

Sitework and Technical Specifications

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SECTION 01 – Site Preparation

PART 1 – GENERAL

1.1 WORK INCLUDED IN THIS SECTION

Site preparation includes, but are not limited to, work to develop and provide access to the instream work area, water quality protection measures, clearing and grubbing. Clearing and grubbing involves the removal and disposal of vegetative material, miscellaneous abandoned subsurface structures and debris that may be discovered during site preparation. Riparian trees or large bushes designated for relocation will be staged until replanting efforts can be completed.

1.2 RELATED WORK IN OTHER SECTIONS

Section 02 – Excavating, Filling, and Grading

1.3 JOB CONDITIONS

Dust Control: Use water or other approved means to control dust on and near the work site and on and near all access routes, excavated areas, as well as staging and stockpile areas, as directed by the Project Coordinator.

1.4 LINES AND GRADES

All clearing and grubbing shall be conducted in a manner to limit impact and shall be done within the lines and grades shown on the Construction Plans and as directed by the Project Coordinator.

PART 2 – INSTALLATION

2.1 CLEARING

Contractor shall only clear trees, stumps, bushes, brush, snags, and other vegetation where necessary for installation of the project components. All other trees and vegetation shall be left intact. Trees and vegetation to be left undisturbed shall be protected from damage during construction.

2.2 GRUBBING

In areas requiring excavation, Contractor shall grub and remove material to a depth necessary to complete excavation to the limits indicated on the Construction Plans. Material to be grubbed shall include any miscellaneous surface and subsurface structures and debris that may be encountered (root, shrubs, stumps, etc.).

2.3 PROTECTION

Contractor shall take precautions to protect any trees, bushes, vegetation, benchmarks, survey stakes, infrastructure, and utilities not intended for removal.

Contractor shall be responsible for verifying that there are no utilities within the work area. Contractor shall be responsible for repairing and/or replacing, public or private utilities, water lines, or other infrastructure. The Siskiyou Resource Conservation District (RCD) is not responsible for damaged items.

2.4 PLANT RELOCATION

Riparian trees or large bushes designated for relocation shall be moved in a timely manner so as not to delay construction progress. The Contractor shall take extra measures to protect plants during relocation such as excavating a significant percentage of the root ball and soaking staged them until replanting efforts can be completed.

2.5 DISPOSAL OF MATERIAL

All materials resulting from clearing and grubbing activities shall be removed and disposed of in an acceptable manner at an acceptable facility conforming to all applicable regulations.

2.6 DEWATERING

Flowing water will be present during the construction period. Contractor will need to temporarily reroute water around the work area. The Contractor will need to divert flowing water to the river left channel by constructing a berm consisting of onsite bedload of low silt content, inflatable dams, sandbags, imported washed, spawning-sized gravel, impermeable sheeting, or other materials approved by the California Department of Fish and Wildlife (CDFW). Barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock riprap, or other protective material. The enclosure and the supportive material shall be removed from the work site when the work is completed. Clean bedload may be left in the stream, but the barrier must be breached to return the stream flow to its natural channel and to provide fish passage. The dewatering process and any fish removal will be controlled and will occur in coordination with the RCD and CDFW.

PART 3 – MEASUREMENT AND PAYMENT

3.1 METHOD OF MEASUREMENT

No measurement will be made for site preparation unless the construction limits are changed.

3.2 BASIS OF PAYMENT

The amount of work completed and approved shall be paid as a line item of a lump sum contract, with the value of the line item defined by the Contractor in the bid. Such payment shall constitute full compensation for all services and materials necessary and incidental to the completion of site preparation.

In the event of a change in construction limits, the Contractor shall submit a Change Order to the Project Coordinator for approval by the RCD.

END OF SECTION 01

SECTION 02 – Excavating, Filling, and Grading

PART 1 – GENERAL

1.1 WORK INCLUDED IN THIS SECTION

Excavating, filling and grading required for this project includes, but is not limited to:

- Excavating bedrock alteration and water diversion intake
- Excavating, filling, and grading of the existing irrigation channel to accommodate conveyance pipeline, and fish screen system
- Excavating, filling, and backfilling for a fish bypass conveyance system
- Preparation of sub-grade for areas to be seeded, planted, and/or mulched
- Rough and finish grading of work

1.2 RELATED WORK IN OTHER SECTIONS

Section 01 – Site Preparation

Section 03 – Infrastructure Installation

Section 04 – Site Restoration

1.3 JOB CONDITIONS

Dust Control: Use all approved means necessary to control dust within and surrounding the work site, including offsite staging areas, if such dust is caused by the Contractor's operations during performance of the work, or if resulting from the condition in which the Contractor leaves the site.

Protection: Contractor shall take precautions to protect any trees, bushes, vegetation, benchmarks, survey stakes, infrastructure and utilities not intended for removal. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Project Coordinator, and at no cost to the RCD. Protect tops, trunks, and roots of existing trees on the project site, which are to remain.

Notification: Contractor shall notify Engineer and Project Coordinator prior to installation of specified components of the project to allow for sufficient inspection of the work and shall obtain approval of all materials prior to commencing construction. Any eventual difficulty or loss of time caused by the Contractor failing to meet environmental compliance requirements shall be borne solely by the Contractor.

1.4 LINES, GRADES, AND ELEVATION

All excavation, filling, backfilling, and grading shall be done to the lines, grades, and elevations shown on the Construction Plans and as staked and directed by the Engineer.

1.5 BENCHMARKS AND MONUMENTS

Maintain all monuments, benchmarks, and reference points, which are shown on the Construction Plans and marked in the field. The RCD and Engineer will provide benchmarks outside of the construction area in coordination with Contractor. Contractor shall pay for the replacement of such reference points located outside of the grading limits if disturbed by the Contractor during construction.

1.6 REFERENCES

The publications listed below form a part of this specification. The latest revision of the following standards shall apply to work hereunder:

Associated General Contractors of America Inc. "Manual of Accident Prevention in Construction"

PART 2 – MATERIALS

2.1 FILL MATERIAL – GENERAL

All fill material for construction shall come from onsite unless otherwise specified by the Engineer. All fill material shall be subject to approval by the Engineer.

2.2 OTHER MATERIAL

All other materials not specifically described but required for proper completion of the work of this section, shall be as selected by the Contractor, subject to approval by the Engineer and Project Coordinator.

PART 3 – INSTALLATION

3.1 GENERAL

Familiarization: Prior to all work in this section, the Contractor shall become thoroughly familiar with the site, the site conditions, the Construction Plans and all portions of the work falling within this section.

3.2 EXCAVATION AND FILLING

General: Excavation, as hereinafter specified, shall comprise the satisfactory removal and disposition of all earthen material. Excavation shall be performed to the lines, grades, elevations, and slopes indicated on the Construction Plans. During construction, excavation, filling, and backfilling shall be performed in a manner and sequence that will provide drainage at all times.

Classification of Excavation: Excavation shall be unclassified. Excavation can involve the disturbance of earth, clay, silt, sand, gravel, hard pan, loose pan, loose stone masses, boulders, rock material in ledges, bedded deposits, unstratified masses, or firmly cemented conglomerate deposits.

Depressions resulting from material removal: Where depressions result from, or have resulted from, the removal of surface or subsurface obstructions, open the depression to equipment working width and remove all debris and soft material, and grade to the elevations specified in the Construction Plans and as directed by the Engineer.

Fill and Backfill: All fill or backfill material shall consist of native channel materials or other approved material with all undesirable material removed. Unless otherwise specified, all fill shall be uniformly placed into layers and compacted to achieve the slope identified in the Construction Plans or as directed by the Engineer.

Over-excavation: Backfill and compact all over-excavation areas at no additional cost to the RCD.

3.3 BACKFILLING

Responsibility of Contractor for Backfill Settlement: The Contractor shall be responsible for the satisfactory compaction and maintenance of all backfill of any description required as part of this work.

Fort Goff Fish Passage and Diversion Improvement Project

If, prior to the final inspection, any backfilled areas are found to have settled, they shall immediately be reworked by the Contractor and restored to the specified grades in the Construction Plans.

3.4 FINISH GRADING

The finishing of side slopes, cuts and fills shall be to reasonably smooth uniform surfaces that will merge with the adjacent terrain without noticeable break. Finish grading shall be performed to the lines and grades shown on the Construction Plans without variations that are readily discernible. All areas disturbed by the Contractor during construction operations shall be bladed, shaped, and compacted, as specified previously.

Newly graded areas shall be protected from traffic, erosion, and any settling or washing away that may occur from any cause. Prior to acceptance, these areas shall be repaired and grades reestablished to the required elevations and slopes. Damaged areas shall be re-vegetated if necessary.

3.5 BORROW AND SPOIL AREAS

Borrow and spoil areas shall be contoured to promote drainage at the completion of the work. No borrow or spoil slopes shall be greater than 3H:1V unless specified in the Construction Plans or directed by the Engineer.

Erosion controls shall be implemented to prevent erosion from entering the waterway. If necessary, borrow and spoil areas shall be seeded and mulched.

3.6 CLEAN UP

Upon completion of the work of this section, immediately remove and properly dispose of all resultant dirt, debris, and other waste materials.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

No measurement will be made for excavation quantities unless the construction limits are changed.

4.2 BASIS OF PAYMENT

The amount of work completed and approved shall be paid according to the associated line items of a lump sum contract, with the value of the line item defined by the Contractor in the bid.

Excavation, grading, and altering of bedrock and the water diversion intake will be paid for as part of the line item for Bedrock Alteration and Installation of Water Diversion Intake. Excavation, grading, and backfilling for the installation of conveyance pipe will be paid for as part of the line item for Intake Structure Installation and Conveyance System Construction. Excavation and grading for fish screen and flow measurement station will be paid for as part of the Fish Screen, Fish Bypass, and Flow Measurement Station Installation.

Such payment shall constitute full compensation for all services and materials necessary and incidental to the completion of excavating, filling, and grading. In the event of a change in construction limits, the Contractor shall submit a Change Order to the Project Coordinator for approval by the RCD.

END OF SECTION 02

SECTION 03 – Infrastructure Installation

PART 1 – GENERAL

1.1 WORK INCLUDED IN THIS SECTION

This section installation of prefabricated or precast structures and materials to be used at various locations within the project area. Work includes, but is not limited to:

- Installation of an improved water intake structure
- Installation of conveyance piping
- Installation of the fish screen and bypass pipeline
- Installation of a precast concrete box for the flow measurement station

1.2 RELATED WORK IN OTHER SECTIONS

Section 02 – Excavation, Filling, and Grading

1.3 LINES AND GRADES

All excavation and construction will adhere to the lines and grades shown in the Construction Plans and as marked and directed by the Engineer in the field. Furthermore, the elevation of any structure or any excavation will adhere to the Construction Plans.

PART 2 – MATERIALS

2.1 COBBLE, COFFERDAM MATERIAL

Contractor will provide material for diversion berms consisting of onsite bedload of low silt content, inflatable dams, sandbags, imported washed, spawning-sized gravel, or other materials approved by CDFW. Barriers shall not be made of earth or other substances subject to erosion unless first enclosed by sheet piling, rock riprap, or other protective material.

2.2 INTAKE STRUCTURE, CONVEYANCE SYSTEM

Contractor will install a diversion intake structure and approximately 165 feet of 12-inch, conveyance pipe. The conveyance pipe will be fitted with couplers that will be staged onsite.

2.3 PVC PIPE FOR BYPASS

Contractor will source and install approximately 55 feet 18-inch, PVC pipe to be buried for the fish bypass.

2.4 FISH SCREEN

Contractor will install a prefabricated fish screen and associated prefabricated structures. The RCD will provide these items. For fish screen dimensions, refer to the attached Construction Plans.

2.5 FLOW MEASUREMENT STATION

Contractor will install flow measurement station including a pre-cast, measuring box, weir plate, staff gage, and sensors. The Contractor will source the prefabricated concrete box. The RCD will provide and stage the weir plate, staff gage, and sensors.

PART 3 – INSTALLATION

3.1 INSTALLATION OF INTAKE STRUCTURE, CONVEYANCE SYSTEM

Contractor will install an intake structure and associated conveyance will be installed according to the Construction Plans and as directed by the Engineer in the field.

3.3

FISH SCREEN, FISH BYPASS, AND FLOW MEASUREMENT STATION

Contractor will install the prefabricated elements of this project (fish screen, bypass piping, and flow station) according to the Construction Plans and as directed by the Engineer in the field. All structures must sit at an elevation and slope to allow for proper hydrological function.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

No method of measurement will be made for individual infrastructure items unless the construction extents change.

4.2 BASIS OF PAYMENT

The amount of work completed and approved shall be paid as a line item of a lump sum contract, with the value of the line item defined by the Contractor in the bid. Such payment shall constitute full compensation for all services and materials necessary and incidental to site restoration.

- The installation of the intake structure and conveyance pipe will be paid out line item 3.0 *Intake Structure Installation and Conveyance System Construction*.
- The installation of the prefabricated fish screen, PVC pipe for fish bypass, and the concrete box for the flow measurement station will be paid out of line item 4.0 *Fish Screen, Fish Bypass, and Flow Measurement Station Installation*.

In the event of a change in the construction limits, the Contractor shall submit a Change Order to the Project Coordinator for approval by the RCD.

END OF SECTION 03

SECTION 04 – Site Restoration

PART 1 – GENERAL

1.1 WORK INCLUDED IN THIS SECTION

Site restoration includes, but is not limited to, work to return access routes, staging and stockpile areas, and other areas affected by construction activities to pre-project conditions. As directed by the Project Coordinator, this may include grading surfaces, tracking in native seed mix and dispersing mulch across disturbed areas.

PART 2 – INSTALLATION

2.1 SURFACE CONDITION

Inspection: Prior to any work in this section, Contractor and Project Coordinator shall inspect the site and delineate site restoration.

Surface preparation: Contractor shall smooth impacted surfaces to eliminate abrupt changes in grade and loosen compacted soils where applicable.

Seeding and Mulching: Native seed mix and straw mulch shall be dispersed by the Project Coordinator and tracked over by Contractor as directed.

2.2 DISPOSAL OF MATERIAL

All materials resulting from site restoration activities shall be removed and disposed of in an acceptable manner at an acceptable facility conforming to all applicable regulations.

PART 3 – MEASUREMENT AND PAYMENT

3.1 METHOD OF MEASUREMENT

No measurement will be made for site restoration unless the construction limits are changed.

3.2 BASIS OF PAYMENT

The amount of work completed and approved shall be paid as a line item of a lump sum contract, with the value of the line item 5.0 *Site Restoration*. Such payment shall constitute full compensation for all services and materials necessary and incidental to site restoration.

In the event of a change in the construction limits, the Contractor shall submit a Change Order to the Project Coordinator for approval by the RCD.

END OF SECTION 05