

SECTION 02221

REMOVE STRUCTURE AND OBSTRUCTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove, dispose of, or salvage buildings, fences, structures, pavements, curb, gutter, driveways and approaches, sidewalk and similar hard surfaces, abandoned pipelines or utility items and other obstructions that interfere with construction on or off the site including, but not limited to, foundations, bridges, culverts, guardrail, concrete work, septic tanks, trees, etc.
- B. Salvage as specified, or dispose of in an approved manner.

1.2 RELATED SECTIONS

- A. Section 00727: Control of Work
- B. Section 01355: Environmental Protection
- C. Section 02056: Common Fill
- D. Section 02705: Pavement Cutting
- E. Section 03055: Portland Cement Concrete

1.3 PROJECT/SITE CONDITIONS

- A. Protect adjacent structures and utilities and their contents that are designated to remain.

PART 2 PRODUCTS

2.1 CONCRETE

- A. Use Class A Concrete. Refer to Section 03055.

2.2 COMMON FILL

- A. Refer to Section 02056.

PART 3 EXECUTION

3.1 PREPARATION

- A. Review all work procedures with Engineer.
- B. Coordinate utility location in accordance with Section 00727.
 - 1. Locate and protect all active utilities.
 - 2. Before beginning work:
 - a. Notify Engineer.
 - b. Notify all affected utilities.
 - c. Blue Stake the area.
- C. Restore utility services disturbed by construction operations.
- D. Disconnect water service by excavating to the corporation stop and turning it off. Disconnect the service line from the corporation stop.
- E. Plug disconnected storm drains or sewer lines near the right-of-way line with a watertight concrete plug extending at least 2.0 ft into the remaining pipe.
- F. Remove existing septic tanks, cesspools, leach lines, etc.
- G. All materials not designated for use or salvage becomes the property of the Contractor unless owned by a utility company.
- H. Excavate all material necessary to permit removal of structure.

3.2 BACKFILL AND COMPACTION

- A. Fill all holes or pits resulting from removal operations with suitable material.
- B. Compact the backfilled areas to the density of the surrounding ground, or as specified.

- C. Department will pay separately for material used for backfilling as “Roadway Excavation,” or “Borrow.” If no appropriate material item is included in the bid proposal, it will be considered incidental to the work.

3.3 REMOVAL AND DISPOSAL

- A. Remove and dispose of all material promptly using methods acceptable to the Engineer and in accordance with all applicable rules and regulations.
 - 1. Include all excavation, removal, transportation and disposal costs in the item of work.
- B. Repair any damage to adjacent area at no additional cost to Department.
- C. Remove all concrete to at least 2.0 ft below the finished grade, or 2.0 ft below the natural ground surface, whichever is lower.
- D. Obtain all required permits and provide an environmentally safe area for disposal of removed items. Refer to Section 01355.
- E. Dispose of removed obstructions at a site secured by the Contractor. Furnish the Engineer with a copy of the disposal permits or agreements.

3.4 BUILDING, BASEMENT, AND FOUNDATION DEMOLITION

- A. Move or demolish designated buildings including basements, foundations, sidewalks, pavement slabs, porches, fences and outbuildings on each parcel.
- B. The Department is not responsible for any vandalism or theft that occurs to the building or its contents that reduces the value of the salvage or increases the cost of removal after the award of the Contract.
- C. Break the floor into pieces not over 3.0 ft² in areas to remain in place. Remove and dispose of pieces over 3.0 ft².
- D. Include in other items of work, payment for obstructions shown on the plans for removal but not having a bid item included in the proposal.

3.5 BRIDGE, BOX CULVERT DEMOLITION

- A. Arrange detours for traffic flow according to traffic control plans.
- B. Excavate all material necessary to permit removing structure.

- C. Remove structure so that no remaining portion is closer than 3.0 ft to any watercourse or closer than 2.0 ft to the subgrade and embankment surface or within 2.0 ft of the natural ground surface.
- D. Remove all structures that will interfere with proposed construction.
- E. Complete blasting or other removal operations of existing structure that may damage new construction before placing the new work.

3.6 MANHOLE, CLEANOUT, DIVERSION, AND CATCH BASIN REMOVAL

- A. Maintain satisfactory by-pass service during construction operations.
- B. Plug unused sewers with a 2.0 ft long concrete plug.

3.7 CATTLE GUARD REMOVAL

- A. Remove the cattle guard to at least 2.0 ft below the subgrade surface.
- B. Excess materials become the Contractor's property, unless otherwise designated.

3.8 SEPTIC TANK, UNDERGROUND TANK REMOVAL

- A. Empty and dispose of tank contents in accordance with Section 01355.
- B. Break down and remove tank and appurtenances to at least 2.0 ft below the subgrade surface or finished ground lines.
- C. Break the floor into pieces not over 3 ft² in area.

3.9 BURIED FUEL TANK DEMOLITION

- A. Remove buried fuel storage tanks and dispose of tank contents in accordance with all applicable Laws and Regulations.
- B. Do not spill fuel on subgrade.
- C. Comply with the State and local authorities having jurisdiction over fuel tank removals.

3.10 GUARDRAIL REMOVAL

- A. Remove and dispose of guardrail, posts, hardware, anchor assemblies, terminal assemblies, and attached posts, signs, and delineators.
- B. For steel posts, remove to a minimum of 8.0 inches below the subgrade surface or finished ground lines.

3.11 FENCE REMOVAL

- A. Prevent people or livestock from entering work site from adjacent properties during removal and installation procedures.
- B. Remove fence, posts, and foundations to at least 2.0 ft below subgrade or finished ground lines.
- C. Do not damage vegetation and ground cover during removal operations.

3.12 RAILROAD TRACK REMOVAL

- A. Remove all rails, ties, paving, track encasement, and other appurtenances.
- B. Leave crushed stone or gravel ballast. Grade as necessary.

3.13 TREE REMOVAL

- A. Remove all trees with a circumference larger than 20 inches measured at a point 2.0 ft above existing ground.
 - 1. A tree consists of stump, root, trunk, branches, and foliage.
 - 2. Multiple leaders rising from a common root will not be counted separately.
 - 3. Remove the root system to a minimum depth of 2.0 ft below the finished ground level and within a 2.0 ft radius of the stump.
 - 4. When there is no bid item included in the proposal for "Tree Removal:"
 - a. This work is considered incidental to other items of work and no separate measurement or payment will be made.
 - b. Include all costs in other items of work.
- B. Trees removed with a circumference 20 inches or less, measured at 2.0 ft above existing ground are considered incidental construction.

3.14 CONCRETE HEADWALL REMOVAL

- A. Remove headwalls where designated.
- B. Replace pipes or structural plate pipes damaged while removing headwall at no additional cost to the Department.

3.15 UTILITY POLE REMOVAL

- A. Remove pole and all appurtenances.
- B. Remove foundation to at least 2.0 ft below subgrade or natural ground.

3.16 PIPE CULVERT REMOVAL

- A. Excavate all material necessary to permit removing pipe culvert, end sections, headwalls, etc.
- B. Plugs:
 - 1. Cut existing pipe culvert 2.0 ft inside the Department's right-of-way, and abandon culvert located on private property.
 - 2. Plug disconnected pipelines near the right-of-way line with a water-tight concrete plug extending into the remaining pipe at least 2.0 ft.
- C. Seal openings in walls of remaining manholes or catch basins with watertight concrete plug.

3.17 PAVEMENT REMOVAL

- A. Cut existing pavement on the designated lines with straight vertical edges free from irregularities when joining new construction to existing pavement. Refer to Section 02705.
- B. Completely remove pavement down to the underlying base course or subgrade.

3.18 OBLITERATE ROAD

- A. Break up pavement into pieces not over 1 ft² in area. Scarify and cover broken concrete with at least 1 ft of suitable backfill material.
- B. Fill depressions and form rounded slopes to blend with the natural or surrounding contours.

- C. Grade materials either along the toe of an embankment or into a depression or borrow pit. Cover with at least 1 ft of suitable backfill material.

3.19 CONCRETE SIDEWALK, CONCRETE DRIVEWAY REMOVAL

- A. Remove concrete to the nearest expansion joint or saw cut to provide proper grades and connections.
- B. Make concrete cuts straight, vertical to the surface, full depth, and free from irregularities. Refer to Section 02705.
- C. Thoroughly clean all adhering materials from existing reinforcement.
- D. Do not damage concrete designated to remain.

3.20 CONCRETE CURB, CONCRETE CURB AND GUTTER, RAISED ISLAND, BITUMINOUS CURB REMOVAL

- A. Remove curb, curb and gutter, gutters, raised island, bituminous curb, and parts of such improvements to an existing joint or joint sawed with a vertical face.
- B. Remove material to provide proper grades and connections.

3.21 SALVAGE

- A. Salvage designated equipment and materials.
- B. All other materials become the property of the Contractor unless otherwise noted.

END OF SECTION