#	-	pound/s, number
&	-	and
(E)	-	existing
(N)	-	new
<	-	less than, angle
@	-	at
[	-	channel
A/C	-	air conditioning
AB	-	anchor bolt
ABV	-	above
AC	-	air conditioning
ADD	-	additional
ADJ	-	adjust, adjustable
AFF	-	above finished floor
AL	-	aluminum
ALT	-	alternate
ALUM	-	aluminum
ANOD	-	anodized
ARCH	-	architect, architecture
AUX	-	auxilary
AVG	-	average
B/	-	bottom of
BK	-	back
BLDG	-	building
BLK	-	block, blocking
BLW	-	below
BM	-	beam, benchmark
BSBL	-	building setback line
BTM	-	bottom
CAB	-	cabinet
CB	-	catch basin, circuit breaker
CDF	-	controlled density fill
CF	-	cubic feet
CFM	-	cubic feet / minute
CI	-	cast iron
CIP	-	cast in place
CJ	-	control joint
CL	-	centerline
CLG	-	ceiling
CLR	-	clear, clearance
CM	-	CO2 detector
CMU	-	concrete masonry units
CO	-	cleanout
CO2	-	carbon monoxide
COL	-	column
CONC	-	concrete
CONN	-	connection, connector
CONST	-	construction
CONT	-	continuous
CONTR	-	contractor, contract
CSMT	-	casement
CY	-	cubic yards
DBL	-	double
DD	-	deck drain
DET	-	detail
DIA	-	diameter
DIAG	-	diagonal, diagram
DIM	-	dimension/al
DIV	-	divide, division
DN	-	down
DR	-	door
DS	-	downspout
DTL	-	detail
DW	-	dishwasher
DWG	-	drawing
E	-	east
EA	-	each
EF	-	exhaust fan
EL	-	elevator
ELEC	-	electric/al
ELEV	-	elevator
ENCL	-	enclose, enclosure
ENGR	-	engineer
EQ	-	equal
EQP	-	equipment
ESMT	-	easement
EST	-	estimate/d
EW	-	each way
EXH	-	exhaust
EXIST	-	existing
EXP	-	expose/d, expansion
EXST	-	existing
EXT	-	exterior
F/	-	face of
FD	-	floor drain
FE	-	fire extinguisher
FIN	-	finish/ed
FLEX	-	flexible
FLR	-	floor
FND	-	foundation
FO	-	face of
FP	-	fireplace
FR	-	fire resistant
FT	-	foot, feet
FTG	-	footing
G	-	gas, gauge
GA	-	gage, gauge
GALV	-	galvanized
GC	-	general contractor
GL	-	glass, glaze, glazing
GLB	-	glu-lam beam, glass block
GR	-	guardrail
GRD	-	grade
GWB	-	gypsum wallboard
GYP	-	gypcrete, gypsum
H	-	high
HB	-	hose bibb
HD	-	heat detector
HDR	-	header
HDWD	-	hardwood
HM	-	hollow metal
HOR	-	horizontal
HP	-	heat pump
HR	-	handrail
HRV	-	heat recovery ventilator
HSS	-	hollow steel section
HT	-	height
HVAC	-	heating, ventilation & air conditioning
HWT	-	hot water tank
HYD	-	hydrant
ID	-	inner diameter
IN	-	inch
INCL	-	include/s /d /ing
INSL	-	insulate, insulation
INT	-	interior, intersection
INV	-	invert, inverse
JST	-	joist
JT	-	joint
L	-	left, long, length
LAM	-	laminate/d
LBL	-	label
LF	-	lineal foot/feet
LT	-	light
LTG	-	lighting
LVL	-	level, laminated veneer lumber
M.	-	master
M/L	-	match line
MAT	-	material
MAX	-	maximum
MECH	-	mechanical
MFR	-	manufacturer
MIN	-	minimum
MIR	-	mirror
MISC	-	miscellaneous
MO	-	masonry opening
MTL	-	metal
N	-	north
N/A	-	not available / applicable
NAT	-	natural
NIC	-	not in contract
NO	-	number
NOM	-	nominal
NTS	-	not to scale
NUM	-	number
OA	-	overall
OC	-	on center
OD	-	outer diameter
OF	-	overflow
OFCI	-	owner furnished contractor installed
OFOI	-	owner furnished owner installed
OH	-	overhang, overhead
OPP	-	opposite
OVFL	-	overflow
PAV	-	pave/ment, pavers
PERF	-	perforate/d
PL	-	plate, property line
PLAM	-	plastic laminate
PLY	-	plywood
PNL	-	panel
PNT	-	paint
PROP	-	property line
PT	-	point
PVC	-	poly vinly chloride
R	-	riser/s
RA	-	return air
RAD	-	radius
RD	-	roof drain
REBAR	-	reinforcing bar
REF	-	refrigerator, reference
REINF	-	reinforce/ment
REM	-	remove
REPL	-	replace
REQ'D	-	required
RH	-	right hand, robe hook
RM	-	room
RO	-	rough opening
ROW	-	right-of-way
RT	-	right
S	-	south
SBK	-	setback
SC	-	solid core
SCHEM	-	schematic
SD	-	smoke detector, storm drain
SEC	-	section
SF	-	square feet
SG	-	safety glazing
SHT	-	sheet
SIM	-	similar
SL	-	slope
SOG	-	slab-on-grade
SPC	-	space/s
SPEC	-	specification/s
SQ	-	square
ST	-	street
STD	-	standard
STL	-	steel
STR	-	structure, structural
SYS	-	system
T	-	tee, tempered
T&G	-	tongue & groove
T/	-	top of
TBD	-	to be determined
TCR	-	tree credit/s
TEL	-	telephone
TEMP	-	tempered, temporary
THK	-	thick/ness
TOL	-	tolerance
TV	-	television
TYP	-	typical
UG	-	underground
UL	-	underwriter's laboratory
UNO	-	unless noted otherwise
V	-	vent, valve, volt
VAR	-	varies, variable
VB	-	vapor barrier
VERT	-	vertical
VG	-	vertical grain
VIF	-	verify in field
VTO	-	vent to outside
W	-	west, wide, width, water
W.C.	-	water closet
W/	-	with
W/D	-	washer and dryer
WD	-	wood
WIC	-	walk-in closet
WIN	-	window
WP	-	waterproof/ing
WR	-	water-resistant
WRB	-	water resistant barrier

GENERAL NOTES

General Requirements

Applicable Codes and Regulations.

Building Code	2018 International Residential Code (IRC) with WA state Amendments (WAC 51-51)
Electrical Code	2020 National Electrical Code (NEC) with WA State amendments (WAC 296-46B) and(RCW 19.28)
Energy Code	2018 Washington State Energy Code (WSEC) Residential Provisions (WAC 51-11R)
Fire Code	2018 International Fire Code (IFC) with WA State Amendments (WAC 51-54A)
Mechanical Code	2018 International Mechanical Code (IMC) with WA State Amendments (WAC 51-52)
National Fuel Gas Code	2018 NFPA 54, National Fuel Gas Code (NFGC) (WAC 51-52)
Plumbing Code	2018 Uniform Plumbing Code (UPC) with WA State Amendments (WAC 51-56)
Zoning Code	Mercer Island City Code

Contractor Responsibilities. It is the responsibility of the General Contractor (GC) to ensure compliance and conformance with the various provisions of the applicable ordinances and codes in all the Work. The GC is responsible for coordinating all work including additional permits and subcontractor work.

Dimensions. Dimensions that are not stated as "maximum" or "minimum" are absolute. All dimensions are subject to conventional industry tolerances. Verify and coordinate dimensions among all drawings prior to construction. Written dimensions take precedence over scaled lengths and heights in all cases. Do not scale drawings.

Discrepancies. In the event of discrepancies or contradictory information in the drawings, notes, or specifications, it is the obligation of the GC to notify Highland Design of the same and to obtain clarification from Highland Design before proceeding with the work. Any work done by the contractor after discovery of such discrepancy shall be done at the contractor's risk.

Inspections. Contractor shall be responsible for coordinating all building inspections. Required building inspections per IRC section R109 and WSEC 105:

- Foundation inspection – after forms are erected and reinforcing steel is placed
- Plumbing, mechanical, gas, and electrical systems inspection – prior to covering/concealment
- Frame and masonry inspection – after the roof, masonry, firestopping, draftstopping, and bracing are in place and after plumbing, mechanical, and electrical rough inspections are approved.
- Special inspections as required by Engineer of Record
- Other inspections required by the Building Official
- Final inspection – after the permitted work is complete and prior to occupancy.

Contract Documents. Highland Design shall have final authority regarding interpretation of the intent and spirit of the contract documents. The Project Manual is included by reference. All contract documents pertaining to this project are to be considered and interpreted for bidding and construction purposes as a complete whole. No part of the drawings or project manual shall be distributed, considered, or used in any way independent of the complete set of documents.

Typical Details. Project 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 to those provided shall be used - subject to review and approval by Highland Design and the structural engineer.

Work and Data by Others. Highland Design assumes no responsibility for, nor verifies the accuracy of, any engineering data supplied by others.

Submittals.
Shop drawings are required for the following components:

- Items required by consultants - See individual consultant documentation for any shop drawings required by their respective disciplines.
- Windows and doors
- Gates and specialty doors
- Railing systems
- Casework and Built-ins

Changes. Contractor initiated changes shall be submitted in writing to Highland Design and/or structural engineer for approval prior to fabrication or construction. Changes shown on shop drawings only do NOT satisfy this requirement unless previously approved.

All changes – whether drawing or field required – shall have revisions approved & filed for record w/ the city once the original submission has been approved and the permit issued. Charge will be made by city for all revision review and approvals including field inspections beyond that required under permit fees and paid for under estimated inspection fee

As-Built Drawings. Contractor and subcontractors shall mark drawings for as-built condition. Mechanical, electrical, plumbing, and fire-protection drawings shall be revised for as-built conditions by their respective authors. Final as-built reproducible drawings shall be submitted to the Owner or Owner's representative.

Safety. Contractor shall be responsible for all required safety precautions and the methods, techniques, sequences, or procedures required to perform the work.

Site Maintenance. Contractor shall maintain a trash bin in an area designated by the owner's representative for the collection of all construction debris. Contractor shall dispose of all debris and remove trash bin prior to occupancy. All surfaces shall be cleaned prior to occupancy.

Demolition Permit. A separate demolition permit is required for the removal of any existing structure.

Design Criteria

Construction Type: Buildings shall be constructed of wood light-frame systems. Engineered designs shall comply with the International Building Code.

Seismic: Design Category = D

Fire-Resistant Construction

Garage Opening Protection. Provide minimum 20 minute or 1 3/8"solid core doors with self-closing devices between the attached garage and the dwelling. Ducts penetrating the walls or ceiling between the garage and dwelling shall be of minimum No. 26 gage sheet steel and shall not have penetrations into the garage. For other penetrations, refer to IRC R302.11

Garage Separation. Separate the attached garage from the dwelling unit and its attic area by minimum 1/2" gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated by not less than 5/8" Type X gypsum board. Structure supporting floor/ceiling assemblies used for separation shall be protected with ½"minimum gypsum board.

Under-Stair Protection. Provide minimum ½"gypsum board on all walls, under-stair
urfaces, or any soffits in enclosed accessible under-stair spaces

Fire Blocking. Provide fire blocking in concealed wall spaces of stud walls and partitions vertically at ceiling and floor levels, at 10 feet max. horizontally, and at all interconnections of concealed vertical and horizontal spaces. Fire block concealed spaces between stair stringers at the top and bottom of run and between studs and in line with the run of the stairs if the walls under the stairs are unfinished. Fire stop with non-combustible materials in openings around all vents, pipes, ducts, chimneys, fireplaces, and similar openings which afford passage for fire at ceiling and floor levels.

Toilet, Bath, and Shower Spaces

Wet Areas. Shower compartments and walls above bathtubs with installed shower heads shall be finished with a non-absorbent surface to a height not less than 6 feet above the floor per Section IRC R307.

Glazing

Glazing shall be in accordance with IRC Section R308.

Exterior Glazing. All exterior wall glazing shall be double-glazed and comply with the Washington State Energy Code (WAC 51-11).

Safety Glazing. Provide in areas subject to human impact per Section R308.4. Such hazardous locations include:

1. Glazing in fixed and operable panels of swinging, sliding, or bi-folding door assemblies unless less than 3 inches or decorative glazing.
2. Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface unless there is a permanent intervening barrier, it is adjacent to the fixed panel of a patio door, or decorative glazing.
3. Glazing in storm doors.
4. Glazing in doors and enclosures for bathtubs and showers. Glazing in any part of a building wall enclosing these compartments where the bottom exposed edge of the glazing is 60 inches measured vertically above any standing or walking surface.
5. Glazing in an individual or fixed panel that meets all of the following conditions:
   - Exposed area of an individual pane greater than 9 square feet.
   - Bottom edge less than 18 inches above the floor.
   - Top edge greater than 36 inches above the floor.
   - One or more walking surfaces within 36 inches horizontally of the glazing.
   - All glazing in railings, regardless of an area or height above walking surface. Included are structural baluster panels and nonstructural in-fill panels.
   - Glazing in walls and fences enclosing indoor and outdoor swimming pools, hot tubs, and spas where the bottom edge of the glazing is less than 60 inches above a walking surface and within 60 inches horizontally of the water's edge.
   - Glazing adjacent to stairways, landings, and ramps within 36 inches horizontally of a walking surface when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface.
   - Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches above the nose of the tread.

Egress

Egress Openings. Emergency escape and rescue openings shall have a minimum net clear opening of 5.7 sq. ft. except grade floor openings shall be 5 sq. ft minimum. The minimum net clear opening height dimension shall be 24" and the minimum net clear opening width dimension shall be 20" per IRC Section R310. The sill of the opening shall be not more than 44 inches above the floor.

Handrails. Provide at least one handrail at every stairway having four or more risers. Provide 2 handrails where shown on plans. Handrails shall be continuous the full length of the flight from a point directly above the top riser of a flight to a point directly above the lowest riser of the flight and shall be returned or terminate in newel posts. Handrails are permitted to be interrupted by newel posts at the turn, and may start over the lowest tread.

Handrail height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34" and not more than 38". Handrails with a circular cross section shall have an outside diameter of at least 1.25" and not greater than 2" or shall provide equivalent graspability. If the handrail is not circular, it shall have a perimeter dimension of at least 4" and not greater than 6.25" with a maximum cross-section dimension of 2.25".

Guards. Guards shall be located along open-sided walking surfaces, mezzanines, stairways, ramps and landings which are located more than 30" above the floor or grade below per IRC R312. **Guards shall be adequate in strength and attachment in accordance with Table 301.5 and contractor shall verify to inspector all guards are capable of resisting 200 lb load on top rail acting in any direction.** Guards whose top rail also serves as a handrail shall have a height not less than 34" and not more than 38" measured vertically from the leading edge of the stair tread nosing. (IRC R312.1.2 exception 2)

Open guards shall have balusters or ornamental patterns such that a 4 inch diameter sphere cannot pass through any opening up to a height of 34". Except: The triangular openings formed by the riser, tread and bottom rail at the open side of a stairway shall not allow passage of a 6 inch diameter sphere, and guards on the open side of stairs shall not allow passage of a 4 3/8 inch diameter sphere. IRC R312.1.3

Fire Protection Systems

Bidder Designed. Fire Protection systems shall be bidder designed. Designated subcontractors are responsible for the preparation of drawings and applications for appropriate required permits.

Smoke Alarm System. An approved monitored smoke alarm system with automatic smoke detectors shall be provided and installed in accordance with NFPA 72 and IRC Section R314. Provided alarms inside of each bedroom, outside of each sleeping area, and on each story of the dwelling not less than 3 feet from the door of a bathroom containing a tub or shower. Required smoke alarms shall be hardwired to building power, interconnected, and have a battery backup.

Sprinkler System. An NFPA13D fire sprinkler system with controls shall be installed. The system shall be designed and the plans stamped by a person holding a Washington State Certificate of Competency. Contractor shall submit design to the Fire Department for approval. The system shall be installed by a state licensed sprinkler contractor.

Carbon Monoxide Alarms. Provide CO alarms outside of each separate dwelling area in the immediate vicinity of the bedrooms. CO alarms may be part of a combination carbon monoxide/smoke alarm. Required alarms shall be hardwired to building power and have battery backup.

Heat Alarms. Provide HD alarm in each attached garage per R314.2.3 and R314.4.1 Heat alarms shal be connected to a heat alarm or smoke alarm that is installed in the dwelling unit.

Soils and Foundations

Soils. Highland Design assumes no responsibility as to the physical characteristics of the soils. Excavations shall be inspected by the geotechnical engineer prior to pouring concrete if required.

Perimeter Drains. Provide continuous 4" round perforated drain in gravel fill with filter fabric wrap at all foundation walls. Provide clean-outs such that all portions of drainage system can be adequately cleaned. Locate bottoms of drain pipes at the lowest point of wall footings and tight-line perimeter drains to storm sewer or other approved discharge. Do not connect the perimeter / foundation drain to any other tight-lines or site drainage systems.

Provide a minimum 12" thick layer of continuous gravel fill from bottom of footing to within 12" of finish grade - typical at all walls. Approved gravel fill consists of washed, clean, free drainage gravel ranging from 1/4" to 3/4" in size.

Dampproofing. Provide dampproofing on the exterior surface of new foundation walls from the top of the footing to finished grade. Damp-proofing shall consist of a bituminous material, 3 lbs per sq. yd. of acrylic modified cement, 1/8" coat of surface-bonding mortar complying with ASTM C 887, any of the materials permitted for waterproofing by Section R406.2 or other approved methods or materials.

Waterproofing. Provide waterproofing on the exterior surface of basement walls from the higher of the top of the footing or 6" below the top of the basement floor, to finished grade on walls that retain earth and enclose interior spaces. Waterproofing shall consist of any of wo-ply hot-mopped felts, Fifty-five-pound roll roofing, Six-mil polyvinyl chloride, Six-mil polyethylene, Forty-mil polymer-modified asphalt, Sixty-mil flexible polymer cement, One-eighth-inch cement-based, fiber-reinforced, waterproof coating, or Sixty-mil solvent-free liquid-applied synthetic rubber. All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane. (R404.2)

Site Drainage. Conform to all local regulations and ordinances. Tight-line all roof drains to storm sewer system or approved discharge when storm sewers are not available. Do not connect foundation and retaining wall perimeter / footing drains tight-line to roof drain tight-lines or other site drainage.

Finish Grade. Provide a positive slope away from the building at the building face. All site hard surfaces to have a minimum slope of 1/8" in 12" to drains unless noted otherwise.

Debris. Remove all vegetation and organic material including wood formwork and construction debris from the under-floor area before the building is occupied.

Structural Systems

Structural Systems. All structural systems (such as trusses) 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.

Exterior Structures. Exterior wood framed decks and other wood framed structures exposed to weather: all wood shall be pressure treated to current American Wood Preservers Institute standards. This includes all plywood, trusses, sawn members, glue-laminated members, etc., unless noted otherwise. All nails and connectors shall be heavy-coat galvanized.

Wall Construction

Exterior Wall. New exterior walls to be 2x6 wood studs at 16" o.c. unless indicated otherwise on plans. Provide R-21 minimum cavity insulation. Interior walls to be 2x4 studs at 16" o.c. unless noted otherwise on plans. Existing exterior 2x4 walls shall be insulationed to a minimum of R-15 per WSEC R503.1.1.

Acoustical Insulation: Provide 1/2" thick sound attenuation board or 3" thick batt insulation at all bathroom, toilet room, and powder room walls and as noted on plans. Provide sound attenuation blankets at all bathroom, toilet room, and powder room floors and ceilings when these rooms occur above or below a habitable space.

Roof Assemblies and Structures

Roof Flashings. Provide roof flashing at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction and around roof openings. Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than No. 26 galvanized sheet per Section IRC R903

Attic and Rafter Ventilation: Cross-ventilate enclosed attics and rafter spaces where ceilings are applied directly. The net free ventilating area shall not be less than 1/150 of the area of the space ventilated. The minimum required net free ventilating area may be 1/300 of the area of the space ventilated, provided 40%-50% of the required ventilating area is through ventilators located within 3' of the ridge or highest point and the balance provided by eave or cornice vents.

Mechanical Systems

Bidder Designed. Mechanical systems, electrical systems, and plumbing systems shall be bidder designed. Subcontractors designated to accomplish the above will be responsible for the preparation of drawings and applications for appropriate required permits.

Ventilation. Provide source specific and whole house ventilation. Provide exhaust fans vented to the exterior in the following locations: bathrooms, powder rooms, laundry rooms, and kitchens. Exhaust fan CFM callouts are minimums. Specified equipment shall meet or exceed flow noted.

Whole House Ventilation. Continuous whole house ventilation shall be integrated with the forced-air heating system. Outdoor air shall be provided to the return side of the forced-air system within 4 feet upstream of the unit. At a minimum, filtration shall be provided at the forced-air unit with adequate access to filters for maintenance and replacement.

Exhaust Fans. IMC 403.3.6.5 Intermittent whole-house fan shall be capable of operating at least 2 hours of each 4-hour period. Ventilations Quality Adjustments per IMC 403.4.3

Table 403.4.2 rate: 90 CFM
System Coefficient: Not Balanced, Not Distributed Systems 1.5
Ventilation rate provided: 250 CFM
Operating Time: 54% of each 4-hour period (2 hours)

Areas of Moisture. When HVAC units or water heaters are placed in an area susceptible to moisture, all pilot lights, burners, switches, or heating elements shall be located at least 18" above the floor slab.

Water Heaters. Provide seismic anchor straps for all water tanks.

All hot water tanks shall be equipped with:
a. Pressure relief valve discharging to the exterior of the building and terminating 6" to 24" above grade.
b. Thermal expansion tank if the water system is equipped with a pressure reducing valve or a check valve.

Factory-Built Fireplaces. Factory-built fireplaces shall bear UL or ICBO seal of approval & be installed per manufacturer's recommendations. Fireplaces shall be installed with tight-fitting glass doors & outside source of combustion air (no less than 6 sq. in.) ducted to each firebox

Energy Conservation

Insulation and Vapor Barriers. Application and installation of insulation and vapor barriers shall comply with Washington State thermal insulation standards. All insulating materials shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450 per Section R302.10.1

Air Leakage. All exterior joints shall be sealed, caulked, gasketed, or weather-stripped to limit air leakage in the following locations

- window and door frames
- openings between walls and foundations
- between walls and roof
- openings at penetration of utility services
- all other openings in the building

Energy Code Compliance

Prescriptive Approach Used. Prescriptive option, per WSEC R402.1, will be used to determine required U-Values and R-Values for the addition. (note: bold text indicates modification from minimum precriptive requirements)

Maximum Vertical Fenestration U-Factor	0.28
Up to 15 SF exempt per R402.3.3	
Skylight U-Factor:	0.30
Maximum Opaque Wood Door U-Factor:	0.30
One 24 SF Opaque Door Exempt per R402.3.4	
Required R-Value for Ceilings:	R-49 min. R-38c single rafter/vaults
Required R-Value for Walls Above Grade:	R-21 min.
Required R-Value for Walls Below Grade:	R-21 int + TB
Required R-Value for Floors:	R-38
Required R-Value for Slab on Grade:	R-10 under perimeter and entire slab

R406.2 Carbon Emission Equalization

Table R406.2 Fuel Normalization Credits
System Type = 2
Credit = 1

Table R406.3 Additional Energy Efficiency Requirements
Medium Dwelling Unit- 6 credits req'd

Option 1.3 (0.5 credits)
R402.1.1 prescriptive and; U = 0.28 and; floor = R-38 and; SOG R-10 perimeter with full under slab and; SBG R-10 perim. & under slab

Option 3.4 (1.5 credits)
Ductless mini split heat pump w/ min HSPF 10.

Option 5.3 (1.0 credits) Water heating system to include energy star rated gas or propone heater w/ min. UEF 9.1

Options 6.1 (2.0credits)
Renewable Electric Energy Option. 2400 kWh solar panel elevtrical generation.

Interior Lighting. A minimum of 90% of lamps in permanently installed lighting fixtures that are part of the addition shall be high efficacy lamps (WSEC R404.1).

Site Information:

OWNER: Kapsner Homes
SITE ADDRESS: 2526 70th Ave SE
Mercer Island, 98040

PARCEL: 217450-3730
JURISDICTION: Mercer Island
ZONE: R-8.4
PRESENT USE: Single Family Residential
LOT AREA: 8,942 SF

LEGAL DESCRIPTION
East Seattle ADD Plat Block:23, Plat Lot:5-6-7

Development Information

PROPOSED FLOOR AREAS:
See sheet A2.01 SITE AREA CALCULATIONS for proposed floor areas

PROPOSED IMPERVIOUS SURFACES
See sheet A2.01 SITE AREA CALCULATIONS for impervious surface calculations

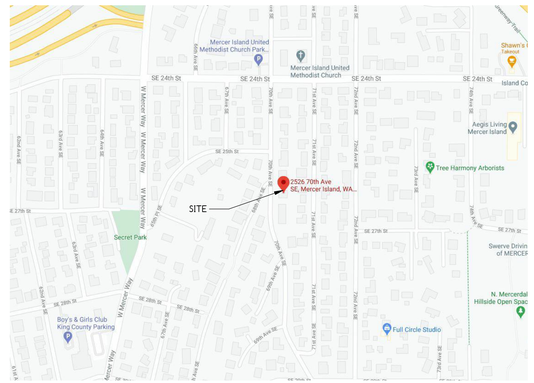
Project Consultants

Designer: HIGHLAND | design LLC
1029 Market St., Suite 100
Kirkland, WA 98033
(425) 998-7765
Contact: Jeffrey R. Barnett

Structural Engineer: PCS Structural Solutions
1011 Western Avenue, Suite 810
Seattle WA 98104
206-292-5076

Civil Engineer: Civil Engineering Solutions
102 NW Canal Street
Seattle, WA 98107
206-658-5210

index to sheets



1 vicinity map
NTS

HIGHLAND | design LLC
1029 Market Street, Suite 100, Kirkland, WA 98033
Phone: (425) 998-7765
Jeffrey R. Barnett - Principal
jeff@HIGHLANDdesign.net

REVISIONS:

NO.	DATE	DESCR.
1	02/04/22	Permit Comments
2	06/29/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

COVER SHEETS AND NOTES

JOB: 246.01
SCALE: 1 1/2" = 1'-0"
SHEET NO: A1.00

MARKETING 2

PLOT DATE: 6/29/2022 4:31:39 PM

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 8704170830)

LOTS 5, 6 AND 7, BLOCK 23, EAST SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 3 OF PLATS, PAGE 22, IN KING COUNTY, WASHINGTON.

BASIS OF BEARINGS

HELD BEARING N 89°29'46" W ALONG S.E. 24TH ST. AS SHOWN HEREON, AND PER REFERENCE 1

REFERENCES

R1. LOT LINE REVISION, VOL. 365, PG. 239,
R2. PLAT OF EAST SEATTLE PER VOL. 3, PG 22&23, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD88 PER GPS OBSERVATIONS.

SURVEYOR'S NOTES

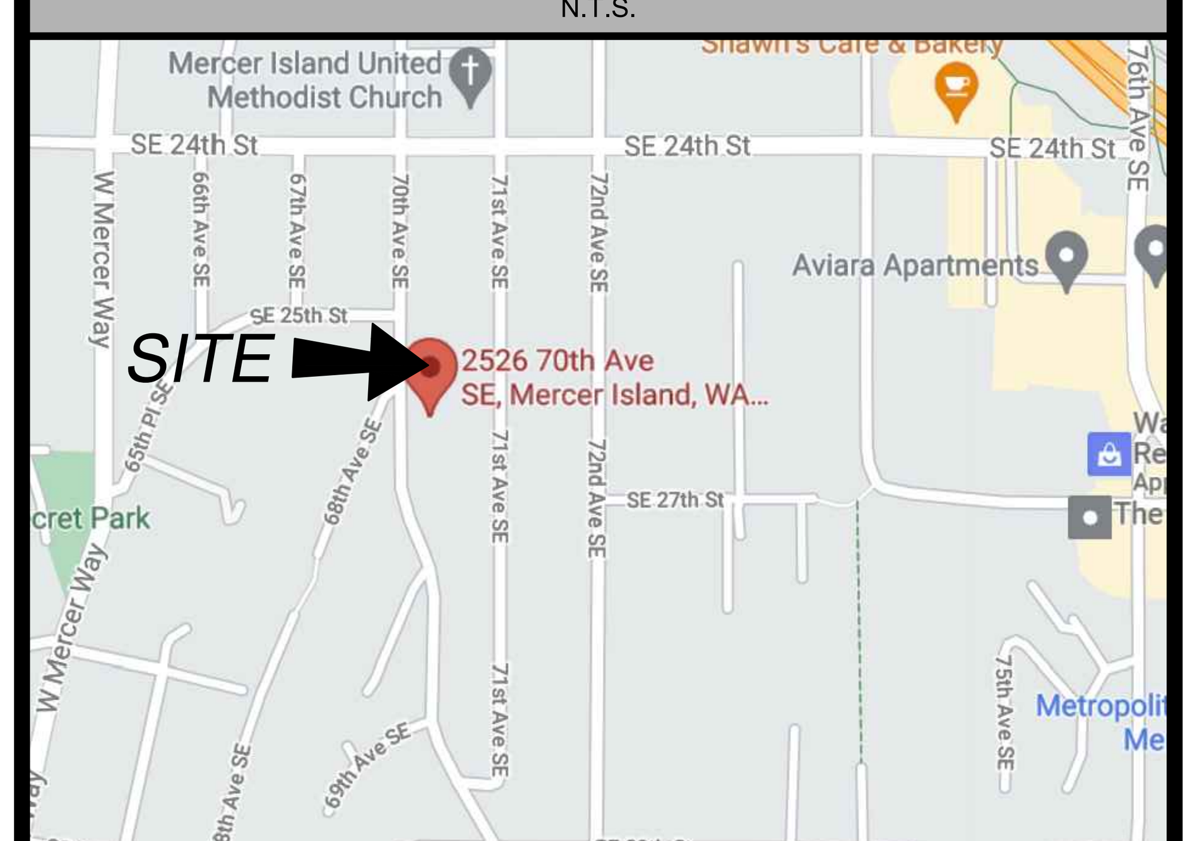
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN APRIL OF 2021. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 2174503730.
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 8,942± S.F. (0.21 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

LEGEND

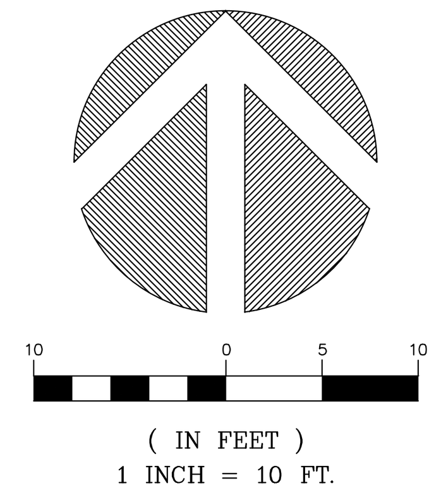
ACU	AC UNIT		MONUMENT IN CASE (FOUND)
	ASPHALT SURFACE		MONUMENT (SURFACE, FOUND)
	BRASS DISC (FOUND)	OHPT	OHP TRANSMISSION LINE
	BUILDING	P	POWER METER
	CENTERLINE ROW	PP	POWER POLE
	CONCRETE SURFACE	P	POWER (OVERHEAD)
	FENCE LINE (CHAIN LINK)		RETAINING WALL
	FENCE LINE (WOOD)		REBAR AS NOTED (FOUND)
G	GAS LINE		REBAR & CAP (SET)
G	GAS METER		ROCKERY
HB	HOSE BIB RISER	SS	SEWER LINE
	INLET (TYPE 1)	SD	STORM DRAIN LINE
IP	IRON PIPE (FOUND)		SEWER MANHOLE
	MAILBOX (RESIDENTIAL)	SIZE TYPE	TREE (AS NOTED)
	BENCHMARK	W	WATER LINE
		WM	WATER METER

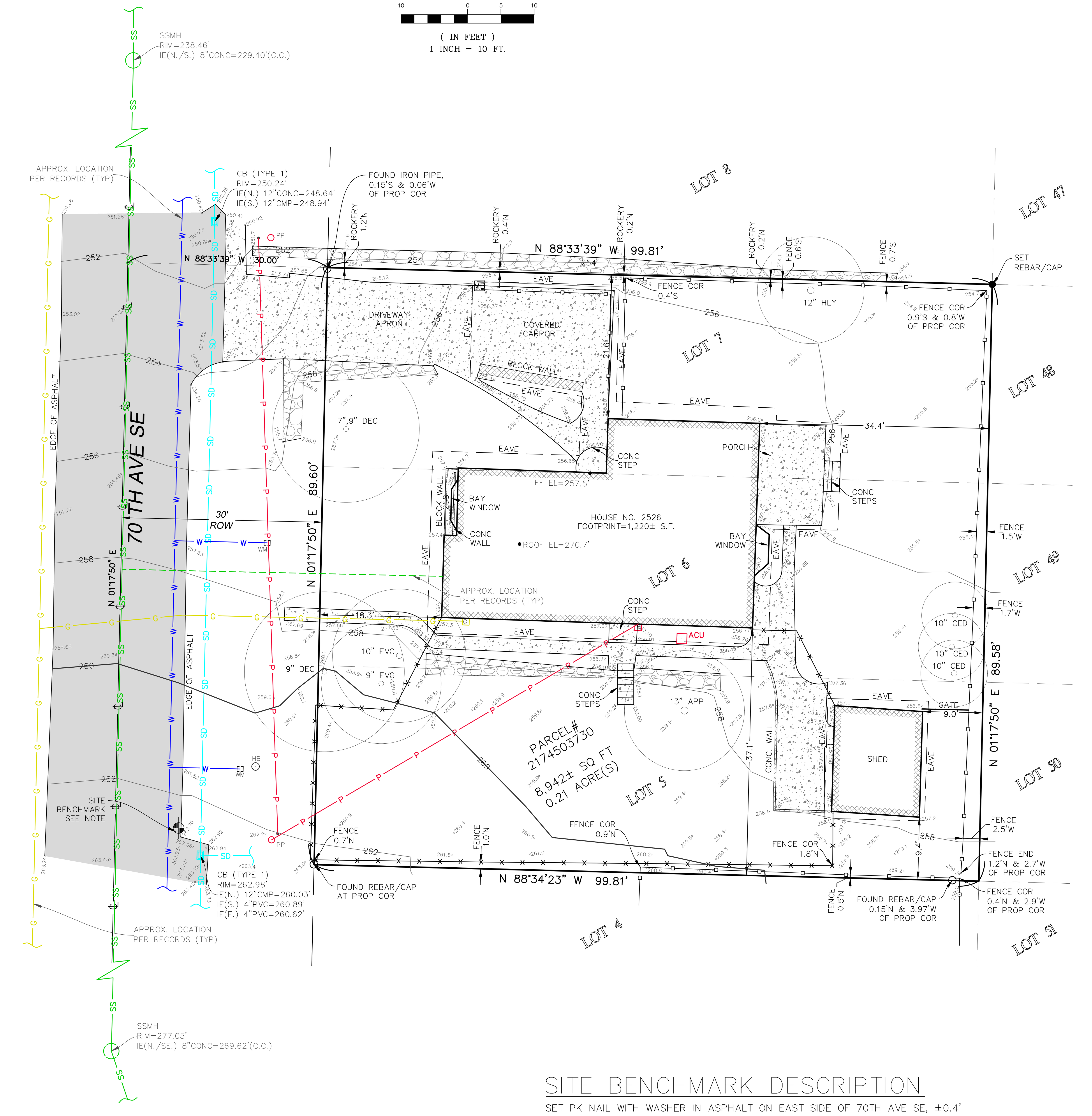
VICINITY MAP

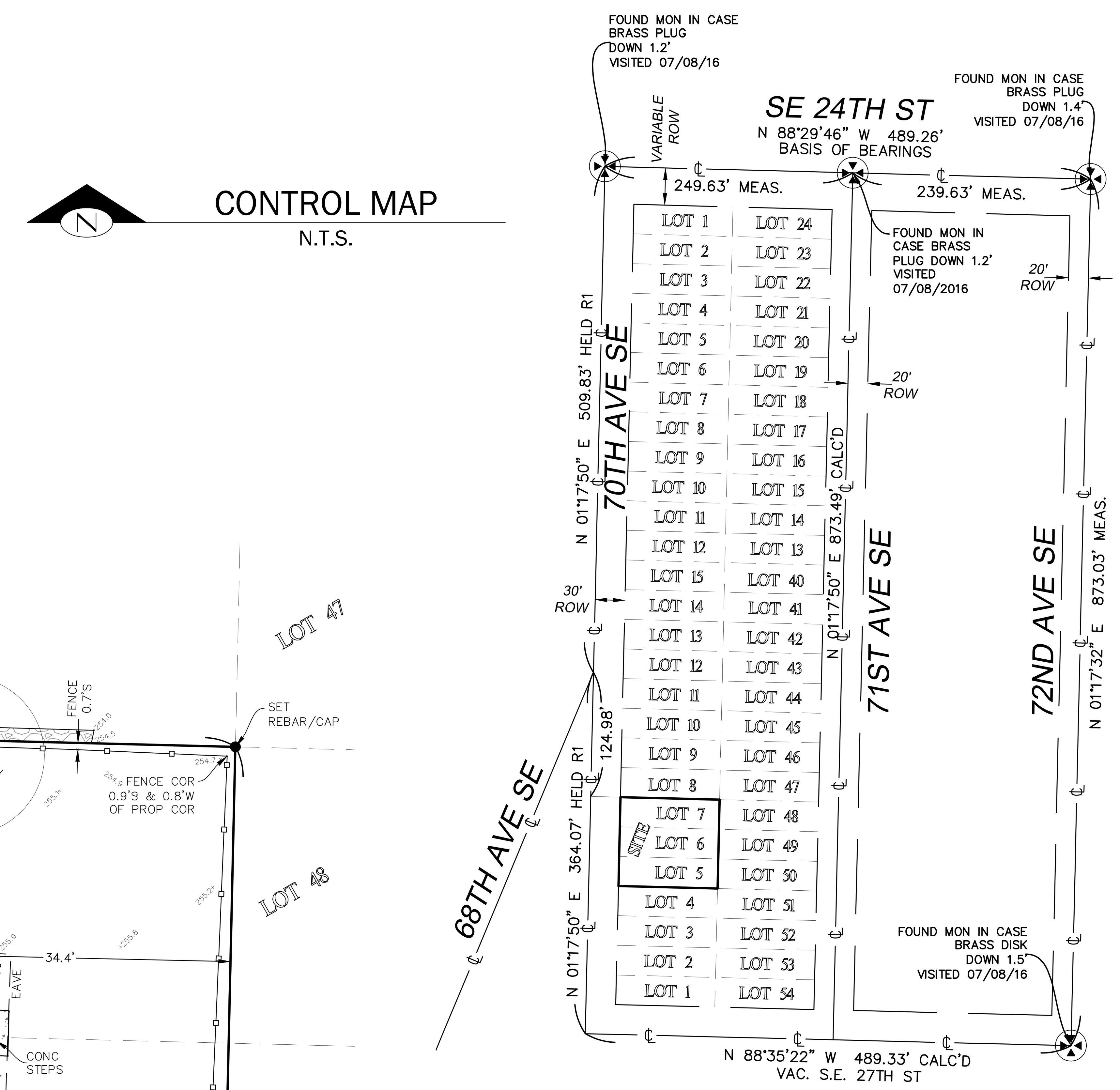
N.T.S.



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







SITE BENCHMARK DESCRIPTION

SET PK NAIL WITH WASHER IN ASPHALT ON EAST SIDE OF 70TH AVE SE, ±0.4' WEST OF THE EAST EDGE & ±5.2' NW'LY OF A CATCH BASIN WEST OF THE SW CORNER OF SUBJECT PARCEL.
ELEVATION=262.59'

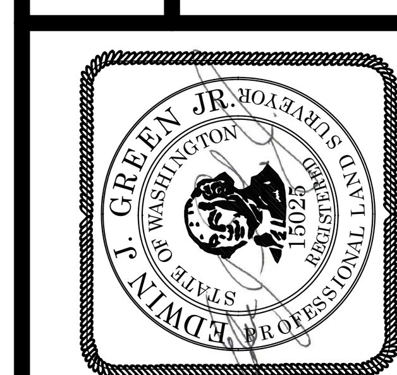
INDEXING INFORMATION

NW 1/4 NW 1/4
SECTION: 12
TOWNSHIP: 24N
RANGE: 04E, W.M.
COUNTY: KING

measure success

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 2174503730

KAPSNER HOMES
2526 70TH AVE SE
MERCER ISLAND, WA 98040



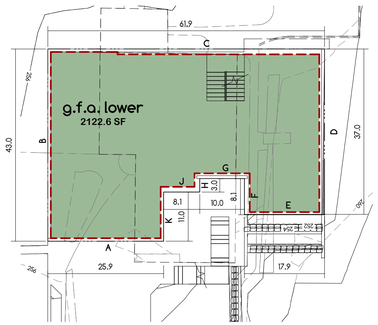
Terrane
10801 Main Street, Suite 102, Bellevue, WA 98004
phone 425.458.4488 support@terrane.net
www.terrane.net

JOB NUMBER:	210823
DATE:	05/04/2021
DRAFTED BY:	RSN
CHECKED BY:	JGM
SCALE:	1" = 10'

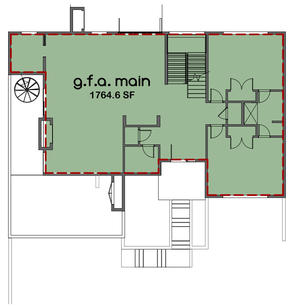
REVISION HISTORY

01/18/21	ADD BENCHMARK

SHEET NUMBER
1 OF 1



2 g.f.a.- lower
1/16" = 1'-0"



3 g.f.a.- main
1/16" = 1'-0"

4 g.f.a.- upper
1/16" = 1'-0"

LOWER FLOOR FAR CALCULATIONS

segment	length	% covered	length excluded	length remain	% excluded	total area		Basement FAR
A	25.9	5.05	1.3	24.6	82.37%	2122.6 SF		374.3 SF
B	43.0	89.15	38.3	4.7	82.37%	2122.6 SF		374.3 SF
C	61.9	100.00	61.9	0.0	82.37%	2122.6 SF		374.3 SF
D	37.0	100.00	37.0	0.0	82.37%	2122.6 SF		374.3 SF
E	17.9	41.05	7.4	10.6	82.37%	2122.6 SF		374.3 SF
F	8.1	100.00	8.1	0.0	82.37%	2122.6 SF		374.3 SF
G	10.0	100.00	10.0	0.0	82.37%	2122.6 SF		374.3 SF
H	3.0	100.00	3.0	0.0	82.37%	2122.6 SF		374.3 SF
J	8.1	100.00	8.1	0.0	82.37%	2122.6 SF		374.3 SF
K	11.0	100.00	11.0	0.0	82.37%	2122.6 SF		374.3 SF
	225.9		186.1					

see site plan and exterior elevations for grade points and graphics relating to percent covered and excluded of lower wall portions

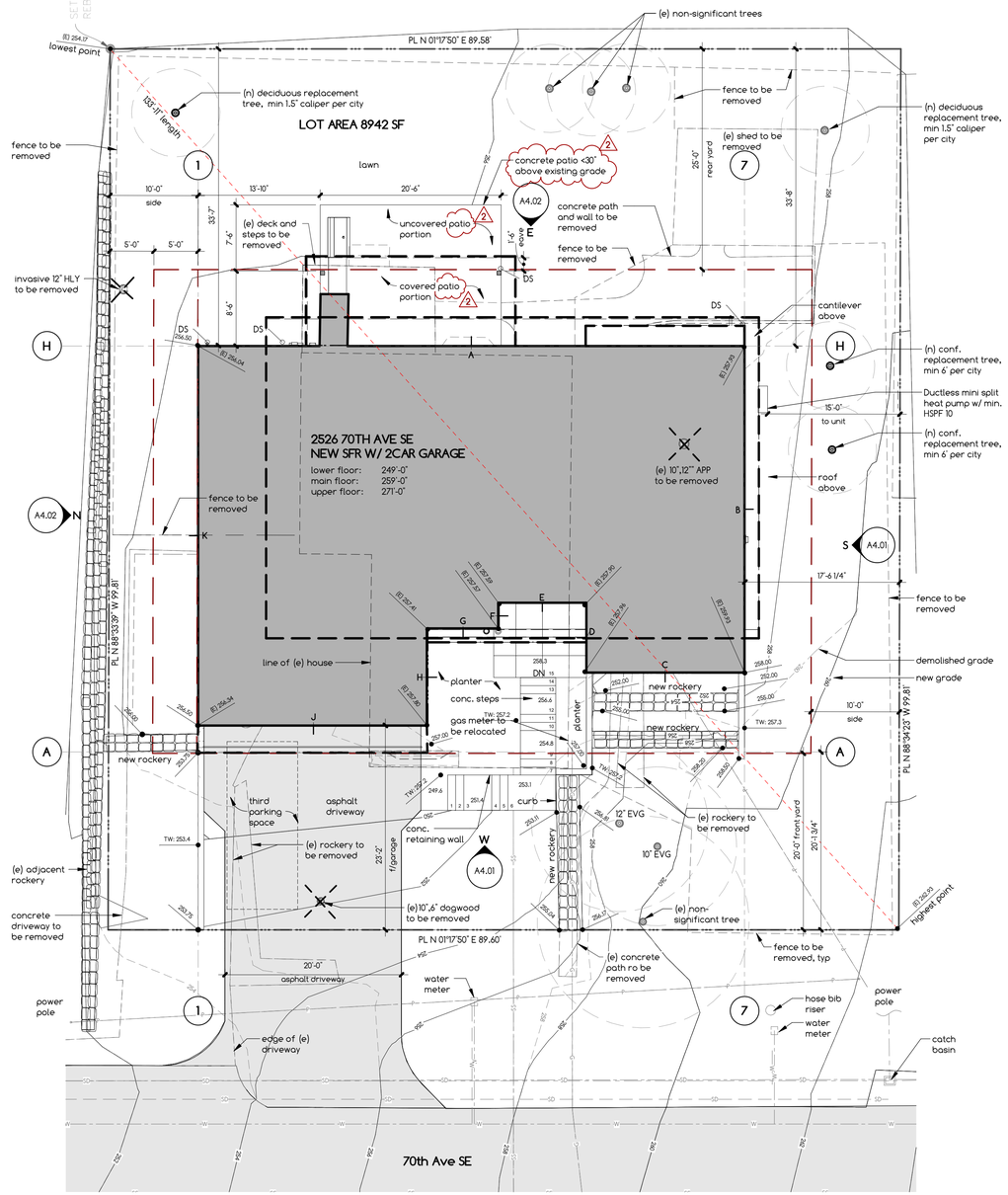
Lot Area = 8942 SF @ 40% = 3576.8 SF

FLOOR AREA (3,576.8 SF MAX)

name	area
g.f.a. main	1764.6 SF
g.f.a. upper	1433.1 SF
subtotal	**3197.8 SF**
g.f.a. lower (see table for excluded)	374.3 SF
total	3,572.1 SF

ABE CALCULATIONS

point	segment length	midpoint elevation	L*H	ABE
A	61'-11"	256.51	15,882.25 ft²	259.29
B	37'-1 5/8"	257.99	9,580.56 ft²	259.29
C	17'-11 13/16"	252.00	4,532.06 ft²	259.29
D	7'-11 13/16"	285.47	2,279.30 ft²	259.29
E	9'-10 3/16"	285.47	2,811.58 ft²	259.29
F	3'-0"	285.47	856.41 ft²	259.29
G	8'-1"	285.93	2,311.27 ft²	259.29
H	10'-10 13/16"	257.00	2,801.57 ft²	259.29
J	25'-11"	249.00	6,453.25 ft²	259.29
K	42'-11 13/16"	256.53	11,026.78 ft²	259.29
	225'-9 1/16"		58,535.03 ft²	



1 site plan
1/8" = 1'-0"

slope calculation
(highest point-lowest point)/length
(262.93-254.17) = 8.76 rise
/ 113.92' run = 0.0768 or 7.68% slope

HIGHLAND | designs LLC
1029 Market Street, Suite 100, Kirkland, WA 98033
Phone: (425) 998-7765
Jeffrey R. Barnett - Principal
jeff@HIGHLANDdesigns.net

REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments
2	08/02/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

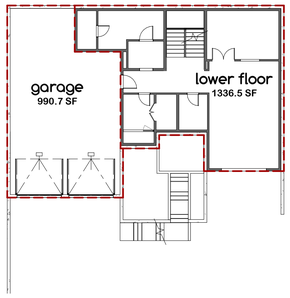
SITE PLAN

JOB: 246.01
SCALE: As indicated
SHEET NO:

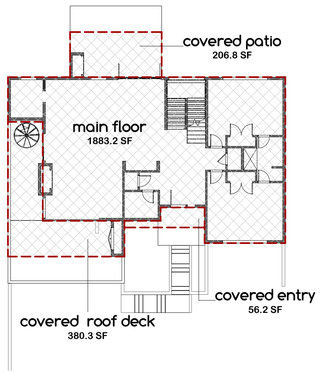
A2.01

MARKETING 2

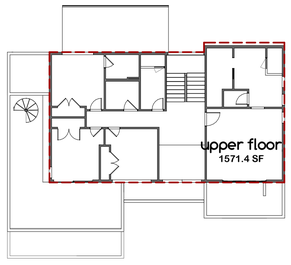
PLOT DATE: 8/2/2022 10:21:21 AM



5 fire area- lower
1/16" = 1'-0"



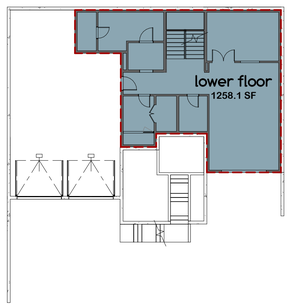
6 fire area- main
1/16" = 1'-0"



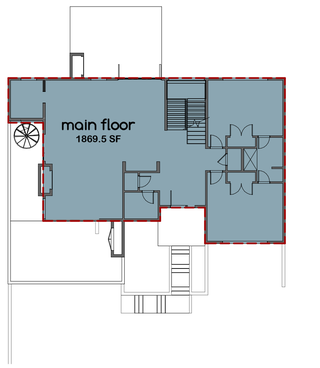
7 fire area- upper
1/16" = 1'-0"

FIRE AREA

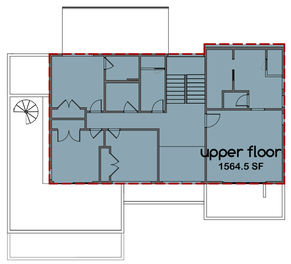
name	area
covered roof deck	380 SF
covered entry	56 SF
covered patio	207 SF
garage	991 SF
lower floor	1336 SF
main floor	1883 SF
upper floor	1571 SF
total	6425 SF



2 conditioned- lower
1/16" = 1'-0"



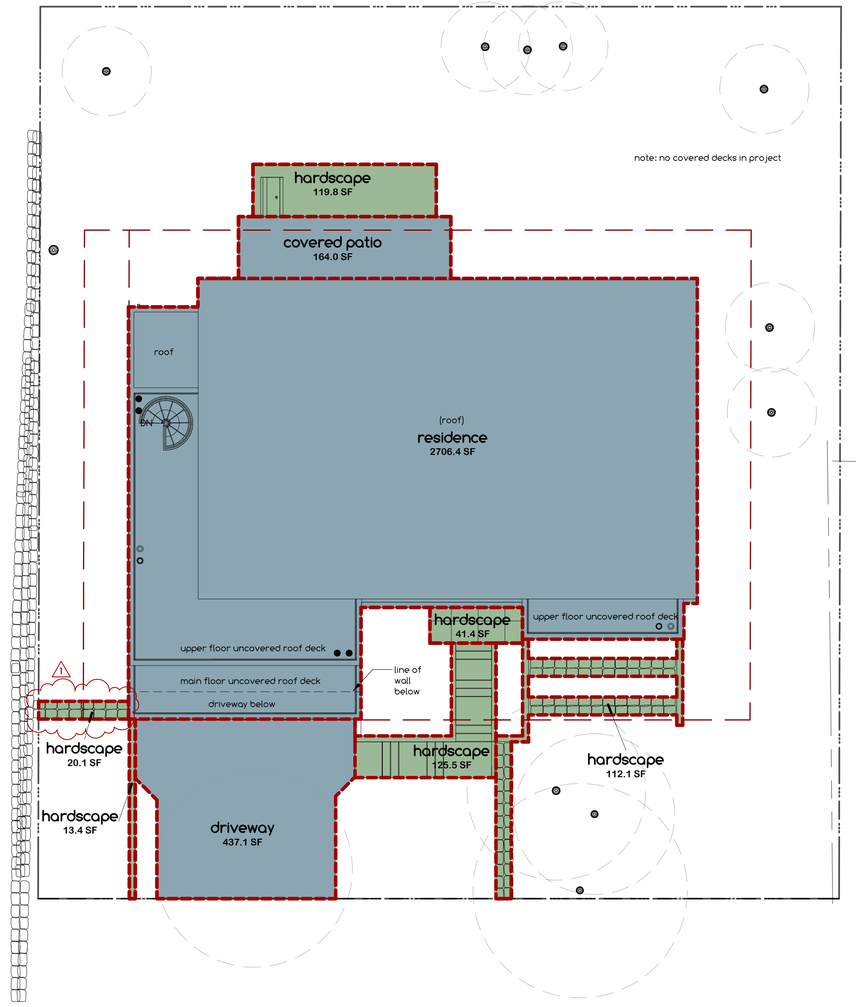
3 conditioned- main
1/16" = 1'-0"



4 conditioned- upper
1/16" = 1'-0"

CONDITIONED AREA

name	area
lower floor	1258 SF
main floor	1870 SF
upper floor	1564 SF
	4692 SF



1 coverage map
1/8" = 1'-0"

HARDSCAPE COVERAGE (804 SF MAX)

area	area
hardscape	432 SF
total	432 SF

LOT COVERAGE (3576.8 SF MAX)

area	area
covered patio	164 SF
driveway	437 SF
residence	2706 SF
total	3308 SF

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REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

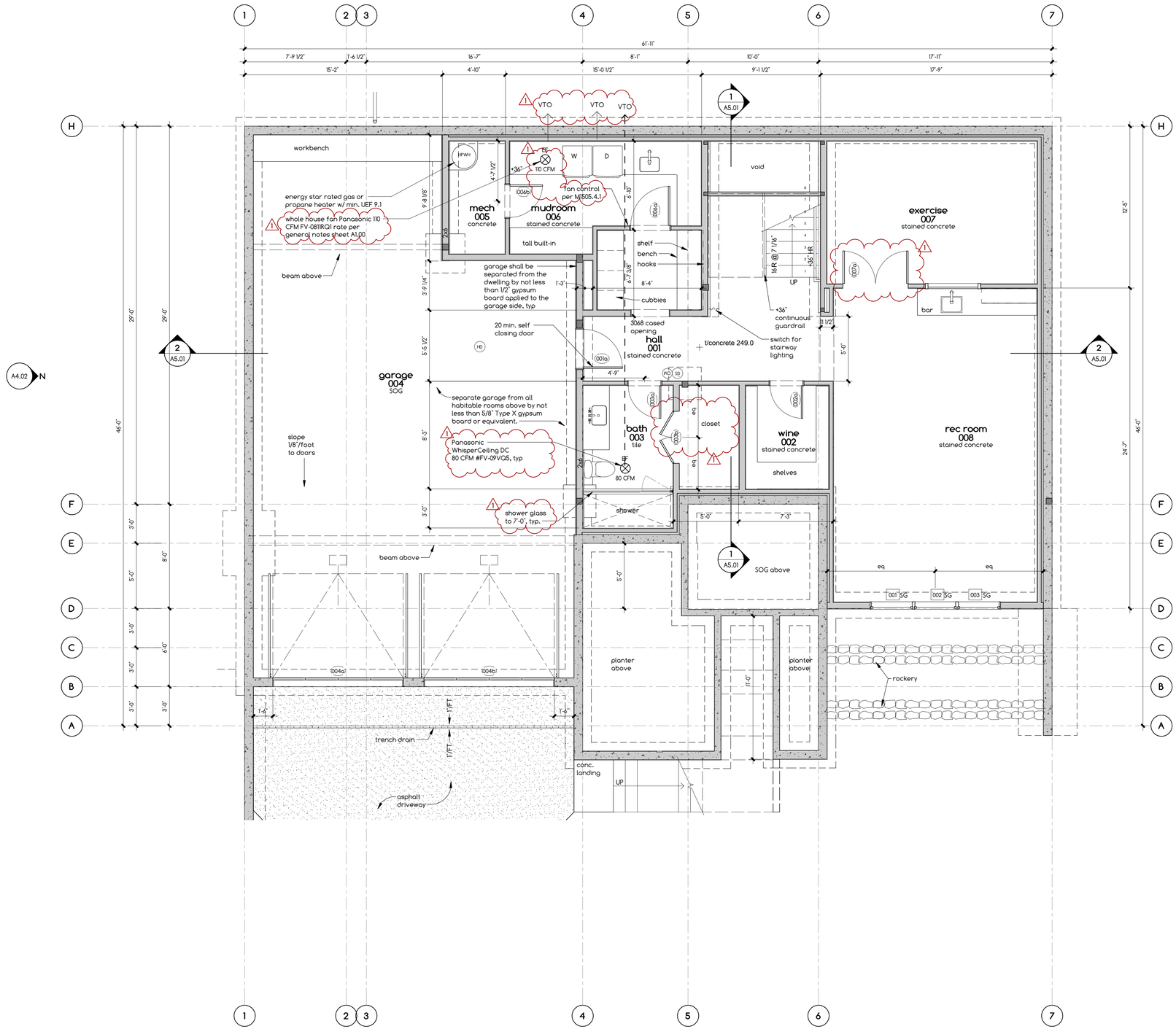
K2526
2526 70TH Ave SE, Mercer Island, 98040

CALCULATIONS

JOB: 246.01
SCALE: As indicated
SHEET NO: A2.02

MARKETING 1

PLOT DATE: 6/30/2022 11:04:13 AM



1 lower floor
1/4" = 1'-0"

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K2526
2526 70TH Ave SE, Mercer Island, 98040

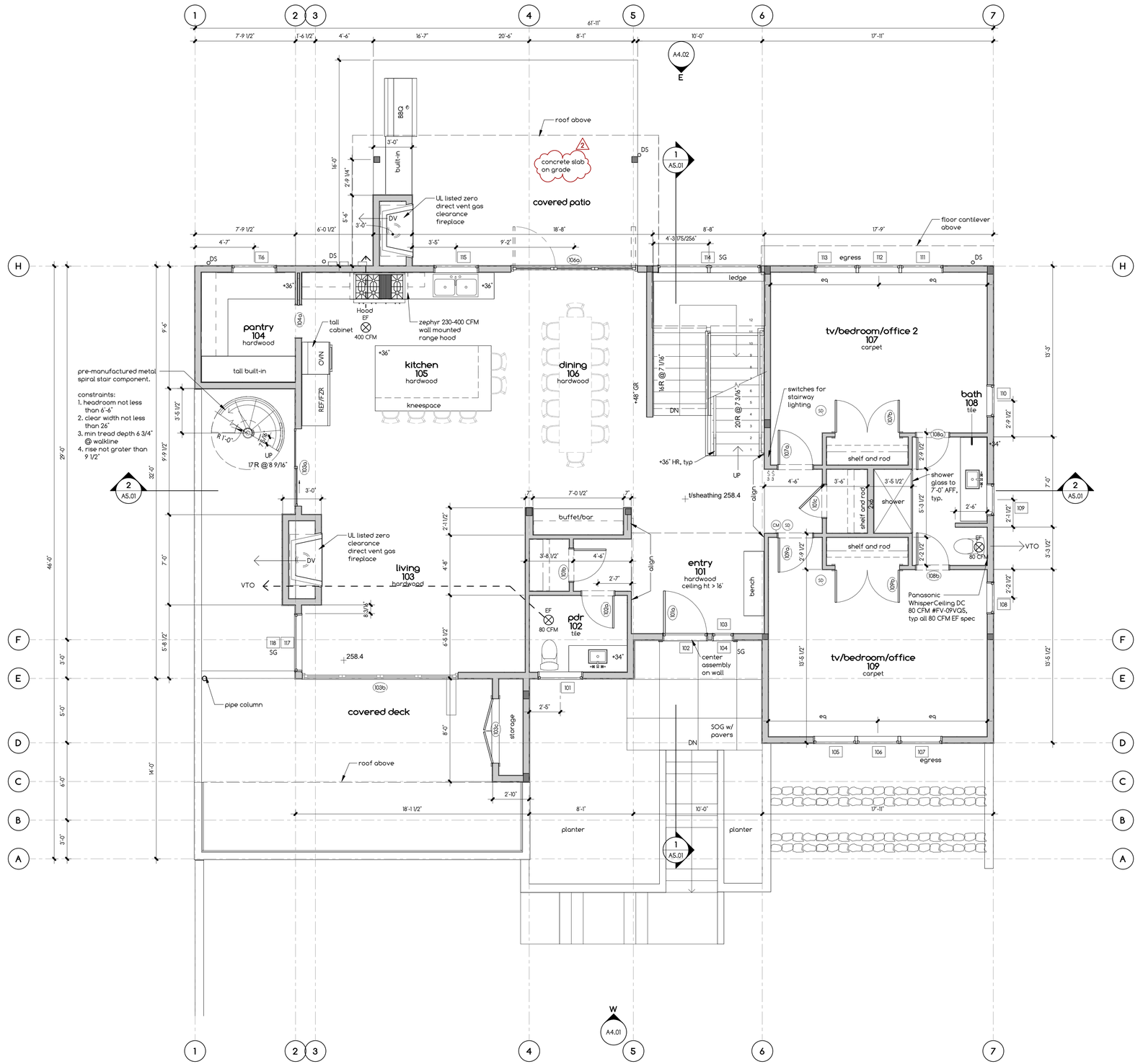
LOWER FLOOR PLAN

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

A3.02

MARKETING 1

PLOT DATE: 6/30/2022 10:54:31 AM



1 main floor
1/4" = 1'-0"

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REVISIONS:

NO.	DATE	DESCR.
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2	08/02/22	City Comments

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ISSUED: 01/11/22

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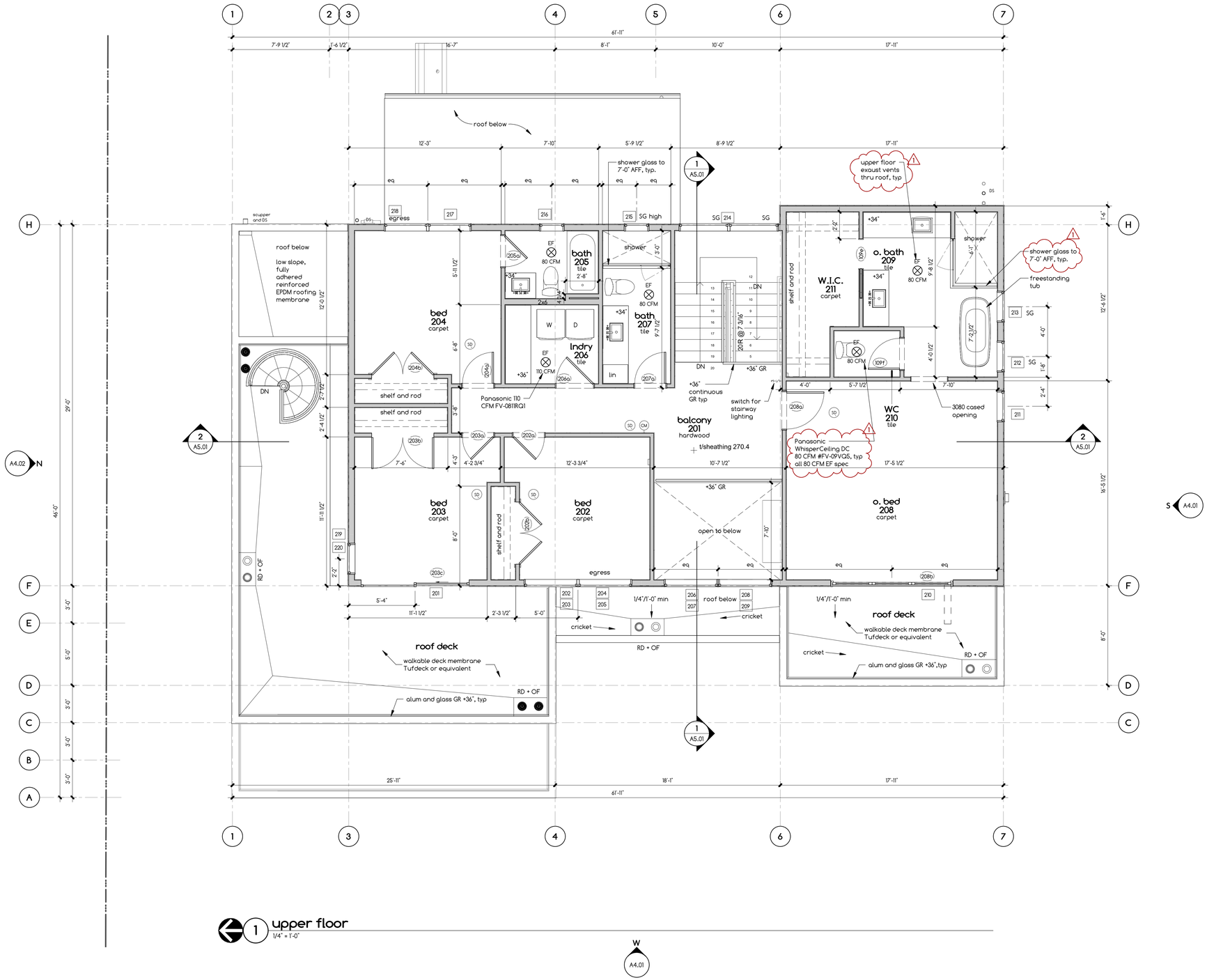
MAIN FLOOR PLAN

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

A3.03

MARKETING 2

PLOT DATE: 8/2/2022 10:20:02 AM



1 upper floor
1/4" = 1'-0"

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REVISIONS:		
NO.	DATE	DESCR.
1	06/29/22	City Comments

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ISSUED: 01/11/22

K2526
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UPPER FLOOR PLAN

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

A3.04

MARKETING 1

PLOT DATE: 6/30/2022 10:57:06 AM

ROOF VENTING CALCULATIONS

roof 01:
roof area = 1567 SF
min venting required @ 1/150 = 10.4 SF (1504 sq in)
soffit vent length = 166'-6"

venting provided @ soffit vent = 1666 sq in
total = 1666 sq in (11.6 sq ft) 1

roof 02:
roof area = 480 SF
min venting required @ 1/150 = 3.2 SF (461 sq in)
parapet vent length = 67'-0"

venting provided at parapets = 670 sq in
total = 670 sq in (4.6 SF)

roof 03:
roof area = 626 SF
min venting required @ 1/150 = 4.2 SF (605 sq in)
parapet vent length = 71'-9"

venting provided at parapets = 717.5 sq in
total = 717.5 sq in (4.9 SF)

roof 04:
roof area = 70 SF
min venting required @ 1/150 = .47 SF (67.2 sq in)
parapet vent length = 18'-0"

venting provided at parapets = 180 sq in
total = 180 sq in (1.25 SF)

1

roof 05:
roof area = 142 SF
min venting required @ 1/150 = 0.945F (136 sq in)
parapet vent length = 34'-4"

venting provided at parapets = 343 sq in
total = 343 sq in (2.38 SF)

roof 06:
roof area = 785F
min venting required @ 1/150 = .52 SF (74.9 sq in)
parapet vent length = 28'-8"

venting provided at parapets = 286.6 sq in
total = 286.6 sq in (1.99 SF)

roof 04:
not enclosed, no venting required

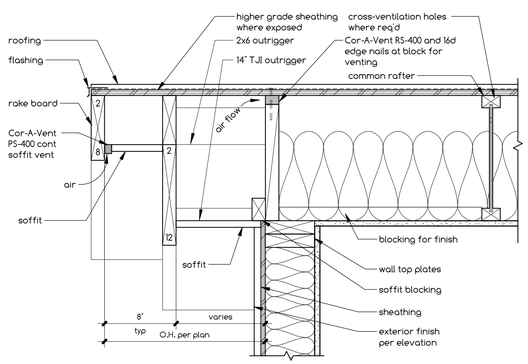
PRODUCT SPECIFICATIONS

soffit vent: Cor-A-Vent PS-400
NFVA = 10 sq in / LF

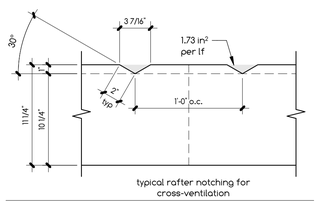
parapet vent: Cor-A-Vent S-400
NFVA = 10 sq in / LF

ROOF NOTES

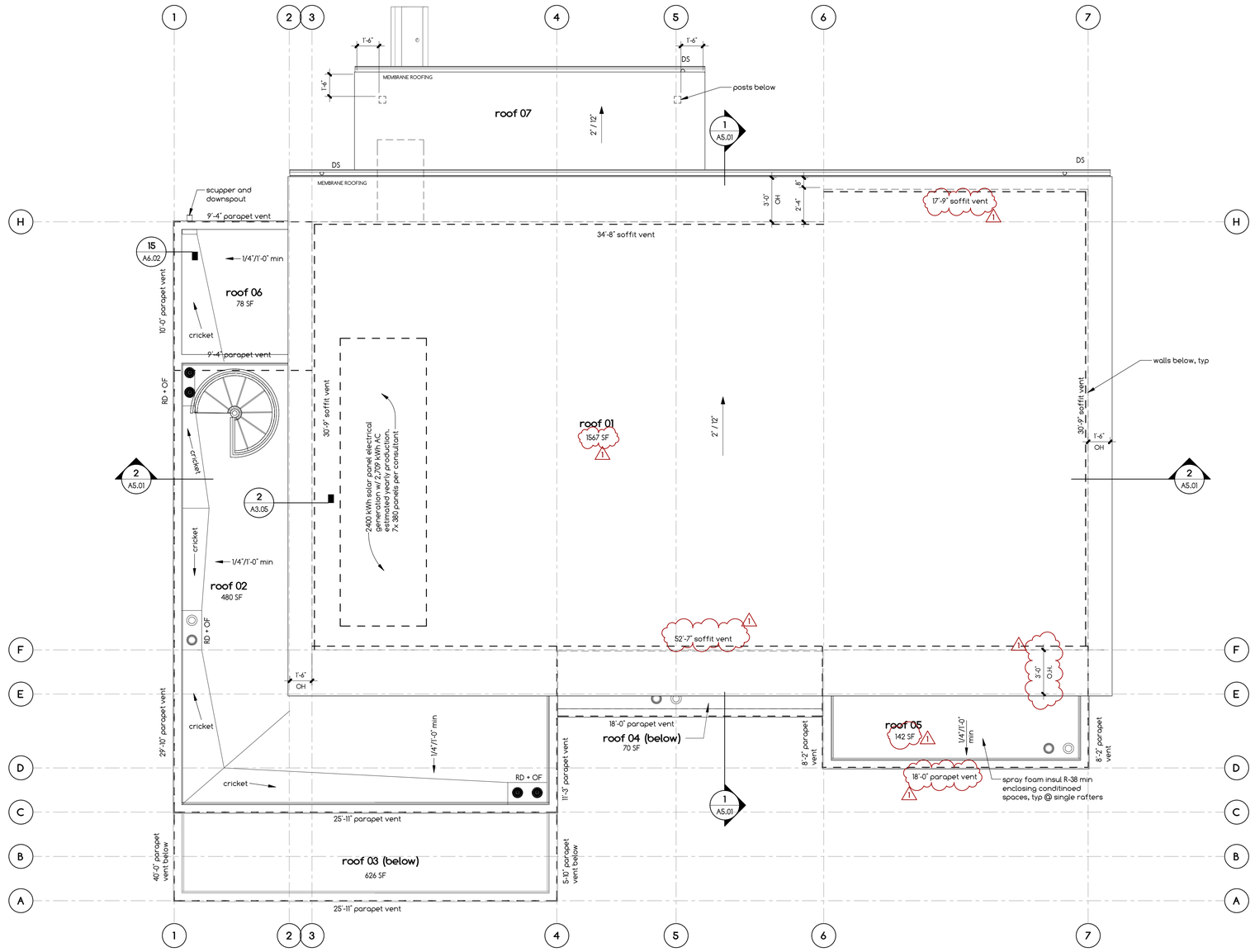
1. See sheet A1.0 for additional general notes applicable to this plan sheet.
2. Roof slope shall in no case less than 1/4":12" at any location.
3. Plumbing risers and vents not shown on for clarity. Plumbing penetrations to be kept to a minimum and located on roof slopes not visible from the entry access.
4. Flash and counterflash roof penetrations.
5. All chimneys to terminate at a minimum of 24" above the highest part of nearby roof within a 10-foot radius.
6. See roof ventilation calculations (this sheet) for required roof ventilation.
7. Provide balanced roof ventilation. It is recommended that the contractor coordinate with venting product suppliers to prevent imbalanced ventilation under severe weather conditions where infiltration could occur. Weather shield flashing may be required at these conditions.



2 roof overhang
1 1/2" = 1'-0"



typical rafter notching for cross-ventilation



1 roof plan
1/4" = 1'-0"

HIGHLAND | design LLC
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Phone: (425) 998-7765
Jeffrey R. Barnett - Principal
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REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

ROOF PLAN

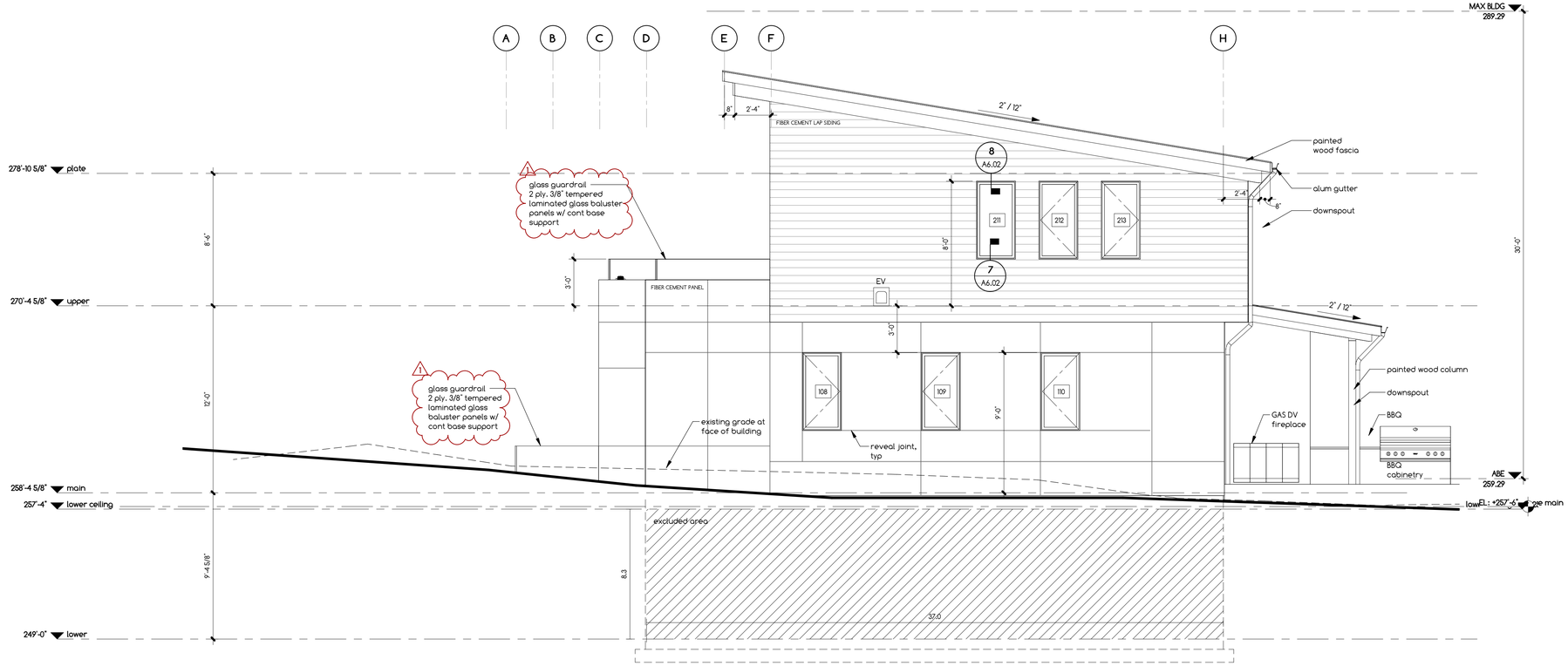
JOB: 246.01
SCALE: As indicated
SHEET NO:

A3.05

MARKETING 1

PLOT DATE: 6/30/2022 11:16:50 AM

W west elevation
1/4" = 1'-0"



S south elevation
1/4" = 1'-0"

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Phone: (425) 998-7765
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REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments

DRAWN: MBR
ISSUED: 1/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

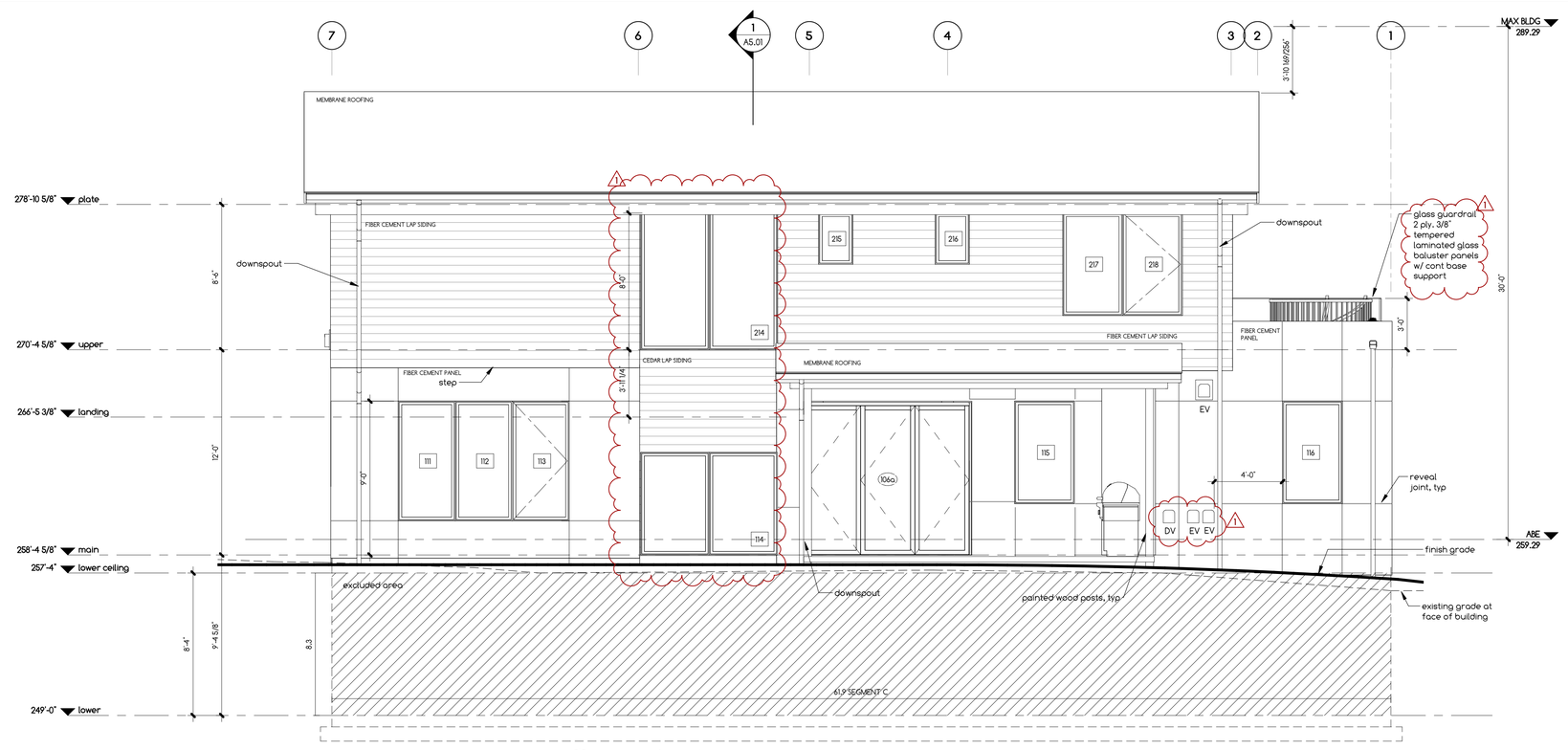
ELEVATIONS

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

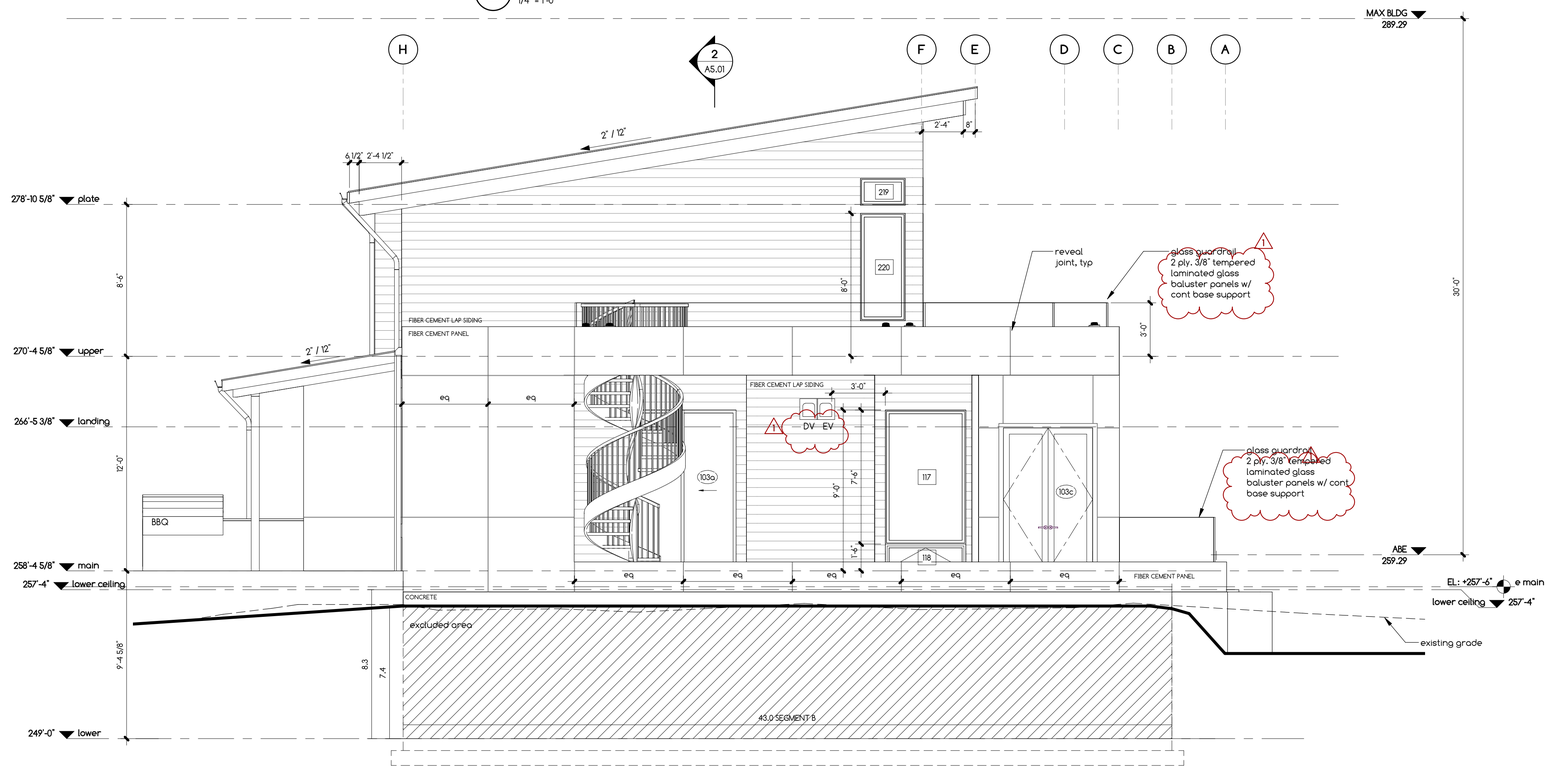
A4.01

MARKETING 1

PLOT DATE: 6/30/2022 12:03:32 PM



E **east elevation**
1/4" = 1'-0"



N **north elevation**
1/4" = 1'-0"

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REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

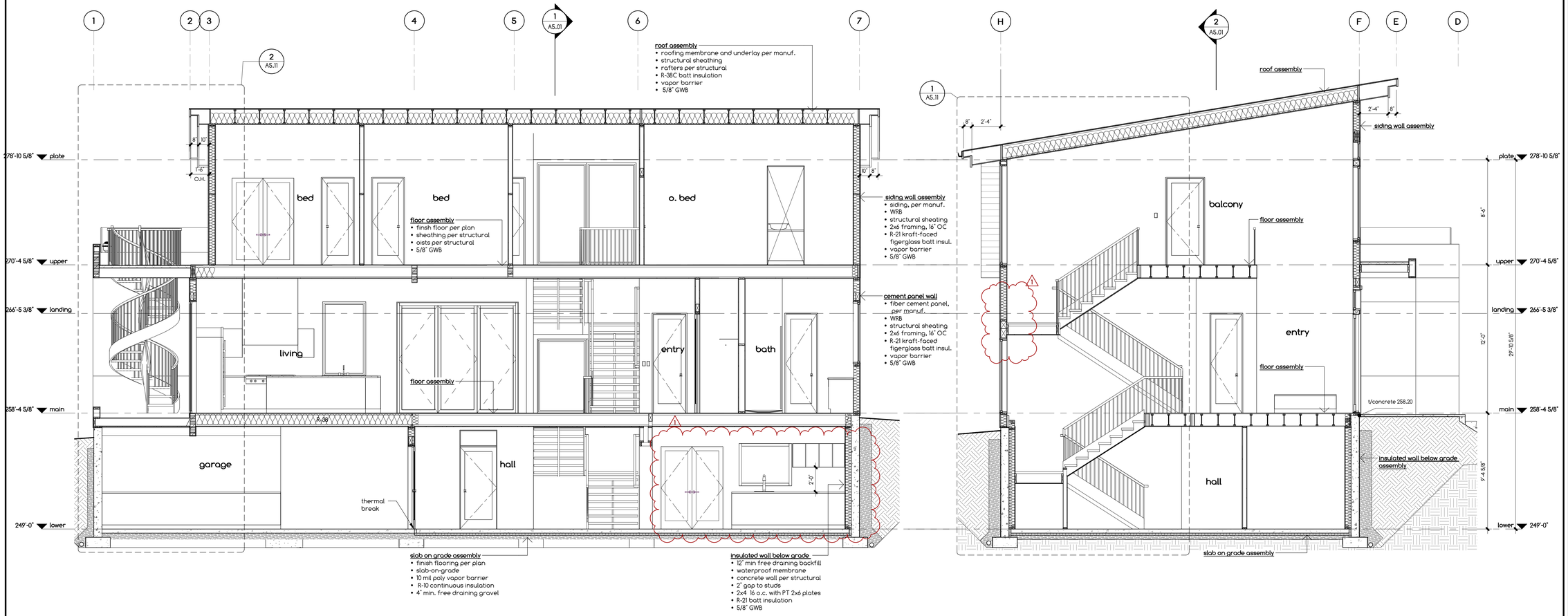
ELEVATIONS

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

A4.02

MARKETING 1

PLOT DATE: 6/30/2022 12:02:44 PM



2 NS building section
1/4" = 1'-0"

1 EW building section
1/4" = 1'-0"

HIGHLAND | design LLC
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REVISIONS:

NO.	DATE	DESCR.
1	06/29/22	City Comments

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

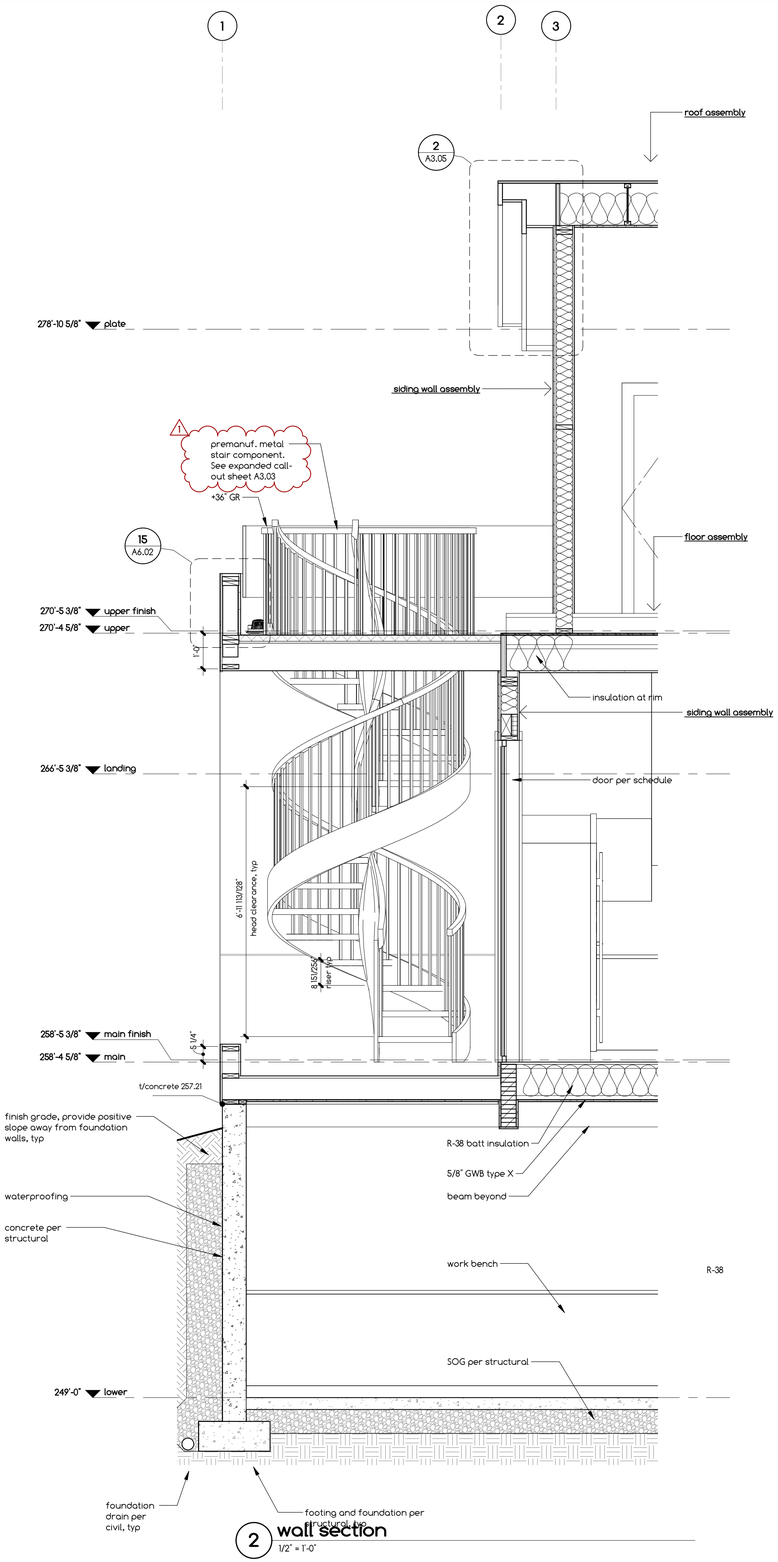
BUILDING SECTIONS

JOB: 246.01
SCALE: 1/4" = 1'-0"
SHEET NO:

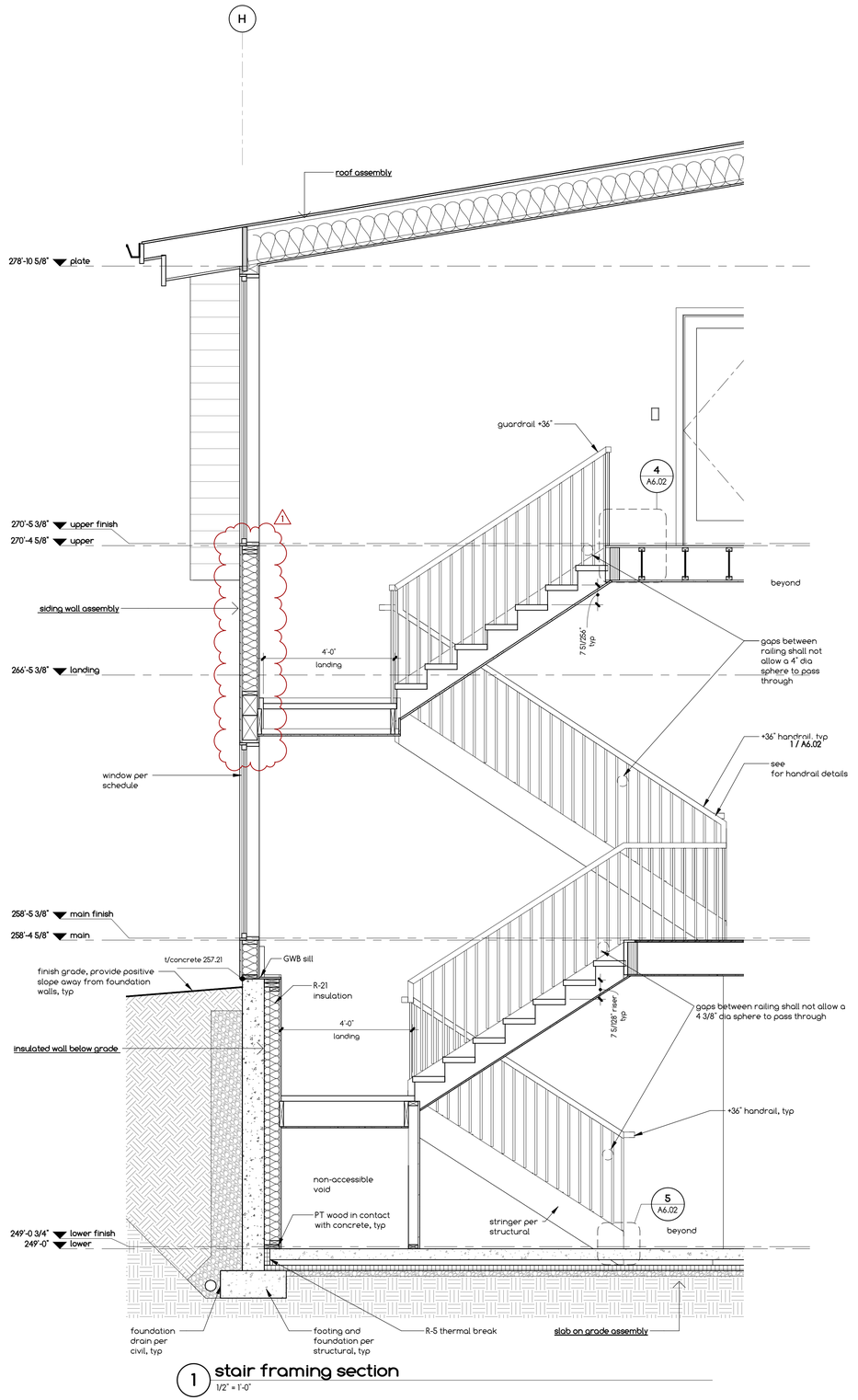
A5.01

MARKETING 1

PLOT DATE: 6/30/2022 12:28:50 PM



2 wall section
1/2" = 1'-0"



1 stair framing section
1/2" = 1'-0"

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K2526
2526 70TH Ave SE, Mercer Island, 98040

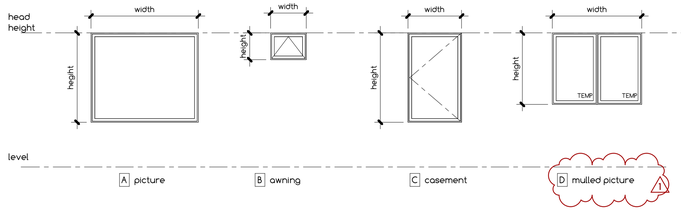
STAIR AND WALL SECTIONS

JOB: 246.01
SCALE: 1/2" = 1'-0"
SHEET NO:

A5.11

MARKETING 1

PLOT DATE: 6/30/2022 12:24:47 PM



WINDOW SCHEDULE

no	type	manufacturer	model	width	height	head ht	area	U	UA	comments
lower										
001	A	Marvin Windows and Doors		3'-4"	4'-4"	8'-0"	14 SF	0.28	4	SG
002	A	Marvin Windows and Doors		3'-4"	4'-4"	8'-0"	14 SF	0.28	4	SG
003	A	Marvin Windows and Doors		3'-4"	4'-4"	8'-0"	14 SF	0.28	4	SG
main										
101	B	Marvin Windows and Doors		3'-6"	1'-6"	8'-0"	5 SF	0.28	1	
102	A	Marvin Windows and Doors		3'-6"	1'-8"	10'-0"	6 SF	0.28	2	
103	A	Marvin Windows and Doors		1'-8"	8'-0"	8'-0"	13 SF	0.28	4	SG
104	A	Marvin Windows and Doors		1'-8"	1'-8"	10'-0"	3 SF	0.28	1	
105	A	Marvin Windows and Doors		3'-4"	6'-0"	9'-0"	20 SF	0.28	6	
106	A	Marvin Windows and Doors		3'-4"	6'-0"	9'-0"	20 SF	0.28	6	
107	C	Marvin Windows and Doors		3'-4"	6'-0"	9'-0"	20 SF	0.28	6	
108	C	Marvin Windows and Doors		2'-6"	5'-0"	9'-0"	13 SF	0.28	4	
109	C	Marvin Windows and Doors		2'-6"	5'-0"	9'-0"	13 SF	0.28	4	
110	C	Marvin Windows and Doors		2'-6"	5'-0"	9'-0"	13 SF	0.28	4	
111	A	Marvin Windows and Doors		3'-4"	7'-0"	9'-0"	23 SF	0.28	7	
112	A	Marvin Windows and Doors		3'-4"	7'-0"	9'-0"	23 SF	0.28	7	
113	C	Marvin Windows and Doors		3'-4"	7'-0"	9'-0"	23 SF	0.28	7	
114	D	Marvin Windows and Doors		8'-0"	6'-0"	6'-0"	48 SF	0.28	13	SG
115	A	Marvin Windows and Doors		3'-6"	6'-0"	9'-0"	21 SF	0.28	6	
116	A	Marvin Windows and Doors		3'-6"	6'-0"	9'-0"	21 SF	0.28	6	
117	A	Marvin Windows and Doors		4'-6"	7'-6"	9'-0"	34 SF	0.28	9	
118	B	Marvin Windows and Doors		4'-6"	1'-6"	1'-6"	7 SF	0.28	2	SG
upper										
201	A	Marvin Windows and Doors		8'-8"	1'-6"	10'-0"	13 SF	0.28	4	
202	A	Marvin Windows and Doors		4'-4"	6'-0"	8'-0"	26 SF	0.28	7	
203	A	Marvin Windows and Doors		4'-4"	1'-6"	10'-0"	7 SF	0.28	2	
204	A	Marvin Windows and Doors		4'-4"	6'-0"	8'-0"	26 SF	0.28	7	egress
205	A	Marvin Windows and Doors		4'-4"	1'-6"	10'-0"	7 SF	0.28	2	
206	A	Marvin Windows and Doors		4'-4"	6'-0"	8'-0"	26 SF	0.28	7	
207	A	Marvin Windows and Doors		4'-4"	1'-6"	10'-0"	7 SF	0.28	2	
208	A	Marvin Windows and Doors		4'-4"	6'-0"	8'-0"	26 SF	0.28	7	
209	A	Marvin Windows and Doors		4'-4"	1'-6"	10'-0"	7 SF	0.28	2	
210	A	Marvin Windows and Doors		9'-10"	1'-6"	10'-0"	15 SF	0.28	4	
211	A	Marvin Windows and Doors		2'-6"	5'-0"	8'-0"	13 SF	0.28	4	
212	C	Marvin Windows and Doors		2'-6"	5'-0"	8'-0"	13 SF	0.28	4	SG
213	C	Marvin Windows and Doors		2'-6"	5'-0"	8'-0"	13 SF	0.28	4	SG
214	D	Marvin Windows and Doors		8'-0"	8'-3"	8'-3"	66 SF	0.28	18	SG
215	A	Marvin Windows and Doors		2'-0"	3'-0"	8'-0"	6 SF	0.28	2	SG
216	A	Marvin Windows and Doors		2'-0"	3'-0"	8'-0"	6 SF	0.28	2	
217	A	Marvin Windows and Doors		3'-6"	6'-0"	8'-0"	21 SF	0.28	6	
218	C	Marvin Windows and Doors		3'-6"	6'-0"	8'-0"	21 SF	0.28	6	egress
219	A	Marvin Windows and Doors		2'-6"	1'-6"	9'-11 1/2"	4 SF	0.28	1	
220	A	Marvin Windows and Doors		2'-6"	6'-0"	8'-0"	15 SF	0.28	4	
							703 SF		197	

INTERIOR DOOR SCHEDULE

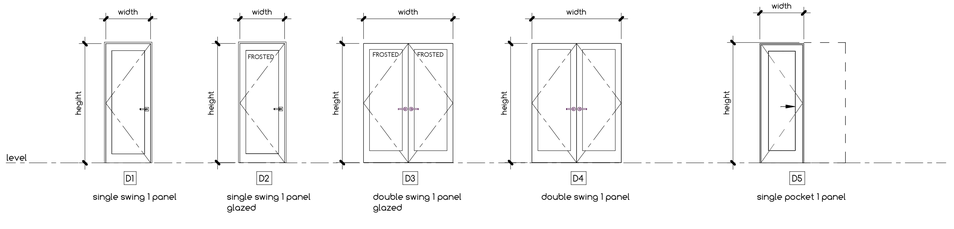
no	type	manufacturer	model	width	height	comments
lower						
001a	D1	TruStile Doors, LLC	TS1000	3'-0"	6'-8"	20 min SC
002a	D2	TruStile Doors, LLC	TS1000	2'-6"	6'-8"	frosted safety glaing
003a	D1	TruStile Doors, LLC	TS1000	2'-6"	6'-8"	
003b	D4	TruStile Doors, LLC	TS1000	4'-0"	6'-8"	
006a	D1	TruStile Doors, LLC	TS1000	3'-0"	6'-8"	
006b	D1	TruStile Doors, LLC	TS1000	2'-6"	6'-8"	louvered
007a	D4	TruStile Doors, LLC	TS1000	5'-0"	6'-8"	frosted safety glaing
main						
101b	D1	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	
101c	D1	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	
102a	D2	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	frosted safety glaing
104a	D5	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	
107a	D1	TruStile Doors, LLC	TS1000	2'-8"	8'-0"	
107b	D4	TruStile Doors, LLC	TS1000	5'-0"	8'-0"	
108a	D1	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	
108b	D1	TruStile Doors, LLC	TS1000	2'-6"	8'-0"	
109a	D1	TruStile Doors, LLC	TS1000	2'-8"	8'-0"	
109b	D4	TruStile Doors, LLC	TS1000	5'-0"	8'-0"	
upper						
109e	D5	TruStile Doors, LLC	TS1000	2'-4"	7'-0"	
109f	D2	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	frosted safety glaing
202a	D1	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	
202b	D4	TruStile Doors, LLC	TS1000	5'-0"	7'-0"	
203a	D1	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	
203b	D4	TruStile Doors, LLC	TS1000	5'-0"	7'-0"	
204a	D1	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	
204b	D4	TruStile Doors, LLC	TS1000	5'-0"	7'-0"	
205a	D2	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	frosted safety glaing
206a	D1	TruStile Doors, LLC	TS1000	3'-0"	7'-0"	
207a	D2	TruStile Doors, LLC	TS1000	2'-6"	7'-0"	
208a	D1	TruStile Doors, LLC	TS1000	3'-0"	7'-0"	

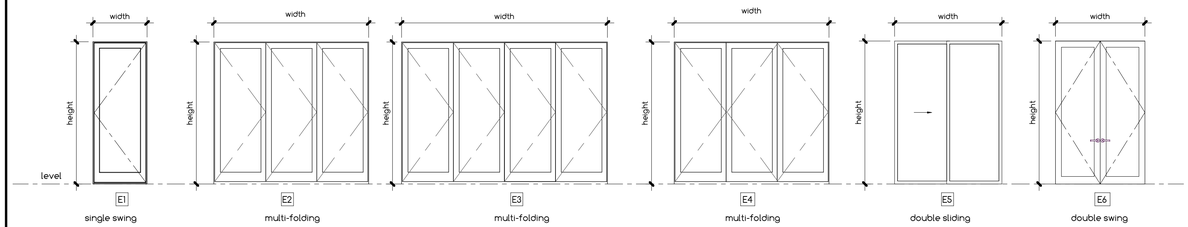
EXTERIOR DOOR SCHEDULE

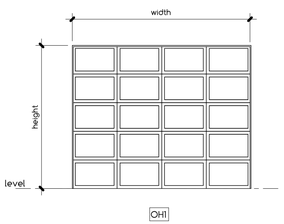
no	type	manufacturer	model	width	height	CPD	u-value	comments
main								
101a	E1	Marvin Windows and Doors	ultimate 1 panel outswing door	3'-6"	8'-0"	SS MAR-N-439-00033-0001	0.28	
103a	E5	Marvin Windows and Doors	ultimate lift and slide 2W 6090	6'-0"	9'-0"	SS MAR-N-439-00033-0001	0.28	
103b	E3	Marvin Windows and Doors	ultimate lift and slide 4W 12090	12'-0"	9'-0"	SS MAR-N-439-00033-0001	0.28	XXXO
103c	E6	TruStile Doors, LLC	TS1000	5'-0"	8'-0"		0.5	
106a	E4	Marvin Windows and Doors	ultimate bifold door IL2R	9'-9"	9'-0"	SS MAR-N-439-00033-0001	0.28	
upper								
203c	E5	Marvin Windows and Doors	ultimate sliding patio 8880	8'-8"	8'-0"	SS MAR-N-439-00033-0001	0.28	
208b	E2	Marvin Windows and Doors	ultimate lift and slide 3W 9980	9'-9"	8'-0"	SS MAR-N-439-00033-0001	0.28	XXO

GARAGE DOOR SCHEDULE

no	type	manufacturer	model	height	width	comments
lower						
004a	OH1	northwest door	modern classic MC54	8'-0"	10'-0"	frosted glass
004b	OH1	northwest door	modern classic MC54	8'-0"	10'-0"	frosted glass







GLAZING NOTES

1. See sheet A1.00 for general glazing notes.
2. All glazing to have a U-factor of 0.28 max per WSEC prescriptive approach. Provide Andersen E-Series, typical.
3. Window dimensions taken to frame UNO.
4. Safety glazing (SG) to be provided in all glazed doors and where required by the IRC. See plans for safety glazing locations as noted. Each pane of safety glazing to be identified in accordance with IRC.
5. Emergency escape and rescue opening shall be installed per IRC R310. See plans for locations. All emergency escape openings shall have a minimum net clear opening of 5.7 SF. The minimum net clear opening shall be no less than 24", clear opening width no less than 20", with all finished sill height not more than 44" above the floor.
6. Window supplier/manufacturer to field verify all rough openings, window divisions, and operation prior to production of windows.
7. Window supplier/manufacturer to submit color sample for approval by Highland Design or Owner.
8. All operable windows to be provided with screens.
9. Windows within 10'-0" of grade or accessible deck shall be capable of being locked.
10. All sill and head heights are taken from finish floor UNO.

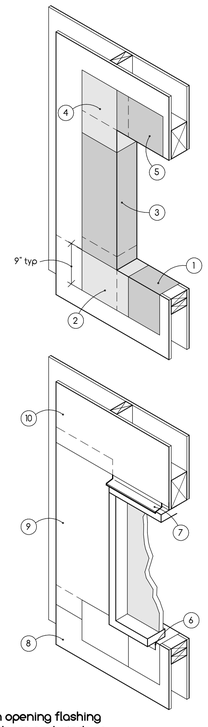
DOOR NOTES

1. Safety glazing (SG) to be provided where required by IBC 2403. Refer to plans for safety glazing locations. Each pane of safety glazing shall be identified by a label in accordance with the IRC.
2. Door frames and frame anchorage shall be installed according to the conditions of their listings.
3. All exterior doors, except garage doors, to be provided with mortise lock and deadbolt. Minimum 1/2" throw deadbolt or dead latch for doors per IRC R329.
4. Opaque exterior doors to have minimum U-factors per WSEC 303.1.3(2). Glazed exterior doors have a minimum U-factor of 0.28.
5. Fire doors, windows, and dampers shall have an approved label or listing mark, indication fire-protection rating, which is visible for inspection and permanently affixed at the time of manufacture.
6. All exterior, mechanical room, and crawl space doors shall be insulated with interlocking low-rise thresholds and weatherstripping.
7. Door thresholds shall not exceed 1/2" in height above finish floor.
8. All bedroom, bathroom, and powder room doors to be provided with privacy locks.
9. Operation, hinging, pocketing, and sliding per plans.

general rough opening flashing sequence notes

1. install flashing along entire sill, leave bottom loose to overlap WRB later
2. install pre-formed corner flashing @ lower corner each side
3. install flashing along entire length of jamb
4. install pre-formed corner flashing @ upper corner each side
5. install flashing along entire lengths of head
6. provide cont. bead of sealane on backside of nailing flange and install window per manuf.
7. typical head flashing per details, extend past window frame 1/2"
8. WRB under window flashings at sill
9. upper WRB layer shall overlap lower layer of WRB
10. WRB shall overlap head flashing

note:
manufacturer's technical installation specifications take precedence



typical rough opening flashing sequence at doors and windows

1 iso-window-flashing sequence
3/4" = 1'-0"

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ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

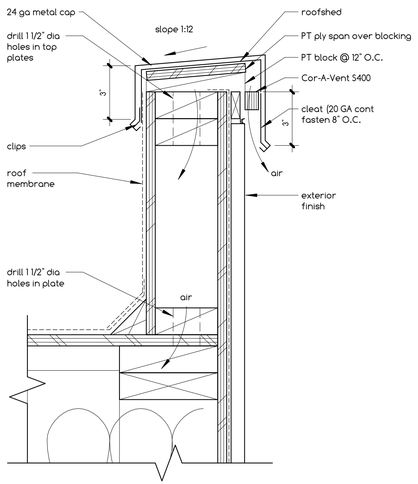
SCHEDULES

JOB: 246.01
SCALE: As indicated
SHEET NO:

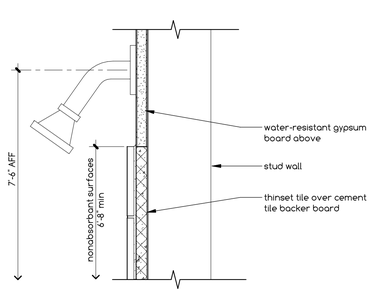
A6.01

MARKETING 1

PLOT DATE: 6/30/2022 12:25:53 PM

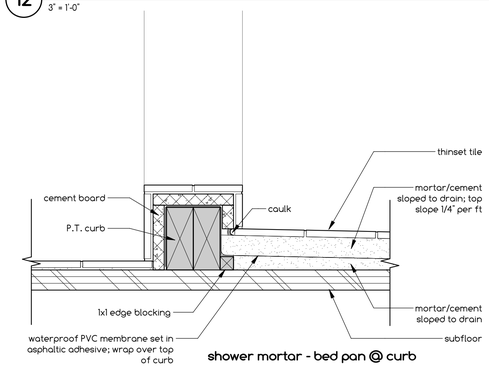


15 vented parapet
3" = 1'-0"



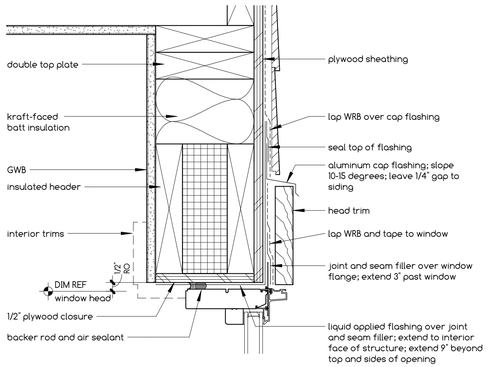
shower wall surface

12 shower wall surface
3" = 1'-0"



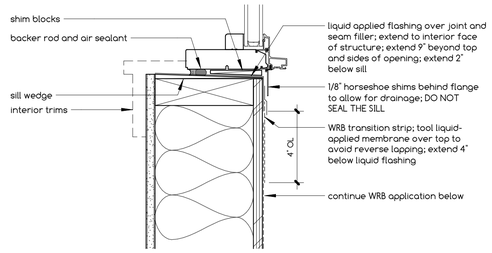
shower mortar - bed pan @ curb

11 shower mortar-bed pan @ curb
3" = 1'-0"

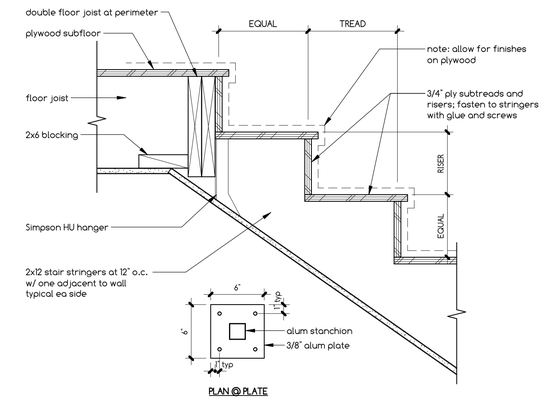


8 window head flashing
3" = 1'-0"

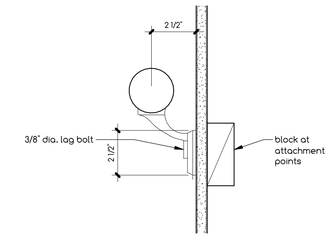
window per plan



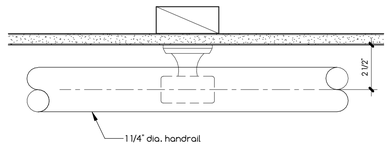
7 window sill flashing
3" = 1'-0"



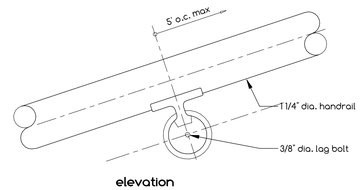
4 wood stair - head at wood floor
1 1/2" = 1'-0"



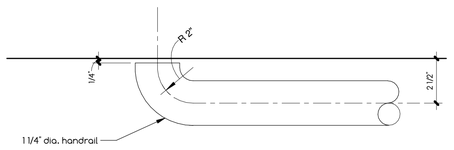
section



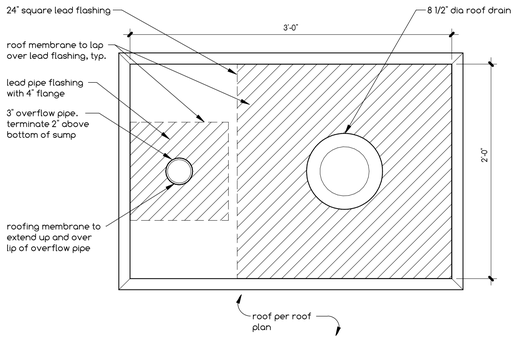
plan



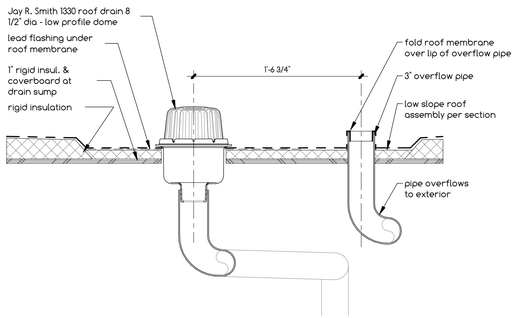
elevation



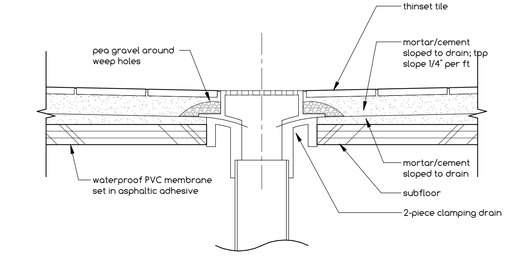
end return



14 drain sump
1 1/2" = 1'-0"

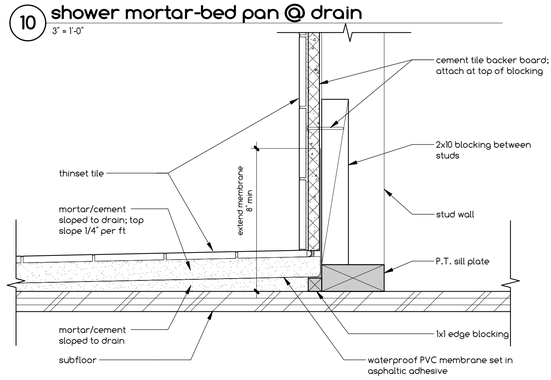


13 roof drain
1 1/2" = 1'-0"



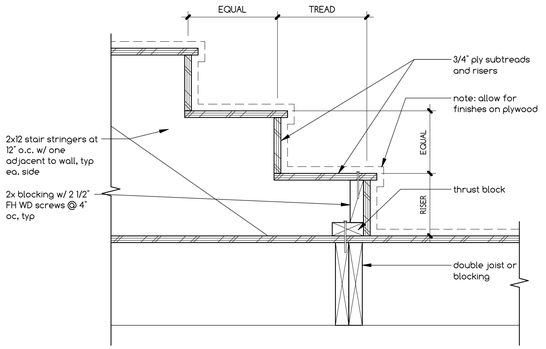
shower pan drain

10 shower mortar-bed pan @ drain
3" = 1'-0"

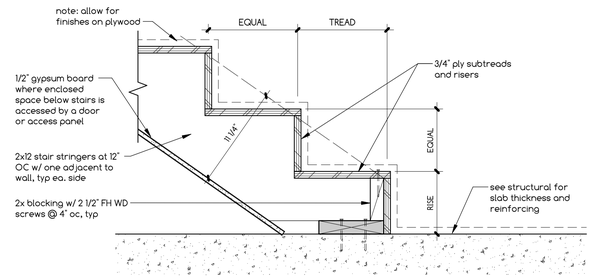


shower pan at wall

9 shower mortar-bed pan @ wall
3" = 1'-0"



6 wood stair - sill at wood floor
1 1/2" = 1'-0"



5 wood stair - sill at concrete floor
1 1/2" = 1'-0"

1 handrails - interior
3" = 1'-0"

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REVISIONS:

NO.	DATE	DESCR.

DRAWN: MBR
ISSUED: 01/11/22

K2526
2526 70TH Ave SE, Mercer Island, 98040

DETAILS

JOB: 246.01
SCALE: As indicated
SHEET NO:

A6.02

CONSTRUCTION

PLOT DATE: 1/17/2022 2:33:49 PM

GENERAL NOTES

THESE GENERAL NOTES ARE TO BE USED AS A SUPPLEMENT TO THE SPECIFICATIONS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATIONS, 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. THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. THE STRUCTURE HAS BEEN DESIGNED TO RESIST CODE SPECIFIED VERTICAL AND LATERAL FORCES AFTER THE CONSTRUCTION OF ALL STRUCTURAL ELEMENTS HAS BEEN COMPLETED. STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS RESPONSIBILITY INCLUDES BUT IS NOT LIMITED TO JOB SITE SAFETY; ERECTION MEANS, METHODS, AND SEQUENCES; TEMPORARY SHORING, FORMWORK, BRACING; USE OF EQUIPMENT AND CONSTRUCTION PROCEDURES. PROVIDE ADEQUATE RESISTANCE TO LOADS ON THE STRUCTURES DURING CONSTRUCTION PER SEI/ASCE STANDARD NO. 37–14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION."

CONSTRUCTION OBSERVATION BY THE STRUCTURAL ENGINEER IS FOR GENERAL CONFORMANCE WITH DESIGN ASPECTS ONLY AND IS NOT INTENDED IN ANY WAY TO REVIEW THE CONTRACTOR'S CONSTRUCTION PROCEDURES.

STANDARDS

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION.

CONTRACT DRAWINGS / DIMENSIONS

ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. CONSULTANT DRAWINGS BY OTHER DISCIPLINES ARE SUPPLEMENTARY TO ARCHITECTURAL DRAWINGS. REPORT DIMENSIONAL OMISSIONS OR DISCREPANCIES BETWEEN ARCHITECTURAL DRAWINGS AND STRUCTURAL, MECHANICAL, ELECTRICAL OR CIVIL DRAWINGS TO ARCHITECT PRIOR TO PROCEEDING WITH WORK.

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS. PRIMARY STRUCTURAL ELEMENTS ARE DIMENSIONED ON STRUCTURAL PLANS AND DETAILS AND OVERALL LAYOUT OF STRUCTURAL PORTION OF WORK. SOME SECONDARY ELEMENTS ARE NOT DIMENSIONED, SUCH AS WALL CONFIGURATIONS, INCLUDING EXACT DOOR AND WINDOW LOCATIONS, ALCOVES, SLAB SLOPES AND DEPRESSIONS, CURBS, ETC. VERTICAL DIMENSIONAL CONTROL IS DEFINED BY ARCHITECTURAL WALL SECTIONS AND BUILDING SECTIONS. STRUCTURAL DETAILS SHOW DIMENSIONAL RELATIONSHIPS TO CONTROL DIMENSIONS DEFINED BY ARCHITECTURAL DRAWINGS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN **BOTH** ARCHITECTURAL AND STRUCTURAL DRAWINGS.

DESIGN CRITERIA

VERTICAL LOADS

AREA	DESIGN DEAD LOAD	LIVE LOAD	CONCENTRATED LOADS
LIVING AREA	15 PSF	40 PSF	300#
ROOF	15 PSF	25 PSF	300#
BALCONY	35 PSF	60 PSF	
STAIRS	ACTUAL	40 PSF	

LATERAL FORCES

LATERAL FORCES ARE TRANSMITTED BY DIAPHRAGM ACTION OF ROOF AND FLOORS TO BRACED FRAME/SHEAR WALLS. LOADS ARE THEN TRANSFERRED TO FOUNDATION BY BRACED FRAME/SHEAR WALL ACTION WHERE ULTIMATE DISPLACEMENT IS RESISTED BY PASSIVE PRESSURE OF EARTH AND/OR SLIDING FRICTION. OVERTURNING IS RESISTED BY DEAD LOAD OF THE STRUCTURE.

WIND:

THE BUILDING MEETS THE CRITERIA TO USE THE "METHOD 2 – SIMPLIFIED ENVELOPE PROCEDURE" PER ASCE 7–16.

- EXPOSURE CATEGORY = B
- BASIC WIND SPEED (3 SEC. GUST), V_{ULT} = 97 MPH; V_{ASD} = 75 MPH
- RISK CATEGORY PER TABLE 1.5-1 = II
- TOPOGRAPHIC FACTOR K_{zt} = 1.59 1
- INTERNAL PRESSURE COEFFICIENT (ENCLOSED) = ± 0.18
- COMPONENTS AND CLADDING LOADS, SEE THE FOLLOWING TABLES:

ROOF SURFACES [1]						
EFFECTIVE WIND AREA	POSITIVE PRESSURES (PSF)			NEGATIVE PRESSURES (PSF)		
	ZONE [2]					
	1	2	3	1	2	3
10 SF	16.0	16.0	16.0	-28.9	-33.4	-44.7
20 SF	16.0	16.0	16.0	-28.9	-33.0	-40.2
50 SF	16.0	16.0	16.0	-28.9	-31.6	-35.7
100 SF	16.0	16.0	16.0	-28.9	-31.2	-31.2

WALL SURFACES AND ROOF OVERHANGS [1]						
EFFECTIVE WIND AREA	POSITIVE PRESSURE (PSF)		NEGATIVE PRESSURE (PSF)		ROOF OVERHANGS (PSF)	
	ZONE [2]					
	4	5	4	5	2	3
10 SF	26.7	26.7	-28.9	-35.7	-52.0	-63.3
20 SF	25.5	25.5	-27.7	-33.3	-50.3	-57.5
50 SF	23.9	23.9	-26.1	-30.1	-47.4	-51.4
100 SF	22.7	22.7	-24.9	-27.7	-45.7	-45.7
500 SF	19.9	19.9	-22.1	-22.1	-42.9	-42.9

1. VALUES SHOWN IN TABLE ARE GROSS ULTIMATE WIND PRESSURES.
2. ZONES ARE AS DEFINED BY FIGURE 30.5–1 IN ASCE 7–16.

SEISMIC: (ASCE 7–16) V = CsW

WHERE $C_S = \frac{S_{DS}}{(\frac{R}{I_E})}$; WITH

C_S MINIMUM = 0.044 $S_{DS}I_E \geq 0.01$

OR

C_S MINIMUM = $\frac{0.5S_1}{\frac{R}{I_E}}$ FOR $S_1 > 0.6g$

C_S MAXIMUM = $\frac{\frac{S_{D1}}{(\frac{R}{I_E})}}{T}$ FOR $T \leq T_L$

OR

C_S MAXIMUM = $\frac{S_{D1}T_L}{T^2(\frac{R}{I_E})}$ FOR $T > T_L$

SEISMIC IMPORTANCE FACTOR, I_E = 1.0
RISK CATEGORY OF BUILDING PER TABLE 1.5–1 = II
SPECTRAL RESPONSE ACCELERATIONS Ss =1.40 S_1 = 0.486
SITE CLASS PER TABLE 20.3–1 = D
DESIGN SPECTRAL RESPONSE ACCELERATIONS S_{DS} = 1.17 & S_{D1} = 0.65
SEISMIC DESIGN CATEGORY = D
W = EFFECTIVE SEISMIC WEIGHT OF BUILDING = 145 KIPS
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE PROCEDURE
RESPONSE MODIFICATION FACTOR PER TABLE 12.2–1, R = 6.5
Cs = 0.172
DESIGN BASE SHEAR V = 18.9 KIPS

PIPES, DUCTS AND MECHANICAL EQUIPMENT SUPPORTED OR BRACED FROM STRUCTURE. CONFORM TO SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC. PUBLICATION "SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS". SPRINKLER LINE ATTACHMENTS SHALL CONFORM TO NFPA PAMPHLET 13.

FOUNDATION DESIGN CRITERIA

SOIL BEARING PRESSURE: 1500 PSF (ASSUMED)*

ACTIVE PRESSURE – RESTRAINED: 50 PCF +14H SEISMIC SURCHARGE (ASSUMED)
ACTIVE PRESSURE – UNRESTRAINED: 35 PCF +6H SEISMIC SURCHARGE (ASSUMED)
PASSIVE RESISTANCE: 200 PCF (INCLUDES F.O.S. ≥ 1.5) (ASSUMED)
COEFFICIENT OF FRICTION: .35 (INCLUDES F.O.S. ≥ 1.5) (ASSUMED)
*1/3 INCREASE ALLOWED FOR SEISMIC OR WIND LOADING

ALL FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED EARTH OR "STRUCTURAL BACKFILL". NATIVE EARTH BEARING SHALL BE SURFACE COMPACTED. AREAS OVER–EXCAVATED SHALL BE BACKFILLED WITH LEAN CONCRETE (F'c=2000 PSI) OR "STRUCTURAL BACKFILL". AREAS DESIGNATED "STRUCTURAL BACKFILL" SHALL BE FILLED WITH APPROVED WELL–GRADED BANKRUN MATERIAL. MAXIMUM SIZE OF ROCK 4". FROZEN SOIL, ORGANIC MATERIAL AND DELETERIOUS MATTER NOT ALLOWED. COMPACT TO AT LEAST 95% OF ITS MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. CONTRACTOR SHALL EXERCISE EXTREME CARE DURING EXCAVATION TO AVOID DAMAGE TO BURIED LINES, TANKS, AND OTHER CONCEALED ITEMS. UPON DISCOVERY, DO NOT PROCEED WITH WORK UNTIL RECEIVING WRITTEN INSTRUCTIONS FROM ARCHITECT. A COMPETENT REPRESENTATIVE OF THE OWNER SHALL INSPECT ALL FOOTING EXCAVATIONS FOR SUITABILITY OF BEARING SURFACES PRIOR TO PLACEMENT OF REINFORCING STEEL. PROVIDE DRAINAGE AND DEWATERING AROUND ALL WORK TO AVOID WATER–SOFTENED FOOTINGS.

FREE DRAINING BACKFILL MATERIAL FOR RETAINING & BASEMENT WALLS

A CLEAN, FREE DRAINING, WELL GRADED GRANULAR MATERIAL CONFORMING TO ASTM D2487 GW OR SW WHOSE MAXIMUM PARTICLE SIZE DOES NOT EXCEED 3/4" AND WHOSE FINES CONTENT (MATERIAL PASSING THE NO. 200 SIEVE) DOES NOT EXCEED 5%,

WITH A MAXIMUM DUST RATIO $\frac{\%\text{ PASSING U.S. NO. 200 SIEVE}}{\%\text{ PASSING U.S. NO. 40 SIEVE}}$ = 2/3 MAX.

CONCRETE

CAST–IN–PLACE CONCRETE

MIX DESIGNS: THE CONTRACTOR SHALL DESIGN CONCRETE MIXES THAT MEET OR EXCEED THE REQUIREMENTS OF THE CONCRETE MIX TABLE. THE MIX DESIGNS SHALL FACILITATE ANTICIPATED PLACEMENT METHODS, WEATHER, REBAR CONGESTION, ARCHITECTURAL FINISHES, CONSTRUCTION SEQUENCING, STRUCTURAL DETAILS, AND ALL OTHER FACTORS REQUIRED TO PROVIDE A STRUCTURALLY SOUND, AESTHETICALLY ACCEPTABLE FINISHED PRODUCT. WATER REDUCING ADMIXTURES WILL LIKELY BE REQUIRED TO MEET THESE REQUIREMENTS. CONCRETE MIX DESIGNS SHALL CLEARLY INDICATE THE TARGET SLUMP. SLUMP TOLERANCE SHALL BE ± 1–1/2 INCHES.

AGGREGATE: COARSE AND FINE AGGREGATE SHALL CONFORM TO ASTM C33

CEMENT: CEMENT SHALL CONFORM TO ASTM C150, TYPE II PORTLAND CEMENT, UNLESS NOTED OTHERWISE.

FLYASH: SHALL CONFORM TO ASTM C618 CLASS C OR F, MAXIMUM LOSS OF IGNITION SHALL BE 1.0%.

SLAG: GROUND GRANULATED BLAST–FURNACE (GGBF) SLAG SHALL CONFORM TO ASTM C989 GRADE 100 OR 120.

ALTERNATE MIX DESIGNS: VARIATIONS TO THE MIX DESIGN PROPORTIONS MAY BE ACCEPTED IF SUBSTANTIATED IN ACCORDANCE WITH ACI 318, CHAPTER 19. PROVIDE SUBMITTALS A MINIMUM OF TWO WEEKS PRIOR TO BID FOR DETERMINATION OF ACCEPTABILITY.

ADMIXTURES: ADMIXTURES SHALL BE BY MASTER BUILDERS, W.R. GRACE, OR PRE–APPROVED EQUAL. ALL MANUFACTURERS RECOMMENDATIONS SHALL BE FOLLOWED.

WATER: SHALL BE CLEAN AND POTABLE.

MAXIMUM CHLORIDE CONTENT: THE MAXIMUM WATER SOLUBLE CHLORIDE CONTENT SHALL NOT EXCEED 0.15% BY WEIGHT OF CEMENTITIOUS MATERIAL UNLESS NOTED OTHERWISE.

CONCRETE EXPOSED TO WEATHER: PROVIDE 5.0% TOTAL AIR CONTENT FOR ALL CONCRETE EXPOSED TO WEATHER. TOTAL AIR CONTENT IS THE SUM OF ENTRAINED AIR PROVIDED BY ADMIXTURES AND NATURALLY OCCURRING ENTRAPPED AIR. AIR CONTENT SHALL BE TESTED PRIOR TO BEING PLACED IN THE PUMP HOPPER OR BUCKET; IT IS NOT REQUIRED TO BE TESTED AT THE DISCHARGE END OF THE PUMP HOSE. THE TOLERANCE ON ENTRAPPED AIR SHALL BE +2.0% AND –1.5% WITH THE AVERAGE OF ALL TESTS NOT LESS THAN THE SPECIFIED AMOUNT.

TOTAL CEMENTITIOUS MATERIAL: THE SUM OF ALL CEMENT PLUS FLYASH AND SLAG. AT THE CONTRACTORS OPTION FLYASH OR SLAG MAY BE SUBSTITUTED FOR CEMENT BUT SHALL NOT EXCEED 25% BY WEIGHT OF TOTAL CEMENTITIOUS MATERIAL. IN NO CASE SHALL THE AMOUNT OF FLYASH OR SLAG BE LESS THAN REQUIRED BY THE CONCRETE MIX DESIGN TABLE. FOOTING MIXES SHALL CONTAIN NOT LESS THAN **5 SACKS** OF CEMENTITIOUS MATERIAL PER CUBIC YARD, ALL OTHER MIXES SHALL CONTAIN NOT LESS THAN **5–1/2 SACKS** OF CEMENTITIOUS MATERIAL PER CUBIC YARD, UNLESS NOTED OTHERWISE.

ITEM	DESIGN f'c (PSI) (AT 28 DAYS U.N.O.)	MAX. W/C RATIO	MIN. FLYASH OR SLAG (PCY)	AGGREGATE GRADING ASTM AASHTO
SLABS ON GRADE – UNO	4000	0.45	100	57 OR 67
FOUNDATIONS – UNO	3000	0.50	--	57 OR 67
STEM WALLS AND OTHER WALLS EXPOSED TO EARTH OR WEATHER	4500	0.45	100	57 OR 67
STEM WALLS AND OTHER WALLS – UNO	4000	0.50	100	57 OR 67
ALL OTHER CONCRETE	4000	0.50	--	57 OR 67

CONCRETE PLACEMENT

PLACE CONCRETE FOLLOWING ALL APPLICABLE ACI RECOMMENDATIONS. CONCRETE SHALL BE PROPERLY CONSOLIDATED PER ACI 309 USING INTERIOR MECHANICAL VIBRATORS, DO NOT OVER–VIBRATE. CONCRETE SHALL BE POURED MONOLITHICALLY BETWEEN CONSTRUCTION OR EXPANSION JOINTS. IF CONCRETE IS PLACED BY THE PUMP METHOD, HORSES SHALL BE PROVIDED TO SUPPORT THE HOSE, THE HOSE SHALL NOT BE ALLOWED TO RIDE ON THE REINFORCING. WEATHER FORECASTS SHALL BE MONITORED AND ACI RECOMMENDATIONS FOR HOT AND COLD WEATHER CONCRETING SHALL BE FOLLOWED AS REQUIRED. CONCRETE SHALL NOT FREE FALL MORE THAN 5 FEET DURING PLACEMENT WITHOUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER.

CONTROL AND CONSTRUCTION JOINTS

CONSTRUCTION JOINTS SHALL MEET THE REQUIREMENTS OF ACI 301 SECTIONS 2.2.2.5 AND 5.3.2.6. SPECIAL BONDING METHODS PER SECTION 5.3.2.6 SHALL BE SATISFIED BY ITEM 4 BELOW UNLESS OTHERWISE DETAILED ON THE STRUCTURAL DRAWINGS. WHERE CONSTRUCTION JOINTS ARE NOT SHOWN ON PLAN OR ADDITIONAL CONSTRUCTION JOINTS ARE REQUIRED SUBMIT PROPOSED JOINTING FOR STRUCTURAL ENGINEERS APPROVAL. PROVIDE CONSTRUCTION JOINTS AS INDICATED BELOW UNLESS NOTED OTHERWISE ON THE PLANS:

1. SLABS ON GRADE. PROVIDE CONSTRUCTION AND/OR CONTROL JOINTS AT 16 FEET O.C. MAXIMUM FOR UNEXPOSED SLABS ON GRADE AND 12 FEET O.C. FOR EXPOSED SLABS ON GRADE. COORDINATE JOINTS WITH ARCHITECTURAL DRAWINGS.

PCS Structural Solutions
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Jeffrey R. Barnett - Principal

LUKE A. HEATH
STATE OF WASHINGTON
42292
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

REVISIONS:

NO.	DATE	DESCR.
1	2-4-22	PERMIT REVIEW COMMENTS

DRAWN:

ISSUED:

K2526
2526 70TH Ave SE, Mercer Island, 98040

JOB: 246.01
SCALE: 1/8" = 1'-0"
SHEET NO:

S1.01

CONSTRUCTION

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2. TOPPING OVER WOOD FRAMING. PROVIDE JOINTS AT 12' O.C. MAXIMUM.

3. BONDING AGENT. WHERE BONDING AGENT IS SPECIFICALLY CALLED OUT ON THE STRUCTURAL DRAWINGS USE "WELD CRETE" BY LARSON PRODUCTS CORPORATION OR PRE-APPROVED EQUAL. FOLLOW ALL MANUFACTURERS RECOMMENDATIONS.

4. ATTACHMENT OF NEW CONCRETE TO EXISTING: WHERE SHOWN, ROUGHEN CONCRETE TO A MINIMUM AMPLITUDE OF 1/4" USING IMPACT HAMMER. REMOVE ALL LOOSE OR DAMAGED CONCRETE, THOROUGHLY FLUSH ALL SURFACES WITH POTABLE WATER, AIR BLAST WITH OIL FREE COMPRESSED AIR TO REMOVE ALL WATER.

EMBEDDED ITEMS

1. NO ALUMINUM ITEMS SHALL BE EMBEDDED IN ANY CONCRETE.

2. ALL EMBED PLATES SHALL BE SECURELY FASTENED IN PLACE.

3. ALL EMBEDDED STEEL ITEMS EXPOSED TO EARTH SHALL BE GALVANIZED.

4. ALL EMBEDDED STEEL ITEMS EXPOSED TO WEATHER SHALL BE PAINTED UNLESS NOTED AS GALVANIZED. SEE DRAWINGS AND SPECIFICATIONS FOR PAINT, PRIMER, AND GALVANIZING REQUIREMENTS.

GROUT

NON-SHRINK GROUT: MASTER BUILDERS "MASTERFLOW 928" OR PRE-APPROVED EQUAL. GROUT SHALL CONFORM TO CRD-C621 AND ASTM C1107 WHEN TESTED AT A FLUID CONSISTENCY PER CRD-C611-85 FOR 30 MINUTES. GROUT MAY BE PLACED FROM A 25 SECOND FLOW TO A STIFF PACKING CONSISTENCY. FILL OR PACK ENTIRE SPACE UNDER PLATES OR SHAPES. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PREPARATION, INSTALLATION, AND CURING.

REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO:

ASTM A615, GRADE 60 TYPICAL UNLESS NOTED OTHERWISE.

ASTM A706 GRADE 60 FOR ALL MOMENT FRAME HORIZONTAL BEAM BARS, MOMENT FRAME VERTICAL COLUMN BARS, VERTICAL SHEAR WALL BARSAND ALL COUPLING BEAM BARS (EXCEPT TIES). PER ACI 318, ASTM A615 GRADE 60 MAY BE SUBSTITUTED FOR THESE MEMBERS IF THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18 KSI, THE RATIO OF ACTUAL ULTIMATE TENSILE STRENGTH TO ACTUAL YIELD STRENGTH IS NOT LESS THAN 1.25, AND IF THE ELONGATION OVER AN 8" GAGE LENGTH MEETS THE FOLLOWING:

BAR SIZE	MINIMUM ELONGATION
#3-#6	≥14%
#7-#11	≥12%
#14, #18	≥10%

ASTM A706 GRADE 60 FOR ALL WELDED BARS.

DETAIL FABRICATE AND PLACE PER ACI 315 AND ACI 318.

WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A185. LAP ONE FULL MESH ON SIDES AND ENDS, BUT NOT LESS THAN 8 INCHES. WELDED WIRE REINFORCING SHALL BE SUPPORTED TO WITHSTAND CONCRETE PLACEMENT. PULLING OF MESH INTO PLACE AFTER PLACEMENT IS NOT ALLOWED.

REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE, Fy=60 KSI (UNLESS NOTED OTHERWISE)

BAR SIZE	MINIMUM LAP SPLICE LENGTHS ("Ls")		MINIMUM DEVELOPMENT LENGTHS ("Ld")		MINIMUM EMBEDMENT LENGTH FOR STANDARD END HOOKS ("Ldh")
	TOP BARS (1)	OTHER BARS	TOP BARS (1)	OTHER BARS	
#3	2'-0"	1'-6"	1'-6"	1'-3"	0'-7"
#4	2'-8"	2'-0"	2'-0"	1'-7"	0'-9"
#5	3'-4"	2'-7"	2'-7"	2'-0"	1'-0"
#6	4'-0"	3'-1"	3'-1"	2'-4"	1'-2"
#7	5'-10"	4'-6"	4'-6"	3'-6"	1'-5"
#8	6'-8"	5'-2"	5'-2"	3'-11"	1'-7"

SPLICE TABLE NOTE:

1. "TOP BARS" ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM.

REINFORCING STEEL COVER

PROVIDE CONCRETE COVER OVER REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE.

CONCRETE CAST AGAINST EARTH ---------- 3"
EXPOSED TO WEATHER OR EARTH ---------- 2"
TIES ON BEAMS AND COLUMNS ---------- 1-1/2"
WALLS AND SLABS NOT EXPOSED TO WEATHER---- 3/4"

POST-INSTALLED ANCHORS

POST-INSTALLED ANCHORS: SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH REBAR. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. INSTALLER SHALL BE QUALIFIED AND TRAINED BY THE MANUFACTURER. HOLE SHALL BE HAMMER DRILLED ONLY (ROTARY DRILLED ONLY AT UNREINFORCED MASONRY - NO HAMMER TOOLS).

SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED FOR APPROVAL A MINIMUM OF 2 WEEKS PRIOR TO BID, ALONG WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER (LICENSED IN THE STATE IN WHICH THE PROJECT OCCURS) DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.

CONCRETE ANCHORS:

- ADHESIVE ANCHORS: HILTI HIT-HY 200 (ICC-ESR-3187)
  - * CONCRETE SHALL BE A MINIMUM OF 21 DAYS OLD AT TIME OF INSTALLATION.
  - * CONCRETE SHALL BE IN THE TEMPERATURE RANGE AS REQUIRED BY THE CONCRETE MANUFACTURER.
  - * HOLE SHALL BY HAMMER-DRILLED ONLY.
  - * HOLE SHALL BE DRY AT TIME OF INSTALLATION.
  - * INSTALLER OF HORIZONTAL OR UPWARDLY INCLINED (ANY POSITION EXCEPT DIRECTLY DOWNWARD) ANCHORS SHALL ALSO BE CERTIFIED BY THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM.
- EXPANSION ANCHORS: KWIKBOLT TZ (ICC ESR-1917) BY HILTI, INC. OR STRONG-BOLT 2 (ICC ESR-3037) BY SIMPSON STRONG TIE, INC.
- SCREW ANCHORS: KWIK HUS-EZ (ICC ESR-3027) BY HILTI, INC. OR TITEN HD (ICC ESR-2713) BY SIMPSON STRONG TIE, INC.

STRUCTURAL STEEL

DETAILING, FABRICATION AND ERECTION

ALL WORKMANSHIP SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION, THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, JUNE 22, 2010, THE AISC CODE OF STANDARD PRACTICE, APRIL 14, 2010 AND THE AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS JUNE 22, 2010.

STEEL MEMBERS ARE EQUALLY SPACED BETWEEN COLUMNS AND/OR DIMENSION POINTS UNLESS NOTED OTHERWISE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES, AND OTHER AIDES, WELDING PROCEDURES, REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS. WELD EXTENSION TABS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS OF UNEQUAL PARTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLIANCE WITH ALL CURRENT OSHA REQUIREMENTS.

HOLES, COPES OR OTHER CUTS OR MODIFICATIONS OF THE STRUCTURAL STEEL MEMBERS SHALL NOT BE MADE IN THE FIELD WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.

MATERIAL PROPERTIES

WIDE FLANGE SECTIONS: ASTM A992 (Fy = 50 KSI)

OTHER SHAPES AND PLATES: ASTM A36 (Fy = 36 KSI) TYP. U.N.O.; ASTM A572 (Fy = 50 KSI) WHERE INDICATED

HOLLOW STRUCTURAL SECTIONS: RECTANGULAR & SQUARE - ASTM A500 GRADE B (Fy = 46 KSI)

MACHINE BOLTS (M.B.): ASTM A307, GRADE A

HIGH-STRENGTH BOLTS: A325-ASTM F1852

ANCHOR BOLTS (A.B.): ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE

WELDING

STRUCTURAL STEEL: WELD IN ACCORDANCE WITH "STRUCTURAL WELDING CODE" AWS D1.1.

CERTIFICATION: ALL WELDING SHALL BE PERFORMED BY WABO/AWS CERTIFIED WELDERS. WELDERS SHALL BE PREQUALIFIED FOR EACH POSITION AND WELD TYPE WHICH THE WELDER WILL BE PERFORMING.

WELD TABS (ALSO KNOWN AS WELD "EXTENSION" TABS OR "RUN OFF" TABS) SHALL BE USED. AFTER THE WELD HAS BEEN COMPLETED THE WELD TABS SHALL BE REMOVED AND THE WELD END GROUND TO A SMOOTH CONTOUR. WELD "DAMS" OR "END DAMS" SHALL NOT BE USED.

THE PROCESS CONSUMABLES FOR ALL WELD FILLER METAL INCLUDING TACK WELDS, ROOT PASS AND SUBSEQUENT PASSES DEPOSITED IN A JOINT SHALL BE COMPATIBLE.

ALL WELD FILLER METAL AND WELD PROCESS SHALL PROVIDE THE TENSILE STRENGTH CHARPY V-NOTCH RATINGS AS FOLLOWS:

GRAVITY FRAME

WELD TYPE	FILLER METAL TENSILE STRENGTH	CHARPY V-NOTCH (CVN) RATING
FILLET	70 KSI	-----
PARTIAL PENETRATION	70 KSI	-----
COMPLETE PENETRATION	70 KSI	20 FT-LBS @ -20 DEG F

WELDED CONNECTIONS INSPECTION:

1. ALL WELDING SHALL BE CHECKED BY VISUAL MEANS AND BY OTHER METHODS DEEMED NECESSARY BY THE WELDING INSPECTOR.

THE STANDARDS OF ACCEPTANCE FOR WELDS TESTED BY ULTRASONIC METHODS SHALL CONFORM TO AWS D1.1.

ALL WELDS FOUND TO BE DEFECTIVE SHALL BE REPAIRED AND REINSPECTED BY THE SAME METHODS ORIGINALLY USED, AND THIS REPAIR AND REINSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.

LATERAL FRAME

WELD TYPE	FILLER METAL TENSILE STRENGTH	CHARPY V-NOTCH (CVN) RATING
FILLET	70 KSI	20 FT-LBS @ -20 DEG F
PARTIAL PENETRATION	70 KSI	20 FT-LBS @ -20 DEG F
COMPLETE PENETRATION	70 KSI	20 FT-LBS @ -20 DEG F AND 40 FT-LBS @ 70 DEG F

WELDED CONNECTIONS INSPECTION:

1. ALL WELDING SHALL BE CHECKED BY VISUAL MEANS AND BY OTHER METHODS DEEMED NECESSARY BY THE WELDING INSPECTOR.

2. ALL FULL PENETRATION WELDS TO MEMBERS WHICH FORM A PORTION OF THE LATERAL LOAD RESISTING FRAME SHALL BE CHECKED 100 PERCENT BY ULTRASONIC TESTING.

3. THE CONTRACTOR SHALL SUBMIT A WRITTEN WELDING PROCEDURE SPECIFICATION FOR SHOP AND FIELD WELDING OF ALL LATERAL LOAD RESISTING FRAME CONNECTIONS FOR APPROVAL TO THE STRUCTURAL ENGINEER OF RECORD PRIOR TO FABRICATION.

THE STANDARDS OF ACCEPTANCE FOR WELDS TESTED BY ULTRASONIC METHODS SHALL CONFORM TO AWS D1.1.

ALL WELDS FOUND TO BE DEFECTIVE SHALL BE REPAIRED AND REINSPECTED BY THE SAME METHODS ORIGINALLY USED, AND THIS REPAIR AND REINSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.

GENERAL REQUIREMENTS

BOLTED CONNECTIONS INSPECTION: CONNECTIONS MADE WITH BEARING TYPE BOLTS SHALL BE INSPECTED PER SECTION 9.1 AND CONNECTIONS MADE WITH SLIP-CRITICAL TYPE BOLTS (A325SC OR A490SC) SHALL BE INSPECTED PER SECTION 9.3 OF RCSC SPECIFICATION.

ADHESIVE ANCHOR RODS: ASTM F1554, GRADE 36 UNLESS NOTED OTHERWISE.

FINISH: STRUCTURAL STEEL SHALL BE PRIMER PAINTED, UNLESS NOTED OTHERWISE, AND SHALL BE CLEAN OF LOOSE RUST, LOOSE MILL SCALE, OIL, GREASE AND OTHER FOREIGN SUBSTANCES AND SHALL MEET THE REQUIREMENTS OF SSPC-SP1. WHERE STRUCTURAL STEEL IS NOTED TO BE PAINTED, ALL AREAS COMPRISING THE FAYING SURFACES OF BOLTED CONNECTIONS MADE WITH SLIP-CRITICAL TYPE BOLTS (A325SC OR A490SC) SHALL COMPLY WITH THE REQUIREMENTS OF THE RCSC SPECIFICATION. WHERE STRUCTURAL STEEL IS NOTED TO BE GALVANIZED, IT SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123, A384, AND A385. ALL SURFACES WITHIN TWO INCHES OF ANY FIELD WELD LOCATION SHALL BE FREE OF MATERIALS THAT WOULD PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES. FIELD TOUCH-UP OF PRIMED, PAINTED, AND GALVANIZED SURFACES SHALL BE PERFORMED TO REPAIR COATING ABRASIONS, AS WELL AS TO PROTECT ALL AREAS AT CONNECTIONS.

CARPENTRY

NAILS: CONNECTION DESIGNS ARE BASED ON "COMMON WIRE" NAILS WITH THE FOLLOWING PROPERTIES:

PENNYWEIGHT	DIAMETER (INCHES)	LENGTH (INCHES)	TRACKER** EMBOSSED HEAD / COLOR
8d	0.131	2-1/2	3/ BLUE
10d	0.148	3	4 / WHITE
16d	0.162	3-1/2	6 / ORANGE
20d	0.192	4	-

FOR DIAPHRAGM OR SHEAR WALL NAILING THE FOLLOWING FASTENER TYPES MAY BE USED AT EQUIVALENT SPACING TO THAT SPECIFIED ON PLANS

FASTENER TYPE	DIAMETER (INCHES)	LENGTH (INCHES)	EQUIVALENT SPACING (INCHES)			TRACKER** EMBOSSED HEAD / COLOR
8d COMMON WIRE	0.131	2-1/2	6	4	3	3 / BLUE
8d "DIPPED GALV. BOX"	0.131	2-1/2	6	4	3	3E / NONE
8d "SHINY BOX"	0.113	2-1/2	4-1/2	3	2-1/2	1 / BLUE
12 GA. STAPLES	0.1055	1-7/8*	6	5-1/2	4	-
14 GA. STAPLES	0.080	1-1/2*	6	4	3	-
15 GA STAPLES	0.072	1-1/2*	5	3	2-1/2	-
10d COMMON WIRE	0.148	3	6	4	3	4 / WHITE
10d "HOT DIPPED GALV. BOX"	0.148	3	6	4	3	F4 / NONE
10d "SHINY BOX"	0.128	3	4-1/2	3	2-1/4	3 / WHITE

*BASED ON 15/32" PLYWOOD OR OSB.
**REFERENCE TO EMBOSSED HEAD/COLOR CODED NAILS PER TRACKERS SYSTEM.

WOOD SHEATHING (STRUCTURAL): **SHEATHING ON ROOF SURFACES SHALL BE PLYWOOD ONLY.** SHEATHING ON FLOOR AND WALLS SHALL BE PLYWOOD OR ORIENTED STRAND BOARD (OSB). PLYWOOD SHEATHING SHALL BE 5-PLY MINIMUM WHERE INDICATED AS PERFORMANCE CATEGORY 3/4" OR THICKER. WOOD SHEATHING SHALL BE "STRUCTURAL I" CONFORMING TO PS1-09 AND/OR PS2-10. ALL PANELS SHALL BEAR THE STAMP OF AN APPROVED GRADING AGENCY. SPAN RATING SHALL BE PROVIDED AS FOLLOWS: ROOF FRAMING AT 32"O.C. (48/24); ROOF FRAMING AT 24"O.C. (32/16); WALLS (32/16); FLOORS (48/24) ALL WOOD SHEATHED WALLS SHALL BE BLOCKED AT ALL PANEL EDGES UNLESS OTHERWISE NOTED.

GLUE-LAMINATED MEMBERS: CONFORM TO ANSI/AITC A190.1. MEMBERS SHALL BE COMBINATION 24F-V4 DOUGLAS FIR (DF) FOR SIMPLE SPANS AND 24F-V8 DF FOR CANTILEVERED SPANS (Fb=2400 PSI, Fv=265 PSI, E=1.8X10^6 PSI) AND DF COMBINATION 2 FOR COLUMNS.

TRUSSES SHALL HAVE A BALANCED LAY-UP FOR CHORDS AND COMBINATION 2 FOR WEBS.

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CONSTRUCTION

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MEMBERS INDICATED IN STRUCTURAL DRAWINGS AS "POC" SHALL BE PORT ORFORD CEDAR COMBINATION 22F-V/POC1 (Fb=2200 PSI, Fv=265 PSI, E=1.8X10^6 PSI) AND POC COMBINATION 2 FOR COLUMNS.

ARCHITECTURAL APPEARANCE GRADE WHERE EXPOSED TO VIEW; INDUSTRIAL APPEARANCE WHERE NOT EXPOSED TO VIEW. ALL MEMBERS TO HAVE EXTERIOR GLUE AND HAVE AN APPROVED GRADE STAMP. CAMBER AS SHOWN ON STRUCTURAL DRAWINGS.

FRAMING LUMBER:
STANDARDS. EACH PIECE SHALL BEAR THE GRADE TRADEMARK OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB), WESTERN WOOD PRODUCTS ASSOCIATION (WWPA), OR OTHER AGENCY ACCREDITED BY THE AMERICAN LUMBER STANDARD COMMITTEE (ALSC) TO GRADE UNDER ALSC CERTIFIED GRADING RULES.

SPECIES AND GRADE (BASE DESIGN VALUE)
1. 6x BEAMS AND HEADERS. "DOUG FIR-LARCH" NO. 1 (Fb=1350 PSI, Fv=170 PSI)
2. 2x TO 4x JOISTS, PURLINS AND HEADERS. "DOUG FIR-LARCH" NO. 2 (Fb=900 PSI, Fv=180 PSI) OR "HEM-FIR" NO. 1 (Fb=975 PSI, Fv=150 PSI)
3. 6x POSTS AND COLUMNS. "DOUG FIR-LARCH" NO. 1 (Fc=1000 PSI)
4. EXTERIOR STUDS, INTERIOR BEARING WALLS AND 4x COLUMNS. "DOUG FIR-LARCH" NO. 2 (Fb= 900 PSI, Fc=1350 PSI) OR "HEM-FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI).
5. INTERIOR NON-BEARING STUD WALLS. "DOUG FIR-LARCH" NO. 2 (Fb=900 PSI. Fc=1350 PSI) OR "HEM-FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI)
6. 2x & 3x T&G DECKING: "DOUG FIR-LARCH" COMMERCIAL (Fb=1450 PSI, E=1700 KSI)
7. THE MINIMUM GRADE OF ALL OTHER STRUCTURAL FRAMING. "DOUG FIR-LARCH" NO. 2 (Fb= 900 PSI, Fc=1350 PSI), OR "HEM-FIR" NO. 1 (Fb=975 PSI, Fc=1350 PSI).
8. UTILITY & STANDARD GRADES NOT PERMITTED.

STRUCTURAL COMPOSITE LUMBER (SCL): SHALL BE MANUFACTURED BY REDBUILT LLC., OR PRE-APPROVED EQUAL IN ACCORDANCE WITH APPROVED SHOP AND INSTALLATION DRAWINGS CONFORMING TO A CURRENT EVALUATION REPORT.

MIINIMUM DESIGN VALUES:
1. 2x SCL: Fb = 1700 PSI, Fv = 285 PSI, E = 1300 KSI
2. 1-3/4" SCL: Fb = 2600 PSI, Fv = 285 PSI, E = 1800 KSI
3. 3-1/2" SCL: Fb = 2900 PSI, Fv = 285 PSI, E = 2000 KSI
4. 5-1/4" SCL: Fb = 2900 PSI, Fv = 285 PSI, E = 2000 KSI
5. RIMBOARD: APA/EWS PERFORMANCE RATED RIM (PRR-401) 1-1/4" MINIMUM THICKNESS

MEMBERS HAVE BEEN DESIGNED TO SERVICEABILITY AND OTHER PERFORMANCE BASED REQUIREMENTS, WHICH MAY EXCEED MINIMUM DESIGN LOADS AND CODE REQUIREMENTS. SUBSTITUTIONS MUST MEET OR EXCEED MOMENT, SHEAR, AND STIFFNESS OF THOSE MEMBERS SPECIFIED AT THE SAME DEPTH AND SPACING.

PRESERVATIVE TREATED WOOD REQUIREMENTS:
TREATMENTS OTHER THAN THOSE LISTED BELOW ARE NOT PERMITTED.

EXPOSURE		APPLICATION	SPECIFIED MATERIAL	PRESERVATIVE TREATMENT (1)	CONNECTORS & FASTENERS (2)(3)
DRY		FOUNDATION SILL PLATES, TOP PLATES & LEDGERS ON CONCRETE OR MASONRY WALLS (4)	2x, 4x, 6x (FIR), OR GLULAM (SP)	SBX	GALV (G60)
				ACQ, CBA, CA	GALV (G185)
WET		FRAMING, DECKING, POSTS & LEDGERS	2x, & 4x (FIR)	ACQ, CBA, CA	GALV (G185)
			2x, & 4x (CEDAR)	NONE	GALV (G90)
		BEAMS & COLUMNS	6x (FIR), OR GLULAM (SP)	ACQ, CBA, CA	GALV (G185)
			6x OR GLULAM (CEDAR)	NONE	GALV (G90)

1. CCA: CHROMATED COPPER ARSENATE NOT PERMITTED
   SBX: DOT SODIUM BORATE
   ACQ: ALKALINE COPPER QUAT
   CBA & CA: COPPER AZOLE
   FIR: DOUG-FIR OR HEM-FIR
   SP: SOUTHERN PINE

2. CONNECTORS: JOIST HANGERS, STRAPS, FRAMING CONNECTORS, COLUMN CAPS AND BASES, ETC. FASTENERS: MACHINE BOLTS, ANCHOR BOLTS AND LAG SCREWS WITH ASSOCIATED PLATE WASHERS AND NUTS. NAILS, SPIKES, WOOD SCREWS, ETC.

3. G60, G90 & G185 PER ASTM A653 FOR COLD-FORMED STEEL CONNECTORS. BATCH/POST HOT-DIP GALVANIZED PER ASTM A123 FOR STRUCTURAL STEEL CONNECTORS. HOT-DIP GALVANIZED PER ASTM A153 FOR FASTENERS OR MECHANICALLY GALVANIZED FASTENERS PER ASTM B695, CLASS 55 OR GREATER.

4. AT CONTRACTORS OPTION, LEDGERS AND TOP PLATES A MINIMUM OF 8 FEET ABOVE GRADE ON CONCRETE OR MASONRY WALLS MAY BE UN-TREATED IF COMPLETELY SEPARATED FROM THE WALL BY A SELF ADHERING ICE & WATER SHIELD BARRIER (40 MIL MINIMUM).

GENERAL REQUIREMENTS: PROVIDE MINIMUM NAILING PER TABLE 2304.10.1 OR MORE, AS OTHERWISE SHOWN. STAGGER ALL NAILING TO PREVENT SPLITTING OF WOOD MEMBERS. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESERVATIVE TREATED WITH THE EXCEPTION OF INTERIOR CONCRETE TOPPINGS ON WOOD FLOOR SYSTEMS. HOLES AND CUTS IN 3x OR 4x PLATES SHOULD BE TREATED WITH A 9% SOLUTION OF COPPER NAPHTHENATE. BOLT HOLES IN WOOD MEMBERS SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT DIAMETER. PROVIDE CUT WASHERS WHERE BOLT HEADS, NUTS AND LAG SCREW HEADS BEAR ON WOOD. PROVIDE A MINIMUM 3"x3"x0.229" PLATE WASHER ON ALL ANCHOR BOLTS WHICH CONNECT MUD SILLS TO FOUNDATION. DO NOT NOTCH OR DRILL STRUCTURAL MEMBERS, EXCEPT AS ALLOWED BY SECTIONS 2308.4.2.4, 2308.5.9, 2308.5.10 AND 2308.7.4 OR AS RESTRICTED BY PLANS OR DETAILS, OR AS APPROVED PRIOR TO INSTALLATION. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

FRAMING CONNECTORS: SHALL CONFORM TO CURRENT EVALUATION REPORT AND BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, SAN LEANDRO, CA., OR PRE-APPROVED EQUAL. PROVIDE MAXIMUM SIZE AND QUANTITY OF NAILS OR BOLTS PER MANUFACTURER, EXCEPT AS NOTED OTHERWISE. PROVIDE LEAD HOLES AS REQUIRED TO PREVENT SPLITTING OF WOOD MEMBERS. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

LAG SCREWS: SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1. LAG SCREWS SHALL BE OF A DIAMETER INDICATED ON DRAWINGS WITH A MINIMUM OF 8x DIA. EMBEDMENT IN SUPPORTING MEMBER UNLESS NOTED OTHERWISE. CLEARANCE HOLE FOR THE SHANK SHALL BE THE SAME DIAMETER AS THE SHANK AND THE SAME DEPTH OF PENETRATION AS THE UNTHREADED PORTION OF THE SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 60 TO 75 PERCENT OF THE SHANK DIAMETER AND A LENGTH EQUAL TO AT LEAST THE LENGTH OF THE THREADED PORTION. THE THREADED PORTION OF THE SCREW SHALL BE INSERTED IN ITS LEAD HOLE BY TURNING WITH A WRENCH. SOAP OR OTHER LUBRICANT SHALL BE USED ON THE SCREWS OR IN THE LEAD HOLE TO FACILITATE INSERTION AND PREVENT DAMAGE TO THE SCREW. LAG SCREW SHALL NOT BE DRIVEN WITH A HAMMER. REFER TO PRESERVATIVE TREATED WOOD REQUIREMENTS IN THESE GENERAL NOTES FOR GALVANIZING REQUIREMENTS FOR CONNECTORS AND FASTENERS.

PRE-MANUFACTURED SHEAR/BRACED WALL PANELS: SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, IN SAN LEANDRO, CA., HARDY FRAMES INC., VENTURA, CA., OR APPROVED EQUAL. WALL PANEL ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, INSTALLATION INSTRUCTIONS AND APPROVED SHOP DRAWINGS. WALL PANEL ASSEMBLY SHALL CONFORM TO CURRENT EVALUATION REPORT.

I-JOISTS: SHALL BE BE APA EWS PERFORMANCE RATED I-JOISTS (PRI) OR PRE-APPROVED EQUAL. I-JOISTS SHALL BE MANUFACTURED IN CONFORMANCE WITH APA PRI-400 CONFORMING TO APPROVED SHOP AND INSTALLATION DRAWINGS.

MEMBERS HAVE BEEN DESIGNED TO MEET SERVICEABILITY AND OTHER PERFORMANCE BASED REQUIREMENTS, WHICH MAY EXCEED MINIMUM DESIGN LOADS AND CODE REQUIREMENTS. SUBSTITUTIONS MUST MEET OR EXCEED MOMENT, SHEAR, AND STIFFNESS OF THOSE MEMBERS SPECIFIED AT THE SAME DEPTH AND SPACING.

REFER TO THE FRAMING CONNECTORS SECTION OF THESE GENERAL NOTES FOR REQUIREMENTS PLACED UPON CONNECTOR HARDWARE SPECIFIED BY TRUSS ENGINEER AND/OR PROVIDED BY TRUSS MANUFACTURER.

MISCELLANEOUS:

PRE-APPROVED SUBSTITUTIONS
SUBSTITUTIONS MAY BE ALLOWED ONLY IF THEY MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND THE SPECIFICATIONS, AND IF COMPLETE WRITTEN ENGINEERING DATA FOR EACH CONDITION REQUIRED FOR THIS PROJECT IS PROVIDED TO THE STRUCTURAL ENGINEER TWO WEEKS PRIOR TO BID DATE AND APPROVED IN WRITTEN ADDENDA BY THE ARCHITECT. DATA IS TO INDICATE CODE BASIS BY YEAR, AUTHORITY FOR STRESSES AND STRESS INCREASES, IF ANY, AND AMOUNT OF EXPECTED DEFLECTION FOR FLEXURAL MEMBERS UNDER (1) TOTAL LOAD AND (2) LIVE LOAD ONLY. ALL INCREASED COSTS IN MECHANICAL, SPRINKLER, ELECTRICAL OR GENERAL INSTALLATION AND ANY ARCHITECTURAL OR STRUCTURAL REDESIGN RESULTING FROM SUBSTITUTION SHALL BE BORNE BY THE GENERAL CONTRACTOR.

SHOP DRAWINGS/SUBMITTALS

THE FOLLOWING SHOP DRAWINGS/SUBMITTALS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION OR DELIVERY.

	STRUCTURAL ENGR.	BLDG. DEPT.
1. CONCRETE MIX DESIGNS	X	X
2. REINFORCING STEEL SHOP DRAWINGS	X	
3 STRUCTURAL STEEL	X	X
4. GLU-LAMINATED MEMBERS	X	X
5. STRUCTURAL COMPOSITE LUMBER	X	X
6. WOOD OPEN-WEB TRUSSES AND I-JOISTS	X	X
7. PRE-ASSEMBLED WALL PANELS	X	X
8. CONTRACTOR'S STATEMENT OF RESPONSIBILITY	X	X

DEFERRED SUBMITTALS

THE FOLLOWING ARE NOT INCLUDED WITH THE BUILDING PERMIT DRAWINGS AND SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AS A DEFERRED SUBMITTAL. SUBMITTALS SHALL BEAR THE SEAL OF AN ENGINEER LICENSED IN THE STATE OF THE PROJECT AS NOTED.

	ENGINEER STAMP REQUIRED
1. WOOD I-JOISTS	PE

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CONSTRUCTION

PLOT DATE: 11/12/2020 3:39:39 PM

SPECIAL INSPECTION: SPECIAL INSPECTION SHALL BE PROVIDED BY AN INDEPENDENT TESTING LABORATORY PER THE REQUIREMENTS OF IBC CHAPTER 17 AND THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION AND THE CONTRACT DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL FOR THE ITEMS LISTED IN THE QUALITY ASSURANCE/SPECIAL INSPECTION SECTION:

STATEMENT OF SPECIAL INSPECTIONS:

SPECIAL INSPECTION: SPECIAL INSPECTION SHALL BE PROVIDED PER THE REQUIREMENTS OF IBC SECTION 1704 AND 1705 AND AS NOTED HEREIN.

STRUCTURAL SYSTEM	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
SOILS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X		IBC 1705.6
	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X		
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X		
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X		
STRUCTURAL STEEL	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS		X		AISC 360 CHAPTER N5
	HIGH-STRENGTH BOLTING A. SNUG-TIGHT JOINTS		X		AISC 360 CHAPTER N5
	MATERIAL VERIFICATION OF STRUCTURAL STEEL A. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360 B. MANUFACTURER'S CERTIFIED MILL TEST REPORTS		X X	MANUFACTURER TO PROVIDE CERTIFIED MILL TEST REPORTS	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6
	MATERIAL VERIFICATION OF WELD FILLER MATERIALS A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATIONS LISTED IN GENERAL NOTES B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE		X X	MANUFACTURER TO PROVIDE CERTIFICATE OF COMPLIANCE	AISC 360 CHAPTER N5
	INSPECTION OF WELDING A. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS B. MULTI-PASS FILLET WELDS C. SINGLE-PASS FILLET WELDS > 5/16" D. PLUG AND SLOT WELDS E. SINGLE-PASS FILLET WELDS ≤ 5/16" F. FIELD-INSTALLED WELDED STUDS G. WELDING OF STAIRS AND RAILING SYSTEMS	X X X X	X X X	SPECIAL INSPECTIONS IN THIS SECTION ARE WAIVED WHERE FABRICATION IS PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED IN ACCORDANCE WITH IBC SECTION 1704.2.5	AISC 360 CHAPTER N5 AISC 341 CHAPTER J6 AWS D1.1
	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS		X		
CONCRETE	INSPECT REINFORCEMENT, INCLUDING PRE-STRESSING TENDONS, AND VERIFY PLACEMENT		X	SPECIAL INSPECTIONS NOT REQUIRED FOR THE FOLLOWING CONDITIONS: NON-STRUCTURAL SLAB ON GRADE CONCRETE FOUNDATION WALLS WITH f'c ≤ 2500 PSI ISOLATED SPREAD FOOTINGS FOR BUILDINGS THREE- STORIES AND LESS ABOVE GRADE PLANE CONTINUOUS FOOTINGS SUPPORTING WALLS OF THREE-STORIES AND LESS ABOVE GRADE PLANE WHERE WALLS ARE LIGHT-FRAME CONSTRUCTION AND STRUCTURAL DESIGN IS BASED ON F'c ≤ 2500 PSI	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4
	ANCHORS CAST IN CONCRETE-PRIOR TO AND DURING PLACEMENT OF CONCRETE		X		ACI 318: 17.8.2 AISC 360 SECTION N7
	ANCHORS POST-INSTALLED IN HARDENED CONCRETE		X		ACI 318: 3.8.6, 8.1.3, 21.2.8 IBC 1909.1
	VERIFY USE OF REQUIRED DESIGN MIX		X		ACI 318: CH 19
	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X			ASTM C172, C31 ACI 318: 26.4, 26.12 IBC 1908.10
	MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X		ACI 318: 26.5.3-26.5.5 IBC 1908.9
	MATERIAL VERIFICATION OF REINFORCEMENT STEEL FOR ASTM A615 REINFORCING		X	MANUFACTURER SHALL PROVIDE MILL TEST REPORTS. CONTINUOUS INSPECTION FOR ALL WELDS GREATER THAN 5/16" FILLET. PERIODIC INSPECTION FOR FILLET WELD 5/16" AND SMALLER	ACI 318: 26.6.4 AWS D1.4, IBC 1705.3.1
	TESTING OF MATERIALS		X		IBC 1705.3.2

STRUCTURAL SYSTEM	VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
WOOD FRAMING	SHEAR WALL NAILING		X	SPECIAL INSPECTION NOT REQUIRED FOR FASTENER SPACING > 4" O.C.	IBC 1705.11.1, 1705.12.2, 1705.5
	DIAPHRAGM NAILING		X	SPECIAL INSPECTION NOT REQUIRED FOR FASTENER SPACING > 4" O.C.	IBC 1705.11.1, 1705.12.2, 1705.5
	NAILING, BOLTING, AND ANCHORAGE OF COMPONENTS THAT ARE PART OF DRAG STRUTS, BRACES AND HOLD-DOWNS THAT ARE PART OF THE SEISMIC RESISTING SYSTEM		X		IBC 1705.11.1, 1705.12.2

TESTING AND SPECIAL INSPECTION REPORTS SHALL BE PREPARED FOR EACH INSPECTION ITEM ON A DAILY BASIS WHENEVER WORK IS PERFORMED ON THAT ITEM. REPORTS SHALL BE DISTRIBUTED TO OWNER, CONTRACTOR, BUILDING OFFICIAL, ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.

STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY THE STRUCTURAL ENGINEER OF RECORD OR DESIGNATED REPRESENTATIVE IN ACCORDANCE WITH IBC 1704.6. STRUCTURAL OBSERVATION SHALL BE PERFORMED AS FOLLOWS:

- PERIODIC VISUAL OBSERVATION OF STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES.
- REVIEW OF TESTING AND INSPECTION REPORTS.
- REPORTS SHALL BE PREPARED FOR EACH SITE VISIT AND SHALL BE DISTRIBUTED TO ARCHITECT.

GENERAL CONTRACTOR SHALL SUBMIT A WRITTEN CONTRACTOR'S STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL INCLUDE ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

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CONSTRUCTION

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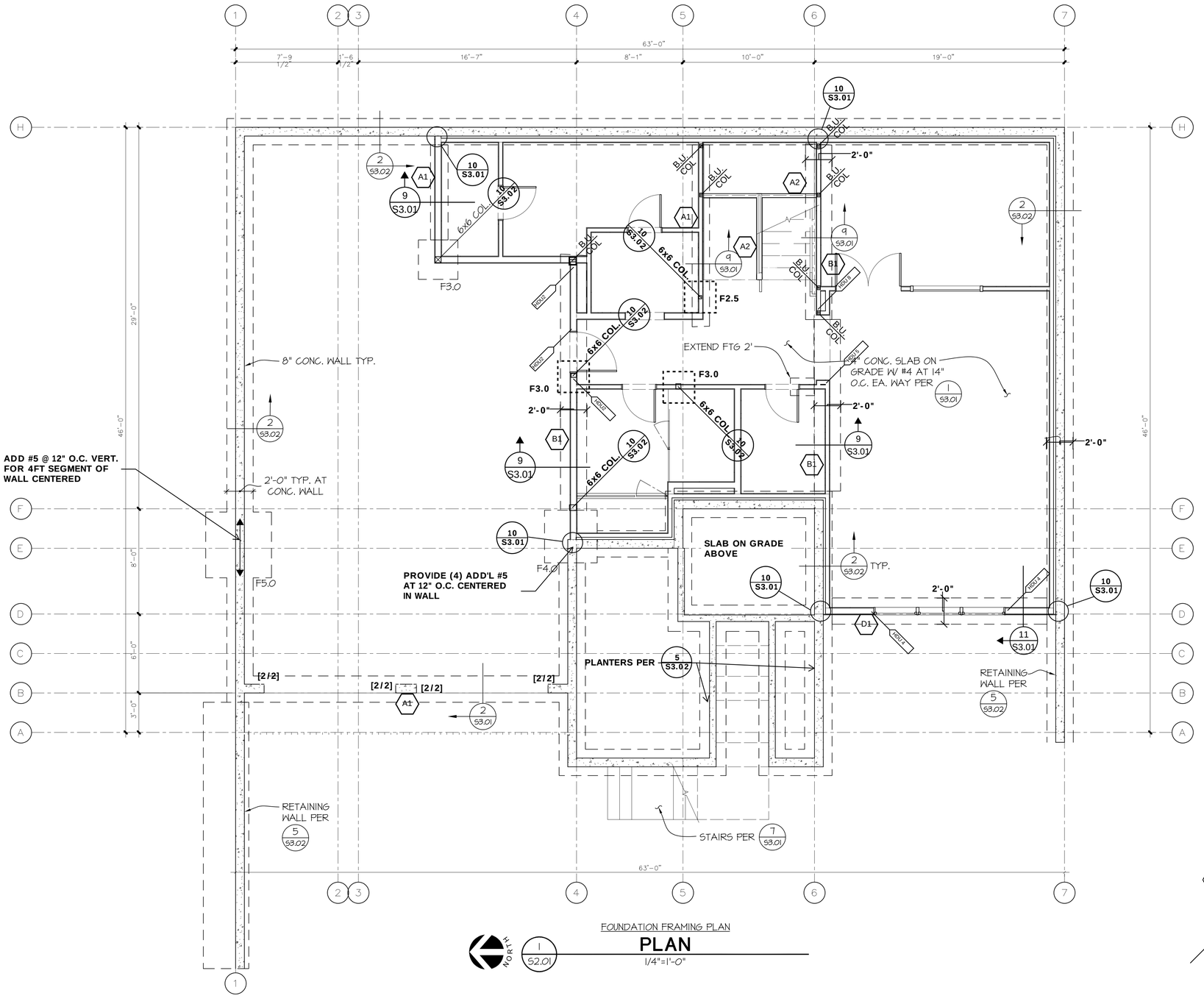

FOUNDATION FRAMING PLAN

PLAN

1/4"=1'-0"

NORTH

1/S2.01

NOTES:

FOR WALL FRAMING AT AN OPENING SEE 1/S4.01.

FOR BUILT-UP COLUMNS, SEE 2/S4.01

XX INDICATES WALL FRAMING, SEE 3/S4.01.

FOR ROOF AND FLOOR DIAPHRAGM NAILING REQUIREMENTS, SEE 4/S4.01.

HOLDOWN INDICATES HOLDOWN, SEE 5/S3.01

FOR TYPICAL RETAINING WALL DETAILS SEE 5/S3.02.

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LUKE A. HEATH
STATE OF WASHINGTON
42292
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

REVISIONS:

NO.	DATE	DESCR.

DRAWN:

ISSUED:

K2526

2526 70TH Ave SE, Mercer Island, 98040

Job: 246.01

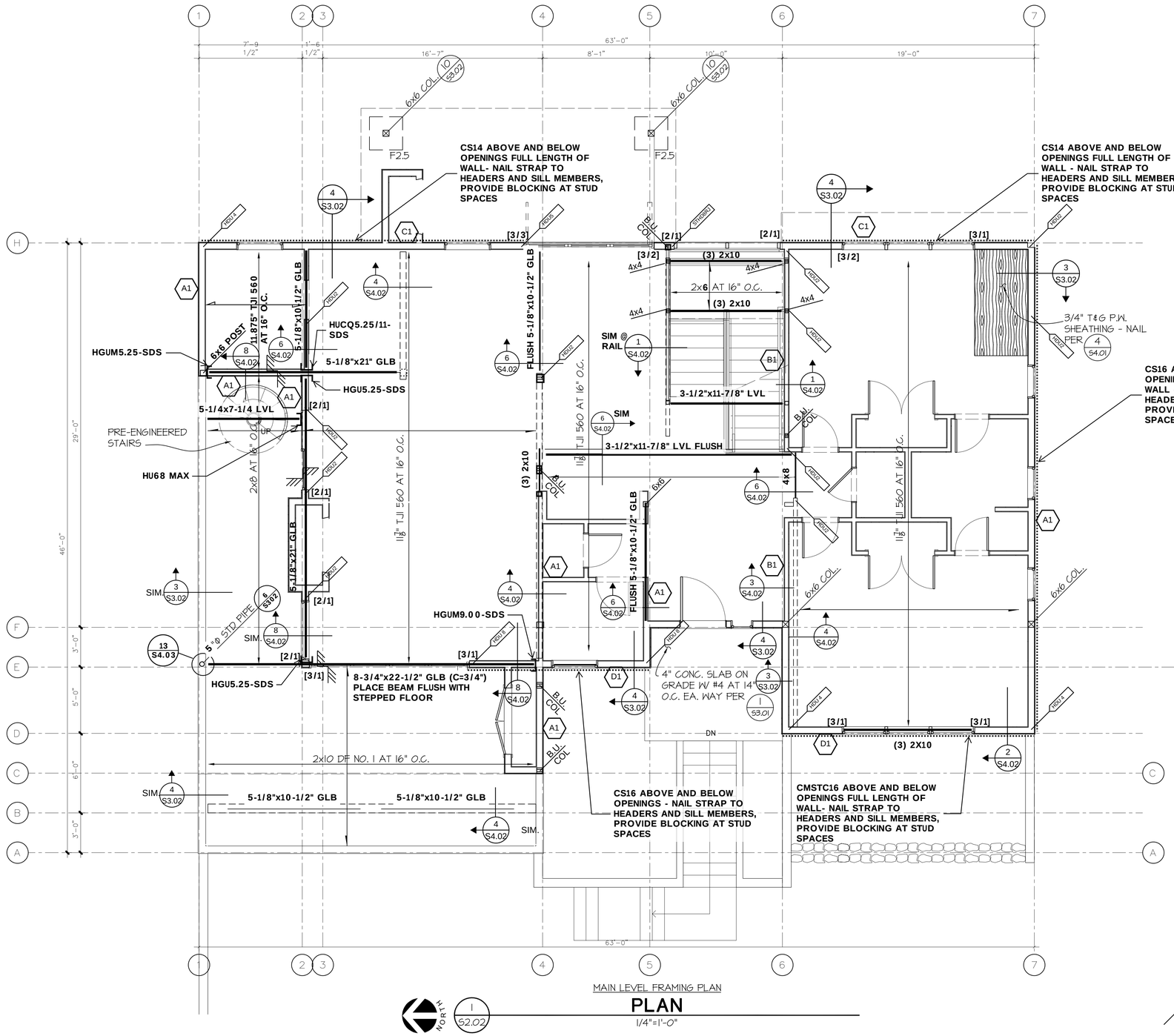
SCALE: 1/8" = 1'-0"

SHEET NO:

S2.01

CONSTRUCTION

PLOT DATE: 11/12/2020 3:39:39 PM



MAIN LEVEL FRAMING PLAN

PLAN

1/4"=1'-0"

FRAMING NOTES:

A1 1. INDICATES WOOD STUD WALL, SEE 1/S4.01.

2. FOR TYPICAL FOUNDATION DETAILS SEE SHEET S3.01.

HDU2 3. INDICATES A HOLDOWN SEE DETAIL 5/S3.01.

BUL COL 4. INDICATES BUILT-UP COLUM, SEE 2/S4.01

5. FOR TYPICAL WALL FRAMING DETAILS, SEE SHEET S4.01. TYPICAL HEADERS NOT SHOWN ARE INDICATED ON 1/S4.01.

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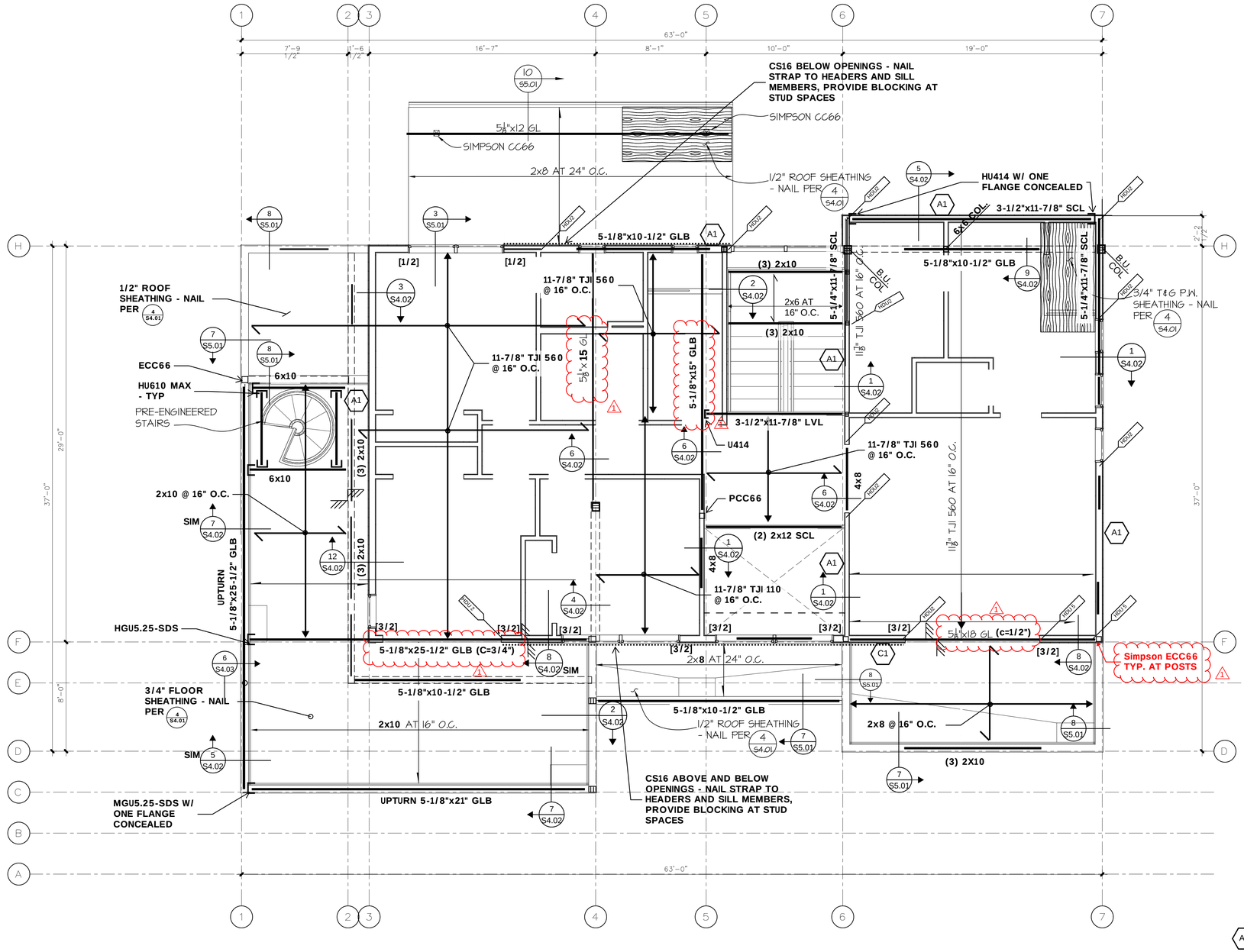
SHEET NO:
S2.02
CONSTRUCTION

PLOT DATE: 11/12/2020 3:39:09 PM



UPPER FLOOR FRAMING PLAN

PLAN

1/4"=1'-0"

FRAMING NOTES:

A1 1. INDICATES WOOD STUD WALL, SEE 1/S4.01.

2. FOR TYPICAL FOUNDATION DETAILS SEE SHEET S3.01.

HDU2 3. INDICATES A HOLDOWN SEE DETAIL 5/S3.01.

BU COL 4. INDICATES BUILT-UP COLUM, SEE 2/S4.01

5. FOR TYPICAL WALL FRAMING DETAILS, SEE SHEET S4.01 TYPICAL HEADERS NOT SHOWN ARE INDICATED ON 1/S4.01.

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LUKE A. HEATH — STATE OF WASHINGTON — 42292 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

REVISIONS:

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1	5/12/22	Permit comment

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JOB: 246.01

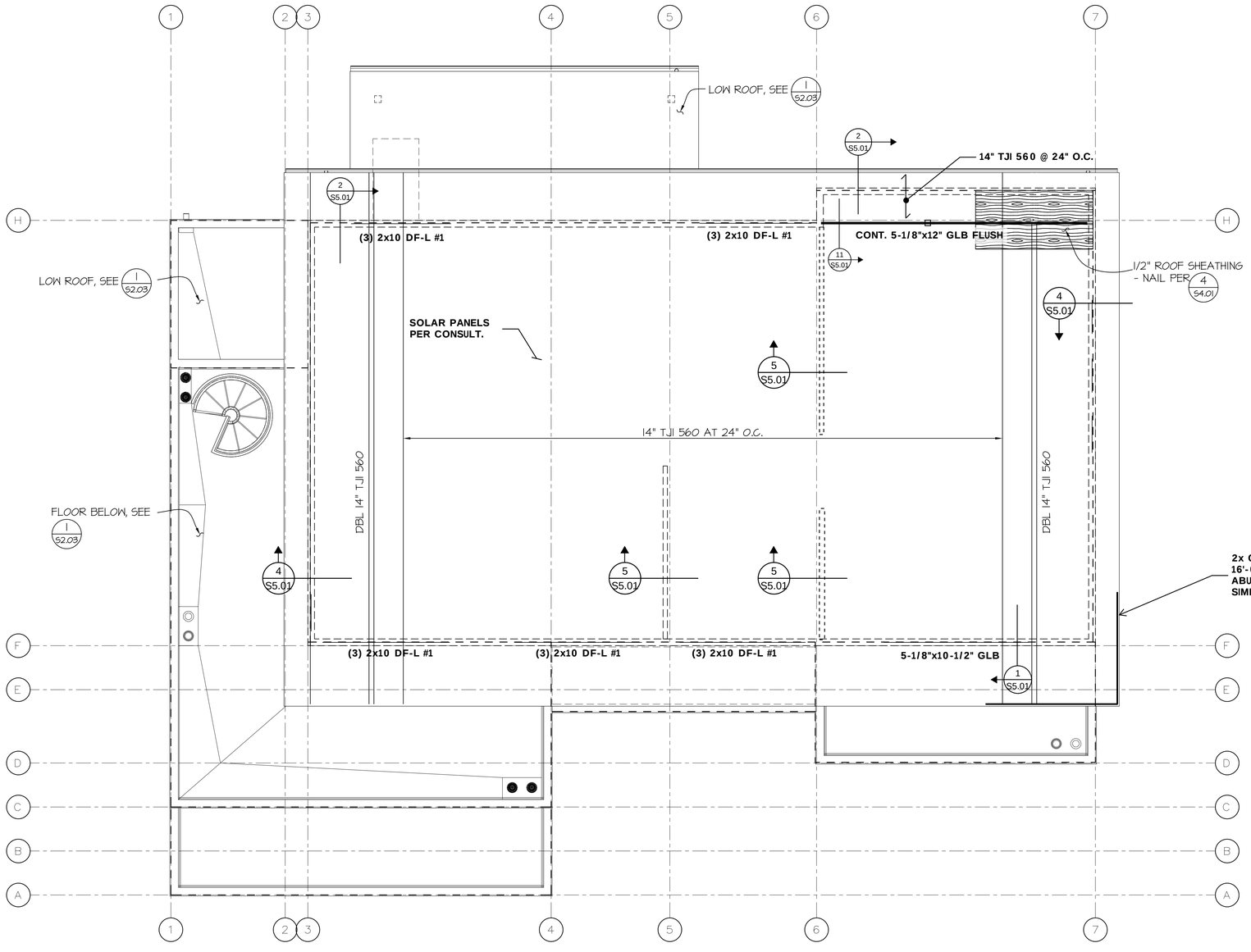
SCALE: 1/8" = 1'-0"

SHEET NO:

S2.03

CONSTRUCTION

PLOT DATE: 11/2/2021 3:39:09 PM



ROOF FRAMING PLAN

PLAN

1/4"=1'-0"

NORTH

1/S2.04

FRAMING NOTES:

1. FOR TYPICAL WALL FRAMING DETAILS, SEE SHEET S4.01 TYPICAL HEADERS NOT SHOWN ARE INDICATED ON 1/S4.01.

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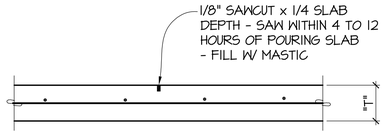
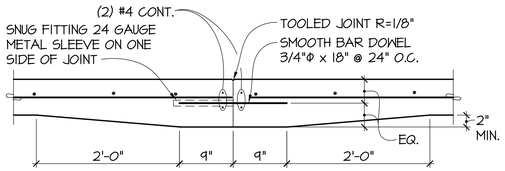
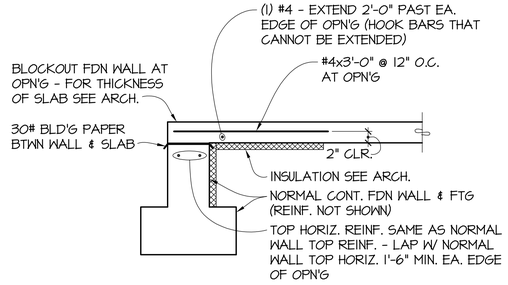


TYPICAL CONTROL JOINT FOR SLAB ON GRADE



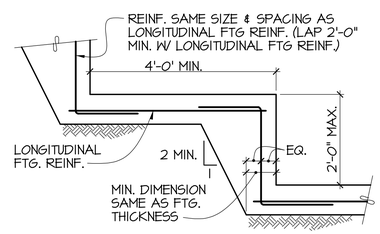
TYPICAL CONSTRUCTION JOINT FOR SLAB ON GRADE

1 S3.01 **SECTION** NO SCALE



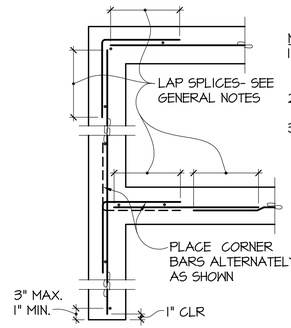
TYPICAL SLAB AT EXTERIOR OPENING

2 S3.01 **SECTION** NO SCALE



TYPICAL STEPPED FOOTING

3 S3.01 **DETAIL** NO SCALE



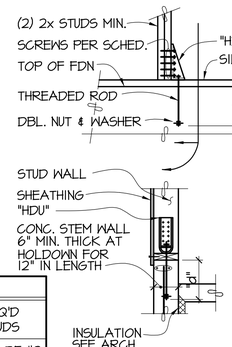
NOTES:
1. VERT. REINF. SHOWN IS ADD'L IF NORMAL STEM WALL REINF. IS NOT IN PROPER LOCATION.
2. CORNER BARS ARE SAME SIZE & SPACING AS HORIZ. REINF.
3. STD HOOK MAY BE SUBSTITUTED FOR CORNER BARS.

TYPICAL REINFORCING PLACEMENT PLAN FOR CONCRETE STEM WALLS

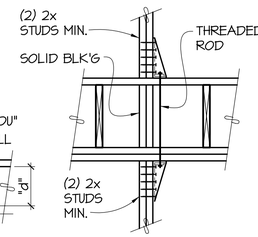
4 S3.01 **SECTION** NO SCALE

NOTES:
1. SEE FDN PLANS FOR HOLDOWN LOCATIONS.
2. ALL HOLDOWNS NOT OCCURRING AT A WALL CORNER SHALL BE LOCATED AT THE EDGE OF A WINDOW OR A DOOR, NAILING & PLACEMENT DETAILS. EDGE NAIL HOLDOWN STUDS.
3. AT CONTRACTOR OPTION PROVIDE STHD14 STRAP IN LIEU OF HDU2.

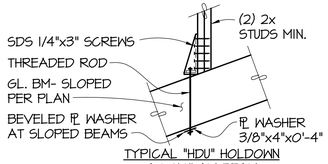
TYP ANCHOR ROD TYPE HOLDOWNS				
SIZE	SDS 1/4"x2½" SCREWS	THREADED ROD Φ	"d"	REQ'D STUDS
HDU2 (3)	(6)	5/8"Φ	1'-3"	(2) 2x DF #2
HDU4	(10)	5/8"Φ	1'-3"	(2) 2x DF #2
HDU5	(14)	5/8"Φ	1'-3"	(2) 2x DF #2
HDU8	(20)	7/8"Φ	1'-3"	(2) 2x DF #2
HDU11	(30)	1"Φ	2'-0"	6X6 DF #1



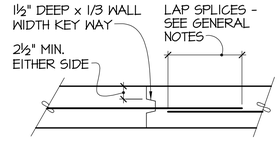
TYPICAL "HDU" HOLDOWNS AT FOUNDATION



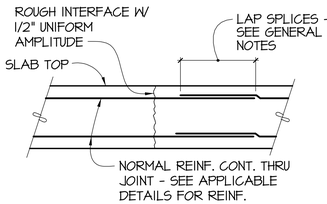
TYPICAL "HDU" HOLDOWN AT FLOOR FRAMING



TYPICAL "HDU" HOLDOWN AT GLULAM BEAM



TYPICAL AT VERTICAL WALL JOINTS

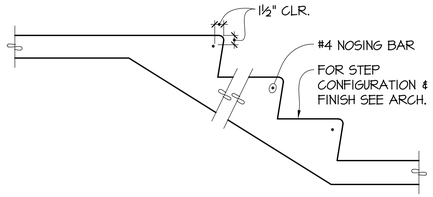


TYPICAL AT CONCRETE BEAMS, & FOOTINGS

NOTE:
OBTAIN APPROVAL OF ENGINEER FOR LOCATION OF ANY CONST. JOINTS.

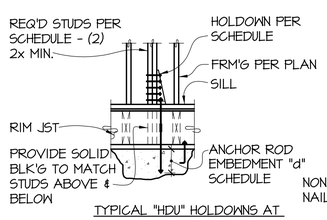
TYPICAL FOR CAST IN PLACE CONCRETE WALLS, BEAMS, AND FOOTINGS

6 S3.01 **CONSTRUCTION JOINTS** NO SCALE

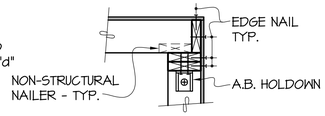


TYPICAL STAIR ON GRADE

7 S3.01 **SECTION** NO SCALE

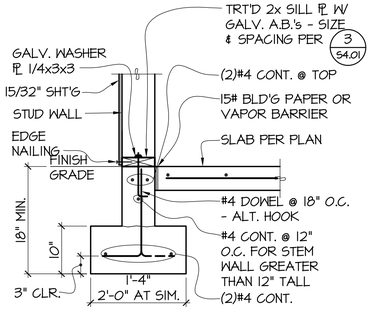


TYPICAL "HDU" HOLDOWNS AT FOUNDATION WITH FLOOR JOISTS



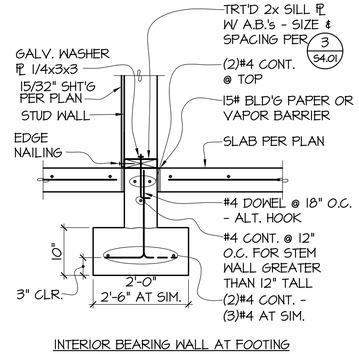
TYP. A.B. HOLDOWN AT CORNER

5 S3.01 **SECTION** NO SCALE



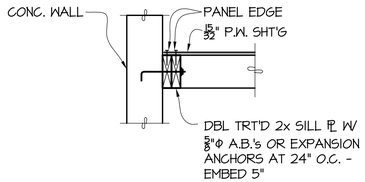
TYP. FDN AT EXTERIOR STUD WALL

8 S3.01 **SECTION** 1"=1'-0"

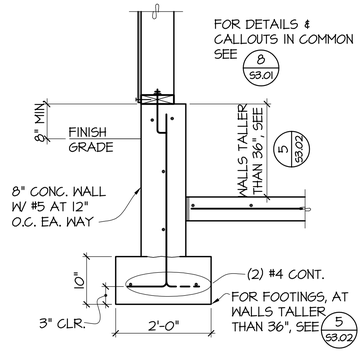


INTERIOR BEARING WALL AT FOOTING

9 S3.01 **SECTION** NO SCALE



10 S3.01 **PLAN** NO SCALE



11 S3.01 **SECTION** 1"=1'-0"

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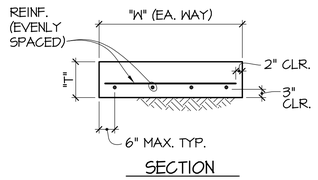
MARK	DIMENSIONS		REINF. EA. WAY
	"W"	"T"	
F2.5	2'-6"	0'-8"	(2) #4
F3.0	3'-0"	10	(3) #4
F4.0	4'-0"	1'-0"	(4) #4
F5.0	5'-0"	1'-0"	(5) #4

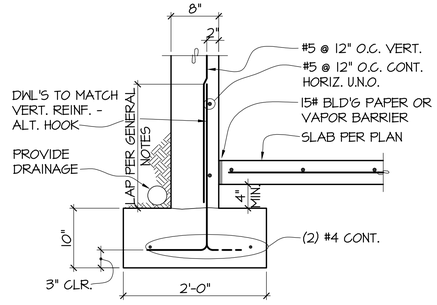


SECTION

NOTES:
1. CENTER ALL FOOTINGS ON COLUMN ABOVE EXCEPT AS SHOWN OTHERWISE.
2. FOOTINGS SHALL BEAR ON UNDISTURBED OR COMPACTED MATERIAL, SEE GENERAL NOTES. DESIGN BEARING PRESSURE IS 1500 PSF.

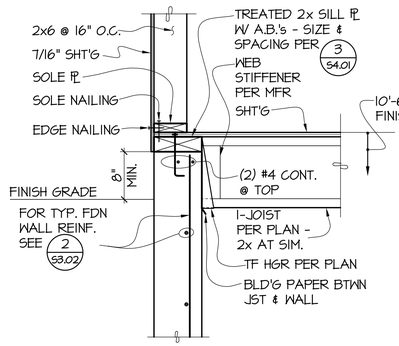
TYPICAL CONCRETE SPREAD FOOTING DETAILS

1 / S3.02 — SECTION — NO SCALE



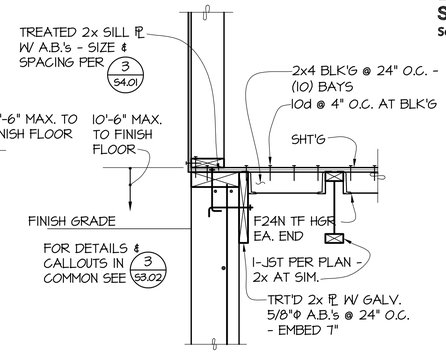
TYP. BASEMENT WALL

2 / S3.02 — SECTION — NO SCALE



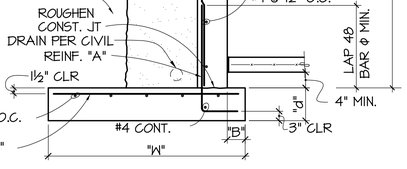
TYPICAL I-JOIST BEARING AT FOUNDATION PLAN

3 / S3.02 — SECTION — NO SCALE



TYPICAL I-JST PARALLEL TO FOUNDATION WALL

4 / S3.02 — SECTION — NO SCALE



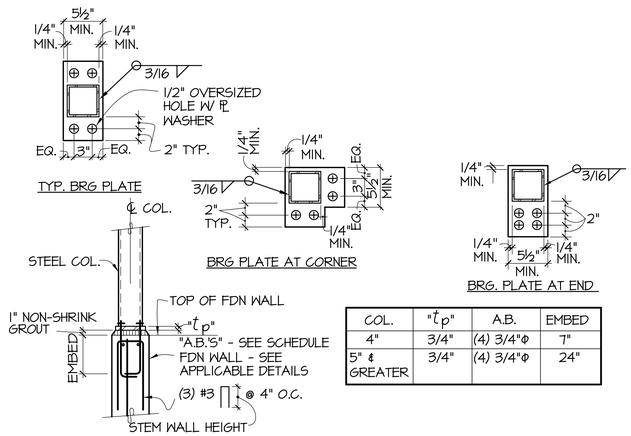
TYPICAL RETAINING WALL

5 / S3.02 — SECTION — NO SCALE

DIMENSIONS & REINF. FOR 8" RETAINING WALL					
DIMENSIONS				REINFORCING	
"d"	"H" MAX.	"W"	"B"	REINF. "A"	REINF. "B"
12"	2'-0"	4'-0"	(3)	#4@12" O.C.	#5@12" O.C.
12"	4'-0"	4'-6"	6"	#4@12" O.C.	#5@12" O.C.
13"	9'-0"	5'-6"	6"	#5@12" O.C.	#5@12" O.C.

NOTES:
1. REFER TO SITE PLAN FOR WALL LOCATIONS AND WALL HEIGHT REQUIREMENTS.
2. FOR CHANGES IN FOOTING ELEVATIONS, REFER TO GRADING PLAN. STEP FOOTINGS PER 3/S3.01.
3. CENTER FOOTING ABOUT STEM WALL.
4. REFER TO ARCHITECTURAL AND CIVIL DRAWINGS.

RETAINING WALL SCHEDULE

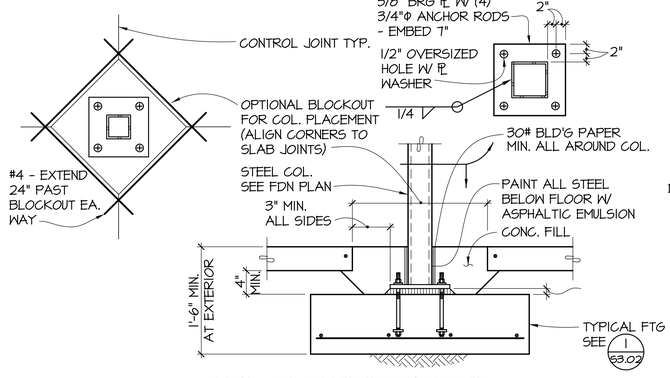


COL.	"tp"	A.B.	EMBED
4"	3/4"	(4) 3/4"Φ	7"
5" & GREATER	3/4"	(4) 3/4"Φ	24"

BRG. PLATE AT END

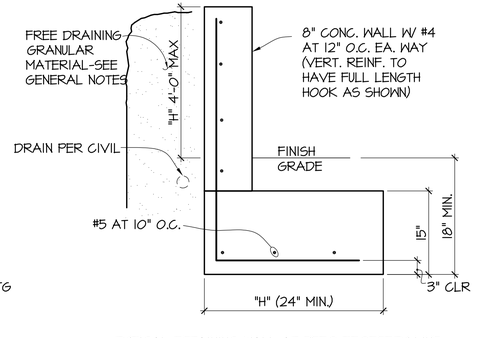
TYPICAL STEEL COLUMN BASE AT CONTINUOUS FOUNDATION WALL OF STEM WALL

6 / S3.02 — SECTION — NO SCALE



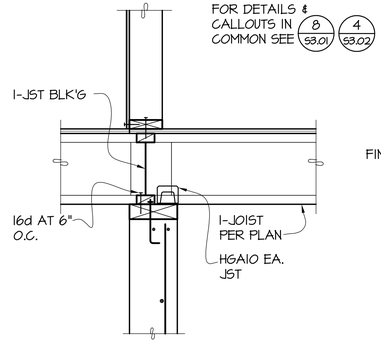
TYPICAL STEEL COLUMN ON SPREAD FOOTING

7 / S3.02 — SECTION — NO SCALE



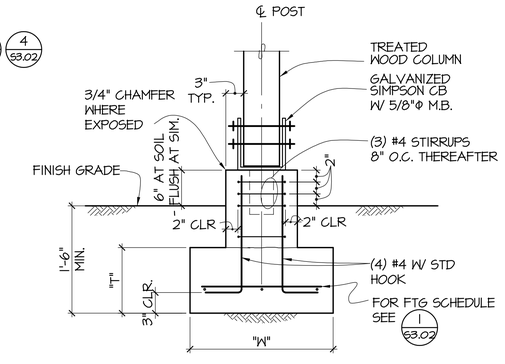
TYPICAL RETAINING WALL AT ZERO PROPERTY LINE

8 / S3.02 — SECTION — NO SCALE



TYPICAL I-JOIST BEARING AT FOUNDATION PLAN

9 / S3.02 — SECTION — NO SCALE



10 / S3.02 — SECTION — NO SCALE

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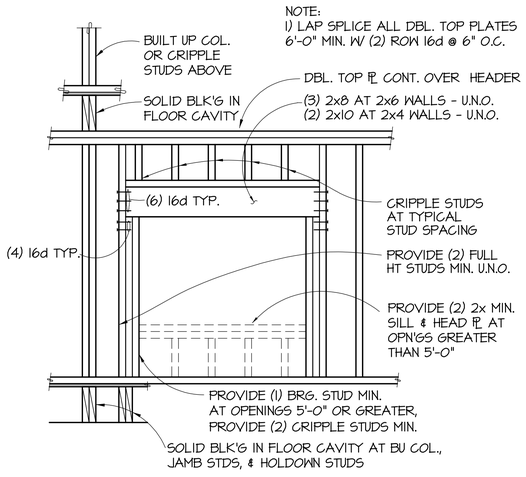
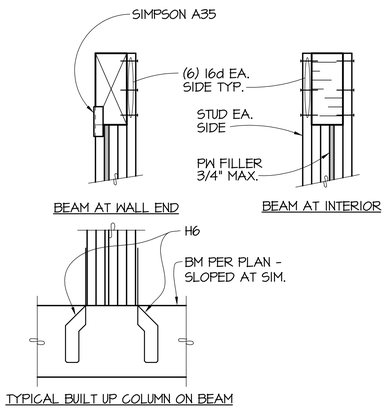


TYPICAL STUD WALL CONSTRUCTION AT HEADER

1 S4.01 **SECTION**

NO SCALE



TYPICAL BUILT UP COLUMN ON BEAM

TYPICAL BUILT-UP COLUMN AT BEAM PERPENDICULAR TO WALL

2 S4.01 **SECTION**

NO SCALE

STUD WALL CONSTRUCTION SCHEDULE

SHEAR WALL REQUIREMENTS					SPECIAL STUD SPACING REQUIREMENTS		
MARK	SHEATHING REQUIREMENTS	(2) EDGE NAILING	FIELD NAILING	3/4" ANCHOR BOLT SPACING	MARK	STUD SIZE & SPACING	# STUDS REQ'D AT JST BRG
⟨A⟩	15/32" SHT'G - ONE SIDE	10d @ 6" O.C.	10d @ 12" O.C.	48" O.C.	⟨1⟩	2x6 @ 16" O.C.	(1) 2x6
⟨B⟩(1)	15/32" SHT'G - ONE SIDE	10d @ 4" O.C.	10d @ 12" O.C.	48" O.C.	⟨2⟩	2x4 @ 16" O.C.	(1) 2x4
⟨C⟩(1)	15/32" SHT'G - TWO SIDES	10d @ 4" O.C.	10d @ 12" O.C.	32" O.C.	⟨3⟩	2x6 @ 12" O.C.	(1) 2x6
⟨D⟩(1)	15/32" SHT'G - TWO SIDES	10d @ 3" O.C.	10d @ 12" O.C.	16" O.C.	⟨4⟩	2x8 @ 16" O.C.	(1) 2x8

NOTES:

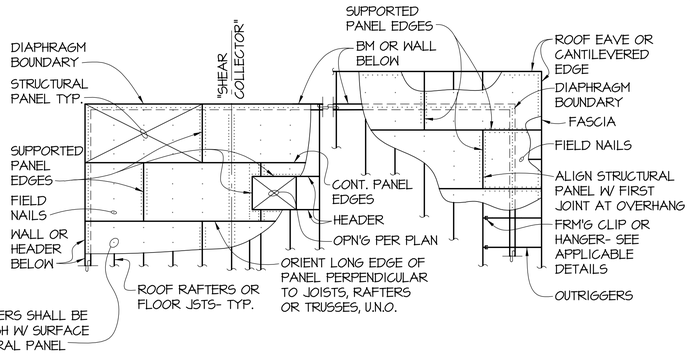
1. ⟨ ⟩ INDICATES SPECIAL STRUCTURAL WALL TYPE. ALL WALLS SHOWN ON STRUCTURAL DRAWINGS ARE 2x6 AT 16" O.C. AT EXTERIOR WALLS & 2x4 AT 16" O.C. AT INTERIOR WALLS UNLESS DESIGNATED SPECIAL. STUD LAYOUT SHALL MATCH FRAMING MEMBER LAYOUT ABOVE WHERE APPLICABLE. ALL EXTERIOR WALLS SHALL HAVE 15/32" WOOD SHEATHING AND BE NAILED WITH 10d AT 6" O.C. AT EDGES AND 12" O.C. IN FIELD UNLESS DESIGNATED SPECIAL.
2. ALL EXTERIOR WALLS AND ALL DESIGNATED SHEAR WALLS SHALL BE BLOCKED AT ALL SHEATHING EDGES. EDGE NAILING APPLIES TO ALL TOP AND BOTTOM PLATES, VERTICAL JOINTS, HORIZONTAL BLOCKED JOINTS, WALL CORNERS, AND HOLDOWN ANCHORED STUDS.
3. FOR BEAMS OR HEADERS FRAMED INTO WALLS AND A COLUMN IS NOT CALLED OUT, PROVIDE BUILT-UP COLUMN PER 2/S4.01 FOR BEAM PERPENDICULAR TO WALL.
4. ALL ANCHOR BOLTS SHALL HAVE A GALVANIZED 3"x3"x1/4" PL WASHER. A BOLT SHALL BE LOCATED NO MORE THAN 12" NOR LESS THAN 6" FROM ENDS OF EACH PLATE. EMBED ANCHOR BOLTS 7" MIN. A SAME DIAMETER EPOXY ANCHOR MAY BE USED IN LIEU OF A.B. W/ SAME EMBED.
5. PROVIDE ADDITIONAL BLOCKING IN JOIST SPACE TO MATCH BEARING STUDS WHERE NOT ALIGNED WITH FLOOR FRAMING.
6. SOLE PLATE NAILING SHALL BE 16d AT PANEL EDGE NAILING SPACING.
7. PROVIDE 3x TREATED SILL PLATE AT FOUNDATION WITH (2) 2x STUDS FACE NAILED WITH 16d AT PANEL EDGE NAILING SPACING OR A 3x STUD AT ABUTTING PANEL EDGES. PROVIDE 3x HORIZONTAL BLOCKING AT ABUTTING PANEL EDGES.

3 S4.01 **SCHEDULE**

NO SCALE

NOTES:

1. "COLLECTOR" CONSTITUTES AS THE BOUNDARY OF 2 DIAPHRAGMS, PROVIDE (2) ROWS OF DIAPHRAGM BOUNDARY NAILING.
2. AT BLOCKED DIAPHRAGM, PROVIDE AT UNSUPPORTED PANEL EDGES, 2x4 FLATWISE BLK'G FOR 6" O.C. OR 4" O.C. SUPPORTED PANEL EDGE NAILING. ELSE PROVIDE 2x4 LSL FLATWISE. PROVIDE SIMPSON Z2 CLIPS FOR ALL FLATWISE BLK'G.



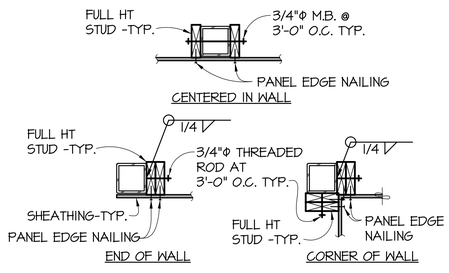
TYPICAL DIAPHRAGM NAILING

DIAPHRAGM NAILING SCHEDULE

DIAPHRAGM TYPE	LOCATION	NAILS	SPACING
FLOOR DIAPHRAGM 3/4" T&G BLOCKED	DIAPHRAGM BOUNDARY	10d	6" O.C.
	FIELD NAILS	10d	10" O.C.
	SUPPORTED PANEL EDGES	10d	6" O.C.
ROOF DIAPHRAGM 1/2" PW. UNBLOCKED	DIAPHRAGM BOUNDARY	8d	6" O.C.
	FIELD NAILS	8d	10" O.C.
	SUPPORTED PANEL EDGES	8d	6" O.C.

4 S4.01 **SCHEDULE**

NO SCALE



TYPICAL STEEL COLUMN IN SHEAR WALL

5 S4.01 **DETAIL**

NO SCALE

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REVISIONS:

NO.	DATE	DESCR.

DRAWN:

ISSUED:

K2526

2526 70TH Ave SE, Mercer Island, 98040

JOB: 246.01

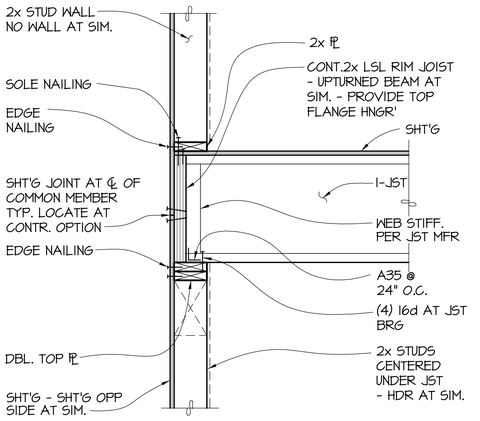
SCALE: 1/8" = 1'-0"

SHEET NO:

S4.01

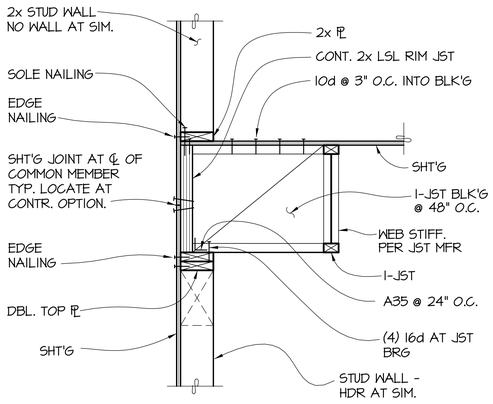
CONSTRUCTION

PLOT DATE: 11/12/2021 3:39:39 PM



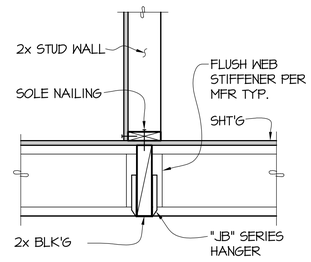
TYPICAL I-JOIST BEARING AT STUD WALL

1 / S4.02 **SECTION** 1"=1'-0"



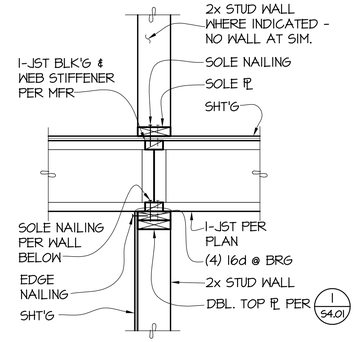
TYPICAL I-JOIST PARALLEL TO STUD WALL

2 / S4.02 **SECTION** 1"=1'-0"



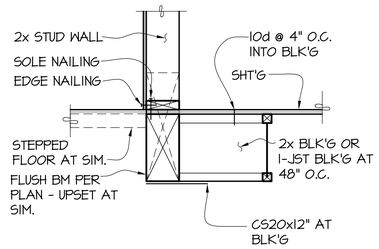
TYPICAL STUD WALL BEARING ON I-JOIST FRAMING

3 / S4.02 **SECTION** NO SCALE



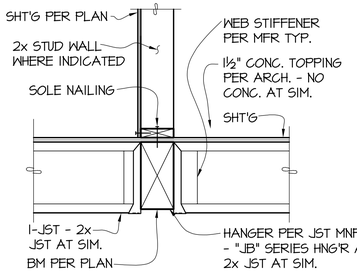
I-JOIST BEARING AT STUD WALL

4 / S4.02 **SECTION** NO SCALE



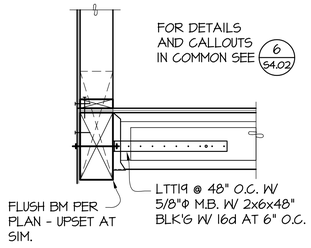
TYPICAL I-JOIST PARALLEL AT FLUSH BEAM

5 / S4.02 **SECTION** NO SCALE



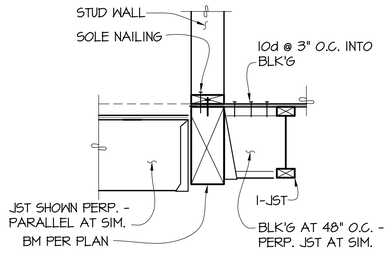
FLUSH BEAM WITH JOIST CONNECTION

6 / S4.02 **SECTION** NO SCALE



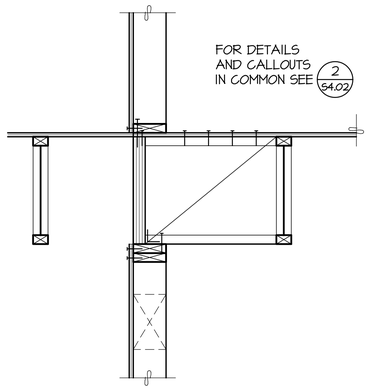
TYPICAL FLUSH BEAM WITH JOIST ONE SIDE

7 / S4.02 **SECTION** NO SCALE

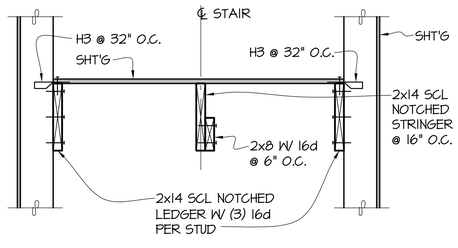


FLOOR AT STEPPED FLOOR

8 / S4.02 **SECTION** NO SCALE

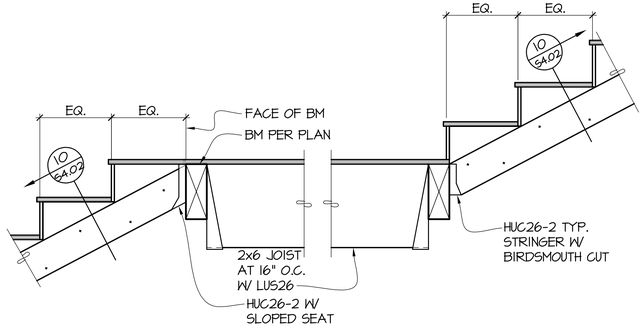


9 / S4.02 **SECTION** 1"=1'-0"



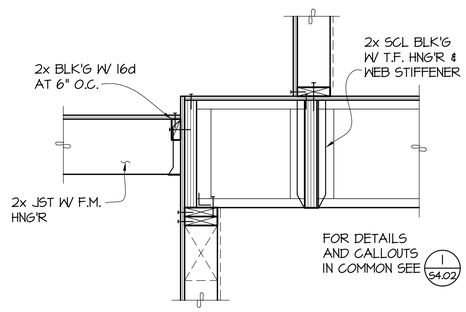
TYPICAL STAIR STRINGERS

10 / S4.02 **SECTION** 1"=1'-0"



TYPICAL STRINGER CONNECTION TO FLOOR/ LANDING

11 / S4.02 **SECTION** 1"=1'-0"



12 / S4.02 **SECTION** 1"=1'-0"

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2526 70TH Ave SE, Mercer Island, 98040

JOB: 246.01
SCALE: 1/8" = 1'-0"
SHEET NO:

S4.02

CONSTRUCTION

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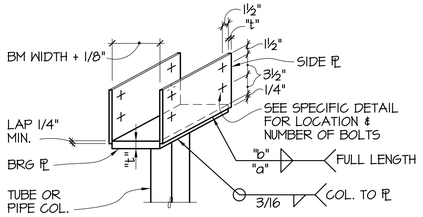
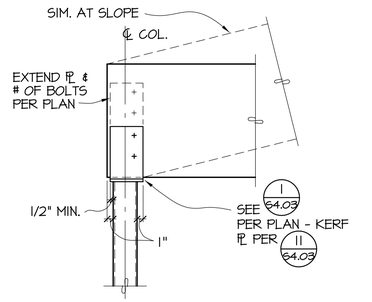


GL. BM WIDTH	BRG PL "t"	SIDE PL "t"	WELD "a"	WELD "b"	MIN. BOLT SIZE
5⅛, 5.25	5/8"	3/16"	3/16"	——	3/4"
6¾, 7	3/4"	1/4"	1/4"	1/8"	3/4"
8¾	3/4"	1/4"	1/4"	3/16"	3/4"

TYPICAL GLULAM BEAM BEARING CONNECTION ASSEMBLY

DETAIL 1 / S4.03

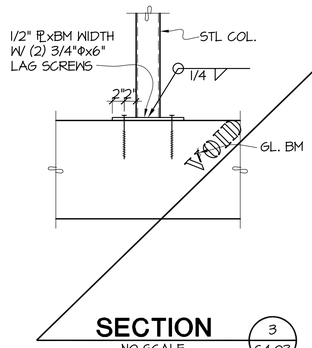
NO SCALE



TYPICAL SINGLE BEAM TO COLUMN CONNECTION

SECTION 2 / S4.03

NO SCALE



SECTION 3 / S4.03

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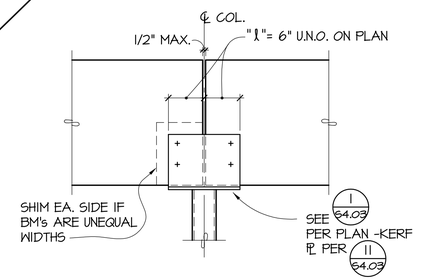
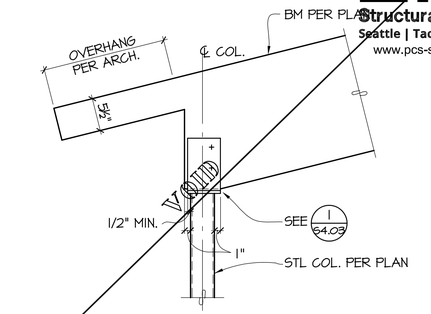


TYPICAL BEAM TO COLUMN CONNECTION W/ BEAM DEPTHS EQUAL

SECTION 4 / S4.03

NO SCALE



TYPICAL SINGLE BEAM TO COLUMN CONNECTION

SECTION 5 / S4.03

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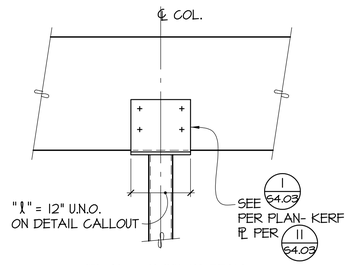
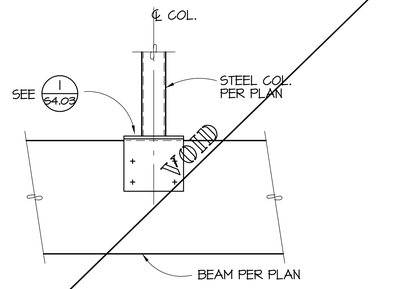


TYPICAL CONTINUOUS BEAM OVER COLUMN CONNECTION

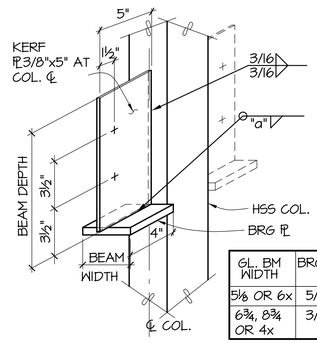
SECTION 6 / S4.03

NO SCALE



SECTION 7 / S4.03

NO SCALE



NOTE:

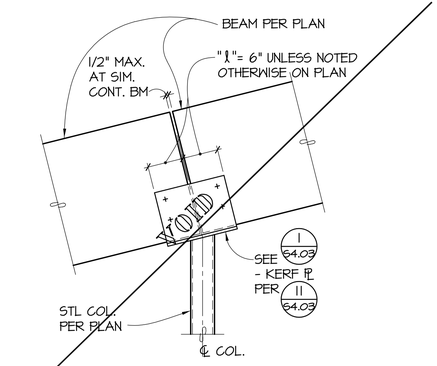
- ✳ AT TOP OF COLUMN - PROVIDE 3/8" END PL W/ PERIMETER WELD- UNLESS NOTED OTHERWISE
- ✳ RECESS BOLT HEADS & NUTS AS REQ'D FOR FINISHES
- ✳ DAP GLULAM FOR FLUSH BRG PL AT EXPOSED CONDITION

GL. BM WIDTH	BRG PL	KERF PL	WELD "a"	MIN. BOLT SIZE
5⅛ OR 6x	5/8"	3/8"	3/16"	3/4"
6¾, 8¾ OR 4x	3/4"	3/8"	1/4"	3/4"

TYPICAL GLULAM BEAM BEARING CONNECTION ASSEMBLY

DETAIL 8 / S4.03

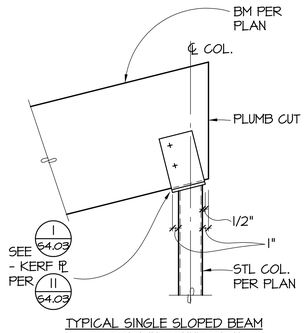
NO SCALE



TYPICAL BEAM TO COLUMN CONNECTION W/ BEAM DEPTHS EQUAL

SECTION 9 / S4.03

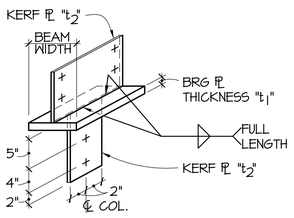
NO SCALE

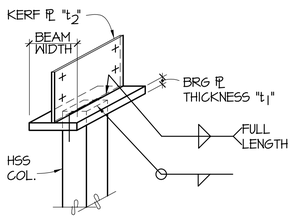


TYPICAL SINGLE SLOPED BEAM TO COLUMN CONNECTION

SECTION 10 / S4.03

NO SCALE





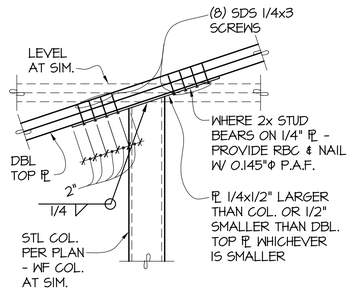
GL. BM WIDTH	BRG PL "t1"	KERF PL "t2"	WELD	MIN. BOLT SIZE
5⅛	5/8"	3/8"	3/16"	3/4"
6¾	3/4"	3/8"	1/4"	3/4"

NOTE:
DAP GLULAM FOR FLUSH BRG PL AT EXPOSED CONDITION

TYPICAL GLULAM BEAM BEARING KERF CONNECTION ASSEMBLY

DETAIL 11 / S4.03

NO SCALE



TYPICAL CONNECTION AT TOP OF COLUMN

SECTION 12 / S4.03

NO SCALE

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CONSTRUCTION

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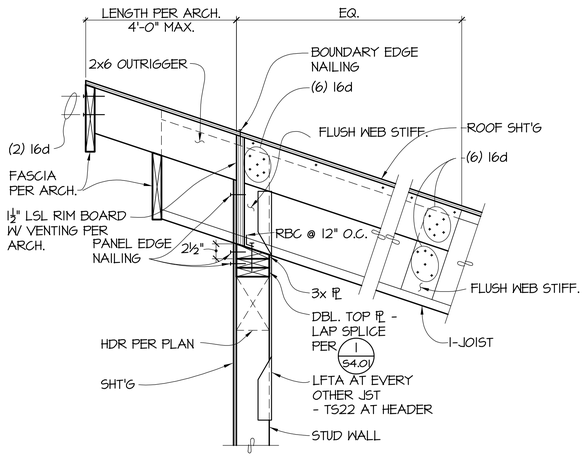
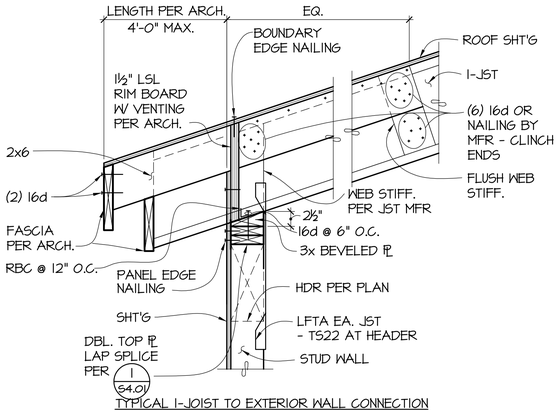


1/S5.01 **SECTION**
1"=1'-0"



TYPICAL I-JOIST TO EXTERIOR WALL CONNECTION

2/S5.01 **SECTION**
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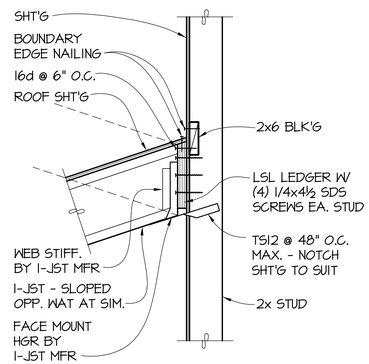

3/S5.01 **SECTION**
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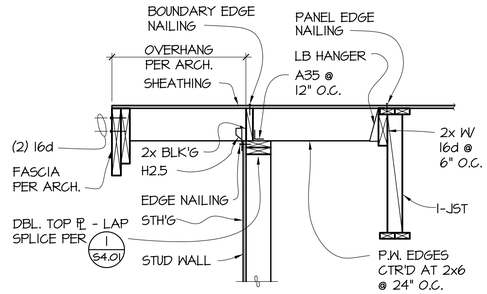
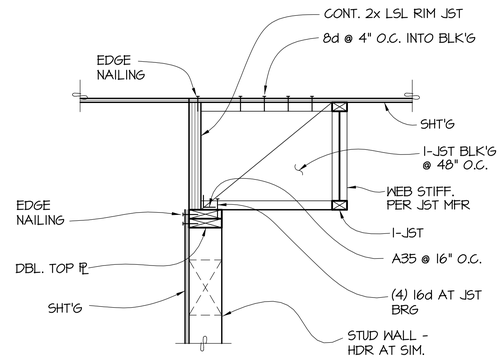


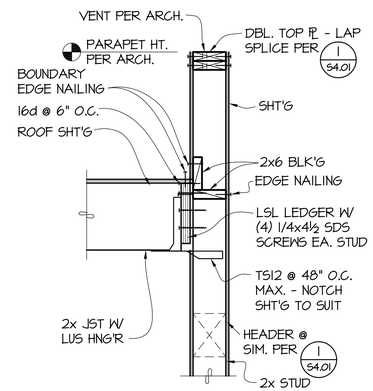
TYPICAL AT I-JOIST PARALLEL TO EXTERIOR WALL

4/S5.01 **SECTION**
NO SCALE



TYPICAL I-JOIST PARALLEL TO STUD WALL

5/S5.01 **SECTION**
1"=1'-0"



7/S5.01 **SECTION**
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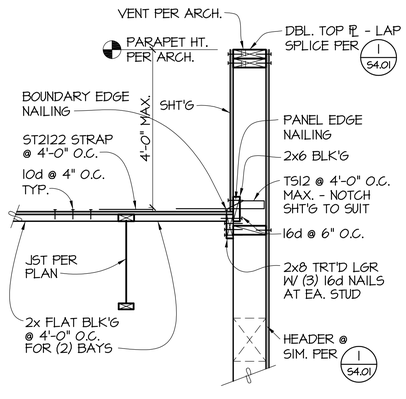
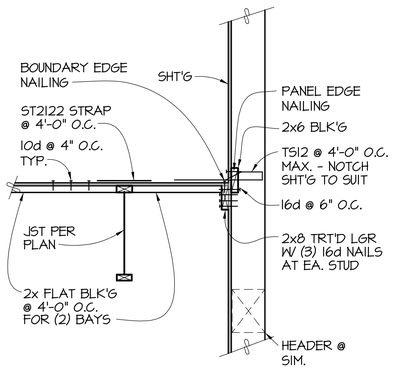


TYPICAL AT JOIST PARALLEL TO PARAPET WALL

8/S5.01 **SECTION**
NO SCALE



9/S5.01 **SECTION**
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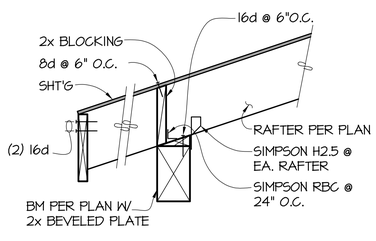

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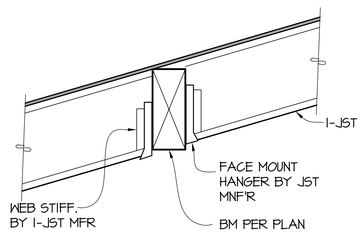

11/S5.01 **SECTION**
NO SCALE

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REVISIONS:

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JOB: 246.01
SCALE: 1/8" = 1'-0"
SHEET NO:

S5.01

CONSTRUCTION

PLOT DATE: 1/12/2023 3:39:39 PM

TREE TABLE - CREATIVE LANDSCAPE SOLUTIONS

1	2	3	4	5	6	7		8	9	10			11				12				
										Proposed Action			CRZ/TPZ/LOD								
										Ret.	Remove		Radius in feet								
#	Tree Tag #	Species ID	DBH (in)	Adj. DBH (in)	Drip-line radius (ft)	Wind-firm	OK In Grove	Health	Defects/Comments	Viable	Non-viable	Remove for construction	N	W	E	S	Exceptional tree DBH > 24"	Value	Healthy Trees	Retained trees	**Replacement**
1	248	Dog-wood	10,6	12	10			OK	Co-dominant leader with included bark X 2@3', exposed roots, moss and lichen			1	10	10	10	10	N	1	1		2
2	250	Spruce	10	10	8			OK	Exposed roots, self-corrected lean west, suppressed canopy	1			8	8	8	8	N	1	1	1	
3	251	Spruce	12	12	8			OK	Co-dominant leader with included bark X 2@6', typical of species, exposed roots	1			8	8	8	8	N	1	1	1	
4	252	Apple	10, 12	15	10			OK	Co-dominant leader with included bark X 2 @ 3', galls, poor pruning with decay, moss and lichen, typical of species			1	10	10	10	10	N	1	1		2
										2	0	2						4	4	2	4

EROSION CONTROL LEGEND

LIMITS OF DISTURBANCE		
FILTER FABRIC FENCE (SILT FENCE)	SF	
STABILIZED CONSTRUCTION ENTRANCE	CE	CE
CATCH BASIN INLET PROTECTION	IP	
INTERCEPTOR SWALE SEE COR DWG 504, TYPE A TEMPORARY SWALE	IS	
TREE PROTECTION FENCING	TP	
CHECK DAM	CD	
STRAW WATTLES	SW	USE AS NEEDED

LEGAL DESCRIPTION

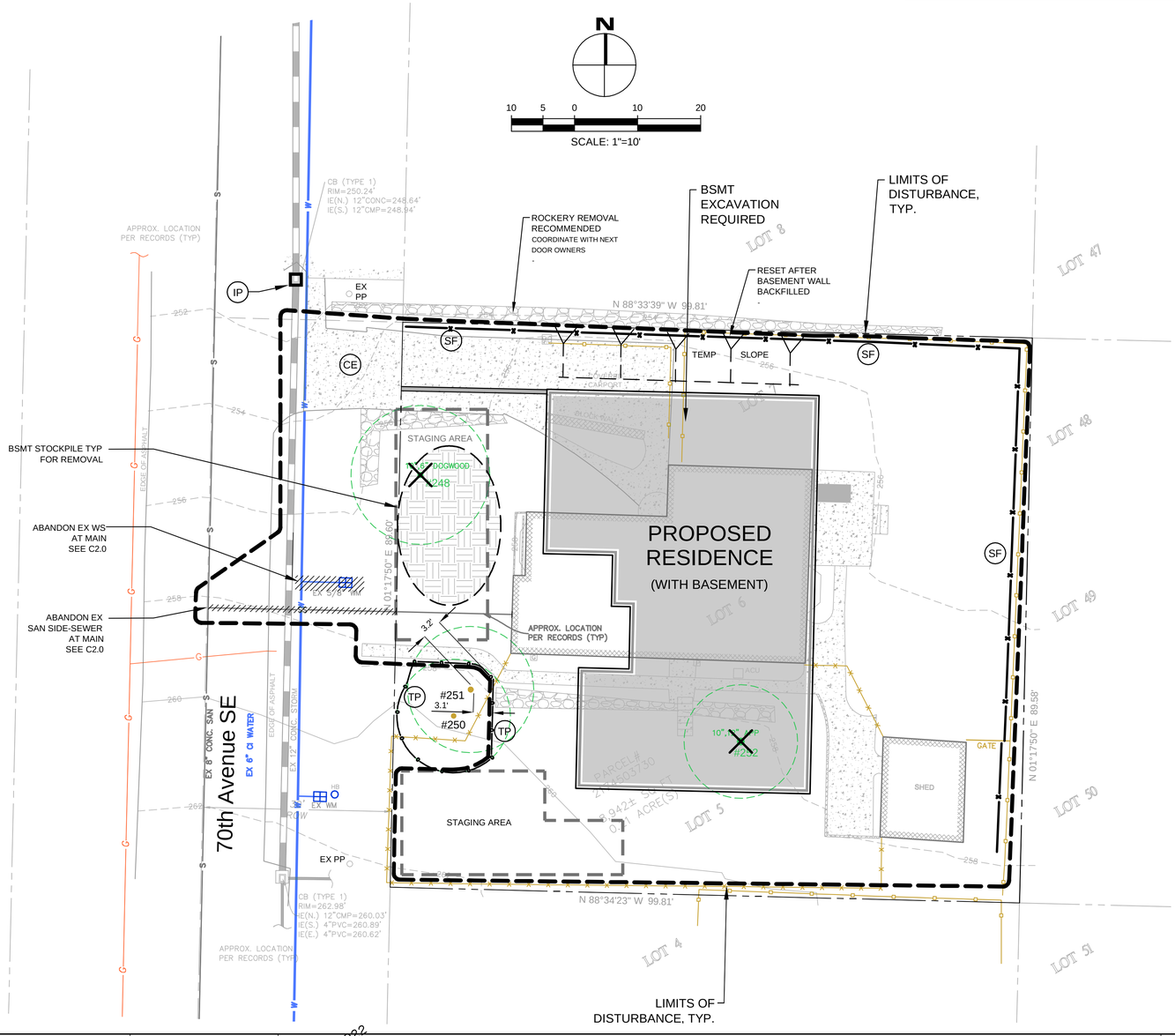
(PER STATUTORY WARRANTY DEED RECORDING # 8704170830)

LOTS 5, 6, AND 7, BLOCK 23, EAST SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 3 OF PLATS, PAGE 22, IN KING COUNTY, WASHINGTON.

SOIL AMENDMENT REQUIRED

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

MINIMUM 10% ORGANIC MATTER - COMPOST SOIL REQUIRED



NO.	DATE	BY	REVISIONS

APPLICANT
JEFF KAPSNER
KAPSNER HOMES LLC
9301 SE 43rd STREET
MERCER ISLAND, WA 98040

DATE: Aug 09, 2022
JOB# 2013
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

Aug 09, 2022
JEFFREY E. DUFFY
STATE OF WASHINGTON
20788
REGISTERED
PROFESSIONAL ENGINEER

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

TESC PLAN
TREE RETENTION PLAN

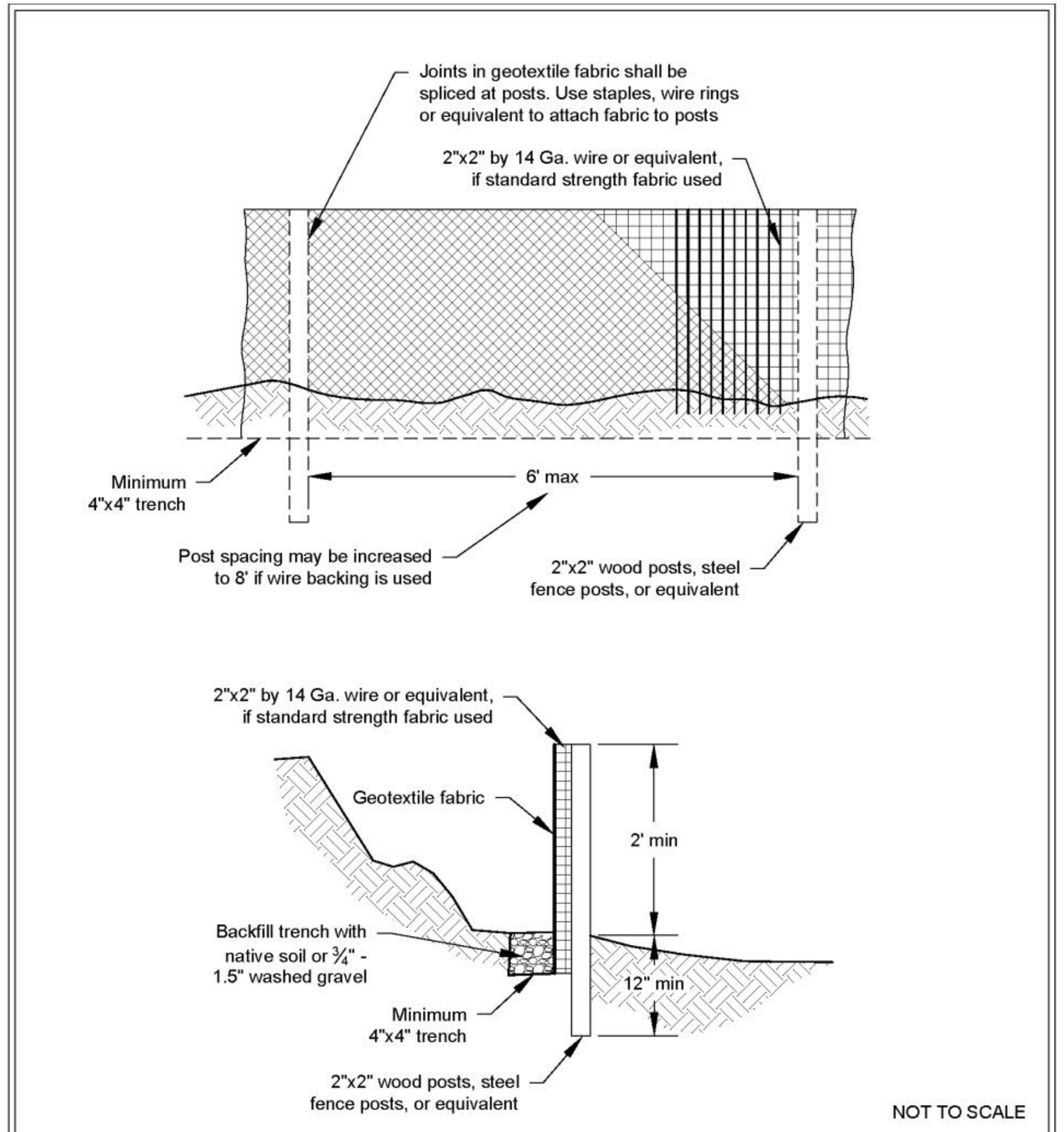
PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO:
C1.0

APN 217450-3730

SILT FENCE DETAIL DOE

Figure II-3.22: Silt Fence



DEPARTMENT OF ECOLOGY State of Washington

Silt Fence

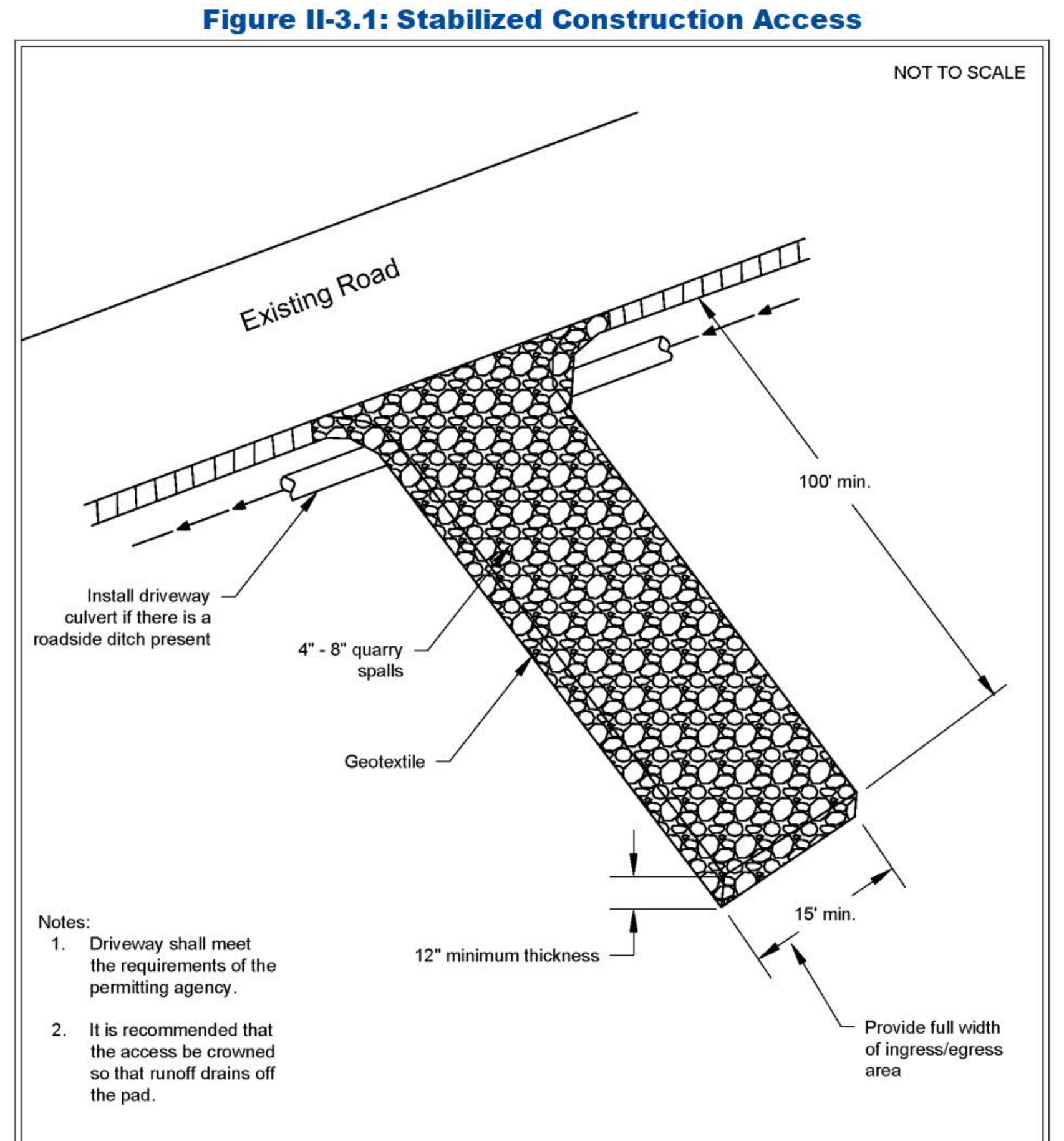
Revised July 2017

2019 Stormwater Management Manual for Western Washington

Volume II - Chapter 3 - Page 371

CONSTRUCTION ENTRANCE DOE

Figure II-3.1: Stabilized Construction Access



DEPARTMENT OF ECOLOGY State of Washington

Stabilized Construction Access

Revised June 2018

2019 Stormwater Management Manual for Western Washington

Volume II - Chapter 3 - Page 279

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. SILT 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.

20. 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.

21. NEWLY INSTALLED SIDE SEWER REQUIRES A 4 P.S.I. AIR TEST OR PROVIDE 10' OF HYDROSTATIC HEAD TEST.

22. 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.

23. 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
JEFF KAPSNER
KAPSNER HOMES LLC
9301 SE 43rd STREET
MERCER ISLAND, WA 98040

DATE: Jun 28, 2022
JOB# 2013
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

Jun 28, 2022
JEFFREY E. ... STATE OF WASHINGTON ... REGISTERED PROFESSIONAL ENGINEER

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

TESC & CITY NOTES
TESC DETAILS
PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO:
C1.2

APN 217450-3730

SANITARY SEWER IMPROVEMENTS

(1) -6" PVC SIDE SEWER PER MERCER ISLAND STANDARD DETAIL S-17

(2) -6" SDR 35 PVC SANITARY SEWER(SS) @ MIN 1.2 %.

(3) -

(4) -

(7) -

WATER IMPROVEMENTS

(10) -INSTALL 1" WATER METER WITH 1" TYPE "K" SOFT COPPER TUBING PER MERCER ISLAND DETAIL W-13

(11) -1.5" 250 PSI PRIVATE HDPE WATER (ASTM D2239) FROM METER TO HOUSE. RECOMMENDED DEPTH=36". COORDINATE HOUSE ENTRY WITH BUILDER/OWNER.

(12) -

(14) -

STORM DRAIN

(20) -4" STORM DRAIN (3034 PVC) @ MIN 2 % GRADE

(21) -4" FOUNDATION DRAIN (3034 PVC) @ MIN 2 % GRADE

(22) -6" STORM DRAIN (3034 PVC) @ MIN 2 % GRADE

(23) -

(24) -

(25) -

(26) -

(28) -

(29) -

STORM DRAIN STRUCTURES

(30) -

(31) ~~-TYPE 1 CB WITH VANED LID. MAX 5' RIM TO FL DEPTH.~~

(32) -

(33) -

(34) -

(35) -

(36) -6" WIDE NDS DURASLOPE CHANNEL DRAIN KIT OR EQUAL. MINIMUM 6" CHANNEL. CLASS B VEHICLE RATED GRATE.

(37) --STORM CLEANOUTS REQ. AT ALL JUNCTIONS AND BENDS > 45°. THE MAXIMUM SPACING BETWEEN CO's SHALL NOT EXCEED 100-FEET.

(39) -

(40) -TYPE 40 CATCH BASIN OR EQUAL WITH SUMP. INCLUDE SPILL CONTROL TEE ON THE EXITING PIPE (OR DOWNTURNED ELBOW).

(41) -

(43) -

(46) -DUPLEX STORM PUMPS PLACE IN A MINIUMUM 30" DIA PVC RIBBED BASIN (OR EQUAL) WITH RHOMBUS 122 CONTROLLER. BACKUP GAS GENERATOR REQ.. SEE C5.0 FOR PUMP DETAILS. COORDINATE ALL PUMP PACKAGE REQUIRED ITEMS WITH A REPUTABLE PUMP SUPPLIER LIKE FOWLER PUMP IN BELLEVUE.

(47) -

(48) -

STORM BMP's

(50) -COMPOST AMENDED SOIL TO ALL DISTURBED AREAS (SEE DETAIL SHEET C3.5). TILL 2-3" OF COMPOST INTO UPPER 8" OF SOIL. LOOSEN COMPACTED SUBSOIL, IF NEEDED BY RIPPING TO 12" DEPTH. MULCH LANDSCAPE BEDS AFTER PLANTING.

(51) -

(52) -

(53) -

(54) -

(55) -

(56) -

(57) -

(58) -

PERFORATED FOOTING DRAINS

(A) -4" PERFORATED FOOTING DRAIN (3034 PVC) @ MIN 0.5 % GRADE

SOILS

SEE REPORT BY EARTH SOLUTIONS NW
REPORT JUNE 3, 2021
NATIVE SOIL IS GLACIAL TILL
BECOMES DENSE TO VERY DENSE BELOW 3'
SEE "LANDSLIDE HAZARD" SECTION IN REPORT REGARDING MAPPED CRITICAL AREA (LANDSLIDE HAZARD) AS NOT AN ISSUE (SITE DOES NOT MEET DEFINITION).

SURVEYOR

TOPOGRAPHIC SURVEY BY:
TERRANE
10801 MAIN STREET, SUITE #102
BELLEVUE, WA 98004
PHONE 425.458.4488
www.terrane.net

VERTICAL DATUM

NAVD88 PER GPS OBSERVATIONS.
SEE SURVEY

LEGAL DESCRIPTION

SEE C1.0

SOIL AMENDMENT REQUIRED

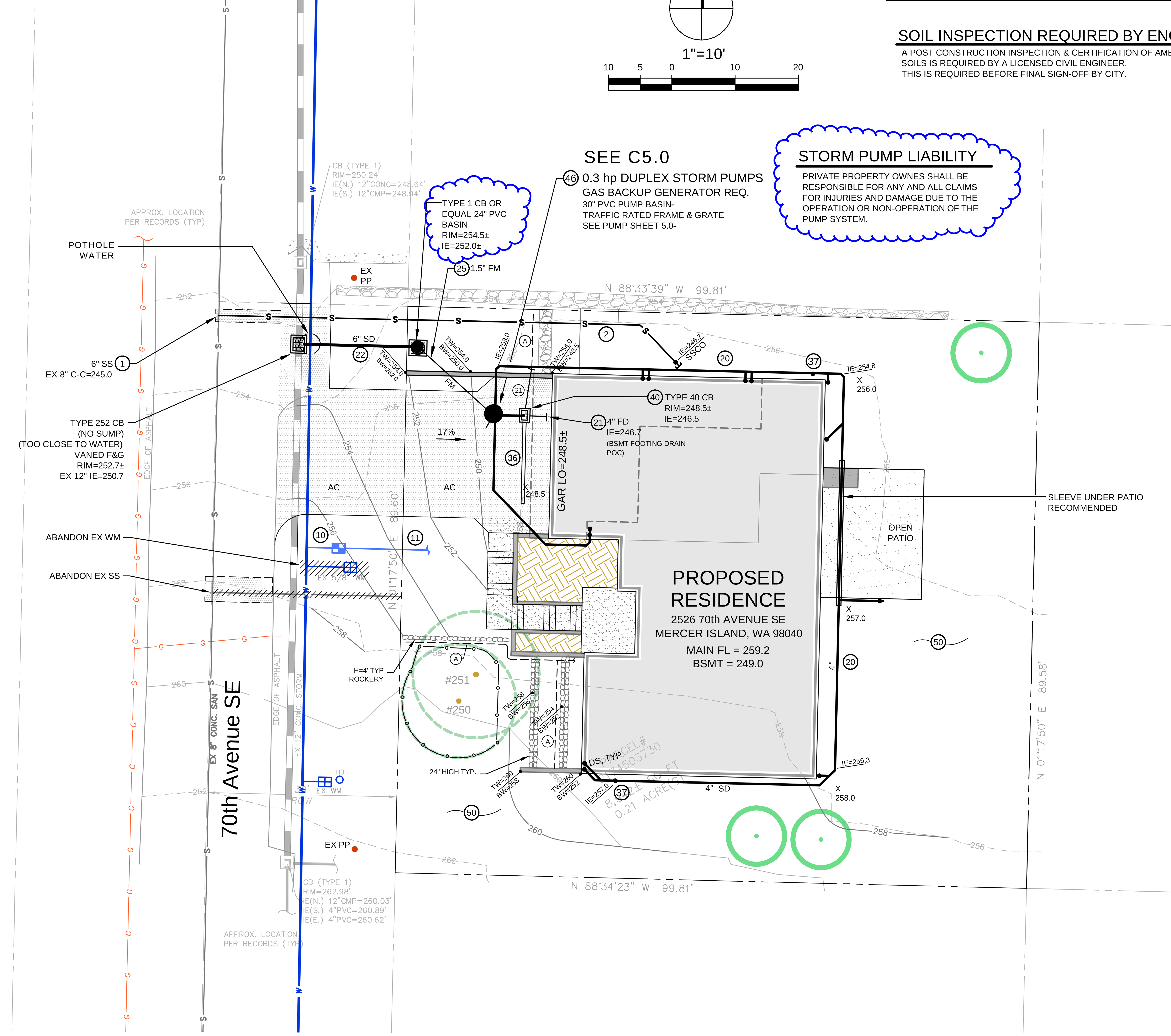
COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL ON C3.5.

ESTIMATED TOPSOIL IMPORT= 35 CY

MINIMUM 10% ORGANICS - COMPOST SOIL REQUIRED

SOIL INSPECTION REQUIRED BY ENGINEER

A POST CONSTRUCTION INSPECTION & CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER.
THIS IS REQUIRED BEFORE FINAL SIGN-OFF BY CITY.



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PHONE: 206.930.0342 DUFFY@CESOLUTIONS.US

DRAINAGE / CIVIL PLAN

PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO: C2.0

APN 217450-3730

TYPE 40 CATCH BASIN

shope Concrete Products

Catch Basin Products

Catch Basin Type 40

Reinforcing

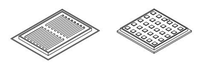
- ASTM A-615 Specifications
- All components
- #3 grade 60 reinforcing bar

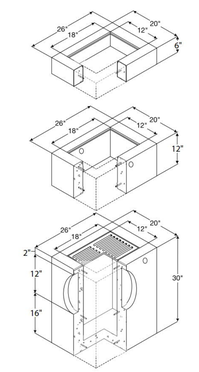
Cast Iron Grate

- 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

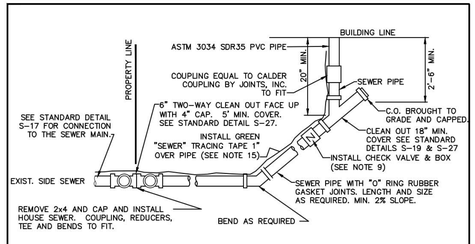




Note: drawings not to scale

shope Concrete Products
Shope Concrete, LLC
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]
www.shopeconcrete.com

HOUSE SIDE SEWER CONNECTION



BUILDING CONNECTION

NOTES

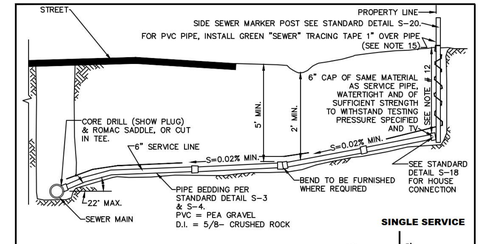
1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWN SPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
4. 18" MINIMUM COVERAGE OVER PIPE.
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH ½ BEND OR WYE. 90° CHANGE WITH 1/8 BEND AND WYE.
6. 4" SEWER PIPE MINIMUM SIZE ON PROPERTY. 2% MINIMUM GRADE.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT SEWER ORDINANCES.
8. ALL CONSTRUCTION REQUIRES A PLAN SHOWING PROPERTY AND DIMENSIONS AND COMPLETION OF SIDE SEWER APPLICATION AND MAINTENANCE AGREEMENT, AS NEEDED.
9. BACK WATER VALVE (CHECK VALVE) IS REQUIRED:
   A. IF CONNECTED TO A SHARED SIDE SEWER.
   B. IF CONNECTION AT HOUSE IS LOWER THAN BOTH UPSTREAM AND DOWNSTREAM MANHOLE.
   C. SEE S-23 & S-24 FOR LAKE LINE REQUIREMENTS.
10. AS-BUILT DRAWING SHOWING LOCATION OF SIDE SEWER & ALL BENDS, C.O. ETC., IN RELATION TO THE HOUSE IS REQUIRED AFTER INSPECTION & INSTALLATION. SEE STANDARD DETAIL S-38 FOR A TYPICAL "AS BUILT".
11. THE MINIMUM PIPE SIZE FOR SIDE SEWERS SHALL BE:
    6" – WITHIN THE PUBLIC RIGHT-OF-WAY.
    4" – SINGLE FAMILY RESIDENCES.
    6" – 2 TO 6 SINGLE FAMILY RESIDENCES.
    6" – BUILDINGS OTHER THAN SINGLE FAMILY RESIDENCES.
12. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.

CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER

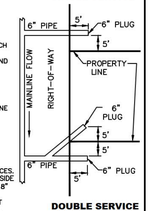
HOUSE SEWER CONNECTION		
6-5-2009	NO SCALE	**S-18**

REV DATE | APPROVED

SAN SIDE SEWER STUB



SINGLE SERVICE



DOUBLE SERVICE

NOTES

1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION AND BE IN ACCORDANCE WITH CITY STANDARDS.
4. ALL TRENCH BACKFILL IN PUBLIC RIGHT-OF-WAY OR ROADWAY AREAS SHALL BE CRUSHED SURFACING PER WSDOT 9-09.9(3) OR BANK RUN GRAVEL PER WSDOT 9-03.19, COMPACTED IN 6" LIFTS OR MAY BE CDF WHEN DIRECTED BY THE CITY ENGINEER (SEE DETAIL S-3).
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH 1/8 BEND OR WYE. 90° CHANGE WITH 1/8 BEND AND WYE.
6. 6" SEWER PIPE MINIMUM SIZE IN RIGHT-OF-WAY, AND ELSEWHERE AS DIRECTED BY ENGINEER. 2% MIN. GRADE (UNLESS DIRECTED BY ENGINEER), 50% MAXIMUM.
7. ALL A.C. MAINS TO BE TAPPED IN ACCORDANCE WITH WAC 296-62-00775 STATE/FEDERAL GUIDELINES AND CERTIFICATION.
8. CONSTRUCTION IN RIGHT-OF-WAY MUST BE DONE BY A REGISTERED AND LICENSED CONTRACTOR.
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CITY SEWER ORDINANCES.
10. WHERE CITY ENGINEER ALLOWS SIDE SEWER CONNECTIONS TO MANHOLE, INVERT OF SIDE SEWER SHALL BE EQUAL TO OR ABOVE MAIN SEWER CROWN, BUT NOT TO EXCEED 18" ABOVE INVERT OF MAIN SEWER.
11. UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MIN. OF 6' DEEP AT PROPERTY LINE, OR 5' LOWER THAN THE LOWEST ELEVATION, WHICH EVER IS LOWER.
12. ALL PIPE MATERIALS NOT TO STANDARDS WILL BE ABANDONED AND REPLACED WITH DUCTILE IRON OR PVC PIPE OF THE SAME SIZE.
13. IF A BUILDING SEWER IS TO SERVE MORE THAN ONE PROPERTY, BY JOINT AGREEMENT OF THE OWNERS, AN APPROVED EASEMENT INSURING THAT ALL PROPERTIES INVOLVED SHALL HAVE PERPETUAL USE OF THE SIDE SEWER, HAVING PROVISIONS FOR OPERATION, MAINTENANCE, RECONSTRUCTION AND FOR ACCESS FOR REPAIR PURPOSES, SHALL BE SIGNED BY THE OWNERS. THIS EASEMENT SHALL BE RECORDED WITH THE COUNTY AUDITOR. A SIX INCH (MINIMUM) DIAMETER PIPE SHALL BE USED FOR THE COMMON LINE AND A SIX INCH CLEANOUT EXTENDING TO WITHIN 12 INCHES OF THE GROUND SURFACE SHALL BE PROVIDED AT THE WYE WHERE THE UPPER GRADE CONNECTIONS ARE MADE. BACKWATER VALVES SHALL BE INSTALLED ON SERVICE LINES UPSTREAM OF THE CONNECTION TO THE SHARED SIDE SEWER.
14. THE CITY ENGINEER MAY REQUIRE BACKWATER VALVES ON SIDE SEWERS WHEN DEEMED NECESSARY. THE EFFECTIVE OPERATION AND MAINTENANCE OF ANY BACKWATER VALVE SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE SIDE SEWER.
15. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.

CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER

SIDE SEWER CONNECTION AND STUB		
6-5-2009	NO SCALE	**S-17**

REV DATE | APPROVED

NO.	DATE	BY	REVISIONS

APPLICANT
JEFF KAPSNER
KAPSNER HOMES LLC
9301 SE 43rd STREET
MERCER ISLAND, WA 98040

DATE: Jun 28, 2022
JOB# 2013
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

Jun 28, 2022
JEFFREY E. KING
STATE OF WASHINGTON
39766
REGISTERED
PROFESSIONAL ENGINEER

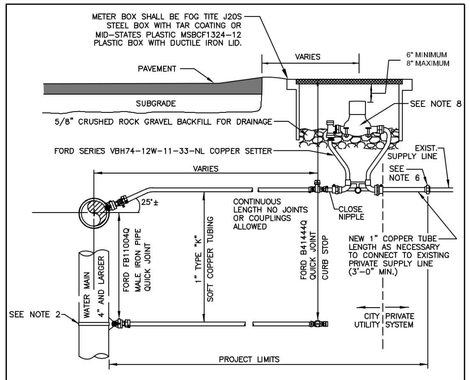
CIVIL ENGINEERING SOLUTIONS
102 NW CANAL STREET
PHONE: 206.930.0342
SEATTLE, WA 98107
DUFFY@CESOLUTIONS.US

STORM DETAILS
SAN DETAILS
PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO:
C3.2

APN 217450-3730

WATER METER INSTALLATION



NOTES

1. WATER SERVICES SHALL COMPLY WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
2. ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL DOUBLE STRAPS, ROMAC 202NS, OR APPROVED EQUAL.
3. MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18". MINIMUM DISTANCE BETWEEN TAPS, BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24", ALL HORIZONALLY STAGGERED.
4. PLASTIC METER BOXES SHALL NOT BE INSTALLED WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS.
5. UPON CITY ENGINEER'S APPROVAL, METER BOXES ARE ALLOWED TO BE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK.
6. WHEN CONNECTING TO EXISTING PRIVATE SUPPLY LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING PRIVATE SUPPLY LINE DIAMETER.
7. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER. PROVIDE WINDING SLACK IN THE SERVICE LINE BETWEEN THE MAIN AND WATER METER.
8. WATER METER SUPPLIED BY CITY.
9. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
10. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.

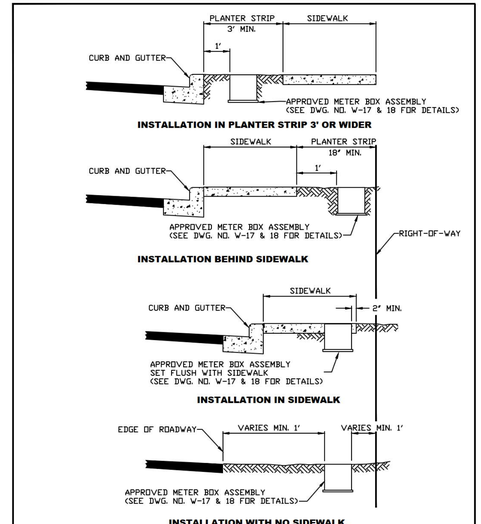
CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

1" WATER METER INSTALLATION

02-05-2021	NO SCALE	W-13

REV DATE						APPROVED

WATER METER PLACEMENT



CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

WATER METER PLACEMENT

3-20-2006	NO SCALE	W-16

REV DATE						APPROVED

NO.	DATE	BY	REVISIONS

APPLICANT
JEFF KAPSNER
KAPSNER HOMES LLC
9301 SE 43rd STREET
MERCER ISLAND, WA 98040

DATE: Jun 28, 2022
JOB# 2013
DRAFTED: SS DESIGN: SS
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Jun 28, 2022
JEFFREY E. KING
STATE OF WASHINGTON
39766
REGISTERED
PROFESSIONAL ENGINEER

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

WATER DETAILS

PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO:
C3.3

APN 217450-3730

MINIMUM 10% ORGANIC - COMPOST SOIL REQUIRED

SOIL AMENDMENT REQUIRED

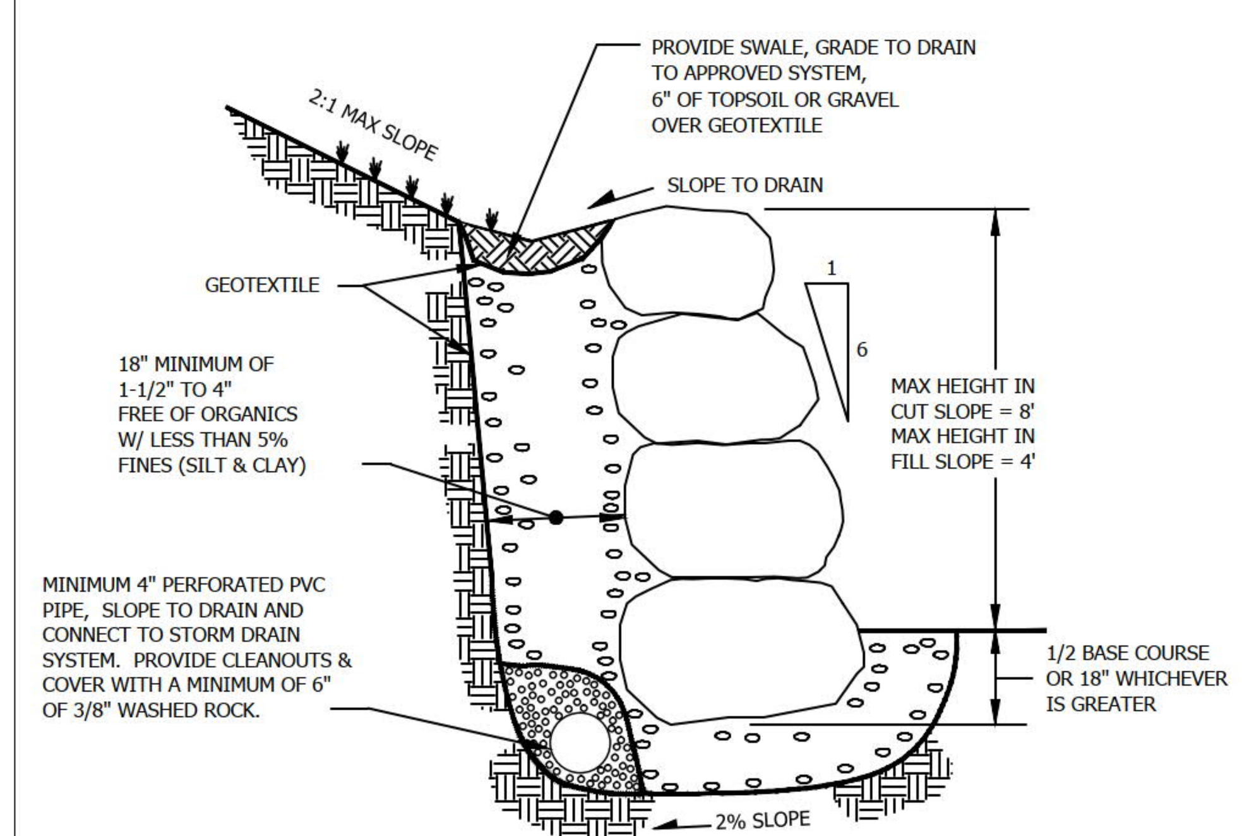
COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL BELOW.

SOIL CERTIFICATIONREQUIRED

A POST CONSTRUCTION INSPECTION & CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER. THIS IS REQUIRED BEFORE FINAL SIGN-OFF BY CITY.

ROCKERY

LAST REVISED: 1/18/18



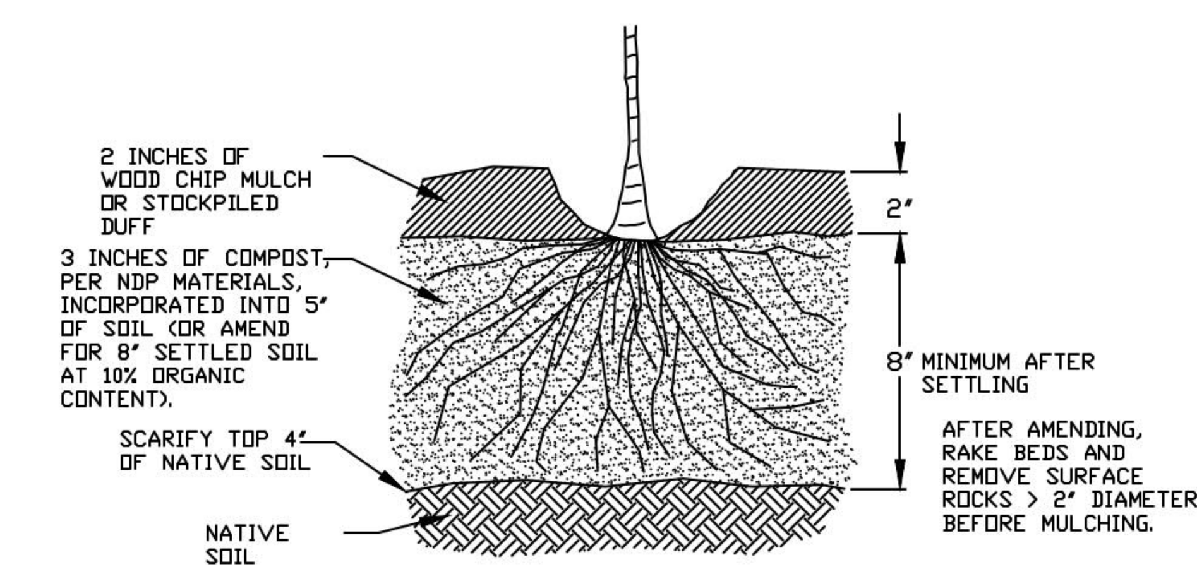
NOTES:

1. CALL FOR CLEAR AND GRADE INSPECTION PRIOR TO BASE COURSE BEING PLACED. VERIFICATION OF ROCKERY HEIGHT, FOUNDATION MATERIAL, AND ROCK SIZE BY CITY CLEAR AND GRADE INSPECTOR IS REQUIRED.
2. 4" TO 6" QUARRY SPALLS SHOULD BE PLACED DIRECTLY FROM TRUCK OR OTHER SUITABLE CONTAINER IN ORDER TO MAINTAIN CLEAN BACKFILL.
3. SPALLS MAY NOT BE NEEDED AT BASE OF ROCKERY IF NATIVE FOUNDATION MATERIAL IS SUITABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR THE CITY CLEARING AND GRADING INSPECTOR.
4. OPENINGS CHINKED WITH QUARRY SPALLS.
5. IF ROCKERY HEIGHT EXCEEDS 4', IT MUST BE DESIGNED BY A PRACTICING GEOTECHNICAL/ CIVIL ENGINEER LICENSED IN THE STATE OF WASHINGTON. NO ROCKERY SHALL BE GREATER THAN 8' IN HEIGHT UNLESS APPROVED BY CITY.
6. A ROCKERY GREATER THAN 4' IN HEIGHT AND ON PRIVATE PROPERTY SHALL REQUIRE A BUILDING PERMIT WITH A THIRD PARTY INSPECTION TO BE CONSTRUCTED.

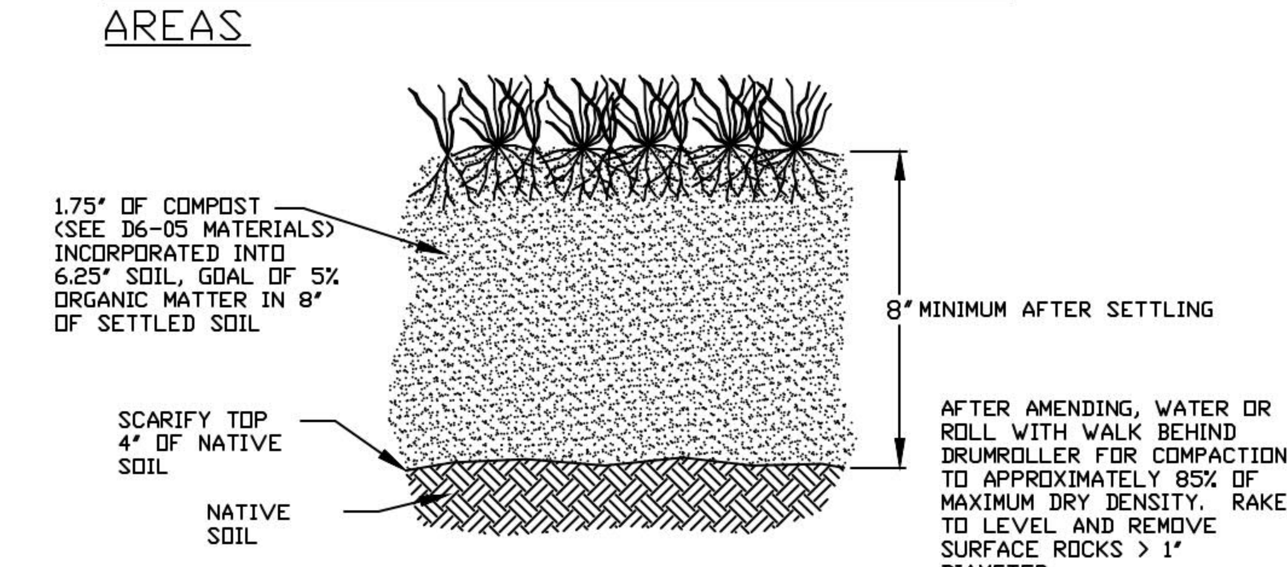
CITY OF KIRKLAND	
PLAN NO. CK- R.52	
CITY OF KIRKLAND WASHINGTON	ROCKERY WALL (RIGHT-OF-WAY AND PRIVATE ACCESS ROAD USE ONLY)

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.

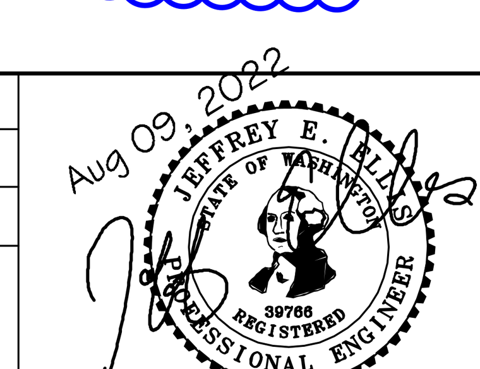
JANUARY 2021 NO SCALE

City of Bellevue	STORM AND SURFACE WATER UTILITY
TITLE	AMENDED SOILS
	NO. ~~NDP-1~~

NO.	DATE	BY	REVISIONS

APPLICANT
JEFF KAPSNER
KAPSNER HOMES LLC
9301 SE 43rd STREET
MERCER ISLAND, WA 98040

DATE: Aug 09, 2022
JOB# 2013
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE



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

STORMWATER BMP DETAILS

PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO:
C3.5

APN 217450-3730

RHOMBUS 122 PANEL

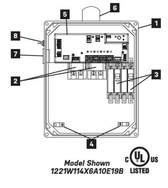
MODEL 122 Control Panel

Single phase, duplex alternating pump control with override.

The Model 122 control panel is designed to alternately control two 120, 208, or 240 VAC single phase pumps in water and sewage installations. The controller is provided with a pump selector switch that can be set to alternate the pumps to equalize wear or to call either pump to activate first with the other pump to activate in lag condition. If an alarm occurs, the alarm activates the audible-visual system. The alarm conditions include: high water, float out-of-sequence, pump fail-to-run, seal failure (optional). Common applications include: lift stations, pump chambers, and irrigation systems.

PANEL COMPONENTS

1. **Enclosure** measures 12x10x6 inches (30.48x24.4x15.24). Choice of NEMA 1 (steel for indoor use) or NEMA 4X (ultraviolet stabilized thermoplastic, padlockable with integral mounting flanges, drip shield, (2) heavy duty cover latches, and stainless steel ¼ turn set screw; for outdoor or indoor use). Note: added options may change enclosure size and enclosure features.
2. **Magnetic Motor Contactors** control pumps by switching electrical lines.
3. **Circuit Breakers** (optional) provide pump disconnect and branch circuit protection.
4. **Ground Lugs**
5. **Duplex Controller** provides pump control, alternation and alarm; elevated in the enclosure for easy access and field wiring
   a. HOA switches for manual control Hand/Off/Automatic
   b. Control Power ON/OFF switch
   c. Power ON green LED indicator
   d. Float status red LED indicators
   e. Float push-to-test buttons
   f. Pump selector switch: Alt, 1-lead 2-lag, 2-lead 1 lag
   g. Auxiliary alarm contacts Form-C
   h. Terminal block: incoming power
   i. Terminal block: float switches
   j. **Option:** adjustable seal failure circuits and red LED indicators (must select option SE when ordering)



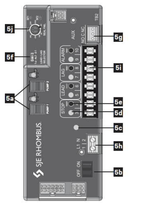
Model Shown
122TW114X6A10E19B

NOTE: Schematic Diagram is located inside the panel on enclosure cover.

STANDARD ALARM PACKAGE

6. **Red Alarm Beacon** provides 360° visual check of alarm condition.
7. **Alarm Horn** provides audible alarm warning (83 to 85 decibel rating).
8. **Exterior Alarm Test/Normal/Silence Switch** allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared unless the controller is programmed to manual alarm reset.

NOTE: other options available.



FEATURES

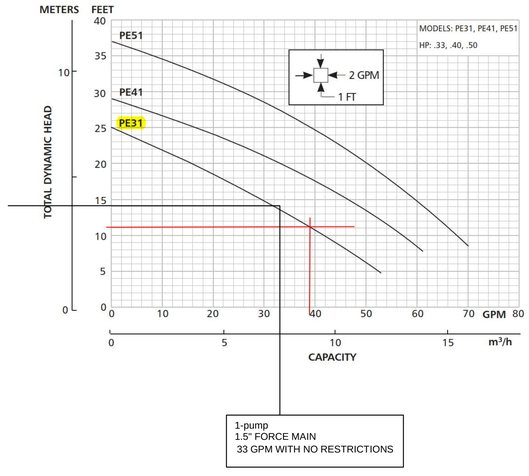
- Touch safe circuit board housing and low voltage 12 VDC float circuits
- Alarm (field programmable to flash)
- Alarm automatic reset (field programmable to manual alarm reset)
- Float out-of-sequence detection
- Pump fail-to-run detection (field programmable to deactivate)
- Controller protected by four auto resettable fuses, no fuse replacement
- Three second lag pump delay time, prevents simultaneous pump start-up
- Standard package includes three 20' control switches or EZconnex® float system
- Five-year limited warranty.

California Prop 65 requires the following: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

SEE REVERSE SIDE FOR ORDERING INFORMATION.
SEE PRICE BOOK FOR LIST PRICE.

SJE RHOMBUS
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: customer.service@sjeinc.com
www.sjerhombus.com **B.39**

GOULD PE31 STORM PUMP CURVE



STORM PUMP SPEC

PE

SUBMERSIBLE EFFLUENT PUMP

GOULDS WATER TECHNOLOGY
a xylem brand

Goulds Water Technology

Wastewater

TECHNICAL BROCHURE
BPE

FEATURES

Corrosion resistant construction
Cast iron body
Thermoplastic impeller and cover.
Upper sleeve and lower heavy duty ball bearing construction.
Motor is permanently lubricated for extended service life.
Powered for continuous operation.
All ratings are within the working limits of the motor.
Quick disconnect power cord, 20' standard length, heavy duty 16/3 SJTW with 115 or 230 volt grounding plug.
Complete unit is heavy duty, portable and compact.
Mechanical seal is carbon, ceramic, BUNA and stainless steel.
Stainless steel fasteners

APPLICATIONS

Specially designed for the following uses:
- Mound Systems
- Effluent/Dosing Systems
- Low Pressure Pipe Systems
- Basement Draining
- Heavy Duty Sump/Dewatering

SPECIFICATIONS

Pump – General:
- Discharge: 1½" NPT
- Temperature: 104°F (40°C) maximum, continuous when fully submerged.
- Solids handling: ½" maximum sphere.
- Automatic models include a float switch.
- Manual models available.
- Pumping range: see performance chart or curve.

PE31 Pump:
- Maximum capacity: 53 GPM
- Maximum head: 25' TDH

PE41 Pump:
- Maximum capacity: 61 GPM
- Maximum head: 29' TDH

PE51 Pump:
- Maximum capacity: 70 GPM
- Maximum head: 37' TDH

MOTOR

General:
- Single phase
- 60 Hertz
- 115 and 230 volts
- Built-in thermal overload protection with automatic reset.
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft

PE31 Motor:
- .33 HP, 3000 RPM
- 115 volts
- Shaded pole design

PE41 Motor:
- .40 HP, 3400 RPM
- 115 and 230 volts
- PSC design

PE51 Motor:
- .50 HP, 3400 RPM
- 115 and 230 volts
- PSC design

AGENCY LISTINGS

Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

PUMP INFORMATION

Order No.	HP	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight lbs/kg
PE31M	0.33	115	12	20	1	Manual / No Switch	20'	1.5"	18"	.5"	31 / 14.1
PE31P1						Piggyback Float Switch					
PE41M	0.4		7.5	15		Manual / No Switch					
PE41P1						Piggyback Float Switch					
PE42M		230	3.7	10		Manual / No Switch					
PE42P1						Piggyback Float Switch					
PE51M	0.5	115	9.5	20		Manual / No Switch					
PE51P1						Piggyback Float Switch					
PE52M		230	4.7	10		Manual / No Switch					
PE52P1						Piggyback Float Switch					

PAGE 2

PUMPING DEPTH CALCULATOR

Storm Pump-Float Depth / Pump Interval Calculator

	Value	Units	Comments
Input Pump Basin Diameter (feet)=	2.5	feet	
Calculate pump basin radius=	1.3	feet	
Calculate cross section Area of basin=	4.91	sf	
Input a pump depth to achieve 2 min run time=	2.0	feet	
Calculate volume of water per pump cycle=	9.8	cf	
Convert volume to gallons	73.4	gallons	convert to gallons pumped
Input pump rate based on pump curve and TDH	33	gpm	
Calculated time for pump to operate per cycle	2.2	Minutes	Ensure greater than 2 minutes

RECOMMENDED PUMP CYCLE DEPTH

PROVIDE 24" DEPTH. SEE DETAIL FAR RIGHT

PUMP DESIGN HYDROLOGY

Peak Flow Rates in Puget Sound

100 year, 24 hour storm event
I=4.0 inches/24 hours per isopluvials

		SBUH	SBUH	SBUH	SBUH	
		(CFS)	(GPM)	(CFS)	(GPM)	
Impervious Area	*Acres*	*Tc=6.3*		*Tc=10*		*Comments*
500	0.011	0.01	4	0.011	5	
1,000	0.023	0.02	9	0.023	10	
2,000	0.046	0.041	18	0.045	20	
3,000	0.069	0.062	28	0.067	30	
4,000	*0.092*	*0.082*	*36*	*0.085*	*38*	*tributary area ~3,600 sf*
5,000	0.115	0.103	46	0.112	50	
6,000	0.138	0.124	55	0.135	60	
7,000	0.161	0.143	64	0.156	69	
8,000	0.184	0.164	73	0.179	80	

FIND PUMP FOR 50% OF 38 GPM GOULDS PE31 RECOMMENDED DUPLEX PUMPS REQUIRED

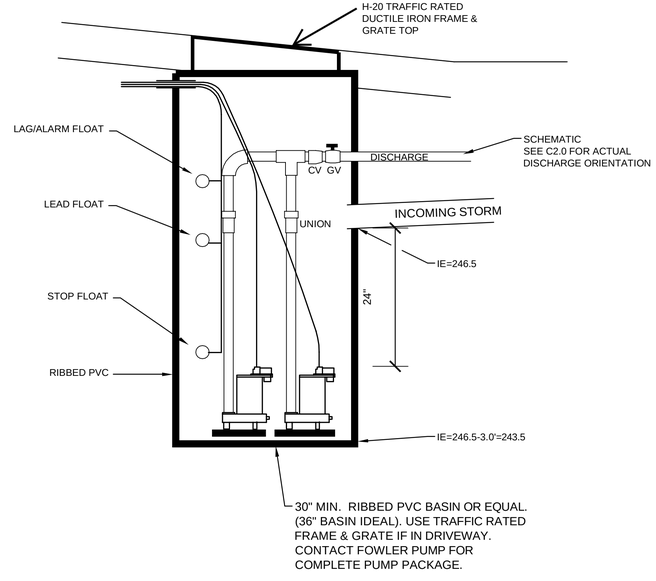
TOTAL DYNAMIC HEAD CALCULATOR

Pump Flow Rate	Pipe Diameter(ID)	Pipe Length	Differential Elevation	Pipe Material	Total Dynamic Head (TDH)
US GPM	in.	ft.	ft.	Plastic	ft.
33	1.5	105	5	*Results--->*	14.259520714884941

Compute Total Dynamic Head (TDH) | Reset Values

STORM PUMP & PVC PUMP BASIN SCHEMATIC

3-FLOAT DUPLEX



NO.	DATE	BY	REVISIONS

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9301 SE 43rd STREET
MERCER ISLAND, WA 98040

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102 NW CANAL STREET SEATTLE, WA 98107
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STORM PUMPS
PROPOSED RESIDENCE
2526 70th AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO: C5.0
APN 217450-3730