

GENERAL NOTES

- 1 All materials, workmanship, design, and construction shall conform to the drawings, specifications, and the following applicable codes used in the design:
2021 INTERNATIONAL RESIDENTIAL CODE
2021 WASHINGTON STATE ENERGY CODE
- 2 Contractor shall contact architect immediately in case of any discrepancy between drawings and site conditions or code requirements.
- 3 Unvented Enclosed Rafter Assemblies per IRC R806.5
- 4 Dimensions are to face of concrete and face of stud unless noted otherwise.
- 5 Applicable codes, ordinances, and minimum structural requirements take precedence over all drawings, notes, specifications, and sizes.
- 6 Verify dimensions before beginning work.
- 7 Do not scale drawings.
- 8 Provide approved draft-stopping in concealed space between ceiling and floor per IRC R502.12 & R302.12.
- 9 Provide approved fireblocking in walls, concealed spaces, soffits, drop ceilings, and under stairs per IRC R602.8 & R302.11.
- 10 Provide solid wood blocking as support for all wall mounted fixtures.
- 11 All exterior openings exposed to weather shall be flashed to make weatherproof per IRC R703.2, R703.4, R703.7.3, R703.8, R903, and R905. All flashing, counter-flashing, and coping shall be minimum 26 ga. galvanized.
- 12 Provide weather resistive barrier per IRC 703.2 and R903.
- 13 Caulk all openings per mfg specifications. All exterior joints shall be sealed, caulked, gasketed, or weather-stripped to limit air flow at windows, doors, openings between walls and foundations, walls and roof, utility service penetrations, etc.
- 14 Provide flow control devices for all new fixtures; showers @ 1.8 gpm., Toilets @ 1.28 gallons max per flush, lavatory faucets @ 1.2 gpm, and kitchen faucets @ 1.8 gpm max. All flow rates for plumbing fixtures to comply with WAC 51-56-0400.
- 15 Smoke detectors located and installed per IRC R314 to be hardwired with battery backup and connected to sound alarm in all locations on trigger. Carbon Monoxide detectors shall be located and installed, per IRC R315, outside of each separate sleeping area in the immediate vicinity of each bedroom as required. Placement per plan.
- 16 Safety glazing is required to be permanently marked. Provide tempered glass at required hazardous locations and category ii glass enclosure doors and panels per IRC 308.4.
- 17 All skylights shall conform to IRC R308.6 and be installed per MFR's details and specifications.
- 18 All shower enclosures shall be finished to a height of 72" with a hard, non-absorbent material.
- 19 Water heaters shall meet the requirements of 1987 NAECA and be so labeled. Water heaters shall be strapped to resist displacement by an earthquake per UPC.
- 20 All structural panel components within conditioned space shall be identified as exposure I, exterior or HUD-approved per R702.5.
- 21 Provide emergency escape route for bedrooms per IRC R310.
- 22 Stairways, exits and handrails shall conform to IRC R311.7 requirements. Stairways with 4 or more risers shall have a continuous 1 1/2" handrail, 34"-38" above nosing of tread, which returns to a newel post or wall. Openings in rail shall be less than 4" clear in any direction.
- 23 Decks and guardrails to conform to IRC R312 requirements.
- 24 All ceiling heights shall conform to IRC R305. Habitable space, hallways and portions of basements containing habitable spaces shall have a ceiling height of not less than 7 feet. Toilet rooms and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches
- 25 Clearances of listed appliances from combustible materials shall be specified in appliance label and in manufacturer's installation instructions. Unspecified shall comply with IRC M304.9.
- 26 All wood in contact with concrete or ground to be treated or naturally decay resistant per IRC R317.1.
- 27 Vapor barrier under all concrete slabs, lapped min 12" at all seams and taped.
- 28 Mechanical and service hot water piping to be insulated per WSEC R403.4 and R403.5.
- 29 Per IRC R401.3, surface drainage shall be diverted into a storm sewer or other point of collection.
- 30 Existing roof/ceiling, wall or floor cavities exposed during construction shall be filled with insulation per WSEC R503.
- 31 Construction erosion control measures must be in place and approved by the Authority Having Jurisdiction prior to any earth disturbance.
- 32 No sediment shall be tracked into the street or onto paved surfaces. Sediment shall be removed from trucks and equipment prior to leaving the site. In the event of failure of erosion control system resulting in sediment being tracked onto paved surfaces, the contractor shall immediately implement measures to correct the situation, and street sweeping shall be employed on an emergency basis. If street sweeping vehicles are utilized, they shall be of the type that actually removes sediment from the pavement.



VIEW FROM NE/STREET



VIEW FROM SW

PROJECT CONTACTS

OWNERS:
RAHUL PATHAK AND SEVERINE KELLEY
8541 SE 82ND ST
MERCER ISLAND, WA 98040

ARCHITECTS:
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LICENSE #: MERCEBL942J7
EXP: 04/27/26

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info@terrane.net

GEOTECHNICAL ENGINEER:
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3213 EASTLAKE AVE E, SUITE B
SEATTLE, WA 98102
206-262-0370

ARBORIST:
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A.B.C. CONSULTING ARBORISTS LLC
12402 N DIVISION ST, SUITE 294
SPOKANE, WA 99218
DANIEL@ABCARBORIST.COM
509-953-0293



VICINITY MAP

PROJECT INFORMATION

CAST PROJECT NUMBER: 2215

OWNER:
RAHUL PATHAK AND SEVERINE KELLEY
8541 SE 82ND ST
MERCER ISLAND, WA 98040

PROJECT ADDRESS:
8541 SE 82ND ST
MERCER ISLAND, WA 98040

PROJECT DESCRIPTION:
INTERIOR REMODEL OF (E) SINGLE-FAMILY RESIDENCE. CONVERT (E) CARPORT TO (N) ATTACHED GARAGE WITH UTILITY ROOM. NO NEW CONDITIONED AREA.

SHEET INDEX

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Approved by:

| issue | issue date | description | printed |
|-------|------------|---------------------------|-----------|
| | 10/17/23 | PRELIMINARY PRICING SET | 1/19/2023 |
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GENERAL
INFO

a.01

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER CHICAGO TITLE COMPANY "GUARANTEE", ORDER NO. 0248356-ETU)

LOT 5, ISLAND POINT, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 75 OF PLATS, PAGE 88, RECORDS OF KING COUNTY, WASHINGTON;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

A LINE COMPUTED PER REFERENCE NO. 1 BETWEEN FOUND MONUMENTS BEARS S 81°48'51" W, AS SHOWN HEREON.

REFERENCES

R1. ISLAND POINT, VOL. 75 OF PLATS, PG. 88, RECORDS OF KING COUNTY, WASHINGTON.

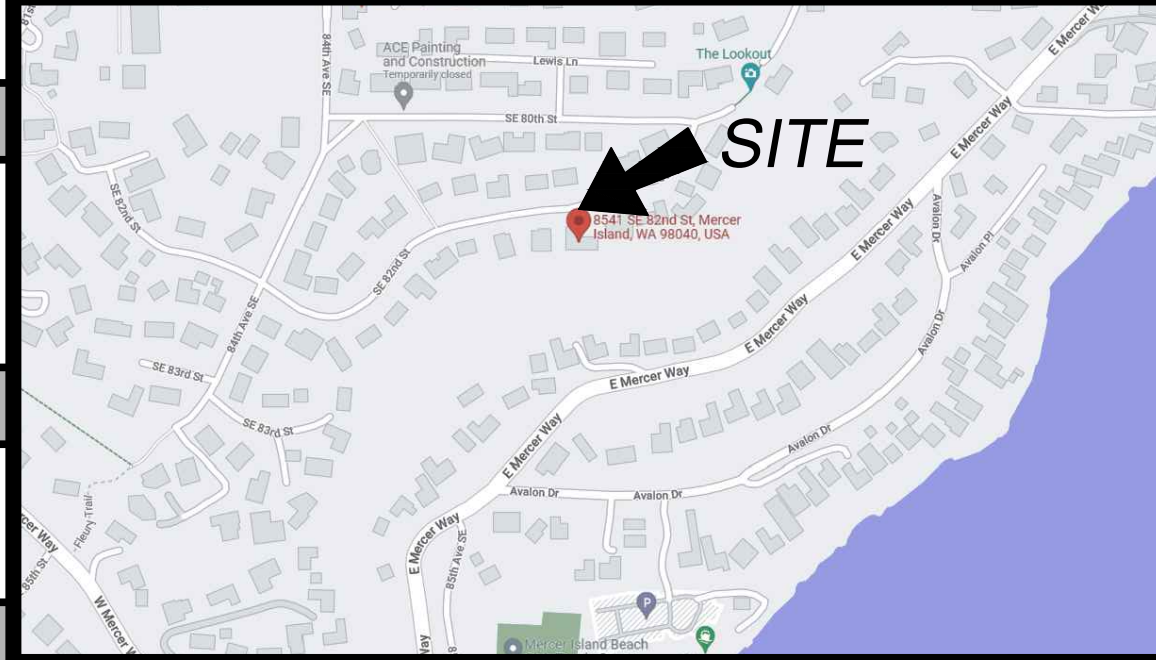
VERTICAL DATUM

NAVD 88 PER CITY OF MERCER ISLAND BENCHMARK NO. 1722
DESCRIPTION: BRASS NIPPLE IN CONC (DN 0.9')
LOCATION: SE 82ND ST, OPP HSE #8500
ELEVATION: 321.936'

SURVEYOR'S NOTES

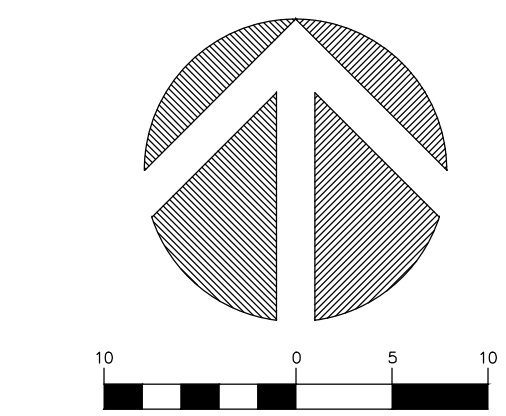
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN NOVEMBER OF 2022. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 362550-0050
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 16,138 ±S.F. (0.37 ACRES)
6. ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM CHICAGO TITLE INSURANCE COMPANY'S "GUARANTEE" ORDER NO. 0248356-ETU, DATED OCTOBER 31, 2022. IN PREPARING THIS MAP, TERRANE, INC. HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS TERRANE, INC. AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY THE REFERENCED "SUBDIVISION GUARANTEE". TERRANE, INC. HAS RELIED WHOLLY ON NAME.NAME NAME TITLE INSURANCE COMPANY'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND TERRANE, INC. QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

VICINITY MAP



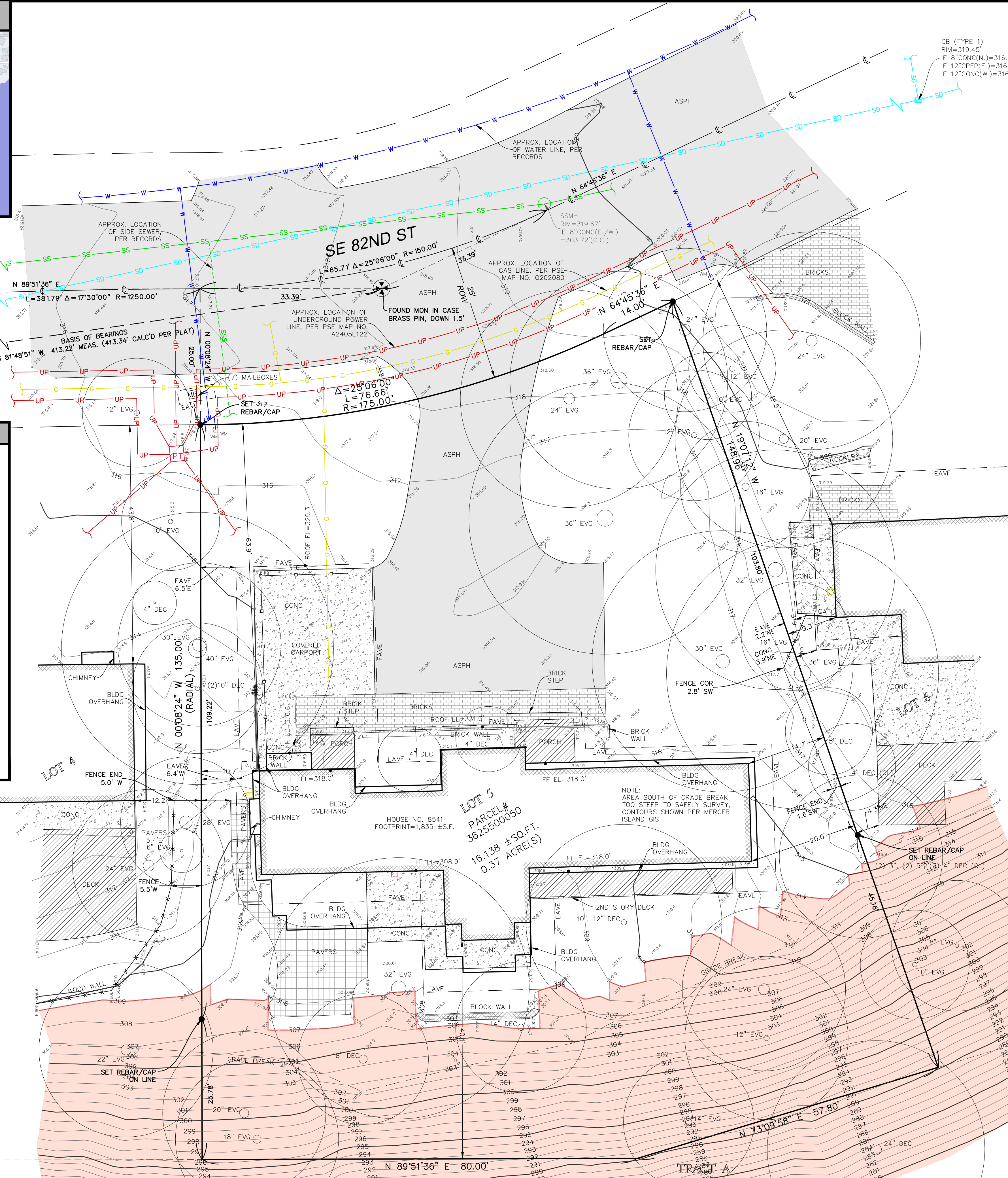
SCHEDULE B ITEMS

1. RESERVATIONS AND RECITALS CONTAINED IN THE DEED AS SET FORTH BELOW:
RECORDING DATE: JULY 12, 1939
RECORDING NO.: 3054284
(BLANKET IN NATURE. NOTHING TO PLOT.)
2. RESERVATIONS AND RECITALS CONTAINED IN THE DEED AS SET FORTH BELOW:
RECORDING DATE: SEPTEMBER 7, 1954
RECORDING NO.: 4482974
(BLANKET IN NATURE. NOTHING TO PLOT.)
3. COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, ENCROACHMENTS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS, IF ANY, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, INCLUDING BUT NOT LIMITED TO THOSE BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILY STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON THE PLAT OF ISLAND POINT:
RECORDING NO.: 5733121
(BLANKET IN NATURE. RESTRICTIONS EXIST. NOTHING TO PLOT.)
4. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: THE CITY OF MERCER ISLAND, A MUNICIPAL CORPORATION OF THE STATE OF WASHINGTON
PURPOSE: PEDESTRIAN PATHWAY
RECORDING DATE: OCTOBER 18, 1973
RECORDING NO.: 7310180355
(EASEMENT FALLS OFF SITE.)



| INDEXING INFORMATION | | | |
|----------------------|--------|------------------|--|
| NW 1/4 | NE 1/4 | SECTION: 31 | |
| SW 1/4 | SE 1/4 | TOWNSHIP: 24N | |
| | | RANGE: 05E, W.M. | |
| | | COUNTY: KING | |

STEEP SLOPE/BUFFER DISCLAIMER:
THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS, AS SUCH, TERRANE CANNOT BE LIABLE OR RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY STEEP SLOPE INFORMATION. ULTIMATELY, THE LIMITS AND EXTENT OF ANY STEEP SLOPES ASSOCIATED WITH ANY SETBACKS OR OTHER DESIGN OR CONSTRUCTION PARAMETERS MUST BE DISCUSSED AND APPROVED BY THE REVIEWING AGENCY BEFORE ANY CONSTRUCTION CAN OCCUR.

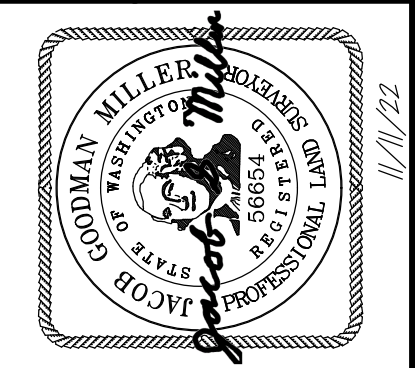


LEGEND

- | | | | |
|--|---------------------------|--|---------------------|
| | ASPHALT SURFACE | | PAVER SURFACE |
| | BRICK SURFACE | | POWER METER |
| | BUILDING | | POWER (UNDERGROUND) |
| | CENTERLINE ROW | | POWER TRANSFORMER |
| | CONCRETE SURFACE | | REBAR & CAP (SET) |
| | DECK | | RETAINING WALL |
| | FENCE LINE (WIRE) | | ROCKERY |
| | FENCE LINE (WOOD) | | SEWER LINE |
| | GAS LINE | | SEWER MANHOLE |
| | GAS METER | | STORM DRAIN LINE |
| | INLET (TYPE 1) | | TREE (AS NOTED) |
| | MAILBOX (RESIDENTIAL) | | WATER LINE |
| | MONUMENT (IN CASE, FOUND) | | WATER METER |
| | | | STEEP SLOPE AREA |

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 3625500050

PATHAK RESIDENCE
8541 SE 82ND ST
MERCER ISLAND, WA 98040

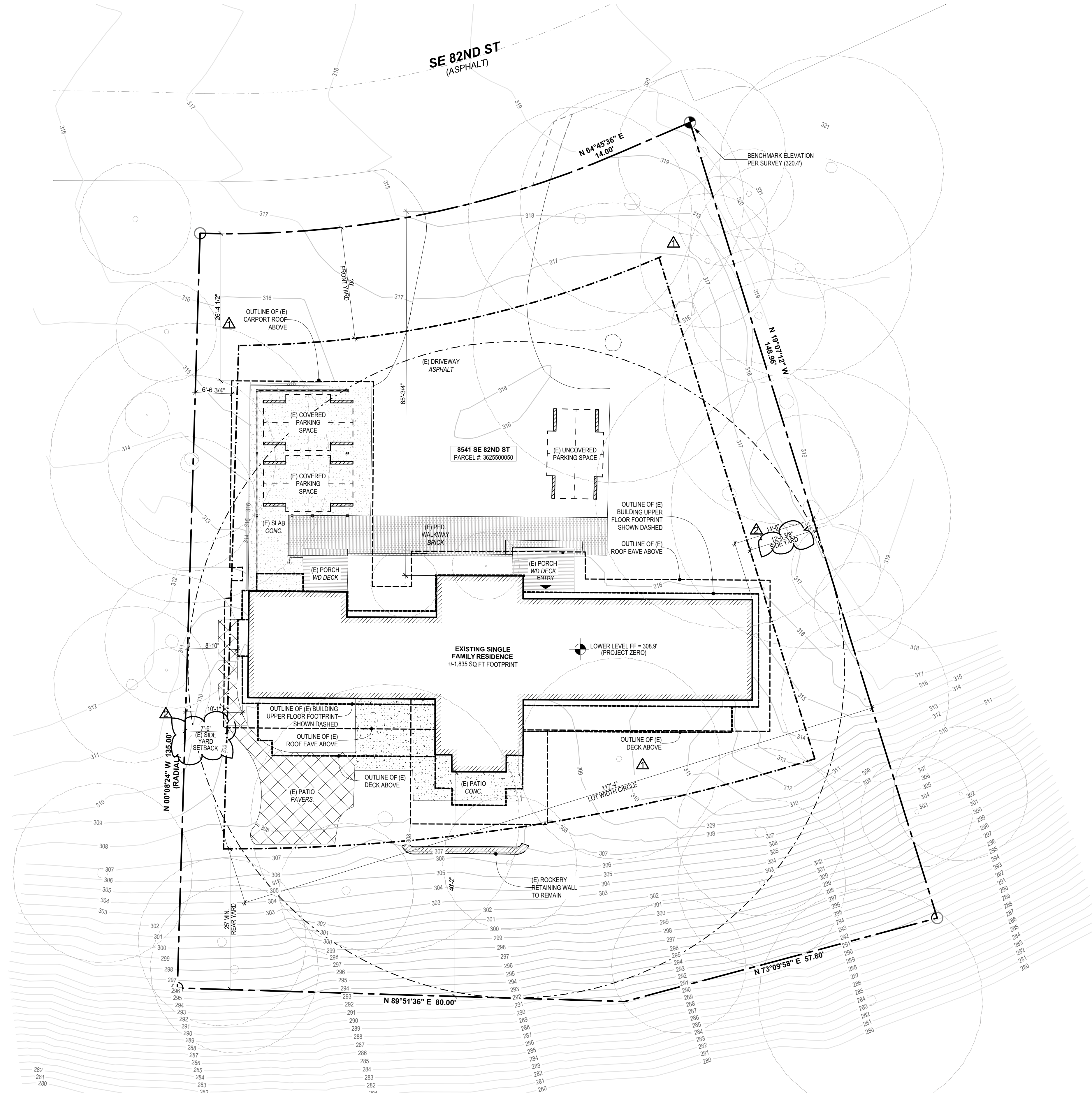


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10801 Main Street, Suite 102
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p: 425-458-4488 | e: info@terrane.net

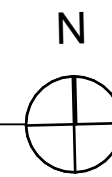
| | |
|------------------|------------|
| JOB NUMBER: | 222005 |
| DATE: | 11/11/22 |
| DRAFTED BY: | IDV / RPM |
| CHECKED BY: | JGM/TB/TLR |
| SCALE: | 1" = 10' |
| REVISION HISTORY | |
| | |
| SHEET NUMBER | |
| 1 OF 1 | |

We are the measure | terrane.net



SITE PLAN - EXISTING

SCALE: 1" = 10'

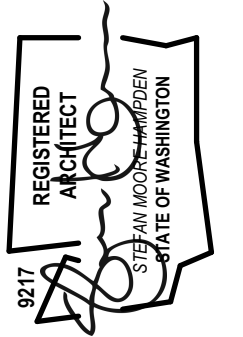


SITE PLAN - EXISTING

a.03

| Issue | Issue date | Description | Printed |
|-------|------------|---------------------------|-----------|
| | 10.17.23 | PRELIMINARY PRICING SET | 1/16/2025 |
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Approved by:



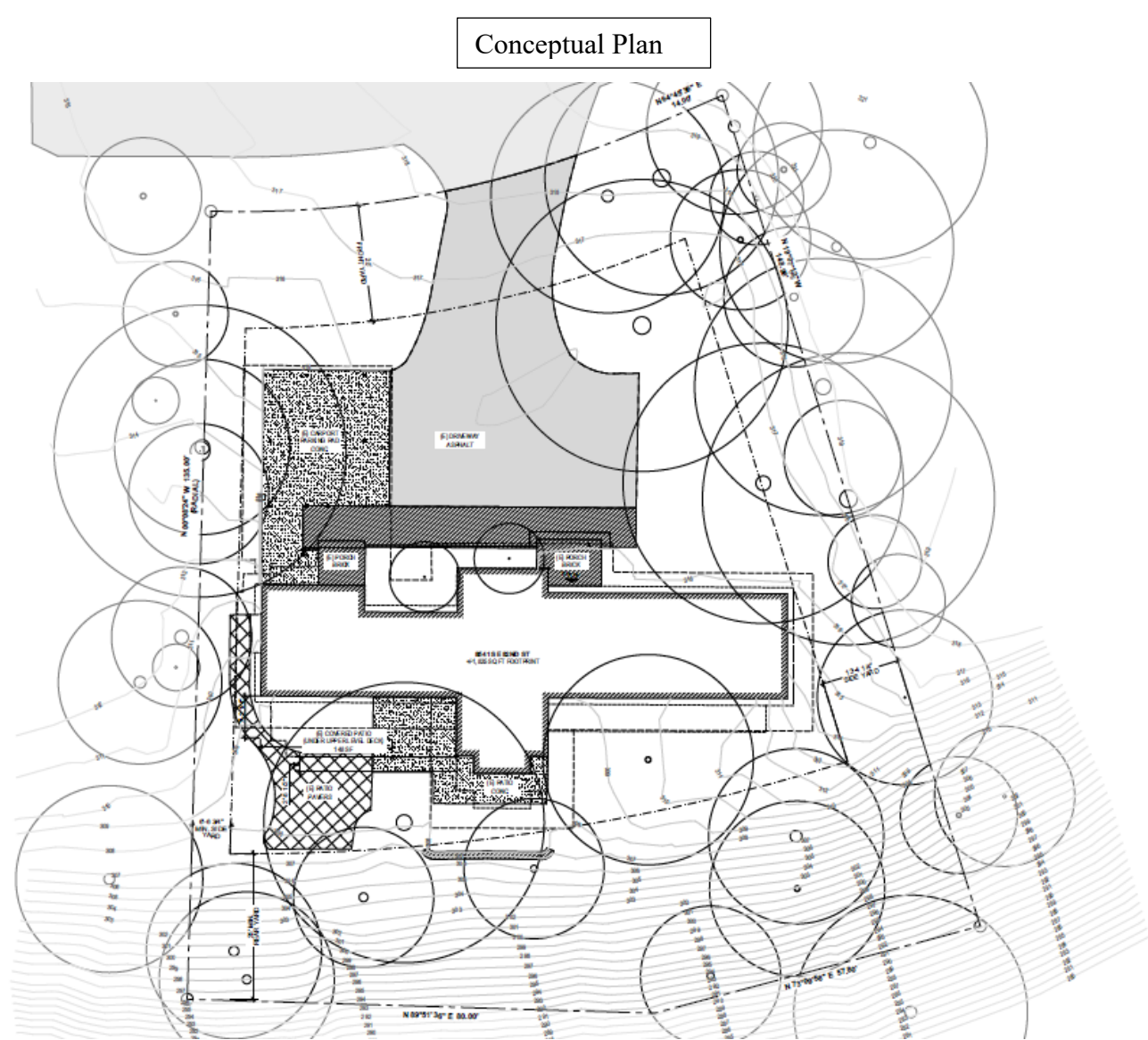
PATHAK RESIDENCE

8541 SE 82ND ST,
MERCER ISLAND, WA 98040

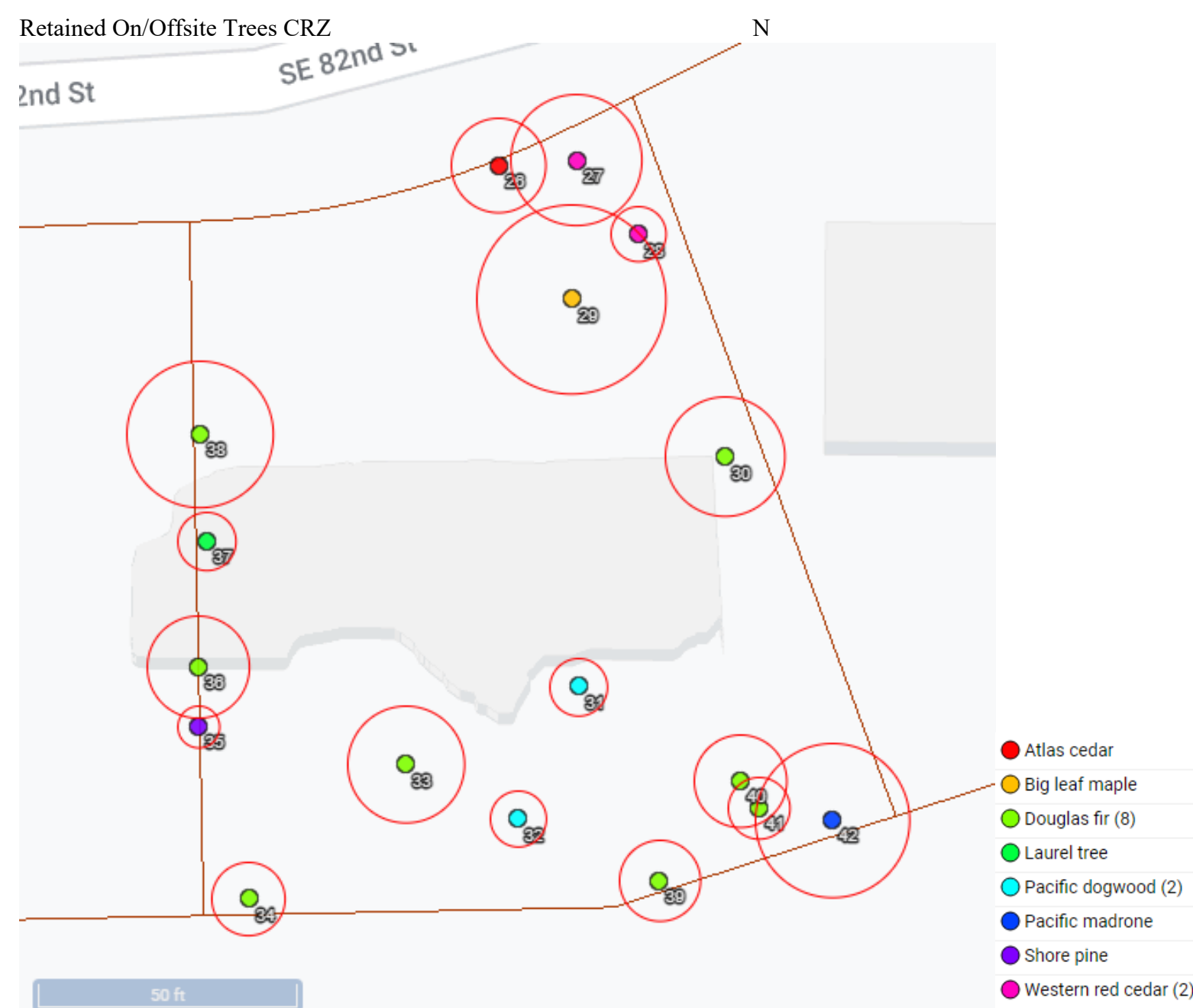
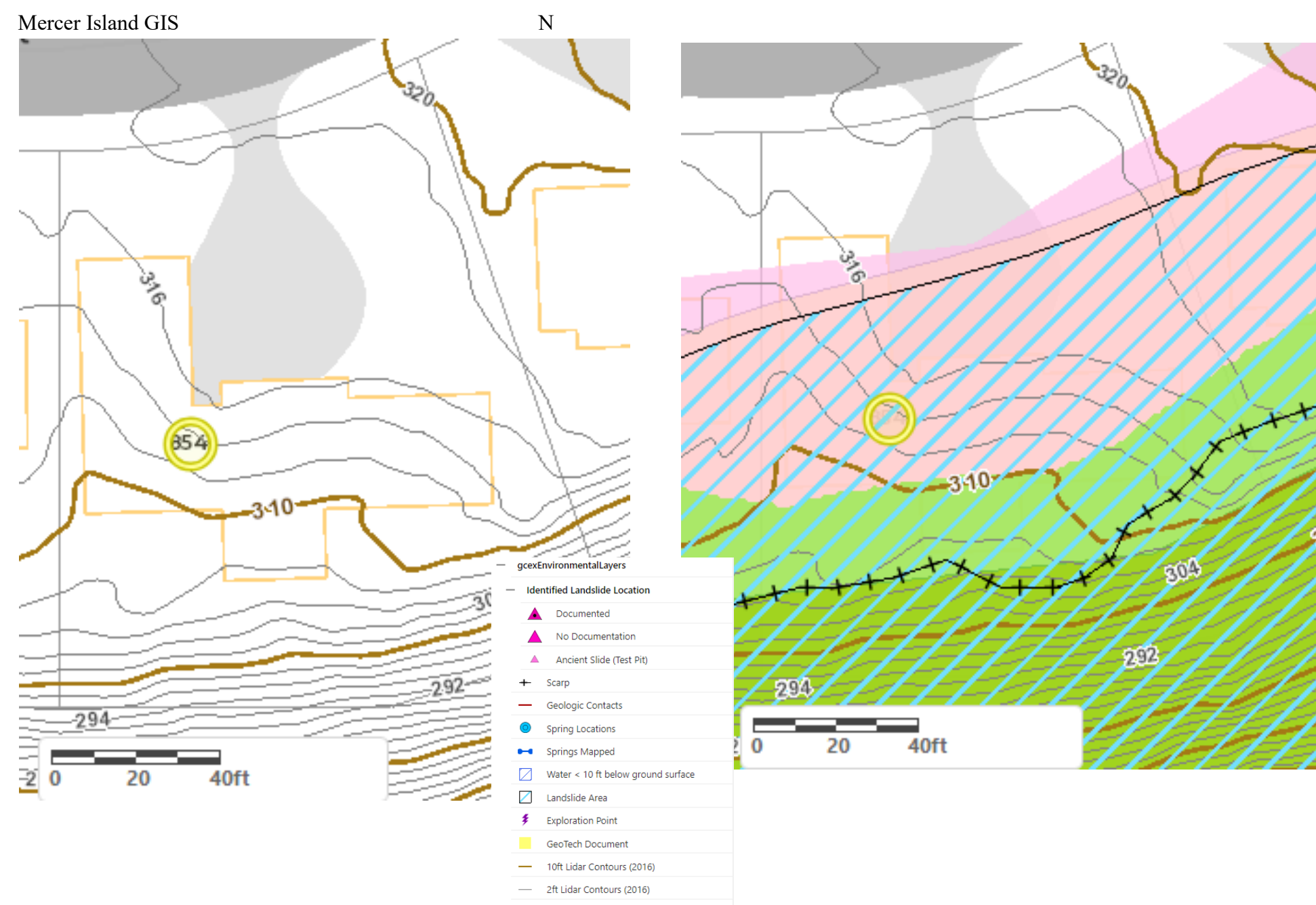
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ATTACHMENTS

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ATTACHMENT 1 - SITE IMAGES



ATTACHMENT 2 - TREE SUMMARY, TPZ, CRZ

| ID | Species | Latin | DBH | Spread | Condition - Health | Condition - Structure | Landmark Grove Exceptional | Development | TPZ - Radius (ft) | CRZ - Radius (ft) | Notes |
|----|-------------------|------------------------------|-------|--------|--------------------|-----------------------|----------------------------|------------------|-------------------|-------------------|--|
| 26 | Atlas cedar | <i>Cedrus atlantica</i> | 24.5 | 30 | Good | Good | NO | R-Viable | 18.375 | 9.1875 | Viable |
| 27 | Western red cedar | <i>Thuja plicata</i> | 25.5 | Good | Poor | Fair to poor | NO | R-Asym | 25.5 | 12.75 | Woodpecker holes noted - insect treatment recommended |
| 28 | Western red cedar | <i>Thuja plicata</i> | 10.7 | 12 | Fair | Good | NO | R-Viable | 10.7 | 5.35 | Crowded |
| 29 | Big leaf maple | <i>Acer macrophyllum</i> | 36.8 | 40 | Good | Good | Exceptional | R-Viable | 36.8 | 18.4 | Nice specimen tree |
| 30 | Douglas fir | <i>Pseudotsuga menziesii</i> | 31 | 40 | Good | Good | Exceptional | R-Viable | 23.25 | 11.625 | Good health and vigor |
| 31 | Pacific dogwood | <i>Cornus nuttallii</i> | 14.92 | 16 | Fair | Good | Exceptional | R-Poor Condition | 11.19 | 5.595 | S fork in poor condition |
| 32 | Pacific dogwood | <i>Cornus nuttallii</i> | 14.5 | 15 | Fair | Poor | NO in Poor Condition | R-Poor Condition | 10.875 | 5.4375 | Tree is declining. Decay in the trunk. |
| 33 | Douglas fir | <i>Pseudotsuga menziesii</i> | 30.3 | 33 | Good | Good | Exceptional | R-Impacted | 22.725 | 11.3625 | May conflict with plans, arborist oversight, required during any earth work inside the TPZ |
| 34 | Douglas fir | <i>Pseudotsuga menziesii</i> | 19 | 21 | Good | Good | NO | R-Viable | 14.25 | 7.125 | asymmetrical. In good health at this time |
| 35 | Shore pine | <i>Pinus contorta</i> | 6.5 | 8 | Fair | Fair | NO | R-Poor Condition | 8.125 | 4.0625 | Suppressed |
| 36 | Douglas fir | <i>Pseudotsuga menziesii</i> | 26.5 | 30 | Good | Good | NO | R-Viable | 19.875 | 9.9375 | Good health and vigor |
| 37 | Laurel tree | <i>Laurus nobilis</i> | 11.31 | 12 | Good | Fair | NO | R-Viable | 11.31 | 5.655 | unmaintained |
| 38 | Douglas fir | <i>Pseudotsuga menziesii</i> | 38 | 37 | Good | Good | Exceptional | R-Viable | 28.5 | 14.25 | Good health and vigor |
| 39 | Douglas fir | <i>Pseudotsuga menziesii</i> | 21 | 26 | Good | Good | NO | R-Viable | 15.75 | 7.875 | Limbed for a view window |
| 40 | Douglas fir | <i>Pseudotsuga menziesii</i> | 24 | 26 | Good | Good | NO | R-Viable | 18 | 9 | Good health and vigor |
| 41 | Douglas fir | <i>Pseudotsuga menziesii</i> | 16 | 20 | Fair | Fair | NO | R-Viable | 12 | 6 | Suppressed limbed for view |
| 42 | Pacific madrone | <i>Arbutus menziesii</i> | 22 | 30 | Fair | Fair | Exceptional | R-Viable | 30 | 15 | Fair condition |

1. The TPZ listed shall be the TPZ that is used. 2. The TPZ can be reduced to the CRZ, unless noted otherwise, as long as the TPZ is not reduced by more than 20%. 3. This may be further reduced on a case-by-case basis, upon review, approval, and under the direct oversight of A.B.C. Consulting Arborists LLC. 4. Install Fencing Per Attachment 3, prior to starting construction activity.

| | Total Trees | Hazard Non-Viable | Conflict W/ plans | Trees Retained | Viable Trees Removed | Replacement Ratio | Required Replant |
|--------------------|-------------|-------------------|-------------------|----------------|----------------------|-------------------|------------------|
| >36" & Exceptional | 6 | 0 | 0 | 6 | 0 | 6:1 | 0 |
| Lg 24-36 | 4 | 0 | 0 | 4 | 0 | 3:1 | 0 |
| Lg 10-24 | 6 | 0 | 0 | 6 | 0 | 2:1 | 0 |
| Small < 10" | 1 | 0 | 0 | 1 | 0 | 1:1 | 0 |
| Small < 10 | 0 | 0 | 0 | 0 | 0 | Exempt | 0 |
| TOTAL | 17 | 0 | 0 | 17 | 0 | | 0 |

⁶ MMCC 19.16.010 Grove = 8 or more trees ≥ 10-inches DBH that form a continuous canopy (exceptional unless hazardous).
⁷ In a Critical Area or Critical Area Buffer or On Public Property.

ATTACHMENT 3 - TREE PROTECTION

The following minimum Tree Protection Measures can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements.

1. Tree Protection Fencing Shall Be Continuous 6' min. Chain Link or like Fencing and:

- a. Tree Protection Fences will need to be placed around each tree or group of trees to be retained.
 - i. Tree Protection Fences are to be placed according to the attached drawing (bottom of attachment) at a distance of not less than 10' feet outside the dripline of the tree or group of trees to be saved, or at the designated TPZ See Attachment 2 for TPZ/CRZ
 - ii. Tree Protection Fences must be inspected prior to the beginning of any demolition or construction work activities.
 - iii. Nothing must be parked or stored within the Tree Protection Fences—no equipment, vehicles, soil, debris, or construction supplies of any sorts.
- b. Signs:
 - i. The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters every 40'

**TREE PROTECTION FENCE, DO NOT ENTER!
DO NOT PARK OR STORE MATERIALS WITHIN THE PROTECTION AREA**

Questions contact Daniel Maple of A.B.C. Consulting Arborists LLC.
 Cell: (509) 953-0293 Email: Daniel@AbcArborist.Com

Signs along the TPZ may be waived at the discretion of the City and/or its officials.

2. Cement Trucks/Washout:

- a. Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the Tree Protection Fences.
- b. No waste, wash out, or contaminated water shall be allowed to flow into the Tree Protection Area.

3. Canopy Pruning:

- a. The canopies of some of the trees may need to be properly pruned to allow Sight lines (vehicular), access of equipment, materials, or building and construction clearance.
- b. If so, the pruning must be done by an International Society of Arboriculture, (ISA) Certified Arborist using current industry standard pruning techniques. (ANSI A300 Pruning Standards and ANSI Z131.1 Safety Standards as well as all OSHA, WISHA, and local standards must be followed.)
- c. Plant debris can be chipped and utilized on site for the mulch under the trees.

PATHAK RESIDENCE

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| PERMIT CORRECTIONS 02 SET <td></td> | |

TREE PROTECTION PLAN

a.05

5. When excavation occurs near trees that are scheduled for retention, the following procedure must be followed to protect the long-term survivability of the tree:
- An International Society of Arboriculture, (ISA) Certified Arborist must be working with all equipment operators.
 - The Certified Arborist should be outfitted with an Airspade™, shovel, hand pruners, a pair of loppers, a handsaw, and a power saw (a "saws all" type reciprocating saw is recommended).
 - The hoe must be placed to "comb" the material directly away from the trunk as opposed to cutting across the roots.
 - Combing is the gradual excavation of the ground cover plants and soil in depths that only extend as deep as the tines of the hoe.
 - When any roots of one-inch diameter or greater, of the tree to be retained, is struck by the equipment, the Certified Arborist should stop the equipment operator.
 - The Certified Arborist should then excavate around the tree root by Airspade™ (recommended) or by hand/shovel and cleanly cut the tree root.
 - The Certified Arborist should then instruct the equipment operator to continue.

6. Putting Utilities Under the Root Zone:

- Boring under the root systems of trees (and other vegetation) shall be done under the supervision of an ISA Certified Arborist. This is to be accomplished by excavating a limited trench or pit on each side of the critical root zone of the tree and then hand digging or pushing the pipe through the soil under the tree. The closest pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade as shown on the plan and profile.
- Tunneling under the roots of trees shall be done under the supervision of an ISA Certified Arborist in an open trench by carefully excavating and hand digging around areas where large roots are exposed. No roots 1 inch in diameter or larger shall be cut.
- The contractor shall verify the vertical and horizontal location of existing utilities to avoid conflicts and maintain minimum clearances; adjustment shall be made to the grade of the new utility as required.

7. Watering:

The trees will require significant watering throughout the summer and early fall in order to survive long-term. An easy and economical watering can be done using soaker hoses placed three feet from the trunk of the tree and spiraled around the tree. One 75-foot soaker hose per tree is adequate. It is best to place the soakers using landscape staples, (available from HD Fowler in Bellevue for pennies apiece) then cover the area with three to six inches of mulch. The mulch will minimize evaporation and will also stimulate the microbial activity of the soil which is another benefit to the health of the tree.

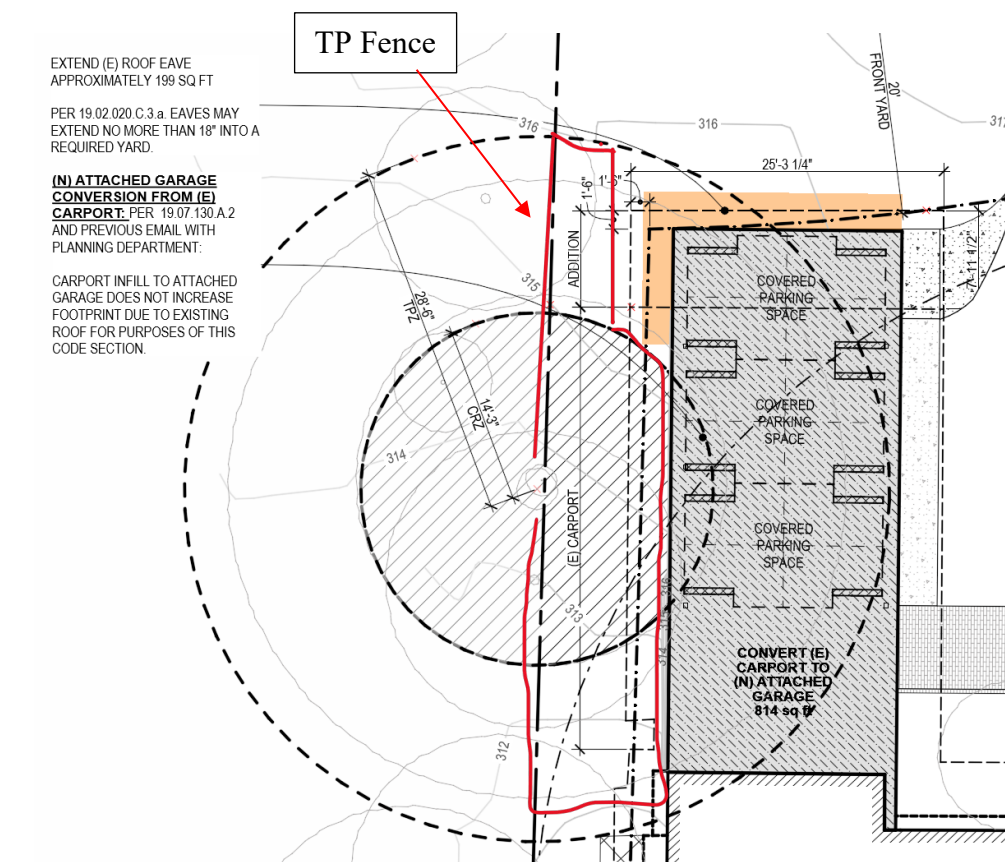
- Water the tree to a depth of 18 to 20 inches. I recommend leaving the water on the soaker hoses for six to eight hours and then digging down to determine how deep your water is penetrating. Then adjust accordingly. It may take a good two days of watering to reach the proper depth.
- Once the water reaches the proper depth, turn off the hoses for four weeks and then water again. Water more often when temperatures increase—every three weeks when temperatures exceed 80 degrees and every two weeks when temperatures exceed 90 degrees. This drying out of the soil in between watering is important to prevent soil pathogens from attacking the trees.

TREE #38 Additional Required Tree Protection Measures.

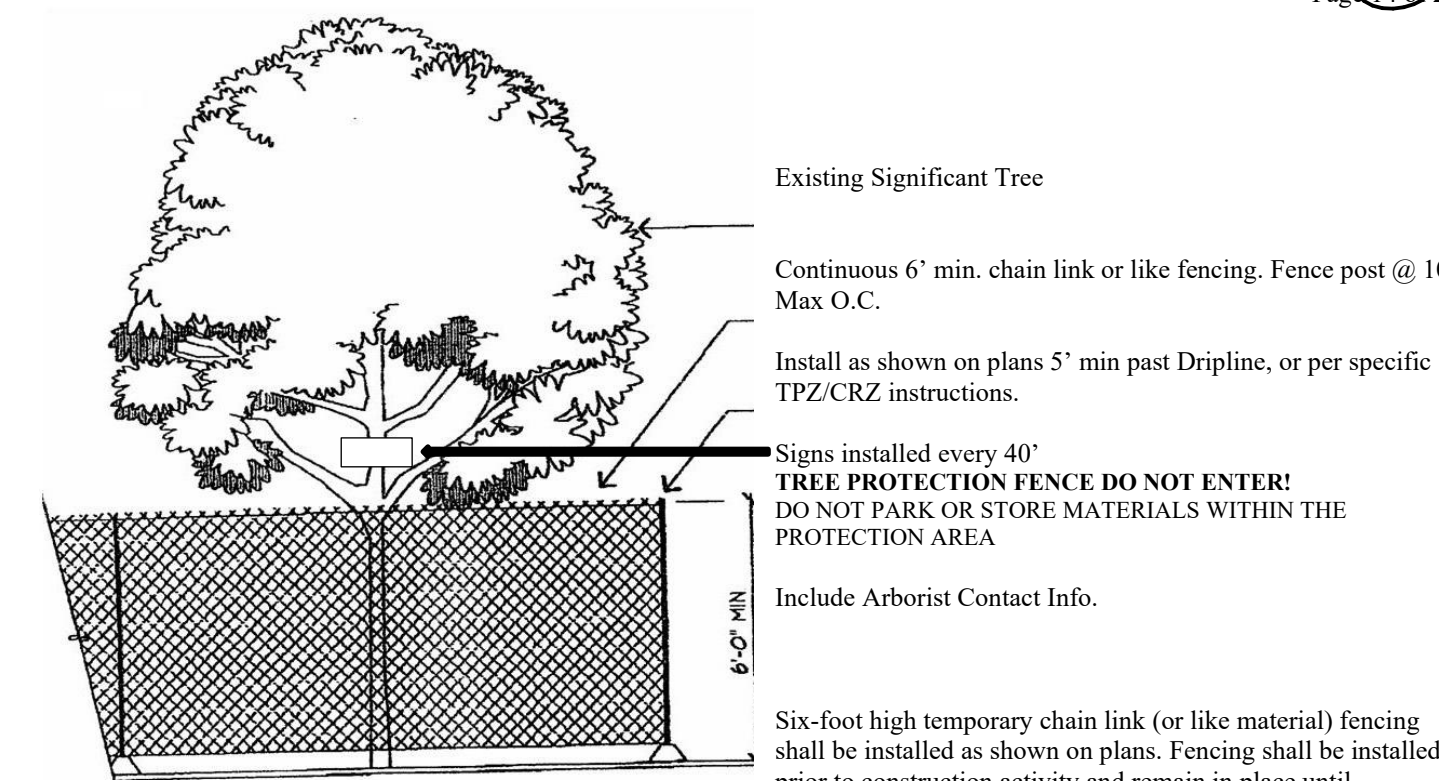
| | | | | | | | | | | | |
|----|-------------|------------------------------|----|----|------|------|-------------|----------|------|-------|-----------------------|
| 38 | Douglas fir | <i>Pseudotsuga menziesii</i> | 38 | 37 | Good | Good | Exceptional | R-Viable | 28.5 | 14.25 | Good health and vigor |
|----|-------------|------------------------------|----|----|------|------|-------------|----------|------|-------|-----------------------|

Douglas fir trees are listed as moderately tolerant to construction and tolerant to root pruning (Mathey, Clark). Tree #38 was in good health and vigor at the time of my assessment. As the proposed work⁹ is outside the CRZ, it will only impact a small portion of the TPZ, and minimal root pruning is anticipated; it is my professional opinion that the proposed work is viable and should have little to no long-term impact of tree #38, provided:

- Install 6' tall chain link fencing along the TPZ/CRZ. Fencing shall be installed, and inspected, prior to any construction activity. (Install as shown below).
- A Qualified ISA or ASCA Arborist Shall oversee ALL work that is done within the TPZ.
- The Arborist shall prune any roots 1-inch in diameter or greater with a Sawzall or like device.
- The Arborist shall have the authority to stop any and all work within the (as needed) to protect the tree.
- These requirements are in addition to the other tree protection details listed.



⁹ In lieu of over excavations below the new garage footings, we understand that the footings will be supported on 2-inch diameter pin piles, as shown on Sheet S2.1 of the current structural plans, with revisions dated October 1, 2024. Our recommendations for 2-inch pin piles are provided in our geotechnical report, with revisions dated June 5, 2024. We anticipate that the construction excavations for the new footing construction will be limited to no more than about 2 to 3 feet below existing grades. In our opinion, the excavations will not negatively impact the tree root zone site. As such, no mitigation measures are required.



Make a clean straight cut, using loppers, reciprocal saw, or like tool, to remove damaged portion of root(s) over 1" in diameter that are damaged during construction. ALL exposed roots shall be temporarily covered with damp burlap and covered with soil the same day, if possible, to prevent drying out. If not possible, the burlap must be kept moist at all times.

Work within the protection fencing shall be done manually. No stockpiling of materials, soil, debris, vehicular traffic, or storage of machinery or equipment shall be allowed within the limits of the fencing.
Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the tree protection fences, or in a manner that would allow the waste or wash out material to enter the TPZ.

The area within the tree protection fencing shall be covered with wood chips, hog fuel, or similar materials, to a depth of 3 to 6 inches. The materials should be placed prior to beginning construction and remain until the tree protection fencing was taken down.

Should the tree protection fencing need to be installed inside the TPZ to allow for construction activity, then the following shall be done:
For construction equipment, cover the area from the tree protection fencing to the outer edge of the TPZ with 8 to 10 inches of wood chips, hog fuel, or similar materials, to reduce compaction cover area with steel plates.
For foot traffic¹⁰ cover the area from the tree protection fencing to the outer edge of the TPZ with 6 inches of wood chips, hog fuel, or similar materials, to reduce compaction, cover with 1/4 inch to 1-inch plywood.

The steel plates, plywood and wood chips are to remain in place until all construction activity is completed. The steel plates, plywood and woodchips shall then be removed and the tree protection fencing installed along the outer edge of the tree protection zone.

ATTACHMENT 4 - MULCHING

Mulching is one of the easiest and most effective ways to improve urban soil quality entry health. Mulching is the application materials to the soil surface to improve or protect the tree and/or soil. Most materials can be organic or inorganic. When selecting mulch, organic materials are usually preferred over inorganic materials. Organic mulches moderate soil temperatures reduce soil compaction and erosion, and increase soil organic matter; thereby stimulating microbial activity, soil aggregation, and nutrient availability. Inorganic mulches may be fire resistant, do not decompose, reflect, or transfer heat more readily into the soil, and tend to be more stable when exposed to high wind or flooding.

Table 2) Potential uses and limitations of typical mulches for urban trees.

| Mulch | Uses | | | | | | | | | | Limitations | | | | |
|---------------------|--------------------|-----------------|-------------------|------------|---------------|---------------------|-------------------------|--------------------|-----------------------------------|---------------------|-------------|-----------------|-----------------------|----------------------------|------------------------------|
| | Prevent compaction | Prevent erosion | Limit evaporation | Deter pest | Control weeds | Promote aggregation | Increase organic matter | Increase nutrients | Expensive or limited availability | Crushing or maiting | Unstable | Anaerobic soils | Salts or contaminants | Potential N immobilization | Temporary or unknown effects |
| Grass clippings | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Fresh leaves | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Needles | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Hay/straw | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| *Arborist woodchips | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Bark | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Eucalyptus | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Cypress | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Pecan shells | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Leaf mold | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Compost | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Fabrics | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Recycled rubber | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Stone/gravel | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Black plastic | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

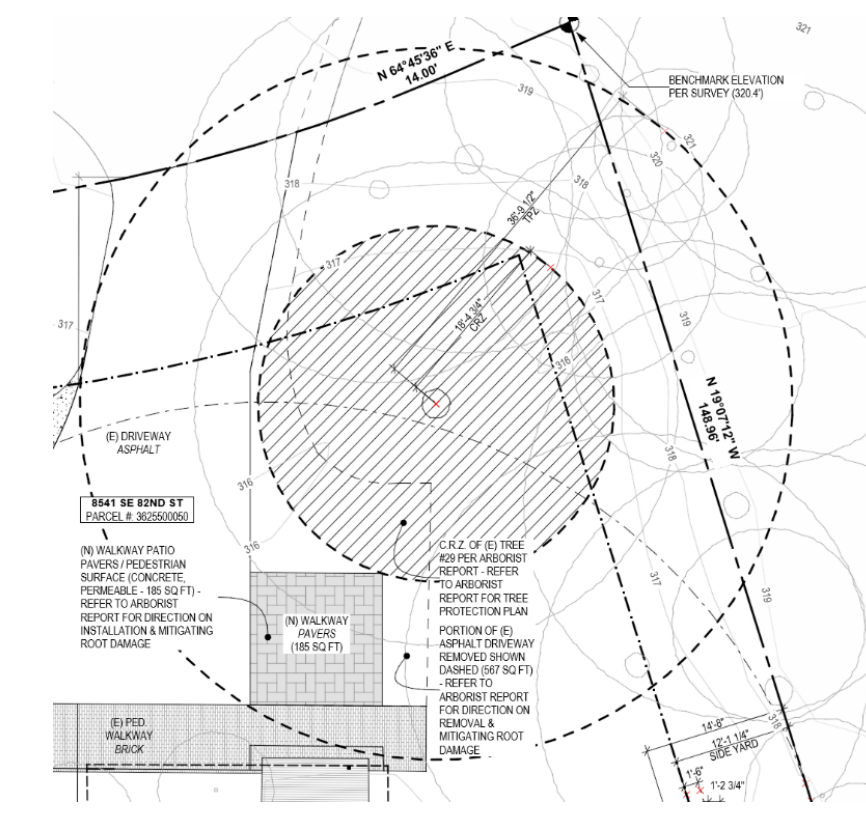
*Arborist woodchips are less costly and hold up better, they are the preferred mulch, in moderate to high traffic areas.

TREE 29 Additional Required Tree Protection Measures.

| ID | Species | Latin | DBH | Spred | Condition - Health | Condition - Structure | Landmark Grove ⁹ Exceptional | Development | TPZ - Radius (ft) | CRZ - Radius (ft) | Notes |
|----|----------------|--------------------------|------|-------|--------------------|-----------------------|---|-------------|-------------------|-------------------|--------------------|
| 2 | Big leaf maple | <i>Acer macrophyllum</i> | 36.8 | 40 | Good | Good | Exceptional | R-Viable | 36.8 | 18.4 | Nice specimen tree |

Big leaf maples have a low tolerance to construction and are not tolerant of fill. (Mathey, Clark). Removal of the asphalt under the tree is required. If done with care the removal of the asphalt will have many health benefits for the tree and greatly increase its long-term viability. Originally it was proposed to remove the asphalt and install pavers. The installation of the pavers has been removed from the plans. The following shall be done to ensure that the maple tree has little to no impact from the proposed work.

- All work within the trees CRZ and TPZ shall be overseen by a Qualified ISA or ASCA Arborist. The Arborist shall have the authority to stop all work needed to protect the tree.
- The asphalt shall be removed with a small to medium sized track hoe or mini excavator.
- The asphalt shall be removed slowly so as not to injure any roots that may be near the surface, and in such a manner that the equipment stays on the undisturbed asphalt.
- Immediately upon completion of the asphalt removal; the 6' tall chain link tree protection fencing shall be installed along the TPZ, and inspected, prior to any additional construction activity commencing.
- 4-inches of woody mulch or bark shall be installed under the tree's dripline (keep mulch a min. of 8-inches away from the tree's trunk). Watering with roughly 1 to 1.5-inches of water is recommended as well.
- Supplemental watering shall be done bi-monthly June – September as needed.
- These requirements are in addition to the tree protection details found in Attachment-3.

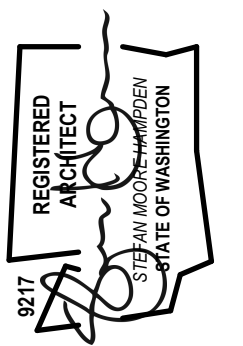


⁹ MMCC 19.16.010 Grove = 8 or more trees ≥ 10-inches DBH that form a continuous canopy (exceptional unless hazardous).

Mulching guidelines for urban landscapes

- Depth of mulch application is dependent upon mulch texture, density, material decomposition rate, and climate. Wooden chip mulch should be applied and maintained at depths of 3-6 inches for trees. Materials that are finer, denser, and slower to decompose should be applied at lesser depths. thicker mulch layers should be applied in arid regions to retain more water in the soil.
- Apply a sufficiently thick layer of mulch, usually 2-4 inches, to kill existing weeds and prevent new weed seeds from germinating or reaching the soil surface. If thinner layers are applied, kill or remove weeds prior to installing mulch.
- Do not place impervious plastic sheeting or fabric barriers under mulch. Impervious barriers stop water movement and limit incorporation of organic matter into the soil.
- The mulch area should cover as much of the tree root zone as possible, from near the trunk of the dripline, is considered ideal.
- For recent transplants, mulch beyond the root ball. The minimum recommended radius is 3 feet. Maintain mulch for at least three years to facilitate root growth and protect trees from mechanical damage.
- For larger existing trees, the minimum radius for mulch is at least three times the trunk diameter.
- Mulch applied as a continuous bed around multiple trees is more effective than single rings around individual trees.
- Average chip size of most organic mulches should be 1-2 inch.
- Avoid woodchips from trees that are known to have allelopathic affects (e.g., *Juglans nigra*) and from individual trees that may have soil transmittable diseases (e.g., Verticillium wilt).

On wet sites, soil drying can be promoted by removing organic mulches. Be aware of some other potential negative impacts of mulches, including: toxicity (allelopathy and "sour" anaerobic mulches with pH of <-2.5), slime molds (unsightly, but mostly harmless), matting (hydrophobic layers from fungal mats and mulches), flammability, and some fungus problems (e.g., Sphaerobolus, Mutinuscaninu, and M. elegans).



Approved by:

| Issue | Issue date | Description | Printed |
|-------|------------|---------------------------|-----------|
| | 10.17.23 | PRELIMINARY PRICING SET | 1/16/2025 |
| | 02.19.24 | VE COORDINATION SET | |
| | 03.25.24 | COORDINATION SET | |
| | 07.03.24 | PERMIT APPLICATION SET | |
| | 11.27.24 | PERMIT CORRECTIONS 01 SET | |
| | 01.16.25 | PERMIT CORRECTIONS 02 SET | |

ATTACHMENT 5 - TREE INVENTORY AND REPLACEMENT

TREE INVENTORY & REPLACEMENT SUBMITTAL
INFORMATION

EXCEPTIONAL TREES

Exceptional Trees- means a tree or group of trees that because of its unique historical, ecological or aesthetic value constitutes an important community resource. A tree that is rare or exceptional by virtue of its size, species, condition, cultural/historical importance, age, and/or contribution as part of a tree grove. Trees with a diameter of more than 36 inches, or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table shown in MICC 19.16 under Tree, Exceptional.

List the total number of trees for each category and the tree identification numbers from the arborist report.

Number of trees 36" or greater 2

List tree numbers: 29, 38

Number of trees 24" or greater (including 36" or greater) 7

List tree numbers: 26, 27, 29, 33, 36, 38, 40

Number of trees from Exceptional Tree Table (MICC 19.16)

List tree numbers: 29, 30, 31, 33, 38, 42

LARGE REGULATED TREES

Large Regulated Trees- means any tree with a diameter of 10 inches or more, and any tree that meets the definition of an Exceptional Tree.

Number of Large Regulated Trees on site 16 (A)

List tree numbers: 26-34 36-42

Number of Large Regulated Trees on site proposed for removal 0 (B)

List tree numbers:

Percentage of trees to be retained ((A-B)/Ax100) note: must be at least 30% 100 %

RIGHT OF WAY TREES

Right of Way Trees- means a tree that is located in the street right of way adjacent to the project property.

Number of Large Regulated Trees in right of way 0

List tree numbers:

Number of Large Regulated Trees in right of way proposed for removal

List tree numbers;

Reason for removal:

TREE REPLACEMENT

Tree replacement- removed trees must be replaced based on the ratio in the table below. Replacement trees shall be conifers at least six feet tall and or deciduous at least one and one-half inches in diameter at base.

Table with 4 columns: Diameter of Removed Tree (measured 4.5' above ground), Tree replacement Ratio, Number of Trees Proposed for Removal, Number of Tree Required for Replacement Based on Size/Type. Rows include categories like 'Less than 10"', '10" up to 24"', 'Greater than 24" up to 36"', 'Greater than 36" and any Exceptional Tree', and a 'TOTAL TREE REPLACEMENTS' row.

Table with 8 columns: Category, Total Trees, Hazard Non-Viable, Conflict W/ plans, Trees Retained, Viable Trees Removed, Replacement Ratio, Required Replant. Rows include categories like '>36" & Exceptional', 'Lg 24-36', 'Lg 10-24', 'Small < 10"', 'Small < 10', and 'TOTAL'.

¹⁰ In a Critical Area or Critical Area Buffer or On Public Property.

REPLANTING

MICC 19.10.070 Table A; trees that are remove shall be replanted at the ratio:
<10" 1:1, 10" to 24" 2:1, 24" to 36" 3:1 >36" and exceptional trees 6:1

Table with 8 columns: Category, Total Trees, Hazard Non-Viable, Conflict W/ plans, Trees Retained, Viable Trees Removed, Replacement Ratio, Required Replant. Rows include categories like '>36" & Exceptional', 'Lg 24-36', 'Lg 10-24', 'Small < 10"', 'Small < 10', and 'TOTAL'.

No additional trees are required to be planted⁵. See Attachment 6-Tree Inventory and Replacement

TREE PROTECTION ZONES (TPZ)

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. With proper preparation, often costing little or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

General

- 1. The TPZ is the optimal protection zone set to preserve trees during construction. The TPZ radius generally is 8-Inches to 18-Inches of protection for every 1-Inch of DBH, based on the trees size, vigor and construction tolerances (ANSI A300 Part 5 BMP, Matheny, Clark, 1998).
- 2. The TPZ can usually safely be reduced by 20% as long as it does not impact the CRZ. Greater than 20% reductions may be possible, pending review, written permission, and direct over site of the work, by the Consulting Arborist.
- 3. The trees to be saved, must be protected during construction by temporary 6' tall chain-link, or like fencing, located 10' beyond the edge of the trees farthest extending limbs on all sides (dripline). The individual tree protection zones (TPZ) are 10' past the driplines of the tree(s), unless otherwise delineated by A.B.C. Consulting Arborist LLC. See Attachment 2 for tree specific TPZ and CRZ.
- 4. No irrigation lines, trenches, or other utilities shall be installed within the TPZ, without detailed written instructions and the oversight of the Consulting Arborist, to reduce the impacts to the tree roots, and construction related stressors. Cuts or fills should impact no more than 20% of a tree's root system. If topsoil is added to the root zone of a protected tree, the depth should not exceed 2 inches of a sandy loam or loamy fine sand topsoil and should not cover more than 20% of the root system.
- 5. If roots are encountered outside the TPZ during construction, they shall be cut cleanly with a saw (not ripped or torn) and covered immediately with moist soil. Noxious vegetation within the critical root zone should be removed by hand. If a proposed save tree must be impacting by grading or fills, then the tree should be re-evaluated by A.B.C. Consulting Arborist LLC to determine if the tree can be saved with mitigating measures, or if the tree should be removed. See Attachment 3 for tree protection instructions.

⁴ In a Critical Area or Critical Area Buffer or On Public Property.

⁵ Replacement trees SHALL primarily be native / Conifers >6-feet / Deciduous ≥ 1.5-inch caliper. Landscape plan to be provided by client.

CRITICAL ROOT ZONES (CRZ)

- 1. The CRZ is the area where the roots vital for the tree's survival are located, the CRZ is generally 1/2 of the TPZ. At no time or for any reason shall the roots within the CRZ be impacted.

FENCING

- 1. 6' tall chain link (or like fencing) shall be installed the TPZs prior to commencement of site clearing and shall remain in place for the duration of the project. When possible, it is preferred that trees be fenced as a group, rather than individuals. At no time shall any vehicle or equipment be allowed inside the TPZ/Fencing. No placing or stock-piling of any material of any kind shall be allowed inside the TPZ.
- 2. Removal of any vegetation within the TPZ shall be done by hand. Should any disturbance be required inside the TPZ to install utilities or any other needs during the construction period, they will require project specific instructions by the Consulting Arborist and approval by the city prior to undertaking any said activity in the TPZ.

ROOT PROTECTION

- 1. Any roots encountered of 1" in diameter or greater, shall be cut with loppers, pruners, reciprocal saw or like device to provide a clean smooth cut. At no time, shall 1" or greater diameter roots be ripped or torn. Exposed roots shall be covered with wet burlap, or like item, to keep roots from drying out and shall be covered with soil as soon as reasonably possible.
- 2. Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations. Protect root systems from damage due to removal of adjacent trees.

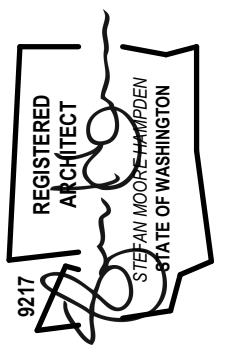
SEE ATTACHMENT 3 For Complete Tree Protection Instructions – Including specific instructions for tree #29 and offsite tree #38

Thank you for contacting A.B.C. Consulting Arborists LLC for your arboricultural needs.

Sincerely,

Daniel Maple
Daniel Maple, Consulting Arborist

Registered Consulting Arborist #627
ISA Municipal Specialist #PN-7970AM
ISA Tree Risk Assessment Qualified (TRAQ)
ISA Board Certified Master Arborist #PN-7970BM



Approved by:

Table with 2 columns: issue date, description. Rows include: 10.17.23 PRELIMINARY PRICING SET, 02.19.24 VE COORDINATION SET, 03.25.24 COORDINATION SET, 07.03.24 PERMIT APPLICATION SET, 11.27.24 PERMIT CORRECTIONS 01 SET, 01.16.25 PERMIT CORRECTIONS 02 SET.