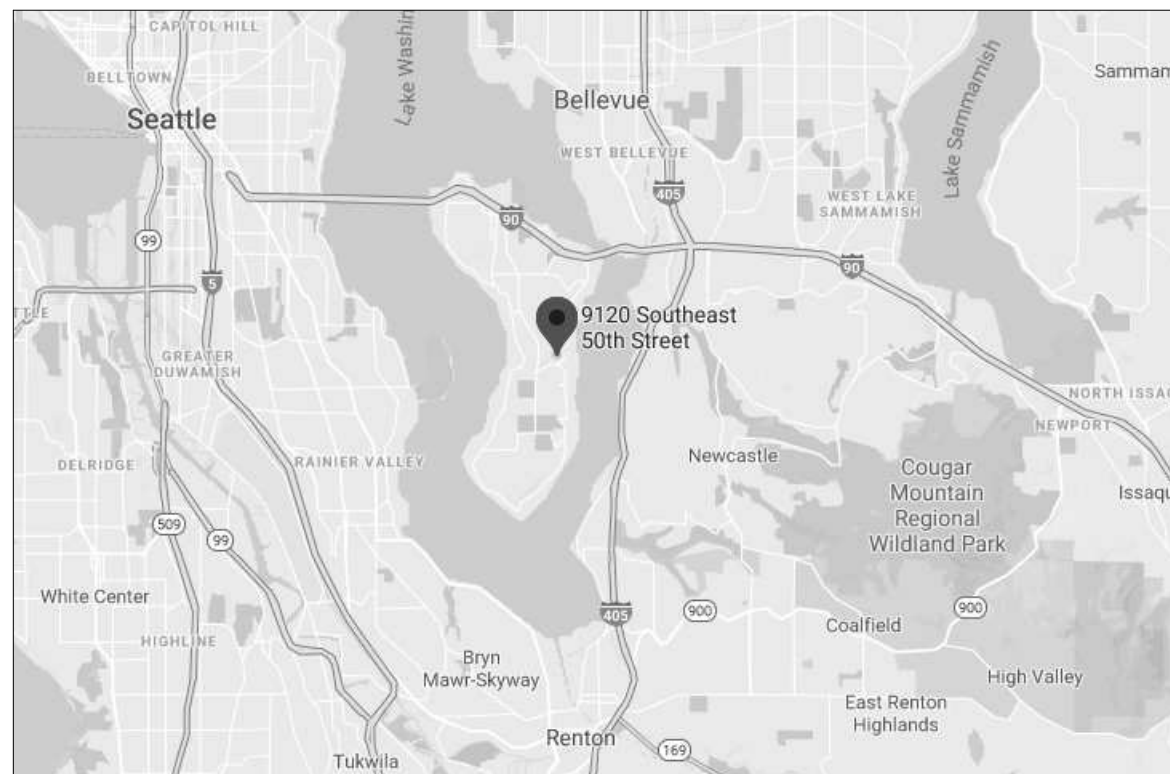
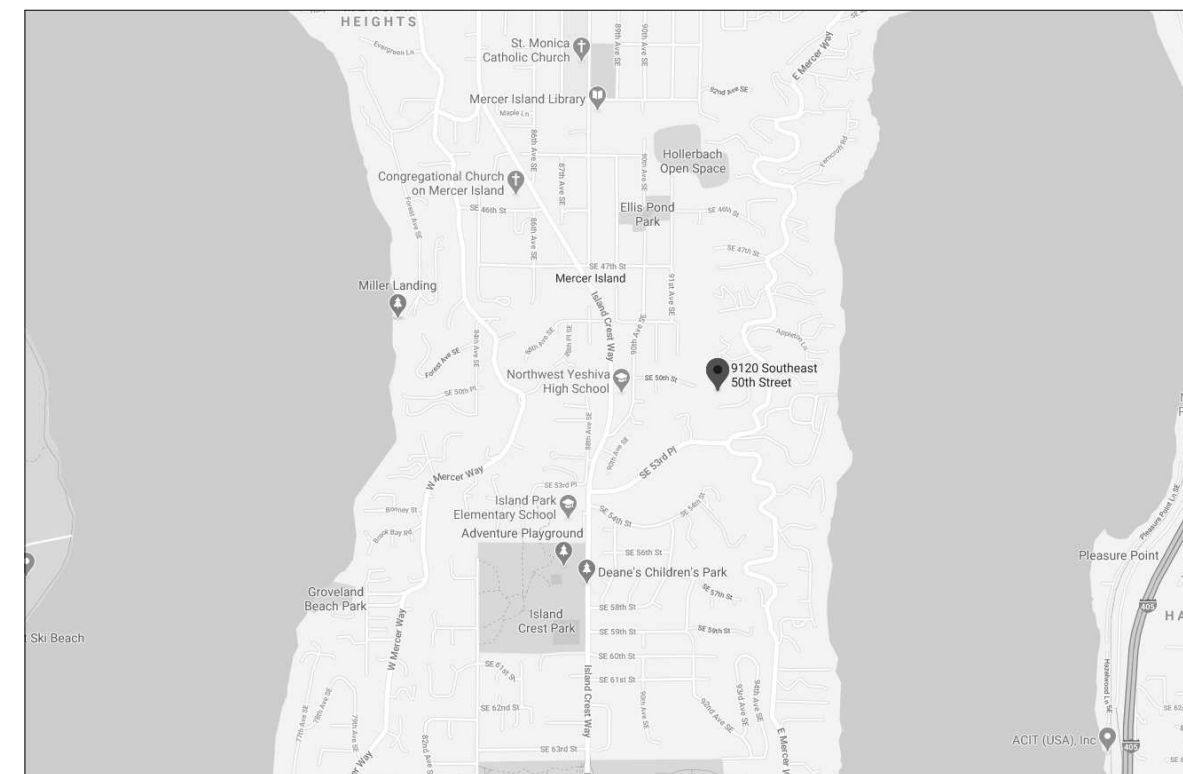


VICINITY PLAN



LOCATION PLAN



ABBREVIATIONS

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

SYMBOLS KEY

GRID LINES		0	0
ROOM REFERENCE		ROOM NAME 101	ROOM NAME ROOM NUMBER
DOOR REFERENCE		100A	ROOM NUMBER DOOR NUMBER
WINDOW REFERENCE		200A	ROOM NUMBER WINDOW NUMBER
EXTERIOR ELEVATIONS		1 A4.0	DRAWING NUMBER SHEET NUMBER
WALL SECTION		1 SIM 3.0	DRAWING NUMBER SHEET NUMBER
SECTION DETAIL		1 8.0	DRAWING NUMBER SHEET NUMBER
AREA DETAIL		1 9.0	DRAWING NUMBER SHEET NUMBER
INTERIOR ELEVATION		3 A4.0 2	DRAWING NUMBER SHEET NUMBER
ELEVATION DATUM		FINISH FLOOR 101'-3"	LOCATION ELEVATION
FINISH MATERIAL		1-1	FINISH TYPE: SEE FINISH SCHEDULE FINISH NUMBER
REVISION BUG		1	NOTE: ONLY MOST RECENT REVISION SHOWN CLOUDED. FOR PREVIOUS REVISIONS DELTAS REMAIN. DATE OF REVISIONS INDICATED AT RIGHT MARGINS.
ASSEMBLY TYPE		W4a	R: ROOF TYPE W: WALL TYPE F: FLOOR TYPE SEE ASSEMBLIES FOR MORE INFO
EXHAUST FAN			
SMOKE DETECTOR			
SMOKE/CARBON MONOXIDE DETECTOR			
CENTERLINE			

GENERAL NOTES

WORK SHALL BE IN **COMPLIANCE** WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE AS ADOPTED AND MODIFIED BY THE LOCAL JURISDICTIONAL LAND USE CODE, AND ALL OTHER LAWS, CODES, ORDINANCES AND REGULATIONS OF THE COUNTY, STATE, AND FEDERAL JURISDICTIONS. (LATEST EDITION AND AMENDMENTS)

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

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

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

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

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

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

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

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

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

PARTIAL LIEN WAIVERS TO BE SUBMITTED WITH MONTHLY REQUISITION.

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

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

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

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

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

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

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

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

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

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

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

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

PROVIDE GALVANIC INSULATION BETWEEN ALL DISSIMILAR METALS.

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

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

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

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

WATER PIPES TO BE INSULATED IN ALL UNHEATED AREAS.

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

GRAPHIC KEY

(NOT TO SCALE)

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

PROJECT DATA

EXISTING LOT AREA SUMMARY	
GROSS LOT AREA	33,106 SF
ACCESS EASEMENTS	316 SF
NET LOT AREA	32,790 SF
LOT SLOPE	47°/16'5" = 28.4%
SETBACKS	
FRONT YARD	20'
REAR YARD	25'
SIDE YARD	COMBINED SETBACK = 17% OF LOT WIDTH = 26.3' MINIMUM SETBACK = 33% OF COMBINED = 8.7'
ZONING	R-15

LOT COVERAGE	
ALLOWABLE LOT COVERAGE	35% = 11,477 SF

EXISTING	
(E) RESIDENCE/ GARAGE INCL OVERHANGS	4,226 SF
(E) DRIVING SURFACES (LESS EASEMENT)	2,164 SF
(E) TOTAL LOT COVERAGE	6,390 SF / 32,790 SF = 19.5%

DEMO	
(E) RESIDENCE/ CARPORT AND OVERHANGS TO BE REMOVED	0 SF
(E) DRIVING SURFACES TO BE REMOVED	0 SF
(E) LOT COVERAGE REMOVED	0 SF
PROPOSED	
(N) BUILDING/OVERHANGS/COVERED DECKS	530 SF
(N) DRIVING SURFACES (LESS 73 SF INCL IN BLDG OH)	0 SF

PROPOSED TOTAL LOT COVERAGE	6,920 SF
6,920 SF / 32,790 SF = 21.1%	

HARDSCAPE	
EXISTING	
PATIO'S/ WALKWAYS/STAIRS	940 SF
DECKS	510 SF
(E) TOTAL EXISTING	1,450 SF / 32,790 SF = 4.4% OF LOT AREA

DEMOLISHED	
PATIO'S/WALKWAYS/STAIRS	207 SF
DECKS	290 SF
TOTAL DEMOLISHED	497 SF

NEW	
TOTAL ADDED	0 SF

TOTAL PROPOSED HARDSCAPE	
(E) + (N) PATIO'S/ WALKWAY/STAIRS	733 SF
(E) + (N) DECKS	220 SF
TOTAL TO REMAIN	953 SF

TOTAL PROPOSED HARDSCAPE	953 SF / 32,790 SF = 2.9% OF LOT AREA
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REQUIRED LANDSCAPING	35% ALLOWABLE LOT COVERAGE + 9% ALLOWABLE HARDSCAPE COVERAGE = 41%; 59% LANDSCAPE
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EXISTING LANDSCAPE	
LOT AREA	32,790 SF
(E) LOT COVERAGE	6,390 SF (19.5%)
(E) HARDSCAPE	1,450 SF (4.4%)
TOTAL EXISTING	24,950 SF / 32,790 SF = 76.1% OF LOT AREA

PROPOSED LANDSCAPE	
SLOT AREA	32,790 SF
(P) LOT COVERAGE	6,920 SF (21.1%)
(P) HARDSCAPE	953 (2.9%)
TOTAL PROPOSED	24,917 SF / 32,790 SF = 76.0% OF LOT AREA

TREE REMOVAL	
(E) TREES TO BE REMOVED	0
(N) TREES TO BE PLANTED AS REPLACEMENT	0

GROSS FLOOR AREA (GFA)	
LESSER OF 12,000 SQUARE FEET OR 40 PERCENT OF THE LOT AREA	
40% OF LOT AREA	33,106 SF X 0.40 = 13,242 SF
ALLOWABLE GFA	12,000 SF

EXISTING BUILDING AREA SUMMARY (GFA)	
(E) BASEMENT	894 SF
(E) BASEMENT MODIFIER	482 SF
(E) MAIN LEVEL	1,917 SF
(E) COVERED DECK	344 SF
(E) DETACHED CARPORT	804 SF
TOTAL EXISTING BUILDING AREA (GSF)	3,477 SF
EXISTING FLOOR AREA RATIO:	3,477/33,106 = 10.5% OF LOT AREA

PROPOSED BUILDING AREA SUMMARY (GFA)	
PROPOSED BASEMENT	1,296 SF
BASEMENT MODIFIER	704 SF
PROPOSED MAIN LEVEL	2,043 SF
PROPOSED COVERED DECK	560 SF
PROPOSED DETACHED GARAGE	804 SF
TOTAL PROPOSED BUILDING AREA (GSF)	3,998 SF
PROPOSED FLOOR AREA RATIO:	3,998/33,106 = 12.1% OF LOT AREA

ENERGY/M.E.P.

OCCUPANT LOAD -	SINGLE FAMILY
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ENERGY CODE SUMMARY	
CLIMATE ZONE 1 (TABLE 6-1)	
PRESCRIPTIVE OPTION III (EFFICIENT ENVELOPE OPTION 1A)	
UNLIMITED GLAZING	.30
GLAZING U-FACTOR (VERTICAL):	.50
GLAZING U-FACTOR (OVERHEAD):	.20
DOOR U-FACTOR:	R-49
CEILING:	R-38
VAULTED CEILING:	R-21
WALL ABOVE GRADE:	R-21 (INT.) OR R-10 (EXT.)
WALL BELOW GRADE (INT.):	R-10
SLAB ON GRADE @ BASEMENT	

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

VENTILATION
FANS ON TIMERS. PER PLANS. VOLUME OF REQUIRED OUTDOOR VENTILATION AIR TO BE PROVIDED BASED ON TABLE 403.8.5.1 OF THE INTERNATIONAL MECHANICAL CODE.
* PLUMBING, MECHANICAL, ELECTRICAL WORK TO BE PERMITTED SEPARATELY.
SEE SHEET A002 FOR VENTILATION & ENERGY CALCULATIONS.

INSULATION UPGRADES
EXISTING CEILING, WALL OR FLOOR CAVITIES EXPOSED DURING THE CONSTRUCTION PROVIDED THAT THESE CAVITIES ARE FILLED WITH INSULATION. 2x4 FRAMED WALLS SHALL BE INSULATED TO A MINIMUM OF R-15 AND 2x6 FRAMED WALLS SHALL BE INSULATED TO A MINIMUM OF R-21.

LIFE SAFETY UPGRADES
CONTRACTOR TO VERIFY CARBON MONOXIDE ALARMS ARE OUTSIDE OF EACH BEDROOM IN THE IMMEDIATE VICINITY ON EACH FLOOR LEVEL PER IRC SECTION 315.5
CONTRACTOR TO VERIFY SMOKE ALARMS ARE OUTSIDE OF EACH BEDROOM IN THE IMMEDIATE VICINITY ON EACH FLOOR LEVEL PER IRC SECTION 314.2.2

GENERAL INFORMATION

PROJECT ADDRESS	9120 SE 50TH ST. MERCER ISLAND, WA 98040
PROJECT NUMBER	TBD
ASSESSOR'S PARCEL #	192405-9207
LEGAL DESCRIPTION	BEG AT PT 755.94 FT S OF NW COR OF QL 1 TH S 20 FT N 88-39-01 E 120 FT TH S 12-26-57 E 151.81 FT N 71-20-59 E 240 FT TH N 37-28-01 W 74.48 FT N 43-54-01 W 72 FT TH S 83-13-53 W 165.57 FT N 88-39-01 W 120 FT TO BEG

PROJECT DESCRIPTION	REMODEL AND ADDITION OF THE BASEMENT AND MAIN LEVEL.
ZONE	R-15
BUILDING TYPE	SINGLE FAMILY RESIDENCE

PROJECT DIRECTORY

OWNER	AMELIA & AARON McLEAR 9120 SE 50TH ST. MERCER ISLAND, WA 98040
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ARCHITECT	COLIN BRANDT BRANDT DESIGN GROUP 66 BELL ST., UNIT 1 SEATTLE, WA 98121 206.239.0850 colin@brandtdesigninc.com
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OWNER'S AGENT/CONTACT	BREE MEDLEY BRANDT DESIGN GROUP 66 BELL ST., UNIT 1 SEATTLE, WA 98121 206.239.0850 bree@brandtdesigninc.com
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GENERAL CONTRACTOR	STEVE MOELLER/PATRICK KERR, SCHULTZ MILLER 1015 NE 113TH ST. SEATTLE, WA 98125 (206) 281.1234 smoeller@schultzmillers.com pkerr@schultzmillers.com
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STRUCTURAL ENGINEER	BRETT MOZDEN SWENSON SAY FAGET 2124 THIRD AVENUE, SUITE 100 SEATTLE, WA 98121 206.443.6212 bmozden@sseengineers.com
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GEOTECHNICAL ENGINEER	MARC MCGINNIS GEOTECH CONSULTANTS, INC. 2401 - 10 TH AVENUE E SEATTLE, WA 98102 425.747.5618 marcm@geotechninc.com REPORT JN20322
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SHEET INDEX

DISCIPLINE	SHEET NUMBER	SHEET NAME
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ARCHITECTURAL	A000	COVERSHEET
	A001	WA STATE ENERGY CODE / VENTILATION CALC

CITY OF MERCER ISLAND

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



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

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

PRESCRIPTIVE ENERGY CODE COMPLIANCE FOR CLIMATE ZONE MARINE 4

Component	Fenestration ¹		Ceiling		Wood Framed Wall (Int.) ²	Mass Wall (Above Grade)	Below-Grade Wall ^{1,3}	Framed Floor	Slab R-Value & Depth
	Vertical	Overhead	Unf. Attic	Unf. Ceiling					

Fenestration is defined as skylights, roof windows, vertical windows (fixed or movable), opaque doors, glazed doors, glazed block and combination opaque/glazed doors. Fenestration includes products with glass and non-glass glazing materials.
¹ Int. Intermediate Fenestration devices standard Fenestration 3/4" air, with headers insulated with a minimum R-10 insulation.
² 10/15/21" TB means R-20 continuous insulation on the exterior of the wall, or R-15 on the continuous insulation on the interior of the wall, or R-21 cavity insulation plus thermal break between the slab and the basement wall at the interior of the basement wall. 10/15/21" TB shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-8 continuous insulation on the interior or exterior of the wall. "TB" means thermal break between floor slab and basement wall.

Whole House Ventilation (Prescriptive)

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

WHOLE HOUSE VENTILATION METHOD		Whole House Ventilation Rate
<input type="checkbox"/>	Intermittent Whole House Ventilation Using Exhaust Fans & Fresh Air Inlets. (IRC M1507.3.4)	
<input checked="" type="checkbox"/>	Intermittent Whole House Ventilation Integrated with a Forced Air System. (IRC M1507.3.5)	150 CFM
<input type="checkbox"/>	Intermittent Whole House Ventilation Using a Supply Fan. (IRC M1507.3.6)	
<input type="checkbox"/>	Intermittent Whole House Ventilation Using a Heat Recovery Ventilation System (IRC M1507.3.7)	

Source Specific Exhaust Ventilation & Fan Efficiency

Required in each kitchen, bathroom, water closet compartment, laundry room, indoor swimming pool, spa and other rooms where water vapor or cooking odor is produced. (IRC M1507.4) Fan efficiency from WAC 51-118 - Table R403.6.1. Kitchen Hoods greater than 400 cfm require makeup air per IRC M1503.4

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

Energy Efficiency Credits

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

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

S:\DSG\FORMS\2017\Building\2015_WSEC_IRC_Ventilation.pdf

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

OPTION	DESCRIPTION	CREDITS
1a	<input type="checkbox"/> EFFICIENT BUILDING ENVELOPE 1a: Vertical fenestration U = 0.28 Floor R-38 Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab. DB Compliance based on Section R402.1.4. Reduce the Total UA by 5%.	0.5
1b	<input type="checkbox"/> EFFICIENT BUILDING ENVELOPE 1b: Vertical fenestration U = 0.25 Wall R-21 plus R-4 Floor R-38 Basement wall R-21 int plus R-5 i Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab. DB Compliance based on Section R402.1.4. Reduce the Total UA by 15%.	1.0
1c	<input type="checkbox"/> EFFICIENT BUILDING ENVELOPE 1c: Prescriptive compliance is based on Table R402.1.1 with the following modifications. Vertical fenestration U = 0.22 Ceiling and single-roofer or joint-roofer R-49 advanced Wood Frame wall R-21 int plus R-2 i c Floor R-38 Basement wall R-21 int plus R-12 i c DB Compliance based on Section R402.1.4. Reduce the Total UA by 30%.	2.0
1d	<input type="checkbox"/> EFFICIENT BUILDING ENVELOPE 1d: Prescriptive compliance is based on Table R402.1.1 with the following modifications. Vertical fenestration U = 0.24. Projects using this option may not use Option 1a, 1b or 1c.	0.5
2a	<input type="checkbox"/> AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2a: Compliance based on R402.1.2. Reduce the tested air leakage to 3.0 or changes per hour maximum. AND All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code shall be met with a high efficiency fan (maximum 0.35 watts/cfm), not interlocked with the furnace fan. Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only mode. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the qualifying ventilation system.	0.5
2b	<input type="checkbox"/> AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2b: Compliance based on R402.1.2. Reduce the tested air leakage to 2.0 air changes per hour maximum. AND All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.70. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.	1.0
2c	<input type="checkbox"/> AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2c: Compliance based on R402.1.2. Reduce the tested air leakage to 1.5 air changes per hour maximum. AND All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.70. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.	1.5
3a	<input checked="" type="checkbox"/> HIGH EFFICIENCY HVAC EQUIPMENT 3a: Gas, propane or oil fired furnace with minimum AFUE of 94%, or Gas, propane or oil fired boiler with minimum AFUE of 92%. Projects may only include credit from one space heating option. 3a, 3b, 3c or 3d. Where a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	1.0
3b	<input type="checkbox"/> HIGH EFFICIENCY HVAC EQUIPMENT 3b: Air-source heat pump with minimum HSPF of 9.0. Projects may only include credit from one space heating option. 3a, 3b, 3c or 3d. Where a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	1.0
3c	<input type="checkbox"/> HIGH EFFICIENCY HVAC EQUIPMENT 3c: Closed-loop ground source heat pump, with a minimum COP of 3.3 OR Open loop water source heat pump with a maximum pumping hydraulic head of 150 feet and minimum COP of 3.6. Projects may only include credit from one space heating option. 3a, 3b, 3c or 3d. Where a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	1.5
3d	<input type="checkbox"/> HIGH EFFICIENCY HVAC EQUIPMENT 3d: Ductless Split System Heat Pump, Zoned Control: In homes where the primary space heating system is zonal electric heating, a ductless heat pump system shall be installed and provide heating to the largest zone of the housing unit. Projects may only include credit from one space heating option. 3a, 3b, 3c or 3d. Where a housing unit has two pieces of equipment (i.e., two furnaces) both must meet the standard to receive the credit. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	1.0

2015 WSEC - Table R406.2 - Continued

OPTION	DESCRIPTION	CREDITS
4	<input checked="" type="checkbox"/> HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM: All heating and cooling system components installed inside the conditioned space. This includes all equipment and distribution system components such as forward ducts, hydronic piping, hydronic floor heating loop, connectors and radiators. All combustion equipment shall be direct vent or sealed combustion. For forced air ducts: A maximum of 10 linear feet of return ducts and 5 linear feet of supply ducts may be located outside the conditioned space. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Flex duct connections must be made with nylon straps and installed using a plastic strapping tensioning tool. Ducts located outside the conditioned space must be insulated to a minimum of R-6. Locating system components in conditioned crawl spaces is not permitted under this option. Electric resistance heat and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 85% is not permitted under this option. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and of the ductwork.	1.0
5a	<input type="checkbox"/> EFFICIENT WATER HEATING 5a: All showerhead and kitchen sink faucets installed in the house shall be rated at 1.75 GPM or less. All other lavatory faucets shall be rated at 1.0 GPM or less. Plumbing Fixtures Flow Ratings. Low flow plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following requirements: 1. Residential bathroom lavatory sink faucets: Maximum flow rate - 3.8 L/min (1.0 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1 2. Residential kitchen faucets: Maximum flow rate - 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1 To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum flow rates for all showerheads, kitchen sink faucets, and other lavatory faucets.	0.5
5b	<input type="checkbox"/> EFFICIENT WATER HEATING 5b: Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF of 0.74 OR Water heater heated by ground source heat pump meeting the requirements of Option 3c. OR For R-2 occupancy, a central heat pump water heater with an EF greater than 2.0 that would supply DHW to all the units through a common pipe insulation. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.	1.0
5c	<input type="checkbox"/> EFFICIENT WATER HEATING 5c: Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF of 0.91 OR Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems. OR Electric heat pump water heater with a minimum EF of 2.0 and meeting the standards of NEEA's Northern Climate Specifications for Heat Pump Water Heaters To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of the minimum energy savings.	1.5
5d	<input type="checkbox"/> EFFICIENT WATER HEATING 5d: A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all the showers, and has a minimum efficiency of 40%, if installed for equal-flow or a minimum efficiency of 52%, if installed for unequal flow. Such units shall be rated in accordance with CSA B55.1 and be so labeled. To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specified the drain water heat recovery units and the plumbing layout needed to install it and labels or other documentation shall be provided that demonstrates that the unit complies with the standard.	0.5
6	<input type="checkbox"/> RENEWABLE ELECTRIC GENERATION: For each 1200 kWh of electrical generation per each housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows: For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTS. Documentation noting solar access shall be included on the plans. For wind generation projects design shall document annual power generation based on the following factors: - The wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.	0.5

Simple Heating System Size (network version available at http://www.energy.wa.edu/Documents/Desc_406c_nx5070000_Final_2015.xh)

Please complete the following information regarding the heating system for this project. The electronic version automatically calculates the information based on the information selected. The paper form below may be used if a computer is not available but will need to be hand calculated.

Conditioned Floor Area (sq ft)	3338
Average Ceiling Height (ft)	8.4
Conditioned Volume (cu ft)	28187

Glazing and Doors	U-Factor	X	Area	=	UA
	3		282	sf	85
Skylights	U-Factor	X	Area	=	UA
				sf	0
Insulation	U-Factor	X	Area	=	UA
			0	sf	0
Single Rafters or Joint Vaulted Ceilings	U-Factor	X	Area	=	UA
	0.06		2027	sf	52.7
Above Grade Walls	U-Factor	X	Area	=	UA
	0.048		672	sf	32.3
Floors	U-Factor	X	Area	=	UA
	0.03		295	sf	8.4
Below Grade Walls	U-Factor	X	Area	=	UA
	0.048		84	sf	4
Slab Below Grade	R-Factor	X	Length	=	UA
	1		23	ft	2.3
Slab on Grade	R-Factor	X	Length	=	UA
	1			ft	0

Sum of UA	184.7
Envelope Heat Load	8311.5 Btu / Hour
Sum of UA x 65	
Air Leakage Heat Load	13827 Btu / Hour
Volume x 0.6 x 45 x .038	
Building Design Heat Load	21038.5 Btu / Hour
Air Leakage Heat Load + Envelope Heat Load	
Building and Duct Heat Load	24132 Btu / Hour
Ducts in unconditioned space: Building Design Heat Load x 1.10	
Ducts in conditioned space: Building Design Heat Load x 1	
Maximum Heat Equipment Output	15765 Btu / Hour
Building and Duct Heat Load x 1.48 for Forced Air Furnace	
Building and Duct Heat Load x 1.25 for Heat Pump	

Table 403.4.2 WHOLE HOUSE MECHANICAL VENTILATION AIRFLOW RATE (CONTINUOUSLY OPERATING SYSTEMS)

Floor Area (ft²)	Bedrooms ¹				
	1	2	3	4	>5
<500	30	30	35	45	50
500 - 1000	30	35	40	50	55
1001 - 1500	30	40	45	55	60
1501 - 2000	35	45	50	60	65
2001 - 2500	40	50	55	65	70
2501 - 3000	45	55	60	70	75
3001 - 3500	50	60	65	75	80
3501 - 4000	55	65	70	80	85
4001 - 4500	60	70	75	85	90
4501 - 5000	65	75	80	90	95

¹ Minimum airflow (Q₀) is set at not less than 30 cfm for each dwelling units.

Table 403.4.6.5 INTERMITTENT WHOLE HOUSE MECHANICAL VENTILATION RATE

Run-time Percentage in Each 4-hour Segment	FACTORS ^{a, b}			
	50%	66%	75%	100%
Factor ^a	2	1.5	1.3	1.0

- ^a For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.
- ^b Extrapolation beyond the table is prohibited.

WHOLE HOUSE VENTILATION CALC

PROPOSED CONDITIONED SF = 3338 SF
NUMBER OF BEDROOMS = 4
AIRFLOW IN CFM REQUIRED FOR CONTINUOUS VENTILATION = 75 CFM
RUN TIME PERCENTAGE IN EACH 4 HOUR SEGMENT = 2
FACTOR = 2
CALCULATION 75 CFM X 2 = 150 CFM

403.4.6.5 INTERMITTENT OFF OPERATION

WHOLE HOUSE MECHANICAL VENTILATION SYSTEMS SHALL BE PROVIDED WITH ADVANCED CONTROLS THAT ARE CONFIGURED TO OPERATE THE SYSTEM WITH INTERMITTENT OFF OPERATION AND SHALL OPERATE FOR A LEAST TWO HOURS IN EACH FOUR-HOUR SEGMENT. THE WHOLE HOUSE VENTILATION AIRFLOW RATE DETERMINED IN ACCORDANCE WITH SECTION 403.4.2 AS CORRECTED BY SECTION 403.4.3 SHALL BE MULTIPLIED BY THE FACTOR DETERMINED IN ACCORDANCE WITH TABLE 403.4.6.5.

403.4 GROUP R WHOLE HOUSE MECHANICAL VENTILATION SYSTEM.

EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH A WHOLE HOUSE MECHANICAL VENTILATION SYSTEM THAT COMPLIES WITH SECTIONS 403.4.1 THROUGH 403.4.6. EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH LOCAL EXHAUST COMPLIING WITH SECTION 403.4.7. ALL OCCUPIED SPACES, INCLUDING PUBLIC CORRIDORS, OTHER THAN THE GROUP R DWELLING UNITS AND/OR SLEEPING UNITS, THAT SUPPORT THESE GROUP R OCCUPANCIES SHALL MEET THE VENTILATION REQUIREMENT OR NATURAL VENTILATION REQUIREMENTS OF SECTION 402 OR THE MECHANICAL VENTILATION REQUIREMENTS OF SECTIONS 403.1 THROUGH 403.3.

403.4.1 SYSTEM DESIGN

THE WHOLE HOUSE VENTILATION SYSTEM SHALL CON SIST OF ONE OR MORE SUPPLY FANS, ONE OR MORE EXHAUST FANS, OR AN ERV/HRV WITH INTEGRAL FANS, AND THE ASSOCIATED DUCTS AND CONTROLS. LOCAL EXHAUST FANS SHALL BE PERMITTED TO SERVE AS PART OF THE WHOLE HOUSE VENTILATION SYSTEM WHEN PROVIDED WITH THE PROPER CONTROLS IN ACCORDANCE WITH SECTION 403.4.5. THE SYSTEMS SHALL BE DESIGNED AND IN STALLED TO SUPPLY AND EXHAUST THE MINIMUM OUTDOOR AIRFLOW RATES PER SECTION 403.4.2 AS ORRECTED BY THE BALANCED AND/OR DISTRIBUTED WHOLE HOUSE VENTILATION SYSTEM COEFFICIENTS IN ACCORDANCE WITH SECTION 403.4.3 WHERE APPLICABLE.

403.4.5 WHOLE HOUSE VENTILATION CONTROLS

- 1. THE WHOLE HOUSE VENTILATION SYSTEM SHALL BE CONTROLLED WITH MANUAL SWITCHES, TIMERS OR OTHER MEANS THAT PROVIDE FOR AUTOMATIC OPERATION OF THE VENTILATION SYSTEM THAT ARE READILY ACCESSIBLE BY THE OCCUPANT.
- 2. WHOLE HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE OFF OF THE SYSTEM BY THE OC. UPANT DURING PERIODS OF POOR OUTDOOR AIR QUALITY. CONTROLS SHALL IN CLUDE PERMANENT TEXT OR A SYMBOL INDICATING THEIR FUNCTION. RECOMEN DED CONTROL PERMANENT LABELING TO INCLUDE TEXT SIMILAR TO THE FOLLOW CERTIFIED ON 3/10/2021 WAC 51-52-0403 PAGE 6ING: "LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." MANUAL CONTROLS SHALL BE PROVIDED WITH READY ACCESS FOR THE OCCUPANT.
EXCEPTION: CENTRAL WHOLE HOUSE MECHANICAL SYSTEMS WITH SUPPLY AIR AND/OR EXHAUST THAT SERVE MORE THAN ONE DWELLING OR SLEEP UNITS ARE NOT REQUIRED TO HAVE MANUAL OVERRIDE OFF CONTROLS ACCESSIBLE TO THE OCCUPANT.
- 3. WHOLE HOUSE VENTILATION SYSTEMS SHALL BE CONFIGURED TO OPERATE CONTINUOUSLY EXCEPT WHERE INTERMITTENT OFF CONTROLS ARE PROVIDED IN ACCORDANCE WITH SECTION 403.4.6.5 AND ALLOWED BY SECTION 403.4.4.2.

403.4.2 WHOLE HOUSE MECHANICAL VENTILATION RATES

THE SLEEPING UNIT WHOLE HOUSE MECHANICAL VENTILATION MINIMUM OUTDOOR AIRFLOW RATE SHALL BE DETERMINED IN ACCORDANCE WITH THE BREATHING ZONE VENTILATION RATES MINIMUM OUTDOOR AIRFLOW RATE SHALL BE DETERMINED IN ACCORDANCE WITH THE BREATHING ZONE VENTILATION RATES REQUIREMENTS OF SECTION 403.3.1.1.2 USING EQUATION 4-2. THE DWELLING UNIT WHOLE HOUSE MECHANICAL VENTILATION MINIMUM OUTDOOR AIRFLOW RATE SHALL BE DETERMINED IN ACCORDANCE WITH EQUATION 4-10 OR TABLE 403.4.2.

403.4.6.4 FURNACE INTEGRATED SUPPLY

SYSTEMS USING SPACE CONDITION HEATING AND/OR COOLING AIR HANDLER FANS FOR OUTDOOR AIR SUPPLY AIR DISTRIBUTION ARE NOT PERMITTED.
EXCEPTION: AIR HANDLER FANS SHALL BE PERMITTED THAT HAVE MULTI-SPEED OR VARIABLE SPEED SUPPLY AIRFLOW CONTROL CAPABILITY WITH A LOW SPEED OPERATION NOT GREATER THAN 25 PERCENT OF THE RATED SUPPLY AIR FLOW CAPACITY DURING VENTILATION ONLY OPERATION. OUTDOOR AIR INTAKE OPENINGS MUST MEET THE PROVISIONS OF SECTIONS 401.4 AND 401.5 AND MUST INCLUDE A MOTORIZED DAMPER THAT IS ACTIVATED BY THE WHOLE HOUSE VENTILATION SYSTEM CONTROLLER. INTAKE AIR OPENINGS SHALL BE DESIGNED TO LIMIT THE PRESSURE DIFFERENCE TO THE OUTSIDE TO LIMITING THE INLET FREE AREA MAXIMUM VELOCITY TO 500 FT PER MIN. THE MOTORIZED DAMPER MUST BE CONTROLLED TO MAINTAIN THE OUTDOOR AIRFLOW INTAKE AIRFLOW WITHIN 10 PERCENT OF THE WHOLE HOUSE MECHANICAL EXHAUST AIRFLOW RATE. THE SUPPLY AIR HANDLER SHALL PROVIDE SUPPLY AIR TO EACH HABITABLE SPACE IN THE RESIDENTIAL UNIT. THE WHOLE HOUSE VENTILATION SYSTEM SHALL INCLUDE EXHAUST FANS IN ACCORDANCE WITH SECTION 403.4.6.1 TO MEET THE PRESSURE EQUALIZATION REQUIREMENTS OF SECTION 501.4. THE FLOW RATE FOR THE OUTDOOR AIR INTAKE MUST BE TESTED AND VERIFIED AT THE MINIMUM VENTILATION FAN SPEED AND THE MAXIMUM HEATING OR COOLING FAN SPEED. THE RESULTS OF THE TEST SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION 403.4.6.7.

Brandt

Design Group

66 Bell Street
Unit 1
Seattle, WA
98121

206.239.0850

brandtdesigninc.com

8843



McLear Residence

9120 SE 60th St.
Mercer Island, WA 98040

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PERMIT DRAWINGS

DATE: 3/17/2021

SHEET SIZE: D (24x36)

REVISIONS

NO. DATE:

DRAWN BY: KJ

CHECKED BY: BM

WA STATE ENERGY CODE / VENTILATION CALC

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

A001

DEDICATED APPROVAL STAMP SPACE

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

New Construction

Based on the protocol for "Total Leakage Testing," or "Leakage Testing to Outdoors" duct leakage in new construction shall not exceed 0.04 CFM₂₅ x floor area (in square feet) served by the system for leakage to outdoors or for total leakage when tested post construction. When testing at rough-in, targets should not exceed 0.04 CFM₂₅ x floor area (in square feet) for total leakage or 0.03 CFM₂₅ x floor area (in square feet) if the air handler is not installed.

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

Existing Construction

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

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

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

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

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

In addition, the following requirements must be met:

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

Total Duct Leakage Test

Testing Procedure Application:

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

Standard:

- For certification, the measured duct leakage must not exceed **0.04 CFM₂₅ x floor area** (in square feet) served by the system at rough-in **when the air handler is installed.**
- The measured duct leakage at rough-in must not exceed **0.03 CFM₂₅ x floor area** (in square feet) served by the system **when the air handler is not installed.**
- If testing post construction, the total leakage must not exceed **0.04 CFM₂₅ x floor area** (in square feet) served by the system.

Duct Leakage Affidavit (New Construction)

Permit #: _____
 House address or lot number: _____
 City: _____ Zip: _____
 Cond. Floor Area (ft²): _____ Source (circle one): Plans Estimated Measured
 Duct tightness testing is not required. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope. Ducts located in crawl spaces do not qualify for this exception.
 Air Handler in conditioned space? yes no Air Handler present during test? yes no
 Circle Test Method: Leakage to Outside Total Leakage
Maximum duct leakage:
 Post Construction, total duct leakage: (floor area x .04) = _____ CFM@25 Pa
 Post Construction, leakage to outdoors: (floor area x .04) = _____ CFM@25 Pa
 Rough-In, total duct leakage with air handler installed: (floor area x .04) = _____ CFM@25 Pa
 Rough-In, total duct leakage with air handler not installed: (floor area x .03) = _____ CFM@25 Pa

Test Result: _____ CFM@25Pa
 Ring (circle one if applicable): Open 1 2 3
 Duct Tester Location: _____ Pressure Tap Location: _____
 I certify that these duct leakage rates are accurate and determined using standard duct testing protocol.
 Company Name: _____ Technician: _____
 Technician Signature: _____
 Date: _____
 Phone Number: _____

Duct Leakage Test Results (Existing Construction)

Permit #: _____
 House address or lot number: _____
 City: _____ Zip: _____
 Cond. Floor Area (ft²): _____
 Duct tightness testing is not required for this residence per exceptions listed at the end of this document

Test Result: _____ CFM@25Pa
 Ring (circle one): Open 1 2 3
 Duct Tester Location: _____
 Pressure Tap Location: _____
 I certify that these duct leakage rates are accurate and determined using standard duct testing protocol
 Company Name: _____
 Duct Testing Technician: _____
 Technician Signature _____ Date _____
 Phone Number: _____

Washington State Energy Code Reference:
R101.4.3.1 Mechanical Systems: When a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-conditioning equipment shall be tested as specified in RS-33. The test results shall be provided to the building official and the homeowner.
Exceptions:
 1. Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in RS-33.
 2. Ducts with less than 40 linear feet in unconditioned spaces.
 3. Existing duct systems constructed, insulated or sealed with asbestos.
 4. Additions of less than 750 square feet.

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

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

Property Address: _____
Conditioned Floor Area _____ **Date:** ____/____/____
Builder or registered design professional: _____
Signature: _____

R-Values

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

U-Factors and SHGC

NRFC rating (or)	Windows U-_____	SHGC- N/A
Default rating (per ASHRAE 90.1-2010)	Skylights U-_____	SHGC- N/A

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

Heating, Cooling & Domestic Hot Water

System	Type	Efficiency
Heating		
Cooling		
DHW		

Duct & Building Air Leakage

All ducts & HVAC in conditioned space (yes / no) Insulation R- _____
 Air handler present (yes / no) _____
 Test Target _____ CFM@25Pa Test Result _____ CFM@25Pa
 Building air leakage target: ACH₅₀ < 5.0 - Tested leakage: ACH₅₀ = _____

Onsite Renewable Energy Electric Power System

System type: _____ Rated annual generation _____ kWh



LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 2008020800044)
 THAT PORTION OF GOVERNMENT LOT 1, SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 COMMENCING AT THE NORTHWEST CORNER OF SAID GOVERNMENT LOT 1,
 THENCE SOUTH 1°20'59" WEST ALONG THE WEST LINE THEREOF 755.94 FEET TO THE TRUE POINT OF BEGINNING,
 THENCE CONTINUING SOUTH 1°20'59" WEST ALONG SAID WEST LINE 20.00 FEET,
 THENCE SOUTH 88°39'01" EAST 120.00 FEET,
 THENCE SOUTH 12°26'57" EAST 151.81 FEET,
 THENCE NORTH 71°20'59" EAST 240.00 FEET,
 THENCE NORTH 37°28'01" WEST 74.48 FEET,
 THENCE NORTH 43°54'01" WEST 72.00 FEET,
 THENCE SOUTH 83°13'53" WEST 167.57 FEET TO A POINT FROM WHICH THE TRUE POINT OF BEGINNING BEARS NORTH 88°39'01" WEST,
 THENCE NORTH 88°39'01" WEST 120.00 FEET TO THE TRUE POINT OF BEGINNING.

BASIS OF BEARINGS

N 88°20'18" W BETWEEN SURVEY MONUMENTS FOUND ON THE CENTERLINE OF S.E. 50TH ST., PER R1

REFERENCES

R1 RECORD OF SURVEY, RECORDED IN BOOK 55 OF SURVEYS, PAGE 164, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD(88) PER GPS OBSERVATIONS.

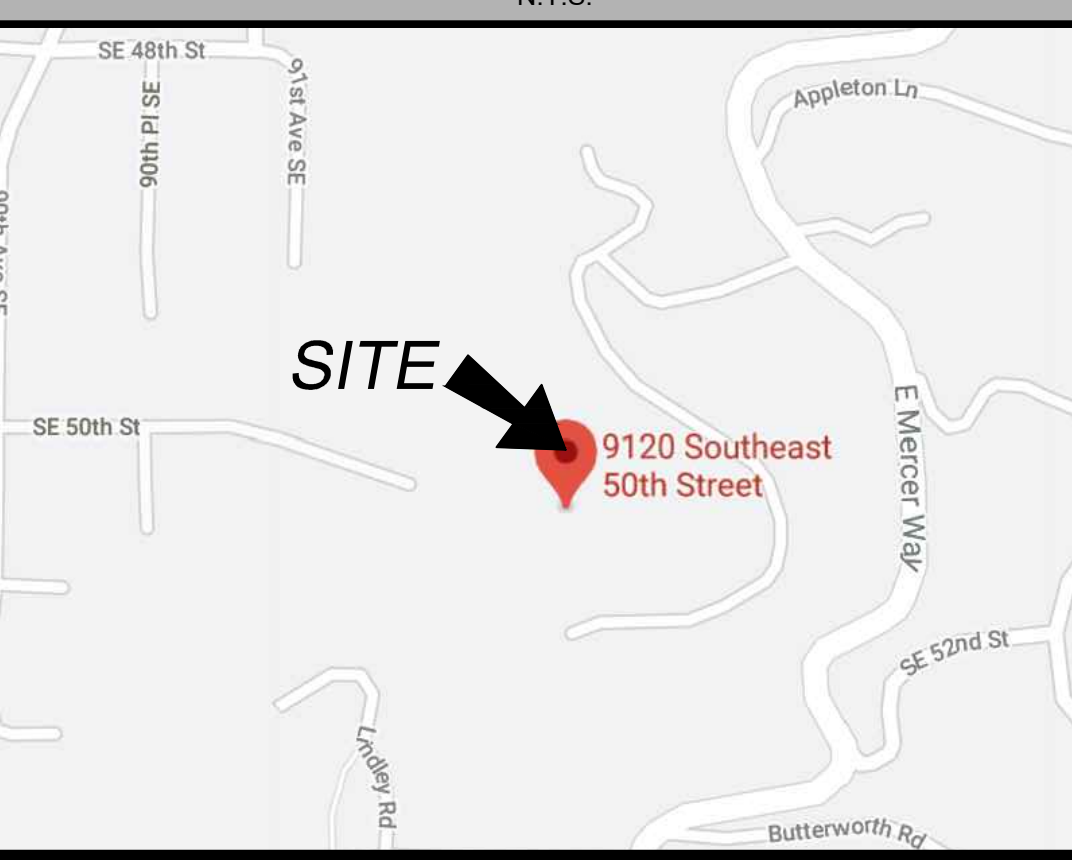
SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN APRIL OF 2020. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 192405-9207.
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 33,483± S.F. (0.77 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 5-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

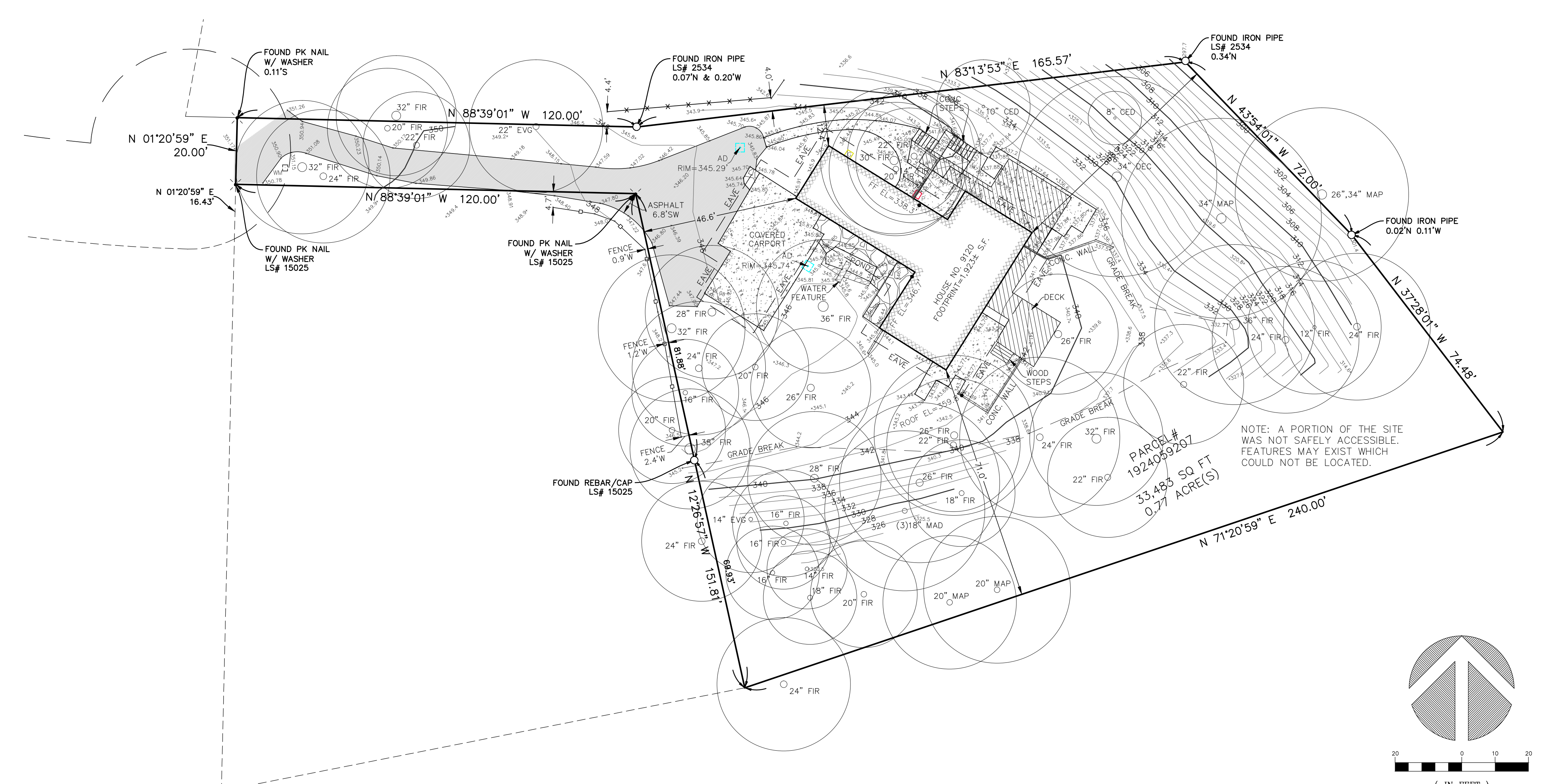
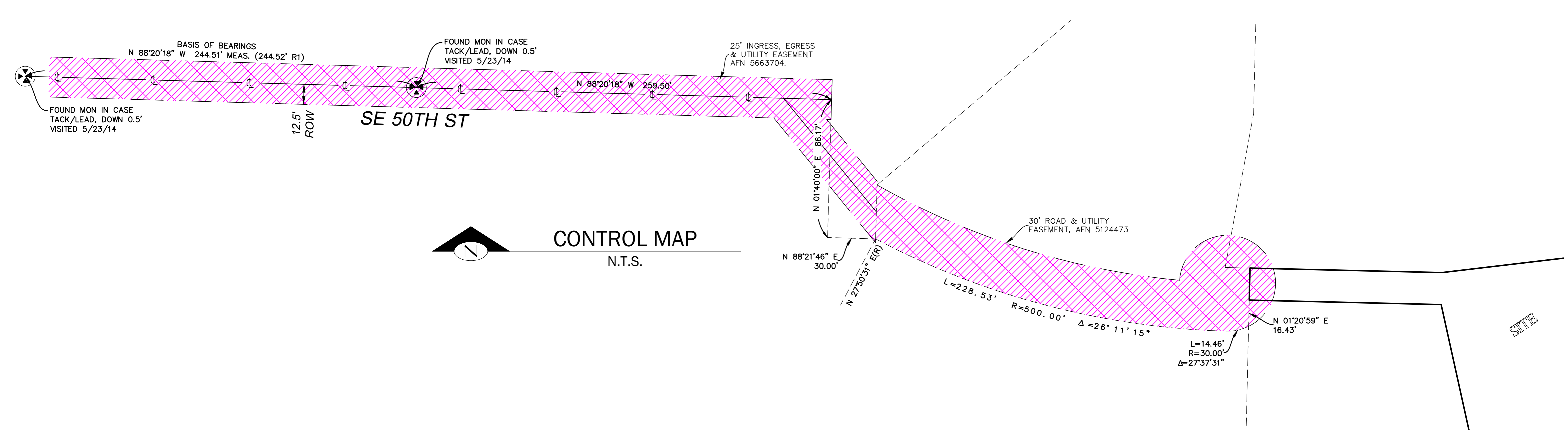
LEGEND

	ASPHALT SURFACE		AREA DRAIN
	BUILDING		EASEMENT AREA
	CENTERLINE ROW		DECK
	CONCRETE SURFACE		GAS METER
	RETAINING WALL		NAIL AS NOTED
	FLAGSTONE SURFACE		POWER METER
	FENCE LINE (CHAIN LINK)		ROCKERY
	FENCE LINE (WOOD)		TREE (AS NOTED)
	REBAR AS NOTED (FOUND)		WATER METER
	MONUMENT IN CASE (FOUND)		

VICINITY MAP
N.T.S.

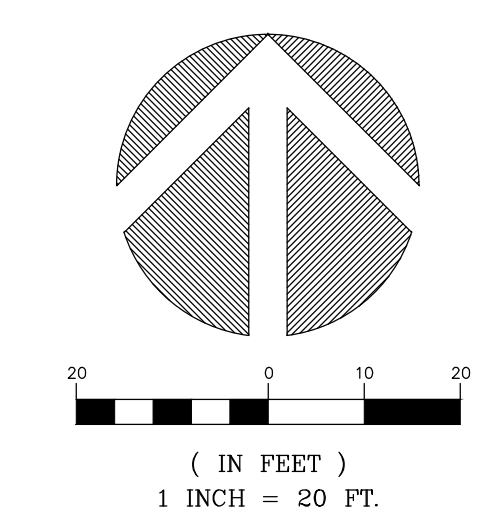


TOPOGRAPHIC & BOUNDARY SURVEY

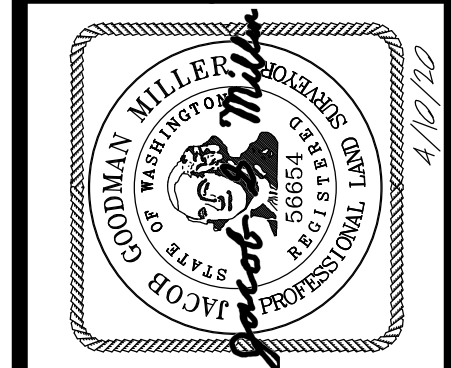


NOTE: A PORTION OF THE SITE WAS NOT SAFELY ACCESSIBLE. FEATURES MAY EXIST WHICH COULD NOT BE LOCATED.

PARCEL # 1924059207
33,483 SQ FT
0.77 ACRE(S)



TOPOGRAPHIC & BOUNDARY SURVEY
NW 1/4 OF NE 1/4 SEC 19, TWP. 24N., RGE 05E., W.M.
PARCEL NO. 192405-9207



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

JOB NUMBER:	200232
DATE:	04/10/2020
DRAFTED BY:	RSN
CHECKED BY:	JGM/RLS
SCALE:	1" = 20'

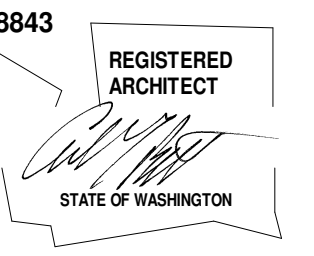
REVISION HISTORY	

SHEET NUMBER
1 OF 1

measure success

McLEAR RESIDENCE
9120 SE 50TH ST
MERCER ISLAND, WA 98040

STEEP SLOPE/BUFFER DISCLAIMER:
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PERMIT DRAWINGS

DATE: 3/17/2021

SHEET SIZE: D (24x36)

REVISIONS

NO. DATE:

DRAWN BY: KJ

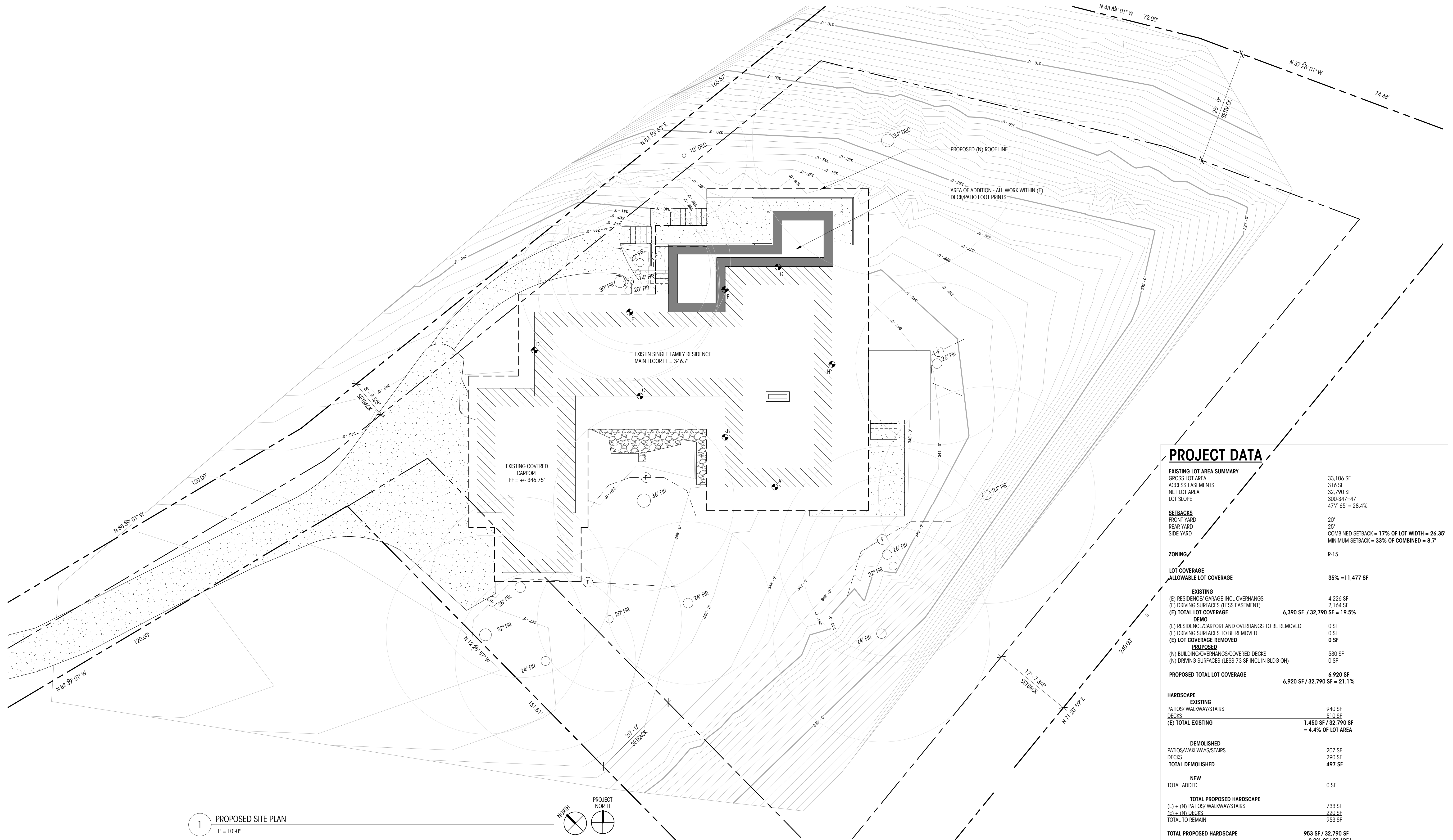
CHECKED BY: BM

SITE PLAN

SCALE: As indicated

A100

DEDICATED
APPROVAL
STAMP SPACE



1 PROPOSED SITE PLAN
1" = 10'-0"

MIDPOINT ELEVATION	WALL SEGMENT LENGTH
A = 345'	A = 23'
B = 346.75'	B = 20'
C = 346'	C = 42'
D = 346'	D = 18'
E = 344'	E = 29.5'
F = 339'	F = 10'
G = 337'	G = 23'
H = 341'	H = 48'
TOTAL x WSL = 73.287	TOTAL = 213.5
AVERAGE BUILDING HEIGHT = 73.287 / 213.5 = 343.3'	

SITE PLAN LEGEND

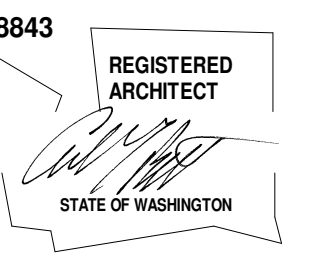
- PROPERTY LINE
- BUILDING FOOTPRINT
- PAVING/HARDSCAPE/DECK
- TREE PROTECTION FENCE
- CONTOUR MAJOR
- CONTOUR MINOR
- (E) FOOTPRINT
- AREA OF ADDITION, WITHIN (E) DECK/PATIO FOOT PRINTS
- (E) ROOF OVERHANG
- (E) CONCRETE DRIVE/PAVING
- (E) CONCRETE DRIVE/PAVING
- (E) TREE TO REMAIN
- (N) TREE
- (E) TREE TO BE REPLACED

NOTES

- ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
- ALL DIMENSIONS AT INTERIOR WALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.

PROJECT DATA

EXISTING LOT AREA SUMMARY	
GROSS LOT AREA	33,106 SF
ACCESS EASEMENTS	314 SF
NET LOT AREA	32,790 SF
LOT SLOPE	300-347=47 47/165' = 28.4%
SETBACKS	
FRONT YARD	20'
REAR YARD	25'
SIDE YARD	COMBINED SETBACK = 17% OF LOT WIDTH = 26.35' MINIMUM SETBACK = 33% OF COMBINED = 8.7'
ZONING	
	R-15
LOT COVERAGE	
ALLOWABLE LOT COVERAGE	35% = 11,477 SF
EXISTING	
(E) RESIDENCE/ GARAGE INCL OVERHANGS	4,226 SF
(D) DRIVING SURFACES (LESS EASEMENT)	2,144 SF
(E) TOTAL LOT COVERAGE	6,390 SF / 32,790 SF = 19.5%
DEMOL	
(E) RESIDENCE/CARPORT AND OVERHANGS TO BE REMOVED	0 SF
(E) DRIVING SURFACES TO BE REMOVED	0 SF
(E) LOT COVERAGE REMOVED	0 SF
PROPOSED	
(N) BUILDING/OVERHANGS/COVERED DECKS	530 SF
(N) DRIVING SURFACES (LESS 73 SF INCL IN BLDG OH)	0 SF
PROPOSED TOTAL LOT COVERAGE	6,920 SF
	6,920 SF / 32,790 SF = 21.1%
HARDSCAPE	
EXISTING	
PATIOS/ WALKWAY/STAIRS	940 SF
DECKS	610 SF
(E) TOTAL EXISTING	1,450 SF / 32,790 SF = 4.4% OF LOT AREA
DEMOLISHED	
PATIOS/WALKWAYS/STAIRS	207 SF
DECKS	290 SF
TOTAL DEMOLISHED	497 SF
NEW	
TOTAL ADDED	0 SF
TOTAL PROPOSED HARDSCAPE	
(E) + (N) PATIOS/ WALKWAY/STAIRS	733 SF
(E) + (N) DECKS	220 SF
TOTAL TO REMAIN	953 SF
TOTAL PROPOSED HARDSCAPE	953 SF / 32,790 SF = 2.9% OF LOT AREA
REQUIRED LANDSCAPING	
35% ALLOWABLE LOT COVERAGE + 9% ALLOWABLE HARDSCAPE COVERAGE = 41%; 59% LANDSCAPE	
EXISTING LANDSCAPE	
LOT AREA	32,790 SF
(E) LOT COVERAGE	6,390 SF (19.5%)
(E) HARDSCAPE	1,450 SF (4.4%)
TOTAL EXISTING	24,950 SF / 32,790 SF = 76.1% OF LOT AREA
PROPOSED LANDSCAPE	
SLOT AREA	32,790 SF
(P) LOT COVERAGE	6,920 SF (21.1%)
(P) HARDSCAPE	953 (2.9%)
TOTAL PROPOSED	24,917 SF / 32,790 SF = 76.0% OF LOT AREA
TREE REMOVAL	
(E) TREES TO BE REMOVED	0
(N) TREES TO BE PLANTED AS REPLACEMENT	0



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REVISIONS
NO. DATE:

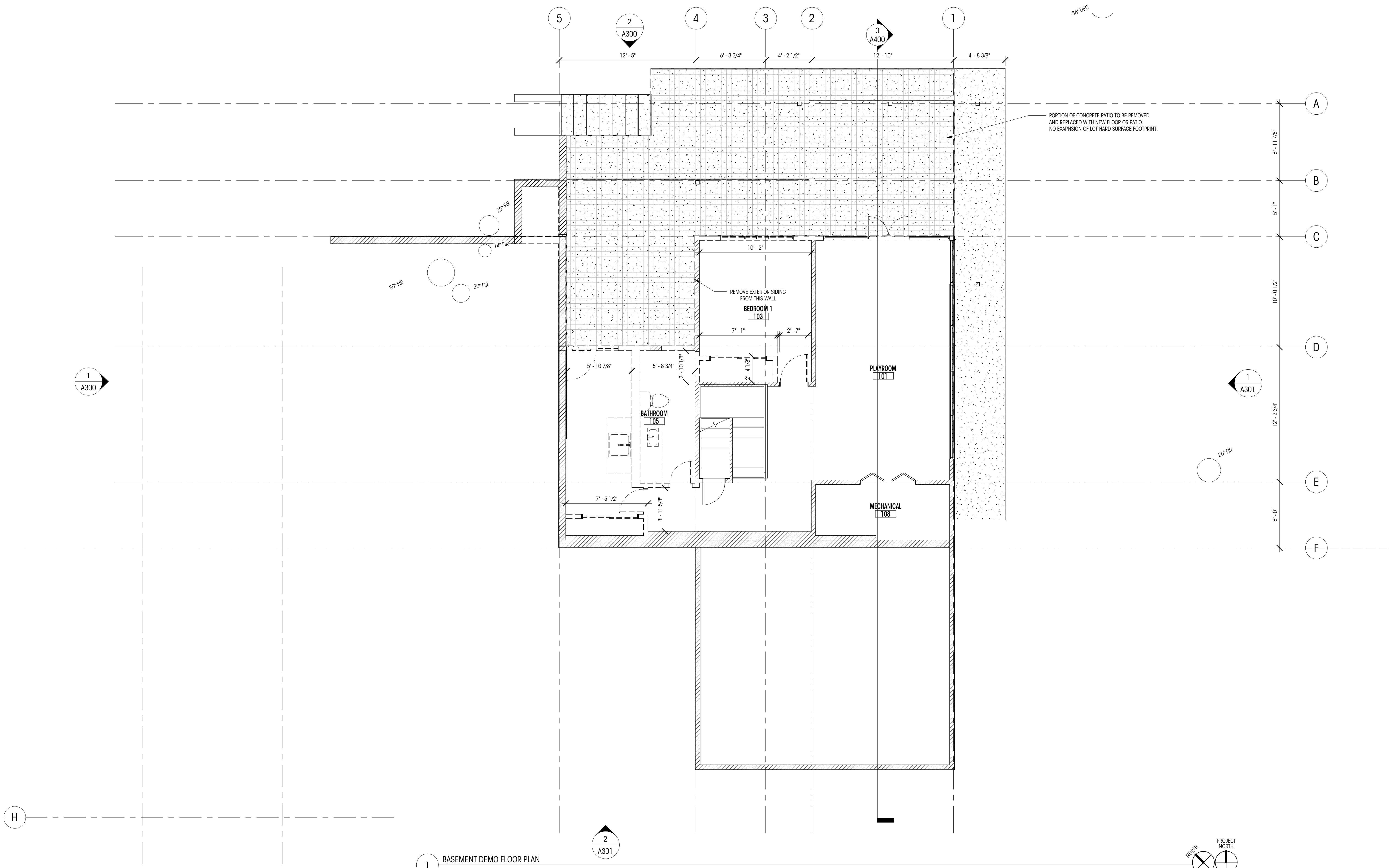
DRAWN BY: KJ
CHECKED BY: BM

DEMO LOWER
FLOOR PLAN

SCALE: As indicated

AD201

DEDICATED
APPROVAL
STAMP SPACE



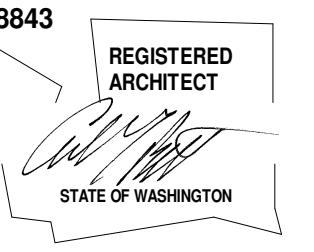
1 BASEMENT DEMO FLOOR PLAN
1/4" = 1'-0"

LEGEND

EL= 148.5' (+0'-0") MAIN LEVEL FIN. FLR.	ELEVATION DATUM		PROPERTY LINE	(E) TREE TO REMAIN		(E) FLOOR/DECK/ROOF TO BE REPLACED/REMOVED
	GRIDLINE		BUILDING FOOTPRINT	(N) TREE		(E) STONE PATIO WALKWAY
	NEW WALL		PAVING/HARDSCAPE/DECK			PORTION OF (E) PATIO/WALKWAYS TO BE REMOVED/REPLACED
	WALL TO REMAIN		ROOF OVERHANG			(E) PATIO/DRIVEWAY
	TO BE REMOVED					
	1-HOUR RATED ASSEMBLY					

NOTES

- ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
- ALL DIMENSIONS AT INTERIOR ALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.



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NO. DATE:

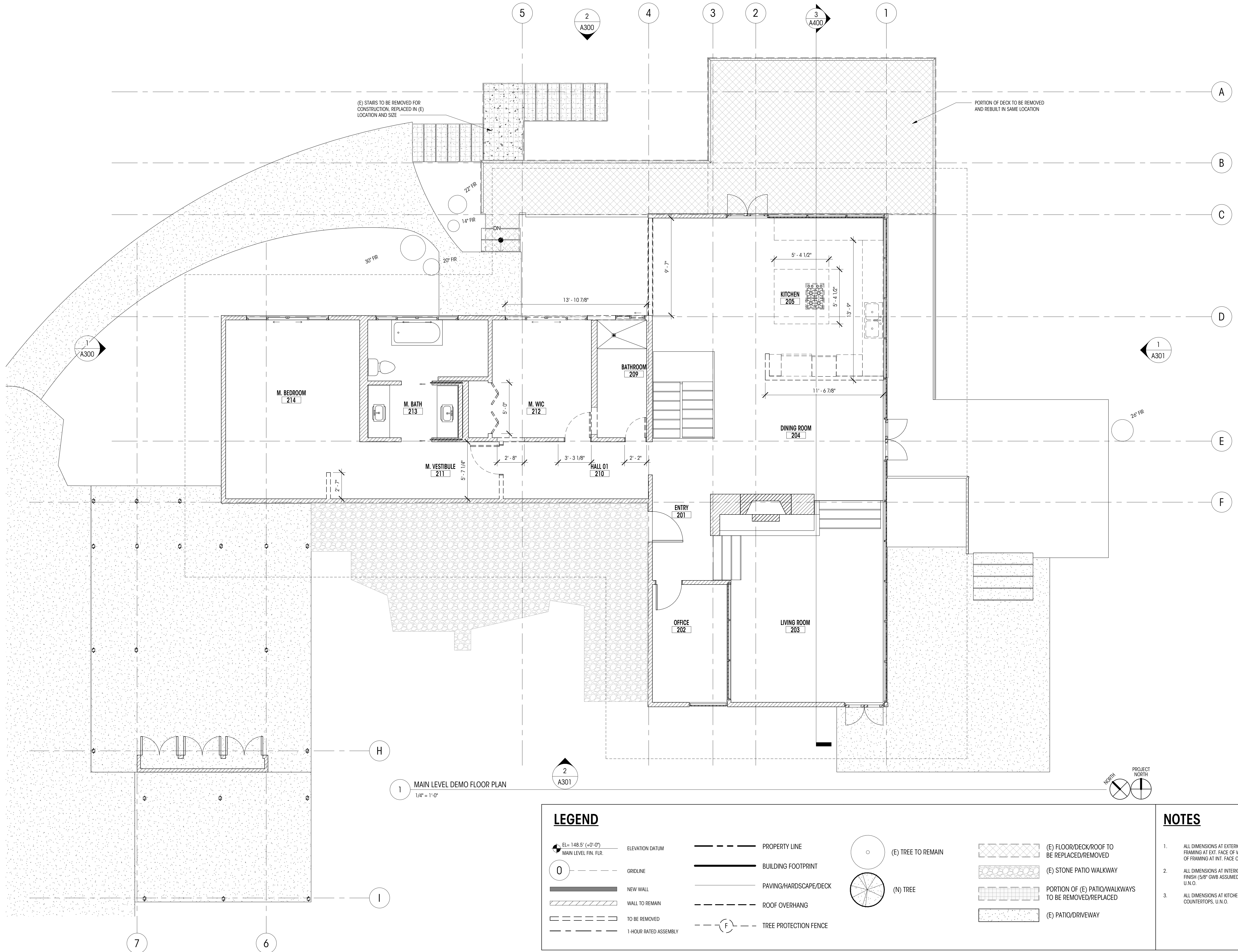
DRAWN BY: KJ
CHECKED BY: BM

DEMO MAIN FLOOR PLAN

SCALE: As indicated

AD202

DEDICATED
APPROVAL
STAMP SPACE



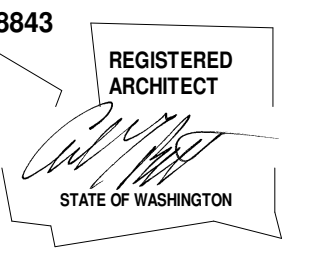
1 MAIN LEVEL DEMO FLOOR PLAN
1/4" = 1'-0"

LEGEND

- | | | | | | | | |
|---|-----------------------|--|-----------------------|--|--|--|--|
| EL= 148.5' (+0'-0")
MAIN LEVEL FIN. FLR. | ELEVATION DATUM | | PROPERTY LINE | | (E) TREE TO REMAIN | | (E) FLOOR/DECK/ROOF TO BE REPLACED/REMOVED |
| | GRIDLINE | | BUILDING FOOTPRINT | | (N) TREE | | (E) STONE PATIO WALKWAY |
| | NEW WALL | | PAVING/HARDSCAPE/DECK | | PORTION OF (E) PATIO/WALKWAYS TO BE REMOVED/REPLACED | | (E) PATIO/DRIVEWAY |
| | WALL TO REMAIN | | ROOF OVERHANG | | (F) TREE PROTECTION FENCE | | |
| | TO BE REMOVED | | | | | | |
| | 1-HOUR RATED ASSEMBLY | | | | | | |

NOTES

- ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
- ALL DIMENSIONS AT INTERIOR ALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.



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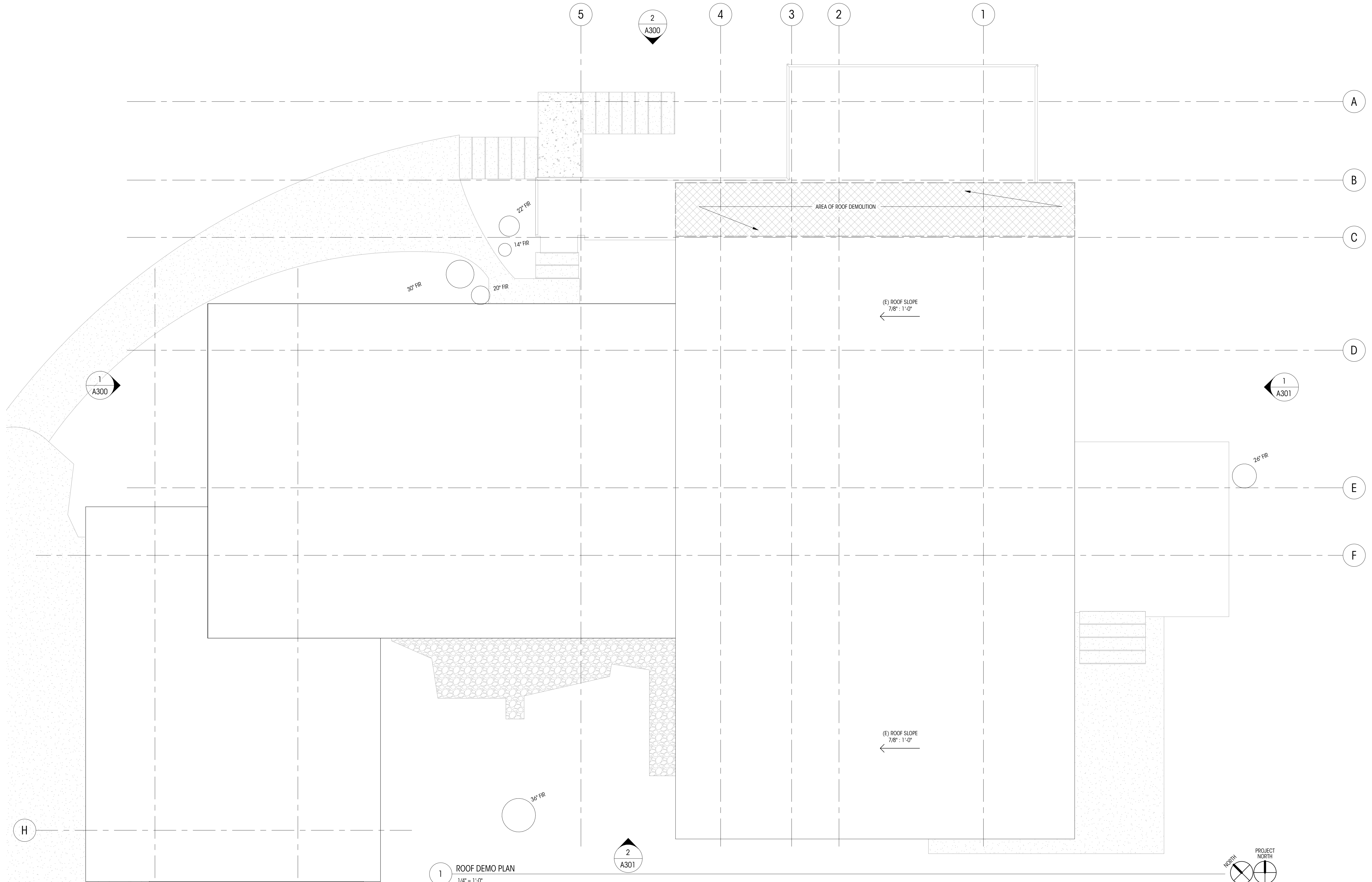
CHECKED BY: BM

DEMO ROOF PLAN

SCALE: As indicated

AD203

DEDICATED
APPROVAL
STAMP SPACE



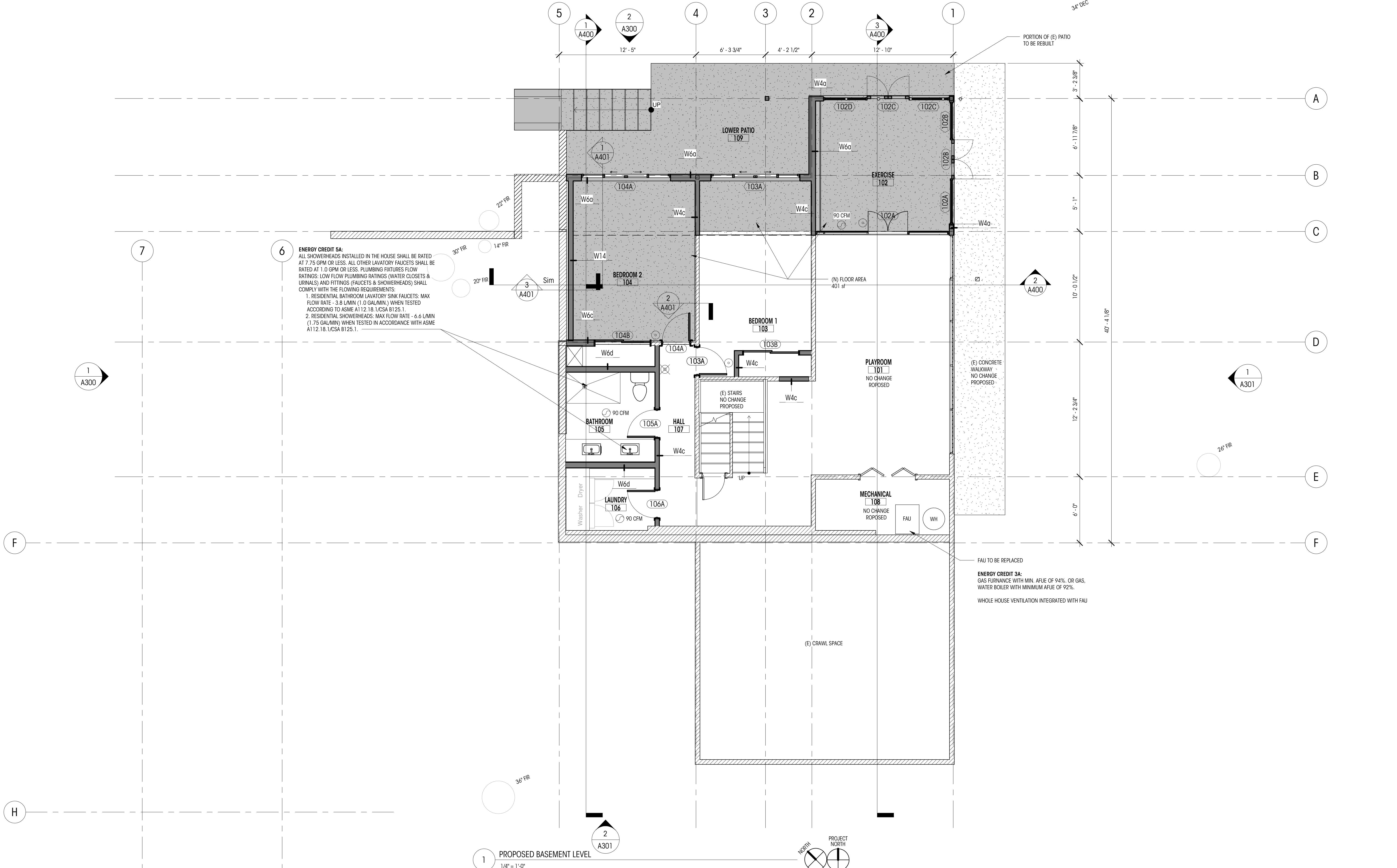
1 ROOF DEMO PLAN
1/4" = 1'-0"

LEGEND

EL= 148.5' (+0'-0") MAIN LEVEL FIN. FLR.	ELEVATION DATUM		PROPERTY LINE		(E) TREE TO REMAIN		(E) FLOOR/DECK/ROOF TO BE REPLACED/REMOVED
	GRIDLINE		BUILDING FOOTPRINT		(N) TREE		(E) STONE PATIO WALKWAY
	NEW WALL		PAVING/HARDSCAPE/DECK		PORTION OF (E) PATIO/WALKWAYS TO BE REMOVED/REPLACED		(E) PATIO/DRIVEWAY
	WALL TO REMAIN		ROOF OVERHANG		TREE PROTECTION FENCE		
	TO BE REMOVED						
	1-HOUR RATED ASSEMBLY						

NOTES

- ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
- ALL DIMENSIONS AT INTERIOR ALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.



ENERGY CREDIT 5A:
ALL SHOWERHEADS INSTALLED IN THE HOUSE SHALL BE RATED AT 7.75 GPM OR LESS. ALL OTHER LAVATORY FAUCETS SHALL BE RATED AT 1.0 GPM OR LESS. PLUMBING FIXTURES FLOW RATINGS: LOW FLOW PLUMBING RATINGS (WATER CLOSETS & URINALS) AND FITTINGS (FAUCETS & SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
1. RESIDENTIAL BATHROOM LAVATORY SINK FAUCETS: MAX FLOW RATE - 3.8 L/MIN (1.0 GAL/MIN.) WHEN TESTED ACCORDING TO ASME A112.18.1/CSA B125.1
2. RESIDENTIAL SHOWERHEADS: MAX FLOW RATE - 6.6 L/MIN (1.75 GAL/MIN.) WHEN TESTED IN ACCORDANCE WITH ASME A112.18.1/CSA B125.1

ENERGY CREDIT 3A:
GAS FURNANCE WITH MIN. AFUE OF 94%. OR GAS WATER BOILER WITH MINIMUM AFUE OF 92%.
WHOLE HOUSE VENTILATION INTEGRATED WITH FAU

LEGEND

- (200A) WINDOW ID
- (100A) DOOR ID
- (100A) FINISH ID
- SMOKE DETECTOR
- ⊗ SMOKE/CARBON MONOXIDE DETECTOR
- FAN - 100 CFM U.N.O.
- ▲ EL= 1.48.5' (+0'-0") ELEVATION DATUM
- MAIN LEVEL FIN. FLR.
- GRIDLINE
- NEW WALL
- ▨ WALL TO REMAIN
- - - - - TO BE REMOVED
- - - - - 1-HOUR RATED ASSEMBLY

NOTES

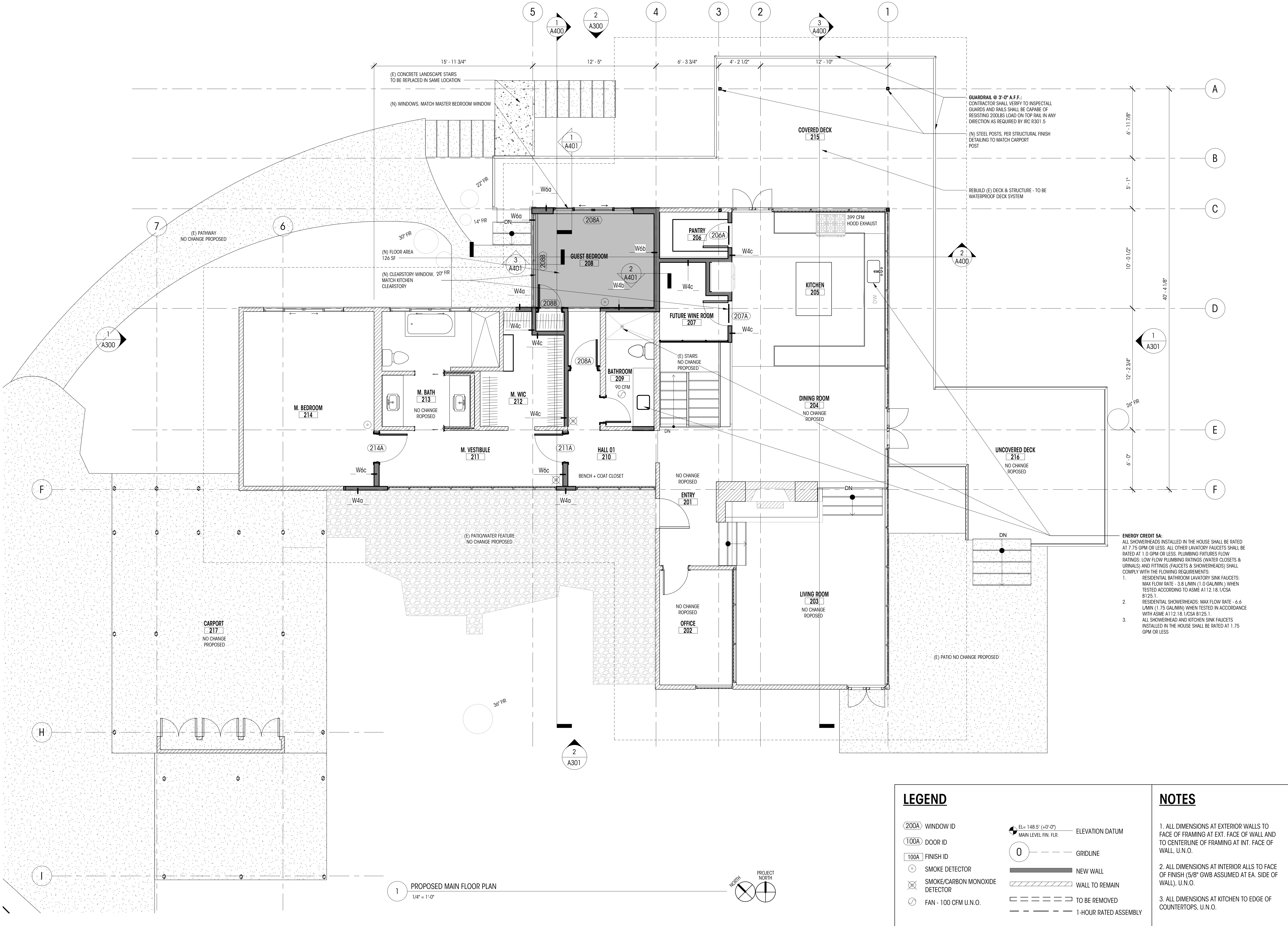
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- ALL DIMENSIONS AT INTERIOR WALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.

BASEMENT LEVEL BELOW GRADE AREA CALC

WALL SEGMENT	LENGTH	COVERAGE	RESULT
A	22.75'	0%	0'
B	7'	0%	0'
C	13'	0%	0'
D	40.25'	46%	18.6'
E	23.33'	78%	18.4'
F	12.33'	100%	12.33'
G	33.33'	100%	33.33'
TOTAL	151.99'		82.66'

TOTAL BASEMENT GSF = 1,295 SF
PORTION OF EXCLUDED BASEMENT FLOOR AREA: (82.66/151.99) X 1,295 = 704.3 SF
NET BASEMENT GFA: (1,295 - 704) = 591 SF

1 PROPOSED BASEMENT LEVEL
1/4" = 1'-0"



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

LEGEND

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

NOTES

- ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
- ALL DIMENSIONS AT INTERIOR WALLS TO FACE OF FINISH (5/8" GWB ASSUMED AT EA. SIDE OF WALL), U.N.O.
- ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.

ENERGY CREDIT 5A:
ALL SHOWERHEADS INSTALLED IN THE HOUSE SHALL BE RATED AT 7.75 GPM OR LESS. ALL OTHER LAVATORY FAUCETS SHALL BE RATED AT 1.0 GPM OR LESS. PLUMBING FIXTURES FLOW RATINGS: LOW FLOW PLUMBING RATINGS (WATER CLOSETS & URINALS) AND FITTINGS (FAUCETS & SHOWERHEADS) SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
1. RESIDENTIAL BATHROOM LAVATORY SINK FAUCETS: MAX FLOW RATE - 3.8 L/MIN (1.0 GAL/MIN.) WHEN TESTED ACCORDING TO ASME A112.18.1/CSA B125.1.
2. RESIDENTIAL SHOWERHEADS: MAX FLOW RATE - 6.6 L/MIN (1.75 GAL/MIN) WHEN TESTED IN ACCORDANCE WITH ASME A112.18.1/CSA B125.1.
3. ALL SHOWERHEAD AND KITCHEN SINK FAUCETS INSTALLED IN THE HOUSE SHALL BE RATED AT 1.75 GPM OR LESS.

GUARDRAIL @ 3'-0" A.F.F.:
CONTRACTOR SHALL VERIFY TO INSPECT ALL GUARDS AND RAILS SHALL BE CAPABLE OF RESISTING 200LBS LOAD ON TOP RAIL IN ANY DIRECTION AS REQUIRED BY IRC R301.5
(N) STEEL POSTS, PER STRUCTURAL FINISH DETAILING TO MATCH CARPORT POST
REBUILD (E) DECK & STRUCTURE - TO BE WATERPROOF DECK SYSTEM

(E) CONCRETE LANDSCAPE STAIRS TO BE REPLACED IN SAME LOCATION
(N) WINDOWS, MATCH MASTER BEDROOM WINDOW

(E) PATHWAY NO CHANGE PROPOSED

(N) FLOOR AREA 126 SF
(N) CLEARSTORY WINDOW, 20" FIR MATCH KITCHEN CLEARSTORY

NO CHANGE ROPOSED

LIVING ROOM 203
NO CHANGE ROPOSED

DINING ROOM 204
NO CHANGE ROPOSED

FUTURE WINE ROOM 207

BATHROOM 209
90 CFM

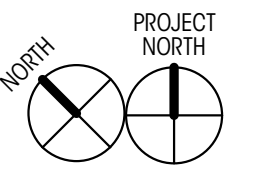
M. BATH 213
NO CHANGE ROPOSED

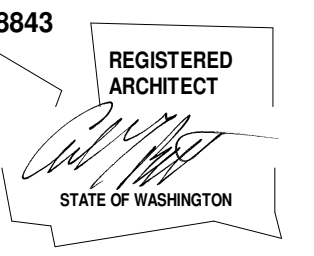
M. BEDROOM 214

CARPORT 217
NO CHANGE PROPOSED

(E) PATIO/WATER FEATURE NO CHANGE PROPOSED

(E) PATIO NO CHANGE PROPOSED





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REVISIONS
NO. DATE:

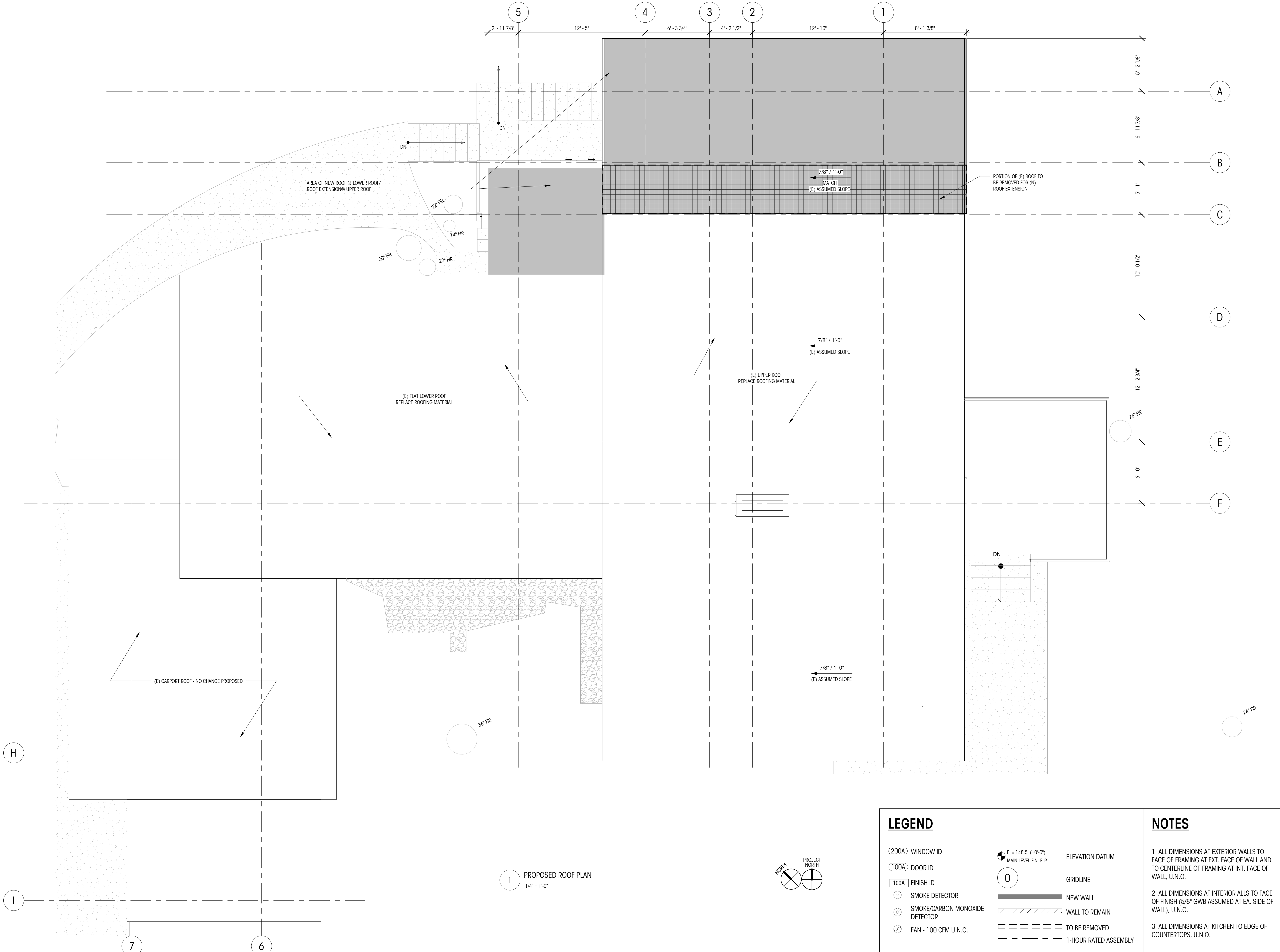
DRAWN BY: KJ
CHECKED BY: BM

ROOF PLAN

SCALE: As indicated

A212

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STAMP SPACE

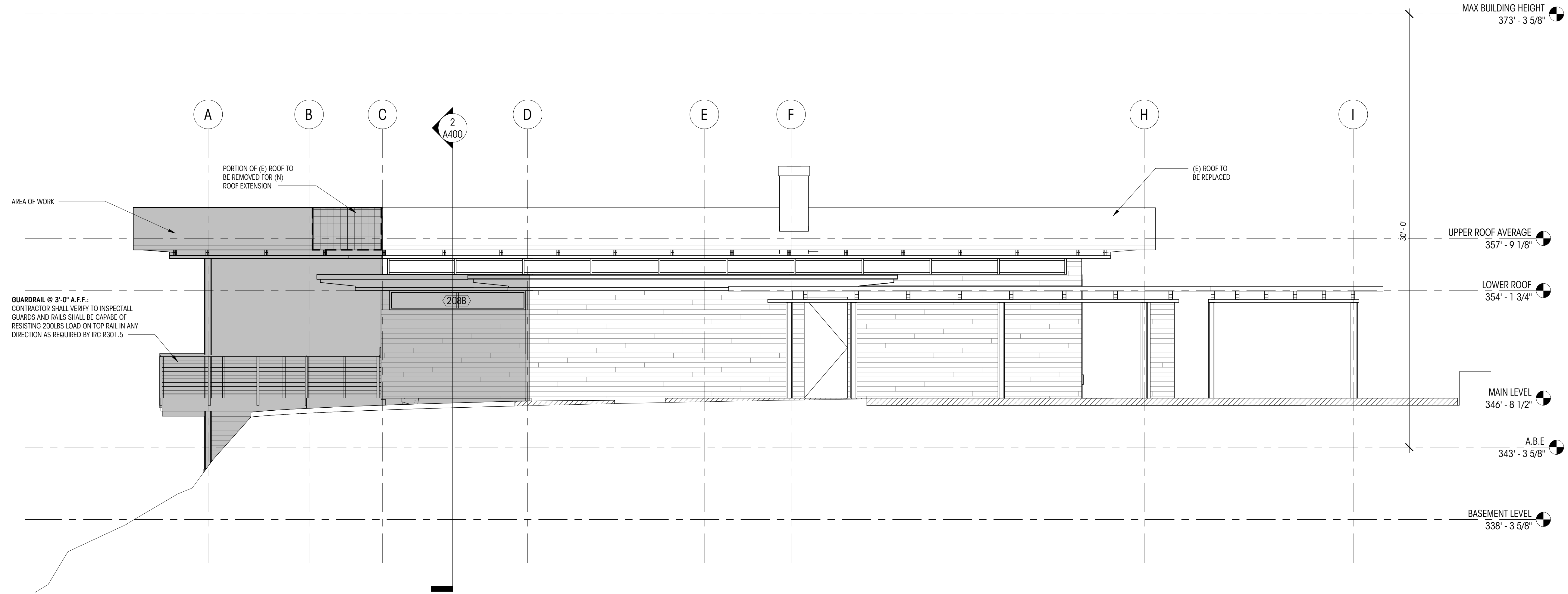


LEGEND

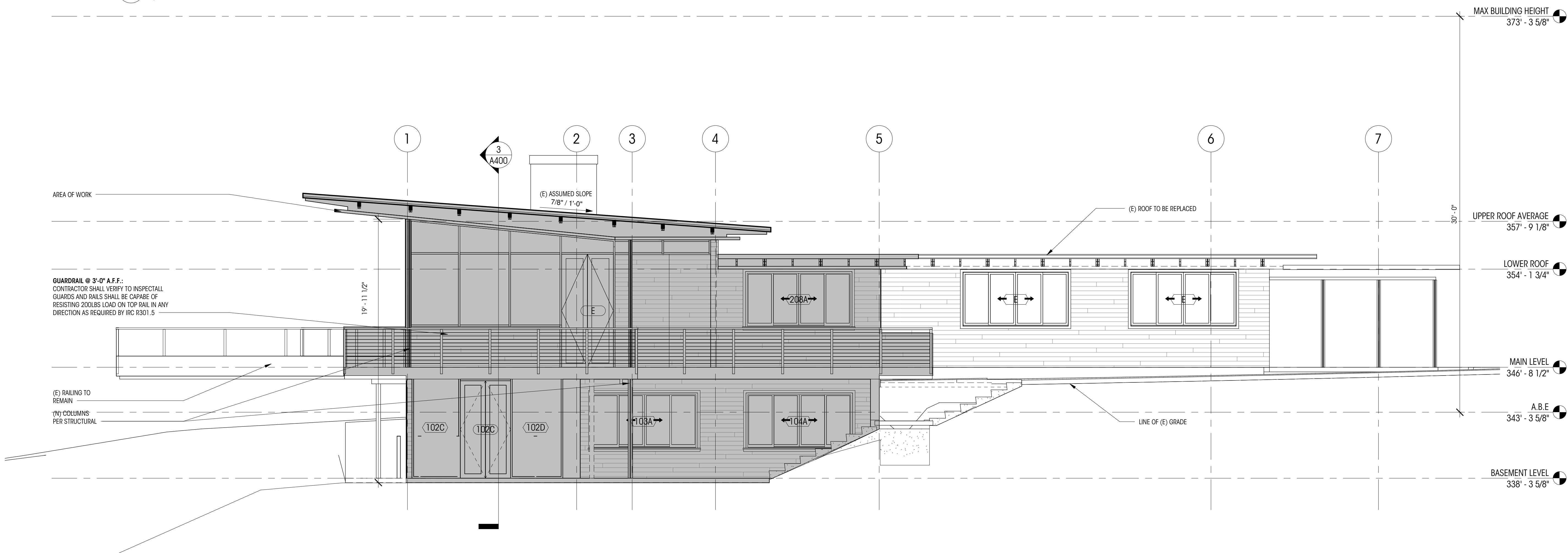
- (200A) WINDOW ID
- (100A) DOOR ID
- (100A) FINISH ID
- SMOKE DETECTOR
- ⊗ SMOKE/CARBON MONOXIDE DETECTOR
- ⊙ FAN - 100 CFM U.N.O.
- EL= 148.5' (+0'-0") MAIN LEVEL FIN. FLR. ELEVATION DATUM
- GRIDLINE
- ▬ NEW WALL
- ▨ WALL TO REMAIN
- ▬ TO BE REMOVED
- ▬ 1-HOUR RATED ASSEMBLY

NOTES

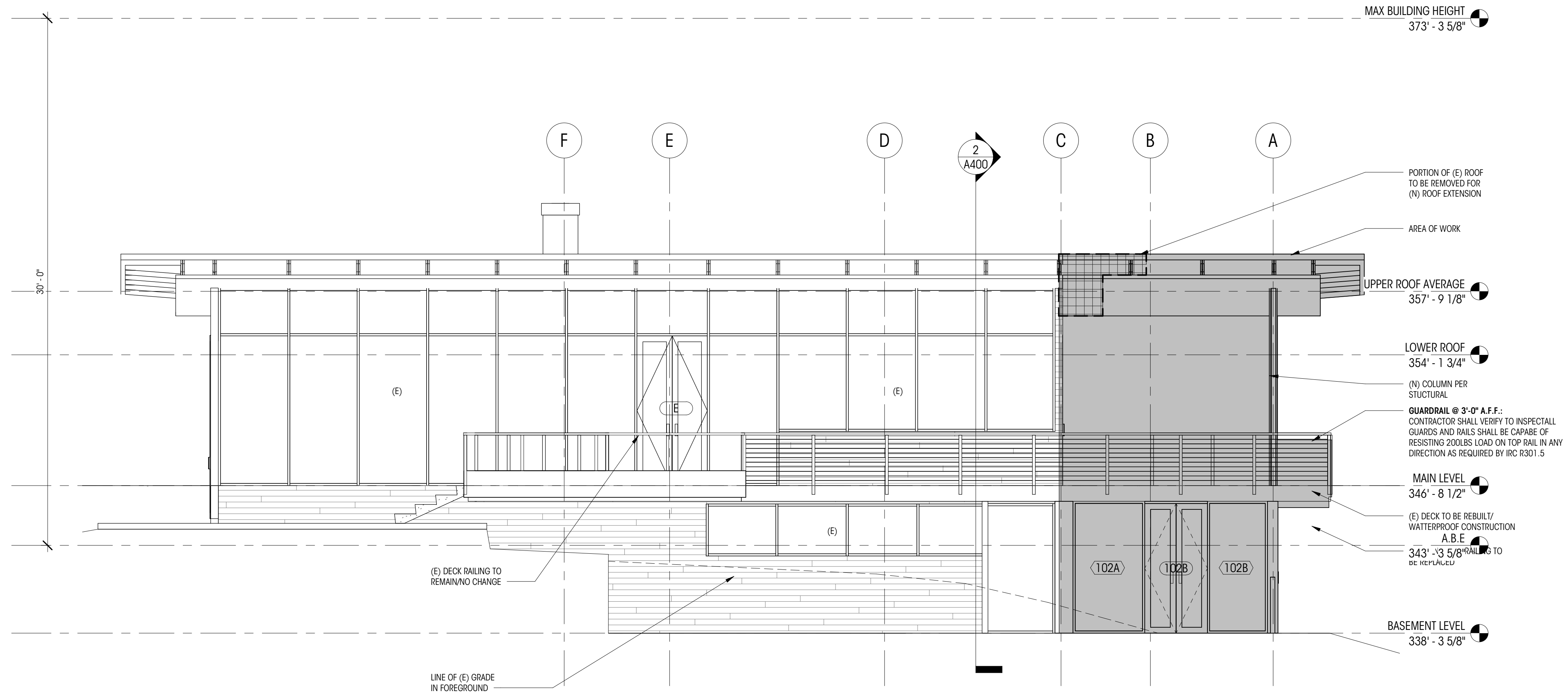
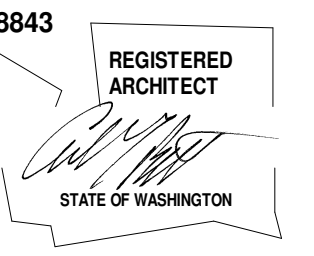
1. ALL DIMENSIONS AT EXTERIOR WALLS TO FACE OF FRAMING AT EXT. FACE OF WALL AND TO CENTERLINE OF FRAMING AT INT. FACE OF WALL, U.N.O.
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3. ALL DIMENSIONS AT KITCHEN TO EDGE OF COUNTERTOPS, U.N.O.



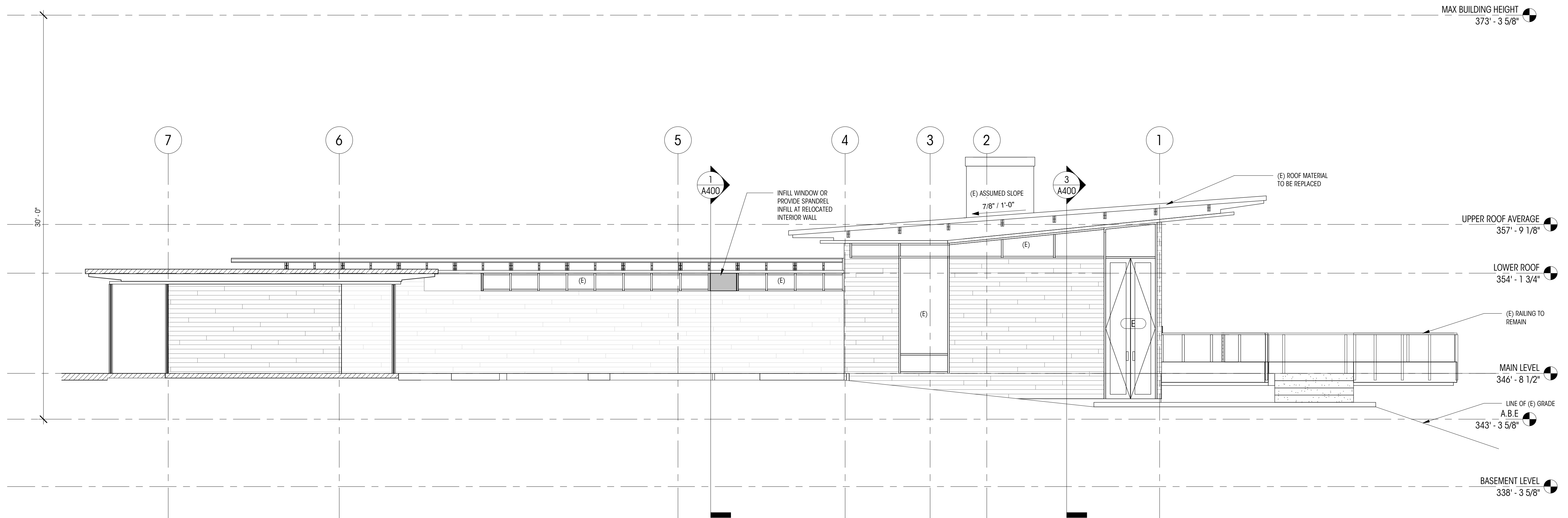
1 PROJECT WEST PROPOSED ELEVATION
1/4" = 1'-0"



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



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



2 PROJECT SOUTH PROPOSED ELEVATION
1/4" = 1'-0"

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REVISIONS
NO. DATE:

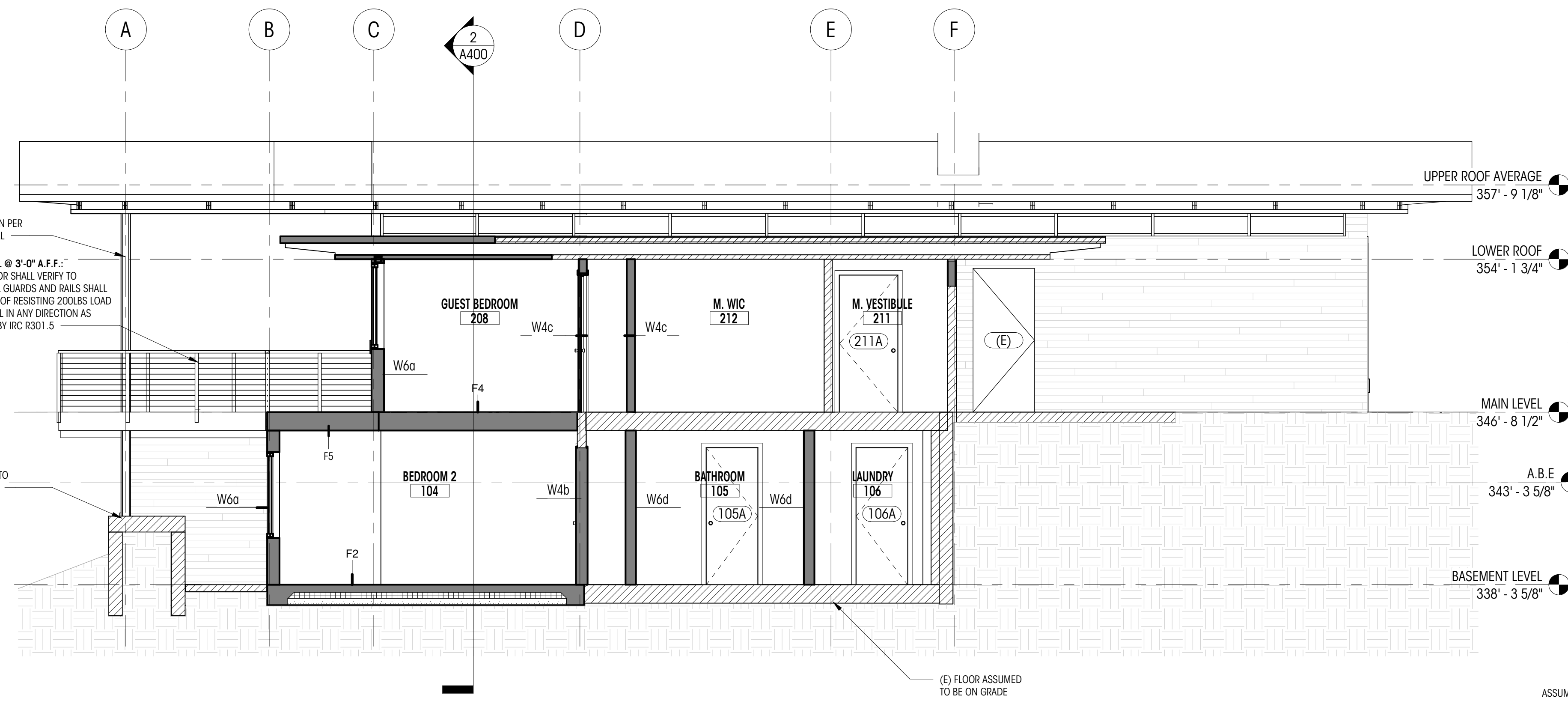
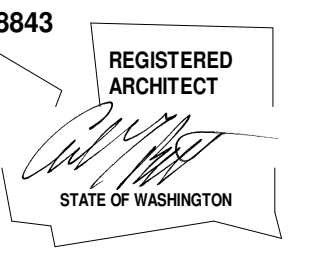
DRAWN BY: KJ
CHECKED BY: BM

EXTERIOR
ELEVATIONS (S & W)

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

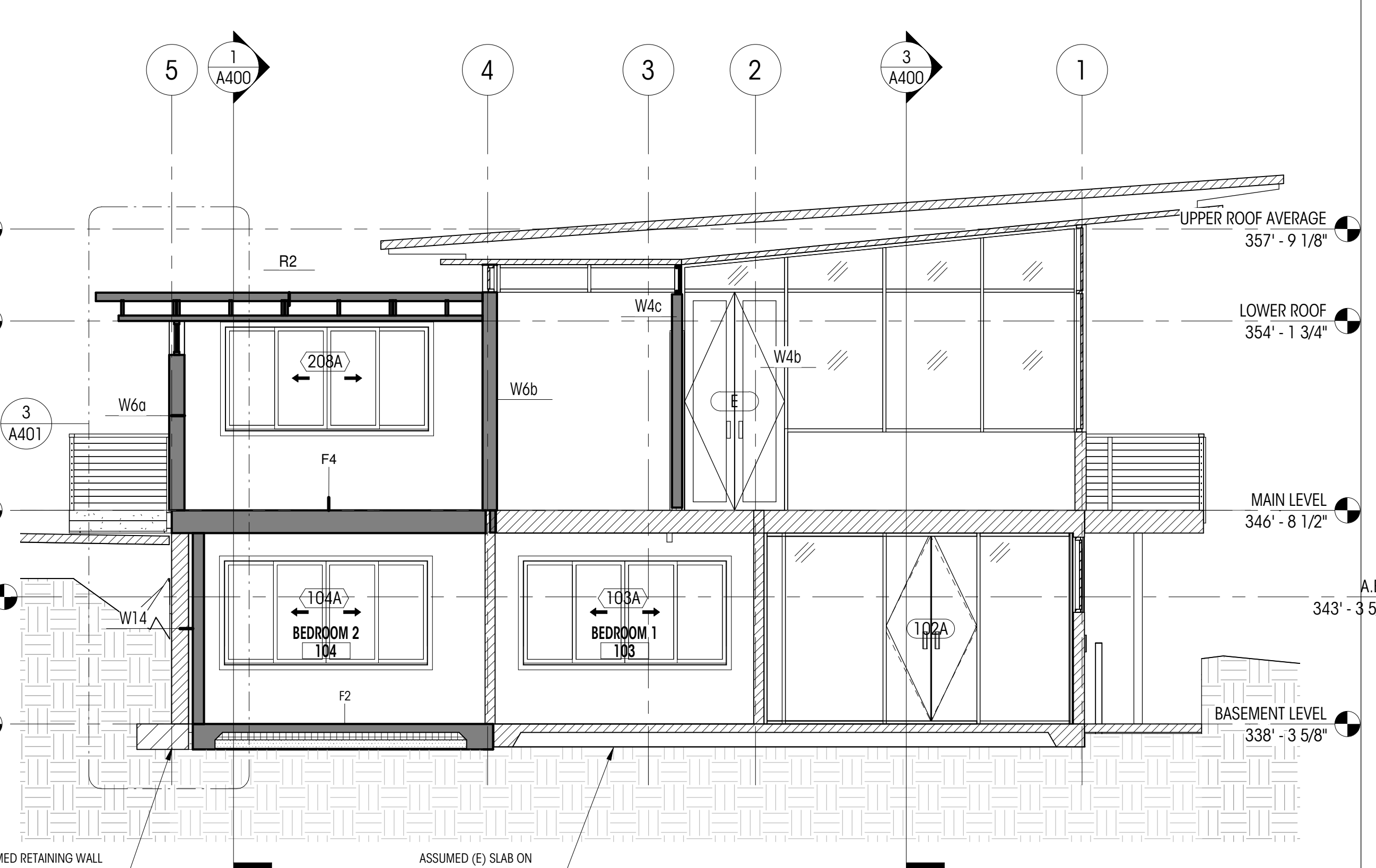
A301

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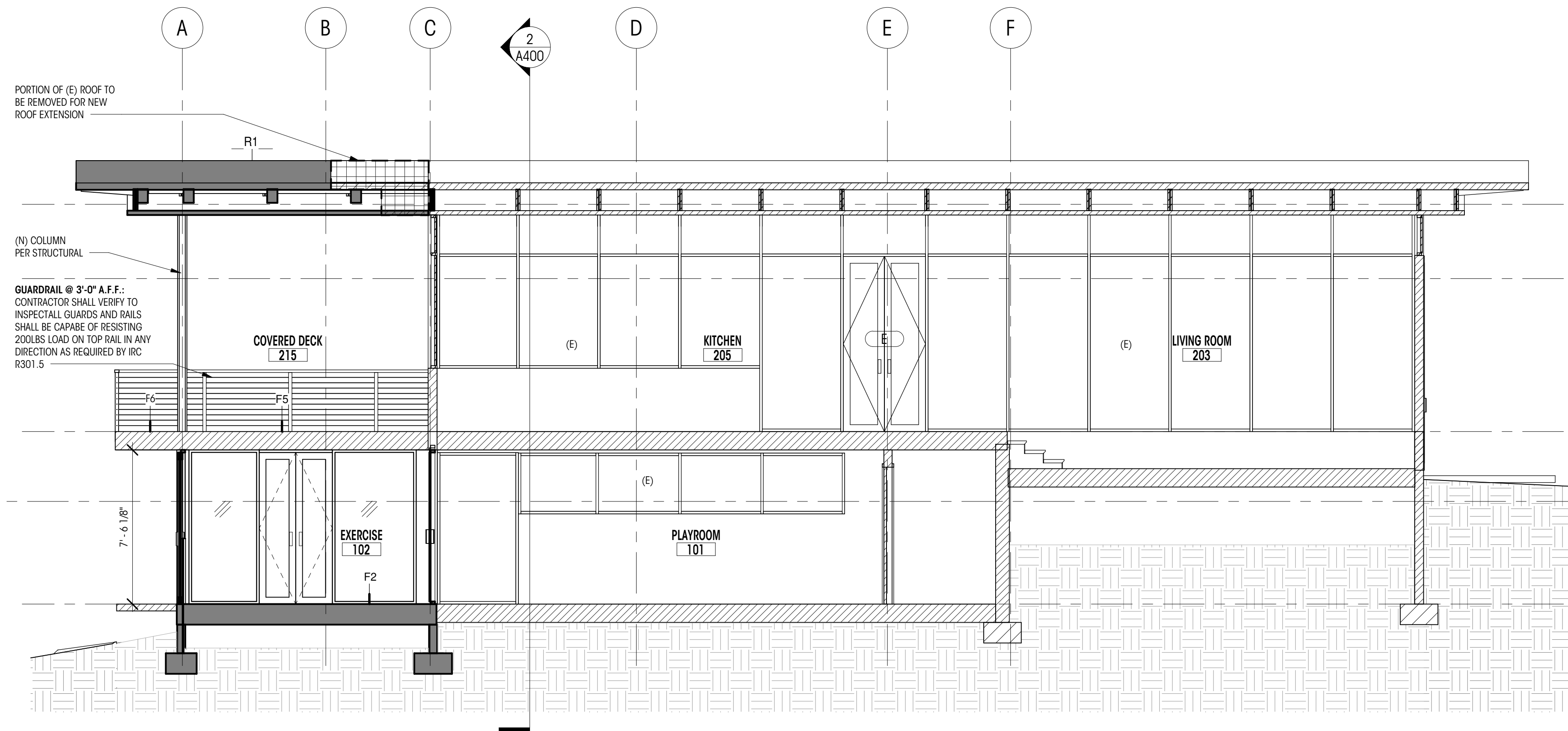
1 BUILDING SECTION - EAST

1/4" = 1'-0"



2 BUILDING SECTION - NORTH

1/4" = 1'-0"



3 BUILDING SECTION - EAST 1

1/4" = 1'-0"

(N) COLUMN PER STRUCTURAL
GUARDRAIL @ 3'-0" A.F.F.: CONTRACTOR SHALL VERIFY TO INSPECT ALL GUARDS AND RAILS SHALL BE CAPABLE OF RESISTING 200LBS LOAD ON TOP RAIL IN ANY DIRECTION AS REQUIRED BY IRC R301.5

(E) STAIRS TO BE REBUILT

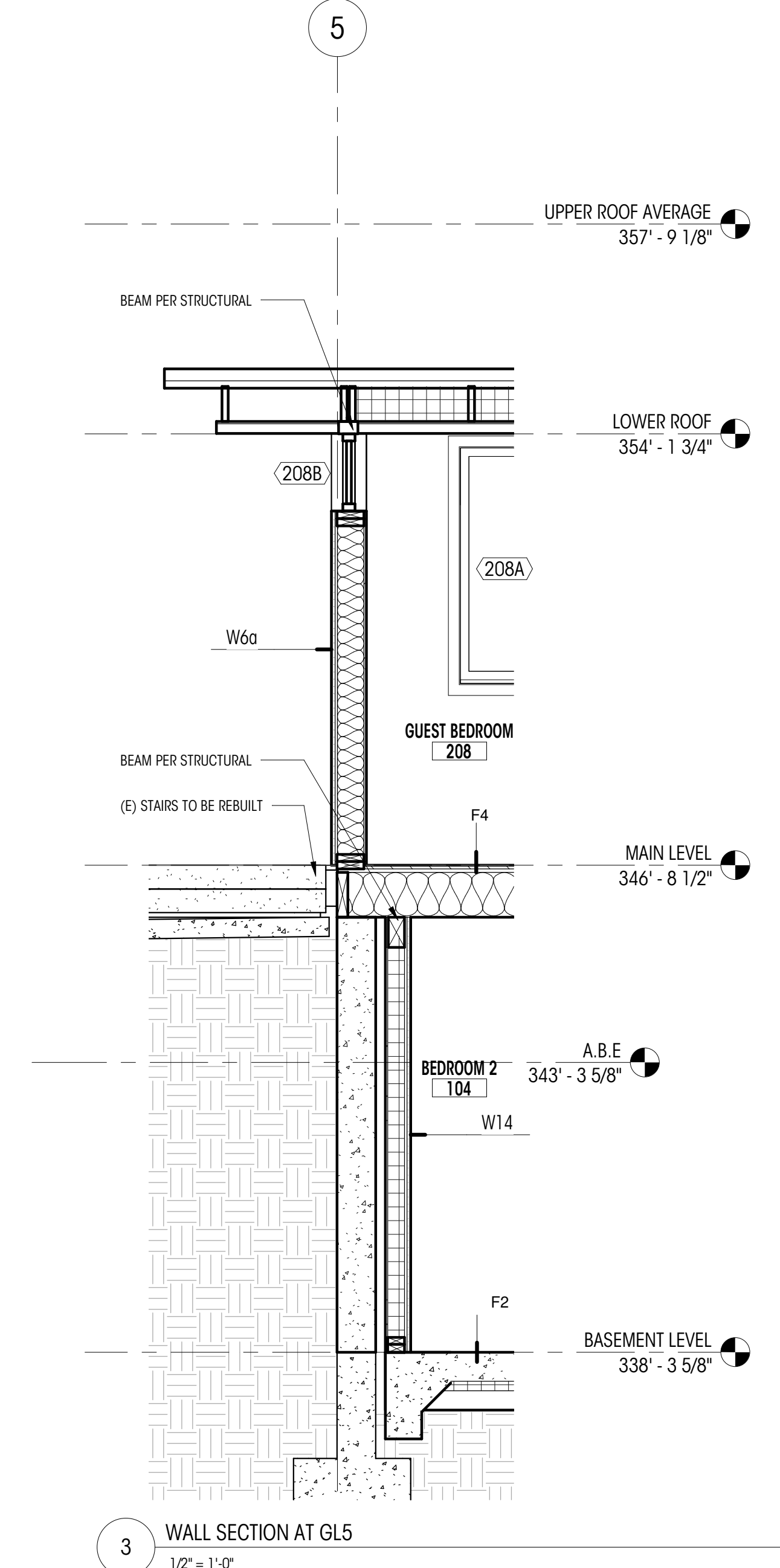
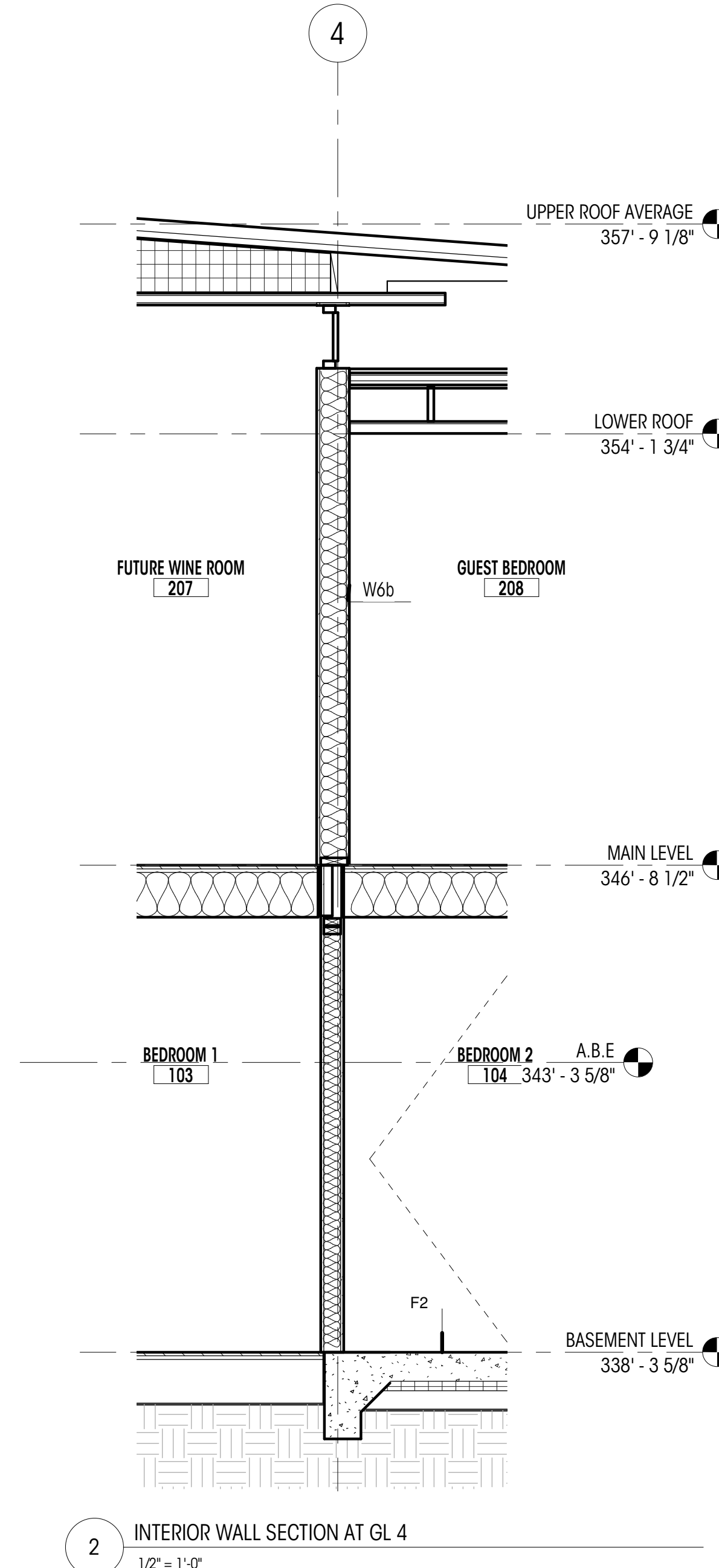
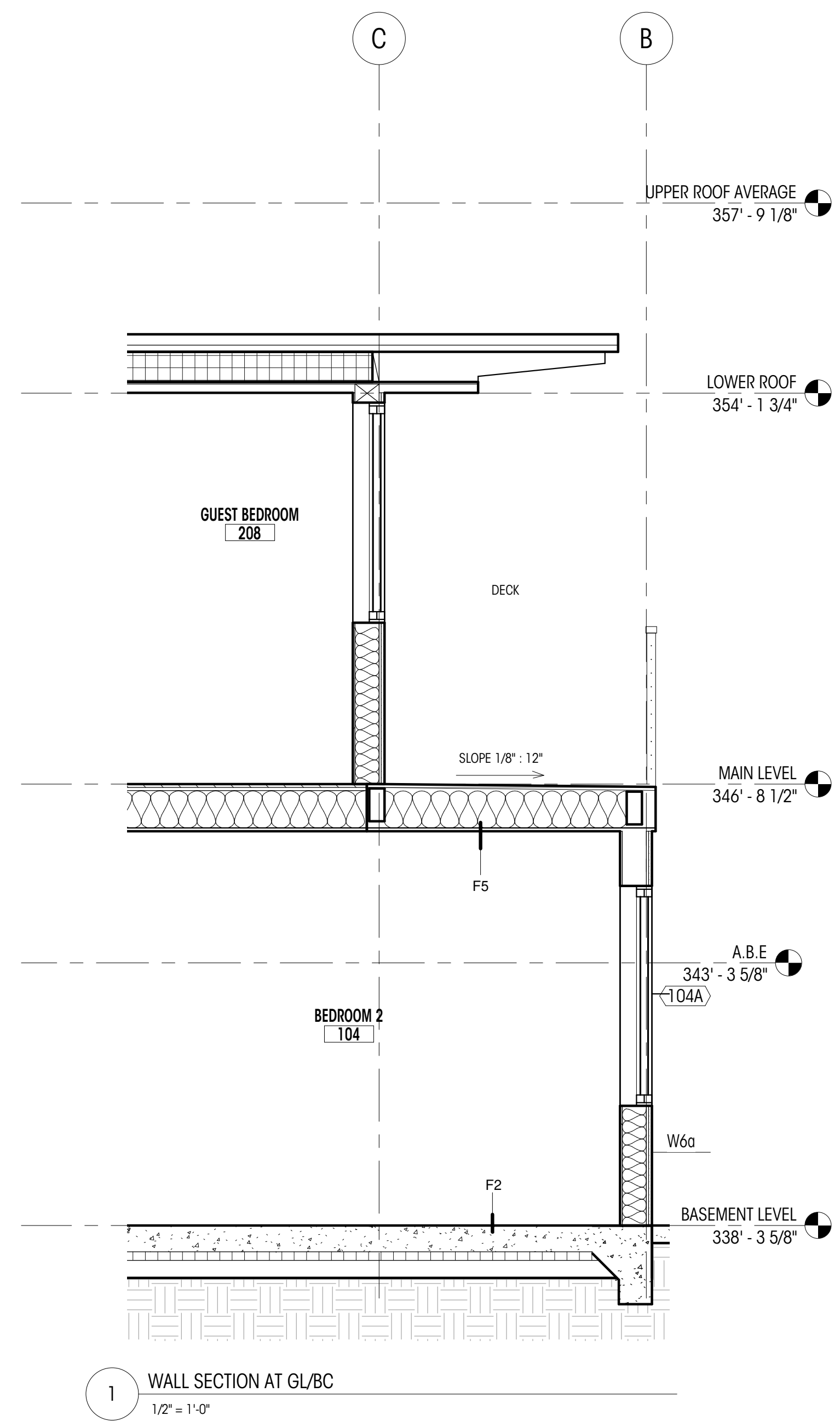
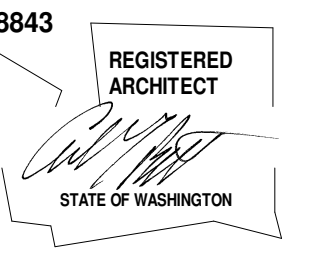
(E) FLOOR ASSUMED TO BE ON GRADE

ASSUMED RETAINING WALL FOUNDATION TO REMAIN

ASSUMED (E) SLAB ON GRADE TO REMAIN

PORTION OF (E) ROOF TO BE REMOVED FOR NEW ROOF EXTENSION
(N) COLUMN PER STRUCTURAL
GUARDRAIL @ 3'-0" A.F.F.: CONTRACTOR SHALL VERIFY TO INSPECT ALL GUARDS AND RAILS SHALL BE CAPABLE OF RESISTING 200LBS LOAD ON TOP RAIL IN ANY DIRECTION AS REQUIRED BY IRC R301.5

7'-6 1/8"



McLear Residence

9120 SE 50th St.
Mercer Island, WA 98040
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PERMIT DRAWINGS

DATE: 3/17/2021

SHEET SIZE: D (24x36)

REVISIONS
NO. DATE:

DRAWN BY: KJ
CHECKED BY: BM

WALL SECTIONS

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

A401

DEDICATED
APPROVAL
STAMP SPACE

WINDOW SCHEDULE

PLAN ID	TYPE	WIDTH (ft)	HEIGHT (ft)	HEAD HT	UNIT AREA (sf)	U VALUE	UA	Note
102A	C	4'-1"	7'-6 1/8"	7'-6 1/8"	31 SF	0.3	9 SF	1,4
102B	C	3'-5"	7'-6 1/8"	7'-6 1/8"	26 SF	0.3	8 SF	1,4
102C	C	3'-8"	7'-8 7/8"	7'-8 7/8"	28 SF	0.3	9 SF	1,4
102D	C	3'-11 1/2"	7'-8 7/8"	7'-8 7/8"	31 SF	0.3	9 SF	1,4
103A	A	8'-1"	4'-2 1/4"	6'-5 5/8"	34 SF	0.3	10 SF	2
104A	A	8'-1"	4'-2 1/4"	6'-5 5/8"	34 SF	0.3	10 SF	2
208A	A	8'-1"	4'-2 1/4"	7'-3 1/8"	34 SF	0.3	10 SF	2
208B	B	9'-5"	1'-4"	7'-5 3/8"	13 SF	0.3	4 SF	3

GENERAL NOTES

- ALL DIMENSIONS SHOWN ARE FINISHED DIMENSIONS, R.O. PER CONTRACTOR.
- CONTRACTOR TO VERIFY ALL SIZES AND DIMENSIONS IN FIELD WITH OWNER BEFORE ORDERING.
- ALL NEW WINDOWS TO BE NFRC CERTIFIED.
- ALL WINDOW WALL IS TEMPERED GLASS.
- REFER TO PLANS AND TAGS FOR LOCATION AND SWINGS.
- ALL ELEVATIONS ARE FROM THE EXTERIOR.
- ALL NEW VERTICAL FENESTRATION U-VALUE TO MEET ENERGY COMPLIANCE GUIDELINES FOR EFFICIENT BUILDING ENVELOPE OPTION 1A
- PER IBC 8310.2 ALL EGRESS OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SF, NET CLEAR HEIGHT OPENING SHALL NOT BE LESS THAN 24" AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20". THE WINDOW SILL SHALL HAVE HEIGHT OF NOT MORE THAN 44" ABOVE THE FLOOR
- PER IRC R3208.4.3, GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL NEEDS TO BE TEMPERED GLASS / SAFETY GLAZING IN THE FOLLOWING HAZARDOUS LOCATIONS:
 1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SF.
 2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18" ABOVE THE FLOOR.
 3. THE TOP EDGE OF THE GLAZING IS MORE THAN 36" ABOVE THE FLOOR, AND
 4. ONE OR MORE WALKING SURFACES ARE WITHING 36". MEASURE HORIZONTALLY IN A STRAIGHT LINE OF THE GLAZING.

SPECIFIC NOTES

1. EGRESS
2. TEMPERED GLASS/SAFETY GLAZING
3. CLEARSTORY TO MATCH (E)
4. STOPPED IN GLASS WALL TO MATCH (E)

WINDOW WALL GENERAL NOTES

*ALL WINDOW WALL MUST HAVE A U-VALUE OF .3 OR LOWER

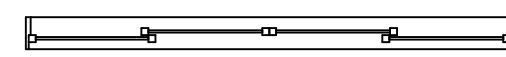
*CONTRACTOR TO VERIFY ALL SIZES AND DIMENSIONS IN FIELD WITH OWNER BEFORE ORDERING.

*ALL WINDOW WALL IS TEMPERED GLASS

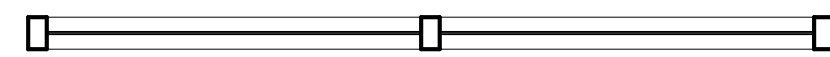
*REFER TO PLANS AND TAGS FOR LOCATION

*ALL ELEVATIONS ARE FROM THE EXTERIOR

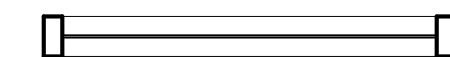
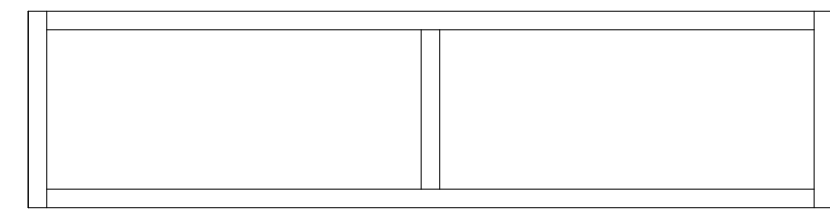
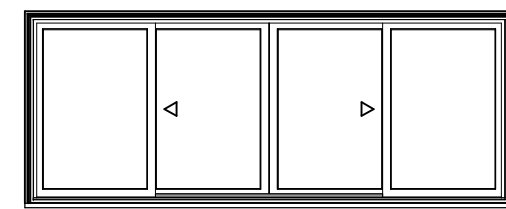
*ALL DIMENSIONS SHOWN ARE FINISHED DIMENSIONS, R.O. PER CONTRACTOR



A
4 PANEL - SLIDER



B
MAIN LEVEL BEDROOM CLEARSTORY



C
FULL-HEIGHT WINDOW

WINDOW TYPES

1/4" = 1'-0"

DOOR SCHEDULE

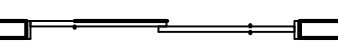
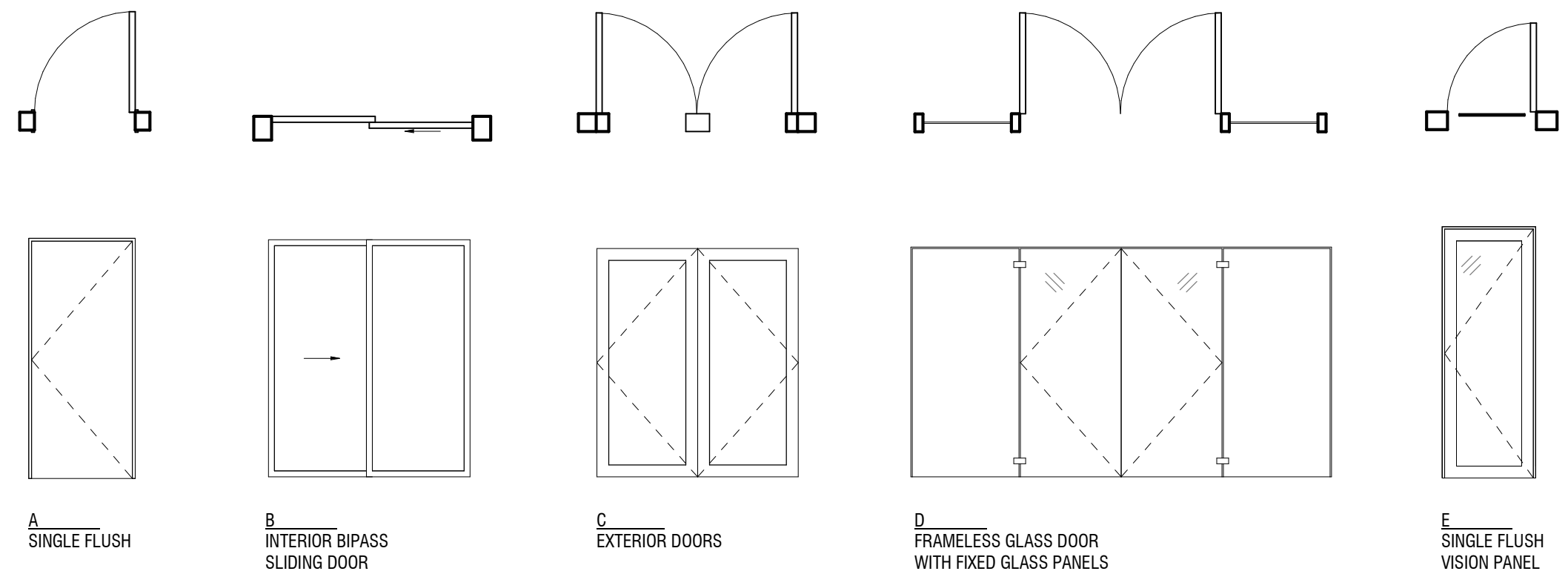
PLAN ID	TYPE	WIDTH (ft)	HEIGHT (ft)	AREA (sf)	U VALUE	UA	NOTES
102A	D	3'-7 1/2"	7'-3 1/8"	26 SF			1
102B	C	3'-6 3/4"	7'-4 5/8"	26 SF	0.3	8 SF	2
102C	C	3'-9 3/4"	7'-4 5/8"	28 SF	0.3	8 SF	2
102D	A	2'-6"	6'-8"	17 SF			
103A	A	2'-6"	6'-8"	17 SF			
103B	F	5'-0"	6'-8"	33 SF			
104A	A	2'-6"	6'-8"	17 SF			
104B	F	5'-0"	6'-8"	33 SF			
105A	A	2'-6"	6'-8"	17 SF			
106A	A	2'-6"	6'-8"	17 SF			
206A	E	2'-6"	7'-0"	18 SF			
207A	E	2'-6"	7'-0"	18 SF			
208A	A	2'-8"	6'-8"	18 SF			
208B	A	2'-4"	6'-8"	16 SF			
211A	A	2'-10"	6'-8"	19 SF			
212A	A	2'-6"	6'-8"	17 SF			
214A	A	2'-10"	6'-8"	19 SF			

GENERAL NOTES

- ALL NEW DOORS TO BE NFRC CERTIFIED
- ALL NEW VERTICAL FENESTRATION U-VALUE TO MEET ENERGY COMPLIANCE GUIDELINES FOR EFFICIENT BUILDING ENVELOPE OPTION 1A
- ALL DOORS TO BE SOLID-CORE WOOD VENEER FLAT PANELS UNO

SPECIFIC NOTES

1. TEMPERED GLASS/SAFETY GLAZING
2. DOUBLE TO MATCH (E) DOORS IN GLASS WALL
3. ACCESS DOOR TO UNDER STAIR



F
DOUBLE SLIDING

DOOR TYPES

1/4" = 1'-0"

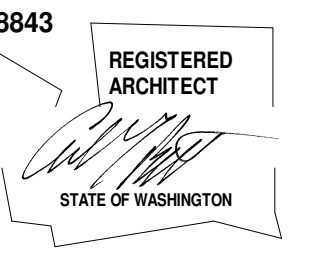
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McLear Residence

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PERMIT DRAWINGS

DATE: 3/17/2021

SHEET SIZE: D (24X36)

REVISIONS

NO. DATE:

DRAWN BY: KJ

CHECKED BY: BM

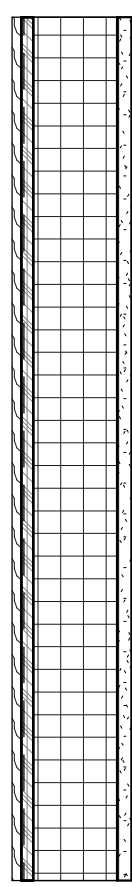
WINDOW / DOOR SCHEDULES

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

A600

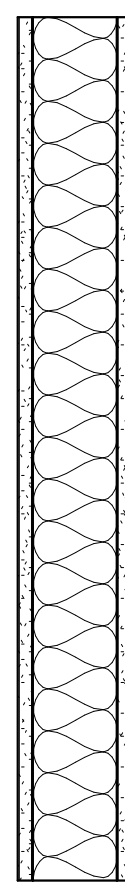
DEDICATED APPROVAL STAMP SPACE

VERTICAL ASSEMBLIES



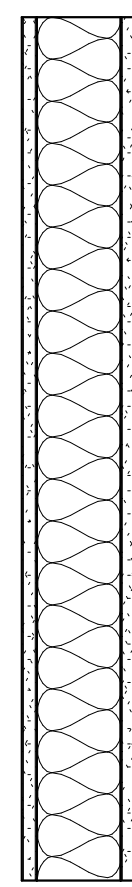
SIDING TO MATCH (E)
WRB TO MATCH (E)
1/2" PLYWOOD TO MATCH (E)
2x4 FRAMING TO MATCH (E)
R-21 RIGID INSULATION
5/8" GWB TO MATCH (E)

W4a - NEW EXTERIOR INFILL WALL TO MATCH (E) CONTRACTOR TO VIF



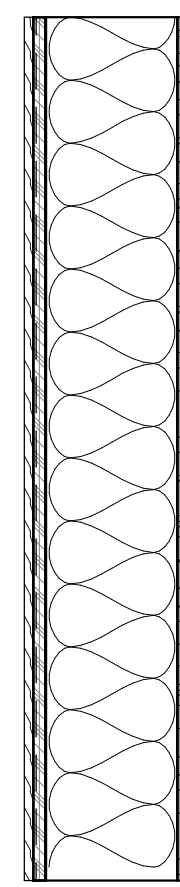
(E) SIDING & PLY REMOVED. REPLACE WITH 5/8" GWB TO MATCH (E)
(E) 2x4 FRAMING INFILL WITH ROCKWOOL. IF NO INSULATION IS PRESENT 5/8" GWB REPLACED / (E) TILE TO REMAIN

W4b - (E) EXTERIOR CONVERT TO INTERIOR



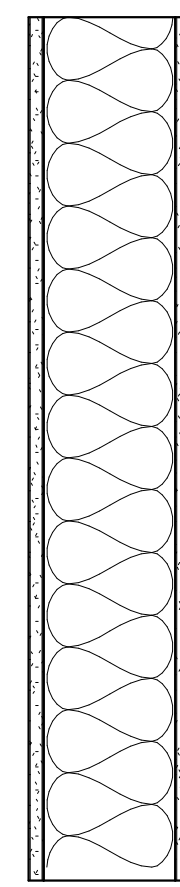
5/8" GWB TO MATCH (E)
2x4 FRAMING
ROCKWOOL INSULATION (FOR SOUND)
5/8" GWB REPLACED / (E) TILE TO REMAIN

W4c - INTERIOR



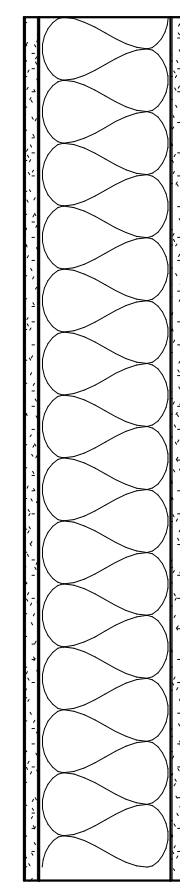
SIDING TO MATCH (E)
WRB (E)
1/2" PLYWOOD TO MATCH (E)
2x6 FRAMING
R-21 BATT INSULATION
5/8" GWB TO MATCH (E)

W4d - NEW/INFILL EXTERIOR



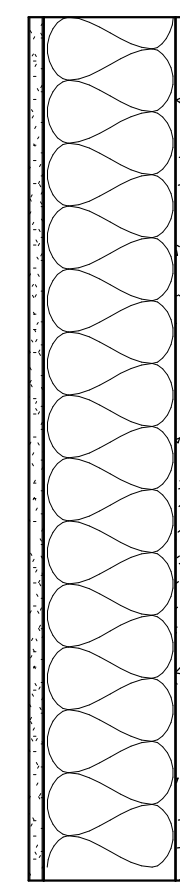
(E) SIDING & PLYWOOD REMOVED. REPLACE WITH 5/8" GWB TO MATCH (E)
(E) 2x6 FRAMING INFILL WITH ROCKWOOL INSULATION IF NO INSULATION IS PRESENT 5/8" GWB REPLACED

W4e - (E) EXTERIOR CONVERT TO INTERIOR



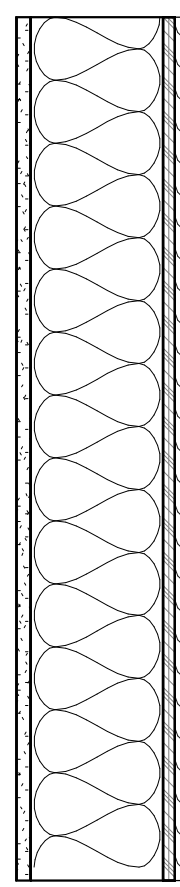
5/8" GWB TO MATCH (E)
2x6 FRAMING
ROCKWOOL INSULATION (FOR SOUND)
5/8" GWB

W4f - INTERIOR



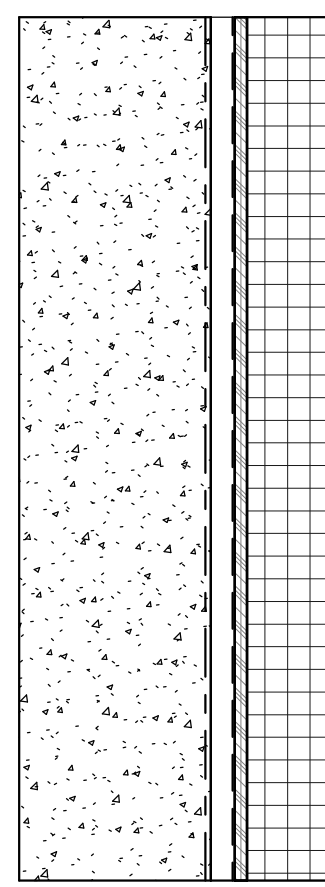
3/16" TILE 0' 5/16" MORTAR BED (WET ROOM SIDE)
1/4" CEMENT BACKER BOARD
2x6 FRAMING
ROCKWOOL INSULATION (FOR SOUND)
5/8" GWB TO MATCH (E)

W4g - INTERIOR (WET)



5/8" GWB TO MATCH (E), CONTRACTOR TO VIF
2x6 FRAMING
R-21 INSULATION
PLYWOOD SHEATHING
SIDING TO MATCH (E)

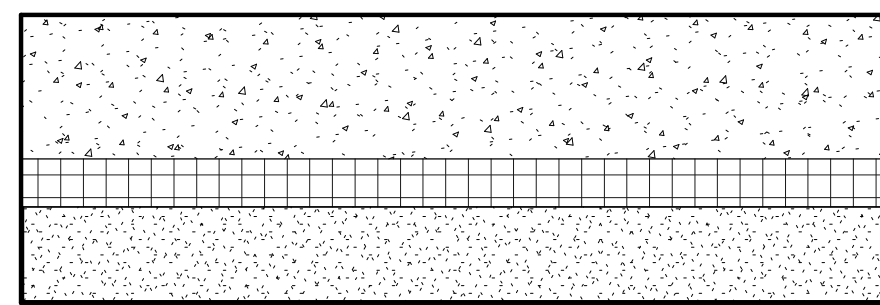
W4h



8" (E) CONCRETE WALL TO REMAIN
DRAIN MAT
1" AIR GAP
WRB
1/2" PLYWOOD PER STRUCTURAL
2x4 FRAMING
R-21 RIGID INSULATION
5/8" GWB TO MATCH (E)

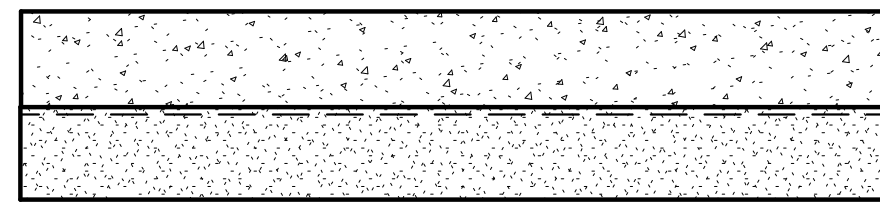
W4i - WALL AT (E) RETAINING

HORIZONTAL ASSEMBLIES



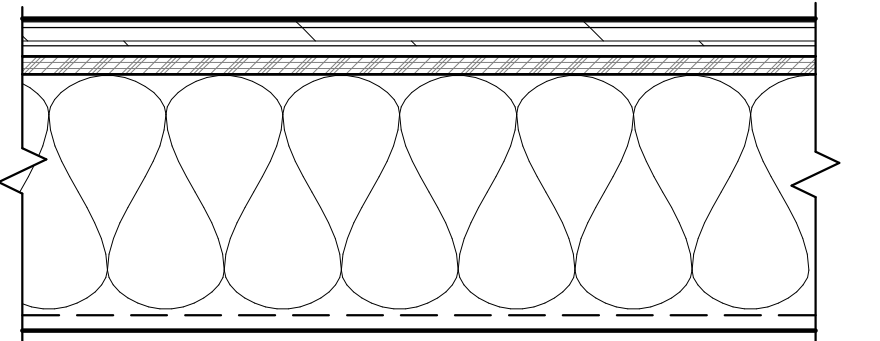
6" CONCRETE
VAPOR BARRIER
2" RIGID INSULATION
4" SAND 0' FREE DRAINING GRAVEL

F1



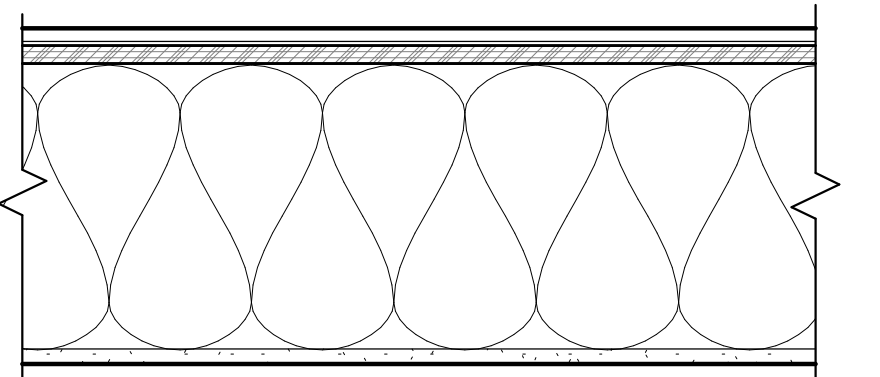
4" CONCRETE
VAPOR BARRIER
4" DRAIN FREE MATERIAL

F2



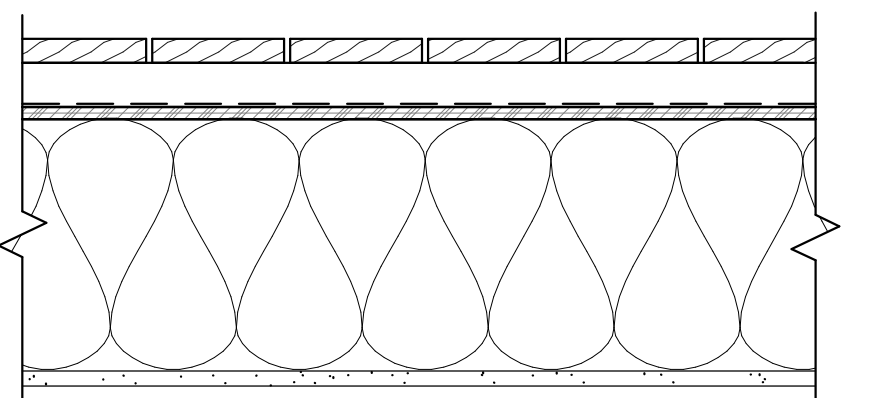
3/32" KARNDÉAN FLOORING
1/32" GLUE
1/4" MIN. UNDERLAYMENT GRADE PLY.
3/4" FLOOR SHEATHING
R-30 INSULATION
FRAMING PER STRUCTURAL
VAPOR BARRIER

F3
FLOOR JOIST OVER CRAWL



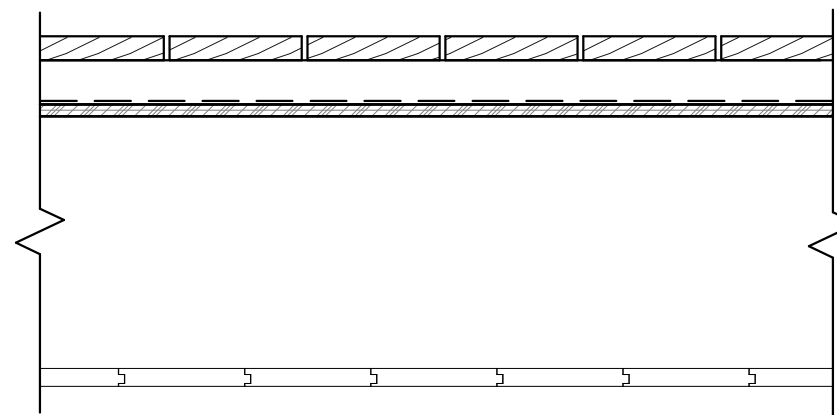
1/2" WOOD FLOORING O/SUBFLOOR
1/4" MIN. SHEATHING TO ALIGN W/ TILE (SEE ASSEMBLY F1B)
3/4" FLOOR SHEATHING
ROCK WOOL INSULATION FOR SOUND
FRAMING PER STRUCTURAL
5/8" GWB PAINTED

F4
FLOOR OVER HEATED SPACE



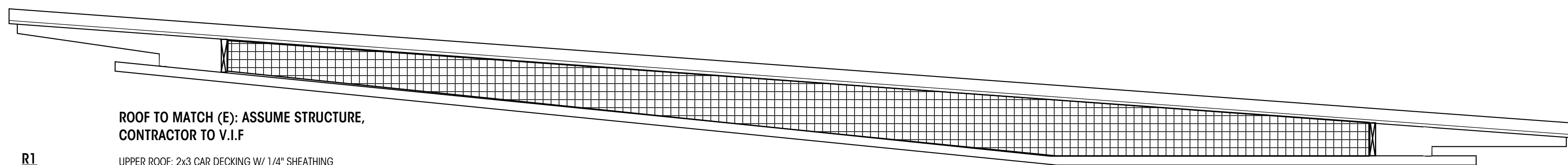
ZOMETEK 'PALLETIZED' DECKING
RIPPED FURRING, SLOPE 1/8"-12"
'DURADECK' OR APPROVED ALTERNATE MEMBRANE* O/ 3/4"
PLYWOOD OVER RIPPED FURRING AT 1/8" PER FOOT
FLOOR FRAMING PER STRUCT ALIGN BOTTOM OF FRAMING WITH INTERIOR FLOOR FRAMING
R-30 INSULATION
5/8" GWB
*WATERPROOFING MUST BE APPROVED FOR USE AS A WALKING DECK AND FOR THE INSTALLATION OF THE DECKING DIRECTLY ON THE OF THE MEMBRANE PER ICC-ES WALKING DECKS CRITERIA

F5
WP DECK OVER HEATED SPACE



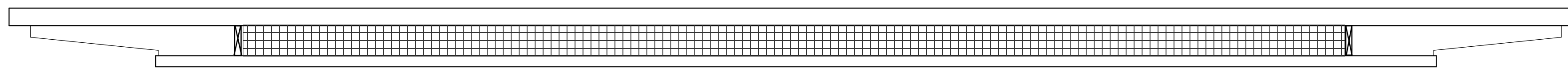
ZOMETEK 'PALLETIZED' DECKING
RIPPED FURRING, SLOPE 1/8"-12"
'DURADECK' OR APPROVED ALTERNATE MEMBRANE* O/ 3/4"
PLYWOOD OVER RIPPED FURRING AT 1/8" PER FOOT
FLOOR FRAMING PER STRUCT ALIGN BOTTOM OF FLOOR FRAMING WITH INTERIOR FLOOR FRAMING
1X CEDAR T&G STAINED
*WATERPROOFING MUST BE APPROVED FOR USE AS A WALKING DECK AND FOR THE INSTALLATION OF THE DECKING DIRECTLY ON THE OF THE MEMBRANE PER ICC-ES WALKING DECKS CRITERIA

F6
(Deck @ Main Level)



ROOF TO MATCH (E): ASSUME STRUCTURE, CONTRACTOR TO V.I.F

R1
UPPER ROOF: 2x3 CAR DECKING W/ 1/4" SHEATHING
ROOF STRUCTURE: 4x4 @ 12' SLOPE TO 3" (EXPOSED @ 1/4" SLOPE TO 1 5/8")
FILL ENTIRE CAVITY WITH SPRAY FOAM INSULATION AT (N) AND (E)
WHEN UPPER ROOF IS REPLACED R-38 MIN.
LOWER CEILING: 2x3 AT OUTSIDE EDGE, 2x T&G DECKING



R2
UPPER ROOF: 2x3 CAR DECKING W/ 1/4" SHEATHING
ROOF STRUCTURE: 2x8 ROOF RAFTERS WITH DECORATIVE TAILS
FILL ENTIRE CAVITY WITH SPRAY FOAM INSULATION AT (N) AND (E)
WHEN UPPER ROOF IS REPLACED R-38 MIN.
LOWER CEILING: 2x3 AT OUTSIDE EDGE, 2x T&G DECKING

General Structural Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2018 EDITION).
2. DESIGN LOADING CRITERIA:
 GUARDRAILS/BALCONY RAILS CONCENTRATED LOAD 200 LBS
 FLOOR LIVE LOAD 40 PSF
 ROOF LIVE LOAD 25 PSF
 DECKS 1.5 x AREA SERVED
 SNOW Ce=1.0, Is=1.0, Ct=1.1, Cs=1.0, Pg=25 PSF, Pf=20 PSF
 WIND Gcpi=0.18, 98 MPH, RISK CATEGORY II, EXPOSURE "C"
 EARTHQUAKE . . . ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
 LATERAL SYSTEM: LIGHT FRAMED SHEAR WALLS,
 SITE CLASS=D, Ss=144, Sds=100, S1=50, SD1=60, Cs=0.154
 SDC D (DEFAULT), Ie=1.0, R=6.5
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATION, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.
4. PRIMARY STRUCTURAL ELEMENTS NOT DIMENSIONED ON THE STRUCTURAL PLANS AND DETAILS SHALL BE LOCATED BY THE ARCHITECTURAL PLANS AND DETAILS. VERTICAL DIMENSION CONTROL IS DEFINED BY THE ARCHITECTURAL WALL SECTIONS, BUILDING SECTION, AND PLANS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN BOTH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. CONFORM TO ASCE 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION".
7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL NOTES AND DETAILS SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED OR REQUEST ADDITIONAL INFORMATION. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.
9. ALL STRUCTURAL SYSTEMS, WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED, SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
10. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

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

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

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

QUALITY ASSURANCE

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

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

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

GEOTECHNICAL

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

ALLOWABLE SOIL PRESSURE	3000 PSF
LATERAL EARTH PRESSURE (UNRESTRAINED)	35 PCF
ULTIMATE PASSIVE EARTH PRESSURE (FS NOT INCLUDED)	300 PCF
COEFFICIENT OF FRICTION (FS NOT INCLUDED).	0.5
SEISMIC SURCHARGE PRESSURE (UNIFORM LOAD)	8H PSF
PILE CAPACITY (COMPRESSION)	6T

SOILS REPORT REFERENCE:
 PROPOSED ADDITIONS TO EXISTING MCLear RESIDENCE
 9120 SOUTHEAST 50TH ST
 MERCER ISLAND, WA

PREPARED BY: GEOTECH CONSULTANTS, INC. ON JANUARY 29, 2021 JN 20322

15. PIN PILES SHOWN ON THE PLAN SHALL BE 3" DIAMETER SCHEDULE 40, GRADE A, UNLESS OTHERWISE NOTED. THE MAXIMUM CAPACITY OF 3" PILES SHALL BE 6 TONS. ALL PILES SHALL BE DRIVEN TO REFUSAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE MAXIMUM PILE ECCENTRICITY SHALL BE 2 INCHES. GEOTECHNICAL SPECIAL INSPECTION SHALL BE SUBJECT TO THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND THE BUILDING DEPARTMENT. SEE PLANS FOR OTHER SIZES AND CRITERIA.

RENOVATION

16. 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.
17. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER IF EXISTING CONDITIONS DETERMINED DURING WORK VARY FROM THE EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS.
18. 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.

- A. ALL NEW OPENINGS THROUGH EXISTING WALLS, SLABS AND BEAMS SHALL BE ACCOMPLISHED BY SAW CUTTING WHEREVER POSSIBLE. CORNERS SHALL NOT BE OVERCUT.
- B. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND LOCATION OF MEMBERS PRIOR TO CUTTING ANY OPENINGS.
- C. SMALL ROUND OPENINGS SHALL BE ACCOMPLISHED BY CORE DRILLING.
- D. WHERE NEW REINFORCING TERMINATES AT EXISTING CONCRETE, DRILL AND EPOXY DOWELS MATCHING THE NEW REINFORCING INTO THE EXISTING CONCRETE WITH 6" EMBED, UNLESS OTHERWISE NOTED ON PLANS.

19. CONTRACTOR SHALL CHECK FOR DRY ROT 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.

CONCRETE

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

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

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

23. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 315R-18 AND 318-14. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318-14, CLASS B. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

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

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

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

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

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

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

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

ANCHORAGE

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

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

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

STEEL

31. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON:
 A. AISC 360-16 AND SECTION 2205.2 OF THE INTERNATIONAL BUILDING CODE.
 B. JUNE 15, 2016 AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AMENDED AS FOLLOWS: AS NOTED IN THE CONTRACT DOCUMENTS, BY THE DELETION OF PARAGRAPH 4.4.1, AND REVISE REFERENCE FROM "STRUCTURAL DESIGN DRAWINGS" TO "CONTRACT DOCUMENTS" IN PARAGRAPH 3.1.
 C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

32. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	FY
A. WIDE FLANGE SHAPES	A992	50 KSI
B. OTHER SHAPES, PLATES, AND RODS	A36	36 KSI
C. OTHER SHAPES AND PLATES (NOTED GRADE 50 ON PLANS)	A572 (GRADE 50)	50 KSI
D. PIPE COLUMNS	A53 (E OR S, GR. B)	35 KSI
E. STRUCTURAL TUBING -SQUARE OR RECTANGULAR	A500 (GR. B)	46 KSI
-ROUND		42 KSI
-ANY SHAPE	ASTM A1085	50 KSI
F. CONNECTION BOLTS (3/4" ROUND, UNLESS SHOWN OTHERWISE)	A325-N	

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

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

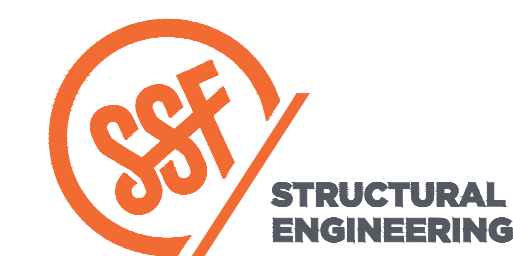
35. SHOP PRIME ALL STEEL EXCEPT:

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

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

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

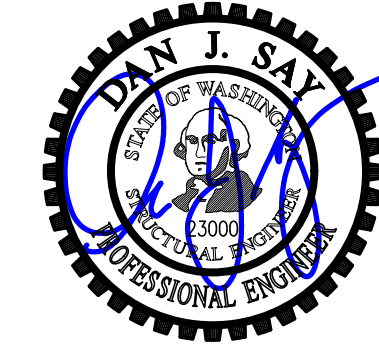
38. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS AND SHALL BE PERFORMED BY WABO CERTIFIED WELDERS USING E70XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN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



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DESIGN:	BDM
DRAWN:	NHD
CHECKED:	BDM
APPROVED:	DJS

REVISIONS:

DPD:

PROJECT TITLE:

McLear Residence
 9120 SE 50th St.
 Mercer Island, WA 98040

ARCHITECT:

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

ISSUE:

PERMIT

SHEET TITLE:

General Structural Notes

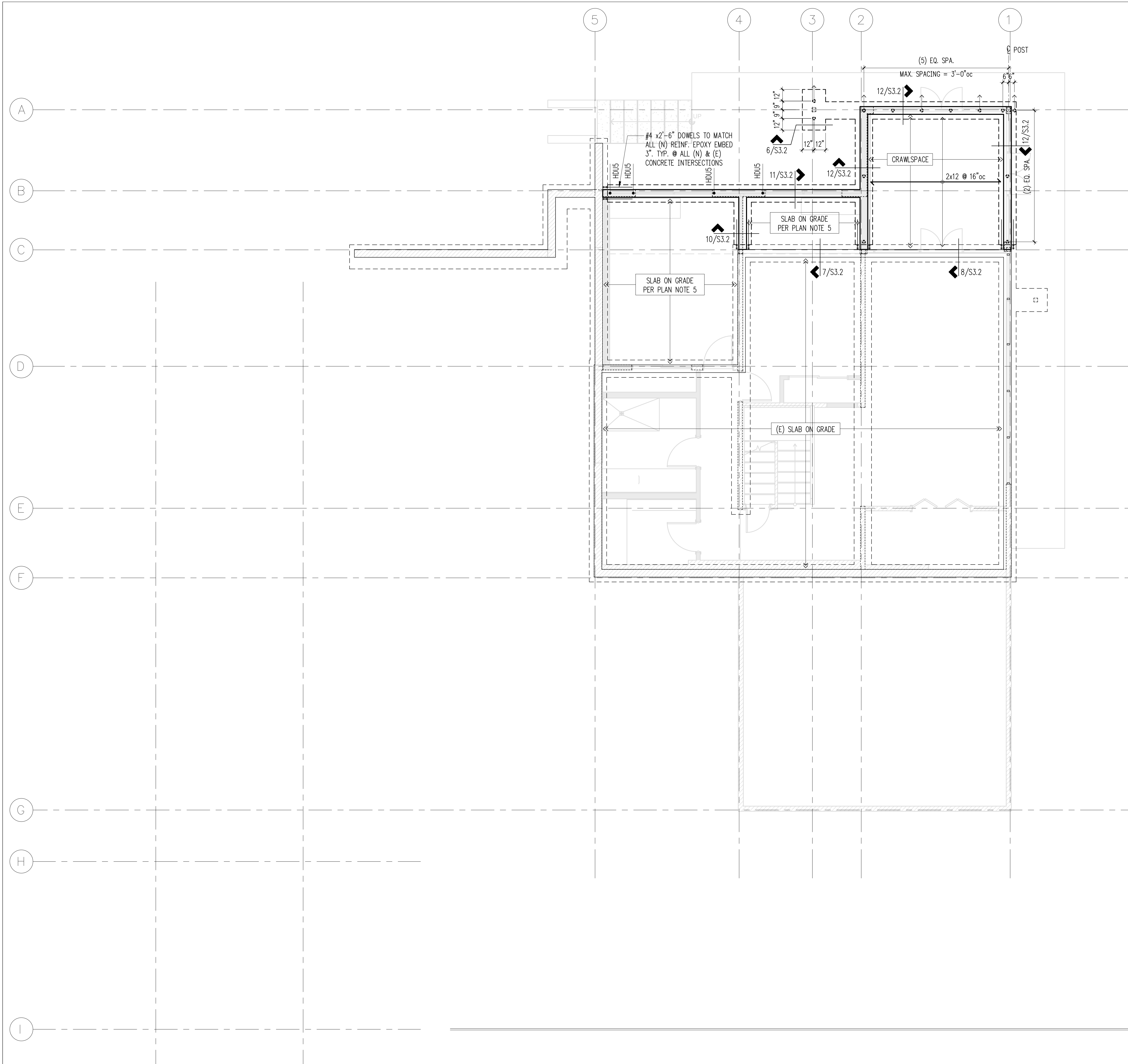
SCALE:

DATE: March 19, 2021

PROJECT NO: 01519-2020-13

SHEET NO:

S1.1



Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. EXISTING FRAMING ON PLANS IS ASSUMED. CONTRACTOR TO VERIFY DIRECTIONS AND EXTENTS. NOTIFY ARCHITECT AND ENGINEER IF DIFFERENT.
4. THE BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
5. NEW INTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
6. NEW EXTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
7. TYPICAL NEW FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 3/4" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
8. NAIL NEW FLOOR SHEATHING W/ BD AT 6" OC AT FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" OC IN FIELD.
9. PROVIDE BLOCKING/BRIDGING AT 8'-0" O.C. IN NEW FLOOR FRAMING
10. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.

Legend

- NEW STRUCTURAL WALL OR POST ABOVE
- EXISTING STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- EXISTING WALL OR POST BELOW
- EXISTING STEM WALL & FOOTING
- NEW STEM WALL & FOOTING
- HOLDOWN PER 10/S3.1
- 3"Ø PIN PILE (8 total this sheet)
- 3"Ø PIN PILE BATTERED IN DIRECTION OF ARROW @ 1H:5V (5 total this sheet)

Main Floor Framing Plan
Scale: 1/4" = 1'-0"



DESIGN: BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

PROJECT TITLE:
McLear Residence
9120 SE 50th St.
Mercer Island, WA 98040

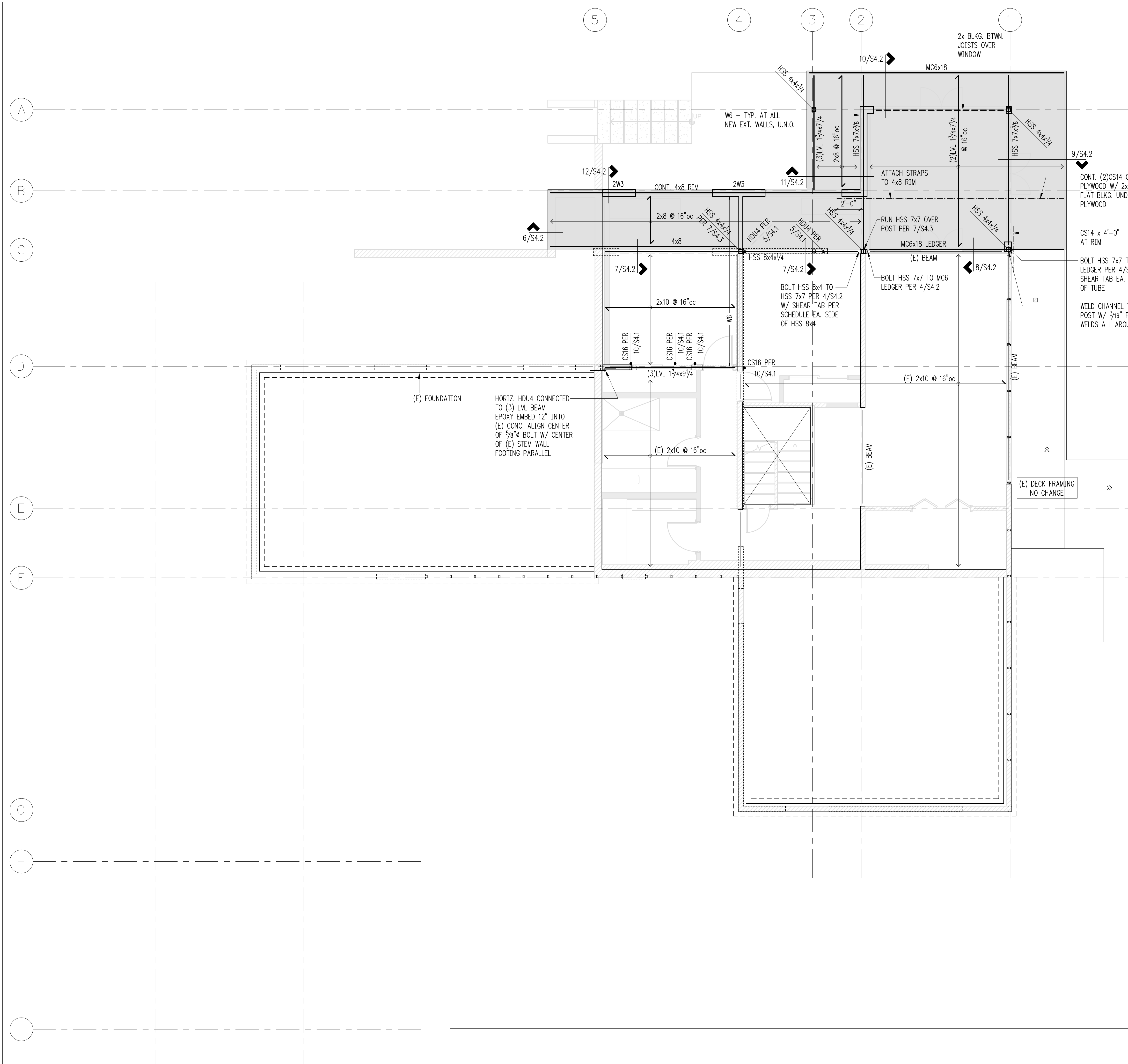
ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
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ISSUE:
PERMIT

SHEET TITLE:
Foundation Plan

SCALE: 1/4" = 1'-0" U.N.O.
DATE: March 19, 2021
PROJECT NO: 01519-2020-13
SHEET NO:

S2.1



Plan Notes

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FRAMING ON PLANS IS ASSUMED. CONTRACTOR TO VERIFY DIRECTIONS AND EXTENTS. NOTIFY ARCHITECT AND ENGINEER IF DIFFERENT.
- TYPICAL NEW FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 3/4" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
- NAIL NEW FLOOR SHEATHING W/ 8d @ 6" OC AT FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" OC IN FIELD.
- PROVIDE BLOCKING/BRIDGING AT 8'-0" O.C. IN NEW FLOOR FRAMING
- "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL NEW EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
- PROVIDE (2) BEARING STUDS AT EACH END OF ALL NEW HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.
- PROVIDE LCE COLUMN CAP AND BASE AT ALL NEW BEAM TO COLUMN CONNECTIONS U.O.N.
- ALL NEW POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.

Legend

- NEW STRUCTURAL WALL OR POST BELOW
- NEW STRUCTURAL WALL OR POST ABOVE
- EXISTING STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- EXISTING WALL OR POST BELOW
- EXISTING STEM WALL & FOOTING
- SHEARWALL PER 12/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- NEW HEADER/BEAM PER PLAN
- EXISTING HEADER/BEAM
- HANGER
- BLOCKED FLOOR DIAPHRAGM: 2x4 FLAT BLKG. AT ALL PLYWOOD PANEL EDGES. NAIL ALL PLYWOOD PANEL EDGES W/ 8d @ 3"oc & @ 12"oc FIELD



DESIGN: BDM
 DRAWN: NHD
 CHECKED: BDM
 APPROVED: DJS

REVISIONS:

NO.	DESCRIPTION

DPD:

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 9120 SE 50th St.
 Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
 66 Bell Street, Unit 1
 Seattle, WA 98121
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ISSUE:
PERMIT

SHEET TITLE:
Main Floor Framing Plan

SCALE: 1/4" = 1'-0" U.N.O.
 DATE: March 19, 2021
 PROJECT NO: 01519-2020-13
 SHEET NO:

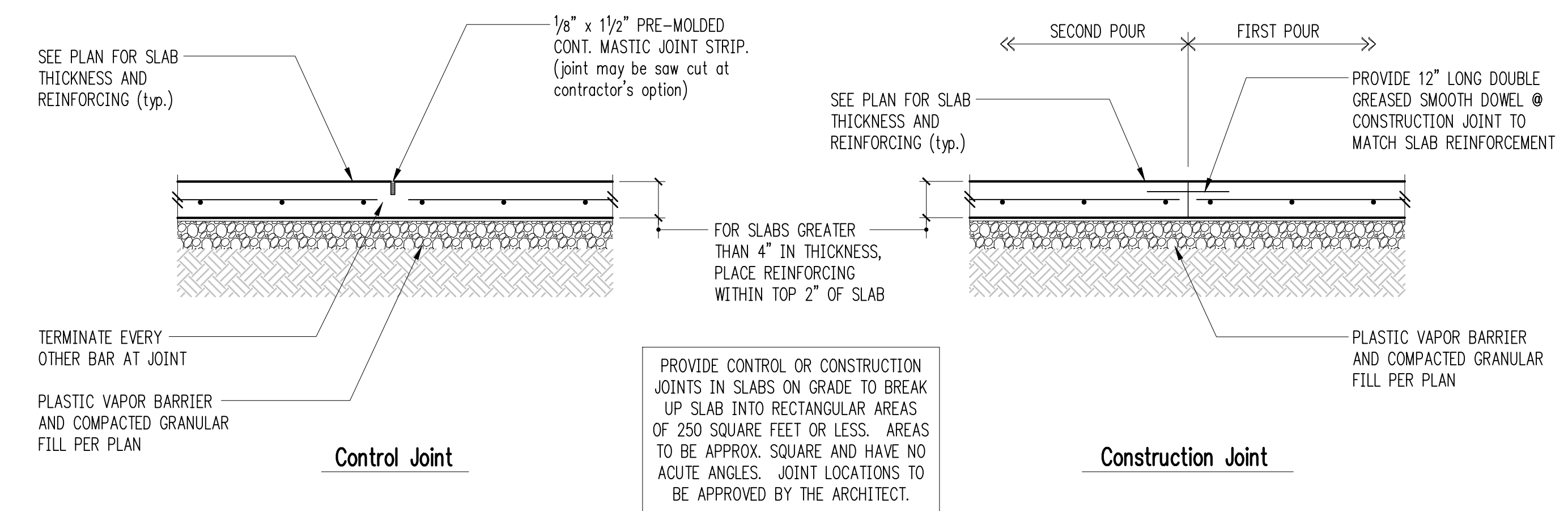


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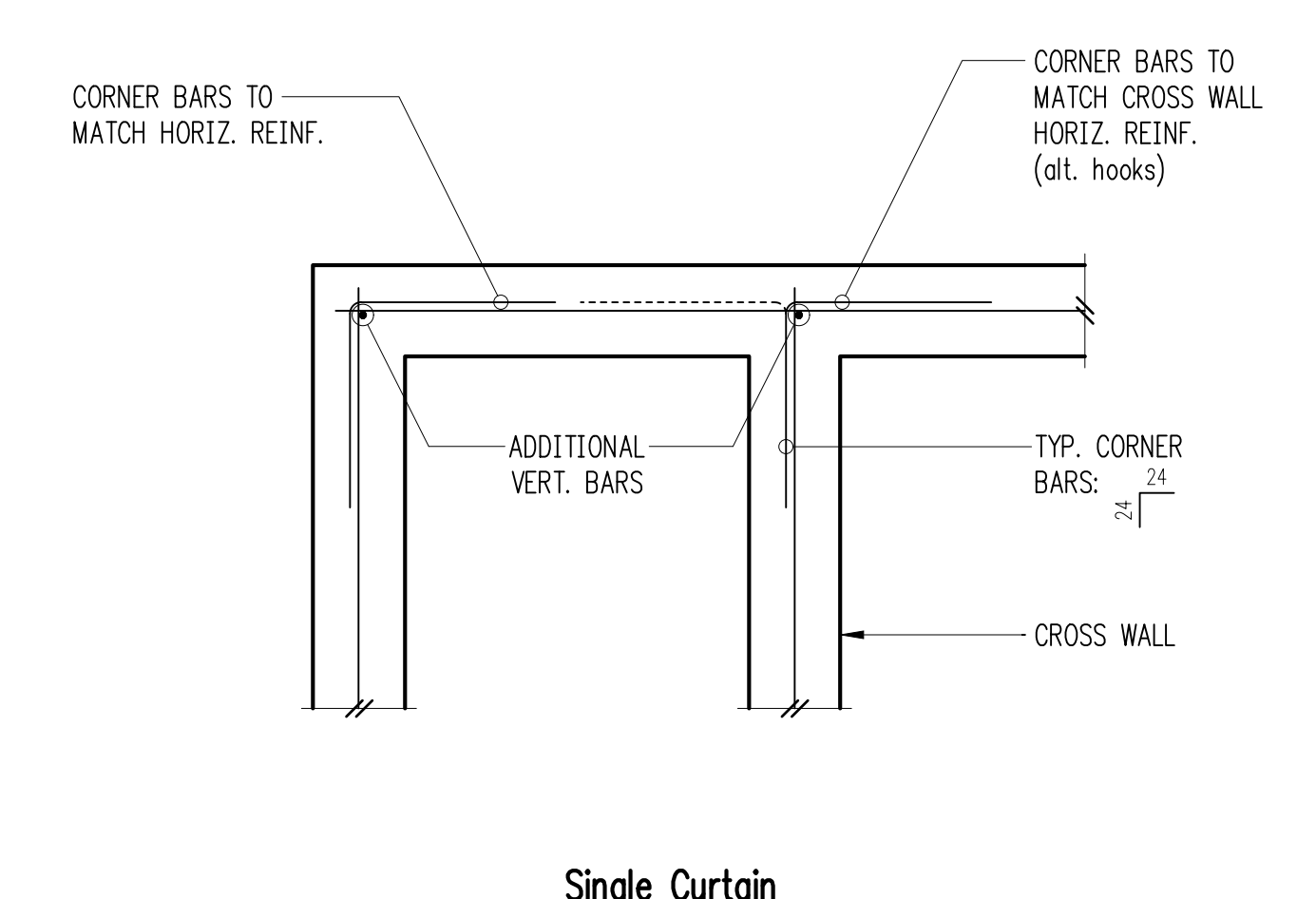
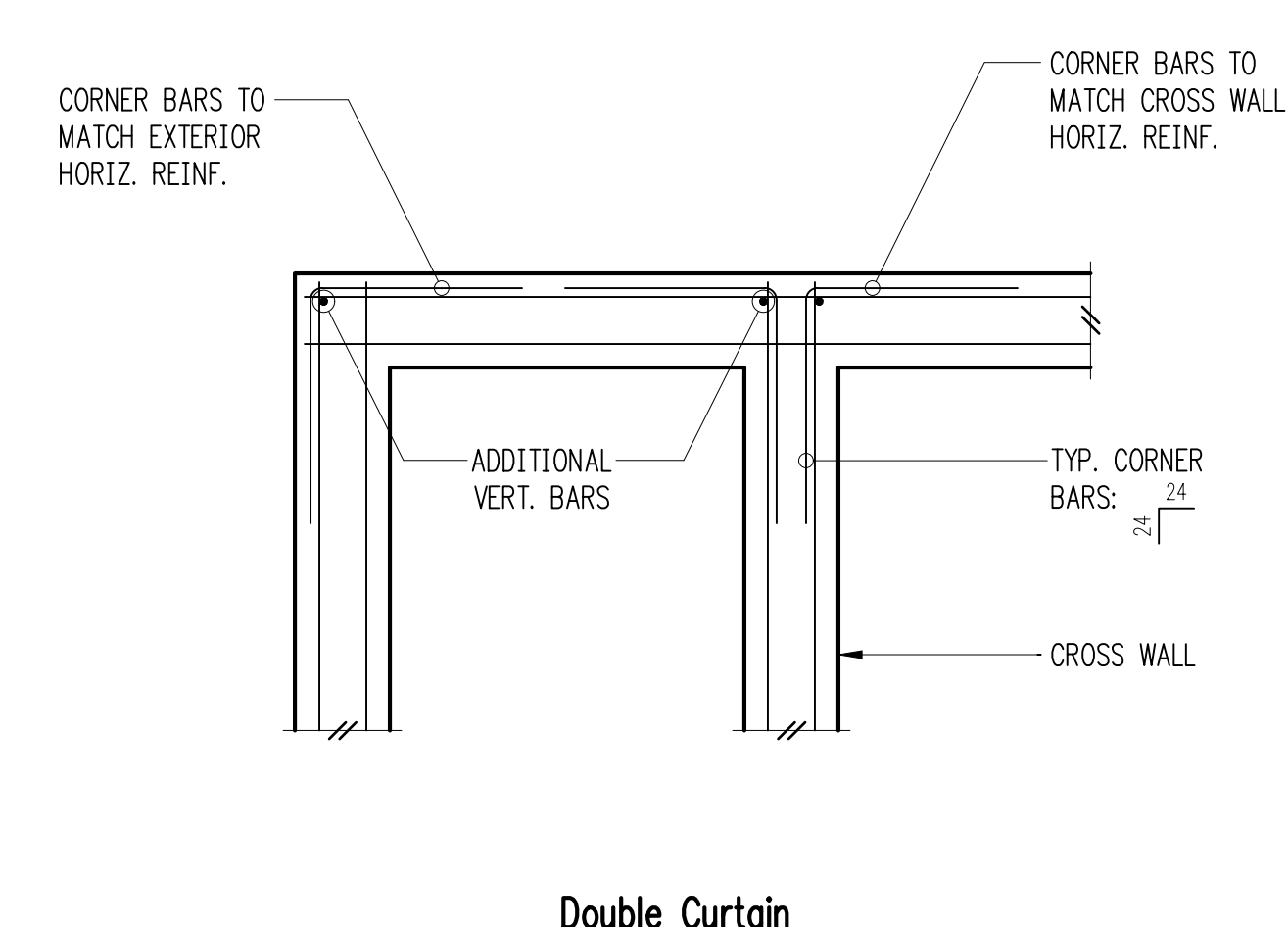
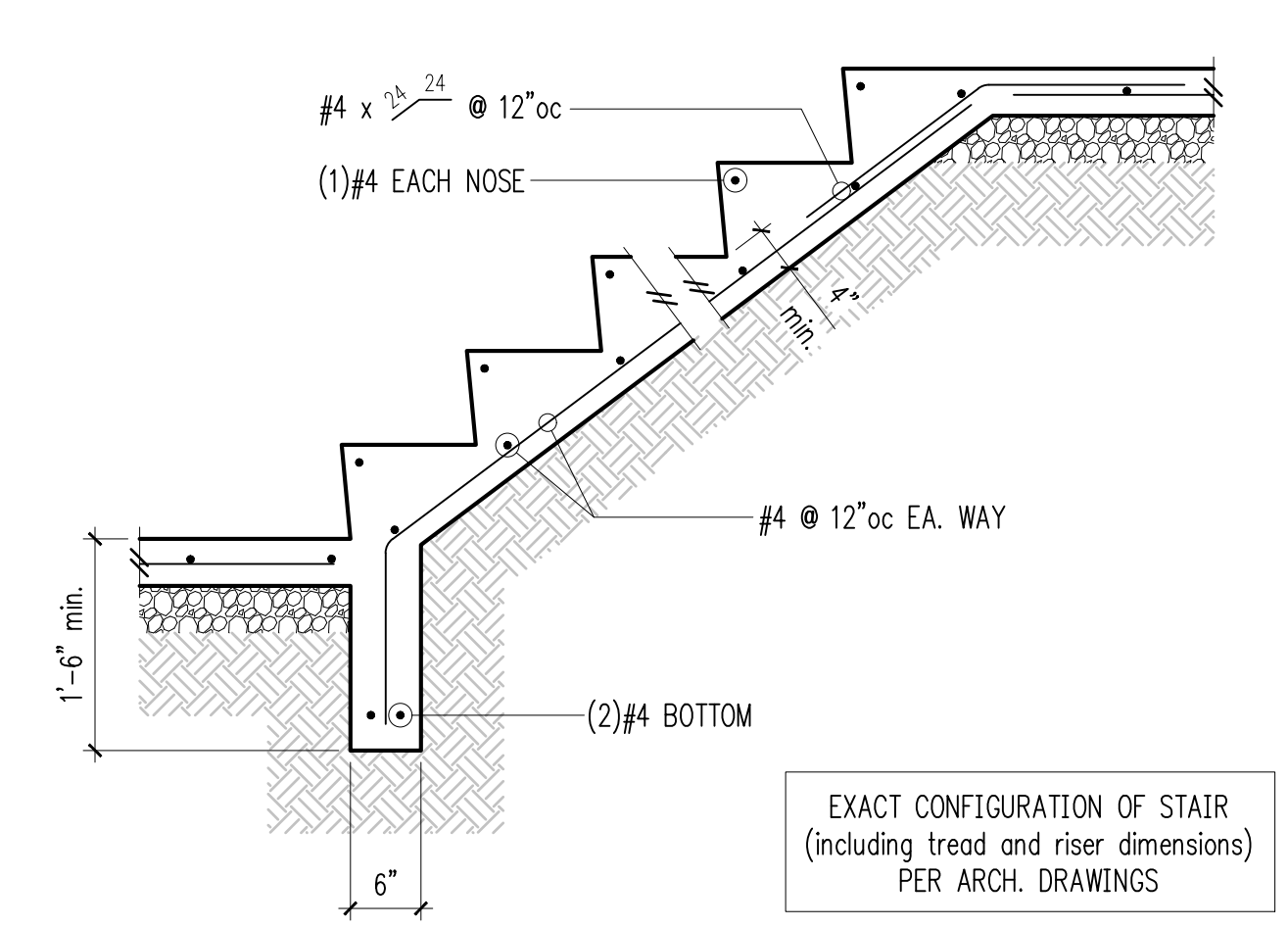
Typical Slab Joints 4



5

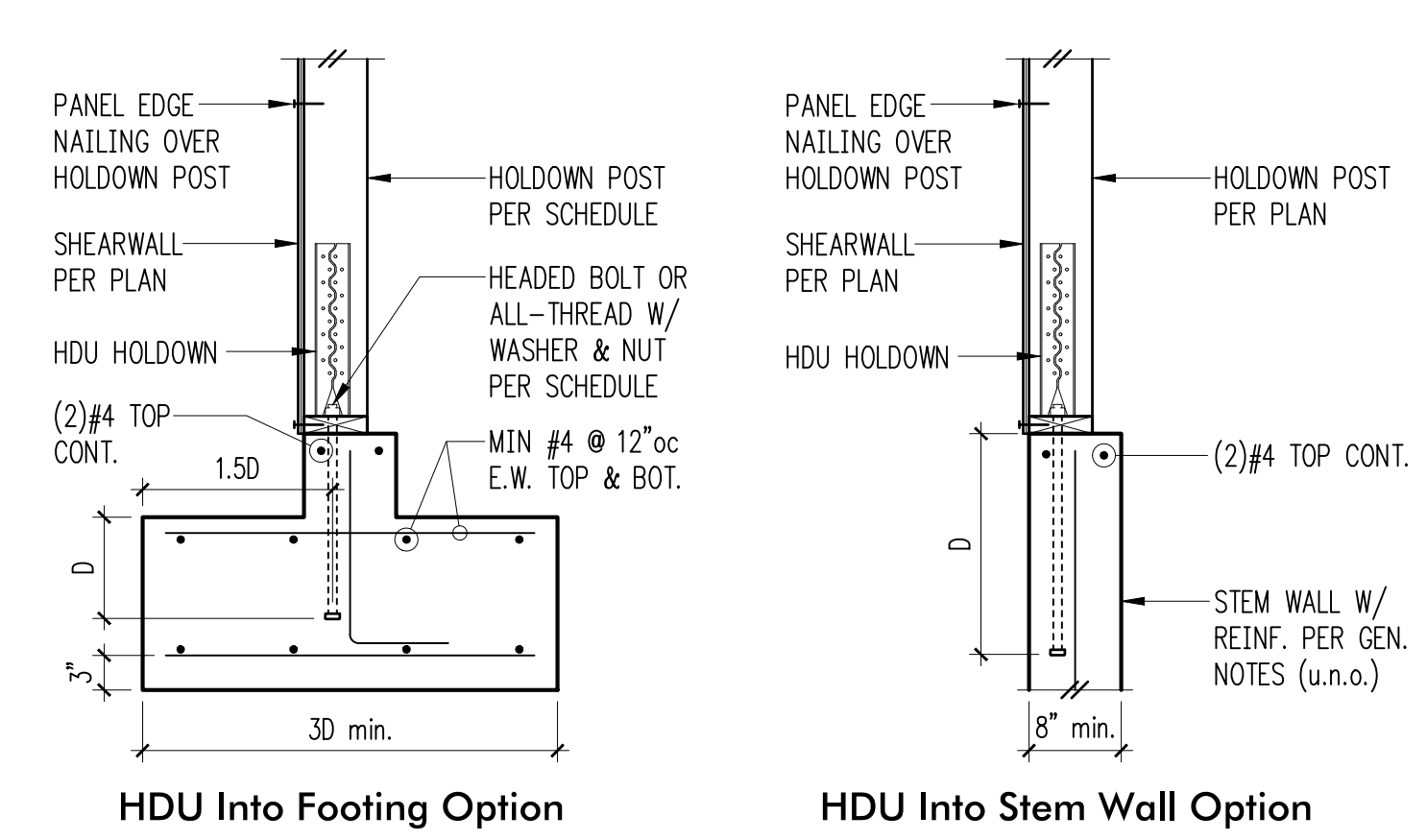
6

Typical Stair On Grade 6



Typical Corner Bars at Concrete Walls and Footings 8

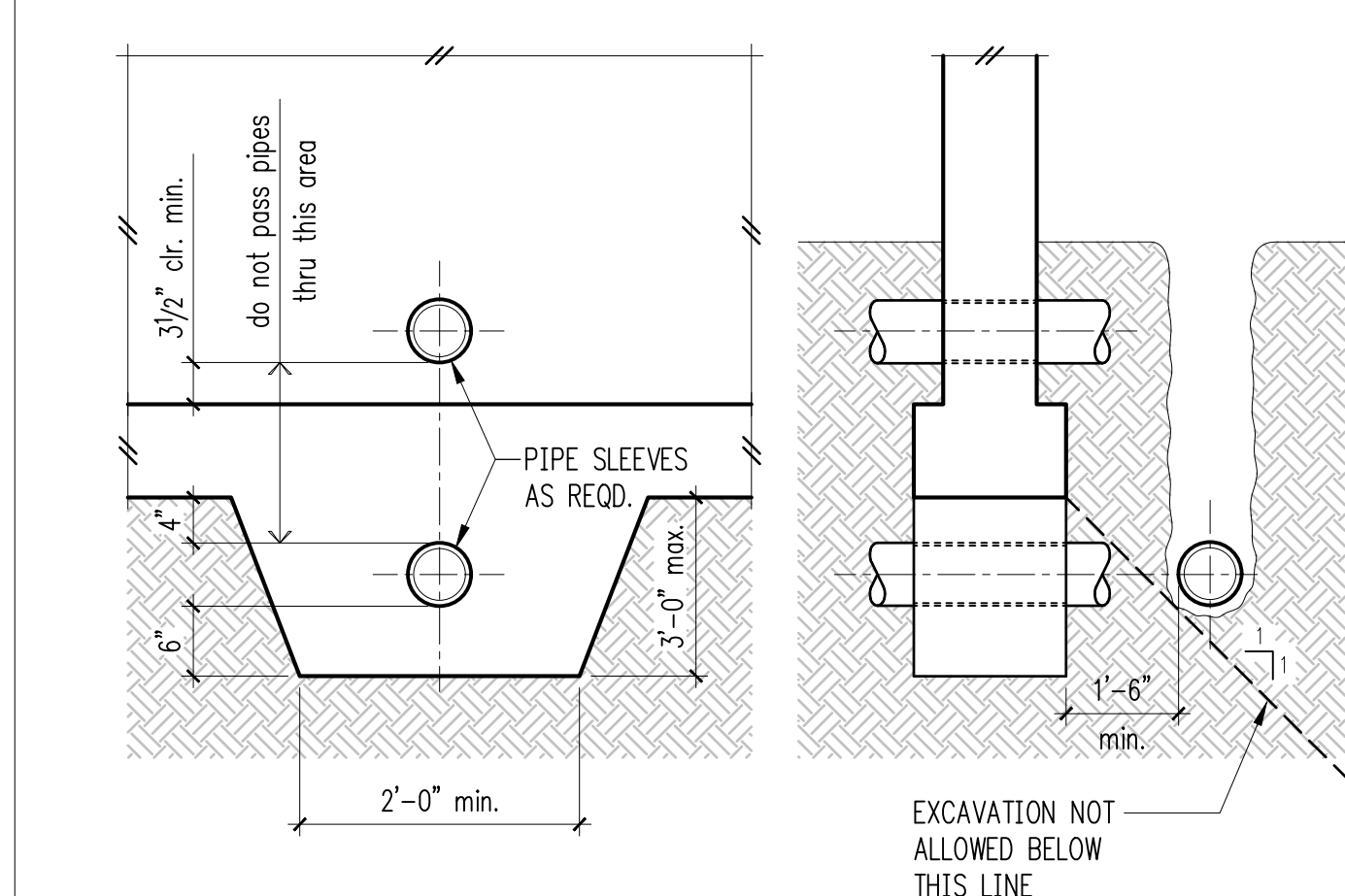
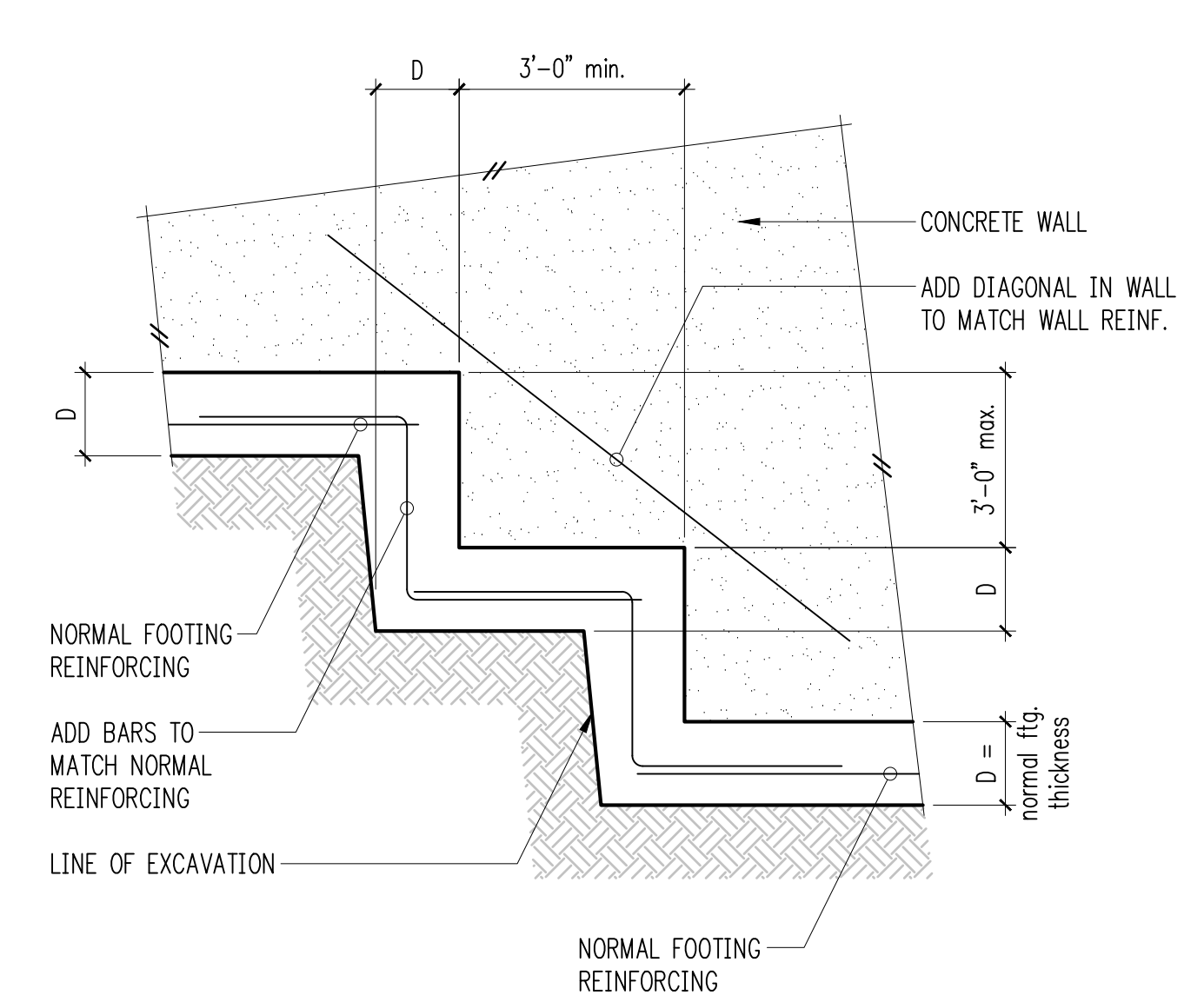
Typical HDU Holddown 10



Holddown Schedule

Plan Mark	Screws	Anchor Bolt	Min. A.B. Embed (D)		Holddown Post ①	
			Stem Wall	Footing	if 2x4	if 2x6
HDU2-SDS2.5	(6)SDS 1/4"x2 1/2"	5/8"φ	12"	4"	(2) 2x4	(2) 2x6
HDU4-SDS2.5	(10)SDS 1/4"x2 1/2"	5/8"φ	18"	6"	4x4	4x6
HDU5-SDS2.5	(14)SDS 1/4"x2 1/2"	5/8"φ	SB9x24	7"	4x4	4x6
HDU8-SDS2.5	(20)SDS 1/4"x2 1/2"	7/8"φ	SSTB28	8"	4x6	6x6
HDU11-SDS2.5	(30)SDS 1/4"x2 1/2"	1"φ	SB1x30	10"	4x8	6x6
HDU14-SDS2.5	(36)SDS 1/4"x2 1/2"	1"φ	N/A	12"	4x8	6x6

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



REVISIONS:

DPD:

PROJECT TITLE:
McLear Residence
9120 SE 50th St.
Mercer Island, WA 98040

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

ISSUE:
PERMIT

SHEET TITLE:
Typical Concrete Details

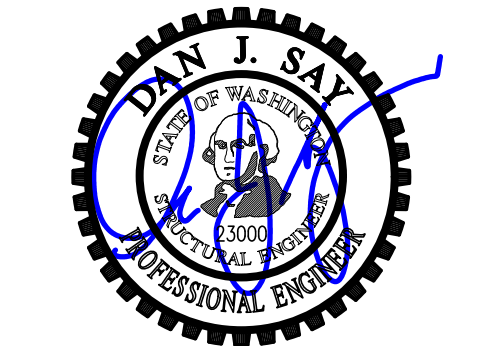
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DATE: March 19, 2021

PROJECT NO: 01519-2020-13

SHEET NO:

S3.1



DESIGN: BDM
 DRAWN: NHD
 CHECKED: BDM
 APPROVED: DJS

REVISIONS:

NO.	DESCRIPTION

DPD:

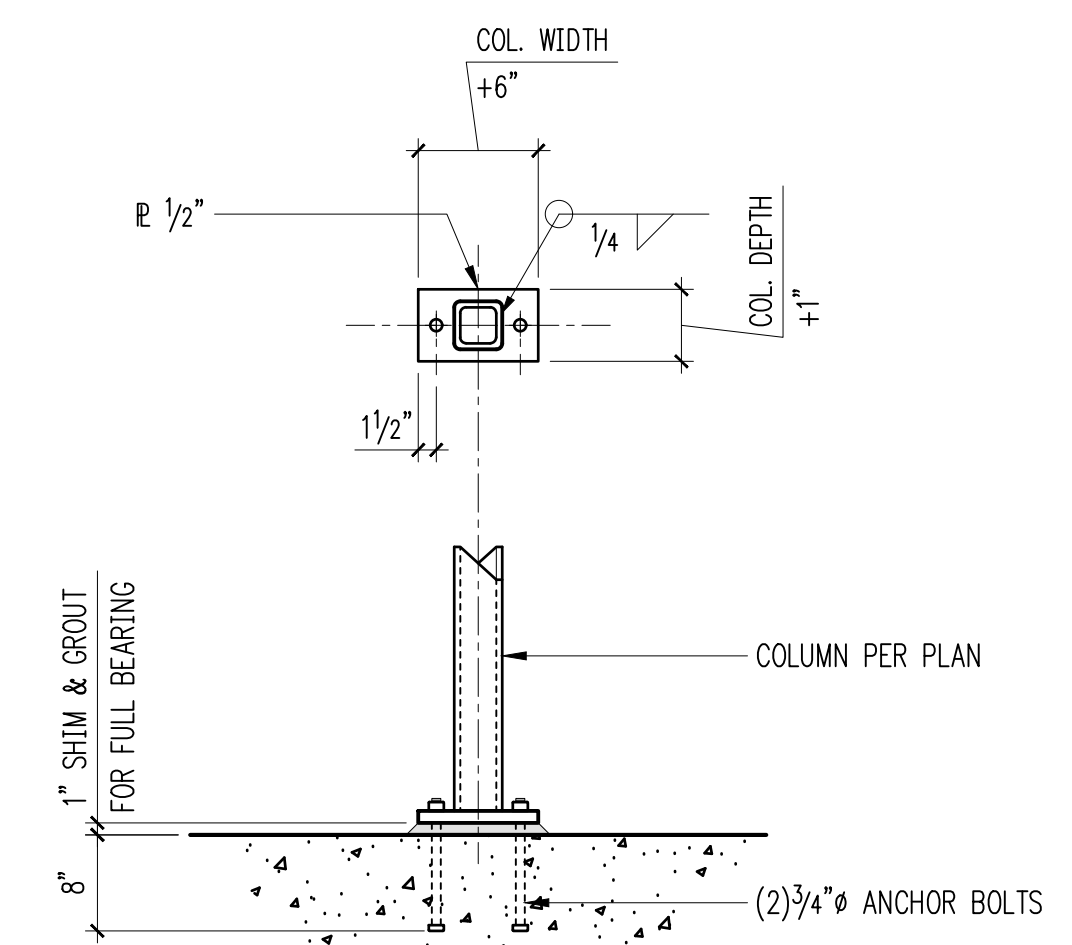
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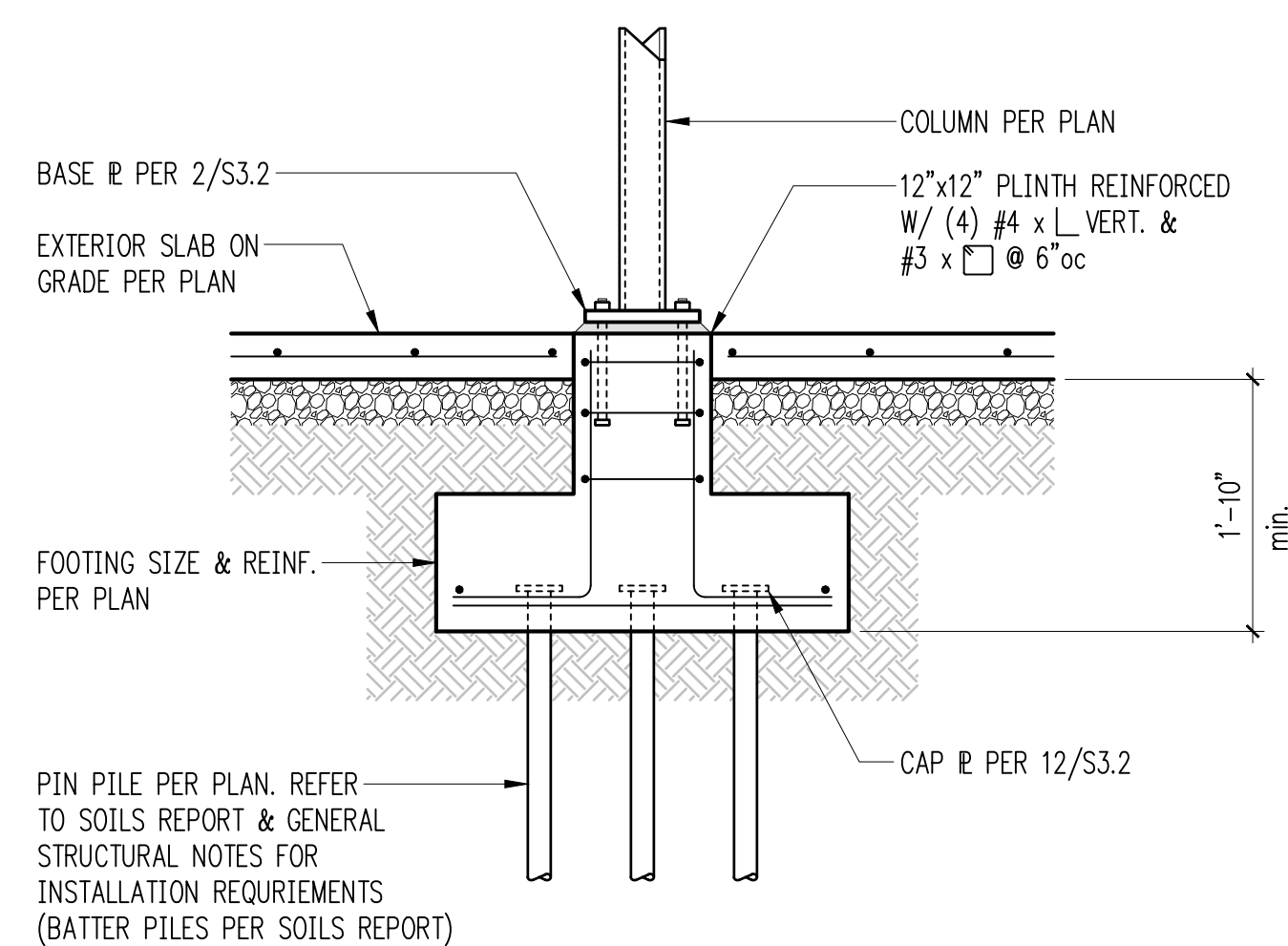
ISSUE:
PERMIT

SHEET TITLE:
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 SCALE: 3/4" = 1'-0" U.N.O.
 DATE: March 19, 2021
 PROJECT NO: 01519-2020-13
 SHEET NO:

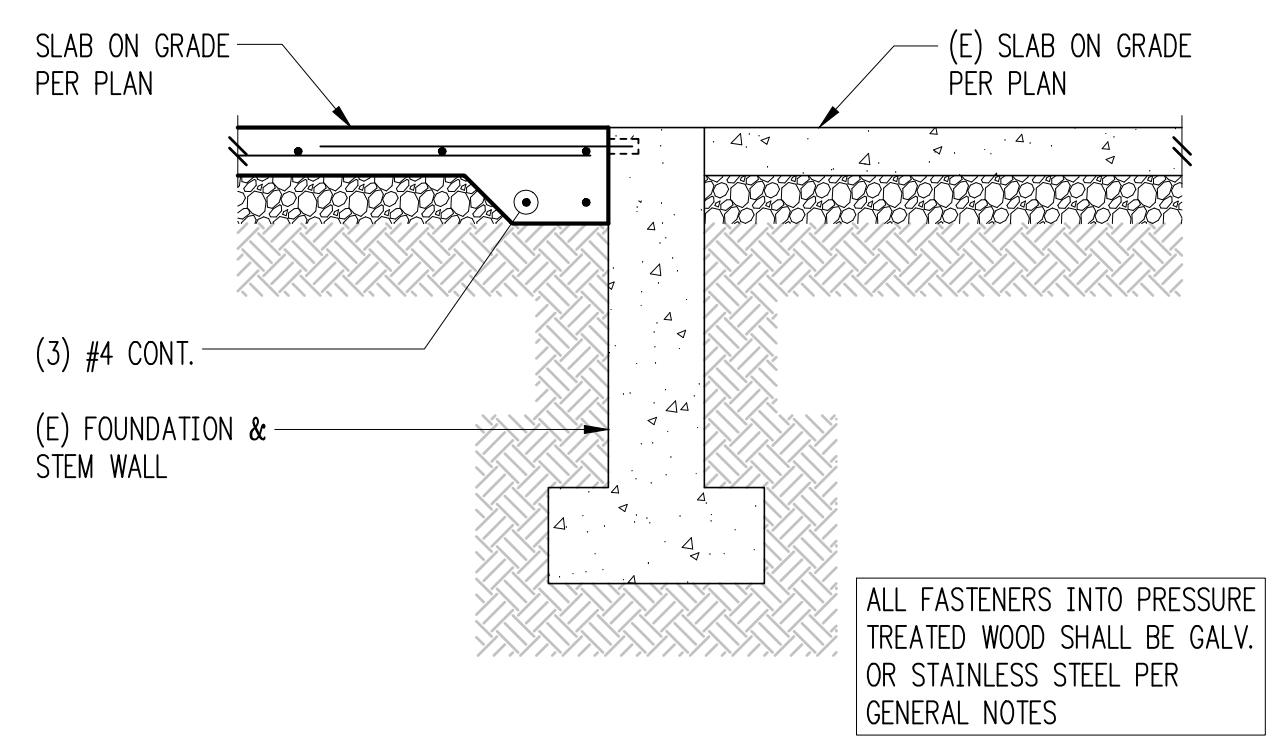
S3.2



2 Baseplate - HSS Column

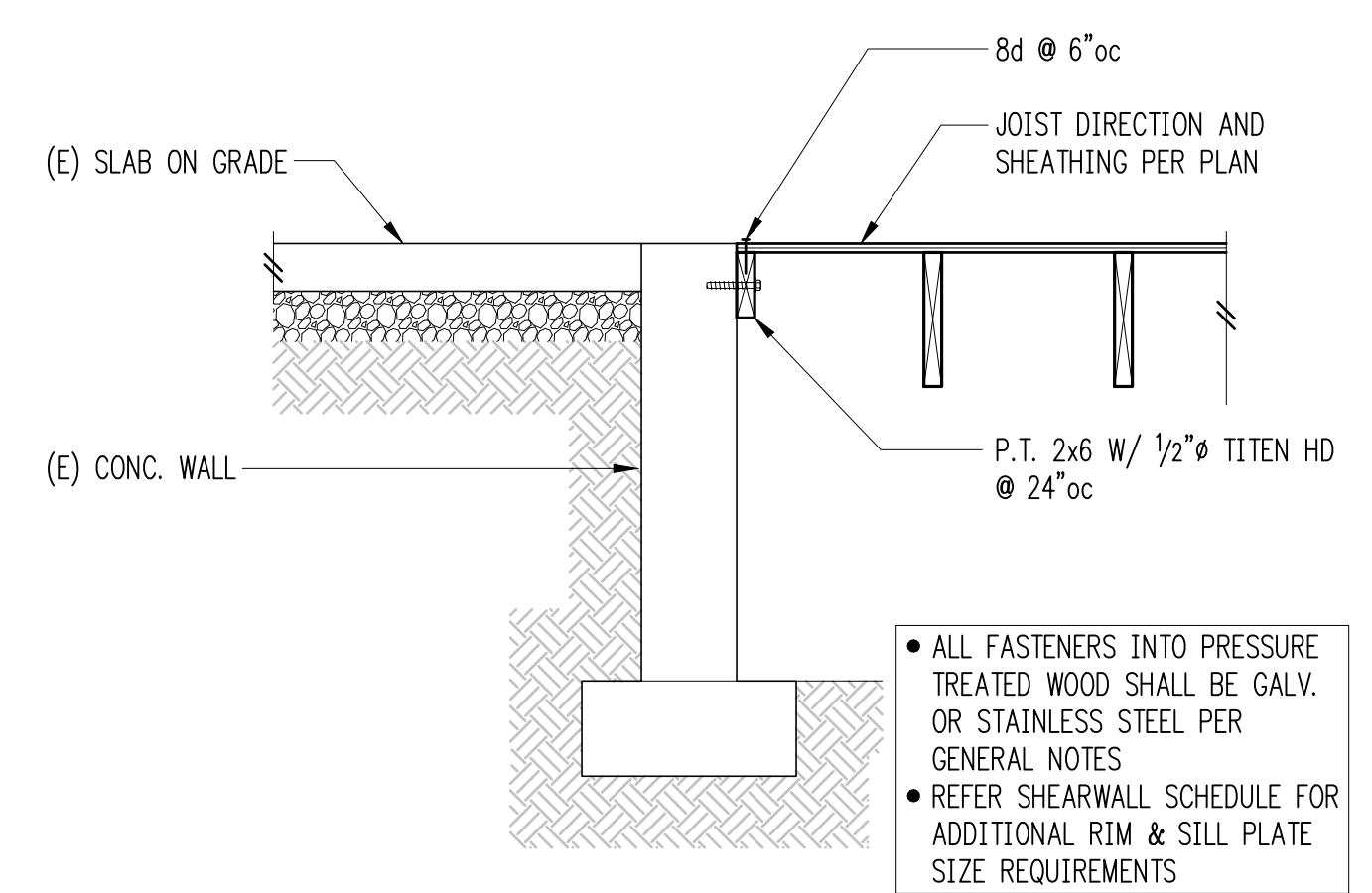


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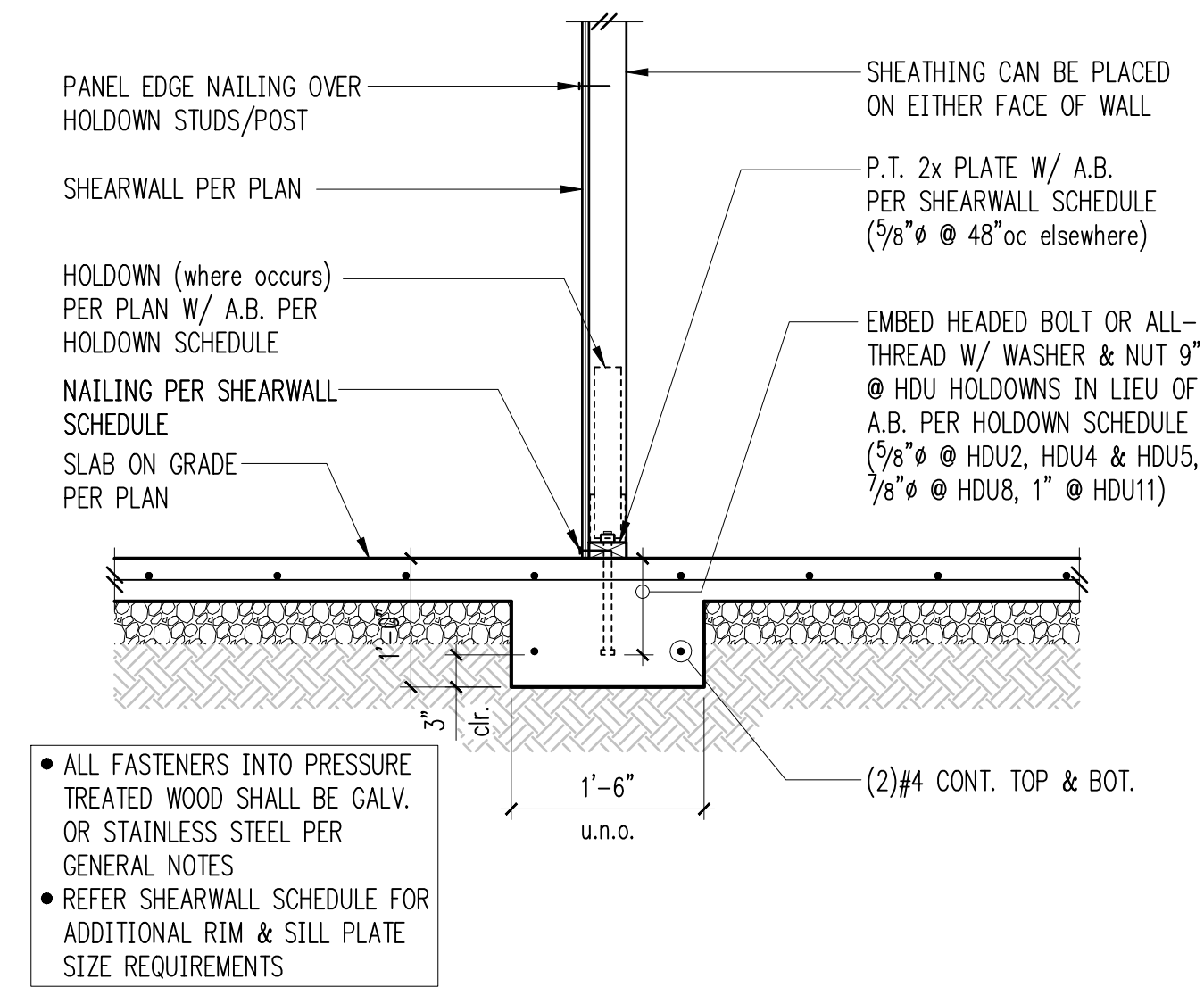
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7 New Exterior Wall W/ Existing Slab & Foundation



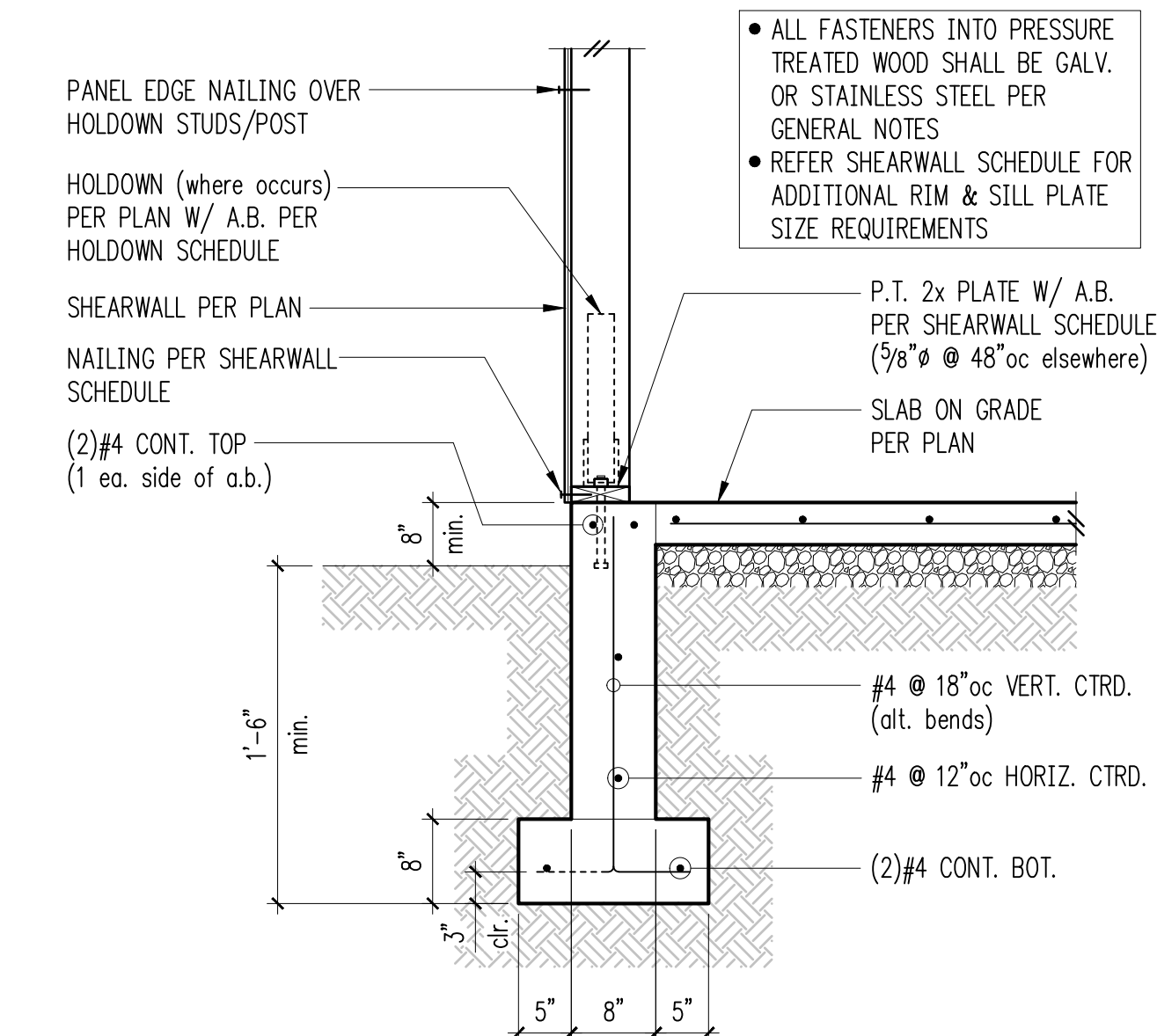
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8 Exterior Framing at Crawl Space



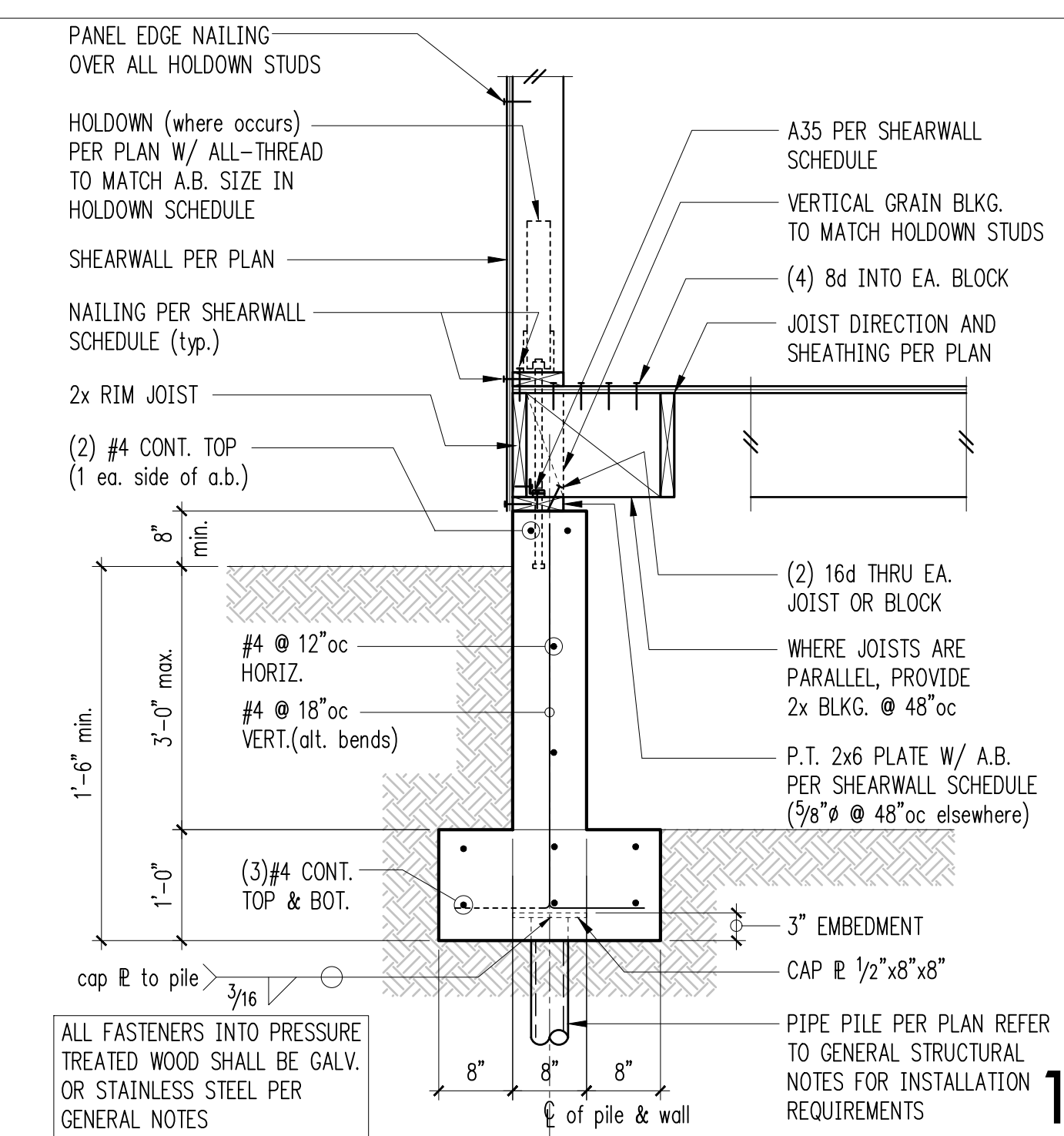
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10 Interior Wall w/ Thickened Slab



11

11 Exterior Wall w/ Slab on Grade



12

12 Foundation Detail



DESIGN: BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

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Wood Framing Details

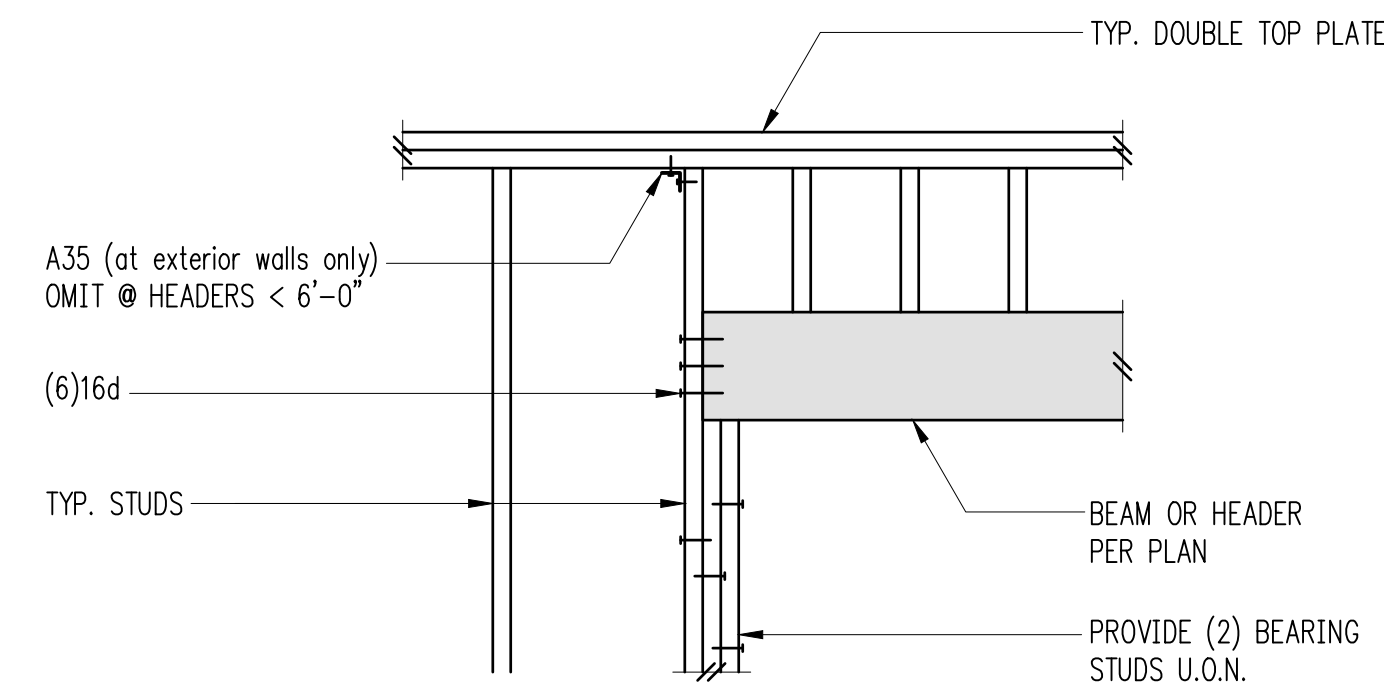
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DATE: March 19, 2021

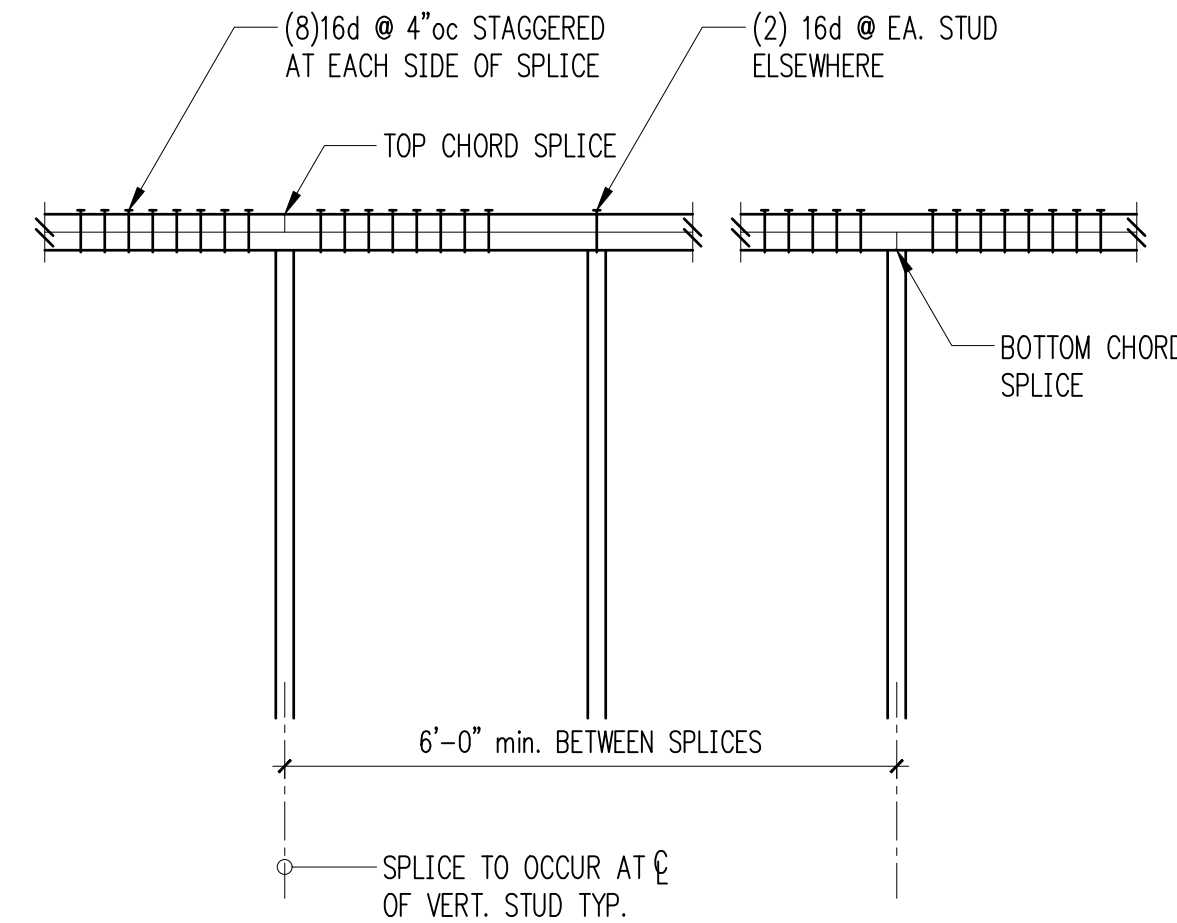
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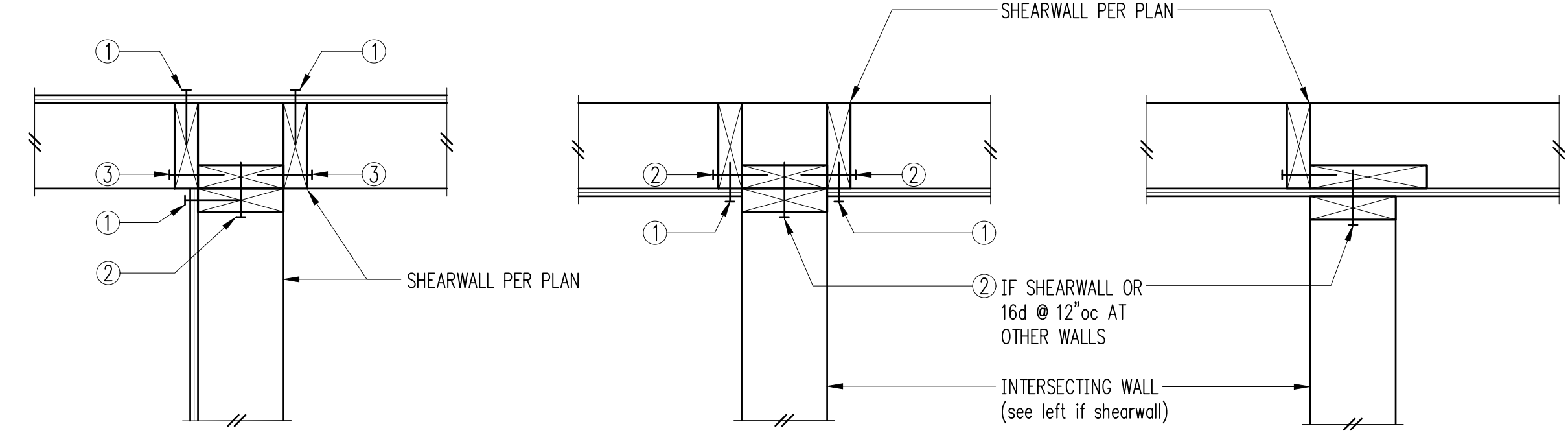
S4.1



Typical Header Support w/2 Bearing Studs 1

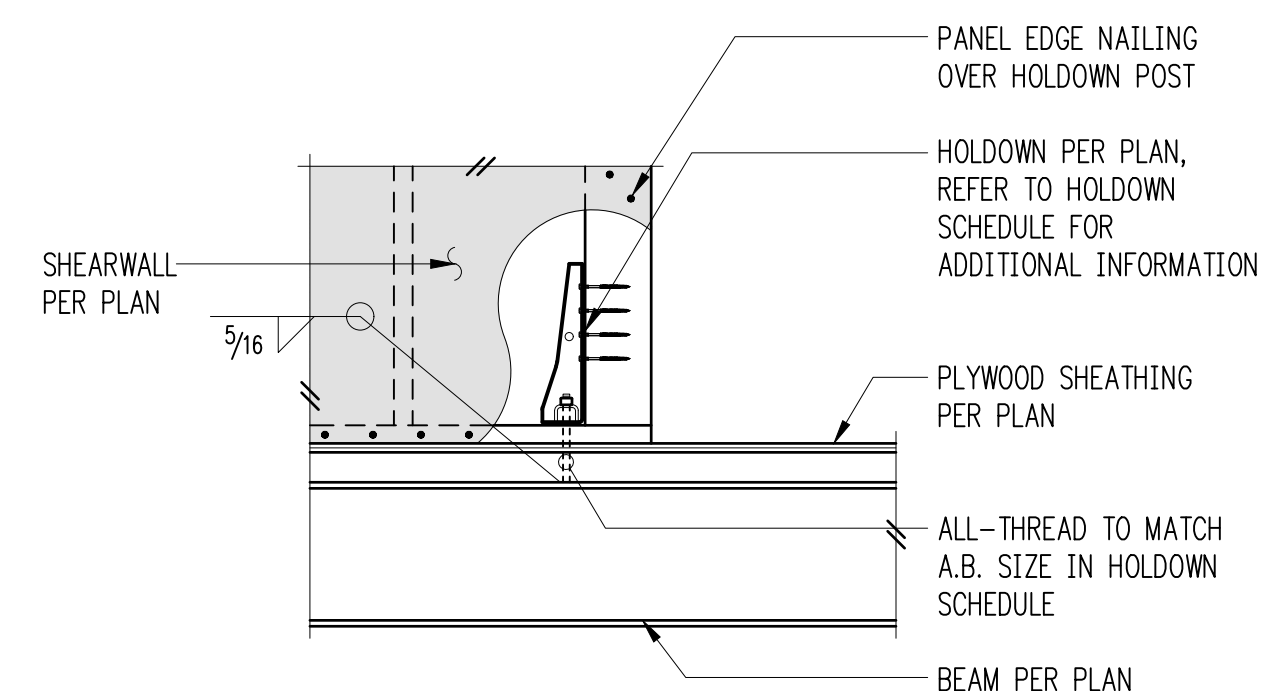


Typical Top Plate Splice 2



- ① PLYWOOD PANEL EDGE NAILING PER SHEARWALL SCHEDULE
- ② BASE PLATE NAILING PER SHEARWALL SCHEDULE
- ③ 16d @ 8"oc

Typical Shearwall Intersections 4



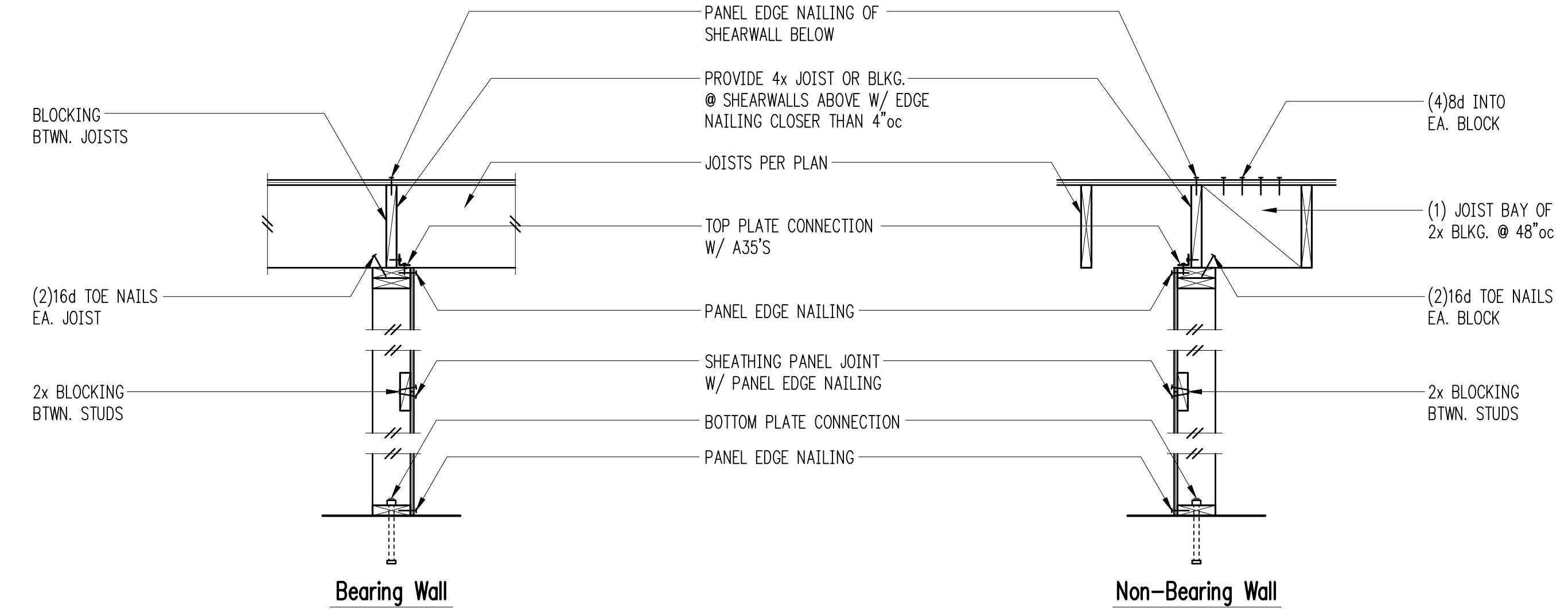
Holddown at WF Beam - HDU 5

	A	B	C
PLAN VIEW			
SECTION			
# OF WOOD BMS (LVL)	2-1 3/4"	3-1 3/4"	4-1 3/4"
SDW22 SCREW SIZE	0.220x3	0.220x5	0.220x6
# OF SDW22 SCREWS	2	2	2
SPACING OF SDW22 SCREWS	12"oc	12"oc	12"oc

NOTES:
- MIN. SCREW END DISTANCE = 6"

NOTE: MAY USE SDS 1/4" @ CONTRACTORS OPTION

Sistering Schedule for Multi Beams (SDWS) 6



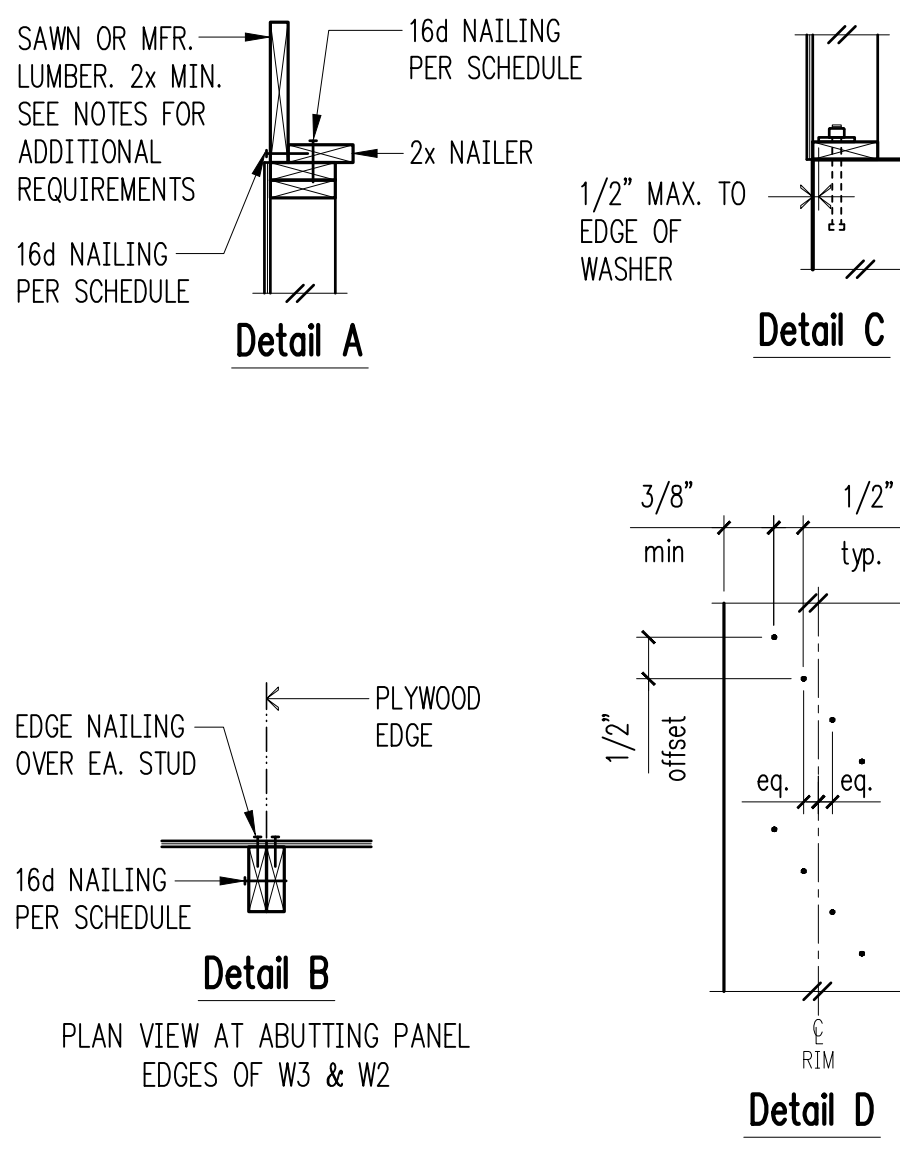
NOTE:
SEE SHEARWALL SCHEDULE FOR ALL NAILING AND CONNECTIONS, NOT OTHERWISE NOTED

Typical Shearwall Construction 8

Shearwall Schedule ①②③④⑤⑥⑦⑧

Mark	Sheathing	Panel Edge Nailing	Top Plate Connection		Base Plate Connection	
			if TJI	if Wood ⑤	at Wood ①⑦	at Concrete
W6	15/32" CDX PLYWOOD	8d @ 6"oc	16d @ 6"oc	A35 @ 24"oc ⑩	16d @ 6"oc	5/8" A.B. @ 48"oc
W4	15/32" CDX PLYWOOD	8d @ 4"oc	16d @ 4"oc	A35 @ 16"oc ⑩	(2)rows 16d @ 6"oc	5/8" A.B. @ 32"oc
W3 ④	15/32" CDX PLYWOOD	8d @ 3"oc	(2)rows 16d @ 4"oc	A35 @ 12"oc ⑩	(2)rows 16d @ 6"oc	5/8" A.B. @ 24"oc
W2 ④	15/32" CDX PLYWOOD	8d @ 2"oc	(2)rows 16d @ 4"oc	A35 @ 9"oc ⑩	(2)rows 16d @ 4"oc ⑬	5/8" A.B. @ 16"oc
2W3 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 3"oc EA. SIDE	n/a	A35 @ 6"oc	(3)rows 16d @ 4"oc ⑬	5/8" A.B. @ 16"oc
2W2 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 2"oc EA. SIDE	n/a	HGA10KT @ 8"oc	(3)rows 16d @ 4"oc ⑬	5/8" A.B. @ 12"oc
2W2-10 ⑤	15/32" CDX PLYWD. EA. SIDE	10d @ 2"oc EA. SIDE	n/a	HGA10KT @ 6"oc	(4)rows 16d @ 4"oc ⑬	5/8" A.B. @ 12"oc

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



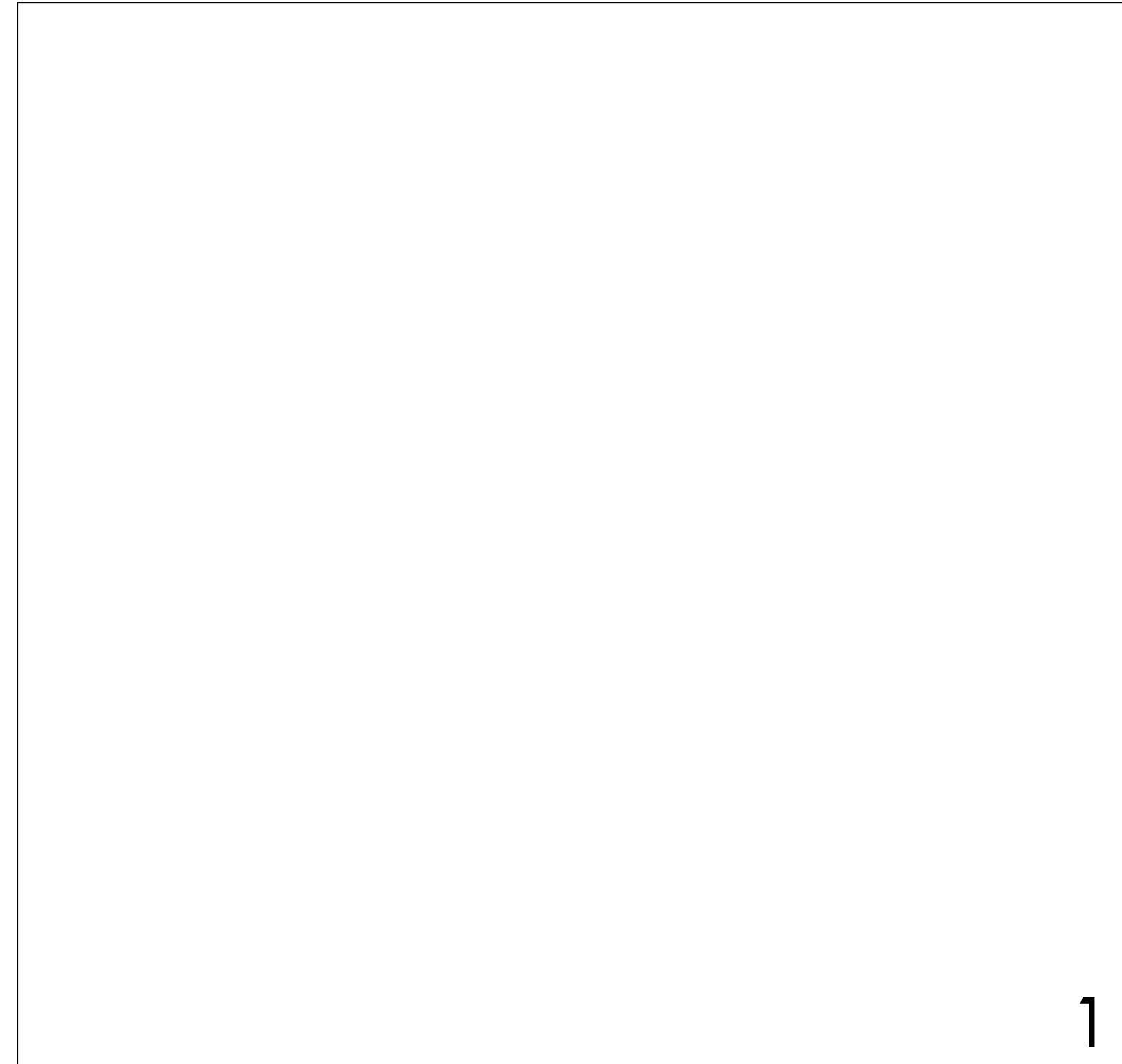
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10

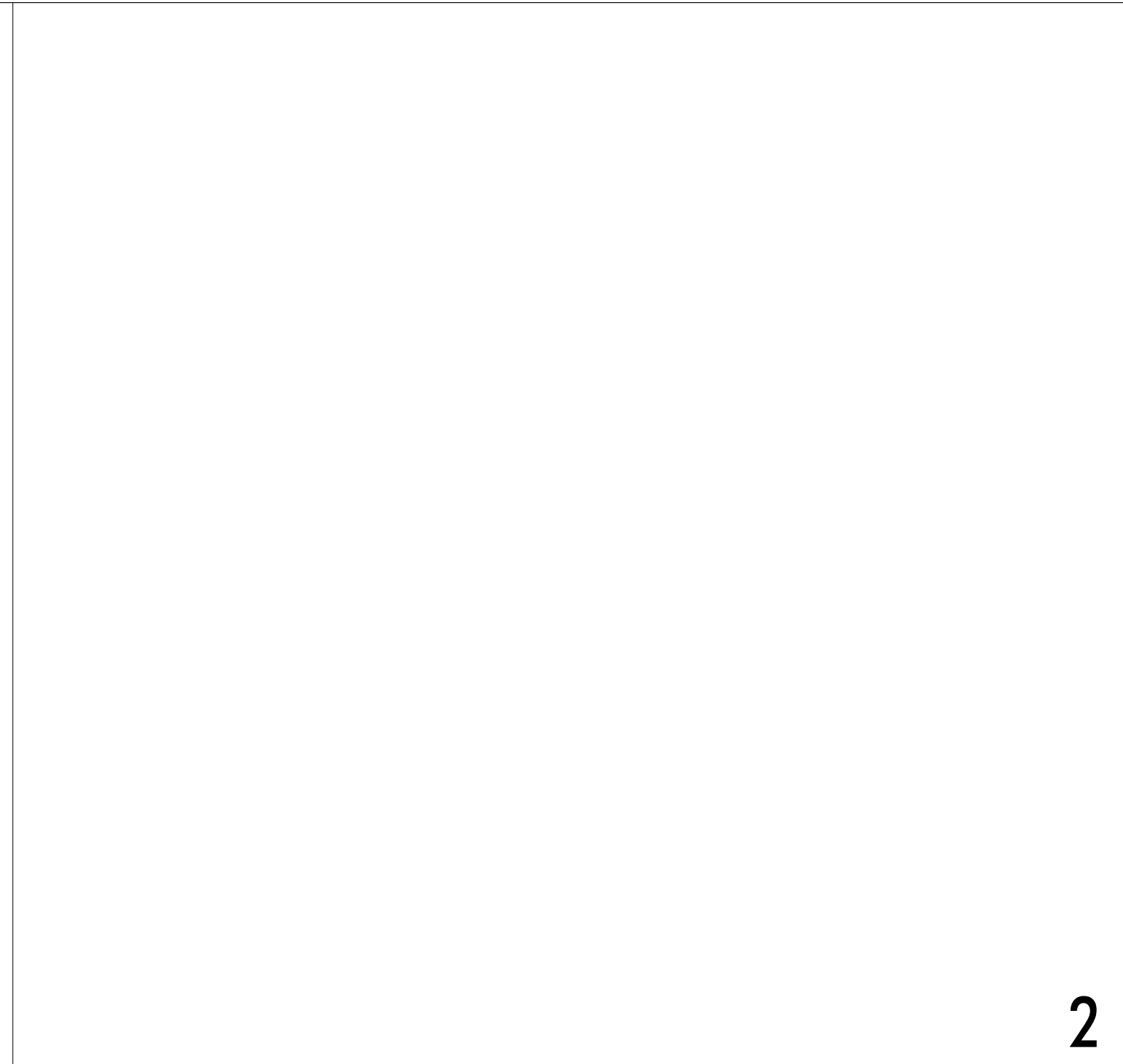
Shearwall Schedule - (Sheathed One & Two Sides) 12



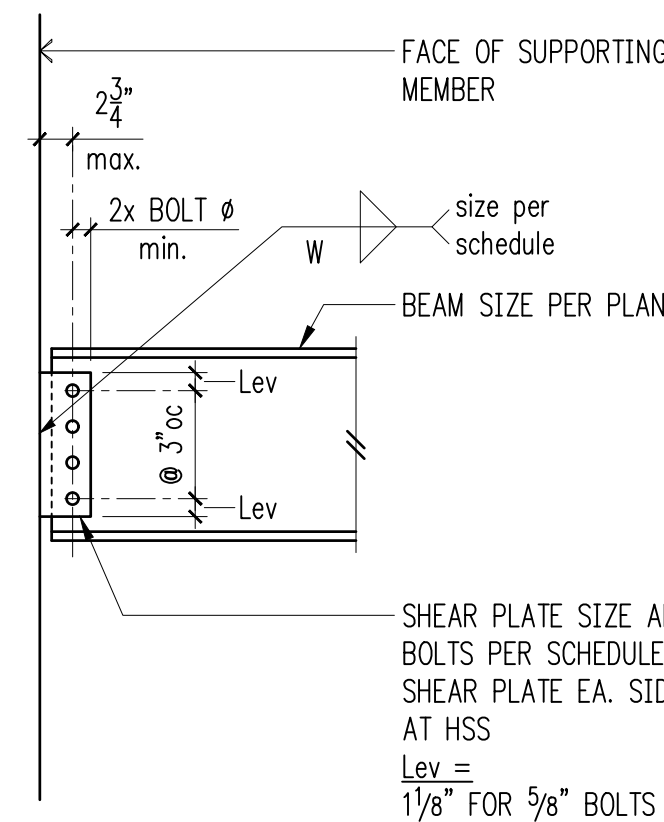
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DRAWN: NHD
CHECKED: BDM
APPROVED: DJS



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2



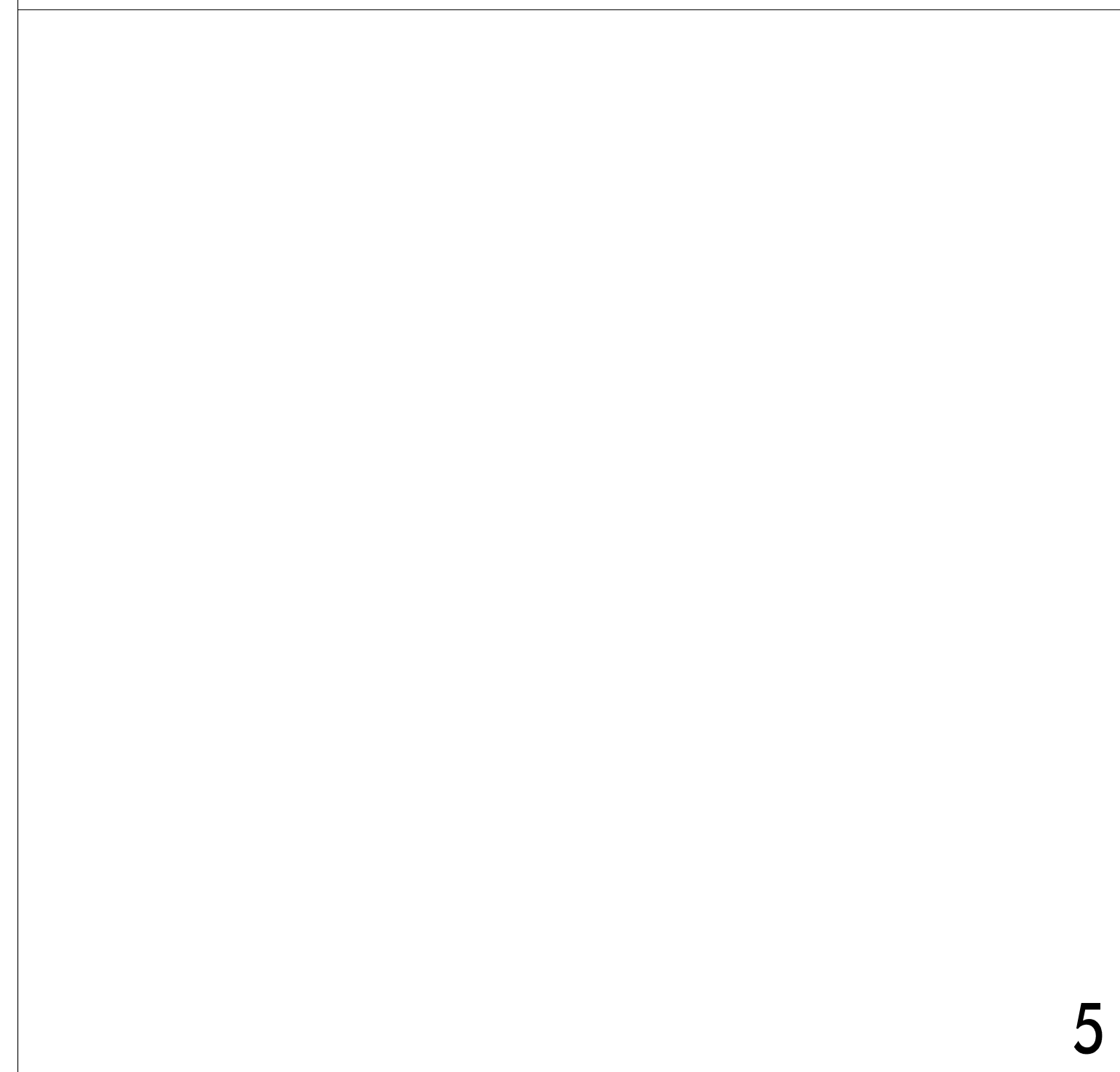
Shear Plate Schedule

Beam Size	No. of Bolts	Bolt Size	Plate Thickness	Weld Size
MC6	2	5/8" ϕ @ 2" SPACING	1/4"	3/16"
HSS 8x	2	5/8" ϕ	1/4"	3/16"

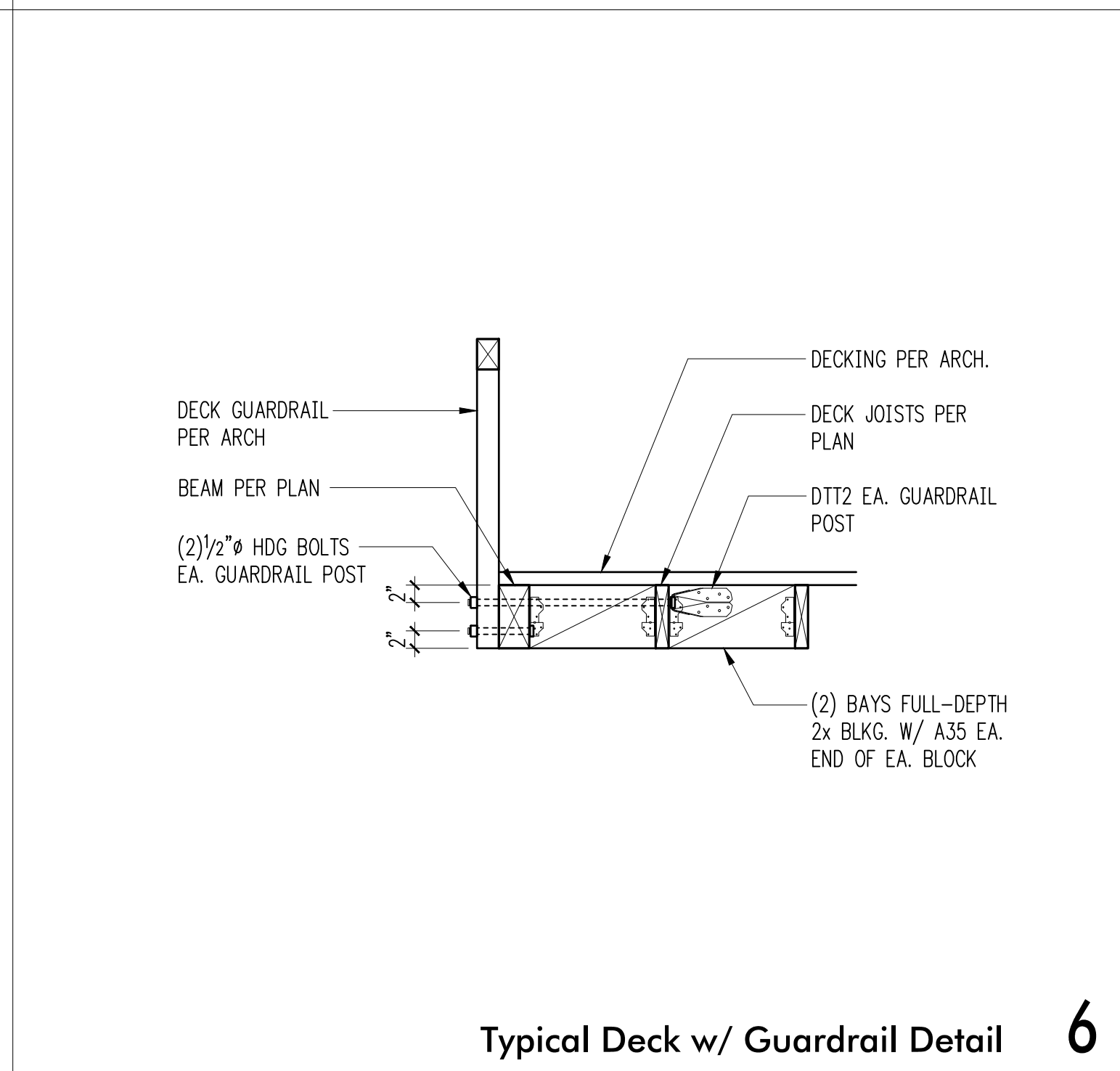
NOTES:

- STANDARD OR SLOTTED HOLES MAY BE USED.
- BOLT TYPE A325N.
- W MATERIAL - A36
- SEE EXTENDED W DETAIL FOR COLUMN WEB CONNECTIONS.

Typical Single Shear Plate Connection and Schedule 4

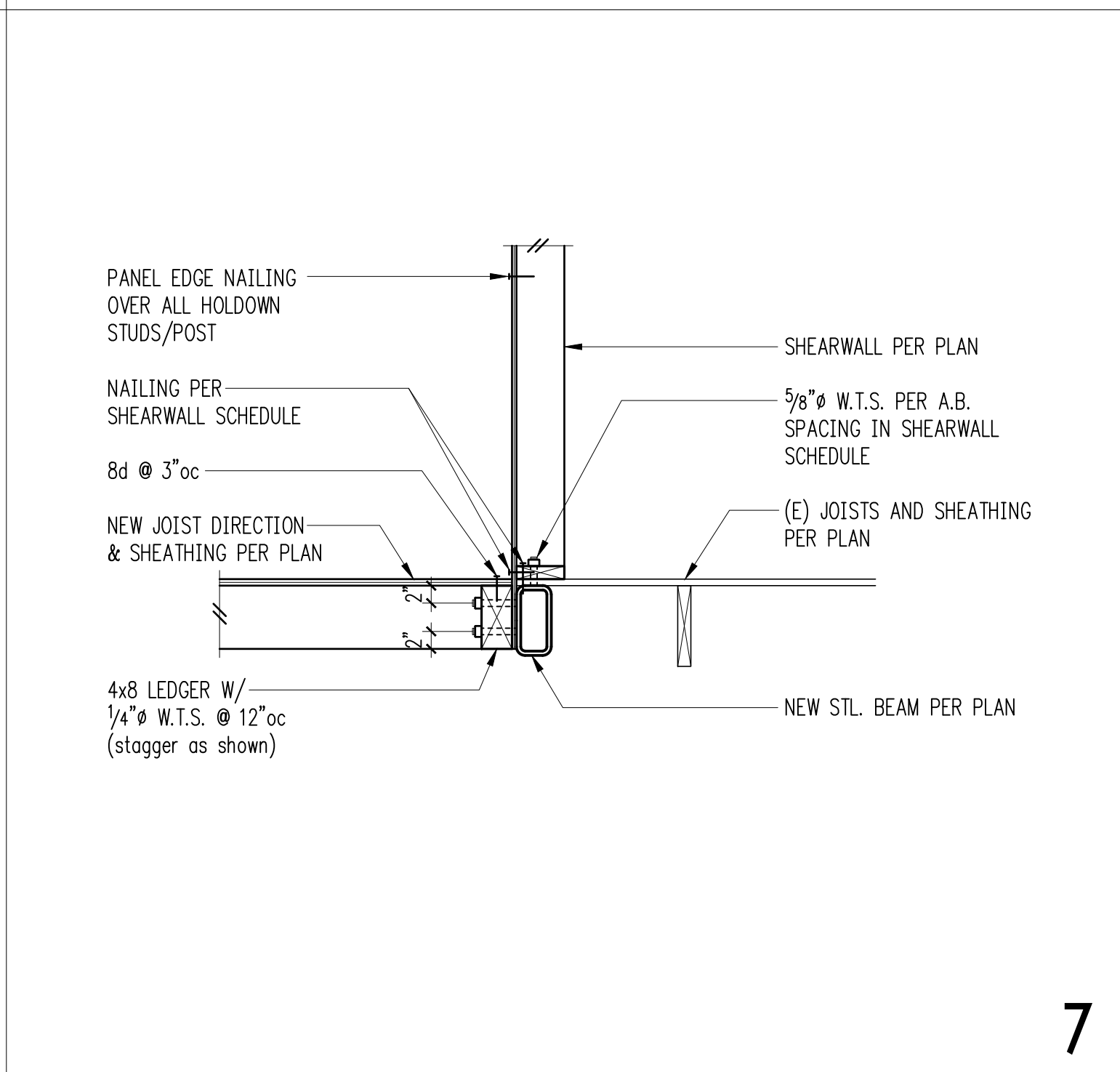


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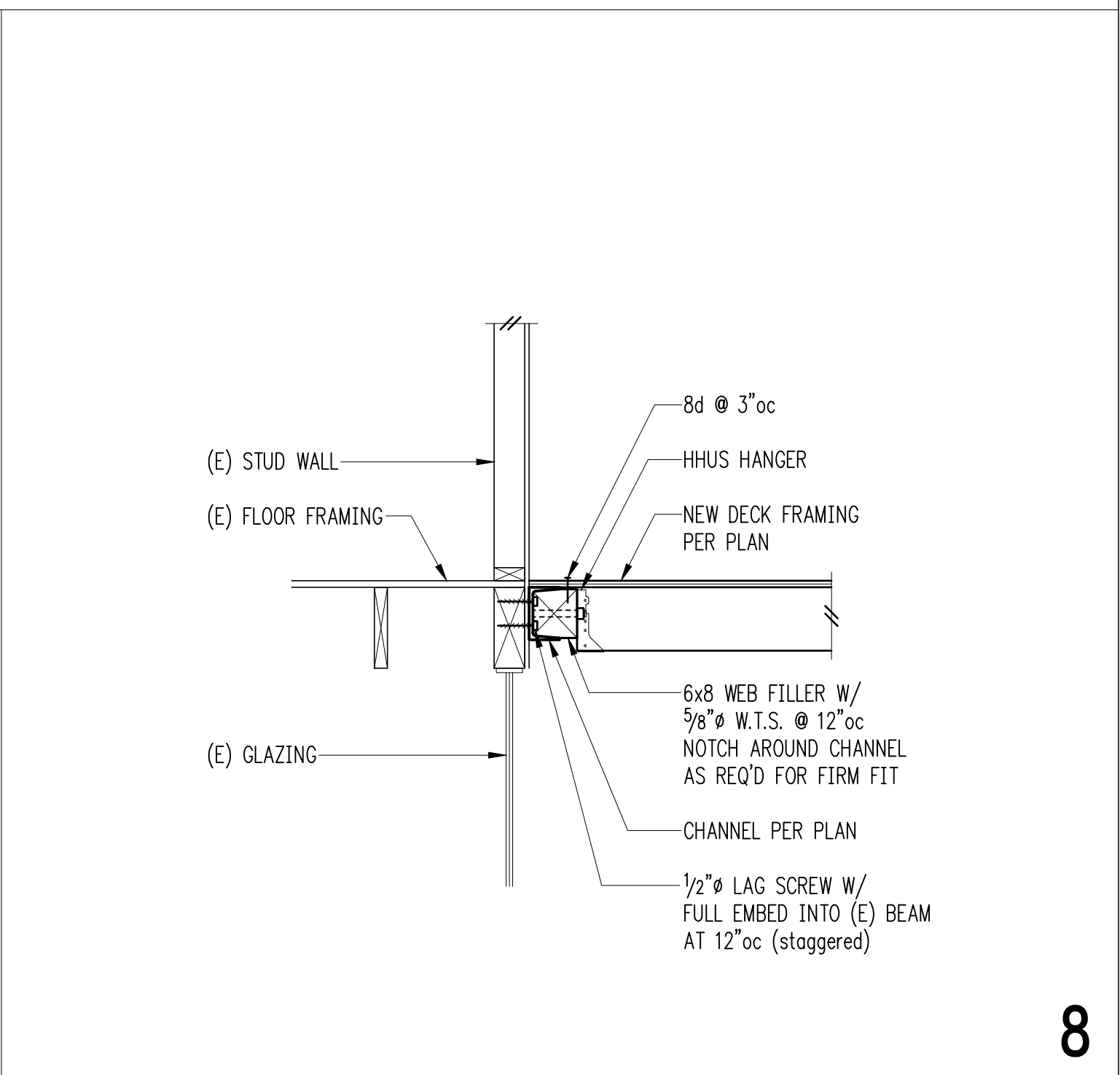


Typical Deck w/ Guardrail Detail 6

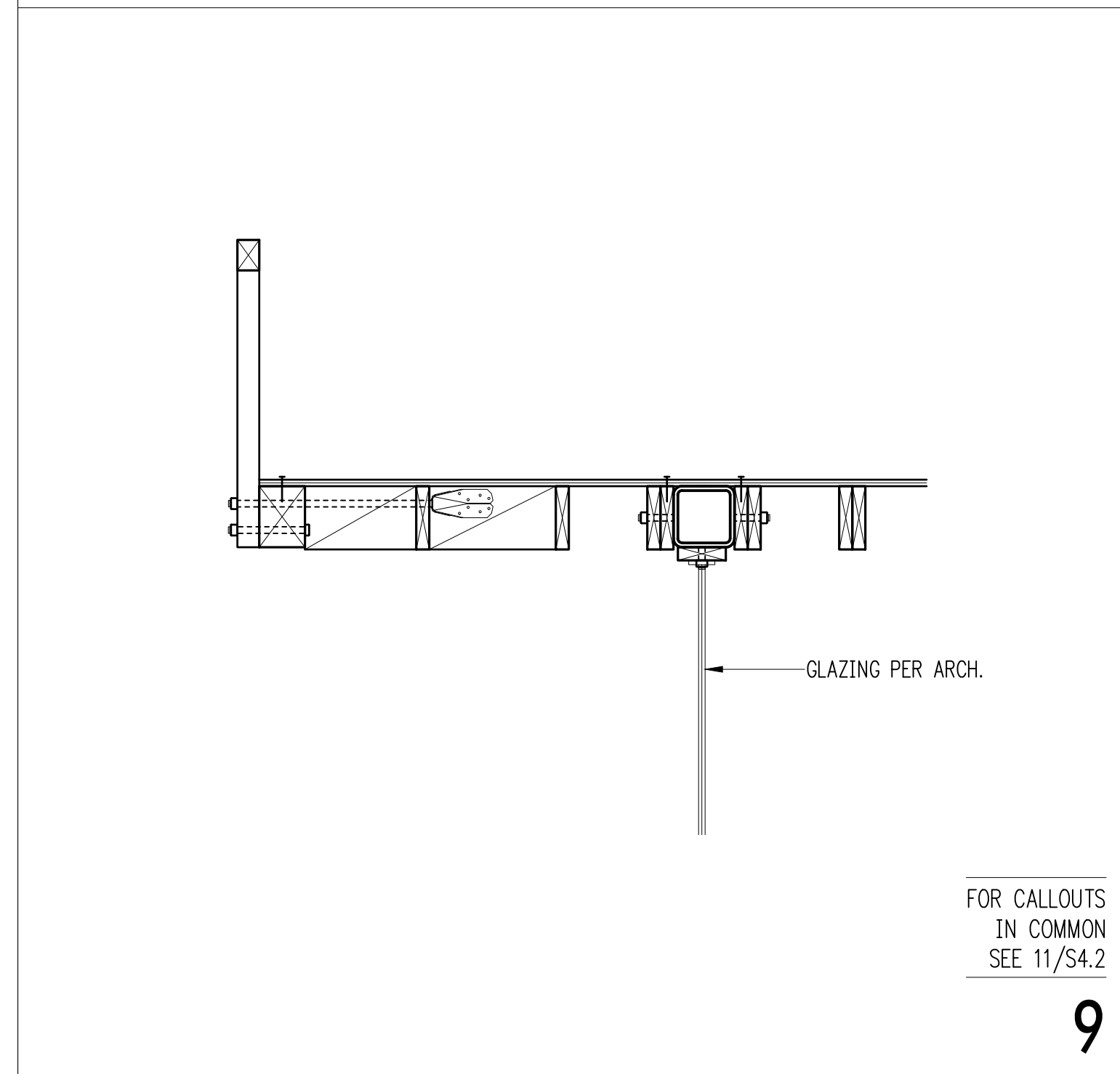
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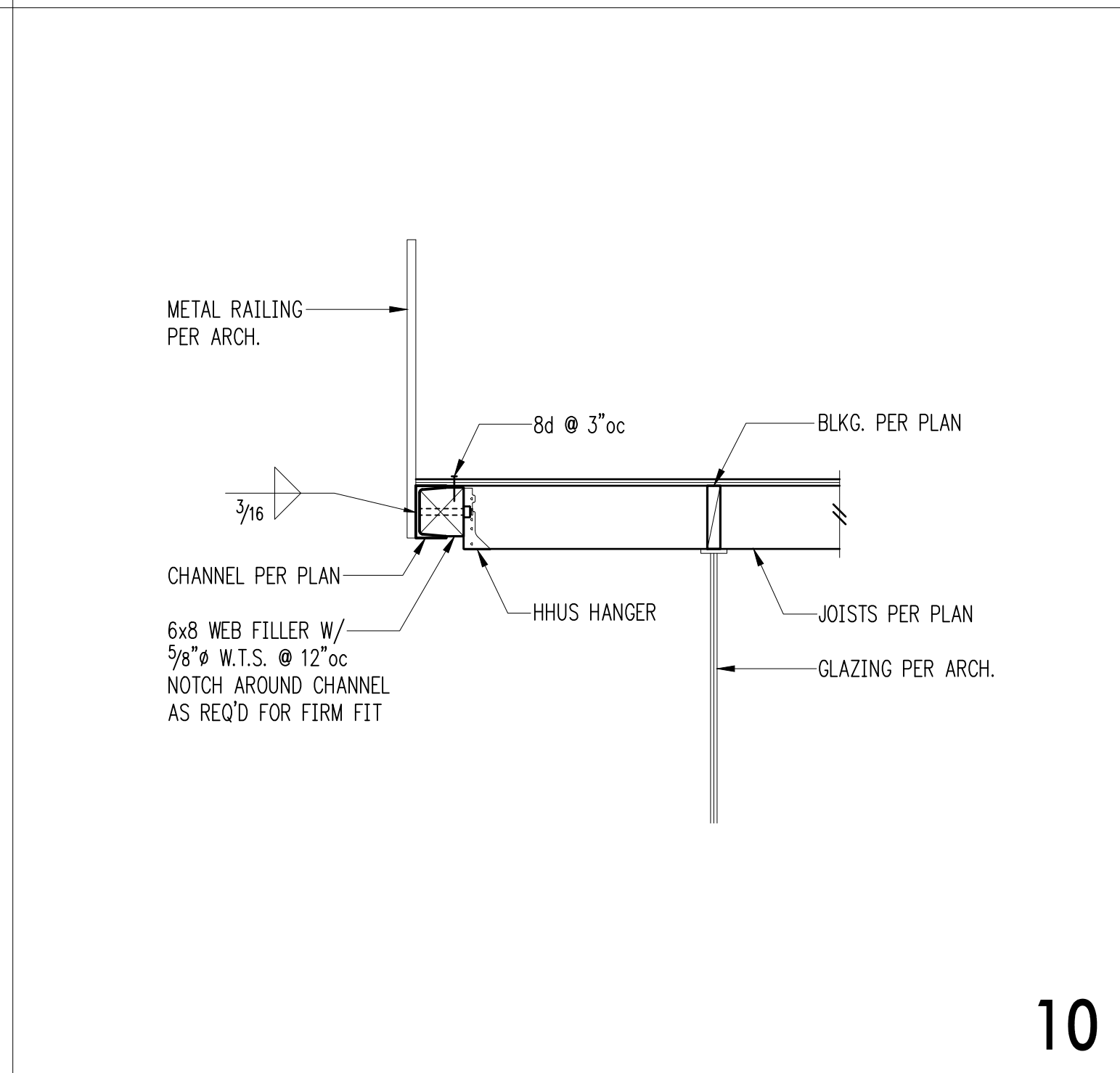
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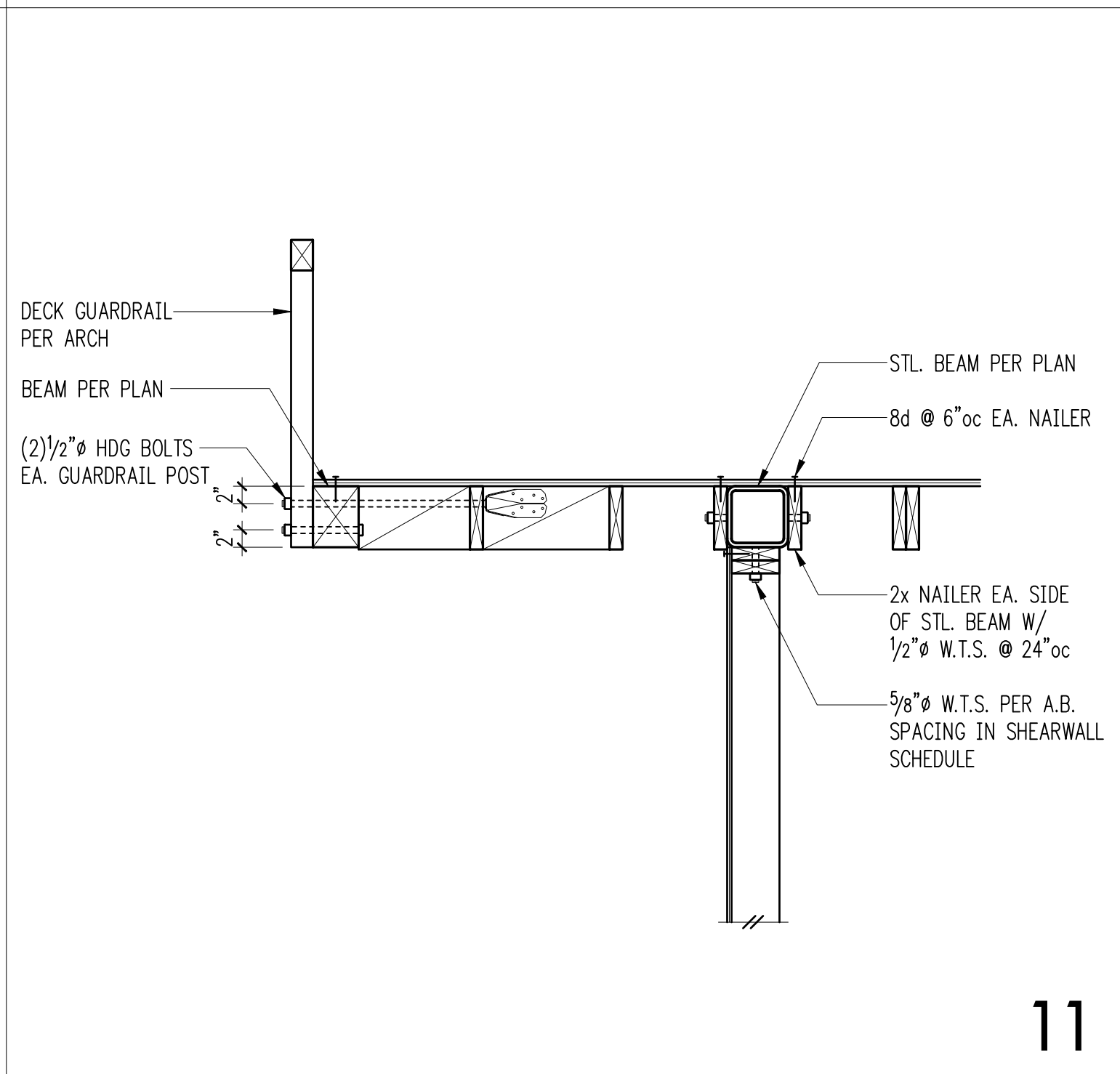
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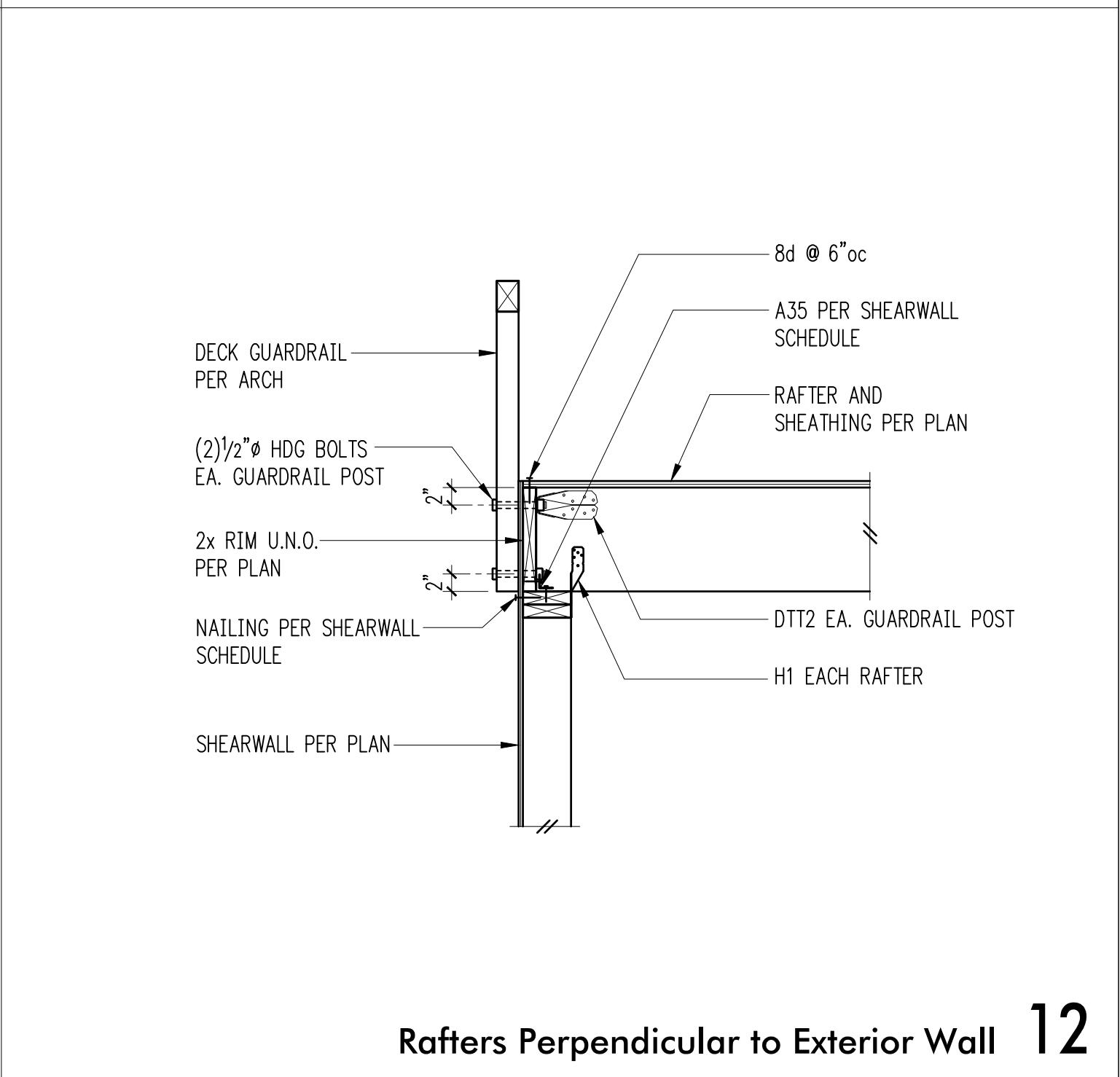
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10



11



Rafters Perpendicular to Exterior Wall 12

REVISIONS:

No.	Description

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Framing Details
SCALE: 3/4" = 1'-0" U.N.O.
DATE: March 19, 2021
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SHEET NO:

S4.2

