EXHIBIT G

REFERENCES

IFRQ MAO2016842: Grant Ave / Washington Ave / Hampton Rd Landscape Maintenance

Bidder Name: ______________________________

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

Company Name:	Contact Person:
Address:	Telephone Number:
City, State, Zip:	E-mail Address:
Services Provided / Date(s) of Service:	

EXHIBIT H

PROJECT 1 – GRANT AVENUE

MAINTENANCE PLAN

&

BAY FRIENDLY GUIDELINES

&

AS-BUILT DRAWINGS

LANDSCAPE MAINTENANCE PLAN

GRANT AVENUE

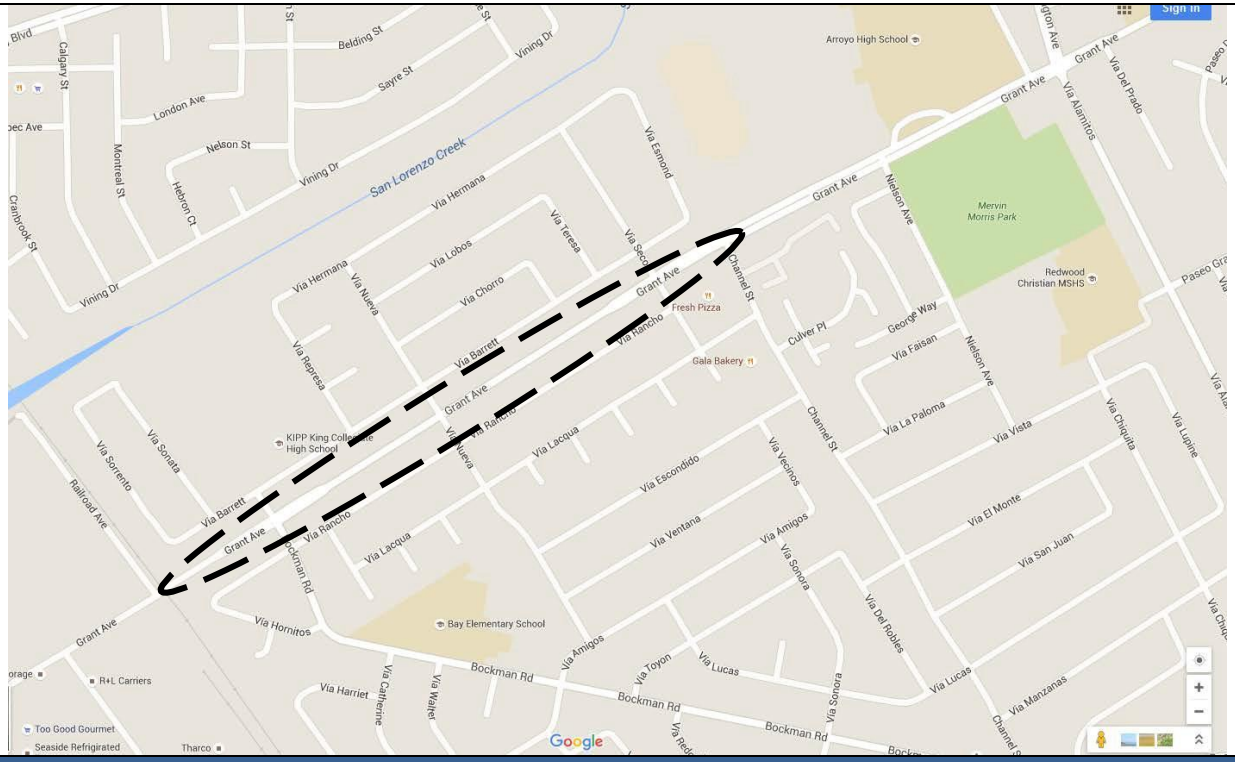
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
EDEN TOWNSHIP
ALAMEDA COUNTY CA

Public Works Agency
Alameda County

A. PROJECT INFORMATION

Grant Avenue

DESCRIPTION	Grant Avenue sidewalk and drainage improvements were designed as a Bay-Friendly Rated Landscape. Bay-Friendly Landscaping is a whole systems approach to the design, construction and maintenance of landscapes that contributes to the health of the San Francisco Bay Watershed. The project includes landscape planting with native, low water use plant materials, curb inlets and drainage to capture and filter water, and use of mulch to retain moisture and reduce weeds. Project components to be maintained include: • Maintain and repair drainage swales to receive storm water flows • Maintain landscape plantings • Seasonally water plants • Install 1" compost over swale banks and flat planting areas adjacent to road shoulder (one time only, August-September 2016) • Maintain 4" mulch over all landscaped areas • Maintain and repair landscape headers NOTE: Existing fences along property line are not owned by the County, do not damage or repair existing fences.
ADDRESS	Grant Avenue, from Southern Pacific Railroad To Channel Street Eden Township (San Lorenzo) Alameda County CA

LOCATION MAP	

COUNTY INFORMATION

MAINTENANCE SUPERVISOR	**Rob Sales,** Field Maintenance Supervisor robs@acpwa.org 510-670-5534 Ext. 55534

GRANT AVENUE

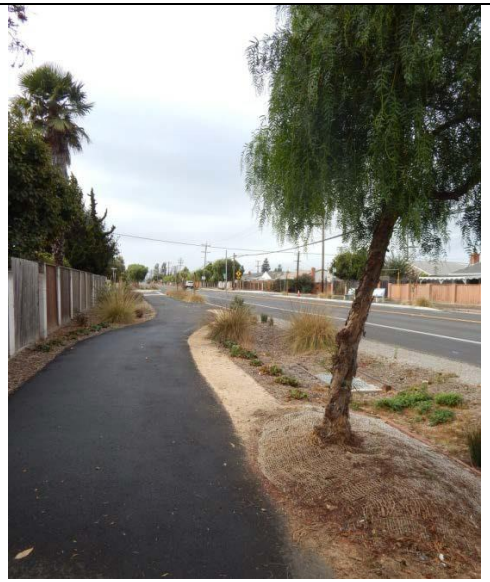
LANDSCAPE MAINTENANCE PLAN

September 13, 2016

PROJECT TYPE	
✓	STREET/ROADWAY LANDSCAPING
✓	BAY FRIENDLY LANDSCAPE

AS-BUILT PLANS/SUBMITTALS (SEE ATTACHMENT 1)	
✓	U783-5 Sheets 65-78 (Landscape Plans only, other drawings available upon request)

SPECIAL PROJECT CONDITIONS	
Attachment 2	Bay-Friendly Landscape Guidelines



B. PROJECT ELEMENTS

SECTION	APPLIES TO PROJECT?	ELEMENT
1	✓	Safety and General Practices
2	✓	Weeding and Trash Removal
3	✓	Trees
4	✓	Shrubs and Groundcover
5	✓	Pest Management
6	✓	Mulch and other supplies
7	✓	Storm Water Management
8	✓	Pavements and Finishes
9	✓	Special Horticultural Conditions – Bay-Friendly Landscape

1. SAFETY AND GENERAL PRACTICES

	TASK	FREQUENCY
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities including but not limited to traffic control, pesticide use and tree trimming (ISA Standards, applicable O.S.H.A. and CAL-O.S.H.A. Safety Orders).	EVERY SITE VISIT
B	All work shall be completed in a professional, workmanlike manner, and use quality equipment and materials that comply with current regulations.	EVERY SITE VISIT
C	Do not work or perform any operations, particularly during periods of inclement weather, which may destroy or damage landscaped areas.	EVERY SITE VISIT
D	The safety of workers, passersby, and the public shall be paramount. Utilize accepted standards for safe practices during the maintenance operation and to safely maintain and manage equipment, machines, and materials or other hazards consequential or related to the work.	EVERY SITE VISIT
E	All personnel shall be properly trained, and wear and use Personal Protective Equipment required for the task assigned as required by OSHA or other regulatory agencies.	EVERY SITE VISIT
F	Warning signs, traffic cones, flashing lights, etc., shall be utilized at each work site and all traffic control activities and equipment shall conform to MUTCD standards.	EVERY SITE VISIT
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair.	EVERY SITE VISIT
H	Work shall be performed in such a manner to limit unnecessary idling for periods of longer than five (5) minutes while on the worksite, unless engine power is required to operate the vehicle's accessory equipment.	EVERY SITE VISIT
I	All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor.	EVERY SITE VISIT
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.	EVERY SITE VISIT
K	Record field notes on Maintenance Checklist. Organize, label, date and file digital photography	EVERY SITE VISIT

2. WEEDING AND TRASH REMOVAL

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Pick up litter and landscape debris (including downed tree branches)	EVERY SITE VISIT	• All recyclable materials including green waste shall be disposed of at an appropriate facility. • Green waste may be taken to a composting facility or a transfer station that offers separate processing for green waste for composting. • Per Alameda County Waste Management Authority Ordinance #2008-1 adopted January 28, 2009: **plant debris may not be landfilled and must be composted.**
B	Remove weeds at curbs and sidewalks and planter areas (focus on April through June)	MONTHLY	
C	Fill holes in landscape areas using compost mulch or native soil	EVERY SITE VISIT	
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance	MONTHLY	
E	Remove all cutting and waste materials to an off-site facility.	EVERY SITE VISIT	

3. TREES

	TASK	FREQUENCY
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	ANNUALLY (Jan. – Mar.)
B	Remove dead branches and branches overhanging pavement or to improve line of sight; remove sucker growth from pepper/other trees.	AS NEEDED
C	Inspect, and replace dead/diseased plant material. Test soil if there are health issues. Add organic fertilizer if recommended by soil testing.	ANNUALLY
D	Maintain 14' clearance for branches overhanging beyond curb line into the paved section of streets and 10' clearance for branches overhanging sidewalk, bicycle path and pedestrian areas.	AS NEEDED
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8" from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes after **Year Three.** **REMOVE NURSERY STAKES AND GREEN TIES.**	AS NEEDED (March-May)

ADDITIONAL INFORMATION

- Tree Replacement: Any existing pepper tree that is permanently damaged or shows declining health shall be replaced with 48" box specimen tree, or as directed by County. Notify County of need for replacement and to obtain authorization.
- Pruning (with hand pruners/loppers/saws): Prune trees between the months of January – March to encourage healthy growth habits pertaining to each individual species, and for an overall balanced shape and appearance. All trees shall be free of dead wood, weak, diseased, insect-infested, and damaged limbs at all times. Selective thinning cuts should be made, not "heading" or "tipping" cuts. Remove all clippings the same day tree is pruned.
- Keep plant material trimmed 1' from the tree trunk.
- Do not use string trimmers/weed whippers around trees.
- Schedule horticultural soils tests if new spring growth is stunted, yellow, or chlorotic, or low flower production. Add organic fertilizer based on recommendation of soils testing laboratory.

Existing: California Pepper
Schinus molle

Redbud
Cercis occidentalis

Crape myrtle
Lagerstroemia indica
'Watermelon Red'

4. SHRUBS AND GROUNDCOVER

	TASK	FREQUENCY
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas	AS NEEDED
B	Inspect, and replace dead/diseased plant material. Test soil if there are health issues. Add organic fertilizer if recommended by soil testing.	AS NEEDED

Arctostaphylos 'Green Supreme'

Berberis aquifolium

Rhamnus 'Eve Case'

Ribes viburnifolium

ADDITIONAL INFORMATION

- Shrub/groundcover Replacement: Shrubs and groundcover that are woody, decadent or permanently damaged should be replaced with the same species, unless conditions warrant replacement with other species. If so, notify County and suggest replacements from successful species at project site, with low water use needs.
- Pruning (with hand pruners/loppers/saws): Prune woody shrubs to remove dead wood, weak, diseased, insect-infested, and damaged limbs. Selective thinning cuts should be made; do not use not "heading" or "tipping" cuts. Remove all clippings the same day shrub is pruned.
- Trim shrubbery and ground covers to area behind curbs and walkways, within planter beds, and away from walls, fences, and utilities, as necessary. Do not prune into hedges or topiary—let plant grow in natural shape
- Keep ground cover trimmed 1' from the base of trees
- Do not use string trimmers/weed whippers around trees.
- Schedule horticultural soils tests if new spring growth is stunted, yellow, or chlorotic, or low flower production. Add organic fertilizer based on recommendation of soils testing laboratory.

4. SHRUBS AND GROUNDCOVER

SPECIES		SPECIES	
Achillea millefolium		***Ceanothus*** **'Centennial' Ceanothus**	
Mimulus aurantiacus		***Muhlenbergia rigens***	
Penstemon **'Blue Spring'**		***Epilobium canum***	

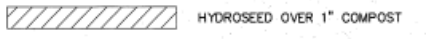
5. IRRIGATION

NOTE: There is no existing irrigation system. Water must be manually applied.		FREQUENCY
A	Inspect plant material and soil moisture to determine irrigation needs. Provide supplemental irrigation via hose/water truck, gel pack or other temporary means if plants exhibit signs of stress.	AT EACH VISIT

6. PEST MANAGEMENT

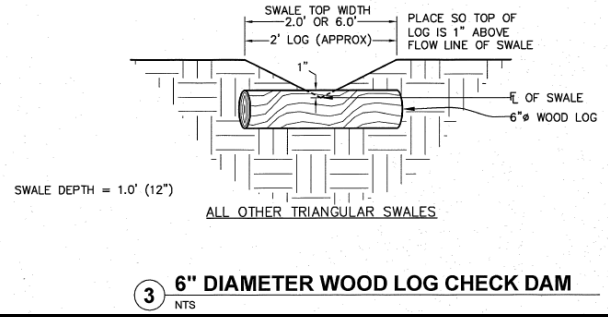
TASK		FREQUENCY	USE OF CHEMICALS (PESTICIDES) AND DISEASE & PEST CONTROL
A	Inspect and notify supervisor of major disease and insect infestations affecting trees, shrubs and ground covers.	MONTHLY	• Alameda County encourages environmentally sensitive maintenance practices. Apply insecticide or fungicide to trees, shrubs and ground covers only when significant plant damage would result from not addressing the infestation. Base pest and disease control program on known pests and diseases in Alameda County. • All work involving the use of chemicals to be performed under the guidance of a valid California Pest Control Advisor (PCA) License and Qualified Applicator. • If needed, spray herbicide, under guidance and recommendation of PCA. Apply only at manufacturers approved rates to avoid soil toxicity. Verify that herbicide is appropriate for use with various plant materials. • Attach Material Safety Data Sheet (MSDS) to this Landscape Maintenance PLAN for any chemicals used. All regulatory reporting requirements for chemical use must be followed. • Comply with quarantine regulations set by the California Department of Food and Agriculture (CDFA) when working in areas affected by Sudden Oak Death (SOD), and by Light Brown Apple Moth (LBAM). Regulations include, but are not limited to, ensuring that material is transported to a green waste processing facility that has been authorized by the local County Agricultural Department to accept affected loads, ensuring vehicle payloads are tightly covered with a tarp or otherwise enclosing green waste material to prevent releases during transport, and ensuring equipment is cleaned after working in a contaminated zone so as to prevent cross contamination.
B	Inspect and notify supervisor of damage due to ground squirrels, gophers, and other burrowing rodents.	MONTHLY	
C	Control weeds first with hand removal or mechanical cultivation.	MONTHLY	
D	Use Integrated Pest Management (IPM) practices, and least toxic methods to control pests	MONTHLY	

7. MULCH/OTHER SUPPLIES

TASK		FREQUENCY	ADDITIONAL INFORMATION		
A	**ONE TIME ONLY APPLICATION:** **AUGUST/SEPTEMBER 2016:** Place 1" compost on swale banks and flat landscape areas adjacent to road shoulder. Avoid compost placement over gravel shoulders. These are shown on Landscape Plan, Attachment 2) as follows:  **ANNUALLY:** Replace/replenish mulch annually, or when bare ground occurs over 40% of area. Maintain mulch minimum 4 inches deep in all landscape areas at all times. Mulch installed as part of project consists of 1" compost layer on existing grade, top-dressed with 3" wood chip or bark mulch. Replenish annually with wood chip or bark mulch to maintain 4" depth.	**ANNUALLY OR AS NEEDED**		MULCH	4" mulch (recycled material preferred). One-time Application: 1" compost mulch on swale banks and bank tops, avoid paved areas.
				SUPPLIER	County
					BFI - Newby Island Compost Facility 1601 Dixon Landing Road Milpitas, CA 95035 Phone: (408) 945-2836 Fax: (408) 262-0603 www.interquix.com/organics/
					Davis St. Transfer Station 2615 Davis St. San Leandro, CA 510-563-4257
					Earthtones Mulch Company 6756 Central Avenue Newark, CA 94560 408-888-7632 www.earthtonesmulch.com
	ALL APPLICATIONS: Mulch layer to be installed in all non-paved areas, including planted areas, swale top and sides, and tree wells. Keep root crowns of all plants free of compost, mulch and debris. Do not apply to paved areas. Mulch shall be applied/replenished annually after annual flowers have seeded. Apply mulch on top of dead annuals and around all other planting areas, avoiding root crowns.				

8. STORMWATER MANAGEMENT

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Inspect and remove mulch, plant materials or other items blocking drainage features. Notify county if drains, log structures or other drainage features are blocked or damaged.	AT EACH VISIT	Note if log check dams or other drainage features are blocked or damaged.



3 6" DIAMETER WOOD LOG CHECK DAM
NTS

9. PAVEMENTS AND FINISHES

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	PC Concrete Sidewalk	INSPECT AT EACH SITE VISIT	Notify County of cracking, pavement damage, graffiti, trip hazards or other conditions that need further inspection or repair. Sweep pavement on path and intersections to remove rocks, bark and debris from traveled surface.
	Asphalt Path		
	Gravel Path Shoulder		
	Truncated domes accessibility features		

10. SPECIAL HORTICULTURAL CONDITIONS

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	UTILIZE BAY FRIENDLY LANDSCAPE PRACTICES	AT EACH SITE VISIT	See Attachment for specific Bay-Friendly landscape maintenance practices.
B			
C			
D			

C. TASK SUMMARY

1: Safety and General Practices	
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities
B	Complete all work in a professional, workmanlike manner, with compliant equipment and materials
C	Do not work or perform any operations that may destroy or damage landscaped areas
D	Utilize accepted standards for safety and safely maintain and manage equipment and materials
E	Properly train all personnel, and wear and use Personal Protective Equipment required by OSHA or other regulatory agencies
F	Use warning signs, traffic cones, flashing lights, etc., at each work site and all traffic control activities and equipment shall conform to MUTCD
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair
H	Work shall be performed in such a manner to limit unnecessary vehicle or equipment idling
I	Handle all materials and equipment in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.
K	Record field notes on Maintenance Checklist.
2: Weeding and Trash Removal	
A	Pick up litter and landscape debris (including downed tree branches)
B	Remove weeds at curbs and sidewalks and median planter islands
C	Fill holes in landscape areas
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance
E	Remove all cutting and waste materials to an off-site disposal facility
3: Trees	
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)
B	Remove dead branches and branches overhanging pavement or to improve line of sight; remove sucker growth from pepper/other trees.
C	Inspect and replace dead/diseased plant material . Test soils if necessary for health issues
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes year three if support is no longer needed.

C. TASK SUMMARY

4: Shrubs and Groundcover	
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas
B	Inspect and replaced dead/diseased plant material; add organic fertilizer if needed
5: Irrigation	
A	Inspect plant material and soil moisture to determine irrigation needs; provide irrigation water to plants as needed.
6: Pest Management	
A	Inspect for disease and insect infestations
B	Inspect for damage by burrowing animals
C	Control weeds with hand or mechanical tools
D	Use IPM for least toxic methods to control pests
7: Mulch and Other Materials	
A	**One time only** : Place 1" compost over hydro seeded swale areas, including banks and flat landscape tops. Do not place compost over road shoulder or paved areas. **Annually**: Replace/replenish mulch to maintain 4" cover, or when bare ground occurs over 40% of area. Mulch must be maintained a minimum 4 inches deep in all landscape areas.
8: Storm Water Management	
A	Inspect and remove mulch, plant materials and other items blocking drainage features; notify County of damage.
9: Pavements and Finishes	
A	Inspect pavement at all site visits and notify County of damage
10: Special Horticultural Conditions	
A	Utilize Bay-Friendly Practices
11: Lighting N/A	

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
1: Safety and General Practices				
A	Comply with laws	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	✓ 1 2 3 4 5 6 7 8
B	Complete all work in a professional, workmanlike manner			
C	Do not destroy or damage landscaped areas			
D	Utilize accepted standards for safety			
E	Properly train wear and use Personal Protective Equipment required by OSHA			
F	Use warning signs, traffic cones, flashing lights, etc., at each work site			
G	Note any hazards found in the service area landscape and notify Supervisor			
H	Limit unnecessary vehicle or equipment idling			
I	Install barriers signs, lights, flaggers, etc. to warn the public of any danger			
J	Handle all materials and equipment in accordance with the manufacturer			
K	Proceed with caution to avoid damaging any utilities known or unknown			
L	Take a digital photograph(s) of site at each visit, note problem areas			
M	Record field notes on Maintenance Checklist.			
2: Weeding and Trash Removal				
A	Pick up litter and landscape debris (including downed tree branches)	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH SEPTEMBER) ☒ MONTHLY (DURING OCTOBER THROUGH MARCH) ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Remove weeds at curbs and sidewalks and median planter islands			
C	Fill holes in landscape areas			
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance			
E	Remove all cutting and waste materials to an off-site disposal facility			

D. FREQUENCY AND ESTIMATED HOURS BY TASK

	TASK	CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
3: Trees				
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☐ APRIL ☐ MAY ☐ JUNE ☐ JULY ☐ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☒ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Remove dead branches and branches overhanging pavement or to improve line of sight and remove sucker growth from pepper/other trees.	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☒ JULY ☐ AUGUST ☐ SEPTEMBER ☒ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8
C	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues			
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.			
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove Tree Stakes between March and May after Year Three (2017)			

D. FREQUENCY AND ESTIMATED HOURS BY TASK

	TASK	CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
4: Shrubs and Groundcover				
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☐ JULY ☒ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☒ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 ✓ 4 5 6 7 8
B	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues; add organic fertilizer if needed.			
5: Irrigation				
A	Inspect plant material and soil moisture to determine irrigation needs; supply irrigation water to plants as needed.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☐ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH OCTOBER) ☒ MONTHLY (DURING NOVEMBER THROUGH MARCH) ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
6: Pest Management				
A	Inspect for disease and insect infestations	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☒ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Inspect for damage by burrowing animals			
C	Control weeds with hand or mechanical tools, especially before annuals set seed. Remove weeds from site.			
D	Use IPM for least toxic methods to control pests			
7: Mulch and Other Materials				
A	One time only : Place 1" compost over hydro seeded swale areas, including banks and flat landscape tops. Do not place compost over road shoulder or paved areas. Annually: Replace/replenish mulch to maintain 4" cover, or when bare ground occurs over 40% of area. Mulch must be maintained a minimum 4 inches deep in all landscape areas. At all times: Place mulch over dead annuals and in all planting areas. Avoid placing mulch over root crowns. Mulch may be applied in August or September when annuals are spent. Note date of application in Maintenance Log. Do not place mulch over pavement or gravel or AB road shoulders or in storm drain areas.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☐ APRIL ☐ MAY ☐ JUNE ☐ JULY ☒ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☒ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8

D. FREQUENCY AND ESTIMATED HOURS BY TASK

	TASK	CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
11: Pavements and Finishes				
A	Inspect pavement at all site visits and notify County of damage.	JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER ☐ DECEMBER	AT EACH VISIT WEEKLY TWICE A MONTH MONTHLY EVERY 2-3 MONTHS TWICE A YEAR ONCE A YEAR AS NEEDED	✓ 1 2 3 4 5 6 7 8
12: Special Horticultural Conditions				
A	Utilize Bay-Friendly Practices (see Attachment)	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ ☒ ☒ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED ☒	✓ 1 2 3 4 5 6 7 8

***** The hourly estimate is intended to provide a guideline for hours and frequency needed to complete site maintenance tasks. The Contractor should make his/her own determination of maintenance and manpower commitment needed to complete site maintenance. Some tasks may be completed concurrently, and site needs may vary depending on previous maintenance, seasonal inundation, vandalism, disease, and/or other conditions.

E. MAINTENANCE RECORD

Task	Attach or Signature	Date	Completed by
1: Safety and General Practices			
2: Weeding and Trash Removal			
3: Trees			
4: Shrubs/Groundcover			
5: Irrigation			
6: Pest Management	• Quantity/description of all commercial and organic fertilizers used • Quantity and description of all soil amendments used • PCA Applicator/License Number • **Agricultural Commissioners Use Report** for all chemical, disease, and pest control work performed (attach)		
7: Mulch and Other Materials	**Attach submittal of Compost source and date of application:** **1" Compost Mulch: <u>one time only</u>, banks and tops of swale adjacent to road; do not cover pavement.** **3" Wood/Bark Mulch: annual or as needed in bare areas**		
8: Stormwater Management			
9: Pavements and Finishes			
10: Bay-Friendly Practices			

ATTACHMENTS	
1	**Grant Avenue Bay Friendly Landscape Specifications**
2	**AS BUILT PLANS:** **SHEETS 65-78, U-783-5** **(other contract drawings available on request)**

BAY-FRIENDLY LANDSCAPE MAINTENANCE SPECIFICATIONS
For
GRANT AVENUE SIDEWALK AND DRAINAGE IMPROVEMENTS FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET EDEN TOWNSHIP
ALAMEDA COUNTY CA

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Senior Landscape Architect
Questa Engineering Corporation

Adapted from Bay Friendly Coalition Guidelines

GRANT AVENUE

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

Grant Avenue Bay-Friendly Landscaping
Maintenance Specifications

CONTENTS

GRANT AVENUE

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

Section 1: General Information

1.1 Project Goals

Bay-Friendly Landscape Maintenance practices shall be employed to minimize waste, protect air and water quality, conserve energy and water, and protect natural ecosystems (refer to Bay-Friendly Landscape Guidelines, www.BayFriendly.org).

1.2 General Scope of Work

This work shall include all supervision, labor, materials, equipment, tools, supplies and services to maintain in a superior condition all landscape areas, irrigation and drainage systems and other related work. All work shall be performed in a workmanlike manner, using quality equipment, Bay-Friendly methods and materials.

1.3 Site Description

A. SCOPE

Work to be done is located at Grant Avenue and identified on the enclosed maps and plans. This area is owned or supervised by Alameda County Public Works Agency, hereafter referred to as Agency.

B. LANDSCAPE INVENTORY

TREES				
2	ACE-CIR	Acer circinatum	Vine maple	5 GAL
5	ACE-NEG	Acer negundo 'Sensation'	Sensation Box Elder	15 GAL
9	CEA-RAY	Ceanothus 'Ray Hartman'	Ray Hartman ceanothus	15 GAL
11	CER-OCC	Cercis occidentalis	Redbud	15 GAL
17	LAG-IND	Lagerstroemia indica 'Watermelon Red'	Red crape myrtle	15 GAL
REPLACE *	EXISTING	Schinus Molle	Californai Pepper	48" BOX
44	**TREE SUBTOTAL**			
SHRUBS				
19	ARC-GRE	Arctostaphylos 'Greensphere'	Greensphere manzanita	5 GAL
89	BER-AQU	Berberis aquifolium	Oregon grape	5 GAL
18	LUP-ALB	Lupinus albifrons	Silver Bush Lupine	5 GAL
148	MIM-AUR	Mimulus aurantiacus	Sticky Monkey Flower	5 GAL
10	RHA-EVE	Rhamnus californica 'Eve Case'	Eve Case coffeeberry	5 GAL
24	RHA-MSB	Rhamnus california 'Mound San Bruno'	San Bruno coffeeberry	5 GAL
43	RIB-VIB	Ribes viburnifolium	Evergreen currant	5 GAL
351	**SHRUB SUBTOTAL**			
GROUND-COVER				
111	ACH-MIL	Achillea millefolium	Yarrow	1 GAL
436	ARC-EME	Arctostaphylos 'Emerald Carpet'	Manzanita hybrid	1 GAL
116	ARC-UVA	Arctostaphylos 'Green Supreme'	Green supreme bearberry	1 GAL
27	BAC-PIL	Baccharis pilularis 'Santa Ana'	Dwarf coyote brush	1 GAL
32	BER-REP	Berberis repens	Creeping mahonia	1 GAL
37	CAR-PAN	Carex pansa	California Meadow Sedge	1 GAL
68	CEA-CEN	Ceanothus 'Centennial'	Centennial Wild Lilac	1 GAL
102	EPI-CAN	Epilobium canum	California Fuschia	1 GAL
141	EPI-EVE	Epilobium canum 'Everett's Choice'	Everett's Choice Fuchsia	1 GAL
24	ERI-GLA	Erigeron glaucus 'Sea Breeze'	Seaside daisy	1 GAL
28	ERI-RUB	Eriogonum grande rubescens	Rosy Buckwheat	1 GAL
296	FES-CAL	Festuca californica	California Fescue	1 GAL
267	HEU-ROS	Heuchera 'Rosada'	Rosada Coral Bells	1 GAL
63	IRI-DOU	Iris Douglasiana	Douglas Iris	1 GAL
326	JUN-PAT	Juncus Patens	Grey Rush	1 GAL
286	MUH-RIG	Muhlenbergia rigens	Deer Grass	1 GAL
42	PEN-HET	Penstemon heterophyllus 'Blue Spring'	Blue Spring Penstemon	1 GAL
2402	**GROUNDCOVER SUBTOTAL**			

1.4. Limits of Work

Specified work does not include:

A. Repair or replacement of street lighting, traffic signals or roadside signs.

B. Repair or replacement of traffic lane pavement or concrete pavement.

1.5. Supplemental Documents

A. SITE MAPS
1. Record Drawings, including landscape, irrigation, site furnishings etc. are available from ACPWA.

B. INITIAL SOIL ANALYSIS. Results of soil analyses from samples collected at the project area may be available from ACPWA.

1.6. Supplemental Resources

A. StopWaste.Org www.BayFriendly.org
1. Bay-Friendly Landscape Guidelines
2. A Landscaper's Guide to Mulch

B. *A Guide to Estimating Irrigation of Water Needs of Landscape Plantings*, California Dept. of Water Resources, http://cdec.water.ca.gov

C. *California Irrigation Management Information System*, www.cimis.water.ca.gov, Waste management and recycling, www.ciwmb.ca.gov.

D. *The Weed Worker's Handbook, A Guide to Techniques for Removing Bay Area Invasive Plants*, The Watershed Council (510) 231-5655 and the California , Invasive Plant Council (510) 843-3902

E. *Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide*, 2nd ed., UC Publication 3359, http://www.ipm.ucdavis.edu

F. *A Field Guide to Compost Use*, The Composting Council, 114 South Pitt Street, Alexandria, Virginia 22314, (703) 739-2401, http://www.compostingcouncil.org/index.cfm

Section 2: General Requirements

2.1. Contractor Qualifications

A. QUALIFICATIONS

1. Contractor must have a valid California C-27 contractor's license authorized by the State of California.
2. Contractor must have assigned to the project at least one employee possessing a California State Chemical Applicator's License for the control of weeds, plant diseases and other pests.
3. Contractor shall be thoroughly familiar with California native wildflower species, and take care not to eliminate or eradicate California native wildflowers or other plants installed as part of the project.
4. It is preferred that the Contractor have assigned to the project at least one employee who has successfully completed the Pollution Prevention Training & Certification Program For Surface Cleaners issued by the Bay Area StormWater Management Agencies Association **(**BASMAA).
5. All tree pruning shall be completed under the direction of a Certified Arborist or Certified Tree Worker (International Society of Arboriculture).
6. It is preferred that the Contractor have assigned to the project at least one employee who has experience or training in Integrated Pest Management (IPM) techniques.
7. It is preferred that the Contractor have assigned to the project at least one employee who has experience or training in Bay-Friendly Landscaping practices.

B. INSURANCE

Contractor shall maintain insurance required by ACPWA throughout the contract period.

2.2. Compliance with Laws, Ordinances and Policies

All services rendered shall be provided in accordance with all ordinances, resolutions, statutes, rules, laws and regulations of the Agency, and any Federal, State, or local governmental agency having jurisdiction in effect at the time service is provided

2.3. Work Requirements

A. WORK SCHEDULE

1. Contractor is to provide Agency with a monthly work schedule describing the work to be performed in the Project Area, hours by job classification and tasks completed.
2. The Contractor shall conduct all operations during the hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, unless otherwise approved by the Agency. Contractor may not work on any Federal, State, or local holidays.
3. Any non-emergency work that may be deemed hazardous or disruptive (i.e., chemical spraying, tree pruning, etc.) shall be scheduled at least two (2) weeks in advance with the Agency's representative. For emergency work, Contractor must obtain written approval from Agency's representative prior to commencing work.
4. Agency reserves the right to change schedules for special events, conflicts with adjacent property owners/tenants within five (5) working days advance notice.

B. PROTECTION OF EXISTING PROPERTY

1. Contractor must protect all existing plant materials, site improvements, structures, facilities, utilities, and natural areas from damage, both above and below ground. Any damages shall be reported immediately to the Agency's representative. Any damages caused by Contractor shall be corrected and/or paid for by the Contractor at no cost to the Agency.
2. Contractor shall protect property from accidental chemical, fuel, oil or other contaminant spills.
3. Contractor shall not wash or blow soil, chemicals, litter, mulch, soil amendments or other materials into storm drains.

C. SAFETY

Contractor must at all times exercise necessary precautions to provide for the protection of the public and employees.

1. Traffic Lane Closure. Landscape maintenance services conducted in the roadway must be performed in a safe manner. The contractor is required to perform traffic diverting lane closures prior to beginning any trimming operations in the center median. Litter pickup does not require a lane closure.
2. All lane closure activities must comply with Federal Highway Manual on Uniform Traffic Control Devices (MUTCD) http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/supplement.htm], applicable governmental agencies and follow notification requirements of the Police and Fire Departments.
3. Chemical Applications. Note: Bay-Friendly Landscaping emphasizes Integrated Pest Management (IPM) practices to control pests and diseases in the landscape. IPM uses cultural, mechanical, physical, and biological control methods before using pesticides. Chemical controls are applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control is applied.
4. Contractor shall apply all chemicals in a safe manner and according to label instructions and Agency, State and Federal requirements. A California Chemical Applicators license is required by the contractor for chemical applications. The Contractor shall mix and apply chemicals to protect against accidental spills and drift to non-target areas, and to insure safety of the applicator. Any spilled chemicals, as well as contaminated soil, water, and/or landscape materials must be removed from the Project and disposed of in accordance with the Agency requirements. The Contractor shall maintain applicator's licenses and records of applications as required by the State.
5. A Chemical Work Report shall be completed for each chemical application. The Contractor is responsible for submitting chemical usage reports to the County Agricultural Department. Copies are to be sent to the Agency's representative as part of the Contractor's monthly report.

D. CONTRACTOR'S PERSONNEL AND SUPERVISION

1. Contractor shall provide a list including all Contractor's and subcontractor's employees assigned to work site and include work schedule and assignment. Contractor must update list within 5 business days of any change. All Contractor's employees assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States.
2. The Contractor shall assign a qualified trained supervisor to oversee work performed at the work site and to act as the Contractor's liaison with the Agency representative. This supervisor must inspect the Project daily

(Monday through Friday) except holidays and provide direction to the Contractor's workers and/or subcontractors. This supervisor shall speak, write, read and understand English and be capable of writing schedules, monthly reports noting any deficiency that needs correcting and major projects for the coming month. This supervisor shall have at least three (3) years of landscape maintenance supervision experience.

3. All Contractor's personnel shall adhere to basic public works standards for working attire including; uniform shirts with Contractor's name or logo clearly visible at all times when working at all locations, proper shoes and other equipment required by State Safety Regulations. Shirts are to be maintained in a neat and presentable condition.
4. All Contractor vehicles are to have a readable sign with Contractor's name or logo and telephone number. Trucks are to be kept in a clean and presentable condition.

E. SUBCONTRACTING

A portion of the work covered by these specifications may be subcontracted with prior approval of the Agency. Contractor shall supervise subcontractor and guarantee work quality. Subcontractors and their qualifications must be submitted to the Agency thirty (30) days before working at the site. All subcontractors assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States. It is preferred that subcontractors have training in Bay- Friendly Landscaping or other experience in sustainable landscape practices.

F. SUPPLIES AND EQUIPMENT

1. Fuel conservation and low emission equipment: The Contractor will implement strategies in work operations to reduce fossil fuel consumption and emissions, such as:
    a. Use hand-powered equipment when possible.
    b. Minimize use of gas-powered blowers, especially on planting beds.
    c. Select smallest, most fuel efficient equipment to accomplish task.
    d. Consider vehicles that operate on natural gas or biodiesel.
    e. Maintain equipment properly and keep it well tuned.
    f. Emphasize employee carpooling to Project.
2. Use local products and suppliers: The Contractor shall use local products and suppliers (produced within 150 miles from the project site) to the extent possible to minimize fuel consumption and emissions.
3. Use recycled and salvaged materials: The Contractor shall use salvaged and recycled-content products where possible Materials for reuse may be found by contacting the CalMax website at www.ciwmb.ca.gov or www.stopwaste.org .
4. Equipment refueling and repair: The Contractor shall refuel and repair equipment in a safe manner to protect against accidental spills. Limit refueling to specific areas on a site. Measures shall be taken to prevent, control, and clean-up spills. Clean-ups should be immediate, automatic and routine and performed by a trained staff member or a licensed cleaning company. Contact the local emergency response team agencies to report all spills.

G. REPORTING AND INSPECTING

1. The Contractor shall submit a written report each month stating all contract work completed. The report shall show the work completed during each week contract work was accomplished, and shall be submitted with and cover the same work as the Contractor's billing statement for the previous month's work. The report shall include documentation of stormwater and irrigation inspections, IPM monitoring, soil and pest management treatments and other chemical applications. A three week look ahead schedule outlining anticipated work by number should be included.
2. Unusual horticultural problems such as pests, disease and damages that are beyond the scope of the Contractor's responsibility shall be brought to the attention of the Agency representative immediately.
3. The Agency, through a designated representative, will make periodic inspections to insure that complete and continuous maintenance is fulfilled. In addition, the Agency may obtain the services of a Landscape Architect, Arborist, IPM/PCA or other professional to inspect plantings and make recommendations for improvements in the maintenance program.

H. WORK PERFORMANCE

1. Contractor is responsible for (a) having thoroughly investigated and considered the scope of services to be performed, (b) carefully considering how the services should be performed, and (c) fully understanding the facilities, difficulties, and restrictions attending to the performance of the services required. Contractor is responsible to investigate the area and be fully acquainted with the conditions.
2. Should the Contractor discover any latent or unforeseeable conditions, which will materially affect the performance of services, Contractor shall immediately inform the Agency of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Agency.
3. Plants, irrigation systems, etc., damaged by traffic accidents or vandalism, shall be reported immediately to the Agency.

Section 3: Landscape Standards and Maintenance Requirements

3.1 Overview

A. BAY-FRIENDLY LANDSCAPE PRINCIPLES AND OBJECTIVES

Contractor shall maintain the specified landscape in an integrated approach, consistent with the principles set forth in the Bay-Friendly Landscape Guidelines, www.BayFriendly.org. The seven Bay- Friendly principles are:

1. Landscape locally – The Project landscape is part of a larger natural ecosystem of the San Francisco Bay Area. The materials and methods used to maintain the Project can support the health, diversity and sustainability of the Bay.
2. Landscape for less to the landfill – Reducing waste starts with not generating plant debris in the first place by fertilizing, irrigating and pruning judiciously, grass cycling, mulching and composting plant debris. Using recycled content, salvaged, durable or local materials conserves resources and reduces the amount of energy consumed by the landscape.
3. Nurture the soil – Create a healthy soil that supports a healthy landscape by protecting the soil from compaction and erosion, replenishing organic matter and mulching, using slow-release and organic fertilizers and minimizing use of chemicals that harm beneficial soil organisms.

4. Conserve water – Use California's water supply efficiently by reducing irrigation requirements, irrigating according to plant need, maximizing irrigation system performance, increasing the water holding capacity of the soil and using recycled water.
5. Conserve energy – Conventional landscapes are fossil fuel consumptive. Nationally it is estimated that lawn mowers consume 400 million gallons of gas. Look for opportunities to conserve fuel and energy by choosing and maintaining materials and equipment for fuel conservation.

6. Protect water and air quality –Reduce runoff, reduce contaminants in runoff through an integrated pest management (IPM) program, and increase the soil's ability to remove pollutants from runoff through steps such as mulching bare soil. Reduce air pollution by reducing fossil fuel consumption, recycling plant debris on –site and planting trees to remove CO2 and absorb air pollutants.,
7. Protect and maintain wildlife habitat – The Project may provide food, water, shelter and nesting sites for birds, butterflies, beneficial insects and animals that contribute to the ecological diversity of the Bay. Methods to protect them include minimizing application of chemicals by implementing an integrated pest management (IPM) program, and conserving flowers, berries, fruits, seed heads, low branch cover, and natural vegetation in open space areas.

B. APPLICABLE STANDARDS AND BEST MANAGEMENT PRACTICES (BMP's)

Contractor shall adhere to applicable professional standards as defined by a professional organization including:

1. American National Standard for Tree Care Operations - ANSI A300, Parts 1 and 2
2. International Society of Arboriculture BMP for Tree and Shrub Fertilization, and BMP for Tree Pruning
3. Irrigation Association BMPs
4. Bay-Friendly Landscape Guidelines
5. California Association of Pest Control Advisors

3.2 Site Analysis

A. Contractor shall become familiar with the site's microclimate(s), infiltration rate and drainage characteristics and range in exposures to schedule irrigation.

B. Contractor shall become familiar with plants species present in the Project landscape and to identify areas of infestation or nutritional deficiency. Do not remove native California landscape species, including wildflowers seeded as part of project installation.

C. Contractor shall inspect drainage features at each site visit to identify potential erosion and drainage management needs.

3.3 Soil & Nutrition Management

A. GOALS

A healthy, biologically diverse soil is required to sustain a healthy landscape. A basic concept of Bay- Friendly Landscaping is to cultivate a functional, living soil food web which shall then provide nutrient elements as needed to sustain healthy and attractive plants while avoiding excessive growth that might attract pests and/ or need to be removed through pruning, edging or mowing. Landscape maintenance activities shall be implemented to nurture

biological activity, provide organic material, and protect soil from damage. Bay and riparian water quality and soil and aquatic habitat shall be protected by controlling soil erosion.

B. CONTRACTOR SHALL PROTECT SOIL FROM COMPACTION BY:

1. Cultivating soil when it is moderately moist; wet and dry soils shall not be cultivated.
2. Scheduling maintenance operations that require driving equipment over the soil when the soil is dry.
3. Confining vehicle traffic to paved areas.
4. When temporary access is needed over non-paved areas, distribute the load over the soil with 6" thick, coarse organic mulch or reusable planks.

C. CONTRACTOR SHALL PROTECT THE SOIL FROM EROSION BY:

1. Maintaining vegetative cover over the soil to the extent possible.
2. Placing compost berms, blanket, socks or straw rolls along slopes to slow water.
3. Maintaining a minimum of 4" mulch cover over bare soil (see Section 3.3).
4. Minimizing use of blowers in planting beds.
5. Create leaf repositories in planting beds.

D. SOIL AND PLANT TISSUE ANALYSIS

1. Where plant micronutrient deficiencies are suspected, Contractor shall submit soil samples for testing to an agricultural testing laboratory. The types and quantities of fertilizer and/or soil amendments to be applied shall be determined from the results of the soil analysis and shall be based on an 'organic' approach to soil management.

E. INCORPORATE ORGANIC SOIL AMENDMENTS

1. Contractor shall incorporate composted organic amendments into soil prior to replanting damaged plants. Incorporate 2-4" of compost into the top 6-12" of soil in areas to be replanted.

2. Compost shall be a well decomposed, stable, weed free organic matter source. The product shall be certified through the US Composting Council's (USCC) Seal of Testing Assurance Program (STA)
   Program (a compost testing and information disclosure program). It shall be derived from agricultural and/or food waste and/or yard trimmings. The product shall contain no substances toxic to plants, will possess no objectionable odors and shall not resemble the feedstock (the original materials from which it was derived. Before delivery of the compost, the supplier will submit to Agency proof of STA certification and a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's CAP and using the approved Test Methods for the Evaluation of Composting and Compost (TMECC). The lab report shall verify:
   a. Feedstock Materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
   b. Organic Matter Content: 50% - 60% by dry wt. preferred, 35-70% acceptable
   c. Carbon and Nitrogen Ratio: C:N < 25:1 plus at least one measure of stability and at least one measure of toxicity.

d. Maturity/Stability: shall have a dark brown color and a soil-like odor. In addition any one of the following is required to indicate stability

1) Oxygen Test < 1.3 *O_2 / unit TS / hr*
2) Specific oxy. Test < 1.5 *O_2 / unit BVS / hr*
3) Respiration test < 8 *C / unit VS / day*
4) Dewar test < 20 *Temp. rise (^OC)*
5) Solvita® > 5 *Index value*

e. Toxicity: any one of the following measures is sufficient to indicate non-toxicity.

1)	NH_4- : NO_3-N	< 3
2)	Ammonium	< 500 *ppm, dry basis*
3)	Seed Germination	> 80 *% of control*
4)	Plant Trials	> 80*% of control*
5)	Solvita®	> 5 *Index value*

f. Nutrient Content: provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B.
1) Total Nitrogen content 0.9% or above preferred.
2) Boron: Total shall be <80 ppm; Soluble shall be <2.5 ppm

g. Salinity: Must be reported; may vary but < 4.0 mmhos/cm preferred. Soil should also be tested: <2.5 mmhos/cm is preferred for soil/compost blend but may vary with plant species.

h. pH: pH shall be between 6.5 and 8. May vary with plant species.

i. Particle size: 95% passing a 1/2" screen.

j. Bulk density: shall be between 500 and 1100 dry lbs/cubic yard

k. Moisture Content shall be between 35% - 55% of dry solids.

l. Inerts: compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 0.1 % by weight or volume.

m. Weed seed/pathogen destruction: provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.

n. Select Pathogens: Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <10000 MPN/gram.

1) Trace Contaminants Metals (Lead, Mercury, Etc.) Product must meet US EPA, 40 CFR 503 regulations.

3. The delivery tags indicating the quantity delivered to the job site shall be submitted by contractor as part of the maintenance record. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or heat (120F) upon delivery or rewetting shall not be used.

F. MAINTAIN ORGANIC MULCH

1. Contractor shall maintain a minimum of 4" of coarse organic mulch at all times over soil surface that is not covered by vegetation. 1" of compost as described in Section 3.3 E shall be applied one time only to the swale banks and tops along the road shoulder. Do not place compost over AB road shoulder, gravel paved

shoulder or any other paved area or storm drain. Mulch materials shall be chipped or shredded green waste, wood chips from pruning operations, or chipped landscape prunings. When available, use materials generated on-site. Shredded redwood bark mulch ("Gorilla hair") shall be avoided. Non porous material (e.g. plastic weed barriers) shall not be placed under the mulch.

2. Apply mulch annually to maintain 4" thick layer. As needed, apply mulch to bare areas when these areas exceed approximately 40% of cover. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch, tapered as needed to transition to existing grade.
3. Topdress top and sides of all swale areas with 1" layer of compost at start of project. Do not place over pavement.
4. Replenish all mulched areas with a 2-3" layer to maintain 4" thick layer throughout all landscape areas.
5. Keep root crowns of all plants free of compost, mulch and debris.

6. Apply mulch in August or September (after wildflowers have seeded and died). Apply compost and mulch on top of dead annuals and around trees and perennials, avoiding root crowns. Taper mulch and compost application in watering basins and at edge of hardscape to maintain mulch layer ½" below adjacent shoulder.

G. RETAIN NATURAL LEAF LITTER AND CLIPPINGS

To conserve nutrients on-site and protect the soil surface, Contractor shall retain natural leaf drop under trees or in shrub beds. Select only tree and shrub beds that will not allow leaf litter or mulch to wash out into storm drains. Where leaf litter detracts from landscape appearance due to large leaf size, it is preferable that leaves be chopped and returned to landscape beds. Remove diseased leaves that would provide inoculums for plant infection.

H. FERTILIZERS AND OTHER SOIL AMENDMENTS

1. Bay-Friendly Landscaping relies on organic fertilizers and soil amendments from natural sources that release elements slowly, which shall be preferred.
2. Additional amendments and fertilizers that are approved for use by the Organics Materials Research Institute (OMRI) for use in crop production are approved for use in landscape. See www.omri.org. Contractor must supply fertilizer and soil amendment labels including the guaranteed analysis identifying components of the material and the percent nutrient content. Contractor is required to apply the appropriate amount of fertilizer to supply the specified quantity of nutrient as determined by soil analysis and/or plant tissue analysis.
3. Contractor shall apply and manage fertilizers and amendments to prevent pollution of surface and ground water and to avoid creating a nitrogen draft in the soil or toxicity to plants.
4. Application frequency
   Fertilizers shall be applied on a prescription base only. Application frequency shall be determined by plant need and assessed through soil and/or tissue analyses. For bidding purposes the following maximum annual number of applications are provided.
   a. Trees, shrubs, woody ground covers: One time per year
   b. Herbaceous ground covers, perennials: Two times per year
5. Restricted materials. Fertilizers that are not approved or are restricted for use in crop production by OMRI shall be applied only after review and written approval by the Agency Representative.

3.4 Water Management

A. WATER CONSERVATION GOALS

Landscapes shall be irrigated to as needed maintain plant appearance and health, and avoid overspray and water damage to Agency's hardscape and property.

B. IRRIGATION ASSESSMENT

1. There is no on-site irrigation system.
2. Irrigation shall be applied as needed to maintain plant health and survival. Application may be from water truck, gel pack or other system subject to Agency approval. Irrigation with recycled water is preferred.
3. Irrigation intervals and frequency shall be suitable for weather conditions, soil infiltration rates, and plant species' rooting depth and water requirements within each hydrozone. Calculation methods are described in *A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California*, available from the Dept. of Water Resources, Sacramento, CA.
4. Irrigation frequency shall be based on soil moisture and ET (evapotranspiration) data (available through CIMIS). Irrigation shall be applied at approximately 80% allowable depletion (AD) for drought tolerant plantings. Enough water shall be applied at each irrigation cycle to wet through the depth of root zone.
5. Landscape irrigation shall not be applied during high wind or high temperature conditions.
6. Use soil probe at each landscape visit to evaluate soil moisture conditions and need for supplemental irrigation application.

3.5 Integrated Pest Management (IPM)

A. GOALS

An Integrated Pest Management program shall be implemented to:

1. Maintain healthy, attractive plants, maximize resistance to pests and out-compete weeds;
2. Monitor for presence of pests and to evaluate pest impact to plant health and appearance, and nuisance to the public;
3. Provide control treatments that have minimal negative effects on all but the pest and that protect air and water quality. Contractor shall assume pesticides are potentially hazardous to human and environmental health. Preference shall be given to reasonably available non-pesticide alternatives when considering the use of pesticides on Agency property.

B. INSECTS AND DISEASES

1. Key plant: key pests. Contractor shall identify primary plant species and cultivars in the landscape (key plants) and the pests that commonly cause significant harm to plant health or appearance (key pests).
2. Monitoring. Contractor shall monitor landscape areas monthly to identify presence of beneficial insects and pests, determine populations, life stage, and degree of damage to plants. Key plants/key pests will be

monitored closely during normal periods of pest activity. This information will be the basis on which pest control methods are initiated. Records of monitoring activity shall be kept.

3. Controls. Bay-Friendly Landscaping seeks to control pests without harming non-target organisms, or negatively affecting air and water quality and public health. It relies on IPM which uses a range of cultural, mechanical, physical, and biological control methods before using pesticides. Chemical controls are applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control is applied. Pesticides are not applied on a prescheduled basis.

C. CULTURAL/MECHANICAL/PHYSICAL METHODS

Adjust maintenance practices or modifications as needed to make the environment unfavorable for pest reproduction, movement, or survival. This can include modifying an existing maintenance practice, such as timing of pruning or fertilization. Other mechanical or physical practices may be utilized, including:

1. Fertilize and irrigate only when needed, to foster a healthy soil.
2. Prune to remove infected or infested branches and shoots. Time pruning to avoid periods of insect infestation.
3. Remove fallen twigs, leaves, and fruit that contains disease inoculum.
4. Mulch soil surface to reduce weeds and to reduce splashing and the drops of mud that would protect spores deposited on plant surfaces.
5. Mechanical traps can be used to control rodents.
6. Bringing to attention of Agency plants that are disease or insect prone and suggesting resistant plant replacements or those better suited to the site and microclimate.

D. BIOLOGICAL METHODS

Biological controls are pesticides of natural origin that have limited or no adverse effects on the environment or beneficial organisms. Determining the effective biological control and proper timing of application are critical to success in pest control. The Contractor shall consider the following biological control methods when cultural/mechanical/physical methods are not adequate to lower pest populations to the target level.

1. *Bacillus thuringiensis* (Bt)
2. Parasitic nematodes
3. Pheromone traps
4. Beneficial insect release and conservation

E. PESTICIDES

The term pesticide applies to insecticides, fungicides and other substances used to control pests. Antimicrobial agents are not included in this definition of pesticides.

1. Least toxic pesticides. When cultural, mechanical, physical and biological controls have provided inadequate pest control, the Contractor may select and apply an appropriate least-toxic pesticide as a last resort. Least-toxic pesticides have a high LD-50, low residual, and narrow range of toxicity. Application must be timed to the appropriate life stage of the pest. Examples are:

a. insecticidal soaps,
b. horticultural oils,
c. herbicidal soaps,
d. Neem,
e. Pyriproxyfen insect growth regulator (e.g. Distance IGR)

2. Restricted chemicals. Organophosphate-containing pesticides have been found to persist in the environment and cause water quality impairment of some creeks, streams, and arroyos in Alameda County. They are restricted from use. Examples include:

a. diazinon, trade names Spectracide®, Knox-out® b. chlorpyrifos, trade names Dursban®, Pageant®) c. malathion and carbaryl (trade name Sevin®)

Pyrethroids and pyrethrins containing piperonyl butoxide (PBO) are restricted from use. Pyrethrins are toxic to birds, fish, and beneficial insects, should be used only as a last resort, and carefully applied to avoid runoff and contact with non-target plants.

Contractor shall not apply any Toxicity Category I or II Pesticide Product, any pesticide containing a chemical identified by the State of California as a chemical known to the State to cause cancer or reproductive toxicity pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986, and any pesticide classified as a human carcinogen, probable human carcinogen or possible human carcinogen by the United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.

3. All chemical applications shall be performed by a licensed, trained technician. Contractor must be a licensed Pest Control Operator as required by the State of California, registered in Alameda Co., and strictly adhere to all laws.

4. Notice of pesticide use. Signs shall be posted at least three days before application of the pesticide product and remain posted at least four days after application of the pesticide.

a. Signs shall be posted (i) at every entry point where the pesticide is applied if the pesticide is applied in an enclosed area, and (ii) in highly visible locations around the perimeter of the area where the pesticide is applied if the pesticide is applied in an open area.
b. Signs shall be of a standardized design that are easily recognizable to the public and workers. c. Signs shall contain the name and active ingredient of the pesticide product, the target pest, the date of pesticide use, the signal word indicating the toxicity category of the pesticide product, the date for re-entry to the area treated, and the name and contact number for the City department responsible for the application.
d. Contractor shall not be required to post signs in right-of-way locations that the general public does not use for recreational purposes (north side and medians). However, Contractor shall notify Agency in writing three days prior to pesticide applications in the right-of-way areas (south side pedestrian/bicycle path).
e. Contractor may obtain authorization from the Agency to apply a pesticide without providing a three-day advance notification in the event of a public health emergency or to comply with worker safety requirements. Signs shall be posted for at least four days after application of

the pesticide, as described herein.

5. Recordkeeping and reporting

a. Contractor shall maintain records of all pest management activities. Each record shall include the following information:
- target pest;
- type and quantity of pesticide used;
- site of the pesticide application;
- date the pesticide was used;
- name of the pesticide applicator;
- application equipment used;
- prevention and other non-chemical methods of control used.

b. Contractor shall submit the pest management record to Agency on a monthly basis.

F. WEED MANAGEMENT

1. Landscapes shall be maintained in a healthy and attractive manner using Bay-Friendly methods.
2. Contractor shall be familiar with California native wildflower species and educate all workers in plant identification so that native wildflower species (applied as part of project hydroseeding) are not removed from site. Mulch may be applied over dead annual wildflowers in late summer/early fall.
3. Identify key weeds: Contractor will identify key weeds present and design a weed management program to target those species.
4. Invasive plants. Refer to www.bayfriendly.org or www.cal-ipc.org for a list of invasive species. Remove all invasive plants not planted intentionally.
5. Controls. Cultural/Mechanical/physical methods will be used as the first choice in weed management.
6. Monitor planting areas frequently to identify and eradicate weeds early in the growth stage prior to their setting seed. Cut or pull weeds using hand operated equipment where possible.
7. Mulches shall be maintained at all times over soil surface that is not covered by vegetation. See Section 3.3 for application and maintenance of 4" mulch layer.
8. Propane-fueled flamers may be used in winter and spring with required permits and approval by the Fire Marshall to kill early-season, non-grass weeds by heating the cells until they burst. The weed quickly wilts and dies.
9. Least toxic herbicides may be employed by Contractor as a last resort. Examples are:
    - Fatty acid potassium salts (herbicidal soaps e.g. Safer's Superfast Weed and Grass Killer® Dr. Bonner's Peppermint Anti-Bacterial Soap; example only, not an endorsement)
    - Acetic and citric acids (e.g. Nature's Glory Weed and Grass Killer RTU®)
    - Clove, citrus, mint and thyme oil (e.g. Matran II®, Xpress®)
    - Corn gluten
    - Low-toxic, low-residual herbicide [e.g. glyphosate (Round-up®), glufosinate-ammonium
    - (Finale®), pelargoic acid (Scythe®)
10. Restricted herbicides that may not be used because they have been identified as ground water contaminants are (trade names in parentheses):

- Atrazine (Aatrex)
- Simazine (Princep)
- Bromacil (Hyvar, Krovar)
- Prometon (Pramitol)
- Bentazon (Basagran)
- Norflurazon (Solicam, Predict, Zorial)

11. Restricted herbicides that may not be used because they have been identified as a compost contaminant are:

- Picloram
- Clopyralid

G. VERTEBRATE PESTS

1. Identify key pests that significantly affect plant health and appearance. Accurate identification is critical to appropriate control. Common vertebrate pests are rodents including rats, mice, voles, moles, gophers, deer and rabbits

2. Controls. Mechanical/physical/cultural methods shall be implemented as a first course of action. Preferred treatments include:

- Exclusion – Protect plants from damage by grazing animals with fences or cages.
- Habitat modification – Reduce cover at the site periphery
- Application of repellents that are suitable for use in public areas.
- Traps may be used where mechanical/physical/cultural methods have been insufficient to control moles, voles, gophers, rats and mice
- Encouragement of predators – owl boxes
- Least toxic rodenticides—last resort in severe infestation

3.6 Plant Growth Control

A. GOALS

The goals of plant growth control are to maintain healthy, attractive plants within the planting space allotted with minimal removal and disposal of vegetative growth. Avoid excessive irrigation or fertilization that would trigger plant growth that would require additional pruning or mowing to manage.

B. PRUNING

1. Selective pruning. Plants shall be pruned selectively to remove individual stems or branches that extend beyond the natural conformation of the plant to a lateral branch or at the point of attachment. Woody groundcovers shall be selectively pruned to control growth towards pavements rather than edged.
2. Hedging and shearing. Shearing of plants into formal shapes shall be avoided as this destroys the natural form of the plant and generates excessive waste. Plants having adequate space for development shall instead be selectively pruned on an as needed basis. Where plant size must be controlled because of inadequate space for the plant at certain locations, prune to reduce size by cutting individual branches or stems to interior lateral branches.
3. Tree Pruning. Tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning.

C. FIRE MANAGEMENT/DEFENSIBLE SPACE

Manage growth of grasses, shrubs and trees adjacent to fences to minimize fire risk. Contractor shall maintain vegetation clearances as required by the Alameda County Fire Marshall. Where recommended clearances would negatively affect plant health or environmental quality, Contractor shall contact the Fire Marshall for a field inspection and recommendation.

3.7 Waste Management

A. GOALS

Bay Friendly landscapes are maintained to minimize producing waste and to use as much of the plant debris generated on-site as is possible and to recycle plant debris and discarded materials to the maximum extent feasible at appropriate recycling centers to avoid adding it to landfill.

B. RETAIN NATURAL LEAF LITTER

To conserve nutrients on-site and protect the soil surface, Contractor shall retain natural leaf drop and other organic materials in shrub beds. Where leaf litter detracts from landscape appearance due to large leaf size, it is preferable that leaves be chopped and returned to landscape beds. Remove diseased leaves that would provide inoculum for plant infection. Leaf litter shall not be accumulated in bioswale areas or where it blocks drainage facilities.

C. DEBRIS REMOVAL AND CLEAN-UP

Contractor shall keep all landscaped areas and paths free from trash and debris. Debris clean up with brooms and rakes is preferred to blowers. Contractor is encouraged to chip all vegetative materials and wood and use on site as mulch.

D. RECYCLE WASTE

Contractor shall separate all plant debris that cannot be reused on site and other discarded materials that are readily recyclable and transport to appropriate recycling facilities. If shrub and tree trimmings or prunings must be removed from site, they must be kept free of other types of debris and transported to a local composting facility or transfer station that offers a separate processing of plant debris for composting.

Section 4: Landscape Specifications for Plant Types and Landscape Zones

4.1 Ground Cover and Shrubs

A. STANDARDS FOR HEALTH AND APPEARANCE

Ground covers shall be maintained to sustain an attractive, healthy, normal color for the species, and uniform density with no bare spots. Ground covers shall be kept free of trash and debris.

B. PROTECT ENVIRONMENTAL RESOURCES

Ground cover shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy, minimize waste, and reuse and recycle materials to the extent possible.

C. EDGING AND MOWING

1. Ground covers shall be trimmed if needed to maintain pavements and other features clear of vegetation.
2. The edge of woody ground covers (e.g. ceanothus, arctostaphylos) shall be maintained by pruning individual branches or stems to interior lateral branches a minimum of 6" and maximum of 12" from the edge of pavement.
3. When ground covers become excessively woody or develop thatch in excess of 4", the Contractor shall prune the planting severely to rejuvenate it. For most woody ground covers, prune to approximately 6-8" height. Herbaceous ground covers may be mowed at an appropriate height, generally 4-6". This treatment shall only be applied in the late winter/early spring when ET is low and regrowth will occur quickly.

5. Handling of plant debris. Contractor is encouraged to chip all vegetative materials used on site as mulch and/or compost and use as soil amendment. If ground cover prunings must be removed from site, they must be kept free of other types of inorganic debris and transported to a local composting facility or transfer station that offers a separate processing of plant debris for composting.

D. MULCHING

Contractor shall maintain a minimum of 4" of coarse organic mulch at all times over all landscape area, including swale, that is not covered by groundcover or plants (see Section 3.3). Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch. Transition areas adjacent to sidewalks and at root crowns to keep the finish grade of the mulch at an appropriate level. Mulch materials shall be 1" compost on swales sides and top, and 4" total chipped or shredded plant debris wood chips. When available, utilize chipped plant prunings generated on-site.

E. WATER MANAGEMENT

1. Plants shall be irrigated to provide adequate water to maintain an attractive, green, healthy plants, and moderate growth rate during its growing season.
2. Use soil probe to evaluate soil moisture and determine need for supplemental irrigation to maintain healthy plants.
3. Avoid applying water to hardscape surfaces or in excess of soil infiltration rate.

F. SOIL AND NUTRITION MANAGEMENT

1. Contractor shall incorporate composted organic amendments into soil prior to replanting damaged plants.
2. Fertilization shall be managed to provide moderate, not excessive, growth, and avoid polluting surface and ground waters.
3. Fertilizer applications are to be made on a prescription basis only when soil and/or plant tissue analyses identify specific deficiencies.

4. Contractor shall select fertilizers that are released over a period of time, predominately are organic and derived from natural sources, are produced locally, and will not pollute surface and ground water when properly used to provide primary nutrient needs of the ground cover.

G. PEST MANAGEMENT

1. Contractor is responsible for monitoring plant growth to identify, assess pest problems and taking action to control pests that affect ground cover health and appearance when pest populations or damage exceed established thresholds.
2. Contractor shall employ integrated pest management procedures.
3. Contractor shall select pest controls to provide adequate pest control without harming non-target organisms, or negatively affect air and water quality and public health. Pest management shall rely first on cultural, mechanical, physical, and biological control methods. Chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control will be applied. Pesticides may not applied on a prescheduled basis.
4. Contractor shall not apply restricted chemicals that may harm water resources.

4.2 Trees

A. STANDARDS FOR HEALTH AND APPEARANCE

Trees shall be maintained to sustain an attractive, healthy and structurally stable plant that is characteristic for the species.

B. PROTECT ENVIRONMENTAL RESOURCES

Trees shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy, minimize waste, and reuse and recycle materials to the extent possible.

C. PRUNING

1. All tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning. Arborist must have a State of Calif. Contractor's License for Tree Service (C61-D49).
2. All pruning shall be in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).
3. Young trees shall receive annual pruning for up to five years after planting by personnel trained in pruning to develop tree structure. The purpose of the pruning is to direct the tree into the appropriate form for the species and the site and to develop a strong branch structure. Trees with co-dominant trunks and multiple branch attachments shall be pruned to correct those defects over a period of several years.
4. Trees shall be pruned in the following manner:
    a. Clear the crown of diseased, crossing, weak and dead branches. Trees shall not be routinely thinned.

b. Provide 14’ vertical clearance over roads, 10’ over bicycle path, walkway and sidewalks/bus stops.
c. Reduce end weight on heavy, horizontal branches.
d. Create a strong central trunk with lateral branches spaced vertically and horizontally. e.
Interior branches shall not be stripped out.
f. No more than 20% of live foliage shall be removed within the trees. g.
Trees shall not be climbed with spurs.
h. Branch removal or reduction cuts (thinning cuts) are to be employed rather than heading cuts. i.
Trees shall not be topped or headed back.

5. Schedule pruning to avoid time of bud break, flowering and leaf drop on live branches, and to avoid peak periods of insect and disease activity for pests to which the tree species is susceptible.
6. Pruning operations shall be conducted in a manner that does not damage surrounding and understory plants and structures.

D. STAKING

1. Tree stakes, ties and guys shall be checked regularly to ensure trees are not being damaged. Adjust ties and stake as necessary to prevent girdling and wounding. Remove nursery stakes and green ties during initial site visit.
2. Tree stakes shall be removed within three to five years of planting. For trees unable to stand alone after two years, Contractor will shorten the stakes and lower the ties to 3-4’ height. If after the third year the tree will not stand without a stake, Contractor will inspect to determine cause of instability, and make recommendations to Agency for corrective action.
3. If new ties are needed to secure tree to stake, use ties composed of recycled materials. The tie must be broad, have a smooth surface where it contacts the trunk, and provide some elasticity. Wire covered with hose, tubing or other materials, and covered electrical wire are not acceptable materials.

E. MULCHING

Contractor shall maintain a minimum of 4” of coarse organic mulch at all times over all planted areas, see Section 3.3. Do not place mulch over root crowns or against trunks. Mulch shall be applied so that it is below grade (curb, edging,etc.) by half an inch. Mulch materials shall be compost and chipped or shredded plant debris and/or wood chips from pruning operations. When available, utilize chipped landscape prunings generated on-site.

F. WATER MANAGEMENT

Trees shall be irrigated to encourage deep root growth and to provide adequate water to maintain an attractive, healthy plants, and a moderate growth rate during their growing season. Use soil probe to evaluate soil moisture needs.

G. SOIL AND NUTRITION MANAGEMENT

1. Fertilization shall be managed to provide moderate, not excessive, growth, and to avoid polluting surface and ground waters.
2. Fertilizer applications are to be made on a prescription basis only when soil and/or plant tissue analyses identify specific deficiencies. Additional fertilization of mature trees may not be necessary.

3. Contractor shall select fertilizers that are released over a period of time, are predominantly organic and derived from natural sources, are produced locally, and will not pollute surface and ground water when properly used to provide the primary nutrient needs of the tree.

H. PEST MANAGEMENT

1. Contractor is responsible for monitoring trees to identify, assess pest problems and taking action to control pests that affect tree health and appearance when pest populations or damage exceed established thresholds.
2. Contractor shall employ integrated pest management procedures
3. Contractor shall select pest controls to provide adequate pest control without harming non-target organisms, or negatively affect air and water quality and public health. Pest management shall rely first on cultural, mechanical, physical, and biological control methods. Chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control will be applied. Pesticides may not applied on a prescheduled basis.
4. Contractor may not apply restricted chemicals that may harm water resources.

4.3 Bioswales, Raingardens and Biorention areas

A. STANDARDS FOR HEALTH AND APPEARANCE AND FUNCTION

BIoretention features include hydroseeded swale, log check dams, and storm drain inlets. Swales shall be maintained to allow filtering runoff slowly through the active layer of soil. They shall be maintained to ensure that flow is not obstructed, erosion is prevented and they continue to be effective without causing flooding or harboring vectors.

B. PROTECT ENVIRONMENTAL RESOURCES

Bioswales depend on soils that are biologically active and held together by plant roots. They shall be maintained using materials and methods that support this biological activity, protect environmental quality and human health, conserve water and energy, minimize waste, and reuse and recycle materials to the extent possible.

C. MONITORING AND INSPECTION

1. Inspect inlets for channels and exposure of soils and report to the Agency if evidence of erosion is found. Examine rock or other material and report to the Agency if it requires replacement, or soil replenishment.
2. Inspect inlets and slopes for instability, erosion or obstructions. Report indications of problems to Agency.
3. Observe soil at the bottom of the swale for uniform infiltration. Confirm that irrigation is adequate but not excessive. Report water that does not drain within 48 hours of a storm.
4. Confirm that check dams and tree retaining walls are in place and level. Report problems to Agency.

D. SEDIMENT CONTROL

Clear minor obstructions and inspect for accumulation of sediment. Contractor shall remove accumulated sediment in swales by hand and around catch basins and culverts as necessary to maintain adequate flow.

E. VEGETATION MANAGEMENT

Examine vegetation to ensure that it is healthy, adequately but not overwatered, and dense enough to provide filtering. Remove debris. Prune large trees and shrubs as per previous Sections. Weeds and invasive plant species shall be controlled. Refer to www.cal-ipc.org for list of invasive species. Do not remove wildflowers or native perennials.

G. MOSQUITO ABATEMENT

Areas of seasonal water collection that do not drain within 48 hours shall be reported to Agency.

4.4 Hardscape

A. DEBRIS REMOVAL AND CLEAN-UP

Contractor shall keep pathways, shoulders and landscaped areas free from trash and debris.

B. SURFACE CLEANING

Contractor shall clean hard surfaces as needed to remove accumulation of sediment, dirt, or other materials that distracts from the visual impact of the area or creates a safety hazard.

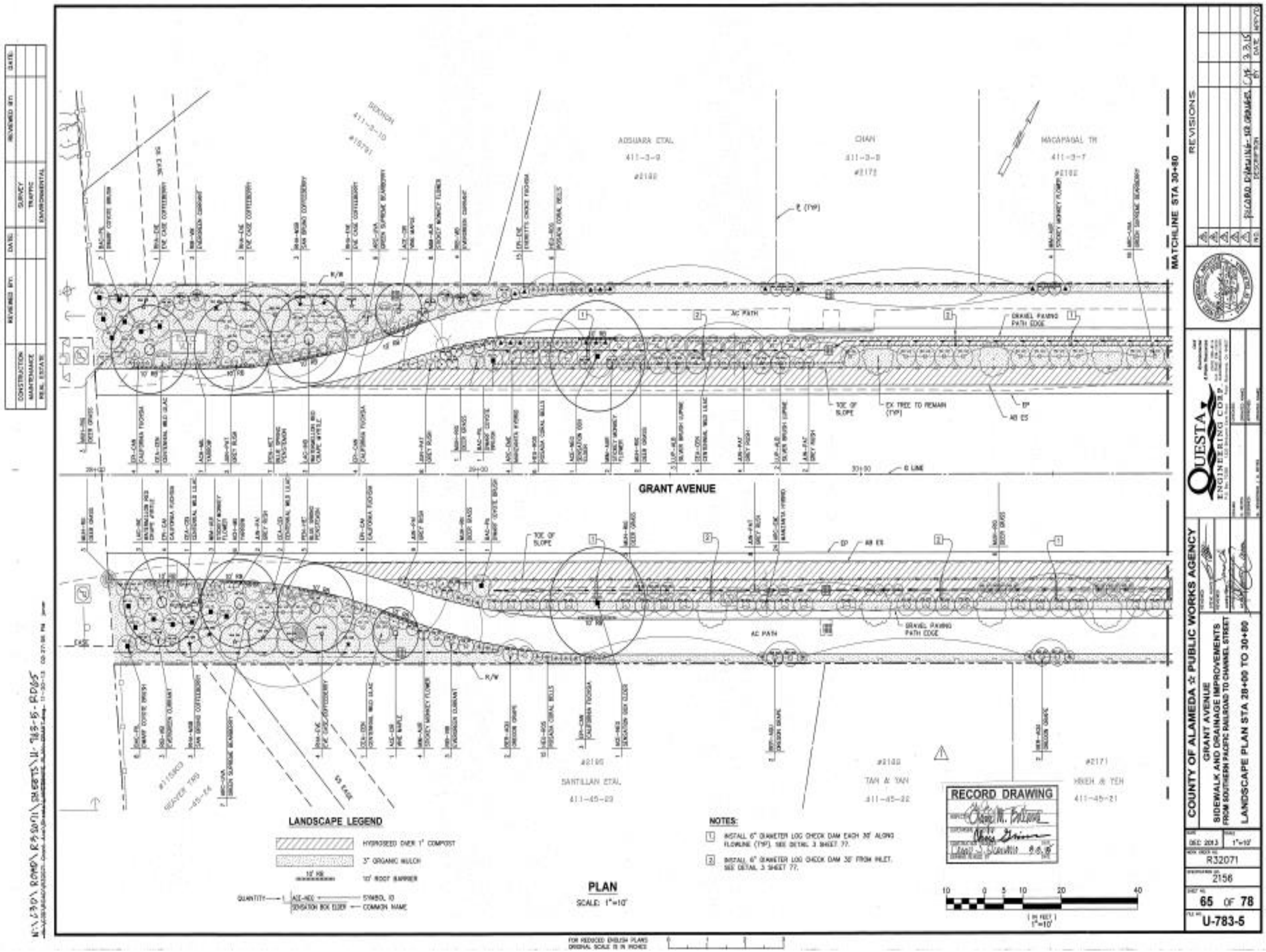
C. ROOT INTERFERENCE

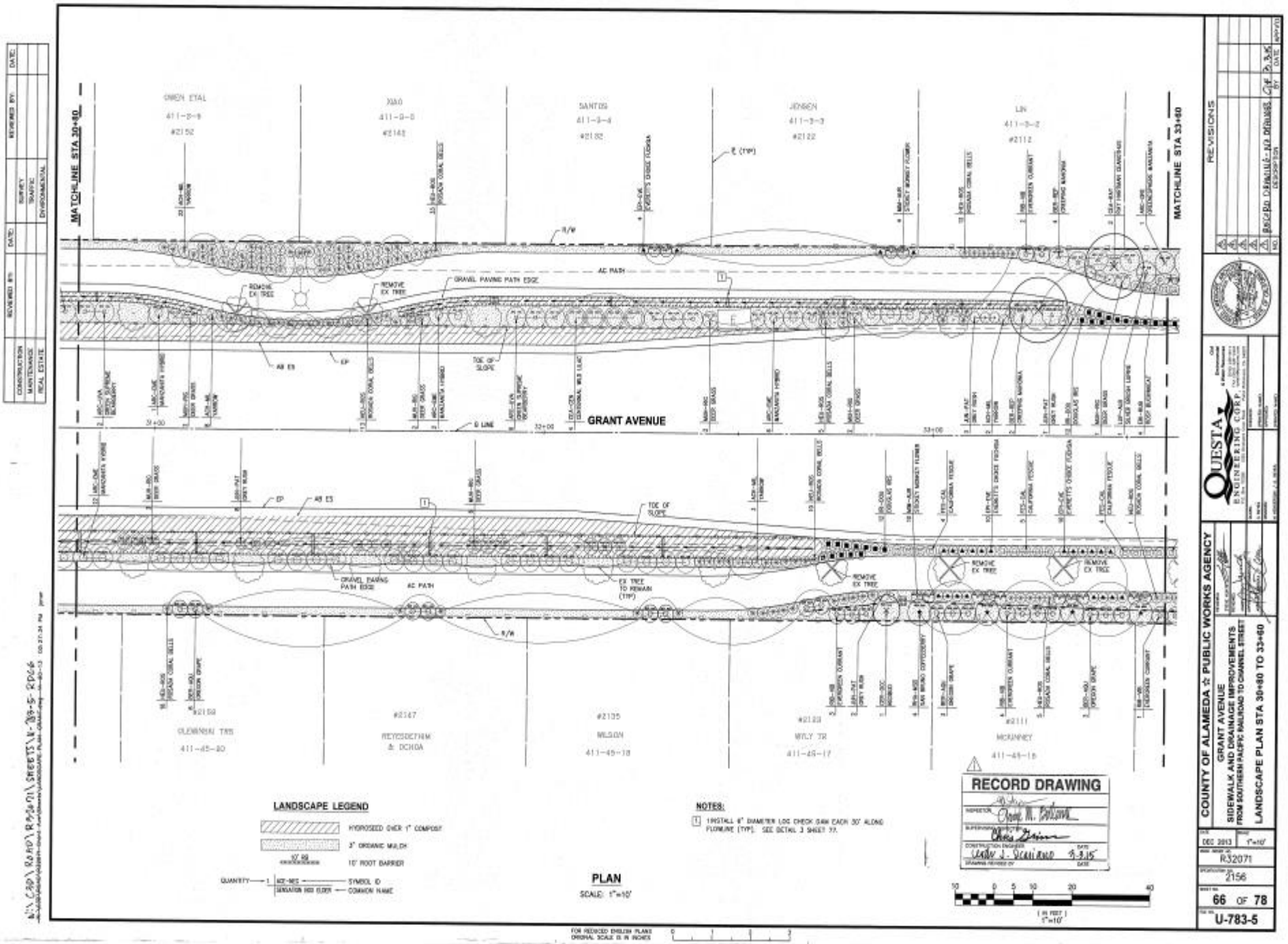
Potential root damage to hardscapes shall be reported to Agency. Corrective action will be determined and directed as an extra service.

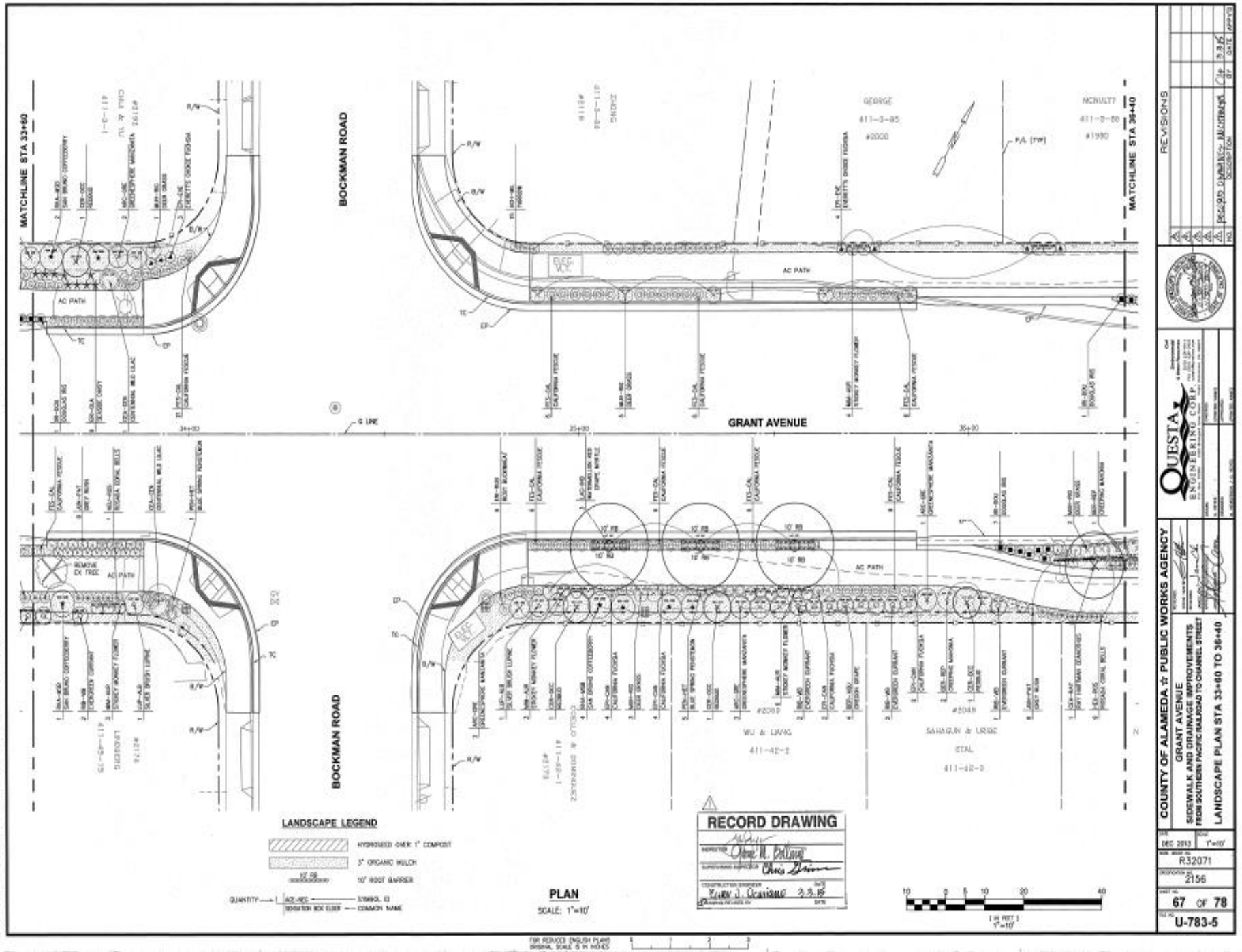
D. Where possible, use dry cleaning methods (such as the use of absorbing materials for oils and sweeping) over wet. Minimize use of any soaps or solvents. Where water is used, direct wash water into the landscape instead of a storm drain.

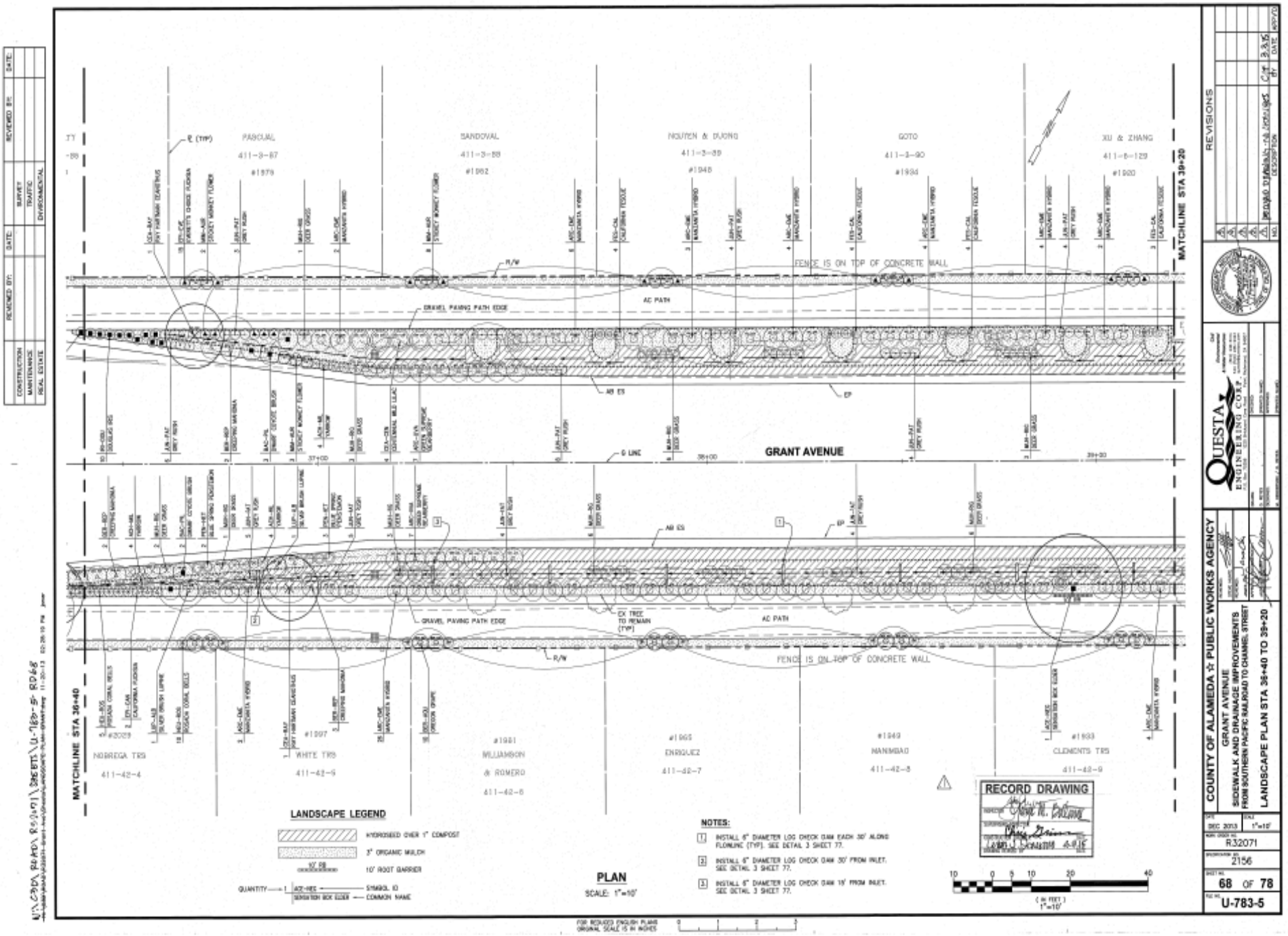
Section 5: Definitions

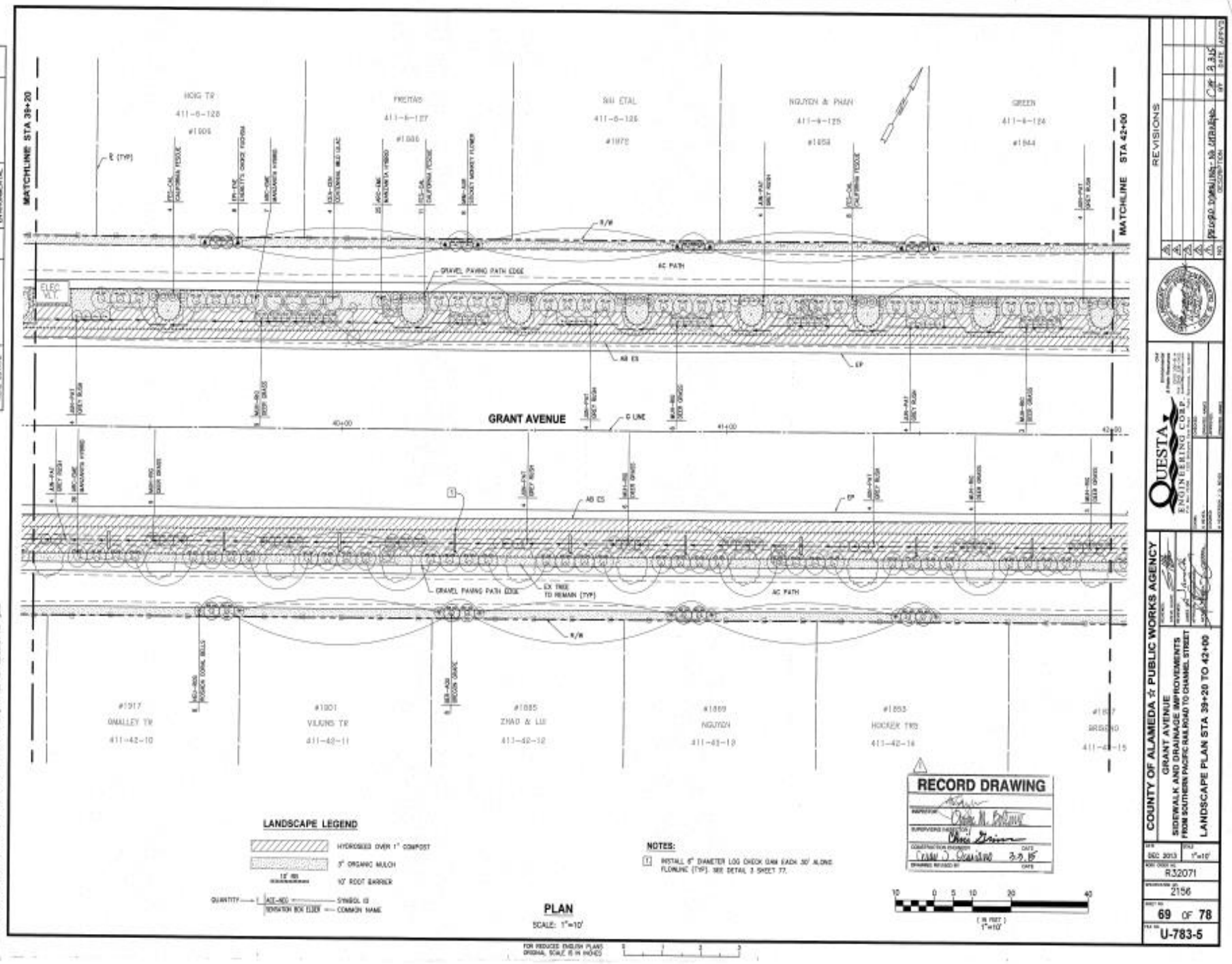
Antimicrobial agent – Any substance or mixture of substances intended for inhibiting the growth of or destroying any bacteria, fungi pathogenic to human and other animals, or viruses declared to be pests under Section 12754.5 of the California Food and Agricultural Code, except slime control agents. Antimicrobial agents include, but are not limited to, disinfectants, sanitizers, bacteriostats, sterilizers, fungicides and fungistats.
Biodiesel – A fuel produced through a process in which organically-derived oils such as soybean or vegetable oil are combined with alcohol.
Bioswale - Channel constructed to improve the water quality of runoff, usually while also conveying it, through filtering by vegetation and other mechanisms that capture and hold water pollutants.
Blanket – Mat of organic, biodegradable materials such as coir fibers, straw or curled wood fiber, on or between photodegradable polypropylene or degradable natural fiber netting. The blanket is placed on the soil surface to protect from surface erosion.
CIMIS – California Irrigation Management Information System http://www.cimis.water.ca.gov/
Evaportranspiration (ET) – The combined loss of water from a given area, and during a specified period of time, by evaporation from the soil surface and by transpiration from plants.
Hardscape – The hard-surface components of the landscape such as sidewalks, pavements, non-living features.
Hydrozone – A portion of a landscaped area having plants with similar water needs that are served by one irrigation valve or set of valves with the same schedule.
I.S.A – International Society of Arboriculture, www.isa-arbor.com
Integrated Pest Management – A holistic approach to managing insects, plant disease, weeds and other pests so that their populations do not exceed a tolerable level by fostering an environment favorable for plants and other beneficial organisms and unfavorable for pests. If pest problems arise a variety of control techniques are considered, with least toxic pesticides being applied as a last resort.
Pesticide – As defined in Section 12753 of the California food and Agricultural Code, a pesticide includes any of the following: (a) Any spray adjuvant. (b) Any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever. Antimicrobial agents are excluded from the definition of pesticide. “Toxicity Category I Pesticide Product” means any pesticide product that meets United States Environmental Protection Agency criteria for Toxicity Category I under Section 156.10 of Part 156 of Title 40 of the Code of Federal Regulations. “Toxicity Category II Pesticide Product” means any pesticide product that meets United States Environmental Protection Agency criteria for Toxicity Category II under Section 156.10 of Part 156 of Title 40 of the Code of Federal Regulations.
Sock, Tube or Wattle – Sleeve filled with mulch, straw, or other organic, biodegradable material to create long tube placed along a slope to slow water movement and retain sediment.

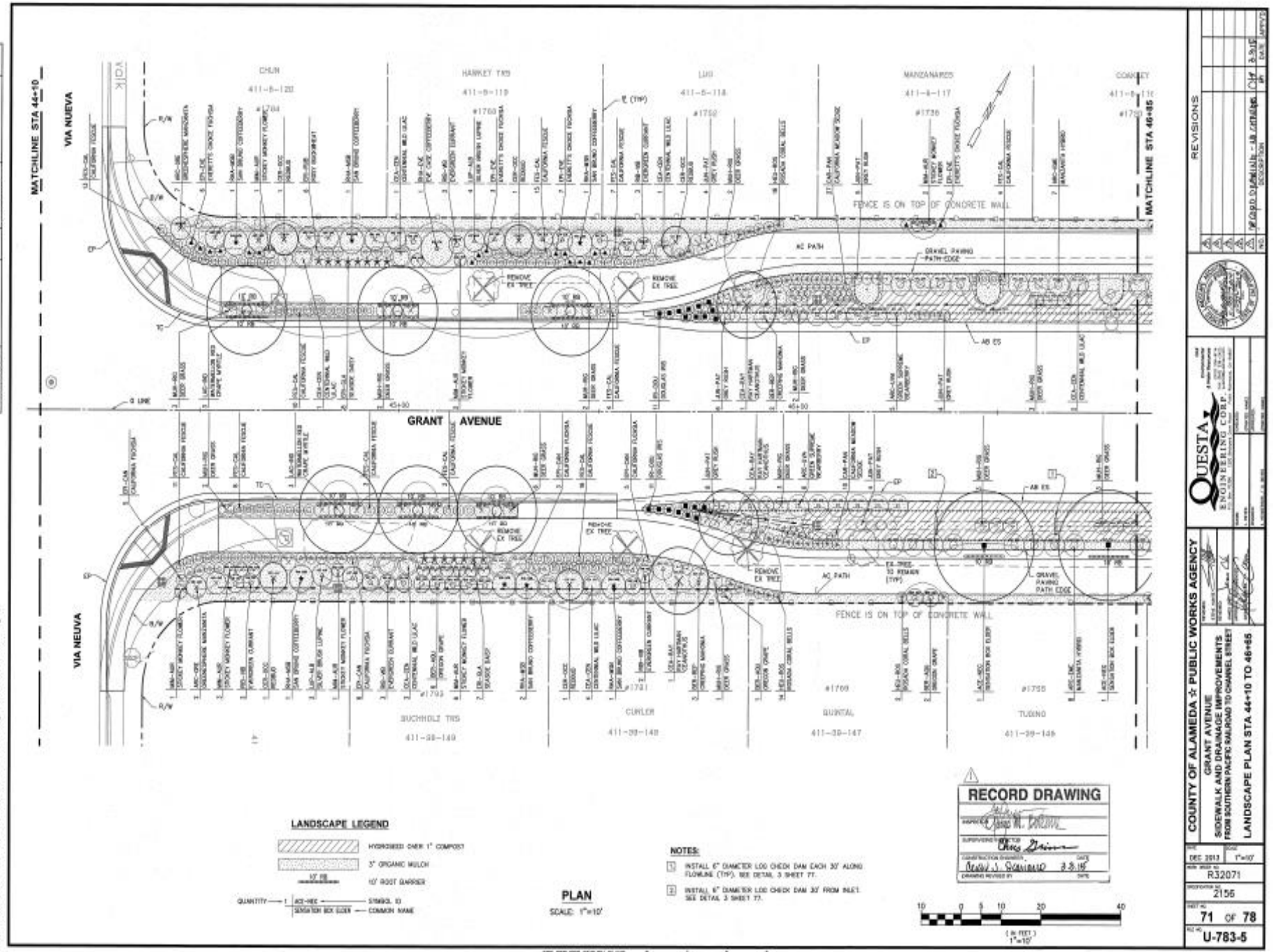

GRANT AVENUE
MATCHLINE STA 30+80
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
QUANTITY
SYMBOL ID
COMMON NAME
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
2 INSTALL 6" DIAMETER LOG CHECK DAM 30' FROM INLET. SEE DETAIL 3 SHEET 77.
PLAN
SCALE: 1"=10'
RECORD DRAWING
REVISIONS
QUESTA ENGINEERING CORP.
COUNTY OF ALAMEDA PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 28+00 TO 30+80
DEC 2013
1"=10'
R32071
2156
65 OF 78
U-783-5

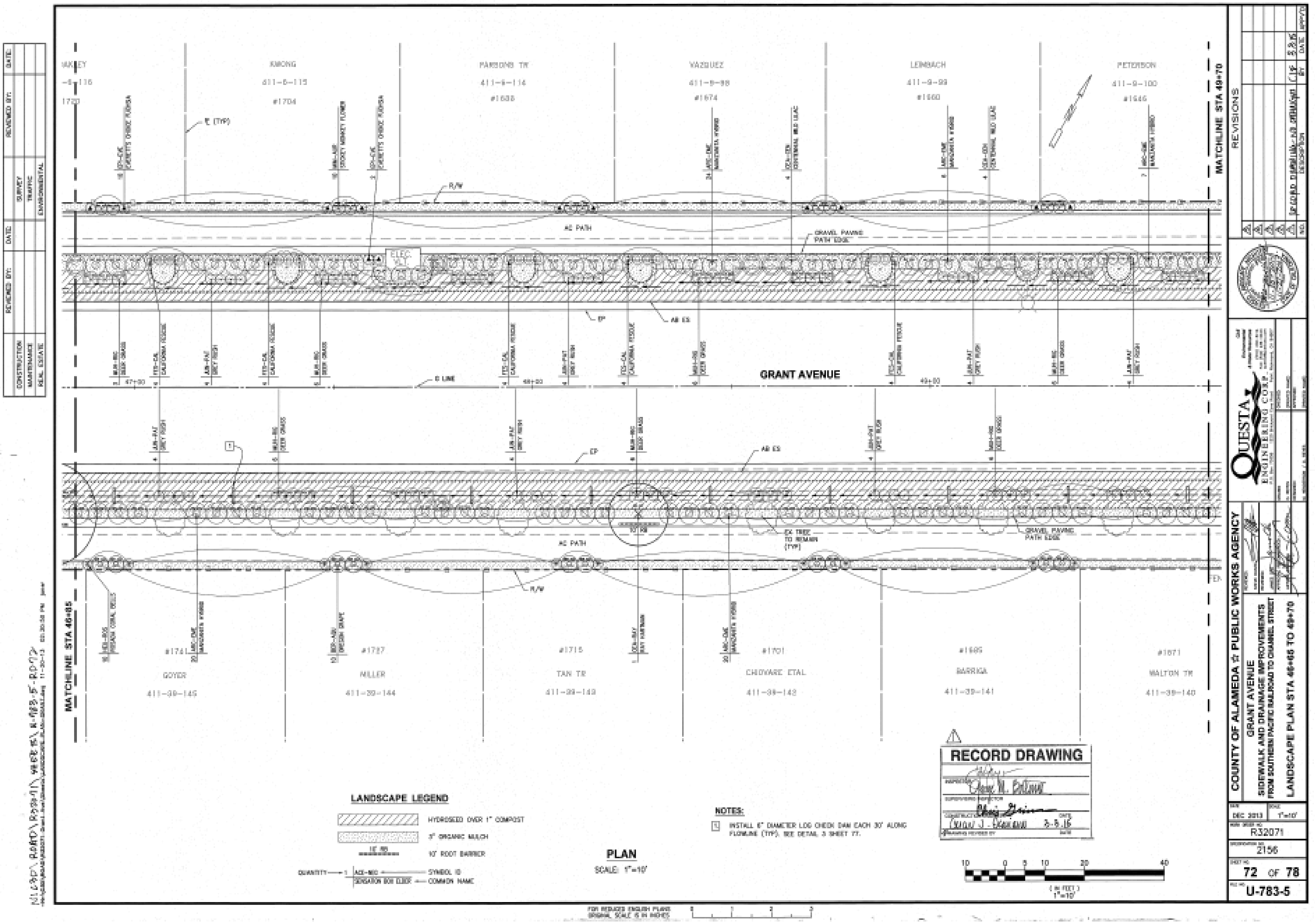

MATCHLINE STA 30+60
MATCHLINE STA 33+60
GRANT AVENUE
AC PATH
GRAVEL PAVING PATH EDGE
REMOVE EX TREE
EX TREE TO REMAIN (TYP)
TOE OF SLOPE
EP
AB ES
R/W
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
PLAN
SCALE: 1"=10'
RECORD DRAWING
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 30+60 TO 33+60
R32071
2156
66 OF 78
U-783-5

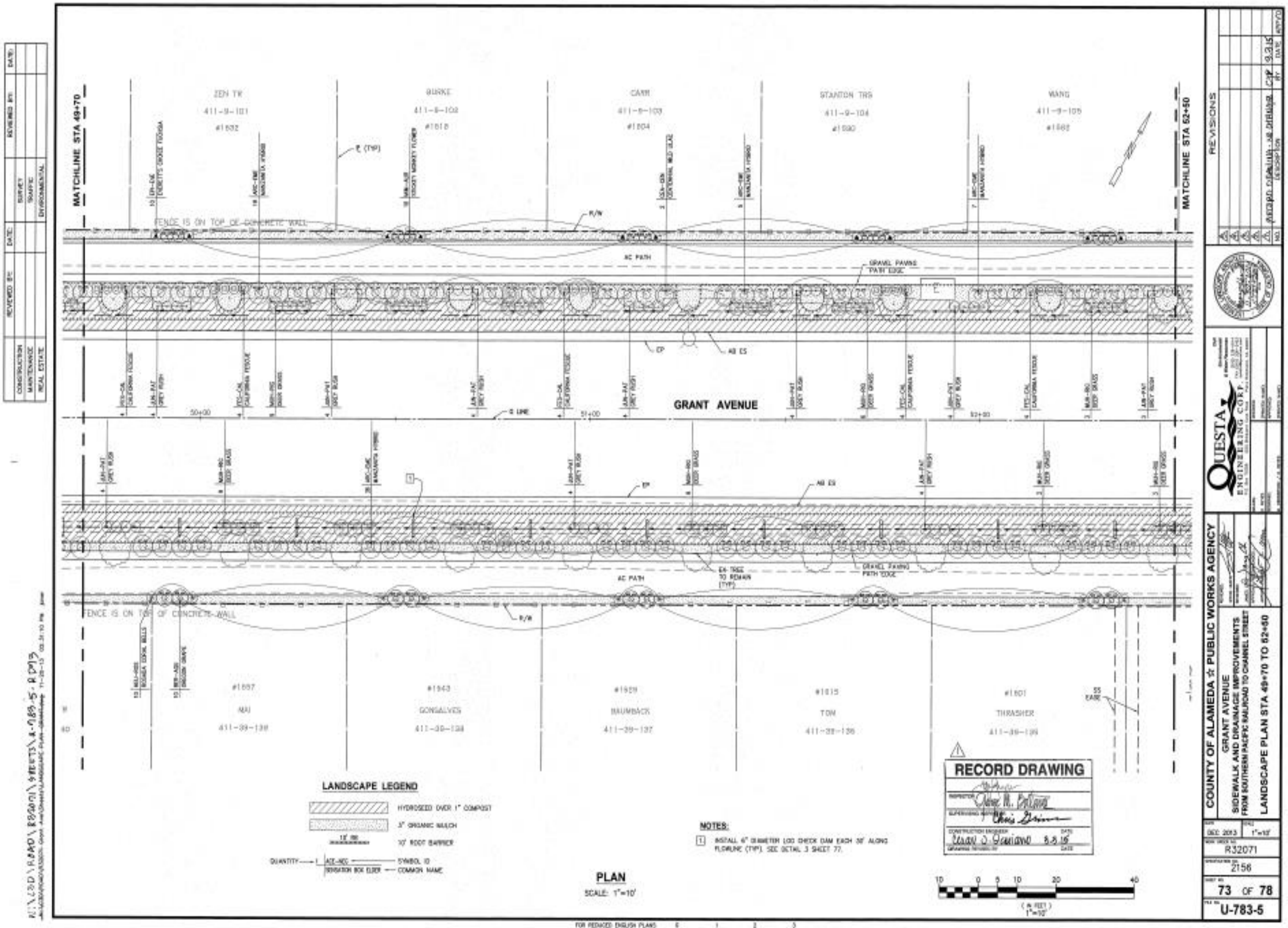

MATCHLINE STA 33+60
BOCKMAN ROAD
MATCHLINE STA 36+40
GRANT AVENUE
AC PATH
REMOVE EX TREE
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
PLAN
SCALE: 1"=10'
RECORD DRAWING
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 33+60 TO 36+40
QUESTA ENGINEERING CORP.
REVISIONS
DEC 2013
1"=10'
R32071
2156
67 OF 78
U-783-5


GRANT AVENUE
MATCHLINE STA 36+40
MATCHLINE STA 39+20
PASCUAL
411-3-87
#1979
SANDOVAL
411-3-88
#1962
NGUYEN & DUONG
411-3-89
#1948
GOTO
411-3-90
#1934
XU & ZHANG
411-3-129
#1920
NOBREGA TRS
411-42-4
WHITE TRS
411-42-6
#1981
WILLIAMSON & ROMERO
411-42-6
#1965
ENRIQUEZ
411-42-7
#1949
MANIMBAO
411-42-8
#1933
CLEMENTS TRS
411-42-9
FENCE IS ON TOP OF CONCRETE WALL
AC PATH
GRAVEL PAVING PATH EDGE
EX TREE TO REMAIN (TYP)
R/W
EP
AB ES
℄ LINE
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
2 INSTALL 6" DIAMETER LOG CHECK DAM 30' FROM INLET. SEE DETAIL 3 SHEET 77.
3 INSTALL 6" DIAMETER LOG CHECK DAM 15' FROM INLET. SEE DETAIL 3 SHEET 77.
RECORD DRAWING
PLAN
SCALE: 1"=10'
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 36+40 TO 39+20
DEC 2015
1"=10'
R32071
2156
68 OF 78
U-783-5
QUESTA ENGINEERING CORP.
REVISIONS


MATCHLINE STA 39+20
MATCHLINE STA 42+00
GRANT AVENUE
HONG TR
411-6-128
#1906
FREITAS
411-6-127
#1886
SHI ETAL
411-6-126
#1872
NGUYEN & PHAN
411-6-125
#1858
GREEN
411-6-124
#1844
O'MALLEY TR
411-42-10
#1917
VILUNS TR
411-42-11
#1901
ZHAO & LUI
411-42-12
#1885
NGUYEN
411-42-13
#1869
HOOKER TRS
411-42-14
#1853
411-42-15
#1837
GRAVEL PAVING PATH EDGE
AC PATH
EX TREE TO REMAIN (TYP)
AB ES
EP
C LINE
R/W
ELEC VLT
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
QUANTITY
SYMBOL ID
COMMON NAME
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 2 SHEET 77.
RECORD DRAWING
PLAN
SCALE: 1"=10'
(IN FEET)
1"=10'
REVISIONS
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 39+20 TO 42+00
QUESTA ENGINEERING CORP.
DESIGNED
DRAWN
CHECKED
DATE
DEC 2013
1"=10'
RJ2071
2156
69 OF 78
U-783-5


MATCHLINE STA 44+10
MATCHLINE STA 46+85
VIA NUEVA
GRANT AVENUE
FENCE IS ON TOP OF CONCRETE WALL
AC PATH
GRAVEL PAVING PATH EDGE
REMOVE EX TREE
EX TREE TO REMAIN (TYP)
CHUN
411-B-120
HARKEY TRS
411-B-119
LUO
411-B-118
MANZANARES
411-B-117
COMBEY
411-B-116
BUCHHOLZ TRS
411-39-149
CURLER
411-39-148
QUINTAL
411-39-147
TUGEND
411-39-146
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
2 INSTALL 6" DIAMETER LOG CHECK DAM 30' FROM INLET. SEE DETAIL 3 SHEET 77.
PLAN
SCALE: 1"=10'
RECORD DRAWING
REVISIONS
QUESTA ENGINEERING CORP.
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 44+10 TO 46+85
DEC 2013
1"=10'
R32071
2156
71 OF 78
U-783-5


GRANT AVENUE
MATCHLINE STA 46+65
MATCHLINE STA 49+70
REVISIONS
RECORD DRAWING
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
NOTES:
INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
PLAN
SCALE: 1"=10'
COUNTY OF ALAMEDA PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 46+65 TO 49+70
QUESTA ENGINEERING CORP.
DEC 2013
1"=10'
R32071
2156
72 OF 78
U-783-5


MATCHLINE STA 49+70
MATCHLINE STA 52+50
GRANT AVENUE
ZEN TR
BURKE
CARR
STANTON TRS
WANG
MAI
GONSALVES
BAUMBACK
TOM
THRASHER
FENCE IS ON TOP OF CONCRETE WALL
AC PATH
GRAVEL PAVING PATH EDGE
EX TREE TO REMAIN (TYP)
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
QUANTITY
SYMBOL ID
COMMON NAME
NOTES:
1 INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
PLAN
SCALE: 1"=10'
RECORD DRAWING
REVISIONS
QUESTA ENGINEERING CORP.
COUNTY OF ALAMEDA PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 49+70 TO 52+50
DEC 2013
1"=10'
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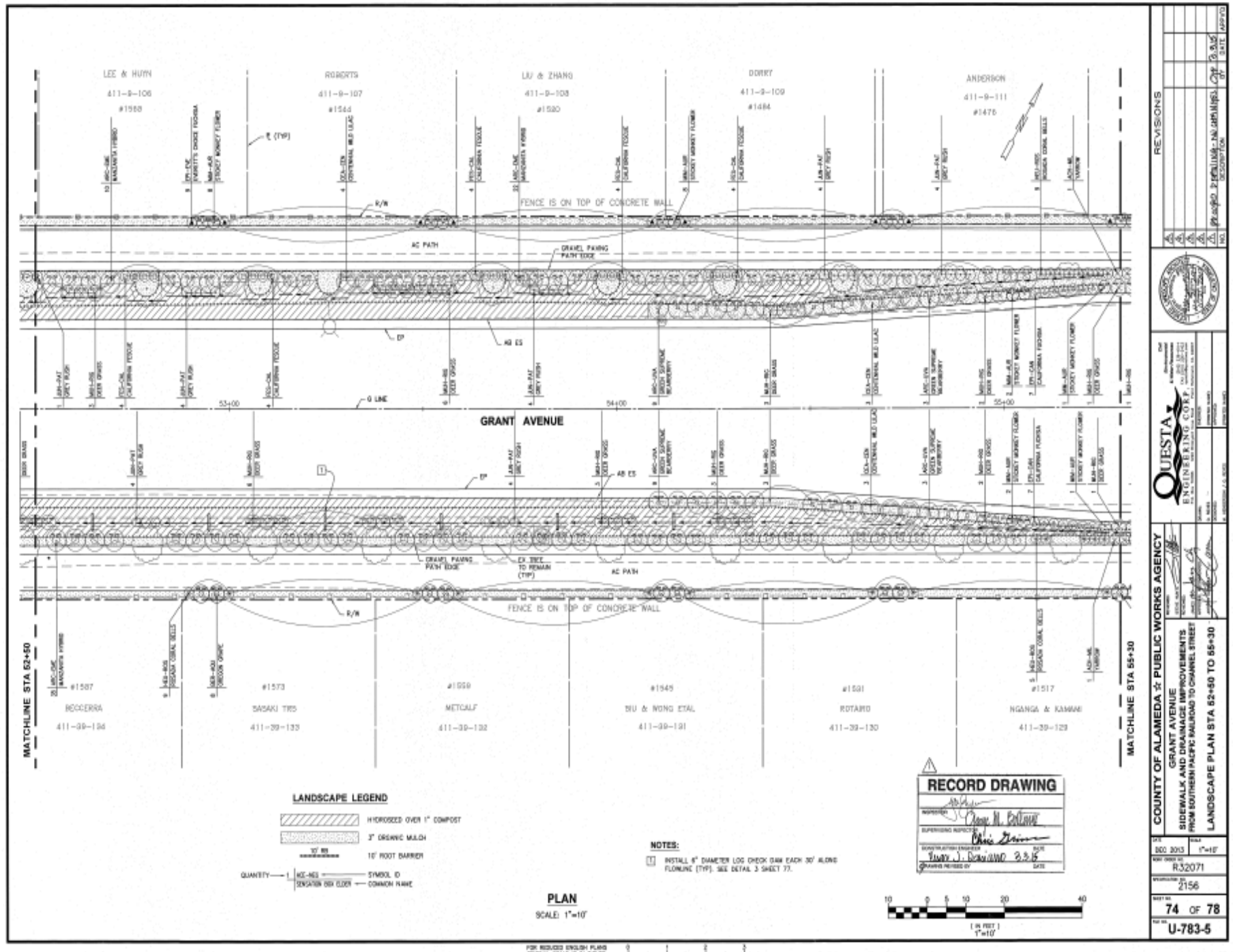
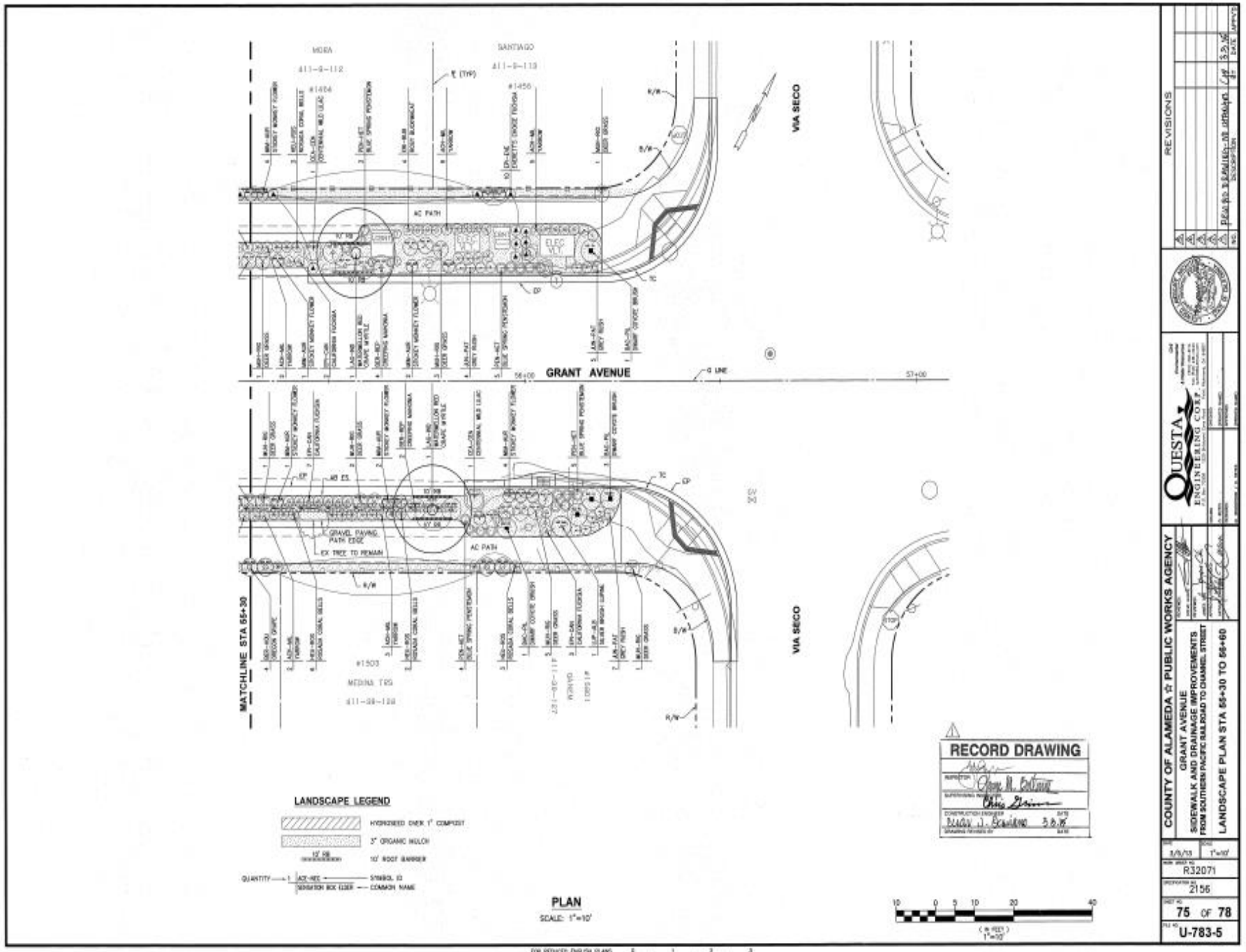
U-783-5


LEE & HUYN
411-9-106
#1568
ROBERTS
411-9-107
#1564
LIU & ZHANG
411-9-108
#1520
DORRY
411-9-109
#1484
ANDERSON
411-9-111
#1476
FENCE IS ON TOP OF CONCRETE WALL
AC PATH
GRAVEL PAVING PATH EDGE
GRANT AVENUE
53+00
54+00
55+00
MATCHLINE STA 52+50
MATCHLINE STA 55+30
#1587
BECCERRA
411-39-134
#1573
SASAKI TRS
411-39-133
#1559
METCALF
411-39-132
#1545
SIU & WONG ETAL
411-39-131
#1531
ROTARIO
411-39-130
#1517
NGANGA & KAMANI
411-39-129
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
SYMBOL ID
COMMON NAME
NOTES:
INSTALL 6" DIAMETER LOG CHECK DAM EACH 30' ALONG FLOWLINE (TYP). SEE DETAIL 3 SHEET 77.
RECORD DRAWING
PLAN
SCALE: 1"=10'
REVISIONS
QUESTA ENGINEERING CORP
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN STA 52+50 TO 55+30
DEC 2013
1"=10'
RJ2071
2156
74 OF 78
U-783-5


GRANT AVENUE
VIA SECO
MATCHLINE STA 55+30
AC PATH
GRAVEL PAVING
PATH EDGE
EX TREE TO REMAIN
LANDSCAPE LEGEND
HYDROSEED OVER 1" COMPOST
3" ORGANIC MULCH
10' ROOT BARRIER
PLAN
SCALE: 1"=10'
RECORD DRAWING
REVISIONS
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHAMBEL STREET
LANDSCAPE PLAN STA 55+30 TO 56+60
QUESTA ENGINEERING CORP.
R32071
2156
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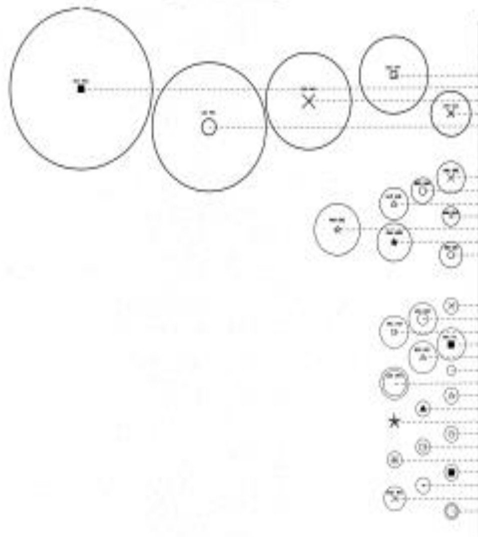
U-783-5

PLAN SYMBOLS



PLANT LIST

GRANT AVENUE SAN LORENZO STREETSCAPE BFL PLANT LEGEND

QUANTITY	SYMBOL ID	BOTANICAL NAME	COMMON NAME	CONT.SIZE	SIZE(HxW)	WATER REQ.	REFERENCE	SPACING	NATIVE
TREES									
2	ACE-CIR	Acer circinatum	Vine maple	5 GAL	12' X 12'	MOD	WUCOLS	12'	Y
5	ACE-NEG	Acer negundo 'Sensation'	Sensation Box Elder	15 GAL	30' X 30'	MOD	WUCOLS	30'	Y
9	CEA-RAY	Ceanothus 'Ray Hartman'	Ray Hartman ceanothus	15 GAL	15' x 15'	VERY LOW	WUCOLS	15'	Y
11	CER-OCC	Cercis occidentalis	Redbud	15 GAL	8' X 8'	VERY LOW	WUCOLS	8'	Y
17	LAG-IND	Lagerstroemia indica 'Watermelon Red'	Red crape myrtle	15 GAL	20' x 20'	LOW	WUCOLS	20'	N
REPLACE *	EXISTING	Schinus Molle	California Pepper	48" BOX					
44	TREE SUBTOTAL								
SHRUBS									
19	ARC-GRE	Arctostaphylos 'Greensphere'	Greensphere manzanita	5 GAL	5' X 5'	NONE-OCC	EBMUD	5'	Y
48	BER-AQU	Berberis aquifolium	Oregon grape	5 GAL	3'x4'	NONE-OCC	EBMUD	4'	Y
18	LUP-ALB	Lupinus albifrons	Silver Bush Lupine	5 GAL	3'-5'x3-5'	NONE-OCC	EBMUD	4'	Y
148	MIM-AUR	Mimulus aurantiacus	Sticky Monkey Flower	5 GAL	3'-4'x3'-4'	NONE	EBMUD	4'	Y
16	RHA-EVE	Rhamnus californica 'Eve Case'	Eve Case coffeeberry	5 GAL	4' x 8'	LOW	WUCOLS	8'	Y
24	RHA-BRR	Rhamnus californica 'Mound San Bruno'	San Bruno coffeeberry	5 GAL	7' x 8'	LOW	WUCOLS	8'	Y
33	RIB-VIB	Ribes viburnifolium	Evergreen currant	5 GAL	3-6' x 4-12'	LOW	WUCOLS	4'	Y
301	SHRUB SUBTOTAL								
GROUND-COVER									
111	ACH-MIL	Achillea millefolium	Yarrow	1 GAL	12"-36"x 2'	OCC-MOD	CNP	2'	Y
436	ARC-PIE	Arctostaphylos 'Emerald Carpet'	Manzanita hybrid	1 GAL	5' x 5'	VERY LOW	WUCOLS	5'	Y
116	ARC-UVA	Arctostaphylos 'Green Supreme'	Green supreme bearberry	1 GAL	1'x6'	NONE-OCC	EBMUD	10'	Y
27	BAC-PIL	Baccharis pilularis 'Santa Ana'	Dwarf coyote brush	1 GAL	1' x 4'	VERY LOW	WUCOLS	5'	Y
32	BER-REP	Berberis repens	Creeping mahonia	1 GAL	1' x 5'	LOW	WUCOLS	5'	Y
37	CAR-PAN	Carex pansa	California Meadow Sedge	1 GAL	12"high	INF-REG	CNP	1'	Y
68	CEA-CEN	Ceanothus 'Centennial'	Centennial Wild Lilac	1 GAL	8"-12"high	OCC-OCC	CNP	10'	Y
102	EPI-CAN	Epilobium canum	California Fuchsia	1 GAL	1' x 2.5'	NONE-OCC	EBMUD	4'	Y
121	EPI-EVE	Epilobium canum 'Everett's Choice'	Everett's Choice Fuchsia	1 GAL	1' x 2.5'	LOW	WUCOLS	5'	Y
24	ERI-GLA	Erigeron glaucus 'Sea Breeze'	Seaside daisy	1 GAL	1' x 2.5'	LOW	WUCOLS	2.5'	Y
38	ERI-RUB	Eriogonum grande rubescens	Rosy Buckwheat	1 GAL	2'x2'	NONE-OCC	EBMUD	2.5'	Y
286	FES-CAL	Festuca californica	California Fescue	1 GAL	1-2' x 2-3'	OCC-MOD	EBMUD	2.5'	Y
287	HEU-ROS	Heuchera 'Rosada'	Rosada Coral Bells	1 GAL	1.5' x 2.5'	OCC-MOD	CNP	2.5'	Y
63	IRI-DOU	Iris Douglasiana	Douglas Iris	1 GAL	1' x 2'	OCC-OCC	CNP	2.5'	Y
326	JUN-PAT	Juncus Patens	Gray Rush	1 GAL	1' x 2'	OCC-REG	CNP	2'	Y
288	MUH-RIG	Muhlenbergia rigens	Deer Grass	1 GAL	3'x3'	NONE-OCC	EBMUD	3'	Y
42	PEN-HET	Penstemon heterophyllus 'Blue Spring'	Blue Spring Penstemon	1 GAL	1' x 2.5'	OCC-OCC	CNP	2.5'	Y
2402	GROUNDCOVER SUBTOTAL								
2797	PLANT LIST TOTAL								
		California Coastal Wildflower Mix	20 lbs/acre/27,400 SF		1'x 2'	NONE-OCC	CNP	SEED	Y
		Achillea millefolium	White yarrow						
		Elegans clarkia	Elegant farewell to spring						
		Collinsia heterophylla	Chinese houses						
		Coreopsis lanceolata	Lance leaf coreopsis						
		Eschscholzia californica	California poppy						
		Gilia capitata	Globe gilia						
		Layia platyglossa	Tidy tips						
		Linum grandiflorum var. rubrum	Scarlet flax						
		Linum lewisii	Blue flax						
		Lobularia maritima	Sweet alyssum						
		Lupinus bicolor	Pygmy leaf lupine						
		Lupinus succulentus	Arroyo lupine						
		Papaver rhoeas	Flanders poppy						
		Oenothera hookeri	Evening primrose						
		Native Ornamental Fine Fescue Mix	70 lbs/acre/27,400 SF		1' x 2'	NONE-OCC	CNP	SEED	Y
						75% MINIMUM			% NATIVE
						98%			99%

NOTE: COMBINE THE CALIFORNIA COSTAL WILDFLOWER MIX AND THE NATIVE ORNAMENTAL FINE FESCUE MIX INTO ONE TOTAL MIX AT A TOTAL APPLICATION RATE OF 90 LBS/ACRE OVER 27,400 SF (0.629 ACRES)

REPLACE* = Existing California Pepper trees that are damaged by the Contractor shall be replaced in kind, quantity and location with 48" BOX California Pepper trees

A plant that is adapted to summer dry climates must be identified by a third party reference. Below is a list of sources that qualify with the following classifications:

- EBMUD - Plants and Landscapes for Summer-Dry Climates of the San Francisco Bay Region by EBMUD – "infrequent" or "occasional" or "no summer water", plants that are "occasional to moderate" water may qualify if they are in the appropriate climate and exposure.
- CNP- California Native Plants for the Garden by Bornstein, Fross & O'Brien – "occasional" or "infrequent" or "drought tolerant"
- SUNSET- Sunset Western Garden Book - "little" or "no water"
- WUCOLS - Water Use Classification of Landscape Species)- "Low" or "Very Low" water.

BAY FRIENDLY LANDSCAPE PLANTING NOTE:

1. AREAS UNDER TREE AND SHRUB CANOPIES AND 10 FEET FROM STORM DRAINS TO REMAIN AS LEAF REPOSITORIES.
2. ALL TREES TO BE REMOVED TO BE CHIPPED ON SITE AND USED AS MULCH.
3. ANY ADDITIONAL PEPPER TREES REMOVED AS PART OF PROJECT IMPLEMENTATION AND NOT SHOWN ON DEMOLITION PLANS SHALL BE REPLACED AT A 1:1 RATIO WITH 15 GC XXXX.
4. TEMPORARY TOPSOIL STORAGE SHALL BE LOCATED WITHIN PROJECT SITE IN AREAS TO BE LANDSCAPED. TOPSOIL PILES SHALL NOT BE HIGHER THAN SIX FEET, AND SHALL BE PROTECTED FROM EROSION IN ACCORDANCE WITH SWPPP REQUIREMENTS.
5. DO NOT STORE MATERIALS OR EQUIPMENT WITHIN DRIPLINES OF EXISTING TREES.
6. DO NOT TILL, PLANT, OR OTHERWISE WORK THE SOIL WHEN SOILS ARE SATURATED.
7. PLANTING HOLES TO BE EXCAVATED TO A MINIMUM DEPTH OF 12" TO RELIEVE COMPACTION AND AMENDED WITH COMPOST MULCH IN ACCORDANCE WITH THE SOILS REPORT AND SPECIFICATIONS.
8. ALL EXISTING TREES TO REMAIN DURING CONSTRUCTION SHALL BE PROTECTED WITH TEMPORARY FENCING AT LEAST 3 FEET MAX. FROM TRUNK.

MAINTENANCE REQUIREMENTS

9. REPLENISH MULCH AS NEEDED TO MAINTAIN A MINIMUM 3" MULCH TOPDRESSING OVER ALL SITE SOILS NOT HYDROSEEDED DURING PROJECT MAINTENANCE PERIOD.
10. USE ONLY COMPOST OR NON-SYNTHETIC FERTILIZERS DURING MAINTENANCE PERIOD.
11. UTILIZE INTEGRATED PEST MANAGEMENT DURING MAINTENANCE PERIOD.
12. DO NOT REPAIR EQUIPMENT OR USE LEAKING EQUIPMENT AT PROJECT SITE.
13. LANDSCAPE MAINTENANCE EQUIPMENT TO USE BIO-BASED LUBRICANTS AND/OR ALTERNATIVE FUELS.
14. DO NOT USE PESTICIDES PROHIBITED BY THE ORGANIC RESEARCH MATERIALS INSTITUTE.
15. BAY FRIENDLY MAINTENANCE TASK LIST:
    a. WEED OR REMOVE INVASIVE SPECIES FROM SITE.
    b. WATER PLANTS TO SUPPORT HEALTHY GROWTH AND SURVIVAL.
    c. REMOVE TRASH AND DEBRIS FROM SITE AND RECYCLE WASTE.
    d. REPLENISH 3" MULCH IN ALL SOIL AREAS.
    e. INSPECT PLANTS FOR HEALTH OR PEST PROBLEMS.
    f. IDENTIFY AND REMOVE BROKEN BRANCHES OR SAFETY HAZARDS.

LANDSCAPE LEGEND

HYDROSEED OVER 1" COMPOST

3" ORGANIC MULCH

10' ROOT BARRIER

QUANTITY — SYMBOL ID — COMMON NAME

RECORD DRAWING

COUNTY OF ALAMEDA PUBLIC WORKS AGENCY

GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET

LANDSCAPE PLAN - PLANT LIST

QUESTA ENGINEERING CORP.

REVISIONS

DEC 2013 | AS SHOWN

R32071

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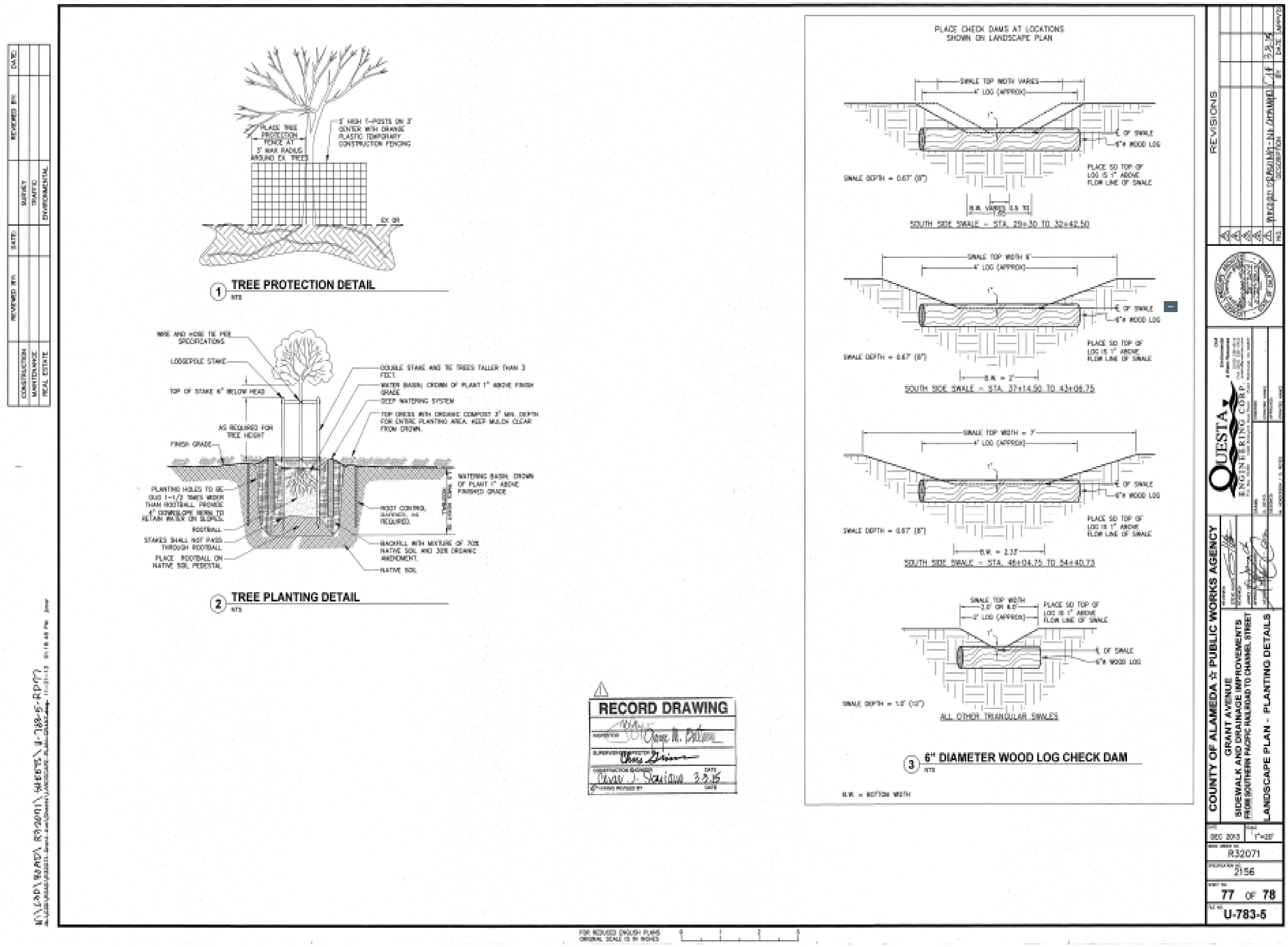
FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES


TREE PROTECTION DETAIL
NTS
PLACE TREE PROTECTION FENCE AT 5' MAX RADIUS AROUND EX. TREES
5' HIGH T-POSTS ON 3' CENTER WITH ORANGE PLASTIC TEMPORARY CONSTRUCTION FENCING
EX GR
TREE PLANTING DETAIL
NTS
WIRE AND HOSE TIE PER SPECIFICATIONS
LODGEPOLE STAKE
TOP OF STAKE 6" BELOW HEAD
AS REQUIRED FOR TREE HEIGHT
FINISH GRADE
DOUBLE STAKE AND TIE TREES TALLER THAN 3 FEET.
WATER BASIN; CROWN OF PLANT 1" ABOVE FINISH GRADE
DEEP WATERING SYSTEM
TOP DRESS WITH ORGANIC COMPOST 3" MIN. DEPTH FOR ENTIRE PLANTING AREA. KEEP MULCH CLEAR FROM CROWN.
WATERING BASIN; CROWN OF PLANT 1" ABOVE FINISHED GRADE
PLANTING HOLES TO BE DUG 1-1/2 TIMES WIDER THAN ROOTBALL. PROVIDE 4" DOWNSLOPE BERM TO RETAIN WATER ON SLOPES.
ROOTBALL
STAKES SHALL NOT PASS THROUGH ROOTBALL.
PLACE ROOTBALL ON NATIVE SOIL PEDESTAL
ROOT CONTROL BARRIERS, AS REQUIRED.
BACKFILL WITH MIXTURE OF 70% NATIVE SOIL AND 30% ORGANIC AMENDMENT.
NATIVE SOIL
PLACE CHECK DAMS AT LOCATIONS SHOWN ON LANDSCAPE PLAN
SWALE TOP WIDTH VARIES
4' LOG (APPROX)
℄ OF SWALE
6"ø WOOD LOG
PLACE SO TOP OF LOG IS 1" ABOVE FLOW LINE OF SWALE
SWALE DEPTH = 0.67' (8")
SOUTH SIDE SWALE - STA. 29+30 TO 32+42.50
SWALE TOP WIDTH 6'
B.W. = 2'
SOUTH SIDE SWALE - STA. 37+14.50 TO 43+08.75
SWALE TOP WIDTH = 7'
B.W. = 2.33'
SOUTH SIDE SWALE - STA. 46+04.75 TO 54+40.73
SWALE TOP WIDTH 2.0' OR 6.0'
2' LOG (APPROX)
SWALE DEPTH = 1.0' (12")
ALL OTHER TRIANGULAR SWALES
6" DIAMETER WOOD LOG CHECK DAM
NTS
B.W. = BOTTOM WIDTH
RECORD DRAWING
REVISIONS
COUNTY OF ALAMEDA PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN - PLANTING DETAILS
QUESTA ENGINEERING CORP.
DEC 2013
1"=20'
R32071
2156
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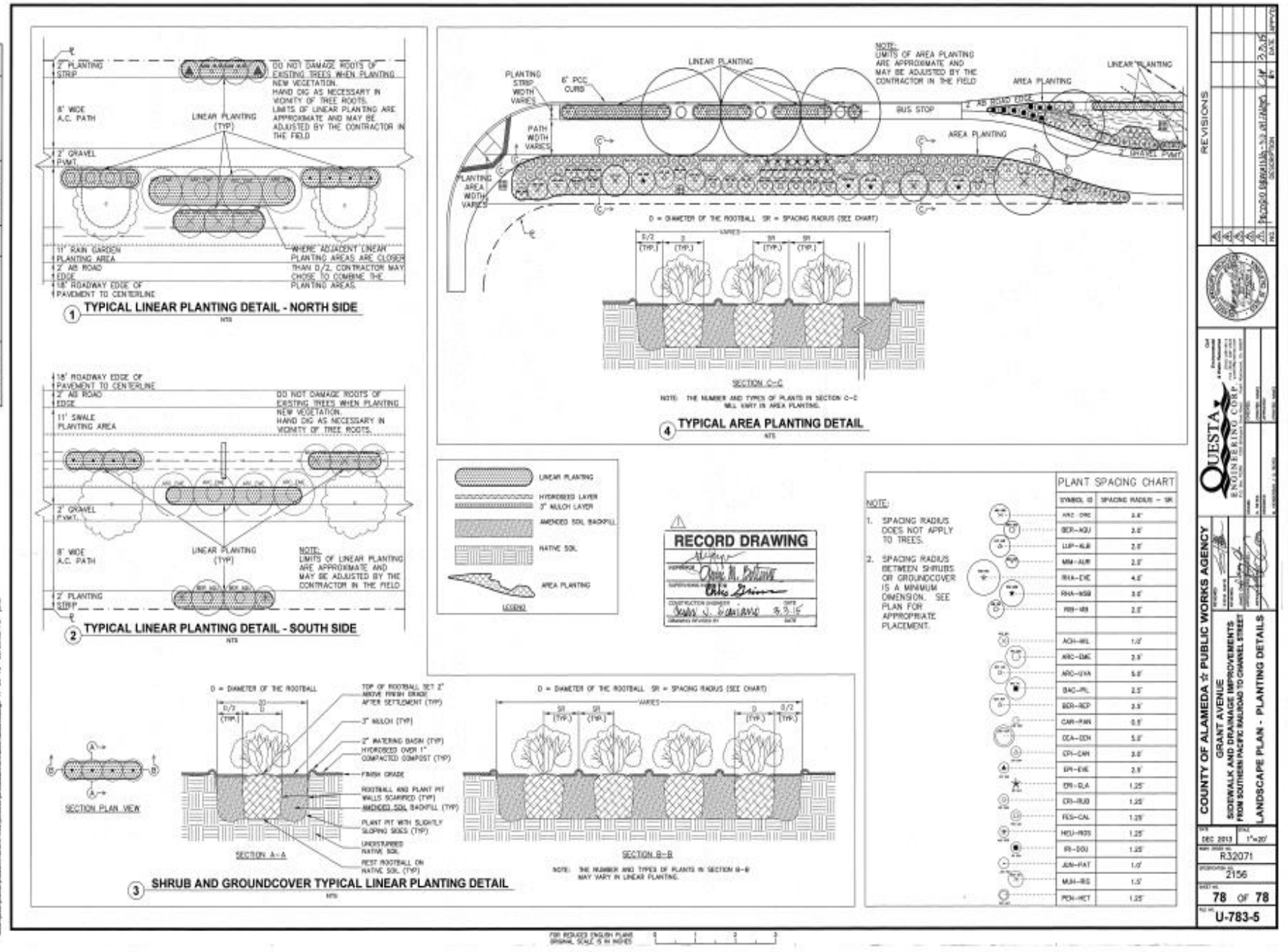
U-783-6
FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES


1 TYPICAL LINEAR PLANTING DETAIL - NORTH SIDE
2 TYPICAL LINEAR PLANTING DETAIL - SOUTH SIDE
3 SHRUB AND GROUNDCOVER TYPICAL LINEAR PLANTING DETAIL
4 TYPICAL AREA PLANTING DETAIL
RECORD DRAWING
PLANT SPACING CHART
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
GRANT AVENUE
SIDEWALK AND DRAINAGE IMPROVEMENTS
FROM SOUTHERN PACIFIC RAILROAD TO CHANNEL STREET
LANDSCAPE PLAN - PLANTING DETAILS
QUESTA ENGINEERING CORP
REVISIONS
DEC 2013
1"=20'
R32071
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U-783-5

EXHIBIT I

PROJECT 2 – WASHINGTON AVENUE

MAINTENANCE PLAN

&

AS-BUILT DRAWINGS

LANDSCAPE MAINTENANCE PLAN

WASHINGTON AVENUE

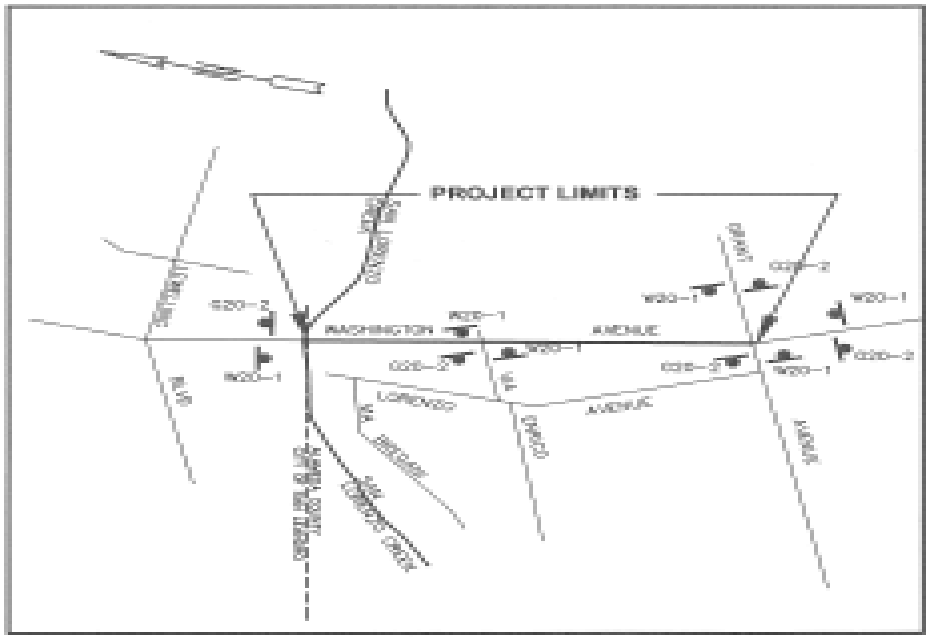
FROM GRANT AVENUE TO SOUTH OF LEWELLING BOULEVARD
ALAMEDA COUNTY CA

Public Works Agency
Alameda County

A. PROJECT INFORMATION

WASHINGTON AVENUE

DESCRIPTION	WASHINGTON AVENUE is a beautification project where non-irrigated landscape and hardscape have been installed in the median and a small amount of landscaping and trees installed on the west side of the roadway only. The project also includes a gateway with irrigated landscaping at the southwest corner of Grant Ave and Via Alamitos. Maintenance for the project includes tree well maintenance, tree trimming, vine, groundcover and shrub maintenance, irrigation system maintenance, and paving elements. Project components to be maintained include: • Maintain landscape plantings – trees, shrubs, vines and groundcover. • Maintain and operate irrigation system for the gateway landscape at the s/w corner of Grant and Washington (Via Alamitos). • Maintain/install 3” mulch over tree wells and landscaped areas. • Maintain and repair landscape headers. NOTE: All landscaping on the east side of the road is maintained by others and not part of this contract.
ADDRESS	WASHINGTON AVENUE, FROM GRANT AVENUE TO THE FLOOD CONTROL CHANNEL OVERCROSSING SOUTH OF LEWELLING BOULEVARD

LOCATION MAP	

COUNTY INFORMATION

MAINTENANCE SUPERVISOR	**Rob Sales,** Field Maintenance Supervisor robs@acpwa.org 510-670-5534 Ext. 55534

WASHINGTON AVENUE

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

PROJECT TYPE	
✓	STREET/ROADWAY LANDSCAPING

AS-BUILT PLANS/SUBMITTALS (SEE ATTACHMENT 1)	
✓	Landscape Plans only, other drawings available upon request

SPECIAL PROJECT CONDITIONS	

WASHINGTON AVENUE

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

B. PROJECT ELEMENTS

SECTION	APPLIES TO PROJECT?	ELEMENT
1	✓	Safety and General Practices (to follow each site visit)
2	✓	Weeding and Trash Removal
3	✓	Trees
4	✓	Shrubs and Groundcover
5	✓	Irrigation Maintenance
6	✓	Pest Management
7	✓	Mulch and other supplies
8	✓	Pavements and Finishes

1. SAFETY AND GENERAL PRACTICES

TASK		FREQUENCY
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities including but not limited to traffic control, pesticide use and tree trimming (ISA Standards, applicable O.S.H.A. and CAL-O.S.H.A. Safety Orders).	EVERY SITE VISIT
B	All work shall be completed in a professional, workmanlike manner, and use quality equipment and materials that comply with current regulations.	EVERY SITE VISIT
C	Do not work or perform any operations, particularly during periods of inclement weather, which may destroy or damage landscaped areas.	EVERY SITE VISIT
D	The safety of workers, passersby, and the public shall be paramount. Utilize accepted standards for safe practices during the maintenance operation and to safely maintain and manage equipment, machines, and materials or other hazards consequential or related to the work.	EVERY SITE VISIT
E	All personnel shall be properly trained, and wear and use Personal Protective Equipment required for the task assigned as required by OSHA or other regulatory agencies.	EVERY SITE VISIT
F	Warning signs, traffic cones, flashing lights, etc., shall be utilized at each work site and all traffic control activities and equipment shall conform to MUTCD standards.	EVERY SITE VISIT
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair.	EVERY SITE VISIT
H	Work shall be performed in such a manner to limit unnecessary idling for periods of longer than five (5) minutes while on the worksite, unless engine power is required to operate the vehicle's accessory equipment.	EVERY SITE VISIT
I	All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor.	EVERY SITE VISIT
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.	EVERY SITE VISIT
K	Record field notes on Maintenance Checklist. Organize, label, date and file digital photography	EVERY SITE VISIT

2. WEEDING AND TRASH REMOVAL

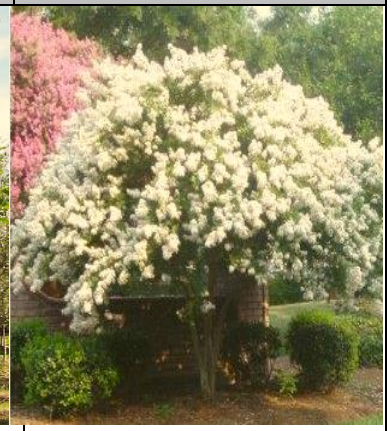
TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Pick up litter and landscape debris (including downed tree branches)	EVERY SITE VISIT	• All recyclable materials including green waste shall be disposed of at an appropriate facility. • Green waste may be taken to a composting facility or a transfer station that offers separate processing for green waste for composting. • Per Alameda County Waste Management Authority Ordinance #2008-1 adopted January 28, 2009: **plant debris may not be landfilled and must be composted.**
B	Remove weeds at curbs and sidewalks and planter areas (focus on April through June)	MONTHLY	
C	Fill tree wells around tree areas using mulch or native soil	EVERY SITE VISIT	
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance	MONTHLY	
E	Remove all cutting and waste materials to an off-site facility.	EVERY SITE VISIT	

3. TREES

TASK		FREQUENCY
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	ANNUALLY (Jan. – Mar.)
B	Remove dead branches and branches overhanging pavement or to improve line of sight	AS NEEDED
C	Inspect, and replace dead/diseased plant material. Test soil if there are health issues. Add organic fertilizer if recommended by soil testing.	ANNUALLY
D	Maintain 14' clearance for branches overhanging beyond curb line into the paved section of streets and 10' clearance for branches overhanging sidewalk, bicycle path and pedestrian areas.	AS NEEDED
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8" from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes after **Year Three.** **REMOVE NURSERY STAKES AND GREEN TIES.**	AS NEEDED (March-May)

ADDITIONAL INFORMATION

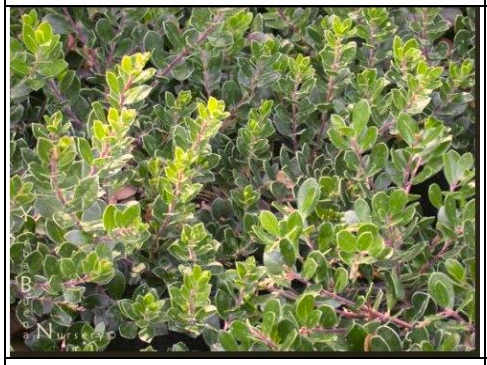
- Tree Replacement: Any existing tree that is permanently damaged or shows declining health shall be replaced with 48" box specimen tree, or as directed by County. Notify County of need for replacement and to obtain authorization.
- Pruning (with hand pruners/loppers/saws): Prune trees between the months of January – March to encourage healthy growth habits pertaining to each individual species, and for an overall balanced shape and appearance. All trees shall be free of dead wood, weak, diseased, insect-infested, and damaged limbs at all times. Selective thinning cuts should be made not "heading" or "tipping" cuts. Remove all clippings the same day tree is pruned.
- Keep plant material trimmed 1' from the tree trunk.

Dr. Hurd Manzanita *Arctostaphylos 'Dr. Hurd'*	**Bloodgood London Plane** *Platanus X Acerifolia*	**Natchez Crapemyrtle** *Lagerstremia X 'Natchez'*
		

4. SHRUBS AND GROUNDCOVER

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas	AS NEEDED	• Shrub/groundcover Replacement: Shrubs and groundcover that are woody, decadent or permanently damaged should be replaced with the same species, unless conditions warrant replacement with other species. If so, notify County and suggest replacements from successful species at project site, with low water use needs. • Pruning (with hand pruners/loppers/saws): Prune woody shrubs to remove dead wood, weak, diseased, insect- infested, and damaged limbs. Selective thinning cuts should be made; do not use not "heading" or "tipping" cuts. Remove all clippings the same day shrub is pruned. • Trim shrubbery and ground covers to area behind curbs and walkways, within planter beds, and away from walls, fences, and utilities, as necessary. Do not prune into hedges or topiary—let plant grow in natural shape • Keep ground cover trimmed 1' from the base of trees • Do not use string trimmers/weed whippers around trees.
B	Inspect, and replace dead/diseased plant material. Test soil if there are health issues.	AS NEEDED	

Arctostaphylos Emerald Carpet



Arctostaphylos 'John Dourley'

5. IRRIGATION

	NOTE: There is no existing irrigation system for the trees, shrubs, and vines along the roadway or in the median. An irrigation system only exists at the southwest corner of Washington Ave (Via Alamitos) and Grant Ave for the gateway landscape. Irrigation controller at the site must be manually turned on to water shrubs and groundcover.	FREQUENCY
A	Inspect plant material and soil moisture to determine irrigation needs for trees and landscaping throughout project. Provide supplemental irrigation via hose/water truck if trees/landscape exhibit signs of stress.	AT EACH VISIT

6. PEST MANAGEMENT

	TASK	FREQUENCY	USE OF CHEMICALS (PESTICIDES) AND DISEASE & PEST CONTROL
A	Inspect and notify supervisor of major disease and insect infestations affecting trees, shrubs and ground covers.	MONTHLY	• Alameda County encourages environmentally sensitive maintenance practices. Apply insecticide or fungicide to trees, shrubs and ground covers only when significant plant damage would result from not addressing the infestation. Base pest and disease control program on known pests and diseases in Alameda County. • All work involving the use of chemicals to be performed under the guidance of a valid California Pest Control Advisor (PCA) License and Qualified Applicator. • If needed, spray herbicide, under guidance and recommendation of PCA. Apply only at manufacturers' approved rates to avoid soil toxicity. Verify that herbicide is appropriate for use with various plant materials. • Attach Material Safety Data Sheet (MSDS) to this Landscape Maintenance PLAN for any chemicals used. All regulatory reporting requirements for chemical use must be followed. • Comply with quarantine regulations set by the California Department of Food and Agriculture (CDFA) when working in areas affected by Sudden Oak Death (SOD), and by Light Brown Apple Moth (LBAM). Regulations include, but are not limited to, ensuring that material is transported to a green waste processing facility that has been authorized by the local County Agricultural Department to accept affected loads, ensuring vehicle payloads are tightly covered with a tarp or otherwise enclosing green waste material to prevent releases during transport, and ensuring equipment is cleaned after working in a contaminated zone so as to prevent cross contamination.
B	Inspect and notify supervisor of damage due to ground squirrels, gophers, and other burrowing rodents.	MONTHLY	
C	Control weeds with hand removal or mechanical cultivation.	MONTHLY	
D	Use Integrated Pest Management (IPM) practices, and least toxic methods to control pests	MONTHLY	

7. MULCH/OTHER SUPPLIES

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	**ANNUALLY:** Replace/replenish mulch annually, or when bare ground occurs over 40% of area. Maintain mulch minimum 3 inches deep in all landscape areas at all times. Mulch installed as part of project consists of 1" compost layer on existing grade, top-dressed with 3" wood chip or bark mulch. Replenish annually with wood chip or bark mulch to maintain 4" depth. **ALL APPLICATIONS:** Mulch layer to be installed in all non-paved areas, including planted areas and tree wells. Keep root crowns of all plants free of mulch and debris. Mulch shall be applied/replenished annually after annual flowers have seeded. Apply mulch on top of dead annuals and around all other planting areas, avoiding root crowns.	**ANNUALLY** **OR** **AS NEEDED**	MULCH: 3" mulch (recycled material preferred). SUPPLIER: County **Earthtones Mulch Company** 6756 Central Avenue Newark, CA 94560 408-888-7632 www.earthtonesmulch.com
			

8. PAVEMENTS AND FINISHES			
TASK		**FREQUENCY**	**ADDITIONAL INFORMATION**
A	Maintain, adjust and/or repair tree grates and frames for tree growth. Inspect decomposed granite, cobble stones, and other pavement treatments for damage, settlement, etc., and report to County.	**INSPECT AT EACH SITE VISIT**	Notify County of cracking, pavement damage, graffiti, trip hazards or other conditions that need further inspection or repair.

C. TASK SUMMARY

1: Safety and General Practices	
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities
B	Complete all work in a professional, workmanlike manner, with compliant equipment and materials
C	Do not work or perform any operations that may destroy or damage landscaped areas
D	Utilize accepted standards for safety and safely maintain and manage equipment and materials
E	Properly train all personnel, and wear and use Personal Protective Equipment required by OSHA or other regulatory agencies
F	Use warning signs, traffic cones, flashing lights, etc., at each work site and all traffic control activities and equipment shall conform to MUTCD
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair
H	Work shall be performed in such a manner to limit unnecessary vehicle or equipment idling
I	Handle all materials and equipment in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.
K	Record field notes on Maintenance Checklist.
2: Weeding and Trash Removal	
A	Pick up litter and landscape debris (including downed tree branches)
B	Remove weeds at curbs and sidewalks and median planter islands
C	Fill tree wells around tree areas with mulch
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance
E	Remove all cutting and waste materials to an off-site disposal facility
F	Inspect, adjust and/or repair tree grates as needed for tree growth
3: Trees	
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)
B	Remove dead branches and branches overhanging pavement or to improve line of sight
C	Inspect and replace dead/diseased plant material . Test soils if necessary for health issues
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes year three if support is no longer needed.

C. TASK SUMMARY

4: Shrubs and Groundcover	
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas
B	Inspect and replaced dead/diseased plant material
5: Irrigation	
A	Inspect plant material and soil moisture to determine irrigation needs; provide irrigation water to trees as needed.
6: Pest Management	
A	Inspect for disease and insect infestations
B	Inspect for damage by burrowing animals
C	Control weeds with hand or mechanical tools
D	Use IPM for least toxic methods to control pests
7: Mulch and Other Materials	
A	Annually: Replace/replenish mulch to maintain 3” cover, or when bare ground occurs over 40% of area. Mulch must be maintained a minimum 4 inches deep in all landscape areas.
8: Pavements and Finishes	
A	Inspect pavement at all site visits and notify County of damage

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
1: Safety and General Practices				
A	Comply with laws	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	✓ 1 2 3 4 5 6 7 8
B	Complete all work in a professional, workmanlike manner			
C	Do not destroy or damage landscaped areas			
D	Utilize accepted standards for safety			
E	Properly train wear and use Personal Protective Equipment required by OSHA			
F	Use warning signs, traffic cones, flashing lights, etc., at each work site			
G	Note any hazards found in the service area landscape and notify Supervisor			
H	Limit unnecessary vehicle or equipment idling			
I	Install barriers signs, lights, flaggers, etc. to warn the public of any danger			
J	Handle all materials and equipment in accordance with the manufacturer			
K	Proceed with caution to avoid damaging any utilities known or unknown			
L	Take a digital photograph(s) of site at each visit, note problem areas			
M	Record field notes on Maintenance Checklist.			
2: Weeding and Trash Removal				
A	Pick up litter and landscape debris (including downed tree branches)	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH SEPTEMBER) ☒ MONTHLY (DURING OCTOBER THROUGH MARCH) ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Remove weeds at curbs and sidewalks and median planter islands			
C	Fill tree wells in landscape areas			
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance			
E	Remove all cutting and waste materials to an off-site disposal facility			

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
3: Trees				
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☐ APRIL ☐ MAY ☐ JUNE ☐ JULY ☐ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☒ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Remove dead branches and branches overhanging pavement or to improve line of sight	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☒ JULY ☐ AUGUST ☐ SEPTEMBER ☒ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8
C	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues			
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.			
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove Tree Stakes between March and May after Year Three (2017)			

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
4: Shrubs and Groundcover				
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☐ JULY ☒ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☒ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 ✓ 4 5 6 7 8
B	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues			
5: Irrigation				
A	Inspect plant material and soil moisture to determine irrigation needs; supply irrigation water to trees, groundcover, vines, and shrubs as needed.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☐ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH OCTOBER) ☒ MONTHLY (DURING NOVEMBER ☐ THROUGH ☐ MARCH) ☐ EVERY 2-3 MONTHS ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8

E. MAINTENANCE RECORD

Task	Attach or Signature	Date	Completed by
1: Safety and General Practices			
2: Weeding and Trash Removal			
3: Trees			
4: Shrubs/Groundcover			
5: Irrigation			
6: Pest Management	• Quantity/description of all commercial and organic fertilizers used • Quantity and description of all soil amendments used • PCA Applicator/License Number • **Agricultural Commissioners Use Report** for all chemical, disease, and pest control work performed (attach)		
7: Mulch and Other Materials	**Attach submittal of Mulch source and date of application:** **3" Wood/Bark Mulch: annual or as needed in bare areas**		
8: Pavements and Finishes			

ATTACHMENTS	
1	WASHINGTON AVENUE Landscape Specifications
2	AS BUILT PLANS: SHEETS 65-78, U-783-5 (other contract drawings available on request)

ATTACHMENT 1 – WASHINGTON AVENUE LANDSCAPE MANAGEMENT SPECIFICATIONS

Section 1: General Information

1.1 General Scope of Work

This work shall include all supervision, labor, materials, equipment, tools, supplies and services to maintain in a superior condition all landscape areas, irrigation and drainage systems and other related work. All work shall be performed in a workmanlike manner, using quality equipment and materials.

1.2 Site Description

A. SCOPE

Work to be done is located at WASHINGTON AVENUE and identified on the enclosed maps and plans. This area is owned or supervised by Alameda County Public Works Agency, hereafter referred to as Agency.

B. LANDSCAPE INVENTORY

TREES				
17	HUR MAN	'Dr. Hurd' Manzanita *Arctostaphylos 'Dr. Hurd'*	Dr. Hurd Manzanita	15 GAL
16	BLO LON	Bloodgood London Plane *Platanus X Acerifolia*	Bloodgood London Plane	48" BOX
10	NAT CRA	Natchez Crapemyrtle *Lagestroemia X 'Natchez'*	Natchez Crapemyrtle	24" BOX
PLANTS				
33	BOS IVY	Boston Ivy *Parthenocissus*	Boston Ivy	1 GAL
SHRUBS				
80±	EME CAR	Emerald Carpet Manzanita *Arctostaphylos 'Emerald Carpet'*	Emerald Carpet Manzanita	5 GAL
120±	JOH DOU	John Dourley Manzanita *Arctostaphylos 'John Dourley'*	John Dourley Manzanita	5 GAL

1.3. Limits of Work

Specified work does not include:

A. Repair or replacement of street lighting, traffic signals or roadside signs.

B. Repair or replacement of traffic lane pavement or concrete pavement.

1.4. Supplemental Documents

A. SITE MAPS
1. Record Drawings, including landscape, irrigation, site furnishings etc. are available from ACPWA.

1.5. Supplemental Resources

A. *A Guide to Estimating Irrigation of Water Needs of Landscape Plantings*, California Dept of Water Resources, http://cdec.water.ca.gov

B. *California Irrigation Management Information System*, www.cimis.water.ca.gov, Waste management and recycling, www.ciwmb.ca.gov.

C. *The Weed Worker's Handbook, A Guide to Techniques for Removing Bay Area Invasive Plants*, The Watershed Council (510) 231-5655 and the California , Invasive Plant Council (510) 843-3902
D. *Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide*, 2nd ed., UC Publication 3359, http://www.ipm.ucdavis.edu

Section 2: General Requirements

2.1. Contractor Qualifications

A. QUALIFICATIONS

1. Contractor must have a valid California C-27 contractor's license authorized by the State of California.
2. Contractor must have assigned to the project at least one employee possessing a California State Chemical Applicator's License for the control of weeds, plant diseases and other pests.
3. Contractor shall be thoroughly familiar with California native wildflower species, and take care not to eliminate or eradicate California native wildflowers or other plants installed as part of the project.
4. It is preferred that the Contractor have assigned to the project at least one employee who has successfully completed the Pollution Prevention Training & Certification Program For Surface Cleaners issued by the Bay Area StormWater Management Agencies Association **(**BASMAA).
5. All tree pruning shall be completed under the direction of a Certified Arborist or Certified Tree Worker (International Society of Arboriculture).
6. It is preferred that the Contractor have assigned to the project at least one employee who has experience or training in Integrated Pest Management (IPM) techniques.

B. INSURANCE

Contractor shall maintain insurance required by ACPWA throughout the contract period.

2.2. Compliance with Laws, Ordinances and Policies

All services rendered shall be provided in accordance with all ordinances, resolutions, statutes, rules, laws and regulations of the Agency, and any Federal, State, or local governmental agency having jurisdiction in effect at the time service is provided

2.3. Work Requirements

A. WORK SCHEDULE

1. Contractor is to provide Agency with a monthly work schedule describing the work to be performed in the Project Area, hours by job classification and tasks completed.
2. The Contractor shall conduct all operations during the hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, unless otherwise approved by the Agency. Contractor may not work on any Federal, State, or local holidays.
3. Any non-emergency work that may be deemed hazardous or disruptive (i.e., chemical spraying, tree pruning, etc.) shall be scheduled at least two (2) weeks in advance with the Agency's representative. For emergency work, Contractor must obtain written approval from Agency's representative prior to commencing work.
4. Agency reserves the right to change schedules for special events, conflicts with adjacent property owners/tenants within five (5) working days advance notice.

B. PROTECTION OF EXISTING PROPERTY

1. Contractor must protect all existing plant materials, site improvements, structures, facilities, utilities, and natural areas from damage, both above and below ground. Any damages shall be reported immediately to the Agency's representative. Any damages caused by Contractor shall be corrected and/or paid for by the Contractor at no cost to the Agency.
2. Contractor shall protect property from accidental chemical, fuel, oil or other contaminant spills.
3. Contractor shall not wash or blow soil, chemicals, litter, mulch, soil amendments or other materials into storm drains.

C. SAFETY

Contractor must at all times exercise necessary precautions to provide for the protection of the public and employees.

1. Traffic Lane Closure. Landscape maintenance services conducted in the roadway must be performed in a safe manner. The contractor is required to perform traffic diverting lane closures prior to beginning any trimming operations in the center median. Litter pickup does not require a lane closure.
2. All lane closure activities must comply with Federal Highway Manual on Uniform Traffic Control Devices (MUTCD) http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/supplement.htm], applicable governmental agencies and follow notification requirements of the Police and Fire Departments.
3. Chemical Applications. Note: Bay-Friendly Landscaping emphasizes Integrated Pest Management (IPM) practices to control pests and diseases in the landscape. IPM uses cultural, mechanical, physical, and biological control methods before using pesticides. Chemical controls are applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control is applied.

4. Contractor shall apply all chemicals in a safe manner and according to label instructions and Agency, State and Federal requirements. A California Chemical Applicators license is required by the contractor for chemical applications. The Contractor shall mix and apply chemicals to protect against accidental spills and drift to non-target areas, and to insure safety of the applicator. Any spilled chemicals, as well as contaminated soil, water,

and/or landscape materials must be removed from the Project and disposed of in accordance with the Agency requirements. The Contractor shall maintain applicator's licenses and records of applications as required by the State.
5. A Chemical Work Report shall be completed for each chemical application. The Contractor is responsible for submitting chemical usage reports to the County Agricultural Department. Copies are to be sent to the Agency's representative as part of the Contractor's monthly report.

D. CONTRACTOR'S PERSONNEL AND SUPERVISION

1. Contractor shall provide a list including all Contractor's and subcontractor's employees assigned to work site and include work schedule and assignment. Contractor must update list within 5 business days of any change. All Contractor's employees assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States.
2. The Contractor shall assign a qualified trained supervisor to oversee work performed at the work site and to act as the Contractor's liaison with the Agency representative. This supervisor must inspect the Project daily (Monday through Friday) except holidays and provide direction to the Contractor's workers and/or subcontractors. This supervisor shall speak, write, read and understand English and be capable of writing schedules, monthly reports noting any deficiency that needs correcting and major projects for the coming month. This supervisor shall have at least three (3) years of landscape maintenance supervision experience.
3. All Contractor's personnel shall adhere to basic public works standards for working attire including; uniform shirts with Contractor's name or logo clearly visible at all times when working at all locations, proper shoes and other equipment required by State Safety Regulations. Shirts are to be maintained in a neat and presentable condition.
4. All Contractor vehicles are to have a readable sign with Contractor's name or logo and telephone number. Trucks are to be kept in a clean and presentable condition.

E. SUBCONTRACTING

A portion of the work covered by these specifications may be subcontracted with prior approval of the Agency. Contractor shall supervise subcontractor and guarantee work quality. Subcontractors and their qualifications must be submitted to the Agency thirty (30) days before working at the site. All subcontractors assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States. It is preferred that subcontractors have training in Bay- Friendly Landscaping or other experience in sustainable landscape practices.

F. SUPPLIES AND EQUIPMENT

1. Fuel conservation and low emission equipment. The Contractor will implement strategies in work operations to reduce fossil fuel consumption and emissions, such as:
a. Use hand-powered equipment when possible.
b. Minimize use of gas-powered blowers, especially on planting beds.
c. Select smallest, most fuel efficient equipment to accomplish task.
d. Consider vehicles that operate on natural gas or biodiesel.
e. Maintain equipment properly and keep it well tuned.
f. Emphasize employee carpooling to Project.
2. Use local products and suppliers. The Contractor shall use local products and suppliers (produced within 150 miles from the project site) to the extent possible to minimize fuel consumption and emissions.

3. Use recycled and salvaged materials. The Contractor shall use salvaged and recycled-content products where possible Materials for reuse may be found by contacting the CalMax website at www.ciwmb.ca.gov or www.stopwaste.org .
4. Equipment refueling and repair. The Contractor shall refuel and repair equipment in a safe manner to protect against accidental spills. Limit refueling to specific areas on a site. Measures shall be taken to prevent, control, and clean-up spills. Clean-ups should be immediate, automatic and routine and performed by a trained staff member or a licensed cleaning company. Contact the local emergency response team agencies to report all spills.

G. REPORTING AND INSPECTING

1. The Contractor shall submit a written report each month stating all contract work completed. The report shall show the work completed during each week contract work was accomplished, and shall be submitted with and cover the same work as the Contractor's billing statement for the previous month's work. The report shall include documentation of stormwater and irrigation inspections, IPM monitoring, soil and pest management treatments and other chemical applications. A three week look ahead schedule outlining anticipated work by number should be included.
2. Unusual horticultural problems such as pests, disease and damages that are beyond the scope of the Contractor's responsibility shall be brought to the attention of the Agency representative immediately.
3. The Agency, through a designated representative, will make periodic inspections to insure that complete and continuous maintenance is fulfilled. In addition, the Agency may obtain the services of a Landscape Architect, Arborist, IPM/PCA or other professional to inspect plantings and make recommendations for improvements in the maintenance program.

H. WORK PERFORMANCE

1. Contractor is responsible for (a) having thoroughly investigated and considered the scope of services to be performed, (b) carefully considering how the services should be performed, and (c) fully understanding the facilities, difficulties, and restrictions attending to the performance of the services required. Contractor is responsible to investigate the area and be fully acquainted with the conditions.
2. Should the Contractor discover any latent or unforeseeable conditions, which will materially affect the performance of services, Contractor shall immediately inform the Agency of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Agency.
3. Plants, irrigation systems, etc., damaged by traffic accidents or vandalism, shall be reported immediately to the Agency.

Section 3: Landscape Standards and Maintenance Requirements

3.1 Overview

A. APPLICABLE STANDARDS AND BEST MANAGEMENT PRACTICES (BMP's)

Contractor shall adhere to applicable professional standards as defined by a professional organization including:
1. American National Standard for Tree Care Operations - ANSI A300, Parts 1 and 2
2. International Society of Arboriculture BMP for Tree and Shrub Fertilization, and BMP for Tree Pruning
3. Irrigation Association BMPs
4. California Association of Pest Control Advisors

3.2 Site Analysis

A. Contractor shall become familiar with the site's microclimate(s), infiltration rate and drainage characteristics and range in exposures to schedule irrigation.

3.3 Soil & Nutrition Management

A. MAINTAIN MULCH

1. Contractor shall maintain a minimum of 3" of mulch at all times over soil surface that is not covered by vegetation. 1" of compost as described in Section 3.3 E shall be applied one time only to the swale banks and tops along the road shoulder. Mulch materials shall be chipped or shredded green waste, wood chips from pruning operations, or chipped landscape prunings.
2. Apply mulch annually to maintain 3" thick layer. As needed, apply mulch to bare areas when these areas exceed approximately 40% of cover. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch, tapered as needed to transition to existing grade.
3. Keep root crowns of all plants free of mulch and debris.
4. Apply mulch in August or September. Apply mulch around trees and ground cover, avoiding root crowns.

3.4 Water Management

A. WATER CONSERVATION GOALS

Landscapes shall be irrigated to as needed maintain tree appearance and health, and avoid overspray and water damage to Agency's hardscape and property.

B. IRRIGATION ASSESSMENT

1. There is an irrigation system for ground cover only.
2. Irrigation shall be applied as needed to maintain tree health and survival. Application may be from water truck or other system subject to Agency approval. Irrigation with recycled water is preferred.
3. Irrigation intervals and frequency shall be suitable for weather conditions. Calculation methods are described in *A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California*, available from the Dept. of Water Resources, Sacramento, CA.
4. Irrigation frequency shall be based on soil moisture and ET (evapotranspiration) data (available through CIMIS). Irrigation shall be applied at approximately 80% allowable depletion (AD) for drought tolerant plantings. Enough water shall be applied at each irrigation cycle to wet through the depth of root zone.
5. Landscape irrigation shall not be applied during high wind or high temperature conditions.
6. Use soil probe at each landscape visit to evaluate soil moisture conditions and need for supplemental irrigation application.

3.5 Integrated Pest Management (IPM)

A. GOALS

An Integrated Pest Management program shall be implemented to:
1. Maintain healthy, attractive plants, maximize resistance to pests and out-compete weeds;
2. Monitor for presence of pests and to evaluate pest impact to plant health and appearance, and nuisance to the public;
3. Provide control treatments that have minimal negative effects on all but the pest and that protect air and water quality. Contractor shall assume pesticides are potentially hazardous to human and environmental health. Preference shall be given to reasonably available non-pesticide alternatives when considering the use of pesticides on Agency property.

B. INSECTS AND DISEASES

1. Key Trees and Shrubs: key pests. Contractor shall identify primary tree and shrub species and cultivars in the landscape (key plants) and the pests that commonly cause significant harm to tree and shrub health or appearance (key pests).
2. Monitoring. Contractor shall monitor landscape areas monthly to identify presence of beneficial insects and pests, determine populations, life stage, and degree of damage to trees or shrubs. Key plants/key pests will be monitored closely during normal periods of pest activity. This information will be the basis on which pest control methods are initiated. Records of monitoring activity shall be kept.

C. CULTURAL/MECHANICAL/PHYSICAL METHODS

Adjust maintenance practices or modifications as needed to make the environment unfavorable for pest reproduction, movement, or survival. This can include modifying an existing maintenance practice, such as timing of pruning or fertilization. Other mechanical or physical practices may be utilized, including:
1. Fertilize and irrigate only when needed, to foster a healthy soil.
2. Prune to remove infected or infested branches and shoots. Time pruning to avoid periods of insect infestation.
3. Remove fallen twigs, leaves, and fruit that contains disease inoculum.
4. Mulch soil surface to reduce weeds and to reduce splashing and the drops of mud that would protect spores deposited on plant surfaces.
5. Bringing to attention of Agency trees and shrubs that are disease or insect prone and suggesting resistant tree or shrub replacements or those better suited to the site and microclimate.

D. BIOLOGICAL METHODS

Biological controls are pesticides of natural origin that have limited or no adverse effects on the environment or beneficial organisms. Determining the effective biological control and proper timing of application are critical to success in pest control. The Contractor shall consider the following biological control methods when cultural/mechanical/physical methods are not adequate to lower pest populations to the target level.
1. *Bacillus thuringiensis* (Bt)
2. Parasitic nematodes
3. Pheromone traps
4. Beneficial insect release and conservation

E. PESTICIDES

The term pesticide applies to insecticides, fungicides and other substances used to control pests. Antimicrobial agents are not included in this definition of pesticides.

1. Least toxic pesticides. When cultural, mechanical, physical and biological controls have provided inadequate pest control, the Contractor may select and apply an appropriate least-toxic pesticide as a last resort. Least-toxic pesticides have a high LD-50, low residual, and narrow range of toxicity. Application must be timed to the appropriate life stage of the pest. Examples are:

a. insecticidal soaps,
b. horticultural oils,
c. herbicidal soaps,
d. Neem,
e. Pyriproxyfen insect growth regulator (e.g. Distance IGR)

2. Restricted chemicals. Organophosphate-containing pesticides have been found to persist in the environment and cause water quality impairment of some creeks, streams, and arroyos in Alameda County. They are restricted from use. Examples include:

a. diazinon, trade names Spectracide®, Knox-out®
b. chlorpyrifos, trade names Dursban®, Pageant®)
c. malathion and carbaryl (trade name Sevin®)

Pyrethroids and pyrethrins containing piperonyl butoxide (PBO) are restricted from use. Pyrethrins are toxic to birds, fish, and beneficial insects, should be used only as a last resort, and carefully applied to avoid runoff and contact with non-target plants.

Contractor shall not apply any Toxicity Category I or II Pesticide Product, any pesticide containing a chemical identified by the State of California as a chemical known to the State to cause cancer or reproductive toxicity pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986, and any pesticide classified as a human carcinogen, probable human carcinogen or possible human carcinogen by the United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.

3. All chemical applications shall be performed by a licensed, trained technician. Contractor must be a licensed Pest Control Operator as required by the State of California, registered in Alameda Co., and strictly adhere to all laws.

4. Notice of pesticide use. Signs shall be posted at least three days before application of the pesticide product and remain posted at least four days after application of the pesticide.

a. Signs shall be posted (i) at every entry point where the pesticide is applied if the pesticide is applied in an enclosed area, and (ii) in highly visible locations around the perimeter of the area where the pesticide is applied if the pesticide is applied in an open area.
b. Signs shall be of a standardized design that are easily recognizable to the public and workers.
c. Signs shall contain the name and active ingredient of the pesticide product, the target pest,

the date of pesticide use, the signal word indicating the toxicity category of the pesticide product, the date for re-entry to the area treated, and the name and contact number for the City department responsible for the application.
d. Contractor shall not be required to post signs in right-of-way locations that the general public does not use for recreational purposes (north side and medians). However, Contractor shall notify Agency in writing three days prior to pesticide applications in the right-of-way areas (south side pedestrian/bicycle path).
e. Contractor may obtain authorization from the Agency to apply a pesticide without providing a three-day advance notification in the event of a public health emergency or to comply with worker safety requirements. Signs shall be posted for at least four days after application of
the pesticide, as described herein.

5. Recordkeeping and reporting.

a. Contractor shall maintain records of all pest management activities. Each record shall include the following information:

- target pest;
- type and quantity of pesticide used;
- site of the pesticide application;
- date the pesticide was used;
- name of the pesticide applicator;
- application equipment used;
- prevention and other non-chemical methods of control used.

b. Contractor shall submit the pest management record to Agency on a monthly basis.

F. WEED MANAGEMENT

1. Landscapes shall be maintained in a healthy and attractive manner.
2. Identify key weeds: Contractor will identify key weeds present and design a weed management program to target those species.
3. Monitor planting areas frequently to identify and eradicate weeds early in the growth stage prior to their setting seed. Cut or pull weeds using hand operated equipment where possible.
4. Mulches shall be maintained at all times over soil surface that is not covered by vegetation. See Section 3.3 for application and maintenance of 3” mulch layer.

3.6 Plant Control

A. PRUNING

1. Selective pruning. Plants shall be pruned selectively to remove individual stems or branches that extend beyond the natural conformation of the plant to a lateral branch or at the point of attachment. Woody groundcovers shall be selectively pruned to control growth towards pavements rather than edged.
2. Hedging and shearing. Shearing of plants into formal shapes shall be avoided as this destroys the natural form of the plant and generates excessive waste. Plants having adequate space for development shall instead be selectively pruned on an as needed basis. Where plant size must be controlled because of inadequate space for the plant at certain locations, prune to reduce size by cutting individual branches or stems to interior lateral branches.

3. Tree Pruning. Tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning.

3.7 Waste Management

A. DEBRIS REMOVAL AND CLEAN-UP

Contractor shall keep all landscaped areas and paths free from trash and debris. Debris clean up should be performed with blowers.

B. RECYCLE WASTE

Contractor shall transport all waste and debris to appropriate local recycling facilities.

Section 4: Landscape Specifications for Tree/Shrub Types and Landscape Zones

4.1 Ground Cover and Shrubs

A. STANDARDS FOR HEALTH AND APPEARANCE

Ground covers shall be maintained to sustain an attractive, healthy, normal color for the species, and uniform density with no bare spots. Ground covers shall be kept free of trash and debris.

B. PROTECT ENVIRONMENTAL RESOURCES

Ground cover shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy, minimize waste, and reuse and recycle materials to the extent possible.

D. MULCHING

Contractor shall maintain a minimum of 3” of mulch at all times over all landscape area. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch.

E. WATER MANAGEMENT

1. Trees and shrubs shall be irrigated to provide adequate water to maintain attractive, green, healthy plants, and a moderate growth rate during its growing season.
2. Use soil probe to evaluate soil moisture and determine need for supplemental irrigation to maintain healthy trees and shrubs.
3. Avoid applying water to hardscape surfaces, or in excess of soil infiltration rate.

4.2 Trees

A. STANDARDS FOR HEALTH AND APPEARANCE

Trees shall be maintained to sustain attractiveness, health and structural stability that is characteristic for the species.

B. PROTECT ENVIRONMENTAL RESOURCES

Trees shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy and minimize waste.

C. PRUNING

1. All tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning. Arborist must have a State of Calif. Contractor's License for Tree Service (C61-D49).
2. All pruning shall be in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).
3. Trees shall be pruned in the following manner:
a. Clear the crown of diseased, crossing, weak and dead branches. Trees shall not be routinely thinned.
b. Provide 14' vertical clearance over roads, 10' over bicycle path, walkway and sidewalks/bus stops.
c. Reduce end weight on heavy, horizontal branches.
d. Create a strong central trunk with lateral branches spaced vertically and horizontally.
e. Interior branches shall not be stripped out.
f. Trees shall not be climbed with spurs.

D. STAKING

1. Tree stakes, ties and guides shall be checked regularly to ensure trees are not being damaged. Adjust ties and stakes as necessary to prevent girdling and wounding. Remove nursery stakes and green ties during initial site visit.
2. Tree stakes shall be removed within three to five years of planting. For trees unable to stand alone after two years, Contractor will shorten the stakes and lower the ties to 3-4' height. If after the third year the tree will not stand without a stake, Contractor will inspect to determine cause of instability, and make recommendations to Agency for corrective action.
3. If new ties are needed to secure tree to stake, use ties composed of recycled materials. The tie must be broad, have a smooth surface where it contacts the trunk, and provide some elasticity. Wire covered with hose, tubing or other materials, and covered electrical wire are not acceptable materials.

E. MULCHING

Contractor shall maintain a minimum of 3" of mulch at all times over all related areas, see Section 3.3. Do not place mulch over root crowns or against trunks. Mulch shall be applied so that it is below grade (curb, edging,etc.) by 1½".

F. WATER MANAGEMENT

Trees shall be irrigated to encourage deep root growth and to provide adequate water to maintain an attractive, healthy tree, and a moderate growth rate during their growing season. Use soil probe to evaluate soil moisture needs.

H. PEST MANAGEMENT

1. Contractor is responsible for monitoring trees to identify, assess pest problems and taking action to control pests that affect tree health and appearance when pest populations or damage exceed established thresholds.
2. Contractor shall employ integrated pest management procedures.
3. Contractor shall select pest controls to provide adequate pest control without harming non-target organisms, or negatively affecting air and water quality and public health. Pest management shall rely first on cultural, mechanical, physical, and biological control methods. When necessary, chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control will be applied. Pesticides may not applied on a prescheduled basis.
4. Contractor may not apply restricted chemicals that may harm water resources.

4.4 Hardscape

A. DEBRIS REMOVAL AND CLEAN-UP

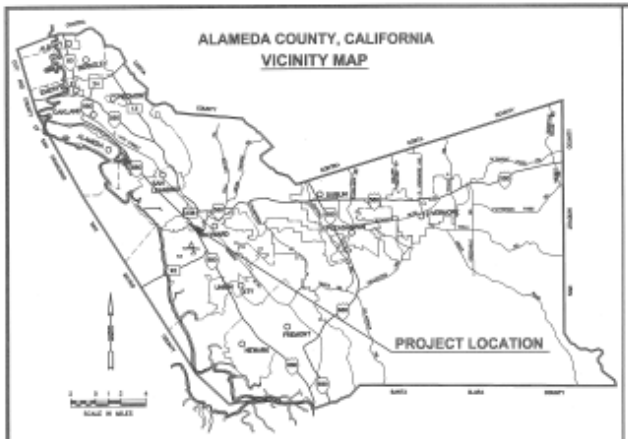
Contractor shall keep pathways, shoulders and landscaped areas free from trash and debris.

B. SURFACE CLEANING

Contractor shall clean hard surfaces as needed to remove accumulation of sediment, dirt, or other materials that distracts from the visual impact of the area or creates a safety hazard.

C. ROOT INTERFERENCE
Potential root damage to hardscapes shall be reported to Agency. Corrective action will be determined and directed as an extra service.

ALAMEDA COUNTY, CALIFORNIA
VICINITY MAP



ALAMEDA COUNTY
PUBLIC WORKS AGENCY

APRIL 2010

ROADWAY IMPROVEMENTS
WASHINGTON AVENUE
SAN LORENZO CREEK TO GRANT AVENUE
IN THE UNINCORPORATED AREA
OF SAN LORENZO, EDEN TOWNSHIP
ALAMEDA COUNTY, CALIFORNIA

* THE CONTRACTOR SHALL POSSESS A CLASS A LICENSE AT THE TIME THIS CONTRACT IS AWARDED.

INDEX OF SHEETS

CONVENTIONAL SYMBOLS

LOCATION MAP
NO SCALE

COUNTY OF ALAMEDA
DESIGN GUIDELINES
JAN 1986

SD-205	SD-422	
SD-206	SD-700	
SD-300	SD-705	
SD-304		
SD-403		

CALTRANS
STANDARD PLANS
MAY 2006

A20A	A24B	ES7B	ES9D
A20B	A24C	ES7C	ES9A
A20C	A87A	ES5A	ES6B
A20D	D72	ES5B	
A24A	ES1A	ES5C	

CONSTRUCTION AREA SIGNS

TYPE	QUANTITY	DESCRIPTION	DIMENSION (in)
G20-2	5	END ROAD WORK	60 x 24
W20-1	6	ROAD WORK AHEAD	48 x 48

DANIEL WOLDESENBET, Ph.D., P.E.
COUNTY ENGINEER
CIVIL ENGINEER CERTIFICATE NO. 60306
EXPIRATION JUNE 30, 2010

4/23/10
PLAN APPROVAL DATE

REVISIONS

NO.	DESCRIPTION	BY	DATE	APPVD

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

TITLE SHEET

SCALE	AS SHOWN
DATE	APRIL 2010
JOB NO.	R23365
SPECIFICATION NO.	2077
SHEET NO.	1 OF 27
FILE NO.	U-149-4

	REVIEWED BY	DATE	REVIEWED BY
CONSTRUCTION			SURVEY
MAINTENANCE			TRAFFIC
REAL ESTATE			ENVIRONMENTAL

FOR REDUCED ENGLISH PLANS
0 1 2 3

GENERAL NOTES:

1. ALL WORK IS TO BE DONE UNDER THE DIRECTION OF THE ENGINEER.
2. CALTRANS STANDARD SPECIFICATIONS AND STANDARD PLANS, MAY 2006 EDITION, ARE PART OF THESE PLANS.
3. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORK HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH THE LATEST OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.
4. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES DURING CONSTRUCTION. PROPER REPAIR SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND THE RESPECTIVE UTILITY COMPANY.
5. ALL PIPELINES AND OTHER UNDERGROUND FACILITIES MAY NOT BE SHOWN. EXISTING UNDERGROUND FACILITIES AS SHOWN ARE APPROXIMATE ONLY AND WERE OBTAINED FROM AVAILABLE UTILITY RECORDS. HOWEVER, THE UTILITIES ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITIES AND TO HAVE ALL FACILITIES LOCATED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 1-800-642-2444 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION.
6. SLOPES OF ALL EMBANKMENT FILL SHALL BE 2:1 (HORIZONTAL: VERTICAL) UNLESS OTHERWISE NOTED ON PLANS OR AS DIRECTED BY THE ENGINEER. ATTENTION IS DIRECTED TO CALTRANS STANDARD SPECIFICATIONS, SECTION 19, FOR EMBANKMENT CONSTRUCTIONS WHERE APPLICABLE.
7. DUST CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHALL BE FOLLOWED AT ALL TIMES DURING CONSTRUCTION OPERATIONS.
8. EROSION CONTROL SHALL BE PERFORMED ON ALL DISTURBED AREAS.
9. EROSION CONTROL SHALL BE PERFORMED ON ALL EMBANKMENT CONSTRUCTION.
10. TREES DESIGNATED ⊗ ON THE PLANS ARE TO BE REMOVED UNLESS DIRECTED OTHERWISE IN WRITING BY THE ENGINEER.
11. ALL ELEVATIONS SHOWN ARE FINISHED ELEVATIONS UNLESS STATED OTHERWISE.
12. THE CONTRACTOR SHALL NOT PERFORM WORK OUTSIDE THE RIGHT OF WAY UNLESS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
13. SEE SPECIFICATIONS FOR DETAILS NOT SHOWN HEREIN.

ABBREVIATIONS

AB	AGGREGATE BASE	N	NORTH
AS	AGGREGATE SUBBASE	NTS	NOT TO SCALE
APPROX	APPROXIMATE		
AC	ASPHALT CONCRETE	OC	ON CENTER
ACP	ASBESTOS CEMENT PIPE	OG	ORIGINAL GROUND
		OD	OUTSIDE DIAMETER
BC	BEGINNING OF HORIZONTAL CURVE		
BEG	BEGIN	PT	ANGLE POINT
		PG&E	PACIFIC GAS & ELECTRIC CO.
BVC	BEGINNING OF VERTICAL CURVE	PVMT	PAVEMENT
BW	BACK OF SIDEWALK	PED	PEDESTRIAN
		POC	PORTLAND CEMENT CONCRETE
CIP	CAST-IN-PLACE OR CAST IRON PIPE	POC	POINT ON HORIZONTAL CURVE
CIPCP	CAST-IN-PLACE CONCRETE PIPE	PI	POINT OF INTERSECTION
C-C	CENTER TO CENTER	POT	POINT OF TANGENCY
℄	CENTER LINE	PRC	POINT OF REVERSE CURVE
CL	CLASS OR CHAIN LINK	P/L	PROPERTY LINE
CLR	CLEAR OR CLEARANCE		
CMP	CORRUGATED METAL PIPE	R	RADIUS OR RADIAL
C&G	CURB AND GUTTER	RR	RAILROAD
		REINF	REINFORCED
D	DEPTH	RCB	REINFORCED CONCRETE BOX
DET	DETAIL	RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER	RW	RETAINING WALL
DI	DROP INLET	REV	REVISED OR REVISION
DWG	DRAWING	RT	RIGHT
DWY	DRIVEWAY	R/W	RIGHT-OF-WAY
		RSP	ROCK SLOPE PROTECTION
E	EAST OR ELECTRIC		
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT	SS	SANITARY SEWER
		S	SLOPE OR SOUTH
EC	END OF HORIZONTAL CURVE	SFM	SURVEY FOUND MONUMENT
ELEV	ELEVATION	SHT	SHEET
EP	EDGE OF PAVEMENT	SD	STORM DRAIN
EVC	END OF VERTICAL CURVE	STA	STATION
EX	EXISTING	STD	STANDARD
EXC	EXCAVATE	SW	SIDEWALK
		SYM	SYMMETRIC OR SYMMETRICAL
FC	FACE OF CURB		
FG	FINISHED GRADE	T	TANGENT LENGTH OR TELEPHONE
FL	FLOW LINE	TEMP	TEMPORARY
		TC	TOP OF CURB
g	GRAM	TG	TOP OF GRADE
G	GAS LINE	TW	TOP OF WALL
GA	GAUGE	TYP	TYPICAL
GALV	GALVANIZED		
		VAR	VARIES
H	HEIGHT	VC	VERTICAL CURVE
HORIZ	HORIZONTAL	VERT	VERTICAL
HP	HINGE POINT		
		W	WATER, WEST OR WIDTH
ID	INSIDE DIAMETER		
INV	INVERT GRADE ELEVATION	Δ	DELTA (ANGLE OF CURVATION)
		℘	DIAMETER OR SIGNAL PHASE
kg	KILOGRAM		
		1/-	DETAIL NUMBER / SHEET NUMBER OR DASH INDICATING SAME SHEET
L	LENGTH OR LENGTH OF CURVE		
LC	LENGTH OF CHORD	A/3	SECTION LETTER / SHEET NUMBER OR DASH INDICATING SAME SHEET
LT	LEFT		
MAX	MAXIMUM		
MH	MANHOLE		
MPa	MEGAPASCAL		
m	METER		
MIN	MINIMUM		
mm	MILLIMETER		
MON	MONUMENT		

	REVIEWED BY:	DATE:
CONSTRUCTION		
MAINTENANCE		
REAL ESTATE		
SURVEY		
TRAFFIC		
ENVIRONMENTAL		

REVISIONS

NO.	DESCRIPTION	BY	DATE	APP'D
1				
2				
3				
4				
5				

APPROVED

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

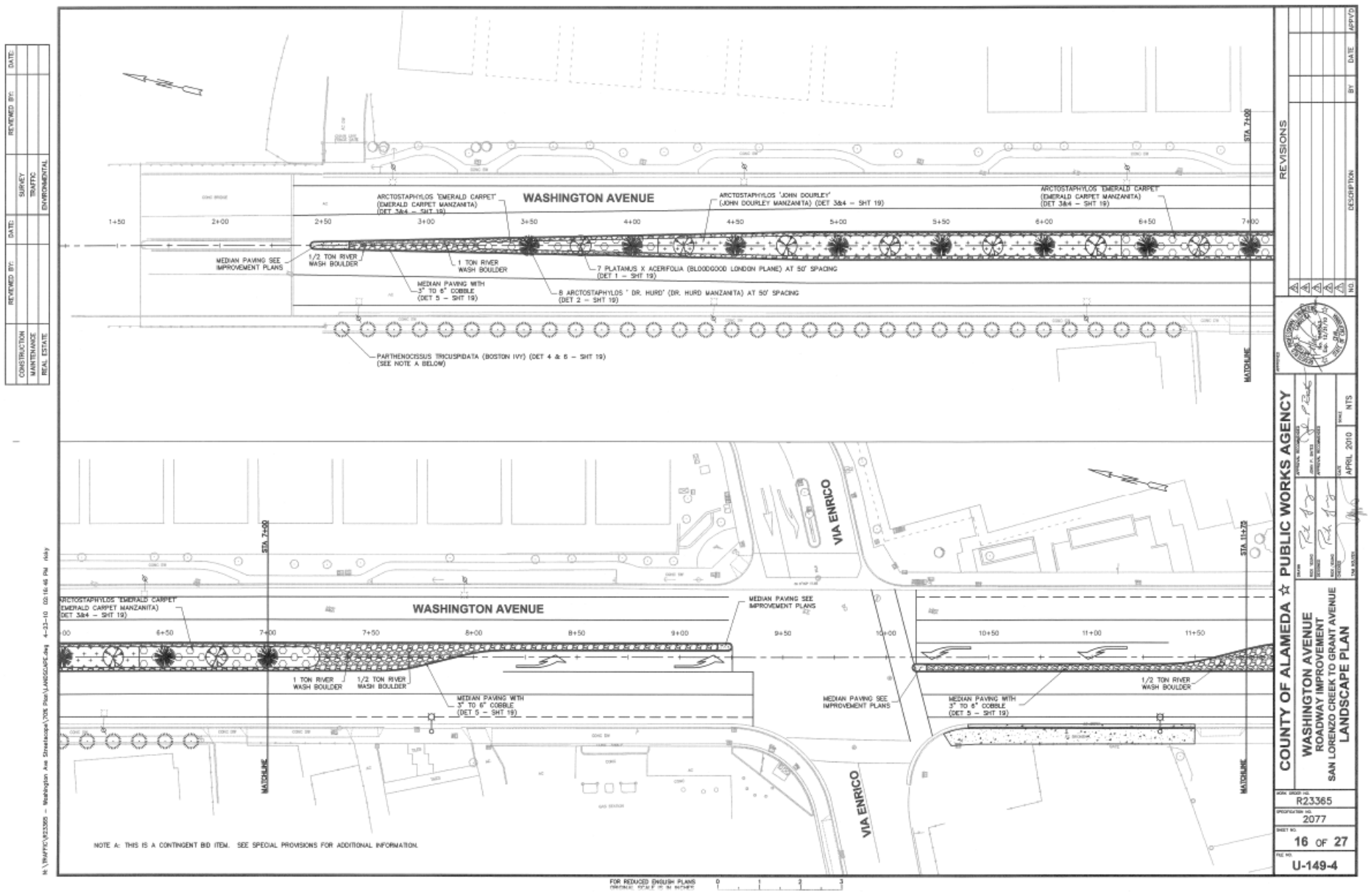
WASHINGTON AVENUE
ROADWAY IMPROVEMENT
SAN LORENZO CREEK TO GRANT AVENUE
NOTES AND ABBREVIATIONS

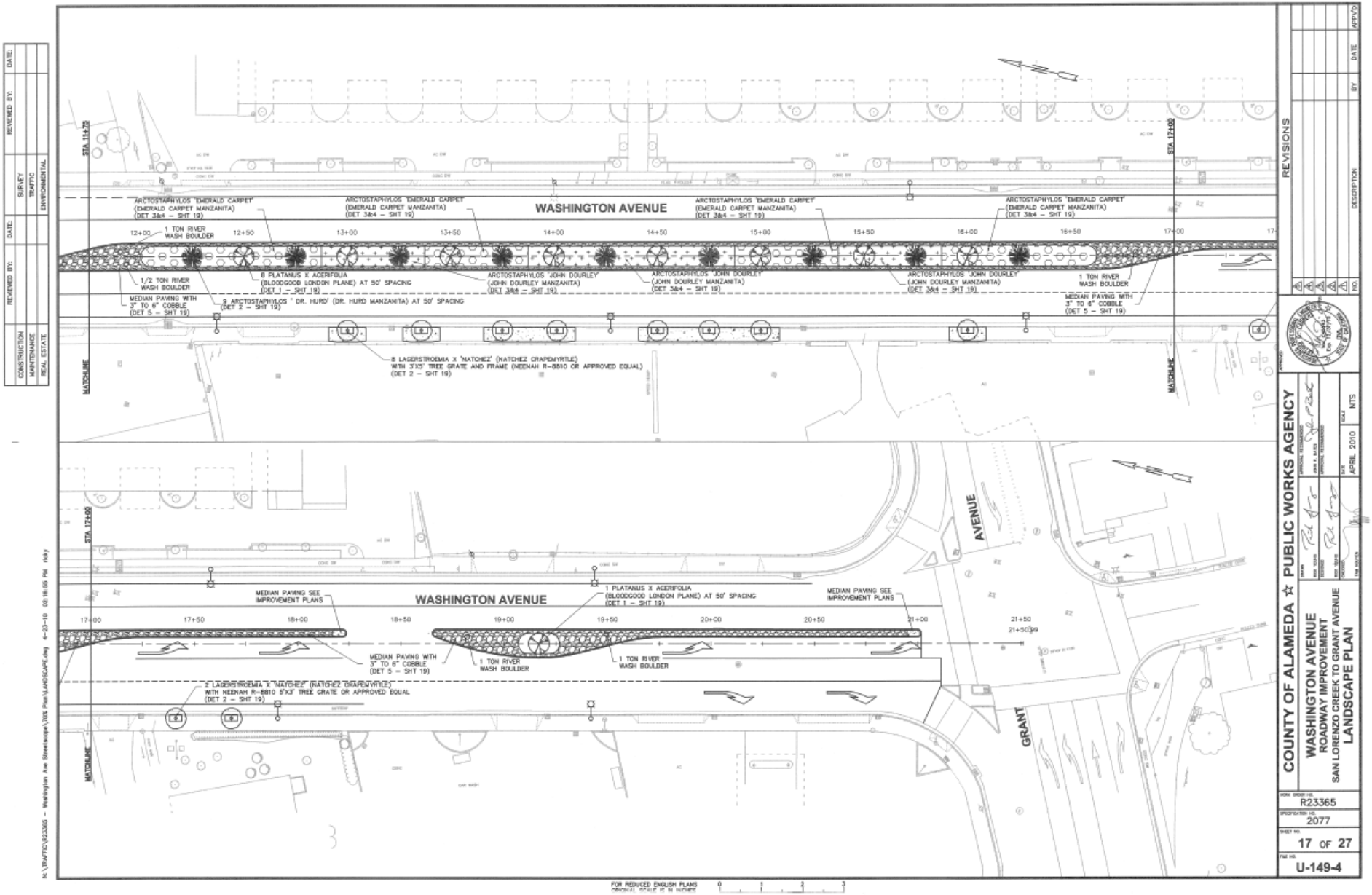
DATE: APRIL 2010 SCALE: N.T.S.

WORK ORDER NO. R23365
SPECIFICATION NO. 2077
SHEET NO. 3 OF 27
FILE NO. U-149-4

FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

\\gendfs\drawings\TRAFFIC\R23365 - Washington Ave Streetscape\705 Plan\TITLE.dwg 4-23-10 12:55:08 PM ricky


WASHINGTON AVENUE
ARCTOSTAPHYLOS 'EMERALD CARPET' (EMERALD CARPET MANZANITA) (DET 3&4 – SHT 19)
ARCTOSTAPHYLOS 'JOHN DOURLEY' (JOHN DOURLEY MANZANITA) (DET 3&4 – SHT 19)
MEDIAN PAVING SEE IMPROVEMENT PLANS
1/2 TON RIVER WASH BOULDER
1 TON RIVER WASH BOULDER
MEDIAN PAVING WITH 3" TO 6" COBBLE (DET 5 – SHT 19)
7 PLATANUS X ACERIFOLIA (BLOODGOOD LONDON PLANE) AT 50' SPACING (DET 1 – SHT 19)
8 ARCTOSTAPHYLOS ' DR. HURD' (DR. HURD MANZANITA) AT 50' SPACING (DET 2 – SHT 19)
PARTHENOCISSUS TRICUSPIDATA (BOSTON IVY) (DET 4 & 5 – SHT 19) (SEE NOTE A BELOW)
STA 7+00
MATCHLINE
VIA ENRICO
STA 11+75
NOTE A: THIS IS A CONTINGENT BID ITEM. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
REVISIONS
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
WASHINGTON AVENUE
ROADWAY IMPROVEMENT
SAN LORENZO CREEK TO GRANT AVENUE
LANDSCAPE PLAN
APRIL 2010
NTS
R23365
2077
16 OF 27
U-149-4


WASHINGTON AVENUE
ARCTOSTAPHYLOS 'EMERALD CARPET' (EMERALD CARPET MANZANITA) (DET 3&4 – SHT 19)
1 TON RIVER WASH BOULDER
1/2 TON RIVER WASH BOULDER
MEDIAN PAVING WITH 3" TO 6" COBBLE (DET 5 – SHT 19)
8 PLATANUS X ACERIFOLIA (BLOODGOOD LONDON PLANE) AT 50' SPACING (DET 1 – SHT 19)
9 ARCTOSTAPHYLOS ' DR. HURD' (DR. HURD MANZANITA) AT 50' SPACING (DET 2 – SHT 19)
ARCTOSTAPHYLOS 'JOHN DOURLEY' (JOHN DOURLEY MANZANITA) (DET 3&4 – SHT 19)
8 LAGERSTROEMIA X 'NATCHEZ' (NATCHEZ CRAPEMYRTLE) WITH 3'X3' TREE GRATE AND FRAME (NEENAH R–8810 OR APPROVED EQUAL) (DET 2 – SHT 19)
MATCHLINE
STA 171+00
STA 174+75
AVENUE
GRANT
MEDIAN PAVING SEE IMPROVEMENT PLANS
2 LAGERSTROEMIA X 'NATCHEZ' (NATCHEZ CRAPEMYRTLE) WITH NEENAH R–8810 5'X3' TREE GRATE OR APPROVED EQUAL (DET 2 – SHT 19)
REVISIONS
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
WASHINGTON AVENUE
ROADWAY IMPROVEMENT
SAN LORENZO CREEK TO GRANT AVENUE
LANDSCAPE PLAN
APRIL 2010
NTS
R23365
2077
17 OF 27
U-149-4

PLANT LIST

SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	NOTES
	ARCTOSTAPHYLOS 'DR. HURD'	DR. HURD MANZANITA	15 GALLON	MULTI-TRUNK
	PLATANUS X ACERIFOLIA	BLOODGOOD LONDON PLANE	48" BOX	STANDARD
	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY (SEE NOTE A BELOW)	1 GALLON	SPACE 10' O.C.
	LAGERSTROEMIA X 'NATCHEZ'	NATCHEZ CRAPEMYRTLE	24" BOX	STANDARD
	ARCTOSTAPHYLOS 'EMERALD CARPET'	EMERALD CARPET MANZANITA	5 GALLON	SPACE 2.5' O.C.
	ARCTOSTAPHYLOS 'JOHN DOURLEY'	JOHN DOURLEY MANZANITA	5 GALLON	SPACE 3' O.C.

NOTE A: THIS IS A CONTINGENT BID ITEM. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

PLANTING NOTES

1. VERIFY EXACT LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO WORK. ALL COSTS ASSOCIATED WITH LOCATING EXISTING UTILITIES, INCLUDING POTHOLING, SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICES PAID FOR THE VARIOUS ITEMS OF WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFORE.
2. QUANTITIES SHOWN ON THE PLANS AND SPECIFICATIONS ARE APPROXIMATE AND ARE PROVIDED FOR CONVENIENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES AND FOR FURNISHING AND INSTALLING ALL PLANTS AND MATERIALS SHOWN ON THE PLANS AND REQUIRED BY THE CONTRACT DOCUMENTS.
3. ENGINEER SHALL APPROVE FINAL LOCATIONS OF ALL PLANS PRIOR TO INSTALLATION. NOTIFY ENGINEER FOR DIRECTION IF PLANT LOCATIONS REQUIRE ADJUSTMENT DUE TO, BUT NOT NECESSARILY LIMITED TO THE FOLLOWING: UNDERGROUND OR ABOVE GROUND UTILITIES, STRUCTURES OR OBSTRUCTIONS, AND TO COMPLY WITH UTILITY AND/OR COUNTY REQUIREMENTS FOR SETBACKS, ETC., PRIOR TO IRRIGATION AND/OR PLANT INSTALLATION. ENGINEER'S APPROVAL IS REQUIRED FOR ALL ADJUSTMENTS PRIOR TO INSTALLATION. ALL COSTS ASSOCIATED WITH ADJUSTMENTS IN IRRIGATION AND/OR PLANT LOCATIONS WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICES PAID FOR THE VARIOUS ITEMS OR WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFORE.
4. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN OBSTRUCTIONS, GRADE DIFFERENCES, STRUCTURES, ETC., CONFLICT WITH THE DESIGN. NOTIFY ENGINEER IN WRITING FOR DIRECTIONS PRIOR TO PROCEEDING. IF THE CONTRACTOR FAILS TO NOTIFY THE ENGINEER REGARDING SITE CONFLICTS, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND ASSOCIATED COSTS FOR ANY CHANGES WHICH MAY BE REQUIRED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADING ALL PLANTING BED AND MULCHED DIRT AREAS. ALL PLANTED AND MULCHED AREAS ARE TO HAVE POSITIVE DRAINAGE. NO LOW SPOTS OR BIRDBATHS ALLOWED.
6. PLANTS SHALL CONFORM TO THE STATE OF CALIFORNIA GRADING CODE OF NURSURY STOCK, NO. 1 GRADE, AND SHALL BE IN PRIME CONDITION WHEN INSTALLED AND ACCEPTED. SEE PLANTING SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING QUANTITY, TRANSPORTATION, PLANTING, ETC.
7. INSPECTION AND ACCEPTANCE OF PLANS WILL BE DONE BY THE ENGINEER AT THE NURSERY AND AT THE PROJECT SITE PRIOR TO PLANTING.
8. APPLY PRE-EMERGENT HERBICIDE TO ALL TREE, SHRUB AND GROUNDCOVER PLANTING BED AREAS INCLUDING TREE AND SHRUB BASINS AND MULCHED DIRT AREAS. CHEMICALS USED ARE TO BE IN A WRITTEN CHEMICAL WEED CONTROL PROGRAM PREPARED BY A LICENSED PEST CONTROL ADVISOR AND APPROVED BY THE ENGINEER AND THE COUNTY MAINTENANCE DEPARTMENT. APPLY PRIOR TO MULCHING.
9. INSTALL A 4" LAYER OF BARK MULCH IN ALL TREE AND SHRUB BASINS, ALL PLANTING AREAS FROM AND TO EDGES OF PAVING, CURBS, HEADERS, FENCES, WALLS, ETC., WITHIN THE PROJECT LIMITS. DO NOT APPLY BARK MULCH TO TREE PLANTERS WITH TREE GRATES. KEEP MULCH AWAY FROM STEMS OF PLANS AND TRUNKS OF TREES.
10. SET AXIS OF TREE STAKES PARALLEL TO ROADWAY.

	REVIEWED BY:	DATE:
CONSTRUCTION		
MAINTENANCE		
REAL ESTATE		

	REVIEWED BY:	DATE:
SURVEY		
TRAFFIC		
ENVIRONMENTAL		

NO.	DESCRIPTION	BY	DATE	APPVD
	REVISIONS			

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

WASHINGTON AVENUE
ROADWAY IMPROVEMENT
SAN LORENZO CREEK TO GRANT AVENUE
PLANTING LIST AND NOTES

DATE: APRIL 2010 SCALE: N.T.S.

WORK ORDER NO. R23365
SPECIFICATION NO. 2077
SHEET NO. 18 OF 27
FILE NO. U-149-4

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FOR REDUCED ENGLISH PLANS 0 1 2 3

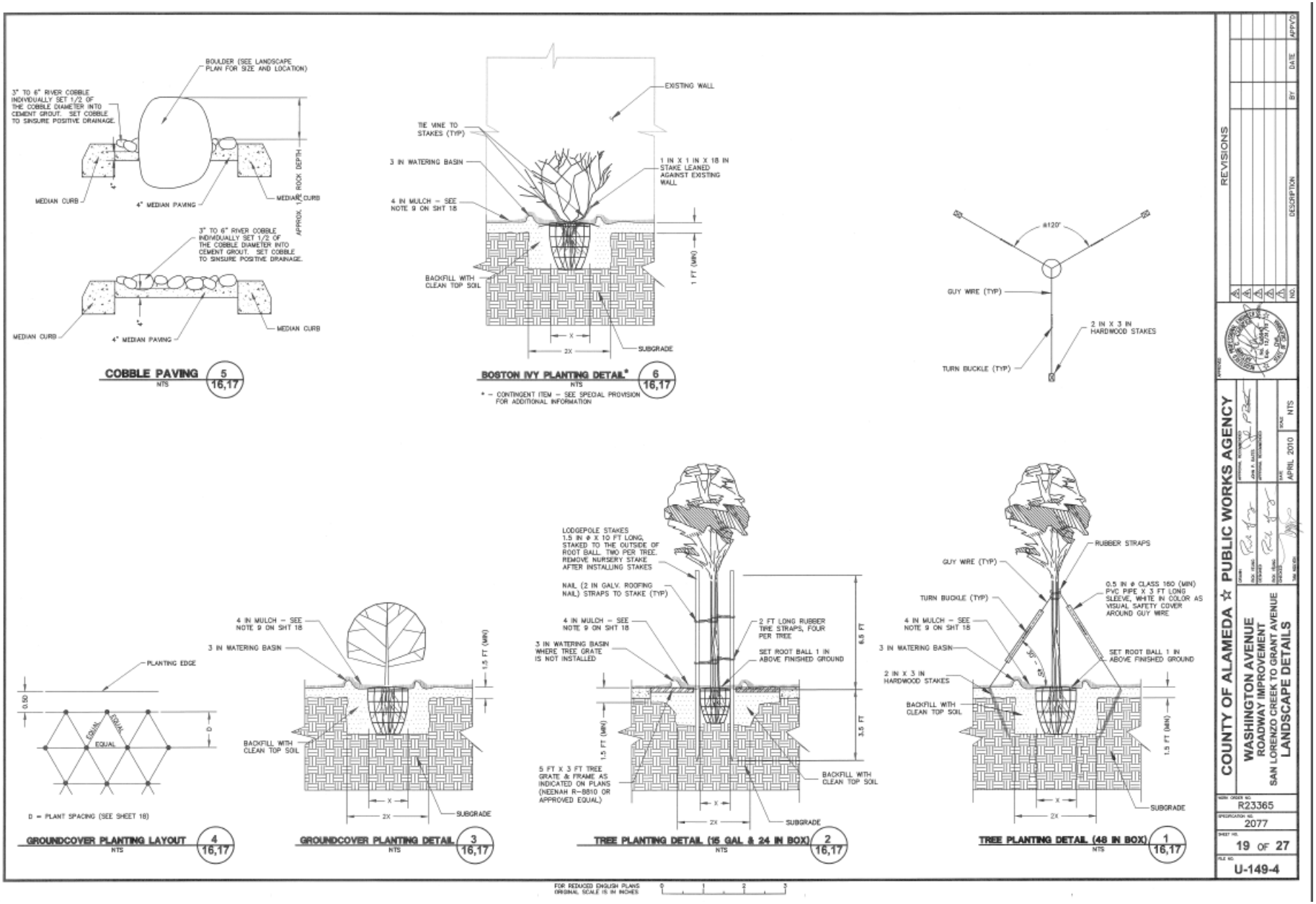

BOULDER (SEE LANDSCAPE PLAN FOR SIZE AND LOCATION)
3" TO 6" RIVER COBBLE INDIVIDUALLY SET 1/2 OF THE COBBLE DIAMETER INTO CEMENT GROUT. SET COBBLE TO SINSURE POSITIVE DRAINAGE.
MEDIAN CURB
4" MEDIAN PAVING
APPROX. ROCK DEPTH
COBBLE PAVING 5 16,17
NTS
EXISTING WALL
TIE VINE TO STAKES (TYP)
3 IN WATERING BASIN
1 IN X 1 IN X 18 IN STAKE LEANED AGAINST EXISTING WALL
4 IN MULCH – SEE NOTE 9 ON SHT 18
BACKFILL WITH CLEAN TOP SOIL
1 FT (MIN)
SUBGRADE
BOSTON IVY PLANTING DETAIL* 6 16,17
* – CONTINGENT ITEM – SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION
≈120°
GUY WIRE (TYP)
2 IN X 3 IN HARDWOOD STAKES
TURN BUCKLE (TYP)
PLANTING EDGE
0.50
EQUAL
D = PLANT SPACING (SEE SHEET 18)
GROUNDCOVER PLANTING LAYOUT 4 16,17
4 IN MULCH – SEE NOTE 9 ON SHT 18
3 IN WATERING BASIN
1.5 FT (MIN)
BACKFILL WITH CLEAN TOP SOIL
GROUNDCOVER PLANTING DETAIL 3 16,17
LODGEPOLE STAKES 1.5 IN ø X 10 FT LONG, STAKED TO THE OUTSIDE OF ROOT BALL. TWO PER TREE. REMOVE NURSERY STAKE AFTER INSTALLING STAKES
NAIL (2 IN GALV. ROOFING NAIL) STRAPS TO STAKE (TYP)
2 FT LONG RUBBER TIRE STRAPS, FOUR PER TREE
SET ROOT BALL 1 IN ABOVE FINISHED GROUND
6.5 FT
3.5 FT
5 FT X 3 FT TREE GRATE & FRAME AS INDICATED ON PLANS (NEENAH R–8810 OR APPROVED EQUAL)
TREE PLANTING DETAIL (15 GAL & 24 IN BOX) 2 16,17
RUBBER STRAPS
GUY WIRE (TYP)
0.5 IN ø CLASS 160 (MIN) PVC PIPE X 3 FT LONG SLEEVE, WHITE IN COLOR AS VISUAL SAFETY COVER AROUND GUY WIRE
TURN BUCKLE (TYP)
4 IN MULCH – SEE NOTE 9 ON SHT 18
3 IN WATERING BASIN
SET ROOT BALL 1 IN ABOVE FINISHED GROUND
2 IN X 3 IN HARDWOOD STAKES
BACKFILL WITH CLEAN TOP SOIL
TREE PLANTING DETAIL (48 IN BOX) 1 16,17
REVISIONS
CONSTRUCTION
MAINTENANCE
REAL ESTATE
SURVEY
TRAFFIC
ENVIRONMENTAL
REVIEWED BY:
DATE:
COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
WASHINGTON AVENUE ROADWAY IMPROVEMENT
SAN LORENZO CREEK TO GRANT AVENUE
LANDSCAPE DETAILS
APRIL 2010
NTS
R23365
2077
19 OF 27
U-149-4
FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES
0 1 2 3

EXHIBIT J

PROJECT 3 – HAMPTON ROAD

MAINTENANCE PLAN

&

AS-BUILT DRAWINGS

LANDSCAPE MAINTENANCE PLAN

HAMPTON ROAD

FROM MISSION BOULEVARD
TO MEEKLAND AVENUE
CHERRYLAND DISTRICT
ALAMEDA COUNTY CA

Public Works Agency
Alameda County

HAMPTON ROAD

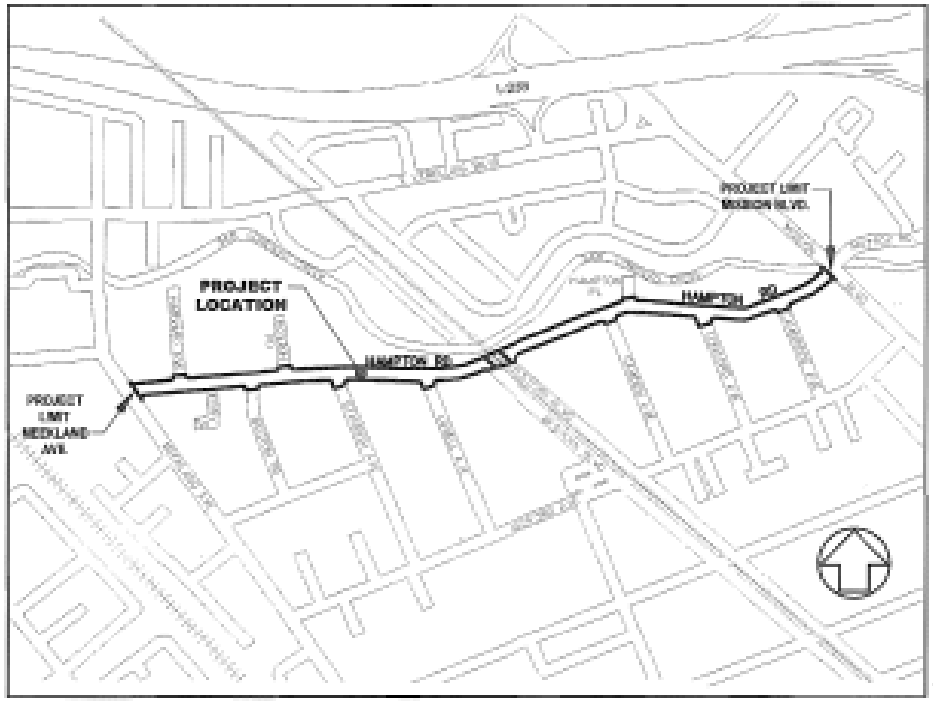
LANDSCAPE MAINTENANCE PLAN

September 13, 2016

A. PROJECT INFORMATION

HAMPTON ROAD

DESCRIPTION	HAMPTON ROAD is a beautification project consisting of trees planted along the roadway and an irrigated, landscaped gateway entrance at the Mission Blvd intersection. The project includes shrub and groundcover maintenance, tree well maintenance, tree trimming,, and irrigation system maintenance. Project components to be maintained include: • Maintain landscape plantings and irrigation system • Seasonally water plants • Install 3" mulch over tree wells 6-8" from tree trunks • Maintain and repair landscape headers NOTE: There is an irrigation clock at the beginning of Hampton Road and Mission Boulevard that irrigates the southwest corner lot.
ADDRESS	HAMPTON ROAD, FROM MISSION BOULEVARD TO MEEKLAND AVENUE

LOCATION MAP	

COUNTY INFORMATION

MAINTENANCE SUPERVISOR	**Rob Sales,** Field Maintenance Supervisor robs@acpwa.org 510-670-5534 Ext. 55534

HAMPTON ROAD

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

PROJECT TYPE	
✓	STREET/ROADWAY LANDSCAPING

AS-BUILT PLANS/SUBMITTALS (SEE ATTACHMENT 1)	
✓	Landscape Plans only, other drawings available upon request

SPECIAL PROJECT CONDITIONS	

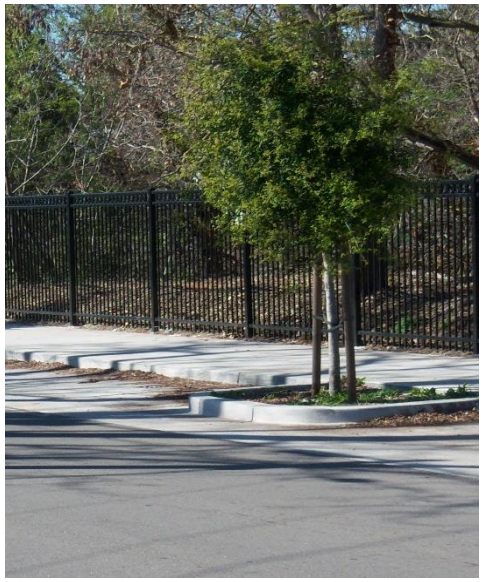
HAMPTON ROAD

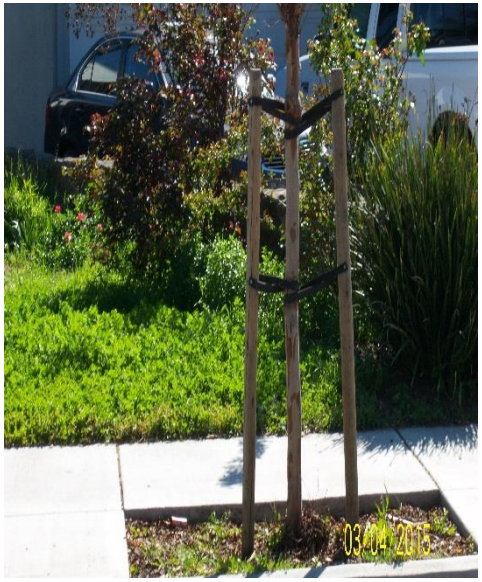
LANDSCAPE MAINTENANCE PLAN

September 13, 2016

B. PROJECT ELEMENTS

SECTION	APPLIES TO PROJECT?	ELEMENT
1	✓	Safety and General Practices (to follow each site visit)
2	✓	Weeding and Trash Removal
3	✓	Trees
4	✓	Shrubs and Groundcover
5	✓	Irrigation
6	✓	Pest Management
7	✓	Mulch and other supplies
8	✓	Pavements and Finishes





1. SAFETY AND GENERAL PRACTICES

TASK		FREQUENCY
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities including but not limited to traffic control, pesticide use and tree trimming (ISA Standards, applicable O.S.H.A. and CAL-O.S.H.A. Safety Orders).	EVERY SITE VISIT
B	All work shall be completed in a professional, workmanlike manner, and use quality equipment and materials that comply with current regulations.	EVERY SITE VISIT
C	Do not work or perform any operations, particularly during periods of inclement weather, which may destroy or damage landscaped areas.	EVERY SITE VISIT
D	The safety of workers, passersby, and the public shall be paramount. Utilize accepted standards for safe practices during the maintenance operation and to safely maintain and manage equipment, machines, and materials or other hazards consequential or related to the work.	EVERY SITE VISIT
E	All personnel shall be properly trained, and wear and use Personal Protective Equipment required for the task assigned as required by OSHA or other regulatory agencies.	EVERY SITE VISIT
F	Warning signs, traffic cones, flashing lights, etc., shall be utilized at each work site and all traffic control activities and equipment shall conform to MUTCD standards.	EVERY SITE VISIT
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair.	EVERY SITE VISIT
H	Work shall be performed in such a manner to limit unnecessary idling for periods of longer than five (5) minutes while on the worksite, unless engine power is required to operate the vehicle's accessory equipment.	EVERY SITE VISIT
I	All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor.	EVERY SITE VISIT
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.	EVERY SITE VISIT
K	Record field notes on Maintenance Checklist. Organize, label, date and file digital photography	EVERY SITE VISIT

2. WEEDING AND TRASH REMOVAL

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Pick up litter and landscape debris (including downed tree branches)	EVERY SITE VISIT	• All recyclable materials including green waste shall be disposed of at an appropriate facility. • Green waste may be taken to a composting facility or a transfer station that offers separate processing for green waste for composting. • Per Alameda County Waste Management Authority Ordinance #2008-1 adopted January 28, 2009: **plant debris may not be landfilled and must be composted.**
B	Remove weeds at curbs and sidewalks and planter areas (focus on April through June)	MONTHLY	
C	Fill tree wells around tree areas using mulch	EVERY SITE VISIT	
D	Sweep/blow pavement for storm water quality and to maintain a neat and clean appearance	MONTHLY	
E	Remove all cutting and waste materials to an off-site facility	EVERY SITE VISIT	

3. TREES

TASK		FREQUENCY	ADDITIONAL INFORMATION
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	**ANNUALLY (Jan. – Mar.)**	• Tree Replacement: Any existing tree that is permanently damaged or shows declining health shall be replaced with 48" box specimen tree, or as directed by County. Notify County of need for replacement and to obtain authorization. • Pruning (with hand pruners/loppers/saws): Prune trees between the months of January – March to encourage healthy growth habits pertaining to each individual species, and for an overall balanced shape and appearance. All trees shall be free of dead wood, weak, diseased, insect-infested, and damaged limbs at all times. Selective thinning cuts should be made not "heading" or "tipping" cuts. Remove all clippings the same day tree is pruned. • Keep plant material trimmed 1' from the tree trunk.
B	Remove dead branches and branches overhanging pavement or to improve line of sight	**AS NEEDED**	
C	Inspect, and replace dead/diseased plant material. Test soil if there are health issues. Add organic fertilizer if recommended by soil testing.	**ANNUALLY**	
D	Maintain 14' clearance for branches overhanging beyond curb line into the paved section of streets and 10' clearance for branches overhanging sidewalk, bicycle path and pedestrian areas.	**AS NEEDED**	
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8" from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes after **Year Three.** **REMOVE NURSERY STAKES AND GREEN TIES.**	**AS NEEDED (March-May)**	

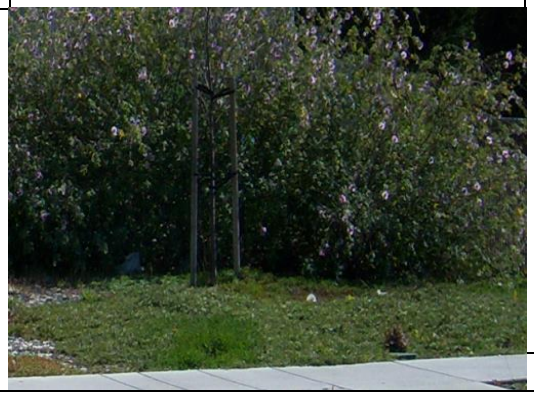
Existing: Kwanzan Cherry
Prunus Serrulata

4. SHRUBS AND GROUNDCOVER

TASK		FREQUENCY
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas	AS NEEDED
B	Inspect, and replace dead/diseased plant material. Test soil if there are health issues.	AS NEEDED

Lavatera Maritima Tree Mallow

Myoporum Parvifolium Myoporum



ADDITIONAL INFORMATION

- Shrub/groundcover Replacement: Shrubs and groundcover that are woody, decadent or permanently damaged should be replaced with the same species, unless conditions warrant replacement with other species. If so, notify County and suggest replacements from successful species at project site, with low water use needs.
- Pruning (with hand pruners/loppers/saws): Prune woody shrubs to remove dead wood, weak, diseased, insect- infested, and damaged limbs. Selective thinning cuts should be made; do not use not “heading” or “tipping” cuts. Remove all clippings the same day shrub is pruned.
- Trim shrubbery and ground covers to area behind curbs and walkways, within planter beds, and away from walls, fences, and utilities, as necessary. Do not prune into hedges or topiary—let plant grow in natural shape
- Keep ground cover trimmed 1’ from the base of trees
- Do not use string trimmers/weed whippers around trees.

5. IRRIGATION

	NOTE: There is no existing irrigation system for the trees along roadway, only a small system at the southwest corner of Hampton Road and Mission Boulevard. Toro clock at the site must be manually turned on to water shrubs and groundcover.	**FREQUENCY**
A	Inspect plant material and soil moisture to determine irrigation needs for trees. Provide supplemental irrigation via hose/water truck if trees exhibit signs of stress.	**AT EACH VISIT**

6. PEST MANAGEMENT

TASK		**FREQUENCY**	**USE OF CHEMICALS (PESTICIDES) AND DISEASE & PEST CONTROL**
A	Inspect and notify supervisor of major disease and insect infestations affecting trees, shrubs and ground covers.	**MONTHLY**	• Alameda County encourages environmentally sensitive maintenance practices. Apply insecticide or fungicide to trees, shrubs and ground covers only when significant plant damage would result from not addressing the infestation. Base pest and disease control program on known pests and diseases in Alameda County. • All work involving the use of chemicals to be performed under the guidance of a valid California Pest Control Advisor (PCA) License and Qualified Applicator. • If needed, spray herbicide, under guidance and recommendation of PCA. Apply only at manufacturers' approved rates to avoid soil toxicity. Verify that herbicide is appropriate for use with various plant materials. • Attach Material Safety Data Sheet (MSDS) to this Landscape Maintenance PLAN for any chemicals used. All regulatory reporting requirements for chemical use must be followed. • Comply with quarantine regulations set by the California Department of Food and Agriculture (CDFA) when working in areas affected by Sudden Oak Death (SOD), and by Light Brown Apple Moth (LBAM). Regulations include, but are not limited to, ensuring that material is transported to a green waste processing facility that has been authorized by the local County Agricultural Department to accept affected loads, ensuring vehicle payloads are tightly covered with a tarp or otherwise enclosing green waste material to prevent releases during transport, and ensuring equipment is cleaned after working in a contaminated zone so as to prevent cross contamination.
B	Inspect and notify supervisor of damage due to ground squirrels, gophers, and other burrowing rodents.	**MONTHLY**	
C	Control weeds with hand removal or mechanical cultivation.	**MONTHLY**	
D	Use Integrated Pest Management (IPM) practices, and least toxic methods to control pests	**MONTHLY**	

7. MULCH/OTHER SUPPLIES

TASK		FREQUENCY	ADDITIONAL INFORMATION		
A	**ANNUALLY:** Replace/replenish mulch annually, or when bare ground occurs over 40% of area. Maintain mulch minimum 3 inches deep in all landscape areas at all times. Mulch installed as part of project consists of 1" compost layer on existing grade, top-dressed with 3" wood chip or bark mulch. Replenish annually with wood chip or bark mulch to maintain 4" depth. **ALL APPLICATIONS:** Mulch layer to be installed in all non-paved areas, including planted areas and tree wells. Keep root crowns of all plants free of mulch and debris. Mulch shall be applied/replenished annually after annual flowers have seeded. Apply mulch on top of dead annuals and around all other planting areas, avoiding root crowns.	**ANNUALLY OR AS NEEDED**		MULCH	3" mulch (recycled material preferred).
				SUPPLIER	County **Earthtones Mulch Company** 6756 Central Avenue Newark, CA 94560 408-888-7632 www.earthtonesmulch.com
					

8. PAVEMENTS AND FINISHES			
TASK		**FREQUENCY**	**ADDITIONAL INFORMATION**
A	Inspect for cracks or damaged concrete	**INSPECT AT EACH SITE VISIT**	Notify County of cracking, pavement damage, graffiti, trip hazards or other conditions that need further inspection or repair.

C. TASK SUMMARY

1: Safety and General Practices	
A	Comply with federal, state, local, and regulatory standards, ordinances, rules, policies and laws for all performed activities
B	Complete all work in a professional, workmanlike manner, with compliant equipment and materials
C	Do not work or perform any operations that may destroy or damage landscaped areas
D	Utilize accepted standards for safety and safely maintain and manage equipment and materials
E	Properly train all personnel, and wear and use Personal Protective Equipment required by OSHA or other regulatory agencies
F	Use warning signs, traffic cones, flashing lights, etc., at each work site and all traffic control activities and equipment shall conform to MUTCD
G	Note any hazards found in the service area landscape and notify Supervisor immediately of any unsafe condition that requires repair
H	Work shall be performed in such a manner to limit unnecessary vehicle or equipment idling
I	Handle all materials and equipment in accordance with the instructions of the applicable manufacturer, fabricator, supplier, or distributor
J	Take a digital photograph(s) of site at each maintenance visit, note problem areas.
K	Record field notes on Maintenance Checklist.
2: Weeding and Trash Removal	
A	Pick up litter and landscape debris (including downed tree branches)
B	Remove weeds at curbs and sidewalks and median planter islands
C	Fill tree wells around tree areas with mulch
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance
E	Remove all cutting and waste materials to an off-site disposal facility
3: Trees	
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)
B	Remove dead branches and branches overhanging pavement or to improve line of sight
C	Inspect and replace dead/diseased plant material . Test soils if necessary for health issues
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove tree stakes year three if support is no longer needed.

HAMPTON ROAD

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

C. TASK SUMMARY

4: Shrubs and Groundcover	
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas
B	Inspect and replaced dead/diseased plant material
5: Irrigation	
A	Inspect plant material and soil moisture to determine irrigation needs; provide irrigation water to trees as needed.
6: Pest Management	
A	Inspect for disease and insect infestations
B	Inspect for damage by burrowing animals
C	Control weeds with hand or mechanical tools
D	Use IPM for least toxic methods to control pests
7: Mulch and Other Materials	
A	Annually: Replace/replenish mulch to maintain 3” cover, or when bare ground occurs over 40% of area. Mulch must be maintained a minimum 4 inches deep in all landscape areas.
8: Pavements and Finishes	
A	Inspect pavement at all site visits and notify County of damage

HAMPTON ROAD

LANDSCAPE MAINTENANCE PLAN

September 13, 2016

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
1: Safety and General Practices				
A	Comply with laws	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	✓ 1 2 3 4 5 6 7 8
B	Complete all work in a professional, workmanlike manner			
C	Do not destroy or damage landscaped areas			
D	Utilize accepted standards for safety			
E	Properly train wear and use Personal Protective Equipment required by OSHA			
F	Use warning signs, traffic cones, flashing lights, etc., at each work site			
G	Note any hazards found in the service area landscape and notify Supervisor			
H	Limit unnecessary vehicle or equipment idling			
I	Install barriers signs, lights, flaggers, etc. to warn the public of any danger			
J	Handle all materials and equipment in accordance with the manufacturer			
K	Proceed with caution to avoid damaging any utilities known or unknown			
L	Take a digital photograph(s) of site at each visit, note problem areas			
M	Record field notes on Maintenance Checklist.			
2: Weeding and Trash Removal				
A	Pick up litter and landscape debris (including downed tree branches)	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☒ AT EACH VISIT ☐ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH SEPTEMBER) ☒ MONTHLY (DURING OCTOBER THROUGH MARCH) ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☐ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Remove weeds at curbs and sidewalks and median planter islands			
C	Fill tree wells in landscape areas			
D	Sweep/blow pavement for storm water quality maintenance and to maintain a neat and clean appearance			
E	Remove all cutting and waste materials to an off-site disposal facility			

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
3: Trees				
A	Prune trees (to maintain optimum health of the plants and to correct branching structure)	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☐ APRIL ☐ MAY ☐ JUNE ☐ JULY ☐ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED ☒	1 2 3 4 5 ✓ 6 7 8
B	Remove dead branches and branches overhanging pavement or to improve line of sight	☒ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☒ JULY ☐ AUGUST ☐ SEPTEMBER ☒ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8
C	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues			
D	Maintain 14’ clearance for branches overhanging beyond curb line into the paved section of streets and 7' clearance for branches overhanging sidewalks and pedestrian areas.			
E	Stake and support trees and replace stakes which have been broken or damaged as needed. Do not place stakes closer than 8” from trunk of tree. Place stakes and ties so no chafing of bark occurs; check and re-tie to prevent girdling. Remove Tree Stakes between March and May after Year Three (2017)			

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D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
4: Shrubs and Groundcover				
A	Trim shrubs and groundcovers to remove dead material or overhanging paved areas.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☐ MAY ☐ JUNE ☐ JULY ☒ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☒ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☒ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ☒ ONCE A YEAR AS NEEDED	1 2 3 ✓ 4 5 6 7 8
B	Inspect and replace dead/diseased plant material. Test soils if necessary for health issues.			
5: Irrigation				
A	Inspect plant material and soil moisture to determine irrigation needs; supply irrigation water to trees as needed.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ ☒ ☒ ☒ ☒ ☐	☒ AT EACH VISIT ☐ ☒ WEEKLY ☒ TWICE A MONTH (DURING APRIL THROUGH OCTOBER) ☐ MONTHLY (DURING NOVEMBER AS NEEDED ☐	1 2 3 4 5 6 7 ✓ 8

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D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
6: Pest Management				
A	Inspect for disease and insect infestations	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☒ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 ✓ 6 7 8
B	Inspect for damage by burrowing animals			
C	Control weeds with hand or mechanical tools, especially before annuals set seed. Remove weeds from site.			
D	Use IPM for least toxic methods to control pests			
7: Mulch and Other Materials				
A	Annually: Replace/replenish mulch to maintain 3" cover, or when bare ground occurs over 40% of area. Mulch must be maintained a minimum 3 inches deep in all landscape areas. At all times: Place mulch over dead annuals and in all planting areas. Avoid placing mulch over root crowns. Mulch may be applied in August or September when annuals are spent. Note date of application in Maintenance Log. Do not place mulch over pavement or gravel or AB road shoulders or in storm drain areas.	☐ JANUARY ☐ FEBRUARY ☐ MARCH ☐ APRIL ☐ MAY ☐ JUNE ☐ JULY ☒ AUGUST ☐ SEPTEMBER ☐ OCTOBER ☐ NOVEMBER ☐ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☒ ONCE A YEAR ☒ AS NEEDED	1 2 3 4 5 6 7 ✓ 8

D. FREQUENCY AND ESTIMATED HOURS BY TASK

TASK		CALENDAR	FREQUENCY	ESTIMATED HOURS/VISIT*
8: Pavements and Finishes				
A	Inspect concrete and decorative brick crossings and notify County of damages.	☒ JANUARY ☒ FEBRUARY ☒ MARCH ☒ APRIL ☒ MAY ☒ JUNE ☒ JULY ☒ AUGUST ☒ SEPTEMBER ☒ OCTOBER ☒ NOVEMBER ☒ DECEMBER	☐ AT EACH VISIT ☐ WEEKLY ☐ TWICE A MONTH ☐ MONTHLY ☐ EVERY 2-3 MONTHS ☐ TWICE A YEAR ☐ ONCE A YEAR AS NEEDED ☒	✓ 1 2 3 4 5 6 7 8

* The hourly estimate is intended to provide a guideline for hours and frequency needed to complete site maintenance tasks. The Contractor should make his/her own determination of maintenance and manpower commitment needed to complete site maintenance. Some tasks may be completed concurrently, and site needs may vary depending on previous maintenance, seasonal inundation, vandalism, disease, and/or other conditions.

E. MAINTENANCE RECORD

Task	Attach or Signature	Date	Completed by
1: Safety and General Practices			
2: Weeding and Trash Removal			
3: Trees			
4: Shrubs/Groundcover			
5: Irrigation			
6: Pest Management	• Quantity/description of all commercial and organic fertilizers used • Quantity and description of all soil amendments used • PCA Applicator/License Number • **Agricultural Commissioners Use Report** for all chemical, disease, and pest control work performed (attach)		
7: Mulch and Other Materials	**Attach submittal of Compost source and date of application:** **3" Wood/Bark Mulch: annual or as needed in bare areas**		
8: Pavements and Finishes			

ATTACHMENTS	
1	HAMPTON ROAD Landscape Specifications
2	AS BUILT PLANS: (Available on request)

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ATTACHMENT 1 – HAMPTON RD LANDSCAPE SPECIFICATIONS

Section 1: General Information

1.1 General Scope of Work

This work shall include all supervision, labor, materials, equipment, tools, supplies and services to maintain in a superior condition all landscape areas, irrigation and drainage systems and other related work. All work shall be performed in a workmanlike manner, using quality equipment and materials.

1.2 Site Description

A. SCOPE

Work to be done is located at HAMPTON ROAD and identified on the enclosed maps and plans. This area is owned or supervised by Alameda County Public Works Agency, hereafter referred to as Agency.

B. LANDSCAPE INVENTORY

TREES				
5	PRU-SER	Prunus Serrulata Kwanzan	Kwanzan Cherry	24" Box
SHRUBS				
42	HEM-HYB	Hemerocallis Hybrid *Stella D'Oro*	Daylily	2 GAL
34	LAV-MAR	Lavatera Maritima	Tree Mallow	5 GAL
GROUND COVER				
88±	MYO-PAR	Myoporum Parvifolium	Myoporum	1 GAL

1.3. Limits of Work

Specified work does not include:

A. Repair or replacement of street lighting, traffic signals or roadside signs.

B. Repair or replacement of traffic lane pavement or concrete pavement.

1.4. Supplemental Documents

A. SITE MAPS

1. Record Drawings, including landscape, irrigation, site furnishings etc. are available from ACPWA.

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1.5. Supplemental Resources

A. *A Guide to Estimating Irrigation of Water Needs of Landscape Plantings*, California Dept of Water Resources, http://cdec.water.ca.gov

B. *California Irrigation Management Information System*, www.cimis.water.ca.gov, Waste management and recycling, www.ciwmb.ca.gov.

C. *The Weed Worker's Handbook, A Guide to Techniques for Removing Bay Area Invasive Plants*, The Watershed Council (510) 231-5655 and the California , Invasive Plant Council (510) 843-3902

D. *Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide*, 2nd ed., UC Publication 3359, http://www.ipm.ucdavis.edu

Section 2: General Requirements

2.1. Contractor Qualifications

A. QUALIFICATIONS

1. Contractor must have a valid California C-27 contractor's license authorized by the State of California.
2. Contractor must have assigned to the project at least one employee possessing a California State Chemical Applicator's License for the control of weeds, plant diseases and other pests.
3. Contractor shall be thoroughly familiar with California native wildflower species, and take care not to eliminate or eradicate California native wildflowers or other plants installed as part of the project.
4. It is preferred that the Contractor have assigned to the project at least one employee who has successfully completed the Pollution Prevention Training & Certification Program For Surface Cleaners issued by the Bay Area StormWater Management Agencies Association **(**BASMAA).
5. All tree pruning shall be completed under the direction of a Certified Arborist or Certified Tree Worker (International Society of Arboriculture).
6. It is preferred that the Contractor have assigned to the project at least one employee who has experience or training in Integrated Pest Management (IPM) techniques.

B. INSURANCE

Contractor shall maintain insurance required by ACPWA throughout the contract period.

2.2. Compliance with Laws, Ordinances and Policies

All services rendered shall be provided in accordance with all ordinances, resolutions, statutes, rules, laws and regulations of the Agency, and any Federal, State, or local governmental agency having jurisdiction in effect at the time service is provided

2.3. Work Requirements

A. WORK SCHEDULE

1. Contractor is to provide Agency with a monthly work schedule describing the work to be performed in the Project Area, hours by job classification and tasks completed.
2. The Contractor shall conduct all operations during the hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, unless otherwise approved by the Agency. Contractor may not work on any Federal, State, or local holidays.
3. Any non-emergency work that may be deemed hazardous or disruptive (i.e., chemical spraying, tree pruning, etc.) shall be scheduled at least two (2) weeks in advance with the Agency's representative. For emergency work, Contractor must obtain written approval from Agency's representative prior to commencing work.
4. Agency reserves the right to change schedules for special events, conflicts with adjacent property owners/tenants within five (5) working days advance notice.

B. PROTECTION OF EXISTING PROPERTY

1. Contractor must protect all existing plant materials, site improvements, structures, facilities, utilities, and natural areas from damage, both above and below ground. Any damages shall be reported immediately to the Agency's representative. Any damages caused by Contractor shall be corrected and/or paid for by the Contractor at no cost to the Agency.
2. Contractor shall protect property from accidental chemical, fuel, oil or other contaminant spills.
3. Contractor shall not wash or blow soil, chemicals, litter, mulch, soil amendments or other materials into storm drains.

C. SAFETY

Contractor must at all times exercise necessary precautions to provide for the protection of the public and employees.

1. Traffic Lane Closure. Landscape maintenance services conducted in the roadway must be performed in a safe manner. The contractor is required to perform traffic diverting lane closures prior to beginning any trimming operations in the center median. Litter pickup does not require a lane closure.
2. All lane closure activities must comply with Federal Highway Manual on Uniform Traffic Control Devices (MUTCD) http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/supplement.htm], applicable governmental agencies and follow notification requirements of the Police and Fire Departments.
3. Chemical Applications. Note: Bay-Friendly Landscaping emphasizes Integrated Pest Management (IPM) practices to control pests and diseases in the landscape. IPM uses cultural, mechanical, physical, and biological control methods before using pesticides. Chemical controls are applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control is applied.

4. Contractor shall apply all chemicals in a safe manner and according to label instructions and Agency, State and Federal requirements. A California Chemical Applicators license is required by the contractor for chemical applications. The Contractor shall mix and apply chemicals to protect against accidental spills and drift to non-target areas, and to insure safety of the applicator. Any spilled chemicals, as well as contaminated soil, water, and/or landscape materials

must be removed from the Project and disposed of in accordance with the Agency requirements. The Contractor shall maintain applicator's licenses and records of applications as required by the State.
5. A Chemical Work Report shall be completed for each chemical application. The Contractor is responsible for submitting chemical usage reports to the County Agricultural Department. Copies are to be sent to the Agency's representative as part of the Contractor's monthly report.

D. CONTRACTOR'S PERSONNEL AND SUPERVISION

1. Contractor shall provide a list including all Contractor's and subcontractor's employees assigned to work site and include work schedule and assignment. Contractor must update list within 5 business days of any change. All Contractor's employees assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States.
2. The Contractor shall assign a qualified trained supervisor to oversee work performed at the work site and to act as the Contractor's liaison with the Agency representative. This supervisor must inspect the Project daily (Monday through Friday) except holidays and provide direction to the Contractor's workers and/or subcontractors. This supervisor shall speak, write, read and understand English and be capable of writing schedules, monthly reports noting any deficiency that needs correcting and major projects for the coming month. This supervisor shall have at least three (3) years of landscape maintenance supervision experience.
3. All Contractor's personnel shall adhere to basic public works standards for working attire including; uniform shirts with Contractor's name or logo clearly visible at all times when working at all locations, proper shoes and other equipment required by State Safety Regulations. Shirts are to be maintained in a neat and presentable condition.
4. All Contractor vehicles are to have a readable sign with Contractor's name or logo and telephone number. Trucks are to be kept in a clean and presentable condition.

E. SUBCONTRACTING

A portion of the work covered by these specifications may be subcontracted with prior approval of the Agency. Contractor shall supervise subcontractor and guarantee work quality. Subcontractors and their qualifications must be submitted to the Agency thirty (30) days before working at the site. All subcontractors assigned to the Project must demonstrate they are United States citizens or have a legal right to work in the United States. It is preferred that subcontractors have training in Bay- Friendly Landscaping or other experience in sustainable landscape practices.

F. SUPPLIES AND EQUIPMENT

1. Fuel conservation and low emission equipment. The Contractor will implement strategies in work operations to reduce fossil fuel consumption and emissions, such as:
a. Use hand-powered equipment when possible.
b. Minimize use of gas-powered blowers, especially on planting beds.
c. Select smallest, most fuel efficient equipment to accomplish task.
d. Consider vehicles that operate on natural gas or biodiesel.
e. Maintain equipment properly and keep it well tuned.
f. Emphasize employee carpooling to Project.
2. Use local products and suppliers. The Contractor shall use local products and suppliers (produced within 150 miles from the project site) to the extent possible to minimize fuel consumption and emissions.
3. Use recycled and salvaged materials. The Contractor shall use salvaged and recycled-content products where possible Materials for reuse may be found by contacting the CalMax website at www.ciwmb.ca.gov or

www.stopwaste.org .
4. Equipment refueling and repair. The Contractor shall refuel and repair equipment in a safe manner to protect against accidental spills. Limit refueling to specific areas on a site. Measures shall be taken to prevent, control, and clean-up spills. Clean-ups should be immediate, automatic and routine and performed by a trained staff member or a licensed cleaning company. Contact the local emergency response team agencies to report all spills.

G. REPORTING AND INSPECTING

1. The Contractor shall submit a written report each month stating all contract work completed. The report shall show the work completed during each week contract work was accomplished, and shall be submitted with and cover the same work as the Contractor's billing statement for the previous month's work. The report shall include documentation of stormwater and irrigation inspections, IPM monitoring, soil and pest management treatments and other chemical applications. A three week look ahead schedule outlining anticipated work by number should be included.
2. Unusual horticultural problems such as pests, disease and damages that are beyond the scope of the Contractor's responsibility shall be brought to the attention of the Agency representative immediately.
3. The Agency, through a designated representative, will make periodic inspections to insure that complete and continuous maintenance is fulfilled. In addition, the Agency may obtain the services of a Landscape Architect, Arborist, IPM/PCA or other professional to inspect plantings and make recommendations for improvements in the maintenance program.

H. WORK PERFORMANCE

1. Contractor is responsible for (a) having thoroughly investigated and considered the scope of services to be performed, (b) carefully considering how the services should be performed, and (c) fully understanding the facilities, difficulties, and restrictions attending to the performance of the services required. Contractor is responsible to investigate the area and be fully acquainted with the conditions.
2. Should the Contractor discover any latent or unforeseeable conditions, which will materially affect the performance of services, Contractor shall immediately inform the Agency of such fact and shall not proceed except at Contractor's risk until written instructions are received from the Agency.
3. Plants, irrigation systems, etc., damaged by traffic accidents or vandalism, shall be reported immediately to the Agency.

Section 3: Landscape Standards and Maintenance Requirements

3.1 Overview

A. APPLICABLE STANDARDS AND BEST MANAGEMENT PRACTICES (BMP's)

Contractor shall adhere to applicable professional standards as defined by a professional organization including:

1. American National Standard for Tree Care Operations - ANSI A300, Parts 1 and 2
2. International Society of Arboriculture BMP for Tree and Shrub Fertilization, and BMP for Tree Pruning
3. Irrigation Association BMPs
4. California Association of Pest Control Advisors

3.2 Site Analysis

A. Contractor shall become familiar with the site's microclimate(s), infiltration rate and drainage characteristics and range in exposures to schedule irrigation.

3.3 Soil & Nutrition Management

A. CONTRACTOR SHALL PROTECT SOIL FROM COMPACTION BY:

1. Cultivating soil when it is moderately moist; wet and dry soils shall not be cultivated.
2. Scheduling maintenance operations that require driving equipment over the soil when the soil is dry.
3. Confining vehicle traffic to paved areas.
4. When temporary access is needed over non-paved areas, distribute the load over the soil with 6" thick, coarse organic mulch or reusable planks.

B. MAINTAIN MULCH

1. Contractor shall maintain a minimum of 3" of mulch at all times over soil surface that is not covered by vegetation. 1" of compost as described in Section 3.3 E shall be applied one time only to the swale banks and tops along the road shoulder. Mulch materials shall be chipped or shredded green waste, wood chips from pruning operations, or chipped landscape prunings.
2. Apply mulch annually to maintain 3" thick layer. As needed, apply mulch to bare areas when these areas exceed approximately 40% of cover. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch, tapered as needed to transition to existing grade.
3. Keep root crowns of all plants free of mulch and debris.
4. Apply mulch in August or September. Apply mulch around trees and ground cover, avoiding root crowns.

3.4 Water Management

A. WATER CONSERVATION GOALS

Landscapes shall be irrigated to as needed maintain tree appearance and health, and avoid overspray and water damage to Agency's hardscape and property.

B. IRRIGATION ASSESSMENT

1. There is an irrigation system for ground cover and shrubs only.
2. Irrigation shall be applied as needed to maintain tree health and survival. Application may be from water truck or other system subject to Agency approval. Irrigation with recycled water is preferred.
3. Irrigation intervals and frequency shall be suitable for weather conditions. Calculation methods are described in *A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California*, available from the Dept. of Water Resources, Sacramento, CA.
4. Irrigation frequency shall be based on soil moisture and ET (evapotranspiration) data (available through CIMIS). Irrigation shall be applied at approximately 80% allowable depletion (AD) for drought tolerant plantings. Enough water shall be applied at each irrigation cycle to wet through the depth of root zone.
5. Landscape irrigation shall not be applied during high wind or high temperature conditions.
6. Use soil probe at each landscape visit to evaluate soil moisture conditions and need for supplemental irrigation application.

3.5 Integrated Pest Management (IPM)

A. GOALS

An Integrated Pest Management program shall be implemented to:
1. Maintain healthy, attractive plants, maximize resistance to pests and out-compete weeds;
2. Monitor for presence of pests and to evaluate pest impact to plant health and appearance, and nuisance to the public;
3. Provide control treatments that have minimal negative effects on all but the pest and that protect air and water quality. Contractor shall assume pesticides are potentially hazardous to human and environmental health. Preference shall be given to reasonably available non-pesticide alternatives when considering the use of pesticides on Agency property.

B. INSECTS AND DISEASES

1. Key Trees and Shrubs: key pests. Contractor shall identify primary tree and shrub species and cultivars in the landscape (key plants) and the pests that commonly cause significant harm to tree and shrub health or appearance (key pests).
2. Monitoring. Contractor shall monitor landscape areas monthly to identify presence of beneficial insects and pests, determine populations, life stage, and degree of damage to trees or shrubs. Key plants/key pests will be monitored closely during normal periods of pest activity. This information will be the basis on which pest control methods are initiated. Records of monitoring activity shall be kept.

C. CULTURAL/MECHANICAL/PHYSICAL METHODS

Adjust maintenance practices or modifications as needed to make the environment unfavorable for pest reproduction, movement, or survival. This can include modifying an existing maintenance practice, such as timing of pruning or fertilization. Other mechanical or physical practices may be utilized, including:
1. Fertilize and irrigate only when needed, to foster a healthy soil.
2. Prune to remove infected or infested branches and shoots. Time pruning to avoid periods of insect infestation.
3. Remove fallen twigs, leaves, and fruit that contains disease inoculum.
4. Mulch soil surface to reduce weeds and to reduce splashing and the drops of mud that would protect spores deposited on plant surfaces.
5. Bringing to attention of Agency trees and shrubs that are disease or insect prone and suggesting resistant tree or shrub replacements or those better suited to the site and microclimate.

D. BIOLOGICAL METHODS

Biological controls are pesticides of natural origin that have limited or no adverse effects on the environment or beneficial organisms. Determining the effective biological control and proper timing of application are critical to success in pest control. The Contractor shall consider the following biological control methods when cultural/mechanical/physical methods are not adequate to lower pest populations to the target level.

1. *Bacillus thuringiensis* (Bt)
2. Parasitic nematodes
3. Pheromone traps
4. Beneficial insect release and conservation

E. PESTICIDES

The term pesticide applies to insecticides, fungicides and other substances used to control pests. Antimicrobial agents are not included in this definition of pesticides.

1. Least toxic pesticides. When cultural, mechanical, physical and biological controls have provided inadequate pest control, the Contractor may select and apply an appropriate least-toxic pesticide as a last resort. Least-toxic pesticides have a high LD-50, low residual, and narrow range of toxicity. Application must be timed to the appropriate life stage of the pest. Examples are:

a. insecticidal soaps,
b. horticultural oils,
c. herbicidal soaps,
d. Neem,
e. Pyriproxyfen insect growth regulator (e.g. Distance IGR)

2. Restricted chemicals. Organophosphate-containing pesticides have been found to persist in the environment and cause water quality impairment of some creeks, streams, and arroyos in Alameda County. They are restricted from use. Examples include:

a. diazinon, trade names Spectracide®, Knox-out®
b. chlorpyrifos, trade names Dursban®, Pageant®)
c. malathion and carbaryl (trade name Sevin®)

Pyrethroids and pyrethrins containing piperonyl butoxide (PBO) are restricted from use. Pyrethrins are toxic to birds, fish, and beneficial insects, should be used only as a last resort, and carefully applied to avoid runoff and contact with non-target plants.

Contractor shall not apply any Toxicity Category I or II Pesticide Product, any pesticide containing a chemical identified by the State of California as a chemical known to the State to cause cancer or reproductive toxicity pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986, and any pesticide classified as a human carcinogen, probable human carcinogen or possible human carcinogen by the United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.

3. All chemical applications shall be performed by a licensed, trained technician. Contractor must be a licensed Pest Control Operator as required by the State of California, registered in Alameda Co., and strictly adhere to all laws.

4. Notice of pesticide use. Signs shall be posted at least three days before application of the pesticide product and remain posted at least four days after application of the pesticide.

a. Signs shall be posted (i) at every entry point where the pesticide is applied if the pesticide is applied in an enclosed area, and (ii) in highly visible locations around the perimeter of the area where the pesticide is applied if the pesticide is applied in an open area.
b. Signs shall be of a standardized design that are easily recognizable to the public and workers.
c. Signs shall contain the name and active ingredient of the pesticide product, the target pest, the date of pesticide use, the signal word indicating the toxicity category of the pesticide product, the date for re-entry to the area treated, and the name and contact number for the City department responsible for the application.
d. Contractor shall not be required to post signs in right-of-way locations that the general public does not use for recreational purposes (north side and medians). However, Contractor shall notify Agency in writing three days prior to pesticide applications in the right-of-way areas (south side pedestrian/bicycle path).
e. Contractor may obtain authorization from the Agency to apply a pesticide without providing a three-day advance notification in the event of a public health emergency or to comply with worker safety requirements. Signs shall be posted for at least four days after application of the pesticide, as described herein.

5. Recordkeeping and reporting

a. Contractor shall maintain records of all pest management activities. Each record shall include the following information:

- target pest;
- type and quantity of pesticide used;
- site of the pesticide application;
- date the pesticide was used;
- name of the pesticide applicator;
- application equipment used;
- prevention and other non-chemical methods of control used.

b. Contractor shall submit the pest management record to Agency on a monthly basis.

F. WEED MANAGEMENT

1. Landscapes shall be maintained in a healthy and attractive manner.
2. Identify key weeds: Contractor will identify key weeds present and design a weed management program to target those species.
3. Monitor planting areas frequently to identify and eradicate weeds early in the growth stage prior to their setting seed. Cut or pull weeds using hand operated equipment where possible.
4. Mulches shall be maintained at all times over soil surface that is not covered by vegetation. See Section 3.3 for application and maintenance of 3” mulch layer.

3.6 Plant Control

A. PRUNING

1. Selective pruning. Plants shall be pruned selectively to remove individual stems or branches that extend beyond the natural conformation of the plant to a lateral branch or at the point of attachment. Woody groundcovers shall be selectively pruned to control growth towards pavements rather than edged.

2. Hedging and shearing. Shearing of plants into formal shapes shall be avoided as this destroys the natural form of the plant and generates excessive waste. Plants having adequate space for development shall instead be selectively pruned on an as needed basis. Where plant size must be controlled because of inadequate space for the plant at certain locations, prune to reduce size by cutting individual branches or stems to interior lateral branches.

3. Tree Pruning. Tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning.

3.7 Waste Management

A. DEBRIS REMOVAL AND CLEAN-UP

Contractor shall keep all landscaped areas and paths free from trash and debris. Debris clean up should be performed with blowers.

B. RECYCLE WASTE

Contractor shall transport all waste and debris to appropriate local recycling facilities.

Section 4: Landscape Specifications for Tree/Shrub Types and Landscape Zones

4.1 Ground Cover and Shrubs

A. STANDARDS FOR HEALTH AND APPEARANCE

Ground covers shall be maintained to sustain an attractive, healthy, normal color for the species, and uniform density with no bare spots. Ground covers shall be kept free of trash and debris.

B. PROTECT ENVIRONMENTAL RESOURCES

Ground cover shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy, minimize waste, and reuse and recycle materials to the extent possible.

D. MULCHING

Contractor shall maintain a minimum of 3” of mulch at all times over all landscape area. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch.

E. WATER MANAGEMENT

1. Trees and shrubs shall be irrigated to provide adequate water to maintain attractive, green, healthy plants, and a moderate growth rate during its growing season.
2. Use soil probe to evaluate soil moisture and determine need for supplemental irrigation to maintain healthy trees and shrubs.
3. Avoid applying water to hardscape surfaces, or in excess of soil infiltration rate.

4.2 Trees

A. STANDARDS FOR HEALTH AND APPEARANCE

Trees shall be maintained to sustain attractiveness, health and structural stability that is characteristic for the species.

B. PROTECT ENVIRONMENTAL RESOURCES

Trees shall be maintained using materials and methods that protect environmental quality and human health, conserve water and energy and minimize waste.

C. PRUNING

1. All tree pruning shall be performed only by trained, experienced personnel. An I.S.A. Certified Arborist or Tree Worker is to be present at all times during pruning. Arborist must have a State of Calif. Contractor's License for Tree Service (C61-D49).
2. All pruning shall be in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300).
3. Trees shall be pruned in the following manner:
a. Clear the crown of diseased, crossing, weak and dead branches. Trees shall not be routinely thinned.
b. Provide 14' vertical clearance over roads, 10' over bicycle path, walkway and sidewalks/bus stops.
c. Reduce end weight on heavy, horizontal branches.
d. Create a strong central trunk with lateral branches spaced vertically and horizontally.
e. Interior branches shall not be stripped out.
f. Trees shall not be climbed with spurs.

D. STAKING

1. Tree stakes, ties and guides shall be checked regularly to ensure trees are not being damaged. Adjust ties and stakes as necessary to prevent girdling and wounding. Remove nursery stakes and green ties during initial site visit.
2. Tree stakes shall be removed within three to five years of planting. For trees unable to stand alone after two years, Contractor will shorten the stakes and lower the ties to 3-4' height. If after the third year the tree will not stand without a stake, Contractor will inspect to determine cause of instability, and make recommendations to Agency for corrective action.
3. If new ties are needed to secure tree to stake, use ties composed of recycled materials. The tie must be broad, have a smooth surface where it contacts the trunk, and provide some elasticity. Wire covered with hose, tubing or other materials, and covered electrical wire are not acceptable materials.

E. MULCHING

Contractor shall maintain a minimum of 3" of mulch at all times over all related areas, see Section 3.3. Do not place mulch over root crowns or against trunks. Mulch shall be applied so that it is below grade (curb, edging,etc.) by 1½".

F. WATER MANAGEMENT

Trees shall be irrigated to encourage deep root growth and to provide adequate water to maintain an attractive, healthy tree, and a moderate growth rate during their growing season. Use soil probe to evaluate soil moisture needs.

H. PEST MANAGEMENT

1. Contractor is responsible for monitoring trees to identify, assess pest problems and taking action to control pests that affect tree health and appearance when pest populations or damage exceed established thresholds.
2. Contractor shall employ integrated pest management procedures.
3. Contractor shall select pest controls to provide adequate pest control without harming non-target organisms, or negatively affecting air and water quality and public health. Pest management shall rely first on cultural, mechanical, physical, and biological control methods. When necessary, chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control will be applied. Pesticides may not applied on a prescheduled basis.
4. Contractor may not apply restricted chemicals that may harm water resources.

4.4 Hardscape

A. DEBRIS REMOVAL AND CLEAN-UP

Contractor shall keep pathways, shoulders and landscaped areas free from trash and debris.

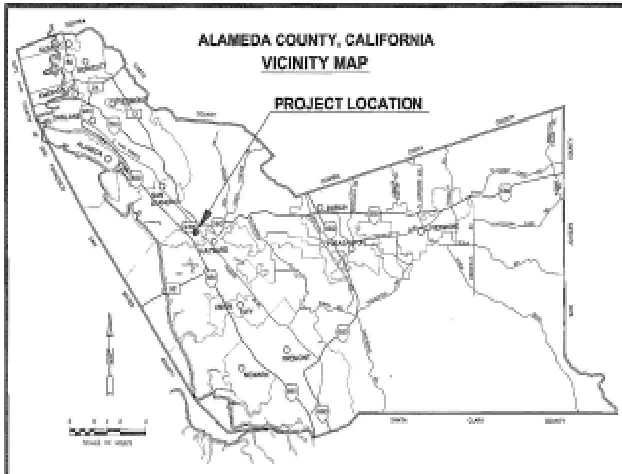
B. SURFACE CLEANING

Contractor shall clean hard surfaces as needed to remove accumulation of sediment, dirt, or other materials that distracts from the visual impact of the area or creates a safety hazard.

C. ROOT INTERFERENCE

Potential root damage to hardscapes shall be reported to Agency. Corrective action will be determined and directed as an extra service.

ALAMEDA COUNTY, CALIFORNIA
VICINITY MAP



ALAMEDA COUNTY
PUBLIC WORKS AGENCY

HAMPTON ROAD
STREET IMPROVEMENTS
(FROM MEEKLAND AVENUE TO MISSION BOULEVARD)

EDEN TOWNSHIP

ALAMEDA COUNTY, CALIFORNIA

DECEMBER 2008

FEDERAL AID PROJECT ID: CML - 5933 (092)

alameda county redevelopment agency

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7	XS-3	CROSS SECTIONS - STA. 9+80 TO STA. 17+00
8	XS-4	CROSS SECTIONS - STA. 17+50 TO STA. 25+00
9	XS-5	CROSS SECTIONS - STA. 26+00 TO STA. 35+50
10	XS-6	CROSS SECTIONS - STA. 36+00 TO STA. 44+50
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12	DL-1	DEMOLITION & LAYOUT PLAN - MEEKLAND AVENUE TO STA. 11+30.00
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19	DL-8	DEMOLITION & LAYOUT PLAN - STA. 40+56.00 TO STA. 45+65.00
20	DL-9	DEMOLITION & LAYOUT PLAN - STA. 45+65.00 TO STA. 51+05.00
21	DL-10	DEMOLITION & LAYOUT PLAN - STA. 51+05.00 TO MISSION BOULEVARD
22	PP-1	PLAN AND PROFILE - MEEKLAND AVENUE TO STA. 11+30.00
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27	PP-6	PLAN AND PROFILE - STA. 30+90.00 TO STA. 35+68.34
28	PP-7	PLAN AND PROFILE - STA. 35+68.34 TO STA. 40+56.00
29	PP-8	PLAN AND PROFILE - STA. 40+56.00 TO STA. 45+65.00
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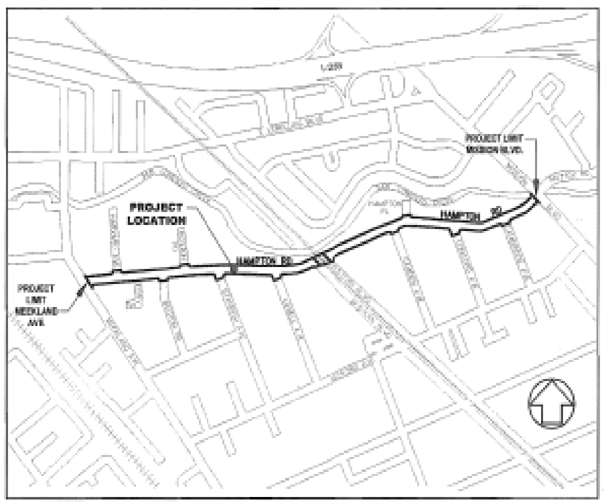
COUNTY OF ALAMEDA
DESIGN GUIDELINES
JAN 1996

SD-300	SD-405	SD-511
SD-304	SD-407	
SD-305	SD-411	
	SD-420	
	SD-434	
	SD-436	

CALTRANS
STANDARD PLANS
MAY 2006

A20A	A88B	ES5A	ES8
A24A	ES7A	ES5B	ES9A
A24C	ES7B	ES5C	
A24D	ES7C	ES5D	
A24E	ES4A	ES7A	
A88A	ES4B	ES7P	



LOCATION MAP
NTS

DANIEL WOLDESENBET, Ph.D., P.E.
COUNTY ENGINEER
CIVIL ENGINEER CERTIFICATE NO. 60306
EXPIRATION JUNE 30, 2010

3/20/09
PLAN APPROVAL DATE

FOR E-76 SUBMITTAL ONLY

FOR E-76 SUBMITTAL

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY
HAMPTON ROAD
STREET IMPROVEMENT PLANS
TITLE SHEET

REVISIONS

DATE 12/22/08 SCALE AS SHOWN

T-1
1 OF 62

U-690-1

FOR REDUCED ENGLISH PLANS 0 1 2 3
ORIGINAL SCALE IS IN INCHES

NOTES:

1. ALL WORK IS TO BE DONE UNDER THE DIRECTION OF THE ENGINEER.

2. CALTRANS STANDARD SPECIFICATIONS MAY 2006 AND STANDARD PLANS, MAY 2006 EDITION, AND THE SUBSEQUENT ERRATA ARE PART OF THESE PLANS.

3. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORK HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF PROPER SHORING OF TRENCHES IN ACCORDANCE WITH OCCUPATIONAL SAFETY LAWS. THE DUTIES OF THE ENGINEER DO NOT INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY IN, ON, OR NEAR THE CONSTRUCTION SITE.

4. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES DURING CONSTRUCTION. PROPER REPAIR SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND THE RESPECTIVE UTILITY COMPANY.

5. ALL PIPELINES AND OTHER UNDERGROUND FACILITIES MAY NOT BE SHOWN. EXISTING UNDERGROUND FACILITIES AS SHOWN ARE APPROXIMATE ONLY AND WERE OBTAINED FROM AVAILABLE UTILITY RECORDS. HOWEVER, THE COUNTY ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITIES AND TO HAVE ALL FACILITIES LOCATED IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT AT 1-800-642-2444 AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION.

6. SLOPES OF ALL EMBANKMENT FILL SHALL BE 2:1 (HORIZONTAL: VERTICAL) UNLESS OTHERWISE NOTED ON PLANS OR AS DIRECTED BY THE ENGINEER. SLOPES OF ALL EMBANKMENT CUTS SHALL BE 3:1 (HORIZONTAL:VERTICAL) UNLESS OTHERWISE NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ATTENTION IS DIRECTED TO CALTRANS STANDARD SPECIFICATIONS, SECTION 19, FOR EMBANKMENT CONSTRUCTIONS WHERE APPLICABLE.

7. DUST CONTROL MEASURES, AS APPROVED BY THE ENGINEER, SHALL BE FOLLOWED AT ALL TIMES DURING CONSTRUCTION OPERATIONS.

8. SEE SPECIFICATIONS FOR DETAILS NOT SHOWN HEREIN.

9. ALL POLES, VALVES, BOXES WITHIN THE PROJECT AREA WILL BE REMOVED, RELOCATED, OR ADJUSTED TO GRADE OF NEW IMPROVEMENTS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

10. THE CONTRACTOR SHALL NOT PERFORM WORK OUTSIDE THE PROJECT LIMIT.

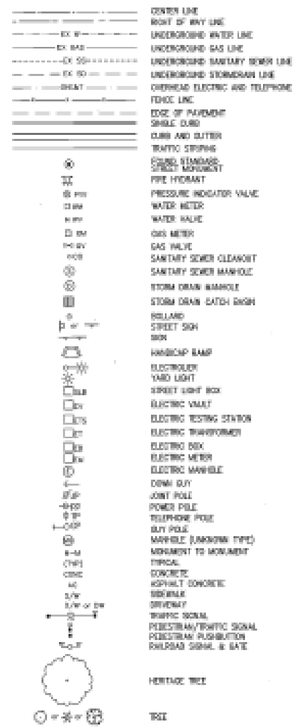
11. A COUNTY REPRESENTATIVE OF THE ENGINEER SHALL BE PRESENT WHEN POLES OR ANCHORS ARE RELOCATED BY PG&E. PG&E SHALL NOTIFY THE ENGINEER 24 HOURS BEFORE PLANNED RELOCATION.

12. PG&E SHALL NOT INSTALL POLES OR ANCHORS NOT SHOWN ON THE PLANS WITHOUT APPROVAL BY THE COUNTY OR THE ENGINEER.

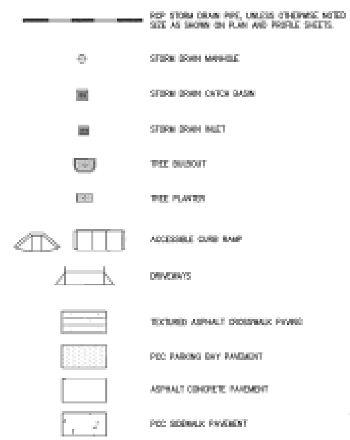
ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
BC	BEGINNING OF CURVE
BVC	BEGINNING OF VERTICAL CURVE
BW	BACK OF SIDEWALK
C&G	CURB AND GUTTER
CB	CATCH BASIN
C/L	CENTER LINE
CLF	CHAIN LINK FENCE
COA	COUNTY OF ALAMEDA
CONC	CONCRETE
CR	CURB RETURN
DET	DETAIL
DI	DRAINAGE INLET
DWY	DRIVE WAY
DWG	DRAWING
E	ELECTRIC
EBMUD	EAST BAY MUNICIPAL UTILITY DISTRICT
EC	END OF CURVE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EVC	END OF VERTICAL CURVE
EX	EXISTING
FC	FACE OF CURB
FG	FINISHED GRADE
FL	FLOW LINE
FT	FOOT/FEET
FS	FINISH SURFACE
G	GAS LINE
GM	GAS METER
GV	GAS VALVE
HORIZ.	HORIZONTAL
IN	INCH/INCHES
INT	INTERSECT
INV	INVERT GRADE ELEVATION
L	LENGTH OF CURVE
LF	LINEAR FEET
LG	LIP OF GUTTER
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MH	MANHOLE
MON	MONUMENT
NTS	NOT TO SCALE
O.C.	ON CENTER
OG	ORIGINAL GROUND
PCC	PORTLAND CEMENT CONCRETE
PED	PEDESTRIAN
PG&E	PACIFIC GAS & ELECTRIC CO.
PRC	POINT OF REVERSE CURVE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RR	RAILROAD
RT	RIGHT
ROW, R/W	RIGHT-OF-WAY
S	SLOPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
STA	STATION
STD	STANDARD
T	TELEPHONE
TC	TOP OF CURB
TYP	TYPICAL
U.P.R.R.	UNION PACIFIC RAILROAD
VC	VERTICAL CURVE
VERT.	VERTICAL
W	WATER
WM	WATER METER
WV	WATER VALVE
WW	WELDED WIRE

EXISTING CONDITIONS LEGEND



IMPROVEMENTS LEGEND



FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

FOR E-76 SUBMITTAL

REVISIONS

NO. | DESCRIPTION | BY | DATE | APPR'D

BKF

COUNTY OF ALAMEDA ☆ PUBLIC WORKS AGENCY

HAMPTON ROAD
STREET IMPROVEMENT PLANS

GENERAL NOTES & ABBREVIATIONS

DATE 12/22/08 | SCALE AS SHOWN

R23359

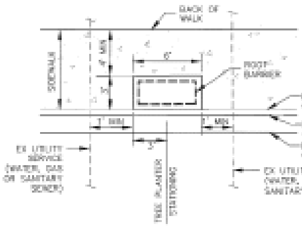
3963

GN-01

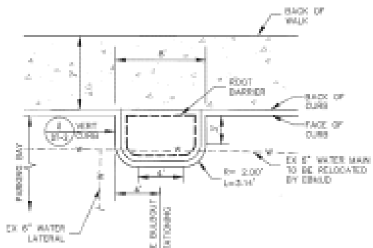
3 OF 62

U-890-1

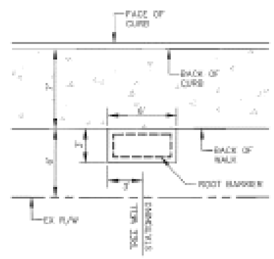
CONSTRUCTION		REVIEWED BY:	DATE:
MAINTENANCE			
REAL ESTATE			
SURVEY		REVIEWED BY:	DATE:
TRAFFIC			
ENVIRONMENTAL			



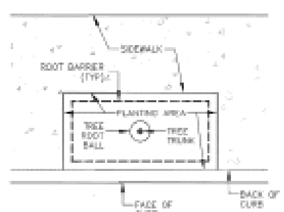
TREE PLANTER (1)
NTS



TREE BULBOUT (2)
NTS

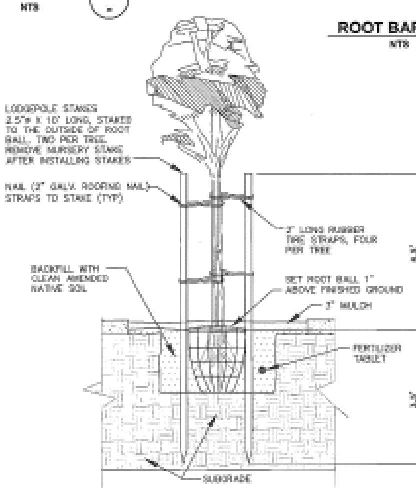


TREE WELL (3)
NTS



NOTES:
1. ROOT BARRIER SHALL BE UB18-2 AS MANUFACTURED BY DEEPROOT CORP. OR EQUAL.
2. INSTALL ROOT BARRIER PER MANUFACTURER'S RECOMMENDATIONS.

ROOT BARRIER (4)
NTS



TREE PLANTING DETAIL (5)
NTS

TREE PLANTER TABLE - SOUTH SIDE HAMPTON ROAD

TREE PLANTER STATIONING	ADDRESS	TYPE OF TREE Common Name / Botanical Name
7+77.14	17324 Meekland Ave.	Golden Rain Tree / Koelreuteria paniculata
8+66.28	17324 Meekland Ave.	Golden Rain Tree / Koelreuteria paniculata
8+37.09	17324 Meekland Ave.	Golden Rain Tree / Koelreuteria paniculata
9+64.09	127	Chinese Yellowood / Maackia amurensis
9+42.78	129	Golden Rain Tree / Koelreuteria paniculata
9+78.13	143-161	Chinese Yellowood / Maackia amurensis
10+14.30	143-161	Chinese Yellowood / Maackia amurensis
10+74.03	161	Golden Rain Tree / Koelreuteria paniculata
10+97.27	161	Golden Rain Tree / Koelreuteria paniculata
11+46.08	171	Chinese Yellowood / Maackia amurensis
12+23.61	177-181	Golden Rain Tree / Koelreuteria paniculata
12+72.55	177-181	Golden Rain Tree / Koelreuteria paniculata
13+06.58	187-189	Chinese Yellowood / Maackia amurensis
13+26.58	187-189	Chinese Yellowood / Maackia amurensis
13+69.80	193	Golden Rain Tree / Koelreuteria paniculata
15+06.14	209	Golden Rain Tree / Koelreuteria paniculata
15+60.58	223	Chinese Yellowood / Maackia amurensis
17+77.08	283-287	Golden Rain Tree / Koelreuteria paniculata
18+50.28	279	Chinese Yellowood / Maackia amurensis
19+02.23	279	Chinese Yellowood / Maackia amurensis
19+22.23	295	Golden Rain Tree / Koelreuteria paniculata
20+41.08	319	Chinese Yellowood / Maackia amurensis
20+06.99	319	Chinese Yellowood / Maackia amurensis
21+16.11	333	Golden Rain Tree / Koelreuteria paniculata
21+58.89	353-357	Chinese Yellowood / Maackia amurensis
21+60.88	353-357	Chinese Yellowood / Maackia amurensis
22+40.89	361	Japanese Pagoda Tree / Sophora japonica
22+65.04	385	Japanese Pagoda Tree / Sophora japonica
23+15.08	385	Japanese Pagoda Tree / Sophora japonica
24+64.77	16527 LOWELL	Japanese Pagoda Tree / Sophora japonica
24+86.08	16527 LOWELL	Japanese Pagoda Tree / Sophora japonica
25+25.02	16558 LOWELL	Chinese Yellowood / Maackia amurensis
25+64.88	425-433	Golden Rain Tree / Koelreuteria paniculata
27+15.88	425-433	Golden Rain Tree / Koelreuteria paniculata
27+45.38	451	Chinese Yellowood / Maackia amurensis
27+69.08	451	Chinese Yellowood / Maackia amurensis
28+33.28	451	Chinese Yellowood / Maackia amurensis
28+16.21	491	Golden Rain Tree / Koelreuteria paniculata
31+01.38	525	Chinese Yellowood / Maackia amurensis
31+21.78	525	Chinese Yellowood / Maackia amurensis
31+41.78	535	Chinese Yellowood / Maackia amurensis
31+97.78	551	Golden Rain Tree / Koelreuteria paniculata
32+25.17	551	Golden Rain Tree / Koelreuteria paniculata
32+54.18	575	Chinese Yellowood / Maackia amurensis
33+15.79	611	Golden Rain Tree / Koelreuteria paniculata
33+54.89	635	Chinese Yellowood / Maackia amurensis
33+76.91	635	Chinese Yellowood / Maackia amurensis
35+04.10	635	Golden Rain Tree / Koelreuteria paniculata
35+53.78	649	Chinese Yellowood / Maackia amurensis
36+90.20	671-681	Golden Rain Tree / Koelreuteria paniculata
36+65.32	687	Chinese Yellowood / Maackia amurensis
36+95.38	687	Chinese Yellowood / Maackia amurensis
37+35.48	695	Golden Rain Tree / Koelreuteria paniculata
38+64.21	717-721	Chinese Yellowood / Maackia amurensis
41+47.48	771	Golden Rain Tree / Koelreuteria paniculata
42+15.50	779	Chinese Yellowood / Maackia amurensis
42+40.00	779	Chinese Yellowood / Maackia amurensis
43+06.64	785	Golden Rain Tree / Koelreuteria paniculata
44+35.58	803-809	Chinese Yellowood / Maackia amurensis
44+60.58	803-809	Chinese Yellowood / Maackia amurensis
45+11.34	825	Golden Rain Tree / Koelreuteria paniculata
45+36.34	825	Golden Rain Tree / Koelreuteria paniculata
45+75.18	841	Chinese Yellowood / Maackia amurensis
46+01.58	841	Chinese Yellowood / Maackia amurensis
46+25.59	841	Chinese Yellowood / Maackia amurensis
46+52.49	855	Golden Rain Tree / Koelreuteria paniculata
47+06.28	881-883	Chinese Yellowood / Maackia amurensis
47+82.62	20519	Golden Rain Tree / Koelreuteria paniculata
48+17.60	20519	Golden Rain Tree / Koelreuteria paniculata
48+43.60	20519	Golden Rain Tree / Koelreuteria paniculata
49+48.72	923	Chinese Yellowood / Maackia amurensis
49+76.73	923	Chinese Yellowood / Maackia amurensis
49+95.72	945	Golden Rain Tree / Koelreuteria paniculata
50+24.13	945	Golden Rain Tree / Koelreuteria paniculata
50+57.14	951	Chinese Yellowood / Maackia amurensis
50+86.25	987	Golden Rain Tree / Koelreuteria paniculata
51+20.08	987	Kentucky Coffeetree / Gymnocladus dioicus
51+52.72	981	Kentucky Coffeetree / Gymnocladus dioicus
51+88.28	20513-20519	Kentucky Coffeetree / Gymnocladus dioicus

TREE PLANTER TABLE - NORTH SIDE HAMPTON ROAD

TREE PLANTER STATIONING	ADDRESS	TYPE OF TREE Common Name / Botanical Name
7+66.26	122	Kentucky Coffeetree / Gymnocladus dioicus
8+69.13	130-132	Shumard Red Oak / Quercus shumardii
9+41.74	143	Japanese Pagoda Tree / Sophora japonica
9+62.21	143	Japanese Pagoda Tree / Sophora japonica
10+29.65	156	Kentucky Coffeetree / Gymnocladus dioicus
10+55.62	156	Kentucky Coffeetree / Gymnocladus dioicus
11+05.86	170-172	Japanese Pagoda Tree / Sophora japonica
12+60.72	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
12+80.72	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
13+00.72	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
13+38.27	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
13+58.27	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
13+78.27	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
14+04.13	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
14+42.28	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
15+28.94	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
15+50.95	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
15+65.95	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
16+05.90	PARCEL 13-4	Shumard Red Oak / Quercus shumardii
17+20.60	258	Kentucky Coffeetree / Gymnocladus dioicus
17+97.87	260	Kentucky Coffeetree / Gymnocladus dioicus
18+33.24	278	Japanese Pagoda Tree / Sophora japonica
18+57.34	278	Japanese Pagoda Tree / Sophora japonica
18+08.87	278	Japanese Pagoda Tree / Sophora japonica
18+10.64	278	Japanese Pagoda Tree / Sophora japonica
20+58.37	345-349	Kentucky Coffeetree / Gymnocladus dioicus
21+08.95	345-349	Chinese Yellowood / Maackia amurensis
26+24.40	422	Kentucky Coffeetree / Gymnocladus dioicus
26+55.00	442	Shumard Red Oak / Quercus shumardii
31+34.39	579	Japanese Pagoda Tree / Sophora japonica
31+77.88	579	Japanese Pagoda Tree / Sophora japonica
32+68.72	579	Japanese Pagoda Tree / Sophora japonica
33+97.81	628	Kentucky Coffeetree / Gymnocladus dioicus
35+28.44	645-651	Shumard Red Oak / Quercus shumardii
36+13.89	673-677	Japanese Pagoda Tree / Sophora japonica
37+31.89	684-688	Kentucky Coffeetree / Gymnocladus dioicus
37+63.86	706	Shumard Red Oak / Quercus shumardii
38+38.73	732	Japanese Pagoda Tree / Sophora japonica
41+14.85	773	Kentucky Coffeetree / Gymnocladus dioicus
41+38.16	773	Kentucky Coffeetree / Gymnocladus dioicus
42+28.65	782	Japanese Pagoda Tree / Sophora japonica
42+58.35	794	Shumard Red Oak / Quercus shumardii
42+91.51	794	Shumard Red Oak / Quercus shumardii
43+23.86	794	Shumard Red Oak / Quercus shumardii
44+35.94	791	Shumard Red Oak / Quercus shumardii
48+13.11	818	Kentucky Coffeetree / Gymnocladus dioicus
48+63.81	828	Japanese Pagoda Tree / Sophora japonica
48+93.48	828	Japanese Pagoda Tree / Sophora japonica
48+15.40	842	Shumard Red Oak / Quercus shumardii
50+08.96	938-942	Japanese Pagoda Tree / Sophora japonica
50+38.95	938-942	Japanese Pagoda Tree / Sophora japonica
50+98.31	County of Alameda	Kentucky Coffeetree / Gymnocladus dioicus
51+23.22	County of Alameda	Kentucky Coffeetree / Gymnocladus dioicus
51+49.15	County of Alameda	Kentucky Coffeetree / Gymnocladus dioicus
51+75.46	County of Alameda	Kentucky Coffeetree / Gymnocladus dioicus
52+01.17	County of Alameda	Kentucky Coffeetree / Gymnocladus dioicus

TREE BULBOUT TABLE - NORTH SIDE HAMPTON ROAD

TREE BULBOUT STATIONING	ADDRESS	TYPE OF TREE Common Name / Botanical Name
21+90.15	ACFC	Coast Live Oak / Quercus agrifolia
22+38.85	ACFC	Coast Live Oak / Quercus agrifolia
22+90.87	ACFC	Coast Live Oak / Quercus agrifolia
23+40.08	ACFC	Coast Live Oak / Quercus agrifolia
23+80.38	ACFC	Coast Live Oak / Quercus agrifolia
24+60.81	ACFC	Coast Live Oak / Quercus agrifolia

TREE WELL TABLE - SOUTH SIDE HAMPTON ROAD

TREE STATIONING	ADDRESS	TYPE OF TREE Common Name / Botanical Name
17+64.08	263-267	Chinese Yellowood / Maackia amurensis
17+87.08	263-267	Chinese Yellowood / Maackia amurensis

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HAMPTON ROAD
STREET IMPROVEMENT PLANS

TREE PLANTING TABLES & DETAILS

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2063

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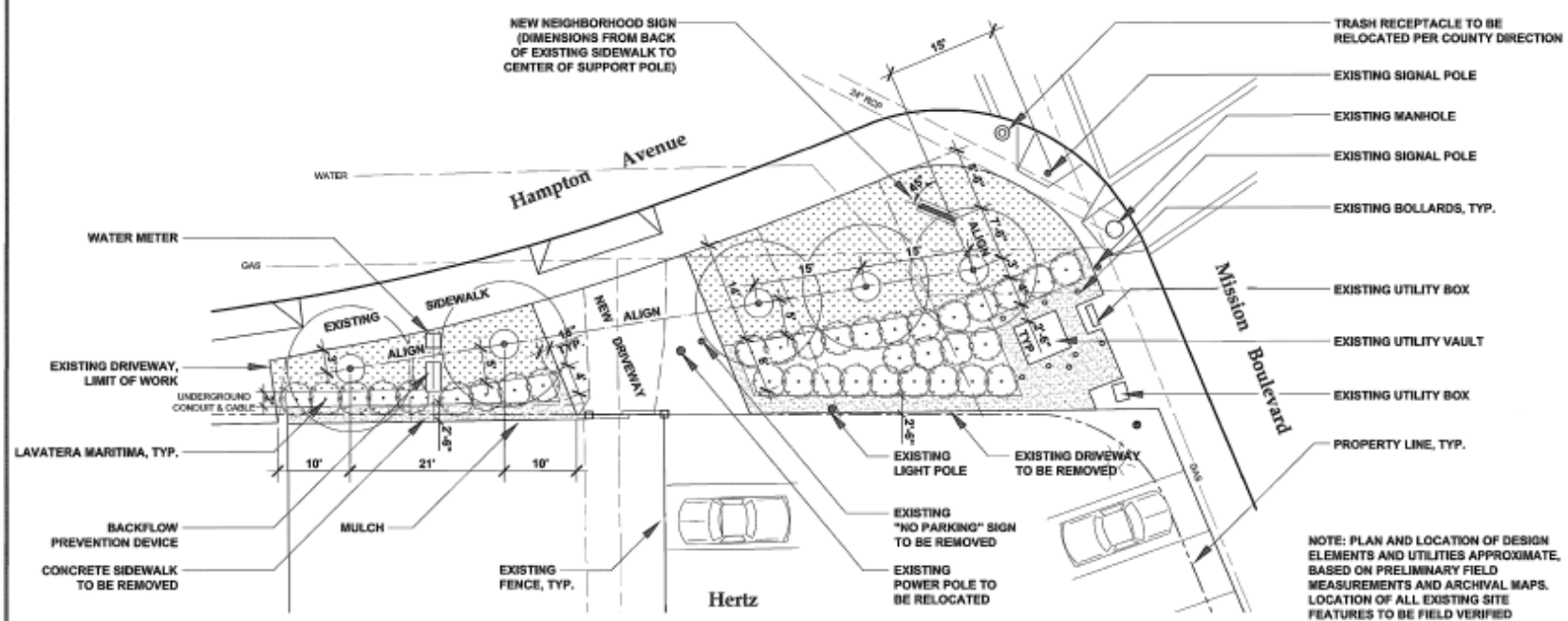
U-690-1

FOR E-76 SUBMITTAL

FOR REDUCED ENGLISH PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

SYMBOL	BOTANICAL NAME	COMMON NAME	PLANT GROUP SIZE	QUANTITY EACH	MULCH	PLANTING LIMITS		REMARKS
						MIN. DISTANCE FROM TRVD WAY (FT)	ON CENTER (FT)	
TREES								
○	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	24" BOX	5	IN MULCHED AREAS	SEE PLANS	SEE PLANS	SEE DETAIL FOR PLACEMEMT
SHRUB								
⊙	LAVATERA MARITIMA	TREE MALLOW	5 GAL	34	IN MULCHED AREAS	SEE PLANS	4' OC ±	SEE DETAIL FOR PLACEMEMT
GROUND COVER								
▨	MYOPORUM PARVIFOLIUM	MYOPORUM	1 GAL	56 ±	IN MULCHED AREAS	SEE PLANS	5' OC ±	SEE DETAIL FOR PLACEMEMT



NOTE: PLAN AND LOCATION OF DESIGN ELEMENTS AND UTILITIES APPROXIMATE, BASED ON PRELIMINARY FIELD MEASUREMENTS AND ARCHIVAL MAPS. LOCATION OF ALL EXISTING SITE FEATURES TO BE FIELD VERIFIED PRIOR TO ANY SITE WORK.

1 PHASE I PLAN

0' 5' 10' 15'

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HAMPTON ROAD
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PLANTING & LAYOUT PLAN

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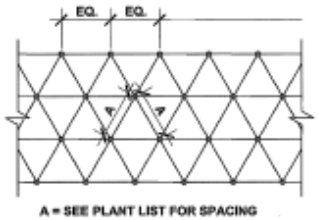
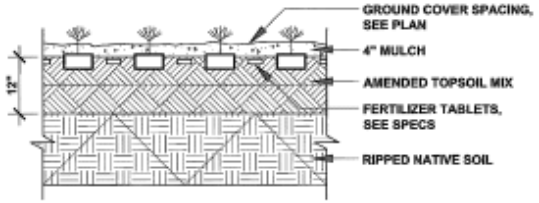
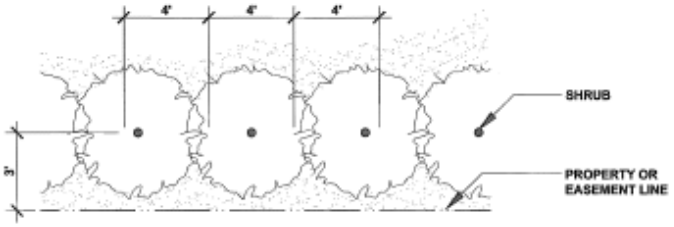


A - PLAN

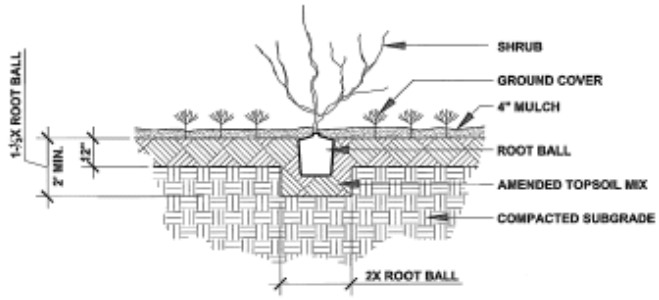


B - SECTION

1 GROUND COVER PLANTING /SPACING OF FLAT STOCK
NOT TO SCALE

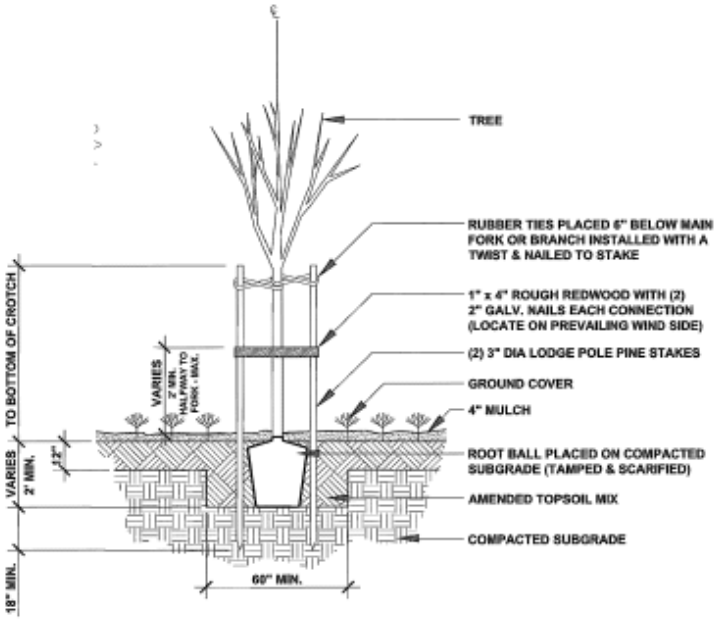


A - PLAN



B - SECTION

2 SHRUB SCREEN PLANTING
NOT TO SCALE



3 TREE PLANTING
NOT TO SCALE

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PLANTING DETAILS

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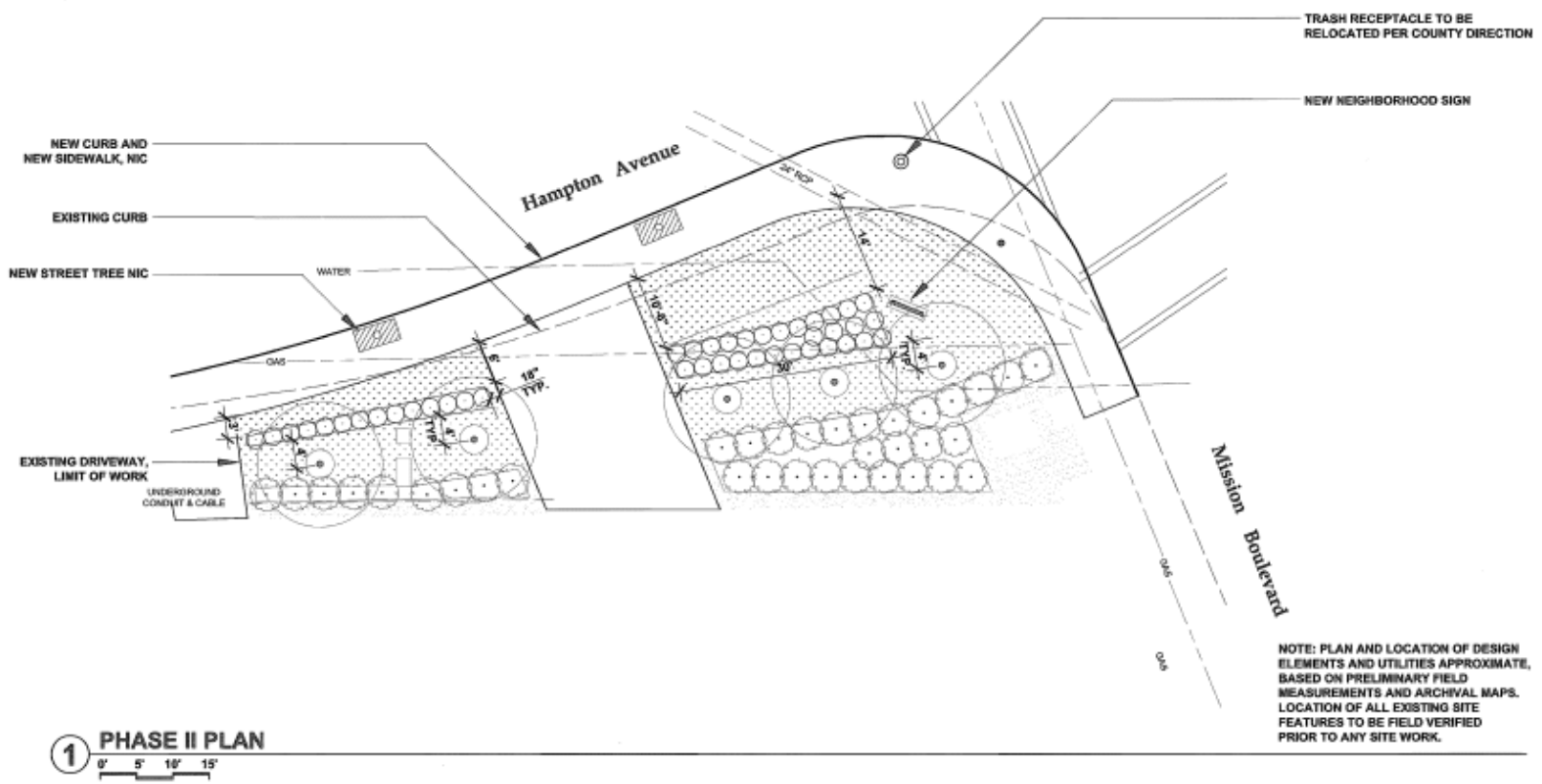
SYMBOL	BOTANICAL NAME	COMMON NAME	PLANT GROUP SIZE	QUANTITY EACH	MULCH	PLANTING LIMITS		REMARKS
						MIN. DISTANCE FROM TRVD WAY (FT)	ON CENTER (FT)	
SHRUB								
○	HEMEROCALLIS HYBRID "STELLA D'ORO"	DAYLILY	2 GAL	42	IN MULCHED AREAS	SEE PLANS	2'-6" OC ±	SEE DETAIL FOR PLACEMENT
GROUND COVER								
▨	MYOPORUM PARVIFOLIUM	MYOPORUM	1 GAL	32 ±	IN MULCHED AREAS	SEE PLANS	5' OC ±	SEE DETAIL FOR PLACEMENT



1 PHASE II PLAN
0' 5' 10' 15'

REVISIONS

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HAMPTON ROAD
STREET IMPROVEMENT PLANS
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DATE 12/22/08 SCALE NTS

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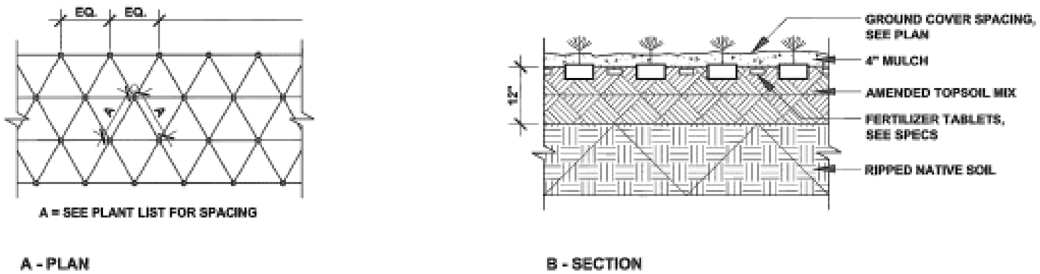
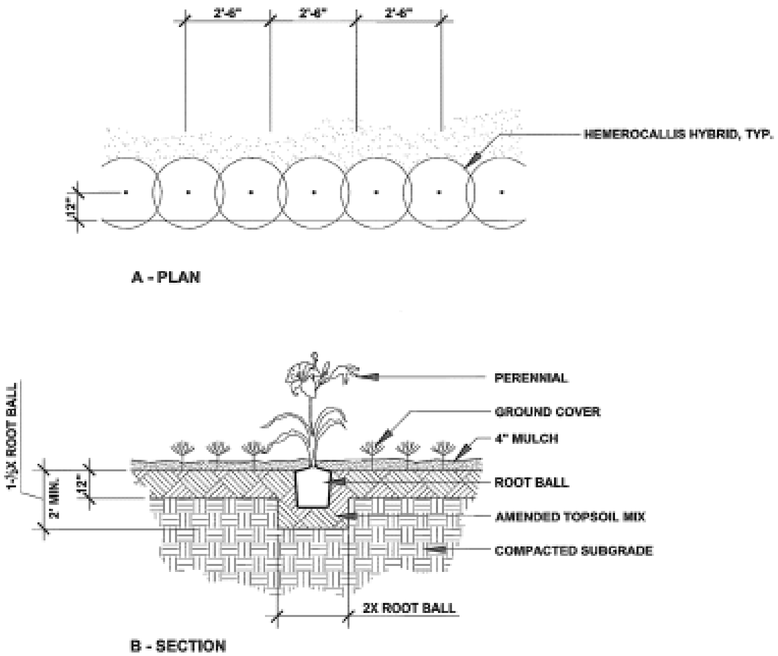


1 GROUND COVER PLANTING /SPACING OF FLAT STOCK
NOT TO SCALE



2 PERENNIAL PLANTING
NOT TO SCALE

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