



December 13, 2022

www.cityofpaloalto.org



AGENDA

- 1. Project Overview
- 2. Existing Conditions
- 3. Exterior Site / New Landscaping Modifications (reviewed)
- 4. Tree removal
- 5. Planting
- 6. Irrigation



AWPS Project Overview



- Project purpose:
 - To improve the recycled water quality from the RWQCP by lowering salt content
 - Higher quality recycled water decreases potable water demand for irrigation uses
- Project Requirement:
 - Follow Palo Alto Baylands Nature Preserve Design Guidelines and provide screening of the RWQCP Facility.







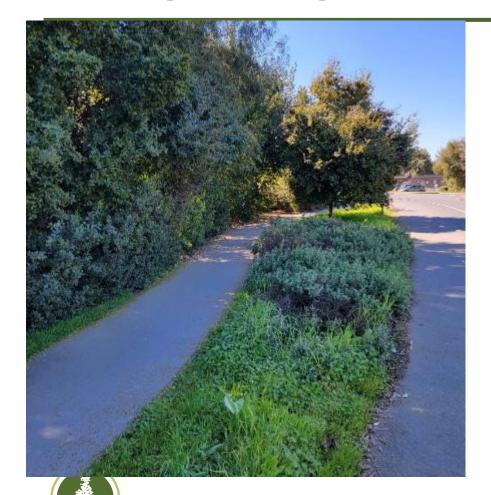






Existing Asphalt Pathway (View West along Embarcadero Road)

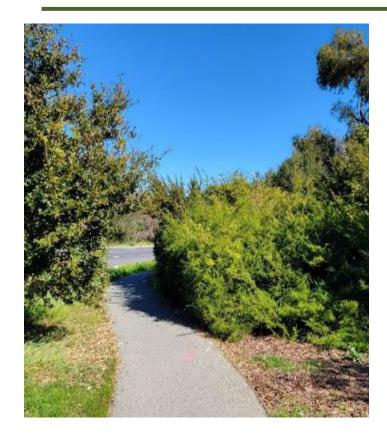




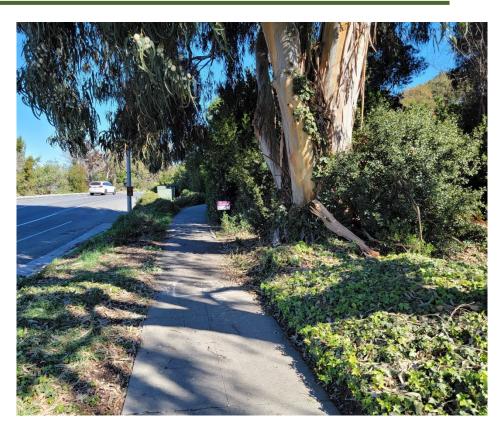














•Existing Pathway Planting (View East along Embarcadero Road)

Exterior Site / New Landscaping Modifications

- •10' High Soundwall
- •Minor Path Re-alignment
- •Facility Tree & Shrub Screening
- Naturalized Planting along Pathway
- Modifications to existing Irrigation
- Informational BoardOpportunity



Exterior Site / New Landscaping Modifications

- Added vines to the walls
- •Much denser layer along the perimeter wall (space-permitting)









30% Design Landscaping

90% Design Landscaping





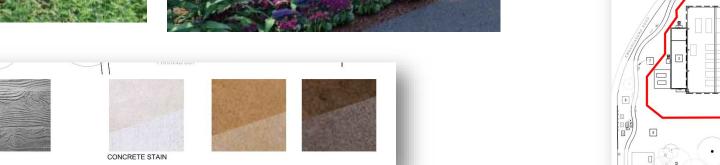




Exterior Wall / Screening Wall

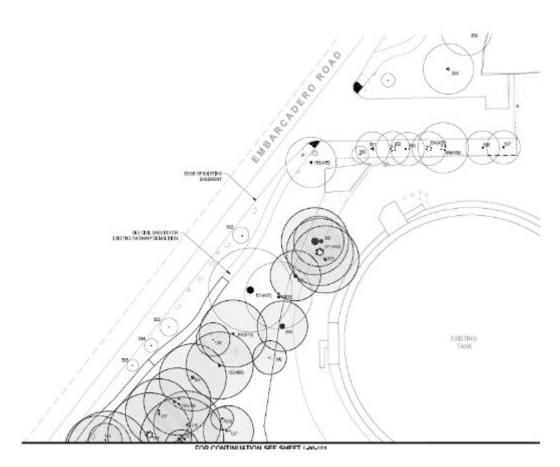


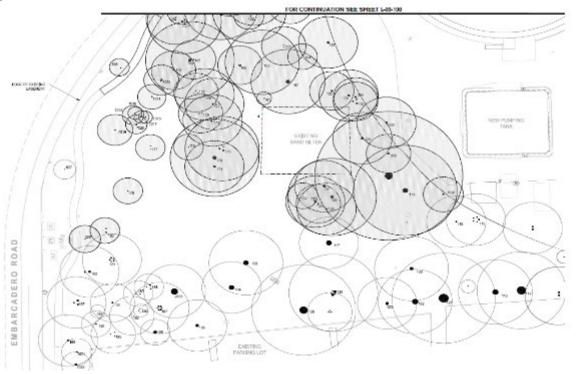
- 10' High Concrete Soundwall
- Wood panel Formliner texture
- Colored Stain





Landscaping Modifications – Tree Removal





- 9 trees over 25" diameter to be removed, a majority are Eucalyptus
- 60 trees total to be removed (reduced from 69)



Landscaping Modifications – Public Tree Replacement

	TRE	TABLE 1 SURVEY DATA		
ID	Species Name	DBH¹ (inches)	Drip line Radius ² (feet)	Condition ³
112	Eucalyptus globulus	71	30	Fair/Good
113	Eucolyptus globulus	46	25	Fair/Good
115	Eucolyptus robusta	8,9,8,6,12	20	Fair
116	Eucolyptus ap.	11	20	Poor – near de
117	Eucalyptus camaldulensis	43	20	Fair
119	Eucalyptus sp.	40	35	Fair/Good
120	Eucolyptus camaldulensis	26 47	25	Fair
122	Eucalyptus globulus	47 25	25	Fair/Good
123	Eucalyptus globulus		20 30	Fair/Good Good
125	Eucalyptus globulus	10,4,12, 5, 21	35	Good Fair/Good
127	Eucolyptus globulus	23	35	Fair/Good
127	Eucolyptus ap. Eucolyptus ap.	13	20	Fair
128	Eucolyptus ap. Eucolyptus ap.	13	15	Fair
130		19	20	Fair/Good
131	Eucolyptus ap.	10	20	Good
131	Eucolyptus sp. Rhomnus alaternus	19	10	Fair
132	Rhamnus alaternus	20	15	Fak
133		17	20	Poor/Fair
135	Casuarina glauca	16	15	Fair
135	Casuarina glauca	12.7	15	Fair
137	Casuarina glauca.	12,7	15	Fair
	Casuarina glauca	16		
139	Rhomnus alsternus		10	Fair/Good
141(408)	Rhomnus alaternus Eucalyptus globulus	4,3,3	10	Fair/Good
141(408)			15	Fair
	Rhammus alaternus	7,8,4		
143	Myoporum betum	23	15	Fair Fair/Good
145	Eucolyptus globulus		20	Fair/Good Fair/Good
	Myoporum laetum	12,9	10	
146	Myoporum laetum			Good
150(405)	Myoporum laetum	17	15	Good
151(407)	Eucolyptus globulus	48		
152(410)	Casuarina glauca		20	Fair/Good
153(409)	Casuarina glauca	18	20	Good
154	Casuarina glauca	21	20	Good
155	Myoporum laetum	17, 10, 14	20	Fair
156	Myoporum laetum	14, 16, 10, 9, 12, 8,	25	Poor/Fair Poor/Fair
	Myoporum laetum	16, 15		
158	Myoporum laetum	16, 7, 8, 8	25	Fair Fair
159	Myoporum laetum	24, 12, 10, 18	25 20	Fair/Good
161	Casuarina glauca	5	5	Fair/Good
	Myoporum laetum		10	Fair
162	Myoporum laetum	64	10	Fair
	Myoporum betum	4,5		
164	Myoporum laetum	4, 2, 2	10	Fair
165	Myoporum loetum	5, 4, 4	25	Fair
166	Casuarina glauca	16	15	Fair/Good
167	Eucalyptus robusts	29	25	Good
168	Rhomnus alaternus	10	20	Fair
169	Rhamnus alaternus	3, 7, 6, 4	15	Fair/Good
170	Rhamnus alaternus	7,5	15	Fair
171	Rhammus alaternus	11, 8	20	Poor/Fair
172	Rhammus alaternus	10, 10, 6, 4, 7, 8	20	Good
173	Eucolyptus globulus	12, 10, 13	25	Fair/Good
174	Eucolyptus globulus	17	20	Fair/Good
175	Eucolyptus globulus	29	30	Fair
176	Rhamnus alaternus	6	10	Fair/Good
177	Rhamnus alaternus	4,4	10	Fair
178	Rhamnus alaternus	6	10	Good
180	Myoporum laetum	7,8,4	10	Fair/Good
181	Myoporum laetum	11, 11, 9, 10, 8	20	Fair
182	Myoporum laetum	18	20	Poor/Fair
183	Eucolyptus globulus	40	25	Good
184	Eucolyptus globulus	41	20	Good
185	Eucolyptus globulus	24	20	Good
186	Eucalyptus globulus	26	10	Fair/Good
187	Eucalyptus globulus	10, 12, 8, 14, 9, 5	20	Fair/Good
188	Eucalyptus camaldulensis	8, 4, 4	10	Fair
189	Shormus alsternus	4.4.4.4.4.4.3	10	Fair
190	Rhammus slaternus	4, 4, 3, 3, 3	5	Fair
191	Myoporum betum	13	15	Fair
191	Rhamnus alaternus	4, 3, 3, 3	1.6	Enic

19								
	4	Rhamnus alaternus	4, 3	5	Fair			
19	5	Rhamnus alaternus	7	10	Good			
19	7	Myoporum laetum	15, 12, 9	20	Fair			
19	8	Eucolyptus globulus	12	20	Good			
33	333 Casuarina glauca 17 20 Excellent							
33	334 Myoporum laetum 10,10,13 15 Fair							
33	5	Eucolyptus globulus	20	20	Good			
33	6	Casuarina glauca	14	15	Excellent			
33	9	Eucolyptus globulus	20	20	Good			
34	0	Eucolyptus globulus	23	15	Fair/Poor			
341(463) Eucolyptus globulus 50 20 Good								
35	0	Myoporum loetum	5	5	Fair/Good			
35	1	Myoporum laetum	7,9,8	10	Good			
35	2	Myoporum laetum	6,6,7,7,3	10	Good			
35	3	Myoporum laetum	10,6	10	Good			
35	4(403)	Myoporum laetum	8,6,4,7,1,3	10	Fair			
35	5 (400)	Myoporum laetum	9,8,8,8	15	Fair/Good			
35	6	Melaleuca lingrificia	10	10	Good			
35	7	Melaleuca linarifolia	12	10	Excellent			
38	8	Eucalyptus camaldulensis	15	20	Excellent			
39	9	Myoporum laetum	6,4	10	Poor			
2853 Unknown								
70	7014 Unknown 10 20							
70	7015 Unknown 6,6 15							
7016 Unknown 6 10								
7017 Unknown 6 10								
7018 Unknown 6 10								
70	19	Unknown	10	25				
70	20	Unknown	10	15				
70	21	Unknown						
70	22	Unknown						
70	24	Unknown						
70	26	Unknown						
7026 Unknown								
-	27	Unknown						

ID	Species Name	DBH ¹ (inches)	Dripline Radius ² (feet)	Condition ³
IC2 Ouerous Virginiana 'Cathedral'			Good	
503	Arbutus unedo			Good
504	Arbutus urredo			Good
506	6 Arbutus unedo			Good
506 Querous Virginiana 'Cathedral'			Good	
507	Querous Virginiana 'Cathedral'			Good
508	Unknown			Good

TORE MADDING DATA

- 1. TREES WERE ORIGINALLY MAPPED WITH A GPS UNIT ON 1/18/2011 BY
- EM/RONMENTAL SCIENCE ASSOCIATES (ESA).
- SUPPLEMENTAL INVENTORY DATA AND REMOVAL PROVIDED BY PALO ALTO STAFF (URBAN FORESTRY) JANUARY 2019.
- WRA ENVIRONMENTAL CONSULTANTS,
- ALL TREES AND TAGS TO BE FIELD VERIFIED PRIOR TO FINAL SUBMITTAL AN CONSTRUCTION

- This project was reviewed and evaluated under PAMC 8.04.015 for tree preservation, removal and replacement.
- Most of existing trees are in fair/poor condition and belong to species considered invasive or non-native
- Minimum of 75% replacement ratio proposed by Urban Forestry due to poor conditions of trees and non-native species
- Proposed replacements exceed minimum by 5 trees



Landscaping Modifications – Planting

1		24" box	New		30		15 gal	New	
2	Melaleuca styphelioides / Prickly Leaved Paperback	24" box	New	4	31		15 gal	New	
3		24" box	New	1 4	32		15 gal	New	
4		24" box	New		33	Heteromeles	15 gal	New	
5		36" box	New		34	arbutifolia / Toyon	15 gal	New	9
6	raperback	36" box	New	3	35	arbutifolia / Toyoff	15 gal	New	
7		36" box	New		36		15 gal	New	
8		36" box	New		37		15 gal	New	
9	Outomous	36" box	New		38		15 gal	New	
10	Quercus	36" box	New	5	39		15 gal	New	
11	agrifolia/Coast Live	36" box	New	T I	40		15 gal	New	
12	Oak	36" box New	41		15 gal	New			
13		48" box	New	1	42		15 gal	New	
14	Arbutus x 'Marina /	15 gal	New		43		15 gal	New	
15	Marina Strawberry Tree	15 gal	New	4	44	Morella Californica /	15 gal	New	
16		15 gal	New		45		15 gal	New	
17	Tree	15 gal	New		46		15 gal	New	
18		15 gal	New		47	California Wax	15 gal	New	18
19	Cercis occidentalis / Western Redbud	15 gal	New		48	Myrtle	15 gal	New	18
20		15 gal	New	4	49		15 gal	New	
21		15 gal	New		50		15 gal	New	
22		15 gal	New		51		15 gal	New	
23	Platanus racemosa	15 gal	New		52		15 gal	New	
24		15 gal	New	3	53		15 gal	New	
25		15 gal	New		54		15 gal	New	
26	Ceanothus	15 gal	New		55		15 gal	New	
27	thyrsiflorus/Blueblos	15 gal	New	5	56		15 gal	New	
28	som	15 gal	New					TOTAL	56
29		15 gal	New						

- 4 trees in 24" box, 8 in 36" box, 1 in 48" box and 38 smaller trees in 15 gal to be planted onsite
- Total trees planted onsite: 51



Landscaping Modifications – Water Use by Landscaping

- This project was reviewed and evaluated for inclusion of landscape information necessary to meet MWELO requirements during the permit phase.
- The proposed landscape plan meets or exceeds all MWELO requirements for new landscape.
- The plan includes all low or very low water requirement species (drought tolerant) and are composed of a comprehensive selection of large to small shrubs, vines, ornamental grasses and groundcovers. The estimated water consumption is 39,000 gallons under the maximum allowed.



Landscaping Modifications – Plant Palette



(•)

Aquilegia formosa / Western Columbine

Eriophyllum confertiflorum / Golden Yarrow

Penstemon heterophyllus 'Margarita BOP' / Margarita BOP Penstemon

ERI CON



Redefined list of species to increase native percentage



Lighting considerations

- Color temperature 4000K (medium range)
- Automatic ON switch for Operators
- Astronomical time clock lightning requirement of Title 24
- Exterior luminaires qualified as "Nighttime Friendly" Product
- Eliminate wasteful uplight



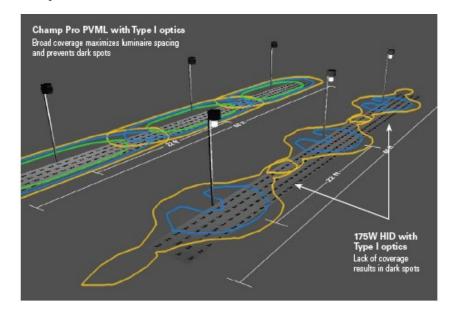










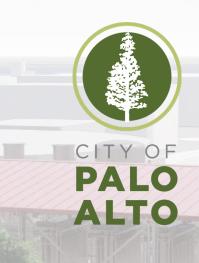




Next steps

- Finance evaluation on-going
- Design Completion ~ January 2023
- Permitting
- Estimated construction start ~ end of 2023
- Construction complete ~ end of 2025





THANK YOU

Tom Kapushinski

Senior Engineer

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Diego Martinez Garcia

Associate Engineer

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FOR CONTINUATION SEE SHEET L-00-101

ID	Species Name	DBH¹ (inches)	Dripline Radius ² (feet)	Condition ³
112	Eucalyptus globulus	71	30	Fair/Good
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117	Eucalyptus camaldulensis	43	20	Fair
119	Eucalyptus sp.	40	35	Fair/Good
120	Eucalyptus camaldulensis	26	25	Fair
122	Eucalyptus globulus	47	25	Fair
123	Eucalyptus globulus	25	20	Fair/Good Good
125 126	Eucalyptus globulus Eucalyptus globulus	10,4,12, 5, 21 64	30 35	Fair/Good
127	Eucalyptus sp.	23	30	Fair
128	Eucalyptus sp.	13	20	Fair
129	Eucalyptus sp.	9	15	Fair
130	Eucalyptus sp.	19	20	Fair/Good
131	Eucalyptus sp.	19	20	Good
132	Rhamnus alaternus	6	10	Fair
133	Rhamnus alaternus	20	15	Fair
134	Casuarina glauca	17	20	Poor/Fair
135	Casuarina glauca	16	15	Fair
137	Casuarina glauca	12,7	15	Fair
138	Casuarina glauca	16	20	Fair
139	Rhamnus alaternus	5	10	Fair/Good
140	Rhamnus alaternus	4,3,3	10	Fair/Good
141(408)	Eucalyptus globulus	13,14	20	Fair
142	Rhamnus alaternus	7,8,4	15	Fair
143	Myoporum laetum	9	15	Fair
144	Eucalyptus globulus	23	30	Fair/Good
145	Myoporum laetum	12,9	20	Fair/Good
146	Myoporum laetum	10	10	Good
150(405)	Myoporum laetum	17	15	Good
151(407)	Eucalyptus globulus	48	25	Good
152(410)	Casuarina glauca	14	20	Fair/Good
153(409)	Casuarina glauca	18	20	Good
154	Casuarina glauca	21	20	Good
155	Myoporum laetum	17, 10, 14	20	Fair
156 157	Myoporum laetum Myoporum laetum	14, 16, 10, 9, 12, 8,	20	Poor/Fair Poor/Fair
157	Myoporum laetum	16, 15 16, 7, 8, 8	25	Fair
159	Myoporum laetum	24, 12, 10, 18	25	Fair
160	Casuarina glauca	16	20	Fair/Good
161	Myoporum laetum	5	5	Fair
162	Myoporum laetum	64	10	Fair
163	Myoporum laetum	4, 5	15	Fair
164	Myoporum laetum	4, 2, 2	10	Fair
165	Myoporum laetum	5, 4, 4	25	Fair
166	Casuarina glauca	16	15	Fair/Good
167	Eucalyptus robusta	29	25	Good
168	Rhamnus alaternus	10	20	Fair
169	Rhamnus alaternus	3, 7, 6, 4	15	Fair/Good
170	Rhamnus alaternus	7, 5	15	Fair
171	Rhamnus alaternus	11,8	20	Poor/Fair
172	Rhamnus alaternus	10, 10, 6, 4, 7, 8	20	Good
173	Eucalyptus globulus	12, 10, 13	25	Fair/Good
174	Eucalyptus globulus	17	20	Fair/Good
175	Eucalyptus globulus	29	30	Fair
176	Rhamnus alaternus	6	10	Fair/Good
177	Rhamnus alaternus	4, 4	10	Fair
178	Rhamnus alaternus	6	10	Good
180	Myoporum laetum	7, 8, 4	10	Fair/Good
181	Myoporum laetum	11, 11, 9, 10, 8	20	Fair
182	Myoporum laetum	18	20	Poor/Fair
183	Eucalyptus globulus	40	25	Good
184	Eucalyptus globulus	41	20	Good Good
185 186	Eucalyptus globulus	24	20 10	Good Fair/Good
186 187	Eucalyptus globulus	26 10 12 8 14 9 5	10	Fair/Good Fair/Good
187 188	Eucalyptus globulus Eucalyptus camaldulensis	10, 12, 8, 14, 9, 5 8, 4, 4	20 10	Fair/Good Fair
188	Rhamnus alaternus	8, 4, 4 4, 4, 4, 4, 4, 4, 3	10	Fair Fair
190	Rhamnus alaternus Rhamnus alaternus	4, 4, 4, 4, 4, 4, 3	5	Fair Fair
190	Myoporum laetum	4, 4, 3, 3, 3	5 15	Fair
191	Rhamnus alaternus	4, 3, 3, 3	15	Fair
102	Mannus dialemus	-1 , 0, 0, 0	IU	ıalı

TABLE 1

194	Rhamnus alaternus	4, 3	5	Fair
195	Rhamnus alaternus	7	10	Good
197	Myoporum laetum	15, 12, 9	20	Fair
198	Eucalyptus globulus	12	20	Good
333	Casuarina glauca	17	20	Excellent
334	Myoporum laetum	10,10,13	15	Fair
335	Eucalyptus globulus	20	20	Good
336	Casuarina glauca	14	15	Excellent
337	Eucalyptus globulus	20	20	Good
340	Eucalyptus globulus	23	15	Fair/Poor
341(463)	Eucalyptus globulus	50	20	Good
350	Myoporum laetum	5	5	Fair/Good
351	Myoporum laetum	7,9,8	10	Good
352	Myoporum laetum	6,6,7,7,6	10	Good
353	Myoporum laetum	10,6	10	Good
354(403)	Myoporum laetum	8,6,4,7,4,3	10	Fair
355 (400)	Myoporum laetum	9,8,6,8	15	Fair/Good
356	Melaleuca linariifolia	10	10	Good
357	Melaleuca linariifolia	12	10	Excellent
388	Eucalyptus camaldulensis	15	20	Excellent
399	Myoporum laetum	6,4	10	Poor
2853	Unknown			
7014	Unknown	10	20	
7015	Unknown	6,6	15	
7016	Unknown	6	10	
7017	Unknown	6	10	
7018	Unknown	6	10	
7019	Unknown	10	25	
7020	Unknown	10	15	
7021	Unknown			
7022	Unknown			
7024	Unknown			
7025	Unknown			
7026	Unknown			
7027	Unknown			

DBH (DIAMETER AT BREAST HEIGHT), THE DIAMETER OF A TREE MEASURED AT 4.5 FEET ABOVE GROUND LEVEL ON THE HIGH SIDE OF THE TREE, UNLESS OTHERWISE NOTED. TREES WITH MULTIPLE DBH'S REPRESENT MULTI-TRUNK TREES, WITH EACH SEPARATE TRUNK MEASURE INDIVIDUALLY.

MEASURE AT THE LARGEST DIAMETER OF THE DRIPLINE OF A TREE.

GENERAL HEALTH OF THE TREE INCLUDING ROOT COLLAR, TRUNK, LIMBS, FOLIAGE, STRUCTURE, AND GENERAL VIGOR.

	UI	NSURVEYED TR	EES	
ID	Species Name	DBH¹ (inches)	Dripline Radius ² Cor (feet)	ndition ³
502	Quercus Virginiana 'Ca	Quercus Virginiana 'Cathedral'		
503	Arbutus unedo	Arbutus unedo		
504	Arbutus unedo	Arbutus unedo		
505	Arbutus unedo	Arbutus unedo		
506	Quercus Virginiana 'Ca	Quercus Virginiana 'Cathedral'		
507	Quercus Virginiana 'Ca	Quercus Virginiana 'Cathedral'		
508	Unknown		Goo	od

TREE MAPPING DATA

- TREES WERE ORIGINALLY MAPPED WITH A GPS UNIT ON 1/18/2011 BY ENVIRONMENTAL SCIENCE ASSOCIATES (ESA).
- 2. SUPPLEMENTAL INVENTORY DATA AND REMOVAL PROVIDED BY PALO ALTO STAFF (URBAN FORESTRY) JANUARY 2019.
- 3. ADDITIONAL TREE MAPPING DATA FOR TREES 400-465 MAPPED ON 5/6/2017 BY WRA ENVIRONMENTAL CONSULTANTS.
- 4. ALL TREES AND TAGS TO BE FIELD VERIFIED PRIOR TO FINAL SUBMITTAL AND

TREE NOTES

- 1. EXISTING TREES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION. CARE SHOULD BE TAKEN WHEN GRADING OCCURS WITHIN THE DRIPLINE OF THE TREE.
- 2. CONTRACTOR TO NOTIFY CITY IMMEDIATELY IF ANY DISCREPANCIES OR QUESTIONS REGARDING TREE PROTECTION OCCUR AT TIME CONSTRUCTION.
- 3. ALL WORK WITHIN THE EXISTING TREE ROOT ZONES SHALL BE DONE USING ALL POSSIBLE CARE TO AVOID INJURY TO ROOTS.
- 4. NO ROOTS LARGER THAN 2" SHALL BE CUT WITHOUT APPROVAL. CONTACT LANDSCAPE ARCHITECT AND UNIVERSITY PROJECT MANAGER IF PLANT MATERIAL PLACEMENT IS IN CONFLICT WITH EXISTING ROOTS.
- 5. ROOT BARRIER, TO BE INSTALLED WHEN TREE IS WITHIN 5' OF SIDEWALKS, ROADWAYS, BUILDING OR CURBS.

LEGEND

• TREE TO BE REMOVED (TREE SURVEY DATA TABLE)

SITE DEMOLITION NOTES

SEE CIVIL PLANS FOR SITE DEMOLITION NOTES.

• EXISTING SITE CONDITIONS FOR REFERENCE ONLY.



TREE TO BE REMOVED DURING THIS PROJECT BY CONTRACTOR DUE TO CONFLICTS WITH PROJECT IMPROVEMENTS, CONDITION, OR HEALTH. REFER TO TREE SURVEY DATA TABLE FOR ADDITIONAL INFORMATION.



EXISTING TREE TO REMAIN WITH TREE SURVEY IDENTIFICATION NUMBER

-SEE CIVIL PLANS FOR SITE DEMOLITION, NOTES AND DESCRIPTIONS.

EXISTING SHRUBS/VEGETATION TO REMAIN AND BE PROTECTED

DURING CONSTRUCTION

EXISTING SHRUBS/VEGETATION TO BE REMOVED

LANDSCAPE DEMOLITION & TREE INVENTORY PLAN

OF 214

BLACK & VEATCH

Black & Veatch Corporation Walnut Creek, California

SIEGFRIED

PALO

ALTO

CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL

NOT FOR

CONSTRUCTION

04/22 60% DESIGN SUBMITTAL

04/2022 PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

DESIGNED: RJN DETAILED: AYM CHECKED: PJS APPROVED: RJN

REVISIONS AND RECORD OF ISSUE

L-00-100



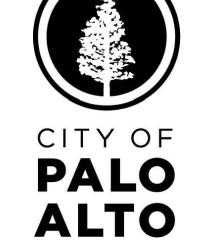
(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

BLACK&VEATCH

Black & Veatch Corporation Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL **NOT FOR** CONSTRUCTION

04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE

DESIGNED: RJN DETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022

AWPS

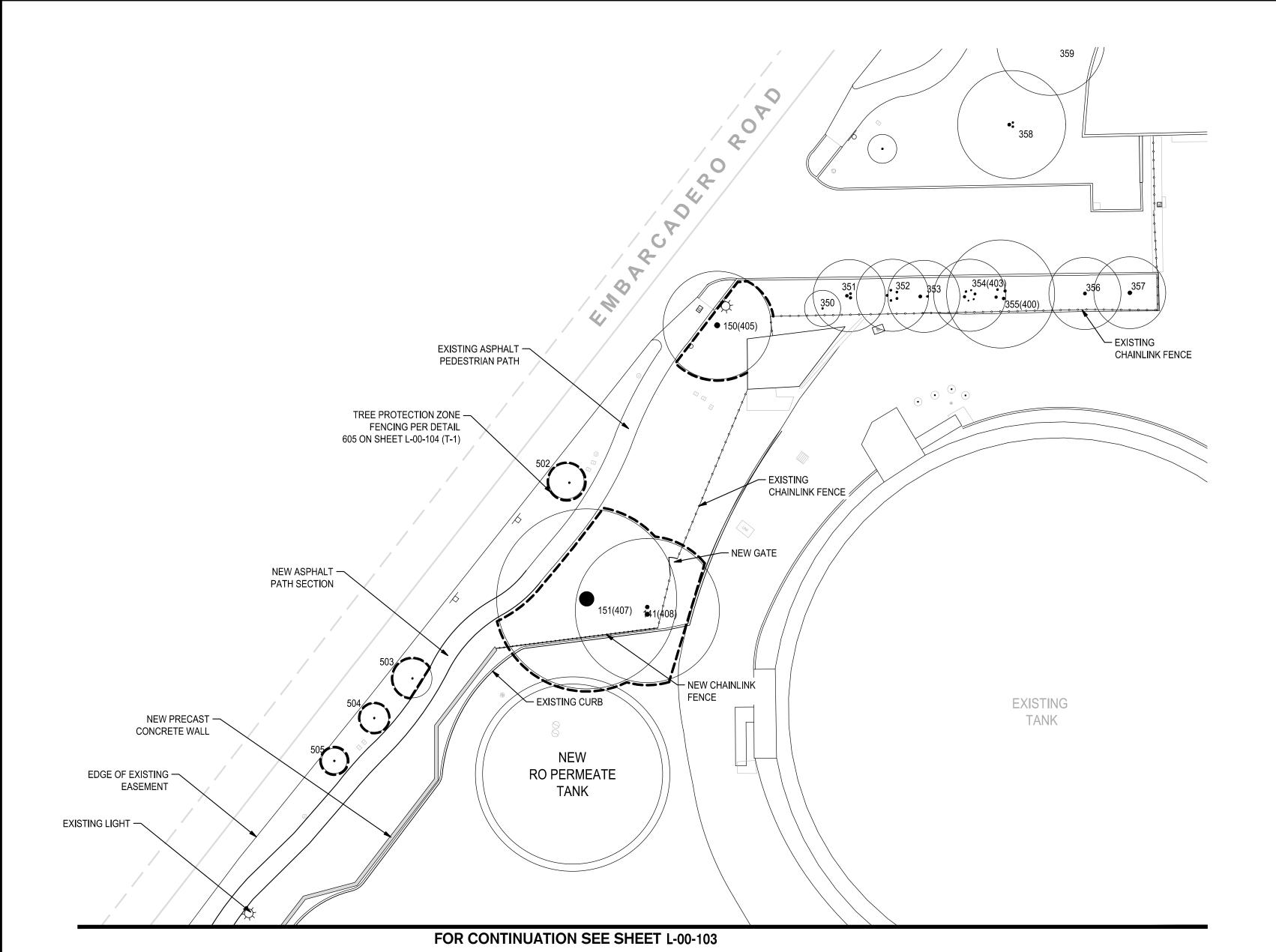
PROJECT NO.: 408520 (SEI 20087)

LANDSCAPE

LANDSCAPE DEMOLITION & TREE INVENTORY PLAN

L-00-101

SEE SHEET L-00-100 FOR TREE INVENTORY LEGEND AND NOTES



TREE PROTECTION NOTES:

- BEFORE WORKING IN REGULATED TREE AREAS, CONTACT THE CITY AND PROJECT MANAGER.
- REMOVAL OF A CITY OWNED TREE (I.E. RIGHT-OF-WAY) URBAN FORESTRY SECTION REQUIREMENTS (6450-496-5953;

http://www.cityofpaloalto.org/depts/pwd/trees/default.asp) : a. TREE REMOVAL POSTING.

EACH TREE TO BE REMOVED SHALL BE VISIBLY POSTED WITH A COMPLETED TREE REMOVAL NOTICE FORM (8.5"x11", SEALED IN PROTECTIVE PLASTIC) NO LESS THAN 14 CALENDAR DAYS FROM THE DATE OF POSTING.

b. TREE REMOVAL PERMIT.

A COMPLETED AND APPROVED APPLICATION FOR THE PROJECT STREET WORK (INCLUDING REMOVALS) ISSUED BY THE URBAN FORESTRY SECTION MUST BE AVAILABLE AT THE JOB SITE.

LEGEND



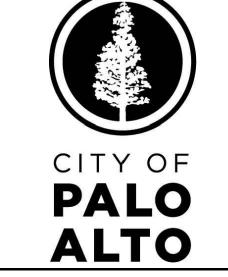
EXISTING TREE TO REMAIN AND RECEIVE TREE PROTECTION PER CITY STANDARDS.



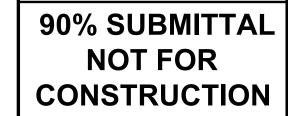
Black & Veatch Corporation Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM



04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE DESIGNED: RJN

DETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022

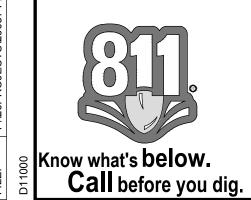
PROJECT NO.: 408520 (SEI 20087)

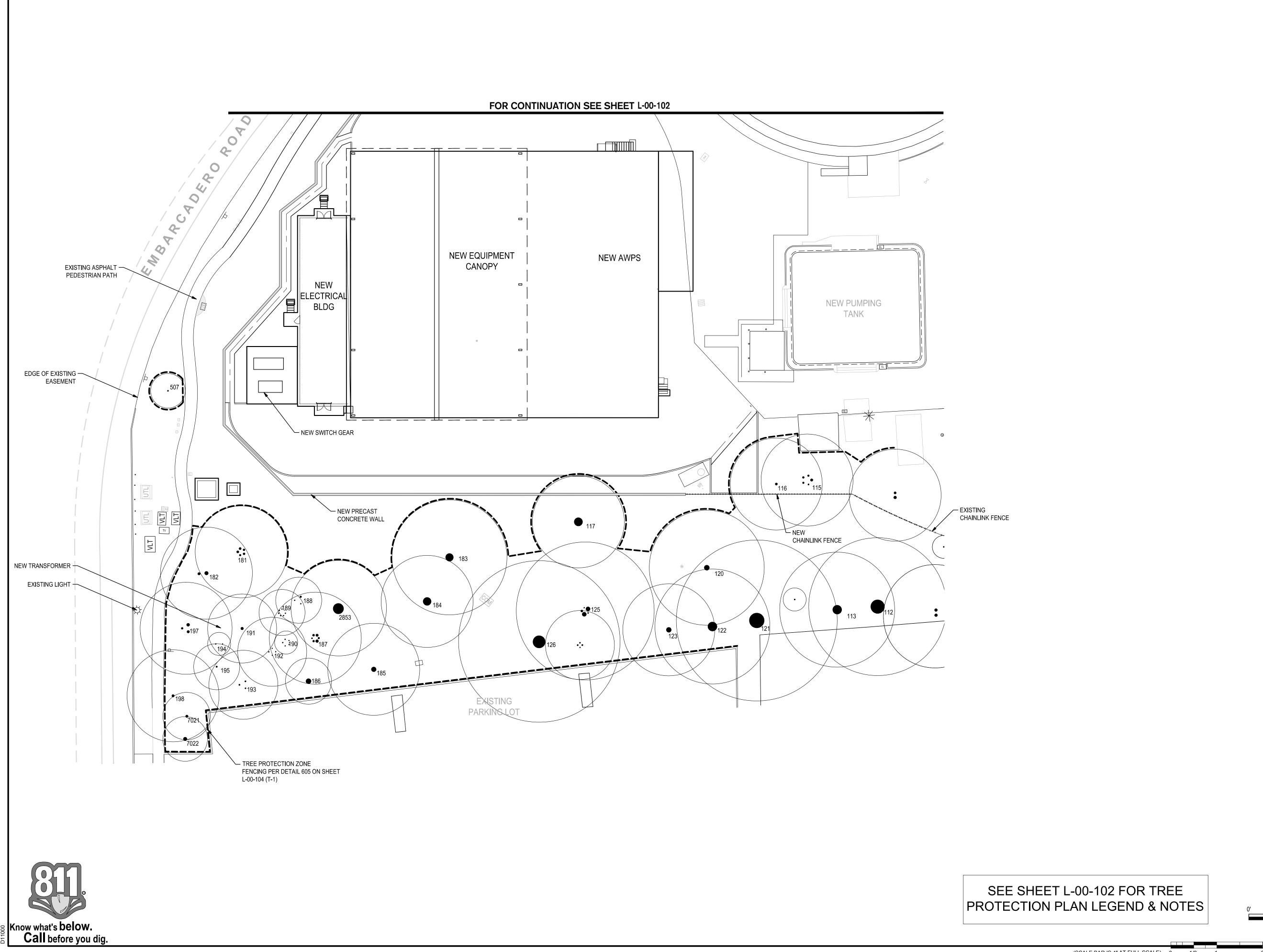
AWPS

LANDSCAPE

TREE PROTECTION PLAN

L-00-102





BLACK&VEATCH

Black & Veatch Corporation Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL **NOT FOR** CONSTRUCTION

04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE

DESIGNED: RJN DETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022

PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

TREE PROTECTION PLAN II

L-00-103

22 OF 214

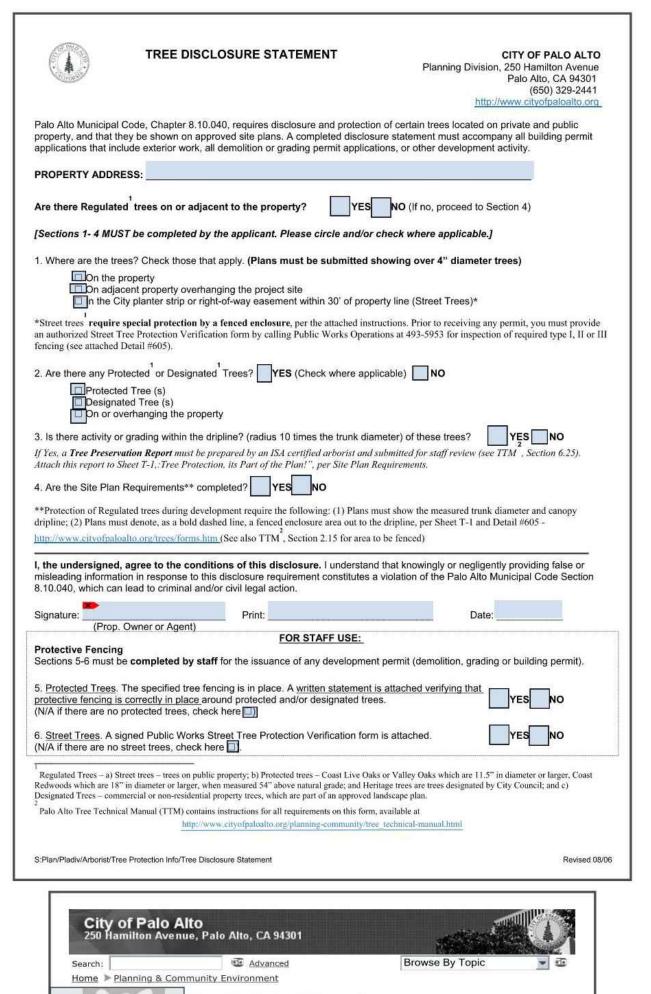
(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

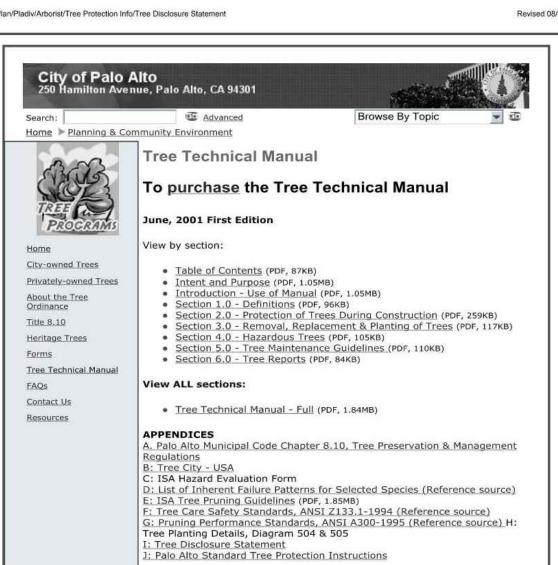
T-T

City of Palo Alto Tree Protection - It's Part of the Plan!

Make sure your crews and subs do the job right!

Fenced enclosures around trees are essential to protect them by keeping the foliage canopy and branching structure clear from contact by equipment, materials and activities, preserving roots and soil conditions in an intact and non-compacted state, and identifying the Tree Protection Zone (TPZ) in which no soil disturbance is permitted and activities are restricted, unless otherwise approved. An approved tree protection report must be added to this sheet when project activity occurs within the TPZ of a regulated tree. For detailed information on Palo Alto's regulated trees and protection during development, review the City Tree Technical Manual (TTM) found at www.cityofpaloalto.org/trees/.





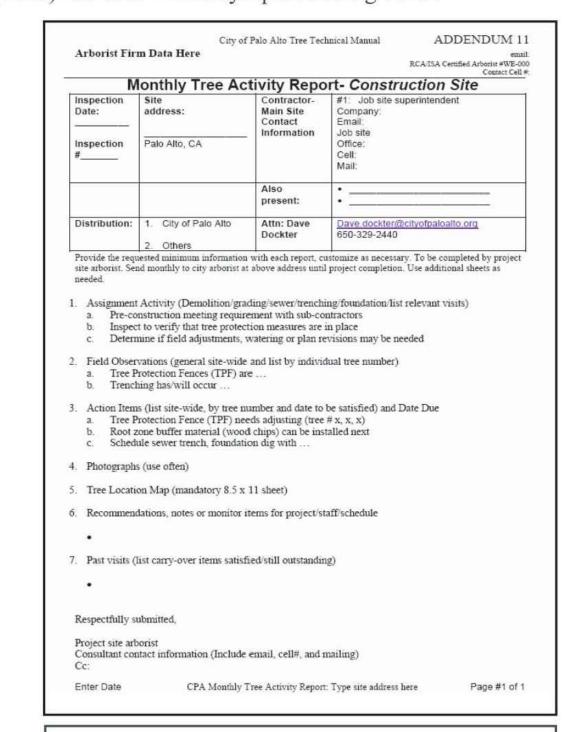
Type I Tree Protection Type I Tree Protection Type I Tree Protection Type I Tree Protection Type II Tree Protection Fencing must provide public passa while protecting all other land in Till trees in sidewalk cutous tree wells only for instructions Type III Tree Protection Type II Tree Protection For all Ordinance Protected and Designative research and characters frees, as detailed in the site species tree preservation of a permit requires applicant's project arborist written verification Type I is installed correctly according to the plans and Tree Preservation Report of	2			
	2-inches of 2-in side	Orange Plastic Fencing overlaid with ch Thick Wooden Slats	Note: Ordinance Protection of a permit requirement written verification according to the parkway strip sidewalk. Any proposed trench in TPZ requires approval See TTM 2.20 C-D for instructions Note: Street Trees. Is Public Works O approval on the form provided. Type III Tree Pro	trees, as detailed in the site speci- tree preservation report (TPR) prepared by ican's project arborist as diagramed on the pit ted & Designated Trees. Issuance es applicant's project arborist in Type I is installed correctly plans and Tree Preservation Report Any inadvertant sidewalk or curb replacement or trenching requires approval Fencing must provide public passa while protecting all other land in TI suance of a permit requires perations inspection and signed a Street Tree Verification (STV)
Tree fencing is required and shall be erected before demolition, grading or construction begins.	Tree	fencing is required	l and shall be erected before demolition, grad	ling or construction begins.
	O. D.	A CONTRACTOR OF THE CONTRACTOR	T 0	Approved by:
		200	Iron Protoction	
Rev By Date Approved by: O DWH 12/14/92 Tree Protection Dave Dockter		H 12/14/92	Tree Frotection	Dave Dockter
Tree Destruction	0 DW	U. S. C. Sandania, State of the Control of the Cont		(CONTRACTOR OF A CONTRACTOR O
0 DWH 12/14/92 Tree Protection Dave Dockter	0 DW	U. S. C. Sandania, State of the Control of the Cont		Dave Dockter
To a Division in			Iron Protoction	
	Own D	/ Date		Approved by:

18		APPENDIX
100	A .	PALO ALTO STREET TREE PROTECTION INSTRUCTIONSSECTION 31
31-1	Genera	
	a. b.	Tree protection has three primary functions, 1) to keep the foliage canopy and branching structure clea from contact by equipment, materials and activities; 2) to preserve roots and soil conditions in an intact an non-compacted state and 3) to identify the Tree Protection Zone (TPZ) in which no soil disturbance i permitted and activities are restricted, unless otherwise approved. The Tree Protection Zone (TPZ) is a restricted area around the base of the tree with a radius of ten-time the diameter of the tree's trunk or ten feet; whichever is greater, enclosed by fencing.
31-2	Referer	nce Documents
	a.	Detail 605 – Illustration of situations described below.
	b.	Tree Technical Manual (TTM) Forms (http://www.cityofpoloalto.org/trees/)
		 Trenching Restriction Zones (<u>ITM, Section 2.20(C)</u>)
		2. Arborist Reporting Protocol (ITM, Section 6.30)
		3. Site Plan Requirements (TTM, Section 6,35)
	c.	4. Tree Disclosure Statement (TTM, Appendix J) Street Tree Verification (STV) Form (http://www.cityofpaloalto.org/trees/forms)
		Street Tree vermeaton (STV) Form (http://www.citvorphobate.org/dees/forms)
31-3	Executi	on
	3.	Type I Tree Protection: The fence shall enclose the entire TPZ of the tree(s) to be protected throughout the life of the construction project. In some parking areas, if fencing is located on paving or concrete that will no be demolished, then the posts may be supported by an appropriate grade level concrete base, if approved by Public Works Operations.
	b.	Type II Tree Protection: For trees situated within a planting strip, only the planting strip and yard side of the TPZ shall be enclosed with the required chain link protective fencing in order to keep the sidewalk and street open for public use.
	c.	Type III Tree Protection: To be used only with approval of Public Works Operations. Trees situated in a tree well or sidewalk planter pit, shall be wrapped with 2-inches of orange plastic fencing from the ground to the first branch and overlaid with 2-inch thick wooden slats bound securely (slats shall not be allowed to dig into the bark). During installation of the plastic fencing, caution shall be used to avoid damaging any branches. Major limbs may also require plastic fencing as directed by the City Arborist.
	d.	Size, type and area to be fenced. All trees to be preserved shall be protected with six (6') foot high chain link fences. Fences are to be mounted on two-inch diameter galvanized iron posts, driven into the ground to a depth of at least 2-feet at no more than 10-foot spacing. Fencing shall extend to the outer branching, unless specifically approved on the STV Form.
	e.	*Warning' signs. A warning sign shall be weather proof and prominently displayed on each fence at 20-foc intervals. The sign shall be minimum 8.5-inches x 11-inches and clearly state in half inch tall letters: "WARNING - Tree Protection Zone - This fence shall not be removed and is subject to a fine according to PAMC Section 8.10.110."
	f.	Duration. Tree fencing shall be erected before demolition; grading or construction begins and remain in place until final inspection of the project, except for work specifically allowed in the TPZ. Work or soil disturbance in the TPZ requires approval by the project arborist or City Arborist (in the case of work around Street Trees). Excavations within the public right of way require a Street Work Permit from Public Works.
	g.	During construction
		 All neighbors' trees that overhang the project site shall be protected from impact of any kind. The applicant shall be responsible for the repair or replacement plus penalty of any publicly owned trees that are damaged during the course of construction, pursuant to Section 8.04.070 of the Palo Alto Municipal Code.
		 The following tree preservation measures apply to all trees to be retained: a. No storage of material, topsoil, vehicles or equipment shall be permitted within the TPZ. b. The ground under and around the tree canopy area shall not be altered. c. Trees to be retained shall be irrigated, acrated and maintained as necessary to ensure survival.

Revised 08/06

Table 2-2	Palo Alto Tree Technical Manual
	CONTRACTOR & ARBORIST INSPECTION SCHEDULE
Refer	ence: the Palo Alto Tree Technical Manual is available at www.cityofpaloalto.org/environment/
ALL CHECKE	D ITEMS APPLY TO THIS PROJECT:
signed Month inspec design	tion of Protective Tree Fencing. For Public Trees, the Street Tree Verification Form shall be by the City Arborist. For Protected Trees, the project site arborist shall provide an initial by Tree Activity Report form with a photograph verifying that he has conducted a field tion of the trees and that the correct type of protective fencing is in place around the ated tree protection zone (TPZ) prior to issuance of a demolition, grading, or building permit TM, Verification of Tree Protection, Section 1.39).
condu gradin	enstruction Meeting. Prior to commencement of construction, the applicant or contractor shall a pre-construction meeting to discuss tree protection with the job site superintendent, g operators, project site arborist, City Arborist, and, if a city maintained irrigation system is ed, the Parks Manager (Contact 650-496-6962).
performand TPZ to require	etion of Rough Grading or Trenching. Contractor shall ensure the project site arborist ms an inspection during the course of rough grading or trenching adjacent to or within the ensure trees will not be injured by compaction, cut or fill, drainage and trenching, and if ed, inspect aeration systems, tree wells, drains and special paving. The contractor shall provide opect arborist at least 24 hours advance notice of such activity.
month immed Techn landsc	ally Tree Activity Report Inspections. The project site arborist shall perform a minimum by activity inspection to monitor and advise on conditions, tree health and retention or, liately if there are any revisions to the approved plans or protection measures. The Tree ical Manual Monthly Tree Activity Report format shall be used and sent to the Planning Dept ape review staff no later than 14 days after issuance of building permit date. Fax to (650) 329 (See TTM, Monthly Tree Activity Inspection Report, Addendum 11 & section 1.17).
require	al activity within the Tree Protection Zone. Work in the TPZ area (see also #7 below) as the direct onsite supervision of the project arborist (see TTM, Trenching, Excavation & ment, Section 2.20 C).
final o on site Qualit constri verific	scape Architect Inspection. For discretionary development projects, prior to temporary or ccupancy the applicant or contractor shall arrange for the Landscape Architect to perform an inspection of all plant stock, quality of the materials and planting (see TTM, Planting y, Section 5.20.1 A) and that the irrigation is functioning consistent with the approved action plans. The Planning Dept. landscape review staff shall be in receipt of written ation of Landscape Architect approval prior to scheduling the final inspection, unless rise approved.
7. List C	Other (please describe as called out in the site Tree Preservation Report, Sheet T-1, T-2, etc.)

STEAL OF THE STEAL	City of Palo Alto Tree Department Public Works Operations PO Box 10250 Palo Alto, CA 943 650/496-5953 FAX: 650/852-921 treeprotection@CityofPaloAlto.or	39
		of this form. Mail or FAX this form along with signed Tree blic Works Tree Staff will inspect and notify applicant.
APPLICATION	DATE:	
ADDRESS/LOC TREES TO BE	CATION OF STREET PROTECTED:	
APPLICANT'S	NAME:	
APPLICANT'S	ADDRESS:	
APPLICANT'S & FAX NUMBE		
This section to I	be filled out by City Tree Staff	
address(es)	Trees at the above are adequately he type of protection	YES ☐ NO* ☐ * If NO, go to #2 below
Inspected by	:	
Date of Inspe	ection:	
address are protected. T modification	Trees at the above PNOT adequately The following In sare required: w the required In saver communicated In sa	
Subsequent Ins	pection	
	above address were found	YES NO* * If NO, indicate in "Notes" below the disposition of case.
Inpsected by:		
Date of Inspec	tion:	
site, condition a installed. Also r	y street trees by species, nd type of tree protection note if pictures were k of sheet if necessary.	



---WARNING---**Tree Protection Zone**

This fencing shall not be removed without City Arborist approval (650-496-5953)

Removal without permission is subject to a \$500 fine per day*

*Palo Alto Municipal Code Section 8.10.110 City of Palo Alto Tree Protection Instructions are located at http://www.city.palo-alto.ca.us/trees/technical-manual.htm

SPECIAL INSPECTIONS	PLANNING DEPARTMENT
TREE PROTECTION IN	SPECTIONS MANDATORY
PAMC 8.10 PROTECTED TREES, CONTRACTOR SHA REQUIRED TREE INSPECTION AND SITE MONITORIN REPORTS TO THE PLANNING DEPARTMENT LANDSO BUILDING PERMIT ISSUANCE.	
BUILDING PERMIT DATE:	
DATE OF 1ST TREE ACTIVITY REPORTS	:
CITY STAFF:	
VERIFY THAT ALL TREE PROTECTION MEASURES A	VITY REPORT SHALL CONFORM TO SHEET T-1 FORMAT, IRE IMPLIMENTED AND WILL INCLUDE ALL CONTRACTOR IN A TREE PROTECTION ROOT ZONE, NON-COMPLIANCE REFERENCE: PALO ALTO TREE TECHNICAL MANUAL,

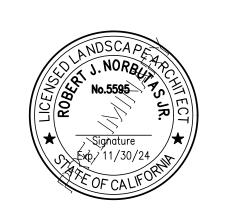
Apply Tree Protection Report on sheet(s) T-2

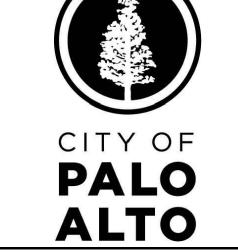
Use addtional "T" sheets as needed

BLACK&VEATCH **Black & Veatch Corporation**

Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL **NOT FOR** CONSTRUCTION

	04/22	60% DESIGN SUBMITTAL							
	REV	SIONS AND RECORD OF ISSUE							
DI	SIGNE): RJN							
DI	ETAILED	: AYM							
CI	HECKED	: PJS							

04/2022

PROJECT NO.: 408520 (SEI 20087)

APPROVED: RJN

AWPS

LANDSCAPE

SPECIAL TREE **PROTECTION INSTRUCTION SHEET**

L-00-104

0

roje

All other tree-related reports shall be added to the space provided on this sheet (adding as needed) Include this sheet(s) on Project Sheet Index or Legend Page. A copy of T-1 can be downloaded at

Street Tree Verification of Protection, PWE, Section 31

http://www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=6460

Special Tree Protection Instruction Sheet City of Palo Alto

OF 214

Date Reported 09/02/2022 Date Submitted 08/29/2022

To: Robert Norbutas Siegfried-stockton 3428 Brookside Rd. 95219 Stockton, CA

From: Gene Oliphant, Ph.D. \ Randy Horney General Manager \ Lab Manager

The reported analysis was requested for the following: Location: 20087 EMBARCADERO Site ID: PALO ALTO AWPS. Thank you for your business.

* For future reference to this analysis please use SUN # 88076-183124.

SOIL	ANALYSIS

Saturation Percen	nt (SP)		69		Soil	Texture	Clay Loa					
рн			7.25									
E.C.			2.50	mmho/ci	m							
Tot.Dissolved Sal	lts		1600	ppm								
Infiltration Rate	e (0% Slope	e)	0.25	in/hr								
% Organic Matter			15.9									
C.E.C.			36.5	meq/10	0g							
Sodium Absorption	n Ratio (S	AR)	5.1									
Exchangable Sodio	um Percent	(ESP)	5.8									
Gypsum Req. (CaSC	04*2H2O)		25.	#/1000 sq.ft.								
est. Nitrogen Re	lease		4.0	#/1000	sq.ft.							
			1 1		É	1						
Nitrate	16.13	ppm	*****	**	13							
Phosphorus	85.13	ppm	****	*****	******	**						
Potassium	409.53	ppm	*****	*****	******	*						
Sulfur	57.57	ppm	****	*****	*****	****						
Chloride	179.61	ppm	*****	*****	*****							
Carbonates	319.17	ppm	*****	*****	*****	****						
Sodium	490.18	ppm	Ì									
Calcium	5250.91	ppm	*****	*****	*****	**						
Magnesium	862.84	ppm	*****	*****	*****							
Boron	0.56	ppm	******									
Copper	6.41	ppm	*****	*****	*****							
Iron	97.94	ppm	******									
Manganese	42.78	ppm	******									
Zinc	21.88	ppm	****	******	*******	*****	* *					
			11_			_						
			Very	Low	Adequat	ce Exc	cessive					
			Low									

^{*} High Organic Matter creates significant error in Texture determinations.

Sunland Analytical

11419 Sunrise Gold Circle, #10 Rancho Cordova, CA 95742 (916) 852-8557

DATE 09/02/2022 SUN NUMBER 183124

Information for: Information requested by: Robert Norbutas 20087 EMBARCADERO Sample ID: PALO ALTO AWPS Siegfried-stockton

SOIL RECOMMENDATIONS FOR LANDSCAPE GARDENING

SOIL BORON

Boron concentations are in a range allowing normal plant growth.

SOIL MICRONUTRIENTS

PAGE #2

Micronutrients, Copper, Iron, Manganese and Zinc, in soil are present in small amounts. However, they play a necessary role in plant metabolism. Without appropriate amounts plants will not thrive. Soil has adequate amounts - no application needed. SOIL MACRONUTRIENTS : NITROGEN-PHOSPHORUS-POTASSIUM (N-P-K) GENERAL N-P-K RECOMMENDATION

Use ONE of these NPK preparations for the first fertilizer application.

Standard NP	K						Customer
Fertilizer							Choice
Preparation	6-24-24	5-20-10	16-16-16	0-10-10	28-3-4	21-0-0	None

#/1000 sq.f	t. N/A	N/A	N/A	N/A	2	2	* *

GRASS OR SOD PREPARATION

Till in organic matter, N,P,K and micro nutrients in addition to any lime gypsum or sulfur as directed above. Smooth soil surface and follow seed or sod producers direction for moisture and product application.

TREES AND SHRUBS

Excavate holes for planting shrubs and trees to at least twice the volume of the container. Prepare backfill for tree and shrub planting holes by mixing three parts of native soil (or imported top soil) with one part organic amendment (preferably nitrogen and iron fortified) and 2.5 pounds of 6-24-24 per yard of mix. For extended fertilization, place slow release fertilizer tablets in each hole per manufacturer's instructions. If 6-24-24 was not directly added to backfill mix, during backfill apply uniformly 1/2 oz of 6-24-24 per gallon containers, 2.5 oz per 5 gallons, 6 oz per 24 inch boxes.



11419 Sunrise Gold Circle, #10 Rancho Cordova, CA 95742 (916) 852-8557

> DATE 09/02/2022 SUN NUMBER 183124

Information requested by: Robert Norbutas Siegfried-stockton

Information for: 20087 EMBARCADERO Sample ID: PALO ALTO AWPS

______ SOIL RECOMMENDATIONS FOR LANDSCAPE GARDENING

SOIL pH (Acidity and Alkalinity) The pH of this sample indicates the soil is in a range for normal growth of most plants. No modification is required.

DISSOLVED SALTS (Indicated by E.C. & TDS)

Under these conditions the very salt sensitive plants may have some growth restriction. The soil may be improved by leaching with good quality water. Have the water analyzed before use to insure that the water is not the cause of the high salt in the soil. Leaching requires good quality water and adequate drainage through the root zone.

SOIL TEXTURE AND RATE OF WATER INFILTRATION

The infiltration rate for all soil textures decreases with increasing ground slope. At 0 to 4%, 5 to 8%, 9 to 12%, 13 to 16% and above 16% the infiltration rate of this sample decreases from 0.25 to 0.20, 0.15, 0.10, 0.06, respectively. Infiltration rate also decreases with percent of ground cover and by compaction.

WATER PENETRATION OF SOIL DUE TO CHEMICAL CHARACTERISTICS When exchangable Sodium increases in the soil, water penetration decreases. Based on SAR and ESP values this sample will have increasing problems with water penetration. Apply 25 pounds of Gypsum per 1000 sq.ft., work into soil, and leach with good quality water. Have the water analyzed before use to insure that the water is not the cause of the high Sodium in the soil. Leaching requires good quality water and adequate drainage through the root zone.

Organic matter provides a slow nitrogen release and aids water retention. This sample has a adequate Organic Matter content. No further organic matter is essential, a 2-3 in. top dressing will aid water retention.

Sunland Analytica

11419 Sunrise Gold Circle, #10 Rancho Cordova, CA 95742 (916) 852-8557

DATE 09/02/2022 SUN NUMBER 183124

Information requested by: Robert Norbutas Siegfried-stockton

Information for: 20087 EMBARCADERO Sample ID: PALO ALTO AWPS _____

SOIL RECOMMENDATIONS FOR LANDSCAPE GARDENING

Summary and Suggested Sequence of Soil Improvements (#/1000 Sq.Ft.)

25 # - leach soil Gypsum Organic Amendment None presently required N-P-K Fertilizer See above chart

Maintenance Fertilization

PAGE #3

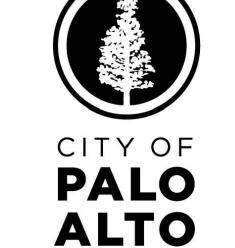
Apply 5 pounds of Ammonium sulfate (21-0-0) per 1000 sq.ft.every month until plants become established. After established, apply 28-3-4 (or similar preparation) to provide desired growth rate and color.



Black & Veatch Corporation Walnut Creek, California







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04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE DESIGNED: RJN DETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022

PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

LANDSCAPE SOILS REPORT

OF 214

L-00-105

(SCALE BAR IS 4" AT FULL SCALE) 0

*

EXISTING TANK

NEW PUMPING

TANK

EXISTING

PARKING LOT

SOIL BED /

SOIL TESTING KEY MAP SCALE: 1"=60'

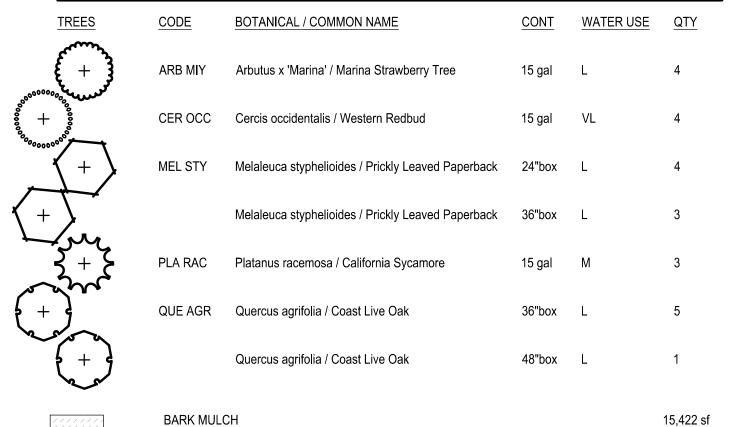
PALO ALTO AIRPORT

SOILS TESTING

Know what's below.

Call before you dig.

TREE LEGEND





EXISTING TREES TO REMAIN. FOR INVENTORY AND DESCRIPTIONS, SEE SHEETS L-00-100 AND L-00-101.

TREE SELECTION NOTE

perimeter fence and wall.

ALL TREES ARE BASED UPON APPROVED LIST, 'PLANT PALETTE RECOMMENDATIONS FOR THE NORTH BAYSHORE PRECISE PLAN', PREPARED FOR THE CITY OF MOUNTAIN VIEW, AND PREPARED BY H.T. HARVEY & ASSOCIATES. PROJECT # 3640-01. JULY 24, 2015

Natural bark mulch. 3" thick layer minimum. Landscape areas within the project site to receive city provided recycled natural bark mulch. Stabilizing edges of pavement, areas of traffic and

activity as well as disturbed open space areas along the

DESIGN INTENT

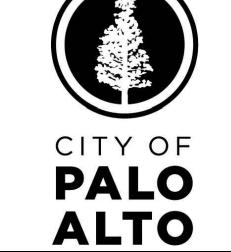
- 1. COMBINE PERIMETER WALL AND FENCING WITH PLANT MATERIAL TO PROVIDE BAYLANDS PRESERVATION SCREENING REQUIREMENTS FOR THE RWQCP FACILITY.
- 2. REMOVAL OF INVASIVE PLANTS.
- 3. FOLLOW CPTED PRINCIPLES IN DESIGN FOR SAFETY AND SECURITY THROUGH PATHWAY COORIDOR AREA.
- 4. PROVIDE A WILDLIFE CORRIDOR AND REFUGIA FOR THE PROJECT SITE AT EMBARCADERO ROAD ALONG THE PERIMETER FENCE AND WALL.



Black & Veatch Corporation Walnut Creek, California







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04/2022 PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

25 OF 214

TREE PLAN

L-00-200

SCALE: 1"=30'

2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE CITY OF PALO ALTO

3. ALL PLANTS BROUGHT ONTO THE SITE SHALL BE WATERED AND PROTECTED FROM EXCESSIVE WIND, SUN, FROST, PHYSICAL DAMAGE AND THEFT UNTIL

4. ALL ASPHALT, BASE COURSE AND OTHER DEBRIS ARE TO BE REMOVED COMPLETELY BELOW PLANTING AREAS TO NATIVE SOIL LEVEL.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSITIVE SURFACE DRAINAGE AT 2% MINIMUM IN PLANTING AREAS EXCEPT WHERE SHOWN.

6. THE CONTRACTOR SHALL FURNISH AND APPLY THE APPROPRIATE PRE-EMERGENT HERBICIDE AT RATES PRESCRIBED BY LAW AND THE MANUFACTURER'S RECOMMENDATIONS. 'SURFLAN 75W' IS RECOMMENDED FOR GROUND COVER AND SHRUB AREAS. ALL PRE-EMERGENT HERBICIDES SHALL BE APPLIED BY LICENSED OPERATORS UNDER FAVORABLE WEATHER CONDITIONS.

7. ALL PLANTING AREAS SHALL BE ROTOTILLED (OR HAND CULTIVATED UNDER EXISTING TREES) TO A DEPTH OF 8". TAKE CARE NOT TO DAMAGE ROOTS.

8. THE CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING A SOILS TEST AND PROVIDING THE APPROPRIATE AMENDMENTS BASED ON THE TEST RESULTS.

9. FINISH GRADE OF PLANTED AREAS TO BE ONE (1) INCH BELOW PAVING. WATER SOIL THOROUGHLY BEFORE PLANTING. ALL PLANTS SHALL BE SET AT SUCH A LEVEL THAT AFTER SETTLING THEY BEAR THE SAME RELATIONSHIP TO THE SURROUNDING FINISH GRADE AS THEY BORE TO THE SOIL LINE GRADE IN THE CONTAINER, UNLESS OTHERWISE NOTED.

10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE DRAINAGE OF ALL PLANTINGS, SUFFICIENT TO INSURE HEALTHY GROWTH.

11. COVER ALL PLANTING AREAS WITH A 3" DEPTH OF APPROVED BARK MULCH AFTER FINAL SHAPING OF SAUCERS AND DRESS OFF NEATLY.

12. TREES ARE TO BE STAKED PER DETAIL. INSTALL 8 LF. OF ROOTBARRIER CENTERED ON TREES (MODEL #UB24-2) WITHIN 5 FEET OF WALKS, WALLS OR BUILDINGS.

13. TRIANGULAR SPACING FOR GROUND COVER PLANTING BEDS.

14. PLANTS TO BE INSTALLED A MINIMUM OF 24" AWAY FROM EDGE OF PATHWAY TO ALLOW FOR NATURAL GROWTH HABITS AND MINIMIZE MAINTENANCE. TYPICAL.

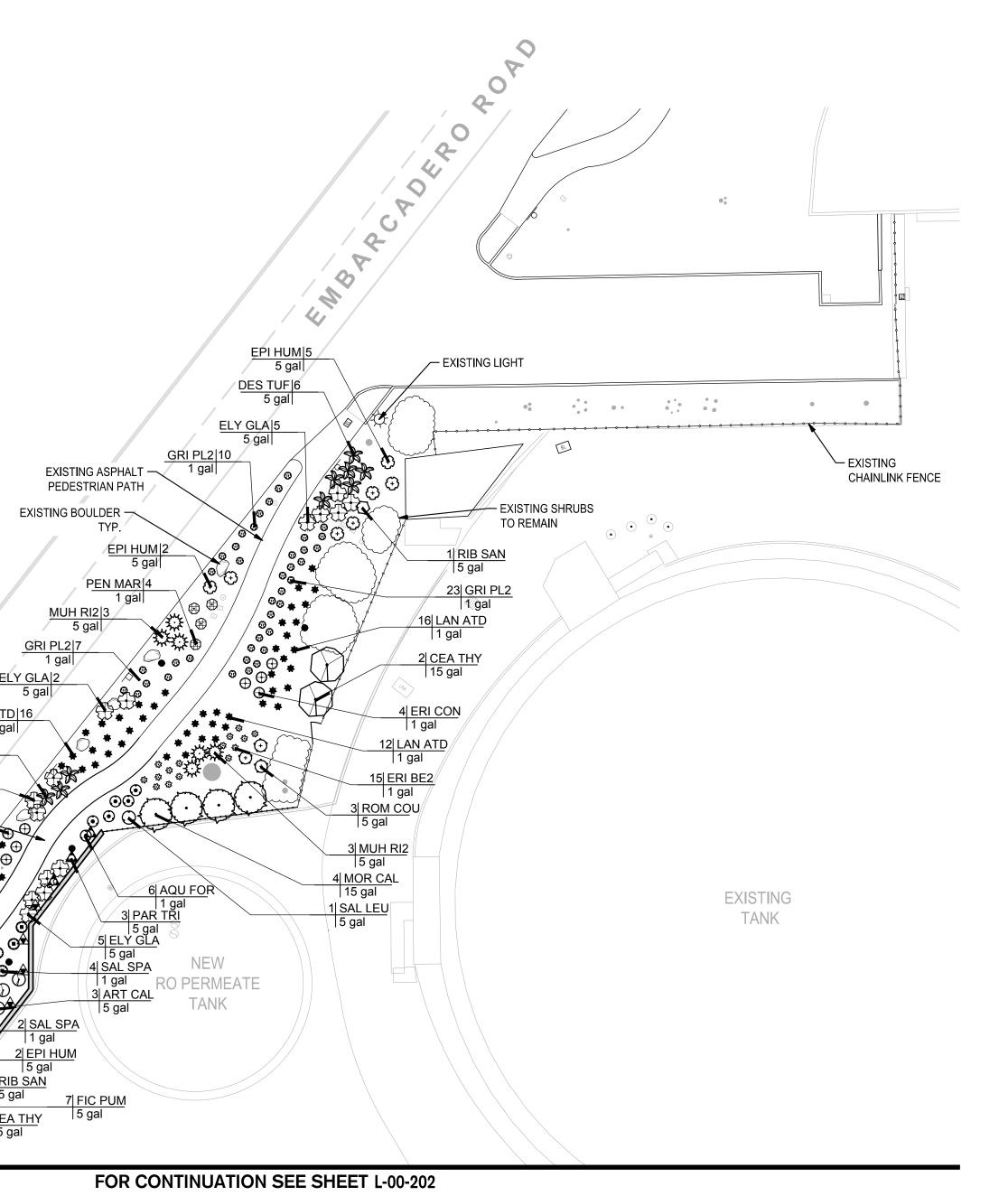
NEW ASPHALT — PATH SECTION

- NEW PRECAST

CONCRETE WALL

EDGE OF EXISTING -ASPHALT PAVEMENT

EXISTING LIGHT



SHRUB & GROUNDCOVER LEGEND

LARGE SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
	CEA THY	Ceanothus thyrsiflorus / Blueblossom	15 gal	L	5
Exercise the second	HET ARB	Heteromeles arbutifolia / Toyon	15 gal	L	9
\bigcirc	MOR CAL	Morella californica / California Wax Myrtle	15 gal	M	18
MEDIUM SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
\bigcirc	ART CAL	Artemisia californica / California Sagebrush	5 gal	L	8
0	BAC PIG	Baccharis pilularis 'Pigeon Point' / Pigeon Point Coyote Brush	5 gal	L	10
(+)	EPI HUM	Epilobium canum / California Fuchsia	5 gal	L	17
\odot	RIB SAN	Ribes sanguineum / Red Flowering Currant	5 gal	L	4
+	ROM COU	Romneya coulteri / Matilija Poppy	5 gal	VL	13
\odot	SAL LEU	Salvia leucantha / Mexican Bush Sage	5 gal	L	4
SMALL SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
(•)	AQU FOR	Aquilegia formosa / Western Columbine	1 gal	L	27
	ERI CON	Eriophyllum confertiflorum / Golden Yarrow	1 gal	L	35
	PEN MAR	Penstemon heterophyllus 'Margarita BOP' / Margarita BOP Penstemon	1 gal	L	29
	SAL SPA	Salvia spathacea / Hummingbird Sage	1 gal	L	32
VINE	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
	FIC PUM	Ficus pumila / Creeping Fig (8' O.C., TYP.)	5 gal	M	21
Δ	PAR TRI	Parthenocissus tricuspidata / Boston Ivy (6' O.C., TYP.)	5 gal	L	29
ORNAMENTAL GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
	DES TUF	Deschampsia cespitosa / Tufted Hair Grass	5 gal	L	23
	ELY GLA	Elymus glaucus / Blue Wildrye	5 gal	L	24
Wy That	MUH RI2	Muhlenbergia rigens / Deer Grass	5 gal	L	15
GROUNDCOVERS	CODE	BOTANICAL / COMMON NAME	CONT	WATER USE	<u>QTY</u>
£3	ERI BE2	Erigeron glaucus / Seaside Daisy (36" O.C., TYP.)	1 gal	L	116
	GRI PL2	Grindelia stricta platyphylla / Spreading Grindelia (42" O.C., TYP.)	1 gal	L	89
*	LAN ATD	Lantana montevidensis 'Spreading White' / White Trailing Lantana (48" O.C., TYP.)	1 gal	L	176

EXISTING SHRUBS TO REMAIN

TREE LOCATION (PROPOSED) Layout reference of proposed trees. See sheet L-00-

TREE LOCATION (EXISTING) Layout reference of existing trees. Tree protection in place during construction.

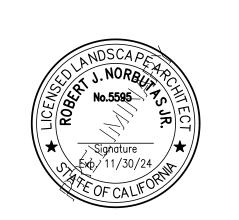
SHRUB SELECTION NOTE

ALL SHRUBS ARE BASED UPON APPROVED LIST, 'PLANT PALETTE RECOMMENDATIONS FOR THE NORTH BAYSHORE PRECISE PLAN', PREPARED FOR THE CITY OF MOUNTAIN VIEW, AND PREPARED BY H.T. HARVEY & ASSOCIATES. PROJECT # 3640-01. JULY 24, 2015



Black & Veatch Corporation Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL **NOT FOR** CONSTRUCTION

04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE DESIGNED: RJN

ETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022 PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

SHRUB & GROUNDCOVER PLAN I

OF 214

L-00-201

SCALE: 1"=20'

Know what's below. Call before you dig.

ERI CON 7 1 gal LAN ATD 17

(SCALE BAR IS 4" AT FULL SCALE) 0

Black & Veatch Corporation Walnut Creek, California







PALO ALTO

CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

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AWPS

LANDSCAPE

SHRUB & GROUNDCOVER PLAN II

L-00-202

SCALE: 1"=20'

27 OF 214

SEE SHEET L-00-201 FOR SHRUB & GROUNDCOVER LEGEND AND NOTES

Know what's below.

Call before you dig.

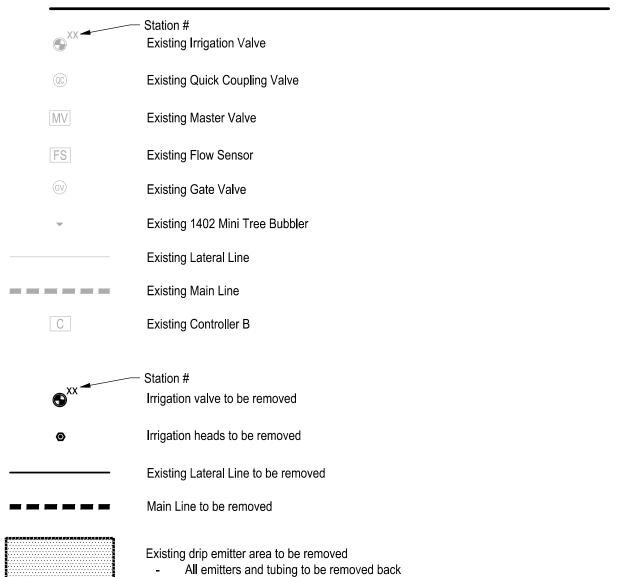
TO REMAIN

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

OWNER'S REPRESENTATIVE, AT NO ADDITIONAL COST TO THE OWNER. REFER TO THE IRRIGATION LEGEND, NOTES, AND DETAILS, AND PROJECT SPECIFICATIONS FOR

ADDITIONAL INFORMATION.







Existing drip emitter area to remain - Area to be reconnected to new laterals and zone.

to valve, unless noted.

TREE LOCATION (EXISTING) Layout reference of existing trees. Tree protection in place during construction. Refer to L-00-100.

NOTE: EXISTING SITE IS IRRIGATED WITH RECYCLED WATER. SITE SIGNAGE IS EXISTING. All NEW IRRIGATION EQUIPMENT SHALL BE INSTALLED WITH NON-POTABLE EQUIPMENT WITH REQUIRED LABELING.

NOTES

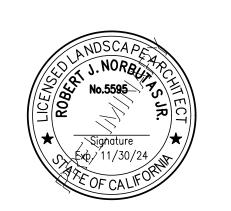
- 1. BOLD ITEMS TO BE REMOVED
- 2. ALL EXISTING CONTROLLERS AND EQUIPMENT TO REMAIN UNLESS OTHERWISE NOTED IN PLAN.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS NECESSARY TO THE EXISTING IRRIGATION SYSTEM, MAINLINE, LATERALS, HEADS OR EQUIPMENT TO MAINTAIN COVERAGE AND APPLICATION TO THE EXISTING LANDSCAPE AREAS.
- EXISTING LATERALS TO REMAIN FOR NEW LATERAL CONNECTIONS.
- EXISTING LATERAL TO REMAIN AND BE
- ABANDONED UNDER PATH.
- REMOVE VALVE AND CAP AT MAINLINE. 2-WIRE STATION NUMBER TO BE REASSIGNED TO NEW VALVE. SEE L-00-302

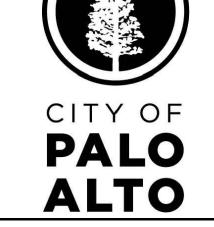
SCALE: 1"=30'

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AWPS

LANDSCAPE

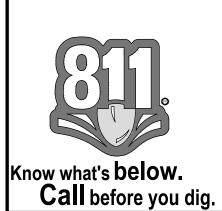
IRRIGATION DEMOLITION PLAN

OF 214

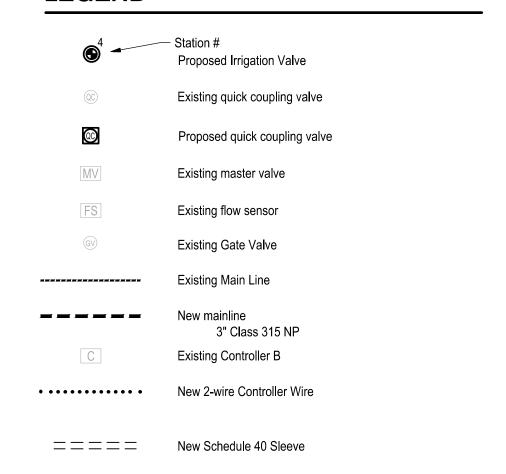
L-00-300

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

Know what's below. Call before you dig.



LEGEND



LEGEND

- 1. PLAN REPRESENTS ACTUAL INSTALLATION LOCATIONS. CONTRACTOR SHALL FIELD VERIFY.
- 2. SEE SHEETS L-00-302/303 FOR IRRIGATION DESIGN AND DESCRIPTIONS.
- 3. CONTRACTOR RESPONSIBLE FOR DETERMINING SLEEVE PIPE SIZE AND QUANTITIES BASED ON FINAL ROUTING OF MAINLINE, LATERALS AND WIRING.

PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE TWICE THE DIAMETER OF THE PIPE SLEEVE

DESIGN TYPICALS MAINLINE (8" SLEEVE") CONTROLLER WIRE (2" SLEEVE) LATERALS (2" SLEEVE)

EXTEND SLEEVES 24" BEYOND EDGES OF PAVING OR CONSTRUCTION.

4. MULTIPLE SLEEVES MAY BE INSTALLED TO ISOLATE MAINLINE AND LATERAL PIPING.

GENERAL NOTES:

- 1. LOCATE VALVES IN GROUPS & IN PLANTER AREAS WHEREVER
- POSSIBLE. 2. 5 DEGREE DEFLECTION ALLOWABLE OVER 200'.
- 3. HAND TRENCHING REQUIRED WITHIN DRIPLINE OF EXISTING
- TREES, OR WHERE ROOTS 2" OR GREATER IN DIAMETER ARE ENCOUNTERED.
- 4. CONTRACTOR REQUIRED TO VERIFY ALL DEPTH OF ALL CROSSINGS, AND PROVIDE FOR MINIMUM REQUIRED VERTICAL CLEARANCE PER CITY STANDARDS.



Black & Veatch Corporation Walnut Creek, California







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04/2022 PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

IRRIGATION MAINLINE PLAN

OF 214

L-00-301

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

SCALE: 1"=30'

IRRIGATION LEGEND

MANUFACTURER/MODEL/DESCRIPTION Rain Bird RWS-M-B-C-P w/ RWS-SOCK Mini Root Watering System with 4" diameter x 18" long with locking grate, semi-rigid mesh tube. 1402 0.5 GPM bubbler. 2 per tree, typical. MANUFACTURER/MODEL/DESCRIPTION Rain Bird XCZ-100-PRB-R Wide Flow Drip Control Kit. Purple Cap designates for Reclaimed Water, Non-Potable Use. 1" PESBR Valve and 1" Pressure Regulating 40psi Basket Filter. 0.3-20 GPM.

Rain Bird XCZ-150-PRB-COM High Flow Control Zone Kit. 1-1/2" PESB Valve with two 1" Pressure Regulating 40psi Quick-Check Basket Filters. Flow range: 15-40 GPM.

Area to Receive Drip Emitters + + + + + + + + Rain Bird PCT Pressure Compensating Threaded Low-Flow Bubblers. Offered in 5 GPH, 7 GPH, and 10 GPH models, with 1/2" FPT threaded inlet. Light Brown = 5 |+ + + + + + | GPH, Violet = 7 GPH, and Green = 10 GPH. Emitter Notes:

05 gph emitters (1 assigned to each 1 gal plant) 07 gph emitters (1 assigned to each 5 gal plant) 10 gph emitters (1 assigned to each 15 gal plant)

MANUFACTURER/MODEL/DESCRIPTION Rain Bird PEB-PRS-D-NP-HAN 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe 2 Configuration. With Pressure Regulator Module, and Purple Flow Handle for Non-Potable Water Use.

Rain Bird 44-NP 1" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Non-Potable Purple Rubber Cover, and 2-Piece Body.

Point of Connection 3" Point of Connection with new 3" mainline connected to the existing 3" mainline due to the relocation of the walkway. Contractor shall field verify location. Point of Connection 3"

Point of Connection with new 3" mainline connected to the existing 3" mainline due to the relocation of the walkway. Contractor shall field verify POC3 Point of Connection 3" Point of Connection with new 3" mainline extension at the end of the existing

3" mainline. Contractor shall field verify location.

Irrigation Lateral Line: PVC Schedule 40-NP 1,171 l.f. Irrigation Mainline: PVC Class 315 SDR 13.5 (3")

Proposed non-potable irrigation mainline 549.8 l.f. - Connection to W-4 - Recycled water

___ _ _ _ _ _ _ Pipe Sleeve: PVC Schedule 40 ——————— Typical pipe sleeve for irrigation pipe. Min. size 2x diameter of pipe being sleeved. Extend sleeves 24" beyond edges of paving or construction.

Existing Irrigation Valve

Existing Quick Coupling Valve **Existing Master Valve Existing Flow Sensor Existing Gate Valve** Existing Lateral Line

Existing Main Line Existing Controller B

> TREE LOCATION (PROPOSED) Layout reference of proposed trees. See sheet L-00-200 and L-00-201.

TREE LOCATION (EXISTING) Layout reference of existing trees. Tree protection in place during

NON-POTABLE IRRIGATION EQUIPMENT RECYCLED WATER INFRASTRUCTURE FOR IRRIGATION SYSTEM IS REQUIRED. NON-POTABLE PRODUCTS, TAGS AND VALVE BOXES SHALL BE INSTALLED.

LANDSCAPE SUMMARY

TOTAL IRRIGATED AREA

137,806 GALLON/YR

MAXIMUM APPLIED WATER ALLOWANCE (MAWA) 176,754 GALLON/YR ESTIMATED TOTAL WATER USE (ETWU)

> I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN

THE LANDSCAPE AND IRRIGATION DESIGN PLANS.

BLACK & VEATCH

Black & Veatch Corporation Walnut Creek, California

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DESIGNED: RJN

AWPS

LANDSCAPE

OF 214

IRRIGATION PLAN I

L-00-302

ROBERT J. NORBUTAS, JR., RLA 5595 (SCALE BAR IS 4" AT FULL SCALE) 0 1/2

Know what's below. Call before you dig.

IRRIGATION EQUIPMENT AND PIPING IS DIAGRAMMATIC FOR GRAPHICAL CLARITY

SEE SHEET L-00-304 FOR IRRIGATION CALCULATIONS & NOTES

SCALE: 1"=20'

Know what's below.

Call before you dig.

IRRIGATION EQUIPMENT AND PIPING IS DIAGRAMMATIC FOR GRAPHICAL CLARITY.

SEE SHEET L-00-302 FOR IRRIGATION LEGEND, L-00-304 FOR IRRIGATION CALCULATIONS & NOTES

GENERAL IRRIGATION NOTES

- 1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF PALO ALTO STANDARDS.
- 2. THE IRRIGATION SYSTEM IS DESIGNED TO OPERATE AT 30 PSI FOR DRIP EMITTERS WITH A MAXIMUM FLOW RATE OF 50 GPM. THE SUBCONTRACTOR IS TO PERFORM A STATIC AND DYNAMIC PRESSURE TEST; VERIFY AT LEAST 60 PSI STATIC, WITH A MAXIMUM OF 80 PSI STATIC. REPORT FINDINGS TO THE LANDSCAPE ARCHITECT. IF THE CONTRACTOR FAILS TO DO SO, THE SUBCONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
- 3. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH. LANDSCAPE SUBCONTRACTOR SHALL GUARANTEE 100% COVERAGE OF SYSTEM. QUANTITIES (IF SHOWN) ARE FOR REFERENCE ONLY.
- 4. SPLICING OF 24 VOLT WIRES IS NOT PERMITTED EXCEPT IN VALVE BOXES. LEAVE A 36" LONG, 6" DIAMETER COIL OF EXCESS WIRE AT EACH SPLICE AND A 36" LONG EXPANSION LOOP EVERY 100 FEET ALONG WIRE RUN. TAPE WIRE TOGETHER EVERY TEN FEET. TAPING WIRES IS NOT REQUIRED INSIDE SLEEVES. RUN WIRE FROM EACH REMOTE CONTROL VALVE TO THE CONTROLLER. ALL CONTROLLER WIRES TO BE LABELED AT VALVES AND CONTROLLER.
- 5. PLASTIC VALVE BOX LIDS TO BE T-STYLE NON-HINGED COVERS. BOX BODY SHALL HAVE KNOCK-OUTS WITH BOLT-DOWN LIDS.
- 6. INSTALL NEW REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, LAWN, HEADER BOARD, BUILDING, OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, EACH BOXSHALL BE AN EQUAL DISTANCE FROM THE WALK, CURB, LAWN, ETC. AND EACH BOX SHALL BE 12" APART.
- 7. SHORT SIDE OF RECTANGULAR VALVE BOXES SHALL BE PARALLEL TO WALK, CURB, LAWN, ETC.
- 8. THIS PLAN IS <u>DIAGRAMMATIC</u>. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. AVOID ANY CONFLICTS BETWEEN THE IRRIGATION SYSTEM AND PLANTING AND ARCHITECTURAL FEATURES.
- 9. THE IRRIGATION CONTRACTOR SHALL FLUSH ALL LINES AND ADJUST ALL HEADS FOR MAXIMUM PERFORMANCE AND TO MINIMIZE OVERSPRAY ON TO WALKS, WALLS, FENCES, DRIVES, AND BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT EXISTING CONDITIONS AND REDUCE RADIUS AT EACH HEAD TO.
- 10. COMMON WIRE TO BE U.L. LISTED DIRECT BURY #12 GAUGE, WHITE. ALL CONTROL WIRE TO BE U.L. LISTED DIRECT BURY #14 GAUGE WIRE, RED.
- 11. CONTRACTOR SHALL LABEL VALVE BOX LIDS PER STANDARDS. REMOTE CONTROL VALVES SHALL BE LABELED WITH STATION NUMBER, QUICK COUPLERS WITH "QCV" AND GATE VALVES WITH "GV".
- 12. CONTRACTOR SHALL PROVIDE TWO (2) COPIES OF 11x17 LAMINATED CONTROLLER CHARTS PRIOR TO FINAL ACCEPTANCE BY OWNER. CONTROLLER CHARTS SHALL BE COLOR-CODED INDICATING EACH VALVE AND THE SYSTEM IT OPERATES. CHARTS SHALL BE REDUCTIONS OF THE IRRIGATION PLANS.
- 13. SEE SPECIFICATIONS FOR COMMON TRENCHING REQUIREMENTS.

WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

- 14. ALL PVC SLEEVES UNDER PAVEMENT AND ROADWAYS TO BE SCH. 40. PVC, TWICE THE DIAMETER OF PIPE OR WIRE BUNDLE THAT WILL PASS THROUGH SLEEVE.
- 15. INSTALL CHECK VALVES OR IN-HEAD CHECK VALVES TO ELIMINATE LOW HEAD DRAINAGE WHERE NECESSARY.
- 16. SUBSTITUTION FOR IRRIGATION EQUIPMENT SPECIFIED ON THE PLANS MAY BE DONE ONLY
- 17. PROVIDE A MINIMUM 24" COVER OVER ALL MAINLINE PIPING AND 18" OVER ALL LATERAL
- 18. CONTRACTOR SHALL NOT WILLFULLY INSTALL THE SYSTEM AS DESIGNED WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT WERE NOT IDENTIFIED IN THE DRAWINGS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. OTHERWISE, THE CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
- 19. ALL WIRE CONNECTIONS TO BE MADE IN VALVE BOX WITH WATER TIGHT CONNECTORS PER THE MANUFACTURERS DIRECTIONS. WIRE SPLICES SHALL NOT BE PERMITTED UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE. WIRE SPLICE LOCATIONS MUST BE INDICATED ON "AS-BUILTS" PER THE SPECIFICATIONS.
- 20. ALL PIPE 2 1/2" AND SMALLER TO BE SOLVENT WELD AND ALL PIPE 3" AND OVER TO BE RING-TITE WITH JOINT RESTRAINTS.
- 21. CONTRACTOR TO VERIFY LOCATIONS OF ALL ON-SITE UTILITIES. RESTORATION OF DAMAGED UTILITIES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY.
- 22. CONTRACTOR TO MARK IRRIGATION STREET CROSSINGS OF WATER LINES WITH A CHISELED "I" IN THE CURB.
- 23. SEE IRRIGATION DETAILS FOR ADDITIONAL INFORMATION.

NON-POTABLE IRRIGATION EQUIPMENT
RECYCLED WATER INFRASTRUCTURE FOR IRRIGATION SYSTEM IS REQUIRED.
NON-POTABLE PRODUCTS, TAGS AND VALVE BOXES SHALL BE INSTALLED.

LANDSCAPE SUMMARY

TOTAL IRRIGATED AREA

14,699 SF

MAXIMUM APPLIED WATER ALLOWANCE (MAWA) 176,754 GALLON/YR ESTIMATED TOTAL WATER USE (ETWU) 137,806 GALLON/YR

I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE AND IRRIGATION DESIGN PLANS.

ROBERT J. NORBUTAS, JR., RLA 5595

O' 10' 20'

SCALE: 1"=20'

40'

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2

R BLACK&VEATCH

Black & Veatch Corporation

Walnut Creek, California

SIEGFRIED





CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL NOT FOR CONSTRUCTION

04/22 60% DESIGN SUBMITTAL

04/22 60% DESIGN SUBMITTAL
REVISIONS AND RECORD OF ISSUE
DESIGNED: RJN
DETAILED: AYM

CHECKED: PJS

APPROVED: RJN

DATE: 04/2022

PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

OF 214

IRRIGATION PLAN II

L-00-303

HYDROZONE INFORMATION TABLE ZONE

	zone data summary Description		Vd -	Vmo	KL	Irr Type	ΙE	PR	Soil Type	BIR	AW	RZ	PAW	MAD	AD	HA (sqft)	Area Calculations % of landscape area
OHE		Ks Ks	Kd	Kmc							27.412.41					;	
1	DRIPELINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	1647	11.20%
2	BUBBLER-TREE	0.5	1.0	1.3	0.65	Bubbler	0.81	0.50	Clay Loam	0.2	0.18	36	6.48	50%	3.24	375	2.55%
3	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	2224	15.13%
4	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	4592	31.24%
5	BUBBLER-TREE	0.5	1.0	1.3	0.65	Bubbler	0.81	0.50	Clay Loam	0.2	0.18	36	6.48	50%	3.24	400	2.72%
6	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	965	6.57%
7	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	968	6.59%
8	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	1189	8.09%
9	DRIPLINE-SHRUB	0.2	1.0	1.3	0.26	Drip	0.81	0.50	Clay Loam	0.2	0.18	18	3.24	50%	1.62	2339	15.91%

Legend: Ks=species coefficent, Kd=density coefficent, Kmc-micro-climate coefficient, KL=landscape coeffcient, IE= irrigation efficiency, PR = precipitation rate, BIR = basic intake rate, AW = available water, RZ = root zone, PAW = plant available water, MAD = managed allowable depletion (%), AD = allowable depletion (inches).

REFERENCE SCHEDULE

Zone						Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	DRIPELINE-SHRUB			Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
1			N	Cycles / Day	0	0	1	1	1	1	1	1	1	1	0	0
	Max. Minutes / Cycle	24		Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
	BUBBLER-TREE			Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
2	11 15 1 10 1	1	N	Cycles / Day	0	0	2	1	2	2	2	2	1	3	0	0
	Max. Minutes / Cycle	24		Min. / Cycle	0	0	19	19	20	17	16	15	24	17	0	0
3	DRIPLINE-SHRUB		K I	Irr. Days / Wk	0	0	1 1	3	3 1	4	4	4	4	1	0	0
3	May Minutes / Ovels	24	N	Cycles / Day	0	0		8			'	'		•		_
_	Max. Minutes / Cycle	24		Min. / Cycle Irr. Days / Wk	0	0	15 1	3	16 3	14	13	12	10	21	0	0
4	DRIPLINE-SHRUB		N	Cycles / Day	0	0	1	3	1	1 1	1	1	1	1	0	0
4	Max. Minutes / Cycle	24	IN	Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
-	Iviax. Iviiriutes / Cycle	24		Irr. Days / Wk	0	0	10	3	3	4	4	4	4	1	0	0
5	BUBBLER-TREE		N	Cycles / Day	0	0	2	1	2	2	2	2	1	3	0	0
	Max. Minutes / Cycle	24	'`	Min. / Cycle	0	0	19	19	20	17	16	15	24	17	0	0
-		24	N	Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
6	DRIPLINE-SHRUB			Cycles / Day	0	0	1	1	1	1	1	1	1	1	0	0
	Max. Minutes / Cycle	24		Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
			N	Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
7	DRIPLINE-SHRUB			Cycles / Day	0	0	1	1	1	1	1	1	1	1	0	0
	Max. Minutes / Cycle	24		Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
	1			Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
8	DRIPLINE-SHRUB		N	Cycles / Day	0	0	1	1	1	1	1	1	1	1	0	0
	Max. Minutes / Cycle	24	1	Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
	DDIDLINE CLIDUD	•		Irr. Days / Wk	0	0	1	3	3	4	4	4	4	1	0	0
9	DRIPLINE-SHRUB	E-SHRUB		Cycles / Day	0	0	1	1	1	1	1	1	1	1	0	0
	Max. Minutes / Cycle	24	1	Min. / Cycle	0	0	15	8	16	14	13	12	10	21	0	0
		•			•					•				•		
Total Ir	rigation System Runtime (du	uring estal	blishmen	it) Percent	tage adjustm	ent:	150%									
	um system runtime per irriga	ation day ((single-s	tation Hrs	0.0	0.0	3.0	1.6	3.2	2.8	2.6	2.4	2.0	4.1	0.0	0.0
operat	ion)			1115	0.0	0.0	5.0	1.0	0.2	2.0	2.0	2.4	2.0	7.1	0.0	0.0
Total Ir	rigation System Runtime (no	ormal oper	ration)													
	um system runtime per irriga			tation												
operat			(Hrs	0.0	0.0	2.0	1.0	2.1	1.8	1.7	1.6	1.3	2.8	0.0	0.0
Note: I	hours shown are cumulative	e and run	schedul	e may be reduced if	controller is	capable of r	nulti-valve o _l	peration.								

HYDROZONE CALCULATION REFERENCE

Plant Spacing & layering

0.8 - Low

1.3 - High

1.0 - Average

Ks = Species factor Per WUCOLS List: .1 - Very Low .2 - Low

Kd = Density factor

Kmc = Micro-climate factor Relative to open field conditions 0.7 - Low 1.00 - Average .5 - Medium 1.3 - High .8 - High

KL = Landscape Coefficient Calculation factor Irr Type = Method of Irrigation

AW = Available Water Amount of water per inch of soil available to plant assuming field-saturated condition Overhead spray, bubbler, or drip = Depth of Root Zone 4" - Turf = Irrigation Efficiency Value based on irrigation method 8" - Groundcover 24" - Small Tree

PAW = Plant Available Water zone, depth, & soil type MAD = Management Allowable Depletion

Percentage of plant available water

= Allowable Depletion to avoid reaching permanent wilting point MAWA = (ETo) (0.62) [(ETAF X LA) + ((1-ETAF) X SLA)]

 $= (43.1) (0.62) [(.45 \times 14,699) + ((.55) \times 0)]$

= (43.1) (0.62) [(6,614.55) + (0)]= (43.1) (0.62) (6,614.55)

TOTAL MAXIMUM APPLIED WATER ALLOWANCE (MAWA): 176,754 Gallons Per Year

ESTIMATED TOTAL WATER USE (ETWU)

= (ETo) (PF) (HA) (0.62)

WATER USE ZONES:

TREE PLANTING AREAS (Low water use-Bubbler)

(Low water use-Drip)

(43.1) (.30) (775) (.62)

= 7,670 Gallons Per Year

(0.81)

SHRUB PLANTING AREAS (43.1) (.30) (13,924) (.62)

= 137.806 Gallons Per Year

(0.81)

TOTAL ESTIMATED WATER USE (ETWU): 137,806 Gallons Per Year

SUMMARY

(ETWU): 137,806 Gallons Per Year IS LESS THAN (MAWA): 176,754 Gallons Per Year

Calculations based on California Department of Water Resources Title 23, Appendix A Reference Evapotranspiration Table, Department of Water Resources and WUCOLS III (Water Use Classifications of Landscape Species) guide.

ETo = Reference evapotranspiration (inches/year)

ETAF = .45 for non-residential areas, .55 for residential areas (ET adjustment factor)

= Landscape area (square feet)

= Conversion factor (to gallons per square foot)

= Plant Factor (0-0.1 Very Low, 0.2-0.3 Low, 0.4-0.6 Medium, 0.7-1.0 High plant water usage,

1.0 SLA)

= Special Landscape Area (square feet)

= Hydrozone Area (square feet)

= Irrigation Efficiency (0.75 for Spray Heads and 0.81 for Drip/Bubblers)

City of Palo Alto

43.1 Inches per year

Tree area based on 25 square per tree

Total Irrigated Landscape Area = 14,699 sq. ft.

RECYCLED WATER IRRIGATION NOTES:

- IRRIGATION SYSTEM USING RECYCLED WATER SHALL COMPLY WITH ALL STATE AND LOCAL RULES (CITY OF PALO ALTO MUNICIPAL CODE CHAPTER 16.12) AND CODES REGARDING USE OF RECYCLED WATER INCLUDING CHAPTER 3, DIVISION 4, TITLE 22, SECTION 60301 OF THE CALIFORNIA CODE OF REGULATIONS.
- 2. NOTIFY RECLAIMED WATER PURVEYOR'S AUTHORIZED REPRESENTATIVE NO LESS THAN 5 WORKING DAYS PRIOR TO START OF WORK FOR INSPECTION SCHEDULE COORDINATION.
- 3. RECYCLED WATER MAINLINE CAN NOT BE INSTALLED PARALLEL IN ELEVATION TO, OR DIRECTLY ON TOP OF A POTABLE WATER LINE.
- 4. RECYCLED WATER LINES AND ALL APPURTENANCES MUST MAINTAIN 10'-0" HORIZONTAL DISTANCE AND 1'-0" VERTICAL SEPARATION FROM POTABLE WATER LINES AND APPURTENANCES.
- 5. ALL RECYCLED WATER PIPE, VALVES, HEADS, AND OTHER APPURTENANCES SHALL HAVE INTEGRAL PURPLE COLOR AND STENCILING. ALL MARKINGS SHALL INCLUDE THE FOLLOWING STATEMENT OR APPROVED SIMILAR:

"CAUTION - RECYCLED WATER - DO NOT DRINK".

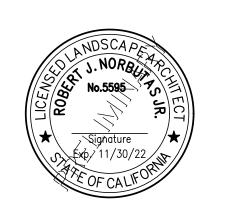
ALL PIPING OF RECYCLED WATER IRRIGATION SYSTEM SHALL BE CONSTRUCTED SO THAT SPRAY OR RUNOFF SHALL NOT ENTER A DWELLING, FOOD HANDLING FACILITY OR EATING AREA AND SHALL NOT CONTACT ANY DRINKING WATER FOUNTAINS. IRRIGATION WITH RECYCLED WATER SHALL BE ACCOMPLISHED AT A TIME AND MANNER THAT MINIMIZES THE POSSIBILITY OF HUMAN CONTACT.

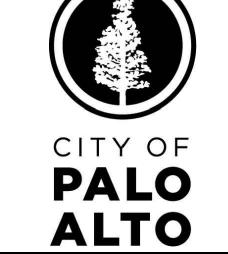
- 7. NO HOSE BIBS SHALL BE USED FOR RECYCLED WATER SYSTEMS. QUICK-COUPLING VALVES SHALL BE CONSTRUCTED OF BRASS, WITH A PURPLE RUBBER OR VINYL COVER.
- 8. LIDS TO ALL VALVE, QUICK COUPLER AND EMITTER BOXES MUST BE PURPLE IN
- 9. IRRIGATION MAINTENANCE PROGRAM SHALL INCLUDE A PROVISION FOR REPORTING PROBLEM AREAS (PONDING, RUNOFF, OVERSPRAY, LEAKS, BREAKS, ETC.) TO THE WATER PURVEYOR. IF THE WATER PURVEYOR HAS NO CONTINGENCY PLAN, THEN DEVELOP A CONTINGENCY PLAN REGARDING ACTION TO BE TAKEN TO CORRECT PROBLEMS IF RECYCLED WATER QUALITY FAILS TO MEET REQUIRED STANDARDS.
- 10. ALL PRESSURE MAINLINE PIPING FROM THE RECYCLED WATER SYSTEM SHALL BE INSTALLED TO MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION FROM ALL POTABLE WATER PIPING. WHERE RECYCLED AND POTABLE WATER PRESSURE MAINLINE PIPING CROSS, THE RECYCLED WATER PIPING SHALL BE INSTALLED 12" BELOW THE POTABLE WATER PIPING OUTSIDE DIAMETER (OD) TO OD. WHERE THE RECYCLED WATER PRESSURE MAINLINE MUST PASS ABOVE POTABLE WATER PIPING, THE RECYCLED WATER PIPING SHALL INSTALLED IN A SCHEDULE 40 PURPLE COLORED PVC SLEEVE WHICH EXTENDS A MINIMUM OF FIVE FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. A 12" VERTICAL SEPARATION OD TO OD MUST BE MAINTAINED. CONVENTIONAL (WHITE) PVC PIPE MAY BE USED FOR SLEEVE MATERIAL IF IT IS TAPED WITH THREE-INCH WIDE PURPLE WARNING TAPE, WHICH READS "RECYCLED WATER- DO NOT DRINK".

BLACK & VEATCH

Black & Veatch Corporation Walnut Creek, California







CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION

90% SUBMITTAL **NOT FOR CONSTRUCTION**

04/22 60% DESIGN SUBMITTAL

REVISIONS AND RECORD OF ISSUE ESIGNED: RJN DETAILED: AYM PJS

CHECKED: APPROVED: RJN 04/2022 PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

IRRIGATION CALCULATIONS AND NOTES

L-00-304

ROBERT J. NORBUTAS, JR., RLA 5595

I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL

APPLIED THEM FOR THE EFFICIENT USE OF WATER IN

WATER EFFICIENT LANDSCAPE ORDINANCE AND

THE LANDSCAPE AND IRRIGATION DESIGN PLANS.

LANDSCAPE SUMMARY

MAXIMUM APPLIED WATER ALLOWANCE (MAWA) 176,754 GALLON/YR

TOTAL IRRIGATED AREA

ESTIMATED TOTAL WATER USE (ETWU)

OF 214

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

137,806 GALLON/YR

PR = Precipitation Rate

= Basic Infiltration Rate

Value based on irrigation method

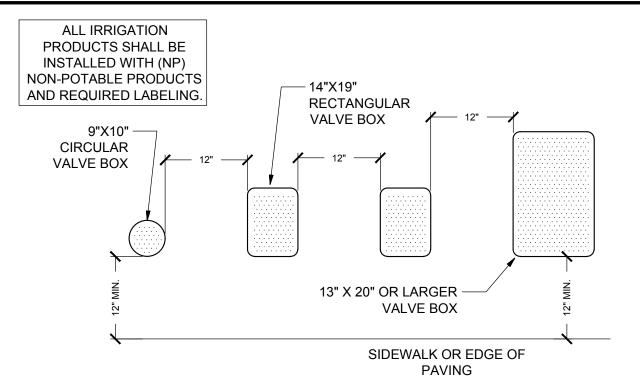
Infiltration rate based on type of soil

18" - Large Shrub 12" - Small Shrub 36" - Large Tree

Water available to plant based on root

allowed to be depleted from usable soil

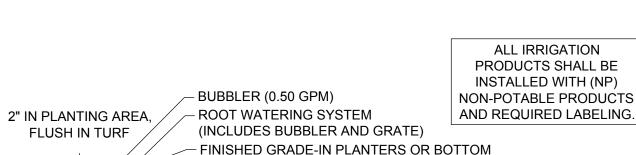
Plant available water allowed to be lost

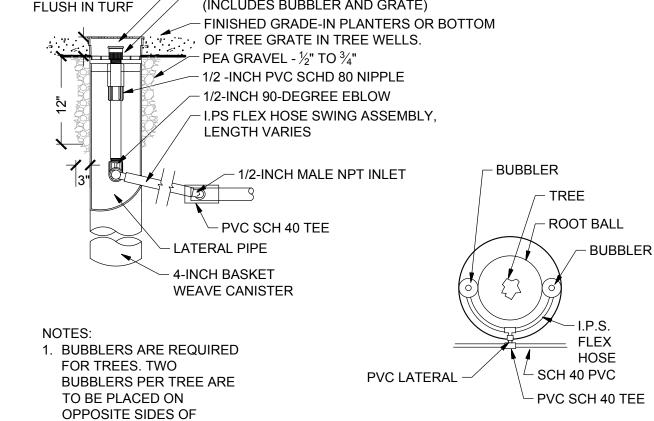


1. CENTER BOX OVER VALVE TO FACILITATE SERVICING VALVE.

- 2. SET BOXES 2" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
- 3. SET VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN AREA ONLY IF GROUND COVER/SHRUB AREA DOES NOT EXIST ADJACENT TO LAWN.
- 4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE. 5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOX EDGES TO PREVENT
- COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
- 6. VALVE BOXES SHALL HAVE BOLT DOWN LIDS WITH BOLTS INSTALLED.







NO SCALE

NO SCALE

ROOTBALL.

2. USE PROPER RATED GLUE

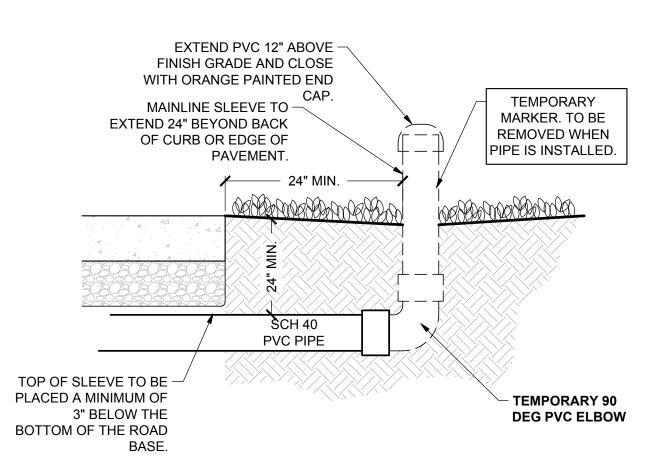
FOR I.P.S. FLEX HOSE.

DEEP ROOT WATERING SYSTEM

DECODER COMMUNICATION CABLE SOLENOID WIRE COMMUNICATION CABLE SOLENOID WIRE DIRECT BURIAL WIRE DIRECT BURIAL WIRE CONNECTORS CONNECTORS WHITE DECODER

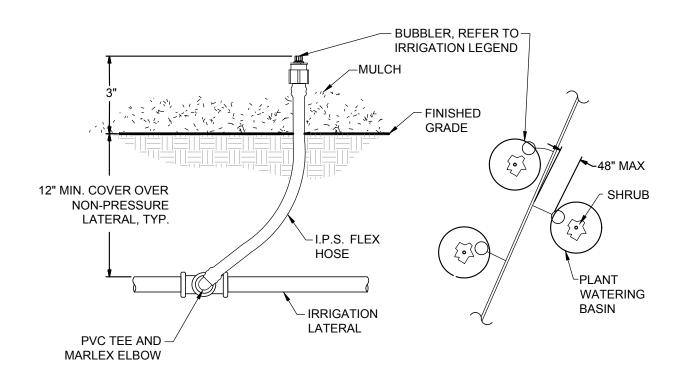
1. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM DECODER TO

2-WIRE DECODER WIRING DIAGRAM



PIPE SLEEVE WITH 90 ELBOW

NO SCALE



PLAN - LAYOUT

NOTES:

TOP VIEW

- A. LOCATE BUBBLER/RISER 6" MIN. FROM BUILDING FOUNDATION, WALL, OR
- PAVING. B. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR MORE INFORMATION.
- C. RISER LENGTH NOT TO EXCEED 48". D. EACH EMITTER TO HAVE SEPARATE RISER.

SECTION

E. CONTRACTOR SHALL INSTALL LATERALS AS REQUIRED IN PLANTER AREAS.

F. INSTALL UPHILL SIDE OF PLANT.

SHRUB BUBBLER

NO SCALE

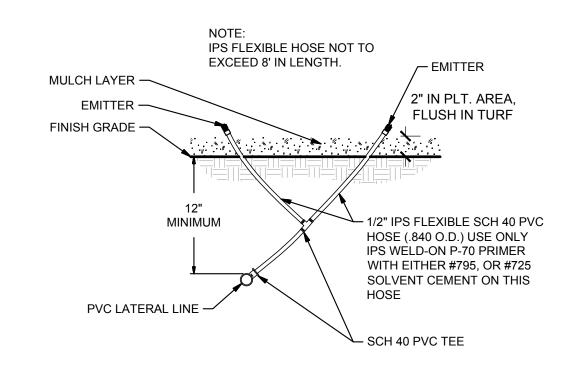
SLEEVING UNDER MAINLINE LATERAL MAINLINE LATERAL HARDSCAPE AND WIRING PIPE PIPE HARDSCAPE PIPE 6" MIN. PLAN VIEW ALL SOLVENT WELD -**RUN WIRING BENEATH-**PLASTIC PIPING TO AND BESIDE MAINLINE. BE SNAKED IN TRENCH TIE A 24" LOOP IN ALL TAPE AND BUDLE AT 10' WIRING AT CHANGES OF AS SHOWN. **INTERVALS** DIRECTION OF 30° OR GREATER. UNTIE AFTER ALL CONNECTIONS HAVE

1. SLEEVE 24" BELOW ALL HARDSCAPE ELEMENTS WITH SCH. 40 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.

BEEN MADE.

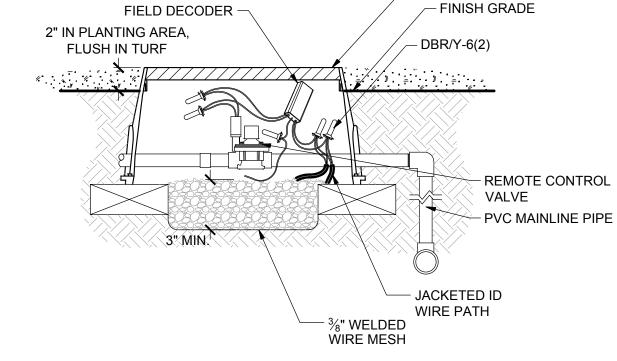
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE SPECIFICATIONS. 3. SNAKE ALL PLASTIC PIPING IN TRENCHES FROM SIDE TO SIDE AS SHOWN, AT A 50'

PIPE AND WIRE TRENCHING



1. USE MULTI EMITTER SET-UP FOR CLOSELY SPACED SHRUB AND GROUND COVER AREAS. CONTRACTOR MAY INSTALL UP TO THREE (3) EMITTERS PER EACH LATERAL TEE.

SHRUB BUBBLER - MULTIPLE EMITTERS



- LOCKING VALVE BOX

- FINISHED GRADE

THREADED ENDS

BRICK (TYP. OF 4)

LOCKING VALVE BOX

- MAINLINE FITTING, SEE SPECS.

SCH 80 NIPPLE

- SCH 80 NIPPLE

MAINLINE

SCH 80 NIPPLE

- CONTROL WIRE

— ELECTRIC VALVE

1. EARTH GROUND TO BE A MINIMUM OF 8' AWAY FROM DUAL-S AND AT A RIGHT ANGLE TO THE TWO WIRE PATH

ALL IRRIGATION

PRODUCTS SHALL BE

INSTALLED WITH (NP)

NON-POTABLE PRODUCTS

AND REQUIRED LABELING.

3" MIN

COMPLETE.

3/8" WELDED

WIRE MESH

CONTRACTOR SHALL STABILIZE VALVE

DURING INSTALLATION UNTIL BACKFILL IS

REMOTE CONTROL VALVE WITH BALL VALVE

2" IN PLANTING AREA,

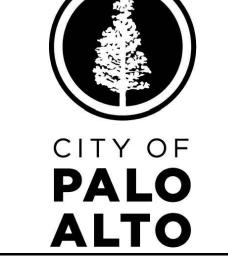
FLUSH IN TURF

2-WIRE VALVE DECODER CONNECTION









CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

90% SUBMITTAL **NOT FOR** CONSTRUCTION

04/22 60% DESIGN SUBMITTAL REVISIONS AND RECORD OF ISSUE DESIGNED: RJN DETAILED: AYM CHECKED: PJS APPROVED: RJN 04/2022

PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE

LANDSCAPE DETAILS I

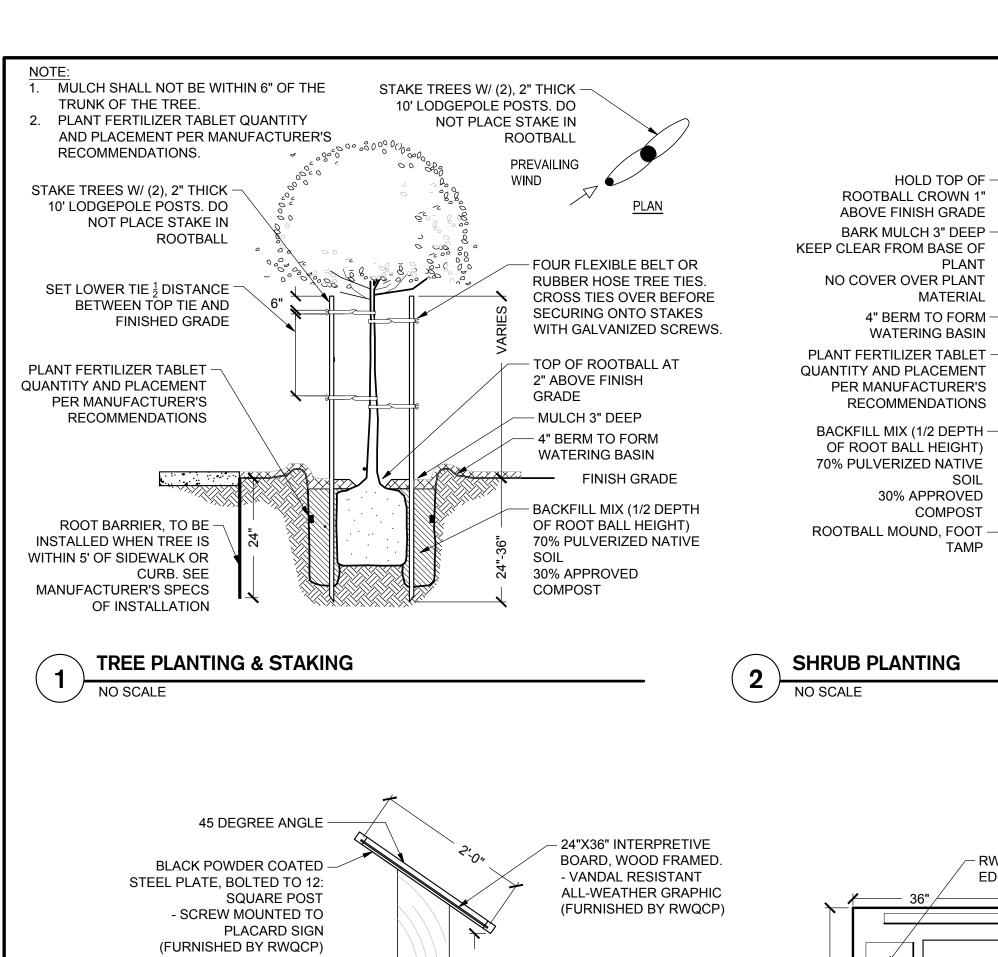
OF 214

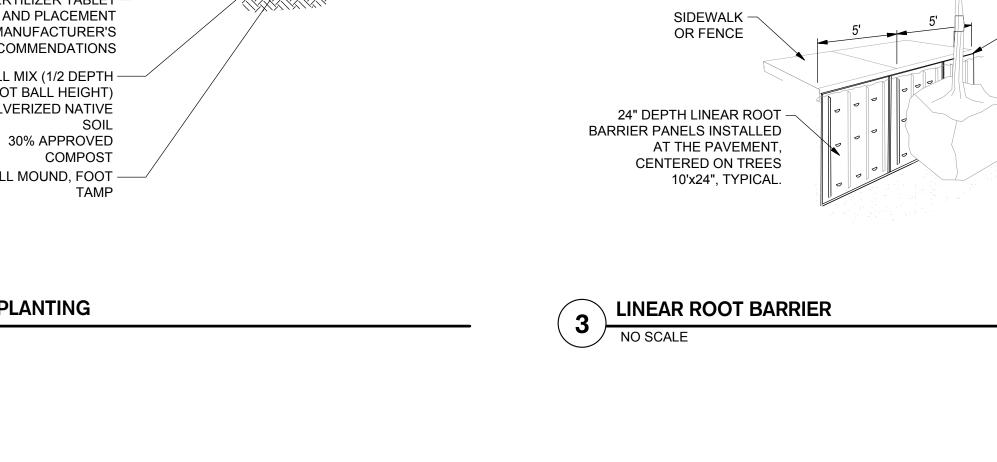
L-00-400

(SCALE BAR IS 4" AT FULL SCALE) 0

SOLENOID (VALVE), MASTER VALVE, OR BOOSTER PUMP / VALVE (MAXIMUM 1)

SOLENOID IS 450 FEET.





1. INSTALL ROOT

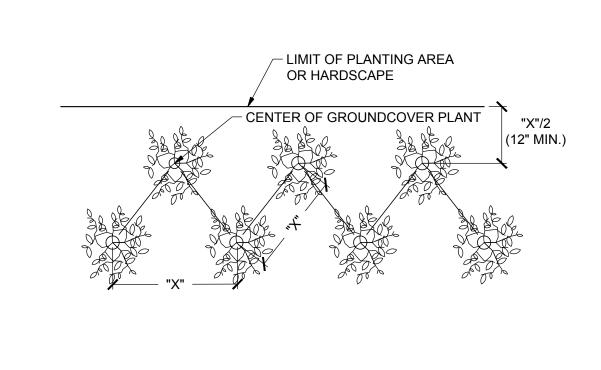
ON TREES.

BARRIERS AT ALL TREES

WITHIN 5' OF ALL CURBS,

SIDEWALKS, ROADS OR

BUILDINGS. CENTERED



1. "X" REPRESENTS PLANT SPACING ON CENTER PER PLANTING PLAN. 2. AFTER ALL TREES, SHRUBS AND GROUNDCOVER HAVE BEEN PLANTED, A PRE-EMERGENT SPRAY SHALL BE APPLIED TO ALL PLANTING AREAS PER MANUFACTURER'S SPECIFICATIONS.

GROUNDCOVER SPACING

NO SCALE

TOP OF LINEAR ROOT

BARRIER MUST BE AT

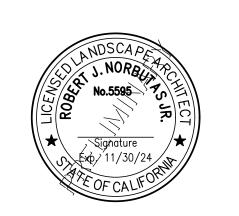
LEAST 1/2" ABOVE

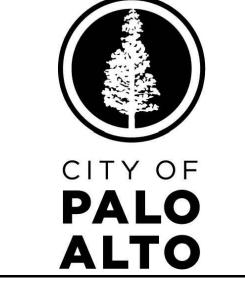
FINISHED GRADE

BLACK & VEATCH **Black & Veatch Corporation**

Walnut Creek, California

SIEGFRIED





CITY OF PALO ALTO RWQCP ADVANCED WATER PURIFICATION SYSTEM

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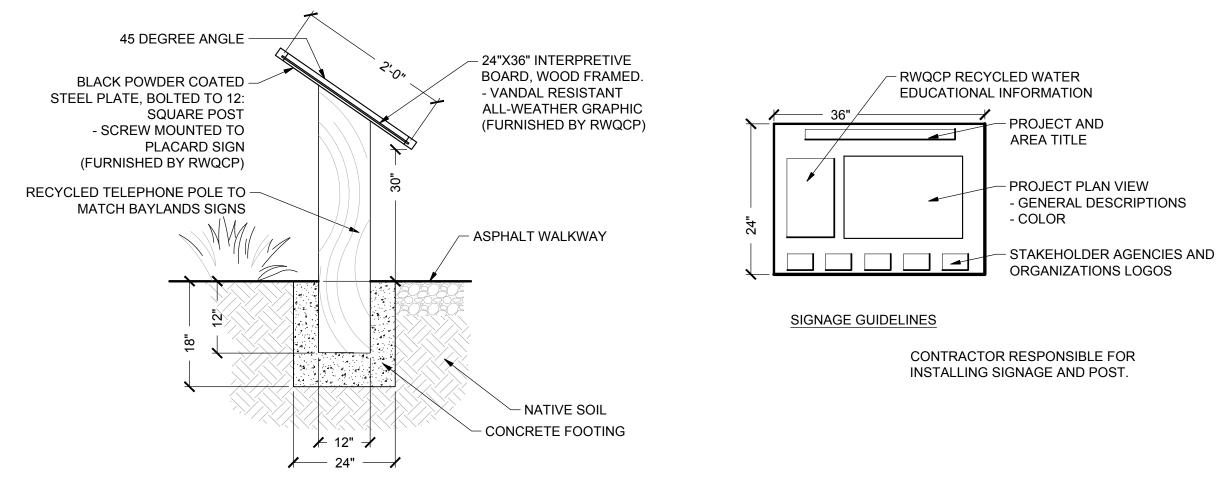
PROJECT NO.: 408520 (SEI 20087)

AWPS

LANDSCAPE DETAILS II

OF 214

L-00-401



EDUCATIONAL INTERPRETIVE SIGN (NOT PART OF PROJECT SCOPE. DESIGN AND INSTALLATION BY OWNER)

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2

DESIGNED: RJN

LANDSCAPE

















