402.2.10 Wearing surface on gravel surfaced streets or drives shall be replaced with 9" of compacted gravel backfill with a minimum P.I. of 4. The material shall be required to meet the sieve test of the current ASTM E11 for conformity to ASTM D448 for a Standard Aggregate Size Number 67 and a percent of wear test not to exceed 35 when tested in accordance with ASTM C131.

402.3 EXECUTION

402.4 CLEANUP

402.4.1 Upon completion of installation and backfill operations, clean and dress up the work area as follows.

A) Remove construction debris and litter from the site.

B) Remove excess excavation material from the site including material that has washed into streambeds, storm water facilities, streets, culverts, etc.

C) Remove tools, equipment, and construction materials except for designated storage areas along the pipeline route. Maintain designated storage areas in a neat appearing manner.

D) Restore surface and subsurface drainage and provide drainage wash checks necessary to prevent soils from being washed downstream.

E) Machine-grade the area in preparation of final grading, seeding, sodding, pavement replacement, etc.

F) Restore all street signs and mailboxes.

G) Maintain adequate safety signs, barricades, and lights until final restoration of work area is completed.

402.4.2 Finish Grading

A) Finish grade the area to lines and grades which existed prior to the area being disturbed, with special attention directed to proper surface drainage, and the refilling of settled excavations with earth compacted to densities required. The area shall be smoothed by raking or dragging. Flower and vegetable gardens in existence prior to this project shall have the separately stored topsoil restored unless otherwise required. Areas to be sodded or seeded shall have a minimum 5-inch depth of topsoil.

402.4.3 Sod

A) Restore grassed areas disturbed by construction with sod to match existing. Sod may be placed between the average date of the last freeze in the Spring and six weeks prior to the average date for the first freeze in the Fall according to the

Almanac or U.S. Weather Bureau for the area unless otherwise approved by the Engineer in writing. Place sod at any time during this period except when the temperature is over 90° Fahrenheit, drought conditions exist, or the sod or ground surface is frozen. Cut sod as thick as possible to aid the sod in taking root at the earliest possible date.

B) Spread fertilizer nutrients over the area at a rate of 160 pounds per acre (nutrient weight only) or as recommended by the manufacturer.

C) Place sod on the prepared surface with the edges in close contact and the alternate courses staggered. Bury exposed edges of the sod flush with the adjacent soil. In ditches, Place sod with the longer dimension perpendicular to the flow of the water in the ditch. On slopes, starting at the bottom of the slope, place sod with the longer dimension perpendicular to the slope of the ground and where the slope is 2:1 or greater, stake the sod. Sod shall be rolled after placement and joints filled between sections with scarified soil. Within eight hours after placing the sod, apply five gallons of water per square yard.

D) Provide sufficient water to prevent the sod from drying out.

E) Existing sod, which was salvaged during construction, may be reused at the Contractor's option.

F) Sod shall have taken root before acceptance Contractor shall guarantee sodding one year after acceptance by the City.

402.4.4 Tree, Bush, and Hedge Transplanting and Replacement

A) Existing trees, bushes, and hedges which cannot be tied back or trimmed to prevent damage and require removal because of the proposed construction shall be transplanted with a tree spade or replaced. Tree removal shall include removal of stump and roots 4" below grade. Transplanting shall be at the location directed by the Engineer. After digging the plants, properly store them until they can be transplanted. Replacement plants shall not be delivered until they can be planted.

B) Plant during the proper seasons. Do not plant in frozen soil or during unfavorable weather conditions. Dig tree pits of such size as to provide ample space for the entire root system, as the tree comes from the nursery, without crowding or bending the roots. The pits shall be 12" wider than the ball diameter, have vertical sides, and be 6" deeper than the thickness of the ball. Thoroughly loosen the soil in the bottom of the pit by spading to a depth of 6". Dig holes immediately before planting. Dispose of soil earth dug from the tree pits.

C) Set trees at a depth slightly above finished grade, half-fill the hole with planting soil and thoroughly water. Loosen and fold down the upper half of the burlap, fill the hole with planting soil and thoroughly water. Fill the top 2" with well-rotted mulch.

D) After planting, prune the branches in proportion to the amount of root system lost in the transplanting operations but in such a manner as to retain the form typical of the tree. In general, remove approximately 1/3 of the branch structure. Pruning shall be done by expert workmen in such a manner as to insure healthy and symmetrical growth of new wood.

E) After planting, wrap trunks of trees planted after October 15 with special tree wrap from the crotch of the first major branches down to the ground. Tie wrapping with cotton twine to keep the wrapping in place.

F) Plant trees vertically. Trees found leaning during the guarantee period shall immediately be staked with two 2" x 3" wood stakes, 8' long, pointed on one end. The stake shall be long enough to properly support the tree. Drive the stakes to a depth of 18" below the bottom of the tree pit. Locate the stakes on the north side and the south side of the tree, and 12" to 18" from the trunk. Do not drive stakes into the ball and burlap. Guy the trees using a figure eight hitch consisting of No. 14 gauge wire encased in a section of rubber hose.

402.4.5 Restoration of Pavement Surfaces

A) Restore (unless otherwise specified or ordered by the Engineer) permanent type pavements, sidewalks, driveways, curbs, gutters, and surface structures removed or disturbed during or as a result of construction operations to a condition which is equal in appearance and quality to the condition that existed before the work began. The surface of all improvements shall match the appearance of the existing surface.

B) Pour concrete only after inspection by the Engineer of the pouring site to verify proper forms and reinforcement. Reinforcement shall be equal in quantity and type of materials to reinforcement that existed prior to the work, or as indicated in the plans or specifications.

C) Saw-cut existing paved surfaces to provide a straight joint between the existing and new surface. Saw cutting shall be full depth and square or rectangular in shape.

D) Cure and protect all exposed concrete installed under this contract in accordance with the reference standard.

E) Allow concrete to attain a minimum seven-day strength before allowing traffic or construction equipment on the concrete.

F) Remove entire sidewalk squares. Removal of partial squares shall not be allowed.

402.5 CONCRETE SIDEWALKS

402.5.1 Concrete sidewalks shall consist of a minimum thickness of 4" of non-reinforced Portland cement concrete over 4" of compacted granular material.

402.5.2 Increase sidewalk thickness to 6" when crossing residential driveways.