RAMAIYAH SUBRAMANIAN RESIDENCE



ENERGY CODE

CALCULATIONS BASED ON CHAPTER 51-11R WAC
STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2015 EDITION OF
THE INTERNATIONAL ENERGY CONSERVATION CODE, RESIDENTIAL.

PRESCRIPTIVE REQUIREMENTS

TABLE R402.1.1 FOR CLIMATE ZONE 4C

FENESTRATION (GLAZING) U-FACTOR	0.30
SKYLIGHT U-FACTOR MAX	0.50
GLAZED FENESTRATION SHGC	NOT REQ'D
ATTIC CEILING R-VALUE	R-38
VAULTED CEILING R-VALUE	R-38
WOOD FRAME WALL R-VALUE	R-21
MASS WALL R-VALUE	R-21
FLOOR R-VALUE	R-30
BELOW-GRADE WALL - EXT. CONTINUOUS INSULATION	R-10
BELOW-GRADE WALL - INT. CONTINUOUS INSULATION	R-15
BELOW-GRADE WALL - CAVITY INSULATION	R-21+TB*
SLAB R-VALUE & DEPTH	R-10, 2 FT

*TB = THERMAL BREAK
R406 ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS
2. MEDIUM DWELLING UNIT — MIN 6.0 CREDITS

PROVIDE: TABLE 406.2 FUEL NORMALIZATION CREDITS

SYSTEM TYPE OF PRIMARY HEATING SOURCE

1 Combustion heating equipment meeting minimum federal efficiency standards for the equipment listed in Table C403.3.2(4) or C403.3.2(5) — 0 CREDITS

PROVIDE: TABLE 406.3 ENERGY CREDITS

1.3 EFFICIENT BUILDING ENVELOPE — 0.5 CREDITS
Prescriptive compliance is based on Table R402.1.1 with the following modifications:
Vertical fenestration U = 0.28
Floor R-38
Slab on grade R-10 perimeter and under entire slab
Below grade slab R-10 perimeter and under entire slab
or
Compliance based on Section R402.1.4: Reduce the Total conductive UA by 5%.

2.3 AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION — 1.5 CREDITS
Compliance based on Section R402.4.1.2:
Reduce the tested air leakage to 1.5 air changes per hour maximum at 50 Pascals
and
All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.75.
To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.

3.1 HIGH EFFICIENCY HVAC EQUIPMENT — 1.0 CREDITS
Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95%
or
Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%.
To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.

4.2 HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM — 1.0 CREDITS
HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.7.
Locating system components in conditioned crawl spaces is not permitted under this option.
Electric resistance heat and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option.

5.5 EFFICIENT WATER HEATING — 2.0 CREDITS
Water heating system shall include one of the following:
Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification

TOTAL — 6.0 CREDITS

ENERGY NOTES AS REQUIRED:

- THE BUILDING SHALL COMPLY WITH: SECTION R402.4.1.2, SECTION R403.2.2, & SECTION R404.1 OF THE ENERGY CODE OR AS PER THE REQUIREMENTS OF THE CITY/TOWN OF JURISDICTION.
- A PERMANENT CERTIFICATE SHALL BE COMPLETED AND POSTED ON OR WITHIN THREE FEET OF THE ELECTRICAL DISTRIBUTION PANEL BY THE BUILDER OR REGISTERED DESIGN PROFESSIONAL AND SHALL NOT COVER OR OBSTRUCT THE REQUIRED LABELS. THE CERTIFICATE SHALL LIST THE PREDOMINANT R-VALUES/U-FACTORS AND THE TYPES AND THE EFFICIENCIES OF HEATING, COOLING AND SERVICE WATER HEATING EQUIPMENT AS WELL AS DUCT AND AIR LEAKAGE RATES.
- 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 METHOD OF CONSTRUCTION.
- FLOOR INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING. INSULATION SUPPORTS SHALL BE INSTALLED SO SPACING IS NO MORE THAN 24-INCHES ON CENTER.
- THE BUILDING OR DWELLING UNIT SHALL BE TESTED AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING 5 AIR CHANGES PER HOUR.
- WINDOWS, SKYLIGHTS AND SLIDING GLASS DOORS SHALL HAVE AN AIR INFILTRATION RATE OF NO MORE THAN 0.3 CFM PER SQUARE FOOT (1.5 L/S/M2), AND SWINGING DOORS NO MORE THAN 0.5 CFM PER SQUARE FOOT (2.6 L/S/M2), 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.
- AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM.
- DUCTS IN CRAWL SPACES SHALL BE INSULATED TO A MINIMUM OF R-3.
- DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RS-33, USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED.
- MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F (41°C) OR BELOW 55°F (13°C) SHALL BE INSULATED TO A MINIMUM OF R-6.
- CIRCULATING HOT WATER SYSTEMS SHALL BE PROVIDED WITH AN AUTOMATIC OR READILY ACCESSIBLE MANUAL SWITCH THAT CAN TURN OFF THE HOT WATER CIRCULATING PUMP WHEN THE SYSTEM IS NOT IN USE.
- INSULATION FOR HOT WATER PIPE SHALL HAVE A MINIMUM THERMAL RESISTANCE (R-VALUE) OF R-4.
- THE BUILDING SHALL BE PROVIDED WITH VENTILATION THAT MEETS THE REQUIREMENTS OF THE INTERNATIONAL RESIDENTIAL CODE OR INTERNATIONAL MECHANICAL CODE, AS APPLICABLE, OR WITH OTHER APPROVED MEANS OF VENTILATION. OUTDOOR AIR INTAKES AND EXHAUSTS SHALL HAVE AUTOMATIC OR GRAVITY DAMPERS THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING.
- WHOLE HOUSE VENTILATION SYSTEM SHALL COMPLY WITH IRC 1508.
- A MINIMUM OF 75% OF LAMPS IN LIGHTING FIXTURES SHALL BE HIGH-EFFICIENCY LAMPS.

MECHANICAL & ENERGY GENERAL NOTES

1. ALL GLAZING SHALL BE DOUBLE GLAZED PER SPECIFICATIONS.
2. ALL METAL DUCT JOINTS TO BE SEALED WITH DUCT SEALANT AND TESTED.
3. ALL OPENINGS IN THE EXTERIOR WALLS SHALL BE SEALED OR WEATHERSTRIPPED AS APPROPRIATE TO LIMIT AIR LEAKAGE.
4. BATT INSULATION SHALL BE CAREFULLY INSTALLED TO AVOID TEARING OR RIPPING THE VAPOR BARRIER. ALL JOINTS (BETWEEN BATT SPLICES) AND TEARS SHALL BE SEALED. ALL JOINTS (BETWEEN BATT SPLICES) AND TEARS SHALL BE SEALED WITH DUCT TAPE (OR OTHER APPROVED MATERIAL).
5. SHOWERS SHALL BE EQUIPPED WITH FLOW-CONTROL DEVICES THAT LIMIT TOTAL FLOW TO A MAXIMUM OF 2.5 GPM PR SHOWERHEAD.
6. FACTORY-BUILT WINDOWS SHALL BE RATED AND TESTED BY THE ASTM STANDARD E 283-73 LISTING AIR LEAKAGE RATES.
7. R-19 DUCT INSULATION REQUIREMENTS PER WESC TABLE 5-11.
8. ALL FAN DUCTING TO BE SMOOTH WALL 26-GAUGE OR HEAVIER.
9. FUEL FOR WATER AND SPACE HEATING SHALL BE GAS.
10. SERVICE WATER HEATER SHALL HAVE A LABLE WHICH STATES THAT IT COMPLIES WITH 1987 THE NATIONAL APPLIANCE ENERGY CONSERVATION ACT
11. ALL WATER SERVICE PIPING SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH LOCAL CODE.
12. CONTINOUS APPROVED VAPOR BARRIERS SHALL BE INSTALLED ON THE HEATED SIDE OF ALL INSULATION INSTALLED.
13. ONLY ONE DUCT IS ALLOWED PER JOIST BAY FOR BATH, KITCHEN OR LAUNDRY ROOM VENT FANS.
14. ALL HVAC AND MECHANICAL CONTRACTORS SHALL COMPLY WITH ALL APPLICABLE WSCE AND WAC REGULATIONS.
15. ALL AIR DUCTS, DRYER EXHAUST VENTS AND DUCTS, OUTSIDE COMBUSTION AIR, FLUES, PLUMBING WASTE, ELECTRIC LIGHT RECESSED CANS AND BOXES MUST MAINTAIN THE INTEGRITY OF FIRE-RESISTIVE ASSEBLIES. REF.WSBC 704, 709, 710 AND 713, UFC AND CITY OF SEATTLE STANDARDS.
16. DISHWASHER MUST BE PROVIDED WITH AN ATMOSTPHERIC AIR GAP MOUNTED ABOVE THE FLOOR LEVEL RIM OF SINK.
17. HOT WATER TANK MUST BE PROVIDED WITH ALL FOLLOWING:
    a. BE SECURED TO PREVENT SEISMIC DISPLACEMENT.
    b. BE PROVIDED WITH A PRESSURE RELIEF VALVE DISCHARGING TO THE EXTERIOR OF THE BUILDING TERMINATION 6" TO 24" ABOVE THE GROUND.
    c. BE PROVIDED WITH A THERMAL EXAPANSION TANK SIZED IN ACCORADANCE WITH THE MAUFACTURER'S RECOMMENDATIONS.
18. ELECTRIC RESISTANCE IS NOT ALLOWED.
19. ENCLOSURE AT HOT WATER TANKS AND FURNACES MUST BE PROVIDED WITH OUTSIDE AIR, AND THERMALLY ISOLATED TO SAME STANSARDS AS EXTERIOR ENVELOPE WITH TIGHT-FITTING U-0.40 DOOR.
20. IF THE WATER HEATER HAS A NONRIGID WATER CONNECTION AND IS OVER 4' IN HEIGHT IT MUST BE ANCHORED OR STAPPED TO RESIST EARTHQUAKE MOTION.
21. INSTALL BACK WATER VALVE AT BASEMENT LEVEL AS REQUIRED TO PREVENT SEWERAGE BACKUPS PER UPS 710.1.
22. PERFORM REQUIRED SOUND TEST FOR INTERIOR RANGE HOOD WITH FAN CAPASCITY GREATER THAN 400 CFM.

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GENERAL NOTES

1. GENERAL NOTES DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITIES DOCUMENTED IN AIA FORM A201 GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS OR INFORMATION CONTAINED WITHIN THE CONTRACT DOCUMENTS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES TO ASSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

CODES
3. ALL WORK SHALL CONFORM TO ALL APPLICABLE BUILDING CODES AND ORDINANCES. ANY CONFLICT WHERE THE METHOD OR STANDARDS OF INSTALLATION OF THE MATERIALS SPECIFIED DO NOT EQUAL OR EXCEED THE REQUIREMENTS OF THE APPLICABLE CODE OR ORDINANCES, THE CODE OR ORDINANCES SHALL GOVERN. IN THE EVENT THIS OCCURS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY. CURRENT EDITIONS OF THE CODE ARE LISTED HERE FOR GENERAL REFERENCE, BUT DO NOT RELEASE THE CONTRACTOR FROM CONFORMING TO ALL APPLICABLE BUILDING CODES AND ORDINANCES AND THEIR SUBSECTIONS.

APPLICABLE CODES PER CITY/COUNTY REQUIREMENTS:
2018 INTERNATIONAL BUILDING CODE (IBC) - WAC 51-50
2018 INTERNATIONAL RESIDENTIAL CODE (IRC) - WAC 51-51
2018 INTERNATIONAL MECHANICAL CODE (IMC) - WAC 51-52
2018 WASHINGTON STATE ENERGY CODE - WAC 51-11C & WAC 51-11R
2018 UNIFORM PLUMBING CODE (UPC) - WAC 51-52 & WAC 51-57
2018 INTERNATIONAL FIRE CODE (IFC) - WAC 51-54A
2018 INTERNATIONAL FUEL GAS CODE (NFGC) - WAC 51-52
2010 NFPA 13

CONSULTANT'S DRAWINGS
4. CONSULTANT DRAWINGS INCLUDING BUT NOT LIMITED TO STRUCTURAL, CIVIL, MECHANICAL, ELECTRICAL, AND INTERIOR DESIGN ARE SUPPLEMENTARY TO THE DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY AND ALL DISCREPANCIES IDENTIFIED BETWEEN THE CONSULTANT'S DRAWINGS WITH A WRITTEN REQUEST FOR CLARIFICATION. WORK INSTALLED IN CONFLICT WITH THE CONTRACT DOUCMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION . WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF A SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE ARCHITECT.

6. THE CONTRACTOR SHALL INVESTIGATE EXISTING CONDITIONS BEFORE BEGINNING WORK.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT INDICATED IN THE CONTRACT DOCUMENTS, AND PROVIDED BY OTHERS.

8. THE CONTRACTOR SHALL PROVIDE ALL BLOCKING, BUCK-OUTS, BACKING AND JACKS AS REQUIRED FOR THE WORK, UNLESS NOTED OTHERWISE.

9. SUBCONTRACTORS SHALL BE RESPONSIBLE FOR INSPECTING THE WORKMANSHIP OF SUBCONTRACTORS PRECEDING. DISCREPANCIES IN PROCEEDING WORK SHALL BE REPORTED TO THE CONTRACTOR IMMEDIATELY . FAILURE TO DO SO IN A TIMELY MANNER SHALL BE CONSTRUED AS ACCEPTANCE OF THAT WORK.

10. SUBCONTRACTORS SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT WORK CAUSED BY THE SUBCONTRACTOR, IT'S AGENTS, OR EMPLOYEES. SUBCONTRACTOR SHALL REPAIR SAID DAMAGE AT THE SUBCONTRACTOR'S EXPENSE.

11 THE USE OF WORD "PROVIDE" SHALL ALWAYS MEAN, "FURNISH, INSTALL, CONNECT OR SECURE" AS REQUIRED.

12. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS AND TRADE ASSOCIATES ACCEPTED STANDARDS.

DRAWING STANDARDS / DIMENSIONS
13. DO NOT SCALE DRAWINGS: USE WRITTEN DIMENSIONS. IN THE EVENT THAT DISCREPANCIES ARE FOUND IN THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY CLARIFY SAID CONDITION WITH THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

14. ALL INFORMATION RELATED TO EXISTING CONDITIONS HAS BEEN REPRESENTED TO THE BEST KNOWLEDGE OF THE ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES THAT WOULD EFFECT THE CONSTRUCTION OF THE PROJECT BEFORE STARTING THE WORK.

15. DIMENSIONS ARE TO THE FACE OF FRAMING, FACE OF CONCRETE, GRID LINES, OR CENTERLINE OF COLUMNS, DOORS AND WINDOWS UNLESS NOTED OTHERWISE.

16. VERIFY SIZE AND LOCATION OF AND PROVIDE ALL OPENINGS THROUGH FLOORS AND WALLS, FURRING, ANCHORS, INSERTS, ROUGH BLOCKS AND BACKING FOR SURFACE MOUNTED ITEMS.

17. PROVIDE FURRING AS REQUIRED TO CONCEAL MECHANICAL AND ELECTRICAL IN ALL FINISHED AREAS.

18. ALL SWING DOORS NOT LOCATED BY DIMENSIONS ON PLANS OR DETAILS SHALL BE 4" FROM FACE OF STUD TO EDGE OF ROUGH OPENINGS OR CENTERED BETWEEN ROOM PARTITIONS AS SHOWN.

19. PLANS ARE DRAWN ASSUMING THE FOLLOWING ROUGH OPENINGS:
-SWINGING DOORS: NOMINAL SIZE +2"
-BI-FOLD DOORS: NOMINAL SIZE + 1 1/2"
-BI-PASS DOORS: NOMINAL SIZE +0"
-WINDOWS: NOMINAL SIZE +0"

20. PROVIDE CAULKING BETWEEN SOLE PLATES AND SUBFLOOR AND BETWEEN RIM JOISTS AT BOTH TOP PLATE AND SUBFLOOR.

21. SAFETY GLAZING: WINDOW MFR. SHALL PROVIDE TEMPERED SAFETY GLAZING WHERE REQUIRED BY W.S.B.C. SECTION 2406.

22. SKYLIGHTS SHALL COMPLY WITH W.S.B.C. 2409.

23. REFER TO ARCHITECT'S STANDARDS FOR SYMBOLS AND ABBREVIATIONS IN SPECIFICATION MANUAL FOR CLARITY OF DRAWINGS. IF A SYMBOL OR ABBREVATION IS IDENTIFIED IN THE SPEC MANUAL THAT IS IN DISCREPANCY WITH THE STANDARDS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR CLARIFICATION.

24. DEFERRED SUBMITTALS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR BIDDER DESIGN AND FOR SUBMITTING DRAWINGS AND/OR SPECIFICATIONS TO THE CITY/TOWN OF JURISDICTION AS DEFERRED SUBMITTALS FOR THE FOLLOWING:
-PLUMBING
-HVAC, MECHANICAL SYSTEMS
-AUTOMATIC SPRINKLER SYSTEMS, VERIFY

THESE SUBMITTALS SHALL BE PROVIDED TO THE CITY PRIOR TO COMMENCING ANY WORK ON THE SYSTEM.

25. ALL FASTENERS, CONNECTORS & HANGERS IN CONTACT WITH PRESERVATIVE-TREATED WOOD ARE REQUIRED TO BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 OR BE STAINLESS STEEL.

26. REPETITIVE FEATURES NOT FULLY SHOWN OR NOTED ON THE DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.

VICINITY MAP



PROJECT TEAM

CLIENT
SELLAPRIYA RAMAIYAH &
SUBU SANKARA SUBRAMANIAN
7466 EAST MERCER WAY
MERCER ISLAND, WA 98040
PHONE: (860) 990-7528
PHONE: (203) 609-3151
CONTACT: SELLAPRIYA RAMAIYAH
SUBU SANKARA SUBRAMANIAN
EMAIL: sellapriya@yahoo.com
subuss@yahoo.com

GENERAL CONTRACTOR
TBD
XXX
XXX
PHONE: (XXX) XXX-XXXX
CONTACT: XXX
EMAIL: xxx

SURVEYOR
TERRANE
10801 MAIN STREET, SUITE 102
BELLEVUE, WA 98004
PHONE: 425.458.4488
CONTACT: KATHERINE BAKER
EMAIL: katherineb@terrane.net

GEOTECHNICAL
AGES ENGINEERING, LLC
PO BOX 935
PUYALLUP, WA 98371
PHONE: (253) 845-7000
CONTACT: SHELLA KNOLL
EMAIL:
shellaknoll@monticule.onmicrosoft.com

ARCHITECT
BAYLIS ARCHITECTS
10801 MAIN ST # 110,
BELLEVUE, WA 98004
PHONE: (425) 454-0566
CONTACT: JOHAN LUCHSINGER
EMAIL: luchsingerj@baylisarchitects.com

STRUCTURAL
BTL ENGINEERING
19011 WOODINVILLE-SNOHOMISH ROAD
NE SUITE 100
WOODINVILLE, WA. 98072
PHONE: (425) 814-8448
CONTACT: BRIAN LAMPE
EMAIL: brian.lampe@btleng.net

CIVIL
EASTSIDE CONSULTANTS, INC.
1320 NW MALL ST SUITE B
ISSAQUAH, WA 98027
PHONE: (425) 392-5351
CONTACT: RONALD FREDERIKSEN
EMAIL: rfrederiksen@eastsideconsultants.com

PROJECT DATA

PROJECT NAME: RAMAIYAH SUBRAMANIAN RESIDENCE

PROJECT ADDRESS: 7466 E Mercer Way
Mercer Island, WA 98040

PROJECT LEGAL DESCRIPTION: PER SURVEY BY TERRANE AND
PER STATUTORY WARRANTY DEED RECORDING # 20150526001877

THAT PORTION OF LOT 20, , BLOCK 3, FLOOD'S LAKE SIDE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 83, RECORDS OF KING COUNTY, WASHINGTON, LYING WEST OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE MONUMENT MARKING THE INTERSECTIONS OF THE ORIGINAL PLATTED CENTER LINE OF EAST MERCER WAY WITH THE WESTERLY EXTENSION OF THE SOUTH LINE OF SAID LOT 20; THENCE NORTH, 89°56'32" EAST ALONG SAID WESTERLY EXTENSION AND ALONG SAID SOUTH LINE 169.30 FEET TO THE TRUE POINT OF BEGINNING OF THE LINE HEREIN DESCRIBED;
THENCE NORTH 0°03'28" WEST TO THE NORTH LINE OF SAID LOT 20 AND THE END OF THE LINE HEREIN DESCRIBED;

TOGETHER WITH THAT PORTION OF VACATED EAST MERCER WAY ADJOINING THE ABOVE DESCRIBED PROPERTY ON THE WEST;

PARCEL B:
AN EASEMENT FOR INGRESS AND EGRESS TO LAKE WASHINGTON OVER THE NORTH 5.0 FEET OF THAT PORTION OF SAID TRACT 20 LYINE EASTERLY OF THE EAST LINE OF THE ABOVE DESCRIBED TRACT;

SITUATED IN THE COUNTY OF KIND, STATE OF WASHINGTON.

TAX PARCEL #: PARCEL # 2579500136

JURISDICTION: MERCER ISLAND

LAND USE ZONING: R-8.4

OCCUPANCY GROUPS: R-3 SINGLE FAMILY RESIDENCE

TYPE OF CONSTRUCTION: VB

OCCUPANCY SEPARATIONS: ONE HOUR BETWEEN GARAGE & RESIDENCE

1 A NFPA 72- 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.

A NFPA 13R FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13R AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.

PROJECT SCOPE OF WORK

CONSTRUCTION OF NEW SINGLE FAMILY RESIDENCE AND DEMOLITION OF EXISTING RESIDENCE, GARAGE AND SITE ELEMENTS. PROPOSED NEW STRUCTURE CONSISTS OF TWO FLOORS AND A PARTIAL BASEMENT WITH AN ATTACHED TWO-CAR GARAGE.

PROPOSED SF CALCULATION

HEATED AREAS		UNHEATED AREAS		DECK AREAS	
UPPER FLOOR:	1,280 SF	GARAGE:	560 SF	UPPER DECK:	74 SF
MAIN FLOOR:	1,710 SF	MECH:	192 SF	MAIN DECK:	458 SF
BASEMENT FLOOR:	1,268 SF				
TOTAL HEATED SPACE:	**4,258 SF**	**TOTAL UNHEATED SPACE:**	**752 SF**	**TOTAL DECK SPACE:**	**532 SF**

GROSS FLOOR AREA CALCULATIONS

CALCULATED PER MICC 19.02.020.D. SEE SHEET A004 FOR FLOOR DIAGRAMS & BASEMENT CALCULATIONS.

BASEMENT AREA CALCULATED =	798 SF
MAIN FLOOR AREA CALCULATED =	1,954 SF
UPPER FLOOR AREA CALCULATED =	1,230 SF
TOTAL AREA CALCULATED =	3,776 SF

TOTAL SITE AREA = **10,150 x 40% = 4,060 SF**

1 **3,982 SF < 4,060 SF.... OK!**

BUILDING HEIGHT CALCULATION

CALCULATED PER MICC 19.02.020.E. SEE DIAGRAM 4/A004 FOR MEASURMENTS.

MAXIMUM BUILDING HEIGHT ON DOWNHILL BUILDING FACADE DICATES THAT THE EAST ELEVATION IS USED AS IT IS THE LOWEST DOWNHILL SLOPE. MEASURING FROM THE LOWEST POINT BETWEEN ORIGINAL GRADE AND FINISHED GRADE, THE FINISHED GRADE IS LOWER. THE EXTERIOR WALL OF THE MASTER BEDROOM IS THE HIGHEST WALL. THE BUILDING FACADE WILL BE BELOW THE 30' MAXIMUM.

LOT COVERAGE - IMPERVIOUS SURFACE CALCULATION

PER 19.02.020.F. SEE DIAGRAMS 5/A004 FOR SITE SLOPE & 6/A004 FOR LOT COVERAGE PLAN.

LOT SLOPE 15% TO LESS THAN 30%, MAXIMUM LOT COVERAGE SHALL BE 35%, LANDSCAPING AREA SHALL BE 65%.

TOTAL SITE AREA 10,150 SF - RIGHT OF WAY AREA 280 SF
NET LOT AREA: 10,150 - 280 = 9,870 SF

HARDSCAPE SHALL NOT EXCEED 9% OF NET LOT AREA: 886 SF HARDSCAPE PROPOSED < 888.3 SF ALLOWED

LOT COVERAGE SHALL NOT EXCEED 35% OF NET LOT AREA: 3,432 SF PROPOSED < 3,454.5 SF ALLOWED

LANDSCACPING SHALL BE AT LEAST 65% OF NET LOT AREA: 6,593 SF PROPOSED > 6,415.5 SF REQUIRED

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SURVEY
7/15/2020 - TOPOGRAPHIC & BOUNDARY SURVEY

CIVIL

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Ramaiyah Subramanian Residence
7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET
REVISION 1
07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

REVISIONS:

NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

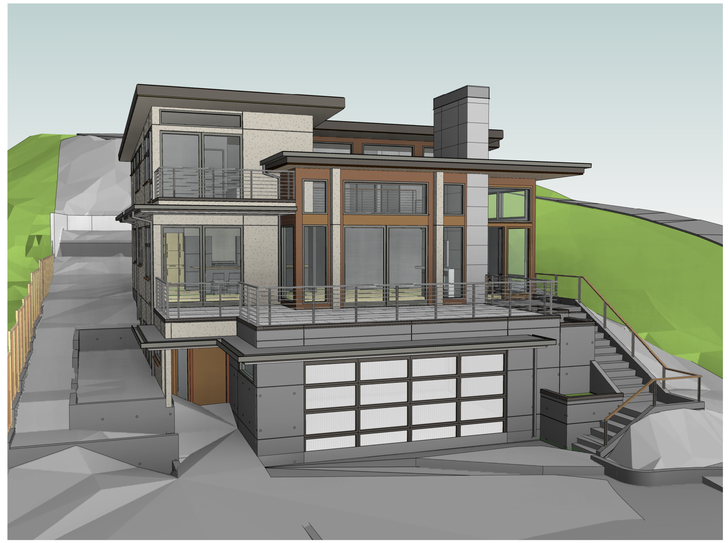
ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
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COVERSHEET

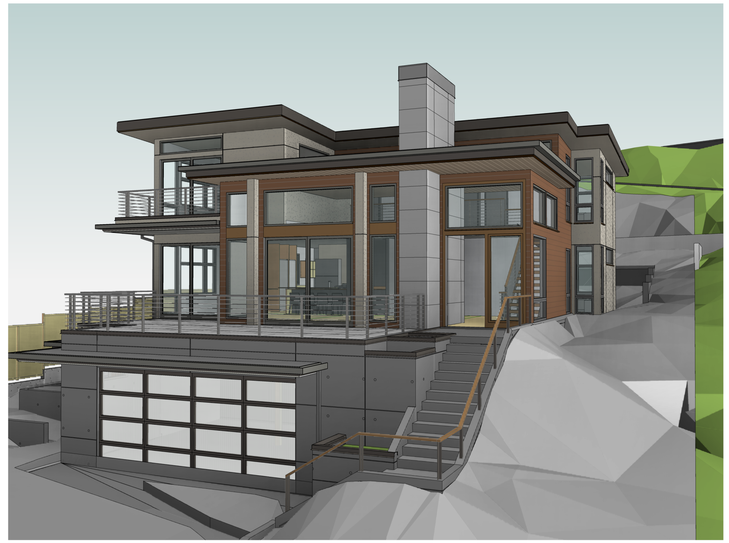
A001



1 LOOKING NW



2 LOOKING WEST



3 LOOKING SW



4 LOOKING EAST



5 LOOKING SE



6 LOOKING SOUTH

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Ramaiyah Subramanian Residence

7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL

DRAWN BY: AD

REVISIONS:

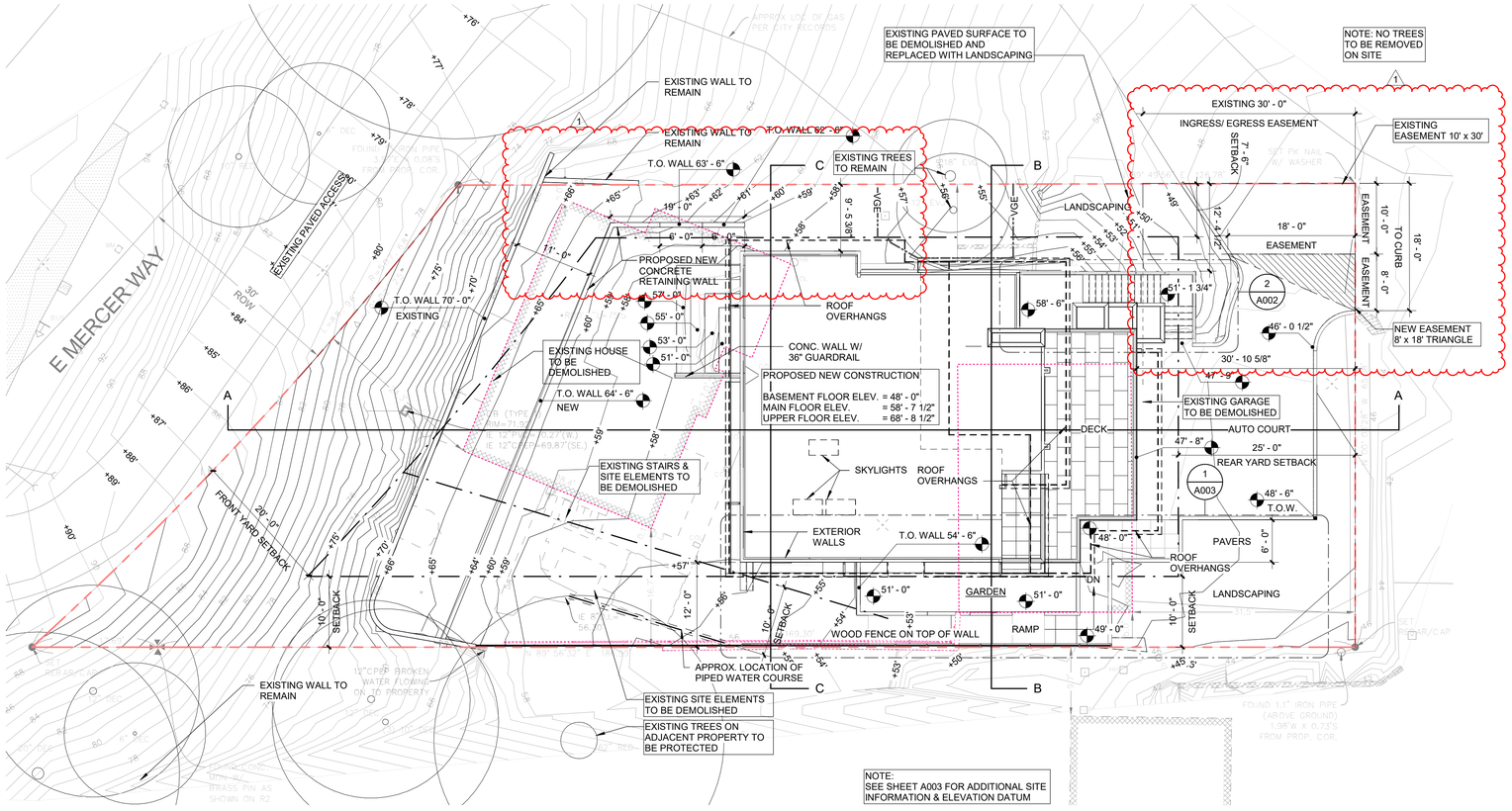
NO.	DESCRIPTION	DATE

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EXTERIOR PERSPECTIVES

A001a

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SITE PLAN LEGEND

- SHORELINE BUFFER
- PROPOSED BUILDING AREA
- ADJ. PROPERTY DRIVEWAY
- PROPOSED DECK AREA
- TRENCH DRAIN
- C.O. — CLEANOUT (C.O.)
- D.S. — DOWNSPOUT (D.S.)
- EXISTING TO BE REMOVED
- LINE OF ROOF OVERHANG
- LINE OF EXISTING GRADE
- LINE OF PROPOSED GRADE
- SETBACK/EASEMENT
- PROPERTY LINE
- W — WATER LINE
- SS — SANITARY SEWER LINE
- SD — STORM DRAIN LINE
- G — GAS LINE
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- VGE — TREE PROTECTION FENCE

1 PROPOSED SITE PLAN

1" = 10'-0"

1"=10'-0" 0 2.5 5 10 20 40

ARCHITECT

BAYLIS ARCHITECTS
10801 MAIN ST # 110, BELLEVUE, WA 98004
PHONE: (425) 454-0566
CONTACT: JOHAN LUCHSINGER
EMAIL: luchsingerj@baylisarchitects.com

GENERAL SITE NOTES

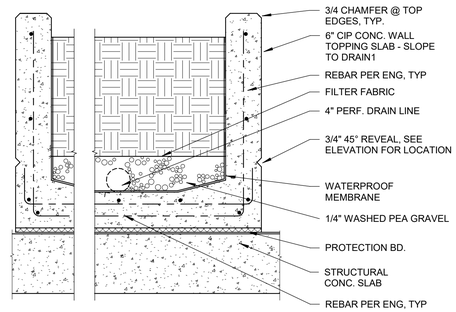
1. SITE INFORMATION TAKEN FROM BOUNDARY AND TOPOGRAPHIC SURVEY DATED ON 04/04/2020.
2. SEE COVER SHEET A001 FOR ADDITIONAL PROJECT DATA.

TREE PROTECTION DURING CONSTRCTION

1. THE CONTRACTOR SHALL FOLLOW BEST PRACTICES TO PROTECT ANY TREE SCHEDULED TO BE RETAINED AND ALL TREES ON ADJACENT PROPERTY FROM DAMAGE. ALL TREES TO BE RETAINED WILL BE TAGGED BY THE OWNER. SHOULD THE CONTRACTOR AT ANY TIME HAVE CONCERNS OR QUESTIONS ABOUT ANY TREE HE IS TO CONTACT THE OWNER IMMEDIATELY AND THE OWNER WILL CONSULT WITH HIS LANDSCAPE ARCHITECT AND/OR ARBORIST TO INSPECT THE TREE IN QUESTIONS AND PROVIDE THEIR RECOMMENDATIONS.

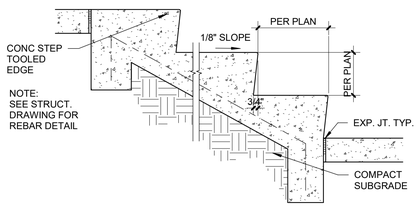
CLEARING AND GRADING NOTES

1. CLEAR SITE OF VEGETATION AS REQUIRED FOR EXCAVATION OF HOUSE. PROTECT SLOPES AND CLEARED AREAS PER CITY OF MERCER ISLAND.
2. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF IMPROVEMENTS ON ADJACENT PROPERTIES. COORDINATE WITH NEIGHBORS AS REQUIRED.
3. ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE CITY OF MERCER ISLAND STANDARDS.
4. ALL EXISTING UTILITIES SHOWN ON PLAN WERE OBTAINED FROM FIELD SURVEY. CONTRACTOR IS RESPONSIBLE FOR SITE VERIFICATION OF ALL UTILITY LOCATIONS AND CONDITIONS.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TELEPHONE, GAS, POWER AND CABLE UTILITIES PRIOR TO CONSTRUCTION SO THAT UTILITIES CAN PREPARE NECESSARY PLANS FOR THE EXTENSION OF THEIR RESPECTIVE SYSTEMS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THESE ACTIVITIES DURING CONSTRUCTION.
6. EROSION CONTROL - CONTRACTOR TO INSTALL CONTINUOUS SILT FENCING @ BOUNDARY OF CLEARED/DISTRIBUTED AREA PER CITY OF MERCER ISLAND STANDARDS.



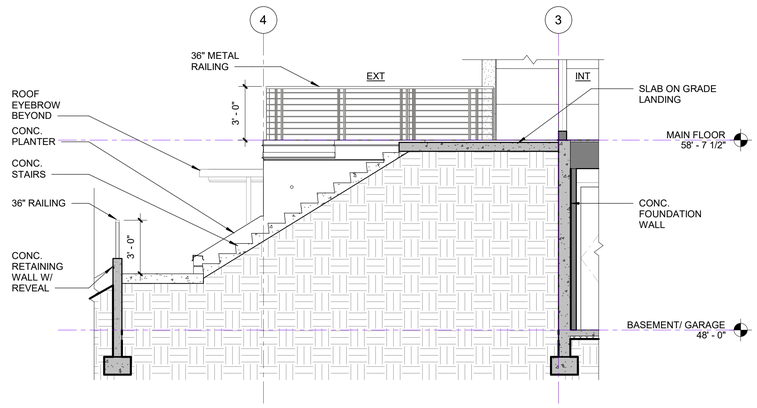
5 CONC PLANTER

1" = 1'-0" D2-1-9



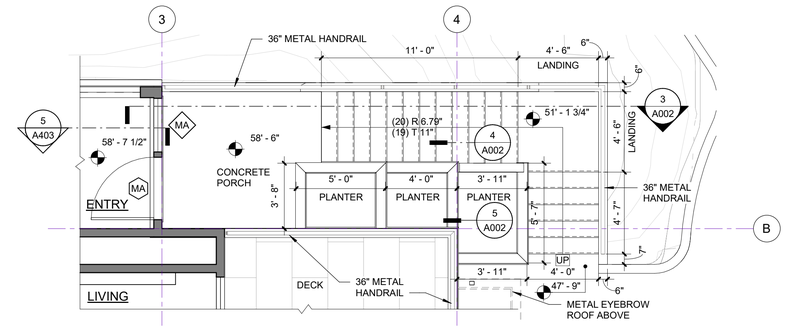
4 TYP CONC STEPS

1" = 1'-0" D2-1-6



3 STAIR SECTION - ENTRY STAIR

1/4" = 1'-0"



2 ENTRY STAIR & NORTH PLANTERS

1/4" = 1'-0"

1/4"=1'-0" 0 1 2 4 8 16

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Ramaiyah Subramanian Residence

7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

REVISIONS:

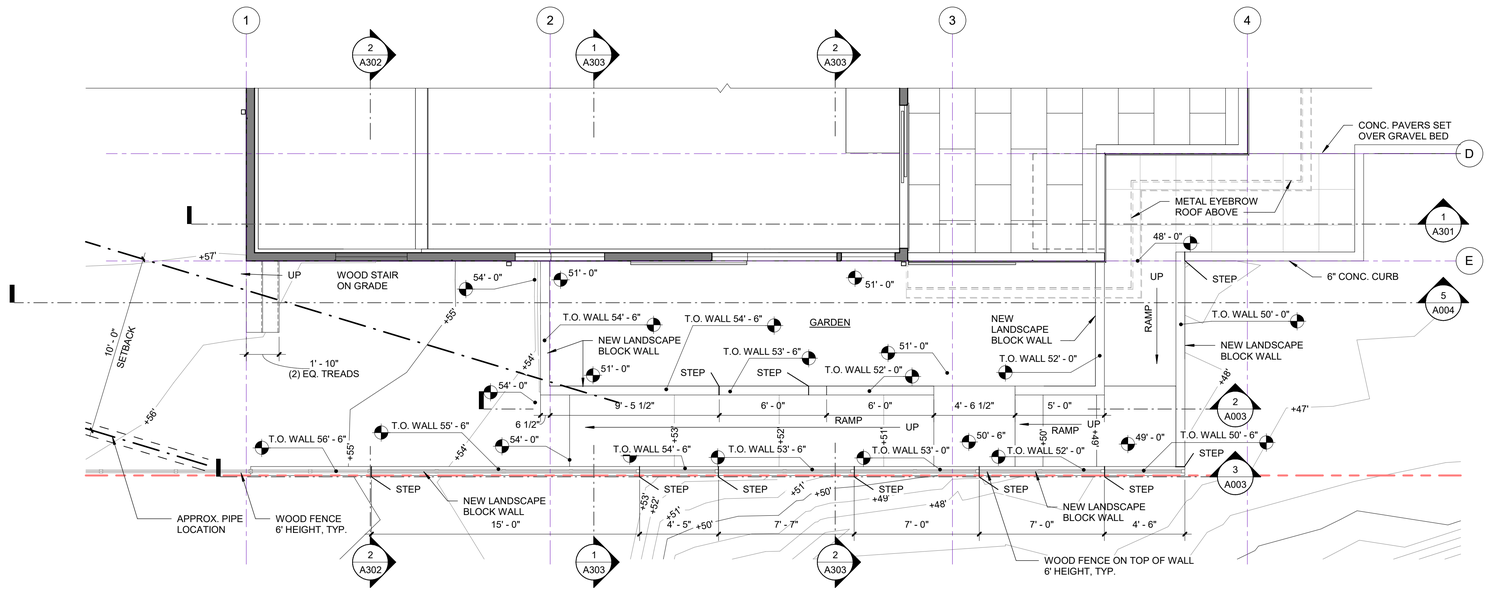
NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

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SITE PLAN & ENTRY STAIRS

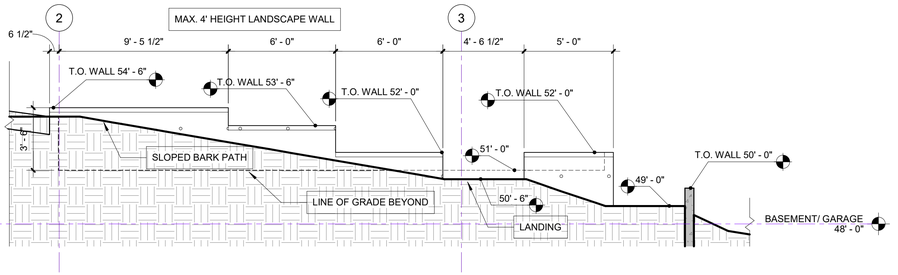
A002

7/17/2025 10:28:56 AM



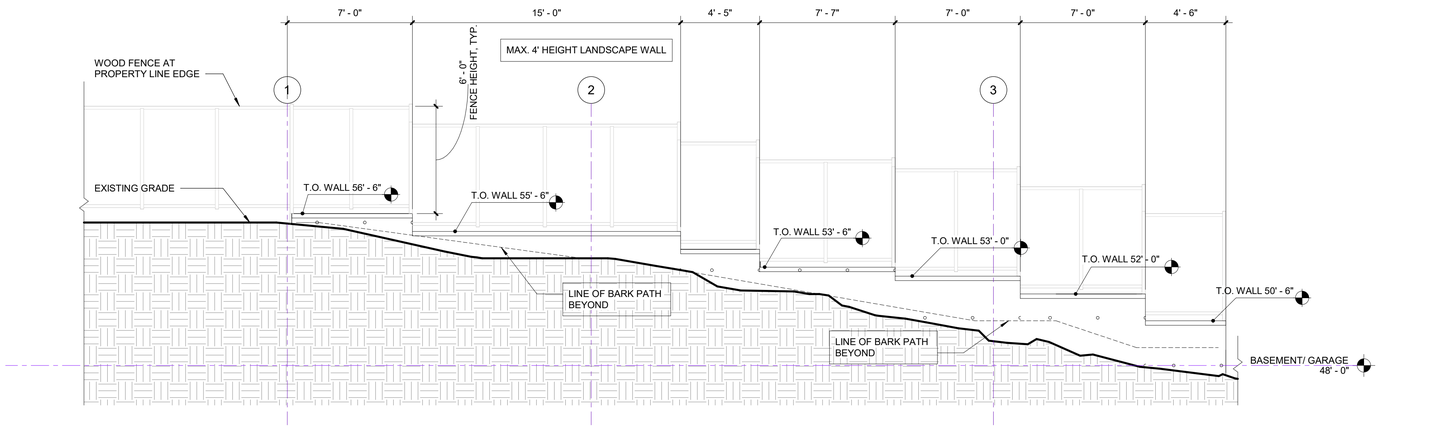
1 SOUTH PLANTERS & BARK PATH AT GARDEN
1/4" = 1'-0"

1/4"=1'-0" 1 2 4 8 16
0



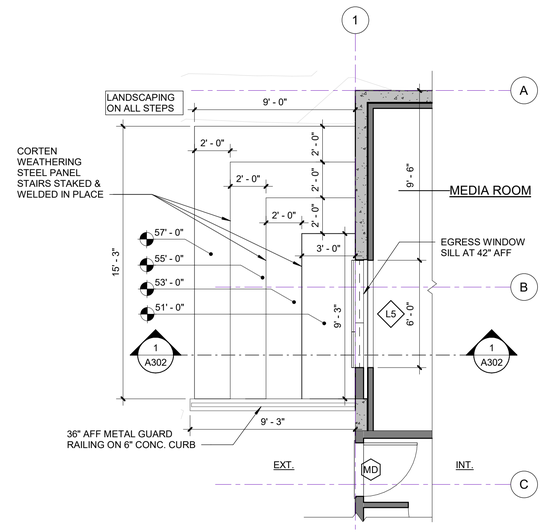
2 GARDEN LANDSCAPE BLOCK WALL AT BARK PATH
1/4" = 1'-0"

1/4"=1'-0" 1 2 4 8 16
0



3 LANDSCAPE BLOCK WALL AT PROPERTY LINE
1/4" = 1'-0"

1/4"=1'-0" 1 2 4 8 16
0



4 EGRESS WELL
1/4" = 1'-0"

1/4"=1'-0" 1 2 4 8 16
0

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SITE PLAN LEGEND

- SHORELINE BUFFER
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- TRENCH DRAIN
- C.O. — CLEANOUT (C.O.)
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Ramaiyah Subramanian Residence

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Mercer Island, WA 98040

BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
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REVISIONS:

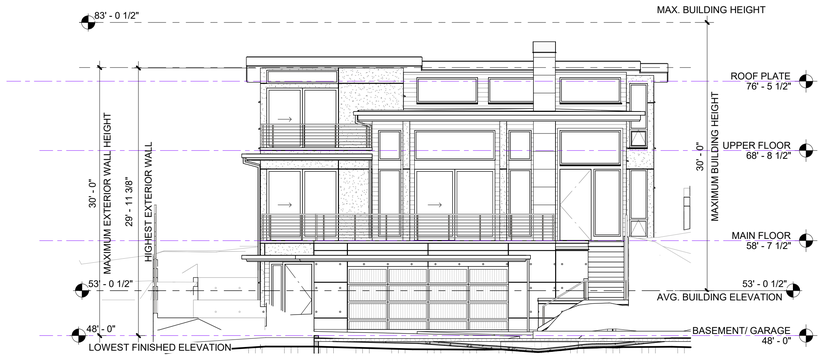
NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

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SITE IMPROVEMENTS - BARK RAMP & EGRESS WELL

A003

7/17/2025 10:29:02 AM



PER MICC 19.02.020.E

1. MAXIMUM BUILDING HEIGHT: NO BUILDING SHALL EXCEED 30 IN HEIGHT ABOVE THE AVGERAGE BUILDING ELEVATION TO THE HIGHEST POINT OF THE ROOF.

2.MAXIMUM BUILDING HEIGHT ON DOWNHILL BUILDING FACADE. THE MAXIMUM BUILDING FACADE HEIGHT ON THE DOWNHILL SIDE OF A SLOPING LOT SHALL NOT EXCEED 30 FEET IN HEIGHT. THE BUILDING FACADE HEIGHT SHALL BE MEASURED FROM THE EXISTING GRADE OR FINISHED GRADE, WHICHEVER IS LOWER, AT THE FURTHEST DOWNHILL EXTENT OF THE PROPOSED BUILDING, TO THE TOP OF THE EXTERIOR WALL FACADE SUPPORTING THE ROOF FRAMING, RAFTERS, TRUSSES, ETC.

4 BUILDING HEIGHT DIAGRAM - EAST ELEVATION

1/8" = 1'-0"

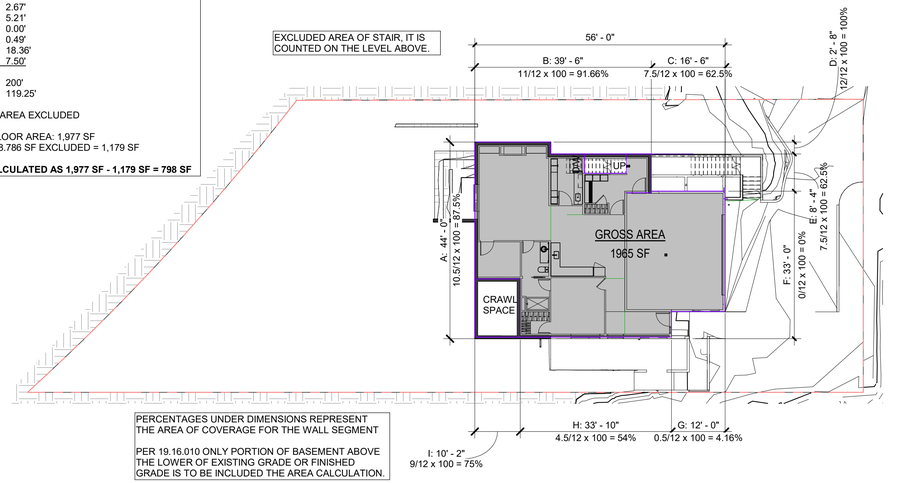
1/8"=1'-0" 0 1 2 4 8 16

A: 44' x 87.5%	=	38.50'
B: 39.5' x 91.66%	=	36.21'
C: 16.5' x 62.5%	=	10.31'
D: 2.67' x 100.0%	=	2.67'
D: 8.33' x 62.5%	=	5.21'
F: 33' x 0%	=	0.00'
G: 12' x 4.16%	=	0.49'
H: 34' x 54%	=	18.36'
I: 10' x 75%	=	7.50'
ORIGINAL LENGTH	=	200'
ADJUSTED LENGTH	=	119.25'

119.25'/200' = 59.625% AREA EXCLUDED

BASEMENT GROSS FLOOR AREA: 1,977 SF
1,977 x 59.625% = 1,178.786 SF EXCLUDED = 1,179 SF

BASEMENT AREA CALCULATED AS 1,977 SF - 1,179 SF = 798 SF



PERCENTAGES UNDER DIMENSIONS REPRESENT THE AREA OF COVERAGE FOR THE WALL SEGMENT

PER 19.16.010 ONLY PORTION OF BASEMENT ABOVE THE LOWER OF EXISTING GRADE OR FINISHED GRADE IS TO BE INCLUDED THE AREA CALCULATION.

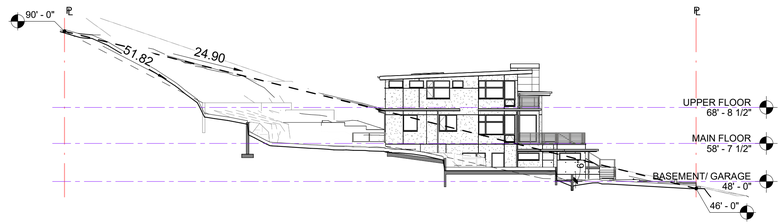
1 BASEMENT/ GARAGE

1/16" = 1'-0"

1/16"=1'-0" 0 2 4 8 16 32 64

PER 19.02.020.F

LOT SLOPE 15% TO LESS THAN 30%, MAXIMUM LOT COVERAGE SHALL BE 35%, LANDSCAPING AREA SHALL BE 65%.



5 SITE SLOPE DIAGRAM

1" = 20'-0"

1"=20'-0" 0 5 10 20 40 80

PER 19.02.020.F

TOTAL SITE AREA 10,150 SF - RIGHT OF WAY AREA 280 SF
NET LOT AREA: 10,150 - 280 = 9,870 SF

HARDSCAPE:	
AUTOCOURT & STAIRS	818 SF
WALKWAY	60 SF
LANDSCAPED STAIR	8 SF
HARDSCAPE TOTAL:	886 SF

9,870 SF x 9% = 888.3 SF **886 SF < 888.3 SF... OK!**

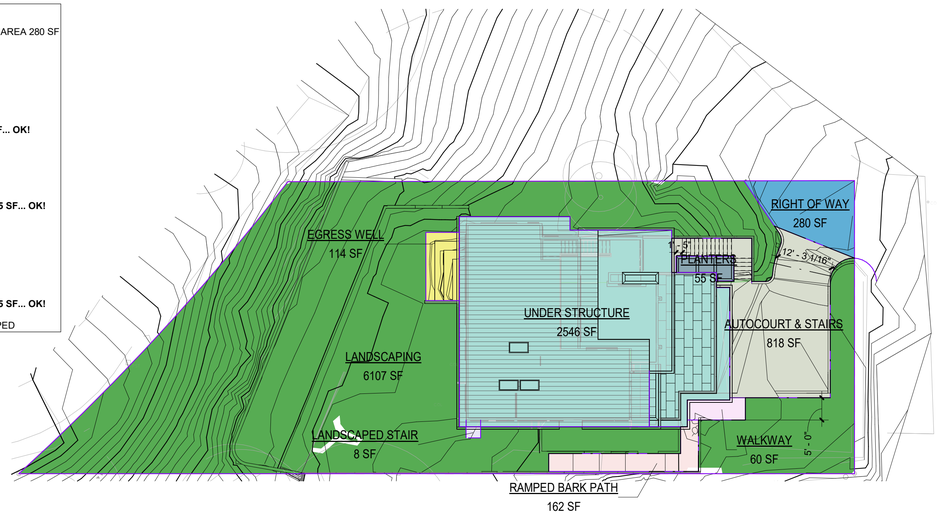
LOT COVERAGE:	
HARDSCAPE TOTAL	886 SF
UNDER STRUCUTRE	2,546 SF
TOTAL LOT COVERAGE	3,432 SF

9,870 SF x 35% = 3,454.5 SF **3,432 SF < 3,454.5 SF... OK!**

LANDSCAPING:	
LANDSCAPING	6,107 SF
PLANTER	55 SF
RAMPED BARK PATH	317 SF
STEPPED EGRESS WELL*	114 SF
TOTAL LANDSCAPING	6,591 SF

9,870 SF x 65% = 6,415.5 SF **6,591 SF > 6,415.5 SF... OK!**

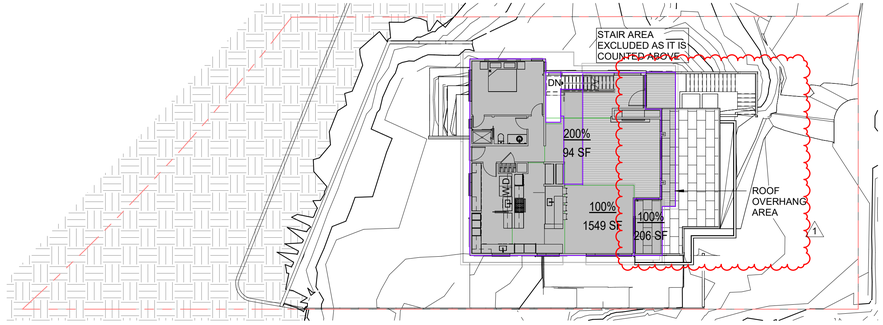
*STEPPED EGRESS WELL WILL BE LANDSCAPED



6 LOT COVERAGE DIAGRAM

1/16" = 1'-0"

1/16"=1'-0" 0 2 4 8 16 32 64



MAIN FLOOR GROSS FLOOR AREA: 1,560 + 94(200%) + 206

200% FOR AREA OVER 16' CEILING HEIGHT

MAIN FLOOR AREA CALCULATED AS 1,560 SF + 188 SF + 206 SF = 1,954 SF

2 MAIN FLOOR

1/16" = 1'-0"

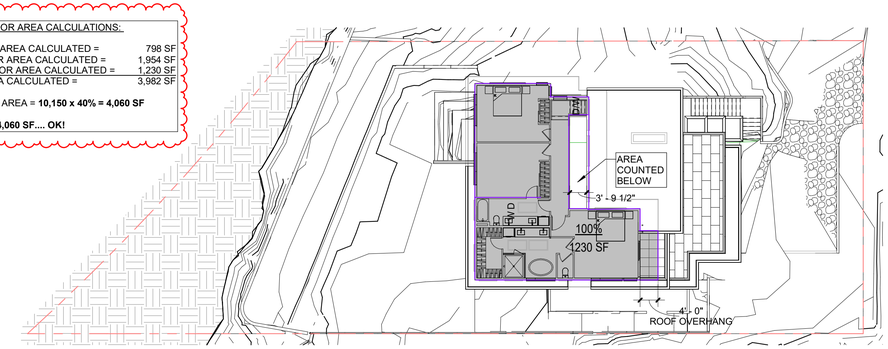
1/16"=1'-0" 0 2 4 8 16 32 64

GROSS FLOOR AREA CALCULATIONS:	
BASEMENT AREA CALCULATED =	798 SF
MAIN FLOOR AREA CALCULATED =	1,954 SF
UPPER FLOOR AREA CALCULATED =	1,230 SF
TOTAL AREA CALCULATED =	3,982 SF

TOTAL SITE AREA = **10,150 x 40% = 4,060 SF**

3,982 SF < 4,060 SF.... OK!

1



UPPER FLOOR GROSS FLOOR AREA: 1,230.

UPPER FLOOR AREA CALCULATED AS 1,230 SF

3 UPPER FLOOR

1/16" = 1'-0"

1/16"=1'-0" 0 2 4 8 16 32 64

7/17/2025 10:29:08 AM

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Ramaiyah Subramanian Residence

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Mercer Island, WA 98040

BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER:	20-0502
PROJECT MANAGER:	JL
DRAWN BY:	AD

REVISIONS:

NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

baylis ARCHITECTS
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SITE CALS & BLDG HT
CAL & SITE DIAGRAMS

A004

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20150526001877)

THAT PORTION OF LOT 20,, BLOCK 3, FLOOD'S LAKE SIDE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 83, RECORDS OF KING COUNTY, WASHINGTON, LYING WEST OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE MONUMENT MARKING THE INTERSECTION OF THE ORIGINAL PLATTED CENTER LINE OF EAST MERCER WAY WITH THE WESTERLY EXTENSION OF THE SOUTH LINE OF SAID LOT 20;
THENCE NORTH, 89°56'32" EAST ALONG SAID WESTERLY EXTENSION AND ALONG SAID SOUTH LINE 169.30 FEET TO THE TRUE POINT OF BEGINNING OF THE LINE HEREIN DESCRIBED;
THENCE NORTH 0°03'28" WEST TO THE NORTH LINE OF SAID LOT 20 AND THE END OF THE LINE HEREIN DESCRIBED;

TOGETHER WITH THAT PORTION OF VACATED EAST MERCER WAY ADJOINING THE ABOVE DESCRIBED PROPERTY ON THE WEST;

PARCEL B:
AN EASEMENT FOR INGRESS AND EGRESS TO LAKE WASHINGTON OVER THE NORTH 5.0 FEET OF THAT PORTION OF SAID TRACT 20 LYINE EASTERLY OF THE EAST LINE OF THE ABOVE DESCRIBED TRACT;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN MARCH OF 2018. 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. BURIED UTILITIES SHOWN BASED ON RECORDS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE IN THE FIELD. TERRANE ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS OR ACCEPT RESPONSIBILITY FOR UNDERGROUND LINES WHICH ARE NOT MADE PUBLIC RECORD. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.
4. SUBJECT PROPERTY TAX PARCEL NO. 257950-0136
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 10,150 ±S.F. (0.23 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

LEGEND

- ASPHALT SURFACE
- BUILDING
- CENTERLINE ROW
- CLEANOUT
- CULVERT PIPE
- CONCRETE SURFACE
- RETAINING WALL
- DECK
- FENCE LINE (WOOD)
- FIRE HYDRANT
- GRAVEL SURFACE
- GUY ANCHOR
- HEDGE FOLIAGE LINE
- INLET (TYPE 1)
- IRON PIPE (FOUND)
- NAIL AS NOTED
- OHP TRANSMISSION LINE
- POWER TRANSFORMER POLE
- INLET (TYPE 2)
- MONUMENT (SURFACE, FOUND)
- POST
- POWER HAND HOLE
- POWER METER
- POWER (OVERHEAD)
- POWER POLE
- REBAR & CAP (SET)
- ROCKERY
- SEWER LINE
- SEWER MANHOLE
- SIGN (AS NOTED)
- STORM MANHOLE
- TELEPHONE (OVERHEAD)
- WATER METER
- WATER VALVE
- AC UNIT
- TREE (AS NOTED)

VICINITY MAP

N.T.S.



BASIS OF BEARINGS

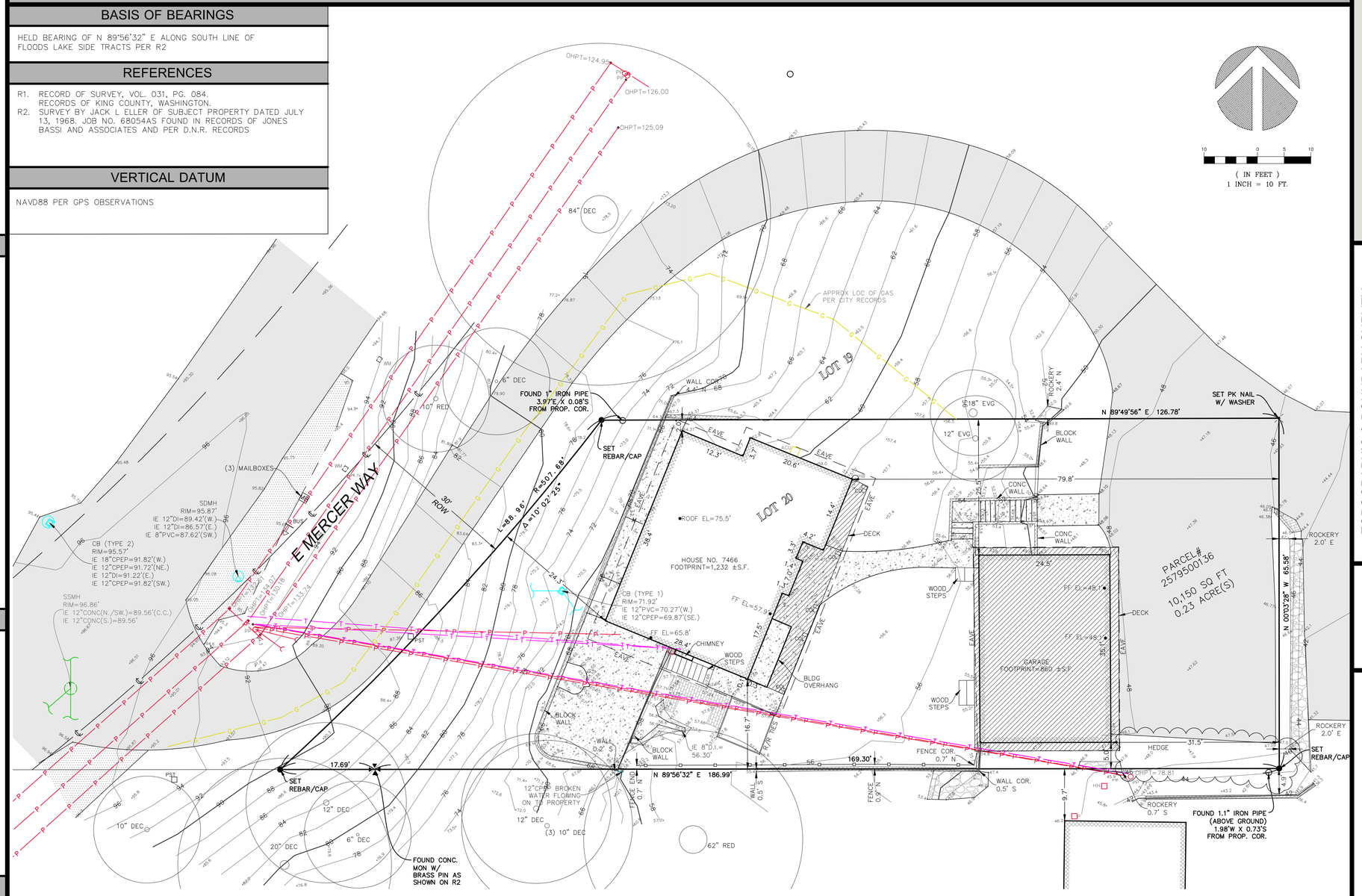
HELD BEARING OF N 89°56'32" E ALONG SOUTH LINE OF FLOODS LAKE SIDE TRACTS PER R2

REFERENCES

R1. RECORD OF SURVEY, VOL. 031, PG. 084. RECORDS OF KING COUNTY, WASHINGTON.
R2. SURVEY BY JACK L ELLER OF SUBJECT PROPERTY DATED JULY 13, 1968. JOB NO. 68054AS FOUND IN RECORDS OF JONES BASSI AND ASSOCIATES AND PER D.N.R. RECORDS

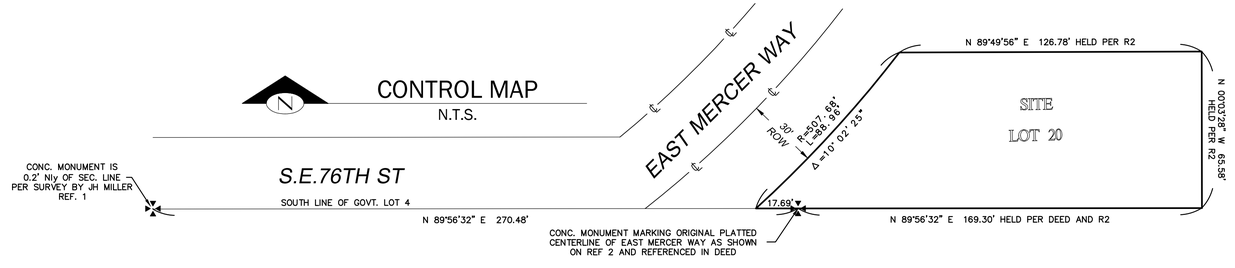
VERTICAL DATUM

NAVD88 PER GPS OBSERVATIONS



CONTROL MAP

N.T.S.



measure success

TOPOGRAPHIC & BOUNDARY SURVEY
SW 1/4 OF SE 1/4 SEC 30, TWP. 24N., RGE 05E., W.M.
PARCEL NO. 2579500136

7466 E MERCER WAY
7466 E MERCER WAY
MERCER ISLAND, WA 98040

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

JOB NUMBER:	170678
DATE:	04/04/18
DRAFTED BY:	IDV- RSN
CHECKED BY:	EJG/TMM
SCALE:	1" = 10'

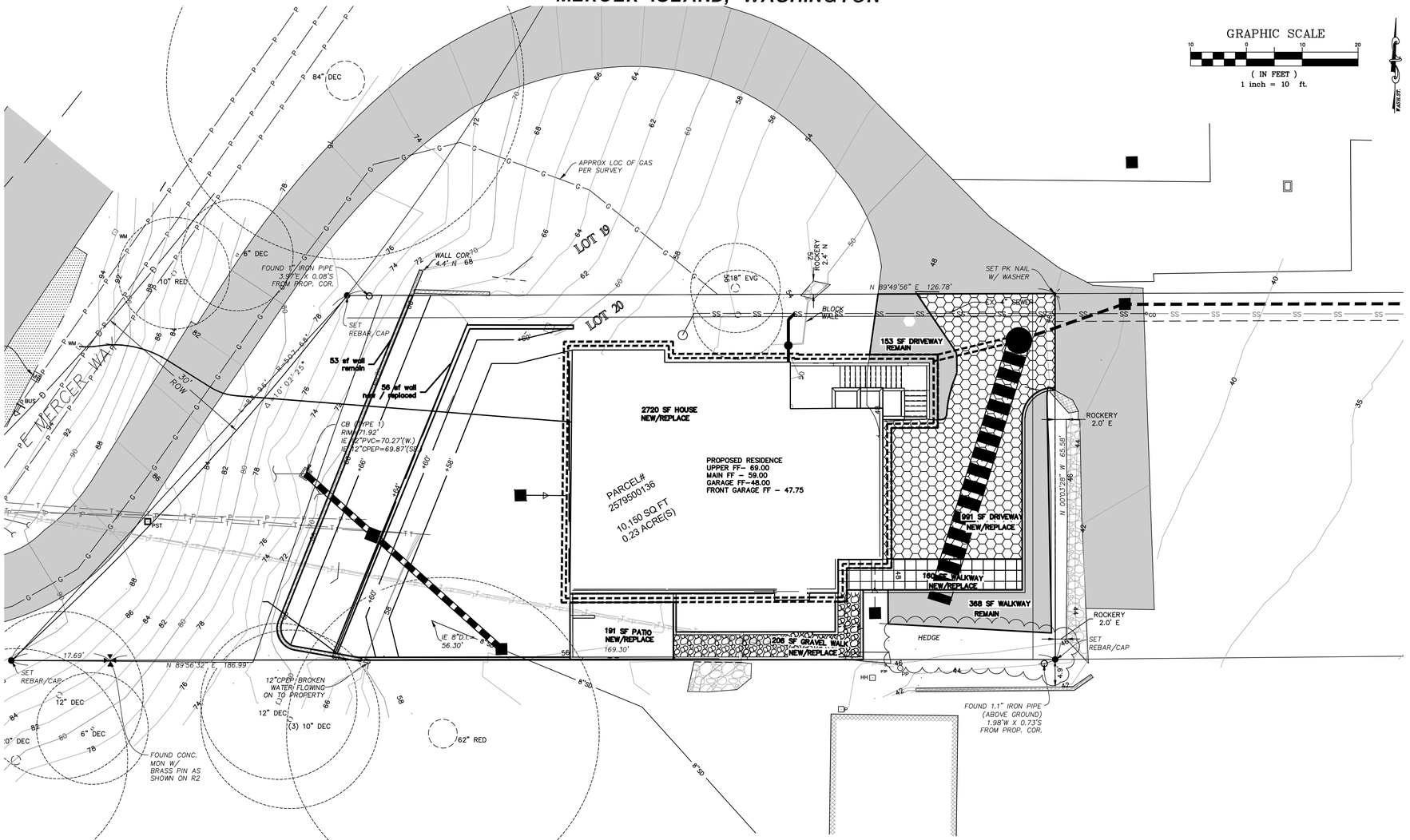
REVISION HISTORY

7/15/20	TREE DRIP LINE

SHEET NUMBER
1 OF 1

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON





VICINITY MAP
N.T.S.

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20150526001877)

THAT PORTION OF LOT 20,, BLOCK 3, FLOOD'S LAKE SIDE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 83, RECORDS OF KING COUNTY, WASHINGTON, LYING WEST OF A LINE DESCRIBED AS FOLLOWS:

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TOGETHER WITH THAT PORTION OF VACATED EAST MERCER WAY ADJOINING THE ABOVE DESCRIBED PROPERTY ON THE WEST;

PARCEL B:
AN EASEMENT FOR INGRESS AND EGRESS TO LAKE WASHINGTON OVER THE NORTH 5.0 FEET OF THAT PORTION OF SAID TRACT 20 LYINE EASTERLY OF THE EAST LINE OF THE ABOVE DESCRIBED TRACT;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN MARCH OF 2018. 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.
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ONSITE IMPERVIOUS SURFACE COVERAGE CAL

	(E)EXISTING AREA	(N)PROPOSED AREA	NET AREA
HOUSE	1,816 SF	2,720 SF (NEW/REPLACE)	+904 SF
CONCRETE PATIO / WALKWAY/GRAVEL	750 SF	503 SF (REMAIN+REPLACE)	-247SF
GARAGE	1,036 SF	0 SF	-1,036 SF
WALL	92 SF	53 SF (REMAIN)	- 39 SF
DRIVEWAY	1,827 SF	991 SF (NEW/REMAIN)	- 836 SF
TOTAL	5,521 SF	4,844 SF (47.72%)	-1,254 SF

SHEET INDEX

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2-3	DRAINAGE PLAN
4	GRADING PLAN
5	WATER AND SEWER PLAN
6	TESC PLAN
7	DRAINAGE DETAILS
8-9	DRAINAGE, SEWER, & WATER DETAILS
10-16	TESC DETAILS

PROJECT CONTACTS

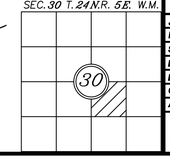
OWNER:
RAMAIYAH & SUBRAMANIAN
7466 E MERCER WAY
MERCER ISLAND, WA 98040

APPLICANT/ARCHITECT:
BAYLIS ARCHITECTS
10801 MAIN ST, #110
BELLEVUE, WA 98004
BRANDON@BAYLISARCHITECTS.COM
425-679-5202

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1320 NW MALL STREET, STE B
ISSAQUAH, WA 98027
PHONE: 425.392.5351
CONTACT: RONALD FREDERIKSEN

ROBERT S. FREDERIKSEN
STATE OF WASHINGTON
39053
REGISTERED PROFESSIONAL ENGINEER
7/9/2025

INDEX LOCATION:
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COVER PAGE

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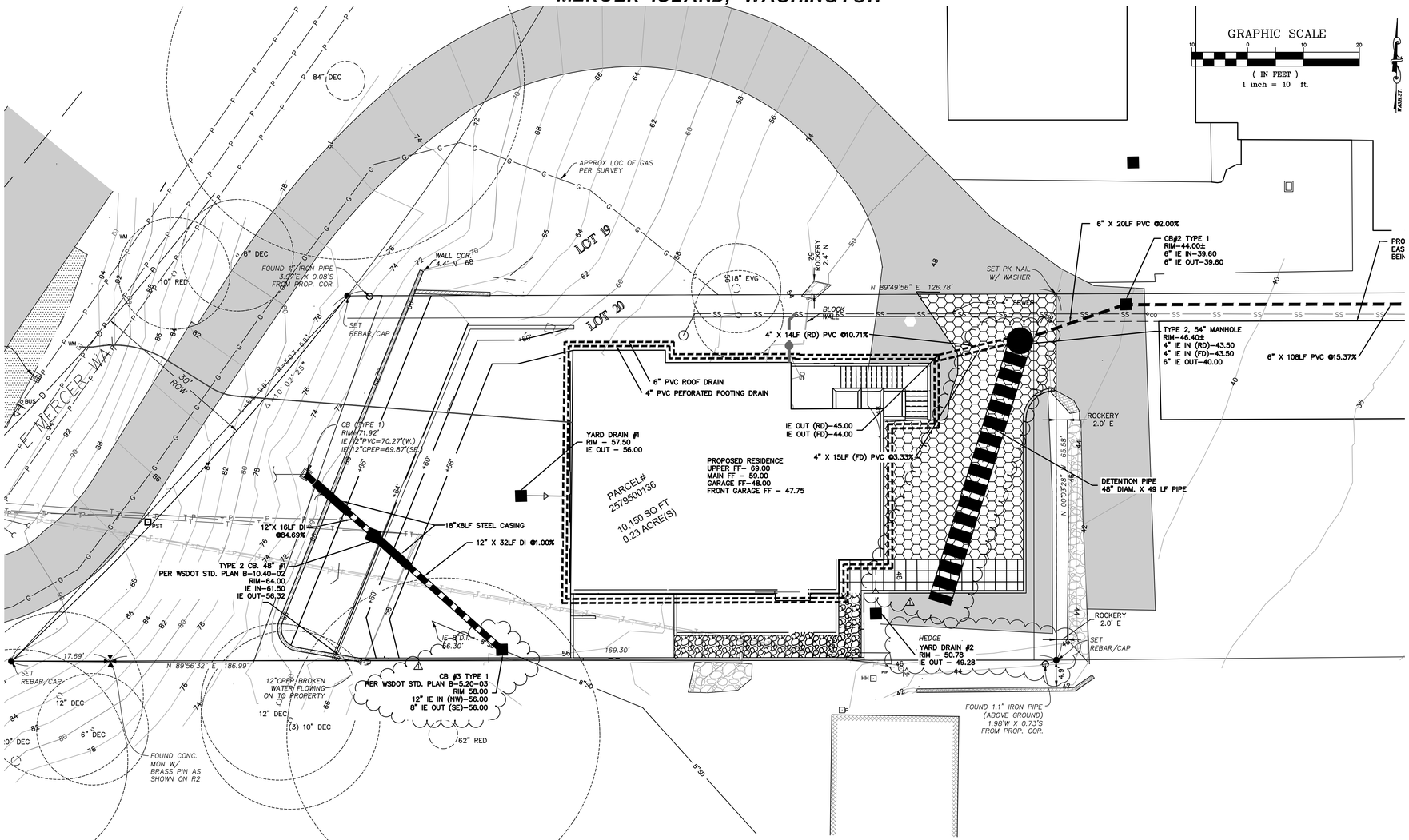
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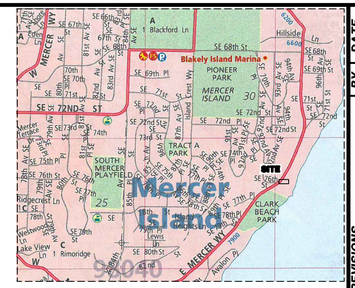
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SHEET 1 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

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CONTACT: RONALD FREDERIKSEN

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STATE OF WASHINGTON
19051
REGISTERED PROFESSIONAL ENGINEER
7/9/2025

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DRAINAGE PLAN

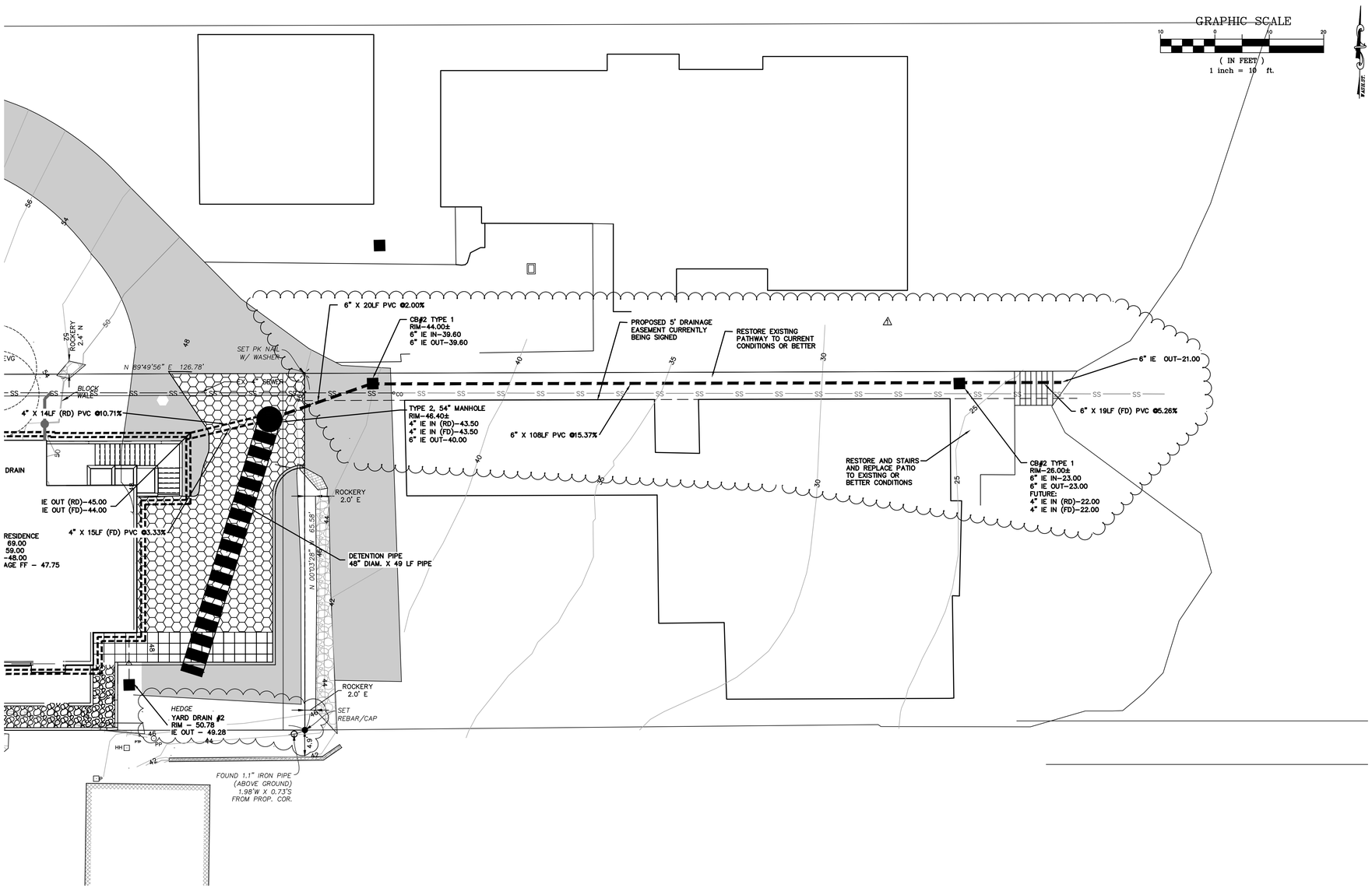
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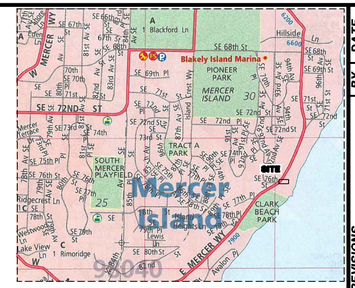
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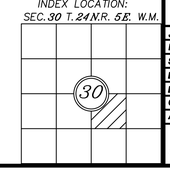
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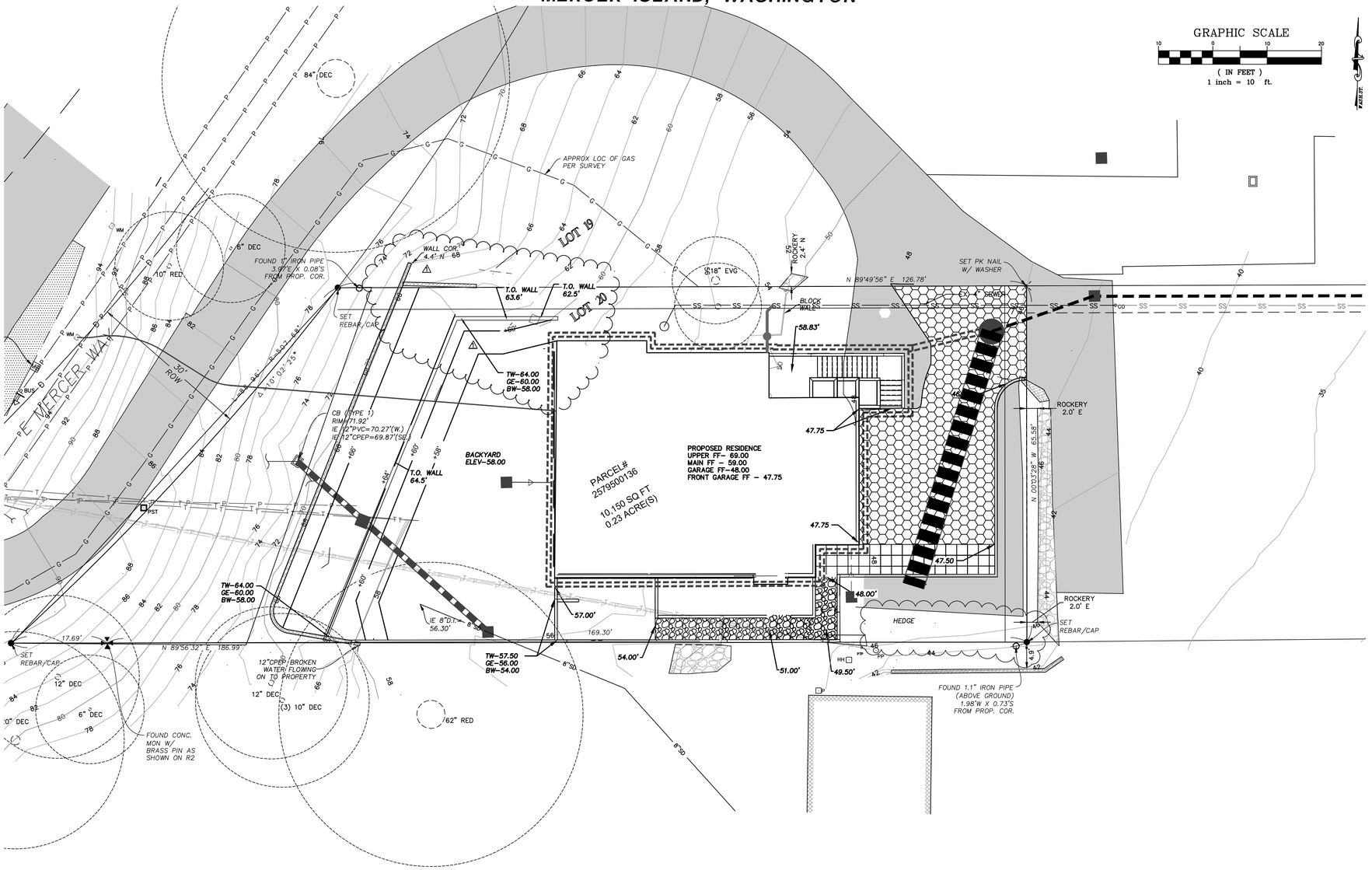
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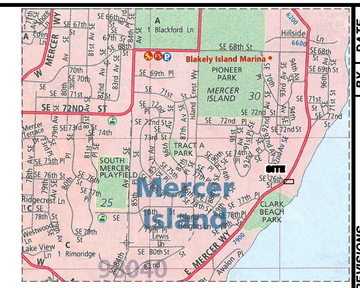
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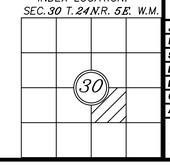
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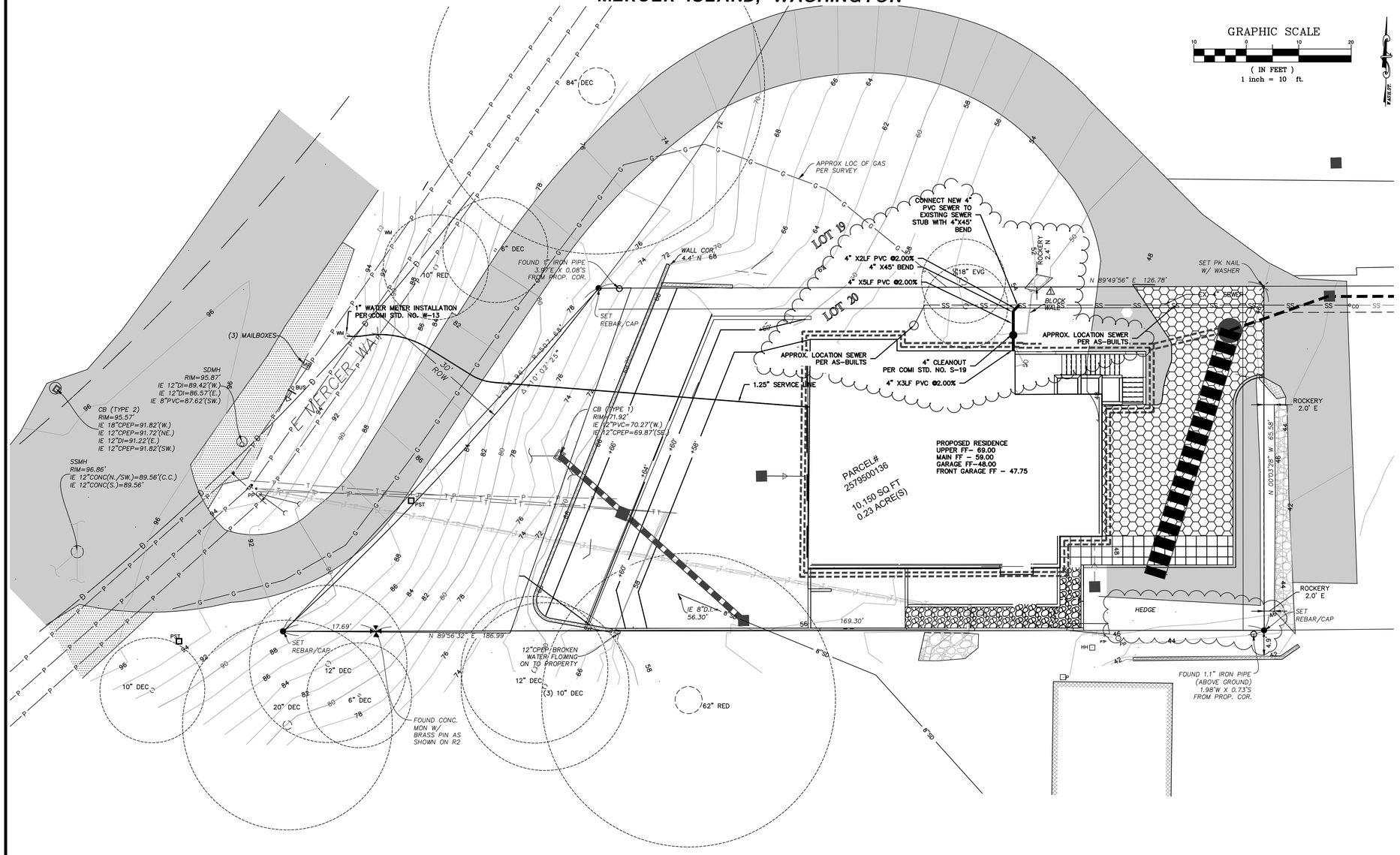
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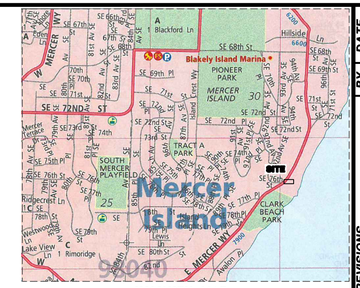
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AN EASEMENT FOR INGRESS AND EGRESS TO LAKE WASHINGTON OVER THE NORTH 5.0 FEET OF THAT PORTION OF SAID TRACT 20 LYING EASTERLY OF THE EAST LINE OF THE ABOVE DESCRIBED TRACT;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN MARCH OF 2018. 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. BURIED UTILITIES SHOWN BASED ON RECORDS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE IN THE FIELD. TERRANE ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS OR ACCEPT RESPONSIBILITY FOR UNDERGROUND LINES WHICH ARE NOT MADE PUBLIC RECORD. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.
4. SUBJECT PROPERTY TAX PARCEL NO. 257950-0136
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 10,150 ±S.F. (0.23 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

SEWER NOTE:

EXISTING SEWER LINE TO BE INSPECTED ONCE EXPOSED.
IF SEWER NEEDS TO BE REPLACED PER INSPECTORS RECOMMENDATION IT SHALL BE REPLACED WITH 6-INCH PVC.

PROJECT CONTACTS

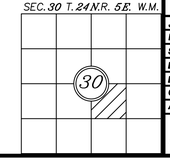
OWNER:
RAMAIYAH & SUBRAMANIAN
7466 E MERCER WAY
MERCER ISLAND, WA 98040

APPLICANT/ARCHITECT:
BAYLIS ARCHITECTS
10801 MAIN ST, #110
BELLEVUE, WA 98004
BRANDB@BAYLISARCHITECTS.COM
425-679-5202

CIVIL ENGINEER:
EASTSIDE CONSULTANTS, INC
1320 NW MALL STREET, STE B
ISSAQUAH, WA 98027
PHONE: 425.392.5351
CONTACT: RONALD FREDERIKSEN

RONALD S. FREDERIKSEN
STATE OF WASHINGTON
18955
REGISTERED
PROFESSIONAL ENGINEER
7/9/2025

INDEX LOCATION:
SEC. 30 T. 24 N. R. 5 E. W.M.



REVISIONS	BY	DATE
REVISED PER CITY MARKUPS	REH	7/9/25

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WATER AND SEWER PLAN

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

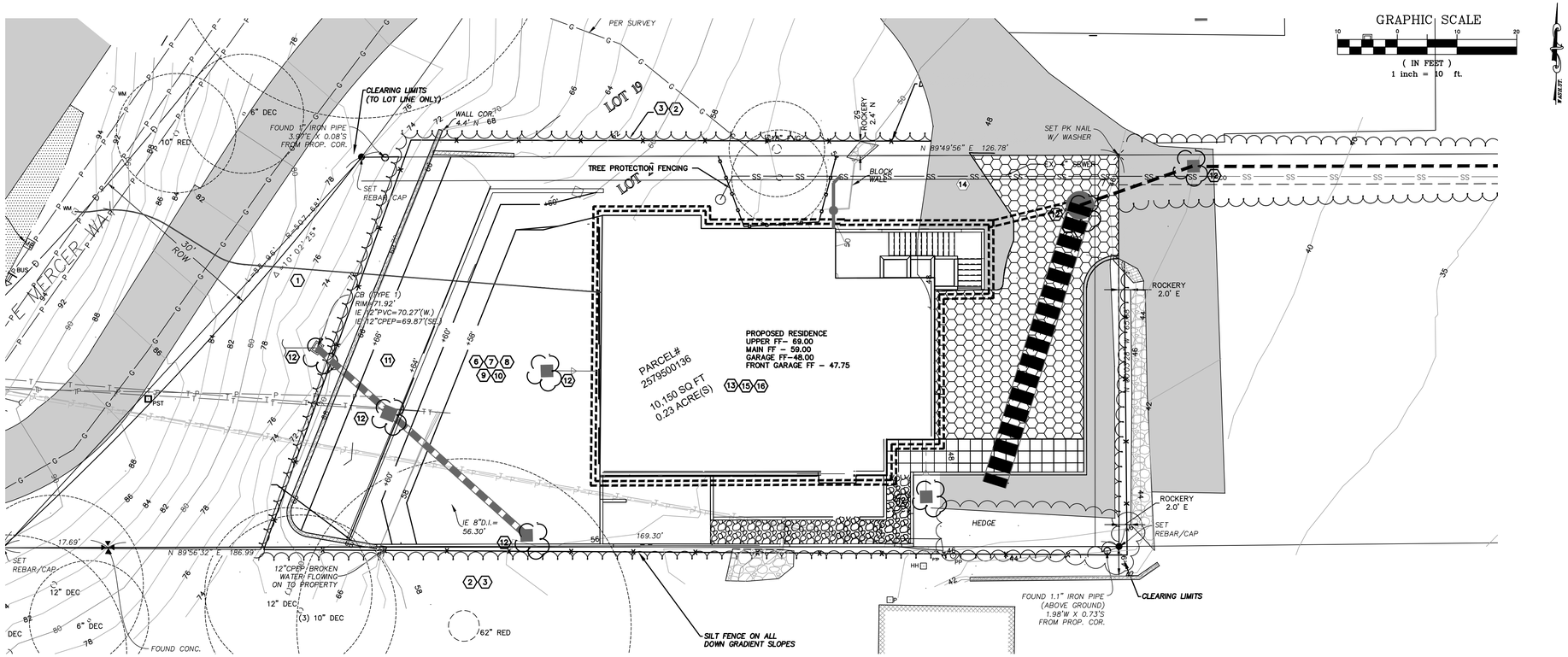
EASTSIDE CONSULTANTS, INC.
ENGINEERS - SURVEYORS
1320 N.W. MALL ST., SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

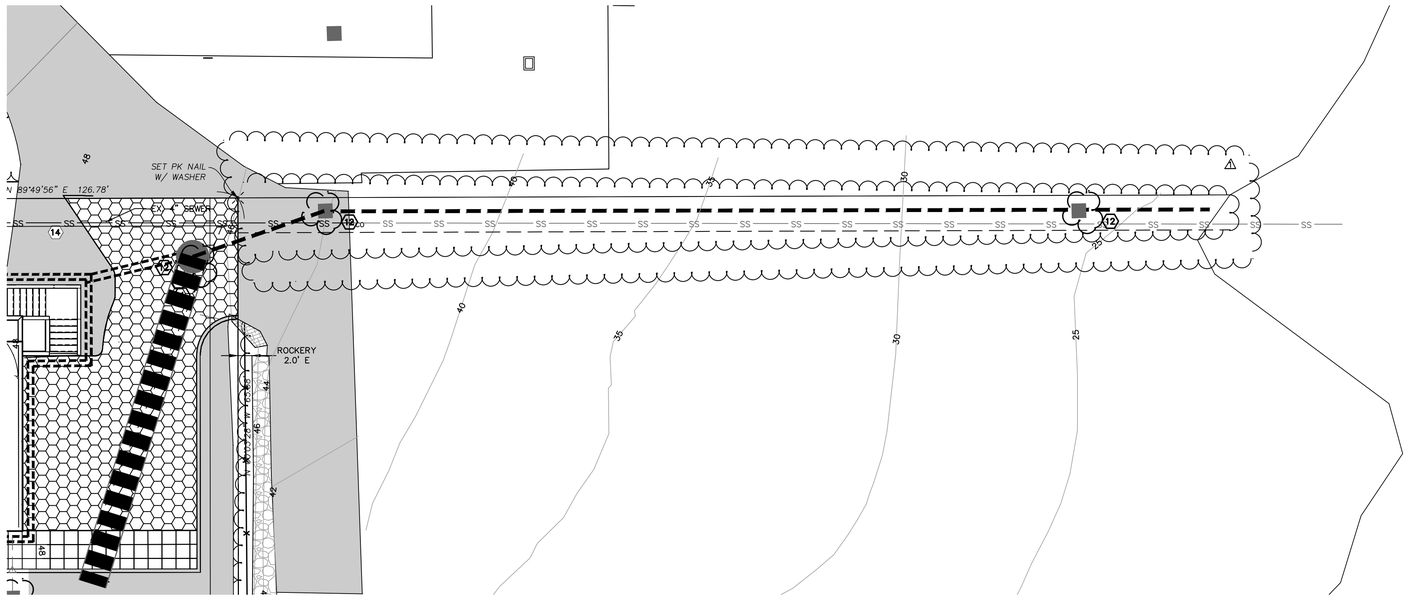
JOB NO.	24014
DATE	3/24
SCALE	1"=10'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	R.S.F.
APPROVED	R.S.F.

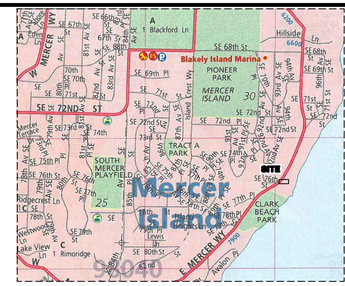
SHEET 5 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON







VICINITY MAP
N.T.S.

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20150526001877)

THAT PORTION OF LOT 20,, BLOCK 3, FLOOD'S LAKE SIDE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 83, RECORDS OF KING COUNTY, WASHINGTON, LYING WEST OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE MONUMENT MARKING THE INTERSECTION OF THE ORIGINAL PLATTED CENTER LINE OF EAST MERCER WAY WITH THE WESTERLY EXTENSION OF THE SOUTH LINE OF SAID LOT 20;
THENCE NORTH. 89°56'32" EAST ALONG SAID WESTERLY EXTENSION AND ALONG SAID SOUTH LINE 169.30 FEET TO THE TRUE POINT OF BEGINNING OF THE LINE HEREIN DESCRIBED;
THENCE NORTH 0°03'28" WEST TO THE NORTH LINE OF SAID LOT 20 AND THE END OF THE LINE HEREIN DESCRIBED;

TOGETHER WITH THAT PORTION OF VACATED EAST MERCER WAY ADJOINING THE ABOVE DESCRIBED PROPERTY ON THE WEST;

PARCEL B:
AN EASEMENT FOR INGRESS AND EGRESS TO LAKE WASHINGTON OVER THE NORTH 5.0 FEET OF THAT PORTION OF SAID TRACT 20 LYING EASTERLY OF THE EAST LINE OF THE ABOVE DESCRIBED TRACT;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

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TESC CALLOUTS

1. PRESERVING NATURAL VEGETATION PER BMP C101
2. HIGH VISIBILITY PLASTIC OR METAL FENCE PER BMP C103
3. SILT FENCE PER BMP C233
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT PER BMP C105
5. WATTLES PER BMP C235
6. TEMPORARY AND PERMANENT SEEDING PER BMP C120
7. MULCHING PER BMP C121
8. NETS AND BLANKETS PER BMP C122
9. PLASTIC COVERING PER BMP C123
10. SURFACE ROUGHENING PER BMP C130
11. GRADIENT TERRACES PER BMP C131
12. STORM DRAIN INLET PROTECTION PER BMP C220
13. CONCRETE HANDLING PER BMP C151
14. SAWCUTTING AND SURFACING POLLUTION PREVENTION PER BMP C152
15. MATERIAL DELIVERY, STORAGE, AND CONTAINMENT PER BMP C153
16. MATERIALS ON HAND PER BMP C150

X TREES TO BE REMOVED

PROJECT CONTACTS

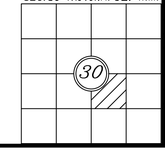
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7466 E MERCER WAY
MERCER ISLAND, WA 98040

APPLICANT/ARCHITECT:
BAYLIS ARCHITECTS
10801 MAIN ST, #110
BELLEVUE, WA 98004
BRANDB@BAYLISARCHITECTS.COM
425-679-5202

CIVIL ENGINEER:
EASTSIDE CONSULTANTS, INC
1320 NW MALL STREET, STE B
ISSAQUAH, WA 98027
PHONE: 425.392.5351
CONTACT: RONALD FREDERIKSEN

RONALD S. FREDERIKSEN
STATE OF WASHINGTON
22905
REGISTERED
PROFESSIONAL ENGINEER
7/9/2025

INDEX LOCATION:
SEC. 30 T. 24 N. R. 5 E. W.M.



REVISIONS	BY	DATE
REVISED PER CITY MARKUPS	REH	7/9/25

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TESC PLAN

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

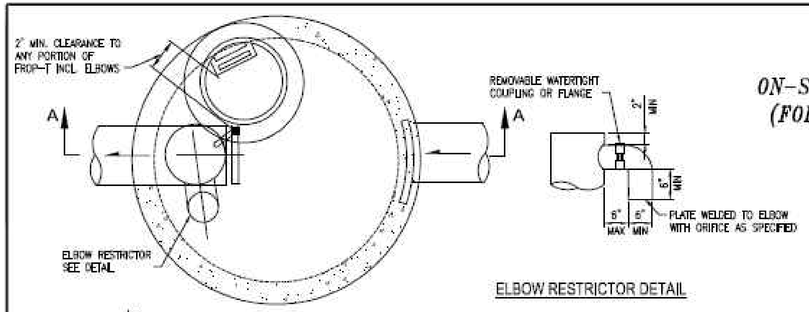
EASTSIDE CONSULTANTS, INC.
ENGINEERS - SURVEYORS
1320 N.W. MALL STREET, SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO.	24014
DATE	3/24
SCALE	1"=10'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	R.S.F.
APPROVED	R.S.F.

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

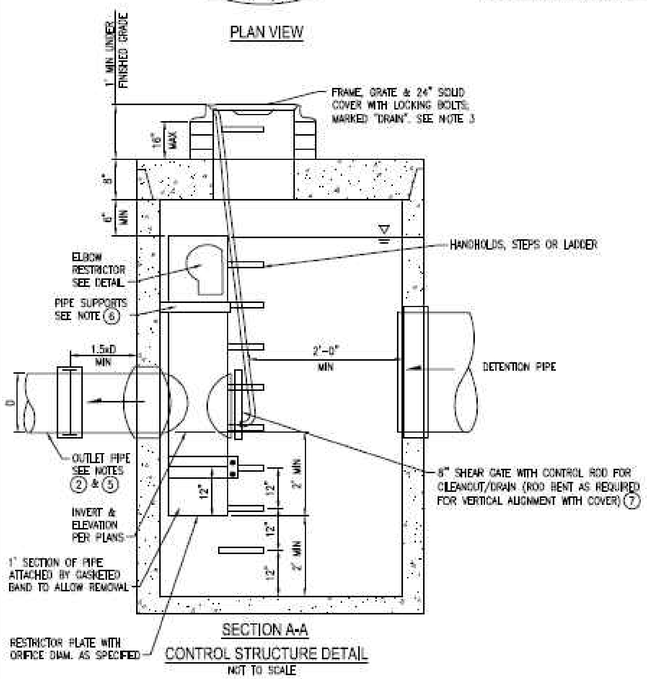
ATTACHMENT 1
CITY OF MERCER ISLAND
ON-SITE DETENTION SYSTEM WORKSHEET
(FOR NEW PLUS REPLACED IMPERVIOUS AREA OF 9,500 SF OR LESS)



PLAN VIEW

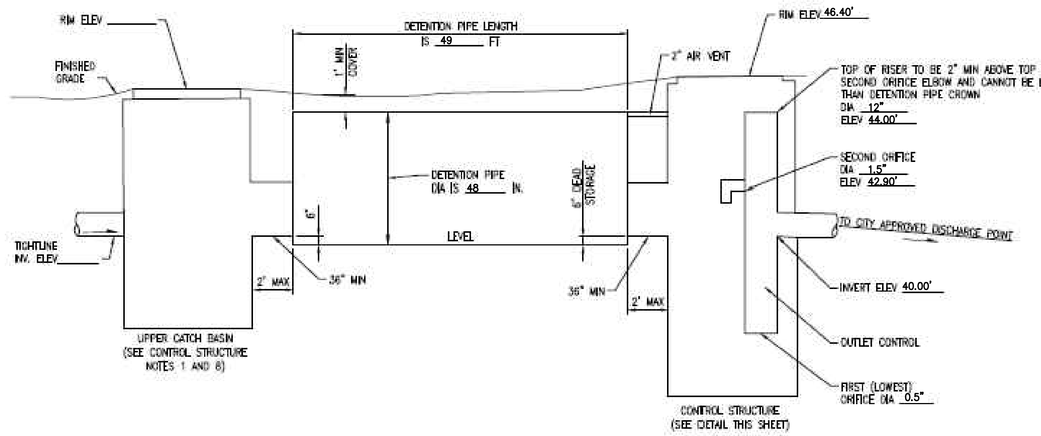
ELBOW RESTRICTOR DETAIL

OWNER: RAMAIYAH & SUBRAMANIAN	ADDRESS: 7466 E. MERCER WAY MERCER ISLAND, WA	PREPARED BY: EASTSIDE CONSULTANTS	
PERMIT #: TBD		PHONE: 425-392-5351	
		DATE: 7/9/2025	
NEW PLUS REPLACED IMPERVIOUS SURFACE AREA (SF): 4,270	DETENTION PIPE DIA (INCH): 48	DETENTION PIPE LENGTH (FT): 49	ORIFICE #1 DIA 0.5" INCH, ELEV 38.00'
SOIL TYPE: C	PIPE MATERIAL: CMP		ORIFICE #2 DIA 1.5" INCH, ELEV 42.9"



SECTION A-A

CONTROL STRUCTURE DETAIL
NOT TO SCALE



ON-SITE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)

CONTROL STRUCTURE NOTES

1. USE A MINIMUM OF A 54 IN. DIAM. TYPE 2 CATCH BASIN. THE ACTUAL SIZE IS DEPENDENT ON CONNECTING PIPE MATERIAL AND DIAMETER.
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT, NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
6. PROVIDE AT LEAST ONE 3 X 0.050 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION 20132A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION), IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED. A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED. THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT. ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.
8. THE UPPER CATCH BASIN IS REQUIRED IF THE LENGTH OF THE DETENTION PIPE IS GREATER THAN 50 FT.

ON-SITE DETENTION SYSTEM NOTES:

1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING, LINED CORRUGATED POLYETHYLENE PIPE (LDPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36); CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.
4. FOOTING DRAINS SHALL NOT BE CONNECTED TO THE DETENTION SYSTEM.



7/9/2025

REVISIONS	BY	DATE
REVISED PER CITY MARKUPS	A	7/9/25

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DRAINAGE DETAIL

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1500 N. MAIN ST., SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

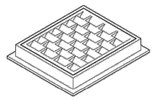
JOB NO.	24014
DATE	3/24
SCALE	1"=10'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	R.S.F.
APPROVED	R.S.F.

SHEET 7 OF 16

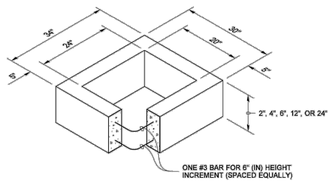
RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

DRAWN BY: FERN LIDDELL



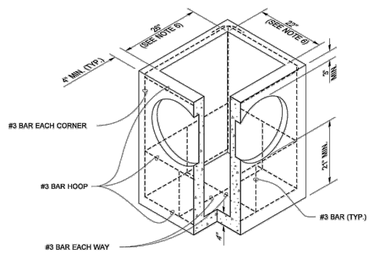
FRAME AND VANED GRATE



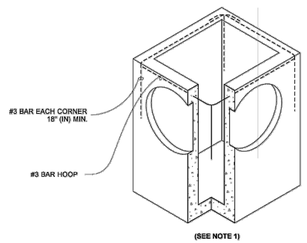
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP ★ (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



PRECAST BASE SECTION



ALTERNATIVE PRECAST BASE SECTION

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.

JULIE HEILMAN STATE OF WASHINGTON 41819 REGISTERED PROFESSIONAL ENGINEER

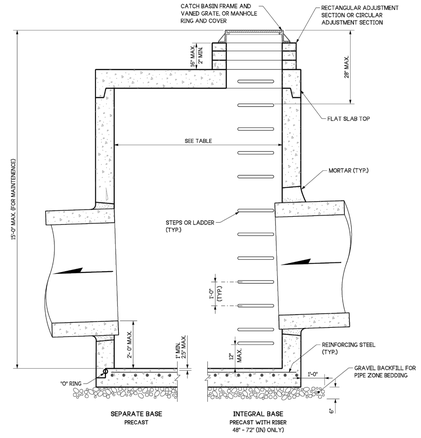
Julie Heilman 2020.09.01 07:52:50 -07'00'

CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-03

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Roark, Steve Digitally signed by Roark, Steve Date: 2020.09.09 09:45:23 -07'00'
STATE DESIGN ENGINEER
Washington State Department of Transportation



NOTES:

1. No steps are required when height is 4' or less.
2. The bottom of the precast catch basin may be sloped to facilitate cleaning.
3. The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
4. 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**.
5. Pipe allowances will vary depending on the pipe material used. Contact the Region Hydraulics Engineer for assistance.

CATCH BASIN DIMENSIONS				
CATCH BASIN DIAMETER	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"
72"	6"	8"	60"	12"
84"	8"	12"	72"	12"
96"	8"	12"	84"	12"
120"	10"	12"	96"	12"
144"	12"	12"	108"	12"

PIPE ALLOWANCES					
CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER				
	CONCRETE	ALL METAL	CPSSP ① PP ④	SOLID WALL PVC ②	PROFILE WALL PVC ③
48"	24"	30"	24"	30"	30"
54"	30"	36"	30"	36"	36"
60"	36"	42"	36"	42"	42"
72"	42"	54"	42"	48"	48"
84"	54"	60"	54"	48"	48"
96"	60"	72"	60"	48"	48"
120"	66"	84"	60"	48"	48"
144"	78"	96"	60"	48"	48"

① Corrugated Polyethylene Storm Sewer Pipe (See Standard Specification Section 9-05.20)
② (See Standard Specification Section 9-05.12(1))
③ (See Standard Specification Section 9-05.12(2))
④ Polypropolyne Pipe (See Standard Specification Section 9-05.24)

JULIE HEILMAN STATE OF WASHINGTON 41819 REGISTERED PROFESSIONAL ENGINEER

Aug 23, 2023

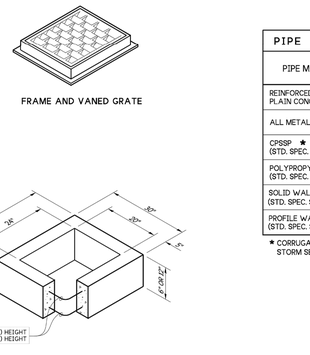
CATCH BASIN TYPE 2

STANDARD PLAN B-10.20-03

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Aug 23, 2023
STATE DESIGN ENGINEER
Washington State Department of Transportation

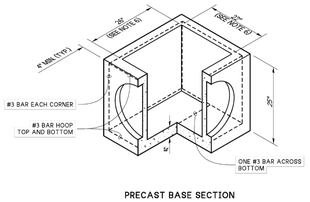
DRAWN BY: FERN LIDDELL



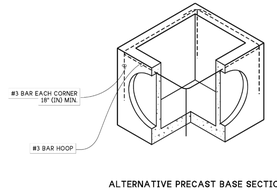
RECTANGULAR ADJUSTMENT SECTION

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER (INCHES)
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP ★ (STD. SPEC. SECT. 9-05.20)	12"
POLYPROPYLENE (STD. SPEC. SECT. 9-05.24)	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



PRECAST BASE SECTION



ALTERNATIVE PRECAST BASE SECTION
(SEE NOTE 1)

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 18" (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 up or down. The frame may be cast into the adjustment section.
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 inlet has been placed.
8. Pipe allowances will vary depending on pipe material used. Contact the Region Hydraulic Engineer for assistance.

JULIE HEILMAN STATE OF WASHINGTON 41819 REGISTERED PROFESSIONAL ENGINEER

Aug 23, 2023

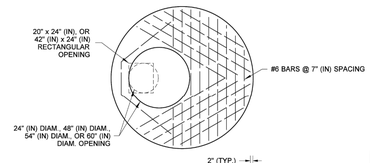
CONCRETE INLET

STANDARD PLAN B-25.60-03

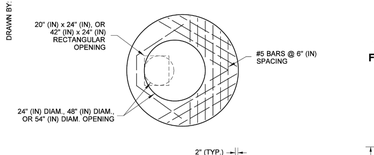
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Aug 23, 2023
STATE DESIGN ENGINEER
Washington State Department of Transportation

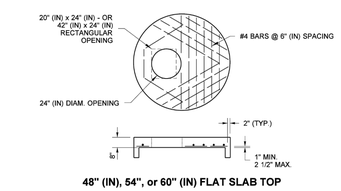
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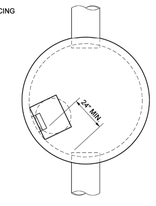
84" (IN) or 96" (IN) FLAT SLAB TOP



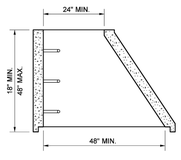
72" (IN) FLAT SLAB TOP



48" (IN), 54", or 60" (IN) FLAT SLAB TOP



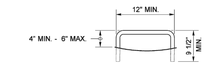
TYPICAL ORIENTATION FOR ACCESS AND STEPS



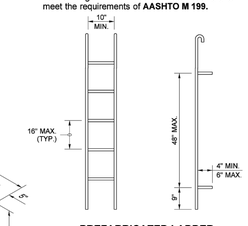
ECCENTRIC CONE SECTION

NOTE

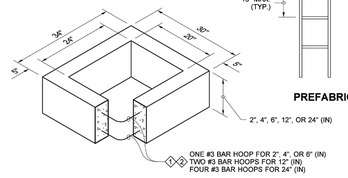
1. Ladder rungs for manholes and catch basins shall meet the requirements of **AASHTO M 199.**



STEP



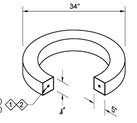
PREFABRICATED LADDER



RECTANGULAR ADJUSTMENT SECTION

① As an acceptable alternative to rebar, wire mesh having a minimum area of 0.12 square inches per foot may be used for adjustment sections.

② As an acceptable alternative to conventional steel reinforcment, manufacturers shall use Synthetic Structural Fibers meeting the requirements of **Standard Specification Section 9-05.50(10)**.



CIRCULAR ADJUSTMENT SECTION

For rectangular and circular adjustment sections, approved alternate material compositions are acceptable in lieu of precast concrete designs

JULIE HEILMAN STATE OF WASHINGTON 41819 REGISTERED PROFESSIONAL ENGINEER

Wenatchee, Idaho
Jun 25 2017 3:01 PM

MISCELLANEOUS DETAILS FOR DRAINAGE STRUCTURES

STANDARD PLAN B-30.90-02

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
STATE DESIGN ENGINEER
Washington State Department of Transportation

REVISIONS	BY	DATE
REVISED PER CITY MARKUPS	REH	7/9/25

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RONALD S. FREDERICKSEN STATE OF WASHINGTON 29057 REGISTERED PROFESSIONAL ENGINEER

7/9/2025

DRAINAGE DETAILS

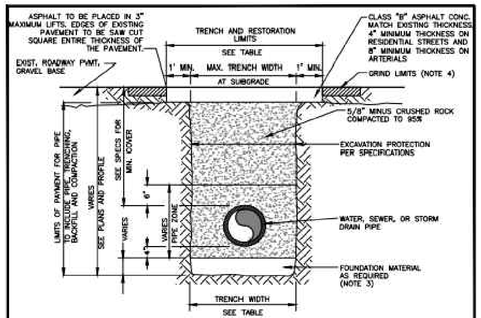
RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

EASTSIDE CONSULTANTS, INC.
ENGINEERS - SURVEYORS
1520 NW MALL ST., SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO.	24014
DATE	3/24
SCALE	1"=20'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	RSF
APPROVED	RSF

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

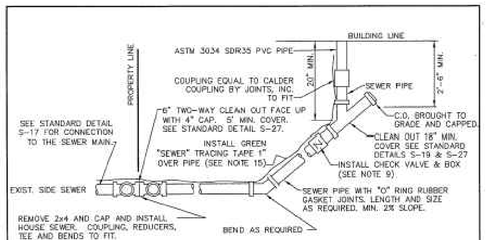


WIDTH TRENCH			
PIPE SIZE	PIPE ZONE MAX. TRENCH WIDTH	MAX. TRENCH WIDTH AT SUBGRADE	MAX. RESTORATION WIDTH AT SURFACE
WATER SERVICES	2'-0"	2'-0"	4'-0"
4" OR 6"	2'-2"	3'-0"	5'-0"
8"	2'-4"	4'-0"	6'-0"
10"	2'-6"	4'-0"	6'-0"
12"	2'-8"	4'-6"	6'-6"
16"	3'-0"	5'-0"	7'-0"

NOTES
1. CALL IN LOCATES TWO BUSINESS DAYS BEFORE YOU DIG. (1-800-424-5555)
2. IN RIGHT-OF-WAY USE 100% 5/8 MINUS CRUSHED ROCK FOR BEDDING, PIPE ZONE AND BACKFILL
3. FOUNDATION MATERIAL SHALL BE 1 ¼" MINUS CRUSHED ROCK OR OTHER AGGREGATE AS APPROVED BY CITY ENGINEER.
4. GRIND AND OVERLAY LIMITS SHALL EXTEND A MINIMUM OF 10' PAST THE END OF TRENCH AREAS.
5. SEAL ALL FINAL PATCHING AND PAVING SEAMS WITH LIQUID ASPHALT, SQUEEGEE OR MOP THE SEALER. COVER WITH DRY SAND.

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
TRENCH SECTION

3-29-2021	NO SCALE	W-3
		APPROVED

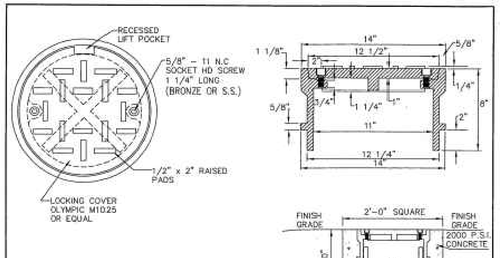


BUILDING CONNECTION

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
		APPROVED

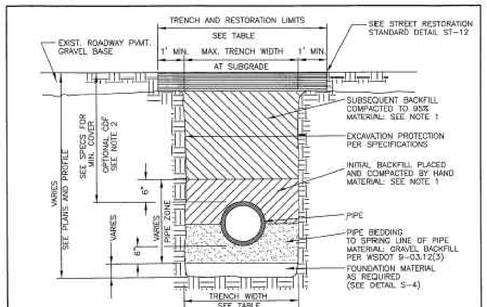


FOR PVC PIPE

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
		APPROVED



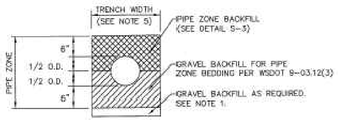
TRENCH WIDTH			
PIPE SIZE	PIPE ZONE MAX. TRENCH WIDTH	MAX. TRENCH WIDTH AT SUBGRADE	MAX. RESTORATION WIDTH AT SURFACE
SIDE SEWER	2'-0"	2'-0"	6'-0"
4" OR 6"	2'-2"	3'-0"	8'-0"
8"	2'-4"	4'-0"	8'-0"
10"	2'-6"	4'-0"	8'-0"
12"	2'-8"	4'-6"	8'-6"

NOTES
1. ALL TRENCH BACKFILL IN PUBLIC RIGHT-OF-WAY OR ROADWAY AREAS SHALL BE CRUSHED SURFACING PER WSDOT 9-09.9(3) OR BANK RUN GRAVEL PER WSDOT 9-03.19, COMPACTED IN 6" LIFTS.
2. CDF FOR BACKFILL MAY BE REQUIRED BY CITY ENGINEER WHEN PROPER COMPACTION AROUND EXISTING UTILITIES MAY NOT BE POSSIBLE. CDF SHALL BE PER WSDOT 2-09.3(1)E.
3. SEE S-4 FOR PIPE BEDDING DETAILS.

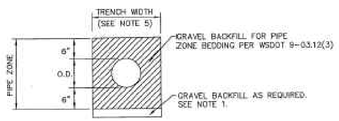
CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER
SEWER TRENCH DETAIL

6-5-2009	NO SCALE	S-3
		APPROVED

BEDDING FOR RIGID PIPE MATERIAL



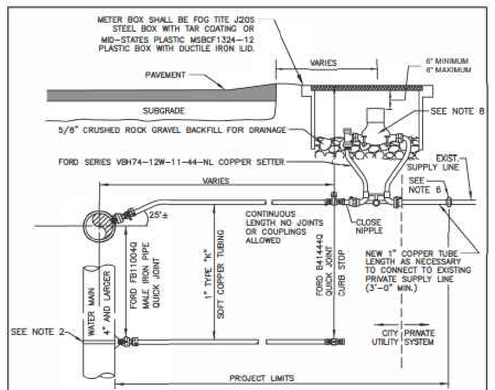
BEDDING FOR FLEXIBLE PIPE MATERIAL



NOTES
1. EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL. REPLACE WITH GRAVEL BACKFILL PER WSDOT 9-03.12(3) AS DIRECTED BY THE CITY ENGINEER.
2. PROVIDE UNIFORM SUPPORT UNDER BARREL.
3. HAND TAMP UNDER HAUNCHES.
4. COMPACT BEDDING AND BACKFILL MATERIAL TO 95% MAX. DENSITY EXCEPT DIRECTLY OVER PIPE. HAND TAMP ONLY UNTIL MINIMUM 6" ABOVE TOP OF PIPE.
5. 30" MAXIMUM TRENCH WIDTH FOR PIPE UP TO AND INCLUDING 12", FOR PIPE LARGER THAN 12", USE O.D. PLUS 16".

CITY OF MERCER ISLAND
STANDARD DETAILS
SEWER
PIPE BEDDING

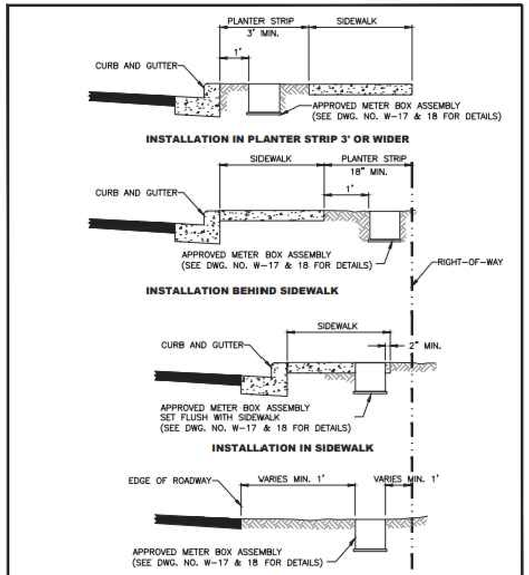
6-5-2009	NO SCALE	S-4
		APPROVED



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

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
1" WATER METER INSTALLATION

05-02-2023	NO SCALE	W-13
		APPROVED



CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
WATER METER PLACEMENT

3-20-2006	NO SCALE	W-16
		APPROVED

REVISIONS	BY	DATE
REVISED PER CITY MARKUPS	REH	7/9/25

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DRAINAGE, WATER, AND SEWER DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

EASTSIDE CONSULTANTS, INC.
ENGINEERS - SURVEYORS
1507 NW MALL ST. SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO.	24014
DATE	3/24
SCALE	1"=20'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	RSF
APPROVED	RSF

SHEET 9 OF 16

ROBERT S. FREDERIKSEN
STATE OF WASHINGTON
39053
REGISTERED PROFESSIONAL ENGINEER
7/9/2025

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

Maintenance Standards

If the fence has been damaged or visibility reduced, it shall be repaired or replaced immediately and visibility restored.

BMP C105: Stabilized Construction Access

Purpose

Stabilized construction accesses are established to reduce the amount of sediment transported onto paved roads outside the project site by vehicles or equipment. This is done by constructing a stabilized pad of quarry spalls at entrances and exits for project sites.

Conditions of Use

Construction accesses shall be stabilized wherever traffic will be entering or leaving a construction site if paved roads or other paved areas are within 1,000 feet of the site.

For residential subdivision construction sites, provide a stabilized construction access for each residence, rather than only at the main subdivision entrance. Stabilized surfaces shall be of sufficient length/width to provide vehicle access/parking, based on lot size and configuration.

On large commercial, highway, and road projects, the designer should include enough extra materials in the contract to allow for additional stabilized accesses not shown in the initial Construction SWPPP. It is difficult to determine exactly where access to these projects will take place; additional materials will enable the contractor to install them where needed.

Design and Installation Specifications

See Figure II-3.1: Stabilized Construction Access for details. Note: the 100' minimum length of the access shall be reduced to the maximum practicable size when the size or configuration of the site does not allow the full length (100').

Construct stabilized construction accesses with a 12-inch thick pad of 4-inch to 8-inch quarry spalls, a 4-inch course of asphalt treated base (ATB), or use existing pavement. Do not use crushed concrete, cement, or calcium chloride for construction access stabilization because these products raise pH levels in stormwater and concrete discharge to waters of the State is prohibited.

A separation geotextile shall be placed under the spalls to prevent fine sediment from pumping up into the rock pad. The geotextile shall meet the standards listed in Table II-3.2: Stabilized Construction Access Geotextile Standards.

Table II-3.2: Stabilized Construction Access Geotextile Standards

Geotextile Property	Required Value
Grab Tensile Strength (ASTM D4751)	200 psi min.

Table II-3.2: Stabilized Construction Access Geotextile Standards (continued)

Geotextile Property	Required Value
Grab Tensile Elongation (ASTM D4632)	30% max.
Mullen Burst Strength (ASTM D3786-80a)	400 psi min.
AOS (ASTM D4751)	20-45 (U.S. standard sieve size)

- Consider early installation of the first lift of asphalt in areas that will be paved; this can be used as a stabilized access. Also consider the installation of excess concrete as a stabilized access. During large concrete pours, excess concrete is often available for this purpose.
- Fencing (see BMP C103: High-Visibility Fence) shall be installed as necessary to restrict traffic to the construction access.
- Whenever possible, the access shall be constructed on a firm, compacted subgrade. This can substantially increase the effectiveness of the pad and reduce the need for maintenance.
- Construction accesses should avoid crossing existing sidewalks and back of walk drains if at all possible. If a construction access must cross a sidewalk or back of walk drain, the full length of the sidewalk and back of walk drain must be covered and protected from sediment leaving the site.

Alternative Material Specification

WSDOT has raised safety concerns about the Quarry Spall rock specified above. WSDOT observes that the 4-inch to 8-inch rock sizes can become trapped between Dually truck tires, and then released off-site at highway speeds. WSDOT has chosen to use a modified specification for the rock while continuously verifying that the Stabilized Construction Access remains effective. To remain effective, the BMP must prevent sediment from migrating off site. To date, there has been no performance testing to verify operation of this new specification. Jurisdictions may use the alternative specification, but must perform increased off-site inspection if they use, or allow others to use, it.

Stabilized Construction Accesses may use material that meets the requirements of WSDOT's *Standard Specifications for Road, Bridge, and Municipal Construction* Section 9-03.9(1) (WSDOT, 2016) for ballast except for the following special requirements.

The grading and quality requirements are listed in Table II-3.3: Stabilized Construction Access Alternative Material Requirements.

Table II-3.3: Stabilized Construction Access Alternative Material Requirements

Sieve Size	Percent Passing
2½"	99-100

Table II-3.3: Stabilized Construction Access Alternative Material Requirements (continued)

Sieve Size	Percent Passing
2"	65-100
¾"	40-80
No. 4	5 max.
No. 100	0-2
% Fracture	75 min.

- All percentages are by weight.
- The sand equivalent value and dust ratio requirements do not apply.
- The fracture requirement shall be at least one fractured face and will apply the combined aggregate retained on the No. 4 sieve in accordance with FOP for AASHTO T 335.

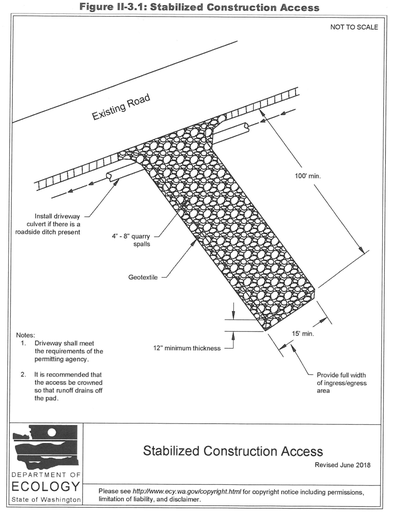
Maintenance Standards

Quarry spalls shall be added if the pad is no longer in accordance with the specifications.

- If the access is not preventing sediment from being tracked onto pavement, then alternative measures to keep the streets free of sediment shall be used. This may include replacement/cleaning of the existing quarry spalls, street sweeping, an increase in the dimensions of the access, or the installation of BMP C106: Wheel Wash.
- Any sediment that is tracked onto pavement shall be removed by shoveling or street sweeping. The sediment collected by sweeping shall be removed or stabilized on site. The pavement shall not be cleaned by washing down the street, except when high efficiency sweeping is ineffective and there is a threat to public safety. If it is necessary to wash the streets, the construction of a small sump to contain the wash water shall be considered. The sediment would then be washed into the sump where it can be controlled.
- Perform street sweeping by hand or with a high efficiency sweeper. Do not use a non-high efficiency mechanical sweeper because this creates dust and throws soils into storm systems or conveyance ditches.
- Any quarry spalls that are loosened from the pad, which end up on the roadway shall be removed immediately.
- If vehicles are entering or exiting the site at points other than the construction access(es), BMP C103: High-Visibility Fence shall be installed to control traffic.

- Upon project completion and site stabilization, all construction accesses intended as permanent access for maintenance shall be permanently stabilized.

Figure II-3.1: Stabilized Construction Access



Crushed rock, gravel base, etc., shall be added as required to maintain a stable driving surface and to stabilize any areas that have eroded.

Following construction, these areas shall be restored to pre-construction condition or better to prevent future erosion.

Perform street cleaning at the end of each day or more often if necessary.

BMP C120: Temporary and Permanent Seeding

Purpose

Seeding reduces erosion by stabilizing exposed soils. A well-established vegetative cover is one of the most effective methods of reducing erosion.

Conditions of Use

Use seeding throughout the project on disturbed areas that have reached final grade or that will remain unworked for more than 30 days.

The optimum seeding windows for western Washington are April 1 through June 30 and September 1 through October 1.

Between July 1 and August 30 seeding requires irrigation until 75 percent grass cover is established.

Between October 1 and March 30 seeding requires a cover of mulch or an erosion control blanket until 75 percent grass cover is established.

Review all disturbed areas in late August to early September and complete all seeding by the end of September. Otherwise, vegetation will not establish itself enough to provide more than average protection.

Mulch is required at all times for seeding because it protects seeds from heat, moisture loss, and transport due to runoff. Mulch can be applied on top of the seed or simultaneously by hydroseeding. See BMP C121: Mulching for specifications.

Seed and mulch all disturbed areas not otherwise vegetated at final site stabilization. Final stabilization means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as pavement, riprap, gabions, or geotextiles) which will prevent erosion. See BMP T5.13: Post-Construction Soil Quality and Depth.

Design and Installation Specifications

General

- Install channels intended for vegetation before starting major earthwork and hydroseed with a Bonded Fiber Matrix. For vegetated channels that will have high flows, install erosion control blankets over the top of hydroseed. Before allowing water to flow in vegetated channels, establish 75 percent vegetation cover. If vegetated channels cannot be established by seed

before water flow; install sod in the channel bottom — over top of hydromulch and erosion control blankets.

- Confirm the installation of all required surface water control measures to prevent seed from washing away.
- Hydroseed applications shall include a minimum of 1,500 pounds per acre of mulch with 3 percent tackifier. See BMP C121: Mulching for specifications.
- Areas that will have seeding only and not landscaping may need compost or meal-based mulch included in the hydroseed in order to establish vegetation. Re-install native topsoil on the disturbed soil surface before application. See BMP T5.13: Post-Construction Soil Quality and Depth.
- When installing seed via hydroseeding operations, only about 1/3 of the seed actually ends up in contact with the soil surface. This reduces the ability to establish a good stand of grass quickly. To overcome this, consider increasing seed quantities by up to 50 percent.
- Enhance vegetation establishment by dividing the hydromulch operation into two phases:
  - Phase 1- Install all seed and fertilizer with 25-30 percent mulch and tackifier onto soil in the first lift.
  - Phase 2- Install the rest of the mulch and tackifier over the first lift.

  Or, enhance vegetation by:
  - Installing the mulch, seed, fertilizer, and tackifier in one lift.
  - Spread or blow straw over the top of the hydromulch at a rate of 800-1000 pounds per acre.
  - Hold straw in place with a standard tackifier.

  Both of these approaches will increase cost moderately but will greatly improve and enhance vegetative establishment. The increased cost may be offset by the reduced need for:
  - Irrigation.
  - Reapplication of mulch.
  - Repair of failed slope surfaces.

  This technique works with standard hydromulch (1,500 pounds per acre minimum) and Bonded Fiber Matrix/ Mechanically Bonded Fiber Matrix (BFM/MBFMs) (3,000 pounds per acre minimum).
- Seed may be installed by hand if:
  - Temporary and covered by straw, mulch, or topsoil.
  - Permanent in small areas (usually less than 1 acre) and covered with mulch, topsoil, or erosion blankets.
- The seed mixes listed in Table II-3.4: Temporary and Permanent Seed Mixes include

recommended mixes for both temporary and permanent seeding.

- Apply these mixes, with the exception of the wet area seed mix, at a rate of 120 pounds per acre. This rate can be reduced if soil amendments or slow-release fertilizers are used. Apply the wet area seed mix at a rate of 60 pounds per acre.
- Consult the local suppliers or the local conservation district for their recommendations. The appropriate mix depends on a variety of factors, including location, exposure, soil type, slope, and expected foot traffic. Alternative seed mixes approved by the local authority may be used, depending on the soil type and hydrology of the area.

Table II-3.4: Temporary and Permanent Seed Mixes

Common Name	Latin Name	% Weight	% Purity	% Germination
Temporary Erosion Control Seed Mix A standard mix for areas requiring a temporary vegetative cover.				
Chewings or annual blue grass	*Festuca rubra var. commutata or Poa anna*	40	98	90
Perennial rye	*Lolium perenne*	50	98	90
Redtop or colonial bentgrass	*Agrostis alba or Agrostis tenuis*	5	92	85
White dutch clover	*Trifolium repens*	5	98	90
Landscaping Seed Mix A recommended mix for landscaping seed.				
Perennial rye blend	*Lolium perenne*	70	98	90
Chewings and red fescue blend	*Festuca rubra var. commutata or Festuca rubra*	30	98	90
Low-Growing Turf Seed Mix A turf seed mix for dry situations where there is no need for watering. This mix requires very little maintenance.				
Dwarf tall fescue (several varieties)	*Festuca arundinacea var.*	45	98	90
Dwarf perennial rye (Barclay)	*Lolium perenne var. barclay*	30	98	90
Red fescue	*Festuca rubra*	20	98	90
Colonial bentgrass	*Agrostis tenuis*	5	98	90
Bioswale Seed Mix A seed mix for bioswales and other intermittently wet areas.				
Tall or meadow fes-	*Festuca arundin-*	75-80	98	90



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TESC DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
520 KIRKLAND WAY, SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO. 24014
DATE 3/24
SCALE 1"=20'
DESIGNED R.E.H.
DRAWN R.E.H.
CHECKED R.S.F.
APPROVED R.S.F.

SHEET 10 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

Table II-3.4: Temporary and Permanent Seed Mixes (continued)

Common Name	Latin Name	% Weight	% Purity	% Germination
cue	*acea or Festuca elatior*			
Seaside/Creeping bentgrass	*Agrostis palustris*	10-15	92	85
Redtop bentgrass	*Agrostis alba* or *Agrostis gigantea*	5-10	90	80
Wet Area Seed Mix				
A low-growing, relatively non-invasive seed mix appropriate for very wet areas that are not regulated wetlands. Consult Hydraulic Permit Authority (HPA) for seed mixes if applicable.				
Tall or meadow fescue	*Festuca arundinacea* or *Festuca elatior*	60-70	98	90
Seaside/Creeping bentgrass	*Agrostis palustris*	10-15	98	85
Meadow foxtail	*Alopecurus pratensis*	10-15	90	80
Alsike clover	*Trifolium hybridum*	1-6	98	90
Redtop bentgrass	*Agrostis alba*	1-6	92	85
Meadow Seed Mix				
A recommended meadow seed mix for infrequently maintained areas or non-maintained areas where colonization by native plants is desirable. Likely applications include rural road and utility right-of-way. Seeding should take place in September or very early October in order to obtain adequate establishment prior to the winter months. Consider the appropriateness of clover, a fairly invasive species, in the mix. Amending the soil can reduce the need for clover.				
Redtop or Oregon bentgrass	*Agrostis alba* or *Agrostis oregonensis*	20	92	85
Red fescue	*Festuca rubra*	70	98	90
White dutch clover	*Trifolium repens*	10	98	90

Roughening and Rototilling

- The seedbed should be firm and rough. Roughen all soil no matter what the slope. Track walk slopes before seeding if engineering purposes require compaction. Backblading or smoothing of slopes greater than 4H:1V is not allowed if they are to be seeded.
- Restoration-based landscape practices require deeper incorporation than that provided by a simple single-pass rototilling treatment. Wherever practical, initially rip the subgrade to improve long-term permeability, infiltration, and water inflow qualities. At a minimum,

permanent areas shall use soil amendments to achieve organic matter and permeability performance defined in engineered soil/landscape systems. For systems that are deeper than 8 inches complete the rototilling process in multiple lifts, or prepare the engineered soil system per specifications and place to achieve the specified depth.

Fertilizers

- Conducting soil tests to determine the exact type and quantity of fertilizer is recommended. This will prevent the over-application of fertilizer.
- Organic matter is the most appropriate form of fertilizer because it provides nutrients (including nitrogen, phosphorus, and potassium) in the least water-soluble form.
- In general, use 10-4-6 N-P-K (nitrogen-phosphorus-potassium) fertilizer at a rate of 90 pounds per acre. Always use slow-release fertilizers because they are more efficient and have fewer environmental impacts. Do not add fertilizer to the hydromulch machine, or agitate, more than 20 minutes before use. Too much agitation destroys the slow-release coating.
- There are numerous products available that take the place of chemical fertilizers. These include several with seaweed extracts that are beneficial to soil microbes and organisms. If 100 percent cottonseed meal is used as the mulch in hydroseed, chemical fertilizer may not be necessary. Cottonseed meal provides a good source of long-term, slow-release, available nitrogen.

Bonded Fiber Matrix and Mechanically Bonded Fiber Matrix

- On steep slopes use Bonded Fiber Matrix (BFM) or Mechanically Bonded Fiber Matrix (MBFM) products. Apply BFM/MBFM products at a minimum rate of 3,000 pounds per acre with approximately 10 percent tackifier. Achieve a minimum of 95 percent soil coverage during application. Numerous products are available commercially. Most products require 24-36 hours to cure before rainfall and cannot be installed on wet or saturated soils. Generally, products come in 40-50 pound bags and include all necessary ingredients except for seed and fertilizer.
- Install products per manufacturer's instructions.
- BFMs and MBFMs provide good alternatives to blankets in most areas requiring vegetation establishment. Advantages over blankets include:
  - BFM and MBFMs do not require surface preparation.
  - Helicopters can assist in installing BFM and MBFMs in remote areas.
  - On slopes steeper than 2.5H:1V, blanket installers may require ropes and harnesses for safety.
  - Installing BFM and MBFMs can save at least $1,000 per acre compared to blankets.

Maintenance Standards

Reseed any seeded areas that fail to establish at least 75 percent cover (100 percent cover for areas that receive sheet or concentrated flows). If reseeding is ineffective, use an alternate method such as sodding, mulching, nets, or blankets.

- Reseed and protect by mulch any areas that experience erosion after achieving adequate cover. Reseed and protect by mulch any eroded area.
- Supply seeded areas with adequate moisture, but do not water to the extent that it causes runoff.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology's website at:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

BMP C121: Mulching

Purpose

Mulching soils provides immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures. There are a variety of mulches that can be used. This section discusses only the most common types of mulch.

Conditions of Use

As a temporary cover measure, mulch should be used:

- For less than 30 days on disturbed areas that require cover.
- At all times for seeded areas, especially during the wet season and during the hot summer months.
- During the wet season on slopes steeper than 3H:1V with more than 10 feet of vertical relief.

Mulch may be applied at any time of the year and must be refreshed periodically.

For seeded areas, mulch may be made up of 100 percent:

- cottonseed meal;
- fibers made of wood, recycled cellulose, hemp, or kenaf;

- compost;
- or blends of these.

Tackifier shall be plant-based, such as guar or alpha plantago, or chemical-based such as polyacrylamide or polymers.

Generally, mulches come in 40-50 pound bags. Seed and fertilizer are added at time of application.

Recycled cellulose may contain polychlorinated biphenyl (PCBs). Ecology recommends that products should be evaluated for PCBs prior to use.

Refer to BMP C126: Polyacrylamide (PAM) for Soil Erosion Protection for conditions of use. PAM shall not be directly applied to water or allowed to enter a water body.

Any mulch or tackifier product used shall be installed per the manufacturer's instructions.

Design and Installation Specifications

For mulch materials, application rates, and specifications, see Table II-3.6: Mulch Standards and Guidelines. Consult with the local supplier or the local conservation district for their recommendations. Increase the application rate until the ground is 95% covered (i.e. not visible under the mulch layer). Note: Thickness may be increased for disturbed areas in or near sensitive areas or other areas highly susceptible to erosion.

Where the option of "Compost" is selected, it should be a coarse compost that meets the size gradations listed in Table II-3.5: Size Gradations of Compost as Mulch Material when tested in accordance with Test Method 02.02-B found in *Test Methods for the Examination of Composting and Compost* (Thompson, 2001).

Table II-3.5: Size Gradations of Compost as Mulch Material

Sieve Size	Percent Passing
3"	100%
1"	90% - 100%
3/4"	70% - 100%
1/4"	40% - 100%

Mulch used within the ordinary high-water mark of surface waters should be selected to minimize potential flotation of organic matter. Composted organic materials have higher specific gravities (densities) than straw, wood, or chipped material. Consult the Hydraulic Permit Authority (HPA) for mulch mixes if applicable.

Maintenance Standards

The thickness of the mulch cover must be maintained.

Any areas that experience erosion shall be remulched and/or protected with a net or blanket. If the erosion problem is drainage related, then the problem shall be fixed and the eroded area remulched.

Table II-3.6: Mulch Standards and Guidelines

Mulch Material	Guideline	Description
Straw	Quality Standards	Air-dried; free from undesirable seed and coarse material.
	Application Rates	2"-3" thick; 5 bales per 1,000 sf or 2-3 tons per acre
	Remarks	Cost-effective protection when applied with adequate thickness. Hand-application generally requires greater thickness than blown straw. The thickness of straw may be reduced by half when used in conjunction with seeding. In windy areas straw must be held in place by crimping, using a tackifier, or covering with netting. Blown straw always has to be held in place with a tackifier as even light winds will blow it away. Straw, however, has several deficiencies that should be considered when selecting mulch materials. It often introduces and/or encourages the propagation of weed species and it has no significant long-term benefits It should also not be used within the ordinary high-water elevation of surface waters (due to flotation).
Hydromulch	Quality Standards	No growth inhibiting factors.
	Application Rates	Approx. 35-45 lbs per 1,000 sf or 1,500 - 2,000 lbs per acre
	Remarks	Shall be applied with hydromulcher. Shall not be used without seed and tackifier unless the application rate is at least doubled. Fibers longer than about 3/4 – 1 inch clog hydromulch equipment. Fibers should be kept to less than 3/4 inch.
Compost	Quality Standards	No visible water or dust during handling. Must be produced per WAC 173-350, Solid Waste Handling Standards, but may have up to 35% biosolids.
	Application Rates	2" thick min.; approx. 100 tons per acre (approx. 750 lbs per cubic yard)
	Remarks	More effective control can be obtained by increasing thickness to 3". Excellent mulch for protecting final grades until landscaping because it can be directly seeded or tilled into soil as an amendment. Compost used for mulch has a coarser size gradation than compost used for BMP C125: Topsoiling / Composting or BMP T5.13: Post-Construction Soil Quality and Depth. It is more stable and practical to use in wet areas and during rainy weather conditions. Do not use near wetlands or near phosphorous impaired water bodies.
Chipped Site Vegetation	Quality Standards	Gradations from fines to 6 inches in length for texture, variation, and interlocking properties. Include a mix of various sizes so that the average size is between 2- and 4- inches.
	Application Rates	2" thick min.;

Table II-3.6: Mulch Standards and Guidelines (continued)

Mulch Material	Guideline	Description
	Remarks	This is a cost-effective way to dispose of debris from clearing and grubbing, and it eliminates the problems associated with burning. Generally, it should not be used on slopes above approx. 10% because of its tendency to be transported by runoff. It is not recommended within 200 feet of surface waters. If permanent seeding or planting is expected shortly after mulch, the decomposition of the chipped vegetation may tie up nutrients important to grass establishment. Note: thick application of this material over existing grass, herbaceous species, and some groundcovers could smother and kill vegetation.
Wood-Based Mulch	Quality Standards	No visible water or dust during handling. Must be purchased from a supplier with a Solid Waste Handling Permit or one exempt from solid waste regulations.
	Application Rates	2" thick min.; approx. 100 tons per acre (approx. 750 lbs. per cubic yard)
	Remarks	This material is often called "wood straw" or "hog fuel". The use of mulch ultimately improves the organic matter in the soil. Special caution is advised regarding the source and composition of wood-based mulches. Its preparation typically does not provide any weed seed control, so evidence of residual vegetation in its composition or known inclusion of weed plants or seeds should be monitored and prevented (or minimized).
Wood Strand Mulch	Quality Standards	A blend of loose, long, thin wood pieces derived from native conifer or deciduous trees with high length-to-width ratio.
	Application Rates	2" thick min.
	Remarks	Cost-effective protection when applied with adequate thickness. A minimum of 95-percent of the wood strand shall have lengths between 2 and 10-inches, with a width and thickness between 1/16 and 1/2-inches. The mulch shall not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust or wood shavings shall not be used as mulch. [Specification 9-14.4(4) from the *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT, 2016)

BMP C122: Nets and Blankets

Purpose

Erosion control nets and blankets are intended to prevent erosion and hold seed and mulch in place on steep slopes and in channels so that vegetation can become well established. In addition, some nets and blankets can be used to permanently reinforce turf to protect drainage ways during high flows.

BMP C123: Plastic Covering

Purpose

Plastic covering provides immediate, short-term erosion protection to slopes and disturbed areas.

Conditions of Use

Plastic covering may be used on disturbed areas that require cover measures for less than 30 days, except as stated below.

- Plastic is particularly useful for protecting cut and fill slopes and stockpiles. However, the relatively rapid breakdown of most polyethylene sheeting makes it unsuitable for applications greater than six months.
- Due to rapid runoff caused by plastic covering, do not use this method upslope of areas that might be adversely impacted by concentrated runoff. Such areas include steep and/or unstable slopes.
- Plastic sheeting may result in increased runoff volumes and velocities, requiring additional on-site measures to counteract the increases. Creating a trough with wattles or other material can convey clean water away from these areas.
- To prevent undercutting, trench and backfill rolled plastic covering products.
- Although the plastic material is inexpensive to purchase, the cost of installation, maintenance, removal, and disposal add to the total costs of this BMP.
- Whenever plastic is used to protect slopes, install water collection measures at the base of the slope. These measures include plastic-covered berms, channels, and pipes used to convey clean rainwater away from bare soil and disturbed areas. Do not mix clean runoff from a plastic covered slope with dirty runoff from a project.
- Other uses for plastic include:
  - Temporary ditch liner.
  - Pond liner in temporary sediment pond.
  - Liner for bermed temporary fuel storage area if plastic is not reactive to the type of fuel being stored.
  - Emergency slope protection during heavy rains.
  - Temporary drainpipe ("elephant trunk") used to direct water.

Design and Installation Specifications

- Plastic slope cover must be installed as follows:
  1. Run plastic up and down the slope, not across the slope.
  2. Plastic may be installed perpendicular to a slope if the slope length is less than 10 feet.



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TESC DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
520 KIRKLAND WAY, SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO. 24014
DATE 3/24
SCALE 1"=20'
DESIGNED R.E.H.
DRAWN R.E.H.
CHECKED R.S.F.
APPROVED R.S.F.

SHEET 11 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

3. Provide a minimum of 8-inch overlap at the seams.
4. On long or wide slopes, or slopes subject to wind, tape all seams.
5. Place plastic into a small (12-inch wide by 6-inch deep) slot trench at the top of the slope and backfill with soil to keep water from flowing underneath.
6. Place sand filled burlap or geotextile bags every 3 to 6 feet along seams and tie them together with twine to hold them in place.
7. Inspect plastic for rips, tears, and open seams regularly and repair immediately. This prevents high velocity runoff from contacting bare soil, which causes extreme erosion.
8. Sandbags may be lowered into place tied to ropes. However, all sandbags must be staked in place.

- Plastic sheeting shall have a minimum thickness of 0.06 millimeters.
- If erosion at the toe of a slope is likely, a gravel berm, riprap, or other suitable protection shall be installed at the toe of the slope in order to reduce the velocity of runoff.

Maintenance Standards

- Torn sheets must be replaced and open seams repaired.
- Completely remove and replace the plastic if it begins to deteriorate due to ultraviolet radiation.
- Completely remove plastic when no longer needed.
- Dispose of old tires used to weight down plastic sheeting appropriately.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology's website at:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

BMP C124: Sodding

Purpose

The purpose of sodding is to establish turf for immediate erosion protection and to stabilize drainage paths where concentrated overland flow will occur.

pipe, sandbags, geotextile fabric and steel "T" posts.

- Materials should be stockpiled and readily available before any site clearing, grubbing, or earthwork begins. A large contractor or project proponent could keep a stockpile of materials that are available for use on several projects.
- If storage space at the project site is at a premium, the contractor could maintain the materials at their office or yard. The office or yard must be less than an hour from the project site.

Design and Installation Specifications

Depending on project type, size, complexity, and length, materials and quantities will vary. A good minimum list of items that will cover numerous situations includes:

- Clear Plastic, 6 mil
- Drainpipe, 6 or 8 inch diameter
- Sandbags, filled
- Straw Bales for mulching
- Quarry Spalls
- Washed Gravel
- Geotextile Fabric
- Catch Basin Inserts
- Steel "T" Posts
- Silt fence material
- Straw Wattles

Maintenance Standards

- All materials with the exception of the quarry spalls, steel "T" posts, and gravel should be kept covered and out of both sun and rain.
- Re-stock materials as needed.

BMP C151: Concrete Handling

Purpose

Concrete work can generate process water and slurry that contain fine particles and high pH, both of which can violate water quality standards in the receiving water. Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate concrete, concrete process water, and concrete slurry from entering waters of the State.

Conditions of Use

Any time concrete is used, utilize these management practices. Concrete construction project components include, but are not limited to:

- Curbs
- Sidewalks
- Roads
- Bridges
- Foundations
- Floors
- Runways

Disposal options for concrete, in order of preference are:

1. Off-site disposal
2. Concrete wash-out areas (see BMP C154: Concrete Washout Area)
3. De minimus washout to formed areas awaiting concrete

Design and Installation Specifications

- Wash concrete truck drums at an approved off-site location or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground (including formed areas awaiting concrete), or into storm drains, open ditches, streets, or streams. Refer to BMP C154: Concrete Washout Area for information on concrete washout areas.
  - Return unused concrete remaining in the truck and pump to the originating batch plant for recycling. Do not dump excess concrete on site, except in designated concrete washout areas as allowed in BMP C154: Concrete Washout Area.
- Wash small concrete handling equipment (e.g. hand tools, screeds, shovels, rakes, floats, trowels, and wheelbarrows) into designated concrete washout areas or into formed areas awaiting concrete pour.
- At no time shall concrete be washed off into the footprint of an area where an infiltration feature will be installed.
- Wash equipment difficult to move, such as concrete paving machines, in areas that do not directly drain to natural or constructed stormwater conveyance or potential infiltration areas.
- Do not allow washwater from areas, such as concrete aggregate driveways, to drain directly (without detention or treatment) to natural or constructed stormwater conveyances.
- Contain washwater and leftover product in a lined container when no designated concrete washout areas (or formed areas, allowed as described above) are available. Dispose of contained concrete and concrete washwater (process water) properly.

- Always use forms or solid barriers for concrete pours, such as pilings, within 15-feet of surface waters.
- Refer to BMP C252: Treating and Disposing of High pH Water for pH adjustment requirements.
- Refer to the Construction Stormwater General Permit (CSWGP) for pH monitoring requirements if the project involves one of the following activities:
  - Significant concrete work (as defined in the CSWGP).
  - The use of soils amended with (but not limited to) Portland cement-treated base, cement kiln dust or fly ash.
  - Discharging stormwater to segments of water bodies on the 303(d) list (Category 5) for high pH.

Maintenance Standards

Check containers for holes in the liner daily during concrete pours and repair the same day.

BMP C152: Sawcutting and Surfacing Pollution Prevention

Purpose

Sawcutting and surfacing operations generate slurry and process water that contains fine particles and high pH (concrete cutting), both of which can violate the water quality standards in the receiving water. Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate process water and slurry created through sawcutting or surfacing from entering waters of the State.

Conditions of Use

Utilize these management practices anytime sawcutting or surfacing operations take place. Sawcutting and surfacing operations include, but are not limited to:

- Sawing
- Coring
- Grinding
- Roughening
- Hydro-demolition
- Bridge and road surfacing

Design and Installation Specifications

- Vacuum slurry and cuttings during cutting and surfacing operations.
- Slurry and cuttings shall not remain on permanent concrete or asphalt pavement overnight.
- Slurry and cuttings shall not drain to any natural or constructed drainage conveyance including stormwater systems. This may require temporarily blocking catch basins.
- Dispose of collected slurry and cuttings in a manner that does not violate ground water or surface water quality standards.
- Do not allow process water generated during hydro-demolition, surface roughening or similar operations to drain to any natural or constructed drainage conveyance including stormwater systems. Dispose of process water in a manner that does not violate ground water or surface water quality standards.
- Handle and dispose of cleaning waste material and demolition debris in a manner that does not cause contamination of water. Dispose of sweeping material from a pick-up sweeper at an appropriate disposal site.

Maintenance Standards

Continually monitor operations to determine whether slurry, cuttings, or process water could enter waters of the state. If inspections show that a violation of water quality standards could occur, stop operations and immediately implement preventive measures such as berms, barriers, secondary containment, and/or vacuum trucks.

BMP C153: Material Delivery, Storage, and Containment

Purpose

Prevent, reduce, or eliminate the discharge of pollutants to the stormwater system or watercourses from material delivery and storage. Minimize the storage of hazardous materials on-site, store materials in a designated area, and install secondary containment.

Conditions of Use

Use at construction sites with delivery and storage of the following materials:

- Petroleum products such as fuel, oil and grease
- Soil stabilizers and binders (e.g., Polyacrylamide)
- Fertilizers, pesticides and herbicides
- Detergents
- Asphalt and concrete compounds

thickness is 2 feet.

- For outlets at the base of steep slope pipes (pipe slope greater than 10 percent), use an engineered energy dissipator.
- Filter fabric or erosion control blankets should always be used under riprap to prevent scour and channel erosion. See BMP C122: Nets and Blankets.

- Bank stabilization, bioengineering, and habitat features may be required for disturbed areas. This work may require a Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife. See I-2.11 Hydraulic Project Approvals.

Maintenance Standards

- Inspect and repair as needed.
- Add rock as needed to maintain the intended function.
- Clean energy dissipator if sediment builds up.

BMP C220: Inlet Protection

Purpose

Inlet protection prevents coarse sediment from entering drainage systems prior to permanent stabilization of the disturbed area.

Conditions of Use

Use inlet protection at inlets that are operational before permanent stabilization of the disturbed areas that contribute runoff to the inlet. Provide protection for all storm drain inlets downslope and within 500 feet of a disturbed or construction area, unless those inlets are preceded by a sediment trapping BMP.

Also consider inlet protection for lawn and yard drains on new home construction. These small and numerous drains coupled with lack of gutters can add significant amounts of sediment into the roof drain system. If possible, delay installing lawn and yard drains until just before landscaping, or cap these drains to prevent sediment from entering the system until completion of landscaping. Provide 18-inches of sod around each finished lawn and yard drain.

Table II-3.10: Storm Drain Inlet Protection lists several options for inlet protection. All of the methods for inlet protection tend to plug and require a high frequency of maintenance. Limit contributing drainage areas for an individual inlet to one acre or less. If possible, provide emergency overflows with additional end-of-pipe treatment where stormwater ponding would cause a hazard.

Table II-3.10: Storm Drain Inlet Protection

Type of Inlet Protection	Emergency Overflow	Applicable for Paved/ Earthen Surfaces	Conditions of Use
Drop Inlet Protection			
Excavated drop inlet protection	Yes, temporary flooding may occur	Earthen	Applicable for heavy flows. Easy to maintain. Large area requirement: 30'x30'/acre
Block and gravel drop inlet protection	Yes	Paved or Earthen	Applicable for heavy concentrated flows. Will not pond.
Gravel and wire drop inlet protection	No	Paved or Earthen	Applicable for heavy concentrated flows. Will pond. Can withstand traffic.
Catch basin filters	Yes	Paved or Earthen	Frequent maintenance required.
Curb Inlet Protection			
Curb inlet protection with wooden weir	Small capacity overflow	Paved	Used for sturdy, more compact installation.
Block and gravel curb inlet protection	Yes	Paved	Sturdy, but limited filtration.
Culvert Inlet Protection			
Culvert inlet sediment trap	N/A	N/A	18 month expected life.

Design and Installation Specifications

Excavated Drop Inlet Protection

Excavated drop inlet protection consists of an excavated impoundment around the storm drain inlet. Sediment settles out of the stormwater prior to entering the storm drain. Design and installation specifications for excavated drop inlet protection include:

- Provide a depth of 1-2 ft as measured from the crest of the inlet structure.
- Slope sides of excavation should be no steeper than 2H:1V.
- Minimum volume of excavation is 35 cubic yards.
- Shape the excavation to fit the site, with the longest dimension oriented toward the longest inflow area.
- Install provisions for draining to prevent standing water.
- Clear the area of all debris.

- Grade the approach to the inlet uniformly.
- Drill weep holes into the side of the inlet.
- Protect weep holes with screen wire and washed aggregate.
- Seal weep holes when removing structure and stabilizing area.
- Build a temporary dike, if necessary, to the down slope side of the structure to prevent bypass flow.

Block and Gravel Filter

A block and gravel filter is a barrier formed around the inlet with standard concrete blocks and gravel. See Figure II-3.17: Block and Gravel Filter. Design and installation specifications for block gravel filters include:

- Provide a height of 1 to 2 feet above the inlet.
- Recess the first row of blocks 2-inches into the ground for stability.
- Support subsequent courses by placing a pressure treated wood 2x4 through the block opening.
- Do not use mortar.
- Lay some blocks in the bottom row on their side to allow for dewatering the pool.
- Place hardware cloth or comparable wire mesh with ½-inch openings over all block openings.
- Place gravel to just below the top of blocks on slopes of 2H:1V or flatter.
- An alternative design is a gravel berm surrounding the inlet, as follows:
  - Provide a slope of 3H:1V on the upstream side of the berm.
  - Provide a slope of 2H:1V on the downstream side of the berm.
  - Provide a 1-foot wide level stone area between the gravel berm and the inlet.
  - Use stones 3 inches in diameter or larger on the upstream slope of the berm.
  - Use gravel ½- to ¾-inch at a minimum thickness of 1-foot on the downstream slope of the berm.



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RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

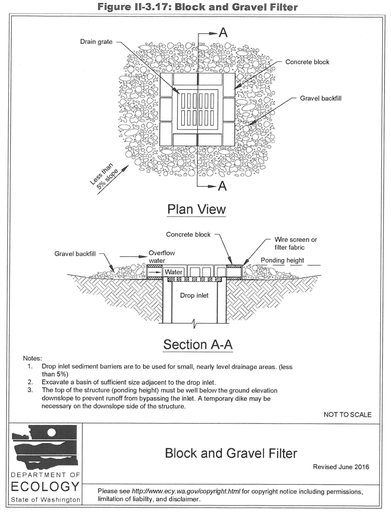
ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1507 NW MALL ST, SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO. 24014
DATE 3/24
SCALE 1"=20'
DESIGNED R.E.H.
DRAWN R.E.H.
CHECKED R.S.F.
APPROVED R.S.F.

RAMAIYAH AND SUBRAMANIAN RESIDENCE

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MERCER ISLAND, WASHINGTON

Figure II-3.17: Block and Gravel Filter



Gravel and Wire Mesh Filter

Gravel and wire mesh filters are gravel barriers placed over the top of the inlet. This method does not provide an overflow. Design and installation specifications for gravel and wire mesh filters include:

- Use a hardware cloth or comparable wire mesh with ½-inch openings.
  - 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.
- Place coarse aggregate over the wire mesh.
  - Provide at least a 12-inch depth of aggregate over the entire inlet opening and extend at least 18-inches on all sides.

Catch Basin Filters

Catch basin filters are designed by manufacturers for construction sites. The limited sediment storage capacity increases the amount of inspection and maintenance required, which may be daily for heavy sediment loads. To reduce maintenance requirements, combine a catch basin filter with another type of inlet protection. This type of inlet protection provides flow bypass without overflow and therefore may be a better method for inlets located along active rights-of-way. Design and installation specifications for catch basin filters include:

- Provides 5 cubic feet of storage.
- Requires dewatering provisions.
- Provides a high-flow bypass that will not clog under normal use at a construction site.
- Insert the catch basin filter in the catch basin just below the grating.

Curb Inlet Protection with Wooden Weir

Curb inlet protection with wooden weir is an option that consists of a barrier formed around a curb inlet with a wooden frame and gravel. Design and installation specifications for curb inlet protection with wooden weirs include:

- Use wire mesh with ½-inch openings.
- Use extra strength filter cloth.
- Construct a frame.
- Attach the wire and filter fabric to the frame.
- Pile coarse washed aggregate against the wire and fabric.
- Place weight on the frame anchors.

Block and Gravel Curb Inlet Protection

Block and gravel curb inlet protection is a barrier formed around a curb inlet with concrete blocks and gravel. See Figure II-3.18: Block and Gravel Curb Inlet Protection. Design and installation specifications for block and gravel curb inlet protection include:

- Use wire mesh with ½-inch openings.
- Place two concrete blocks on their sides abutting the curb at either side of the inlet opening. These are spacer blocks.
- Place a 2x4 stud through the outer holes of each spacer block to align the front blocks.
- Place blocks on their sides across the front of the inlet and abutting the spacer blocks.
- Place wire mesh over the outside vertical face.
- Pile coarse aggregate against the wire to the top of the barrier.

BMP C233: Silt Fence

Purpose

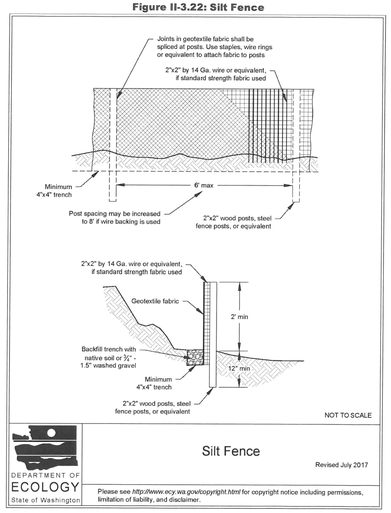
Silt fence reduces the transport of coarse sediment from a construction site by providing a temporary physical barrier to sediment and reducing the runoff velocities of overland flow.

Conditions of Use

Silt fence may be used downslope of all disturbed areas.

- Silt fence shall prevent sediment carried by runoff from going beneath, through, or over the top of the silt fence, but shall allow the water to pass through the fence.
- Silt fence is not intended to treat concentrated flows, nor is it intended to treat substantial amounts of overland flow. Convey any concentrated flows through the drainage system to a sediment trapping BMP.
- Do not construct silt fences in streams or use in V-shaped ditches. Silt fences do not provide an adequate method of silt control for anything deeper than sheet or overland flow.

Figure II-3.22: Silt Fence



Design and Installation Specifications

- Use in combination with other construction stormwater BMPs.
- Maximum slope steepness (perpendicular to the silt fence line) 1H:1V.
- Maximum sheet or overland flow path length to the silt fence of 100 feet.
- Do not allow flows greater than 0.5 cfs.
- Use geotextile fabric that meets the following standards. All geotextile properties listed below are minimum average roll values (i.e., the test result for any sampled roll in a lot shall meet or exceed the values shown in Table II-3.11: Geotextile Fabric Standards for Silt Fence):

Table II-3.11: Geotextile Fabric Standards for Silt Fence

Geotextile Property	Minimum Average Roll Value
Polymeric Mesh AOS (ASTM D4751)	0.60 mm maximum for slit film woven (#30 sieve). 0.30 mm maximum for all other geotextile types (#50 sieve). 0.15 mm minimum for all fabric types (#100 sieve).
Water Permittivity (ASTM D4491)	0.02 sec^{-1} minimum
Grab Tensile Strength (ASTM D4632)	180 lbs. Minimum for extra strength fabric. 100 lbs minimum for standard strength fabric.
Grab Tensile Strength (ASTM D4632)	30% maximum
Ultraviolet Resistance (ASTM D4355)	70% minimum

- Support standard strength geotextiles with wire mesh, chicken wire, 2-inch x 2-inch wire, safety fence, or jute mesh to increase the strength of the geotextile. Silt fence materials are available that have synthetic mesh backing attached.
- Silt fence material shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0°F to 120°F.
- One-hundred percent biodegradable silt fence is available that is strong, long lasting, and can be left in place after the project is completed, if permitted by the local jurisdiction.
- Refer to Figure II-3.22: Silt Fence for standard silt fence details. Include the following Standard Notes for silt fence on construction plans and specifications:
  1. The Contractor shall install and maintain temporary silt fences at the locations shown in the Plans.
  2. Construct silt fences in areas of clearing, grading, or drainage prior to starting those activities.

3. The silt fence shall have a 2-feet min. and a 2½-feet max. height above the original ground surface.
4. The geotextile fabric shall be sewn together at the point of manufacture to form fabric lengths as required. Locate all sewn seams at support posts. Alternatively, two sections of silt fence can be overlapped, provided that the overlap is long enough and that the adjacent silt fence sections are close enough together to prevent silt laden water from escaping through the fence at the overlap.
5. Attach the geotextile fabric on the up-slope side of the posts and secure with staples, wire, or in accordance with the manufacturer's recommendations. Attach the geotextile fabric to the posts in a manner that reduces the potential for tearing.
6. Support the geotextile fabric with wire or plastic mesh, dependent on the properties of the geotextile selected for use. If wire or plastic mesh is used, fasten the mesh securely to the up-slope side of the posts with the geotextile fabric up-slope of the mesh.
7. Mesh support, if used, shall consist of steel wire with a maximum mesh spacing of 2-inches, or a prefabricated polymeric mesh. The strength of the wire or polymeric mesh shall be equivalent to or greater than 180 lbs. grab tensile strength. The polymeric mesh must be as resistant to the same level of ultraviolet radiation as the geotextile fabric it supports.
8. Bury the bottom of the geotextile fabric 4-inches min. below the ground surface. Backfill and tamp soil in place over the buried portion of the geotextile fabric, so that no flow can pass beneath the silt fence and scouring cannot occur. When wire or polymeric back-up support mesh is used, the wire or polymeric mesh shall extend into the ground 3-inches min.
9. Drive or place the silt fence posts into the ground 18-inches min. A 12–inch min. depth is allowed if topsoil or other soft subgrade soil is not present and 18-inches cannot be reached. Increase fence post min. depths by 6 inches if the fence is located on slopes of 3H:1V or steeper and the slope is perpendicular to the fence. If required post depths cannot be obtained, the posts shall be adequately secured by bracing or guying to prevent overturning of the fence due to sediment loading.
10. Use wood, steel or equivalent posts. The spacing of the support posts shall be a maximum of 6-feet. Posts shall consist of either:
    - Wood with minimum dimensions of 2 inches by 2 inches by 3 feet. Wood shall be free of defects such as knots, splits, or gouges.
    - No. 6 steel rebar or larger.
    - ASTM A 120 steel pipe with a minimum diameter of 1-inch.
    - U, T, L, or C shape steel posts with a minimum weight of 1.35 lbs./ft.
    - Other steel posts having equivalent strength and bending resistance to the post sizes listed above.
11. Locate silt fences on contour as much as possible, except at the ends of the fence,

where the fence shall be turned uphill such that the silt fence captures the runoff water and prevents water from flowing around the end of the fence.

12. If the fence must cross contours, with the exception of the ends of the fence, place check dams perpendicular to the back of the fence to minimize concentrated flow and erosion. The slope of the fence line where contours must be crossed shall not be steeper than 3H:1V.
    - Check dams shall be approximately 1-foot deep at the back of the fence. Check dams shall be continued perpendicular to the fence at the same elevation until the top of the check dam intercepts the ground surface behind the fence.
    - Check dams shall consist of crushed surfacing base course, gravel backfill for walls, or shoulder ballast. Check dams shall be located every 10 feet along the fence where the fence must cross contours.
- Refer to Figure II-3.23: Silt Fence Installation by Slicing Method for slicing method details. The following are specifications for silt fence installation using the slicing method:
  1. The base of both end posts must be at least 2- to 4-inches above the top of the geotextile fabric on the middle posts for ditch checks to drain properly. Use a hand level or string level, if necessary, to mark base points before installation.
  2. Install posts 3- to 4-feet apart in critical retention areas and 6- to 7-feet apart in standard applications.
  3. Install posts 24-inches deep on the downstream side of the silt fence, and as close as possible to the geotextile fabric, enabling posts to support the geotextile fabric from upstream water pressure.
  4. Install posts with the nipples facing away from the geotextile fabric.
  5. Attach the geotextile fabric to each post with three ties, all spaced within the top 8-inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1-inch vertically apart. Each tie should be positioned to hang on a post nipple when tightening to prevent sagging.
  6. Wrap approximately 6-inches of the geotextile fabric around the end posts and secure with 3 ties.
  7. No more than 24-inches of a 36-inch geotextile fabric is allowed above ground level.
  8. Compact the soil immediately next to the geotextile fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first and then each side twice for a total of four trips. Check and correct the silt fence installation for any deviation before compaction. Use a flat-bladed shovel to tuck the fabric deeper into the ground if necessary.

ROGER S. FREDERICKSEN
STATE OF WASHINGTON
39053
REGISTERED PROFESSIONAL ENGINEER

7/9/2025

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MERCER ISLAND, WA 98040

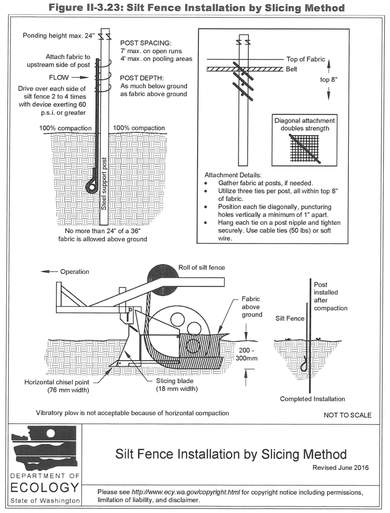
ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1520 NW MALL ST, SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4976

JOB NO. 24014
DATE 3/24
SCALE 1"=20'
DESIGNED R.E.H.
DRAWN R.E.H.
CHECKED R.S.F.
APPROVED R.S.F.

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Figure II-3.23: Silt Fence Installation by Slicing Method



Maintenance Standards

- Repair any damage immediately.
- Intercept and convey all evident concentrated flows uphill of the silt fence to a sediment trapping BMP.
- Check the uphill side of the silt fence for signs of the fence clogging and acting as a barrier to flow and then causing channelization of flows parallel to the fence. If this occurs, replace the fence and remove the trapped sediment.
- Remove sediment deposits when the deposit reaches approximately one-third the height of the silt fence, or install a second silt fence.
- Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.

BMP C234: Vegetated Strip

Purpose

Vegetated strips reduce the transport of coarse sediment from a construction site by providing a physical barrier to sediment and reducing the runoff velocities of overland flow.

Conditions of Use

- Vegetated strips may be used downslope of all disturbed areas.
- Vegetated strips are not intended to treat concentrated flows, nor are they intended to treat substantial amounts of overland flow. Any concentrated flows must be conveyed through the drainage system to BMP C241: Sediment Pond (Temporary) or other sediment trapping BMP. The only circumstance in which overland flow can be treated solely by a vegetated strip, rather than by a sediment trapping BMP, is when the following criteria are met (see Table II-3.12: Contributing Drainage Area for Vegetated Strips):

Table II-3.12: Contributing Drainage Area for Vegetated Strips

Average Contributing Area Slope	Average Contributing Area Percent Slope	Max Contributing area Flowpath Length
1.5H : 1V or flatter	67% or flatter	100 feet
2H : 1V or flatter	50% or flatter	115 feet
4H : 1V or flatter	25% or flatter	150 feet
6H : 1V or flatter	16.7% or flatter	200 feet
10H : 1V or flatter	10% or flatter	250 feet

BMP C101: Preserving Natural Vegetation

Purpose

The purpose of preserving natural vegetation is to reduce erosion wherever practicable. Limiting site disturbance is the single most effective method for reducing erosion. For example, conifers can hold up to about 50 percent of all rain that falls during a storm. Up to 20-30 percent of this rain may never reach the ground but is taken up by the tree or evaporates. Another benefit is that the rain held in the tree can be released slowly to the ground after the storm.

Conditions of Use

Natural vegetation should be preserved on steep slopes, near perennial and intermittent watercourses or swales, and on building sites in wooded areas.

- As required by local governments.
- Phase construction to preserve natural vegetation on the project site for as long as possible during the construction period.

Design and Installation Specifications

Natural vegetation can be preserved in natural clumps or as individual trees, shrubs and vines.

The preservation of individual plants is more difficult because heavy equipment is generally used to remove unwanted vegetation. The points to remember when attempting to save individual plants are:

- Is the plant worth saving? Consider the location, species, size, age, vigor, and the work involved. Local governments may also have ordinances to save natural vegetation and trees.
- Fence or clearly mark areas around trees that are to be saved. It is preferable to keep ground disturbance away from the trees at least as far out as the dripline.

Plants need protection from three kinds of injuries:

- *Construction Equipment* - This injury can be above or below the ground level. Damage results from scarring, cutting of roots, and compaction of the soil. Placing a fenced buffer zone around plants to be saved prior to construction can prevent construction equipment injuries.
- *Grade Changes* - Changing the natural ground level will alter grades, which affects the plant's ability to obtain the necessary air, water, and minerals. Minor fills usually do not cause problems although sensitivity between species does vary and should be checked. Trees can typically tolerate fill of 6 inches or less. For shrubs and other plants, the fill should be less.

  When there are major changes in grade, it may become necessary to supply air to the roots of plants. This can be done by placing a layer of gravel and a tile system over the roots before the fill is made. The tile system should be laid out on the original grade leading from a dry well around the tree trunk. The system should then be covered with small stones to allow air to circulate over the root area.

  Lowering the natural ground level can seriously damage trees and shrubs. The highest percentage of the plant roots are in the upper 12 inches of the soil and cuts of only 2-3 inches can cause serious injury. To protect the roots it may be necessary to terrace the immediate area around the plants to be saved. If roots are exposed, construction of retaining walls may be needed to keep the soil in place. Plants can also be preserved by leaving them on an undisturbed, gently sloping mound. To increase the chances for survival, it is best to limit grade changes and other soil disturbances to areas outside the dripline of the plant.
- *Excavations* - Protect trees and other plants when excavating for drainfields, power, water, and sewer lines. Where possible, the trenches should be routed around trees and large shrubs. When this is not possible, it is best to tunnel under them. This can be done with hand tools or with power augers. If it is not possible to route the trench around plants to be saved, then the following should be observed:
  - Cut as few roots as possible. When you have to cut, cut clean. Paint cut root ends with a wood dressing like asphalt base paint if roots will be exposed for more than 24-hours.
  - Backfill the trench as soon as possible.
  - Tunnel beneath root systems as close to the center of the main trunk to preserve most of the important feeder roots.

Some problems that can be encountered with a few specific trees are:

- Maple, Dogwood, Red alder, Western hemlock, Western red cedar, and Douglas fir do not readily adjust to changes in environment and special care should be taken to protect these trees.
- The windthrow hazard of Pacific silver fir and madrona is high, while that of Western hemlock is moderate. The danger of windthrow increases where dense stands have been thinned. Other species (unless they are on shallow, wet soils less than 20 inches deep) have a low windthrow hazard.
- Cottonwoods, maples, and willows have water-seeking roots. These can cause trouble in sewer lines and infiltration fields. On the other hand, they thrive in high moisture conditions that other trees would not.
- Thinning operations in pure or mixed stands of Grand fir, Pacific silver fir, Noble fir, Sitka spruce, Western red cedar, Western hemlock, Pacific dogwood, and Red alder can cause serious disease problems. Disease can become established through damaged limbs, trunks, roots, and freshly cut stumps. Diseased and weakened trees are also susceptible to insect attack.

Maintenance Standards

Inspect flagged and/or fenced areas regularly to make sure flagging or fencing has not been removed or damaged. If the flagging or fencing has been damaged or visibility reduced, it shall be repaired or replaced immediately and visibility restored.

If tree roots have been exposed or injured, "prune" cleanly with an appropriate pruning saw or loppers directly above the damaged roots and recover with native soils. Treatment of sap flowing trees (fir, hemlock, pine, soft maples) is not advised as sap forms a natural healing barrier.

BMP C102: Buffer Zones

Purpose

Creation of an undisturbed area or strip of natural vegetation or an established suitable planting that will provide a living filter to reduce soil erosion and stormwater runoff velocities.

Conditions of Use

Buffer zones are used along streams, wetlands and other bodies of water that need protection from erosion and sedimentation. Contractors can use vegetative buffer zone BMPs to protect natural swales and they can incorporate them into the natural landscaping of an area.

Do not use critical-areas buffer zones as sediment treatment areas. These areas shall remain completely undisturbed. The local permitting authority may expand the buffer widths temporarily to allow the use of the expanded area for removal of sediment.

The types of buffer zones can change the level of protection required as shown below:

Designated Critical Area Buffers - buffers that protect Critical Areas, as defined by the Washington State Growth Management Act, and are established and managed by the local permitting authority. These should not be disturbed and must protected with sediment control BMPs to prevent impacts. The local permitting authority may expand the buffer widths temporarily to allow the use of the expanded area for removal of sediment.

Vegetative Buffer Zones - areas that may be identified in undisturbed vegetation areas or managed vegetation areas that are outside any Designated Critical Area Buffer. They may be utilized to provide an additional sediment control area and/or reduce runoff velocities. If being used for preservation of natural vegetation, they should be arranged in clumps or strips. They can be used to protect natural swales and incorporated into the natural landscaping area.

Design and Installation Specifications

- Preserving natural vegetation or plantings in clumps, blocks, or strips is generally the easiest and most successful method.
- Leave all unstable steep slopes in natural vegetation.
- Mark clearing limits and keep all equipment and construction debris out of the natural areas and buffer zones. Steel construction fencing is the most effective method to protect sensitive areas and buffers. Alternatively, wire-backed silt fence on steel posts is marginally effective. Flagging alone is typically not effective.
- Keep all excavations outside the dripline of trees and shrubs.
- Do not push debris or extra soil into the buffer zone area because it will cause damage by burying and smothering vegetation.
- Vegetative buffer zones for streams, lakes or other waterways shall be established by the local permitting authority or other state or federal permits or approvals.

Maintenance Standards

Inspect the area frequently to make sure flagging remains in place and the area remains undisturbed. Replace all damaged flagging immediately. Remove all materials located in the buffer area that may impede the ability of the vegetation to act as a filter.

BMP C103: High-Visibility Fence

Purpose

High-visibility fencing is intended to:

- Restrict clearing to approved limits.
- Prevent disturbance of sensitive areas, their buffers, and other areas required to be left undisturbed.
- Limit construction traffic to designated construction entrances, exits, or internal roads.
- Protect areas where marking with survey tape may not provide adequate protection.

Conditions of Use

To establish clearing limits plastic, fabric, or metal fence may be used:

- At the boundary of sensitive areas, their buffers, and other areas required to be left uncleared.
- As necessary to control vehicle access to and on the site.

Design and Installation Specifications

High-visibility plastic fence shall be composed of a high-density polyethylene material and shall be at least four feet in height. Posts for the fencing shall be steel or wood and placed every 6 feet on center (maximum) or as needed to ensure rigidity. The fencing shall be fastened to the post every six inches with a polyethylene tie. On long continuous lengths of fencing, a tension wire or rope shall be used as a top stringer to prevent sagging between posts. The fence color shall be high-visibility orange. The fence tensile strength shall be 360 lbs/ft using the ASTM D4595 testing method.

If appropriate install fabric silt fence in accordance with BMP C233: Silt Fence to act as high-visibility fence. Silt fence shall be at least 3 feet high and must be highly visible to meet the requirements of this BMP.

Metal fences shall be designed and installed according to the manufacturer's specifications.

Metal fences shall be at least 3 feet high and must be highly visible.

Fences shall not be wired or stapled to trees.

Maintenance Standards

If the fence has been damaged or visibility reduced, it shall be repaired or replaced immediately and visibility restored.

BMP C105: Stabilized Construction Access

Purpose

Stabilized construction accesses are established to reduce the amount of sediment transported onto paved roads outside the project site by vehicles or equipment. This is done by constructing a stabilized pad of quarry spalls at entrances and exits for project sites.

Conditions of Use

Construction accesses shall be stabilized wherever traffic will be entering or leaving a construction site if paved roads or other paved areas are within 1,000 feet of the site.

For residential subdivision construction sites, provide a stabilized construction access for each residence, rather than only at the main subdivision entrance. Stabilized surfaces shall be of sufficient length/width to provide vehicle access/parking, based on lot size and configuration.

On large commercial, highway, and road projects, the designer should include enough extra materials in the contract to allow for additional stabilized accesses not shown in the initial Construction SWPPP. It is difficult to determine exactly where access to these projects will take place; additional materials will enable the contractor to install them where needed.

Design and Installation Specifications

See Figure II-3.1: Stabilized Construction Access for details. Note: the 100' minimum length of the access shall be reduced to the maximum practicable size when the size or configuration of the site does not allow the full length (100').

Construct stabilized construction accesses with a 12-inch thick pad of 4-inch to 8-inch quarry spalls, a 4-inch course of asphalt treated base (ATB), or use existing pavement. Do not use crushed concrete, cement, or calcium chloride for construction access stabilization because these products raise pH levels in stormwater and concrete discharge to waters of the State is prohibited.

A separation geotextile shall be placed under the spalls to prevent fine sediment from pumping up into the rock pad. The geotextile shall meet the standards listed in Table II-3.2: Stabilized Construction Access Geotextile Standards.

Table II-3.2: Stabilized Construction Access Geotextile Standards

Geotextile Property	Required Value
Grab Tensile Strength (ASTM D4751)	200 psi min.

- PAM designated for these uses should be "water soluble" or "linear" or "non-crosslinked". Cross-linked or water absorbent PAM, polymerized in highly acidic (pH<2) conditions, are used to maintain soil moisture content.
- The PAM anionic charge density may vary from 2-30 percent; a value of 18 percent is typical. Studies conducted by the United States Department of Agriculture (USDA)/ARS demonstrated that soil stabilization was optimized by using very high molecular weight (12-15 mg/-mole), highly anionic (>20% hydrolysis) PAM.
- PAM tackifiers are available and being used in place of guar and alpha plantago. Typically, PAM tackifiers should be used at a mixing rate of no more than 0.5-1 lb. per 1000 gallons of water in a hydromulch machine. Some tackifier product instructions say to use at an application rate of 3 – 5 lbs per acre, which can be too much. In addition, pump problems can occur at higher application rates due to increased viscosity.

Maintenance Standards

- PAM may be reapplied on actively worked areas after a 48-hour period.
- Reapplication is not required unless PAM treated soil is disturbed or unless turbidity levels show the need for an additional application. If PAM treated soil is left undisturbed, a reapplication may be necessary after two months. More PAM applications may be required for steep slopes, silty and clayey soils (USDA Classification Type "C" and "D" soils), long grades, and high precipitation areas. When PAM is applied first to bare soil and then covered with straw, a reapplication may not be necessary for several months.
- Loss of sediment and PAM may be a basis for penalties per RCW 90.48.080.
- PAM may affect the treatment efficiency of chitosan flocculent systems.

BMP C130: Surface Roughening

Purpose

Surface roughening aids in the establishment of vegetative cover, reduces runoff velocity, increases infiltration, and provides for sediment trapping through the provision of a rough soil surface. Horizontal depressions are created by operating a tiller or other suitable equipment on the contour or by leaving slopes in a roughened condition by not fine grading them.

Use this BMP in conjunction with other BMPs such as BMP C120: Temporary and Permanent Seeding, BMP C121: Mulching, or BMP C124: Sodding.

Conditions for Use

- All slopes steeper than 3H:1V and greater than 5 vertical feet require surface roughening to a depth of 2 to 4 inches prior to seeding.
- Areas that will not be stabilized immediately may be roughened to reduce runoff velocity until seeding takes place.



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TESC DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1630 NW MALL ST. SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO.	24014
DATE	3/24
SCALE	1"=20'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	R.S.F.
APPROVED	R.S.F.

SHEET 14 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

- Slopes with a stable rock face do not require roughening.
- Slopes where mowing is planned should not be excessively roughened.

Design and Installation Specifications

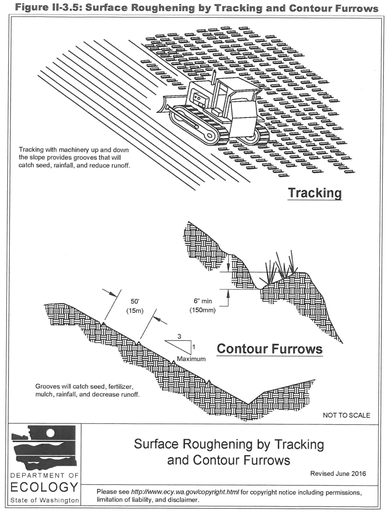
There are different methods for achieving a roughened soil surface on a slope, and the selection of an appropriate method depends upon the type of slope. Roughening methods include stair-step grading, grooving, contour furrows, and tracking. See Figure II-3.5: Surface Roughening by Tracking and Contour Furrows. Factors to be considered in choosing a roughening method are slope steepness, mowing requirements, and whether the slope is formed by cutting or filling.

- Disturbed areas that will not require mowing may be stair-step graded, grooved, or left rough after filling.
- Stair-step grading is particularly appropriate in soils containing large amounts of soft rock. Each "step" catches material that sloughs from above, and provides a level site where vegetation can become established. Stairs should be wide enough to work with standard earth moving equipment. Stair steps must be on contour or gullies will form on the slope.
- Areas that will be mowed (these areas should have slopes less steep than 3H:1V) may have small furrows left by disking, harrowing, raking, or seed-planting machinery operated on the contour.
- Graded areas with slopes steeper than 3H:1V but less than 2H:1V should be roughened before seeding. This can be accomplished in a variety of ways, including "track walking," or driving a crawler tractor up and down the slope, leaving a pattern of cleat imprints parallel to slope contours.
- Tracking is done by operating equipment up and down the slope to leave horizontal depressions in the soil.

Maintenance Standards

- Areas that are surface roughened should be seeded as quickly as possible.
- Regular inspections should be made of the area. If rills appear, they should be re-roughened and re-seeded immediately.

Figure II-3.5: Surface Roughening by Tracking and Contour Furrows



BMP C131: Gradient Terraces

Purpose

Gradient terraces reduce erosion damage by intercepting surface runoff and conveying it to a stable outlet at a non-erosive velocity.

Conditions of Use

Gradient terraces are normally limited to bare land having a water erosion problem. They should not be constructed on deep sands or on soils that are too stony, steep, or shallow to permit practical and economical installation and maintenance. Gradient terraces may only be used where suitable outlets are or will be made available.

Design and Installation Specifications

- The maximum vertical spacing of gradient terraces should be determined by the following method:

  VI = (0.8)s + y

  Where:

  VI = vertical interval in feet

  s = land rise per 100 feet, expressed in feet

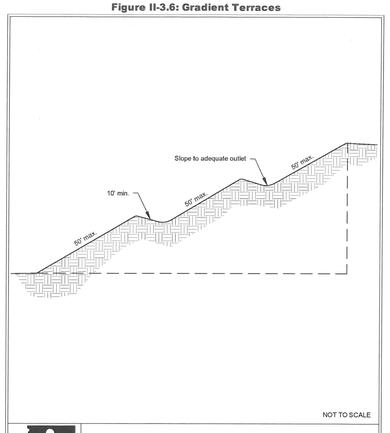
  y = a soil and cover variable with values from 1.0 to 4.0

  Values of "y" are influenced by soil erodibility and cover practices. The lower values are applicable to erosive soils where little to no residue is left on the surface. The higher value is applicable only to erosion-resistant soils where a large amount of residue (1½ tons of straw/acre equivalent) is on the surface.
- The minimum constructed cross-section should meet the design dimensions.
- The top of the constructed ridge should not be lower at any point than the design elevation plus the specified overfill for settlement. The opening at the outlet end of the terrace should have a cross section equal to that specified for the terrace channel.
- Channel grades may be either uniform or variable with a maximum grade of 0.6 feet per 100 feet length (0.6%). For short distances, terrace grades may be increased to improve alignment. The channel velocity should not exceed that which is nonerosive for the soil type.
- All gradient terraces should have adequate outlets. Such an outlet may be a grassed waterway, vegetated area, or tile outlet. In all cases the outlet must convey runoff from the terrace or terrace system to a point where the outflow will not cause damage. Vegetative cover and energy dissipators should be used in the outlet channel.
- The design elevation of the water surface of the terrace should not be lower than the design elevation of the water surface in the outlet at their junction, when both are operating at design flow.
- Vertical spacing determined by the above methods may be increased as much as 0.5 feet or 10 percent, whichever is greater, to provide better alignment or location, to avoid obstacles, to adjust for equipment size, or to reach a satisfactory outlet. The drainage area above the terrace should not exceed the area that would be drained by a terrace with normal spacing.
- The terrace should have enough capacity to handle the peak runoff expected from a 2-year, 24-hour design storm without overtopping.
- The terrace cross-section should be proportioned to fit the land slope.
- The ridge height should include a reasonable settlement factor.
- The ridge should have a minimum top width of 3 feet at the design height.
- The minimum cross-sectional area of the terrace channel should be 8 square feet for land slopes of 5 percent or less, 7 square feet for slopes from 5 to 8 percent, and 6 square feet for slopes steeper than 8 percent. The terrace can be constructed wide enough to be maintained using a small vehicle.

Maintenance Standards

Maintenance should be performed as needed. Terraces should be inspected regularly; at least once per year, and after large storm events.

Figure II-3.6: Gradient Terraces



compliance with this BMP.

- Use vacuum street sweepers.
- Remove mud and other dirt promptly so it does not dry and then turn into dust.
- Techniques that can be used for unpaved roads and lots include:
  - Lower speed limits. High vehicle speed increases the amount of dust stirred up from unpaved roads and lots.
  - Upgrade the road surface strength by improving particle size, shape, and mineral types that make up the surface and base materials.
  - Add surface gravel to reduce the source of dust emission. Limit the amount of fine particles (those smaller than .075 mm) to 10 to 20 percent.
  - Use geotextile fabrics to increase the strength of new roads or roads undergoing reconstruction.
  - Encourage the use of alternate, paved routes, if available.
  - Apply chemical dust suppressants using the admix method, blending the product with the top few inches of surface material. Suppressants may also be applied as surface treatments.
  - Limit dust-causing work on windy days.
  - Pave unpaved permanent roads and other trafficked areas.

Maintenance Standards

Respray area as necessary to keep dust to a minimum.

BMP C150: Materials on Hand

Purpose

Keep quantities of erosion prevention and sediment control materials on the project site at all times to be used for regular maintenance and emergency situations such as unexpected heavy rains. Having these materials on-site reduces the time needed to replace existing or implement new BMPs when inspections indicate that existing BMPs are not meeting the Construction SWPPP requirements. In addition, contractors can save money by buying some materials in bulk and storing them at their office or yard.

Conditions of Use

- Construction projects of any size or type can benefit from having materials on hand. A small commercial development project could have a roll of plastic and some gravel available for immediate protection of bare soil and temporary berm construction. A large earthwork project, such as highway construction, might have several tons of straw, several rolls of plastic, flexible pipe, sandbags, geotextile fabric and steel "T" posts.
- Materials should be stockpiled and readily available before any site clearing, grubbing, or earthwork begins. A large contractor or project proponent could keep a stockpile of materials that are available for use on several projects.
- If storage space at the project site is at a premium, the contractor could maintain the materials at their office or yard. The office or yard must be less than an hour from the project site.

Design and Installation Specifications

Depending on project type, size, complexity, and length, materials and quantities will vary. A good minimum list of items that will cover numerous situations includes:

- Clear Plastic, 6 mil
- Drainpipe, 6 or 8 inch diameter
- Sandbags, filled
- Straw Bales for mulching
- Quarry Spalls
- Washed Gravel
- Geotextile Fabric
- Catch Basin Inserts
- Steel "T" Posts
- Silt fence material
- Straw Wattles

Maintenance Standards

- All materials with the exception of the quarry spalls, steel "T" posts, and gravel should be kept covered and out of both sun and rain.
- Re-stock materials as needed.

BMP C151: Concrete Handling

Purpose

Concrete work can generate process water and slurry that contain fine particles and high pH, both of which can violate water quality standards in the receiving water. Concrete spillage or concrete discharge to waters of the State is prohibited. Use this BMP to minimize and eliminate concrete, concrete process water, and concrete slurry from entering waters of the State.

Design and Installation Specifications

- The vegetated strip shall consist of a continuous strip of dense vegetation with topsoil for a minimum of a 25-foot length along the flowpath. Grass-covered, landscaped areas are generally not adequate because the volume of sediment overwhelms the grass. Ideally, vegetated strips shall consist of undisturbed native growth with a well-developed soil that allows for infiltration of runoff.
- The slope within the vegetated strip shall not exceed 4H:1V.
- The uphill boundary of the vegetated strip shall be delineated with clearing limits.

Maintenance Standards

- Any areas damaged by erosion or construction activity shall be seeded immediately and protected by mulch.
- If more than 5 feet of the original vegetated strip width has had vegetation removed or is being eroded, sod must be installed.
- If there are indications that concentrated flows are traveling across the vegetated strip, stormwater runoff controls must be installed to reduce the flows entering the vegetated strip, or additional perimeter protection must be installed.

BMP C235: Wattles

Purpose

Wattles are temporary erosion and sediment control barriers consisting of straw, compost, or other material that is wrapped in netting made of natural plant fiber or similar encasing material. They reduce the velocity and can spread the flow of rill and sheet runoff, and can capture and retain sediment.

Conditions of Use

- Wattles shall consist of cylinders of plant material such as weed-free straw, coir, wood chips, excelsior, or wood fiber or shavings encased within netting made of natural plant fibers unaltered by synthetic materials.
- Use wattles:
  - In disturbed areas that require immediate erosion protection.
  - On exposed soils during the period of short construction delays, or over winter months.
  - On slopes requiring stabilization until permanent vegetation can be established.
- The material used dictates the effectiveness period of the wattle. Generally, wattles are effective for one to two seasons.



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TESC DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1500 NW MALL ST. SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO. 24014
DATE 3/24
SCALE 1"=20'
DESIGNED R.E.H.
DRAWN R.E.H.
CHECKED R.S.F.
APPROVED R.S.F.

SHEET 15 OF 16

RAMAIYAH AND SUBRAMANIAN RESIDENCE

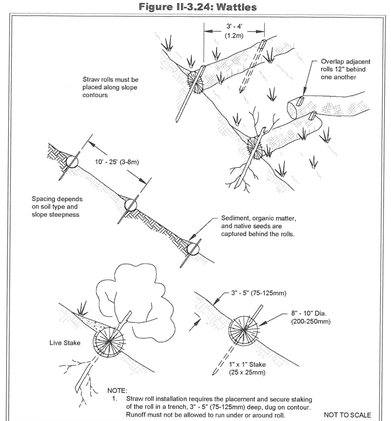
NW 1/4, SE 1/4, SECTION 30, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.
MERCER ISLAND, WASHINGTON

- Prevent rilling beneath wattles by entrenching and overlapping wattles to prevent water from passing between them.

Design Criteria

- See Figure II-3.24: Wattles for typical construction details.
- Wattles are typically 8 to 10 inches in diameter and 25 to 30 feet in length.
- Install wattles perpendicular to the flow direction and parallel to the slope contour.
- Place wattles in shallow trenches, staked along the contour of disturbed or newly constructed slopes. Dig narrow trenches across the slope (on contour) to a depth of 3- to 5-inches on clay soils and soils with gradual slopes. On loose soils, steep slopes, and areas with high rainfall, the trenches should be dug to a depth of 5- to 7- inches, or 1/2 to 2/3 of the thickness of the wattle.
- Start building trenches and installing wattles from the base of the slope and work up. Spread excavated material evenly along the uphill slope and compact it using hand tamping or other methods.
- Construct trenches at intervals of 10- to 25-feet depending on the steepness of the slope, soil type, and rainfall. The steeper the slope the closer together the trenches.
- Install the wattles snugly into the trenches and overlap the ends of adjacent wattles 12 inches behind one another.
- Install stakes at each end of the wattle, and at 4-foot centers along entire length of wattle.
- If required, install pilot holes for the stakes using a straight bar to drive holes through the wattle and into the soil.
- Wooden stakes should be approximately 0.75 x 0.75 x 24 inches min. Willow cuttings or 3/8-inch rebar can also be used for stakes.
- Stakes should be driven through the middle of the wattle, leaving 2 to 3 inches of the stake protruding above the wattle.

Figure II-3.24: Wattles



Maintenance Standards

- Wattles may require maintenance to ensure they are in contact with soil and thoroughly entrenched, especially after significant rainfall on steep sandy soils.
- Inspect the slope after significant storms and repair any areas where wattles are not tightly abutted or water has scoured beneath the wattles.

Approved as Functionally Equivalent

Ecology has approved products as able to meet the requirements of this BMP. The products did not pass through the Technology Assessment Protocol – Ecology (TAPE) process. Local jurisdictions may choose not to accept these products, or may require additional testing prior to consideration for local use. Products that Ecology has approved as functionally equivalent are available for review on Ecology's website at:

https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies

BMP C236: Vegetative Filtration

Purpose

Vegetative filtration as a BMP is used in conjunction with detention storage in the form of portable tanks or BMP C241: Sediment Pond (Temporary), BMP C206: Level Spreader, and a pumping system with surface intake. Vegetative filtration improves turbidity levels of stormwater discharges by filtering runoff through existing vegetation where undisturbed forest floor duff layer or established lawn with thatch layer are present. Vegetative filtration can also be used to infiltrate dewatering waste from foundations, vaults, and trenches as long as runoff does not occur.

Conditions of Use

- For every five acres of disturbed soil use one acre of grass field, farm pasture, or wooded area. Reduce or increase this area depending on project size, ground water table height, and other site conditions.
- Wetlands shall not be used for vegetative filtration.
- Do not use this BMP in areas with a high ground water table, or in areas that will have a high seasonal ground water table during the use of this BMP.
- This BMP may be less effective on soils that prevent the infiltration of the water, such as hard till.
- Using other effective source control measures throughout a construction site will prevent the generation of additional highly turbid water and may reduce the time period or area need for this BMP.
- Stop distributing water into the vegetated filtration area if standing water or erosion results.



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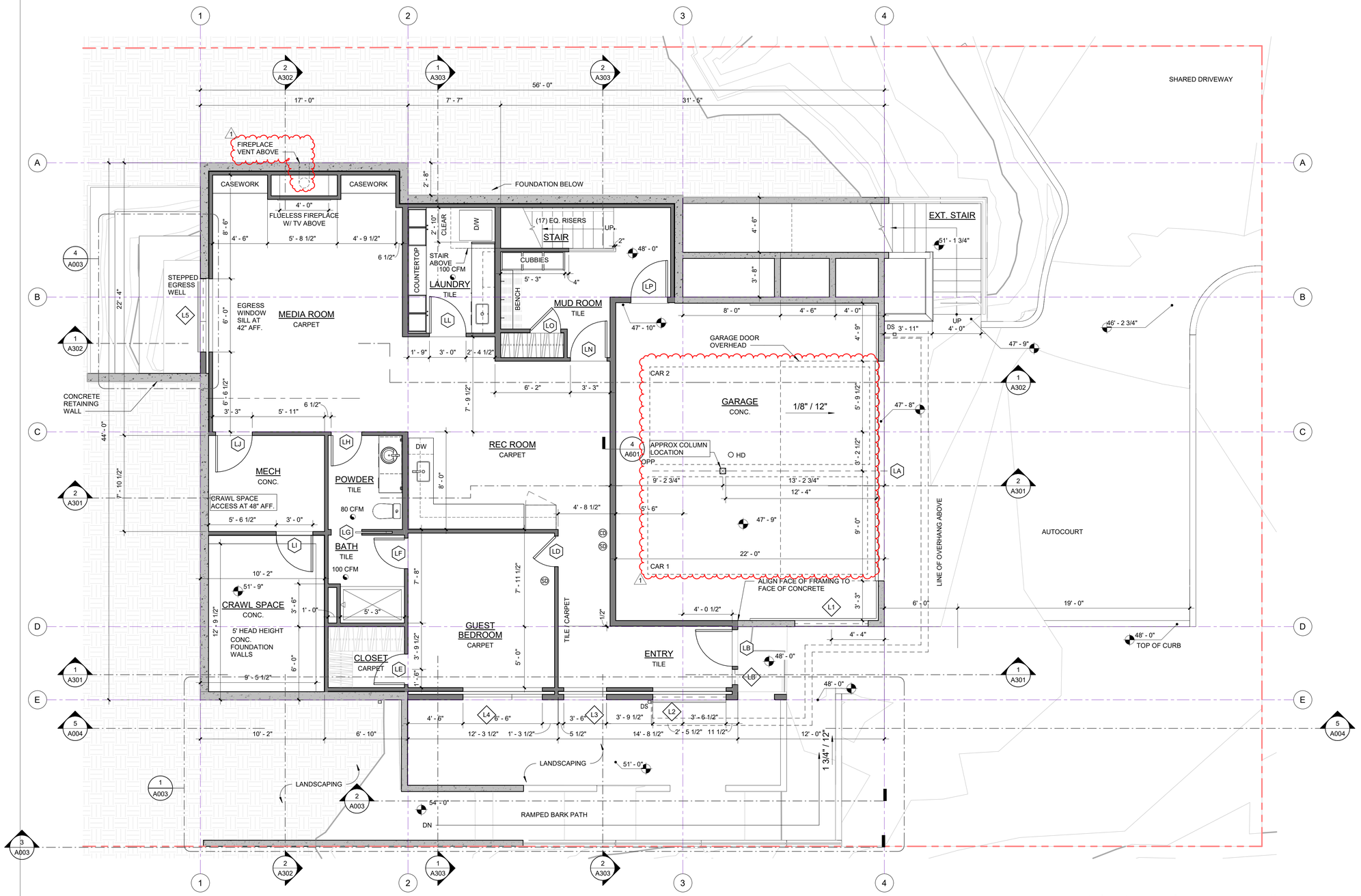
TESC DETAILS

RAMAIYAH AND SUBRAMANIAN
7466 E. MERCER WAY
MERCER ISLAND, WA 98040

ENGINEERS - SURVEYORS
EASTSIDE CONSULTANTS, INC.
1287 N.W. MILL ST. SUITE B
ISSAQUAH, WASHINGTON 98027
PH:(425)392-5351 FAX:392-4676

JOB NO.	24014
DATE	3/24
SCALE	1"=20'
DESIGNED	R.E.H.
DRAWN	R.E.H.
CHECKED	R.S.F.
APPROVED	R.S.F.

SHEET 16 OF 16



1 BASEMENT/ GARAGE FLOOR PLAN
1/4" = 1'-0"

FLOOR PLAN NOTES:
- TYPICAL WALL CONSTRUCTION:
  - EXTERIOR WALLS - 2X6 STYDS @ 16" O.C. UNO
  - INTERIOR WALLS - 2X4 & 2X6 STUDS @ 16" O.C.
- 2X6 STUDS @ PLUMBING WALLS & POCKET DOORS, TYP
- ALL SWING DOORS NOT LOCATED BY DIMENSIONS ON PLANS OR DETAILS SHALL BE 4" FROM FACE OF STUD TO EDGE OF ROUGH OPENING OR CENTERED BETWEEN ROOM PARTITIONS AS SHOWN
- VENT ALL FANS AND DRYER VENTS TO EXTERIOR, TYP
- BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN-SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NON-ABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6' ABOVE THE FLOOR

SMOKE ALARM NOTES:
- LOCATE SMOKE ALARMS PER PLANS AND IRC R314.1
- MULTIPLE SMOKE ALARMS TO BE INTERCONNECTED PER IRC R313.1
- SMOKE ALARMS TO BE HARD-WIRED WITH BATTERY BACK-UP PER IRC 313.2

CARBON MONOXIDE ALARM NOTES:
- LOCATE CARBON MONOXIDE ALARMS (CMA) PER PLANS AND IRC 315.1; A COMBINATION FIRE AND CARBON MONOXIDE DETECTOR IS ACCEPTABLE
- CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN ACCORDANCE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IRC 315.3

FIREPLACE NOTES:
- FIREPLACE TO BE A PRE-MANUFACTURED FIREPLACE WITH CHIMNEY, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODE REQUIREMENTS

FLOOR PLAN LEGEND:

- WOOD FRAME WALL
- CONCRETE WALL
- WOOD FRAME WALL WITH STONE VENEER
- WINDOW TAG
- DOOR TAG
- DETAIL TAG
- BUILDING SECTION
- RECESSED EXHAUST FAN
- SMOKE ALARM
- CARBON MONOXIDE ALARM
- DOWNSPOUT
- HEAT DETECTOR

BASEMENT FLOOR AREAS:

HEATED AREA	1,268 SF
UNHEATED GARAGE	560 SF
UNHEATED MECH	192 SF

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Ramaiyah Subramanian Residence

7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL

DRAWN BY: AD

REVISIONS:

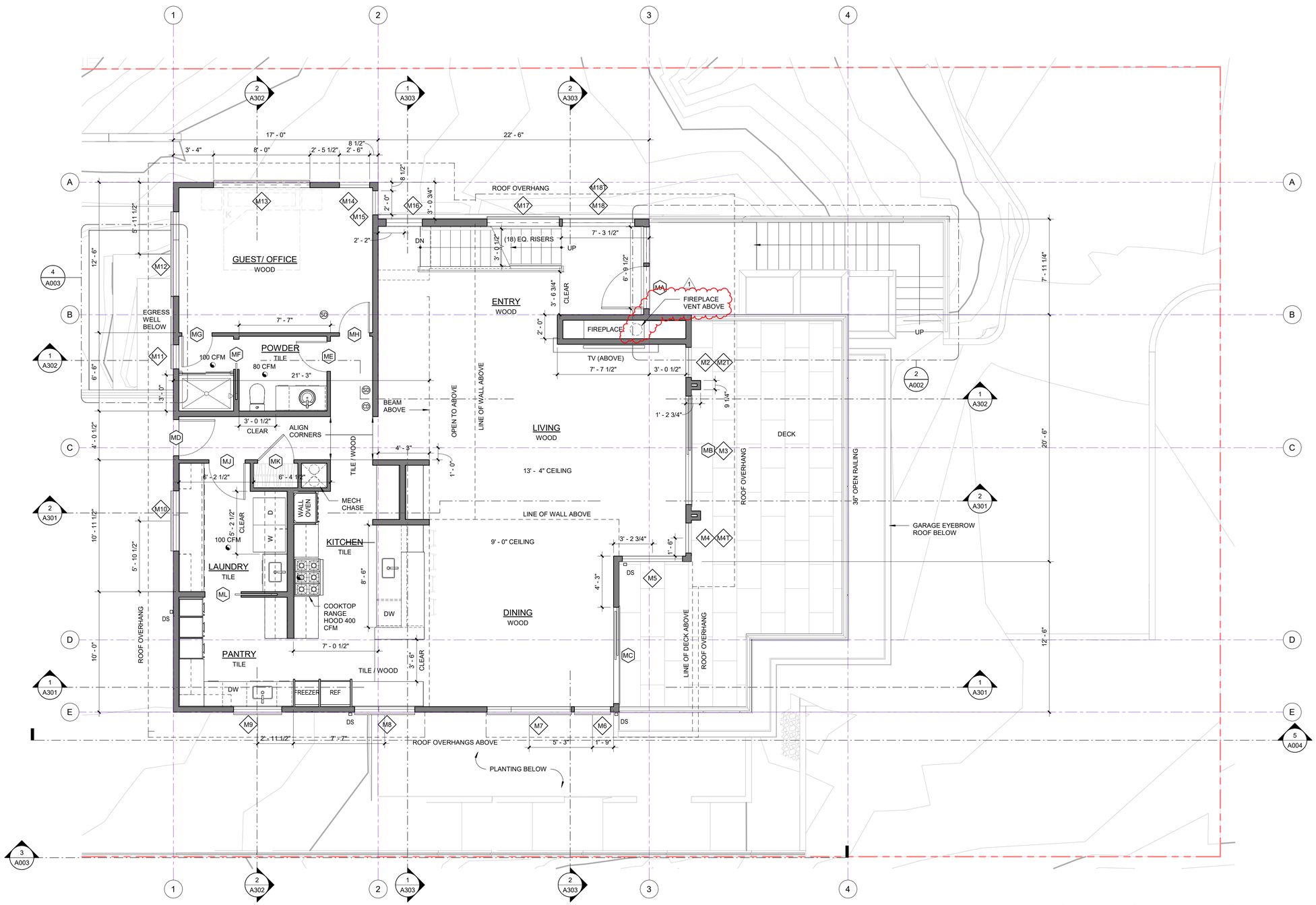
NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

LOWER FLOOR PLAN

A101

7/17/2025 10:29:36 AM



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

1/4"=1'-0" 0 1 2 4 8 16

FLOOR PLAN NOTES:
- TYPICAL WALL CONSTRUCTION:
  - EXTERIOR WALLS - 2X6 STYDS @ 16" O.C. UNO
  - INTERIOR WALLS - 2X4 & 2X6 STUDS @ 16" O.C.
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FLOOR PLAN LEGEND:

	WOOD FRAME WALL
	CONCRETE WALL
	WOOD FRAME WALL WITH STONE VENEER
1i	WINDOW TAG
1i	DOOR TAG
1 / A101	DETAIL TAG
1 / A101	BUILDING SECTION
	RECESSED EXHAUST FAN
SD	SMOKE ALARM
CD	CARBON MONOXIDE ALARM
DS	DOWNSPOUT
HD	HEAT DETECTOR

MAIN FLOOR AREAS:

HEATED AREA	1,710 SF
DECK	458 SF

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DRAWN BY: AD

REVISIONS:

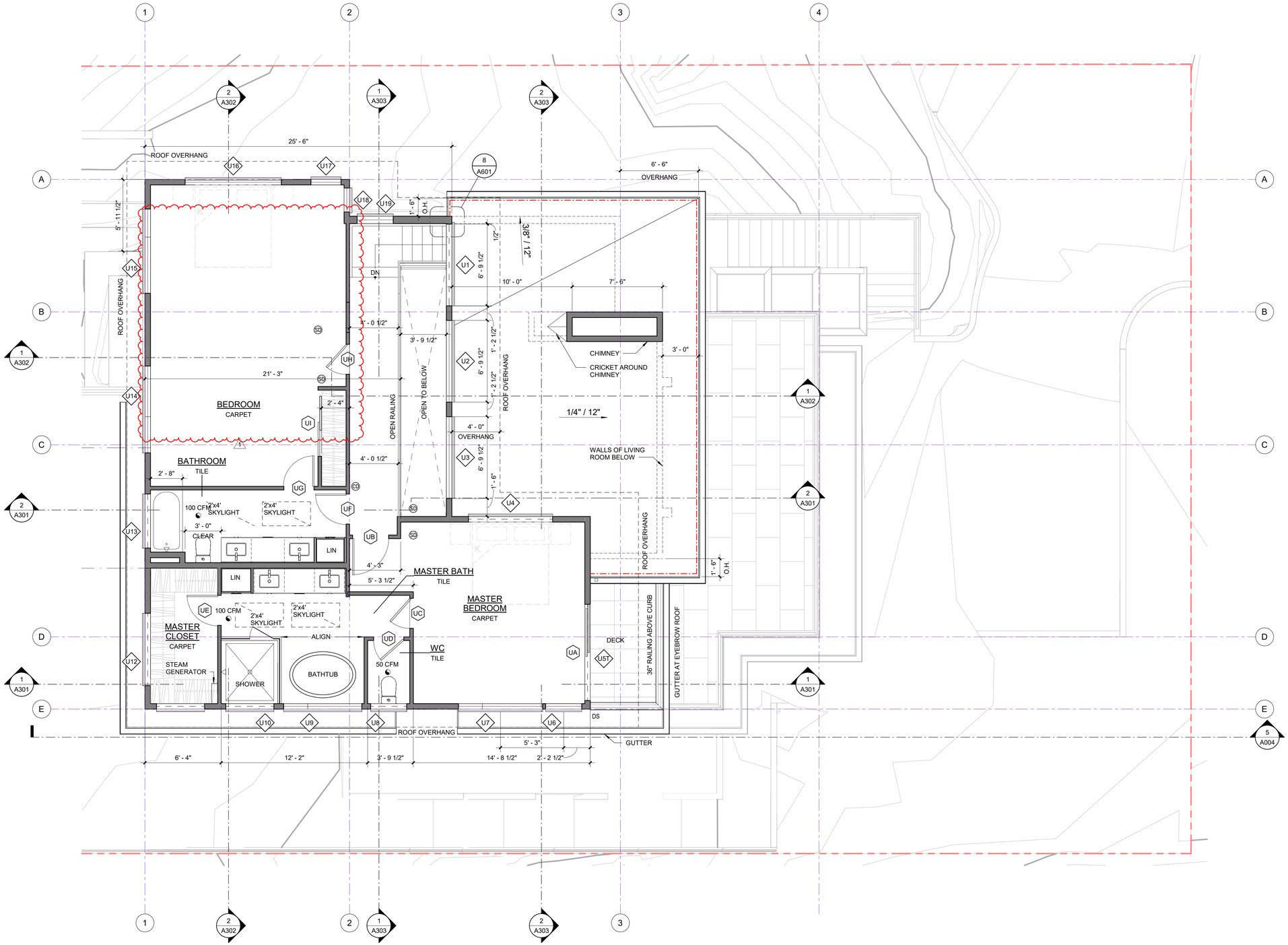
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MAIN FLOOR PLAN

A102

7/17/2025 10:36:43 AM



1 UPPER FLOOR
1/4" = 1'-0"

1/4"=1'-0" 0 1 2 4 8 16

FLOOR PLAN NOTES:
- TYPICAL WALL CONSTRUCTION:
  - EXTERIOR WALLS - 2X6 STYDS @ 16" O.C. UNO
  - INTERIOR WALLS - 2X4 & 2X6 STUDS @ 16" O.C.
- 2X6 STUDS @ PLUMBING WALLS & POCKET DOORS, TYP
- ALL SWING DOORS NOT LOCATED BY DIMENSIONS ON PLANS OR DETAILS SHALL BE 4" FROM FACE OF STUD TO EDGE OF ROUGH OPENING OR CENTERED BETWEEN ROOM PARTITIONS AS SHOWN
- VENT ALL FANS AND DRYER VENTS TO EXTERIOR, TYP
- BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN-SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NON-ABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6' ABOVE THE FLOOR

SMOKE ALARM NOTES:
- LOCATE SMOKE ALARMS PER PLANS AND IRC R314.1
- MULTIPLE SMOKE ALARMS TO BE INTERCONNECTED PER IRC R313.1
- SMOKE ALARMS TO BE HARD-WIRED WITH BATTERY BACK-UP PER IRC 313.2

CARBON MONOXIDE ALARM NOTES:
- LOCATE CARBON MONOXIDE ALARMS (CMA) PER PLANS AND IRC 315.1; A COMBINATION FIRE AND CARBON MONOXIDE DETECTOR IS ACCEPTABLE
- CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN ACCORDANCE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IRC 315.3

FIREPLACE NOTES:
- FIREPLACE TO BE A PRE-MANUFACTURED FIREPLACE WITH CHIMNEY, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE, AND NATIONAL CODE REQUIREMENTS

FLOOR PLAN LEGEND:

	WOOD FRAME WALL
	CONCRETE WALL
	WOOD FRAME WALL WITH STONE VENEER
1i	WINDOW TAG
1i	DOOR TAG
1 A101	DETAIL TAG
1 A101	BUILDING SECTION
	RECESSED EXHAUST FAN
SD	SMOKE ALARM
CD	CARBON MONOXIDE ALARM
DS	DOWNSPOUT
HD	HEAT DETECTOR

UPPER FLOOR AREAS:

HEATED AREA	1,280 SF
DECK	74 SF

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BUILDING PERMIT SET
REVISION 1
07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

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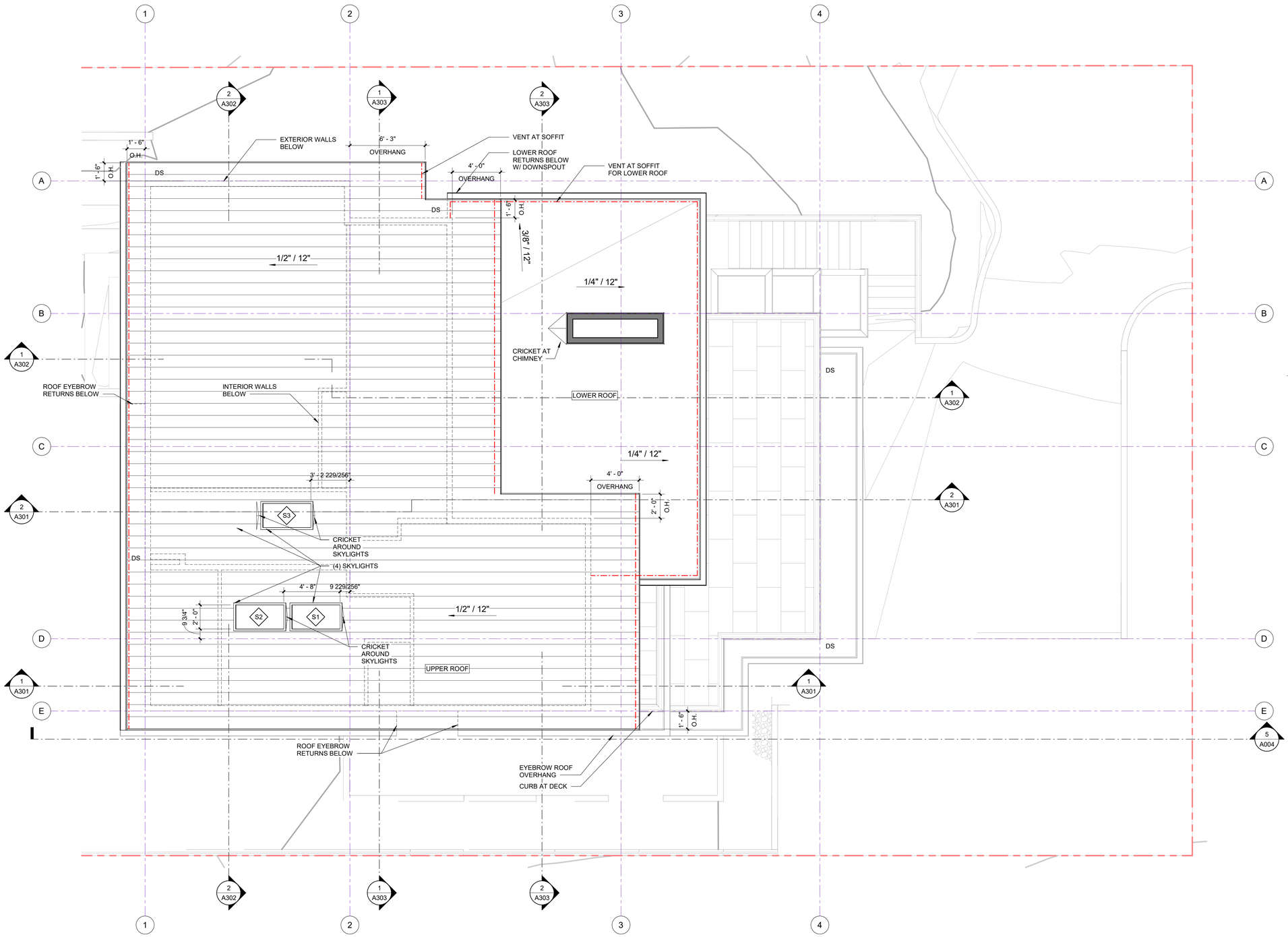
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UPPER FLOOR PLAN

A103

7/17/2025 10:29:42 AM



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

1/4"=1'-0" 0 1 2 4 8 16

ROOF PLAN NOTES:

1. SEE STRUCTURAL FOR ROOF FRAMING PLANS.
2. REFER TO MECHANICAL/PLUMBING DRAWINGS FOR PIPE PENETRATIONS.
3. GENERAL CONTRACTOR SHALL COORDINATE WITH THE DIFFERENT TRADES FOR INSTALLATION OF ROOF PENETRATIONS PRIOR TO INSTALLATION OF THE ROOFING MEMBRANE.
4. GENERAL CONTRACTOR SHALL COORDINATE WITH THE BUILDING PLUMBING AND SITE UTILITY CONTRACTORS TO ENSURE THAT CONNECTIONS BETWEEN RAIN WATER LEADERS, STOR AND BUILDING SANITARY ARE COMPLETED.
5. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE ON ROOF TO ALL ROOF DRAINS
6. CRICKETS MUST MAINTAIN POSITIVE SLOPE TO DRAIN. AT ROOF AND TIE INTO DRAINAGE SYSTEM
7. CONTRACTOR TO VERIFY ALL ROOF DRAIN SLOPES AND ROOF DRAIN ELEVATIONS

ROOF PLAN LEGEND:

	CONT. SOFFIT EDGE STRIP VENT
	LINE OF FACE OF STRUCTURE OF WALL BELOW
	4" METAL GUTTER
	ROOF RIDGE VENT
	ROOF W/RIDGE INSULATION
DS	DOWNSPOUT
DS	DOWNSPOUT LOCATED UNDER ROOF OVERHANG

VENTILATION CALCULATION:

NOTES:

1. ROOF VENTILATION CALCULATION: CONFIRM WITH IRC R806.
   - **HYBRID ROOF INSULATION TO BE USED THROUGHOUT. EXTERIOR SOFFITS WILL BE VENTED WITH NO INSULATION.**

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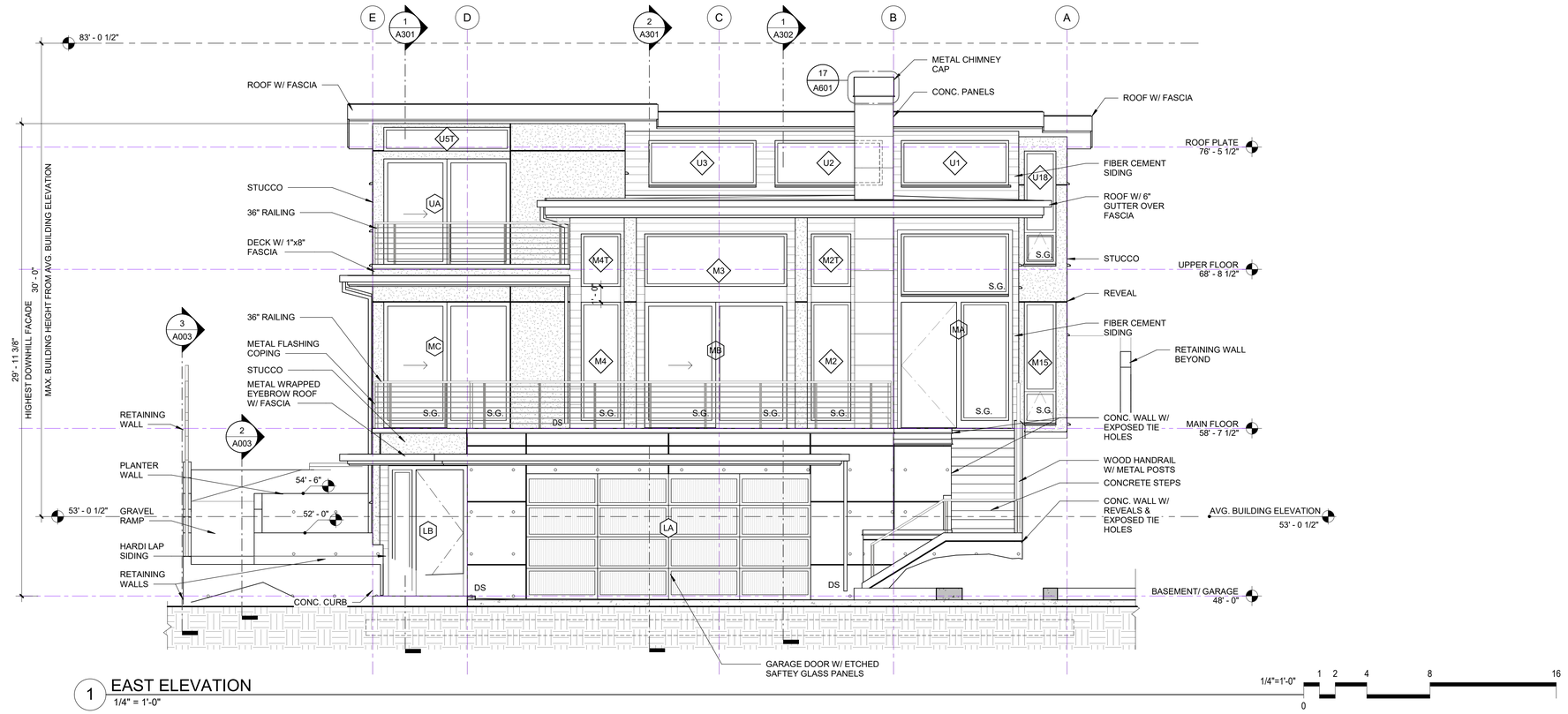
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ROOF PLAN

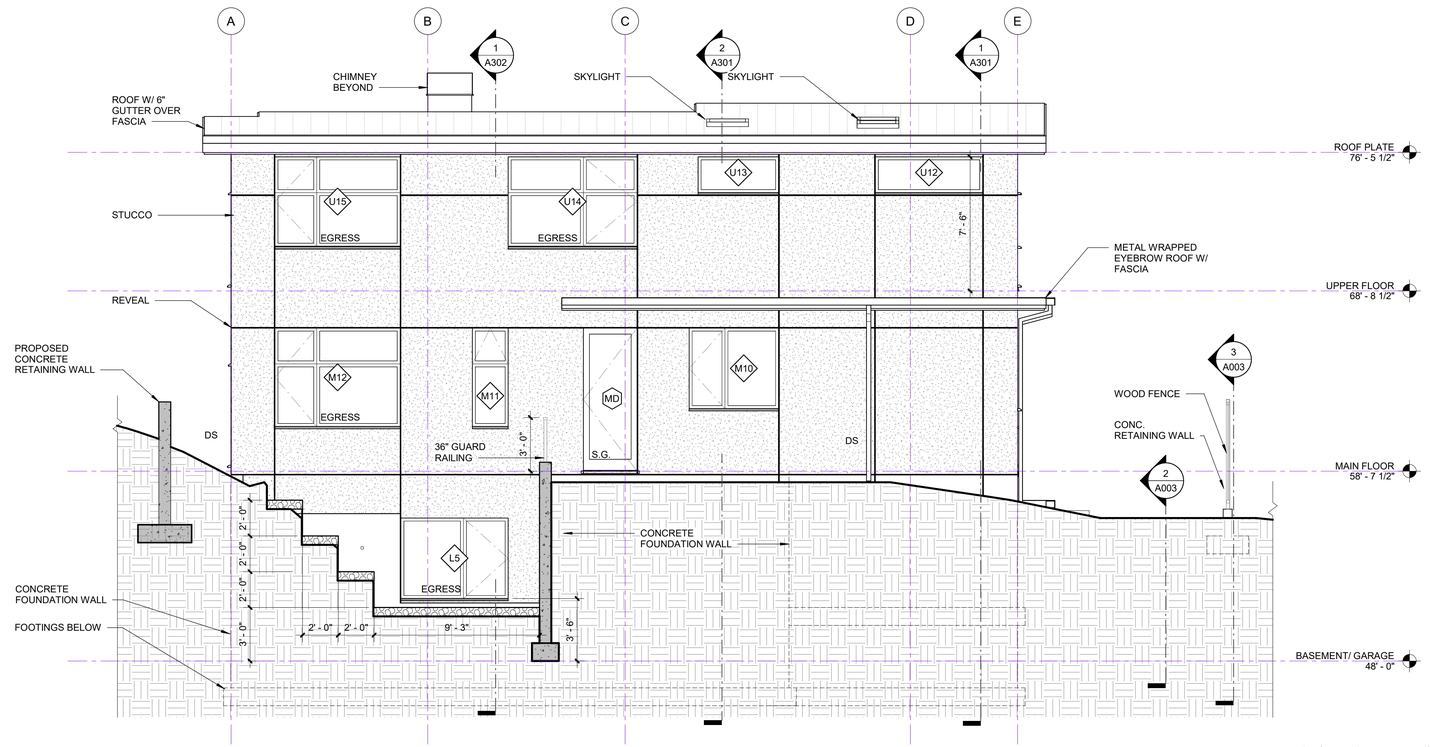
A104

7/17/2025 10:29:45 AM



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

1/4"=1'-0" 1 2 4 8 16
0



2 WEST ELEVATION
1/4" = 1'-0"

1/4"=1'-0" 1 2 4 8 16
0

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BUILDING PERMIT SET

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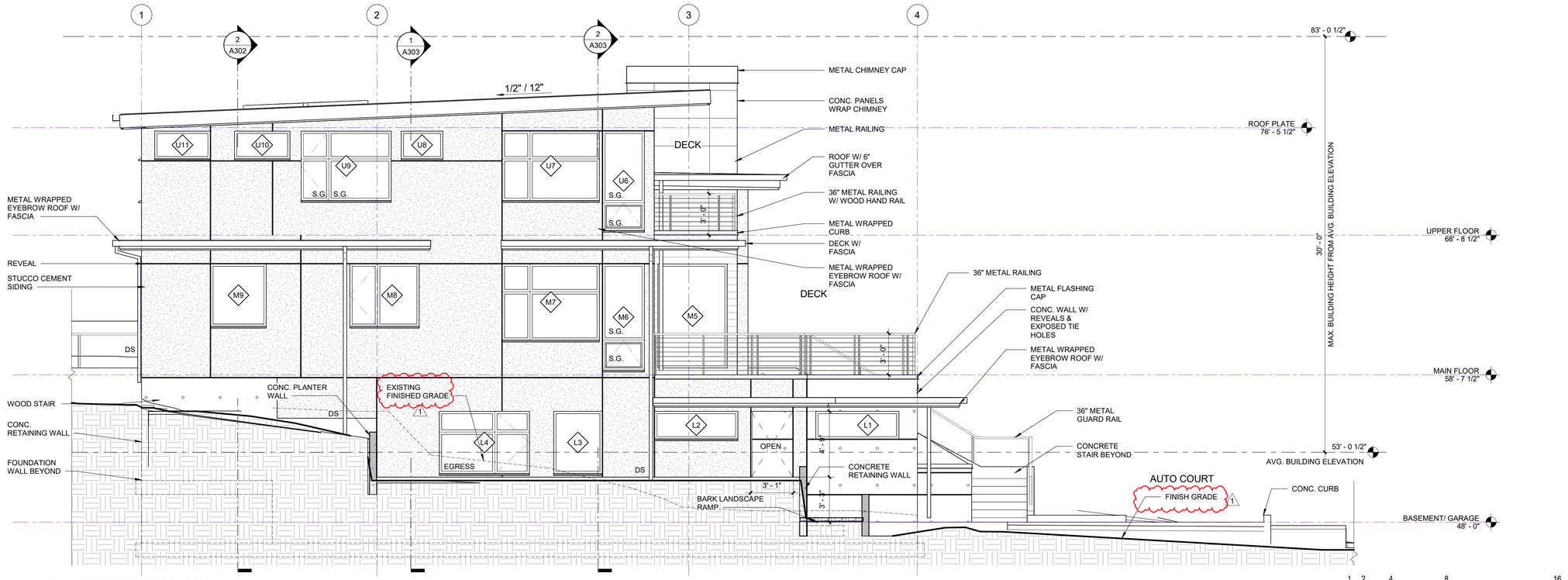
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BUILDING ELEVATIONS - EAST & WEST

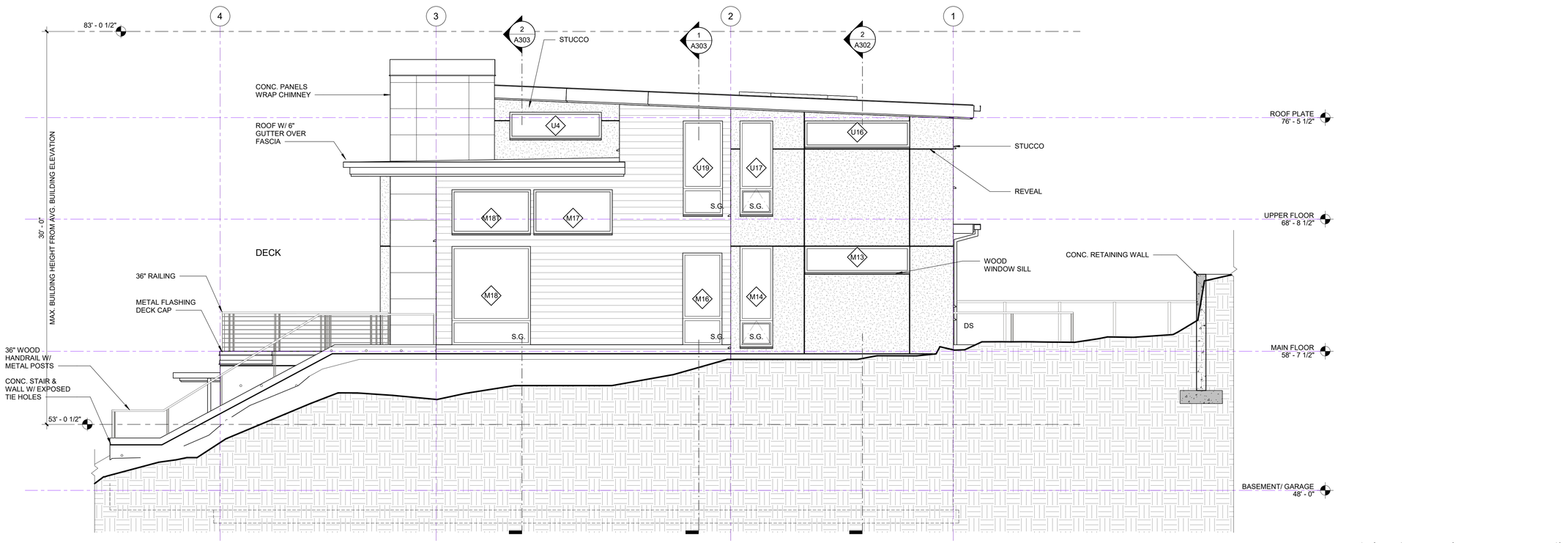
A201

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

1/4"=1'-0" 0 1 2 4 8 16



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

1/4"=1'-0" 0 1 2 4 8 16

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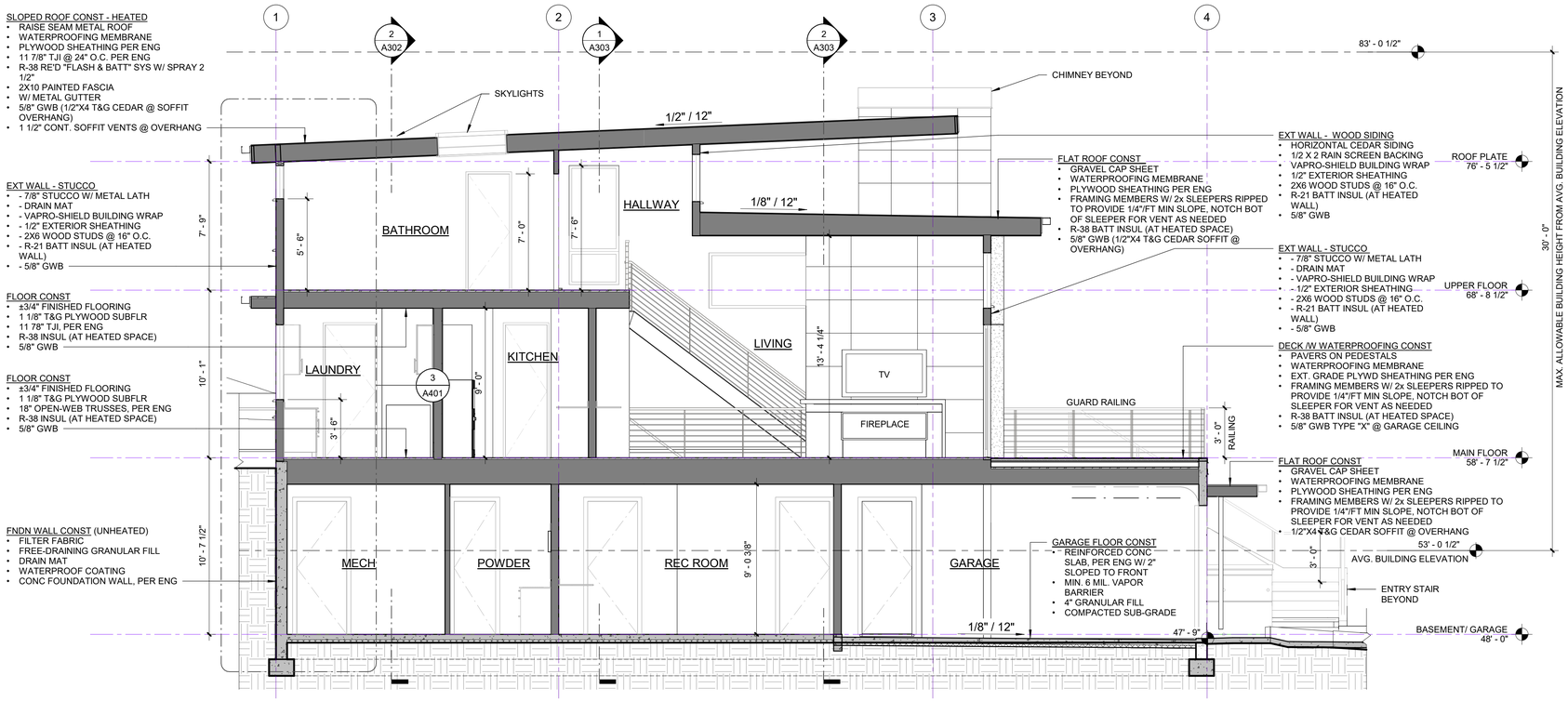
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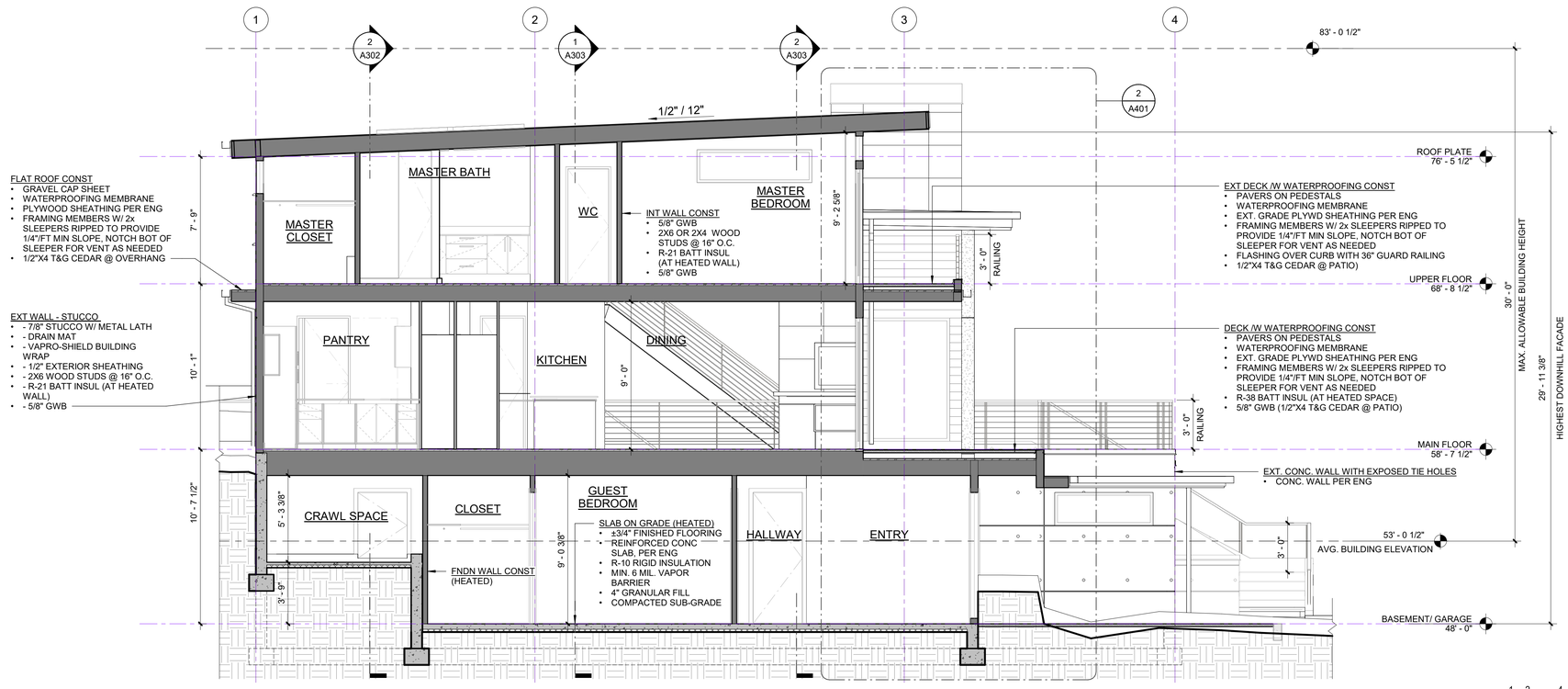
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BUILDING ELEVATION - SOUTH & NORTH

A202



2 BUILDING SECTION THROUGH GARAGE & LIVING
1/4" = 1'-0"



1 BUILDING SECTION THROUGH BASEMENT ENTRY & MASTER BEDROOM
1/4" = 1'-0"

1/4"=1'-0" 0 1 2 4 8 16

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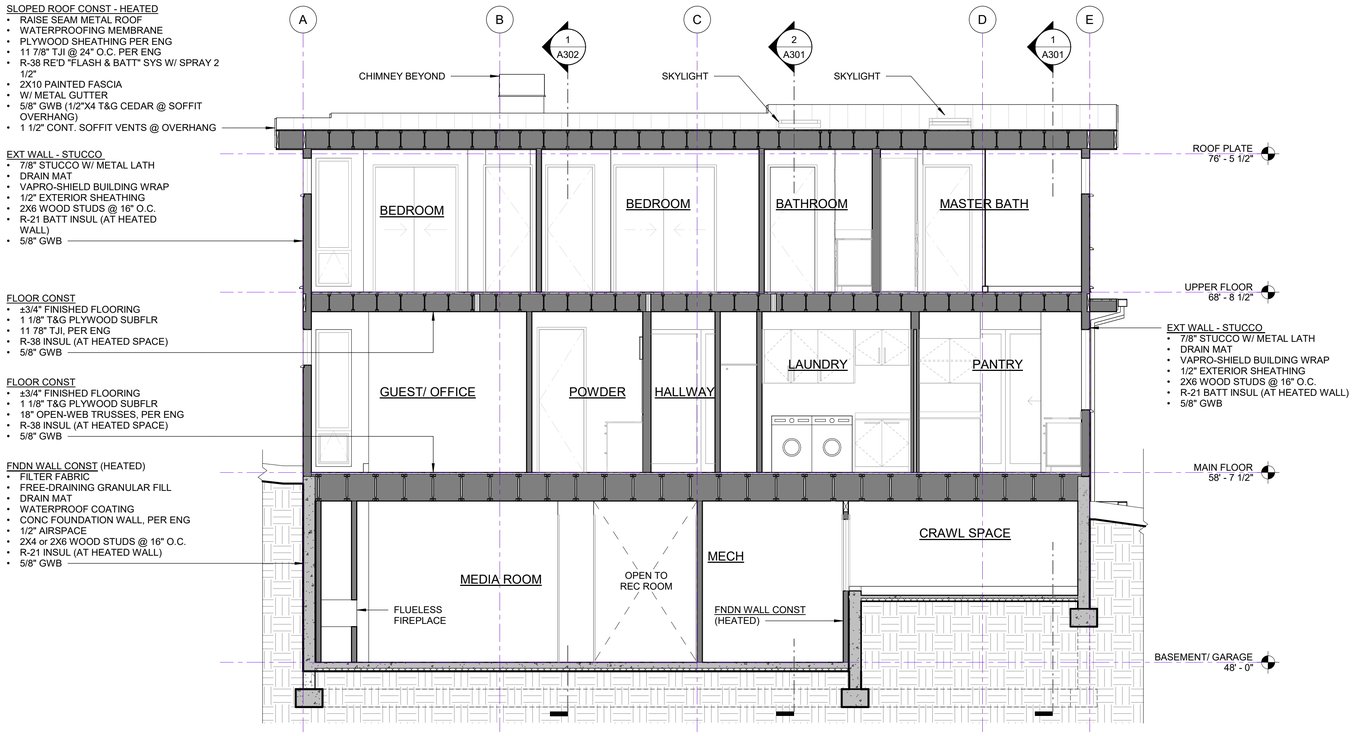
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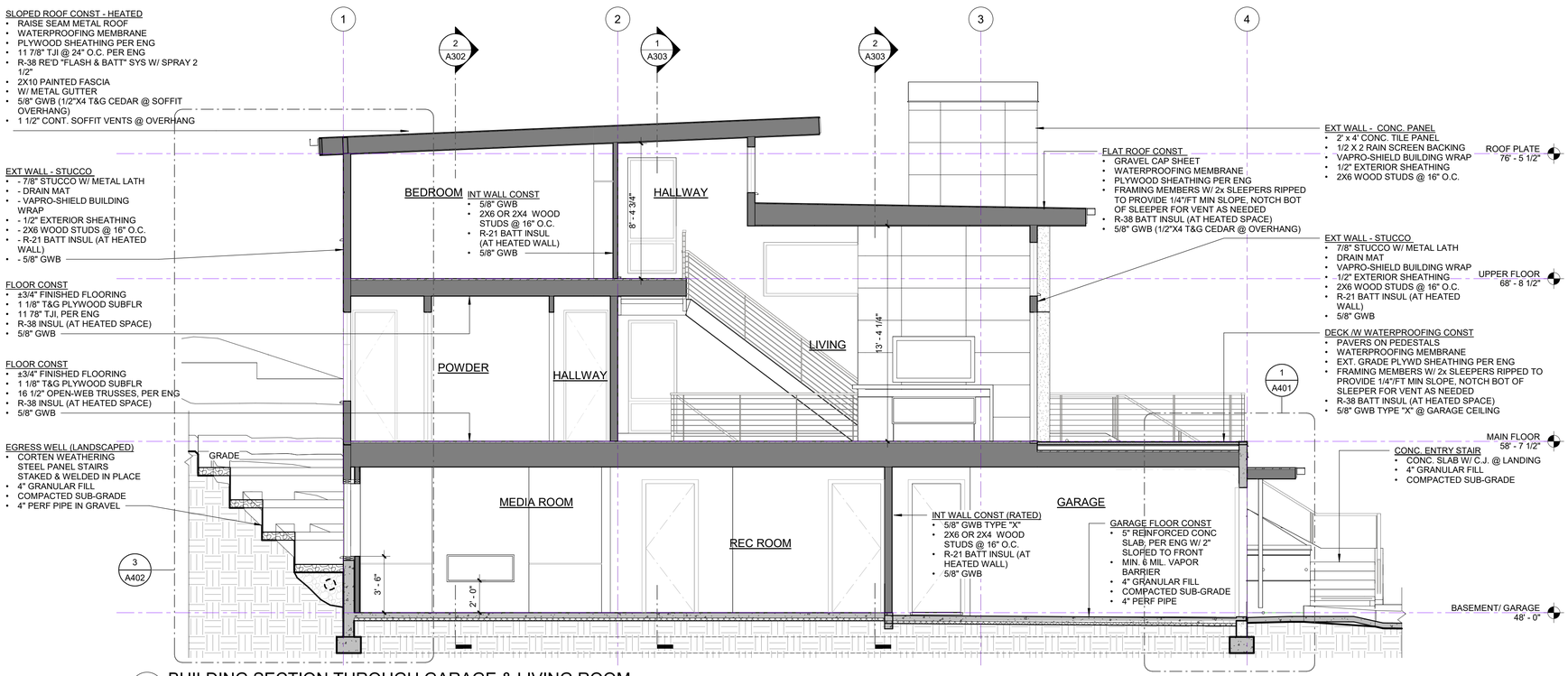
BUILDING SECTION

A301



2 BUILDING SECTION THROUGH MEDIA ROOM & CRAWL SPACE

1/4" = 1'-0"



1 BUILDING SECTION THROUGH GARAGE & LIVING ROOM

1/4" = 1'-0"

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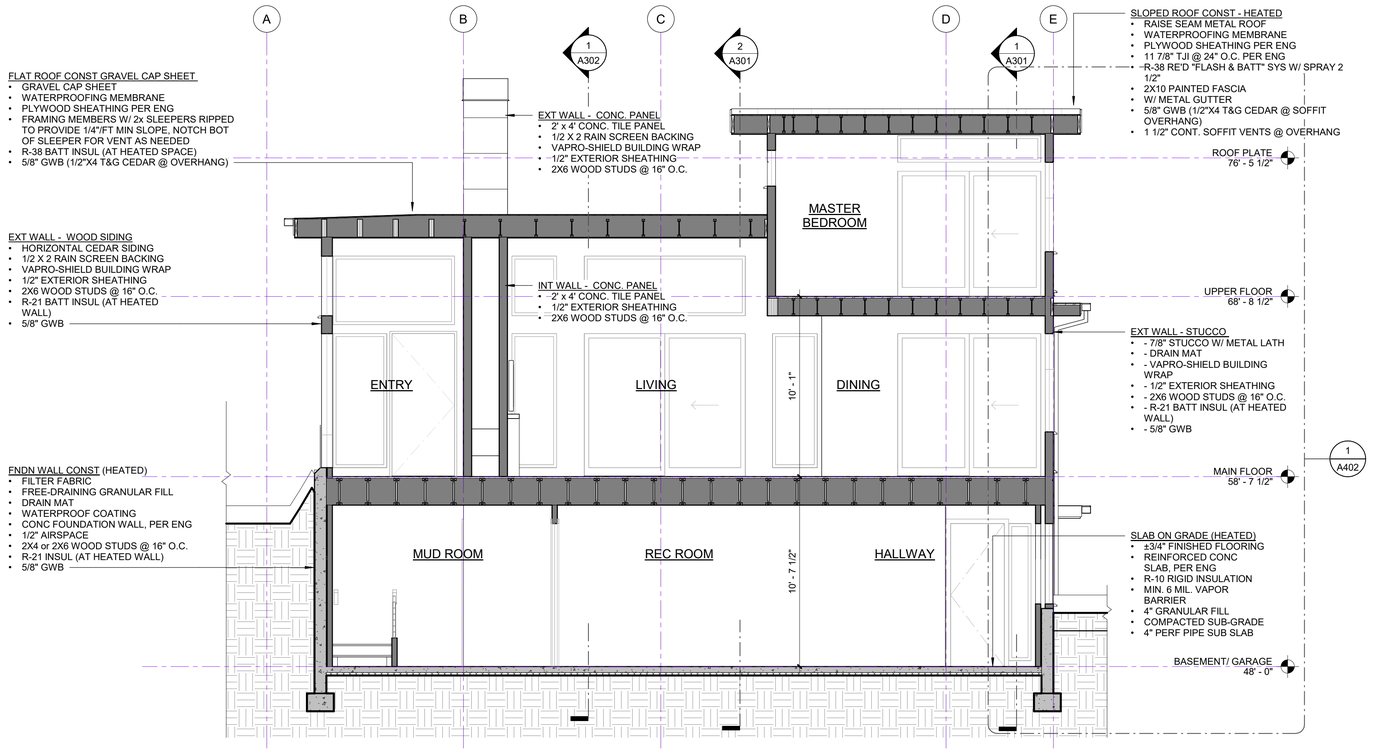
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BUILDING SECTION

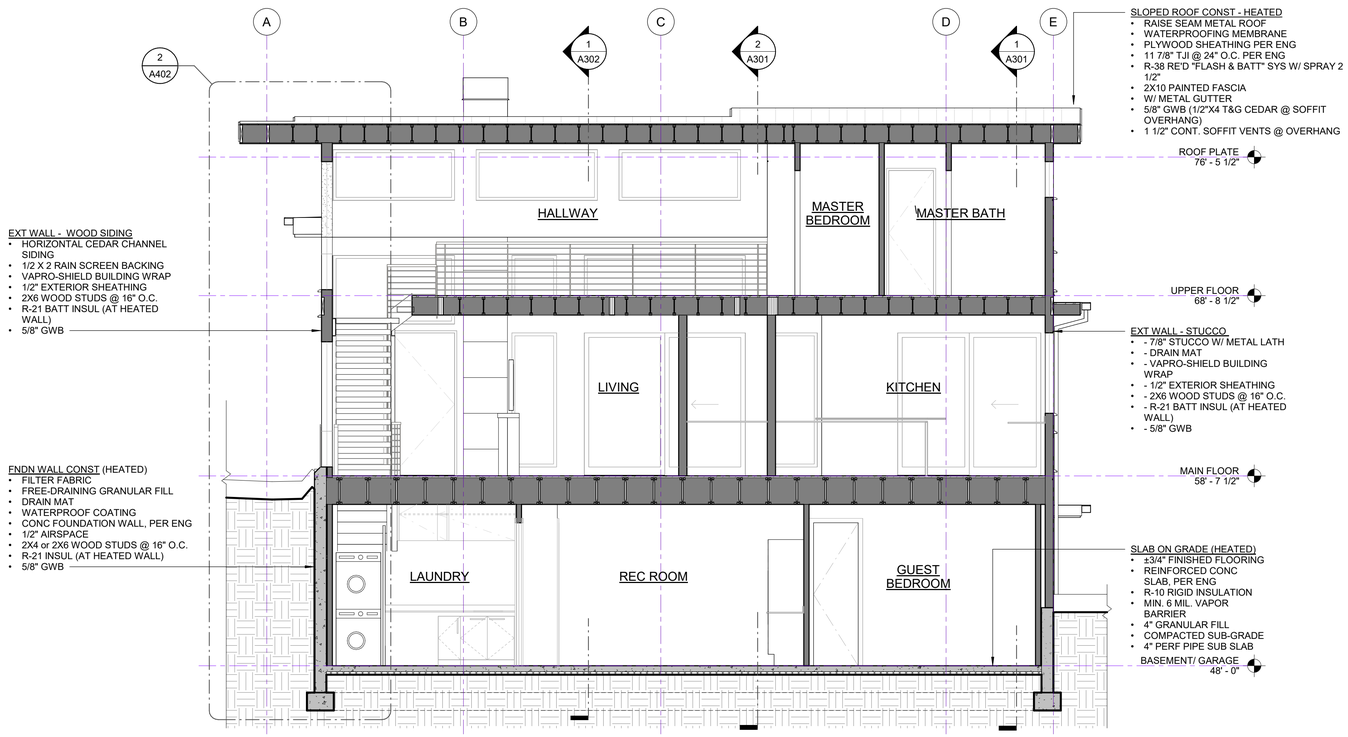
A302

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2 BUILDING SECTION THROUGH REC & LIVING ROOMS

1/4" = 1'-0"



1 BUILDING SECTION THROUGH STAIRS

1/4" = 1'-0"

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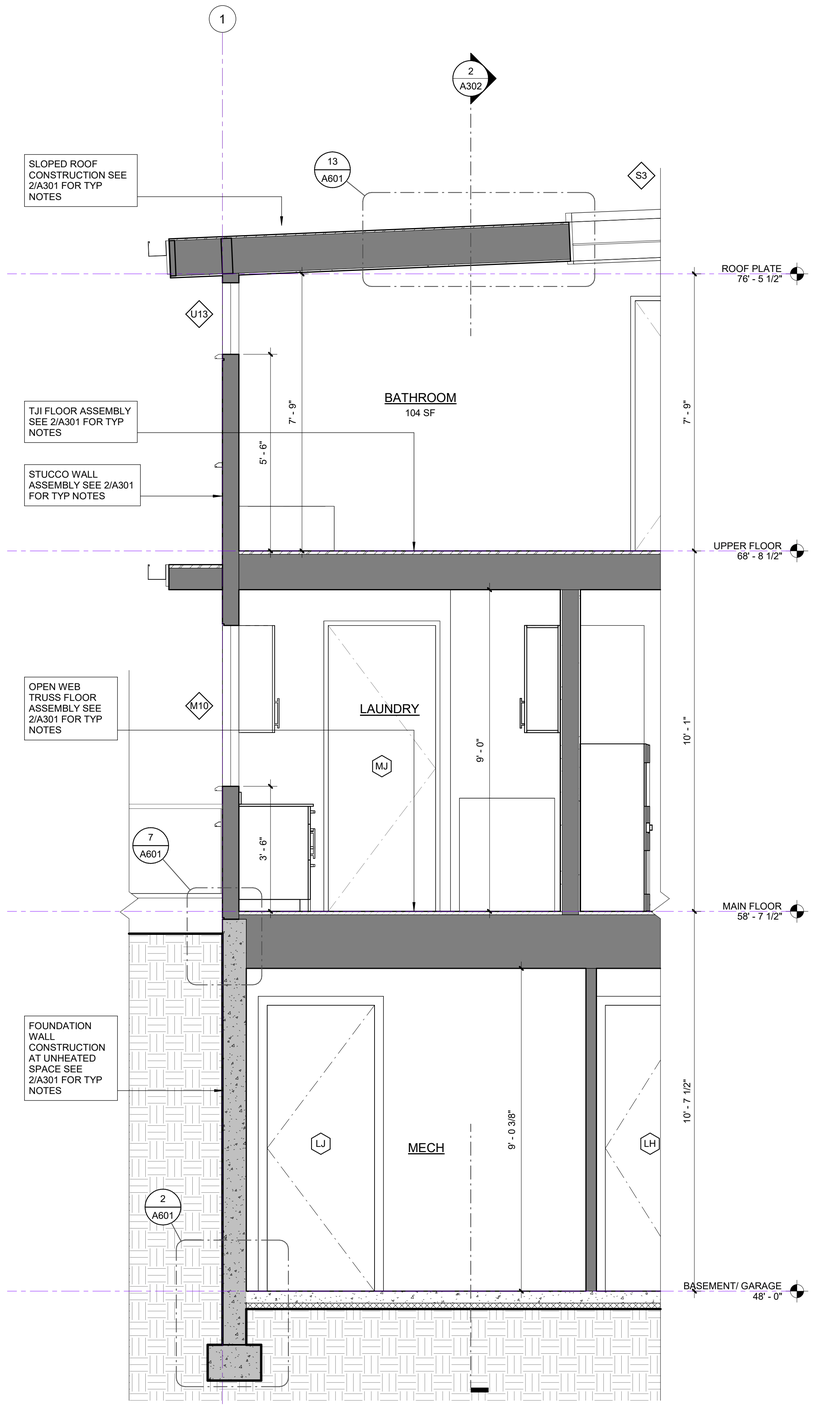
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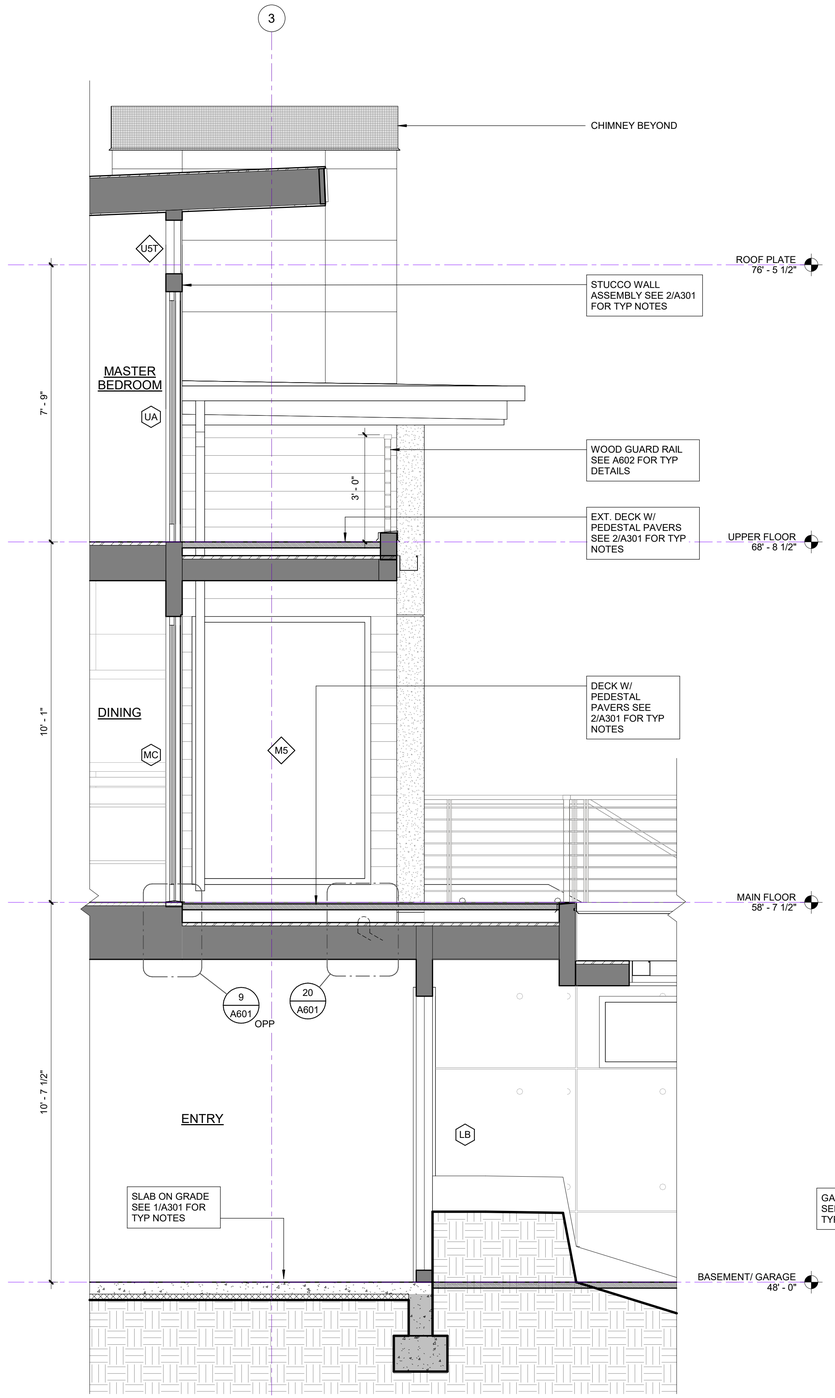
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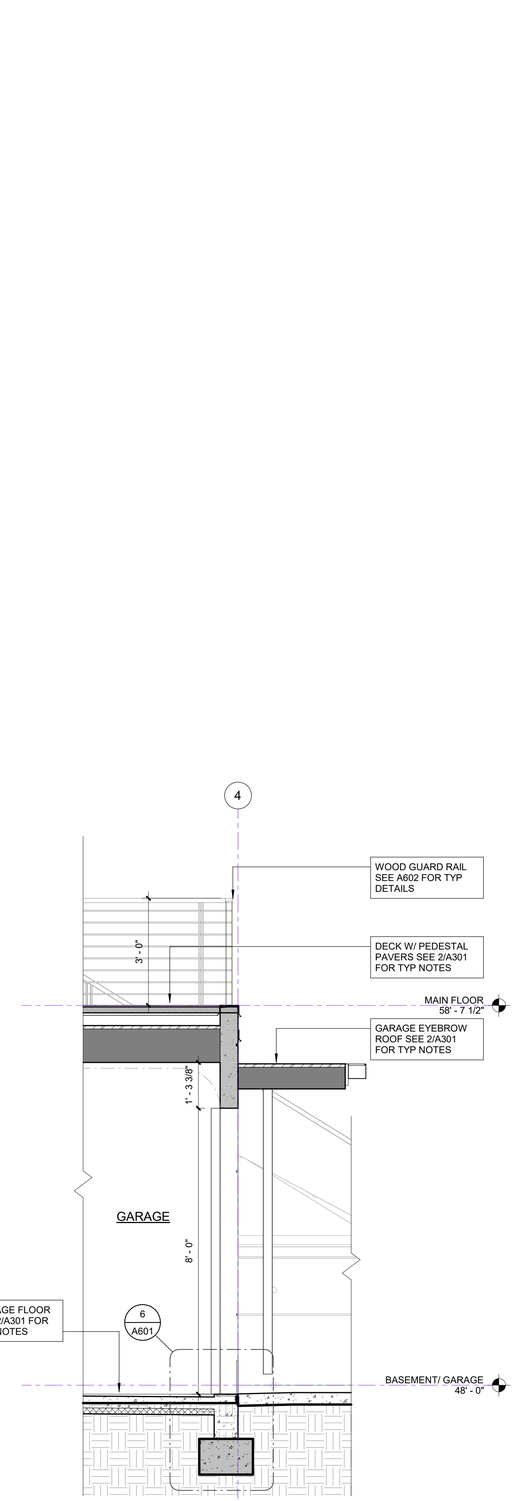
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BUILDING SECTION

A303







3 WALL SECTION - THRU MECH & SKYLIGHTS
1/2" = 1'-0"

2 WALL SECTION - THRU BASEMENT ENTRY
1/2" = 1'-0"

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

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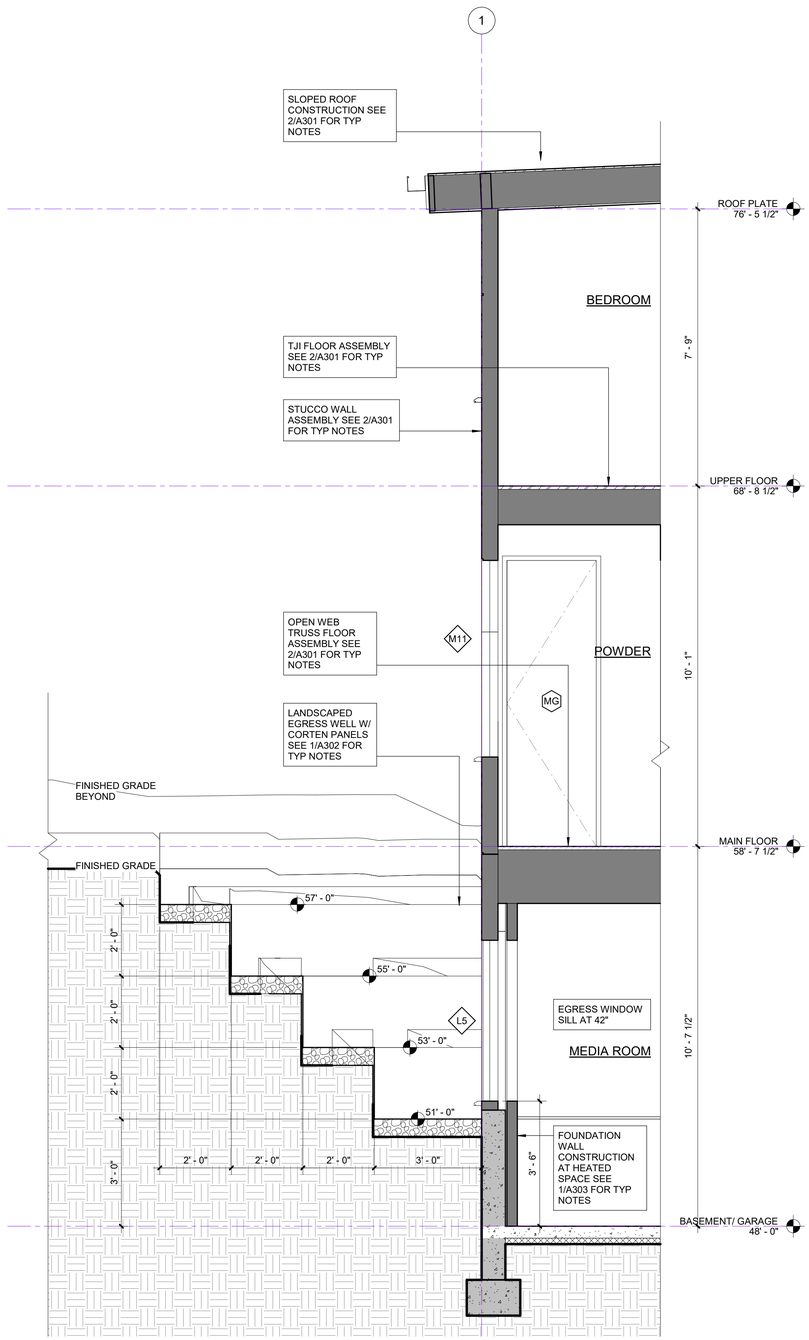
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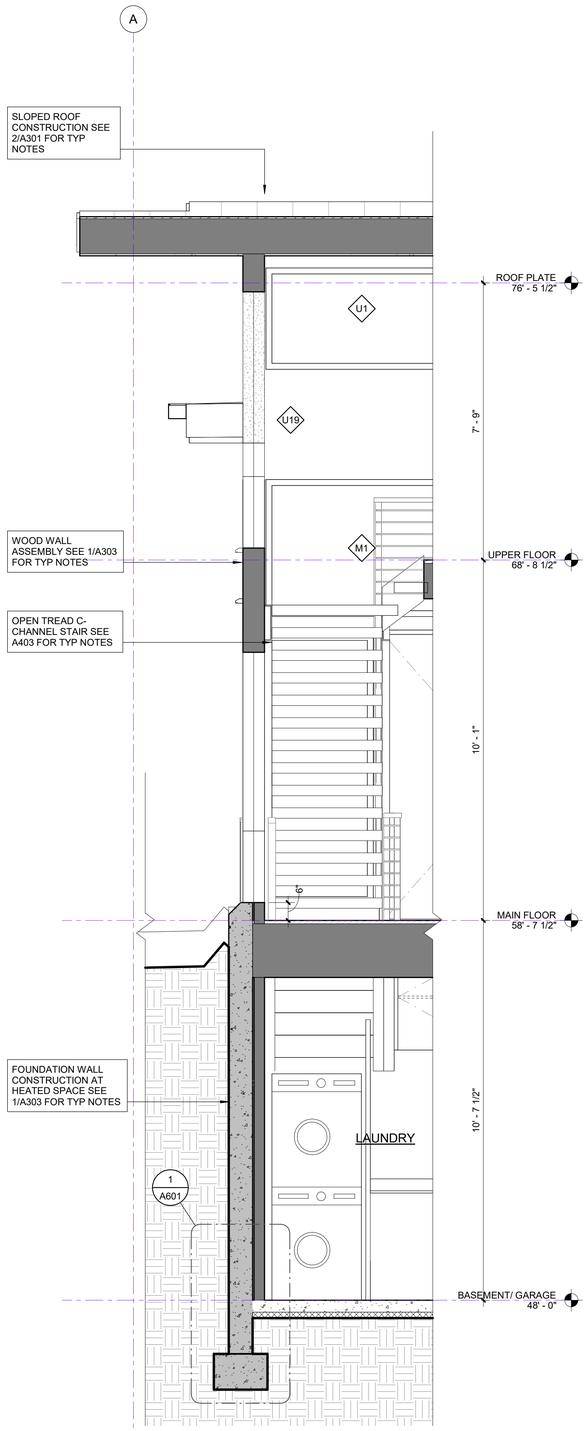
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WALL SECTIONS

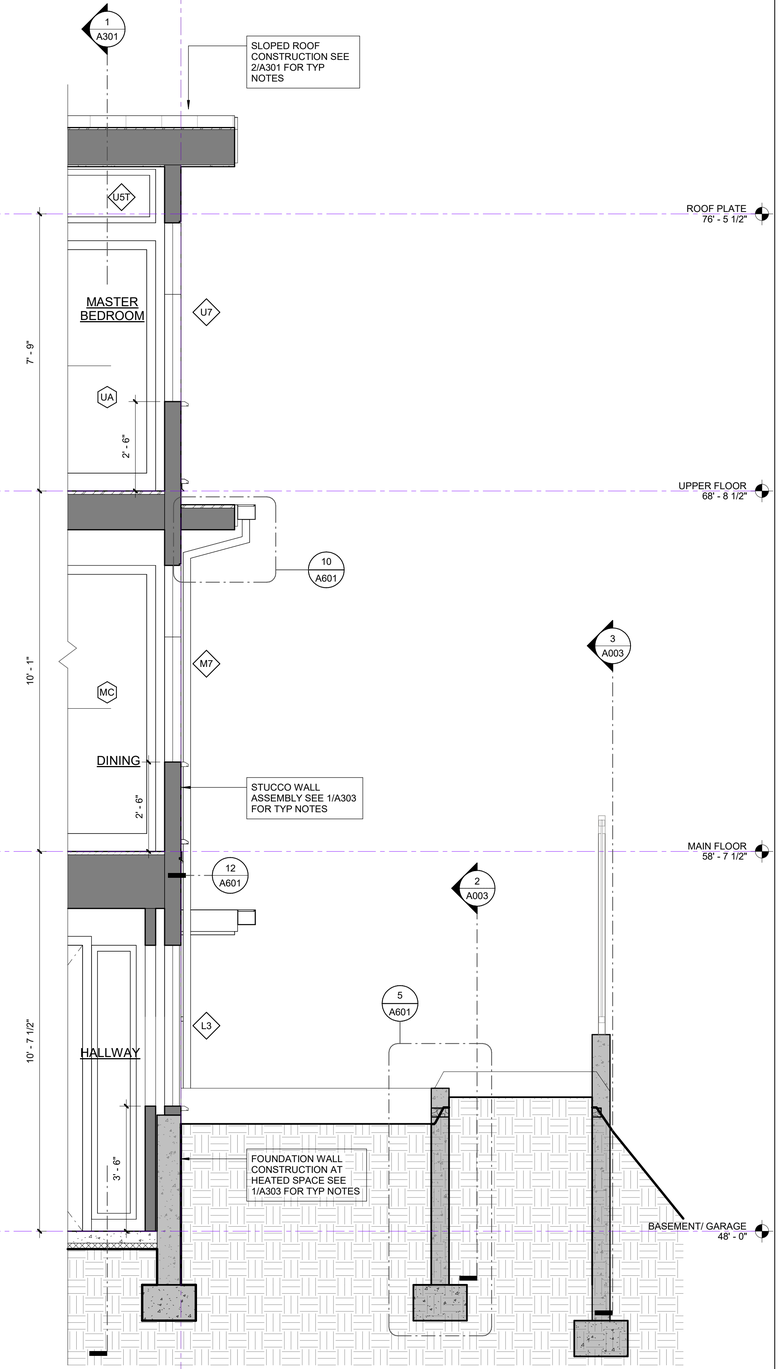
A401



3 WALL SECTION - THRU EGRESS WELL
1/2" = 1'-0"



2 WALL SECTION - THRU STAIR LANDING
1/2" = 1'-0"



1 N-S THROUGH LIVING & REC ROOMS - Callout 1
1/2" = 1'-0"

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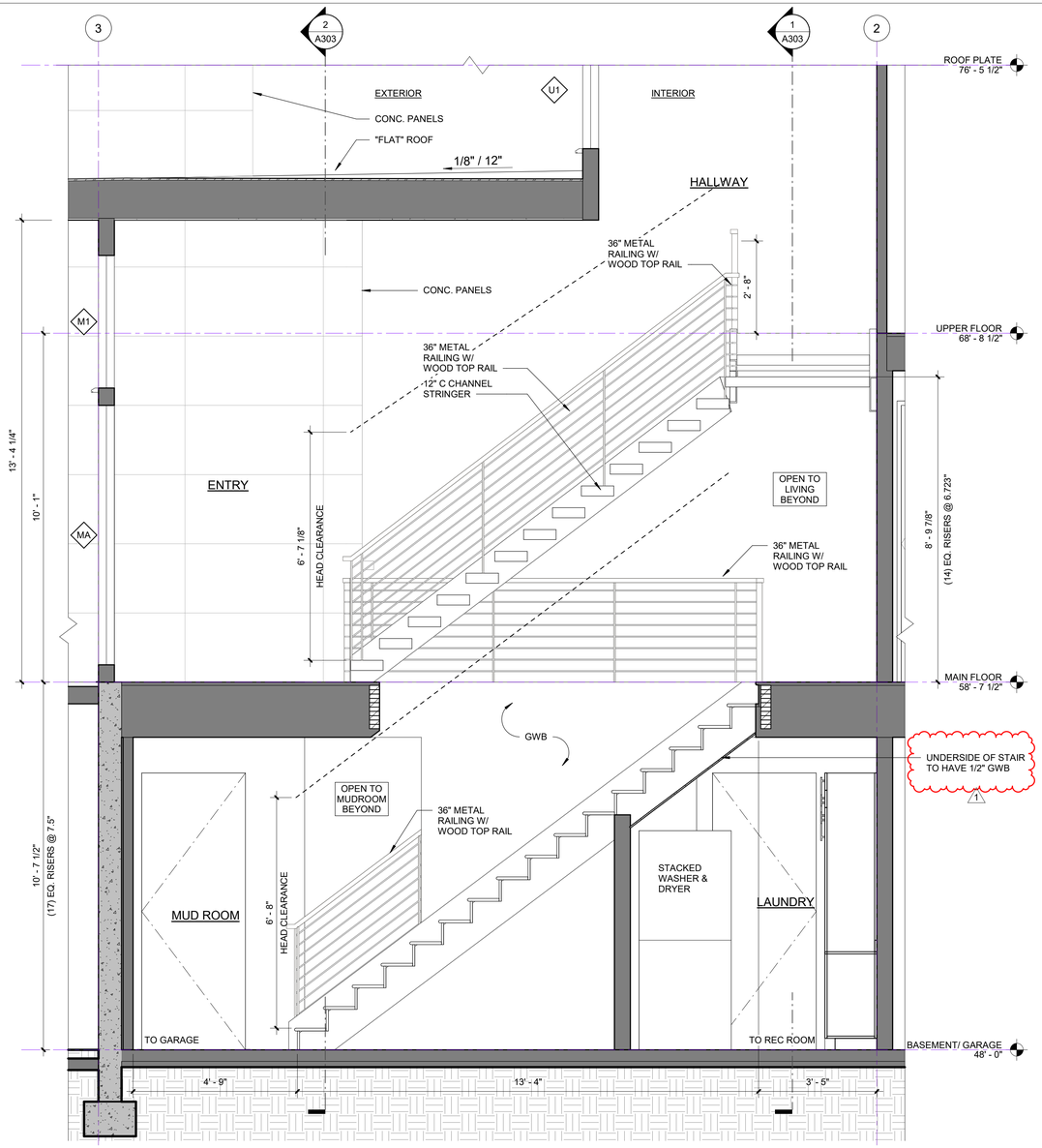
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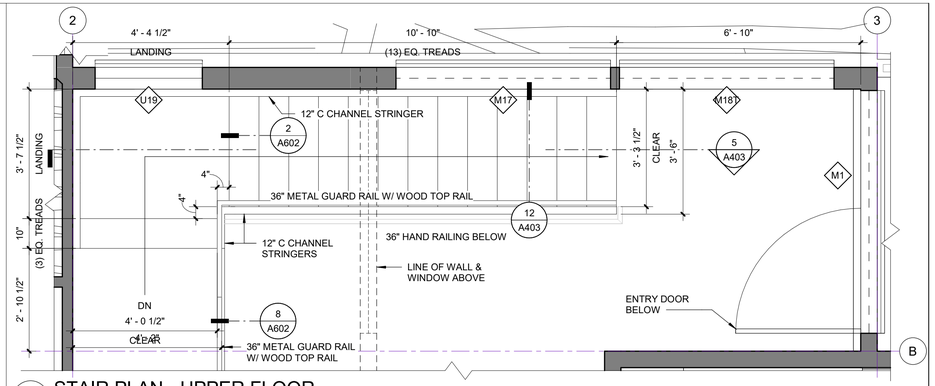
WALL SECTIONS

A402

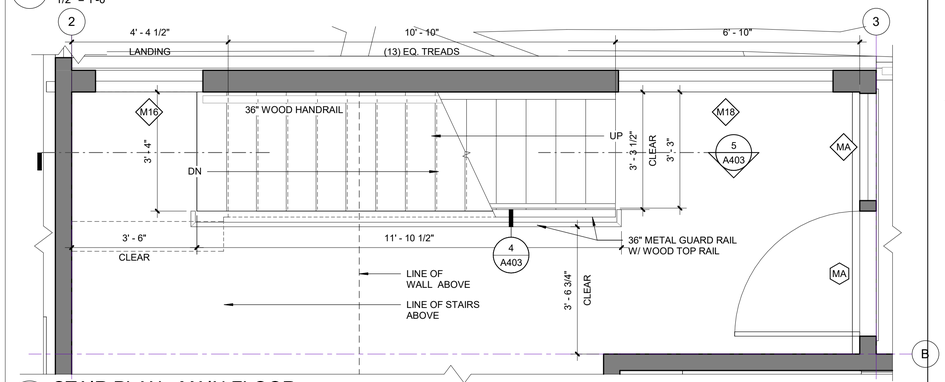
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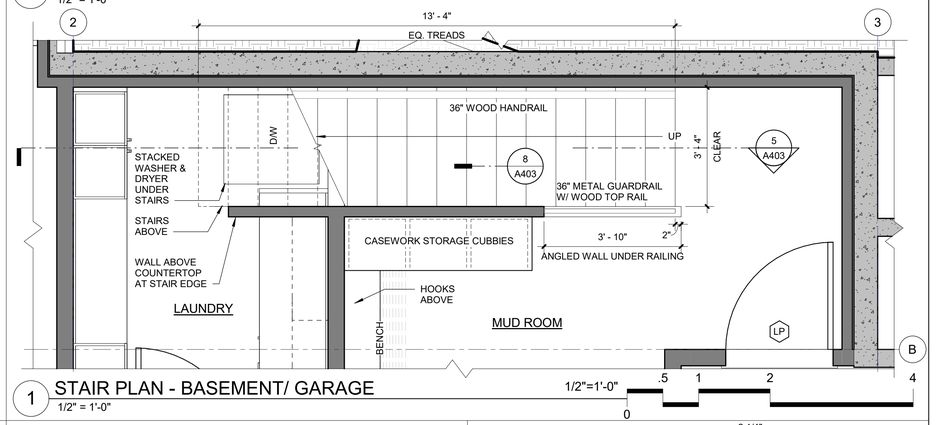
5 STAIR SECTION - BASEMENT & UPPER LEVEL
1/2" = 1'-0"



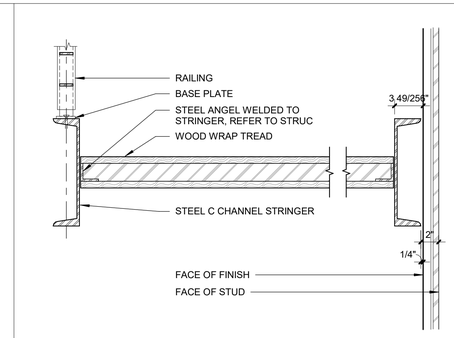
3 STAIR PLAN - UPPER FLOOR
1/2" = 1'-0"



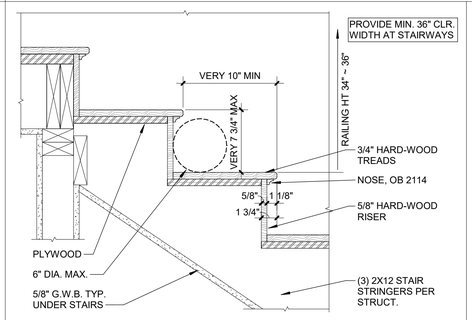
2 STAIR PLAN - MAIN FLOOR
1/2" = 1'-0"



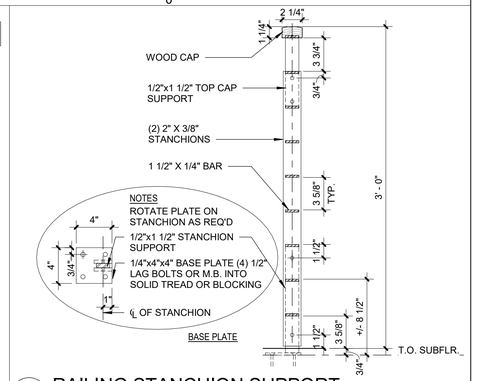
1 STAIR PLAN - BASEMENT/ GARAGE
1/2" = 1'-0"



12 OPEN TREAD CROSSING - CHANNEL
1 1/2" = 1'-0"



8 TYP CLOSED WOOD STAIR - SECTION
1 1/2" = 1'-0"



4 RAILING STANCHION SUPPORT
1 1/2" = 1'-0"

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Residence

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BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL

DRAWN BY: AD

REVISIONS:

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INT STAIR & RAILING
DETAILS

A403

7/17/2025 10:30:12 AM

EXTERIOR WINDOW SCHEDULE

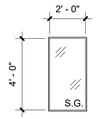
No.#	LOCATION	ROUGH OPENING (ft-in) WIDTH	ROUGH OPENING (ft-in) HEIGHT	HEAD HEIGHT From Subflr (ft-in)	WINDOW TYPE	WINDOW AREA	REMARKS (U-VALUE - 0.28 MAX) (S.G. - SAFETY GL; O.G. - OBSCURE GL; R.S. ROLLER SHADE)
BASEMENT/ GARAGE							
L1	GARAGE	6' - 0"	2' - 0"	8' - 0"	FIXED	12 SF	
L2	ENTRY	6' - 0"	2' - 0"	8' - 0"	FIXED	12 SF	S.G.
L3	HALLWAY	3' - 6"	4' - 6"	8' - 0"	FIXED	16 SF	
L4	GUEST BEDROOM	6' - 6"	4' - 6"	8' - 0"	CASEMENT	29 SF	EGRESS
L5	MEDIA ROOM	6' - 0"	4' - 6"	8' - 0"	CASEMENT	27 SF	EGRESS - WINDOW WELL
MAIN FLOOR							
M2	LIVING	2' - 6"	7' - 6"	8' - 0"	FIXED	19 SF	S.G.
M2T	LIVING	2' - 6"	3' - 4"	12' - 4"	FIXED TRANSOM	8 SF	S.G.
M3	LIVING	9' - 0"	3' - 4"	12' - 4"	FIXED TRANSOM	30 SF	S.G.
M4	LIVING	2' - 6"	7' - 6"	8' - 0"	FIXED	19 SF	S.G.
M4T	LIVING	2' - 6"	3' - 4"	12' - 4"	FIXED TRANSOM	8 SF	S.G.
M5	LIVING	5' - 0"	7' - 6"	8' - 0"	FIXED	38 SF	S.G.
M6	DINING	3' - 0"	7' - 8"	8' - 0"	AWNING	23 SF	S.G.
M7	DINING	7' - 0"	5' - 6"	8' - 0"	FIXED	39 SF	
M8	KITCHEN	5' - 0"	4' - 6"	8' - 0"	CASEMENT	23 SF	
M9	PANTRY	4' - 0"	4' - 6"	8' - 0"	FIXED	18 SF	
M10	LAUNDRY	5' - 0"	4' - 6"	8' - 0"	CASEMENT	23 SF	
M11	POWDER	2' - 0"	5' - 6"	8' - 0"	AWNING	11 SF	
M12	GUEST/ OFFICE	7' - 0"	5' - 6"	8' - 0"	CASEMENT	39 SF	EGRESS
M13	GUEST/ OFFICE	8' - 0"	2' - 0"	8' - 0"	FIXED	16 SF	
M14	GUEST/ OFFICE	2' - 6"	7' - 8"	8' - 0"	AWNING	19 SF	S.G.
M15	GUEST/ OFFICE	2' - 0"	7' - 8"	8' - 0"	AWNING	15 SF	S.G.
M16	ENTRY	3' - 0"	7' - 0"	7' - 6"	FIXED	21 SF	S.G.
M17	ENTRY	6' - 0"	3' - 4"	12' - 4"	FIXED	20 SF	
M18	ENTRY	6' - 0"	7' - 6"	8' - 0"	FIXED	45 SF	S.G.
M18T	ENTRY	6' - 0"	3' - 4"	12' - 4"	FIXED TRANSOM	20 SF	S.G.
UPPER FLOOR							
U1	HALLWAY	6' - 9 1/2"	2' - 10"	8' - 2"	FIXED	19 SF	
U2	HALLWAY	6' - 9 1/2"	2' - 10"	8' - 2"	FIXED	19 SF	
U3	HALLWAY	6' - 9 1/2"	2' - 10"	8' - 2"	FIXED	19 SF	
U4	MASTER BEDROOM	7' - 0"	2' - 0"	8' - 2"	FIXED	14 SF	
U5T	MASTER BEDROOM	8' - 0"	1' - 6"	9' - 0"	FIXED TRANSOM	12 SF	S.G.
U6	MASTER BEDROOM	3' - 0"	7' - 2"	7' - 6"	AWNING	22 SF	S.G.
U7	MASTER BEDROOM	7' - 0"	5' - 0"	7' - 6"	FIXED	35 SF	
U8	WC	3' - 0"	2' - 0"	7' - 6"	FIXED	6 SF	
U9	MASTER BATH	6' - 6"	5' - 0"	7' - 6"	CASEMENT	33 SF	S.G.
U10	MASTER BATH	4' - 0"	2' - 0"	7' - 6"	AWNING	8 SF	
U11	MASTER CLOSET	4' - 0"	2' - 0"	7' - 6"	FIXED	8 SF	
U12	MASTER CLOSET	6' - 0"	2' - 0"	7' - 6"	FIXED	12 SF	
U13	BATHROOM	4' - 6"	2' - 0"	7' - 6"	FIXED	9 SF	
U14	BEDROOM	7' - 2 1/2"	5' - 0"	7' - 6"	CASEMENT	36 SF	EGRESS
U15	BEDROOM	7' - 0"	5' - 0"	7' - 6"	CASEMENT	35 SF	EGRESS
U16	BEDROOM	8' - 0"	2' - 0"	7' - 6"	FIXED	16 SF	
U17	BEDROOM	2' - 6"	7' - 2"	7' - 6"	AWNING	18 SF	S.G.
U18	BEDROOM	2' - 0"	7' - 2"	7' - 6"	AWNING	14 SF	S.G.
U19	HALLWAY	3' - 0"	7' - 2"	7' - 6"	AWNING	22 SF	S.G.
			Total Areas of Windows			905 SF	

SKYLIGHT SCHEDULE

No.#	LOCATION	FRAME CENTER TO CENTER WIDTH	FRAME CENTER TO CENTER HEIGHT	TYPE	AREA	REMARKS
S1	MASTER BATH	2' - 0"	4' - 0"	FIXED	8 SF	S.G.
S2	MASTER BATH	2' - 0"	4' - 0"	FIXED	8 SF	S.G.
S3	BATHROOM	2' - 0"	4' - 0"	FIXED	8 SF	S.G.

WINDOW & EXTERIOR DOOR NOTES:

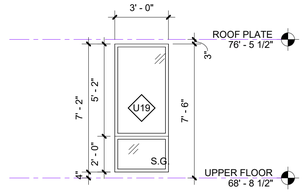
1. WINDOW & DOOR MANUFACTURER: PER SPEC; UNLESS NOTED OTHERWISE.
2. ALL GLAZING SHALL BE DOUBLE GLAZED, TRIPLE GLAZED IF NEEDED, W/ 1 LAYER OF LOW E COATING AND 5/8" AIRSPACE FILLED WITH ARGON GAS AS REQD., AVERAGE u-VALUE TO BE 0.28 OR LESS.
3. WHERE THERE IS A 2ND SUB FLOOR, WINDOW HEAD AND SILL HEIGHTS ARE MEASURED FROM THE 2ND SUB FLOOR.
4. ALL DOOR & WINDOW HEAD CASINGS TO ALIGN U.N.O.
5. THE CONFIGURATION PER A501 & TYP WATERPROOF DETAILS PER A503
6. ALL HEADER HEIGHTS ARE MEASURED FROM THE TOP OF SUBFLR. UNLESS NOTED OTHERWISE.
7. CONTRACTOR TO VERIFY UNIT HEIGHT AND ROUGH OPENING W/ WINDOW MANUFACTURER AND ADJUST AS REQD. TO ALLOW DOOR & WINDOW HEIGHTS TO ALIGN
8. WINDOW & DOOR SUPPLIER TO VERIFY LOCATION OF ALL SAFETY GLASS PER CURRENT CODE REQUIREMENTS.
9. PROVIDE SCREENS @ ALL OPERABLE WINDOWS.
10. EGRESS WINDOW PER IRC CODE W/ MIN CLEAR OPEN 20" WIDTH & 24" HT & MIN. 5.7 SF NET OPEN AREA, 44" MAX SILL HT
11. HARDWARE TYPES T.B.D., SEE SPECIFICATION
12. ALL DOORS HAVE THRESHOLD & WEATHERSTRIP

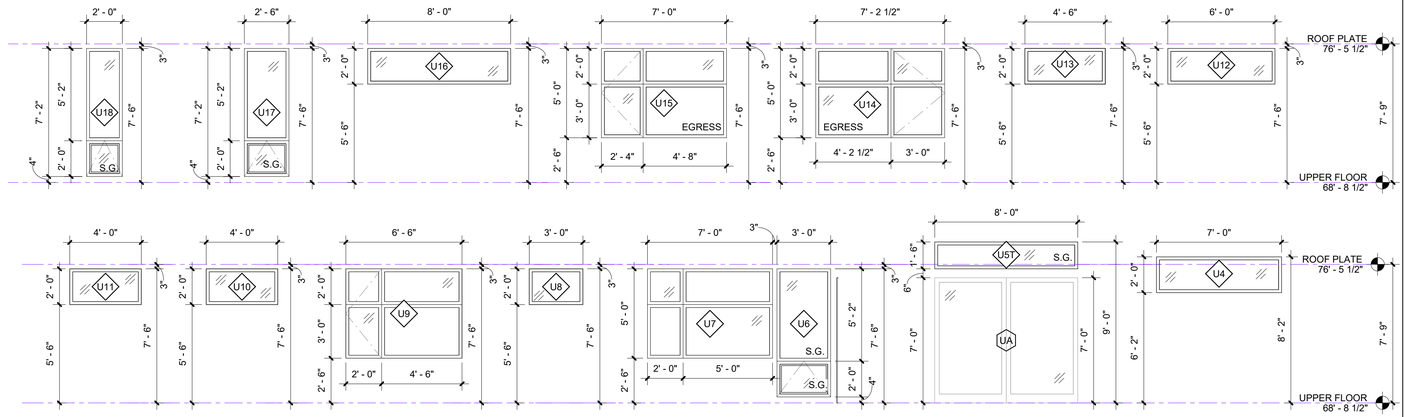


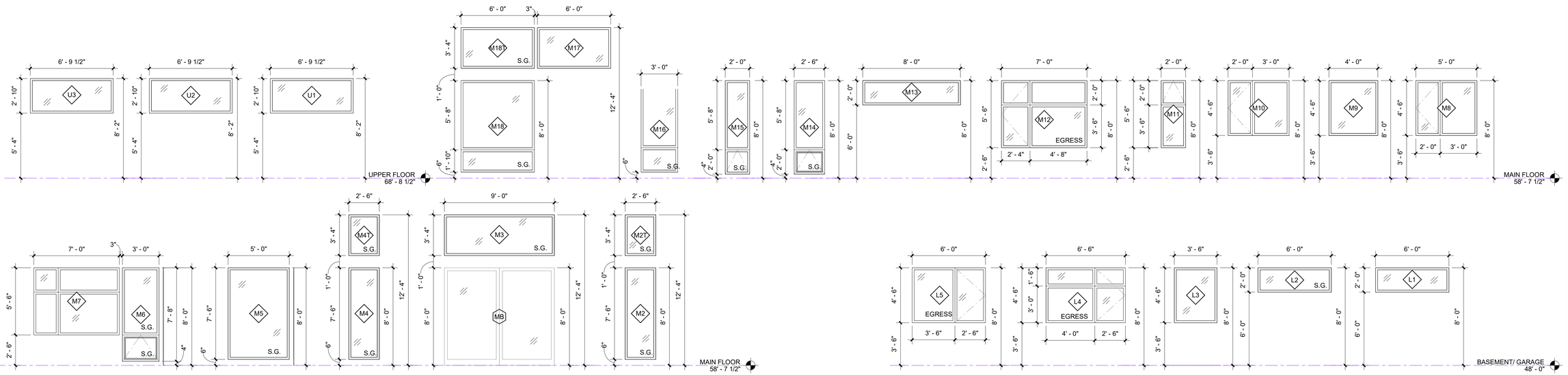
S1 / S2 / S3 / S4

SKYLIGHT LEGENDS

1/4" = 1'-0"







EXTERIOR WINDOW ELEVATIONS

1/4" = 1'-0"

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Ramaiyah Subramanian Residence
7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET
REVISION 1
07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

REVISIONS:

NO.	DESCRIPTION	DATE

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

WINDOW & SKYLIGHT SCHEDULES

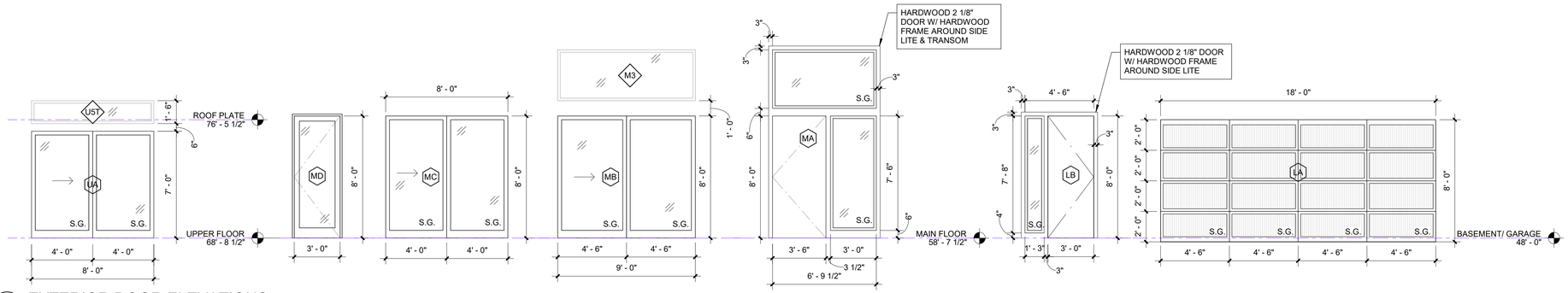
A501

EXTERIOR DOOR SCHEDULE

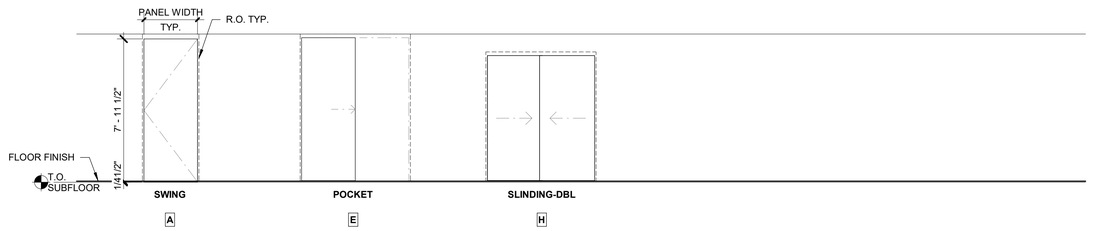
Ext. Door #	LOCATION	ROUGH OPENING WIDTH (ft-in)	ROUGH OPENING HEIGHT (ft-in)	HEAD HEIGHT From Subflr (ft-in)	DOOR TYPE	DOOR AREA	REMARKS U-VALUE: 0.28 MAX (S.G. - Safety Gl; O.G. - Obscure Gl; R.S. - Roller Shade)
BASEMENT/ GARAGE							
LA	GARAGE	18' - 0"	8' - 0"	7' - 9"	OVERHEAD	144 SF	ALUM.-GLASS; ETCH MATTE S.G.
LB	ENTRY	3' - 0"	8' - 0"	8' - 0"	SWING	24 SF	CUSTOM HARDWOOD DOOR & FRAME; SIDE LITE S.G., TRANSOM S.G.
MAIN FLOOR							
MA	ENTRY	3' - 6"	8' - 0"	8' - 0"	SWING	28 SF	CUSTOM HARDWOOD DOOR & FRAME; SIDE LITE, S.G.
MB	LIVING	9' - 0"	8' - 0"	8' - 0"	SLIDING - 2P	72 SF	S.G.
MC	DINING	8' - 0"	8' - 0"	8' - 0"	SLIDING - 2P	64 SF	S.G.
MD	HALLWAY	3' - 0"	8' - 0"	8' - 0"	SWING	24 SF	S.G., WEATHERSTRIP, THRESHOLD
UPPER FLOOR							
UA	MASTER BEDROOM	8' - 0"	7' - 0"	7' - 0"	SLIDING - 2P	56 SF	S.G.

INTERIOR DOOR SCHEDULE

No.#	From Room: Name	DOOR SIZE Width	DOOR SIZE Height	ROUGH HDR. FROM SUBFLR	DOOR TYPE #	DOOR TYPE NAME	DOOR MAT'L	DOOR FINISH	FRAME MAT'L	FRAME FINISH	REMARKS (S.G. Safety Glass) (T&W - Threshold & Weatherstrip)
BASEMENT/ GARAGE											
LD	HALLWAY	2' - 6"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LE	GUEST BEDROOM	2' - 6"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LF	GUEST BEDROOM	2' - 6"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LG	BATH	2' - 6"	8' - 0"	8' - 2 1/2"	E	POCKET	WD	PAINT	WD	PAINT	
LH	MEDIA ROOM	2' - 6"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LI	CRAWL SPACE	3' - 0"	4' - 0"	4' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LJ	MEDIA ROOM	3' - 0"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LL	REC ROOM	3' - 0"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LN	REC ROOM	3' - 0"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LO	MUD ROOM	2' - 6"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	
LP	GARAGE	3' - 0"	8' - 0"	8' - 1"	A	SWING	WD	PAINT	WD	PAINT	T&W, 20 MIN, SOLID CORE DOOR, W/ CLOSER 1
MAIN FLOOR											
ME	HALLWAY	2' - 6"	8' - 0"	8' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
MF	POWDER	2' - 6"	8' - 0"	8' - 2 1/2"	E	POCKET	WD	PAINT	WD	PAINT	
MG	GUEST/ OFFICE	2' - 6"	8' - 0"	8' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
MH	HALLWAY	2' - 6"	8' - 0"	8' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
MJ	HALLWAY	3' - 0"	8' - 0"	8' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
MK	HALLWAY	3' - 0"	8' - 0"	8' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
ML	LAUNDRY	3' - 0"	8' - 0"	8' - 2 1/2"	E	POCKET	WD	PAINT	WD	PAINT	
UPPER FLOOR											
UB	HALLWAY	3' - 0"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UC	MASTER BEDROOM	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UD	MASTER BATH	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UE	MASTER BATH	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UF	HALLWAY	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UG	BATHROOM	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UH	HALLWAY	2' - 6"	7' - 0"	7' - 2 1/2"	A	SWING	WD	PAINT	WD	PAINT	
UI	BEDROOM	5' - 6"	7' - 0"	7' - 2 1/2"	H	SLIDING- DBL	WD	PAINT	WD	PAINT	



1 EXTERIOR DOOR ELEVATIONS
1/4" = 1'-0"



INTERIOR DOOR TYPES
1/4" = 1'-0"

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Ramaiyah Subramanian Residence
7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET
REVISION 1
07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

REVISIONS:

NO.	DESCRIPTION	DATE
1	REVISION 1	07/17/2025

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

EXTERIOR & INTERIOR DOOR SCHEDULES

A502

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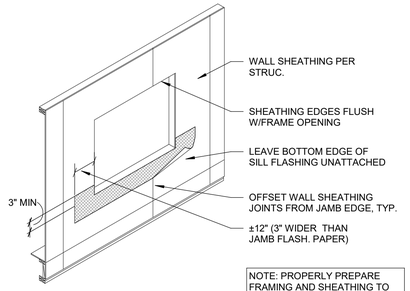
INSTALLATION STEPS:

1. CUT AND FOLD SELF-ADHESIVE FLEXIBLE SILL FLASHING INTO FRAME OPENING; LEAVE BOTTOM EDGE OF SILL FLASHING UNATTACHED.
2. CUT AND FOLD SELF-ADHESIVE FLEXIBLE CORNER FLASHING INTO BOTH BOTTOM CORNERS OF FRAME OPENING
3. CUT AND FOLD SELF ADHESIVE FLEXIBLE FLASHING INTO JAMB FRAME OPENING; LEAVE BOTTOM EDGES OF JAMB FLASHING UNATTACHED
4. CUT AND FOLD SELF ADHESIVE FLEXIBLE FLASHING INTO HEAD FRAME OPENING.
5. SEAL WINDOW FRAME TO OPENING. APPLY CONT. BEAD OF SEALANT WITHIN 1/2" OF EDGE OF OPENING OR APPLY CONT. SEALANT ON BACKSIDE OF WINDOW FLANGES @ HEAD, JAMB & SILL; THEN INSTALL FRAME TO OPENING.

   CHECK WINDOW FINS FOR DAMAGE. REPAIR OR REPLACE DAMAGED FINS.

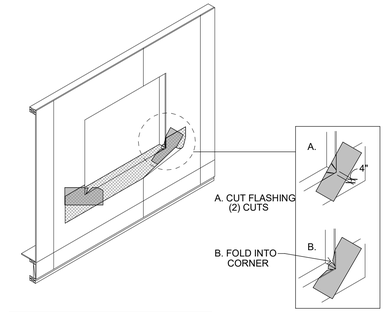
   FASTENERS TO BE STAINLESS STEEL ROOFING NAILS (1 1/2") OR EQUAL. MINIMUM PENETRATION INTO FRAMING TO BE 1"

   GALVANIZED FASTENERS ALLOWED WHEN INSTALLING VINYL WINDOWS
6. WHEN INSTALLING A WINDOW: NAIL BOTTOM CORNER FIRST. SET WINDOW STRAIGHT, PLUMB & LEVEL BEFORE SECURING. PROVIDE CONTINUOUS SUPPORT OR SHIMS UNDER FRAME OF SILL IF REQUIRED BY MFR. FASTEN THROUGH SIDES OF FRAME. DO NOT FASTEN THROUGH HEAD UNLESS PERMITTED BY WINDOW MFR.
7. INSTALL BUILDING PAPER FROM THE BOTTOM TO TOP OF THE WALL SHINGLE EACH COARSE TO FACILITATE PROPER DRAINAGE.

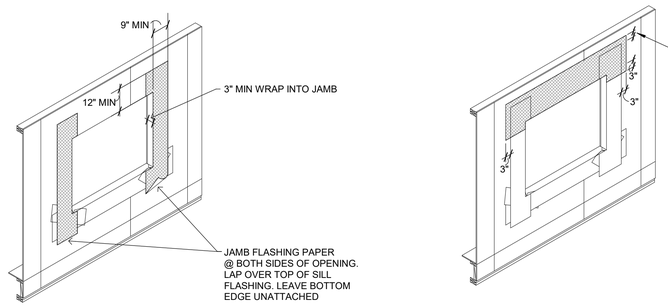


NOTE: PROPERLY PREPARE FRAMING AND SHEATHING TO FACILITATE PROPER ADHESION FOR SELF-ADHESIVE FLEXIBLE FLASHING(S) AND NAIL-FLANGE WINDOW(S).

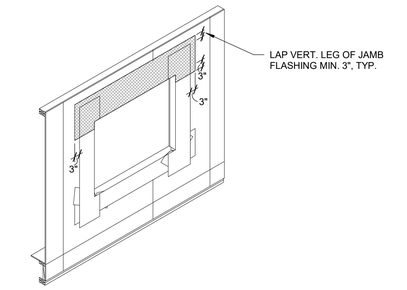
1. MEMBRANE SILL FLASHING



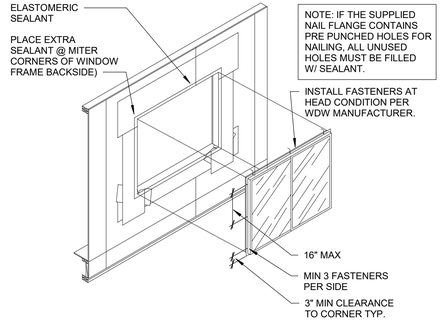
2. MEMBRANE SILL CORNER FLASHING



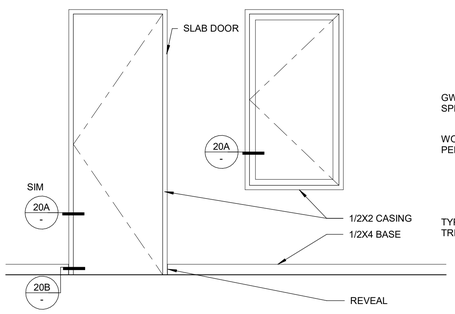
3. MEMBRANE JAMB FLASHING



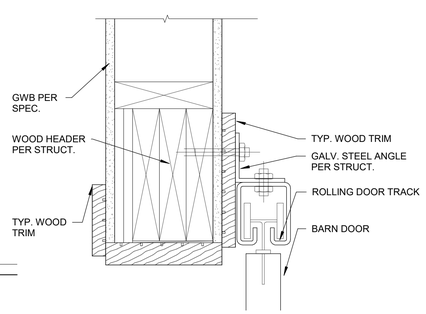
4. MEMBRANE HEAD FLASHING



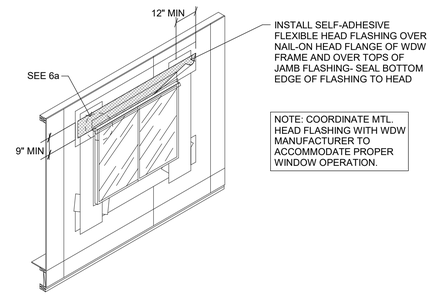
5. WINDOW INSTALLATION



19 TYP WINDOW & DOOR CASINGS
1/2" = 1'-0" D8-5-19

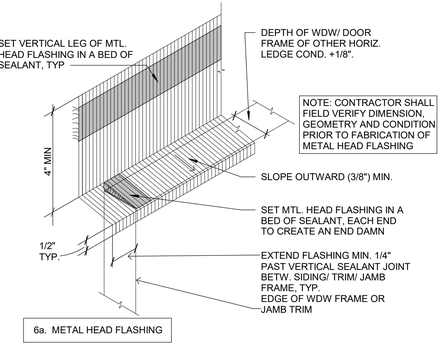


15 INT SLIDING BARN DOOR HEAD
1 1/2" = 1'-0" D8-5-15



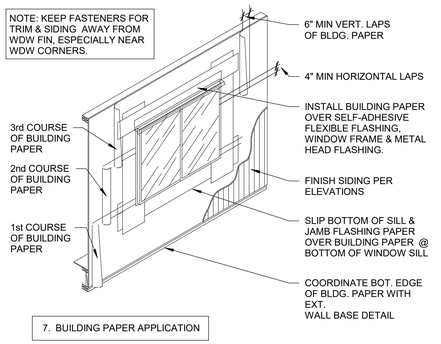
NOTE: COORDINATE MTL. HEAD FLASHING WITH WDW MANUFACTURER TO ACCOMMODATE PROPER WINDOW OPERATION.

6. HEAD FLASHING SEQUENCE



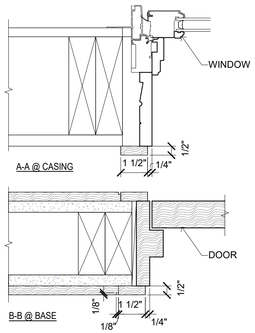
NOTE: CONTRACTOR SHALL FIELD VERIFY DIMENSION, GEOMETRY AND CONDITION PRIOR TO FABRICATION OF METAL HEAD FLASHING

6a. METAL HEAD FLASHING

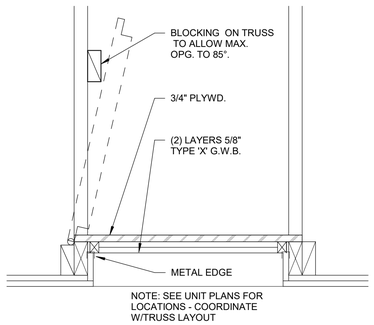


7. BUILDING PAPER APPLICATION

1 FLASHING & NAILFLANGE WINDOWS INSTALLATION
1" = 1'-0" D8-5-11

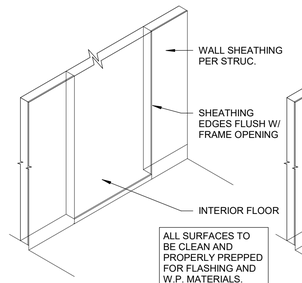


20 INT CASING & BASE - PLAN VIEW
3" = 1'-0" D8-5-20



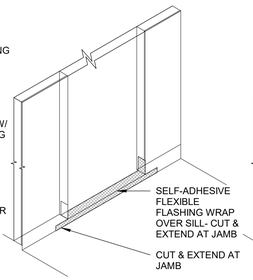
NOTE: SEE UNIT PLANS FOR LOCATIONS - COORDINATE W/TRUSS LAYOUT

16 ATTIC ACCESS PANEL
1 1/2" = 1'-0" D8-5-16

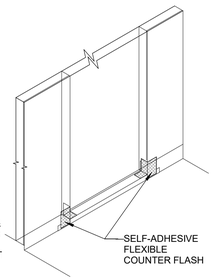


ALL SURFACES TO BE CLEAN AND PROPERLY PREPPED FOR FLASHING AND W.P. MATERIALS.

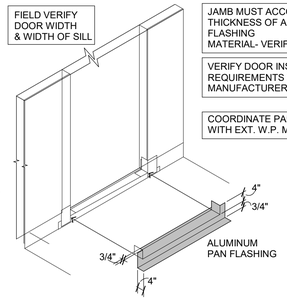
1. FRAMED OPENING



2. SELF ADHESIVE FLEXIBLE FLASHING INSTALLATION



3. SELF ADHESIVE FLEXIBLE COUNTER FLASHING

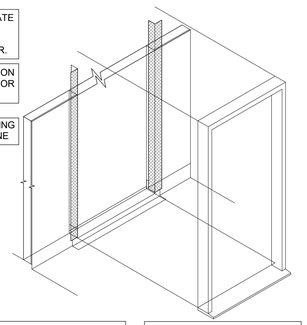


4. ALUMINUM PAN FLASHING

JAMB MUST ACCOMMODATE THICKNESS OF ALL FLASHING MATERIAL- VERIFY W/ MFR.

VERIFY DOOR INSTALLATION REQUIREMENTS WITH DOOR MANUFACTURER

COORDINATE PAN FLASHING WITH EXT. W.P. MEMBRANE



5. COUNTER FLASH @ JAMB AND INSTALL DOOR

NOTE: INSTALL DOOR PER TYP FLASHING AND WINDOW/DOOR INSTALLATION DETAIL

2 DOOR PAN
1" = 1'-0" D8-5-12

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BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL

DRAWN BY: AD

REVISIONS:

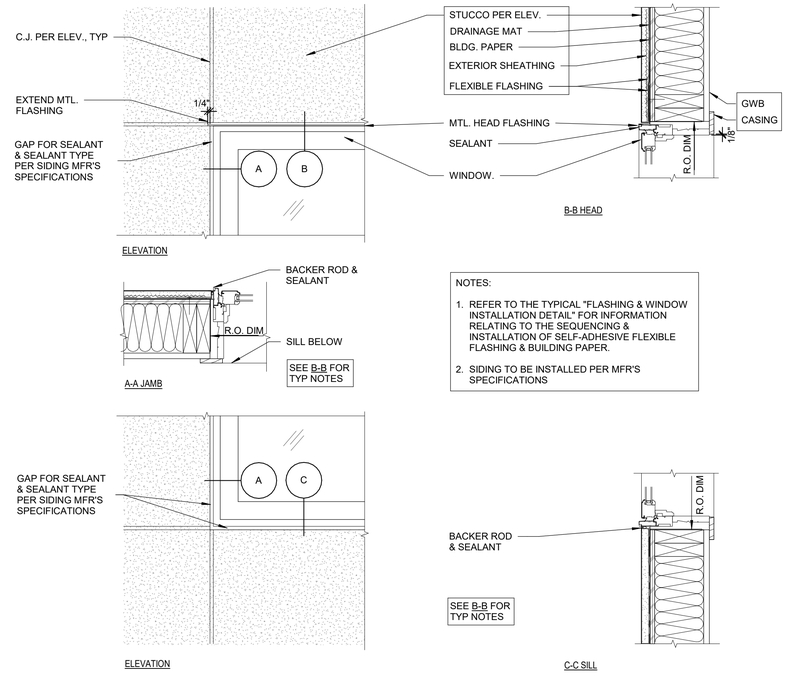
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WATERPROOF DETAILS

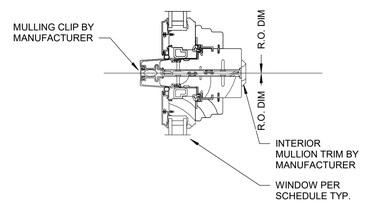
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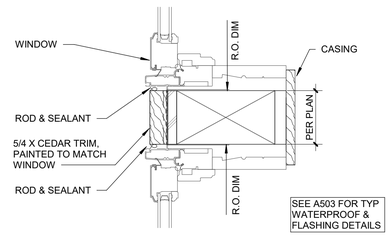
1 TYP FLASHING & SEALANT DETAILS @ NAILFLANGE WINDOWS - STUCCO

1 1/2" = 1'-0"



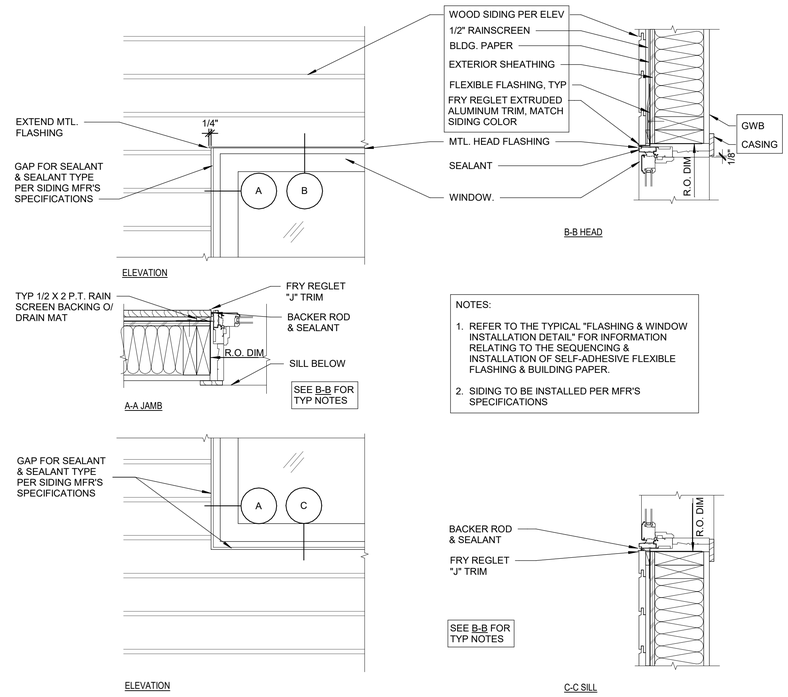
3 MULLED WINDOW DETAIL

3" = 1'-0"



4 WINDOW JAMB BTW WINDOWS

3" = 1'-0"



2 TYP FLASHING & SEALANT DETAILS @ NAILFLANGE WINDOWS - WOOD SIDING

1 1/2" = 1'-0"

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BUILDING PERMIT SET

REVISION 1

07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL

DRAWN BY: AD

REVISIONS:

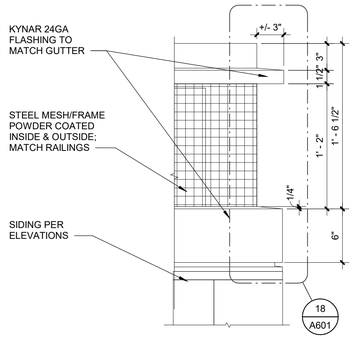
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WATERPROOF DETAILS

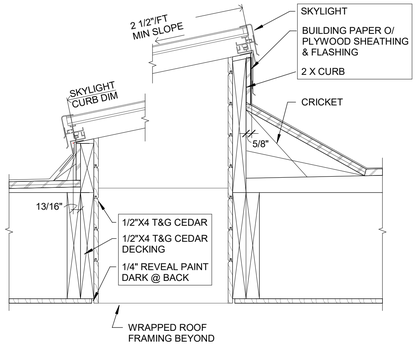
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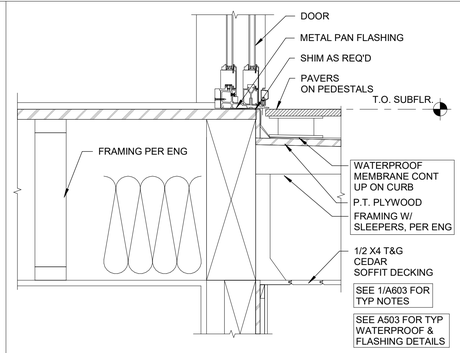
17 CHIMNEY CAP

1 1/2" = 1'-0" D7-3-4



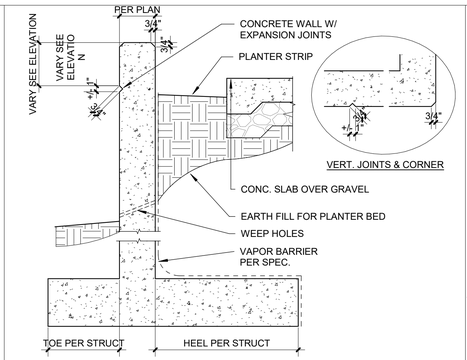
13 SKYLIGHT SILL & HEADER

1 1/2" = 1'-0"



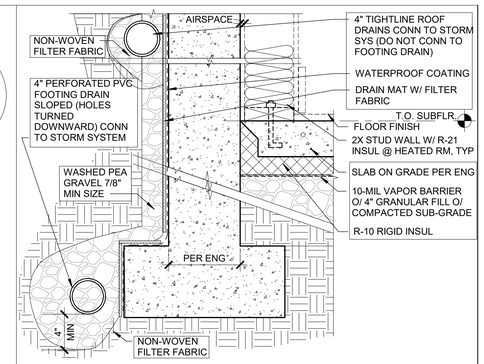
9 SLIDING DOOR @ DECK

1 1/2" = 1'-0"



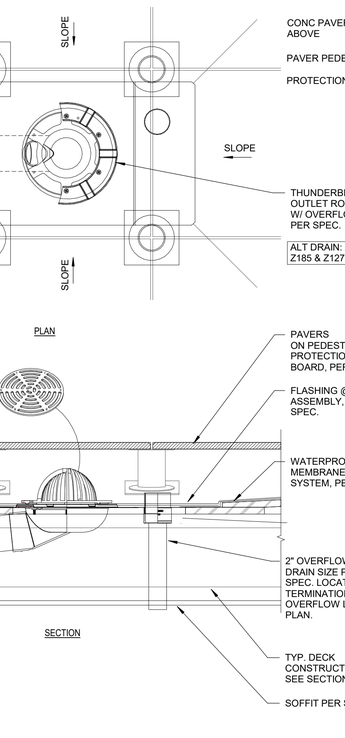
5 ARCHITECTURAL/PLANTER CONC WALL

1" = 1'-0"



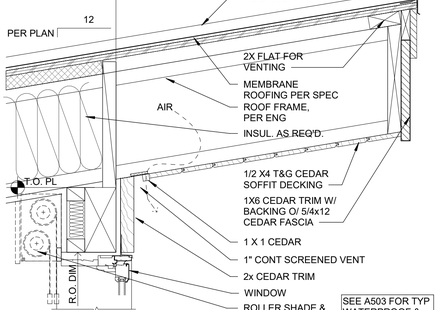
1 TYP. FNDTN. @ HEATED BSMNT

1 1/2" = 1'-0"



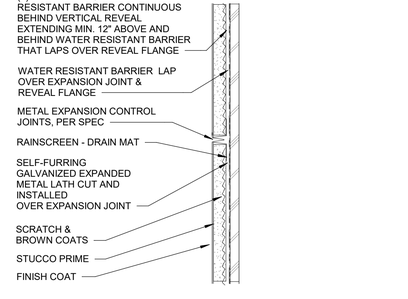
18 CHIMNEY CAP - METAL

3" = 1'-0" D7-3-8



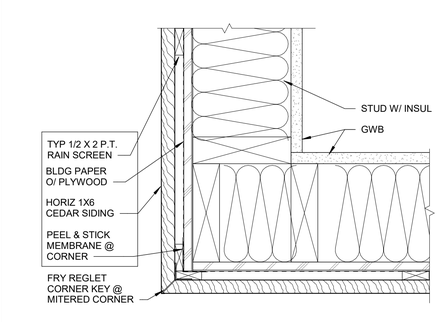
14 RAKE - ROOF W/ WOOD TRIM

1 1/2" = 1'-0"



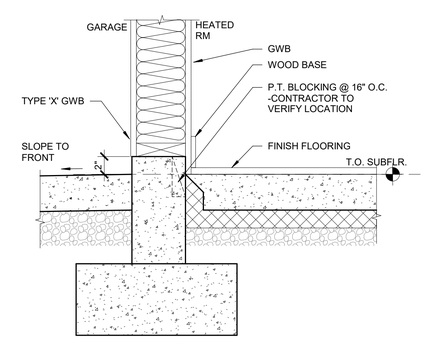
10 TYP OVERHANG & D.S. FLAT

1 1/2" = 1'-0"



6 GARAGE DOOR THRESHOLD

1 1/2" = 1'-0"

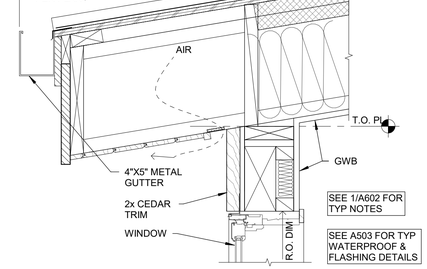


2 FDTN @ BSMT W/O INSUL

1 1/2" = 1'-0"

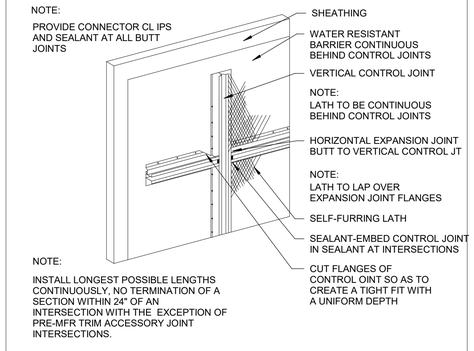
20 DECK DRAIN

1 1/2" = 1'-0"



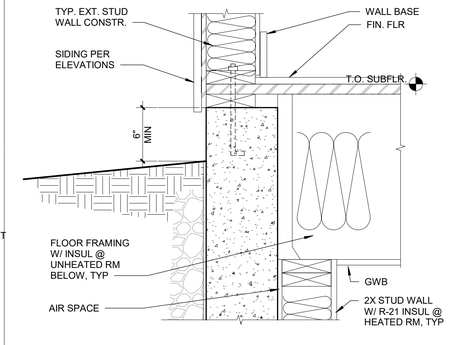
15 EAVE - ROOF W/ WOOD FASCIA

1 1/2" = 1'-0"



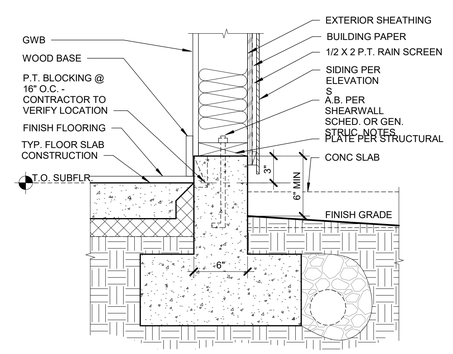
11 STUCCO EXP. C.J. INTERSECTION

3" = 1'-0"



7 FNDTN @ BSMNT FLOOR

1 1/2" = 1'-0"



3 TYP FNDTN W/ SLAB ON GRADE

1 1/2" = 1'-0"

16 RIDGE - ROOF W/ WOOD FASCIA

1 1/2" = 1'-0"

12 STUCCO EXP. C.J. @ HORI. / VERT.

3" = 1'-0"

8 TYP WD SIDING @ CORNER - PLAN VIEW

3" = 1'-0"

4 FNDTN. BETWEEN GARAGE & HEATED RM

1 1/2" = 1'-0"

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Ramaiyah Subramanian Residence
7466 E Mercer Way
Mercer Island, WA 98040

BUILDING PERMIT SET
REVISION 1
07/17/2025

PROJECT NUMBER: 20-0502
PROJECT MANAGER: JL
DRAWN BY: AD

REVISIONS:

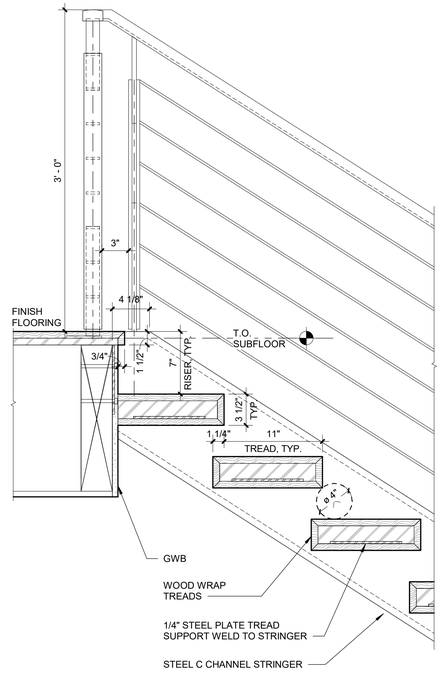
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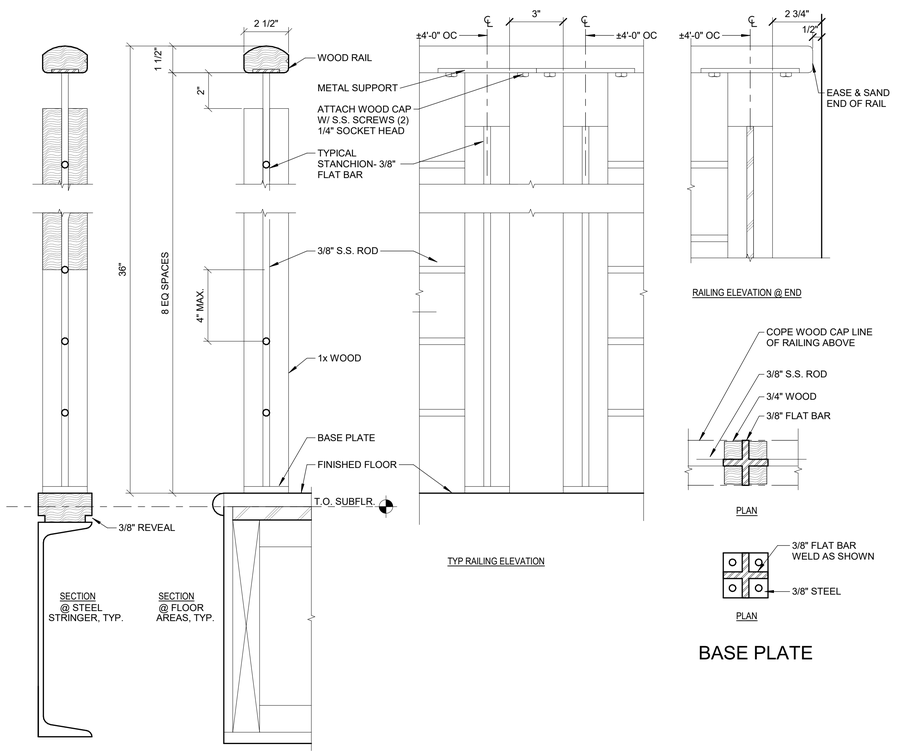
DETAILS

A601

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2 RAILING & OPEN TREAD SECT - CHANNEL
1 1/2" = 1'-0"



8 WOOD RAILING DETAILS
3" = 1'-0"

BASE PLATE

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Residence

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BUILDING PERMIT SET

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DETAILS

A602

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GENERAL STRUCTURAL NOTES:

CRITERIA:

1.1 ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION.

1.2 DESIGN LOADING CRITERIA
THE DESIGN LOADING OF THE STRUCTURE IS AS FOLLOWS:

LIVE LOADS (IN ACCORDANCE WITH IBC TABLE 1607.1)			
OCCUPANCY OR USE	**UNIFORM LIVE LOAD**	**CONCENTRATED LIVE LOAD**	**NOTES**
FLOOR, RESIDENTIAL	40-PSF	-	
BALCONIES & DECKS	60-PSF	-	1.5 x OCCUPANCY LOAD
UNINHABITABLE ATTIC, WITH STORAGE	20-PSF	-	CONCURRENT WITH SNOW LOADS
UNINHABITABLE ATTIC, WITHOUT STORAGE	10-PSF	-	NON-CONCURRENT WITH SNOW LOADS
HANDRAILS AND GUARDS	-	200-LBS	ANY POINT, ANY DIRECTION (ASCE 7-16, SECTION 4.5.1)

WIND DESIGN DATA ASCE 7-16, CHAPTER 28: SIMPLIFIED ENVELOPE PROCEDURE	
BASIC DESIGN WIND SPEED (3-SEC GUST), V	100-MPH
RISK CATEGORY	II
WIND EXPOSURE	B
INTERNAL PRESSURE COEFFICIENT	N/A
EXTERIOR COMPONENTS & CLADDING	25-PSF
TOPOGRAPHICAL FACTOR, K_{ZT}	2.00

SEISMIC DESIGN DATA ASCE 7-16, CHAPTER 12.8: EQUIVALENT LATERAL FORCE PROCEDURE	
RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR, I_e	1.0
MAPPED SPECT ACCEL, SHORT PERIOD, S_S	1.454
MAPPED SPECT ACCEL, 1-SEC, S_1	0.502
SITE CLASS	D
SPECTRAL RESPONSE COEFF, SHORT PERIOD, S_{DS}	1.240
SPECTRAL RESPONSE COEFF, 1-SEC, S_{D1}	0.680
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC-FORCE-RESISTANCE SYSTEM	PLY. SHEAR WALLS
RESPONSE MODIFICATION FACTOR, R	6.5
SEISMIC RESPONSE COEFFICIENT, C_S	0.19
DESIGN BASE SHEAR, V	25.34 KIPS

SNOW LOADS ASCE 7-16, CHAPTER 7		
GROUND SNOW LOAD, P_g		25-PSF
FLAT ROOF SNOW LOAD, $P_f = 0.7\ C_e C_t I_s P_g$		25-PSF
• SNOW EXPOSURE FACTOR, C_e	1.0	
• SNOW LOAD IMPORTANCE FACTOR, I_S	1.0	
• THERMAL FACTOR, C_t	1.2	
DO NOT ADJUST FOR SLOPE OR DRIFT UNLESS NOTED ON THE DRAWINGS.		

SEE DRAWINGS FOR ADDITIONAL LOADING CRITERIA.

1.3 STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER PROJECT DOCUMENTS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION.

1.4 CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS.

1.5 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.

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

1.7 DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

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

GEOTECHNICAL:

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

GEOTECHNICAL PROPERTIES AS DEFINED IN GEOTECHNICAL REPORT: AGES ENGINEERING, LLC PROJECT NO. A-1562, DATED JULY 10, 2020	
SOIL SITE CLASS	D
ALLOWABLE SOIL BEARING PRESSURE	2500-PSF
ACTIVE LATERAL EARTH PRESSURE (UNRESTRAINED)	35-PCF
ACTIVE LATERAL EARTH PRESSURE (RESTRAINED)	35-PCF + 10-PSF
SEISMIC LATERAL EARTH PRESSURE	6H-PSF
PASSIVE LATERAL EARTH PRESSURE	325-PCF
BASE FRICTION COEFFICIENT	0.35

CONCRETE:

3.1 CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC CHAPTER 19 AND ACI 318-14. MIX SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-CONTENT CONFORMING TO ACI 318-14 TABLE 19.3.3.1. CONCRETE STRENGTH, BASED ON IBC SECTION 1904.1, SHALL BE AS FOLLOWS:

TYPE OR LOCATION OF CONCRETE CONSTRUCTION	**MIN. 28-DAY COMPRESSIVE STRENGTH, f'_c**
INTERIOR SLABS-ON-GRADE	2500-PSI
FOOTINGS, BASEMENT WALLS, FOUNDATION/STEM WALLS	3000-PSI[1]

[1] SPECIFIED COMPRESSIVE STRENGTH (f'_c) SPECIFICATIONS ADDRESS SERVICEABILITY REQUIREMENTS. DESIGN STRENGTH OF CONCRETE IS 2500-PSI, THEREFORE, STRENGTH TESTS ARE NOT REQUIRED. PROVIDE CONCRETE MIX TICKETS VERIFYING STRENGTH SPECIFICATIONS.

3.2 REINFORCING STEEL SHALL CONFORM TO ASTM A615/A615M-18E1 AND THE FOLLOWING:

BAR SIZE	**STEEL GRADE**
#5 BAR & LARGER	GRADE 60, f_y = 60,000-PSI
#4 BAR & SMALLER	GRADE 40, f_y = 40,000-PSI
WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064/A1064M-18a	

3.3 REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 318-14. LAP ALL CONTINUOUS REINFORCEMENT (#5 AND SMALLER) 2'-0" MINIMUM. LAPS OF LARGER BARS (#6 AND #7) SHALL BE 3'-0", MIN. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS AND LAP 2'-0" MINIMUM. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

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

CONDITION	**CLEAR COVER**
FOOTINGS & UNFORMED SURFACES CAST AGAINST & PERMANENTLY EXPOSED TO EARTH	3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS & LARGER)	2"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#5 BARS & SMALLER)	1-1/2"
SLABS & INTERIOR FACE OF WALLS (#11 BARS & SMALLER)	3/4"
COLUMN TIES, COLUMN SPIRALS, BEAM STIRRUPS	1-1/2"

WOOD:

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

MEMBER USE	**SIZE**	**SPECIES**	**GRADE**
STUDS	2X, 3X	HEM-FIR OR SPF	STUD
JOISTS/RAFTERS	2X, 3X	HEM-FIR	NO. 2
PLATES/MISC.	2X, 3X	HEM-FIR	NO. 2
BEAMS	4X	DOUGLAS FIR-LARCH	NO. 2
POSTS	4X	DOUGLAS FIR-LARCH	NO. 2
TIMBER BEAMS	6X & LARGER	DOUGLAS FIR-LARCH	NO. 2
TIMBER POSTS	6X & LARGER	DOUGLAS FIR-LARCH	NO. 2

6.2 GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND AITC STANDARDS. EACH MEMBER SHALL BEAR AN AITC IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC CERTIFICATE OF CONFORMANCE. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

MEMBER USE	**COMBINATION**	**SPECIES**	F_{bx+}	F_{bx-}	F_{cLx}	F_{vx}	E_x
BEAMS	24F-V4	DF/DF	2400-PSI	1850-PSI	650-PSI	265-PSI	1800-KSI

6.3 ENGINEERED WOOD SHOWN ON THE DRAWINGS ARE DESIGNED BASED ON TRUS JOIST ENGINEERED LUMBER MANUFACTURED BY WEYERHAEUSER IN ACCORDANCE WITH ICC REPORT NO. ES ESR-1387. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER. ALL HANGERS AND OTHER HARDWARE NOT SHOWN SHALL BE DESIGNED AND SUPPLIED BY THE JOIST MANUFACTURER. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE ICC REPORT NUMBER, AND THE QUALITY CONTROL AGENCY. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

MEMBER USE	**PRODUCT**	F_b	F_{cL}	F_v	**E**
BEAMS	1.55E LAMINATED STRAND LUMBER (LSL)	2325-PSI	800-PSI	310-PSI	1550-KSI
BEAMS	2.0E LAMINATED VENEER LUMBER (LVL)	2600-PSI	750-PSI	285-PSI	2000-KSI
BEAMS	2.2E PARALLEL STRAND LUMBER (PSL)	2900-PSI	750-PSI	290-PSI	2200-KSI
RIM BOARDS	LAMINATED STRAND LUMBER (LSL)	1700-PSI	680-PSI	400-PSI	1300-KSI

6.4 ENGINEERED WOOD I-JOISTS SHOWN ON THE DRAWINGS ARE DESIGNED BASED ON TRUS JOIST I-JOISTS MANUFACTURED BY WEYERHAEUSER IN ACCORDANCE WITH ICC REPORT NO. ES ESR-1153. ALTERNATE ENGINEERED WOOD I-JOISTS MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER.

6.5 PREFABRICATED CONNECTOR PLATE WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH TPI 1-2014 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS. WOOD TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES (MITEK, ITW OR OTHER APPROVED TRUSS PLATE MANUFACTURER).

UNLESS OTHERWISE NOTED, LOADING SHALL BE AS FOLLOWS:

ROOF TRUSS DESIGN LOADING	
MEMBER/USE	**UNIFORM LOAD**
TOP CHORD SNOW LOAD	25-PSF
TOP CHORD WIND LOAD (UPLIFT)	15-PSF
TOP CHORD DEAD LOAD	7-PSF
BOTTOM CHORD LIVE LOAD	10-PSF
BOTTOM CHORD DEAD LOAD	5-PSF

FLOOR TRUSS DESIGN LOADING	
MEMBER/USE	**UNIFORM LOAD**
TOP CHORD LIVE LOAD	40-PSF
TOP CHORD DEAD LOAD	10-PSF
BOTTOM CHORD LIVE LOAD	N/A
BOTTOM CHORD DEAD LOAD	5-PSF

SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS PRIOR TO FABRICATION. SUBMITTED DOCUMENTS SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON. TRUSS DESIGN DRAWINGS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

1. SLOPE OR DEPTH, SPAN AND SPACING
2. LOCATION OF ALL JOINTS AND SUPPORT LOCATIONS
3. NUMBER OF PLIES IF GREATER THAN ONE
4. REQUIRED BEARING WIDTHS
5. DESIGN LOADS AND LOCATIONS: INCLUDE TOP AND BOTTOM CHORD LIVE AND DEAD LOADS, GIRDER LOADS, AND ENVIRONMENTAL LOADS (SEISMIC, WIND, SNOW, ETC.)
6. OTHER LATERAL LOADS, INCLUDING DRAG STRUT LOADS
7. ADJUSTMENTS TO WOOD AND METAL CONNECTOR PLATE DESIGN VALUE FOR CONDITIONS OF USE
8. MAXIMUM REACTION FORCE AND DIRECTION (INCLUDING MAXIMUM UPLIFT)
9. METAL-CONNECTOR-PLATE TYPE, SIZE, THICKNESS, AND LOCATION
10. SIZE SPECIES AND GRADE FOR EACH MEMBER
11. TRUSS-TO-TRUSS CONNECTIONS AND TRUSS FIELD ASSEMBLY REQUIREMENTS
12. CALCULATED SPAN-TO-DEFLECTION RATIO AND MAXIMUM VERTICAL AND HORIZONTAL DEFLECTION FOR LIVE AND TOTAL LOADS
13. MAXIMUM AXIAL TENSION AND COMPRESSION FORCES IN EACH TRUSS MEMBER
14. REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT LOCATION AND THE METHOD AND DETAILS OF RESTRAINT BRACING TO BE USED
15. PLACEMENT LAYOUT INCLUDING BEARING POINTS, INTERSECTIONS, HIPS, VALLEYS, ETC.
16. TRUSS-TO-TRUSS AND TRUSS-TO-BEAM CONNECTION DETAILS AND HARDWARE

6.6 ROOF, FLOOR & WALL SHEATHING SHALL BE APA RATED, EXTERIOR OR EXPOSURE 1 PLYWOOD OR OSB MANUFACTURED UNDER THE PROVISIONS OF VOLUNTARY PRODUCT STANDARDS DOC PS-1 OR DOC PS-2, OR APA PRP-108 PERFORMANCE STANDARDS AND POLICIES FOR STRUCTURAL USE PANELS. SEE DRAWINGS FOR THICKNESS, SPAN RATING, AND NAILING REQUIREMENTS. UNLESS OTHERWISE NOTED, WALL SHEATHING SHALL BE ½" (NOMINAL) WITH SPAN RATING OF 24/0. GLUE FLOOR SHEATHING TO ALL SUPPORTING MEMBERS WITH ADHESIVE CONFORMING TO APA SPECIFICATION AFG-01.

6.7 WOOD MEMBERS SHALL BE PROTECTED AGAINST DECAY AND TERMITES IN ACCORDANCE WITH IBC SECTION 2304.12. WHERE REQUIRED, MEMBERS SHALL BE NATURALLY DURABLE SPECIES OR SHALL BE TREATED WITH WATERBORNE PRESERVATIVES WOOD IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION SPECIFICATION AWPA U1. MEMBERS SHALL BE CLEARLY LABELED. MODIFED TREATED MEMBERS (RIPPED OR END CUT) SHALL BE FIELD TREATED IN ACCORDANCE WITH SPECIFICATION AWPA M4.

6.8 TIMBER CONNECTORS AND PROPRIETARY FASTENERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CURRENT CATALOG. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, CENTER STRAP ON JOINT AND PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER, WITH EQUAL NUMBER AND SIZE OF FASTENERS IN EACH MEMBER.

ALTERNATE HARDWARE MANUFACTURER SUBSTITUTIONS, SUCH AS USP CONNECTORS, SHALL BE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH SPECIFIED FRAMING MEMBERS. SEE HANGER CONVERSION TABLE FOR PRE-APPROVED SUBSTITUTIONS.

TIMBER CONNECTORS AND THEIR FASTENERS SHALL BE PROTECTED FROM CORROSION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS OR ASTM A 653, TYPE G185.

6.9 DOWEL-TYPE FASTENERS (BOLTS, LAG SCREWS, WOOD SCREWS AND NAILS) SHALL CONFORM TO SECTIONS 11 & 12 OF THE ANSI/AWC NDS-2018.

DOWEL TYPE FASTENER	**GRADE**	**REQUIREMENTS AT EXTERIOR USE OR WHEN IN CONTACT w/ TREATED LUMBER**	**INSTALLATION**
BOLTS	ASTM A307	ASTM B695, CLASS 55 GALVANIZED or STAINLESS STEEL	ANSI/AWC NDS-2018 SECTION 12.1.3 HOLE = BOLT ø + (1/32" to 1/16") WASHER @ BOLT HEAD & @ NUT
ALL-THREAD/THREADED ROD	ASTM F1554	ASTM B695, CLASS 55 GALVANIZED or STAINLESS STEEL	ANSI/AWC NDS-2018 SECTION 12.1.3 HOLE = BOLT ø + (1/32" to 1/16") WASHER @ BOLT HEAD & @ NUT
LAG SCREWS	ASTM A307	ASTM A153 GALVANIZED or STAINLESS STEEL	ANSI/AWC NDS-2018 SECTION 12.1.4 LEAD HOLE = 0.5 SHANK ø; SHANK HOLE = SHANK ø WASHER @ LAG HEAD
WOOD SCREWS		ASTM A153 GALVANIZED or STAINLESS STEEL	ANSI/AWC NDS-2018 SECTION 12.1.5 PILOT HOLE = 0.5 ROOT ø (UNLESS SELF- BORING)
NAILS	ASTM F1667	ASTM A153 GALVANIZED or STAINLESS STEEL	ANSI/AWC NDS-2018 SECTION 12.1.6 AVOID OVERDRIVING or UNDERDRIVING AVOID WOOD SPLITTING TOENAILS 30º, 1/3 NAIL LENGTH FROM JOINT

NAILS SPECIFIED ON DRAWINGS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

NAIL USE	**PENNY WEIGHT**	**SIZE**
FRAMING NAILS	12d BOX	0.131"ø x 3-1/4"
SHEATHING NAILS	8d BOX	0.131"ø x 2-1/2"

ALL METAL FASTENERS EXPOSED TO WEATHER OR IN CONTACT WITH TREATED WOOD SHALL BE PROTECTED FROM CORROSION ACCORDING TO TABLE ABOVE. NUTS AND BOLTS EXPOSED TO WEATHER OR IN CONTACT WITH TREATED WOOD SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153/A153M-16a OR STAINLESS STEEL. SEE ABOVE FOR PROPRIETARY FASTENER REQUIREMENTS. DO NOT SUBSTITUTE STANDARD DOWEL-TYPE FASTENERS FOR PROPRIETARY FASTENERS UNLESS SPECIFICALLY ALLOWED.

QUALITY ASSURANCE:

7.1 SPECIAL INSPECTION IN ACCORDANCE WITH IBC SECTION 1704.2 IS NOT REQUIRED. STANDARD INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC SECTION 110.

7.2 SPECIAL INSPECTION IN ACCORDANCE WITH IBC SECTION 1704.2 IS REQUIRED IN ACCORDANCE WITH STATEMENT OF SPECIAL INSPECTIONS.

STATEMENT OF SPECIAL INSPECTION			
SPECIAL INSPECTION & TESTING REQUIREMENTS			
VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	COMMENTS
SOILS	-	-	REFER TO GEOTECHNICAL REPORT
CONCRETE	-	-	PROVIDE BATCH MIX TICKETS
CONCRETE RETAINING WALLS	-	X	
POST-INSTALLED ANCHORS IN CONCRETE	X	-	

STANDARD INSPECTIONS SHALL BE IN ACCORDANCE WITH IBC SECTION 110.

7.3 STRUCTURAL OBSERVATION IN ACCORDANCE WITH IBC SECTION 1704.6 IS REQUIRED. CONTACT STRUCTURAL ENGINEER ONE WEEK PRIOR TO COORDINATE SITE VISIT.

7.4 STRUCTURAL OBSERVATION IN ACCORDANCE WITH IBC SECTION 1704.6 IS NOT REQUIRED.

BRYAN T. LAM
STATE OF WASHINGTON
35666
PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE
7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

PROJECT NUMBER: 24-010-02
PROJECT MANAGER: BTL
PROJECT ENGINEER:
DRAWN BY: JLL

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT	03/12/2024

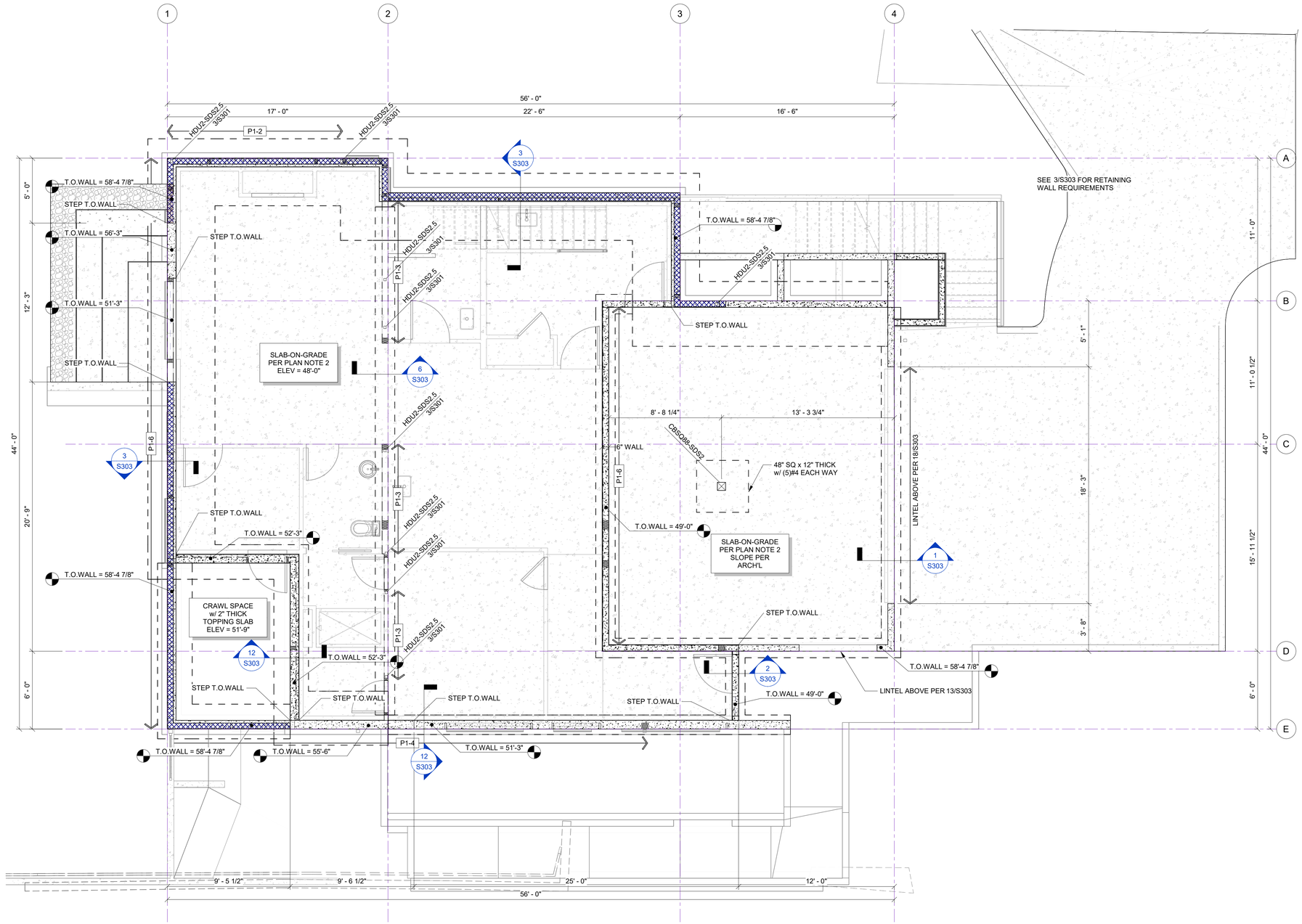
BTL ENGINEERING
19911 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

GENERAL STRUCTURAL NOTES

S101

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

FOUNDATION PLAN NOTES:

1. BOTTOM OF FOOTINGS SHALL BE SET BELOW FROST DEPTH ON COMPETENT, PROPERLY COMPACTED BEARING SOIL. FINAL ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND ON-SITE VERIFICATION BY THE GEOTECHNICAL ENGINEER. OVER EXCAVATE AND PLACE SUITABLE COMPACTED FILL AS DIRECTED BY GEOTECHNICAL ENGINEER WHERE REQUIRED.
2. SLAB-ON-GRADE SHALL BE 4" THICK CONCRETE POURED OVER VAPOR BARRIER AND FREE-DRAINING GRANULAR FILL PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE SLAB SHALL BE REINFORCED WITH ONE OF THE FOLLOWING:
   - 6x6 W1.4xW1.4 WWM, CENTERED IN SLAB
   - #3 @ 24"oc EACH WAY, CENTERED IN SLAB
   - FIBROUS REINFORCEMENT ADMIXTURE (i.e., FIBERMESH 650, MASTER FIBER F100)
3. SLAB ELEVATION SHALL BE x'-xx", U.O.N. SEE ARCHITECTURAL DRAWINGS FOR SLAB SLOPE AND DEPRESSION REQUIREMENTS.
4. SEE ARCHITECTURAL DRAWINGS FOR SLAB DEPRESSION AND SLOPE REQUIREMENTS.
5. PROVIDE CONSTRUCTION/CONTROL JOINT IN SLABS AS A MEANS OF CRACK CONTROL. REFER TO ARCHITECTURAL DRAWINGS FOR APPROPRIATE CONTROL JOINT LOCATIONS AT EXPOSED SLABS. AREAS SHALL BE APPROXIMATELY SQUARE AND 400 SQUARE FEET OR LESS.
6. ANCHOR BOLTS FOR EXTERIOR WALLS SHALL BE SHEAR WALL TYPE P1-6, U.O.N.
7. WOOD JOISTS SHALL BE MINIMUM 18" CLEAR AND WOOD BEAMS SHALL BE MINIMUM 12" CLEAR ABOVE THE CRAWLSPACE FINISH GRADE. REFERENCE IBC 2304.12.1.1

LEGEND

- XX / SX.X — DETAIL CALL-OUT
- Px-x — ANCHOR BOLTS PER SHEAR WALL ABOVE PER SCHEDULE OF 1/S301
- BEARING OR SHEAR WALL ABOVE
- STEM WALL AND FOOTING BELOW
- SLAB-ON-GRADE PER PLAN NOTE 1
- HOLDOWN xx/Sxx — HOLDOWN TO WALL ABOVE

1/4"=1'-0" 0 1 2 4 8 16

BRIAN T. LAMB — STATE OF WASHINGTON — 35666 — PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

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PROJECT ENGINEER:	
DRAWN BY:	JLL

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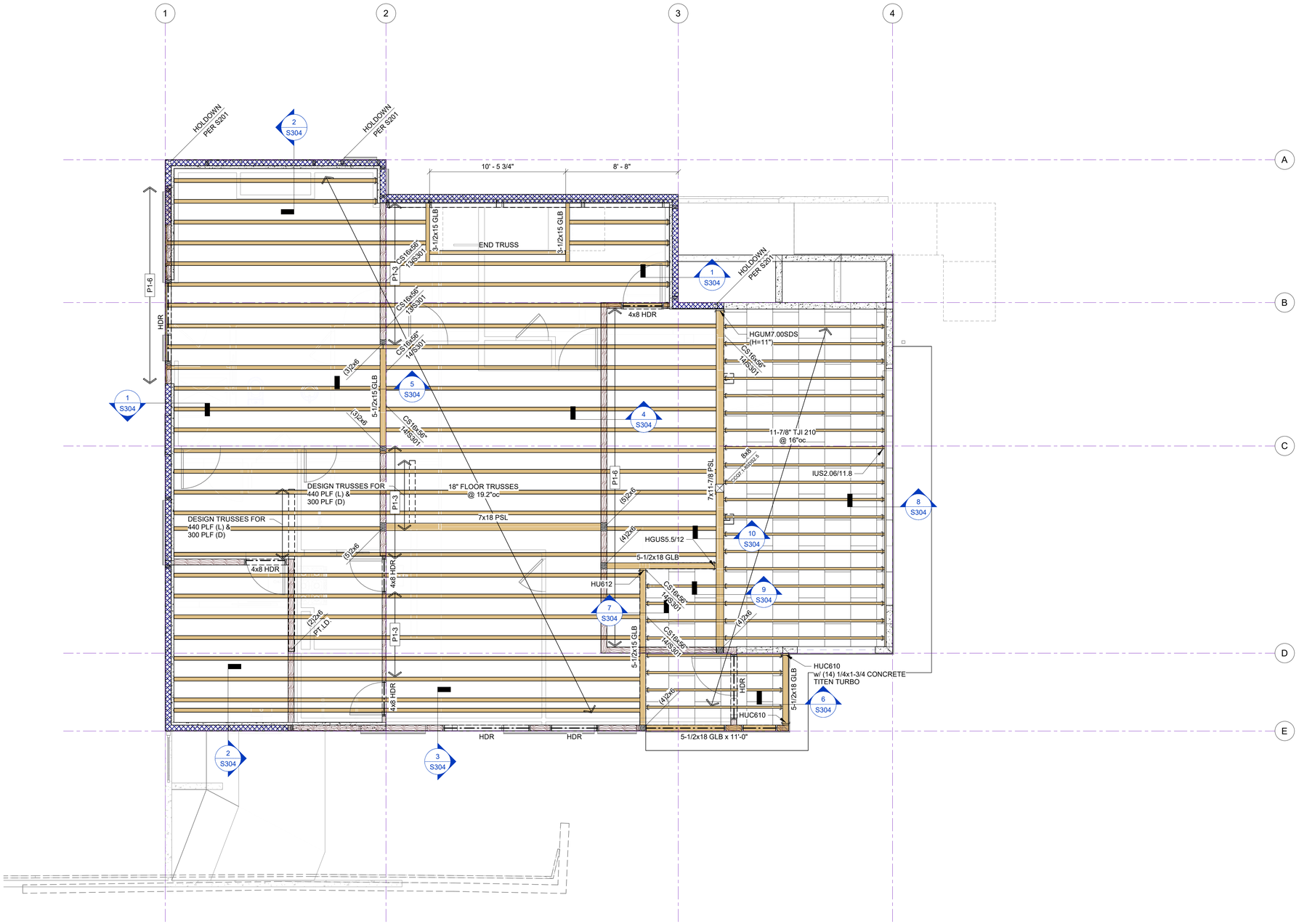
BTL ENGINEERING
19031 Woodinville-Snohomish Road NE, Suite 200
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

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FOUNDATION PLAN

S201

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

FLOOR FRAMING PLAN NOTES:

1. FLOOR SHEATHING SHALL BE 1-1/8" THICK T&G (PANEL SPAN RATING 48/24). GLUE SHEATHING TO ALL FRAMING MEMBERS AND BLOCKING BELOW WITH ADHESIVE CONFORMING TO A.P.A. SPECIFICATION AFG-01. FASTEN SHEATHING TO FRAMING WITH WSV212S SUBFLOOR SCREWS (#9 x 2-1/2") OR 0.131"∅ x 2-1/2" NAILS (8d COMMONS) AS FOLLOWS:

FRAMING, EDGES	4"oc
FRAMING, FIELD	10"oc
BOUNDARIES, BLOCKING, STRUTS	4"oc

SEE DRAWINGS FOR OTHER SHEATHING NAILING REQUIREMENTS.

2. FLOOR FRAMING SHALL BE 18" DEEP "4x2" CONNECTOR-PLATE TRUSSES @ 19.2"oc, U.O.N. CHANGE SPACING TO 16"oc, AS REQUIRED, TO MEET THE DEFLECTION REQUIREMENTS. LOADING SHALL BE AS FOLLOWS, U.O.N.:

TOP CHORD LIVE LOAD	40-PSF
TOP CHORD DEAD LOAD	10-PSF
BOTTOM CHORD LIVE LOAD	N/A
BOTTOM CHORD DEAD LOAD	5-PSF

MAXIMUM LIVE LOAD DEFLECTION SHALL BE THE SMALLER OF L/960 OR 1/4". REFER TO GENERAL STRUCTURAL NOTES FOR LOADING AND OTHER REQUIREMENTS.

LAYOUT SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. GIRDER AND BEAM LOCATIONS SHOWN SHALL NOT BE CHANGED WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. OTHER FRAMING LAYOUT SHOWN MAY BE MODIFIED TO ACCOMMODATE ACCESS, HVAC, PLUMBING OR OTHER FIXTURES.

WALL FRAMING PLAN NOTES:

3. EXTERIOR WALLS: 2x6 STUDS @ 16"oc, SHEAR WALL TYPE P1-6, U.O.N.
INTERIOR WALLS: 2x4 STUDS @ 16"oc, U.O.N.

WHERE ADJACENT SHEAR WALLS ARE IN CONTACT, NAIL STUDS TOGETHER PER 3/S301. SEE 1/S301 FOR SPECIAL STUD REQUIREMENTS AT SHEAR WALL TYPES P1-3, P1-2, P2-4, P2-3, AND P2-2.

4. TOP PLATE ELEVATIONS SHALL BE x'-xx", U.O.N.

5. HEADERS SHALL BE 3-1/2 x 9 GLB, U.O.N. SEE DETAIL 17/S302.

6. BUILT-UP STUD GROUPS IN WALLS SUPPORTING BEAMS, POSTS OR GIRDER TRUSSES ABOVE SHALL BE (2) STUDS, U.O.N. SEE GENERAL STRUCTURAL NOTES FOR FASTENING REQUIREMENTS.

LEGEND

- XX / SX.X — DETAIL CALL-OUT
- Px-x — SHEAR WALL PER SCHEDULE OF 1/S301
- BEARING OR SHEAR WALL THIS LEVEL
- BEARING OR SHEAR WALL ABOVE
- HDR — HEADER PER PLAN NOTE 5
- HOLDOWN xx/Sxx — HOLDOWN TO WALL ABOVE
- XXX — POST BELOW ((2)2x u.o.n.)

1/4"=1'-0" 0 1 2 4 8 16

BRYAN T. LABHART — STATE OF WASHINGTON — 35666 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

PROJECT NUMBER:	24-010-02
PROJECT MANAGER:	BTL
PROJECT ENGINEER:	
DRAWN BY:	JLL

REVISIONS:

NO.	DESCRIPTION	DATE
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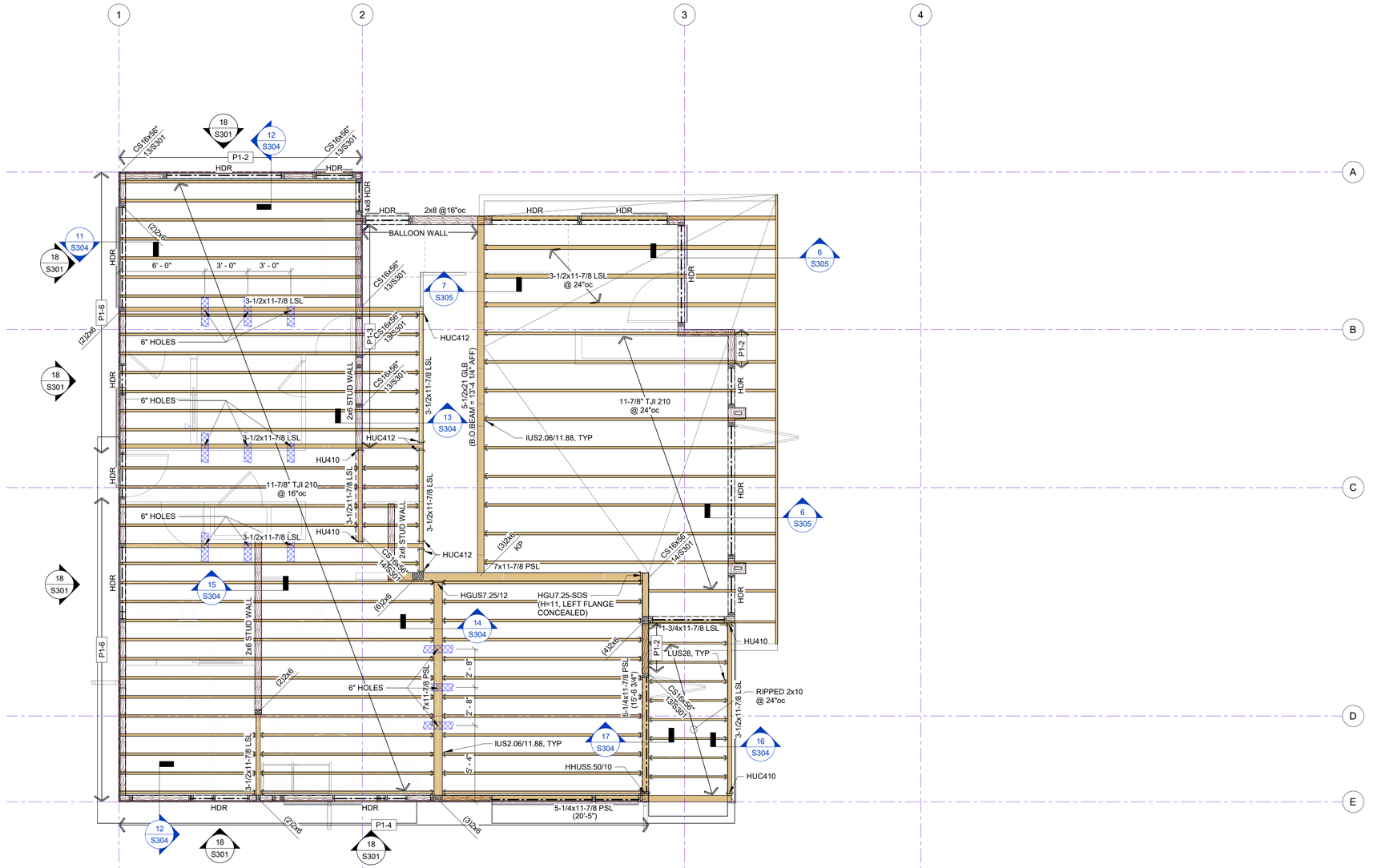
BTL ENGINEERING
19011 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

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MAIN FLOOR FRAMING PLAN

S202

3/11/2024 1:48:00 PM



1 UPPER FLOOR FRAMING
1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES:

1. FLOOR SHEATHING SHALL BE 1-1/8" THICK T&G (PANEL SPAN RATING 48/24). GLUE SHEATHING TO ALL FRAMING MEMBERS AND BLOCKING BELOW WITH ADHESIVE CONFORMING TO A.P.A. SPECIFICATION AFG-01. FASTEN SHEATHING TO FRAMING WITH WSV212S SUBFLOOR SCREWS (#9 x 2-1/2") OR 0.131"∅ x 2-1/2" NAILS (8d COMMONS) AS FOLLOWS:

FRAMING, EDGES	4"oc
FRAMING, FIELD	10"oc
BOUNDARIES, BLOCKING, STRUTS	4"oc

   SEE DRAWINGS FOR OTHER SHEATHING NAILING REQUIREMENTS.

2. FLOOR JOISTS SHALL BE 11-7/8" TJI 210 @ 16"oc, U.O.N.

   LAYOUT SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. GIRDER AND BEAM LOCATIONS SHOWN SHALL NOT BE CHANGED WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. OTHER FRAMING LAYOUT SHOWN MAY BE MODIFIED TO ACCOMMODATE ACCESS, HVAC, PLUMBING OR OTHER FIXTURES.

WALL FRAMING PLAN NOTES:

3. EXTERIOR WALLS: 2x6 STUDS @ 16"oc, SHEAR WALL TYPE P1-6, U.O.N.
   INTERIOR WALLS: 2x4 STUDS @ 16"oc, U.O.N.

   WHERE ADJACENT SHEAR WALLS ARE IN CONTACT, NAIL STUDS TOGETHER PER 3/S301. SEE 1/S301 FOR SPECIAL STUD REQUIREMENTS AT SHEAR WALL TYPES P1-3, P1-2, P2-4, P2-3, AND P2-2.

4. TOP PLATE ELEVATIONS SHALL BE x'-xx", U.O.N.

5. HEADERS SHALL BE 3-1/2 x 9 GLB, U.O.N. SEE DETAIL 17/S302.

6. BUILT-UP STUD GROUPS IN WALLS SUPPORTING BEAMS, POSTS OR GIRDER TRUSSES ABOVE SHALL BE (2) STUDS, U.O.N. SEE GENERAL STRUCTURAL NOTES FOR FASTENING REQUIREMENTS.

LEGEND

- XX / SX.X — DETAIL CALL-OUT
- Px-x — SHEAR WALL PER SCHEDULE OF 1/S301
- BEARING OR SHEAR WALL THIS LEVEL
- BEARING OR SHEAR WALL ABOVE
- HDR — HEADER PER PLAN NOTE 5
- HOLDOWN xx/Sxx — HOLDOWN TO WALL ABOVE
- xxx — POST BELOW

1/4"=1'-0" (0, 1, 2, 4, 8, 16)

BRIAN T. LAMB — STATE OF WASHINGTON — 35666 — PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE
7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
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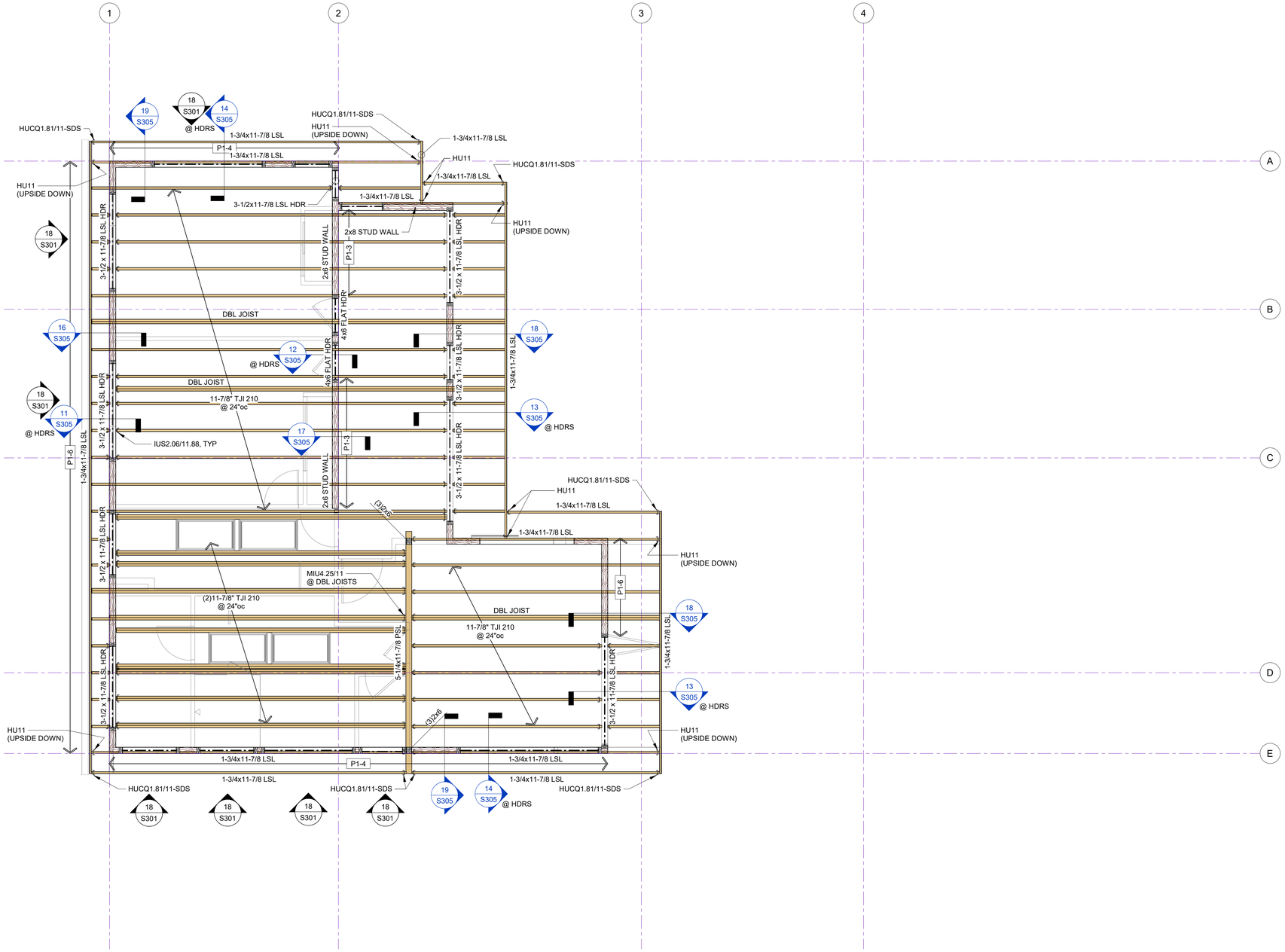
BTL ENGINEERING
19011 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

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baylis
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UPPER FLOOR FRAMING PLAN

S203

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

ROOF FRAMING PLAN NOTES:

1. ROOF SHEATHING SHALL BE 5/8" THICK (PANEL SPAN RATING 32/16). FASTEN SHEATHING TO FRAMING WITH 0.131"⌀ x 2-1/2" NAILS (8d COMMONS) AS FOLLOWS:

FRAMING, EDGES	6"oc
FRAMING, FIELD	12"oc
BOUNDARIES, BLOCKING, STRUTS	6"oc

   AT UNFRAMED PANEL EDGES, PROVIDE PSCA PANEL FRAMING CLIPS CENTERED BETWEEN EACH FRAMING MEMBER. SEE DRAWINGS FOR OTHER SHEATHING NAILING REQUIREMENTS.

   SEE DRAWINGS FOR OTHER SHEATHING NAILING REQUIREMENTS.

2. ROOF JOISTS SHALL BE 11-7/8" TJI 210 @ 24"oc, U.O.N. REFER TO GENERAL STRUCTURAL NOTES FOR LOADING AND OTHER REQUIREMENTS.

WALL FRAMING PLAN NOTES:

3. EXTERIOR WALLS: 2x6 STUDS @ 16"oc, SHEAR WALL TYPE P1-6, U.O.N.
   INTERIOR WALLS: 2x4 STUDS @ 16"oc, U.O.N.

   WHERE ADJACENT SHEAR WALLS ARE IN CONTACT, NAIL STUDS TOGETHER PER 3/S301. SEE 1/S301 FOR SPECIAL STUD REQUIREMENTS AT SHEAR WALL TYPES P1-3, P1-2, P2-4, P2-3, AND P2-2.

4. SEE ARCHITECTURAL DRAWINGS FOR TOP PLATE ELEVATIONS.

5. HEADERS SHALL BE 4x8, U.O.N. SEE DETAIL 19/S301.

6. BUILT-UP STUD GROUPS IN WALLS SUPPORTING BEAMS, POSTS OR GIRDER TRUSSES ABOVE SHALL BE (2) STUDS, U.O.N. SEE GENERAL STRUCTURAL NOTES FOR FASTENING REQUIREMENTS.

LEGEND

- XX / SX.X — DETAIL CALL-OUT
- Px-x — SHEAR WALL PER SCHEDULE OF 1/S301
- BEARING OR SHEAR WALL THIS LEVEL
- XXX — POST BELOW
- HDR — HEADER PER PLAN NOTE 5

1/4"=1'-0" (0, 1, 2, 4, 8, 16)

BRYAN T. LAMB — STATE OF WASHINGTON — 35666 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

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PROJECT ENGINEER:	
DRAWN BY:	JLL

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT	03/12/2024

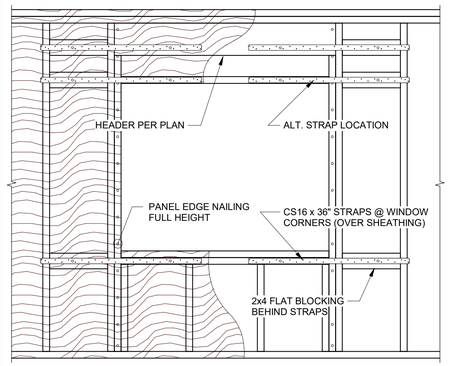
BTL ENGINEERING
19011 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

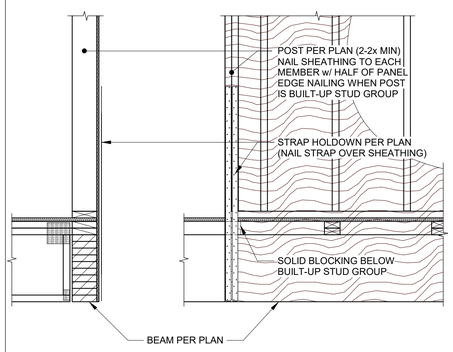
ROOF FRAMING PLAN

S204

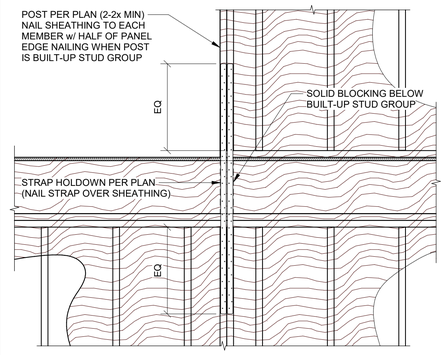
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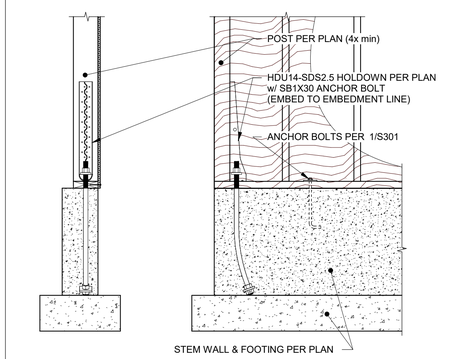
WINDOW STRAPS (FORCE TRANSFER) 18



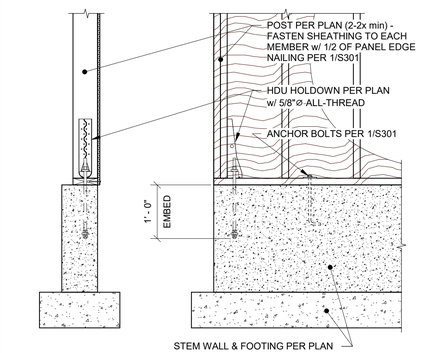
HOLDOWN_STRAP TO FLUSH BEAM 14



HOLDOWN_STRAP TO WALL BELOW 13



HOLDOWN_STEM WALL_HDU14 4



WD_HOLDOWN_001 3

SHEAR WALL SCHEDULE

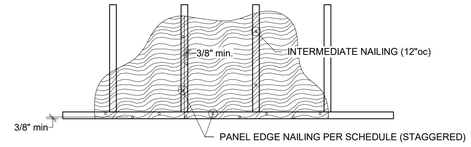
(IN ACCORDANCE w/ ANSI/AF&PA SDPWS-2015 SECTION 4.3)
UPDATED 4/20/2021

WALL TYPE	SHEATHING (1)	PANEL EDGE NAILING (2)	MINIMUM WIDTH OF NAILED FACE OF FRAMING @ ADJOINING PANEL EDGES (3)		MUDSILL PLATE	FACE NAILING (4)	FRAMING CLIPS (5)	ANCHORAGE TO CONCRETE (6)		SEISMIC CAPACITY h/b = 2 (h/b = 3.5)	WIND CAPACITY h/b = 2 (h/b = 3.5)
			SINGLE MEMBER	BUILT-UP MEMBER				ANCHOR BOLTS	MUDSILL ANCHORS		
P1-6	1 Side	6"oc	2x	-	2x	6"oc	A35 @ 27"oc or LTP4 @ 27"oc	5/8"ø @ 60"oc	MASAP @ 52"oc	240-plf (194-plf)	240-plf (194-plf)
P1-4	1 Side	4"oc	2x	-	2x	4"oc	A35 @ 18"oc or LTP4 @ 18"oc	5/8"ø @ 46"oc	MASAP @ 36"oc	350-plf (284-plf)	350-plf (284-plf)
P1-3	1 Side	3"oc	3x	(2)2x	2x	3"oc	A35 @ 14"oc or LTP4 @ 14"oc	5/8"ø @ 36"oc	MASAP @ 28"oc	450-plf (366-plf)	450-plf (366-plf)
P1-2	2 Side	2"oc	3x	(2)2x	2x	2"oc	A35 @ 7-1/2"oc or LTP4 @ 7-1/2"oc	5/8"ø @ 20"oc	MASAP @ 18"oc	590-plf (478-plf)	820-plf (669-plf)
P2-4	2 Side	4"oc	3x	(2)2x	2x	4"oc	A35 @ 18"oc AND LTP4 @ 18"oc	5/8"ø @ 28"oc	MASAP @ 15"oc	700-plf (568-plf)	700-plf (568-plf)
P2-3	2 Side	3"oc	3x	(2)2x	2x	3"oc	A35 @ 14"oc AND LTP4 @ 14"oc	5/8"ø @ 22"oc	MASAP @ 11"oc	900-plf (733-plf)	900-plf (733-plf)
P2-2	2 Side	2"oc	3x	(2)2x	2x	2"oc	A35 @ 8"oc AND LTP4 @ 8"oc	5/8"ø @ 12"oc	MASAP @ 7"oc	1180-plf (957-plf)	1640-plf (1338-plf)

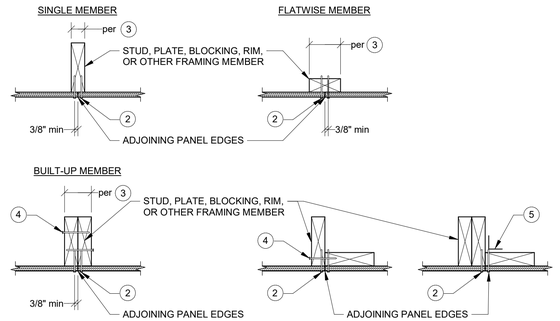
SHEAR WALL SCHEDULE NOTES

(1) (SECTION 4.3.7.1.1)
7/16" OSB or 15/32" PLYWOOD SHEATHING OR SIDING EXCEPT GROUP 5 SPECIES. MINIMUM PANEL SPAN RATING OF (24/0). PANELS SHALL NOT BE LESS THAN 4'x8', EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING. ALL EDGES OF ALL PANELS SHALL BE SUPPORTED BY AND FASTENED TO FRAMING MEMBERS OR BLOCKING.

(2) (SECTION 4.3.7.1.2. & SECTION 4.3.7.1.3)
PANEL EDGE NAILING APPLIES TO ALL SHEATHING PANEL EDGES. NAIL SHEATHING TO INTERMEDIATE FRAMING MEMBERS WITH SHEATHING NAILS @ 12"oc. MAXIMUM STUD SPACING SHALL BE 16"oc. SHEATHING NAILS SHALL BE 0.131"dia. x 21/2". PLYWOOD EDGE NAILING SHALL BE STAGGERED. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE PANEL EDGES.

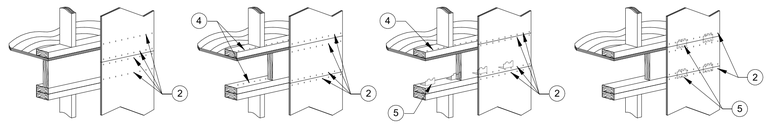


(3) (SECTION 4.3.7.1.4)
THE MINIMUM NOMINAL WIDTH OF THE NAILED FACE OF FRAMING AND BLOCKING AT ADJOINING PANEL EDGES SHALL BE AS INDICATED IN THE SCHEDULE.

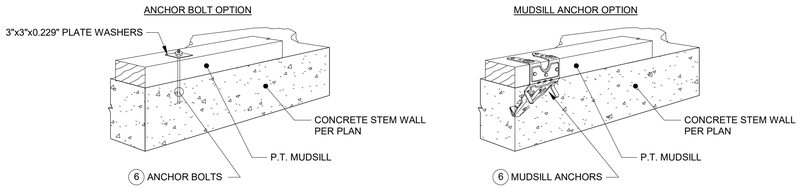


(4) FACE NAILING APPLIES TO CONDITIONS WHERE FRAMING NAILS CAN BE STRAIGHT DRIVEN THRU FIRST MEMBER AND PENETRATE MAIN MEMBER MINIMUM OF 1-1/2". FRAMING NAILS SHALL BE 0.131"dia. x 3-1/4". 0.131"dia. x 3" NAILS MAY BE USED WHEN STITCHING TOGETHER (2)2x MEMBERS WITH NO SPACERS.

(5) AT ADJOINING PANEL EDGES WHERE SHEATHING CANNOT LAP ON SINGLE MEMBER AND FACE NAILING CANNOT BE ACCOMPLISHED, FRAMING CLIPS SHALL BE USED TO FASTEN BUILT-UP MEMBERS. USE 0.131"dia. x 2-1/2" NAILS AT LTP4 CLIP WHEN INSTALLED OVER 1/2" SHEATHING.



(6) (SECTION 4.3.6.4.3)
ANCHOR BOLTS EMBEDMENT SHALL BE 7", U.O.N. ALL ANCHORS SHALL HAVE 3" x 3" x 0.229" PLATE WASHERS. PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE WITH SHEATHING. IF SHEATHING IS ON BOTH SIDES OF THE WALL, STAGGER THE ANCHOR BOLTS, AS REQUIRED, SO THAT HALF OF THE PLATE WASHERS ARE WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON EACH SIDE. HOLE IN PLATE WASHERS MAY BE DIAGONALLY SLOTTED.



SHEAR WALL SCHEDULE 1

BRYAN T. LAMB
STATE OF WASHINGTON
35666
PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE
7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

PROJECT NUMBER: 24-010-02
PROJECT MANAGER: BTL
PROJECT ENGINEER:
DRAWN BY: JLL

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT	03/12/2024

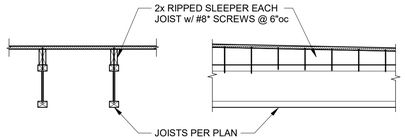
BTL ENGINEERING
19031 Woodinville-Snohomish Road NE, Suite 200
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

baylis ARCHITECTS
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

SHEAR WALL DETAILS

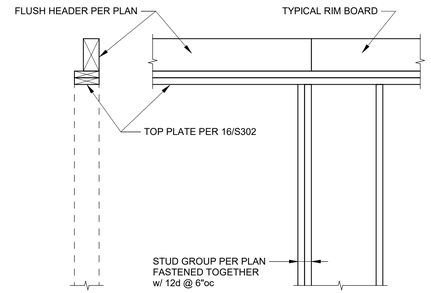
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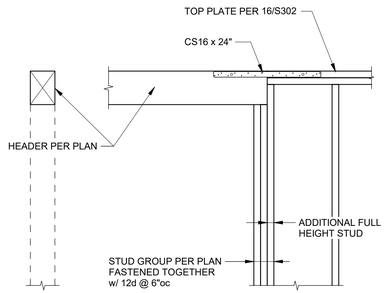


* DEPTH OF RIPPED SLEEPER	LENGTH OF #8 SCREW
0" to 3/4"	2"
3/4" to 1-1/2"	3"
1-1/2" to 2-1/2"	4"
2-1/2" to 3-1/2"	5"
3-1/2" to 4-1/2"	6"

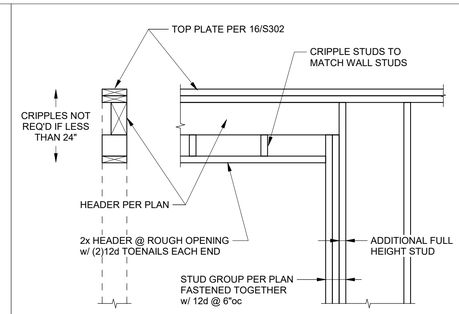
RIPPED SLEEPERS 20



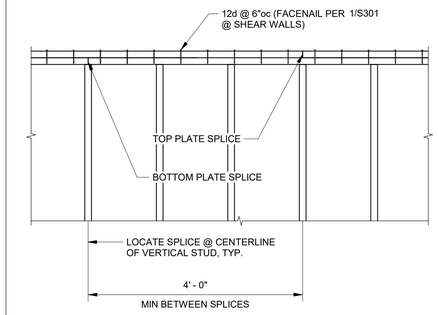
FLUSH FRAMED HEADER 19



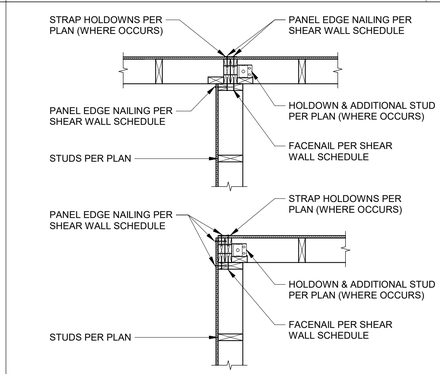
HEADER w/ NO TOP PLATE 18



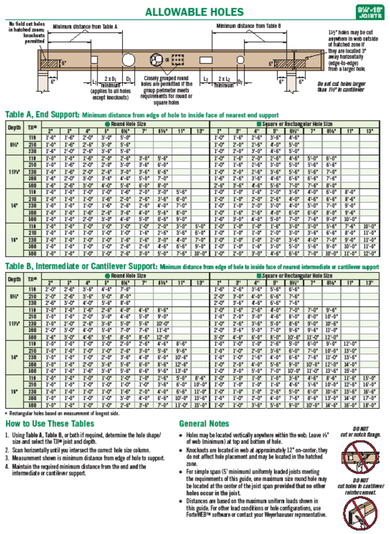
TYPICAL HEADER 17



TYPICAL TOP PLATE 16



CORNER & TEE NAILING 11



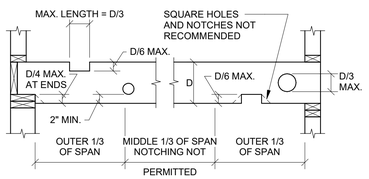
ALLOWABLE HOLES - TJIs 10

HANGER CONVERSION SCHEDULE		
TYPE	SIMPSON STRONG-TIE PRODUCT #	USP CONNECTORS PRODUCT #
HOLDOWNS	HDUx-SDS2.5	PHDxA
	STHD14/STHD14RJ	STAD14/STAD14RJ
	DTT1Z	LTS19-TZ w/ 1"x1"x1/4" PLATE WASHER (TO ACCOMMODATE 3/8" LAG SCREW)
STRAPS	MST48	KST248
	ST2215	KST216
	ST6224	KST224
	CS16	RS150
	MASA / MASAP	FA4
	CMSTC16	CMSTC16
ANGLES/TIES	LGT2	LUGT2
	LTP4	MP4F
	LTP5	MP6F
	A34	MP34
	A35	MPA1
	H1	RT15
	H2.5	RT7
	H2.5A	RT7A
POST CAPS	LPCxZ	PBxx-6TZ
	LCE4	PBES74
	EPCxx	EPCMxx
	CCQxxSDS5.5	KCCQxx
	ECCQxxSDS5.5	KECCQxx
	ACx	PBSxx
POST BASES	PBxx	WExx
	ABUxx	PAUxx
	ABAxx	PAxxE
DRAG STRUTS	HTS30C	HTW30C
	HTS30	HTW30
	DSC5	DSC4
HANGERS	LUSxx	JUSxx
	IUSxx	THFxx
	ITTxx	THOxx
	HUxx / HUCxx	HDxx / HDxxIF
	MIUxx	THFxx
	HUSxx	HUSxx

HANGER CONVERSION SCHEDULE1 1

GUIDE FOR CUTTING, NOTCHING, AND BORING JOISTS

JOIST SIZE	MAXIMUM HOLE	MAXIMUM NOTCH DEPTH	MAXIMUM END NOTCH
2x4	NONE	NONE	NONE
2x6	1-1/2	7/8	1-3/8
2x8	2-3/8	1-1/4	1-7/8
2x10	3	1-1/2	2-3/8
2x12	3-3/4	1-7/8	2-7/8



DIMENSIONAL JOIST ALLOWABLE NOTCHES 5

BRYAN T. LAM
STATE OF WASHINGTON
35666
PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE
7466 E Mercer Way
Mercer Island, WA 98040

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REVISIONS:

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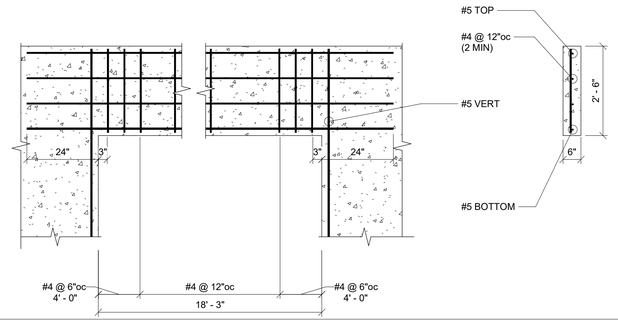
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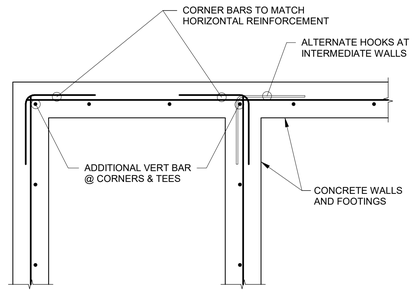
TYPICAL WOOD DETAILS

S302

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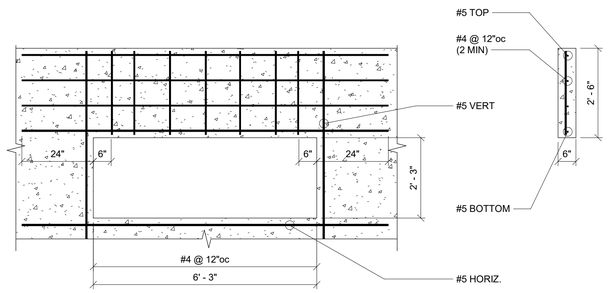


LINTEL_02 | 18

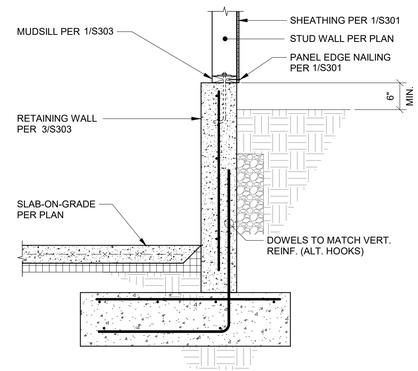


CORNER BARS

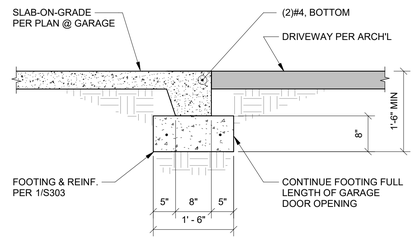
CORNER BARS | 17



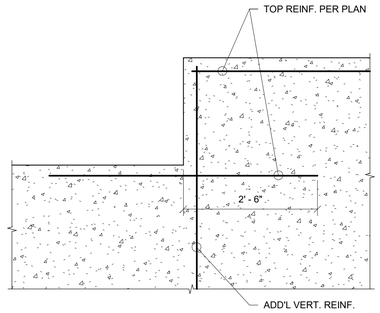
LINTEL_01 | 13



SLAB-ON-GRADE w/ RETAINING WALL | 12



SLAB_ON_GRADE_FOOTING | 11

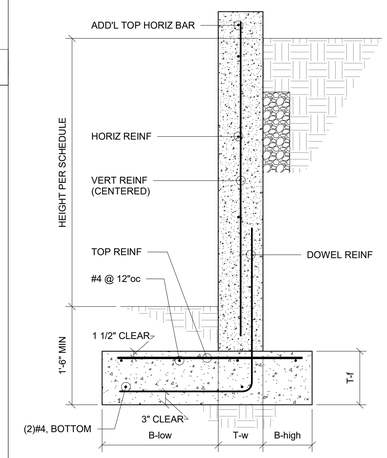


STEP IN WALL

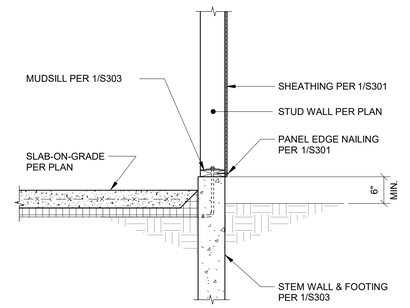
STEP IN WALL | 9

RETAINING WALL

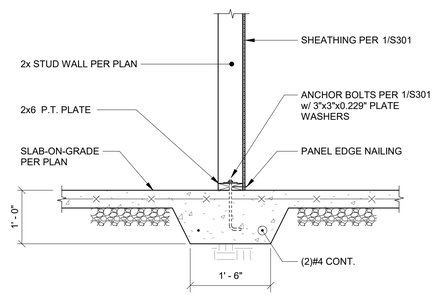
HEIGHT	B-low	T-w	B-high	T-f	DOWEL REINF	DOWEL COVER	LAP	VERT REINF	HORIZ REINF	FOOTING TOP REINF
10' - 0"	3' - 0"	8"	1' - 6"	1' - 0"	#6 @ 7"oc	1 1/2"	42"	#6 @ 7"oc	#5 @ 18"oc	#4 @ 9"oc
9' - 0"	2' - 6"	8"	1' - 6"	1' - 0"	#5 @ 7"oc	1 1/2"	36"	#5 @ 7"oc	#5 @ 18"oc	#4 @ 12"oc
8' - 6"	2' - 6"	8"	1' - 3"	1' - 0"	#5 @ 9"oc	1 1/2"	36"	#5 @ 9"oc	#5 @ 18"oc	#4 @ 15"oc
8' - 0"	2' - 3"	8"	1' - 3"	1' - 0"	#5 @ 11"oc	1 1/2"	36"	#5 @ 11"oc	#5 @ 18"oc	#4 @ 18"oc
7' - 6"	2' - 3"	8"	1' - 0"	1' - 0"	#5 @ 13"oc	1 1/2"	30"	#5 @ 13"oc	#5 @ 18"oc	#4 @ 18"oc
7' - 0"	2' - 0"	8"	1' - 0"	1' - 0"	#5 @ 17"oc	1 1/2"	30"	#5 @ 17"oc	#5 @ 18"oc	#4 @ 18"oc
6' - 0"	1' - 9"	8"	9"	1' - 0"	#4 @ 12"oc	1 1/2"	24"	#4 @ 12"oc	#5 @ 18"oc	#4 @ 18"oc
5' - 0"	1' - 3"	8"	9"	1' - 0"	#4 @ 16"oc	1 1/2"	24"	#4 @ 16"oc	#5 @ 18"oc	#4 @ 18"oc
4' - 0"										



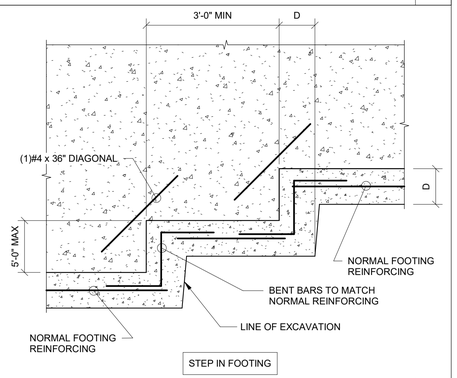
RETAINING WALL SCHEDULE | 3



SLAB-ON-GRADE_6"STEM_CURB | 7

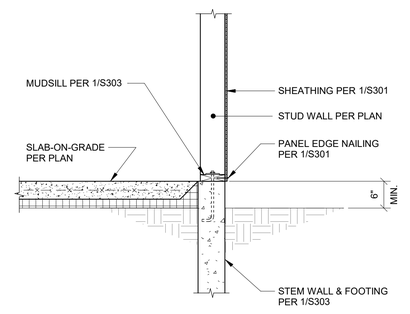


SLAB-ON-GRADE_THICKENED FOOTING | 6

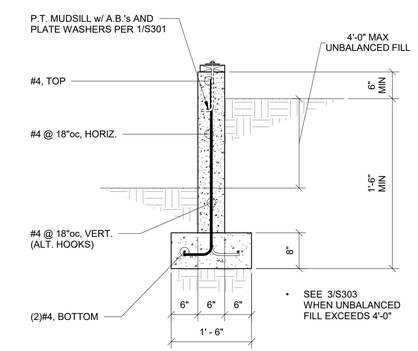


STEP IN FOOTING

STEP IN FOOTING | 4



SLAB-ON-GRADE_6"STEM_FLUSH | 2



TYPICAL STEM WALL | 1

3/11/2024 1:48:04 PM

BRYAN T. LAMPH
STATE OF WASHINGTON
35666
PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
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PROJECT NUMBER: 24-010-02
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DRAWN BY: JLL

REVISIONS:

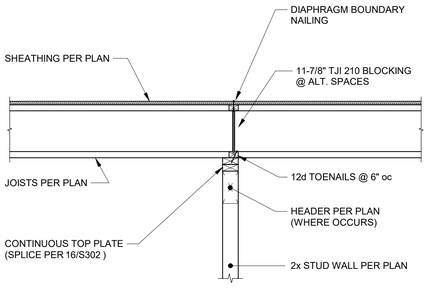
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	PERMIT	03/12/2024

BTL ENGINEERING
19911 Woodinville-Snohomish Road NE, Suite 330
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

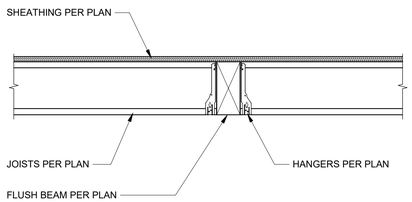
baylis ARCHITECTS
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

FOUNDATION DETAILS

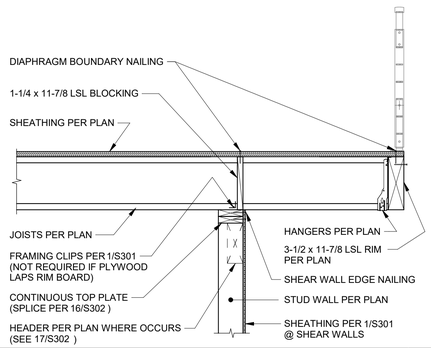
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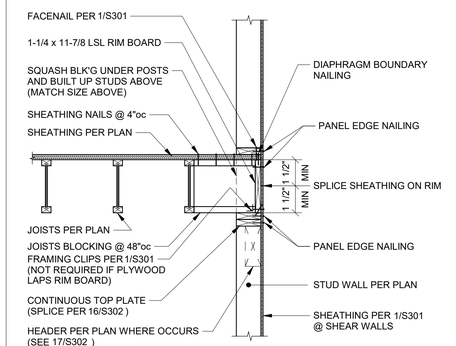
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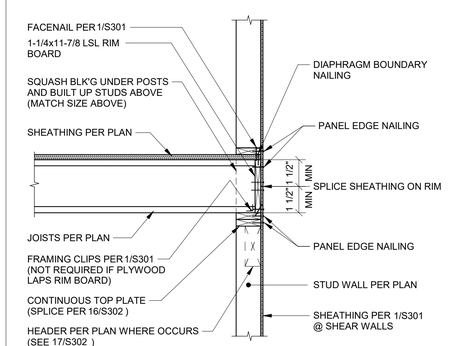
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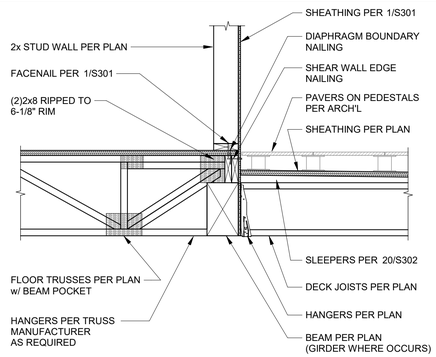
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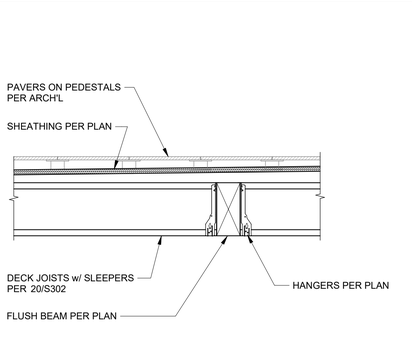
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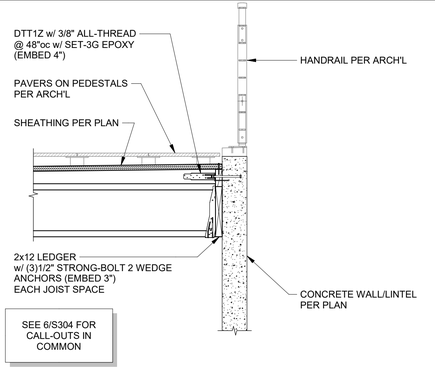
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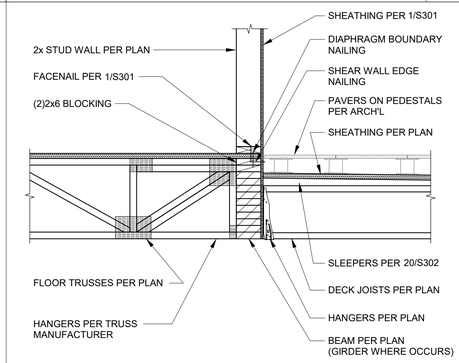
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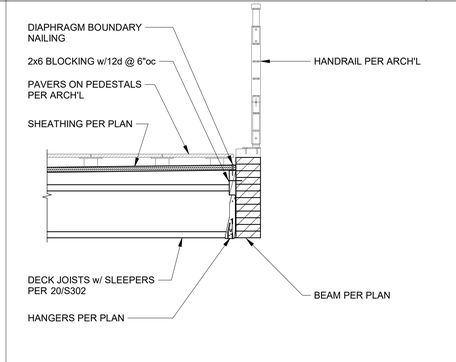
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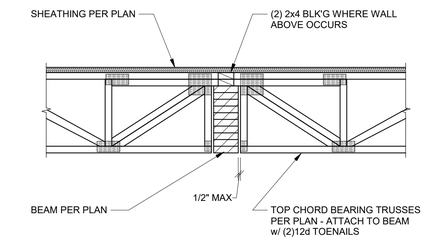
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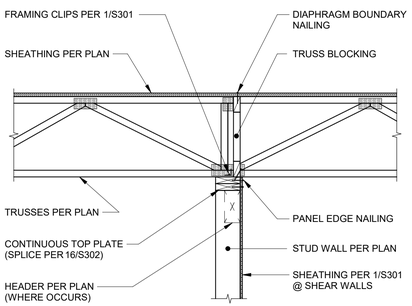
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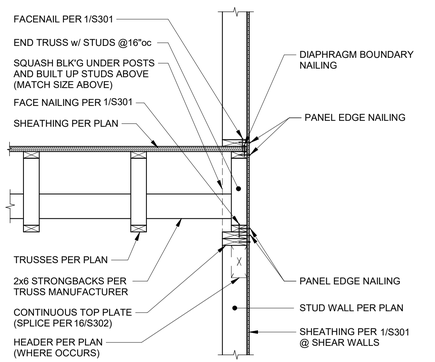
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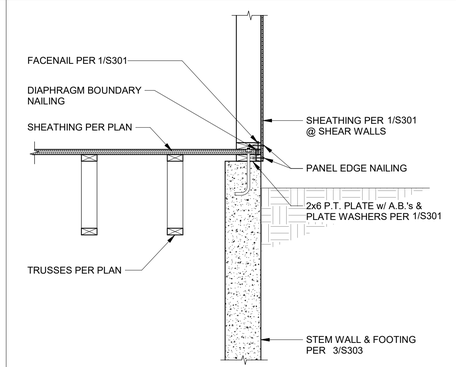
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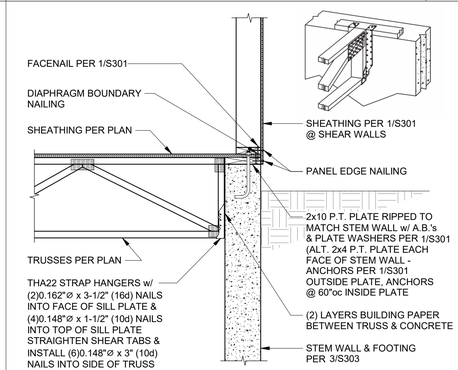
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FLOOR_TRUSS_02 | 3



FOUND_TRUSS_02 | 2



FOUND_TRUSS_01 | 1

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03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

PROJECT NUMBER:	24-010-02
PROJECT MANAGER:	BTL
PROJECT ENGINEER:	
DRAWN BY:	JLL

REVISIONS:

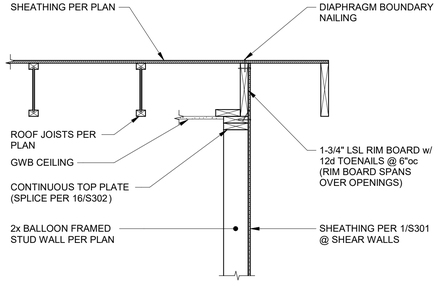
NO.	DESCRIPTION	DATE
	PERMIT	03/12/2024

BTL ENGINEERING
19051 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

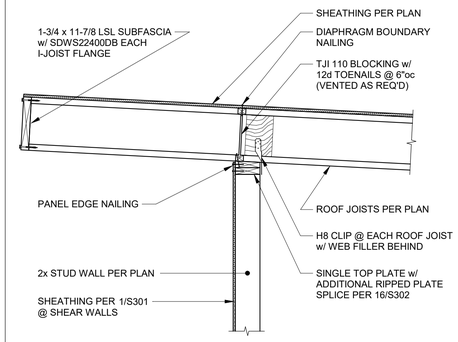
baylis ARCHITECTS
10801 Main Street, #110 | Bellevue, WA 98004
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FLOOR DETAILS

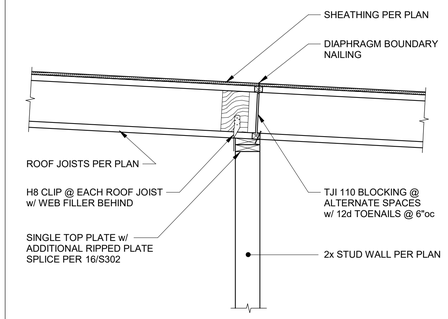
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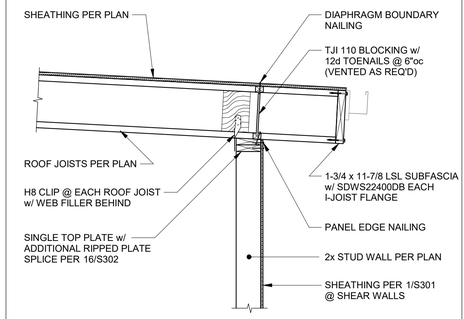
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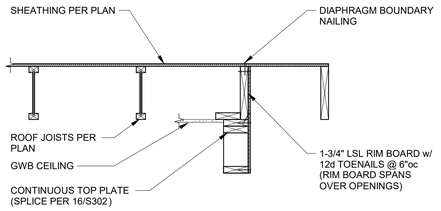
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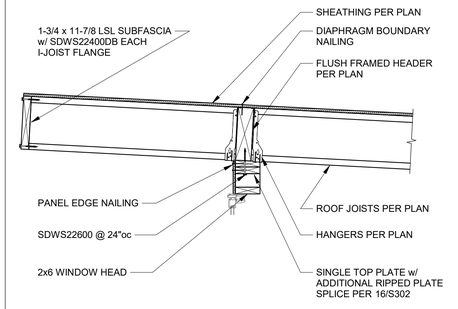
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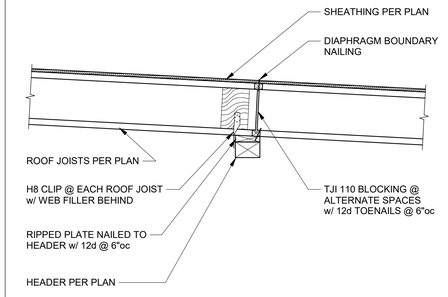
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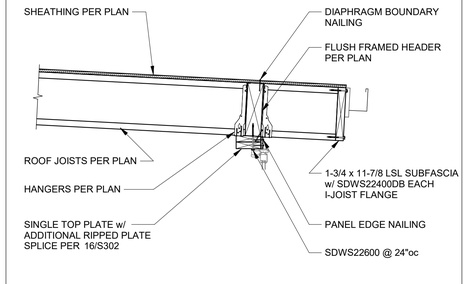
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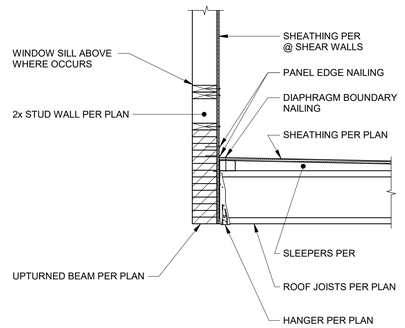


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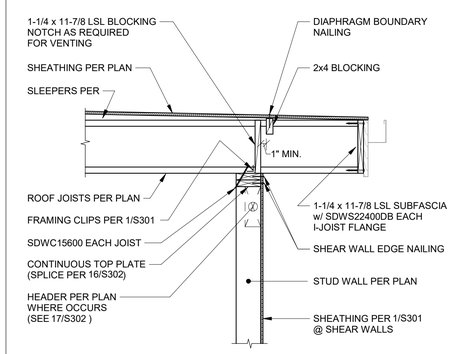
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ROOF_FLAT_TJI+SLEEPER_01 6

5

4

3

2

1

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BRYAN T. LAMB
STATE OF WASHINGTON
35666
PROFESSIONAL ENGINEER
03/12/2024

RAMAIYAH SUBRAMANIAN RESIDENCE

7466 E Mercer Way
Mercer Island, WA 98040

PERMIT SET
03/12/2024

PROJECT NUMBER: 24-010-02
PROJECT MANAGER: BTL
PROJECT ENGINEER:
DRAWN BY: JLL

REVISIONS:

NO.	DESCRIPTION	DATE
	PERMIT	03/12/2024

BTL ENGINEERING
19011 Woodinville-Snohomish Road NE, Suite 100
Woodinville, WA 98072-4436
Phone: 425-814-8448 Fax: 425-821-2120

ARCHITECTS
baylis
10801 Main Street, #110 | Bellevue, WA 98004
(425) 454 0566 | BaylisArchitects.com

ROOF DETAILS

S305