

SECTION 02221

SELECTIVE DEMOLITION

PART 1 -GENERAL

1.01 DESCRIPTION

This section includes all material, labor, machinery and supervision required to demolish and remove the following items where applicable and as noted on the Drawings:

- A. Concrete paving, asphaltic concrete pavement, and base courses.
- B. Concrete curbs, concrete curbs and gutters, sidewalks and driveways.
- C. Concrete and metal pipe culverts and sewers.
- D. Existing inlets and manholes.
- E. Miscellaneous structures of concrete or masonry.
- F. Concrete, stone, or clay brick pavers.
- G. Building structures, supporting walls, foundations, fixtures, and utilities.
- H. Capping, and/or relocation of all utilities.
- I. Septic systems and capping/plugging of water well systems.
- J. Plants and miscellaneous landscape materials
- K. Irrigation equipment
- L. Playground equipment, fall surfaces, concrete borders, drainage materials, and foundations.
- M. Site lighting, conduit, fencing, poles, guy wires, panels, and miscellaneous lighting equipment.
- N. Chain link fencing posts, meshing, rails, foundations, and miscellaneous attachment devices.
- O. Any other items specifically called for in the Drawings
- P. Off-site Disposal of all demolished materials and equipment.

1.02 SUBMITTALS

- A. Submittals shall conform to requirements of Section 01330 - Submittals.
- B. Submit proposed methods, equipment, materials and sequence of operations for demolition of structures. Describe coordination for shutting off, capping, and removing temporary utilities. Plan operations to minimize temporary disruption of utilities to existing facilities or adjacent property.
- C. Submit proposed demolition and removal schedule for approval. Notify Landscape Architect and/or Owner's Representative in writing at least 48 hours before starting demolition.
- D. Obtain a permit for building demolition and sidewalk closures, as required.

1.03 REFERENCES

- A. Section 02316 - Excavation and Backfill for Structures
- B. Section 02317 - Excavation and Backfill for Utilities

1.04 OWNERSHIP OF MATERIAL AND EQUIPMENT

- A. Materials and equipment designated for reuse or salvage are listed in the Drawings. Protect items designated for reuse or salvage from damage during demolition, handling and storage. Restore damaged items to satisfactory condition at no additional costs to the Owner.
- B. The Owner has the right of first salvage of any item designed on the drawings for demolition.
- C. Materials and/or equipment not claimed by the Owner shall be demolished and disposed of offsite or salvaged by the Contractor.

1.05 STORAGE AND HANDLING OF SALVAGED ITEMS.

- A. Store and protect materials and equipment designated for reuse until time of installation.
- B. Deliver items to be salvaged to Owner property storage areas indicated on Drawings. Items will be unloaded by Owner personnel.
- C. Remove equipment and materials not designated for reuse or salvage and all waste and debris resulting from demolition from site. Remove material as work progresses to avoid clutter.

1.06 ENVIRONMENTAL CONTROLS

- A. Minimize spread of dust and flying particles. If required by governing regulations, use temporary enclosures and other suitable methods to prevent the spread of dust, dirt and debris.
- B. Use appropriate controls to limit noise from demolition to levels designated in Owner ordinances.
- C. Do not use water where it can create dangerous or objectionable conditions, such as localized flooding, erosion, or sedimentation of nearby ditches or streams.
- D. Stop demolition and notify Landscape Architect and/or Owner's Representative if underground fuel storage tanks, asbestos, PCB's, contaminated soils, or other hazardous materials are encountered.
- E. Dispose of removed equipment, materials, waste and debris in a manner conforming to applicable laws and regulations.

1.07 EXISTING CONDITIONS

- A. Conduct demolition to minimize interference with driveway access. Maintain egress and access at all times.

- B. Provide, erect, and maintain temporary barriers and security devices as required by the Owner of Houston.
- C. Protect shrubs and trees designated to remain from damage during construction according to Specification Section 01562 – Tree and Plant Preservation

1.08 HAZARDOUS MATERIALS

- A. It is not expected that hazardous materials will be encountered in the Work.
- B. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Landscape Architect and Owner. Owner will remove hazardous materials under a separate contract.

1.09 SUBMITTALS

- A. Qualification Data: For demolition firm.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's [building manager's] [and] [other tenants'] on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work, if applicable.
 - 5. Means of protection for items to remain and items in path of waste removal from building.
- C. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- D. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Section 01321 Construction Photographs. Submit photographs before Work begins.

1.10 REGULATORY REQUIREMENTS

- A. Conform to applicable codes for disposal of debris.
- B. Coordinate removal work with utility companies.

1.11 MEASUREMENT AND PAYMENT

- A. Stipulated Price(Lump Sum): The Contract is a Stipulated Price Contract, payment for labor, materials, and all miscellaneous costs required as part of the work required in this Section is included in the total Stipulated Price.

PART 2 - MATERIALS

2.01 EQUIPMENT AND MATERIALS FOR DEMOLITION

- A. Use equipment and materials approved under Paragraph 1.08, Submittals.
- B. Fires are not permitted.
- C. Do not use a "drop hammer" where the potential exists for damage to underground utilities, structures, or adjacent improvements.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Procure lane closure, sidewalk and, building permits from **Owner of Houston**, erect traffic barriers, maintain traffic flow as required and as directed by Landscape Architect or Owner's Representative.
- B. Verify dimensions and limits of all removal work. Prior to demolition, make an inspection with the landscape architect and/or Owner's Representative to determine the condition of existing structures and features adjacent to items designated for demolition.
- C. Identify all below grade utilities and stake/flag locations.
- D. Concrete shall be removed starting at joints or along neat saw cut lines.
- E. At locations designated on the drawings, or as directed, a sawed cut will be made to provide a clean, neat edge for removing concrete pavement, concrete base and asphaltic concrete surfacing, concrete curb and concrete curb and gutter.
- F. Verify that utilities have been disconnected and capped

3.02 PROTECTION OF PERSONS AND PROPERTY

- A. The Contractor shall protect and replace if damaged or displaced, the following items at no additional cost to the Owner or property Owner.
 - 1. Adjacent public and private property.
 - 2. Trees, plants, and other landscape features designated to remain.
 - 3. Utilities designated to remain, including but not limited to manhole covers, water meter boxes, fire hydrants and valve covers.
 - 4. Pavement and utility structures designated to remain.
 - 5. Bench marks, monuments, and existing structures designated to remain.
 - 6. Other structures or features damaged by the Contractor.
- B. Provide safe working conditions for employees throughout demolition and removal operations. Observe safety requirements for work below grade.
- C. Maintain safe access to adjacent property and buildings. Do not obstruct roadways, sidewalks or passageways adjacent to the work.

- D. The Contractor shall be responsible for safety and integrity of adjacent structures and shall be liable for any damage due to movement or settlement. Provide proper framing and shoring necessary for support. Cease operations if an adjacent structure appears to be endangered. Resume demolition only after proper protective measures have been taken.
- E. Erect and maintain enclosures, barriers, warning lights, and other required protective devices.

3.03 UTILITY SERVICES

- A. Follow rules and regulations of authorities or companies having jurisdiction over communications, pipelines, and electrical distribution services.
- B. Notify and coordinate with utility company and adjacent building occupants when temporary interruption of utility service is necessary.
- C. Contractor shall protect and replace, if damaged, and at no additional cost to the Owner, existing utilities.

3.04 BUILDING DEMOLITION

- A. Demolish structure to the lines and grades shown on Drawings. Where no limits are shown, the limits shall be 4 inches outside new items to be installed. Removals beyond these limits shall be at the Contractor's expense; satisfactorily reconstruct excess removals.
- B. Proceed with demolition from the top of the structure to the ground. Complete demolition work above each floor or tier before disturbing supporting members of lower levels.
- C. Demolish concrete and masonry in small sections.
- D. Carefully remove structural framing members and lower them to the ground by means of hoists, derricks or other suitable devices.
- E. Do not overload existing roof or structures.
- F. Provide temporary coverings for openings through walls and roof to prevent water damage to buildings and structures which are to remain.
- G. Where existing concrete must be removed, but will be replaced subsequently:
 - 1. Make initial cut with a concrete saw; do not cut reinforcement.
 - 2. After removing concrete, cut cross bars at center of breakout and protect for subsequent concrete work.
- H. Demolish structures to a minimum of 3 feet below finished grade, unless otherwise indicated on Drawings.

3.05 DEMOLITION OF PAVEMENTS AND OTHER STRUCTURES

- A. Remove pavements and structures by methods that will not damage underground utilities. Do not use a drop hammer near existing underground utilities.
- B. Minimize amount of earth loaded during removal operations.

- C. Where existing pavement is to remain, make straight saw cuts in existing pavement to provide clean breaks prior to removal. Do not break concrete pavement or base with drop hammer unless concrete or base has been saw cut to a minimum depth of 2 inches, or as indicated on the drawings.
- D. Concrete, masonry or asphalt shall be broken up into pieces not greater than 18 inches in any dimension by air-driven machinery or other suitable means. Reinforcing steel shall be cut as necessary for satisfactory removal and disposal.
- E. Where street and driveway saw cut locations coincide or fall within 3 feet of existing construction or expansion joints, break out to existing joint.
- F. Sawed cuts shall be cut with a power-driven concrete pavement saw.
- G. Where new pavement will tie into the sawed joint, expose a minimum of 12" of reinforcing steel. If the pavement is unreinforced, drill into existing pavement and install horizontal dowels.
- H. Remove sidewalks and curbs to nearest existing dummy, expansion, or construction joint.
- I. Remove demolished materials from site as work progresses. Upon completion of work, leave areas of work in clean condition. Demolish material shall not be buried on site and shall be disposed of off site.

3.06 DISPOSAL

- A. Remove from the site all items contained in or upon the structure not designated for reuse or salvage. Conform to requirements of Section 01504 - Temporary Facilities and Controls or Section 01576 - Waste Material Disposal.
- B. Follow method of disposal as required by regulatory agencies.

3.07 BACKFILL AND FILLING VOIDS

- A. A. Completely backfill voids and holes and below grade areas resulting from demolition activities per Section 02300 – Earthwork and Section 02316 – Excavation and Backfill for Structures.
- B. Prior to placement of fill materials ensure that areas to be filled are free of standing water, trash, and debris.
- C. Place fill materials in horizontal layers not to exceed 6 inches in loose depth. Compact each layer at optimum moisture content of the fill material to a density specified in Section 02300.
- D. After fill placement and compaction grade surface to meet adjacent contours and to provide flow to surface drainage structures.
- E. Provide topsoil, and solid sod for areas to receive turf treatment.
- F. Do not backfill with material from demolition.

3.08 MECHANICAL WORK ITEMS

- A. Mechanical removals consist of dismantling and removing existing piping, pumps, motors, water tanks, equipment and other appurtenances. It includes cutting, capping, and plugging required to restore use of existing utilities.
- B. Remove existing process, water, chemical, gas, fuel oil and other piping not required for new work. Take out piping to the limits shown or to a point where it will not interfere with the new work. Piping not indicated to be removed or which does not interfere with new work shall be removed to the nearest solid support, capped, and the remainder left in place. Purge chemical and fuel lines and tanks. Verify that such lines are safe prior to removal or capping.
- C. Where piping that is to be removed passes through existing walls, cut and cap piping on each side of the wall. Use cap appropriate for pipe material to be capped. Provide fire-rated sealant for walls classified as fire-rated.
- D. When underground piping is to be altered or removed, cap the remaining piping. Abandoned underground piping may be left in place unless it interferes with new work or is shown or specified to be removed. Piping less than 15 inches in diameter may be plugged and abandoned in place. For piping 15 inches in diameter and greater to be abandoned, fill with sand, pressure grout or other approved method and plug with concrete or brick masonry bulkhead.
- E. Remove waste and vent piping to points shown. Plug pipe and cleanouts and plugs. Where vent stacks pass through an existing roof that is to remain, remove the stack and patch the hole in the roof, making it watertight. Comply with requirements of existing roof installer so as to maintain roof warranty.
- F. Conform to applicable codes when making any changes to plumbing and heating systems.
- G. For demolition of water line, refer to Section 02516 - Cut, Plug, and Abandonment of Mains.

3.09 ELECTRICAL WORK ITEMS

- A. Electrical removals consist of disconnecting and removing existing switchgear, distribution switchboards, control panels, poles, foundations, guy wires, bus duct, conduits and wires, panel boards, lighting fixtures, and miscellaneous electrical equipment.
- B. Remove existing electrical equipment and fixtures to prevent damage and to allow continued operation of existing systems and to maintain the integrity of the grounding systems.
- C. Remove poles and metering equipment, if designated for removal on the Drawings. Coordinate electrical removals with the power company, as necessary. Verify that power is properly de-energized and disconnected.
- D. Where shown or otherwise required, remove wiring in underground duct systems. Verify function of wiring before disconnecting and removing. Plug ducts which are not to be reused at entry to buildings.
- E. Changes to electrical systems shall conform to applicable codes.

3.10 PLANTS AND MISCELLANEOUS LANDSCAPE MATERIALS

- A. Review site conditions with Landscape Architect and/or Owner's Representative prior to removing any existing vegetation.
- B. Trees to be removed in the Public Rights-of-Way or within the designated building setback require prior approval by the City of Houston Urban Forestry Department. **See Tree Preservation Section 01562**
- C. Selectively prune large trees and/or shrubs systematically to avoid damage to trees, existing site improvements, and adjacent properties.
- D. Stump grind trees and large shrubs to +/- 2'-0" below finished grade and remove excess debris from the site. Backfill tree and/or shrub pits with approved topsoil.

3.11 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02221