



DENISE DUFFY & ASSOCIATES, INC.

PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: December 16, 2020

To: Doug Yount, Project Director
Shea Homes

From: Patric Krabacher, ISA Certified Arborist 11759/Environmental Scientist
Denise Duffy & Associates, Inc.

RE: Arborist Report to Obtain a Supplemental Tree Removal Permit for The Dunes on Monterey Bay Project, Phase 2 East – Evaluation Area 3

Denise Duffy & Associates, Inc. (DD&A) is contracted by Shea Homes (SH) to provide environmental consulting services for The Dunes on Monterey Bay Project, Phase 2 East– Evaluation Area 3 (project; **Figure 1; Appendix A**). To inform the development of project design plans that preserve as many healthy trees as practicable, DD&A conducted a field inventory of protected trees—as defined by the City of Marina (City) and the University Villages Specific Plan (UVSP)—within the project site on December 5, 2020. The tree inventory was conducted in accordance with the City-approved UVSP Existing Tree Removal, Relocation, and Replacement Standards (UVSP Tree Standards; approved on May 31, 2005), the project’s Final Environmental Impact Report (FEIR; SCH. NO.2004091167) and Resolution, the project’s Mitigation Monitoring and Reporting Program (MMRP), and 2005 Marina Municipal Code (MMC) Chapter 12.04 (Tree Removal, Preservation, and Protection).¹

MMC Chapter 12.04 requires a tree removal permit from the City to remove, relocate, or damage protected trees within City limits. Based on current design plans for the project and the results of the field survey of protected trees, 28² trees are proposed for removal as part of updated grading and fill activities to complete the project (**Figures 2; Appendices B and C**³). 22 trees were inadvertently removed during the initial grading of Evaluation Area 3 and shall be mitigated in accordance with MMC Section 12.040.100 Restitution for Violations. Additional tree removal and, therefore, additional tree removal permits, may be required during future excavations or construction. This report satisfies the requirements of MMC Section 12.04.060 and includes the tree survey results; recommended actions to mitigate potential and preceding impacts to trees which are proposed for removal or have previously been removed, to adjacent trees, and to other sensitive biological resources; and a completed tree removal permit application to remove 28 trees.

¹ To remain in compliance with the approved MMRP and FEIR (see Impact BR-2.2), the 2005 MMC 12.04 was used rather than the current tree protection ordinance (MMC 17.51).

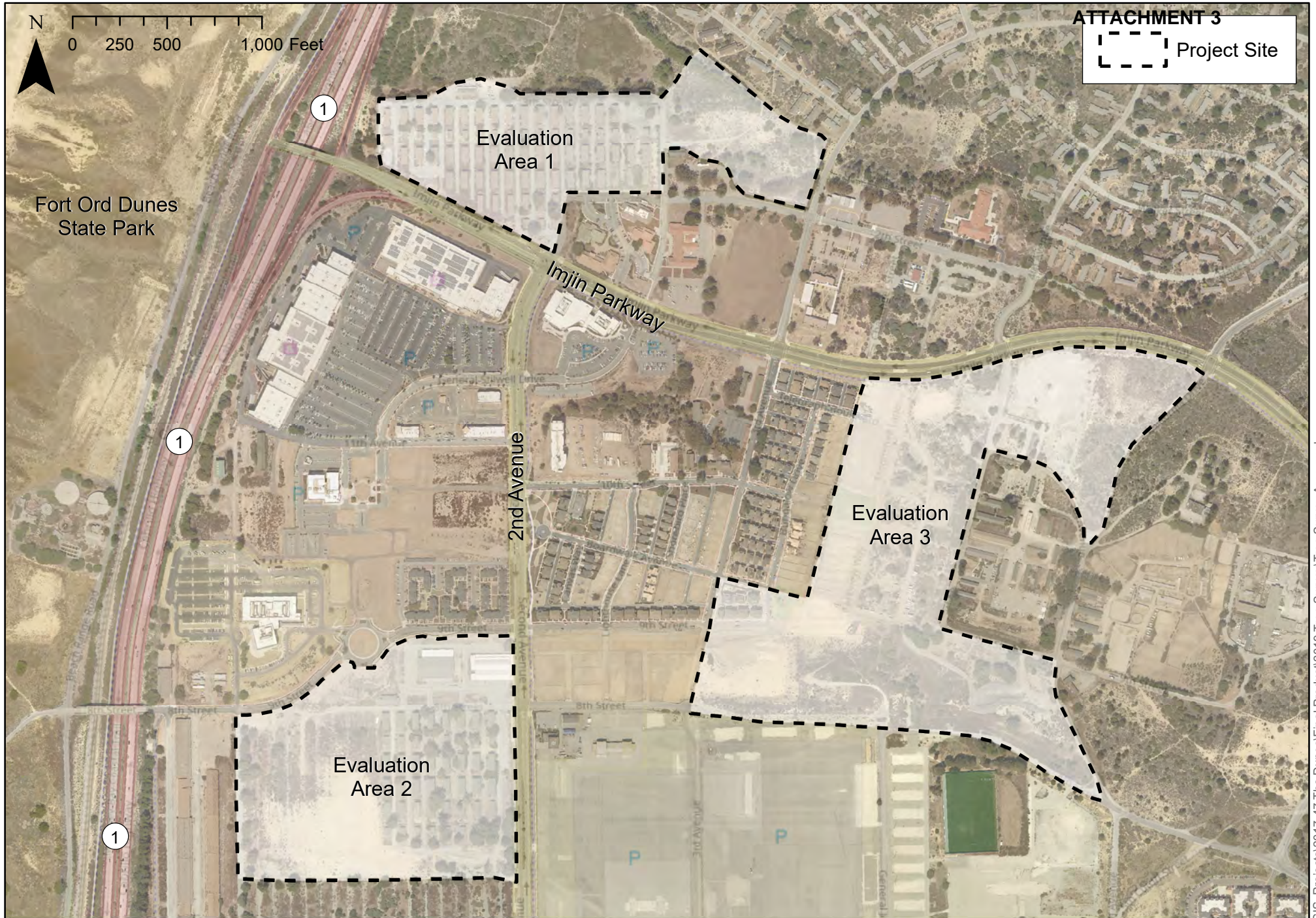
² Please note that, in addition to these 28 trees, six acacia trees which are proposed for removal were only mapped and not recorded, per UVSP Development Regulations, Page 118: “Acacia trees will not be recorded in table, but locations will be noted on map”.

³ Please note that trees 555, 556, and 557 were removed prior to data collection; consequently, they do not have DBH or photos presented in Appendices B and C.

Project Site



Fort Ord Dunes State Park



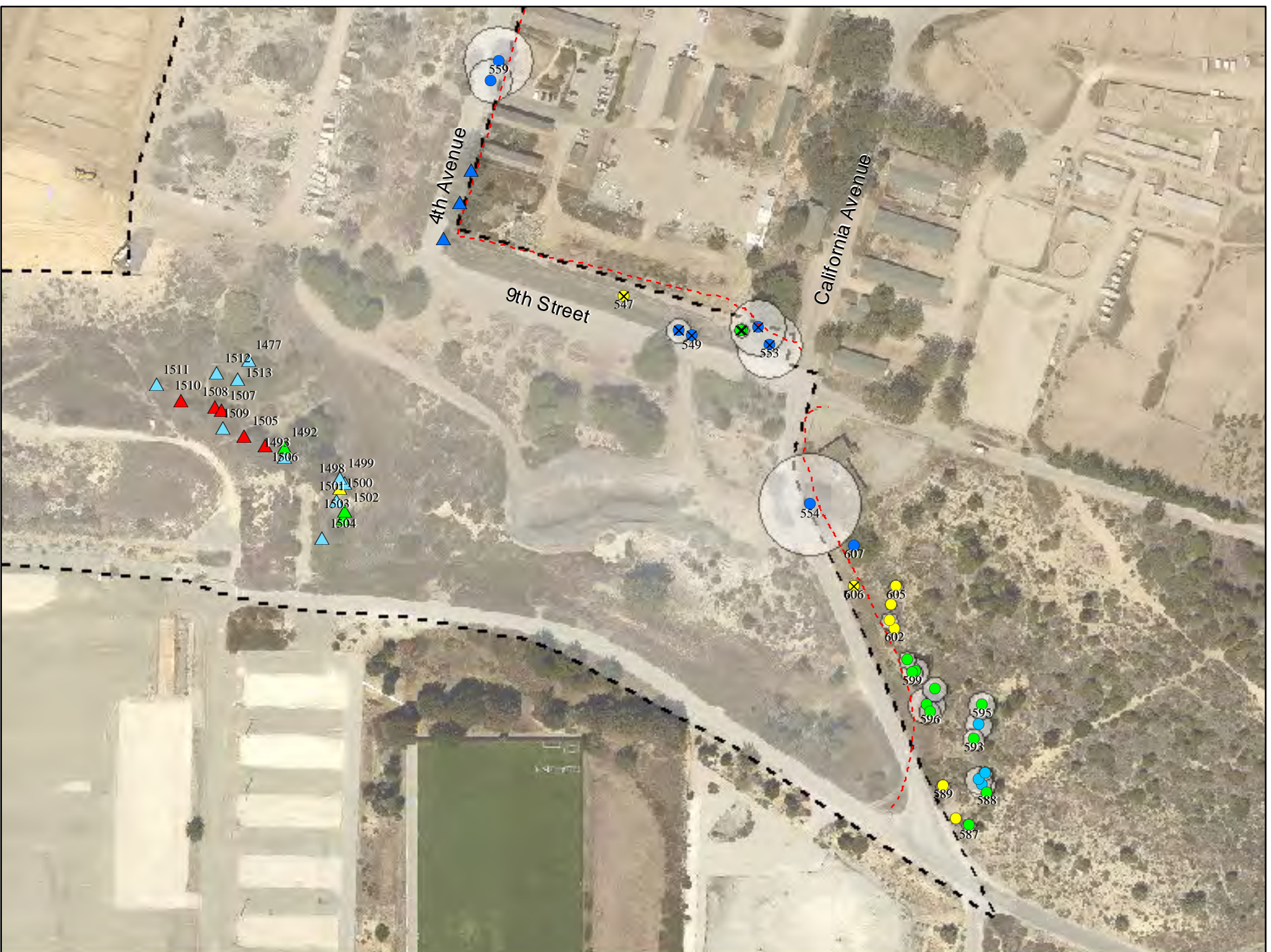
Denise Duffy & Associates, Inc.
 Planning and Environmental Consulting

**The Dunes on Monterey Bay Project — Phase 2
 Project Location Map**

Date
3/17/2020

Scale
1 in = 700 ft

Figure
1



METHODS

Limitations

At the direction of SH, this assessment is based exclusively on the UVSP Tree Standards. It is not the intent of this report to provide a monetary valuation of the trees or provide risk assessment for any tree on this parcel, as any tree can fail at any time. No clinical diagnosis was performed on any pest or pathogen that may or may not be present within the site. In addition to an inspection of the property, DD&A relied on information provided by SH (such as survey data, property boundaries, and property ownership information) to prepare this report, and must reasonably rely on the accuracy of the information provided. DD&A shall not be responsible for another's means, methods, techniques, schedules, or procedures, or for contractor safety or any other related programs, or for another's failure to complete the work in accordance with approved plans and specifications.

Regulatory Framework

City of Marina Municipal Code

The City's 2005 MMC Chapter 12.04 requires a tree removal permit to remove, damage, or relocate, or cause to be removed, damaged, or relocated any tree on any property within City limits, unless exempted by MMC Sections 12.04.040 or 12.04.050. MMC Section 12.04.030 also prohibits construction activities within the dripline of any tree, unless these activities are conducted in compliance with tree protection guidelines adopted by resolution of the planning commission. MMC Section 12.040.100 provides the framework for mitigation required to unauthorized tree removals and states that *“the planting of replacement trees on site or the payment to the city to fund the purchase, planting and maintenance of off-site tree plantings should be in accordance with the tree replacement formula found in Section 12.04.060C (2:1) multiplied by three (6:1) for each tree removed in violation of this chapter.”*

MMC defines “tree” as any living woody perennial plant having a single stem of six inches or more measured at four and one-half feet above the ground while standing on the high side of the tree, also referred to as diameter at breast height (DBH), or a multi-stemmed plant having an aggregate diameter of ten inches or more measured at DBH, and any living woody perennial plant which was planted in accordance with requirements of an approved compensation plan or was planted as part of a landscaping plan approved by the city. MMC defines “dripline” as the greater of the outermost edge of the tree's canopy, or fifteen times DBH measured from the center point of the tree.

UVSP Tree Standards

UVSP Tree Standards call for the preservation of as many healthy Monterey cypress trees and oak trees as practicable. In accordance with the UVSP Tree Standards, Monterey cypress trees and oak trees that are in good or fair condition must be protected during construction and preserved wherever practicable. If relocation is possible, Monterey cypress and oak trees shall be removed by machinery, be immediately replanted at a new site, and be watered and fertilized. Existing healthy trees determined to be in good or fair condition and that are removed shall be replaced on-site at a ratio of two replacement trees for every one tree removed (2:1). UVSP classifies tree health based on the following definitions:

- *Good.* Tree is healthy and vigorous as indicated by color of foliage and density, has no apparent signs of insect, disease, structural defects or mechanical injury. Tree has good form and structure.

- *Fair*. Tree is in average condition and vigor for the area, but may show minor insect, disease, or physiological problems. Trees rated as Fair/Poor may be improved with correctional pruning.
- *Poor*. Tree that is in a general state of decline and may show severe structural or mechanical defects which may lead to failure, may have insect or disease damage, but is not dead.
- *Dead/Snags*. Dead standing trees.

Survey Methods

DD&A biologists, led by ISA Certified Arborist Patric Krabacher, conducted tree surveys of the project site on October 4, 9, 10, 11, 14, 16, and 17, 2019 for trees with tag identification numbers ranging from 1477 to 1513⁴, and on December 5 and 7, 2020 for trees with tag identification numbers ranging from 547 to 607. The survey area encompassed the project's construction limits and the modified grading limits on the eastern side of Evaluation Area 3 (**Figure 2**)⁵. Protected trees (trees that require a tree removal permit from the City and/or are considered protected in the UVSP) were inventoried in accordance with FEIR and MMRP Mitigation Measure (MM) BR-2.2, as follows:

Any tree removal that occurs during the construction phase of the project shall be subject to the conditions in the City of Marina Municipal Code Chapter 12.04 (Tree Removal and Protection) or the UVSP tree standards and shall be mitigated accordingly.

Trees within the survey area were inventoried in accordance with the following protocol, which was designed to meet the requirements of both MMC Chapter 12.04 and the USVP Tree Standards:

- All trees (including dead snags) 6" DBH or greater were tagged with a GPS location and a numbered aluminum marker (on the most feasible/visible location possible).
- Tree diameter was recorded at breast height (4.5 feet above ground) or (for multi-stemmed trees) at the most representable location.
- Multi-stemmed trees were recorded as one tree if the root crown (the point where the trunk meets natural grade) was contiguous. Multi-stemmed tree DBH was calculated by taking the square root of the squared sum of all stems measured ($\sqrt{[\text{Stem 1 DHB}^2 + \text{Stem 2 DBH}^2 + \text{Stem 3 DBH}^2 \dots]}$). This equation returns the diameter at the base of the tree (Chojnacky, 1999).
- Species, size, and health class were recorded for each tree.

Tree health was based on the UVSP classification system and was evaluated by visually inspecting each tree from its root crown to its foliar canopy for signs of decay, disease, or insect infestations.

GPS data were collected using a Trimble® TDC600 GPS and were then digitized using Trimble® TerraFlex and ESRI® ArcGIS 10.4. GPS data were collected using geographic coordinate system Universal

⁴ These trees were surveyed previously as part of Phase 2 of the UVSP. Trees that have been previously approved for removal are not referenced in this report; only those that were previously identified for retainment and are now proposed for removal are included in this report.

⁵ Some trees outside the survey area were inventoried because part of their canopy fell within the survey area and could potentially be impacted by construction activities.

Transverse Mercator (UTM) Zone 10 North and the World Geodetic System 1984 (WGS84) datum. The Trimble® TDC600 GPS has a GNSS accuracy of 1.5 meters.

RESULTS

All 22 tree that have been previously removed have been assumed to be in fair condition. Of the 28 trees inventoried in December 2020, approximately 92 percent are in fair condition, seven (7) percent are in good condition, and two percent are in poor condition. No dead snags were observed during the survey efforts (**Figure 2; Appendix B**).

TREES PROPOSED FOR REMOVAL

As a result of the grading and fill required in large portions of tree driplines, 28 trees (excluding six acacia trees per UVSP Standards) are proposed for removal in the project site (**Figures 2; Appendices B and C**). These include:

- Two (2) Torrey pine trees (*Pinus torreyana*) both measuring at from 6” DBH,
- Four (4) Monterey cypress trees (*Hesperocyparis macrocarpa*, syn. *Cupressus macrocarpa*) ranging from 6” to 42” DBH,
- Three (3) Monterey pine trees (*Pinus radiata*) ranging from 6” to 27” DBH,
- 18 coast live oak trees (*Quercus agrifolia*) ranging from 6” to 22” DBH, and
- One (1) eucalyptus species (*Eucalyptus* sp.), 30” DBH.

Per UVSP Tree Standards, Page 118, eucalyptus health was not recorded. Of the remaining 27 trees planned for removal in the project, two (2) are in good condition, 25 are in fair condition, and no trees proposed for removal are in poor condition (**Appendix B**). Trees in fair condition are in average vigor for the area, but are showing signs of decay, disease, and/or insect infestations, including California oakworm, pitch canker, oak branch canker, foamy bark canker, oak ambrosia beetles, bark beetles, coryneum canker fungus (also known as cypress canker), and *Phytophthora* root, crown rot, and root rot fungus (*Armillaria* sp.).

TREES PREVIOUSLY REMOVED

22 trees were inadvertently removed during the initial grading of Evaluation Area 3. These trees were not scheduled for removal nor did they have an existing tree removal permit; however, all but three (tree 555, 556, and 557) were surveyed in accordance with MMC and UVSP standards during the initial October 2019 survey effort (**Figures 2; Appendices B and C**). The area where the trees were removed was proposed to be a neighborhood park and aimed to capture the natural native landscape. Trees removed inadvertently include:

- One (1) Torrey pine tree, 6” DBH,
- Three (3) Monterey cypress trees, these trees were removed prior to data collection and are referenced in this report as trees 555, 556, and 557,
- Three (3) Monterey pine trees, ranging from 6” to 17” DBH,
- 10 coast live oak, ranging from 6” to 21” DBH, and

- Five (5) eucalyptus species, ranging from 10 to 16” DBH.

All trees that were removed without an existing tree removal permit are assumed to have been in fair condition and shall be mitigated in accordance with MMC Section 12.040.100, which requires replacement of trees which were removed in violation of the code at a 6:1 ratio.

DISCUSSION

Project design plans must incorporate the mitigation measures and regulatory requirements of MMC, the FEIR, the MMRP, and the UVSP Tree Standards, as follows:

- Existing trees in good or fair condition which are removed shall be replaced on site at a ratio of two replacement trees for each tree removed (2:1). Trees that were removed without a tree removal permit shall be replaced on site at a ratio of six replacement trees for each tree removed (6:1).
- The minimum size of tree selection is 15-gallon. For trees that will be planted in areas of special interest, such as focal points and neighborhood entries, the minimum size of tree selection is 24” boxed trees.
- Pre-construction surveys for active nests shall be conducted by a qualified biologist within 250 feet of proposed construction activities no more than 30 days prior to construction. If active nests are found and the biologist determines that construction activities would adversely affect the nest or cause nest abandonment, then those activities shall be avoided in these areas until the young have fledged, as determined by the qualified biologist. Once the young have fledged, construction activities may resume in the vicinity and no further mitigation measures shall be required.
- Prior to the removal of large trees, a qualified biologist shall survey the trees for presence of roosting bats. If special-status bat species are determined to be present, the following measures shall be implemented.
 - a. Tree removal should not occur if maternity bat roosts are present (between April 15 and August 1) in the trees to be removed.
 - b. No tree removal should occur within 300 feet of the maternity roost until all young bats have fledged, as determined by a qualified biologist.
 - c. If special-status bats are present but there is not an active maternity roost, a Memorandum of Understanding (MOU) with the California Department of Fish and Wildlife (CDFW) should be obtained in order to remove the animals prior to tree removal. Alternate habitat may need to be provided if bats are to be excluded from maternity roosts. A roost with comparable spatial and thermal characteristics should be constructed as directed by a qualified biologist. In the event that adult bats need to be handled and relocated, a qualified biologist shall prepare and implement a relocation plan subject to approval by CDFW that includes relocating all bats found on-site to an alternate suitable habitat. A Mitigation and Monitoring Plan that mitigates for loss of bat roosting habitat should be prepared by a qualified biologist and approved by CDFW prior to tree removal.

CONCLUSION

Removal and replacement is recommended for trees 547–553, 561–578, 580, 582–585, and 606 (**Figure 2; Appendices B and C**). Removal is also recommended for eucalyptus tree 560; however, per UVSP Tree Standards, the condition for eucalyptus was not recorded and, therefore, this tree is not required to be replaced. Of the trees for which condition was recorded, 27 are in good or fair condition. Replacement is required for all trees that have already been removed without an existing tree removal permit, including trees 555–557, 1477, 1492, 1493, and 1498–513. Therefore, per UVSP Tree Standards, 54 replacement plantings are required to mitigate for the removal of healthy trees, and, per MMC, 132 replacement plantings are required to mitigate for trees which were removed without an existing permit. In total, 186 on-site replacement plantings are required. A tree removal permit from the City is required for all trees. Best management practices while working around trees are included in **Appendix D**.

If you have any comments or questions regarding this report, please contact Patric Krabacher at pkrabacher@ddaplanning.com or at (831) 373–4341 ext. 29.

REFERENCES

David C. Chojnacky, 1999. Converting Tree Diameter Measured at Root Collar to Diameter at Breast Height.

APPENDIX A

Site Plan



NOT VALID
WITHOUT
SIGNATURE

SUBMITTAL / REVISION

Monterey, California

THE DUNES ON MONTEREY BAY

STAKING PLAN
GRADING LIMITS

SCALE: 1" = 100'
DRAWN: APH
JOB No.: 3140.15
SHEET 1 OF 1

12/10/20



3:\monterey\Revised\1500\DWG\CONSTRUCTION STAKING\BASE 20\1500 Base 20.dwg
Date: 10/20/20 4:46pm
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0 1 2 3 INCHES

SCALE: 1" = 100'

APPENDIX B

Tree Table

The Dunes on Monterey Bay Project, Phase 2 — Evaluation Area 3 East Supplemental Tree Inventory														
Previously Removed														
Tree ID	Scientific Name	Common Name	Individual Stem DBH (in)					Total DBH (in)	Dripline (ft)	Health	Status	Comments		
1477	<i>Quercus agrifolia</i>	Coast Live Oak	9	11				14	17.8	Fair	Removed			
1492	<i>Pinus radiata</i>	Monterey Pine	16	7				17	21.8	Fair	Removed			
1493	<i>Quercus agrifolia</i>	Coast Live Oak	6	6				8	10.6	Fair	Removed			
1498	<i>Quercus agrifolia</i>	Coast Live Oak	12	9				15	18.8	Fair	Removed			
1499	<i>Quercus agrifolia</i>	Coast Live Oak	6					6	7.5	Fair	Removed			
1500	<i>Pinus torreyana</i>	Torrey Pine	6					6	7.5	Fair	Removed			
1501	<i>Quercus agrifolia</i>	Coast Live Oak	6					6	7.5	Fair	Removed	Potential bird nest		
1502	<i>Pinus radiata</i>	Monterey Pine	6					6	7.5	Fair	Removed			
1503	<i>Pinus radiata</i>	Monterey Pine	11					11	13.8	Fair	Removed			
1504	<i>Quercus agrifolia</i>	Coast Live Oak	8	6	9	10	6	6	8	6	21	26.6	Fair	Removed
1505	<i>Eucalyptus sp.</i>	Eucalyptus	16					16	20.0	Fair	Removed			
1506	<i>Eucalyptus sp.</i>	Eucalyptus	11	7	8	12		19	24.3	Fair	Removed			
1507	<i>Eucalyptus sp.</i>	Eucalyptus	27					27	33.8	Fair	Removed			
1508	<i>Eucalyptus sp.</i>	Eucalyptus	24	10				26	32.5	Fair	Removed			
1509	<i>Quercus agrifolia</i>	Coast Live Oak	6	6	8			12	14.6	Fair	Removed			
1510	<i>Eucalyptus sp.</i>	Eucalyptus	8	6				10	12.5	Fair	Removed			
1511	<i>Quercus agrifolia</i>	Coast Live Oak	8	6				10	12.5	Fair	Removed			
1512	<i>Quercus agrifolia</i>	Coast Live Oak	6					6	7.5	Fair	Removed			
1513	<i>Quercus agrifolia</i>	Coast Live Oak	12					12	15.0	Fair	Removed			
555	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress								Fair	Removed	No data gathered prior to removal		
556	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress								Fair	Removed	No data gathered prior to removal		
557	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	50					50	62.5	Fair	Removed			
Additional Proposed Removals														
Tree ID	Scientific Name	Common Name	Individual Stem DBH (in)					Total DBH (in)	Dripline (ft)	Health	Recommendation	Comments		
547	<i>Pinus torreyana</i>	Torrey Pine	6					6	7.5	Good	Remove	Within grading limits		
548	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	6	6	8	10	6	7	18	21.1	Fair	Remove	Within grading limits	
549	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	6					6	7.5	Fair	Remove	Within grading limits		
550	<i>Pinus radiata</i>	Monterey Pine	9					9	11.3	Fair	Remove	Within grading limits		
551	<i>Pinus radiata</i>	Monterey Pine	6					6	7.5	Fair	Remove	Within grading limits		
552	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	37					37	46.3	Fair	Remove	Within grading limits		
553	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	42					42	52.5	Fair	Remove	Within grading limits		
554	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	65					65	81.3	Fair	Retain	Preserve and protect		
558	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	29					29	36.3	Fair	Retain	Preserve and protect		

ATTACHMENT 3

Tree ID	Scientific Name	Common Name	Additional Proposed Removals							Total DBH (in)	Dripline	Health	Recommendation	Comments
			Individual Stem DBH (in)											
559	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	45						45	56.3	Fair	Retain	Preserve and protect	
560	<i>Eucalyptus sp.</i>	Eucalyptus Species	52	20	16	7	7	10	8	60	75		Remove	Within grading limits
562	<i>Quercus agrifolia</i>	Coast Live Oak	9							9	11.3	Fair	Remove	Within grading limits
566	<i>Quercus agrifolia</i>	Coast Live Oak	11	7						7	8.8	Fair	Remove	Within grading limits
567	<i>Quercus agrifolia</i>	Coast Live Oak	8							8	10.0	Fair	Remove	Within grading limits
568	<i>Quercus agrifolia</i>	Coast Live Oak	8	7	6					9	11.5	Fair	Remove	Within grading limits
569	<i>Quercus agrifolia</i>	Coast Live Oak	12							12	15.0	Fair	Remove	Within grading limits
570	<i>Quercus agrifolia</i>	Coast Live Oak	18	13						13	16.3	Fair	Remove	Within grading limits
571	<i>Quercus agrifolia</i>	Coast Live Oak	18							18	22.5	Fair	Remove	Within grading limits
572	<i>Quercus agrifolia</i>	Coast Live Oak	10							10	12.5	Fair	Remove	Within grading limits
573	<i>Quercus agrifolia</i>	Coast Live Oak	9							9	11.3	Fair	Remove	Within grading limits
574	<i>Pinus radiata</i>	Monterey Pine	6							6	7.5	Good	Remove	Within grading limits
575	<i>Quercus agrifolia</i>	Coast Live Oak	6							6	7.5	Fair	Remove	Within grading limits
576	<i>Quercus agrifolia</i>	Coast Live Oak	10	8	6					10	12.5	Fair	Remove	Within grading limits
577	<i>Quercus agrifolia</i>	Coast Live Oak	8							8	10.0	Fair	Remove	Within grading limits
578	<i>Quercus agrifolia</i>	Coast Live Oak	13							13	16.3	Fair	Remove	Within grading limits
580	<i>Quercus agrifolia</i>	Coast Live Oak	8	8	6	6	6	6	6	18	19.5	Fair	Remove	Within grading limits
582	<i>Quercus agrifolia</i>	Coast Live Oak	14							14	17.5	Fair	Remove	Within grading limits
583	<i>Quercus agrifolia</i>	Coast Live Oak	11							11	13.8	Fair	Remove	Within grading limits
584	<i>Quercus agrifolia</i>	Coast Live Oak	7							7	8.8	Fair	Remove	Within grading limits
585	<i>Quercus agrifolia</i>	Coast Live Oak	7	6						6	7.5	Fair	Remove	Within grading limits
586	<i>Pinus torreyana</i>	Torrey Pine	7							7	8.8	Good	Retain	Preserve and protect
587	<i>Pinus radiata</i>	Monterey Pine	10							10	12.5	Fair	Retain	Preserve and protect
588	<i>Pinus radiata</i>	Monterey Pine	9							9	11.3	Fair	Retain	Preserve and protect
589	<i>Pinus torreyana</i>	Torrey Pine	10							10	12.5	Fair	Retain	Preserve and protect
590	<i>Quercus agrifolia</i>	Coast Live Oak	6	6	6					10	10.6	Fair	Retain	Preserve and protect
591	<i>Quercus agrifolia</i>	Coast Live Oak	10	8						13	10.0	Fair	Retain	Preserve and protect
592	<i>Quercus agrifolia</i>	Coast Live Oak	10							10	12.5	Fair	Retain	Preserve and protect
593	<i>Pinus radiata</i>	Monterey Pine	15							15	18.8	Fair	Retain	Preserve and protect
594	<i>Quercus agrifolia</i>	Coast Live Oak	21							21	26.3	Fair	Retain	Preserve and protect
595	<i>Pinus radiata</i>	Monterey Pine	20							20	25.0	Fair	Retain	Preserve and protect

Additional Proposed Removals

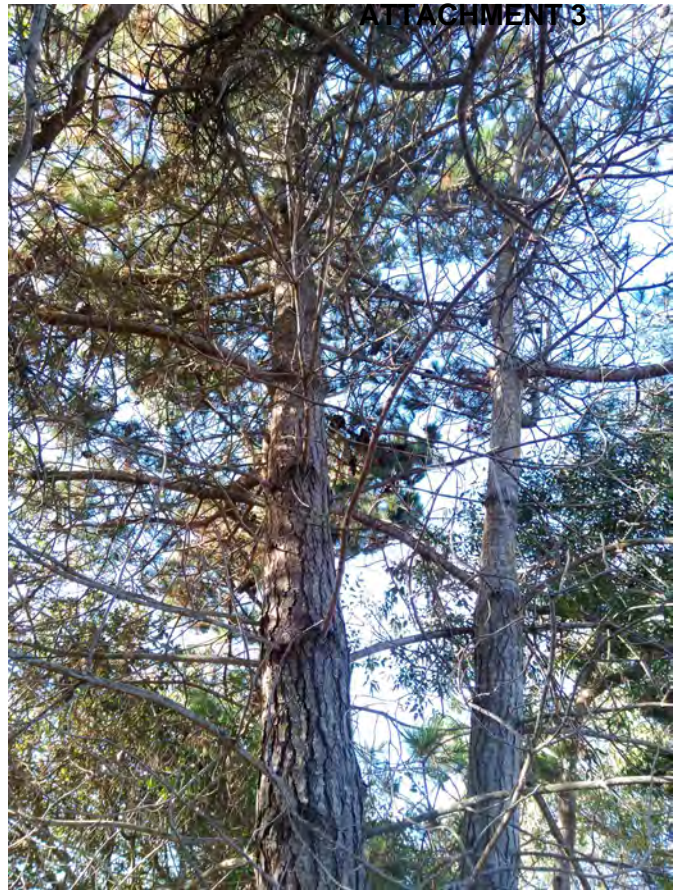
Tree ID	Scientific Name	Common Name	Individual Stem DBH (in)	Total DBH (in)	Dripline	Health	Recommendation	Comments
596	<i>Pinus radiata</i>	Monterey Pine	15	15	18.8	Fair	Retain	Preserve and protect
597	<i>Pinus radiata</i>	Monterey Pine	27	27	33.8	Fair	Retain	Preserve and protect
598	<i>Pinus radiata</i>	Monterey Pine	16	16	20.0	Fair	Retain	Preserve and protect
599	<i>Pinus radiata</i>	Monterey Pine	14	14	17.5	Fair	Retain	Preserve and protect
600	<i>Pinus radiata</i>	Monterey Pine	21	21	26.3	Fair	Retain	Preserve and protect
601	<i>Pinus radiata</i>	Monterey Pine	12	12	15.0	Poor	Retain	Preserve and protect
602	<i>Pinus torreyana</i>	Torrey Pine	6	6	7.5	Good	Retain	Preserve and protect
603	<i>Pinus torreyana</i>	Torrey Pine	12	12	15.0	Fair	Retain	Preserve and protect
604	<i>Pinus torreyana</i>	Torrey Pine	9	9	11.3	Fair	Retain	Preserve and protect
605	<i>Pinus torreyana</i>	Torrey Pine	10	10	12.5	Good	Retain	Preserve and protect
606	<i>Pinus torreyana</i>	Torrey Pine	6	6	7.5	Fair	Remove	Within grading limits
607	<i>Hesperocyparis macrocarpa</i>	Monterey Cypress	35	35	43.8	Fair	Retain	Preserve and protect

APPENDIX C

Photo Log



Tree 1477. Coast Live Oak



Tree 1492. Monterey Pine



Tree 1493. Coast Live Oak



Tree 1498. Coast Live Oak



Tree 1499. Coast Live Oak



Tree 1500. Torrey Pine



Tree 1501. Coast Live Oak



Tree 1502. Monterey Pine



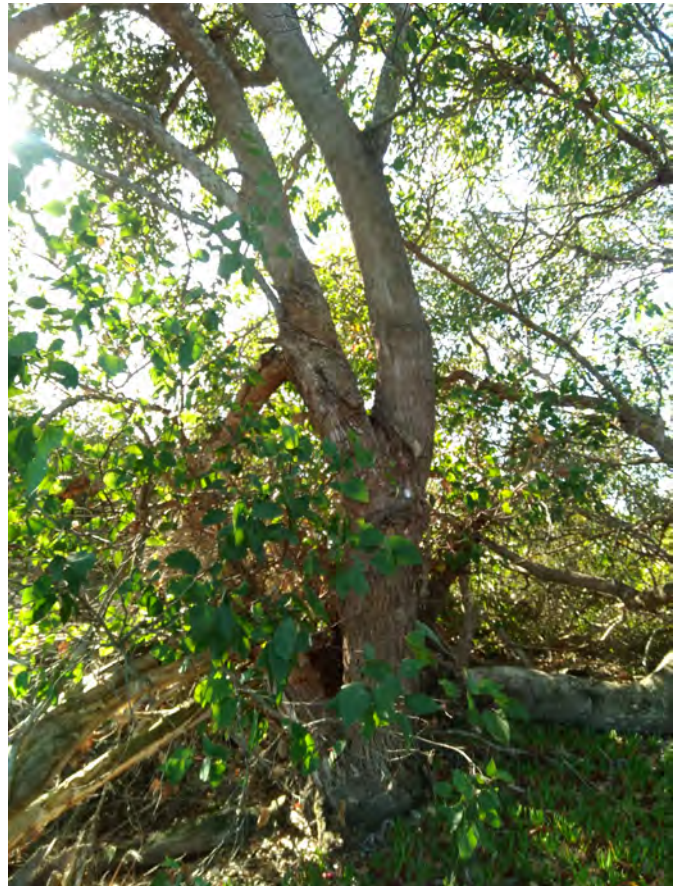
Tree 1503. Monterey Pine



Tree 1504. Coast Live Oak



Tree 1505. Eucalyptus



Tree 1506. Eucalyptus



Tree 1507. Eucalyptus



Tree 1508. Eucalyptus



Tree 1509. Coast Live Oak



Tree 1510. Eucalyptus



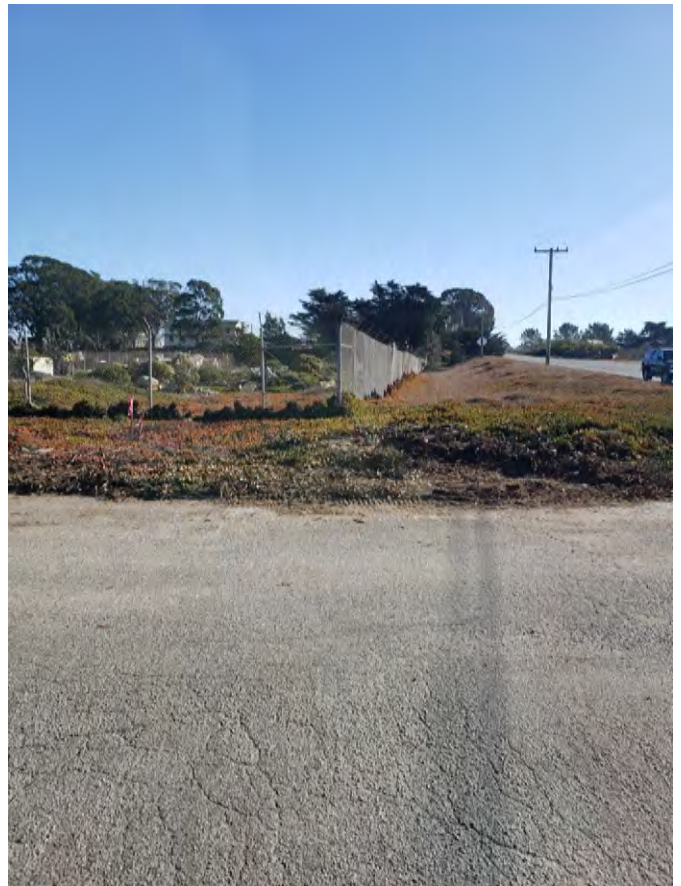
Tree 1511. Coast Live Oak



Tree 1512. Coast Live Oak



Tree 1513 Coast Live Oak



Tree 555. Monterey Cypress (removed prior to data collection)



Tree 556. Monterey Cypress (removed prior to data collection) Tree 557. Monterey Cypress (removed prior to data collection)



Tree 547. Torrey Pine

Tree 548. Monterey Cypress



Tree 549. Monterey Cypress



Tree 550. Monterey Pine



Tree 551. Monterey Pine



Tree 552. Monterey Cypress



Tree 553. Monterey Cypress



Tree 606. Torrey Pine



Tree 560. Eucalyptus



Tree 562. Coast Live Oak



Tree 566. Coast Live Oak



Tree 567. Coast Live Oak



Tree 568. Coast Live Oak



Tree 569. Coast Live Oak



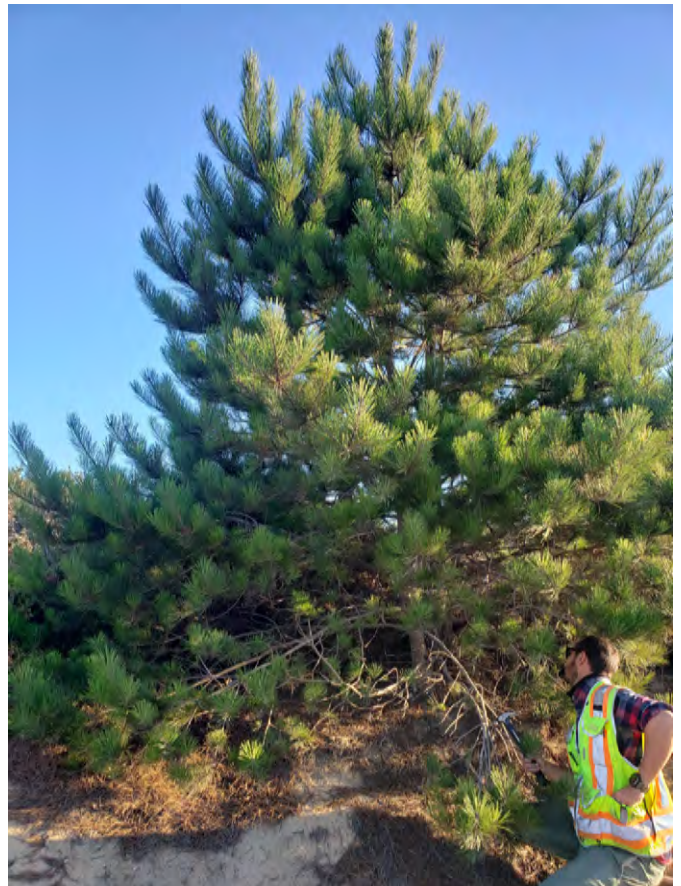
Tree 571. Coast Live Oak



Tree 572. Coast Live Oak



Tree 573. Coast Live Oak



Tree 574. Monterey Pine



Tree 575. Coast Live Oak



Tree 576. Coast Live Oak



Tree 577. Coast Live Oak



Tree 570. Torrey Pine



Tree 578. Coast Live Oak



Tree 580. Coast Live Oak



Tree 582. Coast Live Oak



Tree 583. Coast Live Oak



Tree 584. Coast Live Oak



Tree 585. Coast Live Oak

APPENDIX D
Recommended Best Management Practices

Fencing and Barricades

All trees in the project area which are scheduled for preservation shall be temporarily fenced prior to all project-related activities. Fencing shall be installed at the edge of the root zone (the area located within 15 times the trunk diameter in all directions) or located at the edge of pavement furthest from the trunk (whichever comes first). Fencing shall consist of chain link or plastic link fence which is maintained at a minimum height of four feet above grade during all phases of construction.

Fenced areas shall not be used for material stockpile, storage, or vehicle parking. Dumping of materials, chemicals, or garbage shall be prohibited within fenced areas. Fenced areas shall be maintained in natural condition at natural or existing grade and shall not be compacted.

All approved construction within the root zone shall include construction barricades. Barricades shall be upright and be constructed from two-inch by four-inch planks standing a minimum of eight feet vertically, conforming to the tree, and shall be tied with wire or rope forming a maximum of one-inch space between the planks. If the tree's configuration or site conditions do not lend themselves to the installation of this type barricade, a certified arborist or City Forester shall designate alternate tree protection methods. Under certain conditions where soil compaction is probable, fences may also be required around a tree or grouping of trees. The use of recycled lumber, synthetic lumber, or similar materials approved by a certified arborist or City Forester is encouraged.

Tree Pruning

Tree pruning shall be minimal but, when necessary, shall be performed in accordance with American National Safety Institute (ANSI) A300 Pruning Standards. Pruning may include the larger canopied trees that have deadwood or are exhibiting some minor structural defect or minor disease that must be compensated. Should the health and vigor of any tree decline, it shall be treated as appropriately recommended by a certified arborist or qualified forester. In general, trees shall be assessed then pruned first for safety (e.g., broken and cracked limbs shall be removed in high-traffic areas of concern), next for health, and finally for aesthetics. No more than 25% of the overall tree crown shall be pruned in one season.

Tree pruning may include crown thinning, crown raising, crown reduction, or crown restoration, as described below.

Crown Thinning

Crown thinning is the cleaning out of or removal of dead, diseased, weakly attached, or low vigor branches from a tree crown. Crown thinning shall be conducted as follows:

- All trees shall be pre-assessed on how the tree will be pruned from the top down.
- Tree trimmers shall favor branches with strong, U-shaped angles of attachment and, where possible, remove branches with weak, V-shaped angles of attachment and/or included bark.
- Lateral branches shall be evenly spaced on the main stem of young trees and areas of fine pruning.
- Branches that rub or cross another branch shall be removed where possible.
- Lateral branches shall be no more than one-half to three-quarters of the diameter of the stem to discourage the development of co-dominant stems where feasible.
- In most cases, trimmers shall not remove more than one-quarter of the living crown of a tree at one time. If it is necessary to remove more, it shall be done over successive years.

Crown Raising

Crown raising removes the lower branches of a tree to provide clearance for buildings, vehicles, pedestrians, and vistas. Crown raising shall be conducted as follows:

- Live branches on at least two-thirds of a tree's total height shall be maintained wherever possible. The removal of too many lower branches would hinder the development of a strong stem.
- All basal sprouts and vigorous epicormic sprouts shall be removed where feasible.

Crown Reduction

Crown reduction is used to reduce the height and/or spread of trees and is used for maintaining the structural integrity and natural form of a tree. Crown reduction shall be conducted only when absolutely necessary, as follows:

- Pruning cuts shall be at a lateral branch that is at least one-third the diameter of the stem to be removed wherever possible.
- When it is necessary to remove more than half of the foliage from a branch, it may be necessary remove the entire branch.

Crown Restoration

Crown restoration is used to improve the structure and appearance of trees that have been topped or severely pruned using heading cuts. One of three sprouts on main branch stubs should be selected to reform a natural appearing crown. Selected vigorous sprouts may need to be thinned to ensure adequate attachment for the size of the sprout. Restoration may require several years of pruning.

Root Pruning

Where alternative routes are not available, any subsurface construction related activities for the project shall avoid cutting major roots with a diameter of greater than or equal to two inches, unless necessary. All approved construction within the root zone shall conform to the following construction practices:

- Hand trenching at point or line of grade cuts closest to the trunk to expose major roots two inches or more in diameter.
- In cases where rock or unusually dense soil prevents hand trenching, mechanical trenching may be permitted provided that work inside the dripline is closely supervised to prevent tearing or other damage to major roots (greater than or equal to two inches).
- Exposed major roots shall be cut with a saw to form a smooth surface and avoid tearing or jagged edges.
- Absorbent tarp or heavy cloth fabric shall be placed over grade cuts where roots are exposed and secured with stakes and two to four inches of compost or wood chips spread over the tarp to prevent moisture loss. Care shall be taken that moisture levels beneath tarped areas remain comparable to surrounding areas until backfilling occurs. Some watering of these areas may be necessary to maintain moisture levels, and such measures shall remain in effect through all phases of construction, including all delays and other periods of inactivity.