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SPECIFICATIONS - DETAILED PROVISIONS
Section 02051 – Temporary Sewage Lift Station Demolition

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SECTION 02051
TEMPORARY SEWAGE LIFT STATION DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall furnish all labor, materials, and equipment necessary to perform and complete demolition work specified herein.
- B. The Work includes demolition of existing temporary sewage lift station facilities, abandonment of existing force main and gravity sewer, and re-construction of gravity sewer manhole(s). Existing lift station facilities to be removed and disposed, removed and salvaged, or to remain are summarized in Exhibit A attached at the end of these specifications.
- C. Contractor shall comply with the requirements of the District, government agencies, and utilities having jurisdiction over the work, such as, but not limited to: work in the public right-of-way (if applicable), hours of work, and removal of utilities.
- D. Re-construction of gravity sewer manhole(s) may require work to be performed within the public right-of-way. Contractor shall apply for and procure all permits and licenses, including encroachment permits required by the City or County having jurisdiction over the right-of-way. Contractor shall give all notices necessary and incidental to the prosecution of the work.

It is the responsibility of the Contractor to contact the jurisdictional agency and make himself knowledgeable of their requirements.

- E. Demolition shall include the cost of "Final Disposal" of all debris, waste, and rubbish in a manner that complies with all local, state, and federal laws, regulations, and ordinances.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

The Work covered under this Section shall comply with current editions of the following specifications, codes, and standards:

- A. District Detailed Provisions – Section 01000, General Safety Requirements
- B. California Building Code
- C. National Electrical Code

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- D. State and Federal Occupational Health and Safety Administration (OHSA) Standards

1.03 CONTRACTOR SUBMITTALS

Contractor shall provide submittals in accordance with the General Conditions, Section F - Labor and Construction. Submittals shall include, but shall not be limited to, the following:

- A. Demolition Schedule
Prior to commencing demolition activities, Contractor shall submit for District's approval a complete coordination schedule for all demolition work, including shut-off of lift station pumping units, and deactivation and removal of electric power service to ensure uninterrupted sewage conveyance.
- B. Encroachment Permit
Where work is required to be performed in the public right-of-way, Contractor shall submit a copy of the encroachment permit obtained from the City or County agency having jurisdiction over the right-of-way.
- C. Preconstruction Video
Contractor shall prepare a video recording in the presence of the District's Inspector showing the existing lift station site, lift station facilities, and condition of structures and improvements adjacent to areas of demolition and alteration. Copies of the video recording shall be submitted to the District's Inspector prior to commencing work.
- D. Insurance Certificates
Contractor shall not commence work until he has obtained all insurance required under the District's General Conditions, Section F – Labor and Construction. Contractor shall submit all necessary documents to demonstrate compliance with the District's insurance requirements, including Worker's Compensation Insurance Certificate and Certificate of Liability Insurance.
- E. Hot Work Permit
Prior to initiating hot work, Contractor shall submit a Hot Work Permit application to the District. Hot work includes, but is not limited to, any work involving grinding, cutting, torching, welding, soldering, brazing, powder-actuated tools and all other similar applications producing a spark, flame, or heat that is capable of initiating fires or explosions.

1.04 JOB CONDITIONS

District assumes no responsibility for actual condition of the existing lift station facilities to be demolished. The Contractor shall visit the site and inspect the existing facilities, to ascertain their condition and impact on demolition activities.

Existing lift station facilities pump raw sewage from the District's gravity sewer collection system. Contractor shall assume that all lift station piping, wet well and associated appurtenances are filled with raw sewage, including grease, grit, and debris. Prior to commencing demolition of lift station facilities, Contractor shall dewater and clean said facilities as necessary and as specified herein.

PART 2 - PRODUCTS

2.01 IMPORTED FILL MATERIAL

All imported fill material shall be select soil material, non-expansive with an expansion index of less than 20, free of vegetative matter and other deleterious substances, granular with a Sand Equivalent (SE) greater than 30, and shall not contain rocks or other irreducible matter with a maximum dimension greater than 4 inches. Fill material shall be approved by the District prior to use onsite.

PART 3 - EXECUTION

3.01 GENERAL

- A. Contractor shall not commence with lift station demolition activities until receipt of District's written direction to proceed. Contractor shall not interrupt sewage conveyance at any time during demolition work.

The first demolition work activity shall consist of diverting sewage from the lift station wet well or onsite bypass manhole to the gravity collection system. Contractor shall reconfigure the diversion manhole to the lift station or onsite bypass manhole to block sewage conveyance to the lift station facilities and open up conveyance to the gravity collection system. Contractor shall maintain continuous conveyance of raw sewage throughout reconfiguring the manhole base.

- B. All demolition work shall be completed within 90 days, commencing from the time the new sewer is placed in-service. Prior to commencing demolition work, Contractor shall submit a written request to District for additional time if demolition work is anticipated to take longer than 90 days.
- C. Site grading and compaction shall be performed as specified herein. Relative compaction of 95% shall mean soil compacted to a dry density exceeding 95% of the maximum dry density in accordance with ASTM D1577-12. Compaction testing will be provided by the District. However, any costs for retesting of compaction due to the Contractor's negligence shall be paid for by the Contractor.

3.02 POLLUTION CONTROL

- A. Water sprinkling, temporary enclosures, chutes, and other suitable methods shall be used to limit dust and dirt rising and scattering in the air. Comply with government regulations pertaining to environmental protection.
- B. Water shall not be used when it creates hazardous or objectionable conditions such as erosion, flooding, or pollution.
- C. Water contaminated with sediment or hazardous or toxic materials shall not be allowed to run off into the public storm drain system (including street gutters). Such runoff shall be intercepted, collected and disposed of according to existing environmental regulations.

3.03 PROTECTION

- A. Contractor shall perform his operations so that existing improvements which have not been designated for demolition are not damaged, including roads and other paved surfaces adjacent to or in the vicinity of the work site. Contractor shall repair and restore any disturbed or damaged private or public improvements which results from his operations (except that which is specifically a part of the Contract Work) to the satisfaction of the District, or the agency having jurisdiction over said improvements, all at the Contractor's expense.
- B. Interior and exterior shoring, bracing, or supports shall be provided to prevent sudden collapse of structures to be demolished and to prevent movement, settlement or collapse of adjacent facilities to remain.
- C. Existing vegetation, landscaping materials, structures, and appurtenances, which are not to be demolished, shall be protected and maintained as necessary.
- D. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of work personnel and public during demolition and removal operations. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely backfilled and no longer constitute a hazard or dangerous condition. Excavations in the public right-of-way shall be completely backfilled or covered with vehicle safety plates at the end of each work day.
- E. During demolition activities, Contractor shall protect all nearby existing equipment such as the motor control center and main control panel from dust caused by demolition activities by covering with drop-curtains or other similar methods.

- F. Demolition work involving grinding, cutting, torching, welding, or similar applications producing a spark, flame, or heat that is capable of initiating fires or explosions ("hot work") shall be performed in conformance with OSHA 29CFR 1910.252-254 and NFPA 51B at a minimum. Prior to commencing any hot work, Contractor shall obtain a Hot Work Permit from the District and confirm that all fire prevention and protection requirements have been implemented.

3.04 EQUIPMENT, PIPING, AND APPURTENANCES

- A. All mechanical and electrical equipment shall be disconnected and removed. Mechanical and electrical equipment to be salvaged for the District is designated in Section 3.11 herein. Equipment and appurtenances not listed therein shall be considered waste and shall be disposed of by the contractor.
- B. All equipment, piping, and appurtenances inside the wet well shall be removed. Wet well discharge piping embedded in remaining wet well wall sections (deeper than 5 feet) shall be abandoned in-place. Contractor shall furnish and install blind flanges at the end of the remaining pipe spools.
- C. All above grade discharge piping, valves, and appurtenances shall be removed. Vertical pipe risers shall be removed to below grade transition with horizontal piping. Below grade horizontal piping runs deeper than 48 inches shall be abandoned in-place. The appropriate blind flanges, caps, threaded plugs, etc. shall be provided at the ends of all abandoned piping.

Contractor shall flush the sewage force main piping to be abandoned with water, and then fill the piping with control density fill per District Detailed Provisions Section 02252. Contractor shall review the District's as-built drawings for the existing sewage force main(s) to determine the extent of the filling and conditions affecting same. Contractor shall plug the end of the sewage force main(s) at the discharge manhole to prevent any control density fill from entering the manhole and gravity sewage collection system. Contractor shall provide observation personnel at the discharge manhole during filling operations to ensure the integrity of the force main plug is maintained.

- D. All miscellaneous above grade mechanical and electrical appurtenances such as air valves, pipe supports, electrical receptacles, light fixtures, poles, and foundations, shall be removed and disposed.
- E. All electrical conductors shall be disconnected from the associated equipment and removed from the conduit. All above grade conduit shall be removed. Vertical conduit risers shall be removed to below grade transition with horizontal conduit. Below grade horizontal conduit runs deeper than 36 inches shall be abandoned in-place. Conduit caps shall be provided at the ends of all abandoned conduit.

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- F. Voids created by removal of below grade facilities and appurtenances shall be backfilled with select fill material compacted to 95% minimum relative compaction.

3.05 CONCRETE STRUCTURES AND IMPROVEMENTS

- A. Demolition shall proceed in a systematic manner, in accordance with all permits and approved submittals.
- B. All concrete structures and improvements shall be demolished and disposed. As a minimum, concrete structures and improvements to be demolished include: wet well roof, upper 5 feet of wet well shaft, electrical panel foundation slab, standby generator foundation slab, discharge piping support slab, odor control chemical tank support slab, SCE transformer support slab, below grade electrical pull boxes and vaults, and site lighting pole foundations.

At lift station installations where gravity sewage will no longer enter the site, the onsite bypass manhole shall be demolished, which shall consist of removal of the manhole roof/cone and the upper 5 feet of the manhole shaft.

- C. Concrete walls and roofs shall be demolished in sections. Contractor shall provide bracing and shoring as necessary to prevent structure collapse.
- D. Prior to commencing lift station wet well demolition, Contractor shall dewater and clean the wet well, and remove all equipment and appurtenances. Contractor shall then remove submersible sewage pumping units, including base elbows, guide rails and support brackets, access stabilizer, float switches and ultrasonic level transducer or bubbler system, discharge piping, pipe supports, and all related items.

Following wet well cleaning and equipment removal, Contractor shall commence wet well demolition. Contractor shall remove wet well roof and upper wet well shaft sections to a minimum depth of 5 feet below existing or ultimate finished grade, whichever is greater. Contractor shall core drill the wet well foundation in 4 places, equally spaced. Each core drill shall be 12-inch diameter. Contractor shall fill the remaining wet well shaft with sand (minimum SE of 30) compacted to 90% relative compaction. The remaining wet well excavation (upper 5 feet or more) shall be backfilled with select fill material and compacted to 95% minimum relative compaction.

- E. Unless specified otherwise, footings, foundation walls, below-grade construction and concrete slabs on grade shall be demolished and removed to a depth which will not interfere with new construction, but not less than 24 inches below existing ground surface or future ground surface, whichever is lower. All below grade boxes, vaults and other underground structures shall be broken up and removed.

- F. Below-grade areas and voids resulting from demolition of structures shall be completely filled with select fill material compacted to 95% minimum relative compaction. Prior to filling, below grade areas and voids shall be free of standing water, trash, and debris.
- G. Select fill material shall be placed in horizontal layers not to exceed 12 inches in loose depth. Each layer shall be compacted to a minimum of 95% relative compaction.

3.06 SITEWORK

- A. All designated site work shall be demolished and removed.
- B. Where existing concrete slabs or foundations are to be removed adjacent to remaining improvements, Contractor shall saw concrete to provide square, straight edges.
- C. Where onsite asphalt concrete pavement is specified to be removed, Contractor shall remove all asphalt concrete pavement and aggregate sub-base beneath the pavement. Upon removal of asphalt concrete pavement and sub-base, Contractor shall import select fill material as necessary to restore the finished grade to the prior pavement elevations. Fill material shall be compacted to a minimum of 90% relative compaction.
- D. After site fill and compaction operations are complete, all site surfaces shall be graded to meet adjacent contours and to provide flow to surface drainage structures. The final surfaces shall be wheel rolled to a smooth, well compacted finished surface.

3.07 EXISTING UTILITIES

- A. Electrical power service to the lift station facilities will be terminated by the District. Contractor shall coordinate power service termination with the District and Southern California Edison (SCE). Contractor shall not commence demolition activities related to any electrical equipment until Contractor and District jointly confirm that electrical power to the site has been permanently disconnected.
- B. Contractor shall coordinate with SCE the removal of all SCE owned equipment and material, including service meter, transformer, and service conductors. Upon removal of SCE equipment and material, Contractor shall remove the pre-cast concrete support pad for the SCE transformer. Contractor shall remove vertical conduit risers and elbows, and cap remaining conduit to be abandoned in-place at below grade connection with horizontal conduit run.

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- C. Water service to the lift station shall be terminated by the District. Contractor shall coordinate water service termination and demolition with the District. Contractor shall remove water service appurtenances as directed by the District. As a minimum, Contractor shall remove service meter, meter box, and reduced pressure backflow device.
- D. All exposed onsite water facilities shall be removed, including hose bibs and risers for future water connections. Contractor shall remove vertical pipe risers and cap remaining piping to be abandoned in-place at below grade connection with horizontal piping run.
- E. Contractor shall bear all costs, including fees to utility companies and/or other agencies, resulting from demolition work.

3.08 DISPOSAL OF DEMOLISHED MATERIALS

- A. Demolition and removal of debris shall be conducted to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the District.
- B. Debris, rubbish, and other materials resulting from demolition operations shall be removed and disposed of in compliance with all applicable local, state, and federal laws and regulations, all at the Contractor's expense. Demolition debris, rubbish, and other materials shall be removed from the project site as it accumulates and shall not be stored thereon.
- C. Burning of removed materials from demolished structures shall not be permitted.

3.09 PATCHING AND REPAIRING

- A. The Contractor shall provide patching, replacing, repairing, and refinishing of damaged areas involved in demolition as necessary to match the existing adjacent surfaces, with materials and procedures approved by the District.
- B. The Contractor shall repair all damage caused to adjacent improvements and facilities by demolition activities as directed by the District, and at no cost to the District.

3.10 CLEANING

- A. During, and upon completion of work, the Contractor shall promptly remove unused tools and equipment, surplus materials, rubbish, and debris from the site. The Contractor shall clean and sweep the affected portions of roads, streets, sidewalks, and driveways daily. At the completion of demolition work, Contractor shall return all adjacent areas to their condition prior to the start of work.
- B. Upon removal of all raw sewage, grit, grease, and other debris from the wet well, Contractor shall pressure wash clean the wet well walls and floor.

3.11 SALVAGE

- A. All salvageable and non-salvageable items shall be removed and salvaged by the Contractor for the District at the Contractor's expense in accordance with "EXHIBIT A - TEMPORARY SEWAGE LIFT STATION DEMOLITION CHECKLIST."
- B. Equipment and material to be salvaged shall be removed in a manner that will cause the least possible damage to same. Contractor shall thoroughly clean the interior and exterior of all salvaged items. Contractor shall handle, store, and protect all salvaged items until they are delivered to the District.
- C. Upon approval of the District's Inspector, Contractor shall deliver all salvaged items to the District's Operation Yard at 2270 Trumble Road, Perris, California.

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EXHIBIT A

TEMPORARY SEWAGE LIFT STATION DEMOLITION CHECKLIST

SEWAGE LIFT STATION ITEM	REMOVE & DISPOSE	REMOVE & SALVAGE	ITEM TO REMAIN	DOES NOT APPLY
MECHANICAL:				
Submersible Pumping Units & Appurtenances				
Wet Well Discharge Pipe & Fittings				
Wet Well Bubbler System or Ultrasonic Level Control System				
Wet Well Raw Sewage Bypass (RSB) Pipe & Fittings				
Wet Well Access Stabilizer				
Wet Well Pipe Supports				
Raw Sewage Discharge (RSD) Pipe, Fittings & Valves				
Above Grade Pipe Supports				
Raw Sewage Force Main (RSF) Piping				
Emergency Standby Generator (and Diesel Particulate Filter if so equipped)				
Magnetic Flow Meter and Signal Converter				
Odor Control Chemical Storage Tank				
Odor Control Chemical Feed Pump				
Emergency Eyewash Station				
Water Service Meter & Box				
Water Service Reduced Pressure Backflow Device				
Water Service Hose Bibs & Risers				
Bypass Manhole (Cover, Grade Rings, Cone, Shaft – 5' Depth)				
Removable Handrail Around Wet Well				
ELECTRICAL:				
Electrical Service Section or Pedestal				
Automatic or Manual Transfer Switch				
Motor Control Center & Main Control Panel				
Remote Telemetry Unit (RTU) Panel		X		
Radio Lightning Arrestor Panel				
Radio Antenna & Support Pole				
Electrical Conduit (Above Grade & Vertical Risers)				
Conductors (Above & Below Grade)				
Wet Well Float Switches & Cables				
Junction Boxes, Pull Boxes, & Vaults				
SCE Transformer Pad				
Site Lighting (Fixtures, Pole, & Foundation)				
Grounding Electrodes & Conductors				
Odor Control Receptacle & Guard Post				

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SEWAGE LIFT STATION ITEM	REMOVE & DISPOSE	REMOVE & SALVAGE	ITEM TO REMAIN	DOES NOT APPLY
STRUCTURAL:				
Wet Well Reinforced Concrete Roof & Access Hatch				
Wet Well Shaft (Upper 5' Minimum)				
Reinforced Concrete Support Slab for Discharge Piping				
Reinforced Concrete Foundation Slab for Standby Generator				
Reinforced Concrete Foundation Slab for Electrical Panels				
Reinforced Concrete Foundation Slab for Odor Control Chemical Tank				
SITE IMPROVEMENTS:				
Asphalt Concrete Pavement				
Concrete Driveway				
Chain Link Fencing				
Masonry Walls (including Concrete Foundations)				
Access Gates (Chain Link or Wrought Iron)				
Guard Posts at SCE Transformer				
Concrete Drainage Swales				
Storm Drain Piping & Appurtenances				

END OF SECTION 02051