ABBREVIATIONS

ABV	ABOVE
AEG	ABOVE EXISTING GRADE
AFF	ABOVE FINISHED FLOOR
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ALT	ALTERNATE
ARCH	ARCHITECT; ARCHITECTURAL
BLW	BELOW
BSMT	BASEMENT
BTW	BETWEEN
BLD	BUILDING
CAB	CABINET
CALC	CALCULATION
CLG	CEILING
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
DBL	DOUBLE
DEMO	DEMOLISH
DIA	DIAMETER
DIM	DIMENSION
DW	DISHWASHER
DS	DOWNSPOUT
EA	EACH
ELEC	ELECTRIC, ELECTRICIAN
ELEV	ELEVATION
ENGR	ENGINEER
EQUIV	EQUIVALENT
EXIST OR (E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GALV	GALVANIZED
GWB	GYPSUM WALL BOARD
HDR	HEADER
HT	HEIGHT
HORIZ	HORIZONTAL
INSUL	INSULATION
INT	INTERIOR
LOC	LOCATE, LOCATION
MAX	MAXIMUM
MFR	MANUFACTURER
MECH	MECHANICAL
MTL	METAL
MIN	MINIMUM
NTS	NOT TO SCALE
NR	NON-REGULATED
O.C.	ON CENTER
OH	OVERHANG
OHWM	ORDINARY HIGH WATER MARK
PLY	PLYWOOD
PRELIM	PRELIMINARY
PT	PRESSURE-TREATED
PL	PROPERTY LINE
REFR	REFRIGERATOR
REINF	REINFORCE, REINFORCING
REQD	REQUIRED
SCHED	SCHEDULE
SW	SHEARWALL
SIM	SIMILAR
SF	SQUARE FOOT
SPECS	SPECIFICATIONS
SSTL	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURE, STRUCTURAL
TEMP	TEMPORARY
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
VERT	VERTICAL
WP	WATERPROOF, WEATHERPROOF
WNDW	WINDOW
W/	WITH
W/O	WITHOUT
WD	WOOD

GRAPHIC KEY

GLASS
CONCRETE
STEEL
EARTH
GRAVEL
WATER
BRICK
ALUMINUM
BATT INSULATION
RIGID INSULATION
PLYWOOD
FINISH WOOD
STUCCO
SPRAY FOAM INSULATION
GYPSUM WALLBOARD

GENERAL NOTES

ALL WORK SHALL BE IN **COMPLIANCE** WITH THE 2015 INTERNATIONAL RESIDENTIAL CODE AS ADOPTED AND MODIFIED BY THE CITY OF MERCER ISLAND, MERCER ISLAND LAND USE CODE, AND ALL OTHER LAWS, CODES, ORDINANCES AND REGULATIONS OF THE COUNTY, STATE, AND FEDERAL JURISDICTIONS INCLUDING THE 2015 WASHINGTON STATE ENERGY CODE. (LATEST EDITION AND AMENDMENTS)

ALL **UNDERGROUND UTILITIES** MUST BE VERIFIED AS TO EXACT LOCATIONS SO AS NO INTERFERENCE BY DISRUPTION WILL BE CAUSED. GENERAL CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES BY THE METHODS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND DPD REPRESENTATIVE AT THE PRE-CONSTRUCTION SITE MEETING. DAMAGE THAT MAY BE CAUSED BY GENERAL CONTRACTOR OR SUBCONTRACTOR TO ANY OF THE ABOVE MENTIONED SHALL BE REPAIRED BY HIM AND LEFT IN AS GOOD A CONDITION AS EXISTED PRIOR TO DAMAGING.

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL **DIMENSIONS AND JOB CONDITIONS** RELATED TO THIS WORK. ALL DIMENSIONS SHALL BE CONSIDERED "NOMINAL" UNLESS NOTED OTHERWISE. DO NOT SCALE DRAWINGS. USE WRITTEN DIMENSIONS ONLY. DIMENSIONS ON LARGE SCALE DRAWINGS OR DETAILS WILL PREVAIL OVER SMALLER SCALED DRAWINGS. WRITTEN DIMENSIONS ARE DRAWN TO THE FACE OF STUD OR CONCRETE U.N.O. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT, PROVIDE ALL BUCKOUTS, BLOCKING, AND JACKS AS REQUIRED BY THE DRAWINGS AND OTHER TRADES. ANY DISCREPANCY IN DIMENSIONS SHALL BE REPORTED IN WRITING TO THE PROJECT MANAGER/ DESIGNER FOR CLARIFICATION, OR APPROVAL OF MODIFICATION BEFORE COMMENCING WORK. THE RESPONSIBILITY TO THE PROJECT MANAGER/DESIGNER, SHALL REST WITH THE CONTRACTOR OR ANY OTHER PERSON APPROVING SUCH A CHANGE.

ALL **WORKMANSHIP AND MATERIALS** SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF CERTIFICATE OF OCCUPANCY UNLESS SPECIFIED FOR A LONGER PERIOD OF TIME ON SPECIFIED ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING HIS OWN DEFECTIVE WORK AS WELL AS PAY ALL COSTS INCIDENTAL THERETO INCLUDING DAMAGE TO OTHER WORK, FURNISHINGS OR EQUIPMENT.

ALL **WARRANTIES OR GUARANTEES** AS TO MATERIALS OR WORKMANSHIP ON OR WITH RESPECT TO THE OWNER'S WORK SHALL BE CONTAINED IN THE CONTRACT OR SUBCONTRACT WHICH SHALL BE SO WRITTEN THAT SUCH GUARANTEE OR WARRANTIES SHALL INSURE TO THE BENEFIT OF OWNER.

INSURANCE: PRIOR TO THE COMMENCEMENT OF WORK THE GENERAL CONTRACTOR SHALL DELIVER TO THE OWNER CERTIFICATES OF INSURANCE FOR BOTH COMPREHENSIVE GENERAL LIABILITY AND WORKMAN'S COMPENSATION INCLUDING THE TOTAL AMOUNT OF COVERAGE AND CONDITIONS STIPULATED AND AGREED BY BOTH PARTIES.

THE OWNER SHALL BE RESPONSIBLE FOR PAYING FOR THE **BUILDING PERMIT**. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL OTHER PERMITS REQUIRED OR NECESSARY FOR THE COMPLETION OF THE WORK FROM THE RESPECTIVE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE GOVERNING AGENCIES AS REQUIRED FOR SITE INSPECTIONS.

ALL TRADES SHALL REFER TO THE **ARCHITECTURAL DRAWINGS** REGARDING LOCATIONS OF WORK TO BE INSTALLED.

UNLESS OTHERWISE NOTED, PROVIDE ALL MISCELLANEOUS FASTENERS, HARDWARE AND ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION. EVEN THOUGH SUCH ITEMS MAY NOT HAVE BEEN SPECIFICALLY MENTIONED IN THE DRAWINGS AND SPECIFICATIONS, NOTIFY THE ARCHITECT OF ANY REVISIONS OR ADDITIONAL INFORMATION OBTAINED FROM THE MANUFACTURER OF SPECIFIED MATERIALS OR EQUIPMENT WHICH MAY AFFECT THE CONTRACT TIME, COST OR QUALITY OF WORK.

GENERAL CONDITIONS
THE GENERAL CONTRACTOR, ALL SUB-CONTRACTORS AND ALL MAJOR SUPPLIERS SHALL SUBMIT TO THE OWNER WITHIN 30 DAYS AFTER COMPLETION ALL "RELEASE OF LIENS" FOR ALL WORK PERFORMED PRIOR TO FINAL PAYMENT.

PARTIAL LIEN WAIVERS TO BE SUBMITTED WITH MONTHLY REQUISITION.

ALL MANUFACTURERS AND/OR SUPPLIERS SHALL SUBMIT SHOP DRAWINGS AND/OR MATERIAL SAMPLES TO THE DESIGNER/OWNER FOR APPROVAL PRIOR TO FABRICATION.

ALL OF THE GENERAL CONTRACTOR'S EQUIPMENT, SCAFFOLDING HOISTS, ETC., SHALL BE AVAILABLE TO THE OWNER/ DESIGNER AND THEIR STAFF FOR INSPECTION OF ANY AND ALL WORK DURING NORMAL WORKING HOURS.

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL DELIVERY POINTS, HOISTS LOCATIONS, ACCESS TO AND FROM THE SITE OF THE BUILDING AND UTILITY SERVICES.
BID TO INCLUDE ALL NECESSARY AND REQUIRED PERMITS, LICENSES, FEES, BONDS AND INSURANCE - EVIDENCE OF WHICH MUST BE SUBMITTED TO OWNER/ DESIGNER PRIOR TO ANY CONSTRUCTION.

GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUBCONTRACTORS WORKING AT JOB SITE AND FOR ALL COORDINATION OF WORK.

THE MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTOR SHALL FULLY COORDINATE ALL EQUIPMENT WITH THE OTHER TRADES. THESE CONTRACTORS SHALL BE RESPONSIBLE FOR FINAL HOOK-UP OF ALL EQUIPMENT NOT FURNISHED BY THEM BUT REQUIRING THE SAME FOR FINAL COMPLETION.

GENERAL CONTRACTOR TO BE RESPONSIBLE FOR SECURITY OF ALL MATERIALS AT JOB SITE UNTIL FINAL ACCEPTANCE OF WORK BY OWNER.

ANY SUBCONTRACTOR CUTTING INTO WORK ALREADY COMPLETED, CUTTING CHASES AND TRENCHES FOR THE INTRODUCTION OF HIS WORK AND EQUIPMENT IN THE BUILDING SHALL DO OR PAY FOR ALL BACK FILLING, REPARATION OF WALLS, FLOOR, ETC., DAMAGE BY SUCH A COMPANY. ALL REPAIRS SHALL MATCH EXISTING SURFACES.

CONSTRUCTION SPECIFICATIONS
NO SUBSTITUTIONS ARE ALLOWED FOR MATERIALS WHERE SPECIFIC MANUFACTURERS ARE INDICATED, UNLESS APPROVED BY THE OWNER/ARCHITECT. REQUESTS FOR SUBSTITUTIONS SHALL BE MADE IN WRITING PRIOR TO ORDERING MATERIALS OR COMMENCING WORK. SUCH REQUESTS SHALL INCLUDE THE DATE, SCOPE OF WORK, ANY ADDITIONAL COSTS TO THE OWNER, AND ANY ANTICIPATED DELAYS CAUSED BY SUCH CHANGES.

NO EXTRA WORK OR CHANGE SHALL BE MADE UNLESS A WRITTEN CHANGE ORDER IS SUBMITTED AND SIGNED BY THE OWNER AND ARCHITECT. THE ORDER SHALL STATE THAT THE OWNER HAS AUTHORIZED THE EXTRA WORK OR CHANGE, AND NO CLAIM FOR AN ADDITIONAL SUM SHALL BE VALID UNLESS SO OFFERED AS DESCRIBED ABOVE.

ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.

WOOD SPECIFICATIONS TO CONFORM TO OUTLINE SPECIFICATIONS, STRUCTURAL PLANS, NOTES, AND GENERAL CONDITIONS.

CAULKING AND SEALANTS: INSTALLED SHALL BE GUARANTEED WATERTIGHT. EXTERIOR METAL WORK, INCLUDING WINDOWS AND DOOR FRAMES AND ALL JUNCTIONS BETWEEN MASONRY, CONCRETE AND METAL SHALL BE SEALED WITH NEOPRENE OR POLYURETHANE FILLER AND APPROVED SEALANT COMPOUNDS.

PROVIDE GALVANIC INSULATION BETWEEN ALL DISSIMILAR METALS.

PROVIDE WATERPROOFING MEMBRANE OVER PROTECTIVE BOARD AT ALL WALLS EXPOSED TO EARTH.

ALL PIPING AND CONDUIT UNDER SLAB SHALL BE A MINIMUM OF 2"-0" CLEAR OF UNDERSIDE OF FOOTING.

ALL FINAL SURFACE GRADING SHALL BE COMPLETED TO FACILITATE POSITIVE DRAINAGE AWAY FROM THE BUILDING UNLESS NOTED OTHERWISE.

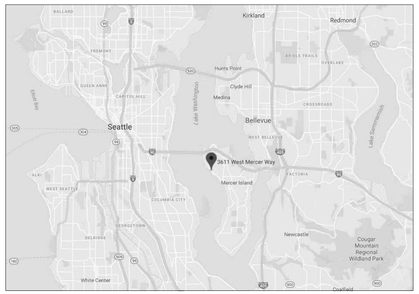
PROVIDE AND INSTALL INSULATION AT EXTERIOR WALLS, ROOF, FLOOR LOCATIONS AS SHOWN, SPECIFIED AND IN ACCORDANCE WITH WASHINGTON STATE ENERGY CODE.

WATER PIPES TO BE INSULATED IN ALL UNHEATED AREAS.

INSULATE ALL ROUGH-IN PLUMBING IN WALLS, FLOORS, AND CEILINGS FOR SOUND TRANSMISSION.

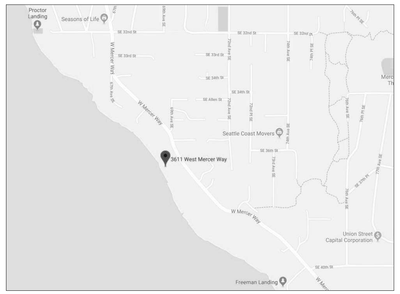
VICINITY PLAN

(NTS)



LOCATION PLAN

(NTS)



NORTH

SYMBOLS KEY

GRID LINES

ROOM REFERENCE — ROOM NAME / 101 — ROOM NAME / ROOM NUMBER

DOOR REFERENCE — 100A — ROOM NUMBER / DOOR NUMBER

WINDOW REFERENCE — 200A — ROOM NUMBER / WINDOW NUMBER

EXTERIOR ELEVATIONS — 1 / A4.0 — DRAWING NUMBER / SHEET NUMBER

WALL SECTION — SIM / 1 / 3.0 — DRAWING NUMBER / SHEET NUMBER

SECTION DETAIL — 1 / 8.0 — DRAWING NUMBER / SHEET NUMBER

AREA DETAIL — 1 / 9.0 — DRAWING NUMBER / SHEET NUMBER

INTERIOR ELEVATION — 4 / 3 / A8.01 / 1 / 2 — DRAWING NUMBER / SHEET NUMBER

ELEVATION DATUM — FINISH FLOOR / 101'-3" — LOCATION / ELEVATION

FINISH MATERIAL — T-1 — FINISH TYPE: SEE FINISH SCHEDULE / FINISH NUMBER

REVISION BUG — 1 — NOTE: ONLY MOST RECENT REVISION SHOWN CLOUDED. FOR PREVIOUS REVISIONS DELTAS REMAIN. DATE OF REVISIONS INDICATED AT RIGHT MARGINS.

ASSEMBLY TYPE — W4a — R: ROOF TYPE; W: WALL TYPE; F: FLOOR TYPE; SEE ASSEMBLIES FOR MORE INFO

EXHAUST FAN

SMOKE DETECTOR

SMOKE/CARBON MONOXIDE DETECTOR

CENTERLINE

PROJECT DIRECTORY

OWNER	CHRISTINE AND RYAN YUAN 3611 W MERCER WAY MERCER ISLAND, WA 98040
ARCHITECT	COLIN BRANDT BRANDT DESIGN GROUP 66 BELL ST., UNIT 1 SEATTLE, WA 98121 206.239.0850 colin@brandtdesigninc.com
OWNER'S AGENT/CONTACT	GEORGE STEIRER PLAN TO PERMIT 206.909.2893 george@plantopermit.com
GENERAL CONTRACTOR	CHRIS GREGERSON GREGERSON CUSTOM HOMES 14107 180TH AVE NE REDMOND, WA 98052 206.691.0042
STRUCTURAL ENGINEER	BRETT MOZDEN SWENSON SAY FAGÉT 2124 THIRD AVENUE, SUITE 100 SEATTLE, WA 98121 206.443.6212
CIVIL ENGINEER	DUFFY ELLIS CIVIL ENGINEERING SOLUTIONS 102 NW CANAL ST SEATTLE, WA 98107 206.930.0342 duffy@cesolutions.us
GEOTECH	STEPHEN EVANS PANGEO 206 262-0370 sevans@pangeoinc.com

SETBACKS

SIDE YARD	17% X 100' = 17' - 0" COMBINED
MIN SIDE YARD	33% X 17' = 5.61 FT
FRONT YARD	20' - 0"
SHORELINE	0 - 25' - 0" BUFFER FROM OHWM 25'- 0" - 50' - 0" BUFFER FROM OHWM

ENERGY CODE SUMMARY

CLIMATE ZONE 4C TABLE R402.1.1
PRESCRIPTIVE OPTION III (EFFICIENT ENVELOPE OPTION 1A)
UNLIMITED GLAZING

GLAZING U-FACTOR (VERTICAL):	.30
GLAZING U-FACTOR (OVERHEAD):	.50
DOOR U-FACTOR:	.20
CEILING:	R-49
VAULTED CEILING:	R-38
WALL ABOVE GRADE:	R-21
WALL BELOW GRADE (INT.)	R-21 (INT.) OR R-10 (EXT.)
SLAB ON GRADE @ BASEMENT	R-10

ENERGY CREDITS: PER 2015 WSEC TABLE 406.2. 3.5 CREDITS MIN: 1a, 3a,4 and 5c.

HEATING
INSTALLED PER INTERNATIONAL MECHANICAL CODE, WORK TO BE COMPLETED UNDER A SEPARATE PERMIT.

VENTILATION
FANS ON TIMERS, PER PLANS. VOLUME OF REQUIRED OUTDOOR VENTILATION AIR TO BE PROVIDED BASED ON TABLE M1507.3.3 OF THE IRC.
* PLUMBING, MECHANICAL, ELECTRICAL WORK TO BE PERMITTED SEPARATELY.
SEE SHEET A002 FOR VENTILATION & ENERGY CALCULATIONS.

SHEET INDEX

GENERAL INFORMATION

PROJECT ADDRESS	3611 W MERCER WAY, MERCER ISLAND, WA 98040
PROJECT NUMBER	TBD
ASSESSOR'S PARCEL #	362350-0265

LEGAL DESCRIPTION
THE NORTHWESTERLY 100 FT OF SOUTHEASTERLY 1000 FT OF BLOCK "A", AS MEASURED ALONG THE NORTHEASTERLY LINE THEREOF, REPLAT OF ISLAND PARK, ACCORDING TO THE PLAT RECORDED IN VOLUME 13 OF PLATS, PAGE 58, RECORDS OF KING COUNTY, WA.

PROJECT DESCRIPTION
DEMOLITION OF (E) 2,241 SF HOUSE W/ ATTACHED GARAGE AND PORTION OF (E) DRIVEWAY, CONSTRUCTION OF NEW 3988 SINGLE FAMILY DWELLING + 788 SF ATTACHED GARAGE; CONSTRUCTION OF NEW MOTOR COURT.

ZONE	R-15
BUILDING TYPE	SINGLE FAMILY RESIDENCE

PROJECT DATA

ZONING: R-15
EXISTING LOT AREA SUMMARY:

GROSS LOT AREA:	17,535 SF
ACCESS EASEMENT:	1446 SF
ACCESS EASEMENT LESS DRIVEWAY: 1446 - 1228 =	218 SF
NET LOT AREA:	17,317 SF
LOT SLOPE: 53' / 136.3' =	**38.9%**

30% ALLOWABLE LOT COVERAGE: 17,317 SF X 0.30 = **5,195 SF**

EXISTING LOT COVERAGE:

(E) HOUSE FOOTPRINT AND OVERHANGS	2,758 SF
(E) DRIVEWAY	3,686 SF
TOTAL EXISTING LOT COVERAGE:	**6,444 SF = 37.2%**
TOTAL EXISTING LANDSCAPING:	**10,920 SF = 62.8%**
(INCLUDES EXIST 1936 SF (11.1 %) HARDSCAPE)	

PROPOSED LOT COVERAGE:

(E) DRIVEWAY TO REMAIN	1,491 SF
NEW DRIVEWAY	626 SF
HOUSE FOOTPRINT + OVERHANGS	3555 SF
TOTAL PROPOSED LOT COVERAGE:	**5,672 SF = 32.7%**
TOTAL PROPOSED LANDSCAPING:	**11,592 SF = 67.3%**
(INCLUDES 1462 SF (8.4%) HARDSCAPE)	

LOT COVERAGE 2:1 TRADE OFF CALCULATION (PER MICC 19.050 F3 biii):

EXISTING LOT COVERAGE =	6,444 SF
LOT COVERAGE REMOVED =	1,526 SF
2:1 LOT COVERAGE CREDIT: 1526/2 =	763 SF
ALLOWABLE LOT COVERAGE: (6,444-1,526)+763 =	**5,681 SF**

ALLOWABLE HARDSCAPE: 17,317 X .9 = **1558.5 SF**

PROPOSED HARDSCAPE:

(E) HARDSCAPE TO REMAIN:	
(E) RETAINING WALLS:	36 SF
(E) DECK:	269 SF
(E) BULKHEAD LANDWARD OF OHWM:	559 SF
NEW HARDSCAPE:	
NEW PATIO/WALKWAYS:	195 SF
NEW DECK:	380 SF
NEW RETAINING WALLS:	23 SF
TOTAL PROPOSED HARDSCAPE:	**1462 SF (8.4%)**

SHORELINE BUFFERS:

0' - 25' SHORELINE BUFFER AREA:	2895 SF
ALLOWABLE IMPERVIOUS AREA: 2895 SF X .10 =	289.5 SF
PROPOSED IMPERVIOUS AREA:	
EXISTING BULKHEAD:	559 SF
NEW IMPERVIOUS:	0 SF
TOTAL PROPOSED @ 0-25' BUFFER:	**559 SF (19.3%)**
25' - 50' SHORELINE BUFFER AREA:	2820 SF
ALLOWABLE IMPERVIOUS AREA: 2820 X .30 =	846 SF
PROPOSED IMPERVIOUS AREA:	
EXISTING:	0 SF
HOUSE AND OVERHANG:	802 SF
TOTAL PROPOSED @ 25'-50' BUFFER:	**802 SF (28.4%)**

R-15 ZONING MAX GFA: 12,000 SF OR 40% NET LOT AREA MAX

ALLOWABLE GFA: 17535 x .40 = 7,014 SF (40%)

GROSS FLOOR AREA CALCULATION:
EXISTING GFA : 2241 SF (12.9%)

MAIN FLOOR < 12' CEILING HEIGHT 556 X 1 =	556 SF
MAIN FLOOR > 12' CEILING HEIGHT 1546 X 1.5 =	2319 SF
GARAGE:	788 SF
COVERED DECK @ MAIN LEVEL:	273 SF
GROSS LOWER FLOOR AREA:	1,886 SF
LOWER FLOOR < 12' CEILING HEIGHT 1,110 X 1 =	1,100 SF
LOWER FLOOR > 12' CEILING HEIGHT 776 X 1.5 =	1,164 SF
LOWER FLOOR BELOW GRADE NOT INCLUDED	(224 SF)
TOTAL PROPOSED GFA:	**5,976 SF (34.5%)**

TOP OF PROPOSED ROOF: **59'-10"**
DISTANCE TO NEAREST FIREHYDRANT: **477'**

Brandt
Design Group
66Bell Street
Unit 1
Seattle, WA
98121
206.239.0850
brandtdesigninc.com

8843 REGISTERED ARCHITECT STATE OF WASHINGTON

YUAN RESIDENCE

3611 W MERCER WAY,
MERCER ISLAND, WA 98040

PERMIT DOCUMENTS

DATE: 7/18/19
SHEET SIZE: D (24X36)

REVISIONS
NO: DATE:

DRAWN BY: NLD/LL/SE
CHECKED BY: LL

COVERSHEET

SCALE: 1" = 1'-0"

A000

DEDICATED APPROVAL STAMP SPACE

WA STATE ENERGY CODE FORMS

CITY OF MERCER ISLAND

DEVELOPMENT SERVICES GROUP
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org
Inspection Requests: Online: www.MyBuildingPermits.com VM: 206.275.7730

2015 WSEC & IRC Ventilation Worksheet (Effective July 1, 2016)

INFORMATION IN THESE WORKSHEETS MUST BE INCLUDED IN THE CONSTRUCTION DOCUMENTS
This set of worksheets has been developed to assist permit applicants with documenting compliance with the 2015 Washington State Energy Code. The following worksheets provide much of the required documentation for plan review. **The details, systems, and ratings noted here must also be shown on the drawings.**

PRESCRIPTIVE ENERGY CODE COMPLIANCE FOR CLIMATE ZONE MARINE 4

Component	Fenestration [1]		Ceiling w/ Attic	Vaulted Ceiling	Wood Framed Wall (Int.)[2]	Mass Wall (Above grade)	Below-Grade Wall [2,3]	Framed Floor	Slab R-Value & Depth
	Vertical	Overhead							
Prescriptive Value	U. 0.30 max.	U. 0.50 max.	R-49 min.	R-38 min.	R-21 min.	R-21 min.	R- 10/15/21 Int. + TB	R-30 min.	R-10 min. 2'

[1] *Fenestration is defined as skylights, roof windows, vertical windows (fixed or moveable), opaque doors, glazed doors, glazed block and combination opaque/glazed doors. Fenestration includes products with glass and non-glass glazing materials.*
[2] *Int. (intermediate framing) denotes standard framing 16" o.c. with headers insulated with a minimum R-10 insulation.*
[3] *10/15/21 +TB" means R-10 continuous insulation on the exterior of the wall, or R-15 on the 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 +TB" 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. "TB" means thermal break between floor slab and basement wall.*

Whole House Ventilation (Prescriptive)
Please check the appropriate box to describe which of the four prescriptive Whole House Ventilation Systems you will be using AND fill in the required whole house ventilation rate in CFM's. (See "2015 Residential Whole House Ventilation Rate" Handout.) A complete system required by one of the sections noted below must be specified on the drawings.

WHOLE HOUSE VENTILATION METHOD	Whole House Ventilation Rate
☐ Intermittent Whole House Ventilation Using Exhaust Fans & Fresh Air Inlets. (IRC M1507.3.4)	270 CFM
☐ Intermittent Whole House Ventilation Integrated with a Forced Air System. (IRC M1507.3.5)	
☐ Intermittent Whole House Ventilation using a Supply Fan. (IRC M1507.3.6)	
☐ Intermittent Whole House Ventilation Using a Heat Recovery Ventilation System (IRC M1507.3.7)	

Source Specific Exhaust Ventilation & Fan Efficiency
Required in each kitchen, bathroom, water closet compartment, laundry room, indoor swimming pool, spa and other rooms where water vapor or cooking odor is produced. (IRC M 1507.4) Fan efficiency from WAC 51-11R – Table R403.6.1. Kitchen Hoods greater than 400 cfm require makeup air per IRC M1503.4

Minimum Source Specific Ventilation Capacity Requirements

	Bathrooms – Utility Rooms		Kitchens	In-line fan
Intermittently operating	50 cfm min		100 cfm min	
Continuous operation	20 cfm min		25 cfm min	
Minimum Efficacy (cfm/watt)	1.4 cfm/watt if <90cfm	2.8 cfm/watt if >90cfm	2.8 cfm/watt	2.8 cfm/watt

Energy Efficiency Credits
Each dwelling unit shall comply with sufficient options from WSEC Table R406.2 so as to achieve the following minimum number of credits as described on the reverse side of this page.

- ☐ **Small Dwelling Unit: 1.5 credits** (Dwelling units less than 1500 SF in conditioned floor area with less than 300 square feet of fenestration area. Additions to existing building that are greater than 500 SF of heated floor area, but less than 1500 SF. **TOTAL SQUARE FEET OF FENESTRATION:** ________ (doors, windows, skylights)
- ☑ **Medium Dwelling Unit: 3.5 credits** (All dwelling units not included in #1 or #3. Exception: Dwelling units serving R-2 occupancies shall require 2.5 credits.
- ☐ **Large Dwelling Unit: 4.5 credits** (Dwelling Units exceeding 5000 SF of conditioned floor area.
- ☐ **Additions less than 500 SF: 0.5 credits**

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2015 WSCE – Table R406.2 – circle the options that you will be using for this project

OPTION	DESCRIPTION	CREDIT(S)
1a ☑	**EFFICIENT BUILDING ENVELOPE 1a:** 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 UA by 5%.	0.5
1b ☐	**EFFICIENT BUILDING ENVELOPE 1b:** Vertical fenestration U = 0.25; Wall R-21 plus R-4 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** Compliance based on Section R402.1.4: Reduce the Total UA by 15%.	1.0
1c ☐	**EFFICIENT BUILDING ENVELOPE 1c:** 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** Compliance based on Section R402.1.4: Reduce the Total UA by 30%.	2.0
1d ☐	**EFFICIENT BUILDING ENVELOPE 1d:** Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.24. Projects using this option may not use Option 1a, 1b or 1c.	0.5
2a ☐	**AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2a:** Compliance based on R402.4.1.2: Reduce the tested air leakage to 3.0 air changes per hour maximum **AND** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* shall be met with a high efficiency fan (maximum 0.35 watts/cfm), not interlocked with the furnace fan. 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 shall specify the maximum tested building air leakage and shall show the qualifying ventilation system.*	0.5
2b ☐	**AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2b:** Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 2.0 air changes per hour maximum **AND** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.70. *To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.*	1.0
2c ☐	**AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2c:** Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 1.5 air changes per hour maximum. **AND** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.85. *To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.*	1.5
3a ☑	**HIGH EFFICIENCY HVAC EQUIPMENT 3a:** Gas, propane or oil-fired furnace with minimum AFUE of 94%, or Gas, propane or oiled-fired boiler with minimum AFUE of 92%. Projects may only include credit from one space heating option, 3a, 3b, 3c or 3d. When a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. *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.*	1.0
3b ☐	**HIGH EFFICIENCY HVAC EQUIPMENT 3b:** Air-source heat pump with minimum HSPF of 9.0. Projects may only include credit from one space heating option, 3a, 3b, 3c or 3d. When a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. *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.*	1.0
3c ☐	**HIGH EFFICIENCY HVAC EQUIPMENT 3c:** 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. Projects may only include credit from one space heating option, 3a, 3b, 3c or 3d. When a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. *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.*	1.5
3d ☐	**HIGH EFFICIENCY HVAC EQUIPMENT 3d:** Ductless Split System Heat Pumps, Zonal Control: In homes where the primary space heating system is zonal electric heating, a ductless heat pump system shall be installed and provide heating to the largest zone of the housing unit. Projects may only include credit from one space heating option, 3a, 3b, 3c or 3d. When a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. *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.*	1.0

2015 WSCE – Table R406.2 - Continued

OPTION	DESCRIPTION	CREDIT(S)
4 ☑	**HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM:** All heating and cooling system components installed inside the conditioned space. This includes all equipment and distribution system components such as forced air ducts, hydronic piping, hydronic floor heating loop, convectors and radiators. All combustion equipment shall be direct vent or sealed combustion. For forced air ducts: A maximum of 10 linear feet of return ducts and 5 linear feet of supply ducts may be located outside the conditioned space. 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. Flex duct connections must be made with nylon straps and installed using a plastic strapping tensioning tool. Ducts located outside the conditioned space must be insulated to a minimum of R-8. 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
5a ☐	**EFFICIENT WATER HEATING 5a:** All showerhead and kitchen sink faucets installed in the house shall be rated at 1.75 GPM or less. All other lavatory faucets shall be rated at 1.0 GPM or less. Plumbing Fixtures Flow Ratings. Low flow plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following requirements: 1. Residential bathroom lavatory sink faucets: Maximum flow rate - 3.8 L/min (1.0 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1. 2. Residential kitchen faucets: Maximum flow rate - 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1. 3. Residential showerheads: Maximum flow rate - 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1. *To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum flow rates for all showerheads, kitchen sink faucets, and other lavatory faucets.*	0.5
5b ☑	**EFFICIENT WATER HEATING 5b:** Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF of 0.74 **OR** Water heater heated by ground source heat pump meeting the requirements of Option 3c. **OR** For R-2 occupancy, a central heat pump water heater with an EF greater than 2.0 that would supply DHW to all the units through a ce[ntral] minimum pipe insulation. *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.*	1.0
5c ☐	**EFFICIENT WATER HEATING 5c:** Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF 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** Electric heat pump water heater with a minimum EF of 2.0 and meeting the standards of NEEA's Northern Climate Specifications for Heat Pump Water Heaters *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 the minimum energy savings.*	1.5
5d ☐	**EFFICIENT WATER HEATING 5d:** A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all the showers, and has a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 52% if installed for unequal flow. Such units shall be rated in accordance CSA B55.1 and be so labeled. *To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specified the drain water heat recovery units and the plumbing layout needed to install it and labels or other documentation shall be provided that demonstrates that the unit complies with the standard.*	0.5
6 ☐	**RENEWABLE ELECTRIC ENERGY:** For each 1200 kWh of electrical generation per each housing unit provided annually by on-site wind or solar equipment a 0.5 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. ***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.*	0.5

Fenestration Schedule

Please check the applicable boxes and complete the information below

☑ **Weighted Average:** Using the Prescriptive Method, all glazing must have an "area weighted average" U-Factor of 0.30. This means that some windows can have a higher U-factor than 0.30 and some can have a lower U-factor than 0.30, as long as the area weighted average is U-0.30 or lower you may need to complete this form to document glazing compliance when applying for your building permit.

☐ **Dwelling units less than 1500 SF in conditioned floor area:** If using the option for new dwellings less than 1500 SF of conditioned floor area with no more than 300 SF fenestration

Electronic version available at: http://www.energy.wsu.edu/Documents/2015%20Glazing%20Schedule.xlsx

Exemptions	Ref	Glazing U-Factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Glazing Area	Glazing UA
Swing Door (24 SF Max)									
Glazed Fenestration (15 SF Max)									

SEE SHEET A600 FOR WINDOW/DOOR GLAZING

VERTICAL FENESTRATION (WINDOWS AND GLAZED DOORS)

Plan ID	Component Description	Ref	Glazing U-Factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Glazing Area	Glazing UA

Sum of Vertical Fenestration Area and UA: 1,569 | 439.32
Area Weighted U = UA/Area: .28

OVERHEAD GLAZING (SKYLIGHT)

Plan ID	Component Description	Ref	Glazing U-Factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Glazing Area	Glazing UA

Sum of Overhead Glazing Area and UA: 21 | 10.5
Area Weighted U = UA/Area: .50

Total Sums of Area and UA for Vertical Fenestration and Overhead Glazing Area and UA: 1,590 | 449.82

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2015 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This calculator will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.
The glazing (window) and door portion of this calculator assumes the installed glazing and door products have an area weighted average U-factor of 0.30. The incorporated insulation requirements are the minimum prescriptive amounts specified by the 2015 WSEC.
Please fill out all of the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please call the WSU Energy Extension Program at (360) 956-2042 for assistance.

Project Information	*Contact Information*
YUAN RESIDENCE	BRANDT DESIGN GROUP
3611 WEST MERCER WAY	LISA LINDBURG
MERCER ISLAND, WA 98040	lisa@brandtdesigninc.com

Heating System Type: ◉ All Other Systems ○ Heat Pump

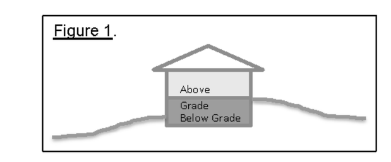
To see detailed instructions for each section, place your cursor on the word "Instructions".

Design Temperature — Instructions — Mercer Island — Design Temperature Difference (ΔT): 45 (ΔT = Indoor (70 degrees) - Outdoor Design Temp)

Area of Building
Conditioned Floor Area — Instructions — Conditioned Floor Area (sq ft): 3,929
Average Ceiling Height — Instructions — Average Ceiling Height (ft): 11.8 — Conditioned Volume: 46,166

Item	Selection	U-Factor / F-Factor	X	Area / Length	=	UA
Glazing and Doors		0.28		1,569		439.32
Skylights		0.50		21		10.50
Insulation: Attic	Select R-Value	No selection				---
Single Rafter or Joist Vaulted Ceilings	R-38 Vented	0.027		2,102		56.75
Above Grade Walls (see Figure 1)	R-21 Intermediate	0.056		3,313		185.51
Floors	No Floors above unconditioned spaces.	---				
Below Grade Walls (see Figure 1)	R-10 Continuous Exterior	0.064		862		55.17
Slab Below Grade (see Figure 1)	R-5 Thermal Break at slab edge	0.570		114		64.70
Slab on Grade (see Figure 1)	R-10 Fully Insulated	0.360		190		68.22

Location of Ducts — Instructions — No Ducts — Duct Leakage Coefficient: 1.00



Sum of UA	880.17	
Envelope Heat Load (Sum of UA X ΔT)	42,201	Btu / Hour
Air Leakage Heat Load (Volume X 0.6 X ΔT X .018)	22,437	Btu / Hour
Building Design Heat Load (Air Leakage + Envelope Heat Loss)	64,638	Btu / Hour
Building and Duct Heat Load (Ducts in unconditioned space: Sum of Building Heat Loss X 1.10; Ducts in conditioned space: Sum of Building Heat Loss X 1)	64,638	Btu / Hour
Maximum Heat Equipment Output (Building and Duct Heat Loss X 1.40 for Forced Air Furnace; Building and Duct Heat Loss X 1.25 for Heat Pump)	90,493	Btu / Hour

(07/01/13)

Duct Leakage Affidavit (New Construction)

Permit #: ______________
House address or lot number: ______________
City: ______________ Zip: ______________
Cond. Floor Area (ft²): ______________ Source (circle one): Plans Estimated Measured

☐ Duct tightness testing is not required. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope. Ducts located in crawl spaces do not qualify for this exception.

Air Handler in conditioned space? ☐ yes ☐ no Air Handler present during test? ☐ yes ☐ no

Circle Test Method: Leakage to Outside Total Leakage

Maximum duct leakage:
Post Construction, total duct leakage: (floor area x .04) = _______CFM@25 Pa
Post Construction, leakage to outdoors: (floor area x .04) = ________CFM@25 Pa
Rough-In, total duct leakage with air handler installed: (floor area x .04) = _______CFM@25 Pa
Rough-In, total duct leakage with air handler not installed: (floor area x .03) = _______CFM@25 Pa

Test Result: ____________CFM@25Pa

Ring (circle one if applicable): ☐ Open ☐ 1 ☐ 2 ☐ 3

Duct Tester Location: ______________ Pressure Tap Location: ______________

I certify that these duct leakage rates are accurate and determined using standard duct testing protocol.

Company Name: ______________ Technician: ______________
Technician Signature: ______________
Date: ______________
Phone Number: ______________

Energy Code Support — WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

Duct Leakage Test Results (Existing Construction)

Permit #: ______________
House address or lot number: ______________
City: ______________ Zip: ______________
Cond. Floor Area (ft²): ______________

☐ Duct tightness testing is not required for this residence per exceptions listed at the end of this document

Test Result: ____________CFM@25Pa

Ring (circle one): ☐ Open ☐ 1 ☐ 2 ☐ 3

Duct Tester Location: ______________
Pressure Tap Location: ______________

I certify that these duct leakage rates are accurate and determined using standard duct testing protocol

Company Name: ______________
Duct Testing Technician: ______________
Technician Signature: ______________ Date: ______________
Phone Number: ______________

Washington State Energy Code Reference:

R101.4.3.1 Mechanical Systems: When a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-conditioning equipment shall be tested as specified in RS-33. The test results shall be provided to the building official and the homeowner.

Exceptions:
1. Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in RS-33.
2. Ducts with less than 40 linear feet in unconditioned spaces.
3. Existing duct systems constructed, insulated or sealed with asbestos.
4. Additions of less than 750 square feet.

Energy Code Support — WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

Duct Testing Standard (RS-33)
For New and Existing Construction

New Construction

Based on the protocol for "Total Leakage Testing," or "Leakage Testing to Outdoors" duct leakage in new construction shall not exceed 0.04 CFM_{25} x floor area (in square feet) served by the system for leakage to outdoors or for total leakage when tested post construction. When testing at rough-in, targets should not exceed 0.04 CFM_{25} x floor area (in square feet) for total leakage or 0.03 CFM_{25} x floor area (in square feet) if the air handler is not installed.

Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope. Ducts located in crawl spaces do not qualify for this exception.

Existing Construction

When a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-conditioning equipment shall be tested. The test results shall be provided to the building official and the homeowner.

Exception 1: Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in RS-33.

Exception 2: Ducts with less than 40 linear feet in unconditioned spaces.

Exception 3: Existing duct systems constructed, insulated or sealed with asbestos.

Exception 4: Additions of less than 750 square feet of conditioned floor area.

In addition, the following requirements must be met:
1. All testing must be done by a qualified technician. The minimum qualification requirement is documented attendance at a duct testing training course approved by the building official. The following existing training programs are recognized as equivalent to this requirement:
   a. Northwest ENERGY STAR Homes Program, Performance Testing training for new construction.
   b. Performance Tested Comfort Systems (PTCS) training for existing homes and new construction.
2. Duct systems must be designed, sized, and installed using recognized industry standards and International Residential Code (IRC) requirements, so that calculated heating and/or cooling loads are delivered to each zone.

Energy Code Support — WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

Total Duct Leakage Test

Testing Procedure Application:
This test is appropriate in new construction when ducts are to be tested at the rough-in stage before the house envelope is intact and can also be done post construction. The test measures the total collected leaks in the system at an induced pressure of 25 Pascals (PA). Compared to the leakage to exterior test, the total leakage test is simpler, but does not discriminate between leakage to inside and outside the heated space; as such, this test is not recommended for homes with complete house envelopes and HVAC systems. In such cases, the leakage to outside test is recommended.

Standard:
1) For certification, the measured duct leakage must not exceed ***0.04 CFM_{25} x floor area*** (in square feet) served by the system at rough-in **when the air handler is installed.**

2) The measured duct leakage at rough-in must not exceed ***0.03 CFM_{25} x floor area*** (in square feet) served by the system **when the air handler is not installed.**

3) If testing post construction, the total leakage must not exceed ***0.04 CFM_{25} x floor area*** (in square feet) served by the system.

Certificate (Electronic version available at: http://www.energy.wsu.edu/Documents/WSEC-2012-Avery-6878_4_Per_Sheet.pdf)

A permanent certificate shall be posted within three feet of the electrical distribution panel. The certificate shall be completed by the builder or registered design professional and include all of the information as follows:

2012 WSEC Residential Energy Compliance Certificate

Property Address: ______________
Conditioned Floor Area ________ **Date:** / /
Builder or registered design professional : ______________
Signature: ______________

R-Values
Ceiling: Vaulted R-____ **Floors:** Over unconditioned space R-____
Attic R-____ Slab on grade floor R-____
Walls: Above grade R-____ **Doors:** ____________ R-____
Below, int. R-____ ____________ R-____
Below, ext. R-____ ____________ R-____

U-Factors and SHGC
NRFC rating (or) Windows U-____ SHGC- N/A
Default rating (Appendix A WSEC 2012) Skylights U-____ SHGC- N/A

Table 406.2 Option(s) ________ ***Total 406.2 Credits*** ________

Heating, Cooling & Domestic Hot Water

System	Type	Efficiency
Heating		
Cooling		
DHW		

Duct & Building Air Leakage
All ducts & HVAC in conditioned space (yes / no) Insulation R-____
Air handler present (yes / no)
Test Target ________CFM@25Pa Test Result ________CFM@25Pa
Building air leakage target: ACH_{50} < 5.0 - Tested leakage: ACH_{50} = ________

Onsite Renewable Energy Electric Power System
System type: ____________ Rated annual generation ____________ **Kwh**

WHOLE HOUSE VENTILATION CHART

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 - 1	2 - 3	4 - 5	6 - 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 - 3,000	45	60	75	90	105
3,001 - 4,500	60	75	90	105	120
4,501 - 6,000	75	90	105	120	135
6,001 - 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor[a]	4	3	2	1.5	1.3	1.0

REQUIRED VENTILATION

PROPOSED CONDITIONED SF = 3,929
NUMBER OF BEDROOMS = 4
AIRFLOW IN CFM REQUIRED FOR CONTINUOUS VENTILATION = 90 CFM
RUN TIME PERCENTAGE IN EACH 4 HOUR SEGMENT = 33%
VENTILATION RATE FACTOR = 3

CALCULATION: 90 CFM x 3 = **270 CFM**

OPTION M1507.3.3(2) - INTERMITTENT WHOLE HOUSE VENTILATION.

PER IRC TABLES M1507.3.3(1) + M1507.3.3(2) A 33% RUN-TIME IN EACH 4-HOUR SEGMENT REQUIRES A 450 CFM VENTILATION RATE TO BE PROVIDED FOR THE REQUIRED WHOLE-HOUSE VENTILATION. THIS VENTILATION REQUIREMENT WILL BE HANDLED BY EXHUAST FANS & FRESH AIR INLETS. THIS SYSTEM WILL BE ON 24 HOUR AUTOMATIC TIMER TO ALLOW IT TO CYCLE AS REQUIRED.
(3) 50 CFM FANS AND (2) 75 CFM FANS TO RUN AT 33% TIME.

PER M403.4.5.1 OUTDOOR AIR SHALL BE DISTRIBUTED TO ALL HABITABLE SPACES. DOORS SHALL BE UNDERCUT TO A MINIMUM 1/2" ABOVE FINISHED FLOOR TO ALLOW AIRFLOW.

Brandt
Design Group
66Bell Street
Unit 1
Seattle, WA
98121
206.239.0850
brandtdesigninc.com

8843 REGISTERED ARCHITECT STATE OF WASHINGTON

YUAN RESIDENCE
3611 W MERCER WAY,
MERCER ISLAND, WA 98040

PERMIT DOCUMENTS

DATE: 7/18/19
SHEET SIZE: D (24X36)

REVISIONS
NO: DATE:

DRAWN BY: NLD/LL/SE
CHECKED BY: LL

WA STATE ENERGY CODE / VENTILATION CALC

SCALE: 1" = 1'-0"

A001

DEDICATED APPROVAL STAMP SPACE

N
W E
S

GRAPHIC SCALE
5 0 5 10 20
1INCH = 10 FT.

LEGEND

	FOUND MONUMENT AS DESCRIBED	—OHP—	OVERHEAD POWER
	FOUND REBAR AS DESCRIBED	—OHU—	OVERHEAD UTILITIES
	TACK IN LEAD FOUND	—X—	CHAINLINK FENCE
	SET 5/8" X 24" IRON ROD W/1" YELLOW PLASTIC CAP	—□—	WOOD FENCE
	POWER METER		CONCRETE WALL
	UTILITY POLE		ROCKERY
	GAS METER		ASPHALT SURFACE
	YARD DRAIN		CONCRETE SURFACE
	CATCH BASIN		GRAVEL SURFACE
	WATER VALVE	CH	CHERRY
	FIRE HYDRANT	DS	DECIDUOUS
	WATER METER	MP	MAPLE
	GUYWIRE	BI	BIRCH
—SS—	APPROXIMATE LOCATION SANITARY SEWER LINE	LA	LAUREL
—SD—	APPROXIMATE LOCATION STORM DRAIN LINE		* INDICATES MULTI-TRUNK

LEGAL DESCRIPTION

THE NORTHWESTERLY 100 FEET OF THE SOUTHEASTERLY 1,000 FEET OF BLOCK "A", AS MEASURED ALONG THE NORTHEASTERLY LINE THEREOF, REPLAT OF ISLAND PARK, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 13 OF PLATS, PAGE 58, RECORDS OF KING COUNTY, WASHINGTON;
TOGETHER WITH SECOND CLASS SHORELANDS ADJOINING;
EXCEPT SAID PORTION OF SAID SHORELANDS, IF ANY, AS MAY FALL WITHIN LAKE VIEW AVENUE AS EXTENDED BY THE COMMISSIONER OF PUBLIC LANDS

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

RECORD OF SURVEY BY DAVID EVANS AND ASSOCIATES FOR BOYD AND ANN GIVAN AS RECORDED UNDER RECORDING NO. 199109189001, RECORDS OF KING COUNTY, WASHINGTON. ACCEPTED A BEARING OF S42°09'00E BETWEEN REBAR AND CAPS FOUND.

PROJECT INFORMATION

SURVEYOR:	SITE SURVEYING, INC. 21923 NE 11TH ST SAMMAMISH, WA 98074 PHONE: 425.298.4412
PROPERTY OWNER:	RYAN YUAN 3611 W MERCER WAY MERCER ISLAND, WA 98040
TAX PARCEL NUMBER:	362350-0265
PROJECT ADDRESS:	3611 W MERCER WAY MERCER ISLAND, WA 98040
ZONING:	R-15
JURISDICTION:	CITY OF MERCER ISLAND
PARCEL ACREAGE:	17,535 S.F. (± 0.403 ACRES) AS SURVEYED ABOVE OHWM

GENERAL NOTES

1. THIS SURVEY WAS COMPLETED WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST ON THIS PROPERTY THAT ARE NOT SHOWN HEREON.
2. INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND NIKON NIVO 5.C TOTAL STATION. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.
3. THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN SEPTEMBER 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
4. UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.
5. ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

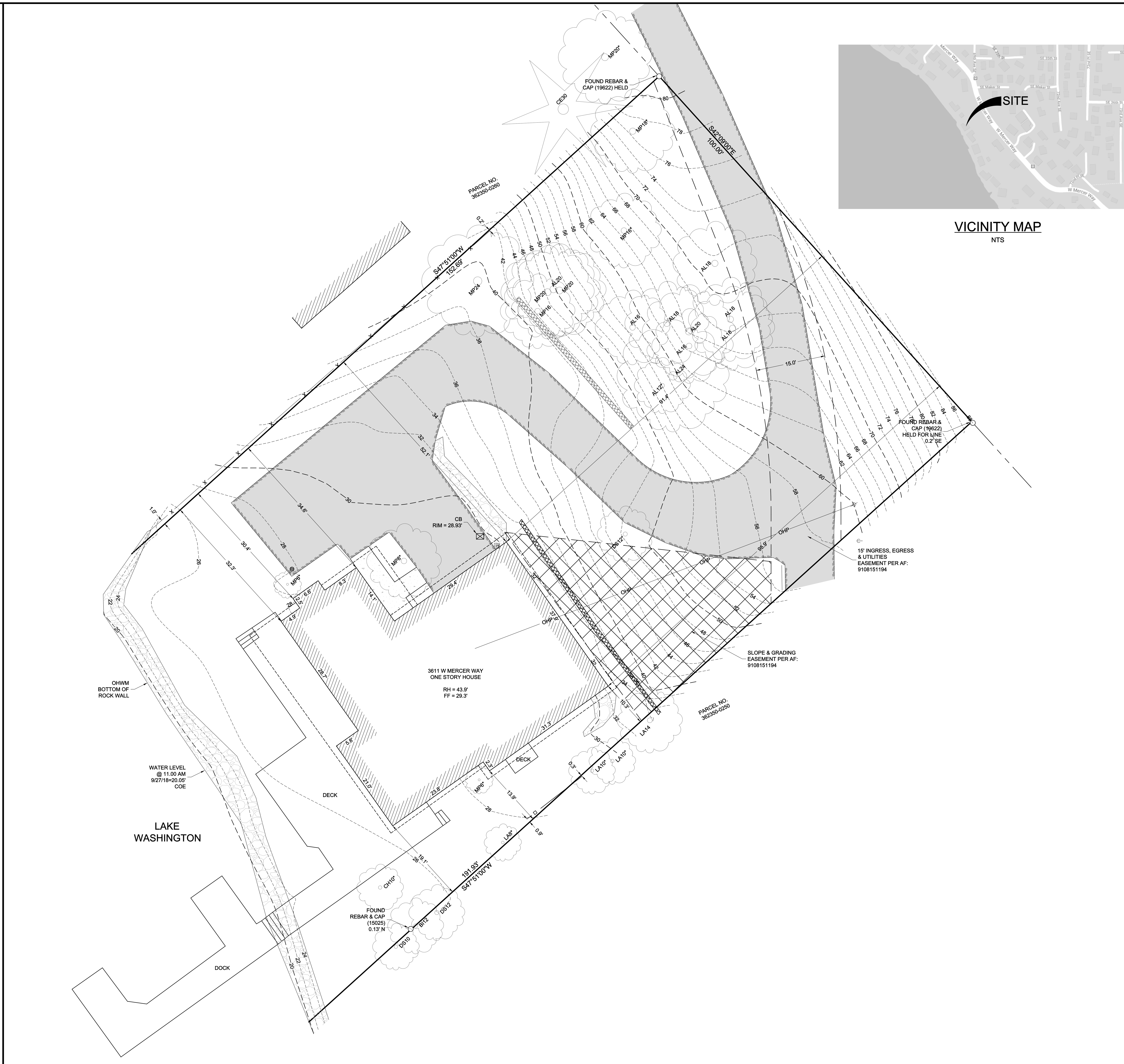
VERTICAL DATUM & CONTOUR INTERVAL

DATUM

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM INFORMATION PROVIDED BY US CORPS OF ENGINEERS AND ARE ON USCE CHITTENDEN LOCKS DATUM.

WATER LEVEL = 20.050 1131 AM SEPTEMBER 9, 2018

2.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO 1/2 THE CONTOUR INTERVAL OR PLUS / MINUS 1.0' FOR THIS PROJECT.



VICINITY MAP
NTS

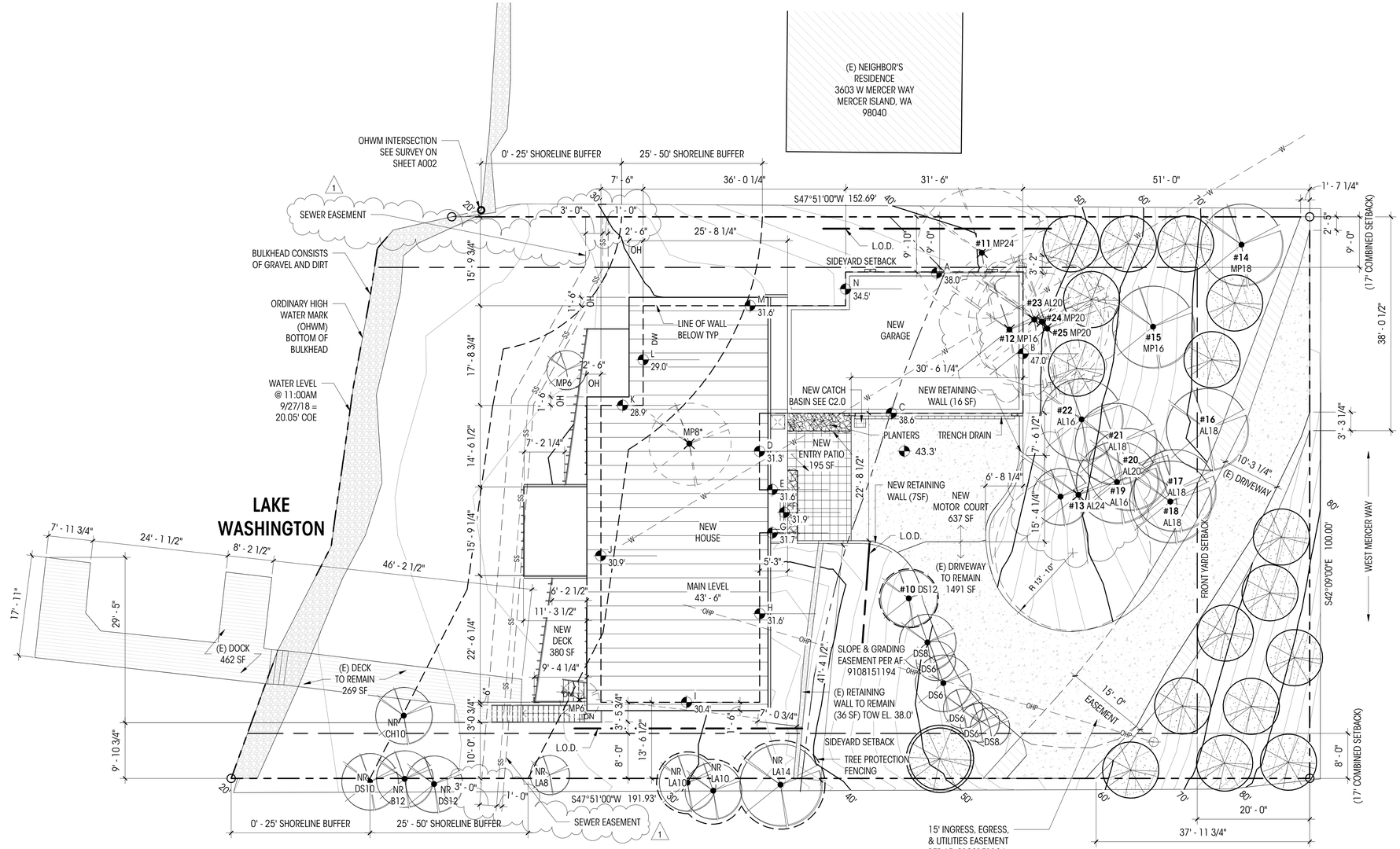
SW 1/4, SW 1/4, SEC 12, TWP 24N, RNG 4E, W.M.

Site Surveying, Inc.
21923 NE 11th Street Sammamish, WA 98074
Phone: 425.298.4412
www.sitesurveymapping.com

DATE	REVISION	DRN

TOPOGRAPHIC SURVEY
RYAN YUAN
3611 W MERCER WAY
MERCER ISLAND, WA 98040

PROJECT NO.	18-444
DRAWN BY:	MTS
CHECKED BY:	TNW
DATE:	5/9/19
SHEET 1	OF 1



1 SITE PLAN
1" = 10'-0"

1 UTILITIES ADDED TO SITE PLAN

NOTE: ALL DIMENSIONS ON SITE PLAN TO FACE OF FINISHED WALL, CONCRETE, OR DECK.

AVERAGE BUILDING ELEVATION

WALL	MIDPOINT ELEV. (FT.)	WALL LENGTH (FT.)	PRODUCT
A	38.0	31.5	1197.0
B	47.0	25.1	1179.7
C	38.6	46.8	1806.5
D	31.3	13.6	425.7
E	31.7	4.6	145.8
F	31.9	7.8	248.8
G	31.7	4.6	145.8
H	31.6	30.1	951.2
I	30.4	28.2	857.3
J	30.9	52.1	1609.9
K	28.9	7.5	216.7
L	29.0	18.4	533.6
M	31.6	36.0	1137.6
N	34.5	6.0	207.0
TOTALS		312.3	10,662.6

AVERAGE GRADE =
TOTAL PRODUCTS / TOTAL WALL LENGTHS
TOTAL PRODUCTS 10,662.6'
TOTAL WALL LENGTHS 312.3'
AVERAGE GRADE 10,662.6/312.3 = **34.1'**
MAX HEIGHT ALLOWABLE 30' ABOVE AVERAGE GRADE
MAX HEIGHT ELEVATION/MAX BUILDING HEIGHT **64.1'**
PROPOSED BUILDING HEIGHT: **59.83'**

SITE PLAN LEGEND

- PROPERTY LINE
- SETBACK LINE
- (E) ROCKERY / BULKHEAD TO REMAIN
- INGRESS / EGRESS / UTILITIES EASEMENT
- LINE OF WALL BELOW
- PAVING/HARDSCAPE/DECK
- LINE OF DISTURBANCE
- SANITARY SEWER LINE
- WATER LINE
- OVERHEAD POWER LINE

1

- (E) TREE TO REMAIN
- (E) TREE TO BE REMOVED
- (E) > 24" TREE TO BE REMOVED
- REPLACEMENT TREE WESTERN RED CEDAR
- REPLACEMENT TREE SHORE PINE

GENERAL INFORMATION

PROJECT ADDRESS 3611 W MERCER WAY, MERCER ISLAND, WA 98040

PROJECT NUMBER TBD

ASSESSOR'S PARCEL # 362350-0265

LEGAL DESCRIPTION
THE NORTHWESTERLY 100 FT OF SOUTHEASTERLY 1000 FT OF BLOCK "A", AS MEASURED ALONG THE NORTHEASTERLY LINE THEREOF, REPLAT OF ISLAND PARK, ACCORDING TO THE PLAT RECORDED IN VOLUME 13 OF PLATS, PAGE 58, RECORDS OF KING COUNTY, WA.

PROJECT DESCRIPTION
DEMOLITION OF (E) 2,241 SF HOUSE W/ ATTACHED GARAGE AND PORTION OF (E) DRIVEWAY, CONSTRUCTION OF NEW 3988 SINGLE FAMILY DWELLING + 788 SF ATTACHED GARAGE; CONSTRUCTION OF NEW MOTOR COURT.

ZONE R-15
BUILDING TYPE SINGLE FAMILY RESIDENCE

PROJECT DATA

ZONING: R-15
EXISTING LOT AREA SUMMARY:

GROSS LOT AREA:	17,535 SF
ACCESS EASEMENT:	1446 SF
ACCESS EASEMENT LESS DRIVEWAY: 1446 - 1228 =	218 SF
NET LOT AREA:	17,317 SF
LOT SLOPE:	53' / 136.3' = **38.9%**

30% ALLOWABLE LOT COVERAGE: 17,317 SF X 0.30 = **5,195 SF**

EXISTING LOT COVERAGE:

(E) HOUSE FOOTPRINT AND OVERHANGS	2,758 SF
(E) DRIVEWAY	3,686 SF
TOTAL EXISTING LOT COVERAGE:	**6,444 SF = 37.2%**
TOTAL EXISTING LANDSCAPING:	**10,920 SF = 62.8%**
(INCLUDES EXIST 1936 SF (11.1 %) HARDSCAPE)	

1

PROPOSED LOT COVERAGE:

(E) DRIVEWAY TO REMAIN	1,491 SF
NEW DRIVEWAY	626 SF
HOUSE FOOTPRINT + OVERHANGS	3555 SF
TOTAL PROPOSED LOT COVERAGE:	**5,672 SF = 32.7%**
TOTAL PROPOSED LANDSCAPING:	**11,592 SF = 67.3%**
(INCLUDES 1462 SF (8.4%) HARDSCAPE)	

LOT COVERAGE 2:1 TRADE OFF CALCULATION (PER MICC 19.050 F3 biii)**:**

EXISTING LOT COVERAGE =	6,444 SF
LOT COVERAGE REMOVED =	1,526 SF
2:1 LOT COVERAGE CREDIT: 1526/2 =	763 SF
ALLOWABLE LOT COVERAGE: (6,444-1,526)+763 =	**5,681 SF**

ALLOWABLE HARDSCAPE: 17,317 X .9 = **1558.5 SF**

PROPOSED HARDSCAPE:

(E) HARDSCAPE TO REMAIN:	
(E) RETAINING WALLS:	36 SF
(E) DECK:	269 SF
(E) BULKHEAD LANDWARD OF OHWM:	559 SF
NEW HARDSCAPE:	
NEW PATIO/WALKWAYS:	195 SF
NEW DECK:	380 SF
NEW RETAINING WALLS:	23 SF
TOTAL PROPOSED HARDSCAPE:	**1462 SF (8.4%)**

SHORELINE BUFFERS:

0' - 25' SHORELINE BUFFER AREA:	2895 SF
ALLOWABLE IMPERVIOUS AREA: 2895 SF X .10 =	289.5 SF
PROPOSED IMPERVIOUS AREA:	
EXISTING BULKHEAD:	559 SF
NEW IMPERVIOUS:	0 SF
TOTAL PROPOSED @ 0-25' BUFFER:	**559 SF (19.3%)**
25' - 50' SHORELINE BUFFER AREA:	2820 SF
ALLOWABLE IMPERVIOUS AREA: 2820 X .30 =	846 SF
PROPOSED IMPERVIOUS AREA:	
EXISTING:	0 SF
HOUSE AND OVERHANG:	802 SF
TOTAL PROPOSED @ 25'-50' BUFFER:	**802 SF (28.4%)**

R-15 ZONING MAX GFA: 12,000 SF OR 40% NET LOT AREA MAX

ALLOWABLE GFA: 17535 x .40 = **7,014 SF (40%)**

GROSS FLOOR AREA CALCULATION:
EXISTING GFA : **2241 SF (12.9%)**

MAIN FLOOR < 12' CEILING HEIGHT 556 X 1 =	556 SF
MAIN FLOOR > 12' CEILING HEIGHT 1546 X 1.5 =	2319 SF
GARAGE:	788 SF
COVERED DECK @ MAIN LEVEL:	273 SF
GROSS LOWER FLOOR AREA:	1,886 SF
LOWER FLOOR < 12' CEILING HEIGHT 1,110 X 1 =	1,100 SF
LOWER FLOOR > 12' CEILING HEIGHT 776 X 1.5 =	1,164 SF
LOWER FLOOR BELOW GRADE NOT INCLUDED	(224 SF)
TOTAL PROPOSED GFA:	**5,976 SF (34.5%)**

TOP OF PROPOSED ROOF: **59'-10"**
DISTANCE TO NEAREST FIREHYDRANT: **477'**

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206.239.0850
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8843 REGISTERED ARCHITECT STATE OF WASHINGTON

YUAN RESIDENCE

3611 W MERCER WAY, MERCER ISLAND, WA 98040

PERMIT DOCUMENTS

DATE: 7/18/19
SHEET SIZE: D (24X36)

REVISIONS

NO:	DATE:
Revision 1	7/18/19

DRAWN BY: NLD/LL/SE
CHECKED BY: LL

SITE PLAN

SCALE: 1" = 10' -0"

A100

DEDICATED APPROVAL STAMP SPACE

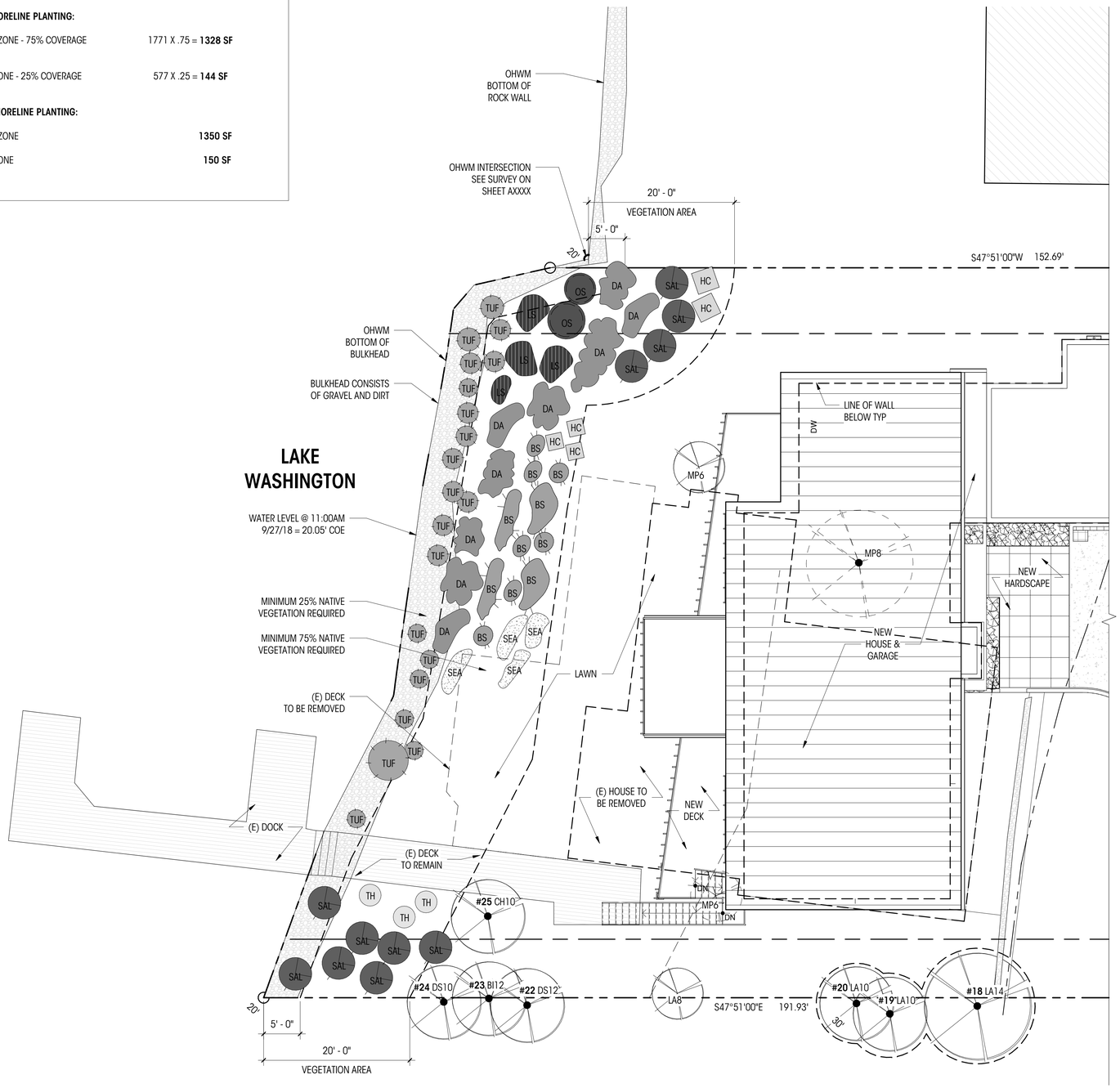
SHORELINE RESTORATION DATA

REQUIRED SHORELINE PLANTING:

20' PLANTING ZONE - 75% COVERAGE 1771 SF	1771 X .75 = **1328 SF**
5' PLANTING ZONE - 25% COVERAGE 577 SF	577 X .25 = **144 SF**

PROPOSED SHORELINE PLANTING:

20' PLANTING ZONE	**1350 SF**
5' PLANTING ZONE	**150 SF**



1 VEGITATION PLAN
1/8" = 1'-0"

PROJECT NORTH

NORTH

SHORELINE RESTORATION PLAN LEGEND

VEGETATION	SPECIES COMMON NAME	SPECIES LATIN NAME
TUF	TUFTED HAIRGRASS	*Deschampsia cespitosa*
OS	OCEANSPRAY	*Holodiscus discolor*
DG	DUNEGRASS	*Elymus mollis*
LS	LYNGBYE'S SEDGE	*Carex lyngbyei*
SEA	SEA-WATCH	*Angelica lucida*
BS	BEACH STRAWBERRY	*Fragaria chiloensis*
HC	HENDERSON'S CHECKER MALLOW	*Sidalcea hendersonii*
DA	DOUGLAS ASTER	*Aster subspicatus*
TH	THRIFT; SEA PINK	*Armeria maritima*
SAL	SALAL	
BLS	BROAD-LEAVED STONECROP	*Sedum spathulifolium*
SB	SNOWBERRY	*Symphoricarpos albus*

ANNOTATION

- PROPERTY LINE
- SETBACK LINE
- 2' CONTOUR LINE
- ROCKERY / BULKHEAD

NOTES

*DEVELOPMENT PROPOSALS FOR A NEW SINGLE-FAMILY HOME SHALL REMOVE JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM) AND REGULATED CLASS A, REGULATED CLASS B, AND REGULATED CLASS C WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED, FROM REQUIRED LANDSCAPING AREAS ESTABLISHED PURSUANT TO SUBSECTION 19.02.020(F)(3)(α). NEW LANDSCAPING ASSOCIATED WITH NEW SINGLE-FAMILY HOME SHALL NOT INCORPORATE ANY WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED. PROVIDED, THAT REMOVAL SHALL NOT BE REQUIRED IF THE REMOVAL WILL RESULT IN INCREASED SLOPE INSTABILITY OR RISK OF LANDSLIDE OR EROSION.

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NO: DATE:

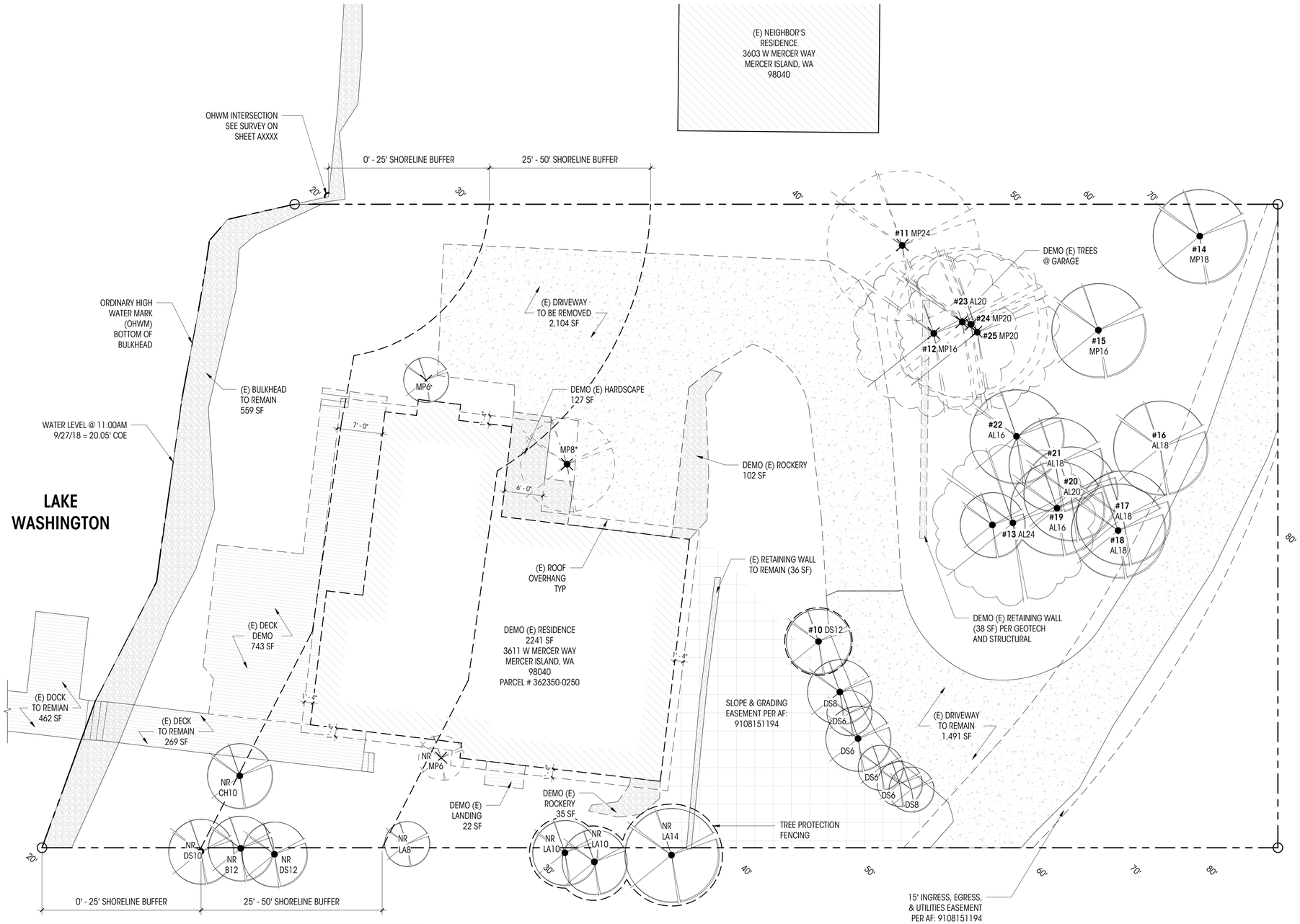
DRAWN BY: NLD/LI/SE
CHECKED BY: LL

SHORELINE
VEGETATION PLAN

SCALE: As indicated

A101

DEDICATED
APPROVAL
STAMP SPACE



1 DEMO SITE PLAN
1/8" = 1'-0"

PROJECT NORTH

NORTH

SITE DEMOLITION LEGEND

- PROPERTY LINE
- SETBACK LINE
- BUILDING TO BE REMOVED
- PAVING / DECK TO BE REMOVED
- (E) ROCKERY TO BE REMOVED
- (E) ROCKERY TO REMAIN
- NR — NON-REGULATED
- (E) TREE TO REMAIN
- (E) TREE TO BE REMOVED
- (E) > 24" TREE TO BE REMOVED

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SHEET SIZE: D (24X36)

REVISIONS
NO: DATE:

DRAWN BY: NLD/LL/SE
CHECKED BY: LL

DEMO SITE PLAN

SCALE: As indicated

D100

DEDICATED APPROVAL STAMP SPACE

EROSION CONTROL LEGEND

FILTER FABRIC FENCE (SILT FENCE)	SF	
STABILIZED CONSTRUCTION ENTRANCE	CE	
CATCH BASIN INLET PROTECTION	IP	
INTERCEPTOR SWALE SEE COR DWG 504, TYPE A TEMPORARY SWALE	IS	
TREE PROTECTION FENCING	TP	
STOCKPILE	ST	
STRAW WATTLES	SW	USE AS NEEDED
PLASTIC COVERING	PC	COVER EXPOSED AREAS WITHIN MERCER ISLAND TIME LIMIT
COMPOST SOCK	CS	SEDIMENT CONTROL OPTION RECOMMENDED IN LIEU OF SILT FENCI
COMPOST BERM	CB	SEDIMENT CONTROL OPTION RECOMMENDED IN LIEU OF SILT FENCI

EROSION CONTROL NOTES

SHEET C1.2

EROSION CONTROL DETAILS

SHEET C1.2

SOIL AMENDMENT REQUIRED

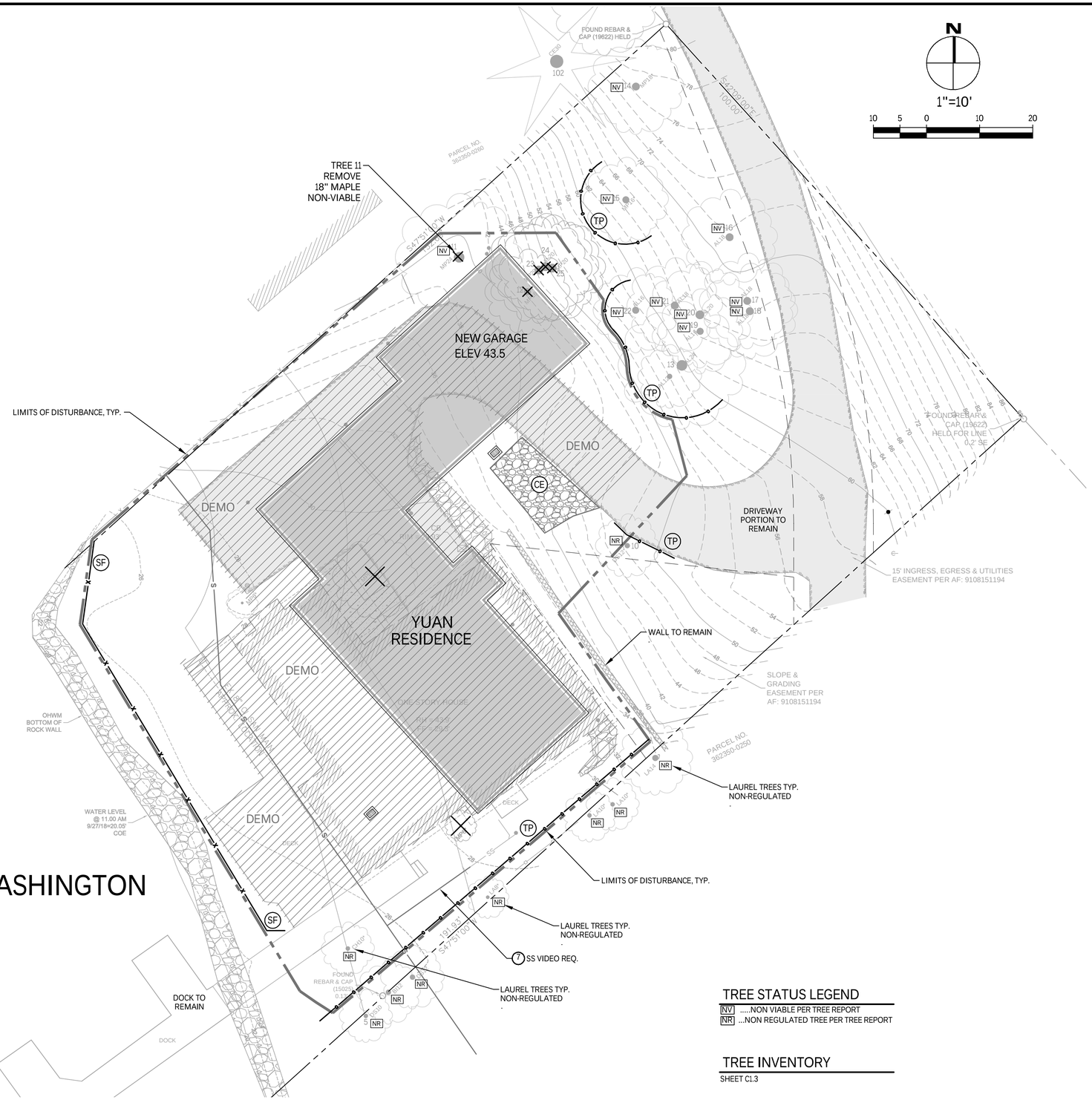
COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL ON C1.2.

TREE INVENTORY

SHEET C1.3

ARBORIST REPORT

SEE TREE INVENTORY REPORT BY GREENFOREST INCORPORATED, DATED FEBRUARY 13, 2019



TREE STATUS LEGEND

NV .....NON VIABLE PER TREE REPORT
NR ...NON REGULATED TREE PER TREE REPORT

TREE INVENTORY

SHEET C1.3

NO.	DATE	BY	REVISIONS

APPLICANT:
RYAN YUAN

811 Know what's below. Call before you dig.

DATE: May 10, 2019
JOB# 1838
DRAFTED: CH DESIGN: DE
DIGITAL SIGNATURE

May 10, 2019 JEFFREY E. HEATH STATE OF WASHINGTON 19755 REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

EROSION CONTROL PLAN

YUAN RESIDENCE
3611 W. MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C1.0

APN 362350-0265
19XX-XXX

SILT FENCE DETAIL — DOE

Figure II-4.2.12 Silt Fence

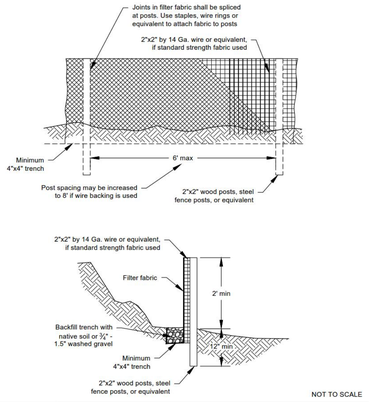


Figure II-4.2.12
Silt Fence

Revised October 2014

DEPARTMENT OF ECOLOGY
State of Washington

2014 Stormwater Management Manual for Western Washington

Volume II - Chapter 4 - Page 369

CONSTRUCTION ENTRANCE — DOE

Figure II-4.1.1 Stabilized Construction Entrance

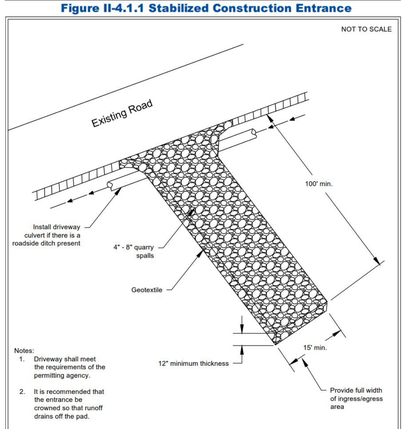


Figure II-4.1.1
Stabilized Construction Entrance

Revised June 2015

DEPARTMENT OF ECOLOGY
State of Washington

2014 Stormwater Management Manual for Western Washington

Volume II - Chapter 4 - Page 273

RECOMMENDED CONSTRUCTION SEQUENCE

A DETAILED CONSTRUCTION SEQUENCE IS NEEDED TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE APPLIED AT THE APPROPRIATE TIMES. A RECOMMENDED CONSTRUCTION SEQUENCE IS PROVIDED BELOW:

1. HOLD AN ONSITE PRE-CONSTRUCTION MEETING.

2. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN).

3. FLAG OR FENCE CLEARING LIMITS.

4. INSTALL CATCH BASIN PROTECTION, IF REQUIRED.

5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).

6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).

7. CONSTRUCT SEDIMENT PONDS AND TRAPS.

8. GRADE AND STABILIZE CONSTRUCTION ROADS.

9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.

10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF MERCER ISLAND STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

11. RELOCATE SURFACE SURFACE WATER CONTROLS OR TESC MEASURES, OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE TESC IS ALWAYS IN ACCORDANCE WITH CITY OF MERCER ISLAND TESC REQUIREMENTS.

12. COVER ALL AREAS THAT WILL BE UN-WORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPT 30) OR TWO DAYS DURING THE WET SEASON (OCT 1 TO APRIL 30) WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.

13. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.

14. SEED, SOD, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.

15. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPS IF APPROPRIATE.

DENUDED AREAS REQUIREMENTS

APRIL 1 TO SEPT 30
ALL DENUDED AREAS MUST BE STABILIZED WITHIN 7 DAYS OF CONSTRUCTION. PLEASE READ ALL CITY TESC NOTES ON SHEET C1.2.

OCT 1 TO MARCH 31
ALL DENUDED AREAS MUST BE STABILIZED WITHIN 2 DAYS OF GRADING. IF AN EROSION PROBLEM ALREADY EXISTS ON THE SITE, OTHER COVER PROTECTION AND EROSION CONTROL WILL BE REQUIRED.

EROSION CONTROL NOTES

D.8.2 STANDARD ESC PLAN NOTES
THE STANDARD ESC PLAN NOTES MUST BE INCLUDED ON ALL ESC PLANS. AT THE APPLICANT'S DISCRETION, NOTES THAT IN NO WAY APPLY TO THE PROJECT MAY BE OMITTED; HOWEVER, THE REMAINING NOTES MUST NOT BE RENUMBERED. FOR EXAMPLE, IF ESC NOTE #3 WERE OMITTED, THE REMAINING NOTES SHOULD BE NUMBERED 1, 2, 4, 5, 6, ETC.

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND
UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.

4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.

5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.

6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY CITY OF MERCER ISLAND.

7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.

8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).

9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.

10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BI-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.

11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

12. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.

13. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE SURFACE WATER DESIGN MANUAL

14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON.

CITY NOTES

1. ANY CHANGES TO THE APPROVED PLANS REQUIRES CITY APPROVAL THROUGH A REVISION.
2. APPLICANT IS RESPONSIBLE FOR ANY DAMAGES TO UNDERGROUND UTILITIES CAUSED FROM THIS CONSTRUCTION.
3. CATCH BASIN FILTERS SHOULD BE PROVIDED FOR ALL STORM DRAIN CATCH BASINS/INLETS DOWNSLOPE AND WITHIN 500 FEET OF THE CONSTRUCTION AREA. CATCH BASIN FILTERS SHOULD BE DESIGNED BY THE MANUFACTURER FOR USE AT CONSTRUCTION SITES AND APPROVED BY THE CITY INSPECTOR. CATCH BASIN FILTERS SHOULD BE INSPECTED FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. IF THE FILTER BECOMES CLOGGED, IT SHOULD BE CLEANED OR REPLACED.
4. CONTRACTORS SHALL VERIFY LOCATIONS AND DEPTHS OF UTILITES.
5. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, CALL "ONE CALL" AT 1.800.424.5555
6. DO NOT BACKFILL WITH NATIVE MATERIAL ON PUBLIC RIGHT-OF-WAY. ALL MATERIAL MUST BE IMPORTED
7. EROSION CONTROL: ALL "LAND DISTURBING ACTIVITY" IS SUBJECT TO PROVISIONS OF MERCER ISLAND ORDINANCE 95C-118 "STORM WATER MANAGEMENT." SPECIFIC ITEMS TO BE FOLLOWED AT YOUR SITE:
8. PROTECT ADJACENT PROPERTIES FROM ANY INCREASED RUNOFF OR SEDIMENTATION DUE TO THE CONSTRUCTION PROJECT THROUGH THE USE OF APPROPRIATE "BEST MANAGEMENT PRACTICES" (BMP) EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO, SEDIMENT TRAPS, SEDIMENT PONDS, FILTER FABRIC FENCES, VEGETATIVE BUFFER STRIPS OR BIOENGINEERED SWALES.
9. CONSTRUCTION ACCESS TO THE SITE SHOULD BE LIMITED TO ONE ROUTE. STABILIZE ENTRANCE WITH QUARRY SPALLS TO PREVENT SEDIMENT FROM LEAVING THE SITE OR ENTERING THE STORM DRAINS.
10. PREVENT SEDIMENT, CONSTRUCTION DEBRIS, PAINTS, SOLVENTS, ETC., OR OTHER TYPES OF POLLUTION FROM ENTERING PUBLIC STORM DRAINS. KEEP ALL POLLUTION ON YOUR SITE.
11. ALL EXPOSED SOILS SHALL REMAIN DENUDED FOR NO LONGER THAN SEVEN (7) DAYS AND SHALL BE STABILIZED WITH MULCH, HAY, OR THE APPROPRIATE GROUND COVER. ALL EXPOSED SOILS SHALL BE COVERED IMMEDIATELY DURING ANY RAIN EVENT.
12. INSTALLATION OF CONCRETE DRIVEWAYS, TREES, SHRUBS, IRRIGATION, BOULDERS, BERMS, WALLS, GATES, AND OTHER IMPROVEMENTS ARE NOT ALLOWED IN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR APPROVAL, AND AN ENCROACHMENT AGREEMENT AND RIGHT OF WAY PERMIT FROM THE SENIOR DEVELOPMENT ENGINEER.
13. OWNER SHALL CONTROL DISCHARGE OF SURFACE DRAINAGE RUNOFF FROM EXISTING AND NEW IMPERVIOUS AREAS IN A RESPONSIBLE MANNER. CONSTRUCTION OF NEW GUTTERS AND DOWNSPOUTS, DRY WELLS, LEVEL SPREADERS OR DOWNSTREAM CONVEYANCE PIPE MAY BE NECESSARY TO MINIMIZE DRAINAGE IMPACT TO YOUR NEIGHBORS. CONSTRUCTION OF MINIMUM DRAINAGE IMPROVEMENTS SHOWN OR CALLED OUT ON THIS PLAN DOES NOT IMPLY RELIEF FROM CIVIL LIABILITY FOR YOUR DOWNSTREAM DRAINAGE.
14. POT HOLING THE PUBLIC UTILITIES IS REQUIRED PRIOR TO ANY GRADING ACTIVITIES LESS THAN 6" OVER THE PUBLIC MAINS (WATER, SEWER AND STORM SYSTEMS). IF THERE IS A CONFLICT, THE APPLICANT IS REQUIRED TO SUBMIT A REVISION FOR APPROVAL PRIOR TO ANY GRADING ACTIVITIES OVER THE PUBLIC MAINS.
15. REMEMBER: EROSION CONTROL IS YOUR FIRST INSPECTION.
16. ROOF DRAINS MUST BE CONNECTED TO THE STORM DRAIN SYSTEM AND INSPECTED BY THE PUBLIC WORKS DEPARTMENT PRIOR TO ANY BACKFILLING OF PIPE.
17. SILENT FENCE: CLEAN AND PROVIDE REGULAR MAINTENANCE OF THE SILT FENCE. THE FENCE IS TO REMAIN VERTICAL AND IS TO FUNCTION PROPERLY THROUGHOUT THE TERM OF THE PROJECT.
18. WORK IN PUBLIC RIGHT OF WAY REQUIRES A RIGHT-OF-WAY USE PERMIT.
19. REFER TO WATER SERVICE PERMIT FOR ACTUAL LOCATION OF NEW WATER METER AND SERVICE LINE DETERMINED BY MERCER ISLAND WATER DEPARTMENT.
16. THE TV INSPECTION OF THE EXISTING SIDE SEWER TO THE CITY SEWER MAIN IS REQUIRED. IF THE RESULT OF THE TV INSPECTION IS NOT IN SATISFACTORY CONDITION, AS DETERMINED BY THE CITY OF MERCER ISLAND INSPECTOR, THE REPLACEMENT OF THE EXISTING SIDE SEWER IS REQUIRED. ALTERNATELY, A PRESSURE TEST OF THE SIDE SEWER, FROM SEWER MAIN TO POINT OF CONNECTION, MAY BE SUBSTITUTED FOR THE VIDEO INSPECTION.
20. NEWLY INSTALLED SIDE SEWER REQUIRES A 4 P.S.I. AIR TEST OR PROVIDE 10' OF HYDROSTATIC HEAD TEST.
21. POT HOLING THE PUBLIC UTILITIES IS REQUIRED PRIOR TO ANY GRADING ACTIVITIES LESS THAN 6" OVER THE PUBLIC MAINS (WATER, SEWER AND STORM SYSTEMS). IF THERE IS A CONFLICT, THE APPLICANT IS REQUIRED TO SUBMIT A REVISION FOR APPROVAL PRIOR TO ANY GRADING ACTIVITIES OVER THE PUBLIC MAINS.
22. THE LIMITS AND EXTENDS OF THE PAVEMENT IN THE PUBLIC RIGHT OF WAY SHALL BE DETERMINED BY THE CITY ENGINEER PRIOR TO FINALIZE THE PROJECT.

NO.	DATE	BY	REVISIONS

APPLICANT:
RYAN YUAN

811 Know what's below. Call before you dig.

DATE: May 10, 2019
JOB# 1838
DRAFTED: CH DESIGN: DE
DIGITAL SIGNATURE

May 10, 2019
JEFFREY E. FAIRE — STATE OF WASHINGTON — 39766 — REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET
PHONE: 206.930.0342
SEATTLE, WA 98107
DUFFY@CESOLUTIONS.US

TESC & CITY NOTES
TESC DETAILS

YUAN RESIDENCE
3611 W. MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO: C1.2

APN 362350-0265
19XX-XXX

TREE INVENTORY

Retain*	Remove*	Threshold (in.)	Significant	Exceptional (Grove)	Exceptional (Size)	≥ 24" DBH	Tree No.	DBH (In.)	QMD*	Species	Dripline radius (Ft.)	Health	Structure		Viable Tree	Tree Type
X		8"			X		**1**	3.5,3.3, 4.8,2.9, 3.7"	10.1"	Vine maple, Acer circinatum	6'	1	2	Stumpsprout, multiple stems	Yes	D
	X	12"			X		**2**	14.5"		Japanese maple, Acer palmatum	13'	1	2	Growth obstruction, roots are soil surface	Yes	D
X		23"	X				**3**	10.8"		Kwanzan flowering ch. P. serrulata 'Kwanzan'	11'	3	3	Diseased, decay, decline	NO	D
X		24"	X				**4**	12.7"		European white birch, Betula pendula	15'	1	2	Ivy	Yes	D
NOT A REGULATED SPECIES							**5**	11"		Portugal laurel, Prunus lusitanica	10'	1	2	Sheared as hedge	Yes	BE
							6	10"			10'	1	2		Yes	BE
							7	4.5,6,8"	10.9"		8'	1	2		Yes	BE
							8	6,7,9"	12.8"		8'	1	2		Yes	BE
							9	11"			8'	1	2		Yes	BE
							10	11"			10'	1	2		Yes	BE
	X	30"		X			**11**	18"		Bigleaf maple, Acer macrophyllum	20'	1	3	Asymmetric canopy, sweep, rootplate failure	NO	D
	X	30"		X		Yes	**12**	10,18, 18"	27.3"	Bigleaf maple, Acer macrophyllum	25'	1	2	Multiple leaders, ivy, perched on retaining wall	Yes	D
X		36"		X		Yes	**13**	24"		Red alder, Alnus rubra	18'	2	2	Branch decline, lean, ivy	Yes	D
X		30"		X			**14**	8,10, 12"	17.5"	Bigleaf maple, Acer macrophyllum	10'	1	3	Stumpsprout, diseased, decay, decline, ivy	NO	D
X		30"		X			**15**	16.5"		Bigleaf maple, Acer macrophyllum	12'	2	3	Stumpsprout, ivy	NO	D
X		36"		X			**16**	17"		Red alder, Alnus rubra	15'	2	3	Branch dieback, asymmetric, very dense ivy covering nearly the entire tree	NO	D
X		36"		X			**17**	18"			12'	2	3		NO	D
X		36"		X			**18**	18"			12'	2	3		NO	D
X		36"		X			**19**	16"			16'	2	3		NO	D
X		36"		X			**20**	21"			18'	2	3		NO	D
X		36"		X			**21**	19"			16'	3	3		NO	D
X		36"		X			**22**	16"			14'	3	3		NO	D
	X	30"		X			**23**	20"		Bigleaf maple, Acer macrophyllum	20'	2	2	Lean, asymmetric, ivy, perched on	Yes	D
X														retaining wall		
	X	36"		X			**24**	21"		Red alder, Alnus rubra	25'	2	2	Lean, asymmetric, ivy, perched on retaining wall	Yes	D
	X	30"		X		Yes	**25**	19,22"	29"	Bigleaf maple, Acer macrophyllum	30'	2	2	Multiple leaders, ivy, perched on retaining wall	Yes	D
OFFSITE TREES																
TO BE RETAINED		30"			X	Yes	**101**	(6) 6-18"	32"	Bigleaf maple, Acer macrophyllum	20'			Offsite		D
		30"			X	Yes	**102**	30"		Western red-cedar, Thuja plicata	16'			Offsite		C

Remove or Retain Status: Project is still in the design phase and tree status will be indicated in these columns by onwer.
QMD - quadratic mean diameter in inches.

NO.	DATE	BY	REVISIONS

APPLICANT:
RYAN YUAN

Know what's **below.**
Call before you dig.

DATE: May 10, 2019
JOB# 1838
DRAFTED: CH DESIGN: DE
DIGITAL SIGNATURE

May 10, 2019

CIVIL ENGINEERING
SOLUTIONS

102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

TREE INVENTORY

YUAN RĒSIDENCE
3611 W. MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C1.3

APN 362350-0265
19XX-XXX

SANITARY SEWER IMPROVEMENTS

1. -
2. 6" SDR 35 PVC SANITARY SEWER(SS) @ MIN 1.0%.
3. -
4. -
7. -LOCATE AND VIDEO CONDITION OF EXISTING SANITARY SIDE SEWER. REPLACE LINE IF FOUND DEFECTIVE AS DETERMINED BY CITY INSPECTOR.

WATER IMPROVEMENTS

10. NEW SF RESIDENTIAL WATER SERVICE & METER PIT. CONFIRM REQUIRED SIZE WITH BUILDING PERMIT REVIEW. INSTALL PER MERCER ISLAND DETAIL W-13, W-14, OR W-14A DEPENDING ON SIZE REQUIREMENT.
11. PRIVATE WATER SERVICE FROM METER TO HOUSE. SEE PLAN FOR SIZE. CONFIRM ADEQUATE TO MEET FIRE FLOW REQUIREMENTS. HDPE WATER (ASTM D2239). RECOMMENDED DEPTH=36".
12. -REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) REQUIRED. PROVIDE FROST PROTECTION IN ACCORDANCE WITH UPC (UNIFORM PLUMBING CODE)
14. -

STORM DRAIN

20. 4" STORM DRAIN (3034 PVC) @ MIN 2% GRADE
21. 4" FOUNDATION DRAIN (3034 PVC) @ MIN 1% GRADE
22. 6" STORM DRAIN (3034 PVC) @ MIN 2% GRADE
23. -
24. -
25. -
26. -
28. -
29. -

STORM DRAIN STRUCTURES

30. -
31. -
32. -
33. -
34. -
35. -
36. NDS DURASLOPE CHANNEL DRAIN OR EQUAL. MINIMUM 6" CHANNEL. CLASS B VEHICLE RATED GRATE.
39. -
40. TYPE 40 CATCH BASIN. IN DRIVEWAY, ADD WATER QUALITY RISER TEE FOR EXITING PIPE (OR DOWNTURNED ELBOW).
41. -
43. -
46. -
47. -
48. -

A CLEARING LIMIT NOTE

ALL SELECTIVE CLEARING, TRENCHING AND OTHER WORK WITHIN THE DRIPLINES OF SIGNIFICANT TREES SHALL BE BY LOW IMPACT/HAND METHODS ONLY AND WORK SHALL BE ADJUSTED AS POSSIBLE TO MINIMIZE ANY DISTURBANCE TO THE SIGNIFICANT AND RETAINED TREES AND PROTECTED UNDERSTORY. CONSTRUCTION MATERIALS AND VEHICLES SHALL NOT BE STORED OUTSIDE THE CLEARING LIMITS.

B TREE DRIPLINE NOTE

WORK WITHIN THE DRIPLINE OF TREES TO BE SAVED MUST BE UNDER THE DIRECTION OF A CERTIFIED ARBORIST (TYP.) SEE ALSO CLEARING LIMIT NOTE ON THIS SHEET.

STORM BMP's

COMPOSTED AMENDED SOIL IS REQUIRED FOR DISTURBED AREAS. SEE DETAIL ON C3.5.

STORM BMP'S ARE NOT PROPOSED FOR PROJECT. SEE STORM REPORT.

SOILS

SITE IS IN AN AREA MAPPED "INFILTRATING LID FACILITIES ARE NOT PERMITTED" ON THE "LOW IMPACT DEVELOPMENT INFILTRATION FEASIBILITY ON MERCER ISLAND" MAP

SURVEYOR

TOPOGRAPHIC & BOUNDARY SURVEY BY:
TERRANE LAND SURVEYING
10801 MAIN STREET, SUITE 102
BELLEVUE, WA 98004
PHONE 425.458.4488
WWW.TERRANE.NET

LEGAL DESCRIPTION

THE NORTHWESTERLY 100 FEET OF THE SOUTHEASTERLY 1,000 FEET OF BLOCK "A", AS MEASURED ALONG THE NORTHEASTERLY LINE THEREOF, REPLAT OF ISLAND PARK, ACCORDING TO THE PLAT THEREF RECORDED IN VOLUME 13 OF PLATS, PAGE 58, RECORDS OF KING COUNTY, WASHINGTON; TOGETHER WITH SECOND CLASS SHORELANDS ADJOINING;
EXCEPT SAID PORTION OF SAID SHORELANDS, IF ANY, AS MAY FALL WITHIN LAKE VIEW AVENUE AS EXTENDED BY THE COMMISSIONER OF PUBLIC LANDS

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM

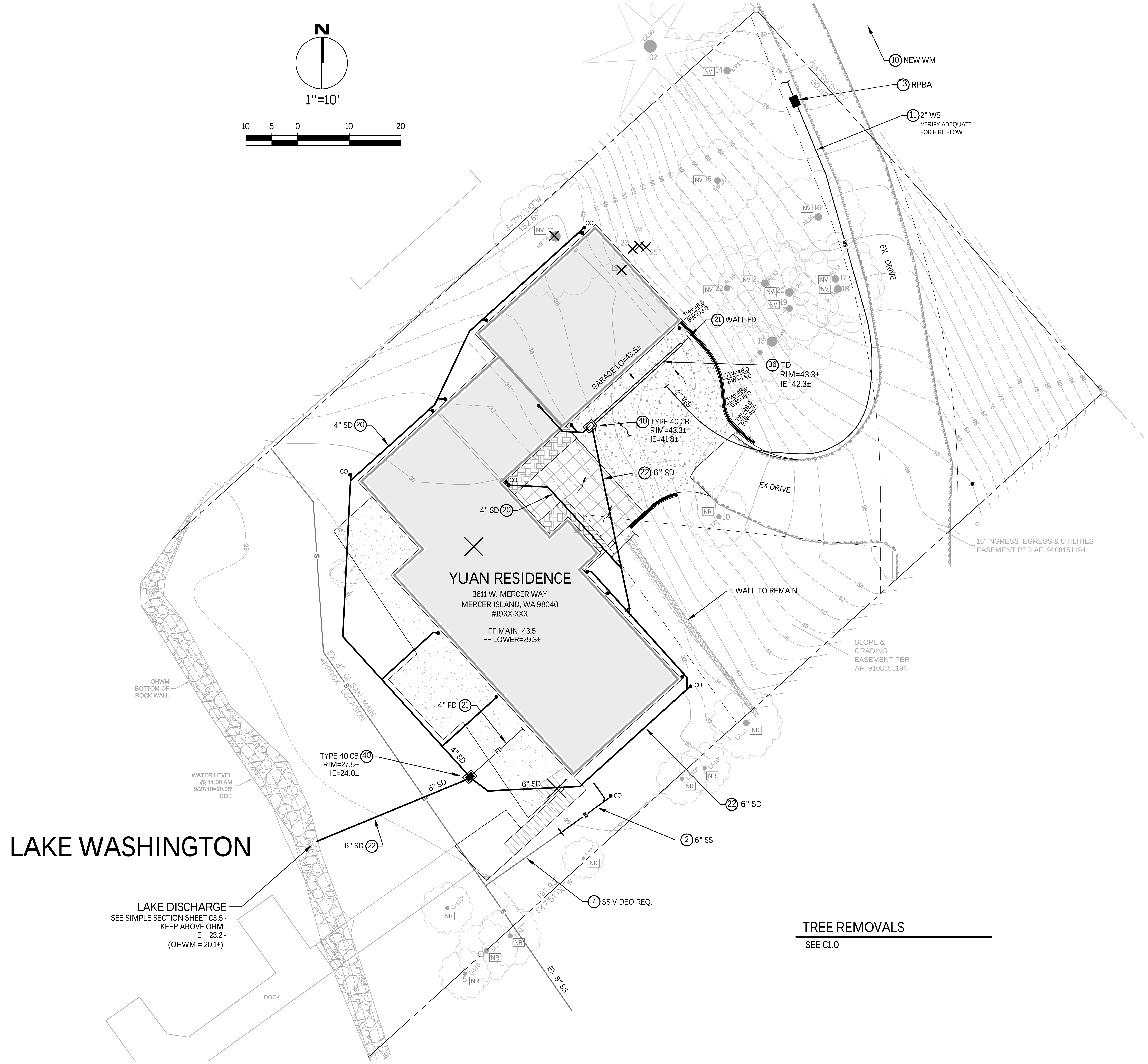
NAVD88 PER WGS SURVEY DATA WAREHOUSE:
POINT DESIGNATION 7007, MON IN CASE AT INT. 70TH AVE. S.E. AND S.E. 24TH ST.
ELEV.=208.21'

TREE REMOVALS

SEE C1.0

SOIL AMENDMENT REQUIRED

COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL ON C3.5.



TREE REMOVALS

SEE C1.0

NO.	DATE	BY	REVISIONS

APPLICANT:
RYAN YUAN

811 Know what's below. Call before you dig.

DATE: Jun 19, 2019
JOB# 1838
DRAFTED: DE DESIGN: DE
DIGITAL SIGNATURE

Jun 19, 2019
JEFFREY E. ... STATE OF WASHINGTON ... REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET
PHONE: 206.930.0342
SEATTLE, WA 98107
DUFFY@CESOLUTIONS.US

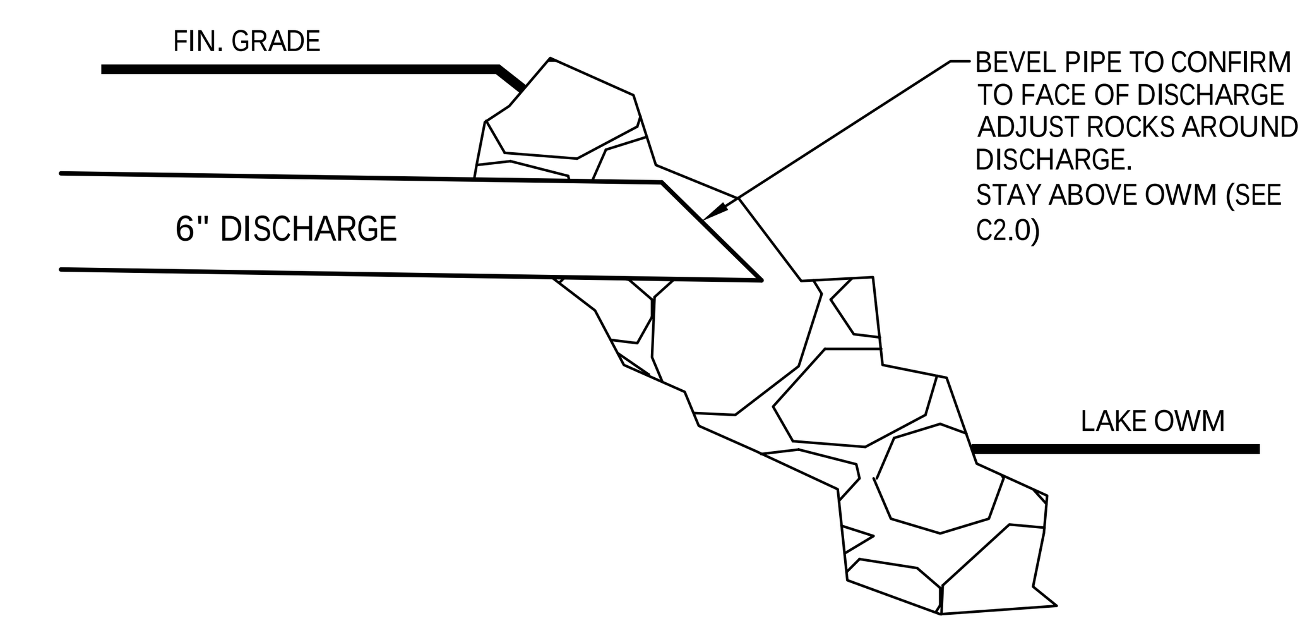
DRAINAGE / CIVIL PLAN

YUAN RESIDENCE
3611 W. MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C2.0

APN 362350-0265
19XX-XXX

PIPE @ LAKE DISCHARGE



TYPE 40 CB (OR EQUAL)

catch basin products

86

Catch Basin Type 40

Reinforcing

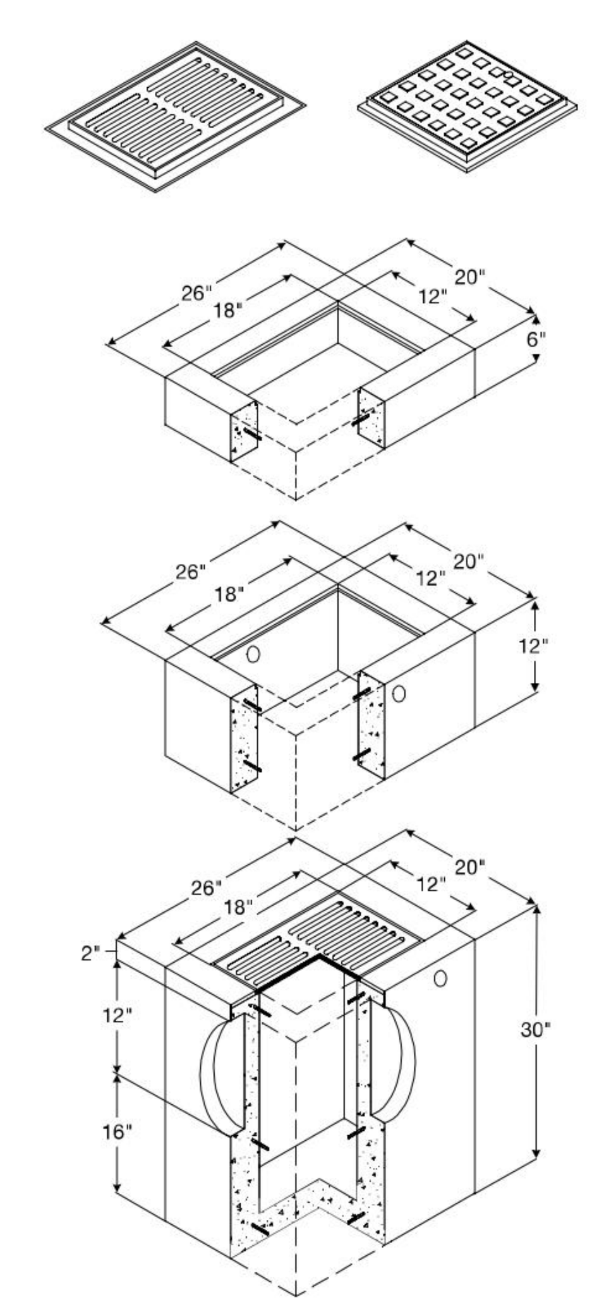
- ASTM A-615 Specifications
- All components
- #3 grade 60 reinforcing bar

Cast Iron Grate

- The 14" x 20" cast iron grate drops in the recessed area at the top of the basin or riser
- An 14" x 20" frame & grate is available

Additional Information

- The base unit has a 12" diameter knock-out on each of the four sides
- Base unit - 1000 lbs
- 6 inch Riser - 150 lbs
- 12 inch Riser - 300 lbs
- 1½ inch hole on each side for handling

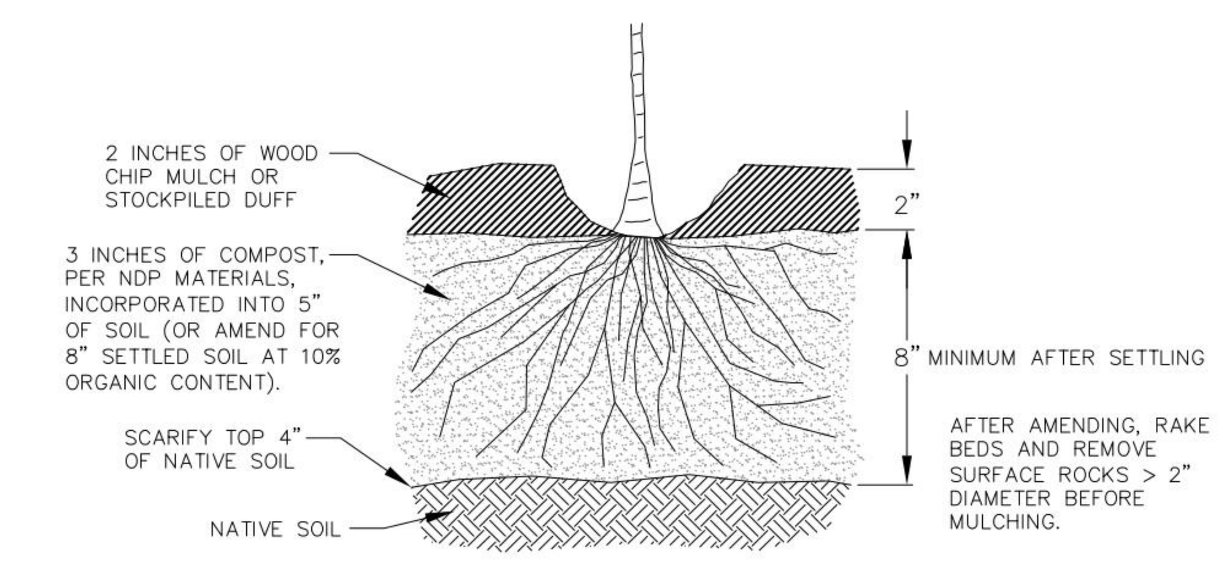


Note: drawings not to scale

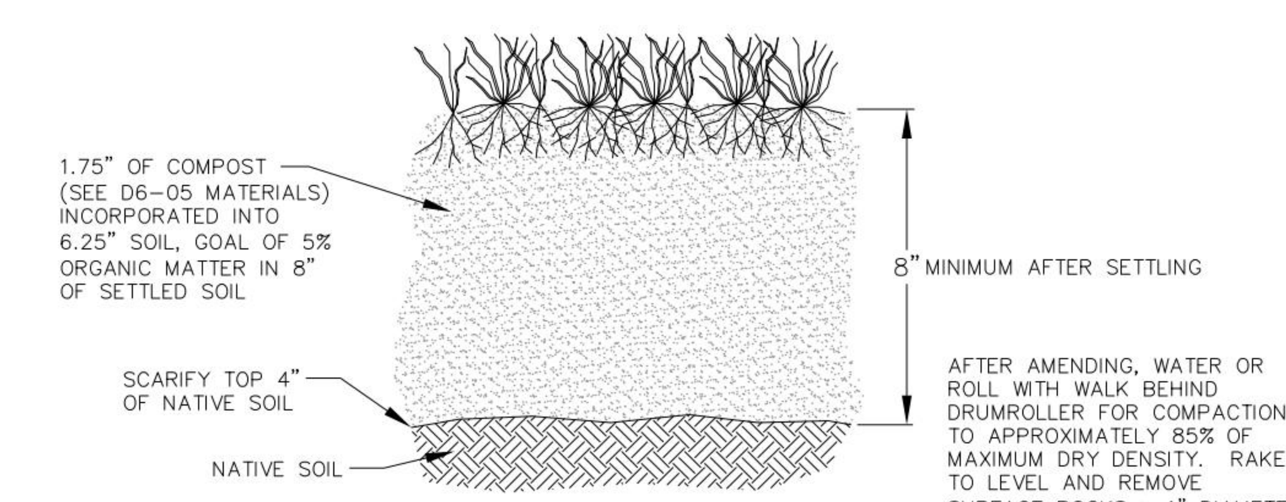
shope concrete products
Shope Enterprises, Inc.
1618 East Main Avenue
Puyallup, WA 98372-3142
(253) 848-1551
Fax Line 1 (253) 845-0292
Fax Line 2 (253) 864-6172
1-800-422-7560 [Toll Free - WA only]
www.shopeconcrete.com

COMPOST AMENDED SOIL SPEC

AMENDMENT FOR LANDSCAPED AREAS



SOIL AMENDMENT FOR GRASS OR TURF AREAS



NOTES:

1. AMEND SOILS PER DOE MANUAL, VOL. V, 5.3.1, BMP T5.13, (2012 OR CURRENT) OR WWW.SOILSFORSALMON.ORG.
2. DO NOT AMEND SOILS IN AREAS WITH UNDISTURBED SOIL AND NATIVE VEGETATION.
3. OPTIONAL ALTERNATIVE: STOCKPILE NATIVE TOPSOIL ONSITE, AMEND IF NEEDED, AND REPLACE BEFORE PLANTING.
4. OPTIONAL ALTERNATIVE: IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET REQUIREMENTS.

JANUARY 2017 NO SCALE

~~City of Bellevue~~ STORM AND SURFACE WATER UTILITY

TITLE: AMENDED SOILS

NO. ~~NDP-1~~

NO.	DATE	BY	REVISIONS

APPLICANT:
RYAN YUAN

811 Know what's below. Call before you dig.

DATE: Jun 19, 2019
JOB# 1838
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

Jun 19, 2019 — JEFFREY E. ... STATE OF WASHINGTON, 39766 REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET SEATTLE, WA 98107
PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

DRAINAGE/BMP DETAILS

YUAN RESIDENCE
3611 W. MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C3.5

APN 362350-0265
19XX-XXX

LEGEND

200A	WINDOW ID
100A	DOOR ID
100A	FINISH ID
	SMOKE DETECTOR
	SMOKE/CARBON MONOXIDE DETECTOR
	FAN - 100 CFM U.N.O.
EL= 148.5' (+0'-0") MAIN LEVEL FIN. FLR.	ELEVATION DATUM
0	GRIDLINE
	NEW WALL
	WALL TO REMAIN
	TO BE REMOVED
	1-HOUR RATED ASSEMBLY

NOTES

1. ALL DIMENSIONS TO FACE OF FRAMING OR CONCRETE UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS UNLESS NOTED OTHERWISE.

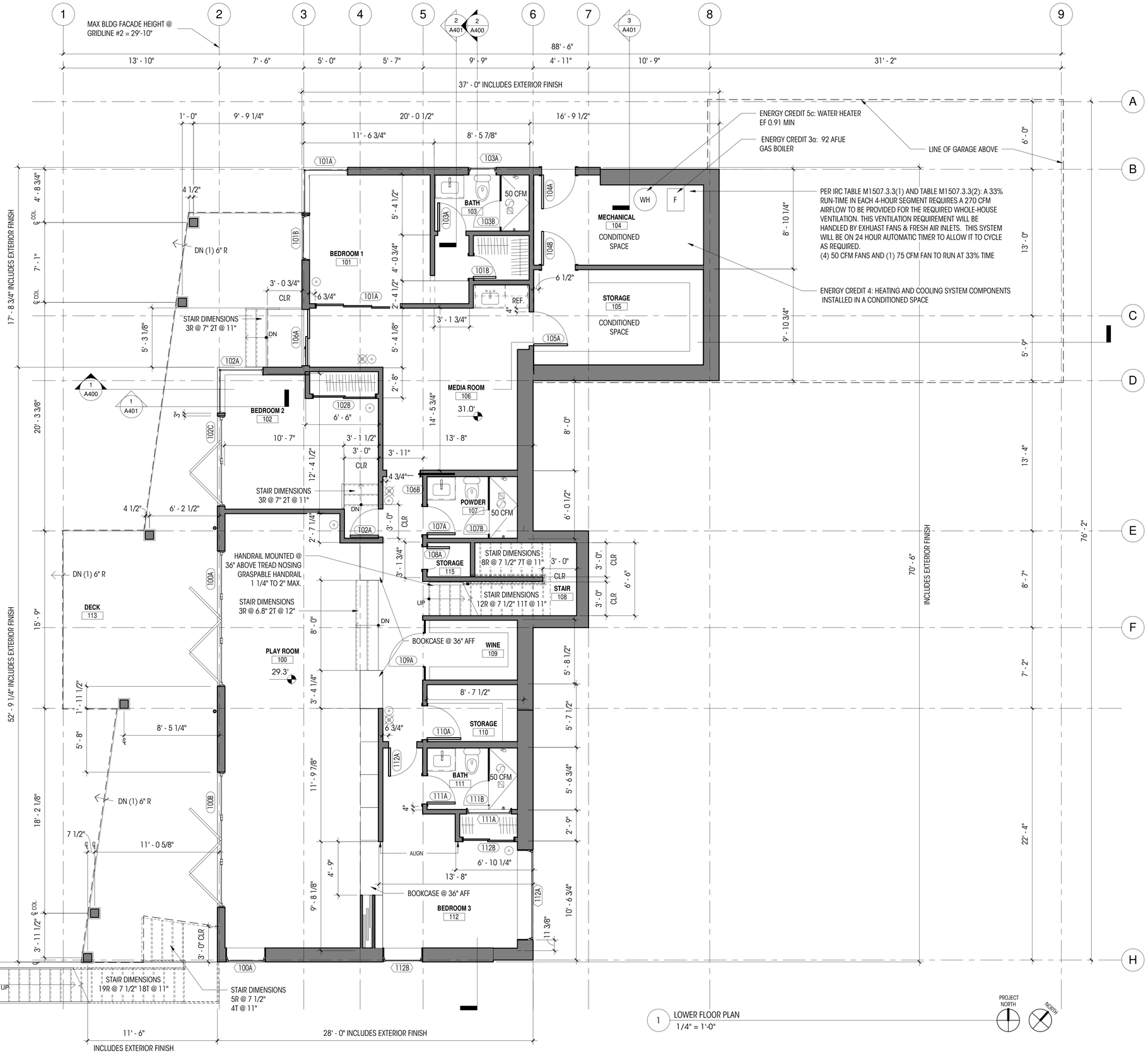
ENERGY CREDITS

1a		
•	R-38 FLOORS AND U-.28 WINDOWS	.5
3a		
•	92 AFUE GAS BOILER	1.0
4		
•	ALL HEATING AND COOLING SYSTEM COMPONENTS INSTALLED WITHIN THE CONDITIONED SPACE. ELECTRIC RESISTANCE AND DUCTLESS HEAT PUMPS NOT PERMITTED UNDER THIS OPTION.	1.0
5c		
•	GAS WATER HEATING SYSTEM W/ A MINIMUM EF OF 0.91	1.0
TOTAL		3.5

BASEMENT FLOOR AREA CALCULATIONS

WALL	COVERAGE %	WALL LENGTH	PRODUCT
A	0.0	36.8'	0.0
B	36.8	18.8'	6.9
C	10.8	16.3'	1.8
D	2.7	13.7'	0.4
E	5.4	4.7'	0.3
F	8.0	7.8'	0.6
G	6.3	4.6'	0.3
H	4.5	30.1'	1.4
I	0.8	28.7'	0.2
J	0.0	52.8'	0.0
K	0.0	8.0'	0.0
L	0.0	17.7'	0.0
TOTALS		240'	11.9%

GROSS LOWER FLOOR AREA = 1,886 SF
TOTAL PERCENTAGE OF BELOW GRADE WALLS 11.9%
LOWER FLOOR AREA EXCLUDED (1,886' X 11.9%) = 224 SF
NET LOWER FLOOR AREA (1,886 - 224) = **1,662 SF**



1 LOWER FLOOR PLAN
1/4" = 1'-0"

Brandt
Design Group
66Bell Street
Unit 1
Seattle, WA
98121
206.239.0850
brandtdesigninc.com
8843 REGISTERED ARCHITECT STATE OF WASHINGTON

YUAN RESIDENCE

3611 W MERCER WAY,
MERCER ISLAND, WA 98040

PERMIT DOCUMENTS

DATE: 7/18/19
SHEET SIZE: D (24X36)

REVISIONS
NO: DATE:

DRAWN BY: NLD/LI/SE
CHECKED BY: LL

LOWER FLOOR PLAN

SCALE: As indicated

A200

DEDICATED APPROVAL STAMP SPACE

LEGEND

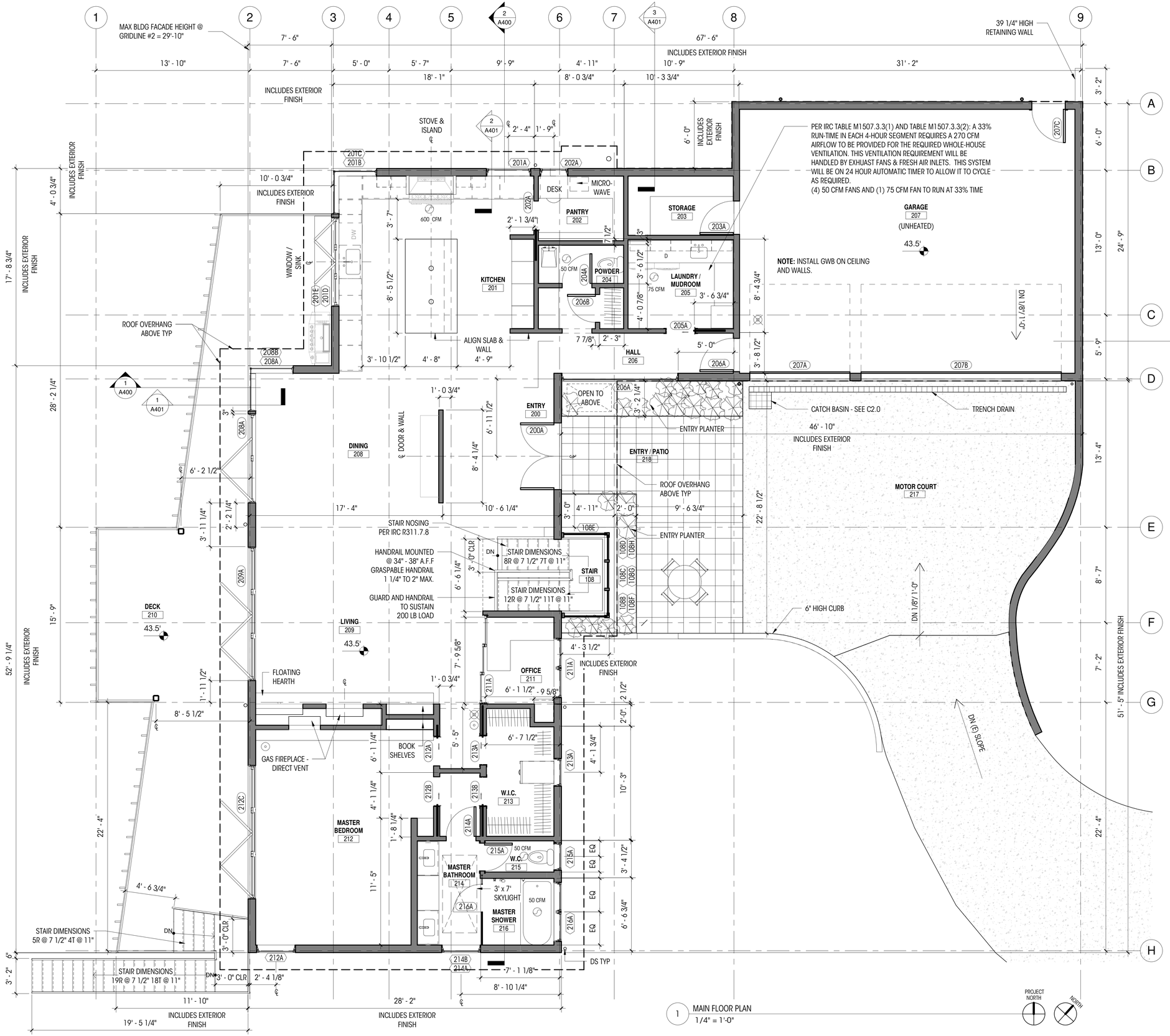
200A	WINDOW ID
100A	DOOR ID
100A	FINISH ID
	SMOKE DETECTOR
	SMOKE/CARBON MONOXIDE DETECTOR
	FAN - 100 CFM U.N.O.
EL= 148.5' (+0'-0") MAIN LEVEL FIN. FLR.	ELEVATION DATUM
0	GRIDLINE
	NEW WALL
	WALL TO REMAIN
	TO BE REMOVED
	1-HOUR RATED ASSEMBLY

NOTES

1. ALL DIMENSIONS TO FACE OF FRAMING OR CONCRETE UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS UNLESS NOTED OTHERWISE.

ENERGY CREDITS

1a •	R-38 FLOORS AND U-.28 WINDOWS	.5
3a •	92 AFUE GAS BOILER	1.0
4 •	ALL HEATING AND COOLING SYSTEM COMPONENTS INSTALLED WITHIN THE CONDITIONED SPACE. ELECTRIC RESISTANCE AND DUCTLESS HEAT PUMPS NOT PERMITTED UNDER THIS OPTION.	1.0
5c •	GAS WATER HEATING SYSTEM W/ A MINIMUM EF OF 0.91	1.0
TOTAL		3.5



1 MAIN FLOOR PLAN
1/4" = 1'-0"

Brandt
Design Group
66Bell Street
Unit 1
Seattle, WA
98121
206.239.0850
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REGISTERED ARCHITECT
STATE OF WASHINGTON

YUAN RESIDENCE

3611 W MERCER WAY,
MERCER ISLAND, WA 98040

PERMIT DOCUMENTS

DATE: 7/18/19
SHEET SIZE: D (24X36)

REVISIONS
NO: DATE:

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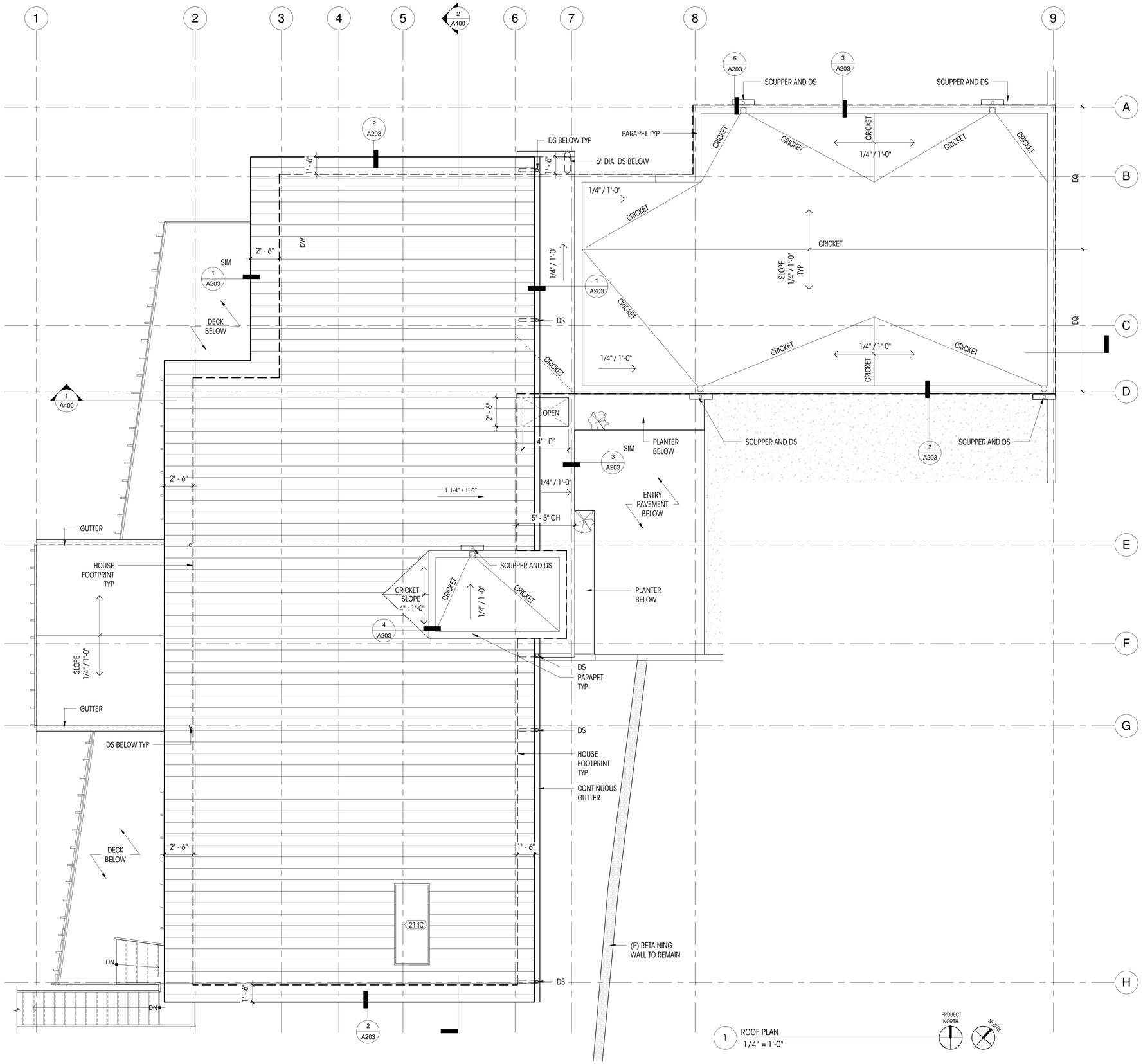
CHECKED BY: LL

MAIN FLOOR PLAN

SCALE: As indicated

A201

DEDICATED APPROVAL STAMP SPACE



1 ROOF PLAN
1/4" = 1'-0"

PROJECT NORTH

NORTH

REQUIRED ROOF VENTILATION

REQUIRED VENTILATION = 1 SF/300 SF OF TOTAL ROOF AREA

SHED ROOF AREA = **1680 SF**
REQUIRED VENTILATION =1680/300 = **5.6 SF = 806.4 SQ INCHES**
PROPOSED VENTILATION = **1380 SQ INCHES TOTAL**
(690 SQ INCHES AT EAST EAVE AND 690 SQ INCHES AT WEST EAVE)

GARAGE FLAT ROOF AREA = 1011 SF
REQUIRED VENTILATION = 1011/300 = 3.37 SF = **485.3 SQ INCHES**
PROPOSED VENTILATION = 920 SQ INCHES TOTAL
(460 SQ INCHES AT SOUTH PARAPET AND 460 SQ INCHES AT NORTH PARAPET)

ENTRY FLAT ROOF AREA = 72 SF
REQUIRED VENTILATION = 72/300 = .24 SF = **34.56 SQ INCHES**
PROPOSED VENTILATION = **130 SQ INCHES**

LEGEND

0 — — — — GRIDLINE

— — — — — HOUSE FOOTPRINT

ENERGY CREDITS

1a		
•	R-38 FLOORS AND U-.28 WINDOWS	.5
3a		
•	92 AFUE GASS BOILER	1.0
4		
•	ALL HEATING AND COOLING SYSTEM COMPONENTS INSTALLED WITHIN THE CONDITIONED SPACE. ELECTRIC RESISTANCE AND DUCTLESS HEAT PUMPS NOT PERMITTED UNDER THIS OPTION.	1.0
5c		
•	GAS WATER HEATING SYSTEM W/ A MINIMUM EF OF 0.91	1.0
TOTAL		**3.5**

NOTES

1. ALL DIMENSIONS TO FACE OF FRAMING OR CONCRETE UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS UNLESS NOTED OTHERWISE.

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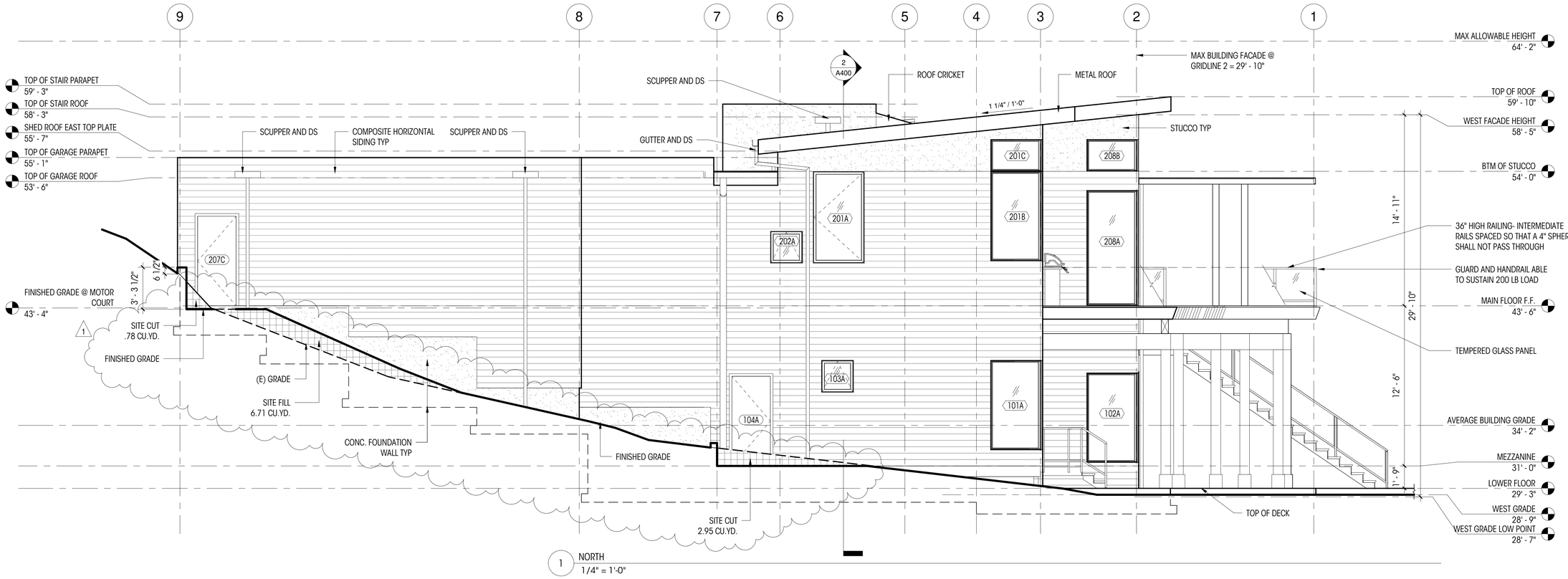
ROOF PLAN

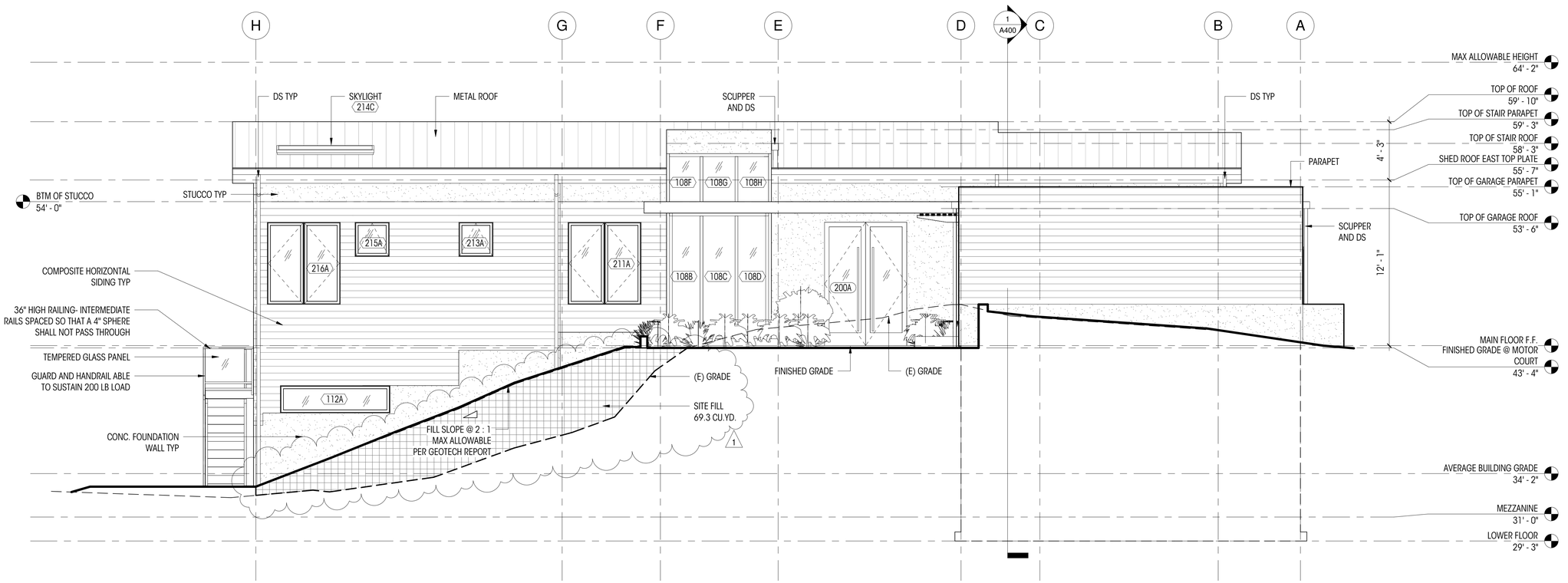
SCALE: As indicated

A202

DEDICATED APPROVAL STAMP SPACE



1 NORTH
1/4" = 1'-0"



2 EAST
1/4" = 1'-0"

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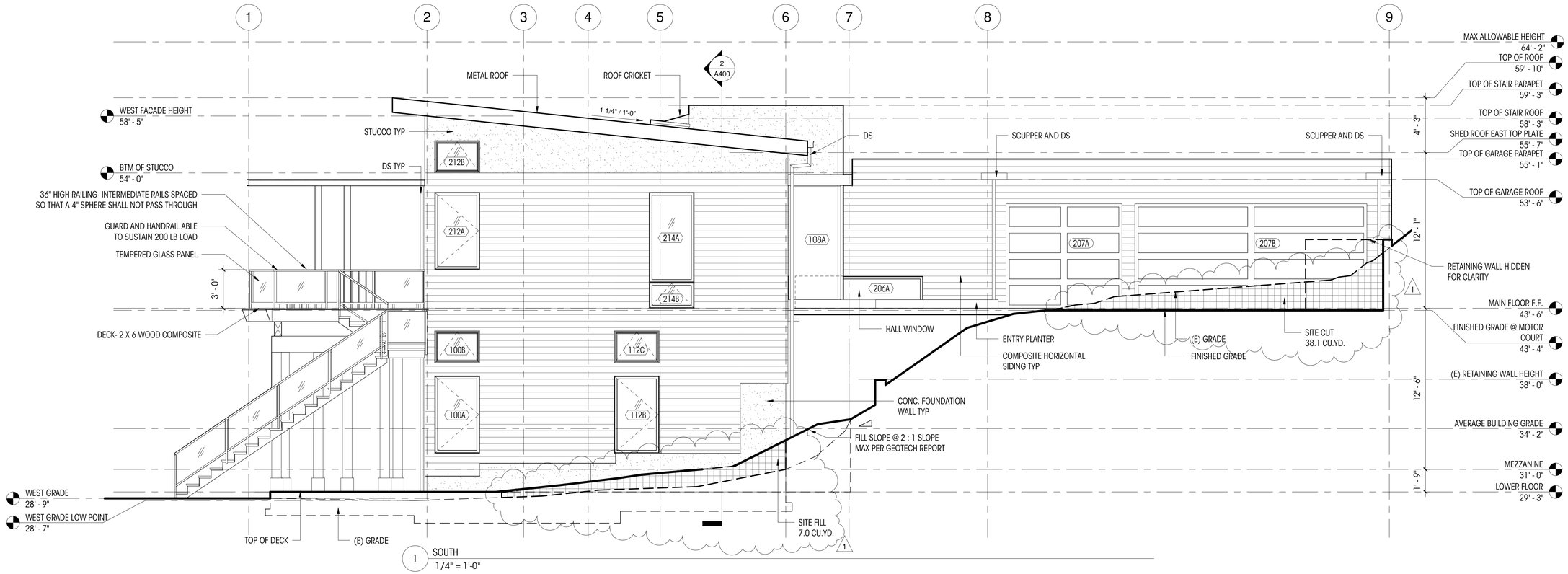
EXTERIOR ELEVATIONS

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

A300

DEDICATED APPROVAL STAMP SPACE



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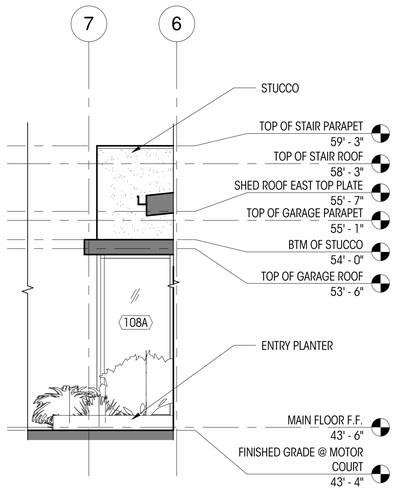
EXTERIOR ELEVATIONS

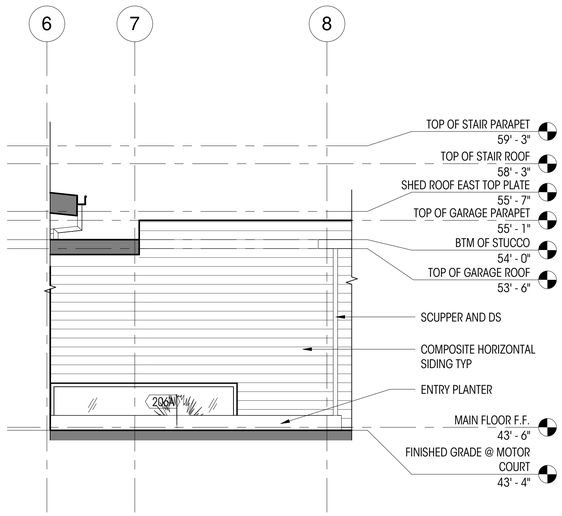
SCALE: 1/4" = 1'-0"

A301

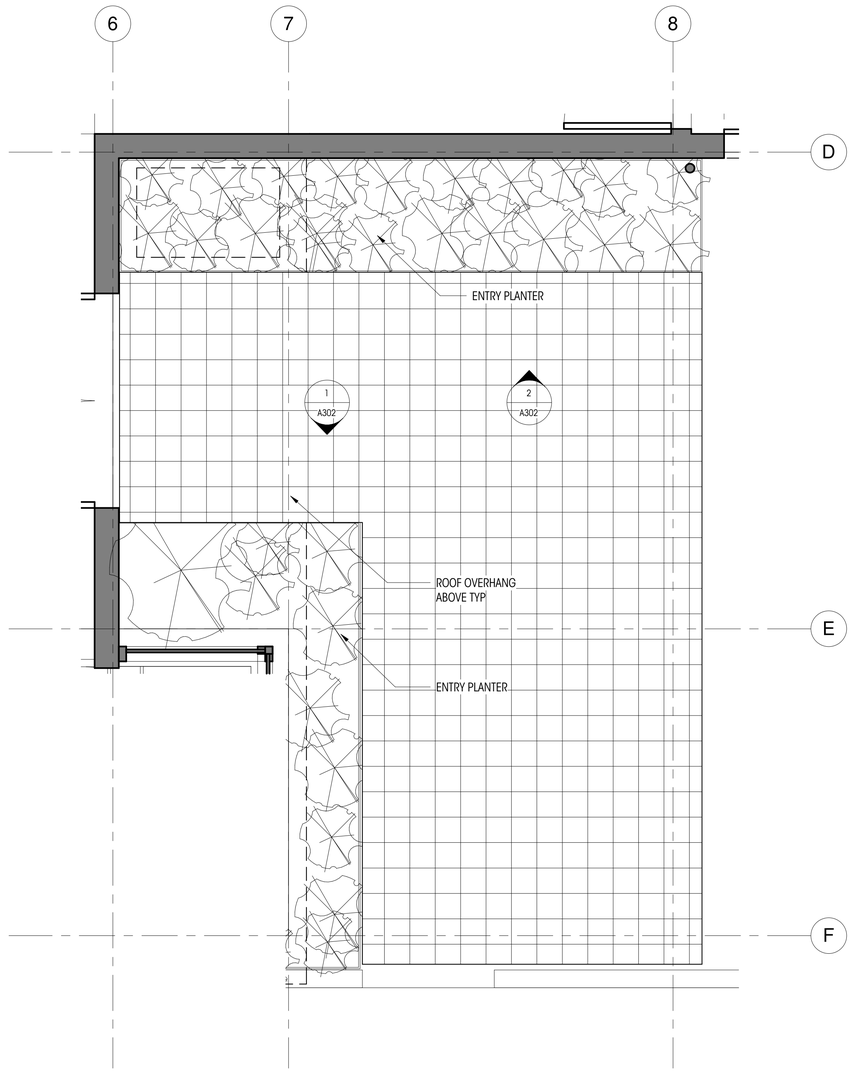
DEDICATED APPROVAL STAMP SPACE



1 ENTRY - SOUTH
1/4" = 1'-0"



2 ENTRY - NORTH
1/4" = 1'-0"



EP-1 ENTRY - ENLARGED PLAN
1/2" = 1'-0"

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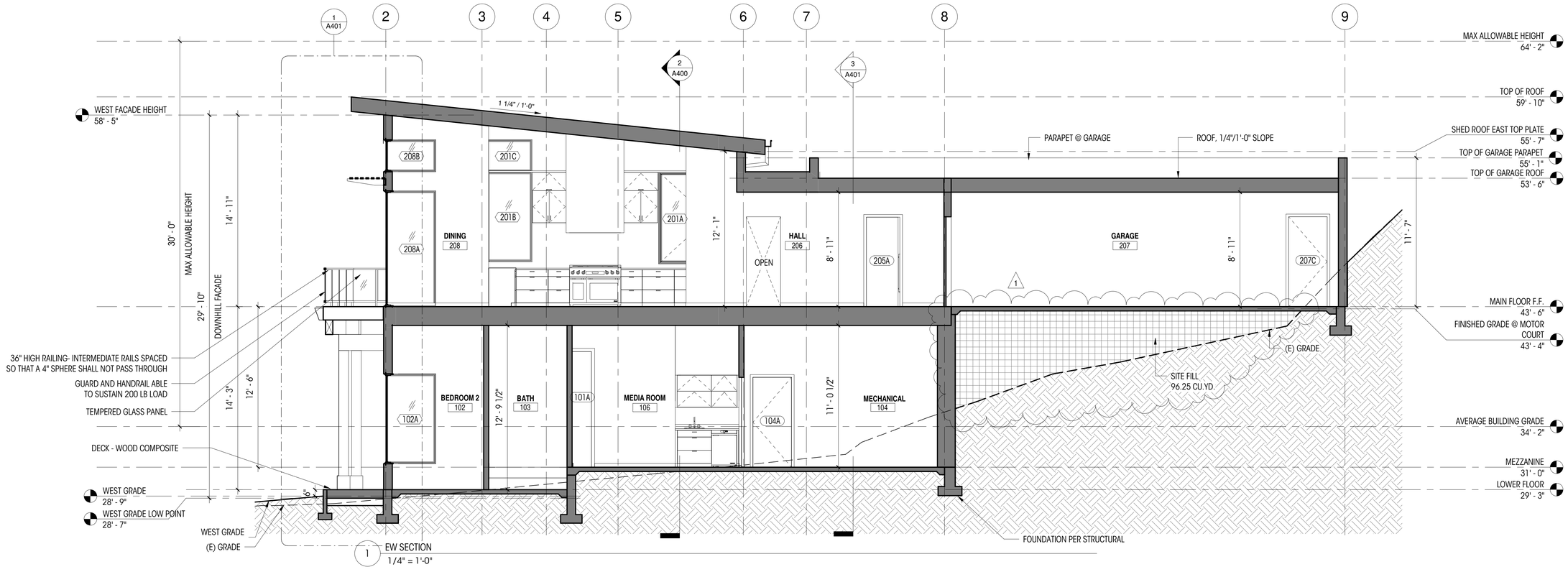
ENTRY

SCALE: As indicated

A302

DEDICATED APPROVAL STAMP SPACE



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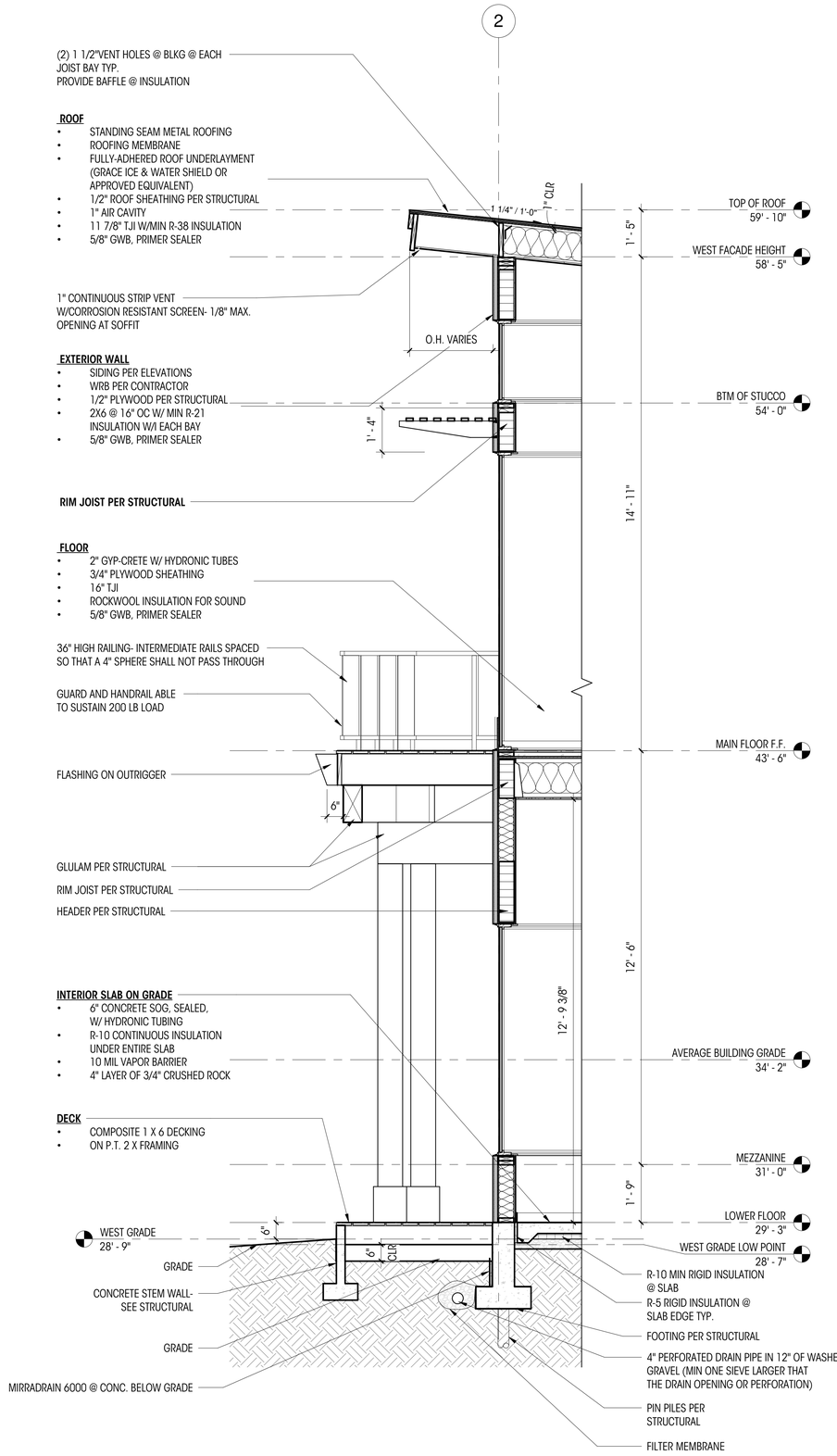
BUILDING SECTIONS

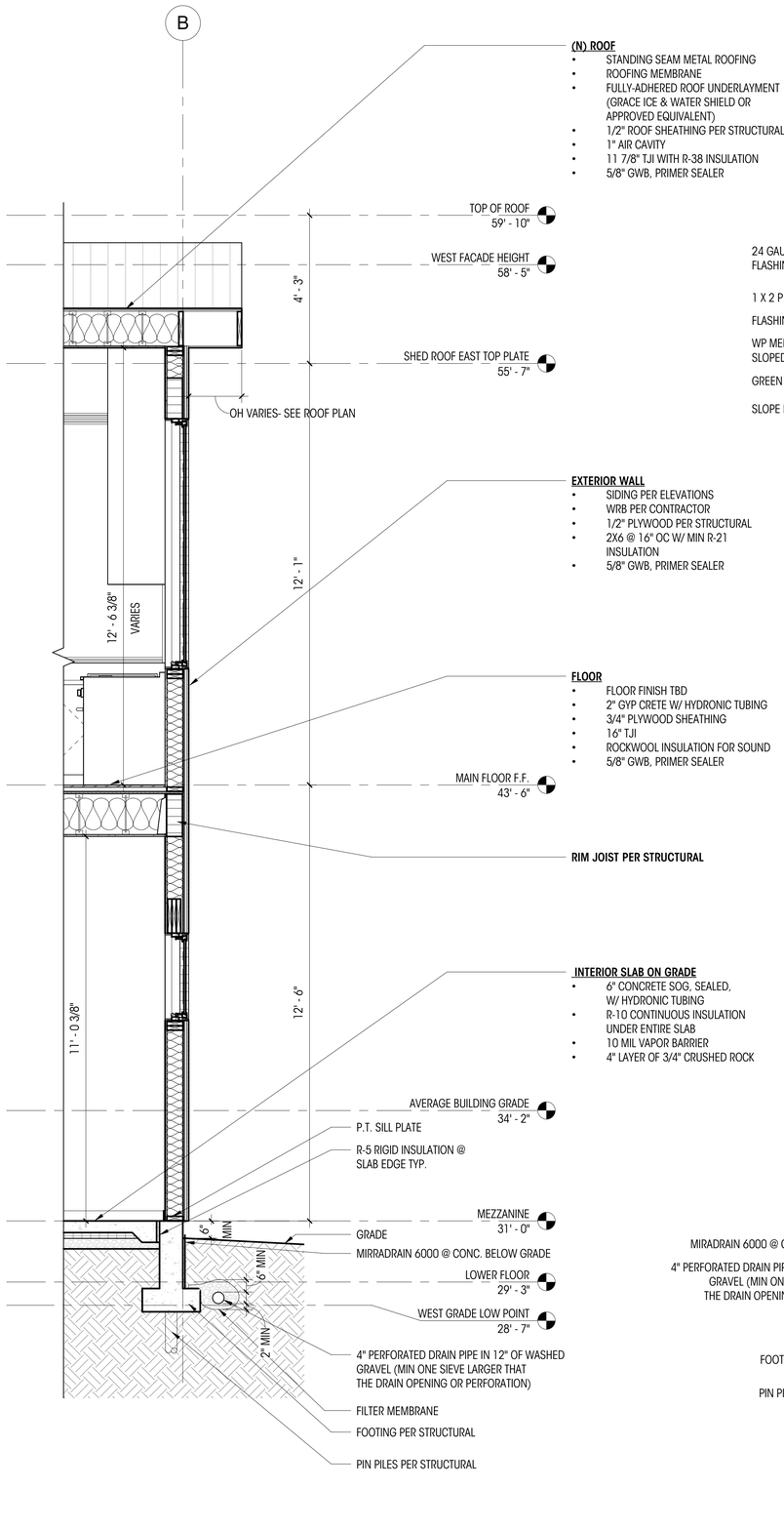
SCALE: 1/4" = 1'-0"

A400

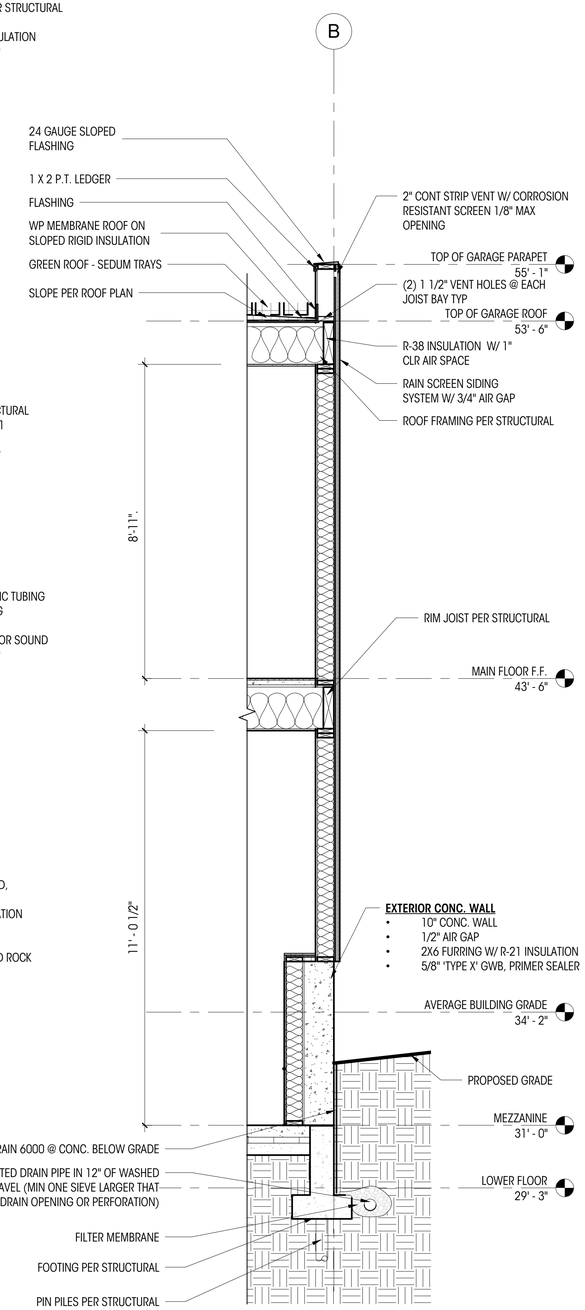
DEDICATED APPROVAL STAMP SPACE



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



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



3 WALL SECTION 3
1/2" = 1'-0"

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WALL SECTIONS

SCALE: 1/2" = 1'-0"

A401

DEDICATED APPROVAL STAMP SPACE

WINDOW SCHEDULE

PLAN ID	TYPE	WIDTH (ft)	HEIGHT (ft)	HEAD HT	UNIT AREA (sf)	U VALUE	UA	NOTES
100A	Casement	3' - 6"	6' - 0"	9' - 0"	21 SF	0.28	6 SF	
100B	Awning	3' - 6"	2' - 6"	10' - 9"	9 SF	0.28	2 SF	
101A	Fixed	4' - 0"	7' - 0"	8' - 1 3/4"	28 SF	0.28	8 SF	2
101B	Casement	4' - 0"	7' - 0"	8' - 3"	28 SF	0.28	8 SF	2
102A	Fixed	4' - 0"	7' - 0"	8' - 11"	28 SF	0.28	8 SF	
103A	Awning	2' - 6"	2' - 6"	8' - 3"	6 SF	0.28	2 SF	
108A	Curtain Wall	3' - 10"	8' - 9"		34 SF	0.28	9 SF	
108B	Curtain Wall	2' - 2 13/16"	8' - 9"		20 SF	0.28	5 SF	6
108C	Curtain Wall	2' - 4 1/16"	8' - 9"		20 SF	0.28	6 SF	6
108D	Curtain Wall	2' - 2 13/16"	8' - 9"		20 SF	0.28	5 SF	6
108E	Curtain Wall	3' - 10 19/32"	8' - 9"		34 SF	0.28	10 SF	6
108F	Curtain Wall	2' - 2 13/16"	3' - 8 1/2"		8 SF	0.28	2 SF	6
108G	Curtain Wall	2' - 4 1/16"	3' - 8 1/2"		9 SF	0.28	2 SF	6
108H	Curtain Wall	2' - 2 13/16"	3' - 8 1/2"		8 SF	0.28	2 SF	6
111A	Awning	4' - 0"	2' - 0"	11' - 4"	8 SF	0.28	2 SF	
112A	Awning	8' - 0"	2' - 0"	9' - 7"	16 SF	0.28	4 SF	
112B	Casement	3' - 6"	6' - 0"	9' - 0"	21 SF	0.28	6 SF	2
112C	Awning	3' - 6"	2' - 6"	10' - 9"	9 SF	0.28	2 SF	
201A	Casement	4' - 0"	7' - 2"	10' - 6"	29 SF	0.28	8 SF	
201B	Fixed	4' - 0"	7' - 0"	10' - 4 3/4"	28 SF	0.28	8 SF	
201C	Fixed	4' - 0"	2' - 6"	12' - 10 3/4"	10 SF	0.28	3 SF	
201D	Folding	8' - 0"	7' - 0"	10' - 6"	56 SF	0.28	16 SF	4
201E	Awning	8' - 0"	2' - 6"	13' - 0"	20 SF	0.28	6 SF	
202A	Awning	2' - 6"	2' - 6"	5' - 10"	6 SF	0.28	2 SF	
206A	Awning	10' - 6"	2' - 6"	2' - 6"	26 SF	0.28	7 SF	
208A	Fixed	4' - 0"	9' - 0"	8' - 11"	36 SF	0.28	10 SF	2
208B	Fixed	4' - 0"	2' - 6"	2' - 10 3/4"	10 SF	0.28	3 SF	
208C	Awning	8' - 0"	2' - 6"	3' - 0"	20 SF	0.28	6 SF	
209A	Awning	12' - 0"	2' - 6"	3' - 0"	30 SF	0.28	8 SF	
211A	Casement	5' - 4"	6' - 0"	9' - 0"	32 SF	0.28	9 SF	
212A	Casement	3' - 6"	6' - 0"	9' - 0"	21 SF	0.28	6 SF	
212B	Awning	3' - 6"	2' - 6"	3' - 0"	9 SF	0.28	2 SF	
212B	Awning	12' - 0"	2' - 6"	3' - 0"	30 SF	0.28	8 SF	
213A	Awning	2' - 6"	2' - 6"	9' - 0"	6 SF	0.28	2 SF	
214A	Awning	3' - 6"	7' - 0"	9' - 0"	25 SF	0.28	7 SF	2
214B	Awning	3' - 6"	2' - 0"	2' - 0"	7 SF	0.28	2 SF	
214C	Skylight	7' - 0"	3' - 0"		21 SF	0.5	11 SF	
215A	Awning	2' - 6"	2' - 6"	9' - 0"	6 SF	0.28	2 SF	
216A	Casement	5' - 4"	6' - 0"	9' - 0"	32 SF	0.28	9 SF	2,3

TOTAL WINDOW COUNT: 39 TOTAL GLAZING SURFACE: 898 SF TOTAL UA: 224 SF

GENERAL NOTES

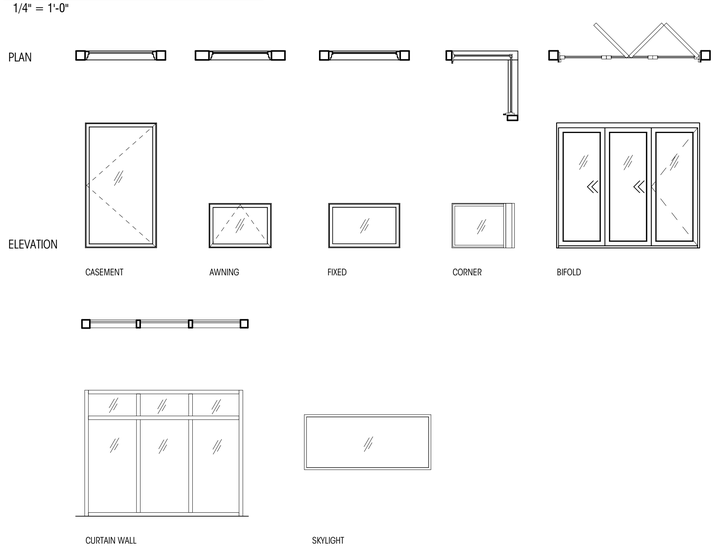
- ALL DIMENSIONS SHOWN ARE FINISHED DIMENSIONS, R.O. PER CONTRACTOR.
- CONTRACTOR TO VERIFY ALL SIZES AND DIMENSIONS IN FIELD WITH OWNER BEFORE ORDERING.
- ALL NEW WINDOWS TO BE NFRC CERTIFIED.
- ALL WINDOW WALL IS TEMPERED GLASS.
- REFER TO PLANS AND TAGS FOR LOCATION AND SWINGS.
- ALL ELEVATIONS ARE FROM THE EXTERIOR.
- ALL NEW VERTICAL FENESTRATION U-VALUE TO MEET ENERGY COMPLIANCE GUIDELINES
- PER IBC 8310.2 ALL **EGRESS** OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SF, NET CLEAR HEIGHT OPENING SHALL NOT BE LESS THAN 24" AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20".
  THE WINDOW SILL SHALL HAVE HEIGHT OF NOT MORE THAN 44" ABOVE THE FLOOR
- PROVIDE WINDOW FALL PROTECTION PER IRC R312 FOR ANY WINDWO WITH SILL HEIGHT LESS THAN 24"

SPECIFIC NOTES

1. EGRESS
2. TEMPERED GLASS/SAFETY GLAZING
3. FROSTED/OPAQUE GLASS
4. BIFOLD WINDOW SYSTEM
5. SILLS FLUSH WITH COUNTERTOP
6. CUSTOM SIZE

WINDOW TYPES

1/4" = 1'-0"



DOOR SCHEDULE

PLAN ID	TYPE	WIDTH (ft.)	HEIGHT (ft.)	AREA (sf.)	U VALUE	UA	NOTES
100A	Folding	12' - 0"	9' - 0"	108 SF	0.28	30 SF	1,2
100B	Folding	12' - 0"	9' - 0"	108 SF	0.28	30 SF	1,2
101A	Sliding	7' - 6"	9' - 0"	68 SF			
101B	Swing	2' - 0"	7' - 0"	14 SF			
102A	Swing	2' - 6"	7' - 0"	18 SF			
102B	Sliding	5' - 6"	7' - 0"	39 SF			
102C	Folding	8' - 0"	9' - 0"	72 SF	0.28	20 SF	1,2
103A	Swing	2' - 6"	7' - 0"	18 SF			
103B	Frameless Glass	2' - 4"	8' - 3"	19 SF			2,6
104A	Swing	3' - 0"	7' - 0"	21 SF	0.17	4 SF	1
104B	Swing	3' - 0"	7' - 0"	21 SF			
105A	Swing	3' - 0"	7' - 0"	21 SF			
106A	Sliding	5' - 0"	8' - 3"	41 SF	0.28	12 SF	1,2
106B	Pocket	3' - 0"	7' - 0"	21 SF			
107A	Swing	2' - 6"	7' - 0"	18 SF			
107B	Frameless Glass	2' - 2"	7' - 0"	15 SF			2,6
108A	Swing	2' - 0"	7' - 0"	14 SF			
109A	Frameless Glass	2' - 11"	8' - 0"	23 SF			2,6
110A	Swing	3' - 0"	7' - 0"	21 SF			
111A	Swing	2' - 6"	7' - 0"	18 SF			
111B	Frameless Glass	2' - 2"	7' - 0"	15 SF			2,6
112A	Swing	2' - 6"	7' - 0"	18 SF			
112B	Sliding	4' - 6"	7' - 0"	32 SF			
200A	Entry	6' - 0"	9' - 0"	54 SF	0.28	15 SF	5,2
202A	Pocket	2' - 8"	7' - 0"	19 SF			
203A	Swing	3' - 0"	7' - 0"	21 SF			
204A	Swing	2' - 8"	7' - 0"	19 SF			
205A	Pocket	2' - 8"	7' - 0"	19 SF			
206A	Swing	3' - 0"	7' - 0"	21 SF			3
206B	Swing	2' - 6"	7' - 0"	18 SF			
207A	Garage OH	9' - 0"	8' - 0"	72 SF			
207B	Garage OH	18' - 0"	8' - 0"	144 SF			
207C	Swing	3' - 0"	7' - 0"	21 SF	0.5	11 SF	1
208A	Folding	8' - 0"	9' - 0"	72 SF	0.28	20 SF	1,2
209A	Folding	12' - 0"	9' - 0"	108 SF	0.28	30 SF	1,2
211A	Sliding	8' - 0"	9' - 0"	72 SF			
212A	Pocket	2' - 8"	7' - 0"	19 SF			
212B	Pocket	2' - 8"	7' - 0"	19 SF			
212C	Folding	12' - 0"	9' - 0"	108 SF	0.28	30 SF	1,2
213A	Pocket	2' - 8"	7' - 0"	19 SF			
213B	Pocket	2' - 8"	7' - 0"	19 SF			
214A	Swing	2' - 8"	7' - 0"	19 SF			
215A	Swing	2' - 6"	7' - 0"	18 SF			
216A	Frameless Glass	2' - 6"	7' - 6"	19 SF			2,6

TOTAL DOOR COUNT: 44 TOTAL EXTERIOR DOOR AREA: 938 SF TOTAL UA: 202 SF
TOTAL EXTERIOR DOOR GLAZING AREA: 616 SF

GENERAL NOTES

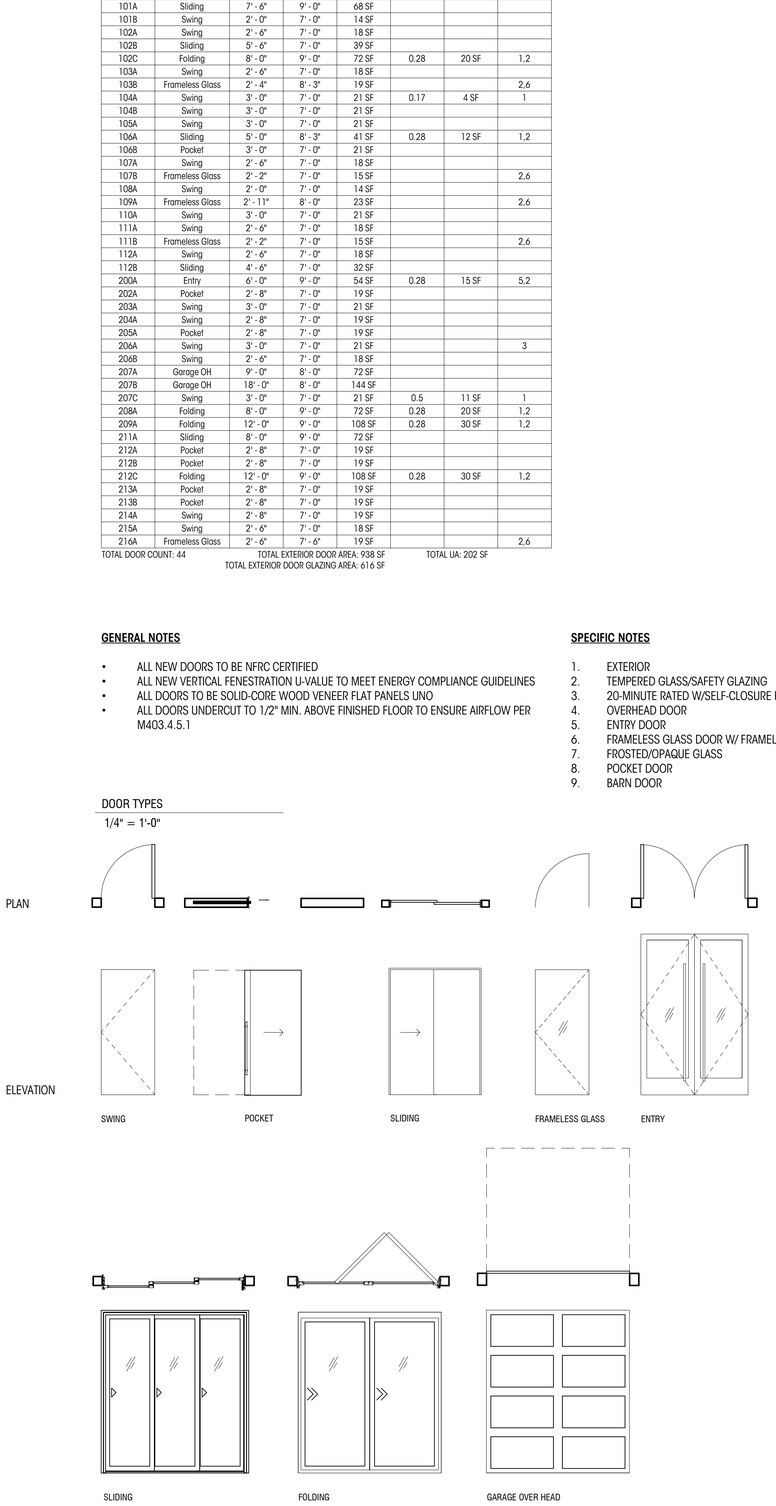
- ALL NEW DOORS TO BE NFRC CERTIFIED
- ALL NEW VERTICAL FENESTRATION U-VALUE TO MEET ENERGY COMPLIANCE GUIDELINES
- ALL DOORS TO BE SOLID-CORE WOOD VENEER FLAT PANELS UNO
- ALL DOORS UNDERCUT TO 1/2" MIN. ABOVE FINISHED FLOOR TO ENSURE AIRFLOW PER M403.4.5.1

SPECIFIC NOTES

1. EXTERIOR
2. TEMPERED GLASS/SAFETY GLAZING
3. 20-MINUTE RATED W/SELF-CLOSURE PER IRC R302.5.1
4. OVERHEAD DOOR
5. ENTRY DOOR
6. FRAMELESS GLASS DOOR W/ FRAMELESS GLASS SURROUND
7. FROSTED/OPAQUE GLASS
8. POCKET DOOR
9. BARN DOOR

DOOR TYPES

1/4" = 1'-0"



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WINDOW / DOOR SCHEDULES

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

A600

DEDICATED APPROVAL STAMP SPACE

General Structural Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE 2015 SEATTLE BUILDING CODE.

2. DESIGN LOADING CRITERIA:
   RESIDENTIAL – ONE AND TWO-FAMILY DWELLINGS
   FLOOR LIVE LOAD . . . . . 40 PSF
   ROOF
   ROOF LIVE LOAD . . . . . 25 PSF
   MISCELLANEOUS LOADS
   DECKS . . . . . 1.5 x AREA SERVED
   ENVIRONMENTAL LOADS
   SNOW . . . . . Ce=1.0, Is=1.0, Ct=1.1, Pg=25 PSF, Pf=20 PSF
   WIND . . . . . GCpi=0.18, 110 MPH, RISK CATEGORY II, EXPOSURE "C"
   EARTHQUAKE . . . ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
   LATERAL SYSTEM: LIGHT FRAMED SHEAR WALLS
   SITE CLASS=D, Ss=1.402, Sds=0.935, S1=0.54, SD1=0.54, Cs=0.144
   SDC D, Ie=1.0, R=6.5
   SEE PLANS FOR ADDITIONAL LOADING CRITERIA

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATION, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.

4. PRIMARY STRUCTURAL ELEMENTS NOT DIMENSIONED ON THE STRUCTURAL PLANS AND DETAILS SHALL BE LOCATED BY THE ARCHITECTURAL PLANS AND DETAILS. VERTICAL DIMENSION CONTROL IS DEFINED BY THE ARCHITECTURAL WALL SECTIONS, BUILDING SECTION, AND PLANS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN BOTH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. CONFORM TO ASCE 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION".

7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL NOTES AND DETAILS SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED OR REQUEST ADDITIONAL INFORMATION. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

9. ALL STRUCTURAL SYSTEMS, WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED, SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

10. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

    GLUED LAMINATED MEMBERS
    MANUFACTURED LUMBER (PSL'S, LSL'S, LVL'S)
    PLYWOOD WEB JOISTS
    STRUCTURAL STEEL

    CONTRACTOR SHALL SUBMIT WALL ELEVATION DRAWINGS OF AT LEAST 1/8" = 1'-0" SCALE INDICATING LOCATIONS OF CONNECTION EMBEDMENT'S AND WALL OPENINGS FOR REVIEW PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WALL ELEVATION DRAWINGS WITH REINFORCEMENT SHOP DRAWINGS.

    APPROVED SETS OF ALL SHOP DRAWINGS SHALL ALSO BE SUBMITTED TO THE BUILDING DEPARTMENT.

11. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY; REPRODUCIBLE WILL BE MARKED AND RETURNED WITHIN TWO WEEKS OF RECEIPT WITH A NOTATION INDICATING THAT THE SUBMITTAL HAS BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE SUBMITTED ITEMS SHALL NOT BE INSTALLED UNTIL THEY HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

    SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

12. SHOP DRAWINGS OF DESIGN BUILD COMPONENTS INCLUDING CANOPIES, BALCONIES, COLD FORM STEEL FRAMING, TEMPORARY SHORING, CURTAIN WALL SYSTEMS, SKYLIGHT FRAMES, PREFABRICATED STAIR SYSTEMS, EXTERIOR CLADDING, AND PRE-ENGINEERED SYSTEMS SHALL BE STAMPED AND SIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON. SHOP DRAWINGS SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO REVIEW OF THE ARCHITECT OR ENGINEER OF RECORD FOR GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE. DESIGN CALCULATIONS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

QUALITY ASSURANCE

13. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTIONS 110 AND 1705 OF THE INTERNATIONAL BUILDING CODE BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE ARCHITECT, AND RETAINED BY THE BUILDING OWNER. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS. SPECIAL INSPECTION OF THE FOLLOWING TYPES OF CONSTRUCTION IS REQUIRED UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL FABRICATION AND ERECTION	PER AISC 360
SOIL CONDITIONS, FILL PLACEMENT, AND DENSITY	PER TABLE 1705.6
DRIVEN DEEP FOUNDATION	PER TABLE 1705.7
HELICAL PILE FOUNDATION	CONTINUOUS
EXPANSION BOLTS AND THREADED EXPANSION INSERTS	PER MANUFACTURER
EPOXY GROUTED INSTALLATIONS	PER MANUFACTURER

PERIODIC INSPECTION: INSPECTION SHALL BE PERFORMED AT INTERVALS NECESSARY TO CONFIRM THAT WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE WITH REQUIREMENTS.
CONTINUOUS INSPECTION: INSPECTOR SHALL BE ONSITE AND OBSERVE THE WORK REQUIRING INSPECTION AT ALL TIMES THAT WORK IS PERFORMED.

GEOTECHNICAL

14. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE SOILS REPORT OR AS DIRECTED BY THE SOILS ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH OR COMPACTED STRUCTURAL FILL AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND SOILS ENGINEER. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SOILS REPORT.

    LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED). . . . . 50 PCF/35 PCF
    ALLOWABLE PASSIVE EARTH PRESSURE (FS OF 1.5 INCLUDED). . . . . 400 PCF
    COEFFICIENT OF FRICTION (FS OF 1.5 INCLUDED). 0.5
    SEISMIC SURCHARGE PRESSURE (UNIFORM LOAD) . . . . . 6H PSF
    4" DIA PILE CAPACITY . . . . . 10 TONS

    SOILS REPORT REFERENCE:

    GEOTECHNICAL ENGINEERING STUDY
    PROPOSED RESIDENCE
    3611 WEST MERCER WAY, MERCER ISLAND, WA

    PREPARED BY:

    PANGEO INCORPORATED ON APRIL 16, 2019

15. PIN PILES SHOWN ON THE PLAN SHALL BE 4" DIAMETER SCHEDULE 40. THE MAXIMUM CAPACITY OF 4" PILES SHALL BE 10 TONS. ALL PILES SHALL BE DRIVEN TO REFUSAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. PILES USED IN COMMON TO RESIST LATERAL EARTH PRESSURES SHALL HAVE THE ADDITIONAL REQUIREMENT OF BEING EMBEDDED A MINIMUM OF 10 FEET BELOW RETAINED GRADE. THE MAXIMUM PILE ECCENTRICITY SHALL BE 2 INCHES. GEOTECHNICAL SPECIAL INSPECTION SHALL BE SUBJECT TO THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND THE BUILDING DEPARTMENT. SEE PLANS FOR OTHER SIZES AND CRITERIA. DRIVING CRITERIA FOR 4" DIAMETER PIPE PILES ARE AS FOLLOWS:

HAMMER MODEL	HAMMER WEIGHT (lb)/ BLOWS PER MINUTE	REFUSAL CRITERIA (seconds per inch of penetration)
HYDRAULIC TB 325	850/900	16
HYDRAULIC TB 425	1,100/900	10
HYDRAULIC TB 725X	2,000/600	4

CONCRETE

16. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301, INCLUDING TESTING PROCEDURES. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF f'c = 3,000 PSI AND MIX SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. REQUIRED CONCRETE STRENGTH IS BASED ON THE DURABILITY REQUIREMENTS OF SECTION 1904 OF THE IBC. DESIGN STRENGTH IS f'c = 2,500 PSI.

17. A CONCRETE PERFORMANCE MIX SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 318-14, SECTIONS 26.4.3 AND 26.4.4. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE PAID BY THE GENERAL CONTRACTOR. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

18. ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER OR STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, AND C618. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14, TABLE 19.3.2.1 MODERATE EXPOSURE, F1.

19. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, FY = 60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, FY = 40,000 PSI. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. SPIRAL REINFORCEMENT SHALL BE DEFORMED WIRE CONFORMING TO ASTM A615, GRADE 60, FY = 60,000 PSI.

20. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 315-99 AND 318-14. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318-14, CLASS B. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

    NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

21. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

    FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . . 3"
    FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER) . . . . 2"
    FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#5 BARS OR SMALLER). . 1-1/2"
    COLUMN TIES OR SPIRALS AND BEAM STIRRUPS . . . . . 1-1/2"
    SLABS AND WALLS (INT. FACE). . . GREATER OF BAR DIAMETER PLUS 1/8" OR 3/4"

22. CONCRETE WALL REINFORCING--PROVIDE THE FOLLOWING UNLESS DETAILED OTHERWISE:

6" WALLS	#4 @ 16 HORIZ.	#4 @ 18 VERTICAL	1 CURTAIN
8" WALLS	#4 @ 12 HORIZ.	#4 @ 18 VERTICAL	1 CURTAIN
10" WALLS	#4 @ 18 HORIZ.	#4 @ 18 VERTICAL	2 CURTAINS
12" WALLS	#4 @ 16 HORIZ.	#4 @ 18 VERTICAL	2 CURTAINS

23. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES, BOTH CAST-IN-PLACE AND PRECAST.

24. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (3000 PSI MINIMUM).

ANCHORAGE

25. EXPANSION BOLTS INTO CONCRETE SHALL BE "STRONG-BOLT 2" WEDGE ANCHORS AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY AND INSTALLED IN STRICT CONFORMANCE TO ICC-ES REPORT NUMBER ESR-3037, INCLUDING MINIMUM EMBEDMENT REQUIREMENTS. BOLTS INTO CONCRETE MASONRY OR BRICK MASONRY UNITS SHALL BE INTO FULLY GROUTED CELLS. PERIODIC SPECIAL INSPECTION IS REQUIRED TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, ANCHOR LOCATION, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT, AND ADHERENCE TO THE INSTALLATION INSTRUCTIONS.

26. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED USING "SET-XP" HIGH STRENGTH EPOXY AS MANUFACTURED BY THE SIMPSON STRONG, TIE COMPANY. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT NO. ESR-2508. MINIMUM BASE MATERIAL TEMPERATURE IS 50 DEGREES, F. RODS SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED. PERIODIC SPECIAL INSPECTION OF INSTALLATION IS REQUIRED TO VERIFY ANCHOR OR EMBEDDED BAR TYPE AND DIMENSIONS, LOCATION, ADHESIVE IDENTIFICATION AND EXPIRATION, HOLE DIMENSIONS, HOLE CLEANING PROCEDURE, ANCHOR EMBEDMENT, AND ADHERENCE TO THE INSTALLATION INSTRUCTIONS. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR HORIZONTAL AND OVERHEAD INSTALLATIONS.

27. CONCRETE SCREW ANCHORS INTO CONCRETE AND CONCRETE MASONRY UNITS SHALL BE "TITEN HD" HEAVY DUTY SCREW ANCHOR AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, INSTALLED IN STRICT ACCORDANCE WITH ICC-ES REPORT NO. ESR-2713 (CONCRETE), NO. ESR-1056 (CMU), INCLUDING MINIMUM EMBEDMENT REQUIREMENTS. SCREW ANCHORS INTO CONCRETE MASONRY UNITS SHALL BE INTO FULLY GROUTED CELLS. SPECIAL INSPECTION IS REQUIRED.

STEEL

28. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON:

    A. AISC 360 AND SECTION 2205.2 OF THE INTERNATIONAL BUILDING CODE.
    B. APRIL 14, 2010 AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AMENDED AS FOLLOWS: AS NOTED IN THE CONTRACT DOCUMENTS, BY THE DELETION OF PARAGRAPH 4.4.1, AND REVISE REFERENCE FROM "STRUCTURAL DESIGN DRAWINGS" TO "CONTRACT DOCUMENTS" IN PARAGRAPH 3.1.
    C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

29. WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, FY = 50 KSI. OTHER ROLLED SHAPES INCLUDING PLATES, SHALL CONFORM TO ASTM A36, FY = 36 KSI. STEEL PIPE SHALL CONFORM TO ASTM A-53, TYPE E OR S, GRADE B, Fy = 35 KSI. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B, FY = 42 KSI (ROUND), FY = 46 KSI (SQUARE AND RECTANGULAR). CONNECTION BOLTS SHALL CONFORM TO ASTM A307.

30. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

31. ALL STEEL EXPOSED TO THE WEATHER OR IN CONTACT WITH GROUND SHALL BE CORROSION PROTECTED BY GALVANIZATION OR PROVIDED WITH EXTERIOR PAINT SYSTEM, UNLESS OTHERWISE NOTED.

32. SHOP PRIME ALL STEEL EXCEPT:

    A. STEEL ENCASED IN CONCRETE.
    B. SURFACES TO BE WELDED.
    C. CONTACT SURFACES AT HIGH-STRENGTH BOLTS.
    D. MEMBERS TO BE GALVANIZED.
    E. MEMBERS WHICH WILL BE CONCEALED BY INTERIOR FINISHES.
    F. SURFACES TO RECEIVE SPRAYED FIREPROOFING.
    G. SURFACES TO RECEIVE OTHER SPECIAL SHOP PRIMERS.

33. ALL A-325N CONNECTION BOLTS NEED ONLY BE TIGHTENED TO A SNUG TIGHT CONDITION, DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH.

34. ALL ANCHORS EMBEDDED IN MASONRY OR CONCRETE SHALL BE A307 HEADED BOLTS OR A36 THREADED ROD WITH AN ASTM 563 HEAVY HEX NUT TACK WELDED ON THE EMBEDDED END.

35. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS AND SHALL BE PERFORMED BY WABO CERTIFIED WELDERS USING E70XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT -20 DEGREES F AND 40 FT – LBS AT 70 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.

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SHEET TITLE: General Structural Notes

SCALE: -
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S1.1

WOOD

36. FRAMING LUMBER SHALL BE S-DRY, KD, OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD "GRADING RULES FOR WEST COAST LUMBER NO. 17", OR WWPA STANDARD, "WESTERN LUMBER GRADING RULES 2011". FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS AND BEAMS	(2X & 3X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASE VALUE, Fb = 850 PSI
	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1000 PSI
BEAMS	(INCL. 6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1350 PSI
POSTS	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 2 MINIMUM BASE VALUE, Fc = 1350 PSI
	(6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fc = 1000 PSI
STUDS, PLATES & MISC. FRAMING:		DOUGLAS-FIR-LARCH OR HEM-FIR NO. 2

37. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND ANSI/AITC STANDARDS. EACH MEMBER SHALL BEAR AN AITC OR APA-EWS IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC OR APA-EWS CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv =265 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2400 PSI, Fv = 265 PSI. CAMBER ALL SIMPLE SPAN GLULAM BEAMS, WITH SPANS OVER 30', TO 3,500' RADIUS, UNLESS SHOWN OTHERWISE ON THE PLANS.

38. MANUFACTURED LUMBER, PSL, LVL, AND LSL SHOWN ON PLAN ARE BASED PRODUCTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION IN ACCORDANCE WITH ICC-ES REPORT ESR-1387. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PSL (2.0E)	Fb = 2900 PSI,	E = 2000 KSI,	Fv = 290 PSI
LVL (2.0E)	Fb = 2600 PSI,	E = 2000 KSI,	Fv = 285 PSI
LSL (1.55E)	Fb = 2325 PSI,	E = 1550 KSI,	Fv = 310 PSI

ALTERNATE MANUFACTURED LUMBER MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

MANUFACTURED LUMBER PRODUCTS SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%. EXCESSIVE DEFLECTIONS MAY OCCUR IF MOISTURE CONTENT EXCEEDS THIS VALUE.

39. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

40. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1 OR PS 2. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD.

ROOF SHEATHING SHALL BE 5/8" (NOMINAL) WITH SPAN RATING 32/16.

FLOOR SHEATHING SHALL BE 1-1/8" (NOMINAL) WITH SPAN RATING 48/24.

WALL SHEATHING SHALL BE 1/2" (NOMINAL) WITH SPAN RATING 24/0.

PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING.

REFER TO WOOD FRAMING NOTES BELOW FOR TYPICAL NAILING REQUIREMENTS.

41. ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY.

42. PRESERVATIVE TREATED WOOD SHALL BE TREATED PER AWPA STANDARD U1 TO THE USE CATEGORY EQUAL TO OR HIGHER THAN THE INTENDED APPLICATION. TREATED WOOD FOR ABOVE GROUND USE SHALL BE TREATED TO AWPA UC3B. WOOD IN CONTINUOUS CONTACT WITH FRESH WATER OR SOIL SHALL BE TREATED TO AWPA UC4A. WOOD FOR USE IN PERMANENT FOUNDATIONS SHALL BE TREATED TO AWPA UC4B.

43. WOOD TREATED FOR FIRE RESISTANCE SHALL MEET THE REQUIREMENTS OF ASTM E 84 OR UL 723 AND HAVE A LISTED FLAME SPREAD INDEX OF 25 OR LESS. FIRE RETARDANT TREATED LUMBER AND WOOD STRUCTURAL PANELS SHALL BE LABELED IN ACCORDANCE WITH IBC 2303.2.4. WOOD TREATED FOR FIRE PROTECTION FOR USE IN INTERIOR ABOVE GROUND CONSTRUCTION AND CONTINUOUSLY PROTECTED FROM WEATHER AND OTHER SOURCES OF MOISTURE SHALL BE TREATED TO AWPA UCFA. WOOD TREATED FOR FIRE PROTECTION FOR USE IN EXTERIOR ABOVE GROUND CONSTRUCTION AND SUBJECT TO WETTING OR OTHER SOURCES OF MOISTURE SHALL BE TREATED TO AWPA UCFB.

44. FASTENERS AND TIMBER CONNECTORS USED WITH TREATED WOOD SHALL HAVE CORROSION RESISTANCE AS INDICATED IN THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED.

WOOD TREATMENT	CONDITION	PROTECTION
HAS NO AMMONIA CARRIER	INTERIOR DRY	G90 GALVANIZED
CONTAINS AMMONIA CARRIER	INTERIOR DRY	G185 OR A185 HOT DIPPED OR CONTINUOUS HOT-GALVANIZED PER ASTM A653
CONTAINS AMMONIA CARRIER	INTERIOR WET	TYPE 304 OR 316 STAINLESS
CONTAINS AMMONIA CARRIER	EXTERIOR	TYPE 304 OR 316 STAINLESS
AZCA	ANY	TYPE 304 OR 316 STAINLESS

INTERIOR DRY CONDITIONS SHALL HAVE WOOD MOISTURE CONTENT LESS THAN 19%. WOOD MOISTURE CONTENT IN OTHER CONDITIONS (INTERIOR WET, EXTERIOR WET, AND EXTERIOR DRY) IS EXPECTED TO EXCEED 19%. CONNECTORS AND THEIR FASTENERS SHALL BE THE SAME MATERIAL. COMPLY WITH THE TREATMENT MANUFACTURERS RECOMMENDATIONS FOR PROTECTION OF METAL.

45. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER FOR MAXIMUM LOAD CARRYING CAPACITY. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

ALL 2X JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS. ALL TJI JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "ITS" SERIES JOIST HANGERS. ALL DOUBLE-JOIST BEAMS SHALL BE CONNECTED TO FLUSH BEAMS WITH "MIT" SERIES JOIST HANGERS.

WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER.

ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM)AS MEMBERS CONNECTED.

46. WOOD FASTENERS

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
6d	2"	0.113"
8d	2-1/2"	0.131"
10d	3"	0.148"
12d	3-1/4"	0.148"
16d BOX	3-1/2"	0.135"

IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS, THEY SHALL SUBMIT NAIL SPECIFICATIONS TO THE STRUCTURAL ENGINEER (PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.

NAILS - PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED. TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30 DEGREES WITH THE MEMBER AND STARTED 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END.

B. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG BOLTS BEARING ON WOOD. INSTALLATION OF LAG BOLTS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION WITH A LEAD BORE HOLE OF 60 TO 70 PERCENT OF THE SHANK DIAMETER. LEAD HOLES ARE NOT REQUIRED FOR 3/8" AND SMALLER LAG SCREWS.

47. NOTCHES AND HOLES IN WOOD FRAMING:

A. NOTCHES ON THE ENDS OF SOLID SAWN JOISTS AND RAFTERS SHALL NOT EXCEED ONE-FOURTH THE JOIST DEPTH. NOTCHES IN THE TOP OR BOTTOM OF SOLID SAWN JOISTS SHALL NOT EXCEED ONE-SIXTH THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN. HOLES BORED IN SOLID SAWN JOISTS AND RAFTERS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM OF THE JOIST, AND THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE JOIST.

B. IN EXTERIOR WALLS AND BEARING PARTITIONS, ANY WOOD STUD IS PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. A HOLE NOT GREATER IN DIAMETER THAN 40 PERCENT OF THE STUD WIDTH IS PERMITTED TO BE BORED IN ANY WOOD STUD. IN NO CASE SHALL THE EDGE OF THE BORED HOLE BE NEARER THAN 5/8 INCH TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A CUT OR NOTCH.

C. NOTCHES AND HOLES IN MANUFACTURED LUMBER AND PREFABRICATED PLYWOOD WEB JOISTS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS UNLESS OTHERWISE NOTED.

48. WOOD FRAMING NOTES--THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE, THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE AF&PA "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION". MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO IBC TABLE 2304.10.1. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

B. WALL FRAMING: REFER ARCHITECTURAL DRAWINGS FOR THE SIZE OF ALL WALLS. ALL STUDS SHALL BE SPACED AT 16" O.C. UNO. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS, AND AT BEAM OR HEADER BEARING LOCATIONS. TWO 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS SOLID BLOCKING AT MID-HEIGHT OF ALL STUD WALLS OVER 10'-0" IN HEIGHT.

ALL WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16d NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16d NAILS. FACE NAIL DOUBLE TOP PLATE WITH 16d @ 12" O.C. AND LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE EIGHT 16d NAILS @ 4" O.C. EACH SIDE JOINT.

ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH TWO ROWS OF 16d NAILS @ 12" ON-CENTER, OR ATTACHED TO CONCRETE BELOW WITH 5/8" DIAMETER ANCHOR BOLTS @ 4'-0" ON-CENTER EMBEDDED 7" MINIMUM, UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH TWO ROWS OF 16d @12" ON-CENTER. UNLESS OTHERWISE NOTED, GYPSUM WALLBOARD SHALL BE FASTENED TO THE INTERIOR SURFACE OF ALL STUDS AND PLATES WITH NO. 6 X 1-1/4" TYPE S OR W SCREWS @ 8" ON-CENTER. UNLESS INDICATED OTHERWISE, 1/2" (NOMINAL)APA RATED SHEATHING (SPAN RATING 24/0) SHALL BE NAILED TO ALL EXTERIOR SURFACES WITH 8d NAILS @ 6" ON-CENTER AT PANEL EDGES AND TOP AND BOTTOM PLATES (BLOCK UN-SUPPORTED EDGES)AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8d NAILS @ 12" ON-CENTER ALLOW 1/8" SPACING AT ALL PANEL EDGES AND PANEL ENDS.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. TOE-NAIL JOISTS TO SUPPORTS WITH TWO 16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI JOIST BEAMS TOGETHER WITH TWO ROWS 16d @ 12" ON-CENTER.

UNLESS OTHERWISE NOTED ON THE PLANS, PLYWOOD ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED AT 6" ON-CENTER WITH 8d NAILS TO FRAMED PANEL EDGES, STRUTS AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" ON-CENTER TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d @ 12" ON-CENTER UNLESS OTHERWISE NOTED.

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DESIGN: SRW, HAA

DRAWN: NHD

CHECKED: BDM

APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:

Yuan Residence

3611 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:

Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:

PERMIT

SHEET TITLE:

General Structural Notes

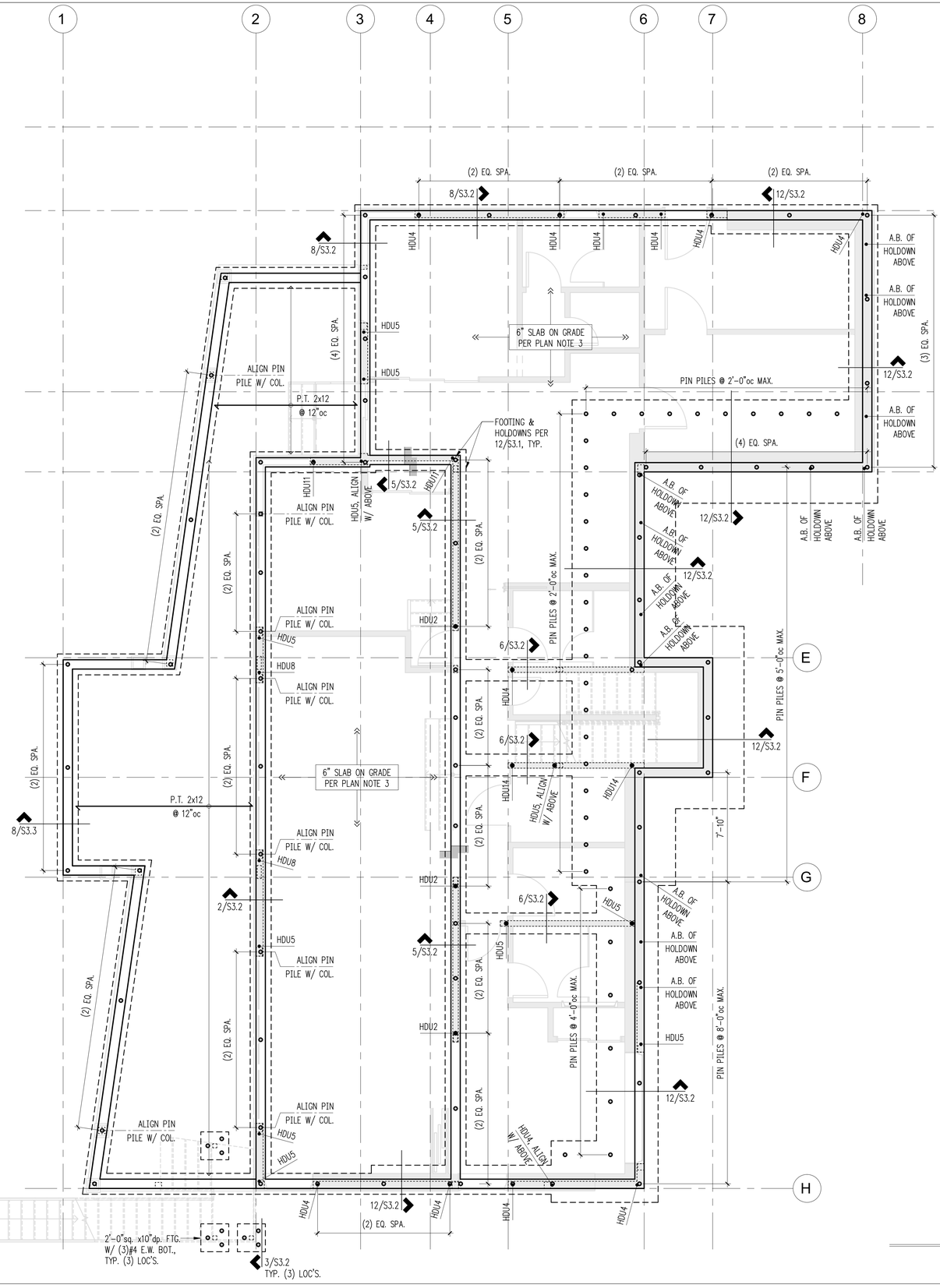
SCALE: -

DATE: April 20, 2019

PROJECT NO: 01519-2019-01

SHEET NO:

S1.2



Legend

- STRUCTURAL WALL OR POST ABOVE
- STEM WALL & FOOTING
- SPAN DIRECTION
- EXTENT OF JOISTS
- CHANGE IN ELEVATION PER ARCH.
- XX HOLDOWN PER 12/S3.1
- 4"ø PIN PILE (123 total this sheet)

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
3. INTERIOR SLABS ON GRADE SHALL BE 6" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
4. EXTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
5. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
6. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Foundation Plan
Scale: 1/4" = 1'-0"

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DYAN J. SAY — STATE OF WASHINGTON — 23000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: SRW, HAA
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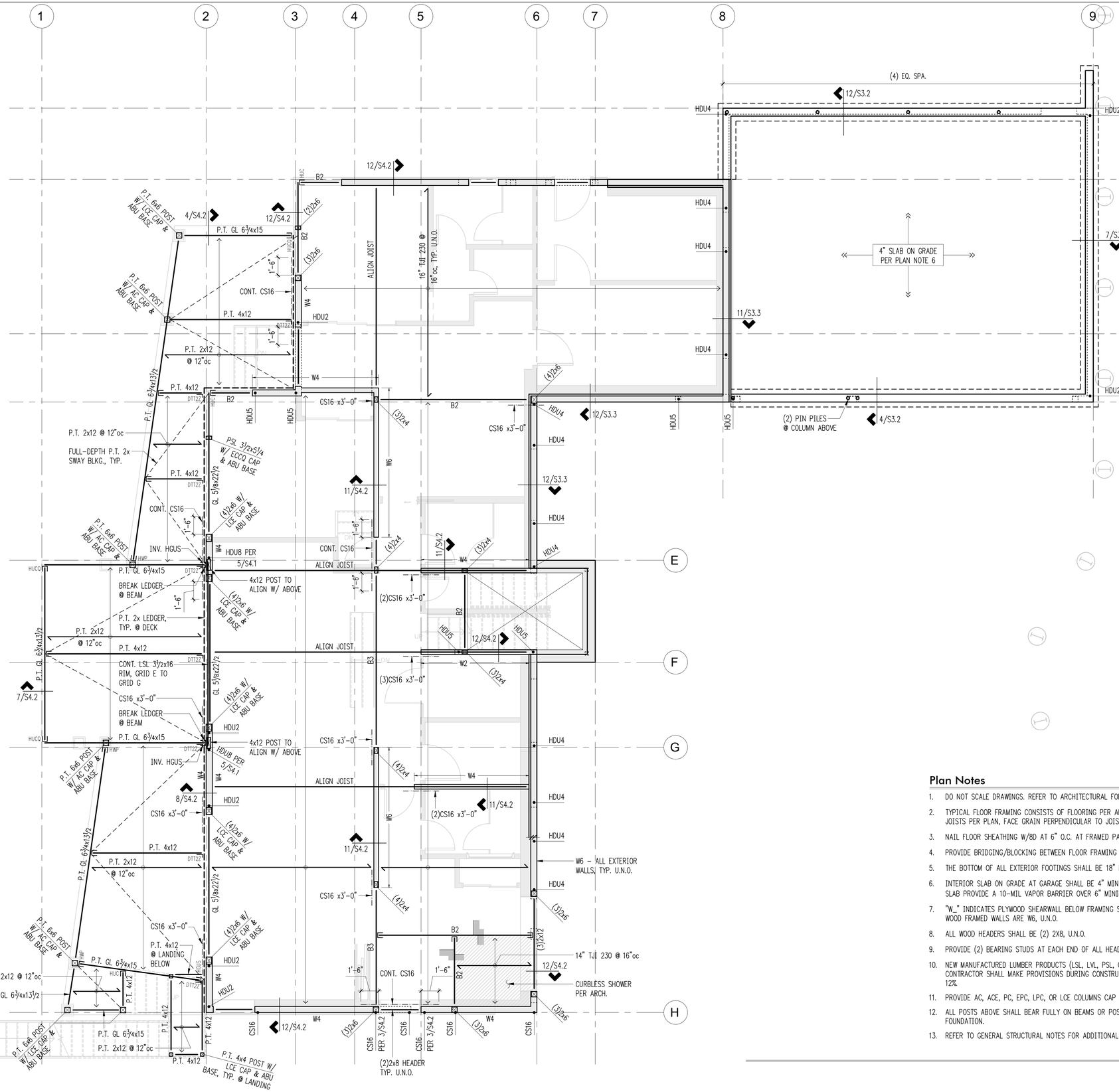
ISSUE: PERMIT

SHEET TITLE: Foundation Plan

SCALE: 1/4" = 1'-0" U.N.O.
DATE: Aprill 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S2.1



Beam Schedule

MARK	BEAM	HANGER	BRG. STUDS
B1	LVL 1¾x16	MIU	2
B2	LSL 3½x16	HU416	3
B3	(3)LVL 1¾x16	HGUS5.50/14	4
B4	(4)LVL 1¾x16	HGUS7.25/14	5

Legend

- STRUCTURAL WALL OR POST ABOVE
- STRUCTURAL WALL BELOW
- NON-STRUCTURAL WALL BELOW
- Wx — SHEARWALL PER
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- HANGER
- INVERTED HANGER
- Bx — BEAM PER SCHEDULE, THIS SHEET
- CHANGE IN ELEVATION PER ARCH.
- 3"ø PIN PILE (7 total this sheet)

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL FOR ALL DIMENSIONS.
2. TYPICAL FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 1-1/2" GYPCRETE OVER 1-1/8" T&G APA RATED PLYWOOD OVER JOISTS PER PLAN, FACE GRAIN PERPENDICULAR TO JOISTS, U.N.O.
3. NAIL FLOOR SHEATHING W/8D AT 6" O.C. AT FRAMED PANEL EDGES AND OVER SHEARWALLS AND AT 12" O.C. IN FIELD.
4. PROVIDE BRIDGING/BLOCKING BETWEEN FLOOR FRAMING AT 8'-0" O.C. MAX.
5. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
6. INTERIOR SLAB ON GRADE AT GARAGE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER GEOFOAM.
7. "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.N.O.
8. ALL WOOD HEADERS SHALL BE (2) 2X8, U.N.O.
9. PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.N.O.
10. NEW MANUFACTURED LUMBER PRODUCTS (LSL, LVL, PSL, GL) SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%.
11. PROVIDE AC, ACE, PC, EPC, LPC, OR LCE COLUMNS CAP AND BASE AT ALL BEAM TO COLUMN CONNECTIONS, U.N.O.
12. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
13. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Main Floor Framing Plan

Scale: ¼" = 1'-0"

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DESIGN: SRW, HAA
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:
Yuan Residence
3611 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
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Seattle, WA 98121
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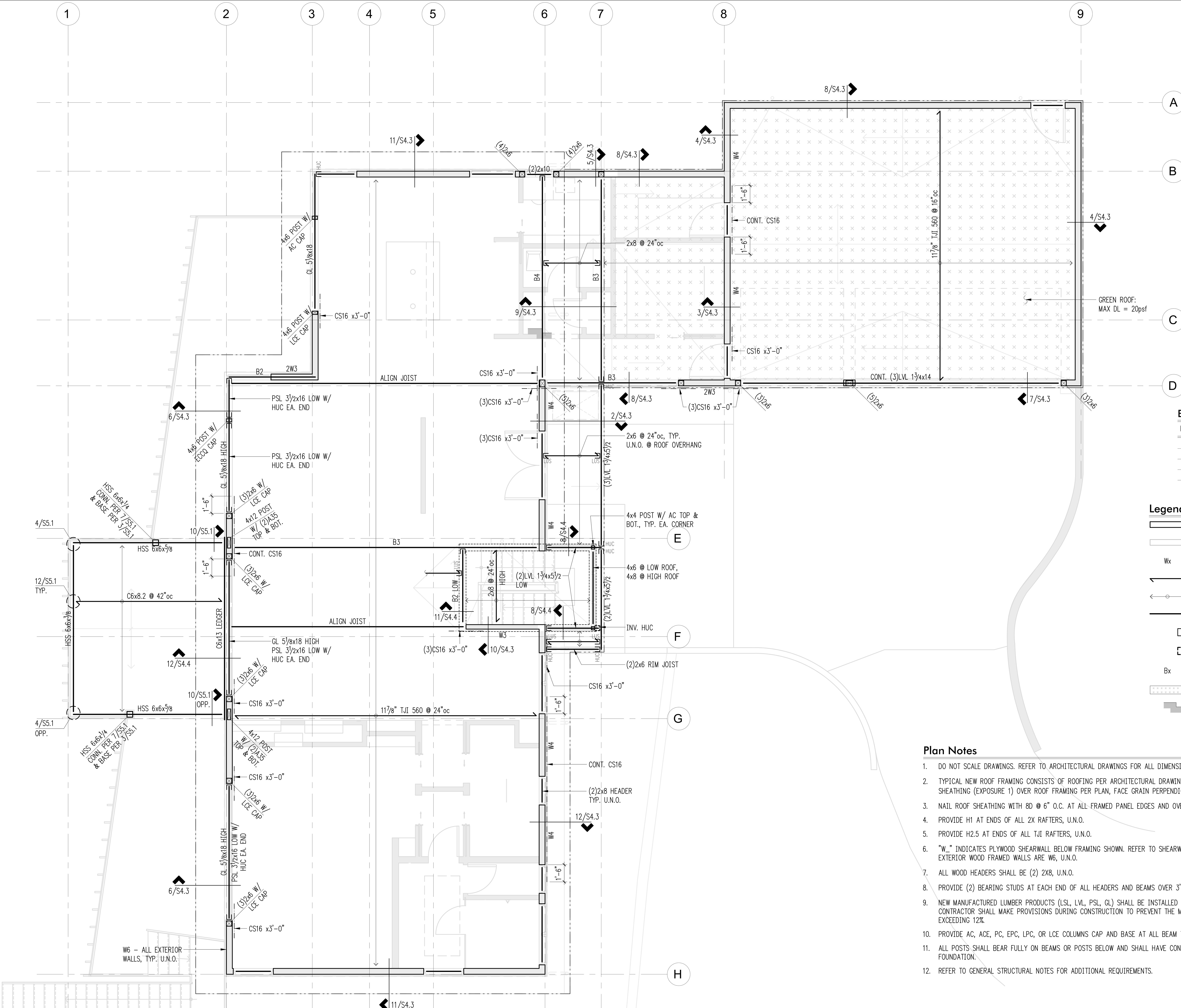
ISSUE: PERMIT

SHEET TITLE: Main Floor Framing Plan

SCALE: 1/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S2.2



Beam Schedule

MARK	BEAM	HANGER	BRG. STUDS
B1	LVL 1¾x11⅞	HU11	2
B2	LSL 3½x11⅞	HHUS410	3
B3	(3)LVL 1¾x11⅞	HGUS5.50/12	4
B4	(4)LVL 1¾x11⅞	HGUS7.25/12	5

Legend

- STRUCTURAL WALL BELOW
- NON-STRUCTURAL WALL BELOW
- Wx — SHEARWALL PER
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- HANGER
- INVERTED HANGER
- Bx — BEAM PER SCHEDULE, THIS SHEET
- GREEN ROOF PER ARCH.
- CHANGE IN ELEVATION PER ARCH.

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. TYPICAL NEW ROOF FRAMING CONSISTS OF ROOFING PER ARCHITECTURAL DRAWINGS OVER 5/8" CDX OR 7/16" O.S.B APA RATED SHEATHING (EXPOSURE 1) OVER ROOF FRAMING PER PLAN, FACE GRAIN PERPENDICULAR TO ROOF FRAMING, U.N.O.
3. NAIL ROOF SHEATHING WITH 8D @ 6" O.C. AT ALL FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" O.C. IN FIELD.
4. PROVIDE H1 AT ENDS OF ALL 2X RAFTERS, U.N.O.
5. PROVIDE H2.5 AT ENDS OF ALL TJI RAFTERS, U.N.O.
6. "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.N.O.
7. ALL WOOD HEADERS SHALL BE (2) 2X8, U.N.O.
8. PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.N.O.
9. NEW MANUFACTURED LUMBER PRODUCTS (LSL, LVL, PSL, GL) SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%.
10. PROVIDE AC, ACE, PC, EPC, LPC, OR LCE COLUMNS CAP AND BASE AT ALL BEAM TO COLUMN CONNECTIONS, U.N.O.
11. ALL POSTS SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE CONTINUOUS FULL BEARING THROUGH FLOORS TO THE FOUNDATION.
12. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Roof Framing Plan

Scale: ¼" = 1'-0"

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DAN J. SAY — PROFESSIONAL ENGINEER

DESIGN: SRW, HAA
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:
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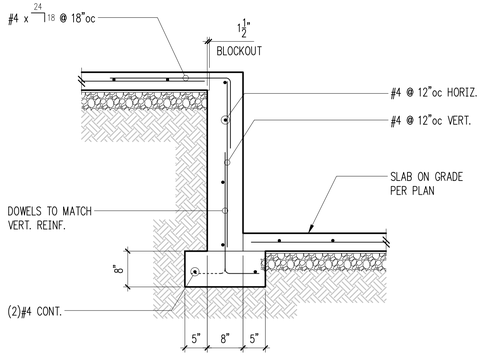
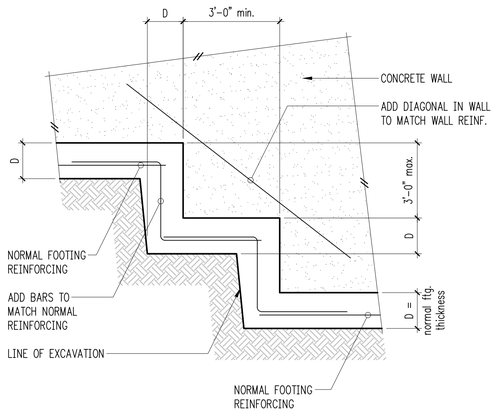
ISSUE:
PERMIT

SHEET TITLE:
Roof Framing Plan

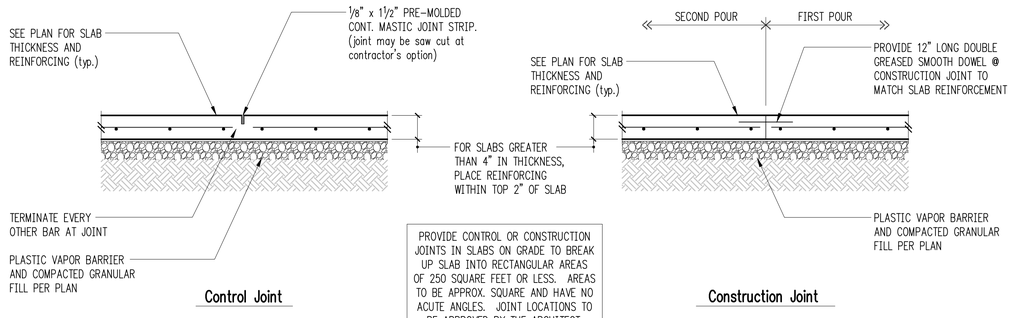
SCALE: 1/4" = 1'-0" U.N.O.
DATE: Aprill 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO:
S2.3



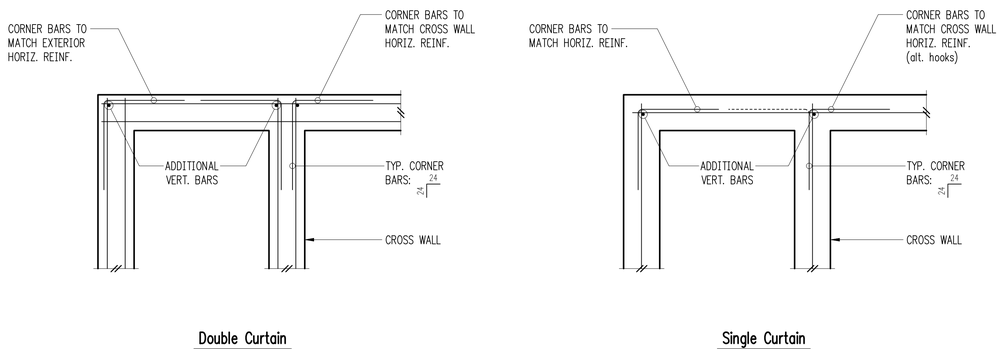
Typical Elevation Change 5



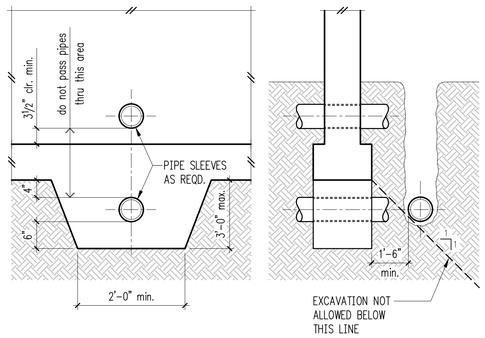
Typical Stepped Footing 6



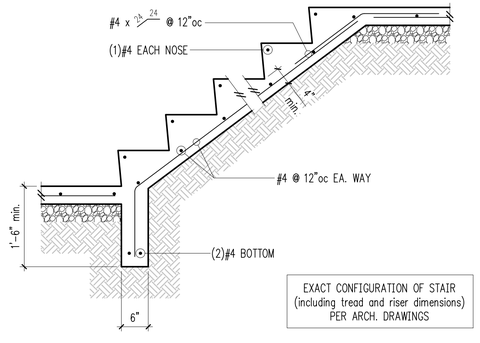
Typical Slab Joints 4



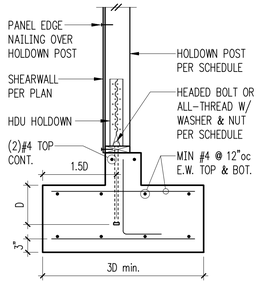
Typical Corner Bars at Concrete Walls and Footings 8



Pipe and Trench Locations 9



Typical Stair On Grade 10



Holdown Schedule

Plan Mark	Screws	Anchor Bolt	Min. A.B. Embed (D)		Holdown Post ①	
			Stem Wall	Footing	if 2x4	if 2x6
HDU2-SDS2.5	(6)SDS ¼"x2½"	⅝"ø	12"	4"	(2) 2x4	(2) 2x6
HDU4-SDS2.5	(10)SDS ¼"x2½"	⅝"ø	18"	6"	4x4	4x6
HDU5-SDS2.5	(14)SDS ¼"x2½"	⅝"ø	SB⅝x24	7"	4x4	4x6
HDU8-SDS2.5	(20)SDS ¼"x2½"	⅞"ø	SSTB28	8"	4x6	6x6
HDU11-SDS2.5	(30)SDS ¼"x2½"	1"ø	SB1x30	10"	4x8	6x6
HDU14-SDS2.5	(36)SDS ¼"x2½"	1"ø	N/A	12"	4x8	6x6

① MINIMUM SIZE OF POST AT END OF WALL UNLESS OTHERWISE NOTED ON FRAMING PLANS.

Typical HDU Holdown 12

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DESIGN: SRW, HAA
DRAWN: NHD
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APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:
Yuan Residence
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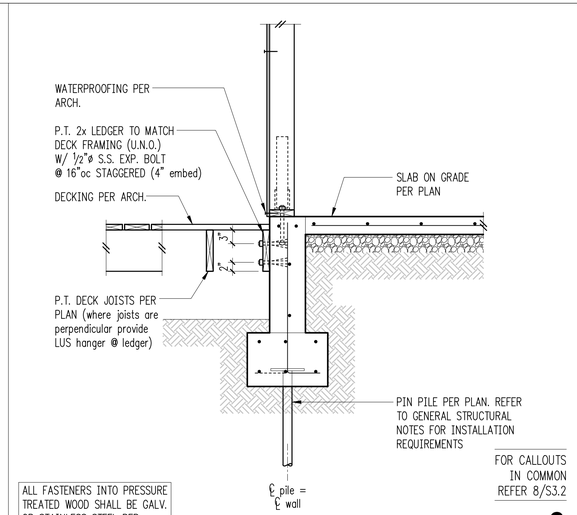
PH 206.239.0850

ISSUE:
PERMIT

SHEET TITLE:
Typical Concrete Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO:
S3.1

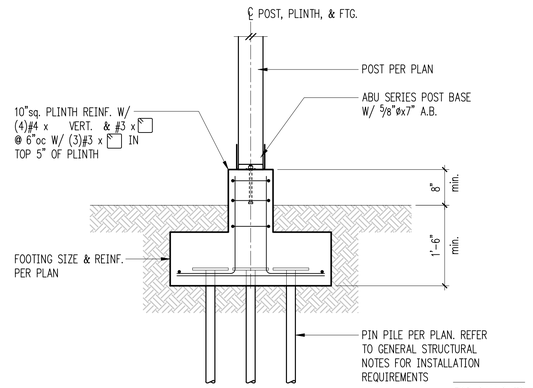
1



ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

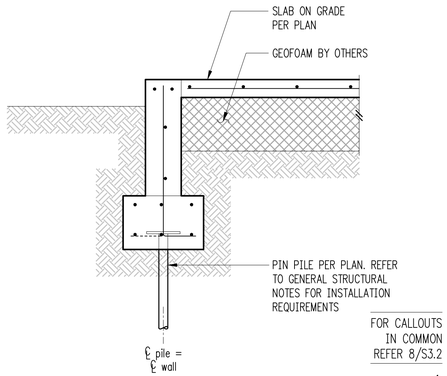
FOR CALLOUTS IN COMMON REFER 8/S3.2

2



FOR CALLOUTS IN COMMON REFER 8/S3.2

3



FOR CALLOUTS IN COMMON REFER 8/S3.2

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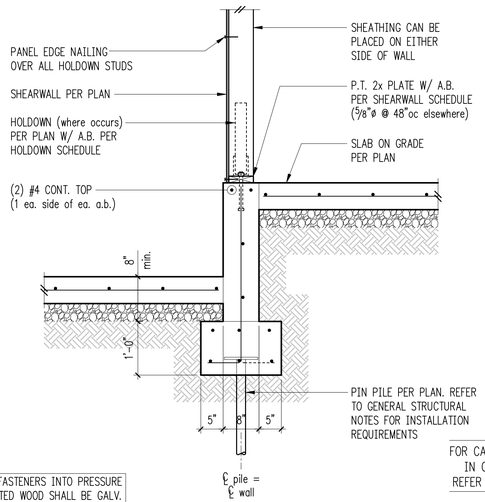
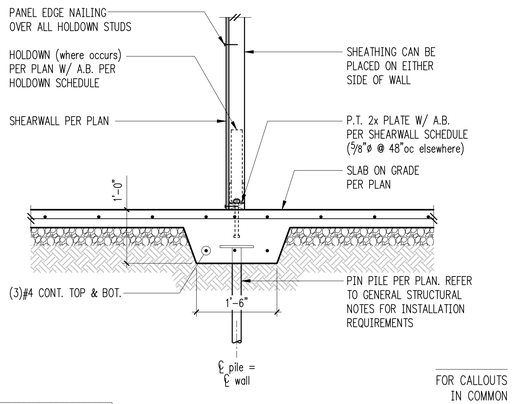


ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

FOR CALLOUTS IN COMMON REFER 8/S3.2

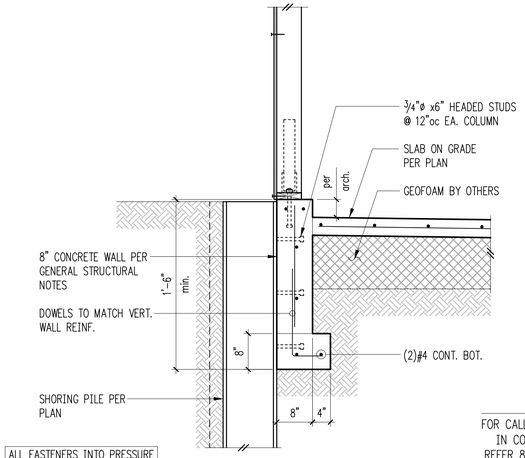
Interior Wall w/ Stem Wall & Footing 5



ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

FOR CALLOUTS IN COMMON REFER 8/S3.2

Interior Wall w/ Thickened Slab 6



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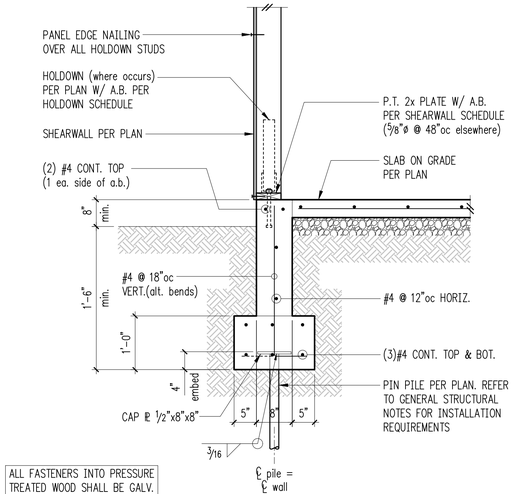
FOR CALLOUTS IN COMMON REFER 8/S3.2

7



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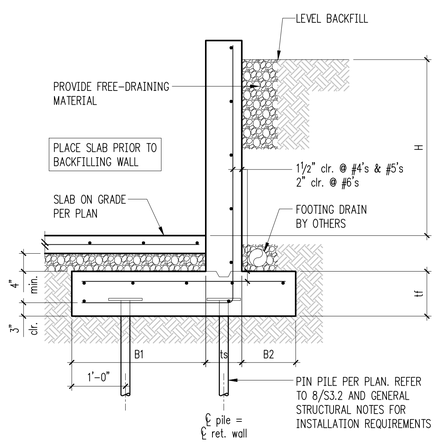
Exterior Wall w/ Slab on Grade 8

9

10



Retaining Wall Schedule W/ Slab

H (ft.)	B1	ts	B2	tf	Stem Reinforcing		Footing Reinforcing	
					Vert.	Horiz.	Top	Longit.
3'-0"	5"	8"	5"	8"	#4 @ 18"oc	#4 @ 12"oc	–	(2)#4
4'-0"	1'-0"	8"	5"	8"	#4 @ 18"oc	#4 @ 12"oc	–	(2)#4
6'-0"	2'-3"	8"	5"	10"	#4 @ 12"oc	#4 @ 12"oc	–	(4)#4
8'-0"	2'-9"	8"	1'-0"	12"	#5 @ 12"oc	#4 @ 12"oc	#4 @ 18"oc	(6)#5
10'-0"	3'-9"	8"	1'-6"	18"	#7 @ 12"oc	#4 @ 12"oc	#4 @ 18"oc	(8)#5
12'-6"	4'-6"	10"	2'-3"	18"	#9 @ 12"oc	#5 @ 12"oc	#4 @ 18"oc	(9)#5

12

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DESIGN: SRW, HAA
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:
Yuan Residence
3611 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE: PERMIT

SHEET TITLE: Foundation Details

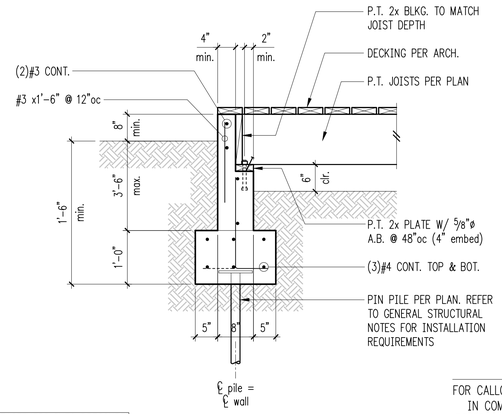
SCALE: 3/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S3.2

1

2

3

4



ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

FOR CALLOUTS IN COMMON REFER 8/S3.2

8

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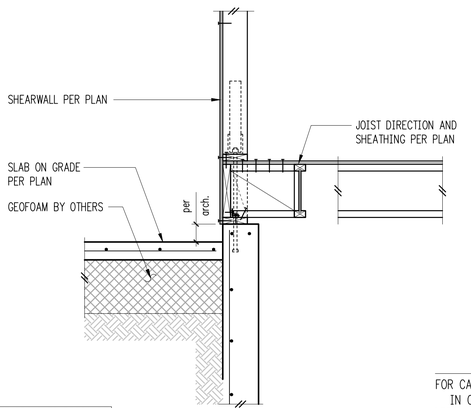
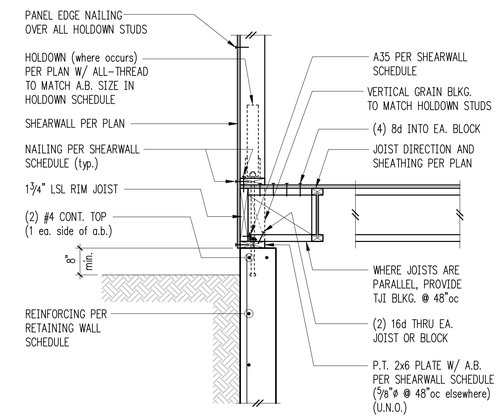


ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

FOR CALLOUTS IN COMMON REFER 12/S3.3

11



ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

Exterior Framing at Basement

12

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DRAWN: NHD

CHECKED: BDM

APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:

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Mercer Island, WA 98040

ARCHITECT:

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ISSUE:

PERMIT

SHEET TITLE:

Foundation Details

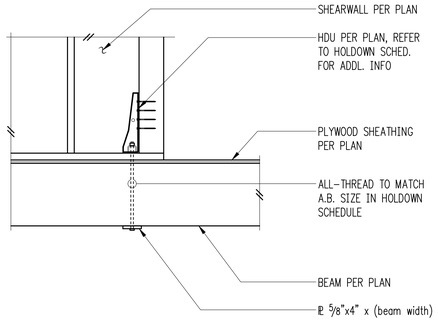
SCALE: 3/4" = 1'-0" U.N.O.

DATE: Aprill 20, 2019

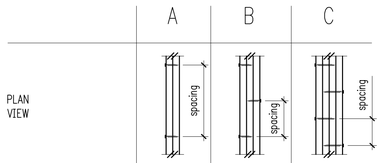
PROJECT NO: 01519-2019-01

SHEET NO:

S3.3



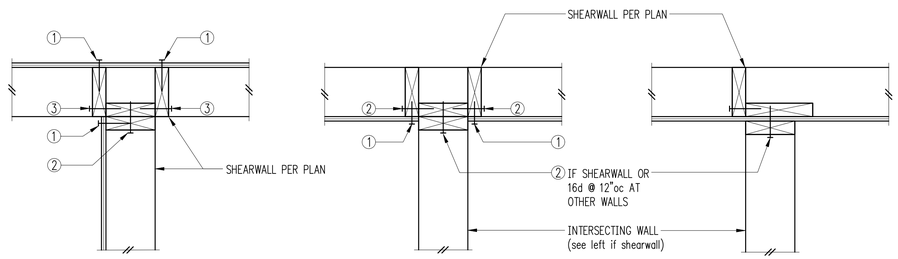
HDU at Floor Beam 1



	A	B	C
# OF WOOD BMS (LVL)	2-1¾"	3-1¾"	4-1¾"
SDS SCREW SIZE	¼"x3½"	¼"x4½"	¼"x6"
# OF SDS SCREWS	3	3	3
SPACING OF SDS SCREWS	16"oc	8"oc	6"oc

NOTES:
- MIN. SCREW END DISTANCE = 4"

Sistering Schedule for Multi Beams 2

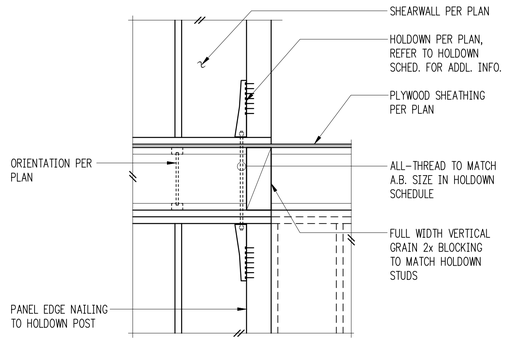


① PLYWOOD PANEL EDGE NAILING PER SHEARWALL SCHEDULE

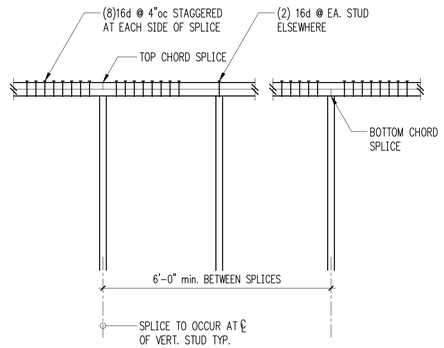
② BASE PLATE NAILING PER SHEARWALL SCHEDULE

③ 16d @ 8"oc

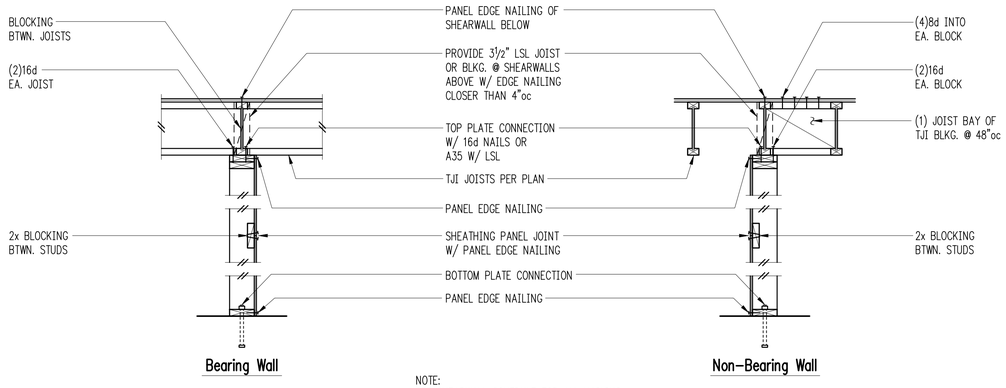
Typical Shearwall Intersections 4



Typical HDU Holdowns 5

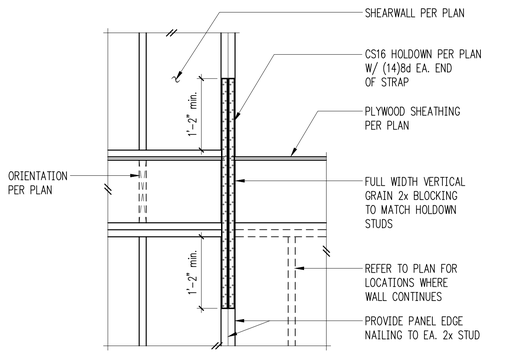


Typical Top Plate Splice 6

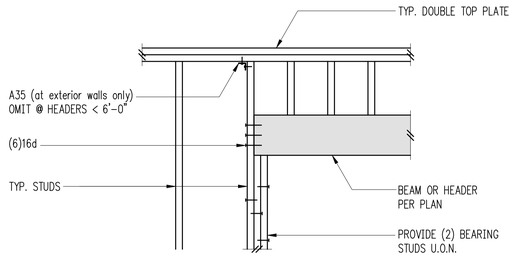


NOTE:
SEE SHEARWALL SCHEDULE FOR ALL NAILING AND CONNECTIONS, NOT OTHERWISE NOTED

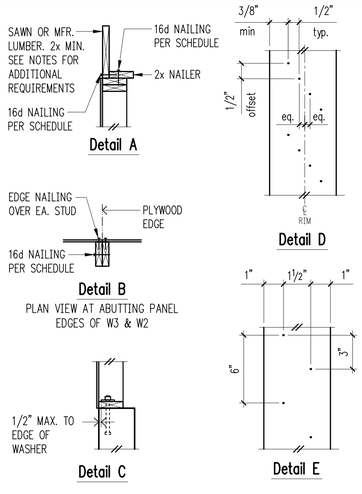
Typical Shearwall Construction 8



Typical CS16 Holdown 9



Typical Header Support w/2 Bearing Studs 10



Shearwall Schedule ①②③⑥⑦⑧

Mark	Sheathing	Panel Edge Nailing	Top Plate Connection		Base Plate Connection	
			if TJI	if Wood ⑨	at Wood ⑪⑫	at Concrete
W6	15/32" CDX PLYWOOD	8d @ 6"oc	16d @ 6"oc	A35 @ 24"oc ⑩	(2)rows 16d @ 6"oc	5/8"ø A.B. @ 48"oc
W4	15/32" CDX PLYWOOD	8d @ 4"oc	16d @ 4"oc	A35 @ 16"oc ⑩	(2)rows 16d @ 4"oc ⑬	5/8"ø A.B. @ 32"oc
W3 ④	15/32" CDX PLYWOOD	8d @ 3"oc	(2)rows 16d @ 4"oc	A35 @ 12"oc ⑩	(2)rows 16d @ 4"oc ⑬	5/8"ø A.B. @ 24"oc
W2 ④	15/32" CDX PLYWOOD	8d @ 2"oc	(2)rows 16d @ 4"oc	A35 @ 9"oc ⑩	(3)rows 16d @ 4"oc ⑭	5/8"ø A.B. @ 16"oc
2W3 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 3"oc EA. SIDE	n/a	A35 @ 6"oc	(4)rows 16d @ 4"oc ⑭	5/8"ø A.B. @ 16"oc
2W2 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 2"oc EA. SIDE	n/a	HGA10KT @ 8"oc	(2)ROWS SDS ¼x5" 6"oc⑮	5/8"ø A.B. @ 12"oc
2W2-10 ⑤	15/32" CDX PLYWD. EA. SIDE	10d @ 2"oc EA. SIDE	n/a	HGA10KT @ 6"oc	n/a	5/8"ø A.B. @ 12"oc

① BLOCK PANEL EDGES WITH 2x MIN. LAID FLAT AND NAIL PANELS TO INTERMEDIATE SUPPORTS WITH 8d @ 12"o.c.
② 8d NAILS SHALL BE 0.131"ø x 2 1/2" (common) - 16d NAILS SHALL BE 0.135"ø x 3 1/2" (box) - 10d NAILS SHALL BE 0.148"ø x 3" (common).
③ EMBED ANCHOR BOLTS AT LEAST 7". EXPANSION BOLTS MAY BE SUBSTITUTED FOR ANCHOR BOLTS WITH 4" EMBEDMENT. TITEN HD SCREW ANCHORS MAY BE SUBSTITUTED FOR ANCHOR BOLTS W/ 4" EMBEDMENT. ALL BOLTS SHALL HAVE 3" x 3" x 1/4" MIN. PLATE WASHERS. PLATE WASHERS SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE WITH SHEATHING. SEE DETAIL C.
④ 3x STUDS OR DOUBLE STUDS NAILED TOGETHER W/ BASE PLATE NAILING ARE REQUIRED AT ABUTTING PANEL EDGES OF W3 AND W2. SEE DETAIL B. WHERE 3x STUDS ARE USED FOR W2, STAGGER NAILS AT ADJOINING PANEL EDGES.
⑤ 3x FOUNDATION SILL PLATES ARE REQUIRED FOR 2W3 AND 2W2. 3x STUDS ARE REQUIRED AT ABUTTING PANEL EDGES AND PANEL JOINTS SHALL BE OFFSET EACH SIDE OF WALL. STAGGER NAILS AT ADJOINING PANEL EDGES. 3x STUD, MIN., REQUIRED AT END OF SHEARWALL.
⑥ TWO STUDS MINIMUM ARE REQUIRED AT EACH END OF ALL SINGLE-SIDED SHEARWALLS. ALL END STUDS SHALL RECEIVE PANEL EDGE NAILING. SEE PLANS AND HOLDOWN SCHEDULE FOR ALTERNATE REQUIREMENTS.
⑦ ALL EXTERIOR WALLS SHALL BE W6, UNLESS NOTED OTHERWISE.
⑧ 7/16" O.S.B. MAY BE SUBSTITUTED FOR 15/32" CDX, EXCEPT AT 10d PANEL EDGE NAILING.
⑨ LTP4's (HORIZIONTAL ORIENTATION) W/ 8d COMMON MAY BE SUBSTITUTED FOR A35's AT CONTRACTORS OPTION.
⑩ A 2x NAILER ATTACHED W/ BASE PLATE NAILING PER DETAIL A MAY BE SUBSTITUTED FOR A35's AT CONTRACTORS OPTION.
⑪ AT MULTI-ROW NAILING, MINIMUM OFFSET BETWEEN ROWS AND ROW SPACING 1/2", SEE DETAIL D.
⑫ LVL RIMS PERMITTED AT "W6", "W4", & "W3" ONLY.
⑬ PROVIDE (3) ROWS 16d @ 6"oc AT LVL RIMS.
⑭ MINIMUM RIM OR JOIST 3½" WIDE.
⑮ MINIMUM RIM OR JOIST 3½" WIDE. SEE DETAIL E FOR SPACING REQUIREMENTS.

Shearwall Schedule 12

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REVISIONS:

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ARCHITECT:
Brandt Design Group
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PH 206.239.0850

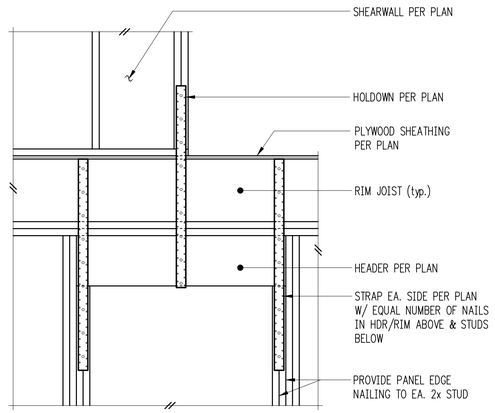
ISSUE:
PERMIT

SHEET TITLE:
Typical Wood Framing Details

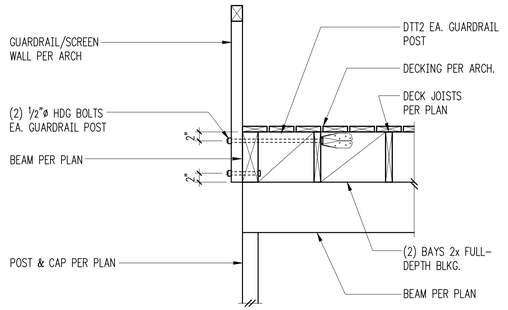
SCALE: 3/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S4.1

1

2



Typical Strap over Beam 3



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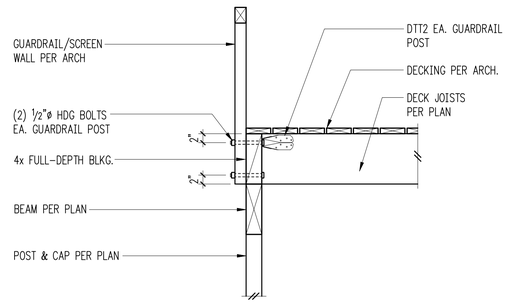
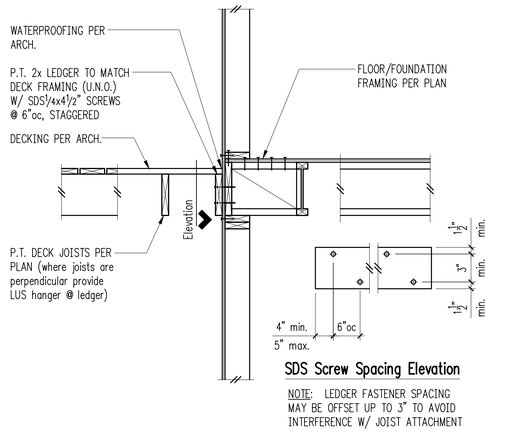


Typical Deck w/ Guardrail Detail 7



SDS Screw Spacing Elevation

NOTE: LEDGER FASTENER SPACING MAY BE OFFSET UP TO 3" TO AVOID INTERFERENCE W/ JOIST ATTACHMENT

Typical Deck Ledger Detail 8

9

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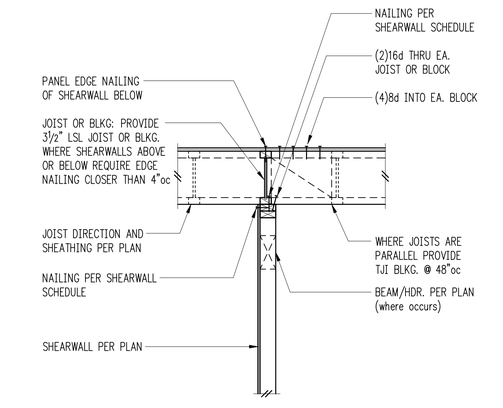
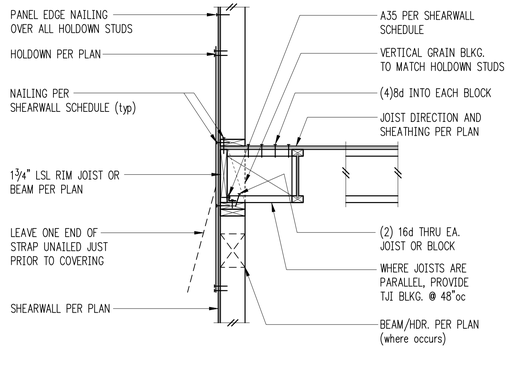


Interior Shearwall Below 11



Exterior Floor Framing 12

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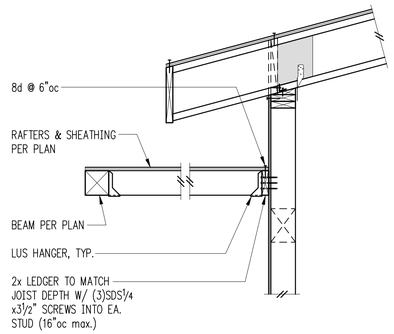
ISSUE: PERMIT

SHEET TITLE: Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S4.2

1



FOR CALLOUTS IN COMMON REFER 12/S4.3

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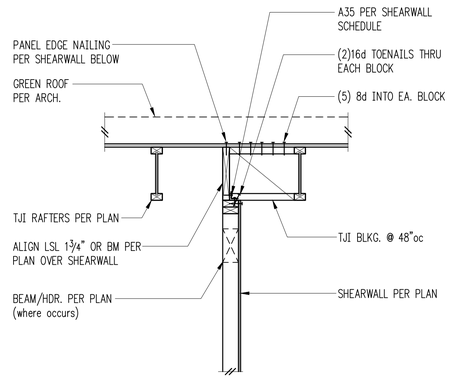

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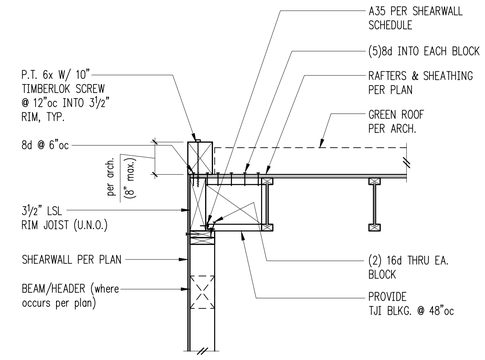
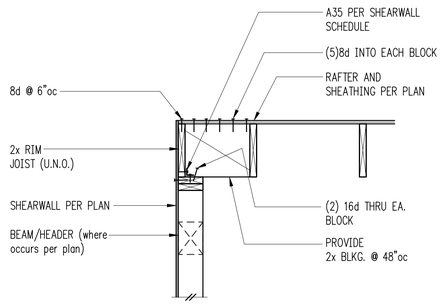
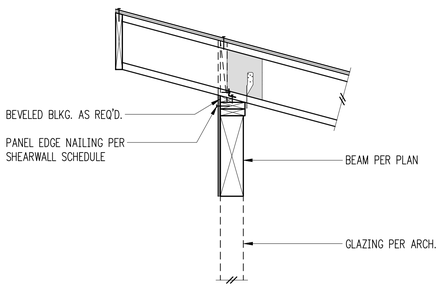


Rafters Parallel to Exterior Wall 4



Rafters Parallel to Exterior Wall 5



FOR CALLOUTS IN COMMON REFER 12/S4.3

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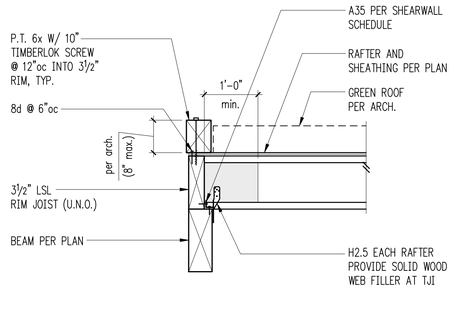

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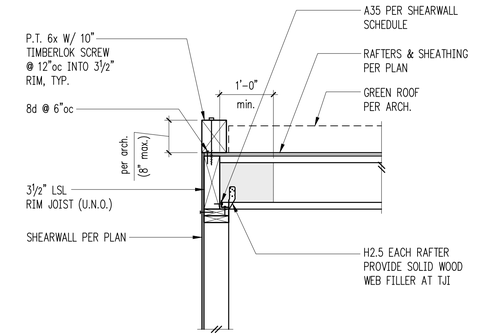
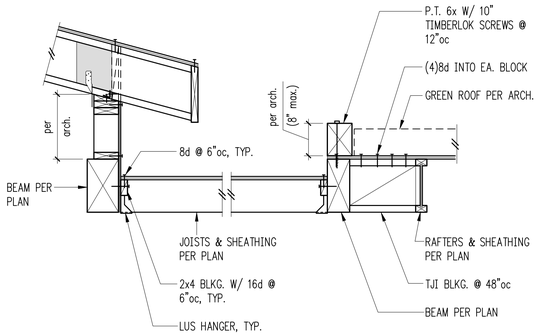
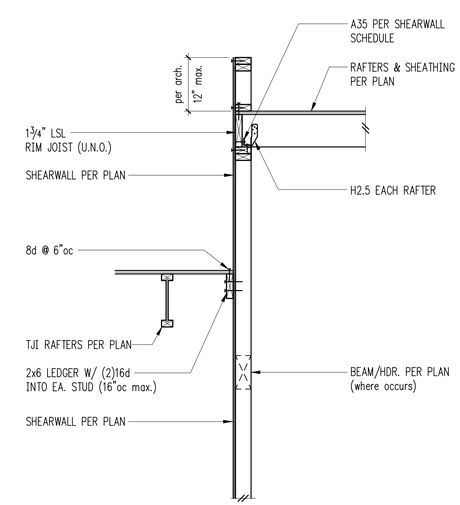


Rafters Perpendicular to Exterior Wall 8



FOR CALLOUTS IN COMMON REFER 12/S4.3

9



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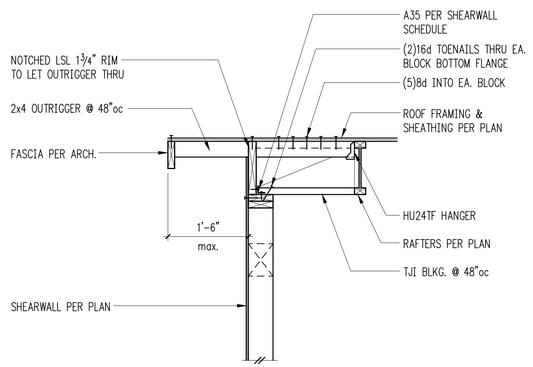
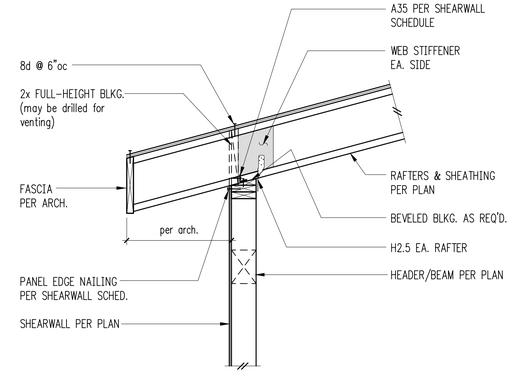


Exterior Non-Bearing Wall 11



Exterior Bearing Wall 12

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DAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: SRW, HAA
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

DPD:

PROJECT TITLE:

Yuan Residence

3611 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE: PERMIT

SHEET TITLE: Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO: S4.3

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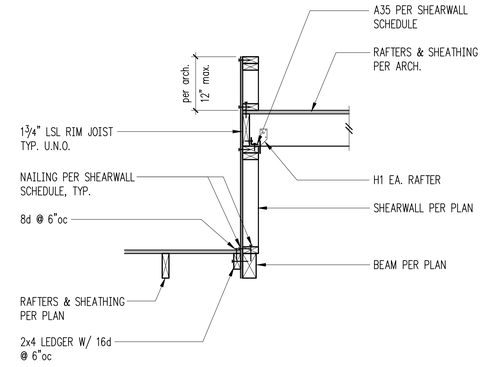

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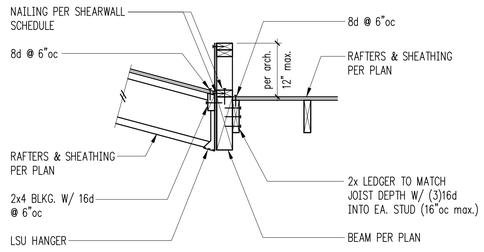

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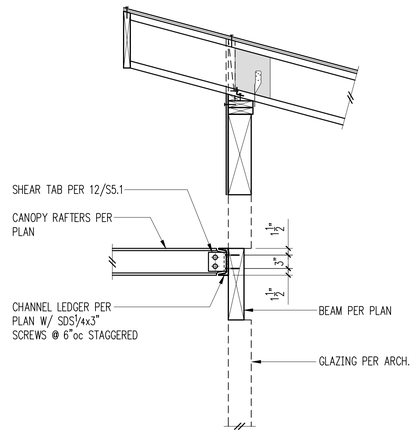

FOR CALLOUTS IN COMMON REFER 6/S4.3

12

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DATE: Aprill 20, 2019

PROJECT NO: 01519-2019-01

SHEET NO:

S4.4

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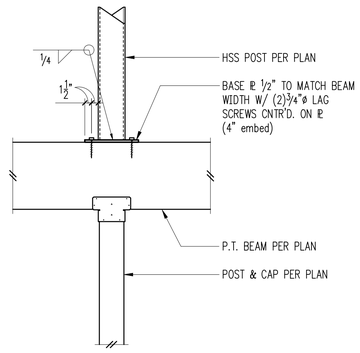

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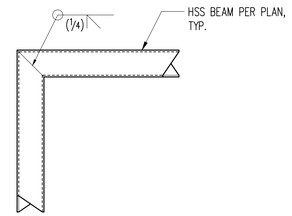

Plan View

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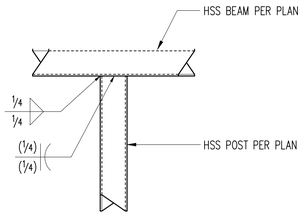

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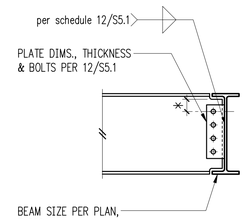

Beam Size	*
W6, W7, C6, C7	1"
W8, W9, C8, C9	1 1/2"
TYP.	2"

Typical Beam to Beam Connection

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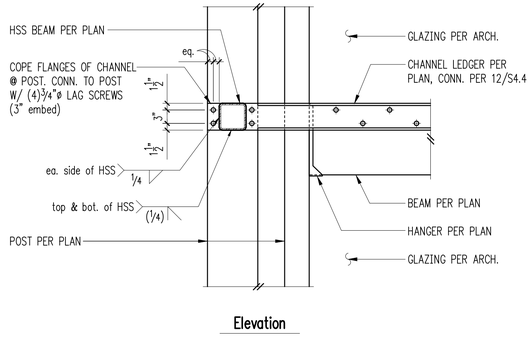
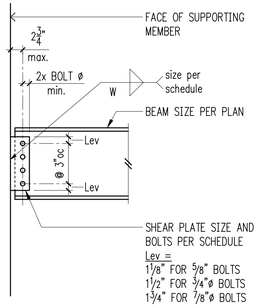


Elevation



Shear Plate Schedule

Beam Size	No. of Bolts	Bolt Size	Plate Thickness	Weld Size
C6, W6, MC7	2	5/8"ø @ 2" SPACING	1/4"	3/16"
MC8, MC9, MC10 C7, C8, C9, C10, W8, W10	2	5/8"ø	1/4"	3/16"
C12, C15, MC12, W12, W14	3	3/4"ø	1/4"	3/16"
W16	4	3/4"ø	1/4"	3/16"
W18	4	3/4"ø	5/16"	1/4"
W21	4	7/8"ø	3/8"	5/16"
W24	5	7/8"ø	3/8"	5/16"
W27	6	7/8"ø	3/8"	5/16"
W30	7	7/8"ø	3/8"	5/16"

NOTES:
1. STANDARD OR SLOTTED HOLES MAY BE USED.
2. BOLT TYPE A325N.
3. ℙ MATERIAL – A36
4. SEE EXTENDED ℙ DETAIL FOR COLUMN WEB CONNECTIONS.

Typical Single Shear Plate Connection and Schedule

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SHEET NO:
S5.1

General Shoring Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CODE REQUIREMENTS

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION, AND THE LATEST EDITION OF PTI DC-35.1, "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS".

REFERENCE DOCUMENTS

2. REPORT ON GEOTECHNICAL INVESTIGATION BY PANGEO INC. DATED APRIL 16, 2019. FILE NO. 18-371. GEOTECHNICAL ENGINEERING STUDY - PROPOSED RESIDENCE - 3611 WEST MERCER WAY, MERCER ISLAND, WA

GENERAL REQUIREMENTS

3. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATIONS, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER AND ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.

4. SHOULD ANY DISCREPANCIES BE FOUND IN THE PROJECT DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE INCLUDED IN THE PRICE THE MOST EXPENSIVE WAY OF COMPLETING THE WORK, UNLESS PRIOR TO SUBMISSION OF THE PRICE THE CONTRACTOR ASKS FOR A DECISION FROM THE ENGINEER AND ARCHITECT AS TO WHICH SHALL GOVERN.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTOR'S WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF EXISTING STRUCTURES IN THE FIELD AND SHALL NOTIFY THE ENGINEER OF ALL FIELD CHANGES PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBER.

7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL AND NOTES SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

9. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

   STRUCTURAL STEEL

10. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY; REPRODUCIBLE WILL BE MARKED AND RETURNED WITHIN TWO WEEKS OF RECEIPT WITH A NOTATION INDICATING THAT THE SUBMITTAL HAS BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE SUBMITTED ITEMS SHALL NOT BE INSTALLED UNTIL THEY HAVE BEEN APPROVED BY THE DESIGN TEAM.

    SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS.

11. UTILITY LOCATION: THE UTILITIES INFORMATION SHOWN ON THE PLANS MAY NOT BE COMPLETE. THE SHORING CONTRACTOR SHALL DETERMINE THE HORIZONTAL AND VERTICAL LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO DRILLING PILE HOLES OR CUTTING OR DIGGING. PILES INCLUDING CONCRETE CASING SHALL MAINTAIN A MINIMUM OF 12" CLEARANCE TO ANY EXISTING UTILITIES TO REMAIN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF CONFLICTS. CONFLICTS SHALL BE RESOLVED IN WRITING PRIOR TO PROCEEDING WITH CONSTRUCTION.

QUALITY ASSURANCE

12. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTIONS 110 AND 1704 OF THE INTERNATIONAL BUILDING CODE BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE ARCHITECT, AND RETAINED BY THE BUILDING OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL INSPECTIONS. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS WITHIN TWO WEEKS OF COMPLETION OF EACH PHASE OF WORK. SPECIAL INSPECTION OF THE FOLLOWING TYPES OF CONSTRUCTION IS REQUIRED

    SOIL CONDITIONS, FILL PLACEMENT, AND DENSITY PER TABLE 1705.6

    PERIODIC INSPECTION ALLOWS INSPECTION AT INTERVALS NECESSARY TO CONFIRM THAT WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE WITH REQUIREMENTS. CONTINUOUS SPECIAL INSPECTION REQUIRES THAT THE INSPECTOR BE ONSITE AT ALL TIMES THAT WORK REQUIRING SPECIAL INSPECTION IS PERFORMED.

13. INSPECTORS SHALL BRING DEFICIENCIES TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE INSPECTOR SHALL BRING THE UNCORRECTED DEFICIENCY TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER IMMEDIATELY AND PRIOR TO COMPLETION OF THAT PHASE OF WORK.

14. SOILS INSPECTION: INSPECTION BY THE SOILS ENGINEER SHALL BE PERFORMED FOR PILE PLACEMENT. ALL PREPARED SOIL BEARING SURFACES SHALL BE INSPECTED BY THE SOILS ENGINEER PRIOR TO PLACEMENT OF PILES. SOIL COMPACTION SHALL BE SUPERVISED BY AN APPROVED TESTING LAB. THE GEOTECHNICAL ENGINEER SHALL ALSO ADVISE ON WATER CONTROL AND SLAB ON GRADE CONSTRUCTION.

15. WET WEATHER INSPECTION: A SITE VISIT FROM THE GEOTECHNICAL SPECIAL INSPECTOR SHALL OCCUR DURING EACH DAY OF ACTIVE GRADING AND IN THE EVENT OF SIGNIFICANT RAINFALL WHICH MIGHT COMPROMISE STABILIZATION MEASURES BETWEEN NOVEMBER 1 AND MARCH 31. THE DETERMINATION OF WHAT CONSTITUTES SIGNIFICANT RAINFALL IS SUBJECT TO THE DISCRETION OF THE GEOTECHNICAL SPECIAL INSPECTOR. HOWEVER, AS A MINIMUM STANDARD, THE GEOTECHNICAL SPECIAL INSPECTOR IS REQUIRED TO CONDUCT A SITE VISIT IF MORE THAN ONE HALF INCH OF PRECIPITATION OCCURS ON ANY GIVEN DAY. ANY RECOMMENDATIONS REQUIRED TO MAINTAIN STABILITY OF EXCAVATIONS AND PROPER FUNCTIONING OF THE SEDIMENT/EROSION CONTROL SYSTEM PROVIDED BY THE GEOTECHNICAL SPECIAL INSPECTOR SHALL BE IMPLEMENTED IMMEDIATELY. THE GEOTECHNICAL SPECIAL INSPECTOR SHALL PROVIDE WRITTEN NOTICE THAT THE SITE HAS BEEN STABILIZED FOLLOWING COMPLETION OF GRADING.

SHORING MONITORING

16. A SYSTEMATIC PROGRAM OF MONITORING SHALL BE CONDUCTED DURING THE PROJECT EXECUTION TO DETERMINE THE EFFECT OF CONSTRUCTION ON ADJACENT FACILITIES AND STRUCTURES IN ORDER TO PROTECT THEM FROM DAMAGE. REFER TO REPORT OF GEOTECHNICAL INVESTIGATION FOR RECOMMENDATIONS. FIELD DATA AND MEASUREMENTS ARE TO BE SUBMITTED TO THE STRUCTURAL AND GEOTECHNICAL ENGINEER FOR REVIEW.

17. MONITORING SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR (PLS) LICENSED IN THE STATE OF WASHINGTON.

18. UNLESS OTHERWISE REQUIRED BY THE GEOTECHNICAL ENGINEER, THE MONITORING PROGRAM SHALL INCLUDE A VIDEO OR PHOTOGRAPHIC SURVEY PRIOR TO THE BEGINNING OF THE SHORING INSTALLATION TO DOCUMENT THE CURRENT CONDITIONS OF THE SURROUNDING FEATURES. THE SIZE AND LOCATION OF ANY EXISTING CRACKS IN ADJACENT SLABS, PAVEMENTS OR BUILDINGS SHALL BE MEASURED AND DOCUMENTED. CONTROL POINTS SHALL BE ESTABLISHED AT A DISTANCE WELL AWAY FROM THE WALLS AND SLOPES, AND DEFLECTIONS FROM THE REFERENCE POINTS SHALL BE MEASURED THROUGHOUT CONSTRUCTION BY OPTICAL SURVEY. A MINIMUM OF 3 MONITORING POINTS SHALL BE ESTABLISHED ON NEARBY ADJACENT BUILDINGS. MINIMUM SURVEY FREQUENCY SHALL BE ONCE PER WEEK.

19. SOLDIER PILE MONITORING PROGRAM: FOLLOWING INSTALLATION OF THE SOLDIER PILES, MONITORING POINTS SHALL BE ESTABLISHED ON THE TOP OF THE PILES PRIOR TO PROCEEDING WITH THE EXCAVATION. ONE MONITORING POINT SHALL BE ESTABLISHED FOR EVERY FOUR PILES. THE MONITORING POINTS SHALL BE READ DAILY DURING EXCAVATION OPERATIONS AND TWICE WEEKLY ONCE THE EXCAVATION IS COMPLETED. THE INITIAL READINGS FOR THIS MONITORING SHALL BE TAKEN BEFORE STARTING ANY DEMOLITION OR EXCAVATION ON THE SITE. NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEERS, SHORING DESIGNER, AND THE BUILDING DEPARTMENT IF .5" OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS. THE ENGINEERS AND DESIGNERS SHALL DETERMINE THE CAUSE OF DISPLACEMENT AND DEVELOP REMEDIAL MEASURES IF WARRANTED. PLEASE NOTE THAT A MAXIMUM OF 1" HORIZONTAL DISPLACEMENT IS REQUIRED ANYWHERE ON SHORING WALL SURFACES THROUGHOUT THE SHORING WALL SERVICE LIFETIME. CONSTRUCTION SHALL BE SUSPENDED IMMEDIATELY AND REMEDIAL PROCEDURES APPLIED AS LONG AS A DISPLACEMENT READING EXCEEDS 1". IF THE TOTAL MEASURED LATERAL DEFLECTION OF THE PILES EXCEEDS 1", REMEDIAL MEASURES MAY BE REQUIRED.

20. EACH SET OF MONITORING DATA MUST BE PROVIDED TO THE GEOTECHNICAL ENGINEER FOR REVIEW. IT MAY BE NECESSARY TO INSTALL ADDITIONAL MONITORING POINTS IF WARRANTED BY THE DATA. RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION IF ADDITIONAL MONITORING POINTS BECOME NECESSARY.

21. SURVEY FREQUENCY MAY BE DECREASED AFTER THE SHORING SYSTEM HAS BEEN INSTALLED AND EXCAVATION IS COMPLETE IF THE DATA INDICATES LITTLE OR NO ADDITIONAL MOVEMENT. CHANGE IN THE SURVEY FREQUENCY SHALL BE APPROVED IN WRITING BY THE GEOTECHNICAL ENGINEER. SURVEYING MUST CONTINUE UNTIL THE PERMANENT STRUCTURE (INCLUDING FLOOR SLABS AS BRACES) IS COMPLETE TO FINAL AND STREET GRADES.

GEOTECHNICAL INFORMATION AND CRITERIA

22. INSTALLATION OF SHORING, SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION AND FILLING REQUIREMENTS SHALL CONFORM WITH THE RECOMMENDATIONS CONTAINED IN THE SOILS REPORT AND/OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE SUBSURFACE CHARACTERIZATIONS USED TO DESIGN THE SHORING ARE CONTAINED IN THE SOILS REPORT AS REFERENCED ABOVE.

23. EXCAVATIONS FOR FOUNDATIONS SHALL BE PER PLAN DOWN TO UNDISTURBED NATIVE MATERIAL PER THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS. OVER EXCAVATED AREAS SHALL BE BACKFILLED WITH LEAN CONCRETE OR PER GEOTECHNICAL RECOMMENDATIONS AT THE CONTRACTOR'S EXPENSE. EXCAVATION SLOPES SHALL BE SAFE AND SHALL NOT BE GREATER THAN THE LIMITS SPECIFIED BY LOCAL, STATE, AND NATIONAL SAFETY REGULATIONS. CONTRACTOR SHALL PROTECT CUT SLOPES AS NECESSARY IF CONSTRUCTION OCCURS DURING WET WEATHER, AND SHALL CONTROL AND MANAGE RUNOFF TO MINIMIZE EFFECTS ON CONSTRUCTION.

24. DESIGN SOIL CAPACITIES ARE DETERMINED BY THE GEOTECHNICAL ENGINEER. THE SOIL PRESSURES INDICATED ON THE SOIL PRESSURE DIAGRAM WERE USED FOR DESIGN, IN ADDITION TO THE DEAD AND LIVE LOADS. SEE REPORT OF GEOTECHNICAL INVESTIGATION FOR MORE COMPLETE INFORMATION, INCLUDING RECOMMENDATIONS FOR SHORING IN GENERAL, SHORING MONITORING, EXCAVATION, LAGGING, AND DRAINAGE.

25. SOIL DESIGN PARAMETERS ARE AS FOLLOWS:

LATERAL EARTH PRESSURES	E.F.P.
ACTIVE EARTH PRESSURE (YIELDING)	
LEVEL BACKFILL	35 PCF
MAX SLOPE BACKFILL	55 PCF
SEISMIC SURCHARGE PRESSURE (UNIFORM LOAD)	6H PSF
PASSIVE EARTH PRESSURE (INCLUDES FS=1.5)	400 PCF
ALLOWABLE END BEARING PRESSURE	20.0 KSF
ALLOWABLE SKIN FRICTION	1.0 KSF

26. SHORING DURATION: PERMANENT

27. HELICAL ANCHORS SHALL BE DESIGNED TO MEET THE LOADING REQUIREMENTS SHOWN ON THE DRAWINGS AND SHALL INCLUDE A MINIMUM SAFETY FACTOR OF 2. DRAWINGS AND CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON SHALL BE SUBMITTED PRIOR TO INSTALLATION. INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE ANCHOR MANUFACTURER AND INSTRUCTIONS OF THE GEOTECHNICAL ENGINEER. THE CAPACITY OF THE INSTALLED ANCHORS SHALL BE VERIFIED BY FIELD TESTING THE GREATER OF ONE ANCHOR OR 5% OF THE TOTAL ANCHORS TO THE SPECIFIED ANCHOR CAPACITY MULTIPLIED BY THE SAFETY FACTOR USED FOR DESIGN

CONCRETE

28. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC SECTION 1905, 1906, AND ACI 301. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS:

f'c psi	Minimum Cement Per Cubic Yard	Max. Water Per 94 LB Cement	Use
n/a	1-1/2 sacks	-----	pile & tieback lean concrete

STEEL

29. STEEL SPECIFICATIONS: DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL, AISC 360 AND SECTION 2205 OF THE BUILDING CODE.

30. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	FY
WIDE FLANGE SHAPES	A992	50 KSI
OTHER SHAPES, PLATES, AND RODS	A36	36 KSI
HEADED SHEAR STUDS	A108	

31. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS AND SHALL BE PERFORMED BY WABO CERTIFIED WELDERS USING E70XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT 20 DEGREES F AND 40 FT-LBS AT 70 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.

32. STEEL PROVIDED FOR PERMANENT SHORING SHALL BE GALVANIZED OR PAINTED BLACK FOR CORROSION RESISTANCE.

WOOD

33. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

Use	Grade	Fb (psi, single use)
4X TIMBER LAGGING	HEM-FIR NO. 2	850 (WHERE SPECIFIED)

PILE AND LAGGING CONSTRUCTION

34. DEMOLITION: SHORING AND SOIL EXCAVATION SHALL BE DONE SIMULTANEOUSLY.

35. DIMENSIONS AND LOCATION OF EXISTING STRUCTURES SHALL BE VERIFIED PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBER. NOTIFY ENGINEER ABOUT ANY DISCREPANCIES PRIOR TO FABRICATION.

36. PILE HOLES SHALL BE DRILLED WITHOUT LOSS OF GROUND AND WITHOUT ENDANGERING PREVIOUSLY INSTALLED PILES AND ANCHORS. THIS MAY INVOLVE CASING THE HOLES OR OTHER METHODS OF PROTECTION FROM CAVING. REFER TO REPORT OF GEOTECHNICAL INVESTIGATION FOR RECOMMENDED HOLE DIGGING PROCEDURE.

37. STEEL PILE PLACEMENT TOLERANCES:

    1" INSIDE PERPENDICULAR TO SHORING WALL.
    1" OUTSIDE PERPENDICULAR TO SHORING WALL.
    3" LATERALLY.
    1" IN ANY DIRECTION

38. LAGGING: TIMBER LAGGING SHALL BE INSTALLED IN ALL AREAS. VOIDS BETWEEN LAGGING AND SOIL SHALL BE BACKFILLED WITH PEA GRAVEL OR LEAN MIX FILL. DRAINAGE BEHIND THE WALL MUST BE MAINTAINED. IT IS CONTRACTOR'S RESPONSIBILITY TO LIMIT THE AMOUNT OF EXPOSED SOIL WITHOUT LAGGING TO AVOID LOSS OF SOIL. MAXIMUM HEIGHT OF 4 FEET IS RECOMMENDED. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO AVOID GROUND LOSS DURING EXCAVATION.

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Mercer Island, WA 98040

ARCHITECT:

Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:

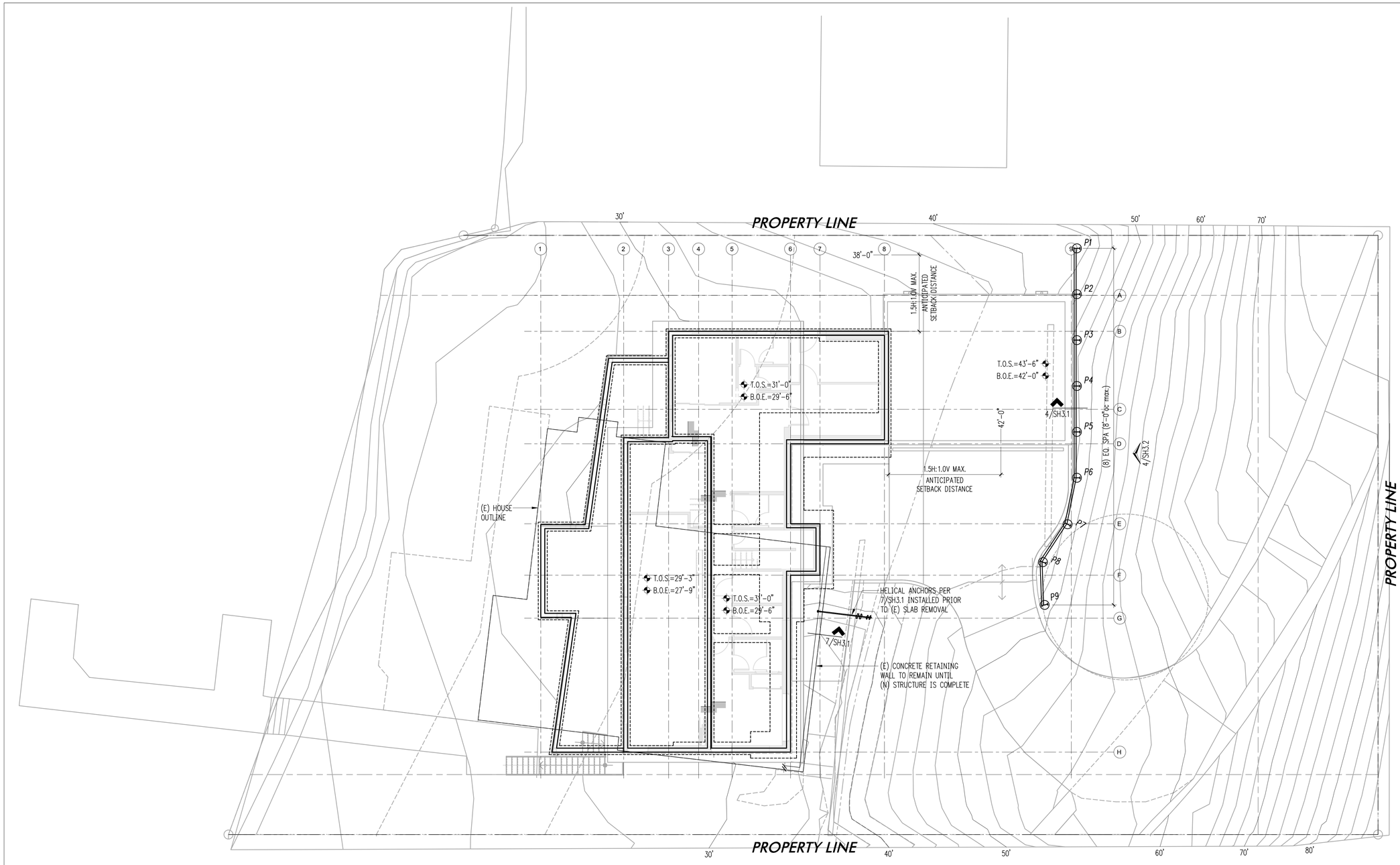
PERMIT

SHEET TITLE:

General Shoring Notes

SCALE: -
DATE: April 20, 2019
PROJECT NO: 01519-2019-01
SHEET NO:

SH1.1



Shoring Plan

Scale: 1/8" = 1'-0"

PROJECT NORTH

TRUE NORTH

Pile Schedule

MARK	AUGER DIA. (min.)	STEEL PILE SIZE	ELEVATION	
			MAX. TOP OF PILE	MIN. BOT. OF PILE
P1-P9	18"ø	W12x22	48'-0"	32'-0"

Plan Notes

1. DO NOT SCALE DRAWINGS. DIMENSIONS AND EXISTING ELEVATIONS ARE ESTIMATED AND ARE SHOWN FOR BID PURPOSES. EXISTING DIMENSIONS AND ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR.
2. TIMBER LAGGING SHALL CONSIST OF 4x12 DF #2 WITH A BASE VALUE OF FB=900 PSI.
3. OBSTRUCTIONS MAY BE ENCOUNTERED DURING EXCAVATION AND SHORING/PILE INSTALLATION. NOTIFY ENGINEER OF RECORD AND GEOTECHNICAL ENGINEER IF OBSTRUCTIONS PREVENT INSTALLATION OF PILES PER PLANS.
4. FOR EACH PILE UTILIZING LEAN CONCRETE, THE REQUIRED VOLUME OF GROUT SHALL BE CALCULATED PRIOR TO, AND MONITORED DURING INSTALLATION. GROUTING OPERATIONS SHALL BE STOPPED IF THE PUMPED GROUT VOLUME EXCEEDS THE CALCULATED GROUT VOLUME BY 10%.
5. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

Legend

T.O.W.	TOP OF WALL
T.O.S.	TOP OF SLAB
B.O.E.	BOTTOM OF EXCAVATION
Pxx	PILE PER SCHEDULE

STRUCTURAL ENGINEERING

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DYAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: SRW, HAA
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

DPD:

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Shoring Plan

SCALE: 1/8" = 1'-0" U.N.O.
DATE: Aprill 20, 2019
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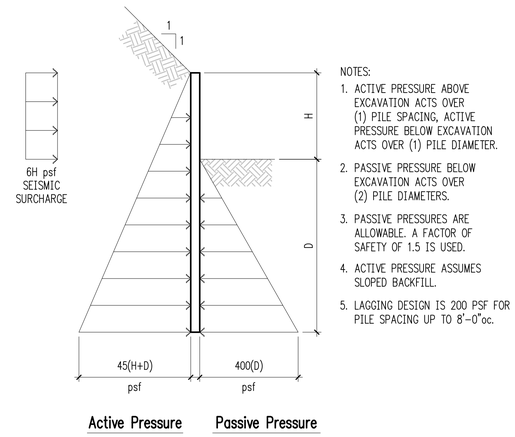
SH2.1

1

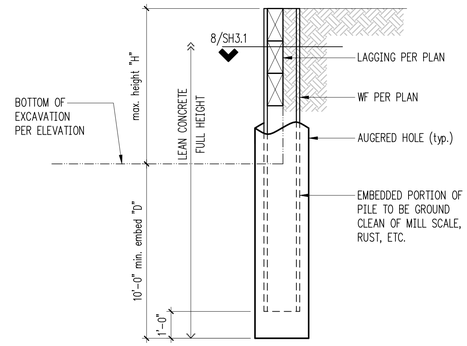
2



NOTES:

1. ACTIVE PRESSURE ABOVE EXCAVATION ACTS OVER (1) PILE SPACING, ACTIVE PRESSURE BELOW EXCAVATION ACTS OVER (1) PILE DIAMETER.
2. PASSIVE PRESSURE BELOW EXCAVATION ACTS OVER (2) PILE DIAMETERS.
3. PASSIVE PRESSURES ARE ALLOWABLE. A FACTOR OF SAFETY OF 1.5 IS USED.
4. ACTIVE PRESSURE ASSUMES SLOPED BACKFILL.
5. LAGGING DESIGN IS 200 PSF FOR PILE SPACING UP TO 8'-0"oc.

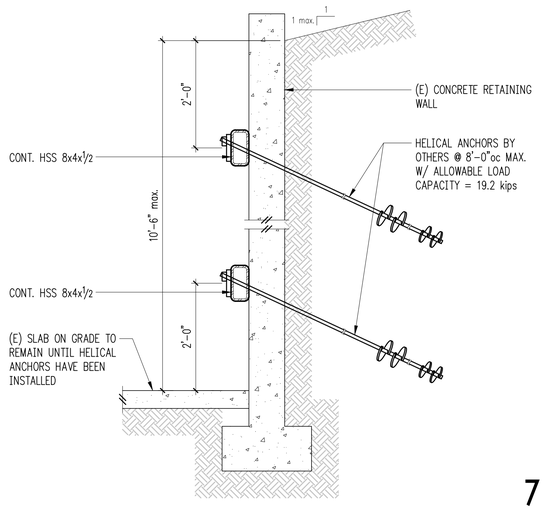
Cantilever Pile With Slope Diagram 3



Cantilever Pile 4

5

6



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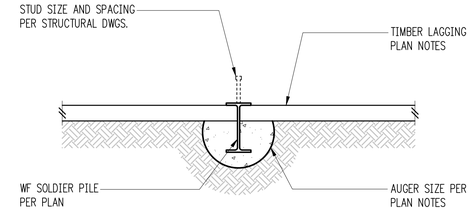

Typical Pile Plan 8

9

10

11

12

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Shoring Details

SCALE: 3/4" = 1'-0" U.N.O.
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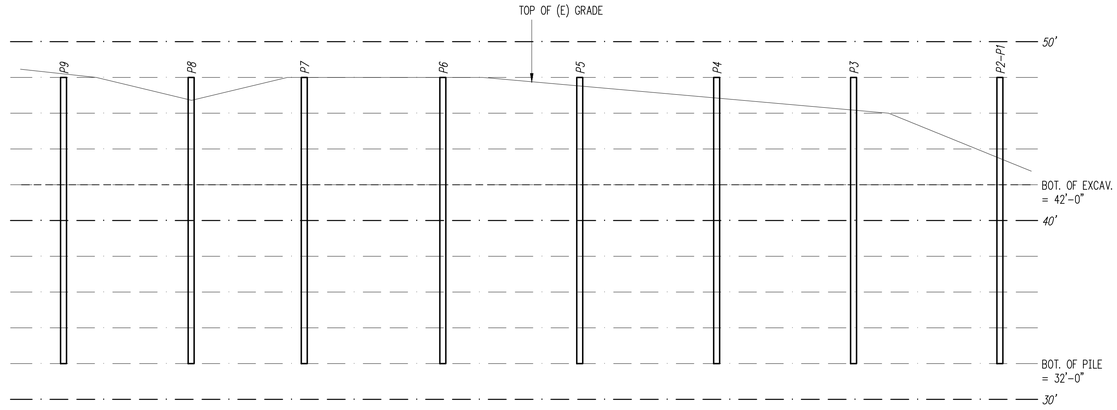
SH3.1



1 2 4

5 6 7 8

9 10 11 12

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Shoring Elevtaions

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SH3.2