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The Contractor shall be familiar with the Contract Documents for the Sulphur Creek Fish Passage Restoration Project (Project) which includes the following:

1. Contract Documents
 - a. The Notice to Contractors
 - b. The Special Provisions
 - c. The General Provisions
 - d. The Technical Provisions
 - e. The Contract
 - f. Landowner Site Access Agreements
 - g. Department of Industrial Relations Registration
 - h. Debarment Certification
 - i. Off Road Regulations Assurances
 - j. Schedule of Bid Prices
 - k. Addenda Acknowledgement
 - l. Non-Collusion Affidavit
 - m. Designation of Subcontractors
 - n. Contractor License Information
 - o. Bidder Responsibility Statement
 - p. Bidder's Signature Page
 - q. The Bid Bond, Faithful Performance Bond, Labor and Material Bond, and Warranty/Maintenance Bond
 - r. The Plans for PROJECT NO. 30144 – SULPHUR CREEK FISH PASSAGE RESTORATION PROJECT, dated July 31, 2024
 - s. 2023 Caltrans Standard Specifications
2. Reference Permits and Reports
 - a. U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 Authorization for impacts to jurisdictional wetlands including Nationwide permits (NWP) 27 Aquatic Habitat Restoration, Enhancement and 13 Bank Stabilization.
 - b. California Department of Fish and Wildlife (CDFW) Section 1602 Lake/Streambed Alteration Agreement.
 - c. United States Fish and Wildlife Service (USFWS) Section 7 Informal Consultation for Northern Spotted Owl.
 - d. National Marine Fisheries Service (NMFS) Section 7(a)(2) Programmatic Formal Consultation for the NOAA Restoration Center (NOAA RC) Santa Rosa Office Programmatic Approach.
 - e. RWQCB Clean Water Act 401 Water Quality Certification and Porter-Cologne Waste Discharge Requirements (WDR).
 - f. Foundation Report – September 2023
 - g. Geotechnical Memorandum – March 2021

- h. Project CEQA Statutory Exemption for Restoration Projects Concurrence
- i. The Contract Documents are available on the Napa RCD's web site: <https://naparcd.org/get-involved/rfps-and-rfqs/>

4-1.03A Worksite

The Project includes the following major components:

1. Installation of a creek bypass and dewatering to facilitate excavation work.
2. Removing the existing fishway, including the ladder, all concrete, and all other associated man-made materials, and will restore a natural channel through the Project reach.
3. Removing existing bridge and abutments and realigning private road to meet new bridge configuration.
4. Channel and creek bank cut fill operations to meet finish grade shown in the plans with field fit requirements based on existing conditions at the time of construction.
5. Layering engineered streambed materials (ESM) under the new bridge, placing rock along banks on either side of bridge and staking live willows.
6. Placing channel boulders and large wood structure with rootwads across the floodplain.
7. Removal of 28 trees for site access and constructability and salvage of some trees for large wood structures and rootwads in the Project reach.
8. Revegetation of native riparian and upland vegetation communities.
9. Removing invasive and non-native plant species.
10. Compliance with permit requirements.
11. Restoration of grading areas in compliance with Erosion Control and Revegetation plans.

4-1.03B Scope of Work

The Contractor shall furnish all labor, materials, tools, and equipment, except as otherwise expressly specified, that are necessary or proper for completion of the work according to the contract. Work shall be performed and materials provided to the satisfaction of the Engineer. Whenever in these specifications the satisfaction of the Engineer must be met and the Engineer makes a determination in good faith of satisfaction or dissatisfaction, such determination shall be final and binding upon all parties.

The Work to be done under this Contract includes all work as shown in the Contract Documents, as further divided into bid items described in Section 9 Payment, and generally including the following:

1. Mobilization and Demobilization. Mobilizing/demobilizing equipment and materials to the site, preparing the site, staging area, and establishing access for Contractor's operations.
2. Environmental Protection and Restoration Measures, as specified and required by the projects permits.
3. Construction surveying and layout.
4. Traffic Control Measures. Preparation and implementation of Traffic Control Plan.
5. Installing Best Management Practices (BMPs) for sediment and erosion control throughout construction, including the preparation of a Storm Water Pollution Prevention Plan (SWPPP) and Water Control Plan.
6. Establishing and maintaining Construction Support Facilities, including items such as access ramps, storage and laydown areas, temporary site fencing, access control and security provisions.
7. Excavation including handling, transport, sampling, grading, and disposal of excavated materials.

8. Fill including handling, transport, sampling, grading, and import of specified materials in addition to reuse of native material.
9. Controlling water, including flow isolation, fish protection, flow diversion, treatment and discharge of encountered groundwater, if required, and/or dewatering as needed to safely perform all work in accordance with regulatory permit requirements.
10. Creating access to locations for, and installing log structures
11. Site finish grading, tree removal, reseeding, planting, and site restoration to restore disturbed work areas to existing conditions.
12. Coordination with Cities, County, State and Federal Agencies with jurisdiction over the project sites.
13. All other incidental and related work required to complete the project as shown on the Plans and specified herein.
14. Removing and properly disposing of all temporary materials and/or debris.
15. Restoring the staging area and site access to pre-project conditions, including replacement of ground cover, off-hauling any imported materials, and grading to pre-project conditions.
16. Demobilization and cleanup.

The Contractor must strictly comply with all requirements of the contract documents. Variance from such requirements shall be permitted only upon the advance written consent of the Engineer. The Contractor may not rely upon any actual or alleged oral statement or representation of anyone purporting to waive, alter, or amend any such requirements.

Any discrepancy in, or misunderstanding of the contract documents shall be immediately referred to the Engineer. The Engineer shall clarify the true intent and meaning of the contract documents, and any decision rendered shall be binding on the Contractor. The Contractor will not be allowed to take advantage of any error or omission in the plans and specifications. Suitable instructions will be given or corrections made when such error or omission is discovered.

4-1.03C Design Services to be Provided by the Contractor

Contractor shall provide Final Design for the creek bypass piping and pipe anchoring on the Project, based on the preliminary design in the contract documents, available geologic and geotechnical information provided with the contract documents, and any data the Contractor wishes to collect. Design shall be sealed by a California professional engineer in accordance with Section 13-2 Temporary Creek Diversion Systems.

Contractor shall provide Final Design for the dewatering system for the Project, based on the information in the contract documents, and any data the Contractor wishes to collect.

4-1.03D Project Work Not in this Contract

The contract does not include biological or archeological surveys. Construction inspection services shall be performed under a separate contract.

4-1.03E Identified Agencies

The Owner has endeavored to identify agencies having jurisdiction over the Work. The list is not necessarily complete, and the Contractor shall be bound by requirements of other agencies having jurisdiction over the Work.

The identified agencies include:

1. County of Napa
2. City of St Helena
3. U.S. Army Corps of Engineers (USACE)

4. California Department of Fish and Wildlife (CDFW)
5. San Francisco Bay Regional Water Quality Control Board (RWQCB)
6. U.S. Fish and Wildlife Service (USFWS)
7. National Marine Fisheries Service (NMFS)
8. Bay Area Air Quality Management District (BAAQMD)
9. Caltrans

4-1.03F Agency Inspections

Contractor shall allow inspection of the Worksite or work premises during business hours by jurisdictional agencies for the purpose of ensuring that the premises and the business are in compliance with the terms and conditions of the Permits and with the requirements of their Codes, standard specifications and details and other local, State, and Federal laws and regulations.

Replace Section 4-1.13 with “Cleanup/Demobilization”

Demobilization shall include, but not be limited to, the following work items:

1. Demobilizing and removal of the Contractor’s facilities and equipment.
2. Complete removal of the creek bypass system.
3. Coordinate and attend punch list meeting generated at substantial completion walkthrough. Finishing all punch list work within the time requirements.
4. Removing all project signs from project site, and removing all construction area signs, traffic handling and detour signs, and temporary traffic control devices from project vicinity.
5. Removing all temporary construction facilities and other equipment and utilities from the site as Contractor’s property within 10 calendar days after Final Completion. Cleanup of all debris, trash, and restore the site as specified.
6. Furnishing all required equipment installation certification forms, and warranty documents.
7. Preparing and submitting all final documents, including certified payroll, and other records of payments to suppliers and subcontractors, and lien releases/claims waivers needed to close the contract within the time requirements per the General Conditions.
8. Furnishing the Contractor’s Final Updated Construction Drawings (Record Drawings).
9. Performing final site cleanup and restoration as required, including restoration of pavement and guard rails per County Standard Specifications.
10. Providing signoffs from affected property owners and permitting agencies confirming that their requirements have been met.
11. Completing all specified close-out requirements.
12. Obtaining and paying for required Defective Material and Workmanship Bond per the General Conditions.
13. Requesting final payment.

4-1.04 Drawings

The location and general arrangement of the facilities to be installed under the contract are as shown diagrammatically on the contract drawings.

Additional drawings that may be necessary will be supplied by the Engineer during the progress of the work, and such drawings shall become a part of the contract documents.

4-1.04A Drawings Required of Contractor

Within 30 calendar days after execution of the contract, the Contractor shall submit to the Engineer any drawings, catalog cuts, specifications, lists and graphs as required under these specifications. Such submittals shall be reviewed and approved by the Contractor in regard to conformance to contract plans and specifications prior to submittal to the Engineer. They shall become part of the contract documents upon the Engineer’s approval.

If the materials submitted by the Contractor are in accord with acceptable practice and meet the requirements of these specifications, the Engineer will return one set marked "no exceptions noted" within 15 working days after their receipt; otherwise said data will be returned to the Contractor within the 15 working day period with a statement of the points found unsatisfactory. In such a case the Contractor, at his own expense, shall proceed at once to revise said materials until they shall be found satisfactory by the Engineer. No fabrication shall start prior to the time the materials are determined to be satisfactory. The Contractor shall have no claim for damages or extension of time because of any delays for revisions found necessary to fulfill the requirements of these specifications. Regardless of such delays, the Contractor shall be liable to the Owner for any failure to complete the work as required by the contract documents. Revisions of said materials shall be considered as changes necessary to meet the requirements of the specifications and shall not be taken as the basis of claims for extra work.

Neither the inspection nor lack of inspection of any such materials shall constitute a waiver of any requirements of the contract documents or relieve the Contractor of any obligations thereunder. In addition, any deviation from the contract documents (including shop drawings, etc.) shall be brought to the attention of the Engineer by written notice. Defective work, materials, and equipment may be rejected notwithstanding conformance with drawings, catalog cuts, specifications, lists and graphs inspected by the Engineer.

4-1.05 Contract Completion Date

In the event that Contract work is anticipated to exceed the October 31, 2025 Contract Completion Date for reasons of Unavoidable Delay (including but not limited to rain, Red Flag Warnings, or other adverse weather), the Contractor shall restore the site and completely demobilize from the project, per applicable contract provisions and permits. The Contractor shall remobilize to the project and complete the balance of work by August 1, 2026, NSO survey early start date clearance notwithstanding. The work period limitations identified shall apply to the following year. The Owner will, as appropriate, extend the Contract Completion Date by Contract Change Order to accommodate the remaining work. Should the Owner agree to extending the Contract Completion Date, prices for remaining bid items of work may be adjusted by a factor not greater than the Engineering News-Record (ENR) Construction Cost Index (CCI) for the San Francisco Bay Area, for the month of July 2026. The Contractor shall not be entitled to any damages or claims for any such Contract Delay.

The ENR CCI for the San Francisco Bay Area can be found at:
https://www.enr.com/economics/historical_indices/SanFrancisco

The Contract Completion Date has been determined including a 30-day period for the processing of contract documents and issuance of a Notice to Proceed with Field Work to begin on or before August 1, 2025. The Contractor is expected to prosecute this work with full knowledge of a limited construction season and potential weather delays that may require additional measures to ensure timely progress of the work. The Owner shall be the sole owner of all float time related to all construction schedules pertaining to this project.

AA

5 CONTROL OF WORK

Replace 5-1.23 SUBMITTALS with:

5-1.23A General

5-1.23A(1) Submittal Requirements

The Contractor shall prepare and provide required submittals as described for all items, plans, materials, products, and information as and when specified throughout the Project Specifications.

High Priority Submittals: Within 10 calendar days after the effective date of Notice to Proceed, the Contractor shall submit the following high priority submittals for the Resident Engineer's review and approval prior to starting work at the site, as follows:

1. Project schedule and first 3-week Look-ahead schedule.
2. Proposed dates for Kickoff meeting and Environmental Training
3. Creek Bypass Plan and Piping Layout and Design
4. Injury and Illness Prevention Program (IIPP)
5. Site-specific Health and Safety/Communications Plan
6. Emergency Contact: The Contractor shall provide a list of names and phone numbers of Contractor's representatives for 24-hour contact in case of emergency at the job site.
7. Competent Person: The Contractor shall provide a list of Competent Persons.
8. Stormwater Pollution Prevention Plan Amendments and Rain Event Action Plan
9. Proposed Analytical Lab and Soil Sampler for SMV Stockpiling and Soil Sampling.
10. Remaining Submittals: See Preliminary Submittal List in the appendix (Contractor is responsible for all required submittals even if they are not listed therein).
11. Professional Seal Required: Submittals involving engineering design services, when required by the Contract Documents or by governing codes and regulations, such as shoring and underpinning, excavation support structures, and load and design calculations, shall be sealed and signed in blue ink by a professional engineer, currently registered in the State of California, for the discipline involved.

5-1.23A(2) Submittal Procedures

No items requiring submittals shall be installed prior to review and approval by the Engineer. The Contractor is encouraged to transmit all submittals in electronic form.

Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on the Design Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the work to permit processing, including resubmittals.

Review Period:

1. Prepare submittals sufficiently in advance so that approval may be given before commencement of related work.
2. Allow 15 calendar days after receipt by the Construction Manager / Resident Engineer for review of each submittal, including resubmittals. Allow additional time if coordination with subsequent submittals is required. The Construction Manager / Resident Engineer will advise the Contractor when a submittal is being processed must be delayed for coordination.
3. The Contractor shall be responsible for determining whether or not certain governmental entities and utility districts require longer review periods. When longer review periods are required, the Contractor shall schedule the Work accordingly, so that the Work and project progress schedules are not adversely impacted.

Submittal Delivery: Email submittals directly to the Construction Manager / Resident Engineer and cc the Design Engineer and Owner at the following:

1. Peter Smith, Construction Manager / Resident Engineer at peter@teamanchor.com
2. Andrew Smith, Senior Restoration Engineer at WRA at smith@wra-ca.com
3. Bill Birmingham, Project Manager at Napa County Resources Conservation District at Bill@naparcd.org

Transmittal Form: Accompany submittals with an Owner-furnished transmittal form containing the following information:

1. The Contractor 's name, address, and telephone number;
2. Submittal number and date;
3. Contract title and number;
4. Supplier's, manufacturer's, or Subcontractor's name, address, and telephone number; and
5. Subject identification, including Contract Drawing and Specification reference.
6. Changes in Approved Submittals: Changes in approved submittals will not be allowed unless those approved submittals with changes have been resubmitted and approved, in the same manner as the original submittal.
7. Supplemental Submittals: Supplemental submittals initiated by the Contractor for consideration of corrective procedures shall contain sufficient data for review. Make supplemental submittals in the same manner as initial submittals.

Deviations ("or approved equals/equivalents"): Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

Products that are specified by manufacturer, trade name, or catalog number establish a standard of quality and do not prohibit the use, except where noted, of equal products of other manufacturers provided that they are favorably reviewed by the Design Engineer prior to installation.

The burden of providing proof as to the type, function, and quality of any such substitute material or equipment is the sole responsibility of the Contractor. The Design Engineer's decision as to the acceptability of the material shall be final.

The Contractor may be required to furnish, at the Contractor's expense, a special performance guarantee or other surety with respect to any substitute.

Acceptance by the Design Engineer of a substitute item shall not relieve the Contractor of the responsibility for full compliance with the Contract Documents and for adequacy of the substitute item.

The Contractor shall be responsible for the resultant changes or all additional work that the accepted substitution requires in the Contractor's work including all costs and delays.

5-1.23A(3) Contractor Responsibilities

Contractor 's Review and Approval:

1. Each submittal shall be reviewed, stamped, and signed as reviewed and approved by the Contractor prior to submission. Check for coordination with other work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. The Contractor 's approval shall indicate review and approval with respect to the following responsibilities:
 - a. The correctness of the drawings and plans and for the results obtained by the use of such drawings and plans.
 - b. Determination and verification of field measurements and field construction criteria.
 - c. Checking and coordinating information in the submittal with requirements of the Work and of the Contract Documents.
 - d. Determination of accuracy and completeness of dimensions and quantities.
 - e. Confirmation and coordination of dimensions and field conditions at the site.
 - f. Safety precautions.
 - g. Errors or omissions on submittals.
 - h. Coordination and performance of work of all trades.
 - i. Identification of deviation(s) from Contract requirements.

2. The Contractor shall coordinate each submittal with the requirements of the Work, placing particular emphasis upon assuring that each submittal of one trade is compatible with other submittals of related work. Ensure submittal is complete with all relevant data required for review.
3. The Contractor shall stamp, initial, or sign the submittal, certifying:
 - a. Dimensional compatibility of the product with the space in which it is intended to be used.
 - b. Review of submittals for compliance with Contract requirements.
4. Do not start work that requires approval by the Engineer until submittals have been returned to the Contractor with official indication that approval has been granted by the Engineer.
5. If the submittal is designated to be sent to the Engineer for information, approval by the designated approval authority shall take place before submission to the Engineer.
6. Approval of drawings and associated calculations by the Resident Engineer shall not relieve the Contractor from the responsibility for errors or omissions in the drawings and associated calculations, or from deviations from the Contract Documents, unless submittals containing such deviations were submitted to the Resident Engineer and the deviations were specifically called to the attention of the Resident Engineer in the letter of transmittal and within the submittal, and approved specifically by the Resident Engineer as a Contract change.
7. Approval of the Contractor's submittal by the Engineer shall not relieve the Contractor of any responsibility, including responsibility for accuracy and agreement of dimensions and details.
8. Review by the Resident Engineer: One marked up reproducible set of drawings, one copy of product data, and one sample will be returned to the Contractor.
9. Distribution of Submittals after Review: Distribute prints or copies of approved submittals, bearing the Resident Engineer's or designated approval authority's stamp and signature, to the Contractor's field office and the Resident Engineer's field office; to affected and concerned Subcontractors, Suppliers, and fabricators; and to affected and concerned members of the Contractor's workforce.

5-1.23A(4) Engineer's Review

1. Submittals will be reviewed for conformance with requirements of the Contract Documents. Review of a separate item will not constitute review of an assembly in which the item functions. Neither review nor approval shall relieve the Contractor from Contractor's responsibility for accuracy of submittals, for conformity of submittals to requirements of Contract Documents, for compatibility of described product with other provided products and the rest of the system, or for prosecution and completion of the Contract in accordance with the Contract Documents.
2. Submittals shall be understood as being made for approval, unless otherwise specified, for example, as being made for information, record, or review. The Engineer will indicate its reviews of submittals and the action taken (approvals and non-approvals) by means of its review stamp. The review stamp will be affixed by the Engineer, the action block will be marked, and the stamp will be signed in blue ink and dated.
 - a. Approval of the submittal by the Engineer does not relieve the responsibilities of the professional Engineer who originally signed and sealed the submittal or the responsibilities of the Contractor to meet the Contract requirements.
3. The review-stamp action-block marks will have the following meanings:
 - a. The mark NO EXCEPTIONS TAKEN is an acceptance and means that the submittal appears to conform to the respective requirements of the Contract Documents; that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product or work may proceed; and that the submittal need not be resubmitted.
 - b. The mark MAKE CORRECTIONS NOTED is an acceptance and means that the submittal appears to conform to the respective requirements of the Contract Documents upon incorporation of the reviewer's corrections, and that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product may proceed. Submittals so marked need not be resubmitted unless the Contractor challenges the reviewer's exception within 7 calendar days. All noted changes will be reflected in the as-built drawing by the Contractor.
 - c. The mark AMEND AND RESUBMIT is a disapproval and means that the submittal requires corrections to conform to the respective requirements of the Contract Documents, and that fabrication, assembly, manufacture, installation, application, and erection of the illustrated and described product may not proceed until incorporation of the reviewer's corrections and verification by the Engineer that the reviewer's corrections have been properly incorporated in the submittal.

- d. The mark REJECTED – RESUBMIT is a disapproval and means that the submittal is deficient to the degree that the reviewer cannot correct the submittal with a reasonable degree of effort, has not made a thorough review of the submittal, and that the submittal needs revision and is to be corrected and resubmitted.
 - e. The mark NOT REVIEWED is acknowledgement of receipt and means that the submittal is for information and record purposes only.
4. Review stamps or other approval methods of the various designated approval authorities may not be the same as those of the Owner. The Contractor shall work with the various designated approval authorities and shall obtain approvals in the clearest and most straightforward manner possible.

Add section 5-1.24C Qualifications of Surveyors and Engineers:

Qualified Engineer's or registered land surveyors, acceptable to Engineer and Owner.

Registered professional Engineer's of the disciplines required for the specific service on the Project, licensed in California.

Add section 5-1.24D Survey Reference Points:

Survey control points and benchmarks in the project area are provided in the plans.

Locate and protect control points before starting site work and preserve all permanent reference points during construction.

1. Make no changes or relocations without prior written request for approval to Engineer.
2. Report to Engineer when any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.
3. Require surveyor to replace Project control points which may be lost or destroyed. Establish replacements based on original survey control.

Add section 5-1.24E Project Survey Requirements:

Contractor shall establish a minimum of two permanent benchmarks at each Work site, referenced to data established by survey control points.

1. Record locations, with horizontal and vertical data, on Project Record Documents.

Establish lines and levels, locate, and lay out, by instrumentation and similar appropriate means:

1. Site improvements:
 - a. Stakes for excavation, grading, fill and topsoil placement.
 - b. Rock slope protection placement
 - c. Log structure placement
2. Exclusion and protection areas

From time to time, verify layouts by the same methods.

Add section 5-1.24F Record:

Contractor shall maintain a complete, accurate log of all control, survey, and field measurement work as it progresses.

On completion of major site improvements, prepare a survey to accompany record drawings.

Add section 5-1.24G Submittals:

Submit name, address and qualifications of Surveyors and Professional Engineer's to Engineer.

Submit documentation to verify accuracy of field and design engineering work.

Surveys for measurement of quantities shall be reduced and plotted, necessary calculations performed, and results presented in an orderly form. All plotted plans, cross sections, calculations, and recap sheets shall be submitted to the Engineer for review and record.

Submittals shall be in NAD83 California State Plane Zone II, US Survey feet and NAVD88, US Survey feet.

Add section 5-1.24H Other Survey Requirements:

Survey buried component location, depth, and elevation prior to backfill.

Add section 5-1.25 SITE CONDITIONS SURVEY

5-1.25A General

5-1.25A(1) The Requirement

The Contractor shall conduct thorough pre-construction and post-construction Site conditions surveys of the entire Project. Site conditions surveys shall consist of digital photographs and/or video in a common format.

5-1.25A(2) Contractor Submittal

Digital photographs, and other data of the preconstruction conditions shall be submitted to the Resident Engineer for record purposes prior to, but not more than 10 days before, commencement of any construction activities.

A complete set of all photographs and survey data of the post-construction conditions shall be completed and submitted prior to final inspection by the Owner and Resident Engineer.

The site condition surveys shall be submitted as 2 sets of compact disks (one for Owner, one for Engineer) or as a digital transmission with receipt confirmed by Resident Engineer.

5-1.25B Execution

5-1.25B(1) Photographs

Contractor, as a minimum, shall document pre- and post-construction conditions by preparing photographs of the following:

1. Roadways used to access the Sites or haul materials and equipment to the Sites and disposal areas.
2. Work areas, including actual work sites, materials processing and stockpiling areas, access corridors, disposal areas, and staging areas.
3. Any work completed by other contractors at the Site that will be connected to or otherwise affected by the WORK.
4. Driveways, sidewalks, bridges and buildings which might be affected by the WORK.

Add section 5-1.26 Project Closeout/ Record Drawings

5-1.26A General

Deliver the marked record set of Drawings and photographs of as-built conditions to the Owner prior to acceptance of the Work.

The Contractor shall supply the Resident Engineer with GPS or surveyed points of final project as-constructed dimensions.

Record GPS location of and photograph prior to backfill any buried abandoned facilities (i.e. end of pipe).

Make the record drawings available for review by Owner in Contractor 's field office.

Protect the record set from damage or loss.

5-1.26A(1) Final Cleanup

The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the Owner will be withheld until the Contractor has satisfactorily performed the final cleanup of the Site.

5-1.26A(1) Final Submittals

The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Resident Engineer for transmittal to the Owner:

1. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
2. Completed record drawings.
3. Photographs documenting construction.
4. Survey data documenting construction
5. Certificates of inspection and acceptance by local governing agencies having jurisdiction.

5-1.26B Record Drawing Requirements

Contractor shall provide and maintain on the jobsite one complete set of prints of all Plans which form a part of the contract. Immediately after each portion of the Work is installed, indicate all deviations from the original design shown on the Plans either by additional sketches or marked in red ink thereon and reviewed by Resident Engineer. Upon completion of the job, deliver this record set to the Resident Engineer.

The Contractor shall provide Record Drawings which shall clearly show all differences between the contract Work as drawn and as installed for all concealed construction, as well as construction added to the Contract, which is not indicated on the Contract Drawings.

Concealed shall mean construction installed underground or in an area which cannot be readily inspected by use of access panels, inspection plates or other removable features.

Show all changes in the Work, or Work added on the Record Drawings in a contrasting color.

In showing changes in the Work, or added Work, use the same legends that are used on the Contract Drawings. Indicate exact locations by dimensions and exact elevations. Give dimensions from a permanent point.

Record by marking on the Drawings all changes in the Work which occur during construction, including adding approved change orders.

Show locations by key dimensions, depths, elevations of all underground features.

5-1.26C As-Built Surveying Requirements

Contractor shall supply the Resident Engineer with GPS or surveyed points in a CAD-compatible file, referenced to local benchmarks, of the following as-built project features:

1. Location and elevation of each end of all installed log structures including the top elevation of the log structure at any bolt plus the elevation of the creek thalweg immediately upstream of each log structure.
2. Location and Elevation every 20 feet of the pilot channel thalweg and edges

5-1.26D As-Built Photography Requirements

Contractor shall supply the Resident Engineer with digital photographs of the following as-built project features:

1. Installed rootwads trees and live willow stakes.
2. Any buried facilities, prior to burial.
3. Staging areas and haul route following demobilization.

Digital photographs shall have GPS coordinates in the meta date of each file (photo) taken.

2. Land use history of the local material location and surrounding property
3. Sampling protocol
4. Number of samples per volume of local material
5. QA and QC requirements and procedures
6. Qualifications of sampling personnel
7. Stockpile history
8. Name and address of the analytical laboratory that will perform the chemical analyses
9. Analyses that will be performed for lead and pH
10. Other analyses that will be performed for possible hazardous constituents based on:
 - 10.1. Source property history
 - 10.2. Land use adjacent to source property
 - 10.3. Constituents of concern in the ground water basin where the job site is located

The plan must be sealed and signed by an engineer who is registered as a civil engineer in the State, or a professional geologist licensed as a professional geologist by the State.

If the plan requires revisions, the Engineer provides comments. Submit a revised plan within 7 days of receiving comments. Allow 7 days for the review.

6-1.03B(3) Analytical Test Results

At least 15 days before placing local material, submit analytical test results for each local material obtained from a noncommercial source or a source not regulated under CA jurisdiction. The analytical test results must include:

1. Certification signed by an engineer who is registered as a civil engineer in the State, or a professional geologist licensed as a professional geologist by the State stating:

The analytical testing described in the local material plan has been performed. I performed a statistical analysis of the test results of the analytical testing described in the local material plan using the US EPA's ProUCL software with the applicable 95 percent upper confidence limit. I certify that the material from the local material source is suitable for unrestricted use at the job site and the material has met the following criteria:

1. Has a pH above 5.0.
 2. Does not contain soluble lead in concentrations equal to or greater than 5 mg/L as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II.
 3. Does not contain lead in concentrations above 80 mg/kg total lead.
 4. Is not contaminated with the other constituents of concern identified in the local material plan in average concentration (95 percent upper confidence limit) in excess of these constituents' respective San Francisco Bay RWQCB commercial/industrial environmental screening levels ESLs, except for arsenic.
 5. Does not exceed the maximum allowed concentration limit table listed in Section 6-1.03B(4).
2. Chain of custody of samples.
 3. Analytical results no older than 1 year.
 4. Statistical analysis of the data using US EPA's ProUCL software with a 95 percent upper confidence limit.
 5. Comparison of sample results and 95 percent upper confidence limits to hazardous waste concentration thresholds and the applicable San Francisco Bay RWQCB environmental screening levels (ESLs) given in direct exposure human health risk levels (Table S-1), commercial/industrial: Shallow soil exposure, under Summary of Soil ESLs tables (2019 Rev 2). The Summary of Soil ESLs tables (2019 Rev 2) can be obtained by sending an email to ESLs.ESLs@waterboards.ca.gov with "Request for ESL Documents" in the subject line.

6-1.03B(4) Sample and Analysis

Sample and analyze local material from a (1) noncommercial source or (2) a source not regulated under CA jurisdiction:

1. Before bringing the local material to the job site
2. As described in the local material plan
3. Under US EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)

The sample collection must be designed to generate a data set representative of the entire volume of proposed local material.

Before excavating at (1) a noncommercial material source or (2) a source not regulated under CA jurisdiction, collect the minimum number of samples, and perform the minimum number of analytical tests for the corresponding maximum volume of local material as shown in the following table:

Minimum Number of Samples and Analytical Tests for Local Material

Maximum volume of imported borrow (cu yd)	Minimum number of samples and analytical tests
< 5,000	8
5,000–10,000	12 for the first 5,000 cu yd plus 1 for each additional 1,000 cu yd or portion thereof
10,000–20,000	17 for the first 10,000 cu yd plus 1 for each additional 2,500 cu yd or portion thereof
20,000–40,000	21 for the first 20,000 cu yd plus 1 for each additional 5,000 cu yd or portion thereof
40,000–80,000	25 for the first 40,000 cu yd plus 1 for each additional 10,000 cu yd or portion thereof
> 80,000	29 for the first 80,000 cu yd plus 1 for each additional 20,000 cu yd or portion thereof

Do not collect composite samples or mix individual samples to form a composite sample.

Statistically analyze the samples' laboratory results using the US EPA's ProUCL software to define 95 percent upper confidence limit for the various contaminants of concern. All chemical analysis must be performed by a laboratory certified by the SWRCB's Environmental Laboratory Accreditation Program (ELAP).

The analytical test results must demonstrate that the local material:

1. Is not a hazardous waste
2. Has a pH above 5.0
3. Has an average total lead concentration, based upon the 95 percent upper confidence limit, at or below 80 mg/kg
4. Is not contaminated with local material plan-identified constituents of concern at average concentrations (95 percent upper confidence limits) in excess of their respective commercial/industrial San Francisco Bay RWQCB environmental screening levels ESLs, except for arsenic.
5. Does not contain any of the following compounds, chemicals, or elements at an estimated average concentration (95 percent upper confidence limit) above the maximum allowed concentration defined in the following table:

Compound/Chemical	Maximum allowed concentration (mg/kg)
Arsenic	11
Barium	1500
Benzene	1
Beryllium	10
Cadmium	10
Chromium (total)	1000
Cobalt	100
Diesel	150
Ethylbenzene	10
Gasoline	500
Mercury	10
Motor oil	500
Nickel	150
Selenium	10
Toluene	10
Trichloroethene	1
Vanadium	200
Xylenes	10
Zinc	600

6-1.03C Local Material Management

Do not place local material until authorized.

If the Engineer determines the appearance, odor, or texture of any delivered local material suggests possible contamination, sample and analyze the material. The sampling and analysis is change order work unless (1) hazardous waste is discovered or (2) the analytical test results indicate the material does not comply with section 6-1.03B(3).

Dispose of noncompliant local material at an appropriately permitted CA Class I, CA Class II or CA Class III facility. You are the generator of noncompliant local materials.

Replace section 6-1.04 with:

6-1.04 BUY AMERICA

6-1.04A General

Buy America requirements do not apply to the following:

1. Tools and construction equipment used in performing the work
2. Temporary work that is not incorporated into the finished project

6-1.04B Crumb Rubber (Pub Res Code § 42703(d))

Furnish crumb rubber with a certificate of compliance. Crumb rubber must be:

1. Produced in the United States
2. Derived from waste tires taken from vehicles owned and operated in the United States

6-1.04C Steel and Iron Materials

Steel and iron materials must be melted and manufactured in the United States except:

1. Foreign pig iron and processed, pelletized, and reduced iron ore may be used in the domestic production of the steel and iron materials
2. If the total combined cost of the materials produced outside the United States does not exceed the greater of 0.1 percent of the total bid or \$2,500, the material may be used if authorized

Furnish steel and iron materials to be incorporated into the work with certificates of compliance and certified mill test reports. Mill test reports must indicate where the steel and iron were melted and manufactured.

All melting and manufacturing processes for these materials, including an application of a coating, must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied.

6-1.04D Manufactured Products

Iron and steel used in precast concrete manufactured products must meet the requirements of section 6-1.04C regardless of the amount used.

Iron and steel used in other manufactured products must meet the requirements of section 6-1.04C if the weight of steel and iron components constitute 90 percent or more of the total weight of the manufactured product.

6-1.04E Construction Materials

Buy America requirements apply to the following construction materials unless otherwise specified:

1. Non-ferrous metals
2. Plastic and polymer-based products such as:
 - 2.1. Polyvinylchloride
 - 2.2. Composite building materials
 - 2.3. Polymers used in fiber optic cables
3. Glass
4. Lumber
5. Drywall

Where one or more of these construction materials have been combined by a manufacturer with other materials through a manufacturing process, Buy America requirements do not apply unless otherwise specified.

Furnish construction materials to be incorporated into the work with certificates of compliance with each project delivery. Manufacturer's certificate of compliance must identify where the construction material was manufactured and attest specifically to Buy America compliance.

All manufacturing processes for these materials must occur in the United States.

Add Section 6-2.01E Contractor's Quality Control Testing:

Quality control testing is the testing of materials prior to their delivery from a manufacturer, or during construction, such as soils compaction tests, Phytosphthora testing, and such other tests as are specified in the various Sections of the Specifications to ensure compliance with the Contract Documents.

The Contractor shall assume full responsibility for quality control testing and shall give sufficient notice to the Engineer to permit the Engineer to witness the tests. Quality control testing shall be at the expense of the Contractor and shall be performed by a Contractor -employed independent testing firm.

6-2.01E(1) Laboratory Tests

All laboratory testing shall be performed by an independent, qualified testing laboratory approved by the Engineer. The selected laboratory shall employ the proper equipment and qualified testing personnel for the testing specified in these Specifications. The Contractor shall obtain the Engineer's approval of the testing equipment and personnel. The Engineer may monitor the operations to ensure that tests are being performed in accordance with approved procedures and in compliance with these Specifications.

Qualification of Laboratory Testing Personnel: Personnel performing laboratory tests shall be qualified for such work by virtue of prior experience and training.

6-2.01E(2) Testing Equipment

Testing equipment shall be in satisfactory operating condition, of adequate capacity and range, and accurately calibrated. Testing equipment shall be calibrated in accordance with national standards which are certified by the National Institute of Standards and Technology. Testing equipment shall be calibrated at the frequency recommended by the equipment manufacturer.

Add Section 6-2.02E Submittal:

Within five days after completion of testing performed by or for the Contractor, submit test results of such tests to the Resident Engineer. Identify test reports with the information specified, and additionally, the name and address of the organization performing the test, and the date of the tests.

Add Section 6-2.02F Resident Engineer

6-2.02F(1) Monitoring

The Resident Engineer(s) will perform surveillance inspection of the Contractor's on-site construction activities. Surveillance inspection consists of a review, observation, or inspection of Contractor personnel, material, equipment, processes, and test results, performed at random or at selected stages of the construction operations. The purpose of surveillance inspection is to determine if an action has been accomplished or if documents have been prepared in accordance with selected requirements of the Contract Documents.

The Contractor shall provide access to the Work and shall furnish the Resident Engineer reasonable facilities for obtaining such information as may be necessary to be fully informed of the quality and progress of the Work.

Surveillance inspection does not take the place of the Contractor's quality programs or assume any responsibility for such programs or the quality of the Work. The Contractor shall establish its own quality program, perform the required inspections, and provide the necessary documentation to assure that acceptable quality has been achieved. The Contractor is responsible for specifying and controlling the quality of work performed by its Subcontractors.

6-2.02F(2) Inspection and Tests

The Engineer may perform inspections and tests as necessary to determine the Contractor's compliance with Contract requirements. The Resident Engineer may perform such additional inspections and tests as it deems necessary to verify compliance with Contract requirements.

For inspections and tests by the Resident Engineer, the Resident Engineer will provide the services paid for by the Owner.

Add Section 6-2.02G Certificates of Compliance

1. The Contractor may use certificates of compliance for certain materials and products in lieu of the specified sampling and testing procedures. Submit any certificates required for demonstrating proof of compliance of materials with specification requirements with each lot of material delivered to the Work. The lot so certified shall be clearly identified by the certificate. Certificates shall be signed by an authorized representative of the producer or manufacturer and shall state that the material complies in all respects with Contract requirements.
2. The Contract Schedule shall indicate the date scheduled for the submittal of certificates. In the case of multiple shipments, each of which shall be accompanied by a certificate of compliance, the scheduled date on the Project CPM Schedule shall indicate the initial submittal only.
3. The certificate of compliance shall be accompanied by a certified copy of the test results or shall state that such test results are on file with the producer or manufacturer and shall be furnished to the Owner on request. In addition to the identifying information specified for submittals, the name and address of the organization performing the tests, the date of the tests, and the quantity of material shipped.
4. Materials used on the basis of a certificate of compliance may be sampled and tested by the Engineer at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve the Contractor of its responsibility for incorporating material in the Work which conforms to the requirements of the Contract, and any such material not conforming to such requirements will be subject to rejection, whether in place or not.

5. The Owner reserves the right to reject a certificate of compliance and requires submittal and execution of sampling and testing procedures described herein.

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8 PROSECUTION AND PROGRESS

Remove 8-1.02 to 8-1.05 and Replace with the following:

8-1.02 SCHEDULE

8-1.02A General

This section describes preparation and submittal of the Project Schedule. It is critical for the Contractor to design a schedule that they can meet and that is consistent with the environmental work windows specified in the project permits.

Contractor shall prepare a Project Schedule showing the entire project. This shall be updated monthly with payment requests. Payment requests will not be approved by the Owner without an accompanying Updated project schedule.

Contractor shall prepare a 3-week look-ahead scheduled weekly. These shall be presented to the Resident Engineer in paper or digital formats at or just prior to the weekly progress meeting.

8-1.02B Quality Assurance

Contractor 's personnel specializing in Scheduling with three (3) years minimum experience in scheduling construction work of a complexity comparable to this Project and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

8-1.02C Format

Schedule: Format to be determined by Contractor but similar to Microsoft Project. Size: 11" by 17".

All digital copies shall be submitted in PDF format.

Scale and Spacing: Time scale using units of approximately one week. Allow spacing for notations and revisions.

8-1.02D Schedules

The project schedule to be prepared by Contractor pursuant to American Institute of Architects (AIA) Document A201 (latest version as supplemented) shall consist of a Schedule as described herein. The Schedule shall be based on the precedence diagramming method with no lead and/or lag time. Preparation of the Schedule is solely the responsibility of the Contractor; senior management personnel shall actively participate in its development. The Schedule shall consist of a detailed network, mathematical analyses, and network diagrams.

The network diagram shall show the order and interdependence of activities and the sequence in which the work is to be accomplished as planned by Contractor. The basic concept of a network diagram shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities.

The substantial and final completion dates for the work which are shown in the complete Schedule shall be those detailed in the Contract documents.

Activities contained in the schedule and the mathematical analyses, and shown on the schedule, shall include:

1. Construction activities, which shall have a minimum duration of one workday and a maximum duration of fifteen workdays. The activity shall be descriptive of the work to be performed. If, in the opinion of Contractor, a task requires greater than fifteen workdays to perform, that task shall be broken into two or more logically discrete activities, each with durations equal to or less than fifteen workdays. The definition "start" or "finish" are not acceptable.
2. Submittal, review, and approval of samples of materials and shop drawings.
3. Activities of Owner, substantial completion, punch list, and closeout requirements, or of Resident Engineer or others that affect progress of the work.

The schedule shall show the duration of each activity in workdays. The Contractor shall update the project schedule monthly to show the actual progress of each activity.

Related activities shall be grouped in the schedule. The activities on the critical path shall be highlighted. Sundays, holidays, and other non-work periods shall be indicated. Where float or slack exists, the activities shall be shown at the earliest times they can be completed.

8-1.02E Submittals

A preliminary project schedule shall be submitted to Owner within 10 calendar days following Notice of Award. Contractor 's general approach for the balance of the contract shall also be indicated.

The complete Schedule shall be submitted to Owner within 10 days following the Notice to Proceed.

Contractor shall submit, as part of its monthly Application for Payment, a report of the actual construction progress by updating the Schedule. All approved contract changes shall be included in this report.

1. The report shall show the activities or portions of activities completed during the reporting period and their total value as a basis for the Contractor 's request for payment. The report shall state the percentage of the work completed and scheduled as of the report date and the progress along the critical path in terms of days ahead or days behind the mutually acceptable schedule dates. If the work is behind schedule, progress along other paths with negative float or slack shall also be reported.
2. Contractor shall submit a narrative report with the updated Schedule which shall include a description of current and anticipated problem areas, current and anticipated delaying factors, the impact of these areas and factors, and actions taken or proposed to correct these areas and factors.

Contractor shall submit a 3-week look ahead schedule at or just prior to each weekly meeting showing the activities to be completed in the 3 weeks following the meeting. This schedule shall be updated weekly and note any advance notice to Owner or Resident Engineer of upcoming special inspections.

1. Contractor shall review the schedule at the weekly progress meeting and note any uncertain dates in the schedule.
2. Contractor shall notify Owner and Resident Engineer immediately if it appears that there are changed conditions causing the Schedule Constraints to not be met, in particular the date of 31 October 2025 after which the Contractor may no longer conduct work that impacts the creek and/or other regulated areas.

8-1.02F Updating Schedule

If Contractor thereafter desires to make changes in its method of operating or scheduling, it shall notify the Owner in writing, stating the reasons for the proposed change. If the Owner considers these changes to be of a major nature it may require Contractor to revise and submit, at no increase in the Contract Sum or Contract Time, all the affected portion of the Schedule to show the impact of the requested change on the balance of the work. A change may be considered to be of a major nature if the time estimated to be required or actually used for an activity, the network logic, or sequence of activities varies from the original Schedule to a degree that there is reasonable doubt regarding the Contract Completion Date. Changes affecting activities with adequate slack time shall be considered as minor changes, except that an accumulation of minor changes may be considered a major change when their cumulative effect might affect the Contract completion date. Out of sequence operations by the Contractor without prior notification to the Owner may be considered a "de facto" change of a major nature by the Owner.

8-1.02G Distribution

Following joint review, distribute copies of updated schedules to Contractor 's project site file, to Subcontractors, Suppliers, Resident Engineer and Owner.

Contractor shall instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

Add to section 8-1.04 START OF JOB SITE ACTIVITIES

8-1.0A General

8-1.04A(1) Contractor Responsibilities

Mobilization shall include the obtaining of permits, preparing and furnishing specified submittals, moving onto the Site all equipment necessary for the Work; furnishing and erecting plants, temporary buildings, and other construction facilities; and implementing security requirements; all as required for the proper performance and completion of Work.

Prior to the mobilization of all plant, equipment, offices or temporary facilities to the Site, the Contractor and Resident Engineer shall jointly perform a site survey of the existing conditions.

8-1.04A(2) Mobilization

Mobilization shall include, but not be limited to, the following work items:

1. Attendance at pre-construction meeting and Worker Awareness Training for Environmental and Cultural Resource awareness.
2. Signatures on all Contract Documents necessary to proceed.
3. Delivery of all required pre-construction submittals, including but not limited to invasive species control methodology and products, Stream Diversion Plan, Excavation Plan, construction schedule, submittal schedule, schedule of values, and others as specified.
4. Mobilizing and moving onto site the Contractor 's plant, equipment, tools, materials and labor required for the first 30 days of work.
5. Providing the Contractor's Project Manager, Project Superintendent, Project Engineer and Site Safety Representative at the Project site full time.
6. Obtaining and paying for all required permits, insurance, and Faithful Performance Bond and Material and Labor Bonds.
7. Installing temporary construction power, wiring, and lighting facilities as needed.
8. Providing on-site sanitary facilities and potable water facilities.
9. Arranging for and erection of Contractor 's work and storage yards and any required on-site and off-site parking areas.
10. Posting all OSHA-required notices and establishing safety programs as defined in Contractor 's Cal-OSHA approved Safety Program.
11. Fabricating and erecting project signs, construction area signs, traffic handling and detour signs, and temporary traffic control devices.
12. Preparing and submitting Site Specific Contractor Health and Safety Plan.
13. Installation of a Contractor's field office per Section 16 – Temporary Facilities.
14. Constructing and implementing safety and security features.
15. Installing erosion control measures, and other environmental protection measures such as environmental fencing, indicated in the Drawings, and/or covered in applicable permits.

All other incidental work of a general and administrative nature as specified in the Contracting Requirements and General Conditions and not covered under separate bid items.

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9 PAYMENT

Add to 9-1.02 A General:

Payment for each contract bid item includes full compensation for all labor, equipment, tools, supplies and incidentals necessary to complete the work.

Costs for conforming to the provisions of this section will receive no separate payment from the Owner, and the Contractor is presumed to have allocated such costs to the pay items deemed most appropriate.

Contractor administrative costs for performing work in this contract will receive no separate payment from the Owner, and the Contractor is presumed to have allocated such costs to the pay items deemed most appropriate.

Add Section 9-1.02A(1) Allowances

All Allowance Work shall be directed by the Owner to the Contractor in writing prior to the start of work. The work shall be billed by time and materials basis, or other method agreed in advance by the Owner and shall not exceed the total approved by the Owner.

Allowances specified in the Contract Documents shall cause the work so covered to be furnished and performed for such sums as acceptable to the Owner and shall include the cost to Contractor, less any applicable trade discounts, of materials and equipment to be delivered and installed.

Contractor 's costs for unloading, handling, labor, installation costs, overhead, profit and other expenses contemplated shall not be deducted from the Allowance but shall be included in the Contract Price.

Add Section 9-1.02A(2) Basis for Progress Payment

Prior to the beginning of work, the Contractor shall submit a Contractor's Cost Breakdown of his bid items that will be used as the basis for determining progress and computing monthly progress payments. This breakdown is subject to the approval of the Engineer.

For Mobilization/Demobilization Bid Item, partial payment for mobilization shall not exceed 50% of the total bid item price. This breakdown is subject to the approval of the Engineer.

Monthly progress payments will be made based on the pro rata value of the actual work completed. The progress payment will be initiated by the foreman arranging a meeting with the designated Owner's representative to review the estimate of total work completed for the current pay period. The Owner's representative will submit the reviewed estimated quantities to the Engineer for approval. In the case of disagreements between the contractor and the Owner as to the amount of progress payment monies due, the Engineer's estimate shall be final.

Replace section 9-1.03 Payment of Scope with:

The contract Lump Sum and unit prices paid for the various items and classifications of work shall include full compensation for furnishing all labor, materials, tools, equipment, transportation, services, and incidentals as specified in the General Conditions and for performing all work necessary for completing the construction or installation of the item or work classification, unless stated otherwise.

The work has been broken down into several unit price and lump sum items for convenience in measuring progress for payment.

It is recognized that due to the "interconnected nature" of construction, specific separation of work into bid items is not always possible; generally only the major involved items are specified herein. However, all of the work under the contract for a complete project is included in these items, and no claims for extra work will be allowed for any item shown on the plans or required by the Specifications.

The Contractor shall accept the compensation provided in the Contract as full payment for furnishing all labor, materials not furnished by the Owner, tools, equipment, and incidentals necessary for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work, until the work is accepted by the Engineer; and for all risks of every description connected with the prosecution of the work, also for all expense incurred in consequence of the suspension or discontinuance of the work as herein specified; and for completing the work according to the Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

No compensation will be made in any case for loss of anticipated profits.

Except as specifically provided otherwise, no separate payment will be made for any of the requirements of the Standard Specifications, the Special Provisions, nor for any of the work specified in the Specifications, and the cost thereof will be considered as included in the prices paid for the various contract items included in the Bid.

Remove and Replace 9-1.11B Payment Quantity with:

9-1.11B(1) Lump-Sum Measurement:

1. Lump-Sum measurement will be for the entire item, unit of work, structure, or combination thereof, as specified and as listed or indicated in the Schedule of Quantities and Prices with pay limits for the item of work shown on the Plans.
2. If Contractor requests progress payments for Lump-Sum items or amounts in the Schedule of Quantities and Prices, such progress payments will be made in accordance with a well-balanced, detailed program of payment-apportioning, prepared by Contractor and submitted to the Owner for approval.
3. Such program for each applicable Lump-Sum item shall show fixed measurable quantities where possible and unit prices therefore as allocated by Contractor to the different features of the Work and major subdivisions thereof. The summation of extensions of quantities and unit prices and related costs shall equal the amount of the Lump Sum bid item indicated in the Schedule of Quantities and Prices.
4. Before the Contractor's first progress pay request on this project, the Contractor shall provide the Owner's Representative a Schedule of Values (Lump Sum Breakdown) for each Lump Sum bid item shown on the Bid Schedule. The Schedule of Values shall be a well-balanced, detailed breakdown of work items consisting of estimated quantities, unit prices, material, and equipment costs the Contractor allocates for the work covered under each Lump Sum bid item.
5. Such Schedule of Values shall not be unbalanced and will be subject to approval of the Owner's Representative and will be used to compute progress payments for Lump Sum bid item work. The Contractor shall provide proof of costs to justify the submitted Schedule of Values if requested by the Owner's Representative.
6. Where Contract Change Orders are issued increasing or decreasing the scope of the work and cost, the Contractor shall prepare revisions to the Schedule of Values, where necessary, for approval of the Owner's Representative. The revised Schedule of Values will be used for subsequent progress payments.

9-1.11B(2) Unit Price Bid Items:

1. For items bid on a unit price basis, the estimated quantities given in the Bid Form are approximate and are given only as a basis for comparison of bids. The Owner does not expressly, nor by implication, warrant that the actual amount of work will correspond to the estimated quantities. The Owner reserves the right to increase or decrease the amount of work performed under unit price Bid Items, or to omit such work altogether unless such change exceeds 25 percent of the total contract bid price. No adjustments to the Contract unit prices will be made, nor will any claim for loss of anticipated profit be allowed on account of any such increase, decrease, or omission. Payment for unit price Bid Items will be made at the Contract unit prices stated in the Contractor's Bid, for the quantities of work directed by the Engineer to be performed and actually performed, measured as specified below.

2. Items of work listed in the Bid Schedule that are Unit Price bid items shall be measured for payment as set forth in this section, under the description of each relative bid item.
3. All initial measurements for payment purposes shall be made by the Contractor and subject to review and approval by the Owner's Designated Representative unless noted otherwise.

9-1.12 Description of Bid Items:

The Bid Schedule bid items are presented to indicate major categories of the work for purposes of comparative bid analysis, payment, breakdown for monthly progress payments, and final payment to the Contractor under the Contract. The Bid Schedule is not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, equipment, and operations necessary to complete each bid item of work, as shown and specified, and all costs of compliance with all applicable regulations of public agencies having jurisdiction, including, but not limited to, the health and safety requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

1. Bid Item No. 1 - Mobilization / Demobilization (Lump Sum)
 - a. 1.01 Mobilization: Payment of the contract price to be made under this bid item shall constitute full compensation for providing all labor, equipment, and those materials not furnished by the Owner required to mobilize to the site and primary staging area, perform all Contractor operations, including both administrative and field operations and demobilize from the site. Mobilization and demobilization shall include but is not limited to completion of all submittals, applying for and obtaining all required permit(s), procurement and installation of project identification signage, attending pre-construction meeting(s), transporting equipment, initial site reconnaissance, utility location, provision of sanitary facilities, traffic and pedestrian control, temporary barriers, enclosures, and signage, temporary construction fencing at each site, temporary storage, temporary utilities services and equipment, construction water and dust control, staging area fencing and restoration, and site clean-up. In addition, payment for fulfilling Special Provisions that are not covered under any of the following separate Bid Items shall be included in this item, and no additional payment shall be made.
 - b. 1.02 Demobilization: The Contract Lump Sum Price for this Pay Item shall include, but not be limited to, construction and/or improvement of permanent access roads and asphalt resurfacing, removal of all field offices, removal of all Contractor facilities, materials and supplies, removal of other temporary facilities, final clean up including cleaning of all debris, and Contract closeout.
 - c. Payment for these Items will be Lump Sum (LS) as named in the Bid Schedule, two thirds of which will be for Mobilization and one third for Demobilization. The payment for Demobilization will be made at the time of final payment upon final acceptance of the Work.
 - d. Total payment for these items shall not exceed 10% of the total bid.
2. Bid Item No. 2 – Health and Safety (Lump Sum)
 - a. 2.01 Health and Safety Compliance: Payment for this Item shall be full compensation for all costs associated with implementing and maintaining the health and safety measures as required by the General Conditions, project specifications, and applicable regulatory requirements. This includes all labor, materials, equipment, administrative costs, and other incidental expenses necessary to ensure compliance with the project's health and safety requirements throughout the duration of the work.
3. Bid Item No. 3 – Site Preparation
 - a. 3.01 SWPPP Implementation and Compliance (Lump Sum): Payment of the contract price to be made under this bid item shall constitute full compensation for providing all labor, equipment, and those materials not furnished by the Owner required to comply with

the Stormwater Pollution Prevention Plan (SWPPP), including preparation of the SWPPP with a Construction Site Monitoring Program (CSMP), NOI and all required attachments, NOI application fee, ad hoc reports, annual reports, and NOT. Additionally, SWPPP compliance includes but is not limited to uploading all required documentation to the Water Board's SMARTS website, site monitoring as required by the Construction General Permit, and reporting in SMARTS, as well as installing, inspecting, and maintaining/replacing all stormwater BMPs that the Contractor deems necessary for SWPPP compliance during construction, and any mitigation required if analytical results from monitoring are out of compliance with the SWPPP.

- b. 3.02 Establish Site Access (Lump Sum): Payment for this Item shall be full compensation for all labor, equipment, materials, and incidentals necessary to provide safe and adequate access to the site as specified in the contract documents and shown on the drawings. This work includes, but is not limited to, establishing access routes, installation of temporary roads, and staging areas required to support construction activities.
- c. 3.03 Clearing and Grubbing (AC): Payment of the contract price to be made under this bid item shall constitute full compensation for providing all labor, equipment, and those materials not furnished by the Owner required for clearing, grubbing, chipping and/or vegetative debris disposal, tree pruning and root trimming, vegetation removal and scarification, and removal of miscellaneous debris within the project limits, whether or not shown on the Drawings, and off-site disposal of all materials generated throughout construction if not noted for payment under another bid item.
- d. 3.04 Tree Removal (EA): Payment for this Item will be made at the unit bid price per each tree designated to be removed and shall constitute full compensation for all labor, equipment, materials, and incidentals necessary to remove trees as specified in the contract documents and shown on the drawings. This item includes, but is not limited to, cutting, felling, removal, disposal, stump grinding or excavation, backfilling, surface restoration, all required environmental protection measures, and incidentals necessary to complete the work as specified. Each tree designated for removal will be measured and verified by the designated Owner's Representative prior to removal.
- e. 3.05 Temporarily Relocate Mailboxes per USPS Standards (and Replace) (Lump Sum): This item includes the temporary removal and replacement of mailboxes per USPS standards. The work includes careful removal, protection during construction, and reinstallation in its original or other approved location. Payment will be made at the contract lump sum price and includes labor, materials, and equipment necessary for the relocation and replacement of mailboxes as described in the Contact Documents.
- f. 3.06 Temporarily Relocate Existing Fencing (and Replace) (Lump Sum): This item includes the temporary removal, handling, disposal, and reinstallation of existing fencing as required for construction activities. The contractor shall ensure that the fencing is reinstalled as described in the Contract Document in the location approved by the Engineer. Payment will be made at the lump sum price and includes all costs for labor, materials, and equipment.
- g. 3.07 Diversion and Dewatering (Lump Sum): This item consists of designing, furnishing, installing, maintaining, and removing all necessary diversion and dewatering systems to facilitate construction. The work includes designing, installing, operating, inspecting and maintaining temporary cofferdams, pumps, piping, sediment control, monitoring, and removal of all equipment and materials related to fish protection, including but not limited to coordinating fish relocation with Owner, flow diversion, water control, flow isolation and/or localized dewatering throughout the construction period and compliance with environmental regulations. Payment is at the lump sum price and includes labor, materials, equipment, and compliance measures.

4. Bid Item No. 4 – Demolition (Lump Sum)

- a. 4.01 Remove Existing Fish Ladder and Concrete, Salvage Existing Riprap (Lump Sum): This item includes removal and disposal of the existing fish ladder and associated concrete structures while salvaging existing riprap for reuse. Payment covers all labor, materials, equipment, required to achieve the lines and grades shown on the Contract Drawings. Payment will be on a lump sum basis.
 - b. 4.02 Hauling and Disposal of Construction Debris (Lump Sum): This item includes disposal of all materials related to the demolition and removal of the existing fish ladder and associated concrete structures. Payment covers all labor, materials, equipment, hauling, and proper disposal associated with demolition items. Payment will be on a lump sum basis.
5. Bid Item No. 5 – Survey and Stakeout (Lump Sum)
- a. 5.01 Establish Survey Control, Layout and Project Control Staking: This item includes all work necessary to establish and maintain survey control points and perform construction staking. Payment will be on a lump sum basis and includes all labor, materials, and equipment necessary to achieve survey control to the tolerances specified in the Contract Documents.
6. Bid Item No. 6 – Roadway and Structures
- a. 6.01 Develop Water Supply (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 17. Includes sourcing and supplying water for construction activities. Payment is at the lump sum price.
 - b. 6.02 Traffic Control System (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 12. Includes furnishing, installing, maintaining, and removing traffic control systems per project specifications. Payment is at the lump sum price.
 - c. 6.03 Portable Changeable Message Sign (EA): Includes furnishing, placing, maintaining, and removing portable changeable message signs as required. Measurement and payment shall conform to Caltrans Standard Specifications Section 12. Includes furnishing, placing, maintaining, and removing portable changeable message signs as required. Payment for this Item will be made at the unit bid price per each.
 - d. 6.04 Temporary Concrete Washout (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 13. Includes installation, maintenance, and removal of a temporary concrete washout facility in compliance with environmental regulations. Payment is at the lump sum price.
 - e. 6.05 Roadway Excavation (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes excavation required for roadway construction. Payment is per cubic yard.
 - f. 6.06 Class 2 Aggregate Base (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 26. Includes furnishing, placing, and compacting aggregate base material for roadway construction. Payment is per cubic yard.
 - g. 6.07 Hot Mix Asphalt (Type A) (TN): Measurement and payment shall conform to Caltrans Standard Specifications Section 39. Includes supplying, placing, and compacting hot mix asphalt per project specifications. Payment is per ton.
 - h. 6.08 Place Hot Mix Asphalt Dike (Type A) (LF): Measurement and payment shall conform to Caltrans Standard Specifications Section 39. Includes installation of asphalt dikes. Payment is per linear foot.

- i. 6.09 Remove Base and Surfacing (YD2): Measurement and payment shall conform to Caltrans Standard Specifications Section 39. Includes removal of existing base and surfacing. Payment is per square yard.
- j. 6.10 12' Wire Mesh Gate (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 83. Includes furnishing and installing wire mesh gates. Payment is per each unit.
- k. 6.11 Delineator (Class 1) (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 82. Includes furnishing and installing delineators. Payment is per each unit.
- l. 6.12 Relocate Roadside Sign-Two Post (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 56. Includes relocating existing roadside signs with two posts. Payment is per each unit.
- m. 6.13 Vegetation Control (Minor Concrete) (YD2): Measurement and payment shall conform to Caltrans Standard Specifications Section 73. Includes placement of minor concrete for vegetation control. Payment is per square yard.
- n. 6.14 Single Thrie Beam Barrier (LF): Measurement and payment shall conform to Caltrans Standard Specifications Section 83. Includes furnishing and installing thrie beam barriers. Payment is per linear foot.
- o. 6.15 Return Cap (Type TA) (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 83. Includes furnishing and installing return caps for barriers. Payment is per each unit.
- p. 6.16 End Cap (Type TC) (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 83. Includes furnishing and installing end caps for barriers. Payment is per each unit.
- q. 6.17 Structure Excavation (Bridge) (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes excavation for bridge structures. Payment is per cubic yard.
- r. 6.18 Structure Backfill (Bridge) (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes furnishing, placing, and compacting backfill for bridge structures. Payment is per cubic yard.
- s. 6.19 30" Cast-In-Drilled Hole Concrete Piling (LF): Measurement and payment shall conform to Caltrans Standard Specifications Section 49. Includes furnishing, installing, and reinforcing concrete piling. Payment is per linear foot.
- t. 6.20 Structural Concrete (Bridge) (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 51. Includes furnishing, placing, and curing structural concrete for bridge elements. Payment is per cubic yard.
- u. 6.21 Erect Structural Steel (Bridge) (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 55. Includes furnishing and erecting structural steel for bridge components. Payment is at the lump sum price.
- v. 6.22 Bar Reinforcing Steel (Bridge) (LB): Measurement and payment shall conform to Caltrans Standard Specifications Section 52. Includes furnishing, placing, and securing reinforcing steel for bridge structures. Payment is per pound.
- w. 6.23 Bridge Removal (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 15. Includes complete removal and disposal of existing bridge structures. Payment is at the lump sum price.

- x. 6.24 Minor Concrete (Curb) (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 73. Includes furnishing, placing, and finishing minor concrete curbs. Payment is per cubic yard.

7. Bid Item No. 7 – Earthwork

- a. 7.01 Excavation (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes all excavation necessary to achieve required grades, including cut slopes and subgrade preparation. Payment is per cubic yard.
- b. 7.02 Hauling (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes loading, transporting, and off-haul of excess or unsuitable materials to an approved disposal site. Payment is per cubic yard.
- c. 7.03 Fill (CY): Measurement and payment shall conform to Caltrans Standard Specifications Section 19. Includes placement, grading, and compaction of fill materials to design elevations. Payment is per cubic yard.
- d. 7.04 QA/QC (LS): Measurement and payment shall conform to Caltrans Standard Specifications Section 6. Includes all activities necessary to perform quality assurance and quality control, including testing and reporting. Payment is at the lump sum price.
- e. 7.05 Install Log Structures (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes furnishing and installing log structures in accordance with project plans. Payment is per each installed structure.
- f. 7.06 Purchase and Install ESM1 (TN): Measurement and payment shall conform to Caltrans Standard Specifications Section 72. Includes procurement, transport, and installation of Engineered Stream Material Type 1. Payment is per ton.
- g. 7.07 Purchase and Install ESM2 (TN): Measurement and payment shall conform to Caltrans Standard Specifications Section 72. Includes procurement, transport, and installation of Engineered Stream Material Type 2. Payment is per ton.
- h. 7.08 Purchase and Install Bankline Rock (TN): Measurement and payment shall conform to Caltrans Standard Specifications Section 72. Includes procurement, transport, and placement of bankline rock for bank stabilization. Payment is per ton.
- i. 7.09 Purchase and Install Boulders in Channel (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 72. Includes furnishing and installing boulders within the stream channel for habitat enhancement. Payment is per each installed boulder

8. Bid Item No. 8 – Revegetation and Erosion Control

- a. 8.01 Harvest and Install Live Willow Stakes (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes harvesting, preparing, and installing live willow stakes in designated areas for streambank stabilization and revegetation. Payment is per each installed stake.
- b. 8.02 Purchase and Install 1-Gallon Shrubs (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes procuring, transporting, and planting 1-gallon shrubs in designated locations. Payment is per each installed shrub.
- c. 8.03 Purchase and Install 5-Gallon Trees (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes procurement, transportation, and installation of 5-gallon trees as specified in the project plans. Payment is per each installed tree.

- d. 8.04 Foliage Protection Cages (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes procurement, fabrication, and installation of foliage protection cages to prevent damage to newly planted vegetation. Payment is per each installed cage.

- e. 8.05 Purchase and Install Broadcast Seed (Riparian and Upland Seed Mix) (SF): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes procurement, preparation, and broadcasting of riparian and upland seed mix over designated areas for erosion control and revegetation. Payment is per square foot.

- f. 8.06 One Year Planting, Seeding Maintenance and Invasive Removal (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes watering, weeding, and invasive species removal for a period of one year to ensure successful plant establishment. Payment is at the lump sum price.

- g. 8.07 Straw Wattles (Purchase, Deliver, and Install) (LF): Measurement and payment shall conform to Caltrans Standard Specifications Section 21. Includes procurement, delivery, and installation of straw wattles in designated areas to reduce erosion and control sediment transport. Payment is per linear foot.

- h. 8.08 Erosion Control - Stabilized Construction Entrance (EA): Measurement and payment shall conform to Caltrans Standard Specifications Section 13. Includes furnishing, installing, and maintaining stabilized construction entrances to prevent sediment tracking onto public roads. Payment is per each entrance.

9. Bid Item No. 9 – Irrigation

- a. 9.01 Install Irrigation System (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes furnishing, installing, and testing a complete irrigation system, including but not limited to supply lines, valves, fittings, emitters, controllers, and necessary appurtenances to ensure proper function and coverage for the designated planting areas. Payment is at the lump sum price and includes labor, materials, equipment, and testing to verify system functionality.

- b. 9.02 One Year Irrigation (Lump Sum): Measurement and payment shall conform to Caltrans Standard Specifications Section 20. Includes maintenance and operation of the installed irrigation system for a period of one year to ensure plant establishment. Work includes adjusting irrigation schedules, monitoring water distribution, repairing leaks, flushing lines, and ensuring proper operation of all system components. Payment is at the lump sum price and covers labor, materials, water usage, and required maintenance to keep the system operational and effective for plant growth.

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DIVISION II GENERAL CONSTRUCTION

10 GENERAL

Add to 10-1.03 TIME CONSTRAINTS

10-1.03A The Requirement

The Contractor shall perform and sequence the Work to be in compliance with the work windows specified in the project permits and agreements and in coordination with other agencies.

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13 WATER POLLUTION CONTROL

Add section 13-4.03G(1) Definitions

Groundwater: Groundwater denotes all water below the existing ground surface.

Perched Water: Perched water denotes unconfined groundwater within the work area that is separated from the underlying main body of groundwater by unsaturated material.

Surface Water: Surface water is all water that enters the work area at or above the ground surface, from either natural or artificial sources, including precipitation and incomplete creek bypass.

Geotechnical Engineer: The geotechnical engineer for the Project representing Owner.

Add section 13-4.03G(2) Submittals

No less than 15 days in advance of the relevant work commencing or materials being ordered: Submit Dewatering Plan for excavations including drawings and complete design data for the proposed dewatering system, showing the equipment and methods that Contractor proposes to use to dewater the excavations, and to control and remove surface water and perched water. The data provided shall include, but not be limited to, the following:

1. Design calculations.
2. Size, depth and location of sumps, and drains.
3. The capacities and locations of pumping units.
4. Size and location of collection headers, discharge lines, water treatment equipment, sampling locations and holding ponds.
5. The proposed methods of installation of the dewatering equipment, including filters packs.
6. The proposed methods of controlling and removing surface water and perched water from within excavations.
7. If employed, discharge treatment and handling systems and facilities for disposal of dewatering water not stored or used on site.
8. Sampling plans to confirm the effectiveness of treatment to meet discharge requirements.
9. Contingency plans, including backup equipment and emergency contact information.

Submit weekly log of dewatering operations.

Add section 13-4.03G(3) Quality Assurance

Preconstruction Meeting: Hold a meeting with Engineer prior to beginning construction of the work specified under this Section. Review and discuss the following items:

1. Scope of work to be performed.
2. Construction methods and constraints overview.
3. Equipment operating parameters.
4. Safety procedures.
5. Reporting requirements.
6. Other issues may be raised by either party.

Testing: Results of discharge water testing shall be in accordance with the Regional Water Quality Control Board permit.

Add section 13-4.03G(4) Equipment for Dewatering

Contractor shall furnish all materials, tools, equipment, facilities, and services as required for providing the necessary dewatering work and facilities. Provide back-up equipment and or backup power as necessary for replacement and for unanticipated emergencies.

Provide equipment with sufficient capacity to accommodate dewatering operations and provide a productive work area.

Pumps shall be regularly maintained and kept in good operating condition with no leaks from operating fluids. Contractor shall comply with applicable local, state, and federal regulations regarding contamination of water during dewatering operations.

A settlement and oil separation tank system manufactured by Baker Corp., or approved equal, or water filtration equipment may be required to comply with applicable local, state, and federal regulations regarding discharge of infiltration water into the creek.

Add to section 13-3.01C(2)(b)(i)

Minimum Discharge Water Quality Requirements: Except as may be amended or modified by applicable permits, the following minimum water quality requirements shall be complied with at all times:

1. pH: between 6.5 and 8.5
2. Turbidity: Increase above background levels no greater than 10 percent if background level is greater than 50 NTU and no greater than 5 NTU if background level is less than 50 NTU.
3. Temperature: Increase no more than 5 degrees Fahrenheit above natural receiving water temperature.
4. Free of coloration that causes nuisance or adversely affects beneficial uses.
5. Free of floating materials, including solids, liquids, foams, and scum in concentrations that cause nuisance or adversely affect beneficial uses.
6. Free of oils, greases, waxes, and other materials in concentrations that cause visible films or coatings on the surface of the water or on objects in the water or that adversely affect beneficial uses.
7. Free of toxic substances in concentrations that are harmful to aquatic organisms.

Add section 13-4.03G(5) Execution

General Dewatering Operations

- A. Perform dewatering in accordance with approved shop drawings. Advise Engineer of any changes made to accommodate field conditions and, on completion of the dewatering system installation, revise and resubmit shop drawings as necessary to indicate the installed configuration.
- B. Contractor shall keep an accurate and legible up-to-date log of its operations at all times, and deliver complete, legible copies of these records to Engineer weekly or at such other times as may be required. Engineer shall have the right to examine such records at any time prior to their delivery.
- C. Except for equipment maintenance shutdowns, no interruption in the approved control and disposal of water, or dewatering procedures, will be permitted during excavation and construction operations. The Contractor shall provide continuous surveillance and maintenance of the equipment to avoid breakdowns. Personnel experienced in the operation and maintenance of pumping and other equipment shall be on site to ensure proper operation of the facilities.

- D. All motors shall be electric. Except for standby power, diesel or gas generators will not be permitted.
- E. Provide standby power, installed and ready to operate. The standby power shall be operated a minimum of one hour per week. Immediately repair or replace any equipment failing to perform properly. For groundwater dewatering, the standby power system shall be capable of maintaining the specified groundwater levels. The fueling of standby power generator shall comply with project environmental permits.

Groundwater Dewatering Operations

- A. Organize dewatering operations to lower the groundwater level in excavations as required for prosecution of the work, and to provide a stable, dry subgrade for the prosecution of construction operations. The subgrade shall be in a firm, well-drained condition, and of adequate and uniform load-bearing nature to support construction personnel, construction materials, construction equipment, and steel reinforcing mats without tracking, rutting, heaving, or settlement. All weak, soft, saturated, or otherwise unsuitable material shall be removed and replaced with approved backfill.
- B. Maintain water level at lower elevations so that no danger to structures can occur because of buildup of excessive hydrostatic pressure.
- C. Contractor shall furnish all plant, labor, equipment, and materials required, and install, operate, and remove the systems needed to control and remove surface and perched water in excavation areas. Contractor shall be responsible for controlling groundwater flow into excavations by constructing sumps or ditches; pumping, or other means so that excavations are accomplished in the dry. Conduct dewatering operations to preclude free standing water at the site and keep all temporary and final subgrade areas well-graded and drained.
- D. Install headers, discharge lines and electric lines in such manner that if a portion of the dewatering system becomes inoperative, that portion can be isolated and the remaining portion(s) of the operative dewatering system is capable of maintaining the water at the specified levels.
- E. Upon completion of the dewatering operations, remove the dewatering equipment and sumps in accordance with respective City and/or County Code Ordinance.
- F. Remove or seal all ditching, under drains and sumps upon completion of the dewatering, as approved by Resident Engineer.

Dewatering in Excavations

- A. During construction, Contractor shall be responsible for the design, construction, operation, maintenance, implementation, at all times including Saturday, Sunday, holidays and during any periods of labor strikes, to provide and maintain proper equipment, facilities, and power supply to remove promptly and dispose of properly all water entering excavations.
- B. Keep excavations dry so as to obtain satisfactory undisturbed sub-grade foundation condition until the structures, and/or pipes to be built have been completed to such extent that they will not be floated or otherwise damaged by allowing water to accumulate in excavations or levels to return to natural elevations.
- C. Local water flow is expected from rock joints and other fractures into excavations. Contractor shall control such flows into excavations by pumping from sumps, and/or other approved methods.
- D. Control groundwater flowing toward or into excavations to prevent sloughing of excavation slopes and walls, boils, uplift, and heave in excavations and to eliminate interference with orderly progress of construction.
- E. Provide and maintain ditches of adequate size to collect surface and seepage water which may enter the excavations. Divert the water into sumps and drain or pump into drainage channels or storm drains or sewers, subject to the approval of jurisdictional authorities.

- F. Locate dewatering facilities where they will not interfere with utilities and construction work to be performed by others.
- G. Provide settling basins or other approved facilities as required to reduce the number of fine particles which may be carried into the creek.
- H. Contractor shall carefully assess site conditions before and during trench excavation, so that intended improvements of ground stability are achieved.
- I. Prevent water accumulated in excavations from flowing down through bedding and road base materials, and resulting in softening of surfaces or sub-grade, and causing pavement failure, or misalignment and conduit failure in pipelines. Drain water to the nearest point where flow can be acceptably relieved using gravel encased perforated metal pipe and removed to a discharge pipe by pumping, when it causes such problems.
- J. Contractor shall not discharge any ground water on the street, nor any sediment, debris, or pollutants into the creek.
- K. Acquire all permits and pay all fees for disposal of dewatering drainage. Contractor shall submit water disposal plans for approval by Resident Engineer.
- L. Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to avoid settlement or damage to adjacent property. When dewatering the excavations, dewater from outside the structural limits and from a point below the bottom of the excavation when possible.
- M. Contractor shall remove all temporary lines and related connections upon completion of the work and shall restore all facilities to conditions prior to construction, to the satisfaction of Resident Engineer.
- N. Contractor shall continue dewatering operations until erosion control material placement is complete.

WATER DISCHARGE/CONTROL

- A. Contractor shall treat and discharge water produced during dewatering operations that is not used for construction activities in accordance with approved dewatering plan and in compliance with local RWQCB permit requirements for discharge to inland surface waters and groundwater bodies.
- B. Convey water discharged from dewatering operations to detention tanks provided by Contractor. The tank system shall be manufactured by Baker Corp., or approved equal, and may consist of settlement tanks, transfer pumps, sand filter and backwash tanks, if required to meet water quality standards. Contractor shall provide all piping, valving, pumping and appurtenances required conveying the discharge as specified herein. Contractor shall be responsible for cleaning all detention tanks and for the removal of all solids to disposal areas shown on the Drawings. In the event that the water disposal options being used (detention tanks, etc.) are all operating at capacity, and maximum use is being made of dewatering water for construction activities, dispose excess dewatering water by discharging it into an area within the reservoir isolated by silt curtain(s) after it has been treated to remove pollutants and sediment in accordance with the NPDES permit for groundwater discharge.

DAMAGES

- A. The Contractor is responsible for any failure of the dewatering system or components of the system and any damage arising from. If at any time the installation, operation, or removal of the dewatering system, or any part of the dewatering system, cause any damage to the adjacent area, creek water quality and/or construction site, Contractor shall immediately commence correction thereof and modify the dewatering procedure to prevent a reoccurrence.
- B. Restore existing structures to the conditions equivalent to those existing prior to the start of work, including repair of any settlement-related damage.

C. Additional excavation due to insufficient dewatering shall be done at no cost to the Owner.

Replace *Reserved* in section 13-12 with:

13-12.01 GENERAL

13-12.01A Description

This Section includes requirements for preventing creek water from entering the restoration and work areas. The Contractor shall be responsible for implementing the stream diversion works including water diversion structures, pipes, pumps, electric power, and discharge facilities, as needed over the duration of the project.

Additional dewatering of excavations within the work area.

The creek diversion systems shall be developed, furnished, and installed, maintained, and removed by the Contractor. Creek diversion system plans shall be submitted to the Resident Engineer for approval prior to implementation. Improper performance of the creek diversion system can cause releases of sediment to the creek that may be hazardous to aquatic life, and as such daily maintenance of the creek, diversion is critical and will require a minimum of twice-daily inspections of the system by the Contractor, 7 days a week.

The Contractor shall coordinate the timing of the creek diversion installation system with the Resident Engineer, who will perform fish removals just prior.

In case rain is forecasted as described in the Rain Emergency Action Plan and the SWPPP, the Contractor shall alter the creek diversion system as described in the approved Plan and restore it as needed to continue working after the rain has passed.

13-12.01B Submittals

In accordance with Sections 5 Control of Work and 6 Control of Materials.

Prior to implementation, submit a site-specific Creek Diversion Plan for the work based on the configuration shown in the approved Plans. The Creek Diversion Plan shall indicate:

1. A narrative of the methods and equipment to be used for water diversion.
2. A schedule of delivery, installation, operation, and maintenance.
3. Proposed equipment for:
 - Plastic sheeting;
 - Pump type, flow rate, number of pumps, and power source;
 - Diversion piping and inlet screen;
 - Sandbags or other methods for constructing a water diversion structure; and,
 - Map of proposed pipeline alignment and proposed method and locations for securing pipeline around the work area from the upper to lower water diversion structures. Additional temporary water pollution control measures are to be employed during diversion placement.
4. The Creek Diversion Plan shall be submitted to Owner at least 45 days prior to the start of the project so that it can be sent to CDFW for review and approval. CDFW requires receipt of the Plan within 30 days prior to the start of the project.

Submittal of a Rain Emergency Action Plan (REAP) as part of compliance with Section 13-3 Stormwater Pollution Prevention that includes the Contractor's proposed procedures for altering the water diversion structures to allow creek water to pass through the site and replacement of the creek bypass system following the rain event if it is still needed to complete work.

13-12.02 PRODUCTS

It shall be the Contractor's responsibility to provide backup equipment as needed to assure that the temporary creek diversion operates continuously for the duration of all work in the project as shown on the Approved Plans.

Water diversion structures shall be constructed of approved materials.

13-12.02A Pump System

The pumps shall be designed to pump the highest anticipated creek flows during the project duration as specified on the project plans. The Contractor need not operate the creek bypass system if no water is present, and no water or rain is predicted.

The Contractor is responsible for power as needed for pump operation and providing the means for continuous operation of the pumps.

13-12.02B Temporary Sandbags

Sandbag fabric shall be woven polypropylene, polyethylene, or Polyimide with a minimum unit weight of 0.25 lb./SQ YD. The fabric shall have a Mullen burst strength of at least 300 psi, per ASTM Designation: D3786, and an ultraviolet (UV) ability exceeding 70 percent.

Sandbags shall have a length of 24 to 32 inches, a width of 16 to 18 inches, a thickness of 6 to 8 inches, and a weight of 90 to 120 lbs. Bags containing multiple sandbags may be used if they are placed effectively and properly sealed.

Sandbag fill material shall be non-cohesive sand, free from organics, deleterious material, silt, clay, or fines.

13-12.02C Impermeable Plastic Sheeting

The material shall be suitable for use as a protective liner and shall be commercial quality polyethylene/Visqueen, and approved by the Resident Engineer. All plastic sheeting shall be free of cracks, cleavages, or other defects adversely affecting the protective characteristic of the material.

13-12.02D Fish/Debris Screens

A fish and debris screen shall be provided by the Contractor to prevent fish from entering the pipe and debris that could cause clogging for the duration of all construction activities.

Fish screen installation shall be monitored and approved by the Biological Monitor.

The screen shall be inspected for performance and to remove any potentially clogging debris, twice daily, 7 days per week, in accordance with Project permits.

13-12.02E Discharge Piping

Discharge piping and couplings shall be sized to accommodate the highest anticipated creek flows during the duration of the project. The material shall be selected for flexibility and durability to allow for the occasional relocation of the diversion piping during construction activities.

13-12.03 EXECUTION

The Contractor shall visit the worksite and become aware of any and all existing conditions that may affect the execution of the work under this contract.

13-12.03A Installation of Diversion System

The temporary creek diversion shall be installed as the first order of work to maintain a dry work area. The temporary creek diversion system will only be installed after block nets have been installed and fish have been relocated by the Owner's consulting biologist.

The temporary creek diversion shall require the construction of one water diversion structure as shown on the approved Plans. Water diversion structures shall be constructed of sandbags or equivalent non-

sediment producing materials and shall have a minimum height as shown on the approved Plans. Alternative water diversion structure construction materials and methods (e.g., driven piles or bladder dams) may be used only with prior approval by the Resident Engineer.

If after the installation of the initial upstream water diversion structure on top of the creek bed, the creek water is continuing to seep into the work area via subgrade flow as determined by the Resident Engineer, then the Contractor shall install a second water diversion structure downstream from the first, by excavating into the creek bed and installing the water diversion structure below grade or another alternative proposed by the Contractor and approved by the Resident Engineer.

The temporary creek diversion shall require the construction of a temporary diversion pipe. Location, anchoring, and alignment of the temporary pipe shall be designed by Contractor and in the Creek Diversion Plan and approved after installation by the Resident Engineer.

The diversion pipe shall be securely anchored and shall discharge onto a stabilized area as shown on the Project Plans.

13-12.03B Removal of Diversion System

Use of the temporary creek diversion system is restricted to the period between June 1st and October 31st. The Contractor shall notify the Engineer 30 calendar days in advance of any needed time extensions to allow Owner time to request permit modifications from the environmental agencies.

When the work has been completed, the temporary creek diversion system will only be removed once an inspection by the Engineer has occurred, and approval is provided in writing.

Following the inspection, the diversion system shall be removed with the Owner’s consulting biologist present.

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14 ENVIRONMENTAL STEWARDSHIP

Add to 14-1.01 GENERAL

The Contractor shall obtain copies of codes, permits and mitigation measures as required by the Contract Documents. Except where noted, the most recent version of the regulatory permits, and editions of Codes, Standards, and Regulations at the time of the Contract shall apply.

The Contractor shall review and comply with the conditions in the resource agency permits and their applicable supporting documents acquired by the Owner. The resource agency permits and applicable supporting documents are provided as an appendix to these specifications. Contractor shall keep a copy of each resource agency permit in its Jobsite field office. All Contractor and Subcontractors’ superintendents and forepersons shall be thoroughly familiar with and compliant with the requirements of the permits. The Owner has applied for the following environmental permits:

1. U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 Authorization for impacts to jurisdictional wetlands including Nationwide permits (NWP) 27 Aquatic Habitat Restoration, Enhancement and 13 Bank Stabilization.
2. California Department of Fish and Wildlife (CDFW) Section 1602 Lake/Streambed Alteration Agreement.
3. United States Fish and Wildlife Service (USFWS) Section 7 Informal Consultation for Northern Spotted Owl.
4. National Marine Fisheries Service (NMFS) Section 7(a)(2) Programmatic Formal Consultation for the NOAA Restoration Center (NOAA RC) Santa Rosa Office Programmatic Approach.
5. RWQCB Clean Water Act 401 Water Quality Certification and Porter-Cologne Waste Discharge Requirements (WDR).

The Contractor shall review and become familiar with the project's environmental review documentation prepared under the California Environmental Quality Act (CEQA) Statutory Exemption for Restoration Projects (SERP) submittal to CDFW.

Add to 14-1.03 PROJECT REQUIREMENTS ON PHYTOPHTHORA

To minimize the spread of plant pathogens and the contamination of the Project site, all work on the Project shall conform with the BMPs and guidelines developed by the Working Group for Phytophthoras in Native Habitats (2016). The information is available at: <http://www.suddenoakdeath.org/welcome-to-calphytos-org-phytophthoras-in-native-habitats/>

The Contractor shall implement measures to avoid using plant stock that may be infected with the plant pathogen *Phytophthora* sp. Measures to avoid contamination with *Phytophthora* sp. may include, but are not limited to, avoiding collection of propagules from 1) known or likely infected areas; 2) during wet conditions; 3) when soil is muddy; or 4) from within 0.5 meters of the soil surface. Measures may also include implementing heat or chemical treatments to collected seeds prior to installation. (CDFW)

Add to 14-1.04 SUBMITTALS

Prepare, submit, and implement the following plans:

1. Site-Specific Health and Safety Plan – Prepare and submit plan no less than 15 days before commencement of construction activities.
2. Storm Water Pollution Prevention Plan (SWPPP) – Prepare and submit SWPPP no less than 10 days after notice to proceed and before any earthwork for review and approval by Owner and the RWQCB. The plan shall identify erosion and sediment control measures (BMPs) to protect the water quality of creeks and wetlands.
3. Accidental Spill Prevention and Cleanup Plan
4. Dewatering and Streamflow Diversion Plan – Prepare and submit at least 15 days before commencement of construction activities following this specification. No more than 500 feet of contiguous stream can be dewatered without prior authorization.
5. If conditions warrant, a Fish Capture and Relocation Plan to safely move any native fish present out of the work area to facilitate construction will be prepared and submitted for review no less than 30 days prior to commencement of instream activities.
6. Traffic Control and Safety Assurance Plan – Submit plan for review and approval before construction. Submit the final plan no less than 15 days before construction.
7. Dust Control Plan – Prepare and submit at least 15 days before commencement of construction activities following this specification.

Prepare and submit the following report, inventory, log, photographic, and video submittals to Owner:

1. Construction Equipment Efficiency Plan - Using a qualified professional (i.e., construction planner/energy efficiency expert), the Contractor shall prepare a Construction Equipment Efficiency Plan that identifies the specific measures that the construction Contractor and its Subcontractors will implement as part of project construction and decommissioning to increase the efficient use of construction equipment to the maximum extent feasible.
2. Construction Equipment and Hauling Truck Tune-Up and Inspection Log – For all Equipment develop a schedule of low-emissions tune-ups and condition inspections of engine components, braking systems, chassis components, steering systems, exhaust components, suspension components, and battery health. Maintain a log of the performed tune-ups. Submit a copy of the log to the Owner every month.
3. Maintain a log of noise complaints and notifications and submit to Owner monthly.

4. Maintain written records of all BMPs installed, inspections, maintenance activities, corrective actions, and visual observations of offsite discharge of sediment or other pollutants. Submit to Owner monthly.
5. Maintain written records of all spills and cleanup activities. Submit to Owner monthly.
6. Document testing of dewatering water discharges and, if any, stormwater compliance testing results and submit to Owner weekly.

Add to 14-1.05 QUALITY ASSURANCE

The Owner will inspect and monitor the Contractor 's adherence to the requirements specified herein and will report on the Contractor 's compliance under CEQA and regulatory agency permits.

1. Said inspection, monitoring, and reporting activities may include but are not limited to, qualitative, quantitative, and photographic observations and data collection on the impacts of noise, vibration, air quality, traffic, street pavement damage, water quality, cultural resources, biological resources, and hazardous materials.
2. Contractor shall cooperate with such inspection and monitoring activities, provide access to the worksite to establish and secure monitoring stations, and make its facilities and records available to the Owner for performing such monitoring.

The Owner will issue a Non-Compliance Notice to the Contractor for any detected non-compliance with the provisions herein and any other environmentally objectionable acts. The Contractor shall take immediate corrective action.

Add section 14-1.06 ACCOUNTABILITY AND REMEDIAL ACTION

The Contractor shall be held responsible for any damage to natural vegetation, wildlife, cultural resources, waters of the United States and water quality, and any other environmental resources resulting from Contractor operations, located either:

1. Outside the Work areas permitted in the Contract Documents, or
2. Inside the Work areas but marked by Owner on the Contract Drawings or in the field to indicate that avoidance of that sensitive resource is required.

All activities performed in or near a river, stream, or lake shall have absorbent materials designated for spill containment and cleanup activities on-site for use in an accidental spill. The Contractor shall immediately notify Owner of a spill and immediately initiate cleanup activities.

Requirements contained in this Section are based on anticipated conditions attached to the environmental permits and agreements obtained by the Owner. The Contractor shall review and comply with conditions per the resource agency permits acquired by the Owner. Violation of these conditions can result in monetary fines or compensation for damage, requirements for restoration.

Add section 14-1.07 ENVIRONMENTAL AND SAFETY TRAINING PROGRAMS

Contractor and all Subcontractor personnel shall allow time for attending environmental training conducted by the Designated Biologist or Resident Engineer prior to accessing or performing work in the project construction work limits.

The training will last no more than 2 hours. The training will be conducted at the project site office or as otherwise designated, and all staff expected to work on the site throughout the duration of construction are required to attend.

New Crew Training – All new field personnel shall attend training that will last no more than 2 hours. The training will take place at the project site office, on an ongoing as-needed basis during construction. The Designated Biologist or Resident Engineer will establish a schedule and may provide additional training

with at least 5 days' notice from the Contractor that training will be needed. The Contractor may be responsible for costs incurred for new crew training.

Prior to accessing or performing work in the work limits, all Contractor personnel, and their Subcontractors shall:

- a. Sign an agreement acknowledging their intent to conform to the environmental measures addressed in the training program (provided by the Resident Engineer after completion of the training).
- b. Display an environmental training hard hat decal at all times when working within the project construction work limits (provided by the Designated Biologist or Resident Engineer after completion of the training).
- c. For any Contractor or Subcontractor personnel involved in soil-disturbing activities, an archaeological resource "ALERT" sheet will be distributed at the training by an Resident Engineer (cultural resource monitor) and Contractor and Subcontractor personnel shall review said sheet.

Designated Biologist or Resident Engineer may require Contractor personnel to attend additional environmental training in response to Contractor non-compliance.

Contractor shall conduct a safety training program for Subcontractors, Owner, and Resident Engineers (including Resident Engineer and other monitors) before work begins and after approval of the Contractor's Health and Safety Plan (HSP) submittal. The Safety Training shall last up to 2 hours, have a paper handout summary for each attendee, and shall cover the contents of the HSP.

Add to regulated species #3 of section 14-6.02 DEFINITIONS

California Fish and Game Code: 3503, 3503.5, 3513 and 3800

Add definition after take permit of section 14-6.02 DEFINITIONS

Temporary visual barriers and sound attenuating curtains: Device temporarily installed within the Project Area to decrease visual or auditory disturbance to habitats adjacent to the Project Area.

Rename section 14-6.03 "Bird Protection" to "Native Nesting Birds and Northern Spotted Owl"

Add after first paragraph in Section 14-6.03B Bird Protection

Initiation of construction activities during the avian nesting season (February 1–August 31) shall be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, then a qualified biologist shall conduct pre-construction nesting bird surveys within 14 days prior to initial ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys shall be used to detect the nests of special-status as well as non-special-status birds. Surveys shall encompass the entire work area and the surrounding 500 feet. If an active nest is located, an exclusion zone where no construction would be allowed shall be established around any active nests of any protected avian species. A qualified biologist shall determine an appropriate exclusion zone based on the species, location, and placement of the nest. CDFW and USFWS will be notified regarding the appropriate actions for complying with the Migratory Bird Treaty Act of 1918 and Fish and Game Code of California, section 3503. The exclusion zone shall remain until a qualified biologist has determined that all young have fledged and are independent of the nest. If a lapse in project-related work of 15 days or longer occurs, another focused survey and if required, consultation with CDFW and FWS, will be required before project work can be reinitiated.

Add after first paragraph in Section 14-6.03C Fish Protection

All in-channel work will occur between June 1 and October 31. Work outside of this period will only occur if authorized by NMFS and CDFW. If precipitation sufficient to produce runoff is forecast to occur while construction is underway, work will cease and erosion control measures will be put in place sufficient to

prevent significant sediment runoff from occurring. Exceptions regarding the construction season will be considered on a case-by-case basis only if justified and if measurable precipitation sufficient to produce runoff is not forecast to occur during any of the above activities, and if approved by the RC, Corps, and NMFS. Revegetation activities including limited soil preparation outside the active channel may occur beyond October 31 if necessary to better ensure successful plant establishment during the onset of winter precipitation.

The proposed project shall consult with NMFS for potential impacts to steelhead, and to ensure design is sufficient to meet fish passage standards and critical habitat is enhanced, not degraded.

Prior to construction, a Stormwater Pollution Prevention Plan (SWPPP) shall be developed for the Project by a qualified SWPPP developer. Measures included in the SWPPP will be implemented during all phases of construction, as appropriate.

Remove #7 “Recommended Protective measures if regulated species are observed” from Section 14-6.03D(1) General Paragraph 3 “All Reports Must Include:”

Remove Section 14-6.03D(2)

Add to Section 14-6.04 Wetland Protection

General construction BMPs will be implemented during the Project to minimize adverse effects to sensitive habitats as follows:

1. Any site grading or other ground disturbing activities shall be restricted to June 1–October 31. Site grading during the dry season will reduce the possibility of soil erosion and sediments flowing into natural habitats.
2. Removal of vegetation and disturbance of non-wetland waters and riparian habitat will be kept to the minimum necessary to complete the Project activities as follows:
 - a. Prior to all Project activities, a qualified biologist shall work with the contractor to designate the Project work area and any staging areas as well as delineate sensitive habitat areas to be avoided with flagging.
 - b. The number of access routes, number and size of staging areas, and total area of the activity shall be limited to the minimum necessary to complete the Project.
 - c. Prior to construction, locations and equipment access points that minimize riparian disturbance will be determined. Pre-existing access points will be used whenever possible. Unstable areas, which may increase the risk of stream bank instability, will be avoided.
3. Implementation of the following BMPs listed below will be implemented to manage potential erosion control issues during construction of the proposed Project:
 - a. Appropriate erosion control measures will be installed around any stockpiles of soil or other materials that could be mobilized by rainfall or runoff.
 - b. Erosion control structures will be monitored for effectiveness and will be repaired or replaced as needed.
 - c. Erosion control structures shall not include plastic monofilament or other components that may entrap wildlife.
 - d. All equipment will be cleaned before arriving on the site and prior to removal from the site to prevent the spread of invasive plants. Measures for disinfecting equipment and clothes, and other BMPs adapted from the guidelines developed by the Working Group for Phytophthoras in Native Habitats (2016 or current version) will be followed.

4. Prior to construction, an Accidental Spill Prevention and Cleanup Plan shall be prepared and implemented as follows:
 - a. No fueling, cleaning, or maintenance of vehicles or equipment will take place within any areas where an accidental discharge may cause hazardous materials to enter waterways.
 - b. Any equipment or vehicles used for the Project will be checked and maintained daily to prevent leaks of fluids that could be deleterious to aquatic habitats.
 - c. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents, will be located outside of the stream channel banks.
 - d. Stationary equipment such as motors, pumps, and generators located adjacent to aquatic features will be positioned over a secondary containment sufficient to arrest a catastrophic failure.
 - e. All activities performed near aquatic features will have absorbent materials designated for spill containment and cleanup activities on-site for use in the event of an accidental spill.
 - f. No construction debris of any type will be allowed to enter or be placed where it may be washed into any aquatic features.
 - g. No motorized equipment will be left within the channel overnight.
 - h. All activities performed near aquatic features will have absorbent materials designated for spill containment and cleanup activities on-site for use in the event of an accidental spill.
 - i. If a spill of such materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected area shall be restored to its natural condition.
5. At the end of the Project, all flagging, temporary erosion control materials, or other materials used during construction will be removed from the Project site and vicinity of the channel.

Permit applications will be submitted to the Corps, the RWQCB, and the CDFW for the Project. All permit conditions, legal requirements, and appropriate excavation and engineering practices associated with the proposed Project will be followed.

Add to Section 14-6.06 Invasive Species Control

14-6.06A General

This work consists of managing non-native invasive species (NNI) by chemical and/or physical removal within the Limits of Disturbance as specified in the Contract Documents and in compliance with project permits.

Contractor shall comply with the City of St. Helena Integrated Pest Management Policy (the City IPM Policy) dated October 26, 2021, which is available at the bottom of this web site:
https://www.cityofstheleena.org/sites/default/files/fileattachments/public_works/page/25585/city_of_st_helena_integrated_pest_management_policy_final.2022.pdf

14-6.06A(1) Submittals

Invasive Species Control Plan – Contractor shall submit a plan for executing this specification and meeting the performance criteria below. The plan shall detail the methods, timing, NNI species targeted and areas of treatment.

For each type of product, the Contractor shall submit to the Engineer a submittal including product certificates for all herbicides. A list of all herbicides along with spray adjuvants proposed for use on the site shall be provided to the Engineer and the BIOLOGICAL MONITOR prior to bringing the materials on

site. This list should include target weed species and the application period for each herbicide listed. A state-licensed Pest Control Advisor's recommendation and chemical manufacturer's product labels shall be submitted for review and approval along with the herbicide list.

Product Certificates: For each type of manufactured product, signed by the product manufacturer, and complying with the following:

1. Manufacturer's certified analysis for standard products.

Analysis of other materials by a recognized laboratory-made according to methods established by the Association of Official Analytical Chemists, where applicable, and stating the source, physical/chemical composition, and quantity available.

2. Applicator Certificates: Submit the applicable certificates, licenses or registrations, as required for compliance with the City of St. Helena and County of Napa IPM Policy.

14-6.06A(2) Definitions

1. BIOLOGICAL MONITOR is defined as the approved biological monitor for the Project representing Owner.
2. Invasive Species Control is defined as all work required to control and maintain vegetation onsite and areas specified by Contract Documents. Vegetation control and maintenance may be by mowing, trimming, tree-doctoring, non-chemical spray control, or chemical spray control.
3. Vegetation is defined as all plant life growing within the site including, but not limited to, grass, weeds, scrub, shrubs, trees, overhanging branches, and invasive species.
4. Monitoring and Control Period – The one-year warranty period following construction.

14-6.06A(30) Invasive Species

Invasive species found at the site which must be controlled are:

1. Ranked "HIGH" or classified as "RED ALERT" by Cal-IPC.
2. Ranked "HIGH PRIORITY" by the Bay Area Early Detection Network.
3. Examples of NNI species found onsite are Himalayan Blackberry, Tree-of-Heaven and English Ivy.

Revegetation areas are to be maintained throughout the monitoring period, and non-native invasive species shall be removed from the site using mechanical means to the extent feasible.

14-6.06B Products

14-6.06B(1) Physical Removal

Equipment shall include, but is not limited to, hand tools; lever-based tools, machetes, power pruners/trimmers, chainsaws, metal blade brush cutters, brush axes/hooks, shovels, spading forks, loppers, hedge shears, and associated safety equipment as approved by the Owner. Limited use of woodchippers and mowers may be applicable. Heavy equipment may be utilized within the constraints of Section 14 Environmental Stewardship, the Project Plans; and all applicable Federal, State, and local permits.

14-6.06B(2) Chemical Removal

Chemicals must comply with the City of St Helena and County of Napa's policies.

All herbicides may be utilized for application as approved by the Owner and the California Department of Fish and Wildlife (CDFW) and appropriate for the species and area of control (near water with aquatic species). Application materials, surfactants, and other materials depending on application means of execution shall be left to the Contractor to propose for approval by Owner.

14-6.06C Execution
14-6.06C(1) Responsibilities

Complete and maintain all invasive species control in accordance with the requirements of this Specification and the Contract Documents for the duration of the Contract, inclusive of the Monitoring Period. Every effort shall be taken by the Contractor to avoid impacts to any other native, non-invasive species.

Report on invasive species control work in accordance with the Contract Documents.

Herbicide application shall be performed in such a way as to prevent herbicides from entering waterways since applications near or over waters of the U.S. that results in Discharges of pollutants will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit for Residual Aquatic Pesticide Discharges to Waters of the United States from algae and Aquatic Weed Control Applications (Water Quality Order 2013-0002-DWQ). Contractor shall be responsible to secure all required permits.

Waste or surplus chemicals shall be disposed of offsite in a safe manner.

14-6.06C(2) Contractor Documentation

The Contractor shall complete documentation detailing all work undertaken including application rates and chemicals used, wind direction and rainfall, and any other relevant information. The documentation sheets are to be submitted to the Owner with each payment claim.

14-6.06C(3) Construction

Invasive species plant material shall require removal and disposal from the designated treatment areas and additional areas as determined by the Owner, unless otherwise authorized by the Owner.

Control may require physical removal or herbicide treatment, or both, depending on conditions. The Contractor shall perform the work according to the Contract Documents, regardless of schedule or workload. The Contractor is advised that delays to other components of the restoration project shall not be granted or allowed due to invasive species control management. The Contractor shall provide sufficient workforce to execute all aspects of invasive species control work, concurrently with the restoration, whenever necessary.

The areas planned for treatment shall be clearly flagged by the Contractor's personnel in the field and reviewed by the Owner prior to commencement of treatment activities. The Contractor shall be prepared to discuss invasive species control and native plant preservation methodologies during this field review.

Field verification of removal shall be conducted between the Contractor and Owner after completion of the work to determine success. No payment will be made until this verification is complete. The removal shall be completed to the satisfaction of the Owner.

14-6.06C(4) Physical Removal

Depending on the species-specific protocol (type, size, density) and existing onsite conditions, mechanical/manual removal of invasive species may or may not require an herbicidal application component. Areas of invasive species may only require physical removal treatments; however, subsequent herbicide application may be necessary to control and ultimately avoid re-emergence.

14-6.06C(5) Herbicide Application General

Depending on the species-specific protocol (type, size, density), specific area of the site, and the spatial extent of the particular NNI vegetation, three different treatments shall be utilized:

1. Cut-Stem Treatment; two methods, including a) Cut stump/stem b) Hack and Squirt
2. Basal Bark Treatment
3. Foliar Treatment

All herbicides shall be U.S. Environmental Protection Agency registered chemicals that are approved for use in forested areas and/or adjacent to waterways to control and prevent re-growth of NNI vegetation. The Contractor shall use manufacturer-recommended wetting agent, basal oil (when appropriate), and

marking dye, or equivalents, as approved by the Owner. Manufacturer's Specification sheets (labels) for herbicide, wetting agent, basal oil, and dyes shall be submitted to the Owner.

Marking dye shall be from a commercial source, shall be herbicide compatible, and shall be water-soluble. Marking dye shall be mixed with all herbicides prior to application at rates necessary to be readily visible in the field for at least 3 days after application.

The Contractor shall be responsible for replacing and/or pruning any native plant material killed or damaged through any act of negligence by the Contractor as determined by the Owner in applying and handling the herbicide. Due to the nature of the treatment area and the density of invasive species, some damage to desired vegetation may occur.

All herbicide applications shall be selective low volume treatments with a backpack sprayer, squirt bottle, injection gun, paintbrush, or other methods, as approved by the Owner. Broadcast high-volume applications and equipment-mounted spray operations shall not be permitted due to the potential for off-target drift.

Extreme caution shall be used when spraying adjacent to off-target, non-invasive vegetation or directly adjacent to any waterways/wetlands. The Contractor shall be responsible for any act of negligence in applying and overseeing the herbicide on the project. Herbicide application shall only be conducted during appropriate weather conditions as indicated on the product label (e.g., spraying during high winds, rain, high humidity, and/or high temperatures may result in uptake by off-target vegetation due to the volatility of certain herbicides).

Field verification of herbicide application success shall be conducted between the Contractor and Owner after completion of the work and within 2 weeks of application. No payment will be made until signs of invasive species die-back are observed. If the initial application is unsuccessful, for any reason, the Contractor shall reapply herbicide treatment at no additional cost to the Owner.

The Contractor shall be responsible for obtaining all necessary permits (i.e., Request for Permission to Use Herbicides for Aquatic Vegetation Management Purposes) prior to initiating herbicide application.

14-6.06C(6) Evaluation

The limits of invasive species control will be evaluated by the Owner prior to manual removal or herbicide application. The evaluation shall be limited to the work areas as described in the Contract Drawings. A maximum of 10 percent of invasive species shall be permitted per contiguous acre of the site upon the completion of construction, and again at the end of the 1-year Warranty Period, in accordance with the Project Permits and as evaluated by the Resident Engineer.

The presence of NNI in the work areas will be evaluated by the Resident Engineer one month prior to the end of the 1-year Warranty Period and the Contractor will be required to remove additional NNI if necessary, prior to the end of the Warranty Period to the criteria mentioned above.

Add Section 14-6.06 Roosting Bats

At least 30 days prior to the removal of any large trees (DBH>16 inches), a bat roost assessment shall be conducted by a qualified biologist to determine if potential roost habitat is present. If trees or vegetation within the Project boundary and surrounding 100 feet have no potential to support roosting bats (e.g., no large basal cavities, exfoliating bark, interstitial spaces, or suitable foliage), Project work may be initiated with no further measures required to protect roosting bats.

If potential bat roost habitat is present, and work is occurring between September 1 and April 31 (outside of the maternity season), the qualified biologist shall conduct an emergence survey no more than 7 days prior to tree removal or ground disturbance to determine if the roost is occupied. If the emergence survey confirms the roost is inactive, ground disturbance may be initiated, and trees may be felled with no further measures required to protect roosting bats.

If a tree roost is confirmed active or is assumed to be active outside of the maternity season and cannot be avoided by Project activities, a two-phased cut shall be employed to remove the tree. The qualified

biologist shall oversee removal of branches and small limbs not containing potential bat roost habitat using hand tools such as chainsaws or handsaws. The following day, the rest of the tree may be removed.

If potential bat roosting habitat is present and work is occurring during the maternity season (May 1–August 31), the qualified biologist may either conduct an emergence survey to determine if the roost is occupied; or assume the roost is occupied and a buffer shall be implemented. If the emergence survey does not detect bats, the tree may be removed, or ground disturbance may be initiated with no further measures required to protect roosting bats. If roosting bats are detected, or the tree or other suitable habitat is assumed to be an active maternity roost, the roost shall be given a 100-foot buffer within which construction activities shall be avoided until the roost is determined no longer active or the maternity season is complete.

Add Section 14-6.07 Northern Spotted Owl

Project activities shall not occur within the Project Area during the Northern spotted owl (NSO) nesting season (February 1–August 31) to the extent feasible. If Project activities cannot be avoided during the nesting season, three surveys shall be conducted following the USFWS Protocol survey procedures, shall occur prior to and in the same year as these activities, and shall determine that NSO nesting will not be impacted prior to initiation of construction activities. If no NSO are detected within 500 feet of the proposed activities, activities may proceed that year without seasonal restrictions.

If surveys determine that NSO individuals or a NSO nest site is present in the vicinity of the Action Area, the following measure will be implemented:

Activities that result in loud or continuous noise above ambient levels will not be conducted within 500 feet of an active nest site (or presumed site) between February 1 and July 9. This includes activities that generate sound levels 20 or more decibels above ambient sound levels, or activities that generate maximum sound levels above 90 decibels, excluding vehicle back-up alarms. Maximum sound levels are the combined ambient and activity-generated sound levels.

Removal or damage of known nest trees and associated screen trees will be avoided unless they must be removed to implement the proposed project or are a confirmed safety hazard.

Removal or damage of trees or snags with potential nesting platforms and associated screen trees will be avoided to the extent possible. These include trees with large, flattened tops; large, broken-topped trees; trees with decadence, such as large cavities; mistletoe broom structures, catfaces, or large limbs; or large snags with these similar characteristics.

Removal of large (20 inches in diameter at breast height or larger) dead trees will be avoided to the extent possible, unless they must be removed to implement the proposed project or are a confirmed safety hazard.

Although habitat elements such as individual large trees or snags may be removed from NSO nesting, roosting or foraging habitat, the treatment will not be so extensive as to downgrade or remove the overall function of the habitat.

Construction activities will be limited to daylight hours, to the extent practicable. If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway, and construction footprint) will be selectively placed and directed onto the roadway or construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. If the work area is near surface waters, the lighting will be shielded so that it does not shine directly into the water.

Add New Section 14-6.08 Work Window

All work within channels is limited to the period between June 1 and October 31.

Work is restricted to daylight hours and shall not occur earlier than 1 hour after sunrise, or later than 0.5 hour before sunset in order to avoid disturbance to animals during the primary migratory times (night, dawn and dusk). Additionally, with the exception of emergencies, work will be conducted during normal working hours (8:00 am – 5:00 pm). Project work will not occur on Saturdays, Sundays, or NCRCD observed holidays except during emergencies, or with approval by the local jurisdiction and advance notification of surrounding residents.

All concrete within the high flow line shall be poured before September 20 to ensure adequate curing time prior to precipitation events.

The Creek Dewatering Plan shall be submitted to CDFW for review and approval 30 days prior to implementation.

Add to the end of section 14-9.02:

The US EPA has established the National Emission Standards for Hazardous Air Pollutants (NESHAP). Under the Health & Safety Code § 39658(b)(1), demolition and rehabilitation activities must comply with 40 CFR 61, Subpart M (National Emission Standard for Asbestos).

Survey and sample the bridge for asbestos containing materials. Prepare an asbestos survey and sampling report. Submit to the Engineer for review.

Notify the US EPA and the California Air Resources Board of demolition activities even if the activities will not disturb asbestos-containing material.

You may obtain an Asbestos NESHAP Notification of Demolition and Renovation Form at the California Air Resources Board's website:

<http://www.arb.ca.gov/enf/asbestos/asbestos.htm>

Instead of the 10 working days specified at the website, mail or deliver the form with the necessary attachments at least 15 days before starting demolition or rehabilitation activities to:

US EPA - REGION IX
ASBESTOS NESHAP NOTIFICATION (AIR-5)
75 HAWTHORNE ST
SAN FRANCISCO, CA 94105

Mail or fax a copy of the notification form to:

CALIFORNIA AIR RESOURCES BOARD
ENFORCEMENT DIVISION
ASBESTOS NESHAP NOTIFICATION
P.O. BOX 2815
SACRAMENTO, CA 95812
FAX: (916) 229-0645

Notify the Engineer of the submittal. Include in the notification the date and contents of the submittal and the acknowledgement letter from the district.

Submit a copy of the notification form and attachments as informational submittals before starting demolition or rehabilitation activities.

Do not start demolition before the date provided in the acknowledgement letter.

Before submitting a demolition notification form, complete an inspection to determine if ACM or suspected ACM is present within the structure under section 14-11.11.

A demolition notification is required even if no ACM is identified in the ACM inspection.

Surveying, sampling, removal and disposal of asbestos containing material must comply with section 14-11.

You must notify the Bay Area AQMD of your demolition activities even if the activities will not disturb asbestos-containing material.

You may obtain the notification form, submittal instructions, and other information from:

Bay Area AQMD
<http://www.Baaqmd.gov/permits/asbestos>

Submit a copy of the notification form and the necessary attachments as informational submittals before starting demolition or rehabilitation activities.

Submit a copy of the acknowledgement letter from the Bay Area Air Quality Management District (BAAQMD) as an informational submittal.

Do not start demolition or rehabilitation activities before the date specified in BAAQMD's acknowledgement letter.

If you discover unanticipated asbestos-containing material during the demolition or rehabilitation activities, immediately stop work in that area and notify the Engineer. The Owner will use other forces to remove and dispose of the material. Do not resume work in the area until authorized.

Notify the US EPA Region IX, California Air Resources Board, and Bay Area QMD of a change to your demolition or rehabilitation activities, including a revised work plan or the discovery of unanticipated asbestos-containing materials, within 2 business days of the change or discovery.

AA

15 EXISTING FACILITIES

Delete the 7th paragraph of section 15-1.03B.

AA

16 TEMPORARY FACILITIES

Add Section 16-3 FIELD OFFICE

The Owner has agreed to allow the Contractor to use their conference room periodically for project support. The Contractor must coordinate with the Owner to schedule use of the conference room. It will be at the Contractor's discretion whether to provide a dedicated field office at the Project Site.

If the Contractor elects to provide a field office, the following minimum requirements shall apply:

- 1. Location and Setup:**
 - A. The field office shall be located within reasonable proximity to the project site.
 - B. It shall be a secure, weatherproof structure with sufficient space for meetings, document storage, and daily administrative activities.
 - C. The office shall comply with all applicable local zoning and permitting requirements.
- 2. Access and Security:**

- A. The office shall be accessible to the Resident Engineer, inspectors, and authorized personnel as needed.
 - B. The Contractor is responsible for maintaining security of all equipment, project records, and sensitive documents.
 - C. Any required keys or access codes must be coordinated with the Owner.
3. **Maintenance and Housekeeping:**
- A. The Contractor shall be responsible for cleaning and maintaining the office space, including waste disposal.
 - B. Office supplies shall be stocked as necessary to support project management activities.
 - C. Any necessary repairs to the office facility shall be the Contractor's responsibility.
4. **Removal and Restoration:**
- A. Upon project completion, the Contractor shall remove the field office and restore the site to its original condition unless otherwise directed by the Owner.
 - B. Any damage to the site caused by the field office setup or removal shall be repaired at the Contractor's expense.

Add Section 16-4 TEMPORARY ELECTRICAL FACILITIES

- 1. Electrical Services: Provide and maintain during the course and progress of the Work all electrical power and wiring requirements to facilitate the work of all trades and services associated with the Work. Electrical power shall be provided at the Contractor 's expense. All temporary wiring, feeders, and connections shall be furnished by the Contractor, as required.
- 2. Night Lighting: Lighting for work at night, when requested, shall comply with the requirements of Caltrans Standard Specifications for lighting of traffic control. If requested by Owner, the Contractor shall submit a plan of the proposed lighting installations.

Add Section 16-5 TEMPORARY WATER

Provide temporary water service as required for the Work, at the Contractor 's expense. Potential points of water connection shall be determined by the Contractor and shall be approved by authorities having jurisdiction before making the connection.

Add Section 16-6 TEMPORARY BATHROOMS

- 1. Contractor shall provide temporary bathrooms and handwashing for project team members and including the Contractor 's staff, Owner, Engineer, and Official Project Stakeholders visiting the project site(s).
- 2. Contractor shall provide portable toilets and wash stations within 0.5 mi. of the active project site.

DIVISION III EARTHWORK AND LANDSCAPE

17 GENERAL

Add to section 17-2.03B

A project-specific tree removal plan is provided in the Plans.

Refer to Tree Removal Plan and Table (Sheets D-1.1 and D-1.2, respectively) for trees to be removed or protected in place. Trees to be salvaged for reuse on site as log structures shall be identified and approved by the Resident Engineer prior to tree removal activities.

Additional Definitions:

1. Stripping: Stripping shall consist of the removal of the top 2 inches of non-soil organic material after clearing and grubbing have been completed, or as required by the Resident Engineer.
2. DBH: Diameter of tree trunk measured at breast height.
3. Tree Removal: Tree removal shall consist of implementing the Tree Removal Plan in the project Plans.
4. Salvaged Log: Removed trees, 12–30-inch DBH, with root ball intact to be repurposed as log structures in Project.
5. Biological Monitor: The approved project biologist representing the Owner.
6. Vegetative Materials: General term applied to any portion of a plant, bush, or tree.

Clear, grub, and strip within the limits of disturbance indicated.

Remove cleared, grubbed, and stripped materials that are not to be reused from the project site and dispose in accordance with all applicable laws, codes, and ordinances.

Except as otherwise directed by Resident Engineer, cut, grub, and dispose of concrete, paving, base, vegetation, rubbish, debris, and any objectionable material encountered within the limits required for construction. Areas outside the limits of clearing shall be protected. Provide temporary barricades or protection or secure the area from damage.

If the sites have been surveyed and staked prior to the start of the work, use all means necessary to protect the benchmarks, survey stakes, and monuments. If damaged during construction, the replacement of the damaged survey monuments and benchmarks will be at the Contractor's expense.

Add section 17-2.05 Submittals

Contractor shall submit a detailed Clearing and Tree Management Plan. The plan shall describe the means and methods, including number and types of equipment, staging/stockpiling areas, and sequence of work for the following activities:

- a. Clearing and grubbing.
- b. Disposal locations for excess cleared vegetation.
- c. Staging/stockpiling areas for Salvaged Logs.

Add section 17-2.06 Quality Control

Add section 17-2.06A Certifications

Contractor shall request a Certification by the Biological Monitor that the tree limbs they propose to be cut due to interference with Contractor operations will not injure the tree.

Add section 17-2.06B Notifications

If any tree becomes damaged during construction, notify the Resident Engineer before the end of the work shift.

Notify Resident Engineer of any state or federally listed animal species encountered on the work sites in accordance with the project permits and Section 14.

Add section 17-2.07 Job Conditions

Regulatory Requirements

- a. Comply with the requirements of Section 14.
- b. Most strict specifications will take precedence.
- c. Conform to applicable State and Local Code requirements and with all applicable State and local ordinances or regulations.

Contractor is made aware that poison oak is prevalent at the project site and shall take appropriate health and safety precautions.

Excess trees and branches (excluding invasive species vegetation) shall be removed from site.

Add section 17-2.08 Execution

Add section 17-2.08A General

Clearing and grubbing operations shall be conducted under the supervision of the Biological Monitor with minimum interference with roads, and adjacent facilities. Roads and adjacent facilities shall not be obstructed without approval from the Resident Engineer and other authorities having jurisdiction.

Dispose of non-recyclable materials removed during clearing and grubbing to an off- site location. Burning of materials to be cleared and grubbed on-site is not allowed. Contractor shall stake out all work areas designated for clearing, grubbing, and stripping by survey. Contractor shall be responsible for the accuracy, maintenance and observation of all lines and elevations.

1. The location, limits, and methods to be used for clearing, grubbing, and stripping shall be reviewed with the Resident Engineer prior to start of work.
2. Contractor shall review with the Resident Engineer all trees greater than 4 inches in diameter at breast height above ground to be removed or trimmed.

Do not disturb areas outside the construction limits. Protect areas outside the construction limits from Contractor operations.

Prior to cutting or removing tree limbs or roots, have the Engineer inspect and approve cut or removal.

Contractor assumes all responsibility for injuries to, or death of vegetation arising from Contractor operations.

Add section 17-2.08B Preparation

Examine the areas and conditions under which the work in this section will be performed. Correct conditions detrimental to the timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected with Resident Engineer's approval.

In company with the Resident Engineer, visit the site and verify the extent of clearing, grubbing, tree removal, and demolition to be performed under this Contract before proceeding with the prescribed work.

Protect trees indicated to be protected from damage or injury by flagging the Limit of Disturbance line in accordance with project Plans and specifications. To the extent possible, place flagging around the trees at least one foot outside the drip line.

Coordinate the removal of protective barriers with final cleanup.

Contact serving utilities and arrange for relocation of items interfering with construction.

Locate, identify, and protect from damage existing trees, structures, utilities, drainage and irrigation systems, and equipment that are to remain. If such trees, structures, utilities, systems, or equipment are discovered or damaged, immediately notify the Resident Engineer and the facility Owner for corrective action.

Maintain egress and access at all times.

Protect all trees and plant materials that are to remain within the Limits of Disturbance per the Plans and specifications.

Add section 17-2.08C Repair and Replacement

Repair injured trees:

1. The term “injuries” in this context shall comprise any bruising, scarring, or breaking of roots, trunks, or branches not otherwise authorized by the Plans or these specifications.
2. Repair or treat injured vegetation as recommended by and under the direction of the Biological Monitor.

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19 EARTHWORK

Add to the end of section 19-3.01A:

Structure backfill includes constructing the geocomposite drain system. The systems must comply with section 68-7.

Add to section 19-3.04:

Structure excavation for footings at locations not shown as structure excavation (Type D) and where ground or surface water is encountered is paid for as structure excavation (bridge).

Add to section 19-5.03C

Compaction for embankments shall be 90 percent.

Compaction within wetland areas shall be 85 percent.

Add to section 19-1.03C

The Contractor is responsible for verifying the accuracy of the elevations, contours and sections shown in Drawings. If the Contractor does not agree with elevations, contours and sections as shown on the drawings, the Contractor must notify Resident Engineer in writing at least 5 working days prior to the start of work.

Add to section 19-6.01D

Finish excavation and embankment slopes in conformance with the lines and grades shown on Drawings. Remove all debris and loose material. Complete slopes so that the average plane conforms to the slope indicated on Drawings, and so that no point on the completed slope varies from the designated plane by more than six inches, measured at right angles to the slope.

Add to section 19-6.03C:

Scarify areas over which fills are to be placed to provide a bond between the soil lift backfill and the existing ground. Scarify after clearing and grubbing, and after removal of unsuitable material.

Whenever fills are made against slopes, cut into the slopes of the existing hillside and bring the work up in layers. Construct horizontal cuts into existing slopes for satisfactory bonding purposes, as directed by Resident Engineer. Spread and compact the existing material thus cut away along with the new fill in the specified manner. Start a new bench where the vertical cut for the next lower bench intersects the existing ground. This work is considered included in the bid item(s) for the placement of fill.

Excavate the bottoms of all natural drainage channels upon which embankments are to be constructed to a depth sufficient to ensure a suitable base for the embankment, and as directed by Resident Engineer. This work is considered included in the bid item(s) for the placement of fill.

Compact embankments/fills in layers not exceeding eight inches in loose thickness, with all fill material at the time of compacting at optimum moisture content. Soil conditioning to meet optimum compaction conditions is part of the Work.

Spread in uniform layers embankments/fills or excess soil material, and as called for above. Roll, tamp, or otherwise compact such soil material to the relative compaction specified herein or as directed by Resident Engineer.

Add to section 19-7.02B:

Excess cut material may be used as fill in the compacted soil lifts. Excess cut material shall be stored in staging areas until construction of the soil lifts.

The type of material to be excavated will vary in nature. Immediately inform Owner if unknown conditions are encountered of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the project, before such conditions are disturbed. Owner and Geotechnical Engineer to promptly investigate the conditions to determine what action should be taken.

Add to section 19-7.02C:

In advance of the Work, jointly inspect and document with Resident Engineer the condition of all haul roads and other improvements likely to be affected by the Work. Return all haul roads, drainage swales, and other improvements affected by the Work to at least their previous condition and functionality, to the satisfaction of Resident Engineer.

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20 LANDSCAPE

Replace 20-1.01D(2) Progress Inspections with:

It is the Contractor's responsibility to notify the Resident Engineer at least 10 working days prior to each anticipated inspection. The Resident Engineer may at any time inspect work without notification. The following are key inspection events:

1. Pre-Installation Conference: Conduct conference at Project site in the presence of the Resident Engineer.
2. Seeding and Planting Areas Layout Acceptance Inspection.
3. Seeding and Planting Application Inspection: Seeding and Planting shall not start and shall not be accepted without this inspection. The Contractor shall provide supplier and collector names and addresses upon award of contract. Seed and Plant suppliers and collectors are subject to an inspection of methods, materials, and processing. Seeds and plants shall be inspected upon arrival at the job site on the day of seeding and planting by the Resident Engineer for conformity to species, quantity, and quality. The Seed shall be delivered to the project site in sealed bags with seed suppliers or testing laboratory tags attached. The Contractor shall provide Resident Engineer with receipts of the seed and plants purchased and delivered to the site. Receipts shall provide the name of the company from which the seed/plant was purchased, seed/plant species, seed/plant place of origin, composition, quantity, germination rate, and pure-live-seed (P.L.S.)

- percentage. Other seeding materials shall be inspected for compliance with specified requirements. Unacceptable materials shall be removed from the job site and replaced by the Contractor. Immediately prior to commencement of seeding operations, the Contractor shall adjust and calibrate equipment as per the manufacturer's specifications and field test in the presence of the Resident Engineer. Seeding operation shall be inspected during equipment calibration, material loading, and seed application. Contractor shall not start calibration, seeding material loading, or seeding in any area before the Resident Engineer's presence at the project site.
4. **Seeding/Planting Period Inspection:** This inspection shall be performed by the Resident Engineer in two parts. First, a preliminary punch list inspection of the seeded and planting areas will be performed. This inspection will be followed by the final verification inspection upon Contractor notice of punch list items completion. During the preliminary inspection, unsatisfactory conditions and deficiencies will be listed in a punch list. The following items will be reviewed: conformance of the seeding and planting extent with Drawings, quantity and type of species seeded and planted, clean-up requirements, and the acceptability of the seeding and planting operation. During the verification re-inspection, the Resident Engineer will evaluate the completion of the punch list items to ensure they have been corrected. A "Seeding/Planting Period Acceptance" will be issued after all seeding requirements have been satisfactorily completed and approved by the Resident Engineer. If the Resident Engineer is required to perform additional punch list items verification inspections because any of the punch list items are not complete during the first verification inspection, the Contractor shall be responsible for any expenses associated with the additional inspection. Partial acceptance of any area or any item will not be issued. Written, signed, and dated "Seeding/Planting Period Acceptance" issued by the Resident Engineer shall constitute the beginning of the Establishment Period.
 5. **Final Seeding/Planting Inspection:** This inspection shall be performed by the Resident Engineer in two parts at the end of the Seeding/Planting Establishment Period. First, a preliminary punch list inspection of the seeded areas will be performed. This inspection will be followed by the final verification inspection upon Contractor notice of punch list items completion. During the preliminary inspection, unsatisfactory conditions and deficiencies will be listed in a punch list. The following items will be reviewed: vegetation cover, native grass cover, tree and shrub mortality and broadleaf invasive exotic plant cover compliance with the performance criteria (see definitions), conformance of the extent of seeding and planting with Drawings, quantity and type of species seeded, clean-up requirements, and the acceptability of the seeding/planting operation. During the verification re-inspection, the Resident Engineer will evaluate the completion of the punch list items to ensure they have been corrected. A "Final Seeding/Planting Acceptance" will be issued after all seeding and planting requirements have been satisfactorily completed and approved by the Resident Engineer. If the Resident Engineer is required to perform additional punch list items verification inspections because any of the punch list items are not complete during the first verification inspection, the Contractor shall be responsible for any expenses associated with the additional inspection. Partial acceptance of any area or any item will not be issued. Written, signed, and dated "Final Seeding/Planting Acceptance" issued by the Resident Engineer shall constitute the satisfactory completion of the seeding work.

Add 20-1.01D(3) SHIPMENT, DELIVERY, STORAGE, AND HANDLING

Shipment: Preparation for shipment shall be done in a manner that will not cause damage to plan or seed or any other seeding/planting material.

Delivery: Seeds, plants, fiber, mulch, and any other seeding material shall be protected from weather and contamination during delivery.

Storage: Seeding and planting material shall be stored in areas approved by the Resident Engineer. Seed shall be stored in cool, dry locations away from contaminants. Plants shall be stored in an area that is not exposed to direct sun or wind, is protected from wildlife herbivory and watered regularly prior to planting. Chemicals of any kind shall not be stored with other landscape materials and shall be stored in a spillage-contained area. Mulch shall be kept covered from the rain.

Handling: Except for bulk deliveries, the material shall not be dropped or dumped from vehicles.

Add 20-1.01D(4) Time and Conditions

Seeding and Planting Conditions: Seeding and planting shall be performed only during periods when beneficial results can be obtained. When excessive moisture, winds, or other unsatisfactory conditions prevail, the work shall be stopped as directed by the Resident Engineer. When special conditions warrant a variance to the seeding/planting operations, a proposed seeding/planting time shall be submitted in writing to and approved by, the Resident Engineer. The Contractor shall be prepared to seed/plant at the earliest time when all conditions (weather, moisture, wind, temperature) are acceptable.

Seeding/Planting Restrictions: Coordinate carefully seeding/planting periods with seeding/planting establishment period activities to provide required care from the first date of seeding/planting completion.

Weather Limitations: Proceed with seeding/planting only when existing and forecasted weather conditions permit seeding/planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to the manufacturer's written instructions. Seeding/planting shall not commence on days when the official weather report predicts 95°F or higher temperature during any time of the day.

The Contractor shall closely review the Integrative Pest Management Ordinance and methodology and consult with an Integrative Pest Management Specialist before any weed, pest, or disease corrective action is undertaken.

Add to 20-2.01A(1) Summary

The Contractor shall furnish all labor, services, supervision, material, tools, water, trucks, equipment, and all other appurtenances necessary to safely perform the work as shown on the Contract Drawings and as specified herein.

1. Irrigation shall consist of all the work necessary to design and install the irrigation system.
2. The irrigation system is to be a temporary drip system meant to be in place for 1 year(s) to aid in the establishment of new container plantings. The irrigation mainline is to be buried below grade where possible at the top of bank. Lateral lines and supply tubing are to be installed above grade. Stake above ground lines. The following quantities are to be assumed for bidding purposes:
 - a. 1" diameter Mainline: 350 linear feet
 - b. ¾" diameter Lateral Line: 1,500 linear feet
 - c. ½" diameter Supply Tubing: 500 linear feet
 - d. Point Source Drip Emitters:
 - i. Each tree to receive two 1 gph emitters (74 total emitters)
 - ii. Each shrub to receive two 0.5 gph emitters (182 total emitters)
3. Willow poles are not to receive irrigation. City to provide meter and backflow at point of connection to city water supply line located near proposed planting area. When designing irrigation plans, Contractor will need to examine water pressure at the point of connection and determine the proper equipment needed to operate at that pressure. Contractor will need to consider pressure change from elevation. Valves are to be controlled by battery powered controllers.
4. Contractor shall be responsible for supplying water and operating the irrigation system for the first full growing season after installation, up to the end of one year following Owner's Notice of Completion. This will likely require coordination with the landowner(s) and Napa RCD.

Replace 20-2.01A(3) Submittals with:

Irrigation Plan – Contractor shall submit a plan for Owner approval showing the layout, materials and sizing of the proposed drip irrigation system for the final planting scheme. The Plan shall also provide the irrigation schedule and water source. The proposed irrigation system shall provide water to all containerized plants.

Request for Materials Substitution: Submit the catalogue information for materials that are requested for substitution electronically. No substitution will be permitted without prior written approval by the Resident Engineer. The complete material list shall be submitted prior to performing any work.

As-built Irrigation Drawings and Irrigation Manufacturer's Information and Operation and Maintenance Manual (O&M Manual):

1. Provide to Resident Engineer one complete set of blackline prints of all irrigation drawings which form a part of the contract, showing all water lines, drip emitters, boxes, tees, flush assembly, and valves.
2. Obtain reproducible prints upon completion of the work from Resident Engineer and neatly correct the prints to show the as-built conditions.
3. Irrigation Manufacturer's Information and Operation and Maintenance Manual (O&M Manual): After the system has been installed and approved, prepare and submit an O&M manual for the irrigation system and provide the following in a bound and dated manual titled "Sulphur Creek Fish Passage Restoration Project" and sub-titled "Irrigation Manufacturer's Information and O&M Manual."
 - a. Contractor's name, address, telephone number, and name of the person to contact.
 - b. Information for each piece of equipment, including
 - c. Manufacturer's Name
 - d. Make and model number
 - e. Name and address of local manufacturer's representative
 - f. Spare parts list
 - g. Detailed operating and maintenance instructions as per manufacturer reflecting as-built conditions.
 - h. Update O&M Manual as needed during the maintenance period and submit.

Recommended Watering Schedule: Contractor is responsible for scheduling watering in order to provide the minimum amount of water needed to sustain good plant health. This includes adjusting for seasonal weather changes, plant material, water requirements, slope, sun, shade, and wind exposure. Operate and maintain the irrigation system during the guarantee period.

Add to 20-2.01A(4)(a) Quality Assurance General:

Layout of Work: Stake out the irrigation system valves, and mainline locations as shown on the Irrigation Plan. The Resident Engineer shall check these areas before construction starts. Changes, deletions, or additions shall be determined at this check.

Demonstrate and adjust spray heads and drip components to achieve correct coverage and approval by the Resident Engineer prior to installing mulch.

Add 20-3.01A(1)(a) Scope:

The Contractor shall apply seeding and planting, complete and in place, in accordance with the Contract Documents including the Erosion Control and Revegetation Plans in the Drawing set.

Seeding materials, installation, and maintenance methods shall be compatible with California conditions and fully comply with applicable permit requirements if any.

With the exception of any wetted areas, all disturbed, non-paved areas of the project shall be seeded according to this specification. The seed mixes, provided on the Revegetation Notes and Details on the Plans, shall be appropriate for the existing environmental conditions within each distinct portion of the Project area.

Work shall include, but is not limited to, all labor, tools, materials, equipment, and incidentals required to complete activities shown on the Plans, described in these specifications, and as directed by the Resident Engineer. No deviations from the Plans or these specifications shall be allowed without written approval from the Resident Engineer. The Contractor shall plan for appropriate crew sizes supplied with the necessary equipment to complete the required work for seeding, as described in this Section.

Add 20-3.01A(1)(b) References Specifications, Codes and Standards:

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1. Cal-IPC. 2006. California Invasive Plant Inventory. Cal –IPC Publication, Berkeley, CA.
2. AGRICULTURAL MARKETING SERVICE (AMS): AMS-01 (Amended through Aug 1988) Federal Seed Act Regulations (Part 201-202)
3. COMMERCIAL ITEM DESCRIPTIONS (CID) CID A-A-1909 (Basic) Fertilizer
4. FEDERAL SPECIFICATIONS (FS) FS O-F-241 (Rev D) Fertilizers, Mixed,
5. Commercial California Agricultural Code.
6. FS O-F-241D Fertilizer, Mixed, Commercial.
7. ANSI/ASTM D 422 Method for Particle-Size Analysis of Soils.
8. The Jepson Manual - Higher Plants of California, James C. Hickman, editor, University of California Press, Berkeley

Add 20-3.01A(1)(c) Qualifications

All work required by this Section shall be done by an experienced Landscaping Contractor possessing a C-27 California Landscaping Contractors License and no less than 3 years with native herbaceous vegetation seeding and horticulture, industry methods and standards for seeding, and weed control. The Landscaping Contractor shall employ modern equipment and state-of-the-art methods and techniques.

Add to 20-3.01A(2) Definitions

Seeding/Planting Period: The Seeding/Planting Period refers to the time required to complete required pre-seeding weed management, site, and soil preparation, and seeding and planting as indicated on the Plans and described in these Specifications. Written, signed, and dated “Seeding/Planting Period Acceptance” issued by the Resident Engineer upon satisfactory completion of the two-part Seeding/Planting Period Inspection shall constitute the beginning of the Seeding/Planting Establishment Period.

Seeding/Planting Period Acceptance: Seeding/Planting Period Acceptance is the milestone when all work associated with the Seeding/Planting Period is completed to the Owner’s satisfaction upon completion of the Seeding/Planting Period Inspection.

Seeding/Planting Establishment Period: The Seeding/Planting Period work performed shall be followed by an establishment period of one year immediately following Seeding/Planting Acceptance by the Owner of the seeded and planting portions of the project. The Contractor shall be responsible for the maintenance of the entire Project Area as defined by the Plans as Limit of Disturbance and these Specifications during the Seeding/Planting Establishment Period. Specific maintenance actions required will be based on seasonality, weather and soil conditions, terrestrial populations, and distribution of invasive weeds, seeded plants condition, and percent cover. Seeding and Planting establishment maintenance actions include: replacement of dead plant material, supplemental irrigation, appropriate site weeding, reseeding of herbaceous cover in under-performing areas, trash removal, and any other actions necessary to successfully establish the area to meet the performance standards prescribed herein. The Contractor shall be responsible for the work as required by the Specifications and the Plans until the Owner gives Final Project Acceptance of the Project in writing.

Final Seeding/Planting Acceptance: The conclusion of the Seeding/Planting Establishment Period shall be based upon satisfactory completion of the Seeding/Planting Establishment Period and required performance standards prescribed herein.

Performance Criteria: At the end of the Establishment Period there shall be a 100% survival rate of all container plants. This excludes live willow stakes. In addition, invasive plant cover as defined in the Habitat Mitigation and Monitoring Plan (HMMP) shall be 10% or less throughout the one-year period.

Healthy Plants: Healthy plants shall be those that are of good form, free of disease and insect infestation, are robust, and exhibit vigorous growth. Plants must not be heat or water stressed. Plants must be provided by a nursery certified to produce phytophthora-free products.

Seedbed Preparation: Activities required to prepare an area for seeding. Seedbed preparation activities vary by treatment area and can include clearing debris, weed management, tilling, leveling, and irrigation system removal.

Suitable Seedbed: A suitable seedbed is defined as vegetation- and thatch-free soil surface that has been cultivated and prepared to provide a uniform surface as determined by Resident Engineer.

Native Seeding Palette: Native seed mixes are prescribed on the Plans and shall be applied according to the prescribed application rates of pounds per acre of Pure Live Seed (PLS) at the locations shown on the Plans.

Replace to 20-3.01A(3) General with:

Proposed seeding mix and any additions from vendor with proposed seeding method.

Plant Order Forms: Within 30 days of the award of the Contract, the Contractor shall verify that all of the plant material is available from nursery suppliers by submitting plant order forms that include all of the plants that are required for the project. The plant order forms shall include contact information for the plant supplier, botanical name of each species, container size, quantity, and scheduled delivery date. Plant species identification shall be in accordance with The Jepson Manual. Plants will be sourced from Napa County or areas with the same environmental conditions within 100 miles of the Project Site. Any substitutions or deviation from the planting plans shall be clearly identified to Resident Engineer. Upon rejection of any plant substitutions, new plant material shall be procured until all of the plant material is in compliance with the specifications as determined solely by the Resident Engineer. The plant orders shall be completed within 60 days of the award of the Contract.

Add to 20-3.01A(3)(c) Certificates of Compliance:

Certificates of compliance that materials meet the indicated requirements prior to the delivery of materials.

Letter from the nursery describing their phytophthora sanitation methods and describing the procedures they take to achieve this.

Add to 20-3.01A(3)(d) Records

1. Plant Establishment Period Monthly Activities Reports
2. Final Seeding/Planting Acceptance Report
3. Maintenance Instructions Report
4. Record drawings indicating which seed mixes and plantings were installed.

Add 20-3.01A(3)(e) "Schedules":

Schedules: Contractor shall provide the following schedules 15 calendar days before any planting or seeding work is started.

1. Delivery schedule: Contractor shall provide seeding and planting delivery schedule describing planned activities, their location, start dates, and durations.
2. Establishment Period Work Schedule: Written calendar schedule for the beginning of seeding and planting establishment period, planned establishment activities, such as weeding, irrigation, seeding, planting, dead vegetation removal (their start dates, frequencies, durations, and several personnel performing them), and end of seeding and planting establishment period. When there is more than one establishment period, the boundaries of the different seeding areas covered for each period shall be described. The schedule shall address all aspects of weed management (i.e., monitoring, assessment, eradication, and control) for the Owner's approval. The schedule shall include weed eradication methods descriptions, mowing events, tilling and reseeding, and a description of the types of equipment. The plan shall propose a sequence of mowing and eradication methods tailored to specific weed populations and shall include a written Pest Control Advisor (PCA) recommendation
3. Herbicide Treatment Plan and Schedule, giving a proposed sequence of herbicide treatment work, before work is started. The herbicide trade name, chemical composition, formulation,

concentration, the application rate of active ingredients, and methods of application for all materials furnished, and the name and state license number of the state-certified applicator shall be included. No herbicides shall be used prior to Resident Engineer approval and before all Integrative Pest Management methods of invasive plant control are exhausted.

Add to 20-3.01B(1) General:

Materials List: A list of all materials to be used in the seeding operations together with the source of those materials and phytophthora certification for imported plants and materials. The list shall include mulches, soil amendments, and seed mixtures. Manufacturers' literature showing physical characteristics, applications, and installation equipment shall be included.

Replace 20-3.01B(4) Fertilizers with:

Fertilizer shall be furnished in bags or other standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. Fertilizer containers shall not exceed 50 pounds each.

Chemical fertilizers shall be a mixed commercial fertilizer conforming to FS 0-F- 241D, Type I, with percentages of nitrogen, phosphoric acid, and potash at [5-10- 5 or 6-10-4]. The combined N-P-K content shall be the following percentages of total weight: [5] percent nitrogen, [10] percent phosphoric acid, and [5] percent potash. Fertilizers shall be uniform in composition, dry, and free flowing.

Animal fertilizer shall be well-rotted cattle manure, free from sawdust, shaving, or refuse of any kind, and shall contain no more than 25 percent straw or litter by volume. Limestone shall be ground to such fineness that 100 percent will pass a No. 200 sieve.

Lime shall be dolomitic limestone containing not less than 85 percent of total carbonates. Limestone shall be ground to such fineness that 100 percent will pass No. 200 sieve.

Agricultural gypsum shall be approved standard brand agricultural calcium sulfate (CaSO₄) as applied to soils and shall contain 19 percent combined sulfur and a minimum of 90 percent of calcium sulfate, finely ground with 90 percent passing through No. 50 (0.30-mm) sieve.

Iron Sulfate shall be granulated ferrous sulfate-containing a minimum of 20 percent iron and 10 percent sulfur.

Sulfur shall be granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through No. 40 (0.425-mm) sieve.

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21 EROSION CONTROL

Remove Section 21-2.02O(5) Turf Reinforcement Mats

All Rolled Erosion Control Products must be biodegradable per Permits.

Add to Section 21-2.02P:

Straw Wattles: The straw wattles shall be tubular, manufactured from weed-free rice straw or excelsior, and shall be wrapped in 100 percent biodegradable burlap. The use of plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers) is prohibited. Straw wattles shall be nine (9) inches in diameter (plus or minus one inch), twenty-five (25) feet long (plus or minus 0.5 feet), and weigh 35 lbs. (plus or minus 10%).

DIVISION V SURFACINGS AND PAVEMENTS

39 ASPHALT CONCRETE

Replace the 2nd and 3rd paragraphs of section 39-2.01D with:

Payment for tack coat is included in the payment for hot mix asphalt (Type A).

Replace the 2nd paragraph of section 39-2.02A(1) with:

Produce Type A HMA using a WMA additive technology.

Replace *Reserved* in section 39-2.02B(3) with:

The grade of asphalt binder for Type A HMA must be 64-16.

For Type A HMA using RAP substitution of greater than 15 percent of the aggregate blend, the virgin binder grade must comply with the PG binder grade specified above with 6 degrees C reduction in the upper and lower temperature classification.

For Type A HMA using RAP substitution of 15 percent or less of the aggregate blend, the grade of the virgin binder must comply with the PG binder grade specified above.

DIVISION VI STRUCTURES

49 PILING

Add to section 49-1.03:

Expect difficult pile installation due to the conditions shown in the following table:

Pile location		Conditions
Bridge no.	Support location	
	<u>Abutments 1</u>	<u>Decomposed to moderately weathered, very soft to moderately hard Shale and Graywcke. Possible groundwater.</u>
	<u>Abutment 2</u>	<u>Intensely weathered to moderately weathered, very soft to moderately soft Shale and Graywacke. Possible groundwater.</u>

Replace section 49-3.02A(3)(a) with:

49-3.02A(3)(a) General

Submit as an informational submittal the proposed drilling equipment operational capacities or descriptions for:

1. Downward force in lb
2. Torque in ft-lb
3. Rotational speed in rpm

4. Rate of penetration in ft/hr
5. Number and type of drilling cutters or drilling teeth on drilling tool

Add to section 49-3.02A(3):

49-3.02A(3)(I) Experience Qualifications

At least 15 days before the start of CIDH concrete pile construction, submit as an informational submittal the following experience qualifications in compliance with section 49-3.02A(4)(f):

1. List of CIDH concrete pile installations performed by the drilling contractor. The submittal must include:
 - 1.1. Project description
 - 1.2. Name and phone number of the owner
 - 1.3. CIDH pile plans
 - 1.4. Log of test borings
 - 1.5. Estimated dates of major CIDH pile installation activities
 - 1.6. CIDH pile acceptance testing reports
2. List of on-site foremen and drill rig operators who will perform the CIDH concrete pile work and a summary of each individual's experience. The submittal must include:
 - 2.1. Detailed summary of each individual's experience in CIDH pile excavation operations and placement of assembled reinforcing cages and concrete.
 - 2.2. Experience from at least 3 relevant projects, including:
 - 2.2.1. Project Description
 - 2.2.2. Date of work
 - 2.2.3. Actual work performed
 - 2.2.4. Name and phone number of a reference person for each project
 - 2.3. Proof of on-site foremen and drill rig operators experience qualifications

Add to section 49-3.02A(4):

49-3.02A(4)(f) Experience Qualifications

The drilling contractor must have successfully constructed at least 3 separate foundation projects in the last 5 years. The foundation projects must:

1. Have CIDH piles of similar or larger diameter and depth, and installed under similar substructure conditions to this contract
2. Demonstrate experience with drilling fluids and successful construction of CIDH piles under the wet conditions

Each on-site foremen and drill rig operator must have 2 years of experience installing CIDH concrete piles on at least 3 projects. The CIDH pile foundations must be of similar or larger diameter and depth, and installed under similar subsurface conditions to this contract.

On-site foremen experience must be supervising construction of CIDH concrete pile foundations. Indirect supervision of on-site CIDH concrete pile construction operations is not acceptable.

Drill rig operator experience must be in construction of CIDH concrete pile foundations.

Add to section 49-3.02B(6)(c):

The synthetic slurry must be one of the materials shown in the following table:

Material	Manufacturer
SlurryPro CDP	KB INTERNATIONAL LLC 735 BOARD ST STE 209 CHATTANOOGA TN 37402 (423) 266-6964
Super Mud	PDS CO INC 105 W SHARP ST EL DORADO AR 71731 (870) 863-5707
Shore Pac GCV	CETCO CONSTRUCTION DRILLING PRODUCTS 2870 FORBS AVE HOFFMAN ESTATES IL 60192 (800) 527-9948
Terragel or Novagel Polymer	GEO-TECH SERVICES LLC 220 N. ZAPATA HWY STE 11A-449A LAREDO TX 78043 (210) 259-6386
BIG FOOT	MATRIX CONSTRUCTION PRODUCTS 50 S MAIN ST STE 200 NAPERVILLE IL 60540 (877) 591-3137
POLY-BORE	BAROID INDUSTRIAL DRILLING PRODUCTS 3000 N SAM HOUSTON PKWY EAST HOUSTON TX 77032 (877) 379-7412

Use synthetic slurries in compliance with the manufacturer's instructions. Synthetic slurries shown in the above table may not be appropriate for a given job site.

Synthetic slurries must comply with the Caltrans requirements for synthetic slurries to be included in the above table. The requirements are available from:

Offices of Structure Design
P.O. Box 168041
MS# 9-4/11G
Sacramento, CA 95816-8041

SlurryPro CDP synthetic slurry must comply with the requirements shown in the following table:

SlurryPro CDP

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	$\leq 67.0^a$
Before final cleaning and immediately before placing concrete (pcf)		$\leq 64.0^a$
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	50–120
Before final cleaning and immediately before placing concrete (sec/qt)		≤ 70
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

Super Mud synthetic slurry must comply with the requirements shown in the following table:

Super Mud

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	$\leq 64.0^a$
Before final cleaning and immediately before placing concrete (pcf)		$\leq 64.0^a$
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	32–60
Before final cleaning and immediately before placing concrete (sec/qt)		≤ 60
pH	Glass electrode pH meter or pH paper	8.0–10.0
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

Shore Pac GCV synthetic slurry must comply with the requirements shown in the following table:

Shore Pac GCV

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	≤ 64.0 ^a
Before final cleaning and immediately before placing concrete (pcf)		≤ 64.0 ^a
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	33–74
Before final cleaning and immediately before placing concrete (sec/qt)		≤ 57
pH	Glass electrode pH meter or pH paper	8.0–11.0
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

Terragel or Novagel Polymer synthetic slurry must comply with the requirements shown in the following table:

Terragel or Novagel Polymer

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	≤ 67.0 ^a
Before final cleaning and immediately before placing concrete (pcf)		≤ 64.0 ^a
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	45–104
Before final cleaning and immediately before placing concrete (sec/qt)		≤ 104
pH	Glass electrode pH meter or pH paper	6.0–11.5
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

BIG-FOOT synthetic slurry must comply with the requirements shown in the following table:

BIG-FOOT

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	≤ 64.0 ^a
Before final cleaning and immediately before placing concrete (pcf)		≤ 64.0 ^a
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	30–125
Before final cleaning and immediately before placing concrete (sec/qt)		55-114
pH	Glass electrode pH meter or pH paper	8.5–10.5
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

POLY-BORE synthetic slurry must comply with the requirements shown in the following table:

POLY-BORE

Quality characteristic	Test method	Requirement
Density: During drilling (pcf)	Mud weight (density), API RP 13B-1, section 5	62.8-65.8 ^a
Before final cleaning and immediately before placing concrete (pcf)		62.8-64.0 ^a
Viscosity: During drilling (sec/qt)	Marsh funnel and cup, API RP 13B-1, section 7.2	50–80
Before final cleaning and immediately before placing concrete (sec/qt)		50-80
pH	Glass electrode pH meter or pH paper	7.0–10.0
Sand content, percent by volume: Before final cleaning and immediately before placing concrete (%)	Sand, API RP 13B-1, section 10	≤ 1.0

NOTE: Slurry temperature must be at least 40 °F when tested.

^aIf authorized, you may use slurry in a salt water environment. The allowable density of slurry in a salt water environment may be increased by 2 pcf.

Add to section 49-3.02C(1):

If the piling center-to-center spacing is less than 4 pile diameters, do not drill holes or drive casing for an adjacent pile until 24 hours have elapsed after concrete placement in the preceding pile and your prequalification test results for the concrete mix design show that the concrete will attain at least 1800 psi compressive strength at the time of drilling or driving.

Drilling equipment must be equipped with instrumentation to accurately measure the downward force in pounds. The instrumentation dial or display must be clearly visible for reading during operation.

AA

55 STEEL STRUCTURES

Add to section 55-1:

PREFABRICATED STEEL GIRDER BRIDGE

PART 1 – GENERAL

1.1 SUMMARY

- A. Furnish and erect prefabricated steel girder bridge shall conform to these Technical Provisions.
- B. Furnish prefabricated steel girder bridge includes fabricating and delivering bridge to the job site ready to incorporate into the work.
- C. Erect prefabricated steel girder bridge includes erecting bridge at the job site into final position of work.

1.2. QUALIFICATIONS

- A. Manufacturers must meet the following minimum qualifications:
 - 1. AISC shop certification for "Advanced Bridges".
 - 4. 5 years minimum experience designing and fabricating prefabricated steel girder type bridges.
 - 5. A minimum of 5 successful prefabricated bridge projects of similar construction and bridge type that have been in service for at least 2 years.
- B. Welder qualifications must comply with AWS D1.1 and AWS D1.5 as appropriate.

1.3. WARRANTY

- A. The 10-year manufacturer's warranty for prefabricated steel girder bridges must cover defects from design, material, and workmanship. The 10-year warranty period starts at date of delivery on site.

1.4 SUBMITTALS

- A. Submit a 10-year manufacturer's warranty against defects in prefabricated steel girder bridges.
- B. Submit proof of AISC-420-10/SSPC-QP 3, enclosed shop SSPC-QP certification as required by section 8-1.04C of the Caltrans Standard Specifications.
- C. Submit Shop Drawings:
 - 1. Submit shop drawings with supporting calculations for prefabricated steel girder bridges.
 - 2. Shop drawings and calculations must be signed by an engineer who is registered as a civil engineer in the State of California.
 - 3. Submit 4 copies of prefabricated steel girder bridge shop drawings and 2 copies of design calculations and independent check calculations. The calculations must include all design information necessary to determine the structural adequacy of the prefabricated bridge. Include with the submittal:
 - a. Sequence of shop and field assembly.
 - b. Girder erection work plan including details and sequences for lifting and erecting girders.

- c. Checks for axial, bending, and shear forces in the critical member of each girder member type (i.e. top flange, bottom flange, web, vertical, etc.).
- d. All bolted splice connection designs.
- e. Main girder deflection checks.
- g. Metal decking design.
- h. Bridge support reactions.
- i. Anchor bolt locations.
- j. Identification of tension members and fracture critical members.

D. Check Testing

- 2. Furnish plates, shapes, or bars with extra length to provide for removal of check samples.
- 3. Take samples from any location within the plate. Mark donor plates with the same identifying numbers as the test samples.
- 4. Remove material for test samples in the Engineer's presence. Test samples for plates over 24 inches wide must be 10 by 12 inches with the long dimension transverse to the direction of rolling. Test samples for other products must be 12 inches long taken in the direction of rolling with a width equal to the product width.
- 5. Submit test samples before fabricating into components. Mark samples with the direction of rolling, heat numbers, and plate numbers using paint or indelible marking material. You may steel stamp samples in one corner of the plate instead of marking.

E. TEST PANELS

- 1. Construct a test panel for the broom finish on the concrete deck.
 - 2. The test panel must be:
 - a. Constructed at an authorized location
 - b. At least 4 by 4 feet
 - c. Constructed and finished using the personnel materials, equipment, and methods to be used in the work
 - d. Authorized before starting work
 - 3. The Engineer may request that additional test panels be constructed until the specified finish is attained.

PART 2 – MATERIALS

2.1 DESIGN REQUIREMENTS

- A. Design of prefabricated steel girder bridge must comply with AASHTO LRFD Bridge Design Specifications.
- B. Design of prefabricated steel girder bridge shall include design of the concrete deck and must comply with AASHTO LRFD Bridge Design Specifications.
- C. Prefabricated steel girder bridge span and width shall be as shown on the plans.
- D. Prefabricated steel girder bridge shall meet the minimum vertical clearances as shown on the plans.
- E. Prefabricated steel girder bridge support reactions must not exceed the loads shown on the plans.

- F. Design and fabricate the prefabricated steel bridge such that the vertical camber dimension at midspan is equal to 100% of the full dead load deflection plus 1% of the full length of the bridge.
- G. The number, diameter, minimum grade, and finish of all anchor bolts must be determined by the manufacturer. The anchor bolts must be designed to resist all horizontal and uplift forces to be transferred by the superstructure to the supporting foundations.

2.2 STRUCTURAL STEEL

- A. All structural members and bracing must be fabricated from structural steel shapes or square and/or rectangular structural steel tubing
- B. Structural steel tubing must comply with ASTM A500, Grade C (Fy = 50,000 psi) or ASTM A847.
- C. Structural steel angles, plates, and shapes must comply with ASTM A588 (Fy = 50,000 psi).
- D. The minimum thickness of all structural steel members shall be 1/4" nominal and be in accordance with the AISC Manual of Steel Constructions' "Standard Mill Practice Guidelines". For ASTM A500 and ASTM A847 tubing, the section properties used for design shall be per the Steel Tube Institute of North America's Hollow Structural Sections "Dimensions and Section Properties".
- E. Bolts must comply with ASTM F3125, Grade A325, Type 3. Hex head nuts and washers must be compatible with bolts.
- F. Charpy V-notch Requirements
 - 1. Structural steel plate used for the following components must comply with longitudinal CVN impact values shown in the following table:
 - a. Tension members, tension flanges, eyebars, and hanger plates
 - b. Splice plates of tension members, tension flanges, and eyebars

Material complying with ASTM A709/A709M	CVN impact value (ft-lb at temperature)
Grade 36	15 at 40 °F
Grade 50 ^a (Thickness up to 2 inches)	15 at 40 °F
Grade 50W ^a (Thickness up to 2 inches)	15 at 40 °F
Grade 50 ^a (Thickness over 2 inches up to 4 inches)	20 at 40 °F
Grade 50W ^a (Thickness over 2 inches up to 4 inches)	20 at 40 °F
Grade HPS 50W ^a (Thickness up to 4 inches)	20 at 10 °F
Grade HPS 70W (Thickness up to 4 inches)	25 at -10 °F
Grade 100 (Thickness of 2-1/2 inches or less)	25 at 0 °F
Grade 100W (Thickness over 2-1/2 inches up to 4 inches)	35 at 0 °F
Grade HPS 100W (Thickness of 2-1/2 inches or less)	25 at -30 °F
Grade HPS 100W (Thickness over 2-1/2 inches up to 4 inches)	35 at -30 °F

^aIf the material yield strength is more than 65,000 psi, reduce the temperature for the CVN impact value 15 °F for each increment of 10,000 psi above 65,000 psi.

2.4 BEARING PADS

- A. Elastomeric bearing pads must comply with section 51-3.02, "Elastomeric Bearing Pads," of the Caltrans Standard Specifications.

2.5 PERMANENT STEEL DECK FORMS

- A. Permanent steel deck forms must comply with section 51-1.03C(2)(c) of the Caltrans Standard Specifications.

PART 3 – EXECUTION

3.1. QUALITY CONTROL

- A. Once the Contractor takes possession of the prefabricated steel bridge, the Contractor shall allow the Owner's Representatives access for inspection. Allow Owner and their stakeholders free access at all times to where material is stored or work is performed.
- B. Welding must comply with AWS D1.1.
- C. Welding inspection must comply with AWS D1.1.
- D. The Engineer determines the location of all NDT testing for welding.
- E. Charpy V-notch Requirements:
 - 1. Determine CVN values under ASTM E23. Sampling procedures must comply with ASTM A673. Use the Frequency H (Heat) testing for steels complying with ASTM A709/A709M, Grades 36, 50, 50W, and HPS 50W. Use the Frequency P (Piece) testing for steels complying with ASTM A709/A709M, Grades HPS 70W, 100, and 100W.
- F. Manual Torque Wrench
 - 1. Each manual torque wrench must have a dial gauge or digital read out. Any electric, pneumatic, or hydraulic calibrated wrench used to tension fasteners must have an adjustable control unit to shut off the wrench at the desired torque.
 - 2. Bolt tension measuring devices and calibrated wrenches must be calibrated not more than 1 year before use and at least yearly during the project. The calibration must be performed by an authorized repair and calibration center approved by the tool manufacturer. Certification equipment and calibration standards must be traceable to NIST.
 - 3. Calibrate bolt tension measuring devices to be accurate to within 1 percent of actual tension. Calibration must consist of at least 4 evenly spaced verification readings performed over a range of 20 to 80 percent of full scale.
 - 4. Calibrate calibrated wrenches to be accurate to within 2 percent of actual torque. Calibration must consist of at least 4 evenly spaced verification readings performed over a range of 20 to 100 percent of full scale. If a torque multiplier is used, calibrate the torque multiplier and calibrated wrench as a unit. Include sockets and extensions of the same length to be used in the work during calibration. Adjust the manufacturer's torque multiplier during calibration so that the product of the torque multiplier and the input calibrated wrench reading is within 2 percent of actual torque value. Use this system only as calibrated.

3.2 SHOP ASSEMBLY

- A. Preassemble completed subassemblies for structures or units of structures before delivery to the job site to verify geometry and to verify or prepare field connections.
- B. Bolted girders must be completely preassembled, adjusted to line and camber, and checked for bolt fit before deliver to the job site.

3.4 DELIVERY, STORAGE, AND HANDLING

- A. Carefully handle, store, transport, and erect prefabricated steel girder bridge to avoid twisting, racking, or other distortion that would result in damage to the bridge.
- B. Handle, store, transport, and erect prefabricated steel girder bridge in an upright position such that the points of support and directions of the reactions with respect to the bridge are approximately the same as when the bridge is in its final position.

3.5 ASSEMBLY

- A. Falsework must comply with section 48-2, "Falsework," of the Caltrans Standard Specifications.
- B. Field welding must comply with section 55-1.02E(7) of the Caltrans Standard Specifications.
- C. Field splices must be fully bolted.
- D. Assemble parts into final positions without damage. Follow all matchmarks. Do not damage or distort members when hammering.
- E. Drifting done during assembly must not enlarge bolt holes or distort the metal.

3.6 BEARINGS AND ANCHORAGES

- A. Set bearing assemblies level. The Engineer provides adjustments to horizontal positions of bearing assemblies due to temperature. Attain full bearing on the concrete under bearing assemblies.
- B. Immediately before setting bearing assemblies or masonry plates on ground concrete surfaces, thoroughly clean and apply caulking to all contact surfaces.
- C. During welding, protect bearings and bearing surfaces using authorized methods.
- D. The embedded end of each anchor bolt must terminate with a head or a nut and washer. Anchor bolts must allow true positioning of bearing assemblies.
- E. Mortar placed (1) under masonry plates or bearing assemblies or (2) in anchor bolt sleeves or canisters must comply with section 51-1.02F of the Caltrans Standard Specifications except the cement to sand ratio must be 1 to 3. Mortaring and constructing mortar pads under masonry plates must be done after girder bridge erection and before placing girder bridge deck concrete.
- F. If anchor bolts are installed in pipe sleeves or metal canisters, fill the pipes or canisters completely with mortar.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

- A. Prefabricated steel girder bridge will be furnished by others.
- B. Erect prefabricated steel girder bridge will be measured as described in Section 9.

4.2 PAYMENT

- AB. The contract lump sum price paid for erect prefabricated steel girder bridge shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in erecting the prefabricated steel girder bridge, complete in place, including connecting and splicing the prefabricated steel girder, installing stud connectors, placing

asbestos sheet packing, preformed fabric pads, elastomeric bearing pads, stay-in-place deck forms and mesh panel safety system, furnishing and applying caulk; furnishing and placing mortar for masonry or bearing plates and anchor bolts; checking bolt tension; and conforming to qualification and testing requirements associated with member erection, connection or splicing; as shown on the plans, as required by this section of the Technical Provisions, and as directed by the Engineer.

^^

60 EXISTING STRUCTURES

Add to section 60-2.01A:

Remove the following structures or portions of structures:

Bridge no./Structure name	Description of work
<u>Private road bridge over Sulphur Creek</u>	<u>Full removal of bridge and abutments with wingwalls.</u> <u>Full removal of adjacent retaining wall along north side</u> <u>of creek.</u>

^^

DIVISION VIII MISCELLANEOUS CONSTRUCTION

72 SLOPE PROTECTION

Add to Section 72-1.01

Definitions:

- 1. Rock Slope Protection (RSP) is the result of proper excavation, compaction, and placement of rock with specific characteristics related to size, angularity, and specific gravity with the intention of preventing erosion or bank failure.
- 2. Engineered Streambed Material (ESM) is a subset of RSP that has a specific gradation or ratio of small rocks and large rock that is suitable for preventing streambed erosion or bed scour and supporting streambed natural processes such as fish migration. ESM is split into two types, Type 1 and Type 2.
- 3. Bankline Rock is a subset of RSP that has a specific gradation or ratio of small rocks and large rock that is ideal for stream banks with steep or unstable slopes.
- 4. Bankline Rock Backing is a subset of RSP that has a specific gradation or ratio of small rocks designed to provide a stable surface and filtering capacity for Bankline Rock placement
- 5. Boulder Above Proposed Grade is a subset of RSP that has a specific gradation or ratio of large rock that is suitable for promoting irregularity in water flow and velocity refugia for fish passage.
- 6. Native Streambed Material is a subset of RSP that is locally available within the construction site along the streambed.

Add to Section 72-2.02B

ESM shall be smooth (not angular) and of appropriate color (grey or brown) obtained from an approved source. All stones shall be free from laminations, weak cleavages and will not disintegrate from the action

of air, water, and in handling and placing. Importing the larger material and augmenting it with native streambed material shall be approved by the Resident Engineer.

Table 1 ROCK GRADATION FOR ESM TYPE 1

Nominal Rock by Median Particle Diameter	Percentage Passing
30 inch	100
18.5 inch	84
7.5 inch	50
3.0 inch	16
1.5 inch	8

Table 2 ROCK GRADATION FOR ESM TYPE 2

Nominal Rock by Median Particle Diameter	Percentage Passing
52 inch	100
21 inch	84
8 inch	50
4 inch	16
2 inch	8

Bankline Rock shall be angular and of appropriate color (gray or brown) obtained from an approved source. All stones shall be free from laminations, weak cleavages and will not disintegrate from the action of air, water, and in handling and placing.

Table 3. ROCK GRADATION FOR BANKLINE ROCK

Nominal Rock by Median Particle Diameter	Percentage Passing
52 inch	100
45 inch	84
18 inch	50
8 inch	16
4 inch	8

Bankline Rock Backing shall be angular and of appropriate color (gray or brown) obtained from an approved source. All stones shall be free from laminations, weak cleavages and will not disintegrate from the action of air, water, and in handling and placing.

Table 4. ROCK GRADATION FOR BANKLINE ROCK BACKING

Nominal Rock by Median Particle Diameter	Percentage Passing
4 inch	100
3 inch	84
1.5 inch	50
0.35 inch	16

0.25 inch	8
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Boulders Above Proposed Grade shall be angular and of appropriate color (gray or brown) obtained from an approved source. All stones shall be free from laminations, weak cleavages and will not disintegrate from the action of air, water, and in handling and placing.

Table 5. ROCK GRADATION FOR BOULDERS ABOVE PROPOSED GRADE

Nominal Rock by Median Particle Diameter	Percentage Passing
52 inch	100
50 inch	84
48 inch	50
44 inch	16
42 inch	8

Add new Section 72-2.02D Quality Control

Bankline Rock and ESM shall be obtained by the Contractor from a quarry that has produced Bankline Rock and ESM equivalent rock and has performed satisfactorily on other projects for at least 3 years.

Add new Section 72-2.02E Submittals

1. Description and location of proposed source of Bankline Rock and ESM.
2. Testing and Documentation
 1. Rock
 - a. The Contractor shall submit to the Resident Engineer for review a statement of materials and gradation tests, specific gravity, absorption, and durability index, on the rock source intended for use.
 - b. The Resident Engineer may observe the rock gradation tests.
 - c. Mechanical equipment, a sorting site, and labor for performing gradation shall be provided by the Contractor at the Contractor's expense.
 - d. After initial testing, control of gradation will be by visual inspection.
 - e. Should, in the opinion of the Resident Engineer, the gradation appears to become non-compatible with the Specifications, the Resident Engineer may order retesting of the gradation.

Add Section 72-2.03D Placement of Bankline Rock and ESM

1. Stone Toe/Subgrade Keyway:
 - a. Excavate to subgrade depth shown in plans.
 - i. Subgrade grades shall be approved by the Resident Engineer prior to placement of rock. Engineer or Resident Engineer shall observe all rock installation.
 - b. Dewater and compact subgrade.
 - c. Place smaller rock fraction as needed on subgrade to provide level placement surface.
 - d. Place larger rocks in the toe course and on the outside surface of the slope protection.

- e. Place native stream bed material on top and compact and vibrate material until rock is interlocking and there are no voids.
 - f. Backfill channel with native material harvested on site to meet pre-existing grades or as shown on plans.
2. All rock less than 24" in median particle diameter shall be placed by Method B described in Section 72-2.03C of the Caltrans Standard Specifications (2023). All rock larger than 24" in median particle diameter shall be placed by Method A described in Section 72-2.03B of the Caltrans Standard Specifications (2023).
 3. Equipment used to place and spread the rock shall be of the type, which can be operated on the slopes indicated without jeopardizing the safety of personnel and equipment used at the construction site.
 4. Local surface irregularities of the slope protection shall not vary from the planned slope by more than 6 inches measured at right angles of the slope. Irregularities shall be smoothed at the edges and backfilled with extra RSP material.
 5. The extent of RSP shall be excavated to the lines and grades shown on the Plans.

^^

80 FENCES

Replace section 80-2.02A with:

80-2.02A General

Posts must be metal

Add to the end of section 80-2.02B:

Galvanize posts under section 75-1.02B.

Paint posts green or red as directed by the Engineer.

Add section 80-4.03 Orange Exclusion Fence

Orange Exclusion Fence: Install a minimum of 3 to 4 feet tall orange plastic fence to prevent access to areas containing sensitive resources (e.g., around preserved or protected trees, historical resources to be protected, or channels and adjacent wetlands) as identified by the Owner. Attached to stakes or posts a minimum of every 6 to 10 feet or as needed to provide sturdy support. The Contractor may request substitute exclusion measures including staking or flagging with high visibility markers at intervals no greater than 10 feet. Alternative measures must be submitted for review and approval at least 10 days prior to the start of construction.

^^

DIVISION IX TRAFFIC CONTROL DEVICES

83 RAILINGS AND BARRIERS

Replace section 83-2.01B with:

83-2.01B Minor Concrete Vegetation Control

83-2.01B(1) General

83-2.01B(1)(a) Summary

Section 83-2.01B includes specifications for constructing minor concrete vegetation control around railing and barrier posts.

Constructing minor concrete vegetation control includes clearing and excavation.

83-2.01B(1)(b) Definitions

Not Used

83-2.01B(1)(c) Submittals

Submit a mix design for the minor concrete to be used for vegetation control. The mix design must show proportions of:

1. Coarse aggregate
2. Fine aggregate
3. Cementitious material
4. Reinforcing fiber
5. Water

Include compressive strength test results with the mix design.

Submit a certificate of compliance for the crumb rubber aggregate, if used. Include the quantity in pounds of crumb rubber.

83-2.01B(1)(d) Quality Assurance

Not Used

83-2.01B(2) Materials

83-2.01B(2)(a) General

Not Used

83-2.01B(2)(b) Minor Concrete

83-2.01B(2)(b)(i) General

Concrete for vegetation control must comply with the specifications for minor concrete, except the concrete:

1. Must include reinforcing fibers
2. May include crumb rubber aggregate
3. Must contain:
 - 3.1. At least 505 pounds of cementitious material per cubic yard, if crumb rubber aggregate is used
 - 3.2. At least 400 pounds of cementitious material per cubic yard, if crumb rubber aggregate is not used
4. Must have a maximum aggregate size of 3/8 inch

All ingredients must be added at the concrete plant before delivery to the job site.

You may use volumetric proportioning complying with ASTM C685/C685M or as specified.

The minor concrete must have a 28-day compressive strength from 1,400 to 2,500 psi.

83-2.01B(2)(b)(ii) Crumb Rubber Aggregate

Crumb rubber aggregate must consist of ground or granulated scrap tire rubber from automobile and truck tires. Do not use tire buffings.

Crumb rubber aggregate must be ground and granulated at ambient temperature.

The crumb rubber aggregate gradation must comply with the requirements shown in the following table:

Gradation Requirements	
Sieve size	Percentage passing
1/2"	100
3/8"	90–100
1/4"	35–45
No. 4	5–15
No. 8	0–5
No. 16	0

Crumb rubber aggregate must not contain more than 0.01 percent of wire by mass and must be free of oils and volatile organic compounds.

Do not commingle crumb rubber from different sources.

The crumb rubber aggregate must be 3.5 ± 0.5 percent by weight of the concrete.

83-2.01B(2)(b)(iii) Reinforcing Fibers

Reinforcing fibers for minor concrete must be:

1. Manufactured specifically for use as concrete reinforcement from one of the following:
 - 1.1. Polypropylene, polyethylene, or a combination of both.
 - 1.2. Copolymer of polypropylene and polyethylene.
2. Blended ratio from 4 to 5.67 parts by weight of macro synthetic fibers to 1 part by weight of micro synthetic fibers. Synthetic fibers must be:
 - 2.1. Nonfibrillated macro fibers with individual fiber lengths less than $2 \pm 1/2$ inches.
 - 2.2. Fibrillated or monofilament micro fibers of various lengths and thicknesses.
3. Supplied in sealed, degradable bags of appropriate size for adding whole bags to concrete batches.
4. From a commercial source.

The reinforcing fiber content of the minor concrete must be from 5 to 6 lb/cu yd.

83-2.01B(2)(b)(iv) Coloring Agent

Not Used

83-2.01B(2)(c) Block-Out Material

The block-out material must be a commercially available expanded polystyrene foam with a compressive strength of 13 ± 5 psi at 10 percent deformation when tested under ASTM D1621.

If authorized, you may substitute an alternative block-out material that complies with the compressive strength requirements of the expanded polystyrene foam.

83-2.01B(2)(d) Backfill Material

Backfill material must be Class 2 aggregate base complying with section 26.

83-2.01B(3) Construction

83-2.01B(3)(a) General

Not Used

83-2.01B(3)(b) Clearing

Clear areas to receive minor concrete vegetation control of vegetation, trash, and debris. Dispose of the removed material.

83-2.01B(3)(c) Earthwork

Excavate or backfill areas to receive minor concrete vegetation control.

If the minor concrete vegetation control abuts the existing surfacing, and the edge of the existing surfacing is not on a neat line, cut the surfacing on a neat line to a minimum depth of 2 inches before removing the surfacing.

Perform grading so that the finished elevation of the minor concrete vegetation control maintains the existing or planned flow lines, slope gradients, contours, and existing surfacing.

Grade the areas to receive minor concrete vegetation control to a smooth, uniform surface and compact to a relative compaction of at least 90 percent.

83-2.01B(3)(d) Block Outs

For block-out material supplied in more than 1 piece, tape the pieces together to make a smooth surface on the top and sides.

Ensure that the block-out material does not move during concrete placement.

83-2.01B(3)(e) Forming

Forming must comply with section 73-1.03C.

Leave forms in place for at least 12 hours after surface finishing.

83-2.01B(3)(f) Minor Concrete

Strike off and compact the minor concrete until a layer of mortar is brought to the surface. Match the finished grade to the adjacent section of minor concrete vegetation control, pavement, shoulder, or existing grade.

Construct contraction joints by scoring concrete with a grooving tool and rounding corners with an edger tool.

83-2.01B(3)(g) Backfill Material

Backfill material required for minor concrete vegetation control under existing guardrail or barrier is change order work. Excavate or backfill areas to receive vegetation control.

83-2.01B(4) Payment

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Not Used

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**Add 97 LOG STRUCTURES
97-1 GENERAL**

97-1.01 SUMMARY

This section describes the scope of work for log structures, also referred to as sediment traps. This section includes the requirements for the size, species, and grade of trees used for the log structures, as well as the procurement, installation, and fastening requirements.

Definitions:

- A. DBH: Diameter of tree trunk measured at breast height.
- B. Salvaged Log: Trees removed from site during clearing and grubbing, 12–30-inch DBH, with root ball intact to be repurposed as log structures in Project.

97-1.02 SUBMITTALS

97-1.02A Tree Inventory for Log Structures

The Contractor shall provide a tree inventory identifying trees to be used as Salvaged Logs. The Resident Engineer will work with the Contractor to assist with species identification.

The Contractor shall only use Black locust (*Robinia pseudoacacia*), Valley oak (*Quercus lobata*), California black oak (*Quercus kelloggii*), Douglas fir (*Pseudotsuga menziesii*), coast redwood (*Sequoia sempervirens*), and coast live oak (*Quercus agrifolia*) as Salvaged Logs.

Willow (*Salix* sp.) species shall not be used as Salvaged Logs.

97-1.02B Log Structure Installation Plan

Contractor shall submit a Log Structure Installation Plan listing proposed construction equipment for log structure installation and proposed techniques for log structure installation.

The Contractor shall only install log structures under the oversight of the Resident Engineer, in accordance with the project Plans.

97-1.03C As-Built Plan

The Contractor shall record the location of the exposed end of all Salvaged Logs installed on site, along with the length of log and directional bearing of the buried portion of the log.

97-1.03 QUALITY ASSURANCE

Acceptance Criterion for Materials and Workmanship: The Resident Engineer shall inspect all materials and workmanship for compliance with the plans and specifications. Acceptance of all materials and workmanship is at the discretion of the Resident Engineer.

97-1.04 SAFETY

All work shall comply with the California Labor Code.

97-2 PRODUCTS

97-2.01 MANUFACTURERS

None.

97-2.02 MATERIALS AND EQUIPMENT

The log structures will consist of large, whole trees or sections of trees containing a trunk and root ball. All individual logs shall be sourced from the project areas within the limits of disturbance as shown in Tree Removal Plan Sheet D-1.1. Only those trees marked for removal on the Tree Removal Plan sheets shall be removed. Sheet D-1.1 and Tree Removal Table and Notes Sheet D-1.2, and as described in Section 17-2 Clearing and Grubbing.

Salvaged Logs shall be harvested from live trees. Trees that have been dead for more than one year shall not be used for Salvaged Logs. All trees shall be free from insect infestation, fungus, rot and/or other signs (e.g., presence of holes) that indicate disease or other factors that may compromise the longevity and durability of the material.

Salvaged Logs shall be removed in a manner that leaves the rootwad intact. The Contractor may trim roots from the rootwad that are less than 2-inches in diameter and/or more than 2-feet from the center of the tree, as needed to facilitate removal.

The Contractor shall furnish all materials, tools, equipment, facilities, and services as required for providing the necessary log placement work and facilities. Provide back-up equipment as necessary for replacement and for unanticipated emergencies.

Log diameter and length must be in accordance with Tree Removal Sheets D-1.1 and D-1.2 and Channel Details Sheets C-6.0 in the Contract Drawings; and, as specified above, or as directed in the field by the Resident Engineer.

97-3 EXECUTION

97-3.01 LOG PLACEMENT

Prior to starting work, Contractor and Resident Engineer shall meet to confirm schedule, order of work, methods, and removal of Salvaged Logs, Anchor Logs and Slash Material from Project Area.

Logs shall not be de-barked or altered in any way, other than pruning of limbs and unavoidable impacts during handling. The Contractor shall endeavor to minimize damage to the trunk, stakes, and rootwad, including, but not limited to, abrasion, splitting, crushing, and/or shearing.

Logs structures shall be installed under the supervision of the Resident Engineer.

Logs shall be placed along the alignment and orientation indicated in the Construction Drawings, unless otherwise instructed by the Resident Engineer based upon field conditions observed.

When placing logs into the channel, the Contractor shall minimize all impact to the channel and channel banks. All work will be conducted when the work area is completely dewatered, and no equipment shall be allowed to enter any flowing or standing water. In addition, all permit conditions shall be followed, in accordance with Section 14 Environmental Stewardship.

The Resident Engineer will inspect Salvaged Log layout prior to, and again after, placement.

Contractor shall comply with all project specifications and plans for log structure installation including Sections 21 Erosion Control and 13 Water Pollution Control.