

# **HIGHWAY 1 AUXILIARY LANES IMPROVEMENT MITIGATION PLANTING**

## **PROJECT #23TI-012**

*Volume #02 Plans - Specifications - Scope - Photographs - Other  
CUPCCAA Supporting Docs*



**COUNTY OF SANTA CRUZ, CALIFORNIA  
GENERAL SERVICES DEPARTMENT  
August 26, 2022 Date Prepared**

**PROPOSALS DUE:  
Wednesday, October 5, 2022 – 2:30 P.M.**

**PRE-BID CONFERENCE:  
Tuesday, September 13, 2022 – 10:00 A.M.**

**LOCATION:  
Virtual Meeting (MS Teams)**

*For use in connection with Santa Cruz County standards and the 2019 California Building Code.*



## **TABLE OF CONTENTS**

This CUPCCAA Project is supported by specific documents enumerated in the “Table of Contents” below:

- A. Engineered Drawings – ***Joni Janecki & Associates Landscape Architect***
- B. Technical Specifications
- C. Supplemental Conditions
- D. Existing Condition Photographs
- E. Scope of Work
- F. Preliminary / Milestone Project Schedule
- G. Other Documents

### **Project Scope of Work:**

The County, as a core milestone in the development and delivery of a project, did conduct a site assessment and in conjunction met with the occupants of the facility and/or space to discuss the needs, wants, and expectations. From this site meeting discussion, the “**scope of work**” was drafted and refined to aid the Bidder in understanding parameters of the project and establishing the Bid to execute the expected work.

### **Project Supplemental Conditions:**

These are project clarifications that help the Contractor to gain comfort with the site conditions and support the project intent. The Supplemental Conditions are weighted equally in significance to that of the County General Conditions Terms & Conditions and project Specifications.

### **Project Existing Condition Photographs:**

The County has provided existing condition photographs in advance of a site visit for the purpose of formulating questions to focus observations during the mandatory pre-bid site visit. This will better prepare the Contractor to identify, mitigate, and manage their risk as well that of the county.

### **Preliminary / Milestone Project Schedule:**

The County has prepared either a “**Preliminary or Milestone Project Schedule**”. This schedule shall be considered by the Bidder to establish expected duration to execute the work. At the “**Notice of Award**” (NOA) the Bidder will be asked to begin preparing the “**Baseline Project Schedule**” for formal submission and review by the County. This Schedule will be submitted and reviewed within the first ten (10) days of receiving the NOA.





# **ENGINEERED DRAWINGS**

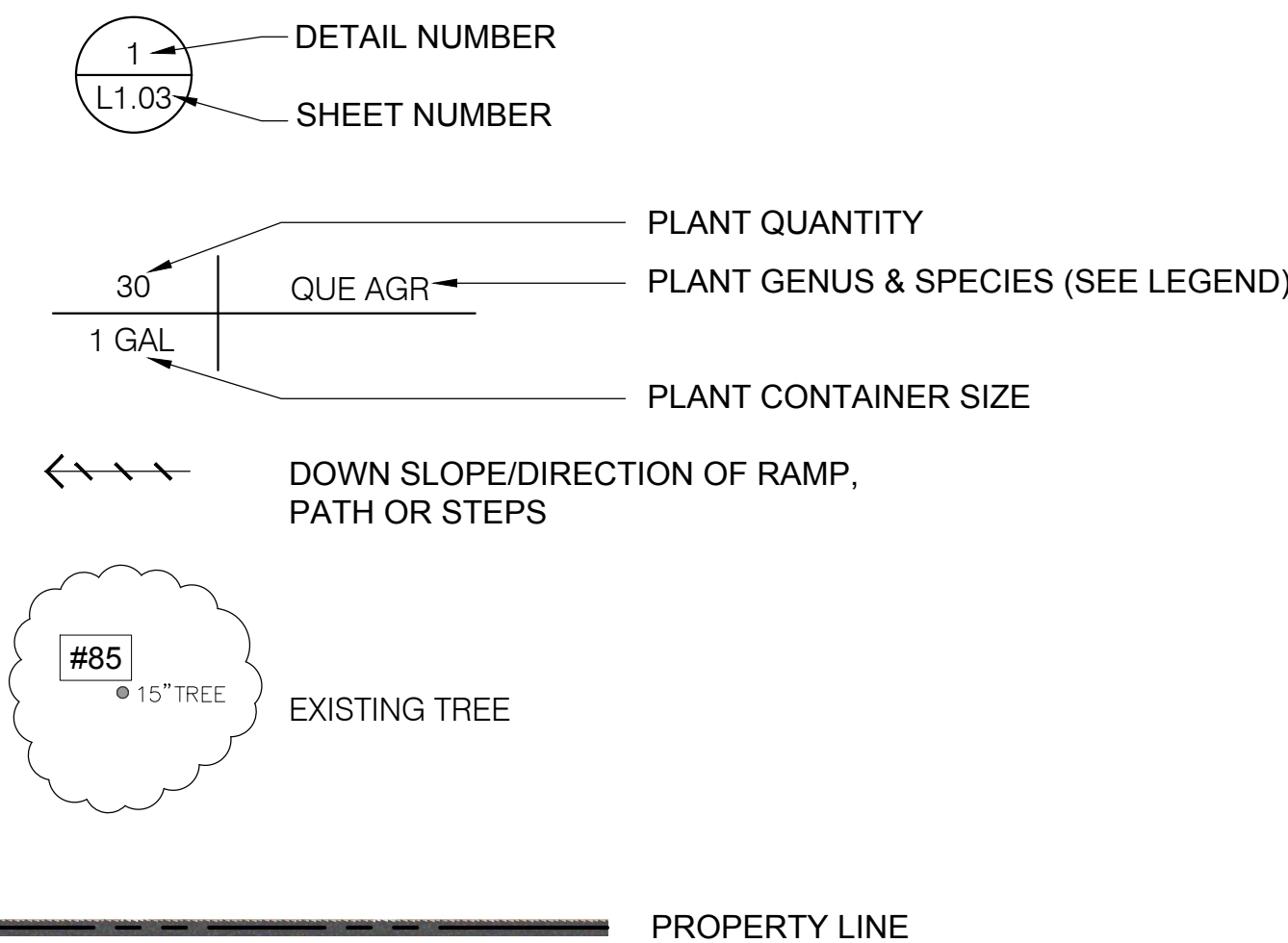
## **EXHIBIT "A"**



COUNTY OF SANTA CRUZ  
DEPARTMENT OF PARKS, OPEN SPACE AND CULTURAL SERVICES  
HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT -  
MITIGATION PLANTING

APN: 030-341-09

LEGEND



PROJECT SUMMARY

THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO SOIL PREPARATION, TEMPORARY FENCING, SUPPLEMENTAL IRRIGATION, PLANTING, MAINTENANCE, SIGNAGE, PROJECT COORDINATION, AND INCIDENTALS.

ADD ALTERNATE 1: EXTENSION OF MAINTENANCE TO 5 YEARS, ADJUSTING MAINTENANCE PROCEDURES AS NEEDED TO ADDRESS BIOLOGIST'S REPORTS, AND REPLACE PLANTS TO ACHIEVE MINIMUM SURVIVAL RATE.

ABBREVIATIONS

&	AND	DIM.	DIMENSION	O.C.	ON CENTER
∠	ANGLE	DN.	DOWN	O.C.E.W.	ON CENTER EACH WAY
@	AT	DWGS	DRAWINGS	OD	OUTSIDE DIAMETER (DIM.)
CL	CENTERLINE	E	EXISTING	PA	PLANTING AREA
Ø	DIAMETER OR ROUND	EJ	EXPANSION JOINT	PRCST.	PRECAST
#	POUND OR NUMBER	EL	ELEVATION	PIP	POURED IN PLACE
ADJ.	ADJACENT	ELEC.	ELECTRICAL	POT	POINT OF TANGENCY
AGGR.	AGGREGATE	EQ	EQUAL	RVC	POLYVINYL CHLORIDE
AL	ALUMINUM	EXP.	EXPANSION	QTY	QUANTITY
APPROX.	APPROXIMATE	EXT.	EXTERIOR	R	RISER
ARCH.	ARCHITECTURAL	FG	FINISH GRADE	RAD	RADIUS
A.C.	ASPHALT	FS	FINISH SURFACE	REINF.	REINFORCED
ACC.	ACCESSIBLE	FOW	FACE OF WALL	REQ.	REQUIRED
B.C.R.	BEGINNING OF CURVE RADIUS	FOB	FACE OF BUILDING	SCH	SCHEDULE
B.O.C.	BACK OF CURB	FOC	FACE OF CURB	SHT.	SHEET
B.O.W.	BOTTOM OF WALL	GA	GAUGE	SPEC.	SPECIFICATION
B.O.S.	BOTTOM OF SLOPE	GALV.	GALVANIZED	S.S.	STAINLESS STEEL
BLDG.	BUILDING	GND.	GROUND	STD	STANDARD
BLK.	BLOCK	GR.	GRADE	STRL.	STRUCTURAL
C.E.	CIVIL ENGINEER	HDR	HEADER	T	TREAD
CIP	CAST IN PLACE	HT	HEIGHT	T.C.	TOP OF CURB
CL	CENTER LINE	LT	LIGHT	T.O.S.	TOP OF SLOPE
CLKG.	CAULKING	MAX	MAXIMUM	T.O.W.	TOP OF WALL
CMU.	CONCRETE MASONRY UNIT	MET.	METAL	TYP	TYPICAL
CONC.	CONCRETE	MFR.	MANUFACTURER	TBS	TO BE SELECTED
CONSTR.	CONSTRUCTION	MIN.	MINIMUM	UBC	UNIFORM BUILDING CODE
CONT.	CONTINUOUS	MTD.	MOUNTED	VERT.	VERTICAL
CTR.	CENTER	MTL	MATERIAL	W/	WITH
D.A.	DISABLED ACCESS	N	NEW	W/O	WITHOUT
DET.	DETAIL	NIC	NOT IN CONTRACT		
DIA.	DIAMETER	NTS	NOT TO SCALE		

SHEET INDEX

SHEET	DESCRIPTION
L-0.00	COVER SHEET
L-1.00	OVERALL PLANTING PLAN
L-1.01	PLANTING ENLARGEMENT PLAN
L-1.02	PLANTING ENLARGEMENT PLAN
L-1.03	PLANT SCHEDULE, NOTES AND DETAILS

PREPARED BY

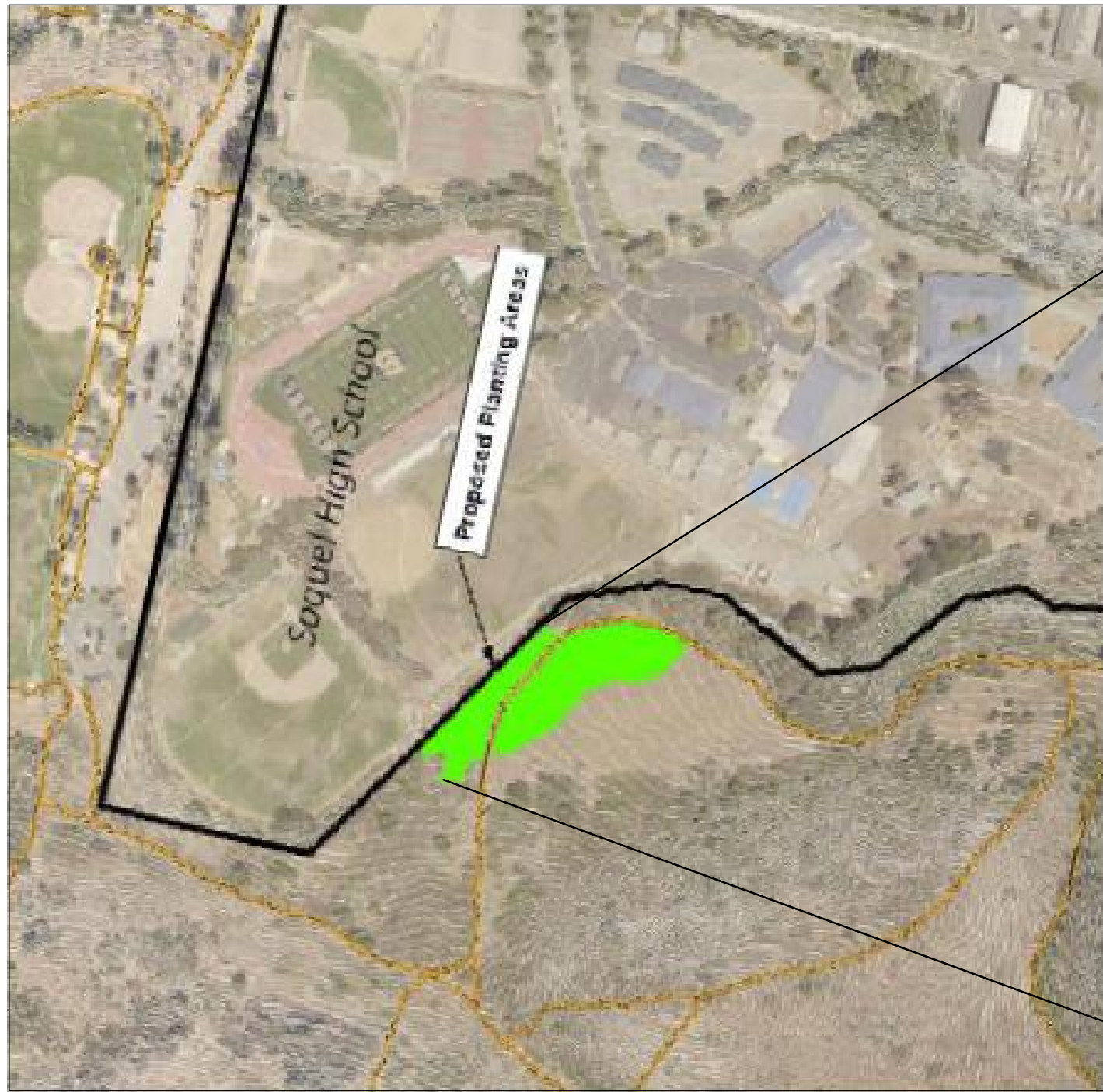
LANDSCAPE ARCHITECT  
JONI L. JANECKI AND ASSOCIATES, INC.  
515 SWIFT STREET  
SANTA CRUZ, CA 95060  
PHONE: (831) 423-6040  
FAX: (831) 423-6054

PREPARED FOR

COUNTY OF SANTA CRUZ  
DEPARTMENT OF PARKS, OPEN SPACE  
AND CULTURAL SERVICES  
979 17TH AVENUE  
SANTA CRUZ, CA 95062  
CONTACT: MICHAEL HETTENHAUSEN  
SANTA CRUZ, CA 95060  
PHONE: (831) 454-7963  
EMAIL: MICHAEL.HETTENHAUSEN@SANTACRUZCOUNTY.US

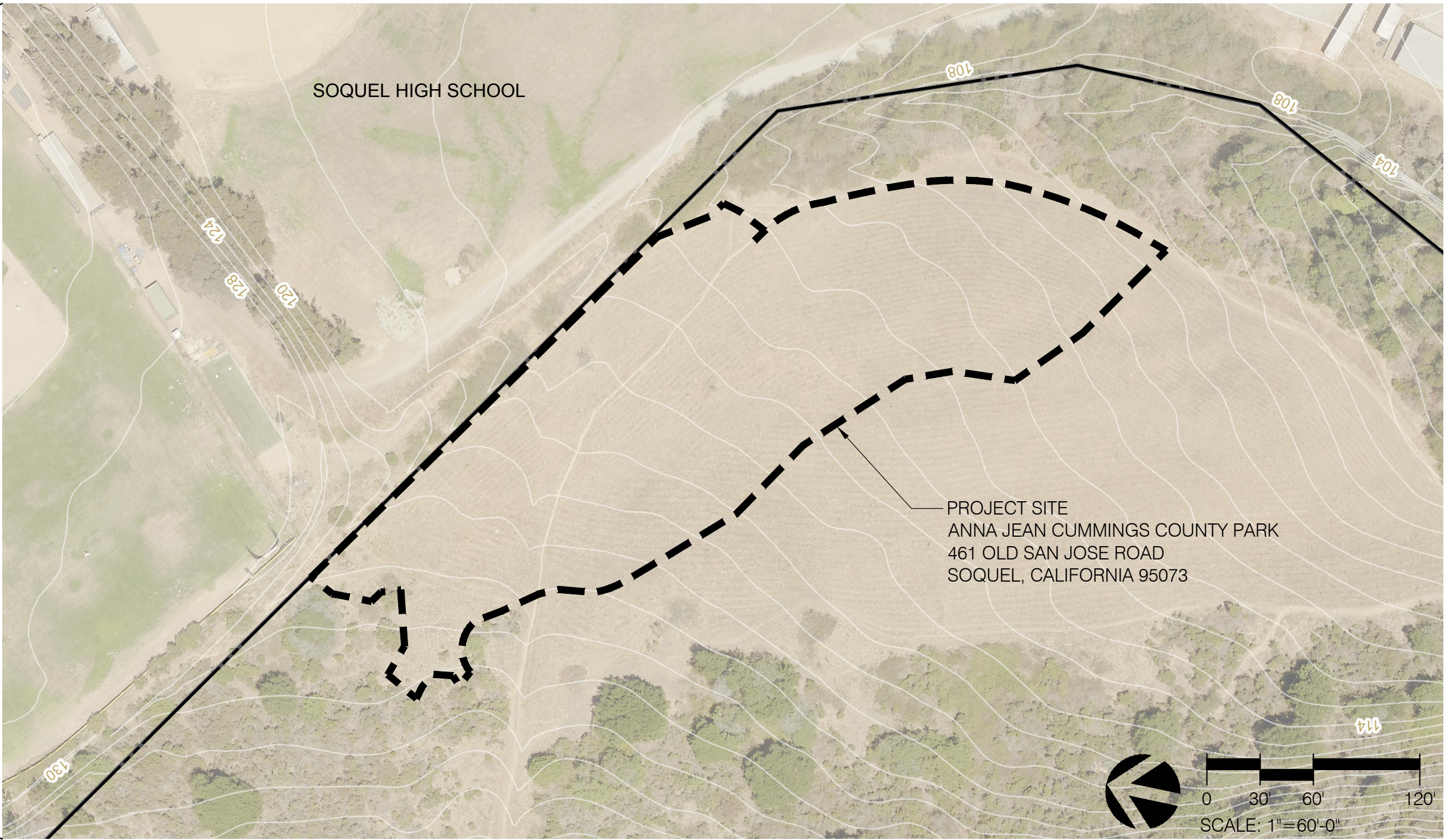
PROJECT SITE

ANNA JEAN CUMMINGS COUNTY PARK  
461 OLD SAN JOSE ROAD  
SOQUEL, CALIFORNIA 95073



LOCATION MAP

NOT TO SCALE



REVISIONS AND RECORD OF ISSUE:		
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COUNTY OF SANTA CRUZ  
DEPARTMENT OF PARKS, OPEN SPACE AND CULTURAL SERVICES  
HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT -  
MITIGATION PLANTING  
030-341-09

COVER SHEET

SCALE: -  
DRAWN BY: MO  
DATE: 07/05/2022

L-0.00



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LEGEND	
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	PROPERTY LINE
	LOW POST AND WIRE FENCE - SEE 3/L-1.03

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030-341-09

OVERALL PLANTING PLAN

SCALE: 1"=20'-0"  
DRAWN BY: MO  
DATE: 07/05/2022

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	PROPERTY LINE
	LOW POST AND WIRE FENCE - SEE 3/L-1.03

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PROJECT: **HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING**  
030-341-09

**PLANTING ENLARGEMENT PLAN**

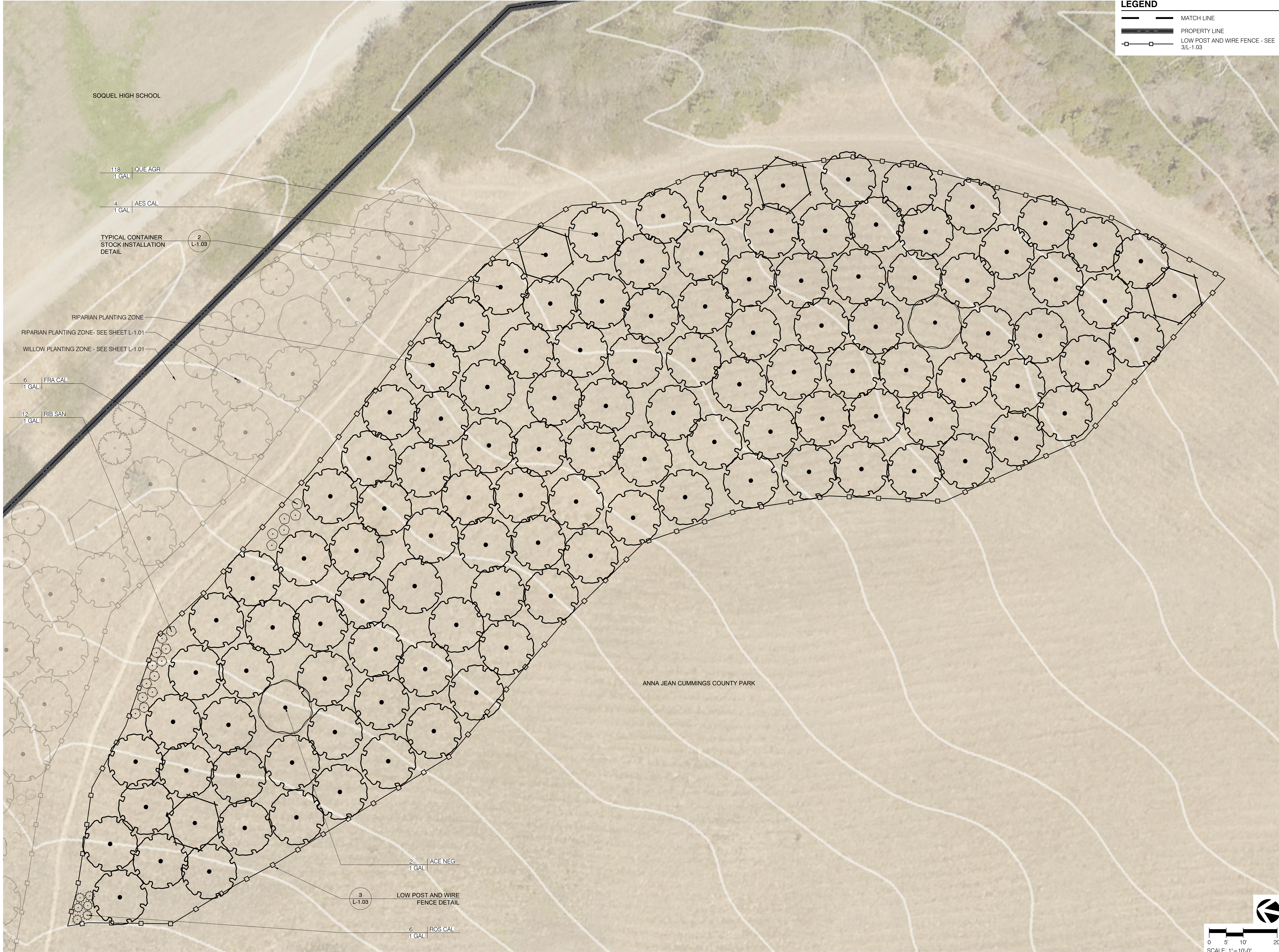
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COUNTY OF SANTA CRUZ  
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**MITIGATION PLANTING**  
030-341-09

**PLANTING ENLARGEMENT PLAN**

SCALE: 1"=10'-0"  
DRAWN BY: MO  
DATE: 07/05/2022

L-1.02









# **TECHNICAL SPECIFICATIONS**

## **EXHIBIT “B”**



**SECTION 32 91 13**

**SOIL PREPARATION**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Backfill soil mix.
  - 2. Soil amendments.
  - 3. Soil sampling and testing prior to planting.
- B. Related Requirements:
  - 1. Section 32 93 00 - Planting Materials.
  - 2. Section 32 93 25 - Landscape Maintenance.

**1.02 REFERENCES**

- A. General: The following published specifications, standards, tests, or recommended methods of trade, industry, or governmental organizations apply to Work of this Section where cited by abbreviations noted below. The latest edition applies, unless otherwise noted.
- B. ASTM International (ASTM):
  - 1. ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
- C. United States Department of Agriculture (USDA):
  - 1. Soil Texture Triangle Classification.
  - 2. USDA Handbook No. 60.

**1.03 DEFINITIONS**

- A. Aesthetic Acceptance of Grades: Acceptance by the Owner's Representative in writing of the aesthetic correctness of the contours as observed without a survey instrument. Aesthetic acceptance does not address whether an area drains properly, whether the areas are at the correct elevation, or whether it has been compacted properly.
- B. Drip Line: Line straight down from outermost limit of tree canopy branching.
- C. Excessive Compaction: Planting area soil compaction greater than 75 percent of maximum dry density as determined by ASTM D1557.
- D. Existing Planting Areas to Remain: Site areas, identified on the Drawings, within the limit of work where construction activities are to be minimized to preserve existing plantings and irrigation, unless otherwise authorized by the Owner's Representative in writing.
- E. Finished Grades: The soil surface grade elevations and contours indicated on the Drawings.
- F. Tree Protection Zone: The ground area within tree protection fencing.
- G. Backfill Mix: Native topsoil, amended per Soils Report direction.

**1.04 ADMINISTRATIVE REQUIREMENTS**



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 30 00 - Submittal Procedures.

### 1.05 ACTION SUBMITTALS

- A. Product Data:
  - 1. Chemical additives.
  - 2. Fertilizers.
  - 3. Organic amendment, as recommended in soils test results.
  - 4. Compost.

### 1.06 INFORMATIONAL SUBMITTALS

- A. Test Reports:
  - 1. Planting Soil: Laboratory soil test reports indicating specified characteristics of soil, with test date no more than 2 weeks old. The soil analysis shall at a minimum include:
    - a. soil texture;
    - b. infiltration rate determined by laboratory test or soil texture infiltration rate table;
    - c. pH;
    - d. total soluble salts;
    - e. sodium;
    - f. percent organic matter; and
    - g. recommendations.
  - 2. Laboratory test report of organic amendment indicating specified characteristics of organic amendment, with test date no more than 2 weeks old.
- B. Purchase Documentation:
  - 1. Organic Amendment purchase and delivery notices.
  - 2. Fertilizer purchase and delivery invoices.
  - 3. Chemical amendment purchases and delivery invoices.

### 1.07 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
  - 1. Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
  - 2. Provide for inspections and permits required by federal, state and local authorities in furnishing, transporting, and installing materials.
- B. Soil Testing Laboratory: Soils testing shall be performed by Waypoint Analytical California, Inc. (Formerly Soil & Plant Laboratory, Inc.), 4741 East Hunter Ave., Suite A, Anaheim, CA 92807, (714) 282-8777, Email: [soilab@soilandplantlaboratory.com](mailto:soilab@soilandplantlaboratory.com), Perry Laboratory, 424 Airport Boulevard, Watsonville, CA 95076, (831) 722-7606, <http://perrylaboratory.com/contact.shtml>; or equivalent laboratory approved by the Owner's Representative. Contractor shall arrange to collect, transport and pay for all soil testing.

### 1.08 FIELD CONDITIONS

- A. Environmental Requirements:
  - 1. Do not work soil when moisture content is so great that excessive compaction will occur, or when it is so dry that dust will form in the air, or that clods will not break readily.
  - 2. Apply water, if necessary, to bring soil to an optimum moisture content for tilling.
  - 3. Do not work soil when muddy or frozen.
  - 4. Do not apply chemicals if wind conditions will cause hazardous drift to people or property.
- B. Existing Conditions:



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

1. Prior to Work commencement review and clearly mark in field horizontal and vertical locations of existing public underground utilities and structures with respective utility companies.
2. Prior to Work commencement review and clearly mark in field horizontal and vertical locations of existing private underground utilities and structures with the Owner's Representative.

### PART 2 - PRODUCTS

#### 2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Backfill Mixes: Uncompacted on-site soil with amendments incorporated uniformly to provide a well-draining, fertile medium for vigorous plant root growth.
- B. Planting Soil:
  1. Free-draining.
  2. Meets requirements for Planting Soil mix.
- C. Sustainable Design:
  1. Local/Regional Materials: Give preference to manufacturer's whose facilities are within a 500-mile radius of the project site. Also give preference to materials that are harvested, extracted, mined, quarried, etc. within a 500-mile radius of the project site.

#### 2.02 MATERIALS

- A. Materials:
  1. Final Acceptable Fertility Range After Amendment:

Ammonium Bicarbonate / DTPA Extraction Parts per million (mg/kg dry-weight basis)	
Phosphorus:	10.0 – 40.0
Potassium:	100.0 – 220.0
Iron:	24.0 – 35.0
Manganese:	0.6 – 6.0
Zinc:	1.0 – 8.0
Copper:	0.3 – 5.0
Boron:	0.2 – 1.0
Magnesium:	50.0 – 150.0
Sodium:	0 – 100.0
Sulfur:	25.0 – 500.0
Molybdenum:	0.1 – 2.0

2. Acidity: 5.5 – 6.5 soil pH range measured in the saturation extract (Method 21a, USDA Handbook No. 60).
3. Salinity: 0.5 – 2.5 dS/m salinity range measured in the saturation extract (Method 3a, USDA Handbook No. 60).
4. Chloride: 150 mg/liter (parts per million) maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook No. 60).
5. Boron: 1-mg/liter (parts per million) maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook No. 60).
6. Sodium Adsorption Ratio (SAR): Maximum of 3.0 measured per Method 20b, USDA Handbook No. 60.
7. Soil Organic Matter Content: Sufficient soil organic matter present to impart good physical soil properties, but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition or organic matter. The organic



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

matter content shall be 3.0 – 6.0 percent by weight. The carbon:nitrogen ratio shall be approximately 10.0. A high carbon:nitrogen ratio can indicate the presence of hydrocarbons or non-humified organic matter.

8. Calcium Carbonate Content: No free calcium carbonate (limestone) present.
9. Available Aluminum: Less than 3.0 parts per million measured with the Ammonium Bicarbonate/DPTA Extraction.
10. Heavy Metals: The maximum permissible elemental concentration in the soil shall not exceed the following:

Ammonium Bicarbonate / DTPA Extraction Parts per million (mg/kg dry-weight basis)	
Arsenic	0.25
Cadmium	0.25
Chromium	2.5
Cobalt	0.5
Lead	7.5
Mercury	0.25
Nickel	1.25
Selenium	0.75
Silver	0.125
Vanadium	0.75

- a. If the soil pH is between 6.0 and 7.0, the maximum permissible elemental concentration shall be reduced 50 percent. If the soil pH is less than 6.0, the maximum permissible elemental concentration shall be reduced 75 percent. No more than three metals shall be present at 50 percent or more of the above values.
11. Phytotoxic Constituent, Herbicides, Hydrocarbons, etc.: Germination and growth of monocots and dicots shall not be restricted more than 10 percent. Total petroleum hydrocarbons shall not exceed 50 mg/kg dry soil measured per the modified EPA Method No. 8015. Total aromatic volatile organic hydrocarbons (benzene, toluene, xylene and ethylbenzene) shall not exceed 0.5 mg/kg dry soil measured per EPA Method No. 8020.

### B. Organic Amendments for Mixing and Amending Existing Soil in Place:

1. Unless otherwise approved by the Owner's Representative in writing, soil amendments for use in the project shall be organically based and include a minimum of 6 Cubic Yards per 1,000 Square Feet. Chemical amendments shall only be utilized when accepted by the Owner's Representative.
2. Any organic amendment proposed for use on the Project shall be approved by the Owner's Representative in writing before purchase. Owner's Representative approval will be based upon Laboratory testing within 2 weeks of proposed purchase and delivery.
3. Humus material shall have an acid-soluble ash content of no less than 5 percent and no more than 20 percent.
4. pH: Between 6 and 7.5.
5. Salt Content: Less than 10 milliohm/cm at 25 degrees C on a saturated paste extract.
6. Boron Content of the Saturated Extract: Less than 1.0 part per million
6. Silicon Content (Acid-Insoluble Ash): Less than 50 percent.
7. Calcium Carbonate: Shall not be present if the amendment is to be applied on alkaline soils.
8. Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses, etc., low in salts, low in heavy metals, free from weed seeds, free of pathogens and other deleterious materials.
9. Composted wood products are conditionally acceptable (stable humus must be present).
10. Wood-based products which are based on redwood or cedar are not acceptable.
11. Sludge-based materials are not acceptable.
12. Carbon-Nitrogen Ratio: Less than 5:1.
13. Compost: Aerobic without malodorous presence of decomposition products.
14. Maximum particle size



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

- a. For Mixing with Soil: 0.5-inch and 80 percent or more shall pass a No. 4 screen.
  - b. For Applying via Hydroseeding Machine: 0.25-inch.
15. Maximum total permissible pollutant concentrations in organic amendment in parts per million on a dry-weight basis:

Arsenic:	20
Cadmium:	15
Chromium:	300
Cobalt:	50
Copper:	150
Lead:	200
Mercury:	10
Molybdenum:	20
Nickel:	100
Selenium:	50
Silver:	10
Vanadium:	400
Zinc:	250

Higher amounts of salinity or boron may be present if the soils are to be pre-leached to reduce the excess or if the plant species will tolerate the salinity and/or boron.

16. From 45- to 65-percent moisture measured via wet-weight basis.
  17. Free of stones and debris.
  18. Tests 5 to 8 on Solvita Test.
- C. Fertilizers: The following, or equal.
1. Southern Organics & Supply, 866 240-8501; [www.southernorganicsandsupply.com](http://www.southernorganicsandsupply.com).
  2. Vermi Technology Unlimited, 352 591-1111; [www.vermitechnology.com](http://www.vermitechnology.com).
  3. Kelly's Green Team, 660 627-5500; [www.kellysgreenteam.com](http://www.kellysgreenteam.com).
- D. Potential Chemical Amendments Required by Accepted Amendment Program and Backfill Mix:
1. Chemical Amendments will only be used if accepted by the Owner's Representative in writing.
  2. Ground Limestone: Agricultural limestone containing not less than 85 percent of total carbonate, ground to such fineness that 50 percent will pass No. 1 sieve and 90 percent will pass No. 20 sieve.
  3. Dolomite Lime: Agricultural grade mineral soil conditioner containing 35 percent minimum magnesium carbonate and 49 percent minimum calcium carbonate, 100 percent passing No. 65 sieve.
  4. Gypsum: Agricultural grade product containing 80 percent minimum calcium sulfate.
  5. Iron Sulfate (Ferric or Ferrous): Supplied by a commercial fertilizer supplier, containing 20 to 30 percent iron and 35 percent to 40 percent sulfur.
  6. Sulfate of Potash: Agricultural grade containing 50 to 53 percent of water-soluble potash.
  7. Single Superphosphate: Commercial product containing 20 to 25 percent available phosphoric acid.
  8. Ammonium Sulfate: Commercial product containing approximately 21 percent ammonia.
  9. Ammonium Nitrate: Commercial product containing approximately 34 percent ammonia.
  10. Calcium Nitrate: Agricultural grade containing 15-1/2 percent nitrogen.
  11. Urea Formaldehyde: Granular commercial product containing 38 percent nitrogen.
  12. IBDU (Iso Butyldiene Diurea): Commercial product containing 31 percent nitrogen.
  13. Soil Sulfur: Agricultural grade sulfur containing a minimum of 96 percent sulfur.
  14. Silicic Acid Calcium: Commercial grade.

### 2.03 SOURCE QUALITY CONTROL

- A. Soil Analysis to Verify Chemical and Physical Characteristics of Existing Site Soil:



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

1. Take representative samples from at least 2 locations at planting site.
  2. Send samples to an independent soil testing laboratory and employ the laboratory to test the soil samples.
- B. Soil Tests for Parasitic Nematodes for Imported Planting Media:
1. Test soils which have been used for agricultural purposes within the prior 12 months for parasitic nematodes.
  2. Soil will be acceptable if the parasitic nematode population is less than 200 per 50 cubic centimeters of soil.
  3. Do not artificially dry soil prior to testing.
  4. Submit written test report to the Owner's Representative.
- C. Organic Amendment: Employ independent soil testing laboratory to test organic amendment for specified properties and submit test results.
1. Sphagnum peat moss is not acceptable.
- D. Imported Soils and Amendments:
1. If imported soils are required, source soils shall have a comparable origin to on-site locations.
  2. Imported soils shall not be sourced from Natural Resource web soil survey as prime farmland, unique farmland or farmland of statewide or local importance; or from greenfield sites.

### 2.04 SOIL MIX

- A. Amendment Mix for Existing Planting Soil to be Amended in Place (actual quantities contingent on amendment program determined by the Owner's Representative based on soil test report) as follows:
1. Content:
    - a. 6 cubic yards of organic amendment per 1,000 square feet (minimum).
    - b. 10 pounds of granular Micromax per 1,000 square feet.
    - c. 9 pounds of Nitroform 38-0-0 per thousand square feet.
    - d. 2.5 pounds of Triple Superphosphate 0-45-0 per thousand square feet.
    - e. 200 pounds of gypsum per 1,000 square feet.
- B. Mixing:
1. Blend amendment materials uniformly with dry existing soil from plant pits.
  2. Blend materials in a clean area which will not contaminate mix.
- C. Final Planting Soil Mix for Installation: Planting soil mixes determined by the Owner's Representative upon review of the soil test report.
- D. Plant Soil Depths: As indicated on the Drawings.

### 2.05 SOURCE QUALITY CONTROL

- A. Organic Amendment: Employ independent soil testing laboratory to test organic amendment for specified properties and submit test results.
1. Sphagnum peat moss is not acceptable.
- B. Imported Soils and Amendments:
1. If imported soils are required, source soils shall have a comparable origin to on-site locations.
  2. Imported soils shall not be sourced from Natural Resource web soil survey as prime farmland, unique farmland or farmland of statewide or local importance; or from greenfield sites.



**PART 3 - EXECUTION**

**3.01 EXAMINATION**

- A. General: Examine site and verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Subgrade: Verify that the subgrade is at the correct elevation and slope.
- C. Underground Utilities and Structures: Verify that the locations of utilities, structures and other underground items have been clearly marked.
- D. Notification of Unsuitable Conditions: Before proceeding with Work, notify the Owner's Representative in writing of unsuitable conditions and conflicts.
- E. Soil Tests to Determine Backfill Planting Mix and Maintenance Period Fertilization Programs:
  - 1. Take two 1-pound composite representative soil samples from locations determined by the Owner's Representative in the field.
  - 2. Send samples to an independent soil testing laboratory and employ the laboratory to test the soil samples for the following:
    - a. pH measurement in the saturation extract per USDA Handbook No. 60, Method 21.
    - b. Electrical conductivity of the saturation extract per USDA Handbook No. 60, Method 2.
    - c. Sodium absorption ratio of the saturation extract per USDA Handbook No. 60, Method 20b.
    - d. Determination of boron, calcium, copper, iron, magnesium, manganese, molybdenum, phosphorous, potassium, sodium, sulfur, and zinc, via the following test methods: Mehlich Number 3, Bray P1, Bray P2, Olsen P, DTPA, ammonium acetate, ammonium bicarbonate DTPA, and hot water extract from boron.
    - e. Analysis of saturation extract for calcium, magnesium, sodium, boron, chloride, phosphorous, nitrate, and sulfate.
    - f. Measurement of following trace metals by the DTPA extract: aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, nickel, selenium, silver, strontium, tin, and vanadium.
    - g. Presence of calcium carbonate and magnesium carbonate.
    - h. Estimate of soil texture per commonly used methods.
    - i. Estimate of organic matter content per commonly used methods.
    - j. Exchangeable Ammonium Cation.
    - k. Base Saturation.
    - l. Cation Exchange Capacity.
    - m. Carbonates Determination.
    - n. Soil Bulk Density.
    - o. Water Infiltration Rate per USDA Handbook No. 60, Method 34b.
  - 3. At least 30 days prior to commencement of soil preparation Work, submit to the Owner's Representative the laboratory's written soil test report including the laboratory's soil test data; the laboratory's interpretation of nutritional deficiencies, excesses, and potential toxicities; the laboratory's amendment recommendations; and the laboratory's maintenance recommendations.
  - 4. The Owner's Representative will determine the final amendment and maintenance period fertilization programs based on the soil test report which may differ from the soil test report amendment recommendations.
- F. Soil Tests for Parasitic Nematodes:
  - 1. Test soils which have been used for agricultural purposes within the prior 12 months for parasitic nematodes.



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2. Soil will be acceptable if the parasitic nematode population is less than 200 per 50 cubic centimeters of soil.
  3. Do not artificially dry soil prior to testing.
  4. Submit written test report to the Owner's Representative.
- G. Soil Tests for Herbicide Contamination:
1. Perform a radish/rye grass growth trial on soils suspected of herbicide contamination.
  2. Submit written test report to the Owner's Representative.

### **3.02 CLEANING**

- A. Remove all construction debris, trash and other deleterious materials. Leave site in clean and tidy condition.

**END OF SECTION**



**SECTION 32 93 00**

**PLANTING MATERIALS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Trees.
  - 2. Shrubs.
  - 3. Mulch.
  - 4. Compost.
  - 5. Gopher baskets, deer cages, and wire.
  - 6. Low wire fence to protect plants.
  - 7. Related materials.
- B. Related Sections:
  - 1. Section 32 91 13 - Soil Preparation.
  - 2. Section 32 93 25 - Landscape Maintenance.

**1.02 REFERENCES**

- A. General: The following published specifications, standards, tests, or recommended methods of trade, industry, or governmental organizations apply to Work of this Section where cited by abbreviations noted below. The latest edition applies, unless otherwise noted.
- B. American National Standards Institute (ANSI):
  - 1. Z60.1 — American Standard for Nursery Stock.
- C. ASTM International (ASTM):
  - 1. ASTM D412 – Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension.
- D. International Code of Botanical Nomenclature (ICBN).
- E. International Code of Nomenclature of Cultivated Plants (ICNCP).
- F. National Arborist Association. Pruning Standards for Shade Trees (NAAPS), 1988.
- G. "An Annotated Checklist of Woody Ornamental Plants of California, Oregon and Washington, (Number 4091)", McClintock and Leiser, Division of Agricultural Sciences, University of California, 1979.
- H. "American Standard for Nursery Stock", 1986 Edition, American Association of Nurserymen, Inc.
- I. "Hortus III", 1976 Edition, Bailey Hortorium, Cornell University.
- J. "The Jepson Manual: Higher Plants of California," 1993 Edition, The Regents of the University of California.

**1.03 DEFINITIONS**

- A. Aesthetic Acceptance of Finish Grades: Acceptance by the Owner's Representative in writing of the aesthetic correctness of the contours and surface smoothness. Aesthetic acceptance



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does not address whether an area drains properly, whether the areas are at the correct elevations, or whether it has been compacted properly.

- B. Caliper: Trunk diameter measured at a point 6 inches above natural ground surface for trees up to 4 inches in caliper, and measured at a point 12 inches above natural ground surface for trees over 4 inches in caliper.
- C. Excessive Compaction: Planting area soil compaction greater than 75 percent of maximum dry density as determined by ASTM D1557.
- D. Plant Height: Measurement of main body height, not measurement to top branch tip.
- E. Plant Spread: Measurement of main body diameter, not measurement from branch tip to tip.

### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures:
  - 1. Action and Informational Submittals shall be submitted in accordance with Section 01 30 00 - Submittal Procedures.
  - 2. Closeout Submittals shall be submitted in accordance with Section 01 77 00 - Closeout Procedures and Section 01 78 30 – Guarantees, Bonds, Service and Maintenance Contracts.
- B. Sequencing:
  - 1. Plant Installation: Excavate plant pits and install plants after finish grading has received aesthetic acceptance.
- C. Substitutions:
  - 1. Plant Material: Accepted substitute plants shall be true to species and variety and shall meet requirements of this Section except that plants larger than specified may be used, if accepted by the Owner's Representative, and at no additional cost to the Owner. All proposed substitutions must be reviewed and approved by Owner's Representative and consistent with Mitigation Report prior to installation.

### 1.05 INFORMATIONAL SUBMITTALS

- A. Plant Material Location Data:
  - 1. Refer to 2.4 Source Quality Control.
  - 2. Provide identity of source nursery or other place of growth for all quantities and sizes of each plant material type.
  - 3. Photos of plants.
  - 4. Address, phone number, and contact person for each nursery or other place of growth.
  - 5. Certificates of Inspection: As required by law for transportation of each shipment of plants along with invoice and including Sudden Oak Death (SOD).

### 1.06 ACTION SUBMITTALS

- A. Product Data: Manufacturer's descriptive literature and installation instructions for the following.
  - 1. Gopher baskets, deer cages, and wire.
  - 2. Mulch.
  - 3. Low wire fence.
  - 4. Compost.
  - 5. Proposed irrigation schedule, access, etc.
- B. Samples:



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1. Mulch: Two (2) pints.
2. Wire for fence.
3. Laminated 8.5x11 mitigation and project status signs.

### C. Mock-ups:

1. General:
  - a. Mock-ups which are partially constructed or finished incorrectly will be rejected.
  - b. Remove rejected mock-ups immediately from the Site.
  - c. Place accepted mock-ups in a location where mock-up can be referenced.
  - d. Accepted mock-ups shall become the Project standard for tolerances and appearance.
  - e. Coordinate with related trades to construct single integrated mock-up as appropriate.
2. Low wire fence layout:
  - a. Flag post locations and show entire fence layout for review and approval prior to installation.
3. Plant Layout:
  - a. Flag all plant locations for review and approval by Owner's Representative prior to excavating holes.

## 1.07 CLOSEOUT SUBMITTALS

- A. Warranty as specified.

## 1.08 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
  2. Provide for inspections and permits required by federal, state and local authorities in furnishing, transporting, and installing materials.

## 1.09 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Do not deliver disease-infected plant materials to the site.
- B. Handling Plants:
1. Do not lift or handle container plants by tops, stems or trunks.
  2. Do not bind or handle plants with wire or rope.
  3. Pad trunk and branches where hoisting cables or straps contact.
- C. Labeling: Furnish standard products in manufacturer's standard containers bearing original labels legibly showing quantity, analysis, genus/species and name of manufacturer/grower.
- D. Handling: Do not lift or handle plants by tops, stems or trunks at any time. Do not bind or handle plants with wire or rope at any time (except wrapped rootball of field dug material).
- E. Digging Plants: Dig ball and burlap plants with firm, natural balls of earth of diameter meeting or exceeding requirements of ANSI Z60.1 and of sufficient depth as required to include the fibrous and feeding roots. Wrap and tie as required to prevent all cracking or loss of soil from rootball.
- F. Pruning: Do not prune plant materials prior to installation and acceptance. Request review by Landscape Architect prior to pruning.



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- G. Plant Storage Prior to Installation:
  - 1. Protect plant root balls from sun and drying winds.
  - 2. Keep root balls moist.
  - 3. Keep sun-sensitive plants shaded.
  - 4. Anchor plants to prevent damage from strong winds.

### 1.10 FIELD CONDITIONS

- A. Environmental Requirements:
  - 1. Protect plant material being stored on site from sun and drying winds.
  - 2. Do not lay plant materials on their side where trunk is exposed to sunscald.
  - 3. Keep plants upright.
- B. Existing Conditions:
  - 1. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of public existing underground utilities and structures with respective utility companies.
  - 2. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of private underground utilities and structures with the Owner's Designated Representative.

### 1.11 WARRANTY

- A. Contractor: Warrant that plant material, including pre-purchased plant material, shall be in a healthy and flourishing condition one (1) year from date of Final Completion.
  - 1. Delays: Delays in completion of planting operations which extend the planting into an additional planting season shall extend the Warranty Period correspondingly.
  - 2. Condition of Plants: Plants shall be free of dead or dying branches and branch tips, with foliage of a normal density, size and color.
  - 3. Incorrect Materials:
    - a. During Warranty Period, replace at no additional cost to the Owner, plants revealed as being untrue to name.
    - b. Provide replacements of a size and quality to match the planted materials at the time the mistake is discovered.
  - 4. Replacements:
    - a. As soon as weather and seasonal conditions permit, replace at no additional cost to the Owner, dead plants and plants not in a vigorous, thriving condition, as determined by the Owner's Representative during and at the end of Warranty Period.
    - b. Closely match replacements to adjacent specimens of the same species. Apply requirements of this Specification to replacements.
    - c. Apply requirements of this Section to replacements.

### 1.12 MAINTENANCE PERIOD AND FINAL COMPLETION

- A. See Section 32 93 25 - Landscape Maintenance.

## PART 2 - PRODUCTS

### 2.01 SUSTAINABLE DESIGN CRITERIA

- A. Local/Regional Materials: Give preference to manufacturer's whose facilities are within a 500-mile radius of the project site. Also give preference to materials that are harvested, extracted, mined, quarried, etc. within a 500-mile radius of the project site.



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### 2.02 MATERIALS

- A. Requirements for Trees and Shrubs:
  - 1. Growing Practices: Nursery grown in accordance with best horticultural industry practices.
  - 2. Nursery Stock: Plants will be in accordance with the California State Regulations for Nursery Inspection of Rules and Grading, and will conform with American Association of Nurseryman Standards, ANSI Z60, in all ways.
  - 3. Nomenclature: Plant nomenclature shall meet requirements of ICBN and ICNCP.
  - 4. Climatic Growing Conditions: Grown under climatic conditions similar to those of this Project for at least two years unless otherwise accepted by the Owner's Representative.
  - 5. Container Growth Limitations: Container stock excluding annuals shall have been grown in the containers in which delivered for at least six months, but not over two years.
  - 6. Root Ball Size: Meet or exceed requirements of ANSI Z60.1.
  - 7. Branching: Structurally strong, able to stand upright without stakes or guys on a windless day; exceptionally heavy, symmetrical, tightly knit, so trained or favored in development and appearance as to be superior in form, number of branches, compactness and symmetry.
  - 8. Vigor: Sound, healthy and vigorous, well branched and densely foliated when in leaf.
  - 9. Disease and Pests: Free of disease, insect pests, eggs, or larvae.
  - 10. Root System: Healthy well-developed root systems, free of kinked, circling, girdling and center roots, root-bound condition and cracked or broken root balls.
  - 11. Plant Size: Measure plants when branches are in their normal upright position.
  - 12. Pruning: Do not prune, thin or shape plants.
  - 13. Unacceptable Conditions: Multiple leaders, unless specified, damaged or crooked leaders, bark abrasions, sunscald, disfiguring knots, or fresh cuts of limbs over 3/4-inch diameter which have not completely callused.
  - 14. Container stock plants to be obtained from local native plant nurseries that employ best management practices that control or eliminate the diseases caused by Phytophthora ramorum, as outlined by the California Oak Mortality Task Force.
- B. Fertilizer: PHC 27-9-9 with Mycor A & B Packets, Plant Health Care, Inc., 800-421-9051; or equal.
- C. Water: Clean, fresh, potable and free of toxic elements. Provided and transported by Contractor to site.
- D. Mulch: 3-inch-thick layer of organic compost.
- E. Gopher Baskets and Wire: As detailed in drawings.
- F. T-post: Galvanized metal, 5' high, as detailed in drawings.
- G. E-Z Post Base Spike: Model # FPBS44 by Simpson Strong-Tie, or approved equal. 12-gauge black powder coated post base spike for 4x4 redwood posts.

### 2.03 MIXES

- A. Plant Pit Backfill: Refer to Section 32 91 13 - Soil Preparation.

### 2.04 SOURCE QUALITY CONTROL

- A. Advanced Tree Procurement:
  - 1. Within 60 days of the award of contract, notify Owner's Representative in writing of the availability or lack thereof of the specified plant material and sources.



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2. Procure plants and arrange for contract growing as required to ensure that plant material is available in the quantities and sizes specified, and of the quality specified, at time of installation.
  3. Verify plant branching requirements with Owner's Representative prior to contract growing.
  4. Owner's Representative will review advanced procured plants prior to initial purchase and at end of the first growing season.
  5. Prior to delivery of advanced procured plant material to site, coordinate and schedule a final review of the plant material at the place of growth.
  6. Review and acceptance of the advance-procured plant material at the place of growth does not cancel the right of the Owner's Representative to reject plant material at the site, if damage or unacceptable conditions are found that were not detected at the place of growth.
- B. Plant Material Review and Tagging:
1. At the Owner's Representative's discretion, trees may or may not be reviewed, photographed, and tagged by the Owner's Representative at the nursery or other place of growth.
  2. At the Owner's Representative's discretion, shrubs may or may not be reviewed, photographed, and tagged by the Owner's Representative at the nursery or other place of growth.
  3. Tagging of plant material at the nursery or place of growth does not affect the right of the Owner's Representative to reject plant material at the site, if damage or unacceptable conditions are found that were not detected at the nursery, place of growth, or in the submitted photographs.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. General: Examine site and verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Finish Grading and Soil Preparation: Verify that finish grading Work and soil preparation Work is complete.
- C. Verification Surface Drainage: Verify positive surface drainage of planted areas.
- D. Notification: Before proceeding with Work, notify the Owner's Designated Representative in writing of unsuitable conditions.

#### 3.02 PREPARATION

- A. Protection of Existing Conditions:
1. Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the Work.
  2. Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of Work.
  3. Provide barricades, fences or other barriers to protect existing conditions to remain from damage during construction.
  4. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
  5. Submit written notification of damaged plants and structures to the Owner's Designated Representative immediately.



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- B. Contractor to take precautions to prevent spreading *Phytophthora ramorum* (water mold responsible for sudden oak death) within the site and to other areas. Precautions will include cleaning and disinfecting pruning or other work tools after use, sanitizing tools before pruning healthy trees or working in pathogen-free areas.

### 3.03 SUBSURFACE OBSTRUCTIONS

- A. Plant Pit Excavation:
  - 1. If rock, underground utilities, structures, tree roots or other obstructions are encountered in the excavation of plant pits, alternate locations may be accepted by the Owner's Representative.
  - 2. Submit written notification of encountered obstructions to the Owner's Representative immediately.

### 3.04 LOW WIRE FENCE TO PROTECT PLANTS

- A. Locations: Install where indicated on Drawings.
- B. Horizontal Alignment:
  - 1. Mock up fence layout prior to installation for review by Owner's Representative.
  - 2. Install straight sections free of "wiggles" using string lines as guides.
- C. Vertical Alignment:
  - 1. Install parallel with finished grade.
- D. T Posts:
  - 1. Install posts in solid soil.
  - 2. Install posts 8' apart and a wood post after every fifth T post and at all corners, as detailed.
- E. Damaged posts: Replace posts and fence sections damaged by construction operations.

### 3.05 PLANT LAYOUT

- A. Trees:
  - 1. Stake location of trees where indicated on Drawings.
  - 2. Scale tree locations where no dimensions are given.
  - 3. Drive a 3-foot long wood lath stake at each tree location and mark each tree type with different color survey tape and write tree type and size on each stake with a permanent ink marker. Alternatively, flags may be used to mark plant locations if accepted by Owner's Representative.
  - 4. Contact the Owner's Representative to review all locations in field prior to excavating plant pits.
  - 5. Do not excavate plant pits until the Owner's Representative has accepted plant locations.
- B. Shrubs:
  - 1. Locations of plants will be checked in the field and will be adjusted to exact position before planting begins.
  - 2. Right is reserved to refuse review at this time if, in the Landscape Architect's opinion, an insufficient quantity of plants is available.
  - 3. Contact the Owner's Representative to review all locations in field prior to excavating plant pits and installing irrigation.
  - 4. Do not excavate plant pits or install irrigation until the Owner's Representative has accepted plant locations.

### 3.06 EXCAVATION OF TREE AND SHRUB PLANT PITS



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- A. Equipment:
  - 1. Excavate pits with hand digging.
  - 2. Do not use an auger unless otherwise noted.
- B. Dimensions:
  - 1. Where not indicated on the Drawings, excavate plant pits to a depth equal to the root ball height minus the amount needed to allow for settlement and to install the root balls at the specified elevation relative to adjacent finished grade.
  - 2. Install top of plant root balls 1 inch above adjacent finished grade, or higher if required to allow settlement, except where indicated otherwise.
  - 3. Excavate pits to a diameter which is 3 times the root ball diameter, except where indicated otherwise on the Drawings.
  - 4. Center plant pits on plant locations where possible.
  - 5. Where plant pits cannot be excavated to specified dimensions nor centered on plants due to obstructions such as paving, walls, curbs, or other structures excavate pits in directions without obstructions until pit volume equals the specified plant pit volume, except where indicated otherwise.
  - 6. Do not undercut adjacent obstructions unless accepted by the Owner's Representative.
  - 7. Excavate plant pit sides along adjacent elements such as paving, walls, curbs, and other structures at a 45 degree angle sloping away from the bottom surfaces of the adjacent elements, except where indicated otherwise.

### 3.07 PLANTING AND BACKFILL OPERATIONS

- A. Protection of Plants Prior to Installation:
  - 1. Protect plant root balls from sun or drying winds.
  - 2. Keep root balls of plants that cannot be planted immediately upon delivery in the shade, well-protected and well-watered.
  - 3. Do not lay plants on side and expose trunks to sunscald.
  - 4. Keep plants upright.
  - 5. Avoid damage to containers and rootballs. If rootball is cracked or broken during handling and de-potting, plant will be rejected. Do not remove plant from container prior to completion of plant pit preparation.
- B. Removal of Containers:
  - 1. Metal Containers: Cut can on two sides with accepted cutting tool. Do not use spade.
  - 2. Plastic Containers: Tip container to horizontal orientation and shake carefully to remove shrub. Support rootball during installation to prevent cracking or shedding of soil.
  - 3. Boxed Trees: Lift from bottom with forklift or from sides with 2-inch x 4-inch rails nailed to each side of box. Do not remove box prior to settling tree in plant pit. Remove sides of box after acceptance by Landscape Architect and prior to backfilling. Bottom of box may be left in place.
  - 4. Balled and Burlapped Plants: Lift and carry by bottom of ball only. Do not remove wrapping until plant is set in plant pit. Cut all wire and peel wire and burlap away from upper 1/3 of rootball prior to backfilling.
- C. Root Ball Scarification:
  - 1. After removing plant from container, scarify side of root ball to prevent root-bound condition.
  - 2. Loosen root ball soil surface to depth of 1/8-inch to 1/4-inch without damaging roots or breaking root ball.
- D. Cutting Circling Roots:
  - 1. If circling roots are encountered at root ball sides, notify the Landscape Architect for field review.



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2. Upon the Owner's Representative's acceptance, cut roots on 4 sides of root ball 90 degrees apart at no additional cost to the Owner.
  3. Use a 4-inch wide sharp straight blade.
  4. Cut roots by pushing spade or knife down sides of root ball 90 degrees to root ball surface and 2 inches into root ball.
  5. Keep spade or knife sharp to cut roots cleanly.
- E. Plant Placement:
1. Handling plant carefully, set plant root ball on pit bottom centered on accepted horizontal location.
  2. Install plant root ball vertically so that top of shrub root ball is 1 inch above adjacent finished grade and tree root ball is 2-inches above adjacent finished grade after settlement except where indicated otherwise.
- F. Removal of Root Ball Wrapping Materials: Remove and dispose of burlap, nylon cord, wire baskets, twine and other materials prior to backfilling.
- G. Backfill Mix Placement:
1. Place mix carefully as not to damage the plant root ball, trunk, branches, or foliage.
  2. Fill pit until top of backfill mix is even with top of root ball.
- H. Backfill Mix Settlement:
1. After backfill mix has been placed, pre-settle mix by watering evenly.
  2. Fill settled backfill mix areas with additional backfill mix as required to bring it even with top of root ball, and drench added backfill mix with water.
  3. Continue filling settled areas and drenching with water until settlement stops.
- I. Settled Plant Adjustment: Raise plant root balls which settle so that top of root balls are at the specified elevation relative to adjacent finished grade.
- J. Fertilizer: Fertilize all trees with PHC 27-9-9 and Mycor A & B Packets by soil drenching 1.6 pounds of nitrogen per 1,000 square feet of root area or out to drip line of trees. Do not inject fertilizer into rootball.

### 3.08 MULCH INSTALLATION

- A. Depth:
1. Install a 3-inch depth mulch layer over plant watering basins and shrub areas except where indicated otherwise.
  2. Install 3-inch depth mulch over ground cover areas, unless indicated otherwise.
- B. Rake mulch surface smooth.
- C. Slope mulch away from woody plant stems so that mulch does not touch stems.

### 3.09 CLEANING

- A. Remove all construction debris, trash and other deleterious materials. Leave site in clean and tidy condition.

**END OF SECTION**



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

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**SECTION 32 93 25**

**LANDSCAPE MAINTENANCE**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Work Included: Provide continuous Landscape Maintenance, complete as specified during progress of the work, after installation, and for a period of ninety days (90 days) after Preliminary Acceptance. Extended maintenance for a period of 5 years as part of Add Alternate #1.
- B. Related Work:
  - 1. Section 32 91 13 - Soil Preparation.
  - 2. Section 32 93 00 - Planting Materials.

**1.02 REFERENCES**

- A. University of California Cooperative Extension Publications:
  - 1. "Fertilizing Woody Plants", Leaflet #2958, Sept. 1979, or latest edition.
  - 2. "Pruning Landscape Trees", Leaflet #2574, Jan. 1979, or latest edition.
  - 3. "Staking Landscape Trees", Publication #AXT-311.
- B. "Arboriculture: Care of Trees, Shrubs and Vines in the Landscape" by Richard W. Harris, Prentice-Hall, Inc. 1983.

**1.03 SUBMITTALS**

- A. Submit in accordance with Division 1, Section "Submittals."
- B. Quality Control Submittals:
  - 1. Schedule of maintenance operations and monthly status report including list of equipment, materials proposed for the job, watering schedule, and water access plan.
  - 2. Monthly record of all integrated pest management techniques used for the project.
  - 3. Documentation of existing planting.
- C. Project Close-out Submittal: Three (3) sets in 3-ring binders, a landscape maintenance manual containing an indexed collection of all schedules, records and permits listed above, as well as a documentation of accepted condition of planting at Final Acceptance.

**1.04 QUALITY ASSURANCE**

- A. Qualifications:
  - 1. Experience: The landscape contractor or maintenance subcontractor shall have a full-time employee assigned to the job as foreman for the duration of the contract. He/she shall have a minimum of four (4) years of experience in landscape maintenance supervision, with experience or training in landscape restoration, entomology, Integrated Pest Management, soils, fertilizers and plant identification.
  - 2. Labor Force: The landscape maintenance labor force shall be thoroughly familiar with, and trained in, the work to be accomplished and shall perform the task in a competent, efficient manner acceptable to the Owner's Representative.

**1.05 PROJECT/SITE CONDITIONS**

- A. Site Visit: At beginning of maintenance period, visit and walk the site with the Owner's Representative to clarify scope of work and understand existing project/site conditions.



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- B. Documentation of Conditions: Document general condition of existing trees and shrubs recording all plant materials which are healthy, thriving, damaged, dead or dying.

### 1.06 SEQUENCING AND SCHEDULING

- A. Perform all maintenance during hours mutually agreed upon between Owner's Representative and Contractor.
- B. Work force shall be present at the project site at least once a week and as often as necessary to perform specified maintenance in accordance with the approved maintenance schedule.

### 1.07 WARRANTY

- A. Specific Requirements: Refer to the following sections:
  - 1. Section 32 93 00 - Planting Materials.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. General: All materials and equipment including water to irrigate plants shall be provided by the Contractor.
- B. Water: Clean, potable and fresh, provided and transported to the site by the contractor. Park water is not available for this project.
- C. Herbicides, Insecticides, and Fungicides: Use only integrated Pest Management Techniques.
- D. Replacement fence posts, wire, wire cages: Match originally accepted existing materials on the site.

### 2.02 EQUIPMENT

- A. General: Use only the proper tool for each job. Maintain all tools in sharp, properly-functioning condition. Clean and sterilize pruning tools prior to usage.
- B. Insect/Disease Prevention: Take all acceptable measures to prevent introduction of insect or disease-laden materials onto the site. See drawings and Section 32 93 00 - Planting.

## PART 3 - EXECUTION

### 3.01 ESTABLISHING THE MAINTENANCE PERIOD

- A. Preliminary Review: As soon as planting is substantially completed per documents, hold a preliminary review to determine the condition of the work.
- B. Date of Review: Notify Owner's Representative at least five (5) working days prior to anticipated date of review.
- C. Beginning of the Maintenance Period: The date on which the Owner's Representative issues a letter of Preliminary Acceptance of the completeness of landscape installation to the Contractor.

### 3.02 PREPARATION



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

- A. Protection:
  - 1. Protect all new planting areas from damage of all kinds from beginning of work until sufficiently established or until Final Acceptance.
  - 2. Provide temporary protection fences, barriers and signs as required for protection.
- B. Replacements:
  - 1. Immediately treat or replace all plants which become damaged or injured as a result of Contractor's operations or negligence, as directed by the Owner's Representative, at no cost to the Owner.
  - 2. Replacement plants shall match size, condition and variety of plants replaced.

### 3.03 PLANTING

- A. Watering Basins:
  - 1. Maintain all watering basins around plants so that enough water can be applied to establish moisture through major root zones.
  - 2. For supplemental hand watering of watering basins, use a water wand to break the water force. Do not permit use of "jet" type watering equipment. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
  - 3. Maintain originally called for depth of mulch to reduce evaporation and frequency of watering.
- B. Resetting: Reset plants to proper grades and upright position.
- C. Weed Control:
  - 1. All areas between plants, including watering basins, shall be weed free. Refer to plan notes for more information.
- D. Pruning:
  - 1. Do not prune plants unless required for site security or as noted. Irregular and random plant growth is desirable in natural habitats. If pruning is necessary, under the direction of a qualified arborist or landscape architect, pruning will be limited to the barest minimum required to accomplish the following goals:
    - Promote healthy initial plant growth: Extremely unbalanced plant growth will be pruned only during the first five years after planting, and just enough to promote initial strong growth of trees and shrubs.
    - Repair storm damage or remove hazard: Storm damage, such as broken branches or fallen trees, will be cleaned up if they are deemed to compromise channel stability or capacity.
    - Ladder Fuel Management: If necessary for fire resiliency, limbs from trees and shrubs may be pruned to reduce fuel laddering.
  - 2. Take extreme care to avoid transmitting disease from one infected plant to another. Properly sterilize pruning tools before going from one infected plant to all other plants.

### 3.04 INSECTS, PESTS, AND DISEASE CONTROL

- A. Inspection: Inspect all plant materials for signs of stress, damage and potential trouble from the following:
  - 1. Presence of insects, moles, gophers, ground squirrels, deer, snails and slugs in planting areas.
  - 2. Discolored or blotching leaves or needles.
  - 3. Unusually light green or yellowish green color inconsistent with normal green color of leaves.
- B. Use Integrated Pest Management Techniques to control pests and diseases.



## HIGHWAY 1 AUXILIARY LANES IMPROVEMENT PROJECT - MITIGATION PLANTING

### 3.05 SUPPLEMENTAL WATERING

- A. Contractor to transport water from offsite source to provide supplemental irrigation to plants. Water from Park is not available for this project. Contractor to submit water source, access plan, and watering schedule to Owner's Representative for review and approval. Refer to drawings for more information.

### 3.06 TERMINATION OF THE MAINTENANCE PERIOD

- A. Final Acceptance Procedure:
  - 1. Work will be accepted by the Owner's Representative upon satisfactory completion of all work, including maintenance period, but exclusive of replacement of materials under the Warranty Period.
  - 2. Submit a written request to Owner's Representative for review for Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Maintenance Period.
- B. Corrective Work:
  - 1. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
  - 2. Perform corrective work and materials replacement in accordance with the Drawings and Specifications, and shall be made by the Contractor at no cost to the Owner's Representative.
  - 3. After corrective work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.
  - 4. Continue maintenance of all landscaped areas until such time as all corrective measures have been completed and accepted.
- C. Conditions for Acceptance of Work at End of Maintenance Period:
  - 1. Each plant shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
  - 2. Replace all plants not meeting these conditions. An additional Warranty Period equal in length to the original shall be commenced for all such plants and planted areas.
- D. Final Acceptance Date: The date on which the Owner's Representative issues a Letter of Final Acceptance. Upon Final Acceptance, the Owner's Representative will assume responsibility for maintenance of the work.

### 3.07 CLEANING

- A. Remove from the site all containers and evidence of maintenance activities.

### 3.08 CLOSE OUT

- A. Landscape Maintenance Record: Submit binder to Owner's Representative with all documentation and records required and utilized during the maintenance period.
- B. Keys and Identification: Return all keys and identification materials supplied by Owner's Representative for the purpose of site access.

**END OF SECTION**



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# **SUPPLEMENTAL CONDITIONS**

## **EXHIBIT “C”**





County of Santa Cruz

**GENERAL SERVICES DEPARTMENT**

*FACILITIES MAINTENANCE & PROJECT OPERATIONS*

1110 EMELINE AVENUE, SANTA CRUZ, CA 95060-4073

## SUPPLEMENTAL & SPECIAL CONDITIONS

### **PROJECT 23TI-012**

The Supplemental Conditions enumerated below shall be applicable to the noted Project above and shall be enforced by County Facilities Maintenance & Project Operations with the support of County Risk Management and Counsel.

1. Contractor (Bidder) **MUST** ensure ALL Workers onsite are wearing Safety PP&E which will include Hardhats, orange or bright green safety vests, steel toed shoes, jeans or other applicable work pants, appropriate work shirt preferably with the Contractor name written on said shirt, safety glasses, and safety gloves, and ear protection when applicable.
2. Contractor (Bidder) **MUST** abide by COVID 19 Compliance regulations if and when enforced. If enforced, while walking to and from the work site or outside the work site during the day said Contractor shall ensure all Crew have and wear proper face coverings. While in the work zone area Contractor can remove face coverings if Contractor policy permits. *(Applicable to Interior Remodel or Renovation Projects)*
3. Contractor (Bidder) **is required** to submit a “**Bid Bond**” during the Bid Phase of this project if the value of the Project exceeds \$25,000. **Bid Bond shall be provided on the Base Bid amount only.**
4. The successful Contractor (Bidder) **is required** to obtain and submit a “**Payment & Performance**” Bond for 100% of the project Bid Value. A “**Performance Bond**” is required if the value of the project exceeds \$10,000. A “**Payment Bond**” is required if the value of the project exceeds \$25,000. **Payment and Performance Bonds** are required to be submitted with the Bid. These will be requested of the apparent successful Bidder during Post Bid proceedings.
5. This project will be registered with the Department of Industrial Relations (DIR) and assigned a DIR # if the project value exceeds \$25,000. County General Services Department (GSD) will issue that # to the successful Contractor (Bidder).
6. Contractor (Bidder) shall start work at 7:00 am and cleanup the work site daily beginning at 2:30 pm. Contractor (Bidder) shall be offsite by 3:30pm unless authorized to work overtime. *Project Work Hours can be deviated if the Sponsoring Department and End Users agree on the work schedule change proposed by the Contractor (Bidder).*
7. Materials and equipment shall be staged accordingly as discussed with the Sponsoring Department.
8. Contractor (Bidder) shall define the required staging and laydown area(s) required for the duration of the project. Area shall be adequately delineated, and proper signage installed if applicable.
9. The successful Contractor (Bidder) **SHALL** collaborate with **ALL** applicable County Departments and Representatives to include Facilities Maintenance & Project Operations.





**County of Santa Cruz**

**GENERAL SERVICES DEPARTMENT**

*FACILITIES MAINTENANCE & PROJECT OPERATIONS*

1110 EMELINE AVENUE, SANTA CRUZ, CA 95060-4073

10. Contractor (Bidder) shall maintain an organized and safe site that is in compliance with OSHA Regulations.
11. Contractor (Bidder) is obligated to comply with applicable building codes and county ordinances.
12. Contractor (Bidder) is responsible for the project schedule which includes a baseline, monthly progress, and look ahead schedules throughout the project duration.
13. Change Conditions shall be discussed in advance of Contractor (Bidder) submitting any **"Proposed Change Order"** to Facilities Maintenance & Project Operations. ALL **"Proposed Change Orders"** MUST be submitted with applicable supporting documentation.
14. Contractor (Bidder) shall, at appropriate project intervals, schedule Facilities Maintenance & Project Operations to conduct a trades specific building inspection ensuring means & methods performance meets code requirements. These observations are equivalent to a typical inspection activity from the Agency Having Jurisdiction for enforcement of applicable codes.
15. Facilities Maintenance & Project Operations will inspect the quality and progress of the Contractor (Bidder) work at irregular intervals.
16. Contractor (Bidder) shall use the County **"Progress Payment Schedule of Values"** when submitting for payment.
17. Contractor (Bidder) is required by the County to pay both prevailing wages and ensure a "Living Wage" is paid to all who work on this project.
18. Contractor (Bidder) is required to submit Certified Payroll with all submitted invoices and/or payment applications.
19. Contractor (Bidder) will carry a current and in good standing State of California Contractors License for the work performed.
20. Contractor (Bidder) MUST be a registered Vendor of the County of Santa Cruz and have in possession prior to submitting a Bid or after award a Vendor #.
21. Contractor (Bidder) shall submit applicable certificates of insurance (COI).
22. Contractor (Bidder) will review and execute an Independent Contracting Agreement (ICA) when issued by County General Services Department (GSD) or be issued a Purchase Order (PO). Both bind the Contractor (Bidder) and County to the documents and terms and conditions of the project.
23. Project warranty on material and labor shall be extended to the County by the Contractor (Bidder) during closeout of the project. Warranty on labor and materials shall be separately defined.
24. Taxes (if applicable) shall be included in the Contractor (Bidder) Bid.





**County of Santa Cruz**

**GENERAL SERVICES DEPARTMENT**

*FACILITIES MAINTENANCE & PROJECT OPERATIONS*

1110 EMELINE AVENUE, SANTA CRUZ, CA 95060-4073

25. Facilities Maintenance & Project Operations shall provide to the Contractor a "Notice of Substantial Completion" at a time when the majority of the contracted work is completed and a "Punch List" of the work is scheduled.
26. Contractor (Bidder) before receiving "Retention" payment MUST have completed work to include "Punch Items" and formally submitted ALL closeout required materials and/or documents to include Warranty. AT such time County will issue a "Notice of Completion".

**SPECIAL CONDITIONS:**

- A. Plantings are to be transported in a safe manner, stored, and maintained prior to installation by the contractor.
- B. The Grower is:  
Central Coast Wilds  
125 Walk Circle  
Santa Cruz, CA 95060  
(831) 459-0656
- C. Plantings shall be maintained in accordance with the maintenance specification post installation for a warranty period of 1yr.
- D. Contractor shall advise county of any anticipated planting risk.
- E. Post construction, contractor will provide a 4-year maintenance program in accordance with the maintenance specification provided in the Bid Package.





## **EXISTING CONDITION PHOTOGRAPHS**

### **EXHIBIT “D”**



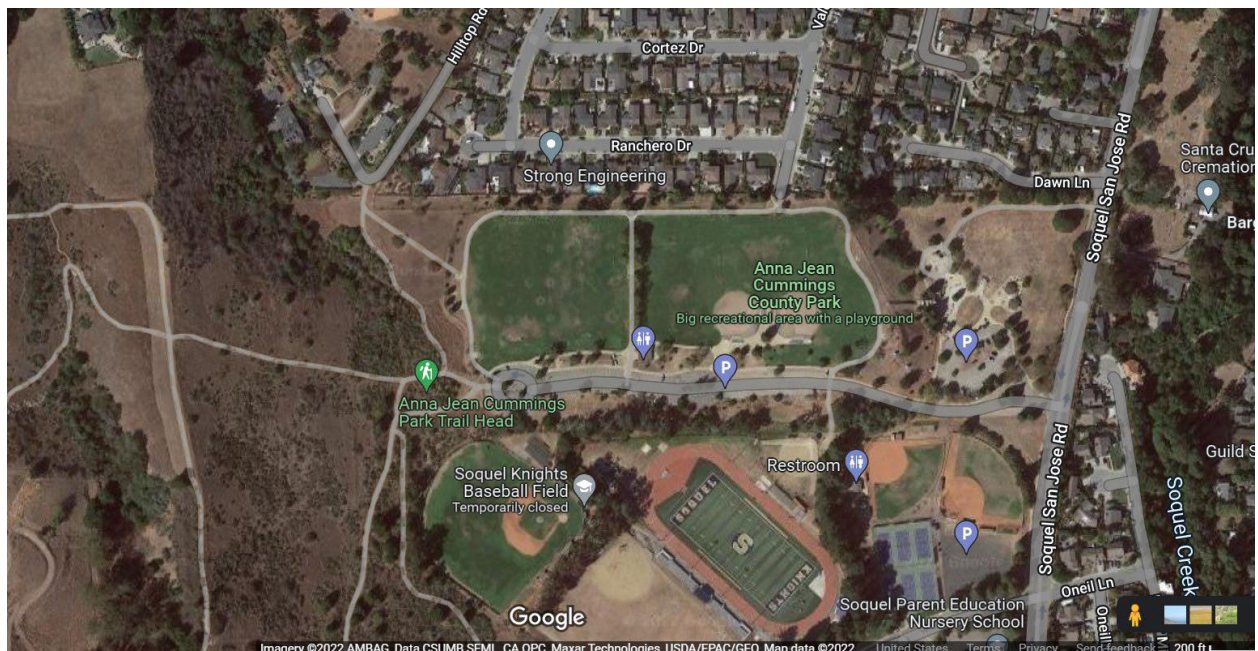


Figure 1: Anna Jean Cummings Mitigation Plantings Site, looking north





*Figure 2: Anna Jean Cummings Mitigation Plantings Site, looking east*





## **SCOPING OF WORK**

### **EXHIBIT “E”**





***County Of Santa Cruz***  
**GENERAL SERVICES DEPARTMENT**

*FACILITIES MAINTENANCE & PROJECT OPERATIONS*  
1110 EMELINE AVE, SANTA CRUZ, CA 95060  
(831) 454-5251 OR (831) 454-5255

**SANTA CRUZ COUNTY FACILITIES MAINTENANCE &  
PROJECT OPERATIONS**

**SCOPING DOCUMENT**

**PROJECT #23TI-012 HIGHWAY**

**1 AUXILIARY LANES**

**IMPROVEMENT**

**MITIGATION PLANTING**

**August 26, 2022**

*\*PURCHASING \* ENERGY MANAGEMENT \*CONSTRUCTION PROJECT MANAGEMENT \*FACILITIES MAINTENANCE  
\* FLEET SERVICES \*EMERGENCY SERVICES \*WAREHOUSE SERVICES \*CUSTODIAL SERVICES \*COUNTY  
FIRE SERVICES \*COUNTY SAFETY*





## **FACILITIES MAINTENANCE & PROJECTS OPERATIONS**

### **PURPOSE:**

This project is being funded to provide mitigation to potential environmental impacts resulting from the Highway 1 Auxiliary Lanes Improvement Project.

The County of Santa Cruz has developed this project Bid Package specifically in an effort to solicit qualified Contractors to review the supporting documents, participate in the Pre-Bid Job Walk(s), submit when applicable Pre-Bid RFI's, and compile a "Fair Market" competitive and complete Bid.

To aid the Contractor (Bidder) in executing work professionally and with an industry expected level of acceptable quality. The County of Santa Cruz submits this scoping document as a supporting document to **Project #23TI-012** Bid Package.

### **SCOPE OF WORK SUMMARY:**

The work shall be executed in accordance with applicable codes and the project Bid documents. The plants will be ready for installation mid-November. Contractor (Bidder) is responsible for retrieving, transporting, offloading, protecting, and maintaining all plantings prior to installation. Contractor to plant as soon as possible to give them the best chance of survival. The Contractor (Bidder) after executing the work, for a period of 1-year, shall provide maintenance of the 221 plants in accordance with the maintenance specification included in the Bid Documents as part of the warranty. An Add Alternate seeks an additional 4-year maintenance contract after the warranty period and maintenance of the plantings.

### **CLARIFICATION:**

- Contractor shall read Exhibit "C" Supplemental Conditions thoroughly before mobilizing.
- Contractor shall contact Grower 5 days before scheduled pick up of plantings.
- The Grower is Central Coast Wilds 125 Walk Circle Santa Cruz, CA 95060: (831) 459-0656 contact [matt@centralcoastwilds.com](mailto:matt@centralcoastwilds.com)
- Contractor shall provide for field staff a portable restroom. Location of this facility shall be discussed with and approved by the sponsoring Department and Agency operating this facility.





## FACILITIES MAINTENANCE & PROJECTS OPERATIONS

- Contractor shall submit adequate product submittals through the formal industry standard submittal process for review by the Landscape Architect and approval or comment.
- Contractor shall coordinate and schedule County Facilities Maintenance & Project Operations to observe and report on project progress accordingly.
- Before digging Contractor should call for utility location marking.
- Contractor shall participate in all scheduled project meetings and be prepared for meaningful discussions.
- At the conclusion of each workday, Contractor shall clean up the project site to ensure the site is safe, secured, clean and orderly.

### SCHEDULE:

Facilities Maintenance & Project Operations have derived a **“Milestone Project Schedule”** for the Bid Phase. Reference **Exhibit “F”**. Post Bid and as a requirement of a “Notice of Award” Contractor shall prepare and submit a **“Draft” Baseline Schedule** for review, comment, or acceptance by signature.












































# **PRELIMINARY PROJECT SCHEDULE**

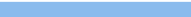


















## **EXHIBIT “F”**



# ANNA JEAN CUMMINGS PARK HIGHWAY I AUXILIARY LANES MITIGATION PLANTING

ID		Task Mode	Task Name	Duration	Start	Finish	Qtr 3, 2022 Jul	Aug	Sep	Qtr 4, 2022 Oct	Nov	Dec	Qtr 1, 2023 Jan
1													
2			<b>ANNA JEAN CUMMINGS PARK - MITIGATION</b>	<b>130 days</b>	<b>Tue 7/19/22</b>	<b>Mon 1/16/23</b>							
3			<b>PROCUREMENT</b>	<b>70 days</b>	<b>Tue 7/19/22</b>	<b>Mon 10/24/22</b>							
4			BOS Project Approval	0 days	Tue 7/19/22	Tue 7/19/22							
5			Draft CUPCCAA Informal Bid Package	15 days	Tue 8/2/22	Mon 8/22/22							
6			Bid Package Review	5 days	Wed 8/24/22	Tue 8/30/22							
7			Release Bid Package to Exchange	1 day	Thu 9/1/22	Thu 9/1/22							
8			Mandatory Job Walk	1 day	Tue 9/13/22	Tue 9/13/22							
9			Pre-Bid RFI	6 days	Wed 9/14/22	Wed 9/21/22							
10			Addenda	3 days	Mon 9/26/22	Wed 9/28/22							
11			Bid Submission	0 days	Wed 10/5/22	Wed 10/5/22							
12			Notice of Award	0 days	Fri 10/7/22	Fri 10/7/22							
13			Required Document Submission	10 days	Mon 10/10/22	Fri 10/21/22							
14			Notice to Proceed	0 days	Mon 10/24/22	Mon 10/24/22							
15			<b>CONSTRUCTION</b>	<b>56 days</b>	<b>Mon 10/31/22</b>	<b>Mon 1/16/23</b>							
16			Mobilization	2 days	Mon 10/31/22	Tue 11/1/22							
17			Transportation of Planting	1 day	Thu 11/3/22	Thu 11/3/22							
18			Offloading Plantings	1 day	Thu 11/3/22	Thu 11/3/22							
19			Site Preparation	7 days	Mon 11/7/22	Tue 11/15/22							

PROJECT 23TI-012



















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Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			



ANNA JEAN CUMMINGS PARK  
HIGHWAY I AUXILIARY LANES MITIGATION PLANTING

ID		Task Mode	Task Name	Duration	Start	Finish	Qtr 3, 2022			Qtr 4, 2022			Qtr 1, 2023	
							Jul	Aug	Sep	Oct	Nov	Dec	Jan	
20			Plantings	45 days	Mon 11/14/22	Fri 1/13/23								
21			Barrier Protections	5 days	Thu 1/5/23	Wed 1/11/23								
22			Closeout	5 days	Tue 1/10/23	Mon 1/16/23								
23			Warranty Start	0 days	Mon 1/16/23	Mon 1/16/23								

PROJECT 23TI-012

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only	