

## SECTION 340113 – ASPHALT AND CONCRETE PAVEMENT

### Scope:

Upon completion of and consolidation of backfills and when authorized, the Contractor shall furnish all materials and labor and shall replace as directed, all pavement, sidewalks, curbs, and gutters and any other pavement removed for construction of the pipelines, manholes, vaults and appurtenances; and shall also remove and replace, at his own expense, any and all pavements, sidewalks, curbs, and gutters and any other pavement adjacent to pipe trenches, which may be disturbed or damaged as the result of construction operations. Compaction shall be in accordance with “General Backfilling” paragraph.

In the event weather conditions do not permit the permanent replacement of pavement immediately subsequent to the completion of pipeline construction, the Contractor will be required to maintain temporary surfacing until such time as the weather is suitable for paving operations. Any such delay will not be counted against the contract time for completion, provided, that all other work to be performed under the contract is completed within the specified time.

### Products and Implementation:

- A. **Removing Pavement:** The Contractor shall remove pavement as necessary for installing the new pipelines and appurtenances and for making connections to existing pipelines.
- (1) **Marking:** Before removing pavement, the pavement shall be marked for cuts neatly paralleling pipe lines and existing street lines. Asphalt pavement shall be broken along the marked cuts with a jackhammer or other suitable tool. Concrete pavement, and asphalt pavement on concrete base, shall be scored to a depth of approximately two inches (2”) below the surface of the concrete along the marked cuts. Scoring will be done by use of a rotary saw, after which the pavement may be broken below the scoring with a jackhammer or other suitable tool.
  - (2) **Machine Pulling:** Pavement shall not be machine pulled until completely broken down and separated along the marked cuts.
  - (3) **Damage to Adjacent Pavement:** The pavement adjacent to pipe line trenches shall be neither disturbed nor damaged. If the adjacent pavement is disturbed or damaged, irrespective of cause, the Contractor shall remove the damaged pavement and shall replace with new pavement at his own expense.
  - (4) **Concrete Curb and Gutter:** The Contractor will remove and replace or tunnel under any curb and gutter encountered. No additional payment will be made for removing or tunneling curb and gutter.
  - (5) **Payment:** The removal of pavement will be paid for on the basis of measured quantity of pavement removed at the unit prices bid in the proposal. Measurement shall be in lineal feet along center line of ditch line for entire length of pavement cut, regardless of ditch width. No extra payment will be made for extra width not anticipated.
- B. **Selected Backfilling:** All trenches shall be backfilled immediately after pipes are laid therein and joints have been inspected, unless other protection of the pipe line is directed. Selected backfill material shall consist of finely divided earth, stone dust, sand, crushed stone, or other approved material carefully placed about the pipe and up to a height of at least eighteen inches (18”) above the top of the pipe barrel, in uniform layers not exceeding six inches (6”) in thickness. Each layer shall be uniformly placed and tamped with proper hand tools in a manner which will not disturb or injure the pipe. Backfilling shall be carried on

simultaneously on both sides of the pipe in a manner which will prevent injurious side pressures from occurring. If suitable select materials are not available from trench excavation, the Contractor will be required to obtain them elsewhere. No extra payment will be made for selected backfill, the cost thereof to be included in the prices bid for pipelines.

- C. **General Backfilling:** After selected backfill material has been placed and tamped, the remainder of the trench may be backfilled with general excavated material, except that no rock, unless in small shattered fragments, will be permitted to be mixed with other backfill material.
- (1) **Street and Road Right-of Ways, Yards, and Other Traveled Areas:** In street and road right of ways, yards and other traveled areas open to vehicular or pedestrian travel the ditch shall be backfilled and each layer shall be tamped to a density equivalent to at least 95% of the Standard Proctor maximum dry density in accordance with ASTM D 698, as amended to date.
    - a. Backfill material shall be placed in uniform layers not exceeding six inches (6") in thickness, with each layer thoroughly compacted with heavy duty tampers ("Whacker" or equal) to a height of at least thirty six inches (36").
    - b. The remainder of the ditch may be backfilled and tamped in the same manner or if the Contractor so elects he may place backfill in layers not exceeding twelve inches (12") and use wheel loading or heavy duty power tamping equipment ("Hydro-Hammer" or equal).
    - c. Pipe shall have at least thirty six inches (36") of cover before wheel loading and at least forty-eight inches (48") of cover before using heavy duty tamping equipment ("Hydro-Hammer" or equal).
  - (2) **Areas Requiring Pavement Replacement:** Mechanical tamping will be required of all backfilling of excavated portions. All backfill in streets will be Compacted Crushed Stone, ASTM C 33, as amended to date, Gradation #89, #67 or #57, with sufficient fines for compaction. Further compaction shall be accomplished by leaving the backfilled trench open to traffic while maintaining the surface with stone. Settlement in trenches shall be refilled with stone and such maintenance shall continue until replacement of pavement is authorized by the Owner. The cost of the stone and any additional stone used shall be included in unit price bid for replacing pavement. A minimum of 12" of stone must cover the pipe or installation prior to final pavement installation.
  - (3) **Other Areas:** Other areas, including woodland, fields, pastures and areas not open to vehicular travel, the remainder of the ditch may be backfilled by placing fill in ditch and "walking-in" with wheel loaded equipment. Backfill material may be windrowed and maintained in a suitable manner so as to concentrate and pond rainfall runoff over the trench. After sufficient settlement has been obtained the Contractor shall complete surface dressing, remove surplus material and clean up in accordance with these Specifications. Wherever trenches have not been properly filled, or if settlement occurs, they shall be refilled, smoothed and finally made to conform to the surface of the ground. Backfilling shall be carefully performed and the original surface restored as specified herein. Surplus material shall be disposed of by the Contractor. No extra payment will be made for general backfill, the cost thereof to be included in the prices bid for pipelines.
- D. **Street Maintenance:** Wherever feasible, all streets and roads on which the Contractor is performing work shall be maintained for traffic as directed by the Owner. Proper construction equipment shall be available for this maintenance.

- a. No more than one block of a street shall be closed for construction at any one time. Before proceeding with trenching operations in a succeeding block the preceding section shall be completely backfilled, cleanup completed, and the street open to traffic. When work is halted for the day, the Contractor shall completely backfill all excavations and remove all equipment to allow an uninterrupted flow of traffic.
  - b. Payment: No extra payment will be made for street maintenance, the cost thereof to be included in the prices bid for pipelines.
- E. Surfacing of Trenches in Unpaved Streets and Driveways:** Where pipelines are constructed on unpaved streets, roads or driveways, the surfacing material shall be stripped and windrowed separately from the general material excavated from trenches. After the line has been installed and the backfill completed within six inches (6") of the original grade, the salvaged surface shall be replaced. This work shall be considered as general cleanup along with the removal of surplus excavation materials from the street surface and the restoring of the topsoil surfacing outside trench limits to its original condition. No separate payment will be made for the work of this section. All cost of equipment, labor, and materials required for such work shall be included in the prices bid for pipelines.
- F. Surfacing of Trenches in Paved Streets and Driveways:** Where trenches are in paved streets and driveways, all backfill up to the traveled surface shall be made with crushed stone, ASTM C 33, as amended to date, Gradation #89, #67 or #57, with sufficient fines for compaction. Trenches shall be compacted and maintained until pavement is replaced. No separate payment will be made for the work of this section. All cost of equipment, labor, and materials required for such work shall be included in the prices bid for replacing pavement.
- F. Pavement Replacement Along State Highways and Roads:** Street pavement shall be replaced in accordance with the applicable provisions of the Department of Transportation, State of Georgia, Standard Specifications Construction of Roads and Bridges, 1983 Edition, and with the details shown on the Drawings and/or as specified herein or in accordance with Chatsworth Water Works Commission Standards, whichever is deemed more stringent by the Owner.
- (1) Weather: In the event weather conditions do not permit the permanent replacement of pavement immediately subsequent to the completion of pipeline installation, the Contractor will be required to maintain temporary surfacing until such time as the weather is suitable for paving operations. Any such delay will not be counted against the contract time for completion, provided, that all other work to be performed under the contract is completed within the specified time.
  - (2) Preparation: Upon completion of backfill and tamping as described in "General Backfill" paragraph and before replacement of pavement, the existing plant mix asphalt or plant mix asphalt on concrete pavement along ditch line shall be cut back from the top of edges of ditch lines for a distance of at least twelve inches (12") on each side of the ditch to allow for solid bearing edges for pavement to be replaced. Pavement shall be marked and cut as specified in "Removing Pavement" paragraph.
  - (3) Base: On Highways the base for the asphaltic concrete pavement shall be twelve inches (12") of concrete, or as shown on all other streets, driveways, etc, the base for the asphalt concrete pavement shall be ten inches (10") of crushed stone and two inches (2") of binder as specified in this section.
  - (4) Asphaltic Concrete: The crushed stone base shall be thoroughly compacted to the proper level after which it shall be primed and sealed in accordance with the aforesaid standard specifications. Then a 2" Binder Course of asphalt paving shall be placed. The wearing course shall consist of 1-1/2" of Type "E" plant-mixed

asphaltic concrete, conforming to the provisions of "Hot Mix Asphaltic Construction" Section 400 of the aforesaid Standard Highway Specifications.

- (5) Replacement of Concrete Curb and Gutter Street Driveway and Sidewalk: Concrete curb and gutter, street, driveway and sidewalk shall be replaced with Class "B," 3,000 pounds per square inch (psi) concrete of the same thickness and dimensions as was removed.
- (6) Payment: Payment for pavement replacement will be made as a separate item, based on the measure and quantity of paving replaced at the unit prices bid in the Proposal Measurement for payment shall be by linear foot measure along center line of pipeline. No payment will be made for extra Widths not anticipated.

**G. Pavement and Concrete Replacement Along All Other Roads:** Street pavement shall be replaced in accordance with the requirements of the appropriate jurisdictional authority, or Chatsworth Water Works Commission standards whichever is more demanding as directed by the Owner.

- (1) Weather: In the event weather conditions do not permit the permanent replacement of pavement immediately subsequent to the completion of pipeline installation, the Contractor will be required to maintain temporary surfacing until such time as the weather is suitable for paving operations. Any such delay will not be counted against the contract time for completion, provided, that all other work to be performed under the contract is completed within the specified time.
- (2) Preparation: Upon completion of backfill and tamping as described in "General Backfill" paragraph and before replacement of pavement, the existing plant mix asphalt or plant mix asphalt on concrete pavement along ditch line shall be cut back from the top edges of ditch lines for a distance of at least twelve inches (12") on each side of the ditch to allow for solid bearing edges for pavement to be replaced. Pavement shall be marked and cut as specified in "Removing Pavement" paragraph.
- (3) Pavement: Pavement shall be placed in accordance with the applicable provisions of the requirements of the appropriate jurisdictional authority, or Chatsworth Water Works Commission standards whichever is more demanding as directed by the Owner's Inspector.
  - a. Materials :
    - Option A- 10 inches of 3,000psi concrete and 2 inches of asphalt topping type E or F.
    - Option B- 12 inches of black dyed 3,000psi concrete.
  - b. Finish tolerance of surface shall be +/- 1/4 inch as measured with straight edge from asphalt edge to asphalt edge.
  - c. Finish tolerance must be maintained for 1 year of date of acceptance and will be verified by Chatsworth Water Works Commission or contractor will be required to remove and replace.
- (4) Prime Coat: A prime coat shall be applied to all untreated aggregate base and shall be applied only so far in advance of placing the surface treatment as may be permitted by the Engineer. The prime coat shall penetrate into the aggregate base and shall be free of puddles before paving operation begins.
  - a. Grade: The prime coat shall be Grade RC-30 or RC-70 liquid asphalt, meeting the requirements of Section 412 of the Georgia DOT Standard Specification.

- b. Prime coat shall be spread at an approximate rate of 0.20 to 0.30 gallons per square yard. The exact rate shall be submitted to the Owner, and shall uniformly cover the aggregate base.
  
- (5) Sidewalks: After backfilling, the sidewalks shall be poured to original line, grade, and width with four inches of Class "B", 3,000 psi concrete. Construction joints shall be every five feet with ½ inch molded bituminous expansion joint every thirty feet. Finish shall match finish of original sidewalk.
- (6) Concrete Driveways: Before cutting, the driveway shall be scored two inches deep with a saw, twelve inches outside the trench line and then broken. The driveway shall be replaced to original line and grade with Class "B" 3,000 psi concrete, six inches thick with a finish matching the original finish.
- (7) Curb and Gutter: Before cutting, the curb and gutter shall be scored two inches deep with a saw, nine inches outside the trench line and then broken. The curb and gutter shall be replaced to original line and grade with Class "B" 3,000 psi concrete, with a finish matching original finish.

**END OF SECTION**