O'BRIEN RESIDENCE

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO THE 2021 CITY OF MERCER ISLAND CODE, INTERNATIONAL RESIDENTIAL CODE, THE 2021 WASHINGTON STATE ENERGY CODE, THE WASHINGTON STATE BUILDING CODE, CHAPTER 51-51 WAC, THE 2021 UNIFORM PLUMBING CODE AND ALL RULES, REGULATIONS AND ORDINANCES OF THE LOCAL GOVERNING AUTHORITY.
2. ENGINEERED DESIGN IN ACCORDANCE WITH THE SEATTLE BUILDING CODE IS PERMITTED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, AND SITE CONDITIONS, AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY IN WRITING OF ANY DISCREPANCIES, ERRORS, OR OMISSIONS PRIOR TO PROCEEDING WITH THE WORK.
4. DO NOT SCALE THE DRAWINGS FOR CRITICAL DIMENSIONS. DIMENSIONS ARE SHOWN TO FACE OF STUDS, POSTS AND CONCRETE UNLESS INDICATED OTHERWISE.
5. CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL VERIFY ALL DOOR AND WINDOW ROUGH-OPENING DIMENSIONS WITH THE DOOR AND WINDOW MANUFACTURERS.
7. PLUMBING, ELECTRICAL AND MECHANICAL CONTRACTORS SHALL VERIFY ALL REQUIREMENTS FOR THIS PROJECT AND COMPLY WITH ALL LOCAL CODES, SUBMIT PLANS FOR APPROVAL AND OBTAIN PERMIT BEFORE STARTING WORK.
8. TYPICAL DETAILS ARE SHOWN ONLY ONCE AND NOT REFERENCED AT ALL LOCATIONS; THE INTENT IS THAT THEY APPLY THROUGHOUT THE PROJECT UNLESS OTHERWISE NOTED.
9. ALL REQUIRED SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
10. ALL SHOP DRAWING DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED BY THEMSELVES OR OTHER TRADES.
12. INSPECTIONS ARE TO BE PER IRC SECTION R109.
13. ADDRESS MUST BE POSTED AND VISIBLE AT CONSTRUCTION SITE PER IRC SEC R319: BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.

BUILDING THERMAL ENVELOPE

COMPLIANCE & CERTIFICATE POSTED

THE BUILDING THERMAL ENVELOPE SHALL MEET THE PRESCRIPTIVE REQUIREMENTS OF SECTION R402 OF THE WSEC PLUS THE INCREASED EFFICIENCIES OF OPTIONS SELECTED FROM TABLE R406.2. SEE TABLE ON THIS SHEET FOR CREDITS CHOSEN.

A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN THREE FEET OF THE ELECTRICAL DISTRIBUTION PANEL BY THE BUILDER NOTING PREDOMINANT R-VALUES OF INSULATION INSTALLED IN OR ON CEILING/ROOF, WALLS, FOUNDATION (SLAB, BASEMENT WALL, CRAWLSPACE WALL AND/OR FLOOR), AND DUCTS OUTSIDE THE CONDITIONED SPACES; U-FACTORS FOR FENESTRATION; AND THE SOLARHEAT GAIN COEFFICIENT (SHGC) OF FENESTRATION. REFER TO SECTION R401.3 WSEC FOR ADDITIONAL INFORMATION.

INSULATION

REFER TO ENERGY CALCULATIONS ON SHEET EN1 FOR REQUIRED INSULATION VALUES.

A. CEILINGS (ATTIC)
   1. OPEN-BLOWN OR POURED LOOSE FILL INSULATION MAY BE USED IN ATTIC SPACES WHERE THE SLOPE OF THE CEILING IS NOT MORE THAN 3 IN 12 AND THERE IS AT LEAST 30 INCHES OF CLEAR DISTANCE FROM THE TOP OF THE BOTTOM CHORD OF THE TRUSS OR CEILING JOIST TO THE UNDERSIDE OF THE SHEATHING AT THE ROOF RIDGE.

B. CEILINGS (UNVENTED VAULT)
   1. ALL RIGID INSULATION OR RIGID + BATT INSULATION MAY BE USED. REFER TO PROJECT DETAILS AND BUILDING SECTIONS.

C. WOOD FRAMED WALLS
   1. ALL EXTERIOR WALL CAVITIES, INCLUDING CAVITIES ISOLATED DURING FRAMING, MUST BE FILLED WITH UNCOMPRESSED INSULATION.
   2. RIGID BOARD INSULATION IS TO BE PLACED BEHIND ALL RECESSED FIXTURES IN EXTERIOR WALLS.
   3. FACED BATTS ARE LAPPED AND ARE TO BE STAPLED TO FACE OF STUDS.
   4. INSULATE BEHIND TUB/ SHOWER PARTITIONS AND CORNERS.

D. FLOORS
   1. FLOOR INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING.
   2. INSULATION SUPPORTS SHALL BE INSTALLED SO SPACING IS NO MORE THAN 24-INCHES ON CENTER.
   3. FOUNDATION VENTS SHALL BE PLACED SO THAT THE TOP OF THE VENT IS BELOW THE LOWER SURFACE OF THE FLOOR INSULATION.

E. SLAB-ON-GRADE
   1. RIGID INSULATION @ CONCRETE SLAB IN HEATED SPACES: THE INSULATION SHALL BE PLACED ON INTERIOR OR EXTERIOR SIDE OF FOUNDATION WALL AND SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB FOR A MINIMUM OF 4'-0" OR TO THE TOP OF THE FOOTING, WHICHEVER IS LESS. ENERGY EFFICIENCY CREDITS CHOSEN MAY REQUIRE ADDITIONAL UNDER-SLAB INSULATION, REFER TO TABLE ON THIS SHEET.

F. 4X HEADERS = R-10

G. DUCTS = DUCTS SHALL BE INSULATED TO A MINIMUM OF R-8.
   EXCEPTION: DUCTS OR PORTIONS THEREOF LOCATED COMPLETELY INSIDE THE BUILDING THERMAL ENVELOPE.

H. PIPING = MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F OR BELOW 55°F SHALL BE INSULATED TO A MINIMUM OF R-6.
   1. PIPING INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT CAUSED BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, AND WIND, AND SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.

INSULATION FOR HOT WATER PIPE SHALL HAVE A MIN. THERMAL RESISTANCE (R-VALUE) OF R-4.

H. ELECTRIC WATER HEATERS = ALL ELECTRIC WATER HEATERS IN UNHEATED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH MIN. THERMAL RESISTANCE OF R-10.

ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS

EACH DWELLING UNIT IN ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES SHALL COMPLY WITH SUFFICIENT OPTIONS FROM TABLES R406.2 & R406.3 TO ACHIEVE THE REQUIRED MINIMUM NUMBER OF CREDITS. SEE TABLES ON ENERGY CALCULATION SHEETS FOR SPECIFIC OPTIONS CHOSEN.

MOISTURE CONTROL

VAPOR RETARDERS

SLABS:	6 MIL POLYETHYLENE SHEETS
FLOORS:	3/4" CDX PLYWOOD OR 3/4" O.S.B.
WALLS:	KRAFT FACED FIBERGLASS BATTS
CEILING:	PVA PAINT (EXCEPT AT UNVENTED ROOF ASSEMBLIES)

1. ATTIC ACCESS AND DOORS ARE TO BE BAFFLED, WEATHER-STRIPPED AND INSULATED.
2. EXTERIOR DOORS AND WINDOWS ARE TO BE CAULKED AND WEATHER-STRIPPED.
3. RECESSED LIGHT FIXTURES TO LIMIT AIR LEAKAGE PER WSEC 402.4.4.
4. ALL PLUMBING, ELECTRICAL AND HVAC PENETRATIONS IN FLOORS, WALLS AND CEILING ARE TO BE CAULKED AND SEALED.
5. ELECTRICAL OUTLET AND LIGHT SWITCH BOXES ON EXTERIOR WALLS MUST BE SEALED AT THE BACK OF THE RECEPTACLE WITH A FACE PLATE GASKET.
6. SILL PLATE TO BE CAULKED OR GLUED TO SUB-FLOOR.
7. CAULK/SEAL RIM JOISTS BETWEEN STORIES.
8. FIRE-STOP ALL PENETRATIONS AS REQUIRED BY THE CODE & BUILDING DEPARTMENT.

FENESTRATION

AN AREA-WEIGHTED AVERAGE OF FENESTRATION PRODUCTS SHALL BE PERMITTED TO SATISFY THE U-FACTOR REQUIREMENTS.

UP TO 15 SQUARE FEET OF GLAZED FENESTRATION PER DWELLING UNIT SHALL BE PERMITTED TO BE EXEMPT FROM U-FACTOR.

ONE SIDE-HINGED OPAQUE DOOR ASSEMBLY UP TO 24 SQUARE FEET IN AREA IS EXEMPTED FROM THE U-FACTOR REQUIREMENT.

AIR LEAKAGE AND TESTING

THE COMPONENTS OF THE BUILDING THERMAL ENVELOPE AS LISTED IN TABLE R402.4.1.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE CRITERIA LISTED IN TABLE R402.4.1.1, AS APPLICABLE TO THE 2021 WASHINGTON STATE ENERGY CODE RE-23 METHOD OF CONSTRUCTION. WHERE REQUIRED BY THE CODE OFFICIAL, AN APPROVED THIRD PARTY SHALL INSPECT ALL COMPONENTS AND VERIFY COMPLIANCE.

THE BUILDING OR DWELLING UNIT SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING 4 AIR CHANGES PER HOUR. TESTING SHALL BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2 INCHES W.G. (50 PASCALS). WHERE REQUIRED BY THE CODE OFFICIAL, TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL. TESTING SHALL BE PERFORMED AT ANY TIME AFTER CREATION OF ALL PENETRATIONS OF THE BUILDING THERMAL ENVELOPE.

WINDOWS, SKYLIGHTS AND SLIDING GLASS DOORS SHALL HAVE AN AIR INFILTRATION RATE OF NO MORE THAN 0.3 CFM PER SQUARE FOOT, AND SWINGING DOORS NO MORE THAN 0.5 CFM PER SQUARE FOOT, WHEN TESTED ACCORDING TO NFRC 400 OR AAMA/WDMA/CSA 101/I.S.2/A440 BY AN ACCREDITED, INDEPENDENT LABORATORY AND LISTED AND LABELED BY THE MANUFACTURER.

EXCEPTIONS:
1. FIELD-FABRICATED FENESTRATION PRODUCTS (WINDOWS, SKYLIGHTS AND DOORS).
2. CUSTOM EXTERIOR FENESTRATION PRODUCTS MANUFACTURED BY A SMALL BUSINESS PROVIDED THEY MEET THE APPLICABLE PROVISIONS OF CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.
3. CUSTOM EXTERIOR WINDOWS AND DOORS MANUFACTURED BY A SMALL BUSINESS PROVIDED THEY MEET THE APPLICABLE PROVISIONS OF CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE. ONCE VISUAL INSPECTION HAS CONFIRMED THE PRESENCE OF A GASKET, OPERABLE WINDOWS AND DOORS MANUFACTURED BY SMALL BUSINESS SHALL BE PERMITTED TO BE SEALED OFF AT THE FRAME PRIOR TO THE TEST.

RECESSED LUMINAIRES INSTALLED IN THE BUILDING THERMAL ENVELOPE SHALL BE TYPE IC-RATED AND CERTIFIED UNDER ASTM E283 AS HAVING AN AIR LEAKAGE RATE NOT MORE THAN 2.0 CFM WHEN TESTED AT A 1.57 PSF PRESSURE DIFFERENTIAL AND SHALL HAVE A LABEL ATTACHED SHOWING COMPLIANCE WITH THIS TEST METHOD. ALL RECESSED LUMINAIRES SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND THE INTERIOR WALL OR CEILING COVERING.

BUILDING SYSTEMS

AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM.

CONTROLS

PRIMARY HEATING SYSTEM IS A FORCED-AIR FURNACE, AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT TEMPERATURE SET POINTS AT DIFFERENT TIMES OF THE DAY. SEE WSEC R403.1 FOR ADDITIONAL REQUIREMENTS.

DUCTS & AIR DUCT SEALING

DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH EITHER THE INTERNATIONAL MECHANICAL CODE OR INTERNATIONAL RESIDENTIAL CODE, AS APPLICABLE.

DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RS-33, USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED. DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING:
1. POSTCONSTRUCTION TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. LEAKAGE TO OUTDOORS SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA.
2. ROUGH-IN TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA.

AIR HANDLERS SHALL HAVE A MANUFACTURER'S DESIGNATION FOR AN AIR LEAKAGE OF NO MORE THAN 2 PERCENT OF THE DESIGN AIR FLOW RATE WHEN TESTED IN ACCORDANCE WITH ASHRAE 193.

BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.

LIGHTING EQUIPMENT

A MINIMUM OF 90% OF PERMANENTLY INSTALLED LAMPS IN LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS (MIN. 65 LUMENS PER WATT).

EQUIPMENT SIZING

HEATING AND COOLING EQUIPMENT SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S BASED ON BUILDING LOADS CALCULATED IN ACCORDANCE WITH ACCA MANUAL J OR OTHER APPROVED HEATING AND COOLING CALCULATION REQUIREMENTS.

MECHANICAL AND PLUMBING

1. WATER HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. WATER HEATERS INSTALLED IN ATTICS SHALL COMPLY WITH M1305.1.3. GAS FIRED WATER HEATERS SHALL COMPLY WITH IRC CHAPTER 24. ELECTRIC WATER HEATERS SHALL COMPLY WITH UL 174 AND INSTALLED IN ACCORDANCE WITH IRC CHAPTERS 34 THROUGH 43.
2. WATER HEATER STORAGE TANK TO BE LABELED TO MEET THE 1987 NATIONAL APPLIANCE ENERGY CONSERVATION ACT.
3. STEEL W.H. TO COMPLY WITH ASHRAE 90A-80.
4. EQUIP WATER HEATERS WITH A PRESSSURE RELIEF LINE PLUMBED TO OUTSIDE.
5. PROVIDE 26 GA METAL SEISMIC STRAPS AROUND WATER HEATER TO WALL TO RESIST LATERAL FORCES. PLACE STRAPS IN UPPER 1/3 AND LOWER 1/3 OF ITS VERTICAL DIMENSION IN ACCORDANCE WITH UPC SECTION 507.2.
6. H.V.A.C. UNIT TO COMPLY WITH THE W.S.E.C. & LABELED WITH A PERFORMANCE RATING.

FIRE SPRINKLER SYSTEMS

1. A NFPA 13D FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13D AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. (A SEPARATE FIRE PERMIT IS REQUIRED.)
   NOTE THAT THIS SPRINKLER SYSTEM REQUIRES A MINIMUM OF A 1" WATER METER AND 1" WATER SERVICE LINE.
2. CHAPTER 29 MONITORED FIRE ALARM SYSTEM IN COMPLIANCE WITH NFPA 72 AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. (A SEPARATE FIRE PERMIT IS REQUIRED.)
3. SEE PARTIAL SITE PLAN ON PAGE A1 FOR <150' FIRE PATH AND STREET ACCESS

WHOLE HOUSE VENTILATION

SEE ENERGY CALCULATION SHEETS FOR WHOLE HOUSE VENTILATION CALCULATIONS.

WAC 51.51.1505 M1505.4: WHOLE HOUSE MECHANICAL VENTILATION SYSTEM. EACH DWELLING UNIT SHALL BE EQUIPPED WITH A VENTILATION SYSTEM. THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH SECTIONS M1504.1 THROUGH 1505.4.4

IRC M1505.4.1: SYSTEM DESIGN. THE WHOLE HOUSE VENTILATION SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY FANS, ONE OR MORE EXHAUST FANS, OR AN ERV/HRV WITH INTEGRAL FANS, ASSOCIATED DUCTS AND CONTROLS. WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM WITH SUPPLY AND EXHAUST FANS PER SECTIONS M1505.4.1.2, M1505.4.1.3, M1505.4.1.4 AND M1505.4.1.5. LOCAL EXHAUST FANS ARE PERMITTED TO SERVE AS PART OF THE WHOLE HOUSE VENTILATION SYSTEM WHEN PROVIDED WITH THE PROPER CONTROLS PER SECTION M1505.4.2. THE SYSTEMS SHALL BE DESIGNED AND INSTALLED TO EXHAUST AND/OR SUPPLY THE MINIMUM OUTDOOR AIRFLOW RATES PER SECTION M1505.4.3 AS MODIFIED BY WHOLE HOUSE VENTILATION SYSTEM COEFFICIENTS IN SECTION M1505.4.3.1 WHERE APPLICABLE. THE WHOLE HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED PER SECTION M1505.4.2 UNLESS CONFIGURED WITH INTERMITTENT OFF CONTROLS PER SECTION M1505.4.3.2.

WAC 51-51-1505 AMENDMENT M1505.4.1.1: WHOLE HOUSE SYSTEM COMPONENT REQUIREMENTS. WHOLE HOUSE VENTILATION SUPPLY AND EXHAUST FANS SPECIFIED IN THIS SECTION SHALL HAVE A MINIMUM EFFICACY AS PRESCRIBED IN THE WA STATE ENERGY CODE. DESIGN AND INSTALLATION OF THE SYSTEM OR EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHOLE HOUSE VENTILATION FANS SHALL BE RATED FOR SOUND AT NO LESS THAN THE MINIMUM AIRFLOW RATE REQUIRED BY SECTION M1505.4.31. VENTILATION FANS SHALL BE RATED FOR SOUND AT A MAXIMUM OF 1.0 SONE. THIS SOUND RATING SHALL BE AT A MINIMUM OF 0.1 IN w.c. (25 Pa) STATIC PRESSURE IN ACCORDANCE WITH HVI PROCEDURES SPECIFIED IN SECTIONS M1505.4.1.2 AND M1505.4.1.3.
   EXCEPTION: HVAC AIR HANDLERS, ERV/HRV UNITS, AND REMOTE MOUNTED FANS NEED NOT MEET THE SOUND REQUIREMENTS. TO BE CONSIDERED FOR THIS EXCEPTION, A REMOTE MOUNTED FAN MUST BE MOUNTED OUTSIDE THE HABITABLE ROOMS, TOILETS, AND HALLWAYS, AND THERE MUST BE AT LEAST 4 FT. OF DUCTWORK BETWEEN THE FAN AND THE INTAKE GRILLE.
   THE WHOLE HOUSE SUPPLY FAN SHALL PROVIDE DUCTED OUTDOOR VENTILATION AIR TO EACH HABITABLE SPACE WITHIN THE RESIDENTIAL UNIT.
   EXCEPTION: INTERIOR LIVING SPACES PROVIDED WITH A 30 CFM WHOLE HOUSE TRANSFER RAN OR A PERMANENT OPENING WITH AN AREA OF NOT LESS THAN 8 PERCENT OF THE FLOOR AREA OF THE INTERIOR ADJOINING SPACE BUT NOT LESS THAN 25 SQUARE FEET DO NOT REQUIRE DUCTED OUTDOOR VENTILATION AIR TO BE SUPPLIED DIRECTLY TO THE SPACE. WHOLE HOUSE TRANSFER FANS SHALL MEET THE SONE RATING OF SECTION M1505.4.1.1 AND SHALL HAVE WHOLE HOUSE VENTILATION CONTROLS THAT COMPLY WITH SECTION M1505.4.2

WAC 51-51-1505 M1505.4.1.2: EXHAUST FANS. EXHAUST FANS REQUIRED SHALL BE DUCTED DIRECTLY TO THE OUTSIDE. EXHAUST AIR OUTLETS SHALL BE DESIGNED TO LIMIT THE PRESSURE DIFFERENCE TO THE OUTSIDE AND EQUIPPED WITH BACKDRAFT DAMPERS OR MOTORIZED DAMPERS IN ACCORDANCE WITH THE WA STATE ENERGY CODE. EXHAUST FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH THE AIRFLOW AND SOUND RATING PROCEDURES OF THE HOME VENTILATING INSTITUTE (HVI 915, HVI LOUDNESS TESTING AND RATING PROCEDURE, HVI 916 AIRFLOW TEST PROCEDURE, AND HVI 920, HVI PRODUCT PERFORMANCE CERTIFICATION PROCEDURE, AS APPLICABLE). EXHAUST FANS REQUIRED IN THIS SECTION MAY BE USED TO PROVIDE LOCAL VENTILATION. BATHROOM EXHAUST FANS THAT ARE DESIGNED FOR INTERMITTENT EXHAUST AIRFLOW RATES HIGHER THAN THE CONTINUOUS EXHAUST AIRFLOW RATES IN TABLE M1505.4.3(3) SHALL BE PROVIDED WITH OCCUPANCY SENSORS OR HUMIDITY SENSORS TO AUTOMATICALLY OVERRIDE THE FAN TO THE HIGH SPEED AIRFLOW RATE. THE EXHAUST FANS SHALL BE TESTED AND THE TESTING RESULTS SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION M1505.4.1.6.

WAC 51.51.1505 M1505.4.1.3: SUPPLY FANS. SUPPLY FANS USED IN MEETING THE REQUIREMENTS OF THIS SECTION SHALL SUPPLY OUTDOOR AIR FROM INTAKE OPENINGS IN ACCORDANCE WITH IMC SECTIONS 401.4 AND 401.5. WHEN DESIGNED FOR INTERMITTENT OFF OPERATION, SUPPLY SYSTEMS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS IN ACCORDANCE WITH THE WA STATE ENERGY CODE. SUPPLY FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH THE AIRFLOW ANSD SOUND RATING PROCEDURES OF THE HOME VENTILATING INSTITUTE (HVI 915, HVI LOUDNESS TESTING AND RATING PROCEDURE, HVI 916, HVI AIRFLOW TEST PROCEDURE, AND HVI 920, HVI PRODUCT PERFORMANCE CERTIFICATION PROCEDURE, AS APPLICABLE). WHERE OUTDOOR AIR IS PROVIDED BY SUPPLY FAN SYSTEMS THE OUTDOOR AIR SHALL BE

FILTERED. THE FILTER SHALL BE ACCESSIBLE FOR REGULAR MAINTENANCE AND REPLACEMENT. THE FILTER SHALL HAVE A MINIMUM EFFICIENCY RATING VALUE (MERV) OF AT LEAST 8.

WAC 51.51.1505 M1505.4.1.4: BALANCED WHOLE HOUSE VENTILATION SYSTEM. A BALANCED WHOLE HOUSE VENTILATING SYSTEM SHALL INCLUDE BOTH SUPPLY AND EXHAUST FANS. THE SUPPLY AND EXHAUST FANS SHALL HAVE AIRFLOW THAT IS WITHIN 10 PERCENT OF EACH OTHER. THE TESTED AND BALANCED TOTAL MECHANICAL EXHAUST AIRFLOW RATE IS WITHIN 10 PERCENT OR 5cfm, WHICHEVER IS GREATER, OF THE TOTAL MECHANICAL SUPPLY AIRFLOW RATE. THE FLOW RATE TEST RESULTS SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION M1505.4.1.7. THE EXHAUST FAN SHALL MEET THE REQUIREMENTS OF SECTION M1505.4.1.2. THE SUPPLY FAN SHALL MEET THE REQUIREMENTS OF SECTION M1505.4.1.3. BALANCED VENTILATION SYSTEMS WITH BOTH SUPPLY AND EXHAUST AIRFLOW RATES ABOVE THE RESIDENTIAL DWELLING OR SLEEPING UNIT MINIMUM VENTILATION RATE ARE EXEMPT FROM THE BALANCED AIRFLOW CALCULATION.

WAC 51.51.1505 M1505.4.1.5: FURNACE INTEGRATED SUPPLY. SYSTEMS USING SPACE HEATING AND/OR COOLING AIR HANDLER FANS FOR OUTDOOR AIR SUPPLY DISTRIBUTION ARE NOT PERMITTED.
   EXCEPTION: AIR HANDLER FANS SHALL HAVE MULTI-SPEED OR VARIABLE SPEED SUPPLY AIRFLOW CONTROL CAPABILITY WITH A LOW SPEED OPERATION NOT GREATER THAN 25 PERCENT OF THE RATED SUPPLY AIRFLOW CAPACITY DURING VENTILATION ONLY OPERATION. OUTDOOR AIR INTAKE OPENINGS MUST MEET THE PROVISIONS OF SECTIONS R303.2 AND R303.6 AND MUST INCLUDE A MOTORIZED DAMPER THAT IS ACTIVATED BY THE WHOLE HOUSE VENTILATION SYSTEM CONTROLLER. THE MOTORIZED DAMPER MUST BE CONTROLLED TO MAINTAIN THE OUTDOOR AIRFLOW INTAKE AIRFLOW WITHIN 10 PERCENT OF THE WHOLE HOUSE MECHANICAL EXHAUST AIRFLOW RATE. THE FLOW RATE FOR THE OUTDOOR AIR INTAKE MUST BE TESTED AND VERIFIED AT THE MINIMUM VENTILATION FAN SPEED AND THE MAXIMUM HEATING OR COOLING FAN SPEED. THE RESULTS OF THE TEST SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION M1505.4.1.7.

WAC 51.51.1505 M1505.4.1.6: TESTING. WHOLE HOUSE MECHANICAL VENTILATION SYSTEMS SHALL BE TESTED, BALANCED AND VERIFIED TO PROVIDE A FLOW RATE NOT LESS THAN THE MINIMUM REQUIRED BY SECTIONS M1505.4.3 AND M1505.4.4. TESTING SHALL BE PERFORMED ACCORDING TO THE VENTILATION EQUIPMENT MANUFACTURER'S INSTRUCTIONS, OR BY USING A FLOW HOOD, FLOW GRID, OR OTHER AIRFLOW MEASURING DEVICE AT THE MECHANICAL VENTILATION FAN'S INLET TERMINALS, OUTLET TERMINALS, OR GRILLES OR IN THE CONNECTED VENTILATION DUCTS. WHERE REQUIRED BY THE BUILDING OFFICIAL, TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE BUILDING OFFICIAL AND BE POSTED IN THE DWELLING UNIT PER SECTION M1505.4.1.7.

WAC 51.51.1505 M1505.4.1.7: CERTIFICATE. A PERMANENT CERTIFICATE SHALL BE COMPLETED BY THE MECHANICAL CONTRACTOR, TEST AND BALANCE CONTRACTOR OR OTHER APPROVED PARTY AND POSTED ON A WALL IN THE SPACE WHERE THE FURNACE IS LOCATED, A UTILITY ROOM, OR AN APPROVED LOCATION INSIDE THE BUILDING. WHEN LOCATED ON AN ELECTRICAL PANEL, THE CERTIFICATE SHALL NOT COVER OR OBSTRUCT THE VISIBILITY OF THE CIRCUIT DIRECTORY LABEL, SERVICE DISCONNECT LABEL, OR OTHER REQUIRED LABELS THE CERTIFICATE SHALL LIST THE FLOW RATE DETERMINED FROM THE DELIVERED AIRFLOW OF THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AS INSTALLED AND THE TYPE OF MECHANICAL WHOLE HOUSE VENTILATION SYSTEM USED TO COMPLY WITH SECTION M1505.4.3.1.

WAC 51.51.1505 M1505.4.2: SYSTEM CONTROLS. THE WHOLE HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT COMPLY WITH THE FOLLOWING:
1. THE WHOLE HOUSE VENTILATION SYSTEM SHALL BE CONTROLLED WITH MANUAL SWITCHES, TIMERS OR OTHER MEANS THAT PROVIDE FOR AUTOMATIC OPERATION OF THE VENTILATION SYSTEM THAT ARE READILY ACCESSIBLE BY THE OCCUPANT;
2. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE OFF OF THE SYSTEM BY THE OCCUPANT DURING PERIODS OF POOR OUTDOOR AIR QUALITY. CONTROLS SHALL INCLUDE PERMANENT TEXT OR A SYMBOL INDICATING THEIR FUNCTION. RECOMMENDED CONTROL PERMANENT LABELING TO INCLUDE TEXT SIMILAR TO THE FOLLOWING: "LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." MANUAL CONTROLS SHALL BE READILY ACCESSIBLE BY THE OCCUPANT;
3. WHOLE HOUSE VENTILATION SYSTEMS SHALL BE CONFIGURED TO OPERATE CONTINUOUSLY EXCEPT WHERE INTERMITTENT OFF CONTROLS AND SIZING ARE PROVIDED PER SECTION M1505.4.3.2.

WAC 51.51.1505 M1505.4.3: MECHANICAL VENTILATION RATE. THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL PROVIDE OUTDOOR AIR AT A CONTINUOUS RATE AS DETERMINED IN ACCORDANCE WITH
   TABLE M1505.4.3(1) OR EQUATION 15-1
   EQUATION 15-1 VENTILATION RATE IN CUBIC FEET PER MINUTE = (0.01 X TOTAL SQ. FT.) + [7.5 X (NUMBER OF BEDROOMS +1)] BUT NOT LESS THAN 30 CFM FOR EACH DWELLING UNIT.

IRC TABLE 1505.4.3(1)

WHOLE-HOUSE MECHANICAL VENTILATION AIRFLOW RATE

	DWELLING UNIT FLOOR AREA (Square feet)	NUMBER OF BEDROOMS				PRIMARY
		0-1	2	3	4	5+
		AIRFLOW IN CFM				
	< 500	30	30	35	45	50
	501 - 1,000	30	35	40	50	55
	1,001 - 1,500	30	40	45	55	60
	1,501 - 2,000	35	45	50	60	65
	2,001 - 2,500	40	50	55	65	70
	2,501 - 3,000	45	55	60	70	75
	3,001 - 3,500	50	60	65	75	80
	3,501 - 4,000	55	65	70	80	85
PRIMARY	4,001 - 4,500	60	70	75	85	90
	4,501 - 5,000	65	75	80	90	95

M1505.4.3.1: VENTILATION QUALITY ADJUSTMENT. THE MIN. WHOLE HOUSE VENTILATION RATE FROM SECTION 1505.4.3 SHALL BE ADJUSTED BY THE SYSTEM COEFFICIENT IN TABLE M1505.4.3(2) BASED ON THE SYSTEM TYPE NOT MEETING THE DEFINITION OF A *BALANCED WHOLE HOUSE VENTILATION* SYSTEM AND/OR NOT MEETING THE DEFINITION OF *DISTRIBUTED WHOLE HOUSE VENTILATION* SYSTEM.

IRC TABLE 1505.4.3(2)

SYSTEM COEFFICIENT (Csystem)

SYSTEM TYPE	DISTRIBUTED	NOT DIST.
BALANCED	1.0	1

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING # 20230815000026)

THAT PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 834 FEET NORTH AND 211 FEET WEST OF THE SOUTHEAST CORNER OF SAID GOVERNMENT LOT 4; THENCE WEST 55 FEET; THENCE NORTH 212.60 FEET; THENCE EAST 55 FEET; THENCE SOUTH 212.60 FEET TO THE POINT OF BEGINNING;

EXCEPT THE SOUTH 20 FEET THEREOF FOR ROAD.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 PER GPS OBSERVATIONS

SITE TEMP. BENCHMARK
DESCRIPTION: NAIL & RED WASHER
LOCATION: IN FRONT OF 9412 SE 33RD ST
ELEVATION: 55.36'

SURVEYOR'S NOTES

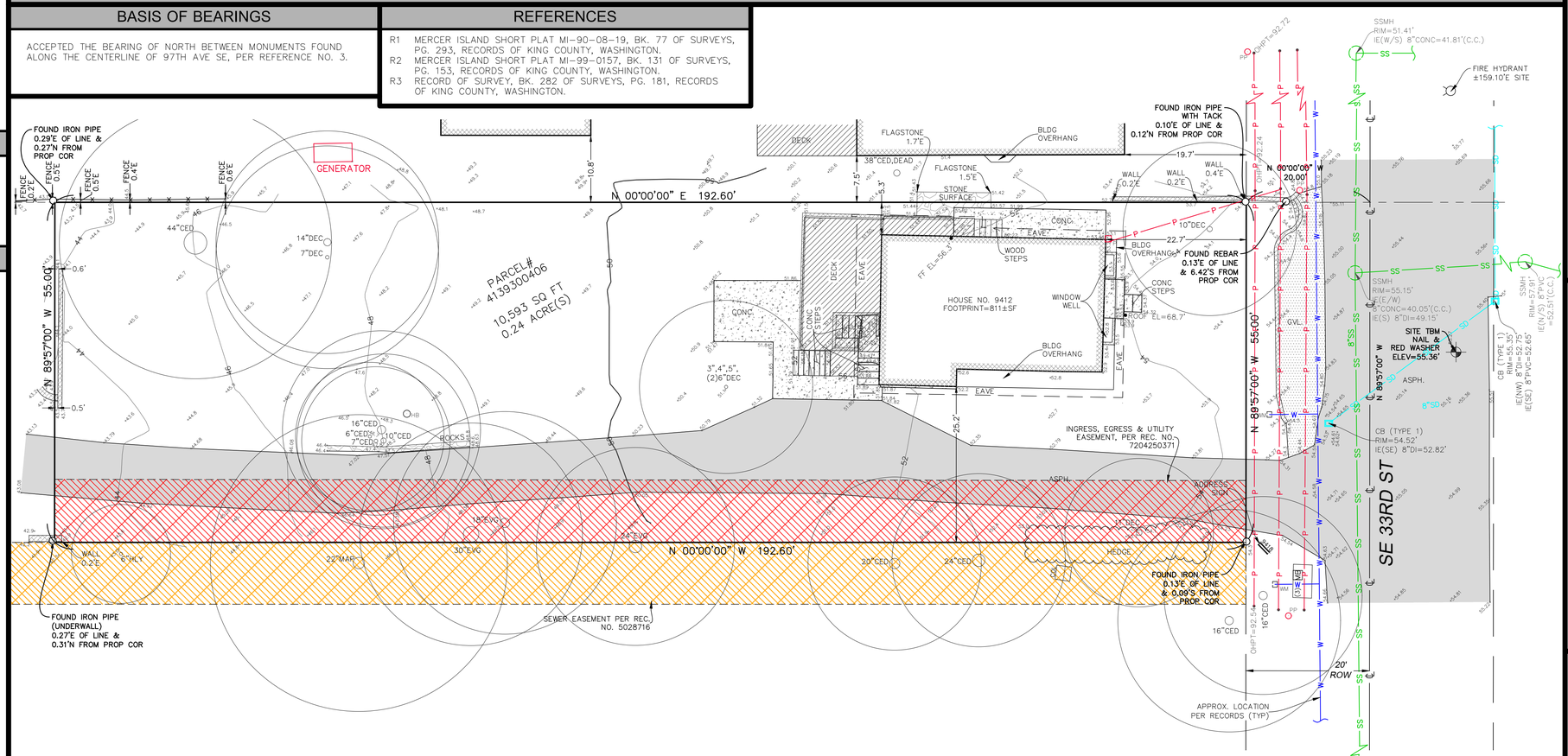
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JANUARY OF 2024. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY 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. 4139300406
5. SUBJECT PAROPERTY AREA PER THIS SURVEY IS 10,593 S.F. (0.24 ACRES)
6. THE PROPERTY DESCRIBED HEREON IS THE SAME AS THE PROPERTY DESCRIBED IN CHICAGO TITLE COMPANY, COMMITMENT NO. 0258732-ETU, WITH AN EFFECTIVE DATE OF JULY 7, 2023 AND THAT ALL EASEMENTS, COVENANTS AND RESTRICTIONS REFERENCED IN SAID TITLE COMMITMENT OR APPARENT FROM A PHYSICAL INSPECTION OF THE PROPERTY OR OTHERWISE KNOWN TO ME HAVE BEEN PLOTTED HEREON OR OTHERWISE NOTED AS TO THEIR EFFECT ON THE PROPERTY.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 3-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.

BASIS OF BEARINGS

ACCEPTED THE BEARING OF NORTH BETWEEN MONUMENTS FOUND ALONG THE CENTERLINE OF 97TH AVE SE, PER REFERENCE NO. 3.

REFERENCES

R1 MERCER ISLAND SHORT PLAT MI-90-08-19, BK. 77 OF SURVEYS, PG. 293, RECORDS OF KING COUNTY, WASHINGTON.
R2 MERCER ISLAND SHORT PLAT MI-99-0157, BK. 131 OF SURVEYS, PG. 153, RECORDS OF KING COUNTY, WASHINGTON.
R3 RECORD OF SURVEY, BK. 282 OF SURVEYS, PG. 181, RECORDS OF KING COUNTY, WASHINGTON.

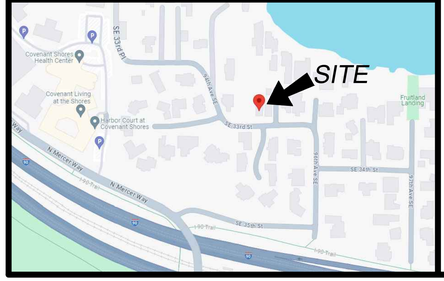


LEGEND

- FENCE LINE (CHAIN LINK)
- FENCE LINE (IRON)
- PROPERTY LINE (SUBJECT)
- RETAINING WALL
- MAILBOX (RESIDENTIAL)
- BUILDING
- SIGN (AS NOTED)
- TREE (AS NOTED)
- HEDGE FOLIAGE LINE
- ASPHALT SURFACE
- BRICK SURFACE
- CONCRETE SURFACE
- DECK
- FLAGSTONE SURFACE
- GRAVEL SURFACE
- PAVER SURFACE
- ROCKERY
- POWER HAND HOLE
- POWER METER
- POWER POLE
- POWER POLE W/ LIGHT
- POWER (OVERHEAD)
- AREA DRAIN
- CULVERT PIPE
- INLET (TYPE 1)
- STORM MANHOLE
- STORM DRAIN LINE
- SEWER MANHOLE
- SEWER LINE
- FIRE HYDRANT
- WATER METER
- WATER POST INDICATOR VALVE
- WATER VALVE
- WATER LINE

VICINITY MAP

N.T.S.

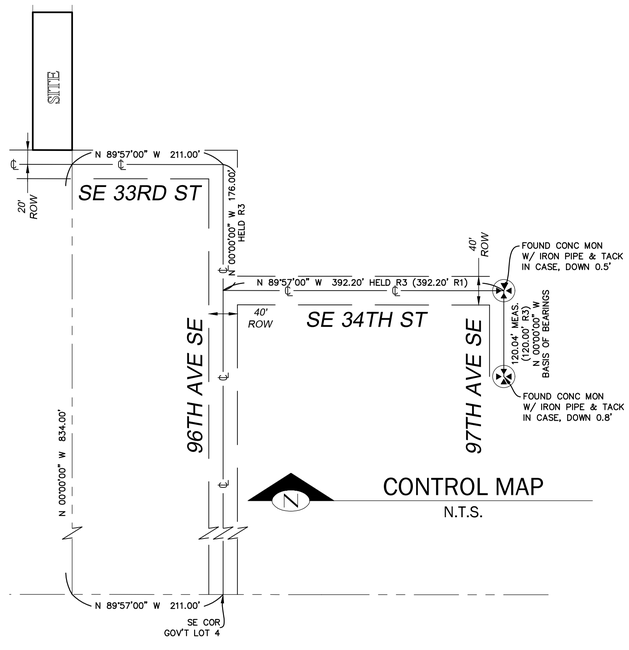


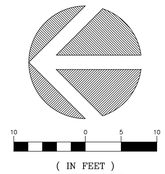
SCHEDULE B ITEMS

1. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: MERCER ISLAND SEWER DISTRICT
PURPOSE: SEWER
RECORDING DATE: MAY 6, 1959
RECORDING NO.: 5028716 AND 5028717
AFFECTS: REFERENCE IS HEREBY MADE TO DOCUMENT FOR FULL PARTICULARS
(PLOTTED)

2. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: MERCER ISLAND SEWER DISTRICT
PURPOSE: SEWER
RECORDING DATE: DECEMBER 18, 1964
RECORDING NO.: 5824573
AFFECTS: REFERENCE IS HEREBY MADE TO DOCUMENT FOR FULL PARTICULARS
(DOES NOT AFFECT SUBJECT PARCEL)

3. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT:
IN FAVOR OF: H. RAND GINN AND JUDITH W. GINN
PURPOSE: INGRESS, EGRESS AND UTILITIES
RECORDING DATE: APRIL 25, 1972
RECORDING NO.: 7204250371
AFFECTS: WESTERLY 10 FEET OF SAID PREMISES
(PLOTTED)





(IN FEET)
1 INCH = 10 FT.

INDEXING INFORMATION

-- 1/4 -- 1/4
NW¼ NE¼
SW¼ SE¼
SECTION: --
TOWNSHIP: --N
RANGE: --E, W.M.
COUNTY: KING

STEEP SLOPE/BUFFER DISCLAIMER:

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

We are the measure | terrane.net

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 4139300406

O'BRIEN RESIDENCE
9412 SOUTHEAST 33RD STREET
MERCER ISLAND, WA 98040

TERRANE
11235 SE 6th St, Suite 130
Bellevue, WA 98004
p: 425-458-4488 | e: info@terrane.net

JOB NUMBER:	232338
DATE:	01/26/2024
DRAFTED BY:	LSA
CHECKED BY:	JPS/RLS
SCALE:	1" = 10'

REVISION HISTORY

7/18/24	TITLE REVIEW

SHEET NUMBER
1 OF 1

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.

O'BRIEN RESIDENCE

GRADING, DRAINAGE AND UTILITY PLAN

DEVELOPMENT TEAM

OWNER / APPLICANT

SEAN & TRACEY O'BRIEN
7310 NE 201ST PL
KENMORE, WA 98028
CONTACT: SEAN & TRACEY O'BRIEN
EMAIL: SEAN@OBRIENREALESTATENW.COM
TRACEY@OBRIENREALESTATENW.COM
PHONE: 206-507-5050

CIVIL ENGINEER

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
CONTACT: MARC PUDISTS, P.E.
EMAIL: MARCP@MOMENTUMCIVIL.COM
PHONE: (253) 319-1505

SURVEYOR

TERRANE
11235 SE 6TH ST, SUITE 130
BELLEVUE, WA 98004
CONTACT: JEFFREY PASON
EMAIL: INFO@TERRANE.NET
PHONE: 425-458-4488

ARCHITECT

MCCULLOUGH ARCHITECTS
5700 CORSON AVE SOUTH
SEATTLE, WA 98108
CONTACT: NATE RUPCICH, ARCHITECTURAL DESIGNER
EMAIL: NATE@MCCULLOUGHARCHITECTS.COM
PHONE: 206.443.1181

GEOTECHNICAL ENGINEER

COBALT GEOSCIENCES, LLC
P.O. BOX 82243
KENMORE, WA 98028
CONTACT: PHIL HABERMAN, PE, LG, LEG PRINCIPAL
EMAIL: COBALTGEO@GMAIL.COM
PHONE: 206-331-1097

GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE CITY OF MERCER ISLAND STANDARDS. IF CITY OF MERCER ISLAND STANDARDS DO NOT ADDRESS A PROJECT ELEMENT, THEN THE LATEST VERSION OF THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION SHALLY APPLY UNLESS SUPERSEDED BY THIS PLAN SET, OR AN ORDER OF THE ENGINEER OR OWNER.
2. ALL EARTHWORK SHALL BE PERFORMED ACCORDING TO THE RECOMMENDATIONS CONTAINED IN THE PROJECT SPECIFIC GEOTECHNICAL REPORT BY COBALT GEOSCIENCES, LLC DATED 04/14/2025.
3. IF NECESSITATED BY EXISTING CONDITIONS, THE PROPERTY OWNER SHALL HAVE A LICENSED ARBORIST ASSESS TREES (BOTH ONSITE AND OFFSITE) ALONG THE LIMITS OF CLEARING AND GRADING TO DETERMINE IF TREES BEYOND THE CLEARING LIMITS SHOWN WILL BE AFFECTED BY THE PROPOSED PROJECT AND IF ANY ADDITIONAL TREE REMOVAL IS NECESSARY.

SITE INFORMATION

PARCEL NUMBER:	4139300406
PROJECT ADDRESS:	9412 SE 33RD STREET MERCER ISLAND, WA 98040
PARCEL AREA:	10,593 +/- SF)0.24 AC)

SURFACE COVERAGE SUMMARY:

NEW AND REPLACED IMPERVIOUS SURFACE:	2,562+/- SF (0.03AC)
NEW & REPLACED POLLUTION GENERATING IMPERVIOUS SURFACE:	612+/- SF (0.01 AC)
LANDSCAPING/TOPSOIL AMENDMENT AREA:	1,819+/- SF (0.02AC)
TOTAL DISTURBED AREA:	4,993+/- SF (0.11 AC)

SITE VOLUME CALCULATIONS

CUT VOLUME	380+/- CY
FILL VOLUME	25+/- CY
NET VOLUME	355+/- CY

EARTHWORK NOTE: ALL VOLUMES ARE APPROXIMATE AND ARE PROVIDED FOR PERMITTING PURPOSES ONLY AND REPRESENT THE FINISH GRADE TO EXISTING GRADE AS SHOWN ON THE PLANS. CONTRACTOR SHALL RELY ON THEIR OWN ESTIMATES FOR DETERMINING ACTUAL EARTHWORK QUANTITIES. THE VOLUMES LISTED ABOVE DO NOT ACCOUNT FOR STRIPPINGS, IMPORTED SUBGRADE MATERIALS, PAVEMENT DEPTHS, TRENCHING, STRUCTURAL EXCAVATION, EXPANSION/COMPACTION FACTORS, OR ANY SOIL TYPE RESTRICTIONS.

FILL SPECIFICATION

FILL MATERIAL SHALL NOT CONTAIN PETROLEUM PRODUCTS, OR ANY KNOWN SUBSTANCES THAT ARE TOXIC, HAZARDOUS, DANGEROUS, OR WHICH OTHERWISE VIOLATE ANY STATE, FEDERAL, OR LOCAL LAW, ORDINANCE CODE, REGULATION RULE, ORDER, OR STANDARD OF AN AGENCY HAVING JURISDICTION . ALL FILL MATERIAL SHALL BE EARTHEN, BE CAPABLE OF 95% COMPACTION IN COMPLIANCE WITH ASTM D1557, AND BE IN COMPLIANCE WITH THE PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.

EXISTING CONDITIONS VERIFICATION

PRIOR TO ANY EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES TO IDENTIFY ANY POTENTIAL CONFLICTS WITH PROPOSED CONSTRUCTION. CONTACT PROJECT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED. EXISTING UTILITIES SHALL BE POTHOLED AT THE LOCATION WHERE NEW CONNECTIONS ARE PROPOSED TO VERIFY INVERTS, MATERIALS, SIZE, AND GENERAL CONFORMANCE WITH THESE PLANS. CONTACT PROJECT ENGINEER IF CONDITIONS ARE DIFFERENT THAN ANTICIPATED.

PRIOR TO ANY CONSTRUCTION ACTIVITIES, VERIFY EXISTING TOPOGRAPHY AND GENERAL SITE FEATURES ARE CONSISTENT WITH THESE PLANS AND IF THERE ARE ANY POTENTIAL CONFLICTS WITH PROPOSED IMPROVEMENTS. CONTACT PROJECT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

TOPOGRAPHIC SURVEY DISCLAIMER

THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE PLANS HAS BEEN PREPARED BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MOMENTUM CIVIL CANNOT ENSURE ITS ACCURACY AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE PLANS AS A RESULT.

ELECTRONIC FILE RELEASE

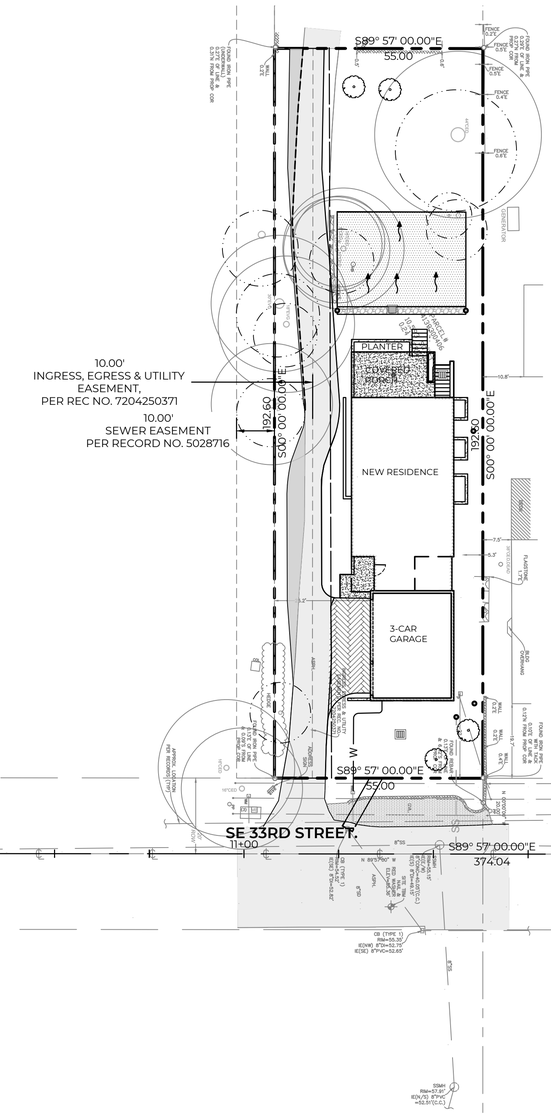
AN AUTOCAD (DWG) DRAWING FILE OF THE PLANS WILL BE MADE AVAILABLE TO THE CONTRACTOR UPON REQUEST. PLEASE BE AWARE THAT ELECTRONIC FILES ARE FURNISHED SOLELY FOR CONTRACTOR'S CONVENIENCE AND SHALL NOT REPLACE NOR BE USED TO SUBSTITUTE THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE IMPROVEMENTS ACCORDING TO THE CONTRACT DOCUMENTS.

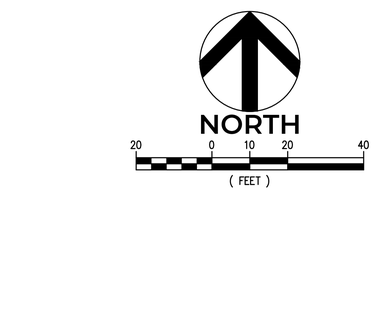
TEMPORARY AND PERMANENT SEEDING

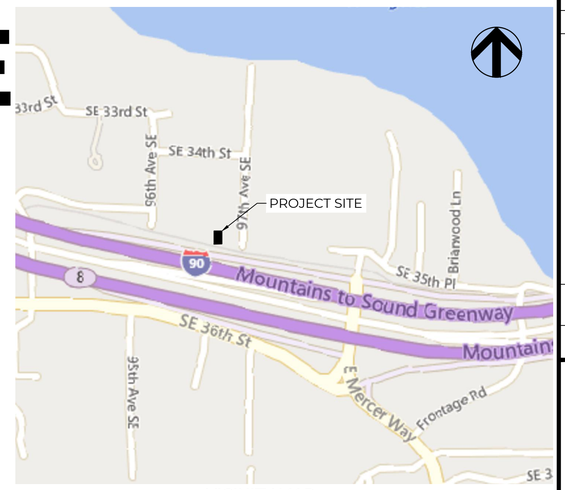
UNLESS NOTED OTHERWISE ON THE LANDSCAPING PLAN, ALL DISTURBED SOILS THAT ARE TO REMAIN VEGETATED IN THE POST-DEVELOPED CONDITION SHALL BE SEEDED TO COMPLY WITH DEPARTMENT OF ECOLOGY BEST MANAGEMENT PRACTICE (BMP) C120. SEED MIXTURES SHALL CONFORM TO TABLE II-3.4 OF ECOLOGY BMP C120 BASED ON SURFACE TYPE IDENTIFIED IN THE PLANS.

POST-CONSTRUCTION SOIL QUALITY AND DEPTH

ALL DISTURBED SOILS THAT ARE TO REMAIN VEGETATED IN THE POST-DEVELOPED CONDITION SHALL BE AMENDED IN-PLACE TO COMPLY WITH DEPARTMENT OF ECOLOGY BEST MANAGEMENT PRACTICE (BMP) T5.13







CIVIL SHEET INDEX

Sheet #	Ref #	Sheet Title
C1.0	1	CIVIL COVER
C1.1	2	EXISTING CONDITIONS
C1.2	3	GENERAL NOTES
C2.0	4	TESC & DEMOLITION PLAN
C2.1	5	TESC DETAILS
C3.0	6	DRAINAGE AND GRADING PLAN
C3.1	7	STORM PROFILE
C4.0	8	UTILITY PLAN
C4.1	9	DRAINAGE AND UTILITY DETAILS
C4.2	10	SEWER DETAILS

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

UTILITY PURVEYORS / SERVICES

SEWER: MERCER ISLAND PUBLIC WORKS
9601 SE 36TH STREET
MERCER ISLAND, WA 98040
PHONE: 206-275-7608

WATER: MERCER ISLAND PUBLIC WORKS
9601 SE 36TH STREET
MERCER ISLAND, WA 98040
PHONE: 206-275-7608

NO.	DATE	REVISION DESCRIPTION	BY	CK

9.18.25
MARC A PUDISTS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN
CIVIL COVER
9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: MP
DESIGNED BY: JDLS
DRAWN BY: JDLS

HORZ. DATUM: NAD83
VERT. DATUM: NAVD88

DATE: 9/18/25

PROJECT NO. OBRI-0001

SHEET NO. 1 or 10

REFERENCE NO. C1.0

Plot Date: 9/18/2025 3:31 PM
Save Date: 9/18/2025 3:08 PM
By: Jazmin Santos (Momentum Civil)
By: JazminSantos
N:\Projects\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\CV-OBRI001.dwg

KING COUNTY PLAN NOTES

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.

GENERAL NOTES

1. ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMIT CONDITIONS, THE KING COUNTY CODE (KCC),ROAD STANDARDS (KCRS), WASHINGTON STATE DOT (WSDOT) STANDARD SPECIFICATIONS AND THE CONDITIONS OF PRELIMINARY APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO KING COUNTY.
2. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THE KING COUNTY DEPARTMENT OF DEVELOPMENT AND ENVIRONMENTAL SERVICES (DDES) ENGINEERING REVIEW CHECKLIST. SOME ELEMENTS MAY HAVE BEEN OVERLOOKED OR MISSED BY THE DDES PLAN REVIEWER. ANY VARIANCE FROM ADOPTED STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY KING COUNTY PRIOR TO CONSTRUCTION.
3. APPROVAL OF THIS ROAD, GRADING, PARKING AND DRAINAGE PLAN DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION (E.G. DOMESTIC WATER CONVEYANCE, SEWER CONVEYANCE, GAS, ELECTRICAL, ETC.
4. BEFORE ANY CONSTRUCTION OR DEVELOPMENT ACTIVITY, A PRECONSTRUCTION MEETING MUST BE HELD BETWEEN THE DDES'S LAND USE INSPECTION SECTION, THE APPLICANT, AND THE APPLICANT'S CONSTRUCTION REPRESENTATIVE.
5. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. GRADING ACTIVITIES (SITE ALTERATION) ARE LIMITED TO THE HOURS OF 7 A.M. TO 7 P.M. MONDAY THROUGH SATURDAY AND 10 A.M. TO 5 P.M. ON SUNDAY, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.
7. IT SHALL BE THE APPLICANT'S/CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS NECESSARY BEFORE INITIATING OFF-SITE WORK. EASEMENTS REQUIRE REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
8. FRANCHISED UTILITIES OR OTHER INSTALLATIONS THAT ARE NOT SHOWN ON THESE APPROVED PLANS SHALL NOT BE CONSTRUCTED UNLESS AN APPROVED SET OF PLANS THAT MEET ALL REQUIREMENTS OF KCRS CHAPTER 8 ARE SUBMITTED TO THE DDES'S LAND USE INSPECTION SECTION THREE DAYS PRIOR TO CONSTRUCTION.
9. DATUM SHALL BE KCAS UNLESS OTHERWISE APPROVED BY DDES.
10. DEWATERING SYSTEM (UNDERDRAIN) CONSTRUCTION SHALL BE WITHIN A RIGHT-OF-WAY OR APPROPRIATE DRAINAGE EASEMENT, BUT NOT UNDERNEATH THE ROADWAY SECTION. ALL UNDERDRAIN SYSTEMS MUST BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS.
11. ALL UTILITY TRENCHES AND ROADWAY SUBGRADE SHALL BE BACKFILLED AND COMPACTED TO 95 PERCENT DENSITY, STANDARD PROCTOR.
12. OPEN CUTTING OF EXISTING ROADWAYS FOR NON-FRANCHISED UTILITY OR STORM WORK IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY DDES AND NOTED ON THESE APPROVED PLANS. ANY OPEN CUT SHALL BE RESTORED IN ACCORDANCE WITH KCRS.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL APPLY. WORK IN RIGHT-OF-WAY IS NOT AUTHORIZED UNTIL A TRAFFIC CONTROL PLAN IS APPROVED BY KING COUNTY

DRAINAGE NOTES

1. PROOF OF LIABILITY INSURANCE SHALL BE SUBMITTED TO DDES PRIOR TO THE CONSTRUCTION OF THE DRAINAGE FACILITIES, PREFERABLY AT THE PRECONSTRUCTION MEETING.
2. ALL PIPE AND APPURTENANCES SHALL BE LAID ON A PROPERLY PREPARED FOUNDATION IN ACCORDANCE WITH WSDOT SPECIFICATIONS. THIS SHALL INCLUDE LEVELING AND COMPACTING THE TRENCH BOTTOM, THE TOP OF THE FOUNDATION MATERIAL, AND ANY REQUIRED PIPE BEDDING, TO A UNIFORM GRADE SO THAT THE ENTIRE PIPE IS SUPPORTED BY AUNIFORMLY DENSE UNYIELDING BASE.
3. STEEL PIPE SHALL BE ALUMINIZED, OR GALVANIZED WITH ASPHALT TREATMENT #1 OR BETTER INSIDE AND OUTSIDE.
4. ALL CATCH BASIN GRATES SHALL CONFORM TO KCRS, WHICH INCLUDES THE STAMPING "OUTFALL TO STREAM, DUMP NO POLLUTANTS" AND "PROPERTY OF KING COUNTY", EXCEPT THAT PRIVATE DRAINAGE SYSTEMS SHALL NOT HAVE THE WORDS "PROPERTY OF KING COUNTY".
5. SEASONAL CLEARING IS LIMITED BETWEEN OCTOBER 1 AND MARCH 30 INCLUSIVE, UNLESS OTHERWISE APPROVED WITH A WRITTEN DECISION BY THE REVIEWING AGENCY.
6. IMPROVEMENTS AND/OR BUILDINGS SHALL NOT BE INSTALLED UNTIL DRAINAGE FACILITIES ARE "IN OPERATION", (KCC 9.04

EROSION AND SEDIMENTATION CONTROL NOTES

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, MAYBE 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.).
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 DAYS DURINGTHE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC COVER METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
9. ANY AREA NEEDING ESC MEASURES, NOT REQUIRING 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 OR WITHIN 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. 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. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DDES INSPECTOR FOR REVIEW.

STORM DRAINAGE DEFINITIONS MOMENTUM CIVIL)

CPEP: CORRUGATED POLYETHYLENE PIPE SHALL BE DUAL WALL RUBBER-GASKETED ADS N-12 OR APPROVED EQUAL WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS CONFORMING TO AASHTO M-294.

PVC: POLYVINYL CHLORIDE PIPE SHALL BE RUBBER GASKETED PIPE CONFORMING TO ASTM D3034, SDR-35 OR THICKER. ALL PERFORATED AND SOLID WALL PVC PIPES SHALL MEET THESE MINIMUM SPECIFICATIONS. PERFORATED PIPES SHALL BE INSTALLED SO THAT PERFORATION ROWS ARE DIRECTED DOWNWARDS.

N-12 HP: HIGH PERFORMANCE CORRUGATED POLYETHYLENE PIPE SHALL BE ADS-12 HP OR APPROVED EQUAL WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS CONFORMING TO AASHTO MP-21-11 AND ASTM F2736

DUCTILE IRON PIPE: DUCTILE IRON PIPE SHALL CONFORM TO ASTM A746 DUCTILE IRON GRAVITY SEWER PIPE AND BE CLASS 51 UNLESS OTHERWISE SPECIFIED ON THE PLANS.

COMBINATION INLET: RECTANGULAR FRAME AND GRATE WITH COMBINATION INLET PER WSDOT STANDARD PLAN B-25.20-02

ROLL GRATE: ROLLED CURB FRAME AND GRATE PER WSDOT STANDARD PLAN B-30.05-00

SOLID LID: RECTANGULAR BOLT DOWN LOCKING LID PER WSDOT STANDARD PLAN B-30.20.04. LID SHALL BE STAMPED WITH THE WORD "STORM"

VANE GRATE: WHERE CB IS LOCATED IN A DEPRESSION, PROVIDE RECTANGULAR BI-DIRECTIONAL VANED GRATE PER WSDOT STANDARD PLAN B-30.40-03; WHERE CB IS LOCATED ON A GRADE, PROVIDE RECTANGULAR VANED GRATE PER WSDOT STANDARD PLAN B-30.30-03.

ADA GRATE: RECTANGULAR ADA GRATE FOR RECTANGULAR FRAMES PER WSDOT STANDARD PLAN B-30.15-00

LIGHT DUTY GRATE: SLOTTED GRATE ONLY FOR PEDESTRIAN FOOT TRAFFIC CONFORMING TO ANSI A112.21.1M

WALL DRAIN (WD): UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER: WALL DRAIN PIPE SHALL BE A MINIMUM OF 4" PERFORATED PVC SDR 35 CONFORMING TO ASTM D3034 AND ASTM D2729; WALL DRAIN SHALL BE CONNECTED A MINIMUM OF 6-INCHES ABOVE ALL OTHER STORM INVERTS/CROWNS AT JUNCTION WITH OTHER STORM SYSTEM COMPONENTS TO PREVENT RUNOFF FROM ENTERING THE WALL DRAIN SYSTEM; PIPE SHALL HAVE CRUSHED ROCK BEDDING WITH MINIMUM 4-INCH BEDDING ON ALL SIDES; WRAP PIPE BEDDING ON ALL SIDES WITH MIRAFI 140N OR EQUIVALENT GEOTEXTILE FABRIC TO PREVENT FINES FROM MIGRATING INTO WALL DRAIN.

FOUNDATION DRAIN (FD): UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER: FOUNDATION DRAIN PIPE SHALL BE A MINIMUM OF 4" PERFORATED PVC SDR 35 CONFORMING TO ASTM D3034 AND ASTM D2729; PIPE SHALL HAVE CRUSHED ROCK BEDDING WITH MINIMUM 4-INCH BEDDING ON ALL SIDES; WRAP PIPE BEDDING ON ALL SIDES WITH MIRAFI 140N OR EQUIVALENT GEOTEXTILE FABRIC TO PREVENT FINES FROM MIGRATING INTO FOUNDATION DRAIN.

ROOF DRAIN (RD): ROOF DRAIN PIPES SHALL BE TIGHTLINED 4" PVC SDR 35 CONFORMING TO ASTM D3034.

DOWNSPOUT (DS): ALL DOWNSPOUTS SHALL BE DIRECTLY PLUMBED INTO THE ROOF DRAIN SYSTEM WITH APPROPRIATELY SIZED DOWNSPOUT ADAPTORS. THE CONNECTION SHALL BE WATER-TIGHT.

YARD DRAIN (YD): YARD DRAINS SHALL ACCOMMODATE A MINIMUM GRATE SIZE OF 9"x9" OR 9" DIAMETER, HAVE A MINIMUM SUMP DEPTH OF 6-INCHES, AND HAVE TIGHT-LINED PIPE CONNECTIONS AT THE INVERT ELEVATIONS SHOWN. CONTRACTOR SHALL COORDINATE WITH OWNER/OWNER'S AGENT FOR PRODUCT INFORMATION AND APPROVAL.

CB TYPE 1: CATCH BASIN TYPE 1 CONFORMING TO WSDOT STANDARD PLAN B-5.20-03

CB TYPE 2 (X" DIA): CATCH BASIN TYPE 2 WITH SPECIFIED INNER DIAMETER IN CONFORMANCE WITH WSDOT STANDARD PLAN B-10.20-02

GRADING GENERAL NOTES (MOMENTUM CIVIL)

1. FILL MATERIAL SHALL NOT CONTAIN PETROLEUM PRODUCTS, OR ANY KNOWN SUBSTANCES THAT ARE TOXIC, HAZARDOUS, DANGEROUS, OR WHICH OTHERWISE VIOLATE ANY STATE, FEDERAL, OR LOCAL LAW, ORDINANCE CODE, REGULATION RULE, ORDER, OR STANDARD OF AN AGENCY HAVING JURISDICTION . ALL FILL MATERIAL SHALL BE EARTHEN, BE CAPABLE OF COMPACTION IN COMPLIANCE WITH ASTM D1557, AND BE IN COMPLIANCE WITH THE PROJECT-SPECIFIC GEOTECHNICAL RECOMMENDATIONS.
2. UNLESS NOTED OTHERWISE, FINISHED LANDSCAPE GRADES ADJACENT TO BUILDING PERIMETER TO BE A MINIMUM OF 6-INCHES BELOW FINISHED FLOOR ELEVATIONS AND PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
3. UNLESS NOTED OTHERWISE, EXTERIOR HARDSCAPE ELEVATIONS AT THRESHOLDS SHALL BE ½ INCHES BELOW FINISHED FLOOR ELEVATIONS AND SLOPE AWAY FROM BUILDING AT 1-2%.
4. ALL SPOT ELEVATIONS SHOWN ARE EXTERIOR TO THE BUILDING UNLESS OTHERWISE NOTED. NO SPOT ELEVATIONS ON THE CIVIL PLANS ARE INTENDED TO SPECIFY GRADES WITHIN BUILDINGS/STRUCTURES.
6. UNLESS OTHERWISE NOTED, ALL GRADING SHOULD BE A MINIMUM OF 2 FEET FROM PROPERTY LINES.
7. LIMITS OF DISTURBANCE ARE SHOWN OFFSET/BEYOND THE PROPERTY LINES FOR CLARITY ONLY. UNLESS OTHERWISE NOTED, LAND DISTURBING ACTIVITIES SHOULD NOT EXTEND ONTO ADJACENT PROPERTIES
8. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL IMPROVED AREAS.
9. ADA COMPLIANCE:
   - 9.1. THE WORK SHALL BE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) FOR ACCESSIBLE DESIGN.
   - 9.2. FOR WORK IN THE RIGHT-OF-WAY, THE ADA STANDARDS FOR ACCESSIBLE DESIGN SHALL BE SUPPLEMENTED BY THE PUBLIC WORKS RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
   - 9.3. THE DEVELOPER SHALL RETAIN A QUALIFIED EXPERT TO REVIEW THESE PLANS FOR COMPLIANCE WITH CURRENT AMERICANS WITH DISABILITIES ACT (ADA) AND FEDERAL FAIR HOUSING ACT (FFHA) STANDARDS. IF ADJUSTMENTS TO THE DESIGN ARE RECOMMENDED AS A RESULT OF THIS REVIEW, THE ENGINEER SHALL BE NOTIFIED AND GIVEN AN OPPORTUNITY TO REVISE THE PLANS PRIOR TO CONSTRUCTION AT DEVELOPER'S EXPENSE.
   - 9.4. ALL SITE IMPROVEMENTS SUBJECT TO THE ADA STANDARDS FOR ACCESSIBLE DESIGN SHALL MEET THE FOLLOWING MAXIMUM SLOPES. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE IMPROVEMENTS OUT OF COMPLIANCE WITH THE ADA STANDARDS AND THE APPROVED PLANS.
   - 9.5. THE FOLLOWING MAXIMUM SLOPES SHALL NOT BE EXCEEDED UNLESS NOTED ON THE PLANS AS "MAXIMUM EXTENT FEASIBLE" PURSUANT TO PROWAG:
     - 9.5.1. LONGITUDINAL SLOPE OF CROSSWALKS: 5.00%
     - 9.5.2. LONGITUDINAL SLOPE OF WALKWAYS WITHOUT HANDRAIL: 5.00%
     - 9.5.3. LONGITUDINAL SLOPE OF CURB RAMP OR WALKWAYS WITH HANDRAIL : 8.33%
     - 9.5.4. CROSS SLOPE OF RAMP: 2.00% MAX
     - 9.5.5. RESULTANT SLOPE OF LANDING: 2.00% MAX
     - 9.5.6. TOP OF CURB SLOPE AT CURB RAMP FLARE: 10.00% MAX

NO	DATE	REVISION DESCRIPTION	BY	CK
1				

9.18.25

MARC A PUDISTS
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER

PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

GENERAL NOTES

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: **MP**
DESIGNED BY: **JDLS**
DRAWN BY: **JDLS**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NAVD88**

DATE: **9/18/25**

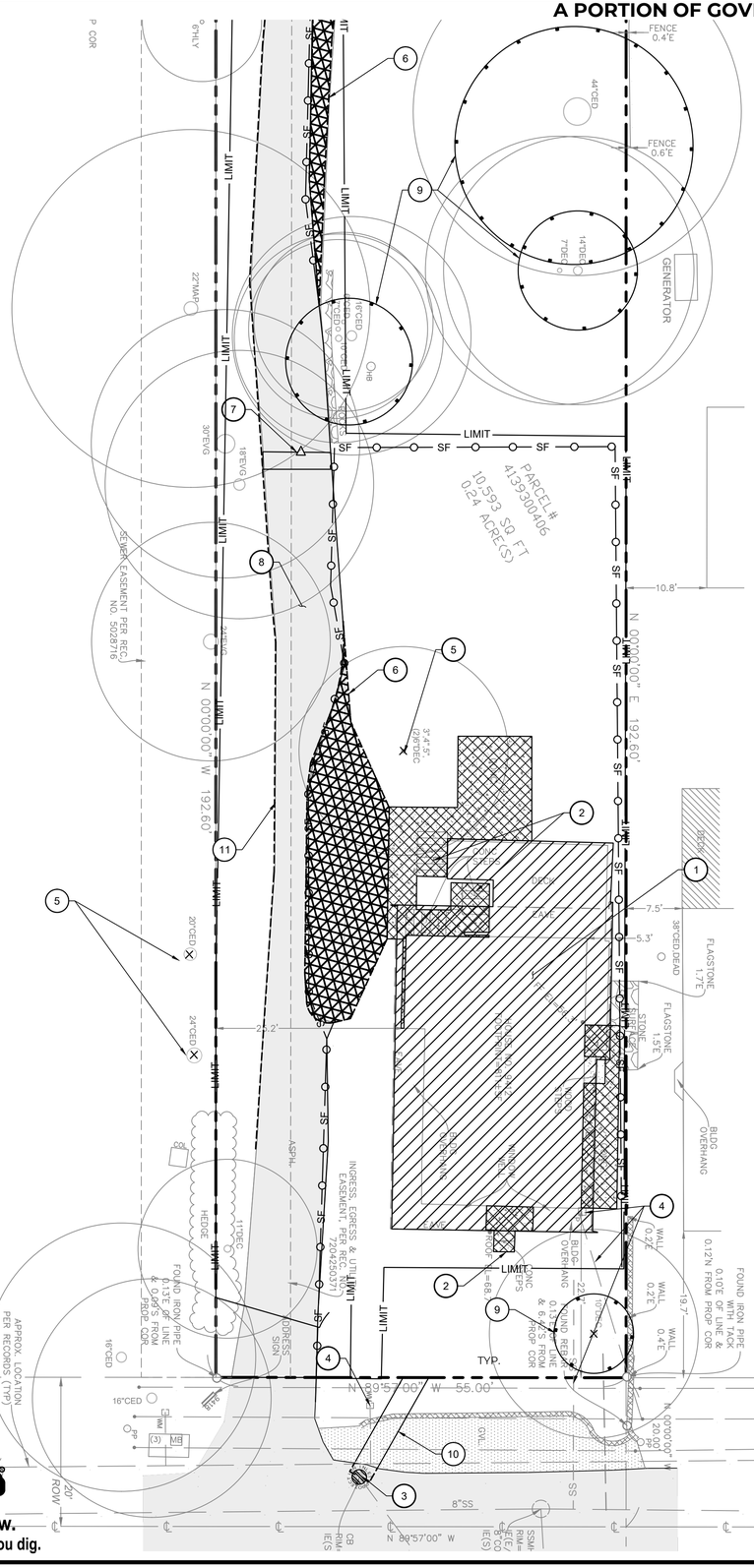
PROJECT NO. **OBRI-0001**

SHEET NO. **3 OF 10**

REFERENCE NO. **C1.2**

Plot Date: 9/18/2025 3:31 PM By: Jazmin Santos (Momentum Civil)
Save Date: 8/1/2025 12:22 PM By: JazminSantos
Path: C:\Users\JazminSantos\Momentum Civil\Momentum Civil - Documents\Projects\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\GN-OBRI001.dwg

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.



NORTH

10 0 5 10 20

(FEET)

TESC & DEMOLITION LEGEND

- PROPERTY BOUNDARY
- LIMIT — LIMITS OF CONSRTUCTION
- FULL DEPTH PAVEMENT SAWCUT LINE
- SF — SF — SF — SILT FENCE (BMP: C233) (1 / C2.1)
- TREE PROTECTION FENCE
- TRIANGULAR SILT DIKE (BMP: C208) (3 / C2.1)
- INLET PROTECTION (BMP: C220) (2 / C2.1)
- TREE REMOVAL
- ASPHALT PAVEMENT REMOVAL
- CEMENT CONCRETE PAVEMENT REMOVAL
- DEMOLISH STRUCTURE

TREE PROTECTION NOTES

AVOID THE FOLLOWING CONDITIONS DURING CONSTRUCTION:

1. ALLOWING RUN OFF OR SPILLAGE OF DAMAGING MATERIALS INTO THE APPROVED TREET PROTECTED ZONE, TPZ.
2. STORING CONSTRUCTION MATERIALS OR PORTABLE TOILETS, STOCKPILING OF SOIL, OR PARKING OR DRIVING VEHICLES WITHIN THE TPZ.
3. CUTTING, BREAKING, SKINNING, OR BRUISING ROOTS, BRANCHES, OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE PROJECT ARBORIST.
4. DISCHARGING EXHAUST INTO FOLIAGE.
5. SECURING CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS
6. TRENCHING CONSTRUCTION - AT FOUR-WEEK INTERVALS - TO ASSESS AND MONITOR THE EFFECTIVENESS OF THE TPPAND PROVIDE RECOMMENDATIONS FOR ANY ADDITIONAL CARE OR TREATMENT. MORE FREQUENT MAY BE REQUIRED BASED ON THE TPP.

THE FOLLOWING ACTIVITIES SHOULD BE OBSERVED AND INSPECTED BY THE PROJECT ARBORIST DURING THE CONSTRUCTION PHASE TO ENSURE COMPLIANCE.
WITH THE APPROVED TPP:

1. ONLY EXCAVATION BY HAND OR COMPRESSED AIR SHALL BE ALLOWED WITHIN THE TPZ OF TREES. MACHINE TRENCHING SHALL NOT BE ALLOWED.
2. ONLY EXCAVATION BY HAND OR COMPRESSED AIR SHALL BE ALLOWED WITHIN THE TPZ OF TREES. MACHINE TRENCHING SHALL NOT BE ALLOWED SMALLER THAN 2", THE WALL OF THE TRENCH ADJACENT TO THE TREES SHALL BE HAND TRIMMED, MAKING CLEAR, CLEAN CUTS THROUGH THE ROOTS. ALL DAMAGEDTORN AND CUT ROOTS SHALL BE GIVEN A CLEAN CUT TO REMOVE RAGGED EDGES, WHICH PROMOTE DECAY. TRENCHES SHALL BE FILLED WITHIN 24 HOURS, BUT WHERE THIS IS NOT POSSIBLE, THE SIDE OF THE TRENCH ADJACENT TO THE TREES SHALL BE KEPT SHADED WITH FOUR LAYERS OF DAMPENED, UNTREATED BURLAP, WETTED AS FREQUENTLY AS NECESSARY TO KEEP THE BURLAP WET. ROOTS 2" OR LARGER, WHEN ENCOUNTERED, SHALL BE REPORTED IMMEDIATELY TO THE PROJECT ARBORIST, WHO WILL DECIDE WHETHER THE CONTRACTOR MAY CUT THE ROOT AS MENTIONED ABOVE OR SHALL EXCAVATE BY HAND OR WITH COMPRESSED AIR UNDER THE ROOT. ALL EXPOSED ROOTS ARE TO BE PROTECTED WITH DAMPENED BURLAP.

GENERAL TESC NOTES

TEMPORARY EROSION AND SEDIMENTAITON CONTROL FACILITIES (TESC) (INCLUDING BUT NOT LIMITED TO TEMPORARY CONSTRUCTION ENTRANCE, CATCH BASIN PROTECTION, SILT FENCE. INSTALLATION,INTERCEPTOR DITCHES, SEDIMENTATION PONDS AND STRAW BALES) MUST BE IN PLACE AND INSPECTED BY THE CITY OF MERCER ISLAND PRIOR TO DEMOLITION, CLEARING/GRADING, ETC MAY BE IDENTIFIED ON THIS PLAN BUT MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR WILL ADHERE TO ADDITIONAL REQUIREMENTS AS CONDITIONS WARRANT AND THE PROJECT PROGRESSES,NO SEDIMENT-LADEN WATER SHALL ENTER LAKE WASHINGTON, THE PUBLIC STORM DRAIN SYSTEM, WATER COURSES, SENSITIVE AREAS OR THE ADJACENT PROPERTIES. NOT ALL OF THESE FACILITIES SPOIL PILES SHALL BE KEPT COVERED. ALL CITY STREETS SHALL BE KEPT FREE OF MUD AND CONSTRUCTION DEBRIS. TESC FACILITIES SHALL BE MAINTAINED UNTIL FINAL LANDSCAPING IS COMPLETED MAY BE IDENTIFIED ON THIS PLAN BUT MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR WILL ADHERE TO ADDITIONAL REQUIREMENTS AS CONDITIONS WARRANT AND THE PROJECT PROGRESSES, INCLUDING CLEANING OF DOWNSTREAM CATCH BASINS AND DRAINAGE FACILITIES OF SEDIMENT FROM THIS PROJECT.

PLAN NOTES

1. APPROVAL OF THIS TEMPORARY EROSION AND SEDIMENTATION CONTROL (TESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN.
2. THE IMPLEMENTATION OF THESE TESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITIES.OF THE OWNER/AGENT AND/OR THEIR CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDAIRES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF SURVEY TAPE (OR FENCING, IF REQUIRED) PRIOR TOCONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE OWNER/AGENT AND/OR THEIR CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE TESC 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.
5. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCITON PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES, HAY BALES AND SILT FENCES, ETC.).
6. THE TESC FACILITIES SHALL BE INSPECTED DAILY BY THE OWNER/AGENT AND/OR THEIR CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORD.SHALL BE KEPT OF WEEKLY REVIEWS OF THE TESC FACILITIES DURING THE WET SEASON (OCT. 1 TO APRIL 30) AND OF MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPT. 3

TESC AND DEMOLITION KEYNOTES

1. DEMOLISH EXISTING STRUCTURE, CONTRACTOR SHALL OBTAIN ALL NECESSARY BUILDING DEMOLITION PERMITS FROM AGENCY HAVING AUTHORITY AND SHALL COORDINATE WITH UTILITY PURVEYORS FOR UTILITY CONNECTION DECOMMISSIONING DURING CONSTRUCTION.
2. REMOVE EXISTING STAIRS.
3. PROVIDE INLET PROTECTION (BMP C220) FOR ALL STORM DRAIN INLETS DOWNSLOPE AND WITHIN 500 FEET OF THE LIMITS OF CONSTRUCTION PER DETAIL 2 ON SHEET C2.1.
4. PROTECT EXISTING UTILITIES THROUGHOUT CONSTRUCTION - DESIGNATED TO REMAIN. (NOTE: THE SIDE-SEWER LOCATION IS APPROXIMATE BASED ON THE MERCERISLAND GIS MAP; THE CONTRACTOR MUST FIELD-VERIFY THE EXISTING LINE'S DEPTH, CONDITION, AND ALIGNMENT BEFORE BEGINNING CONSTRUCTION.
5. REMOVE EXISTING TREES.
6. FULL DEPTH SAWCUT OF EXISTING PAVEMENT. PLACE SAWCUT 3-INCHES BACK FROM EXISTING EDGE OF PAVEMENT FOR STRAIGHT EDGE. A PORTION OF THE EXISTING SHARED ACCESS ROAD TO BE REMOVED.
7. LOCATION OF LOW IMPACT DEVELOPMENT (LID) INFILTRATION FACILITY IN THE FINAL BUILT CONDITION. CONTRACTOR SHALL AVOID USING HEAVY MACHINERY ON THE NATIVE SOILS/SUBGRADE TO PREVENT CLOGGING AND OVER COMPACTION OF THE IN-SITU SOILS. ALL TEMPORARY CONSTRUCTION DRAINAGE SHALL BE DIRECTED AWAY FROM THE LID FACILITY UNTIL THE SITE HAS BEEN STABILIZED.
8. PRESERVE ACCESS TO NEIGHBORING LOTS THROUGHOUT CONSTRUCTION.
9. INSTALL TREE PROTECTION FENCING WITHIN 50% OF THE CRITICAL ROOT PROTECTION ZONES TO PRESERVE AND SAFEGUARD THE REMAINING EXISTING TREES.
10. ALL TRENCHES SHALL BE RESTORED WITH THE SAME OR SIMILAR MATERIAL AND FINISH TO MATCH EXISTING CONDITIONS, SUBJECT TO APPROVAL BY MERCER ISLAND.
11. SAWCUT FULL PAVEMENT DEPTH, 1' BACK FROM EDGE OF EXISTING PAVEMENT, FOR PROPOSED PAVEMENT ADDITION

CONSTRUCTION SEQUENCE NOTES:

1. HOLD AN ONSITE PRE-CONSTRUCTION MEETING.
2. FLAG OR FENCE CLEARING LIMITS.
3. INSTALL CATCH BASIN PROTECTION, IF REQUIRED.
4. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
5. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.)
6. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.
7. MAINTAIN TESC MEASURES IN ACCORDANCE WITH CITY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
8. RELOCATE SURFACE WATER CONTROLS OR TESC MEASURES, OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE TESC IS ALWAYS IN ACCORDANCE WITH THE CITY OF MERCER ISLAND TEMPORARY EROSION AND SEDIMENTATION CONTROL REQUIREMENT.
9. COVER ALL AREAS THAT WILL BE UN-WORKED FOR MORE THAN TWO DAYS DURING THE WET SEASON (OCT. 1 TO APRIL 30) OR SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPT. 30) WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.
10. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.
11. SEED OR SOD ANY AREAS TO REMAIN UN-WORKED FOR MORE THAN 30 DAYS.
12. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE TESC MEASURES IF APPROPRIATE.
    REFERENCE: KING COUNTY SURFACE WATER DESIGN MANUAL APPENDIX D - 10.3

PROTECT ALL EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL THROUGHOUT CONSTRUCTION. PARTICULAR ITEMS ARE CALLED OUT FOR PROTECTION WITHIN THIS PLAN SET FOR EMPHASIS ONLY AND THE LIST IS NOT ALL-INCLUSIVE. CONTACT ENGINEER OR OWNER IF THERE IS ANY UNCERTAINTY PERTAINING TO THE LIMITS OF DEMOLITION OR EXISTING ITEMS TO REMAIN.

THIS TEMPORARY EROSION AND SEDIMENT CONTROL (T.E.S.C.) PLAN REPRESENTS A MINIMAL LEVEL OF BMPS ANTICIPATED FOR THIS SITE. THE CONTRACTOR SHALL MODIFY AND AUGMENT THIS T.E.S.C. PLAN AS NECESSARY TO FULFILL ALL THE REQUIREMENTS OF THE SITE SPECIFIC CONSTRUCTION STORM WATER PERMIT.

CAUTION
LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE AND MAY NOT BE ACCURATE OR ALL INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY LOCATION OF UTILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. CONTRACTOR MUST CALL 1-800-424-5555 NOT LESS THAN TWO FULL BUSINESS DAYS BEFORE BEGINNING EXCAVATION WHERE ANY UNDERGROUND UTILITIES MAY EXIST. EXISTING UTILITIES TO BE LOCATED, PROTECTED, AND REPAIRED IN ACCORDANCE WITH RCW 19.122.

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

Plot Date: 9/18/2025 3:31 PM By: Jazmin Santos (Momentum Civil)
Save Date: 9/12/2025 2:11 PM By: JazminSantos
Path: O:\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\ESC-OBRI001.dwg

NO.	DATE	REVISION DESCRIPTION	BY	CK
1		#		

9.18.25
MARC A PUDLETS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN
TESC & DEMOLITION PLAN
9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: MP
DESIGNED BY: JDLS
DRAWN BY: JDLS

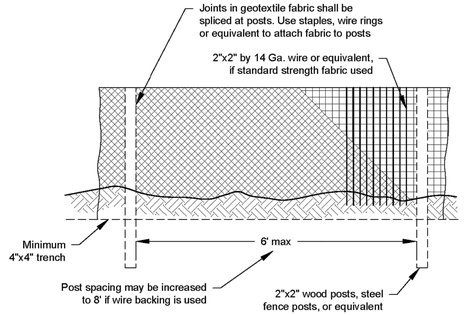
HORZ. DATUM: NAD83
VERT. DATUM: NAVD88

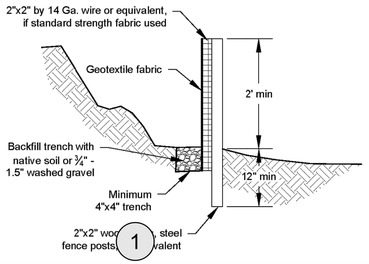
DATE: XX/XX/22

PROJECT NO. OBRI-0001

SHEET NO. 4 OF 10

REFERENCE NO. C2.0





1

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Silt Fence

Revised July 2017

Please see *http://www.ecy.wa.gov/copyright.html* for copyright notice including permissions, limitation of liability, and disclaimer.

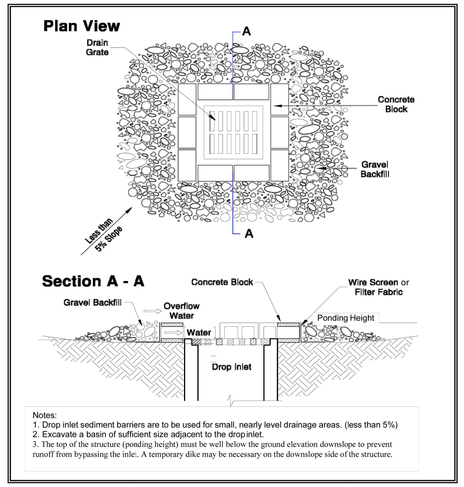
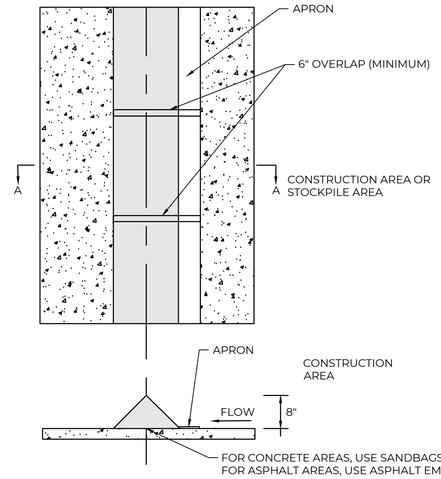


Figure 4.2.8 – Block and Gravel Filter

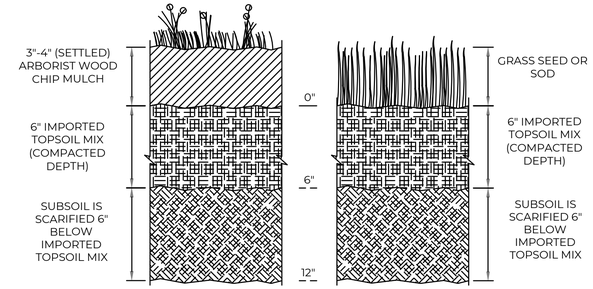
Gravel and Wire Mesh Filter - A gravel barrier placed over the top of the inlet. This structure does not provide an overflow.

- Use a hardware cloth or comparable wire mesh with ½-inch openings.
- Use coarse aggregate.
- Provide a height 1-foot or more, 18-inches wider than inlet on all sides.
- Place wire mesh over the drop inlet so that the wire extends a minimum of 1-foot beyond each side of the inlet structure.
- Overlap the strips if more than one strip of mesh is necessary.

2 INLET PROTECTION
SCALE: NTS



3 TRIANGULAR SILT FOAM DIKE
SCALE: NTS



PLANTING BEDS

1. USE IMPORTED TOPSOIL MIX CONTAINING 10% ORGANIC MATTER (TYPICALLY AROUND 40% COMPOST). SOIL PORTION MUST BE SAND OR SANDY LOAM AS DEFINED BY THE USDA. PLACE 3 INCHES OF IMPORTED TOPSOIL MIX ON SURFACE AND TILL INTO 2 INCHES OF SOIL. PLACE SECOND LIFT OF 3 INCHES TOPSOIL MIX ON SURFACE.
2. RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES DIAMETER. MULCH PLANTING BEDS WITH 3"-4" OF ORGANIC MULCH OR STOCKPILED DUFF.

TURF (LAWN) AREAS

1. USE IMPORTED TOPSOIL MIX CONTAINING 5% ORGANIC MATTER (TYPICALLY AROUND 25% COMPOST). SOIL PORTION MUST BE SAND OR SANDY LOAM AS DEFINED BY THE USDA. PLACE 3 INCHES OF IMPORTED TOPSOIL MIX ON SURFACE AND TILL INTO 2 INCHES OF SOIL. PLACE SECOND LIFT OF 3 INCHES TOPSOIL MIX ON SURFACE.
2. WATER OR ROLL TO COMPACT TO 85% OF MAXIMUM DRY DENSITY. RAKE TO LEVEL AND REMOVE SURFACE ROCKS LARGER THAN 1 INCH DIAMETER.

OPTION: IMPORTED TOPSOIL

IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS. ALL SOIL AREAS DISTURBED OR COMPACTED DURING CONSTRUCTION AND NOT COVERED BY BUILDINGS OR PAVEMENT, SHALL BE RESTORED AS DESCRIBED BELOW.

1. SCARIFICATION: SCARIFY OR TILL SUBGRADE IN TWO DIRECTION TO 6 INCHES DEPTH. ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION. DO NOT SCARIFY WITHIN DRIP LINE OF EXISTING TREES TO BE RETAINED.
2. SETBACKS: TO PREVENT UNEVEN SETTLING, DO NOT COMPOST-AMEND SOILS WITHIN 3 FEET ON CENTER OF UTILITY INFRASTRUCTURE (POLES, VAULTS, METERS ETC.). WITHIN ONE FOOT OF PAVEMENT EDGE, CURBS AND SIDEWALKS; SOIL SHOULD BE COMPACTED TO APPROXIMATELY 90% MAX. MODIFIED PROCTOR DENSITY (ASTM D1557) TO ENSURE A FIRM SURFACE. DO NOT COMPACT WITHIN TREE PROTECTION ZONE.

4 POST-CONSTRUCTION SOIL QUALITY AND DEPTH
SCALE: NTS

NO	DATE	REVISION DESCRIPTION	BY	CK
1				

9.18.25
MARC A PUDLETS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

TESC DETAILS

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: **MP**
DESIGNED BY: **JDLS**
DRAWN BY: **JDLS**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NAVD88**

DATE: **9/18/25**

PROJECT NO. **OBRI-0001**

SHEET NO. **5 OF 10**

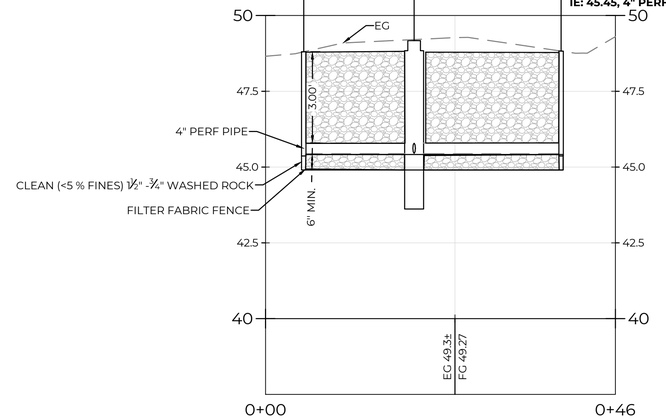
REFERENCE NO. **C2.1**

Plot Date: 9/18/2025 3:32 PM By: Jazmin Santos (Momentum Civil)
Save Date: 7/31/2025 11:46 AM By: JazminSantos
Path: O:\OBRI\01-9412 SE 33rd St SFR\0400CAD\Sheets\ESC-DT-OBRI001.dwg

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.

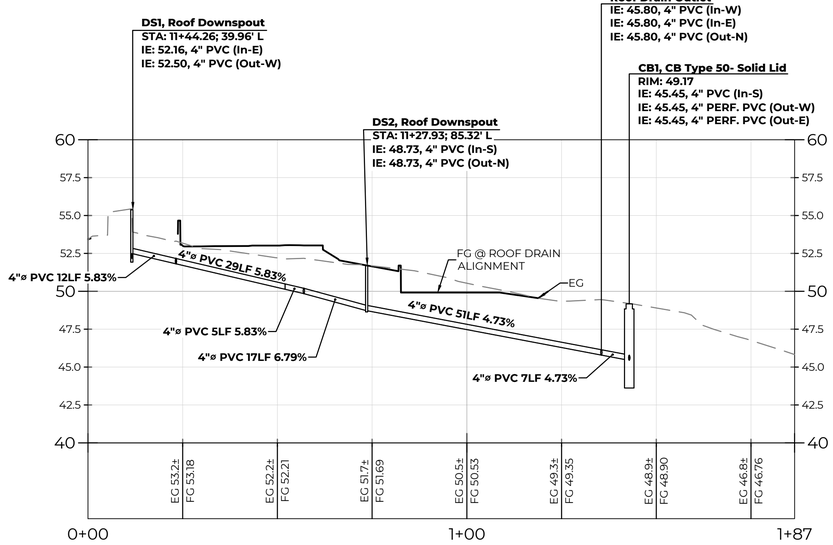
NOTE:THE DISPERSION TRENCH SHALL BE DESIGNED TO MEET THE 2019 STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.

REFER TO DETAIL 3 ON SHEET C4.1. FOR NOTCHED GRADE BOARD.



DISPERSION TRENCH

Horz. Scale: 1" = 10' | Vert. Scale: 1" = 2'



ROOF TIGHTLINE TO DISPERSION TRENCH

RETAINING WALL NOTES

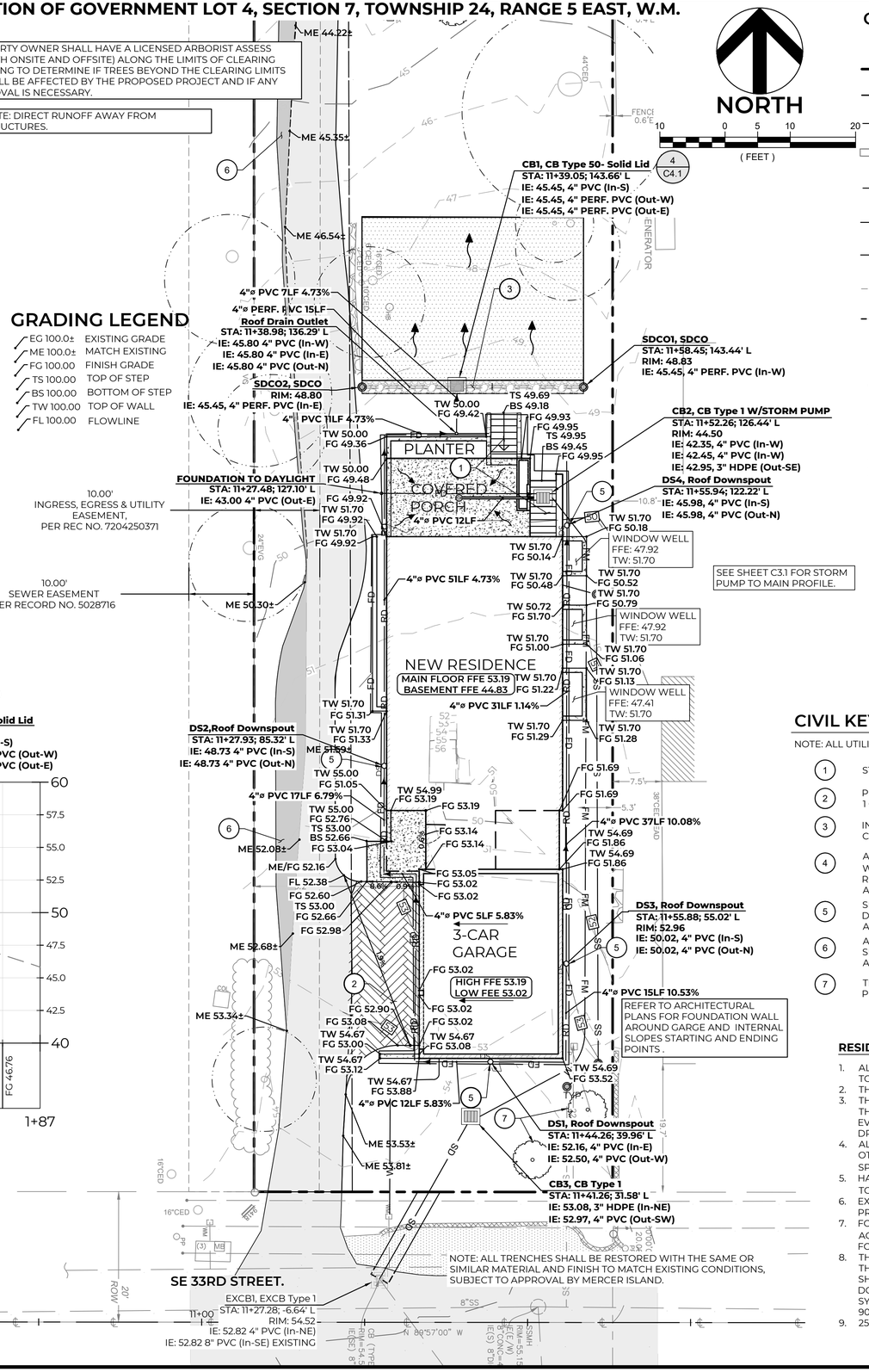
1. ANY RETAINING WALLS OVER 48 INCHES TALL (TOP OF WALL TO BOTTOM OF FOUNDATION) SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER AND WILL REQUIRE SEPARATE BUILDING PERMITS.
2. WALL DESIGNER TO INCORPORATE IBC COMPLIANT PEDESTRIAN GUARDRAIL FALL PROTECTION INTO WALL DESIGN.
3. BOTTOM OF WALL ELEVATION LABELS ARE TO BOTTOM OF "EXPOSED WALL" AND DO NOT INCLUDE THE EMBEDMENT REQUIREMENTS WHICH WILL BE DETERMINED BY THE WALL STRUCTURAL DESIGNER.

THE PROPERTY OWNER SHALL HAVE A LICENSED ARBORIST ASSESS TREES (BOTH ONSITE AND OFFSITE) ALONG THE LIMITS OF CLEARING AND GRADING TO DETERMINE IF TREES BEYOND THE CLEARING LIMITS SHOWN WILL BE AFFECTED BY THE PROPOSED PROJECT AND IF ANY TREE REMOVAL IS NECESSARY.

NOTE: DIRECT RUNOFF AWAY FROM STRUCTURES.

GRADING LEGEND

EG 100.0±	EXISTING GRADE
ME 100.0±	MATCH EXISTING
FG 100.00	FINISH GRADE
TS 100.00	TOP OF STEP
BS 100.00	BOTTOM OF STEP
TW 100.00	TOP OF WALL
FL 100.00	FLOWLINE



CIVIL LEGEND

- BUILDING FOOTPRINT
- PROPERTY BOUNDARY
- BUIDLING OVER HANG
- RD — ROOF DRAIN
- CAST - IN - PLACE CONCRETE WALL
- FD — FOUNDATION DRAIN
- SS — SANITARY SEWER SERVICE
- FD — STORM DISCHARGE LINE
- EASEMENTS
- FULL DEPTH PAVEMENT SAWCUT LINE 1' BACK FROM EXISTING PAVMENT
- DS — DOWNSPOUT, YARD DRAIN, CATCH BASIN TYPE 50 SOLID LID, CATCH BASIN TYPE 1 VANED GRATE
- NEW CONCRETE PAVEMENT PATIO (2 C4.1)
- NEW PERMEABLE CONCRETE DRIVEWAY (1 C4.1)
- DISPERSION TRENCH
- VEGETATED FLOW PATH
- HMA PAVING (3" HMA OVER 6" CSTC)

- FG MAJOR CONTOUR 100
- FG MINOR CONTOUR 101
- EG MAJOR CONTOUR 100
- EG MINOR CONTOUR 101
- FLOWLINE

NOTE: ALL SPOT ELEVATIONS SHOWN ARE EXTERIOR TO STRUCTURE UNLESS OTHERWISE NOTED. NO SPOT ELEVATIONS ON THE CIVIL PLANS ARE INTENDED TO SPECIFY GRADES WITHIN BUILDINGS/STRUCTURES.

CIVIL KEYNOTES

NOTE: ALL UTILITIES STATIONING REFRENCE THE SE 33RD STREET CENTERLINE.

1. STAIRS PER ARCHITECTURAL DRAWINGS.
2. PERMEABLE PAVEMENT TO BE USED FOR THE REPLACED DRIVEWAY PER DETAIL 1 ON SHEET C4.1.
3. INSTALL A 34' LONG x 2' WIDE DISPERSION TRENCH PER DETAIL 3 ON SHEET C4.1. CONNECT THE ROOF DRAIN TIGHTLINE TO THE DISPERSION TRENCH.
4. A 1 HP, 120v , MODEL CDU1000 BY WAYNE PUMPS,OR APPROVED EQUAL TO BE WITHIN A CATCH BASIN TYPE 1, WITH 1-1/4" DISCHARGE LINE..THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR PUMP. PROVIDE A 20 AMP CIRCUIT AND INLINE CHECK VALVE WITHIN THE CATCH BASIN.
5. SEE ARCHITECTURAL PLANS FOR EXACT DOWNSPOUT LOCATIONS. CONNECT ALL DOWNSPOUTS TO ROOF DRAIN LINE WITH APPROPRIATE DOWNSPOUT ADAPTERS.
6. A PORTION OF EXISTING SHARED ACCESS ROAD TO BE RECONSTRUCTED AND SHIFTED TO THE WEST SIDE OF PARCEL. NEW ACCESS ROAD SECTION TO TIE INTO AND MATCH EXISTING GRADES AND PAVEMENT.
7. TREES TO BE PLANTED. SEE ARBORIST REPORT FOR SPECIES, SIZE, AND PLANTING DETAILS.

RESIDENTIAL GRADING AND DRAINAGE NOTES:

1. ALL DISTURBED AREAS THAT ARE NOT PAVED OR ROOFED SHALL RECEIVE TOPSOIL AMENDMENT.
2. THE CONTRACTOR MAY ADJUST THE FINISHED FLOOR ELEVATION AS NECESSARY.
3. THE PIPE SLOPES SHOWN ARE MINIMUM SLOPES; THE CONTRACTOR MAY ADJUST THE PIPE SLOPES SO LONG AS A MINIMUM PIPE COVER OF 2-FT IS PROVIDED EVERYWHERE, A MINIMUM PIPE SLOPE OF 1% IS OBTAINED, AND THAT POSITIVE DRAINAGE IS PROVIDED AS SHOWN ON THESE PLANS.
4. ALL SPOT ELEVATIONS SHOWN ARE EXTERIOR TO THE BUILDING UNLESS OTHERWISE NOTED. NO SPOT ELEVATIONS ON THE CIVIL PLANS ARE INTENDED TO SPECIFY GRADES WITHIN BUILDINGS/STRUCTURES.
5. HARD SURFACING TO BE SLOPED AT 2% MINIMUM AWAY FROM STRUCTURES AND TOWARDS COLLECTION/DISCHARGE POINTS.
6. EXCEPT FOR SITE ACCESS, ALL GRADING SHOULD BE A MINIMUM OF 2-FT FROM PROPERTY LINES.
7. FOOTING DRAINS SHALL BE INSTALLED FOR THE PROPOSED FOUNDATION IN ACCORDANCE WITH THE STRUCTURAL/ARCHITECTURAL PLANS. DO NOT CONNECT FOOTING DRAIN TO ROOF DRAIN SYSTEM.
8. THE ROOF DRAIN SYSTEM SHOWN HEREIN IS NOT EXHAUSTIVE AND ONLY SHOWS THE MINIMUM ELEMENTS REQUIRED TO SERVE THE RESIDENCE. THE CONTRACTOR SHALL MAKE NECESSARY MODIFICATIONS TO TIGHTLINE ALL ROOF DRAIN DOWNSPOUTS TO THE ROOF DRAIN SYSTEM AND OUTLET THE ROOF DRAIN SYSTEM AS SHOWN. THE CONTRACTOR SHALL PROVIDE CLEANOUTS FOR EVERY 90 DEGREES OF ARTICULATION ALONG THE ROOF DRAIN SYSTEM.
9. 25' FLOW PATH FROM DOWNSPOUT DISPERSION TRENCH.

NO.	DATE	REVISION DESCRIPTION	BY	CK
1				

9.18.25

MARC A PUDEWITS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

DRAINAGE AND GRADING PLAN

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: MP
DESIGNED BY: JDLS
DRAWN BY: JDLS

HORZ. DATUM: NAD83
VERT. DATUM: NAVD88

DATE: 9/18/25

PROJECT NO. OBRI-0001

SHEET NO. 6 OF 10

REFERENCE NO. C3.0

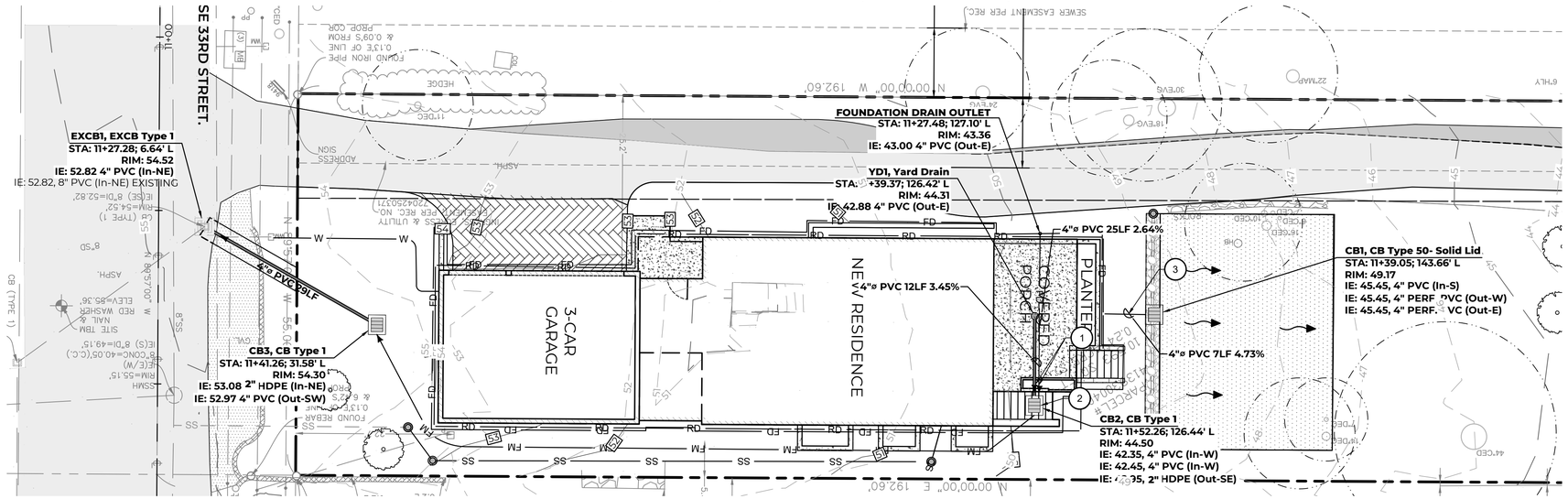
Plot Date: 9/18/2025 3:32 PM By: Jazmin Santos (Momentum Civil)
Save Date: 9/18/2025 3:28 PM By: JazminSantos
K:\2025\250100OBRI\01-9412 SE 33rd St SFR\0400CAD\Sheets\PV-GD-OBRI001.dwg

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.

NORTH

10 0 5 10 20

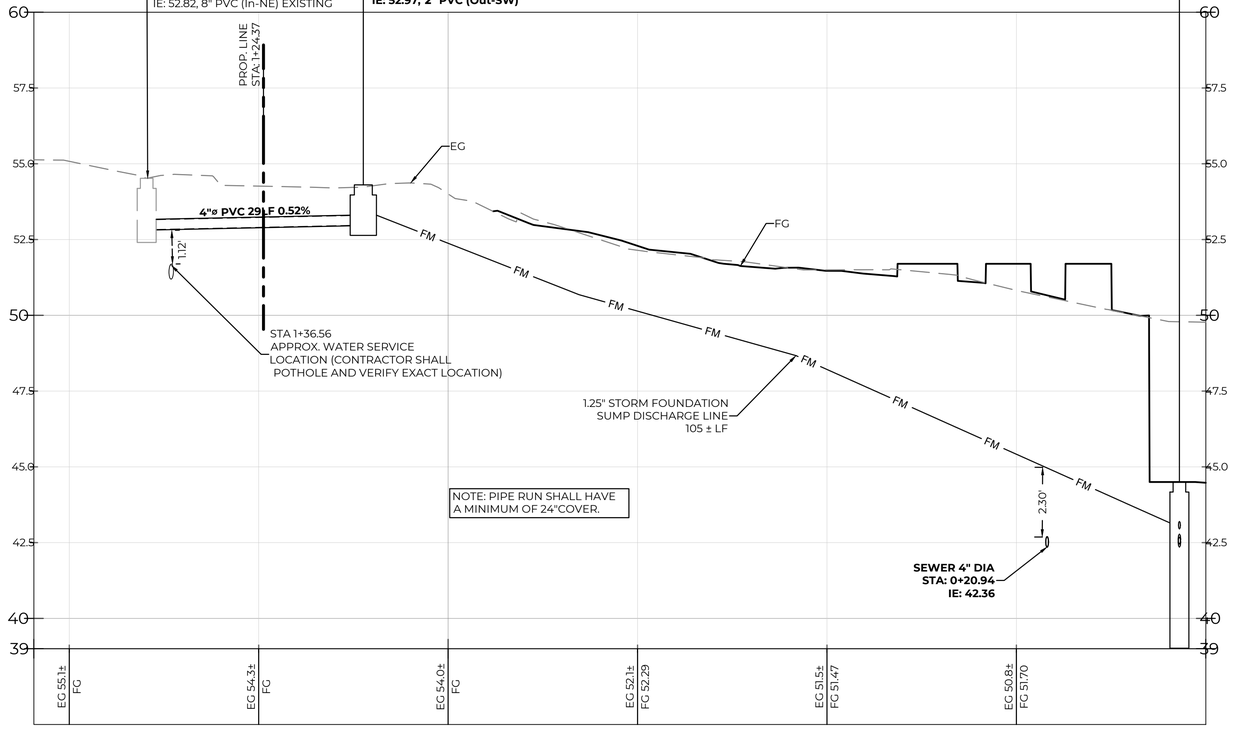
(FEET)



NOTE: ALL STRUCTURE STATIONING IS REFERENCED TO THE SE 33RD STREET CENTERLINE ALIGNMENT.

STORM KEYNOTES

1. FOUNDATION DRAINS AND ANY RUNOFF ENTERING THE COVERED PORCH WILL BE DIRECTED TO THE CATCH BASIN WITH SUMP PUMP, WHICH WILL DISCHARGE TO THE CATCH BASIN WITHIN THE PUBLIC RIGHT-OF-WAY SYSTEM.
2. A 1 HP, 120v , MODEL CDU1000 BY WAYNE PUMPS,OR APPROVED EQUAL TO BE WITHIN A CATCH BASIN TYPE 1. WITH 1-1/4" DISCHARGE LINE.THE CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL PERMITS AND APPROVALS FOR PUMP. PROVIDE A 20 AMP CIRCUIT AND INLINE CHECK VALVE WITHIN THE CATCH BASIN.
3. ROOF DRAIN RUNOFF WILL BE DIRECTED TO THE 34-FOOT-LONG BY 2-FOOT-WIDE DISPERSION TRENCH SEE DETAIL 3 ON SHEET C4.1. REFER TO SHEET C3.0 FOR ROOF DRAIN DOWNSPOUT LOCATIONS AND PIPE SLOPES.



STORM PUMP

Horz. Scale: 1" = 10' | Vert. Scale: 1" = 2'

PUMP SYSTEM NOTES:

1. CONTRACTOR SHALL INSTALL A WATER-TIGHT ASSEMBLAGE FOR THE CONFIGURATION SHOWN.
2. PROVIDE 120V, 20A CIRCUIT TO CB #2 TO SERVICE THE SUMP PUMP. ALL WORK SHALL CONFORM TO PUMP MANUFACTURER'S RECOMMENDATIONS, ELECTRICAL STANDARDS, AND LOCAL JURISDICTIONAL STANDARDS.
3. PUMP FLOAT SHALL BE A VERTICAL FLOAT SWITCH.

NO.	DATE	REVISION DESCRIPTION	BY	CK
△				

9.18.25
MARC A. PUDLETS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

STORM PROFILE

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: **MP**
DESIGNED BY: **JDLS**
DRAWN BY: **JDLS**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NAVD88**

DATE: **9/18/25**

PROJECT NO. **OBRI-0001**

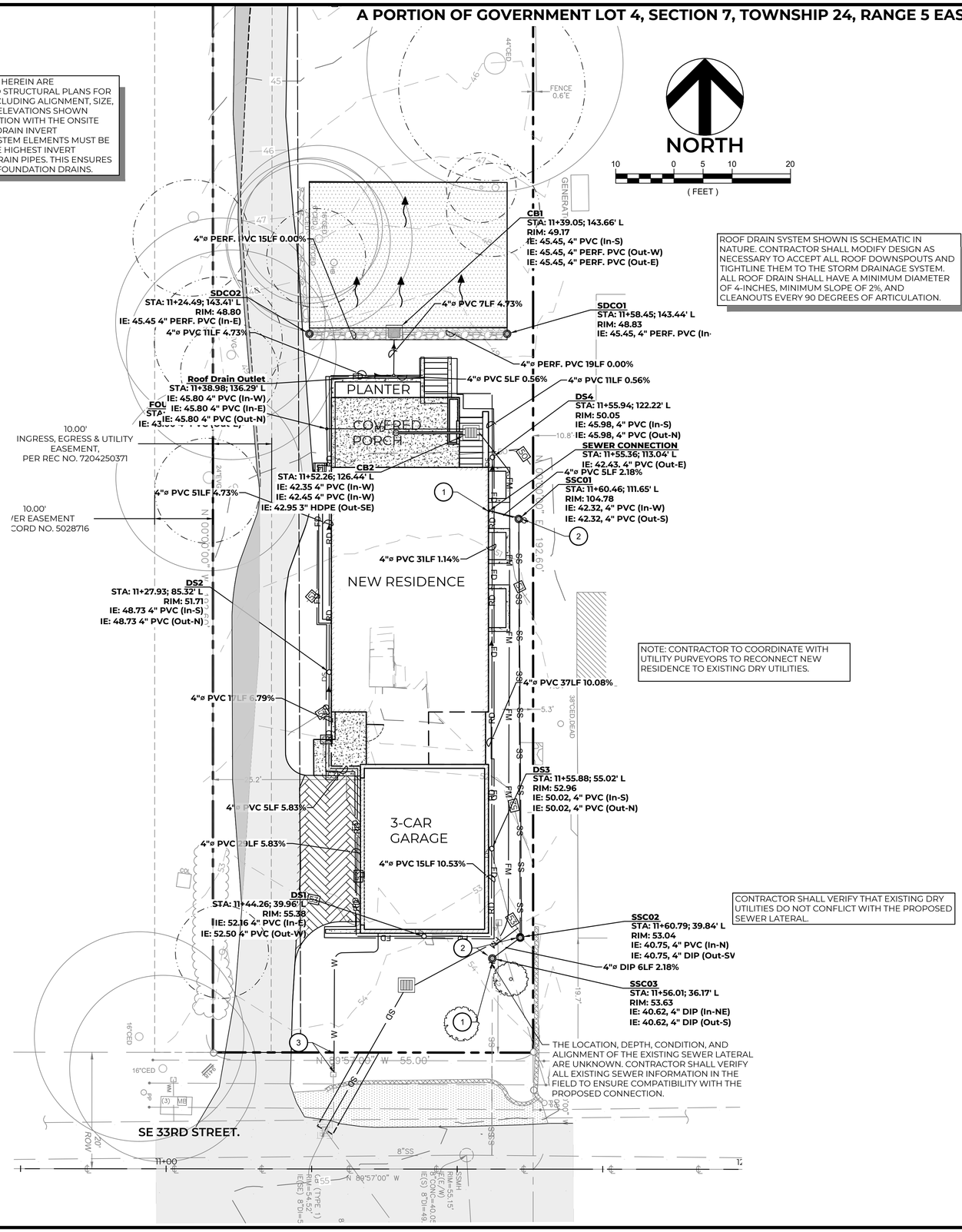
SHEET NO. **7** OF **10**

REFERENCE NO. **C3.1**

Plot Date: 9/18/2025 3:32 PM
Save Date: 8/1/2025 1:10 PM
By: Jazmin Santos (Momentum Civil)
By: JazminSantos
File: P:\0400\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\STORM-PF-OBRI001.dwg

A PORTION OF GOVERNMENT LOT 4, SECTION 7, TOWNSHIP 24, RANGE 5 EAST, W.M.

NOTE: ALL FOOTING DRAINS SHOWN HEREIN ARE DIAGRAMATIC IN NATURE - REFER TO STRUCTURAL PLANS FOR FOOTING DRAIN SPECIFICATIONS INCLUDING ALIGNMENT, SIZE, MATERIAL, AND DEPTH. THE INVERT ELEVATIONS SHOWN HEREIN ARE SOLELY FOR COORDINATION WITH THE ONSITE STORM SYSTEM - ALL FOUNDATION DRAIN INVERT CONNECTIONS TO OTHER STORM SYSTEM ELEMENTS MUST BE A MINIMUM OF 6-INCHES ABOVE THE HIGHEST INVERT ELEVATION OF NON FOUNDATION DRAIN PIPES. THIS ENSURES BACKWATER DOES NOT ENTER THE FOUNDATION DRAINS.



NOTE: CONTRACTOR TO COORDINATE WITH UTILITY PURVEYORS TO RECONNECT NEW RESIDENCE TO EXISTING DRY UTILITIES.

ROOF DRAIN SYSTEM SHOWN IS SCHEMATIC IN NATURE. CONTRACTOR SHALL MODIFY DESIGN AS NECESSARY TO ACCEPT ALL ROOF DOWNSPOUTS AND TIGHTLINE THEM TO THE STORM DRAINAGE SYSTEM. ALL ROOF DRAIN SHALL HAVE A MINIMUM DIAMETER OF 4-INCHES, MINIMUM SLOPE OF 2%, AND CLEANOUTS EVERY 90 DEGREES OF ARTICULATION.

CONTRACTOR SHALL VERIFY THAT EXISTING DRY UTILITIES DO NOT CONFLICT WITH THE PROPOSED SEWER LATERAL.

THE LOCATION, DEPTH, CONDITION, AND ALIGNMENT OF THE EXISTING SEWER LATERAL ARE UNKNOWN. CONTRACTOR SHALL VERIFY ALL EXISTING SEWER INFORMATION IN THE FIELD TO ENSURE COMPATIBILITY WITH THE PROPOSED CONNECTION.

CIVIL LEGEND

- BUILDING FOOTPRINT
- PROPERTY BOUNDARY
- BUIDLING OVER HANG
- RD — ROOF DRAIN
- CAST - IN - PLACE CONCRETE WALL
- FD — FOUNDATION DRAIN
- SS — SANITARY SEWER SERVICE
- FD — STORM DISCHARGE LINE
- EASEMENTS
- FULL DEPTH PAVEMENT SAWCUT LINE 1' BACK FROM EXISTING PAVMENT
- DS O — DOWNSPOUT, YARD DRAIN, CATCH BASIN TYPE 50 SOLID LID, CATCH BASIN TYPE 1 VANED GRATE
- NEW CONCRETE PAVEMENT PATIO (2 / C4.1)
- NEW PERMEABLE CONCRETE DRIVEWAY (1 / C4.1)
- DISPERSION TRENCH
- VEGETATED FLOW PATH
- HMA PAVING (3" HMA OVER 6" CSTC)

UTILITY KEYNOTES

NOTE: ALL UTILITIES STATIONING REFRENCE THE SE 33RD STREET CENTERLINE.

1. INSTALL A NEW 4-INCH SDR-35 PVC SIDE SEWER LATERAL. REFER TO DETAIL 2 ON SHEET C4.2 FOR THE HOUSE CONNECTION. CONNECT TO THE EXISTING SEWER LATERAL, ASSUMING A MINIMUM SLOPE OF 2% IS FEASIBLE BASED ON PROPOSED ELEVATIONS. THE LOCATION OF THE EXISTING SIDE SEWER IS APPROXIMATE AND BASED ON MERCER ISLAND GIS DATA. THE CONTRACTOR IS RESPONSIBLE FOR FIELD-VERIFYING THE DEPTH, CONDITION, AND ALIGNMENT OF THE EXISTING SEWER LINE TO CONFIRM COMPATIBILITY WITH THE PROPOSED CONNECTION.
2. INSTALL CLEANOUT PER CITY OF MERCER ISLAND DETAIL 2 ON SHEET C4.2.
3. CONNECT TO EXISTING 5/8" METER WITH NEW 1" PE SERVICE LINE. METER BOX AND LID SHALL BE TRAFFIC RATED.

NO.	DATE	REVISION DESCRIPTION	BY	CK

9.18.25
MARC A PUDLETS
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER

PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

UTILITY PLAN

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: MP
DESIGNED BY: JDLS
DRAWN BY: JDLS

HORZ. DATUM: NAD83
VERT. DATUM: NAVD88

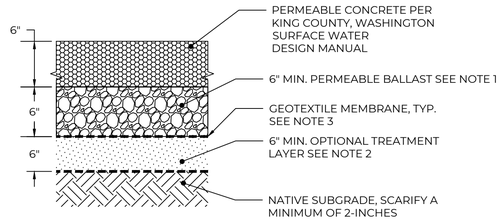
DATE: 9/18/25

PROJECT NO. OBRI-0001

SHEET NO. 8 of 10

REFERENCE NO. C4.0

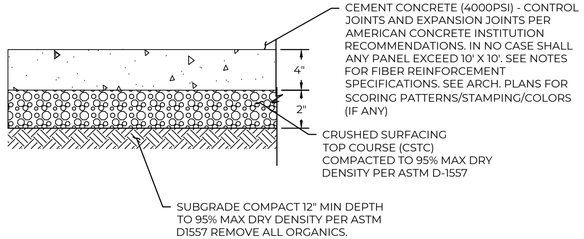
Plot Date: 9/18/2025 3:32 PM
Save Date: 9/12/2025 2:30 PM
By: Jazmin Santos (Momentum Civil)
By: JazminSantos(Momentum Civil)
N:\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\WT-SW-OBRI001.dwg



NOTES:

1. THICKER SECTION OOF BALLAST MAY BE REQUIRED TO ESTABLISH SUFFICENT RESERVOIR CAPACITY. ENGINEER TO PROVIDE CALCULATONS.
2. 6" MIN TREATMENT LAYER OF SAND OR MEDIA IF REQUIRED.
3. GEOTEXTILE MAY BE REQUIRED BETWEEN NATIVE SOILS AND PERMEABLE PAVEMENT SECTION, PER SOILS PROFESSIONAL RECOMMENDATION. GEOTEXTILE SHALL CONFORM TO WSDOT SPEC. 9.33.2(1), WOVEN, TABLE 3 AND INSTALLED PER WSDOT SPEC. 2-12.3(1).

1 PERMEABLE PAVEMENT SECTION
SCALE: NTS



2 CONCRETE SIDEWALK AND PATIO SECTION
SCALE: NTS

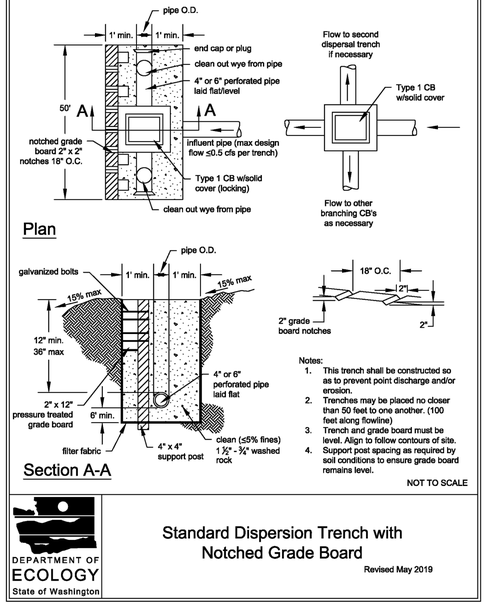
CONCRETE PAVEMENT NOTES

1. CONCRETE PAVEMENT CONSTRUCTION SHALL CONFORM TO WSDOT STANDARD SPECIFICATION SECTION 5-05 AND CURRENT AMERICAN CONCRETE INSTITUTE (ACI) REQUIREMENTS EXCEPT AS NOTED HEREIN.
2. MINIMUM STRENGTH OF CONCRETE SHALL BE AS FOLLOWS:

TYPE	28-DAY COMPRESSIVE	14-DAY FLEXURAL
CURBS/SIDEWALKS (GENERAL)	4,000 PSI	N/A
PAVEMENT	SUBMIT PER 5-05.3 (1)	650 PSI

3. MAXIMUM WATER/CEMENT RATED (W/C) SHALL BE 0.55 FOR GENERAL CONCRETE AND 0.44 FOR HEAVY DUTY PAVEMENT. MINIMUM CEMENTITIOUS MATERIAL SHALL BE 564 LBS/CY. USE 1½" MINUS COARSE AGGREGATE FOR CONCRETE SIX INCHES THICK AND GREATER; USE 3/4" MINUS COARSE AGGREGATE FOR THINNER SECTIONS. ALL HEAVY DUTY CONCRETE PAVEMENT SHALL BE FIBER-REINFORCED AND BE AIR-ENTRAINED (5%± 1%),
4. UNLESS APPROVED OTHERWISE IN WRITING BY THE ENGINEER, ALL CONCRETE PAVING/SLABS ON GRADE SHALL BE BOUND BY SAWCUT CONTROL JOINTS, CONSTRUCTION JOINTS OR EXPANSION JOINTS. THE MAXIMUM JOINT SPACING IS 12 FEET FOR A 6" SLAB AND 8 FEET FOR A 4" SLAB. THE MAXIMUM RATIO OF LENGTH TO WIDTH ON ANY PANEL SHALL BE LESS THAN 1.5. ALL CONTROL AND EXPANSION JOINT SPACING AND CONFIGURATION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE GUIDELINES.
5. FIBER REINFORCED CONCRETE SHALL CONTAIN 1.5 POUNDS PER CUBIC YARD "FIBERMESH 300" POLYPROPYLENE FIBERS BY PROPEX CONCRETE SYSTEMS, OR APPROVED EQUIVALENT. ADD TO CONCRETE MIX PER THE MANUFACTURER'S INSTRUCTIONS. FIBERS SHALL CONFORM TO ASTM C1116, TYPE II.
6. AT DRAINAGE STRUCTURES, MANHOLES, VAULTS, AND OTHER OBSTRUCTIONS WITHIN CONCRETE PAVING/SLABS, AN ISOLATION JOINT WITH PRE-MOLDED JOINT FILLER SHALL BE PLACED PER WSDOT SPECIFICATION SECTION 9-04.1(2).
7. JOINT SEALANT SHALL BE DOW CORNING "890-SL" OR APPROVED EQUAL.
8. EPOXY SHALL BE SIMPSON "SET-XP" OR APPROVED EQUAL.
9. ALL EPOXY BOLTS AND RODS SHALL HAVE ICC APPROVAL FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE. INSTALLATION PER MANUFACTURER'S DIRECTIONS.
10. ONE YEAR AFTER PROJECT COMPLETION CONTRACTOR AND OWNER REPRESENTATIVES SHALL INSPECT SLAB FOR CRACKS. ALL CRACKS GREATER THAN 0.06" SHALL BE CLEANED AND REPAIRED WITH EPOXY INJECTION. CURLED EDGES SHALL BE GROUND DOWN. ROCKING SLABS / SETTLEMENT SHALL BE REPAIRED WITH PRESSURE SLAB JACKING.

Figure V-4.5: Standard Dispersion Trench with Notched Grade Board



Notes:
1. This trench shall be constructed so as to prevent point discharge and/or erosion.
2. Trenches may be placed no closer than 50 feet to one another. (100 feet along flowline)
3. Trench and grade board must be level. Align to follow contours of site.
4. Support post spacing as required by soil conditions to ensure grade board remains level.

NOT TO SCALE

DEPARTMENT OF ECOLOGY
State of Washington

Standard Dispersion Trench with Notched Grade Board

Revised May 2019

2019 Stormwater Management Manual for Western Washington

Volume V - Chapter 4 - Page 716

3 DISPERSION TRENCH
SCALE: NTS

66

shape Concrete Products

Area Drains

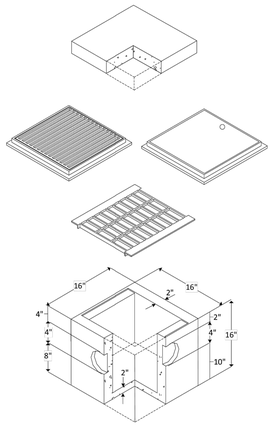
Catch Basin Type 50

Item Detail
- Not a traffic bearing area drain

Concrete Lid
- A concrete lid can be used to convert the basin into a junction box

Cast Iron Grate
- The 11" x 14" cast iron grate drops in the recessed area at the top of the basin
- We also offer a 12" x 12" frame & grate

Additional Information
- Not reinforced
- Base unit has five inch (5") poly cut-outs for pipe on each of the four sides



Note: Drawings not to scale

www.shopeconcrete.com

1-800-422-7560 (TOLL FREE)

shape Concrete Products
Shope Concrete, LLC
1618 East Main Avenue
Puyallup, WA 98372-3142

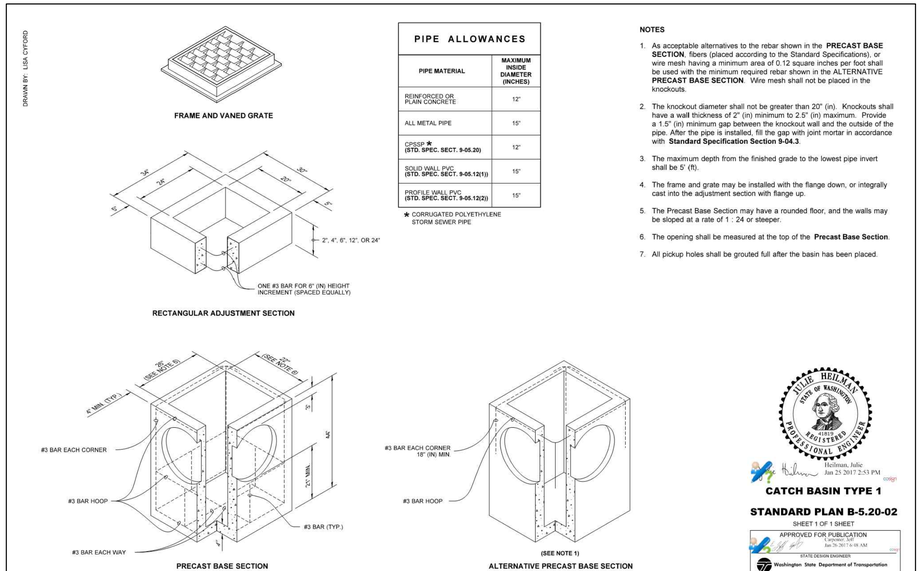
(253) 848-1551
Fax Line 1 (253) 845-0292
Fax Line 2 (253) 864-6172

NPCA CERTIFIED PLANT

WSDOT QPL Approved

4 CATCH BASIN TYPE 50-SOLID LID
SCALE: NTS

DRAWN BY: LISA CYTORO



PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
(SPSSP ★ (STD. SPEC. SECT. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. SECT. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. SECT. 9-05.12(2))	15"

★ CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the ALTERNATIVE **PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 20" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with **Standard Specification Section 9-04.3**.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
6. The opening shall be measured at the top of the **Precast Base Section**.
7. All pickup holes shall be grouted full after the basin has been placed.

Hellman, Allie Jan 25 2017 2:53 PM

CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-02

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Jan 26 '17 6:46 AM

STATE DESIGN ENGINEER

Washington State Department of Transportation

5 CATCH BASIN TYPE 1
SCALE: NTS

NO.	DATE	REVISION DESCRIPTION	BY	CK
1				

9.18.25
MARC A PUDISTS
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN

DRAINAGE AND UTILITY DETAILS

9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: MP
DESIGNED BY: JDLS
DRAWN BY: JDLS

HORZ. DATUM: NAD83
VERT. DATUM: NAVD88

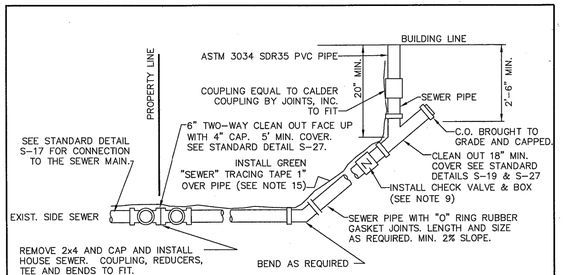
DATE: 9/18/25

PROJECT NO. OBRI-0001

SHEET NO. 9 OF 10

REFERENCE NO. C4.1

Plot Date: 9/18/2025 3:33 PM By: Jazmin Santos (Momentum Civil)
Save Date: 9/12/2025 2:43 PM By: JazminSantos
M:\2025\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\SD-DT-OBRI001.dwg



BUILDING CONNECTION

NOTES

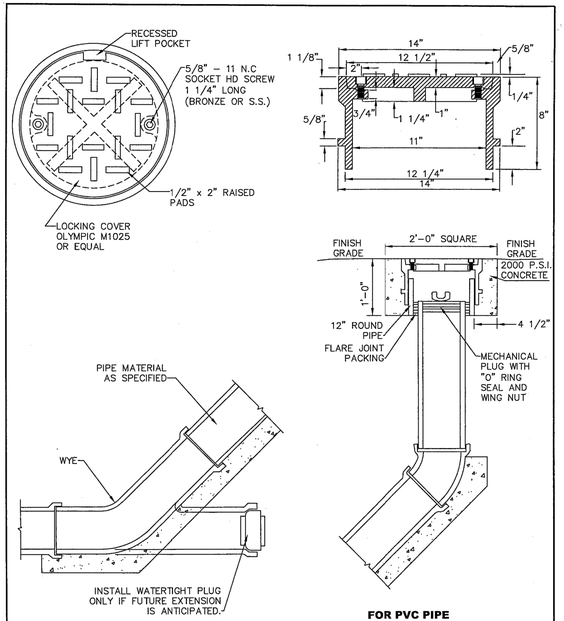
1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER. NO DOWN SPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
4. 18" MINIMUM COVERAGE OVER PIPE.
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH ⅛ 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



FOR PVC PIPE

NOTES

1. SEE S-27 FOR INSTALLATION DETAILS.

CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER

CLEAN OUT DETAIL

6-5-2009	NO SCALE	**S-19**

REV DATE						APPROVED

NO.	DATE	REVISION DESCRIPTION	BY	CK
1				

9.18.25
MARC A PUDLES
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
PERMIT

O-BRIEN RESIDENCE
SEAN & TRACEY O'BRIEN
SEWER DETAILS
9412 SE 33RD STREET
MERCER ISLAND

MOMENTUM CIVIL
1145 BROADWAY, SUITE 115
TACOMA, WA 98402
PHONE: 253.319.1504

CHECKED BY: **MP**
DESIGNED BY: **JDLS**
DRAWN BY: **JDLS**

HORZ. DATUM: **NAD83**
VERT. DATUM: **NAVD88**

DATE: **12/28/23**

PROJECT NO. **OBRI-0001**

SHEET NO. **10 OF 10**

REFERENCE NO. **C4.2**

Plot Date: 9/18/2025 3:33 PM By: Jazmin Santos (Momentum Civil)
Save Date: 9/12/2025 2:43 PM By: JazminSantos
K:\Projects\OBRI01-9412 SE 33rd St SFR\0400CAD\Sheets\SD-DT-OBRI001.dwg

AVERAGE BUILDING ELEVATION CALC

WALL SEGMENT	MIDPOINT ELEV (in feet)	WALL LENGTH (in feet)	TOTALS (in feet)
A	51.88	27.0	1400.76
B	51.50	42.0	2163.00
C	51.50	0.5	25.75
D	51.60	9.0	464.40
E	51.70	0.5	25.85
F	52.43	29.0	1520.47
G	53.79	22.0	1183.38
H	52.59	29.0	1525.11
I	52.13	1.0	52.13
J	52.01	9.0	468.09
K	51.82	6.0	310.92
L	51.32	42.0	2155.44
	TOTALS:	217.00	11295.30

ABE= 11295.30 / 217.00 = **52.05**

BASEMENT FLOOR AREA CALCULATION

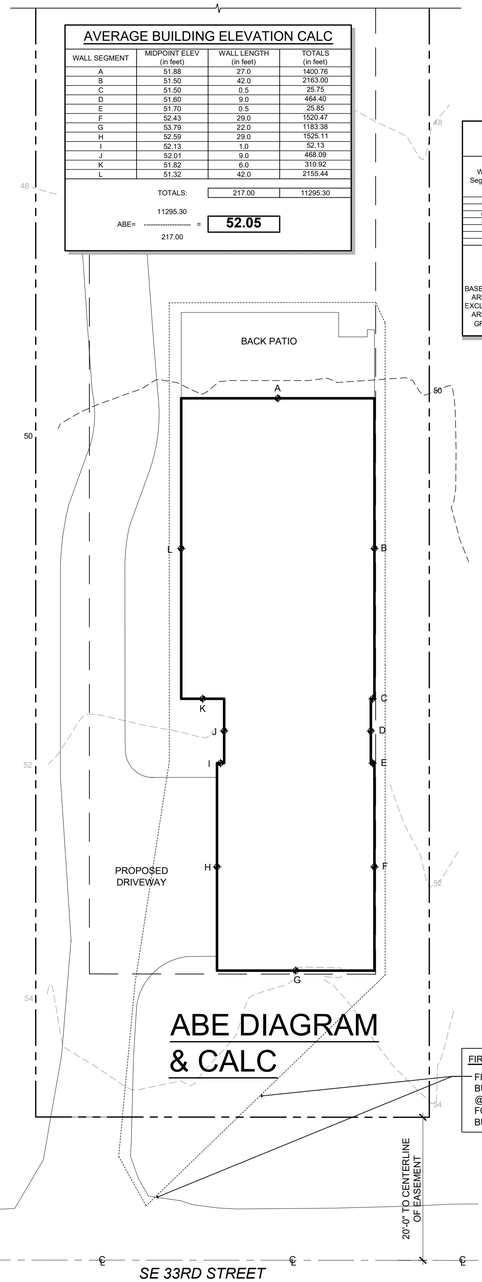
BASEMENT GROSS FLOOR AREA CALC FOR MERCER ISLAND PER MICC APPENDIX B - BASEMENT FLOOR AREA CALCULATION

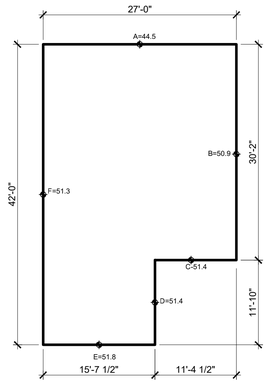
Wall Segment	Length FT	Exist or Finish Grade (which ever is lower) FT	Floor FT	Difference = burried wall ht FT	Total Wall Height FT	Coverage = burried wall height/wall height (%)	Result = Coverage % x Wall Segment
A	27.00	44.50	44.83	-0.33	9.08	-3.67	-0.99
B	30.17	50.90	44.83	6.07	9.08	66.82	20.16
C	11.38	51.40	44.83	6.57	9.08	72.32	8.23
D	11.83	51.40	44.83	6.57	9.08	72.32	8.56
E	15.62	51.80	44.83	6.97	9.08	76.73	11.99
F	42.00	51.30	44.83	6.47	9.08	71.22	29.91

138.00 = SUM OF WALL SEGMENT LENGTHS — TOTAL SUM= 77.85

56.42 = % PERCENTAGE OF BASEMENT WALL WHICH IS BELOW GRADE

BASEMENT AREA =	999	SF
EXCLUDED AREA =	563.59	SF
GFA =	**435.41**	SF





ABE DIAGRAM & CALC

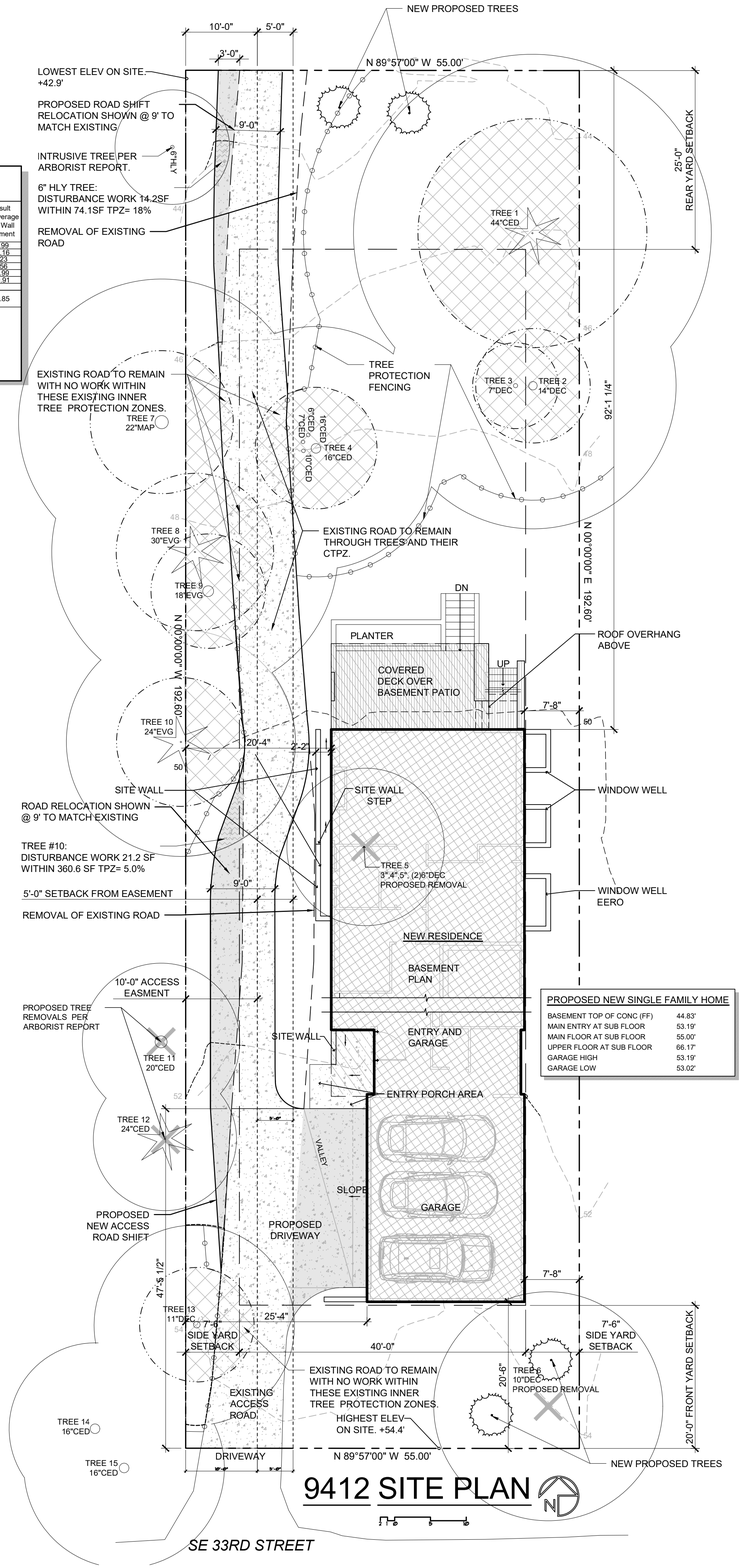
FIRE PATH ACCESS NOTE:
FIRE FIGHTER PATH AROUND BUILDING FROM EDGE OF MAIN ROAD @ 297'. THEREFORE LESS THAN 150' FOOT MAX DISTANCE TO BACK OF BUILDING FROM MAIN ROAD

20'-0" TO CENTERLINE OF EASEMENT

SE 33RD STREET

9412 PARTIAL SITE PLAN W/ ENTRY

SCALE: 1" = 10'-0"



9412 SITE PLAN

SE 33RD STREET

LOT SLOPE

HIGHEST ELEVATION OF LOT	54.4'
LOWEST ELEVATION OF LOT	42.9'
ELEVATION DIFFERENCE	11.5'
HORIZONTAL DIFFERENCE	196.6'
LOT SLOPE:	5.8%

LOT SLOPE LESS THAN 15%, THEREFORE LOT COVERAGE = 40%
REQUIRED LANDSCAPING AREA = 60%

LOT COVERAGE UPDATE-

LOT COVERAGE, MAXIMUM: THE MAXIMUM AREA OF A RESIDENTIALLY ZONED LOT THAT MAY BE COVERED BY A COMBINATION OF BUILDINGS, INCLUDING EAVES AND ROOF OVERHANGS, AND VEHICULAR DRIVING SURFACES, PER MICC 19.16.010 DEFINITIONS.

NET LOT AREA: THE AREA CONTAINED WITHIN THE ESTABLISHED BOUNDARIES OF A LOT, LESS ANY AREA USED FOR PUBLIC OR PRIVATE VEHICULAR ACCESS EASEMENTS, EXCLUDING THAT PORTION OF THE EASEMENT USED FOR A DRIVEWAY ACCESS TO THE ENCUMBERED LOT.

MAIN STRUCTURE + ROOF(s)	2,276 SF
VEHICULAR USE	1367.2 SF
TOTAL LOT COVERAGE SUB TOTAL	3,643.2 SF
PROPOSED HARDSCAPE (make part of 9% allowed)	(8.5) SF
TOTAL PROPOSED LOT COVERAGE	3,643.2 SF
NET LOT AREA	9,141.7 SF
MAX ALLOWED LOT COVERAGE (40% OF NET AREA)	3,656.7 SF
UNDER THE MAXIMUM BY	13.5 SF

GROSS FLOOR AREA

GFA: THE TOTAL SQUARE FOOTAGE OF FLOOR AREA BOUNDED BY THE EXTERIOR FACES OF THE BUILDING. THE GROSS FLOOR AREA OF A SINGLE-FAMILY DWELLING DOES NOT INCLUDE:
A. SECOND- OR THIRD-LEVEL UNCOVERED DECKS, or UNCOVERED ROOFTOP DECKS
B. FIRST-LEVEL COVERED DECKS AND/OR PATIOS

PROPOSED BASEMENT FLOOR (PER CALC)	655 SF
PROPOSED MAIN FLOOR + STAIR (<12'-16')	1,255 SF
PROPOSED GARAGE	629 SF
PROPOSED UPPER FLOOR (<12'-16') (NO STAIR)	1,698 SF
PROPOSED TOTAL GFA	4,237 SF
LOT AREA	10,593 SF
MAXIMUM ALLOWED GFA (R-9.6): 5,000 SF or 40% OF THE LOT AREA, WHICHEVER IS LESS	4,237 SF
AT THE MAXIMUM BY	4,237 = 4,237 **OK**

HARDSCAPE

A MAXIMUM OF NINE PERCENT OF THE NET LOT AREA MAY CONSIST OF HARDSCAPE IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, WALKWAYS, DECKS, ETC., AND PROVIDED:
(A) THE HARDSCAPE FOR LOTS WITH A NET LOT AREA OF 8,400 SQUARE FEET OR LESS MAY BE THE LESSER OF 755 SQUARE FEET OR 12 PERCENT OF THE NET LOT AREA.

NET LOT AREA =	9,141.7 SF
ALLOWABLE HARDSCAPE (9% OF NET LOT AREA)=	822.7 SF
ENTRY WALKWAY	24.1 SF
BACK STAIRS	43.9 SF
BACK PATIO TERRACE	87.6 SF
WINDOW WELLS AND RETAINING WALLS 18.8+	48.1 SF
ALLOWABLE HARDSCAPE	822.7 SF
TOTAL HARDSCAPE	188.1 SF
UNDER MAXIMUM BY	619.1 SF

SIDE YARD CALC

PER MICC 19.02.020.C.1.c.i.a. FOR LOTS WITH A LOT WIDTH OF 90 FEET OR LESS, THE SUM OF THE SIDE YARDS' WIDTH SHALL BE AT LEAST 15 FEET.

PER MICC 19.02.020.C.1.c.iii.a: (a)SINGLE-FAMILY DWELLINGS SHALL PROVIDE A MINIMUM SIDE YARD DEPTH OF SEVEN AND ONE-HALF FEET IF THE BUILDING: (1)FOR NONGABLED ROOF END BUILDINGS, THE HEIGHT IS MORE THAN 15 FEET MEASURED FROM EXISTING OR FINISHED GRADE, WHICHEVER IS LOWER, TO THE TOP OF THE EXTERIOR WALL FACADE ADJOINING THE SIDE YARD
(b)SINGLE-FAMILY DWELLINGS WITH A HEIGHT OF MORE THAN 25 FEET MEASURED FROM THE EXISTING OR FINISHED GRADE, WHICHEVER IS LOWER, TO THE TOP OF THE EXTERIOR WALL FACADE ADJOINING THE SIDE YARD SHALL PROVIDE A MINIMUM SIDE YARD DEPTH OF TEN FEET.

LOT WIDTH	55'-0"
EAST SIDE YARD SETBACK	7'-6"
WEST SIDE YARD SETBACK	7'-6"
TOTAL SIDE YARD SETBACKS	15'-0"

LAND USE APPLICATIONS:

CRITICAL AREA REVIEW 2, AS REQUIRED BY LAND USE INTAKE COMMENTS. THIS IS DUE TO SOME CRITICAL AREAS DESIGNATIONS ON SITE VIA MERCER ISLAND GIS PORTAL. SEE GEOTECH REPORT, WHICH DOES NOT DEEM THESE CRITICAL AREAS AS A MAJOR SIGNIFICANCE TO THE PROJECT

BUILDING AREA SUMMARY:

BASEMENT LEVEL LIVING:	999 SF
MAIN LEVEL LIVING:	1,249 SF
UPPER LEVEL LIVING:	1,698 SF
TOTAL HEATED:	3,946 SF
GARAGE:	629 SF
TOTAL:	4,575 SF

LEGAL DESCRIPTION:

LAKEMONT ADD UNREC & OF N 1/2 VAC ST ADJ DAF
S 212.60 FT OF W 65 FT THOF LESS W 10 FT

ADDRESS:

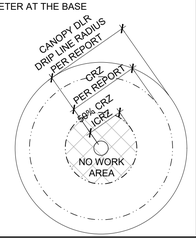
9412 SE 33RD ST
MERCER ISLAND, WA 98040

LEGEND:

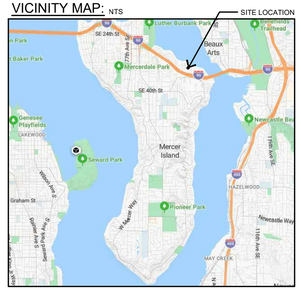
- PROPERTY LINE
- SETBACK LINE
- CONTOUR MAJOR
- CONTOUR MINOR
- CONTOUR PROPOSED
- EASEMENT LINE
- TREE PROTECTION ZONE
- BUILDING ROOF EXTENT
- BUILDING FOOTPRINT
- DECK
- GROUND LEVEL IMPERVIOUS SURFACE
- PROPOSED NEW ROAD
- EXISTING TREE >24" DBH
- EXISTING TREE TO BE REMOVED
- PROPOSED NEW TREE
- EXISTING TREE TO REMAIN w/ TREE PROTECTION RADIUS AND INNER PROTECTION ZONE

NEW TREE NOTE:
ALL REPLACEMENT TREES SHALL BE CONIFERS AT LEAST 6' TALL, AND/OR DECIDUOUS AT LEAST ONE AND 1-1/2 INCHES IN DIAMETER AT THE BASE

EXISTING TREE LEGEND:



VICINITY MAP: NTS



MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7906

O'Brien Residence

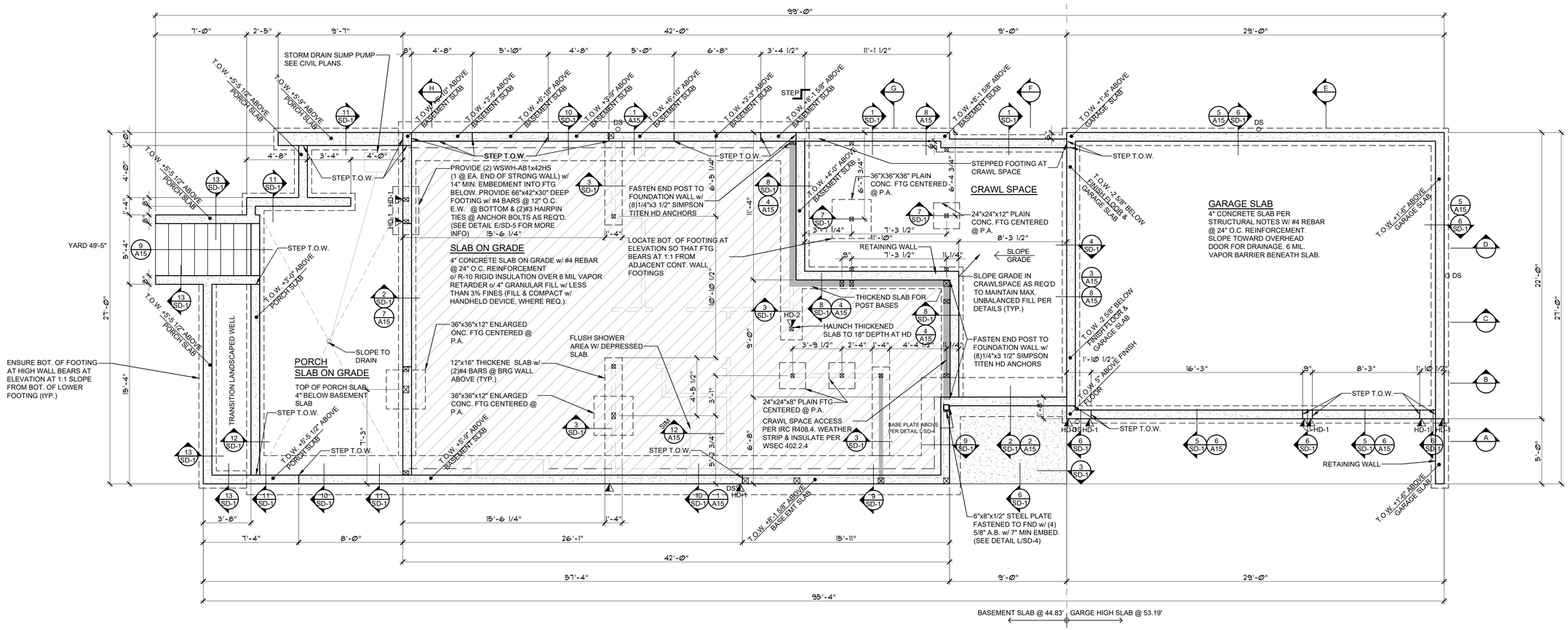
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Site Plan

A1



9412 FOUNDATION PLAN

0 4 8

GENERAL NOTES:
1. 8" MIN. CLEARANCE BETWEEN EXTERIOR GRADE & UNPROTECTED WOOD.
2. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
3. WOOD JOISTS OR THE BOTTOM OF A WOOD STRUCTURAL FLOOR WHEN CLOSER THAN 18" OR WOOD GIRDERS WHEN CLOSER THAN 12" TO THE EXPOSED GROUND IN CRAWL SPACES SHALL BE PROTECTED AGAINST DECAY WITH A PRESERVATIVE-TREATMENT IN ACCORDANCE WITH AWPA U1 AND THE IRC R317.1.
4. WOOD COLUMNS IN CRAWL SPACES SHALL BE PROTECTED AGAINST DECAY WITH AN APPROVED PRESERVATIVE-TREATMENT UNLESS SUPPORTED BY A CONCRETE PIER OR METAL PEDESTAL AT A HEIGHT OF 8" OR MORE FROM EXPOSED EARTH OR EARTH COVERED WITH A VAPOR RETARDER.
5. THE UNDER-FLOOR GRADE SHALL BE CLEANED OF ALL ORGANIC MATERIAL, AND CONSTRUCTION MATERIAL BEFORE THE BUILDING IS OCCUPIED.
6. ALL DIMENSION LINES ARE TO FACE OF FRAMING OR CONCRETE, U.N.O.
7. PROVIDE MIN. 10 MIL VAPOR BARRIER @ CRAWLSPACE & SLAB ON GRADE.
8. PROVIDE RIGID INSULATION @ SLAB PERIMETER OF CONDITIONED SPACES.
9. SEE SHEARWALL SCHEDULE FOR LOCATION & SPACING OF ANCHOR BOLTS.
10. INSTALL ALL HOLDOWNS AND HARDWARE PRIOR TO BACKFILLING.
11. UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON ASSUMED AVERAGE BEARING CAPACITY OF 2000 PSF. EXTERIOR FOOTINGS TO BEAR ON FIRM UNDISTURBED SOIL BELOW ORGANIC SURFACE SOIL, A MINIMUM 1'-6" BELOW FINISH GRADE. FOR STRUCTURAL FILL COMPACTION CRITERIA, REFER TO SHEET A0, GEOTECHNICAL NOTES, STRUCTURAL FILL.

UNDER FLOOR SPACE VENTILATION PER IRC SEC. R408

THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL BE NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF CRAWL SPACE GROUND AREA.

EXCEPTION: THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/1,500 OF THE UNDER-FLOOR AREA WHERE THE GROUND SURFACE IS TREATED WITH AN APPROVED VAPOR RETARDER MATERIAL IN ACCORDANCE WITH SECTION R408.2 AND THE REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS-VENTILATION OF THE CRAWL SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED.

CRAWL SPACE AREA= 303 S.F.
303 / 150 = 2.02 S.F. OF REQ'D. VENT AREA
PROVIDE MIN. (5) 7"x14" FDN VENTS (0.5 S.F. OF VENT AREA EACH VENT)

24" DIA. X 8" THICK FTG. W/ (2) #4 EACH WAY @ BOTTOM

F2.0 — 24" SQ. X 8" THICK FTG. W/ (2) #4 EACH WAY @ BOTTOM

36" X 30" X 10" THICK FTG. W/ (4X3) #4 @ BOTTOM

TYPICAL POST IS P.T. 4X4, U.N.O.

INDICATES SHEAR WALL PER SCHEDULE, 14/S1.1

INDICATES SHEAR WALL W/ FORCE TRANSFER PER 8/S1.2

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT ANDREW P.M. MCCULLOUGH STATE OF WASHINGTON 7805

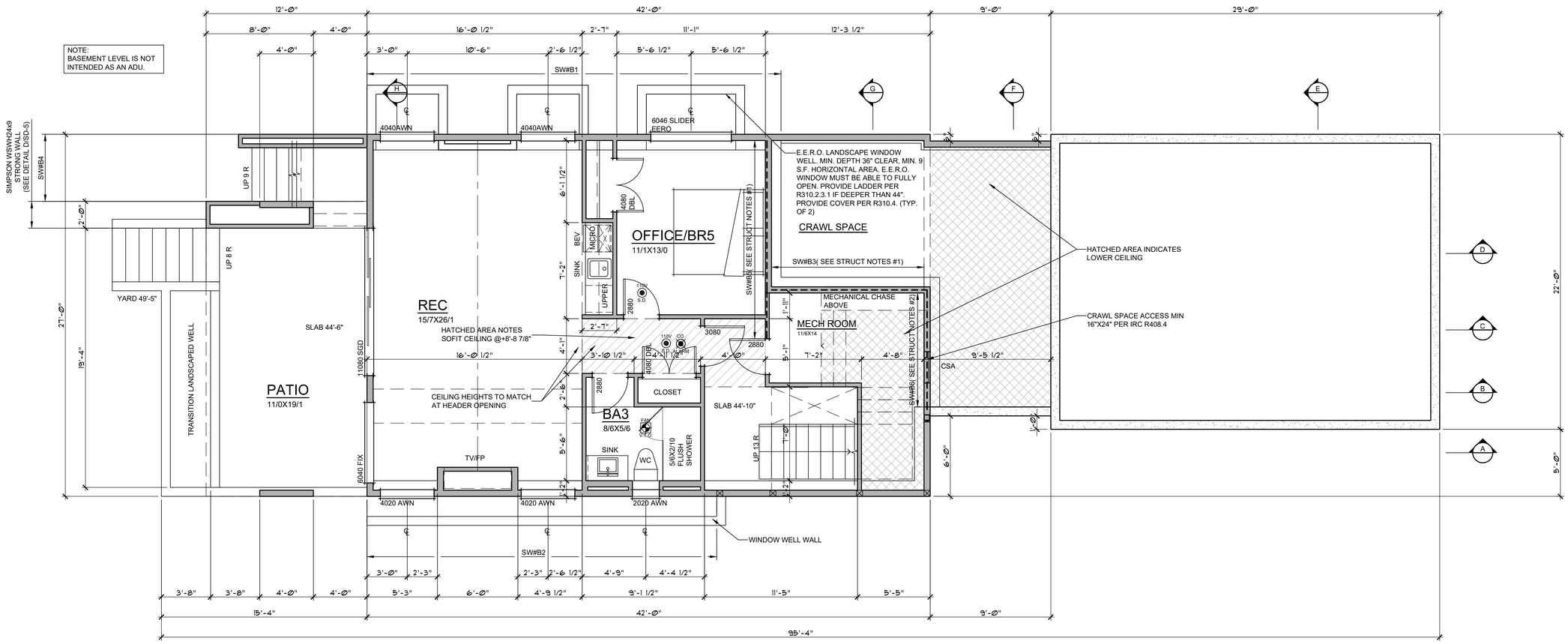
O'Brien Residence
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Foundation Plan

A2



9412 BASEMENT PLAN

0 4 8

GENERAL NOTES:

1. DIMENSION LINES ARE TO FACE OF STUD U.N.O.
2. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
3. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPEC'S TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
4. WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2828= 2'-8"W X 2'-8"H)
5. EXTERIOR WALLS TO BE 2X6 STUDS PER STRUCTURAL. INTERIOR WALLS TO BE 2X4 STUDS PER STRUCTURAL.
6. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER IRC SEC. R302.11.
7. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER IRC SEC. R317.1.
8. PROVIDE UNDER-STAIR PROTECTION (1/2" GWB) PER IRC SEC R302.7.
9. PROVIDE (1) LAYER OF 1/2" GWB AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE, ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE X GWB TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
10. HOUSE/GARAGE DOOR SHALL BE 1-⅜" THICK WOOD SOLID CORE, OR 1-⅜" THICK SOLID OR HONEYCOMB CORE STEEL DOOR, OR 20-MINUTE RATED FIRE DOOR. PROVIDE SELF-CLOSING DEVICE.
11. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS AND CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE MIN. 26 GAUGE GALVANIZED STEEL.
12. PER IRC SEC R311.7.5, MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD: 9/16" MAX.
13. PROVIDE HANDRAILS PER IRC SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
14. PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER IRC SEC. R312.
15. FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. FACTORY BUILT FIREPLACES SHALL MEET EMISSION STANDARDS PER CH. 51-51 WAC R1004.1.1.
16. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER IRC SEC R1006.
17. WATER HEATERS SHALL COMPLY WITH THE REQUIREMENTS OF THE IRC CH. 20 AND 28

17.1 INSTALL PER MANUFACTURERS SPECIFICATIONS, PROVIDING ALL SPECIFIED CLEARANCES & VENTILATION.

17.2 WATER HEATERS SHALL BE ANCHORED OR STRAPPED IN THE UPPER ONE-THIRD AND IN THE LOWER ONE-THIRD OF THE APPLIANCE.

18. ALL SHOWER AND TUB FIXTURES TO HAVE THERMOSTATIC CONTROL W/ 120° F. MAX. SETTING FOR THERMAL PROTECTION PER UPC 408.3 & 409.4.
19. ALL KITCHEN, BATHROOM AND LAUNDRY EXHAUST TERMINATIONS TO EXIT THE STRUCTURE NOT LESS THAN 3 FEET FROM PROPERTY LINES & FROM OPERABLE OPENINGS INTO THE BUILDING AND NOT LESS THAN 10 FEET FROM MECHANICAL AIR INTAKES PER SRC M1504.3

PLAN KEY:

- 110V S.D. — INDICATES 110V SMOKE DET. PER I.R.C. 314.3 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP
- CO ALARM — INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1

  } MAY BE COMBINED
- HEAT ALARM — INDICATES HEAT ALARM PER I.R.C. R314.2.3
- FAN VFD — INDICATES EXHAUST VENTILATION FAN. SEE "LOCAL EXHAUST" ON COVER SHEET FOR ADDITIONAL INFORMATION.
- SW — INDICATES SHEAR WALL PER STRUCTURAL. SEE "TYPICAL EXTERIOR WALL SHEATHING SPECIFICATIONS" ON SHEET S-0.0.
- HD — INDICATES HOLD DOWN PER STRUCTURAL NOTES, S-0.0
- S.G. — SAFETY GLASS REQUIRED PER IRC R308

STRUCTURAL NOTES:

1. SHEATH PER TYP. EXT. WALL SHTG SPEC (SEE NOTES ON S-0.0)

2. SHEATH PER 3" O.C. EDGE NAILING SPEC (SEE NOTES ON S-0.0)

3. STEEL BEAM NOTE: PROVIDE 2x TOP PLATE FASTENED w/ P.A.F.'s (HILTI X-U PINS OR EQUAL) @ 16" O.C. OR 1/2" DIA. BOLTS @ 48" O.C. STAGGERED. ALSO PROVIDE WEB PACKOUT AS REQ'D FASTENED w/ 1/2" DIA. BOLTS @ 24" O.C.

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT PHILIP A. MCCULLOUGH STATE OF WASHINGTON 7806

O'Brien Residence

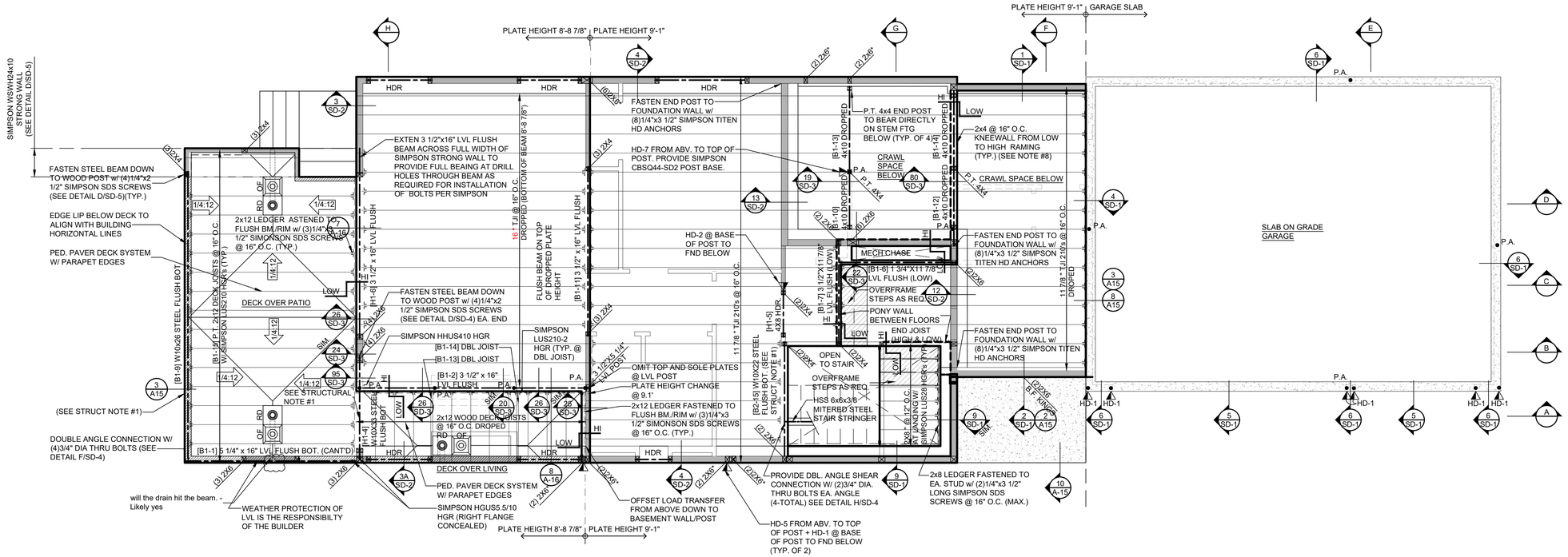
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Lower Floor Plan

A3



9412 MAIN FLOOR FRAMING PLAN

0 4 8

GENERAL NOTES:
1. MAIN FLOOR FRAMING TO BE 11 7/8 " TJI JOISTS @ 16" O.C. WITH 1 1/8" OSB SUBFLOOR, GLUED AND NAILED, U.N.O. ADHESIVES SHALL CONFORM TO APA SPEC. AFG 01. PROVIDE T&G EDGES AT LONG PANEL EDGES. STAGGER SUBFLOOR END JOINTS.
2. BEARING WALLS ARE SHADED.
3. ALL MARKED POSTS ARE BELOW THE FRAMING SHOWN ON THIS PLAN.
4. PROVIDE SOLID BLOCKING IN FLOOR AT ALL WALLS AND POINT LOADS FROM ABOVE.
5. PROVIDE (2) 2X POST @ ALL BEAMS, HEADERS & TRUSS GIRDERS, U.N.O.
6. NAIL PLIED BEAMS TOGETHER W/ 10d @ 12" O.C. @ TOP & BOTTOM.
7. BEAM LINES TO BE 4"x8" HEM FIR (N) NO. 2 U.N.O.

STRUCTURAL NOTES:
1. STEEL BEAM NOTE: PROVIDE 2x TOP PLATE FASTENED w/ P.A.F.'s (HILTI X-U PINS OR EQUAL) @ 16" O.C. OR 1/2" DIA. BOLTS @ 48" O.C. STAGGERED. ALSO PROVIDE WEB PACKOUT AS REQ'D FASTENED w/ 1/2" DIA. BOLTS @ 24" O.C.

KEY:
- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
- INDICATES LOC. OF SOLID SUPPORT (2) STUDS LAM'D W/ 16d @ 12" O.C., (2) 16d EA. END TYP. UNLESS NOTED OTHERWISE
- TYPICAL HANGER @ MAIN FLOOR IS SIMPSON LUS210, U.N.O.

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com
UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7606

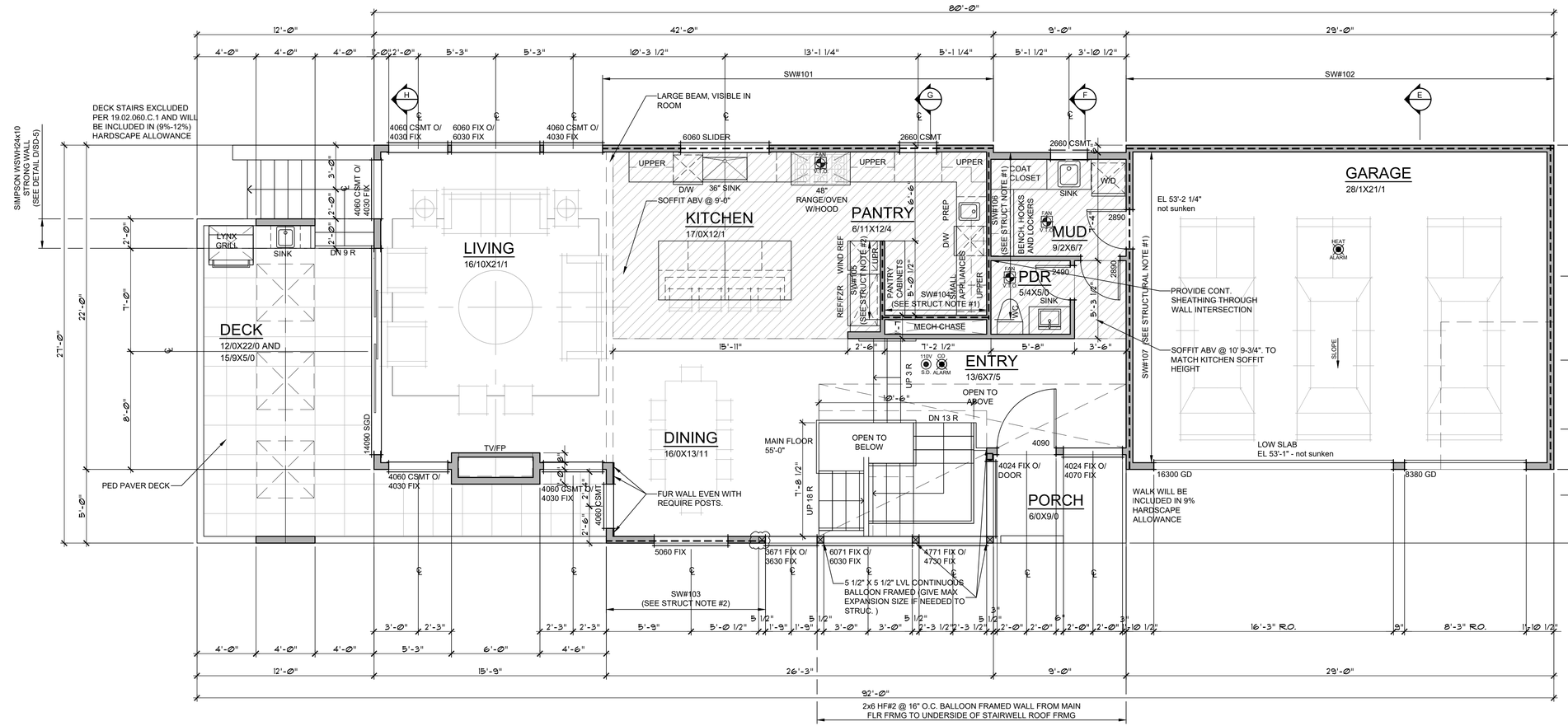
O'Brien Residence
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Main Floor Framing Plan

A4



9412 MAIN FLOOR PLAN

0 4 8

GENERAL NOTES:

1. PLATE HEIGHT @ MAIN FLOOR IS 10'-1", U.N.O.
2. DIMENSION LINES ARE TO FACE OF STUD U.N.O.
3. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
4. WINDOW HEAD HEIGHT AT MAIN FLOOR IS 9'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPEC'S TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
5. WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2828= 2'-8"W X 2'-8"H)
6. EXTERIOR WALLS TO BE 2X6 STUDS AT 16" O.C., INTERIOR WALLS TO BE 2X4 STUDS AT 16" O.C., U.N.O.
7. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER IRC SEC. R302.11.
8. SAFETY GLAZING PER IRC SEC. R308.4.
9. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER IRC SEC. R317.1.
10. PROVIDE UNDER-STAIR PROTECTION (1/2" GWB) PER IRC SEC R302.7.
11. PROVIDE (1) LAYER OF 1/2" GWB AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE, ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE X GWB TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
12. HOUSE/GARAGE DOOR SHALL BE 1-⅜" THICK WOOD SOLID CORE, OR 1-⅜" THICK SOLID OR HONEYCOMB CORE STEEL DOOR, OR 20-MINUTE RATED FIRE DOOR. PROVIDE SELF-CLOSING DEVICE.
13. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS AND CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE MIN. 26 GAUGE GALVANIZED STEEL.
14. PER IRC SEC R311.7.5. MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD: 9/16" MAX.
15. PROVIDE HANDRAILS PER IRC SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LASS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
16. PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER IRC SEC. R312.
17. FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. FACTORY BUILT FIREPLACES SHALL MEET EMISSION STANDARDS PER CH. 51-51 WAC R1004.1.1.
18. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER IRC SEC R1006.
19. GAS FIRED WATER HEATERS SHALL COMPLY WITH THE REQUIREMENTS OF THE IRC CH. 20, 24, AND 28.

- INSTALL PER MANUFACTURERS SPECIFICATIONS, PROVIDING ALL SPECIFIED CLEARANCES.
- WATER HEATERS SHALL BE ANCHORED OR STRAPPED IN THE UPPER ONE-THIRD AND IN THE LOWER ONE-THIRD OF THE APPLIANCE.
- VENT TO OUTSIDE PER IRC CH. 18.
- ELEVATE IGNITION SOURCE 18" MIN.

PLAN KEY:

- 110V S.D. — INDICATES 110V SMOKE DET. PER I.R.C. 313.4 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP
- CO ALARM — INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1
- FAN V.T.O. — INDICATES EXHAUST VENTILATION FAN PER COVER SHEET.
- HEAT ALARM — INDICATES HEAT ALARM PER I.R.C. R314.2.3
- S.G. — INDICATES SAFETY GLAZING REQUIRED PER IRC SEC. R308.4
- — — — INDICATES SHEAR WALL PER SCHEDULE, 14/S1.1
- • • • • INDICATES SHEAR WALL W/ FORCE TRANSFER PER 8/S1.2

STRUCTURAL NOTES:

1. SHEATH PER TYP. EXT. WALL SHTG SPEC (SEE NOTES ON S-0.0)
2. SHEATH PER 3" O.C. EDGE NAILING SPEC (SEE NOTES ON S-0.0)

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

7605 REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON

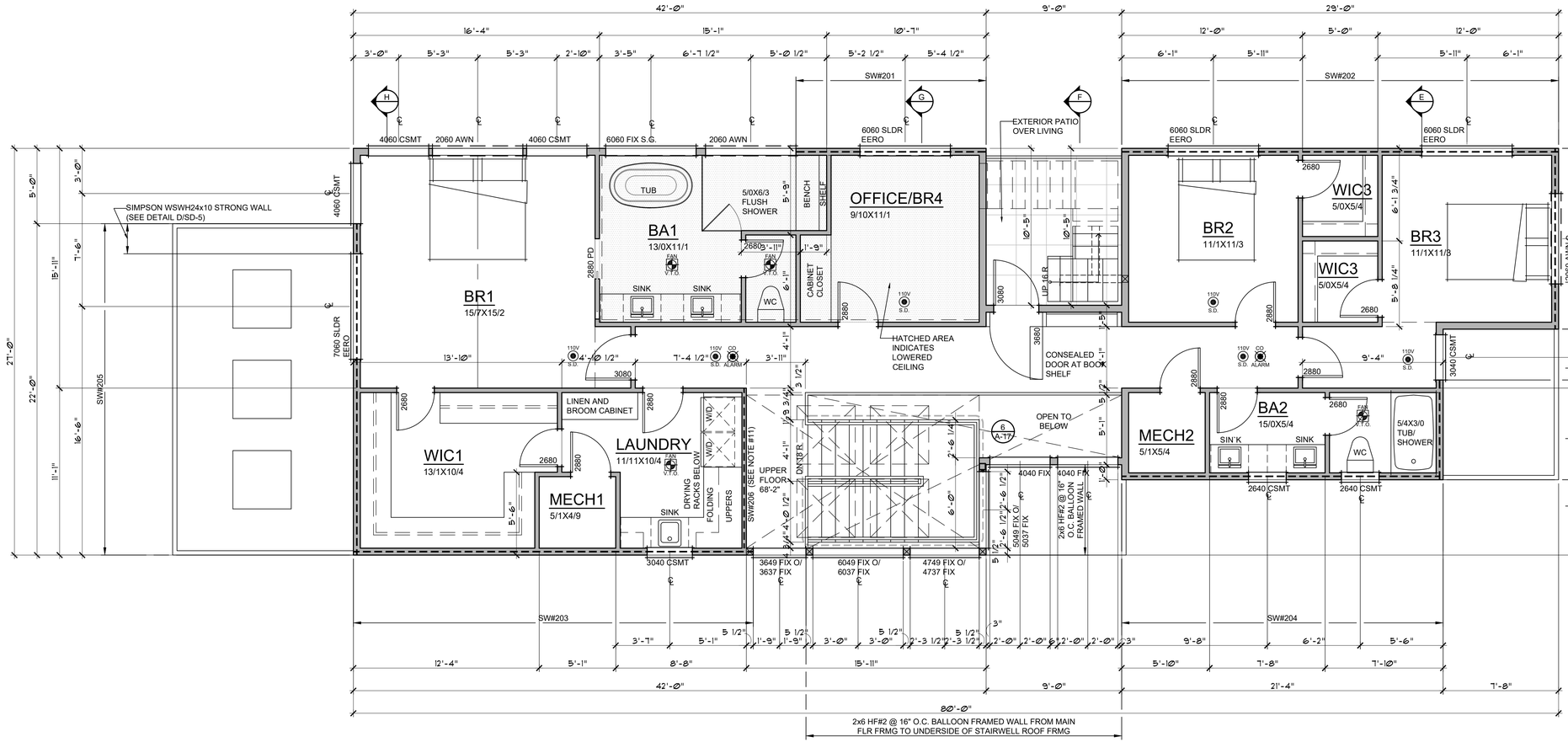
O'Brien Residence
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Main Floor Plan

A5



9412 UPPER FLOOR PLAN

0 4 8

GENERAL NOTES:

1. PLATE HEIGHT @ UPPER FLOOR IS 8'-9", U.N.O.
2. DIMENSION LINES ARE TO FACE OF STUD U.N.O.
3. WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
4. WINDOW HEAD HEIGHT AT UPPER FLOOR IS 8'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPEC'S TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
5. WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2828= 2'-8"W X 2'-8"H)
6. EXTERIOR WALLS TO BE 2X6 STUDS AT 16" O.C., INTERIOR WALLS TO BE 2X4 STUDS AT 16" O.C., U.N.O.
7. FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER IRC SEC. R302.11.
8. SAFETY GLAZING PER IRC SEC. R308.4.
9. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER IRC SEC. R317.1.
10. PROVIDE UNDER-STAIR PROTECTION (1/2" GWB) PER IRC SEC R302.7.
11. PROVIDE (1) LAYER OF 1/2" GWB AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE, ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE X GWB TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
12. HOUSE/GARAGE DOOR SHALL BE 1-⅜" THICK WOOD SOLID CORE, OR 1-⅜" THICK SOLID OR HONEYCOMB CORE STEEL DOOR, OR 20-MINUTE RATED FIRE DOOR. PROVIDE SELF-CLOSING DEVICE.
13. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS AND CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE MIN. 26 GAUGE GALVANIZED STEEL.
14. PER IRC SEC R311.7.5. MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD: 9/16" MAX.
15. PROVIDE HANDRAILS PER IRC SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LASS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
16. PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER IRC SEC. R312.
17. FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. FACTORY BUILT FIREPLACES SHALL MEET EMISSION STANDARDS PER CH. 51-51 WAC R1004.1.1.
18. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER IRC SEC R1006.
19. GAS FIRED WATER HEATERS SHALL COMPLY WITH THE REQUIREMENTS OF THE IRC CH. 20, 24, AND 28.
- INSTALL PER MANUFACTURERS SPECIFICATIONS, PROVIDING ALL SPECIFIED CLEARANCES.
- WATER HEATERS SHALL BE ANCHORED OR STRAPPED IN THE UPPER ONE-THIRD AND IN THE LOWER ONE-THIRD OF THE APPLIANCE.
- VENT TO OUTSIDE PER IRC CH. 18.
- ELEVATE IGNITION SOURCE 18" MIN.

PLAN KEY:

110V S.D. — INDICATES 110V SMOKE DET. PER I.R.C. 313.4 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP

CO ALARM — INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1

FAN V.T.O. — INDICATES EXHAUST VENTILATION FAN PER COVER SHEET.

HEAT ALARM — INDICATES HEAT ALARM PER I.R.C. R314.2.3

S.G. — INDICATES SAFETY GLAZING REQUIRED PER IRC SEC. R308.4

– – – — INDICATES SHEAR WALL PER SCHEDULE, 14/S1.1

· · · · · — INDICATES SHEAR WALL W/ FORCE TRANSFER PER 8/S1.2

STRUCTURAL NOTES:

1. SHEATH PER TYP. EXT. WALL SHTG SPEC (SEE NOTES ON S-0.0)

2. SHEATH PER 3" O.C. EDGE NAILING SPEC (SEE NOTES ON S-0.0)

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7606

O'Brien Residence

9412 SE 33rd st
Mercer Island, WA 98040

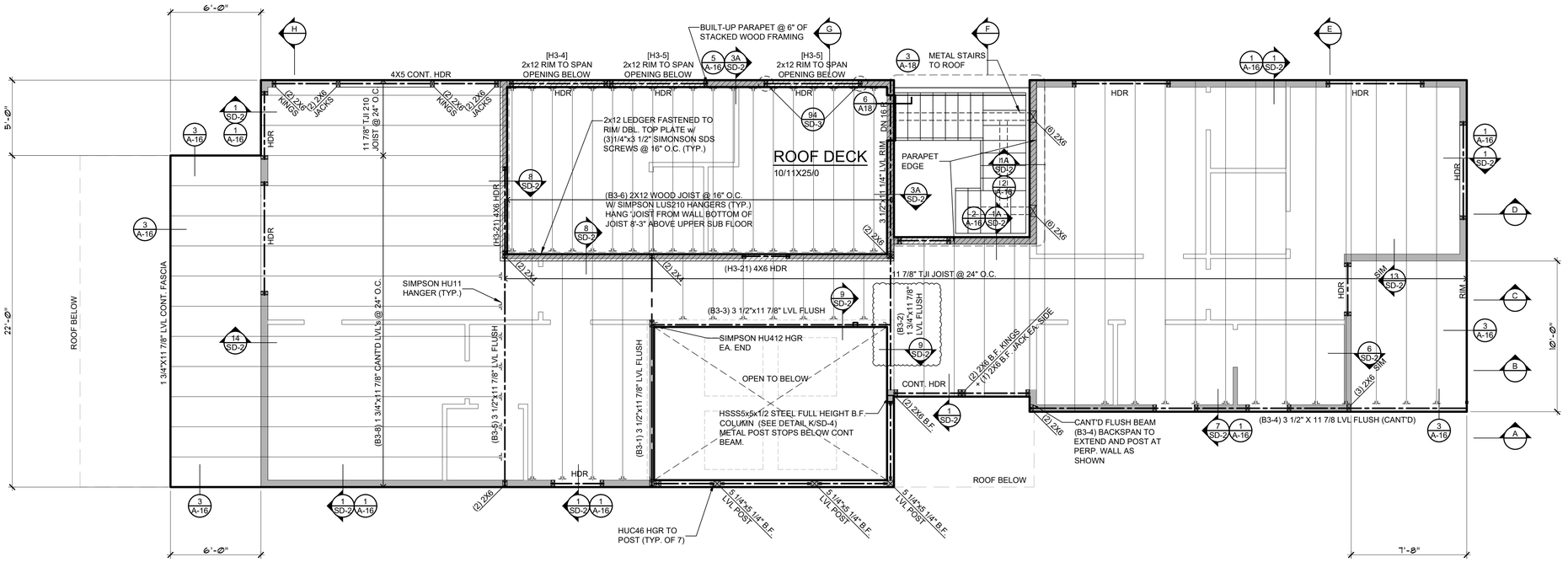
approval stamp

Permit Set

Upper Floor Plan

A7

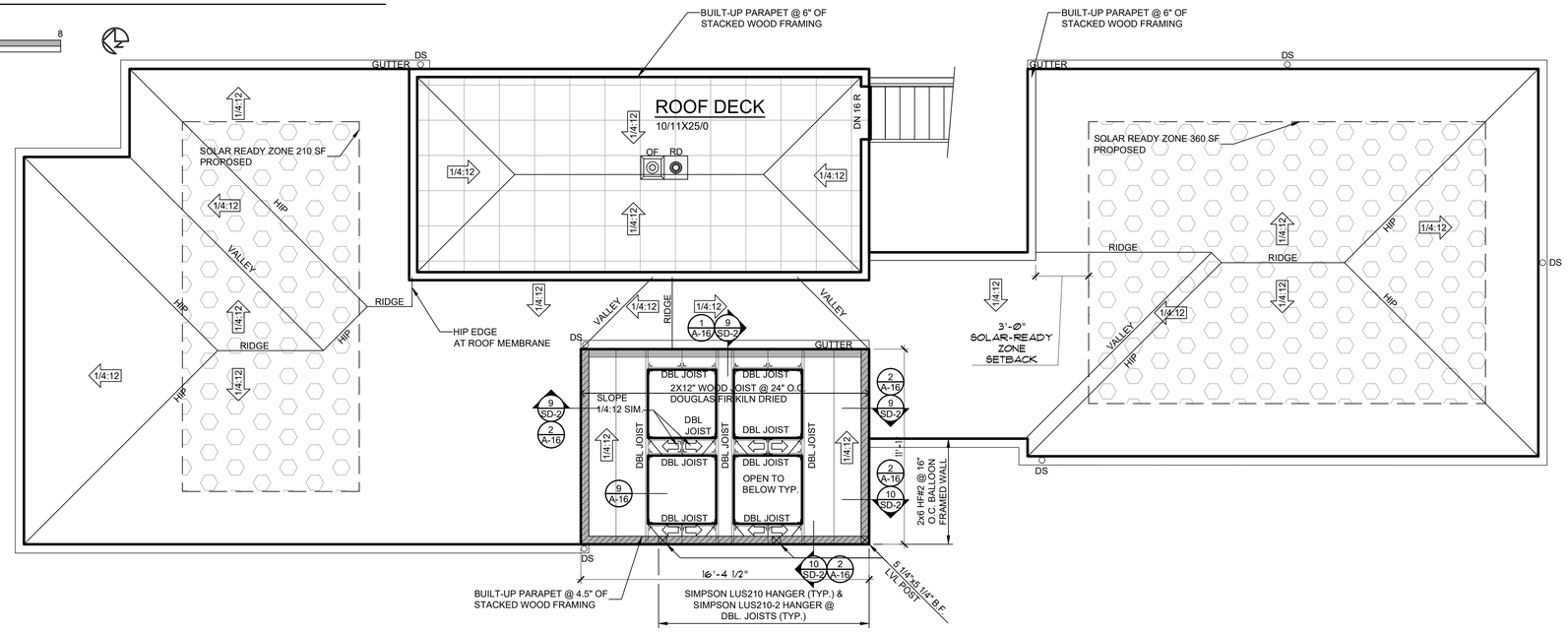
9412 PENTHOUSE AND ROOF FRAMING PLAN



GENERAL NOTES:
1. BEARING WALLS ARE SHADED.
2. ROOF PITCH AS INDICATED ON PLAN.
3. EAVE & RAKE OVERHANG PER PLAN. APPLY ROOFING IN ACCORDANCE WITH I.R.C. SEC. 905. PROVIDE DRIP EDGE PER
4. HEADERS (HDR.) TO BE 4X6D.F. #2 TYP., U.N.O. FILL CAVITIES WITH R-10 RIGID INSULATION. (H3-TYP)
5. PROVIDE STAGGERED NAILING & 3x OR (2)2x MEMBERS AT CONJOINING PANEL EDGES AT ALL WALLS SPECIFIED

- ⊠ INDICATES LOC. OF SOLID SUPPORT (2) STUDS LAM'D W/ 16d @ 12" O.C., (2) 16d EA. END TYP. UNLESS NOTED OTHERWISE
- B.F. =BALLOON FRAMED
- HATCH INDICATES OVERFRAMED AREA
- HD INDICATES HOLD DOWN PER STRUCTURAL NOTES, S-0.0

STRUCTURAL NOTES:
1. SHEATH PER EXT. WALL SPEC. w/ 3" O.C. EDGE NAILING (SEE NOTES ON S0.0)



MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
.

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7906

O'Brien Residence

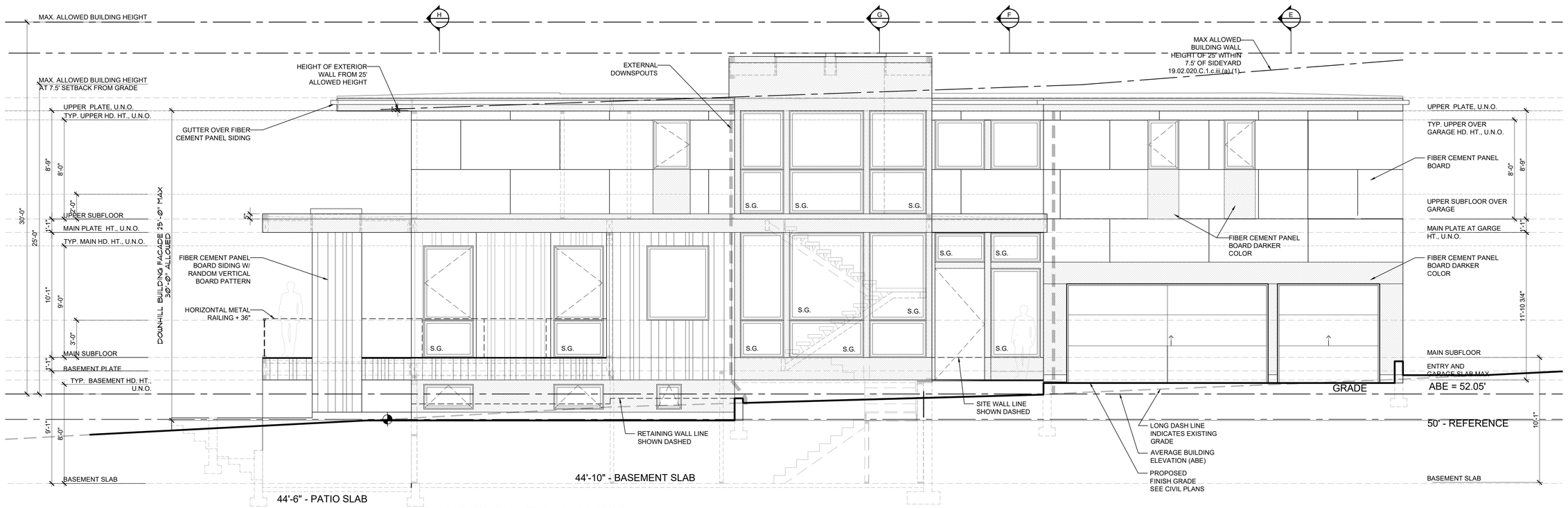
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

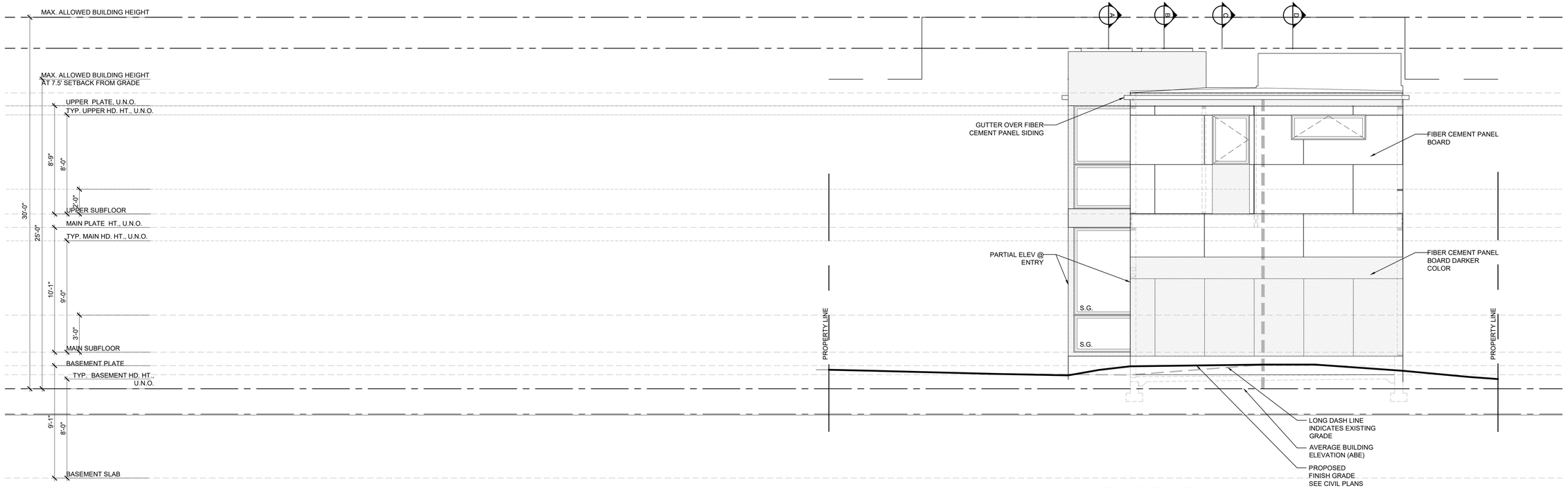
Roof Framing Plan

A8



FRONT ELEVATION - WEST

0 4 8



SOUTH ELEVATION

0 4 8

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions
Comment
.

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT
PHILIP MCCULLOUGH
STATE OF WASHINGTON
7806

O'Brien Residence

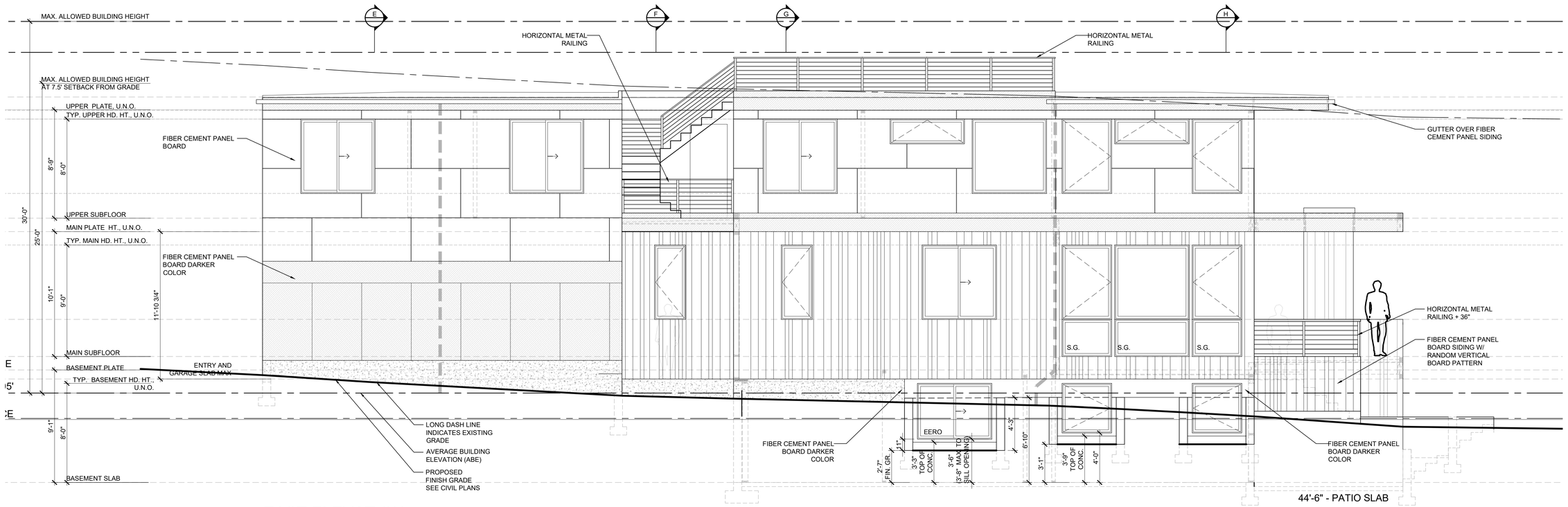
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

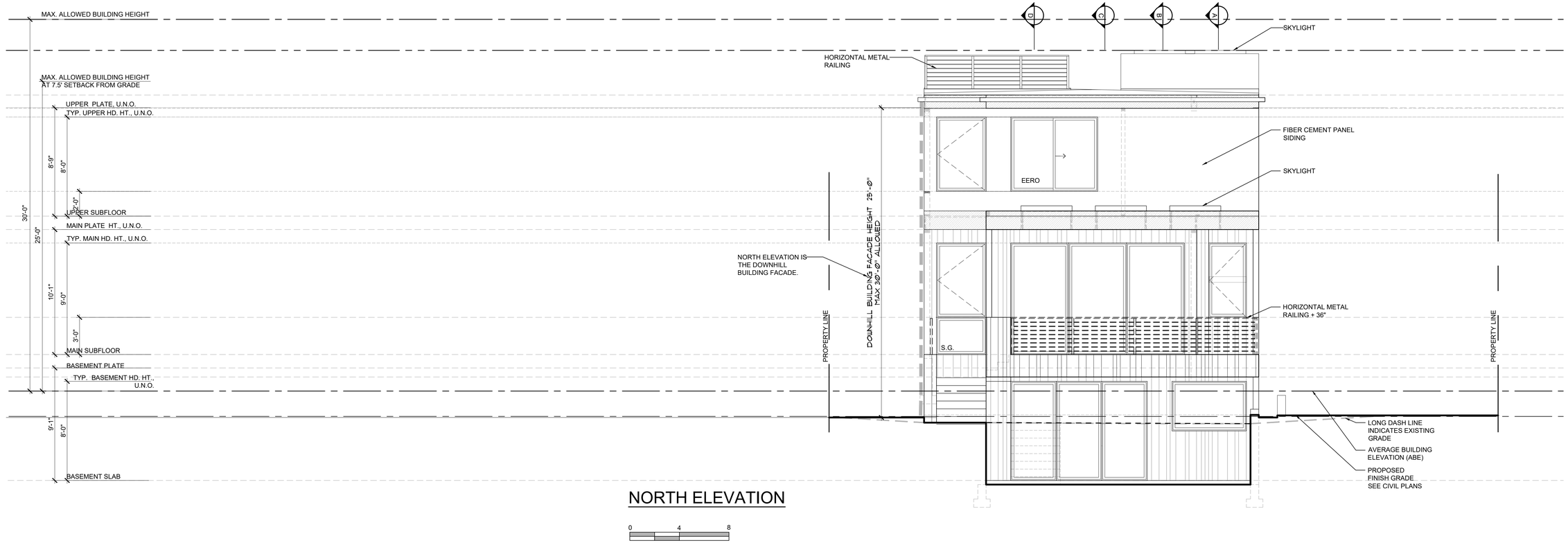
Elevations

A9



EAST ELEVATION

0 4 8



NORTH ELEVATION

0 4 8

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7806

O'Brien Residence

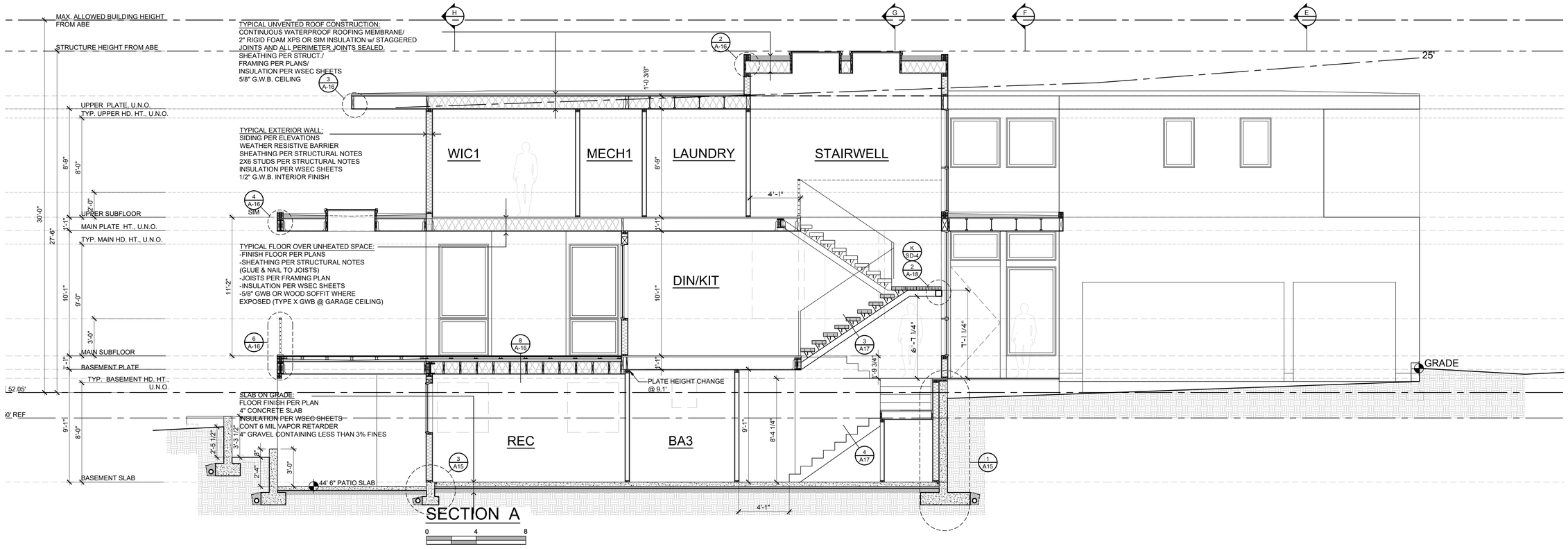
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Elevations

A10



MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

7606 REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON

O'Brien Residence

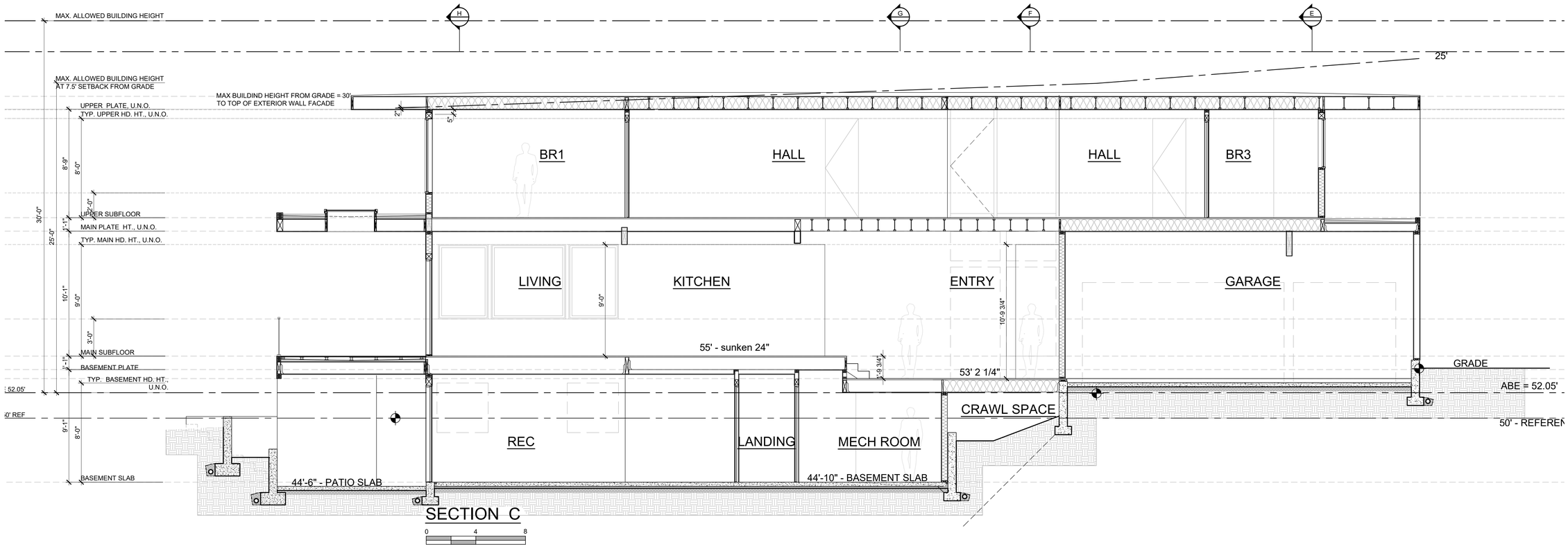
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

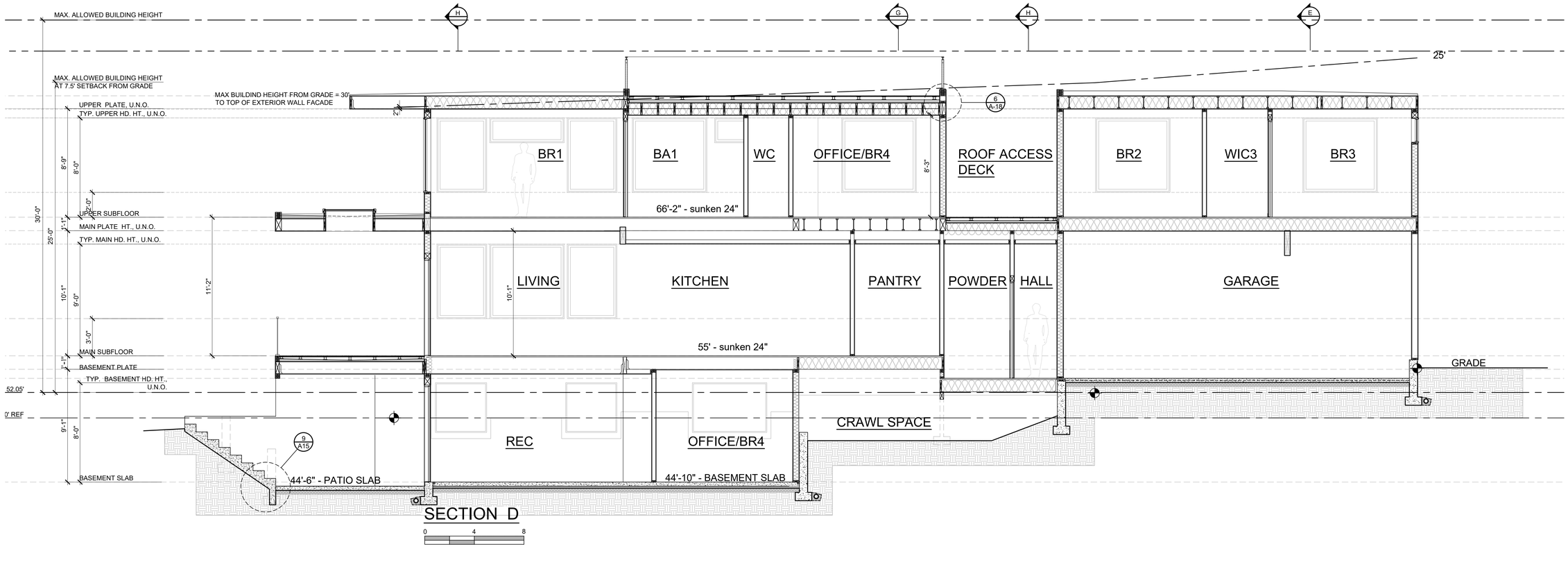
Sections

A11



SECTION C

0 4 8



SECTION D

0 4 8

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT PHILIP MCCULLOUGH STATE OF WASHINGTON 7805

O'Brien Residence

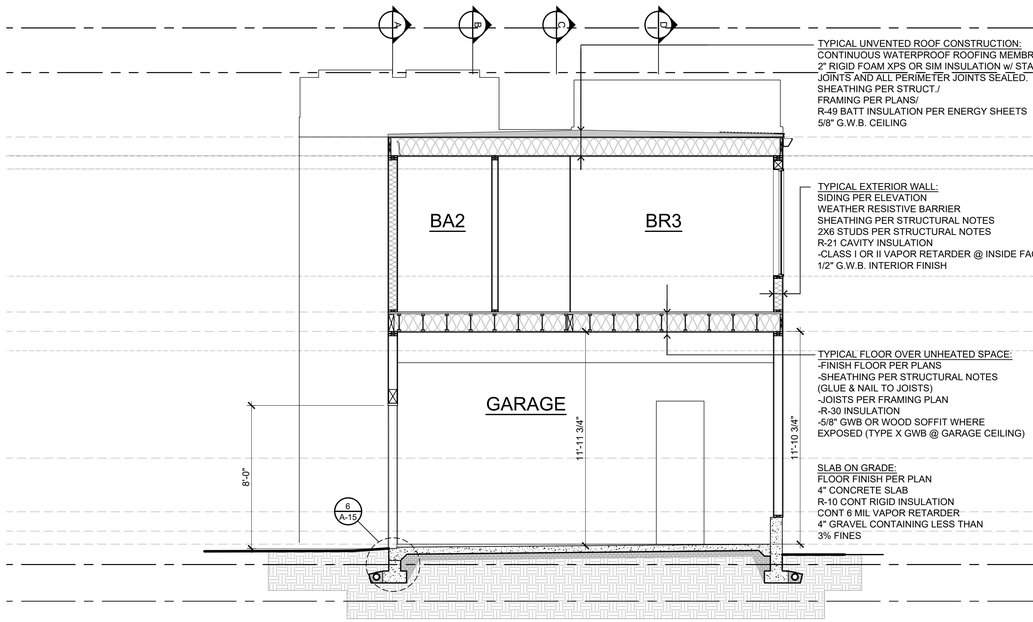
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

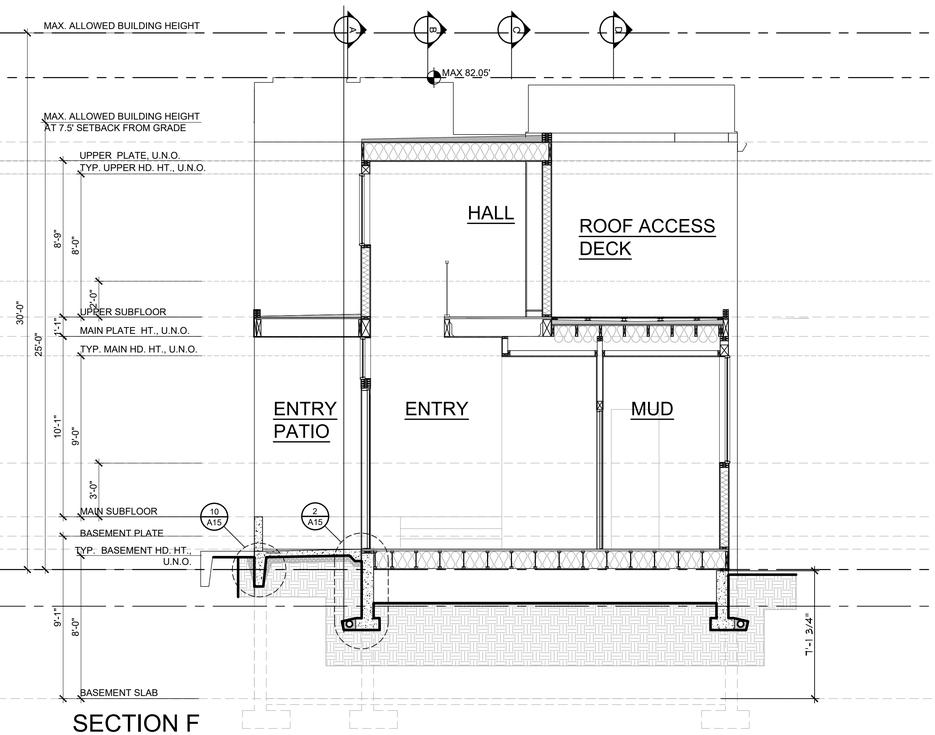
Permit Set

Sections

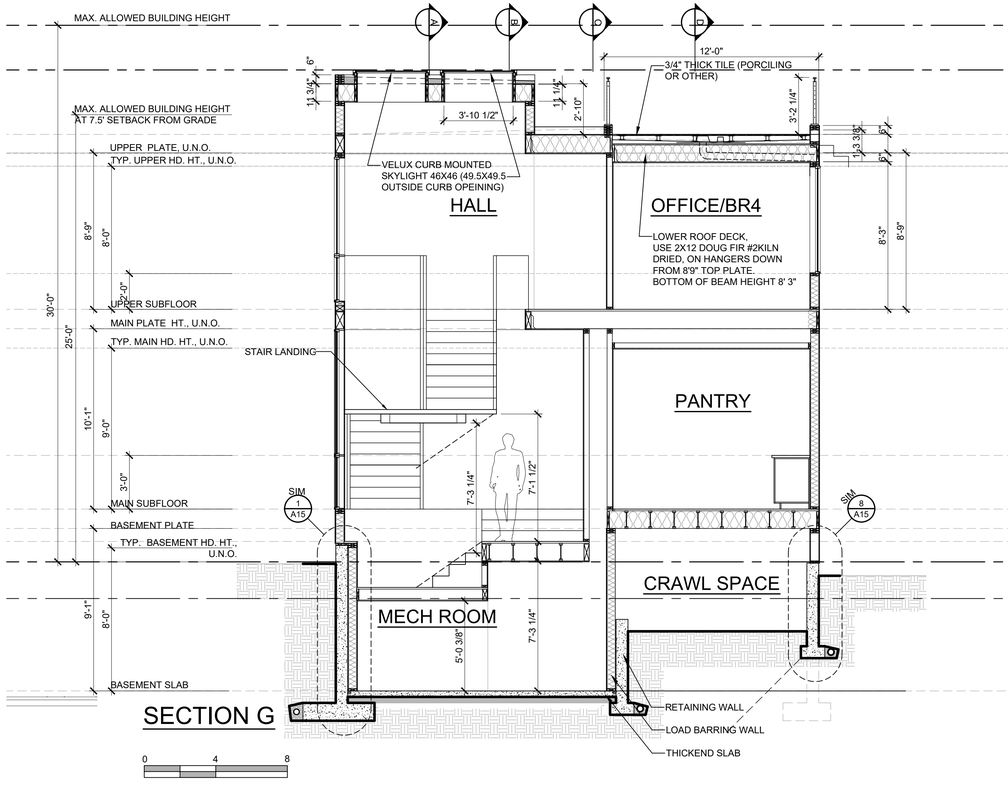
A12



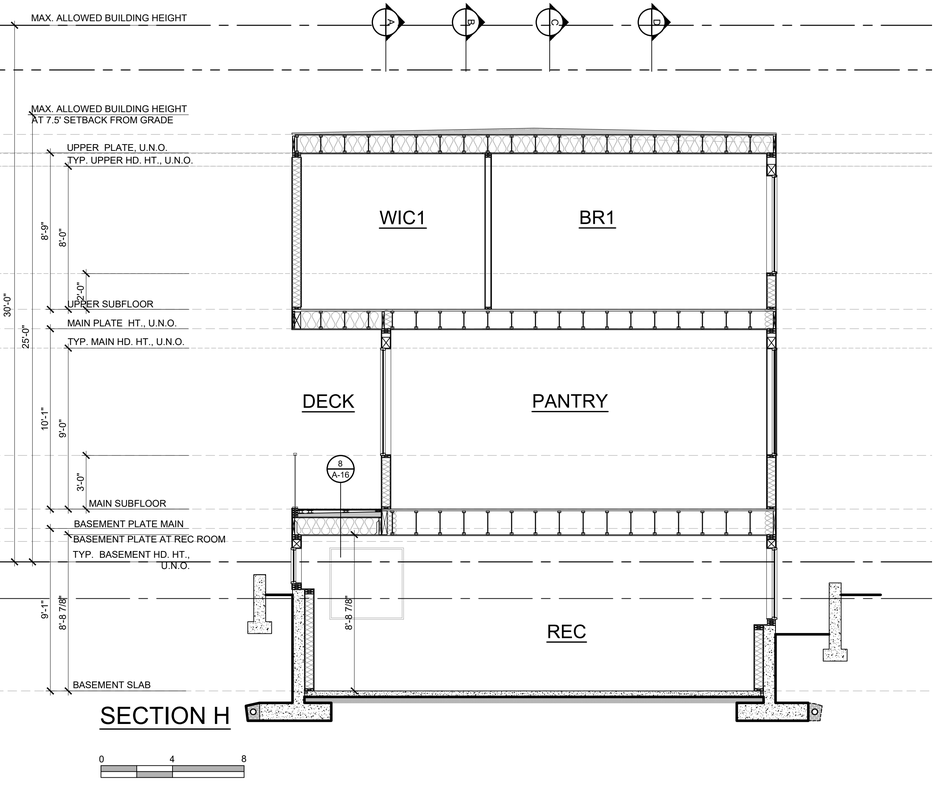
SECTION E



SECTION F



SECTION G



SECTION H

MCCULLOUGH
ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT
7806
PHILIP MCCULLOUGH
STATE OF WASHINGTON

O'Brien Residence

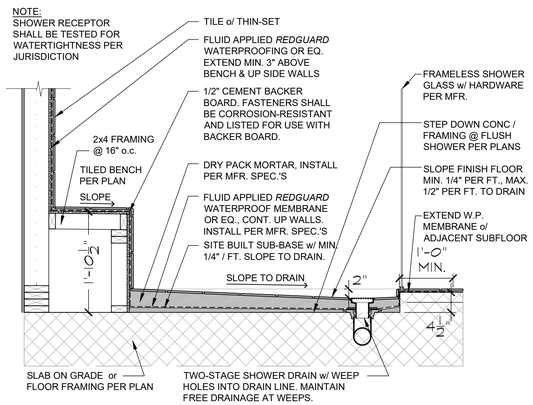
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

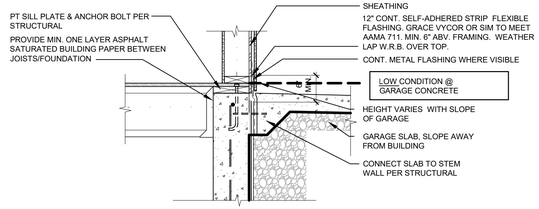
Sections

A13



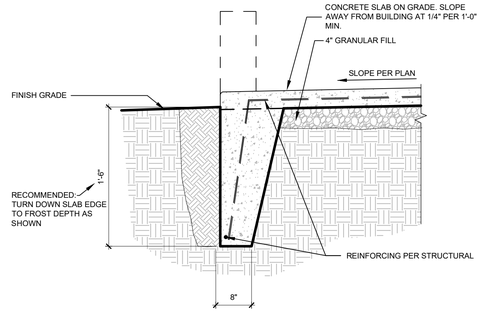
RECESSED MUD SET SHOWER (12)

SCALE: 3/4" = 1'-0"



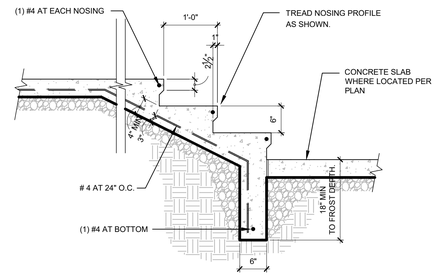
FOUNDATION @ CRAWL SP./GARAGE SLAB (11)

SCALE: 3/4" = 1'-0"



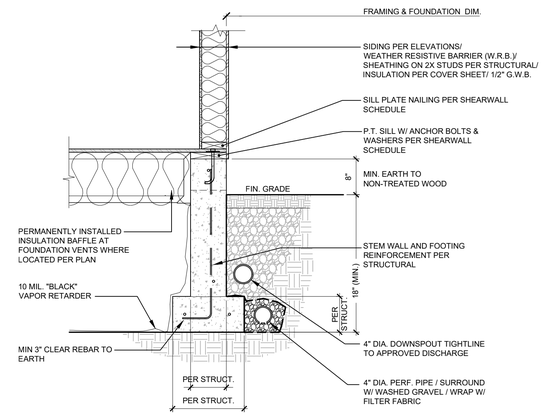
PORCH EDGE @ SLAB (10)

SCALE: 3/4" = 1'-0"



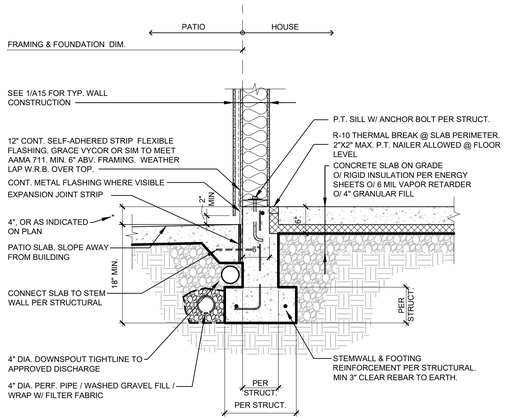
TYP. STEPS ON GRADE (9)

SCALE: 3/4" = 1'-0"



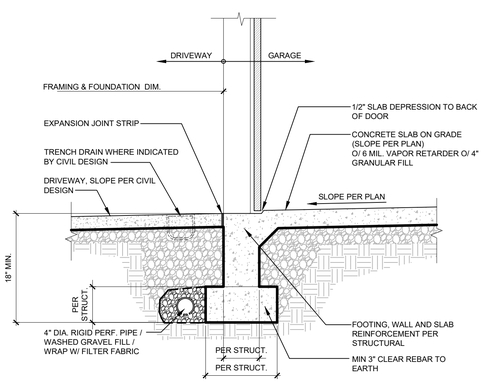
FOUNDATION @ CRAWL SPACE (8)

SCALE: 3/4" = 1'-0"



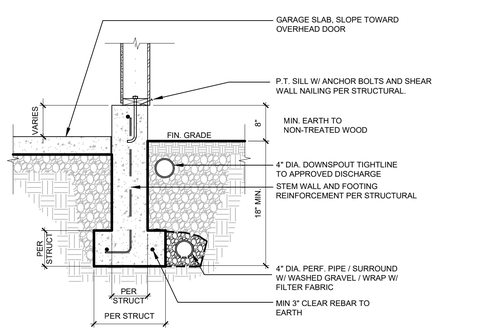
FOUNDATION @ SLAB/PATIO (7)

SCALE: 3/4" = 1'-0"



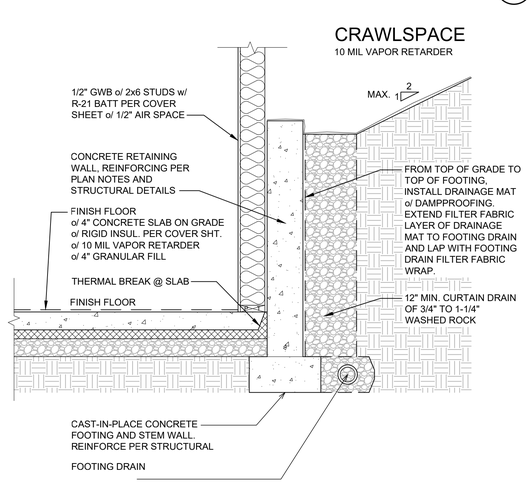
FOUNDATION @ GARAGE DOOR (6)

SCALE: 3/4" = 1'-0"



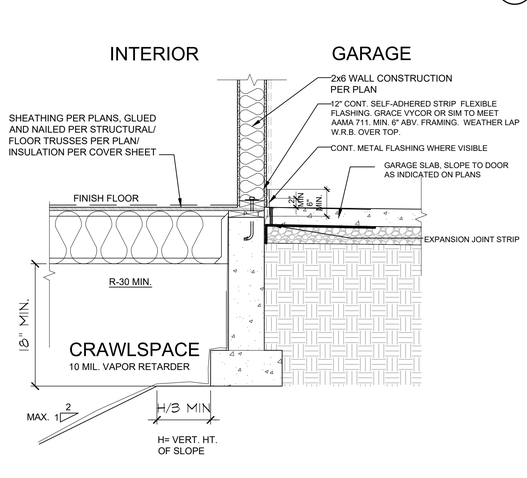
FOUNDATION @ GARAGE WALL (5)

SCALE: 3/4" = 1'-0"



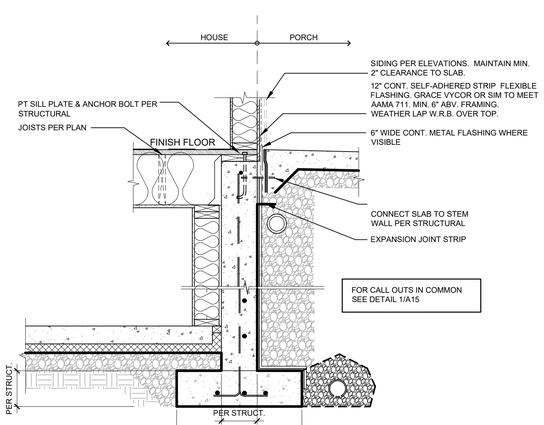
FDN - RAISED WALL @ CRAWLSPACE (4)

SCALE: 3/4" = 1'-0" SLAB ON GRADE / CRAWLSPACE



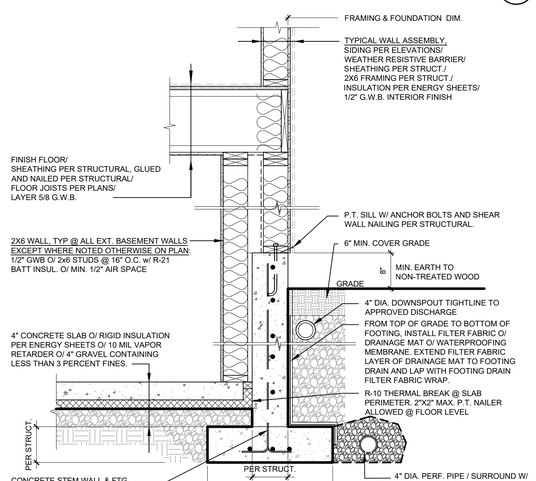
FOUNDATION - CRAWLSPACE (3)

SCALE: 3/4" = 1'-0" CRAWLSPACE



FOUNDATION @ BASEMENT/PORCH SLAB (2)

SCALE: 3/4" = 1'-0"



BASEMENT WALL (1)

SCALE: 3/4" = 1'-0"

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT 7606 PHILIP MCCULLOUGH STATE OF WASHINGTON

O'Brien Residence

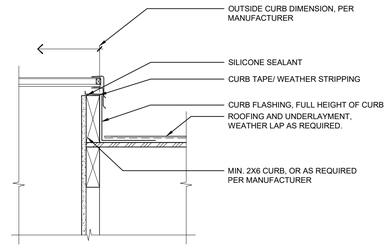
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

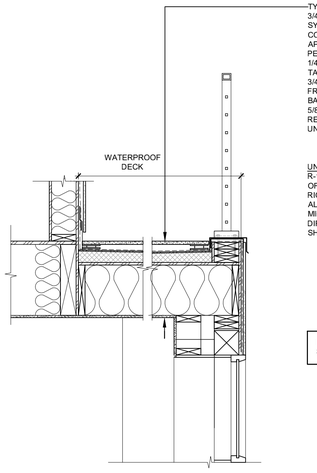
Permit Set

Architectural Details

A15



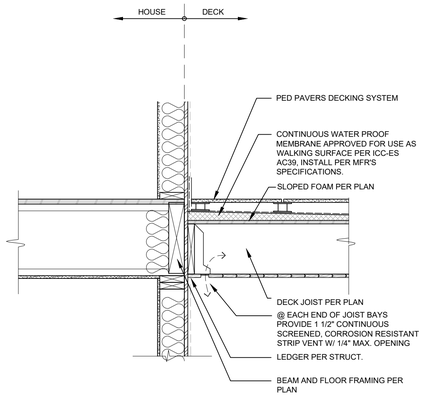
SKYLIGHT CURB 9



ENTRY DECK @ CONDITIONED SPACE 8

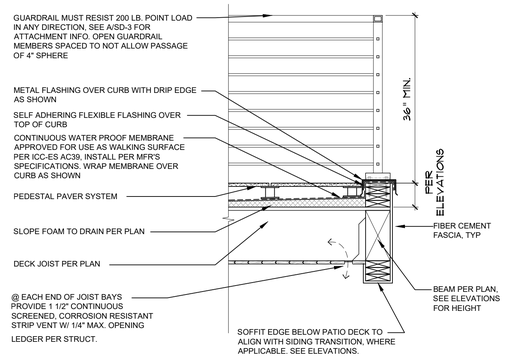
SCALE: 3/4" = 1'-0"

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



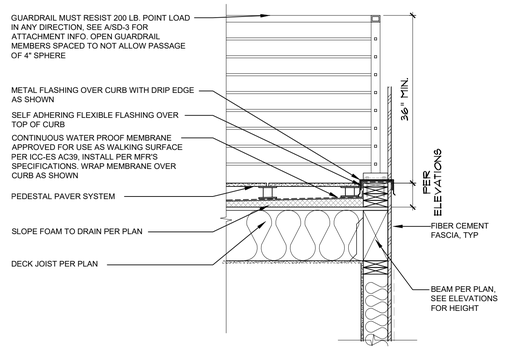
W.P. DECK @ EXTERIOR WALL 7

SCALE: 3/4" = 1'-0"



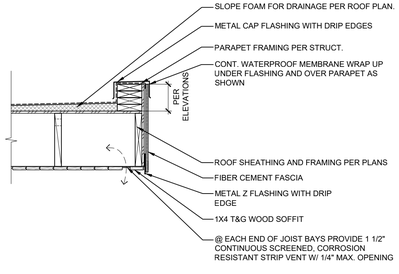
DECK @ EDGE 6

SCALE: 3/4" = 1'-0"



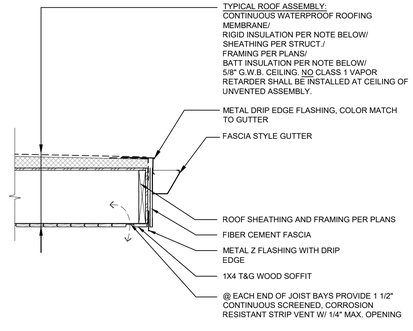
ROOF DECK @ EDGE 5

SCALE: 3/4" = 1'-0"



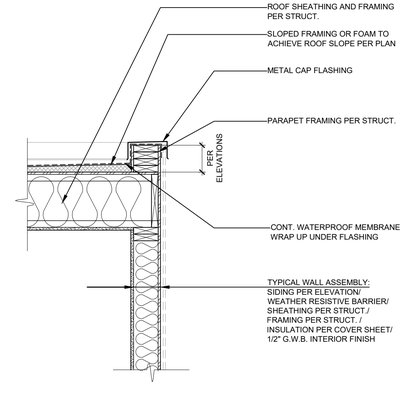
PARAPET ON LOW SLOPE ROOF @ EVE 4

SCALE: 3/4" = 1'-0"



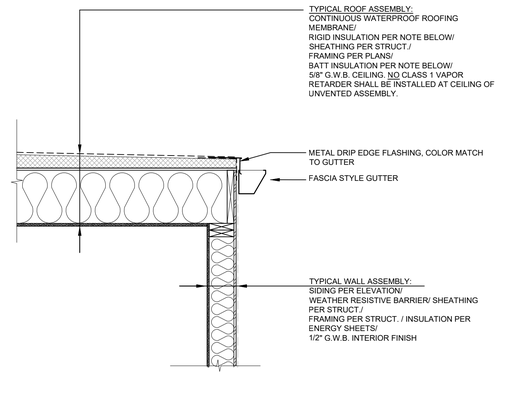
PARAPET ON LOW SLOPE ROOF @ EVE 3

SCALE: 3/4" = 1'-0"



PARAPET @ EXTERIOR WALL 2

SCALE: 3/4" = 1'-0"



TYPICAL LOW SLOPE ROOF, NO EAVE 1

SCALE: 3/4" = 1'-0"

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED ARCHITECT PHILIP J. MCCULLOUGH STATE OF WASHINGTON 7606

O'Brien Residence

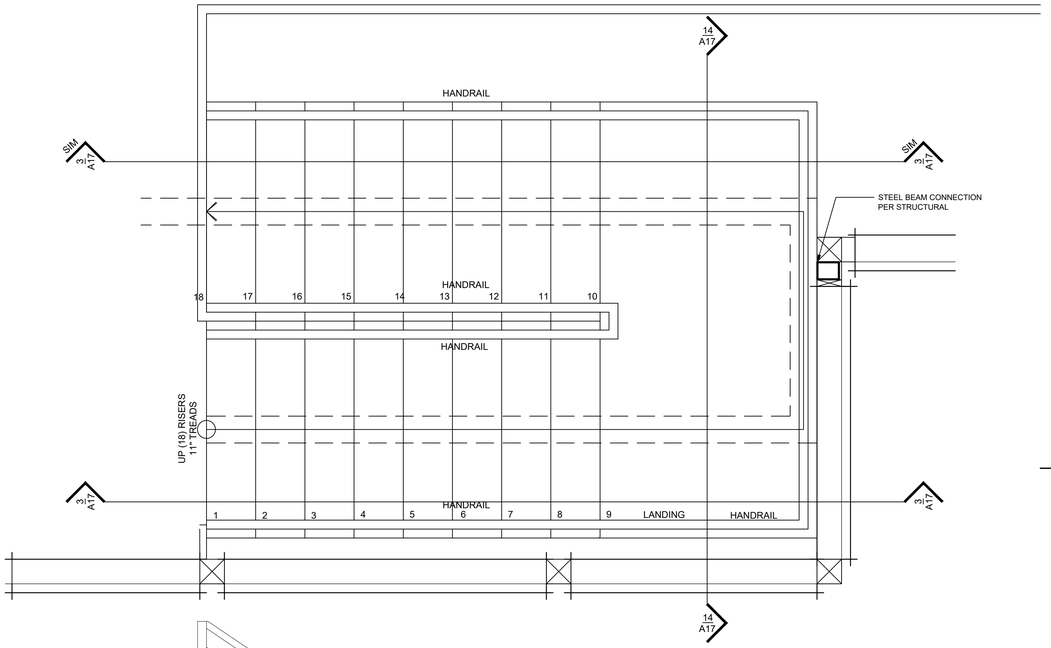
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

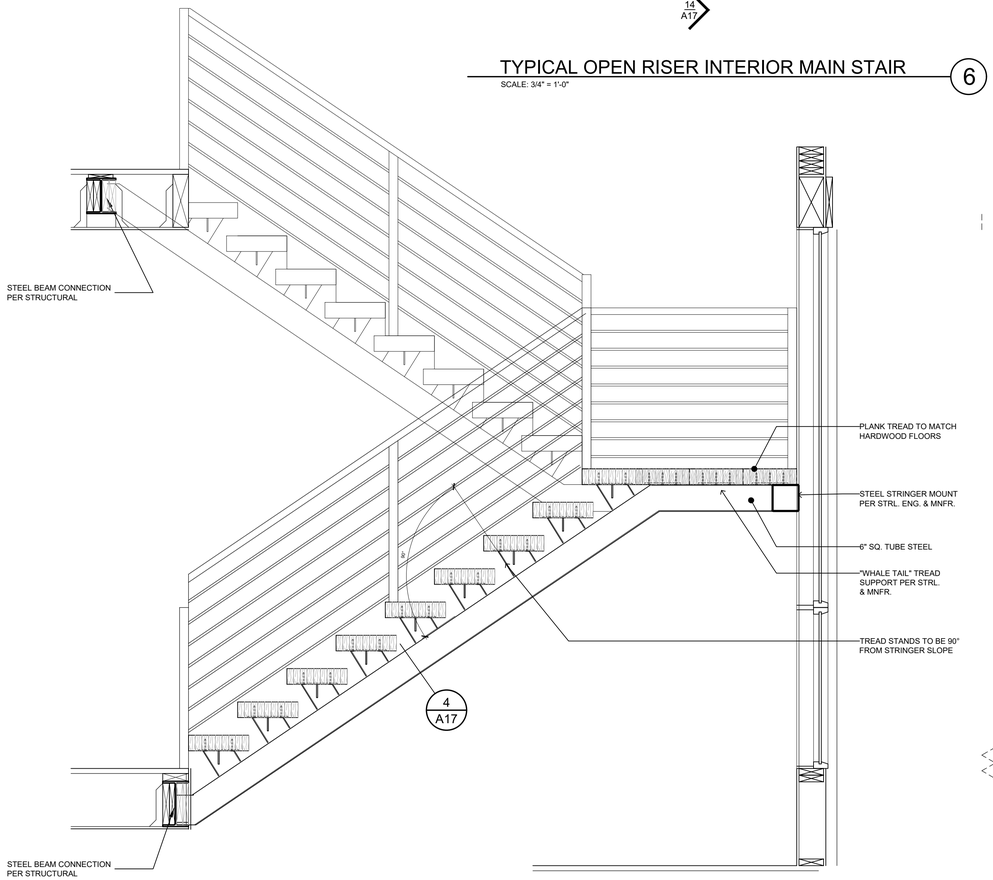
Architectural Details

A16



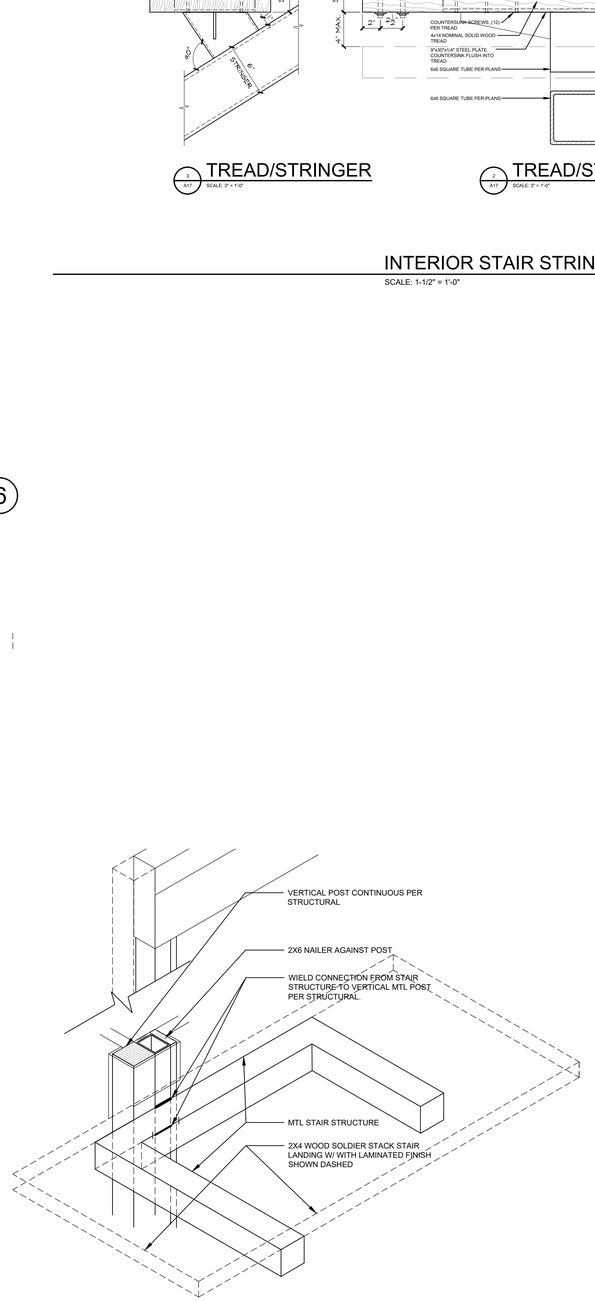
TYPICAL OPEN RISER INTERIOR MAIN STAIR 6

SCALE: 3/4" = 1'-0"



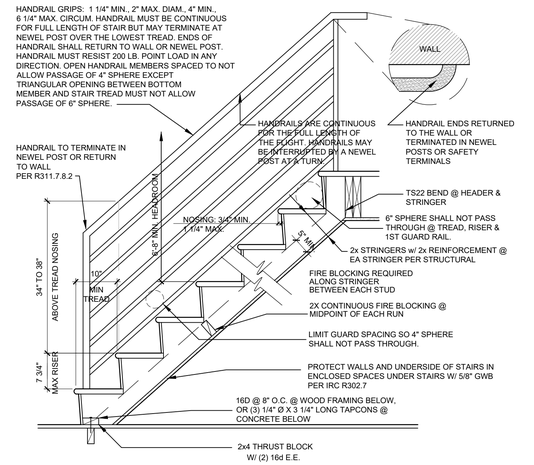
OPEN RISER INTERIOR MAIN STAIR 3

SCALE: 3/4" = 1'-0"



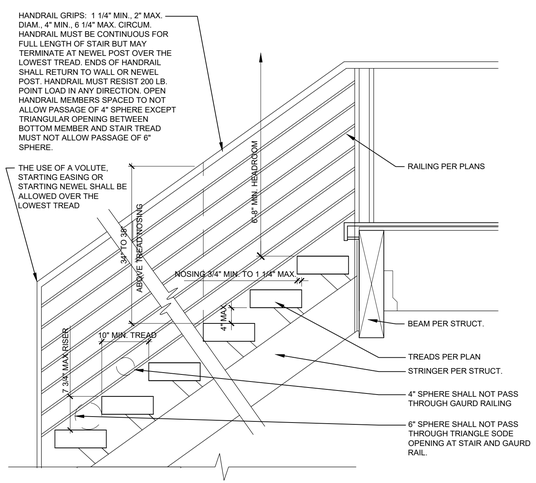
WEILD CONNECTION AT INTERIOR STAIR 2

SCALE: 3/4" = 1'-0"



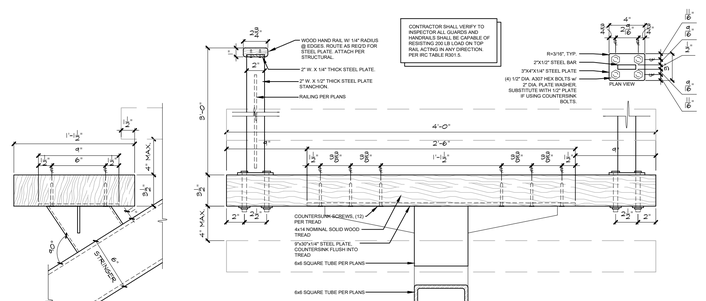
TYPICAL INTERIOR STAIR, CLOSED RISER 4

SCALE: 3/4" = 1'-0"



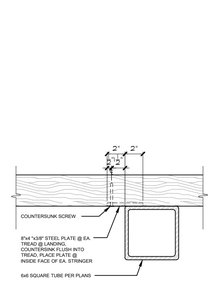
TYPICAL OPEN RISER INTERIOR STAIR 1

SCALE: 3/4" = 1'-0"



TREAD/STRINGER 3

SCALE: 3" = 1'-0"



TREAD/STRINGER 2

SCALE: 3" = 1'-0"

LANDING CONNECTION 1

SCALE: 3" = 1'-0"

INTERIOR STAIR STRINGER & TREAD DETAIL 5

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

MCCULLOUGH
ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1161
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT
7806 APRIL M. MCCULLOUGH
STATE OF WASHINGTON

O'Brien Residence

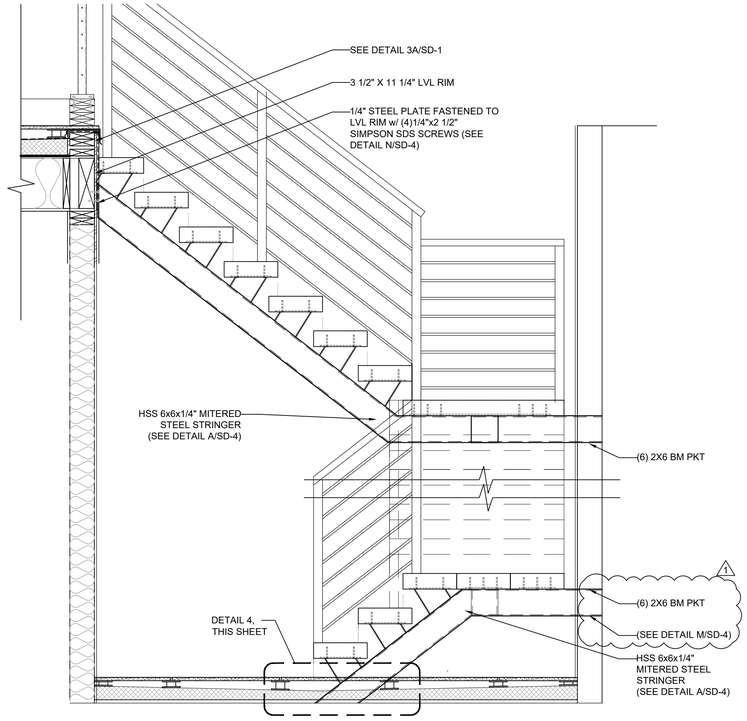
9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

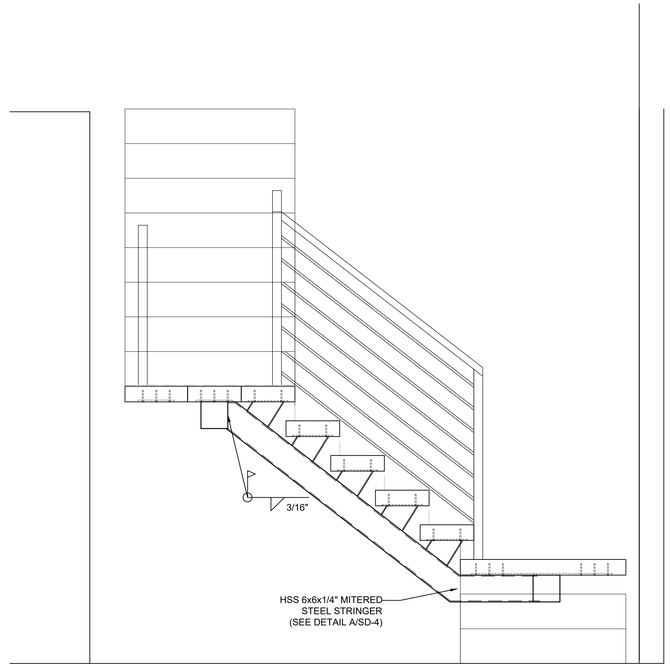
Architectural Details

A17



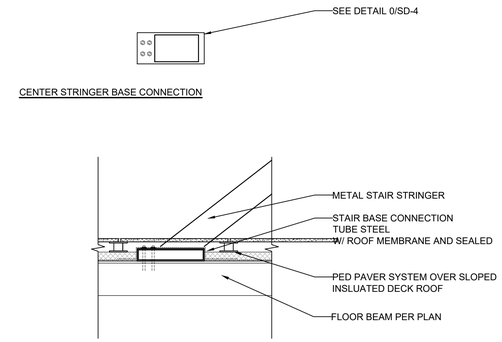
OPEN RISER STAIR - LOWER & UPPER SECTION 6

SCALE: 3/4" = 1'-0"



OPEN RISER STAIR - LOWER SECTION 5

SCALE: 3/4" = 1'-0"

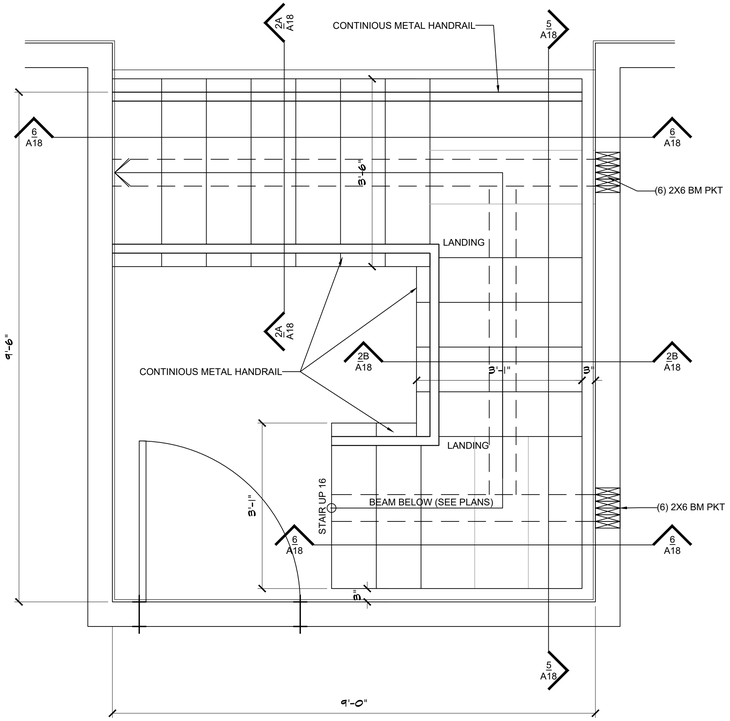


CENTER STRINGER BASE CONNECTION

CENTER STRINGER BASE CONNECTION - SECTION

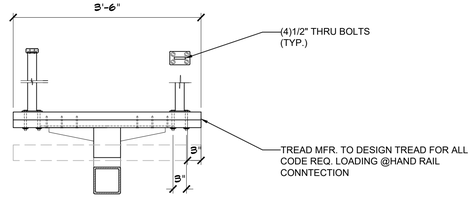
OPEN RISER STAIR - CENTER STRINGER BASE CONNECTION 4

SCALE: 3/4" = 1'-0"



OPEN RISER STAIR - PLAN VIEW 3

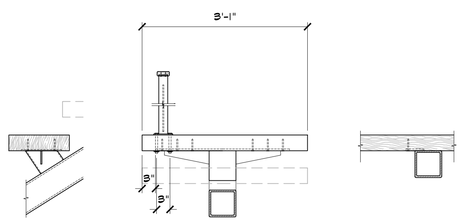
SCALE: 3/4" = 1'-0"



FOR CALL OUTS IN COMMON SEE DETAIL 5/A17

OPEN RISER STAIR - DOUBLE RAILING 2B

SCALE: 3/4" = 1'-0"



FOR CALL OUTS IN COMMON SEE DETAIL 5/A17

OPEN RISER STAIR - SINGLE RAILING 2A

SCALE: 3/4" = 1'-0"

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1161
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner
Sean O'Brien

REGISTERED ARCHITECT
7806
PHILIP A. MCCULLOUGH
STATE OF WASHINGTON

O'Brien Residence

9412 SE 33rd st
Mercer Island, WA 98040

approval stamp

Permit Set

Architectural Details

A18

Project Information	
Obrien Residence	
9412 SE 33rd St	
Mercer Island, WA 98040	

Contact Information	
Nate Rupcich, Arch Designer/Owners Representative	
McCullough Architects	
206-443-1181 nate@McCulloughArchitects.com	

Messages / Comments * **RESULT: PASS**

Note: Review required for custom entries: - Flat/Vaulted Ceilings

UA Reduction = 11.3, Proposed UA is better than baseline by 1.4%

Window area is 35% of floor area

Whole House Mechanical Ventilation Airflow Rate: 106.25 CFM with Run Time Percent of 100%, Unbalanced, Distributed
Maximum allowable total measured duct leakage: 158 CFM25

* Results assume your inputs are complete and correct. Results do not constitute an approval. Analysis should be reviewed by your AHJ.

ANALYSIS SET UP

What code compliance pathway are you using?	U-Factor Compliance Path
Project Building Type?	New Construction
Occupancy Type?	R1 Single family dwellings and townhouses
Code Version?	WSEC 2021
Classification:	Medium Dwelling Unit – 3947 sq. ft.
Baseline Description:	Code Baseline - Baseline and proposed window areas are equal.
About Your Selection:	Up to 15 sf exempt window and 24 sf exempt door allowable

**RESULTS - Comparison of Baseline and Proposed Design **

Component Performance, R occupancies	Baseline U *	Baseline Area	Baseline UA	Proposed Design U	Proposed Design Area	Proposed Design UA
Doors U =	0.300	36	10.8	0.300	36	10.8
Overhead Glazing U =	0.500	59	29.4	0.500	59	29.4
Vertical Glazing U =	0.300	1,390	417.1	0.300	1,390	417.1
Flat/Vaulted Ceilings U =	0.024	1,952	46.8	0.019	1,952	37.1
Wall (above grade) U =	0.056	3,678	206.0	0.054	3,678	198.6
Floors over Crawlspace U =	0.029	635	18.4	0.028	635	17.8
Slab on Grade F =	0.540	0	0.0		0	0.0
Below Grade Wall U =	0.040	661	26.4	0.038	661	25.1
Below Grade Slab F =	0.560	111	62.2	0.630	111	69.9

* Values from Table R402.1.2 (Oct 2023)

Baseline UA Total	817.2	**Proposed UA Total**	805.9
Required Credits	8.0	**Proposed Credits**	8.0 from Tables 406.2 and 406.3
		UA Percent Reduction	1%
		UA Reduction	11.3

If the Proposed UA ≤ the Target UA, and the Proposed Credits from Table 406 are ≥ those required in Section R406, then the home meets the WSEC.

** Results assume your inputs are complete and correct. Results do not constitute an approval. Analysis should be reviewed by your AHJ.

Table R406.2 Energy Equalization Credits

System No.	Full Description	Select System Type	Fuel Normalization Credits (406.2)	Energy Credits (406.3)	Total Credits (406.2 & 406.3)
4	For heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) or Table C403.3.2(5) OR Air to Water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550/590	Variable Refrigerant Heat Pump or Air-to-Water Heat Pump	3.0	5.0	8.0

Table R406.3 Energy Credits

Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Not Selected	0.0	-
2	Air Leakage Control and Efficient Ventilation			
3.1 -3.10	High Efficiency HVAC	Option 3.4	1.0	Air source ducted Heat Pump w/ Min HSPF2 of 10 (HSPF of 11). If htg design temp is 23F or below,a cold climate variable capacity heat pump is required.
3.11	High Efficiency HVAC: Smart Thermostat		0.0	
4	High Efficiency HVAC Distribution System		0.0	
5.1	Efficient Water Heating: Drain Heat Recovery		0.0	
5.2	Efficient Water Heating: Compact Hot Water Distribution		0.0	
5.3-5.8	Efficient Water Heating	Option 5.3	0.5	Energy Star gas or propane water heater with min UEF of 0.80
6	Renewable Electric Energy 4,200 kWh	Option 6.1	3.5	On-site wind or solar electric energy. 0.5 credit per 600 kWh of generation up to maximum of 4.5 credits
7	Appliance Package		0.0	
		Energy Credits	**5.0**	

**Refer to WSEC 2015 Table R406.2 for complete option descriptions and requirements

THERMAL ENVELOPE DETAILS - Proposed Design

Conditioned Floor Area, Proposed Design: 3,947 sq. ft
Classification: Medium Dwelling Unit
Notes:

Exterior Doors

Plan ID	Component Description	Door Ref.	Door U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
Exempt									0	0.0
	Code Baseline, U=0.30	-	0.30	1	4	1	9	0	36	10.8
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
									0	0.0
								Sum of Area and UA	36	10.8
								Exterior Doors Area Weighted U		0.300

Overhead Glazing

Plan ID	Component Description	Glazing Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
	2021 U-factor Baseline (Table R402.1.2)	Table R402	0.50	4	3	11	3	10	58.8	29
									-	-
									-	-
									-	-
								Sum of Area and UA	58.8	29
								Overhead Glazing Area Weighted U		0.500

Vertical Glazing Schedule Rows to Show: 50

Plan ID	Component Description	Glazing Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
Exempt									-	-
1	4324 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	4	5	2	4	18.7	5.60
2	4272 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	4	5	7	0	28.0	8.40
3	4771 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	4	7	7	5	34.8	10.43
4	4730 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	4	7	3	0	13.8	4.13
5	6571 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	7	7	0	42.5	12.75
6	3030 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	7	3	0	18.0	5.40
7	3571 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	3	7	7	5	24.8	7.44
8	3630 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	3	7	3	0	10.5	3.15
9	5060 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	6	0	30.0	9.00
10	4060 OSB Uvh0.30 (Code Baseline)	Table 406.2	0.30	6	4	0	6	0	144.0	43.20
11	140W SLID Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	14	0	9	0	126.0	37.80
12	4030 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	5	4	0	3	0	60.0	18.00
13	5060 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	6	0	30.0	9.00
14	6030 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	3	0	18.0	5.40
15	6060 SLID Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	6	0	36.0	10.80
16	2650 CSM Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	2	6	5	0	30.0	9.00
17									-	-
18	2020 AWN Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	2	0	2	0	4.0	1.20
19	4026AWN Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	4	0	2	0	16.0	4.80
20	6040 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	4	0	24.0	7.20
21	110RE SID Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	11	0	8	0	88.0	26.40
22	4040 AWN Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	4	0	4	0	32.0	9.60
23	6048 SLID Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	4	0	27.0	8.10
24									-	-
25	4048FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	4	0	4	0	32.0	9.60
26	5049 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	4	0	23.8	7.13
27	5037 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	3	0	17.9	5.38
28	4749 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	4	0	4	0	21.8	6.53
29	4737 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	4	0	3	0	16.4	4.93
30	5049 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	4	0	28.5	8.55
31	5037 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	3	0	21.0	6.30
32	5049 FIX Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	5	0	4	0	16.6	4.99

33	3637 FIX	Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	3	6	3	12.5	3.76
34	3040 CSM	Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	4	12.0	3.60
35	7260 SLID	Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	7	0	6	42.0	12.60
36	4060 CSM	Uvh0.30 (Code Baseline)	Table 406.2	0.30	3	4	0	6	72.0	21.60
37	2060 AWN	Uvh0.30 (Code Baseline)	Table 406.2	0.30	3	2	0	6	36.0	10.80
38	6060 FIX	Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	6	36.0	10.80
39	6060 SLID	Uvh0.30 (Code Baseline)	Table 406.2	0.30	3	6	0	6	108.0	32.40
40	3040 CSM	Uvh0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	4	12.0	3.60
41	2640 CSM	Uvh0.30 (Code Baseline)	Table 406.2	0.30	2	2	0	4	20.0	6.00
42									-	-
43									-	-
44									-	-
45									-	-
46									-	-
47									-	-
48									-	-
49									-	-
50									-	-
								Sum of Area and UA	1,390.5	417.1
								Vertical Glazing Area Weighted U		0.300
								Vertical Glazing and Doors Area Weighted U		0.300

Flat/Vaulted Ceilings

Plan ID	Component Description	Ref.	Attic U			Area	UA
	Flat Roof - 2" Rigid over enclosed Batt TJH 11 7/8	Custom	0.019			1,952	37.1
						0	
						Sum of Area and UA	1,952	37.1

Refer to WSEC R402.1

Walls (Above Grade)

Plan ID	Component Description	Ref.	Wall U			Net Area	UA
	R21 cavity+R0 foam INT 2X6W Lap (Code Baseline)	10-5	0.054			3,678	199
						Sum of Area and UA	3,678	199

Floor (over crawl or exterior)

Plan ID	Component Description	Ref.	Floor U	Area	UA
	R30 vented Post/Beam (Code Baseline)	10-3	0.028	635	18
			Sum of Area and UA	635	18

Slab on Grade (less than 2 feet below grade)

Plan ID	Component Description	Ref.	Slab F	Slab Perim	FP
			Sum of Perimeter and FP	0	0

Below Grade Walls and Slabs

Plan ID	Component Description	Slab Depth	Ref.	Wall U	Wall Area	Wall UA	Slab F	Slab Perim	Slab UA
	R21 Batt	3.5' depth	WSU	0.038	661	25.1	0.630	111	70
			Sum of Area, Length and UA		661	25.1		111	70

Links to Download Forms, Checklists and Other Resources

	Link	
Compliance Certificate	Compliance Certificate	Instructions
Insulation Certificate for Residential New Construction	Insulation Certificate	
Duct Testing Affadavits		
Existing Construction	Affidavit, Existing	
New Construction	Affidavit, New	
Prescriptive Checklist for 2018 WSEC	Prescriptive Checklist	
Alterations (Remodel) Worksheet	Worksheet	
EER SEER2 COP HSPF2 Converter	https://www.adicotengineering.com/eer-seer2-cop-hspf2-kelvin-converter	

Show Ventilation Calculator? Show

Ventilation Requirements

Conditioned Floor Area	3,947	sq. ft.
Number of Bedrooms	5	
Run-Time Percent in Each 4-Hour Segment	100%	
Is the system Balanced?	Unbalanced	
Is the system Distributed?	Distributed	Verify system meets definition of 'Distributed Whole-House Ventilation'
Ventilation Code Section	IRC: Chapter 15	
Whole House Mechanical Ventilation Airflow Rate	106	CFM

Show Distribution System Calculator? Show

HVAC Thermal Distribution System Download RS-33 (2016) http://www.energy.wsu.edu/Documents/Duct%20Testing%20Standards%20-%202016.pdf

Is this a hydronic heating system?	No
Location of Ducts	Unconditioned Space
Location of Air Handler	Conditioned Space
Is Duct Testing Required?	Yes
Maximum Duct Leakage:	
Is this a post-contruction test?	Yes
Maximum total measured duct leakage per square foot	0.04 CFM25 per sq. ft.
Maximum allowable total measured duct leakage	158 CFM25

Show Heating System Sizing? Show

Heating System Sizing - Proposed Design Try Out BetterBuiltNW's HVAC Sizing Tool: https://betterbuiltnw.com/resources/hvac-sizing-tool

Nearest Weather Station	Mercer Island	
Indoor Design Temperature	70	F
Outdoor Design Temperature	25	F
Design Temperature Difference (dT)	45	F
Conditioned Floor Area, Proposed Design	3,947	ft2

Conditioned Volume	38,348	ft3
Leave blank to use default of 8.5 ft. ceiling height		
Average ceiling height	9.7	ft
HVAC System Type	Heat Pump	
Location of HVAC Distribution System	Unconditioned Space	
Sum of UA, including exempt door and window	806	
Envelope Heat Load (Sum of UA X dT)	36,204	Btu / Hour
Air Leakage Heat Load (Volume X 0.65 X dT/ 0. 018)	18,837	Btu / Hour
Building Design Heat Load (Air Leakage + Envelope Heat Loss	54,901	Btu / Hour
Building and Duct Heat Load (For ducts located in unconditioned space Sum of Building Heat Loss X 1.1 / For ducts located in conditioned space or ductless, Sum of Building Heat Loss X 1	60,391	Btu / Hour
Maximum Heat Equipment Output (Building and Duct Heat Loss X 1.25 for heat pumps / Building and Duct Heat Loss X 1.40 for all other systems	75,489 / 22.1	Btu / Hour / kW

Average ceiling height =9.7 ft. Volume = 38348 ft3

Ekotrope Assembly Calculator Results

Component: Flat Roof - 2" Rigid over enclosed Batt TJH 11 7/8

R-value: 51.46160862

U-value: 0.019431962

LAYER	TYPE	MATERIAL	MATERIAL DEPTH (in.)	STUD TYPE	STUD DEPTH (in.)	STUD WIDTH (in.)	GAUGE	SPACING (in.)	FRAMING FRACTION	R-VALUE	INCLUDES R-VALUE
Rigid Roof Insulation	Continuous	XPS	2							10	✓
Plywood/OSB Layer	Continuous	Plywood/OSB	0.5							0.34	✓
Batt Insulation	Stud/Cavity	Fiberglass Batts	11.875	Wood	11.875	1.5		24	0.069375	41.8575	✓
Gypsum Board Layer	Continuous	Gypsum Board	0.625							0.38125	✓

If you have any questions, please don't hesitate to reach out at: support@ekotrope.com

Wed May 07 16:23:05 UTC 2025 – ekotrope.com

approval stamp

Permit Set

WSEC SHEETS

EN1

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

UNPUBLISHED WORK 2025 © McCullough Architects

Revisions Comment
. .

Date: 2025.10.20
Job No: 23-031
Drawn: NMR
Approved: APM

Owner Sean O'Brien

REGISTERED PROFESSIONAL ENGINEER PHILIP MCCULLOUGH STATE OF WASHINGTON 7066

O'Brien Residence
9412 SE 33rd st
Mercer Island, WA 98040

BASEMENT SLAB

4" CONC. SLAB ON 10 MIL VAPOR BARRIER ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

GARAGE SLAB

4" CONC. SLAB ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

PORCH SLAB

4" CONC. SLAB ON GRADE ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

GENERAL STRUCTURAL NOTES

FOUNDATION

- DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE & 2021 INTERNATIONAL BUILDING CODE
- DESIGN LOADS:
  SOIL ..... 2,000 PSF ALLOWABLE BEARING PRESSURE PER COBALT GEOSCIENCES GEOTECH REPORT DATED 04/14/2025
- CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS IN 28 DAYS, U.N.O.:
  f'c = 3,000 psi:* ..... FOUNDATION WALLS
  3,000 psi:* ..... FOOTINGS
  2,500 psi: ..... INTERIOR SLABS ON GRADE
  3,500 psi:* ..... GARAGE & EXT. SLABS ON GRADE
  fy = 60,000 psi

  * ALL CONCRETE HAS BEEN DESIGNED FOR 2500 PSI, ANYTHING GREATER THAN THIS SPECIFICATION IS FOR WEATHERING ONLY.
- ALL CONCRETE EXPOSED TO THE WEATHER SHALL NOT HAVE LESS THAN 5% OR MORE THAN 7% AIR ENTRAINMENT.
- FOUNDATION WALL DESIGN IS BASED ON BACKFILL SOIL PRESSURE OF 35 PCF AT-REST, 35 PCF ACTIVE & 7H SEISMIC SURCHARGE.
- TYPICAL REINFORCEMENT DETAILS: LAP ALL REBAR 24" MIN, BEND BARS AND LAP AT CORNERS; PROVIDE 6" HOOK INTO SUPPORTING FOOTINGS WHEN FOOTINGS INTERSECT; PROVIDE 3" MINIMUM COVER AT THE BOTTOM BARS AND 1 1/2" COVER AT THE SIDES.
- FOUNDATION WALLS SHALL BE BRACED, PRIOR TO BACKFILLING, BY EITHER ADEQUATE TEMPORARY BRACING OR INSTALLATION OF FIRST FLOOR DECK.
- ALL FOOTINGS SHALL BEAR BELOW FROST LINE. CONSULT SOILS REPORT/ LOCAL MUNICIPALITY FOR MINIMUM DEPTH BELOW GRADE.
- FOOTINGS AND SLABS ON GRADE SHALL BEAR ON VIRGIN SOIL OR 95% COMPACTED FILL.
- PROVIDE CONTROL JOINTS AT ALL INSIDE CORNERS OF SLAB EDGES, AND OTHER LOCATIONS WHERE SLAB CRACKS ARE LIKELY TO DEVELOP. (15'-0" O.C.)
- FASTEN SILL PLATES TO FOUNDATION WALLS WITH 5/8" DIA. ANCHOR BOLTS W/ MIN. 3"x3"x 1/4" PLATE WASHERS (EDGE OF WASHER TO BE LOCATED WITHIN 1/2" OF EXTERIOR EDGE OF SILL PLATE) PROVIDE A MINIMUM OF 2 ANCHORS PER PLATE, 12" MAXIMUM FROM PLATE ENDS, U.N.O. (SEE FND. DETAILS).
- ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT W/ CONCRETE OR MASONRY FOUNDATION SHALL BE PRESERVATIVE TREATED HEM FIR #2.
- ARCH/BUILDER TO VERIFY ALL DIMENSIONS

HOLD-DOWN SCHEDULE

SYMBOL	SPECIFICATION
HD-1	SIMPSON STHD14 (R.J) HOLD-DOWN
HD-2	SIMPSON HDU4-SDS2.5 HOLD-DOWN
HD-5	SIMPSON CS16 STRAP TIE (14" END LENGTH)
HD-6	SIMPSON MSTC40 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM U.N.O.)
HD-7	SIMPSON MSTC66 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM U.N.O.)

MEANS & METHODS NOTES

THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FINISHED AND ALL PLAN, DETAIL, AND NOTE SPECIFICATIONS HAVE BEEN COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS, AND TIE-DOWNS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING AND BRACING REQUIRED TO STABILIZE AND PROTECT EXISTING AND ADJACENT STRUCTURES AND SYSTEMS DURING COURSE OF DEMOLITION AND CONSTRUCTION OF THE PROJECT.

STRUCTURAL DESIGN AND SPECIFICATIONS ASSUME THAT ALL SUPPORTING AND NON-SUPPORTING ELEMENTS IN CONTACT WITH FLOOR FRAMING ARE LEVEL, INCLUDING, BUT NOT LIMITED TO; FOUNDATIONS, SLABS ON GRADE, BEAMS, WALLS, AND NON-BEARING ELEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LEVELNESS AND MAKE ADJUSTMENTS AS NECESSARY, INCLUDING CONSIDERATION OF THOSE AREAS THAT MAY BE WITHIN CONTRACTUAL, INDUSTRY, OR WARRANTY TOLERANCES.

ADDITIONAL NOTES FOR TRUSS & I-JOIST MANUFACTURER

ROOF TRUSS, FLOOR TRUSS AND ENGINEERED JOISTS SHALL BE DESIGNED TO MEET THE DIFFERENTIAL DEFLECTION CRITERIA BELOW, UNLESS NOTED OTHERWISE ON PLAN. MULHERN & KULP CANNOT BE HELD RESPONSIBLE FOR ANY STRUCTURAL ISSUES RELATED TO ANY BUILDING COMPONENT IF COMPONENT SHOP DRAWINGS ARE NOT SUBMITTED TO MK& FOR REVIEW PRIOR TO FABRICATION, DELIVERY, OR INSTALLATION.

TRUSSES SHALL BE DESIGNED SO THAT DIFFERENTIAL DEFLECTION BETWEEN ADJACENT PARALLEL TRUSSES OR GIRDER TRUSSES DOES NOT EXCEED THE FOLLOWING:

A. ROOF TRUSSES:
   1/4" DEAD LOAD
B. FLOOR TRUSSES, ATTIC TRUSSES, & I-JOISTS:
   1/8" DEAD LOAD
C. FLOOR TRUSSES & ATTIC TRUSSES ADJACENT TO FLOOR FRAMING BY OTHERS:
   LIMIT ABSOLUTE TRUSS DEFLECTION TO
   3/16" DEAD LOAD. (NOT DIFFERENTIAL DEFLECTION)

LOADING AND DESIGN PARAMETERS

GRAVITY DESIGN LOADS:

DEAD LOAD (PSF):

ROOF I-JOISTS :	10
ROOF RAFTERS (2x) :	10
FLOOR I-JOISTS :	10
DECK JOISTS (2x) :	10
PEDESTAL PAVERS :	15

LIVE LOAD (PSF):

ROOF :	20
RESIDENTIAL LIVING AREAS :	40
RESIDENTIAL SLEEPING AREAS :	30
RESIDENTIAL WOOD DECKS :	60
GARAGE	50

SNOW LOAD:

GROUND SNOW LOAD (P_g) (PSF) :	25
FLAT ROOF SNOW LOAD (P_f) (PSF) :	25
SNOW EXPOSURE FACTOR (C_e) :	0.9
SNOW LOAD IMPORTANCE FACTOR (I) :	1.0
THERMAL FACTOR (C_t) :	1.2

LATERAL DESIGN LOADS:

WIND LOAD: (IBC 1609)

SPEED (V_{ult}) (MPH) :	100
WIND RISK CATEGORY :	II
IMPORTANCE FACTOR (I_w) :	1.0
EXPOSURE CATEGORY :	C
INTERNAL PRESSURE COEFF. (GC_{pi}) :	±0.18
TOPOGRAPHIC FACTOR (K_{zt}) :	1.00

SEISMIC LOAD: (IBC 1613)

SEISMIC RISK CATEGORY :	II
SEISMIC IMPORTANCE FACTOR (I_e) :	1.0
MAPPED SPECTRAL RESPONSE :	
S_{ms}: 1.393	S_1: 0.485
SITE CLASS :	D
SPECTRAL RESPONSE COEFF. :	
S_{DS}: 0.929	S_{D1}: 0.581
SEISMIC DESIGN CATEGORY:	D
BASIC SEISMIC-FORCE-RESISTING SYS :	LIGHT FRAMED WALLS w/WOOD STRUCTURAL PANELS
ULTIMATE BASE SHEAR:	
TRANS: 14 k	LONG: 14 k
SEISMIC RESPONSE COEFF. (C_s):	
TRANS: 0.143	LONG: 0.143
RESPONSE MODIFICATION FACTOR (R) :	
TRANS: 6.5	LONG: 6.5
ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE

LATERAL BRACING NOTES

THIS HOME HAS BEEN ENGINEERED TO RESIST LATERAL FORCES RESULTING FROM:
100 MPH WIND SPEED, EXP. C
(ASCE 7-16 WIND MAP, PER IRC R301.2.1.1)
RISK CAT. 2 & SEISMIC CAT. D2.

100 MPH WIND IN 2021 IRC MAP

ENGINEERED DESIGN WAS COMPLETED PER 2021 IBC (SECTION 1609 & 1613) & ASCE 7-16, AS PERMITTED BY R301.1.3 OF THE 2021 IRC. ACCORDINGLY, THIS HOME, AS DOCUMENTED AND DETAILED HEREWITHIN, IS ADEQUATE TO RESIST THE CODE REQUIRED LATERAL FORCES, AND DOES NOT NEED TO CONFORM TO THE PRESCRIPTIVE PROVISIONS OF R602.10.

STANDARD EXTERIOR WALL SHEATHING SPECIFICATIONS

(INTERIOR WALL SPECIFICATION WHERE NOTED ON PLANS)

- 7/16" OSB OR 15/32" PLYWOOD:

  FASTEN SHEATHING W/ 2 1/2"x0.131" NAILS @ 6"o.c. AT ALL SUPPORTED PANEL EDGES AND 12" O.C. IN THE PANEL FIELD. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE. ALL EXTERIOR WALLS SHALL BE CONSTRUCTED PER THIS SPECIFICATION U.N.O. ON PLANS.

3" o.c. EDGE NAILING

(WHERE NOTED ON PLANS)

- 7/16" OSB OR 15/32" PLYWOOD:

  ONLY AT LOCATIONS INDICATED ON PLANS - SHEATHE WALL SHOWN WITH 7/16" OSB. FASTEN SHEATHING W/ 2 1/2"x0.131" NAILS @ 3" O.C. AT EDGES AND 12" O.C. AT CENTER. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE AND 3" O.C. FASTENING.

NOTES:

1. LATERAL ANALYSIS ASSUMES STUD SPACING @ 16" o.c.
2. ALL SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES FASTENED TOGETHER W/ 3"x0.131" NAILS @ 8" O.C. USE (12)3"x0.135" NAILS AT EACH LAP SPLICE, (6) EACH SIDE OF JOINT (TYP. U.N.O.)
3. ALL EXTERIOR WALLS ARE CONTINUOUSLY SHEATHED.
4. ALL INTERIOR SHEAR WALLS AND EXTERIOR WALLS ARE SHEATHED ABOVE AND BELOW OPENINGS.

LEGEND

- INTERIOR BEARING WALL
- BEARING WALL ABOVE (B.W.A.), OR SHEARWALL ABOVE (S.W.A.)
- BEAM / HEADER
- INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL w/ 3" o.c. EDGE NAILING
- AREA OF OVERFRAMING
- JL METAL HANGER
- INDICATES POST ABOVE (P.A.). PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE.
- INDICATES HOLDOWN.

GENERAL STRUCTURAL NOTES

DESIGN PARAMETERS

- DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE & 2021 INTERNATIONAL BUILDING CODE
- WOOD FRAME ENGINEERING IS BASED ON NDS, "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" - LATEST EDITION.

GENERAL FRAMING

- EXTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (W/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, U.N.O.
- INTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (W/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, U.N.O.
- ALL NON-BEARING INTERIOR STUD WALLS SHALL BE CONSTRUCTED WITH 2x "STUD" GRADE MEMBERS SPACED @ 24" O.C. (MAX.)
- ALL WALLS TALLER THEN TYP. PLATE HEIGHT SHALL BE CONSIDERED BALLOON FRAMED & SHALL BE CONSTRUCTED FROM FLOOR TO UNDERSIDE OF FRAMING AT NEXT LEVEL. B.F. WALLS SHALL BE 2x6 HEM FIR (HF) #2 GRADE LUMBER, OR BETTER. U.N.O.
- ALL SHEATHING AND LEDGERS ARE TO BE DIRECTLY APPLIED AND FASTENED TO FRAMING. DO NOT PROVIDE CONTINUOUS INSULATION BETWEEN FRAMING AND SHEATHING/LEDGERS
- ALL HEADERS SHALL BE SUPPORTED BY (1)2x JACK STUD & (1)2x KING STUD, MINIMUM.
  - THE NUMBER OF STUDS SPECIFIED AT A SUPPORT INDICATES THE NUMBER OF JACK STUDS REQUIRED, U.N.O..
- BUILT-UP POSTS SHALL BE 2x4 OR 2x6 HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, U.N.O. & SOLID WOOD COLUMNS SHALL BE SPRUCE PINE FIR (SPF) #2 GRADE LUMBER, OR BETTER, U.N.O.
- ALL 2x6 AND LARGER SOLID SAWN BEAMS/HEADERS SHALL BE HEM FIR #2 (HF #2) OR BETTER. ALL 4x6 AND LARGER SOLID SAWN LUMBER SHALL BE DOUG FIR #2 (DF #2) OR BETTER.
- ALL FRAMING LUMBER SHALL BE KILN DRIED TO 15% MC (KD-15).
- ALL TYP. NAIL FASTENER REQUIREMENTS ARE NOTED IN GENERAL NOTES, IN DETAILS, OR ON PLANS. ALL NAILS SPECIFIED ARE MIN DIAMETER AND LENGTH REQUIRED FOR CONNECTION. ALL HANGER NAILS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS FOR MAX CHARTED CAPACITY. NOTE: HANGERS USE COMMON NAIL DIAMETERS NOT TYPICAL FRAMING GUN NAILS.
- FASTEN ALL BEAMS TO COLUMNS, OR FLUSH BEAMS TO SUPPORTING BEAMS, w/ (4) 3"x0.131" TOENAILS (MIN.), TYP. U.N.O.
- PROVIDE SOLID BLOCKING IN FLOOR SYSTEM UNDER ALL POSTS & HOLD-DOWNS CONTINUOUS TO FOUNDATION/BEARING. BLOCKING TO MATCH POST ABOVE.
- ENGINEERED LUMBER TO MEET OR EXCEED THE FOLLOWING:
  - LSL MEMBERS - Fb=2325 PSI; Fv=310 PSI; E=1.55x10^6 PSI
  - LVL MEMBERS - Fb=2600 PSI; Fv=285 PSI; E=2.0x10^6 PSI
  - GLB MEMBERS - Fb(+)=2400 PSI; Fb(-)=1850 PSI; Fv=265 PSI; E=1.8x10^6 PSI; DF/DF, 24F-V4 (U.N.O)
- ENGINEERED LUMBER POSTS TO MEET OR EXCEED THE FOLLOWING:
  - LVL MEMBERS - Fb=2400 PSI; Fc⊥=2500 PSI; E=1.8x10^6 PSI
- FACE NAIL MULTI-PLY 2x BEAMS & HEADERS W/ 3-ROWS OF 3"x0.131" NAILS (MIN.) @ 12" O.C. STAGGERED. APPLY NAILING FROM BOTH FACES @ 3-PLY OR MORE CONDITIONS. UTILIZE 2 ROWS OF NAILS FOR 2x6 & 2x8 MEMBERS.
- TRUSS SHOP DWGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PROPOSED CONSTRUCTION SHALL BE SUBMITTED TO BUILDING DESIGNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY IN ACCORDANCE WITH TPI-1 2.3.2.3 & 2.3.4.3.
- REFER TO IRC FASTENING SCHEDULE TABLE R602.3(1) FOR ALL CONNECTIONS, TYP. U.N.O.
- BUILDER RESPONSIBLE TO DETERMINE CORROSION-RESISTANCE REQUIREMENTS AND COMPATIBILITY OF HARDWARE, FASTENERS AND CONNECTORS FOR ENVIRONMENTAL EXPOSURE AND IN CONTACT W/ PRESERVATIVE-TREATED WOOD OF ACTUAL FINAL CONDITIONS AND SOURCED MATERIALS. CONTACT LUMBER & HARDWARE SUPPLIERS TO COORD. IN THE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, NOT LESS THAN ASTM A653, TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED.

FLOOR FRAMING

- I-JOISTS/TRUSSES SHALL BE DESIGNED BY MANUF. TO MEET OR EXCEED L/480 LIVE LOAD DEFLECTION CRITERIA AND SHALL RUN CONTINUOUS OVER SUPPORTS WHEREVER POSSIBLE. ALL LOADS SHOWN ON PLAN FOR MANUF. DESIGNS ARE ASD LEVEL LOADS, U.N.O. (EXCLUDES STONE/MARBLE OR WET BED CONSTRUCTED FLOORS - CONTACT MK FOR EXCLUDED DESIGNS).
- ALL METAL I-JOIST/TRUSS HANGERS SHALL BE SPECIFIED BY I-JOIST/TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED.
- 2x FLOOR JOISTS HAVE BEEN DESIGNED TO MEET OR EXCEED L/360 LIVE LOAD DEFLECTION CRITERIA.
- TYPICAL 2x JOIST HANGERS (U.N.O. ON PLANS):
  SINGLE PLY: SIMPSON LUS210
  DOUBLES: SIMPSON LUS210-2
- FLOOR SHEATHING SHALL BE 23/32" A.P.A. RATED 'STURD-I-FLOOR' 24" O.C., EXPOSURE 1 (OR APPROVED EQUAL) WITH TONGUE AND GROOVE EDGES. FASTEN TO FRAMING MEMBERS W/ GLUE AND 2 1/2" x 0.131" NAILS @ 6"o.c. @ PANEL EDGES & @ 12"o.c. FIELD.
- ALL FLUSH CONNECTIONS SHALL BE CONNECTED WITH HANGER APPROPRIATE FOR MEMBER SIZE. U.N.O.
- FASTEN HANGERS TO SINGLE PLY FLUSH BEAMS W/ 1½" LONG NAILS.

ROOF FRAMING

- FASTEN EACH ROOF TRUSS TO TOP PLATE W/ (4) 3"x0.131" TOENAILS (MIN.) & (1) 'SIMPSON' SDWC15600 SCREW @ ALL BEARING POINTS. PROVIDE (2) 'SIMPSON' H2.5T CLIPS AT 2-PLY GIRDER TRUSSES, (2) 'SIMPSON' H2.5T CLIPS AT 3-PLY GIRDER TRUSSES AT ALL BEARING POINTS.
- FASTEN EACH ROOF RAFTER TO TOP PLATE WITH (1) 'SIMPSON' H2.5T CLIPS. PROVIDE (2) 'SIMPSON' H2.5T CLIPS AT FLUSH BEAMS IN THE ROOF - AT ALL BEARING POINTS.
- ROOF SHEATHING SHALL BE 7/16" A.P.A. RATED SHEATHING 24/16 EXPOSURE 1 (OR APPROVED EQUAL). FASTEN TO FRAMING MEMBERS w/ 2 1/2" x 0.131" NAILS @ 6"o.c. AT PANEL EDGES & @ 6" O.C. AT INTERMEDIATE SUPPORTS. ROOF SHEATHING SHALL EXTEND BELOW ALL INSTANCES OF OVERFRAMING. BLOCKING SHALL BE INSTALLED AS REQUIRED TO LIMIT ROOF SHEATHING SPANS TO 24" MAX.
- ALL METAL HANGERS SHALL BE SPECIFIED BY THE TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED.
- ROOF TRUSS SHOP DRAWINGS & CALCULATIONS SHALL BE DESIGNED FOR UNBALANCED SNOW LOADING PER ASCE 7-16, SECTION 7.6.
- ERECT AND INSTALL ROOF TRUSSES PER WTCA & TPI'S BCSI 1-08 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES."
- FASTEN OVER-FRAMED TRUSS SETS TO TRUSSES BELOW W/ (2) 3"x0.131" TOENAILS AT EA. TRUSS.
- FASTEN ALL INTERIOR NON-BEARING PARTITION WALLS TO TRUSS BOTTOM CHORD ABOVE WITH SIMPSON STC CLIPS AT 24" o.c. MAX. PROVIDE BLOCKING BETWEEN THE TRUSS BOTTOM CHORDS AS REQUIRED FOR THE PARALLEL CONDITIONS.

seal:
NICHOLAS J. MARTINOTTI
STATE OF WASHINGTON
36478
REGISTERED
PROFESSIONAL ENGINEER

© copyright 2025 MULHERN & KULP Structural Engineering, Inc.

MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-850-0010 - mulhernkulp.com

M&K project number: 244-25006

project mgr: NJM
drawn by: AJC
issue date: 07-23-25

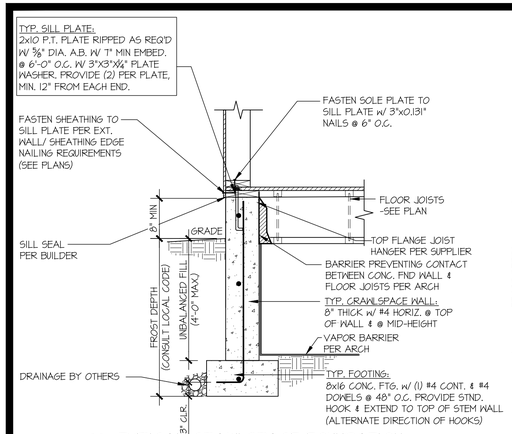
REVISIONS:
date: initial:

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1181
mccullougharchitects.com

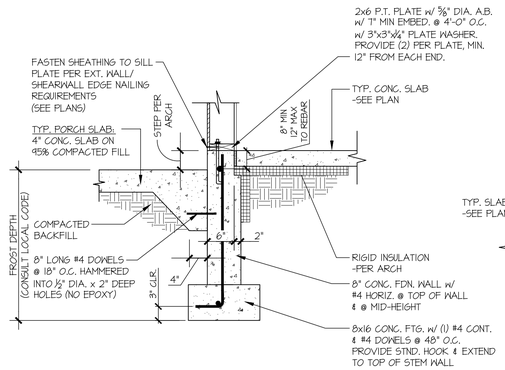
STRUCTURAL NOTES

O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

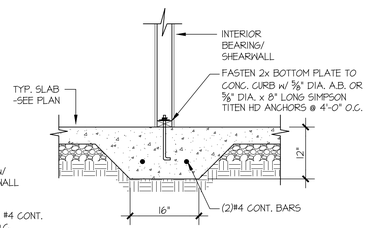
sheet: S-0.0



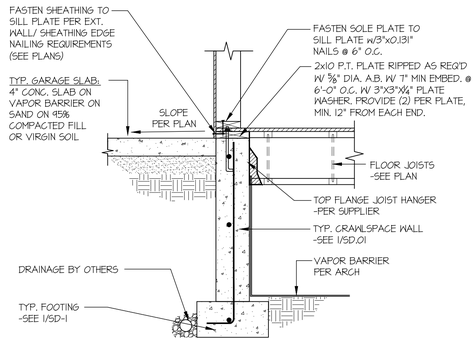
1 TYPICAL CRAWLSPACE FOUNDATION
SCALE: 3/4"=1'-0"



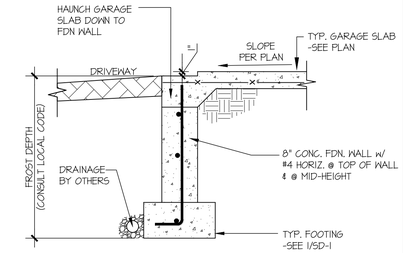
2 TYPICAL SLAB ON GRADE PERIMETER FOOTING
SCALE: 3/4"=1'-0" @ PORCH SLAB



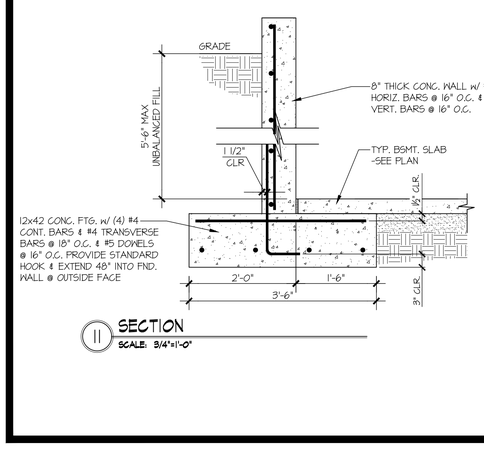
3 TYPICAL THICKENED SLAB @ INTERIOR BEARING WALL
SCALE: 3/4"=1'-0"



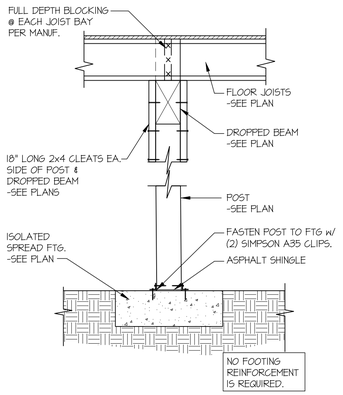
4 TYPICAL CRAWLSPACE FOUNDATION @ GARAGE
SCALE: 3/4"=1'-0"



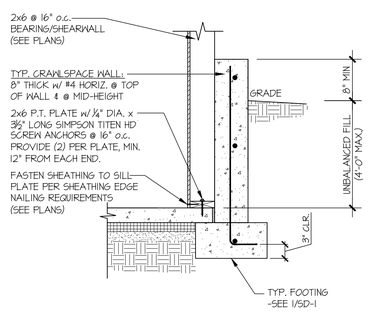
5 TYPICAL CONCRETE FOOTING @ GARAGE DOOR OPENING
SCALE: 3/4"=1'-0"



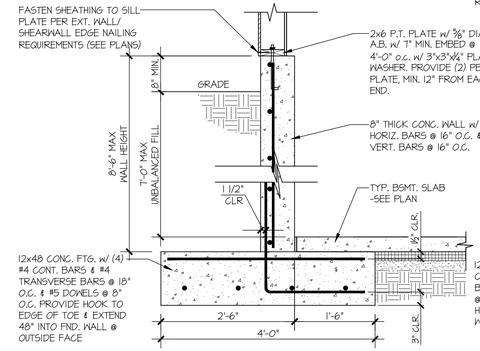
6 TYPICAL EXT. GARAGE FOUNDATION
SCALE: 3/4"=1'-0"



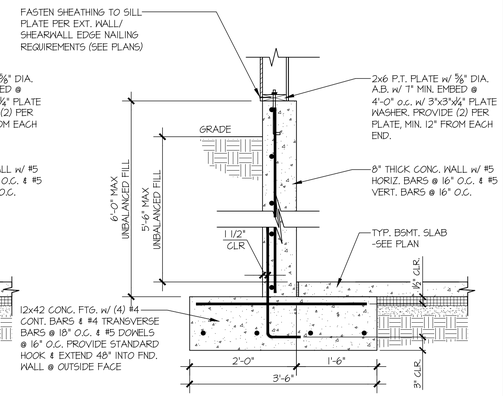
7 TYPICAL CRAWL SPACE FOOTING DETAIL
SCALE: 3/4"=1'-0"



8 SECTION
SCALE: 3/4"=1'-0"

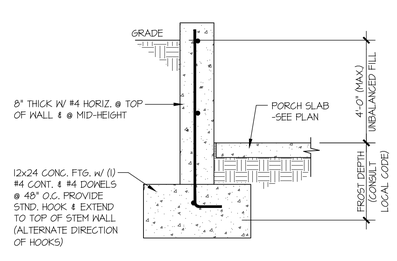


9 SECTION
SCALE: 3/4"=1'-0"

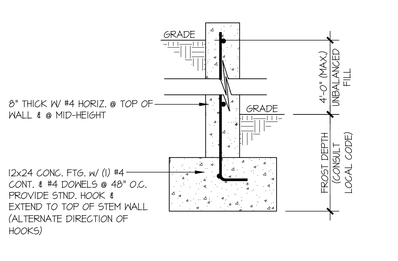


10 SECTION
SCALE: 3/4"=1'-0"

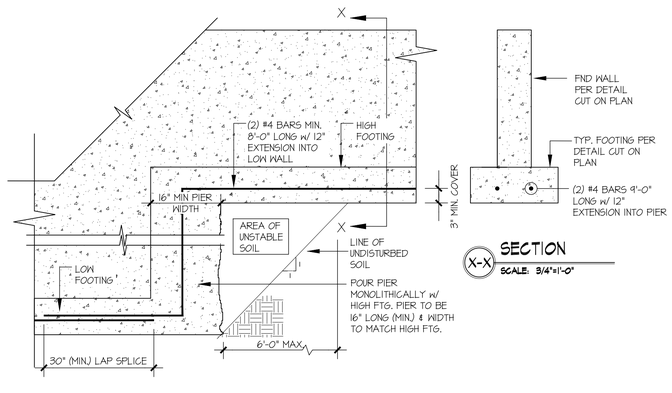
11 SECTION
SCALE: 3/4"=1'-0"



12 SECTION
SCALE: 3/4"=1'-0"



13 SECTION
SCALE: 3/4"=1'-0"



A TYPICAL STEPPED FOOTING
SCALE: 3/4"=1'-0"

seal:
NICHOLAS J. MARTINOTTI
STATE OF WASHINGTON
56478
REGISTERED
PROFESSIONAL ENGINEER
© copyright 2025 MULLHERN+KULP Structural Engineering, Inc.

MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-850-0010 • mulhernkulp.com

M&K project number: 244-25006
project mgr: NJM
drawn by: AJC
issue date: 07-23-25

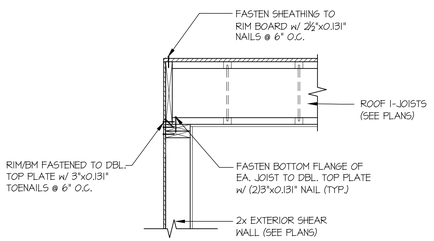
REVISIONS:
date: initial:

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1181
mccullougharchitects.com

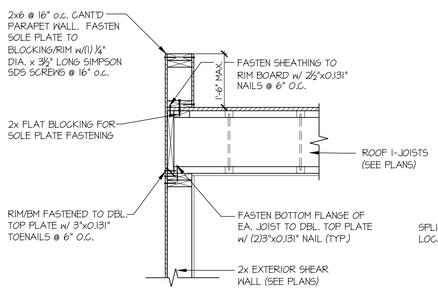
STRUCTURAL DETAILS

O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

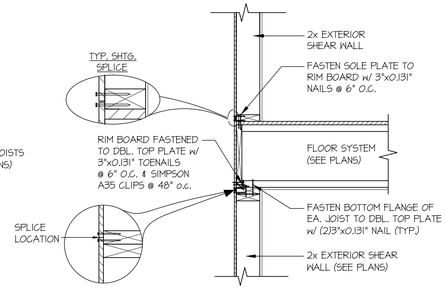
sheet: SD-1



1 SECTION
SCALE: 3/4"=1'-0"

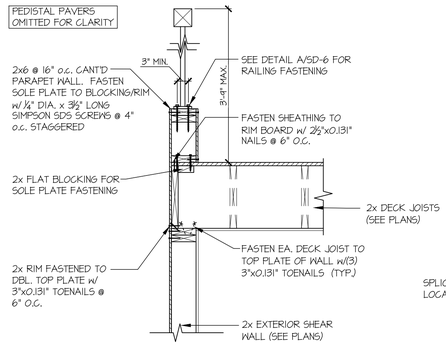


1A SECTION
SCALE: 3/4"=1'-0"

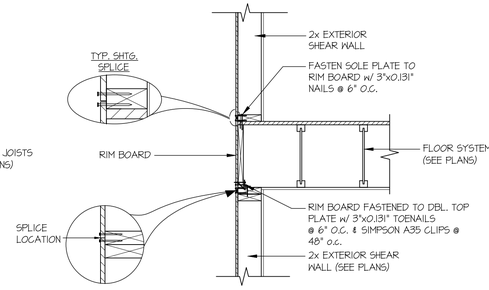


3 SECTION
SCALE: 3/4"=1'-0"

PERPENDICULAR FRAMING

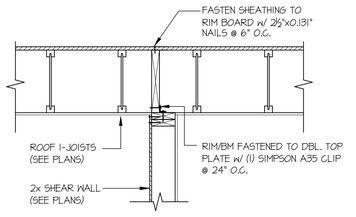


3A SECTION
SCALE: 3/4"=1'-0"

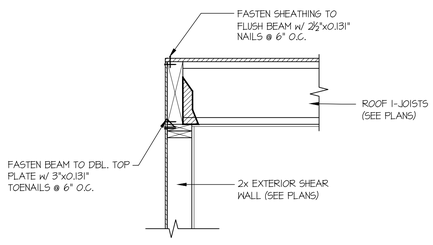


4 SECTION
SCALE: 3/4"=1'-0"

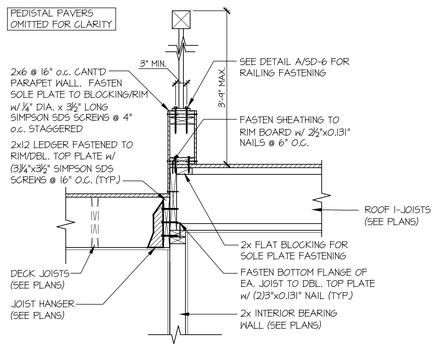
PARALLEL FRAMING



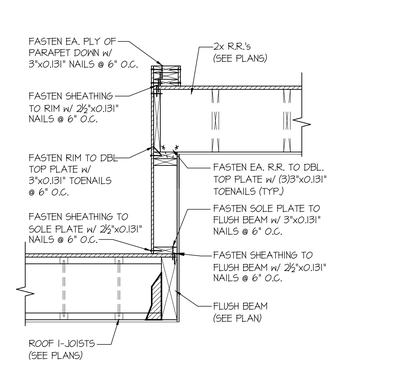
6 SECTION
SCALE: 3/4"=1'-0"



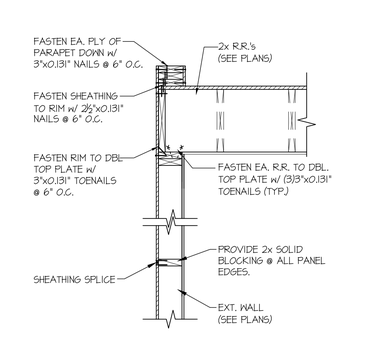
7 SECTION
SCALE: 3/4"=1'-0"



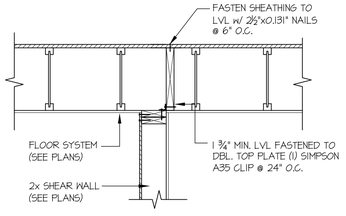
8 SECTION
SCALE: 3/4"=1'-0"



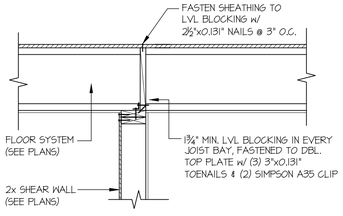
9 SECTION
SCALE: 3/4"=1'-0"



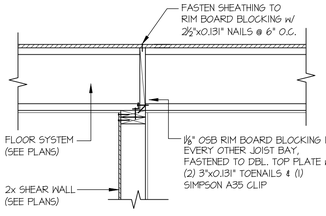
10 SECTION
SCALE: 3/4"=1'-0"



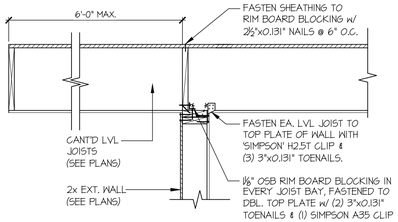
11 SECTION
SCALE: 3/4"=1'-0"



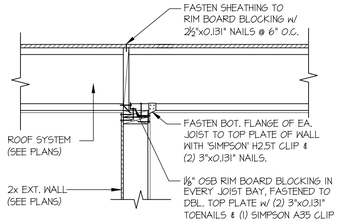
12 SECTION
SCALE: 3/4"=1'-0"



13 SECTION
SCALE: 3/4"=1'-0"



14 SECTION
SCALE: 3/4"=1'-0"



15 SECTION
SCALE: 3/4"=1'-0"

seal:

NICHOLAS J. MARTINOTTI
STATE OF WASHINGTON
36478
REGISTERED
PROFESSIONAL ENGINEER

© copyright 2025 MULLHERN+KULP Structural Engineering, Inc.

MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-850-0010 • mulhernkulp.com

M&K project number: 244-25006

project mgr: NJM
drawn by: AJC
issue date: 07-23-25

REVISIONS:

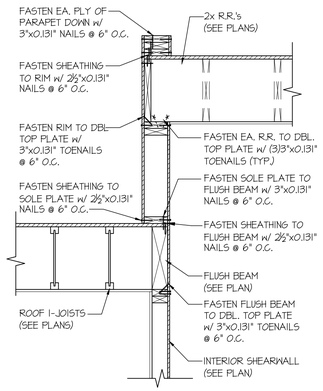
date:	initial:

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1181
mccullougharchitects.com

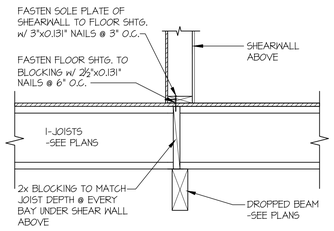
STRUCTURAL DETAILS

O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

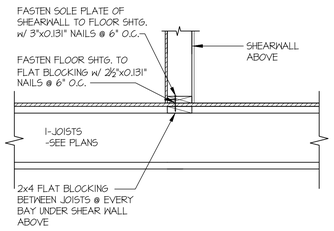
sheet: SD-2



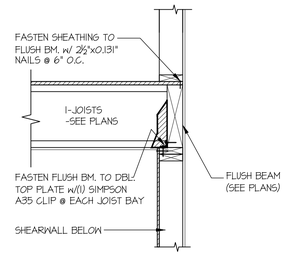
16 SECTION
SCALE: 3/4"=1'-0"



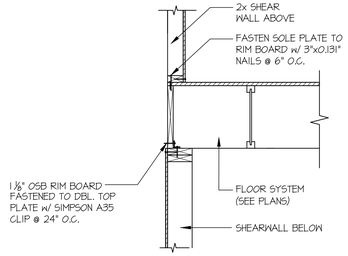
19 SECTION
SCALE: 3/4"=1'-0"



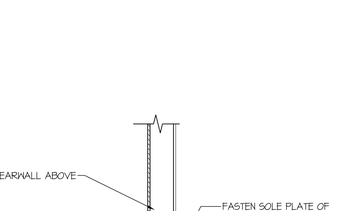
20 SECTION
SCALE: 3/4"=1'-0"



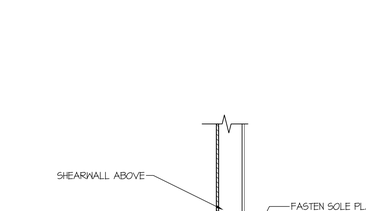
21 SECTION
SCALE: 3/4"=1'-0" EDGE OF FRAMING



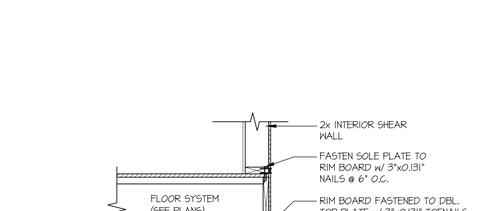
SHEAR TRANSFER DETAIL @ INTERIOR SHEAR WALL
SCALE: 3/4"=1'-0" EDGE OF FRAMING



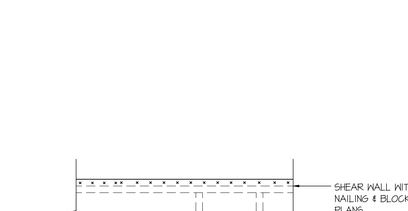
23 SECTION
SCALE: 3/4"=1'-0" EDGE OF FRAMING



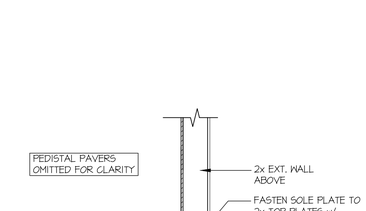
24 SECTION
SCALE: 3/4"=1'-0"



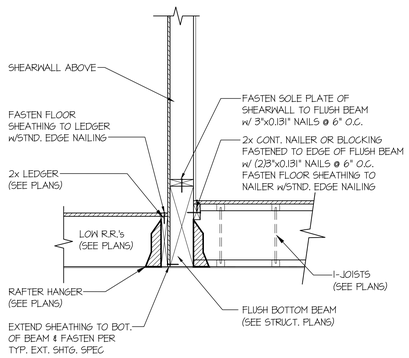
25 SECTION
SCALE: 3/4"=1'-0" PERPENDICULAR FRAMING



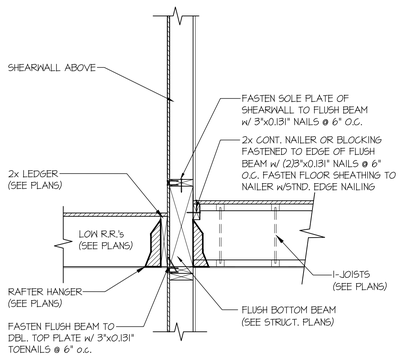
26 SECTION
SCALE: 3/4"=1'-0"



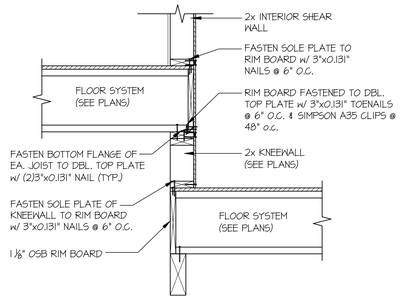
34 SECTION
SCALE: 3/4"=1'-0"



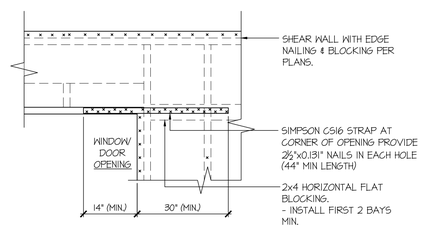
78 SECTION
SCALE: 3/4"=1'-0"



79 SECTION
SCALE: 3/4"=1'-0"

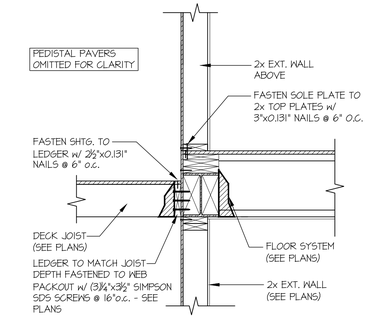


80 SECTION
SCALE: 3/4"=1'-0"



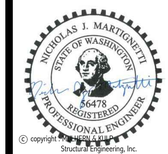
- DETAIL SIMILAR AT BOTTOM CORNERS OF WINDOWS.
- ONLY REQUIRED WHERE SPECIFIED ON STRUCTURAL PLANS
- IF MIN LENGTH IS NOT PROVIDED RUN STRAP TO END OF WALL

EXT. WALL & INT. SHEARWALL OPENING ELEVATION
SCALE: NTS



95 SECTION
SCALE: 3/4"=1'-0"

seal:



© copyright 2025 MULLHERN+KULP Structural Engineering, Inc.

MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-660-0010 • mulhernkulp.com

M&K project number: 244-25006

project mgr: NJM
drawn by: AJC
issue date: 07-23-25

REVISIONS:

date:	initial:

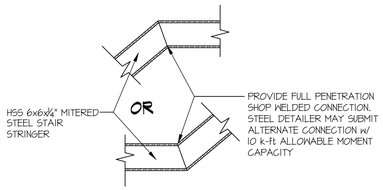
MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA 98108
206.443.1181
mccullougharchitects.com

STRUCTURAL DETAILS

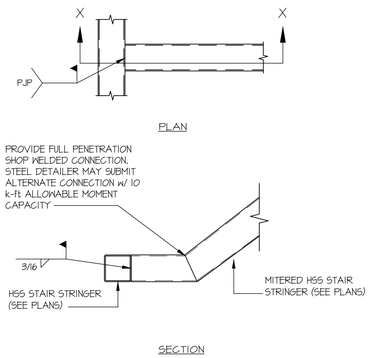
O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

sheet:

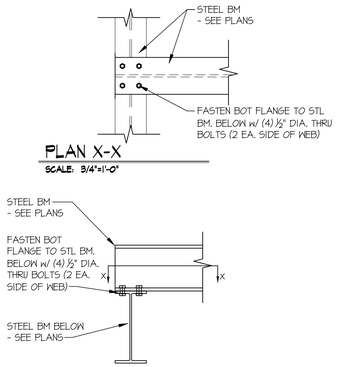
SD-3



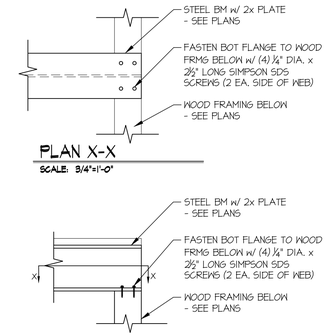
A SECTION
SCALE: N.T.S.



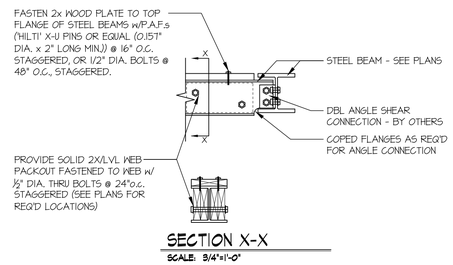
B STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



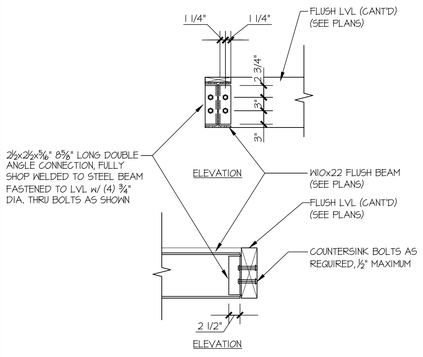
C STL BM TO STL BM CONNECTION
SCALE: 3/4"=1'-0"



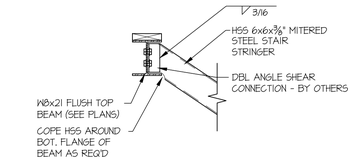
D STL BM TO WOOD FRMG CONNECTION
SCALE: 3/4"=1'-0"



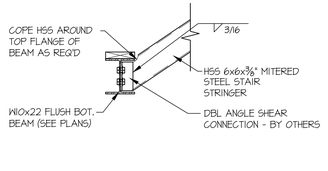
E DOUBLE ANGLE STEEL CONNECTION
SCALE: 3/4"=1'-0"



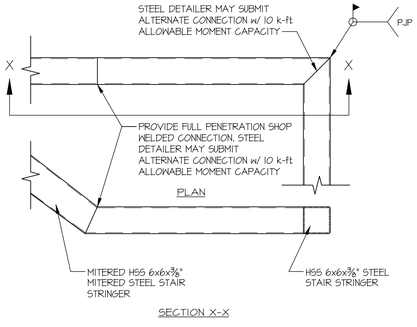
F CONNTECTION DETAIL
SCALE: 3/4"=1'-0"



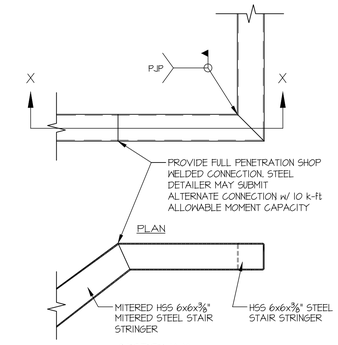
G STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



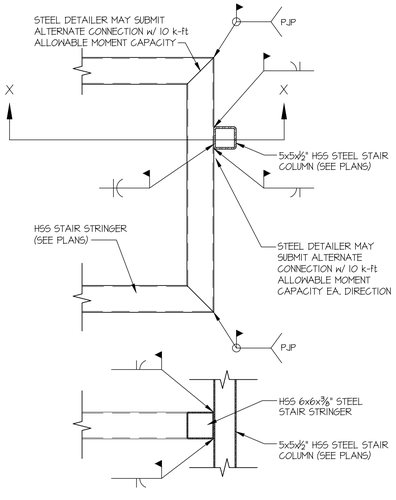
H STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



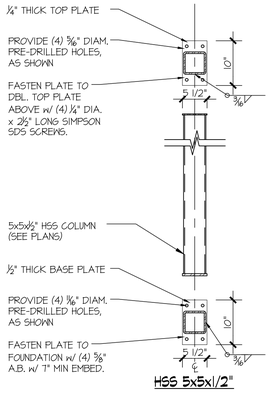
I STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



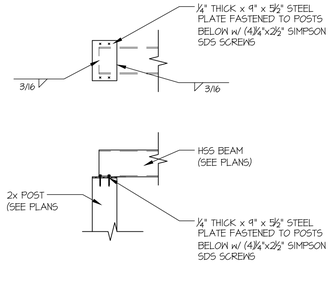
J STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



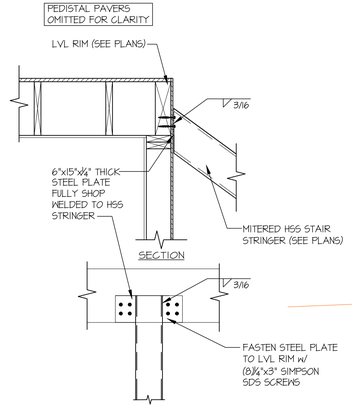
K STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



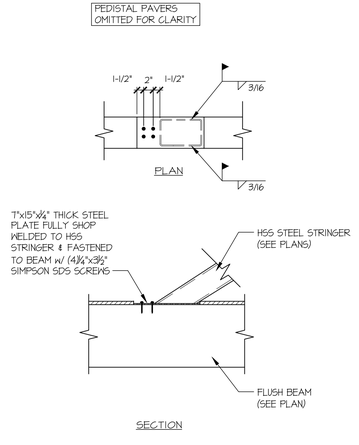
L STL COL CONNECTION
SCALE: 3/4"=1'-0"



M STL BEAM TO WOOD CONNECTION
SCALE: 3/4"=1'-0"



N STL STRINGER TO STEEL CONN.
SCALE: 3/4"=1'-0"



O SECTION
SCALE: 3/4"=1'-0"

seal:

NICHOLAS J. MARTINOTTI
STATE OF WASHINGTON
36478
REGISTERED
PROFESSIONAL ENGINEER

© copyright 2025 MULLEN KULP Structural Engineering, Inc.

MULLEN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-660-0010 - mullenkulp.com

M&K project number: 244-25006

project mgr: NJM
drawn by: AJC
issue date: 07-23-25

REVISIONS:

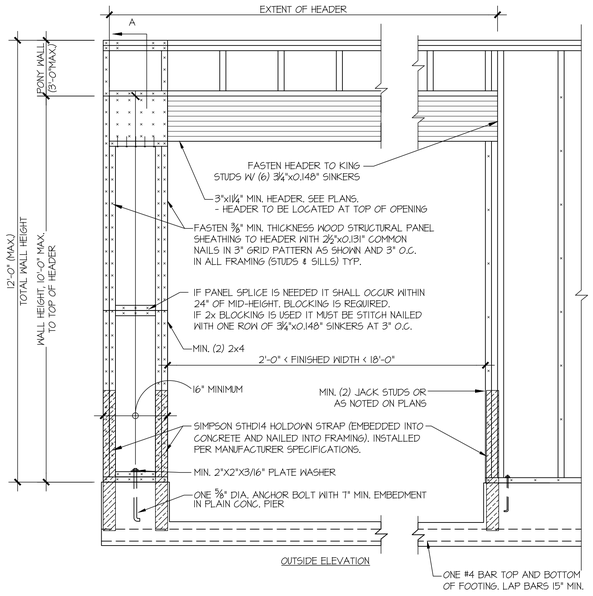
date:	initial:

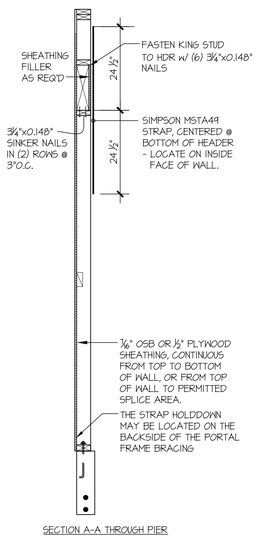
MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA, 98108
206.443.1181
mccullougharchitects.com

STRUCTURAL DETAILS

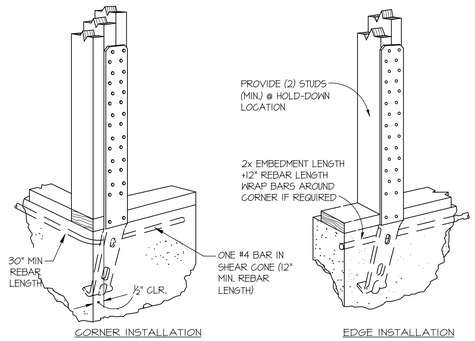
O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

sheet:
SD-4





SECTION A-A THROUGH PIER

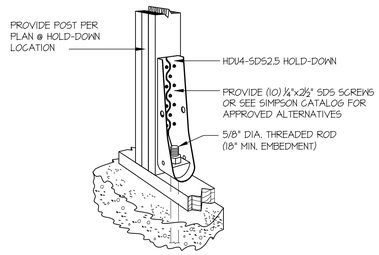


CORNER INSTALLATION

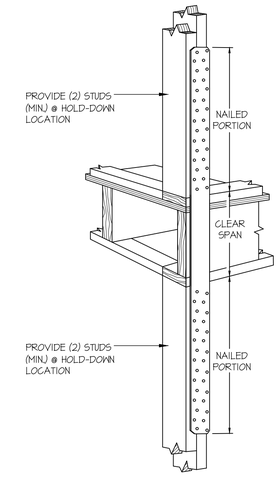
EDGE INSTALLATION

A TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE

SIMPSON STHD HD @ FOUNDATION

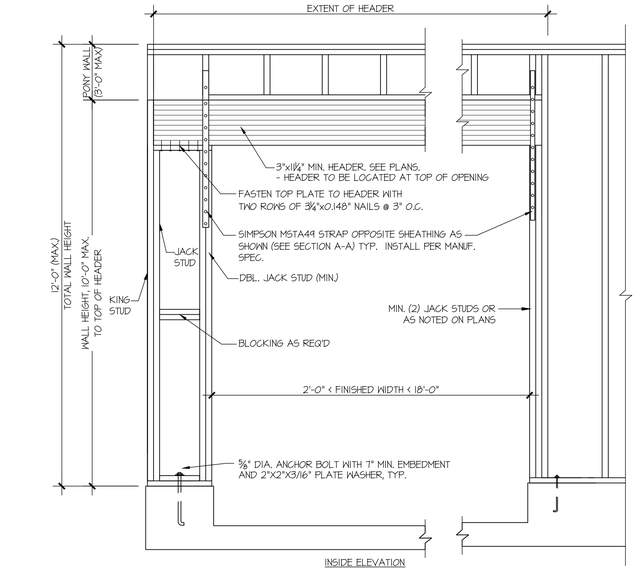


B TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE

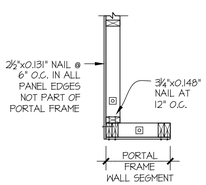


C TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE

SIMPSON STRAP HD @ FLOOR FRAMING



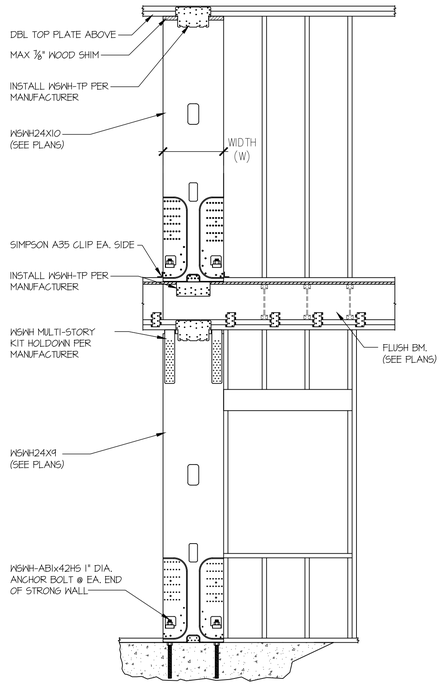
NOTE: ALL SHEATHABLE AREAS OF EXTERIOR WALL SHALL BE FULLY SHEATHED WITH ½" PLYWOOD OR ⅞" OSB



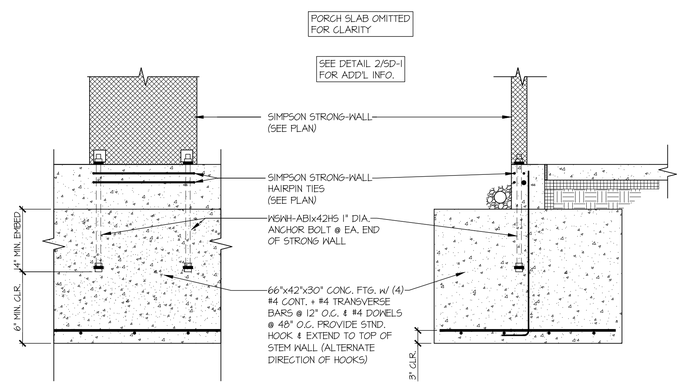
PLAN VIEW OF CORNER DETAIL

2 APA PORTAL FRAME DETAIL WITH HOLDOWNS
SCALE: N.T.S.

SEE APA FORM No. TT-100H FOR MORE INFO.



D STRONG WALL DETAIL
SCALE: 3/4"=1'-0"



E SECTION
SCALE: 3/4"=1'-0"

seal:

NICHOLAS J. MARTINOTTI STATE OF WASHINGTON 36478 REGISTERED PROFESSIONAL ENGINEER

© copyright 2025 MULLEN KULP Structural Engineering, Inc.

MULHERN+KULP
RESIDENTIAL STRUCTURAL ENGINEERING
7220 Trade Street, Suite 255, San Diego, CA 92121
p 619-850-0010 • mulhernkulp.com

M&K project number: 244-25006

project mgr: NJM
drawn by: AJC
issue date: 07-23-25

REVISIONS:

date:	initial:

MCCULLOUGH ARCHITECTS
5601 6th Ave South, Suite 371
Seattle, WA. 98108
206.443.1181
mccullougharchitects.com

STRUCTURAL DETAILS

O'BRIEN RESIDENCE
9412 SE 33RD ST
MERCER ISLAND, WA

sheet: SD-5