

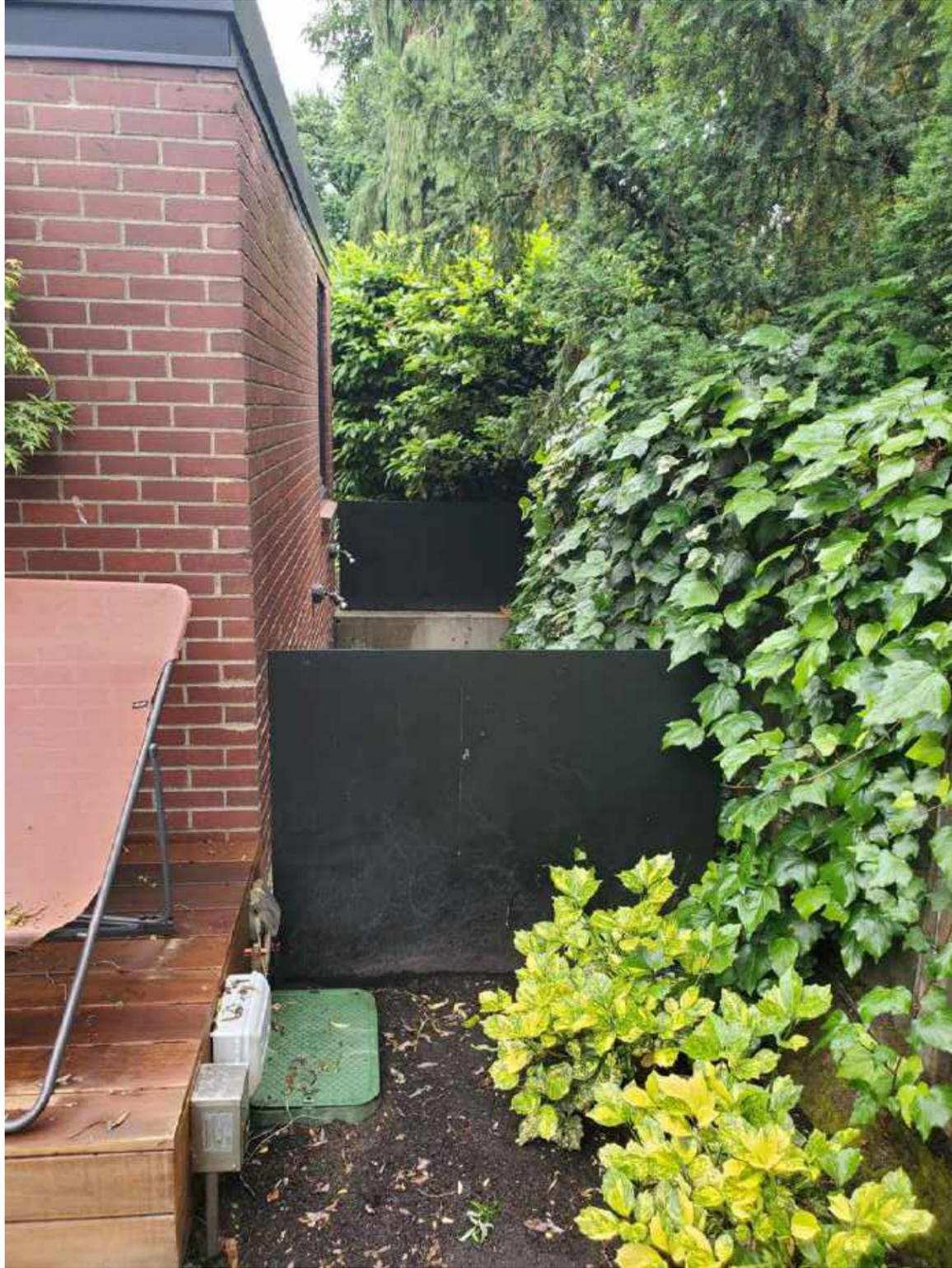
EXISTING CONDITIONS-FRONTYARD



EXISTING CONDITIONS-FRONTYARD



BLACK STEEL DETAILS AT EXISTING HOUSE

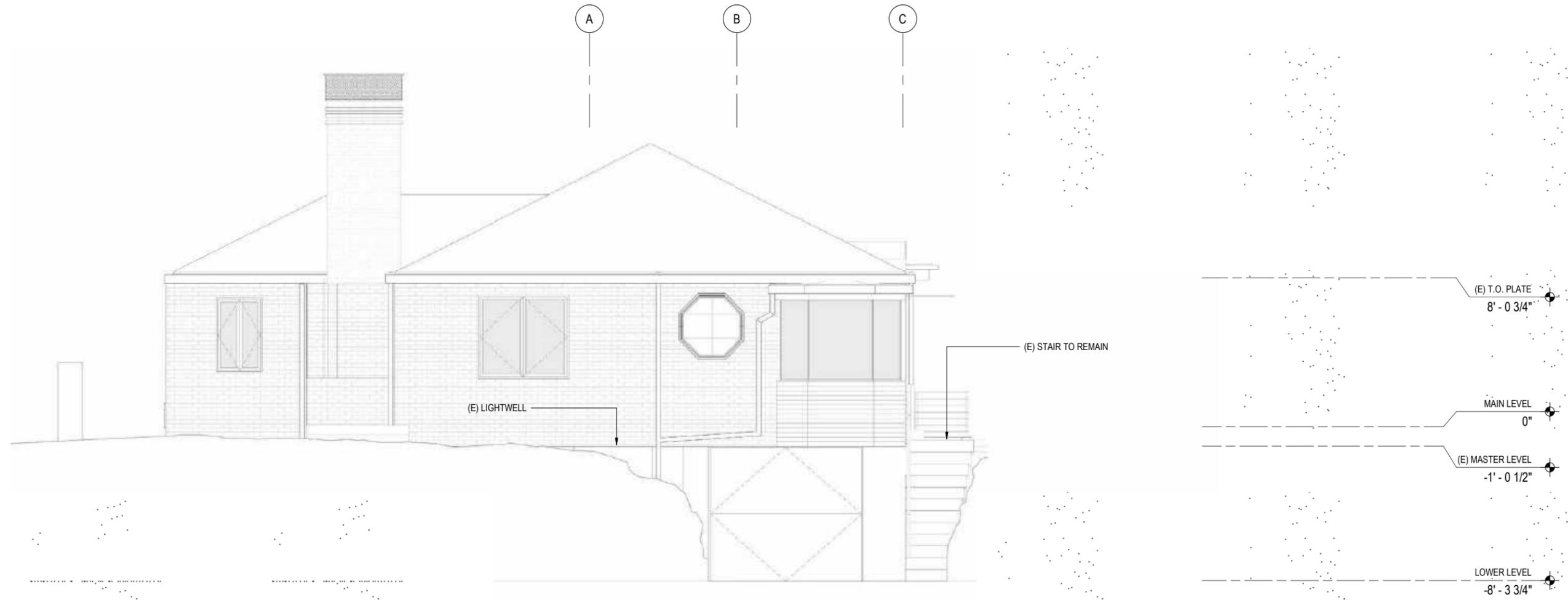


**BOTHWELL**

Farivar-Riehle

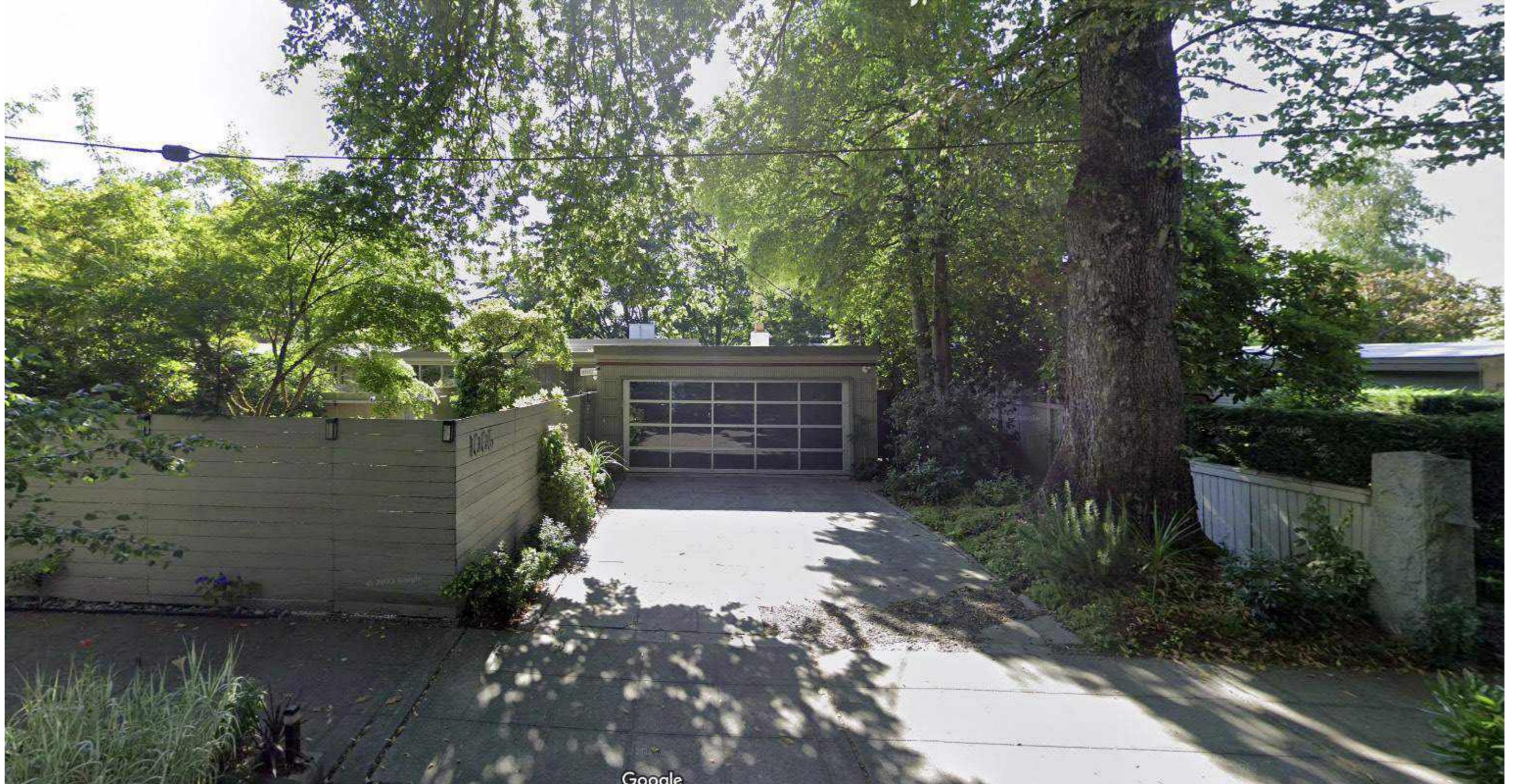
947 Harvard Avenue East, Seattle

ELEVATION EXISTING FRONT YARD



2 EAST ELEVATION  
SCALE: 1/4" = 1'-0"

HOUSE IN NEIGHBORHOOD- 1005 BOYLESTON AVENUE EAST



**BOTHWELL**

Farivar-Riehle

947 Harvard Avenue East, Seattle

HOUSE IN NEIGHBORHOOD- 761 BOYLESTON



**BOTHWELL**

Farivar-Riehle

947 Harvard Avenue East, Seattle

HOUSE IN NEIGHBORHOOD- 1048 SUMMIT AVE EAST



**BOTHWELL**

Farivar-Riehle

947 Harvard Avenue East, Seattle

HOUSE IN NEIGHBORHOOD- 912 HARVARD AVENUE EAST



**BOTHWELL**

Farivar-Riehle

947 Harvard Avenue East, Seattle

HOUSE IN NEIGHBORHOOD- 1000 BELLEVUE PLACE EAST

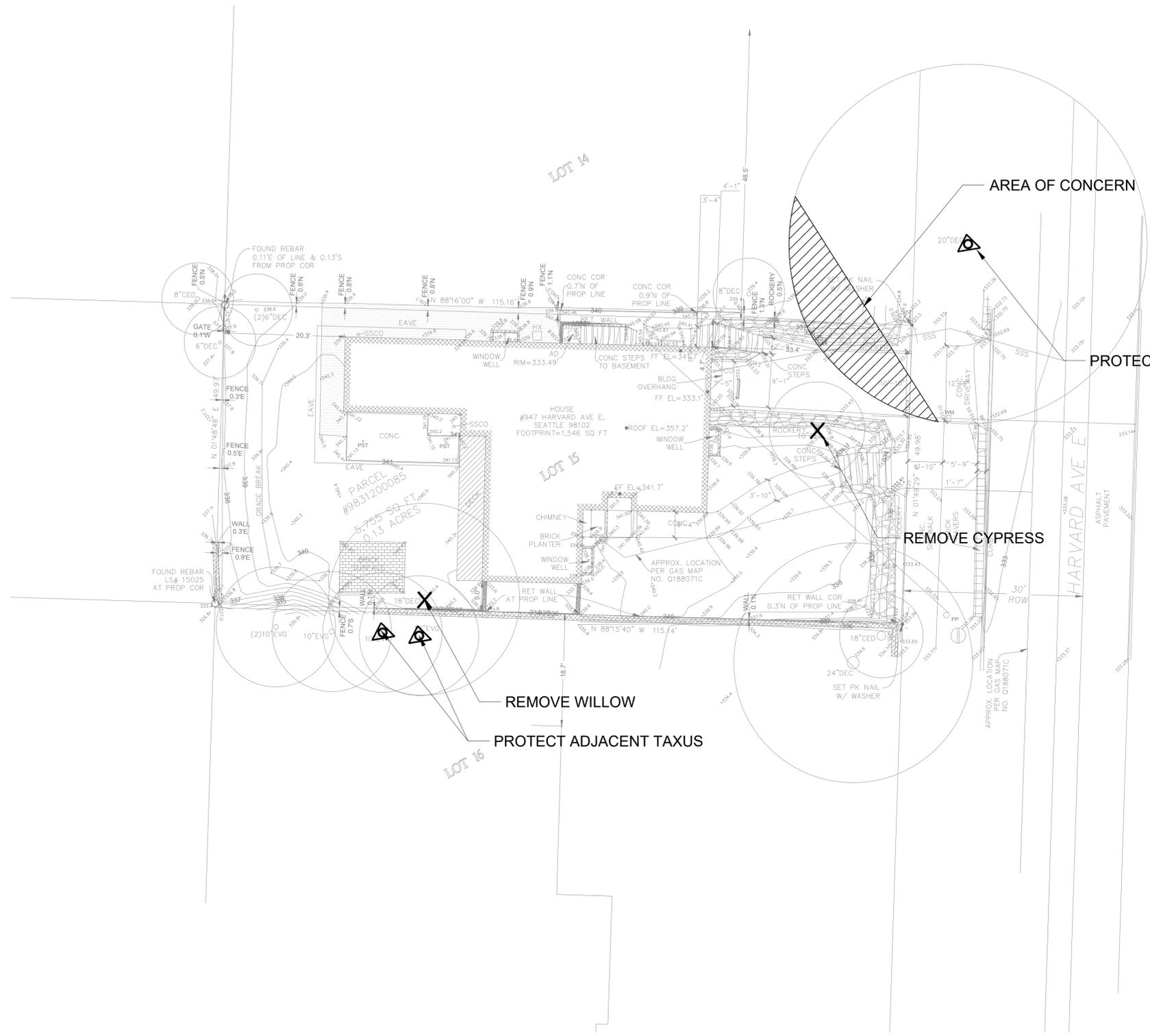


**BOTHWELL**

Farivar-Riehle

947 Harvard Avenue East, Seattle





**LEGEND**

- LIMIT OF WORK
- X EXISTING TREES TO BE REMOVED
- △ EXISTING TREES TO REMAIN – PROTECT AS PER TYPICAL TREE PRESERVATION PLAN.

**DEMOLITION NOTES**

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SITE CONDITIONS BOTH ABOVE AND BELOW THE SURFACE OF THE GROUND PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS & ACTUAL FIELD CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
2. CONDUCT WORK TO MINIMIZE DISTURBANCE OF ROADS, STREETS, WALKS AND ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE NOR OBSTRUCT STREETS, WALKS, AND OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION
3. CONTRACTOR SHALL EXERCISE CARE IN ALL OPERATIONS TO PROTECT EXISTING UNDERGROUND UTILITIES AND TO AVOID DISTURBING OR DAMAGING THEM. ANY DAMAGE RESULTING FROM THIS WORK MUST BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ELECTRICAL, IRRIGATION & DRAINAGE SYSTEMS THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
5. REMOVE, SALVAGE & DELIVER TO OWNER, ALL ITEMS DETERMINED SALVAGEABLE BY OWNER
6. ALL LANDSCAPE AND TREES NOT IDENTIFIED FOR REMOVAL ARE TO BE PROTECTED.
7. VERIFY EXISTING CONDITIONS AT THE SITE WHETHER INCLUDED OR NOT ON THE DRAWINGS. PERFORM ALL WORK EVIDENT BY SITE INSPECTION TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE CONSTRUCTION DOCUMENTS FOR THE FINISHED AREA.

**NOT FOR CONSTRUCTION**

**FARIVAR RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102

REVISIONS:  
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25% CD

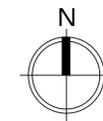
DATE: 11/18/2023

**TREE PROTECTION & REMOVAL**

SCALE: 1" = 10'-0"

**L1.0**

**CALL FOR A UTILITY LOCATE**  
 48 HOURS BEFORE YOU DIG: 1-800-332-2344



Client: Alex Farivar  
Assignment: Tree Protection Plan

TABLE OF TREES  
947 Harvard Ave East, Seattle, WA 98102

Inventory Date: 6/2/2023  
Report Date: 10/30/2023

Tree #	Common Name	Scientific Name	DSH (inches)	Drip-Line (feet)	Condition	Retention Suitability	Comments	Proposal	Tier
1	Corkscrew willow	<i>Salix matsudana</i> 'Tortuosa'	16.5	15	poor	poor	diseased, extensive crown dieback, misshapen	remove	3
2	Lawson cypress	<i>Chamaecyparis lawsoniana</i>	18	12	poor	poor	infected with canker, under attack by engraver beetle, extensive damage to trunk, roots embedded in rockery	remove	3
3	European beech	<i>Fagus sylvatica</i>	23.5	21	good		street tree; location in sidewalk ROW prevents erection of tree protection fencing		3

**Photos – Cypress**



**Photo 1: Image taken from street looking west.**



**Photo 2: Image taken from home showing limited working space for construction of new wall.**



**Photo 3: Image looking west shows proximity of tree to existing rock wall.**



**Photo 4: Close up image showing roots imbedded in rock wall.**

**Photos – Cypress (cont.)**



**Photo 5: Image show sap flow – likely a response to canker attack or beetle infestation.**



**Photo 6: Images of several areas of canker attack (arrows).**



**Photo 7: Image shows bark cracking and beetle galleries.**



**Photo 8: Image of knife inserted in trunk wound to indicate depth of damage.**

**TREE PROTECTION PLAN**

**For**

**Landscape Improvements**  
**947 Harvard Ave East, Seattle WA**

**Delivered to:**  
**Alex Farivar**  
**947 Harvard Ave East**  
**Seattle WA 98102**

**October 30, 2023**

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## INTRODUCTION

### **Alex Farivar – 947 Harvard Ave East (Parcel #983120-0085)**

#### **Report Summary**

This report includes the location and status of the trees that fall within the perimeters of the proposed development. The trees are marked on the site plan.

#### **General Information**

##### *Project Identification and Location:*

Landscape Improvements, 947 Harvard Ave East, Seattle, WA 98102

##### *Proposal*

The project proposes landscape improvements to the subject address.

#### **Terms of the Assignment**

- Locate and identify the trees that will be affected based on the proposed construction according to the provided site plan.
- Provide findings and recommendations pertaining to the trees.

#### **Tree Inventory and Assessment**

On 6/2/2023 I performed a pre-construction site visit. The trees were verified according to the site plan provided by Ann Marie Schneider, landscape designer for Mr. Farivar. I was asked to make any corrections needed to tree species, size, and location. The trees in question were evaluated for impacts by the construction project, their overall condition was verified in comparison to the provided site plan which indicates the existing conditions and the site improvements as identified in the site plan. The data collected for each tree includes the tree identifier, common and scientific names, trunk diameter (DSH), dripline measurement, tree condition, retention suitability, comments, proposal, and tree tier. I inventoried and assessed three trees on this lot. Based on the city of Seattle Municipal Code (SMC), trees measuring 6 inches or greater in diameter at standard height (DSH) are required to be assessed for development projects.

#### **Purpose and Use of the Report**

The purpose of this report is to establish a Tree Protection Plan that will serve as directions that need to be followed during the construction project. This report documents the information as intended to be used by the owner, construction contractor, the sub-contractors, and the tree care and landscape professionals who are involved in the construction project.

#### **Limits of the Report**

The trees were visually assessed only, no tools were used.

**Observations**

## Tree #1

Tree is a corkscrew willow (*Salix matsudana* ‘Tortuosa’) 16.5-inch DSH (Diameter at Standard Height, 54” above grade) and approximately 45-foot height. The tree is located in the backyard on S/SW side. The crown of the tree exhibits approximately 25 percent dieback and is imbalanced due to previous pruning. Approximately two-thirds of the tree is growing over the south property line and into the neighbor’s yard – encroaching a row of yew trees growing in that yard. The root crown of tree is not visible (refer to *Photos – Willow*). This is a Tier 3 tree.

## Tree #2

Tree is a Lawson cypress (*Chamaecyparis lawsoniana*) and is multi-stem, measuring 12.8 x 9 x 7 x 5.5-inch DSH. Tree exhibits extensive evidence of canker disease as well as beetle attack (possibly secondary to canker). The tree is approximately 35-feet tall and planted on a rockery on the south side of the driveway in front of the home. Roots of the tree are embedded in the rockery (refer to *Photos – Cypress*). This is a Tier 3 tree.

## Tree #3

Tree is a European beech (*Fagus sylvatica*) measuring 23.5-inch DSH and is planted in the right-of-way along Harvard Ave East, just north of the Farivar driveway entrance. The tree appears in good health. Potential disturbance would likely be restricted to a small section of the overall Critical Root Zone (CRZ). This is a Tier 3 tree.

**Discussion – Tree Removal**

Two Tier 3 trees are to be removed.

## Tree #1

**I recommend removal of this tree.** The species is typically fast growing, but short-lived (source: [landscapeplants.oregonstate.edu](http://landscapeplants.oregonstate.edu)). It is very disease-prone in our region and often suffers from infection by willow scab, powdery mildew, and rust. Common pests that infest the tree include aphids, leaf beetles, and lace bugs. The tree is also prone to physical damage caused by snow and ice events - often resulting in significant deformity. Tree health and condition is poor.

## Tree #2

**I recommend removal of this tree.** From a health standpoint, the tree is in poor condition. The tree exhibits extensive evidence of canker disease as well as beetle attack (possibly secondary to canker). Additionally, the species is very susceptible to infection by the fungal pathogen *Phytophthora lateralis*. When infection does occur, decline and dieback progress rapidly and are nearly always fatal.

**Discussion – Tree Protection**

Seattle Municipal code (SMC) 25.11.060 requires Tier 1, Tier 2, Tier 3, and Tier 4 trees, including off-site Tier 1, Tier 2, Tier 3, and Tier 4 trees with canopies overhanging and/or roots extending onto the lot, to be documented on all plan review sheets within a plan set.

### **Tree Protection Plan**

- Typically, six-foot tall chain link fencing is placed at the edge of the CRZ. In this situation – because the tree is growing in a ROW planter between the sidewalk and the street – tree protection barriers will likely be constructed using plywood sheets. Placing this box-shaped barrier close to the tree trunk will limit the potential for trunk damage while still permitting continued use of the sidewalk and adjacent driveways.
- Fencing or approved barriers must be installed prior to the start of construction and kept in place for the duration of the work.
- No soil disturbance is allowed within the fenced area and no dumping of materials in the protection area is allowed.

### **Prohibited Activities Inside the Tree Protection Zone**

Construction activities are prohibited inside any part of the Tree Protection Zone. Should access be required due to unforeseen circumstances, prior approval from the project arborist is mandated and he/she shall be onsite to determine mitigation to the proposed activity.

Prohibited activities include but are not limited to:

- Ground disturbance including excavation or trenching.
- Construction activity involving vehicular or equipment access.
- Storage of equipment and materials (including soil and gravel).
- Impervious surfaces such as pavement.
- Underground utilities.

Violations of the provisions may result in liability for damages and applicable fines.

### **Conclusion**

The trees are in Poor to Good condition, taking species and age into consideration. Provided with the information I received, it is my professional opinion that the performance path will suffice from an arboricultural standpoint. Care should be taken to follow the recommendations and provisions outlined in this TPP to ensure the success of the retention efforts. I highly recommend a job site walkthrough prior to the start of the project.

Respectfully submitted,  
Scott Selby



## **Appendix A – Assumptions and Limiting Conditions**

While trees vary in their tolerance to changed conditions, disruption in any form of the environment to which the trees have grown accustomed may result in adverse reaction. Human activity among and near trees is inherently contrary to tree welfare and there are inherent risks associated. The following are limitations to this report:

1. All information presented herein covers only the trees examined at the area of inspection, and reflects the conditions observed of said trees at the time of inspection.
2. Care has been taken to obtain all information from a reliable source. However, the Arborist can neither guarantee nor be responsible for accuracy of information provided by others.
3. Observations were performed visually without probing, dissecting, coring, or exaction, unless noted otherwise, and in no way shall the observer be held responsible for any defects that could have only been discovered by performing said services in specific area(s) where a defect was located.
4. All trees possess the risk of failure. Trees can fail at any time, with or without obvious defects or applied stress. Trees are living biological organisms, and I cannot predict nor guarantee their stability or failure.
5. No guarantee or warranty is made, expressed or implied, that defects of the trees inspected may not arise in the future.
6. This report and any values/opinions expressed herein represent my opinion as an Arborist. Inaction on the part of those receiving the report is not the responsibility of the Arborist.
7. Sketches or drawings in this report are intended as visual aids only and are not necessarily to scale. They should not be used as engineering or architectural reports or surveys.
8. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear and under responsible ownership and competent management.
9. No assurance can be offered that if any recommendations or precautionary measures suggested are accepted and followed, that the desired results may be attained.
10. No responsibility is assumed for the methods used by any person or company executing any recommendations provided in this report.
11. The information provided herein represents an opinion, and in no way is the reporting of a specified finding, conclusion, or value based on payment for services.
12. This report is proprietary to *Scott Selby Consulting LLC* and may not be reproduced in whole or in part without written consent. This report has been prepared exclusively for use of the parties to which it has been submitted.
13. Should any part of this report be altered, damaged, corrupted, or lost, the entire evaluation shall be invalid.
14. The consultant/appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment for such services.
15. Possession of this report does not imply right of publication or use for any other purpose by any other than the person to whom it is addressed, without the prior expressed written consent of the consultant/appraiser.

## Appendix B – Certification of Performance

I, Scott Selby, certify that:

- I have personally inspected the trees and the property referred to in this report and have stated my findings accurately. The extent of the evaluation or appraisal is stated in the attached report the Terms of Assignment.
- I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
- The analysis, opinions and conclusions stated herein are my own and are based on current scientific procedures and facts.
- My analysis, opinions and conclusions were developed, and the report has been prepared, according to commonly accepted arboricultural practices.
- No one provided significant professional assistance to me, except as indicated in the report.
- My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

I further certify that I am a member of, and certified by, the International Society of Arboriculture. I am also a member of the American Society of Consulting Arborists. I have been involved in the arboricultural field in full-time capacity for a period of 30 years.



**Scott Selby**

Scott Selby Consulting LLC

Registered Consulting Arborist #749

Board Certified Master Arborist #PN-1775B

ISA Qualified Tree Risk Assessor

206.849.4718 cell

[scott\\_selby@comcast.net](mailto:scott_selby@comcast.net)

## **Appendix C – Methods**

### **Measuring**

I measured the diameter of each tree at 54 inches above grade, diameter at standard height (DSH).

### **Tagging**

Trees were not tagged.

### **Evaluating**

I evaluated tree health and structure utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts. An understanding of the uniform stress allows the arborist to make informed judgments about the condition of a tree.

### **Rating**

When rating tree health, I took into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. When rating tree structure, I evaluated the tree for form and structural defects, including past damage and decay. I have adapted ratings based on the Purdue University Extension formula values for health condition (Purdue University Extension bulletin FNR-473-W - Tree Appraisal). These values are a general representation used to assist arborists in assigning ratings.

Excellent - Perfect specimen with excellent form and vigor, well-balanced crown. Normal to exceeding shoot length on new growth. Leaf size and color normal. Trunk is sound and solid. Root zone undisturbed. No apparent pest problems. Long safe useful life expectancy for the species.

Good - Imperfect canopy density in few parts of the tree, up to 10% of the canopy. Normal to less than ¾ typical growth rate of shoots and minor deficiency in typical leaf development. Few pest issues or damage, and if they exist, they are controllable, or tree is reacting appropriately. Normal branch and stem development with healthy growth. Safe useful life expectancy typical for the species.

Fair - Crown decline and dieback up to 30% of the canopy. Leaf color is somewhat chlorotic/necrotic with smaller leaves and “off” coloration. Shoot extensions indicate some stunting and stressed growing conditions. Stress cone crop clearly visible. Obvious signs of pest problems contributing to lesser condition, control might be possible. Some decay areas found in main stem and branches. Below average safe useful life expectancy.

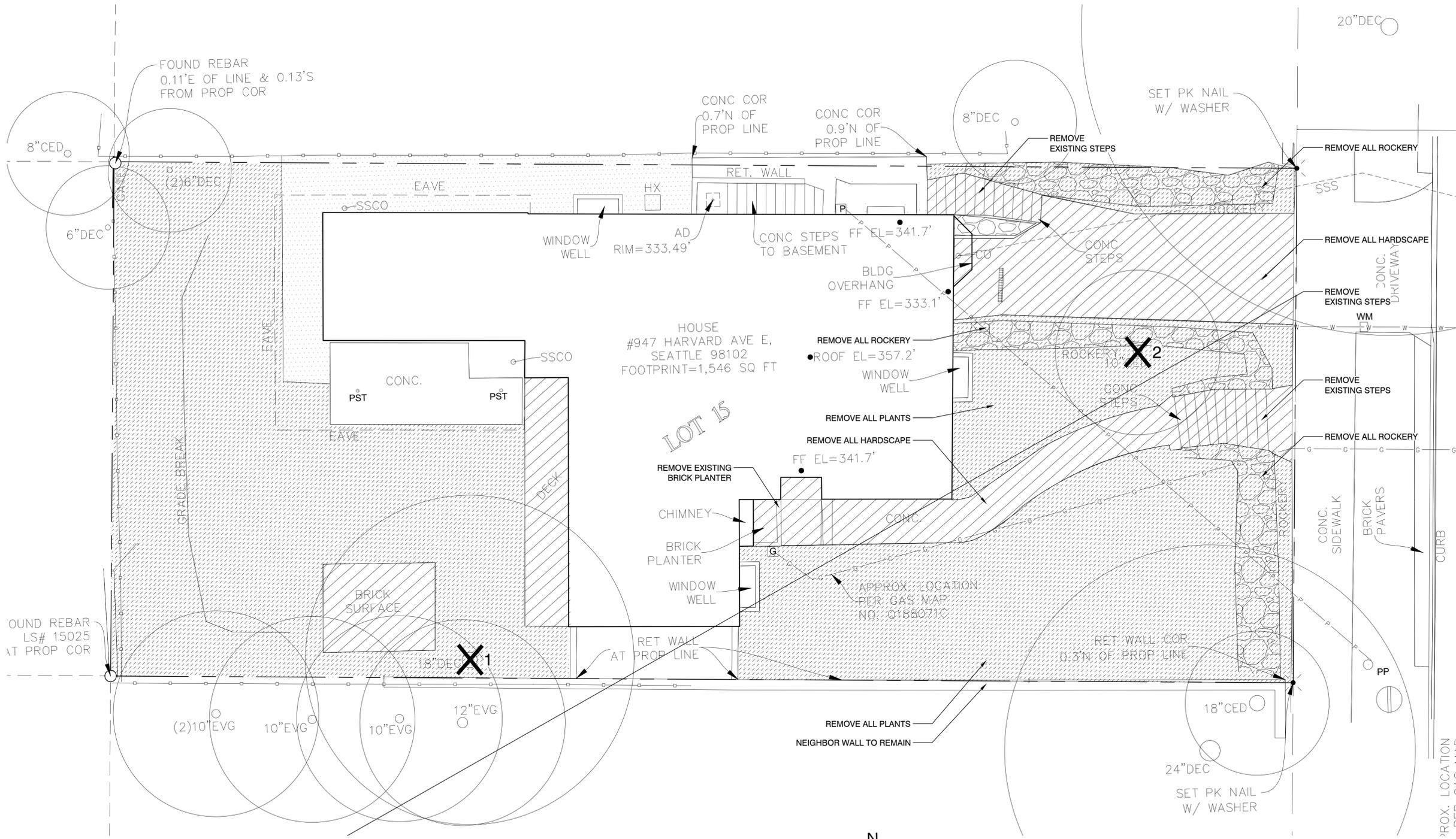
Poor - Lacking full crown, more than 50% decline and dieback, especially affecting larger branches. Stunting of shoots is obvious with little evidence of growth on smaller stems. Leaf size and color reveals overall stress in the plant. Insect or disease infestation may be severe and uncontrollable. Extensive decay or hollows in branches and trunk. Short safe useful life expectancy.

## Appendix D – Tree Protection Specifications

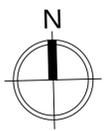
1. **Project Arborist:** The project arborists shall at a minimum have an International Society of Arboriculture (ISA) Certification and ISA Tree Risk Assessment Qualification.
2. **Tree Protection Zone (TPZ):** In some cases, the TPZ may extend outside tree protection fencing. Work within the TPZ must be approved and monitored by the project arborist.
3. **Tree Protection Fencing:** Tree protection shall consist of 6-foot chain-link fencing installed at the TPZ as approved by the project arborist. Fence posts shall be anchored into the ground or bolted to existing hardscape surfaces.
  - a) Where trees are being retained as a group, the fencing shall encompass the entire area including all landscape beds or lawn areas associated with the grove.
  - b) Per arborist approval, TPZ fencing may be placed at the edge of existing hardscape within the TPZ to allow for staging and traffic.
  - c) Where work is planned within the TPZ, install fencing at edge of TPZ and move to limits of disturbance at the time that the work within the TPZ is planned to occur. This ensures that work within the TPZ is completed to specification.
  - d) Where trees are protected at the edge of the project boundary, construction limits fencing shall be incorporated as the boundary of tree protection fencing.
4. **Access Beyond Tree Protection Fencing:** In areas where work such as installation of utilities is required within the TPZ, a locking gate will be installed in the fencing to facilitate access. The project manager or project arborist shall be present when tree protection areas are accessed.
5. **Tree Protection Signage:** Tree protection signage shall be affixed to fencing every 20 feet. Signage shall be fluorescent, at least 2' x 2' in size, with 3" tall text. Signage will note: "Tree Protection Area – Do Not Enter: Entry into the tree protection area is prohibited unless authorized by the project manager." Signage shall include the contact information for the project manager and instructions for gaining access to the area.
6. **Filter / Silt Fencing:** Filter / silt fencing within the TPZ of retained trees shall be installed in a manner that does not sever roots. Install so that filter / silt fencing sits on the ground and is weighted in place by sandbags or gravel. Do not trench to insert filter / silt fencing into the ground.
7. **Monitoring:** The project arborist shall monitor all ground disturbance at the edge of or within the TPZ, including where the TPZ extends beyond the tree protection fencing.
8. **Soil Protection:** No parking, foot traffic, materials storage, or dumping (including excavated soils) are allowed within the TPZ. Heavy machinery shall remain outside of the TPZ. Access to the tree protection area will be granted under the supervision of the project arborist. If project arborist allows, heavy machinery can enter the area if soils are protected from the load. Acceptable methods of soil protection include applying 3/4-inch plywood over 4 to 6 inches of wood chip mulch or use of AlturnaMats. (or equivalent product approved by the project arborist). Retain existing paved surfaces within or at the edge of the TPZ for as long as possible.
9. **Soil Remediation:** Soil compacted within the TPZ of retained trees shall be remediated using pneumatic air excavation according to a specification produced by the project arborist.
10. **Canopy Protection:** Where fencing is installed at the limits of disturbance within the TPZ, canopy management (pruning or tying back) shall be conducted to ensure that vehicular traffic does not damage canopy parts. Exhaust from machinery shall be located five feet outside the dripline of retained trees. No exhaust shall come in contact with foliage for prolonged periods of time.

## Glossary

CRZ	<b>Critical Root Zone.</b> The area of soil immediately adjacent to the trunk where roots essential for tree health and stability are located. The CRZ is subjective; there is no accepted formula to biologically define it. However, there may be regulations that define it. The <b>interior CRZ</b> radius is half the distance from the trunk as the CRZ.
DSH or DBH	<b>Diameter at Standard Height,</b> measured at 54 inches above grade.
Dripline	Imaginary line defined by the branch spread of a single plant or group of plants.
RPZ	<b>Root Protection Zone.</b> Invisible or imaginary circle that runs along or just outside the drip line. This area is important to the tree because it is where the most critical roots are located beneath the ground.
SDCI	Seattle Department of Construction and Inspections.
TPF	<b>Tree Protection Fencing.</b> A physical fence around a tree or cluster of trees to indicate retention or protection.
TPP	<b>Tree Protection Plan.</b> A comprehensive plan to encompass all site work before (site preparation and demolition), during (construction and site servicing), and after (tree fencing removal and final landscaping) development.
TPZ	A <b>Tree Protection Zone</b> an arborist-defined area surrounding the trunk intended to protect roots and soil within the CRZ and beyond, to ensure future tree health and stability. There are many methods for determining the size of the TPZ. The Drip Line method uses the tree canopy's drip line to define the boundary of the TPZ, where the entire area within the drip line is considered the TPZ. The Trunk Diameter method is based on diameter measured at DBH; this method is multiplied by a factor of 6-18 to determine the determine the radius of the TPZ. The unit of measure used to calculate the DBH with be the same unit as the TPZ. For example, a mature tree with medium tolerance to construction damage (a factor of 12) and a 30-inch trunk diameter would have a TPZ radius of 360 inches, or 30 feet.
Tree Tiers	For purposes of permitting, SDCI categorizes trees as Tier 1, Tier 2, Tier 3, and Tier4. Refer to <b>SDCI Tip 242B</b> for further detail.
TSP	<b>Tree Service Provider.</b> Any person or entity engaged in commercial tree work.



**PLAN**



**LEGEND**

- PROPERTY LINE
- FENCE LINE
- EXISTING TREES TO BE REMOVED
- EXISTING TREES TO REMAIN - PROTECT AS PER TYPICAL TREE PRESERVATION PLAN.
- REMOVE EXISTING PLANTS AND ROCKERY
- REMOVE EXISTING HARDSCAPE

**TREE SCHEDULE**

TREE #	COMMON NAME	CONDITION
1.	CORKSCREW WILLOW	POOR
2.	18" LAWSON CYPRESS	POOR

**DEMOLITION NOTES**

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SITE CONDITIONS BOTH ABOVE AND BELOW THE SURFACE OF THE GROUND PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN INFORMATION SHOWN ON THE DRAWINGS & ACTUAL FIELD CONDITIONS SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
2. CONDUCT WORK TO MINIMIZE DISTURBANCE OF ROADS, STREETS, WALKS AND ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE NOR OBSTRUCT STREETS, WALKS, AND OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION
3. CONTRACTOR SHALL EXERCISE CARE IN ALL OPERATIONS TO PROTECT EXISTING UNDERGROUND UTILITIES AND TO AVOID DISTURBING OR DAMAGING THEM. ANY DAMAGE RESULTING FROM THIS WORK MUST BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ELECTRICAL, IRRIGATION & DRAINAGE SYSTEMS THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS.
5. REMOVE, SALVAGE & DELIVER TO OWNER, ALL ITEMS DETERMINED SALVAGEABLE BY OWNER
6. ALL LANDSCAPE AND TREES NOT IDENTIFIED FOR REMOVAL ARE TO BE PROTECTED.
7. VERIFY EXISTING CONDITIONS AT THE SITE, WHETHER INCLUDED OR NOT ON THE DRAWINGS, PERFORM ALL WORK EVIDENT BY SITE INSPECTION TO ACHIEVE THE DESIRED RESULTS INDICATED ON THE CONSTRUCTION DOCUMENTS FOR THE FINISHED AREA.

REVISIONS:  
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PERMIT  
 DATE: 11/16/2023

**DEMO PLAN**

SCALE: 3/16"=1'-0"

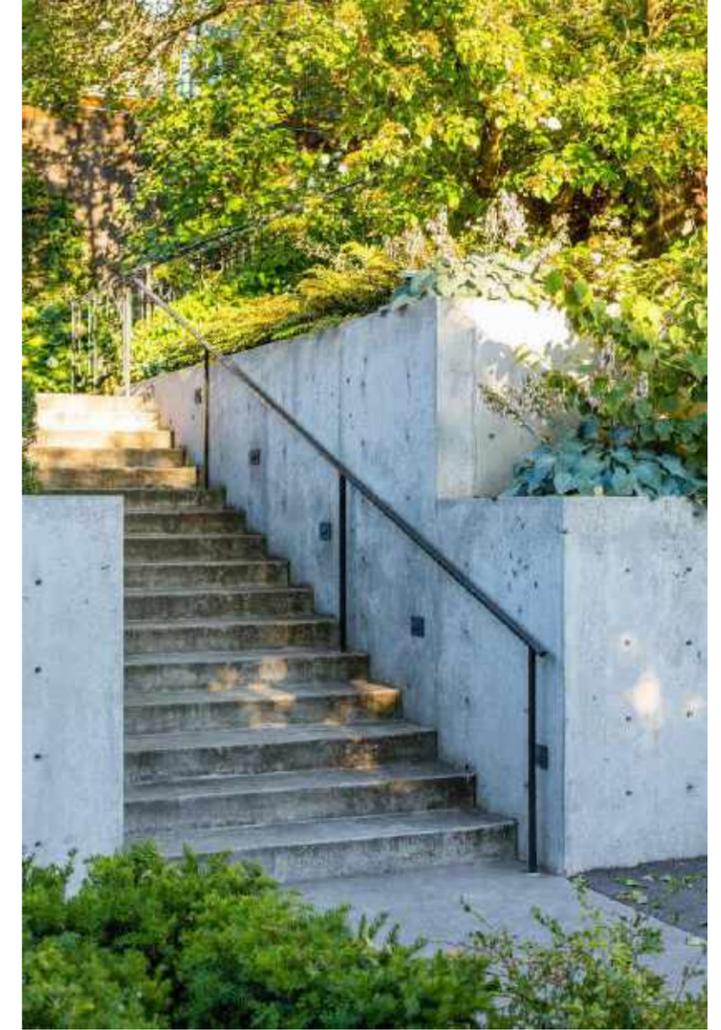
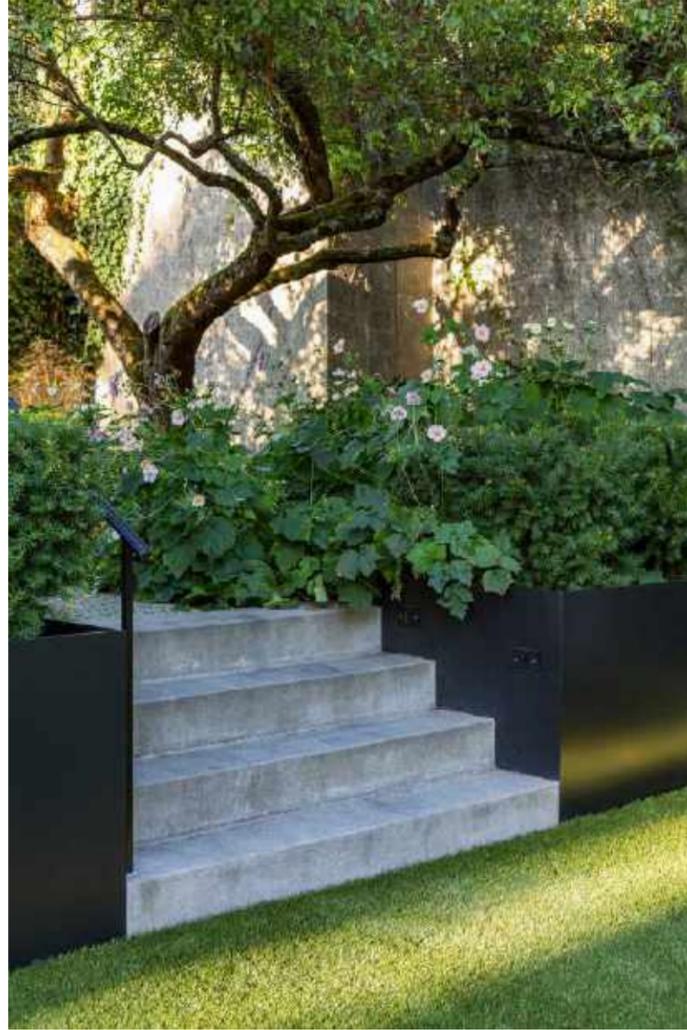
**L1.0**



REFERENCE IMAGES OF PROPOSED RETAINING WALLS



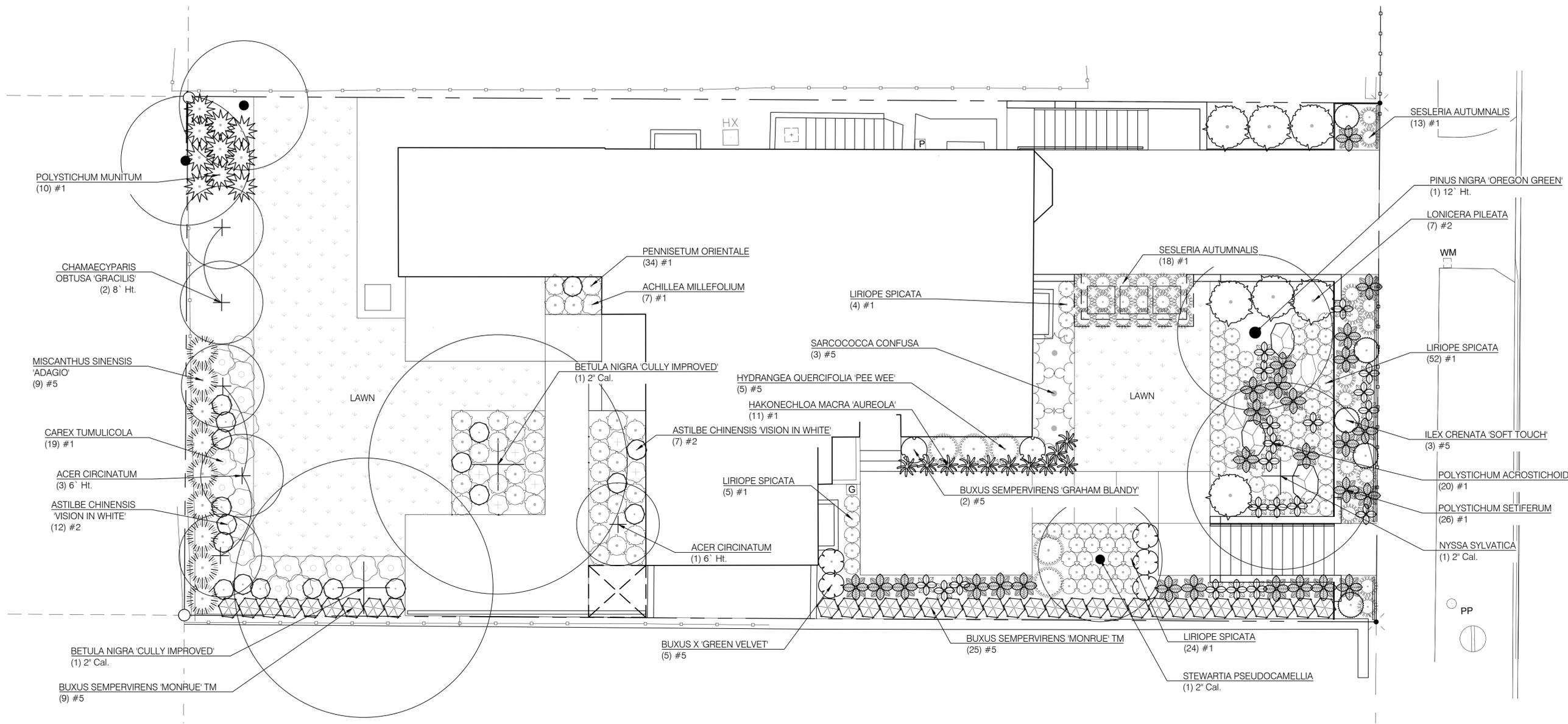
STEEL RETAINING WALL  
COLOR: POWDER COATED BLACK



CONCRETE RETAINING WALL  
WITH SNAP-TIES

**NOT FOR CONSTRUCTION**

**FARIVAR RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102



**PLAN**

**ALL TREES AND TREES PLANTING LOCATION IS COMPACTIBLE WITH EXISTING WIRES**

**PLANTING NOTES**

1. IRRIGATE ALL PLANTING ZONES. PROVIDE PROVIDE HEAD TO HEAD COVERAGE VIA POP-UP SPRAY HEADS AND DRIP EMITTERS.
2. DRAWING IS DIAGRAMMATIC. VERIFY ALL LOCATIONS AND CONDITIONS ON SITE WITH LANDSCAPE DESIGNER PRIOR TO PLANTING. COUNT ALL PLANT MATERIAL BEFORE BIDDING.
3. INSPECT ALL EXISTING CONDITIONS ON SITE AND LOCATE ALLEXISTING UTILITIES BEFORE CONSTRUCTION BEGINS. ALL TREE STAKING LOCATIONS TO BE APPROVED BY LANDSCAPE DESIGNER BEFORE ANY DIGGING.
4. CONTRACTOR TO REPAIR AT OWN EXPENSE ANY PROPERTY DAMAGE WHICH OCCURS DURING PROJECT INSTALLATION.
5. ALL PLANT MATERIAL TO BE GUARANTEED FOR ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER. CONTRACTOR SHALL STORE PLANT MATERIAL IN SHADE AND PROTECT FROM THE SUN. ENSURE ON SITE WATERING PRIOR TO PLANTING.
6. FINISH GRADE TO BE 1" BELOW ALL WALKS, CURBS, AND PAVING.
7. ALL PLANTING AREAS TO BE TOP DRESSED WITH MULCH.
8. ALL SHRUBS AND GROUNDCOVER TO BE PLACED USING TRIANGULAR SPACING UNLESS OTHERWISE INDICATED ON PLANS.

REVISIONS:  
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50% CD  
 DATE: 11/16/2023

**PLANTING PLAN**

SCALE: 3/16" = 1'-0"

**L4.0**

**PLANT SCHEDULE**

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	QTY
<b>TREES</b>				
	ACE CIR	ACER CIRCINATUM / VINE MAPLE	6' HT.	4
	BET CIM	BETULA NIGRA 'CULLY IMPROVED' / HERITAGE® IMPROVED RIVER BIRCH	2" CAL.	2
	CHA GRA	CHAMAECYPARIS OBTUSA 'GRACILIS' / SLENDER HINOKI FALSE CYPRESS	8' HT.	2
	NYS SYL	NYSSA SYLVATICA / BLACK TUPELO	2" CAL.	1
	PIN ORE	PINUS NIGRA 'OREGON GREEN' / OREGON GREEN AUSTRIAN PINE	12' HT.	1
	STE PSE	STEWARTIA PSEUDOCAMELLIA / JAPANESE STEWARTIA	2" CAL.	1

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
<b>SHRUBS</b>					
	BUX GRA	BUXUS SEMPERVIRENS 'GRAHAM BLANDY' / GRAHAM BLANDY COMMON BOXWOOD	#5	30" o.c.	2
	BUX MON	BUXUS SEMPERVIRENS 'MONRUE' TM / GREEN TOWER COMMON BOXWOOD	#5	24" o.c.	34
	BUX GRV	BUXUS X 'GREEN VELVET' / GREEN VELVET BOXWOOD	#5	30" o.c.	5
	HYD WEE	HYDRANGEA QUERCIFOLIA 'PEE WEE' / PEE WEE OAKLEAF HYDRANGEA	#5	36" o.c.	5
	ILE SOF	ILEX CRENATA 'SOFT TOUCH' / SOFT TOUCH JAPANESE HOLLY	#5	30" o.c.	5
	LON PIL	LONICERA PILEATA / BOX HONEYSUCKLE	#2	54" o.c.	7
	SAR CON	SARCOCOCCA CONFUSA / SWEETBOX	#5	48" o.c.	3

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
<b>GRASSES</b>					
	CAR TUM	CAREX TUMULICOLA / FOOTHILL SEDGE	#1	30" o.c.	19
	HAK AUR	HAKONECHLOA MACRA 'AUREOLA' / GOLDEN VARIEGATED FOREST GRASS	#1	24" o.c.	11
	MIS SIN	MISCANTHUS SINENSIS 'ADAGIO' / ADAGIO EULALIA GRASS	#5	36" o.c.	9
	PEN ORI	PENNISETUM ORIENTALE / ORIENTAL FOUNTAIN GRASS	#1	24" o.c.	34
	SES AUT	SESLERIA AUTUMNALIS / AUTUMN MOOR GRASS	#1	24" o.c.	31

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
<b>PERENNIALS</b>					
	ACH MI2	ACHILLEA MILLEFOLIUM / COMMON YARROW	#1	24" o.c.	7
	AST VWH	ASTILBE CHINENSIS 'VISION IN WHITE' / VISION IN WHITE CHINESE ASTILBE	#2	24" o.c.	19
	LIR CR2	LIRIOPE SPICATA / CREEPING LILYTURF	#1	18" o.c.	85
	POL ACR	POLYSTICHUM ACROSTICHOIDES / CHRISTMAS FERN	#1	24" o.c.	20
	POL MUN	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	#1	36" o.c.	10
	POL SET	POLYSTICHUM SETIFERUM / SOFT SHIELD FERN	#1	30" o.c.	27

REFERENCE IMAGES OF PROPOSED PLANTING - FRONT YARD



BLACK TUPELO



AUSTRALIAN GREEN PINE



JAPANESE STEWARTIA



GRAHAM BLANDY COMMON



GREEN TOWER BOXWOOD



GREEN VELVET BOXWOOD



PEE WEE COMMON OAKLEAF HYDRANGEA



SOFT TOUCH OAKLEAF HOLLY



BOX HONEYSUCKLE



SWEETBOX



FOREST GRASS



AUTUMN MOOR GRASS



CREEPING LILYTURF



SOFT SHIELD FERN



CHIRMAS FERN

**NOT FOR CONSTRUCTION**

**FARIVAR RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102

REVISIONS:  
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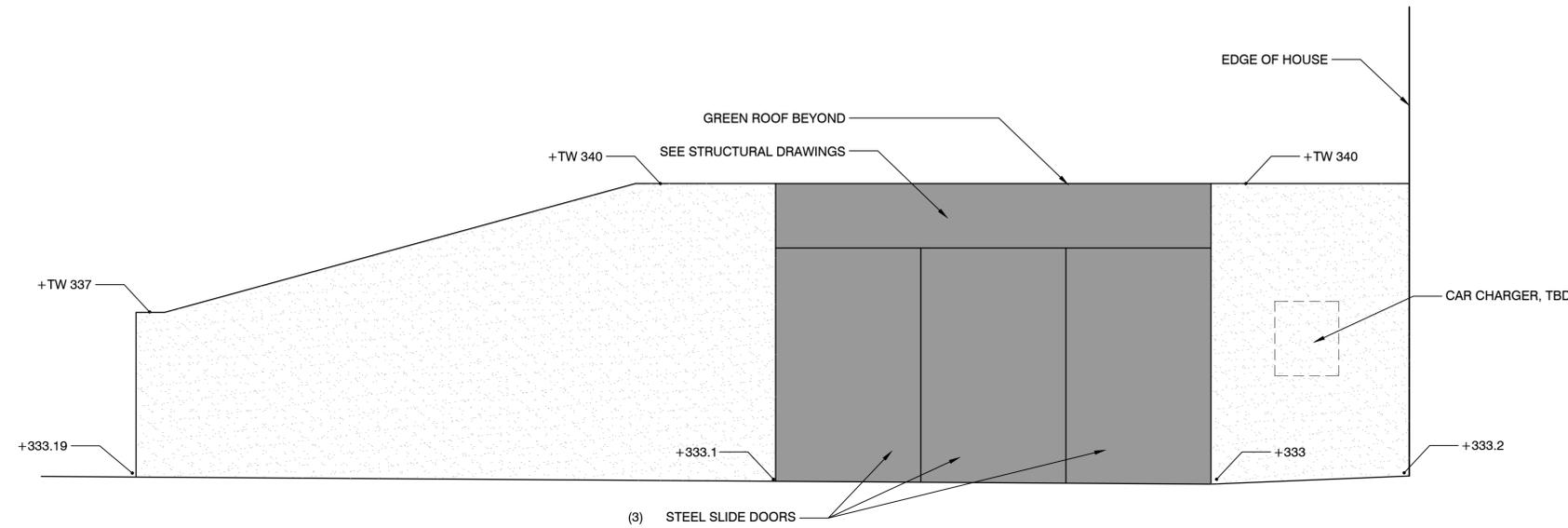
50% CD

DATE: 11/16/2023

**PLANTING LEGEND**

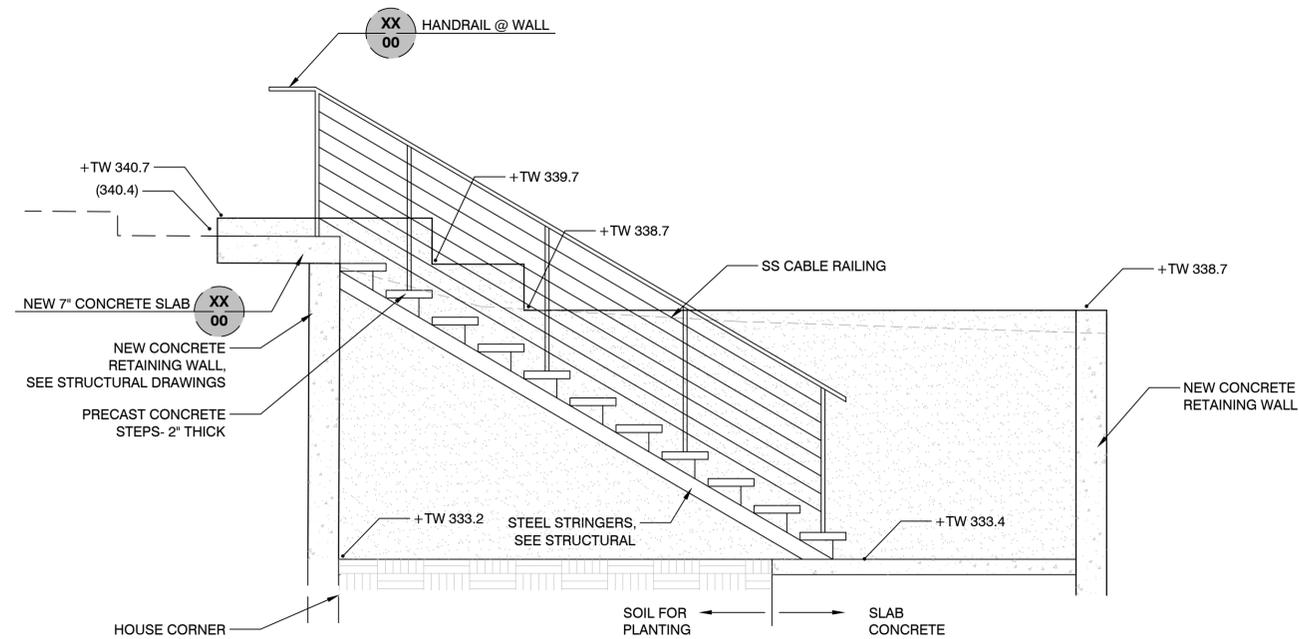
**NOT FOR  
 CONSTRUCTION**

**FARIVAR  
 RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102

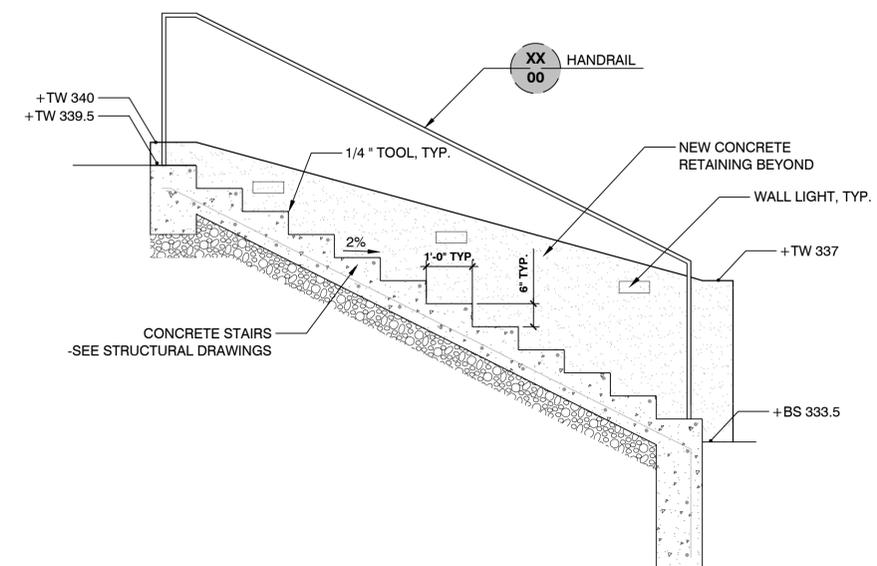


**3** WALL/ GARBAGE ENCLOSURE  
 1/2" = 1'-0"

P-22\_005-03



**1** FLOATING CONCRETE STEPS  
 1/2" = 1'-0"



**2** CONCRETE STAIRS  
 1/2" = 1'-0"

P-22\_005-01

REVISIONS:


50% CD

DATE: 11/16/2023

**DETAILS**

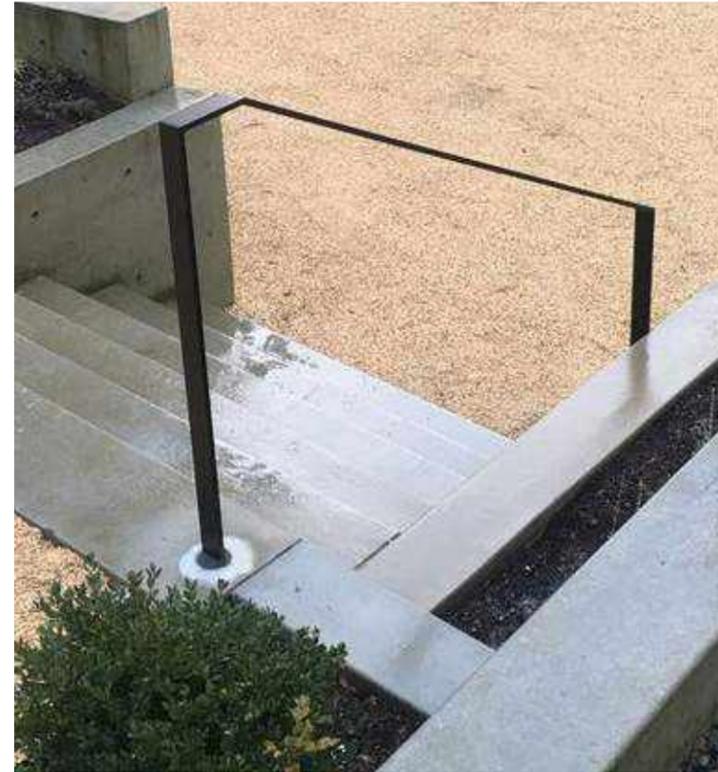
SCALE: AS SHOWN

**L6.0**

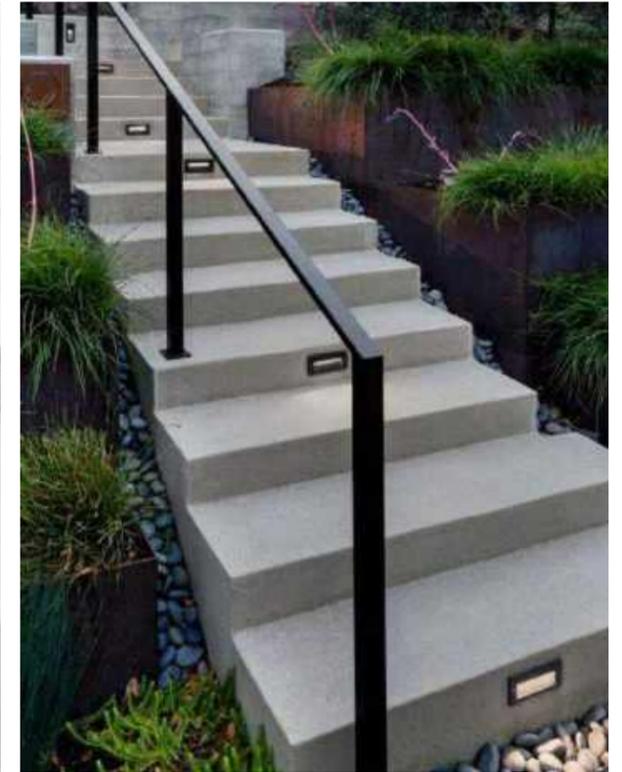
REFERENCE IMAGES OF PROPOSED RAILING



CABLE RAILING HANDRAIL AT FLOATING STAIRS  
POST & TOP RAIL: POWDER COATEDX BLACK  
CABLE: STAINLESS STEEL



HANDRAIL AT CONCRETE STAIRS  
COLOR: POWDER COATED BLACK



REFERENCE IMAGES OF CAR CHARGING, TYPE TBD



**FARIVAR  
 RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102

REVISIONS:  
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PERMIT

DATE: 11/16/2023

**PROPOSED  
 ELEVATION**

SCALE: AS SHOWN

**L6.3**



**1** PROPOSED STREET ELEVATION

1/4" = 1'-0"

P-22\_005-07

# FARIVAR RESIDENCE

947 HARVARD AVE E  
SEATTLE WA 98102

Coordination Set  
11/09/2023

**BOTHWELL**  
BOTHWELL LANDSCAPE STUDIO  
2222 NE Oregon St., Ste. 217  
Portland, Oregon 97232  
503.852.7040  
www.bistudio.la

**FOR COORDINATION**

**FARIVAR RESIDENCE**  
947 HARVARD AVE E  
SEATTLE WA 98102

**LUND OPSAHL**  
1215 Fourth Avenue, Suite 1200  
Seattle, Washington 98161  
206-402-5156 www.lundopsahl.com

REVISIONS:  
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Project No. 23-081-01  
DATE: 11/09/2023 Coordination Set  
Sheet Title

**STRUCTURAL TITLE SHEET**

Sheet Number  
**S1.01**

## ABBREVIATIONS

<b>@</b>	AT	<b>FDN</b>	FOUNDATION	<b>PAF</b>	POWDER ACTUATED FASTENER
<b>Ø</b>	DIAMETER	<b>FF</b>	FINISH FLOOR	<b>PC</b>	PRE-CAST
<b>#</b>	POUND OR NUMBER	<b>FFE</b>	FINISH FLOOR ELEVATION	<b>PCF</b>	POUNDS PER CUBIC FOOT
<b>AAC</b>	AUTOCLAVED AERATED CONCRETE	<b>FOC</b>	FACE OF CONCRETE	<b>PERP</b>	PERPENDICULAR
<b>AB</b>	ANCHOR BOLT	<b>FOM</b>	FACE OF MASONRY	<b>PL</b>	PLATE
<b>ADJ</b>	ADJACENT	<b>FOS</b>	FACE OF STUD	<b>PLF</b>	POUNDS PER LINEAR FOOT
<b>AFF</b>	ABOVE FINISH FLOOR	<b>FS</b>	FAR SIDE	<b>PNL</b>	PANEL
<b>AISC</b>	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	<b>FT</b>	FEET	<b>PRE-ENG</b>	PRE-ENGINEERED
<b>AITC</b>	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	<b>FTG</b>	FOOTING	<b>PSF</b>	POUNDS PER SQUARE FOOT
<b>ANSI</b>	AMERICAN NATIONAL STANDARDS INSTITUTE	<b>FT-LB</b>	FOOT POUNDS	<b>PSI</b>	POUNDS PER SQUARE INCH
<b>ASD</b>	ALLOWABLE STRESS DESIGN	<b>GA</b>	GAGE	<b>PSL</b>	PARALLEL STRAND LUMBER
<b>ASCE</b>	AMERICAN SOCIETY OF CIVIL ENGINEERS	<b>GALV</b>	GALVANIZED	<b>PW</b>	PLYWOOD
<b>ASTM</b>	AMERICAN SOCIETY FOR TESTING AND MATERIALS	<b>GC</b>	GENERAL CONTRACTOR	<b>REF</b>	REFERENCE
<b>AWS</b>	AMERICAN WELDING SOCIETY	<b>GL</b>	GLUE LAMINATED	<b>REINF</b>	REINFORCEMENT
<b>AWC</b>	AMERICAN WOOD COUNCIL	<b>GLB</b>	GLUE LAMINATED BEAM	<b>REQ'D</b>	REQUIRED
<b>BLKG</b>	BLOCKING	<b>GR</b>	GRADE	<b>RT</b>	PRE-ENGINEERED ROOF TRUSS
<b>BM</b>	BEAM	<b>GT</b>	PRE-ENGINEERED GIRDER TRUSS	<b>SBC</b>	SEATTLE BUILDING CODE
<b>BNDY</b>	BOUNDARY	<b>GWB</b>	GYPSUM WALL BOARD	<b>SCHED</b>	SCHEDULE
<b>BN</b>	BOUNDARY NAILING	<b>HGR</b>	HANGER	<b>SDI</b>	STEEL DECK INSTITUTE
<b>BOT</b>	BOTTOM	<b>HDR</b>	HEADER	<b>SDCI</b>	SEATTLE DEPARTMENT OF CONSTRUCTION & INSPECTIONS
<b>BRG</b>	BEARING	<b>HF</b>	HEM-FIR	<b>SER</b>	STRUCTURAL ENGINEER OF RECORD
<b>BS</b>	BOTH SIDES	<b>HSS</b>	HOLLOW STRUCTURAL STEEL	<b>SF</b>	SQUARE FEET
<b>BTWN</b>	BETWEEN	<b>HT</b>	HEIGHT	<b>SHTG</b>	SHEATHING
<b>CIP</b>	CAST-IN-PLACE	<b>HORIZ</b>	HORIZONTAL	<b>SIM</b>	SIMILAR
<b>CJ</b>	CONSTRUCTION/CONTROL JOINT	<b>IBC</b>	INTERNATIONAL BUILDING CODE	<b>SIMP</b>	SIMPSON STRONG-TIE
<b>CL</b>	CENTERLINE	<b>ICF</b>	INSULATED CONCRETE FORM	<b>SOG</b>	SLAB ON GRADE
<b>CLG</b>	CEILING	<b>IN</b>	INCHES	<b>SPACING</b>	SPACING
<b>CLR</b>	CLEAR	<b>INT</b>	INTERIOR	<b>SRC</b>	SEATTLE RESIDENTIAL CODE
<b>CLT</b>	CROSS-LAMINATED TIMBER	<b>JST</b>	JOIST	<b>SS</b>	STAINLESS STEEL
<b>CMU</b>	CONCRETE MASONRY UNIT	<b>JT</b>	JOINT	<b>STD</b>	STANDARD
<b>COL</b>	COLUMN	<b>K</b>	KIPS = 1000 LBS	<b>STIFF</b>	STIFFENER
<b>CONC</b>	CONCRETE	<b>KSI</b>	KILOPOUNDS PER SQUARE INCH	<b>STRUC</b>	STRUCTURAL
<b>CONT</b>	CONTINUOUS	<b>L</b>	ANGLE	<b>SW</b>	SHEAR WALL
<b>CONTR</b>	CONTRACTOR	<b>LBS</b>	POUNDS	<b>SQ</b>	SQUARE
<b>CSK</b>	COUNTERSINK	<b>LVL</b>	LEVEL	<b>T&amp;G</b>	TONGUE AND GROOVE
<b>CTR</b>	CENTER	<b>LVL</b>	LEVEL	<b>THK</b>	THICK
<b>CVR</b>	COVER	<b>LVL</b>	LAMINATED VENEER LUMBER	<b>THRD</b>	THREADED
<b>DBA</b>	DEFORMED BAR ANCHOR	<b>L&amp;I</b>	LABOR & INDUSTRIES DEPARTMENT	<b>TMS</b>	THE MASONRY SOCIETY
<b>DBL</b>	DOUBLE	<b>LLH</b>	LONG LEG HORIZONTAL	<b>T&amp;B</b>	TOP & BOTTOM
<b>DIAPH</b>	DIAPHRAGM	<b>LLV</b>	LONG LEG VERTICAL	<b>TO</b>	TOP OF
<b>DIM</b>	DIMENSION	<b>LOC</b>	LOCATE, LOCATION	<b>TOC</b>	TOP OF CONCRETE
<b>D</b>	DEEP	<b>LONGIT</b>	LONGITUDINAL	<b>TOS</b>	TOP OF STEEL
<b>DF</b>	DOUGLAS-FIR	<b>LSL</b>	LAMINATED STRAND LUMBER	<b>TRANSV</b>	TRANSVERSE
<b>DLT</b>	DOWEL LAMINATED TIMBER	<b>MB</b>	MACHINE BOLT	<b>TRTD</b>	TREATED
<b>DT</b>	PRE-ENGINEERED DRAG TRUSS	<b>MECH</b>	MECHANICAL	<b>TS</b>	TUBE STEEL
<b>EA</b>	EACH	<b>MTL</b>	METAL	<b>TYP</b>	TYPICAL
<b>EL</b>	ELEVATION	<b>MFR</b>	MANUFACTURER	<b>UNO</b>	UNLESS NOTED OTHERWISE
<b>ELEV</b>	ELEVATOR	<b>MIN</b>	MINIMUM	<b>VERT</b>	VERTICAL
<b>EMBED</b>	EMBEDMENT	<b>MC</b>	MOISTURE CONTROL	<b>VIF</b>	VERIFY IN FIELD
<b>EN</b>	END NAILING	<b>MPH</b>	MILES PER HOUR	<b>WABO</b>	WASHINGTON ASSOCIATION OF BUILDING OFFICIALS
<b>ENGR</b>	ENGINEER	<b>NS</b>	NEAR SIDE	<b>W</b>	WIDE
<b>EOR</b>	ENGINEER OF RECORD	<b>NDS</b>	NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION	<b>w/</b>	WITH
<b>EQ</b>	EQUAL	<b>NTS</b>	NOT TO SCALE	<b>w/o</b>	WITHOUT
<b>EQUIV</b>	EQUIVALENT	<b>NWT</b>	NORMAL WEIGHT	<b>WF</b>	WIDE FLANGE
<b>EA FACE</b>	EACH FACE	<b>OC</b>	ON CENTER	<b>WHS</b>	WELDED HEADED STUD
<b>EA SIDE</b>	EACH SIDE	<b>OPP</b>	OPPOSITE HAND	<b>WTS</b>	WELDED THREADED STUD
<b>EA WAY</b>	EACH WAY			<b>WWF</b>	WELDED WIRE FABRIC
<b>(E)</b>	EXIST. EXISTING				
<b>ESR</b>	ICC EVALUATION SERVICE REPORT				
<b>EXP</b>	EXPANSION				
<b>EXT</b>	EXTERIOR				

## GRAPHIC SYMBOL LEGEND

	CONCRETE WALL (ABOVE)		SIMPSON TENSION TIE HOLDOWN
	CONCRETE WALL (BELOW)		NUMBER OF KINGS PLUS TRIMMERS
	CMU WALL (ABOVE)		JOIST SPAN w/ HANGER
	CMU WALL (BELOW)		JOIST SPAN
	WOOD/CFS SHEAR WALL (ABOVE)		DECK SPAN
	WOOD/CFS STUD WALL (ABOVE)		EXTENT
	WOOD/CFS STUD WALL (BELOW)		OVERFRAMING
	CONCRETE COLUMN (ABOVE)		BLOCKED DIAPHRAGM
	CONCRETE COLUMN (BELOW)		CONCRETE COLUMN TYPE
	WOOD POST (ABOVE)		SURFACE SLOPE PER ARCHITECT
	WOOD POST (BELOW)		DETAIL REFERENCE NO.
	STEEL HSS COLUMN (ABOVE)		SECTION CALLOUT
	STEEL HSS COLUMN (BELOW)		SHEET REFERENCE NO.
	STEEL WIDE FLANGE COLUMN (ABOVE)		DETAIL REFERENCE NO.
	STEEL WIDE FLANGE COLUMN (BELOW)		ELEVATION CALLOUT
	BEAM/JOIST		SHEET REFERENCE NO.
	BRACED FRAME BEAM		DETAIL REFERENCE NO.
	GRID LINE		DETAIL CALLOUT
	CENTERLINE		SHEET REFERENCE NO.
	CONCRETE BY OTHERS (CUT)		HIGH SIDE
	GRAVEL (CUT)		FOOTING STEP
	EARTH (CUT)		

SHEET INDEX	
SHEET NUMBER	SHEET NAME
S1.01	STRUCTURAL TITLE SHEET
S1.02	STRUCTURAL GENERAL NOTES
S1.03	STRUCTURAL GENERAL NOTES
S2.00	STRUCTURAL PLANS
S3.01	STRUCTURAL DETAILS
S3.02	STRUCTURAL DETAILS
S3.03	STRUCTURAL DETAILS

## GENERAL REQUIREMENTS

### SUMMARY OF WORK

Project consists of new retaining wall construction as shown on these Contract Documents used in coordination with the Architectural and other discipline's documents.

### GOVERNING CODE

All design and construction shall conform to the 2018 International Building Code and local jurisdiction amendments.

Reference to ASTM and other standards shall refer to the latest edition designated by IBC Chapter 35. Refer to the specifications for information in addition to that covered by these structural notes and drawings.

### DOCUMENTS

Structural Documents shall be used in conjunction with Architectural Documents for all bidding and construction.

Drawings indicate general and typical details of construction. Typical details and general notes shall apply even if not specifically denoted on plans, UNO. Where conditions are not specifically indicated similar details of construction shall be used, subject to review and approval by the Architect and the SER.

Existing structural information, designated as (E) on the Structural drawings, has been compiled from information furnished by various sources and is not necessarily field-verified by the Engineer. Dimensions relating to existing structures are intended for use as guidelines only; all dimensions shall be field-verified by the contractor prior to start of construction. Notify the Architect of any discrepancies.

These Contract Documents and any materials used in preparation of them, including calculations, are the exclusive property of the SER and can be reproduced only with the permission of the SER.

### WARRANTY

The SER has used that degree of care and skill ordinarily exercised under similar circumstances by members of the profession in this locale and no other warranty, either expressed or implied, is made in connection with rendering professional services.

### OWNER RESPONSIBILITY

The Owner shall retain a Special Inspector to perform the special inspection requirements required by the building official and as outlined in the Special Inspection section below.

## DESIGN CRITERIA

### BUILDING CATEGORY

Structural Risk Category II

Importance factors for snow and seismic are listed with the loading criteria.

### LIVE LOADS - SNOW

Numbering below is per IBC Section 1603.1.3:

- Flat-Roof Snow Load:  $P_f = 25$  psf
- Snow Exposure Factor:  $C_e = 1.2$
- Snow Importance Factor:  $I_s = 1.0$
- Thermal Factor:  $C_t = 1.1$

Additional Items:

- Ground Snow Load:  $P_g = 20$  psf  
Snow drifting load per IBC w/ ground snow load  
Minimum uniform roof snow load = 25 psf

## CONTRACTOR PERFORMANCE REQUIREMENTS

### DESIGN DOCUMENTS

Contractor shall verify all dimensions and all conditions at the job site, including building and site conditions before commencing work, and be responsible for same. All discrepancies shall be reported to the Architect before proceeding with work. Any errors, ambiguities and/or omissions in the contract documents shall be reported to the Architect immediately, in writing. No work is to be started before correction is made.

Contractor shall verify and/or coordinate all dimensioned openings and slab edges shown on the contract documents. Some dimensions, openings and embedded items are shown on the Structural drawings. Others may be required. Refer to Architectural drawings for size and location of curbs, equipment pads, wall and floor openings, architectural treatment, embeds required for architectural items and dimensions. Refer to mechanical, plumbing, electrical and fire protection drawings for size and location of all openings for ducts, piping, conduits, etc. Submit openings to Architect for review.

Do not scale drawings. Use only field verified dimensions. When electronic plan files are provided for the Contractor's detailing convenience, it shall be noted that the electronic files are not guaranteed to be dimensionally accurate. The Contractor uses them at their own risk. The published paper documents are the controlling Contract Documents. Electronic files of detail sheets and notes will not be provided.

### CONTRACTOR-INITIATED CHANGES

Contractor-initiated changes shall be submitted in writing to the Architect for review and acceptance prior to fabrication or construction. Changes shown on shop drawings only will not satisfy this requirement.

### INSPECTIONS

The Contractor shall coordinate with the building department for all building department required inspections.

### TEMPORARY SHORING AND BRACING

The Contractor shall provide temporary bracing as required until all permanent connections and stiffening have been installed. The Contractor is responsible for the strength and stability of all partially completed structures including but not limited to concrete or masonry walls, steel framing and erection aids. The Contractor shall, at their discretion, employ the aid of a licensed Structural Engineer to design all temporary bracing and shoring necessary to complete the work described in these contract documents. The Contractor shall be responsible for all required safety standards, safety precautions and the methods, techniques, sequences or procedures required in performing their work. For concrete construction refer to ACI 318 - Section 26.11.2 "Removal of Formwork".

### SAFETY PROCEDURES

Contractor shall be responsible for all safety precautions and the methods, techniques, sequences or procedures required to perform the contractor's work. The Structural Engineer has no overall supervisory authority or actual and/or direct responsibility for the specific working conditions at the site and/or for any hazards resulting from the actions of any trade contractor. The Structural Engineer has no duty to inspect, supervise, note, correct, or report any health or safety deficiencies to the Owner, Contractors, or other entities or persons at the project site.

## RENOVATIONS

### DEMOLITION

Contractor shall verify all existing conditions before commencing any demolition. Shoring shall be installed to support existing construction as required and in a manner suitable to the work sequences. Demolition debris shall not be allowed to damage or overload the existing structure. Limit construction loading (including demolition debris) on existing floor systems to 40 psf.

### EXISTING CONCRETE

Existing reinforcing shall be saved where and as noted on the plans. Saw cutting, if and where used, shall not cut existing reinforcing that is to be saved.

- All new openings through existing walls, slabs and beams shall be accomplished by saw cutting wherever possible.
- Contractor shall verify all existing conditions and location of members prior to cutting any openings.
- Small round openings shall be accomplished by core drilling, if possible.
- Where new reinforcing terminates at existing concrete, dowels epoxy grouted into existing concrete shall be provided to match horizontal reinforcing, unless noted otherwise on plans.

## SHOP DRAWINGS AND SUBMITTALS

### SHOP DRAWING & SUBMITTAL REVIEW (including Deferred Structural Components)

The contractor must review and stamp the shop drawings & submittals for review. SER will only review submittals for items shown on SER documents. Submittals for Deferred Structural Components will receive cursory review by SER for loads imposed on primary structure. SER will review shop drawings for general conformance with design concept of the project and general compliance with the information given in the Structural Contract Documents. Review of submittals does not constitute approval or acceptance of unauthorized deviation from Contract Documents.

Corrections or comments made on shop drawings during this review do not relieve Contractor from compliance with the requirements of the plans and specifications.

Contractor responsible for:

- Reviewing, approving, stamping and signing submittals prior to submittal to Architect and SER
- Timing submittals to allow two weeks of review time for the SER and time for corrections and/or resubmittal
- Conformance to requirements of the Contract Documents
- Dimensions and quantities
- Verifying information to be confirmed or coordinated
- Information solely for fabrication, safety, means, methods, techniques and sequences of construction
- Coordination of all trades

Resubmittals shall be clouded and dated for all changes to the submittal. Only clouded portions of resubmittal will be reviewed and SER's review stamp applies to only these areas.

### SUBSTITUTIONS

Substitutions shall be submitted in writing prior to submittal of shop drawings. Shop drawings bearing substitutions will be rejected. Submit engineering data to substantiate the equivalence of the proposed items. The SER's basic services contract does not include review of substitutions that require re-engineering of the item or adjacent structure. Nor does the SER's contract cover excessive review of proposed substitutions. The fees for making these reviews and/or redesign shall be paid by the Contractor. Reviews and approvals shall not be made until authorization is received.

### SUBMITTALS

Shop drawings and material submittals shall be submitted to the Architect and SER prior to any fabrication or construction for the following structural items. Submittals shall include one reproducible and one copy; reproducible will be marked and returned. If deviations, discrepancies, or conflicts between shop drawings submittals and the contract documents are discovered either prior to or after shop drawing submittals are processed by the SER, the Contract Documents control and shall be followed.

- Construction sequence description
- Contractor quality control testing procedures when required in specifications
- Concrete mix designs
- Reinforcing bar shop drawings and placing plans
- Reinforcing bar mill certificates shall be available upon request
- Non-shrink grout material specifications and manufacturer's installation recommendations
- Fabrication shop AISC Certification
- Structural steel registration/certification or quality control inspection records
- Structural steel shop and erection drawings
- Welding Procedure Specifications
- Certificate of conformance for welding material, including supplemental notch toughness requirements

## INSPECTIONS

### INSPECTIONS BY BUILDING OFFICIAL

The building official, upon notification, shall make structural inspections as required by local ordinance. The inspection by the building official per IBC Section 110 will be separate from and in addition to the special inspection and structural observation mentioned subsequently.

### SPECIAL INSPECTIONS

A Special Inspector shall be hired by the Owner to perform the following special inspections per IBC Section 1704. See the specifications for additional requirements for special inspection and testing. The architect, Structural Engineer, and building department shall be furnished with copies of all inspection reports and test results.

Each contractor responsible for the construction of a seismic force resisting system, designated seismic system, or component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the Owner prior to the commencement of work on the system or component. The written statement shall be in accordance with IBC Section 1704.4.

See IBC Chapter 17: "Special Inspections and Tests" for more detailed requirements.

### SPECIAL INSPECTIONS AND TESTS OF SOILS (PER IBC 1705.6)

Verification and Inspection	Frequency		Reference
	Cont.	Periodic	
Verify materials below shallow foundations are adequate to achieve the design bearing capacity		X	
Verify that excavations are extended to proper depth and have reached proper material		X	
Perform classification and testing of compacted fill materials		X	
Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	X		
Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly		X	

### SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION (PER IBC 1705.3)

Verification and Inspection	Frequency		Reference
	Cont.	Periodic	
Inspect reinforcement and verify placement		X	IBC 1908.4 ACI 318: 20, 25.2-3, 26.6.1-3
Inspection of anchors cast in concrete		X	ACI 318: 17.8.2
Inspection of anchors and reinforcing bar post-installed in hardened concrete members: <ul style="list-style-type: none"><li>Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads</li><li>Mechanical anchors, adhesive anchors and reinforcing bar not defined above</li></ul>	X		ACI 318: 17.8.2.4 ACI 318: 17.8.2
Verifying use of required design mix		X	IBC 1904.1, 1904.2, 1908.2-3, ACI 318: 19, 26.4.3, 26.4.4
Verify maintenance of specified curing temperature and techniques		X	IBC 1908.9 ACI 318: 26.5.3-5
Inspect formwork for shape, location and dimensions of the concrete being formed		X	ACI 318: 26.11.1.2(b)
Inspection of mechanical splicing of reinforcing bars	X		ICC report for specified product

### SPECIAL INSPECTIONS OF STRUCTURAL STEEL CONSTRUCTION OTHER THAN SEISMIC LATERAL FORCE RESISTING SYSTEMS (PER IBC 1705.2.1)

Verification and Inspection	Frequency		Reference
	Cont.	Periodic	
Inspection of fabricator's quality control procedures		X	IBC 1704.2.5 AISC 360-N.2
Review of material test reports and certifications listed in AISC Section N3.2	X		AISC 360-N.5.2 AWS D1.1
Inspection of welding structural steel:	Per AISC 360 tables N5.4-1-3		AISC 360-N.5.4-5 AWS D1.1
Nondestructive testing of welded joints	Per AISC 360 N5.5		AISC 360-N5.5 AWS D1.1
Inspect the fabricated steel or erected steel frame to verify compliance with the details shown on the construction documents		X	AISC 360-N.5.8

## GEOTECHNICAL

### REPORT & GENERAL CRITERIA

Criteria outlined in the report listed below was used for the design of the foundations:  
PN 9831200085  
prepared by GeoResources (August 25, 2023)

Contractor shall be familiar with recommendations in the above-mentioned report prior to start of construction. Allowable soil pressure and lateral earth pressure are assumed and therefore must be verified by a Geotechnical Inspector or the building official. If soils are found to be other than assumed, notify the Structural Engineer for possible foundation redesign. For wet weather work, see the Geotechnical Report.

Unless noted otherwise, footings shall be centered below columns or walls.

### INSPECTIONS

All prepared soil-bearing surfaces shall be inspected by the Owners Geotechnical Inspector (or building official) prior to placement of reinforcing steel and concrete. Inspections shall be made per IBC Table 1705.6.

### BEARING VALUES

All footings shall bear on undisturbed soil and shall be lowered to firm bearing if suitable soil is not found at elevations shown. Exterior footings shall bear a minimum of 18" below the finished ground surface. Footing elevations shown on plans (or in details) are minimum depths and for guidance only; the actual elevations of footings must be established by the Contractor in the field working with the Geotechnical Inspector.

Allowable vertical bearing soil pressure = 2000 psf

### SUBGRADE PREPARATION

Prepare subgrade per the Geotechnical Report, summarized as follows: All footings shall be cast on undisturbed firm natural soils that are free of organic materials. Footing excavation shall be free of loose soils, sloughs, debris and free of water at all times. If organic silt and/or fill material is encountered at subgrade elevations, overexcavate a minimum of 2'-0" below the design foundation subgrade elevation prior to placing footings. The overexcavated areas shall be backfilled with structural fill compacted to 95% proctor per ASTM D-1557 or a lean concrete mix.

### EXISTING UTILITIES

The Contractor shall determine the location of all adjacent underground utilities prior to any excavation, shoring, pile driving, or pier drilling. Any utility information shown on the plans and details are approximate and not verified by the SER. Contractor is to provide protection of any utilities or underground structures during construction.

### DRAINAGE

Drainage systems, including foundation, roof and surface drains, shall be installed as directed by the Geotechnical Report. Vapor retarder placed below slab-on-grade shall conform to ASTM E 1643 and ASTM E 745.

### RETAINING WALLS

Grade on either side of concrete walls shall not vary by more than 12", UNO. Slope of backfill shall not exceed 2H to 1V, UNO. Backfill behind all retaining walls with free draining, granular fill installed per the Geotechnical Report. Provide for subsurface drainage. Design pressures used for the design of retaining walls are based on drained conditions.

Active earth pressure (restrained/unrestrained) = 55/35 PCF  
Passive earth pressure = 300 PCF  
Coefficient of friction (factor of safety of 1.5 included) = 0.3

Provide temporary shoring for tops of walls if backfill is placed prior to the supporting structure being constructed. Supporting structure is the floor framing and sheathing completely installed and attached to perpendicular walls.

**BOTHWELL**

BOTHWELL LANDSCAPE STUDIO  
2222 NE Oregon St., Ste 217  
Portland, Oregon 97232  
503.852.7040  
www.blstudio.la

**FOR COORDINATION**

## FARIVAR RESIDENCE

947 HARVARD AVE E  
SEATTLE WA 98102



1215 Fourth Avenue, Suite 1200  
Seattle, Washington 98161  
206-402-5156 www.lundopsahl.com

REVISIONS:


Project No. 23-081-01

DATE: 11/09/2023 Coordination Set

Sheet Title

## STRUCTURAL GENERAL NOTES

Sheet Number

# S1.02

## CONCRETE

### CAST-IN-PLACE CONCRETE

Concrete materials shall conform to the following:

Portland cement:	Type 1, ASTM C150
Fly ash (if used):	ASTM C618 class F or C
Slag cement (if used):	ASTM C989
Lightweight aggregates:	lightweight aggregates shall not be used without prior approval of SER and building department
Normal weight aggregates:	ASTM C33
Sand equivalent:	ASTM C33
Water:	Potable per ASTM C94
Air entraining admixtures:	ASTM C260
Chemical admixtures:	ASTM C494
Flowable concrete admixtures:	ASTM C1017

Durability requirements of concrete mixes shall conform to building code. These requirements include water-cementitious material ratios, minimum compressive strengths, air entrainment, type of cement, and maximum chloride ion content.

### CONCRETE STRENGTH REQUIREMENTS

Concrete shall be mixed, proportioned, conveyed and placed in accordance with IBC Section 1904, 1905, 1906 and ACI 301, including testing procedures. Concrete shall attain a 28-day strength of  $f_c = 3,000$  psi for purposes of weathering, and accommodate placement, while  $f_c = 2,500$  psi is required for strength. Special inspection is not required for concrete with a 28-day strength greater than  $f_c = 2,500$  psi for purposes of weathering per IBC 1704.6.

### CONCRETE MIXTURES

Mixes shall be proportioned to meet compliance requirements of ACI 318 Section 26.4.3. Slump, W/C ratio, admixtures and aggregate size will be determined by the contractor. Submit documentation of concrete mixture characteristics for review by the SER before the mixture is used and before making changes to mixtures already in use. Documentation shall comply with ACI 318 Section 26.4.4 or City of Seattle Director's Rule 11-2014.

All concrete, including slab on grade, shall contain an acceptable water-reducing admixture conforming to ASTM C494 and be used in strict accordance with the manufacturer's recommendations.

All concrete which is exposed to freezing and thawing in a moist condition or exposed to deicing chemicals shall contain an air entraining agent, conforming to ASTM C260. Total air content shall be adjusted per ACI 318 for mix designs with smaller nominal aggregate size. The amount of entrained air shall be measured at the discharge end of the placing nozzle. Entrained air shall be as noted  $\pm 1.0\%$  by volume. Air-entrainment shall not be used at slabs that will receive a smooth, dense, hard-troweled finish.

Trucks hauling plant-mixed concrete shall arrive on-site with a field ticket indicating the maximum gallons of water that can be added at the site not to exceed the total water content in the approved mix design.

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement, embedded items, and into corners of forms.

### SHOTCRETE

Concrete may be placed by the "shotcrete" method, provided the approvals, tests, and inspections required by the building department are obtained. Shotcrete materials, equipment, procedures, proportions, batching, mixing and placement shall be in accordance with ACI 506R. The "shotcrete" method shall not be used without making special arrangements through Owner and SER unless Structural drawings are specifically detailed to accommodate shotcreting.

### FORMWORK AND ACCESSORIES

Concrete construction shall conform to ACI 301 "Specifications for Structural Concrete" and the Building Code, including testing procedures. See specifications and/or Architectural documents for formwork requirements. Installation shall adhere to ACI 301. Conduits and pipes of aluminum shall not be embedded in concrete construction.

See Architectural drawings for exact locations and dimensions of door and window openings in all concrete walls. See Mechanical drawings for size and location of mechanical openings through concrete walls. See Architectural drawings for all grooves, notches, chamfers, feature strips, color, texture, and other finish details at all exposed concrete surfaces, both cast-in-place and precast. See structural details for reinforcing around openings.

Contractor shall submit the proposed locations of construction joints to the Architect for acceptance before starting construction. Erico Lenton Formasaver (IAPMO-UES-ER-0129) may be used as an alternate to the roughened joint. All construction, control, and isolation joints for slabs on ground shall be in accordance with the typical details.

Concrete accessories and embedded items shall be coordinated with Architectural and all other Contract Documents and suppliers' drawings before placing concrete. Wet-setting of anchor rods, reinforcing, hardware, etc. is not allowed in concrete. Anchor rods, reinforcing, hardware, etc. shall be firmly tied in place prior to concrete placement.

Refer to Architectural documents for waterstops, damp proofing, and soil retaining wall drainage requirements at concrete and at concrete joints (construction joints, slab to wall joints, curb to slab joints, etc).

### RIGID FOAM

Rigid foam specified on the drawings for filling voids shall be expanded polystyrene (EPS) board insulation having at least 10 psi compressive resistance at 10% deformation: ASTM D 6817 (Type EPS15 minimum) or ASTM C578 (Type 1 minimum), as manufactured by Insulfoam (ESR-1788) or approved equal. Install in strict accordance with applicable ICC report.

### CURING AND FINISHES

Protect and cure freshly placed concrete per ACI 305.1 in hot conditions, ACI 306.1 in cold conditions, and ACI 308.1 "Specification for Curing Concrete". All exposed edges and corners shall have 3/4" chamfer, UNO. Concrete flatwork shall be sloped to provide positive drainage. Coordinate finish with Architectural contract documents.

At the time of application of finish materials or special treatment to concrete, moisture content of concrete shall conform to requirements in finish material specifications. Where vapor sensitive coverings are to be placed on slabs on grade, conform strictly to slab covering manufacturer's recommendations regarding vapor retarder and granular fill requirements below the slab.

### CONCRETE CRACK MAINTENANCE

Cracking occurs in concrete structures due to inherent shrinkage, creep, and the restraining effects of walls and other structural elements. Most cracking due to shrinkage and creep will likely occur over the first two years of the life of the structure; further concrete movement due to variations in temperature may persist. Cracks that result in water penetration will need to be repaired to protect reinforcing. Other cracking may be repaired at the Owner's discretion for aesthetic reasons or performance of applied finishes. Prior to repairing cracks, a Structural Engineer should be consulted to provide direction on which cracks to repair and on whether observed cracks may affect the strength of the structure.

## REINFORCEMENT IN CONCRETE

### REINFORCING STEEL

Reinforcing steel shall conform to ASTM A615 (including supplement S1), Grade 60,  $F_y = 60,000$  psi.

### PROCEDURES

Reinforcing steel shall be detailed (including hooks and bends) in accordance with ACI 315 "Details and Detailing of Concrete Reinforcement". Lap all reinforcement in accordance with "The Reinforcing Splice and Development Length Schedule" on these documents. If table is not provided, lap all reinforcing by 40 bar diameters. Provide corner bars at all wall and footing intersections.

Reinforcing steel shall be adequately supported to prevent displacement during concrete and grout placement. Bars shall be bent cold.

Bars partially embedded in concrete shall not be field bent, unless specifically so detailed or approved by the SER.

Mechanical connection of continuous reinforcing bar shall be used where shown on documents and may be substituted for lap splices if approved by the SER. Such connections shall develop at least 125% of the specified yield strength of the bar. Acceptable connectors shall be the Erico Lenton Standard Coupler (ER-0129), Dayton Superior Bar-Lock L Series (ER-0319), or approved equal.

Welding or tack welding of reinforcing bars to other bars or to plates, angles, etc. is prohibited, except where specifically approved by the SER. Where welding is approved, it shall be done by AWS/WABO-certified welders using E9018 or approved electrodes. Welding procedures shall conform to the requirements of AWS D1.4. Any Grade 60 reinforcing bars indicated on drawings to be welded shall conform to ASTM A706. Reinforcement complying with ASTM A615 (S1) may be welded only if material property reports indicating conformance with welding procedures specified in AWS D1.4 are submitted. Welding within 4" of cold bends in reinforcing steel is not permitted.

## ANCHORAGE

Post-installed anchors or reinforcing bar shall not be installed without prior approval of Engineer of Record unless noted otherwise on the plans.

### ADHESIVE ANCHORS

Adhesive anchors (threaded rods or reinforcing bar) specified on the drawings shall be installed using "HIT-HY 200" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report No. ESR-3187. Rods shall be ASTM F1554 Gr.55, unless noted otherwise. Special inspection of installation is required.

### EXPANSION ANCHORS

Expansion anchors into concrete and concrete masonry units shall be "Kwik Bolt TZ2" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report Number ESR-4266, including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Substitutes proposed by contractor shall be submitted for review with ICC Reports indicating equivalent or greater load capacities. Special inspection of installation is required.

### SCREW ANCHORS

Post-installed mechanical anchors into concrete and concrete masonry units shall be "Titen HD" screw anchors as manufactured by the Simpson Strong-Tie Company. Install in strict accordance with ICC Report Number ESR-2713 (into concrete) or ESR-1056 (into masonry), including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Titen HD screw anchors are approved for dry interior applications only. Special inspection is required for the installation of all screw anchors resisting tension.

## STRUCTURAL STEEL

### REFERENCE STANDARDS

Steel construction shall conform to the latest editions of the AISC Specifications and Codes. "Specification for Structural Steel Buildings" ANSI/AISC 360, "Specification for Structural Joints Using High-Strength Bolts" AISC 348 and "Code of Standard Practice for Steel Buildings and Bridges" AISC 303 amended by the deletion of paragraph 4.4.1.

### FABRICATORS

Fabricators for structural steel must have a quality assurance program in place. The quality assurance program must meet the requirements of one of the following methods:

- Registration in the Washington Association of Building Officials (WABO) Steel Fabricator Registration Program
- Participation in the AISC quality certification program, designated as an AISC Certified Plant, Category BU.
- Meeting the requirements of AISC 360 for structural steel buildings, appendix N and submitting plan documentation to the authority having jurisdiction, the Engineer of Record, and the Owner or Owner's designee. Quality assurance requirements of steel construction for wind and seismic (AISC 341, Chapter J) shall be included as required in Special Inspection section of the general notes, where applicable.

Fabricator for structural steel must be registered and approved to perform work without special inspection. At completion of fabrication, the fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

### FINISHING

The terms finish, finish column, finishing, milled, milled surface or milling are intended to include surfaces which have been accurately sawed or finished to a true plane as defined by AISC.

Grind surface value equal to or less than 1,000 as defined by ANSI B46.2 (4-inch and thinner).

### STEEL COATINGS AND PROTECTION

Coatings and protection (weather, fire, corrosion, etc.) shall be as specified by the architect. Galvanized steel members shall conform to ASTM A-123 and galvanized steel hardware shall conform to ASTM A-153. Guidelines outlined in ASTM A-384 shall be followed in order to safeguard against warping and distortion during hot-dip galvanizing of steel assemblies. Steel anchors and ties embedded in concrete and masonry shall be left unpainted.

### CORROSION CONTROL

All steel noted as galvanized and any steel in ground contact or within 6-inches of grade shall be zinc-plated (galvanized) by the hot-dipped galvanic method (or pre-approved equivalent), except where such steel is to be fully encased in concrete. Furthermore, any surface where the coating has been removed or damaged must be brushed and re-coated in clean, dry field conditions with an approved zinc-based anti-corrosion coating except where such area is to be encased in concrete.

### SHOP PAINTING

All steel to be shop primed. Steel fire proofed or encased with concrete need not be painted. All other steel shall be given one coat of shop paint, in accordance with Section M3 of the AISC "Specification" and Section 6.5 of the AISC "Code", unless noted otherwise. The surface preparation of the structural steel prior to painting shall be in accordance with the specific paint manufacturer's published recommendations. Structural joints and faying surfaces which are to be connected by means of welds or bolts shall not be painted until all welds and bolts are installed, inspected and approved. Paint shall be held back 3" from the faying surface or the joint to be welded.

### STRUCTURAL STEEL MEMBERS

Structural Steel shall conform to the following requirements (unless otherwise shown on plans):

### STRUCTURAL STEEL MEMBER SPECIFICATIONS TABLE

Type of Member	ASTM Specification	Fy
Square & rectangle HSS sections	A500, Grade B or C	46 ksi
Plates, channels, angles	A36, Grade 36	36 ksi
Threaded rods	A36	36 ksi
Square or rectangular beveled washers	F436	-

### STEEL FRAMING

The contractor shall be responsible for all erection aids and joint preparations that include, but are not limited to: erection angles, lift holes, and other aids; welding procedures; required root openings; root face dimensions; groove angles; backing bars; copes; surface roughness values; and tapers of unequal parts.

### WELDING

All welding shall be in conformance with AISC and AWS standard and shall be performed by WABO certified welders using E70XX Electrodes in accordance with AWS D1.1. Only Prequalified welds, as defined by WABO, shall be used.

Shop drawings shall show all welding with AWS D1.4 symbols. Welds shown on the drawings are the minimum sizes. Increase weld size to AWS minimum sizes, based on plate thickness. Minimum welding shall be 3/16" UNO. Filler metal with a specified minimum Charpy V-notch toughness of 20 ft-lb at 40°F or lower shall be used at complete-joint-penetration groove welds. Welds designated as demand critical shall be made with filler metals meeting the requirements specified in AWS D1.8 clause 6.3.

Welding procedures shall be submitted to the Owner's testing agency for review prior to commencement of fabrication or erection. All complete-penetration welds shall be ultrasonically tested upon completion of the connection except plate less than or equal to 1/4" thick shall be magnetic particle tested. Complete penetration welds on plates less than or equal to 1/4" shall be magnetic particle tested.

Field welds shown are Engineer's recommendation. Contractor is responsible for actual welds used to support specific means and methods.

### WELDING GALVANIZED STEEL

Welding of galvanized steel shall conform to AWS specification D-19.0. Welded areas of galvanized steel shall be touched up in conformance with ASTM A-780.

### BOLTS

All high-strength bolts, not part of the Seismic Load Resisting System (SLRS), need only be tightened to snug-tight (ST) conditions, defined as the tightness that exists when all plies in a joint are in firm contact. This may be attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. All bolt holes shall be standard size, unless noted otherwise. All ASTM A-307 bolts shall be provided with lock washers under nuts or self-locking nuts.

Connections, joints and fasteners that are part of the Seismic Load Resisting System (SLRS) shall be pretensioned (PT) high-strength bolts and shall meet the requirements for slip-critical (SC) joints. UNO. All faying surfaces shall be prepared as required for class A or better slip-critical joints. All high-strength bolts shall be installed, tightened and inspected in accordance with AISC 348. Slip-critical (SC) connections shall use compressible-washer-type direct tension indicators or twist-off-type tension-control bolts.

**BOTHWELL**

BOTHWELL LANDSCAPE STUDIO  
2222 NE Oregon St., Ste. 217  
Portland, Oregon 97232  
503.852.7040  
www.blistudio.la

**FOR COORDINATION**

## FARIVAR RESIDENCE

947 HARVARD AVE E  
SEATTLE WA 98102



1215 Fourth Avenue, Suite 1200  
Seattle, Washington 98161  
206-402-5156 www.lundopsahl.com

REVISIONS:


Project No. 23-081-01

DATE: 11/09/2023 Coordination Set

Sheet Title

## STRUCTURAL GENERAL NOTES

Sheet Number

**S1.03**

**FOUNDATION PLAN NOTES**

**1. GENERAL**

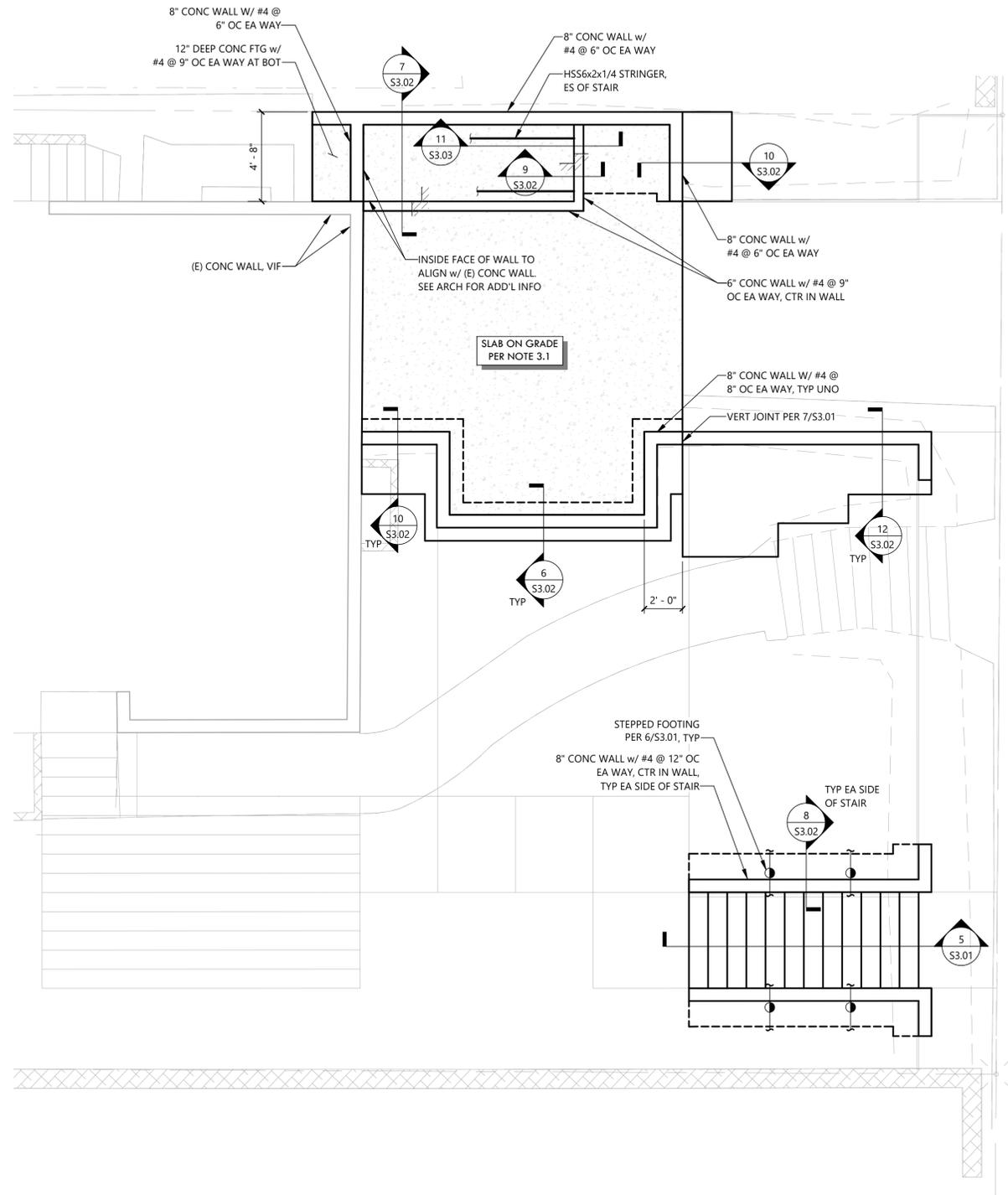
- 1.1. ELEVATION AT TOP OF SLAB SHALL BE PER ARCH. UNO. ELEVATION AT TOP OF FOOTING SHALL BE 0'-8" BELOW TOP OF SLAB, UNO.  
[-'X'-X"] INDICATES ELEVATION AT TOP OF FOOTING, MEASURED IN FEET.  
  
FOOTING ELEVATIONS SHOWN ARE FOR CONTRACTOR CONVENIENCE AND BIDDING ONLY. FINAL ELEVATIONS SHALL BE DETERMINED BY ON-SITE VERIFICATION BY SOILS ENGINEER, BUT SHALL NOT BE SHALLOWER THAN THOSE SHOWN ON THIS PLAN. REFER TO STRUCTURAL GENERAL NOTES FOR ADDITIONAL INFORMATION.
- 1.2. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

**2. FOUNDATIONS**

- 2.1. EXCAVATE, BACKFILL, AND PREPARE SOILS AS REQUIRED PER STRUCTURAL GENERAL NOTES AND GEOTECHNICAL REPORT.

**3. SLAB**

- 3.1. TYPICAL SLAB ON GRADE SHALL BE 6" THICK WITH #4 @ 18" OC EACH WAY AT CENTER OF SLAB.



**ROOF FRAMING PLAN NOTES**

**1. GENERAL**

- 1.1. REFERENCE ROOF ELEVATION SHALL BW PER ARCH, UNO. TOP OF DECK SHALL BE AT REFERENCE ROOF ELEVATION, UNO. ELEVATION AT TOP OF STEEL SHALL BE 1-1/2" BELOW TOP OF DECK, UNO.  
[-'X'-X"] INDICATES ELEVATION ABOVE OR BELOW REFERENCED TOP OF STEEL. SLOPE ROOF DECK BETWEEN ELEVATIONS INDICATED.
- 1.2. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
- 1.3. REFER TO STRUCTURAL GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
- 1.4. EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

**2. WALL AND COLUMNS BELOW**

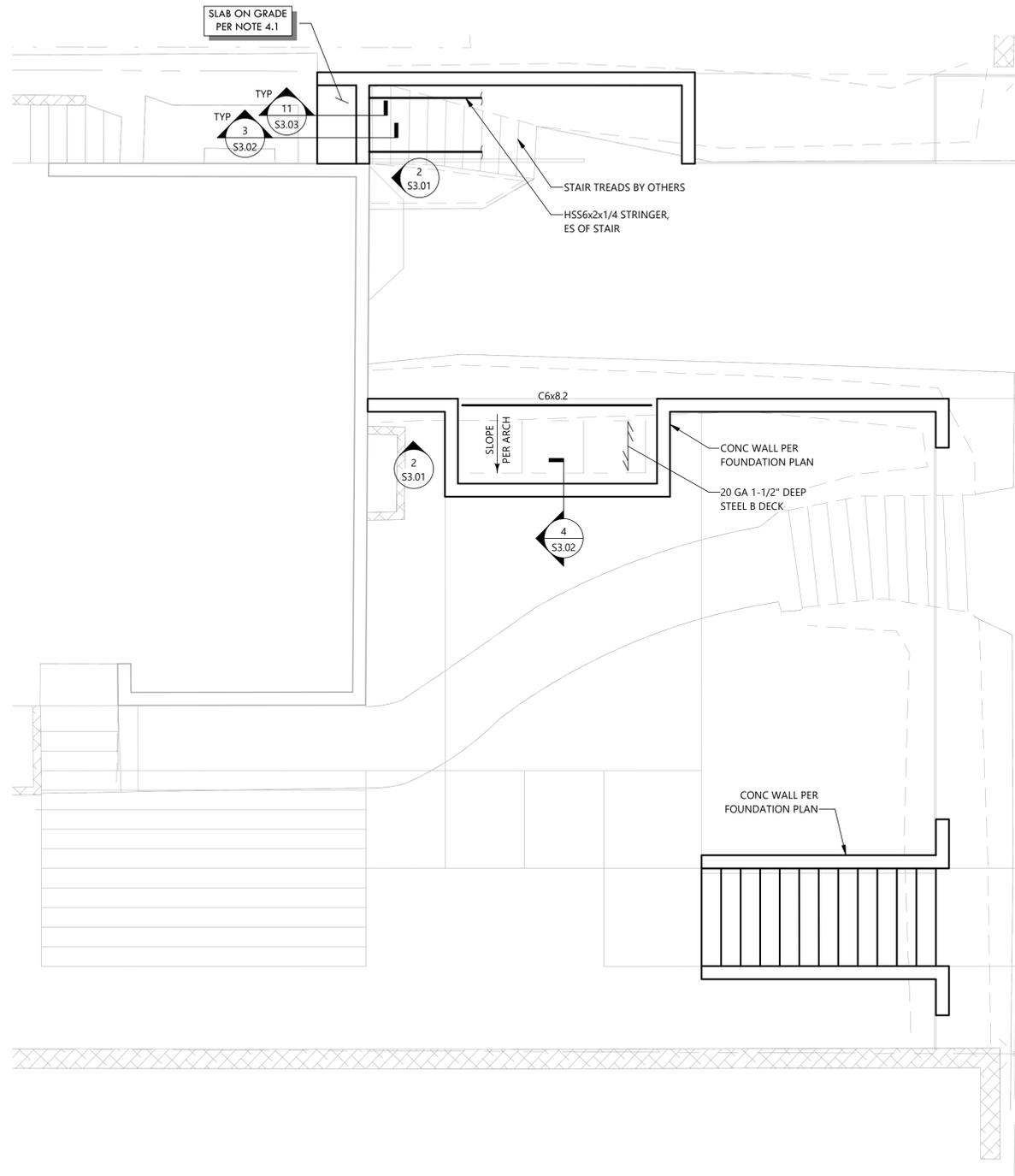
- 2.1. REFER TO PLAN BELOW FOR CONSTRUCTION OF ALL WALLS AND COLUMNS BELOW.

**3. ROOFS**

- 3.1. TYPICAL STEEL DECK SHALL CONSIST OF 1-1/2" DEEP METAL DECK, UNO. REFER TO TYPICAL STEEL DECK DETAILS. REFER TO TYPICAL DETAIL FOR OPENINGS IN STEEL DECK, UNO. CONTRACTOR SHALL VERIFY ALL DECK EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

**4. SLAB**

- 4.1. TYPICAL SLAB ON GRADE SHALL BE 6" THICK WITH #4 @ 18" OC EACH WAY AT CENTER OF SLAB.



FOR COORDINATION

**FARIVAR RESIDENCE**  
947 HARVARD AVE E  
SEATTLE WA 98102

**LUND OPSAHL**  
1215 Fourth Avenue, Suite 1200  
Seattle, Washington 98161  
206-402-5156 www.lundopsahl.com

REVISIONS:


Project No. 23-081-01  
DATE: 11/09/2023 Coordination Set  
Sheet Title  
**STRUCTURAL PLANS**

Sheet Number  
**S2.00**

**1 FOUNDATION PLAN**  
Scale: 1/4" = 1'-0"

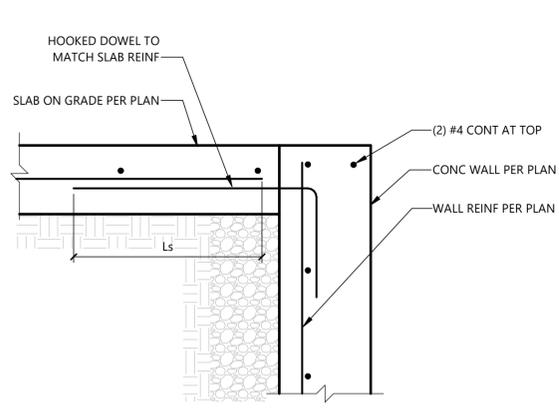


**2 ROOF FRAMING PLAN**  
Scale: 1/4" = 1'-0"

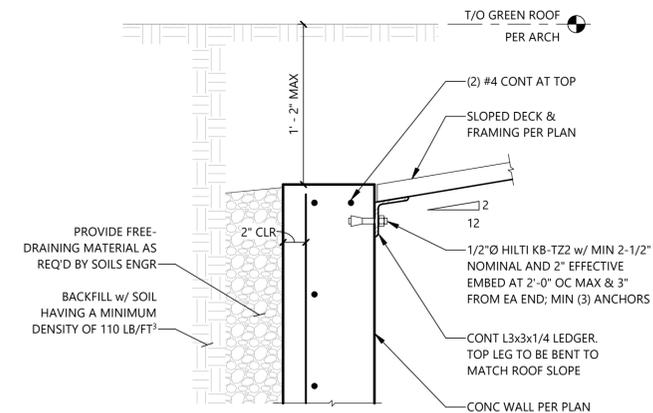


Project No. 23-081-01  
DATE: 11/09/2023 Coordination Set  
Sheet Title  
**STRUCTURAL PLANS**

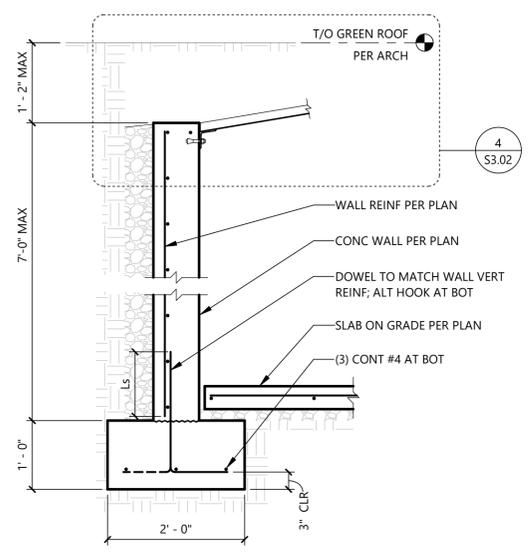




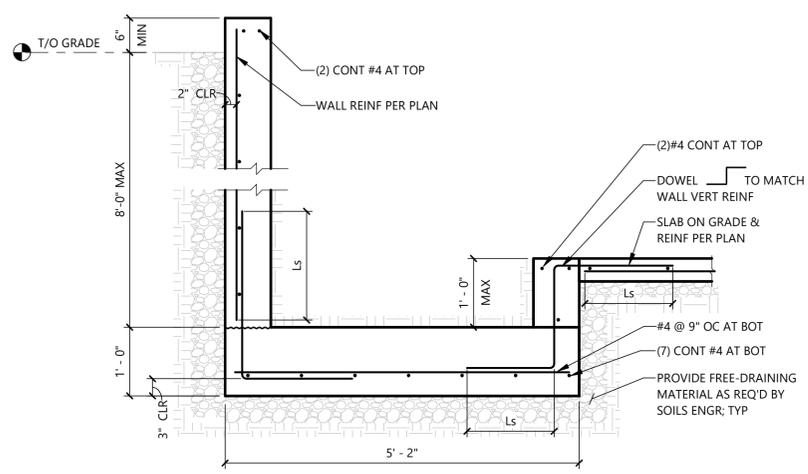
**3** SLAB ON GRADE TO TOP OF CONCRETE WALL  
Scale: 1 1/2" = 1'-0"



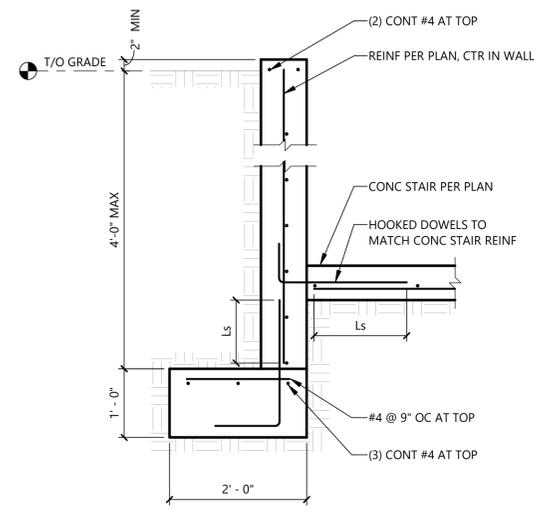
**4** TYPICAL LEDGER ANGLE AT DECK  
Scale: 1 1/2" = 1'-0"



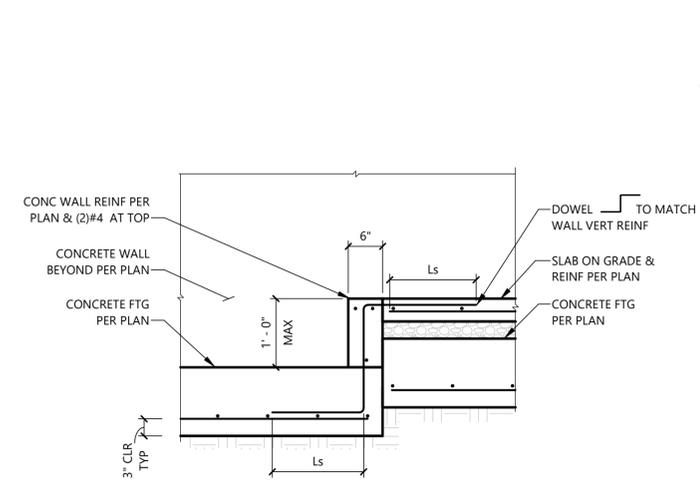
**6** TYPICAL RETAINING WALL (WITH ROOF & SLAB BELOW)  
Scale: 3/4" = 1'-0"



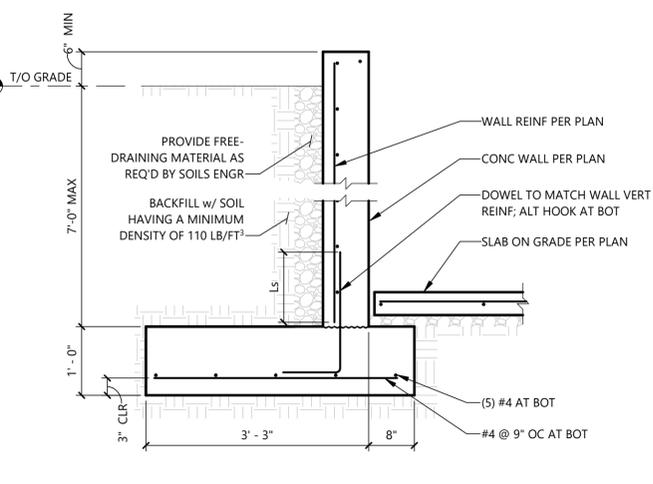
**7** TYPICAL RETAINING WALL AT PROPERTY LINE  
Scale: 3/4" = 1'-0"



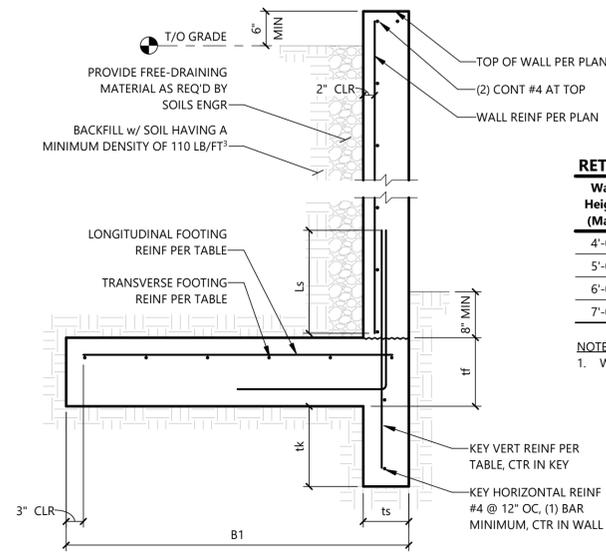
**8** TYPICAL CONC RETAINING WALL AT CONC STAIR  
Scale: 3/4" = 1'-0"



**9** SECTION AT RETAINING WALL AT PROPERTY LINE  
Scale: 3/4" = 1'-0"



**10** TYPICAL RETAINING WALL W/ SLAB  
Scale: 3/4" = 1'-0"



**12** TYPICAL RETAINING WALL (NO SLAB WITH KEY)  
Scale: 3/4" = 1'-0"

**RETAINING WALL TABLE (no slabs - with key)**

Wall Height (Max)	Dimensions				Footing Reinforcing			
	ts	B1	tf	tk	Transverse (at top)	Longitudinal (at Top)	Longitudinal (at Bottom)	Vertical (In Key)
4'-0"	8"	3'-3"	1'-0"	-	#4 @ 9" OC	(5) #4	-	-
5'-0"	8"	3'-3"	1'-0"	1'-0"	#4 @ 9" OC	(5) #4	-	#4 @ 12" OC
6'-0"	8"	4'-9"	1'-0"	1'-0"	#4 @ 9" OC	(7) #4	-	#4 @ 12" OC
7'-0"	8"	6'-6"	1'-0"	1'-0"	#4 @ 9" OC	(9) #4	-	#4 @ 12" OC

NOTES:  
1. WHERE "tk" IS NOTED AS "-", KEY IS NOT REQUIRED.

**FOR COORDINATION**

**BOTHWELL**  
BOTHWELL LANDSCAPE STUDIO  
2222 NE Oregon St., Ste 217  
Portland, Oregon 97232  
503.852.1040  
www.bstudio.io

**FARIVAR RESIDENCE**  
947 HARVARD AVE E  
SEATTLE WA 98102

**LUND OPSAHL**  
1215 Fourth Avenue, Suite 1200  
Seattle, Washington 98161  
206-402-5156 www.lundopsahl.com

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Project No. 23-081-01

DATE: 11/09/2023 Coordination Set

Sheet Title

**STRUCTURAL DETAILS**

Sheet Number

**S3.02**

**FOR COORDINATION**

**FARIVAR RESIDENCE**  
 947 HARVARD AVE E  
 SEATTLE WA 98102

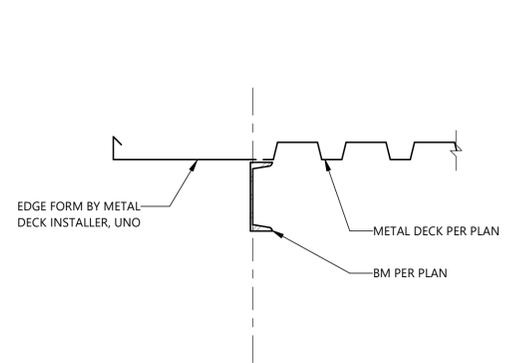
**LUND OPSAHL**  
 1215 Fourth Avenue, Suite 1200  
 Seattle, Washington 98161  
 206-402-5156 www.lundopsahl.com

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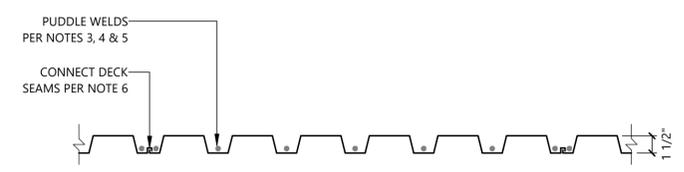
Project No. 23-081-01  
 DATE: 11/09/2023  
 Sheet Title Coordination Set

**STRUCTURAL DETAILS**

Sheet Number  
**S3.03**

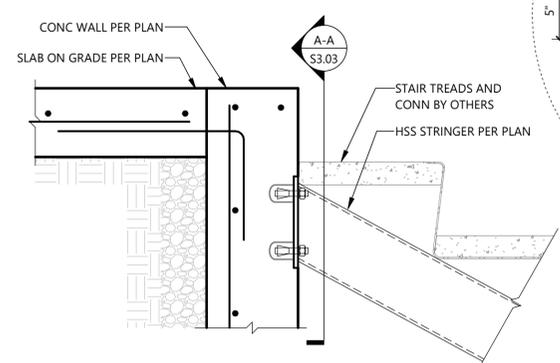


**8 TYPICAL STEEL DECK EDGE**  
 Scale: 1 1/2" = 1'-0"

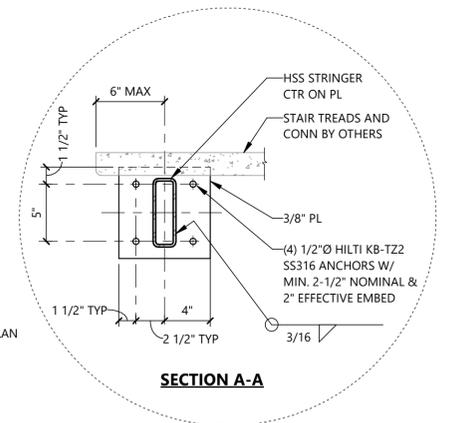


**7 TYPICAL STEEL DECK DETAIL (PLB-36)**  
 Scale: 1 1/2" = 1'-0"

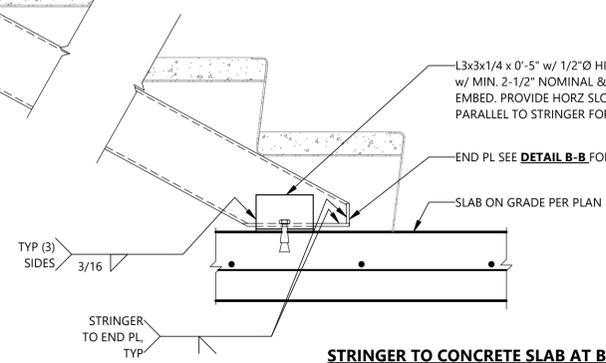
- NOTES:**
1. STEEL ROOF DECK TYPES SHALL BE 1 1/2" DECK - VERO TYPE HSB (ER-2078P), ASC PROFILES TYPE B (ESR-1414), OR APPROVED EQUAL.
  2. USE 20 GAGE DECK WITH MAXIMUM DECK SPAN OF 6'-7" CENTER TO CENTER (3 OR MORE CONTINUOUS SPANS). USE HEAVIER GAGE DECK AS REQUIRED WHERE SPAN CONDITIONS EXCEED THIS.
  3. PROVIDE (7) 3/4"Ø (1/2"Ø EFFECTIVE) PUDDLE WELDS PER SHEET TO ALL SUPPORTS PERPENDICULAR TO DECK FLUTES. WHERE TWO UNITS ABUT, EACH UNIT SHALL BE FASTENED TO THE STEEL FRAMING.
  4. PROVIDE 3/4"Ø (1/2"Ø EFFECTIVE) PUDDLE WELDS AT 1'-0" TO ALL FRAMING PARALLEL TO DECK FLUTES AND TO ALL BRACED FRAME BEAMS.
  5. WHERE STEEL MEMBERS ARE PARALLEL TO THE DECK FLUTES AND AT THE SAME ELEVATION AS THE BOTTOM OF THE DECK, ADJUST DECK LAYOUT AND WELD DECK TO STEEL WITH SAME WELDING AS REQUIRED FOR SIDE BOUNDARIES.
  6. CONNECT DECK SEAMS WITH VSC AT 1'-0" (PLB DECK) OR DELTA GRIP SIDE SEAM ATTACHMENT AT 1'-0" (B DECK).



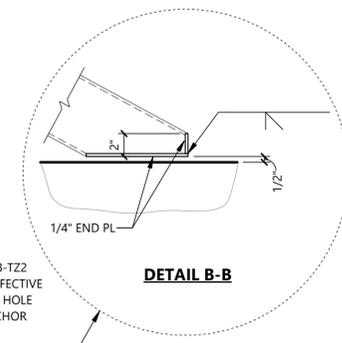
**STRINGER TO CONCRETE WALL AT TOP OF STAIR**



**SECTION A-A**



**STRINGER TO CONCRETE SLAB AT BOT OF STAIR**

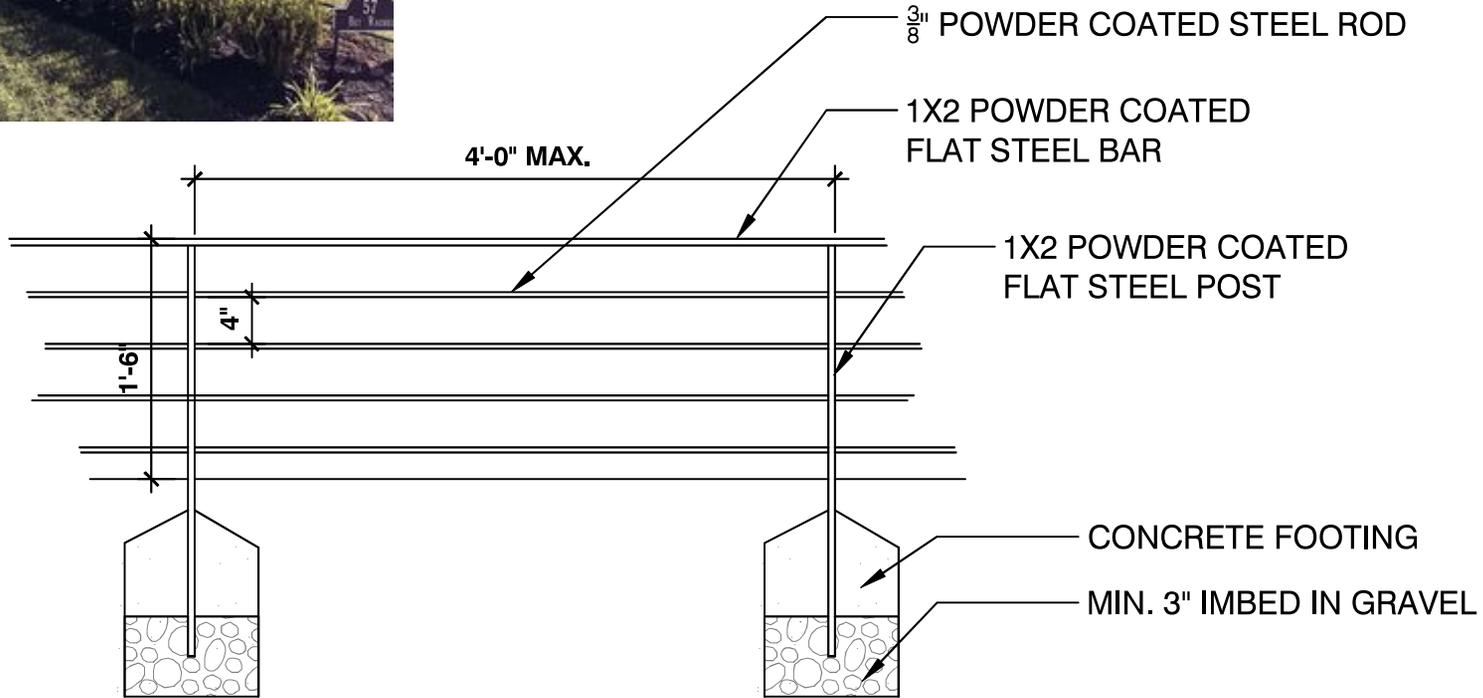


**DETAIL B-B**

**11 STAIR STRINGER CONNECTION**  
 Scale: 1 1/2" = 1'-0"



this is a similar fence detail, but ours is half the size and meant to keep dogs from destroying the planting.



2

## LOW FENCE

3/4" = 1'-0"

P-22\_005-06