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FRONT ELEVATION:



PREPARED FOR:

8456 SE 40TH RESIDENCE

PROJECT DATA:

PARCEL NO.: 502190-0790 PROPERTY TYPE: R, RESIDENTIAL LAND AREA: 11,930 S.F. ACRES: 0.27 Q,S,T,R: SW-7 -24-5 ADDRESS: 8456 SE 40TH MERCER ISLAND, WA 98040	DESIGN TEAM: URBAN DESIGN GROUP 15445 53rd AVE. S. STE. 110 TUKWILA, WA 98188 (206) 838-8250 urbandesigncenter@yahoo.com CONTACT: PAVEL MELNIK
ZONE: R-8.4 SETBACKS: FRONT: 20 FEET REAR: 25 FEET SIDE: 5 FT. MIN. 30 FEET	STRUCTURAL ENGINEER: NN ENGINEERING P.O. BOX 34681 LAKEWOOD, WA 98499 (253) 250-6651 NNENGINEERING@COMCAST.NET CONTACT: NORM P. NAVARRO
MAX HEIGHT: 30 FEET	OWNER: PHILIP SUDO Q LLC mackuntu@gmail.com laurieqian@gmail.com CONTACT: KUN QIAN & LAURIE QIAN
WATER: WATER DISTRICT SEWER/SEPTIC: PUBLIC ROAD ACCESS: PUBLIC STREET SURFACE: PAVED	

SHEET #	
A0	COVER
1 OF 1	BOUNDARY/TOPOGRAPHIC SURVEY
SITE	ARCHITECTURAL SITE PLAN
T1	TREE PROTECTION PLAN
	CIVIL ENGINEERING
C1.0	DRAINAGE SITE PLAN
C2.0	DETAILS
C3.0	TESC/DEMO/GSNPPP
	ARCHITECTURAL PLAN
A1.1	GENERAL NOTES AND PLAN PREVIEW
A1.2	ENERGY CREDITS OPTIONS
A2.1	GROSS FLOOR AREA (GFA)
A2.2	PARKING
A3	MAIN FLOOR PLAN
A4	UPPER FLOOR PLAN
A5	FRONT AND REAR ELEVATIONS
A6	LEFT AND RIGHT ELEVATIONS
A7	PERSPECTIVE VIEWS
A8	BUILDING CROSS-SECTION AND DETAILS
A9	ROOF LAYOUT
A10	SCHEDULES AND NOTES
A11	DETAILS
A12	PROJECT DETAILS
A13	HARDIE PANEL SIDING DETAILS
A14	ARTISAN LAP SIDING DETAILS
	STRUCTURAL PLAN
S1.1	GENERAL NOTES
S1.2	GENERAL NOTES
S2	FOUNDATION DETAILS
S3	FRAMING DETAILS
S4	FOUNDATION/ FLOOR FRAMING
S5	UPPER FLOOR FRAMING
S6	ROOF FRAMING

3D RENDERING NOTES:

3D ELEVATIONS ARE FOR REFERENCE ONLY. THESE SHOULD NOT BE USED TO DETERMINE ANY PORTION OF THE CONSTRUCTION OTHER THAN GENERAL MATERIAL AND APPEARANCE. REFER TO ELEVATION SHEETS FOR DETAILS.

PROJECT DESCRIPTION:

SINGLE FAMILY RESIDENCE (4 016 S.F.) AND ATTACHED 2-CAR GARAGE (500 S.F.).

BUILDING DEPARTMENT NOTES:

THE INSTALLATION OF A NFPA 13D FIRE SPRINKLER SYSTEM. THIS WILL REQUIRE A SEPARATE PERMIT, BUT MAY BE DEFERRED BY CITY AFTER FULL REVIEW.



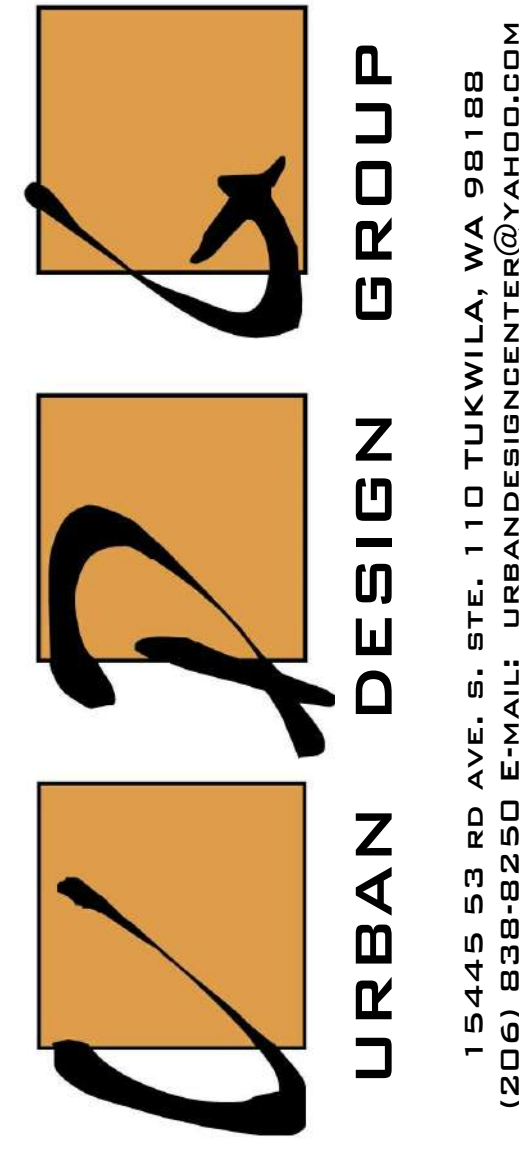
FRONT/RIGHT ELEVATION:



REAR/LEFT ELEVATION:



REAR ELEVATION:



URBAN DESIGN GROUP

15445 53 RD AVE. S. STE. 110, TUKWILA, WA 98188
 (206) 838-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

PROJECT NAME:
**SINGLE-FAMILY RESIDENCE
 8456 SE 40TH
 MERCER ISLAND, WA 98040
 PARCEL #: 502190-0790**

PREPARED FOR:
**PHILIP SUDO Q LLC
 KUN QIAN &
 LAURIE QIAN**

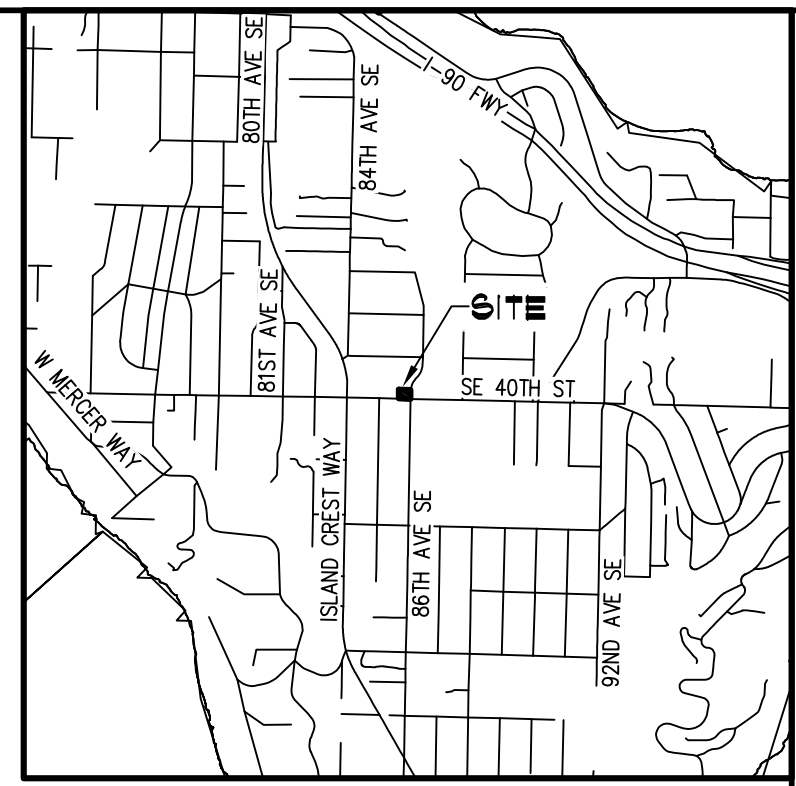
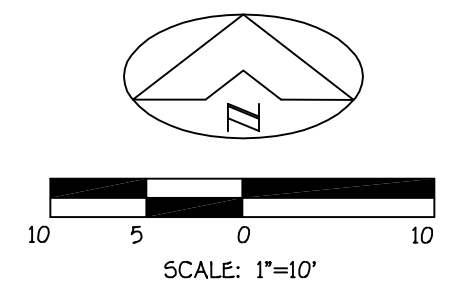
SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA
SHEET TITLE:	

COVER SHEET

PROJECT NUMBER:
21257

SHEET NUMBER:
AO

A PORTION OF THE SW 1/4, SW 1/4 OF SECTION 7, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.



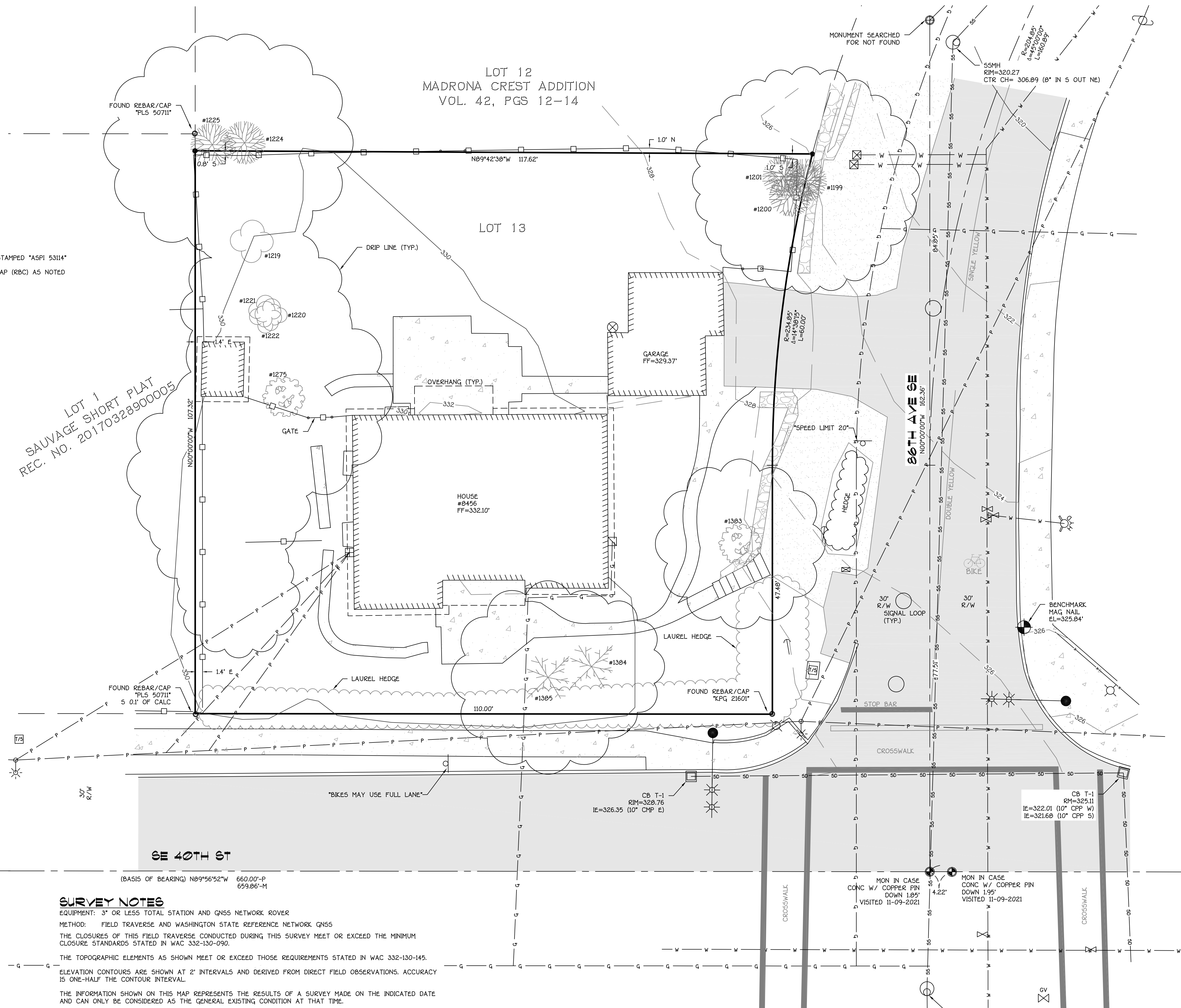
TREE TABLE

POINT	DESCRIPTION
1199	28" REDWOOD
1200	12" REDWOOD
1201	50" REDWOOD
1219	8" DECIDUOUS
1220	8" DECIDUOUS
1221	10" DECIDUOUS
1222	8" DECIDUOUS
1224	28" FIR
1225	22" FIR
1275	10" MAPLE
1383	18" MAPLE
1384	10" BIRCH
1385	16" BIRCH

LEGEND

- SET 24" X 1/2" REBAR WITH CAP STAMPED "ASPI 53114"
- FOUND IRON PIPE OR REBAR AND CAP (RBC) AS NOTED
- ⊗ WATER METER
- ⊕ WATER VALVE
- ⊙ FIRE HYDRANT
- ⊖ HOSE BIB
- ⊞ POWER METER
- ⊠ TRAFFIC SIGNAL BOX
- ⊡ PEDESTRIAN POLE PUSH BUTTON
- ⊛ TRAFFIC SIGNAL
- ⊜ UTILITY POLE
- ⊝ UTILITY POLE WITH LIGHT
- ⊞ GUY ANCHOR
- ⊠ MAILBOX
- ⊡ SIGN
- ⊞ GATE POST
- ⊠ TYPE 1 CATCH BASIN
- ⊞ SANITARY SEWER MANHOLE
- ⊠ GAS METER
- ⊞ GAS VALVE
- ⊠ WOOD FENCE
- ⊠ GAS
- ⊠ STORM DRAIN
- ⊠ OVERHEAD UTILITIES
- ⊠ SANITARY SEWER
- ⊠ DECIDUOUS
- ⊠ MAPLE
- ⊠ COTTONWOOD
- ⊠ FIR
- ⊠ ASPHALT
- ⊠ CONCRETE
- ⊠ GRAVEL
- ⊠ ROCKERY

LOT 1
SAUVAGE SHORT PLAT
REC. NO. 20170328900005



LEGAL DESCRIPTION

LOT 13, BLOCK 7, MADRONA CREST ADDITION, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 42 OF PLATS, PAGE 12 THROUGH 14, IN KING COUNTY, WASHINGTON.
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARING

58°56'52"E BETWEEN FOUND MONUMENTS ALONG CENTERLINE OF SE 40TH ST ACCORDING TO THE PLAT OF MADRONA CREST REFERENCED HEREON.

DATUM NAVD 88

BENCHMARK
MAG NAIL LOCATED ON EAST SIDE OF 86TH AVE SE, 0.5' EAST OF BACK OF CURB AND 5.5' WEST OF ANGLE POINT IN BACK OF SIDEWALK.
ELEV. = 325.84'

ELEVATION ESTABLISHED BY GPS OBSERVATIONS UTILIZING THE WASHINGTON STATE REFERENCE NETWORK.

SURVEY REFERENCES

P- MADRONA CREST ADDITION, RECORDED IN VOLUME 42, PG. 12 OF PLATS SHORT PLAT AF# 20170328900005
R- RECORD OF SURVEY AF# 20140213900001

UTILITY NOTES

BASIS FOR UTILITY LINES SHOWN:
FIELD OBSERVATIONS & AS-BUILT MAPS

IN PROVIDING THIS SURVEY, NO ATTEMPT HAS BEEN MADE TO OBTAIN OR SHOW DATA CONCERNING CONDITION OR CAPACITY OF ANY UTILITY EXISTING ON THIS SITE, WHETHER PRIVATE, MUNICIPAL OR PUBLIC OWNED.

UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THE SITE. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE TAKEN FROM A COMPILATION OF PUBLIC RECORDS AND VISIBLE FIELD EVIDENCE. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THE PUBLIC RECORDS. UNDERGROUND UTILITY LOCATIONS ARE ONLY APPROXIMATE. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN VISIBLE SURFACE LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. FIELD VERIFICATION IS NECESSARY PRIOR TO OR DURING ANY CONSTRUCTION.

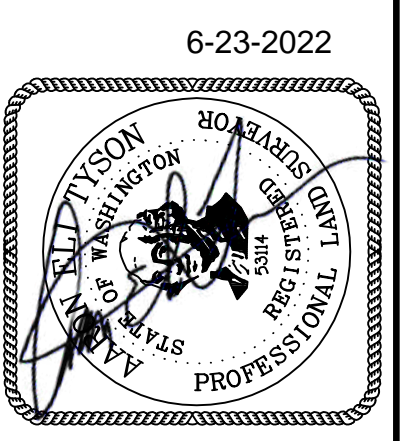
SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT SURVEYED OR EXAMINED OR CONSIDERED AS PART OF THIS SURVEY. NO EVIDENCE OR STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONDITIONS, CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.

SURVEY NOTES

EQUIPMENT: 3" OR LESS TOTAL STATION AND GNSS NETWORK ROVER
METHOD: FIELD TRAVERSE AND WASHINGTON STATE REFERENCE NETWORK GNSS
THE CLOSURES OF THIS FIELD TRAVERSE CONDUCTED DURING THIS SURVEY MEET OR EXCEED THE MINIMUM CLOSURE STANDARDS STATED IN WAC 332-130-090.
THE TOPOGRAPHIC ELEMENTS AS SHOWN MEET OR EXCEED THOSE REQUIREMENTS STATED IN WAC 332-130-145.
ELEVATION CONTOURS ARE SHOWN AT 2' INTERVALS AND DERIVED FROM DIRECT FIELD OBSERVATIONS. ACCURACY IS ONE-HALF THE CONTOUR INTERVAL.
THE INFORMATION SHOWN ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE INDICATED DATE AND CAN ONLY BE CONSIDERED AS THE GENERAL EXISTING CONDITION AT THAT TIME.
NO EASEMENTS, RESTRICTIONS OR RESERVATION OF RECORD WHICH WOULD BE DISCLOSED BY A TITLE REPORT ARE SHOWN.
LEGAL DESCRIPTION IS ACCORDING TO STATUTORY WARRANTY DEED REC. NO. 20200820001869

SITE DATA

SITE ADDRESS: 8456 SE 40TH ST, MERCER ISLAND, WA 98040
TAX PARCEL NUMBER: 502190-0790
GROSS SITE AREA: 11,930 SF (0.27 ACRES)



ASPI, LLC
LAND SURVEYING
AND
PLANNING
5208 6 2ND AVE, SUITE 4
EVERETT, WA 98203
(425) 252-1884

BOUNDARY/TOPOGRAPHIC
SURVEY
FOR
LAURIE YANG
PORTION OF SW 1/4, SW 1/4 OF SECTION 7, TOWNSHIP 24 NORTH,
RANGE 05 EAST, W.M.
CITY OF MERCER ISLAND
KING COUNTY, WASHINGTON

DRAWN BY: NJT
DATE: 10/09/2021
PROJECT NO: 21-514
SHEET NO: 1 OF 1



ZONING INFORMATION:

PARCEL NO.: 502190-0190
 PROPERTY TYPE: R, RESIDENTIAL
 LAND AREA: 11,930 sq. ft.
 ACRES: 0.27
 Q.S.T.R.: SW-1 -24-5
 ADDRESS: 8456 SE 40TH ST
 MERCER ISLAND, WA 98040
 ZONING: R-24
 SETBACKS: FRONT: 20 FEET
 REAR: 25 FEET
 SIDE: 17% OF THE LOT WIDTH OR 18.24' (10'132' x 11% = 18.24')
 MAX. HEIGHT: 30 FEET
 MAX. LOT COVERAGE: 40% (PERCENT)
 WATER: WATER DISTRICT
 SEWER/SEPTIC: PUBLIC
 ROAD ACCESS: PUBLIC
 STREET SURFACE: PAVED

HEIGHT CALCULATION:

PT.	MID. PT. HT	Wall SEGMENT LENGTH	RESULT
A	329.3	22	7244.6
B	329.3	2	658.6
C	329.3	10	3293
D	329.3	4.2	1383.06
E	329.3	3.9	1284.27
F	329	1	329
G	329	10	3290
H	329	1	329
I	329	3.9	1283.1
J	329	5	1645
K	329	18.7	6152.3
L	329.5	22.2	7314.9
M	329.5	2	659
N	329.5	18.3	6029.85
O	329.5	2	659
P	329.5	2	659
Q	329.5	37.5	12356.3
R	329.5	2.5	823.75
S	329.5	16.3	5370.85
T	329.5	2.5	823.75
U	329.5	5.7	1878.15
V	329.5	7	2306.5
W	329.5	9	2965.5
X	329.5	24.5	8072.75
TOTAL		233.2	76811.2
ABE			329.379

LOT COVERAGE CALCULATION

11,930 SF. TOTAL LOT AREA
 3,019 SF. BUILDING STRUCTURE W/ COVERED PORCH, CANTILEVERS AND ROOF OVERHANGS
 224 SF. COVERED PATIO
 813 SF. CONCRETE DRIVEWAY
 4,056 SF/33.99% TOTAL LOT COVERAGE (MAX 40%)

HARDSCAPE CALCULATION

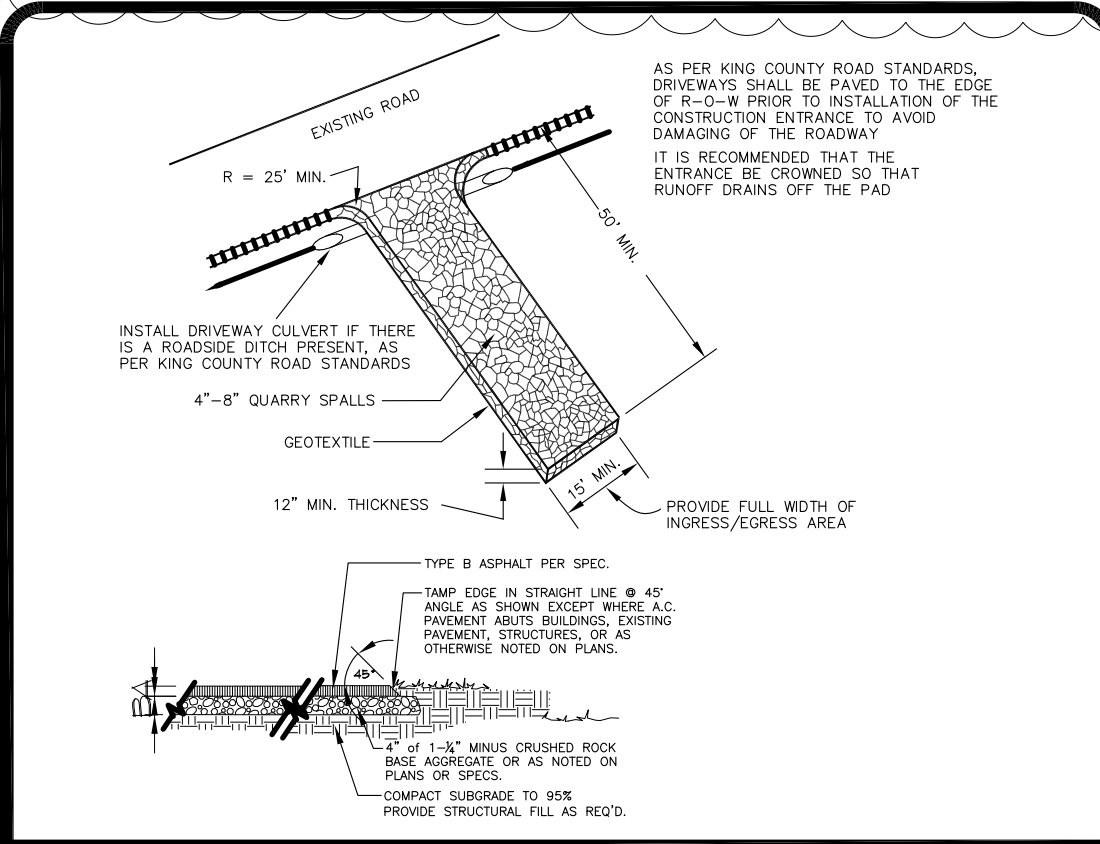
11,930 SF. TOTAL LOT AREA
 9 SF/0.075% CONCRETE STOOP (MAX 9%)

GROSS FLOOR AREA:

LOT AREA: 11,930 s.f.
 ALLOWED GFA: 4,772 s.f.
 GFA W/ALLOWANCE (40%): 4,772 s.f.

MAIN FLOOR: 2,015 SF.
 GARAGE: 500 SF.
 UPPER FLOOR: 2,255 SF.
 STAIRCASE: EXCLUDED

TOTAL GROSS FLOOR AREA (GFA): 4,770 SF. / 39.98%



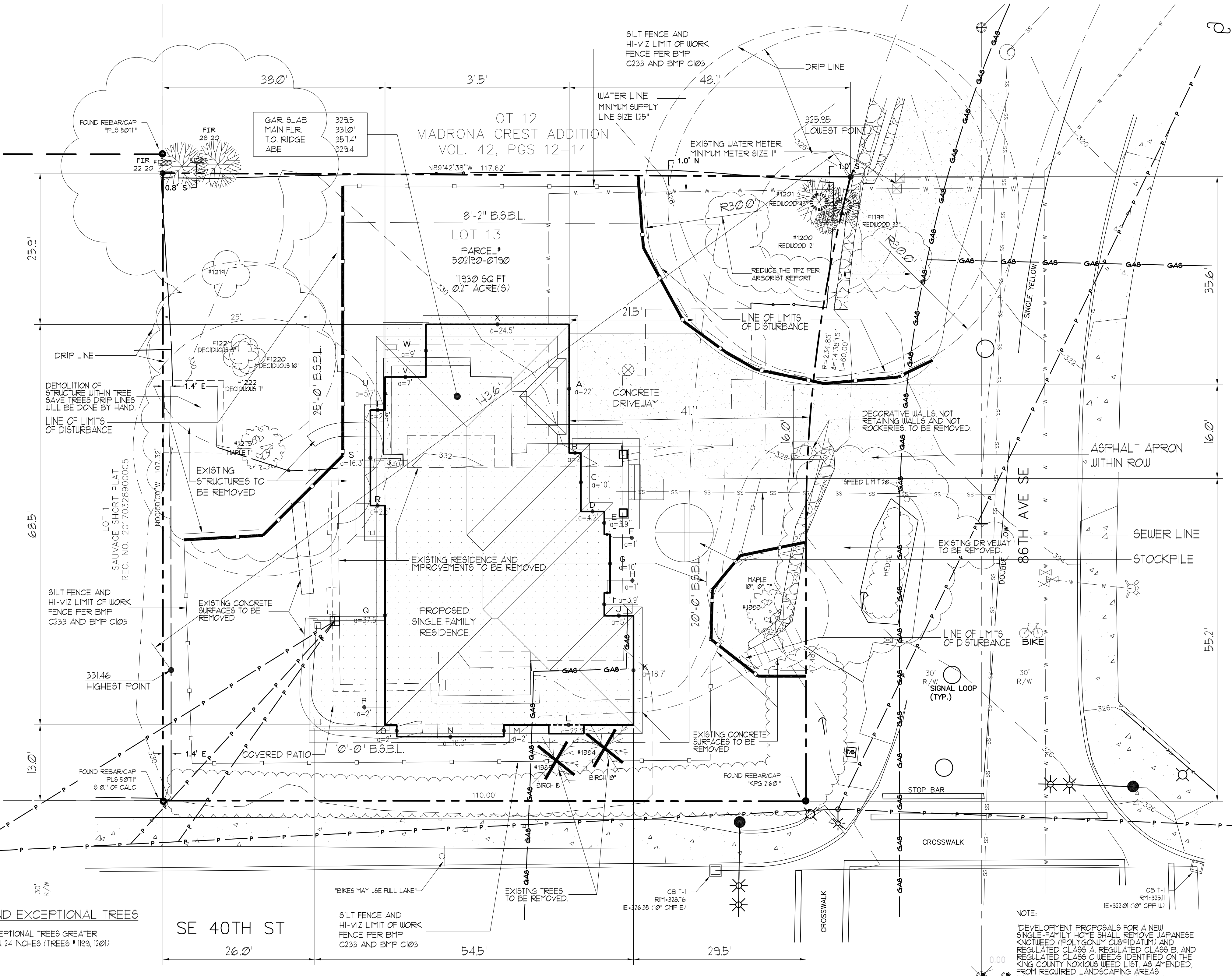
2 CONSTRUCTION ENTRANCE

TREE TABLE (ON SITE TREES)

POINT	DESCRIPTION	REMAIN?
1200	REDWOOD 12" 14'	YES
1201	REDWOOD 50" 16'	YES
1219	DECIDUOUS 8" 10'	YES
1220	DECIDUOUS 8" 10'	YES
1221	DECIDUOUS 10" 16'	YES
1222	DECIDUOUS 8" 12'	YES
1275	MAPLE 10" 20'	YES
1383	MAPLE 18" 16'	YES
1384	BIRCH 10" 14'	NO
1385	BIRCH 16" 18'	NO

TREE TABLE (NEIGHBORING TREES)

POINT	DESCRIPTION	REMAIN?
1199	REDWOOD 28" 22'	YES
1224	FIR 28" 20'	YES
1225	FIR 22" 20'	YES



LEGEND EXCEPTIONAL TREES

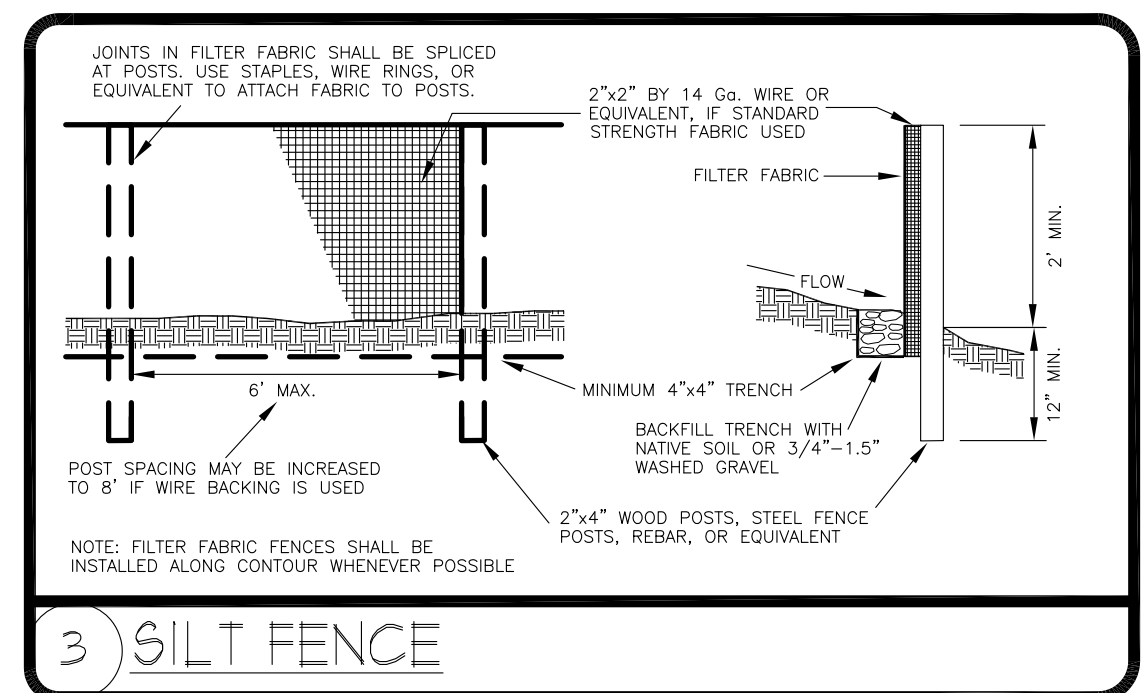
EXCEPTIONAL TREES GREATER THAN 24 INCHES (TREES # 1199, 1201)

TREE PROTECTION INFORMATION SEE SHEET T1

LOT SLOPE CALCULATIONS

Highest Elevation Point of Lot:	331.46	Feet
Lowest Elevation Point of Lot:	325.55	Feet
Elevation Difference:	5.91	Feet
Horizontal Distance Between High and Low Points:	143.8	Feet
Lot Slope*	3.83	%

*Lot slope is the elevation difference divided by horizontal distance multiplied by 100.

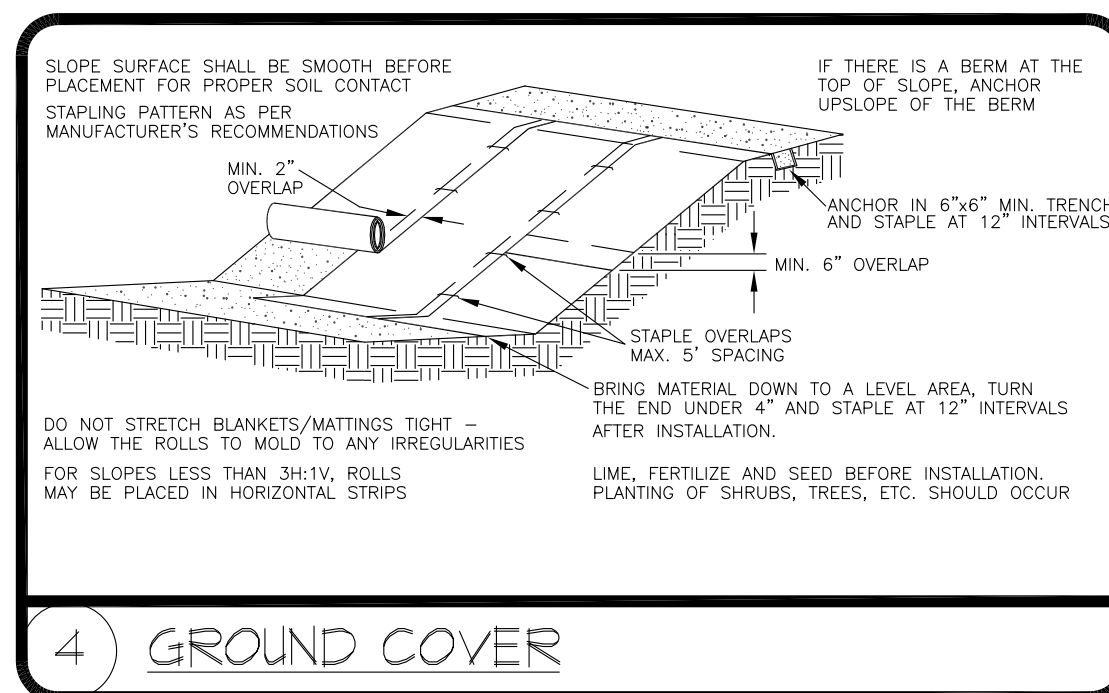


3 SILT FENCE

REDUCE THE TPZ PER ARBORIST'S TREE PROTECTION PLAN

THE SIGNIFICANT ON-SITE TREES WERE TAGGED WITH NUMBERS CORRESPONDING TO THE NUMBERS LISTED IN THIS REPORT. REFER TO ATTACHMENT I, SITE IMAGES, FOR AN ORIENTATION TO THE SITE AND THE APPROXIMATE LOCATION OF THE TREES. THERE WERE A TOTAL OF 8 REGULATED TREES AND 5 UNREGULATED TREES ON THE PROPERTY. ACCORDING TO THE DPO DIRECTOR'S RULE 6-10008 THERE WERE TWO EXCEPTIONAL TREES ON THE PROPERTY. TREES LABELED 1199 AND 1201. EXCEPTIONAL TREES WILL BE MARKED WITH AN 'X' FOLLOWING THEIR CORRESPONDING NUMBER. TWO TREES LABELED 1384 AND 1385 WOULD CONFLICT WITH THE PROPOSED WORK AND ARE PROPOSED FOR REMOVAL. THE TWO TREES TO BE REMOVED ARE BOTH IN POOR HEALTH DUE TO BRONZE BIRCH BORER DAMAGE AND SEVERE PRUNING. NO ADJACENT TREES WILL BE AFFECTED BY THE REMOVAL OF THESE TREES.
 * TREE 1201 HAS A TPZ THAT WILL LIKELY INTERFERE WITH CONSTRUCTION ACTIVITIES TO THE SOUTH OF THE TREE. THE TPZ WILL BE REDUCED BY 30%. THIS WOULD REDUCE THE TPZ FROM 43' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.
 * TREE 1199 HAS A TPZ THAT WILL LIKELY INTERFERE WITH THE CONSTRUCTION OF THE DRIVEWAY. TO THE SOUTH OF THE TREE, THE TPZ WILL BE REDUCED BY 10% TO MATCH TREE 1201'S TPZ. THIS WOULD REDUCE THE TPZ ON THE SOUTH SIDE OF THE TREE FROM 33' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.

TO AVOID ANY CONFLICTS OF INTEREST, EASTSIDE TREE WORKS WILL NOT BE PERFORMING ANY TREE REMOVALS ASSOCIATED WITH THIS CONSTRUCTION PROJECT.



4 GROUND COVER

DRAINAGE DESIGN PROVIDED BY INTERLAKEN ENGINEERING AND DESIGN, PLLC SEATTLE, WA
 TEL: (206) 470-9572
 CONTACT: MATTHEW HARRINGA
 www.interlakenengineering.com

LEGAL DESCRIPTION:
 MADRONA CREST ADD
 Plat Block: 1
 Plat Lot: 13

SITE PLAN
 SCALE: 1" = 10'-0"



Project
SINGLE-FAMILY RESIDENCE
 PARCEL#: 502190-0790
 8456 SE 40TH
 MERCER ISLAND, WA 98040

Prepared for
KUN QIAN & LAURIE QIAN

URBAN DESIGN GROUP
 18445 53rd Ave S, Ste 100 Seattle, WA 98148
 (206) 838-0250 E-mail: urbandesign@urbandesign.com
 PO BOX 85906 Tukwila WA 98186

ENGINEER	DESIGN BY	COMMENTS
I.VAN SHVETS	I.VAN SHVETS	
06/27/2023		
REV. DATE		

Project # :
21257
 Sheet
SITE

PLAT DATE: 06-27-2023

Tree #	Species	Latin Name	DBH	Appr Ht	Health	Drip Line Radius	TPZ Radius [ft]	CRZ Radius [ft]	Exceptional	Regulated	Retain
1199*	Redwood	<i>(Sequoia sempervirens)</i>	33"	95'	Very Good	20'	33'	16.5'	Yes	Yes	Yes
The tree is perched on top of a small stone retaining wall at the northeast corner of the property. There is a small fence that is growing against the trunk at the root flare. This tree is part of a cluster of 3 redwood trees.											
1200	Redwood	<i>(Sequoia sempervirens)</i>	12"	35'	Good	17'	12'	6'	No	Yes	Yes
This tree is located at the northeast corner of the property. This tree is growing subdominantly under 2 larger Redwood trees.											
1201*	Redwood	<i>(Sequoia sempervirens)</i>	43"	100'	Very Good	19'	43'	26.5'	Yes	Yes	Yes
This tree is located at the northeast corner of the property amongst a cluster of 3 Redwood trees.											
1220, 1221 and 1222	Mountain ash	<i>(Sorbus americana)</i>	10", 9", and 7"	40'	Fair	16'	10'	5'	No	Yes	Yes
The tree is located approximately 30' south of the northwestern corner of the property and approximately 12' from the west wall											
1275	Japanese maple	<i>(Acer palmatum)</i>	11"	30'	Good	22'	11'	5.5'	No	Yes	Yes
This tree is located approximately 15' west of the northwest corner of the house.											
1383	Japanese maple	<i>(Acer palmatum)</i>	10", 10", and 7"	20'	Very Good	19'	10'	5'	No	Yes	Yes
This tree is located approximately 25' east of the southeast corner of the house.											
1384	Paper birch	<i>(Betula papyrifera)</i>	10"	20'	Poor	8'	10'	5'	No	Yes	No
This tree is located approximately 15' south of the southeast corner of the house.											
1385	Paper birch	<i>(Betula papyrifera)</i>	15"	20'	Poor	15'	15'	7.5'	No	Yes	No

TREE INVENTORY SUMMARY
(PER ARBORIST REPORT)

LEGEND EXCEPTIONAL TREES

EXCEPTIONAL TREES GREATER THAN 24 INCHES (TREES # 1199, 1201)

TREE PROTECTION AREA (TPZ)

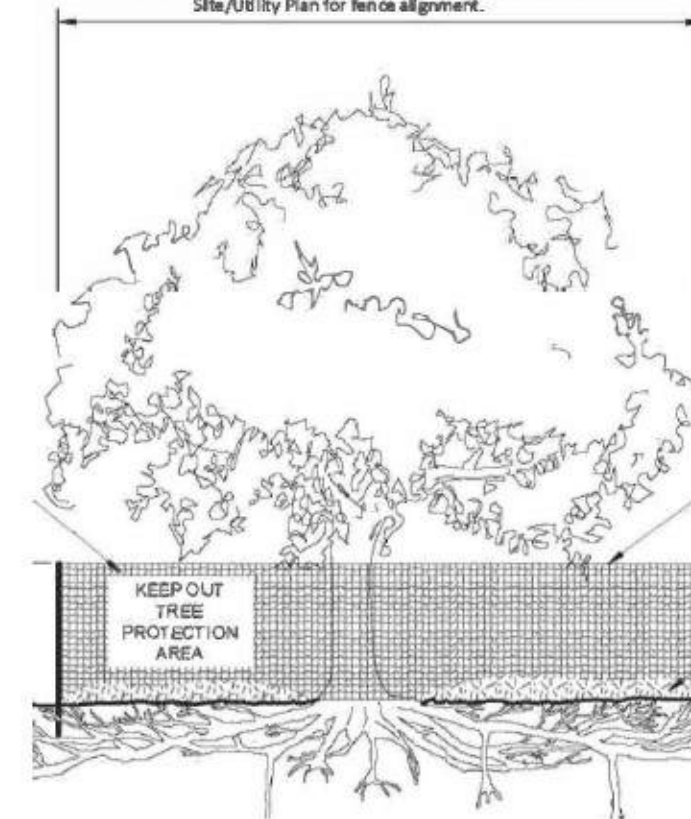
KEEP OUT!

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees
3. Arborist reports recommending mitigation

Crown drip line or other limit of Tree Protection area. See Site/Utility Plan for fence alignment.



- Notes**
1. No pruning shall be performed unless under the direction of an arborist
 2. No equipment shall be stored or operated inside the protective fencing including during fence installation and removal
 3. No storage of materials shall occur inside the protective fencing
 4. Refer to Site/Utility Plan for allowable modifications to the tree protection area.
 5. Unauthorized activities in tree protection area may require evaluation by private arborist to identify impacts and mitigation required
 6. Exposed roots: For roots > 1" damaged during construction, make a clean straight cut to remove damaged portion and inform City Arborist

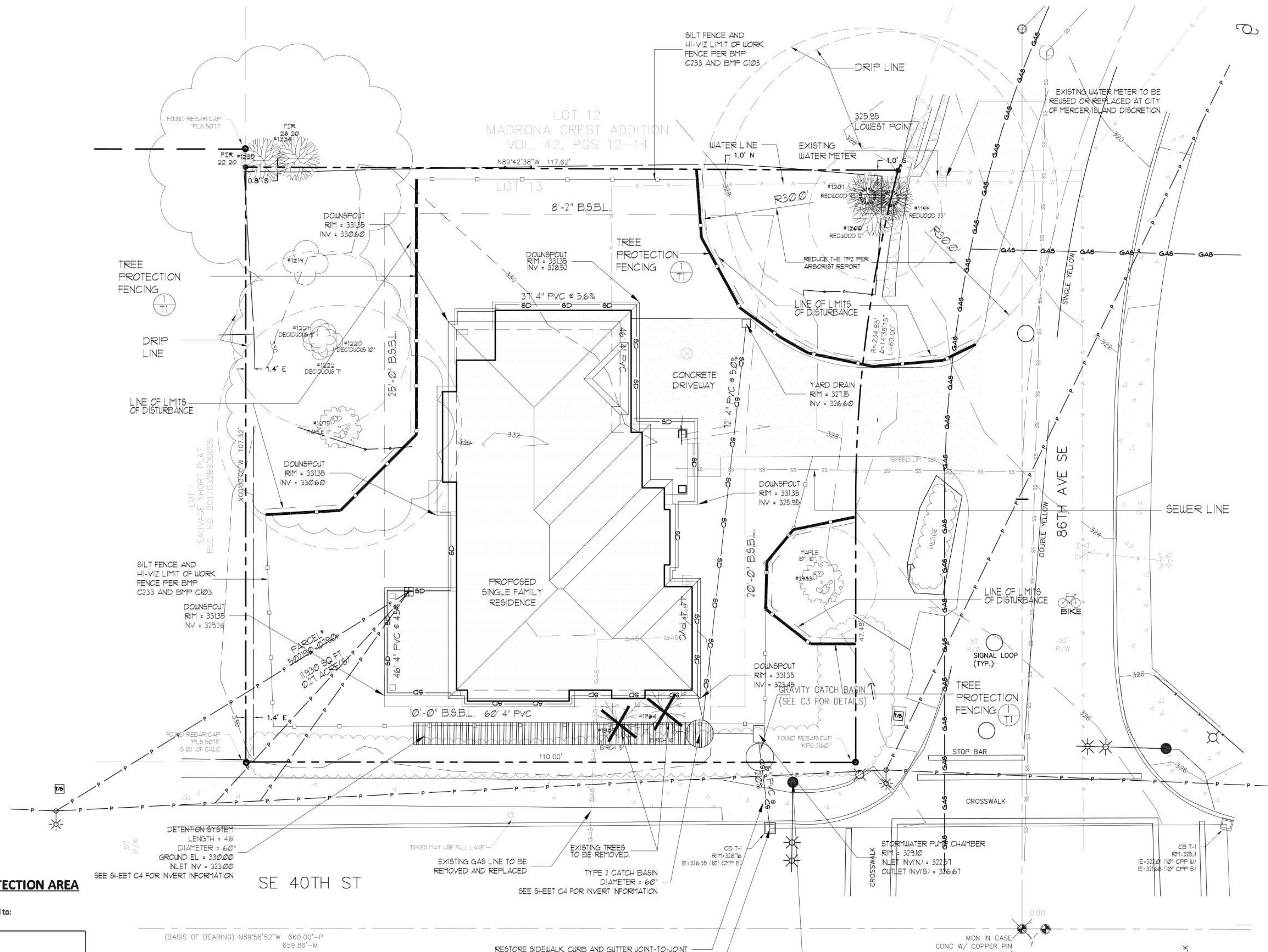
Tree protection fence: 4-6" chain link fence, solidly anchored into the ground, or if authorized High-density polyethylene fencing with 3.5" x 1.5" openings; color orange. Steel posts installed at 8' o.c.

2" x 6" steel posts or approved equal

Maintain existing grade with the tree protection fence unless otherwise indicated on the plans

Any Work in the protected area must be with the permission of the City Arborist john.kennedy@mercer.gov

TREE PROTECTION ZONE (TPZ)



REDUCE THE TPZ PER ARBORIST'S TREE PROTECTION PLAN

THE SIGNIFICANT ON-SITE TREES WERE TAGGED WITH NUMBERS CORRESPONDING TO THE NUMBERS LISTED IN THIS REPORT. REFER TO ATTACHMENT 1 SITE IMAGES FOR AN ORIENTATION TO THE SITE AND THE APPROXIMATE LOCATION OF THE TREES. THERE WERE A TOTAL OF 8 REGULATED TREES AND 5 UNREGULATED TREES ON THE PROPERTY. ACCORDING TO THE DPD DIRECTOR'S RULE 6-2009 THERE WERE TWO EXCEPTIONAL TREES ON THE PROPERTY. TREES LABELED 199 AND 1201. EXCEPTIONAL TREES WILL BE MARKED WITH AN * FOLLOWING THEIR CORRESPONDING NUMBER. TWO TREES LABELED 1384 AND 1385 WOULD CONFLICT WITH THE PROPOSED WORK AND ARE PROPOSED FOR REMOVAL. THE TWO TREES TO BE REMOVED ARE BOTH IN POOR HEALTH DUE TO BRONZE BIRCH BORER DAMAGE AND SEVERE PRUNING. NO ADJACENT TREES WILL BE AFFECTED BY THE REMOVAL OF THESE TREES.

* TREE #1201 HAS A TPZ THAT WILL LIKELY INTERFERE WITH CONSTRUCTION ACTIVITIES. TO THE SOUTH OF THE TREE THE TPZ WILL BE REDUCED BY 30%. THIS WOULD REDUCE THE TPZ FROM 43' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.

* TREE #199 HAS A TPZ THAT WILL LIKELY INTERFERE WITH THE CONSTRUCTION OF THE DRIVEWAY. TO THE SOUTH OF THE TREE THE TPZ WILL BE REDUCED BY 10% TO MATCH TREE #1201'S TPZ. THIS WOULD REDUCE THE TPZ ON THE SOUTH SIDE OF THE TREE FROM 33' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.

TO AVOID ANY CONFLICTS OF INTEREST, EASTSIDE TREE WORKS WILL NOT BE PERFORMING ANY TREE REMOVALS ASSOCIATED WITH THIS CONSTRUCTION PROJECT.

Project
SINGLE-FAMILY RESIDENCE
PARCEL#: 502190-0790
8456 SE 40TH
MERCER ISLAND, WA 98040

Prepared for
KUN QIAN & LAURIE QIAN

URBAN DESIGN GROUP
15445 57th AVE S, STE 110 SEATTLE, WA 98148
(206) 838-8750 E-mail: urban@designergroup.com
PO BOX 86906 Tukwila WA 98186

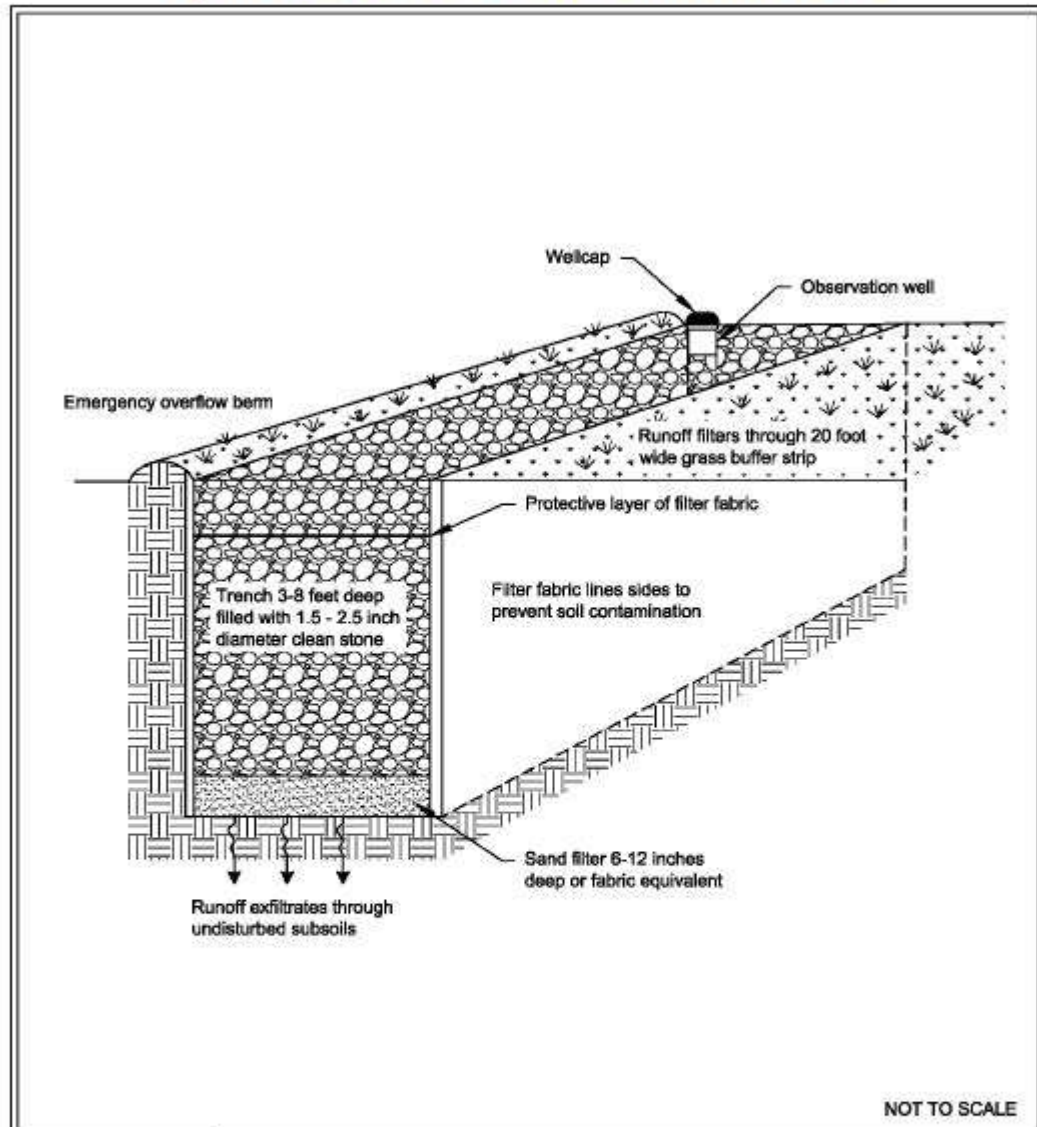
ENGINEER:	
DESIGN BY:	IVAN SHVETS
PLAN DATE:	02/09/2023
REV. DATE:	
COMMENTS:	

Project # :
21257
Sheet
T1

TREE PROTECTION PLAN
SCALE: 1" = 10'-0"

PLAT DATE: 02-20-2023

Figure V-5.5: Schematic of an Infiltration Trench

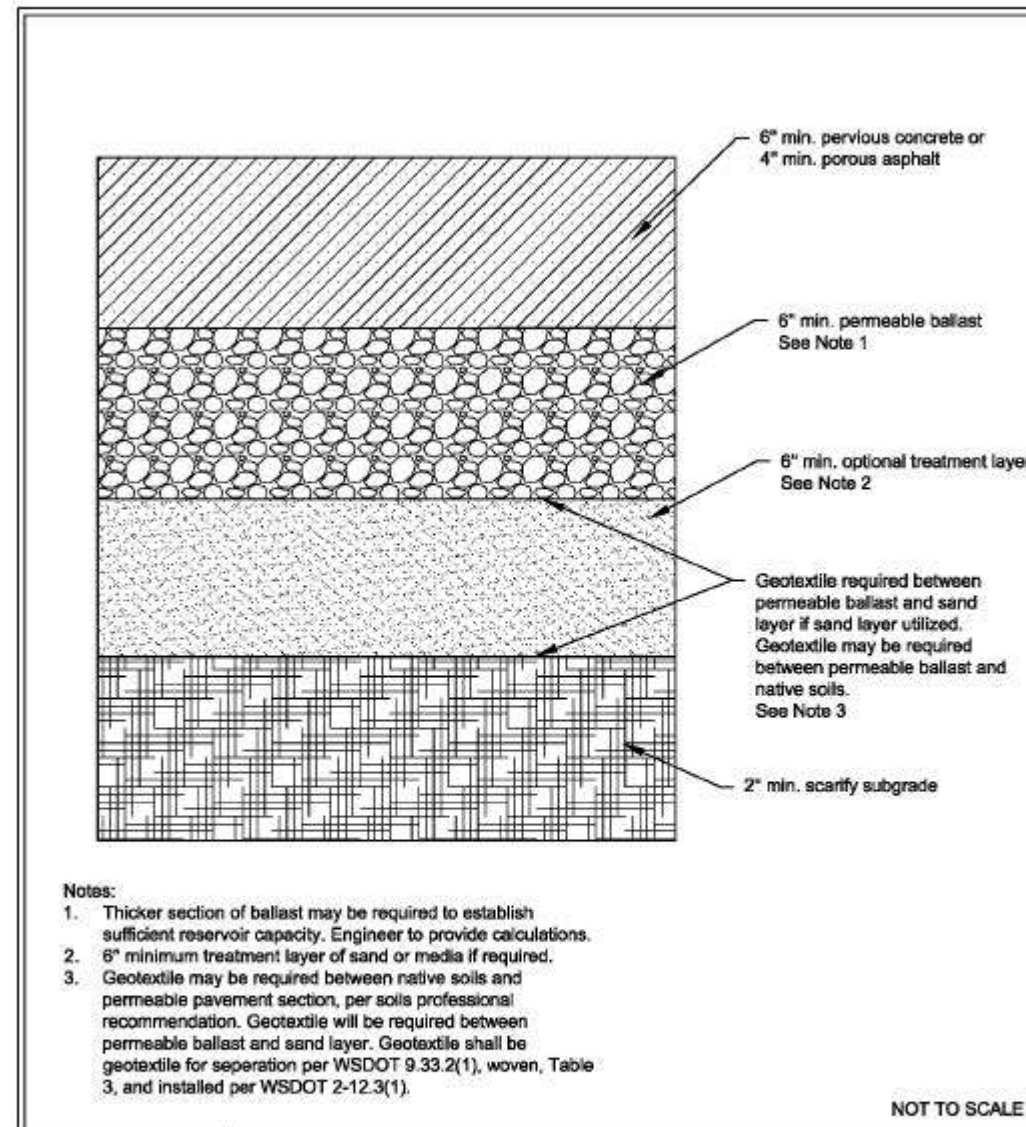


Schematic of an Infiltration Trench

Revised May 2019

**GRAVEL INFILTRATION TRENCH
BMP T-7.20**

Figure V-5.1: Example of a Permeable Pavement (Concrete or Asphalt) Section



Notes:

1. Thicker section of ballast may be required to establish sufficient reservoir capacity. Engineer to provide calculations.
2. 6" minimum treatment layer of sand or media if required.
3. Geotextile may be required between native soils and permeable pavement section, per soils professional recommendation. Geotextile will be required between permeable ballast and sand layer. Geotextile shall be geotextile for separation per WSDOT 9.33.2(1), woven, Table 3, and installed per WSDOT 2-12.3(1).



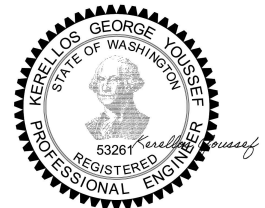
**Example of a Permeable Pavement
(Concrete or Asphalt) Section**

Revised May 2019

**PERMEABLE PAVEMENT
BMP T-5.15**

SKYGATE ENGINEERS AND
CONSULTANTS LLC,
KERELLOS YOUSSEF, P.E.

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SEP. 17, 2023

REVISIONS		DESCRIPTION
NO.	DATE	FOR PERMITS
1	SEP. 17, 2023	

SITE PLAN
PROJECT: KUN & LAURIE QIAN
RESIDENCE
8456 SE 40TH STREET
MERCER ISLAND, WA
98040

DWG. NO.: C-2
SCALE: N.T.S
DATE: 09/17/2023

GENERAL NOTES

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2018 UNIFORM PLUMBING CODE
- 2018 WASHINGTON STATE ENERGY CODE
- 2018 WASHINGTON STATE AMENDMENTS

CONTRACTOR SHALL VERIFY ALL NOTES, DIMENSIONS & CONDITIONS PRIOR TO CONSTRUCTION & PROVIDE TEMPORARY BRACING AS REQUIRED UNTIL ALL PERMANENT CONNECTIONS HAVE BEEN INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY

REPETITIVE FEATURES NOT NOTED ON THE DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL

CONTRACTOR SHALL VERIFY ALL ROUGH-IN DIMENSIONS FOR ALL EQUIPMENT TO BE INSTALLED

SITE WORK

GENERAL
UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 1500 PSF.
EXTERIOR FOOTINGS SHALL BEAR 16" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS. BACK FILL TO BE THOROUGHLY COMPACTED.
FOUNDATION VENTS SHALL NOT INTERFERE WITH DIRECT LOAD PATH OF COLUMNS.

CONCRETE

MIX AND 28 DAY STRENGTH OF CONCRETE
- BASEMENT WALLS & FOUNDATIONS
& OTHER CONCRETE NOT EXPOSED TO WEATHER:

PER STRUCTURAL
5-SHEETS

- BASEMENT SLABS & INTERIOR SLABS
& INTERIOR SLABS ON GRADE,
EXCEPT GARAGE DOOR SLABS

PER STRUCTURAL
5-SHEETS

- BASEMENT WALLS & FOUNDATION
WALLS, EXTERIOR WALLS & OTHER
VERTICAL CONCRETE WORK EXPOSED
TO THE WEATHER:

PER STRUCTURAL
5-SHEETS

- PORCHES, CARPORT SLABS & STEPS
EXPOSED TO WEATHER, & GARAGE

PER STRUCTURAL
5-SHEETS

FLOOR SLABS:

GARAGE FLOORS TO SLOPE 1/8"/1FT. MIN. TOWARDS OPENING AS REQUIRED FOR DRAINAGE. CONCRETE SLABS TO HAVE CONTROL JOINTS AT 25' FT. (MAX) INTERVALS EA. WAY. SLABS ARE TO BE 5-AIR ENTRAINED CONCRETE SIDEWALKS TO HAVE 3/4" IN. TOOLED JOINTS AT 5' FT. (MIN.) O.C.

CONCRETE COVER OF REINFORCING

3" CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
1 1/2" CONCRETE EXPOSED TO EARTH OR WEATHER.
1 1/2" BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER.
3/4" SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER.
LAP COLUMN VERTICALS. CLASS "A" CONCRETE AND MASONRY COLUMN AND WALL VERTICALS 52 DIAMETERS. LAP ALL OTHER REINFORCING 24 DIAMETERS. SPLICES AT TENSION REGIONS SHALL NOT BE PERMITTED.

CARPENTRY

GENERAL
ALL FRAMING TO COMPLY WITH ENGINEERING 5-SHEETS FOR NAIL SIZES AND SPACING.

ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.

6" MIN. CLEARANCE BETWEEN WOOD AND EARTH.
18" MIN. CLEARANCE BETWEEN FLOOR JOIST AND EARTH.
12" MIN. CLEARANCE BETWEEN FLOOR BEAMS AND EARTH.

FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL.

REFERENCE SHEET-S1 FOR SPECIES AND GRADE (BASE DESIGN VALUES)

BOLT HEADS AND NUTS BEARING AGAINST WOOD TO BE PROVIDED WITH 3"x3"x22g PLATE WASHERS. WOOD BEARING ON OR INSTALLED WITHIN 1" OF MASONRY OR CONCRETE TO BE TREATED WITH AN APPROVED PRESERVATIVE. SOLID BLOCKING OF NOT LESS THAN 2 X THICKNESS SHALL BE PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS. BETWEEN SUPPORTS PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS, JOISTS, 10'-0" FOR ROOF JOISTS. TYPICAL SILL BOLTS TO BE 5/8" DIAMETER AT 6'-0" O.C. MINIMUM 1" EMBED. ALL METAL FRAMING ANCHORS AND HANGERS SHOWN ON DRAWINGS SHALL BE STRONG TIE CONNECTORS AS MANUFACTURED BY SIMPSON COMPANY.

PLYWOOD
PLYWOOD WALL AND ROOF SHEATHING SHALL BE 3/4" CDX, UNLESS OTHERWISE SPECIFIED. PLYWOOD FLOOR SHEATHING SHALL BE 3/4" CDX T&G. UNLESS OTHERWISE SPECIFIED. STAGGER END LAPS AT ROOF AND FLOOR SHEATHING. OSB SHEATHING PRODUCTS OF EQUIVALENT SPAN RATINGS SHALL BE ALLOWED.

WOOD TRUSSES
ALL ROOF TRUSSES SHALL BE FRAMED AND TIED INTO THE FRAME WORK AND SUPPORTING WALLS SO AS TO FROM AN INTEGRAL PART OF THE WHOLE BUILDING. ROOF TRUSSES SHALL HAVE JOINTS WELL FITTED AND SHALL HAVE ALL TENSION MEMBERS WELL TIGHTENED BEFORE ANY LOAD IS PLACED UPON THE TRUSS. DIAGONAL AND SWAY BRACING SHALL BE USED TO BRACE ALL TRUSSES.

SEE SHEET-S1 FOR DESIGN CRITERIA

INSULATION AND MOISTURE PROTECTION

GENERAL
INSULATION Baffles TO MAINTAIN 1" ABOVE BATT INSULATION
Baffles TO EXTEND 6" ABOVE BATT INSULATION
Baffles TO EXTEND 12" ABOVE LOOSE FILL INSULATION
INSULATE BEHIND TUBS/SHOWERS, PARTITIONS AND CORNERS FACE STAPLE BATTS
FRICTION FIT FACED BATTS
USE 4 MIL POLY VAPOR RETARDER AT WALLS.
* R-10 RIGID FOAM INSULATION ON 4X EVADERS AT EXTERIOR WALLS.

INFILTRATION CONTROL

1. EXTERIOR JOINTS AROUND WINDOWS AND DOOR FRAMES, OPENINGS BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOF AND BETWEEN WALL PANELS, OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH WALLS, FLOOR AND ROOFS, AND ALL OTHER SUCH OPENINGS IN THE BUILDING ENVELOPE, INCLUDING ACCESS PANELS INTO UNHEATED SPACES, SHALL BE SEALED, CAULKED, GASKETED OR WEATHER-STRIPPED TO LIMIT AIR LEAKAGE. ALL OPENINGS SHALL BE FLASHED. APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. APPROVED CORROSION-RESISTANT FLASHING SHALL BE INSTALLED AT ALL OF THE FOLLOWING LOCATIONS:
 1. AT TOP OF ALL EXTERIOR WINDOW AND DOOR OPENINGS IN SUCH A MANNER AS TO BE LEAKPROOF, EXCEPT THAT SELF-FLASHING WINDOWS HAVING A CONTINUOUS LAP OF NOT LESS THAN 1-1/8" OVER THE SHEATHING MATERIAL AROUND THE PERIMETER OF THE OPENING, INCLUDING CORNERS, DO NOT REQUIRE ADDITIONAL FLASHING; JAMB FLASHING MAY ALSO BE OMITTED WHEN SPECIFICALLY APPROVED BY THE BUILDING OFFICIALS.
 2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
 3. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
 4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
 5. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
 6. AT WALL AND ROOF INTERSECTIONS.
 7. AT BUILT-IN GUTTERS.

- ALL EXTERIOR DOORS, OTHER THAN FIRE-RATED DOORS, SHALL BE DESIGNED TO LIMIT AIR LEAKAGE AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION. DOORS BETWEEN RESIDENCE AND GARAGE ARE NOT CONSIDERED FIRE-RATED AND MUST MEET THE ABOVE REQUIREMENT.

- ALL EXTERIOR WINDOWS SHALL BE DESIGNED TO ADMIT INFILTRATION INTO OR FROM THE BUILDING ENVELOPE.

- RECESSED LIGHTING FIXTURES: WHEN INSTALLED IN THE BUILDING ENVELOPE, RECESSED LIGHTING FIXTURES SHALL BE TYPE IC RATED AND CERTIFIED TO HAVE NO MORE THAN 2.0 CFM AIR MOVEMENT FROM THE CONDITIONED SPACE TO THE CEILING CAVITY. THE LIGHTING FIXTURE SHALL BE TESTED AT 75 PASCAL'S OR 151 LBS/FT² PRESSURE DIFFERENCE AND HAVE A LABEL ATTACHED, SHOWING COMPLIANCE WITH THIS TEST METHOD. RECESSED LIGHTING FIXTURES SHALL BE INSTALLED WITH A GASKET OR CAULK BETWEEN THE FIXTURE AND CEILING TO PREVENT AIR LEAKAGE.

VAPOR BARRIERS/ GROUND COVERS
AN APPROVED VAPOR BARRIER SHALL BE PROPERLY INSTALLED IN ROOF DECKS, IN ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND AT EXTERIOR WALLS. INSET STAPLED BATTS WITH A PERM RATING LESS THAN ONE MAY BE INSTALLED IF THE VAPOR BARRIER IS TO THE WARM SIDE, STAPLES ARE PLACED NOT MORE THAN 8 INCHES ON CENTER AND GAPS BETWEEN THE FACING AND THE FRAMING DO NOT EXCEED 1/16 INCH.

A GROUND COVER OF 6 MIL (0.006") BLACK POLYETHYLENE OR EQUIVALENT, SHALL BE LAID OVER THE GROUND IN ALL CRAWL SPACES. THE GROUND COVER SHALL BE OVERLAPPED ONE FOOT AT EACH JOINT AND SHALL EXTEND TO THE FOUNDATION WALL.

WINDOWS, DOORS, HVAC, & ELECT. EQUIP.

GLAZING MAXIMUM:
ALL CLIMATE ZONES:
GLAZING U-VALUE: VERTICAL (MAX): .28
OVERHEAD (MAX): .50
DOOR U-VALUE (MAX): .20
(DOORS W/ MORE THAN 50 CONSIDERED A WINDOW)
HVAC PERFORMANCE: "MED" OR AFUE = .97
RECESSED LIGHT FIXTURES: IC RATED

DOORS, WINDOWS AND SKYLIGHTS

GENERAL
DOORS TO THE EXTERIOR SHALL HAVE MAX. 3" STEP TO MIN. 36" DEEP LANDING. .

BEDROOM EMERGENCY EGRESS WINDOWS MINIMUM NET CLEAR OPENING OF 5.7 SQ. FT. MIN. NET CLEAR OPEN ABL WIDTH OF 20" AND MINIMUM NET CLEAR OPENING HEIGHT OF 24". MAXIMUM FINISHED SILL HEIGHT OF 44" ABOVE FLOOR.

FACTORY BUILT WINDOWS TO BE CONSTRUCTED TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM PER LINEAL FOOT OF OPERABLE SASH PERIMETER AS TESTED BY ASTM STANDARDS. SITE BUILT AND MILL WORK SHOP BUILT WOODEN SASH ARE EXEMPT FROM INFILTRATION CRITERIA ABOVE, BUT MUST BE MADE TIGHTLY FITTING AND WEATHER STRIPPED OR CAULKED. SLIDING GLASS DOORS TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM INFILTRATION PER SQUARE FOOT OF DOOR AREA.

SAFETY GLAZING SHALL BE LOCATED WITHIN

1. INGRESS AND EGRESS DOORS
 2. SLIDING GLASS DOORS, SWINGING GLASS DOORS
 3. SHOWER AND BATHTUB ENCLOSURES
 4. GLAZING W/ THE EXPOSED EDGE WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF A DOOR IN THE CLOSED POSITION & BOTTOM EDGE IS LESS THAN 60" ABOVE THE WALKING SURFACE
- GLAZING GREATER THAN 4 5/8" LESS THAN 13" ABOVE FINISHED FLOOR.
WINDOW SILLS: 612.2, 24" MINIMUM SILL HEIGHT EXCEPTIONS ALLOW FOR OPENING LIMITING DEVICE FOR 4" DIAMETER SPHERE AND WINDOW FALL PREVENTION DEVICE THAT COMPLIES WITH 612.3.

STRUCTURAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CONTRACT DRAWINGS.
2. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF ENGINEER
5. ALL DETAILS DESIGNATED AS STANDARD OR TYPICAL SHALL OCCUR IN ADDITION TO ANY OTHER SPECIFIC DETAIL CALLED OUT
6. COORDINATE WITH MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES, AND PIPE SLEEVES, ELECTRICAL CONDUITS, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK.
7. PROVIDE OPENINGS AND SUPPORTS, AS REQUIRED PER STANDARD DETAILS FOR HEATERS, MECHANICAL EQUIPMENT, VENTS, DUCTS, PIPING, ETC. ALL SUSPENDED MECHANICAL EQUIPMENT SHALL BE SWAY OR LATERALLY BRACED.

TYPE OF CONSTRUCTION

V-B

UNPROTECTED WOOD FRAME
(EXAMPLES OF CONSTRUCTION ARE SINGLE FAMILY HOMES AND GARAGES. THEY OFTEN HAVE EXPOSED WOOD SO THERE IS NO FIRE RESISTANCE.)



PLAN PREVIEW

NOT TO SCALE



URBAN DESIGN GROUP

15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
(206) 836-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

GENERAL
NOTES AND
PLAN
PREVIEW

PROJECT NUMBER:
21257

SHEET NUMBER:

A1.1

VERTICAL FENESTRATION
U=0.28

FLOOR R-38

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021) Version 1.0

These requirements apply to all IRC building types, including detached one- and two-family dwellings and multiple single-family dwellings (townhouses).

Project Information	Contact Information

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative	Date

All Climate Zones (Table R402.1.1)		
Component	R-Value ^a	U-Factor ^a
Fenestration U-Factor ^b	n/a	0.30
Skylight U-Factor ^b	n/a	0.50
Glazed Fenestration SHGC ^{b,c}	n/a	n/a
Ceiling ^d	49	0.026
Wood Frame Wall ^{e,h}	21 int	0.056
Floor	30	0.029
Below Grade Wall ^{c,h}	10/15/21 int + TB	0.042
Slab ^{d,i} R-Value & Depth	10, 2 ft	n/a

a R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.

b The fenestration U-factor column excludes skylights.

c "10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.

d R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.

e For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.

f R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.

g For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.

h Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

- Small Dwelling Unit: 3 credits**
Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area. Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
- Medium Dwelling Unit: 6 credits**
All dwelling units that are not included in #1 or #3
- Large Dwelling Unit: 7 credits**
Dwelling units exceeding 5,000 sf of conditioned floor area
- Additions less than 500 square feet: 1.5 credits**
All other additions shall meet 1-3 above

Before selecting your credits on this Summary table, review the details in Table 406.3 (Single Family), on page 4.

Summary of Table R406.2			
Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option	User Notes
1	Combustion heating minimum NAECA ^a	0.0	<input type="checkbox"/>
2	Heat pump ^b	1.0	<input type="checkbox"/>
3	Electric resistance heat only - furnace or zonal	-1.0	<input type="checkbox"/>
4	DHP with zonal electric resistance per option 3.4	0.5	<input type="checkbox"/>
5	All other heating systems	-1.0	<input type="checkbox"/>
Energy Options	Energy Credit Option Descriptions	Credits - select ONE energy option from each category ^c	User Notes
1.1	Efficient Building Envelope	0.5	<input type="checkbox"/>
1.2	Efficient Building Envelope	1.0	<input type="checkbox"/>
1.3	Efficient Building Envelope	0.5	<input type="checkbox"/>
1.4	Efficient Building Envelope	1.0	<input type="checkbox"/>
1.5	Efficient Building Envelope	2.0	<input type="checkbox"/>
1.6	Efficient Building Envelope	3.0	<input type="checkbox"/>
1.7	Efficient Building Envelope	0.5	<input type="checkbox"/>
2.1	Air Leakage Control and Efficient Ventilation	0.5	<input type="checkbox"/>
2.2	Air Leakage Control and Efficient Ventilation	1.0	<input type="checkbox"/>
2.3	Air Leakage Control and Efficient Ventilation	1.5	<input type="checkbox"/>
2.4	Air Leakage Control and Efficient Ventilation	2.0	<input type="checkbox"/>
3.1 ^a	High Efficiency HVAC	1.0	<input type="checkbox"/>
3.2	High Efficiency HVAC	1.0	<input type="checkbox"/>
3.3 ^a	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.4	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.5	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.6 ^a	High Efficiency HVAC	2.0	<input type="checkbox"/>
4.1	High Efficiency HVAC Distribution System	0.5	<input type="checkbox"/>
4.2	High Efficiency HVAC Distribution System	1.0	<input type="checkbox"/>

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Summary of Table R406.2 (cont.)			
Energy Options	Energy Credit Option Descriptions (cont.)	Credits - select ONE energy option from each category ^c	User Notes
5.1 ^a	Efficient Water Heating	0.5	<input type="checkbox"/>
5.2	Efficient Water Heating	0.5	<input type="checkbox"/>
5.3	Efficient Water Heating	1.0	<input type="checkbox"/>
5.4	Efficient Water Heating	1.5	<input type="checkbox"/>
5.5	Efficient Water Heating	2.0	<input type="checkbox"/>
5.6	Efficient Water Heating	2.5	<input type="checkbox"/>
6.1 ^a	Renewable Electric Energy (3 credits max)	1.0	<input type="checkbox"/>
7.1	Appliance Package	0.5	<input type="checkbox"/>
Total Credits		6.0	Available Total <input type="checkbox"/> Clear Form <input type="checkbox"/>

- An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
- Equipment listed in Table C403.3.2(4) or C403.3.2(5)
- Equipment listed in Table C403.3.2(1) or C403.3.2(2)
- You cannot select more than one option from any category EXCEPT in category 5. Option 5.1 may be combined with options 5.2 through 5.6. See Table 406.3.
- 1.0 credit for each 1,200 kWh of electrical generation provided annually, up to 3 credits max. See the complete Table R406.2 for all requirements and option descriptions.
- Use the single radiobutton in the upper right of the second column to deselect radiobuttons in that group.

PERSPECTIVE ENERGY CREDITS

ENERGY CREDITS DESCRIPTION

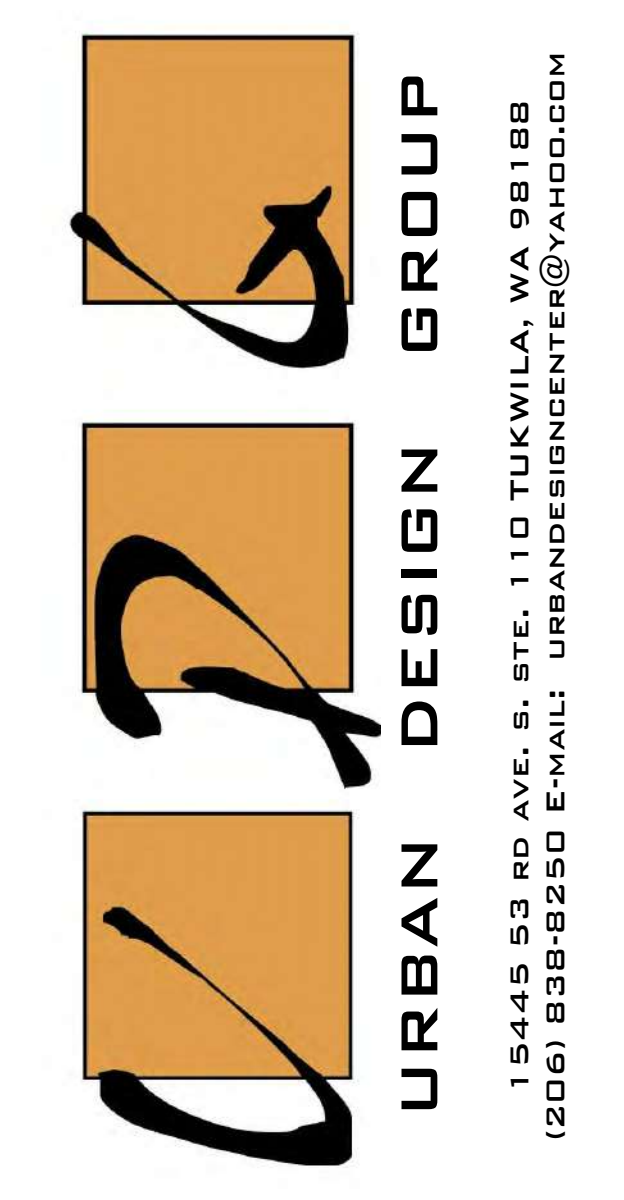
Option	Description	Credits: SF
1. EFFICIENT BUILDING ENVELOPE OPTIONS		
Only one option from Items 1.1 through 1.7 may be selected in this category. Compliance with the conductive UA targets is demonstrated using Section R402.1.4, Total UA alternative, where [1 - (Proposed UA/Target UA)] >= the required %UA reduction.		
1.1	Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.24	0.5
1.2	Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.20	1.0
1.3	Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.28 Floor R-38 Slab on grade R-10 perimeter and under entire slab below grade slab R-10 perimeter and under entire slab or Compliance based on Section R402.1.4: Reduce the Total conductive UA by 5% Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.25 Wall R-21 plus R-4 ci Floor R-38 Basement wall R-21 int plus R-5 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab or	0.5
1.4	Compliance based on Section R402.1.4: Reduce the Total conductive UA by 15% Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.22 Ceiling and single-rafter or joist-vaulted R-49 advanced Wood frame wall R-21 int plus R-12 ci Floor R-38 Basement wall R-21 int plus R-12 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab or	1.0
1.5	Compliance based on Section R402.1.4: Reduce the Total conductive UA by 30% Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.18 Ceiling and single-rafter or joist-vaulted R-60 advanced Wood frame wall R-21 int plus R-16 ci Floor R-48 Basement wall R-21 int plus R-16 ci Slab on grade R-20 perimeter and under entire slab Below grade slab R-20 perimeter and under entire slab or	2.0
1.6	Compliance based on Section R402.1.4: Reduce the Total conductive UA by 40%. Advanced framing and raised heel trusses or rafters Vertical Glazing U-0.28	3.0
1.7	R-49 Advanced (U-0.020) as listed in Section A102.2.1, Ceilings below a vented attic and R-49 vaulted ceilings with full height of uncompressed insulation extending over the wall top plate at the eaves.	0.5

Option	Description	Credits: SF
2. AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS		
Only one option from Items 2.1 through 2.4 may be selected in this category.		
2.1	Compliance based on R402.4.1.2: Reduce the tested air leakage to 3.0 air changes per hour maximum at 50 Pascals or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.3 cfm/sf maximum at 50 Pascals and All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a high efficiency fan(s) (maximum 0.35 watts/cfm), not interlocked with the furnace fan (if present). Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only mode. To qualify to claim this credit, the building permit drawings shall specify the option being selected and the maximum tested building air leakage, and shall show the qualifying ventilation system and its control sequence of operation.	0.5
2.2	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 2.0 air changes per hour maximum at 50 Pascals or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.25 cfm/sf maximum at 50 Pascals and All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 65%. Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 1.5 air changes per hour maximum at 50 Pascals or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.25 cfm/sf maximum at 50 Pascals and All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.75. ¹	1.0
2.3	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.6 air changes per hour maximum at 50 Pascals or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.15 cfm/sf maximum at 50 Pascals and All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.80. Duct installation shall comply with Section R403.3.7. ¹	1.5
2.4	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.6 air changes per hour maximum at 50 Pascals or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.15 cfm/sf maximum at 50 Pascals and All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.80. Duct installation shall comply with Section R403.3.7. ¹	2.0

Option	Description	Credits: SF
3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS		
Only one option from Items 3.1 through 3.6 may be selected in this category.		
3.1 ²	Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95% or Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%. ²	1.0
3.2 ²	Air-source centrally ducted heat pump with minimum HSPF of 9.5. ²	1.0
3.3 ²	Closed-loop ground source heat pump; with a minimum COP of 3.3 or Open loop water source heat pump with a maximum pumping hydraulic head of 150 feet and minimum COP of 3.6. ²	1.5
3.4	Ductless mini-split heat pump system, zonal control: In homes where the primary space heating system is zonal electric heating, a ductless mini-split heat pump system with a minimum HSPF of 10.0 shall be installed and provide heating to the largest zone of the housing unit. ⁴	1.5
3.5 ²	Air-source, centrally ducted heat pump with minimum HSPF of 11.0. ⁴ Ductless split system heat pumps with no electric resistance heating in the primary living areas. A ductless heat pump system with a minimum HSPF of 10 shall be sized and installed to provide heat to entire dwelling unit at the design outdoor air temperature.	1.5
3.6 ²	To qualify to claim this credit, the building permit drawings shall specify the option being selected, the heated floor area calculation, the heating equipment type(s), the minimum equipment efficiency, and total installed heat capacity (by equipment type). ² An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit. ³ To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency. ⁴ To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	2.0
4.1	All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7. For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Duct leakage shall be limited to 3 cfm per 100 square feet of conditioned floor area. Air handler(s) shall be located within the conditioned space. HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.7.	0.5
4.2	Locating system components in conditioned crawl spaces is not permitted under this option. Electric resistance heat and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and all the ductwork.	1.0

Option	Description	Credits: SF
5. EFFICIENT WATER HEATING OPTIONS		
Only one option from Items 5.1 through 5.6 may be selected in this category. Item 5.1 may be combined with any option. A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all and only the showers, and has a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 54% if installed for unequal flow. Such units shall be rated in accordance with CSA B55.1 or IAPMO IGC 346-2017 and be so labeled.		
5.1	To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specifies the drain water heat recovery units and the plumbing layout needed to install it. Labels or other documentation shall be provided that demonstrates that the unit complies with the standard.	0.5
5.2	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.80. ³ Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.91 or Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems or Water heater heated by ground source heat pump meeting requirements of Option 3.3. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of minimum energy savings.	0.5
5.3	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier I of NEEA's advanced water heating specification or For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier I of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. ⁵	1.0
5.4	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier II of NEEA's advanced water heating specification or For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier II of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. ⁵	1.5
5.5	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification or For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. ⁵	2.0
5.6	Water heating system shall include one of the following: Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard Advanced Water Heating Specification with the UEF noted above or For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. ⁵	2.5

Option	Description	Credits: SF
6. RENEWABLE ELECTRIC ENERGY OPTION		
6.1	For each 1200 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 1.0 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows: For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTS or approved alternate by the code official. Documentation noting solar access shall be included on the plans. For wind generation projects designs shall document annual power generation based on the following factors: the wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.	1.0
7.1	7. APPLIANCE PACKAGE OPTION All of the following appliances shall be new and installed in the dwelling unit and shall meet the following standards: Dishwasher – Energy Star rated Refrigerator (if provided) – Energy Star rated Washing machine – Energy Star rated Dryer – Energy Star rated, ventless dryer with minimum CEF rating of 5.2 To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.	0.5



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

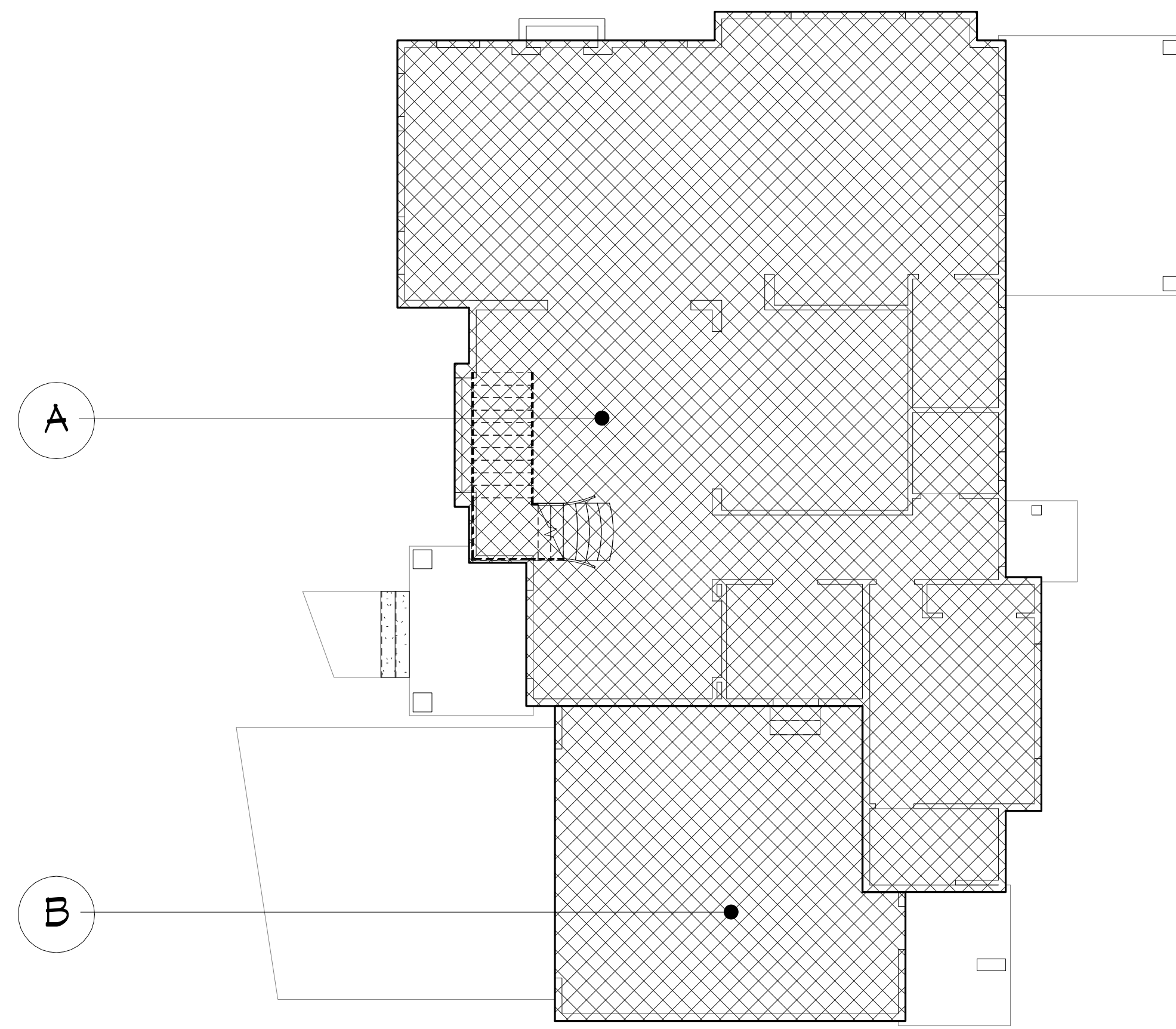
SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022
DESIGN BY: PAVEL MELNIK
DRAWN BY: ANNA KONYAKINA
SHEET TITLE:

ENERGY CREDITS OPTIONS

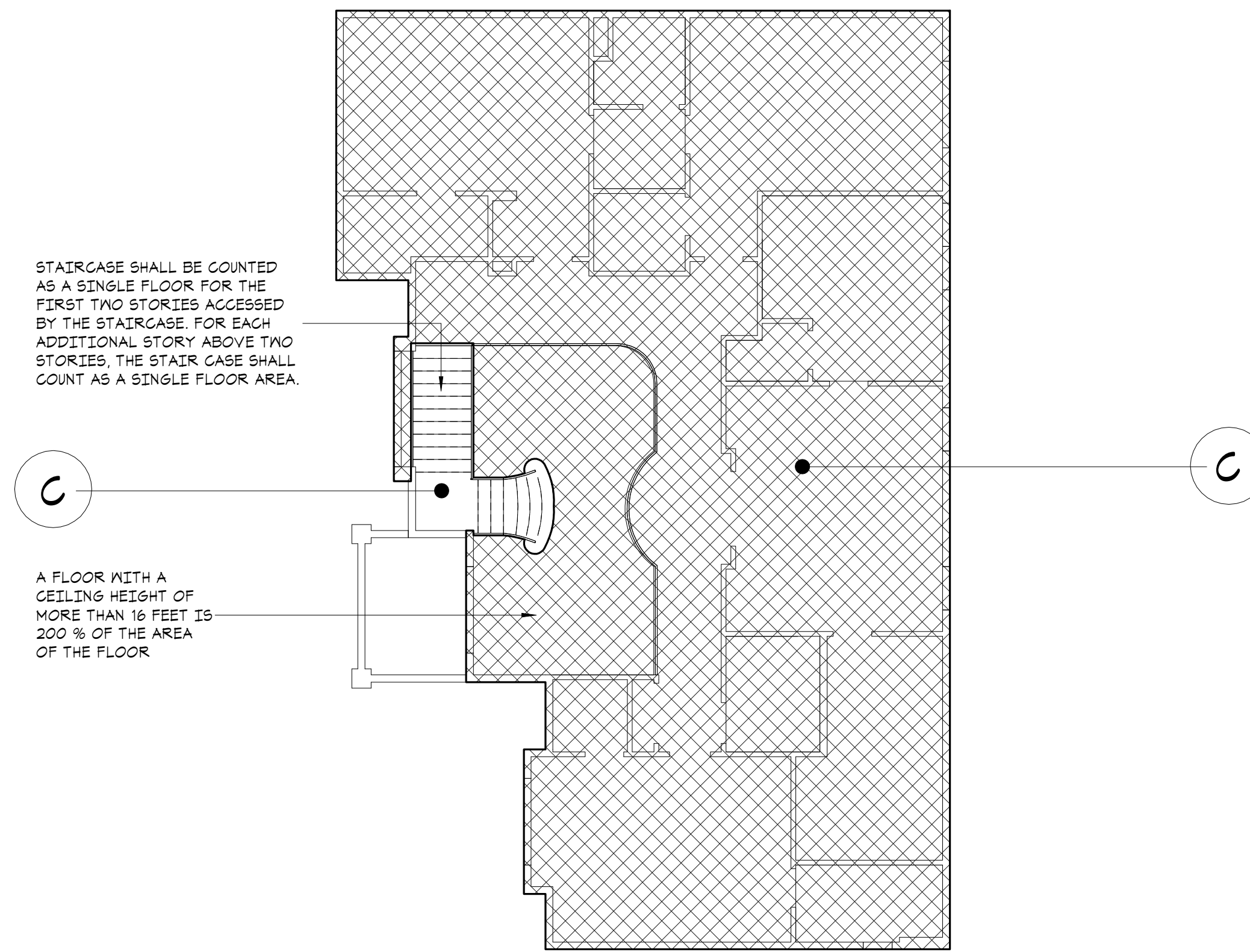
PROJECT NUMBER:
21257
SHEET NUMBER:

A1.2

15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
(206) 838-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM



MAIN FLOOR PLAN - GFR
SCALE: 1/4" = 1'-0"



UPPER FLOOR PLAN - GFR
SCALE: 1/4" = 1'-0"

STAIRCASE SHALL BE COUNTED AS A SINGLE FLOOR FOR THE FIRST TWO STORIES, ACCESSED BY THE STAIRCASE. FOR EACH ADDITIONAL STORY ABOVE TWO STORIES, THE STAIR CASE SHALL COUNT AS A SINGLE FLOOR AREA.

A FLOOR WITH A CEILING HEIGHT OF MORE THAN 16 FEET IS 200% OF THE AREA OF THE FLOOR.

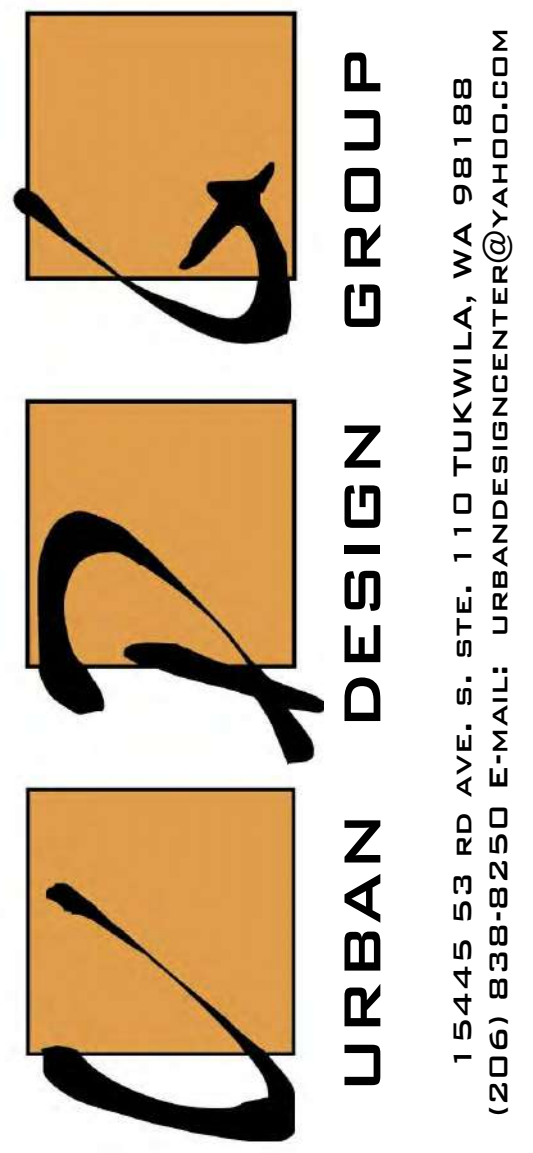
GROSS FLOOR AREA:			
(A)	MAIN FLOOR:	2 015	S.F.
(B)	GARAGE:	500	S.F.
(C)	UPPER FLOOR:	2 255	S.F.
(D)	STAIRCASE:	EXCLUDED	
TOTAL GROSS FLOOR AREA (GFA):		4 770	S.F.

GROSS FLOOR AREA:	
LOT AREA:	11 930 s.f.
ALLOWED GFA *:	40%
GFA W/ALLOWANCE (40%):	4 772 s.f.
TOTAL PROPOSED GFA:	4,770 S.F. / 39.98%

* ZONING R-2.4: 5,000 SQUARE FEET OR 40% OF THE LOT AREA, WHICHEVER IS LESS.

** IF AN ACCESSORY DWELLING UNIT IS PROPOSED, THE 40% ALLOWED GFA MAY BE INCREASED BY THE LESSER OF 5 PERCENTILE POINTS, OR THE FLOOR AREA OF THE ACCESSORY DWELLING UNIT. PROVIDED, THIS ALLOWANCE SHALL NOT RESULT IN A GFA OF MORE THAN 4,500 SQUARE FEET OR 45% OF THE LOT AREA, WHICHEVER IS LESS.

NOTE:
THE GFA INCLUDES THE FLOOR AREA OF THE MAIN BUILDING, ACCESSORY BUILDINGS, GARAGES, ATTACHED ROOFED DECKS ON THE SECOND OR THIRD STORY OF A SINGLE FAMILY HOME, STAIR CASES, ETC. THE GFA DOES NOT INCLUDE SECOND- OR THIRD UNCOVERED DECKS OR UNCOVERED ROOFTOP DECKS.



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PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA
SHEET TITLE:

GROSS FLOOR AREA (GFA)

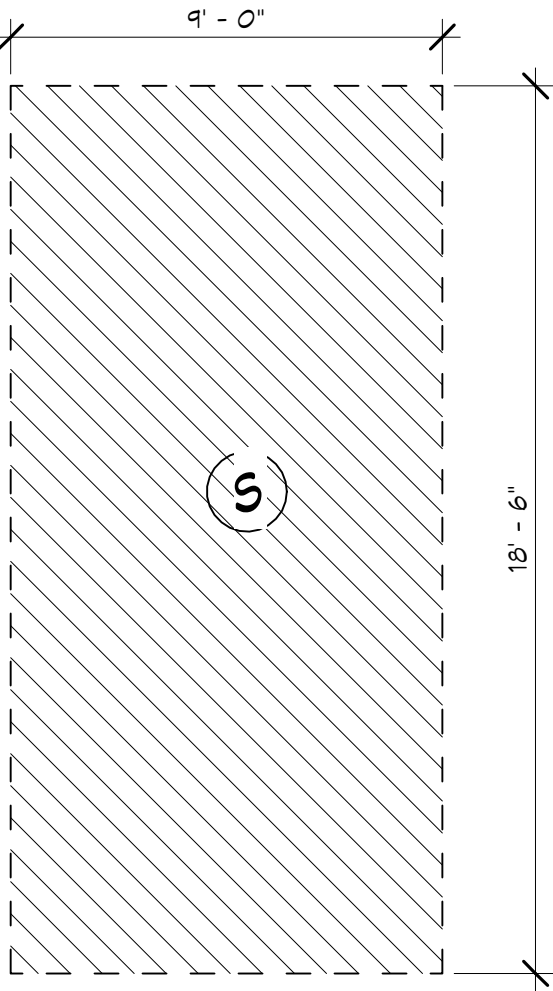
PROJECT NUMBER:
21257

SHEET NUMBER:

A2.1

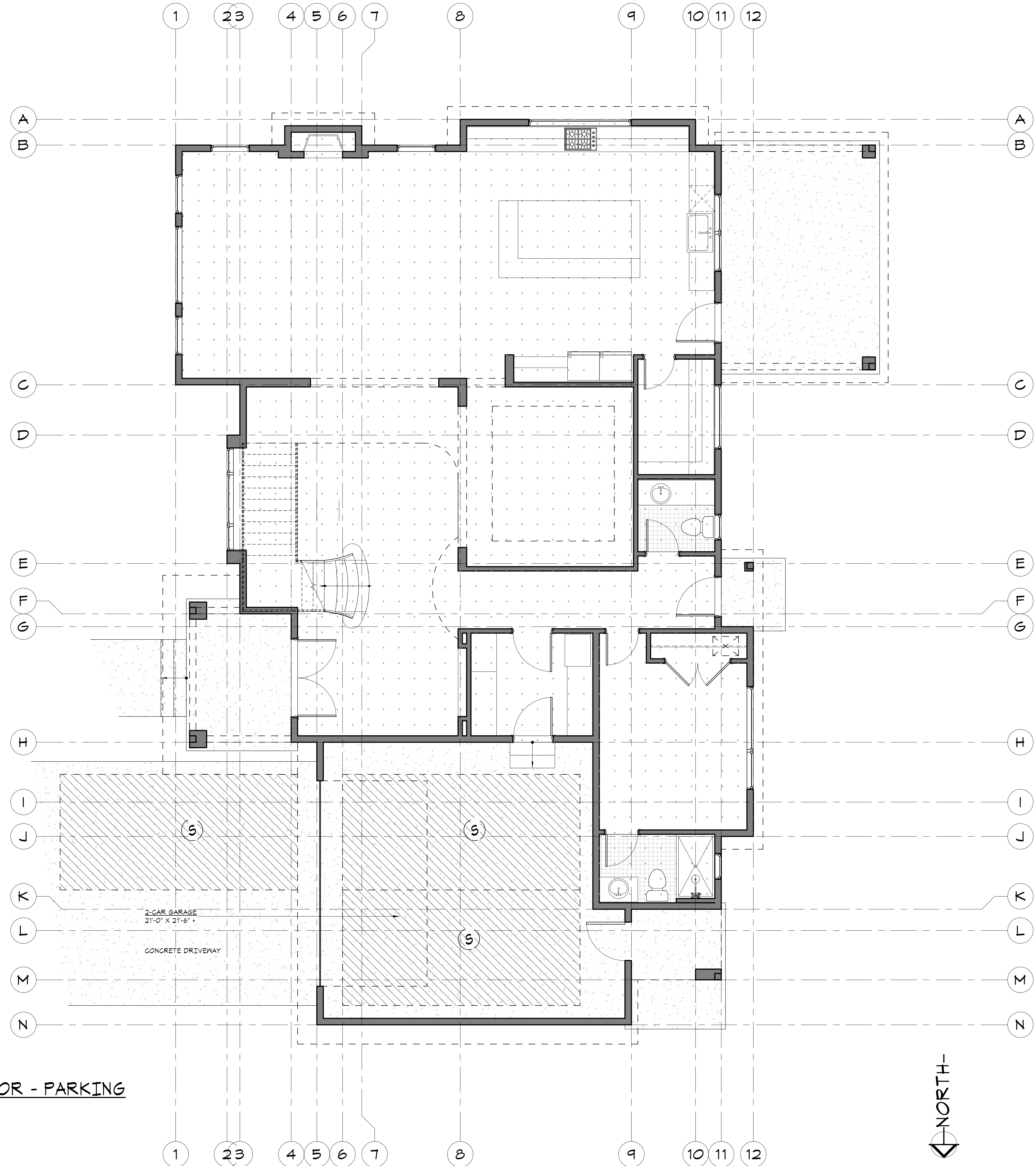
PARKING REQUIRED (MCC 19.02.020(6)(2)(A)):
 A. EACH SINGLE-FAMILY DWELLING WITH A GROSS FLOOR AREA OF 3,000 SQUARE FEET OR MORE SHALL HAVE AT LEAST THREE PARKING SPACES SUFFICIENT IN SIZE TO PARK A PASSENGER AUTOMOBILE; PROVIDED, AT LEAST TWO OF THE STALLS SHALL BE COVERED STALLS.

STANDARD PARKING STALL (9' X 10.5'):

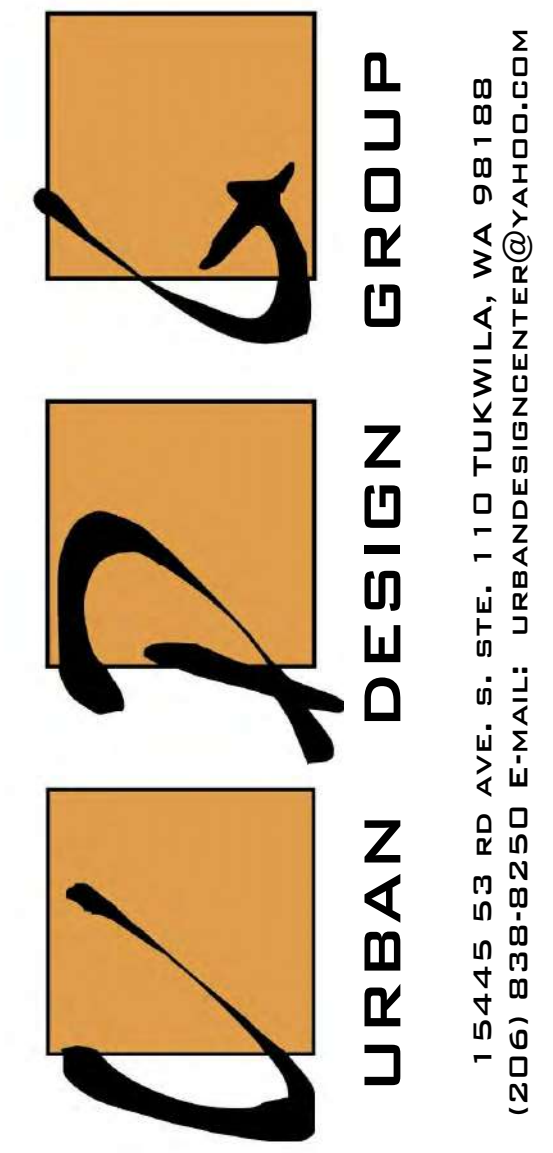


PROVIDED PARKING:
 TWO (2) STANDARD SIZE COVERED PARKING SPACES IN THE GARAGE.
 DRIVEWAY CONTAINS A MINIMUM OF ONE (1) STANDARD PARKING STALL.

PARKING STALLS



MAIN FLOOR - PARKING
 SCALE: 1/4" = 1'-0"



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8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
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KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
 SUBMITTED: --/--/2022
 REVISED: --/--/2022

DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

PARKING

PROJECT NUMBER:
21257

SHEET NUMBER:
A2.2

15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
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- TYPICAL FLOOR NOTES:**
1. INSTALL SMOKE DETECTORS IN ALL SLEEPING ROOMS AND AT AREAS ADJACENT TO SLEEPING ROOMS, AND AT CEILING HEIGHT CHANGES GREATER THAN 24". SMOKE DETECTORS TO BE HARD-WIRED AND INTERCONNECTED, WITH BATTERY BACK-UP PER CODE.
 2. INSTALL CARBON MONOXIDE SENSORS ADJACENT TO SLEEPING AREAS.
 3. ALL INTERIOR WALLS TO BE 2x4 @ 16" O.C. (U.N.O.)
 4. ALL EXTERIOR WALLS TO BE 2x6 @ 16" O.C. (U.N.O.)
 5. MAIN FLOOR HEADERS PER STRUCTURAL @ 9'-0" A.F.F. (U.N.O.)
 6. WINDOW SIZES ARE NOMINAL ROUGH OPENING, WIDTH AND HEIGHT.
 7. DOOR SIZES NOTED ARE SLABS NOT ROUGH OPENINGS
 8. PROVIDE FIREBLOCKING AT ALL PLUMBING OPENINGS.
 9. PROVIDE SOLID BLOCKING OVER SUPPORTS.
 10. WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY, DRAFTSTOPPING SHALL BE INSTALLED SO THAT THE AREA OF CONCEALED SPACE DOES NOT EXCEED 1000 SF. DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS AND SHALL BE OF 1/2" GYP BOARD OR OTHER APPROVED MATERIALS INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS PER CODE.
 11. PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED HORIZONTAL AND VERTICAL DRAFT OPENINGS AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STAIRS, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL CONSIST OF NOT LESS THAN 2" NOMINAL LUMBER OR OTHER APPROVED MATERIAL.
 12. ASPHALT-SATURATED FELT FREE FROM HOLES OR BREAKS, WEIGHING NOT LESS THAN 14 POUNDS PER 100 SQUARE FEET AND COMPLYING WITH ASTM D 226 OR OTHER APPROVED WEATHER RESISTANT MATERIAL SHALL BE APPLIED OVER SHEATHING OF ALL EXTERIOR WALLS. APPROVED ALTERNATIVE WEATHERPROOF MEMBRANES SHALL BE USED FOR OPEN JOINT RAIN SCREEN SIDING. WEATHER RESISTANT MATERIALS SHALL BE APPLIED HORIZONTALLY PER MANUFACTURERS RECOMMENDATIONS, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES AND NOT LESS THAN 6 INCHES WHERE JOINTS OCCUR PER CODE.
 13. APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDINGS STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL SURFACE AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. FLASHING SHALL BE INSTALLED AT, BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:
-TOP OF ALL EXTERIOR WINDOW OPENINGS
-INTERSECTIONS OF FRAME WALLS AND MASONRY OR STUCCO
-UNDER MASONRY, WOOD OR METAL COPINGS AND SILLS
-CONTINUOUSLY ABOVE ALL PROJECTING MOOD TRIM
-WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL
-AT WALL AND ROOF OR SOFFIT INTERSECTIONS
 14. EXTERIOR LOCATIONS FOR ENVIRONMENTAL AIR DUCT EXHAUST & INTAKE OPENINGS TO BE A MINIMUM OF 3'-0" FROM PROPERTY LINE & MINIMUM 3'-0" FROM BUILDING OPENINGS. EQUIP ALL DUCTS W/ BACK-DRAFT DAMPERS.
 15. AIR EXHAUST & INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED W/ CORROSION RESISTANT SCREENS, LOUVERS, OR GRILLS W/ 1/4" MINIMUM 1/2" MAX OPENINGS IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS PER 2015 IRC.
 16. DUCTS FOR KITCHEN RANGES SHALL BE OF METAL AND BE EQUIPPED W/ BACK-DRAFT DAMPERS PER CODE.
 17. ALL INTERIOR FINISHES TO MEET MINIMUM FLAME SPREAD INDEX AND SMOKE DEVELOPMENT INDEX AS REQUIRED BY 2015 IRC.
 18. UNDER FLOOR CLEANOUT NOT MORE THAN 20" FROM ACCESS DOOR WITH AN UNOBSTRUCTED 30" WIDE X 18" HIGH PATH PATHWAY. CLEANOUTS ARE ACCESSIBLE. 12" CLEARANCE REQUIRED AT LINES LESS THAN OR EQUAL TO 2". 18" CLEARANCE AT LINES GREATER THAN 2". (UPC 101.9)
 19. GLAZING IN ALL FIXED AND OPERABLE PANELS OF SKININGS, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION, SAFETY GLAZING.

- GARAGE NOTES:**
1. GARAGES SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 5/8" TYPE X GMB APPLIED TO THE GARAGE SIDE. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 5/8" TYPE X GYPSUM BOARD OR EQUIVALENT.
 2. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH SOLID WOOD DOORS NOT LESS THAN 1 3/8" IN THICKNESS, SOLID OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN 1 3/8" THICK, OR 20-MINUTE FIRE-RATED DOORS.
 3. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL OR OTHER APPROVED MATERIALS AND SHALL HAVE NO OPENINGS INTO THE GARAGE. IRC R304.1.1
 4. IN SEISMIC ZONES 3 & 4, WATER HEATERS SHALL BE ANCHORED TO RESIST HORIZ. DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPINGS SHALL BE @ POINTS WITHIN THE UPPER ONE THIRD AND LOWER ONE THIRD PER UPC SEC. 510.5
 5. PROVIDE OUTDOOR COMBUSTION AIR FOR WATER HEATER
 6. GARAGE FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL AND THE AREA USED FOR THE PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

AREA SUMMARY:

MAIN FLOOR:	2,025 SF
UPPER FLOOR:	1,991 SF
LIVING/HEATED SPACE:	4,016 SF
GARAGE:	500 SF
FRONT PORCH:	92 SF
CONCRETE LANDING:	63 SF
COVERED PATIO:	210 SF

NOTE:
REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN

NOTE:
EACH DOOR TO BE UNDERCUT A MINIMUM OF 1/2-INCH TO ASSURE FREE FLOW OF FRESH AIR THROUGHOUT HABITABLE ROOMS

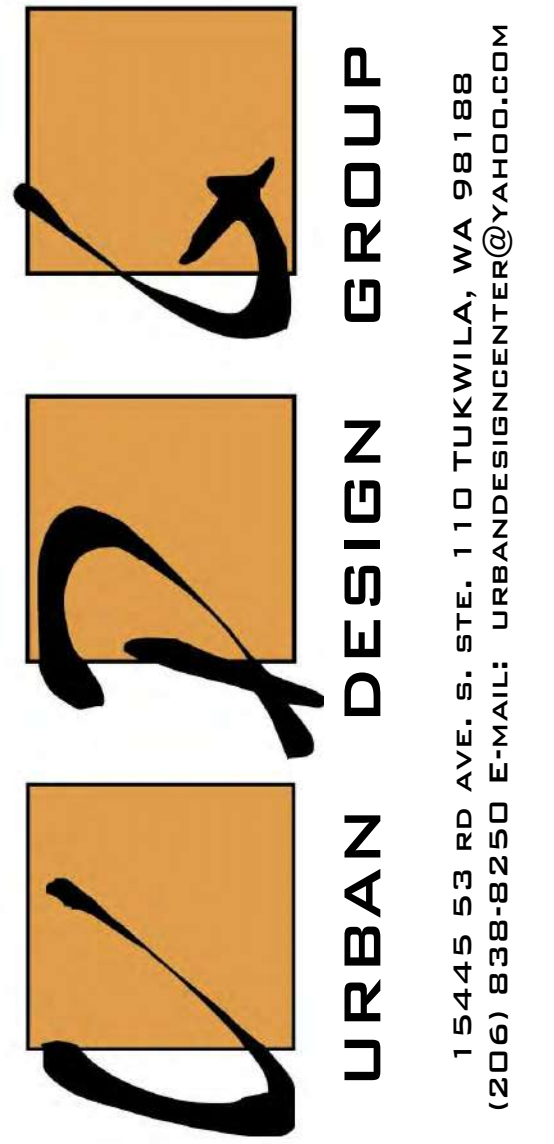
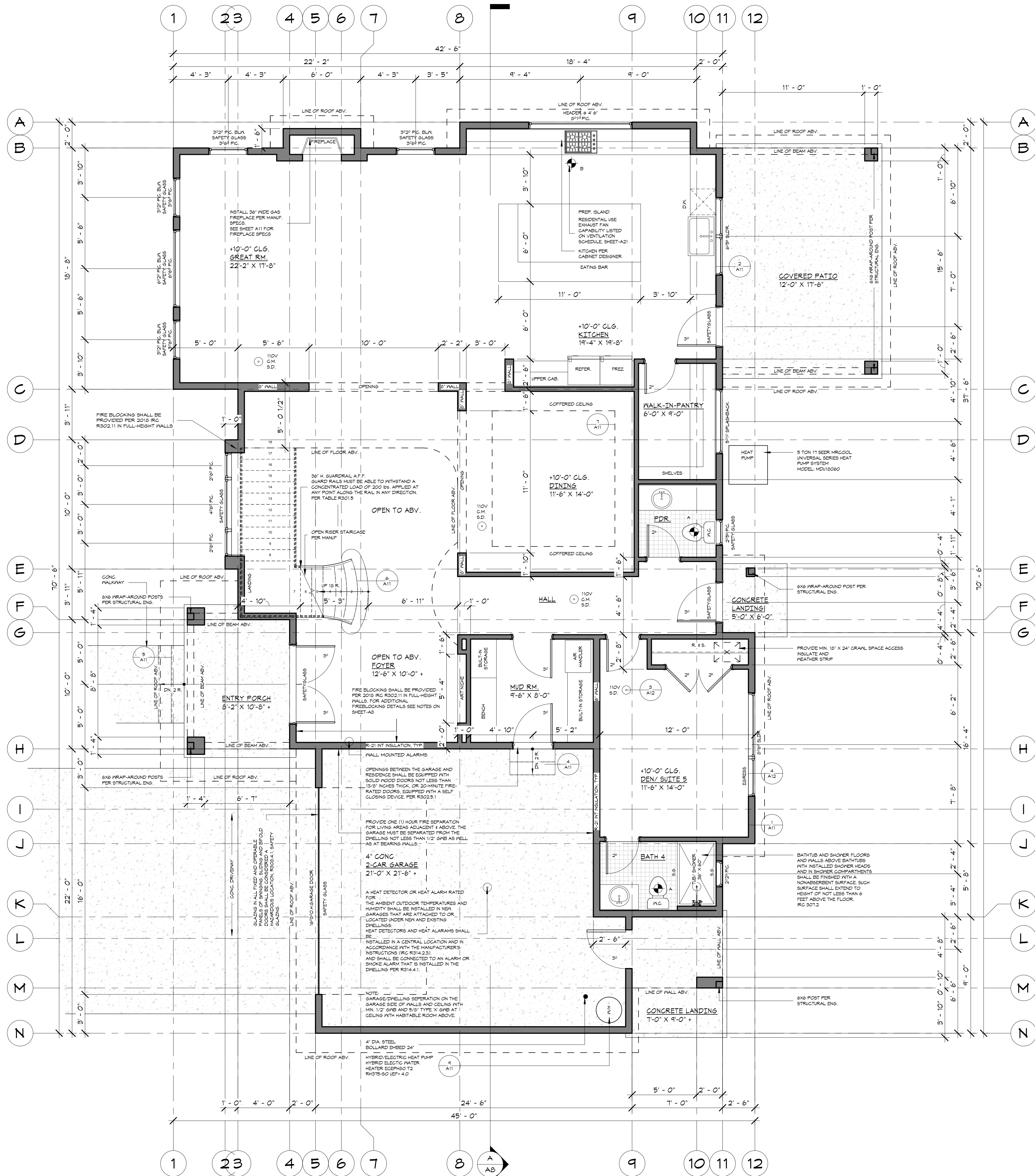
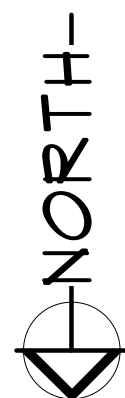
NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
THE DOOR IN THE DWELLING/GARAGE SEPARATION MUST BE EQUIPPED WITH A SELF-CLOSING OR AUTOMATED CLOSING DEVICE. PER IRC 302.5.1

FOR SMOKE & CARBON MONOXIDE ALARMS NOTES SEE SHEET A5.

MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022

DESIGN BY: PAVEL MELNIK
DRAWN BY: ANNA KONYAKINA

MAIN FLOOR PLAN

PROJECT NUMBER:
21257

SHEET NUMBER:

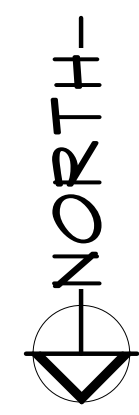
TYPICAL FLOOR NOTES:

- INSTALL SMOKE DETECTORS IN ALL SLEEPING ROOMS AND AT AREAS ADJACENT TO SLEEPING ROOMS, AND AT CEILING HEIGHT CHANGES GREATER THAN 24". SMOKE DETECTORS TO BE HARD-WIRED AND INTERCONNECTED, WITH BATTERY BACK-UP PER CODE.
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- ALL EXTERIOR WALLS TO BE 2x6 @ 16" O.C. (U.N.O.)
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- DOOR SIZES NOTED ARE SLABS NOT ROUGH OPENINGS.
- PROVIDE FIREBLOCKING AT ALL PLUMBING OPENINGS.
- PROVIDE SOLID BLOCKING OVER SUPPORTS.
- WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF CONCEALED SPACE DOES NOT EXCEED 1000 SF. DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS AND SHALL BE OF 1/2" GYP BOARD OR OTHER APPROVED MATERIALS INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS PER CODE.
- PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED HORIZONTAL AND VERTICAL DRAFT OPENINGS AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOFSPACE. FIREBLOCKING SHALL CONSIST OF NOT LESS THAN 2" NOMINAL LUMBER OR OTHER APPROVED MATERIAL.
- ASPHALT-SATURATED FELT FREE FROM HOLES OR BREAKS, WEIGHING NOT LESS THAN 14 POUNDS PER 100 SQUARE FEET AND COMPLYING WITH ASTM D 226 OR OTHER APPROVED WEATHER RESISTANT MATERIAL SHALL BE APPLIED OVER SHEATHING OF ALL EXTERIOR WALLS. APPROVED ALTERNATIVE WEATHERPROOF MEMBRANES SHALL BE USED FOR OPEN JOINT RAIN SCREEN SIDING. WEATHER RESISTANT MATERIALS SHALL BE APPLIED HORIZONTALLY PER MANUFACTURERS RECOMMENDATIONS, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES AND NOT LESS THAN 6 INCHES WHERE JOINTS OCCUR PER CODE.
- APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING'S STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL SURFACE AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. FLASHING SHALL BE INSTALLED AT, BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:
 -THE TOP OF ALL EXTERIOR WINDOW & DOOR OPENINGS
 -INTERSECTIONS OF FRAME WALLS AND MASONRY OR STUCCO
 -UNDER MASONRY, WOOD OR METAL COPINGS AND SILLS
 -CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM
 -WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL
 -AT WALL AND ROOF OR SOFFIT INTERSECTIONS
 -AT BUILT-IN GUTTERS
- EXTERIOR LOCATIONS FOR ENVIRONMENTAL AIR DUCT EXHAUST & INTAKE OPENINGS TO BE A MINIMUM OF 3'-0" FROM PROPERTY LINE & MINIMUM 3'-0" FROM BUILDING OPENINGS. EQUIP ALL DUCTS W/ BACK-DRAFT DAMPERS.
- AIR EXHAUST & INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED W/ CORROSION RESISTANT SCREENS, LOUVERS, OR GRILLS W/ 1/4" MINIMUM & 1/2" MAX OPENINGS IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS PER 2015 IRC.
- DUCTS FOR KITCHEN RANGES SHALL BE OF METAL AND BE EQUIPPED W/ BACK-DRAFT DAMPERS PER CODE.
- ALL INTERIOR FINISHES TO MEET MINIMUM FLAME SPREAD INDEX AND SMOKE DEVELOPMENT INDEX AS REQUIRED BY 2015 IRC.
- UNDER FLOOR CLEANOUT NOT MORE THAN 20" FROM ACCESS DOOR WITH AN UNOBSTRUCTED 30" WIDE X 18" HIGH PATH PATHWAY. CLEANOUTS ARE ACCESSIBLE. 12" CLEARANCE REQUIRED AT LINES LESS THAN OR EQUAL TO 2". 18" CLEARANCE AT LINES GREATER THAN 2". (UPC 707.9)
- GLAZING IN ALL FIXED AND OPERABLE PANELS OF SLIDING, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION. SAFETY GLAZING.

AREA SUMMARY:

MAIN FLOOR:	2,025	SF
UPPER FLOOR:	1,491	SF
LIVING/HEATED SPACE:	4,016	SF
GARAGE:	500	SF
FRONT PORCH:	42	SF
CONCRETE LANDING:	63	SF
COVERED PATIO:	210	SF

UPPER FLOOR PLAN
SCALE: 1/4" = 1'-0"



NOTE: REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN.

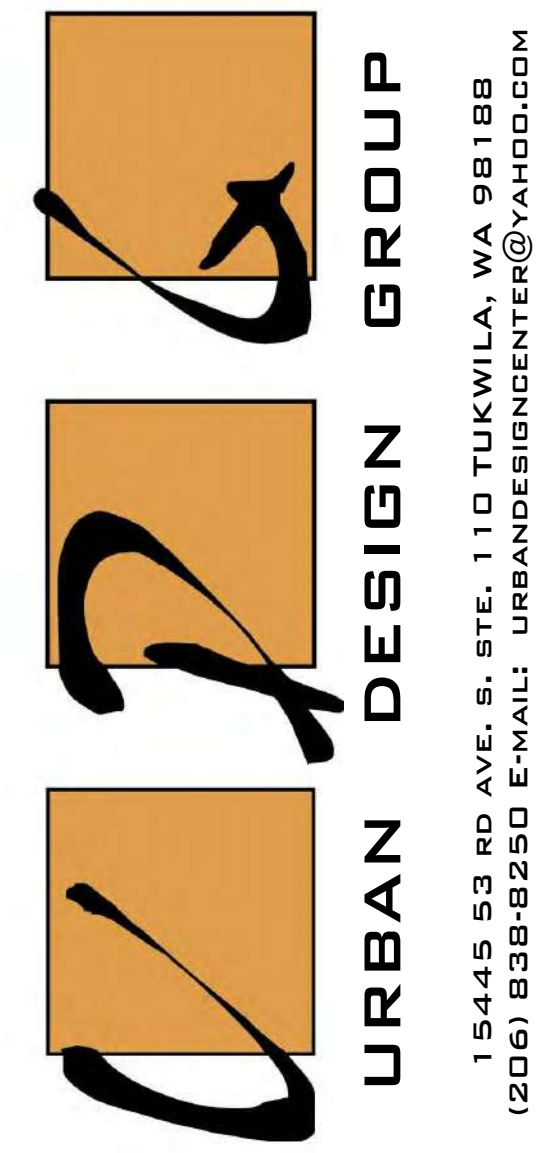
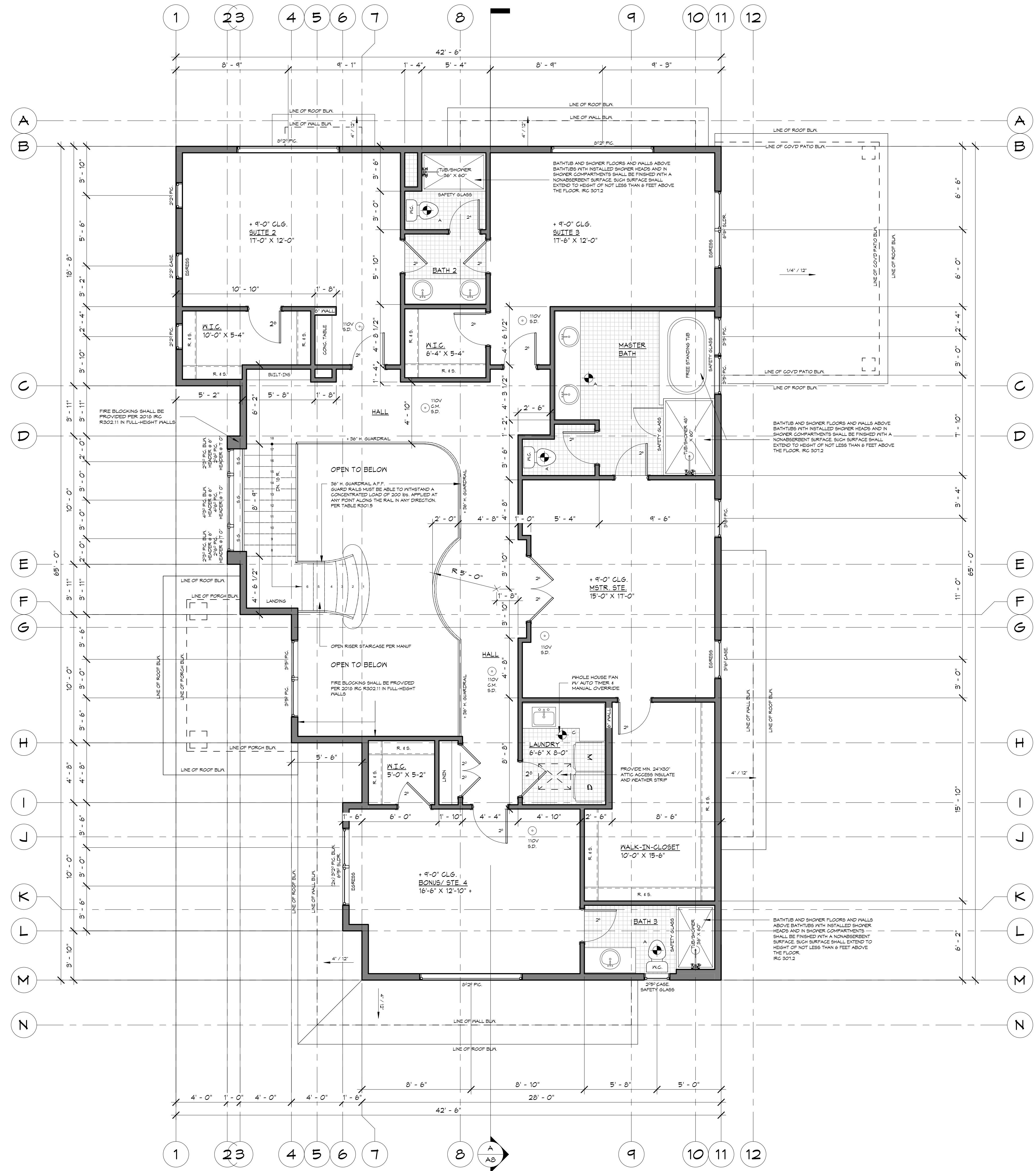
NOTE: EACH DOOR TO BE UNDERCUT A MINIMUM OF 1/2-INCH TO ASSURE FREE FLOW OF FRESH AIR THROUGHOUT HABITABLE ROOMS.

NOTE: CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE: THE DOOR IN THE DWELLING/GARAGE SEPARATION MUST BE EQUIPPED WITH A SELF-CLOSING OR AUTOMATED CLOSING DEVICE. PER IRC 302.5.1

FOR SMOKE & CARBON MONOXIDE ALARMS NOTES SEE SHEET A5.

NOTE: DUCT TO EXTERIOR. FOR INTERMITTENT DISTRIBUTED



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
 SUBMITTED: /-/2022
 REVISED: /-/2022
 DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA

UPPER FLOOR PLAN

PROJECT NUMBER:
21257

SHEET NUMBER:

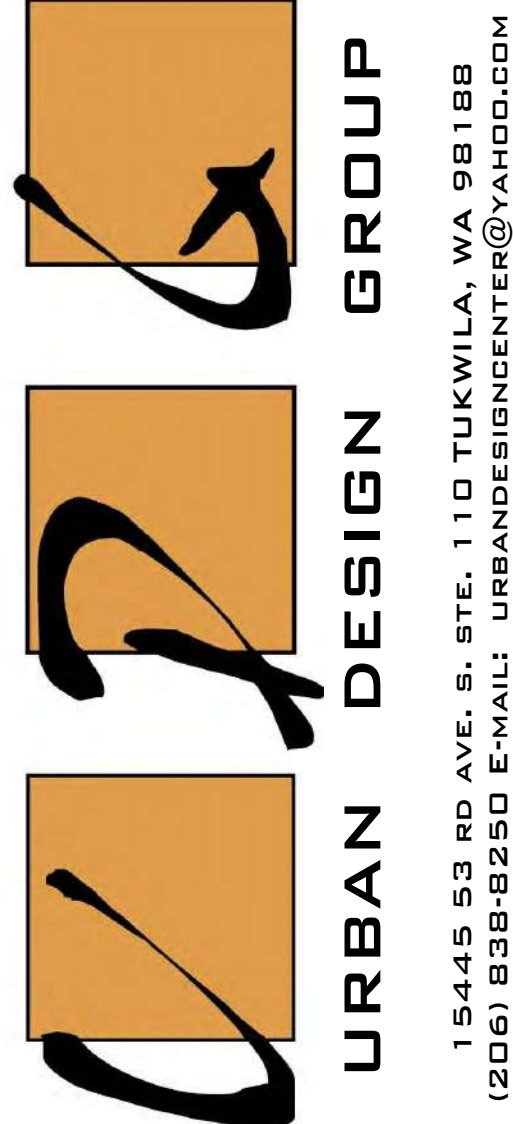
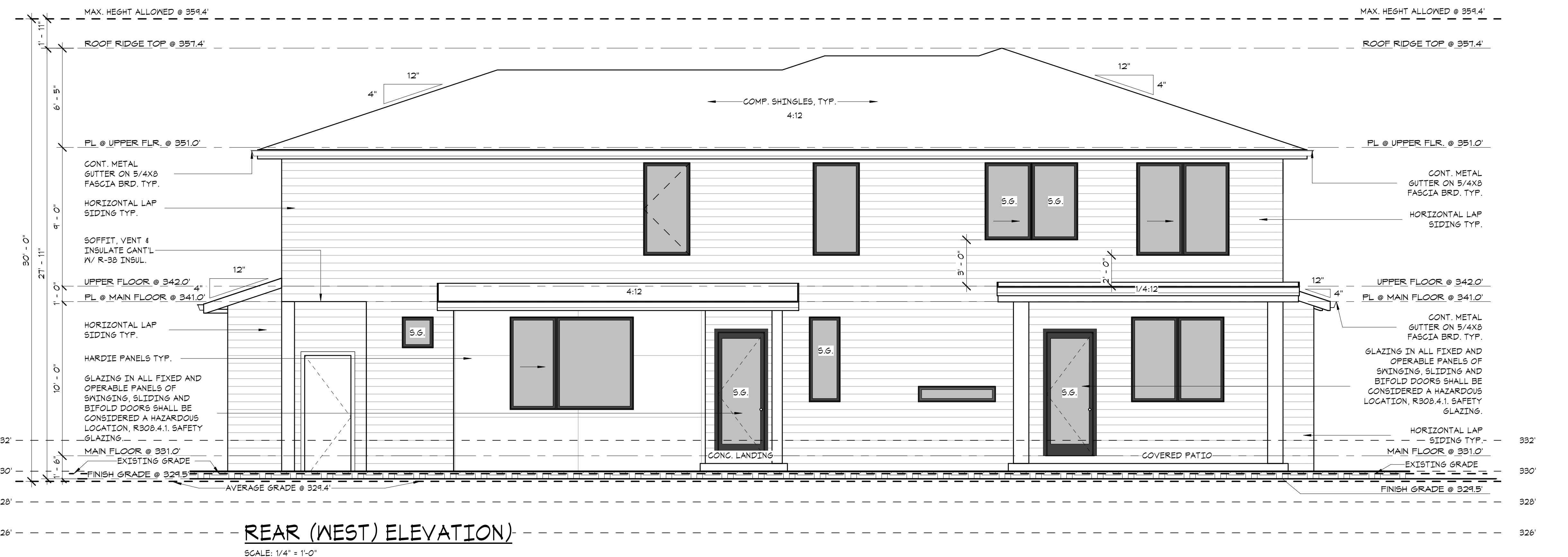
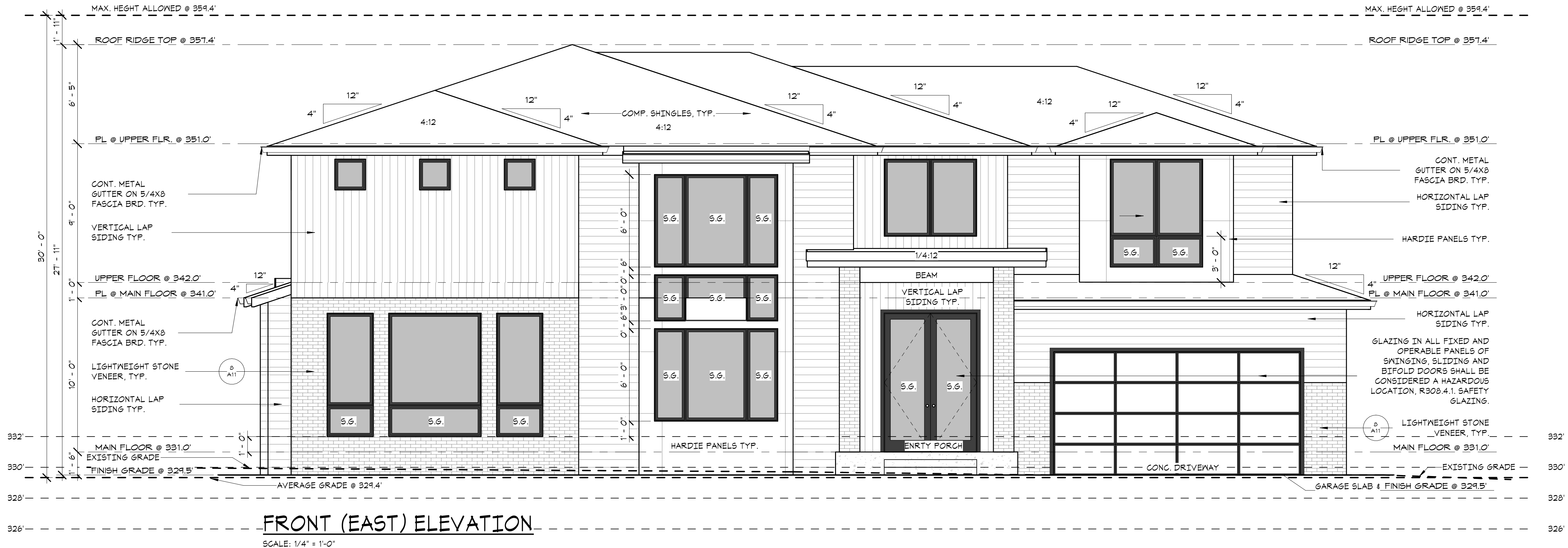
- ELEVATION NOTES:**
1. VERIFY SHEAR WALL NAILING & HOLD-DOWNS PER PLAN PRIOR TO INSTALLING SIDING.
 2. CAULK ALL EXTERIOR JOINTS & PENETRATIONS.
 3. PROVIDE APPROVED CORROSION RESISTANT FLASHING AT EXTERIOR WALL ENVELOPE PER I.R.C. R103.6
 4. PROVIDE FLASHING AT ROOF PENETRATIONS PER I.R.C. R905.2.6
 5. PROVIDE WEATHER STRIPPING AT ALL EXTERIOR & GARAGE-INTERIOR DOORS.
 6. PROVIDE CONTINUOUS GUTTERS & DOWNSPOUTS @ ALL EAVES, TYP.
 7. ADDRESS OR HOUSE NUMBER TO BE POSTED AND PLAINLY VISIBLE FROM THE STREET FRONTAGE, MIN. 4" HEIGHT, 1/2" STROKE WIDTH AND CONTRASTING BACKGROUND.
 8. PROVIDE STAIRWAY ILLUMINATION PER I.R.C. R303.6
 9. SEE SHEET A1 FOR ADDITIONAL NOTES.
 10. PROVIDE SURFACE DRAINAGE 6" : 10' MIN. AWAY FROM HOUSE FOOTPRINT I.R.C. R401.3

NOTE:
NO OPERABLE WINDOW SHALL BE INSTALLED LESS THAN 24 INCHES ABOVE FINISHED FLOOR THAT IS GREATER THAN 12 INCHES ABOVE THE FINISH GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING.

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
FOR HARDIE PANEL DETAILS SEE SHEET A13
FOR ARTISAN LAP SIDING DETAILS SEE SHEET A14

SMOKE & CARBON MONOXIDE ALARMS:
SMOKE AND CARBON MONOXIDE ALARMS MUST BE PROVIDED IN ALL REQUIRED LOCATIONS AND MUST BE:
* AUDIBLE IN ALL PARTS OF THE HOUSE
* INSTALLED PER MANUFACTURER'S INSTRUCTIONS
NEW HOUSES (I.R.C. R314 & R315)
SMOKE ALARMS AND CARBON MONOXIDE ALARMS ARE REQUIRED AND MUST BE CONNECTED TO THE MAIN ELECTRICAL SYSTEM WITH BATTERY BACKUP.
CARBON MONOXIDE ALARMS ARE REQUIRED IN ALL NEW AND EXISTING HOMES, APARTMENTS, CONDOMINIUMS, AND OTHER MULTI-FAMILY UNITS.
REQUIRED LOCATIONS
* SMOKE ALARMS SHALL BE LOCATED IN EACH SLEEPING ROOM AND IN NAPPING AREAS IN A FAMILY HOME CHILD CARE.
* SMOKE ALARMS AND CARBON MONOXIDE ALARMS SHALL BE LOCATED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
* SMOKE ALARMS AND CARBON MONOXIDE ALARMS SHALL BE LOCATED ON EVERY FLOOR LEVEL, INCLUDING BASEMENTS (DOES NOT INCLUDE CRAWLSPACE AND UNINHABITABLE ATTICS).
* IN SPLIT LEVEL FLOOR PLANS, AT THE UPPER LEVEL, PROVIDED THERE IS NO INTERVENING DOOR BETWEEN ADJACENT LEVELS AND THE LOWER LEVEL IS LESS THAN A FULL STORY BELOW THE UPPER LEVEL
* A CARBON MONOXIDE ALARM IS REQUIRED IN A BEDROOM WHEN A FUEL-BURNING APPLIANCE IS INSTALLED IN THE BEDROOM OR ITS ATTACHED BATHROOM.
* A COMBINATION ALARM (COMBINED SMOKE AND CARBON MONOXIDE ALARMS) IS ACCEPTABLE IN ANY REQUIRED LOCATION.
* WALL MOUNTED ALARMS MUST BE NOT MORE THAN 12 INCHES FROM THE ADJOINING CEILING SURFACE.
* AVOID PLACING ALARMS LESS THAN 3 FEET FROM SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND DO NOT PLACE ALARMS IN THE DIRECT AIRFLOW OF THE REGISTERS.
* AVOID PLACING ALARMS WITHIN 3 FEET HORIZONTALLY FROM DOORS TO BATHROOMS CONTAINING A BATHUB OR SHOWER.
* DO NOT PLACE ALARMS IN SPACES WHERE TEMPERATURES MAY BE ABOVE OR BELOW THE ALARM'S OPERATING TEMPERATURE RANGE.
* DO NOT PLACE ALARMS WITHIN 3 FEET OF THE BLADES OF A CEILING FAN.
* ALARMS IN PEAKED OR SLOPED CEILINGS MUST BE WITHIN 3 FEET OF THE PEAK, MEASURED HORIZONTALLY, BUT NOT IN THE HIGHEST 4 INCHES OF THE CEILING, MEASURED VERTICALLY.
A. PHOTOELECTRIC SMOKE ALARMS MUST NOT BE LESS THAN 6 FEET FROM A PERMANENT COOKING APPLIANCE.
B. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH MUST NOT BE LESS THAN 10 FEET FROM A PERMANENT COOKING APPLIANCE.
C. IONIZATION SMOKE ALARMS WITHOUT AN ALARM-SILENCING SWITCH MUST NOT BE LESS THAN 20 FEET FROM A PERMANENT COOKING APPLIANCE
CARBON MONOXIDE ALARM LOCATION LIMITATIONS
* DO NOT PLACE ALARMS DIRECTLY ABOVE OR BESIDE FUEL-BURNING APPLIANCES.
* DO NOT PLACE ALARMS IN DIRECT SUNLIGHT.
* DO NOT PLACE ALARMS IN LOW AREAS WHERE CHILDREN CAN REACH, DO NOT PLACE ALARMS BEHIND CURTAINS OR ANY STRUCTURE THAT MIGHT PREVENT CARBON MONOXIDE FROM REACHING THE SENSOR.



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA
SHEET TITLE:

FRONT AND REAR ELEVATIONS

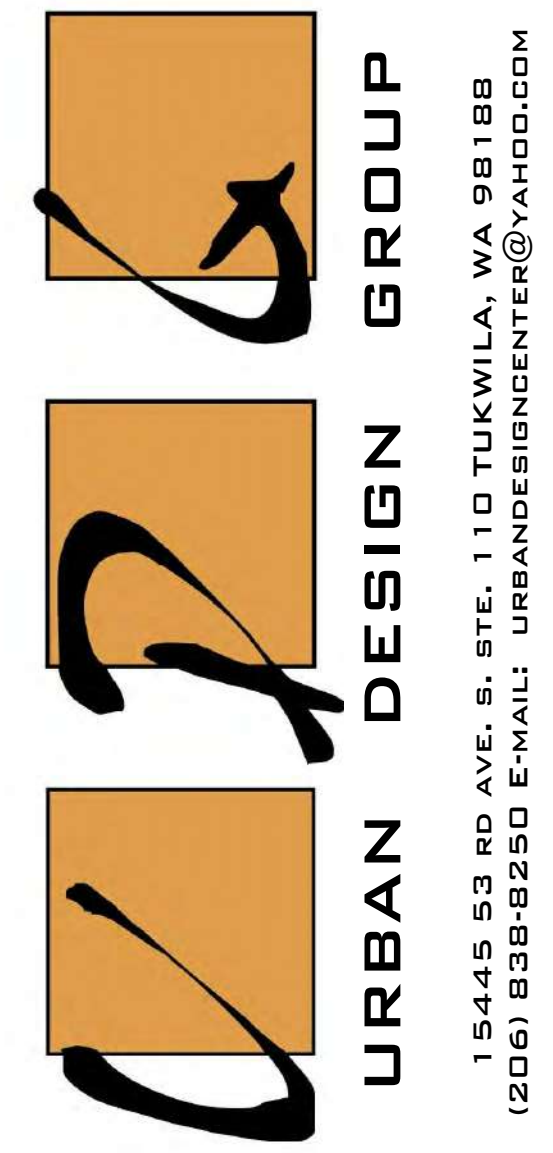
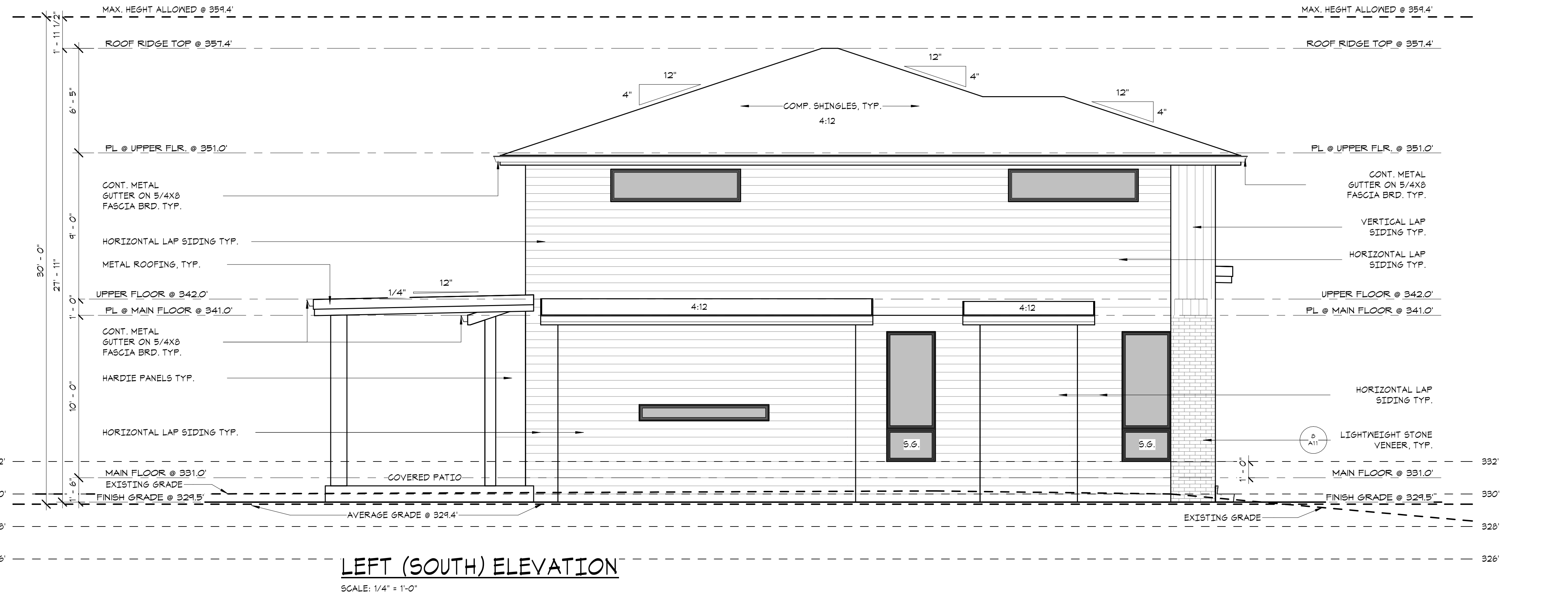
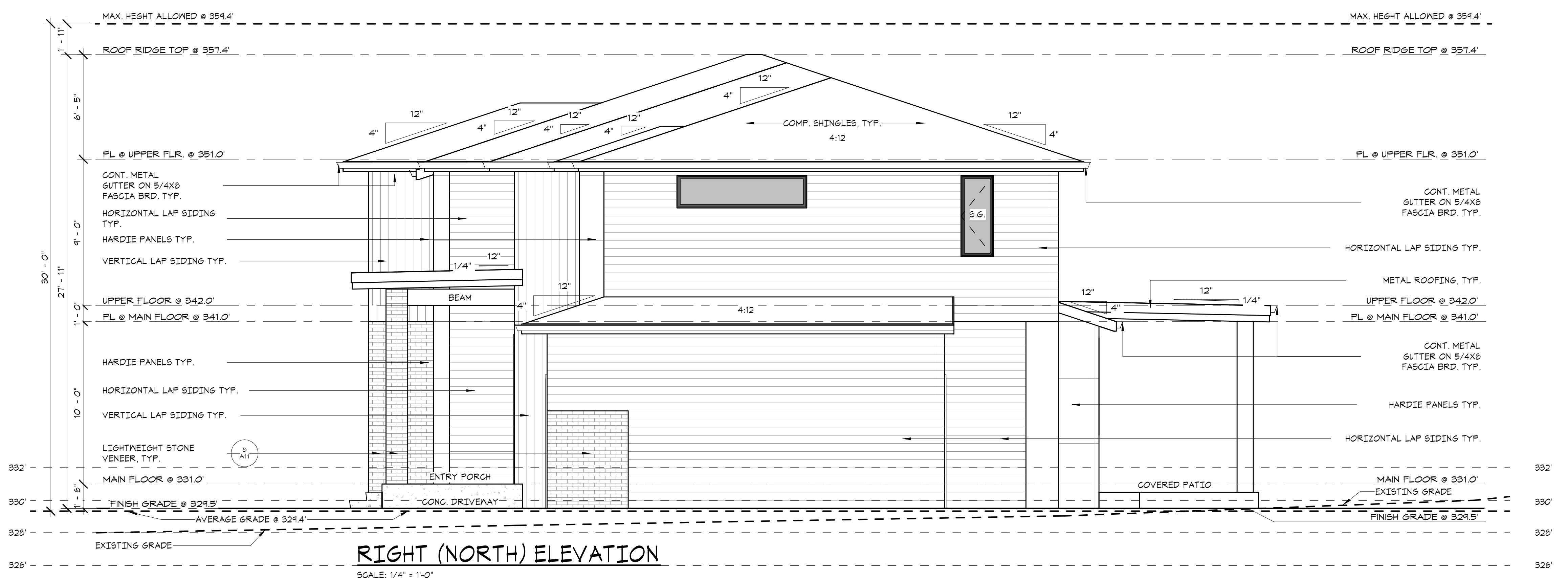
PROJECT NUMBER:
21257
SHEET NUMBER:

- ELEVATION NOTES:
1. VERIFY SHEAR WALL NAILING & HOLDDOWNS PER PLAN PRIOR TO INSTALLING SIDING.
 2. CAULK ALL EXTERIOR JOINTS & PENETRATIONS.
 3. PROVIDE APPROVED CORROSION RESISTANT FLASHING AT EXTERIOR WALL ENVELOPE PER I.R.C. R109.8
 4. PROVIDE FLASHING AT ROOF PENETRATIONS PER I.R.C. R405.2.6
 5. PROVIDE WEATHER STRIPPING AT ALL EXTERIOR & GARAGE-INTERIOR DOORS.
 6. PROVIDE CONTINUOUS GUTTERS & DOWNSPOUTS @ ALL EAVES, TYP.
 7. ADDRESS OR HOUSE NUMBER TO BE POSTED AND PLAINLY VISIBLE FROM THE STREET FRONTAGE, MIN. 4" HEIGHT, 1/2" STROKE WIDTH AND CONTRASTING BACKGROUND.
 8. PROVIDE STAIRWAY ILLUMINATION PER I.R.C. R309.6
 9. SEE SHEET A1 FOR ADDITIONAL NOTES.
 10. PROVIDE SURFACE DRAINAGE 6" x 10" MIN. AWAY FROM HOUSE FOOTPRINT IRC R401.3

NOTE:
NO OPERABLE WINDOW SHALL BE INSTALLED LESS THAN 24 INCHES ABOVE FINISHED FLOOR THAT IS GREATER THAN 12 INCHES ABOVE THE FINISH GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING.

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
FOR HARDIE PANEL DETAILS SEE SHEET A13
FOR ARTISAN LAP SIDING DETAILS SEE SHEET A14



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
 SUBMITTED -/-/2022
 REVISED -/-/2022
 DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:
LEFT AND RIGHT ELEVATIONS

PROJECT NUMBER:
21257
 SHEET NUMBER:

A6

15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
 (206) 836-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM



PERSPECTIVE VIEW: FRONT VIEW



PERSPECTIVE VIEW: BIRD EYE VIEW



PERSPECTIVE VIEW: REAR ELEVATION



PERSPECTIVE VIEW: REAR/ LEFT ELEVATION

PERSPECTIVE VIEW:

PERSPECTIVE VIEWS ARE FOR REFERENCE ONLY. THEY SHOULD NOT BE USED TO DETERMINE ANY PORTION OF THE CONSTRUCTION OTHER THAN GENERAL MATERIAL APPEARANCE. REFER TO ELEVATION SHEETS FOR DETAILS.



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8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

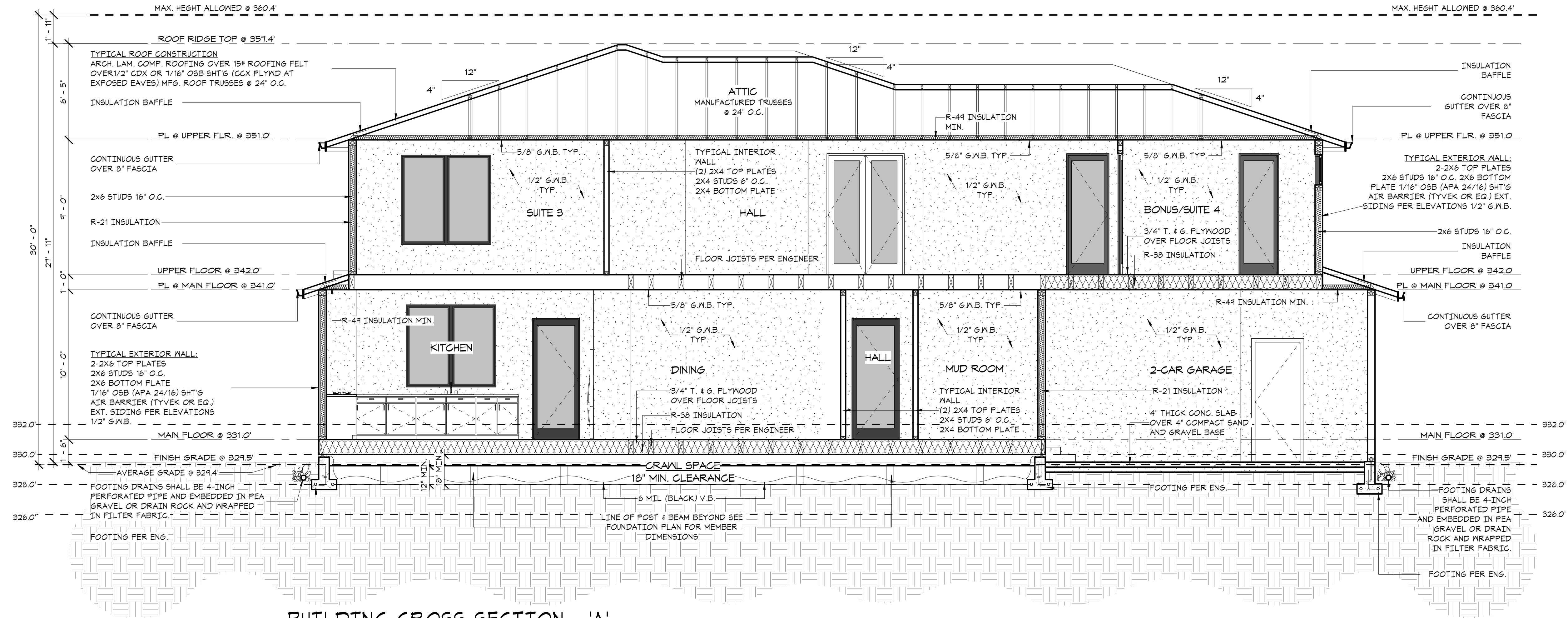
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DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA
SHEET TITLE:

PERSPECTIVE VIEWS

PROJECT NUMBER:
21257

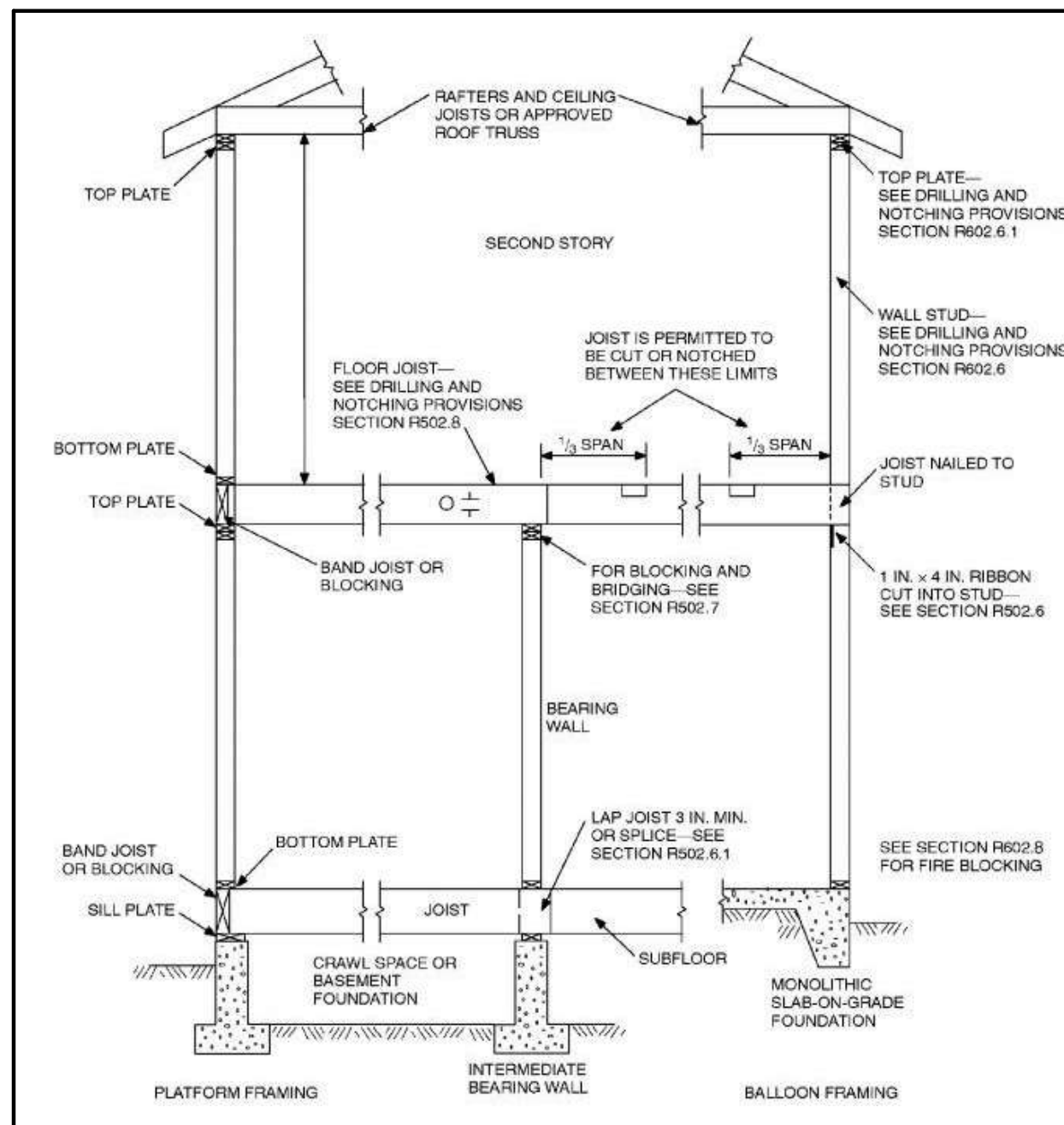
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A7



BUILDING CROSS-SECTION - 'A'

SCALE: 1/4" = 1'-0"



2019 IRC SECTION R302.11 FIREBLOCKING.
 IN COMBUSTIBLE CONSTRUCTION, FIREBLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL BE PROVIDED IN WOOD-FRAME CONSTRUCTION IN THE FOLLOWING LOCATIONS:

- 1) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS AS FOLLOWS:
 - A) VERTICALLY AT THE CEILING AND FLOOR LEVELS.
 - B) HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET.
- 2) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILING AND COVE CEILINGS.
- 3) IN CONCEALED SPACES AT STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
- 4) AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E 136 REQUIREMENTS.
- 5) FOR THE FIREBLOCKING OF CHIMNEYS AND FIREPLACES, SEE SECTION R1003.14.
- 6) FIREBLOCKING OF CORNICES OF A TWO-FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLING UNIT SEPARATION. FIRE BLOCKING MATERIALS SHALL CONSIST OF MATERIAL LISTED IN SECTION R302.11.1. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED. THE INTEGRITY OF ALL FIREBLOCKS SHALL BE MAINTAINED. DRAFTSTOPPING: WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW A CONCEALED SPACE OF A FLOOR/CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1000 SQUARE FEET. DRAFTSTOPS SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS. DRAFTSTOPPING MATERIALS SHALL CONSIST OF MATERIALS LISTED IN SECTION R302.12.1. DRAFTSTOPPING MATERIALS SHALL NOT BE LESS THAN 5 INCH GYPSUM, 3/8 INCH WOOD STRUCTURAL PANELS OR OTHER APPROVED MATERIALS ADEQUATELY SUPPORTED. THE INTEGRITY OF THE DRAFTSTOPS SHALL BE MAINTAINED.

SECTION 312.12: RODENT PROOFING.
 STRAINER PLATES ON DRAIN INLETS SHALL BE DESIGNED AND INSTALLED SO THAT NO OPENING EXCEEDS 1/2 OF AN INCH IN THE LEAST DIMENSION.
312.12.1: METER BOXES SHALL BE CONSTRUCTED IN SUCH A MANNER THAT RATS CANNOT ENTER A BUILDING BY FOLLOWING THE SERVICE PIPES FROM THE BOX INTO THE BUILDING.
312.12.2: METAL COLLARS.
 IN OR ON BUILDINGS WHERE OPENINGS HAVE BEEN MADE IN WALLS, FLOORS, OR CEILINGS FOR THE PASSAGE OF PIPES, SUCH OPENINGS SHALL BE CLOSED AND PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS SECURELY FASTENED TO THE ADJOINING STRUCTURE.
312.12.3: TUB WASTE OPENINGS.
 TUB WASTE OPENINGS IN FRAMED CONSTRUCTION TO CRAWL SPACES AT OR BELOW THE FIRST FLOOR SHALL BE PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS OR METAL SCREEN SECURELY FASTENED TO THE ADJOINING STRUCTURE WITH NO OPENING GREATER THAN 1/2 OF AN INCH IN THE LEAST DIMENSION.
 * 2018 UNIFORM PLUMBING CODE WITH WASHINGTON STATE AMENDMENTS (UPC)

CERTIFICATE (MSEC R401.3):
 A PERMANENT CERTIFICATE SHALL BE COMPLETED AND POSTED ON OR WITHIN THREE FEET OF ELECTRICAL DISTRIBUTION PANEL. THE CERTIFICATE MUST LIST THE ENERGY FEATURES OF THE STRUCTURE.

DUCTS (MSEC R403.2.2):
 DUCTS MUST BE LEAK TESTED IN ACCORDANCE WITH ASHRAE 90.1-2010 USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED. DUCT TIGHTNESS MUST BE VERIFIED BY EITHER THE POST-CONSTRUCTION TEST OR ROUGH-IN TEST PER MSEC R403.2.2. TOTAL LEAKAGE MUST BE LESS THAN OR EQUAL TO 4 CFM PER 100 S.F. OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1" W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM. PROVIDE GENERAL NOTES TO ADDRESS THIS REQUIREMENT.

PER MSEC R402.4, THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE(3). THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. (R402.4.1.2).

PER MSEC R403.1.1, AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE.

PER MSEC R404.1, A MINIMUM OF 90 PERCENT OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

DUCTS (503.1.1)

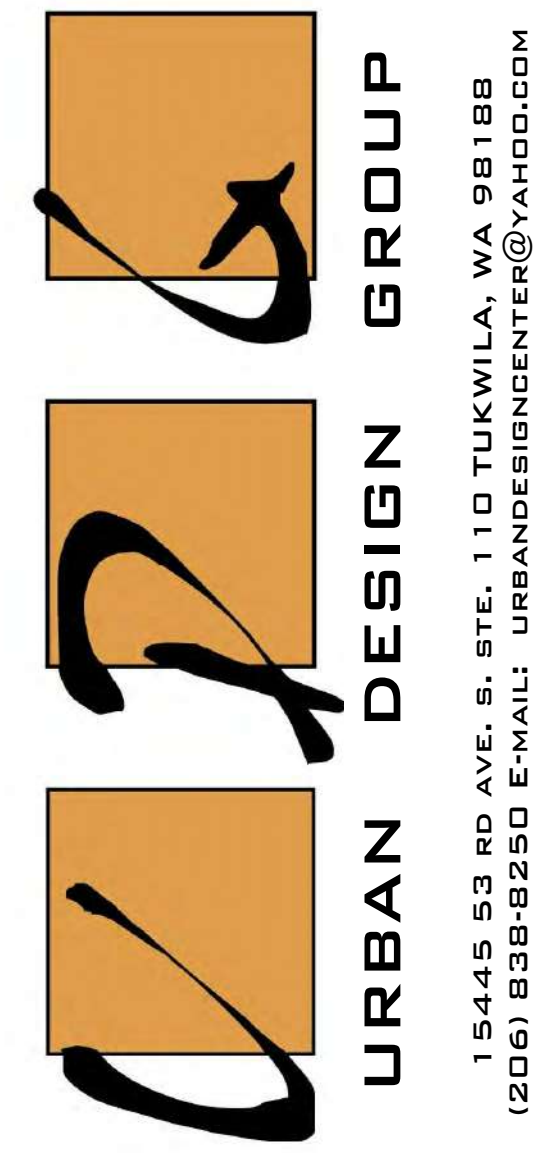
- * INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOOR OR CEILING CANNOT DISPLACE REQUIRED INSULATION.
- * BUILDING CAVITIES CANNOT BE USED AS DUCTS DUCT TESTING (503.1.0.2)
- * DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE MUST BE TESTED.

NOTE:
 REFER TO STRUCTURAL ENGINEERING SHEETS FOR FOUNDATION/CRAWL SPACE VENTILATION.

NOTE:
 CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
 FOR MORE DETAILS SEE STRUCTURAL ENGINEERING PLAN.

NOTE:
 REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN



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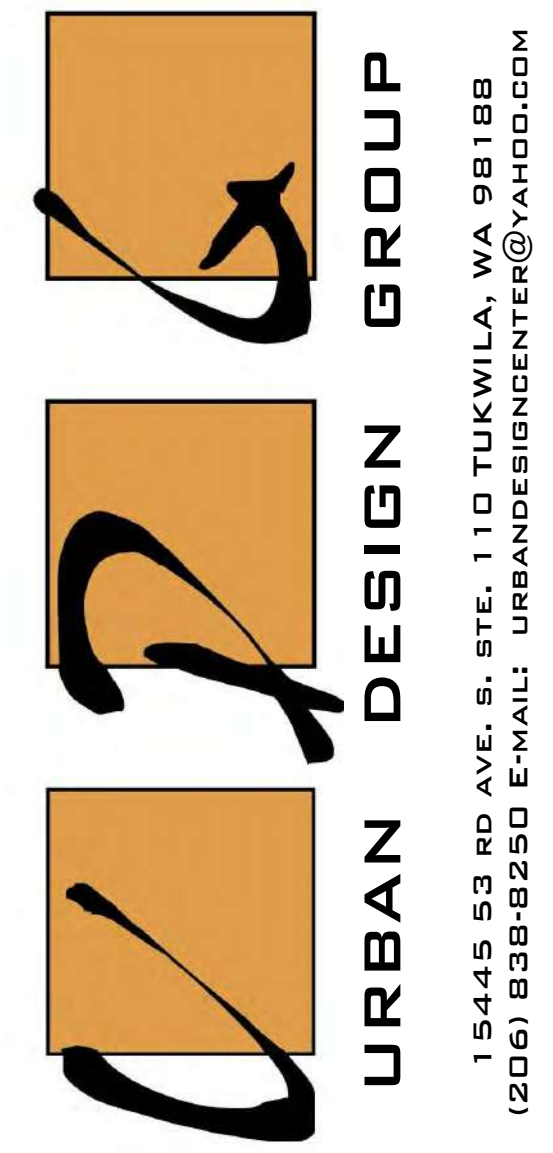
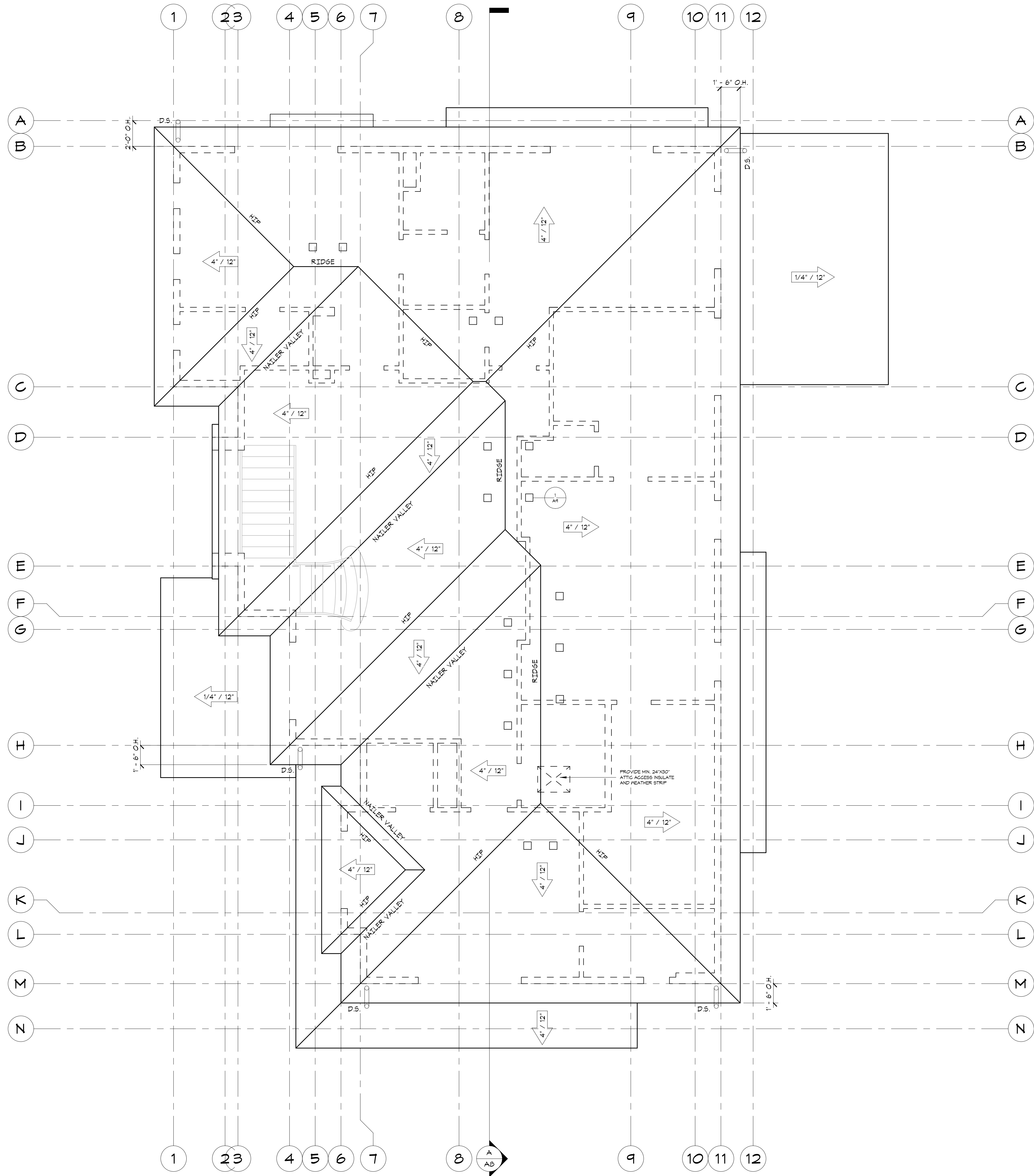
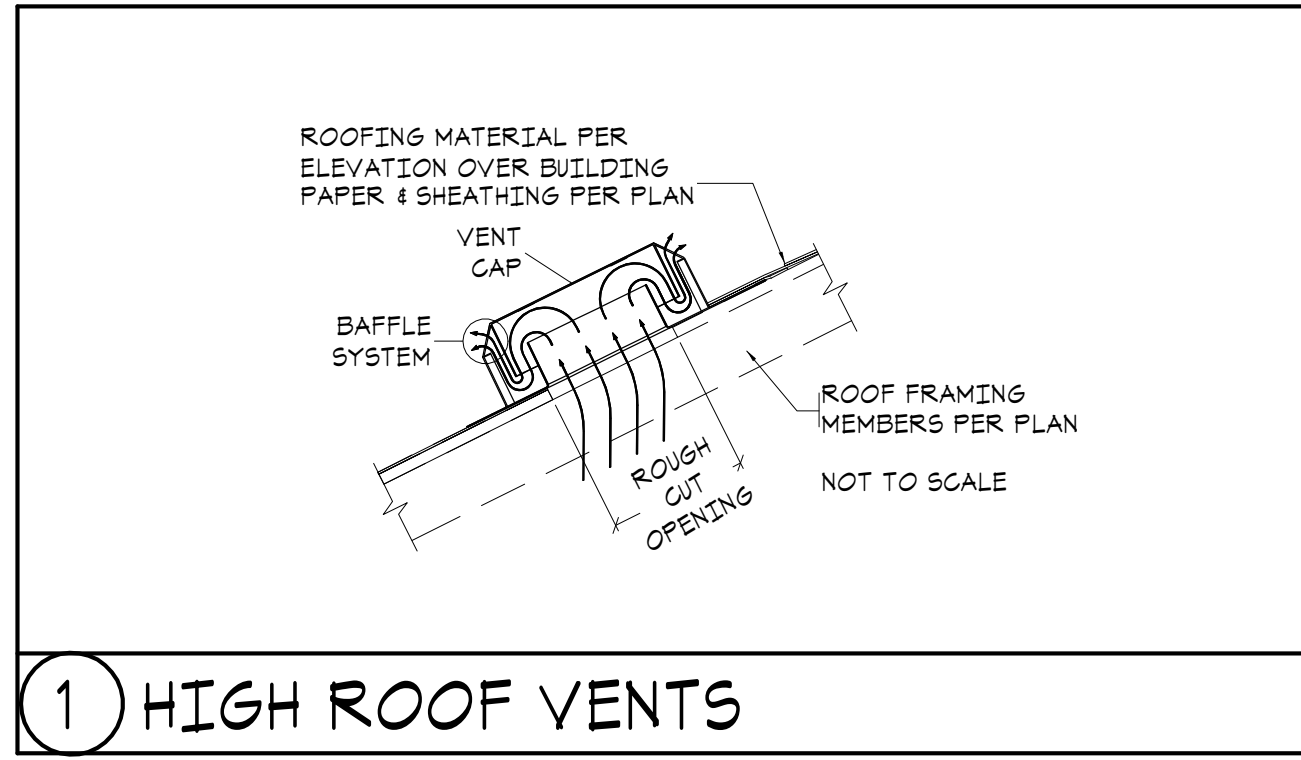
SUBMITTAL/REVISION: DATE:
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 DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA
 SHEET TITLE:

BUILDING CROSS-SECTION AND DETAILS

PROJECT NUMBER:
21257

SHEET NUMBER:

ROOF LAYOUT
SCALE: 1/4" = 1'-0"



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
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PREPARED FOR:
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ROOF LAYOUT
PROJECT NUMBER:
21257
SHEET NUMBER:

GLAZING SCHEDULE													
ROOM	# OF WINDS	WIND W.	WIND H.	MANUF.	FRAME TYPE	WDW. TYPE	MODEL NO.	AIR GAP	GAS	LO-E	U-VAL (1)	AREA	N.A.
MAIN FLOOR													
STAIRCASE	2	2.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	24.00	6.72
STAIRCASE	1	4.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	24.00	6.72
GREAT RM.	4	3.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	72.00	20.16
GREAT RM.	4	3.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	24.00	6.72
GREAT RM.	1	6.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	36.00	10.08
GREAT RM.	1	6.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	12.00	3.36
KITCHEN	1	8.00	1.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	8.00	2.24
KITCHEN	1	6.00	5.50	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0.28	33.00	9.24
KITCHEN	1	3.00	8.00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0.28	24.00	6.72
WALK-IN-PANTRY	1	5.00	1.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	5.00	1.40
PDR.	1	2.00	5.50	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	11.00	3.08
HALL	1	3.00	8.00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0.28	24.00	6.72
DEN/SUITE 5	1	8.00	6.00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0.28	48.00	13.44
BATH 4	1	2.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	4.00	1.12
UPPER FLOOR													
BONUS/SUITE 4	1	6.00	5.00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0.28	30.00	8.40
BONUS/SUITE 4	2	3.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	12.00	3.36
OPEN TO BELOW	2	3.00	5.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	30.00	8.40
STAIRCASE	2	2.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	24.00	6.72
STAIRCASE	2	2.00	3.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	12.00	3.36
STAIRCASE	1	4.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	24.00	6.72
STAIRCASE	1	4.00	3.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	12.00	3.36
W.I.C.	1	2.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	4.00	1.12
SUITE 2	1	2.00	2.00	MILGARD	VINYL	CASE	5521	1/2"	AIR	YES	0.28	4.00	1.12
SUITE 2	1	2.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	4.00	1.12
SUITE 2	1	8.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	16.00	4.48
SUITE 3	1	8.00	2.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	16.00	4.48
SUITE 3	1	6.00	6.00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0.28	36.00	10.08
MASTER BATH	2	3.00	5.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	30.00	8.40
MSTR. STE.	1	3.00	6.00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0.28	18.00	5.04
MSTR. STE.	1	3.00	6.00	MILGARD	VINYL	CASE	5521	1/2"	AIR	YES	0.28	18.00	5.04
BATH 3	1	2.00	5.00	MILGARD	VINYL	CASE	5521	1/2"	AIR	YES	0.28	10.00	2.80
												649.00	181.72
DOORS WITH MORE THAN 50% GLASS													
FOYER	2	3.00	8.00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0.28	48.00	13.44
												48.00	13.44
SKYLIGHTS AND SKYWALLS													
												697.00	195.18
SKYLIGHT TOTAL:													
												697.00	195.18
GLAZING % = TOTAL 1 = 17.36%													
												4016.00	S.F.
												195.16	UA
												0.28	U-VALUE
NON-LIVING SPACE WINDOWS:													

VENTILATION SCHEDULE		
2018 WASHINGTON STATE ENERGY CODE		M1505.4.3(1) & (4)
SYMBOL	LOCATION	MINIMUM FAN REQUIREMENTS
A	Bath, Powder, Laundry	Min. 50 cfm @ 0.25" WG
B	Kitchen	Min. 100 cfm @ 0.25" WG (Range hood or down draft exhaust fan rated at min.100 cfm at 0.10" WG may be used for exhaust fan requirement.)
C	Whole House Fan	CFM = 128 M1505.4.3(1) (based on 4,016 s.f. floor area & 5 bedrooms)
SEE EQ. 15-1		

2018 Residential Ventilation Compliance Summary
 Applicant: 40TH MERCER ISLAND parcel, Permit Number: DWEL21-0295

VENTILATION AND INDOOR AIR QUALITY REQUIREMENTS
 Whole House Ventilation fan(s) shall be sized according to International Residential Code M1505.4:
 Ventilation rate CFM = (0.01 x total sq.ft.) + [7.5 x (# of bedrooms + 1)] but not less than 30 cfm. 85 cfm (Eq. 15-1)
 Ventilation systems shall provide minimum flows per Table M1505.4.3(1) and adjusted per M1505.4.3.1 by coefficients of Tables M1505.4.3(2) and M1505.4.3(3) according to the formula Q₁ = Q_r x C_q x C₁

WHOLE HOUSE VENTILATION SYSTEM Exempt: Addition less than 500 sq. ft. or Remodel only.
 Exhaust fan with 24-hr timer and fresh air inlets in each habitable room per IRC M1505.4.1.2
 Integrated with forced air system per IRC M1505.4.1.5 Balanced and Distributed
 Supply fan per IRC M1505.4.1.3 Balanced and NOT Distributed
 Balanced Supply and Exhaust fans per IRC M1505.4.1.4 NOT balanced and Distributed
 Engineered design complying with IMC section 403.8.10. X NOT balanced and NOT distributed
 Specify location of Whole House Fan: LAUNDRY Size: 128 cfm CONTIN. hrs/day

2018 Table M1505.4.3(1) WHOLE-HOUSE SYSTEM MINIMUM VENTILATION RATES, Q _v					
Floor Area (sq. ft.)	Number of Bedrooms				
	0	1	2	3	>4
0 to 500	30	30	30	35	450
501 to 1000	30	30	35	40	50
1001 to 1500	30	30	40	45	55
1501 to 2000	35	35	45	50	60
2001 to 2500	40	40	50	55	65
2501 to 3000	45	45	55	60	70
3001 to 3500	50	50	60	65	75
3501 to 4000	55	55	65	70	80
4001 to 4500	60	60	70	75	85
4501 to 5000	65	65	75	80	90
Greater than 5000	Use equation 15-1 for minimum flow rate				

2018 Table M1505.4.3(2) WHOLE-HOUSE VENTILATION QUALITY ADJUSTMENT (C ₁)			
SYSTEM TYPE	DISTRIBUTED	NOT DISTRIBUTED	Min. adjusted fan size (cfm)
BALANCED	1.0	1.25	
NOT BALANCED	1.25	1.5	

2018 Table M1505.4.3(3) INTERMITTENT WHOLE-HOUSE VENTILATION RATE FACTORS (C ₂)			
Run-time % in each 4-hour segment	Rate Multiplier	Min. adjusted Fan Size (cfm)	Specified Fan Size (cfm)
50% (2 hrs every 4 hrs; 12 hrs / day)	2		
66% (2 hrs 40 min every 4 hrs; 16 hrs / day)	1.5		
75% (3 hrs every 4 hrs; 18 hrs / day)	1.3		
100% (continuously operating)	1.0	1.5	128

ROOF VENTILATION	
Standard Truss / Scissor Truss Roof Framing Assembly: LOWER ROOF	
Roof Area :	235 s.f.
Ventilation Required:	235 s.f. x 144 s.f. / s.f. / 300 = 112.8 s.f. Req'd
Provide 1/2 ventilation at eaves, 1/2 above midpoint & min. 3 ft. above eave vents	
Eave Ventilation:	
Birdblocking =	4.71 s.f. / I.F. - 25% reduction = 3.53 s.f. / I.F.
Eave Ventilation Req'd =	112.8 s.f. / 2 / s.f. per I.F. = 15.97 I.F.
Provide :	16 I.F. birdblocking. Ventilation = 56.52 s.f.
Min. Ventilation Provided =	56.52 s.f. is greater than 56.4 s.f. Req'd
Upper Roof Ventilation:	
7"x7" Attic Roof Jack =	49 s.f. each - 25% screen reduction = 36.75 s.f. each.
Upper Ventilation Req'd =	112.8 s.f. / 2 / s.f. of each vent = 1.53 vents
Provide :	2 -7"x7" roof jacks. Ventilation = 73.50 s.f.
Ventilation Provided =	73.50 s.f. is greater than 56.4 s.f. Req'd
Use : (minimum)	16 I.F. birdblocking. Ventilation = 56.52 s.f.
Use : (minimum)	2 -7"x7" roof jacks. Ventilation = 73.50 s.f.
Total Min. Ventilation Provided =	130.02 s.f. IS GREATER THAN : 112.8 s.f. Req'd

ROOF VENTILATION	
Standard Truss / Scissor Truss Roof Framing Assembly: MAIN ROOF	
Roof Area :	2350 s.f.
Ventilation Required:	2350 s.f. x 144 s.f. / s.f. / 300 = 1128 s.f. Req'd
Provide 1/2 ventilation at eaves, 1/2 above midpoint & min. 3 ft. above eave vents	
Eave Ventilation:	
Birdblocking =	4.71 s.f. / I.F. - 25% reduction = 3.53 s.f. / I.F.
Eave Ventilation Req'd =	1128 s.f. / 2 / s.f. per I.F. = 159.66 I.F.
Provide :	160 I.F. birdblocking. Ventilation = 565.20 s.f.
Min. Ventilation Provided =	565.2 s.f. is greater than 564 s.f. Req'd
Upper Roof Ventilation:	
7"x7" Attic Roof Jack =	49 s.f. each - 25% screen reduction = 36.75 s.f. each.
Upper Ventilation Req'd =	1128 s.f. / 2 / s.f. of each vent = 15.35 vents
Provide :	16 -7"x7" roof jacks. Ventilation = 588.00 s.f.
Ventilation Provided =	588.00 s.f. is greater than 564 s.f. Req'd
Use : (minimum)	160 I.F. birdblocking. Ventilation = 565.20 s.f.
Use : (minimum)	16 -7"x7" roof jacks. Ventilation = 588.00 s.f.
Total Min. Ventilation Provided =	1153.20 s.f. IS GREATER THAN : 1128 s.f. Req'd

Project Information: Mercer Island RESIDENCE

Contact Information: [Redacted]

Heating System Type: All Other Systems Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions"

Design Temperature: Mercer Island. Design Temperature Difference (ΔT): ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building: Conditioned Floor Area (sq ft) 4,016

Average Ceiling Height: Average Ceiling Height (ft) 9.5. Conditioned Volume 38,152

Glazing and Doors: U-Factor X Area = UA. U-0.28. 697. 195.16

Skylights: U-Factor X Area = UA. 0.50. 0. ---

Insulation: Attic. U-Factor X Area = UA. R-49. 2,350. 61.10

Single Rafter or Joist Vented Ceilings: U-Factor X Area = UA. R-49 Advanced. 0.020. 0. ---

Above Grade Walls: U-Factor X Area = UA. R-21 Intermediate. 0.056. 3,471. 194.38

Floors: U-Factor X Area = UA. R-38. 0.025. 2,373. 59.33

Below Grade Walls: U-Factor X Area = UA. R-21 Interior. 0.042. 0. ---

Slab Below Grade: F-Factor X Length = UA. No Slab Below Grade in this project. 0.303. 0. ---

Slab on Grade: F-Factor X Length = UA. R-10 Fully Insulated. 0.360. 0. ---

Location of Ducts: Conditioned Space. Duct Leakage Coefficient 1.00

Sum of UA 509.96

Envelope Heat Load 0 Btu / Hour

Air Leakage Heat Load 0 Btu / Hour

Volume = 0.6 x 17 x 0.018

Building Design Heat Load 0 Btu / Hour

Air leakage + envelope heat loss

Building and Duct Heat Load 0 Btu / Hour

Ducts in unconditioned space: sum of building heat loss x 1.10

Ducts in conditioned space: sum of building heat loss x 1

Maximum Heat Equipment Output 0 Btu / Hour

Building and duct heat loss + 1.40 for forced air furnace

Building and duct heat loss x 1.25 for heat pump

Figure 1: [Diagram showing above grade and below grade walls]

ENERGY NOTES:

- A RESIDENTIAL ENERGY COMPLIANCE CERTIFICATE COMPLYING WITH SEC R401.9 IS REQUIRED TO BE COMPLETED BY THE DESIGN PROFESSIONAL OR BUILDING AND PERMANENTLY POSTED WITHIN 3' OF THE ELECTRICAL PANEL PRIOR TO FINAL INSPECTION.
- DUCT LEAKAGE TEST RESULTS SHALL BE PROVIDED TO THE BUILDING INSPECTOR AND HOMEOWNER PRIOR TO AN APPROVED FINAL INSPECTION PER SEC R403.2.2.
- EACH DWELLING UNIT IS REQUIRED TO BE PROVIDED WITH AT LEAST ONE PROGRAMMABLE THERMOSTAT FOR THE REGULATION OF TEMPERATURE PER SEC R403.1.4. BUILDING AIR LEAKAGE TESTING, DEMONSTRATING THAT LEAKAGE RATE NOT EXCEED 5 AIR CHANGES PER HOUR AND CONFORM TO SEC R402.4.1 THROUGH R402.4.4.
- MINIMUM 90% OF ALL INTERIOR LUMINAIRES SHALL BE HIGH EFFICACY LUMINAIRES. ALL EXTERIOR LIGHTING SHALL BE HIGH EFFICACY LUMINAIRES PER SEC R404.1.
- BUILDING ENVELOPE MEETS REQUIREMENTS OF TABLE R402.1.1, CLIMATE ZONE 4 OF 2018 SEC.

TABLE R302.6 DWELLING-GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For Sl: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

R314.2.3 A HEAT DETECTOR OR HEAT ALARM RATED FOR THE AMBIENT OUTDOOR TEMPERATURES AND HUMIDITY SHALL BE INSTALLED IN NEW GARAGES THAT ARE ATTACHED TO OR LOCATED UNDER NEW AND EXISTING DWELLINGS. HEAT DETECTORS AND HEAT ALARMS SHALL BE INSTALLED IN A CENTRAL LOCATION AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. EXCEPTION: HEAT DETECTORS AND HEAT ALARMS SHALL NOT BE REQUIRED IN DWELLINGS WITHOUT COMMERCIAL POWER.

REQUIRED SAFETY GLAZING LOCATIONS:

- GLAZING IN SWINGING DOORS EXCEPT LOUVERED WINDOWS AND JALOUSIES COMPLYING WITH IRC R308.2
- GLAZING IN FIXED AND SLIDING PANELS OF SLIDING DOOR ASSEMBLIES AND PANELS IN SLIDING AND BIFOLD CLOSET DOOR ASSEMBLIES.
- GLAZING IN STORM DOORS.
- GLAZING IN ALL UNFRAMED SWINGING DOORS
- GLAZING IN DOORS, WALLS, FENCES AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHROOMS, AND SHOWERS. GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE ANY STANDING OR WALKING SURFACE. EXCEPTION: OPENINGS THROUGH WHICH A 3" SPHERE IS UNABLE TO PASS.
- GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE. EXCEPTION: WHERE THERE IS AN INTERVENING WALL OR PARTITION BETWEEN DOOR AND GLAZING OR WHERE THE DOOR ACCESSES A CLOSET 3' OR LESS IN DEPTH.
- GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL, WHEN ALL OF THE FOLLOWING APPLY:
 - EXPOSED AREA OF AN INDIVIDUAL PANE GREATER THAN 9 S.F.
 - BOTTOM EDGE LESS THAN 18" ABOVE THE FLOOR.
 - TOP EDGE GREATER THAN 36" ABOVE THE FLOOR.
 - ONE OR MORE WALKING SURFACES WITHIN 36" HORIZONTALLY OF THE GLAZING.

EXCEPTION: WHERE A PROTECTIVE 1-1/2"-WIDE BAR IS INSTALLED ON THE ACCESSIBLE SIDE OF THE GLAZING 34" - 38" ABOVE THE FLOOR AND IS CAPABLE OF WITHSTANDING A LOAD OF 80 LBS PER LINEAL FOOT OR WHERE THE BOTTOM EDGE OF THE GLAZING IS 25" OR MORE ABOVE GRADE, A ROOF, WALKING SURFACE, OR OTHER HORIZONTAL SURFACE.

- GLAZING IN RAILINGS REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE. INCLUDES STRUCTURAL BAULSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS.
- GLAZING IN WALLS AND FENCES ENCLOSING INDOOR AND OUTDOOR SWIMMING POOLS, HOT TUBS, AND SPAS WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A WALKING SURFACE AND WITHIN 60" HORIZONTALLY OF THE WATER'S EDGE. THIS WILL APPLY TO ALL SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.
- R308.4.6 GLAZING ADJACENT TO STAIRS AND RAMPS
- GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS AND RAMPS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

EXCEPTIONS:

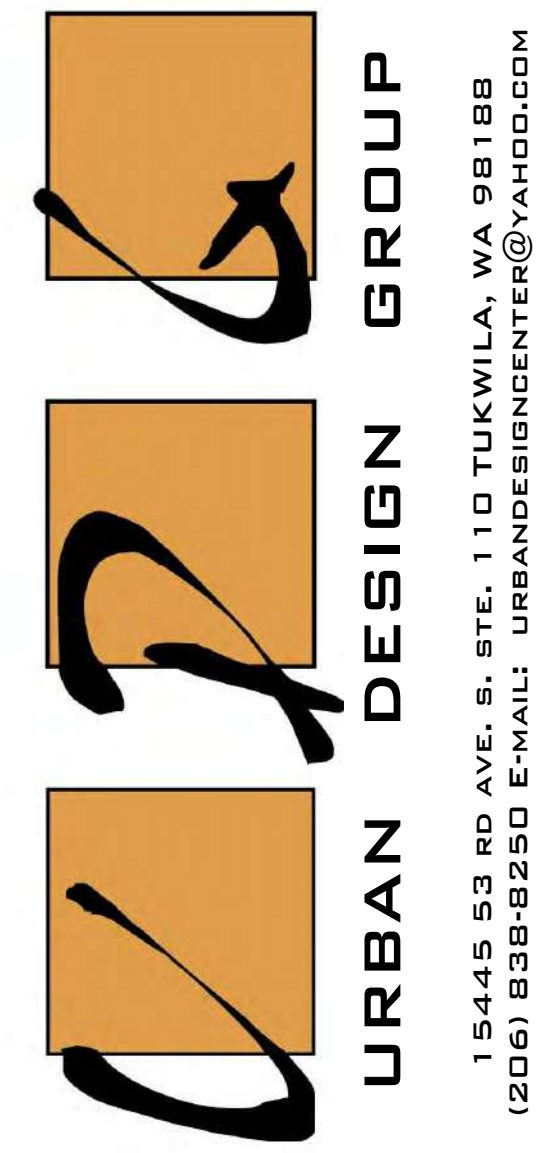
- WHERE A RAIL IS INSTALLED ON THE ACCESSIBLE SIDE(S) OF THE GLAZING 34 TO 38 INCHES (864 TO 965 MM) ABOVE THE WALKING SURFACE, THE RAIL SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAL FOOT (150 N/M) WITHOUT CONTACTING THE GLASS AND HAVE A CROSS-SECTIONAL HEIGHT OF NOT LESS THAN 1 1/2 INCHES (38 MM).
- GLAZING 36 INCHES (914 MM) OR MORE MEASURED HORIZONTALLY FROM THE WALKING SURFACE.
- R308.4.7 GLAZING ADJACENT TO THE BOTTOM STAIR LANDING.
- GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE LANDING AND WITHIN A 60-INCH (1524 MM) HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

EXCEPTION: THE GLAZING IS PROTECTED BY A GUARD COMPLYING WITH SECTION R312 AND THE PLANE OF THE GLASS IS MORE THAN 18 INCHES (457 MM) FROM THE GUARD.

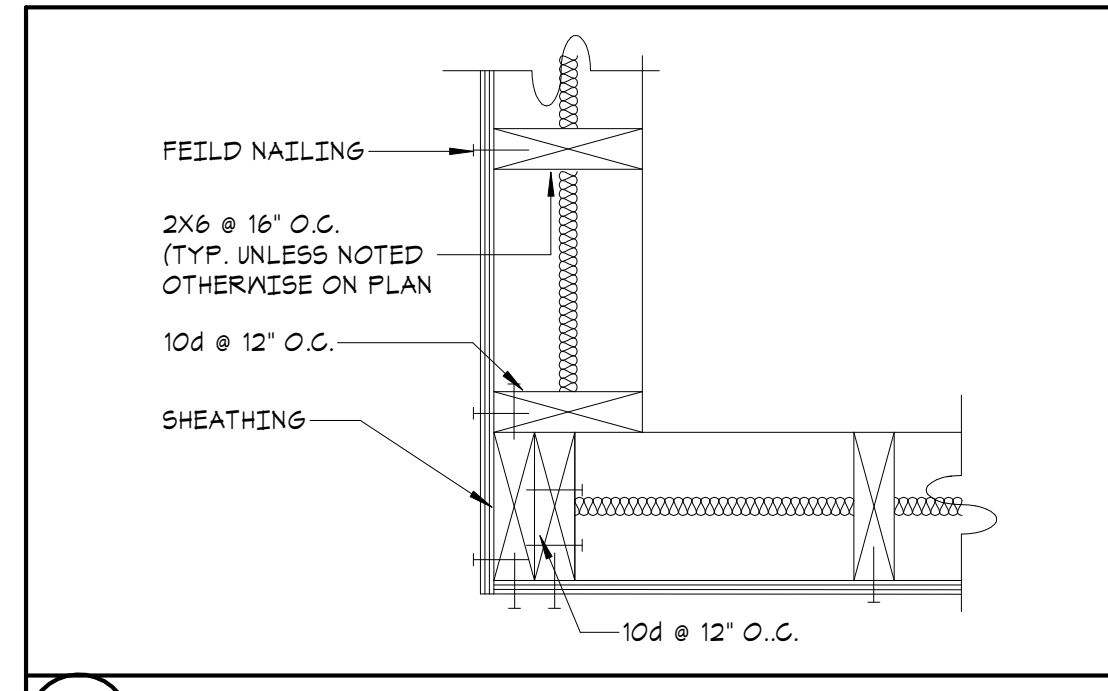
R302.6 DWELLING-GARAGE FIRE SEPARATION
 THE GARAGE SHALL BE SEPARATED AS REQUIRED BY TABLE R302.6. OPENINGS IN GARAGE WALLS SHALL COMPLY WITH SECTION R302.5. ATTACHMENT OF GYPSUM BOARD SHALL COMPLY WITH TABLE R102.3.5. THE WALL SEPARATION PROVISIONS OF TABLE R302.6 SHALL NOT APPLY TO GARAGE WALLS THAT ARE PERPENDICULAR TO THE ADJACENT DWELLING UNIT WALL.

NOTE:
 CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

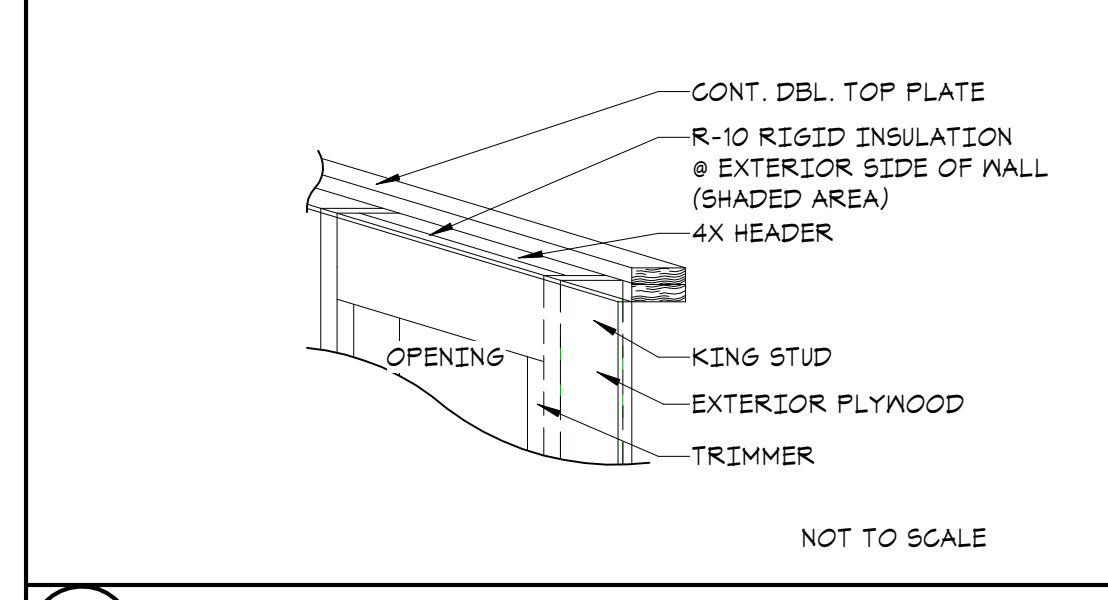
NOTE:
 REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN.



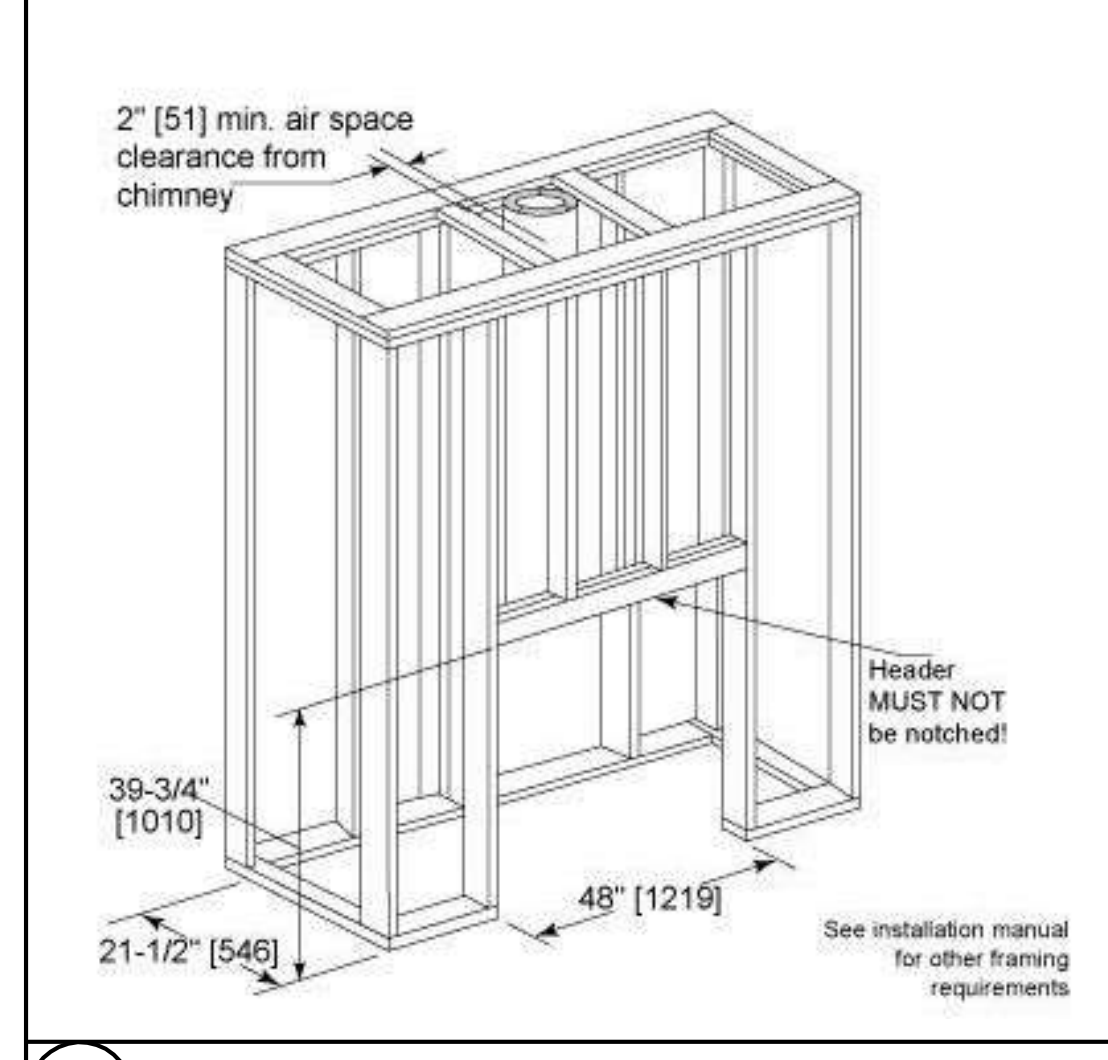
PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040



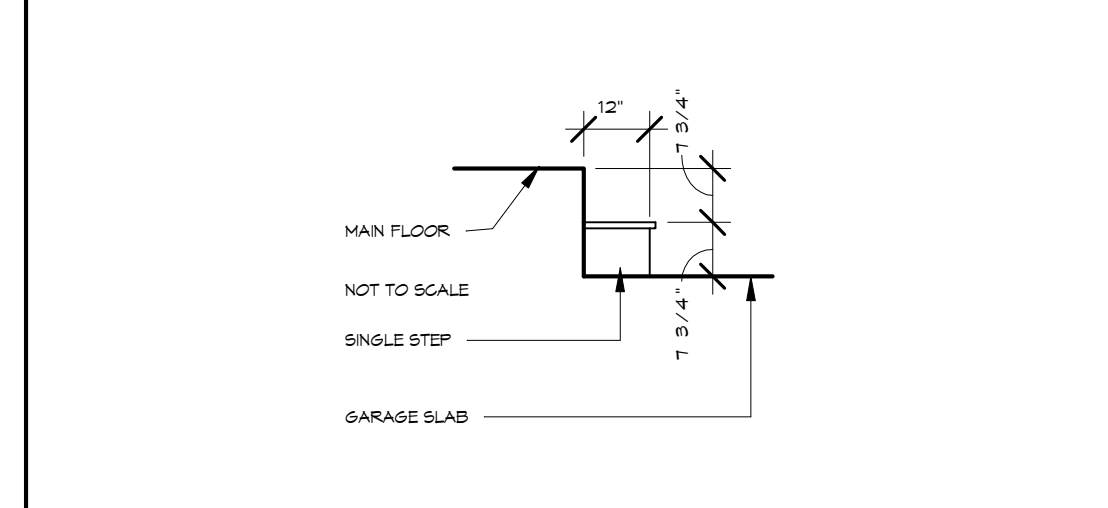
1 CORNER FRAMING



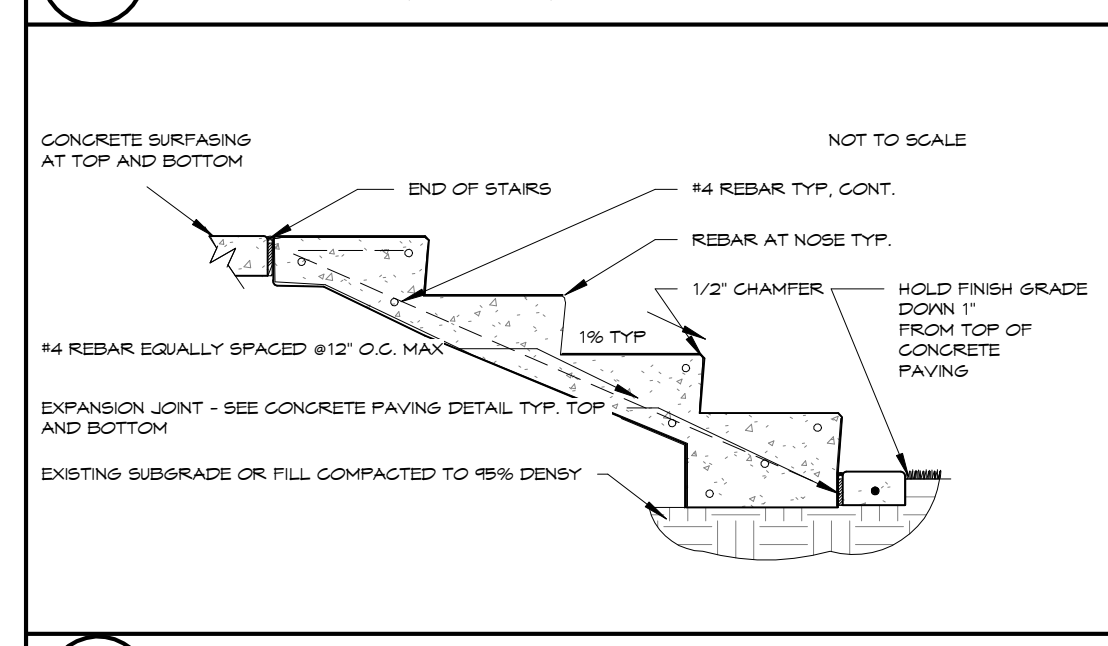
2 HEADER/ INSULATION



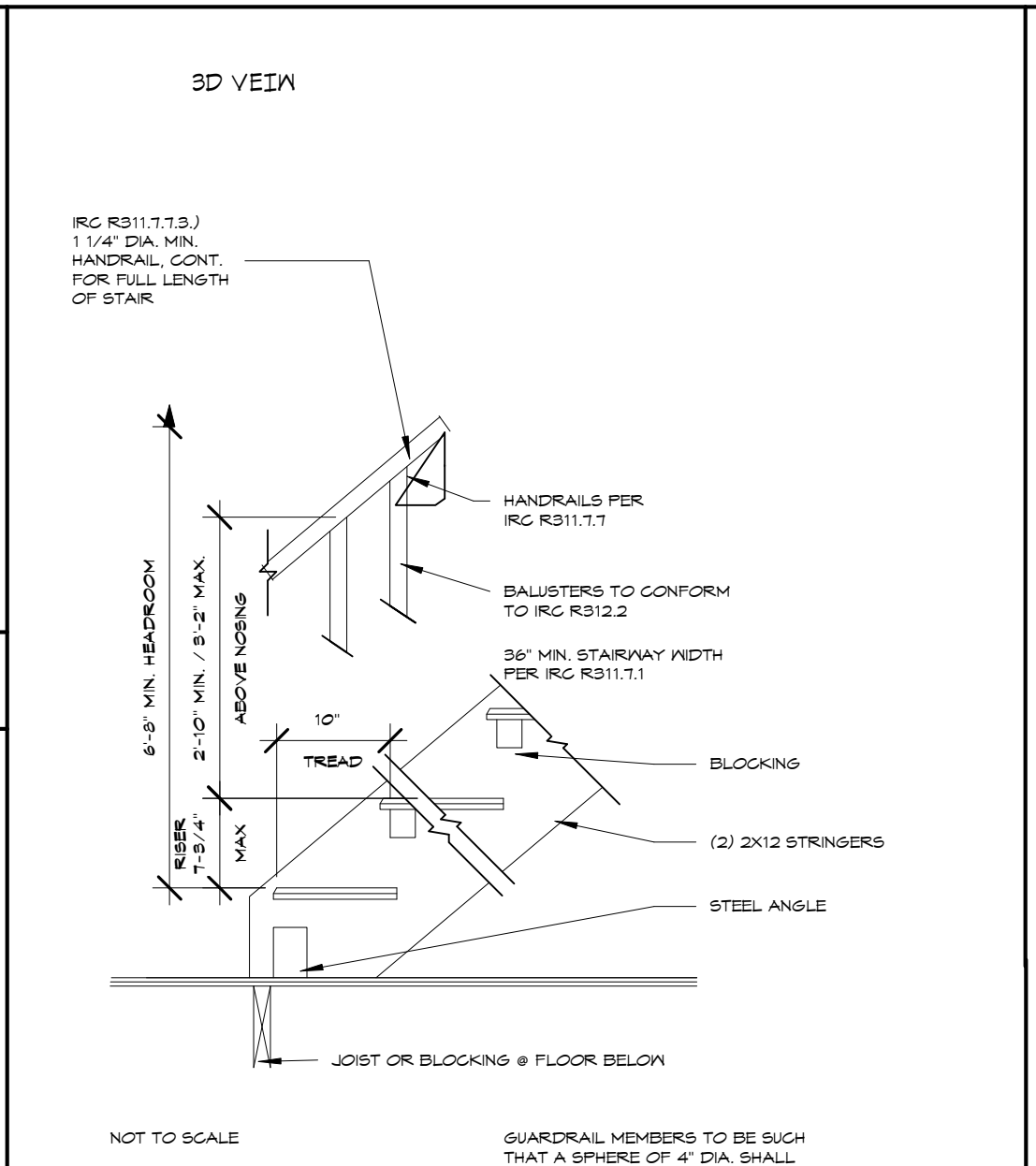
3 FIREPLACE FRAMING



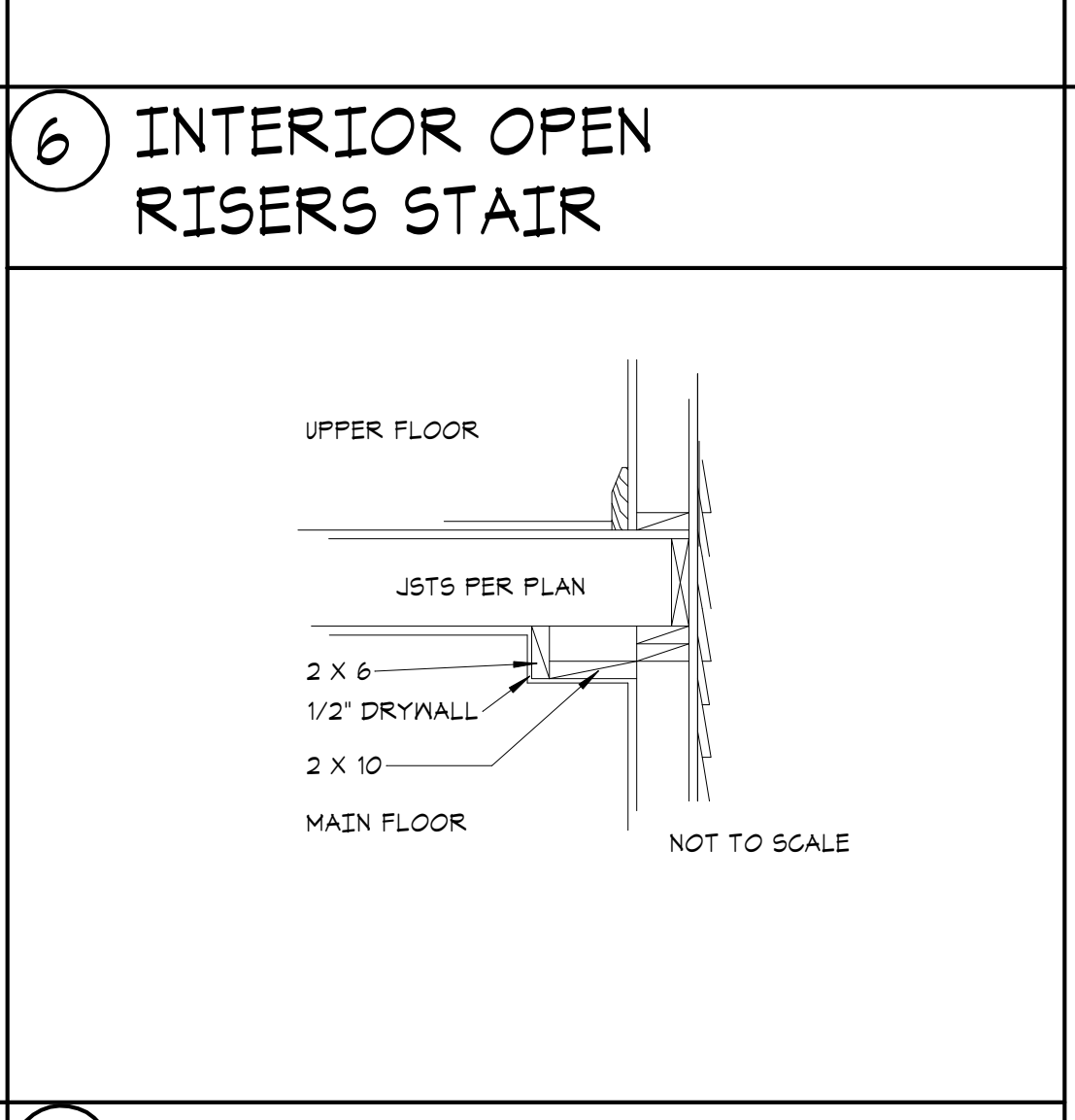
4 GARAGE STEP



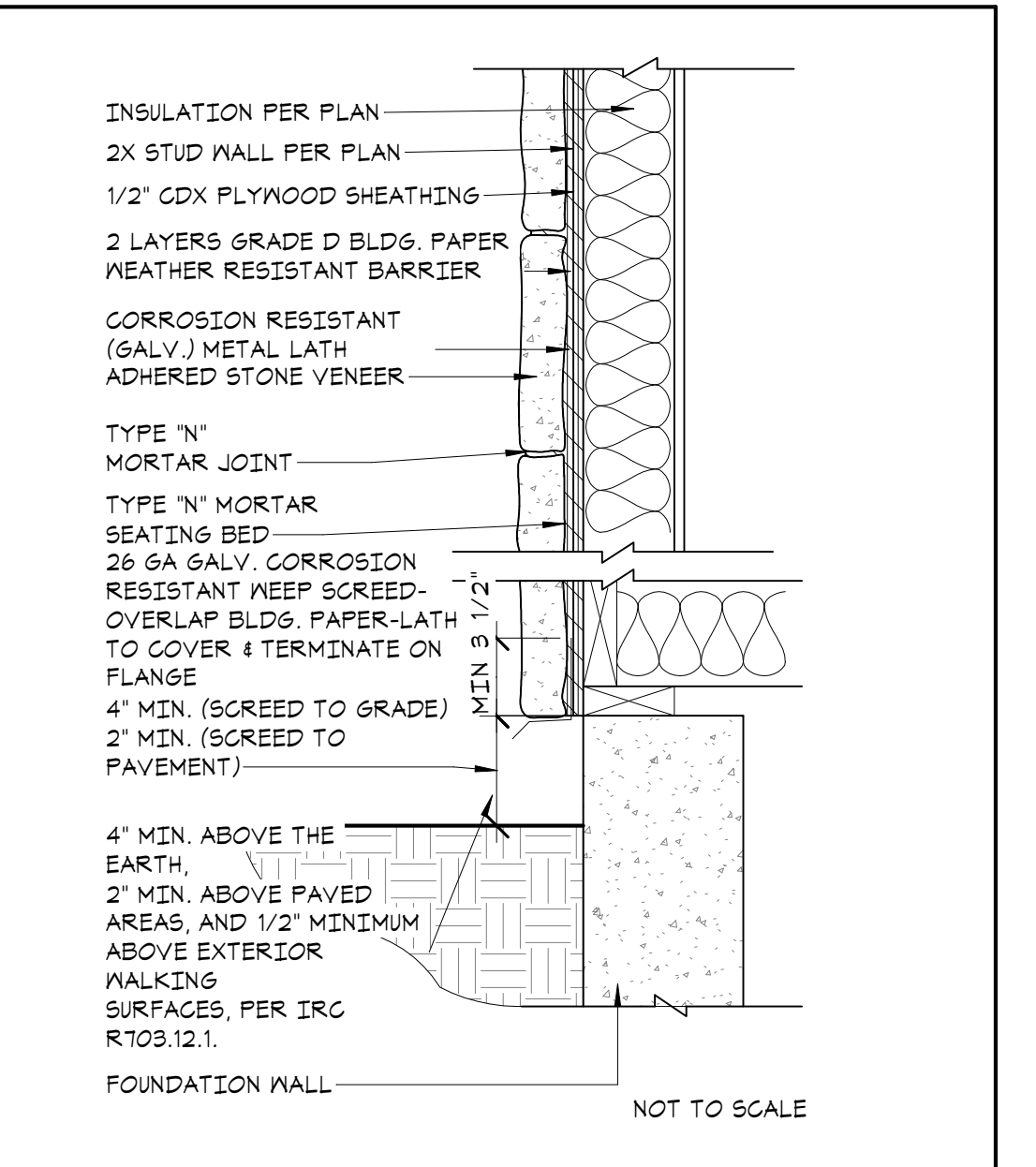
5 EXTERIOR STAIR



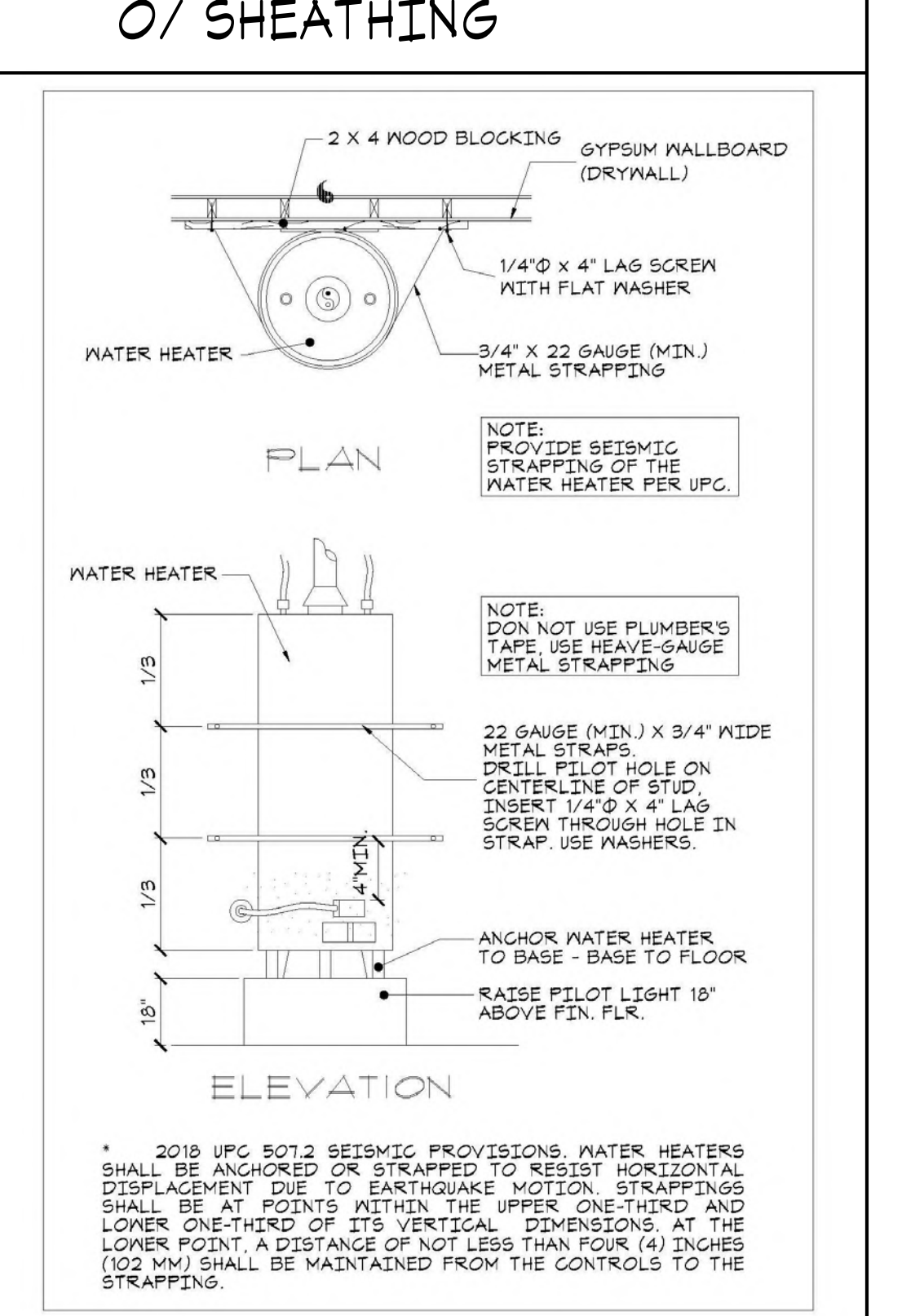
6 INTERIOR OPEN RISERS STAIR



7 COFFERED CEILING



8 ADHERED VENEER O/ SHEATHING



9 WATER HEATER ANCHORAGE

ALTAIR™-C & ALTAIRDLX™-C SERIES

DIRECT-VENT FIREPLACES

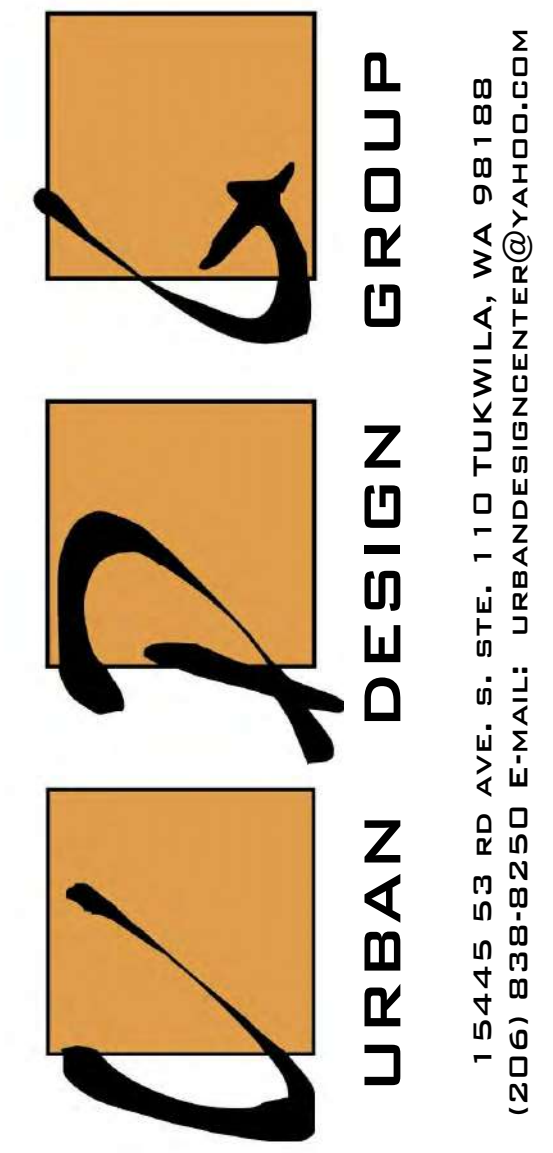
Appliance Specifications

ASTRIA FIREPLACES

ALTAIR™-C & ALTAIRDLX™-C SERIES

FIREPLACE SPECS

ASTRIA FIREPLACES



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
 SUBMITTED /-/2022
 REVISED /-/2022

DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

DETAILS

PROJECT NUMBER:
21257

SHEET NUMBER:

A11

15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
 (206) 836-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

Basic Stairs
This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

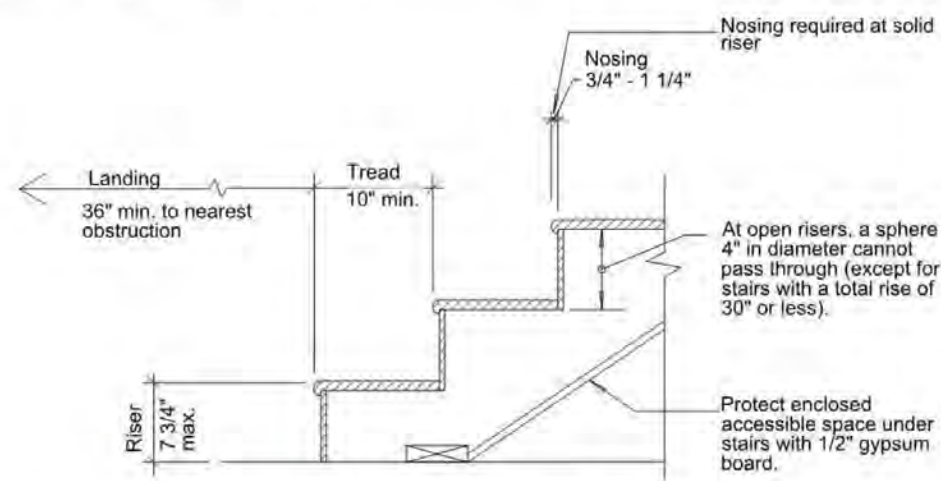


Figure 1: Typical Stair Treads and Risers

Stair Treads and Risers
The largest tread or riser within any flight of stairs is not to exceed the smallest by more than 3/8 inches. (R311.5)

Illumination
Interior stairways shall be provided with an artificial light source to illuminate landings and treads. There shall be a wall switch at each floor level to control the light source where the stairway has 6 or more risers. (R303.7)

Exterior stairways shall be provided with an artificial light source located at the top landing of the stairway and located at the bottom landing where accessing a basement. (R303.8)

Handrails
Handrails are required on at least one side for stairways with four or more risers. See Tip Sheet 2 for additional information regarding handrails. (R311.7.8)

Landings
Landings are required at the top and the bottom of stairways. A floor landing is not required at the top of an interior flight of stairs, provided a door does not swing over the stairs. (R311.7.6)

A landing extending the width of the stair and measuring a minimum of 36 inches in the direction of travel is required at the top and bottom of every stairway. (R311.7.6)

Circular, Winding, or Spiral Stairways
For exceptions related to the construction of circular, winding, or spiral stairways, see IRC R311.7.5.2.1 and R311.7.10.

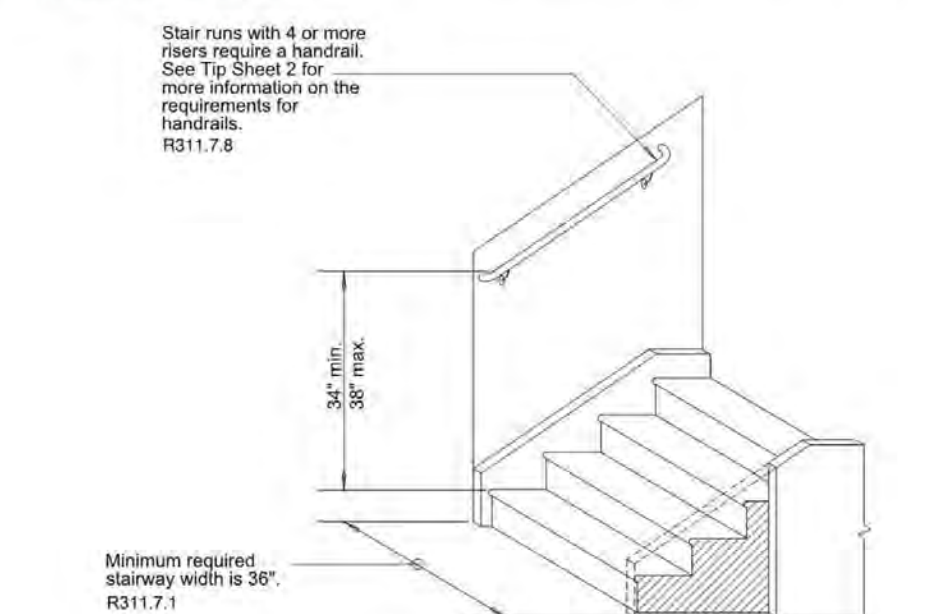


Figure 2: Typical Stair Elevation

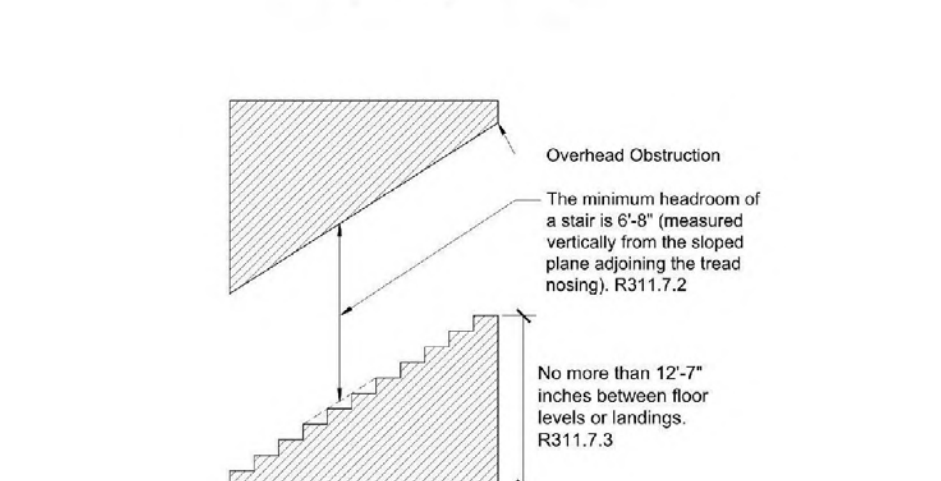


Figure 3: Headroom Clearance Requirements

1 BASIC STAIRS DETAIL

Residential Guards (Guardrails)
This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

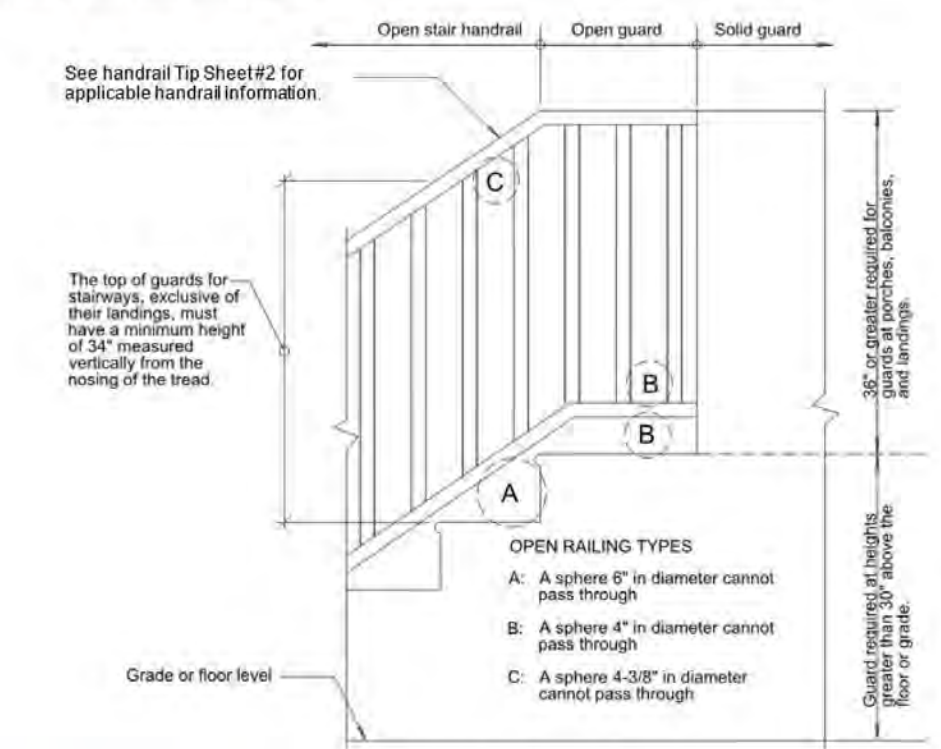


Figure 1: Guard Elevation (IRC R312)

Requirements
Guards shall comply with IRC R312.1; refer to Figure 1 for major requirements.
Guards shall be structurally designed to comply with IRC Table R301.5 (i.e., designed for a 200-pound load in any direction along the top and a 50-pound point load elsewhere).
For glass guards or guards with glazing, see IRC R308.4.4.

2 GUARDRAILS DETAIL

Smoke, Heat, and Carbon Monoxide Alarms
This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments and the 2016 edition of NFPA 72.

Definitions
Smoke alarm: A device designed to respond when it senses smoke, typically as an indicator of fire.
Heat alarm: A device designed to respond when it senses a rise in temperature, typically as an indicator of fire.
Carbon monoxide alarm: A device designed to respond when it senses carbon monoxide, a poisonous gas.

New Construction
Smoke alarms and carbon monoxide alarms shall be installed throughout each dwelling unit in all required locations. (R314.2.1, R315.2.1)
A heat detector shall be provided in each new attached garage. (R314.2.3)

Smoke alarms, heat alarms, and carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. (R314.6, R315.6)
Where more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. (R314.4, R315.5)
Heat alarms shall be connected to a heat alarm or smoke alarm that is installed in the dwelling unit. Alarms that are installed for this purpose shall be located in a hallway, room, or other location that will provide occupant notification. (R314.4.1)
Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. (R314.4, R315.5)

Alterations, Repairs, and Additions
In a dwelling unit where alterations, repairs or additions occur, smoke alarms and carbon monoxide alarms shall be installed throughout each dwelling unit, in all required locations, where not already present. (R314.2.2, R315.2.2)

Smoke and carbon monoxide alarms can be powered by the building wiring or batteries. (R314.6, R315.6)
Smoke alarms shall be interconnected within an individual dwelling except where such existing smoke alarms are not interconnected or where such new smoke alarm or alarm is not acceptable to be interconnected to the existing smoke alarms. (R314.4)

Carbon monoxide alarms shall be interconnected except where the permit related work does not provide access to the building wiring (such as removing exterior walls or ceiling finishes) and there is no attic, crawlspace, or basement available. (R315.5)
Required Locations
A smoke alarm shall be located in each sleeping room or sleeping loft. (R314.3)
A smoke alarm shall be located in each napping area of a family home childcare. (R314.3)
A smoke alarm and a carbon monoxide alarm (or combination smoke and carbon monoxide alarm) shall be located outside each sleeping area in the immediate vicinity of the bedroom(s). (R314.3, R315.3)

At least one smoke alarm and one carbon monoxide alarm shall be located on each floor level, including basements and habitable attics. (R314.3, R315.3)
In split level floor plans, at the upper level, provided there is no intervening door between adjacent levels and the lower level is less than a full story below the upper level. (R314.3)

A carbon monoxide alarm is required in a bedroom when a fuel-burning appliance is installed in the bedroom or its attached bathroom. (R315.3)
A combination alarm (combined smoke and carbon monoxide alarm) is acceptable in any required location. (R314.5, R315.4)
A heat alarm is required in each new attached garage. (R314.2.3)

Alarms and Detectors on Walls and Sloped/Peaked/Coffered Ceilings per NFPA 72
Wall mounted alarms must be not more than 12 inches from the adjoining ceiling surface. (NFPA 72 29.8.3.3)

Alarms in peaked or sloped ceilings must be within 3 feet horizontally and no closer than 4 inches vertically to the peak. Avoid placing alarms in dead air spaces; refer to Figure 1. (NFPA 72 29.8.3.1, 29.8.3.2, 29.8.3.4 (9), (10))

For coffered ceilings, alarms shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 inches vertically down from the highest point. (NFPA 72 29.8.3.4 (11))

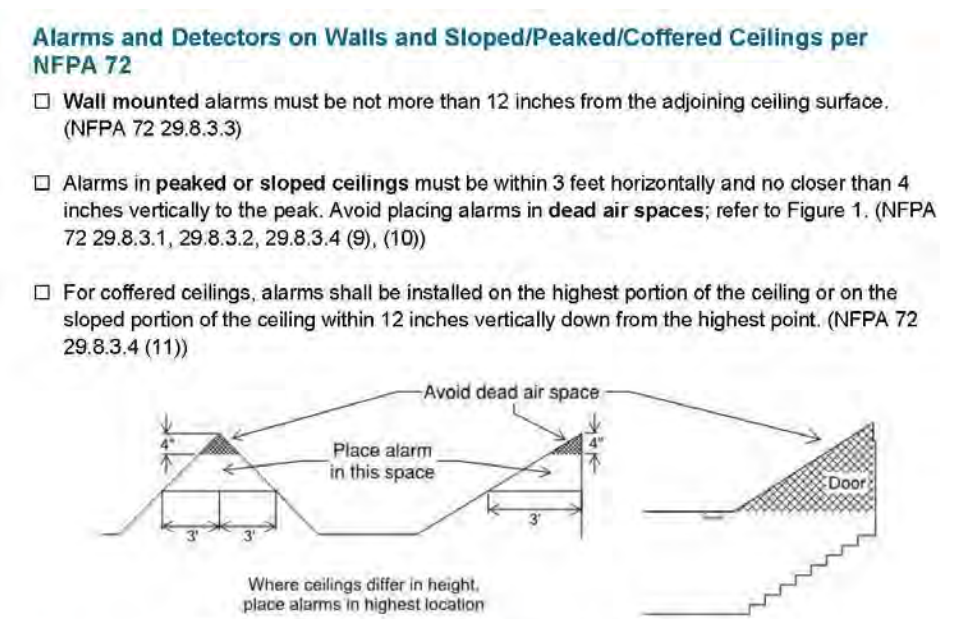


Figure 1: Smoke Alarms and Smoke Detectors in Sloped/Peaked Ceilings

Specific Location Requirements per NFPA 72
Do not place alarms in spaces where temperatures may be above or below the alarm's operating temperature range. (NFPA 72 29.8.3.4 (1), (2), (3))

Avoid placing alarms within 3 feet horizontally from doors or openings to bathrooms containing a bathtub or shower. (NFPA 72 29.8.3.4 (6))
Do not place alarms within 3 feet from a supply register of a forced air heating or cooling system and it shall be installed outside of the direct airflow from those registers. (NFPA 72 29.8.3.4 (7))
Do not place alarms within 3 feet of the blades of a ceiling fan. (NFPA 72 29.8.3.4 (8))

Alarms and Detectors Near Cooking Appliances per NFPA 72
Refer to Figure 2.

Photoelectric smoke alarms shall not be installed less than 6 feet horizontally from a permanently installed cooking appliance. (NFPA 72 29.8.3.4 (4))
Ionization smoke alarms with an alarm-silencing switch must not be less than 10 feet from a permanent cooking appliance. (NFPA 72 29.8.3.4 (4))
Ionization smoke alarms without an alarm-silencing switch must not be less than 20 feet from a permanent cooking appliance. (NFPA 72 29.8.3.4 (4))

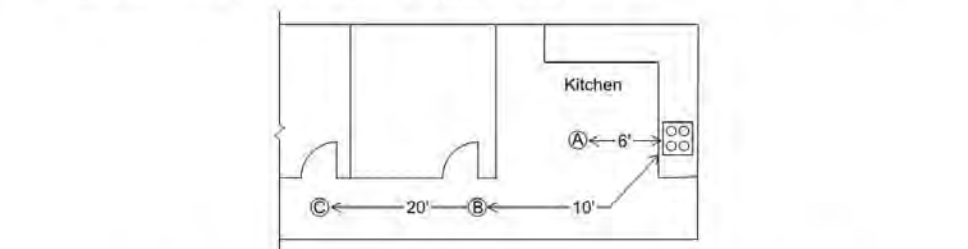


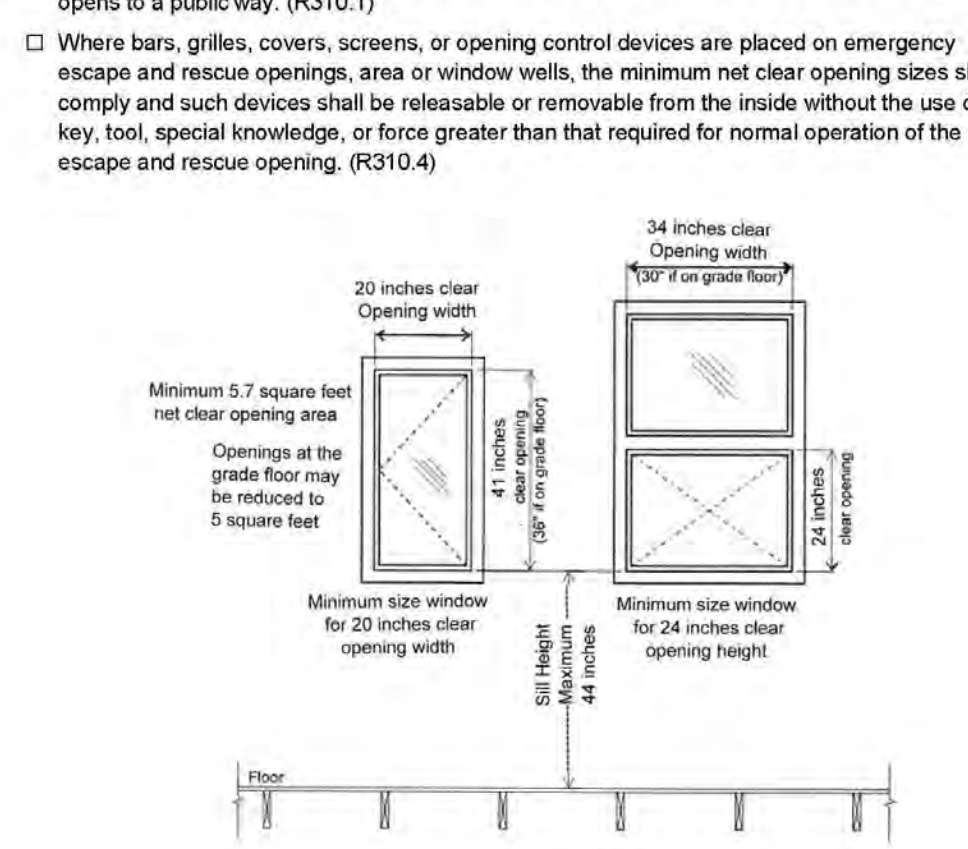
Figure 2: Smoke Alarms and Smoke Detectors Near Cooking Appliances

Carbon Monoxide Alarm Location Limitations
Do not place alarms directly above or beside fuel-burning appliances.
Do not place alarms in direct sunlight.
Do not place alarms in low areas where children can reach. Do not place alarms behind curtains or any structure that might prevent carbon monoxide from reaching the sensor.

3 ALARMS DETAIL

Residential Emergency Egress Openings
This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

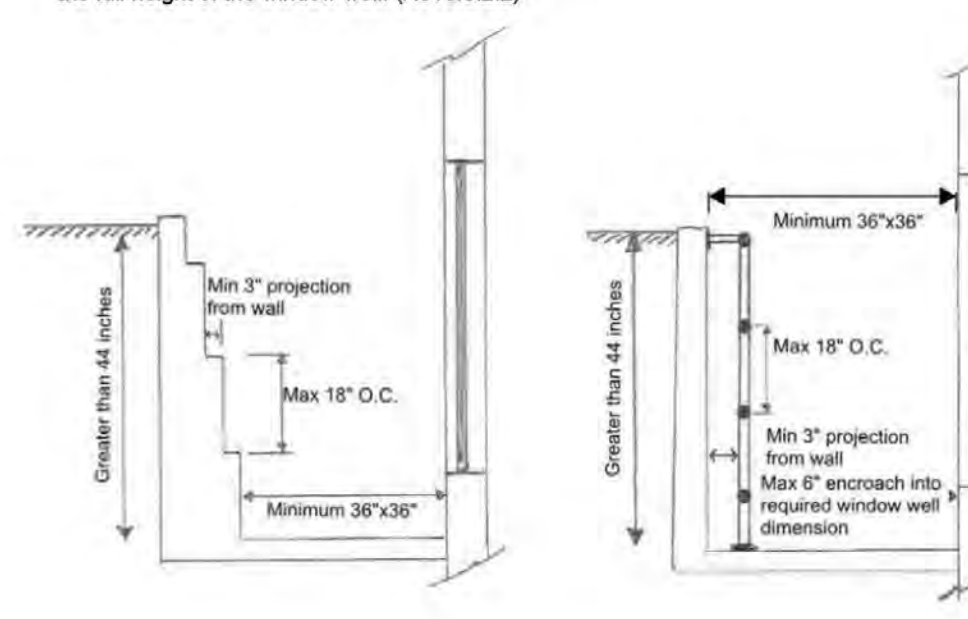
Emergency Escape and Rescue Opening
Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall be operational from the inside without the use of keys, tools, or special knowledge, and open directly into a public way, or to a yard or court that opens to a public way. (R310.1)
Where bars, grilles, covers, screens, or opening control devices are placed on emergency escape and rescue openings, area or window wells, the minimum net clear opening sizes shall comply and such devices shall be releasable or removable from the inside without the use of key, tool, special knowledge, or force greater than that required for normal operation of the escape and rescue opening. (R310.4)



Minimum size window for 20 inches clear opening width and 24 inches clear opening height.

Window Wells in Conjunction with Emergency Escape and Rescue Openings

The horizontal area of the window well shall be not less than 9 square feet, with a horizontal projection and width not less than 36 inches. The area of the window well shall allow the emergency escape and rescue opening to be fully opened. (R310.3.2)
Window wells with a vertical depth greater than 44 inches shall be equipped with a permanently affixed ladder or steps useable with the emergency escape and rescue opening in the fully opened position and shall not encroach into the required dimensions of the window well. (R310.3.2.2)
Ladder rungs or steps shall have an inside width of not less than 12 inches, shall project not less than 3 inches from the wall, and be spaced not more than 18 inches on center vertically for the full height of the window well. (R310.3.2.2)



Minimum 36"x36" projection from wall. Max 18" O.C. Min 3" projection from wall. Max 6" encroach into required window well dimension.

Glazing in Railings and Guards: All glazing in railings and guards, including structural baluster panels and nonstructural in-fill panels, is required to be safety glazing. (R308.4.4)

Glazing and Wet Surfaces: Glazing in walls, enclosures, or fences around showers, bathtubs, pools, hot tubs, spas, saunas, and steam rooms where the bottom edge of the glazing is less than 60 inches from the standing or walking surface is required to be safety glazing. Safety glazing is not required where the glazing is more than 60 inches, horizontally, from the edge of the water. (R308.4.5)

Glazing Adjacent to Bottom Stair Landings: Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60-inch horizontal arc from the bottom tread must be safety glazing. (R308.4.7)



Safety glazing required in this area when less than 36 inches above the floor.

Glazing Adjacent to Stairs and Ramps: Glazing where the bottom edge is less than 36 inches above the plane of the adjacent walking surface of stairways, ramps, and landings between stair flights and ramp runs, must be safety glazing. (R308.4.6)

Exceptions:
Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
Glazing more than 36 inches horizontally from the walking surface is not required to be safety glazing.



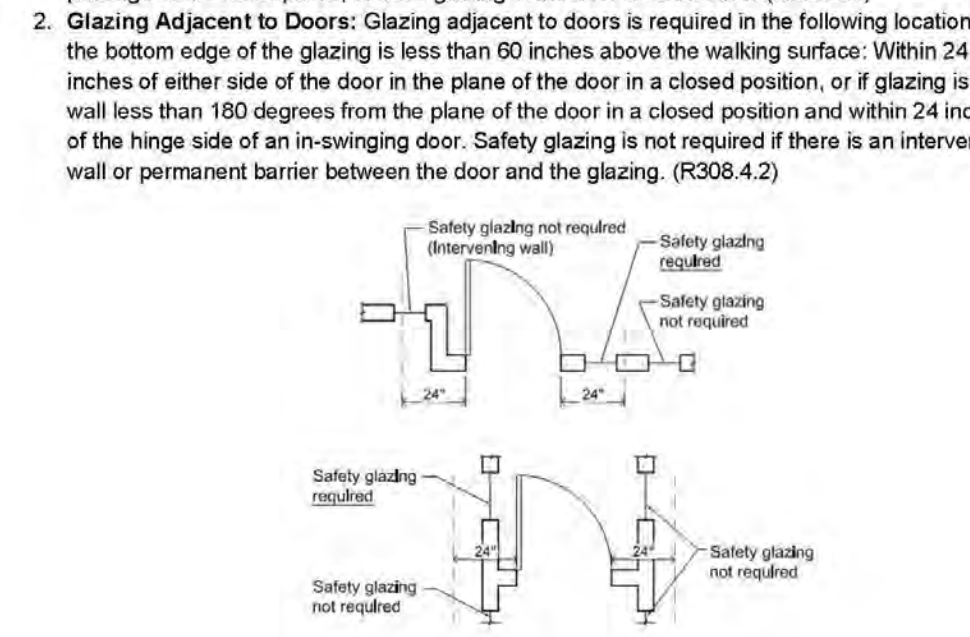
Safety glazing not required. Safety glazing required.

4 EMERGENCY EGRESS DETAIL

Safety Glazing
This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

What is Safety Glazing?
Safety glazing is glass that is less dangerous when it breaks, such as tempered or laminated glass.
Per R308.1, where safety glazing is required, each pane must be provided with a manufacturer's label defining the type of glass and safety glazing standard to which it complies. For tempered glazing the label must be permanently etched, fired, or embossed, on the glass or be a type that once applied cannot be removed without being destroyed. For other types of safety glazing, a certificate, affidavit or other evidence confirming compliance with the code shall be provided at time of inspection.

Required Safety Glazing in Hazardous Locations
Glazing in Doors: Safety glazing is required in fixed and operable panels of swinging, sliding, and bifold doors. Safety glazing is not required in a door if the glazing openings do not allow the passage of a 3-inch sphere, or if the glazing in the door is decorative. (R308.4.1)
Glazing Adjacent to Doors: Glazing adjacent to doors is required in the following locations if the bottom edge of the glazing is less than 60 inches above the walking surface: Within 24 inches of either side of the door in the plane of the door in a closed position, or if glazing is in a wall less than 180 degrees from the plane of the door in a closed position and within 24 inches of the hinge side of an in-swinging door. Safety glazing is not required if there is an intervening wall or permanent barrier between the door and the glazing. (R308.4.2)



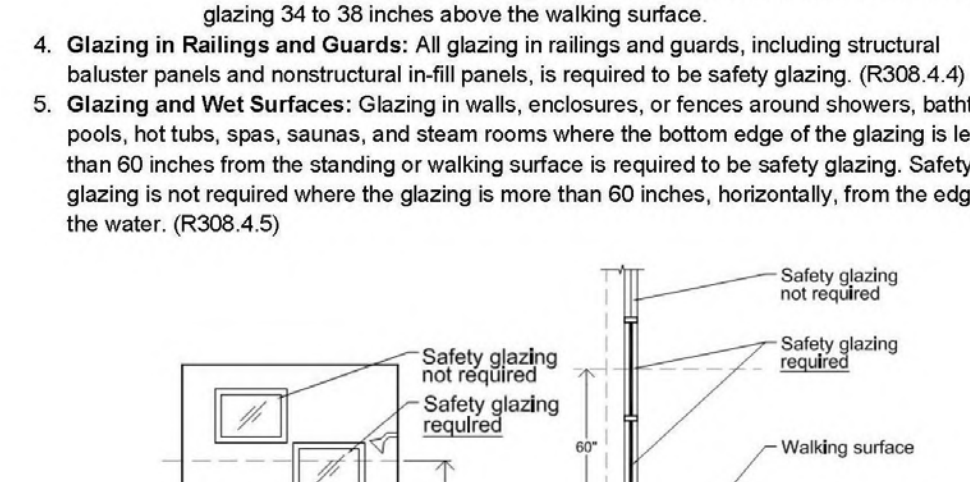
Safety glazing not required. Safety glazing required.

Decorative glazing:
Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.

Glazing in Railings and Guards: All glazing in railings and guards, including structural baluster panels and nonstructural in-fill panels, is required to be safety glazing. (R308.4.4)

Glazing and Wet Surfaces: Glazing in walls, enclosures, or fences around showers, bathtubs, pools, hot tubs, spas, saunas, and steam rooms where the bottom edge of the glazing is less than 60 inches from the standing or walking surface is required to be safety glazing. Safety glazing is not required where the glazing is more than 60 inches, horizontally, from the edge of the water. (R308.4.5)

Glazing Adjacent to Bottom Stair Landings: Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60-inch horizontal arc from the bottom tread must be safety glazing. (R308.4.7)



Safety glazing not required. Safety glazing required.

Glazing Adjacent to Stairs and Ramps: Glazing where the bottom edge is less than 36 inches above the plane of the adjacent walking surface of stairways, ramps, and landings between stair flights and ramp runs, must be safety glazing. (R308.4.6)

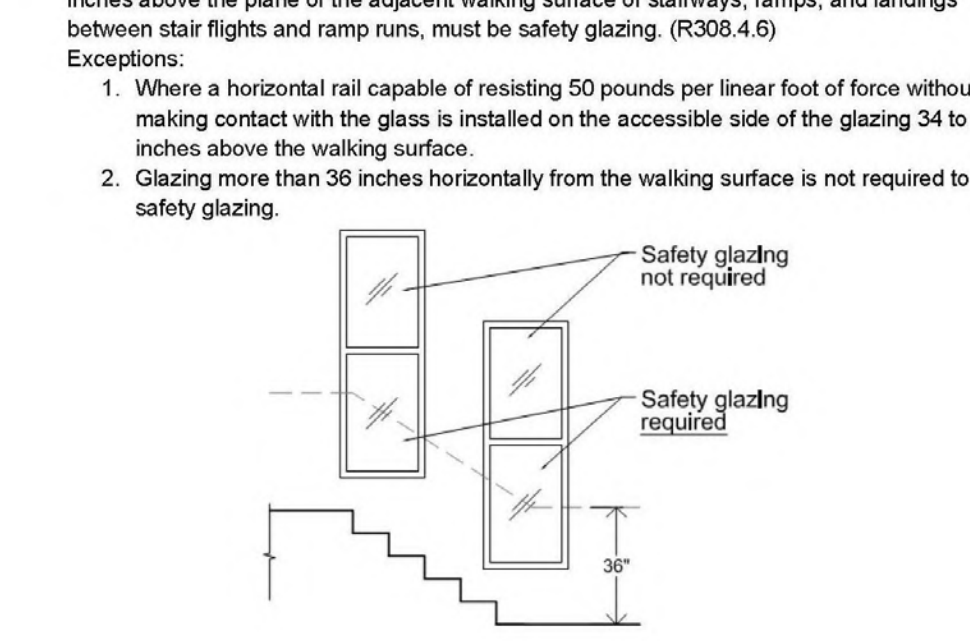
Exceptions:
Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
Glazing more than 36 inches horizontally from the walking surface is not required to be safety glazing.



Safety glazing not required. Safety glazing required.

Glazing Adjacent to Stairs and Ramps: Glazing where the bottom edge is less than 36 inches above the plane of the adjacent walking surface of stairways, ramps, and landings between stair flights and ramp runs, must be safety glazing. (R308.4.6)

Exceptions:
Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
Glazing more than 36 inches horizontally from the walking surface is not required to be safety glazing.



Safety glazing not required. Safety glazing required.

5 SAFETY GLAZING DETAIL

Window Fall Protection
This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) and the 2018 International Building Code (IBC) with Washington State Amendments.

Requirements
Where the sill height above finished grade on the exterior side of an operable window opening is greater than 72 inches, and the sill height above the finished floor on the interior side of the operable window opening is less than 24 inches (or 36 inches in dwelling units regulated by the IBC) (see Figure 1), then window fall protection shall be provided by one of the following (R312.2.1, R312.2.2; IBC 1015.8):
1. Operable windows with openings that, when in their largest opened position, will not allow the passage of a 4-inch sphere (see Figure 2).
2. Operable windows that are provided with window fall prevention devices that comply with ASTM F 2090 (see Figure 2).
3. Operable windows that are provided with opening control devices that comply with ASTM F 2090 (see Figure 2). (Note: When installed on required emergency egress windows, these devices must not reduce the net clear opening to less than the minimum required size or dimensions; see Tip Sheet 10 for more information.)
4. In dwelling units regulated by the IBC where the sill height of an operable window above exterior finished grade is more than 75 feet, provide window fall prevention devices complying with ASTM F 2090 (see Figure 2).

Standards
ASTM F 2090: Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows
ASTM F 2090: Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

Egress Windows
Egress windows must meet minimum size requirements. Minimum clear opening size of 5.7 square feet (5 square feet on the grade level) with minimum clear height of 24 inches and minimum clear width of 20 inches.
For additional emergency egress window requirements refer to Tip Sheet 10.

Safety Glazing
For additional safety glazing requirements refer to Tip Sheet 19.

Standards
ASTM F 2090: Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows
ASTM F 2090: Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

Egress Windows
Egress windows must meet minimum size requirements. Minimum clear opening size of 5.7 square feet (5 square feet on the grade level) with minimum clear height of 24 inches and minimum clear width of 20 inches.
For additional emergency egress window requirements refer to Tip Sheet 10.

Safety Glazing
For additional safety glazing requirements refer to Tip Sheet 19.

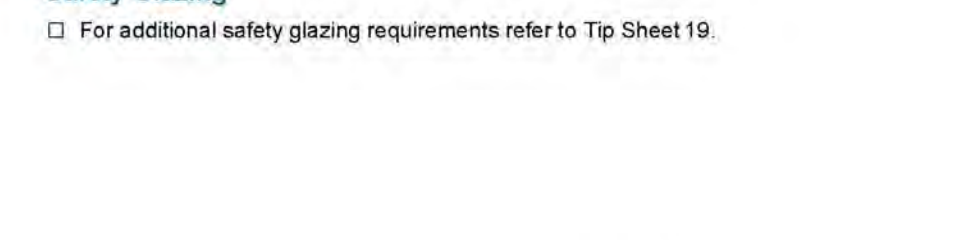


Figure 1: Sill height above finished grade on the exterior side of an operable window opening

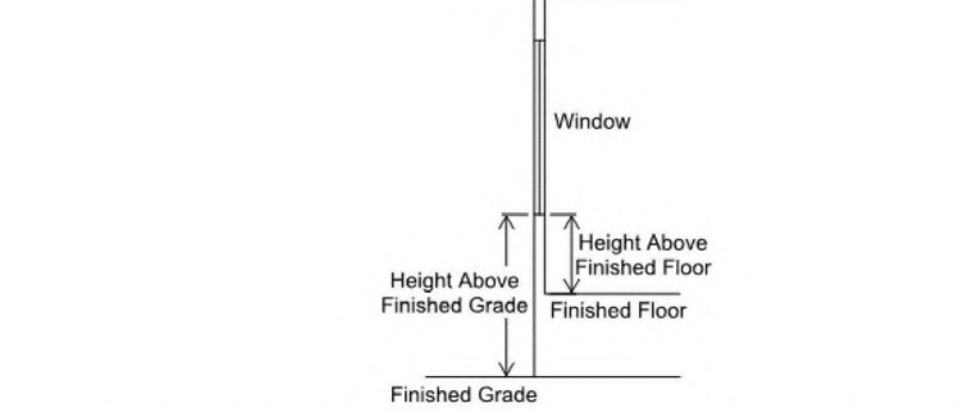


Figure 2: Window fall protection

Table 1: Summary of Requirements

Exterior Sill Height Above Finished Grade	Interior Sill Height Above Finished Floor	Can be used for Egress	Safety Glazing Required	Fall Protection Required
72 inches or less	Greater than 44 inches	No	-	No
	Between 18 and 44 inches	Yes	-	No
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	No
Greater than 72 inches	Greater than 44 inches	No	-	No
	Between 24 and 44 inches (IRC dwelling units)	Yes	-	No
	Less than 24 inches (IRC dwelling units)	Yes	-	Yes
	Between 36 and 44 inches (IBC dwelling units)	Yes	-	No
	Less than 36 inches (IBC dwelling units)	Yes	-	Yes
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	Yes
Greater than 75 feet	Less than 36 inches (IBC dwelling units)	No	-	Yes

Table 1: Summary of Requirements

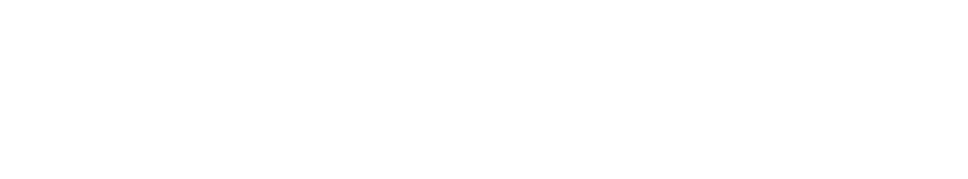
Table 1: Summary of Requirements

Exterior Sill Height Above Finished Grade	Interior Sill Height Above Finished Floor	Can be used for Egress	Safety Glazing Required	Fall Protection Required
72 inches or less	Greater than 44 inches	No	-	No
	Between 18 and 44 inches	Yes	-	No
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	No
Greater than 72 inches	Greater than 44 inches	No	-	No
	Between 24 and 44 inches (IRC dwelling units)	Yes	-	No
	Less than 24 inches (IRC dwelling units)	Yes	-	Yes
	Between 36 and 44 inches (IBC dwelling units)	Yes	-	No
	Less than 36 inches (IBC dwelling units)	Yes	-	Yes
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	Yes
Greater than 75 feet	Less than 36 inches (IBC dwelling units)	No	-	Yes

Table 1: Summary of Requirements

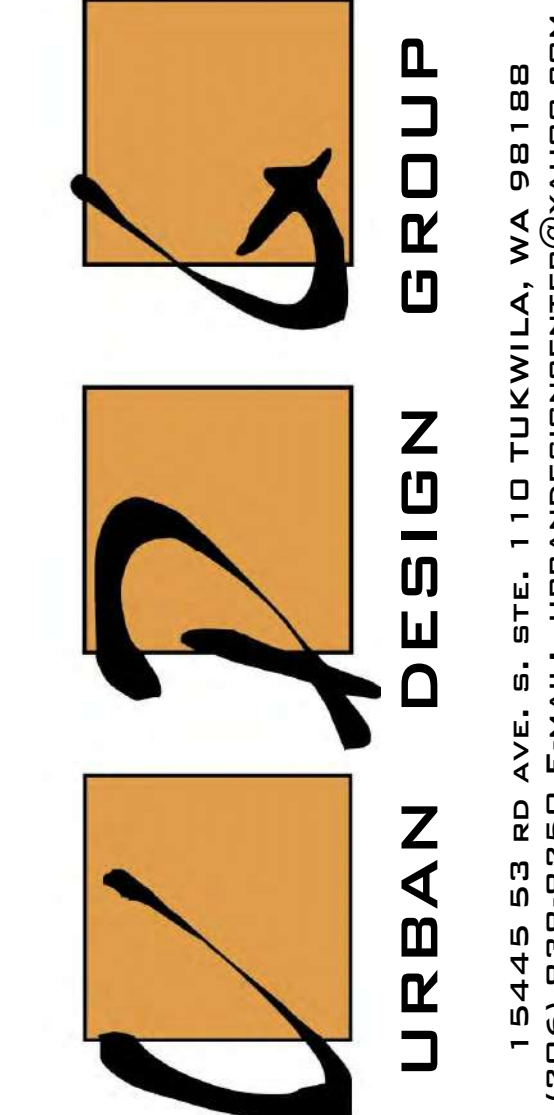
Glazing Adjacent to Stairs and Ramps: Glazing where the bottom edge is less than 36 inches above the plane of the adjacent walking surface of stairways, ramps, and landings between stair flights and ramp runs, must be safety glazing. (R308.4.6)

Exceptions:
Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
Glazing more than 36 inches horizontally from the walking surface is not required to be safety glazing.



Safety glazing not required. Safety glazing required.

6 WINDOW FALL PROTECTION



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

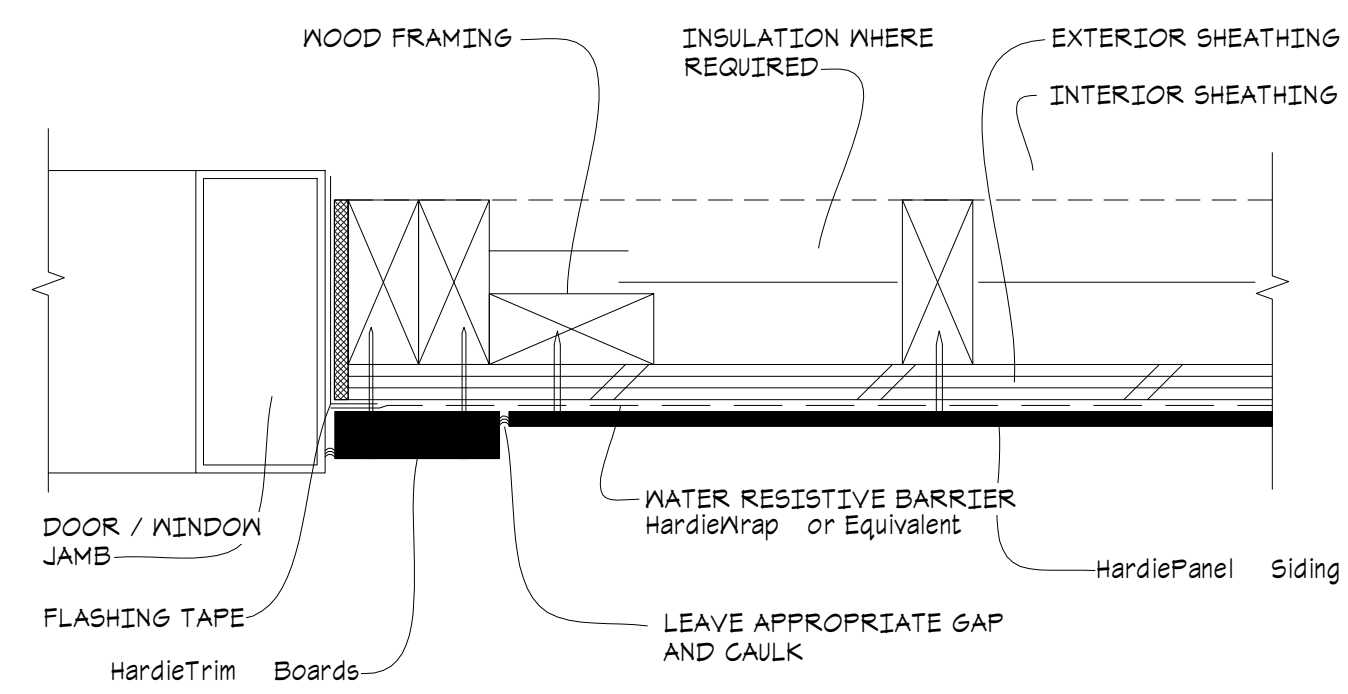
PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
Laurie Qian

SUBMITTAL/REVISION: DATE:
SUBMITTED: /-/2022
REVISED: /-/2022
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

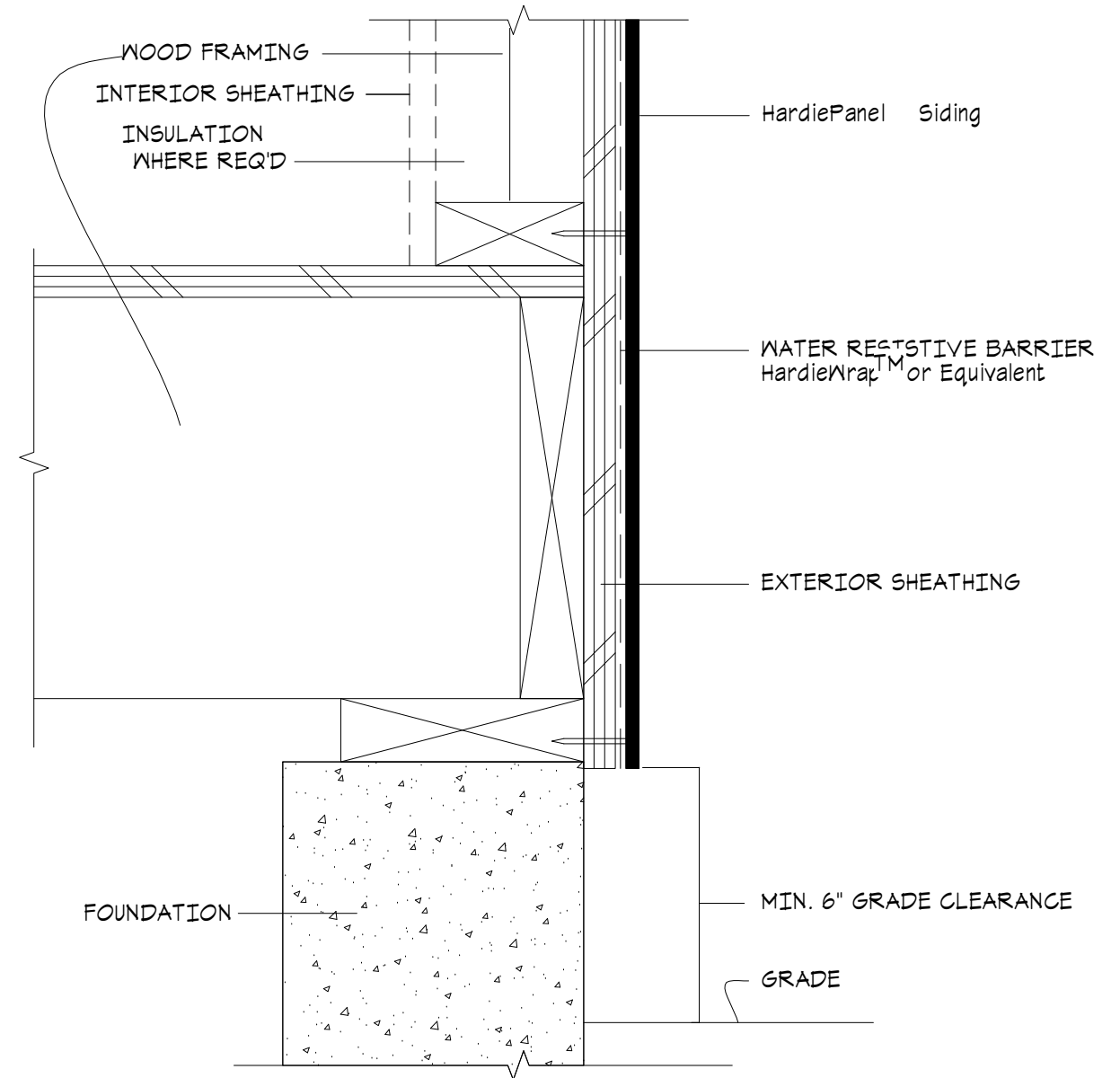
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PROJECT DETAILS

PROJECT NUMBER:
21257

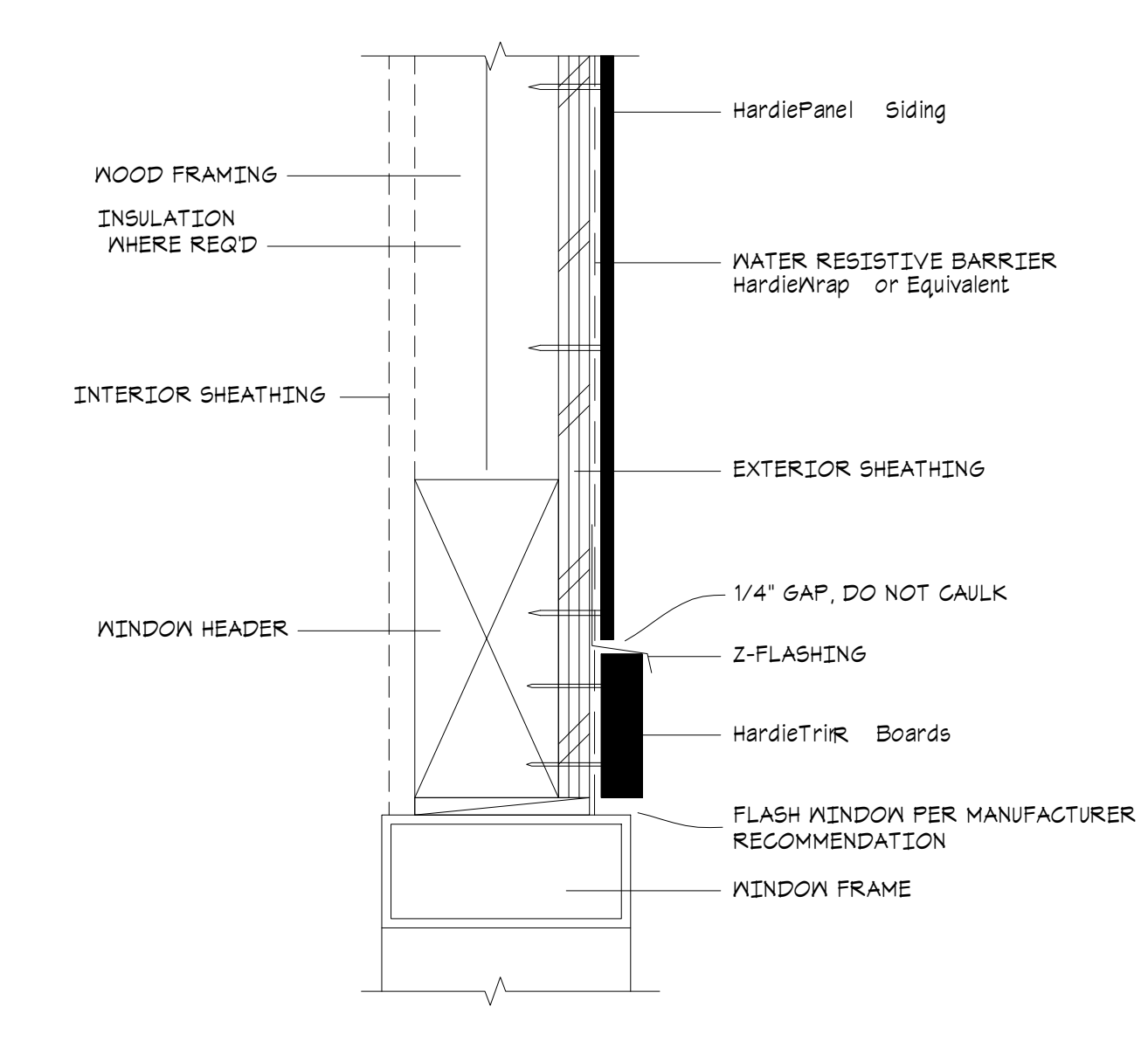
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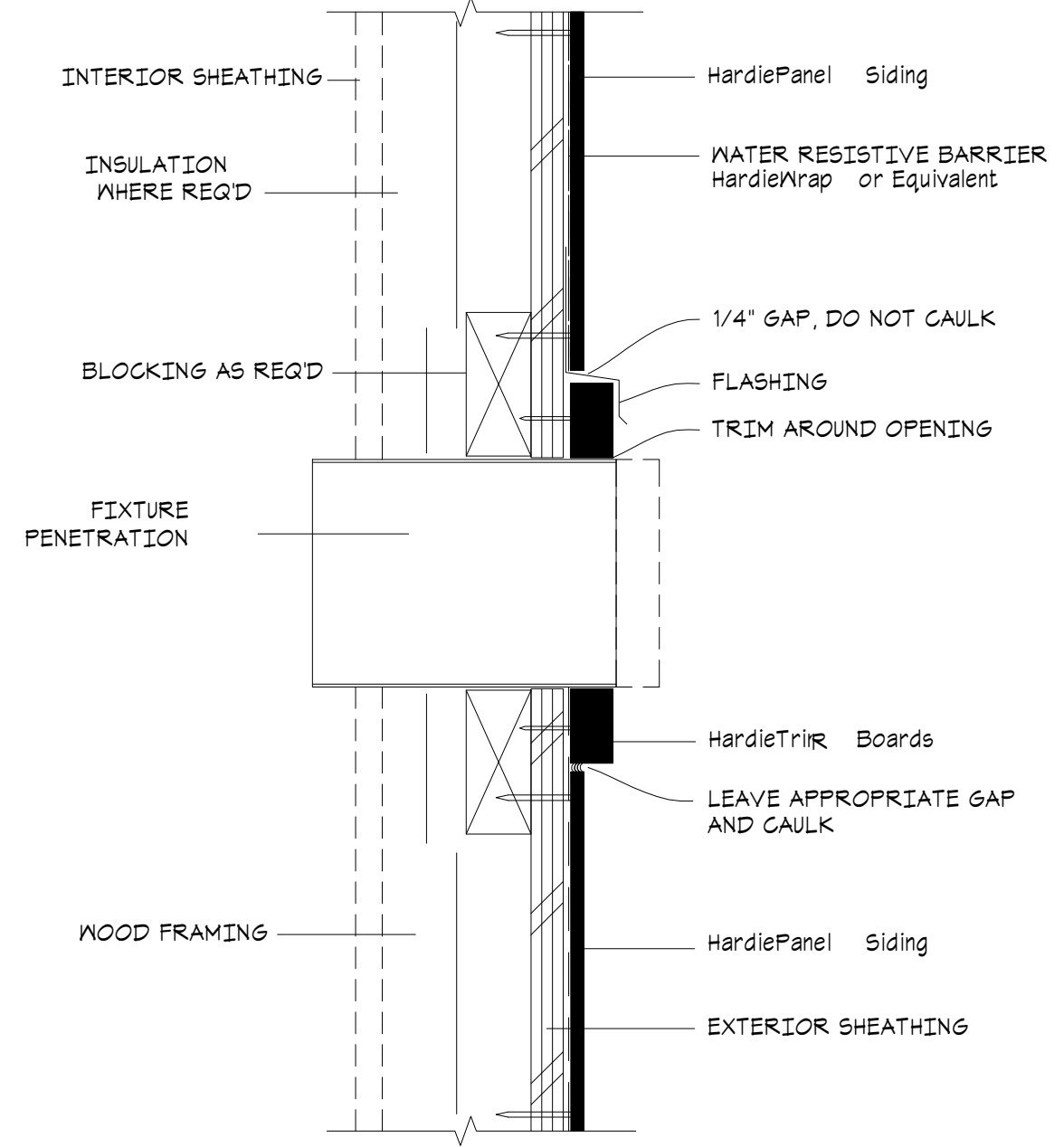
① DOOR / WINDOW JAMB



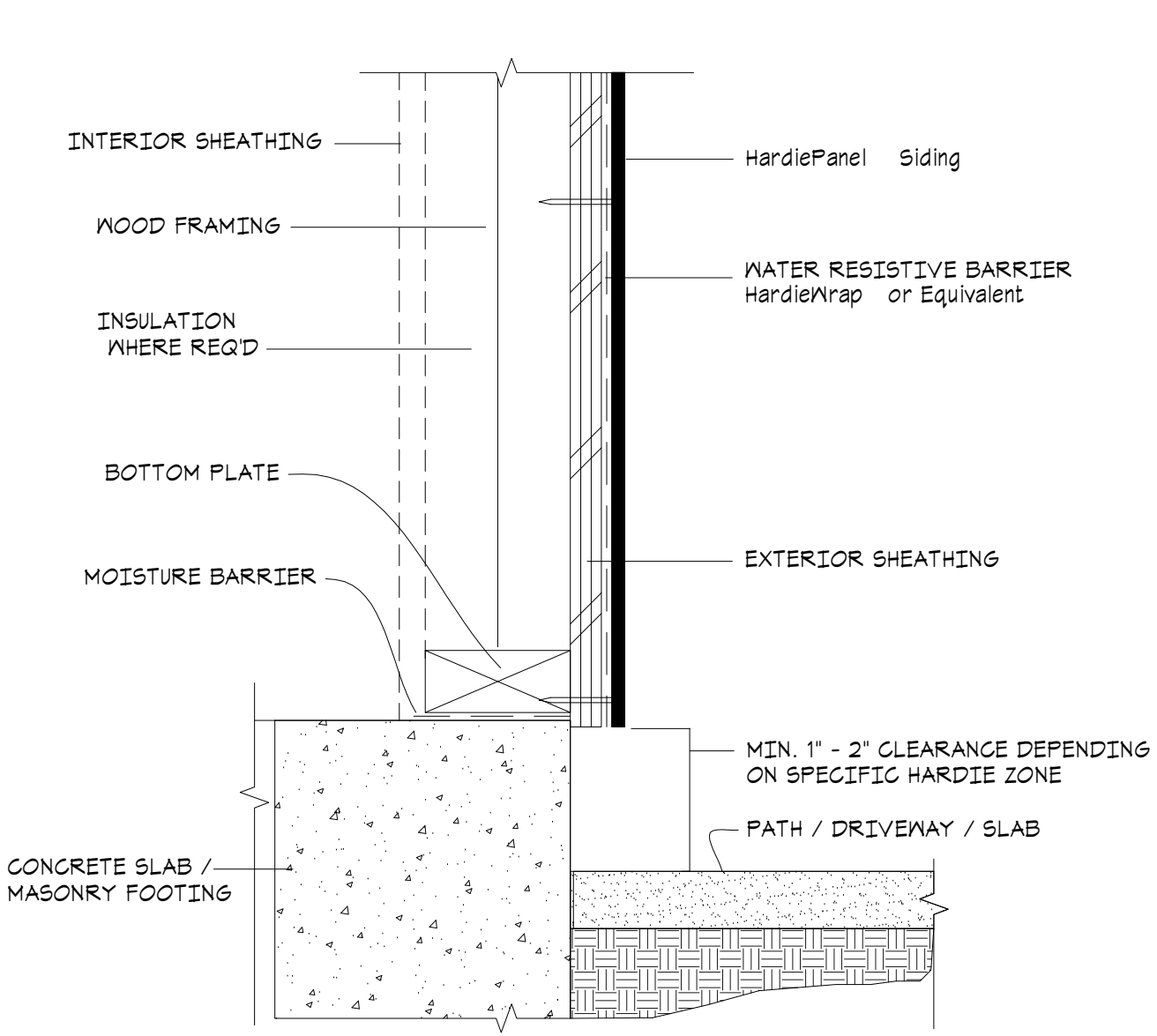
② GRADE CLEARANCE



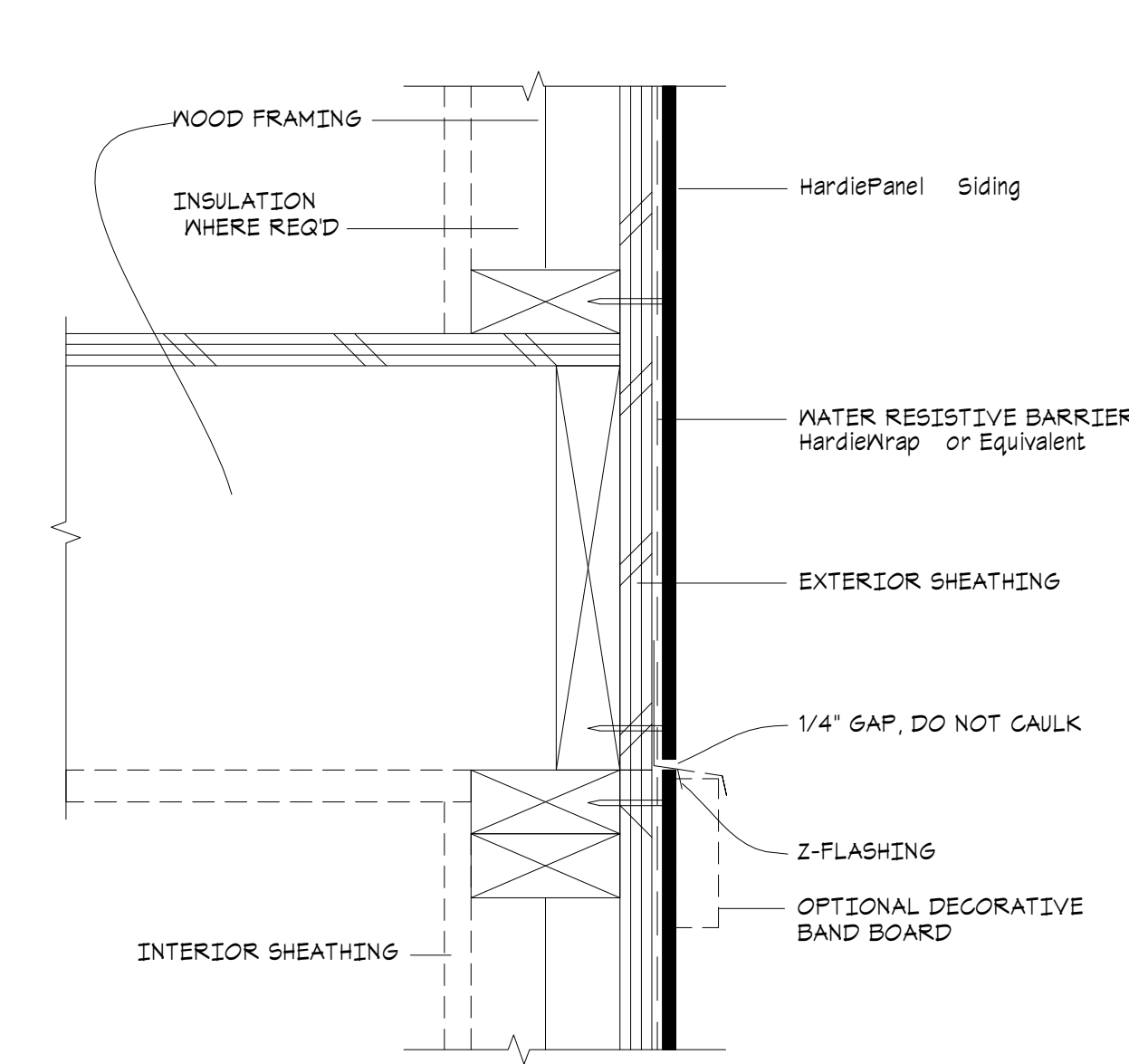
③ WINDOW/DOOR HEAD



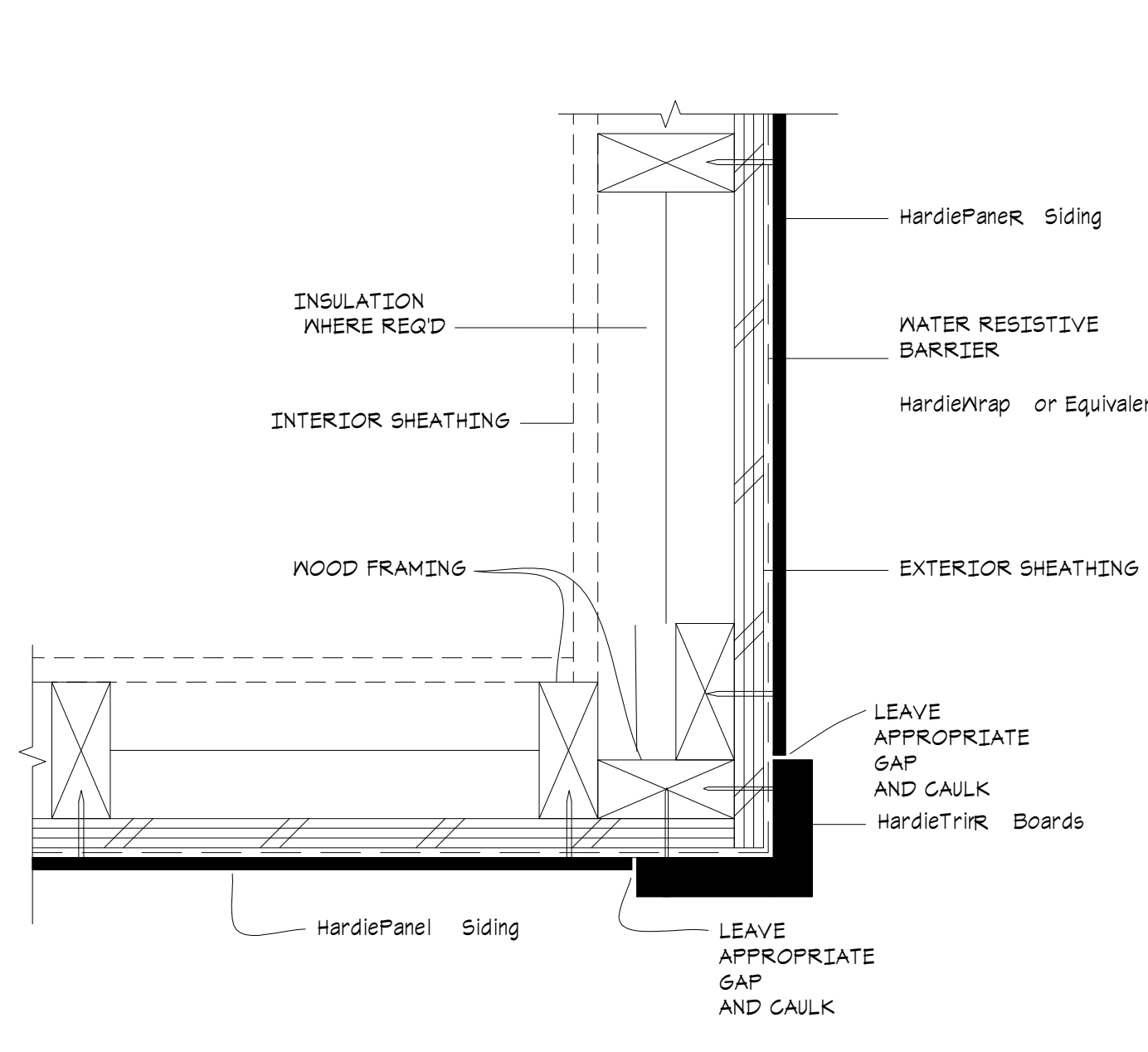
④ FIXTURE PENETRATION



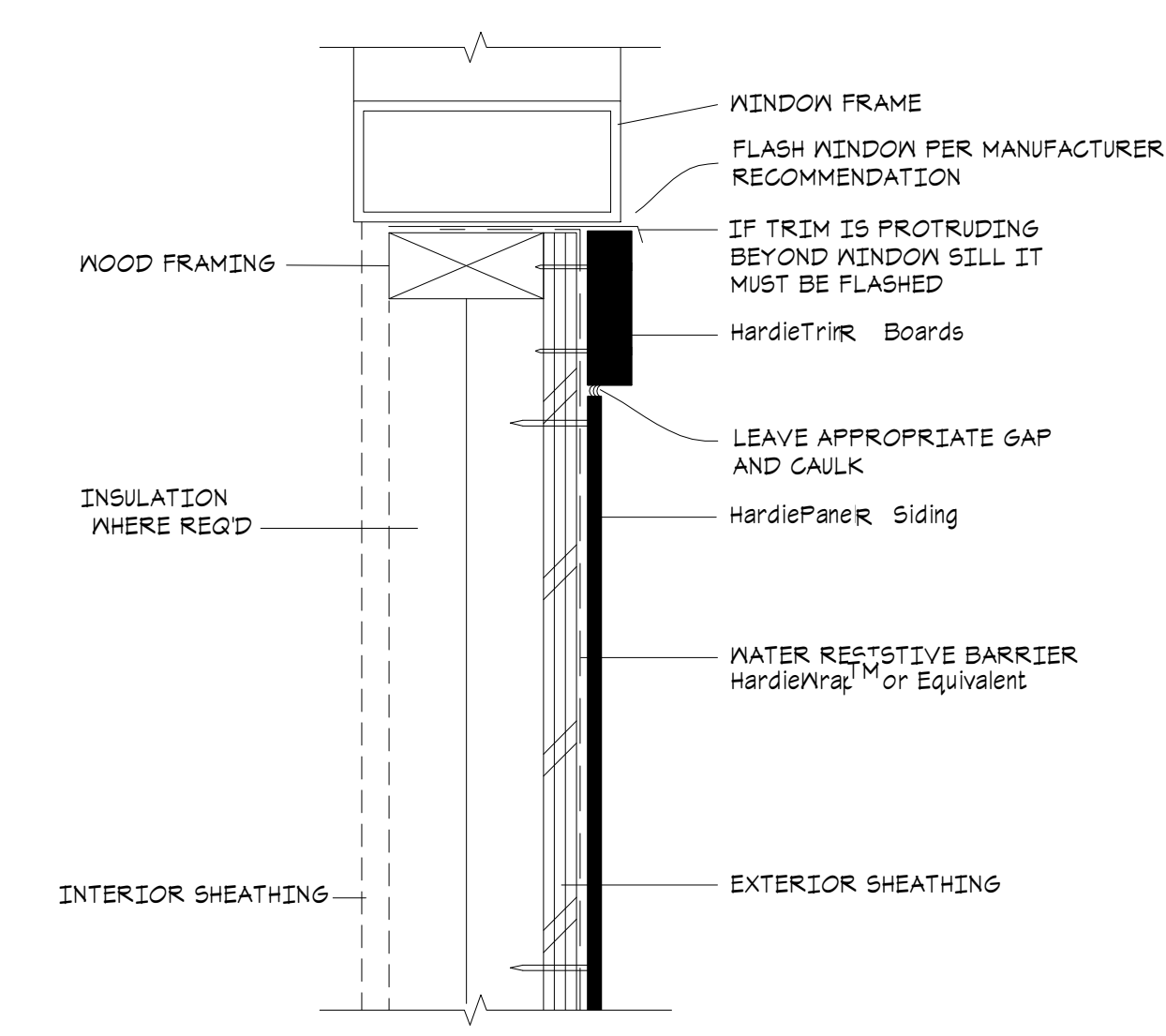
⑤ HARDSCAPE CLEARANCES, DECKS, PORCHES, PATIOS, WALKWAYS, ROOFS, ETC.



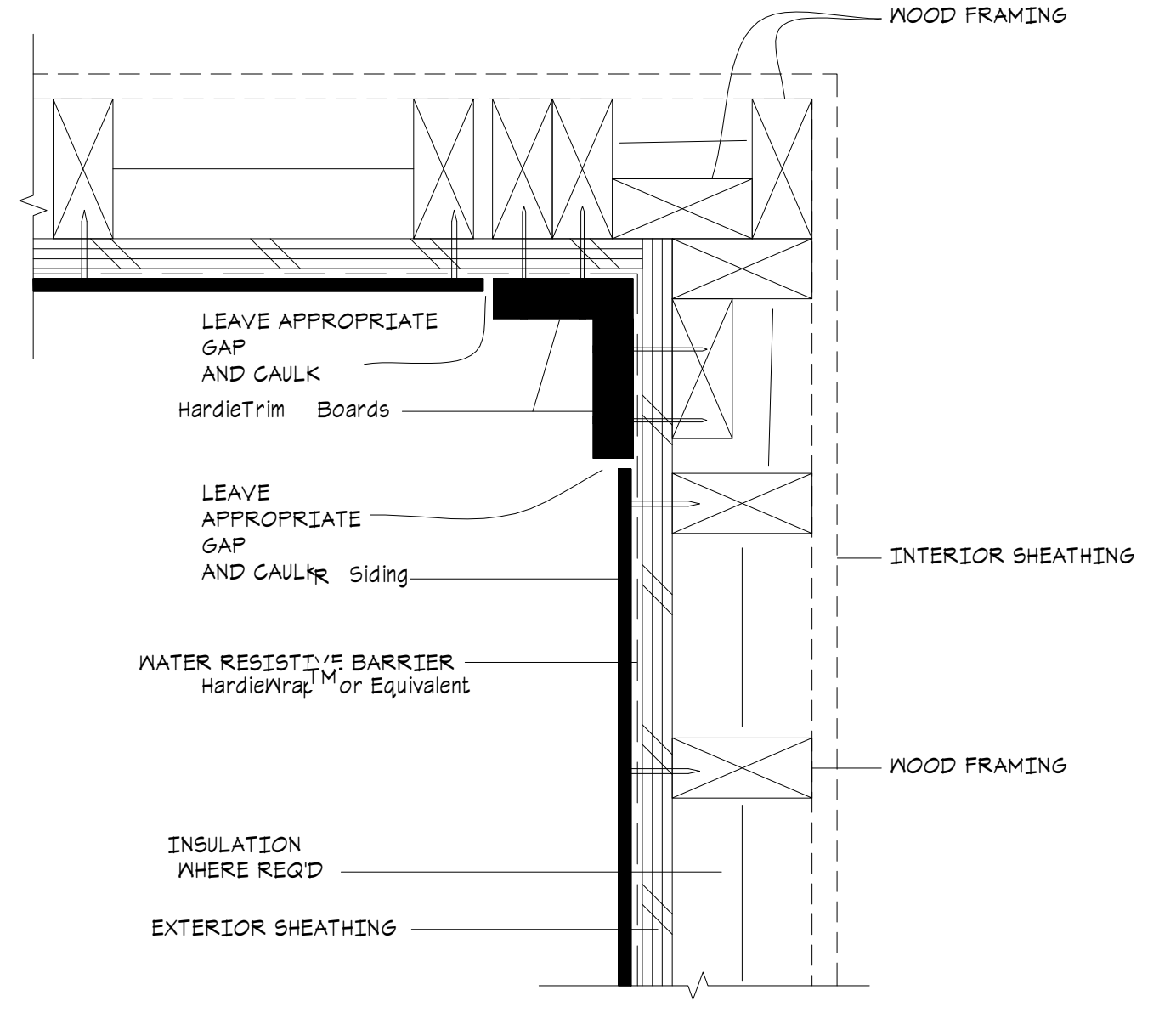
⑥ HORIZONTAL VIEW



⑦ OUTSIDE CORNER



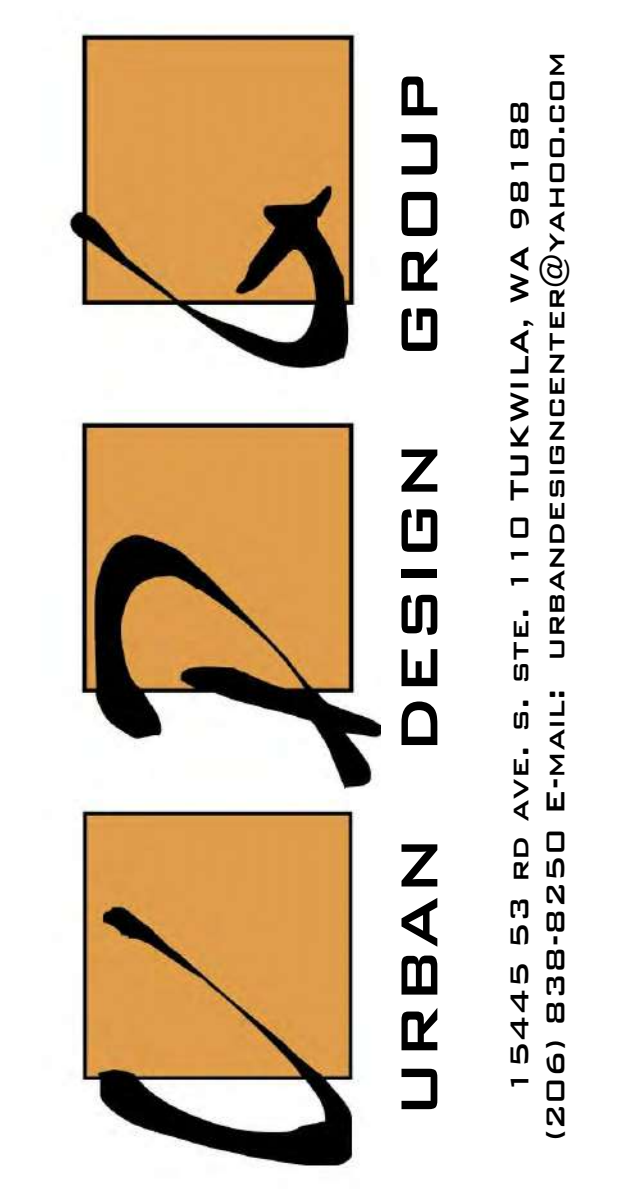
⑧ WINDOW SILL



⑨ INSIDE CORNER

HARDIE PANEL SIDING DETAILS

SCALE: NOT TO SCALE (N.T.S.)



PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

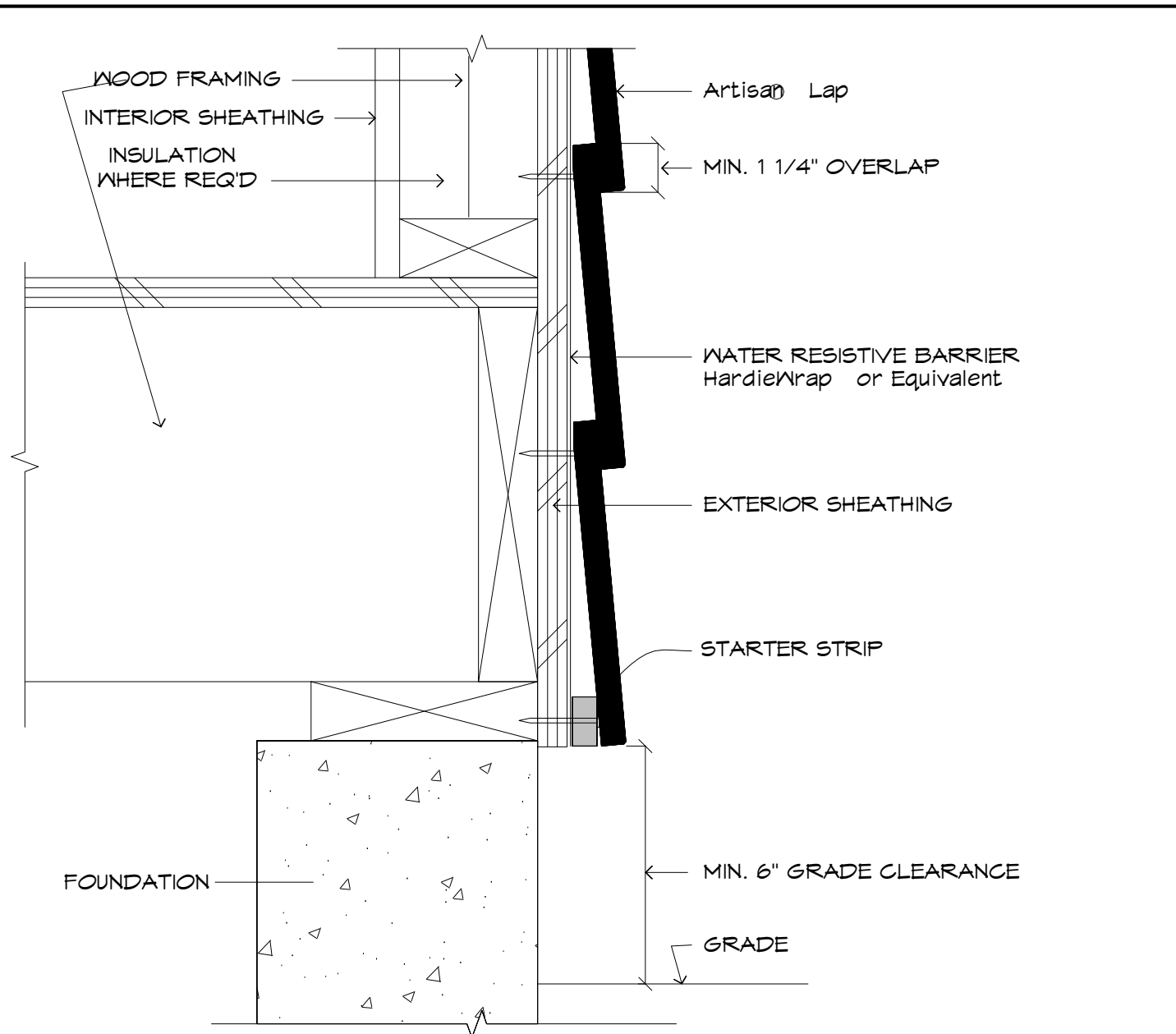
PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
 SUBMITTED -/-/2022
 REVISED -/-/2022
 DESIGN BY: PAVEL MELNIK
 DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:
HARDIE
PANEL
SIDING
DETAILS

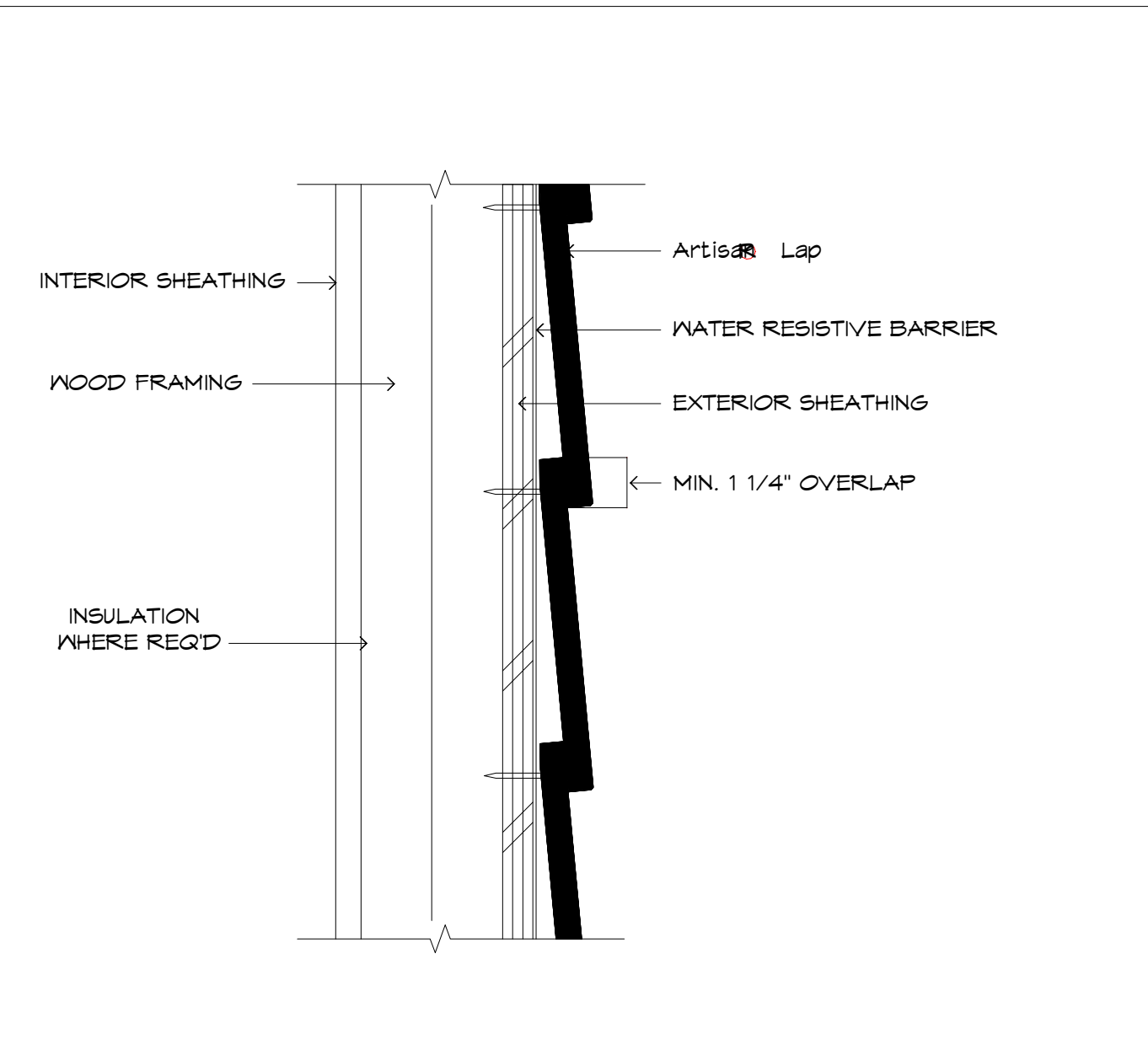
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21257

SHEET NUMBER:



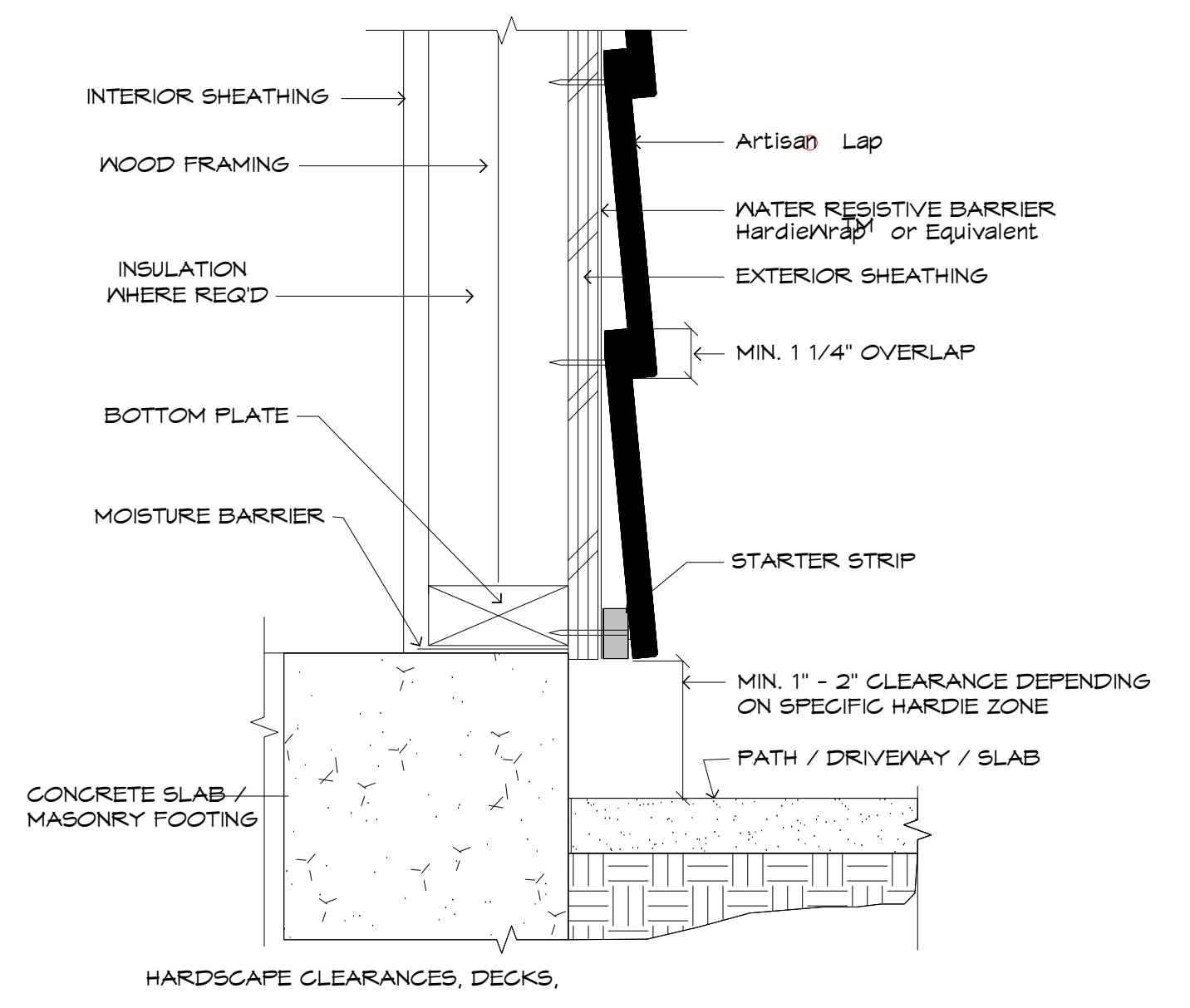
① GRADE CLEARANCE

SCALE: N.T.S.



② HORIZONTAL LAP VIEW

SCALE: N.T.S.

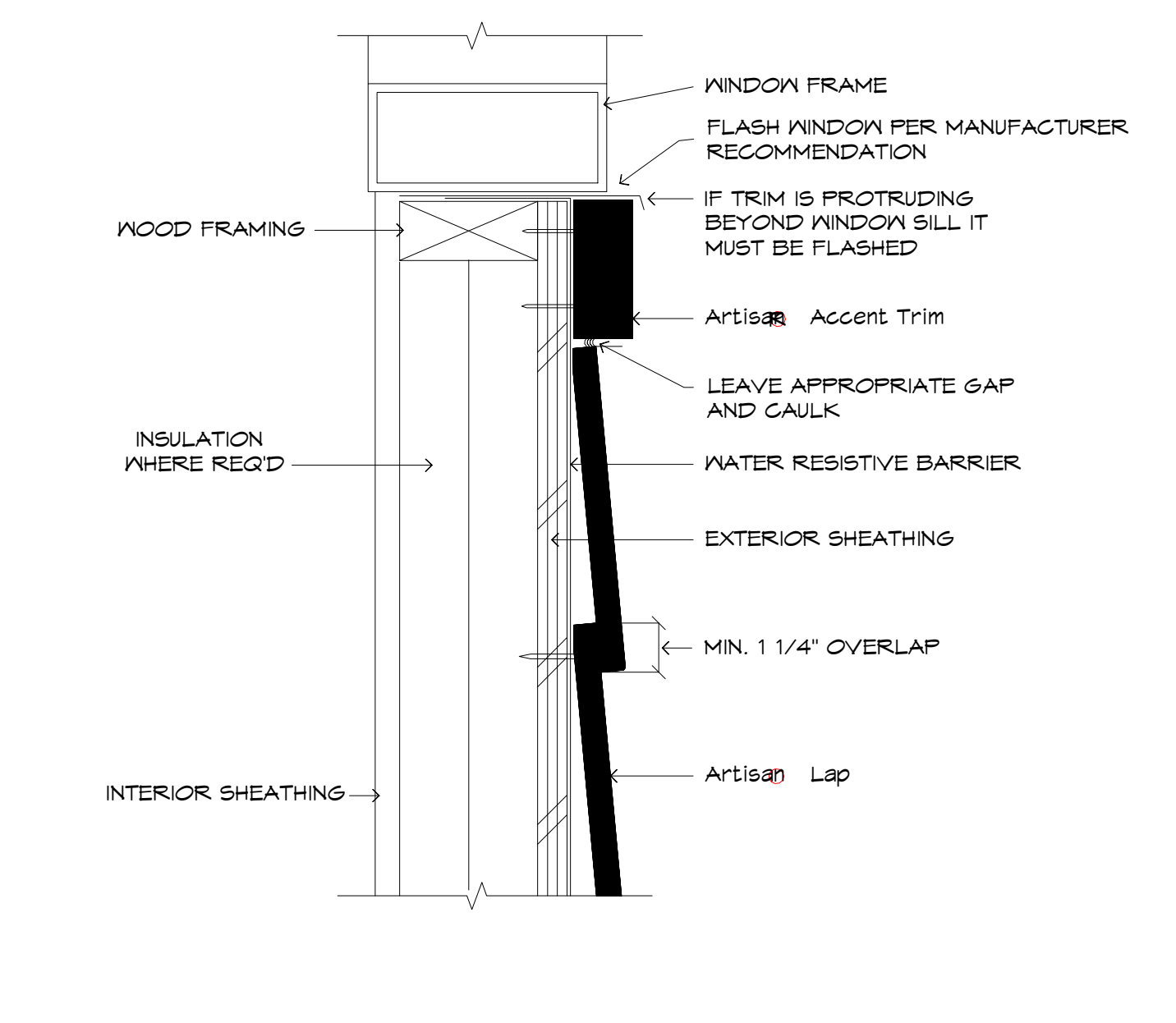


③ PORCHES, PATIOS, WALKWAYS, ROOFS, ETC.

SCALE: N.T.S.

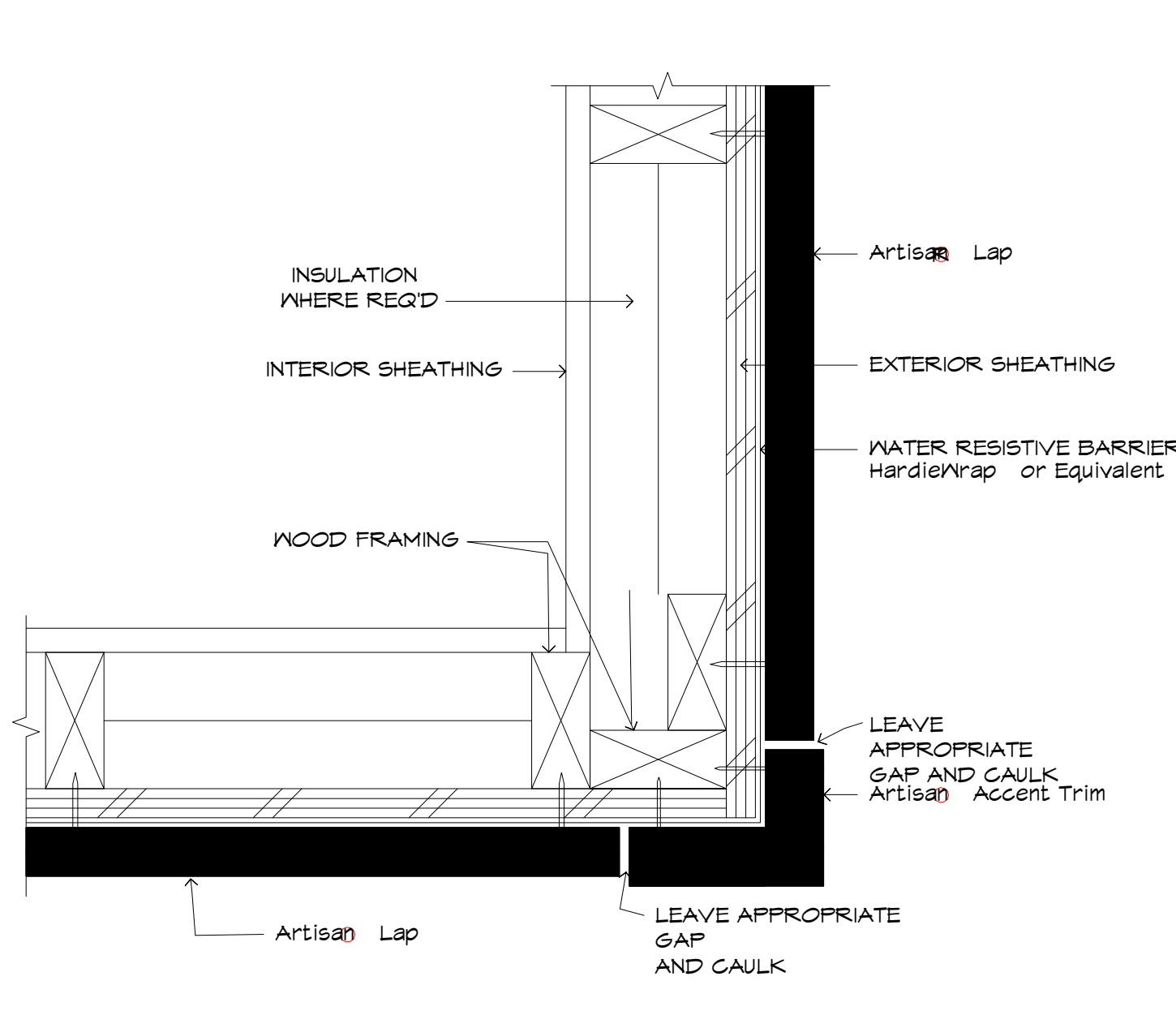
LAP SIDING DETAILS

SCALE: NOT TO SCALE (N.T.S.)



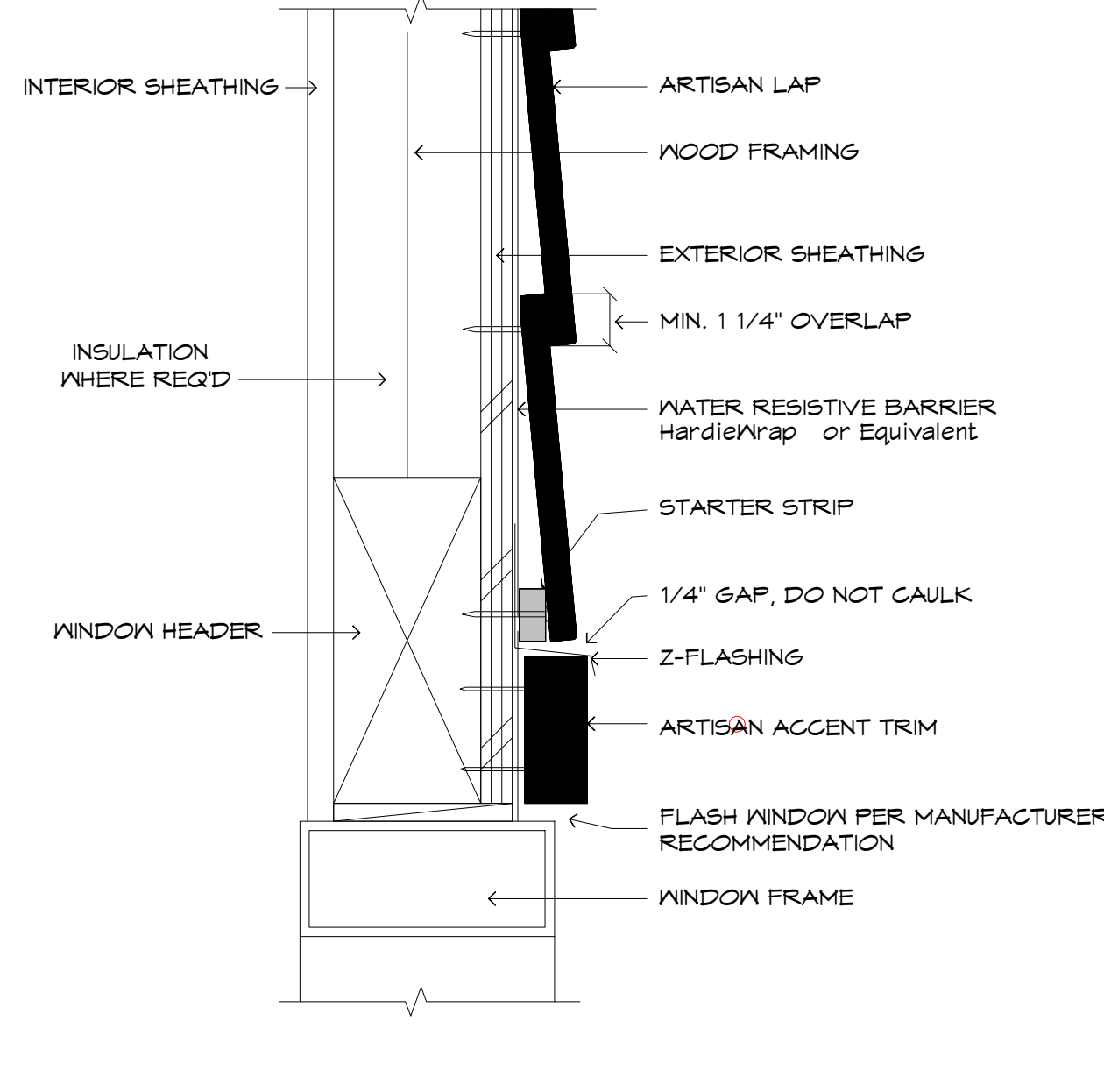
④ WINDOW SILL

SCALE: N.T.S.



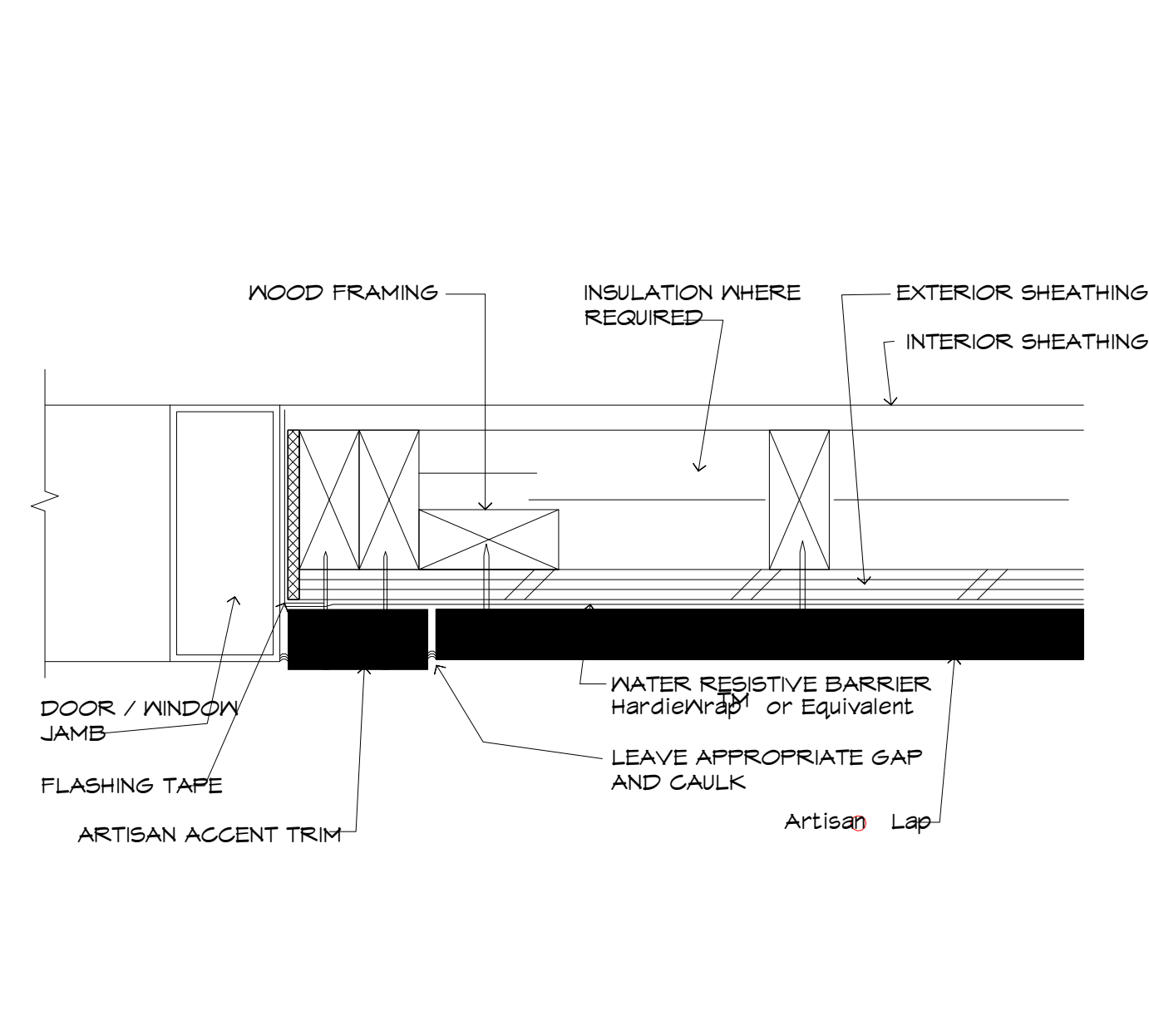
⑤ OUTSIDE CORNER

SCALE: N.T.S.



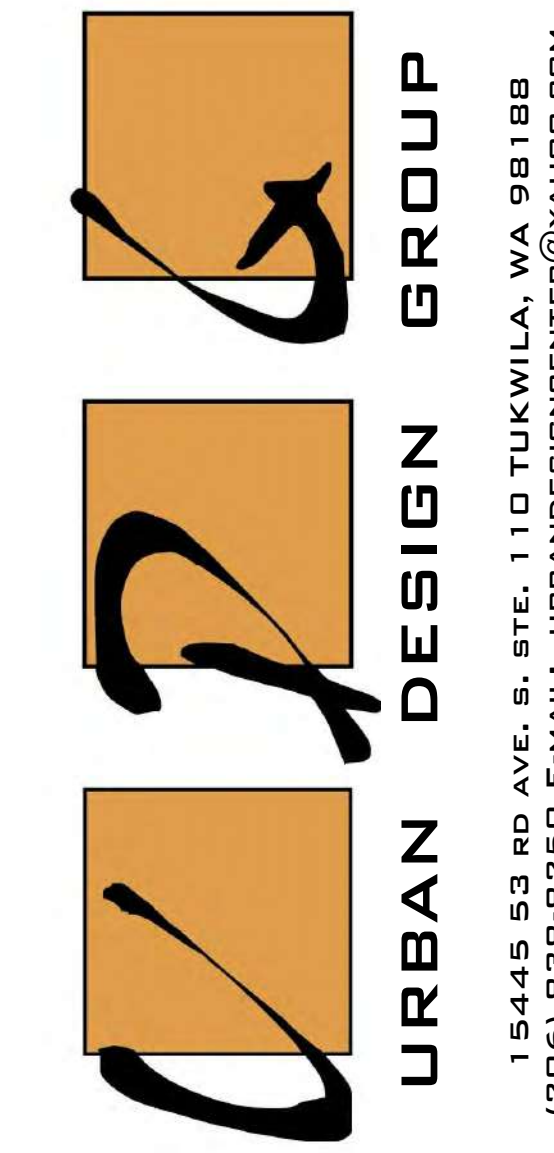
⑥ WINDOW/DOOR HEAD

SCALE: N.T.S.



⑦ DOOR / WINDOW JAMB

SCALE: N.T.S.



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PARCEL #: 502190-0790

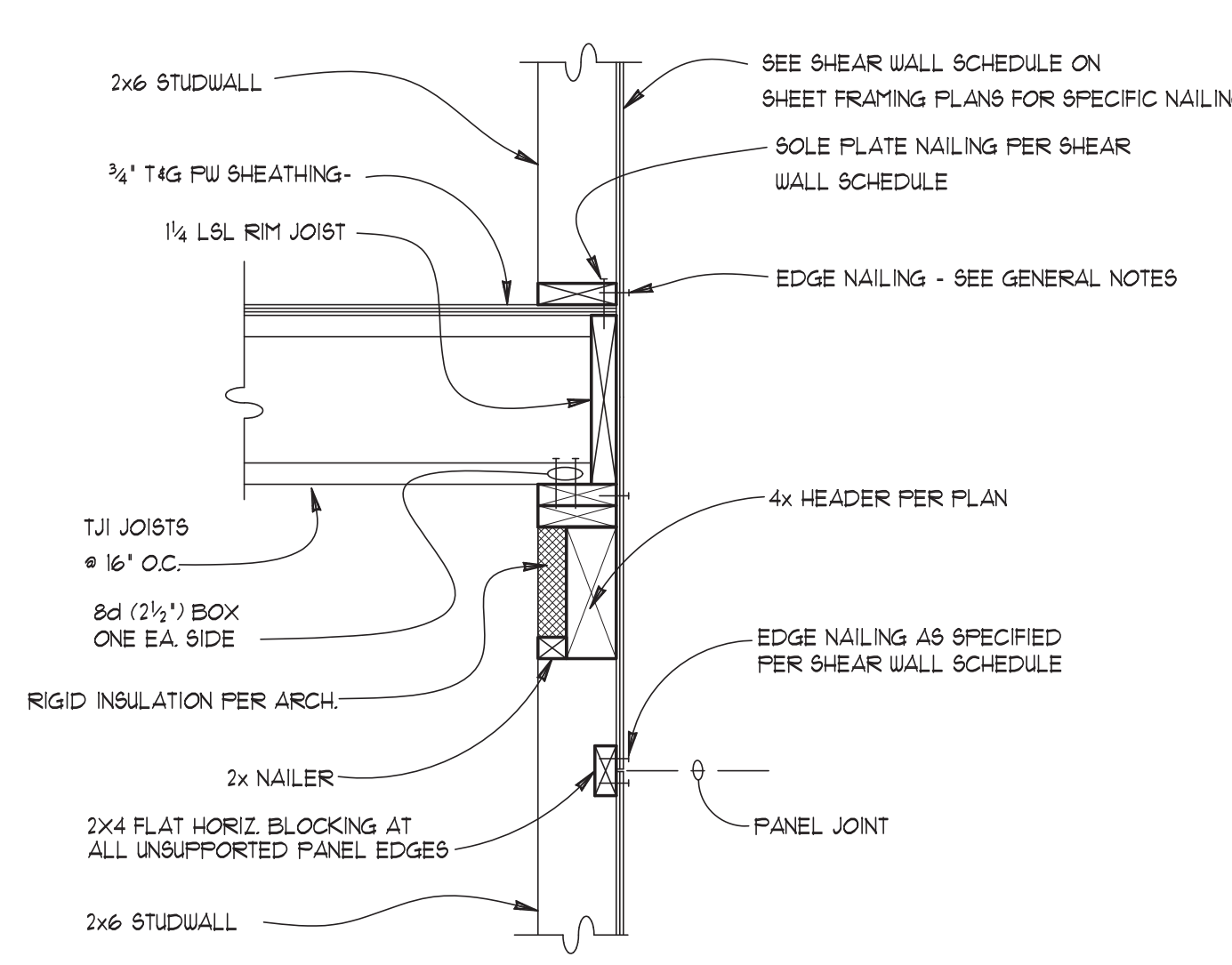
PREPARED FOR:
PHILIP SUDO & LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA
SHEET TITLE:

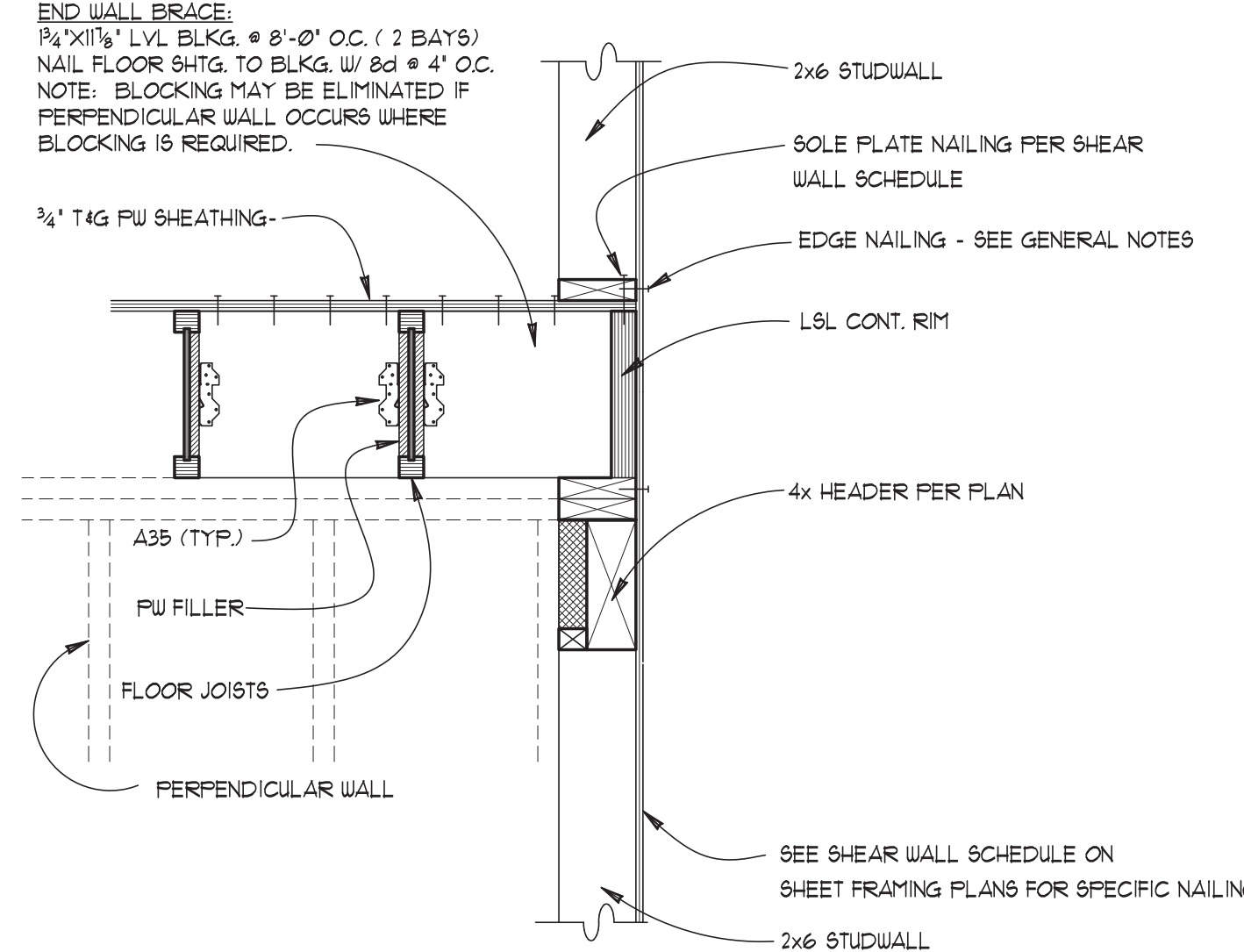
ARTISAN LAP SIDING DETAILS

PROJECT NUMBER:
21257

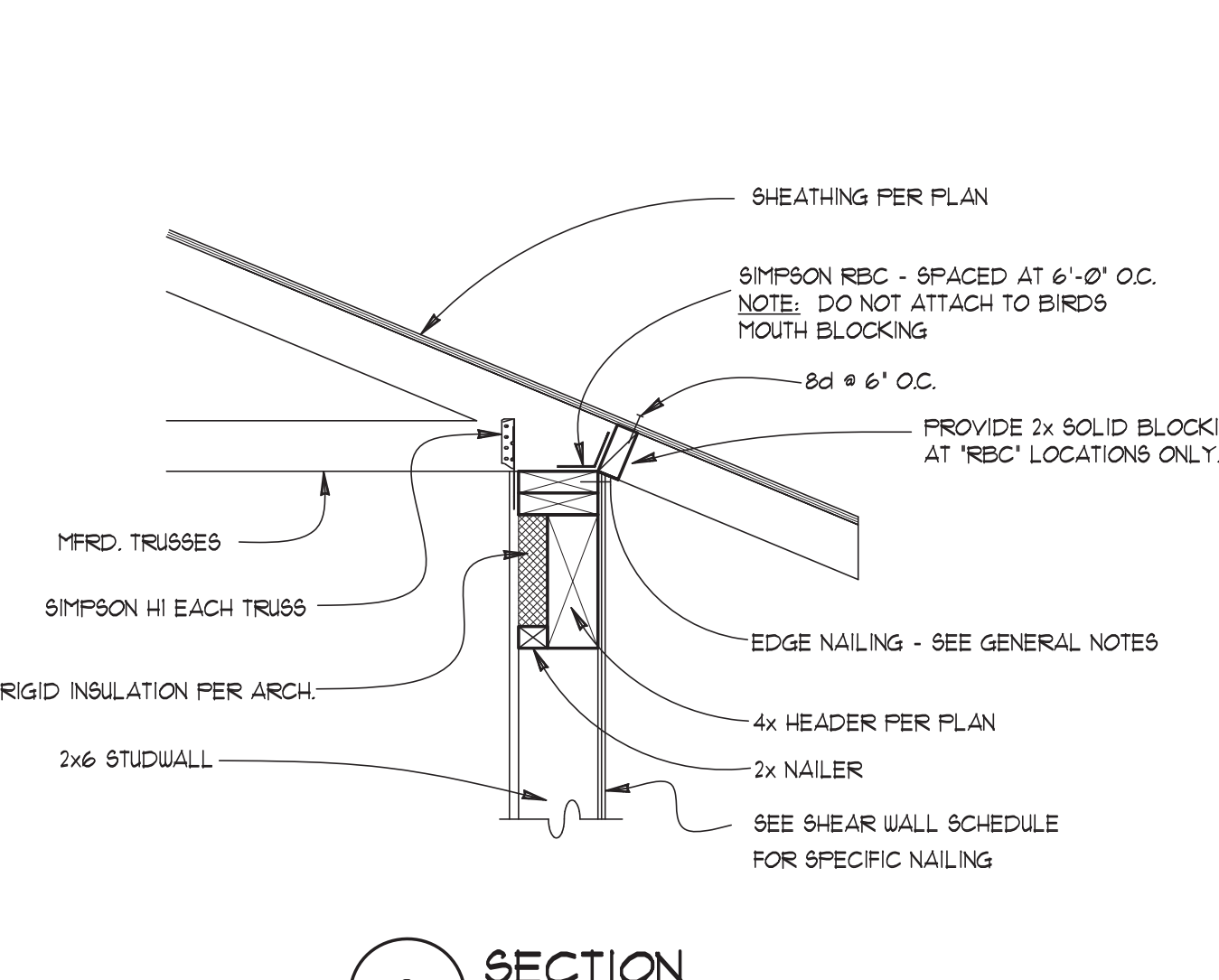
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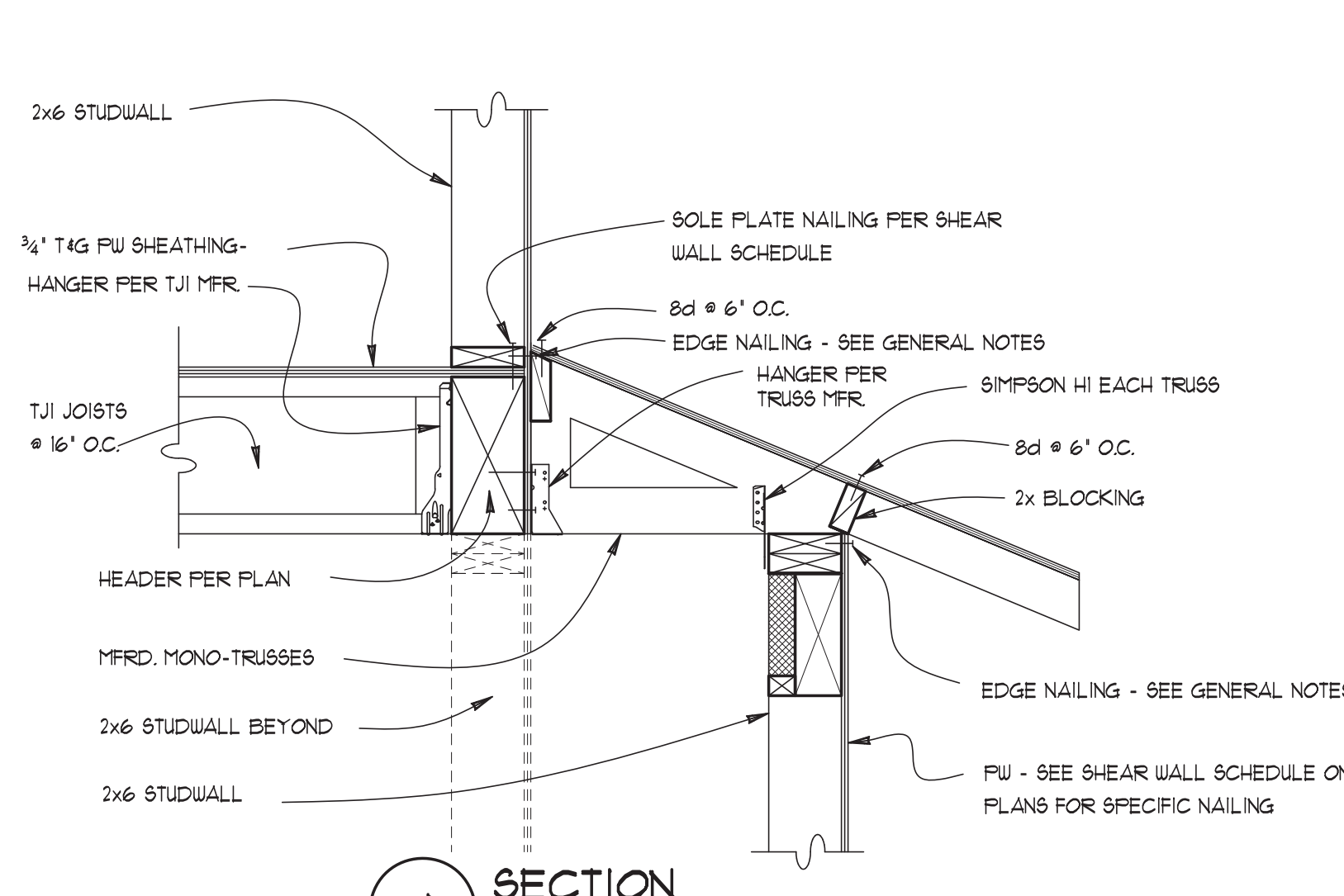
1 SECTION
1" = 1'-0"



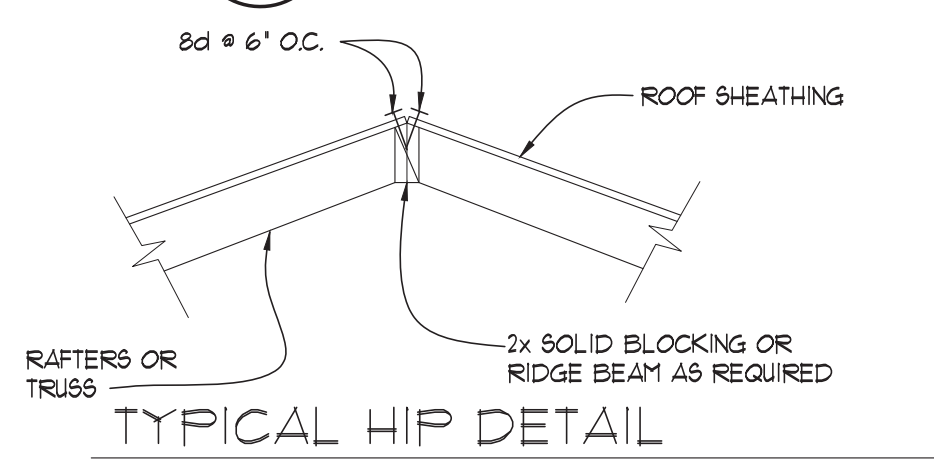
2 SECTION
1" = 1'-0"



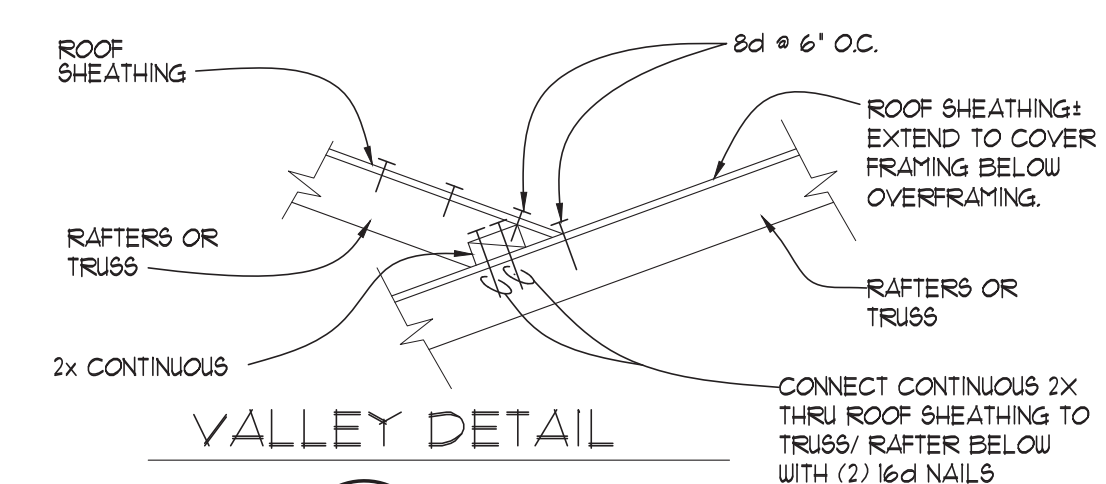
3 SECTION
1" = 1'-0"



4 SECTION
1" = 1'-0"

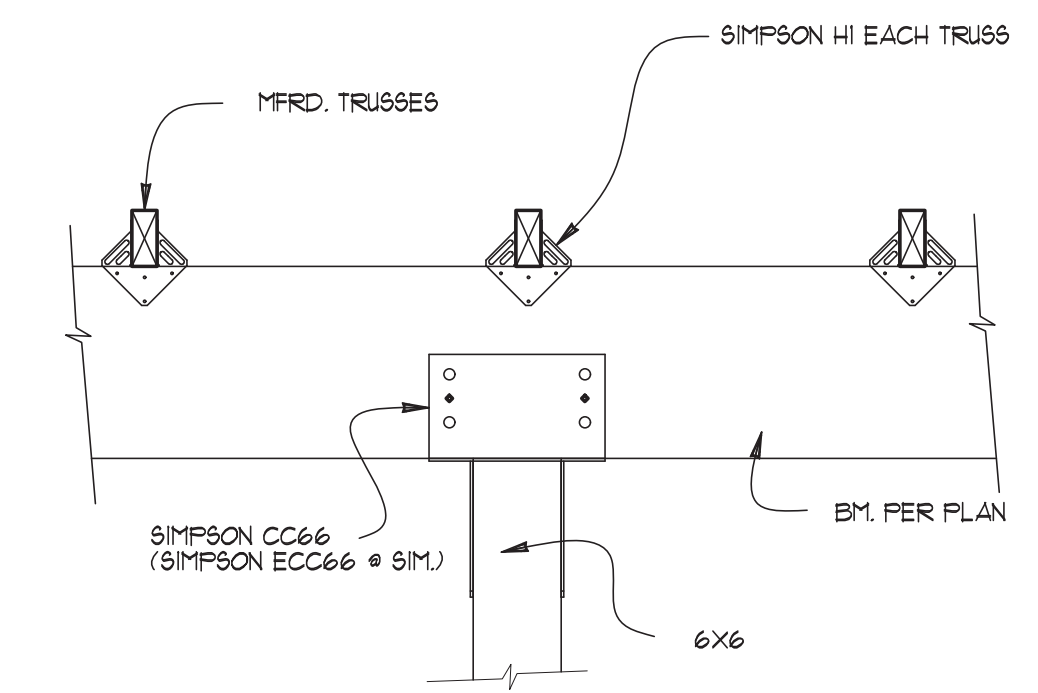


TYPICAL HIP DETAIL

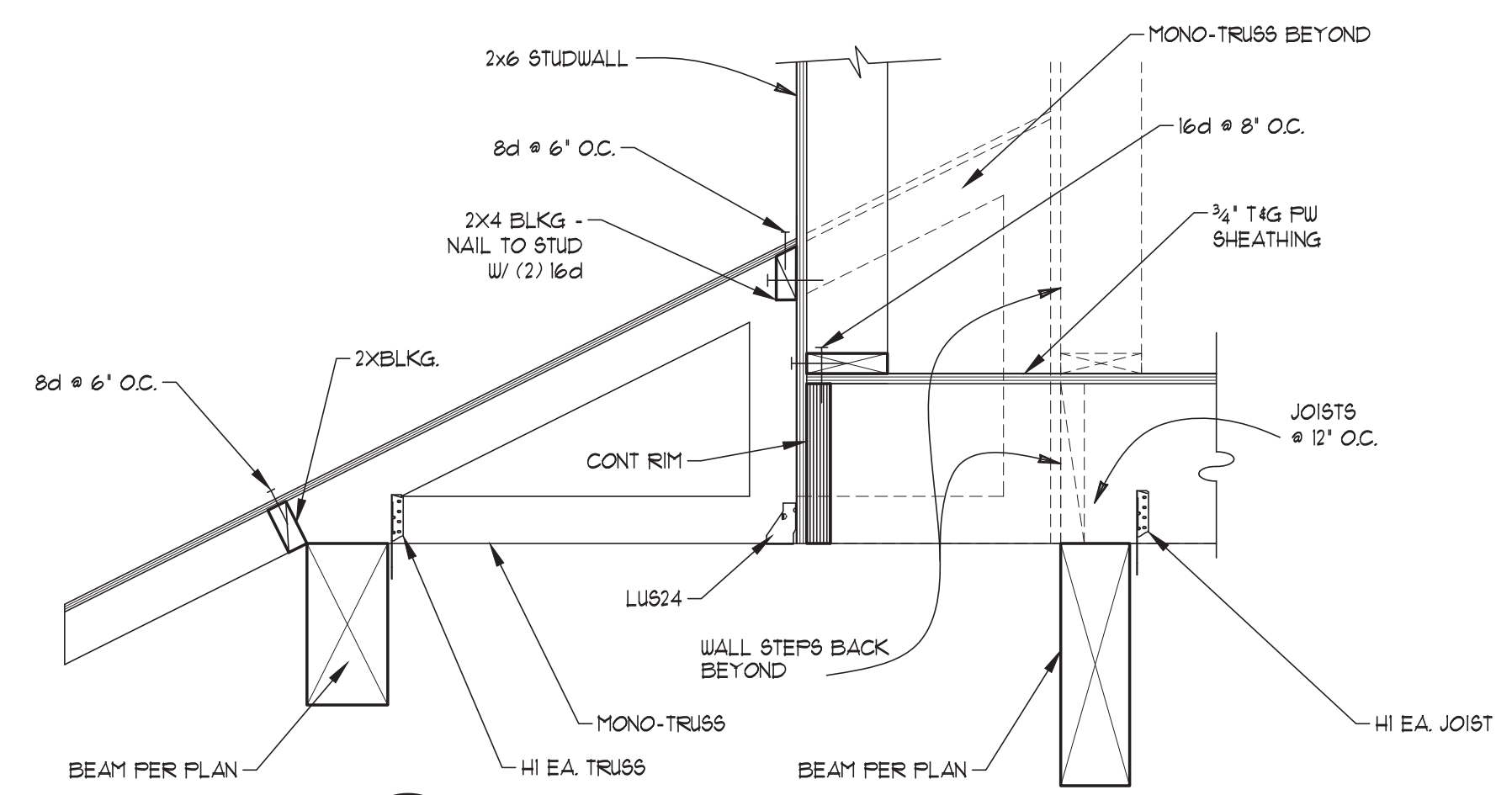


VALLEY DETAIL

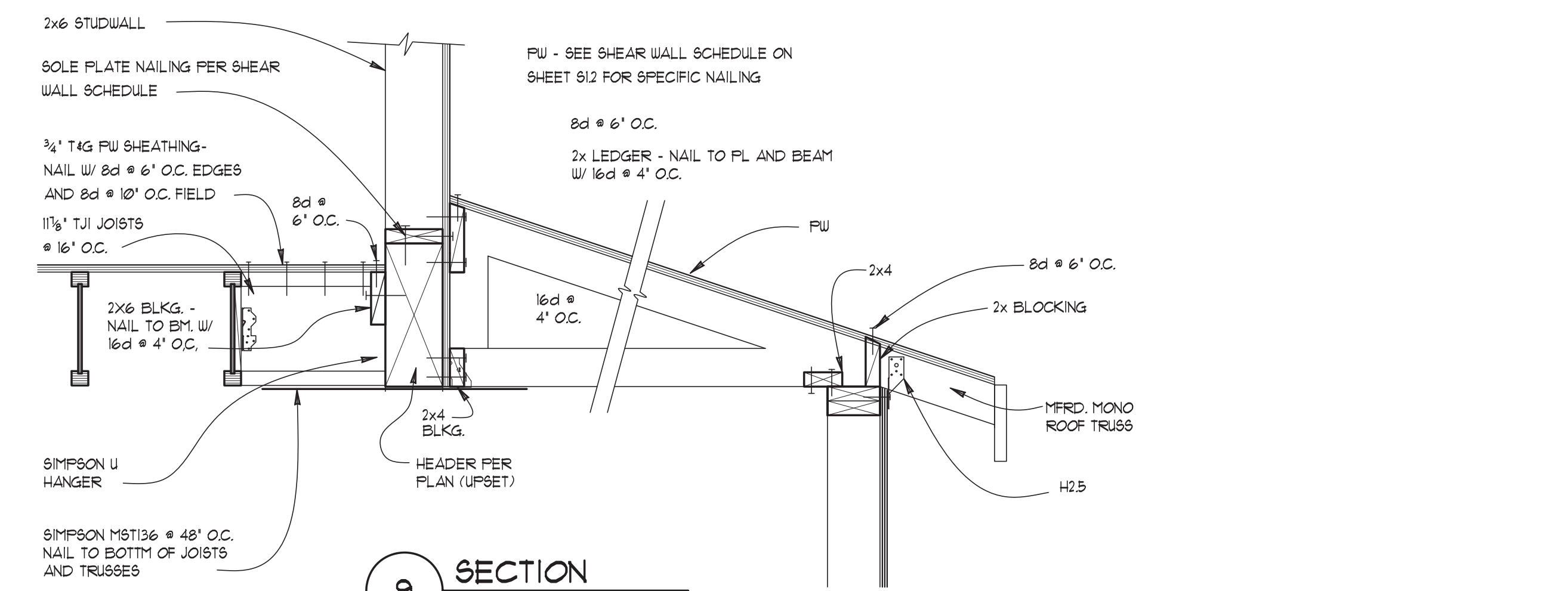
5 SECTION
1" = 1'-0"



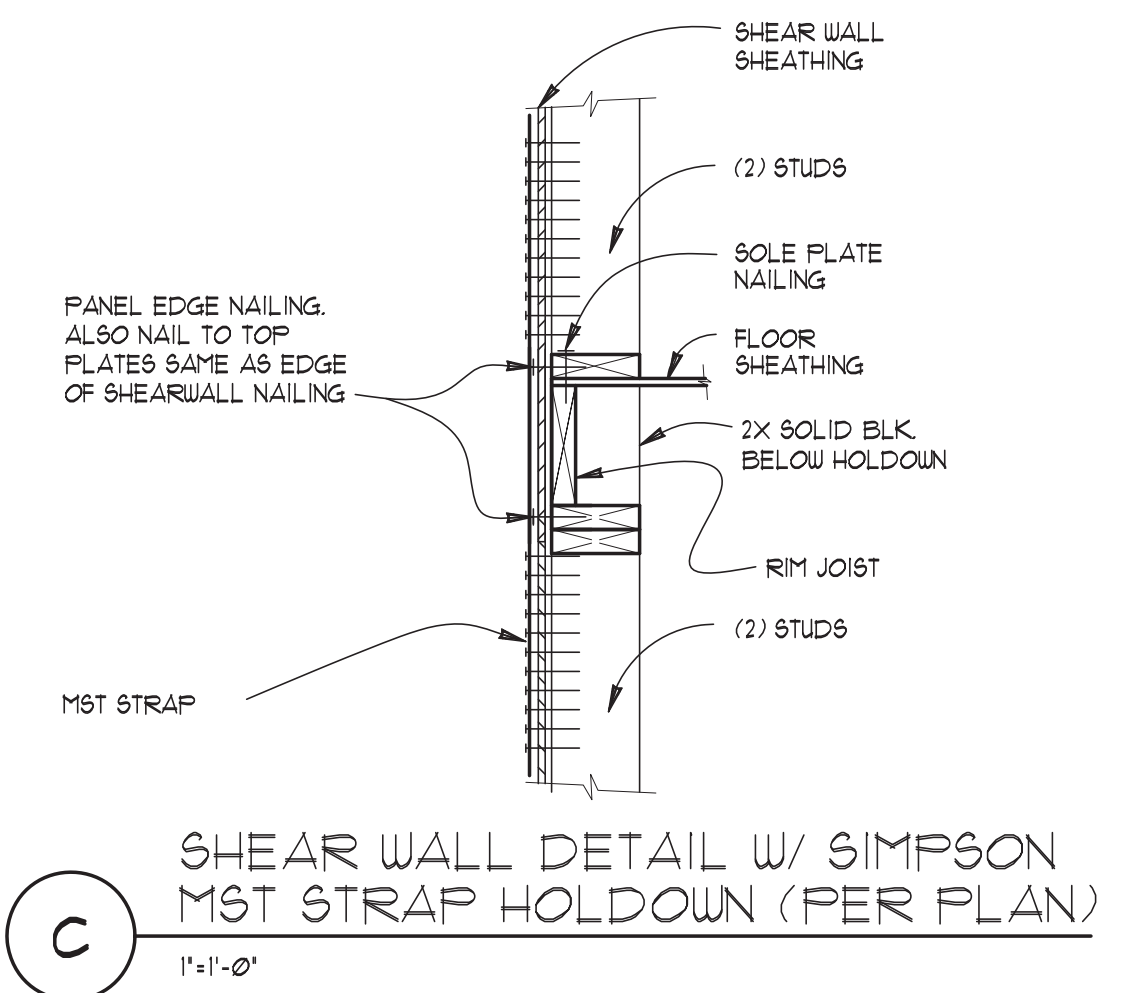
6 SECTION
1" = 1'-0"



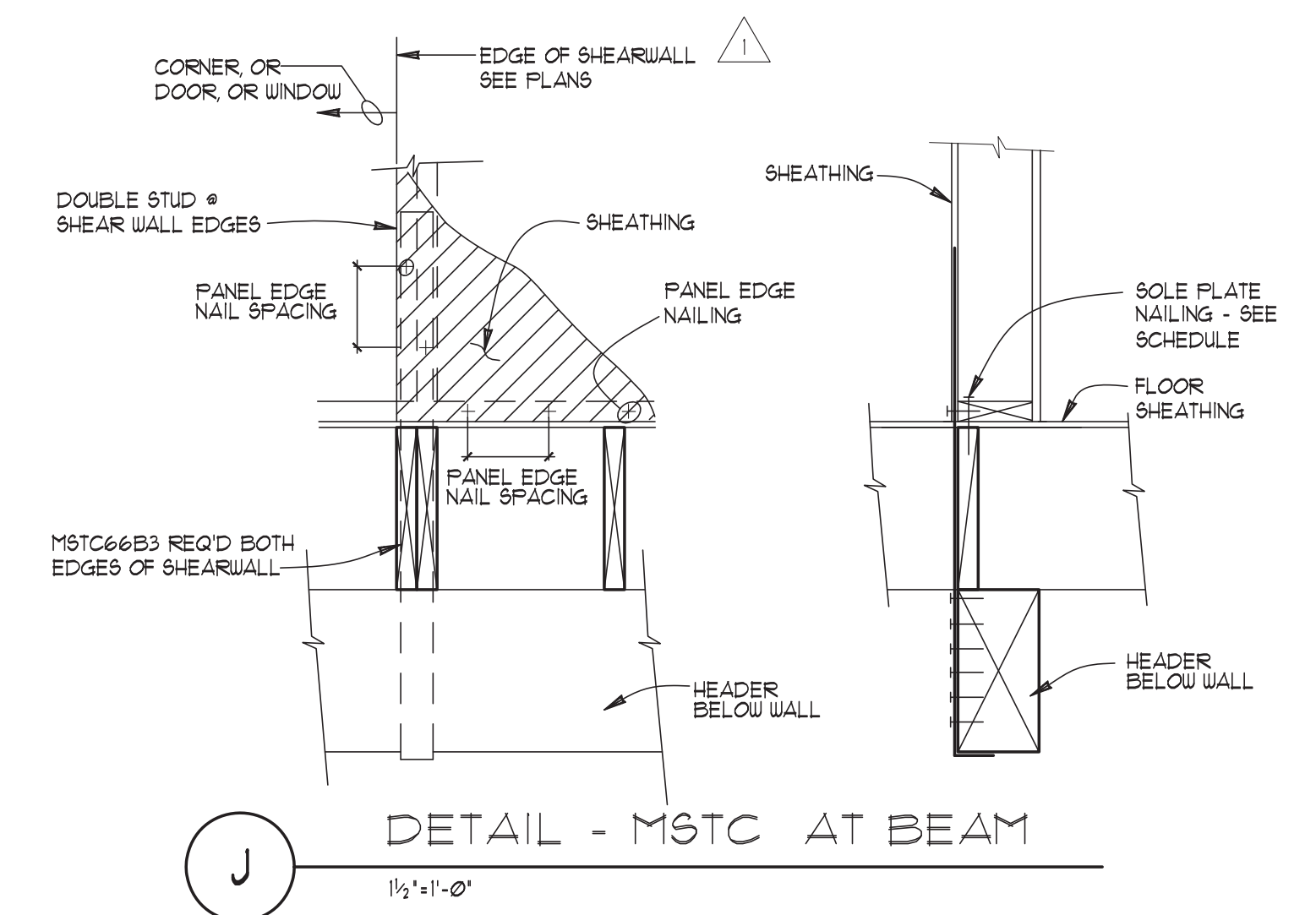
7 SECTION
1" = 1'-0"



9 SECTION
1" = 1'-0"



C SECTION
1" = 1'-0"



J SECTION
1 1/2" = 1'-0"

Project
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8456 SE 40TH ST
PC: MERCER ISLAND, WA

Prepared for
URBAN DESIGN GROUP
Contents
FRAMING DETAILS

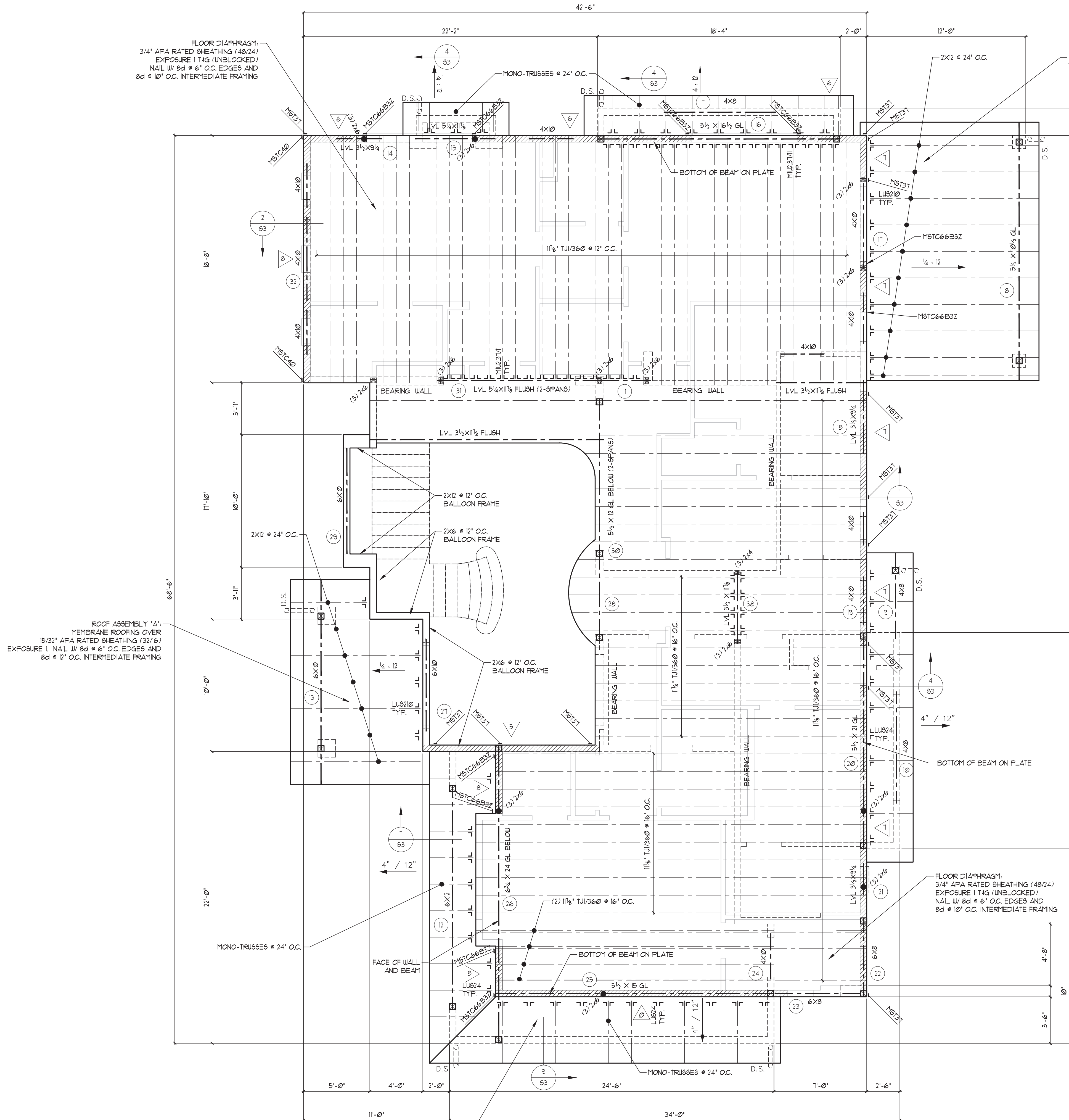
Professional Engineer
D. M. FARRO
Professional Engineer
No. 1000000000
State of Washington
Exp. 12/31/2024

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PO BOX 39681 - LAKEWOOD, WA 98499
Cell: (253) 250-6651 Email: nreng@nweng.com

DESIGN BY: NFN	DATE: 06/15/2023
COMMENTS:	
REV. DATE:	

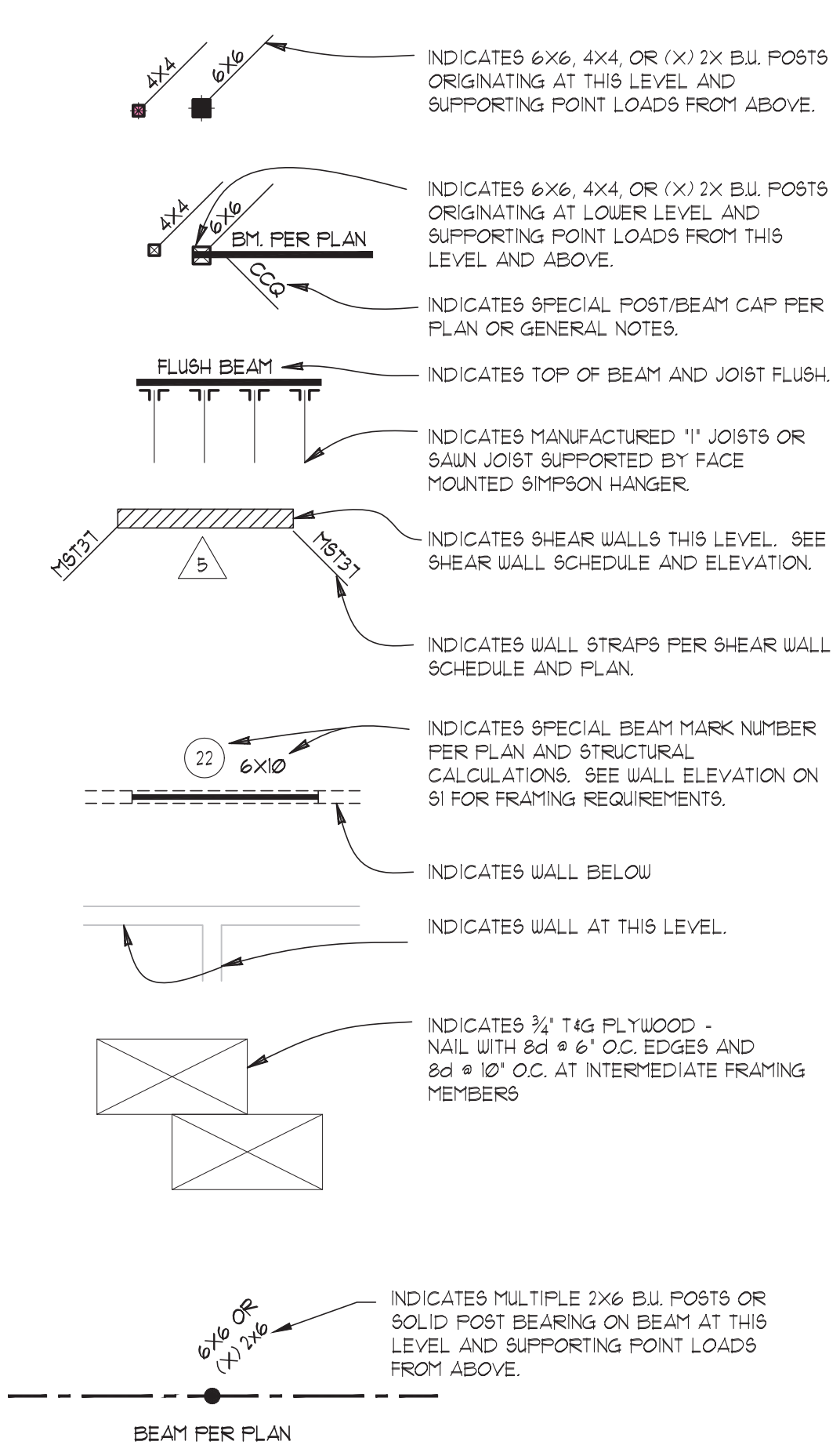
Project # :
12022
Sheet
S3

PLOT DATE: 06/15/2023



- FLOOR FRAMING NOTES:**
- ALL EXTERIOR HEADERS SHALL BE 6X10 DFP, UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR HEADERS SHALL BE 4X10 DFP, UNLESS NOTED OTHERWISE.
 - ALL EXTERIOR WALL STUDS SHALL BE 2X6 HEM-FIR #2 SPACED AT 16" O.C. UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR WALL STUDS SHALL BE 2X4 HEM-FIR #2 SPACED AT 16" O.C. UNLESS NOTED OTHERWISE.
 - FOR TYPICAL WALL FRAMING OR SHEAR WALL FRAMING SEE ELEVATION ON SHEET S1.
 - PROVIDE SOLID BLOCKING BELOW BEARING WALL OR SHEAR WALL PERPENDICULAR TO JOISTS. NAIL WALL SOLE PLATE TO JOISTS OR BEAM PER SHEAR WALL SCHEDULE OR NOTE 8. OR SHEAR WALL SCHEDULE NOTES.
 - PROVIDE DOUBLE JOISTS OR BEAM (PER PLAN) BELOW SHEAR WALL PARALLEL TO TO JOISTS. NAIL WALL SOLE PLATE TO JOISTS OR BEAM PER SHEAR WALL SCHEDULE OR NOTE 10. OF SHEAR WALL SCHEDULE NOTES.
 - PROVIDE JOIST BRIDGING PER JOIST MFR'S RECOMMENDATIONS.
 - PROVIDE SOLID 2X OR LVL RIM JOIST AT EXTERIOR WALL PER DETAIL AND PLAN. NAIL WALL SOLE PLATE TO RIM WITH PER SHEAR WALL SCHEDULE OR NOTE 10. OF SHEAR WALL SCHEDULE NOTES.
 - FOR JOIST CONNECTION TO FLUSH OR UPSET BEAM ON ONE OR TWO SIDES, SEE DETAIL 1/S1.
 - FOR SOLID POST OR BUILT UP 2X POST BEARING ON EXTERIOR OR INTERIOR WALL, SEE DETAIL 3/S1.
 - NAIL JOISTS TO BEARING WALL TOP PLATES OR TOP OF BEAM WITH (2) 10d TOE NAIL EACH SIDE.
 - PROVIDE WEB STIFFENERS AT 1' JOIST BEARING PER MFR'S RECOMMENDATIONS.
 - NOTCHING IN 1" JOISTS NOT PERMITTED WITHOUT MFR'S APPROVAL.
 - ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE. ANY FIELD CUTS, NOTCHES, OR DRILLED HOLES SHALL BE RE-TREATED WITH AUFAM4.
 - ALL FASTENERS & HARDWARE IN PRESSURE TREATED WOOD OR FIRE-RETARDANT WOOD SHALL BE 12MAX(G105 HDG PER ASTM A653).

LEGEND



Project
MARTIN QIAN AND LAURIE YANG
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PC:
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Contents
UPPER FLOOR FRAMING

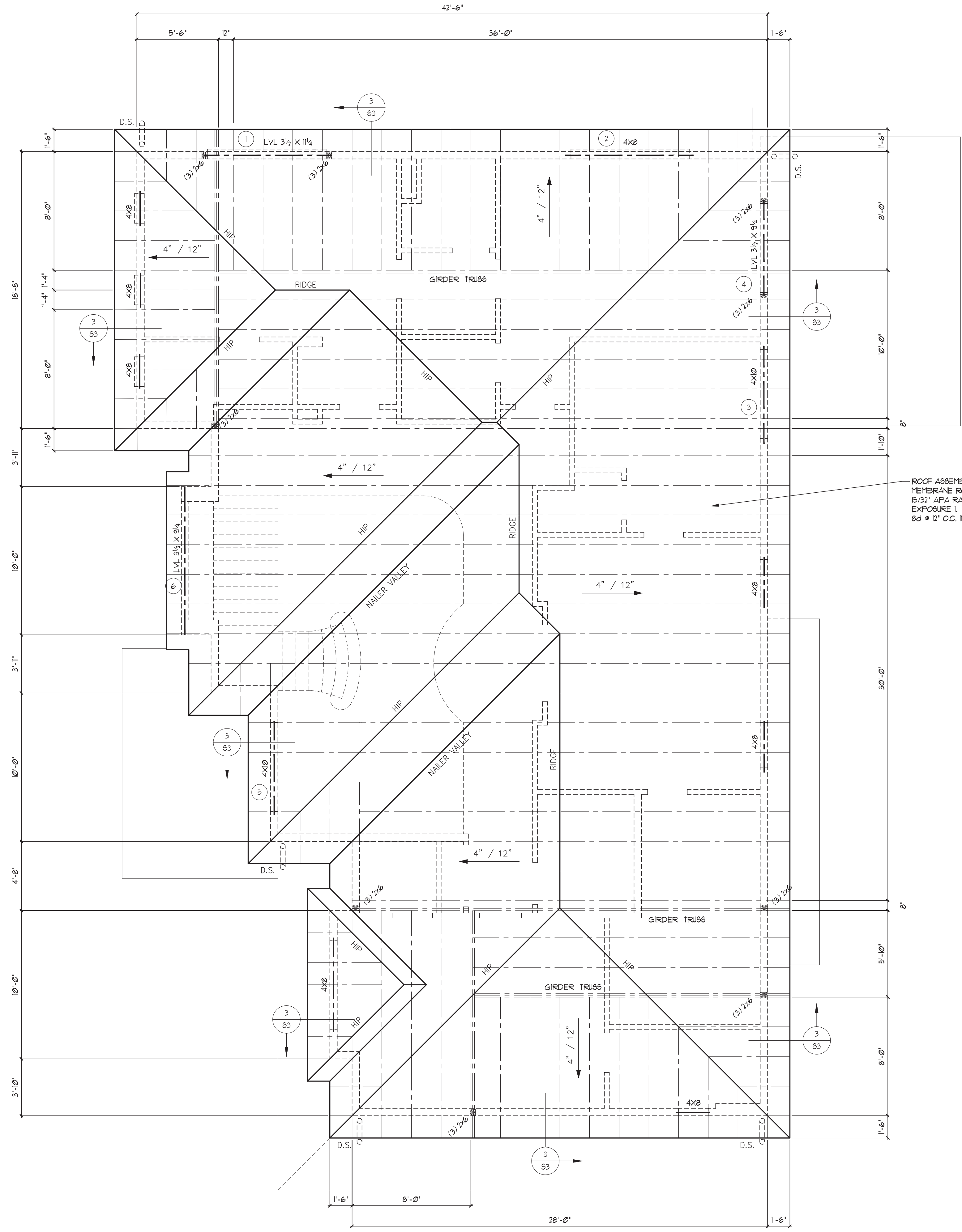
M. V. FARO
REGISTERED PROFESSIONAL ENGINEER
NO. 10000
EXPIRES JANUARY 31, 2024

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DESIGN BY: NPN	COMMENTS:
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12022
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Plot Date: 06/15/2022



ROOF FRAMING PLAN

1/4" = 1'-0" DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

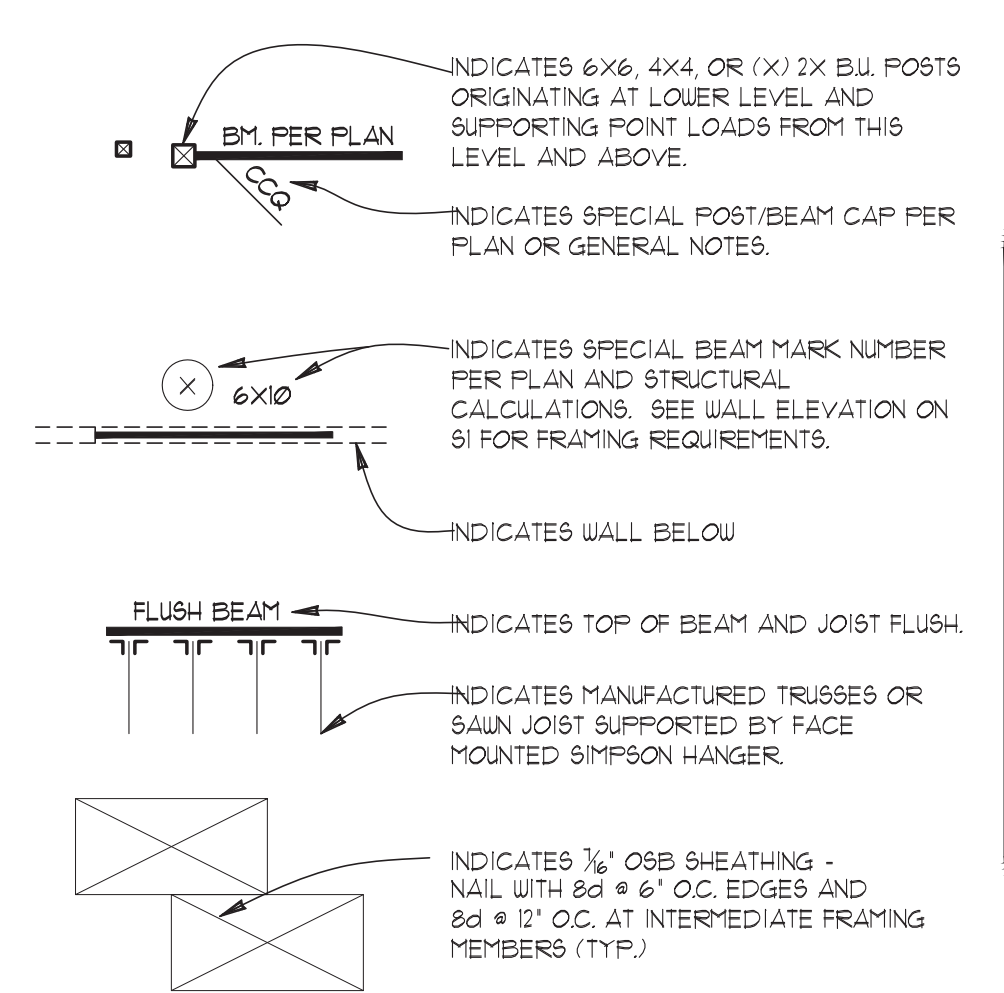
ROOF FRAMING NOTES:

- ALL EXTERIOR HEADERS SHALL BE 6x8 DFP, UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR HEADERS SHALL BE 4x10 DFP, UNLESS NOTED OTHERWISE ON PLAN.
- SEE GENERAL NOTES AND TRUSS NOTES BELOW FOR TRUSS DESIGN SPECIFICATIONS.
- ALL SAUN ROOF JOISTS SHALL BE HP#2 OR BETTER AND SPACED AT 24" O.C. UNLESS NOTED OTHERWISE.
- PRE-FRDR. TJ JOISTS SHALL BE OF THE SIZE AND SERIES SPECIFIED ON THE PLAN. VERIFY MFRD. PLACEMENT PLAN WITH STRUCTURAL. NOTIFY THIS OFFICE OF ANY CONFLICTS IN LAYOUT BEFORE INSTALLATION.
- PROVIDE ROOF VENTILATION PER CURRENT IRC OR IBC. SEE ARCHITECTURAL PLANS FOR SPECIFIC REQUIREMENTS.
- PROVIDE ATTIC ACCESS PANEL PER CURRENT IRC, IBC, AND ARCHITECTURAL PLANS FOR SPECIFIC REQUIREMENTS.

WOOD TRUSSES (IBC 2303.4) SHALL BE:

- DESIGNED PER IBC 2303.4.1 TO CARRY LOADS LISTED IN THE DESIGN CRITERION AND ANY ADDITIONAL POINT LOADS, UNIFORM LOADS, OR DRAG STRUT FORCES NOTED ON FRAMING PLANS.
- NON-ATTIC STORAGE TRUSSES SHALL BE DESIGNED WITH A LIVE LOAD OF 20 PBF LOCATED IN THE PLANE OF THE TRUSS. THE MAXIMUM STORAGE SPACE ABOVE THE BOTTOM CHORD SHALL BE LESS THAN 42" HIGH AND 24" WIDE.
- ATTIC TRUSSES SHALL BE DESIGNED FOR FLOOR LOADS LISTED IN THE DESIGN CRITERION AND LOCATED IN AREAS NOTED ON THE FRAMING PLANS.
- TRUSS DESIGN DRAWINGS AND DOCUMENT SUBMITTAL (2303.4.1) SHALL INCLUDE STRESS ANALYSIS AND PICTORIAL DEPICTION OF EACH TRUSS TYPE FOR THE PROJECT AND INCLUDING A TRUSS PLACEMENT DIAGRAM (2303.4.2). TRUSS INSTALLATION DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER IN THE STATE OF WASHINGTON. APPROVED TRUSS DOCUMENTS SHALL REMAIN ON THE JOB SITE FOR INSPECTION.
- ALTERATIONS (2303.4.5) TRUSS MEMBERS SHALL NOT BE NOTCHED, DRILLED, SPICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN APPROVAL OF THE TRUSS DESIGNER. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, PIPING, ETC.) SHALL NOT BE PERMITTED WITHOUT APPROVAL OF TRUSS DESIGNER.
- TRUSS SPECIFICATIONS: THE DESIGN, MANUFACTURE, FABRICATION, AND QUALITY ASSURANCE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH TPI 1.
- TRUSSES SHALL BE BRACED TO MANUFACTURE'S SPECIFICATIONS.
- UNLESS NOTED OTHERWISE ON PLANS, ALL TRUSSES SHALL HAVE SIMPSON H-1 CLIPS AT EXTERIOR BEARING WALLS. AT GABLE END TRUSSES, PROVIDE SIMPSON A35 AT 24" O.C.
- PROVIDE 5TC CLIPS AT ALL TRUSSES OVER NON-BEARING WALLS.

LEGEND



COORDINATION OF CONSTRUCTION, INCLUDING VERIFICATION OF DIMENSIONS & FIELD CONDITIONS, IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM PRIOR TO CONSTRUCTION.

CONTRACTOR NOTE:
REFER TO TRUSS MANUFACTURER DWG. FOR TRUSS LAYOUT AND TYPES. USE THIS DRAWING FOR LOCATION OF SPECIAL BEAM SIZES, GIRDER TRUSS AND BUILT-UP POST LOCATIONS.

Project
MARTIN QIAN AND LAURIE YANG
8456 SE 40TH ST
PC:
MERCER ISLAND, WA

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Contents
ROOF FRAMING

D. M. FARRO
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PERMIT ISSUE:	DESIGN BY:
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REV. DATE:	COMMENTS:

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12022
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S6

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