

SECTION 02050

DEMOLITION

PART 1 – GENERAL

1.01 SUMMARY

- A. Work Included: All demolition, removal, and salvage work as shown on the drawings or specified herein to include, but not necessarily limited to the following:
 - 1. City of Bayfield Pumping Station (former WWTP) Site:
 - a. Indicated equipment in the Control Building.
 - b. Compact treatment unit including aeration tank, final clarifier, chlorine contact tank, and aerobic digestion and associated piping, equipment, appurtenances, and wooden building covering the unit.
 - c. Effluent Parshall Flume and outfall sewer.
 - d. Former digester/sludge storage tank.
 - e. Sludge drying beds.
 - f. Yard piping and appurtenances indicated on the drawings.
 - 2. Pikes Bay Sanitary District WWTP Site:
 - a. Aerated lagoons and associated piping, equipment, and appurtenances.
 - b. Blower building including all piping equipment and appurtenances.
 - c. UV disinfection including tank, equipment, and building.
 - d. Yard piping and appurtenances indicated on the drawings.
 - 3. Pikes Bay Pumping Station Site:
 - a. Former rectangular pumping station/comminutor structure and associated piping.
 - b. Existing pumps and indicated piping in existing precast concrete pumping station (to be replaced).
- B. Refer to Section 02772 - Lagoon Abandonment for demolition related specifically to the wastewater treatment lagoons at Pikes Bay Sanitary District.
- C. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

- A. CONTRACTOR shall submit permits and notices, if required, authorizing building demolition.

1.03 QUALITY ASSURANCE

- A. CONTRACTOR shall perform demolition, removal, and salvage in conformity with applicable federal, state, and local safety practices and code requirements.

1.04 SEQUENCE

- A. No demolition, removal, or salvage work shall commence until approval to proceed has been granted by OWNER. Such work shall be completed in accordance with the construction sequence included in Division 1 of these specifications and in accordance with the construction phases of this project and work to be done by other contractors.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Compacted fill shall meet the requirements of Section 02222 - Excavation, Fill, Backfill and Grading.
- B. Pipe fittings and materials shall meet the requirements of Section 02600 - Buried Piping and Appurtenances and Section 15050 - Piping and Appurtenances.

PART 3 – EXECUTION

3.01 BREAKING DOWN AND REMOVING STRUCTURES

- A. General:
 - 1. All existing structures, with all attached parts and connections, shown on the drawings or specified to be removed, or that interfere with the new construction, shall be entirely removed within the limits shown or specified, unless otherwise provided.
 - 2. When a portion of an existing structure is to be retained, CONTRACTOR shall take care during construction operations so as not to impair the value of the retained portion.
 - a. Complete all operations necessary for the removal of any existing structure, which might endanger the new construction, prior to the construction of the new work.
 - b. Do not use any equipment or devices which might damage structures, facilities, or property which are to be preserved and retained.
- B. Pavement, Curb, Gutter, Sidewalk, Driveways, Crosswalk, and Similar Structures:
 - 1. Where portions of the existing structure are to be left in the surface of the finished work, CONTRACTOR shall remove the structure to an existing joint or saw and chip the structure to a true line.
 - 2. Sufficient removal shall be made to provide for proper grades and connections in the new work.
- C. Walls, Piers, Surface Drains, Foundations, and Similar Masonry Structures
 - 1. Remove entirely or break down to an elevation at least four feet below the finished slopes or natural ground at Pikes Bay site and two feet below at all other areas.
 - 2. Remove existing construction as required to clear new construction.
- D. Pipe Culverts:
 - 1. Remove entirely all culverts that are to be removed, except as hereinafter provided for closing culverts.
 - 2. Remove sidewalls or substructure units in water to an elevation no higher than the elevation of the natural stream or lake bed.
 - a. Where grading of the channel is required, remove such units to the proposed finished grade of the stream or lake bed.
 - b. Remove all other endwalls or substructure units down to at least two feet below natural or finished ground line, as the case may be.
 - 3. Where existing culverts are to be extended or otherwise incorporated into the new work, remove only such part or parts of the existing culvert as necessary to provide a proper connection to the new work.

4. Remove pipe culverts designated for salvage in a manner that will preclude damage to the culverts.
5. Closing culverts:
 - a. A culvert may be closed instead of being removed if the following conditions apply:
 - (1) If the diameter of the culvert is less than 48 inches.
 - (2) If the top thereof does not come within five feet of the elevation of the finished grade line, and
 - (3) If the culvert is in suitable condition.
 - b. Remove the headwall and such parts as would be within two feet of the finished grade line.
 - c. Completely fill each end of the culvert with concrete for a distance from each end of at least two feet plus the height of the opening of the structure.

3.02 ABANDONING STRUCTURES

- A. Tanks, Manholes, Catch Basins, and Inlets:
 1. CONTRACTOR shall thoroughly clean structures to be abandoned.
 2. CONTRACTOR shall plug existing pipe connections with brick or concrete block masonry or with any grade of concrete having a 28-day compressive strength in excess of 2,000 psi.
 3. CONTRACTOR shall remove the walls of the structures to an elevation at least four feet at Pikes Bay site and two feet at all other areas below the finished grade line, or to such elevation that may be designated on the drawings or as necessary to clear new construction.

3.03 ABANDONING AND REMOVING UTILITIES AND UNDERGROUND PROCESS PIPING

- A. CONTRACTOR shall be responsible for the turning off or unhooking of all utilities and process piping before starting the demolition work. Remove all utility lines, including electrical services and process piping that are shown or specified to be removed. Remove utility lines that are to be abandoned as needed to clear new construction.
- B. CONTRACTOR shall thoroughly flush and clean process piping to be abandoned.
- C. The ends of utility lines and process piping shown or specified to be abandoned that are exposed by excavation shall be plugged with concrete to prevent soil infiltration into the pipes.

3.04 EQUIPMENT

- A. CONTRACTOR shall remove all equipment specified herein or indicated on the drawings.
- B. CONTRACTOR shall remove associated exposed conduit, power wiring, controls, switches, instrumentation, control wiring, control boxes, appurtenances and their supports serving equipment to be removed. Electrical items shall be removed to their junction with motor control center, control panel, or their junction with conduit serving other equipment that is to remain.
- C. CONTRACTOR shall remove all piping and appurtenances and their supports serving equipment indicated to be removed. Piping shall be removed to its junction with the main service header serving other equipment that is to remain or new equipment as indicated.

Remaining piping and tubing shall be fitted with an appropriate blind flange or plug and insulated as required.

- D. CONTRACTOR shall remove equipment bases, anchor bolts and other supports serving equipment to be removed. Concrete bases shall be removed to 1 inch below floor elevation and repaired with nonshrink grout plus surfacing to match existing.
- E. CONTRACTOR shall patch floors, walls and ceilings as required to match existing or as indicated where equipment, piping, electrical, bases or supports are removed.

3.05 INTERIOR PIPING AND APPURTENANCES

- A. CONTRACTOR shall remove all piping and appurtenances as indicated. The location and elevations of existing piping are approximate.
- B. CONTRACTOR shall remove all supports for piping and appurtenances indicated to be removed. Repiping and connections to new piping shall be as specified for new piping. Remaining piping and tubing, not reconnected for new piping, shall be fitted with an appropriate blind flange or plugged and insulated as required.
- C. CONTRACTOR shall patch all holes resulting from removal of piping, appurtenances and their supports. Patching of concrete shall be with nonshrink grout and as indicated. Patching of masonry shall be with matching material toothed in. Patch other material as indicated.

3.06 SALVAGE

- A. OWNER has first right of refusal to all material, piping, and equipment removed.
- B. All equipment, material, and piping except as specified hereinafter, within the buildings and structures to be demolished and additional items as noted shall be removed by CONTRACTOR. CONTRACTOR shall inspect each structure and determine the type and amount of equipment, materials, and piping to be removed.
- C. All equipment, material and piping except as specified hereinafter, within the limits of the demolition, and additional items noted to be removed will become the property of CONTRACTOR, if OWNER does not claim under first right of refusal, and shall be removed from the project site.
- D. The following equipment and materials shall be removed and reused in the new facilities: Existing emergency generator in the City of Bayfield pumping station (existing Bayfield WWTP).
- E. The following equipment and materials shall be removed and turned over to Pikes Bay Sanitary District: Existing Pikes Bay Sanitary District pumping station Flygt submersible pumps.
- F. The following equipment and materials shall be removed and turned over to OWNER (City of Bayfield):
 - 1. Chlorination metering pumps.
 - 2. Dechlorination metering pumps.

3.07 BACKFILL

- A. CONTRACTOR shall fill all abandoned structures and excavations resulting from removal of structures and utilities with compacted fill. See Section 02222 - Excavation, Fill, Backfill and Grading for required degree of compaction.
- B. Prior to filling, CONTRACTOR shall break one opening in the floor or wall near the base of each compartment to allow groundwater to freely migrate through the structure.

END OF SECTION