

## **CHAPTER 8 - GENERAL CONSTRUCTION STANDARDS**

### **8.1 SUMMARY OF WORK**

Work covered consists of providing all work indicated on Construction Drawings approved for project.

### **8.2 Special Project Procedures**

Construction operations in public streets, roads or alleys, shall be confined to as small a space as is practicable and shall be subject at all times to the approval of the Street Superintendent. Unless otherwise directed by the Street Superintendent, the Contractor shall perform the proposed construction as follows:

- (A) Contractor shall obtain and apply for all construction permits required. Contractor shall obtain an excavation permit from Public Works.
- (B) Notify Public Works, Police and Fire Department not less than 24 hours before work is to start.
- (C) Use proper warning signs and lights meeting MUTCD standards at all times. Provide certified flagmen on streets and roads and when required by Public Works. Virginia Work Area Protection Manual shall be a guide for all traffic control.
- (D) Maintain two-way traffic at all times unless otherwise permitted.
- (E) Open no more than 100 feet of trench at any one time and block no more than one intersection. All ditches in public ROW or easements shall be backfilled completely at the end of the work day.
- (F) All backfill in an existing street pavement shall be approved aggregate.
- (G) At the discretion of the City Public Works Department trenches crossing a street at right angles shall be backfilled with flowable grout.
- (H) Use calcium chloride to settle dust whenever necessary and required by the Street Superintendent.
- (I) Sweep all loose material from the compacted, hard surface immediately after backfilling.

- (J) Watch all trenches closely for settlement during rainy periods. If an emergency situation occurs, repairs shall be made at the Contractor's expense.
- (K) Notify the Street Superintendent prior to replacing bituminous surfaces. A plant mix shall be used. The entire disturbed area shall be resurfaced when the excavation disturbs the shoulder within one foot of the pavement. The approval of the Street Superintendent is required as to type of treatment, material, width and depth and method of replacement.
- (L) All trenches and repaved areas shall be maintained for a period of 12 months, and shall be repaired upon request of the Street Superintendent. Paved areas with a differential of 1/4" from existing pavement shall be repaired.
- (M) The Contractor shall restore all streets and road shoulders and ditches to their original side slopes and flow grades; and he shall replace all stabilized materials and ditch linings disturbed or removed along the lines of construction. Any damage to or removal of grasses, plants or shrubs, and the like, that have been planted or landscaping or for the prevention of soil erosion shall be replaced by the contractor. The Contractor shall also be responsible for maintaining such until the Street Superintendent states his approval of the cleaning up and rebuilding of road shoulders and ditches. Property owners shall be notified by the City to remove all shrubs, etc., located within the limits of constructions. The Contractor shall strip and restore sod on established lawns with sod of equal quality as existing.
- (N) The Contractor shall keep all private driveways, walkways and surface drains open for use of the property owner except when an agreement between the Property Owner and the Contractor permits temporary closing. In any event, the driveways, walkways and drains shall be returned to their original conditions. The backfill in driveways and walkways shall be tamped with mechanical equipment, from trench bottom to existing ground surface, to the same density as existed before removal. Surface treatments shall be replaced to original appearance and quality.
- (O) In the event that these conditions are not complied with after reasonable notice has been given, the City will correct the defective work at the Contractor's expense.

- A. Phases of the construction which involve the temporary interruption of essential services shall be scheduled in consultation with the Owner and the City or their representative and shall not be of longer duration than essential to accomplish the purpose for such interruptions. Liaison in this matter shall be required before beginning any work. The Contractor shall give not less than 48 hours notice in advance of the time and date of making any connections to the existing water or sewer system. The City may disapprove the time and date of any and all connections and will advise the Contractor as to a suitable time and date.
- B. The Contractor shall not operate any valves on the City system or make connection to existing sewer and water lines before proper notification is made to the City so that inspection of this work can be made.

#### 8.4 Field Engineering

##### Grades, Lines and Levels

- A. The Developer's Engineer has established baseline and control points. From these points the Contractor shall furnish necessary personnel and equipment to establish line and grade as required for the work.
- B. The Contractor shall be responsible for the preservation of all stakes and marks established by the Engineer, and if any of the stakes and marks are carelessly or willfully disturbed, the cost of replacing them shall be charged against the Contractor.
- C. The Developer's Engineer shall certify that all streets are to subgrade or curb and gutter must be installed prior to acceptance of utility construction by City.

#### 8.5 Project Meetings

A preconstruction conference with the City and the Contractor shall be scheduled before beginning any work.

#### 8.6 Submittals

- A. Construction Schedules

Submit a detailed construction schedule prior to the pre-construction conference.

- B. Shop Drawings, Product Data Certificate of Compliance with Standards and Samples: Submit four copies of all shop drawings for Engineer and sufficient additional copies to satisfy requirements of Contractor.

Submit shop drawings, product data, certificates, samples and the like as required by applicable Specification Sections. Identify each item submitted using applicable specification section number or Drawing or Standard Detail reference.

#### 8.7 Quality Control

- A. All tests required by Technical Specifications shall be performed by the contractor or an independent laboratory approved by the City and observed by the City inspector.
- B. The cost for all testing services shall be borne by the contractor/developer.

#### 8.8 Temporary Facilities and Controls

- A. Temporary Electricity: The Contractor shall make all necessary arrangements for obtaining electric power for construction purposes. No separate payment for electric power for construction purposes or testing is provided.
- B. Temporary Sanitary Facilities: Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as will comply with laws and regulations.

#### 8.9 Materials and Equipment

- A. Quality: Material and equipment incorporated into the work:
  - (1) Conform to applicable specifications and standards.
  - (2) Comply with size, make, type and quality specified or as specifically approved in writing by the City Engineer.
  - (3) Manufactured and fabricated products:

- (a) Design, fabricate and assemble in accord with the best Engineering and shop practices.
  - (b) Manufacture like parts of duplicate units to standard size and gauges, to be interchangeable.
  - (c) Two or more items of the same kind shall be identical, by the same manufacturer.
  - (d) Products shall be suitable for service conditions.
  - (e) Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- (4) Shall not include material or equipment for any purpose other than that for which it is designed or is specified.
- (5) Except as specifically indicated or specified, materials and equipment removed from the existing structure shall not be used in the completed work.
- (6) For material and equipment specifically indicated or specified to be reused in the work:
- (a) Use special care in removal, handling, storage and reinstallation, to assure proper function in the completed work.
  - (b) Arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation. Pay all costs for such work.
- (7) Manufacturer's Instructions:
- (a) When construction plans require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to the City Engineer.

Maintain one set of complete instructions at the job site during installation and until completion.

- (b) Handle, install, connect, clean, conditions and adjust products in strict accord with such instructions and in conformity with specified requirements.
  - (1) Should job conditions or specified requirements conflict with manufacturer's instructions, consult with the City Engineer for further instructions.
  - (2) Do not proceed with work without clear instructions.
  - (3) Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted.

B. Transportation and Handling:

- (1) Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.
  - (a) Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
  - (b) Immediately on delivery, inspect shipments to assure compliance with requirements and approved submittals, and that products are properly protected and undamaged.
- (2) Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

C. Storage and Protections:

- (1) Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
  - (a) Store products subject to damage by the elements in weather tight enclosures.

- (b) Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- (2) Exterior Storage.
  - (a) Store fabricated products above the ground, on blocking skids, to prevent soiling and staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
  - (b) Store loose granular materials in a well drained area on solid surfaces to prevent mixing with foreign matter.
- (3) Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- (4) Protection After Installation: Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.