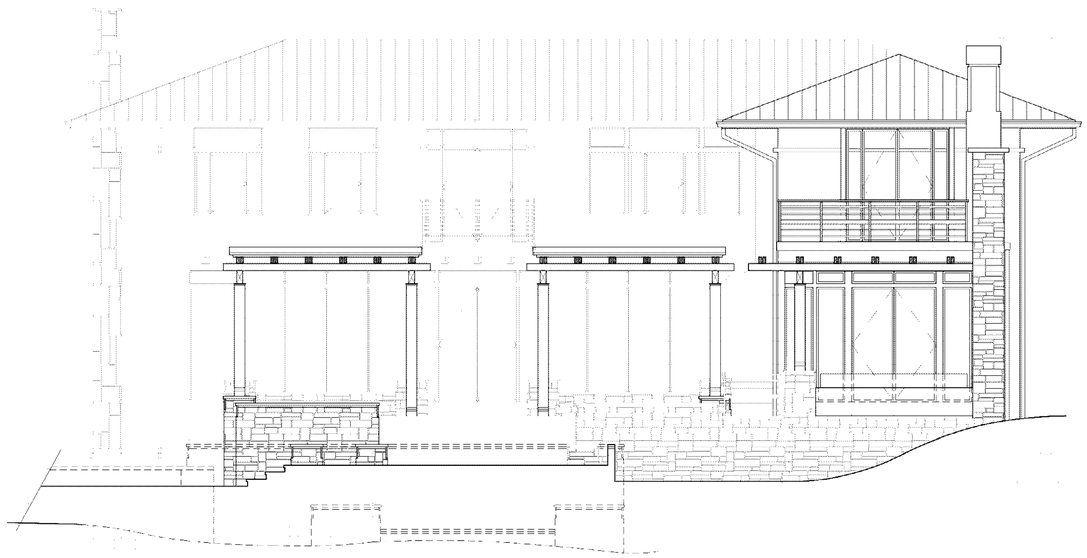
# Harris Remodel

## 1640 72nd Ave SE
## Mercer Islana, WA 98040



## GENERAL NOTES

### GENERAL:

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ALL CONSTRUCTION SHALL CONFORM TO THE 2012 INTERNATIONAL RESIDENTIAL CODE (IRC) AS AMENDED BY THE STATE OF WASHINGTON AND BE IN ACCORDANCE WITH WASHINGTON STATE LAWS, REGULATIONS AND VARIOUS CODES IMPOSED BY LOCAL AUTHORITIES.

DO NOT SCALE DRAWINGS OR DETAILS - USE GIVEN DIMENSIONS. CHECK DETAILS FOR LOCATION OF ALL ITEMS NOT DIMENSIONED ON THE PLANS. DIMENSIONS ON THE PLANS ARE TO FRAMING OR CENTERLINE OF COLUMNS UNLESS NOTED OTHERWISE.

DOOR AND CASED OPENINGS WITHOUT DIMENSIONS ARE TO BE 4" FROM FACE OF ADJACENT WALL OR CENTERED BETWEEN WALLS, UNLESS NOTED OTHERWISE.

VERIFY FIELD CONDITIONS PRIOR TO COMMENCEMENT OF EACH PORTION OF THE WORK.

THE CONTRACTOR SHALL COORDINATE ALL PORTIONS OF THE WORK AS DESCRIBED IN THE CONTRACT DOCUMENTS. NOTIFY THE ARCHITECT FOR RESOLUTION OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION.

### CONTRACTORS RESPONSIBILITY:

CONTRACTOR TO VERIFY ALL DIMENSIONS AND STRUCTURAL MEMBER SIZES PRIOR TO CONSTRUCTION. CONTRACTOR TO INFORM ARCHITECT OF ANY DISCREPANCIES IN THE DRAWINGS OR FROM THE CODES.

CONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE OWNER / ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION.

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

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

CONTRACTOR TO COORDINATE FRAMING LAYOUT WITH ELECTRICAL AND MECHANICAL PLAN.

### SOILS:

UNLESS A SOILS REPORT BY A SOILS ENGINEER IS PROVIDED AND ATTACHED THIS OFFICE ASSUMES NO RESPONSIBILITY AS TO THE PHYSICAL CHARACTERISTICS OF THE SOIL. FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 2,000 PSF. ALL FOOTINGS SHALL BE CAST ON UNDISTURBED FIRM NATURAL SOIL OR COMPACTED SOIL OF 1,000 PSF BEARING CAPACITY AT LEAST 1'-6" BELOW LOWEST ADJACENT GRADE, FREE OF ORGANIC MATERIALS. FOOTING EXCAVATION SHALL BE FREE OF LOOSE SOILS, DEBRIS, AND FREE WATER AT ALL TIMES. THIS OFFICE TAKES NO RESPONSIBILITY IN VERIFYING THE ACCURACY OF ENGINEERING DATA SUPPLIED BY OTHERS.

### CLEARING AND GRADING (T.E.S.C. MEASURES)

ALL CLEARING AND GRADING MUST BE IN ACCORDANCE WITH LOCAL JURISDICTION CLEARING AND GRADING EROSION CONTROL STANDARDS, DEVELOPMENT STANDARDS, LAND USE CODE, INTERNATIONAL RESIDENTIAL CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES AND STANDARDS. THE DESIGN ELEMENTS WITH THESE PLANS HAVE BEEN REVIEWED TO THESE REQUIREMENTS. ANY VARIANCE FROM THE ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE LOCAL JURISDICTION PRIOR TO CONSTRUCTION.

A COPY OF THE APPROVED PLANS MUST BE ON-SITE WHENEVER CONSTRUCTION IS IN PROGRESS. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION.

ALL LOCATIONS OF EXISTING UTILITIES HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND TO DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN WHICH MAY BE EFFECTED BY THE WORK.

FINAL SITE DRAINAGE MUST DIRECT DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AT A MINIMUM OF 6" WITHIN THE FIRST 10', PER IRC R401.3.

### CRAWL SPACE:

UNDER-FLOOR AREAS SHALL BE VENTILATED BY AN APPROVED MECHANICAL MEANS OR BY OPENINGS IN EXTERIOR FOUNDATION WALLS. SUCH OPENINGS SHALL HAVE A NET AREA OF NOT LESS THAN 1 SQ. FT. FOR EACH 150 SQ. FT. OF UNDER-FLOOR AREA. ONE OPENING SHALL BE WITHIN 3' OF EACH CORNER OF THE BUILDING. IRC R408.2.

CRAWL SPACE, UNOBSTRUCTED ACCESS, MINIMUM 18" x 24". IRC R408.4.

PROVIDE 18" MINIMUM CRAWL SPACE UNDER WOOD JOIST AND 12" MINIMUM CRAWL SPACE UNDER WOOD GIRDERS. IRC R317.1.

A GROUND COVER VAPOR BARRIER OF MIN. 6 MIL. (0.006") POLYETHYLENE (OR EQUIVALENT) SHALL BE INSTALLED IN ALL CRAWL SPACES. JOINTS LAPPED 12", EXTEND UP FOUNDATION WALL AND SECURE TO SILL PLATE WHEREVER PRACTICAL.

ALL WOOD IN CONTACT WITH CONCRETE, CMU OR WITHIN 8" OF SOILS SHALL BE PRESSURE TREATED WOOD IN COMPLIANCE WITH IRC R317.1.

### GARAGES:

DOORS BETWEEN GARAGE AND DWELLING SHALL BE SOLID WOOD DOORS 1 3/8" THICK OR MORE PER IRC R302.5.1. THERE SHALL BE NO OPENINGS BETWEEN GARAGE AND ROOMS USED FOR SLEEPING PURPOSES.

SEPARATION FROM DWELLING TO GARAGE, SHOP OR SIMILAR AREAS SHALL BE SEPARATED FROM RESIDENCE AND IT'S ATTIC AREA BY NOT LESS THAN 1/2" GYPSUM BOARD APPLIED TO THE GARAGE SIDE. GARAGES BENEATH HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8" TYPE X GYPSUM BOARD OR EQUIVALENT. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 1/2" GYPSUM BOARD OR EQUIVALENT. IRC R302.6.

HEATING AND/OR COOLING EQUIPMENT LOCATED IN GARAGE SHALL BE INSTALLED WITH PILOTS AND BURNERS OR HEATING ELEMENTS AND SWITCHES AT LEAST 18" ABOVE THE FLOOR LEVEL PER IRC G2408.2.

### FIREPLACES

FACTORY-BUILT FIREPLACES AND CHIMNEYS SHALL BE LISTED AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS, IRC R1002.1 AND TESTED IN ACCORDANCE WITH UL 127.

MASONRY FIREPLACES, BARBECUES, SMOKE CHAMBERS AND FIREPLACE CHIMNEYS SHALL BE CONSTRUCTED OF MASONRY OR REINFORCED CONCRETE. FOUNDATIONS SHALL BE MIN. 12" THICK AND EXTEND MIN. 6" BEYOND MASONRY. FIREBOX WALLS MIN. 10" THICK EXCEPT MIN. 8" THICK WHERE A FIREBRICK LINING IS USED. COMBUSTIBLE MATERIALS SHALL NOT BE PLACED WITHIN 2 INCHES OF FIREPLACE, SMOKE CHAMBER OR CHIMNEY WALLS. COMBUSTIBLE MATERIAL SHALL NOT BE PLACED WITHIN 6" OF THE FIREPLACE OPENING. MIN. 4" THICK NON-COMBUSTIBLE HEARTH EXTENDING 16" IN FRONT AND 8" TO THE SIDE OF THE FIREPLACE OPENING. COMBUSTIBLE MATERIAL WITHIN 12" OF THE FIREPLACE OPENING SHALL NOT PROJECT MORE THAN 1/8" FOR EACH 1" DISTANCE FROM SUCH OPENING. IRC R1001-R1003.

### CEILING HEIGHTS

HABITABLE SPACE SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-0", NOT MORE THAN 50% OF REQUIRED FLOOR AREA OF A SPACE IS PERMITTED TO HAVE A SLOPED CEILING LESS THAN 7'-0" IN HEIGHT WITH NO PORTION LOWER THAN 5'-0". BATHROOM SHALL HAVE A MIN CEILING HEIGHT OF 6'-8" OVER THE FIXTURE AND ITS FRONT CLEARANCE AREA. IRC R305.

### ROOFING:

APPLY ROOFING IN ACCORDANCE WITH IRC R905.

BALCONIES, LANDINGS, EXTERIOR STAIRWAYS, OCCUPIED ROOFS AND SIMILAR SURFACES EXPOSED TO THE WEATHER AND SEALED UNDERNEATH SHALL BE WATERPROOFED AND SLOPED A MINIMUM OF 1/4" PER 12" (2% SLOPE) FOR DRAINAGE.

### ATTIC:

PROVIDE ATTIC VENTILATION AS INDICATED ON ROOF FRAMING PLANS. THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED, EXCEPT THAT THE AREA MAY BE 1/300, PROVIDED AT LEAST 40 BUT NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED NO MORE THAN 3 FEET BELOW THE RIDGE OR HIGHEST POINT 4 WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. IRC R806.2.

ATTIC ACCESS MINIMUM 22" x 30" WITH MINIMUM 30" HEADROOM, UNOBSTRUCTED, READILY ACCESSIBLE OPENING. IRC R807.1

### GLAZING:

TO BE IN COMPLIANCE WITH IRC R308 AND WASHINGTON STATE SAFETY GLASS LAW.

GLAZING IN HAZARDOUS LOCATIONS SUCH AS GLASS ON DOORS, GLAZING WITHIN 24" ON EITHER SIDE OF A DOOR OPENING, AREAS WITHIN 60" VERTICAL AND 36" HORIZONTAL OF THE BOTTOM LANDING OF A STAIRWAY, STORM DOORS, RAILINGS, SHOWER DOORS, SLIDING GLASS DOORS, AND TUB ENCLOSURES SHALL BE SAFETY GLAZING MATERIAL. IRC R308.4

ALL EXTERIOR WALL GLAZING SHALL COMPLY WITH THE 2012 EDITION OF THE WASHINGTON STATE ENERGY CODE.

### EGRESS:

EGRESS IN EVERY SLEEPING ROOM SHALL HAVE AT LEAST ONE OPERABLE EMERGENCY EXIT WITH A MINIMUM NET CLEAR OPENING OF 5.7 SQ. FT. THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24" MINIMUM NET CLEAR OPENING WIDTH DIMENSION OF 20" AND A FINISHED SILL HEIGHT NOT MORE THAN 44" ABOVE THE FLOOR. IRC R310.1.

ONE EXIT DOOR CONFORMING TO IRC R311.2 IS REQUIRED.

### FIRE & CARBON MONOXIDE PROTECTION:

SMOKE & CARBON MONOXIDE DETECTOR POWER SOURCES TO BE INSTALLED IN ACCORDANCE WITH NFPA 72, IRC R314 & IRC R315. ALL ALARM DEVICES SHALL BE INTERCONNECTED PER IRC R314.1.

FIREBLOCKING PER IRC R602.8, R602.12, R302.11 & R602.8. DRAFTSTOPPING PER IRC R302.12 & R502.12.

### VENTILATION & LIGHTING:

INHABITABLE ROOMS NOT PROVIDED WITH AN OPENABLE EXTERIOR OPENING OF AT LEAST 4% OF THE FLOOR AREA, A MECHANICAL VENTILATION SYSTEM MUST BE PROVIDED THAT PROVIDES MIN. 35 AIR CHANGES PER HOUR. IRC R303.1.

DRYER & BATH FANS TO BE 50 CFM, AND RANGE/OVEN FANS TO BE 100 CFM MIN. VENT TO THE OUTSIDE. IRC303 AND 2006 WA STATE VENTILATION AND INDOOR AIR QUALITY CODE.

NATURAL LIGHTING TO BE NOT LESS THAN 8% OF THE FLOOR AREA OR ALL HABITABLE SPACES. IRC R303.

### STAIRS:

MINIMUM HEADROOM OF 6'-8" MEASURED VERTICALLY FROM A SLOPED PLANE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OR PLATFORM. IRC R311.7.2

MINIMUM WIDTH 36", IRC 311.7.1

MINIMUM TREAD 10", MAXIMUM RISER 7 3/4", HANDRAIL MINIMUM 34" AND MAXIMUM 38" ABOVE STAIR NOSING. HANDRAIL TO BE 1 1/4" TO 2" CROSS SECTION AND 1 1/2" AWAY FROM WALL. IRC R311.7.5 & 311.7.8. INSTALL FIRE BLOCKING AT MID STRINGER SPACING AND AT WALL ALONG STRINGER. COVER WALLS AND SOFFITS OF USABLE SPACE UNDER STAIR WITH 1/2" GYPSUM BOARD. IRC R302.7.1

GUARDRAILS: ANY WALKING SURFACE 30" OR MORE ABOVE GRADE OR ADJACENT SURFACE SHALL HAVE MIN. 36" HIGH GUARDRAIL. IRC R312.

### BATHROOMS:

ALL TUB AND SHOWER STALLS SHALL HAVE FIREBLOCKING BETWEEN STUDS.

ALL GLAZING USED FOR DOORS OR ENCLOSURES IN BATHROOMS SHALL BE SAFETY GLAZING. GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING A SHOWER OR BATHTUB WHERE THE BOTTOM EXPOSED EDGE IS LESS THAN 60 INCHES ABOVE THE STANDING SURFACE AND DRAIN INLET SHALL BE SAFETY GLAZING. IRC R308.4

BATH TUB & SHOWER STALL NON-ABSORBENT WAINSCOTS SHALL BE A MINIMUM OF 72 INCHES ABOVE THE FLOOR. IRC R307.2.

WATERCLOSETS SHALL HAVE MIN. 15" TO SIDE WALLS FROM CENTER OF FIXTURE, AND MIN. 21" FRONT CLEARANCE. IRC R307.1

APPLIANCES IN A FIXED POSITION SHALL BE SECURELY FASTENED IN PLACE TO STRUCTURAL MEMBERS WITH STRAP ANCHORS OR SIMILAR ANCHORING METHOD. IRC G2420.4.4

### ENERGY:

METHOD OF COMPLIANCE - PRESCRIPTIVE METHOD FOR GROUP R OCCUPANCY, CLIMATE ZONE PER TABLE R301.1, TABLE R402.1.1, UNLIMITED GLAZING.

ENERGY CREDITS- 1.5 CREDITS REQUIRED, 1.5 CREDITS SELECTED- SEE PRESCRIPTIVE WORKSHEET.

0.5 CREDITS-OPTION 1.2-EFFICIENT BUILDING ENVELOPE, 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

0.5 CREDITS-OPTION 2.1 AIR LEAKAGE CONTROL & EFFICIENT VENTILATION
COMPLIANCE BASED ON R402.4.1.2, REDUCE THE TESTED AIR LEAKAGE TO 3.0 AIR CHANGES PER HOUR MAXIMUM @ 50 PASCALS

0.5 CREDITS-OPTION 4.1 HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS

ALL SUPPLY AND RETURN DUCTS LOCATED IN AN UNCONDITIONED ATTIC SHALL BE DEEPLY BURIED IN CEILING INSULATION IN ACCORDANCE WITH SECTION R403.3.1.

FOR MECHANICAL EQUIPMENT LOCATED OUTSIDE THE CONDITIONED SPACE A MAXIMUM OF 10 LINEAR FEET OF RETURN DUCT AND 5 LINEAR FEET OF SUPPLY DUCT CONNECTIONS TO THE EQUIPMENT MAY BE OUTSIDE OF THE DEEPLY BURIED INSULATION. ALL METALLIC DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE MUST HAVE BOTH TRANSVERSE AND LONGITUDINAL JOINTS SEALED WITH MASTIC. IF FLEX DUCTS ARE USED THEY CANNOT CONTAIN SPLICES.

DUCT LEAKAGE SHALL BE LIMITED TO 3 CFM PER 100 SF OF CONDITIONED FLOOR AREA.

AIR HANDLERS SHALL BE LOCATED WITHIN THE CONDITIONED SPACE.

ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL RESIDENTIAL CODE AND THE WASHINGTON STATE ENERGY CODE, LATEST EDITION. VERIFY ALL CONDITIONS BEFORE PROCEEDING WITH WORK.

WALLS: INSULATED PER TABLE R402.1.1.

ROOF AND CEILING: INSULATED PER TABLE R402.1.1. PROVIDE INSULATION IN CEILING WHERE POSSIBLE AND IN 2x12 RAFTERS IF VAULTED CEILING CONDITION EXISTS. MAINTAIN A MINIMUM OF 2" CLEAR BETWEEN TOP OF INSULATION AND BOTTOM OF SHEATHING FOR VENTING. VENTING MUST OCCUR IN EACH JOIST SPACE. WHERE CONTINUOUS VENTING WITHIN A JOIST SPACE IS INTERRUPTED BY A HEADER (I.E. SKYLIGHT OR AT HIP END), PROVIDE (2) 1 1/2" VENTING HOLES AT THE TOP OF THE RAFTER AT THE HEADER TO ALLOW FOR CONTINUAL THROUGH-VENTING INTO THE NEXT JOIST SPACE.

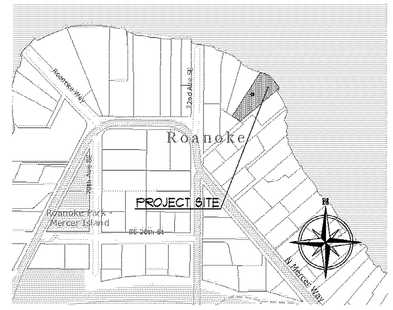
FLOORS: INSULATE PER TABLE R402.1.1.

SLAB ON GRADE: INSULATE PER TABLE R402.1.1. PROVIDE EXTRUDED RIGID CLOSED CELL INSULATION. INSULATION, INSTALLED INSIDE THE FOUNDATION WALL, SHALL EXTEND DOWNWARD FROM THE TOP OF THE SLAB 24" MIN. OR DOWNWARD AND THEN HORIZONTALLY BENEATH THE SLAB FOR A COMBINED 24" MIN. INSULATION INSTALLED OUTSIDE THE FOUNDATION SHALL EXTEND DOWNWARD 24" MIN. OR TO THE FROSTLINE. WSEC 402.2.9.1.

VAPOR BARRIERS: VAPOR RETARDERS SHALL BE INSTALLED ON THE WARM SIDE (IN WINTER) OF INSULATION PER TABLE R402.4.1.1.
FLOORS SEPARATING CONDITIONED SPACE FROM UNCONDITIONED SPACE SHALL HAVE MIN. 4 MIL POLYETHYLENE OR CRAFT FACED MATERIAL. ROOF/CEILING ASSEMBLIES WHERE THE VENTILATION SPACE ABOVE THE INSULATION IS LESS THAN AN AVERAGE OF 12 INCHES SHALL BE PROVIDED WITH A VAPOR RETARDER. WALLS SEPARATING CONDITIONED SPACE FROM UNCONDITIONED SPACE SHALL HAVE A VAPOR RETARDER INSTALLED. FACED BATT INSULATION SHALL BE FACE STAPLED. A GROUND COVER OF MIN. 6 MIL BLACK POLYETHYLENE SHALL BE LAID OVER THE GROUND WITHIN CRAWL SPACES W/ JOINTS LAPPED MIN. 12".

GLAZING AND DOORS: GLAZING AND DOOR U-FACTORS SHALL BE DETERMINED IN ACCORDANCE WITH WSEC SECTIONS R402.1.1 AND R303.1.3(2), RESPECTIVELY.

## VICINITY PLAN

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## PROJECT ADDRESS

1640 72ND AVE SE
MERCER ISLAND, WA 98040

## ZONING CLASSIFICATION

R-12

## IMPERVIOUS SURFACE COVERAGE

PLEASE REFER TO ALL-SITE PLAN

## SQ. FT. CALCULATION

| EXISTING FINISHED AREAS | |
|---|---|
| BASEMENT | 562 SF |
| MAIN FLOOR | 2,364 SF |
| UPPER FLOOR | 2,333 SF |
| TOTAL | 5,259 SF |

| EXIST. GARG. & STORAGE AREAS | |
|---|---|
| BASEMENT | 183 SF |
| MAIN FLOOR | 757 SF |
| TOTAL | 940 SF |

| EXIST. DECK/PATIOS | |
|---|---|
| MAIN FLOOR | 1441 SF |
| UPPER FLOOR | 283 SF |
| TOTAL | 1,724 SF |

| DEMO. DECK/PATIOS | |
|---|---|
| MAIN FLOOR | -382 SF |
| UPPER FLOOR | -283 SF |

| NEW FINISHED AREAS | |
|---|---|
| UPPER FLOOR | 302 SF |

| NEW DECK/PATIOS | |
|---|---|
| MAIN FLOOR | 382 SF |
| UPPER FLOOR | 214 SF |

| PROP. TOTAL FINISHED AREAS | |
|---|---|
| BASEMENT | 562 SF |
| MAIN FLOOR | 2,364 SF |
| UPPER FLOOR | 2,635 SF |
| TOTAL | 5,561 SF |

| PROP. TOTAL GARG. & STORAGE AREAS | |
|---|---|
| BASEMENT | 183 SF |
| MAIN FLOOR | 757 SF |
| TOTAL | 940 SF |

| PROP. TOTAL DECK/PATIOS | |
|---|---|
| MAIN FLOOR | 1441 SF |
| UPPER FLOOR | 214 SF |
| TOTAL | 1655 SF |

## GROSS FLOOR AREA CALCULATIONS (GFA)

| | |
|---|---|
| MAXIMUM ALLOWED | 8,896 SF (40%) |
| TOTAL FLOOR AREA | 6641 SF |
| BASEMENT EXCLUSION | 631 SF |
| TOTAL GFA | 6010 SF (27%) |

## LEGAL DESCRIPTION

LEGAL DESCRIPTION:
MC GILVRAS ISLAND ADD BEG SE COR OF 2 TH N 88 DEG 32 MIN 20 SEC W 417.39 FT TH N 32 DEG 12 MIN 14 SEC E TO SH LN OF LAKE WASH TH SELY ALG SH LN TO PT N 48 DEG 48 MIN 00 SEC E OF BEG TH S 48 DEG 48 MIN 00 SEC W TO BEG & SH LDS ADJ

PARCEL #531510-0014

## BUILDING CLASSIFICATION

| | |
|---|---|
| USE GROUP (IBC CHAPTER 3): | R-3 (SINGLE FAM. RESIDENTIAL) |
| CONSTRUCTION TYPE (IBC 602.5.): | TYPE V |
| ALLOWABLE AREA (IBC TABLE 503.): | UNLIMITED |
| ALLOWABLE HEIGHT (IBC TABLE 503.): | 3 STORIES W/ BASEMENT, OR 4 STORIES IF SPRINKLED |
| SPRINKLERS (IBC 903.3.1.3) | NFPA 13D SYSTEM PROVIDED |
| FIRE FLOW (UFC TABLE A-III-A-1) | NO - SPRINKLERS REQ'D |

## ENERGY COMPLIANCE

WASHINGTON STATE ENERGY CODE: 2018 EDITION, PRESCRIPTIVE METHOD FOR SINGLE-FAMILY RESIDENTIAL, CLIMATE ZONE 5 & MARINE 4. DOOR U-FACTORS SHALL CONFORM TO TABLE R303.1.3(2).

| GLAZING U-FACTOR | | CEILING | VAULTED CEILING | WALL ABOVE GRADE | WALL-INT BELOW GRADE | WALL-EXT BELOW GRADE | FLOOR | SLAB ON GRADE |
|---|---|---|---|---|---|---|---|---|
| VERT. | OVERHEAD | | | | | | | |
| .028 | .050 | R-49 | R-38 | R-21 | R-21 TB | R-10/15/21 Int. + TB | R-38 | R-10 2' |

## INDEX OF DRAWINGS



## ABBREVIATIONS

| | |
|---|---|
| UNO | UNLESS NOTED OTHERWISE |
| NIC | NOT IN CONTRACT |
| WC | WATER CLOSET |
| EXST | EXISTING |
| RM | ROOM |
| NTS | NOT TO SCALE |
| WD | WOOD |
| FPHB | COLD WATER FROST-PROOF HOSE BIBB |
| HW-FPHB | HOT WATER FROST-PROOF HOSE BIBB |
| FBOIC | FURNISHED BY OWNER - INSTALLED BY CONTRACTOR |


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Job No. 2110
Project Manager: TB
Issue Date 11/01/2021

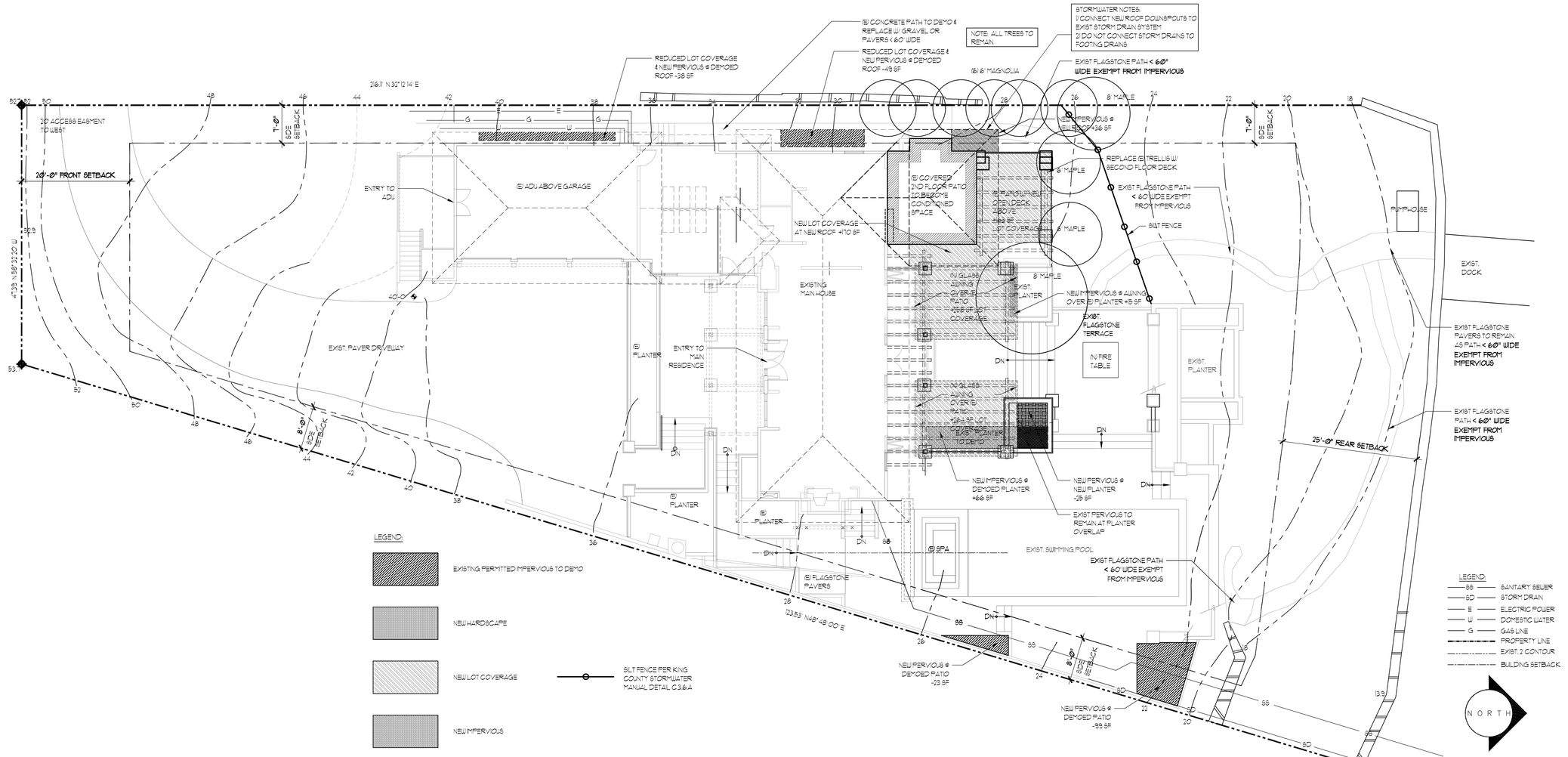
| NO. | DATE | REVISION |
|---|---|---|

5931 REGISTERED ARCHITECT SCOTT W HOMMAS STATE OF WASHINGTON

COVER SHEET

A0.1

P.C.S. 40.1 PRINTED: 6/25/2017




# 1 SITE/TESC/STORM WATER PLAN PROPOSED

SCALE: 1" = 10'-0"

0 5' 10' 20' 30 FT.

TESC NOTES

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SMDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED T ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY KING COUNTY.
7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BI-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
12. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.
13. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE SURFACE WATER DESIGN MANUAL.
14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDED AND THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE DDES INSPECTOR.

LOT AREA:

22,240 SF

LOT SLOPE:

| | |
|---|---|
| HIGH PONT: | 56.56 |
| LOW POINT: | 16.54 |
| DIFFERENCE: | 40.02 |
| DISTANCE BETWEEN POINTS: | 263.23 |
| SLOPE | 15.2% |

LOT COVERAGE:

| | |
|---|---|
| ALLOWED (35%): | 7,784 SF |
| EXISTING: | |
| HOUSE ROOF | 4,129 SF |
| DRIVEWAY | 2,743 SF |
| NEW PROPOSED: | |
| (N) ROOF @ MASTER | 170 SF |
| (N) COVERED PATIO @ FAMILY | 163 SF |
| (N) AWNINGS | 522 SF |
| DEMO PROPOSED: | |
| (2) ROOF NOTCHES: | -87 SF |
| TOTAL PROPOSED (34.4%): | 7,640 SF |

GROSS FLOOR AREA:

| | |
|---|---|
| ALLOWED (LESSER OF 40% OR 10,000 SF): | 8,836 SF |
| EXISTING: | 5,484 SF |
| NEW: | |
| MASTER BEDROOM EXPANSION | 302 SF |
| PROPOSED: | 5,786 SF |
| EXCLUDED BASEMENT | 748 SF |

SQUARE FOOTAGE:

REF A0.1

PROPOSED BUILDING HEIGHT:

| | |
|---|---|
| A.B.E. (NO CHANGE): | 34.37 |
| MAX HEIGHT: | 64.37 |
| PROPOSED HEIGHT (NO CHANGE): | 51.74 |

HARD SURFACES:

| | |
|---|---|
| ALLOWED (9%) | 2,002 SF |
| EXISTING HARD SURFACES (17%) | 3,881 SF |
| (LEGAL NON-CONFORMING) | |
| DEMO PROPOSED: | |
| (2) PATIO AREAS | -122 SF |
| REMOVE EXIST PLANTER | +66 SF |
| PROPOSED NEW: | |
| AWNING OVER (E) PLANTER | +15 SF |
| PLANTER | -25 SF |
| PROPOSED TOTAL: | 3,815 SF |
| NET CHANGE IN HARD SURFACES | -66 SF |

2) REMOVAL OF HARD SURFACES:

| | |
|---|---|
| PROPOSED NEW LOT COVERAGE + HARD SURFACES OUTSIDE EXIST FOOTPRINT | |
| REMOVE EXIST PLANTER | +66 SF |
| AWNING OVER (E) PLANTER | +15 SF |
| PORTION OF MASTER ROOF OUTSIDE EXIST HARD SURFACES | +26 SF |
| TOTAL | +117 SF |
| REQUIRED REMOVAL OF EXIST SURFACES @ 2/1 RATIO | |
| (2) ROOF NOTCHES: | -87 SF |
| (2) PATIO AREAS | -122 SF |
| NEW PLANTER | -25 SF |
| TOTAL | -234 SF |
| PROPOSED NET CHANGE IN IMPERVIOUS | -117 SF |

LANDSCAPING AREA:

| | |
|---|---|
| REQUIRED (65%): | 14,456 SF |
| ALLOWED HARDSCAPING IMPROVEMENTS (9%): | 2,002 SF |
| REQUIRED SOFTSCAPE (56): | 12,454 SF |
| EXISTING SOFTSCAPE (52%) | 11,486 SF |
| (LEGAL NON-CONFORMING) | |
| PROPOSED SOFTSCAPE (51%): | 11,603 SF |
| (117 SF NET INCREASE) | |

LEGAL DESCRIPTION:
THAT PORTION OF LOTS 2 AND 3, BLOCK 1 MCGILVRAS ISLAND ADDITION IN KING COUNTY, WASHINGTON DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 2;
THENCE NORTH 88°31'20" WEST 47.39 FEET;
THENCE NORTH 32°12'14" EAST TO THE SHORE LINE OF LAKE WASHINGTON;
THENCE SOUTHEASTERLY ALONG SAID SHORE LINE TO A POINT WHICH BEARS NORTH 48°48'00" EAST FROM THE POINT OF BEGINNING;
THENCE SOUTH 48°48'00" WEST TO POINT OF BEGINNING.
TOGETHER WITH SHORELANDS OF THE SECOND CLASS, ADJACENT TO OR ABUTTING THEREON AND LYING BETWEEN THE NORTHWESTERLY AND THE SOUTHEASTERLY BOUNDARIES OF THE ABOVE DESCRIBED TRACT EXTENDED NORTHEASTERLY.
TOGETHER WITH AN EASEMENT FOR ROAD PURPOSES OVER A STRIP 20 FEET IN WIDTH DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 2;
THENCE NORTH 88°31'20" WEST 47.39 FEET TO THE TRUE POINT OF THE BEGINNING OF THE EASEMENT;
THENCE CONTINUING NORTH 88°31'20" WEST 72.0 FEET;
THENCE WEST 76.19 FEET TO THE EAST MARGIN OF EXISTING 72ND AVENUE S.E.;
THENCE NORTH 00°08'45" EAST ALONG SAID MARGIN OF 20.00 FEET;
THENCE EAST 81.79 FEET;
THENCE SOUTH 88°31'20" EAST, 78.01 FEET TO THE NORTHWESTERLY LINE OF ABOVE DESCRIBED TRACT;
THENCE SOUTH 32°12'14" WEST, 20.00 FEET TO THE TRUE POINT OF BEGINNING.

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# HARRIS REMODEL

1640 72ND AVE SE
MERCER ISLAND, WA 98040

| | |
|---|---|
| Job No. | 2110 |
| Project Manager: | TB |
| Issue Date | 11/01/2021 |

| NO. | DATE | REVISION |
|---|---|---|

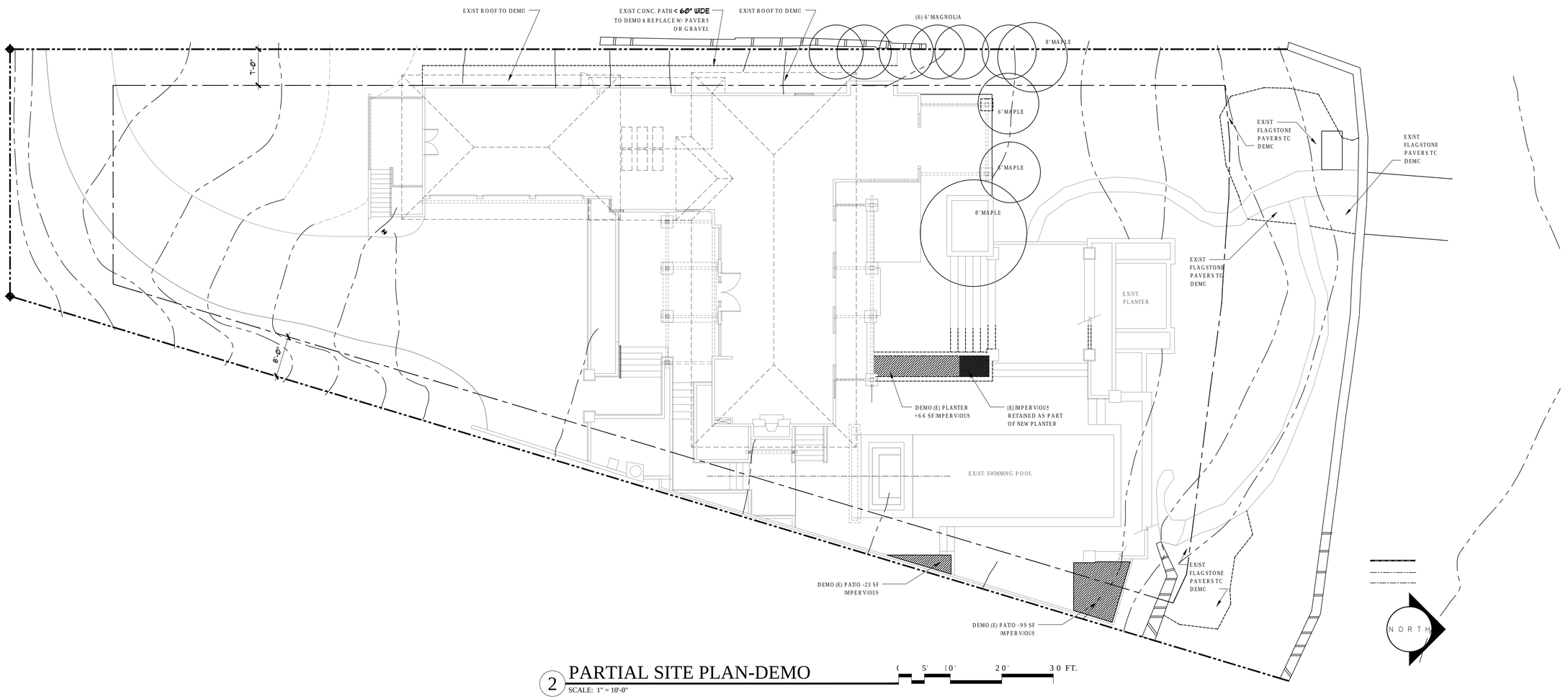
5931 REGISTERED ARCHITECT SCOTT W HOMMAS STATE OF WASHINGTON

SITE PLAN

A1.1



FILE: A1.1-site plan PRINTED: 8/30/2017




2 PARTIAL SITE PLAN-DEMO

SCALE: 1" = 10'-0"

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# HARRIS REMODEL

*1640 72ND AVE SE*
*MERCER ISLAND, WA 98040*

Job No. *2110*
Project Manager: TB
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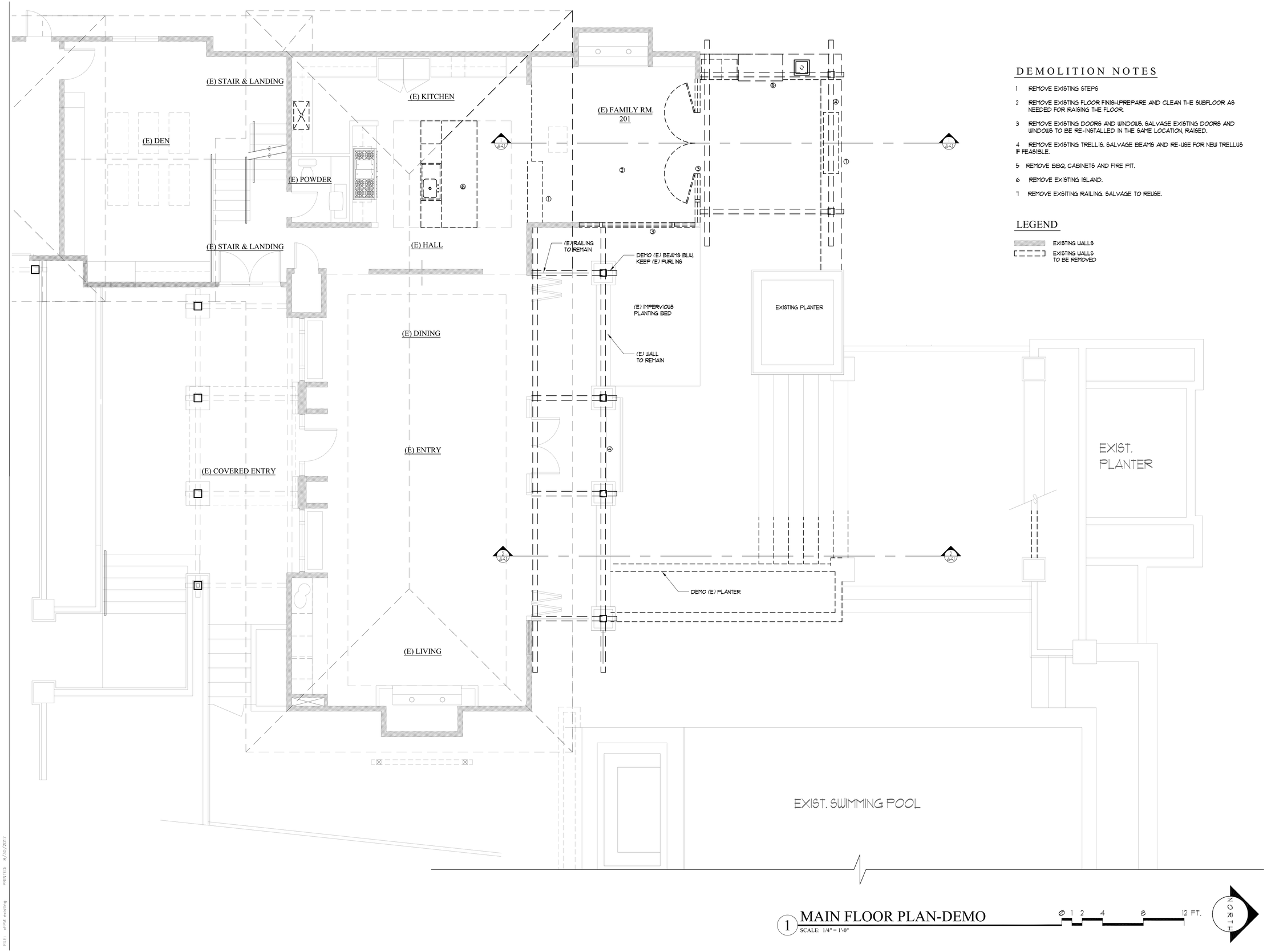
SITE DEMO PLAN

A1.1D



*FILE: A1.1-site plan PRINTED 8/10/2017*




## DEMOLITION NOTES

1 REMOVE EXISTING STEPS

2 REMOVE EXISTING FLOOR FINISH,PREPARE AND CLEAN THE SUBFLOOR AS NEEDED FOR RAISING THE FLOOR.

3 REMOVE EXISTING DOORS AND WINDOWS. SALVAGE EXISTING DOORS AND WINDOWS TO BE RE-INSTALLED IN THE SAME LOCATION, RAISED.

4 REMOVE EXISTING TRELLIS. SALVAGE BEAMS AND RE-USE FOR NEW TRELLIS IF FEASIBLE.

5 REMOVE BBQ, CABINETS AND FIRE PIT.

6 REMOVE EXISTING ISLAND.

7 REMOVE EXSITING RAILING. SALVAGE TO REUSE.

## LEGEND

EXISTING WALLS

EXISTING WALLS TO BE REMOVED

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

0 1 2 4 8 12 FT.

NORTH

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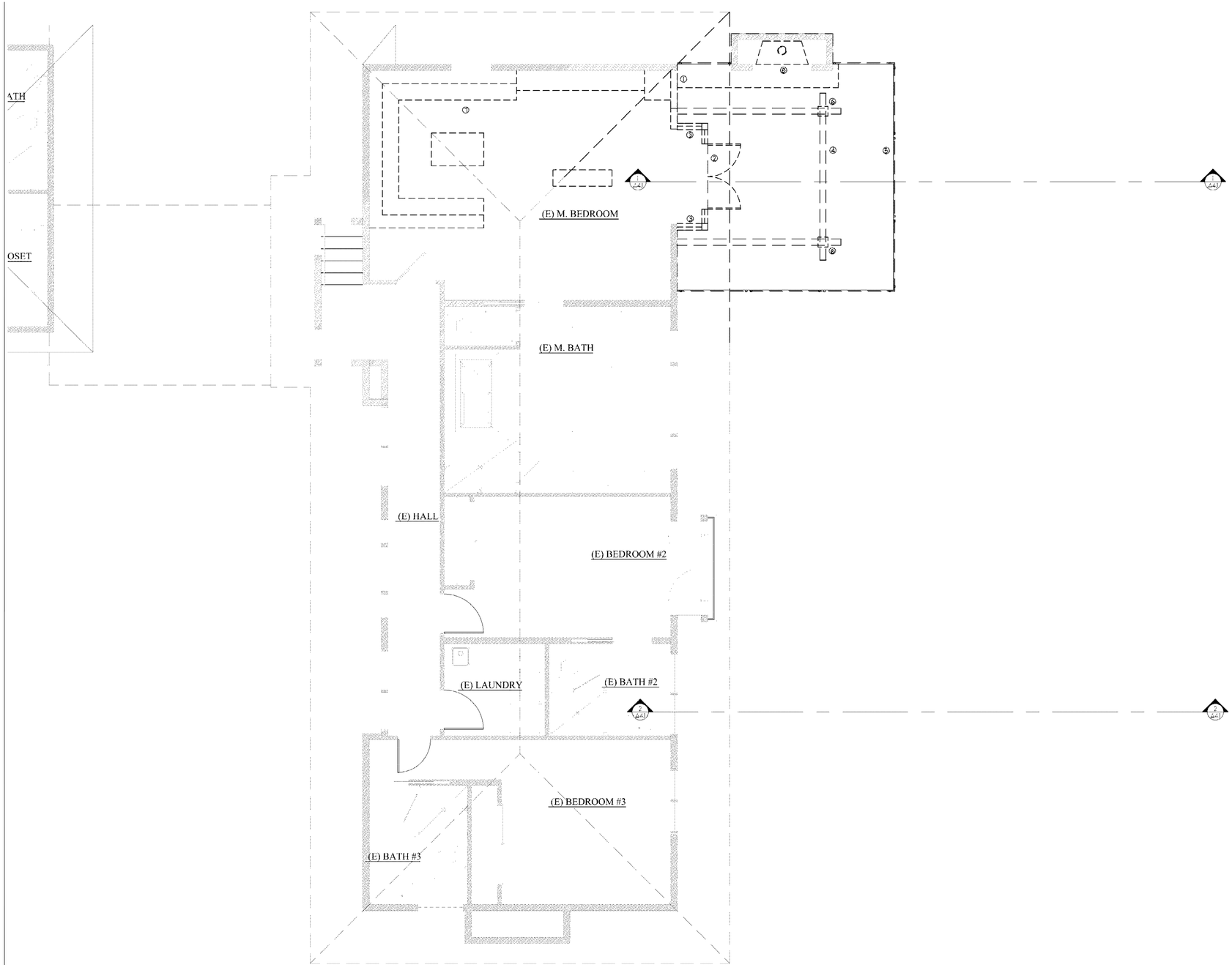
5931 REGISTERED ARCHITECT
SCOTT W HOMMAS
STATE OF WASHINGTON

MAIN FLOOR PLAN DEMO

A2.2D



FILE: xPW existing PRINTED: 8/30/2017




## DEMOLITION NOTES

1 REMOVE EXISTING WALLS PER PLAN.

2 REMOVE EXISTING DOOR. SAIVAGE TO BE REUSED.

3 REMOVE EXISTING WINDOWS. SALVAGE TO BE REUSED.

4 REMOVE EXISTING TRELLIS. SALVAGE BEAMS AND RE-USE FOR NEW TRELLIS IF FEASIBLE.

5 REMOVE EXISTING RAILING. SALVAGE TO REUSE IF FEASIBLE.

6 REMOVE EXISTING COLUMN. SALVAGE TO REUSE IF POSIBLE.

7 REMOVE EXISTING CABINETS.

8 DEMO GAS FIREPLACE. SALVAGE TO REUSE.

## LEGEND

EXISTING WALLS

EXISTING WALLS TO BE REMOVED

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

0 1 2 4 8 12 FT.

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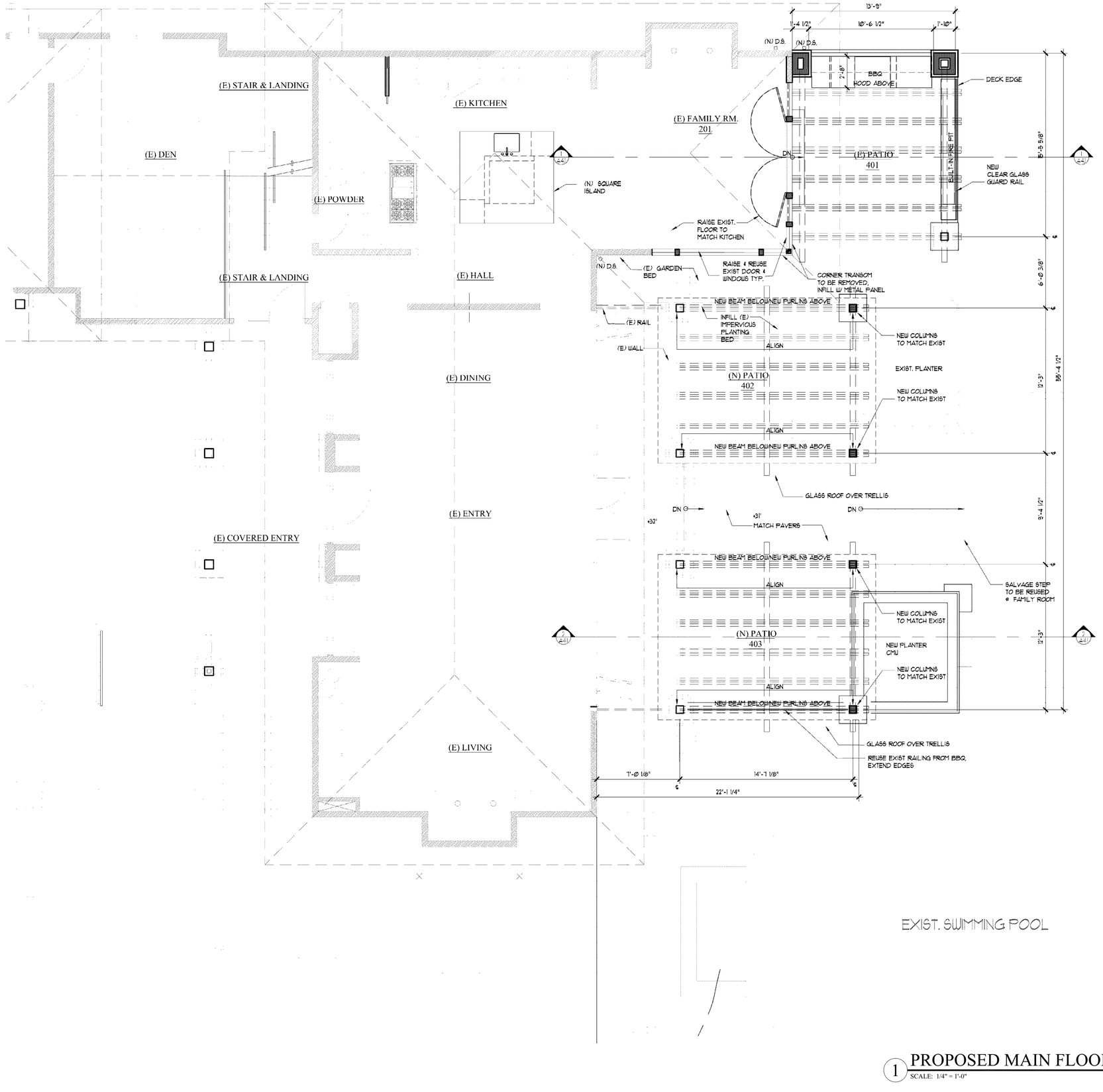
UPPER FLOOR PLAN-DEMO

A2.3D



FILE: ...#Plu existing PRINTED: 8/30/2017




## LEGEND

EXISTING WALLS

NEW WALLS

## SQUARE FOOTAGE

| | |
|---|---|
| EXISTING GARAGE: | 757 SF |
| EXISTING HOUSE: | 2,364 SF |
| EXISTING FRONT PATIO: | 300 SF |
| EXISTING BACK PATIOS: (STAIR, PLANTERS AND POOL PATIO N.I.C.) | 1,141 SF |
| TOTAL EXISTING AREA: | 4,562 SF |
| PATIOS TO BE DEMOLISHED: | -392 SF |
| ADDED NEW PATIOS: | 392 SF |
| TOTAL PROPOSED AREA: | 4,562 SF |

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

0 1 2 4 8 12 FT.

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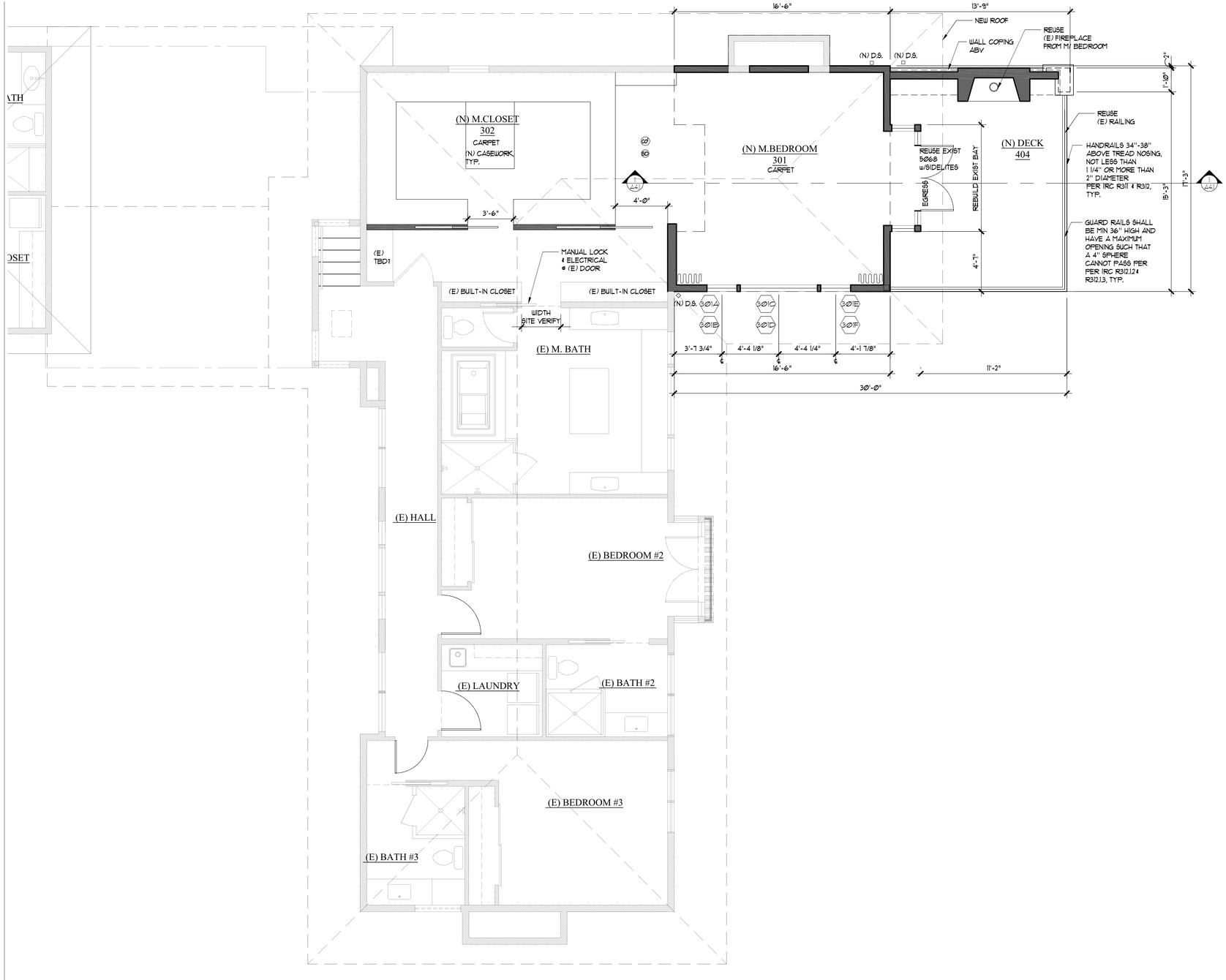
MAIN FLOOR PLAN

A2.2



FILE: xPM PRINTED: 8/30/2017




## LEGEND

EXISTING WALLS

NEW WALLS

## SQUARE FOOTAGE

| | |
|---|---|
| EXISTING HOUSE: | 2,333 SF |
| EXISTING DECK: | 283 SF |
| TOTAL EXISTING AREA: | 2,616 SF |
| DECK TO BE DEMOLISHED: | -283 SF |
| NEW FINISHED AREAS: | 302 SF |
| NEW DECK: | 214 SF |
| TOTAL PROPOSED AREA: | 2,849 SF |

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

0 1 2 4 8 12 FT.

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UPPER FLOOR PLAN

A2.3



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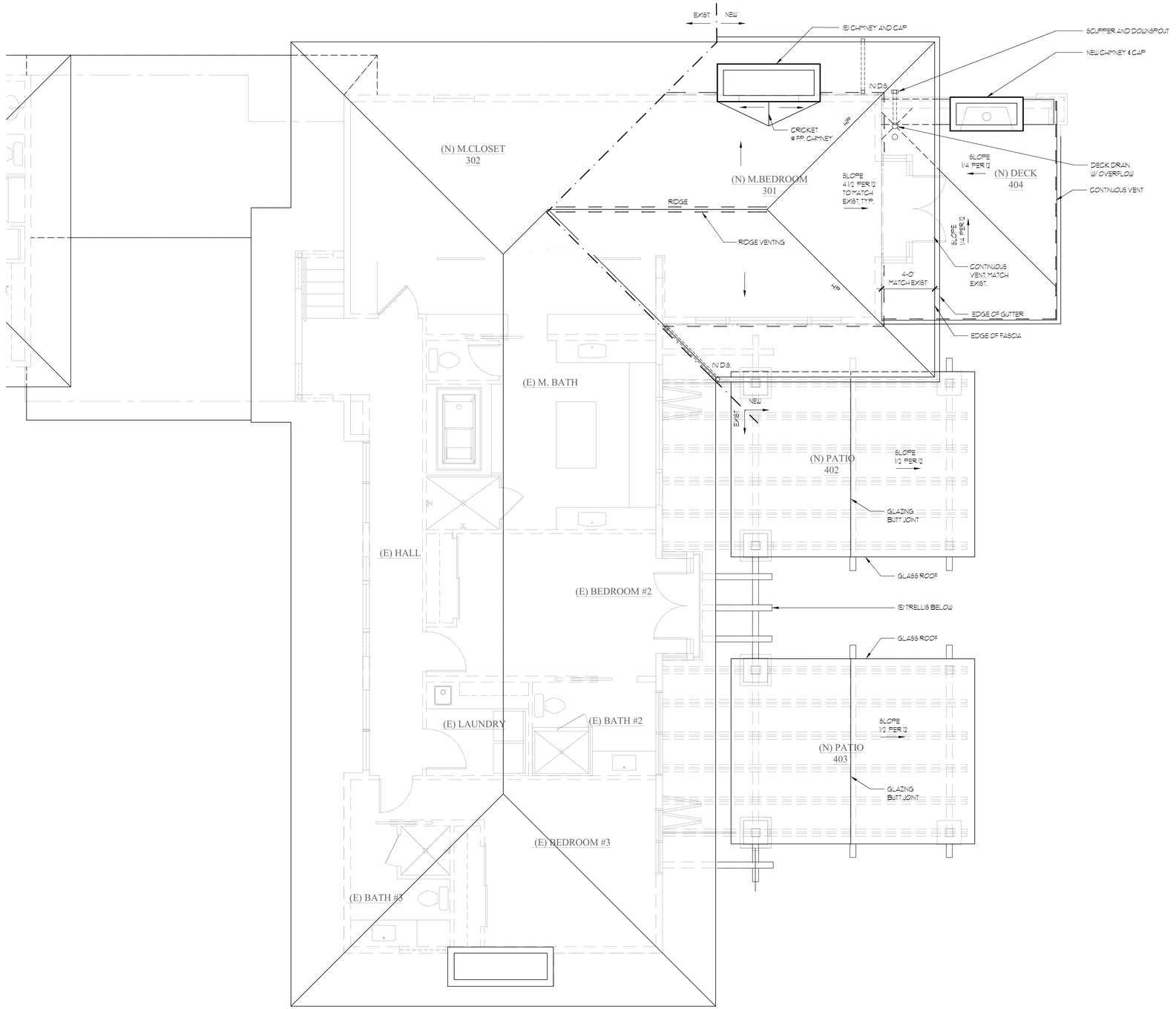


## ROOF VENTING CALCS

EAVE VENTING
VENTING PRODUCT COR-A-VENT 8-400# LOUVER EAVES
10 DQI IN NFVA/LINEAL FOOT (10/144=0.0694 SQ FT/LINEAL FOOT)

RIDGE VENTING
VENTING PRODUCT COR-A-VENT V300 13.5 SQ IN NFVA/LINEAL FOOT (13.5 SQ IN /144=0.93 SQ FT)

ROOF AREA= 576 SF

REQUIRED VENTING AREA: 1/300X576=1.92 SF
TOTAL VENTING PROVIDED: 3.85 SF

EAVE VENTING= 34.25 LINEAL FEET
34.25X0.0694= 2.37 SF (0.86 SF REQUIRED)

RIDGE VENTING= 16 LINEAL FEET
16X0.093= 1.48 SF (0.96 SF REQUIRED)

DECK AREA= 212 SF

REQUIRED VENTING AREA: 1/150X212= 1.41 SF
TOTAL VENTING PROVIDED: 2.04 SF

EAVE VENTING= 22.05 LINEAL FEET
29.5 X 0.0694= 2.04 SF

1 PROPOSED ROOF PLAN
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12 FT.

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ROOF FLOOR PLAN

A2.4



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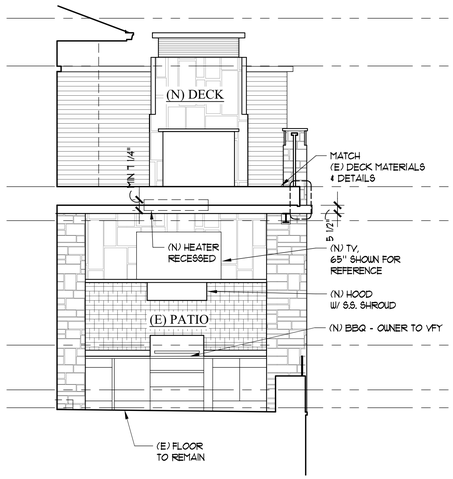
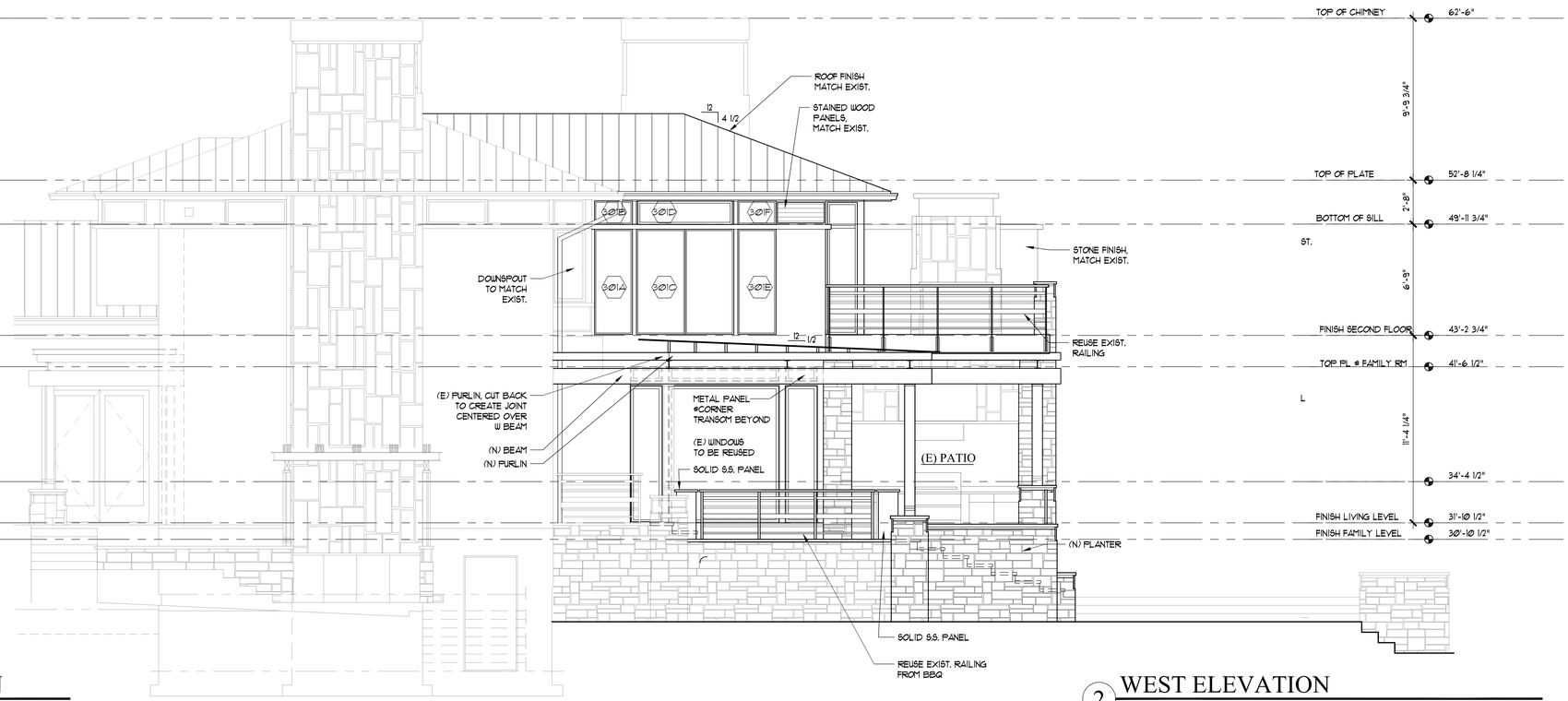


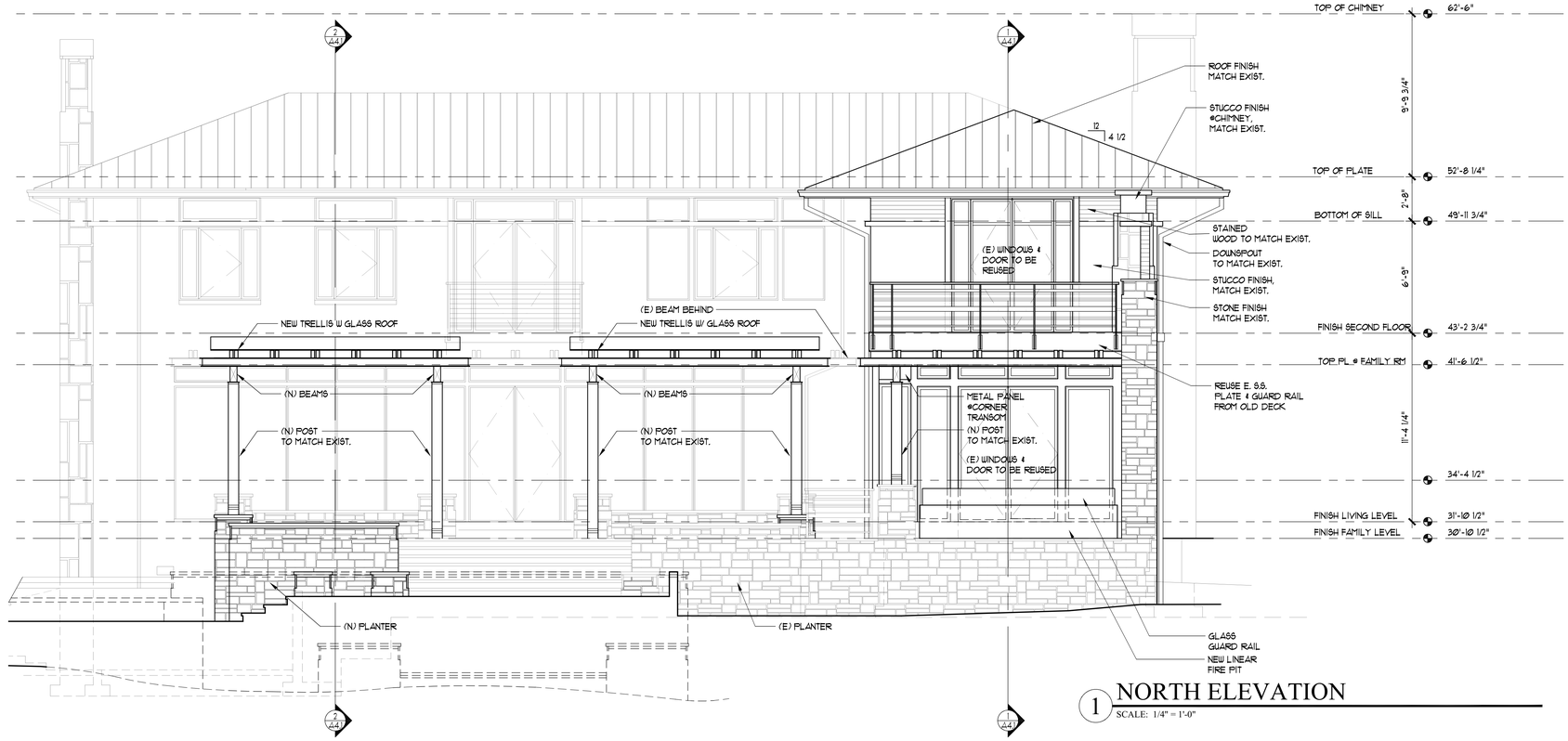

## 3 BBQ & FIREPLACE ELEVATION

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




## 2 WEST ELEVATION

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




## 1 NORTH ELEVATION

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

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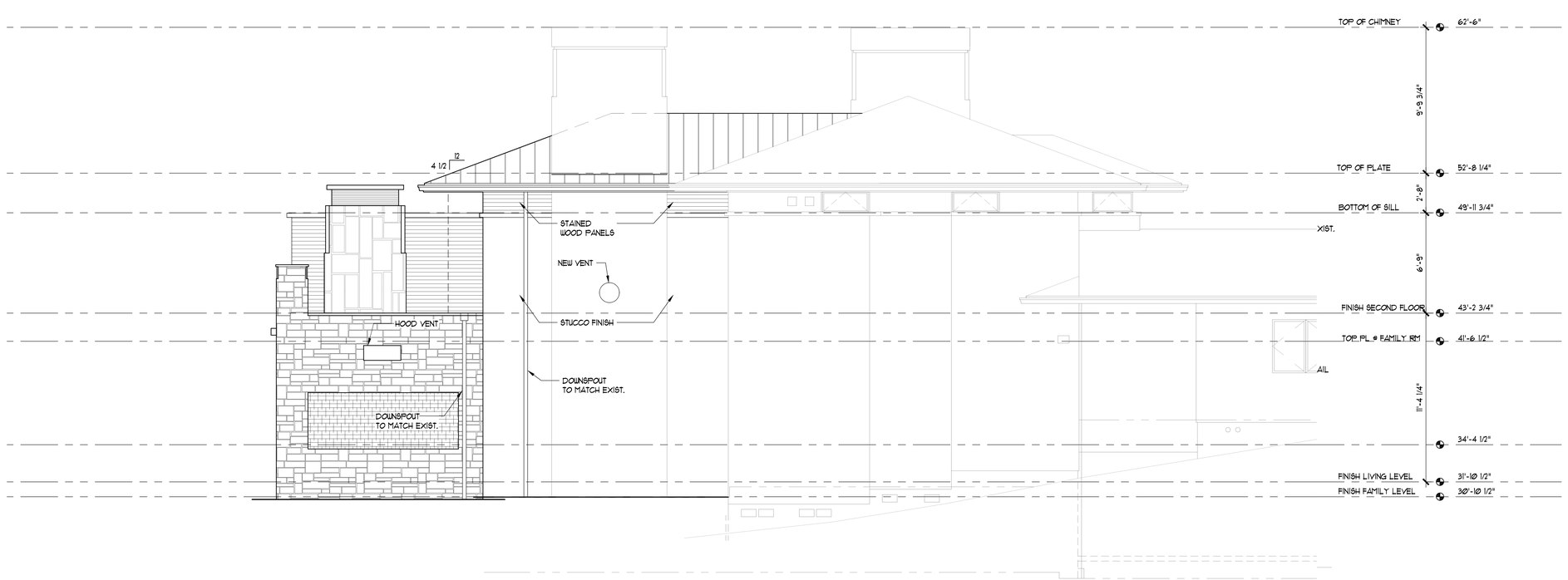
EXTERIOR
ELEVATIONS

# A3.1

FILE: A3.1 PRINTED: 8/30/2017




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

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5931 REGISTERED ARCHITECT
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EXTERIOR ELEVATIONS

A3.2

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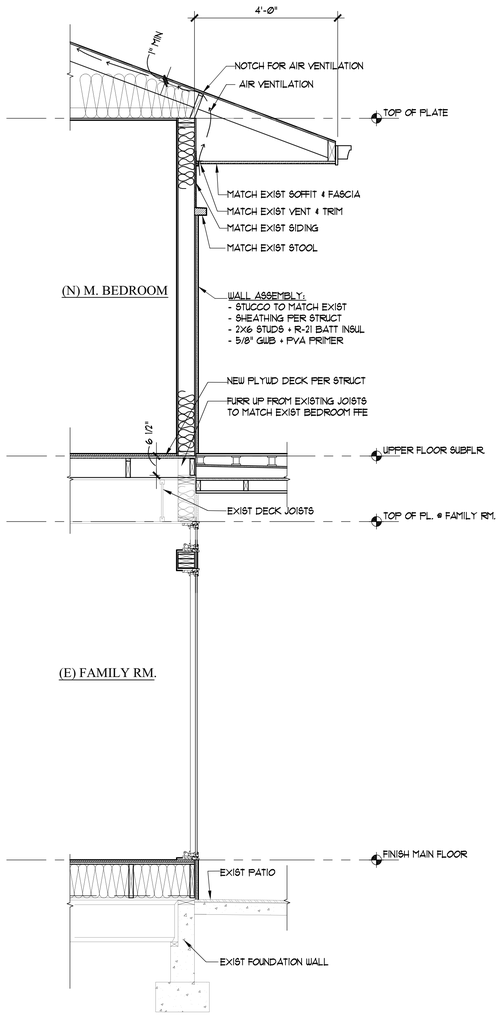
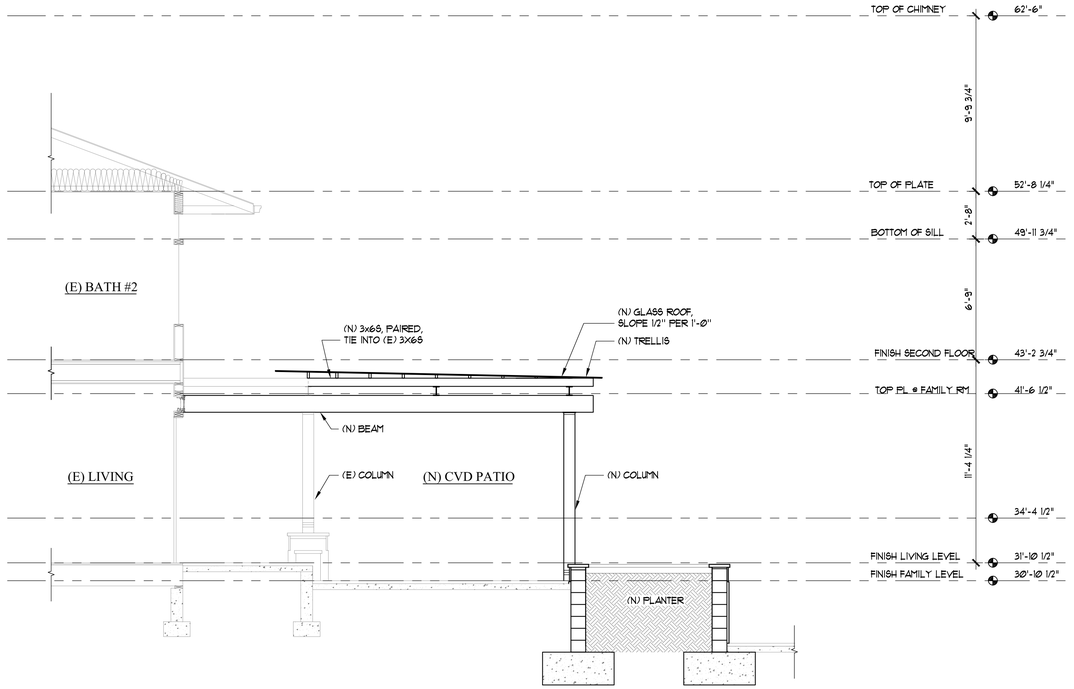
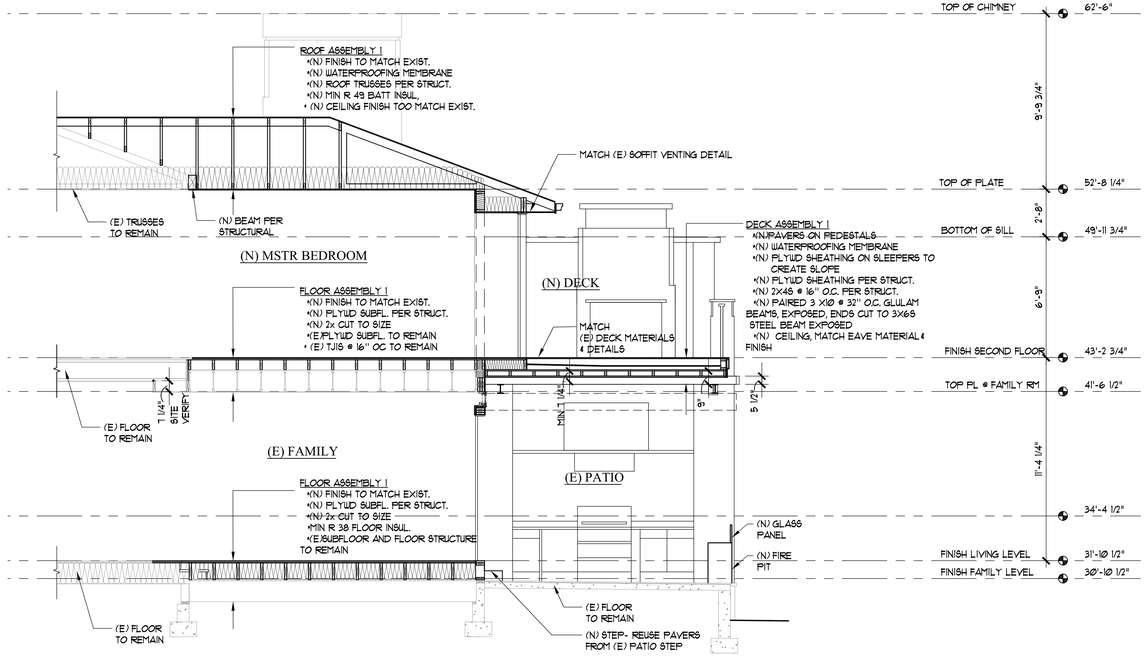



3 TYP. WALL SECTION @ DECK
SCALE: 1/2" = 1'-0"




2 BUILDING SECTION
SCALE: 1/4" = 1'-0"




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

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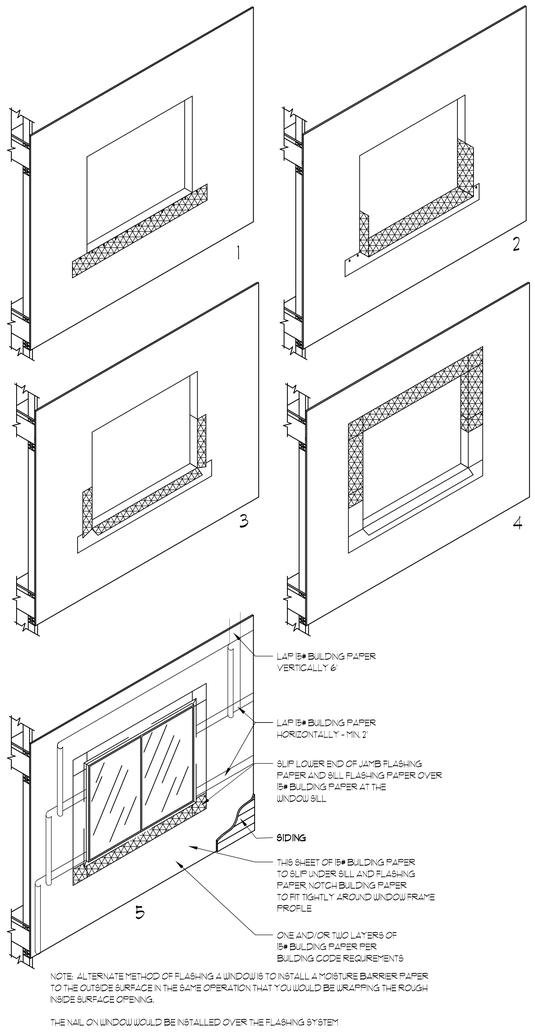
SECTIONS

A4.1



FILE: A4.1 PRINTED: 9/30/2017



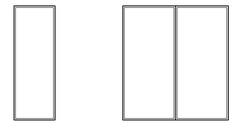

NOTE: ALTERNATE METHOD OF FLASHING A WINDOW IS TO INSTALL A MOISTURE BARRIER PAPER TO THE OUTSIDE SURFACE IN THE SAME OPERATION THAT YOU WOULD BE WRAPPING THE ROUGH INSIDE SURFACE OPENING.

THE NAIL ON WINDOW WOULD BE INSTALLED OVER THE FLASHING SYSTEM

## TYPICAL WINDOW FLASHING DETAILS

**EXTERIOR WINDOWS SCHEDULE**

| # | WIDTH | HEIGHT | HEADER HEIGHT | TYPE | GRILLES | EGRESS | SAFETY GLASS | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 301A | 2'-3 1/2" | 6'-4 1/2" | 6'-6" | W1 | NO | NO | YES | |
| 301B | 2'-3 1/2" | 1'-5" | 8'-2 1/2" | W1 | NO | NO | NO | |
| 301C | 5'-10 3/4" | 6'-4 1/2" | 6'-6" | W2 | NO | NO | YES | |
| 301D | 5'-10 3/4" | 1'-5" | 8'-2 1/2" | W1 | NO | NO | NO | |
| 301E | 2'-3 1/2" | 6'-4 1/2" | 6'-6" | W1 | NO | NO | YES | |
| 301F | 2'-3 1/2" | 1'-5" | 8'-2 1/2" | W1 | NO | NO | NO | |



W1
SINGLE WINDOW, FIXED



W2
2 MULLED WINDOWS, FIXED

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# HARRIS REMODEL

1640 72ND AVE SE
MERCER ISLAND, WA 98040

Job No. 2110
Project Manager: TB
Issue Date 11/01/2021

| NO. | DATE | REVISION |
|---|---|---|

5931 REGISTERED ARCHITECT
SCOTT W HOMMAS
STATE OF WASHINGTON

WINDOW SCHEDULE

A6.1



FILE: A6.1 PRINTED: 8/30/2017

# HARRIS REMODEL

1640 72nd Ave SE
Mercer Island, WA 98040

**Permit Set**
**10/01/2021**

## ABBREVIATIONS

| | |
|---|---|
| **@** | AT |
| **Ø** | DIAMETER |
| **#** | POUND OR NUMBER |
| **AAC** | AUTOCLAVED AERATED CONCRETE |
| **AB** | ANCHOR BOLT |
| **ADJ** | ADJACENT |
| **AFF** | ABOVE FINISH FLOOR |
| **AISC** | AMERICAN INSTITUTE OF STEEL CONSTRUCTION |
| **AITC** | AMERICAN INSTITUTE OF TIMBER CONSTRUCTION |
| **ANSI** | AMERICAN NATIONAL STANDARDS INSTITUTE |
| **ASD** | ALLOWABLE STRESS DESIGN |
| **ASCE** | AMERICAN SOCIETY OF CIVIL ENGINEERS |
| **ASTM** | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| **AWS** | AMERICAN WELDING SOCIETY |
| **AWC** | AMERICAN WOOD COUNCIL |
| **BLKG** | BLOCKING |
| **BM** | BEAM |
| **BNDY** | BOUNDARY |
| **BN** | BOUNDARY NAILING |
| **BOT** | BOTTOM |
| **BRG** | BEARING |
| **BS** | BOTH SIDES |
| **BTWN** | BETWEEN |
| **CIP** | CAST-IN-PLACE |
| **CJ** | CONSTRUCTION/CONTROL JOINT |
| **CL** | CENTERLINE |
| **CLG** | CEILING |
| **CLR** | CLEAR |
| **CLT** | CROSS-LAMINATED TIMBER |
| **CMU** | CONCRETE MASONRY UNIT |
| **COL** | COLUMN |
| **CONC** | CONCRETE |
| **CONT** | CONTINUOUS |
| **CONTR** | CONTRACTOR |
| **CSK** | COUNTERSINK |
| **CTR** | CENTER |
| **CVR** | COVER |
| **DBA** | DEFORMED BAR ANCHOR |
| **DBL** | DOUBLE |
| **DIAPH** | DIAPHRAGM |
| **DIM** | DIMENSION |
| **D** | DEEP |
| **DF** | DOUGLAS-FIR |
| **DLT** | DOWEL LAMINATED TIMBER |
| **DT** | PRE-ENGINEERED DRAG TRUSS |
| **EA** | EACH |
| **EL** | ELEVATION |
| **ELEV** | ELEVATOR |
| **EMBED** | EMBEDMENT |
| **EN** | END NAILING |
| **ENGR** | ENGINEER |
| **EOR** | ENGINEER OF RECORD |
| **EQ** | EQUAL |
| **EQUIV** | EQUIVALENT |
| **EA FACE** | EACH FACE |
| **EA SIDE** | EACH SIDE |
| **EA WAY** | EACH WAY |
| **(E)** | EXIST, EXISTING |
| **ESR** | ICC EVALUATION SERVICE REPORT |
| **EXP** | EXPANSION |
| **EXT** | EXTERIOR |
| **FDN** | FOUNDATION |
| **FF** | FINISH FLOOR |
| **FFE** | FINISH FLOOR ELEVATION |
| **FOC** | FACE OF CONCRETE |
| **FOM** | FACE OF MASONRY |
| **FOS** | FACE OF STUD |
| **FS** | FAR SIDE |
| **FT** | FEET |
| **FTG** | FOOTING |
| **FT-LB** | FOOT POUNDS |
| **GA** | GAGE |
| **GALV** | GALVANIZED |
| **GC** | GENERAL CONTRACTOR |
| **GL** | GLUE LAMINATED |
| **GLB** | GLUE LAMINATED BEAM |
| **GR** | GRADE |
| **GT** | PRE-ENGINEERED GIRDER TRUSS |
| **GWB** | GYPSUM WALL BOARD |
| **HGR** | HANGER |
| **HDR** | HEADER |
| **HF** | HEM-FIR |
| **HSS** | HOLLOW STRUCTURAL STEEL |
| **HT** | HEIGHT |
| **HORIZ** | HORIZONTAL |
| **IBC** | INTERNATIONAL BUILDING CODE |
| **ICF** | INSULATED CONCRETE FORM |
| **IN** | INCHES |
| **INT** | INTERIOR |
| **JST** | JOIST |
| **JT** | JOINT |
| **K** | KIPS = 1000 LBS |
| **KSI** | KILOPOUNDS PER SQUARE INCH |
| **L** | ANGLE |
| **LBS** | POUNDS |
| **LVL** | LEVEL |
| **LVL** | LAMINATED VENEER LUMBER |
| **L&I** | LABOR & INDUSTRIES DEPARTMENT |
| **LLH** | LONG LEG HORIZONTAL |
| **LLV** | LONG LEG VERTICAL |
| **LOC** | LOCATE, LOCATION |
| **LONGIT** | LONGITUDINAL |
| **LSL** | LAMINATED STRAND LUMBER |
| **MB** | MACHINE BOLT |
| **MECH** | MECHANICAL |
| **MTL** | METAL |
| **MFR** | MANUFACTURER |
| **MIN** | MINIMUM |
| **MC** | MOISTURE CONTROL |
| **MPH** | MILES PER HOUR |
| **NS** | NEAR SIDE |
| **NDS** | NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION |
| **NTS** | NOT TO SCALE |
| **NWT** | NORMAL WEIGHT |
| **OC** | ON CENTER |
| **OPP** | OPPOSITE HAND |
| **PAF** | POWDER ACTUATED FASTENER |
| **PC** | PRE-CAST |
| **PCF** | POUNDS PER CUBIC FOOT |
| **PERP** | PERPENDICULAR |
| **PL** | PLATE |
| **PLF** | POUNDS PER LINEAR FOOT |
| **PNL** | PANEL |
| **PRE-ENG** | PRE-ENGINEERED |
| **PSF** | POUNDS PER SQUARE FOOT |
| **PSI** | POUNDS PER SQUARE INCH |
| **PSL** | PARALLEL STRAND LUMBER |
| **PW** | PLYWOOD |
| **REF** | REFERENCE |
| **REINF** | REINFORCEMENT |
| **REQ'D** | REQUIRED |
| **RT** | PRE-ENGINEERED ROOF TRUSS |
| **SBC** | SEATTLE BUILDING CODE |
| **SCHED** | SCHEDULE |
| **SDI** | STEEL DECK INSTITUTE |
| **SDCI** | SEATTLE DEPARTMENT OF CONSTRUCTION & INSPECTIONS |
| **SER** | STRUCTURAL ENGINEER OF RECORD |
| **SF** | SQUARE FEET |
| **SHTG** | SHEATHING |
| **SIM** | SIMILAR |
| **SIMP** | SIMPSON STRONG-TIE |
| **SOG** | SLAB ON GRADE |
| **SPCG** | SPACING |
| **SRC** | SEATTLE RESIDENTIAL CODE |
| **SS** | STAINLESS STEEL |
| **STD** | STANDARD |
| **STIFF** | STIFFENER |
| **STRUC** | STRUCTURAL |
| **SW** | SHEAR WALL |
| **SQ** | SQUARE |
| **T&G** | TONGUE AND GROOVE |
| **THK** | THICK |
| **THRD** | THREADED |
| **TMS** | THE MASONRY SOCIETY |
| **T&B** | TOP & BOTTOM |
| **TO** | TOP OF |
| **TOC** | TOP OF CONCRETE |
| **TOS** | TOP OF STEEL |
| **TRANSV** | TRANSVERSE |
| **TRTD** | TREATED |
| **TS** | TUBE STEEL |
| **TYP** | TYPICAL |
| **UNO** | UNLESS NOTED OTHERWISE |
| **VERT** | VERTICAL |
| **VIF** | VERIFY IN FIELD |
| **WABO** | WASHINGTON ASSOCIATION OF BUILDING OFFICIALS |
| **W** | WIDE |
| **w/** | WITH |
| **w/o** | WITHOUT |
| **WF** | WIDE FLANGE |
| **WHS** | WELDED HEADED STUD |
| **WTS** | WELDED THREADED STUD |
| **WWF** | WELDED WIRE FABRIC |

## GRAPHIC SYMBOL LEGEND

- CONCRETE WALL (ABOVE)
- CONCRETE WALL (BELOW)
- CMU WALL (ABOVE)
- CMU WALL (BELOW)
- WOOD/CFS SHEAR WALL (ABOVE)
- WOOD/CFS STUD WALL (ABOVE)
- WOOD/CFS STUD WALL (BELOW)
- CONCRETE COLUMN (ABOVE)
- CONCRETE COLUMN (BELOW)
- WOOD POST (ABOVE)
- WOOD POST (BELOW)
- STEEL HSS COLUMN (ABOVE)
- STEEL HSS COLUMN (BELOW)
- STEEL WIDE FLANGE COLUMN (ABOVE)
- STEEL WIDE FLANGE COLUMN (BELOW)
- BEAM/JOIST
- BRACED FRAME BEAM
- GRID LINE
- CENTERLINE
- CONCRETE BY OTHERS (CUT)
- GRAVEL (CUT)
- EARTH (CUT)
- SIMPSON TENSION TIE HOLDOWN
- NUMBER OF KINGS PLUS TRIMMERS
- JOIST SPAN w/ HANGER
- JOIST SPAN
- DECK SPAN
- EXTENT
- OVERFRAMING
- BLOCKED DIAPHRAGM
- CONCRETE COLUMN TYPE
- SURFACE SLOPE PER ARCHITECT
- DETAIL REFERENCE NO. / SECTION CALLOUT / SHEET REFERENCE NO.
- DETAIL REFERENCE NO. / ELEVATION CALLOUT / SHEET REFERENCE NO.
- DETAIL REFERENCE NO. / DETAIL CALLOUT / SHEET REFERENCE NO.
- HIGH SIDE / FOOTING STEP

## SHEET INDEX




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Engineer's Stamp

SHAWN ROBERTS — STATE OF WASHINGTON — 27548 — DIRECTOR OF STRUCTURAL ENGINEERING — PROFESSIONAL ENGINEER — 10/01/2021

Project Title

HARRIS REMODEL
1640 72nd Ave SE
Mercer Island, WA 98040

Project Information

| | |
|---|---|
| Project No. | 21-127-01 |
| Checked By | KA |

Issue

| | |
|---|---|
| Permit Set | 10/01/2021 |

Department Approval

Sheet Title

STRUCTURAL TITLE SHEET

Sheet Number

S1.1

# GENERAL REQUIREMENTS

**SUMMARY OF WORK**
Project is a remodel including a newly converted master bedroom, new exterior deck addition, and new exterior trellises as shown on these Contract Documents used in coordination with the Architectural and other discipline's documents.

**GOVERNING CODE**
All design and construction shall conform to the 2018 International Building Code and local jurisdiction amendments.

Reference to ASTM and other standards shall refer to the latest edition designated by IBC Chapter 35. Refer to the specifications for information in addition to that covered by these structural notes and drawings.

**DOCUMENTS**
Structural Documents shall be used in conjunction with Architectural Documents for all bidding and construction.

Drawings indicate general and typical details of construction. Typical details and general notes shall apply even if not specifically denoted on plans, UNO. Where conditions are not specifically indicated similar details of construction shall be used, subject to review and approval by the Architect and the SER.

Existing structural information, designated as (E) on the Structural drawings, has been compiled from information furnished by various sources and is not necessarily field-verified by the Engineer. Dimensions relating to existing structures are intended for use as guidelines only; all dimensions shall be field-verified by the contractor prior to start of construction. Notify the Architect of any discrepancies.

These Contract Documents and any materials used in preparation of them, including calculations, are the exclusive property of the SER and can be reproduced only with the permission of the SER.

**WARRANTY**
The SER has used that degree of care and skill ordinarily exercised under similar circumstances by members of the profession in this locale and no other warranty, either expressed or implied, is made in connection with rendering professional services.

**OWNER RESPONSIBILITY**
The Owner shall retain a Special Inspector to perform the special inspection requirements required by the building official and as outlined in the Special Inspection section below.

# DESIGN CRITERIA

**BUILDING CATEGORY**
Structural Risk Category II
Importance factors for snow and seismic are listed with the loading criteria.

**LIVE LOADS - FLOOR AND ROOF**
Live loads indicated with * are reducible per IBC
Partition loading has been added per IBC

Residential:
Residential floor 40 psf
Residential decks 60 psf

Miscellaneous:
Guardrails/balcony rails 50 plf

**LIVE LOADS - SNOW**
Numbering below is per IBC Section 1603.1.3:
1. Flat-Roof Snow Load: $P_f$ = 25 psf
2. Snow Exposure Factor: $C_e$ = 1.0
3. Snow Importance Factor: $I_s$ = 1.0
4. Thermal Factor: $C_t$ = 1.0

Additional Items:
Ground Snow Load: $P_g$ = 25 psf
Minimum uniform roof snow load = 25 psf
Rain on snow surcharge of 5 psf for roof slopes less than 5 degrees

**LATERAL LOADS - WIND**
Numbering below is per IBC Section 1603.1.4:
1. Ultimate Design Wind Speed (3-second gust): $V_{ult}$ = 98 mph
   Nominal Design Wind Speed: $V_{asd}$ = 76 mph
2. Risk Category: II
3. Wind Exposure: C
4. Internal Pressure Coefficient = +/- 0.18
5. Components and Cladding:
   The following working loads may be used in lieu of calculations (zones per ASCE 7-16 Table 30.6-2) :

**TABLE 30.6-2**

| Location | Zone | Pressure (PSF) (100 Sq Ft) | |
|---|---|---|---|
| | | Service | Ultimate |
| Roof | 1 | -14.4 / +9.6 | -24.0 / +16.0 |
| | 2e | -21.2 / +9.6 | -35.3 / +16.0 |
| | 2r | -21.2 / +9.6 | -35.2 / +16.0 |
| | 3 | -21.2 / +9.6 | -35.3 / +16.0 |
| Walls | 4 | -13.4/ +12.2 | -22.4 / +20.4 |
| | 5 | -14.9 / +12.2 | -24.9 / +20.4 |

Additional Info:
6. Topographic Factor: $K_{zt}$ = 1.0
7. Directionality Factor: $K_d$ = 0.85
8. Ground Elevation Factor: $K_e$ = 1.0
9. Enclosure classification: Enclosed
10. Gust Effect Factor: G = 0.85
11. Analysis Procedure: Directional

**LATERAL LOADS - EARTHQUAKE**
Numbering below is per IBC Section 1603.1.5:
1. Risk Category: II
2. Seismic Importance Factor: $I_e$ = 1.0
3. Mapped Spectral Response Acceleration Parameters: $S_s$ = 1.38 g; $S_1$ = 0.48 g
4. Site Class: D; $F_A$ = 1.2; $F_V$ = 1.82
5. Design Spectral Response Acceleration Parameters: $S_{DS}$ = 1.10 g; $S_{D1}$ = 0.58 g
6. Seismic Design Category: D
7. Basic Seismic Force-Resisting Systems:
   Vertical Elements: Plywood Sheathed Wood Shear Walls
   Diaphragms: Plywood Sheathed Diaphragms
8. Seismic Response Coefficient: $C_S$ = 0.17
9. Response Modification Coefficient: R = 6.5
10. Analysis Procedure: Equivalent Lateral Force Procedure

Additional Items:
Building Location: 47.5951° N, 122.2419° W

# CONTRACTOR PERFORMANCE REQUIREMENTS

**DESIGN DOCUMENTS**
Contractor shall verify all dimensions and all conditions at the job site, including building and site conditions before commencing work, and be responsible for same. All discrepancies shall be reported to the Architect before proceeding with work. Any errors, ambiguities and/or omissions in the contract documents shall be reported to the Architect immediately, in writing. No work is to be started before correction is made.

Contractor shall verify and/or coordinate all dimensioned openings and slab edges shown on the contract documents. Some dimensions, openings and embedded items are shown on the Structural drawings. Others may be required. Refer to Architectural drawings for size and location of curbs, equipment pads, wall and floor openings, Architectural treatment, embeds required for architectural items and dimensions. Refer to mechanical, plumbing, electrical and fire protection drawings for size and location of all openings for ducts, piping, conduits, etc. Submit openings to Architect for review.

Do not scale drawings. Use only field verified dimensions. When electronic plan files are provided for the Contractor's detailing convenience, it shall be noted that the electronic files are not guaranteed to be dimensionally accurate. The Contractor uses them at their own risk. The published paper documents are the controlling Contract Documents. Electronic files of detail sheets and notes will not be provided.

**CONTRACTOR-INITIATED CHANGES**
Contractor-initiated changes shall be submitted in writing to the Architect for review and acceptance prior to fabrication or construction. Changes shown on shop drawings only will not satisfy this requirement.

**INSPECTIONS**
The Contractor shall coordinate with the building department for all building department required inspections.

**TEMPORARY SHORING AND BRACING**
The Contractor shall provide temporary bracing as required until all permanent connections and stiffening have been installed. The Contractor is responsible for the strength and stability of all partially completed structures including but not limited to concrete or masonry walls, steel framing and erection aids. The Contractor shall, at their discretion, employ the aid of a licensed Structural Engineer to design all temporary bracing and shoring necessary to complete the work described in these contract documents. The Contractor shall be responsible for all required safety standards, safety precautions and the methods, techniques, sequences or procedures required in performing their work. For concrete construction refer to ACI 318 - Section 26.11.2 "Removal of Formwork".

**SAFETY PROCEDURES**
Contractor shall be responsible for all safety precautions and the methods, techniques, sequences or procedures required to perform the contractor's work. The Structural Engineer has no overall supervisory authority or actual and/or direct responsibility for the specific working conditions at the site and/or for any hazards resulting from the actions of any trade contractor. The Structural Engineer has no duty to inspect, supervise, note, correct, or report any health or safety deficiencies to the Owner, Contractors, or other entities or persons at the project site.

# RENOVATIONS

**DEMOLITION**
Contractor shall verify all existing conditions before commencing any demolition. Shoring shall be installed to support existing construction as required and in a manner suitable to the work sequences. Demolition debris shall not be allowed to damage or overload the existing structure. Limit construction loading (including demolition debris) on existing floor systems to 40 psf.

**EXISTING CONCRETE**
Existing reinforcing shall be saved where and as noted on the plans. Saw cutting, if and where used, shall not cut existing reinforcing that is to be saved.

- All new openings through existing walls, slabs and beams shall be accomplished by saw cutting wherever possible.
- Contractor shall verify all existing conditions and location of members prior to cutting any openings.
- Small round openings shall be accomplished by core drilling, if possible.
- Where new reinforcing terminates at existing concrete, dowels epoxy grouted into existing concrete shall be provided to match horizontal reinforcing, unless noted otherwise on plans.

**EXISTING WOOD**
Contractor shall check for dryrot at all areas of new work. All rot shall be removed and damaged members shall be replaced or repaired as directed by the Structural Engineer or Architect.

**EXTERIOR MASONRY INSPECTION & REPAIR**
All exterior masonry walls shall be inspected and repaired as follows:

Scrape all loose and weakened mortar out to full depth of the deterioration; remove and replace any loose masonry units; check for loose facing brick veneers; tuck point all joints solid. All masonry restoration and repair shall be performed in such a manner that the existing structure is not weakened or left unsupported during the process of the work. All exterior appendages such as fire escapes, cornices and eyebrows shall be inspected for structural integrity and the condition of the connections to the structure. The Contractor shall notify the Structural Engineer as to their findings.

# BUILDING MOVEMENT

All non-structural wall connections shall account for construction tolerances, column shortening and beam deflections. In addition, all design components shall accommodate a typical vertical movement at each floor of 3/4" due to variable live loading. This displacement will occur at the free end of cantilever beams and at midspan of simple span beams. Non-structural walls shall accommodate typical lateral movements of 1/2" between adjacent floors perpendicular and/or parallel to the wall.

Wall attachments shall not apply any lateral loads to the bottom flange of beams. If attachment is made to the bottom of beams, additional inclined struts bracing the bottom flange or other equivalent means to counteract this force shall be provided by the Contractor.

# SHOP DRAWINGS AND SUBMITTALS

**SHOP DRAWING & SUBMITTAL REVIEW (including Deferred Structural Components)**
The contractor must review and stamp the shop drawings & submittals for review. SER will only review submittals for items shown on SER documents. Submittals for Deferred Structural Components will receive cursory review by SER for loads imposed on primary structure. SER will review shop drawings for general conformance with design concept of the project and general compliance with the information given in the Structural Contract Documents. Review of submittals does not constitute approval or acceptance of unauthorized deviation from Contract Documents.

Corrections or comments made on shop drawings during this review do not relieve Contractor from compliance with the requirements of the plans and specifications.

Contractor responsible for:
- Reviewing, approving, stamping and signing submittals prior to submittal to Architect and SER
- Timing submittals to allow two weeks of review time for the SER and time for corrections and/or resubmittal
- Conformance to requirements of the Contract Documents
- Dimensions and quantities
- Verifying information to be confirmed or coordinated
- Information solely for fabrication, safety, means, methods, techniques and sequences of construction
- Coordination of all trades

Resubmittals shall be clouded and dated for all changes to the submittal. Only clouded portions of resubmittal will be reviewed and SER's review stamp applies to only these areas.

**SUBSTITUTIONS**
Substitutions shall be submitted in writing prior to submittal of shop drawings. Shop drawings bearing substitutions will be rejected. Submit engineering data to substantiate the equivalence of the proposed items. The SER's basic services contract does not include review of substitutions that require re-engineering of the item or adjacent structure. Nor does the SER's contract cover excessive review of proposed substitutions. The fees for making these reviews and/or redesign shall be paid by the Contractor. Reviews and approvals shall not be made until authorization is received.

# SHOP DRAWINGS AND SUBMITTALS

**SUBMITTALS**
Shop drawings and material submittals shall be submitted to the Architect and SER prior to any fabrication or construction for the following structural items. Submittals shall include one reproducible and one copy; reproducible will be marked and returned. If deviations, discrepancies, or conflicts between shop drawings submittals and the contract documents are discovered either prior to or after shop drawing submittals are processed by the SER, the Contract Documents control and shall be followed.

- Construction sequence description
- Contractor quality control testing procedures when required in specifications
- Concrete mix designs
- Concrete construction joint plans
- Concrete accessories material specification, size and location
- Reinforcing bar shop drawings and placing plans
- Reinforcing bar mill certificates shall be available upon request
- Non-shrink grout material specifications and manufacturer's installation recommendations
- Fabrication shop AISC Certification
- Structural steel registration/certification or quality control inspection records
- Structural steel shop and erection drawings
- Welding Procedure Specifications
- Glued laminated members (certificates shall be on site and be available upon request)
- Engineered wood beams (certificates shall be on site and be available upon request)
- Deferred Structural Components listed below
- Certificate of conformance for welding material, including supplemental notch toughness requirements

**DEFERRED STRUCTURAL COMPONENTS**
Components referred to as Deferred Structural Components shall comply with these notes. These elements have not been permitted under the base building application. The Contractor will be required to submit the component system documents to the building official for approval. The documents shall be stamped and signed by an Engineer licensed by the state where the project is located. The deferred structural components shall not be installed until the design and submittal documents have been approved by the building official.

Prior to building department submittal, the deferred structural components submittals shall receive cursory review by SER for loads imposed on primary structure and general conformance with design concept of the project and general compliance with the information given in the Structural Contract Documents. Review of submittals does not constitute approval or acceptance of unauthorized deviation from Contract Documents. Submittals of contractor-designed components shall include the designing professional engineer's stamp and signature, as noted above. The submittal shall be approved by the component vendor prior to review by the SER. The designing professional is responsible for code conformance and all necessary connections not specifically called out on Architectural or structural contract documents.

Submittals shall include details of connections to primary structure that indicate magnitude and direction of all loads imposed at point of connection. Design criteria shall be provided with submittal and calculations shall be made available upon request.

The following list includes the items that are defined as Deferred Structural Components. Refer to other discipline's contract documents for additional deferred components that may require structural design and details. Connections of these elements shall not induce torsion on structural members. Deferred Structural Components shall be manufactured, delivered, handled, stored, and field erected in conformance with instructions prepared by the component vendor.

Deferred structural components:
- Plywood web joists
- Pre-manufactured wood trusses
- Handrails, guards, grab bars, and wall mounted shower seats
- Marquees and canopies, unless detailed on Contract Documents

# INSPECTIONS

**INSPECTIONS BY BUILDING OFFICIAL**
The building official, upon notification, shall make structural inspections as required by local ordinance. The inspection by the building official per IBC Section 110 will be separate from and in addition to the special inspection and structural observation mentioned subsequently.

**SPECIAL INSPECTIONS**
A Special Inspector shall be hired by the Owner to perform the following special inspections per IBC Section 1704. See the specifications for additional requirements for special inspection and testing. The architect, Structural Engineer, and building department shall be furnished with copies of all inspection reports and test results.

Each contractor responsible for the construction of a seismic force resisting system, designated seismic system, or component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the Owner prior to the commencement of work on the system or component. The written statement shall be in accordance with IBC Section 1704.4.

See IBC Chapter 17: "Special Inspections and Tests" for more detailed requirements.

**SPECIAL INSPECTIONS AND TESTS OF SOILS (PER IBC 1705.6)**

| Verification and Inspection | Frequency | | Reference |
|---|---|---|---|
| | Cont. | Periodic | |
| Verify materials below shallow foundations are adequate to achieve the design bearing capacity | | X | |
| Verify that excavations are extended to proper depth and have reached proper material | | X | |
| Perform classification and testing of compacted fill materials | | X | |
| Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill | X | | |
| Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly | | X | |

**SPECIAL INSPECTIONS OF WOOD CONSTRUCTION (PER IBC 1705.5 & 1705.12.2)**

| Verification and Inspection | Frequency | | Reference |
|---|---|---|---|
| | Cont. | Periodic | |
| Moisture content of wood-framed construction at time of cover | | X | Refer to general notes |
| Nailing, bolting, anchoring and other fastening of components (spaced 4" oc or closer) within the seismic force resisting system, including drag struts, braces, holdowns, shear walls, and diaphragms | | X | 1705.12.2.2 1705.5.1 |
| Field gluing operations of elements within the seismic, force resisting system | X | | 1705.12.2.1 |
| Inspection of metal plate connected wood truss fabricator's quality control procedures | | X | 1704.2.5 TPI 1 Section 2.3.6.11 |

# INSPECTIONS (cont'd)

**SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION (PER IBC 1705.3)**

| Verification and Inspection | Frequency | | Reference |
|---|---|---|---|
| | Cont. | Periodic | |
| Inspect reinforcement and verify placement | | X | IBC 1908.4 ACI 318: 20, 25.2-3, 26.6.1-3 |
| Inspection of anchors cast in concrete | | X | ACI 318: 17.8.2 |
| Inspection of anchors and reinforcing bar post-installed in hardened concrete members: | | | |
| • Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads | X | | ACI 318: 17.8.2.4 |
| • Mechanical anchors, adhesive anchors and reinforcing bar not defined above | | X | ACI 318: 17.8.2 |
| Verifying use of required design mix | | X | IBC 1904.1, 1904.2, 1908.2-3, ACI 318: 19, 26.4.3, 26.4.4 |
| Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete | X | | IBC 1908.10 ACI 318: 26.4, 26.12 ASTM C172, C31 |
| Inspection of concrete for proper application techniques | X | | IBC 1908.6-8 ACI 318: 26.5 |
| Verify maintenance of specified curing temperature and techniques | | X | IBC 1908.9 ACI 318: 26.5.3-5 |
| Inspect formwork for shape, location and dimensions of the concrete being formed | | X | ACI 318: 26.11.1.2(b) |

**SPECIAL INSPECTIONS OF STRUCTURAL STEEL CONSTRUCTION OTHER THAN SEISMIC LATERAL FORCE RESISTING SYSTEMS (PER IBC 1705.2.1)**

| Verification and Inspection | Frequency | | Reference |
|---|---|---|---|
| | Cont. | Periodic | |
| Inspection of fabricator's quality control procedures | | X | IBC 1704.2.5 AISC 360-N.2 |
| Review of material test reports and certifications listed in AISC Section N3.2 | X | | AISC 360-N.5.2 AWS D1.1 |
| Inspection of welding structural steel: | Per AISC 360 tables N5.4-1-3 | | AISC 360-N.5.4-5 AWS D1.1 |
| Nondestructive testing of welded joints | Per AISC 360 N5.5 | | AISC 360-N5.5 AWS D1.1 |
| Inspect the fabricated steel or erected steel frame to verify compliance with the details shown on the construction documents | | X | AISC 360-N.5.8 |
| Inspection during the placement of anchor rods and other embedments supporting structural steel | X | | AISC 360-N.5.8 |

# GEOTECHNICAL

**GENERAL CRITERIA**
Allowable soil pressure and lateral earth pressure are assumed and therefore must be verified by a Geotechnical Inspector or the building official. If soils are found to be other than assumed, notify the Structural Engineer for possible foundation redesign.

Unless noted otherwise, footings shall be centered below columns or walls.

**INSPECTIONS**
All prepared soil-bearing surfaces shall be inspected by the Owners Geotechnical Inspector (or building official) prior to placement of reinforcing steel and concrete. Inspections shall be made per IBC Table 1705.6.

**BEARING VALUES**
All footings shall bear on undisturbed soil and shall be lowered to firm bearing if suitable soil is not found at elevations shown. Exterior footings shall bear a minimum of 18" below the finished ground surface. Footing elevations shown on plans (or in details) are minimum depths and for guidance only; the actual elevations of footings must be established by the Contractor in the field working with the Geotechnical Inspector.

Allowable vertical bearing soil pressure = 2,500 psf per existing drawings

**SUBGRADE PREPARATION**
Prepare subgrade per the Geotechnical Report, summarized as follows: All footings shall be cast on undisturbed firm natural soils that are free of organic materials. Footing excavation shall be free of loose soils, sloughs, debris and free of water at all times. If organic silt and/or fill material is encountered at subgrade elevations, overexcavate a minimum of 2'-0" below the design foundation subgrade elevation prior to placing footings. The overexcavated areas shall be backfilled with structural fill compacted to 95% proctor per ASTM D-1557 or a lean concrete mix.

**EXISTING UTILITIES**
The Contractor shall determine the location of all adjacent underground utilities prior to any excavation, shoring, pile driving, or pier drilling. Any utility information shown on the plans and details are approximate and not verified by the SER. Contractor is to provide protection of any utilities or underground structures during construction.

**DRAINAGE**
Drainage systems, including foundation, roof and surface drains, shall be installed as directed by the Geotechnical Report. Vapor retarder placed below slab-on-grade shall conform to ASTM E 1643 and ASTM E 745.

**RETAINING WALLS**
Grade on either side of concrete walls shall not vary by more than 12", UNO. Slope of backfill shall not exceed 2H to 1V, UNO. Backfill behind all retaining walls with free draining, granular fill installed per the Geotechnical Report. Provide for subsurface drainage. Design pressures used for the design of retaining walls are based on drained conditions.

Active earth pressure (restrained/unrestrained) = 35/55 PCF (assumed)
Passive earth pressure = 250 PCF (assumed)
Coefficient of friction (factor of safety of 1.5 included) = 0.3 (assumed)

Provide temporary shoring for tops of walls if backfill is placed prior to the supporting structure being constructed. Supporting structure is the floor framing and sheathing completely installed and attached to perpendicular walls.

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Engineer's Stamp

SHAWN ROBERTS — STATE OF WASHINGTON — 47548 — REGISTERED PROFESSIONAL ENGINEER — 10/01/2021

Project Title

HARRIS REMODEL
1640 72nd Ave SE
Mercer Island, WA 98040

Project Information

| | |
|---|---|
| Project No. | 21-127-01 |
| Checked By | KA |

Issue

| | |
|---|---|
| Permit Set | 10/01/2021 |

Department Approval

Sheet Title

STRUCTURAL GENERAL NOTES

Sheet Number

S1.2

# CONCRETE

**CAST-IN-PLACE CONCRETE**

Concrete materials shall conform to the following:

| | |
|---|---|
| Portland cement: | Type 1, ASTM C150 |
| Fly ash (if used): | ASTM C618 class F or C |
| Slag cement (if used): | ASTM C989 |
| Lightweight aggregates: | lightweight aggregates shall not be used without prior approval of SER and building department |
| Normal weight aggregates: | ASTM C33 |
| Sand equivalent: | ASTM C33 |
| Water: | Potable per ASTM C94 |
| Air entraining admixtures: | ASTM C260 |
| Chemical admixtures: | ASTM C494 |
| Flowable concrete admixtures: | ASTM C1017 |

Durability requirements of concrete mixes shall conform to building code. These requirements include water-cementitious material ratios, minimum compressive strengths, air entrainment, type of cement, and maximum chloride ion content.

**CONCRETE STRENGTH REQUIREMENTS**

Concrete shall be mixed, proportioned, conveyed and placed in accordance with IBC Section 1904, 1905, 1906 and ACI 301, including testing procedures. Concrete shall attain a 28-day strength of f'c = 3,000 psi for purposes of weathering, and accommodate placement, while f'c = 2,500 psi is required for strength. Special inspection is not required for concrete with a 28-day strength greater than f'c = 2,500 psi for purposes of weathering per IBC 1704.6.

**CONCRETE MIXTURES**

Mixes shall be proportioned to meet compliance requirements of ACI 318 Section 26.4.3. Slump, W/C ratio, admixtures and aggregate size will be determined by the contractor. Submit documentation of concrete mixture characteristics for review by the SER before the mixture is used and before making changes to mixtures already in use. Documentation shall comply with ACI 318 Section 26.4.4.

All concrete, including slab on grade, shall contain an acceptable water-reducing admixture conforming to ASTM C494 and be used in strict accordance with the manufacturer's recommendations.

All concrete which is exposed to freezing and thawing in a moist condition or exposed to deicing chemicals shall contain an air entraining agent, conforming to ASTM C260. Total air content shall be adjusted per ACI 318 for mix designs with smaller nominal aggregate size. The amount of entrained air shall be measured at the discharge end of the placing nozzle. Entrained air shall be as noted ± 1.0% by volume. Air-entrainment shall not be used at slabs that will receive a smooth, dense, hard-troweled finish.

Trucks hauling plant-mixed concrete shall arrive on-site with a field ticket indicating the maximum gallons of water that can be added at the site not to exceed the total water content in the approved mix design.

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement, embedded items, and into corners of forms.

**FORMWORK AND ACCESSORIES**

Concrete construction shall conform to ACI 301 "Specifications for Structural Concrete" and the Building Code, including testing procedures. See specifications and/or Architectural documents for formwork requirements. Installation shall adhere to ACI 301. Conduits and pipes of aluminum shall not be embedded in concrete construction.

See Architectural drawings for exact locations and dimensions of door and window openings in all concrete walls. See Mechanical drawings for size and location of mechanical openings through concrete walls. See Architectural drawings for all grooves, notches, chamfers, feature strips, color, texture, and other finish details at all exposed concrete surfaces, both cast-in-place and precast. See structural details for reinforcing around openings.

Contractor shall submit the proposed locations of construction joints to the Architect for acceptance before starting construction. Erico Lenton Formasaver (IAPMO-UES-ER-0129) may be used as an alternate to the roughened joint. All construction, control, and isolation joints for slabs on ground shall be in accordance with the typical details.

Concrete accessories and embedded items shall be coordinated with Architectural and all other Contract Documents and suppliers' drawings before placing concrete. Wet-setting of anchor rods, reinforcing, hardware, etc. is not allowed in concrete. Anchor rods, reinforcing, hardware, etc. shall be firmly tied in place prior to concrete placement.

Refer to Architectural documents for waterstops, damp proofing, and soil retaining wall drainage requirements at concrete and at concrete joints (construction joints, slab to wall joints, curb to slab joints, etc).

**CURING AND FINISHES**

Protect and cure freshly placed concrete per ACI 305.1 in hot conditions, ACI 306.1 in cold conditions, and ACI 308.1 " Specification for Curing Concrete". All exposed edges and corners shall have 3/4" chamfer, UNO. Concrete flatwork shall be sloped to provide positive drainage. Coordinate finish with Architectural contract documents.

At the time of application of finish materials or special treatment to concrete, moisture content of concrete shall conform to requirements in finish material specifications. Where vapor sensitive coverings are to be placed on slabs on grade, conform strictly to slab covering manufacturer's recommendations regarding vapor retarder and granular fill requirements below the slab.

**CONCRETE CRACK MAINTENANCE**

Cracking occurs in concrete structures due to inherent shrinkage, creep, and the restraining effects of walls and other structural elements. Most cracking due to shrinkage and creep will likely occur over the first two years of the life of the structure; further concrete movement due to variations in temperature may persist. Cracks that result in water penetration will need to be repaired to protect reinforcing. Other cracking may be repaired at the Owner's discretion for aesthetical reasons or performance of applied finishes. Prior to repairing cracks, a Structural Engineer should be consulted to provide direction on which cracks to repair and on whether observed cracks may affect the strength of the structure.

**GROUTING STEEL BASE PLATES**

Nonshrink grout for base plates shall be an approved nonshrink cementitious grout containing natural aggregates delivered to the job site in factory prepackaged containers requiring only the addition of water. The minimum 28-day compressive strength shall be at least 6000 psi, UNO. Grouts shall meet ASTM C1107. Approved grouts include: Master Builders' "Master Flow 713", Sika Corporation's "Sikagrout 212", Burke Company's "Nonferrous Nonshrink Grout", W.R. Meadows CG-86 Construction Grade Grout, or approved equal. Grout shall be mixed, applied, and cured strictly in accordance with the manufacturer's published recommendations.

# REINFORCEMENT IN CONCRETE AND MASONRY

**REINFORCING STEEL**

Reinforcing steel shall conform to ASTM A615 (including supplement S1), Grade 60, Fy = 60,000 psi, except any bars specifically so noted on the drawings shall be Grade 40, Fy = 40,000 psi.

**WELDED WIRE REINFORCING**

Welded Wire Reinforcing (WWR) shall conform to ASTM A1064. Lap splice adjacent mats of welded wire fabric a minimum of 8" at sides and ends. In equipment pads, use minimum WWR 6x6-W2.1xW2.1, UNO.

**PROCEDURES**

Reinforcing steel shall be detailed (including hooks and bends) in accordance with ACI 315 "Details and Detailing of Concrete Reinforcement". Lap all reinforcement in accordance with "The Reinforcing Splice and Development Length Schedule" on these documents. If table is not provided, lap all reinforcing by 40 bar diameters. Provide corner bars at all wall and footing intersections.

Reinforcing steel shall be adequately supported to prevent displacement during concrete and grout placement. Bars shall be bent cold.

Bars partially embedded in concrete shall not be field bent, unless specifically so detailed or approved by the SER.

# ANCHORAGE

Post-installed anchors or reinforcing bar shall not be installed without prior approval of Engineer of Record unless noted otherwise on the plans.

**ADHESIVE ANCHORS**

Adhesive anchors (threaded rods or reinforcing bar) specified on the drawings shall be installed using "HIT-HY 200" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report No. ESR-3187. Rods shall be ASTM F1554 Gr.55, unless noted otherwise. Special inspection of installation is required.

**EXPANSION ANCHORS**

Expansion anchors into concrete and concrete masonry units shall be "Kwik Bolt TZ" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report Number ESR-1917, including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Substitutes proposed by contractor shall be submitted for review with ICC Reports indicating equivalent or greater load capacities. Special inspection of installation is required.

**SCREW ANCHORS**

Post-installed mechanical anchors into concrete and concrete masonry units shall be "Titen HD" screw anchors as manufactured by the Simpson Strong-Tie Company. Install in strict accordance with ICC Report Number ESR-2713 (into concrete) or ESR-1056 (into masonry), including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Titen HD screw anchors are approved for dry interior applications only. Special inspection is required for the installation of all screw anchors resisting tension.

# MASONRY

**CONCRETE MASONRY UNIT WALLS**

Concrete masonry unit walls shall be constructed of normal weight units, conforming to ASTM C90, laid in a running bond.

Mortar shall be Type S per IBC 2103.2 Grout shall conform to IBC 2103.3 and ASTM C476 requirements and attain a minimum compressive strength of 2,000 psi at 28 days, design F'm = 2,000 psi. Full stresses are required.

Strength shall be verified by prism testing in accordance with IBC Section 2108. Masonry units shall be chosen in accordance with TMS 602 Table 2.

All preparation and placing of masonry shall conform to Section 2104 of the IBC.

**MASONRY CHIMNEYS**

Masonry chimneys shall be constructed of grade M units, conforming to ASTM C90, laid in a running bond.

Mortar shall be Type "S" per IBC 2103.2. Grout shall conform to IBC 2103.3 and ASTM C476 requirements and attain a minimum compressive strength of 2,000 psi at 28 days, design F'm =1,500 psi. Full stresses are required.

**GLASS BLOCKS**

Glass blocks shall be PPG (or approved) and shall conform to IBC 2110.

Mortar shall be Type "M". Mortar joint shall have a maximum thickness of 3/8" and a minimum width of 3".

# STRUCTURAL STEEL

**REFERENCE STANDARDS**

Steel construction shall conform to the latest editions of the AISC Specifications and Codes. "Specification for Structural Steel Buildings" ANSI/AISC 360, "Specification for Structural Joints Using High-Strength Bolts" AISC 348 and "Code of Standard Practice for Steel Buildings and Bridges" AISC 303 amended by the deletion of paragraph 4.4.1.

**FABRICATORS**

Fabricators for structural steel must have a quality assurance program in place. The quality assurance program must meet the requirements of one of the following methods:

- Registration in the Washington Association of Building Officials (WABO) Steel Fabricator Registration Program
- Participation in the AISC quality certification program, designated as an AISC Certified Plant, Category BU.
- Meeting the requirements of AISC 360 for structural steel buildings, appendix N and submitting plan documentation to the authority having jurisdiction, the Engineer of Record, and the Owner or Owner's designee. Quality assurance requirements of steel construction for wind and seismic (AISC 341, Chapter J) shall be included as reqired in Special Inspection section of the general notes, where applicable.

Fabricator for structural steel must be registered and approved to perform work without special inspection. At completion of fabrication, the fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

**FINISHING**

The terms finish, finish column, finishing, milled, milled surface or milling are intended to include surfaces which have been accurately sawed or finished to a true plane as defined by AISC.

Grind surface value equal to or less than 1,000 as defined by ANSI B46.2 (4-inch and thinner).

**STEEL COATINGS AND PROTECTION**

Coatings and protection (weather, fire, corrosion, etc.) shall be as specified by the architect. Galvanized steel members shall conform to ASTM A-123 and galvanized steel hardware shall conform to ASTM A-153. Guidelines outlined in ASTM A-384 shall be followed in order to safeguard against warping and distortion during hot-dip galvanizing of steel assemblies. Steel anchors and ties embedded in concrete and masonry shall be left unpainted.

**CORROSION CONTROL**

All steel noted as galvanized and any steel in ground contact or within 6-inches of grade shall be zinc-plated (galvanized) by the hot-dipped galvanic method (or pre-approved equivalent), except where such steel is to be fully encased in concrete. Furthermore, any surface where the coating has been removed or damaged must be brushed and re-coated in clean, dry field conditions with an approved zinc-based anti-corrosion coating except where such area is to be encased in concrete.

**SHOP PAINTING**

All steel to be shop primed. Steel fire proofed or encased with concrete need not be painted. All other steel shall be given one coat of shop paint, in accordance with Section M3 of the AISC "Specification" and Section 6.5 of the AISC "Code", unless noted otherwise. The surface preparation of the structural steel prior to painting shall be in accordance with the specific paint manufacturer's published recommendations. Structural joints and faying surfaces which are to be connected by means of welds or bolts shall not be painted until all welds and bolts are installed, inspected and approved. Paint shall be held back 3" from the faying surface or the joint to be welded.

**STRUCTURAL STEEL MEMBERS**

Structural Steel shall conform to the following requirements (unless otherwise shown on plans):

## STRUCTURAL STEEL MEMBER SPECIFICATIONS TABLE

| Type of Member | ASTM Specification | Fy |
|---|---|---|
| Rolled wide-flange shapes | A992 | 50 ksi |
| Plates, channels, angles | A36, Grade 36 | 36 ksi |
| Threaded rods | A36 | 36 ksi |
| Anchor rods (hooked, headed, threaded & nutted) | F1554, Grade 36 (UNO) | 36 ksi |
| Common bolts | A307, Grade A | - |

# STRUCTURAL STEEL (cont'd)

**STEEL FRAMING**

The contractor shall be responsible for all erection aids and joint preparations that include, but are not limited to: erection angles, lift holes, and other aids; welding procedures; required root openings; root face dimensions; groove angles; backing bars; copes; surface roughness values; and tapers of unequal parts.

**WELDING**

All welding shall be in conformance with AISC and AWS standard and shall be performed by AWS certified welders using E70XX Electrodes in accordance with AWS D1.1. Only Prequalified welders, as defined by AWS, shall be used.

Shop drawings shall show all welding with AWS D1.4 symbols. Welds shown on the drawings are the minimum sizes. Increase weld size to AWS minimum sizes, based on plate thickness. Minimum welding shall be 3/16" UNO. Filler metal with a specified minimum Charpy V-notch toughness of 20 ft-lb at 40°F or lower shall be used at complete-joint-penetration groove welds. Welds designated as demand critical shall be made with filler metals meeting the requirements specified in AWS D1.8 clause 6.3.

Welding procedures shall be submitted to the Owner's testing agency for review prior to commencement of fabrication or erection. All complete-penetration welds shall be ultrasonically tested upon completion of the connection except plate less than or equal to 1/4" thick shall be magnetic particle tested. Complete penetration welds on plates less than or equal to 1/4" shall be magnetic particle tested.

Field welds shown are Engineer's recommendation. Contractor is responsible for actual welds used to support specific means and methods.

**WELDING GALVANIZED STEEL**

Welding of galvanized steel shall conform to AWS specification D-19.0. Welded areas of galvanized steel shall be touched up in conformance with ASTM A-780.

**BOLTS**

All high-strength bolts, not part of the Seismic Load Resisting System (SLRS), need only be tightened to snug-tight (ST) conditions, defined as the tightness that exists when all plies in a joint are in firm contact. This may be attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench. All bolt holes shall be standard size, unless noted otherwise. All ASTM A-307 bolts shall be provided with lock washers under nuts or self-locking nuts.

Connections, joints and fasteners that are part of the Seismic Load Resisting System (SLRS) shall be pretensioned (PT) high-strength bolts and shall meet the requirements for slip-critical (SC) joints, UNO. All faying surfaces shall be prepared as required for class A or better slip-critical joints. All high-strength bolts shall be installed, tightened and inspected in accordance with AISC 348. Slip-critical (SC) connections shall use compressible-washer-type direct tension indicators or twist-off-type tension-control bolts.

# WOOD

**MATERIAL CRITERIA**

Framing lumber shall be kiln dried or MC-19 (unless more stringent criteria are required in these notes or on the drawings) and graded and marked in conformance with the latest WCLIB "Standard Grading Rules No. 17 for West Coast Lumber". Furnish to the following minimum standards:

## WOOD STANDARDS

| Member | Grade | Moisture Content |
|---|---|---|
| 4x Beams & posts, 6x Posts | DF #2 | MC19 |
| 4x Treated beams & posts, and 6x treated posts | DF #2 | MC19 |
| 2x Joists, rafters, built-up beams, and headers | DF #2 | MC19 |
| 2x, 3x Flatwise & edgewise blocking | DF Standard | MC19 |
| 3x Nailers on steel beams | DF #2 | MC19 |
| 2x4 and 2x6 Studs | DF #2 | MC19 |
| 3x Studs | DF #2 | MC19 |
| 2x4 Plates | DF Standard | KD15 |
| 2x6 Plates | DF #2 | KD15 |
| 2x, 3x, and 4x Treated plates, ledgers | DF #2 | KD15 |
| Tongue and groove decking (non-visual) | DF Utility/ #3 Commercial DED | MC19 |
| Tongue and groove decking (exposed) | DF #2 | MC19 |
| Tongue and groove decking (upper end exposed) | DF Select DEX | MC19 |

**MOISTURE CONTENT AND CARE OF MATERIAL DURING CONSTRUCTION**

All 2x studs and plates shall be kiln dried. The Contractor shall take measures to minimize exposure of sawn lumber and engineered wood products to moisture during construction. Excessive changes in moisture content during construction may result in swelling and shrinkage of a single story level in the magnitude of 1/2". This may create problems where multi-story wood construction joins multi-story concrete wall construction. All wood framed construction shall have maximum moisture content not to exceed 10% at time of fur-out, which shall be verified by a testing agency hired by the Owner. These test results shall be submitted to the Architect and Structural Engineer of Record for review prior to installation and interior drywall installation is performed. In addition, pre-loading the entire wood building with the interior drywall while the building is being dried out is recommended before wood ledgers are attached to concrete shear walls.

Wood joists and beams supporting topping slabs or subjected to construction loading shall have a maximum live load deflection of l/600. The contractor shall be responsible for ensuring that the moisture content of wood members supporting concrete or construction loads is, and remains, at 10% or less. Wood framing with higher moisture contents before, or during, the placement of topping slabs or subjected to construction loading are subject to excessive creep. Contractor to provide means to maintain the moisture content as required to prevent creep.

**VERTICAL SHRINKAGE**

Allow for 1/2" of wood shrinkage/compression at each level (including foundation). Values are cumulative for the height of the building. Building systems such as mechanical, electrical, plumbing, fire sprinklers, etc. shall have flexible components that account for the potential wood shrinkage/compression. Structural finishes shall also account for the potential wood shrinkage/compression.

**TREATED WOOD**

All wood framing in direct contact with concrete or masonry, exposed to weather, or that rest on exterior foundation walls and are located within 8" of earth, shall be pressure-treated with an approved preservative per IBC section 2303.1.9. Cut or drilled sections of treated material shall be treated with an approved preservative per IBC section 2303.1.9. See IBC section 2304.12 for additional requirements.

**GLUE LAMINATED TIMBER MATERIAL**

Glue laminated timber, or glulam, members shall be fabricated in conformance with ANSI/AITC A190.1 and ASTM D3737, Stress Class 24F-1.8E. Each member shall bear an AITC identification mark and shall be accompanied by an AITC certificate of conformance. All simple span beams shall be douglas fir combination 24F-V4, fb = 2,400 psi, fv =265 psi and all cantilevered beams and columns shall be douglas fir combination 24F-V8, fb = 2,400 psi, fv = 265 psi unless noted otherwise. Camber all simple span glulam beams to 3,500' radius or zero camber, unless shown otherwise on the plans.

# WOOD (cont'd)

***(Trus-Joist)***

**STRUCTURAL COMPOSITE LUMBER**

Manufactured lumber, PSL, LVL and LSL shall be manufactured under a process approved by the national research board. Each piece shall bear a stamp or stamps noting the name and plant number of the manufacturer, the grade, the national research board number, and the quality control agency. All PSL, LVL and LSL lumber shall be manufactured in accordance with ICC Report ESR-1387. LVL lumber shall be manufactured using veneer glued with a waterproof adhesive complying with the requirements of ASTM D2559 with all grain parallel with the length of the member. The members shall have the following minimum properties:

## MINIMUM DESIGN PROPERTIES FOR COMPOSITE LUMBER (Trus-Joist)

| Grade | Orientation | E (ksi) | Fb (psi) | Fcll (psi) | Fv (psi) |
|---|---|---|---|---|---|
| 1.55E LSL | Beam | 1,550 | 2,325 | 2,170 | 310 |
| 2.0E LVL | Beam | 2,000 | 2,600 | 2,510 | 285 |
| 1.8E PSL | Column | 1,800 | 2,400 | 2,500 | 190 |
| 2.0E PSL | Beam | 2,000 | 2,900 | 2,900 | 290 |

Design shown on plans is based on Trus-Joist products manufactured by the Weyerhaeuser Corporation. Alternate manufacturers may be used subject to review and approval by the Architect and Structural Engineer of Record, alternate joist hangers and other hardware may be substituted for items shown provided they have ICC approval for equal or greater load capacities. All joist hangers and other hardware shall be compatible in size with members provided.

**PLYWOOD WEB JOISTS**

Prefabricated plywood web joist design shown on plans is based on Trus-Joist products manufactured by the Weyerhaeuser Corporation. Alternate plywood web joist manufacturers may be used provided they conform with the ICC evaluation service reports ESR-1387 and ESR-1153 and are subject to review and approval by the Architect and Structural Engineer of Record. Alternate plywood web joists must have equivalent section properties and allowable stresses to those previously specified to be considered. Alternate joist hangers and other hardware may be substituted for items shown provided they have ICC approval for equal or greater load capacities. All joist hangers and other hardware shall be compatible in size with plywood web joist provided. All necessary bridging, blocking, blocking panels, stiffeners, etc., shall be detailed and furnished by the manufacturer. All permanent and temporary bridging shall be installed in conformance with manufacturer's specifications. The following deflection criteria shall be maintained with all alternates.

- Floor live load deflections shall be limited to span/480 (span/360 at 100 psf live load).
- Roof total load deflections shall be limited to span/240.
- Specified plywood web joists at floors have been designed for a minimum TJ-Pro rating of 40 in addition to the maximum allowable deflections noted above.

Alternative framing members at shear wall rim / blocking locations may be used, provided ICC reports or manufacturer's test data are submitted. The submitted data shall verify the ability of the alternative members to provide equivalent or greater shear capacities using the specified nail and anchor sizes and spacing.

**WOOD STRUCTURAL PANELS**

Wood structural panels shall be APA rated sheathing, exposure 1 durability classification, in conformance with USDOC PS 1, ASTM D 5457 and IBC 2303.1.5 and Table 2304.8(2).

Oriented strand board (OSB), shall be in accordance with USDOC PS 2, and of equivalent thickness, exposure rating and span rating and may be used in lieu of plywood pending OSB substitution approval by Architect. Contractor to ensure OSB is protected to prevent warping during installation.

**FASTENERS**

Fasteners shall conform to the following requirements, unless noted otherwise. Splitting shall be avoided at all wood fasteners:

| | |
|---|---|
| Bolts | NDS section 12.1.3 |
| Lag screws | NDS section 12.1.4 |
| Wood screws | NDS section 12.1.5 |
| Nails | NDS section 12.1.6 |
| Wood-to-wood connection bolts | ASTM A307 |
| Steel-to-wood connection bolts | ASTM A307 |
| Anchor rods (7" embed min) | ASTM F1554 grade 36 with threaded ends and welded nut at end (provide higher grade at holdown rods where indicated) |

Thru-bolt and anchor rod holes shall be at least 1/32" but no more than 1/16" larger than bolt/rod diameter. Clearance holes for lag screw shanks shall have the same diameter as the lag shank and the same penetration depth as the length of the unthreaded shank. Lead holes for threaded portion of lag screws shall have a diameter of 55 to 60% of lag screw shank diameter and shall extend the length of the threaded portion of the lag screw. Fasteners exposed to earth, weather or located in pressure preservative or fire retardant treated wood shall comply with the criteria listed in the "Metal Products in Contact with Treated Lumber" section.

**FRAMING CONNECTORS**

Timber connectors called out by letters and numbers shall be "Strong-Tie" by the Simpson Strong-Tie Company. Equivalent devices by other manufacturers may be substituted, provided they have ICC approval for equal or greater load capacities.

All connectors shall be installed in accordance with the manufacturer's recommendations. Provide number and size of fasteners as specified by manufacturer. All shims shall be seasoned and dried and the same grade (minimum) as members connected. All nails shall be as called out in the "Fasteners" section of this sheet, unless noted otherwise. All bolts in wood members shall conform to ASTM A307. Provide washers under the heads and nuts of all bolts and lag screws bearing on wood. Where connector straps connect two members, place one-half of the nails or bolts in each member.

**METAL PRODUCTS IN CONTACT WITH TREATED LUMBER**

Simpson hardware in contact with ACQ, CA, or CBA pressure-preservative treated wood shall have a Zmax finish (G185 HDG per ASTM A653) or shall be post hot-dip galvanized (per ASTM A123 for connectors and ASTM A153 for fasteners) unless noted otherwise. Exception: type 304 or 316 stainless steel connectors and fasteners are required for the following applications:

- ACQ, CA, or CBA treatments with ammonia where members are used in exterior applications.
- All ACZA treatments
- Retention levels greater than 0.40 pcf for ACQ, 0.41 pcf for CBA-A, or 0.21 pcf for CA-B treatments.

Stainless steel connectors require matching stainless steel fasteners. Zmax and post hot-dip galvanized connectors require fasteners galvanized per ASTM A153. Thru-bolts and anchor rods used in dry conditions shall be permitted to be of mechanically deposited zinc coated steel with coating weights in accordance with ASTM B 695, class 55 minimum. See IBC section 2304.10.5.1 and "Framing Connectors" section on this sheet for additional requirements.

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10/01/2021

Project Title

HARRIS REMODEL
1640 72nd Ave SE
Mercer Island, WA 98040

Project Information

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|---|---|
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Sheet Title

STRUCTURAL GENERAL NOTES

Sheet Number

S1.3

## PREFABRICATED WOOD ROOF TRUSSES

**PREFABRICATED CONNECTOR-PLATE WOOD ROOF TRUSSES**
Prefabricated connector plate wood roof truss loading shall be as follows:

| | |
|---|---|
| top chord snow load | 25 psf unless noted otherwise in the load criteria |
| top chord dead load | 10 psf |
| bottom chord dead load | 10 psf |
| bottom chord live load | 10 psf (uninhabitable attics w/o storage) |
| bottom chord live load* | 20 psf (uninhabitable attics w/ light storage or uninhabitable attics w/o storage, but containing areas where the clear distance between the top and bottom chords is greater than or equal to 42" for a horizontal distance of 24" involving (2) or more trusses) |

* the bottom chord live load does not act concurrently with the roof live or snow load

See Architectural and Mechanical drawings for sprinkler and mechanical equipment loading. Wind uplift (top chord) per ASCE 7, use components and cladding loads, see loading criteria.

The truss manufacturer shall be responsible for the complete design, fabrication for all trusses, blocking, incidental framing, framing for openings, permanent member lateral restraint and bracing, bridging, connections, holdown anchors, and all other items required for a complete truss system. Truss configurations are shown on the Architectural or Structural drawings. The truss manufacturer shall have at least 3 years experience in the fabrication of prefabricated wood trusses. Truss installer shall be responsible for erection procedures and temporary lateral restraint for a safe installation of the trusses.

Prefabricated wood trusses shall be metal plate connected wood trusses designed and fabricated in accordance with the current ANSI/TPI.1 requirements to support their own weight plus superimposed dead, live, uplift and lateral loads shown on the drawings. Contractor shall submit design calculations and truss design drawings in accordance with the Deferred Submittal Section to the Architect and Structural Engineer of Record. Design calculations and truss design drawings shall be approved by the Architect and the building official prior to manufacturing the trusses.

Truss design drawings are the written, graphic and pictorial depiction of each individual truss. Truss design drawings shall be provided with the shipment of trusses delivered to the job site. Truss design drawings shall include, at a minimum, all items covered in ANSI/TPI.1 2.3.5.5.

Design of trusses shall consider deflection of trusses relative to adjacent parallel supports and include design of bridging, bracing, additional trusses or other means necessary to alleviate problems resulting from differential deflections.

Load criteria for wind and seismic loading are indicated on the general notes, vertical loads are indicated above and in the load maps. Trusses shall be designed to limit total deflections to a maximum of span/600 or 1/4", whichever is smaller. Provided a more stringent deflection requirement is not needed to accommodate brittle finishes.

The truss manufacturer shall provide a Truss Placement Diagram (TPD) that identifies the proposed location for each individually designated truss and references the corresponding truss design drawing. The TPD shall be provided as part of the truss submittal package, and with the shipment of trusses delivered to the job site. The TPD is not required to bear the seal or signature of the truss designer unless the TPD is prepared under the direct supervision of a registered design professional, in which case the TPD is required by Washington state law to be signed and sealed a civil or Structural Engineer licensed in the governing jurisdiction. The Truss Submittal Package (TSP) shall consist of each individual truss design drawing, the TPD, the permanent individual member lateral restraint and bracing details or specifications or drawings and the cover sheet/truss index sheet.

Where permanent individual member lateral restraint and bracing of truss members is required on the truss design drawings, it shall be accomplished by ANSI/TPI.1 2.3.3.1.1 or 2.3.3.1.2.

Erection bracing and bridging sizes and spacing shall be as required by the truss manufacturer in accordance with the latest recommendations of the Truss Plate Institute (TPI). Install and lap bracing and bridging per latest TPI recommendations.

Additional trusses shall be designed and supplied as required to support mechanical equipment, piping, ducts, etc. All connectors specified by the truss manufacturer shall have current ICC approval and shall be designed and sized for twice the calculated load. No offsets for connections will be permitted. Truss manufacturer is responsible for truss to truss connections. General Contractor is responsible for equipment connections to trusses.

Truss members and components shall not be cut, notched, drilled, spliced or otherwise altered in any way without written consent and approval of a registered design professional. New load or changes in loads resulting in the addition of loads to any truss (e.g., HVAC equipment, water heater, piping, ducts, etc.) shall not be permitted without verification that the truss is capable of supporting such additional loading.

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Project Title

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Mercer Island, WA 98040

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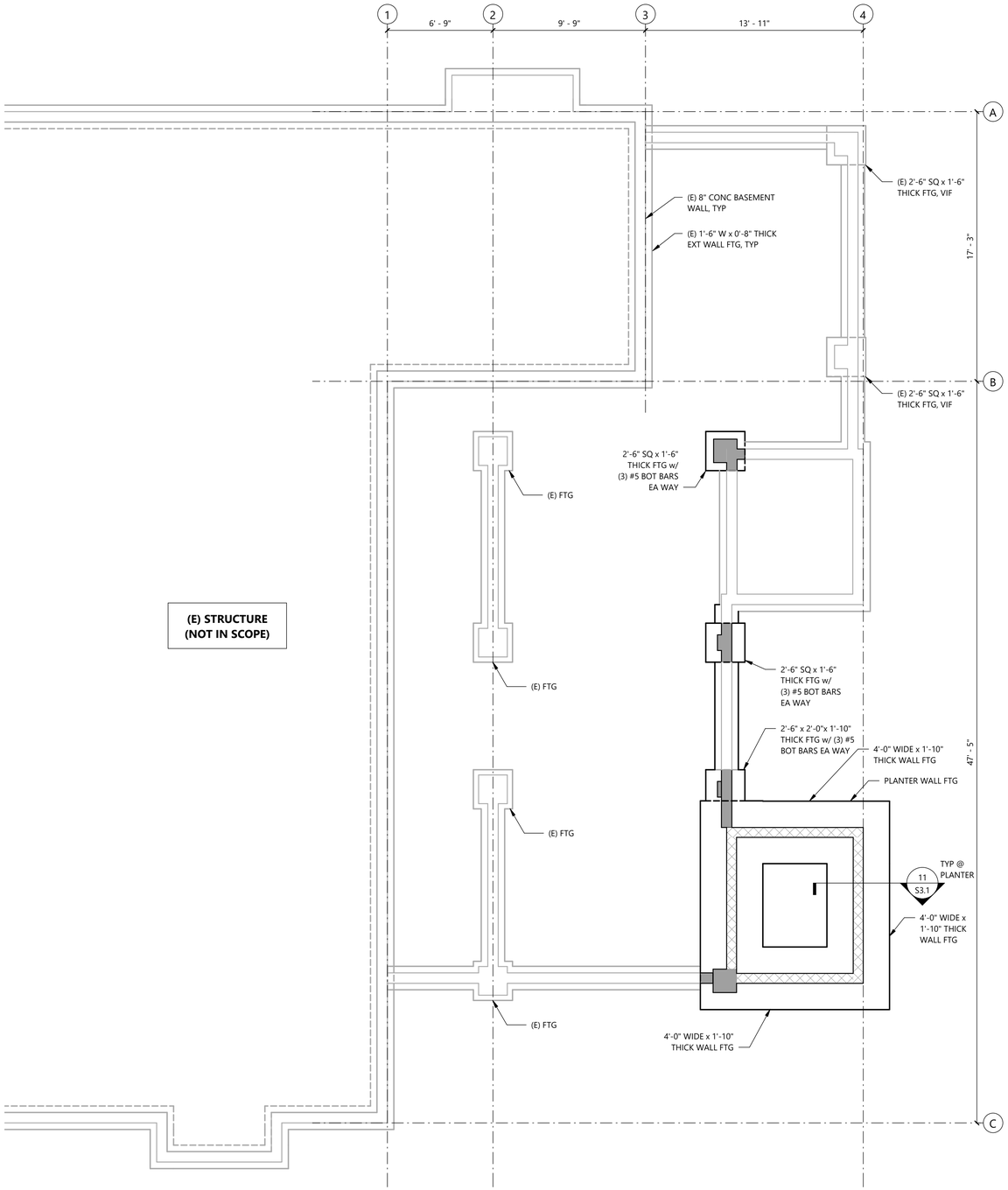
Sheet Title

STRUCTURAL
GENERAL NOTES

Sheet Number

S1.4




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

North

## FOUNDATION PLAN NOTES

**1. GENERAL**

1.1 ELEVATION AT TOP OF SLAB SHALL BE PER ARCH, UNO.

[-X'-X"] INDICATES ELEVATION AT TOP OF FOOTING, MEASURED IN FEET.

FOOTING ELEVATIONS SHOWN ARE FOR CONTRACTOR CONVENIENCE AND BIDDING ONLY. FINAL ELEVATIONS SHALL BE DETERMINED BY ON-SITE VERIFICATION BY SOILS ENGINEER, BUT SHALL NOT BE SHALLOWER THAN THOSE SHOWN ON THIS PLAN.
REFER TO STRUCTURAL GENERAL NOTES FOR ADDITIONAL INFORMATION.

1.2 GRID LINES ARE TO FACE STUD AND CENTERLINE OF COLUMN. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

1.3 EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

1.4 WHEREVER NEW CONCRETE ABUTS EXISTING CONCRETE, ADD DOWELS TO MATCH REINFORCEMENT IN NEW CONSTRUCTION. LAP DOWELS WITH NEW REINFORCEMENT PER TYPICAL LAP SPLICE TABLE AND EMBED INTO EXISTING CONCRETE WITH EPOXY GROUT PER STRUCTURAL GENERAL NOTES.
FOR BARS #5 AND SMALLER: EMBED 6" MIN;
FOR BARS #6 AND LARGER: EMBED 9: MIN.

**2. FOUNDATIONS**

2.1 EXCAVATE, BACKFILL, AND PREPARED SOILS AS REQUIRED PER STRUCTUAL GENERAL NOTES AND GEOTECHNICAL REPORT.

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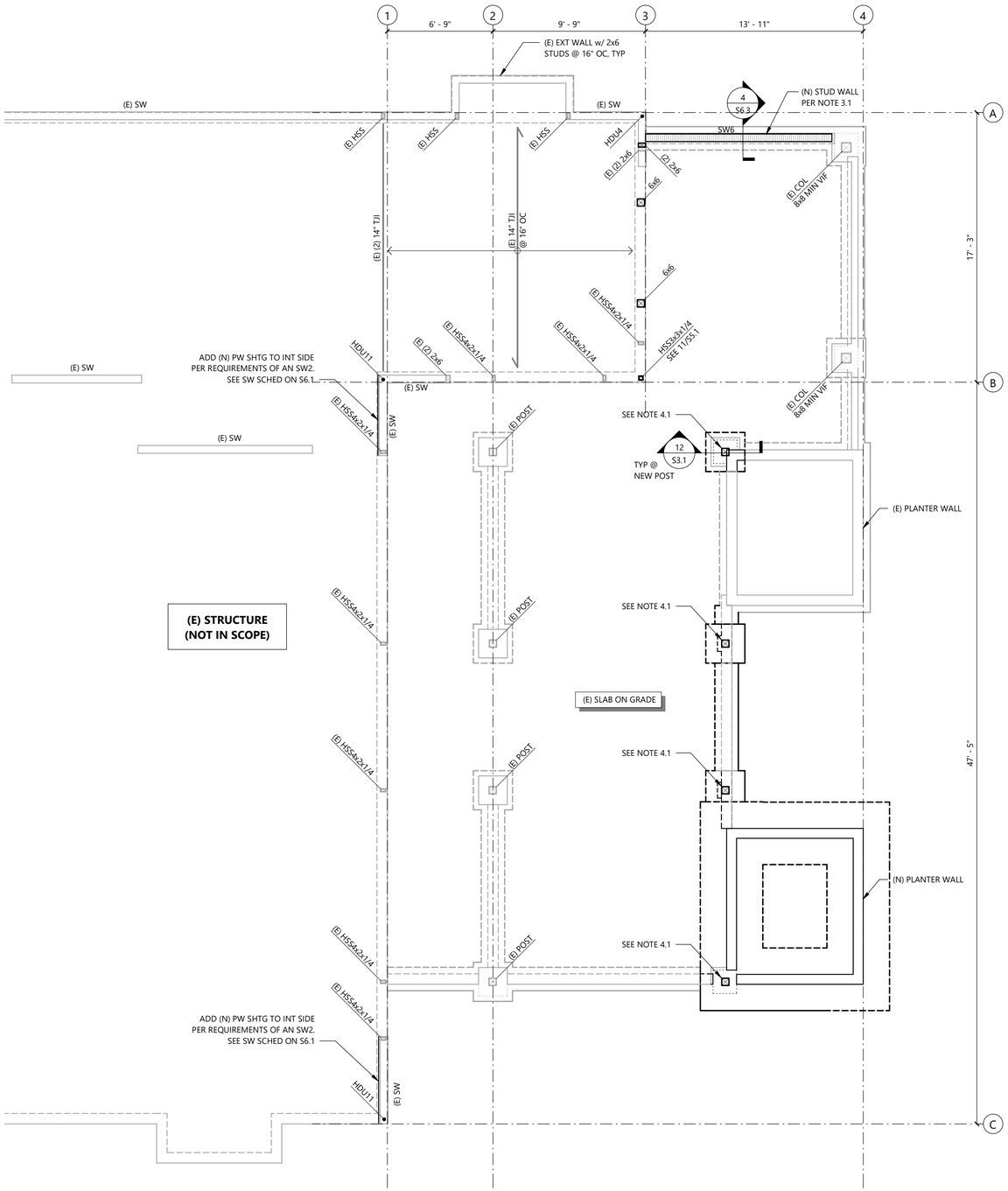
Sheet Title

FOUNDATION PLAN

Sheet Number

S2.1




1 MAIN LEVEL FRAMING PLAN
Scale: 1/4" = 1'-0"

North

## FLOOR FRAMING PLAN NOTES

**1. GENERAL**

1.1. ELEVATION AT TOP OF SHEATHING SHALL BE PER ARCH, UNLESS NOTED OTHERWISE.

1.2. GRID LINES ARE TO FACE OF STUD AND CENTERLINE OF COLUMN. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

1.3. EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

**2. FLOORS**

2.1. FLOOR SHALL BE 23/32" APA-RATED SHEATHING, (48/24) EXPOSURE 1, TONGUE & GROOVE, GLUED AND NAILED. WHERE BLOCKED DIAPHRAGM IS NOTED ON PLAN, USE 2x FLAT BLOCKING AND 'Z' CLIPS AT UNSUPPORTED PANEL EDGES.

NAIL SHEATHING AS FOLLOWS:

FLOOR BOUNDARY (BN).....10d @ 6"
PANEL EDGES (EN).....10d @ 6"
OTHER SUPPORTS, FIELD NAILING.....10d @ 10"
BLOCKING, INTERIOR RIM JOISTS & STRUTS.....10d @ 4"

NAILS SHALL BE DRIVEN FLUSH WITH THE FACE OF SHEATHING. GLUE SHALL CONFORM TO APA AFG-01.

2.2. TYPICAL RIM JOISTS SHALL BE MINIMUM 1 1/2" LSL, UNO. REFER TO SHEAR WALL SCHEDULE FOR ADDITIONAL REQUIREMENTS AT RIMS.

2.3. TYPICAL HEADER SHALL BE 4x10 DF NO. 2, UNLESS NOTED OTHERWISE.

2.4. TYPICAL HANGERS SHALL BE SIMPSON JB OR LU, UNLESS NOTED OTHERWISE.

**3. WALLS**

3.1. STRUCTURAL WALL STUDS AT THIS LEVEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

EXTERIOR WALLS.....2x6 @ 16" OC
INTERIOR WALLS.....2x6 @ 16" OC

SEE DETAIL SHEET S6.1 FOR TYPICAL WALL FRAMING REQUIREMENTS AND FOR TYPICAL SHEAR ALL REQUIREMENTS. FRAME ALL SHEAR WALL INTERSECTIONS PER TYPICAL DETAILS.

3.2. USE (1) KING STUD AND (1) TRIMMER STUD AT EXTERIOR HEADERS AT THIS LEVEL, UNLESS NOTED OTHERWISE.

3.3. ALL EXTERIOR WALLS SHALL BE CONSTRUCTED AS SW6 PER TYPICAL SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.

**4. TRELLIS**

4.1. TRELLIS COLUMNS TO MATCH EXISTING TRELLIS COLUMN SIZE. VERIFY IN FIELD. COLUMNS SHALL BE 8x8 DF NO 1 MIN.

### LEGEND

- STRUCTURAL WALL BELOW WITH HEADER (CONT WALL PLATES)
- STRUCTURAL WALL BELOW WITH FLUSH BEAM (BREAK WALL PLATES)
- STRUCTURAL WALL THIS LEVEL WITH CONT SILL PLATE AT OPENING
- STRUCTURAL WALL THIS LEVEL WITH BREAK IN SILL PLATE AT OPENING
- FLOOR JOIST & EXTENT
- BEAM PER PLAN OR HEADER PER NOTE 2.3
- JOIST HANGER PER NOTE 2.4
- SHEAR WALL PER S6.## (SWx)
- SIMPSON STRAP TIE HOLDOWN USE (2) 2x MIN AT STRAPS; SEE S6.## (MSTC)
- NUMBER OF KINGS PLUS TRIMMERS, UP FROM THIS LEVEL (#k+#t)
- INDICATES OVERFRAMING
- INDICATES BLOCKED DIAPHRAGM PER NOTE 2.1
- STRAP & BLOCKING PER PLAN
- STRAP PER PLAN

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10/01/2021

Project Title

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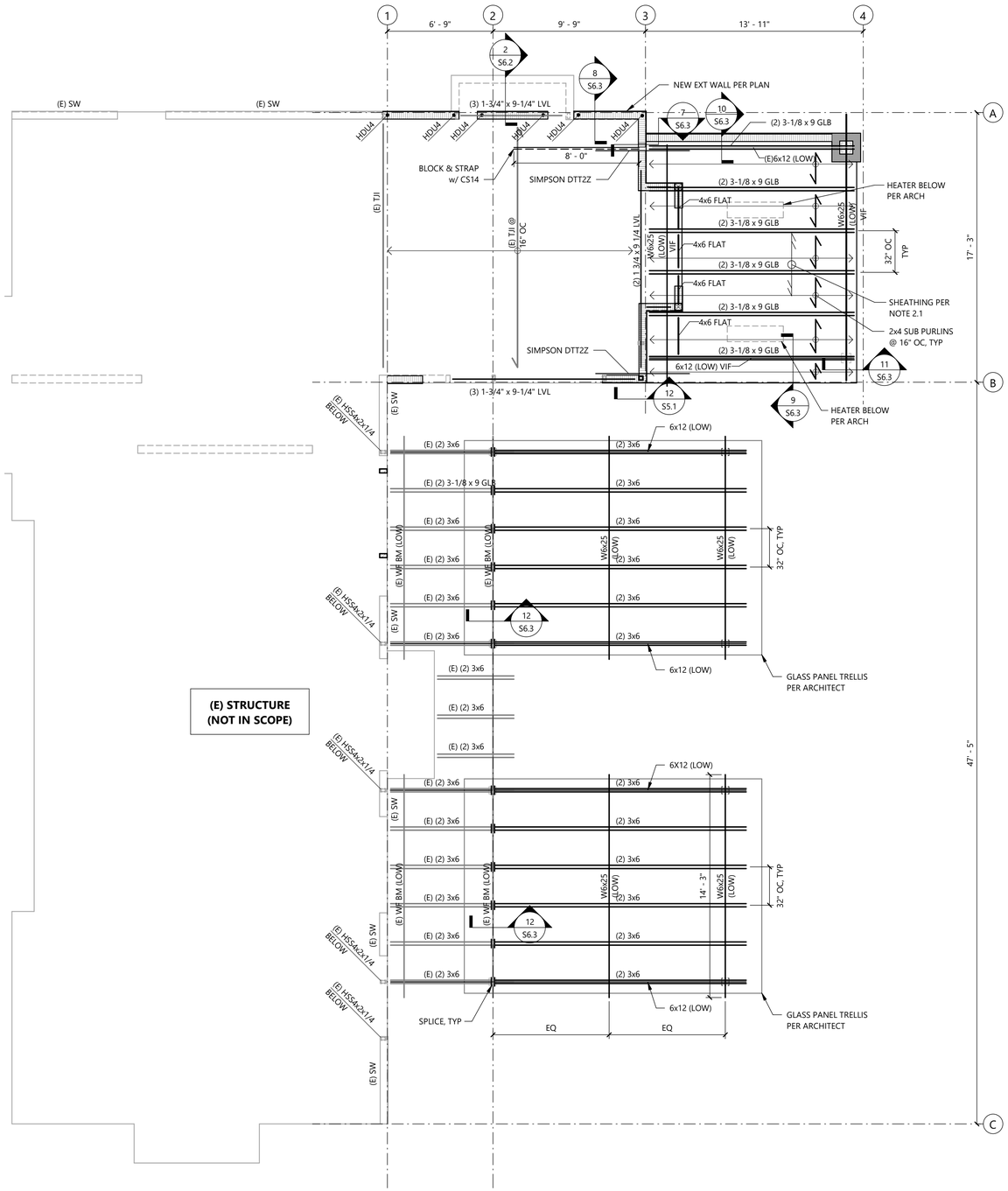
Sheet Title

MAIN LEVEL FRAMING PLAN

Sheet Number

S2.2




1 UPPER LEVEL FRAMING PLAN
Scale: 1/4" = 1'-0"

North

## FLOOR FRAMING PLAN NOTES

**1. GENERAL**

1.1. ELEVATION AT TOP OF SHEATHING SHALL BE PER ARCH, UNLESS NOTED OTHERWISE.

1.2. GRID LINES ARE TO FACE OF STUD AND CENTERLINE OF COLUMN. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

1.3. EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

**2. FLOORS**

2.1. FLOOR SHALL BE 23/32" APA-RATED SHEATHING, (48/24) EXPOSURE 1, TONGUE & GROOVE, GLUED AND NAILED. WHERE BLOCKED DIAPHRAGM IS NOTED ON PLAN, USE 2x FLAT BLOCKING AND 'Z' CLIPS AT UNSUPPORTED PANEL EDGES.

NAIL SHEATHING AS FOLLOWS:

FLOOR BOUNDARY (BN).....10d @ 6"
PANEL EDGES (EN).....10d @ 6"
OTHER SUPPORTS, FIELD NAILING.....10d @ 10"
BLOCKING, INTERIOR RIM JOISTS & STRUTS.....10d @ 4"

NAILS SHALL BE DRIVEN FLUSH WITH THE FACE OF SHEATHING. GLUE SHALL CONFORM TO APA AFG-01.

2.2. TYPICAL RIM JOISTS SHALL BE MINIMUM 1 1/2" LSL, UNO. REFER TO SHEAR WALL SCHEDULE FOR ADDITIONAL REQUIREMENTS AT RIMS.

2.3. TYPICAL HEADER SHALL BE 4x10 DF NO. 2, UNLESS NOTED OTHERWISE.

2.4. TYPICAL HANGERS SHALL BE SIMPSON JB OR LU, UNLESS NOTED OTHERWISE.

**3. WALLS**

3.1. STRUCTURAL WALL STUDS AT THIS LEVEL SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:

EXTERIOR WALLS.....2x6 @ 16" OC
INTERIOR WALLS.....2x6 @ 16" OC

SEE DETAIL SHEET S6.1 FOR TYPICAL WALL FRAMING REQUIREMENTS AND FOR TYPICAL SHEAR WALL REQUIREMENTS. FRAME ALL SHEAR WALL INTERSECTIONS PER TYPICAL DETAILS.

3.2. USE (1) KING STUD AND (1) TRIMMER STUD AT EXTERIOR HEADERS AT THIS LEVEL, UNLESS NOTED OTHERWISE.

3.3. ALL EXTERIOR WALLS SHALL BE CONSTRUCTED AS SW6 PER TYPICAL SHEAR WALL SCHEDULE, UNLESS NOTED OTHERWISE.

### LEGEND

- STRUCTURAL WALL BELOW WITH HEADER (CONT WALL PLATES)
- STRUCTURAL WALL BELOW WITH FLUSH BEAM (BREAK WALL PLATES)
- STRUCTURAL WALL THIS LEVEL WITH CONT SILL PLATE AT OPENING
- STRUCTURAL WALL THIS LEVEL WITH BREAK IN SILL PLATE AT OPENING
- FLOOR JOIST & EXTENT
- BEAM PER PLAN OR HEADER PER NOTE 2.3
- JOIST HANGER PER NOTE 2.4
- SHEAR WALL PER S6.##
- SWx
- MSTC — SIMPSON STRAP TIE HOLDOWN USE (2) 2x MIN AT STRAPS; SEE S6.##
- #K+#T — NUMBER OF KINGS PLUS TRIMMERS, UP FROM THIS LEVEL
- INDICATES OVERFRAMING
- INDICATES BLOCKED DIAPHRAGM PER NOTE 2.1
- STRAP & BLOCKING PER PLAN
- STRAP PER PLAN

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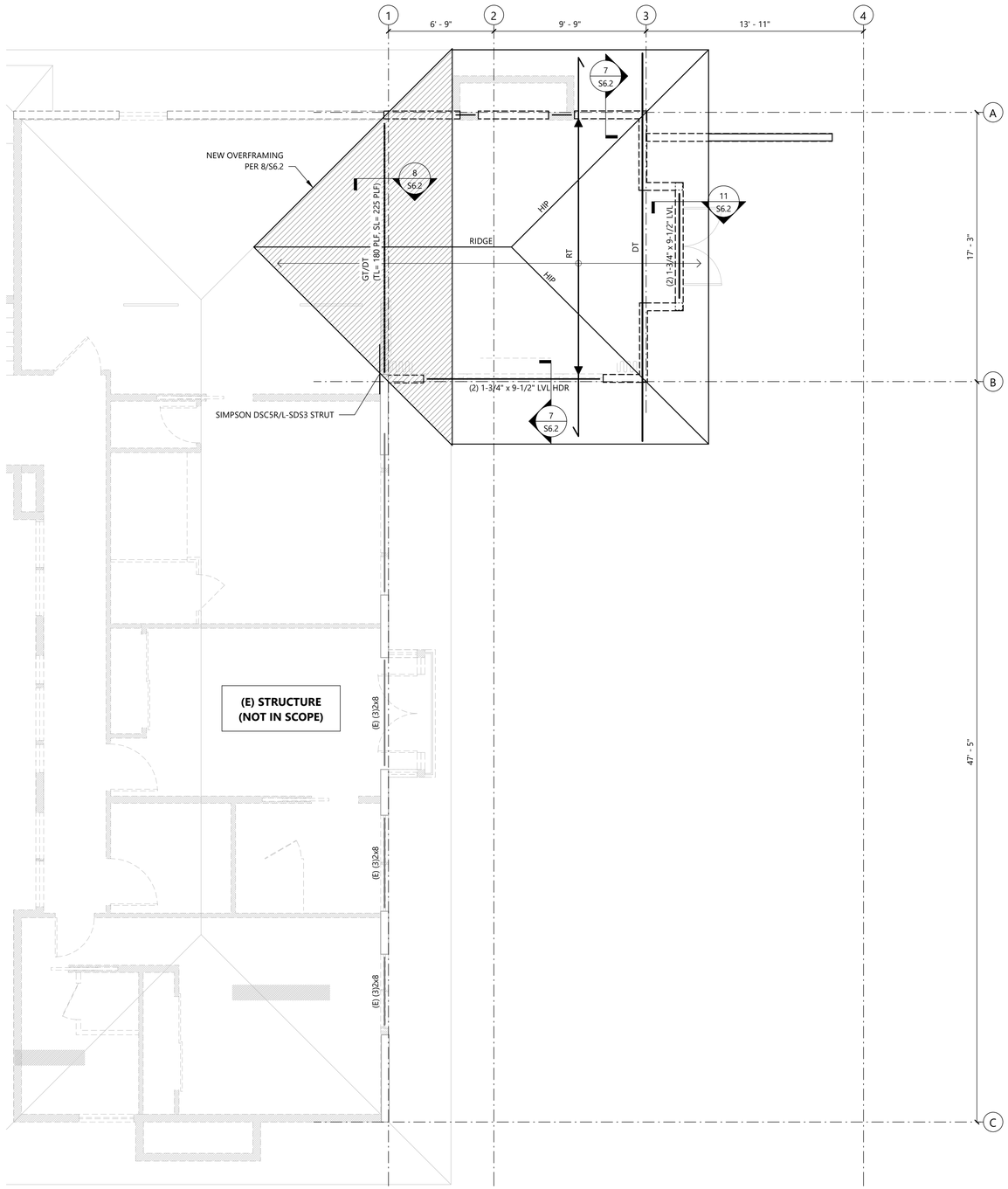
Sheet Title

UPPER LEVEL FRAMING PLAN

Sheet Number

S2.3




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

North

## ROOF FRAMING PLAN NOTES

**1. GENERAL**

1.1. ELEVATION AT TOP OF SHEATHING SHALL BE XX'-X", UNLESS NOTED OTHERWISE.

1.2. GRID LINES ARE TO FACE OF STUD AND CENTERLINE OF COLUMN. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

1.3. EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.

**2. ROOF**

2.1. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING (32/16), EXPOSURE 1. SHEATHING IS SUPPORTED BY 4x T&G TIMBER DECKING. NAIL SHEATHING PANELS AS FOLLOWS:

ROOF BOUNDARY (BN).....10d @ 6"
PANEL EDGES (EN).....10d @ 6"
OTHER SUPPORTS, FIELD NAILING (FN).....10d @ 12"
BLOCKING, INTERIOR RIM JOISTS AND STRUTS.....10d @ 6"

NAILS SHALL BE FLUSH WITH THE FACE OF SHEATHING.

2.2. TYPICAL RIM JOISTS SHALL BE MINIMUM 1 1/2" LSL, UNO. REFER TO SHEAR WALL SCHEDULE FOR ADDITIONAL REQUIREMENTS AT RIMS.

2.3. TYPICAL HEADER SHALL BE 4x10 DF NO. 2, UNLESS NOTED OTHERWISE.

2.4. TYPICAL HANGERS SHALL BE SIMPSON IUS OR ITS, UNLESS NOTED OTHERWISE.

### LEGEND

- STRUCTURAL WALL BELOW WITH HEADER (CONT WALL PLATES)
- STRUCTURAL WALL BELOW WITH FLUSH BEAM (BREAK WALL PLATES)
- INDICATES PRE-ENGINEERED ROOF TRUSSES AT 24" OC; SEE GENERAL STRUCTURAL NOTES FOR CRITERIA. ( ◀ ) DENOTES BEARING POINT BELOW.
- **RT** INDICATES PRE-ENGINEERED ROOF TRUSSES AT 24" OC
- **GT** INDICATES PRE-ENGINEERED GIRDER TRUSS
- **DT** INDICATES PRE-ENGINEERED DRAG TRUSS. SEE DETAIL 4/S6.2
- INDICATES OVERFRAMING
- INDICATES BLOCKED DIAPHRAGM PER NOTE 2.1

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Sheet Title

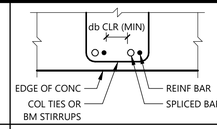
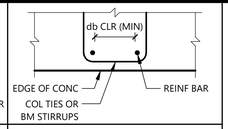
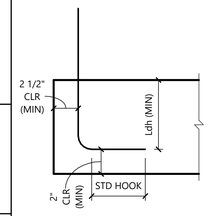
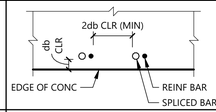
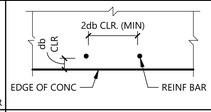
ROOF FRAMING PLAN

Sheet Number

S2.4

## REINFORCING BAR LAP SPLICE & DEVELOPMENT LENGTH DIAGRAMS

The following conditions must be met in order to use the Reinforcing Bar Lap Splice & Development Length Tables

| | Lap Splices | Straight Bar Development | Hooked Bar Development |
|---|---|---|---|
| **CLASS 1:** Bars enclosed by column ties or beam stirrups |  |  |  |
| **CLASS 2:** No enclosure |  |  | |
| Where conditions for Classes 1 & 2 are not met | Multiply lengths shown in schedule by 1.5 | Multiply lengths shown in schedule by 1.5 | |

Notes:
1. All bars shall be developed & all splices lapped per ACE 318 for tension, uno. Table may be used where conditions meet criteria noted in diagrams.
2. Tables are applicable for normal weight concrete, only.
3. Top bars are horizontal bars with more than 12" depth of concrete cast below them. (wall horizontal reinforcement is exempt).
4. Where bars of different size are lap spliced, splice length shall be the larger of:
   a. Developed length of larger bar
   b. Splice length of smaller bar
5. Where minimum straight bar development length cannot be achieved, use with standard hook.
6. Refer to concrete cover table for minimum concrete cover requirements.

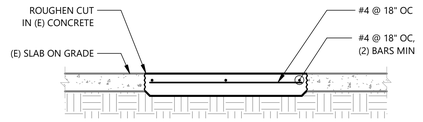
## 2 Reinforcing Bar Lap Splice & Development Length Tables

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

## REINFORCING BAR LAP SPLICE & DEVELOPMENT LENGTH TABLE

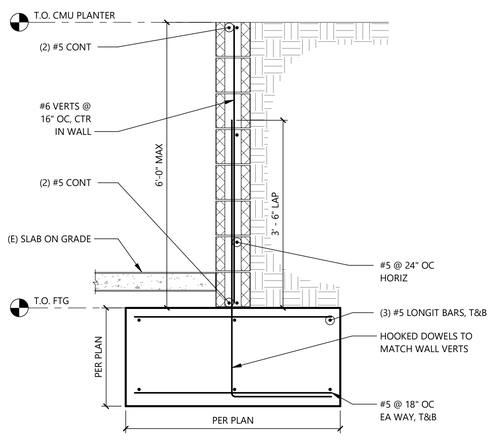
**f'c = 3,000 psi  Grade 60 Reinforcing**

| Bar Size | Min Lap Splice Lengths (Ls) | | Min Straight Bar Development Lengths (Ld) | | Min Hooked Bar Embedment Lengths (Ldh) |
|---|---|---|---|---|---|
| | Top Bars | Other Bars | Top Bars | Other Bars | |
| #3 | 28" | 22" | 22" | 17" | 9" |
| #4 | 38" | 29" | 29" | 22" | 11" |
| #5 | 47" | 36" | 36" | 28" | 14" |
| #6 | 56" | 43" | 43" | 33" | 17" |
| #7 | 81" | 63" | 63" | 48" | 20" |
| #8 | 93" | 72" | 72" | 55" | 22" |
| #9 | 105" | 81" | 81" | 62" | 25" |
| #10 | 118" | 91" | 91" | 70" | 28" |
| #11 | 131" | 101" | 101" | 78" | 31" |




## 7 Typical Patching at Slab on Grade

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




## 11 Typical CMU Planter Wall

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

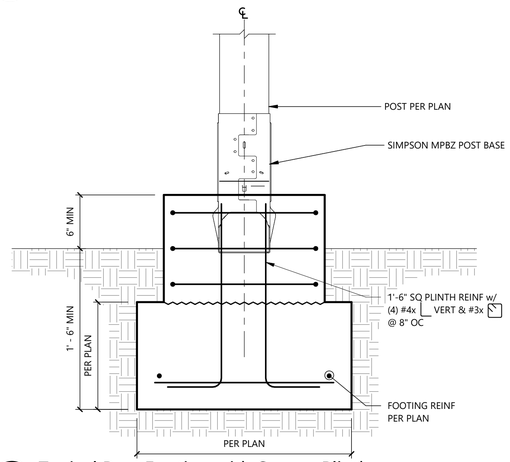
## CONCRETE COVER FOR REINFORCING STEEL

| Reinforcing Bar Location | Minimum Concrete Cover |
|---|---|
| Unformed surfaces cast against and permanently exposed to earth | 3" |
| Formed surfaces exposed to earth or weather (#6 bars and larger) | 2" |
| Formed surfaces exposed to earth or weather (#5 bars and smaller) | 1 1/2" |
| Columns and beams w/ bars enclosed in stirrups, ties or spiral reinforcement | 1 1/2" |
| Slabs, joists and interior faces of walls (#11 bars and smaller) | 3/4" |
| 2-hour and 3-hour slabs | (Refer to plan notes) |
| Clear spacing between longitudinal bars in columns and boundary elements | 1 1/2" or 1.5db |
| Clear spacing between parallel bars in a layer | 1" or db |
| Clear spacing between (2) or more parallel layers | 1" |

Notes:
1. Where a thickness of cover required for fire protection is greater than that specified in this table, the greater thickness shall be used.
2. Where two values are shown, the greater shall be used.

## 8 Concrete Cover for Reinforcing Steel

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




## 12 Typical Post Footing with Square Plinth

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

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Engineer's Stamp

SHAWN ROBERTS — STATE OF WASHINGTON — 47548 — DIRECTOR/PRINCIPAL ENGINEER — PROFESSIONAL ENGINEER — 10/01/2021

Project Title

HARRIS REMODEL

1640 72nd Ave SE
Mercer Island, WA 98040

Project Information

| | |
|---|---|
| Project No. | 21-127-01 |
| Checked By | KA |

Issue

| | |
|---|---|
| Permit Set | 10/01/2021 |

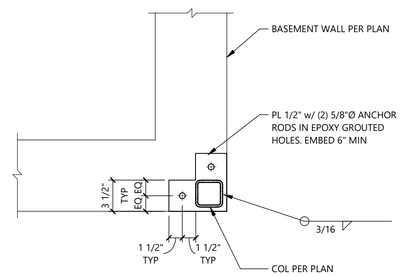
Department Approval

Sheet Title

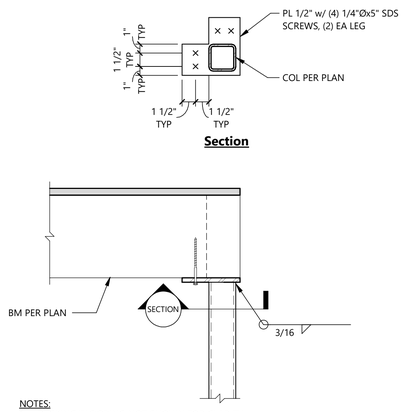
STRUCTURAL CONCRETE DETAILS

Sheet Number

S3.1




11 Column Base Detail
Scale: 1 1/2" = 1'-0"




12 HSS Connection at Top of Col
Scale: 1 1/2" = 1'-0"

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27548
REGISTERED PROFESSIONAL ENGINEER
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Department Approval

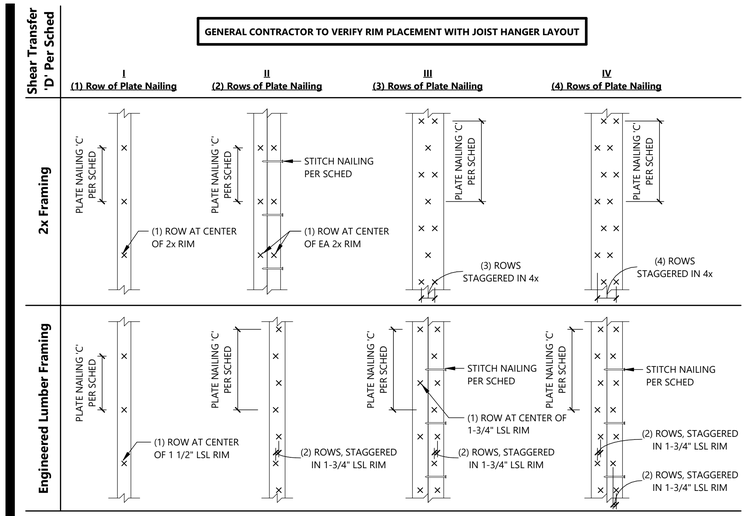
Sheet Title

STRUCTURAL STEEL DETAILS

Sheet Number

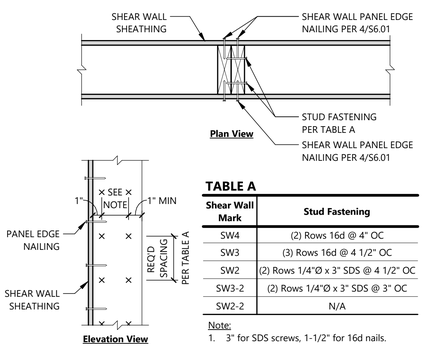
S5.1

**GENERAL CONTRACTOR TO VERIFY RIM PLACEMENT WITH JOIST HANGER LAYOUT**




## 1 Typical Shear Wall Schedule - Plate Nailing Details

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




Elevation View

**TABLE A**

| Shear Wall Mark | Stud Fastening |
|---|---|
| SW4 | (2) Rows 16d @ 4" OC |
| SW3 | (3) Rows 16d @ 4 1/2" OC |
| SW2 | (2) Rows 1/4"Ø x 3" SDS @ 4 1/2" OC |
| SW3-2 | (2) Rows 1/4"Ø x 3" SDS @ 3" OC |
| SW2-2 | N/A |

Note:
1. 3" for SDS screws, 1-1/2" for 16d nails.

## SHEAR WALL SCHEDULE (DOUG FIR FRAMING)

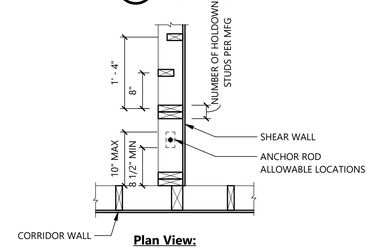
| Mark | Sheathing (15/32" Plywood) | Nailing (EN) Edge | Nailing Field | Framing Min Stud & Blkg at Panel Edges | Framing Sill Plate | Framing Top Plates | Shear Transfer (A) Sill Pl to Concrete | Shear Transfer (B) Rim/Joist/Blkg to Top Pl | Shear Transfer (C) Sill Pl To Rim/Joist/Blkg (See 1/S6.1) | Shear Transfer (D) Rim Below Sill Pl (See 1/S6.1) | Shear Transfer (E) Shearwall Intersections | Capacity (ASD) Seismic | Capacity (ASD) Wind |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SW6 | (1) Side | 10d @ 6" | 10d @ 12" | 2x | 2x | (2)2x | 5/8"Ø Anchor Bolt @ 41" | A35 @ 26" or LTP4 @ 20" | 16d @ 4" or 1/4"Ø x 6" SDS screw @ 14" | I | 16d @ 4" or 1/4"Ø x 6" SDS screw @ 13" | 310 plf | 435 plf |
| SW4 | (1) Side | 10d @ 4" | 10d @ 12" | 3x | 2x | (2)2x | 5/8"Ø Anchor Bolt @ 27" | A35 @ 18" or LTP4 @ 13" | (2) Rows 16d @ 6" or 1/4"Ø x 6" SDS screw @ 9" | II or I | (2) ROWS 16d @ 6" or 1/4"Ø x 6" SDS screw @ 8" | 460 plf | 645 plf |
| SW3 | (1) Side | 10d @ 3" | 10d @ 12" | 3x | 2x | (2)2x | 5/8"Ø Anchor Bolt @ 21" | A35 @ 13" or LTP4 @ 10" | (2) Rows 16d @ 5" or 1/4"Ø x 6" SDS screw @ 7" | II or I | (2) ROWS 16d @ 5" or 1/4"Ø x 6" SDS screw @ 6" | 600 plf | 840 plf |
| SW2 | (1) Side | 10d @ 2" | 10d @ 12" | 3x | 2x | (2)2x | 5/8"Ø Anchor Bolt @ 16" | A35 @ 10" or LTP4 @ 7" | (3) Rows 16d @ 6" or (2) Rows 1/4"Ø x 6" SDS screws @ 10" | III or II | 1/4"Ø x 6" SDS screw @ 5" | 770 plf | 1078 plf |
| SW4-2 | (2) Sides | 10d @ 4" | 10d @ 12" | 3x | 3x | (2)2x | 5/8"Ø Anchor Bolt @ 15" | A35 + LTP4 @ 13" | (3) Rows 16d @ 5" or (2) Rows 1/4"Ø x 6" SDS screws @ 9" | III or II | 1/4"Ø x 6" SDS screw @ 4" | 920 plf | 1288 plf |
| SW3-2 | (2) Sides | 10d @ 3" | 10d @ 12" | 3x | 3x | (2)2x | 5/8"Ø Anchor Bolt @ 15" | A35 + LTP4 @ 10" | (4) Rows 16d @ 5" or (2) Rows 1/4"Ø x 6" SDS screws @ 7" | IV or II | 1/4"Ø x 6" SDS screw @ 3" | 1200 plf | 1680 plf |
| SW2-2 | (2) Sides | 10d @ 2" | 10d @ 12" | 3x | 3x | (2)2x | 5/8"Ø Anchor Bolt @ 12" | A35 + LTP4 @ 8" | (4) Rows 16d @ 4" or (3) Rows 1/4"Ø x 6" SDS screws @ 8" | IV or III | 1/4"Ø x 6" SDS screw @ 2" | 1540 plf | 2155 plf |

**SHEAR WALL SCHEDULE NOTES:**

1. In addition to framing requirements of 11/S6.11, provide framing at shear walls as indicated.
2. See schedule for sheathing and nailing requirements. Lumber grade as indicated or better. Stagger panel joint each side of wall where sheathing is required both sides of wall.
3. All framing members receiving edge nailing from abutting panel edges shall not be less than sizes indicated. In lieu of 3x studs, b2/S6.1› studs shown in 2/S6.01 may be substituted.
4. Block all panel edges.
5. Nail sizes per nail size table. Drive all nails flush with face of sheathing. Tolerance +1/16" to -0. Stagger nailing where necessary to prevent splitting of lumber.
6. Plates on concrete shall be treated. See general notes.
7. Connect sheathing & studs at shear wall intersections as indicated.
8. Where only one holdown is specified, locate on open-side of holdown studs. See wall elevation.
9. The plans and sections shown here schematically demonstrate the typical connection designed by the Engineer of Record. Alternate connections must be approved in writing by the Engineer prior to construction.

## 2 Alternative Built-up 2X Option at Abutting Panel Edge

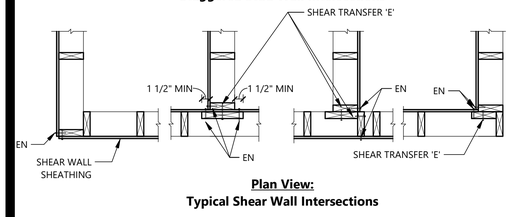
Scale: 1 1/2" = 1'-0"



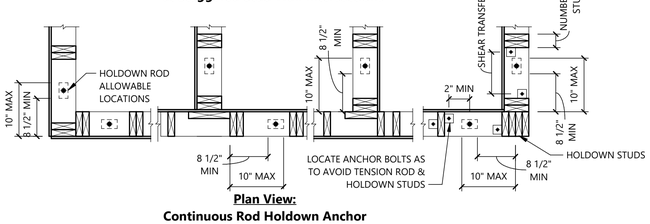

**Plan View:**
**Staggered Stud Wall Intersections**




**Plan View:**
**Continuous Rod Holdown Anchor Placement at Staggered Stud Wall Intersections**




**Plan View:**
**Typical Shear Wall Intersections**



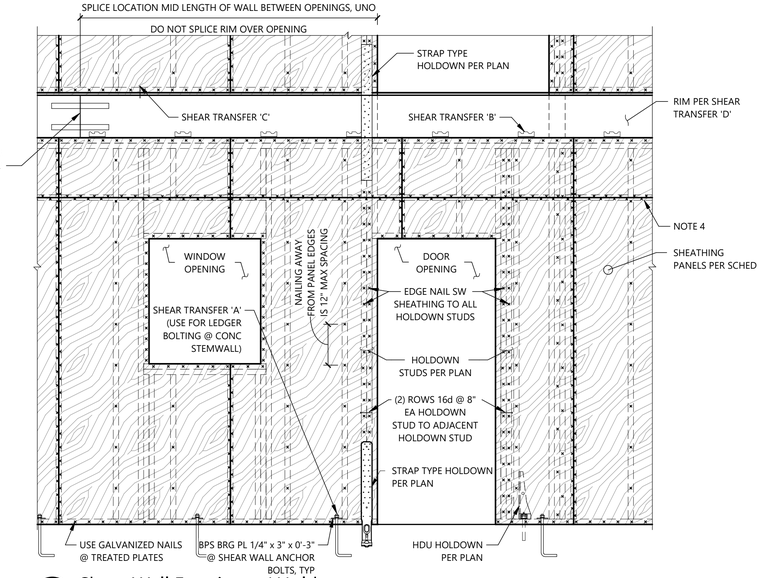

**Plan View:**
**Continuous Rod Holdown Anchor Placement at Shear Wall Intersections**

## 5 Holdown Anchor Placement at Shear Wall Intersections

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

**TYPICAL NAIL LENGTH TABLE**

| Nail Size | Nail Diameter | Typical Nail Length (UNO) |
|---|---|---|
| 6d Common | 0.113"Ø | 2" |
| 8d Common | 0.131"Ø | 2 1/2" |
| 10d Common | 0.148"Ø | 2 1/4" |
| 16d Sinker | 0.148"Ø | 3 1/4" |




## 7 Shear Wall Framing w/ Holdowns

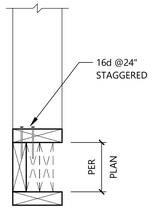
Scale: NTS

**ROUGH WINDOW SILL**

| Horiz Rough Opening | Number of Sills Req'd | End Attachment | Reference |
|---|---|---|---|
| 0'-0" to 6'-0" | 1 | (2) 16d end nails | 11/S6.1 |
| > 6'-0" | 2 | (2) 16d end nails + A35 each end @ each sill | 11/S6.1 |

**HEADER END NAILING**

| Nominal Depth | End Attachment |
|---|---|
| 4 | (4) 16d |
| 6 | (6) 16d |
| 8 | (8) 16d |
| 10 | (10) 16d |
| 12 | (12) 16d |
| 14 | (14) 16d |
| 16 | (16) 16d |
| 18 | (18) 16d |




**Section**

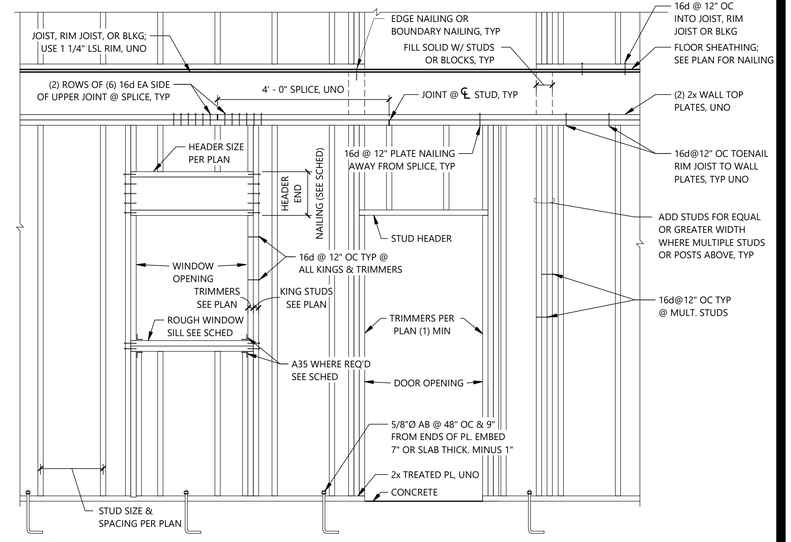
## 9 Header End Nailing

Scale: NTS

**(MINIMUM FASTENING SCHEDULE (UNO)(PER IBC 2015, TABLE 2304.10.01)**

| No. | Connection | Nailing, Location UNO |
|---|---|---|
| 1 | Blocking between joist/rafter or trusses to top plate or other framing above | (3) 8d, toenail each end |
| 2 | Blocking between joist/rafter or trusses not at the wall top plate, to rafter or truss | (2) 8d, toenail each end |
| 3 | Flat blocking to truss and web filler | 16d face nail |
| 4 | Joists to top plate or girder | (3) 8d, toenail |
| 5 | Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) | (3) 16d |
| 6 | Collar tie to joist/rafter | (3) 10d |
| 7 | Roof truss to top plate | (3) 10d, toenail |
| 8 | Roof joist/rafter to ridge valley or hip rafters; or roof rafter to 2" ridge beam | (2) 16d, end nail |
| 9 | Stud to stud (not at shear walls) | 16d @ 24" O.C., face nail |
| 10 | Continuous header to stud | (4) 8d, toenail |
| 11 | Top plate to top plate, at end joints | (8) 16d, Each side of end joint, face nail (minimum 24" lap splice length each side of end joint) |
| 12 | Sill plate to joist, rim joist or blocking (not at braced wall panels) | 16d @ 16" OC, face nail |
| 13 | Sill plate to joist, rim joist or blocking at braced wall panels | (3) 16d @ 16" OC, face nail |
| 14 | Stud to sill plate | (4) 8d, toenail OR (2) 16d, end nail* |
| 15 | Top plate to stud | (2) 16d, end nail |
| 16 | Top plates, laps at corners and intersections | (2) 16d, face nail |
| 17 | 1" brace to each stud and plate | (2) 8d, face nail |
| 18 | 1" x 6" sheathing or less to each bearing | (2) 8d, face nail |
| 19 | 1" x 8" and wider sheathing to each bearing | (3) 8d, face nail |
| 20 | Joist to sill, top plate or girder | (3) 8d, toenail |
| 21 | Rim joist, or blocking to top plate, sill or other framing below | 8d @ 6" OC, toenail |
| 22 | 1" x 6" subfloor or less to each joist | (2) 8d, face nail |
| 23 | 2" subfloor to joist or girder | (2) 16d, blind and face nail |
| 24 | 2" planks (plank & beam - floor & roof) | (2) 16d, each bearing, face nail |
| 25 | Built-up girders and beams, 2" lumber layers | 20d @ 32" OC, face nail at top and bottom staggered on opposite sides and (2) 20d at ends of each splice |
| 26 | Ledger strip supporting joists or rafters | (3) 16d, each joist or rafter, face nail |
| 27 | Joist to rim joist | (3) 16d, end nail |
| 28 | Bridging or blocking to joist | (2) 8d, each end, toenail |

*Use (4) 16d end nail studs to top and sill plates at 2x10 studs




## 11 Typical Wall Framing

Scale: NTS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SHAWN ROBERTS — 67548 — DIRECTOR OF STRUCTURAL ENGINEERING — PROFESSIONAL ENGINEER — 10/01/2021

Project Title

# HARRIS REMODEL

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Project Information

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| Project No. | 21-127-01 |
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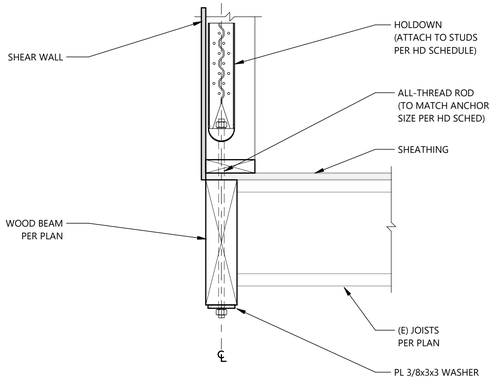
Department Approval

Sheet Title

STRUCTURAL WOOD DETAILS

Sheet Number

S6.1




NOTES:
REFER TO TYPICAL HOLDOWN SCHEDULE FOR ADDITIONAL REQUIREMENTS.

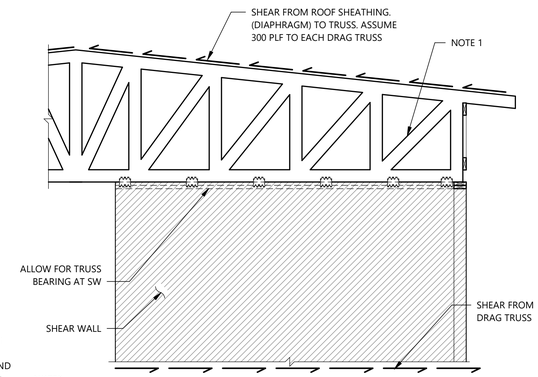
## 2 Typical Holdown to Wood Beam
Scale: 1 1/2" = 1'-0"

**HOLDOWN SCHEDULE**

| Mark | Framing Attachment M | Framing Attachment Fasteners (SDS 1/4 x 2 1/2) | Anchorage D | Anchorage Anchor Type | Anchorage Embed |
|---|---|---|---|---|---|
| HDU2 | 1 3/4" | 6 | 4 1/4" | 5/8"Ø | 1'-6" |
| HDU4 | 1 3/4" | 10 | 4 1/4" | 5/8"Ø | 1'-6" |
| HDU5 | 1 3/4" | 14 | 4 1/4" | 5/8"Ø | 1'-6" |
| HDU8 | 1 3/4" | 20 | 4 1/4" | 7/8"Ø | 1'-6" |
| HDU11 | 1 3/4" | 30 | 4 1/4" | 1"Ø | 1'-6" |

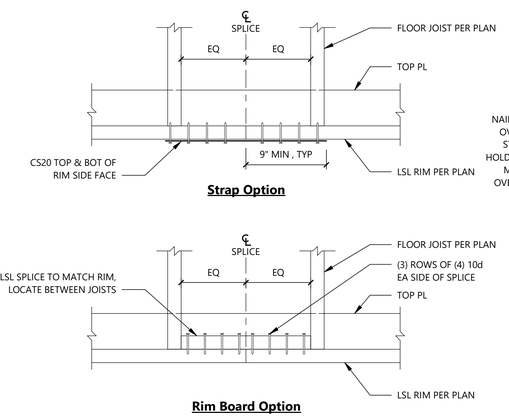
NOTES:
1. INSTALL ALL HOLDOWNS PER MANUFACTURER'S INSTRUCTIONS.
2. PLACEMENT OF ALL ANCHORS IS BASED ON CAST-IN-PLACE INSTALLATION, UNO. POST-INSTALLED ANCHORS SHALL NOT BE INSTALLED WITHOUT PRIOR APPROVAL OF ENGINEER OF RECORD.
3. "M" INDICATES MINIMUM DEPTH OF WOOD FRAMING MEMBER ATTACHED TO HOLDOWN. ALL FRAMING MEMBERS SHALL BE DOUG-FIR, UNO.
4. "D" INDICATES MINIMUM DISTANCE FROM END OF CONCRETE WALL/FOOTING AT CORNER AND WALL END CONDITIONS. REFER TO ELEVATION AND SECTION FOR PLACEMENT DETAILS. UNLESS NOTED OTHERWISE: THE DISTANCE FROM ANY ANCHOR TO THE END OF CONCRETE WALL/FOOTING SHALL BE NO LESS THAN TWICE THE EMBEDMENT DEPTH NOTED IN THE SCHEDULE.

## 3 Typical Holdown Schedule
Scale: 3/4" = 1'-0"




NOTES:
1. DESIGN EACH SHEAR TRUSS TO TRANSFER 300 PLF HORIZONTAL FORCE BETWEEN TOP & BOTTOM CHORDS.

## 4 Drag Truss
Scale: 3/8" = 1'-0"

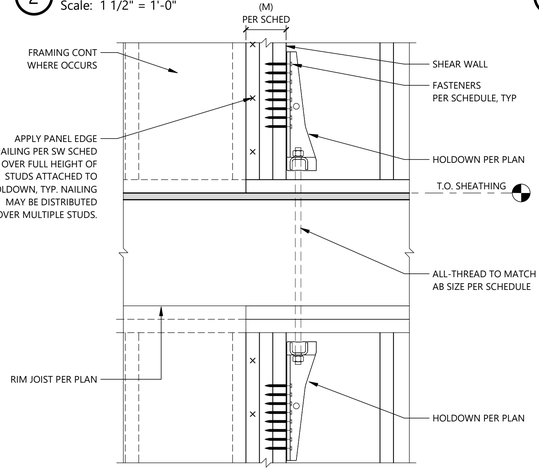



**Strap Option**

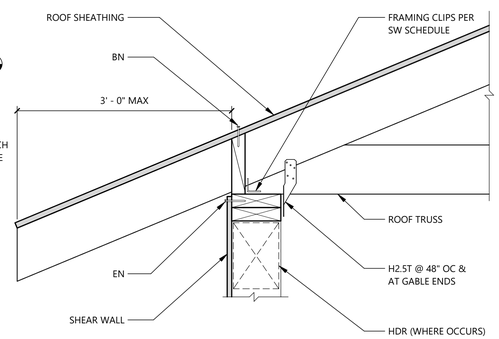



**Rim Board Option**

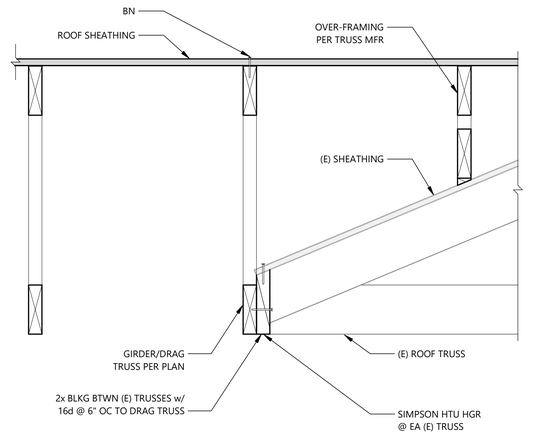
## 5 Typical Rim Splice
Scale: 1 1/2" = 1'-0"



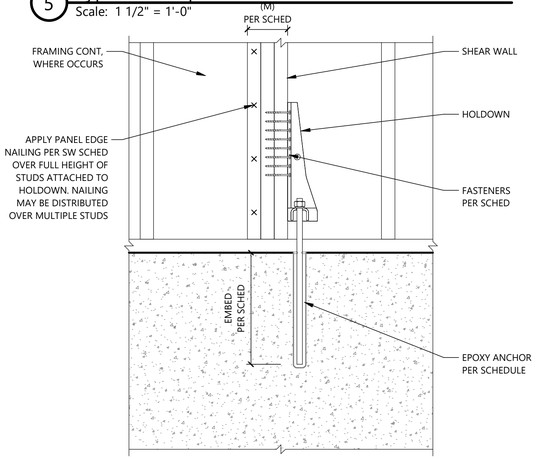

## 6 Typical Holdown at Wood Wall
Scale: 1 1/2" = 1'-0"



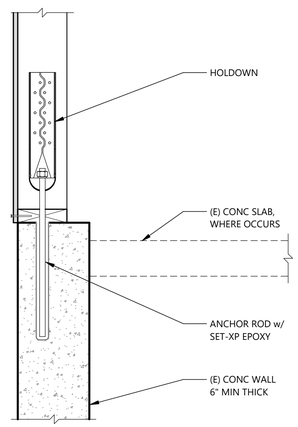

## 7 Typical Roof Truss Perp
Scale: 1 1/2" = 1'-0"




## 8 Typical Roof Truss Perp to Parallel
Scale: 1 1/2" = 1'-0"

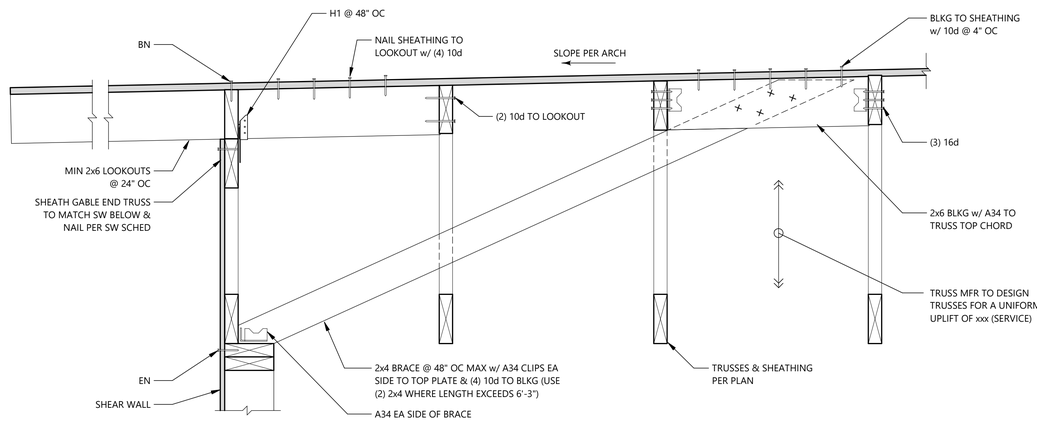



**HDU-PI Elevation**




**Section of HDU-PI**

## 9 Typical Holdown - Post-Installed
Scale: 1 1/2" = 1'-0"




## 11 Typical Roof Truss Parallel
Scale: 1 1/2" = 1'-0"

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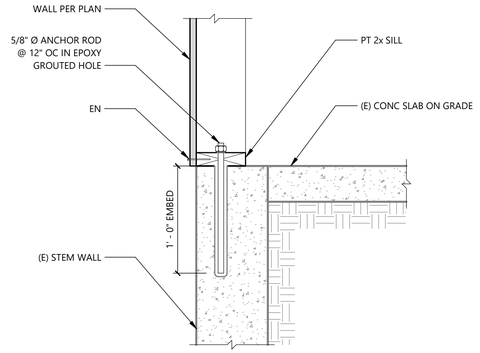
Department Approval

Sheet Title

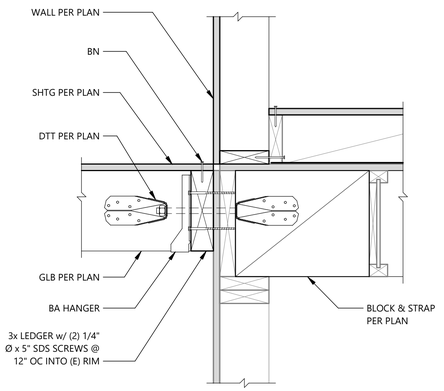
STRUCTURAL
WOOD DETAILS

Sheet Number

S6.2

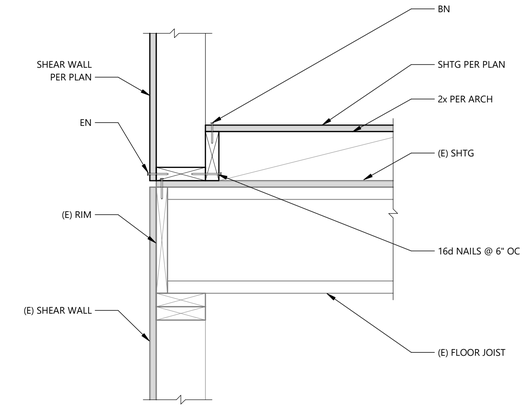



4 Exterior Wall at Patio
Scale: 1 1/2" = 1'-0"

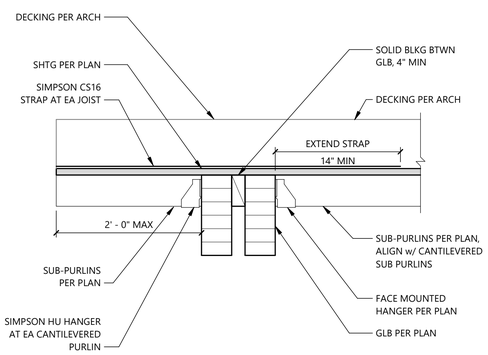



NOTES:
1. SEE 8/S6.3 FOR INFORMATION NOT SHOWN.

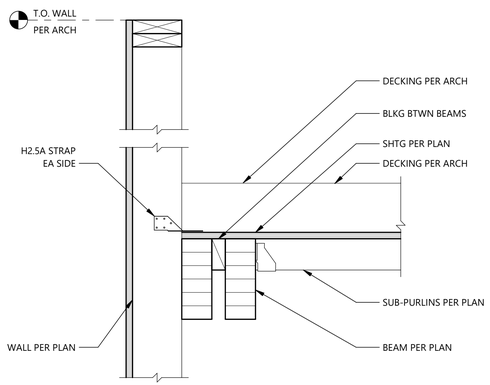
7 Deck Framing at Exterior Wall
Scale: 1 1/2" = 1'-0"



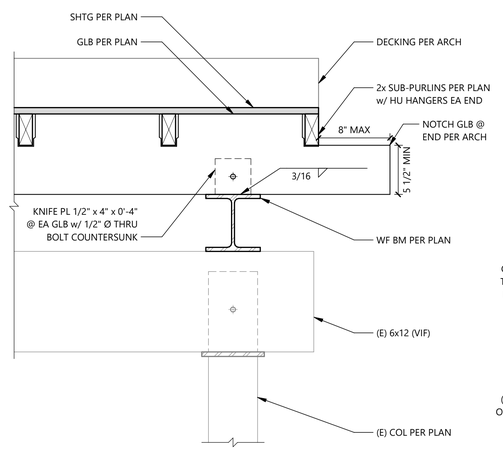

8 Exterior Wall Framing
Scale: 1 1/2" = 1'-0"



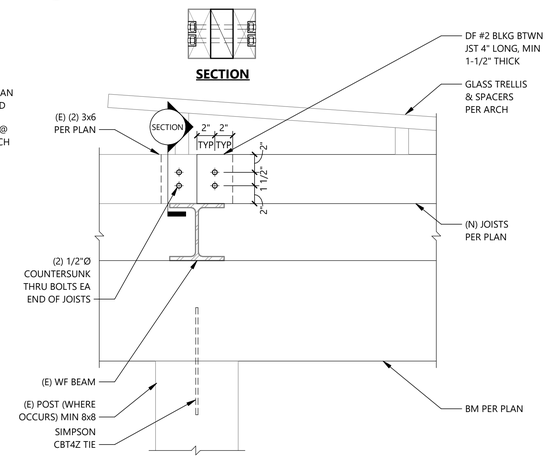

9 Deck Framing at Cantilever
Scale: 1 1/2" = 1'-0"




10 Deck Framing
Scale: 1 1/2" = 1'-0"




11 Deck Framing
Scale: 1 1/2" = 1'-0"




12 Trellis Framing
Scale: 1 1/2" = 1'-0"

LUND OPSAHL
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Engineer's Stamp

SHAWN ROBERTS
STATE OF WASHINGTON
27548
DIRECTOR OF STRUCTURAL ENGINEERING
PROFESSIONAL ENGINEER
10/01/2021

Project Title

# HARRIS REMODEL

1640 72nd Ave SE
Mercer Island, WA 98040

Project Information

| | |
|---|---|
| Project No. | 21-127-01 |
| Checked By | Checker |

Issue

| | |
|---|---|
| Permit Set | 10/01/2021 |

Department Approval

Sheet Title

STRUCTURAL
WOOD DETAILS

Sheet Number

S6.3