Kiewit Infrastructure West Co. Klamath River Renewal Project Technical Specifications

02 41 00 DEMOLITION AND FACILITY REMOVAL

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REVISION INDEX

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SECTION 02 41 00 DEMOLITION AND FACILITY REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section applies to the demolition, removal and disposal of existing structures, buildings, miscellaneous items identified for removal in whole or in part, including but not limited to the following:
 - 1. Diversion dams, embankment and concrete dams, water conveyance structures, powerhouses and switchyards and related facilities.
 - 2. Operator's buildings, residences, and related facilities.
 - 3. Fish hatchery structures and related facilities.
 - 4. Electric, water, communication, sewerage, and gas utilities.
 - 5. Excavation, removal and disposal of historical construction debris and sediment upstream of the Facilities and within the riverbed.
- 1.2 RELATED SECTIONS
 - A. Section 31 05 00 Materials for Earthwork.
 - B. Section 31 10 00 Clearing, Grubbing, and Stripping.
 - C. Section 31 23 00 Excavation and Fill Placement.
 - D. Section 31 25 00 Erosion and Sedimentation Controls.
 - E. Section 31 80 00 Care of Water.

1.3 REFERENCE STANDARDS

- A. The latest edition of Reference Standards shall govern, unless otherwise specified.
- B. American National Standards Institute (ANSI)/ American Society of Safety Professionals (ASSP):
 - 1. ANSI/ASSP A10.6, Safety & Health Program Requirements for Demolition Operations.



- C. National Fire Protection Association (NFPA) 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.
- D. OSHA Construction Safety Orders.
- E. State of California:
 - 1. California Health and Safety Code Section 25117.
- F. Resource Conservation and Recovery Act (RCRA).
- 1.4 GENERAL REQUIREMENTS
 - A. Obtain Authorizations before the commencement of any demolition or removal activities.
 - B. Confirm and coordinate with the Owner the extent of salvaged materials and special procedures for protection of articles indicated to be salvaged.

1.5 SUBMITTALS

- A. Submit in accordance with the Contract Documents and FERC surrender order articles.
- B. Items listed in this section are to be submitted to the Engineer for information prior to the start of any Works, unless noted otherwise.
- C. Demolition and Removal Plan indicating the following:
 - 1. Method statement shall comply with ANSI/ASSP A10.6 and NFPA 241 and schedule of demolition activities.
 - 2. Description and schedule of materials to be disposed on site and their disposal location.
 - 3. Protection of items to be salvaged, in accordance with the salvage list shown on Table 1, the Fall Creek Hatchery Project Specification and as agreed with the Owner.
 - 4. Inventory of all hazardous and/or contaminated materials existing on site.
 - 5. Methods for abatement, removal, handling, and transportation of all hazardous and/or contaminated materials identified in the inventory.
 - 6. Methods for managing and monitoring dust generation and stormwater runoff to satisfy local authorities and in accordance with Section 31 25 00 Erosion and Sedimentation Controls.
 - 7. Submit disposal plan including name and location of off-site disposal facility.
 - 8. Care of Water including Storm Water Pollution Prevention Plan (SWPPP).



- D. Waste Materials Management Plan:
 - 1. Submit a Construction/Demolition Waste Materials Management Plan. Identify requirements for hazardous and non-hazardous construction/demolition waste Materials.
- E. Blasting plans in accordance with the applicable federal, State, and local codes and regulations, indicating the following:
 - 1. Name, qualification, and references of the proposed blaster-in-charge and personnel responsible for blast design.
 - 2. Method and mitigation to control noise, air blast, ground vibration, fly rock, and dust control.
 - 3. Explosives transportation plan including handling, storage, and security.
 - 4. Safety plan and fire prevention plan.

1.6 SITE CONDITIONS

- A. Before beginning any demolition or deconstruction work, survey the site, examine the condition of the structures, historical drawings when available, project drawings and specifications.
- B. Locate existing services and underground structures that may affect the Work or may be damaged during demolition. Drawings or descriptions, verbal or otherwise, of existing structures or their location that are given are intended only as an aid to the location of these structures. Measurements and locations of the existing underground structures shown on the Drawings are not guaranteed to be accurate and must be verified by the Contractor prior to proceeding with demolition.
- C. Unknown Conditions:
 - 1. Material, debris, and soils may be contaminated by hazardous substances including but not limited to transformers, batteries, insulation, and petroleum products not indicated on the Drawings or Contract Documents. Conduct an assessment to classify the extent of contaminated materials.
- D. Lead-based paint and asbestos:
 - 1. Structures, equipment, and buildings to be removed may include lead-based paint and asbestos.



- E. Petroleum, oil, and lubricants (POL):
 - 1. Equipment indicated for removal will require the removal of petroleum, oil, and lubricant products not indicated on the Drawings or Contract Documents.
- PART 2 PRODUCTS NOT USED

PART 3 - EXECUTION

- 3.1 EXAMINATION
 - A. Confirm the location and extent of all structures and items indicated for demolition, salvage, or removal. Identify any special requirements that may be necessary to perform this work.
 - B. Confirm the location of all utilities and coordinate all utility disconnection with the utility owner.
- 3.2 ITEMS TO REMAIN IN PLACE
 - A. Protect items to remain in place from damage. In the event of damage to items indicated to remain in place, immediately notify the Owner.
- 3.3 ENVIRONMENTAL CONSIDERATIONS
 - A. Dust and Debris Control:
 - 1. Dust from demolition and removal operations shall be controlled so as not to adversely affect people and equipment, including other Contractors.
 - 2. Keep the site free of debris and control water runoff. Discharge water runoff such that suspended materials or other harmful substances in accordance with the requirements of local authorities. Prevent erosion and sedimentation at and downstream of the discharge locations, in accordance with Section 31 25 00 Erosion and Sedimentation Controls.
 - B. Properly remove and dispose of hazardous materials including dust, fibrous materials (insulation), contaminated or dangerous materials.



3.4 REMOVAL OF STRUCTURES AND FACILITIES

- A. Comply with ANSI/ASSP A10.6 and NFPA 241.
- B. Proceed with demolition work in accordance with the Demolition and Removal Plan and in accordance with the Drawings.
- C. Demolition limits are based on the conditions reported on the historic drawings. Where unanticipated conditions or unknow elements are encountered contact the Engineer for evaluation.
- D. Site access and temporary safety controls of the work site area are to be established and monitored by the Contractor.
- E. Do not damage components indicated to remain or to be salvaged.
- F. Comply with the Waste Materials Management Plan, Federal, State, and Local Authorities regarding waste material transport.
- G. Excavations:
 - 1. Excavation required for demolition must comply with Section 31 23 00 Excavation and Fill Placement.
- H. Removal of Structures:
 - 1. Remove structures and associated facilities to the lines and limits as indicated on the Drawings.
 - 2. Remove structures in a manner that ensures structural stability during the demolition and removal work.
 - 3. Provide any temporary shoring, support, and work platforms required to ensure structural stability during the demolition and removal process.
 - 4. Remove and separate hazardous or contaminated materials from the demolition waste and dispose of as per the Waste Materials Management Plan.
 - 5. The exposed portion of the structures left in place shall be free of jagged edges and/ or exposed rebar. Rebar shall be cut flush with the lines and grade as shown on the Drawings.
 - 6. Exposed concrete surfaces after demolition works shall be free of any loose material or exposed partially detached aggregates.
- I. Underground Structures:
 - 1. Underground structures shall be abandoned in place unless indicated otherwise.



- 2. Underground storage tanks abandoned in place shall be pumped out and filled with General Fill Type E9 with or without concrete as indicated on the Drawings.
- 3. All underground storage tank containing petroleum products shall be removed.
- J. Utilities and Related Equipment:
 - Electrical distribution system shall be removed or modified as per Section 02 41 99 – Electric Distribution System Demolition.
 - 2. Ensure that all utilities including electric, water, communication, gas, and sewage connection to the structures, indicated to be removed or modified, are disconnected in conformance with Federal, State and Local regulations.
 - 3. Do not interrupt utilities serving facilities used by the Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - a. Notify the Owner not less than 7 days in advance of proposed utility interruptions.
 - b. Do not proceed with utility interruptions without the Owner's written permission.
 - 4. Piping, ducts, and conduits will be removed to the lines and limits as indicated on the Drawings.
 - a. Flush piping to be abandoned in place.
 - b. Abandoned piping remaining in place will be capped or covered with a minimum of 2 feet with General Fill Type E9 or as indicated on the Drawings.
- K. Mechanical Equipment:
 - 1. Where removal of mechanical equipment is required for demolition or indicated on the Contract Documents or Drawings, ensure that the equipment is deenergized.
 - 2. Flush abandoned piping.
 - 3. Identify any hazardous waste materials and decontamination required to prepare the equipment for disposal in accordance with the Demolition and Removal Plan indicating the following:
 - a. Means and method statement.
 - b. Construction staging in accordance with OSHA Construction Safety Orders.
 - c. Description and schedule of materials to be disposed and their disposal location.
 - d. Method for removal, handling, and transportation of hazardous or contaminated materials.
 - e. Name and location of off-site disposal facility.
 - f. Care of Water details.
 - g. Waste Materials Management Plan.



- L. Pavement Removal:
 - 1. Cut out with saw and remove asphalt and road toppings pavement to the limits shown on the Drawings, dispose of all loose pavement, or as agreed between Contractor and local counties, per Memorandum of Understanding.
- M. Recreation Site Demolition:
 - 1. Septic tanks located at recreation facilities shall be removed and backfilled. Septic tanks may also be left in place and backfilled. The bottom of the tank and at least one side shall be crushed so as to prevent subsurface water collection in the tank.
 - 2. Water wells located at recreation facilities shall be abandoned and backfilled with an impervious fill material and as approved by the appropriate jurisdictional agency.
 - 3. Any above ground service or utilities shall be removed and severed with subsurface utilities to a level of 1 feet below ground. Subsurface utilities and components shall remain in place.
 - 4. All existing asphalt and gravel surfaces shall remain in place.
 - 5. Utilities shall be confirmed to be 'out of service' prior to removal.
 - 6. Removal of surface structures (i.e. vaulted toilets, sheds, structures with leadbased paint etc.) shall be completed as approved by the appropriate jurisdictional agency.
 - 7. Boat docks, boat ramps, ADA platforms shall be removed and disposed of as required.

3.5 PACIFICORP EQUIPMENT TO BE SALVAGED

- A. Check equipment salvage list shown in Table 1 and record the conditions of items to be salvaged as per the Contract Documents.
- B. Protect all items indicated to be salvaged as per the Contract Documents. Refer to salvage list in Table 1 and the Fall Creek Hatchery Project Specification (Iron Gate).

3.6 BACKFILL

A. All backfill materials and fill placement required at the demolition Worksite will be as per Section 31 05 00 – Materials for Earthwork and Section 31 23 00 – Excavation and Fill Placement.



3.7 DRILLING AND BLASTING

- A. Drill blasting holes as required to complete desired construction results. Review the blasting performance and adjust the blast design to achieve the requirements as per the Drawings.
- B. Where controlled blasting is required, blasting to be performed using perimetercontrolled blasting techniques including presplitting and trim (cushion) blasting adjacent to the minimum line of excavation.
- C. Design the blast to comply with safe peak particle velocity (PPV) for all structures within and in the vicinity of the blast area and other locations.
- D. Take necessary precautions to protect the structures, buildings and equipment not intended to be removed from blast induced damage, including protection from fly rock, protection from vibrations and air blasts.
- E. Coordinate blasting and notify the Owner, other Contractors and personnel working on site or near site.
- F. Remove unstable material and scale base surface as shown on the Drawings and as required to provide a stable surface.
- 3.8 DISPOSAL OF PETROLEUM, OIL AND LUBRICANTS (POL)
 - A. After de-energizing the facilities, all POL shall be removed, transported, and disposed of off-site in accordance with Clause 3.9 of this Section.
- 3.9 DISPOSAL OF REMOVED MATERIALS
 - A. Dispose of all removed materials.
 - B. Temporary waste material stockpiles shall be placed and graded to prevent any water accumulation on their surfaces and erosion of the slope. If necessary, direct any water accumulation away from the stockpile in accordance with Section 31 25 00 Erosion and Sedimentation Controls.
 - C. Place contaminated materials in separate stockpiles, provide containment and protection of stormwater from seepage in accordance with Section 31 25 00 Erosion and Sedimentation Controls. Remove contaminated materials from the Project site and dispose in a licensed, approved off-site disposal site.



- D. On-Site Disposal:
 - 1. Develop disposal sites as designated on the Drawings. All non-hazardous materials removed from the site and surplus materials from the excavations at the (separate) locations shown on the Drawings shall be disposed in the disposal sites shown on the Drawings. The disposal sites shall be stable within themselves, shall not cause instability of adjacent natural slopes or any parts of the Work and shall be graded as shown on the Drawings, to provide free draining surfaces which do not detract from the general appearance of the area. The Disposal Sites shall be established and maintained in a manner that meets the requirements of the Drawings, Section 31 05 00 Materials for Earthwork, Section 31 23 00 Excavation and Fill Placement and Section 31 25 00 Erosion and Sedimentation Controls.
- E. Off-Site Disposal:
 - 1. Obtain all haul route permits for waste material transport operations.
- F. Hazardous and Contaminated Waste Disposal:
 - This applies to materials and substances as defined under CERCLA, "hazardous waste" as defined under RCRA and in California Health and Safety Code Section 25117, "hazardous material" as defined under US DOT regulations (49 CFR Parts 100–180), and "hazardous material" as defined in Oregon Administrative Rules 340-142-0001.
 - 2. Dispose of hazardous materials and waste in accordance with the Federal, State and Local regulations.
 - 3. Dispose of unused contaminated debris, soils and other materials resulting from the demolition or removal of the facility in accordance with the Waste Materials Management Plan.
 - 4. Comply with all other applicable local, state, and federal hazardous waste material regulations not specifically contained in this section.
- 3.10 CLEAN-UP
 - A. At the end of each shift, ensure that the excavations and structures are safe, clean, solid, and stable.
 - B. Trim demolition surfaces to match the conditions of adjacent, undisturbed areas.
 - C. At completion and during progress of the Work, maintain premises in a neat and orderly manner. Dispose of rubbish, construction debris and surplus materials at least on a weekly basis.



3.11 SECURITY

- A. Partially demolished structures or buildings shall be protected from unauthorized entry.
- B. Access to site is to be restricted to authorized entry points as shown on the Drawings.

PacifiCorp Equipment to be Salvaged – J.C. Boyle			
Functional Location	Equipment	Description	
JCB1 - Exciters	10012357	Exciter	
JCB2 - Exciters	10012358	Exciter	
JCBC - Controls/Instrumentation	10012389	Controls/Instrumentation	
JCBC - Electrical Systems	10012400	JC Boyle 1 GEN Breaker 5L51	
JCBC - Electrical Systems	10012401	JC Boyle 2 GEN Breaker 5L52	
JCBC - Electrical Systems	10012402	Transformer - GSU - JB2 sn C660427	
JCBC - Electrical Systems	10012403	Transformer - GSU - JBC Spare sn C660426	
JCBC - Cranes/Hoists	10050475	JCB Powerhouse Stop Log Crane	
JCB1 - Governor System	10050564	Governor - JCB Unit 1	
JCB2 - Governor System	10050567	Governor - JCB Unit 2	
JCBC - Electrical Systems	10052841	Transformer - GSU - JB1 sn G1150-01	
JCBC - Protective Relays	10075565	JCB1 REL-P GEN 12Y-1 overspeed - Airpax	
JCBC - Protective Relays	10075566	JCB2 REL-P GEN 12Y-2 overspeed - Airpax	
JCBC - WECC Relays	10075588	JCB1 REL-W SWGR Arc Flash Monitor	
JCBC - WECC Relays	10075589	JCB2 REL-W GSU Arc Flash Monitor	
JCBC - WECC Relays	10075637	JCB1 REL-W GEN 11 - 3425A-1	
JCBC - WECC Relays	10075638	JCB1 REL-W GEN 11 - 3425B-1	
JCBC - WECC Relays	10075639	JCB1 REL-W GEN 64F-1 field ground detect	
JCBC - WECC Relays	10075640	JCB1 REL-W GSU 11 - 3311-1	
JCBC - Protective Relays	10075641	JCB1 REL-P GEN 25 sync check 188A-1	
JCBC - Protective Relays	10075642	JCB1 REL-P GEN 25-1 syncrocloser 193B-1	
JCBC - Protective Relays	10075643	JCB1 REL-P GEN 25-1 gen control 194-1	
JCBC - WECC Relays	10075644	JCB2 REL-W GEN 11 - 3425A-2	
JCBC - WECC Relays	10075645	JCB2 REL-W GEN 11 - 3425B-2	
JCBC - WECC Relays	10075646	JCB2 REL-W GEN 64F-2 field ground detect	
JCBC - WECC Relays	10075647	JCB2 REL-W GSU 11 - 3311-2 multi-funct	
JCBC - Protective Relays	10075648	JCB2 REL-P GEN 25 sync check 188A-2	
JCBC - Protective Relays	10075649	JCB2 REL-P GEN 25-2 syncrocloser 193B-2	
JCBC - Protective Relays	10075650	JCB2 REL-P GEN 25-2 gen control 194-2	

Table 1 – Equipment Salvage List (12-09-2019)



PacifiCorp Equipment to be Salvaged – J.C. Boyle			
Functional Location	Equipment	Description	
JCBC - Electrical Systems	10083827	JC Boyle Station Battery System - 125 V	
JCBC - Electrical Systems	10083829	JC Boyle Dam Battery System - 125 V	
JCBC - Electrical Systems	10083830	JC Boyle Station Batteries - 125 VDC	
JCBC - Electrical Systems	10083834	JC Boyle Stn Battery Charger - 125 VDC	
JCBC - Electrical Systems	10083839	JC Boyle Stn Battery Inverter - 125 VDC	
JCBC - Electrical Systems	10083840	JC Boyle Dam Batteries - 125 VDC	
JCBC - Electrical Systems	10083841	JC Boyle Dam Battery Charger - 125 VDC	
JCBC - Electrical Systems	10083842	JC Boyle Dam Battery Inverter - 125 VDC	
JCBC - WECC Relays	10085257	JC Boyle 1 REL-W GEN WECC Relays - 10 YR	
JCBC - WECC Relays	10085258	JC Boyle 1 REL-W GSU WECC Relays - 10 YR	
JCBC - WECC Relays	10085259	JC Boyle 2 REL-W GEN WECC Relays - 10 YR	
JCBC - WECC Relays	10085260	JC Boyle 2 REL-W GSU WECC Relays - 10 YR	
JCBC - WECC Relays	10085261	JC Boyle Plant REL-W SS WECC Relays-10 Y	
JCBC - Electrical Systems	10099298	JC Boyle Plant Energy Meters	

PacifiCorp Equipment to be Salvaged – Copco 1			
Functional Location	Equipment	Description	
C11 - Exciters	10011707	Exciter	
C12 - Exciters	10011708	Exciter	
C1C - Electrical Systems	10011757	Emergency Generator	
C1C - Electrical Systems	10011763	Copco 1 Station Battery System - 120VDC	
C11 - Governor System	10050469	Governor - Copco 11	
C12 - Governor System	10050470	Governor - Copco 12	
C1C - Electrical Systems	10084172	Copco 11 generator energy meter	
C1C - Electrical Systems	10084173	Copco 12 generator energy meter	
C1C - Electrical Systems	10084279	Copco 1 Station Batteries - 120VDC	
C1C - Electrical Systems	10084280	Copco 1 Station Battery Charger	

PacifiCorp Equipment to be Salvaged – Copco 2			
Functional Location	Equipment	Description	
C21 - Exciters	10011839	Exciter	
C22 - Exciters	10011840	Exciter	
C2C - Controls/Instrumentation	10011868	Controls/Instrumentation	
C2C - Electrical Systems	10011878	Copco 21 unit breaker 6G21	



PacifiCorp Equipment to be Salvaged – Copco 2			
Functional Location	Equipment	Description	
C2C - Electrical Systems	10011879	Copco 22 unit circuit breaker 6G22	
C2C - Electrical Systems	10011880	Transformer - Miscellaneous	
C2C - Electrical Systems	10011886	Plant Emergency Generator	
C2C - Electrical Systems	10011891	Dam Emergency Generator	
C21 - Governor System	10050543	Governor - Copco 21	
C22 - Governor System	10050544	Governor - Copco 22	
C2C - Electrical Systems	10084174	Copco 2 station service energy meter	
C2C - Electrical Systems	10084175	Copco 21 generator energy meter	
C2C - Electrical Systems	10084176	Copco 22 generator energy meter	
C2C - Electrical Systems	10084282	Copco 2 Station Batteries - 130 VDC	
C2C - Electrical Systems	10084283	Copco 2 Station Battery Charger -130 VDC	
C2C - Electrical Systems	10084508	Copco 2 station service breaker 6G9	
C2C - Electrical Systems	10084513	Copco 21 station service breaker 6G36	
C2C - Electrical Systems	10084514	Copco 22 station service breaker 6G37	
C2C - Communication Site	10086912	C2C - Communication Site - Hilltop	

PacifiCorp Equipment to be Salvaged – Iron Gate			
Functional Location	Equipment	Description	
IGC - Controls/Instrumentation	10012136	Controls/Instrumentation	
IGC - Electrical Systems	10012147	Irongate Station Battery System - 130VDC	
IG1 - Governor System	10050555	Governor - Iron Gate	
IGC - Cranes/Hoists	10050558	Iron Gate Powerhouse Stop Log Hoist	
IGC - Electrical Systems	10084182	Irongate generator energy meter	
IGC - Electrical Systems	10084344	Irongate Station Batteries - 130VDC	
IGC - Electrical Systems	10084345	Irongate Station Battery Charger	
IGC - Electrical Systems	10099297	Irongate Plant Energy Meters	
IGC - Controls/Instrumentation	10012136	Controls/Instrumentation	
IGC - Electrical Systems	10012147	Irongate Station Battery System - 130VDC	
IG1 - Governor System	10050555	Governor - Iron Gate	
IGC - Cranes/Hoists	10050558	Iron Gate Powerhouse Stop Log Hoist	
IGC - Electrical Systems	10084182	Irongate generator energy meter	
IGC - Electrical Systems	10084344	Irongate Station Batteries - 130VDC	
IGC - Electrical Systems	10084345	Irongate Station Battery Charger	
IGC - Electrical Systems	10099297	Irongate Plant Energy Meters	
IGC - Controls/Instrumentation	10012136	Controls/Instrumentation	



PacifiCorp Equipment to be Salvaged – Iron Gate			
Functional Location	Equipment	Description	
IGC - Electrical Systems	10012147	Irongate Station Battery System - 130VDC	
IG1 - Governor System	10050555	Governor - Iron Gate	

END OF SECTION 02 41 00

