

MONTEREY COUNTY

**DEPARTMENT OF
PUBLIC WORKS, FACILITIES AND PARKS**

BOOK ONE

**NOTICE TO BIDDERS
AND
SPECIAL PROVISIONS**

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1**

County Project No.: 7200



6/8/2022 | 3:49 PM PDT

**BOARD OF SUPERVISORS
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STATE OF CALIFORNIA**

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**DEPARTMENT OF PUBLIC WORKS
FACILITIES AND PARKS**

Randell Ishii, Director

**NOTICE TO BIDDERS
AND
SPECIAL PROVISIONS**

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1**

Project No.: 7200

FOR USE IN CONNECTION WITH STANDARD SPECIFICATIONS 2018, THE STANDARD PLANS 2018, INCLUDING THE LATEST REVISED STANDARD PLANS REVISED STANDARD SPECIFICATIONS DATED 10/15/2021 AS INDICATED HEREIN; THE CURRENT LABOR SURCHARGE EQUIPMENT RENTAL RATES, OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, BUSINESS AND TRANSPORTATION AGENCY; THE CURRENT GENERAL PREVAILING WAGE DETERMINED BY THE DIRECTOR OF INDUSTRIAL RELATIONS IS ON FILE WITH THE DEPARTMENT OF PUBLIC WORKS.

OFFICE OF THE COUNTY
COUNSEL-RISK MANAGMENT
APPROVED AS TO FORM

OFFICE OF THE COUNTY
COUNSEL-RISK MANAGMENT
APPROVED AS TO
INDEMNITY/ INSURANCE
PROVISIONS

AUDITOR-CONTROLLER
APPROVED AS TO FISCAL
TERMS PROVISIONS

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Mary Grace Perry

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Deputy County Counsel

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By: DANIELLE MANCUSO

Risk Manager

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By: GARY GIBONEY

Chief Deputy Auditor Controller

Date: 6/8/2022 | 3:49 PM PDT

The Technical Special Provisions contained herein have been prepared by or under the direction of the following registered persons.

GENERAL PROVISIONS, TEMPORARY WATER POLLUTION CONTROL, AND UTILITIES



6/3/2022

Richard Weber, PE, LS
Whitson and Associates, Inc.

Date



FLOODPLAIN GRADING AND DRAINAGE



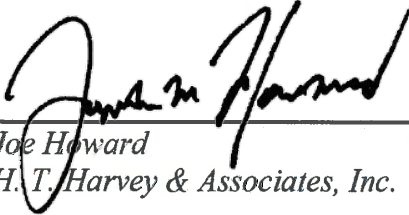
06/03/22

Edward Ballman, PE
Balance Hydrologics, Inc.

Date



LANDSCAPE ARCHITECT



06/03/2022

Joe Howard
H. T. Harvey & Associates, Inc.

Date



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COUNTY OF MONTEREY
PUBLIC WORKS, FACILITIES AND PARKS

NOTICE TO BIDDERS

Sealed bids will be received at the OFFICE OF THE COUNTY CLERK OF THE COUNTY OF MONTEREY, 168 WEST ALISAL STREET, SALINAS, CALIFORNIA 93901 (MAILING ADDRESS: P O BOX 1728, SALINAS CALIFORNIA 93902-1728), until 3:00 p.m., on July 15, 2022, for the:

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
Project No.: 7200**

as shown on the plans, at which time they will be publicly opened and read in the Board of Supervisors' Board Chambers.

The County of Monterey (County) – Department of Public Works, Facilities and Parks proposes to restore a portion of the south floodplain of the Carmel River including temporary water pollution controls, excavation and fill, habitat logs, fencing, irrigation system and potable water system work, erosion control seeding, mitigation planting, and three (3) years of plant establishment.

Complete the work, excluding plant establishment work, within 220 working days. Complete the work, including plant establishment work, within 970 working days. Complete the plant establishment work within 750 working days.

The Engineer's Estimate for the construction cost is approximately \$5,800,000.

The Bidder must submit its bid with a minimum price for plant establishment work. See section 2-1.09.

Bidder's attention is directed to Section 8-1.02 regarding submittal of a Critical Path Method Schedule as part of their bid.

A non-mandatory Pre-Bid Meeting will be held on June 30, 2022, at 10:00 a.m. at the Project Site, 27215 Highway 1, Carmel, CA 93923. For details email Thomas Montoya at montoyatl@co.monterey.ca.us or call (831) 796-6433.

The Bidder must have a valid Class A license at the time of bid opening.

A bidder's bond, issued by an admitted corporate surety company in an amount equal to at least ten percent (10%) of the amount bid, must accompany the bid.

The successful bidder shall furnish a payment bond and a performance bond each in the amount of one hundred percent (100%) of the Contract.

The Contract Documents are available ELECTRONICALLY and can be downloaded for free at the following Monterey County website: <http://www.co.monterey.ca.us/publicworks/bids.htm>. Plan holders must register before they can view or download the documents. A copy of the electronic files on compact-disc (CD) is also available at MONTEREY COUNTY DEPARTMENT OF PUBLIC WORKS, 1441 SHILLING

PLACE, SALINAS, CALIFORNIA 93901 for a nonrefundable fee of \$5.00. The electronic files can be used to print the project plans, project specifications, and other such documents at various printing companies.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the California Department of Industrial Relations and are available at the Department of Public Works, 1441 Schilling Place, Salinas, CA 93901, and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/DLSR/PWD>.

Pursuant to Labor Code Section 1771.1(a), a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. It is not a violation of Labor Code Section 1771.1(a) for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professional Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Labor Code Section 1725.5 at the time the contract is awarded.

Pursuant to Public Contract Code section 22300, the Contractor may substitute securities for any moneys withheld by the County to ensure performance under the contract.

Attention is directed to the Federal minimum wage rate requirements in the Special Provisions. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the general prevailing wage rates determined by the Director of the California Department of Industrial Relations for similar classifications of labor, the Contractor and subcontractors shall pay not less than the higher wage rate. The Department will not accept lower State wage rates not specifically included in the Federal minimum wage determinations. This includes "helper" (or other classifications based on hours of experience) or any other classification not appearing in the Federal wage determinations. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors shall pay not less than the Federal minimum wage rate, which most closely approximates the duties of the employees in question.

Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should call the U.S. Department of Transportation (800) 424-9071 "hotline," between 8:00 a.m. and 5:00 p.m., and report these activities.

The County reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding.

Date: June 21, 2022

RANDELL ISHII, MS, PE, TE, PTOE
DIRECTOR
DEPARTMENT OF PUBLIC WORKS, FACILITIES AND PARKS
COUNTY OF MONTEREY
STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS, FACILITIES & PARKS
COUNTY OF MONTEREY
STATE OF CALIFORNIA

SPECIAL PROVISIONS

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

STANDARD PLANS LIST

The standard plan sheets applicable to this Contract include those listed below. The applicable revised standard plans (RSPs) listed below are available at the following website:
<https://dot.ca.gov/programs/design/ccs-standard-plans-and-standard-specifications>.

ABBREVIATIONS, LINES, SYMBOLS, AND LEGEND

A3A	Abbreviations (Sheet 1 of 3)
A3B	Abbreviations (Sheet 2 of 3)
A3C	Abbreviations (Sheet 3 of 3)
A10A	Legend - Lines and Symbols (Sheet 1 of 5)
A10B	Legend - Lines and Symbols (Sheet 2 of 5)
A10C	Legend - Lines and Symbols (Sheet 3 of 5)
A10D	Legend - Lines and Symbols (Sheet 4 of 5)
A10E	Legend - Lines and Symbols (Sheet 5 of 5)

FENCES

A86	Barbed Wire and Wire Mesh Fences
A86A	Barbed Wire and Wire Mesh Fence Detail on Sharp Break in Grade
A86B	Barbed Wire and Wire Mesh Fence Details
A86C	Barbed Wire and Wire Mesh Fence Details at Ditch Crossing
A86D	Barbed Wire and Wire Mesh Fence - Miscellaneous Details

TEMPORARY WATER POLLUTION CONTROL

T51	Temporary Water Pollution Control Details (Temporary Silt Fence)
T58	Temporary Water Pollution Control Details (Temporary Construction Entrance)
T59	Temporary Water Pollution Control Details (Temporary Concrete Washout Facility)

The Bidder's Bond form mentioned in the last paragraph in Section 2-1.34, "Bidder's Security," of the Standard Specifications will be found in the Bid Form, Book Two. Bidder's security in the form of cashier's check or certified check shall be made payable to the County of Monterey.

In conformance with Public Contract Code Section 7106, a Noncollusion Declaration is included in the Bid Form, Book Two. Signing the Bid shall also constitute signature of the Noncollusion Declaration.

This Contract will require a Class "A" Contractor's license at the time of contract award.

Add between the 1st and 2nd paragraphs of section 2-1.06B:

The Department makes the following supplemental project information available:

Supplemental Project Information

Means	Description
Included in the <i>Information Handout</i>	<p style="text-align: center;">Environmental and Permits</p> <ol style="list-style-type: none"> 1. Project Mitigation Monitoring Plan 2. USFWS / NOAA Fisheries Biological Opinion 3. USACOE Section 404 Nationwide Permit 4. California Coastal Commission Coastal Development Permit 5. Project SWPPP and Notice of Intent 6. Central Coast RWQCB Section 401 Certification 7. California Department of Fish and Wildlife Section 1602 Streambed Alteration Agreement 8. California Department of Fish and Wildlife Section 2081 Incidental Take Permit 9. Monterey County Grading Permit 10. Monterey Peninsula Water Management District River Work Permit 11. Monterey Peninsula Regional Parks District – Encroachment Permit <p style="text-align: center;">Materials Information</p> <ol style="list-style-type: none"> 12. Water Source Information 13. Engineer’s Schedule Estimate 14. Earthwork Cut/Fill Map 15. Project Reports: <ol style="list-style-type: none"> a. Geotechnical Design Report b. Foundation Report c. Restoration Management Plan 16. Record Drawings <ol style="list-style-type: none"> a. Rio Road Tieback Levee and Carmel River South Bank Levee Armor b. Grading and Erosion Control Plans, Coast Ranch 17. Maximum Applied Landscape Water Allowance Calculations <p style="text-align: center;">Grants</p> <ol style="list-style-type: none"> 18. California Wildlife Conservation Board 19. DWR Flood Corridor Protection 20. DWR Urban Streams 21. DWR Coastal Flood 22. National Fish and Wildlife Foundation 23. Coastal Conservancy

Add to section 2-1.07:

The bidder must examine carefully the site of the work contemplated, the specifications, and the proposal and contract forms therefor. The submission of a bid must be conclusive evidence that the bidder has investigated and is satisfied as to the general and local conditions to be encountered, as to the character, quality and scope of work to be performed, the quantities of materials to be furnished and as to the requirements of the proposal, plans, specifications and the contract.

The submission of a bid must also be conclusive evidence that the bidder is satisfied as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information was reasonably ascertainable from an inspection of the site as well as from the specifications made a part of the contract.

All bidder inquiries about the meaning or intent of the Contract Documents submitted to the Engineer must be in writing. Replies to the inquiries will be in the form of addenda and will be mailed, faxed, or delivered to all parties recorded by the Engineer as having received the bidding documents. Issued addenda must be considered as part of the Contract Documents. Bidder inquiries received less than ten (10) days prior to the date of bid opening will not be answered. Oral and other interpretations or clarifications will be without legal effect.

The County assumes no responsibility for conclusions or interpretations made by a bidder or contractor based on the information or data made available by the County. The County does not assume responsibility for representation made by its officers or agents before the execution of the contract concerning surface or subsurface conditions, unless that representation is expressly stated in the contract. No conclusions or interpretations made by a bidder or contractor from the information and data made available by the County will relieve a bidder or contractor from properly fulfilling the terms of the contract.

Add to the end of section 2-1.09:

The item total for plant establishment work must be at least \$200,000.

Add to section 2-1.10:

The bidder's attention is directed to other provisions of said Act (Public Contract Code § 4100 et seq.) related to the imposition of penalties for a failure to observe its provisions by using unauthorized Subcontractors or by making unauthorized substitutions.

A sheet for listing the Subcontractors, as required herein by law, is included in the Bid.

^^

3 CONTRACT AWARD AND EXECUTION

Replace section 3-1.04 with:

Bidders who wish to lodge a protest as to the award of the bid must do so before 5:00 p.m. of the fifth business day following the notice of intent to award the contract. Failure to timely file a written protest shall constitute a waiver of right to protest. Untimely protests will not be accepted or considered. Bid protests must be submitted, in writing, to: MONTEREY COUNTY DEPARTMENT OF PUBLIC WORKS TO THE ATTENTION OF THE PROJECT MANAGER, 1441 SCHILLING PLACE, SALINAS, CALIFORNIA, 93901. Protests may be hand-delivered or sent via facsimile [(831)755-4958], certified postal mail, or E-mail to the attention of the project manager [The Project Manager's E-mail address may be obtained by calling (831) 755-4800]. Bid protests must include the project name and project number, a complete statement describing the basis for the bid protest, including a detailed statement of all legal and factual grounds for the protest, any documentation supporting the protestor's grounds for the protest, and the form of relief requested and the legal basis for such relief. The party lodging the protest must also include their contact information including mailing address, telephone number, and E-mail address.

If a valid protest is timely filed, the Department must investigate the bid protest. The protested bidder will have three (3) business days to respond to any Department of Public Works requests to provide additional information. The Department must respond to the protesting party, stating its finding. The Department Director will make a recommendation to the Board regarding the bid protest.

If the Agency awards the contract, the award is made to the lowest responsible and responsive bidder within ninety (90) days after bid opening, whose bid complies with all the requirements prescribed. In determining the lowest “responsible” Bidder, consideration will be given to the general competency of Bidder in regard to the work covered by the bid.

The contract must be executed by the successful bidder and must be returned, together with the contract bonds and insurance certificates, to the MONTEREY COUNTY PUBLIC WORKS DEPARTMENT so that it is received within ten (10) days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so will be just cause for forfeiture of the bid guaranty. The executed contract documents must be delivered to the following address: MONTEREY COUNTY DEPARTMENT OF PUBLIC WORKS, 1441 SCHILLING PLACE, SALINAS, CALIFORNIA, 93901.

Replace No. 2 in the 1st paragraph in section 3-1.05 with:

- 2. Performance bond to guarantee the faithful performance of the contract. This bond must be equal to at least one hundred percent (100%) of the total bid.

^^

5 CONTROL OF WORK

Replace section 5-1.25 with:

5-1.25 AUTOMATED MACHINE GUIDANCE

5-1.25A General

You may use automated machine guidance (AMG) if the AMG meets or exceeds the staking tolerances described in section 12.5, "Typical Department-Furnished Construction Stakes," of the Department's *Surveys Manual*.

You are responsible for determining whether the work and site conditions are practical for AMG use. Furnish a GNSS rover compatible with your GNSS base station or the GNSS correction service you subscribe to. The Department returns the GNSS rover upon work completion. This is change order work. At the preconstruction conference, be prepared to discuss survey control points, site and equipment calibration, inspection methods, conflict resolution, and staking.

5-1.25B Definitions

automated machine guidance (AMG): Technology that uses positioning devices, singly or in combination, such as global navigation satellite systems (GNSS), total stations, or rotating laser levels, to determine and control the real-time position of construction equipment using onboard computer equipment.

California Coordinate System of 1983 (CCS83): CCS83 as defined in Pub Res Code § 8801.

digital construction model (DCM): Three-dimensional model used by the Contractor's AMG equipment.

digital design model: Three-dimensional model consisting of roadway design alignments, profiles, and cross sections representing the finished grade.

digital terrain model: Three-dimensional model representing the original ground before job site activities start.

global navigation satellite system (GNSS): Satellite system used to pinpoint the geographic location of a user's receiver anywhere in the world. Two GNSS systems are in operation: the US GPS and the Russian Federation's GLONASS. Each of the GNSS systems uses a constellation of orbiting satellites working in conjunction with a network of ground stations.

GNSS base station: Single ground-based system consisting of a GNSS receiver, antenna, and telemetry equipment that provides differential GNSS correction signals to other GNSS receivers or rovers. Multiple base stations can be combined into a GNSS network.

GNSS correction service subscription: Subscription service to receive differential GNSS correction signals for higher accuracy GNSS positioning without the need of a GNSS base station. Signals are normally received via cellular wireless data services.

GNSS rover: Portable GNSS antenna, receiver, rod, and data collector with telemetry equipment for real-time point measurements.

grid: Cartesian coordinate system of Northing (y) and Easting (x) coordinates using CCS83.

robotic total station: Survey instrument capable of tracking an optical target and providing real-time coordinates of the target to the equipment operator and AMG equipment. A robotic total station unit can provide AMG if site conditions do not allow GNSS receivers to be used and if a higher accuracy is required than the GNSS provides.

site calibration or localization: Process that establishes the relationship between the observed control point coordinates and the site coordinate system, which is usually grid. The term applies to both GNSS and robotic total station equipment.

5-1.25C Electronic Files

Electronic design files include:

1. Digital terrain model in 3-D DGN or LandXML format
2. Roadway design alignments and profiles in LandXML format
3. Cross sections in 2-D DGN and PDF
4. Digital design model in LandXML format
5. 2-D layout lines and target geometry in DWG format

The Department makes electronic design files available as supplemental project information. You must create the digital construction models.

Convert the electronic design files to a format compatible with your AMG system. Manipulation of the electronic design files is at your own risk.

Submit copies of the digital construction model files and any updates to them in LandXML format. Digital design model information may not exist for contour grading and some drainage areas. The Department places stakes for these areas.

The Department provides you with updated electronic data whenever the Engineer determines a plan change materially affects the finished grade. For minor grade changes, the Department places stakes and marks.

5-1.25D Quality Control Plan

Submit an AMG QC plan at least 15 days before starting work requiring AMG. The plan must include the following information:

1. Contract number
2. Name and contact information of the AMG QC technician
3. Limits of the area for which the AMG will be used

4. Scope of work to be completed using AMG for the following work categories:
 - 4.1. Clearing and grubbing
 - 4.2. Earthwork
 - 4.3. Trench excavation
 - 4.4. Rough grading
 - 4.5. Subgrade
 - 4.6. Subbase
 - 4.7. Base
 - 4.8. Curb and gutter
 - 4.9. Cold planning or milling existing pavement
 - 4.10. Paving
 - 4.11. Intelligent compaction
 - 4.12. Concrete barrier
 - 4.13. Finishing roadway
5. Project control plan sheet detailing control points covering the job site
6. List of GNSS equipment, including:
 - 6.1. Type
 - 6.2. Manufacturer
 - 6.3. Model
 - 6.4. Software version
7. Description of GNSS site calibration or localization checking, including:
 - 7.1. List of equipment requiring calibration or localization checking
 - 7.2. Site calibration or localization procedures
 - 7.3. Frequency of calibration or localization
 - 7.4. Format for recording calibrations or localizations, including:
 - 7.4.1. Date
 - 7.4.2. Locations where calibration or localization was performed
 - 7.4.3. GNSS equipment manufacturer and model
 - 7.4.4. Range of required tolerance
 - 7.4.5. Name and signature of the person performing calibration or localization
 - 7.5. Reporting time for submitting records of calibration or localization
8. Description of daily GNSS equipment or robotic total station equipment check-testing procedures, including the format for recording daily check testing
9. List of AMG onboard computer equipment, including:
 - 9.1. Type
 - 9.2. Manufacturer
 - 9.3. Software version
 - 9.4. List of AMG-controlled equipment, including:
 - 9.4.1. Type, such as loader or grader
 - 9.4.2. Manufacturer
 - 9.4.3. Model
10. Procedures for AMG-controlled equipment calibration, including:
 - 10.1. Description of equipment calibration procedures
 - 10.2. Frequency of calibration
 - 10.3. Format for recording calibration information
11. Electronic data file control, including:
 - 11.1. Name and contact information of the person responsible for the electronic files
 - 11.2. DCM file-naming convention
 - 11.3. Description of the process that will be used to upload the DCM to the AMG equipment
 - 11.4. Description of the process that will be used whenever updated DCM files are required to be uploaded to the AMG equipment

If QC procedures or personnel change, submit a QC plan supplement describing the change.

5-1.25E Quality Control Technician

During AMG activities, provide a QC technician to be responsible for:

1. GNSS site calibration or localization and upload to all GNSS receivers
2. Maintenance of GNSS and AMG equipment
3. Documentation of the calibration or localization and maintenance of GNSS equipment
4. Daily calibration and documentation of AMG equipment
5. Daily setup and takedown of GNSS and robotic total station components

5-1.25F Just-in-Time Training

Provide at least 8 hours of JIT training on the GNSS rover for up to 3 Department employees. Provide training materials and equipment.

The JIT training must cover the following topics:

1. Background information for the GNSS to be used
2. Setup and calibration checks for:
 - 2.1. GNSS receiver
 - 2.2. GNSS base station
 - 2.3. GNSS rovers
 - 2.4. Machinery
3. Operation of the GNSS rover, including:
 - 3.1. Setup data collection
 - 3.2. Settings for alignments and profiles
 - 3.3. Onboard display options
4. Demonstration of grade checking using the rover

The training is change order work.

5-1.25G Construction

5-1.25G(1) General

If you find a discrepancy in any survey control point, survey stake, or in the electronic data provided, immediately, submit an RFI.

5-1.25G(2) GNSS Site Calibration or Localization

Perform GNSS site calibration or localization to the survey control points at least 5 business days before starting work requiring AMG.

Check each survey control point for accuracy. Submit the GNSS site calibration or localization results within 1 business day of the calibration or localization testing. Allow 3 business days for the review of the results

5-1.25G(3) GNSS Check Testing

Before starting daily work requiring AMG, conduct check testing for the proper setup of the GNSS or robotic total station equipment. Ensure the GNSS or robotic total station equipment achieves accuracies within:

1. 0.10 foot in both horizontal and vertical directions for rough grading
2. 0.05 foot in horizontal directions and 0.02 foot in vertical directions for final grades

Before starting daily production, conduct check testing of the AMG equipment and the GNSS rovers. Within 1 business day after check testing, submit the check-testing results as informational submittals.

5-1.25G(4) Grade Verification

If requested, provide a GNSS rover and personnel to operate it for the Engineer's use in verifying grades. This is change order work.

Replace section 5-1.26 with:

5-1.26A Summary

Section 5-1.26 includes specifications for surveying and furnishing and setting construction stakes and markers to establish the lines and grades required for the completion of the work and as necessary for the Engineer to check lines, grades, alignment and elevations.

You must perform construction surveying and staking as necessary to control the work. Perform surveys and furnish and set construction stakes and marks with accuracy adequate to assure that the completed work conforms to the lines, grades, and section.

You must follow all procedures, methods, and typical stake markings under Chapter 12, Construction Surveys, of the Caltrans publication "Surveys Manual." Copies of the "Survey Manual" may be purchased from Caltrans Publications Unit 1900 Royal Oaks Drive, Sacramento, California 95815, (916) 445-3520.

5-1.26B Existing Data

Review and verify the existing horizontal and vertical controls within two (2) weeks of Notice to Proceed, and prior to the start of work.

Review all record documents provided by the County within two (2) weeks of Notice to Proceed, and prior to the start of work.

Site data given herein and on the Drawings are as exact as could be secured, but their absolute accuracy cannot be guaranteed. Exact locations, distances, elevations, etc., shall finally be governed by field conditions and the Engineer's direction.

In the event there is any conflict between actual conditions and the Drawings, notify the Engineer immediately and do not proceed with the work until directed by the Engineer.

5-1.26C Construction Staking

5-1.26C(1) Submittals

You must submit all computations necessary to establish the exact position of the work from control points. All computations, survey notes, and other records necessary to accomplish the work must be neat, legible, and accurate. Copies of such computation, notes and other records must be furnished to the Engineer before beginning work that requires their use.

Upon completion of construction staking and before acceptance of the contract, all computations, survey notes, and other data used to accomplish the work must be submitted to the Engineer and will become the property of the County of Monterey.

5-1.26C(2) Grade Quality Control

Use a GNSS rover, robotic total station equipment, or a level to check the grades at the frequencies shown in the following table:

Grade Checking Requirements

Type of work	Area or distance represented by the grade checking	Frequency (number of grade points)
Earthwork for cut and fill slopes ≤ 15 feet	200 feet	2
Earthwork for cut and fill slopes > 15 feet	1,000 sq yd	1
Rough grading	1,000 sq yd	1
Trenching	100 feet	6
Subgrade	1 mi	30
Subbase layer	1 mi	50
Base layer	1 mi	100
Curb and gutter	100 feet	6
Concrete barrier	100 feet	5
Finishing roadway	1,000 sq yd	2

Notify the Engineer when an area is ready for line and grade inspection. Submit the grade checking results on a Grade Checking Report form as an informational submittal.

5-1.26C(3) Removal

Construction stakes and marks (including paint marks) must be removed from the site of work when no longer needed.

5-1.26D As-Built Survey

Provide an as-built survey of the completed work. The survey shall show: limits of work; locations and elevations of rubble, aggregate, stripped materials, and any other materials buried with in the agricultural preserve; buried irrigation lines and valves; limits of installed mitigation planting and habitat logs; centerlines of unimproved roads and trails 10'-wide and narrower; edges of all surfaced roads and of dirt roads wider than 10'; and all utilities.

The survey shall provide an accurate representation of the finish grade at a 1-foot contour interval. A digital aerial photomap (image) of the Project Site shall also be provided. The image shall have a maximum 2-inch pixel size. The image may be an aerial photomap or a drone photomap.

5-1.26D(1) Submittals

Submit the as-built survey in both Adobe PDF and AutoCAD DWG formats, both with and without the aerial photomap underlay. The map shall be at a maximum scale of 1" = 50' and 22"x34" sheet size.

5-1.26E Payment

The Department pays you for construction surveying as follows:

1. A total of 90 percent of the various surveying bid items over the life of the work.
2. A total of 100 percent of the item totals upon submission of final computations, notes, CAD files, and other data.

Replace section 5-1.32 with:

The Project Site parcels shall be used only for purposes that are necessary to perform the work. The Contractor shall not occupy the property, or allow others to occupy the property, for purposes that are not necessary to perform the work.

Personal vehicles of your employees must not be parked within the highway right-of-way.

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 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, it has a pH above 5.0, does not contain soluble lead in concentrations equal to or greater than 5mg/l as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II, does not contain lead in concentrations above 80 mg/kg total lead, is free from all other contaminants identified in the local material plan, and will comply with the job site's basin plan and water quality objectives of the RWQCB.

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 to hazardous waste concentration thresholds and the RWQCB's basin plan requirements and water quality objectives for the job site location

6-1.03B(4) Sample and Analysis

Sample and analyze local material from a (1) noncommercial source or (2) 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 the (1) 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.

Analyze the samples using the US EPA's ProUCL software with a 95 percent upper confidence limit. 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 free of possible contaminants identified in the local material plan
5. Complies with the RWQCB's basin plan for the job site location
6. Complies with the RWQCB's water quality objectives for the job site location

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 material.

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 material 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 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, it has a pH above 5.0, does not contain soluble lead in concentrations equal to or greater than 5mg/l as determined by the Waste Extraction Test (WET) Procedures, 22 CA Code of Regs § 66261.24(a)(2) App II, does not contain lead in concentrations above 80 mg/kg total lead, and (3) is not contaminated with the other constituents of concern identified in the local material plan in excess of these constituents'

respective San Francisco Bay RWQCB commercial/industrial environmental screening levels or recognized naturally occurring background concentrations in the job site area.

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 ESL Summary tables (Feb. 2016, Rev 3) found at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml

6-1.03B(4) Sample and Analysis

Sample and analyze local material from a noncommercial source or 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 a noncommercial material source or 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.

Analyze the samples using the US EPA's ProUCL software with a 95 percent upper confidence limit. 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% upper confidence limits) in excess of their respective commercial/industrial San Francisco Bay RWQCB environmental screening levels ESLs or recognized naturally occurring background concentrations in the job site area.

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.

Add to section 6-1:

6-1.06 BUY CLEAN CALIFORNIA ACT

6-1.06A General

The following materials or products are subject to the Buy Clean California Act (Pub Cont Code § 3500 et seq.):

Material or product	Material specifications
Carbon steel rebar	Section 52-1.02B, "Bar Reinforcement"
Structural steel	Section 55-1.02D(1), "General," – Structural Steel table or Section 99, "Building Construction"
Flat glass	Section 99, "Building Construction"
Mineral wool board insulation	Section 99, "Building Construction"

For product category rules and North America program operators for applicable materials or products, go to the METS website.

For projects with bid opening dates after November 30, 2018, through November 30, 2019, the Department collects existing environmental product declarations for materials or products subject to the Buy Clean California Act.

6-1.06B Definitions

environmental product declaration: Independently verified document created and verified in accordance with International Organization for Standardization (ISO) 14025 for Type III environmental declarations that identifies the global warming potential emissions of the facility-specific material or product through a product stage life cycle assessment.

product category rule: Program operator established rule based on the science of life cycle assessment that governs the development of the environmental product declaration for the material or product.

product stage: Boundary of the environmental product declaration that includes (1) raw material supply, (2) transportation processes, and (3) processing operations, including operations such as melting, mixing, fabrication, finishing, curing, cooling, trimming, packaging and loading for transport delivery. Commonly referred to as a "cradle-to-gate" life cycle assessment.

program operator: Independent agency that supervises and confirms the full environmental product declaration development process in accordance with ISO 14025.

wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractors, the Contractor and subcontractors will pay not less than the Federal minimum wage rate, which most closely approximates the duties of the employees in question.

Add to section 7-1.06D(2):

Attention is directed to Section 7-1.05, "Indemnification" and Section 7-1.06 "Insurance," of the Standard Specifications and these Special Provisions.

In addition to all the requirements in Section 7-1.06D(2) of the Standard Specifications, the following additional requirements must be met. An Additional Insured Endorsement to the Contractor's Liability insurance policy naming the County of Monterey, their officers, agents, design consultants, and employees as additional insured's in the form approved by the County of Monterey must also be furnished. A copy of the approved endorsement form may be obtained from the County of Monterey at the address to obtain bid packages as shown in the Notice to Bidders. The insurance afforded to the additional insured's is primary insurance and if the additional insured's have other insurance that might be applicable to any loss, the amount of this insurance will not be reduced or prorated due to the existence of such other insurance.

The contractor's insurer agrees to waive subrogation claims against the County of Monterey, their officers, agents, and employees.

Evidence of insurance (Contractual Liability insurance and Additional Insured Endorsement) in compliance with the requirements herein must be furnished to the County of Monterey by the Contractor with the Certificate of Insurance in the form as approved by the County of Monterey. A copy of the approved certificate form may be obtained from the County of Monterey at the address to obtain bid packages as shown in the Notice to Bidders. Certificates of insurance must, without any qualification thereto, contain the following statement:

Should any of the described policies be canceled, modified, or reduced in limits before the expiration date thereof, the issuing company will mail 30 days advance written notice to the named certificate holders.

The insurance must be issued by a company or companies authorized to transact business in the State of California and must have a rating of at least A- VII in accordance with the current Best's rating.

Insurance coverage in the minimum amounts set forth herein will not be construed to relieve the Contractor for liability in excess of such coverage, nor will it preclude the State of California or County of Monterey from taking such other actions as are available to them under any other provision of this contract (except retention of money due to the Contractor) or otherwise in law.

Nothing in the Contract is intended to create the public or any member thereof a third party beneficiary hereunder, nor is any term and condition or other provision of the contract intended to establish a standard of care owed to the public or any member thereof.

Prior to the execution of the Contract by the County, Contractor must file certificates of insurance with the County Contracts/Purchasing Department and with the County Director of Public Works, showing that the Contractor has in effect the insurance required by this Contract. The Contractor must file a new or amended certificate of insurance promptly after any change is made in any insurance policy that would alter the information of the certificate then on file. Acceptance or approval of insurance will in no way modify or change the indemnification clause in this Contract, which will continue in full force and effect.

- 2.1. Submitted by the 15th day of a month
- 2.2. Approved by the 20th day of a month
3. Amount for materials on hand
4. Amount earned for mobilization
5. Deductions
6. Withholds
7. Resolved potential claims
8. Payment adjustments

Submit certification stating the work complies with the QC procedures. The Engineer does not process a progress estimate without a signed certification.

9-1.16A(2) Applications for Payment

The Engineer prepares monthly progress payment estimates. The Contractor must submit to the Engineer a written request (before the 10th day of the month) which authorizes the Engineer to prepare the monthly progress payment estimates for all remaining payments due under the Contract. The County, once in each month, must cause an estimate in writing to be made by the Engineer, and the Contractor's signature approving the progress payment estimate will be considered to be "receipt of an undisputed and properly submitted payment request" from the Contractor under Section 20104.50 of the California Public Contract Code, and the County must make payment to the Contractor within 30 days after such receipt.

Under the procedure described above, progress pay estimates prepared by the Engineer must include the following:

Contractor's Verification: Contractor has carefully reviewed this entire document and hereby attests that the quantities and amounts stated herein accurately represent the total work that has been performed in compliance with the Contract Documents. Contractor will pay any released retainage to Subcontractor due to accepted complete work of the Subcontractors portion of the work within 30 days of receipt of payment as required under 49 CFR Part 26 sub section 26.29(b)(3).

9-1.16A(3) Prompt Payment to Subcontractors

Attention is directed to the provisions in Sections 10262 and 10262.5 of the Public Contract Code and Section 7108.5 of the Business and Professions Code concerning prompt payment to subcontractors. A prime contractor or subcontractor must pay any subcontractor not later than seven (7) days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The seven (7) days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 will subject the violating contractor or subcontractor to the penalties, sanction and other remedies of that section. This requirement will not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

Add to the end of section 9-1.16A:

Attention is directed to the provisions in Sections 10262 and 10262.5 of the Public Contract Code and Section 7108.5 of the Business and Professions Code concerning prompt payment to subcontractors. A prime contractor or subcontractor must pay any subcontractor not later than seven (7) days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The seven (7) days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only for good cause and with the agency's prior written approval. Any violation of Section 7108.5 will subject the violating contractor or subcontractor to the penalties, sanction and other remedies of that section. This requirement will not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving

late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

Replace section 9-1.22 with:

9-1.22 ARBITRATION:

- A. Application of article; inclusion of article in plans and specifications (Public Contract Code Section 20104):
- 1a. This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a Contractor and the County of Monterey.
 - 1b. This article will not apply to any claims resulting from a contract between the Contractor and the County of Monterey when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, of the Public Contract Code).
 - 2a. "Public Works" has the same meaning as in Sections 3100 and 3106 of the Civil Code.
 - 2b. "Claim" means a separate demand by the Contractor for (A) a time extension, (B) payment of money or damages arising from work done by or on behalf of the Contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.
 3. The provisions of this article or a summary thereof must be set forth in the plans or specifications for any work, which may give, rise to a claim under this article.
 4. This article applies only to contracts entered into on or after January 1, 1991.
- B. Claims; requirements (Public Contract Code Section 20104.2):

For any claim subject to this article, the following requirements apply:

1. The claim must be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.
- 2a. For claims of less than fifty thousand dollars (\$50,000), the local agency must respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the local agency may have against the claimant.
- 2b. If additional information is thereafter required, it must be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.
- 2c. The local agency's written response to the claim, as further documented, must be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.
- 3a. For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency must respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the local agency may have against the claimant.
- 3b. If additional information is thereafter required, it must be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.
- 3c. The local agency's written response to the claim, as further documented, must be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.
4. If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within

Add after the 1st paragraph of section 13-4.03B(1):

Before starting construction activities, prepare an emergency response and cleanup plan for review and approval by the County. You must implement the plan during construction. The plan must detail the methods to contain and clean up spill of petroleum products or other hazardous materials in the work area.

Add to section 13-4.01A:

The construction contractor must water all active construction sites as least twice daily. Frequency shall be based on the type of operation, soil, and wind exposure.

Prohibit all grading activities during periods of high wind (over 15 mph).

Haul trucks must maintain at least 2 ft of freeboard above ground surface.

The construction contractor must cover all trucks hauling dirt, sand, or loose materials.

Limit the area under construction at any one time.

Add to section 13-4.03E(3):

Steam clean or pressure wash construction equipment to remove mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds, before mobilizing to arrive at the construction site and before leaving the construction site. (Mitigation Measure IS-1)

^^

14 ENVIRONMENTAL STEWARDSHIP

14-1 GENERAL

Add to section 14-1.02:

More than one ESA exists on the job site. Use the management measures for the corresponding ESA shown in the following table:

ESA Management

Identification	Location	Management measures
Sensitive habitat areas outside the grading limits	Various locations	Install temporary flagging and temporary exclusionary fence as shown on the Plans. Do not access sensitive habitat areas that are outside the authorized grading limits.
Fish Ranch Adobe	East of the grading limits	Install temporary exclusionary fence as shown on the Plans. Do not access the area inside the high-visibility silt fence.
Potential Waters of the U.S.	Graded agricultural ditch near the south property line of APN 243-071-005	Install temporary high-visibility silt fence as shown on the Plans. Do not access the area south of the silt fence. Do not allow construction runoff to enter the Potential Waters of the U.S.

Before starting job site activities, install fencing and flagging to protect the ESAs and mark their boundaries.

Maintain the fencing and flagging until Contract acceptance. Remove the fencing and flagging immediately prior to Contract acceptance, when ordered by the Engineer.

Furnish a two-way radio to each monitor and equipment operator. Monitors shall be able to communicate with equipment operators and with other monitors by radio at all times, in addition to hand signals.

14-2 CULTURAL RESOURCES

Add to section 14-2.01:

Install exclusionary fencing around the Fish Ranch Adobe prior to the initiation of construction. Install the fencing under the supervision of the Project Archeologist. The purpose of the exclusionary fencing is to ensure construction activities avoid all impacts to this historic resource. Provide evidence of installation to the Engineer prior to construction. Monitor the fencing weekly throughout construction. Remove the fencing at the end of construction, when ordered by the Engineer.

Add to section 14-2.02:

Native American monitor: A reasonably trained or otherwise qualified monitor who is a descendant of OCEN or ETMC and is the designated archaeological monitor for OCEN or ETMC.

Replace the second paragraph in section 14-2.03A with:

If, at any time during Project construction, potentially significant cultural resources are encountered, work shall cease within 50 feet of the find until the Project Archaeologist, Native American monitor(s), and the State Parks archeologist (for discoveries within State Parks property) can evaluate the discovery. If the find is determined to be significant, steps shall be taken to protect the find from further damage or disruption. The Service's Regional Historic Preservation Officer (RHPO) and the County will be notified. Additionally, an appropriate mitigation plan shall be developed and implemented with the concurrence of the Lead Agencies and in consultation with an OCEN representative and an ETMC representative.

The Project Archaeologist and Native American monitor(s) shall closely coordinate the recovery of any significant cultural materials that may be found in the excavated soil. If determined appropriate and

necessary by the monitors, they shall selectively screen soil samples through 1/8" mesh to facilitate data recovery. The property owner, in consultation with the County, shall determine how best to proceed with all materials remaining in the screen and recovered artifacts of interest. Removal of any/all cultural deposits or features on State Parks property shall not occur unless the State Parks archaeologist has been contacted and has been on site to determine how best to proceed.

In accordance with California PRC Sections 5097 and 7050.5, if, at any time, human remains are discovered, the Monterey County Coroner and Service's RHPO must be notified. For discoveries of human remains within State Parks property, the State Parks archeologist shall also be notified. If the Coroner determines that the remains are likely to be Native American, the Native American Heritage Commission will be notified and will appoint a Most Likely Descendent (MLD) to provide recommendations for the disposition of the remains and work will not resume until they have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating and disposing of, with appropriate dignity, the human remains and any associated grave goods, as provided in California PRC 5097.98.

Replace the second paragraph in section 14-2.03B with:

Provide an archaeological monitor to observe work activities as described in section 14-2.03.
The Department provides Native American monitors.
The entire project site is an archaeological monitoring area.
Do not perform ground disturbing work unless the archaeological monitor and Native American monitor(s) are present.

Add:

14-2.03C Contractor-Supplied Archaeologist (Project Archaeologist)

The Contractor-supplied archaeologist monitors work activities for the protection of archaeological resources. The Contractor-supplied archaeologist performs the work specified for the Project Archaeologist in the following project Mitigation Measures:

- CUL-2 Cultural sensitivity training for grading crews
- CUL-3 On-call professional archaeologist
- CUL-4 Evaluation of potentially significant cultural resources
- CUL-5 Recovery of significant cultural materials
- CUL-6 Coordination with Monterey County Coroner and Service's RHPO
- CUL-7 Final Technical Report
- CUL-8 Monitoring of exclusion fencing at Fish Ranch Adobe

The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

The Contractor-supplied archaeologist must:

1. Monitor cut slopes, trenches, spoils piles, and all graded surfaces for freshly exposed human remains and artifacts
2. Immediately notify the Engineer of any discoveries
3. Prepare, submit, and sign notifications and reports

All reports must include:

1. Names of the person(s) conducting the monitoring
2. Dates and times of monitoring
3. Locations and activities monitored
4. Findings and recommendations
5. Name of the archaeologist who prepared the report
6. Signature of the archaeologist certifying the accuracy of the report

Submit the name, resume, and statement of qualifications for a Contractor-supplied archaeologist within 7 days after Contract approval. If required under PLACs, the Department sends the archaeologist's statement of qualifications to regulatory agencies for review and approval before hiring. Allow 30 days for the regulatory agency review. If the submittal is incomplete, the Department provides comments. Submit a revised statement of qualifications within 7 days of receiving comments.

Archaeologists who perform specialized activities must have field experience performing the specialized task. All project-specific authorizations must be current and valid from start of work until work completion.

14-2.03E Worker Training

The Contractor-supplied archaeologist and Native American monitor(s) shall provide cultural resource sensitivity training for grading crews prior to the initiation of construction.

Cultural resource sensitivity training shall be provided by the State Parks archeologist for grading activities on State Parks property. During this training, the construction contractor, Project Archaeologist, State Parks archeologist, and Native American monitor(s) will agree on a communication plan and initial steps to implement Mitigation CUL-4 if potentially significant cultural resources are encountered.

14-2.03F Archaeological Monitoring

At least one Native American monitor must be on site to observe each excavation activity. The Project Archeologist shall communicate and coordinate with the Native American monitor(s) in regard to all data collection and the evaluation of all artifacts.

The Contractor-supplied archaeologist shall be on call to quickly assess any potentially significant cultural materials, archaeological resources, or human remains that might be uncovered during project excavations.

14-6 BIOLOGICAL RESOURCES

Add to the 1st paragraph of section 14-6.03A:

This project is within or near habitat for the regulated species shown in the following table:

Regulated Species

Dusky-Footed Woodrat
Western Pond Turtle
California Red-Legged Frog
Coast Range Newt
California Legless Lizard
Central California Coast Steelhead
Tricolored Blackbird
Nesting Raptors: Cooper's hawk, Sharp-shinned hawk, Ferruginous hawk, northern harrier, white-tailed kite, merlin, American peregrine falcon, osprey
Special-status riparian avian species: oak titmouse, Lawrence's goldfinch, yellow-breasted chat, yellow warbler
Special-status ground-dwelling avian species: California horned lark and western burrowing owl
Other special-status avian species: short-eared owl, olive-sided flycatcher, marbled godwit, long-billed curlew, whimbrel, yellow-billed magpie, and Nuttall's woodpecker

Replace item 1 in the 2nd paragraph of section 14-6.03A with:

1. Stop all work within a 100-foot radius of the discovery except as shown in the following table:

Regulated species	Protective radius (feet)
Nesting Birds	300

Add to section 14-6.03D(1)

The Contractor-supplied biologist and Contractor-supplied biological monitor must perform the work required by the PLACs. Contractor's attention is directed to the following project Mitigation Measures:

- NC-2 On-call biologist and construction biological monitor
- NC-3 Oversee protective fencing installation and monitoring
- AS-1 Employee Education Program
- AS-2 Monitor construction activities
- AS-3 Monitor construction site for trash and debris
- AS-4 Pre-construction surveys for Monterey dusky-footed woodrat
- AS-5 Pre-construction surveys for nesting birds
- AS-6 Pre-construction surveys for coast range newts, California legless lizards, and western pond turtles
- TE-1 Pre-construction surveys and monitor construction activities for California red-legged frog
- TE-2 Designate and train a construction biological monitor

A Service-approved Contractor-supplied biologist must perform certain work. Contractor's attention is directed to the following Mitigation Measures:

- TE-1 Pre-construction surveys and monitor construction activities for California red-legged frog
- TE-2 Designate and train a construction biological monitor

The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

Contractor's attention is also directed to the US Fish and Wildlife Service *Biological Opinion* and California Department of Fish and Wildlife *Avoidance and Minimization Measures*, which are also included in the *Information Handout*.

Submit the name, resume, and statement of qualifications for a Contractor-supplied biologist (and Service-approved Contractor-supplied biologist, if separate from the Contractor-supplied biologist) within 7 days after Contract approval. If required under PLACs, the Department sends the biologist's statement of qualifications to regulatory agencies for review and approval before hiring. Allow 30 days for the regulatory agency review. If the submittal is incomplete, the Department provides comments. Submit a revised statement of qualifications within 7 days of receiving comments.

Add:

14-6.03E CALIFORNIA RED-LEGGED FROG PROTECTION (MM TE-3)

To prevent inadvertent entrapment of CRLF during the Project construction, all excavated, steep-walled holes or trenches more than two feet deep will be covered by the Project Contractor at the close of each working day with plywood or similar materials. Before such holes or trenches are filled, they must be thoroughly inspected by the Service-Approved Contractor-supplied biologist or biological monitor for trapped animals.

14-7 PALEONTOLOGICAL RESOURCES

Replace section 14-7.04 with:

14-7.04 PALEONTOLOGICAL RESOURCES MITIGATION

14-7.04A General

Fossils within or excavated from the highway remain the property of the land owner. Submit a schedule of subsurface-disturbing activities at least 15 days before starting job site activities. Submit an updated schedule at least 3 business days before implementing any changes. All of your personnel and subcontractors involved in subsurface-disturbing activities must complete 1 hour of training by the Contractor-provided paleontological monitor before working at the job site. Do not perform subsurface-disturbing activities unless authorized. Notify the Engineer 15 days before starting subsurface-disturbing activities.

The Engineer may order you to:

1. Divert or stop construction activities in the vicinity of fossils
2. Avoid disturbing an area pending the removal of fossils
3. Perform additional excavation
4. Modify an excavation to facilitate in-place stabilization of fossils by the mitigation team

Additional excavation and modification of an excavation to facilitate in-place stabilization of fossils if ordered are change order work.

14-7.04B Contractor-Supplied Paleontologist

The Contractor-supplied paleontologist monitors work activities for the protection of paleontological resources. The Contractor-supplied paleontologist performs the work specified in the following project Mitigation Measures:

- PAL-1 On-Call professional paleontologist and paleontological monitor
- PAL-2 Paleontological sensitivity training for grading crews

The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

The Contractor-supplied paleontologist must:

1. Monitor cut slopes, trenches, spoils piles, and all graded surfaces for freshly exposed fossil remains
2. Immediately notify the Engineer of any fossil discoveries
3. Prepare, submit, and sign notifications and reports

All reports must include:

7. Names of the paleontologist conducting the monitoring
8. Dates and times of monitoring
9. Locations and activities monitored
10. Findings and recommendations
11. Name of the paleontologist who prepared the report
12. Signature of the paleontologist certifying the accuracy of the report

Submit the name, resume, and statement of qualifications for a Contractor-supplied paleontologist within 7 days after Contract approval. If required under PLACs, the Department sends the paleontologist's statement of qualifications to regulatory agencies for review and approval before hiring. Allow 30 days for the regulatory agency review. If the submittal is incomplete, the Department provides comments. Submit a revised statement of qualifications within 7 days of receiving comments.

Paleontologists who perform specialized activities must have field experience performing the specialized task. All project-specific authorizations must be current and valid from start of work until work completion.

14-7.05C Worker Training

Prior to earthmoving activities, the Contractor-supplied paleontologist shall provide a worker training program to inform construction personnel of the possibility for fossil discoveries (including the location of the areas of high potential) and shall instruct personnel to immediately inform their supervisor if any bones or other potential fossils are unearthed at the Project site and a paleontological monitor is not present. In such a case, workers shall immediately cease all activity within a 20-foot radius of the discovery site until a qualified professional paleontologist shall be mobilized to the Project site to examine and evaluate the find. If necessary, appropriate salvage measures will be developed in consultation with the responsible agencies and in conformance with Caltrans guidelines and best practices in mitigation paleontology. Work may not resume in the discovery area until it has been authorized by a qualified paleontologist.

14-7.05D Paleontological Monitoring

Excavations near the southern boundary of the Project site that are greater than five feet in depth shall be periodically spot checked by the Contractor-supplied paleontologist or paleontological monitor. The spot checks shall occur on a daily basis for at least the first three days to allow for the paleontological monitor to fully assess the onsite conditions and impacted sediments.

Full time monitoring shall be implemented during excavations in to native Pleistocene sediments and Miocene marine sandstone (Tus), if encountered. If it is determined that paleontologically sensitive sediments are not being impacted, this can be reduced to weekly checks upon approval by the Engineer. Additionally, monitoring and spot checking efforts may be reduced, at the discretion of the qualified paleontologist in consultation with the County, Service, and Caltrans (for work within the state right-of-way), if it is determined that only previously disturbed and Holocene-aged alluvial sediments are being impacted, or if sediments are deemed to be nonconductive to fossil preservation.

If a fossil is discovered by a monitor in a construction excavation, the monitor shall immediately notify the equipment operator and/or site project manager to stop work, and then mark the area surrounding the site with flagging until the discovery can be fully explored and evaluated. The paleontological monitor shall immediately notify the Principal Paleontologist, site project manager, and Resident Engineer. Construction activities in the immediate vicinity of the site shall stop until authorization for work to continue is provided by the qualified paleontologist. If a concentration of fossils are found, the area will be flagged and the site project manager, Resident Engineer, and Principal Paleontologist, will be notified to determine necessary action. Any action shall be communicated to the contractor and responsible agencies. Construction activities can continue outside of an appropriate buffer to the discovery site based on the size of the fossil and in consultation with the site project manager and/or Resident Engineer. All scientifically important fossils shall be salvaged and fully documented within a detailed stratigraphic framework as construction conditions and safety considerations permit. Significance criteria and salvage procedures are discussed in the Paleontological Identification Report/Paleontological Evaluation Report prepared for the Project.

14-7.05E Final Paleontological Monitoring Report

The Contractor-supplied paleontologist shall prepare a final paleontological monitoring report. The report shall be delivered to the County, Service, Caltrans, and the University of California Museum of Paleontology at Berkeley (or other appropriate fossil repository) within 30 days of the completion of field work, or as negotiated on consultation. The report shall include dates of field work, results of monitoring, fossil analyses, significance evaluation, conclusions, locality forms, and an itemized list of specimens.

14-8 NOISE AND VIBRATION

Add:

14-8.03 NOISE MONITORING

Prepare a Construction Noise Management Plan (CNMP) and provide noise monitoring as required by project Mitigation Measure NSE-1. The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

14-8.04 NOTIFICATION OF ADJACENT LANDOWNERS AND OCCUPANTS

Provide advance written notice to property owners and building occupants located adjacent to the construction area as required by project Mitigation Measure NSE-2. Provide draft notices to the Engineer for approval at least 10 days prior to proposed noticing. The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

14-8.05 NIGHTTIME NOISE

Noise-generating construction activities shall be limited during the nighttime hours between 9:00 p.m. and 7:00 a.m., consistent with Monterey County noise ordinance Chapter 10.60, Monday through Saturday. Noise-generating construction activities shall be prohibited on Sundays and State-recognized holidays.

14-9 Air Quality

Add:

14-9.04 PROJECT-SPECIFIC AIR QUALITY MITIGATION MEASURES

Implement Project Mitigation Measures AQ-1 and AQ-2. The Mitigation Monitoring and Reporting Program is included in the *Information Handout*.

5. Topsoil stockpiles shall be between 3 and 5 feet in height. Stockpiles should be treated with a tackifier or watered regularly to control dust and to reduce the spread of airborne weed seed.
6. A silt fence and construction fencing should be installed around the perimeter of each stockpile location to prevent erosion and to avoid disturbance by construction activities. Stockpiles should be routinely monitored for the establishment of nonnative, invasive weeds as identified by the Engineer's Representative or a qualified soil or restoration ecologist. All non-native, invasive weeds establishing on stockpiles shall be controlled prior to seed-set.
7. Soil stockpiles that require overwintering should be seeded with a cover crop as directed by a qualified soil or restoration ecologist to maintain soil health and reduce erosion.
8. A soil or restoration ecologist should be onsite during topsoil placement. Topsoil shall be placed in areas specified on the Drawings.
9. Prior to topsoil placement, the graded soil surface shall be loosened to a minimum depth of 12 inches via ripping. To rip to specified depth, ripping bars shall be longer than 12 inches. After ripping, the subgrade shall be track-walked to compact the subgrade to 85% compaction prior to topsoil placement.
10. Topsoil shall be placed in lifts during dry conditions only. The first lift should be placed and ripped to a depth of 12 to 24 inches to eliminate abrupt textural boundary between subgrade and topsoil. Topsoil damaged due to the Contractor's activities during the course of work shall be replaced at the Contractor's expense.
11. At final grade, placed topsoil should be track-walked perpendicular to contour and compacted to 85%. Compaction should not exceed 90% in any location.

19 EARTHWORK

Add:

19-11 FLOODPLAIN EARTHWORK

19-11.01 GENERAL

The work of this section consists of providing all necessary labor, tools, equipment, and incidentals for excavation and placement of diverse types of fill to construct the restoration features including, but not limited to intermittent drainage channels, floodplains, log structures, boulder cascade structures, and temporary levee plugs in order to complete the work described in the Technical Specifications and shown on the Drawings.

19-11.02 CLASSIFICATION OF FLOODPLAIN EARTHWORK

For specification purposes, floodplain earthwork shall be classified as follows:

1. Rough grading: All rough excavation and fill involved in grading and construction of the subgrade for the restored floodplain.
2. Fine grading: All detailed excavation and fill involved in grading the construction of new channels, buried boulder bank protection, boulder cascade, culvert crossings, log structures, roadways, trails, and embankments.
3. Topsoil placement: Used for floodplain and slope construction, on top of compacted native soils, or cut slopes where planting or seeding is to occur and as specified in 17-3 Floodplain Clearing, Grubbing, and Topsoil Placement. Includes furnishing, placing, and compacting topsoil to the grades shown on the Drawings and to the compaction levels specified herein.

19.11.03 PRODUCTS

19-11.03A Channel Bed Material

1. Unless otherwise specified or directed by the Engineer's Representative, channel bed material shall be clean and subangular to subrounded rock and generally consisting of cobbles, gravels, and sands.
2. Materials excavated on-site will be visually inspected by the Engineer's Representative to determine suitability for re-use as channel bed material and may be stockpiled for re-use after acceptance. No other testing of suitable on-site material will be required.
3. See the Drawings for plans associated with excavation and grading. It is the Contractor's responsibility to verify estimated volumes required to implement the Drawings.
4. All imported channel bed material will be rejected by the Engineer's Representative if it is not clean or contains excessive fines as specified below:

Sieve Opening	% Passing, by Weight
12"	100
6"	84
3/8"	50
No. 4	16
No. 10	0

5. Unsatisfactory channel bed material shall include or be equivalent to ASTM D2487 soil classification groups GM, GC, SW, SP, SM, SC, ML, CL, OL, MH, CH, OH, and Pt. Other unacceptable soils would include rip-rap unless otherwise specified herein.
6. The channel bed material shall be well mixed prior to placement.

19-11.03B Topsoil

1. Unless otherwise specified or directed by the Engineer's Representative, topsoil shall be topsoil salvaged from the project site and placed as described in Section 17-3 Floodplain Clearing, Grubbing, and Topsoil Placement and as shown on the Drawings.

19-11.04 EXECUTION**19-11.04A Excavation**

General Excavation Requirements:

1. It is the responsibility of the Contractor to identify field-verified locations of existing utilities and provide all safety measures necessary to work under and around existing utilities prior to commencing excavation.
2. Perform excavation as indicated and required for constructing the floodplain features as specified on the Drawings.
3. Excavate to the lines and grades indicated on the Drawings accounting for overexcavation for later topsoil placement as shown on the Drawings or described herein.
4. Except as otherwise indicated, preserve the material below and beyond the lines of excavations. Where an excavation is carried below the indicated grade, backfill to the indicated grade as herein specified.
5. Excavations for convenience of the Contractor must be approved in advance by the Engineer's Representative.
6. Excavated earth material that is suitable for fill shall be conditioned for re-use and properly stockpiled for later fill placement as herein specified. Test, screen, and mix as necessary to meet specified requirements.
7. Boulders encountered during excavation shall be properly stockpiled as specified herein for reuse contingent upon the specification in Section 20-13 Boulder Cascade Structures and approval by the Engineer's Representative. Unsuitable boulders for reuse shall be disposed of as specified elsewhere in this Section.

8. Boulders too large to be removed may be broken by mechanical means into smaller fragments for removal or treated as bedrock as described elsewhere in this Section.
9. Bedrock encountered during excavation and that interferes with trenching for buried or partially buried structures shall be the lower limit of excavation. In this circumstance, depths of bedding layers or the number of vertically stacked boulders may be adjusted per the discretion of the Engineer's Representative to achieve the finished grade specified in the Drawings. If a structure is unable to be installed within the specified tolerances and using bedrock as the lower limit of excavation it shall be brought to the immediate attention of the Engineer's Representative.
10. Nothing in this Section shall be construed to allow the use of explosives for excavation or removal of boulders or bedrock.

19-11.04B Subgrade Inspection

1. Notify the Engineer's Representative when excavations have reached required subgrade.
2. If the Engineer's Representative determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or embankment fill material as directed. Authorized additional excavation and replacement material will be paid for according to Contract provisions for Extra Work.
3. Proof-roll subgrade at locations requested by the Engineer's Representative with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
4. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Engineer's Representative, without additional compensation.

19-11.04C General Fill Requirements

1. Use materials removed from site excavations, if such material meets specified requirements and is acceptable to the Engineer's Representative.
2. Backfilling is required around all structures.
3. Place fill in layers not to exceed eight (8) inches of loose material and compact each layer to specified density before next layer is placed.
4. Place fill material in such a manner that unbalanced horizontal loads shall not be applied to existing or newly placed structures or portions of structures, utilities, or pipelines.

19-11.04D General Compaction Requirements

1. Unless otherwise specified, compact each layer of fill material to 85 percent relative compaction
2. Do not use compaction equipment and methods that produce excessive horizontal or vertical earth pressures on structures. Excessive horizontal earth pressures are those in excess of at-rest earth pressures. Excessive vertical earth pressures are those in excess of overburden pressures.

19-11.04E Channel Bed Material

1. Channel bed material placement methods:
 - 1.1 All sub grades to receive channel bed material must be inspected by Engineer's Representative prior to placement of fill.
 - 1.2 Channel Bed Material Compaction: Compact each lift with two (2) passes of a vibratory roller or equivalent. Density of placed channel bed material shall be inspected visually by the Engineer's Representative for acceptability. No other testing will be required.

19-11.04F Finish Grading

1. Finish grading shall prepare the excavated and filled areas for planting or seeding by assuring a uniform surface free of debris.

2. Verify that grades are correct. If discrepancies occur, notify the Engineer's Representative and do not commence finish grading work until instructed by the Engineer's Representative.
3. Smooth grade breaks and slope transitions so that they are gradual and provide positive drainage.

19-11.04G Protection

1. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
2. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 2.1 Scarify or remove and replace soil material to depth as directed by Engineer's Representative; reshape and recompact.
3. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 3.1 Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

19-11.03H Fine Grading

1. Planting and seeding areas shall be fine-graded to finish grade to produce a surface suitable for planting and seeding. Protect areas from compaction after they have been prepared.
2. Smooth soil conditions to remove large clods. Establish finish grades to eliminate uneven areas resulting from rough-grading operations, filling as needed and remove surplus soil and float areas to a smooth, uniform grade to elevations as indicated on the Drawings. Blend finish grades with existing grades, providing for smooth transitions to existing grades and positive drainage. All areas shall be fine graded to within 1-1/2 inches of paved areas and curbs.
3. Fine grading shall be done manually around sensitive areas, vegetation to be preserved, and existing hardscape elements and structures.
4. Unless otherwise directed by the Engineer's Representative, cross-slopes shall be 2%, maximum.
5. At no time will the finish grade surfaces have a glazed appearance.
6. The Engineer's Representative will approve all finish grades.

20 LANDSCAPE

Replace section 20-2 with:

20-1 GENERAL

20-1.01 GENERAL

20-1.01A Summary

Section 20 includes general specifications for performing restoration landscaping work.

Irrigation, Planting, and Long-Term Maintenance are specified in sections 32 84 00, 32 93 00, and 32 97 00. These sections are contained in Book 3 of these special provisions.

Sections 20-11 through 20-13 specify selective tree removal, habitat logs, and boulder cascade structures.

Replace section 20-2 with Book 3, Section 32 84 00, IRRIGATION SYSTEM.

Replace section 20-3 with Book 3, Section 32 93 00, PLANTING.

Replace section 20-4 with Book 3, Section 32 97 00, LONG-TERM MAINTENANCE.

Delete sections 20-5 and 20-10.

Add:

20-11 SELECTIVE TREE REMOVAL

20-11.01 GENERAL

20-11.01A General

The work of this section consists of providing all necessary labor, tools, equipment, and incidentals to salvage select trees from the site with rootwads intact as described in the Technical Specifications and shown on the Drawings.

20-11.01B Project Conditions

The Contractor shall attend a walk-through of the site with the Engineer to confirm trees that are to be salvaged as logs with rootwads. The walk-through shall also establish the acceptability of proposed means and extent of salvaging and means and methods that will be used to protect existing trees to remain.

20-11.02 PRODUCTS

Not Used.

20-11.03 EXECUTION

20-11.03A Protection Existing Plants

1. Contractor shall comply with all requirements and conditions in the PLACs.

20-11.03B SELECTIVE REMOVAL OF TREES

1. Obtain relevant permits for tree removal. The Contractor shall obtain all special permits and licenses and give all notices required for performance and completion of tree removal including removal work, hauling, and stockpiling of salvaged logs.
2. Trees to be salvaged as logs with rootwads intact shall be removed by appropriate mechanical means. Trees may be topped prior to removal as long as the salvaged log is of sufficient length for use as a log shown on the Drawings.
3. Efforts shall be made to preserve the largest rootwad mass practical. Section 20-12 Habitat Log Structures includes specifications for logs with rootwad.
4. Larger rootwads shall be trimmed to have a maximum diameter of 10 feet.
5. Salvaged logs with rootwads shall be stockpiled for later placement in the restored floodplain.

Add:

20-12 HABITAT LOG STRUCTURES

20-11.01 GENERAL

20-11.01A General

The work of this section consists of providing all necessary labor, tools, equipment, and materials to construct the habitat log features with dimensions and locations as shown on the Drawings, as specified herein, and as directed by the Engineer's Representative.

The work of this section includes the following considerations:

1. Trenching, compacting original ground or scarified sub grade will not be measured separately for payment, and all costs in connection therewith will be considered incidental to the construction of the log structures.

2. Sub grade and bearing-foundation preparation will not be measured separately for payment and all costs in connection therewith will be considered incidental to the construction of the log structures.
3. Re-handling of stockpiled material will not be measured separately for payment, but will be considered incidental to the work to which it pertains.

20-11.01B Submittals

1. Logs (no rootwad attached) shall be of the types described in Section 20-11.02A, and shall be pre-approved by the Engineer's Representative prior to importation to the work site. The Contractor shall submit five 5" X 7" color photographs of the proposed logs to the Engineer's Representative fifteen (15) days before commencing work. Pressure treated or otherwise chemically treated logs will not be allowed under any circumstances All photos shall include a person for scale.
2. Logs with rootwads shall be pre-approved by the Engineer prior to importation to the work site, if imported logs are needed. The Contractor shall submit five 5" X 7" color photographs of the proposed logs to the Engineer's Representative fifteen (15) days before commencing work. Pressure treated or otherwise chemically treated logs will not be allowed under any circumstances. All photos shall include a person for scale.

20-11.01C Quality Control

1. Tolerances: Place logs and construct other finish surfaces of work described in this Section to plus or minus 3 inches of the elevations indicated on the Drawings.

20-11.01D Site Conditions

1. Unfavorable Weather Conditions:
 - 1.1. Trenching, and placement habitat logs shall not be performed during weather conditions which might damage or be detrimental to the condition of existing ground, in-progress work, or completed work.
2. Prevention of Erosion: Comply with requirements specified in these Technical Specifications, the Project SWPPP, and the following:
 - 2.1. Prevent erosion of stockpiles, ditches, embankments, filled, backfilled, and graded areas until such time as permanent drainage and erosion control measures have been installed.
 - 2.2. Perform "protective grading" to provide positive drainage and to minimize ponding of surface water.

20-11.02 PRODUCTIONS

20-11.02A Logs with Rootwads

Logs shall first be obtained from material salvaged onsite during clearing operations, and by means described in Section 20-11 Selective Tree Removal. Additional logs with rootwads may be obtained if a sufficient number of suitable logs were not acquired during selective tree removal. Habitat logs shall be 10-20 feet long including the rootball, 12 to 24 inches in diameter, and generally straight. The habitat log shall be trimmed so that branches protrude no more than 6 inches from the trunk. Engineer's Representative can make adjustments to the log dimensions in the field as needed.

20-11.02B Willow Stakes

Cuttings shall conform to the type indicated in planting plan Drawings.

20-11.03 EXECUTION

1. Log structures shall be constructed to the dimensions and at the locations indicated on the Drawings and within the tolerances specified herein.
2. The Contractor shall complete the installation of the first log structure with the Engineer's Representative present such that specific construction methods and tolerances are agreed upon.

20-13.02 PRODUCTS

20-13.02A Cascade Boulders

1. All boulders shall be tan or light brown in color and accepted in advance by the Engineer's Representative per the submittal requirements herein.
 - 1.1 Boulders shall not be angular rip rap. Boulders shall have rounded edges and have a weathered outer surface.
 - 1.2 Boulders shall be subject to a separate acceptance process from rock used elsewhere. No boulders shall be imported to the site until accepted by the Engineer's Representative.
 - 1.3 Boulders shall be stockpiled separately on-site and shall not be mixed with other boulder, rock or soil materials.

20-13.03 EXECUTION

20-13.03A Field Quality Control

1. Contractor shall coordinate with Engineer's Representative to schedule inspections at the following stages.
 - 1.1 Cascade Boulder placement
 - 1.2 Cascade Weir Boulder placement
 - 1.3 Completion of the Boulder Cascade
2. Inspections shall be coordinated with inspections in Section 19-11 Floodplain Earthwork.
3. All project work shall remain within the limit of work shown on the Drawings. With the exception of designated clearing and grubbing, tree pruning, fencing, or direct approval from the Engineer's Representative, all project work shall not encroach upon environmentally sensitive areas (as delineated in the field by the ESA fencing).
4. Progress inspections: In addition to the inspections specified, the Engineer's Representative may make periodic progress inspections.

20-13.03B Boulder Cascade Structures

1. Contractor shall coordinate with the Engineer's Representative prior to installation of boulder cascade structures. The first Cascade Boulder structure shall be approved prior to subsequent structure installation.
2. Trenching, placement of subgrade material and placement of the boulders shall be such that the top of the uppermost course of boulders conform within 3-inches of the elevations shown on the Drawings.
3. Trenching shall be completed to the required depths after which a minimum 0.5-foot layer of channel bed fill type II subgrade shall be placed. Boulders shall be placed on top of the subgrade by mechanical means. Dumping shall not be an allowable placement method. Each course of boulders shall be mechanically compacted. Compaction with excavator bucket or other equipment is allowable.
4. Each boulder shall make firm contact with adjacent boulders. Boulders placed such that they do not make firm contact with adjacent boulders shall be replaced to conform to the specifications herein. All boulders above the bottom course shall be buttressed a minimum of 1 foot in the downstream direction.
5. Once boulders are placed they shall be backfilled. All voids between the boulders shall be chinked by hand using appropriately sized materials selected from the channel bed fill mixture so there are no voids remaining larger than 3 inches in any dimension.
6. Structures shall be constructed to the dimensions and elevations shown on the Drawings unless otherwise indicated or directed in the field by the Engineer's Representative.
7. The top of the upper course of boulders shall be at the elevation called out on the Drawings and approved by the Engineer's Representative. Boulders shall be placed such that the top elevation increases in the direction of the adjacent banks.
8. The first flow path for water moving down the boulder cascade shall be over the upstream course of boulders at or near the channel centerline. Under no circumstance will structures be approved or

accepted if the first flow path for water moving down the channel would bypass or run around the end of the structure.

^^

21 EROSION CONTROL

Replace 1st paragraph of section 21-2.01C(3) of the RSS for section 21:

Submit description and map of proposed seed collection locations within 15 working days of Notice to Proceed. All collection locations shall be pre-approved in writing by Engineer, The Big Sur Land Trust, State Parks, and Monterey County before collection can occur.
At least 60 days before seed application, submit proof that the order for seed required for the Contract has been placed and accepted by the seed vendor. Include the seed's botanical names, quantity ordered, and the anticipated date of delivery.

^^

DIVISION VII DRAINAGE FACILITIES

71 EXISTING DRAINAGE FACILITIES

Replace *Reserved* in section 71-6.03 with:

71-6.03A General

Abandon culverts or pipelines by removing portions of the culverts or pipelines, filling the inside, and backfilling the depressions and trenches to grade. As an alternative to abandoning a culvert or pipeline, you may remove the culvert or pipeline, dispose of it, and backfill.
Notify the Engineer before abandoning a culvert or pipeline.

71-6.03B Materials

Openings into existing structures that are to remain in place must be plugged with minor concrete under section 90.

71-6.03C Construction

Wherever culverts or pipelines intersect side slopes, remove them to a depth of at least 3 feet. Measure the depth normal to the plane of the finished side slope. Abandon the remaining portion of the culvert or pipeline.

Culverts or pipelines that are 12 inches or more in diameter must be completely filled by authorized methods. Backfill with sand that is clean, free draining, and free from roots and other deleterious substances. As an alternative to sand, you may backfill with one of the following:

- 1. Controlled low-strength material under section 19-3.02F
- 2. Slurry cement backfill under section 19-3.02D

Ends of culverts and pipelines must be securely closed by a 6-inch-thick, tight-fitting plug or wall of commercial-quality concrete.

71-6.03D Payment

If backfilling inside the culvert or pipeline is required, payment for backfilling inside the culverts or pipelines is included in the payment for abandon culvert or abandon pipeline. Payment for backfilling outside the culvert or pipeline is included in the payment for abandon culvert or abandon pipeline.

If backfilling inside the culvert or pipeline is required, payment for backfilling inside the culvert or pipeline is paid for as sand backfill. Payment for backfilling outside the culvert or pipeline is included in the payment for abandon culvert or abandon pipeline.

APPENDIX I - SAMPLE CONTRACT

SAMPLE CONTRACT

CONTRACT FOR PUBLIC WORK

COUNTY OF MONTEREY

STATE OF CALIFORNIA

PROJECT NO. 7200

THIS AGREEMENT, is made in triplicate by and between the COUNTY OF MONTEREY, a political subdivision of the State of California, hereinafter called the "County," and _____, hereinafter called the "Contractor,"

WITNESSETH:

(1) **THE WORK**

The Contractor shall do all the work and furnish all the materials, except such as are mentioned in any of the contract documents to be furnished by the County, necessary to construct and complete in a good, workmanlike and substantial manner and to the satisfaction of the County, the following public work:

**CARMEL RIVER FLOODPLAIN RESTORATION AND ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

in accordance with this agreement and with all of the following additional contract documents which are incorporated into and made a part of this agreement:

- (a) The Standard Specifications, dated 2018, and the Standard Plans, dated October 2018, including issued revisions dated 10/15/2021, of the State of California, Department of Transportation.
- (b) A set of plans entitled:

**CARMEL RIVER FLOODPLAIN RESTORATION AND ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

- (c) The Special Provisions for the work
- (d) The Notice to Bidders calling for bids
- (e) The Payment and Performance bonds required
- (g) Certificate of Insurance
- (h) The accepted bid/proposal including the following:

- (1) List of Subcontractors
- (2) Equal Employment Opportunity Certification
- (3) Public Contract Code
 - Section 10285.1 Statement
 - Section 10162 Questionnaire
 - Section 10232 Statement
- (4) Noncollusion Declaration
- (5) Debarment and Suspension Certification
- (6) Statement Concerning Employment of Undocumented Aliens
- (7) Contractor's Certificate As To Workers' Compensation
- (8) Waiver for Payment Adjustment for Price Index Fluctuations
- (9) Contractor's Certification of Good-Faith Effort to Employ Monterey Bay Area Residents
- (10) List of Satisfied Public Agencies
- (11) Bidder's Bond

All contract documents are intended to cooperate, so that any work called for in one and not mentioned in another is to be executed the same as if mentioned in all. However, should there be any conflict between the terms of this instrument and the Contractor's bid or proposal, then this instrument shall control.

2. WORKERS' COMPENSATION

In accordance with the provisions of Section 3700 of the Labor Code, the Contractor and every Subcontractor will be required to secure the payment of compensation to his employees.

3. CONTRACT PRICE

The County shall pay the Contractor the following prices for the performance of this contract:

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

CONTRACT PRICE

BID:

ITEM NO.	F	CONTRACT ITEM	UNIT	QUANTITY	Unit Cost	Amount
1		LEVEL 2 CRITICAL PATH METHOD SCHEDULE	LS	1		
2		DEVELOP WATER SUPPLY	LS	1		
3		CONSTRUCTION AREA SIGNS	LS	1		
4		JOB SITE MANAGEMENT	LS	1		
5		PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1		
6		RAIN EVENT ACTION PLAN	EA	15		
7		STORM WATER SAMPLING AND ANALYSIS DAY	EA	25		
8		STORM WATER ANNUAL REPORT	EA	1		
9		TEMPORARY CONSTRUCTION ENTRANCE	EA	1		
10		STREET SWEEPING	LS	1		
11		TEMPORARY CONSTRUCTION ROADWAY	SQYD	2,000		
12		TEMPORARY EXCLUSIONARY FENCE	LF	400		
13		TEMPORARY HIGH-VISIBILITY SILT FENCE	LF	1,400		
14		TEMPORARY FLAGGING (TYPE ESA)	EA	120		
15		CONSTRUCTION STAKING	LS	1		
16		CONTRACTOR-SUPPLIED BIOLOGIST	LS	1		
17		CONTRACTOR-SUPPLIED ARCHAEOLOGIST	LS	1		
18		CONTRACTOR-SUPPLIED PALEONTOLOGIST	LS	1		
19		CONSTRUCTION NOISE MANAGEMENT PLAN AND NOISE MONITORING	LS	1		
20		DEMOLITION	LS	1		
21	F	CLEAR TREES AND SALVAGE LOGS WITH ROOTWADS	AC	6		
22	F	BLISTER MATERIAL EXCAVATION	CY	34,000		
23	F	RAISED AG ROAD AND WELL SITE STOCKPILE EXCAVATION	CY	75,000		
24	F	FLOODPLAIN EXCAVATION	CY	232,000		
25	F	FLOODPLAIN EXCAVATION (LOCAL TOPSOIL)	CY	3,200		
26	F	FINE GRADING (FLOODPLAIN)	SQYD	317,000		
27	F	CLASS 2 AGGREGATE BASE (AGRICULTURAL ROAD)	CY	430		

28	F	WILDLIFE FRIENDLY BARBED WIRE FENCE	LF	2,500		
29		12' METAL GATE	EA	2		
30	F	24" PLASTIC PIPE	LF	20		
31	F	ROCK SLOPE PROTECTION (60 LB, CLASS II, METHOD B)	CY	5		
32		MONITORING WELL	EA	5		
33		PLACE & SECURE HABITAT LOG	EA	39		
34		STOUT FENCE (BOLLARD)	EA	7		
35		RELOCATE 2" DOMESTIC WATER SERVICE	LS	1		
36		IRRIGATION SYSTEM	LS	1		
37	F	EROSION CONTROL TYPE 2	AC	63		
38	F	EROSION CONTROL TYPE 3	AC	18		
39		RESTORATION PLANTING	LS	1		
40		AS-BUILT SURVEY	LS	1		
41		PLANT ESTABLISHMENT WORK (3 YEARS)	LS	1		
42		MOBILIZATION	LS	1		
TOTAL						

F – Final Pay Item

4. PUBLIC WORKS CONTRACT

The parties to this AGREEMENT understand and agree that this is a Public Works Contract pursuant to California Public Contract Code Section 7103.5 which states,

(a) As used in this section:

(1) “Public works contract” means a contract awarded through competitive bids by the state or any of its political subdivisions or public agencies, on whose behalf the Attorney General may bring an action pursuant to subdivision (c) of Section 16750 of the Business and Professions Code, for the erection, construction, alteration, repair, or improvement of any structure, building, road, or other improvement of any kind.

(2) “Awarding body” means the state or the subdivision or agency awarding a public works contract.

(b) In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

(c) Subdivision (b) shall be included in full in the specifications for the public works contract or in the general provisions incorporated therein and shall be included in full in the public works contract or in the general provisions incorporated therein.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the dates appearing below their respective signatures.

CONTRACTOR:

(Name of Company)

By: _____
Corp: Signature of Chair, President, or Vice-President
LLC: Signature of Manager

Printed Name and Title

Date: _____

By: _____
Corp: Signature of Secretary, Asst. Secretary, CFO,
Treasurer or Asst. Treasurer
LLC: Signature of Manager

Printed Name and Title

Date: _____

COUNTY OF MONTEREY:

DEPARTMENT OF PUBLIC
WORKS, FACILITIES AND
PARKS

AUDITOR-CONTROLLER
APPROVED AS TO FISCAL
PROVISIONS

By: _____

Name: Randell Ishii, MS, PE, TE, PTOE

Title: Director

Dated: _____

By: _____

Name: Gary Giboney

Title: Chief Deputy Auditor-Controller

Date: _____

OFFICE OF THE COUNTY
COUNSEL-RISK MANAGEMENT
APPROVED AS TO FORM

OFFICE OF THE COUNTY
COUNSEL- RISK
MANAGEMENT
APPROVED AS TO INDEMNITY/
INSURANCE PROVISIONS

By: _____

Name: Mary Grace Perry

Title: Deputy County Counsel

Date: _____

By: _____

Name: Danielle P. Mancuso

Title: Risk Manager

Date: _____

***INSTRUCTIONS:** If CONTRACTOR is a corporation, including non-profit corporations, the full legal name of the corporation shall be set forth above together with the signatures of two specified officers per California Corporations Code Section 313. If CONTRACTOR is a limited liability company, the full legal name of the LLC shall be set forth above together with the signatures of two LLC Managers. If CONTRACTOR is a partnership, the name of the partnership shall be set forth above together with the signature of a partner who has authority to execute this AGREEMENT on behalf of the partnership. If CONTRACTOR is contracting in an individual capacity, the individual shall set forth the name of the business, if any, and shall personally sign the AGREEMENT.

COUNTY OF MONTEREY

PAYMENT BOND

(Civil Code Section 9550)

WHEREAS, the County of Monterey has awarded to Principal, as Contractor, a contract for the following project:

**CARMEL RIVER FLOODPLAIN RESTORATION AND ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

AND WHEREAS, Principal, as Contractor, is required to furnish a bond in connection with said contract, to secure the payment of claims of laborers, mechanics, materialmen, and other persons furnishing labor and materials on the project, as provided by law.

NOW, THEREFORE, we _____, as Principal, and _____

_____ as Surety, are held and firmly bound unto the County of Monterey, a political subdivision of the State of California (hereinafter called "County"), and to the persons named in California Civil Code section 9100 in the penal sum of _____ Dollars (\$ _____) for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

If the Principal, or any of Principal's heirs, executors, administrators, successors, assigns, or Subcontractors, (1) fails to pay in full all of the persons named in Civil Code Section 9100 with respect to any labor or materials furnished by said persons on the project described above, or (2) fails to pay in full all amounts due under the California Unemployment Insurance Code with respect to work or labor performed on the project described above, or (3) fails to pay for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and Subcontractors pursuant to Unemployment Insurance Code section 13020 with respect to such work and labor, then the Surety shall pay for the same.

Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract on the call for bids, or to the work to be performed there under, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

If suit is brought upon this bond by the County and judgment is recovered, the Surety shall pay all litigation expenses incurred by the County in such suit, including attorney's fees, court costs, expert witness fees and investigation expenses.

This bond inures to the benefit of any of the persons named in Civil Code section 9100, and such persons or their assigns shall have a right of action in any suit brought upon this bond,

subject to any limitations set forth in Civil Code sections 9550 et seq. (Civil Code, Division 4, Part 6, Title 3, Chapter 5: Payment Bond for Public Works).

IN WITNESS WHERE OF the above-bounden parties have executed this instrument under their several seals this _____ day of _____, 202____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Seal)

Principal

By _____

Name and Title _____

(Corporate Seal)

Surety

By _____

Name and Title _____

(Attach notary acknowledgement for all signatures and original or certified copy of unresolved appointment, attorney-in-fact certificate, power of attorney, by laws, or other instrument entitling or authorizing person executing bond on behalf of Surety to do so.)

COUNTY OF MONTEREY

PERFORMANCE BOND

WHEREAS, the County of Monterey has awarded to Principal, _____ as Contractor, a contract for the following project:

**CARMEL RIVER FLOODPLAIN RESTORATION AND ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1
County Project No.: 7200**

WHEREAS, Principal, as Contractor, is required to furnish a bond in connection with said contract, to secure the faithful performance of said contract.

NOW, THEREFORE, we _____, as Principal, and _____ as Surety, are held and firmly bound unto the County of Monterey, a political subdivision of the State of California (hereinafter called "County"), in the penal sum of _____ Dollars (\$ _____), for the payment of which sum in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

If the Principal, as Contractor, or Principal's heirs, executors, administrators, successors, or assigns, (1) shall in all things stand to and abide by and well and truly keep and perform the covenants, conditions, and agreements in said contract and any alteration thereof made as therein provided, on Principal's part to be kept and performed, at the time and in the manner therein specified and in all respects according to their true intent and meaning, and (2) shall defend, indemnify and save harmless the County, the members of its board of supervisors, and its officers, agents and employees as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of said contract or the call for bids, or to the work, or to the specifications.

Whenever the Principal, as Contractor, is in default, and is declared in default, under the contract by the County of Monterey, the County of Monterey having performed its obligation under the contract, Surety may promptly remedy the default, or shall promptly: Complete the contract in accordance with its terms or conditions, or Obtain a bid or bids for submission to County of Monterey for completing the contract in accordance with its terms or conditions, and upon determination by County of Monterey and Surety of the lowest responsible and responsive bidder, arrange for a contract between such bidder and County of Monterey, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of contract price.

If suit is brought upon this bond by the County and judgment is recovered, the Surety shall pay all litigation expenses incurred by the County in such suit, including attorney's fees, court costs, expert witness fees and investigation expenses.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals this _____ day of _____, 202__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Seal)

Principal

By _____

Name and Title _____

(Corporate Seal)

Surety

By _____

Name and Title _____

(Attach notary acknowledgement for all signatures and original or certified copy of unresolved appointment, attorney-in-fact certificate, power of attorney, by laws, or other instrument entitling or authorizing person executing bond on behalf of Surety to do so.)

APPENDIX II – FEDERAL EXHIBITS AND FORMS

Intentionally Omitted

APPENDIX III - LANDSCAPE SPECIAL PROVISIONS

**CARMEL RIVER FLOODPLAIN RESTORATION AND
ENVIRONMENTAL ENHANCEMENT (CRFREE) PROJECT – PHASE 1**

County Project No.: 7200

SECTION 32 84 00**IRRIGATION SYSTEM****Part 1 - GENERAL****1.1 DESCRIPTION OF WORK**

- A. Provide all material, labor and equipment necessary to perform the Work for providing a complete irrigation system as shown on Drawings and as specified herein. The Work of this Section includes but is not limited to:

1. Installing well connection assemblies.
2. Retrofitting existing water meters.
3. Installing pressure regulators, filters, and gate valves.
4. Trenching and backfilling trenches.
5. Installing piping; valves; and fittings.
6. Installing bubbler distribution system.
7. Replacing unsatisfactory Work.
8. Conducting tests.
9. Preparing record drawings and submittals.
10. Performing inspections and final acceptance.

- B. Related Technical Sections

1. Section 32 93 00 PLANTING
2. Section 32 97 00 LONG-TERM MAINTENANCE

1.2 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):

1. D1784: For Rigid PVC Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
2. D1785: For Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
3. D2241: For Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe, Class 200, Class 315.
4. D2464: For Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
5. D2466: For Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
6. D2467: For Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
7. D2564: For Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
8. D2855: For Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
9. G154: For Operating Fluorescent Light Apparatus for Ultraviolet (UV) Exposure of Nonmetallic Materials.

- B. NSF: National Sanitation Foundation – Plastics Piping System Components and Related Materials Protocols and Specifications.

- C. UPC: Uniform Plumbing Code.

- D. NFPA 70: National Fire Protection Association National Electrical Code (NEC).
- E. Monterey County: Plumbing Code (latest edition).
- F. Water Quality Standards: "Standard Method of Test for Quality of Water to Be Used in Concrete," American Association of State Highway and Transportation Officials (AASHTO) T 26.
- G. All standards shall include the latest additions and amendments as of the date of advertisement for bids.

1.3 SUBMITTALS

- A. Contractor shall submit digital copies of the following. Copies should also be made available at the project site:
 - 1. Irrigation system brochure:
 - a. Any manufacturer's warranties, guaranties, instruction sheets, and parts lists, which are furnished with certain articles or materials incorporated in the Work.
 - b. Materials list: Submit complete materials list. Include manufacturer, model number, and description of all materials and equipment. Include sealants, cements, lubricants, and other proprietary items.
 - c. Product data: Submit manufacturer's data sheets, standard details, and installation instructions. Manufacturer's recommended installation procedures shall, when approved, become the basis for accepting or rejecting actual installation procedures used in the Work.
 - 2. Operation and maintenance manuals: Deliver to Engineer complete set of the following data at least ten (10) working days before completion of construction:
 - a. Index sheet stating Contractor's address and telephone number, list of equipment with names and addresses of local manufacturer's representatives.
 - b. Catalog and parts sheets on all material and equipment installed under this Section.
 - c. Complete operating and maintenance instructions for all equipment.
 - d. Complete and dated manufacturer's warranties for all materials used.
 - e. Warranty statement, per sub-Section Warranty
 - 3. Shop drawings: Contractor shall submit the following shop drawings:
 - a. All assemblies not detailed on Drawings.
 - b. Well connection assembly at well points of connection.
 - 4. As-Built Drawings of the irrigation system. Submit as specified, within ten (10) working days after start of three (3)-year long-term maintenance period.
 - a. Provide and keep a complete up-to-date record set of Drawings, which shall be corrected weekly and show every change from the original Drawings and Specifications and the exact locations, sizes, and kinds of equipment. This set of Drawings shall be kept at Project site and shall be used only as a record set.
 - b. These drawings shall also serve as Work progress sheets and shall be the basis for measurement and payment for Work completed. Make neat and legible annotations thereon weekly as the Work proceeds showing the Work as actually installed. These plans shall be made available to Engineer.
 - c. Dimensions from two (2) permanent points of reference for the following items:
 - 1. Well point of connection

2. Pressure regulators
 3. Filters
 4. Gate valves
 5. Routing of main and lateral lines
 6. Quick coupling valves
 7. Routing of agricultural stub
 8. Other equipment as directed by Engineer
- d. Delivery of As-Built drawings shall not relieve Contractor of the responsibility of furnishing required information that may be omitted from Record Documents.

5. Special tools: Two (2) sets of special tools and keys as required to operate, adjust, dismantle, or repair equipment. Include tools not normally found in possession of maintenance personnel.

1.4 PROJECT CONDITIONS

- A. Wet conditions on the access roads may affect access, timing, and sequencing of Work. Contractor shall coordinate with Engineer for approval of vehicular access.
- B. Work may occur during saturated soil conditions. Where wet soil conditions exist, Contractor shall provide and employ plywood, mudboots, or other method approved by Engineer to protect soils vegetation from damage created by foot traffic.

1.5 TIMING AND COORDINATION

- A. Irrigation system installation shall be completed before all plant installation described in Section Planting.
- B. Contractor shall call USA North 811 (811 or 1-800-227-2600) and affected utility companies five (5) working days before digging.

1.6 QUALITY ASSURANCE

- A. All Work and materials shall be in full accordance with the latest rules and regulations of the National Electrical Code published by the National Fire Protection Association; the Uniform Plumbing Code published by the International Association of Plumbing and Mechanical Officials; and other applicable state or local laws or regulations. Nothing on Drawings or in these Specifications is to be construed to permit Work not conforming to these codes.
- B. When the Specifications call for materials or construction of a better quality or larger size than required by the above-mentioned rules and regulations, the provision of the Specifications shall take precedence over the requirements of said rules and regulations.
- C. Contractor shall furnish, without any extra charge, any additional material and labor when required by the compliance with these rules and regulations, including when the Work for said compliance is not mentioned in these Specifications or shown on Drawings.
- D. Materials not conforming to these Specifications and requirements shall remain the property of Contractor and shall be removed from Project site at no additional cost to Owner.

1.7 WARRANTY

- A. Provide guarantee for Work in this SECTION through completion of Work described in SECTION LONG-TERM MAINTENANCE.
- B. Warrant that irrigation system has been installed according to Drawings and Specifications and that system will be free of defects in products and installation. Manufacturer's warranties shall only supplement special warranty.
- C. Agree to repair or replace defective Work, or adjacent Work that is damaged by such defects, with the exception of ordinary wear and tear, abuse, or neglect. This includes damage to site improvements caused by settlement of improperly compacted trench backfill. Owner reserves the right to make temporary repairs as required.

1.8 GENERAL SYSTEM DESIGN

- A. Contractor shall provide bubbler irrigation system to irrigate small container plants as shown on Drawings.
- B. All main lines shall be trenched and lateral lines shall be trenched from the well to the edge of the irrigation zones as shown on Drawings. Lateral lines within irrigation zones shall be on grade.
- C. Water supply shall be as follows:
 - 1. Well water: intake pump from existing Odello (BLST). Flow rate from well has been designed assuming a rate that shall not exceed 202 GPM.
 - 2. Contractor shall provide a shop drawing of the well connection assembly per sub-Section Submittals.
- D. Contractor has the option to install additional quick coupling valves along the main line, at no additional cost to Owner, to allow easier irrigation of individual container plants per SECTION LONG-TERM MAINTENANCE.
- E. Due to the scale of Drawings, it is not possible to indicate all offsets, fittings, etc. that may be required. Contractor shall carefully investigate the structural and finished conditions affecting all of the Work and plan accordingly. Contractor shall furnish materials as required to meet such conditions.
- F. Irrigation demand and design pressure are as shown on Drawings. Contractor shall verify static pressure at P.O.C. and that flow is available at each irrigation zone before starting plant installation. Contractor shall notify Engineer if static pressure varies by more than 15 pounds per square inch in either direction.
- G. Irrigation heads and lines subject to low head drainage, or areas that will cause erosion or water to accumulate, shall have an approved check valve installed.

1.9 BUBBLER SYSTEM DESIGN

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.

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- B. Contractor shall provide bubbler irrigation system to irrigate small container plants as shown on Drawings.
- C. Water supply shall be water pumped from wells per sub-Section General System Design.

Part 2 - PRODUCTS

2.1 PIPE AND GENERAL IRRIGATION PRODUCTS

- A. PVC Pipe and Fittings
 - 1. Polyvinyl Chloride (PVC) Pipe: National Sanitation Foundation-Certified, Type 1, Grade 1 PVC compound; ASTM D1784, ASTM D1785, and ASTM D2241. Available from JM Eagle Co., Los Angeles, CA or approved equal.
 - 2. Pipe shall bear the following markings:
 - a. Manufacturer's name.
 - b. Nominal pipe size.
 - c. Schedule or class.
 - d. Pressure rating in pounds per square inch.
 - e. National Sanitation Foundation Certification Mark.
 - f. Date of extrusion.
 - 3. Main line pipe: Schedule 40 galvanized steel pipe.
 - 4. Lateral line pipe: 1120 PVC plastic pipe. Use schedule 40 for 1-inch to 6-inch pipe. Use IPS PVC flex hose for ½-inch to ¾-inch to pipe. Flex hose available from Ewing Irrigation & Landscape Supply, Stockton, CA. (209) 948-6933, or approved equal.
 - 5. Fittings
 - a. Solvent weld socket fittings: Schedule 40, Type 1, Grade 1, National Sanitation Foundation-Certified, ASTM D2466 or Schedule 80, ASTM D2467. Fittings shall bear manufacturer's name or trademark, material designation, size, applicable Iron Pipe Size (IPS) schedule, and National Sanitation Foundation Certification Mark. Lasco Fittings, Brownsville, TN, or approved equal.
 - b. Threaded fittings: Schedule 40, Type 1, Grade 1, National Sanitation Foundation Certified, Schedule 80, ASTM D2467. Fittings shall bear manufacturer's name or trademark, material designation, size, applicable Iron Pipe Size (IPS) schedule, and National Sanitation Foundation Certification Mark. Lasco Fittings, Inc., Brownsville, TN, or approved equal.
 - c. Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods recommended by pipe manufacturer. IPS Weld-On Corporation, Compton, CA, or approved equal.
 - 6. Polyvinyl chloride (PVC) pipe and fittings for above-grade installation shall be resistant to ultraviolet (UV) light per ASTM G154. If UV-resistant fittings are not available, Contractor may apply a UV-resistant coating, upon approval from Engineer.
 - 7. Pipe joint compound: Non-hardening, non-toxic, designed specifically for use on PVC and metal threaded connections in water-carrying pipe. As recommended by pipe manufacturer and approved by Engineer.
 - 8. Pipe stabilizer: Recommended by pipe manufacturer, as required to secure on-grade pipe to slope.
- B. Galvanized Steel Pipe and Fittings

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1. Pipe: Schedule 40 standard galvanized steel.
2. Fittings: Schedule 40 galvanized steel.

C. Other Piping Materials

1. Pipe upstream of gate valves: Schedule 40 galvanized steel. (Copper tube, Type K)
2. Flexible riser/connector: EPDM hose, PVC ends, with stainless steel bands. Flex-Riser, King Brothers Industries, Valencia, CA, or approved equal.
3. Provide dielectric fittings where dissimilar metals come into contact.
4. Pipe anchors
 - a. Pipe stake: #3 rebar, thirty [30] inches long, shaped into U-shaped anchors as shown on Drawings.

D. Valves

1. Gate valve, 1-3": Model T-113 Series, bronze gate valve with screw-in bonnet, non-rising stem, solid wedge, and threaded or solder ends. Available from Nibco, Elkhart, IN (800) 234-0227, or approved equal.
2. Gate Valve 6": Class 125, F-617-0, Cast iron gate valve, bronze mounted with Handwheel, flanged connection. Available from Nibco, Elkhart, IN (800) 234-0227, or approved equal.
3. Check valve, 2": Bronze C/M check valve. Available from American Granby via Ewing. Available from Ewing, 866 E McGlincy Ln, Campbell, CA, 408-364-9530.
4. Quick coupling valve: Bronze construction, 1-inch connection, two-piece body, vinyl locking top, single slot and lug. Size: 1 inch. 1 inch FIPT outlet. Model No. 44-LRC; Rain Bird Corporation, Azusa, CA.

E. Pressure Regulator

1. 3-inch Pressure Regulator: Wilkins Model 500 XLFC. Use factory preset of 50 pounds per square inch. Available from Zurn, Paso Robles, CA (855) 663-9876, or approved equal.
2. Pressure gauge, hermetically sealed: 0 to 100 psi, Model 50, Irrrometer, Riverside, CA, or approved equal.

F. Filter

1. Filter, 3": MCS- 3-1 Filter, Steel filter, flanged or grooved. 80 mesh. Available from Yardney Water Filtration Systems, Inc., 6666 Box Springs Blvd., Riverside, CA 92507, 951-656-6716.

G. Valve Boxes

1. All underground irrigation valves shall be installed with valve boxes and risers as required.
2. Irrigation valve boxes shall be HDPE plastic, resistant to ultraviolet light, with stainless steel bolt-down mechanism and heat-branded letters, minimum 1-inch high. Oldcastle Precast Enclosure Solutions, Pomona, CA, or approved equal.
 - a. 12-inch standard, Model 1419-12.
 - b. 18-inch standard, Model 1730-18.
 - c. 36-inch standard, Model 2436-24

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3. Size valve box to provide enough clearance to house, maintain, and adjust devices.
4. Cover color: green

2.2 BUBBLER DISTRIBUTION SYSTEM PRODUCTS

- A. Pipe and Fittings
 1. IPS PVC flex hose for 1/2-inch to 3/4-inch to pipe, as available from Ewing Irrigation & Landscape Supply, Stockton, CA. (209) 948-6933, or approved equal.
- B. Drip Bubbler
 1. Plastic, pressure compensating, non-adjustable, self-cleaning, 4 GPH drip bubbler.
 2. Available as Model number DB-04-PC from Toro Company, Riverside, CA, (800) 664-4740, or approved equal.

2.3 OTHER MATERIALS

- A. Water: Shall be per Section Planting.
- B. Drain Rock: Crushed rock or pea gravel with 100 percent passing a 1/2-inch sieve and not more than 10 percent passing a No. 4 sieve.
- C. Valve Box Support: Common brick.
- D. T-posts: All single valve boxes or valve box clusters shall be marked by steel T-posts (#133), minimum 6 feet long.
- E. Tools and Spare Parts: Furnish operating keys, servicing tools, test equipment, spare parts, and other items indicated in Drawings and Specifications.
- F. Other Materials: Provide other materials or equipment shown on Drawings or installation details that are part of irrigation system, even though items may not have been referenced in Specifications.

Part 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Contractor shall inspect Project site and become familiar with any access requirements, access restrictions, and any other site conditions.
- B. Prior to beginning installation of irrigation systems, Contractor shall:
 1. Obtain all necessary permits as described in sub-Section Timing and Coordination.
 2. Flag planting areas and plant locations and excavate planting holes per Section Planting. Contractor shall coordinate with Engineer for inspection and acceptance of plant flagging prior to irrigation system installation.
- C. Contractor shall coordinate with Engineer to schedule observations at the following stages:

1. System layout.
 2. System installation.
 3. System test. A qualified person duly authorized in writing to represent the irrigation Contractor shall be present at this inspection to demonstrate system and prove the performance of the equipment. Prior to this inspection, all Work under Section Irrigation System shall have been completed, tested, balanced, and adjusted and in final operating condition
 4. Acceptance of planting and irrigation system installation.
- D. Progress observations: In addition to the observations specified, Engineer may make periodic progress observations.
- E. Engineer will refuse review if Contractor calls for a site visit without As-Built Drawings, without completing previously noted corrections, or without preparing the system for review.
- F. Engineer reserves the right to take and analyze samples of materials for conformity to these Specifications at any time.
- G. Contractor shall maintain irrigation system to promote healthy plant development until acceptance of Work described in SECTION LONG-TERM MAINTENANCE.

3.2 DELIVERY, STORAGE, STOCKPILING, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC fittings. All PVC pipe shall lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping. Pipe and fittings shall not be stored in direct sunlight.
- C. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways, and pavements, or on existing turf areas or plants.
 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

3.3 LAYOUT

- A. Upon approval of plant flagging and plant hole excavation per Section Planting, Contractor shall stake layout of the following items in the approximate location shown on Drawings. Coordinate with staked layout of plants provided under Section Planting. Adjust as directed by Engineer. Upon approval from Engineer, Contractor shall install the irrigation system.

1. Main line
 2. Pressure regulator
 3. Filters
 4. Valves
 5. Bubbler distribution system
 6. Bubbler at each plant location
 7. Agricultural stub
- B. Drawings are diagrammatic. Provide necessary fittings and offsets to adapt to existing conditions and prevent conflicts with other Work and existing improvements.
- C. Do not willfully install the irrigation system as shown on Drawings when it is obvious in the field that unknown obstructions, grade differences, or discrepancies in area dimensions exist that might not have been considered on Drawings. Such obstructions or differences shall be brought to the attention of Engineer. In the event this notification is not performed, Contractor shall assume full responsibility for any necessary corrections.
- D. Changes or alterations in the irrigation system for the convenience of Contractor shall be made at Contractor's expense and then only if approved by Engineer.

3.4 RETROFIT EXISTING WATER METERS

- A. Contractor shall retrofit existing water meters to meter all water used by irrigation system and agricultural stub.
- B. Contractor shall modify water meters to connect to well connection assemblies per approved shop drawings.

3.5 PIPE INSTALLATION

- A. General
1. Handle plastic pipe carefully. Especially protect pipe that is not resistant to ultraviolet light from prolonged exposure to sunlight.
 2. Cap open pipe ends as pipe line is assembled to keep out soil or debris. Remove caps only when necessary to continue assembly.
 3. Provide check valve where required to prevent erosion from low head drainage.
- B. Trenching
1. Contractor shall trench main lines to the depth shown on Drawings. Trenches shall be wide enough to allow proper placing of pipe.
 2. The minimum cover shown on Drawings shall govern regardless of variations in ground surface profile and occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary. In no case shall the angle of deflection from one pipe length to another exceed 5 degrees.
 3. During excavation, materials suitable for backfilling shall be stockpiled in an orderly manner at a sufficient distance from the edge of trenches to avoid overloading and prevent slides or cave-ins. No excavated materials shall be placed within or permitted to fall upon roadways.
 4. Contractor shall repair all trench locations to pre-existing condition following pipe

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installation.

C. Backfilling

1. Backfill with specified material at specified depths after testing pipe as shown on Drawings.
2. Backfill shall contain no lumps or rocks larger than 1 inch. The top 6 inches of backfill shall be free of rocks, subsoil, or trash. Any materials not suitable for backfill shall be removed from the site and disposed of properly.
3. Backfill shall be compacted to a density equal to adjacent soil, or as specified.
4. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for compaction, then filled and compacted with the surface restored to the required grade and left in a completed surface condition.

D. Solvent-Weld PVC

1. Prepare joint by first making sure the pipe end is square, then deburr the pipe and clean pipe and fitting of dirt, dust, and moisture.
2. Allow joints to cure a minimum of 30 minutes before handling and at least 24 hours before allowing water in pipe.
3. Glue pipe and fittings as recommended by manufacturer and in accordance with accepted industry practices.
4. Follow any additional manufacturer's instructions for PVC welding.

E. Threaded Joints

1. Weld threading of plastic pipe or fittings is not permitted. Factory-formed threads only will be permitted.
2. Factory-made nipples shall be used wherever possible. Field-cut threads in metallic pipe shall be permitted only where absolutely necessary and as approved by Engineer. When field-threading, cut threads accurately on axis with sharp dies.
3. Apply pipe joint compound to male threads and first three (3) female threads.
4. Where assembling soft metal (brass or copper) or plastic pipe, use strap-type friction wrench only; do not use metal-jawed wrench.
5. On metal-to-metal joints, no more than three (3) full threads shall show when joint is complete.
6. When assembling threaded plastic fittings, tighten joint no more than one (1) full turn beyond hand tight. Use strap-type friction wrench only; do not use metal-jawed wrench.
7. All threaded joints shall be made up with pipe joint compound or Teflon tape. Apply compound or tape to male threads only.

F. Pipe Anchors

1. Anchors shall be installed as follows:
 - a. Pipe stakes shall be used to secure on-grade lateral lines to the soil surface.
 - b. Pipe staples shall be used to secure on-grade IPS PVC flex hose to the soil surface.
2. At a minimum, anchors shall be installed at all equipment connection points, valve boxes, Tee connections, and every 30 feet along uninterrupted pipe or tubing segments.
3. Anchors shall have sufficient ground penetration to resist pullout. Longer anchors

may be required for loose soils.

G. Agricultural Stub

1. Install as shown on Drawings.

3.6 VALVES AND OTHER DEVICES INSTALLATION

A. Layout: Locate and install in the approximate locations as shown on Drawings. Contractor shall request and receive approval from by Engineer for location of valves and other devices, as well as alignment of valve boxes,

B. Valves

1. Lines shall be free of soil or debris before installation of valves. After pipe and risers are in place and connected, flush out system with a full head of water.
2. Provide check valve as shown on Drawings and as otherwise required to prevent erosion from low head drainage.
3. Set quick coupling valve perpendicular to finish grade unless otherwise shown.

C. Valve Box Installation, General

1. Valves and filter shall be located in valve boxes.
2. Install boxes in locations as directed by Engineer. Install as shown on Drawings.
3. Install common bricks as required to keep box stable.
4. Place drain rock as shown on the Drawings for drainage.
5. Valve Box Installation On-Grade
 - a. Cut holes on either side of valve box to allow for the passage of the pipe through the box. Install PVC tape over box side cutouts.
 - b. Drill a minimum of two (2) ½-inch diameter holes through the lip that extends out at the bottom of the box. Install pipe stakes through the holes to firmly secure the box to the ground.
6. Provide enough clearance within valve box to house, maintain, and adjust devices. Center valve box over devices.
7. Mark the location of all single valve boxes or valve box clusters with a 6' T-post driven two (2) feet below grade

3.7 BUBBLER DISTRIBUTION SYSTEM

A. Layout

1. Locate well point of connections and all bubbler system equipment in the approximate location shown on Drawings, and flag location for review per sub-Section Layout. Prior to installing these items, Contractor shall request and receive approval from Engineer.

B. Filter and Pressure Regulator: Install as shown on Drawings and per manufacturer's recommendations.

C. Bubbler Distribution Equipment

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1. Provide and install a bubbler distribution system to each irrigation zone as shown on Drawings. Notify Engineer where field conditions obstruct locations of main or lateral lines.
2. Bubblers
 - a. Thoroughly flush lines before installing bubblers.
 - b. Locate and install bubblers as shown on Drawings.
 - c. Install bubbler irrigation as shown with one (1) bubbler per small container plant.
 - d. Place bubbler as shown on the Drawings. On slopes, place on uphill side of plant.
 - e. Fasten bubblers within the watering basin with pipe staples.
 - f. Follow manufacturer's installation instructions.

3.8 TESTING PIPE AND SYSTEM ADJUSTMENT

- A. Before testing, bleed air out of lines at line pressure. Provide vertical pipe at high points during installation.
- B. Trenched lines: Test hydrostatically after joints have cured at least 24 hours.
 1. Provide caps, pumps, pressure gauges and other equipment required to perform test.
 2. Test pressure trenched lateral trunk line at 150 psi for 2 hours and prove watertight.
 3. Repair leaks and repeat tests until system is proven watertight.
 4. Do not cover or enclose Work until tests are approved by Engineer.
- C. On-grade lines and bubblers: Perform visual inspection and function test as follows:
 1. Run system and visually inspect on-grade lateral lines and all joints for leaks.
 2. Verify that bubblers are producing specified water output by testing output of a sampling of bubblers as follows:
 - a. Place selected bubblers in a 1-quart (32 fluid ounces) container and make note of the time required to fill the container (a 4 GPH bubbler should fill a 1-quart container in approximately 3.75 minutes).
 - b. If not providing the specified output, replace bubblers, check filter elements, check pressure, and review system for clogs and leaks.
 3. Repeat inspection and test until system is proven to function as intended.
- D. Remake faulty joints with new materials. Do not use cement or caulking to seal leaks. Repairs shall conform to these Specifications.

3.9 ACCEPTANCE OF IRRIGATION

- A. Acceptance of Work: Engineer will accept Work when all improvements and corrective Work have been performed as specified and to the satisfaction of Engineer.

3.10 PAYMENT

- A. Not used

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3.11 ALTERNATIVE BID ITEM - TRENCHING TEMPORARY SYSTEM WITHIN IRRIGATION ZONES

- A. At Engineer's request, Contractor shall trench the entire temporary irrigation system within the irrigation zones, including flex hose.

3.12 PAYMENT - ALTERNATIVE BID ITEM - TRENCHING TEMPORARY SYSTEM WITHIN IRRIGATION ZONES

- A. Not used

END OF SECTION

SECTION 32 93 00**PLANTING****Part 1 - GENERAL****1.1 SUMMARY**

- A. Provide all material, labor, equipment, and services to perform the Work as shown on Drawings and as specified herein. The Work of this Section includes but is not limited to:
1. Flagging planting areas and individual plant locations for small container plants.
 2. Excavating planting holes.
 3. Preparing amended backfill for small container plants by incorporating compost.
 4. Installing small container plants.
 5. Constructing watering basins.
 6. Installing wood bark mulch.
 7. Installing foliage protection cages.
 8. Maintaining plants until commencement of long-term maintenance period.
- B. Related Technical Sections
1. Section 32 84 00 Irrigation System
 2. Section 32 97 00 Long-Term Maintenance

1.2 REFERENCE STANDARDS

- A. Nomenclature
1. *Western Garden Book*, 9th Edition, Sunset Publishing Co., Menlo Park, CA.
 2. *The Jepson Manual: Vascular Plants of California*, Second Edition, University of California Press, Berkeley, CA.
- B. Plant Material Standards
1. *American Standard for Nursery Stock*, ANSI Z60.1. American Nursery and Landscape Association, 1250 Eye Street, NW, Suite 500, Washington, DC 20005.
 2. *Guidelines for Seed and Plant Material for the Carmel River State Beach Portion of the CRFREE Project*
- C. Sudden Oak Death Regulated Host Species
1. *APHIS List of Regulated Hosts and Plants Proven or Associated with Phytophthora ramorum*, February 2010 edition or later; United States Department of Agriculture Animal and Plant Health Inspection Service, available online at: http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_files/usdaprlist.pdf
- D. California Department of Transportation (Caltrans), Standard Specifications, 2018 edition.

- E. All standards shall include the latest additions and amendments as of the date of advertisement for bids.

1.3 DEFINITIONS

- A. Amended Backfill: Native site soil amended with compost, fertilizer, or other soil amendments and used to backfill planting holes.
- B. Native Site Soil: Onsite native soil excavated during the performance of this Work.
- C. Native Backfill: Onsite native soil used to backfill excavations and planting holes.
- D. Sudden Oak Death: Disease of woody plants caused by the pathogen *Phytophthora ramorum*.

1.4 PROTECTION AGAINST SPREAD OF PHYTOPHTHORA PLANT PATHOGENS

- A. Phytophthora plant pathogens include *Phytophthora ramorum*, which causes the tree disease Sudden Oak Death. For additional information, refer to the California Oak Mortality Task Force website <http://www.suddenoakdeath.org/>.
- B. During plant propagation ensure that the following sanitation, planting, and nursery guidelines are implemented to minimize the potential for spreading Phytophthora pathogens, to the maximum extent practicable.
1. Any container plants used for revegetation efforts, shall be acquired from nursery stock grown pursuant to the following guidelines prepared by the California Oak Mortality Task Force, Working Group for Phytophthoras in Native Habitats:
 - a. *Guidelines to Minimize Phytophthora Pathogens in Restoration Nurseries*, dated September 22, 2016; Working Group for Phytophthoras in Native Habitats, available online at: http://www.suddenoakdeath.org/wp-content/uploads/2016/04/Restoration.Nsy_Guidelines.final_092216.pdf.
 - b. *Guidelines to Minimize Phytophthora Pathogens for holding (non-production) nurseries at restoration sites*, dated May 2016; Working Group for Phytophthoras in Native Habitats, available online at: http://www.suddenoakdeath.org/wp-content/uploads/2016/04/Holding_Nursery_Guidelines_FINAL-111716.pdf
 2. Additional resources for Best Management Practices for nursery propagation are available on the California Oak Mortality Task Force website:
 - a. <http://www.suddenoakdeath.org/wp-content/uploads/2010/03/Nursery-BMPs.pdf>
 - b. <http://www.suddenoakdeath.org/diagnosis-and-management/best-management-practices/>
 3. Best Management Practices (BMPs) for Producing Clean Nursery Stock, dated March 5, 2016; Phytosphere Research, available online at: <http://phytosphere.com/BMPsnursery/Index.htm>
- C. Contractor shall take all appropriate measures during project implementation to minimize the potential spread of Phytophthora plant pathogens to the maximum extent practicable in accordance with the following:

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1. California Oak Mortality Task Force website:
 - a. <http://www.suddenoakdeath.org/library/education-training-resources/>
 - b. <http://www.suddenoakdeath.org/diagnosis-and-management/sanitation-reducing-spread/>
 2. *Cleaning Recommendations to Prevent the Spread of Phytophthora Ramorum, Cause of Sudden Oak Death*
<http://www.suddenoakdeath.org/pdf/SanitationGuide.pdf>
 3. *Sanitation Measures to Minimize Pathogen Spread*
http://www.suddenoakdeath.org/wp-content/uploads/2017/04/Professional-sanitation-guide_January-2013.pdf
 4. *Guidelines to Minimize Phytophthora Contamination in Restoration Projects*, dated October 2016; Working Group for Phytophthoras in Native Habitats, available online at:
http://www.suddenoakdeath.org/wp-content/uploads/2016/04/Restoration_guidance_FINAL-111716.pdf
 5. *APHIS List of Regulated Hosts and Plants Proven or Associated with Phytophthora ramorum*, May 2020 edition or later; United States Department of Agriculture Animal and Plant Health Inspection Service, available online at:
http://www.aphis.usda.gov/plant_health/plant_pest_info/pram/downloads/pdf_files/usdaprlist.pdf
 6. California Department of Food and Agriculture, Sudden Oak Death Quarantine
 - a. http://pi.cdffa.ca.gov/pqm/manual/html/pqm_index.htm
 - b. <https://www.cdffa.ca.gov/plant/pe/InteriorExclusion/SuddenOakDeath/>
- D. Contractor shall abide by the following precautions and sanitation techniques.
1. Precautions
 - a. Because the rainy season is the time when the Phytophthora pathogen is actively producing spores and spreading naturally, take the following precautions during wet conditions:
 1. Avoid entering the site during or immediately following a rain event, except as required for SWPPP inspection after storms.
 2. Keep vehicles on paved and graveled surfaces, where possible.
 3. Stay out of areas of wet soil and mud, when possible.
 - b. Host plant species material (e.g. wood, bark, brush, chips, leaves, or firewood) from tree removals or pruning/removal of vegetation should remain onsite to minimize pathogen spread.
 2. Sanitation Techniques Prior to Working
 - a. All equipment shall be cleaned free of soil from any prior work site prior to arriving to Project site.
 - b. Prior to mobilization on-site, Contractor shall decontaminate their equipment, including tires and undercarriage of on-site vehicles, tools and implements, such as augers, scarifiers, disks, etc. to prevent the introduction of plant pathogens.
 - c. Equipment and tools moved off-site and returned later for use within the planting areas will again require decontamination by Contractor.
 - d. Maintain two (2) sanitation kits onsite at all times for their use. Make these accessible for use by the Contracting Officer. Each sanitation kit shall contain bleach [a minimum of 16 ounces of a 10/90 mixture bleach to water] or Clorox Clean-up®, scrub-brush, metal scraper, boot brush, and rubber gloves.
 - e. Each day prior to the start of work, shoes, tools, and other equipment shall be thoroughly cleaned of debris and soil and sanitized using the sanitation kit. Note

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that these products are corrosive to metal/fabric and that equipment should be rinsed following disinfection.

3. Sanitation Techniques After Working
 - a. Each time prior to leaving the site, check clothing, boots/shoes, vehicles, vehicle tires, tools, and equipment for accumulations of mud, soil, organic material, and detached plant leaves. Remove or wash off these accumulations and sanitize using the sanitation kit before leaving the site. Note that these products are corrosive to metal/fabric and that equipment should be rinsed following disinfection.

- E. Decontamination of equipment, tools, etc. by Contractor shall be included in the lump sum price bid for MOBILIZATION and no separate payment will be made therefor.

1.5 SUBMITTALS

- A. Contractor shall submit samples and miscellaneous materials to Engineer prior to application as follows:
 1. Nursery Coordination
 - a. Plants for the Project are long-lead specialty items.
 - b. Within fifteen (15) working days of Notice to Proceed, Contractor shall establish an agreement with a native plant nursery specializing in collecting and providing native plants, such as Cornflower Farms (916-689-1015); Watershed Nursery (510-234-2222); Central Coast Wilds (831-459-0656); or approved equal.
 - c. For each nursery contacted, Contractor shall submit the following:
 1. Nursery location.
 2. Availability of plant species and quantities shown on Drawings and meeting the product requirements specified herein.
 3. Nursery inventory list showing complete range of sizes and species available.
 - d. A copy of Contractor's initial nursery quotes for all container sizes used in the Drawings shall be submitted within fifteen (15) working days of Notice to Proceed.
 - e. Photographs: Submit color photographs of representative specimens of each type of tree and shrub on the plant list. Photos shall be taken from angle that depicts the size and condition of the typical plant to be furnished. A scale rod or other measuring device shall be included in the photograph. For species where more than 20 plants are required, include a minimum of three (3) photos that show the average plant, the best quality plant, and the worst quality plant to be provided. Label each photograph with the plant botanical and common name, plant size, and name of the growing nursery.
 2. Plants
 - a. Collection locations: Submit description and map of proposed collection locations within fifteen (15) working days of Notice to Proceed. All collection locations shall be pre-approved in writing by Engineer, The Big Sur Land Trust, State Parks, and Monterey County before collection occurs.
 - b. A letter, or appropriate lot tag, from propagule provider stating their botanical name, common name, and provenance to certify that the plants meet the specification described herein.
 - c. For plants grown in California and Oregon nurseries, Contractor shall provide a written statement that the nursery has complied with state and federal Sudden Oak Death regulations:
 1. Federal Domestic Quarantine (7CFR 301.92).

2. California Oak Mortality Disease Control (CCR 3700).

3. Wood Bark Mulch
 - a. One-half ($\frac{1}{2}$) cubic foot sample.
 - b. Manufacturer's receipt describing that the provenance and constituents of tree bark mulch meet the specification described in this Section and that the mulch does not contain noxious weeds or originate from a Sudden Oak Death host plant species derived from a quarantined county.
4. Compost
 - a. Proof that the compost does not contain noxious weeds or materials that originate from a Sudden Oak Death host plant species derived from a quarantined county.
 - b. Compost Technical Data Sheet, which shall include laboratory analytical test results, directions for product use, and a list of product ingredients.
 - c. Compost producer's Seal of Testing Assurance certification.

B. As-Built Drawings

1. Prepare record plans indicating plant type, quantity, size and location. Use Drawings as a background for the As-Built drawings.
2. Submit to Engineer within ten (10) working days of start of Work in Section Long-Term Maintenance.

1.6 PROJECT CONDITIONS

- A. Wet conditions on the access roads may affect access, timing, and sequencing of Work. Contractor shall coordinate with Engineer for approval of vehicular access.
- B. Work may occur during saturated soil conditions. Where wet soil conditions exist, Contractor shall provide and employ plywood, mudboots, or other method approved by Engineer to protect soils vegetation from damage created by foot traffic.

1.7 TIMING AND COORDINATION

- A. Contractor shall coordinate with nursery per sub-Section Submittals
- B. Contractor shall be responsible for coordination and timing of plant delivery per sub-Section Delivery, Storage, and Handling.
- C. Contractor shall conduct additional coordination as noted herein.
- D. Contractor shall coordinate inspections per sub-Section Field Quality Control and Inspections.
- E. Prior to any Work in this Section, all work in Section Earthwork and Caltrans Standard Specifications Section 21 Seeding shall be complete and approved by Engineer.
- F. Planting layout, per sub-Section Plant Layout, shall be approved by Engineer in the field prior to irrigation system installation per Section Irrigation System.
- G. Prior to planting hole excavation or plant installation, irrigation system installation shall be

complete and approved per Section Irrigation System.

- H. Timing of plant installation is subject to the timeframes and soil moisture conditions specified in sub- Sections Plant Installation – General and Small Container Plant Installation.
1. Order and Timing of Work: The following approximate order of Work and timeframes are assumed for the Work. More detailed timing information is provided in these Specifications.
 - a. Layout of planting areas.
 - b. Delivery of small container plants.
 - c. Fabrication of foliage protection cages.
 - d. Installation of small container plants, watering basins, mulch, and foliage protection cages and wooden stakes, as shown on Drawings.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall be responsible for coordination and timing of small container plants delivery to Project site.
- B. Contractor shall coordinate delivery of container plants with native plant nursery at least fifteen (15) working days prior to plant installation.
- C. Contractor shall be responsible for the proper storage, handling, and protection of plant materials once they are delivered to Project site.
- D. Contractor shall maintain plant materials in a healthy condition at all times. Contractor shall protect plants from sun and drying winds. Plants that cannot be installed immediately upon delivery shall be kept in the shade, watered, and kept in a deer-proof enclosure to prevent browse.
- E. After delivery, Contractor shall be responsible for replacement of any damaged plant material, as determined by Engineer at no expense to Owner.

1.9 PROTECTION

- A. Contractor shall contact the local utility companies for verification of the location of all underground utility lines in the area of the Work. Contractor shall be responsible for all damage resulting from neglect or failure to comply with this requirement.

1.10 SUBSTITUTIONS

- A. All plant material substitutions shall be approved in writing by Engineer. Substituted plant species shall be collected for the project per sub-Section Small Container Plants, be of the same size as the material specified, and be made at no additional cost to Owner.
- B. Collection locations for substitutions shall be per sub-Section Small Container Plants.

Part 2 - PRODUCTS

2.1 GENERAL

- A. Provide all materials and components necessary to result in full completion of all work described in this SECTION.
- B. Materials not conforming to these Specifications and requirements shall remain the property of Contractor and shall be removed from Project site at no additional cost to Owner.
- C. All materials supplied shall be free of harmful substances.

2.2 SMALL CONTAINER PLANTS

- A. Contractor is responsible for furnishing small container plants for initial installation and for replacement planting. Replacement small container plant quantities shall be per Section Long-Term Maintenance.
- B. Contractor shall perform nursery coordination per sub-Section Submittals.
- C. Contractor shall coordinate delivery and store and maintain plant materials per sub-Section Delivery, Storage, and Handling.
- D. Procurement
 - 1. Contractor's native plant nursery shall custom-collect, grow, and provide container plants meeting the species, size, and genetic origin specified for this Work.
 - 2. Propagules and/or seeds for container plants shall be collected by Contractor's native plant nursery.
 - a. Propagules and/or seeds for container plants shall be collected by Contractor's native plant nursery from within Monterey County.
 - b. Propagules and/or seeds for container plants to be installed on State Parks Lands (west of Highway 1) shall adhere to the criteria outlined in *Guidelines for Seed and Plant Material for the Carmel River State Beach Portion of the CRFREE Project*.
 - 1. Per the guidelines, any seed or cutting collection from any State Park unit requires a State Parks collecting permit.
 - c. At least fifteen (15) working days prior to propagule and/or seed collection, Contractor shall contact Engineer, in writing, to coordinate access to the collection locations.
 - d. For collection locations beyond those controlled by Owner, Contractor shall be responsible for obtaining all necessary access permission, permits, approvals, etc. to collect the required propagules and/or seeds.
 - e. The collection windows vary for several of the plant species. To provide the range of species required each year, collection visits shall be required during different seasons.
- E. General Requirements
 - 1. Plants shall be nursery grown in accordance with good horticultural practices under climatic conditions similar to those of Project site for at least one (1) year unless

- otherwise accepted by Engineer.
2. Container sizes shall be as shown on Drawings.
 3. Container plants shall be certified by federal and state codes. All plants shall be free of disease or hazardous insects and, as described by ANSI Z60.1, they shall be healthy, vigorous, well rooted, and established in the container in which they are growing.
 - a. Plants shall have foliage of a normal density, size and color.
 - b. Plants shall have roots at the bottom of the containers by delivery dates but shall not be root-bound. Root systems shall be healthy and free from twisting or girdling. Plants that have been transferred to larger containers to meet specified requirements will not be accepted.
 - c. Plants lacking compactness or proper proportions or plants that are weak or thin will not be accepted. Plants that have been cut back from larger containers to meet specified requirements will not be accepted.
 - d. Nursery shall grow enough plants to ensure that the required number of plants is available in the event that some plants are rejected due to poor health.
 - e. Plants shall not be pruned prior to delivery.
 4. Plants shall be labeled at the supplying nursery with genus, species, variety, and collection location.

2.3 COMPOST

- A. Compost shall comply with the following California Department of Transportation (Caltrans) standards:
 1. Compost provider shall be a compost producer and a participant in the United States Composting Council Seal of Testing Assurance program.
 2. Compost producer shall be fully permitted as a compost producer in accordance with requirements of the California Integrated Waste Management Board, Local Enforcement Agencies, and any other state and local agencies that regulate solid waste facilities. If exempt from state permitting requirements, the composting facility shall certify that it follows all guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations (CCR), Division 7, Chapter 3.1, Article 7.
 3. Compost may be derived from any single or mixture of any of the following feedstock materials: green material consisting of chipped, shredded, or ground vegetation; clean processed recycled wood products; or a Class A exceptional quality biosolids compost meeting the United States Environmental Protection Agency, 40 CFR, Part 503 regulations.
 4. Compost feedstock materials shall be processed to reduce weed seeds, pathogens, and deleterious material as specified under Title 14, CCR, Division 7, Chapter 3.1, Article 7, Section 17868.3.
 5. Metal concentrations in the composted mulch shall not exceed the maximum metal concentrations listed in Title 14, CCR, Division 7, Chapter 3.1, Article 7, Section 17868.2.
 6. Compost shall comply with the following physical and chemical requirements:
 - a. pH: 6.0 to 8.0.
 - b. Soluble salts: 0 to 10.0 deciSiemens per meter.
 - c. Moisture content: 30 to 60 percent of dry solids.
 - d. Organic matter content: 30 to 65 percent.
 - e. Maturity – Seed emergence: 80 percent or above relative to positive control.
 - f. Maturity – Seed vigor: 80 percent or above relative to positive control.

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- g. Stability – Carbon dioxide evolution rate: 8 milligrams or below per day.
 - h. Pathogen – Fecal Coliform Bacteria: less than 1000 Most Probable Number per gram dry weight (Pass).
 - i. Pathogen – Salmonella: less than 3 Most Probable Number per 4 grams dry weight (Pass).
 - j. Physical contaminants: Plastic, glass and metal: less than 1.0 percent combined total.
 - k. Physical contaminants: Sharps (sewing and/or hypodermic needles): None detected.
 - l. Boron: dry weight <100.0 ppm and soluble extract <4 ppm
- B. Compost shall also comply with the following.
1. Particle size
 - a. 100 percent shall be able to pass through a ½-inch sieve.
 - b. 95 percent minimum shall be able to pass through a ¼-inch sieve.
 - c. 65 percent minimum shall be able to pass through a 1/8-inch sieve.
 - d. 20 percent maximum shall be able to pass through a ½-millimeter sieve.
 2. The carbon-to-nitrogen ratio shall be less than twenty to one (20 to 1).
 3. Compost shall not contain paint, petroleum preservative products, herbicides, fungicides, or other chemical residues that would be harmful to plant or animal life.
 4. Compost shall not be derived from green waste products that contain recycled sheetrock/gypsum board.
- C. Compost Testing:
1. Send sample to testing agency.
 2. Testing agency shall be a Seal of Testing Assurance (STA) Certified Compost Laboratory, designated by the US Composting Council. Acceptable laboratory includes Soil Control Lab, Watsonville, CA 831.724.5422.
 3. Request Soil Control Lab “Compost Package”, or approved equal.
 - a. Form name specified refer to tests of Soil and Plant Laboratory. Equal tests of approved laboratory may be substituted.
 - b. Format of test reports, analysis and recommendations shall meet approval of the Engineer. Resubmit until accepted.
 - c. If an alternate laboratory is used, the laboratory must be STA certified by the USCC, using test methods described in the “Test Methods of the Examination of Composting and compost” (TMECC) test methods manual.
 - d. Testing agency shall certify that compost complies with these Specifications.
 4. Submit results of sample test to the Project Biologist prior to using compost at the site. Any compost not meeting these specifications shall be removed from Project site at no additional cost to Owner.
- D. Organic compost is available from the Monterey Regional Waste Management District, Marina, CA (831) 384-5313 or Keith Day Company / Gabilan Ag Services, Salinas, CA (831) 771-0126, or equivalent facility, as approved by Engineer.

2.4 WOOD BARK MULCH

- A. Wood chips, tree bark chips, shredded bark, or any combination thereof that meets the following standards:
1. Wood chips: The particle size of wood chips shall be between 1/2 and 3 inches long and a minimum of 3/8 inch wide and 1/16 inch thick. At least eighty-five (85) percent, by volume, of wood chips shall conform to the sizes specified.
 2. Tree bark chips: Tree bark chips shall have a particle size between 1/2 inch and 1-1/2 inches.
 3. Shredded bark: Shredded bark shall be a mixture of bark and wood and shall have a particle size between 1/8 inch and 1/2 inch in diameter and one (1) inch to eight (8) inches long. At least seventy-five (75) percent, by volume, of shredded bark shall conform to the sizes specified.
 4. 'Gorilla hair' shredded redwood bark mulch is not acceptable.
- B. Materials for wood bark mulch shall not contain noxious weeds or originate from a Sudden Oak Death host plant species derived from a quarantined county.
- C. Wood bark mulch shall be free of salt, foreign materials, and other harmful substances.
- D. Upon approval from Engineer, wood bark mulch may be produced from tree trimmings resulting from project tree removal or from other "arborist mulch" obtained from tree trimming companies. Wood bark mulch materials shall be obtained from healthy trees that are free of disease.

2.5 WATER

- A. Water: Water shall be free of harmful substances that would adversely affect plant growth or vigor.
- B. Contractor shall develop a water supply plan for the initial irrigation of plants following installation.

2.6 FOLIAGE PROTECTION CAGES

- A. The following materials are required for each foliage protection cage:
1. Chicken Wire: 20-gauge, minimum five (5) feet tall with a maximum mesh size of one (1) inch by one (1) inch.
 2. Wooden tree stake: Eight (8) feet, two and a quarter (2-1/4) inches diameter lodge pole stakes with tapered driving point; as available from Imperial Sprinkler Supply, Livermore, CA (925) 667-2190; or approved equal.
 3. Ties: Standard agricultural grade bailing wire or plastic ratchet-locking ties.

2.7 OTHER MATERIALS

- A. All materials supplied shall be free of harmful substances.

Part 3 - EXECUTION

3.1 FIELD QUALITY CONTROL AND INSPECTIONS

- A. Contractor shall request and receive approval from Engineer prior to commencement of Work in this Section.
- B. Contractor shall inspect Project site and become familiar with any access requirements, access restrictions, and any other site conditions.
- C. Coordinate with Engineer to schedule inspections at the following stages in the plant installation process:
 - 1. Layout of planting areas and flagging of individual small container plants prior to irrigation system installation.
 - 2. Inspection and acceptance of small container plants at the time of delivery.
 - 3. When small container plant installation is near eighty (80) percent of completion. Contractor shall correct any deficiencies to the Engineer's satisfaction.
 - 4. During periods of active plant installation, Contractor shall schedule weekly onsite Project meetings with Engineer to inspect plant installation. Contractor shall correct any deficiencies to the Engineer's satisfaction by the next week's meeting, unless otherwise approved by Engineer.
 - 5. Acceptance of restoration planting, within ten (10) working days of completion of plant installation.
- D. Progress Inspections: Periodic progress inspections may be made by Engineer.
- E. Engineer reserves the right to take and analyze samples of materials for conformity to these Specifications at any time
- F. Contractor shall correct any deficiencies to Engineer's satisfaction.

3.2 REVIEW AND ACCEPTANCE OF CONTAINER PLANT MATERIAL

- A. Contractor shall coordinate delivery of small container plants per sub-Section Delivery, Storage, and Handling.
- B. Engineer will review container plants upon delivery at Project site. Contractor shall notify Engineer fifteen (15) working days prior to plant delivery to coordinate this review. Engineer reserves the right to approve or reject any materials delivered to Project site.
- C. Contractor shall install only material that has been reviewed and accepted by Engineer.

3.3 PLANT LAYOUT

- A. Engineer reserves the right to make minor adjustments in the layout of all plant material. Contractor shall adjust irrigation system as necessary.
- B. Coordination with Engineer
 - 1. Contractor shall coordinate with Engineer to confirm the location of each planting area.
 - 2. Each planting area shall be flagged by Contractor and constitute the limits of that

planting area.

- C. Contractor shall contact Engineer at least ten (10) working days prior to flagging so Engineer can be present.
- D. Within each planting area, contractor shall flag the location of each small container plant, using a clearly visible, unique, colored flag for each species.
- E. Contractor is responsible for maintaining flags in location until final acceptance of Work in this Section.

3.4 PLANT INSTALLATION - GENERAL

- A. Contractor shall not install plants prior to review and acceptance by Engineer upon delivery of plant material to Project site, or install plant material that has been rejected for any reason.
- B. Plant installation shall occur after the onset of winter rain and between 1 November and 31 December, when the soil becomes moist to a depth of eight (8) inches as determined by Engineer. Prior to planting, Contractor shall request and receive approval from Engineer that the soil moisture is adequate.
- C. Given the soil moisture requirement and site access limitations, it is possible that plant installation will occur in a short window within the following timeframes, after soil moisture becomes appropriate and before ponding at the wetlands makes planting conditions difficult.
- D. Contractor shall not plant under unfavorable weather conditions. Ambient temperatures shall be between thirty-five (35) and ninety (90) degrees Fahrenheit and wind velocity shall not exceed thirty (30) miles per hour.
- E. Planting shall initiate in the areas furthest from the access points. This approach is intended to minimize disturbance of installed plants. Additional efforts shall be made to limit trampling of planting areas, including restricting foot traffic to a single-track pathway around the perimeter of each planting area, rather than crisscrossing the planting areas in multiple locations. Workers shall leave the main path only to perform Work at specific locales within the planting areas.

3.5 PLANTING HOLE EXCAVATION AND BACKFILL

- A. Planting Hole Excavation
 - 1. Planting holes shall be excavated prior to installation of irrigation system.
 - 2. Planting holes shall be sized as shown on Drawings.
 - 3. Planting holes may be excavated by hand digging, auguring, or by drilling. Water jets shall not be used for the excavation of planting holes. When excavating under existing trees, Contractor shall minimize damage to existing tree roots.
 - 4. During excavation, Contractor shall:
 - a. Remove all rocks greater than three (3) inches in diameter from the excavated native site soils. Where rock or other hard material prohibits holes from being excavated to the dimensions specified, new holes shall be excavated and the abandoned holes shall be backfilled with the excavated material.

water.

E. Wood Bark Mulch

1. Subsequent to construction of watering basins, Contractor shall spread a layer of wood bark mulch to depth shown on drawings within the bottom of each watering basin.
2. Wood bark mulch shall be pulled away from small container plant stems in all directions as shown on Drawings.

F. Irrigate each small container plant within one (1) hour of installation with sufficient water to saturate the soil. This can be done by hand if necessary.

G. Contractor shall maintain small container plants until commencement of Work in Section Long-Term Maintenance.

3.7 FOLIAGE PROTECTION CAGE INSTALLATION

A. Contractor shall construct and install foliage protection cages around small container plants as noted on Drawings.

B. Timing. For those plant species requiring a foliage protection cage, the cage shall be fabricated prior to plant installation. Foliage protection cages shall be installed the same day as the plant material in order to provide immediate protection for the plant. Contractor shall request and receive approval from Engineer for any other timetable for this Work.

C. Construction of foliage protection cages shall be as follows:

1. Install three (3) stakes vertically into the soil as shown on Drawings. Space the stakes equally, located in a four (4)-foot diameter area around the small container plants.
2. Create a cylinder with the chicken as shown on Drawings.
3. Use ties to fasten cage loosely to wooden posts. Ties should still allow cage to be slid up and down along wooden posts for maintenance access.

3.8 SITE CLEAN-UP

A. Contractor shall clean up the Project site following planting activities as follows and as directed by Engineer:

1. Clean Project site and work area of all containers, packaging, and other debris resulting from planting operations.
2. Dispose of all trash and debris legally at licensed disposal facilities.
3. Clean all surfaces not designated for treatment and remove all residues resulting from mixing, applying, or equipment flushing.
4. Remove temporary items.

3.9 ACCEPTANCE

A. Acceptance of Work: Engineer will accept Work when all improvements and corrective Work have been performed as specified and to the satisfaction of Engineer.

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- B. Following inspection and acceptance of the completed Work, Work described in Section Long-Term Maintenance shall begin.

3.10 PAYMENT

- A. Not used

END OF SECTION

SECTION 32 97 00**LONG-TERM MAINTENANCE****Part 1 GENERAL****1.1 SUMMARY**

- A. Provide all material, labor, and equipment necessary to perform the Work for the long-term maintenance period (three (3) years) as shown on Drawings and as specified herein. The Work of this Section includes but is not limited to:

1. Preparing maintenance schedule.
2. Preparing maintenance logbook.
3. Conducting maintenance inspections.
4. Coordinating with a native plant nursery to custom-collect, grow, and provide replacement small container plants.
5. Installing replacement small container plants.
6. Maintaining and removing foliage protection cages.
7. Maintaining watering basins, including replenishing wood bark mulch.
8. Maintaining / operating irrigation system.
9. Conducting mowing events.
10. Conducting French broom control events.
11. Removing all above-ground irrigation system components at the direction of Engineer.

- B. Related Technical Sections

1. Section 32 84 00 Irrigation System
2. Section 32 93 00 Planting

- C. Control of non-native noxious and invasive plant species is assumed to be achieved per the mowing events and French broom control events described herein. Information regarding herbicides is provided as additional information should the Contractor propose the use of herbicides. Prior to any herbicide use, contractor shall request and receive approval from Engineer.

1.2 REFERENCE STANDARDS

- A. Nomenclature:

1. *Western Garden Book*, 9th Edition, Sunset Publishing Co., Menlo Park, CA.
2. *The Jepson Manual: Vascular Plants of California*, Second Edition, University of California Press, Berkeley, CA.

- B. Plant Material Standards:

1. *American Standard for Nursery Stock*, American National Standards Institute (ANSI)

Z60.1; American Nursery and Landscape Association.

- C. All standards shall include the latest additions and amendments as of the date of advertisement for bids

1.3 SUBMITTALS

- A. Submit manufacturer's data sheets, standard details, and installation instructions for all materials included in sub-Section Products of this SECTION. Manufacturer's recommended installation procedures shall, when approved, become the basis for accepting or rejecting actual installation procedures used in the Work
- B. Contractor shall submit the following:
1. Prior to the commencement of the long-term maintenance period, a proposed maintenance schedule as described in sub-Section Maintenance Schedule.
 2. A logbook of mitigation site maintenance activities as described in sub-Section Maintenance Logbook.
 3. All submittals required for nursery coordination as described in sub-Section Replacement Small Container Plants.
 4. Plants
 - a. A letter, or appropriate lot tag, from propagule provider stating the botanical name, common name, and provenance to certify that the plants delivered to Project site match those listed on Owner's nursery order.
 - b. A letter, or appropriate lot tag, from propagule provider stating their botanical name, common name, and provenance to certify that the plants meet the specification described herein.
 - c. For plants grown in California and Oregon nurseries, certification shall be provided that the nursery has complied with state and federal Sudden Oak Death regulations:
 - i. Federal Domestic Quarantine (7CFR 301.92).
 - ii. California Oak Mortality Disease Control (CCR 3700).
 5. All submittals required for other planting materials per Section Planting.
 6. Herbicides
 - a. If herbicide use is proposed by the Contractor, the following shall be provided to Engineer:
 - i. Current and valid 'Operator Identification Number' issued by the County Agricultural commissioner.
 - ii. Current and valid Qualified Applicator License (QAL) with an Aquatic Pest Control category issued by the California Department of Pesticide Regulation.
 - iii. A written recommendation from a licensed Pest Control Advisor shall be obtained for each herbicide to be used prior to its application.
 - iv. Material Safety Data Sheet (MSDS) for herbicides proposed for use.
 - v. Manufacturer's container label showing: active ingredient, percent active ingredient, recommended application rate and procedure for target species,

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Environmental Protection Agency registration number and precautionary statements.

1. For each herbicide use, the following shall be provided to County of Monterey Agricultural Commissioner.
 - vi. *Pesticide Use Report* by the 10th of the month following pesticide use. Information is available online at:

<http://www.co.monterey.ca.us/government/departments-a-h/agricultural-commissioner/agricultural-resource-programs/pesticide-use-enforcement/operator-identification-numbers-pesticid#ag>

1.4 QUALITY ASSURANCE

A. Contractor Qualifications

1. At the time of bid, Contractor shall provide a list of three (3) projects that demonstrate previous experience in completing maintenance work similar in type, scope, and scale to the elements described on Drawings and herein.

- B. If herbicides are proposed, they shall only be applied by a qualified applicator licensed to apply commercial herbicides.

1.5 PROJECT CONDITIONS

- A. Wet conditions on the access roads may affect access, timing, and sequencing of Work. Contractor shall coordinate with Engineer for approval of vehicular access.

- B. All long-term maintenance work shall be in compliance with all regulatory agency permit requirements, including all requirements related to wildlife pre-construction surveys or monitoring.

- C. Long-term maintenance work may occur during saturated soil conditions. Where wet soil conditions exist, Contractor shall provide and employ plywood, mudboots, or other method approved by Engineer to protect soils vegetation from damage created by foot traffic.

1.6 GENERAL COORDINATION

- A. Contractor shall request and receive approval from Engineer prior to commencement of the long-term maintenance period. The long-term maintenance period shall begin upon acceptance by Engineer and continue for a minimum of three (3) years.

- B. A minimum of five (5) working days prior to each maintenance event, Contractor shall:

1. Contact Engineer regarding the location, type of work to be done, and the equipment to be used. Engineer may or may not approve the proposed maintenance work
2. For site access, Contractor shall coordinate with the Engineer and BSLT's designated contact.

- C. Contractor shall request approval from Engineer for completion of the long-term maintenance period. Completion of the long-term maintenance period shall be confirmed in writing by Engineer.

Part 2 - PRODUCTS

2.1 GENERAL

- A. Materials not conforming to these Specifications and requirements shall remain the property of Contractor and shall be removed from the job site at no additional cost to Owner.

2.2 REPLACEMENT SMALL CONTAINER PLANTS

- A. Contractor is responsible for furnishing replacement small container plants that will be installed each year of the long-term maintenance period.
- B. Nursery Coordination
 - 1. Replacement small container plants are long-lead specialty items. Contractor’s native plant nursery approved per Work in Section Planting shall custom–collect, grow, and provide replacement small container plants meeting the species, size, and genetic origin specified herein.
- C. Quantity, Species, and Container Size
 - 1. Contractor shall provide fifteen (15) percent replacement small container plants each year for the first three (3) years of the long-term maintenance period as follows:
 - a. Contractor shall match ratios of species composition shown on Drawings. However, each year Engineer may modify this composition and request that certain species be replanted at a higher ratio than others based on the results of the required plant survival monitoring.
 - b. No later than May 31 of the year prior to replacement plant installation, Contractor’s native plant nursery shall provide a list of replacement small container plants to Engineer. List shall include species, quantity, and container size information as described below.

List of Replacement Plants by May 31 of:	Replacement Plant Installation in:
Year of initial installation	Year-1
Year-1	Year-2
Year-2	Year-3

- c. Any changes to the composition of replacement small container plants shall be made prior to the annual ordering and collection of plants.
 - 2. Container sizes shall be as shown on Drawings.
- D. Procurement shall be per Section Planting, sub-Section Small Container Plants.
- E. General Requirements shall be per Section Planting, sub-Section Small Container Plants.

2.3 REPLACEMENT MULCH

- A. Wood Bark Mulch
1. Wood bark mulch shall be per Section Planting, sub-Section Wood Bark Mulch.
 2. Contractor shall provide replacement wood bark mulch each year of the long-term maintenance period.

2.4 FRENCH BROOM CONTROL HEAT WEEDING DEVICE

- A. Contractor shall use a flame torch weeding device to heat and kill the French broom seedlings.
1. Device shall create sufficient heat to kill the French broom seedlings.
 2. Device shall have a minimum heat output of 200,000 BTU.
 3. Flame weeding devices are available from Red Dragon (800-255-2469 or <http://flameengineering.com/collections/back-pack-vapor-torch-kits#collection>) and Manchester Tank (615-370-6300 or <http://www.mantank.com/products/dotproducts/propanehandburners.htm>), or approved equal
- B. Alternate heat weeding methods may be implemented upon approval from Engineer.

2.5 HERBICIDES

- A. If herbicides are proposed by the Contractor, they shall comply with the following:
1. Herbicides shall be delivered to Project site undamaged, unopened, and in original containers bearing manufacturer's label, warranty, and directions for application.
 2. All herbicides shall be approved by Engineer and the Environmental Protection Agency for use in aquatic settings.
 3. None of the sixty-six (66) pesticide active ingredients prohibited by the October 2006 Stipulated Injunction and Order, Case No.: 02-1580-JSW (Center for Biological Diversity v. EPA) shall be used. Information is available online at: <https://www.epa.gov/endangered-species/court-issues-stipulated-injunction-regarding-pesticides-and-california-red-legged>
 4. None of the seventy-five (75) pesticide active ingredients prohibited by the May 2010 Stipulated Injunction and Proposed Order, Case No.: 07-2794-JCS (Center for Biological Diversity vs. EPA) shall be used. Information is available online at: <https://www.epa.gov/endangered-species/san-francisco-bay-area-endangered-species-litigation-center-biological-diversity>

2.6 WATER

- A. Water shall be per Section Planting.

Part 3 - EXECUTION**3.1 FIELD QUALITY CONTROL AND INSPECTIONS**

- A. Contractor shall request and receive approval from Engineer prior to commencement of Work in this Section.

- B. Contractor shall inspect Project site and become familiar with any access requirements, access restrictions, and any other site conditions.
- C. Coordinate with the Engineer to schedule inspections at the following stages in the process:
 - 1. Maintenance inspections.
 - 2. Replacement small container plant installation.
 - 3. French broom control event.
 - 4. Acceptance of long-term maintenance.
- D. Progress Inspections: Periodic progress inspections may be made by Engineer.
- E. Contractor shall correct any deficiencies to the Engineer's satisfaction.
- F. If Engineer determines that significant problems are present at Project site, additional maintenance inspections will be scheduled until Engineer determines that these problems are resolved.

3.2 MAINTENANCE SCHEDULE

- A. Prior to the commencement of the long-term maintenance period, Contractor shall prepare a detailed maintenance schedule for the long-term maintenance period and submit it to Engineer for approval.
- B. Contractor shall update and submit the maintenance schedule to Engineer by the first week of the start of each calendar year of the long-term maintenance period.
- C. Schedule shall include timing of all tasks noted herein.

3.3 MAINTENANCE LOGBOOK

- A. Contractor shall submit the maintenance logbook to Engineer by the first week of the start of each calendar quarter.
- B. Contractor shall record all maintenance activities and observations in a maintenance logbook, which shall include the following records.
 - 1. For all entries, the following basic information shall be provided
 - a. Date when Work occurred.
 - b. Name of Project site and area(s) where Work occurred within Project site.
 - c. Materials, techniques, and equipment used.
 - d. Amount of time spent working in each area.
 - 2. Type and quantity of non-native noxious and invasive plants removed (including location of removal).
 - 3. Location(s) and quantity of water applied for irrigation.
 - 4. Location(s) of weed control and wood bark mulch application.
 - 5. Location(s) of replacement plant installation.
 - 6. If herbicides are used, type, quantity, and concentration of herbicide applied

(including location of application).

3.4 MAINTENANCE INSPECTIONS

- A. Contractor shall schedule quarterly (4 times per year) onsite inspections with Engineer during the long-term maintenance period. Topics for review and discussion shall include, at a minimum, replacement plantings, irrigation frequency, watering basin maintenance, weed control, and French broom control.
- B. During each maintenance inspection, Contractor shall photograph site conditions.
- C. Contractor shall correct any deficiencies to Engineer's satisfaction.

3.5 REPLACEMENT AND/OR SUPPLEMENTAL CONTAINER PLANT DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery and store and maintain plants per SECTION 32 93 00 PLANTING, sub-Section Delivery, Storage, and Handling.

3.6 REPLACEMENT SMALL CONTAINER PLANT INSTALLATION

- A. During each year of the long-term maintenance period, Contractor shall replace dead small container plants at the direction of Engineer.
- B. Timing:
 - 1. Replacement plant installation shall occur after the onset of winter rain when the soil becomes moist to a depth of eight (8) inches. Prior to replacement plant installation, Contractor shall request and receive approval from Engineer that the soil moisture is adequate.
 - 2. Contractor shall install replacement small container plants after 1 November and prior to 15 January.
- C. Replacement small container plants shall be installed and irrigated per Section Planting.

3.7 FOLIAGE PROTECTION CAGE MAINTENANCE

- A. Contractor shall maintain and remove foliage protection cages around plants as directed by Engineer.
- B. Maintenance of foliage protection cages during each year of the long-term maintenance period shall be as follows:
 - 1. Cages shall be maintained in a vertical orientation and the bottom set flush with the soil surface.
 - 2. Contractor shall repair foliage protection cages damaged by severe erosion, wind, browsing or burrowing animals, flooding, theft, vandalism, or deficiencies in workmanship. Repairs may include reconstructing or restaking a damaged portion of the protection cage, in addition to replacing missing ties.
 - 3. Damaged foliage protection cages shall be replaced or repaired per Section Planting, sub-Section Foliage Protection Cages.
 - 4. Once per growing season, Contractor shall raise cylindrical foliage protection cages

using ties to secure each cage to its stakes to protect the plants' leaders from browse. The height to which the protection cage shall be raised shall be determined in coordination with Engineer.

5. Contractor shall remove a cage when it restricts the plant's growth as determined by Engineer. Care shall be taken to minimize damage to plants when removing the cage. If necessary, cages shall be cut so that plants are not damaged when the protection cages are removed. Contractor shall recycle or dispose of protective hardware properly off-site.
- C. At the conclusion of the long-term maintenance period and with approval/direction from Engineer, Contractor shall remove all foliage protective cages and recycle or dispose of these elements properly off-site. Any damage to other Project elements during this removal shall be repaired or replaced in kind at the expense of Contractor.

3.8 WATERING BASIN MAINTENANCE

- A. The watering basins and the surrounding four (4)-inch earthen berms shall be reformed and maintained as necessary to retain water.
- B. Weed removal within watering basins shall occur whenever weeds become established. Weeds within the watering basins shall be hand-pulled.
- C. Wood bark mulch shall be added to each watering basin that originally received wood bark mulch as necessary to maintain the three (3)-inch thick layer.

3.9 IRRIGATION SYSTEM MAINTENANCE

- A. Contractor shall be responsible for the maintenance of irrigation system during the long-term maintenance period.
- B. Maintain irrigation system in working order from beginning of Work until the end of the long-term maintenance period as follows:
 1. At the commencement of the long-term maintenance period and twice in the year of maintenance (every six (6) months), Contractor shall perform a system check and flow test audit at each irrigation zone. Contractor shall place the emitter or bubbler located farthest from the start of the irrigation zone (i.e. farthest from the main line or standpipe) in a one (1)-quart container and make note of the time required to fill the container. Contractor shall use this information to ensure that bubblers are providing the specified flow rates.
 2. Contractor shall inspect irrigation system monthly to ensure proper function.
 3. Contractor shall repair or replace any malfunctioning irrigation components. Failed irrigation components shall be replaced with components as specified in Section Irrigation System.
 4. Contractor shall repair, re-anchor, or replace on-grade lines as needed.
 5. Contractor shall check filter each time the system is run and clean the filter at minimum one time per month and as needed, while irrigation system is in use, to ensure it is not clogged.
 6. The default position of all main gate valves shall be closed, unless irrigation event is actively occurring.
 7. The default position of all sub-zone gate valves shall be open.
 - a. Contractor shall regularly inspect irrigation subzones for breaks. In the instance of a break, Contractor shall isolate the broken subzone by closing the

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appropriate sub-zone gate valve until repairs can be made. All plants affected by sub-zone closure shall be watered by hand in the interim.

C. Demonstration:

1. At the conclusion of the long-term maintenance period, Contractor shall provide four (4) hours of instruction to Owner's maintenance personnel in operation and maintenance of system. Arrange for instruction by manufacturer's representative where Contractor is not expert in operation of equipment.
2. Submit operation and maintenance manuals before instruction session.
3. Instruction shall take place at time accepted by Owner.

- D. At the conclusion of the long-term maintenance period, Contractor shall remove all aboveground irrigation system components at the direction of Engineer. Owner may wish to retain part or all of the temporary irrigation system and may waive Contractor's responsibility to remove those irrigation system components.

3.10 IRRIGATION SYSTEM MANUAL OPERATION EVENT

- A. Contractor shall be responsible for the manual operation of irrigation system during the long-term maintenance period.

B. Timing and Frequency

1. Plants will require irrigation each year of the long-term maintenance period to increase the likelihood of plant establishment and success. Irrigation will be most intensive during the first year and the frequency will decrease during the second and third years to gradually transition the plants to natural conditions.
2. Contractor shall provide water to plants at sufficient applications and quantity to maintain all installed plants. The irrigation schedule below is provided as a guideline.
 - a. Contractor shall evaluate the need to adjust the irrigation schedule or amount of water supplied to plants. Contractor shall communicate the determination of need for irrigation changes in writing to Engineer. Contractor shall request and receive written approval from Engineer prior to implementing changes to the irrigation schedule and note changes in the maintenance log per sub-Section Maintenance Logbook.
 - b. At any time Engineer may also determine that the irrigation schedule and/or rates need adjustment and request Contractor to make the necessary alterations.

MAINTENANCE PERIOD IRRIGATION SCHEDULE

Year	Gallons per Irrigation Event	Frequency of Irrigation Events											
		January	February	March	April	May	June	July	August	September	October	November	December
1	10	0	0	4	4	4	4	4	4	4	4	0	0
2	10	0	0	3	3	3	3	3	3	3	3	0	0
3	10	0	0	2	2	2	2	2	2	2	2	0	0

-
- c. Replacement plants shall be maintained with similar annual frequencies, restarting from the time they are replanted. This supplemental irrigation may be done by hand or adjustment of bubbler flow rates to each plant.

C. Irrigation System Manual Operation

1. Water source shall be per Section Irrigation System.
2. Contractor shall provide approximately ten (10) gallons of water into each watering basin during each irrigation event. Irrigation water shall not damage or overflow each watering basin. Irrigation shall be delivered such that the flow does not displace soil around the tree's root crown or degrade the integrity of the watering basins.
3. Flow at Well A and B shall not exceed the maximum listed on Drawings. Contractor shall open all irrigation zone gate valves to provide all zones with the minimum required gallons per event.

3.11 MOWING EVENT

- A. Mowing events shall include mowing all non-native weeds, including non-native grasses and forbs, within the planting areas and outside of watering basins to a height of two (2) inches above grade.

1. Throughout the planting areas (i.e. between the watering basins), weeds shall be maintained close to ground level; at no point shall weeds exceed a height of one (1) foot.
2. Weed removal within watering basins shall be per sub-Section Watering Basin Maintenance.
3. Contractor shall not damage or remove recruiting native vegetation in the planting area. Contractor shall demonstrate to Engineer the ability to differentiate native plants from non-native plants. If Engineer deems that Contractor is unable to differentiate native plants from non-native plants, Contractor shall train crews to the satisfaction of the Engineer.

B. Timing and Frequency

1. Weeds shall be controlled each year of the long-term maintenance period.
2. For the purposes of bidding, Contractor shall include three (3) weeding events per year for a total of nine (9) events during the long-term maintenance period in the base bid and also provide a unit cost per event.
3. Each year of the long-term maintenance period, Contractor shall conduct three (3) weeding events spaced approximately 6 weeks apart as follows:
 - a. between 1-15 March,
 - b. between 15-30 April, and
 - c. between 1-15 June
4. This schedule is provided as a guideline. The exact timing of weeding events may vary due to weather conditions and plant development rates.
5. Contractor shall conduct weed events at the optimum time in the growth cycle of non-native grasses to achieve control and prior to their seed set.
6. Contractor shall evaluate the need to adjust the timing of weeding events. Contractor shall request and receive written approval from Engineer prior to

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implementing changes.

7. At any time Engineer may also determine that the timing of weeding events needs to be adjusted and request Contractor make the necessary alterations.

- C. Herbicides shall not be utilized for weed control, unless approved by Engineer.

3.12 FRENCH BROOM CONTROL EVENT

- A. French broom control events shall include heat-weeding French broom seedlings within the planting areas and outside of watering basins.

1. Contractor shall control French broom by walking all planting areas with the heat weeding device to kill all French broom seedlings.
2. Engineer shall be present for the initial French broom control event each year of maintenance. Contractor shall coordinate with Engineer five (5) working days prior to scheduled event.
3. Because there is a possibility of inducing fire, fire safety precautions shall be taken, including but not limited to;
 - a. Only perform heat-weeding when conditions are unlikely to support a fire, such as during or immediately following a rain event.
 - b. Prior to each control event, Contractor shall perform all actions required by the Monterey Bay Air Resources District, including but not limited to, Regulation 5 Open Burning.
 - c. Protocols for fire suppression should follow the guidelines of the California Department of Forestry and Fire Protection and the Monterey County Regional Fire District, including but not limited to, guidelines highlighted in the Vegetation Management Program.

- B. Timing and Frequency

1. French broom shall be controlled each year of the long-term maintenance period.
2. For the purposes of bidding, Contractor shall include two (2) French broom control events per year for a total of six (6) events during the long-term maintenance period in the base bid and also provide a unit cost per event.
3. Each year of the long-term maintenance period, Contractor shall conduct two (2) French broom control events as follows:
 - a. between 1-31 January, and
 - b. between 1-31 March
4. Events shall occur during or immediately following a rain event.
5. This schedule is provided as a guideline. The exact timing of French broom control events may vary due to weather conditions and plant growth rates.
6. Contractor shall conduct French broom events at the optimum time in the growth cycle of French broom, during early growth stages when the seedlings are at a maximum height of four (4) inches tall.
7. Contractor shall evaluate the need to adjust the timing of French broom control events. Contractor shall request and receive written approval from Engineer prior to implementing changes.
8. At any time Engineer may also determine that the timing of French broom control events needs to be adjusted and request Contractor make the necessary alterations.

- C. Herbicides shall not be utilized for French broom control, unless approved by Engineer and per sub-Section Herbicide use.

3.13 HERBICIDE USE

- A. Contractor shall request and receive approval from Engineer prior to the use of herbicides for non-native noxious and invasive plant control.
- B. Contractor shall obtain a written recommendation per sub-Section Submittals.
- C. Herbicides shall only be applied by a qualified applicator licensed to apply commercial herbicides under supervision of Engineer. Contractor shall notify Engineer a minimum of ten (10) working days prior to herbicide use to ensure Engineer's presence.
- D. Contractor shall apply the minimum amount of herbicide to Project site to effectively control invasive species.
- E. Contractor shall observe safety precautions and usage restrictions recommended by manufacturer of the herbicide. Contractor shall follow manufacturer's guidelines for herbicide application in the following situations:
 - 1. In aquatic settings.
 - 2. During rain events or if rain is expected.
 - 3. During windy conditions.
 - 4. Contractor shall exercise care and ensure that herbicides do not drift to non-target vegetation or adjacent properties, or contaminate water quality of Creek or wetlands. Contractor shall be responsible for any herbicide damage to desirable vegetation outside the area designated for treatment and for settlement of any claims resulting from such damage.
- F. Equipment for application of herbicide either as a suspension or solution in water shall be of a type that uniformly applies the herbicide at a specified rate, without danger of drift to adjacent areas. Examples include stump painting, wick applicators, wand applicators, and sprayers. Sprayer shall be low-pressure, large droplet sprayer, and herbicide shall be applied close to the target plant materials.
- G. Contractor shall exercise care in draining and flushing tanks. Draining and flushing of herbicide tanks onto bare soil within Project site shall not be permitted.
- H. Contractor shall dispose of herbicides safely off-site at an appropriate facility. Contractor shall not dump herbicides down drains, in water bodies, or on the ground.
- I. Contractor shall keep careful written record of what type of herbicide is applied, application dates, and concentrations. These records shall be made available to Engineer upon request, and can be used as a basis for evaluation compliance with these Specifications.

3.14 SITE CLEANUP FOLLOWING MAINTENANCE ACTIVITIES

- A. Contractor shall cleanup Project site following maintenance activities as follows and as directed by Engineer:
 - 1. Trash may attract sensitive wildlife species and their predators. Following the completion of each maintenance activity, Contractor shall remove all trash and construction debris from Project site. Trash shall be properly contained and removed from Project site daily.

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2. Dispose of all debris legally at licensed disposal facilities. Costs incurred due to cleanup operations shall be as included for the various items of Work and no separate payment will be made thereof.
3. Remove temporary items excluding below-grade irrigation system components abandoned in place.
4. Restore any areas disturbed by maintenance activities.

3.15 ACCEPTANCE

- A. Acceptance of long-term maintenance period will be made after Work in Section 32 97 00 Long-Term Maintenance is deemed complete by the Engineer.

3.16 PAYMENT

- A. Not used

END OF SECTION