FACET

April 8, 2024

Jacob Bilbo
City of Shoreline
206.801.2358
Via email: jbilbo@shorelinewa.gov

Re: City of Shoreline Parks Bond Projects – Hamlin Park Arborist Report

Facet Reference Number: 2207.0207

Dear Jacob:

On September 9th and 16th, 2022, ISA Certified Arborists® from Facet (previously The Watershed Company) visited Hamlin Park located at 16006 15th Avenue NE (parcel #1626049083) in Shoreline, Washington to inventory significant trees located in proximity to proposed park improvements. On January 29, 2024 Facet arborists returned to the site to inventory additional significant trees located in areas identified for construction access. This report summarizes the findings of the study and provides a tree impacts assessment associated with proposed park improvements. The following documents are enclosed:

- Tree Inventory Table
- Tree Inventory Sketch
- Tree Protection Plan (provided by Mithun)

Study Area

The study area, shown on the attached Tree Inventory Sketch, includes portions of Hamlin Park located in proximity to proposed improvements as identified on the 2019 concept plan (Figure 1).

Figure 1. City of Shoreline concept design for Hamlin Park (City of Shoreline, July 2019).

Project Background

Proposition 1, passed in the February 2022 special election, is a bond levy for improvements and land acquisitions at several Shoreline parks, including Hamlin Park. Per conceptual plans, improvements will be made in the southeast portion of the park with main features including a spray park, playground, picnic shelter, sitting wall, entry enhancements, and new walkways. Additional amenities such as bike racks, benches, parking lot lighting, seating walls, and new plantings are also proposed.

Methods

Per Shoreline Municipal Code (SMC), a significant tree is defined as "any healthy tree six inches or greater in diameter at breast height (DBH) excluding those trees that qualify for complete exemptions from Chapter 20.50 SMC, Subchapter 5, Tree Conservation, Land Clearing, and Site Grading Standards, under SMC 20.50.310(A)" (SMC 20.20.048). White flagging with unique identification numbers were affixed to, or near, the trunk of all trees measuring six inches or

greater located in proximity to the project area. Trees located outside of the park boundary in proximity to the project area were assigned a unique identification number but not flagged. All observations of off-site trees were made from the park property or public right-of-way; attributes of off-site trees are estimated.

The attributes collected during the field survey are described in Table 1, below. The attached Tree Inventory Table contains the data collected for each tree inventoried. General attributes documented for all inventoried trees include the unique identification number and species name. Physical attributes include number of stems, diameter at breast height (DBH), height, canopy radius, and condition.

Table 1. Attributes recorded for all inventoried trees and that are presented in the spreadsheet database.

Attribute	Description of Attribute
ID NUMBER	Unique number assigned to an assessed tree. This number corresponds to the tag number in the field.
SCIENTIFIC NAME	Formal scientific name conforming to the International Code of Nomenclature.
COMMON NAME	Name that is based on normal or common language of the Pacific Northwest.
STEMS	Number of trunks or shoots that contribute significantly to the canopy.
DBH	Diameter at Breast Height; or 4.5 feet from the ground surface.
HEIGHT	Approximate distance from the ground surface at the trunk to the highest point of the subject tree as visually estimated.
CANOPY RADIUS	Approximate average distance from the stem to the limits of the drip line, or end of branches.
CONDITION	Health rating of an assessed tree using a 6-tier system as follows: 1 – Excellent: No apparent problems with the tree. Form is exemplary for the species. 2 – Good: Few minor defects such as crossed branches, minor foliage die-back, minor trunk damage, or unbalanced canopy. 3 – Fair: Several minor problems exist. 4 – Poor: Major defects visible such as significant trunk decay, codominant leaders with included bark, significant canopy die-back, major cracks in a stem or major limbs, and/or other structural problems. Topped trees are generally considered poor. 5 – Dying: Tree is in a state of significant decline. 6 – Dead: Tree is dead.

In general, tree diameter was measured at four feet above the ground surface (diameter at breast height, or "DBH") using a graduated metal logger's DBH tape. Methodology for measuring and calculating the diameter of trees with multiple trunks, major leans, or on steep slopes followed those outlined in the Guide for Plant Appraisal, 10th Edition, written by the Council of Tree and Landscape Appraisers (CTLA) and published by ISA (CTLA 2020). For trees with multiple trunks the total diameter was calculated by taking the square root of the sum of each diameter squared, which allows for comparison to other single-stemmed trees and for more accurate permitting and tree retention calculations. Visual estimates of trunk diameter were used where direct access to the tree was not allowed or not feasible.

Findings

Environmental Setting

Hamlin Park is located in the southeast portion of the City of Shoreline (Section 16, Township 26 North, Range 04 East). The study area totals approximately 7.5 acres in size. Single-family residences are located to the east of the study area. Kellogg Middle School and Shorecrest High School are located immediately north and south of the park, respectively; a healthcare facility and school district buildings are located immediately west of the study area. Hamlin Park, which totals approximately 72.10 acres, extends north of the study area; the park is generally forested and has four baseball diamonds and other park amenities.

The study area is characterized by a flat maintained sports field area located south-centrally that is developed with two baseball diamonds and a restroom near the south boundary. Topography generally slopes steeply downward to the north, east, and west with grades as steep as approximately 45 percent. A paved parking area is located on the east side of the study area providing access off of 25th Avenue NE. Paved and soft surface area trails wind through the study area.

Tree Inventory Results

A total of 332 trees (#223-271 and #1878-2161) located within the study area were included in the inventory. Fourteen trees (#224, 237, 241, 1959, 2110, 2116, 2020, 2054, 2066, 2069, 2082, 2084, 2099, and 2150) included in the inventory are not significant due to a condition rating of poor (4) or worse; a total of 318 significant trees were inventoried (SMC 20.20.048). Inventoried trees located within park boundaries are dominated by coniferous species, most native to the Pacific Northwest. Douglas-fir (*Pseudotsuga menziesii*) is the most common species with 118 individuals inventoried, comprising approximately 37-percent of the significant trees on the site. Fifty-four significant Pacific madrone trees (*Arbutus menziesii*) were inventoried. The three next most

common tree species include red alder (*Alnus rubra*) with 34 individuals, and Norway maple (*Acer platanoides*) and western white pine (*Pinus monticola*), with 29 individuals each. Significant trees were generally in good (2) condition.

Overall, the average DBH of significant trees within the park is 14.9-inches. The largest significant tree (#2160) is a Douglas-fir with a DBH of 45.0-inches. One black cottonwood (*Populus balsamifera*), two western white pine (*Pinus monticola*), and two Pacific madrone are the next largest trees inventoried, with DBHs measuring between 34.0-inches and 39.0-inches.

Thirty-eight significant trees have diameters greater than 24-inches DBH and are eligible for landmark tree status in the City of Shoreline; half of all eligible landmark trees are Douglas-firs. A landmark tree is defined as "Any healthy tree over 24 inches in diameter at breast height (DBH) that is worthy of long-term protection due to a unique combination of size, shape, age, location, aesthetic quality for its species or any other trait that epitomizes the character of the species, and/or has cultural, historic or ecological importance or is a regional erratic" (SMC 20.20.048). A summary of significant tree species and size is provided in Table 2 below.

Table 2. Summary of tree species and size.

Tree Name	Total Significant	Total* Landmark Eligible	Average DBH (In.)	Largest DBH (In.)
Acer macrophyllum (bigleaf maple)	4	-	12.7	19.9
Acer platanoides (Norway maple)	29	-	9.9	16.0
Aesculus hippocastanum (horesechestnut)	1	-	n/a	7.3
Alnus rubra (red alder)	34	-	13.0	22.9
Arbutus menziesii (Pacific madrone)	54	4	13.8	35.7
Cornus nuttallii (Pacific dogwood)	3	-	7.2	8.5
Fraxinus latifolia (Oregon ash)	1	-	n/a	6.0
Juglans regia (English walnut)	1	-	n/a	8.0
Pinus monticola (western white pine)	29	10	20.4	37.3
Populus balsamifera (black cottonwood)	1	1	n/a	39.0
Prunus cerasifera (Thundercloud plum)	13	-	9.3	11.7
Prunus emarginata (bitter cherry)	17	-	8.3	14.7
Pseudotsuga menziesii (Douglas-fir)	118	22	17.5	45.0
Robinia pseudoacacia (black locust)	1	-	n/a	20.2

Thuja plicata (western red cedar)	8	1	17.7	29.1
Tsuga heterophylla (western hemlock)	4	-	14.5	18.2
TOTAL	**318**	**38**	**14.9**	**45.0**

* Landmark tree based upon size criteria only.

Local Regulations

The City of Shoreline regulates public trees under Chapter 12.30 *Public Tree Management*. Public trees include those located within the public rights-of-way and city-owned public property (SMC 12.30.010). It is the tree board's responsibility to make policy recommendations regarding the management of public trees (SMC12.30.020). Per SMC 12.30.010 "it shall be the responsibility of the parks, fleet, and facilities manager (hereafter "manager") to manage and oversee the planting, care, maintenance, and removal of all trees on public rights-of-way and city-owned public property within the city limits." Additionally, if critical areas and/or associated buffer are present within, or in proximity, to the proposed park improvements, all trees located within critical areas or buffers are regulated under Chapter 20.80 *Critical Areas.*

Local Regulations

The City of Shoreline regulates public trees under Chapter 12.30 *Public Tree Management*. Public trees include those located within the public rights-of-way and city-owned public property (SMC 12.30.010). It is the tree board's responsibility to make policy recommendations regarding the management of public trees (SMC12.30.020). Per SMC 12.30.010 "it shall be the responsibility of the parks, fleet, and facilities manager (hereafter "manager") to manage and oversee the planting, care, maintenance, and removal of all trees on public rights-of-way and city-owned public property within the city limits." Additionally, if critical areas and/or associated buffers are present within, or in proximity, to the proposed park improvements, all trees located within critical areas or buffers are regulated under Chapter 20.80 *Critical Areas.*

Tree Impacts Assessment

The proposed limits of work are generally restricted to areas outside of the critical root zones of most significant trees located on the site. Work is proposed to occur with the critical root zones of 41 significant trees that are planned to be retained. However, the majority of disturbance will occur where existing impacts are currently present, or impacts are anticipated to be minimal enough that retention is recommended. Table 3 summarizes significant trees proposed for retention that will have impacts to their critical root zones.

Fourteen significant trees that are candidates for retention are anticipated to be impacted significantly, including five landmark eligible trees (#1937, 1944, 2054, 2061, and 2062). Because the intention of the park improvements is to retain as many trees as feasible, particularly large healthy trees, it is recommended that low-impact construction methods be considered and that proposed ground-disturbing activities be limited to the outer portion of the critical root zones of these trees. The alignment, construction material, and/or construction approach to the currently proposed design will need to be modified to retain these trees.

Table 3. Summary of anticipated significant tree impacts.

Tag #	Tree Name	DBH (In.)	Landmark Eligible	Additional Protection Required
1934	*Pseudotsuga menziesii* (Douglas-fir)	25.8	Yes	No
1935	*Pseudotsuga menziesii* (Douglas-fir)	16.8	No	No
1936	*Arbutus menziesii* (Pacific madrone)	21.8	No	Yes
1937	*Arbutus menziesii* (Pacific madrone)	24.9	Yes	Yes
1939	*Pinus monticola* (Western white pine)	25.2	Yes	No
1943	*Pseudotsuga menziesii* (Douglas-fir)	25.9	Yes	No
1944	*Pseudotsuga menziesii* (Douglas-fir)	25.2	Yes	Yes
1954	*Pseudotsuga menziesii* (Douglas-fir)	20.4	No	No
1955	*Pseudotsuga menziesii* (Douglas-fir)	20.6	No	No
1956	*Pseudotsuga menziesii* (Douglas-fir)	23.5	No	Yes
1957	*Pinus monticola* (Western white pine)	11.0	No	No
1967	*Arbutus menziesii* (Pacific madrone)	19.5	No	Yes
1969	*Pseudotsuga menziesii* (Douglas-fir)	23.9	No	Yes
1975	*Prunus emarginata* (bitter cherry)	14.7	No	No
1980	*Prunus emarginata* (bitter cherry)	8.8	No	No
1984	*Prunus emarginata* (bitter cherry)	10.3	No	No
1993	*Alnus rubra* (red alder)	21.0	No	Yes
1996	*Alnus rubra* (red alder)	16.0	No	No
1997	*Arbutus menziesii* (Pacific madrone)	22.2	No	Yes
1998	*Arbutus menziesii* (Pacific madrone)	35.7	Yes	No
1999	*Prunus emarginata* (bitter cherry)	10.1	No	No

2001	*Prunus emarginata* (bitter cherry)	7.1	No	No
2002	*Alnus rubra* (red alder)	17.1	No	No
2007	*Prunus emarginata* (bitter cherry)	7.5	No	No
2009	*Arbutus menziesii* (Pacific madrone)	16.3	No	No
2012	*Prunus cerasifera* (Thundercloud flowering plum)	10.7	No	Yes
2026	*Pinus monticola* (Western white pine)	7.4	No	Yes
2034	*Prunus cerasifera* (Thundercloud flowering plum)	6.1	No	No
2043	*Pinus monticola* (Western white pine)	23.2	No	Yes
2044	*Alnus rubra* (red alder)	22.9	No	No
2045	*Arbutus menziesii* (Pacific madrone)	16.8	No	No
2046	*Alnus rubra* (red alder)	12.4	No	No
2053	*Arbutus menziesii* (Pacific madrone)	18.3	No	No
2054	*Pseudotsuga menziesii* (Douglas-fir)	36.6	Yes	Yes
2057	*Pinus monticola* (Western white pine)	37.3	Yes	No
2058	*Pinus monticola* (Western white pine)	11.9	No	No
2059	*Pinus monticola* (Western white pine)	11.0	No	No
2060	*Pinus monticola* (Western white pine)	12.6	No	No
2061	*Arbutus menziesii* (Pacific madrone)	27.8	Yes	Yes
2062	*Pinus monticola* (Western white pine)	24.6	Yes	Yes
2063	*Pseudotsuga menziesii* (Douglas-fir)	26.6	Yes	No

Execution of the site plan is expected to impact 14 additional significant trees, all of which will require removal with the project (see Table 4). No landmark trees are proposed for removal. Impacts proposed to occur within the critical root zones of all other significant trees in the park are minimal and it is not anticipated that their condition will decline as a result of the project as long as the standard tree protection measures as outlined below are implemented.

Table 4. Summary of anticipated significant tree removals.

Tag #	Tree Name	DBH (In.)	Landmark Eligible
2025	*Alnus rubra* (red alder)	9.8	No
2027	*Alnus rubra* (red alder)	9.6	No
2028	*Alnus rubra* (red alder)	18.1	No
2029	*Alnus rubra* (red alder)	10.0	No
2030	*Alnus rubra* (red alder)	12.3	No
2031	*Alnus rubra* (red alder)	16.3	No
2032	*Robinia pseudoacacia* (black locust)	20.2	No
2035	*Prunus cerasifera* (Thundercloud flowering plum)	7.5	No
2037	*Alnus rubra* (red alder)	10.5	No
2038	*Alnus rubra* (red alder)	9.4	No
2039	*Arbutus menziesii* (Pacific madrone)	7.6	No
2040	*Arbutus menziesii* (Pacific madrone)	16.5	No
2041	*Alnus rubra* (red alder)	22.1	No
2042	*Alnus rubra* (red alder)	19.1	No

Tree Protection Measures

SMC 20.50.370 *Tree protection standards* outlines the following guidelines for all trees proposed for retention:

A. All required tree protection measures shall be shown on the tree protection and replacement plan, clearing and grading plan, or other plan submitted to meet the requirements of this subchapter. Tree protection shall remain in place for the duration of the permit unless earlier removal is addressed through construction sequencing on approved plans.

B. Critical root zones (tree protection zone) as defined by the International Society of Arboriculture shall be protected. No development, fill, excavation, construction materials, equipment staging, or traffic shall be allowed in the critical root zone of trees that are to be retained.

C. Prior to any land disturbance, temporary construction fences must be placed around the tree protection zone to be preserved. If a cluster of trees is proposed for retention, the barrier shall be placed around the edge formed by the drip lines of the trees to be retained. Tree protection shall remain in place

for the duration of the permit unless earlier removal is addressed through construction sequencing on approved plans.

D. Tree protection barriers shall be a minimum of six feet high, constructed of chain link or similar material, subject to approval by the Director. "Tree Protection Area" signs shall be posted visibly on all sides of the fenced areas. On large or multiple-project sites, the Director may also require that signs requesting subcontractor cooperation and compliance with tree protection standards be posted at site entrances.

E. If any construction work needs to be performed inside either the tree drip line, critical root zone, and/or the inner critical root zone, the project arborist will be on site to supervise the work. When excavation must occur within or near the critical root zone, any found roots of three inches or greater in diameter will be cleanly cut to the edge of the trench to avoid ripping of the root.

F. Where tree protection zones are remote from areas of land disturbance, and where approved by the Director, alternative forms of tree protection may be used in lieu of tree protection barriers; provided, that protected trees are completely surrounded with continuous rope or flagging and are accompanied by "Tree Leave Area – Keep Out" signs.

G. Rock walls shall be constructed around the tree, equal to the dripline, when existing grade levels are lowered or raised by the proposed grading.

H. Retain small trees, bushes, and understory plants within the tree protection zone, unless the plant is identified as a regulated noxious weed, a nonregulated noxious weed, or a weed of concern by the King County Noxious Weed Control Board.

I. Preventative Mitigation. In addition to the above minimum tree protection measures, the applicant shall support tree protection efforts by employing, as appropriate, the following preventative measures, consistent with best management practices for maintaining the health of the tree:

1. *Pruning of visible deadwood on trees to be protected or relocated;*

2. *Mulching with a layer of four inches to five inches of wood chips in the critical root zones of retained trees; and*

3. *Ensuring one inch of irrigation or rainfall per week during and immediately after construction and from early May through September until reliable rainfall occurs in the fall.*

In addition to the above tree protection methods required by the City, the following tree protection methods are also recommended to minimize impacts and ensure long term viability of retained trees.

Canopy pruning

All construction activities should stay out of the canopy zone. However, if the canopy of a tree conflicts with construction, the canopy could be raised to the minimum height necessary to avoid conflict with equipment and should never be more than 25% of the overall canopy. Pruning cuts should be made back to an appropriate branch or trunk. Do not stub cut branches or top a tree. Any pruning of trees should be conducted by or overseen by a certified professional through the International Society of Arboriculture (ISA) or Tree Care Industry Association (TCIA). In some cases, it may be appropriate to temporarily tie branches back out of the way for equipment access in order to avoid pruning and any temporary ties should be removed as soon as possible after they are no longer required.

Root pruning

Prior to excavation within a tree's root zone, exposing roots using hand augering (or comparable method) is recommended. No structural roots should be severed within approximately three times the trunk diameter of the significant sized trees directly adjacent to the pedestrian ramp in order to avoid compromising the stability of the trees. Any root pruning of roots over one inch in diameter should be overseen by the project arborist.

Minimize Root Zone Disturbance

The compacted gravel pathway may be used for equipment access without specific protection measures within the CRZs of adjacent trees, as the trees are already adapted to compacted soil in this area. No heavy equipment should be operated within CRZs of trees proposed for retention. Where temporary impacts in the CRZ are unavoidable, use one of the following protection measures to minimize soil compaction and root damage:

- Install eight to twelve inches of wood chip mulch over the CRZ.
- Lay down a ¾-inch thick plywood sheet over at least four inches of wood chip mulch.
- Apply four to six inches of gravel over staked geotextile fabric.
- Place commercial logging mats on top of a 4-inch mulch layer.

The gravel, geotextile fabric, mats, and all mulch over four-inches thick must be removed after the temporary disturbance is finished.

Disclaimer

The findings of this report are based on the best available science and are limited to the scope, budget, and site conditions at the time of the assessment. Although the information in this report is based on sound methodology, internal physical flaws (such as cracking or root rot) or other conditions that are not visible cannot be detected with this limited basic visual screening. Trees are inherently unpredictable. Even vigorous and healthy trees can fail due to high winds, heavy snow, ice storms, rain, age, or other causes.

This report is based on the current observable conditions and may not represent future conditions of the trees. Changes in site conditions, including clearing and grading, will alter the condition of remaining trees in a way that is not predictable.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

RH

Lars Freeman-Wood

Roen Hohlfeld
Ecologist / ISA Certified Arborist® PN-8562A

Lars Freeman-Wood
ISA Certified Arborist® WE-8769AU
Tree Risk Assessment Qualified (TRAQ)
ISA Certified Utility Specialist®

Enclosures

4/4/2024 4:55:43 PM

MITHŪN

SEATTLE / Pier 56, 1201 Alaskan Way, #200
Seattle, WA 98101 / 206.623.3344

SAN FRANCISCO / 660 Market Street, #300
San Francisco, CA 94104 / 415.956.0688

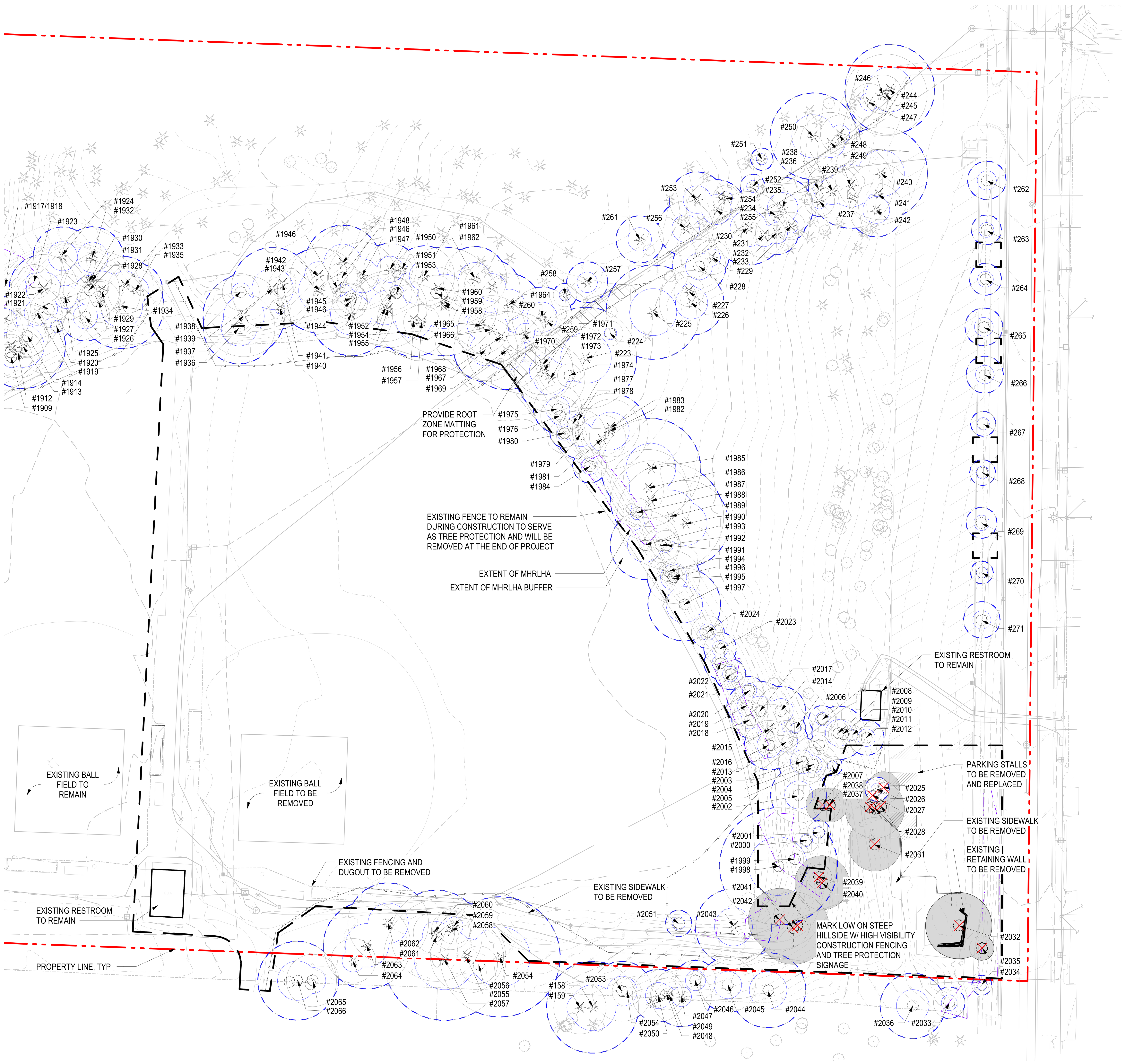
LOS ANGELES / 5837 Adams Blvd
Culver City, CA 90232 / 323.937.2150

mithun.com

PROJECT
EAST HAMLIN PARK

LOCATION
16006 15TH AVE NE,
SHORELINE, WA 98155

PREPARED FOR
CITY OF SHORELINE



LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- TEMPORARY TREE PROTECTION FENCING
- EXISTING FENCING ON SITE
- EDGE OF MODERATE TO HIGH RISK LANDSCAPE HAZARD AREA (MHRLHA)

SIGNIFICANT TREES TO BE REMOVED
REFER TO EXISTING TREE SCHEDULE FOR DETAIL OF TREE SIZE AND TYPE
TREE CRZ, TYP.
#XXXX
TREE TAG NUMBER

EXISTING TREE TO BE RETAINED
PROTECT IN PLACE PER TREE PROTECTION DETAIL (SEE L0.02)
TREE CRZ, TYP.
TREE ICRZ, TYP.
#XXXX
TREE TAG NUMBER
SEE EXISTING TREE SCHEDULE ON L0.02 FOR TREE INFORMATION

COMBINED CANOPY OF TREES TO BE RETAINED
TREE CRZ - MASSING OUTLINE
TREE ICRZ, TYP.

EXISTING TREES LOCATED BY SURVEY AND TAGGED BY ARBORIST

EXISTING TREES IDENTIFIED BY SURVEY THAT ARE NOT SIGNIFICANT OR WILL NOT BE IMPACTED BY PROPOSED WORK

EXISTING TREES TAGGED BY ARBORIST AS OFF-SITE TREES

PROVIDE ROOT ZONE MATTING FOR PROTECTION

NO	DATE	REVISION

DESIGN PARTNER
DF
PROJECT MANAGER
KK
PROJECT LANDSCAPE ARCHITECT
CR
PROJECT TEAM MEMBERS
TL, FR, AW
CHECK

16 TREE RETENTION PLAN
1" = 30'-0"

0' 15' 30'

TITLE
TREE RETENTION PLAN

PROJECT NO.
2224300
DATE
4.12.2024

ORIGINAL SHEET SIZE 30" x 42"

SHEET NUMBER
L0.01
PERMIT SET