

## PART II

### SECTION 5. SITE AND ROAD WORK

#### **1. General**

The work specified in this Section consists of clearing and grubbing, within the areas of the roadway right of way and of borrow pits, sand-clay base material pits, lateral ditches, and any other areas shown in the plans to be cleared and grubbed. Included in the work under this Section is the removal and disposal of all trees, stumps, roots and other such protruding objects, and buildings, structures, appurtenances, existing pavement, and other facilities necessary to prepare the area for the proposed construction, and the removal and disposal of all product and debris which are not required to be salvaged or not required to complete the construction.

Included also in the work under this Division is certain miscellaneous work considered as necessary for the complete preparation of the overall project site, as follows:

- a) The work of plugging any water wells which are encountered within the right of way and which are to be abandoned.
- b) The leveling of the terrain outside the limits of construction, for purpose of facilitating maintenance and other post-construction operations.
- c) The trimming of certain trees and shrubs within the project right of way, for utilization in subsequent landscaping of the project.

#### **2. Demolition, Standard Clearing and Grubbing.**

Work Included:

Standard Clearing and Grubbing shall consist of the complete removal and disposal of all buildings, timber, brush, stumps, roots, rubbish and debris and all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas, and of all other structures and obstructions necessary to be removed.

Unless otherwise shown in the plans, Standard Clearing and Grubbing shall be done within the following areas:

- a) All areas where excavation is to be done, including borrow pits, lateral ditches, right of way ditches, etc.
- b) All areas where roadway embankments will be constructed.
- c) All areas where structures will be constructed, including pipe culverts and other pipe lines.
- d) Any other areas specifically called for on the plans to be cleared and grubbed.

#### **3. Depths of Removal of Roots, Stumps and Other Debris.**

In all areas where excavation is to be done and where the excavated material is to be used in the construction of roadway embankment or roadway base or pavement; also in all areas where roadway embankment will be constructed; roots and other debris shall be removed to a depth of at least one foot below the ground surface. The surface shall then be plowed to a depth of at least six inches and all roots thereby exposed shall be removed to a depth of at least one foot. All stumps within the roadway right of way shall be completely removed and disposed of by the Contractor.

Where excavation is done within the roadway area and where excavation for structures is done, all roots, etc., protruding through or appearing on the surface of the completed excavation shall be removed to a depth of at least one foot below the excavation surface.

In borrow pits, material pits and lateral ditches, all stumps, roots, etc., protruding through or appearing on the surface of the completed excavation shall be removed or cut off below the finished excavation surface.

In borrow and material pits no clearing or grubbing shall be done to within three feet inside the right of way line.

Within all other areas where Standard Clearing and Grubbing is to be done, roots and other debris, projecting through or appearing on the surface of the original ground, shall be removed to a depth of one foot below the surface, but no plowing and harrowing will be required in these areas.

#### **4. Trees to Remain**

As an exception to the above provisions, where so directed by the Engineer, desirable trees within the roadway area shall be trimmed, protected and left standing. Branches of trees extending over the area occupied by the roadway shall be trimmed as directed, to give a clear height of 16 feet above the roadway.

#### **5. Boulders**

Any boulders encountered in the roadway excavation, or found on the surface of the ground, shall be removed and placed in neat piles inside the right of way and adjacent to the right of way line.

#### **6. Selective Clearing and Grubbing.**

Selective Clearing and Grubbing shall consist of removing and disposing of all vegetation, obstructions, etc., as provided above except that, where the Contractor so elects roots, etc., may be cut off flush with the ground surface. Stumps shall be completely removed and disposed of by the Contractor. Undergrowth shall be entirely removed except in specific areas designated by the Engineer to remain for aesthetic purposes. Desirable trees shall be trimmed, protected and left standing, with the exception of such trees as the Engineer may designate to be removed in order to facilitate right of way maintenance. Undesirable or damage trees (as so designated by the Engineer), shall be removed. Selective Clearing and Grubbing shall be done only in areas so designated in the plans.

#### **7. Protection of Property Remaining in Place.**

Property obstructions which are to remain in place, such as buildings, sewers, drains, water or gas pipes, conduits, poles, walls, posts, bridges, etc., are to be carefully protected from injury and are not to be displaced.

#### **8. Removal of Existing Structures.**

Structures to be Removed: The work specifically covered under this Article consists of the removal and disposal of the material from existing structures. The structures to be removed shall be: (1) those structures, or portions of structures, shown in the plans to be removed; (2) those found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed; (3) those structures, or portion of structures, which it is necessary to remove in order to construct new structures, utilities and other appurtenances or obstructions which may be designated in the plans.

#### Method of Removal:

The structures shall be removed in such a way as to leave no obstructions to any proposed new structures or to any waterways. Pilings shall be pulled, or shall be cut off, or broken off, at least two feet below the finish ground line. (In the event that the plans indicate channel excavation to be done by others, the finish ground line shall be considered as the limits of such excavation.) For material which are to remain the property of the Department or are to be salvaged for utilization in temporary structures, the removal shall be in such way as to avoid damage to such materials, and all bolts, nails, etc., shall be entirely removed from timbers to be so salvaged; also such salvaged structural steel members shall be marked for identification, as directed.

#### Removal of Existing Pavement.

The work specified in this Article consists of removing and disposing of existing concrete pavement, concrete sidewalk, slope pavement, ditch pavement, curb and gutter, where shown in the plans or directed by the Engineer to be removed or where required to be removed because of the construction operations. Retaining walls and drainage structures are specifically not included in the work covered under this Division.

### **9. Excavation:**

#### Regular Excavation:

A. Regular Excavation shall include roadway excavation and borrow excavation, as defined for each.

1. Roadway Excavation: Roadway Excavation shall consist of the excavation and the utilization or satisfactory disposal, of all materials necessary for the construction of the roadway, side ditches, etc., within the limits of the roadway right of way as show in the plans.

2. Borrow Excavation shall consist of the excavation and satisfactory utilization of material from authorized borrow pits. It shall include only material that is suitable for the construction of roadway embankments or of other work of constructing embankment covered by the contract and unsuitable material in borrow areas furnished by the Department, which must be excavated as determined by the Engineer, in order to obtain the suitable material.

3. Lateral Ditch Excavation: Lateral ditches shall include inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right of way, as shown in the plans. Unless otherwise shown in the plans all excavation in that portion of lateral ditches beyond the limits of the roadway right of way, including the sections where dressing is required as provided in 120-11.1, shall be classified as Lateral Ditch Excavation.

4. Subsoil Excavation: Where muck, rock, clay or other material within the limits of the roadway is unsuitable in its original position, the Contractor shall excavate such material to the cross sections shown in the plans or indicated by the Engineer, and shall backfill with suitable material, which shall be shaped to conform to the required cross sections. Where the removal of plastic soils below the finished earthwork grade is required, a construction tolerance from the lines shown in the plans as the removal limits, of plus or minus 0.2 foot in depth and plus or minus six inches (each side) in width will be allowed.

#### 5. Trench Excavation:

##### 5.1 General

- A. Design, Provide, and maintain shoring, sheeting and bracing as necessary to support the side of excavations and to prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed Work.

## 5.2 Trench Excavation Plan

- A. Prepare Trench Excavation Plan Addressing Following Topics:
  - 1. Details or shoring, sloping, or other provisions for worker protection from hazards of caving ground.
  - 2. Design assumptions and calculations.
  - 3. Methods and sequencing of installing excavation support.
  - 4. Proposed locations of stockpiled excavated material.
  - 5. Minimum lateral distance from the crest of slopes for vehicles and stockpiled excavated materials.
  - 6. Anticipated difficulties and proposed resolutions.
- B. Excavation Support and Protection:  
Provide excavation support as necessary to support sides of excavations and prevent detrimental settlement and lateral movement of existing facilities, adjacent property, and completed work.

## 5.3 Removal of Excavation Support

- A. Remove excavation support in a manner that will maintain support as excavation is backfilled or leave voids of backfill.
- B. Do not begin to remove excavation support until support can be removed without damage to existing facilities, completed work, or adjacent property.

## 5.4 Trenches

- A. For trench exceeding 5 feet in depth, provide adequate safety system meeting requirements of applicable state and local construction safety order, and federal requirements.

## 6.0 Dewatering Systems

- A. Provide, operate, and maintain dewatering system of sufficient size and capacity to permit excavation and subsequent construction in dry and to lower and maintain groundwater level a minimum of 5 feet below the lowest point of excavation. Continuously maintain excavation free of water regardless of source, and until backfilled to final grade.
- B. Design and Operate Dewatering Systems:
  - 1. To prevent loss of grounds as water is removed.
  - 2. To avoid inducing settlement or damage to existing facilities completed work, or adjacent property.
  - 3. To relieve artesian pressure and resultant uplift of excavation bottom.
- C. Provide supplemental ditches and sump only as necessary to collect water from local seeps. Do not use ditches and stumps as primary means of dewatering.

## 6.1 Settlement

- A. Monitoring Dewatering – Induced Settlement: Established monuments for monitoring settlement at locations selected by ENGINEER. Monitor vertical movement of each settlement monument, relative to remote benchmark selected by the ENGINEER, at frequency CONTRACTOR's Dewatering Plan.

## 6.2 Disposal of Water

- A. Obtain discharge permit for water disposal from authorities having jurisdiction.
- B. Treat water collected by dewatering operations, as required by regulatory agencies, prior to discharge.
- C. Discharge water as required by discharge permit and in manner that will not cause erosion or flooding, or otherwise damage existing facilities, completed work, or adjacent property.
- D. Remove solid from treatment facilities and perform other maintenance of treatment facilities as necessary to maintain their efficiency.

## 6.3 Protection of Property

- A. Make assessment of potential for dewatering induced settlement. Provide and operate devices or systems, including but not limited to re-injection wells, infiltration trenches and cutoff walls, necessary to prevent damage to existing facilities, completed work, and adjacent property.
- B. Securely support existing facilities, completed work, and adjacent property vulnerable to settlement due to dewatering operations. Support shall include, but not be limited to, bracing, underpinning, or compacting grouting.

## 7.0 Stockpiling Excavated Material

- A. Stockpile excavated material that is suitable for use as fill or backfill until material is needed.
- B. Post signs indicating proposed use of material stockpiled. Post signs that are readable from all directions of approach to each stockpile. Signs should be clearly worded and readable by equipment operators from their normal seated position.
- C. Confine stockpiles to within easements, right-of-way, and approved work areas. Do not obstruct road or streets.
- D. Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side-slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.
- E. Do not stockpile excavated materials near or over existing facilities, adjacent property, or completed work, if weight of stockpiled material could induce excessive settlement.

## 7.1 Disposal of Spoil

### **10. Disposal of Surplus and Unsuitable Material.**

#### A. Ownership of Excavated Materials:

Owner of all suitable excavated material shall remain in the Department until the final job requirements for fill or backfill materials have been fulfilled. Unless otherwise provided by the plans or special provisions, any surplus materials then remaining and not needed for job requirements shall become the property of the Contractor and are to be disposed of by him, outside the right of way, to the satisfaction of the Engineer.

In urban or other areas where temporary storage of apparent excess suitable materials within the right of way may be impracticable, the Contractor may stockpile the materials outside the right of way in areas provided by him. Until such materials are needed in the job or are declared surplus. With the written approval of the Engineer, the Contractor may dispose of such apparent excess material with the stipulation that he shall replace any portion of the disposed material required to fulfill the actual job requirements, with equally suitable material, at his own expenses.

No extra compensation will be allowed for any re-handling involved under the provisions of this Sub-article.

B. General Requirements for Disposal: Excavated muck or other materials unsuitable for the roadway construction shall be disposed of as shown in the plans or, if the plans do not indicated the disposal, the materials shall become the property of the Contractor and shall be disposed of by him outside the right of way.

C. Disposal of Muck on Side Slopes: As an exception to the provisions of 120-5.2 when approved by the Engineer, in rural undeveloped areas muck (A-8 material) may be placed on the slopes, or may be stored alongside the roadway, provided there shall be a clear distance of at least six feet between the roadway grading limits and the muck, and the muck shall be so dressed as to present a reasonably neat appearance. In addition, disposal of this material by placing on the slopes may also be permitted in developed areas where, in the opinion of the Engineer, this will result in an esthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where muck or other unsuitable material is permitted to be disposed of inside the right of way limits, such material shall not be placed such as to impede the inflow or outfall of any channel or of side ditches. The Engineer shall determine the limits adjacent to channels within which such materials shall no be placed.

D. Disposal of Paving Materials: Unless otherwise indicated in the plans, paving materials excavated in the removal of existing pavements, such as paving brick, asphalt block, concrete slab, lime-rock, sidewalk, curb and gutter, etc., shall become the property of the Contractor and shall be disposed of by him outside the right of way. If the materials are to remain the property of the Department, they shall be placed in neat piles as directed.

E. Disposal Areas: Where the plans or specifications require the Contractor to dispose of excavated materials outside the right of way, and the disposal area is not indicated in the contract documents, the Contractor shall furnish the disposal area without additional compensation.

Areas provided by the Contractor for disposal of removed paving materials shall be out of sight of the project and at least 300 feet from the nearest roadway right of way line of any State-maintained road. The 300-foot limitation will not apply, however, if the materials are buried.

## **11. Environmental Considerations:**

- A. Excavation of affected soil shall be accomplished as described in the excavation Specification. The soil is contaminated with petroleum product which may be partly or entirely die fuel or gasoline.
- B. Classification of affected soil for disposal purposes will be made by the OWNER using an Organic Vapor Analyzer (OVA) with flame ionization detector. Soils with vapor readings higher than 10 parts per million (ppm) for diesel as defined in Section 62-770 of the Florida Administrative Code, are excessively contaminated and will be identified by the OWNER for treatment and disposal. Affected soil must be placed on an impermeable barrier when temporarily stockpiled. All stockpile leachate or runoff must be collected for disposal in accordance with applicable federal, state, and local regulations. Soils designated for removal and disposal shall be prepared for shipment, transported, and disposed of in accordance with the requirements of this Section.
- C. Affected soils shall be processed by incineration at a state licensed facility. These soils shall be transported and disposed of in accordance with federal, state, and local regulations. The OWNER shall be responsible for all soil analyses required for transportation and disposal.
- D. The OWNER shall be responsible for testing soil which has been incinerated to certify the treated soil meets applicable federal, state, and local regulations for final disposal.

#### FREE PETROLEUM PRODUCT

- A. Some free petroleum products which may be partly or entirely diesel fuel or gasoline may be encountered during excavation or removal of affected soil. The CONTRACTOR shall remove free petroleum product, if necessary, when a separate floating phase greater than 0.10-inch thick is present as required by health and safety considerations. The free petroleum product shall be removed by skimming, pumping to an oil/water separator, or other approved methods. The CONTRACTOR shall take reasonable precautions to ensure that solids are not entrained in the pumping process.
- B. Free petroleum products shall be transported and disposed by the OWNER in accordance with federal, state, and local regulations. The OWNER is responsible for any laboratory analyses required for disposal of the free petroleum products.

#### TRANSPORT AND DISPOSAL

- A. Transport Regulations: The OWNER shall be responsible for the loading, labeling, placarding, marking, weighing, and transport of all waste materials in accordance with the Florida Department of Transportation Regulations, and U.S. Department of Transportation Regulations. The OWNER shall use only transporters that are licensed and competent to haul these wastes.

### **12. Utility Trench Restoration (with flowable fill option)**

Second Cut: Existing pavement shall be saw cut along a neat straight line to the farthest point broken or disturbed asphalt.

Compacted Lime Rock base course twice in thickness of adjoining base or 12" Min. Compacted to a density of 98% (contractor must provide density test results prior to paving) modified proctor T180.

Clean back fill no rock greater than 2" or course sand. 12" lift mechanically hydraulically 90% compacted.

Clean course sand hydraulically compacted to 90 degree density modified proctor T180 or flowable fill as approved by City Engineer.

Where unstable soils are encountered, including peat, muck or other organic soils, elastic silt or clays bellows the water table, a foundation is required. Foundation material shall be 6" course sanf.

Asphaltic concrete type S-III minimum 2 inch thick. Apply tack coat to base and along existing asphalt edges.

Mill and resurface min. 1" to a full lane or as directed by the Public Works Department prior to placing pavement, City Public Works inspection is required.

Stage #1: Place flowable fill midway up on both sides of the utility. Allow to harden before placing stage #2.

Stage #2: Place flowable fill to be bottom of the existing base course. Do not allow the utility being installed to float. If a method is provided to prevent floatation from occurring, Stage #1 and #2 can be combined if approved by the Engineer. If pipe is DIP place at least 6" of compacted sand above pipe or rap with plastic.

Compacted lime rock base course to match thickness of adjoining base or 12" min. compacted in 6" thick lifts to a density of 98%. Contractor must provide density test results prior to paving) modified proctor T180.

Asphaltic Concrete Type S-III minimum 2 inches thick. Apply tack-coat to base and along existing asphalt edges.

Mill and resurface min. 1" to a full lane or as directed by the Public Works Department. Prior to placing pavement, City Public Works inspection is required.

Second Cut: Existing pavement shall be saw cut along a neat straight line to the farthest point of broken or disturbed asphalt.

### **13. Erosion and Sedimentation Control**

All work defined by this section, including work less than one (1) acre in size, that has the potential to impact the City's Municipal Separate Storm Water System (MS4), and/or adjacent properties, is required to employ sediment and erosion control measures that are in accordance with Florida Storm Water Erosion and Sedimentation Control Inspector's Manual, latest revision, and in accordance with Miami-Dade County Department of Environmental Resources Management. All construction activity that results in the disturbance of equal to or greater than one (1) acre is required to obtain coverage under the Florida Department of Environmental Protection's Generic Permit for Storm Water Discharge from Large and Small Construction Activities (CGP).