

LOWER FOBES REACH PHASE 2 RESTORATION PROJECT

The representative assigned to answer questions regarding these bid documents, show the project to prospective bidders, and act as the Contracting Agency's representative who directly supervises the engineering and administration of this project is:

Alex Levell
Deputy Restoration Division Manager
Lummi Nation Natural Resources
2665 Kwina Road
Bellingham, WA 98226
(360) 410-1988
alexl@lummi-nsn.gov

As the Engineer in direct responsible charge of developing these contract provisions, I certify that the sections of the special provisions listed below have been developed or incorporated into this project under my supervision or as a result of certified specifications provided by other licensed professionals.

DIVISION 1 – GENERAL REQUIREMENTS

DESCRIPTION OF THE WORK

1-05 CONTROL OF WORK

DIVISION 2 – EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-05 PILOT CHANNEL EXCAVATION

DIVISION 6 – STRUCTURES

6-05 PILING

DIVISION 7 – DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

7-06 SITE ISOLATION AND DEWATERING

DIVISION 8 – MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

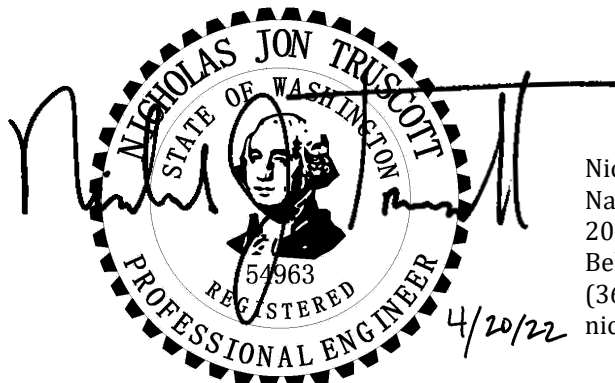
8-26 TEMPORARY ACCESS AND STAGING

8-27 ENGINEERED LOG JAMS

DIVISION 9 – MATERIALS

9-03 AGGREGATES

STANDARD PLANS



Nic Truscott, PE
Natural Systems Design
203 W Chestnut Street
Bellingham, WA 98225
(360) 966-8104
nic@naturaldes.com

INTRODUCTION TO THE SPECIAL PROVISIONS

(December 10, 2020 APWA GSP)

The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2022 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The project-specific Special Provisions are not labeled as such. The GSPs are labeled under the headers of each GSP, with the effective date of the GSP and its source. For example:

(March 8, 2013 APWA GSP)

(April 1, 2013 WSDOT GSP)

Also incorporated into the Contract Documents by reference are:

- *Manual on Uniform Traffic Control Devices for Streets and Highways*, currently adopted edition, with Washington State modifications, if any
- *Standard Plans for Road, Bridge and Municipal Construction*, WSDOT/APWA, current edition

Contractor shall obtain copies of these publications, at Contractor's own expense.

DIVISION 1 GENERAL REQUIREMENTS

Description of Work

(March 13, 1995)

This contract provides for the improvement of *** the South Fork Nooksack River, in the Lower Fobes Reach (River Mile 18.2 to 18.9). The work includes, but is not limited to: temporary traffic control as needed for mobilization and demobilization; clearing as necessary to establish temporary access routes and staging areas within the project area; transportation of stockpiled woody material; clearing, grubbing, and salvage of material for use in Engineered Log Jam (ELJ) construction; tree protection and plant preservation; pilot channel excavation; mobilization and demobilization of temporary bridge(s) as required to access project elements; water management, dewatering, and fish protection in areas impacted by construction activities; erosion control measures; decommissioning of temporary access routes and staging areas at project completion, *** and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

This section is supplemented with the following:

(*****)

The following substitution of words shall prevail in the Standard Specifications and these Special Provisions:

Wherever the word "State" is used, it shall mean Tribe.

Wherever the words "Contracting Agency" are used they shall mean THE LUMMI NATION, and/or the LUMMI NATURAL RESOURCES (as applicable).

Wherever the words "Department, Department of Transportation" are used, they shall mean THE LUMMI NATION.

Wherever the words "Commission, Washington State Transportation Commission" are used, they shall mean the LUMMI NATION TRIBAL COUNCIL.

Wherever the words "Secretary, Secretary of Transportation" are used, they shall mean the LUMMI TRIBAL CHAIRMAN.

Wherever the words "State Treasurer" are used, they shall mean Tribe Accountant.

Wherever the words "State Auditor" are used, they shall mean Tribe Auditor.

Wherever the words "Motor Vehicle Fund" are used, they shall mean Tribe Project Fund.

Wherever the words "Contracting Agency" are used, they shall mean Agency of Tribe that is responsible for the awarding and administration of the Contract.

Wherever the words “Thurston County” are used, they shall mean Whatcom County.

Wherever reference is made to bid opening and public reading of proposals, this shall be understood to mean opening of the bids in a location of the Tribe’s choosing. Nothing in the Bid Documents shall be interpreted as meaning that the Tribe will publicly read proposals.

Wherever, in the Contract, the Specifications and other Contract documents, the following words and terms or pronouns in place of them are used, the meaning will be construed as follows:

Board, Board of Directors

The elective body having authority over Tribe matters as provided by law.

Owner Representative, Department, Public Works Department

The agent of the Board of Directors for the Tribe for the administration of project work; the GENERAL MANAGER.

County Road Engineer

Shall mean the same as the Design Engineer.

Engineer

Shall mean the same as the Design Engineer.

Laboratory

The laboratory designated by the Design Engineer.

Item of Work

For the purpose of this project, an item of work shall be considered a unit of work. Payment will be made for actual work performed at Unit Contract Price for completed units of work.

Additive

A supplemental unit of work or group of bid items, identified separately in the proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate

One of two or more units of work or groups of bid items, identified separately in the proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Contract Documents

See definition for “Contract”.

Contract Time

The period of time established by the terms and conditions of the contract within which the work must be physically completed.

Contracting Officer

A representative of the Contracting Agency (Lummi Nation) responsible for administration of the Contract.

Dates

- **Bid Opening Date** - the date on which the Contracting Agency opens the bids.

- **Award Date** - the date of the formal decision of the Contracting Agency to accept the lowest responsible and responsive bidder for the work.
- **Contract Execution Date** - the date the Contracting Agency officially binds the agency to the contract.
- **Notice to Proceed Date** - the date stated in the Notice to Proceed on which the contract time begins.
- **Substantial Completion Date** - the day the Contracting Officer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, and only minor incidental work, replacement of temporary substitute facilities, or correction or repair remains for the physical completion of the total contract.
- **Physical Completion Date** - the day all of the work is physically completed on the project. All documentation required by the contract and required by law does not necessarily need to be furnished by the Contractor by this date.
- **Completion Date** - the day all the work specified in the contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the contract and required by law must be furnished by the Contractor before establishment of this date.
- **Final Acceptance Date** - the date on which the Contracting Agency accepts the work as complete.

Drawings

All references to “Drawings” in the Standard Specifications, Amendments, or these Special Provisions shall be revised to read “Plans”.

Notice of Award

The written notice from the Contracting Agency to the successful bidder signifying the Contracting Agency’s acceptance of the bid.

Notice to Proceed

The written notice from the Contracting Agency or Contracting Officer to the Contractor authorizing and directing the Contractor to proceed with the work and establishing the date on which the contract time begins.

Traffic

Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

Design Engineer

Refers to the firm and Engineer of Record and Licensed Geologist responsible for preparation of the Plans and these Special Provisions. The Design Engineer will support the Tribe and its representatives throughout construction. The Design Engineer does not have any direct contractual authority over the Contractor. Any time a standard specification or special provision requires approval, direction, or review by the Engineer, this shall mean that the Design Engineer will make a determination for the issue at hand and relay the finding(s) to the Tribe or Contracting Officer for implementation.

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders Replacement

Replace the last two sentences of the fourth paragraph with the following sentence:

Such refusal is not conclusive unless the Bidder protests pursuant to the Lummi Indian Business Council, Procurement Policy, VI.G Protest Procedures.

Add the Following:

A list of similar projects previously completed by Bidder, including contact person with their telephone number, a project description, and date project was completed. Contractor is required to have successfully performed Three (3) projects of similar scope within the last Five (5) years; including at least one project totaling \$500,000. The contractor shall have no construction permit violations over the past Five (5) years. Reference check and positive references will be required for any contractor hired.

Work history of job foreman/superintendent and equipment operator. Contractor is required to staff project with job foreman/superintendent and excavator operator with minimum experience as follows:

1. Five years' experience with similar project work.
2. Five projects within five years greater than \$100,000.

(March 25, 2009 APWA GSP)

Bidders must meet the minimum qualifications of RCW 39.04.350(1), as amended:

“Before award of a public works contract, a bidder must meet the following responsibility criteria to be considered a responsible bidder and qualified to be awarded a public works project. The bidder must:

- (a) At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW;
- (b) Have a current state unified business identifier number;
- (c) If applicable, have industrial insurance coverage for the bidder's employees working in Washington as required in Title 51 RCW; an employment security department number as required in Title 50 RCW; and a state excise tax registration number as required in Title 82 RCW; and
- (d) Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).”

(*****)

Add the following new section:

1-02.1(1) Supplemental Qualifications Criteria

In addition, the Contracting Agency has established Contracting Agency-specific and/or project-specific supplemental criteria, in accordance with RCW 39.04.350(3), for determining Bidder responsibility,

including the basis for evaluation and the deadline for appealing a determination that a Bidder is not responsible. These criteria are contained in Section 1-02.1(2) of these Special Provisions.

(*****)

Add the following new section:

1-02.1(2) Project Specific Supplemental Qualifications Criteria

The Contractor shall submit a “Statement of Qualifications” with this bid which details recent (within the past 5 years) experience on similar Work. The Contracting Agency will evaluate bids based on bid amount, review of record of permit compliance, available Contractor resources, Contractor qualifications, recommendations on the Contractor’s behalf, the Contracting Agency’s past experience with the Contractor, and applicable tribal law.

1-02.4 Examination of Plans, Specifications, and Site of Work

Supplement this section with the following:

(*****)

A mandatory Pre-Bid site walk through with representatives from the Contracting Agency will be held on Wednesday, May 11, 2022 at 9:00 AM at the Project Site. A minimum of one representative from each Prime Contractor that intends to submit a bid is required to attend the entire site walk through and sign in and out on the official sign-in sheet held by the Contract Officer. A representative from the Prime Contractor must attend the entire site visit. The Contracting Agency will disregard any bid submitted from a Prime Contractor that did not have a representative attend the Pre-Bid site walk through as documented by the prime contractor signing in and out.

1-02.6 Preparation of Proposal

Supplement this section with the following:

(*****)

The Bid Proposal for this Contract requires the Bidder to bid additive Alternates as part of the bid. As such the Bidder is required to submit a Base Bid and a bid for each of the Alternate(s).

The Bid Proposal includes the following:

1. Base Bid
The Base Bid shall include constructing all items included in the Proposal except those items contained in the Alternate(s)
2. Alternate(s)
 - a. Alternate A1
Based on constructing all items included in Bid Schedule A1, including necessary temporary site access, site isolation and dewatering, equipment, materials, and all incidentals required to construct ELJs 2-12, 1-13, 1-14, 2-15, 3-16, 2-17, 2-26, 6-42 and 6-43, as well as performing pilot channel excavation. The Bid items for Alternate A1 are as listed in the Bid Proposal.

b. Alternate A2

Based on constructing all items included in Bid Schedule A2, including necessary temporary site access, site isolation and dewatering, equipment, materials, and all incidentals required to construct ELJs 3-7, 3-8, 3-9, 3-10, and 3-11. The Bid items for Alternate A2 are as listed in the Bid Proposal.

c. Alternate A3

Based on constructing all items included in Bid Schedule A3, including necessary temporary site access, site isolation and dewatering, equipment, materials, and all incidentals required to construct ELJs 3-1, 3-2, 4-3, 4-4, 3-5, 2-6, 6-40, and 6-41. The Bid items for Alternate A3 are as listed in the Bid Proposal.

To be considered responsive, the Bidder shall submit a price on each and every Bid item included in the Base Bid and all Alternate(s).

The successful Bidder will be the Bidder submitting the lowest responsible Bid for the highest order Preference that is within the amount of available funds for the project. The following are listed in order from highest to lowest Preference:

1. Preference 1: Lowest total for Base Bid plus Alternate A1 plus Alternate A2 plus Alternate A3.
2. Preference 2: Lowest total for Base Bid plus Alternate A1 plus Alternate A2.
3. Preference 3: Lowest total for Base Bid plus Alternate A1.
4. Preference 4: Lowest total for Base Bid.

The Bidder agrees to hold Base Bid and all Alternate(s) for forty-five (45) days from the date of bid opening.

1-05 CONTROL OF WORK

Add the following new section:

(*****)

1-05.16 Contractor Surveying

Work under this item shall consist of furnishing all labor, tools, materials, and equipment necessary to complete all construction staking in accordance with the Standard Plans and Specifications and these Special Provisions.

The Contracting Agency will establish a minimum of two primary construction stakes (stakeout points) at the location of each ELJ shown on the Plans, and initial construction staking for pilot channel excavation. The Contractor shall expand on this network of primary construction stakes as necessary, establishing offsets and secondary control as required to accurately layout and complete the Work. The Contractor shall furnish stakes and/or marks to establish lines, grades, access routes, staging areas, structure locations, and structure elevations required for the completion of the work as shown on the Plans and as specified in the Standard Specifications and these Special Provisions. The Contractor shall be

responsible for any and all construction staking necessary for the full and complete construction of the Project aside from establishment of primary control points established by the Contracting Agency. The Contractor shall furnish construction survey and staking equipment and the Contractor shall be solely responsible for maintenance and protection of the survey stakes or marks. Construction staking will be verified by the Design Engineer, at the Contracting Officer's discretion.

Primary construction stakes and survey markers will be conspicuously marked with flagging tape or paint if desired by the Contractor. In the event the Contractor's operations destroy any of the primary control points, the Contractor shall replace such control points at his expense, subject to verification by the Design Engineer. All verification costs shall be borne by the Contractor. The cost of any such verification or replacement of control survey points will be deducted from any monies due to the Contractor. The Contractor will not be allowed any adjustment in working days for such verification or replacement of survey control points.

The Contractor shall inform the Subcontractors of the importance of the preservation of all survey markers. The Contractor shall be responsible for protecting and maintaining all stakes from destruction. In the event that one or more of the stakes are damaged or destroyed by one or more subcontractors, the Contractor shall replace the stakes at no cost to the Contracting Agency.

The Contractor shall ensure a surveying accuracy within ± 0.1 feet vertical and ± 1.0 feet horizontal of the specified elevations and coordinates.

1-05.16 (1) Measurement

There will be no measurement of Contractor surveying and construction staking. All costs associated with performing the Work necessary to establish, maintain, and replace all required construction staking to allow for construction and inspection of all Work shall become incidental to other bid items.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.5 Environmental Regulations

1-07.5(2) State Department of Fish and Wildlife

Supplement this section with the following:

(*****)

9. Contractor shall read and comply with the WDFW Hydraulic Project Approval (HPA), ACOE NWP 27, Skagit County Shoreline Exemption, WDNR Forest Practices Application/Notification, WSDOT General, ECY 401 Certification, Sierra Pacific Industries (SPI) Access Agreement, and LNR Cultural Resources permits and shall keep a copy of each permit on site during all working days.
10. The Contractor shall coordinate all site isolation and de-watering work with the Tribe to allow The Tribe to net fish out of the isolated work areas and safely return these fish to adjacent stream habitat. Contractor shall provide The Tribe 48 hours (2 business days) notice prior to water diversion and need for fish out. The Contractor shall be advised that it may take one to three full working days to complete each requisite fish out.
11. The Contractor shall prepare a Spill Prevention, Control and Countermeasures (SPCC) Plan as outlined in 1-07.15(1). The plan shall contain a description of quick response containment supplies that will be available onsite (e.g., a silt fence, straw bales, and oil absorbing floating

boom/absorbent pads). Personnel trained in spill prevention and control will be on site during all heavy equipment operations. Heavy equipment shall be cleaned and free of external petroleum products or leaks prior to delivery to the project site.

12. Sediment and erosion control Best Management Practices (BMPs) and water management materials shall be furnished by the Contractor. The Contractor shall be responsible for filling of bulk bags with native alluvium on unvegetated bars adjacent to ELJs and installation of any necessary or required BMP's and water management materials. Additional sediment, erosion or water management materials may need to be installed where there is potential for significant levels of erosion or discharge to enter waters of the state directly. BMPs shall be maintained throughout construction at no additional cost to Tribe.
13. Inspect heavy equipment on at least a daily basis for any leaks of petroleum products. Repair leaks immediately.
14. Overnight parking of heavy equipment shall be outside the OHWM and at least 50 feet from the stream edges and parking shall be on land draining away from the watercourse.
15. Pick up small garbage items at the site at the end of each workday and at the conclusion of project construction.
16. Project operations must cease under high flow conditions that inundate any isolated work areas, except for efforts to avoid or minimize resource damage.

1-07.6 Permits and Licenses

Supplement this section with the following:

(*****)

The Tribe shall be responsible for obtaining Hydraulic Project Approval from WDFW, Section 404 permit from the ACOE, Cultural resources review and inadvertent discovery plan from LNR, ESA consultation with USFWS, Section 401 Certification from ECY, SEPA Determination, Shoreline Exemption, WSDOT General Permit, and Flood Development Permits from Skagit County, Waiver to operate all day during Industrial Fire Protection Level (IFPL) level 2 and 3 days (if required), Aquatic's Right of Entry, Forest Practices permit from WDNR, Entry and Road Use agreements from SPI, excluding business licenses and permits required for the Contractor's business. A SPI placard must be visible on at least one vehicle at all times during construction. The Contractor shall be given a copy of all relevant project permits. The Contractor shall comply with all permit requirements and keep a copy of the permits on site at all times.

1-07.15 Temporary Water Pollution/Erosion Control

1-07.15(1) Spill Prevention, Control, and Countermeasures Plan

Supplement this section with the following:

(*****)

The Contractor shall address the following items in the SPCC Plan in addition to the requirements of Section 1-07.15(1):

Mixing, Transfers, and Storage

1. All oil, fuel or chemical storage tanks or containers shall be diked and located on impervious surfaces to prevent spill from escaping.

2. All liquid products shall be stored and mixed on impervious surfaces in a secure watertight environment and provide containment to handle the maximum volume of liquid products on site at any given time.
3. Proper security shall be maintained to prevent vandalism.
4. Drip pans or other protective devices shall be required for all transfer operations.

Spills

Paint and solvent spills shall be treated as oil spills and shall be prevented from reaching storm drains, natural channels, or other discharges. No cleaning solvents or chemicals used for tool or equipment cleaning may be discharged to the ground or water.

Maintenance of Equipment

Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks and shall be maintained and stored properly to prevent spills into State waters.

Disposal

Spilled waste, chemicals or petroleum products shall be transported off site for disposal at a facility approved by the Department of Ecology. The materials shall not be discharged to any sanitary sewer without approval of the local sewer authority.

Reporting and Cleanup

The Contractor's designated person for managing and implementing the SPCC Plan shall report hazardous material spills as follows:

Spills into State Water (including ponds, ditches, seasonally dry streams, and wetlands):

Report immediately, call all of the following:

National Response Center	(800) 424-8802
WA State Div. of Emergency Management (24 hr)	(800) 258-5990
Ecology, Northwest Regional Office	(360) 255-4400

Spill to Soil (Including encounters of pre-existing contamination):

Report immediately if threatening to health or environment (i.e., explosive, flammable, toxic vapors, shallow groundwater, nearby creek), otherwise within 90 days

Ecology, Northwest Regional Office	(360) 255-4400
------------------------------------	----------------

Underground Storage Tank (confirmed release of material)

Report within 24 hours

Ecology, Northwest Regional Office	(360) 255-4400
------------------------------------	----------------

1-07.17 Utilities and Similar Facilities

Supplement this section with the following:

(*****)

Locations and dimensions for existing utilities are not shown on the Plans. The Contractor is responsible for locating any utilities in the project site prior to construction and to protect these utilities during construction. The Contractor shall be held financially liable to repair any utilities damaged during construction. The cost of repair shall be paid in full to the owner of the utility in question.

Call Before You Dig

Utility Notification Center

1-800-424-5555

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.
4. To establish normal working hours for the work;
5. To review safety standards and traffic control; and
6. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction meeting the following:

1. A breakdown of all lump sum items;
2. A preliminary schedule of working drawing submittals; and
3. A list of material sources for approval if applicable.

1-08.1 Subcontracting

Section 1-08.1(1) is revised to read:

(June 27, 2011)

The following procedures shall apply to all subcontracts entered into as a part of this Contract:

Requirements

1. The Prime Contractor or Subcontractor shall make payment to the Subcontractor not later than ten (10) days after receipt of payment from the Contracting Agency for work satisfactorily completed by the Subcontractor, to the extent of each Subcontractor's interest therein.

2. Prompt and full payment of retainage from the Prime Contractor to the Subcontractor shall be made within 30 days after Subcontractor's Work is satisfactorily completed.
3. For purposes of this Section, a Subcontractor's work is satisfactorily completed when all task and requirements of the Subcontract have been accomplished and including any required documentation and material testing.
4. Failure by a Prime Contractor or Subcontractor to comply with these requirements may result in one or more of the following:
 - a. Withholding of payments until the Prime Contractor or Subcontractor complies.
 - b. Failure to comply shall be reflected in the Prime Contractor's Performance Evaluation.
 - c. Cancellation, Termination, or Suspension of the Contract, in whole or in part.
 - d. Other sanctions as provided by the subcontractor or by law under applicable prompt pay statutes.

Conditions

This clause does not create a contractual relationship between the Contracting Agency and any Subcontractor as stated in Section 1-08.1. Also, it is not intended to bestow upon any Subcontractor, the status of a third-party beneficiary to the Contract between the Contracting Agency and the Contractor.

Payment

The Contractor will be solely responsible for any additional costs involved in paying retainage to the Subcontractors. Those costs shall be incidental to the respective Bid Items.

1-08.9 Liquidated Damages

This section is revised to read:

LNR and the Contractor recognize that time is of the essence and that the project will incur additional costs if the Work is not completed within the time, plus any extensions thereof, allowed in accordance with the Contract. LNR and the Contractor also recognize the inconvenience, expense, and difficulties involved in a legal proceeding to prove the additional project cost if the Work is not completed within the time allowed in the Contract and within the short window of time allowed for in-water work. Further, LNR and Contractor recognize that LNR is providing resources in support of project construction (labor, materials, and equipment); these resources are limited and as such, must be managed according to a detailed schedule. Accordingly, LNR and the Contractor agree that as liquidated damages for delay, and not as a penalty, the Contractor shall:

1. Pay LNR \$2,000 for each day that in-water work is performed beyond the permitted in-water work window ending date (August 15, 2022) that in-water work is performed as well as for each day beyond the Physical Completion Date (September 30, 2022) that the Contractor (or another party) requires to achieve physical completion of the Work, respectively. For the purposes of this section, in-water work is considered work within the wetted perimeter of any stream channel.
2. Pay LNR \$250 for each day beyond the first workday of the week for which a Weekly Look-Ahead Schedule is not provided and discussed with LNR, up to a maximum of \$1,500 per week.
3. To authorize LNR to deduct these liquidated damages from any money or sums due or owing to the Contractor.

The Contractor further agrees that in the alternative, LNR may seek actual damages for the Contractor's breach, which sum may be proved and fixed by the Tribal Court.

1-09 MEASUREMENT AND PAYMENT

1-09.7 Mobilization

This section is revised to read:

This item shall consist of mobilization of the Contractor's forces that shall include but not be limited to the purchase, rental, transportation, setup, storage and maintenance of equipment and materials, and establishing temporary utilities and temporary facilities at the project site.

Demobilization shall be considered part of Mobilization and shall consist of the removal of all materials, equipment, temporary pollution control materials, and other items imported with the project improvements, designated as temporary, or slated for removal from the site as a part of the project contract. This includes the removal of logs and equipment from the floodplain if construction is needed beyond September 30, 2022. Furthermore, demobilization shall include the repair or replacement of all pavement or other facilities damaged by the Contractor under the normal execution of the work described in the Project Plans, the Standard Specifications, and these Special Provisions. Damaged facilities shall be restored to their pre-project condition. Work to perform these repairs shall conform to the requirements outlined by the facility Owner. Acceptance of the project improvements must be in the form of a written "Notice of Completion". The Contractor is directed to Section 1-05.11 "Final Inspection" of the Standard Specifications.

"Mobilization" shall be measured on a Lump sum basis.

The contract price paid for "Mobilization" shall include full compensation for mobilizing the Contractor's forces that shall include but not be limited to: purchasing, transporting equipment, set-up, work, maintenance, materials, temporary power source and installation, and sanitation facilities for the contract lump sum bid price. This also includes full compensation for operations required to demobilize the Contractor's forces which shall include but not be limited to: the removal of equipment, materials, transportation, sanitation facilities, temporary BMPs, high visibility (orange colored) fencing, and project clean-up and repair of pavement and other facilities damaged during the normal execution of the project work in accordance with these Special Provisions, the Standard Specifications, the Plans, the contract documents, and to the satisfaction of the Contracting Officer. If the Contractor elects to demobilize and remobilize before completion of the Work, no additional payment will be made. Partial payments for "Mobilization," shall be made as follows:

1. When 5% of the total original contract amount is earned from other bid items, 50% of the amount bid for mobilization, or 5% of the total contract amount, whichever is the least, will be paid.
2. When 10% of the total original contract amount is earned from other bid items, 100% of the amount bid for mobilization, or 10% of the total original contract amount, whichever is the least, will be paid.

3. Upon completion of all work on the project, payment of any amount bid for mobilization in excess of 10% of the total original contract amount will be paid.

DIVISION 2 EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

Replace the first paragraph of Section 2-01.1 with the following:

The Work consists of furnishing all materials, labor, and equipment necessary to locate, install, maintain, and remove the construction limits flagging, provide site clearing and disposal, protect vegetation larger than 6-inch diameter, and incorporate vegetation into adjacent structures. The Contractor shall limit clearing and grubbing to the minimum area required for construction. The Contractor shall not clear and/or grub areas beyond the staging areas, access paths, or excavation limits shown on the Contract Plans unless approved by the Engineer.

The Contractor shall be responsible for the protection and preservation of all existing native vegetation including trees, shrubs, and other objects outside of the limits of the staging areas and access paths. Any existing tree, shrub, or bush located outside of the staging areas and access paths that are damaged or destroyed during construction shall be replaced by the Contractor in like type and size as indicated by the Engineer at no cost to the Contracting Agency.

Trees and plants that are not to be removed shall be fully protected from injury; and trees and plants that are to be removed shall be removed in such a manner so as not to injure other standing trees, plants, and improvements that are to be preserved. The Contractor shall remove additional tree branches under the direction of the Contracting Officer, in such a manner that the tree will present a balanced appearance.

2-01.2 Disposal of Usable Materials and Debris

Section 2-01.2 is deleted in its entirety, including subsections, and replaced with the following:

The Contractor shall meet all requirements of state, county, and municipal regulations regarding health, safety, and public welfare in the disposal of all usable material and debris.

All native vegetation cleared or felled within or in the immediate vicinity of ELJ work areas cleared to perform the Work shown on the Plans shall be incorporated in to ELJs as racking material or slash. Removed logs and branches larger than 6-inches in diameter shall be used as racking material in an ELJ.

All native vegetation cleared or felled to establish temporary site access shall be disposed of on-site using one of the methods identified below.

2-01.2(1) Disposal Method No. 1 – Inclusion in ELJs

Material cleared or salvaged explicitly for construction of an ELJ shall be incorporated into the ELJ as either racking material or slash as directed by the Contracting Officer provided the cleared material contains no invasive species.

2-01.2(2) Disposal Method No. 2 – Lop and Scatter

To dispose of cleared material by lopping and scattering, the Contractor shall cut limbs, branches, treetops, and unwanted boles into lengths suitable for handling by hand. Cuts shall be made with hand tools (loppers, hand saw, etc.) or small equipment (sawzall, small chainsaw, etc.) approved by the Contracting Officer. Once cut to an acceptable length the material shall be spread evenly by hand to a depth no greater than 6-inches. Areas where lop and scatter is an acceptable form of disposal include floodplain areas, spoils areas, and other areas identified by the Contracting Officer.

2-01.2(3) Disposal Method No. 3 – Track-Walking

Track-walking for disposal of cleared material shall be accomplished by first cutting limbs, branches, treetops and unwanted boles into lengths no longer than 4-feet using hand tools or small equipment approved by the Contracting Officer. Once cut to an acceptable length, the material shall be placed in an area identified by the Contracting Officer, in a layer no thicker than 6-inches. Following placement, the Contractor shall incorporate the placed material into the ground by track-walking it (making several passes with tracked equipment over the placed material) into finished ground.

2-01.2(4) Disposal Method No. 4 – Chipping

The Contractor may also choose to chip cleared debris. Chipping shall be done by machines that can grind debris into wood chips and chunks of varying sizes. For safety purposes, humans and animals shall be excluded from areas being treated by equipment that throws chips and chunks. If the contractor decides to chip cleared material, wood chips shall be spread evenly to a maximum depth of 2-inches.

2-01.3 Construction Requirements

2-01.3(1) Clearing

Section 2-01.3(1) is supplemented with the following:

(*****)

Prior to clearing operations, the Contractor shall flag all trees equal to or over 30 feet high, or greater than six-inch diameter at breast height (DBH) (measured approximately 4 feet above ground line) within the area to be cleared. The Contractor shall notify the Tribe and Engineer after flagging is completed and arrange a meeting prior to the removal of any existing trees on the project. At this meeting the Contractor and Tribe or Engineer shall inspect the flagged trees. The Engineer or Tribe shall determine if the flagged tree is to be salvaged (removed and stockpiled for use on site) or preserved (protect in place), and if the salvaged tree is to be removed with the rootwad intact. At that time, the Engineer may make any other changes such as adjusting grades or alignments of structures, channels, excavation limits, or temporary access roads to preserve specific trees. Additionally, the Tribe or Engineer may designate any other plants for preservation or salvage at their discretion.

The Contractor shall not disturb, or damage existing plant material designated for preservation, and therefore the Contractor shall be responsible for the protection of tops, trunks and roots of existing trees that are to be preserved. The Contractor shall contact the Tribe prior to continuing clearing activities if there is any conflict between the Contract Plans and field conditions, or if any trees designated for preservation need to be removed or altered to allow construction to continue. The Contractor shall carefully remove existing trees designated for salvage and reuse as slash, during clearing and grubbing activities. Trees designated for salvage shall be removed with rootwads and

branches intact unless noted otherwise by the Tribe and said trees shall not be cut or altered during removal activities.

All felled trees, branches and slash debris ("Slash Material") within or around the ELJ construction areas (except non-native, invasive species, noxious weeds, or unwanted vegetation as determined by the Tribe and referred to herein as "weed and pest species") shall be incorporated into the structures. All felled trees, shrubs, branches and slash debris ("Slash Material") (except weed and pest species), cleared for temporary access road(s) shall be left along the road and placed back over the road during the final site clean-up. All weed and pest plant material cleared shall be stockpiled on site at a location of the Tribe's choosing.

The Contractor may remove any other plants within the area to be cleared and grubbed that are not designated for preservation or salvage. If the Contractor removes or damages any existing plant or plants designated for preservation because of any act, omission, neglect, or misconduct in the execution of the work, such plant(s) shall be restored or replaced by the Contractor at their expense to a condition similar or equal to that existing before such damage or removal. All replacements shall be inspected and approved of by the Tribe or Engineer prior to planting. Planting procedures shall be subject to approval by the Tribe or Engineer. All replacements shall be guaranteed to survive in a healthy condition for at least 5 years.

All salvaged or felled trees and branches larger than or equal to 10" DBH shall be used only as additional racking logs in front of the structures as described in Section 8-27.3(3) unless directed otherwise by the Tribe or Engineer. The Contractor shall stockpile separately all salvaged or felled trees and branches smaller than 10" DBH for slash material for use in the structures as described in Section 8-27.3(3). Scavenging of naturally occurring woody material which does not directly interfere with temporary site access or performance of the Work is not authorized. Disturbance of woody material that is fully submerged and embedded in the stream substrate is authorized if located within a structure footprint.

Heavy equipment or stockpiles shall not be allowed within the critical root zone of a tree (also known as the drip line) unless directed by the Tribe or Engineer. Any grading or other earthwork shown in the Contract Plans to occur in the vicinity of trees that are to be preserved shall not occur within the critical root zone of the trees in order to protect the tree's root system. If a conflict arises, the Contractor shall notify the Tribe or Engineer before proceeding with work. The Contractor shall also verify with the Tribe or Engineer before removing interfering branches and shall remove all verified interfering branches without injury to the tree trunks and cover cuts with tree sealant.

The Contractor shall use selective clearing methods to clear areas where weed and pest species exist, and where clearing is required to occur near vegetation to be preserved or salvaged. Selective clearing methods consist of lightweight or hand-held equipment to prevent damage to roots of existing vegetation, compaction of the soil, or spreading of seed or pollen from invasive species.

2-01.4 Measurement

Replace this section with the following:

There will be no measurement for clearing and grubbing.

2-01.5 Payment

Replace this section with the following:

Clearing and grubbing as described in this section shall be made incidental to other bid items and no payment will be made.

2-05 VACANT

Delete this section in its entirety and replace it with the following:

2-05 PILOT CHANNEL EXCAVATION

2-05.1 Description

This Work includes, regardless of the nature or type of materials encountered, excavation and grading of pilot channel features, as well as hauling, placing, compacting, or disposing of excavated material as described in these Provisions. All Work described here shall conform to the alignments, grades, and cross-sections shown in the Plans or established by the Contracting Officer or Engineer.

2-05.2 Vacant

2-05.3 Construction Requirements

Pilot channel excavation includes open excavations for the distinct purpose of creating a preferential flow path. This Work includes open excavations of channels with an approximate bottom width of twenty (20) feet. Pilot channel excavation is performed within the banks and floodplain of the South Fork Nooksack River.

2-05.3(1) Construction Stakeout

The Engineer will provide construction stakeout sufficient to determine the alignment, elevation, and location of the pilot channel centerline and breaklines at the edge of each side of the channel bottom. The approximate alignment, profile, and representative sections are included in the Plans.

Conditions at the project site may have changed from what is shown on the Plans and the orientation of the alignment and excavation limits staked in the field may vary from those shown on the Plans. The Contractor shall establish offsets and reference points as necessary to complete the pilot channel excavation as staked in the field per requirements of section 1-05.16.

2-05.3(2) Pilot Channel Excavation

The Contractor shall excavate material to the lines and grades shown on the Plans, or as staked in the field if field adjustments are made by the Engineer. Any excavation within the actively flowing channel will require isolation and fish removal prior to performing the excavation. Finish grade of the pilot channel bed shall be within ± 0.1 feet vertically of the elevations staked in the field, and channel bottom width shall be within ± 1.0 foot of the typical channel width shown on the Plans. The Contracting Officer will review finish grading for approval.

The Contractor is advised that groundwater elevations within the excavation area fluctuate seasonally. Groundwater may be encountered while performing pilot channel excavation. Any Work associated with managing ground water while performing pilot channel excavation shall be considered incidental to this

Work. The Contractor shall be prepared to encounter and handle groundwater in a manner that allows for the Work to be completed and inspected while complying with all applicable permits.

2-05.3(3) Disposal of Excavated Material

The Contractor may elect to dispose of excavated material on-site as described in this section, or the Contractor may choose to haul excavated material off-site. If the excavated material is suitable for re-use as boulder-cobble backfill for Type 5 ELJs, the Contractor may elect to use excavated material in lieu of imported material at the Engineer's approval.

All material which is either not suitable for use as boulder-cobble backfill, not required for use as boulder-cobble backfill, or not hauled off-site shall be spoiled on-site within existing gravel bars or as additional backfill on ELJ structures. Excavated material shall be hauled, dumped, and spread on existing gravel bars or ELJs approved by the Contracting Officer. Spoiled material shall be spread such that it blends in with existing topography and creates a smooth transition from existing ground to spoiled material. Excavated material shall not be spoiled on top of existing vegetation and shall have a maximum fill height of approximately 18 inches. The finished surface of spoiled material shall not be smooth but shall be scarified to represent similar conditions of a naturally formed gravel bar.

2-05.4 Measurement

Pilot channel excavation will be measured by the cubic yard in the position it occupied prior to excavation as determined at the time construction stakeout occurs. An estimate of quantities has been prepared based on available data. At the time construction stakeout occurs, the Engineer will determine through field measurements if the required excavation quantities are within $\pm 5\%$ of the estimated quantity. If the estimate is determined to be within $\pm 5\%$ of the estimated quantity, the total quantity estimated shall serve as the measured total unless the Contractor provides supporting survey data which demonstrates a difference in quantities that exceeds 5% of the estimated total. Should field modifications result in a change of excavation quantities that exceed 5%, the excavation quantity will be updated to reflect the newly determined total quantity.

2-05.5 Payment

Payment for "Pilot Channel Excavation" shall be made at the unit Contract price offered in the bid schedule and includes all costs to perform the excavation, transport excavated material to spoils site(s), dump, spreading and scarifying the spoiled soil, and all associated incidental Work. If the Contractor elects to dispose of material off-site, this Work shall come at no additional cost to the Contracting Agency.

DIVISION 6 STRUCTURES

6-05 PILING

6-05.1 Description

This section is supplemented with the following:

(*****)

Driving timber pile is only required for ELJ Types 5 and 6.

6-05.2 Materials

Delete this section and replace it with the following:

Timber piles required for ELJ construction have been supplied by the Contracting Agency. Should the Contractor elect to utilize pile tips or shoes, all costs associated with furnishing and installation of pile tips or shoes shall be the sole responsibility of the Contractor; no additional compensation will be made to the Contractor for this purpose.

6-05.3 Construction Requirements

6-05.3(2) Ordering Piling

Delete this section and replace it with the following:

All timber piles required for the Work have been provided by the Contracting Agency. The Contractor shall handle, transport, and temporarily stockpile provided piles as necessary to complete the Work. The Contractor shall exercise care and utilize proper handling of provided materials. Piles damaged as a result of Contractor actions shall be replaced by the Contractor at no additional cost to the Contracting Agency.

6-05.3(8) Pile Tips and Shoes

Delete this section and replace it with the following:

Pile tips and shoes are not required for this project. Should the Contractor elect to utilize pile tips or shoes, all costs associated with furnishing and installation of pile tips or shoes shall be the sole responsibility of the Contractor; no additional compensation will be made to the Contractor for this purpose.

6-05.3(9) Pile Driving Equipment Approval

Delete this section and all subsections and replace it with the following:

Prior to driving any piles, the Contractor shall submit Type 2 Working Drawings consisting of details of each proposed pile driving system including the Contractor's preferred and all alternate pile driving systems proposed for use should the preferred pile driving system prove ineffective. The Contractor is responsible for examining the site and determining one or more pile driving approaches which are

suitable for use and capable of driving piles at the locations and to the depths shown on the Plans while meeting all requirements of applicable project permits.

The Contractor's primary pile driving system shall be an excavator-mounted vibratory pile driving system. The primary pile driving system shall be capable of generating a minimum centrifugal force of 80 tons. Alternate pile driving systems proposed for use as contingency systems may be impact hammers with a size and drive system to be determined by the Contractor. All pile driving systems proposed for use shall be capable of installing timber piles driven on a batter of at least 15 degrees from vertical. The Contractor shall exhaust all normal means of driving using the primary pile driving system before attempting to utilize any alternate pile driving systems.

6-05.3(11) Driving Piles

6-05.3(11)A Tolerances

Delete this section in its entirety and replace it with the following:

The Contractor is responsible for centralization methods of all piling. The horizontal tolerance for each timber pile after driving through native soil shall be within one foot of the Plan location. Piles driven outside of one foot of the Plan location shall be marked and the Engineer shall be notified immediately to assess function and to determine if remaining piles within the structure require adjustment to allow placement of logs. Misaligned piles may be pushed or pulled laterally as directed by the Engineer to achieve the specified alignment. Piles shall be plumb, unless designated as batter piles, to within 2 percent of the length based on the total length of the pile unless approved by the Engineer. Batter piles shall be installed to within 5 percent of batter angle as specified in the plans, and as approved by the Engineer. The vertical tolerance for each timber pile after driving shall be within 6 inches of the minimum embedment depth specified on the Plans as determined from markings on the driven pile.

6-05.3(11)C Preparation for Driving

Delete this section and replace it with the following:

Timber piles for ELJ Structures shall be cut square on the butt end on site prior to driving. If the pile butt is larger than internal diameter of the pile driving cap, side grip, or steel driving cap, the pile top shall be trimmed or chamfered to fit. Prior to driving, the Contractor shall clearly mark the target embedded depth as measured from the tip end of the pile; marking shall occur after any trimming of the pile has occurred. Shortening of piles shall be minimized; piles shall be shortened a maximum of one foot during squaring, trimming, and/or chamfering. As needed, timber piles shall be fitted with two steel bands fitted around the butt end to prevent splitting, crushing or brooming while driving as described in Section 9-10.1.

Pile tips may be trimmed to a point if desired by the Contractor; if pile tips are trimmed in any fashion, the embedment depth shall be measured from the point where the cuts made to achieve the desired trimming stop (at the lowest point where the full diameter of the pile is present) up to the pile butt.

6-05.3(11)D Achieving Minimum Tip Elevation and Bearing

Delete this section and replace it with the following:

Piles shall be driven with the tip end (narrow end of pile) down. Each pile shall be driven continuously to the embedment depths indicated on the Plans. Driving with vibratory hammers works best when the pile driver head is aligned with the longitudinal axis of the pile during driving to ensure maximum transfer of energy from the pile driver to the pile; a spotter may be necessary to ensure alignment of the driver and the pile. An ultimate load-bearing capacity for timber piles is not required for this work and driving of timber piles is only complete once the embedment depth specified on the Plans is achieved. Bearing resistance shall not be criteria for driving.

The Contractor is encouraged to closely monitor the status of the driver throughout driving activities. Driving timber piles through alluvial material can be difficult and time-consuming. The pile driver shall be monitored closely during all pile driving activities. The temperature of the pile driver shall be monitored, and the Contractor is encouraged to adhere to manufacturer recommendations for maximum operating temperature; regular pauses during pile driving activity are expected and should be anticipated by the Contractor. Cooling via direct immersion in surface waters is not allowed; air cooling, hosing down in an upland area where runoff does not enter surface waters, or construction of a groundwater sump are recommended, provided all applicable permit conditions are being met. Regular maintenance of the pile driver during driving activities is also encouraged; regular inspection of fittings, couplers, hoses, bolts, and other mechanical connections with corrective action implemented immediately upon discovery of an issue can reduce down time and mechanical delays. The Contractor shall anticipate the need for routine maintenance and shall provide appropriate resources in terms of staff, tools, replacement parts, and any other resources required to service the pile driving system.

For pile installation, the Contractor shall use all "normal means" necessary at no cost to the Contracting Agency to ensure the specified embedment is achieved so long as the timber pile is not damaged. "Normal means" refer to methods such as casing, pre-boring or spudding. Blasting, mudding or jetting are not considered "normal means" and shall not be used. Pre-bored holes and pile spuds shall have a diameter no larger than the least outside diameter dimension of the timber pile. After the timber pile is driven, the Contractor shall fill all open spaces between the pile and the soil caused by the pre-boring or spudding with native alluvium, as approved by the Engineer.

Augering, wet-rotary drilling, or other methods of pre-boring with casing to achieve penetration shall be used only when approved by the Engineer. When permitted, such procedures shall be carried out in a manner that will not impair the capacity or alignment of piles already in place. Contractor shall be required to ensure turbid waters from augering or wet-rotary drilling are treated or contained on site, or discharged in a manner that does not violate state water quality standards. All work related to water quality management during pile driving shall be considered incidental to pile installation.

If the Engineer determines that pre-boring has disturbed the alignment and stability of previously installed piles, those piles that have been disturbed shall be restored to conditions meeting the requirements of this specification by re-driving or by other methods acceptable to the Engineer. Redriving or other remedial measures shall be completed after the pre-boring operations have ceased. The Contractor shall be responsible for the costs of any necessary remedial measures unless pre-boring with casing was properly executed by the Contractor.

If, following implementation of all "normal means," a pile is not driven to the depths and tolerances as specified, the Engineer will determine if the actual embedment depth achieved is satisfactory given field conditions. If the Engineer determines that pile driving using all normal means has failed to achieve

adequate embedment the Contractor shall drive additional pile(s) at location(s) specified by the Engineer.

6-05.3(11)F Pile Damage

Delete the first paragraph of this section and replace it with the following:

The Contractor shall remove and replace any pile which is damaged or broken due to Contractor actions at no additional cost to the Contracting Agency. The method used in installation and driving piles shall not subject the piles to excessive or undue abuse that results in brooming, splitting, or splintering of wood. Any pile damaged during installation and driving by reason of improper driving, driving out of proper location, or driving below the designated top elevation, shall be corrected by the Contractor, without compensation, by a method approved by the Engineer.

6-05.3(13) Treatment of Timber Pile Heads

Delete this section and replace it with the following:

No preservatives shall be applied to pile heads.

6-05.4 Measurement

Delete this section in its entirety and replace it with the following:

There will be no measurement made for driving timber piles. Driving timber piles shall be considered as incidental to Work performed as part of ELJ installation; driving piles to the required embedment depth specified on the Plans and utilizing all "normal means" shall become incidental to ELJ bid items the pile driving is associated with.

6-05.5 Payment

Delete this section and replace it with the following:

Payment for pile driving is included with the payment of each ELJ requiring timber piles (Section 8-27). All costs in connection with mobilizing pile driving equipment, trimming and field fitting, pre-boring, spudding, installing steel tips, bands and shoes on timber piles, all costs for any maintenance, labor, and installation of timber piles, as well as any water quality management necessary to install the piles is considered incidental to installation of the ELJ Structure.

Work performed to install additional piles following exhaustion of all "normal means" of pile driving shall be paid for in accordance with Section 1-04.4.

**DIVISION 7
DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS,
WATER MAINS, AND CONDUITS**

7-06 VACANT

Delete this section entirely and replace it with the following:

7-06 SITE ISOLATION AND DEWATERING

7-06.1 Description

This work consists of isolating construction activities from surface waters of the South Fork Nooksack River, bypassing flow around the work areas, pumping water out of the isolated work areas, and other work as necessary to allow for completion and inspection of the work while maintaining water quality standards. Dewatering of the work site is required only to the extent necessary for the Contractor to be able to excavate and grade to the lines and grades shown on the Plans, place logs as shown on the Plans, and for the Contracting Officer to inspect the Work and verify it has been done correctly. Note that excavation for this project will extend below the groundwater elevation during the time of construction; groundwater should be expected any time the excavation below the ordinary high water mark occurs. Similarly, dewatering and handling of groundwater may be required to perform Work in areas outside the main channel.

Except as authorized by project permits, anytime work occurs within the wetted channel, or soil enters the actively flowing channel of the South Fork Nooksack River, an isolated in-water work area shall be created. Isolated in-water work areas consist of a cofferdam or other acceptable method that keeps surface flow in the South Fork Nooksack River separated from turbid water in the active work area. The method shown in the Plans for isolating a work area through installation of gravel filled bags and plastic sheeting that form a cofferdam is one form of an acceptable method for isolating a work zone. Other methods that provide equal or better isolation and include equal or fewer potential environmental impacts can be requested by the Contractor and will be considered by the Contracting Officer. Alternative methods can be used if approved by the Contracting Officer; however, if an approved alternative method fails to meet the performance requirements of this section, the Contractor shall remove it and replace it in a manner consistent with those described in this section at no additional cost to the Contracting Agency.

7-06.2 Materials

The Contractor shall provide all materials necessary to construct in-water work area isolations that meet the requirements of this section and applicable permits.

Plastic Sheeting

Plastic sheeting shall have a minimum thickness of 10-mil and shall be at least 12 feet wide.

Bulk Bags and Sandbags

The cofferdam detail shown in the Plans use "bulk bags". Bulk bags shall be cube-shaped polypropylene woven fabrics with fully open tops, flat bottoms, four loops for lifting, minimum weight capacity of 2 tons, and 5:1 minimum safety factor. Sandbags may also be used and shall

be made from a woven synthetic material (polypropylene, polyethylene, polyamide, or other approved by the Contracting Officer) that is resistant to tearing.

Cofferdam Gravel

Cofferdam Gravel shall be onsite rounded streambed material suitable for use in bulk bags or sandbags, or imported streambed sediment per Section 9-03.11(1). Sources of onsite cofferdam gravel on exposed bars may be used provided the following conditions are met:

1. A minimum of 10 feet of exposed dry ground remains between the borrow area and the wetted edge of the channel.
2. A push up berm a minimum of 2 feet tall with 2H:1V side slopes is installed surrounding the borrow area to reduce the likelihood of low water surface elevation fluctuations inundating the borrow area and stranding fish.
3. The Contractor restores the existing grades by replacing borrow material and supplementing fill as needed with excess alluvium to restore existing grade.
4. Excavation depths and side slopes do not undermine adjacent banks or capture the river due to sloughing or caving.
5. The borrow area does not interfere with other Work.

Sheet Pile

Should the Contractor elect to utilize sheet pile for isolating work areas from surface waters the sheet pile selected by the Contractor shall be of the type and material selected by the Contractor. Sheets shall be interlocking to prevent water from readily flowing between interlocked sheets. All sheets shall be in good condition and free of grease, chemicals, and all other materials which may be hazardous to aquatic life.

7-06.3 Construction Requirements

The Contractor shall be responsible for all work area isolation, including but not limited to construction of temporary isolation dams (also referred to as cofferdams), any necessary temporary flow bypass channels, other management of surface waters, and removal of groundwater as necessary to allow for construction and inspection of the Work.

7-06.3(1) Submittals

The Contractor shall submit an In-Water Work Area Isolation Plan to the Contracting Officer and the plan must be approved by the Contracting Officer prior to beginning any in-water work. The plan shall identify the methods, materials, discharge locations, and contingency plans proposed for use to isolate in-water work area(s). The In-Water Work Area Isolation Plan shall be submitted by the Contractor for approval by the Contracting Agency a minimum of ten (10) working days prior to the beginning of any in-water work. The plan shall clearly identify the Contractor's proposed means and methods of isolating and dewatering all Work areas associated with ELJs including at a minimum:

1. All materials for cofferdam construction.
2. Methods to be used for sealing leaks in cofferdams.
3. The number and specific model of each pump proposed to be used for dewatering of isolated in-water work areas including the length of hose for each pump.
 - (1) At a minimum, two pumps capable of pumping 2,500 gallons per minute shall be provided for use in dewatering open excavations during ELJ construction. More pumps

may be required, and this minimum requirement does not relieve the Contractor from the responsibility of providing a pumping system capable of dewatering isolated work areas to allow for completion and inspection of the Work.

- (2) Ensure that all pumps have the necessary mesh filter as required by other permits to protect aquatic life.
4. Proposed discharge locations for all pumps, including the proposed method for preventing turbid water from entering the South Fork Nooksack River.
 - (1) Approximate discharge locations are shown on the Plans. The Contractor shall review the location and size of the stilling basins shown in terms of the estimated minimum capacity for capturing all discharge from dewatering. If additional stilling basins or increased stilling basin size are anticipated these changes shall be clearly identified on the submittal.
5. An anticipated sequencing plan which indicates the sequence of work and discharge locations associated with each phase of work.
6. A description and sketch of the proposed means for constructing all components of the temporary partial diversion and controlling water flow when flow reduction is required or desired to increase constructability.
7. Contingency measures to be pursued in the event that dewatering is not successful using the Contractor's proposed means and methods.

If the Contracting Officer does not approve the submitted plan, the Contracting Officer will provide written documentation explaining the cause for not approving the plan. The Contractor shall respond to the Contracting Officer's review documentation and resubmit the plan with revisions as necessary. The Contracting Agency reserves the right to postpone commencement of the work, at no cost to itself, due to failure by the Contractor to supply an acceptable In-Water Work Area Isolation Plan.

7-06.3(2) Work Area Isolation

Work within the wetted channel of the South Fork Nooksack River shall be performed within an isolated work area, except as allowed by environmental permits and authorized by the Contracting Officer; note that construction of Type 5 ELJs in the actively flowing channel is the only activity exempted from this requirement for this project. Work areas shall be isolated by constructing cofferdams as described in this section, or by using other methods identified in the approved in-water Work Area Isolation Plan.

Prior to beginning work in an actively flowing channel, cofferdams shall be installed at or near locations shown on the Plans to isolate the work area from surface flow in the river. After isolating a particular work area and prior to beginning work, fish must be removed from the isolated area. All work related to removing fish will be performed by the Contracting Agency at no cost to the Contractor. The Contractor shall notify the Contracting Officer a minimum of two (2) working days or 48 hours prior to needing fish removal services and shall coordinate all site isolation efforts with the Contracting Officer; any delays due to failure of the Contractor to notify the Contracting Officer as required in this section shall not be considered grounds for additional pay. The Contracting Agency will be responsible for the installation of any temporary fish exclusion net, seining, and all fish handling. The Contracting Agency will complete fish handling and removal within 1 to 3 working days of the Contractor establishing an isolated work area. The Contractor shall make all isolated work areas safe and accessible to the Contracting Agency's fish handling team. Work within an isolated work area shall not commence until the Contracting Agency has completed fish exclusion and fish removal for a given isolated work area.

Cofferdams constructed using bulk bags and/or sandbags shall sit on the channel bed; minor grading to create a level surface for bulk bags to rest on is allowed provided it does not appreciably change the shape or elevation of the channel bed. The Contractor may also elect to create a flat pad by placing sandbags filled with cofferdam gravel.

Bulk bags and sandbags shall be handled and placed in a manner that minimizes damage and likelihood of tearing. Bags shall be filled prior to placement in the channel. The Contractor shall make every effort possible to minimize the number of bulk bags or sandbags that rip or tear and release sediment into the river.

The elevation of the top of the cofferdams shall be a minimum of 1-foot higher than the water surface in the river outside of the cofferdams. The water surface in the river varies depending on the time of year and varies from year to year depending on hydrologic conditions of the preceding winter and spring.

Bulk bags, sandbags, or sheet piles used to construct cofferdams shall be removed from the channel upon completion of Work in the isolated work area. All materials used to construct cofferdams shall remain property of the Contractor and shall be wholly removed from the site as part of the Work for this bid item. Cofferdam gravel sourced from exposed gravel bars shall be returned to its original location and roughly graded to pre-project conditions or otherwise spoiled at a location or locations identified by the Contracting Officer. Any imported material used to fill bulk bags or sandbags may be spoiled on exposed gravel bars and spread in lifts of no more than 1 foot so long as no vegetation is covered by the lift and all applicable permit requirements are met.

Isolated work areas shall prevent turbid water created by construction activities from entering the South Fork Nooksack River. During in-water work, turbidity in the South Fork Nooksack River will be monitored by the Contracting Agency in accordance with environmental permits obtained for the project.

If turbid water is exiting the isolated work area to the extent that it increases turbidity in the South Fork Nooksack River to exceed maximum allowable values listed in the environmental permits, in-water work shall cease until the issue has been corrected and the delay shall not be justification for any Contract price adjustment. Any extra Work required to adjust or remove faulty cofferdams or other in-water work area isolations and replace them with materials and methods that accomplish permit conditions shall be done at no additional cost to the Contracting Agency.

7-06.3(3) Dewatering Discharge

Groundwater is expected and shall be anticipated to be encountered any time existing ground is disturbed within the project area, as much of the Work requires excavation below the channel bed. Dewatering will be required to perform and inspect the Work shown on the Plans. Dewatering shall be performed by pumping water from within isolated work areas after fish removal has been performed. Waters removed from isolated work areas shall be pumped to stilling basins established by the Contractor, upland areas approved by the Contracting Officer, or allowed to settle using other proposed methods which have subsequently been approved by the Contracting Officer. Removed waters shall not be discharged back to South Fork Nooksack River or any other surface water body unless conducted in a manner consistent with all project permits. The Contractor shall consider all site conditions prior to submitting a dewatering plan for review and approval; it may be necessary to utilize additional pumps, hoses, or special catchment basins to discharge water pumped from isolated work areas in a manner consistent with project permits. Such measures, when required, shall be considered incidental to the project and no cost adjustments shall be made.

7-06.3(4) *Partial Diversion*

A temporary partial diversion of the South Fork Nooksack River is illustrated on the plans and is intended to ease constructability of several portions of the Work. The Contractor may elect to forego this temporary partial diversion but does so at their own choosing and acknowledges that all Work must be completed as shown on the Plans. If the Contractor elects to utilize a temporary partial diversion it shall be constructed, monitored, and decommissioned in accordance with the requirements of these special provisions.

The temporary partial diversion shown on the plan is a gravity diversion system which relies on utilizing cofferdams to divert the majority of flow into channels where work is not actively being performed, thereby reducing the flow in the channel where work is being performed. The Contractor may propose a different method for review by the Contracting Officer. If the Contracting Officer does not approve the submitted plan, the Contracting Officer will provide written documentation explaining the cause for not approving the plan. The Contractor shall respond to the Contracting Officer's review documentation and resubmit the plan with revisions as necessary. The Contracting Agency reserves the right to postpone commencement of the work, at no cost to itself, due to failure by the Contractor to supply an acceptable In-Water Work Area Isolation Plan.

Cofferdams or other means of diverting water and controlling flow shall be installed carefully. Flow diversion shall be achieved in a controlled manner such that the rate of flow in the bypass channel(s) does not cause any erosion within bypass channel. A maximum of 60% of the total flow may be diverted into the bypass channel(s); determination of the portion of flow in the bypass channel shall be completed visually by the Contracting Officer. The flow rate in the primary channel (where work is being performed) shall not be lowered to the point that average depth at any cross-section falls below 9 inches of depth. Once activated, the bypass channel(s) shall remain actively flowing until they are no longer needed.

The temporary partial diversion shall be monitored closely to ensure these conditions are met and the Contractor shall adjust the diversion system at points of diversion if necessary to ensure these conditions are met.

Once the temporary partial diversion is no longer needed, the Contractor shall coordinate closely with the Contracting Agency on removal of the temporary partial diversion system. Depending on site conditions at the time of the removal, the bypass channels may not remain actively flowing once the temporary partial diversion is removed. To minimize the impacts to aquatic life that may have moved into the bypass channel(s), removal shall be performed in a slow and controlled manner. The Contracting Agency may need to perform fish removal prior to and/or in conjunction with removal of the temporary partial diversion. The Contractor shall plan accordingly and shall allow the Contracting Agency as much time as needed to perform fish removal before and during decommissioning of the temporary partial diversion. The Contractor shall be available to make adjustments to the diversion system throughout the decommissioning process which shall be performed over the course of no fewer than six hours to allow for natural outmigration and manual fish removal. If necessary, the time required to remove the temporary partial diversion may be extended up to 10 hours at no additional cost to the Contracting Agency. If the time required extends beyond 10 hours, the additional Work required shall be paid for in accordance with section 1-04.4.

7-06.4 Measurement

No measurement of the lump sum bid item "Site Isolation and Dewatering", "Site Isolation and Dewatering A1", "Site Isolation and Dewatering A2", and "Site Isolation and Dewatering A3" shall be made when included in the Contract.

7-06.5 Payment

Payment for "Site Isolation and Dewatering" shall be full pay for all labor, materials, and equipment necessary to design, install, operate, and maintain site isolation and diversion measures as necessary to separate work areas from surface waters, partially divert flows in existing channels, and to dewater the work areas in conjunction with project permits to allow for Contract Work to be performed and inspected. Work under this item covers site isolation and dewatering of work areas included as part of the base bid only. Payments will be made based on the actual percentage of work completed at the time of payment request. A lump sum cost breakdown which identifies percentages of the lump sum bid cost associated with individual work area isolations shall be provided to aid in determining percent complete.

Payment for "Site Isolation and Dewatering A1", "Site Isolation and Dewatering A2", and "Site Isolation and Dewatering A3" shall be full pay for all labor, materials, and equipment necessary to design, install, operate, and maintain site isolation and diversion measures as necessary to separate work areas from surface waters, partially divert flows in existing channels, and to dewater the work areas in conjunction with project permits to allow for Contract Work to be performed and inspected. Work under these items covers site isolation and dewatering of work areas included as part of the alternate bid schedule they are included in. Payments will be made based on the actual percentage of work completed at the time of payment request. A lump sum cost breakdown which identifies percentages of the lump sum bid cost associated with individual work area isolations shall be provided to aid in determining percent complete.

DIVISION 8 MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.1 Description

Supplement this section with the following:

(*****)

This Work shall include installing Temporary Erosion and Sediment Control (TESC) Measures that include Best Management Practices (BMPs) necessary to control sediment, whether shown on the Plans or not, in accordance with these Special Provisions, and all federal, state, and local regulations and permit requirements. The Contractor shall be responsible for all TESC measures during construction and until the Notice of Termination is issued to meet all federal, state, local and permit requirements. Furthermore, the Contractor shall utilize BMPs to prevent invasive species transport to and from the project site as directed by the Contracting Officer. The Contractor shall be responsible for complying with turbidity standards, to be monitored and measured by the Contracting Agency.

8-01.3 Construction Requirements

8-01.3(1) General

Supplement this section with the following:

(*****)

The Contractor shall implement TESC measures and BMPs as necessary to comply with all applicable federal, state, and local regulations as well as project permits. A Contractor-developed TESC Plan shall be submitted to the Contracting Agency a minimum of five (5) days prior to beginning clearing, and the plan must be approved by the Contracting Officer prior to the contractor beginning any clearing activities.

All exposed and unworked soils shall be stabilized by application of effective BMPs that protect the soil from the erosive forces of raindrop impact, flowing water, and wind. Full stabilization means all soil disturbing activities at the site have been completed and areas where the soil or natural vegetative cover has been disturbed have been properly covered and accepted to meet permanent erosion control requirements. TESC measures will also be required at staging areas utilized during project construction and on all disturbed soils prior to establishment of permanent erosion control measures. Water shall also be applied to all exposed soils and erodible materials to prevent blowing by wind. Said work is intended to provide prevention, control, and abatement of water and air pollution within the limits of the project and to minimize damage to the work, adjacent properties, streams or other bodies of water. Soils shall be stabilized at the end of the shift before a holiday or weekend if rain is forecast. TESC measures shall remain in place until permanent measures are established, or the Contracting Officer determines they are no longer necessary.

8-26 VACANT

Delete this section entirely and replace it with the following:

8-26 TEMPORARY ACCESS AND STAGING

8-26.1 Description

This Work encompasses establishing temporary staging locations and access points to all locations where project elements are to be constructed, as indicated in the Plans. This shall include any necessary grading, compaction, maintenance, and other Work as necessary to stake for review, establish, maintain, and utilize the temporary staging areas, access routes, temporary bridges, and temporary log crossings as shown on the Plans or approved alternative routes. Decompaction of that portion of temporary access routes and staging areas outside of existing roads is also included as part of this Work.

8-26.2 Materials

The Contractor shall supply all necessary materials, equipment, and labor to establish, maintain, repair, and decommission all temporary staging areas, access routes, temporary bridges, log crossings, and any other means utilized to access construction areas for the Work.

8-26.2(1) Temporary Access Route and Staging Area Materials

When required to prevent rutting, or as a means to address rutting, the Contractor shall utilize bark or wood chip mulch meeting the requirements of section 9-14.5(3).

8-26.2(2) Temporary Bridge Materials

The Contractor shall be responsible for designing and furnishing a temporary bridge system capable of being installed at the location(s) shown on the Plans and supporting all necessary equipment and vehicles required to complete the Work shown on the Plans as determined by the Contractor. The temporary bridge system shall have a minimum free span of 40 feet, may utilize wood, concrete ecology blocks, or other approved method as abutments and shall include a continuous deck which allows for safe travel across the bridge. Examples of acceptable temporary bridge systems include but are not limited to log girder, steel girder, and railcar type bridges with steel plate or timber decking.

The temporary bridge system may utilize approach ramps constructed from borrow material on-site. Borrow material may not be salvaged from the active channel bed, but can be comprised of materials on exposed gravel bars or unvegetated upland areas. All bridge materials, including logs for log stringer bridges are to be provided by Contractor. Use of wood supplied by Contracting Agency for bridges is not acceptable.

8-26.2(3) Temporary Log Crossing Materials

When log crossings are shown in the Plans, the Contractor shall furnish logs or an acceptable alternative for use as temporary supports to access certain portions of the Work. All logs used for temporary log crossings shall not have rootwads, shall be free of any treatments or preservatives, and shall have a minimum diameter of 12 inches at the smallest end. Logs or other proposed means for temporary crossings shall be a minimum of 20 feet long to distribute the weight of equipment evenly over the streambed. Use of wood supplied by Contracting Agency for temporary log crossings is not acceptable.

8-26.3 Construction Requirements

8-26.3(1) Submittals

The Contractor shall prepare and submit for review and approval the following submittals prior to mobilizing to the project site:

Temporary Staging Area Plan

The Contractor shall develop Type 2 Working Drawings indicating any proposed modifications to the location of the Temporary Staging Area(s) shown on the Plans as well as any temporary fencing or other means of preventing unwanted access to the Temporary Staging Area(s).

Temporary Bridge Plan

The Contractor shall develop and submit Type 2 Working Drawings clearly identifying the proposed temporary bridge system and all subcomponents to be utilized. The drawings shall include a comprehensive list of all materials to be used for construction of the temporary bridge designed by the Contractor.

Temporary Log Crossing Plan

The Contractor shall develop and submit Type 2 Working Drawings which lists the type of materials proposed for use in temporary log crossings, the plan for transporting necessary materials, placement, inspection, maintenance, and removal of all required temporary log crossings as well as the number and location for each proposed temporary log crossing.

8-26.3(2) Temporary Access Routes

The temporary access routes and staging areas shown on the plans make use of existing roads through the project site to the extent practicable. Establishment of temporary access routes and staging areas outside of and adjacent to these established roads is a necessary component of project Work. These access routes may traverse through areas of soft soil where rutting and or compaction of underlying soils may occur. When rutting occurs the Contractor shall stabilize the ruts by furnishing and placing bark or wood chip mulch as necessary to prevent further rutting.

Temporary Access Routes shown on the Plans shall be field fit to avoid trees and existing vegetation to the extent practicable. The Contractor shall clearly stake the proposed centerline of all portions of access roads outside of established roads and paths. The Contracting Officer will review the staked routes and make adjustments as necessary based on existing site conditions. No clearing or trimming of any vegetation is allowed until the staking of the Temporary Access Routes has been approved. Temporary access routes shall be limited to the width required to transport equipment and materials to the various project elements shown on the Plans; a maximum width of 16 feet is allowed unless otherwise approved by the Contracting Officer.

The Contractor shall regularly monitor the Temporary Access Routes for rutting, erosion, and any other damage. Rutting shall be addressed through placement of bark or wood chip mulch. Prior to demobilization, the Contractor shall decompact all Temporary Access Routes which were not previously established roads or paths to a depth of 6-inches on the vegetated floodplain and 12-inches on exposed gravel bars. Access routes shall be roughly graded to the approximate original ground line. The Contractor may choose to leave in place, or remove at their own cost, any bark or wood chip mulch imported to stabilize access routes.

8-26.3(3) Temporary Staging Areas

Temporary Staging Areas are shown on the Plans and are available for use to store equipment, vehicles, materials, and other supplies temporarily during the course of the Work. The Contractor shall utilize the areas shown, or otherwise approved, for staging of equipment and materials required to complete the Work included in the Contract. The Contractor shall clearly stake the limits of the staging areas with lathe at each corner point for review and approval prior to staging any materials. The Contractor shall not stage any materials beyond the as-staked approved limits.

No refueling or mixing of potentially environmentally harmful fluids is allowed within areas identified as temporary staging areas; refueling shall occur within areas identified as equipment staging and refueling areas. All staging areas compacted due to vehicle and equipment traffic shall be decompacted to a depth of 6-inches (in sensitive areas) or 12-inches on gravel bars, and roughly graded back to the approximate original ground line; the Contracting Officer may waive this requirement depending on site conditions.

8-26.3(4) Temporary Bridges

The temporary bridge system shown on the approved Temporary Bridge Plan shall be delivered to the project and installed at the location(s) shown on the Plans per details in the Working Drawings. The Contractor may propose an alternate temporary bridge location; the Contracting Officer or Engineer shall review the proposed alternate location and either approve or reject the alternate location based on site conditions during construction.

The Contractor shall prepare the subgrade, construct abutments or other foundation elements, erect the superstructure, and place the deck in accordance with the approved Working Drawings. Each temporary bridge shall be placed such that the low chord of the bridge sits at least 1 foot above the water surface elevation at the time of installation. Abutments shall be placed outside the toe of each bank whenever possible; if placement of abutments within the channel is required, the Contractor shall construct site isolations around each abutment to be placed in the channel and allow the Contracting Agency to perform fish removal prior to placing abutments. Any fill used for temporary approach ramps shall be placed outside the bed of the active channel with appropriate erosion control BMPs installed as necessary to prevent temporary fill from entering the bed of the channel. Temporary bridges may utilize a center pier if necessary; if used, center piers shall be placed in a manner that limits the need for additional scour protection. The purpose of installing temporary bridges is to minimize equipment and vehicle traffic on the streambed; as such, the Contractor shall make every effort possible to minimize the number of trips across the channel for temporary bridge installation and removal.

Each temporary bridge installed shall be inspected daily for defects or flaws which may lead to unsafe conditions. Any flaws or defects discovered shall be corrected immediately at no additional cost to the Contracting Agency.

Throughout the course of performing the Work, the Contracting Agency will monitor weather and flow forecast for the project site. If conditions indicate that weather conditions will lead to high flows which could endanger the temporary bridge(s), the Contractor may require the Contractor to remove one or more temporary bridges. The Contractor shall comply with all such requests and shall reinstall temporary bridges as necessary once high flows have returned to levels which allow for safe inspection and performance of the Work.

Once acceptance of all ELJ construction has been granted, the Contractor shall fully remove all components of the temporary bridge system including replacement of any borrow material for approach ramps.

8-26.3(5) Temporary Log Crossings

Temporary log crossings are intended to be used as a lower cost approach to accessing certain portions of the Work which require crossing the channel while minimizing disturbance to the channel bed. The Contractor shall place logs, or an acceptable alternative, directly on the channel bed to distribute equipment and vehicle loads and elevate the tracks or tires of equipment used to access the Work area(s).

Temporary log crossings shall be utilized any time the tracks of an excavator or other equipment would otherwise sit on the channel bed. Temporary log crossings shall be constructed by placing logs without rootwads flat on the channel bed parallel to one another with spacing adequate to support the full weight of the equipment utilizing the temporary log crossing without compacting the channel bed. Outside of the channel bed, equipment can track normally as needed to perform the Work shown. Logs for temporary log crossings shall be removed once the temporary crossing is no longer required.

The use of a temporary bridge in place of a log crossing is subject to review and approval by the Contracting Officer.

8-26.4 Measurement

No unit of measure shall apply to the lump sum bid items "Temporary Access and Staging", "Temporary Access and Staging A1", "Temporary Access and Staging A2", or "Temporary Access and Staging A3".

8-26.5 Payment

Payment for "Temporary Access and Staging" shall be full compensation for all staking, field fit modification, maintenance, and decompaction of all temporary access routes and staging areas. All costs associated with furnishing materials for, installation of, inspection, maintenance, and decommissioning of all required temporary bridge(s) and temporary log crossings is also included.

The Contractor shall submit a lump sum price breakdown which includes estimated costs for the various major components included within the "Temporary Access and Staging" bid item including but not limited to costs for each temporary bridge, temporary log crossings, access route establishment, and access road decommissioning.

The Contractor may request payment for 50 percent of the lump sum bid price following establishment of all temporary bridges required to perform the Work. Payment for the balance of the lump sum bid price will be made when physical completion is achieved and all access routes are fully decommissioned.

When included in alternate bid schedules, payment for "Temporary Access and Staging A1", "Temporary Access and Staging A2", and "Temporary Access and Staging A3" shall be full compensation for all staking, field fit modification, maintenance, and decompaction of all temporary access routes and staging areas necessary to construct those bid items included in their respective bid schedule. Full payment for temporary access and staging work included in alternate bid schedules will be made following acceptance of all project Work included in the associated bid schedule and decompaction of the temporary access routes specifically required to complete those bid items. No additional payments

will be made for mobilizing equipment or stockpiling of necessary materials associated with alternate bid items; all such costs shall be made incidental to other bid items.

Should conditions dictate that temporary bridge(s) be temporarily removed due to anticipated high flows, this Work shall be paid for in accordance with section 1-04.4.

8-27 VACANT

Delete this section entirely and replace it with the following:

8-27 ENGINEERED LOG JAMS

8-27.1 Description

This Work consists of handling, temporary stockpiling, and placement of all woody material as required for construction of ELJs at the locations, and in conformity with the lines and dimensions shown on the Plans, or as directed by the Engineer.

Work under this item shall consist of furnishing all material, labor, tools, and equipment necessary to install ELJs in accordance with the Plans and these Special Provisions. ELJs shall be placed as staked by the Engineer prior to installation; however, final placement shall be verified and may be adjusted by the Contracting Officer. Logs shall be arranged, placed, and/or buried as indicated in the Plans. The Contractor shall anticipate that because of the irregularities of natural logs, adjustments to structure and individual log placements will be needed. These adjustments and modifications are expected, and additional payment will not be made. The Contractor shall not decommission any temporary access routes, temporary bridges, or temporary log crossings for a particular location until the structure installed has been approved by the Contracting Officer. Costs associated with re-commissioning access to a particular structure location determined not to meet design specifications are not covered under this contract and are the sole responsibility of the Contractor.

8-27.2 Materials

Woody material, manila rope, chain, and associated hardware for the construction of all ELJs (Type 1, 2, 3, 4, 5, and 6) has been provided by the Contracting Agency as listed in this section. All woody material has been stockpiled on-site. The Contractor shall be responsible for safely handling, sorting as necessary, and transporting provided material for ELJs from the stockpiled location to individual ELJ locations. The Contractor shall make arrangements for delivery of chain, manila rope, and other associated hardware to the project site.

List of Contracting Agency Provided Miscellaneous Materials		
Material Type	Unit	Quantity
Chain – 3/8” GR 70	L.F.	9,200
Chain Binder (Lever) – 3/8”	EA	316
Shackle – 3/8”	EA	96
Chain – 5/8” GR 70	L.F.	2,250
Shoulder Eye Bolt – 1” x 6”	EA	462
Shackle – 5/8”	EA	462
Manila Rope – 1”	L.F.	5,400

List of Contracting Agency Provided Woody Material		
Log ID	Unit	Quantity
RB-3	EA	219
RD-5	EA	26
RD-4	EA	115
RD-3	EA	23
RD-3	EA	46
D-6	EA	8
D-5	EA	26
D-4	EA	172
D-3	EA	118
E-3	EA	25
PE-2.5	EA	74
PE-2	EA	95
Racking	EA	6,570
Slash	CY	1,595

The Contractor shall review the list of provided miscellaneous materials for ELJ construction and shall be responsible for identifying any shortfalls and furnishing additional materials when required. If additional woody materials are required, they shall be provided by the Contracting Agency, unless damage, theft, or loss of woody materials occurs as a result of Contractor actions. The Contractor shall furnish the additional following material as required to construct ELJs:

Boulders for rock collars

Boulder used for rock collars shall be streambed boulders meeting the requirements of Section 9-03.11(3). No individual boulder shall weigh less than 6,000 pounds or exceed 9,000 pounds; Four man or Five man streambed boulders are most likely to meet these weight requirements.

Individual boulders for placement within Type 5 ELJs

Boulders which are placed within the Type 5 ELJs, but not used as boulders for rock collars shall be Four man and Five man boulders which meet the requirements of Section 9-03.11(3).

Backfill within Type 5 ELJs

The boulder-cobble mix used as backfill within and between individual Type 5 ELJ elements shall be, well-rounded to sub-rounded material meeting the following gradation:

<u>Percent Passing</u>	<u>Diameter (inches)</u>
100	48
84	36
50	18
16	3

Boulder-cobble backfill shall be comprised of a mix of Four man-, Three man-, Two man-, and One man-streambed boulders as well as 12-inch cobbles as defined in Section 9-03.11. The

Contractor shall be responsible for sourcing and mixing materials such that the specified gradation is met. The gradation of the boulder-cobble backfill shall be approved via visual inspection by the Engineer prior to placement. The Contractor is required to provide submittals for each gradation used and samples of aggregate. The Engineer and/or Contracting Officer may request to visit the source quarry(ies) with the Contractor prior to importing streambed aggregate to the project site. Replacement of materials that do not meet the requirements of this section shall be made at no additional cost to the Contracting Agency.

All boulder-cobble backfill used to construct Type 5 ELJs shall be free of debris and detritus which adheres to the surface of individual particles (e.g., silt, clay, or saturated soil). Material which is coated or covered in soil of any type shall be washed prior to use in construction for Type 5 ELJs; washing of boulder-cobble backfill to remove non-cohesive soil or rock derivatives (e.g., dust generated from transport, small rock fragments, and sand) will not be required.

The approximate quantity of boulder-cobble backfill required for each Type 5 ELJ shown in Plans is listed below:

<u>Type 5 ELJ</u>	<u>Boulder-Cobble Backfill Required (tons)</u>
5-18	3,330
5-19	4,425

Epoxy for Rock Collars

Epoxy used for securing shoulder eye bolts shall be Hilti Hy-200R, or approved equal capable of achieving a minimum bond strength of 10,000 pounds utilizing the hardware chosen by the Contractor.

8-27.3 Construction Requirements

8-27.3(1) Racking Bundle Assembly

The Contractor shall assemble racking bundles for use in constructing ELJs as shown in the Plans. Racking bundles shall be constructed using Contracting Agency-supplied racking material. Completed racking bundles shall measure roughly 4-feet wide by 3-feet tall by 30-feet long (±1-foot). The recommended approach for constructing bundles is to first construct a frame with internal dimensions matching these required dimensions and then stacking racking material within the frame. Racking logs in the racking bundled shall lie parallel with one another and shall be packed tightly; an estimated 20-25 racking logs will be required per racking bundle. Once logs for a bundle are placed, the bundle shall be secured with the Contracting Agency-provided manila rope or another a readily biodegradable material approved by the Contracting Officer and furnished by the Contractor. Other means and methods of constructing racking bundles are acceptable provided they match the required dimensions and are secured by readily biodegradable materials. The Contractor should expect to manually adjust lengths of racking logs by shortening racking logs such that the assembled length matches the requirements of this section.

8-27.3(2) Rock Collar Assembly and Placement

The Contractor shall weigh all boulders individually prior to assembly of individual rock collars. Individual weights shall be marked on each boulder to allow for proper pairing of boulders to achieve specified

total rock collar weight. Each fully assembled rock collar shall weigh a minimum of 6.5 tons and shall not exceed 9 tons. Whenever possible, use similar sized boulders for rock collar construction.

Chain lengths between individual boulders will vary depending on specific field conditions; chain lengths are anticipated to range from 6 to 8 feet. The Contractor shall adjust chain length for individual rock collars as needed to ensure tension is applied to chain when placed within the ELJ; rock collars placed with slack are not acceptable and shall be modified appropriately by the Contractor at no additional cost to the Contracting Agency. If necessary, minor excavation of the channel to create a depression for boulders to ensure tension in the connecting chain may be required and shall be performed at no additional cost.

Rock collars used to ballast Type 5A and Type 5B ELJ elements shall be placed as shown, with two completed collars crossing the corners of a completed log triangle. Rock collars for Type 5C ELJ elements require full wraps around a single log create a clove hitch prior to completing placement of the rock collar. Each end of the clove hitch shall extend perpendicular to the log; a completed clove hitch shall be dressed to ensure that wraps are parallel, and all slack has been removed. The Contractor shall wrap chain around the log as required in the Plans, dress the required wraps, tension the chain on the log fully, then place two boulders, one each on the upstream and downstream sides of the Type 5C ELJ element. Boulders for rock collars on Type 5C ELJ elements shall sit on the existing channel bed. Manual manipulation of individual boulders to ensure proper orientation of the eyebolt with the chain is expected and shall be anticipated as a normal part of the required Work. The distance between boulders and logs used for Type 5C ELJ elements shall be minimized to the extent practicable; the distance between the log and boulder shall be less than 1 foot for all Type 5C rock collars.

8-27.3(2)A Rock Collars with Shoulder Eyebolts and Epoxy

Rock collars shall be assembled using the following steps:

1. Thoroughly clean all eyebolt bond surfaces. If necessary, clean with acetone and allow to fully dry.
2. Locate a flat surface on the boulder and use rotary hammer to drill pilot hole into boulder perpendicular to the surface of the boulder and to the specified minimum depth.
3. Thoroughly clean the drill hole by first using compressed air to blow out dust from drilling pilot hole. Next, use a wire brush to further clean the drill hole, loosening up any remaining dust; wire brush shall resist installation into drilled hole. Lastly, use compressed air again to blow all remaining dust from the drill hole. No dust shall be detectable on visual or physical inspection. If dust is detectable, epoxy will not bond properly and cleaning steps need to be repeated.
4. Dry fit the eyebolt into the pilot hole, testing for appropriate drill depth. If adequate depth has not been achieved to allow for the shoulder of the eyebolt to rest flush on the surface of the boulder, then drill additional depth as needed and repeat cleaning and depth testing procedures.
5. Add epoxy to the pilot hole per manufacturer instructions. The volume of epoxy added shall be such that when inserted fully a small amount of epoxy oozes out of the top of the pilot hole; as a rule of thumb this is approximately two-thirds of the depth of the minimum embedment depth.
6. Allow epoxy to cure fully prior to handling and testing.

7. Test rock collar by lifting off the ground and ensuring proper bonding. Weigh assembled rock collar and clearly mark total weight on assembled rock collar.

8-27.3(3) ELJ Construction

8-27.3(3)A Post-Supported ELJ Construction (Type 1, 2, 3 and 4 ELJs)

When shown on the Plans, the Contractor shall construct all rootwad post-supported ELJs as shown on the plans and as directed by the Contracting Officer in the field. Rootwad posts shall be installed by excavating to the minimum embedment shown on the Plans. Excavation depths for each structure will be based on the elevation of the thalweg of the active mainstem of the river adjacent to the structure location, referred to as the reference elevation. The reference elevations shown on the Plans are based on elevations from 2021 bathymetric survey of the site; these elevations will be verified in the field by the Engineer and are expected to be within ± 1.0 feet of the field-verified reference elevation determined at the time of construction. All woody material required to construct the ELJs has been supplied by the owner and stockpiled at the project site. Some additional racking logs will be obtained by project clearing.

When excavating for post installation or scour pool creation the Contractor shall sort individual native particles (boulders) larger than approximately 2 feet in diameter for selective use in backfill above the reference elevation.

ELJs shall be constructed at locations staked by the Engineer prior to installation; however, final placement shall be verified and may be adjusted by the Contracting Officer. Excavate as necessary to install rootwad posts at the depths and locations indicated on the Plans. When shown on the Plans, Contractor shall excavate a scour pool of the size and dimensions shown on the Plans. Excavated material shall temporarily be staged in an area adjacent to the Work area and outside the actively flowing channel or any surface waters. The excavation depths and volumes required for ELJ installation may require specialized means and methods including benching during excavation, handling material multiple times during ELJ construction, and utilizing sufficiently sized equipment to reach the embedment depths required and handle fully assembled racking bundles. The Contractor shall review the Plans closely and shall be prepared to perform the required Work; no cost adjustments will be made due to the degree of difficulty associated with ELJ installation.

Logs shall be arranged, placed, and/or buried as indicated in the plans. Log size, length, and material shall comply with the specifications shown in the plans. The Contractor should anticipate that because of the irregularities of natural logs, adjustments to structure and individual log placements will be needed. These adjustments and modifications are expected and additional payment will not be made. The Contractor shall backfill each ELJ structure with native alluvium as shown on the Contract Plans.

The Contractor shall place all logs, racking material, rock collars, slash, and mechanical connections as shown in the Plans. Where indicated on the Plans, the Contractor shall establish chain lashings to mechanically secure logs to either other logs, boulders, or upright rootwad posts. Backfill of material excavated for ELJ construction shall occur following completion of individual log layers as determined by the Contractor. Backfill shall be compacted using the bucket of the excavator to "tamp" the backfill in lifts no greater than 2 feet or one log layer whichever is greater. No compaction requirement shall apply to alluvium backfill below the low water or ground water line.

Racking material and slash shall be incorporated into the structure throughout structure construction. Placement of all key members prior to placing racking material and slash is not acceptable. The Contractor shall place Contracting Agency-provided slash or racking material as well as additional material generated from clearing activities as directed by the Contracting Officer which may include supplementing the placement of racking material and slash in the body of the ELJ or mixing cleared material in with the backfill for the structure. When native particles larger than approximately 2 feet in diameter have been stockpiled, and/or when excess racking material is available, the Contractor shall selectively place these materials within the backfill once the reference elevation has been reached as directed by the Contracting Officer.

Any woody material damaged as a direct result of Contractor actions shall be replaced in-kind at no additional cost to the Contracting Agency.

8-27.3(3)B Pile-Supported ELJ Construction (Type 5 ELJs)

Construction of Type 5 ELJs requires careful work and close monitoring of imported cobble backfill material. The Engineer will stakeout the approximate extents of each Type 5 ELJ prior to construction, making any necessary adjustments to the locations shown in the plans. Type 5 ELJs are intended to be constructed with minimal disturbance to the channel and limited, if any, site isolation and dewatering required. Certain portions of Type 5 ELJs do require some excavation for countersinking individual Type 5 ELJ elements. If flows are low enough, no site isolations or dewatering will be required, but the Contractor shall be prepared to install site isolation measures if necessary.

Type 5 ELJs are comprised of individual elements which are strategically placed on the existing channel bed, ballasted with rock collars, and rely on piles for additional resistance to anticipated hydraulic forces. Type 5A and 5B ELJ elements are log triangles which are lashed together at the corners. The Contractor may elect to construct triangles prior to placement or may place individual logs forming the triangles in the channel and then establish chain lashings in accordance with the Contract Plans and these Special Provisions. Either method is acceptable. The integrity of Type 5A and Type 5B ELJ elements shall be demonstrated through testing; the Contractor shall push and pull on the completed triangle elements prior to placing rock collars or piles to demonstrate that chain lashings have been installed properly without slack and are maintaining the structural integrity of the triangle as intended.

Following placement of individual Type 5 ELJ elements, demonstration of structural stability, and approval by the Contracting Officer, the Contractor may install rock collars, piles, and chain lashings as required in the Plans. Pile tops shall be shortened to the approximate heights shown in the Plans, as approved by the Engineer.

Once all rock collars, piles, and required chain lashings have been completed, the Contractor shall place individual boulders within and between individual Type 5 ELJ elements as shown in the Plans or as directed by the Contracting Officer. Boulders shall be spread as evenly as possible throughout each Type 5 ELJ as shown in the Plans.

Two piles shall be driven for each Type 5A and Type 5B ELJ element, and three piles shall be driven per Type 5C ELJ element. Pile locations for Type 5A and 5B ELJ elements shall be identified by the Contracting Officer following completion of the log triangle. Piles for Type 5C ELJ elements shall be placed as shown on the Plans, using even spacing. All piles shall be driven to the embedment depths shown on the Plans as described in Section 6-05.

Following placement of individual boulders, the Contractor shall backfill the entirety of the Type 5 ELJ to the approximate depths shown on the Plans. The Contractor shall work closely with the Engineer prior to placing any boulder-cobble backfill to establish benchmark elevations as necessary to ensure proper backfill depth at each individual Type 5 ELJ element and within the broader Type 5 ELJ as a whole. Backfill depth targets shall be clearly painted on each individual Type 5 ELJ element, and the Contractor shall closely monitor the total quantity of imported and placed material, providing an updated total daily to the Contracting Officer.

The Contractor shall take all practicable measures to minimize the impact of constructing Type 5 ELJs on the environment. Construction of Type 5 ELJs may best be accomplished through working from one bank to another. Placement of logs, rock collars, individual boulders, and boulder-cobble backfill shall be accomplished without placing equipment or vehicles directly on the existing or constructed channel bed. The Contractor may elect to use logs, or crane pads to walk equipment on, or may place steel sheets or an approved alternate on top of the existing or finished streambed when constructing Type 5 ELJs.

8-27.3(3)C Pile-Only ELJs Construction (Type 6 ELJs)

Type 6 ELJs utilize driven piles to stabilize natural and existing accumulations of woody material. The approximate locations of each Type 6 ELJ are shown on the Plans. Type 6 ELJs utilize several piles installed on a batter to stabilize key pieces within the existing wood accumulation. The Engineer will identify key pieces for stabilization within each existing accumulation and will identify the locations for piles to be driven at each key piece. Some minor rearrangement of existing wood in the accumulation should be expected to provide access to the work area. Each Type 6 ELJ will utilize up to 16 piles to stabilize 4 to 6 individual key pieces. Complete disassembly of existing accumulations to allow driving is not anticipated or intended. All minor disassembly of the existing wood accumulation that is required shall be restored following the installation of all piles. Pile tops shall be shortened to the approximate heights shown in the Plans, as approved by the Engineer.

8-27.3(4) Chain Lashings

Chain lashings shall be used to connect logs to other structural components when required in the Plans. Chain lashings shall be installed according to the details in the Plans. The Contractor shall ensure that logs and posts/piles to be connected via chain lashings are in the correct orientation and are touching one another prior to applying the chain lashing. The tag end of the chain shall be temporarily secured to a log or pile as appropriate to hold it in place and allow for manual tension to be applied while the loops, wraps, and crosses of the chain lashing are established.

Following initial application of the loops, wraps, and crosses for the chain lashing, the Contractor shall dress the lashing to ensure that all wraps and loops are perpendicular to the members being connected with the lashing. All slack shall be removed from the lashing and all adjacent wraps and loops shall be situated neatly and parallel with one another.

Once the lashing has been dressed, the Contractor shall apply tension between the tag and working ends of the lashing prior to completing the lashing by connecting the ends together or to boulders. The method used to apply tension shall be determined by the Contractor; pulling the working end toward the tag end using a chain hook or temporary application of chain binder are both acceptable means to apply tension prior to completing the lashing.

For lashings that require connecting the ends of the lashing together with a shackle or connecting link, the Contractor shall utilize a connection method that maintains tension within the lashing when completed. The method to apply tension shall be determined by the Contractor; pulling the working end toward the tag end using a chain hook or temporary application of a chain binder are both acceptable means to apply tension prior to completing the lashing. While the lashing is under tension the Contractor shall connect the working and tag ends of the lashing using a quick link or approved equal. Once the quick link has been applied, the temporary means of applying tension can be released and excess chain lengths shall be trimmed such that no loose ends longer than 6 inches are present in the lashing.

For lashings that require a chain binder, the chain shall be tensioned to the maximum amount achievable by manual tensioning and shall prevent any movement or rotation of both logs secured in the chain lashing. Following tensioning, the lever arm of the chain binder shall be welded in the tensioned position; alternatively, the Contractor may choose to utilize a marine epoxy for securing the lever arm in place.

A completed lashing shall have no visible slack or sagging of connected members. All loops, wraps, and crosses shall be neatly dressed, tight, and square to the connected logs and piles being connected with the lashing. The lashing shall be tight enough that no slack can be detected when manual tension is applied to any portion of the lashing. Completed lashings that do not meet these requirements shall be corrected at no additional cost to the Contracting Agency.

8-27.4 Measurement

“ELJ Type _____” and “ELJ 5-_____” shall be measured per each structure installed and approved by the Contracting Officer.

8-27.5 Payment

The contract price paid for “ELJ Type _____” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for all Work required for installation as described in the Plans and these Special Provisions which may include, but is not limited to the following: sorting, hauling, and placement of Contracting Agency-provided woody materials as shown on the Plans, constructing and placing racking bundles, excavation and backfill, driving timber piles, compacting backfill, establishing a smooth finished grade for all backfilled material, reviewing quantities of Contracting Agency-provided miscellaneous material and furnishing additional material as required, and establishing mechanical connections where shown on the Plans.

The contract price paid for “ELJ 5- _____” shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for all Work required for installation as described in the Plans and these Special Provisions which may include, but is not limited to the following: sorting, hauling, and placement of Contracting Agency-provided woody materials as shown on the Plans, excavation and backfill, driving timber piles, furnishing, placing and tracking imported boulder-cobble backfill, establishing a smooth finished grade for all backfilled material, reviewing quantities of Contracting-Agency provided miscellaneous material and furnishing additional material as required, as well as furnishing additional materials for, constructing, and placing rock collars and individual boulders where shown on the Plans.

The Contractor shall provide a unit cost breakdown for each ELJ type with the first payment request which specifies approximate costs associated with the following types of work when required for ELJ construction:

1. Excavation (approximate cost per cubic yard)
2. Sorting and transport of logs including racking bundle assembly (approximate total cost)
3. Log Placement and Structure Assembly (approximate total cost)
4. Rock collar construction (labor and materials for a single rock collar)
5. Timber pile driving cost (cost per pile)
6. Structure backfill (approximate cost per cubic yard)
7. Boulder-cobble backfill (approximate cost per ton for import and placement)

DIVISION 9 MATERIALS

9-03 AGGREGATES

9-03.11 Streambed Aggregates

9-03.11(3) Streambed Boulders

Delete this section in its entirety and replace it with the following:

Streambed boulders shall be hard, sound and durable material, free from seams, cracks, and other defects tending to destroy its resistance to weather. Streambed boulders shall be well-rounded to sub-angular in shape with low or high sphericity as determined visually according to the visual classification system developed by Powers (1953) with the exception that low sphericity sub-angular boulders will not be allowed. An example of acceptable visual classifications for boulders is shown in Figure 1 below; the Contracting Officer or Engineer shall make determination of acceptance for streambed boulders.

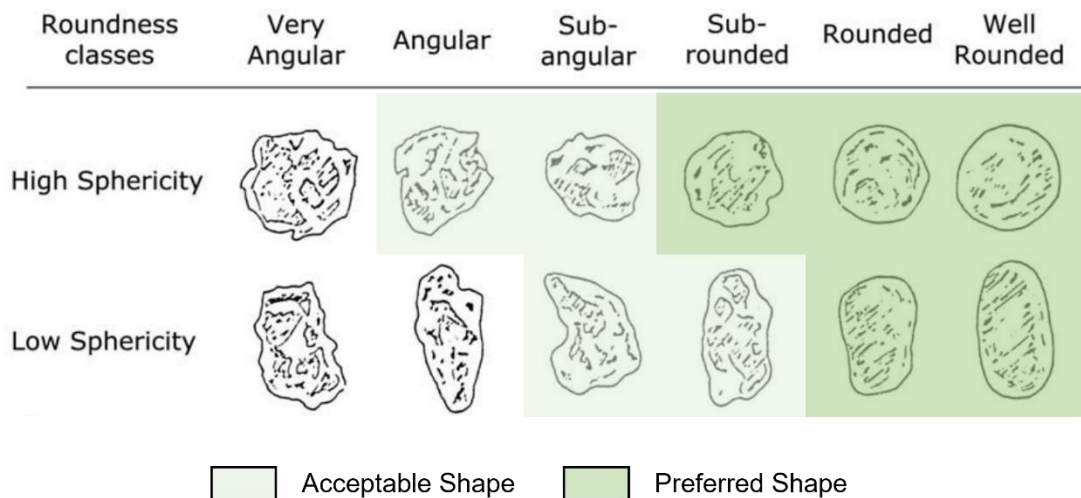


Figure 1. Visual classification system for Streambed Boulders (based on Powers, 1953)

Streambed boulder sizes are approximately as follows, see Plans for sizes specified. When used to construct rock collars, the weight of each boulder shall take precedence over the approximate size listed below and shall conform to the requirements of these special provisions for weight.

Rock Size ¹	Approximate Size
One Man	12" – 18"
Two Man	18" – 28"
Three Man	28" – 36"
Four Man	36" – 48"
Five Man	48" – 54"
Six Man	54" – 60"

¹Approximate size can be determined by taking the average dimension of the three primary axes of the rock (length, width, and thickness). Length is the longest axis, width is the second longest axis, and thickness is the shortest axis.

(*****)

Standard Plans

The State of Washington Standard Plans for Road, Bridge and Municipal Construction M21-01, current edition including the most current revisions are made a part of this Contract.