CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercergov.org

STAFF REPORT

CRITICAL AREA REVIEW 2 PERMIT

Project No.:	CAO24-001
Description:	A request for a Critical Area Review 2 Permit for the renovation of an existing single-family residence located within geologically hazardous areas.
Applicant / Owner:	Craig Belcher / Steve & Joanne Adams
Site Address:	8035 SE 45th St, Mercer Island, WA 98040; Identified by King County Assessor tax parcel number 7700100091.
Zoning District:	Single Family Residential (R-15)
Staff Contact:	Grace Manahan, Code Compliance Planner
Exhibits:	1. Development Application, received by the City of Mercer Island on February 1, 2024 2. Development Plan Set, dated July 19, 2024 and received June 13, 2024 3. Project Narrative, received April 17, 2024 4. Critical Areas Notice on Title, recorded August 6, 2024 under King County Recorder's Number 20240806000699 5. Hazard Report, generated by the City of Mercer Island on September 11, 2024 6. Determination of Complete Application, dated April 24, 2024 7. Notice of Application, dated May 6, 2024 8. City of Mercer Island Review Letters 8.1. Review Letter 1, dated June 26, 2024 9. Geotechnical Engineering Study prepared by Geotech Consultants, Inc, dated December 1, 2023 and received February 1, 2024 10. Letter prepared by Geotech Consultants, Inc, dated August 6, 2024 and received August 6, 2024. 11. Notice of Decision, dated September 23, 2024

INTRODUCTION

I. Project Description

The applicant has requested approval of a Critical Area Review 2 Permit for the renovation of an existing single-family residence located within geologically hazardous areas.

The proposal consists of the following components:

1. A request to renovate an existing single-family residence located within geologically hazardous areas subject to the standards of Mercer Island City Code (MICC) 19.07.160, Geologically hazardous areas.

II. Site Description and Context

1. The proposed activity is to occur at 8035 SE 45th St, Mercer Island, WA 98040. The site is designated Single Family Residential (zoned R-15). Adjacent properties are within the R-15 zone and contain residential uses. The subject site contains potential landslide, erosion, and seismic geologically hazardous areas (**Exhibit 5**).

Findings of Fact & Conclusions of Law

III. Application Procedure

1. The application for a Critical Area Review 2 Permit was received by the City of Mercer Island on February 1, 2024. The application was determined to be complete on April 24, 2024 (**Exhibit 6**).
2. Under MICC 19.15.030, Table A, applications for Critical Area Review 2 Permits must undergo Type III review. Type III reviews require notice of application (discussed below). A notice of decision is issued once the project review is complete.
3. The City of Mercer Island provided public notice of application for this Critical Area Review 2 Permit, as set forth in MICC 19.15.090 (**Exhibit 7**). The comment period for the public notice period lasted for 30 days, from May 6, 2024 to June 5, 2024. The following methods were used for the public notice of application:
    1) A mailing sent to neighboring property owners within 300 feet of the subject parcel.
    2) A sign posted on the subject parcel.
    3) A posting in the City of Mercer Island's weekly permit bulletin.

IV. State Environmental Policy Act (SEPA)

The proposal is categorically exempt from SEPA pursuant to WAC 197-11-800(1)(b)(ii).

V. Consistency with the Critical Areas Code and Land Development Code

1. MICC 19.07.070 lists requirements for disclosure and notice on title. The applicant shall disclose to the city the presence of critical areas on the development proposal site and any mapped or identifiable critical areas within the distance equal to the largest potential required buffer applicable to the development proposal on the development proposal site.
    a. The owner of any property containing critical areas and/or buffers on which a development proposal is submitted, except a public right-of-way or the site of a permanent public facility, shall file a notice approved by the city with the records and elections division of King County. The notice shall inform the public of the presence of critical areas, buffers and/or mitigation sites on the property, of the application of the city's critical areas code to the property and that limitations on actions in or affecting such critical areas and/or buffers may exist. The notice shall run with the land in perpetuity.
    b. The applicant shall submit proof to the city that the notice has been recorded prior to approval of a development proposal for the property or, in the case of subdivisions, short subdivisions,

and binding site plans, at or before recording of the final subdivision, short subdivision, or binding site plan.

Staff Analysis: A Critical Areas Notice on Title was recorded with the King County Recorder's Office on August 6, 2024 (**Exhibit 4**); therefore, this requirement is met.

2. MICC 19.07.090 describes the purpose and procedures by which the city will review and authorize development and verify consistency with this chapter.

   a. Critical Area Review 2. The purpose of a critical area review 2 is to review critical area studies and mitigation plans in support of proposed buffer averaging and reduction of wetland and watercourse buffers.

   b. Review timing and sequence.

      A. When development and/or activity within a wetland, watercourse, fish and wildlife habitat conservation area or buffer associated with these critical area types is proposed, a critical area review 2 is required to be reviewed and approved prior to construction authorization.

      B. When development and/or activity is proposed on a site containing only geologically hazardous areas, an application has the option of either:

         i. Applying for a critical area review 2 in advance of construction permits, using the procedures required for a Type III land use review; or

         ii. Requesting consolidation of the review of geologically hazardous areas together with construction permit review.

      C. When development and/or activity is proposed on a site containing geologically hazardous areas and on or more of the critical area types listed in subsection (B)(2)(a) of this section or the associated buffer of one of those critical areas, a critical area review 2 reviewing all critical areas is required to be reviewed and approved prior to construction authorization, using the procedures required for a Type III land use review.

   Staff Analysis: The development is proposed on a site containing only geologically hazardous areas. The applicant applied for a critical area review 2 in advance of construction permits; therefore, the review timing and sequence requirements for this permit have been met.

3. MICC 19.07.100 lists requirements for mitigation sequencing. An applicant for a development proposal or activity shall implement the following sequential measures, listed below in order of preference, to avoid, minimize, and mitigate impacts to environmentally critical areas and associated buffers. Applicants shall document how each measure has been addressed before considering and incorporating the next measure in the sequence:

   a. Avoiding the impact altogether by not taking a certain action or parts of an action. The applicant shall consider reasonable, affirmative steps and make best efforts to avoid critical area impacts. However, avoidance shall not be construed to mean mandatory withdrawal or denial of the development proposal or activity if the proposal or activity is an allowed, permitted, or conditional use in this title. In determining the extent to which the proposal should be redesigned to avoid the impact, the code official may consider the purpose, effectiveness, engineering feasibility, commercial availability of technology, best management practices, safety and cost of the proposal and identified changes to the proposal. Development proposals should seek to avoid, minimize and mitigate overall impacts based on the functions and values of all of the relevant critical areas and based on the recommendations of a critical

area study. If impacts cannot be avoided through redesign, use of a setback deviation pursuant to section 19.06.110(C), or because of site conditions or project requirements, the applicant shall then proceed with the sequence of steps in subsections B through E of this section;

b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, using a setback deviation pursuant to section 19.06.110(C), using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;

c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

e. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and/or

f. Monitoring the impact and taking appropriate corrective measures to maintain the integrity of compensating measures.

Staff Analysis: The applicant provided a letter prepared by Geotech Consultants, Inc (**Exhibit 10**) which addresses mitigation sequencing for the proposed development. The entire development site is encumbered by potential slide and erosion geologically hazardous areas with seismic geologically hazardous areas mapped on the southern portion of the property (**Exhibit 5**), therefore; avoiding the impact altogether is not possible. The applicant proposes to minimize the impact by proposing work located in flat areas that are covered with impervious surfaces and no work is proposed to extend into the western slop, thus the western slope will not be affected or impacted. The project also proposes that all areas of disturbance are in areas of existing hardscape, with the only areas being removed/disturbed are for the footprint additions resulting in no disturbed areas that are outside of the new building footprint or hardscape areas.

4. MICC 19.07.110 lists requirements for a critical area study. A critical area study is required when a development proposal will result in an alteration to one or more critical area buffers or when required to determine the potential impact to a critical area. The critical area study may be waived or modified if the applicant demonstrates that the development proposal will not have an impact on the critical area or its buffer in a manner contrary to the purposes and requirements of this chapter.

   Staff Analysis: The applicant submitted a Geotechnical Engineering Study, prepared by Geotech Consultants, Inc. (**Exhibit 9**); therefore, this requirement is met for the alteration to one or more critical areas.

5. MICC 19.07.160 lists standards for development on sites containing geologically hazardous areas.

   A. Geologically hazardous areas are lands that are susceptible to erosion, landslides, seismic events, or other factors as identified by WAC 365-190-120. These areas may not be suited for development activities because they may pose a threat to public health and safety. Areas susceptible to one or more of the following types of hazards shall be designated as geologically hazardous areas: landslide hazard areas, seismic hazard areas, and erosion hazard areas.

      Staff Analysis: The subject site contains landslide, seismic, and erosion hazard areas (**Exhibit 5**).

   B. Alteration within geologically hazardous areas or associated buffers is required to meet the standards in this section, unless the scope of work is exempt pursuant to section 19.07.120,

exemptions, or a critical area review 1 approval has been obtained pursuant to section 19.07.090(A).

1. When an alteration within a landslide hazard area, seismic hazard area or buffer associated with those hazards is proposed, the applicant must submit a critical area study concluding that the proposal can effectively mitigate risks of the hazard. The study shall recommend appropriate design and development measures to mitigate such hazards. The code official may waive the requirement for a critical area study and the requirements of subsections (B)(2) and (B)(3) of this section when he or she determines that the proposed development is minor in nature and will not increase the risk of landslide, erosion, or harm from seismic activity, or that the development site does not meet the definition of a geologically hazardous area.

   Staff Analysis: The Geotechnical Engineering Study prepared by Geotech Consultants, Inc (**Exhibit 9**), found that, provided the recommendations presented in the report and addendum are followed during project design and construction, the proposal would not result in adverse impacts to critical areas on the site or neighboring properties.

2. Alteration of landslide hazard areas and seismic hazard areas and associated buffers may occur if the critical area study documents find that the proposed alteration:

   a. Will not adversely impact other critical areas;

   b. Will not adversely impact the subject property or adjacent properties;

   c. Will mitigate impacts to the geologically hazardous area consistent with best available science to the maximum extent reasonably possible such that the site is determined to be safe; and

   d. Includes the landscaping of all disturbed areas outside of building footprints and installation of hardscape prior to final inspection.

   Staff Analysis: The Geotechnical Engineering Study prepared by Geotech Consultants, Inc (**Exhibit 9**), states that provided the recommendations in the report are followed, the planned development will not adversely impact the stability of the neighboring properties or result in a need for increased critical area buffers on those adjacent properties. The project proposes that all areas of disturbance are in areas of existing hardscape, with the only areas being removed/disturbed are for the footprint additions resulting in no disturbed areas that are outside of the new building footprint or hardscape areas.

3. Alteration of landslide hazard areas, seismic hazard areas and associated buffers may occur if the conditions listed in subsection (B)(2) of this section are satisfied and the geotechnical professional provides a statement of risk matching one of the following:

   a. An evaluation of site-specific subsurface conditions demonstrates that the proposed development is not located in a landslide hazard area or seismic hazard area;

   b. The landslide hazard area or seismic hazard area will be modified or the development has been designed so that the risk to the site and adjacent property is eliminated or mitigated such that the site is determined to be safe;

   c. Construction practices are proposed for the alteration that would render the development as safe as if it were not located in a geologically hazardous area and do not adversely impact adjacent properties; or

d. The development is so minor as not to pose a threat to the public health, safety and welfare.

Staff Analysis: The letter prepared by Geotech Consultants Inc. (**Exhibit 10**) includes the following statement of risk, matching statement (a) above:

"*It is our professional opinion that the plans for the proposed project will render the development as safe as if it were not located in a geologically hazardous area and will not adversely impact adjacent properties."*

C. Development is allowed within landslide hazard areas and associated buffers, when the following standards are met:

1. A critical area study shall be required for any alteration of a landslide hazard area or associated buffer;

2. Buffers shall be applied as follows. When more than one condition applies to a site, the largest buffer shall be applied:

   a. Buffer widths shall be equal to the height of a steep slope, but not more than 75 feet, and applied to the top and toe of slopes;

   b. Shallow landslide hazard areas shall have minimum 25-foot buffers applied in all directions; and

   c. Deep-seated landslide hazard areas shall have 75-foot buffers applied in all directions.

Staff Analysis: The applicant submitted a Geotechnical Engineering Study prepared by Geotech Consultants, Inc. (**Exhibit 9**) for the alteration of the landslide hazard area. The subject property is entirely encumbered by a potential landslide hazard area; therefore, buffers cannot be applied from the edge of the landslide hazard area.

D. When development is proposed within a seismic hazard area:

1. A critical area study shall be required and shall include an evaluation by a qualified professional for seismic engineering and design, a determination of the magnitude of seismic settling that could occur during a seismic event, and a demonstration that the risk associated with the proposed alteration is within acceptable limits or that appropriate construction methods are provided to mitigate the risk of seismic settlement such that there will be no significant impact to life, health, safety, and property.

2. Seismic hazard areas shall be identified by a qualified professional who references and interprets information in the U.S. Geological Survey Active Faults Database, performs on-site evaluations, or applies other techniques according to best available science.

3. When development is proposed on a site with an active fault, the follow provisions shall apply:

   a. A 50-foot minimum buffer shall be applied from latest Quaternary, Holocene, or historical fault rupture traces as identified by the United States Geological Survey or Washington Geological Survey map databases or by site investigations by licensed geologic professionals with specialized knowledge of fault trenching studies; or

   b. Mitigation sequencing shall be incorporated into the development proposal as recommended based on geotechnical analysis by a qualified professional to prevent increased risk of harm to life and/or property.

Staff Analysis: The Geotechnical Engineering Study by Geotech Consultants, Inc. (**Exhibit 9**) finds that he soils beneath the site are not susceptible to seismic liquefaction under the ground motions of the Maximum Considered Earthquake because of their dense/stiff nature and/or the absence of near-surface groundwater; therefore, no further measures are needed to mitigate the mapped seismic hazard.

E. When development is proposed within an erosion hazard area:

1. All development proposals shall demonstrate compliance with chapter 15.09, storm water management program.
2. No development or activity within an erosion hazard area may create a net increase in geological instability on or off site.

Staff Analysis: The development proposal was approved by Ruji Ding, Senior Development Engineer, who reviewed the development proposal for compliance with chapter 15.09. The Geotechnical Engineering Study by Geotech Consultants, Inc. (**Exhibit 9**) finds that excavation and construction of the planned construction can be accomplished without adverse erosion impacts to the site and surrounding properties by exercising care and being proactive with the maintenance and potential upgrading of the erosion control system through the entire construction process.

CONDITIONS OF APPROVAL

1. The project proposal shall be in substantial conformance with **Exhibit 2** and all applicable development standards contained within Chapter 19.07 Mercer Island City Code (MICC).
2. The applicant is responsible for documenting any required changes in the project proposal due to conditions imposed by any applicable local, state and federal government agencies.
3. Construction or substantial progress toward construction of a development for which a permit has been granted must be undertaken within three years after the approval of the permit or the permit shall terminate. The code official shall determine if substantial progress has been made.
4. Landscaping of all disturbed areas outside of building footprints and installation of hardscape is required prior to final inspection of the associated building permit.

DEVELOPMENT REGULATION COMPLIANCE – DISCLOSURE

1. The applicant is responsible for obtaining any required permits or approvals from the appropriate Local, State, and Federal Agencies.
2. All required permits must be obtained prior to the commencement of construction.

DECISION

Based upon the above noted Findings of Fact and Conclusions of Law, Critical Area Review 2 Permit application CAO24-001, as depicted in **Exhibit 2**, is hereby **APPROVED**. This decision is final, unless appealed in writing consistent with adopted appeal procedures, MICC 19.15.130(A), and all other applicable appeal regulations.

Approved this 23rd day of September, 2024

Grace Manahan

_____

Grace Manahan
Code Compliance Planner
Community Planning & Development
City of Mercer Island

CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | www.mercerisland.gov

CITY USE ONLY		
PROJECT#	RECEIPT #	**FEE**
Date Received:		
Received By:		

DEVELOPMENT APPLICATION

STREET ADDRESS/LOCATION	ZONE
8035 SE 45th ST	R-15
COUNTY ASSESSOR PARCEL #'S	PARCEL SIZE (SQ. FT.)

PROPERTY OWNER *(required)*	ADDRESS *(required)*	CELL/OFFICE *(required)*
Steve & Joanne Adams	8035 SE 45th St	E-MAIL *(required)*
PROJECT CONTACT NAME	ADDRESS	CELL/OFFICE
Craig Belcher	6947 Coal Creek Pkwy SE #122	206-205-0613 E-MAIL craig@cba-llc.com
TENANT NAME	ADDRESS	CELL PHONE
		E-MAIL

DECLARATION: I HEREBY STATE THAT I AM THE OWNER OF THE SUBJECT PROPERTY OR I HAVE BEEN AUTHORIZED BY THE OWNER(S) OF THE SUBJECT PROPERTY TO REPRESENT THIS APPLICATION, AND THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

SIGNATURE

2/1/2024

DATE

PROPOSED APPLICATION(S) AND CLEAR DESCRIPTION OF PROPOSAL (PLEASE USE ADDITIONAL PAPER IF NEEDED)**:**

Remodel of existing house including addition of 125 SF of Kitchen space and 253 SF of garage into prevously developed areas. Area of additions are in geolocial hazard areas (erosion, potential slide, and wind exposure).

ATTACH RESPONSE TO DECISION CRITERIA IF APPLICABLE

CHECK TYPE OF LAND USE APPROVAL REQUESTED:

CRITICAL AREAS	ENVIRONMENTAL REVIEW (SEPA)	SUBDIVISION
☐ Critical Area Review 1	☐ SEPA Review	☐ Short Plat- Preliminary
☑ Critical Area Review 2	☐ Environmental Impact Statement	☐ Short Plat- Alteration
		☐ Short Plat- Final Plat
DESIGN REVIEW		☐ Long Plat- Preliminary
☐ Design Review – Signs	**LEGISLATIVE**	☐ Long Plat- Alteration
☐ Design Review – Code Official	☐ Code Amendment	☐ Long Plat- Final Plat
☐ Design Commission Study Session	☐ Comprehensive Plan Docket Application	☐ Lot Line Revision
☐ Design Commission Review – Exterior Alteration	☐ Comprehensive Plan Application (If Docketed) ☐ Rezone	
☐ Design Commission Review – Major New Construction		
	OTHER LAND USE	
	☐ Accessory Dwelling Unit	
DEVIATIONS	☐ Code Interpretation Request	
☐ Deviations to Antenna Standards – Code Official	☐ Conditional Use (CUP) ☐ Noise Exception Type I - IV	**WIRELESS COMMUNICATION FACILITIES** ☐ New Wireless Communication Facility
☐ Deviations to Antenna Standards – Design Commission	☐ Other Permit/Services Not Listed	☐ Wireless Communications Facilities-6409 Exemption
☐ Public Agency Exception	**SHORELINE MANAGEMENT**	☐ Small Cell Deployment
☐ Reasonable Use Exception	☐ Shoreline Exemption	☐ Height Variance
☐ Variance	☐ Shoreline Substantial Development Permit	
☐ Seasonal Development Limitation Waiver – Wet Season Construction Approval	☐ Shoreline Variance ☐ Shoreline Conditional Use Permit ☐ Shoreline Permit Revision	

PROJECT DATA

OWNER
Steve & Joanne Adams
8035 SE 45TH ST MERCER ISLAND 98040

ARCHITECT
PHONE: 206-355-9770
MCFADDEN DESIGN LLC
1914 5TH ST
KIRKLAND, WA 98033
CONTACT: MICHAEL McFADDEN
MICHAEL@MCFADDENDESIGN.COM

CONTRACTOR
JOE MEYERS CONSTRUCTION INC.
PHONE: 425-328-7849
CONTACT: JOE MEYERS
LICENSE #: JOEMYMC951PP
EIN/TAX ID: 81-0675182

STRUCTURAL ENGINEER
QUANTUM CONSULTING ENGINEERS
1511 THIRD AVENUE, SUITE 323
SEATTLE, WA 98101
206-957-3900 PHONE
206-957-3901 FAX
CONTACT: MAX SKOTHEIM
MSKOTHEIM@QUANTUMCE.COM

PROJECT DATA

SURVEYOR
TERRANE
10801 MAIN STREET, SUITE 102
BELLEVUE, WA 98004
425-458-4488
CONTACT: DANA HALL
E: DANAH@TERRANE.NET

PROPERTY DATA

PROJECT ADDRESS
8035 SE 45TH ST MERCER ISLAND 98040

LOT AREA
25,130 SF

ASSESSOR'S TAX NUMBER
770010-0091

LEGAL DESCRIPTION
SEWARD ADD POR OF 16 THRU 19 LY W OF LN RNG N 00-16-04 E 100 FT FR PT ON S LN OF 19 49.95 FT E OF SW COR TH S 89-43-56 W ALG S LN OF 17 0.25 FT M/L TO PT 81.10 FT E OF SW COR OF 17 TH N 00-16-04 E 101.28 FT M/L TO N LN OF 16 & POR 32 THRU 34 LY E OF LN BEG ON NLY LN OF LOT 34 5.28 FT W OF NE COR THOF TH S 27-09-40 W 24.75 FT TH ON CURVE TO LFT RAD 144 FT DIST 110.75 FT TH S 16-54-20 E 35.79 FT TH S 64-59-11 E 68.47 FT TO S LN LOT 32

ZONING DESIGNATION
R-15

SETBACKS
FRONT YARD: 20'-0"

SIDE YARD DETERMINATION:
MICC19.02.020 C:
LOT WIDTH=90'=115.43' X 17% = 19.6' COMBINED
MIN SIDE YARD = 19.6' X 33% = 6.5'
EAST SIDE YARD = 7'
WEST SIDE YARD = 12.6'
REAR YARD: 25'
SEE 1/A-1.2 FOR SETBACKS

RESIDENCE HEIGHT LIMIT
30'-0" FEET FROM THE 'AVERAGE BUILDING ELEVATION'. 30'-0" ON DOWNHILL SIDE FROM EXISTING OR FINISHED GRADE TO TOP PLATE OF ROOF, WITH ROOF RIDGE NOT EXCEEDING 30' ABOVE THE ABE. SEE 1/A-1.0 FOR AVERAGE BUILDING ELEVATION CALCULATIONS AND HEIGHT LIMIT DETERMINATION.

LOT SLOPE
HIGHEST ELEVATION POINT OF LOT = 204.1'
LOWEST ELEVATION POINT OF LOT = 182.9'
ELEVATION DIFFERENCE = 21.2'
HORIZONTAL DISTANCE BETWEEN
HIGH AND LOW POINTS = 140.3'
LOT SLOPE : 21.2/140.3 = 15.1%

LOT COVERAGE
SEE 1/A -1.2 FOR LOT COVERAGE DIAGRAM

CONSTRUCTION DATA

SCOPE OF WORK:
WEST SIDE OF HOUSE WALLS REMOVED & REBUILT ON EXISTING FOUNDATION AND SLAB, WALLS TO REMAIN EAST OF ENTRY & NEW ROOF FOR HOUSE AND GARAGE.

GROSS FLOOR AREA
10,000 S.F. OR 40% OF LOT AREA, WHICHEVER IS LESS
NET LOT AREA = 25,130.0 S.F. X 40%
ALLOWABLE GROSS FLOOR AREA = 10,052 S.F.

GFA CALCULATION
(MEASURED FROM EXTERIOR FACES OF BUILDING)

LOWER FLOOR :	706 S.F.
MAIN FLOOR :	3,981 S.F.
GARAGE/SHOP :	1,283 S.F.
TOTAL =	5,970 S.F.

5,970 S.F. < 10,052 S.F (THEREFORE GFA IS OK)

ENERGY DATA

PRESCRIPTIVE COMPLIANCE INSULATION & FENESTRATION REQUIREMENTS
(2018 WASHINGTON STATE ENERGY CODE)
CLIMATE ZONE 4C

PROVIDE MANDATORY CERTIFICATE PER R401.3

PROVIDE MIN BUILDING THERMAL ENVELOPE OR BETTER PER SECTION R402

FENESTRATION U-FACTOR	.30
SKYLIGHT U-FACTOR	.50
CEILING R-VALUE	49
VAULTED CEILING	38
WOOD FRAMED WALL R-VALUE	21 INT.
MASS WALL R-VALUE	21/21
FLOOR R-VALUE	30
BELOW GRADE WALL R-VALUE	21 INT.
SLAB R-VALUE	10
WINDOW AND DOOR HEADER R-VALUE	10

ENERGY DATA

PROVIDE INSULATION SPECIFIED PER R402.2

PROVIDE CONTINUOUS AIR BARRIER & THERMAL BARRIER PER TABLE R-402.4.1.1

THE BUILDING ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE PER R402.4

PROVIDE TESTING OF BUILDING ENVELOPE PER R402.4.1.2

FENESTRATION AIR LEAKAGE TESTING FOR WINDOWS, SKYLIGHTS, AND SLIDING GLASS DOORS TO COMPLY PER R402.4.3

RECESSED LIGHTING IN THE BUILDING THERMAL ENVELOPE TO COMPLY PER R402,4.4

FENESTRATION TRADE OFFS PER SECTION R4-2.1.4 OR R405 NOT APPLICABLE

PROVIDE MANDATORY CONTROLS OF CONDITIONING SYSTEMS PER SECTION R403

BUILDING FRAMING CAVITIES PER R403,2,3 SHALL NOT BE USED AS DUCTS OR PLENUMS

PROVIDE MECHANICAL PIPING INSULATION PER R403,3 MINIMUM R-6

MECHANICAL DUCTS OUTSIDE OF THE THERMAL ENVELOPE SHALL BE INSULATED A MINIMUM OF R-8 PER SECTION R403,2,1
MECHANICAL DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED AND TESTED PER PER R403.2.2
JOINTS AND SEAMS TO COMPLY WITH ADOPTED IMC OR IRC

CIRCULATING HOT WATER SYSTEMS SHALL BE PROVIDED WITH AN AUTOMATIC OR ACCESSIBLY MANUAL SHUT OFF SWITCH PER R403,4.1

PROVIDE MINIMUM R-4 HOT WATER PIPE INSULATION PER R403,4.2

INTERIOR VENTILATION
PROVIDE INTERMITTENT WHOLE-HOUSE VENTILATION PER IRC M1507.3 AND 2012 WSEC SECTION R403.5

SYSTEM FAN EFFICANCY PER TABLE R403.5.1

PROVIDE EQUIPMENT HEATING AND COOLING SIZING PER R403.6

ELECTRICAL POWER AND LIGHTING SYSTEMS TO COMPLY WITH SECTION R404

SIMULATED PERFOMANCE ALTERNATIVE PER SECTION R405 NOT APPLICABLE

ENERGY DATA

2018 WSEC ENERGY CREDIT OPTIONS
EACH DWELLING UNIT IN ONE AND TWO FAMILY DWELLINGS AND TOWNHOUSES, AS DEFINED IN SECTION 101.2 OF THE IRC SHALL COMPLY WITH SUFFICIENT OPTIONS FROM TABLE R406.2 SO AS TO ACHIEVE THE FOLLOWING MINIMUM # OF CREDITS.

CATEGORY: MEDIUM DWELLING UNIT: 6 CREDITS.

1

TABLE R406.2 ENERGY CREDITS SELECTED

SYSTEM TYPE: 1
CREDITS: 0
COMBUSTION HEATING EQUIPMENT MEETING MINIMUM FEDERAL EFFICIENCY STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(4) OR C403.3.2(5)
OPTION 1.1
CREDITS: 0.5
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS: VERTICAL FENESTRATION U = 0.24
OPTION 2.1
CREDITS 0.5
COMPLIANCE BASED ON R402.4.1.2:
REDUCE THE TESTED AIR LEAKAGE TO 3.0 AIR CHANGES PER HOUR MAXIMUM AT 50 PASCALS
OR
FOR R-2 OCCUPANCIES, OPTIONAL COMPLIANCE BASED ON SECTION R402.4.1.2: REDUCE THE TESTED AIR LEAKAGE TO 0.3 CFM/FT2 MAXIMUM AT 50 PASCALS
AND
ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1507.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTERNATIONAL MECHANICAL CODE SHALL BE MET WITH A HIGH EFFICIENCY FAN(S) (MAXIMUM 0.35 WATTS/CFM), NOT INTERLOCKED WITH THE FURNACE FAN (IF PRESENT). 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.
OPTION 3.5
CREDITS 1.5
AIR-SOURCE, CENTRALLY DUCTED HEAT PUMP WITH MINIMUM HSPF OF 11.0.
OPTION 4.2
CREDITS 1.0
HVAC EQUIPMENT AND ASSOCIATED DUCT SYSTEM(S) INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R403.3.7.
LOCATING SYSTEM COMPONENTS IN CONDITIONED CRAWL SPACES IS NOT PERMITTED UNDER THIS OPTION.
ELECTRIC RESISTANCE HEAT AND DUCTLESS HEAT PUMPS ARE NOT PERMITTED UNDER THIS OPTION.
DIRECT COMBUSTION HEATING EQUIPMENT WITH AFUE LESS THAN 80% IS NOT PERMITTED UNDER THIS OPTION.
OPTION 5.5
CREDITS 2.0
WATER HEATING SYSTEM SHALL INCLUDE ONE OF THE FOLLOWING: ELECTRIC HEAT PUMP WATER HEATER MEETING THE STANDARDS FOR TIER III OF NEEA'S ADVANCED WATER HEATING SPECIFICATION
OPTION 7.1
CREDITS 0.5
ALL OF THE FOLLOWING APPLIANCES SHALL BE NEW AND INSTALLED IN THE DWELLING UNIT AND SHALL MEET THE FOLLOWING STANDARDS:
DISHWASHER – ENERGY STAR RATED
REFRIGERATOR (IF PROVIDED) – ENERGY STAR RATED
WASH

TOTAL CREDITS: 6.0

1

VENTILATION DATA

SYSTEM DESIGN
THIS SYSTEM IS DESIGN/BUILD

SYSTEM CRITERIA

PER 2018 IRC TABLE M1507.3.3(1) CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS: PROVIDE 135 CFM AIRFLOW .

PER 2018 IRC TABLE M1507.3.3 (2) INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS, RUN TIME % IN EACH 4-HOUR SEGMENT TO BE 75% WITH A FACTOR OF 1.3:
135 CFM X 1.3 = 175.5 CFM

PER 2018 IRC M1507.3.6.1 ALL HABITABLE SPACES SHALL RECEIVE FILTERED VENTILATION AIR.

MINIMUM OF .35 AIR EXCHANGES PER HOUR FOR ALL HABITABLE ROOMS.
MAXIMUM OF .50 AIR EXCHANGES PER HOUR FOR ALL HABITABLE ROOMS.

SYSTEM COMPONENTS
TIMER
INTAKE GRILL & DUCTING (FROM EXTERIOR)
MOTORIZED DAMPER
ELECTRIC AIR TEMPERING UNIT
INTAKE BLOWER
DISTRIBUTION DUCTING (HABITABLE ROOMS)
DISTRIBUTION GRILLS (HABITABLE ROOMS)
ELECTRIC EXHAUST FAN
EXHAUST DUCTING
EXHAUST PORT WITH BACK DRAFT DAMPER

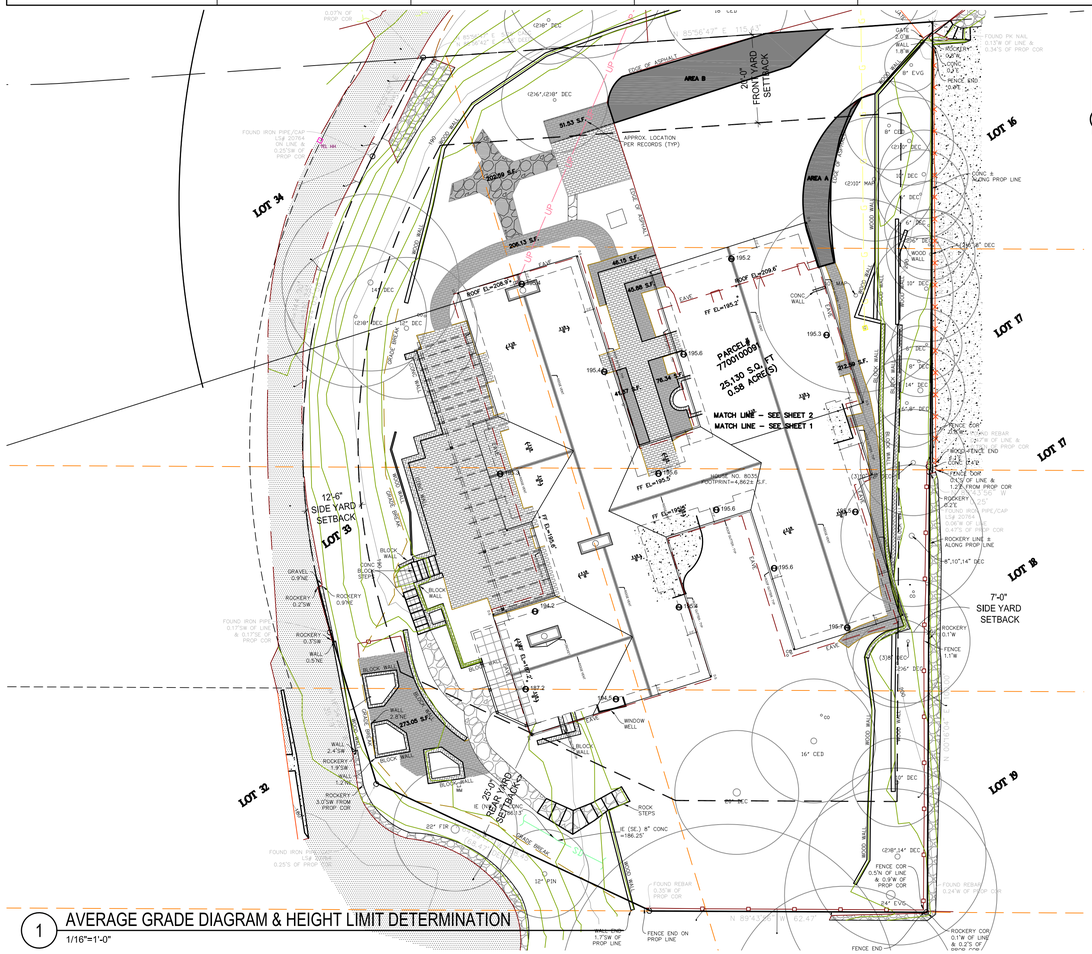
SYSTEM FUNCTION
INTAKE BLOWER, AIR TEMPERING UNIT, AND EXHAUST FAN TO BE CONNECTED TO TIMER FOR SYNCHRONIZED, INTERMITTENT USE THROUGHOUT EACH DAY. FRESH AIR FROM THE EXTERIOR IS PULLED THROUGH AIR TEMPERING UNIT, THEN DISTRIBUTED THROUGH DUCTING TO ALL HABITABLE ROOMS. A BALANCED QUANTITY OF AIR IS SIMULTANEOUSLY EVACUATED FROM THE INTERIOR VIA THE EXHAUST FAN DUCTED TO THE EXTERIOR.

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1 AVERAGE GRADE DIAGRAM & HEIGHT LIMIT DETERMINATION
1/16"=1'-0"

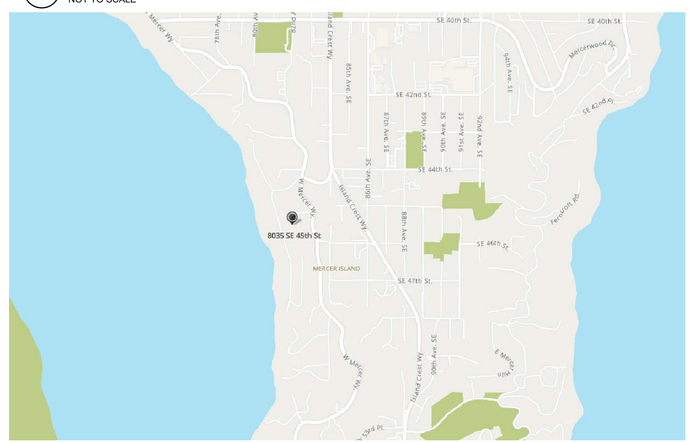
RELATED BUILDING CODES

2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
2018 INTERNATIONAL MECHANICAL CODE (IMC)
2018 INTERNATIONAL FUEL GAS CODE (IFGC)
2018 UNIFORM PLUMBING CODE (UPC)
2018 INTERNATIONAL SWIMMING POOL & SPA CODE
2018 WASHINGTON STATE ENERGY CODE (WSEC)
2018 ICC/ANSI A117.1-09 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, WITH STATEWIDE AND IBC AMENDMENTS
2018 (IFC) INTERNATIONAL FIRE CODE

1



3 PATIO VIEW
NOT TO SCALE



2 VICINTY MAP
NOT TO SCALE

DESIGN	MM
DRAWN	JDE, TES
CHECKED	JB
SHEET ISSUE DATE	07.19.2022
DRAWING SETS	

DATE	DESCRIPTION
2023-07-12	PERMIT SET
2024-05-01	REVISED PERMIT SET

REVISIONS
1 REVISION 1

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ADAMS RESIDENCE

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PROJECT INFO & ZONING DIAGRAMS

A-1.0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE 2018 IRC WITH WASHINGTON AND CITY AMMENDMENTS.
2. ALL APPLICABLE CODES, ORDINANCES AND MINIMUM STRUCTURAL REQUIREMENTS TAKE PRECEDENCE OVER ALL DRAWINGS, NOTES AND SPECIFICATIONS.
3. DO NOT SCALE DRAWINGS; USE PRINTED DIMENSIONS ONLY. NOTIFY ARCHITECT OF ANY OMISSIONS OR DISCREPANCIES BEFORE PROCEEDING WITH WORK IN QUESTION.
4. CONTRACTOR MUST CONTACT ARCHITECT IMMEDIATELY FOR ANY DISCREPANCIES IN CONTRACT DOCUMENTS OR EXISTING CONDITIONS PRIOR TO PROCEEDING WITH WORK.
5. CONTRACTOR MUST CONTACT ARCHITECT IMMEDIATELY FOR ANY DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND APPLICABLE CODES PRIOR TO PROCEEDING WITH WORK.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, GRADES AND EXISTING CONDITIONS BEFORE PROCEEDING WITH WORK.
7. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF/HERSELF WITH ALL ASPECTS OF THE WORK PRIOR TO CONTRACTING WITH THE OWNER TO PERFORM THE WORK.
8. CONTRACTOR SHALL VERIFY CONFORMANCE OF ACTUAL SOIL CONDITIONS WITH SOILS REPORT AND DESIGN ASSUMPTIONS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS FOR THE WORK, EXCEPT FOR THE BUILDING PERMIT WHICH IS THE RESPONSIBILITY OF THE ARCHITECT.
10. GUARANTEE ON ALL MATERIALS AND WORKMANSHIP TO BE (1) YEAR FROM DATE OF COMPLETION UNLESS NOTED OTHERWISE IN CONTRACT.
11. REPETITIVE FEATURES MAY BE DRAWN ONLY ONCE, BUT SHALL BE PROVIDED AS IF DRAWN IN FULL. REPETITIVE NOTES MAY BE CALLED OUT ONLY ONCE AND INDICATED AS TYPICAL.
12. DIMENSIONS ARE TO FACE OF STUD OR FACE OF CONCRETE OR CENTERLINE OF INTERIOR COLUMNS UNLESS NOTED OTHERWISE.
13. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING MECHANICAL, ELECTRICAL AND PLUMBING CONTRACTORS AND NOTIFYING THE ARCHITECT OF ANY DISCREPANCIES IN FRAMING PRIOR TO PROCEEDING WITH WORK.
14. THIS PROJECT TO BE DESIGN-BUILD IN THE AREAS OF MECHANICAL, ELECTRICAL AND PLUMBING.

JOB SITE SAFETY

1. THE ARCHITECT HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATING TO THE CONTRACTOR'S SAFETY PRECAUTIONS.
2. PERIODIC SITE VISITS PERFORMED BY THE ARCHITECT SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION SAFETY PRECAUTIONS.
3. THE ARCHITECT IS NOT RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THE CONTRACTOR OR THE CONTRACTOR'S EMPLOYEES OR EMPLOYEES OF SUPPLIERS OR SUBCONTRACTORS, OR FOR ACCESS, VISITS, USE, WORK, TRAVEL OR OCCUPANCY BY ANY PERSON.

SITE WORK

1. ALL EXCAVATION AND FILL SHALL BE STORED AND PROTECTED SUCH AS TO PREVENT RUN OFF OF MATERIAL TO ADJACENT PROPERTIES.
2. FOOTING DRAIN SHALL BE SEPARATE FROM ROOF AND IMPERVIOUS AREA DRAINS.
3. DOWNSPOUT DRAIN SHALL BE 4" DIAMETER TIGHTLINE UNLESS NOTED OTHERWISE.
4. FOOTING DRAIN SHALL BE 4" DIAMETER PERFORATED PIPE UNLESS NOTED OTHERWISE
5. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH REQUIRED SEPTIC AND/OR STORM WATER DETENTION SYSTEMS.

EARTH WORK

1. EXTEND EXCAVATION DOWN TO UNDISTURBED SOIL OF THE SPECIFIED STRENGTH WITH A MINIMUM OF 18" BELOW LOWEST ADJACENT FINISH GRADE.
2. COMPACTED FILL SHALL BE WELL GRADED AND GRANULAR WITH NOT MORE THAN 5% PASSING A 200 SIEVE. PLACE IN 8" LOOSE LIFTS AND COMPACT TO 95% MODIFIED AASHO DENSITY AT OPTIMUM MOISTURE CONTENT.
3. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SOILS REPORT.

ENERGY NOTES

1. ALL WORK SHALL COMPLY WITH THE RESIDENTIAL PROVISIONS OF THE 2018 WASHINGTON STATE ENERGY CODE (WSEC).
2. HEATING UNIT(S) SHALL MAINTAIN 70 DEGREES FAHRENHEIT AT 36" ABOVE FLOOR WHEN OUTSIDE TEMPERATURE IS 24 DEGREES FAHRENHEIT, OR CURRENT REQUIREMENTS.
3. PROVIDE NIGHT SETBACK THERMOSTAT.
4. CAULK ALL JOINTS AROUND EXTERIOR OPENINGS AND ALL JOINTS IN SIDING AND FLASHING WHERE INFILTRATION MAY BE POSSIBLE.
5. SEAL ALL TEARS AND JOINTS IN INSULATION WITH APPROVED TAPE.
6. SHOWER FLOW CONTROL SHALL BE LIMITED TO 2.5 GALLONS PER MINUTE, OR CURRENT REQUIREMENTS.
7. ALL CRAWLSPACES SHALL HAVE A MINIMUM OF 6 MIL BLACK VISQUEEN GROUND COVER EXTENDED OVER THE TOP OF THE FOOTINGS. LAP ALL JOINTS 12" MINIMUM.
8. FIREPLACE(S) SHALL HAVE TIGHT FITTING DAMPERS AND SHALL BE PROVIDED WITH A MINIMUM OF 6 SQUARE INCHES OF OUTSIDE COMBUSTIBLE AIR SUPPLY.
9. METAL DUCTS OUTSIDE THE CONDITIONED SPACE SHALL BE INSULATED TO R-8 MINIMUM PER THE 2018 WSEC, SECTION R403.2.1. PROVIDE WEATHER BARRIER IF LOCATED ON THE EXTERIOR OF THE BUILDING.
10. HOT WATER PIPES SHALL BE WRAPPED WITH INSULATION (R-4 MINIMUM) PER THE 2018 WSEC, SECTION R403.4.2.
11. WATER HEATER(S) SHALL MEET 1987 NATIONAL APPLIANCE ENERGY CONSERVATION ACT.
12. MINIMUM INSULATION VALUES UNLESS NOTED OTHERWISE:

CEILING	R-49 (1" clear vent space)
CATHEDRAL CEILING	R-38 (1" clear vent space)
ABOVE GRADE WALL	R-21
BELOW GRADE WALL	R-21 (Interior) w/ thermal break @ slab
BELOW GRADE WALL	R-10 (Exterior)
FLOOR	R-30
SLAB ON GRADE	R-10 (First 24")
WINDOW AND DOOR HEADER	R-10

13. VAPOR RETARDER SHALL BE INSTALLED ON THE CONDITIONED ROOM SIDE OF THE INSULATION.
14. BLOWER DOOR TESTING: AIR LEAKAGE SHALL NOT EXCEED 5 AIR CHANGES/HOUR, AND SHALL BE TESTED PER THE 2018 WSEC, SECTION R402.4.1.2. PROVIDE A WRITTEN REPORT OF THE TEST RESULTS, SIGNED BY THE TESTING PARTY, TO THE BUILDING INSPECTOR, PRIOR TO APPROVED FINAL INSPECTION.
15. 75% MIN. OF LUMINAIRES TO BE HIGH EFFICACY LUMINARIES PER THE 2018 WSEC, SECTION R404.1.

VENTILATION NOTES

1. VENTILATION AND EXHAUST SYSTEMS TO COMPLY WITH THE REQUIREMENTS OF CHAPTER 15 OF THE 2018 WASHINGTON RESIDENTIAL CODE (WRC).
2. SOURCE SPECIFIC FANS SHALL BE LOCATED IN ALL KITCHENS, BATHROOMS, WATER CLOSETS, AND LAUNDRY FACILITIES IN COMPLIANCE WITH THE 2018 WRC, SECTION M1507.4 VENTILATION CAPACITY SHALL BE AT LEAST 50 C.F.M. FOR BATHROOMS, WATER CLOSETS, AND LAUNDRY ROOMS (Intermittent use) AND 100 C.F.M. FOR KITCHENS (INTERMITTENT USE). RANGE HOODS SHALL BE EXHAUSTED IN ACCORDANCE WITH SECTION M1503.
3. CLOTHES DRYERS SHALL BE EXHAUSTED IN ACCORDANCE WITH THE 2018 WRC, SECTION M1502. DUCT LENGTH SHALL NOT EXCEED 35 FEET, PLUS THE LENGTH OF THE TRANSITION DUCT, LESS THE EQUIVALENT LENGTH OF FITTINGS PER TABLE M1502.4.4.1.
4. INTERMITTENT WHOLE HOUSE VENTILATION SYSTEM SHALL COMPLY WITH THE 2018 WRC, SECTION M1507.3. INTERMITTENT VENTILATION SHALL OCCUR AT LEAST 25% OF EACH 4-HOUR SEGMENT. VENTILATION RATE SHALL BE NOT LESS THAN AS SPECIFIED BY TABLE M1507.3.3(1), MULTIPLIED BY THE RATE FACTOR INDICATED ON TABLE M1507.3.3(2). FAN SHALL HAVE A SONE RATING OF 1.0 OR LESS MEASURED AT 0.1 INCHES WATER GAUGE. OUTDOOR AIR SHALL BE PROVIDED TO ALL HABITABLE ROOMS.
5. EXHAUST DUCT WORK SHALL CONFORM TO THE 2018 WRC, CHAPTER 16. EXHAUST DUCTING TERMINATIONS SHALL BE OUTSIDE THE BUILDING, SHALL BE LOCATED IN COMPLIANCE WITH SECTION M1506.2, AND SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS.
6. SUPPLY DUCTS WITHIN CONDITIONED SPACE SHALL BE INSULATED TO A MINIMUM OF R-4.
7. PROVIDE A MINIMUM NET AREA OF 1 SQUARE FOOT OF VENTILATION AREA FOR EACH 300 SQUARE FEET OF CRAWLSPACE AREA. PLACE OPENINGS AS NEAR AS TO CORNERS AS PRACTICABLE AND SHALL PROVIDE CROSS VENTILATION.
8. ALL CRAWLSPACE VENTS SHALL BE PROVIDED WITH 1/4" NON-CORROSIVE WIRE MESH.
9. PROVIDE A MINIMUM NET AREA OF 1 SQUARE FOOT OF VENTILATION AREA FOR EVERY 150 SQUARE FEET OF ATTIC AREA. PROVIDE A CONTINUOUS 1 INCH MINIMUM AIR SPACE ABOVE INSULATION FOR CROSS VENTILATION.
10. ALL ATTIC VENTS SHALL BE PROVIDED WITH 1/4" NON-CORROSIVE WIRE MESH OR APPROVED SOFFIT VENTS.

MOISTURE PROTECTION

1. PROVIDE PRESSURE TREATED PLATES BETWEEN CONCRETE AND FRAMING.
2. PROVIDE A MINIMUM OF 12" CLEAR BETWEEN WOOD GIRDERS AND EARTH.
3. PROVIDE A MINIMUM OF 18" CLEAR BETWEEN WOOD JOISTS AND EARTH.
4. PROVIDE A MINIMUM OF 8" CLEAR BETWEEN WOOD POSTS AND EARTH.
5. PROVIDE A MINIMUM OF 1" CLEAR BETWEEN WOOD POSTS AND CONCRETE FLOORS.
6. CAULK ALL OPENINGS THOROUGHLY.
7. FLASH ALL OPENINGS WITH A MINIMUM OF 26 GAUGE GALVANIZED STEEL TO ACCEPTABLE INDUSTRY STANDARDS.
8. METAL COPING AT PARAPET TO BE A MINIMUM OF 22 GAUGE GALVANIZED STEEL.

FIRE PROTECTION

1. 1. THE GARAGE SHALL BE SEPERATED FROM THE RESIDENCE AND IT'S ATTIC BY NOT LESS THAN THE FOLLOWING:
   - 1.1. NOT LESS THAN (1) LAYER OF 5/8" TYPE "X" GYPSUM WALLBOARD APPLIED TO ALL GARAGE WALLS. NOT LESS THAN (2) LAYERS OF 5/8" TYPE "X" GYPSUM WALLBOARD AT CEILINGS.
   - 1.2. 1-3/8" MINIMUM THICK, SOLID CORE, OR HONEYCOMB CORE STEEL DOOR, OR A 20-MIN. FIRE-RATED DOOR.
   - 1.3. DUCTS PIERCING FIRE SEPARATION TO BE A MINIMUM OF 26 GAUGE, AND HAVE NO OPENINGS INTO THE GROUP "U" OCCUPANCY.
2. FIRE SEPARATION TO BE HORIZONTAL AND VERTICAL INCLUDING ALL STRUCTURAL MEMBERS SUPPORTING THE FIRE SEPARATION.
3. ALL ENCLOSED USEABLE SPACE UNDER STAIRWAYS SHALL BE (1) LAYER OF 5/8" TYPE 'X' GYPSUM WALLBOARD ON ENCLOSED SIDE.
4. SMOKE DETECTORS SHALL BE HARD WIRED TO BUILDING POWER AND SHALL HAVE BATTERY BACKUP.
5. SMOKE DETECTORS SHALL BE AUDIBLE IN ALL SLEEPING ROOMS, AND OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
6. A MINIMUM OF (1) SMOKE DETECTOR SHALL BE INSTALLED ON EACH FLOOR INCLUDING THE GARAGE.
7. FIRESTOPPING AND DRAFTSTOPPING SHALL CONSIST OF 2" NOMINAL LUMBER.
8. FIRESTOPPING AND DRAFTSTOPPING IS REQUIRED IN THE FOLLOWING PLACES:
   - 8.1. CONCEALED SPACES AT ALL FLOOR AND CEILING LEVELS AND AT 10 FOOT INTERVALS ALONG THE LENGTH OF THE WALL.
   - 8.2. INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES (I.E., SOFFITS)
   - 8.3. CONCEALED SPACES BETWEEN STAIR STRINGERS AT TOP AND BOTTOM OF THE RUN.
9. ROCK WOOL AROUND ALL OPENINGS FOR VENTS, PIPES, DUCTS, ETC.
10. EMERGENCY EGRESS WINDOWS SHALL MEET THE FOLLOWING REQUIREMENTS:

CLEAR OPEN WIDTH	20" (Minimum)
CLEAR OPEN HEIGHT	24" (Minimum)
CLEAR OPEN AREA	5.7 s.f. (Minimum)
SILL HEIGHT	44" (Maximum)

11. PREFABRICATED FIREPLACES SHALL BEAR U.L. OR I.C.B.O. SEAL OF APPROVAL AND SHALL BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
12. APPLIANCE GENERATING A GLOW, A SPARK, OR FLAME MAY BE INSTALLED IN THE GARAGE PROVIDED THE HEATING ELEMENTS AND SWITCHES ARE 18" ABOVE THE FLOOR.
13. GARAGE FLOOR TO BE CONSTRUCTED OF NON COMBUSTIBLE MATERIAL (CONCRETE).
14. CARBON MONOXIDE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE 2012 WASHINGTON RESIDENTIAL CODE.
15. A NFPA 13D FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 13D AND COMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED.

SHOP DRAWINGS

1. SHOP DRAWINGS ARE REVIEWED FOR DESIGN INTENT ONLY.
2. THE CONTRACTOR IS TO REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMITTING TO ARCHITECT OR STRUCTURAL ENGINEER.
3. SEE STRUCTURAL NOTES AND PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND CLARIFICATIONS REGARDING SHOP DRAWINGS.

SAFETY AND SECURITY

1. DEADBOLTS WITH A MINIMUM THROW OF 1/2" AND A VIEWPORT ARE REQUIRED AT ALL EXTERIOR DOORS.
2. DEADBOLTS OR APPROVED LOCKING DEVICES ARE REQUIRED ON ALL SLIDING DOORS.
3. ALL LOCKS SHALL BE OPENABLE WITHOUT ANY SPECIAL KNOWLEDGE OR EFFORT.
4. WINDOWS WITHIN 10'-0" OF FINISHED GRADE SHALL BE PROVIDED WITH LATCHING DEVICES.
5. STAIRWAYS SHALL MEET THE FOLLOWING REQUIREMENTS:
   OCCUPANCIES LESS THAN 10

STAIR WIDTH	36" (Minimum)
TREAD WIDTH	10" (Minimum), 6" Minimum for Winders
RISER HEIGHT	7 3/4" (Maximum)
HEADROOM	80" (Minimum)
HANDRAIL HEIGHT	34" to 38" above nosing
HANDRAIL GRASP	1-1/4"(Min) to 2" (Max)

6. HANDRAIL INTERMEDIATE MEMBERS SHALL BE CONFIGURED AS TO PROHIBIT PASSING A 4" DIAMETER SPHERE THROUGH ANY OPENING.
7. GUARDRAILS SHALL BE A MINIMUM OF 36" ABOVE FINISH FLOOR.
8. GUARDRAIL INTERMEDIATE MEMBERS SHALL BE CONFIGURED AS TO PROHIBIT PASSING A 4" DIAMETER SPHERE THROUGH ANY OPENING.

NATURAL LIGHT

1. PER WA AMMENDMENT TO IRC 303.1: ALL HABITABLE ROOMS SHALL HAVE AN AGGREGATE GLAZING AREA OF NOT LESS THAN 8% OF THE FLOOR AREA OF SUCH ROOMS.

EXCEPTION : THE GLAZED AREAS NEED NOT BE INSTALLED IN ROOMS WHERE ARTIFICIAL LIGHT IS PROVIDED CAPABLE OF PRODUCING AN AVERAGE ILLUMINATION OF 6 FOOTCANDLES (65 LUX) OVER THE AREA OF THE ROOM AT A HEIGHT OF 30" (762 MM) ABOVE THE FLOOR LEVEL.

GLAZING NOTES

1. ALL GLAZING SHALL BE (2) PANE INSULATED GLASS OR BETTER UNLESS NOTED OTHERWISE.
2. SLIDING DOORS SHALL BE SAFETY GLASS, LAMINATED GLASS, OR TEMPERED GLASS.
3. SHOWER DOORS AND ENCLOSURES SHALL BE SAFETY GLASS, LAMINATED GLASS, OR TEMPERED GLASS.
4. REFER TO WINDOW SCHEDULE FOR ADDITIONAL REQUIREMENTS.

BATHROOM NOTES

1. WALL COVERINGS IN SHOWERS SHALL BE MOISTURE RESISTANT MATERIAL TO 72" (Minimum) ABOVE DRAIN INLET.
2. TOILET SHALL HAVE CLEAR SPACE OF 30" WIDE (Minimum) AND 24" CLEAR (Minimum) IN FRONT OF STOOL.

DRAWING LEGEND

SYMBOL	DESCRIPTION	REMARKS
2	WINDOW SYMBOL	See Window Schedule
A	DOOR SYMBOL	See Door Schedule
202	SPACE NUMBER	See Finish Schedule
2	GRID LINE	
A-12	MATCH LINE	
40'-8" T.O. Slab	VERTICAL DATUM POINT	
Stone Wood	SURFACE MATERIAL CHANGE	
DWG/SHEET BLDG. SECT.	DETAIL REFERENCE	
DWG SHT	SECTION CUT REFERENCE	
1 4 SHT 2 3	INTERIOR ELEVATION REFERENCE	See Interior Elevations

MATERIAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EARTH / COMPACT FILL		ROUGH WOOD FRAMING
	GRAVEL / POROUS FILL		WOOD BLOCKING
	CONCRETE		PLYWOOD
	CMU / BRICK / STONE VENEER		FINISH WOOD
	GYPSUM WALL BOARD / PLASTER		BATT INSULATION
	STEEL OR OTHER METALS		RIGID INSULATION
	NATURAL STONE		

ABBREVIATION LIST

AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING
ACT	ACOUSTICAL TILE
AD	AREA DRAIN
ADDT	ADDITIONAL
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
APPR	APPROXIMATE
ARCH	ARCHITECT/ARCHITECTURAL
ASPH	ASPHALT
BD	BOARD
BEL	BELOW
BLDG	BUILDING
BLK	BLOCKING
BM	BEAM
BO	BY OTHERS
BOF	BOTTOM OF FOOTING
BOT	BOTTOM
BOW	BOTTOM OF WALL
BRG	BEARING
BSMT	BASEMENT
BTB	BURY THE BODIES
BTWN	BETWEEN
BUR	BUILT UP ROOFING
CAB	CABINET
CAP	CAPACITY
CATV	CABLE TELEVISION
CB	CATCH BASIN
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLKG	CAULKING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	CENTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CPT	CARPET
CRV	CONTINUOUS RIDGE VENT
CRW	CONCRETE RETAINING WALL
CSMT	CASEMENT
CT	CERAMIC TILE
CY	CUBIC YARD
d	PENNY
D	DEEP
D	DRYER
DAFD	DON'T ASK FOR DETAIL
DBL	DOUBLE
DCU	DON'T CALL US
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT (EXTERIOR)
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATION
ENCL	ENCLOSURE
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
FB	FLAT BAR
FD	FLOOR DRAIN
FF	FINISH FLOOR
FIN	FINISH
FLASH	FLASHING
FLR	FLOOR
FLUOR	FLUORESCENT
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOS	FACE OF STUD
FRMG	FRAMING
FT	FOOT/FEET
FTG	FOOTING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPTER
GL	GLASS
GLB	GLU-LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	HEIGHT
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HEAVY DUTY
HDR	HEADER
HDWD	HARDWOOD
HDWR	HARDWARE
HGR	HANGER
HORZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HWT	HOT WATER TANK
ID	INSIDE DIAMETER
IDS	INTERIOR DOWNSPOUT
IN	INCH
INSUL	INSULATION
INT	INTERIOR
JST	JOIST
JT	JOINT
KD	KILN DRIED
LAM	LAMINATED
LB	POUNDS
LF	LINEAL FOOT
LH	LEFT HAND
LL	LIVE LOAD
LT	LIGHT
LTG	LIGHTING
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MEDICINE CABINET
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MILP	MAKE IT LOOK PRETTY
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O/	OVER
OBSC	OBSCURE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OD	OVERFLOW DRAIN
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
PBD	PARTICLE BOARD
PERF	PERFORATED
PERP	PERPENDICULAR
PH	PAPER HOLDER
PL	PLATE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
POL	POLISHED
PR	PAIR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAINTED
QT	QUARRY TILE
QTY	QUANTITY
R	RADIUS
R	RISER
RD	ROOF DRAIN
REF	REFRIGERATOR
REINF	REINFORCING
REQD	REQUIRED
RH	RIGHT HAND
RJ	ROOF JACK/VENT
RM	ROOM
RO	ROUGH OPENING
RV	RIDGE VENT
S	SOUTH
SB	SETBACK
SB	SAND BLAST
SC	SOLID CORE
SCHED	SCHEDULE
SF	SQUARE FOOT
SHMTL	SHEET METAL
SHTHG	SHEATHING
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS
SS STL	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUC	STRUCTURAL
SV	SOFFIT VENT
SYM	SYMBOL
T	TREAD
TEL	TELEPHONE
TEMP	TEMPERED
TEMP	TEMPERATURE
T&G	TONGUE AND GROOVE
THK	THICK
TO	TOP OF
TOP	TOP OF PLATE
TOS	TOP OF SLAB
TOW	TOP OF WALL
TV	TELEVISION
TW	TRAIN WRECK
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VER	VERIFY
VERT	VERTICAL
VG	VERTICAL GRAIN
W	WEST
W	WATT
W	WIDTH
W/	WITH
W/O	WITHOUT
WRB	WATER RESISTANT BARRIER
WD	WOOD
WP	WATERPROOF
WR	WATER RESISTANT
WS	WOOD SCREW
WT	WEIGHT
WWM	WELDED WIRE MESH
YD	YARD

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SHEET ISSUE DATE	07.19.2022
DRAWING SETS	

DATE	DESCRIPTION
2023-07-12	PERMIT SET
2024-05-01	REVISED PERMIT SET

REVISIONS

⚠ REVISION 1

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ADAMS RESIDENCE

8035 SE 45TH ST
MERCER ISLAND 98040

GENERAL NOTES

A-1.1

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING #20210222003556)

THAT PORTION OF LOTS 16 THROUGH 19 AND LOTS 32 THROUGH 34, SEWARD ADDITION, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 24 OF PLATS, PAGE 26, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTHERLY LINE OF SAID LOT 34 WHICH BEARS SOUTH 85°56'42" WEST 5.28 FEET FROM THE NORTHEAST CORNER THEREOF;
THENCE SOUTH 27°09'40" WEST 24.75 FEET;
THENCE ON A CURVE TO THE LEFT HAVING A RADIUS OF 144 FEET A DISTANCE OF 110.75 FEET;
THENCE SOUTH 16°54'20" EAST 35.79 FEET;
THENCE SOUTH 64°59'11" EAST 68.47 FEET TO THE SOUTH LINE OF SAID LOT 32;
THENCE SOUTH 89°43'57" EAST, ALONG THE SOUTH LINE, 12.50 FEET TO THE SOUTHEAST CORNER OF SAID LOT 32;
THENCE CONTINUING ON THE SOUTH LINE OF LOT 19, SOUTH 89°43'56" EAST 49.95 FEET;
THENCE NORTH 00°16'04" EAST 100 FEET TO THE SOUTH LINE OF LOT 17;
THENCE SOUTH 89°43'56" EAST, ALONG THE SOUTH LINE OF LOT 17, 0.25 FEET, MORE OR LESS, TO A POINT WHICH IS SOUTH 89°43'56" EAST 81.10 FEET FROM THE SOUTHWEST CORNER OF SAID LOT 17;
THENCE NORTH 00°16'04" EAST 101.28 FEET TO THE NORTH LINE OF SAID LOT 16;
THENCE WESTERLY, ALONG THE NORTH LINE OF SAID LOTS 16 AND 34, SOUTH 85°56'42" WEST 115.43 FEET TO THE POINT OF BEGINNING.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

N 16°54'20" W BETWEEN FOUND CENTERLINE MONUMENTATION ALONG FOREST AVE SE PER R1

REFERENCES

R1. SEWARD ADDITION PLAT, VOL. 24, PG. 26, RECORDS OF KING COUNTY, WASHINGTON.
R2. RECORD OF SURVEY, VOL. 52, PG. 180, RECORDS OF KING COUNTY, WASHINGTON.
R3. RECORD OF SURVEY, VOL. 114, PG. 62, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

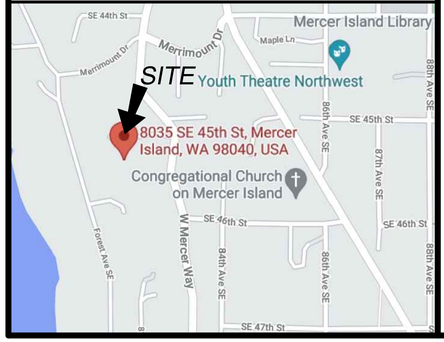
NAVD88 PER GPS OBSERVATIONS

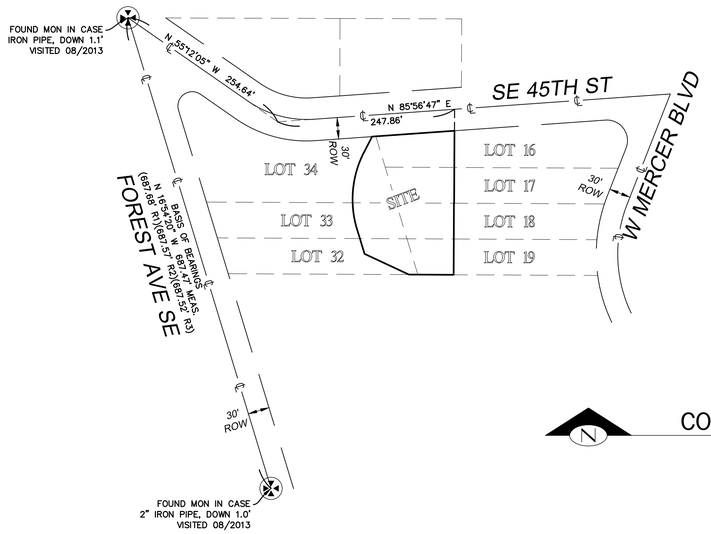
SURVEYOR'S NOTES

1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JULY OF 2021. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 7700100091.
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 25,130± S.F. (0.58 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. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 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.

VICINITY MAP

N.T.S.





CONTROL MAP

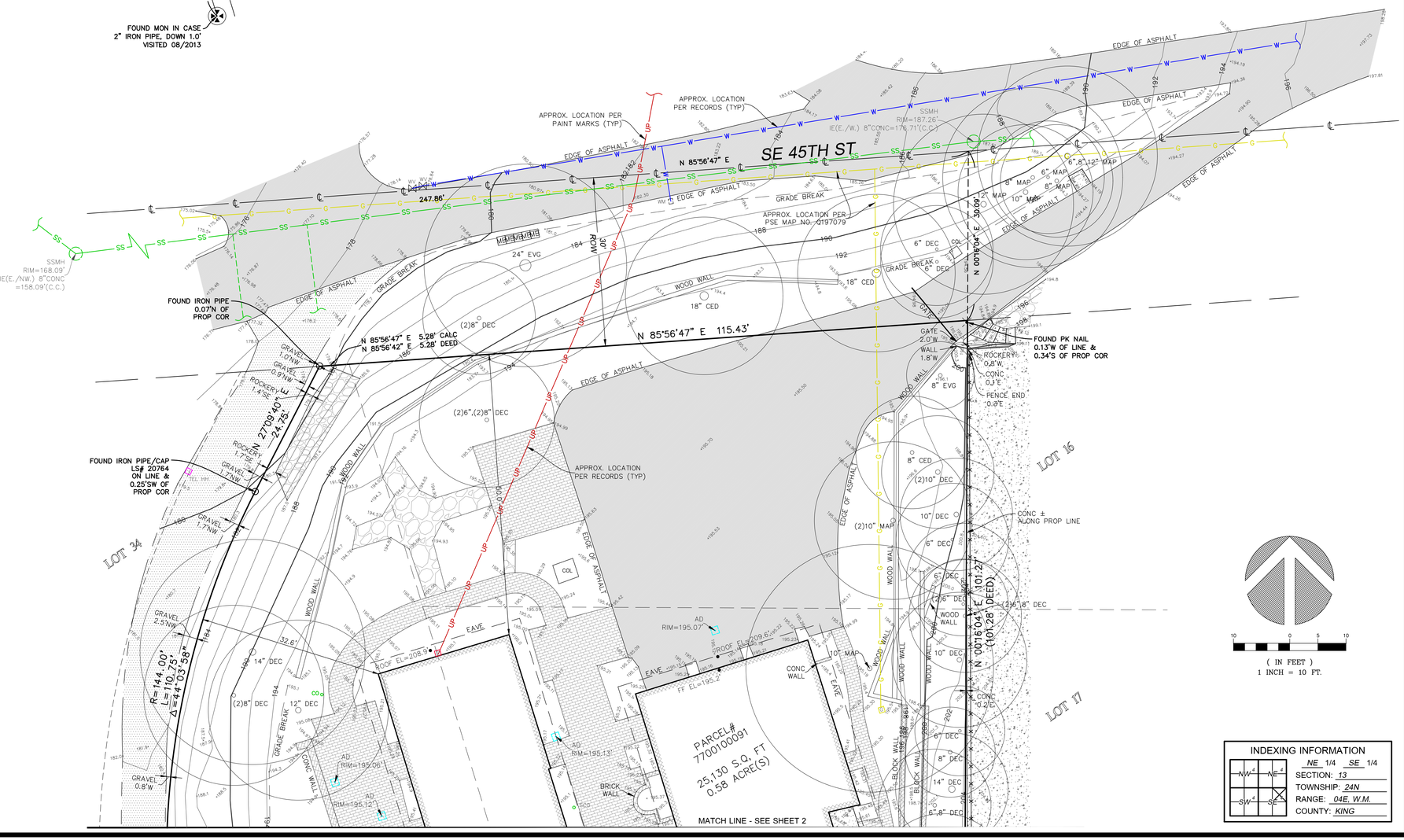
N.T.S.

STEEP SLOPE/BUFFER DISCLAIMER:

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

LEGEND

AREA DRAIN	NAIL AS NOTED
ASPHALT SURFACE	MAILBOX (RESIDENTIAL)
BRICK SURFACE	MONUMENT IN CASE (FOUND)
BUILDING	PAVER SURFACE
CENTERLINE ROW	POWER METER
CLEANOUT	POWER (UNDERGROUND)
SEWER CLEANOUT	REBAR AS NOTED (FOUND)
CULVERT PIPE	ROCKERY
CONCRETE SURFACE	SEWER LINE
RETAINING WALL	SEWER MANHOLE
FENCE LINE (CHAIN LINK)	STORM DRAIN LINE
FENCE LINE (IRON)	TELEPHONE HAND HOLE
FENCE LINE (WOOD)	TREE (AS NOTED)
FLAGSTONE SURFACE	WATER LINE
GAS LINE	WATER METER
GAS METER	WATER VALVE
GRAVEL SURFACE	COLUMN
IRON PIPE (FOUND)	



10 0 5 10

(IN FEET)
1 INCH = 10 FT.

INDEXING INFORMATION

NE 1/4 SE 1/4
SECTION: 13
TOWNSHIP: 24N
RANGE: 04E, W.M.
COUNTY: KING

measure success

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 7700100091

ADAM RESIDENCE

8035 SE 45TH ST
MERCER ISLAND, WA 98040

GOODMAN MILLER — REGISTERED PROFESSIONAL LAND SURVEYOR — STATE OF WASHINGTON — 07/14/21

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

JOB NUMBER:	211187
DATE:	07/14/21
DRAFTED BY:	RSN
CHECKED BY:	JGM/CSP
SCALE:	1" = 10'

REVISION HISTORY

SHEET NUMBER
1 OF 2

TOPOGRAPHIC & BOUNDARY SURVEY

LEGEND

	AREA DRAIN		NAIL AS NOTED
	ASPHALT SURFACE	MB	MAILBOX (RESIDENTIAL)
	BRICK SURFACE		MONUMENT IN CASE (FOUND)
	BUILDING		PAVER SURFACE
℄	CENTERLINE ROW	P	POWER METER
CO	CLEANOUT	UP	POWER (UNDERGROUND)
SCO	SEWER CLEANOUT		REBAR AS NOTED (FOUND)
	CULVERT PIPE		ROCKERY
	CONCRETE SURFACE	SS	SEWER LINE
	RETAINING WALL		SEWER MANHOLE
	FENCE LINE (CHAIN LINK)	SD	STORM DRAIN LINE
	FENCE LINE (IRON)	TEL HH	TELEPHONE HAND HOLE
	FENCE LINE (WOOD)	SIZE TYPE	TREE (AS NOTED)
	FLAGSTONE SURFACE	W	WATER LINE
G	GAS LINE	WM	WATER METER
G	GAS METER	WV	WATER VALVE
	GRAVEL SURFACE	COL	COLUMN
IP	IRON PIPE (FOUND)		

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10 0 5 10

(IN FEET)
1 INCH = 10 FT.

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measure success

TOPOGRAPHIC & BOUNDARY SURVEY

PARCEL NO. 7700100091

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MERCER ISLAND, WA 98040

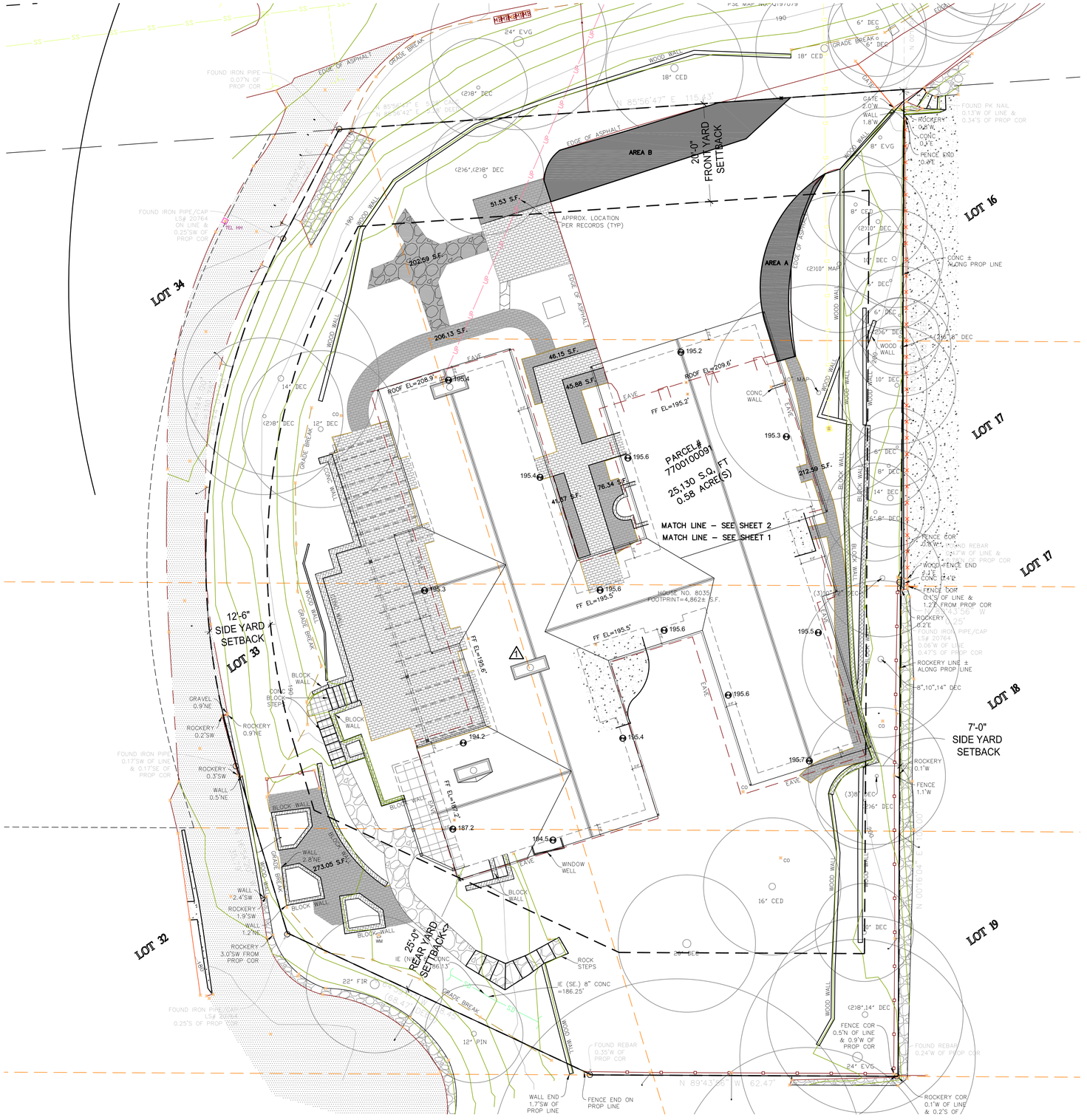
GOODMAN MILLER LAND SURVEYING — REGISTERED PROFESSIONAL LAND SURVEYOR — STATE OF WASHINGTON — 07/14/21

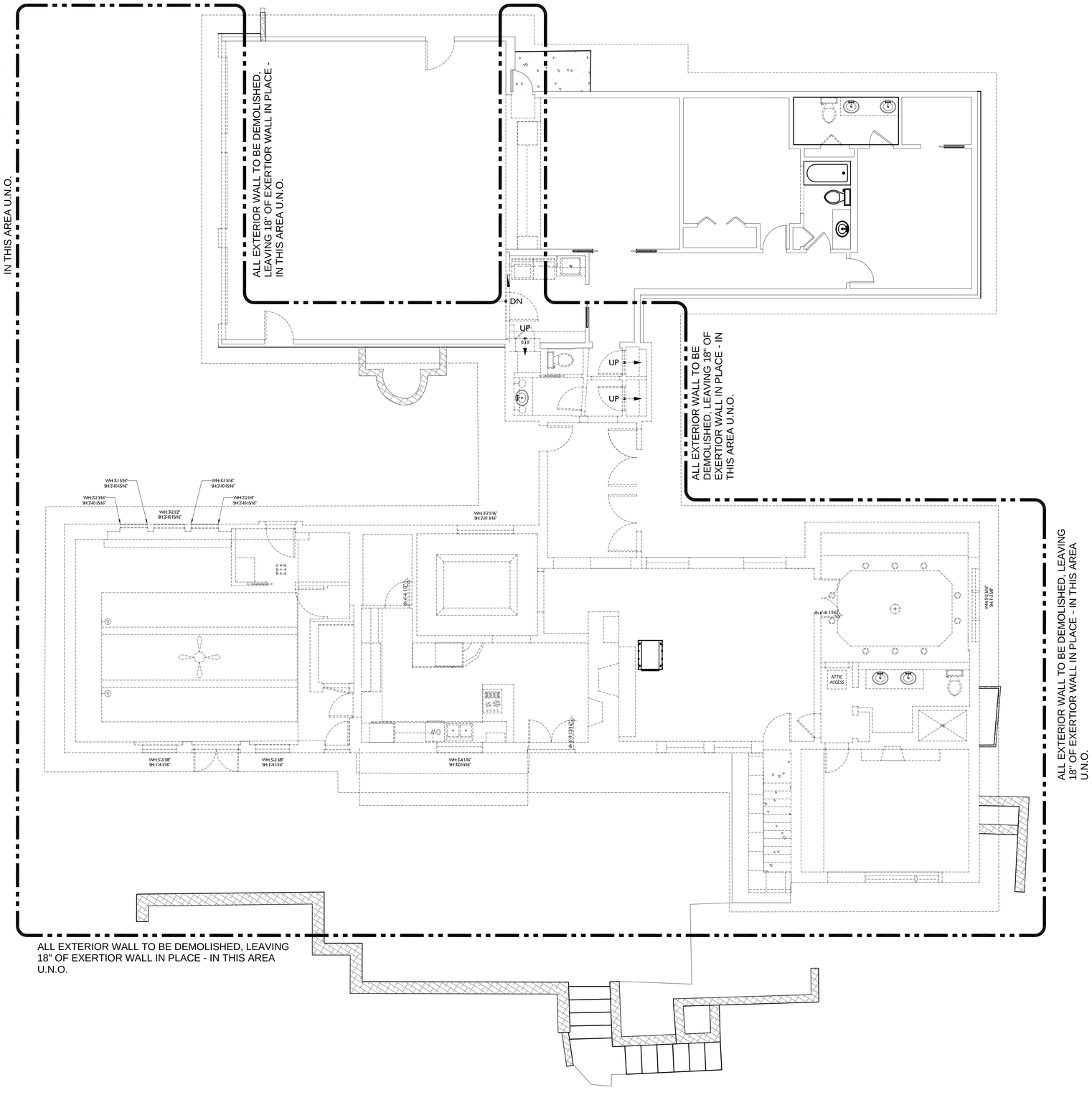
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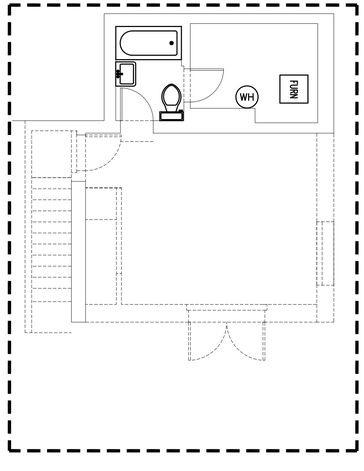
REVISION HISTORY

SHEET NUMBER
2 OF 2


AREA B
AREA A
20'-0" FRONT YARD SETBACK
51.53 S.F.
202.59 S.F.
206.13 S.F.
46.15 S.F.
45.88 S.F.
76.34 S.F.
41.57 S.F.
212.59 S.F.
273.05 S.F.
APPROX. LOCATION PER RECORDS (TYP)
PARCEL# 7700100091
25,130 S.Q. FT
0.58 ACRE(S)
MATCH LINE – SEE SHEET 2
MATCH LINE – SEE SHEET 1
HOUSE NO. 8035
FOOTPRINT=4,862± S.F.
12'-6" SIDE YARD SETBACK
7'-0" SIDE YARD SETBACK
25'-0" REAR YARD SETBACK
LOT 34
LOT 33
LOT 32
LOT 16
LOT 17
LOT 18
LOT 19
ROOF EL=208.9'
ROOF EL=209.6'
FF EL=195.2'
FF EL=195.5'
FF EL=195.6'
FF EL=195.5'
FF EL=195.5'
FF EL=195.6'
FF EL=195.6'
FF EL=195.6



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



2 LOWER FLOOR PLAN
SCALE: 3/16" = 1'-0"

PLAN NORTH

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
	DEMO WALL	Existing wall to be removed
	EXISTING WALL	Existing wall to remain
	NEW WALL (Line of Drywall)	2x studs @ 16" O.C.
(cfm)	EXHAUST FAN	CFM AS NOTED, VENT TO EXTERIOR, SWITCH SEPARATELY
SA CO	SMOKE ALARM CO2 DETECTOR	CEILING MOUNTED
	SOUND WALL	STAGGERED 2X STUDS WITH ROCK WOOL SOUND BATTS & ADDITIONAL LAYER GWB AT RECEIVER SIDE

NOTE: CONTRACTOR MUST CONTACT ARCHITECT IMMEDIATELY FOR ANY DISCREPANCIES IN CONTRACT DOCUMENTS OR EXISTING CONDITIONS PRIOR TO PROCEEDING WITH WORK.

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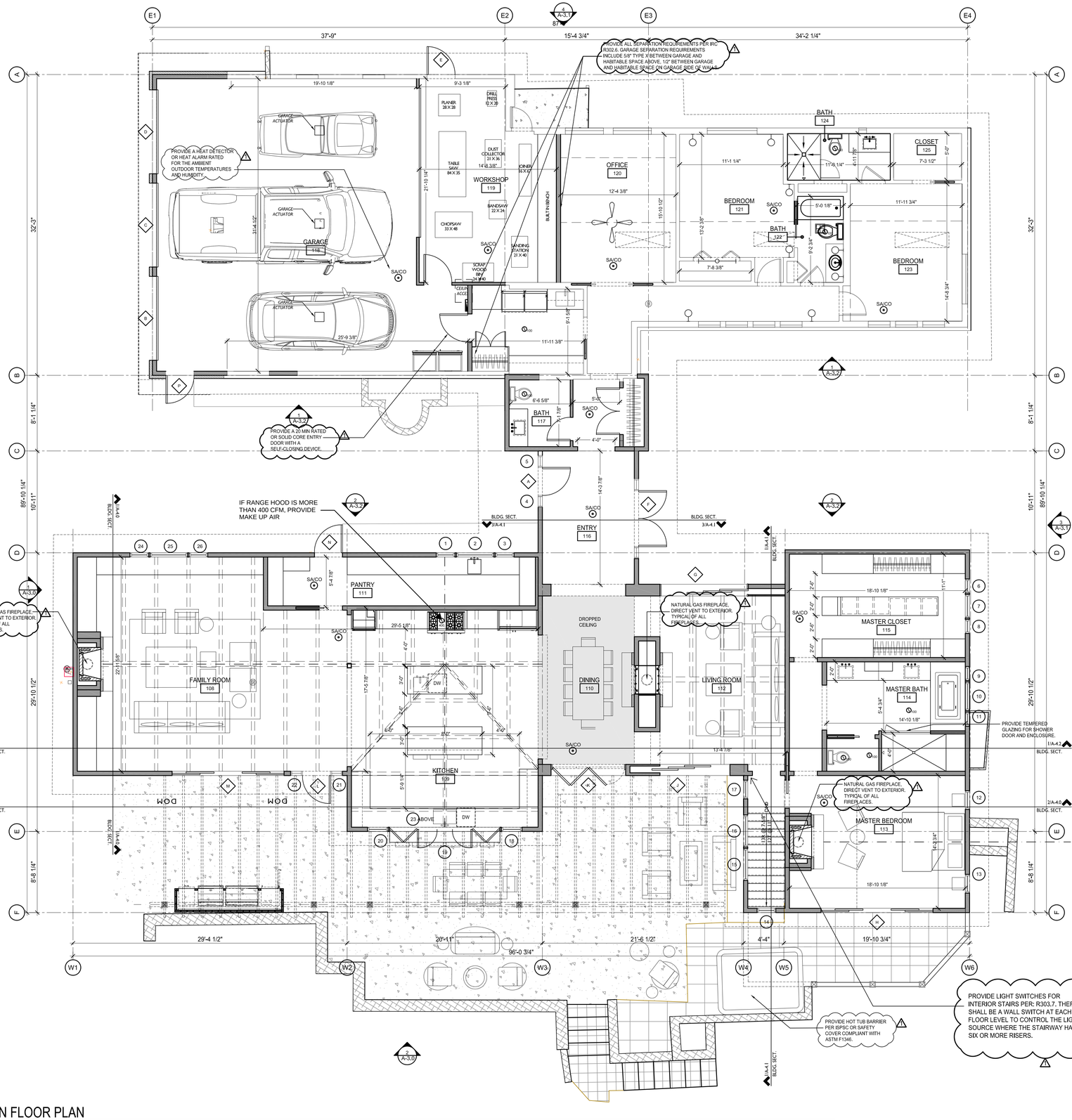
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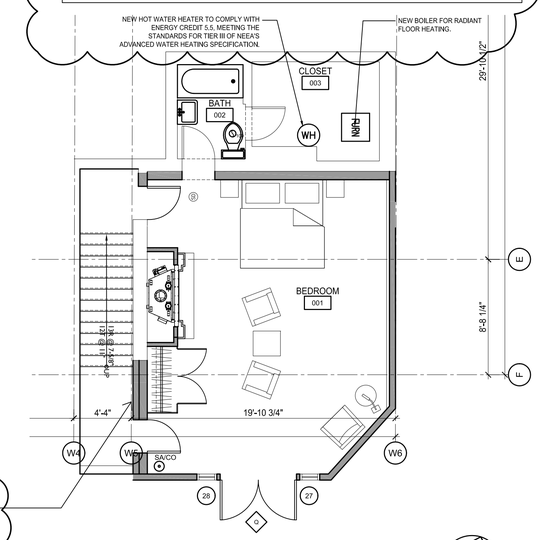
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MAIN FLOOR DEMOLITIONPLAN

A-2.0



1 MAIN FLOOR PLAN
SCALE: 3/16" = 1'-0"



2 LOWER FLOOR PLAN
SCALE: 3/16" = 1'-0"

PLAN NORTH

FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
	DEMO WALL	Existing wall to be removed
	EXISTING WALL	Existing wall to remain
	NEW WALL (Line of Drywall)	2x studs @ 16" O.C.
(cfm)	EXHAUST FAN	CFM AS NOTED, VENT TO EXTERIOR, SWITCH SEPARATELY
SA/CO	SMOKE ALARM CO2 DETECTOR	CEILING MOUNTED
	SOUND WALL	STAGGERED 2X STUDS WITH ROCK WOOL SOUND BATTS & ADDITIONAL LAYER GWB AT RECEIVER SIDE

NOTE: CONTRACTOR MUST CONTACT ARCHITECT IMMEDIATELY FOR ANY DISCREPANCIES IN CONTRACT DOCUMENTS OR EXISTING CONDITIONS PRIOR TO PROCEEDING WITH WORK.

GENERAL STAIR NOTES

1. Tread run to be 10" minimum (11" minimum for occupancies greater than 10).
2. Riser height to be 7 3/4" maximum (7" maximum for occupancies greater than 10).
3. Stair width and landing length to be 36" minimum.
4. Winder tread width to be 6" minimum.
5. Winder tread width to be 10" minimum at a point 12" from inside of stair.
6. Handgrasp width to be 1 1/4" minimum and 2" maximum.
7. Handgrasp to have a minimum clear space to wall surface of 1 1/2".
8. Handgrasp to project into stairway 3 1/2" maximum.
9. Top of handgrasp to be 34" minimum and 38" maximum above nosings.
10. Handgrasp to be continuous from first to last nosing.
11. Handgrasp to return to wall or terminate at a newel post.
12. Guardrails (level) to be capable of withstanding a #200 force at any point in any direction.
13. Guardrail members to be spaced so as to prohibit the passing of a 4" diameter sphere through railing at any point.
14. Guardrails and handrails to be 36" minimum above finish floor.

ENERGY CREDIT COMPLIANCE

PROVIDE COMPLIANCE WITH ENERGY CREDIT 2.1 (REDUCE THE TESTED AIR LEAKAGE TO 3.0 AIR CHANGES PER HOUR MAXIMUM AT 50 PASCALS AND ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1507.3 OF THE INTERNATIONAL RESIDENTIAL CODE OR SECTION 403.8 OF THE INTERNATIONAL MECHANICAL CODE SHALL BE MET WITH A HIGH EFFICIENCY FAN(S) (MAXIMUM 0.35 WATTS/CFM), NOT INTERLOCKED WITH THE FURNACE FAN (IF PRESENT). 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.)

NEW HEAT PUMPS COMPLY WITH ENERGY CREDIT 3.5, A MINIMUM HSPF OF 11.0.

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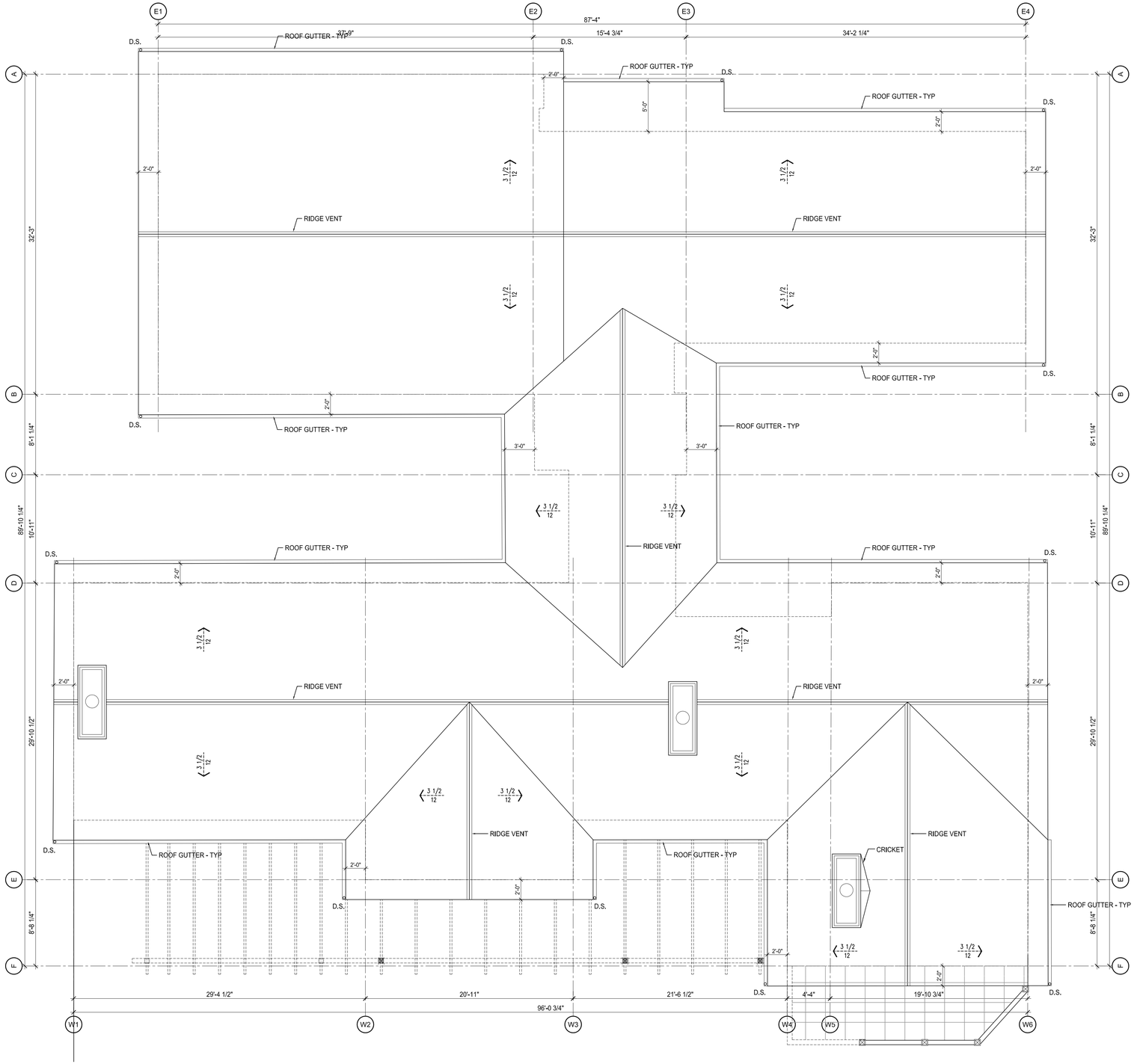
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MAIN FLOOR PLAN

A-2.1



1 ROOF PLAN
SCALE: 3/16" = 1'-0"

ROOF PLAN LEGEND

SEE A-1.1 FOR GENERAL LEGEND

SYMBOL	DESCRIPTION	REMARKS
DS	EXTERIOR DOWNSPOUT	3" DIAMETER, METAL, PAINTED
RD	ROOF DRAIN	AT LOW POINT OF ROOF, 3"~ MINIMUM
CRV	CONTINUOUS RIDGE VENT	0.104 S.F. / L.F. NET FREE VENT AREA, MATCH ROOFING COLOR
SV	SOFFIT VENT	0.083 S.F. / L.F. NET FREE VENT AREA

ROOF PLAN NOTES

1. FLOOD TEST ALL FLAT ROOFS FOR 24 HOURS PRIOR TO INSULATING.
2. ROOFING CONTRACTOR TO GUARANTEE MATERIALS AND WORKMANSHIP FOR 10 YEARS.
3. ALL ROOF PENETRATION LOCATIONS TO BE APPROVED BY ARCHITECT PRIOR TO ROUGH IN.
   NO ROOF PENETRATIONS ON THE (FRONT) SIDE OF ROOF.
   MINIMIZE QUANTITIES OF ROOF PENETRATIONS AS MUCH AS POSSIBLE. COMBINE VENT STACKS.
4. CONTRACTOR TO FIELD VERIFY VENTING CONTINUITY AND 1" MINIMUM AIRSPACE ABOVE INSULATION.

NOTE:

ALL NEW DOWN SPOUTS TO BE CONNECTED TO EXISTING TIGHTLINE SYSTEM.

ROOF VENTILATION CALCULATIONS - HOUSE

ROOF AREA	6,598 SQUARE FEET
REQUIRED VENT AREA	6,598 / 300 = 21.99 SQUARE FEET
RIDGE VENT	275.17 L.F. PROVIDED 0.104 S.F. PER L.F. VENT AREA 275.17 X 0.104 = 28.6 S.F. PROVIDED
SOFFIT VENT	540.5 L.F. PROVIDED 2" WIDE CONT. VENT WITH 1/4" GALV. VENT SCREEN = 0.083 S.F. VENT AREA PER L.F. 540.5 X 0.083 = 44.9. S.F. PROVIDED
EAVE BLOCKING	FULL HEIGHT BLOCKING WITH (6) 2-1/2" VENT HOLES PER 14" GREATER THAN OR EQUAL TO SOFFIT VENTING
TOTAL VENT AREA	73.5 S.F. TOTAL VENT AREA PROVIDED

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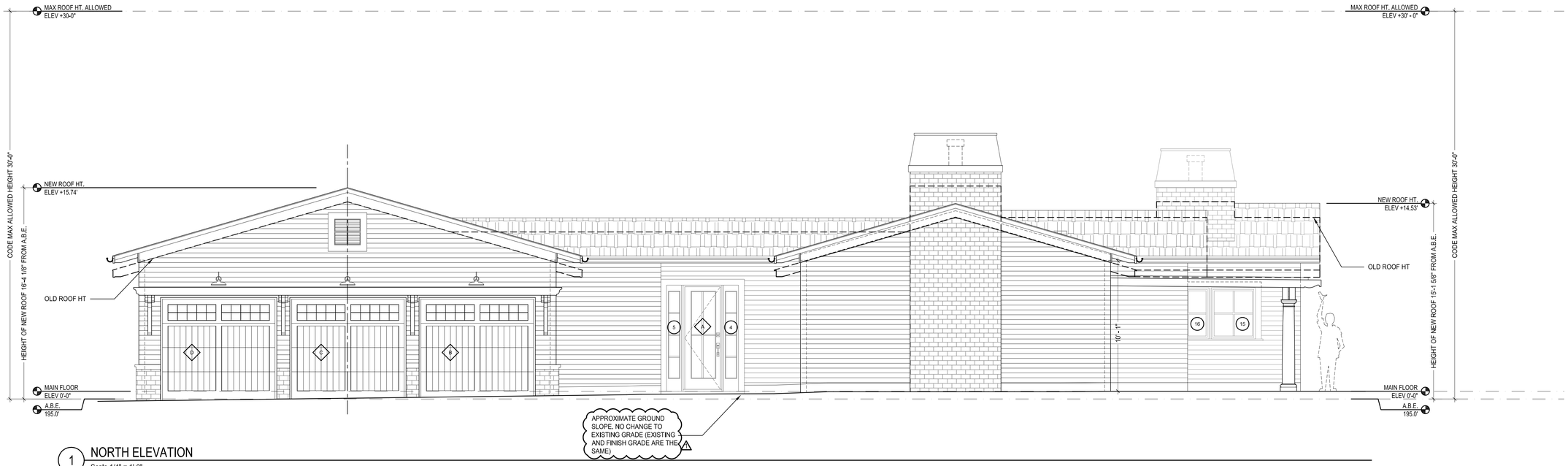
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MERCER ISLAND 98040

PLAN NORTH

ROOF PLAN

A-2.2



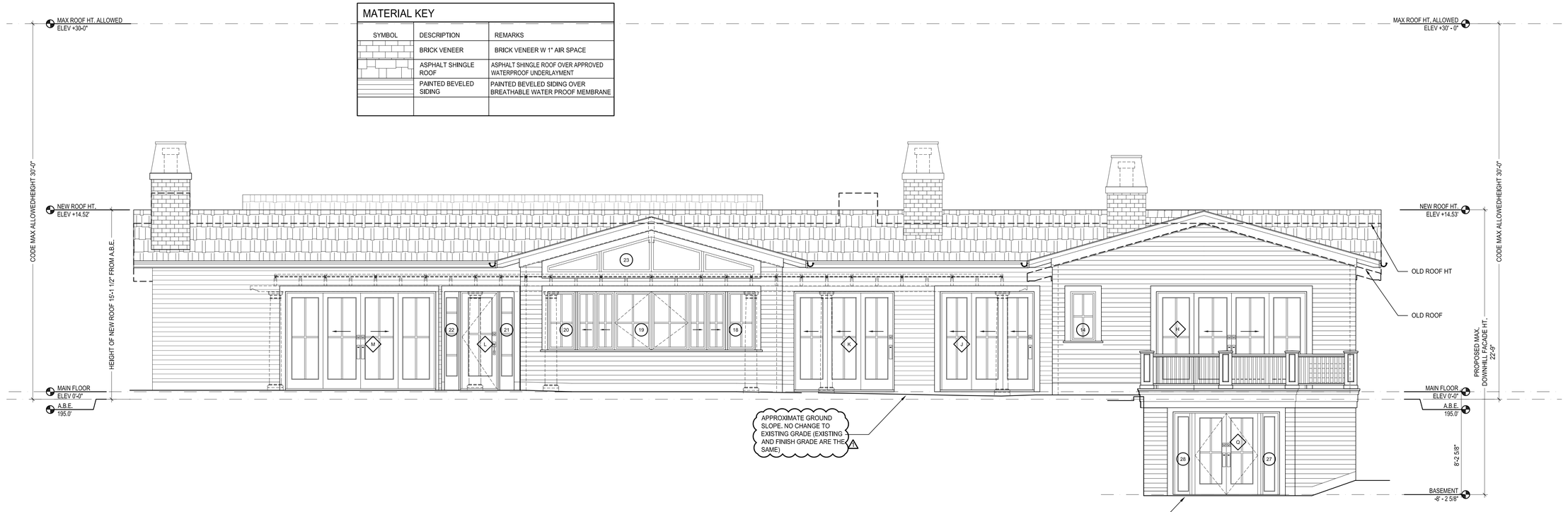
1 NORTH ELEVATION

Scale 1/4" = 1'-0"

NOTE: +0'-0" (T.O. MAIN FINISH FLOOR) = ELEVATION 195.5'

MATERIAL KEY

SYMBOL	DESCRIPTION	REMARKS
	BRICK VENEER	BRICK VENEER W 1" AIR SPACE
	ASPHALT SHINGLE ROOF	ASPHALT SHINGLE ROOF OVER APPROVED WATERPROOF UNDERLAYMENT
	PAINTED BEVELED SIDING	PAINTED BEVELED SIDING OVER BREATHABLE WATER PROOF MEMBRANE



2 WEST ELEVATION

Scale 1/4" = 1'-0"

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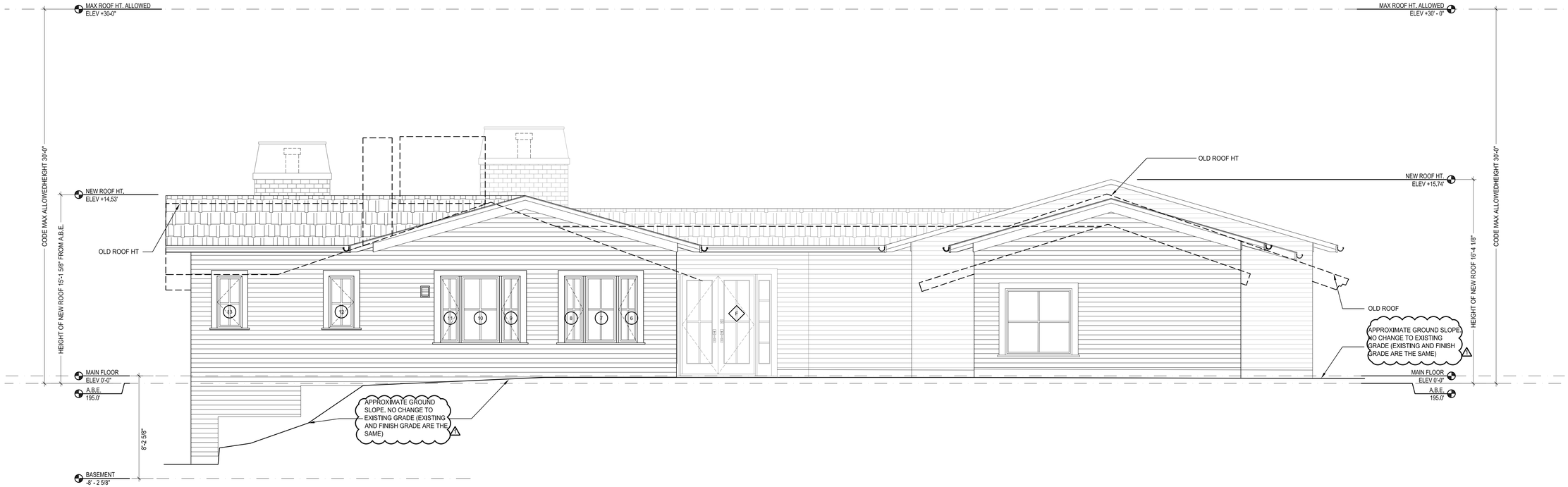
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EXTERIOR ELEVATIONS

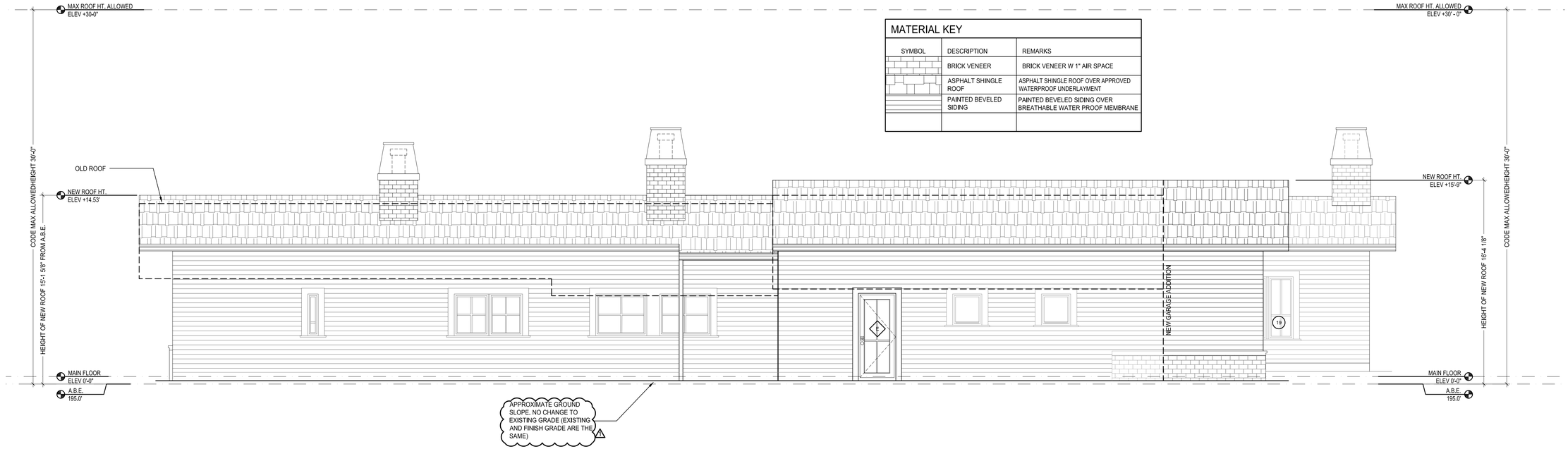
A-3.0



1 SOUTH ELEVATION

Scale 1/4" = 1'-0"

NOTE: +0'-0" (T.O. MAIN FINISH FLOOR) = ELEVATION 195.5'



MATERIAL KEY		
SYMBOL	DESCRIPTION	REMARKS
	BRICK VENEER	BRICK VENEER W 1" AIR SPACE
	ASPHALT SHINGLE ROOF	ASPHALT SHINGLE ROOF OVER APPROVED WATERPROOF UNDERLAYMENT
	PAINTED BEVELED SIDING	PAINTED BEVELED SIDING OVER BREATHABLE WATER PROOF MEMBRANE

2 EAST ELEVATION

Scale 1/4" = 1'-0"

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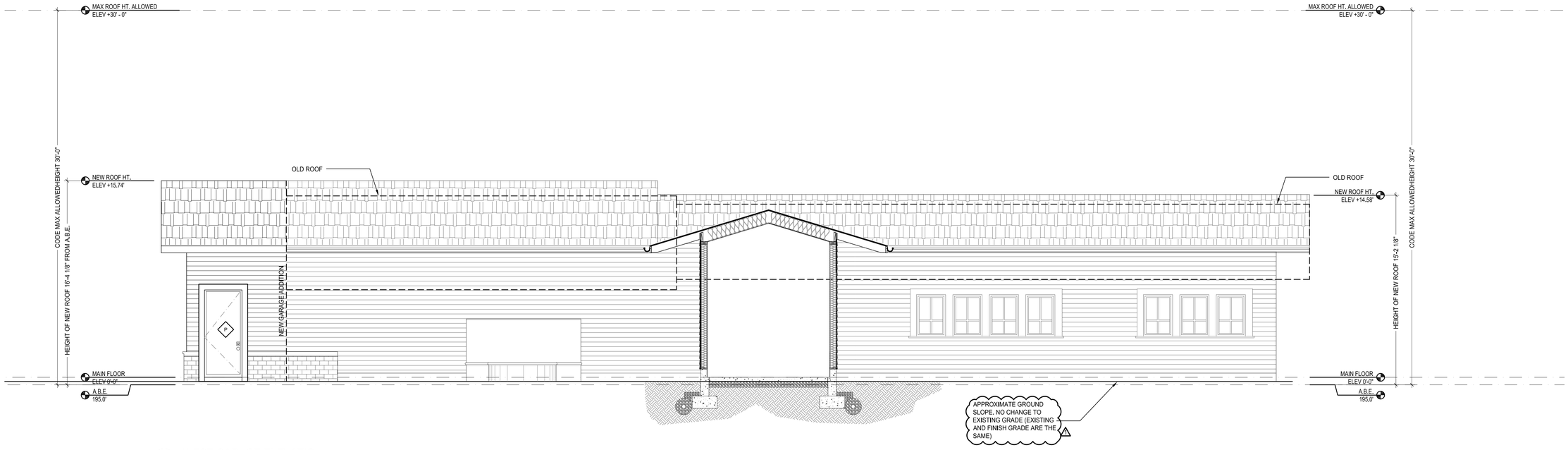
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EXTERIOR ELEVATIONS

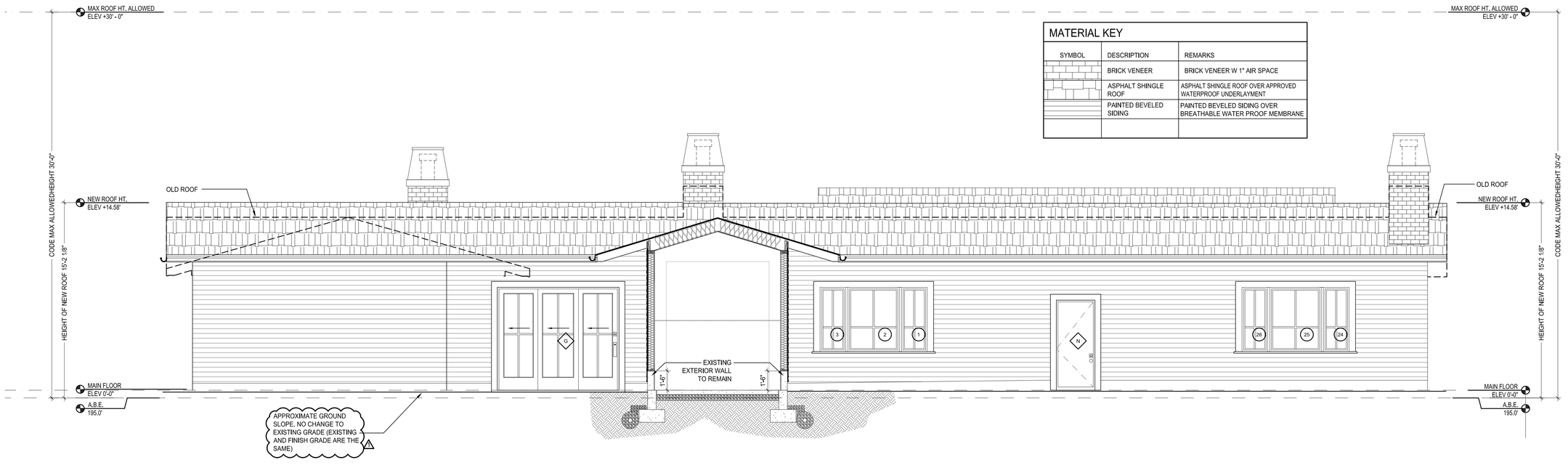
A-3.1



1 WEST GARAGE ELEVATION

Scale 1/4" = 1'-0"

NOTE: +0'-0" (T.O. MAIN FINISH FLOOR) = ELEVATION 195.5'



MATERIAL KEY

SYMBOL	DESCRIPTION	REMARKS
	BRICK VENEER	BRICK VENEER W 1" AIR SPACE
	ASPHALT SHINGLE ROOF	ASPHALT SHINGLE ROOF OVER APPROVED WATERPROOF UNDERLAYMENT
	PAINTED BEVELED SIDING	PAINTED BEVELED SIDING OVER BREATHABLE WATER PROOF MEMBRANE

2 ENTRY SECTION

Scale 1/4" = 1'-0"

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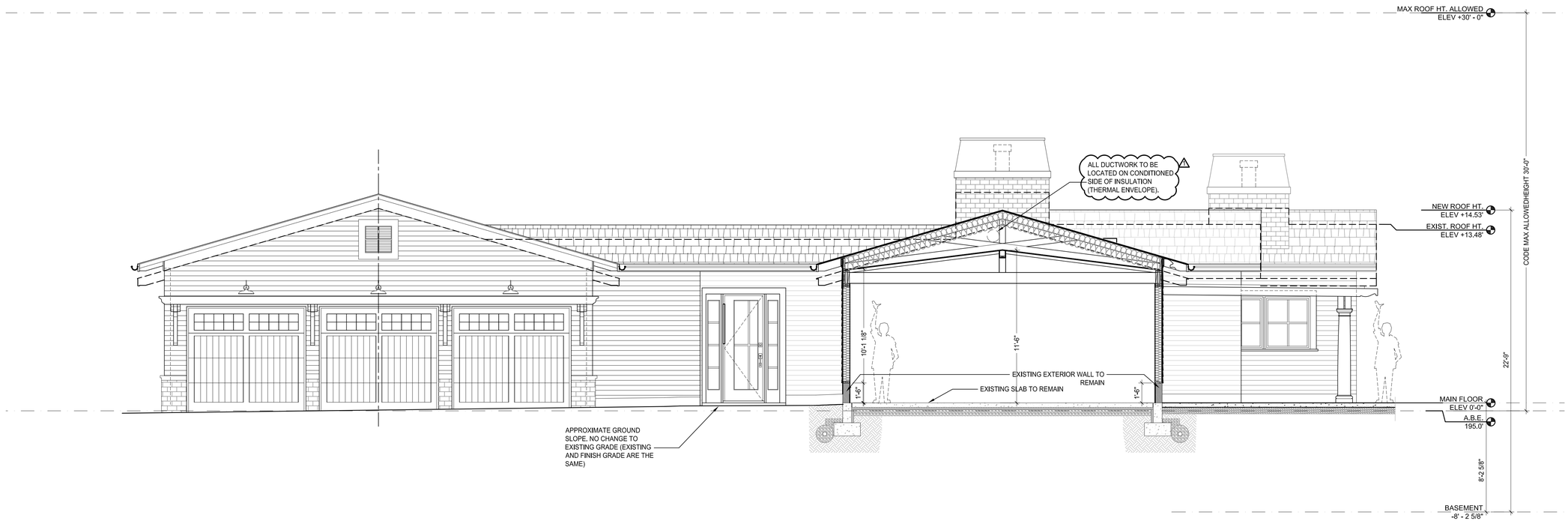
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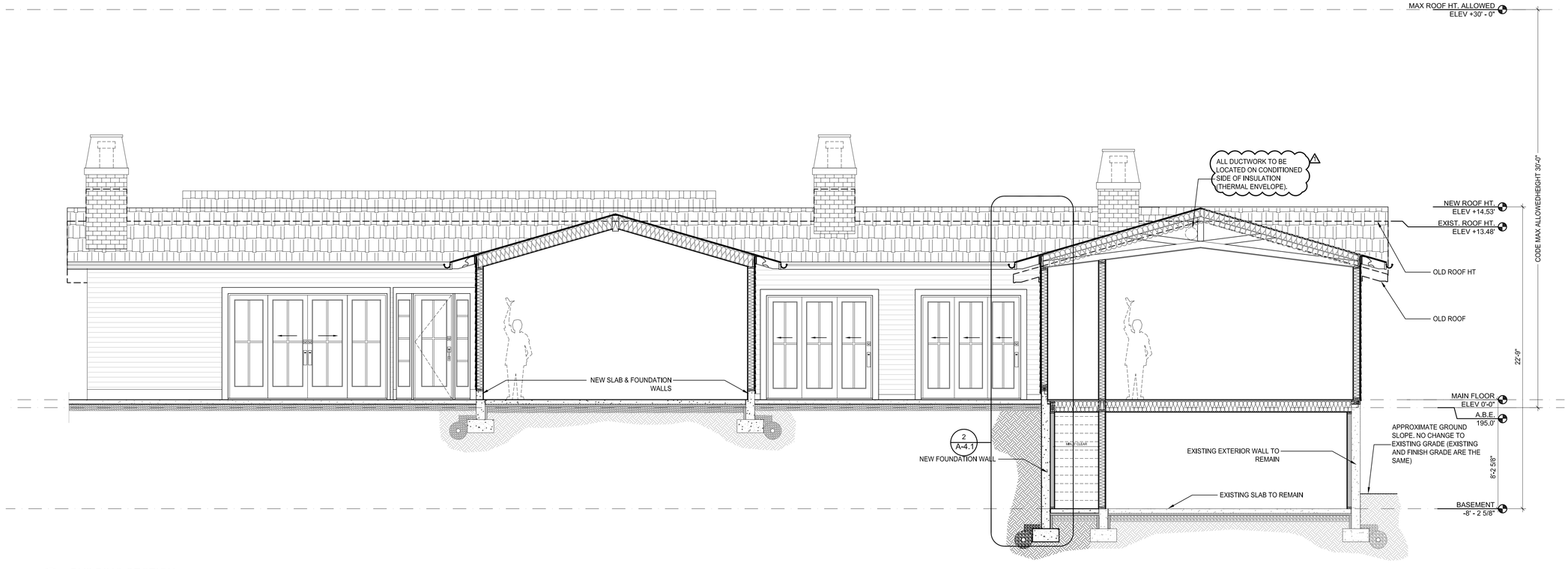
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EXTERIOR ELEVATIONS

A-3.2



1 BUILDING SECTION
Scale 1/4" = 1'-0"



2 BUILDING SECTION
Scale 1/4" = 1'-0"

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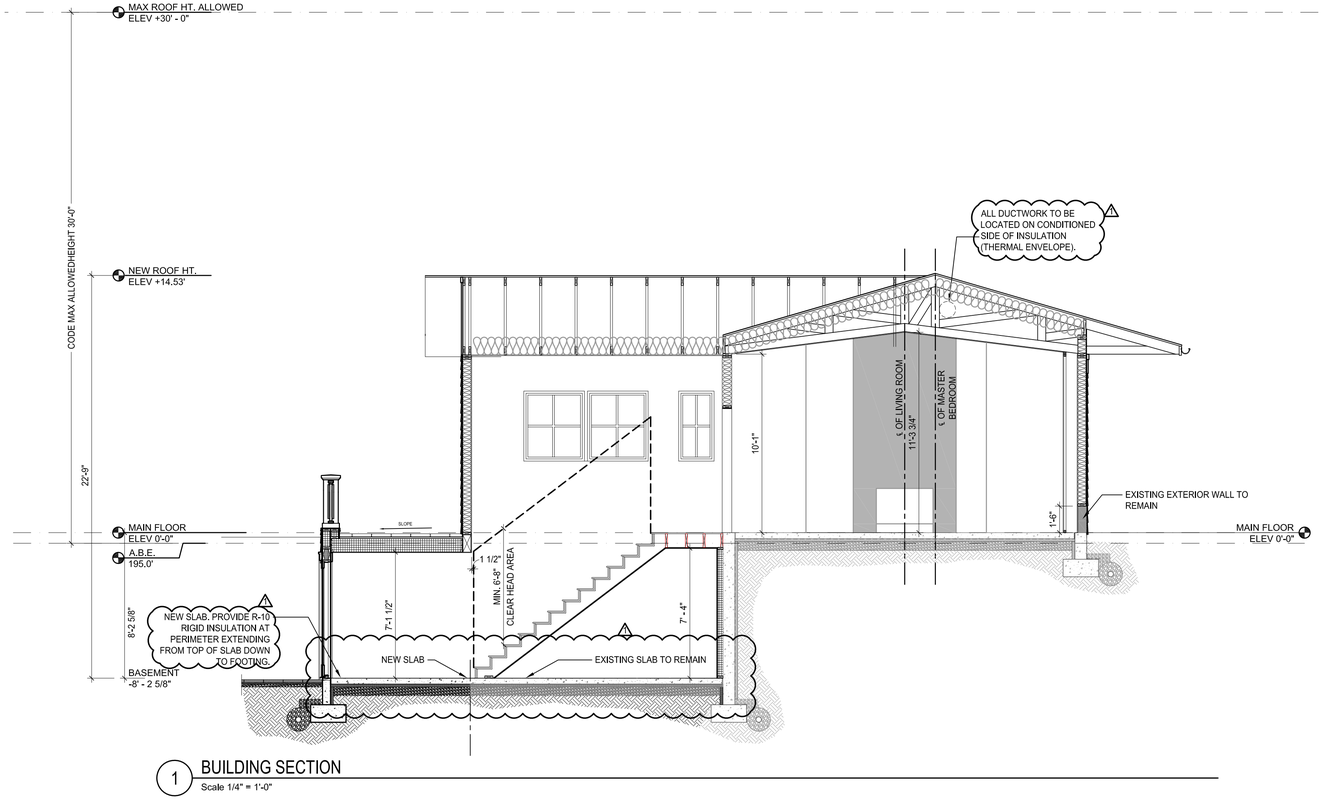
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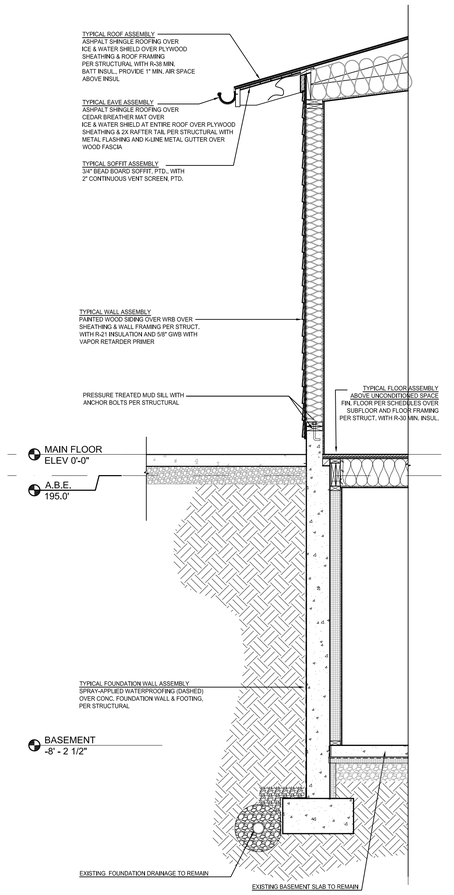
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BUILDING SECTION

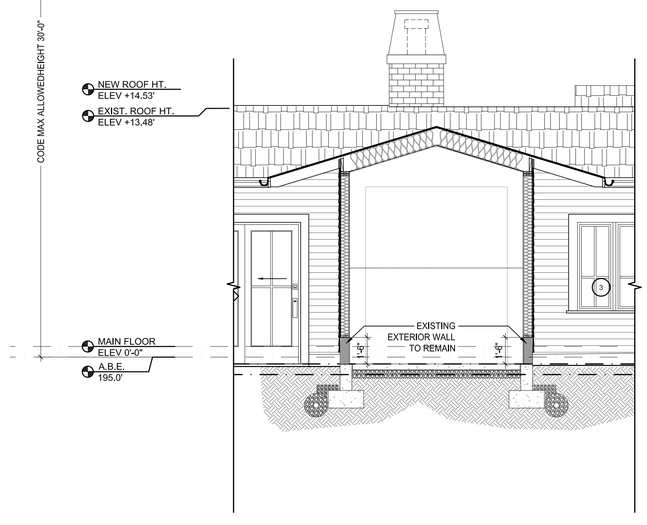
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1 BUILDING SECTION
Scale 1/4" = 1'-0"



2 NEW WALL SECTION
Scale 1/2" = 1'-0"



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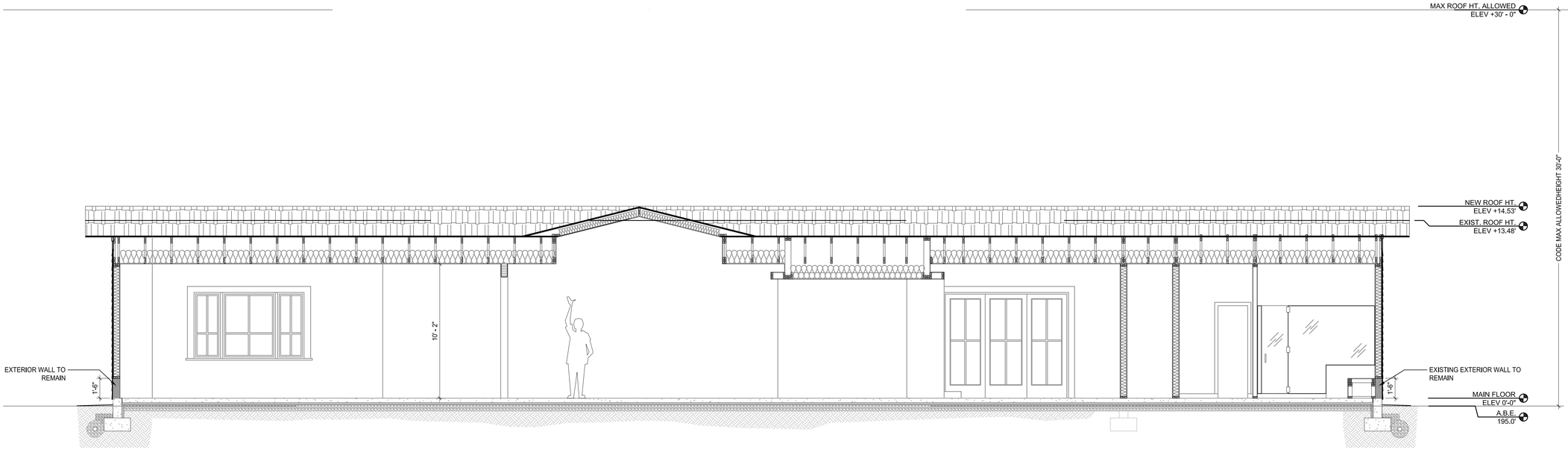
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BUILDING SECTION

A-4.1



1 BUILDING SECTION
Scale 1/4" = 1'-0"

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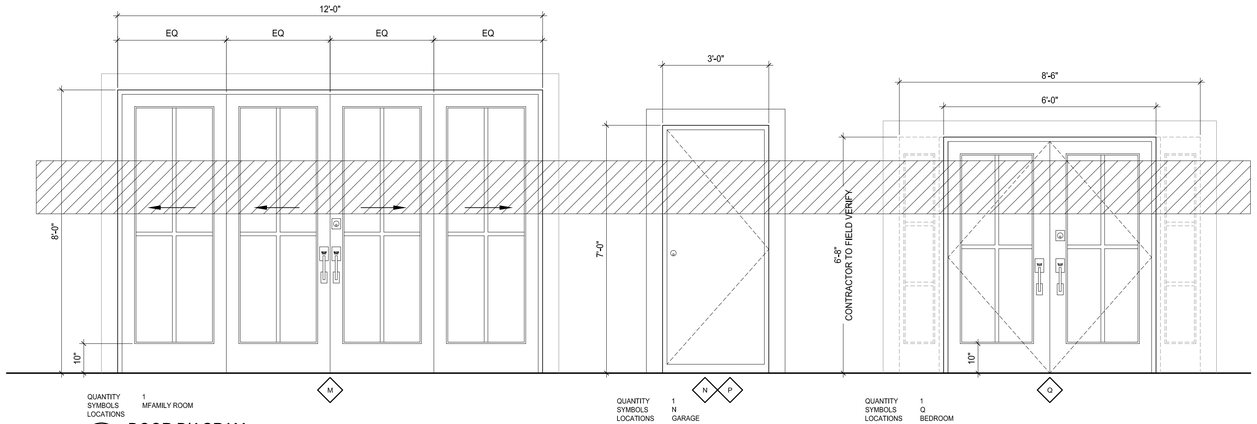
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BUILDING SECTION

A-4.2



QUANTITY 1
SYMBOLS M
LOCATIONS MFAMILY ROOM

D10 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS N
LOCATIONS GARAGE

D11 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS Q
LOCATIONS BEDROOM

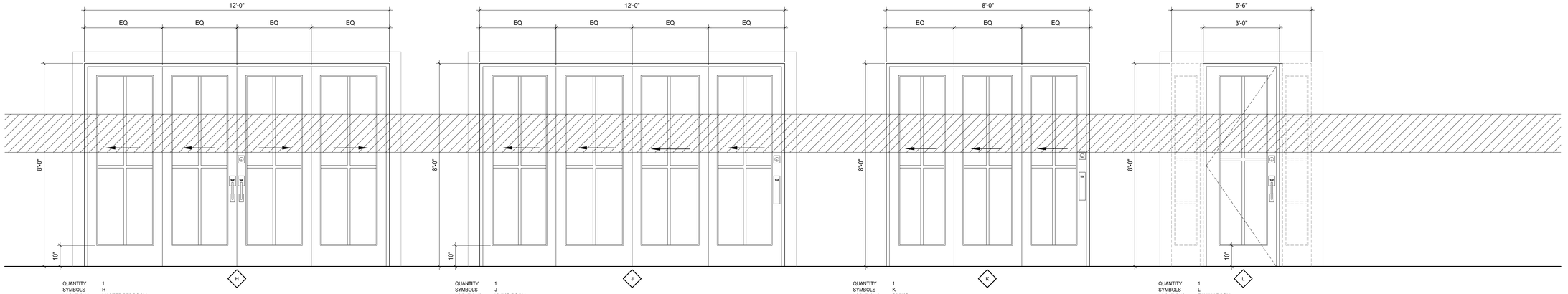
D12 DOOR DIAGRAM
Scale 1/2" = 1'-0"

EXTERIOR DOOR SCHEDULE

SYMBOL	LOCATION	ROOM	DIAGRAM	TYPE	GLAZED AREA	FINISH (INT. / EXT.)	U	REMARKS
A	SEE DIAGRAM	116	D1	SWINGING	12.14 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
B	SEE DIAGRAM	118	D2	OVERHEAD	8.9 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
C	SEE DIAGRAM	118	D2	OVERHEAD	8.9 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
D	SEE DIAGRAM	118	D2	OVERHEAD	8.9 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
E	SEE DIAGRAM	119	D3	SWINGING	11.65 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
F	SEE DIAGRAM	116	D4	SWINGING	26.32 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
G	SEE DIAGRAM	112	D5	SLIDING	50.16 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
H	SEE DIAGRAM	113	D6	SLIDING	57.12 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
J	SEE DIAGRAM	112	D7	SLIDING	57.12 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
K	SEE DIAGRAM	110	D8	BI-FOLDING	34.68 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
L	SEE DIAGRAM	108	D9	SWINGING	12.14 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
M	SEE DIAGRAM	108	D10	SLIDING	57.12 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
N	SEE DIAGRAM	111	D11	SWINGING	NA	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
P	SEE DIAGRAM	118	D11	SWINGING	NA	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)
Q	SEE DIAGRAM	001	D12	SWINGING	26.32 SF	PTD. / CLAD	.29	PAINTED INTERIOR, CLAD EXTERIOR (SAFETY GLASS)

DOOR SCHEDULE ORGANIZATION
1. EXTERIOR DOORS ARE CALLED OUT WITH A SINGLE LETTER (EXAMPLE: A, B, C...)
2. LABELING BEGINS AT THE MAIN LEVEL, THEN LOWER
3. LABELING BEGINS AT THE NORTH ELEVATION AND PROCEEDS CLOCKWISE

DOOR DIAGRAM NOTES
1. ALL DIAGRAMS ARE SHOWN FROM THE EXTERIOR SIDE
2. PROVIDE EXTERIOR TRIM AND MULL COVERS AS INDICATED ON EXTERIOR ELEVATIONS AND DETAILS
3. SHOP DRAWING APPROVAL BY ARCHITECT REQUIRED PRIOR TO FABRICATION
4. CONTRACTOR TO CONFIRM ALL REQUIRED ROUGH OPENING SIZES WITH MANUFACTURER PRIOR TO FRAMING
5. MANUFACTURER TO REVIEW INSTALLATION LOCATIONS AND DETERMINE WHICH LITES ARE REQUIRED TO BE SAFETY GLAZING
6. MANUFACTURER TO REVIEW INSTALLATION LOCATIONS AND SIZES TO DETERMINE IF OPERABLE DOORS MEET EGRESS REQUIREMENTS



QUANTITY 1
SYMBOLS H
LOCATIONS MASTER BEDROOM

D6 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS J
LOCATIONS LIVING ROOM

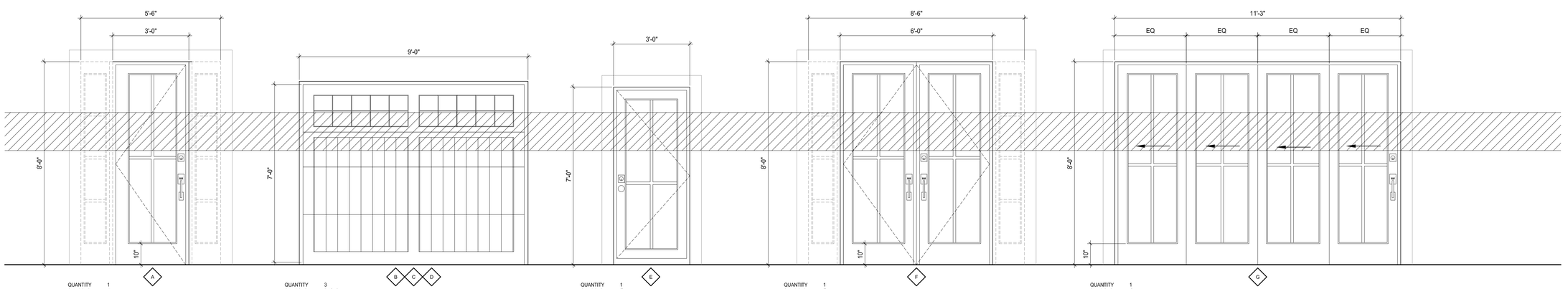
D7 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS K
LOCATIONS DINING

D8 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS L
LOCATIONS FAMILY ROOM

D9 DOOR DIAGRAM
Scale 1/2" = 1'-0"



QUANTITY 1
SYMBOLS A
LOCATIONS ENTRY

D1 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 3
SYMBOLS B, C, D
LOCATIONS GARAGE

D2 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS E
LOCATIONS WORKSHOP

D3 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS F
LOCATIONS ENTRY

D4 DOOR DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS G
LOCATIONS LIVING ROOM

D5 DOOR DIAGRAM
Scale 1/2" = 1'-0"

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DOOR DIAGRAMS & SCHEDULE

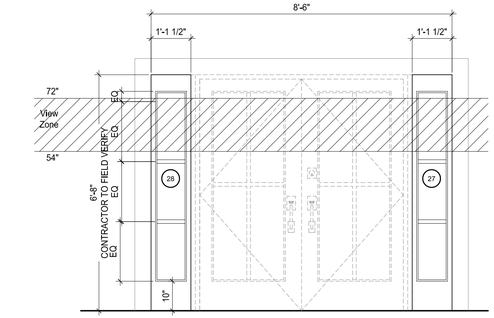
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WINDOW SCHEDULE

SYMBOL	LOCATION	ROOM	DIAGRAM	TYPE	AREA	FINISH	U	REMARKS
1	SEE DIAGRAM	111	W1	FIXED	1.0 SF	PTD. / CLAD	0.24	SAFETY GLASS
2	SEE DIAGRAM	111	W1	FIXED	16.08 SF	PTD. / CLAD	0.24	SAFETY GLASS
3	SEE DIAGRAM	111	W1	FIXED	1.0 SF	PTD. / CLAD	0.24	SAFETY GLASS
4	SEE DIAGRAM	116	W2	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS
5	SEE DIAGRAM	116	W2	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS
6	SEE DIAGRAM	115	W3	CASEMENT	5.1 SF	PTD. / CLAD	0.24	SAFETY GLASS
7	SEE DIAGRAM	115	W3	FIXED	9.95 SF	PTD. / CLAD	0.24	SAFETY GLASS
8	SEE DIAGRAM	115	W3	CASEMENT	5.1 SF	PTD. / CLAD	0.24	SAFETY GLASS
9	SEE DIAGRAM	114	W4	CASEMENT	5.1 SF	PTD. / CLAD	0.24	SAFETY GLASS
10	SEE DIAGRAM	114	W4	FIXED	9.95 SF	PTD. / CLAD	0.24	SAFETY GLASS
11	SEE DIAGRAM	114	W4	CASEMENT	5.1 SF	PTD. / CLAD	0.24	SAFETY GLASS
12	SEE DIAGRAM	113	W5	FIXED	5.72 SF	PTD. / CLAD	0.24	-
13	SEE DIAGRAM	113	W5	FIXED	5.72 SF	PTD. / CLAD	0.24	-
14	SEE DIAGRAM	STAIRS	W5	FIXED	5.72 SF	PTD. / CLAD	0.24	-
15	SEE DIAGRAM	STAIRS	W6	FIXED	10.98 SF	PTD. / CLAD	0.24	SAFETY GLASS
16	SEE DIAGRAM	STAIRS	W6	FIXED	10.98 SF	PTD. / CLAD	0.24	SAFETY GLASS
17	SEE DIAGRAM	STAIRS	W5	FIXED	5.72 SF	PTD. / CLAD	0.24	-
18	SEE DIAGRAM	109	W7	FIXED	7.93 SF	PTD. / CLAD	0.24	SAFETY GLASS
19	SEE DIAGRAM	109	W7	BI-FOLD	41.68 SF	PTD. / CLAD	0.24	SAFETY GLASS
20	SEE DIAGRAM	109	W7	FIXED	7.93 SF	PTD. / CLAD	0.24	SAFETY GLASS
21	SEE DIAGRAM	108	W8	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS
22	SEE DIAGRAM	108	W8	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS
23	SEE DIAGRAM	109	W9	FIXED	19.56 SF	PTD. / CLAD	0.24	-
24	SEE DIAGRAM	108	W10	FIXED	1.0 SF	PTD. / CLAD	0.24	SAFETY GLASS
25	SEE DIAGRAM	108	W10	FIXED	16.08 SF	PTD. / CLAD	0.24	SAFETY GLASS
26	SEE DIAGRAM	108	W10	FIXED	1.0 SF	PTD. / CLAD	0.24	SAFETY GLASS
27	SEE DIAGRAM	001	W11	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS
28	SEE DIAGRAM	001	W11	FIXED	5.24 SF	PTD. / CLAD	0.24	SAFETY GLASS

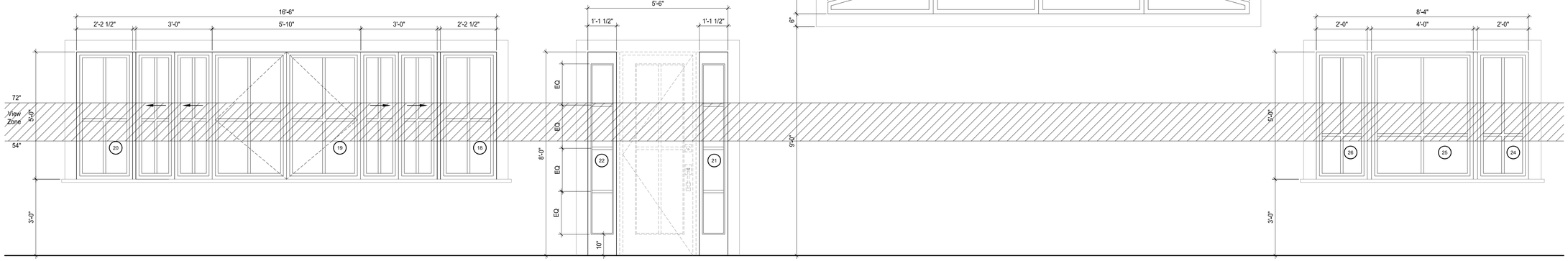
GLAZING NOTES:

1. GLAZING SHALL BE IN ACCORDANCE WITH IRC SECTION 308
2. EXTERIOR GLAZING: ALL EXTERIOR WALL GLAZING SHALL BE DOUBLE-GLAZED AND COMPLY WITH WASHINGTON STATE ENERGY CODE (WAC 51-11)



QUANTITY 2
SYMBOLS 27, 28
LOCATIONS BEDROOM

W11 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

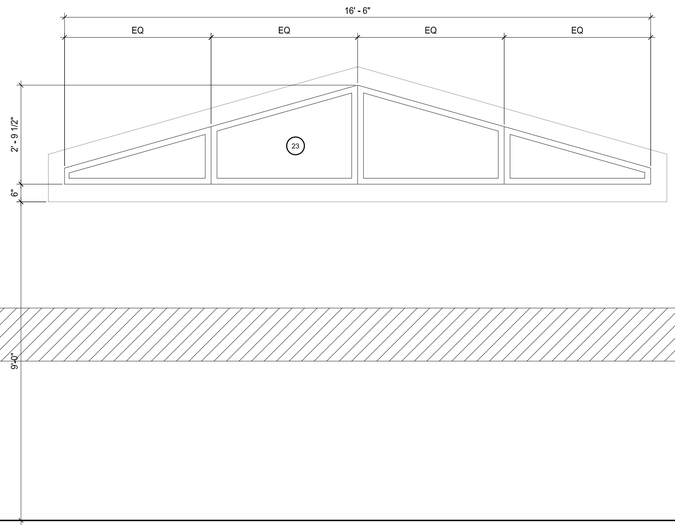


QUANTITY 1
SYMBOLS 18, 19, 20
LOCATIONS KITCHEN

W7 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 21, 22
LOCATIONS FAMILY ROOM

W8 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

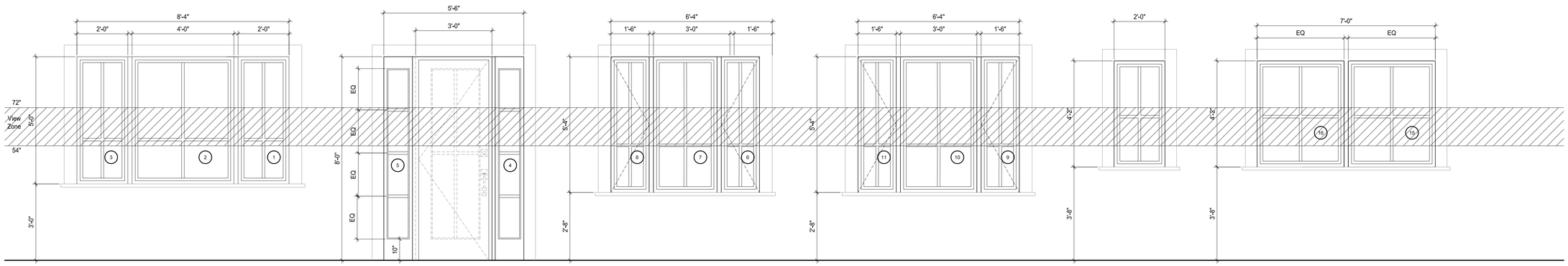


QUANTITY 1
SYMBOLS 23
LOCATIONS KITCHEN

W9 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 19, 20, 21
LOCATIONS FAMILY ROOM

W10 WINDOW DIAGRAM
Scale 1/2" = 1'-0"



QUANTITY 1
SYMBOLS 1, 2, 3
LOCATIONS PANTRY

W1 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 4, 5
LOCATIONS ENTRY

W2 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 6, 7, 8
LOCATIONS MASTER CLOSET

W3 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 9, 10, 11
LOCATIONS MASTER BATH

W4 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 4
SYMBOLS 12, 13, 14, 17
LOCATIONS MASTER BEDROOM, STAIRS

W5 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

QUANTITY 1
SYMBOLS 15, 16
LOCATIONS STAIRS

W6 WINDOW DIAGRAM
Scale 1/2" = 1'-0"

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DESIGN	MM
DRAWN	MM
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SHEET ISSUE DATE	07.19.2022
DRAWING SETS	

DATE	DESCRIPTION
2023-07-12	PERMIT SET

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WINDOW DIAGRAMS & SCHEDULE

A-6.1

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

CRITERIA

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

2. DESIGN LOADING CRITERIA

ROOF SNOW LOAD	25 PSF
ROOF DEAD LOAD ALLOWANCE FOR PV PANELS	5 PSF
FLOOR LIVE LOAD	40 PSF
FLOOR LIVE LOAD (EXTERIOR DECKS AND BALCONIES)	60 PSF
GUARDRAILS/BALCONY RAILS	200 LBS

WIND : ANALYSIS PROCEDURE: ASCE 7-16 CHAPTER 27 "PART 1 - BUILDINGS OF ALL HEIGHTS"
RISK CATEGORY II
97 MPH
EXPOSURE "B"
TOPOGRAPHIC FACTOR Kzt = 1.0
WIND BASE SHEAR, NORTH/SOUTH Vn = 12 K
WIND BASE SHEAR, EAST/WEST Vn = 20 K

CLADDING / WINDOW DESIGN PRESSURE (MAX.)	35 PSF
ROOFING DESIGN PRESSURE NOT AT A CORNER (MAX.)	44 PSF
ROOFING DESIGN PRESSURE AT CORNER (MAX.)	67 PSF

THE DESIGN WIND PRESSURES LISTED ABOVE ARE INWARD OR OUTWARD AND ARE BASED ON AN EFFECTIVE WIND AREA OF 10 SQUARE FEET NEAR A BUILDING CORNER, U.O.N. CORNER AND OTHER ZONES ARE DEFINED BY FIGURE 30.3-1, 30.3-2A TO 2I AND 30.3-5A TO 5B IN ASCE 7-16. REDUCED DESIGN PRESSURES MAY BE CALCULATED USING ASCE 7. NOTE THAT THE DESIGN WIND PRESSURES NOTED ABOVE ARE ULTIMATE VALUES PER THE 2018 IBC AND SHALL BE MULTIPLIED BY 0.6 FOR ALLOWABLE STRESS DESIGN.

EARTHQUAKE : ANALYSIS PROCEDURE: IBC "EQUIVALENT LATERAL FORCE PROCEDURE"
SEISMIC DESIGN CATEGORY (SDC) = D
RISK CATEGORY = II
SEISMIC SITE CLASS = D
IMPORTANCE FACTOR Ie = 1.0
MAPPED MCE Ss = 1.43; S_1 = 0.50
DESIGN ACCELERATION Sds = 1.15; Sd_1 = 0.60
SEISMIC RESISTING SYSTEM: WOOD PANEL BEARING SHEAR WALL, R = 6.5
SEISMIC RESPONSE COEFFICIENT: Cs = 0.18
SEISMIC BASE SHEAR Vs = 40 K

3. LATERAL LOADS ARE TRANSFERRED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE SHEAR WALLS. FORCES ARE BASED ON THE TRIBUTARY AREA FOR EACH SHEAR WALL AND ARE CARRIED BY THE SHEAR WALLS TO THE FOUNDATION.

4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

5. 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.

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

7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THEIR 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 OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

8. 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.

9. 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. WHERE INFORMATION ON THE DRAWINGS IS IN CONFLICT WITH THE SPECIFICATIONS, THE MORE STRINGENT SHALL APPLY, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. DO NOT SCALE THE DRAWINGS.

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

11. SHOP DRAWINGS FOR REINFORCING STEEL AND CONNECTOR PLATE WOOD ROOF TRUSSES SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

12. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND 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. A MINIMUM OF TWO WEEKS SHALL BE ALLOWED FOR REVIEW.

13. 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.

14. DEFERRED SUBMITTALS OF DESIGN BUILD COMPONENTS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. DEFERRED SUBMITTALS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE AND SHALL INCLUDE DESIGN CALCULATIONS WITH THE ENGINEER'S STAMP.

THE FOLLOWING COMPONENTS SHALL BE DEFERRED SUBMITTALS FOR THIS PROJECT:
RAILINGS, TRUSSES.

15. SPECIAL INSPECTION: CONCRETE CONSTRUCTION, EXPANSION BOLTS AND THREADED EXPANSION INSERTS, SCREW ANCHORS, AND EPOXY GROUTED INSTALLATIONS SHALL BE SUPERVISED IN ACCORDANCE WITH IBC SECTIONS 1704 & 1705 AND THE PROJECT SPECIFICATIONS BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET PROJECT SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.

GEOTECHNICAL

16. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH (CONTROLLED, COMPACTED STRUCTURAL FILL OR BOTH) 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 GEOTECHNICAL ENGINEER. UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED UNDER COLUMNS OR WALLS ABOVE.

BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE GEOTECHNICAL REPORT.

THE STRUCTURAL DESIGN IS BASED ON THE FOLLOWING VALUES FROM THE REFERENCED GEOTECHNICAL REPORT:

ALLOWABLE SOIL PRESSURE	2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/35 PCF
SEISMIC SURCHARGE PRESSURE	9H PSF
PASSIVE SOIL PRESSURE	300 PCF
SOIL COEFFICIENT OF FRICTION	0.40
SOIL DENSITY	125 PCF
PILE CAPACITY (3 INCH/4 INCH)	12 KIPS/20 KIPS

GEOTECHNICAL REPORT REFERENCE: #JN23365 BY GEOTECH CONSULTANTS, INC. DATED DECEMBER 1, 2023.

17. PIPE PILES SHALL BE SCHEDULE-40 (STD) ASTM A53 (TYPE E OR S, GRADE A OR B) 3 INCH NOMINAL PIPE DRIVEN TO REFUSAL PER THE FOLLOWING CRITERIA:

HYDRAULIC HAMMER SIZE	REFUSAL CRITERIA
850 LBS.	10 SEC/IN
1100 LBS.	6 SEC/IN
2000 LBS.	2 SEC/IN

THE ALLOWABLE AXIAL COMPRESSION CAPACITY SHALL BE 12 KIPS. SECTIONS OF PIPE SHALL BE CONNECTED TOGETHER WITH COMPRESSION FITTED SLEEVE COUPLERS. PER THE GEOTECHNICAL REPORT, THE ESTIMATED MINIMUM PILE LENGTH IS 15 FEET. THE GEOTECHNICAL SPECIAL INSPECTOR SHALL BE CONTINUOUSLY PRESENT DURING PIN PILE INSTALLATION AND LOAD TESTING.

RENOVATION

18. DEMOLITION: 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. 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. 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.

CONCRETE

19. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301. CONSTRUCTION TOLERANCES SHALL NOT EXCEED THOSE LISTED IN ACI 117. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF f'c = 3,000 PSI. ALL CONCRETE EXPOSED TO THE WEATHER AND ALL GARAGE SLABS-ON-GRADE SHALL ATTAIN A 28-DAY STRENGTH f'c OF 3,000 PSI IN ACCORDANCE WITH IBC SECTION 1904.1. AND ACI 318 TABLE 19.3.2.1 THIS INCREASE IN REQUIRED STRENGTH IS FOR DURABILITY ONLY (SPECIAL INSPECTION IS NOT REQUIRED). 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 (BEFORE THE ADDITION OF ADMIXTURES). THE WATER/CEMENT RATIO SHALL NOT EXCEED 0.55 FOR FOOTINGS AND 0.45 FOR ALL SLABS AND EXPOSED CONCRETE UNLESS OTHERWISE NOTED. EXCEPT FOR FOOTINGS AND SLAB ON GRADE, AGGREGATE SIZE SHALL NOT EXCEED 3/4".

THE MINIMUM AMOUNT OF CEMENT AND THE MAXIMUM SLUMP MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. (THE W/C RATIO LIMITS STILL APPLY). THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, CEMENTITIOUS MATERIAL, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 301. CHEMICAL ADMIXTURES AND FLY ASH SHALL CONFORM TO ASTM C494 AND C618 RESPECTIVELY. FLY ASH PERCENTAGE OF TOTAL CEMENTITIOUS MATERIAL SHALL NOT EXCEED 20%. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY TO CONTRACT DOCUMENTS. CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.

ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14 TABLE 19.3.3.1. ALL CONCRETE TO RECEIVE A STEEL TROWELED FINISH SHALL NOT BE AIR-ENTRAINED.

20. REINFORCING STEEL SHALL CONSIST OF #4 BARS CONFORMING TO ASTM A615, GRADE 40, f_y = 40,000 PSI AND SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT 48 BAR DIAMETERS, 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS, LAP 2'-0" MINIMUM. PROVIDE (2) #4 MIN. U.N.O. TRIM BARS AROUND ALL OPENINGS IN CONCRETE WALLS OR SLABS EXTENDING 2'-0" PAST CORNERS, TYPICAL.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064. 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. NO REINFORCING BARS SHALL BE "WET-SET" INTO THE CONCRETE. PROVIDE A 20' LONG REBAR GROUND (UFER GROUND) PER ELECTRICIAN.

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

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST EARTH	3"
FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER	2"
SLABS AND WALLS (INTERIOR FACE)	1"

22. 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.

ANCHORAGE

23. EXPANSION BOLTS INTO CONCRETE SHALL BE "STRONG-BOLT 2 WEDGE ANCHOR", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-3037 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.

24. SCREW ANCHORS INTO CONCRETE SHALL BE "TITEN HD", AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH I.C.C. REPORT NO. ESR-2713 INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION IS REQUIRED FOR ALL SCREW ANCHOR INSTALLATION.

25. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO CONCRETE SHALL BE INSTALLED USING "AT-XP" ADHESIVE AS MANUFACTURED BY SIMPSON STRONG-TIE ANCHOR SYSTEMS. INSTALL IN STRICT ACCORDANCE WITH IAPMO UES REPORT NO. ER-263, INCLUDING STANDARD EMBEDMENT REQUIREMENTS U.O.N. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW WITH I.C.C. OR IAPMO UES REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED.

WOOD

26. FRAMING LUMBER: SHALL BE KILN DRIED OR MC-19 (MOISTURE CONTENT LESS THAN 19%), AND GRADED AND MARKED IN CONFORMANCE WITH W.C.L.I.B. STANDARD NO. 17 GRADING RULES FOR WEST COAST LUMBER. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS (2X, 3X, AND 4X MEMBERS)	DOUGLAS FIR OR HEM-FIR NO. 2
BEAMS AND STRINGERS (INCLUDING 6 X AND LARGER MEMBERS)	DOUGLAS FIR NO. 1
POSTS AND TIMBERS	DOUGLAS FIR NO. 1
STUDS, PLATES & MISCELLANEOUS LIGHT FRAMING	DOUGLAS FIR OR HEM-FIR NO. 2

27. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM D3737 AND ANSI A190.1 STANDARDS. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. CERTIFICATES OF CONFORMANCE MUST BE MADE AVAILABLE TO BUILDING INSPECTORS. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv = 240 PSI, E = 1,800 KSI. ALL CANTILEVERED OR CONTINUOUS BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2,400 PSI, Fv = 240 PSI, E = 1,800 KSI. CAMBER ALL SIMPLE SPAN GLULAM BEAMS TO 5,000' RADIUS UNLESS SHOWN OTHERWISE ON THE PLANS. CONTRACTOR SHALL VERIFY AVAILABILITY OF THE GL MEMBER SIZES SHOWN ON THE DRAWINGS AND ADJUST THE CONNECTOR SIZES IF NEEDED FOR LARGER MEMBER SIZES.

28. LAMINATED STRAND LUMBER (LSL) SHALL BE DESIGNED AND MANUFACTURED PER ASTM D5456. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, AND THE INDEPENDENT INSPECTION AGENCY'S LOGO. ALL LAMINATED STRAND LUMBER SHALL BE MANUFACTURED USING A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559. MINIMUM STRUCTURAL PROPERTIES ARE AS FOLLOWS:

RIM JOISTS AND BLOCKING (1-1/4" MINIMUM THICKNESS AT NON-SHEAR WALLS; SEE SCHEDULE FOR MINIMUM THICKNESS AT SHEAR WALLS):

Fb = 1700 PSI, E = 1.3 x 10^6 PSI, Fv = 400 PSI

BEAMS AND HEADERS:
Fb = 2325 PSI, E = 1.55 x 10^6 PSI, Fv = 310 PSI

DESIGN SHOWN ON PLANS IS BASED ON MATERIALS MANUFACTURED BY THE WEYERHAEUSER CORPORATION. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER.

29. WOOD I-JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION. ALTERNATE I-JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE I.C.C. OR IAPMO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH WOOD JOIST PROVIDED. GLUE FLOOR JOISTS TO SHEATHING AS REQUIRED BY THE JOIST MANUFACTURER.

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APPROVAL:

NO.	DESCRIPTION	DATE	BY
1	PERMIT REVISIONS	5/3/24	
	PERMIT SET	12/12/23	

ISSUES: ◯ REVISIONS: △

P.M.	SKK
P.E.	MKS
DRAWN BY:	ATK
SCALE:	AS SHOWN
DATE:	12/12/23
JOB NO.	22229.01

SHEET TITLE:

GENERAL STRUCTURAL NOTES

SHEET NO.

S1.0

File: 229-s100.dwg Plotted: Fri, 05/03/2024 9:26 am

GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

30. PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH IBC SECTION 2303.4 AND ANSI/TPI 1-2014 "NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS. TRUSSES SHALL BE HANDLED, INSTALLED, AND BRACED PER "HIB 91" PER THE TRUSS PLATE INSTITUTE. LOADING SHALL BE AS FOLLOWS:

TOP CHORD SNOW LOAD	25 PSF
TOP CHORD DL ALLOWANCE FOR PV PANELS	5 PSF
TOP CHORD DEAD LOAD	12 PSF
BOTTOM CHORD LIVE LOAD	10 PSF (NOT INCLUDED IN TOTAL)
BOTTOM CHORD DEAD LOAD	6 PSF
TOTAL LOAD	48 PSF
NET WIND UPLIFT (TOP CHORD)	10 PSF

THE LOADS ABOVE SHALL BE INCREASED TO THE FOLLOWING IF THE TRUSSES MEET THE DESCRIPTION OF AN "UNINHABITABLE ATTIC WITH LIMITED STORAGE" AS DEFINED IN FOOTNOTE j OF IBC TABLE 1607.1:

BOTTOM CHORD LIVE LOAD	20 PSF - INCLUDE IN TOTAL
BOTTOM CHORD DEAD LOAD	10 PSF

SNOW LOAD DUE TO DRIFTING AND UNBALANCED LOADS SHALL BE INCLUDED PER THE IBC. TOP CHORDS SHALL BE DF LUMBER. UTILIZE A MINIMUM CREEP FACTOR OF 2.0 FOR DEAD AND SUSTAINED LIVE LOADS IN DETERMINING THE TRUSS DEFLECTIONS. MAXIMUM TOTAL DEFLECTION SHALL BE LESS THAN OR EQUAL TO L/240 OF THE TOTAL SPAN AND MAXIMUM LIVE LOAD DEFLECTION SHALL BE LESS THAN OR EQUAL TO L/360 OF THE TOTAL SPAN. PROVIDE ADEQUATE PLIES AND/OR METAL BRACKETS TO ADEQUATELY DISTRIBUTE THE BEARING PRESSURE AT THE ENDS OF THE GIRDER TRUSSES TO THE TOP PLATES OF THE BEARING WALLS SUCH THAT THE BEARING PRESSURE DOES NOT EXCEED 405 PSI. PROVIDE ADDITIONAL TRUSSES (AS REQUIRED) TO CARRY ALL CONCENTRATED LOADS AND MECHANICAL UNITS.

WOOD TRUSSES SHALL UTILIZE I.C.C. OR IAPMO UES APPROVED CONNECTOR PLATES. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. SUBMITTED DOCUMENTS SHALL BEAR THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER. PROVIDE FOR SHAPES, BEARING POINTS, INTERSECTIONS, HIPS, VALLEYS, ETC., SHOWN ON THE DRAWINGS. EXACT COMPOSITION OF SPECIAL HIP, VALLEY, AND INTERSECTION AREAS (USE OF GIRDER TRUSSES, JACK TRUSSES, STEP-DOWN TRUSSES, ETC.) SHALL BE DETERMINED BY THE MANUFACTURER UNLESS SPECIFICALLY INDICATED ON THE PLANS. PROVIDE ALL TRUSS TO TRUSS AND TRUSS TO GIRDER TRUSS CONNECTION DETAILS AND REQUIRED CONNECTION MATERIALS. PROVIDE FOR ALL TEMPORARY AND PERMANENT TRUSS BRACING AND BRIDGING.

31. TRUSS SUPPLIERS NOTE: THE TRUSS CONFIGURATIONS, INCLUDING DEPTHS AND MEMBER SIZES SHOWN ON THE DRAWINGS, INDICATE THE DESIRED TRUSS CONFIGURATION AND ARE TO BE COMPLIED WITH WHEREVER POSSIBLE. IF A TRUSS MANUFACTURER IS UNABLE TO MEET THE LOAD REQUIREMENTS SPECIFIED WITH THE TRUSS CONFIGURATION INDICATED, THE MANUFACTURER IS TO SUBMIT WRITTEN NOTICE TO THAT EFFECT TO THE ARCHITECT PRIOR TO SUBMITTING A COST PROPOSAL OR BID.

IF A DIFFERENT SYSTEM IS PROPOSED THAT REQUIRES REVISIONS TO PRESENT STRUCTURAL FRAMING OR DETAILS, SUCH SYSTEM SHALL BE CONSIDERED SUBJECT TO THE APPROVAL OF THE OWNER, ARCHITECT, AND STRUCTURAL ENGINEER.

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND TRUSS MANUFACTURER TO VERIFY THE WEIGHT AND LOCATIONS OF ALL MECHANICAL EQUIPMENT PRIOR TO SUBMITTING SHOP DRAWINGS. IT SHALL BE NOTED IN THE TRUSS MANUFACTURER'S BID WHETHER OR NOT AN ALLOWANCE HAS BEEN MADE FOR MECHANICAL UNITS.

TRUSS SHOP DRAWINGS WILL NOT BE REVIEWED WITHOUT CALCULATIONS BEARING THE STAMP AND SIGNATURE OF A STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER.

32. WOOD SHEATHING SHALL BE APA RATED, EXTERIOR GLUE; EXPOSURE 1, IN CONFORMANCE WITH THE REQUIREMENTS FOR THEIR TYPE IN DOC PS-1 OR PS-2. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS.

UNLESS OTHERWISE NOTED ON THE PLANS, ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH (2) 10d-F NAILS AT EACH END, UNLESS OTHERWISE NOTED. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PANEL EDGES AND NAIL WITH EDGE NAILING SPACED PER PLANS. WHERE NOT NOTED OTHERWISE, NAIL PANEL EDGES WITH 8d NAILS @ 6" O.C. EDGES, 12" O.C. IN THE FIELD.

33. ALL WOOD EXPOSED TO WEATHER, OR BEARING ON UNPROTECTED CONCRETE BELOW GRADE, OR BEARING ON UNPROTECTED CONCRETE LESS THAN 8" FROM EXPOSED EARTH SHALL BE PRESSURE-TREATED, U.O.N. PRESSURE TREATMENT SHALL BE WITH AN APPROVED PRESERVATIVE CONFORMING TO AMERICAN WOOD PRESERVERS ASSOCIATION U1 AND M4 AND SHALL BE BRANDED WITH A QUALITY CONTROL AGENCY MARK BY THE AWPA OR EQUAL. ALL METAL HARDWARE IN CONTACT WITH TREATED WOOD SHALL BE PROTECTED WITH A G185 GALVANIZED COATING (ZMAX) OR BETTER. ALL NAILS IN TREATED WOOD SHALL BE HOT-DIP GALVANIZED OR BETTER. PROVIDE 2 LAYERS OF 30# ASPHALT IMPREGNATED BUILDING PAPER BETWEEN NON-PRESSURE-TREATED LEDGERS, BLOCKING, ETC., AND CONCRETE.

34. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NO. C-C-2021. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE I.C.C. OR IAPMO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. CONNECTORS SHALL BE SIZED TO MATCH THE SIZE OF THE FRAMING MEMBERS BEING CONNECTED. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD, UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE COMMON. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED. ALL BOLTS TIGHTENED TO SNUG TIGHT.

35. WOOD FASTENERS:

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

DRAWING ID	NAIL NAME	NAIL DIAMETER	NAIL LENGTH
"6d"	6d Common	0.113"	2"
"8d Box"	8d Box	0.113"	2-1/2"
"8d"	8d Common	0.131"	2-1/2"
"10d-F"	10d Framer	0.131"	3"
"10d"	10d Shear	0.148"	2-1/4"
"16d"	16d Sinker	0.148"	3-1/4"

IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS, THEY SHALL SUBMIT NAIL SPECIFICATIONS TO THE STRUCTURAL ENGINEER (PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.

B. NAILS - SHEATHING FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.

C. SCREWS SHALL BE WOOD SCREWS OF THE DIAMETER AND LENGTH NOTED ON THE DRAWINGS. SDS FASTENERS ARE SIMPSON STRONG DRIVE SCREWS.

D. HOT DIPPED GALVANIZED NAILS, BOLTS AND METAL PLATES - ALL NAILS, BOLTS AND METAL PLATES IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED.

36. WOOD FRAMING NOTES: THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE IBC. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO IBC TABLE 2304.10.1. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. TIGHTEN BOLTS AND LAG SCREWS SNUGLY AGAINST WOOD FRAMING AFTER WOOD HAS REACHED SPECIFIED MOISTURE CONTENT.

B. WALL FRAMING: ALL BEARING AND SHEAR WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2 x 4 STUDS @ 16" O.C. AT INTERIOR WALLS AND 2 x 6 @ 16" O.C. AT EXTERIOR WALLS. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL BEARING AND SHEAR WALLS AND AT EACH SIDE OF ALL OPENINGS. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW.

ALL BEARING STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS AT 8" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS WITH 3"x3"x1/4" PLATE WASHERS @ 4'-0" O.C., UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH 10d-F NAILS @ 8" O.C. STAGGERED. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES ATTACHED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH SCREWS AT 8" O.C. USE 1-1/4 " IN #6 SCREWS FOR 1/2" GWB AND 5/8" GWB WHERE OCCURS. VERIFY THE FIRE ASSEMBLY REQUIREMENTS WHERE APPLICABLE WITH THE ARCHITECT.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. NAIL ALL MULTI-JOIST BEAMS TOGETHER WITH 10d-F NAILS @ 8" O.C. STAGGERED UNLESS OTHERWISE NOTED.

D. POSITIVE CONNECTIONS: PROVIDE THE FOLLOWING SIMPSON CONNECTORS AT TYPICAL FRAMING UNLESS OTHERWISE NOTED ON PLAN OR DETAIL. PROVIDE CCQ/ECCQ CAPS AND PBS BASES AT POSTS. PROVIDE BC BASE WHERE POST BEARS ON WOOD FRAMING BELOW. PROVIDE LUS SERIES HANGERS FOR 2X FLOOR AND ROOF JOISTS. CONNECTORS SHALL BE SIZED TO MATCH THE SIZE OF THE FRAMING MEMBERS BEING CONNECTED.

ABBREVIATIONS

@	At	L	Angle
d	Penny (Nails)	LB.	Pound
¢	Diameter	LL	Live Load
°	Degrees	LLH	Long Leg Horizontal
#...	Pounds	LLV	Long Leg Vertical
#...	Number	LONGIT.	Longitudinal
		LT. WT.	Lightweight
(A)	Above		
A.B.	Anchor Bolt	MAX.	Maximum
ADD'L	Additional	MECH.	Mechanical
ALT.	Alternate	MEZZ.	Mezzanine
APPROX.	Approximate	MF	Moment Frame
ARCH.	Architect	MFR.	Manufacturer
		MIN.	Minimum
(B)	Below	MISC.	Miscellaneous
B/	Bottom of	MK.	Mark
BF	Braced Frame		
BLKG.	Blocking	(N)	New
BLDG.	Building	N.	North
BM.	Beam	N.S.	Near Side
BOT.	Bottom	NOM.	Nominal
BRG.	Bearing	NTS	Not to Scale
BTWN.	Between		
		O.C.	On Center
CL or ℄	Centerline	O.D.	Outside Diameter
C	Camber	O.F.	Outside Face
CIP	Cast In Place	O.H.	Overhang
C.J.	Construction Joint or Control Joint	OPNG.	Opening
CJP	Complete Joint Penetration	OPP.	Opposite
CLG.	Ceiling		
CLR.	Clear	PAF	Ponder Actuated Fastener
CMU	Concrete Masonry Unit	PC	Precast
COL.	Column	PERM.	Permanent
CONC.	Concrete	PERP.	Perpendicular
CONN.	Connections	PJP	Partial Joint Penetration
CONST.	Construction	PL or ℗	Plate
CONT.	Continuous	PLF	Pounds per linear Foot
CSK.	Countersink	PLYWD	Plywood
		PREFAB.	Prefabricated
DBA	Deformed Bar Anchor	PSF	Pounds per Square Foot
DBL.	Double	PSI	Pounds per Square Inch
DEG.	Degree	P.T. or PT	Post-Tensioning
DF	Doug Fir-Larch	P/T	Pressure-Treated
DIA.	Diameter		
DIAG.	Diagonal	RAD.	Radius
DIAPH.	Diaphragm	REF.	Reference
DIM.	Dimension	REINF.	Reinforce or Reinforcement
DN.	Down	REQD.	Required
DO	Ditto	REV.	Revise
DTL.	Detail	R.O.	Rough Opening
DTP	Double Top Plate		
DWG.	Drawing	S.	South
		SCH. or SCHED.	Schedule
(E)	Existing	SECT.	Section
E.	East	SHT.	Sheet
EA.	Each	SIM.	Similar
E.F.	Each Face	SOG	Slab On Grade
EL.	Elevation	SPEC.	Specification
ELEV.	Elevator	SQ.	Square
EMBED.	Embedment Length	SQ. FT.	Square Feet
ENGR.	Engineer	SQ. IN.	Square Inch(es)
EQ.	Equal	SPF	Spruce-Pine-Fir
E.W.	Each Way	S.S.	Stainless Steel
EXP.	Expansion	STD.	Standard
EXT.	Exterior	STIFF.	Stiffener
		STL.	Steel
FDN.	Foundation	STR.	Structural
FIN.	Finish	SUB.	Substitute
FLR.	Floor	SYM.	Symmetrical
FRP	Fiber Reinforced Polymer		
F.S.	Far Side	T/	Top of
FT.	Foot or Feet	T&B	Top and Bottom
FTG.	Footing	T&G	Tongue & Groove
		TEMP.	Temporary
GA.	Gauge	THRU	Through
GALV.	Galvanized	T.O.C.	Top of Concrete
GL	Glue Laminated	T.O.S.	Top of Steel
GWB	Gypsum Wall Board	T.O.W.	Top of Wall
		TRANS.	Transverse
HDG	Hot Dipped Galvanized	TS	Tube Steel
HDR.	Header	TYP.	Typical
HF	Hem Fir		
HGR.	Hanger	U.O.N.	Unless Otherwise Noted
HORIZ.	Horizontal		
HSS	Hollow Structural Section	VERT.	Vertical
HT.	Height	VIF	Verify in Field
I.D.	Inside Diameter	W.	West
I.F.	Inside Face	W/ or w/	With
IN.	Inch	W.H.S.	Welded Headed Stud
INFO.	Information	W/O	Without
INT.	Interior	W.P.	Work Point
		W.T.S.	Welded Threaded Stud
JT.	Joint	WWF	Welded Wire Fabric
K	Kips	X SECT.	Cross Section
KSF	Kips per Square Foot	X-STR	Extra Strong
KSI	Kips per Square Inch	XX-STR	Double Extra Strong

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1	PERMIT REVISIONS	5/3/24	
	PERMIT SET	12/12/23	

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P.M.	SKK
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DRAWN BY:	ATK
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JOB NO.	22229.01

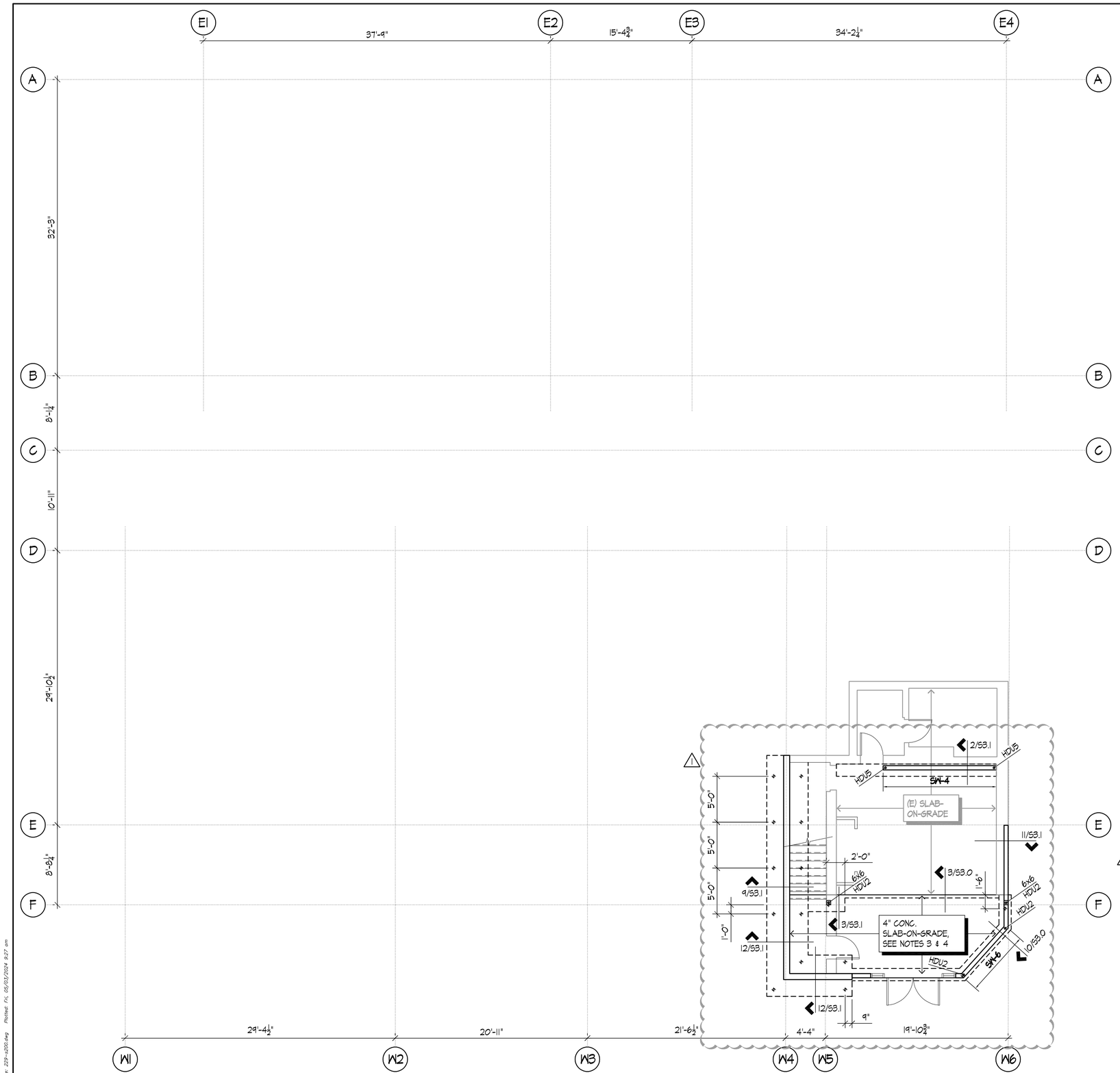
SHEET TITLE:

GENERAL STRUCTURAL NOTES

SHEET NO.

S1.1

File: 229-s101.dwg Plotted: Fri, 05/03/2024 - 8:27 am



FOUNDATION PLAN NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ON THE STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
2. SEE SHEETS S1.0 AND S1.1 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS. SEE SHEET S3.0 FOR TYPICAL CONCRETE AND FOUNDATION DETAILS. SEE SHEET S4.0 FOR TYPICAL WOOD DETAILS.
3. SLAB-ON-GRADE SHALL BE 4" THICK CONCRETE REINFORCED WITH #4 @ 16" O.C. EACH WAY AT MID-DEPTH, U.O.N. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SUB-GRADE MOISTURE BARRIER AND ELEVATIONS, ETC.
4. FOR SLAB-ON-GRADE JOINTS, SEE DETAIL 2/S3.0.
5. WHERE NEW CONCRETE IS CAST AGAINST EXISTING CONCRETE FOUNDATIONS, DRILL AND EPOXY #4 DOWELS x 3'-0" LONG TO LAP WITH THE NEW FOOTING LONGITUDINAL REINFORCING (5" MINIMUM EMBEDMENT).
6. ALL WOOD BEARING ON UNPROTECTED CONCRETE, EXPOSED TO WEATHER, OR WITHIN 8" OF FINISHED GRADE SHALL BE PRESSURE-TREATED, U.O.N.
7. POSTS INDICATED ARE AT THIS LEVEL. ALL POSTS NOT SPECIFIED SHALL BE (2) 2x U.O.N. SOLID SAWN MEMBERS OF EQUIVALENT SIZE MAY BE SUBSTITUTED FOR BUILT-UP MEMBERS (SUCH AS A 4x6 FOR (3) 2x4).
8. SW-x — INDICATES SHEAR WALL AT THIS LEVEL. SEE SHEAR WALL SCHEDULE 8/S4.0 FOR SHEATHING, BLOCKING, NAILING, AND ANCHOR BOLT REQUIREMENTS. ALL EXTERIOR WALLS SHALL BE SHEATHED PER SW-6 CRITERIA U.O.N.
9. HDUx — INDICATES HOLDOWN TO CONCRETE FOUNDATION WALLS OR FOOTINGS. SEE 12/S4.0 FOR HOLDOWN DETAIL. USE MIN. (2) 2x POST U.O.N.

LEGEND:

- INDICATES FRAMING DIRECTION
- INDICATES EXTENT OF FRAMING
- SW-x — INDICATES SHEAR WALL TYPE AT THIS LEVEL. SEE PLAN NOTE 8
- INDICATES WOOD BEARING OR SHEAR WALL AT THIS LEVEL. SEE PLAN NOTES 6 & 8
- INDICATES NON-BEARING/ NON-SHEAR WALL AT THIS LEVEL. SEE 1 & 2/S4.1 FOR CONNECTION DETAILS
- (#)2x — INDICATES MULTIPLE STUD POST AT THIS LEVEL. SEE PLAN NOTE 7
- HDU2 — INDICATES HOLDOWN TYPE AT THIS LEVEL. SEE PLAN NOTE 9
- INDICATES 3"ø PIPE PILE. SEE GENERAL NOTES

BASEMENT PLAN

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

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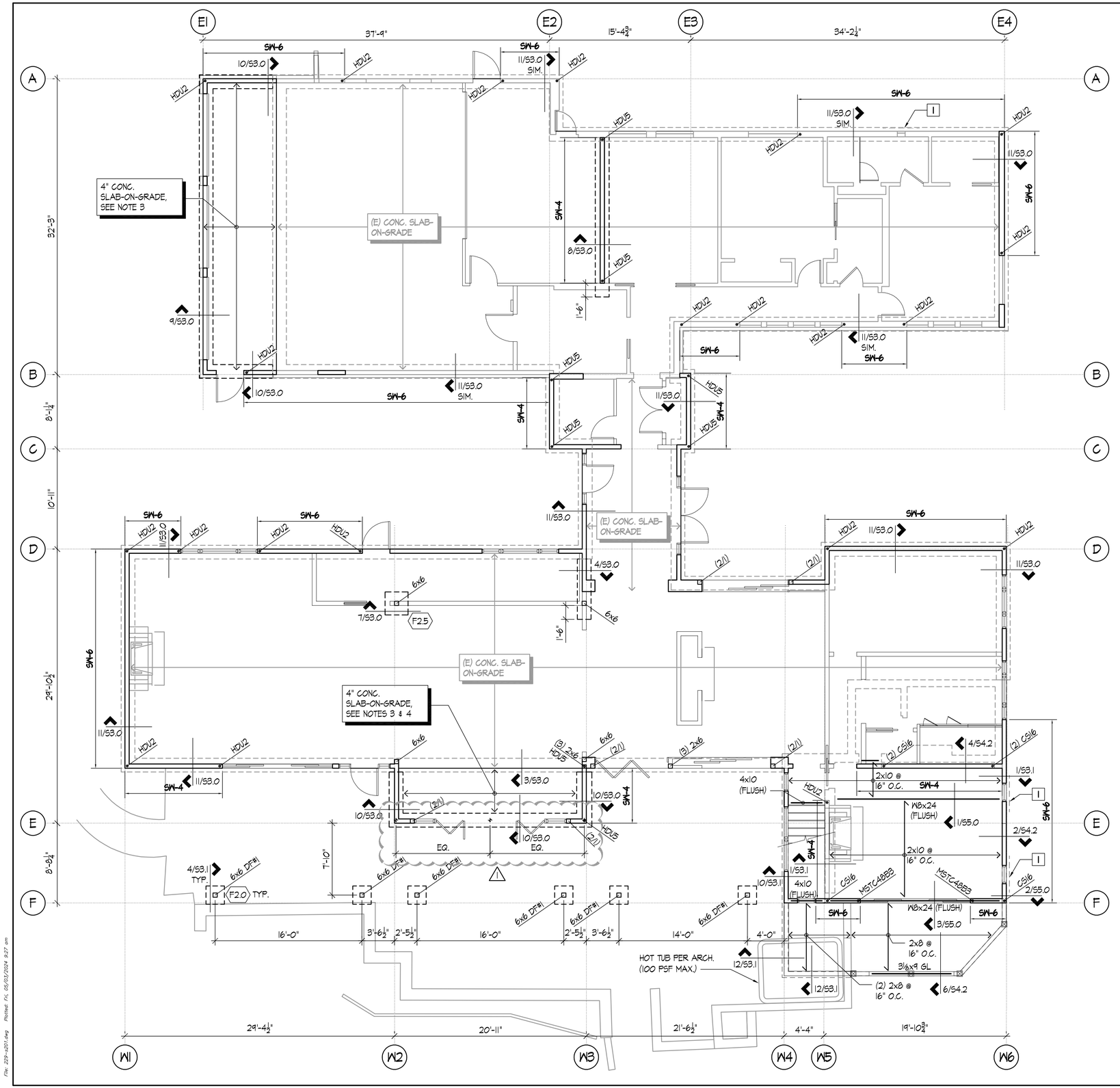
SHEET TITLE:

BASEMENT PLAN

SHEET NO.

S2.0

File: 229-s200.dwg Plotted: Fri, 05/03/2024 - 9:27 am



MAIN FLOOR FRAMING PLAN NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ON THE STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
2. SEE SHEETS S1.0 AND S1.1 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS. SEE SHEET S3.0 FOR TYPICAL CONCRETE AND FOUNDATION DETAILS. SEE SHEET S4.0 FOR TYPICAL WOOD DETAILS.
3. SLAB-ON-GRADE SHALL BE 4" THICK CONCRETE REINFORCED WITH #4 @ 16" O.C. EACH WAY AT MID-DEPTH, U.O.N. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SUB-GRADE MOISTURE BARRIER AND ELEVATIONS, ETC.
4. FOR SLAB-ON-GRADE JOINTS, SEE DETAIL 2/S3.0
5. WHERE NEW CONCRETE IS CAST AGAINST EXISTING CONCRETE FOUNDATIONS, DRILL AND EPOXY #4 DOWELS x 3'-0" LONG TO LAP WITH THE NEW FOOTING LONGITUDINAL REINFORCING (5" MINIMUM EMBEDMENT).
6. ALL WOOD BEARING ON UNPROTECTED CONCRETE, EXPOSED TO WEATHER, OR WITHIN 8" OF FINISHED GRADE SHALL BE PRESSURE-TREATED, U.O.N.
7. FOR SILL PLATE ANCHOR BOLT LAYOUT TO CONCRETE FOUNDATION WALLS AND SLABS, SEE DETAIL 1/S4.0.
8. ALL BEARING AND SHEAR WALLS SHALL BE 2x4 @ 16" O.C. INTERIOR AND 2x6 @ 16" O.C. EXTERIOR U.O.N.
9. POSTS INDICATED ARE AT THIS LEVEL. ALL POSTS NOT SPECIFIED SHALL BE (2) 2x U.O.N. SOLID SAWN MEMBERS OF EQUIVALENT SIZE MAY BE SUBSTITUTED FOR BUILT-UP MEMBERS (SUCH AS A 4x6 FOR (3) 2x4).
10. TYPICAL FLOOR FRAMING CONSISTS OF 23/32" APA RATED T&G SHEATHING (INDEX 48/24), LAID FACE GRAIN PERPENDICULAR OVER 2x10 HF#2 JOISTS AT 16" O.C. HANG JOISTS WITH LUS FACE MOUNT HANGERS TYPICAL AT FLUSH BEAMS, U.O.N.
11. TYPICAL ROOF DECK FRAMING CONSISTS OF 23/32" APA RATED T&G SHEATHING (INDEX 48/24), LAID FACE GRAIN PERPENDICULAR OVER 2x8 JOISTS @ 16" O.C. HANG 2x JOISTS WITH LUS FACE MOUNT HANGERS TYPICAL AT FLUSH BEAMS, U.O.N.
12. NAIL FLOOR SHEATHING TO FRAMING WITH 8d NAILS (0.131"Φ x 2.5" LONG) AT 6" O.C. AT ALL PANELS EDGES AND 8d NAILS AT 12" O.C. AT INTERMEDIATE FRAMING MEMBERS (UNBLOCKED). SEE DETAIL 6/S4.0.
13. SW-x INDICATES SHEAR WALL AT THIS LEVEL. SEE SHEAR WALL SCHEDULE 8/S4.0 FOR SHEATHING, BLOCKING, NAILING, AND ANCHOR BOLT REQUIREMENTS. ALL EXTERIOR WALLS SHALL BE SHEATHED PER SW-6 CRITERIA U.O.N.
14. HDUx INDICATES HOLDOWN TO CONCRETE FOUNDATION WALLS OR FOOTINGS. SEE 12/S4.0 FOR HOLDOWN DETAIL. USE MIN. (2) 2x POST U.O.N.

LEGEND:

- INDICATES FRAMING DIRECTION / INDICATES EXTENT OF FRAMING
- INDICATES 3"Φ PIPE PILE. SEE GENERAL NOTES
- SW-x INDICATES SHEAR WALL TYPE AT THIS LEVEL. SEE PLAN NOTE 12
- INDICATES EXISTING FOOTING
- INDICATES WOOD BEARING WALL OR SHEAR WALL AT THIS LEVEL. SEE PLAN NOTES 8 & 12
- INDICATES NON-BEARING/ NON-SHEAR WALL AT THIS LEVEL. SEE 1 & 2/S4.1 FOR CONNECTION DETAILS
- (#)2x INDICATES MULTIPLE STUD POST AT THIS LEVEL. SEE PLAN NOTE 9
- HDU2 INDICATES HOLDOWN TYPE AT THIS LEVEL. SEE PLAN NOTE 13
- (#/#) INDICATES NUMBER OF KING STUDS, SEE 10/S4.1 / INDICATES NUMBER OF TRIM STUDS, SEE 10/S4.1

KEY NOTES:

1 CS16 HORIZ. STRAP ABOVE AND BELOW WINDOW PER 1/S4.1

MAIN FLOOR PLAN

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

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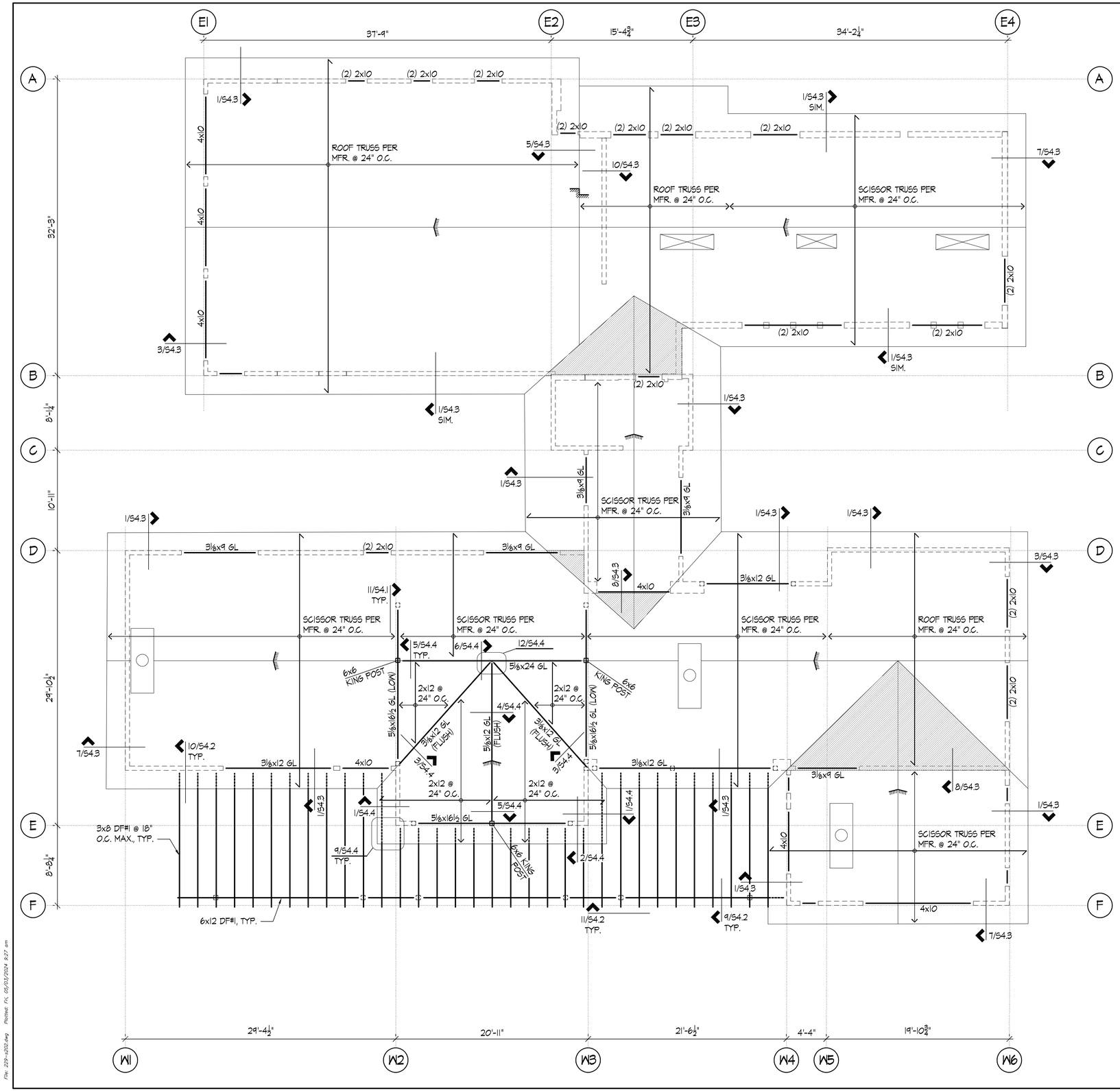
SHEET TITLE:

MAIN FLOOR PLAN

SHEET NO.

S2.1

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ROOF FRAMING PLAN NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ON THE STRUCTURAL PLANS ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION BEGINS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER IMMEDIATELY.
2. SEE SHEETS S1.0 AND S1.1 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS. SEE SHEETS S4.0, S4.3 AND S4.4 FOR TYPICAL WOOD DETAILS.
3. TYPICAL ROOF FRAMING CONSISTS OF 15/32" APA RATED SHEATHING (INDEX 32/16), LAID FACE GRAIN PERPENDICULAR OVER PRE-FABRICATED ROOF TRUSSES AND 2x FRAMING @ 24" O.C., U.O.N. (SEE THE STRUCTURAL GENERAL NOTES FOR TRUSS DESIGN CRITERIA).
4. TYPICAL ROOF JOIST SHALL BE 2x12 HF#2 @ 24" O.C., U.O.N. HANG JOISTS WITH LRUZ FACE MOUNT HANGERS TYPICAL AT FLUSH BEAMS, LSSJ FACE MOUNT HANGERS TYPICAL AT HIP BEAMS, U.O.N.
5. NAIL ROOF SHEATHING TO FRAMING WITH 8d NAILS (0.131"Φ x 2.5" LONG) AT 6" O.C. AT ALL PANELS EDGES AND 8d NAILS AT 12" O.C. AT INTERMEDIATE FRAMING MEMBERS (UNBLOCKED). SEE DETAIL 6/S4.0.
6. PROVIDE SOLID BLOCKING BETWEEN EACH ROOF JOIST AT SUPPORTS. PROVIDE AN HI CLIP AT EVERY MEMBER TO TOP PLATE.
7. ALL HEADERS NOT SHOWN ON PLAN SHALL BE (2) 2x10 FOR EXTERIOR BEARING WALLS AND (2) 2x10 FOR INTERIOR BEARING WALLS. SEE 10/S4.1 FOR HEADER DETAIL.
8. PROVIDE SOLID OR BUILT-UP WOOD POSTS BENEATH THE ENDS OF ALL ROOF BEAMS AND GIRDER TRUSSES FOR FULL BEARING.
9. FOR TOP PLATE SPLICE SEE DETAIL 6/S4.1.
10. ATTACH NON-BEARING INTERIOR WALLS TO BOTTOM OF TRUSSES WITH STC CLIPS AT 48" O.C. INSTALL IN ACCORDANCE WITH MFR. RECOMMENDATIONS. SEE DETAIL 9/S4.4.

LEGEND:

- INDICATES FRAMING DIRECTION
- INDICATES EXTENT OF FRAMING
- INDICATES WOOD BEARING WALL OR SHEAR WALL BELOW. SEE PLAN NOTE 6
- INDICATES ROOF OVERFRAMING PER DETAIL 4/S4.3
- INDICATES HEADER MEMBER. SEE PLAN NOTE 7

ROOF FRAMING PLAN

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

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1	PERMIT REVISIONS	5/3/24	
	PERMIT SET	12/12/23	

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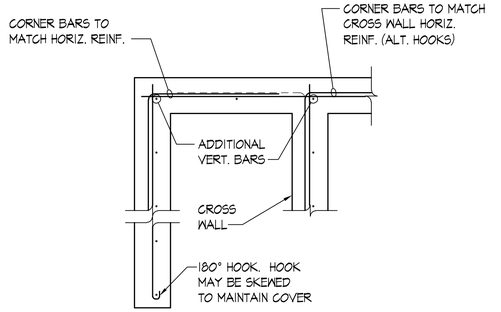
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ROOF FRAMING PLAN

SHEET NO.

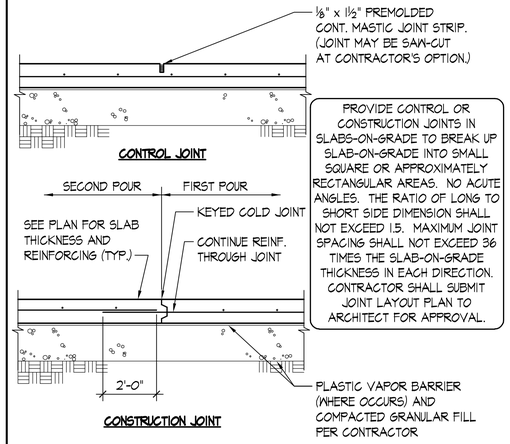
S2.2

File: 229-s202.dwg Plotted: Fri, 05/03/2024 @ 9:27 am



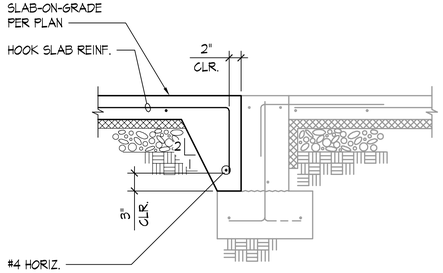
(HF BOLT CAPACITY = 1760#)

TYPICAL CORNER BAR AND WALL END BAR ARRANGEMENT AT CONCRETE WALLS OR FOOTINGS SCALE: NONE | 1

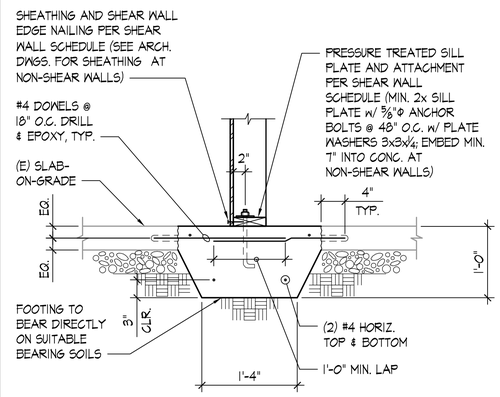


TYPICAL SLAB-ON-GRADE JOINTS SCALE: NONE | 2

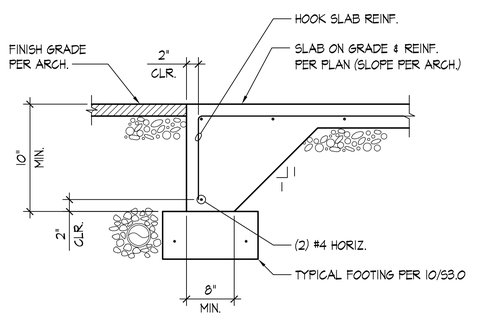
NOTE:
FOR INFORMATION NOT NOTED, SEE 11/S3.0



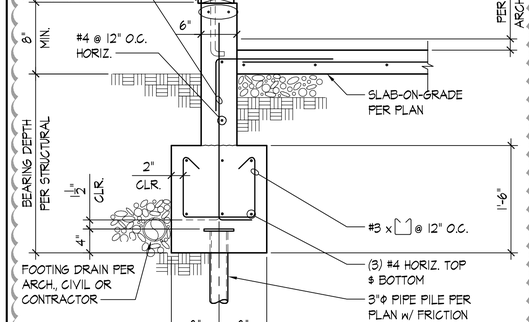
TYPICAL SLAB-ON-GRADE AT EXISTING FOUNDATION SCALE: NONE | 3



TYPICAL INTERIOR WALL FOUNDATION AT EXISTING CONCRETE SCALE: NONE | 4

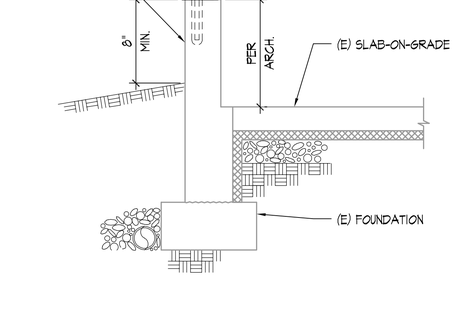


TYPICAL STEPPED FOOTING SCALE: NONE | 5

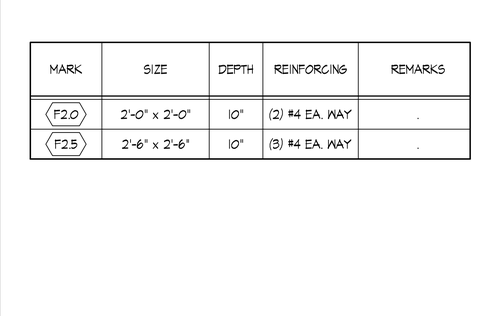


NOTE:
PIPES MUST RUN PERPENDICULAR THROUGH WALL (NOT SKEWED)

TYPICAL PIPE AND TRENCH LOCATIONS PERPENDICULAR TO FOOTING SCALE: NONE | 6



TYPICAL SPREAD FOOTING AT EXISTING SLAB-ON-GRADE SCALE: NONE | 7



TYPICAL INTERIOR WALL FOUNDATION AT EXISTING SLAB-ON-GRADE SCALE: NONE | 8

TYPICAL THICKENED SLAB AT DOOR SCALE: NONE | 9

TYPICAL RAISED PERIMETER WALL FOUNDATION AT SLAB-ON-GRADE SCALE: NONE | 10

NOTE:
FOR INFORMATION NOT NOTED, SEE 10/S3.0

PERIMETER WALL AT EXISTING SLAB-ON-GRADE SCALE: NONE | 11

MARK	SIZE	DEPTH	REINFORCING	REMARKS
F2.0	2'-0" x 2'-0"	10"	(2) #4 EA. WAY	.
F2.5	2'-6" x 2'-6"	10"	(3) #4 EA. WAY	.

SPREAD FOOTING SCHEDULE SCALE: NONE | 12

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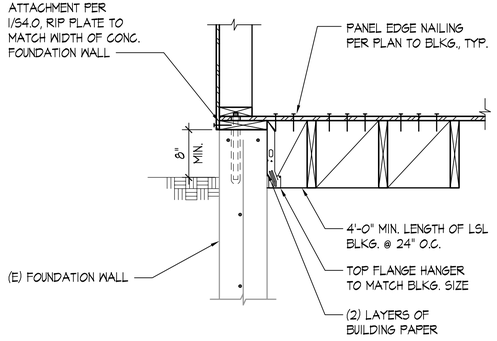
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TYPICAL FOUNDATION/SLAB DETAILS

SHEET NO.

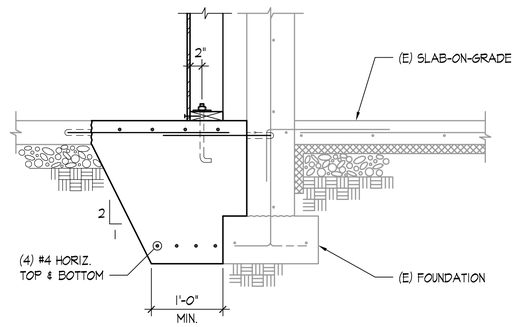
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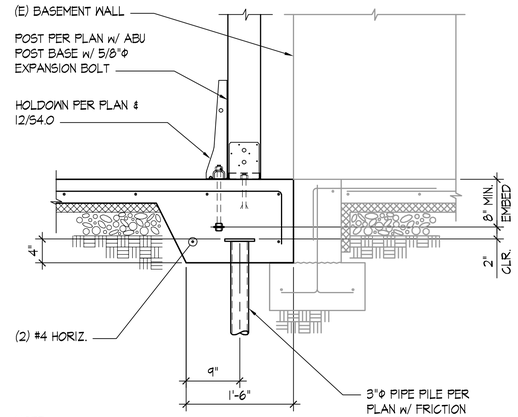
NOTE:
FOR INFORMATION NOT NOTED, SEE 10/S3.1

TYPICAL BASEMENT WALL - I-JOIST PARALLEL SCALE: NONE | 1



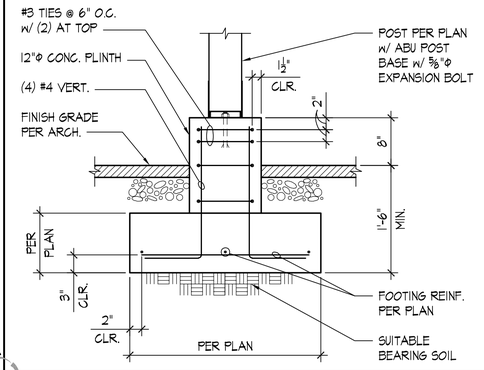
NOTE:
FOR INFORMATION NOT NOTED, SEE 8/S3.0

DETAIL SCALE: NONE | 2



NOTE:
FOR INFORMATION NOT NOTED, SEE 9/S3.0

DETAIL SCALE: 1"=1'-0" | 3



TYPICAL EXTERIOR POST FOOTING SCALE: NONE | 4

TYPICAL BASEMENT WALL - 2x JOIST PARALLEL SCALE: NONE | 10

NOTES:
1. SEE ARCH. OR CONTRACTOR DESIGN FOR VENTING REQUIREMENTS (DO NOT INTERRUPT NAILING, PROVIDE 1½" MIN. CLR. FROM TOP & BOTTOM OF RIM)
2. FOR INFORMATION NOT NOTED SEE DETAIL 2/S4.2

EXISTING FOUNDATION WITH CRIPPLE WALL - 2x JOIST PERPENDICULAR SCALE: NONE | 11

NOTE:
FOR INFORMATION NOT NOTED, SEE 10/S3.1

SECTION A

TYPICAL BASEMENT WALL AT ROOF DECK SCALE: NONE | 12

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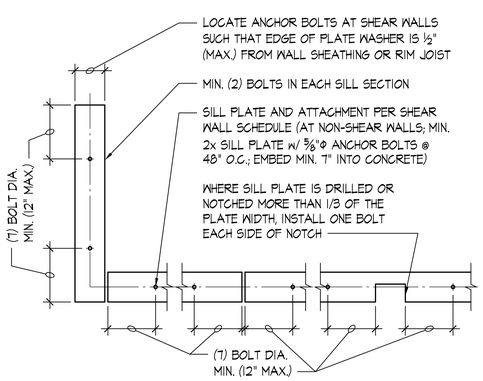
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TYPICAL BASEMENT DETAILS

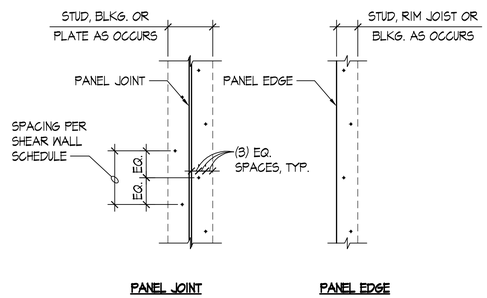
SHEET NO.

S3.1

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TYPICAL SILL PLATE BOLTING - PLAN VIEW SCALE: NONE | 1



NOTE:
STAGGER EACH LINE OF NAILING (AT ALL PANEL EDGES) AS INDICATED

TYPICAL STAGGERED NAILING SCALE: NONE | 2

SHEAR WALL TYPE	SHEAR WALL SHEATHING (1)	PANEL EDGE FRAMING (2)(7)	PANEL EDGE NAILING (3)	BOTTOM PLATE ATTACHMENT			TOP PLATE ATTACHMENT	
				2x BOTTOM PLATE CONNECTION TO RIM JOIST OR BLOCKING BELOW	ANCHOR BOLTING OF SILL PLATE TO CONCRETE BELOW (4)(5)		RIM JOIST OR BLOCKING CONNECTION TO TOP PLATE (6)	
					3x PLATE	2x PLATE	INTERIOR WALL	EXTERIOR WALL
SW-6	7/16" APA ONE-SIDE SHTG.	2x	0.131"Φx2½" @ 6" O.C.	0.148"Φx3¼" @ 6" O.C. (9)	⅝"Φ @ 48" O.C.	⅝"Φ @ 48" O.C.	A35 @ 16" O.C.	LTP4 @ 16" O.C.
SW-4	7/16" APA ONE-SIDE SHTG.	3x OR (2) 2x	0.131"Φx2½" @ 4" O.C. (8)	0.148"Φx3¼" @ 4" O.C. (9)	⅝"Φ @ 48" O.C.	⅝"Φ @ 32" O.C.	A35 @ 16" O.C.	LTP4 @ 16" O.C.

SHEAR WALL SCHEDULE

NOTES:

(1) INSTALL PANEL SHEATHING EITHER HORIZONTALLY OR VERTICALLY FOR THE ENTIRE LENGTH OF THE WALL PER PLAN. WALL STUD SPACING SHALL BE 16" O.C. MAXIMUM.

(2) ALL INTERMEDIATE WALL STUDS SHALL BE PER PLAN. PROVIDE BACKING FRAMING AT ALL PANEL EDGES INCLUDING HORIZONTAL BLOCKING PER THE SCHEDULE.

(3) PROVIDE NAILING TO ALL PANEL EDGES, TOP & BOTTOM PLATES AND HORIZONTAL BLOCKING. PROVIDE THE SAME NAILING PATTERN TO EACH MULTIPLE STUD OF THE BUILT-UP HOLD DOWN POST. NAIL PANEL TO INTERMEDIATE FRAMING MEMBERS w/ 0.131"Φ x 2-1/2" @ 12" O.C.

(4) EMBED CAST-IN-PLACE 5/8"Φ ANCHOR BOLTS 7" MIN. (OR EMBED ADHESIVE ANCHOR BOLTS 5 1/2" IN (E) CONCRETE; SEE STRUCTURAL NOTES). PROVIDE PLATE WASHER 3" x 3" x 1/4" AT EACH ANCHOR BOLT. SILL PLATES SHALL BE TREATED PER GENERAL NOTES, AND SHALL BE 2x OR 3x PER THE SCHEDULE. SEE DETAIL 1/S4.0 FOR OTHER REQUIREMENTS.

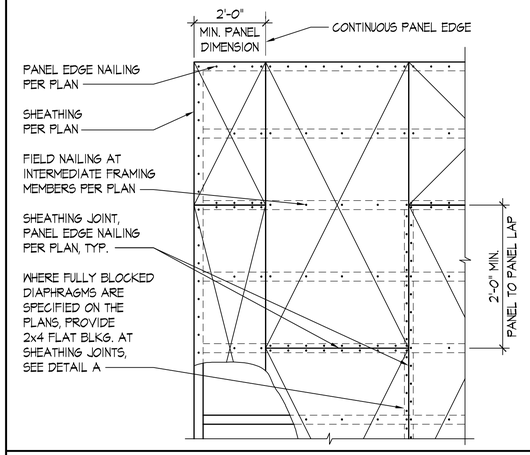
(5) PROVIDE HOT DIPPED GALVANIZED NAILS, BOLTS, OR METAL PLATES FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED MEMBERS.

(6) PROVIDE 0.131"Φ x 1-1/2" LONG NAILS FOR CLIPS DIRECTLY ATTACHED TO FRAMING MEMBERS; PROVIDE 0.131"Φ x 2-1/2" LONG NAILS FOR CLIPS INSTALLED OVER FLOOR OR WALL SHEATHING ON FRAMING MEMBERS. SEE 6/S4.1 FOR TOP PLATE SPLICE.

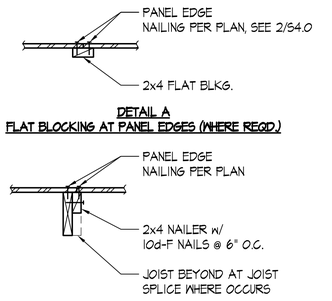
(7) ALTERNATIVE TO 3x STUDS AND 3x HORIZ. BLOCKING IS (2) 2x STUDS/BLKG. NAILED TOGETHER WITH 0.148"Φ x 3" LONG NAILS WITH THE SAME SPACING AS THE PANEL EDGE NAILING PER THE SCHEDULE (STAGGER).

(8) STAGGER NAILS PER 2/S4.0.

(9) RIM JOIST/BLOCKING MINIMUM WIDTH OF 1¾". STAGGER NAILS PER 2/S4.0 WHERE SPACING IS LESS THAN 6" O.C.



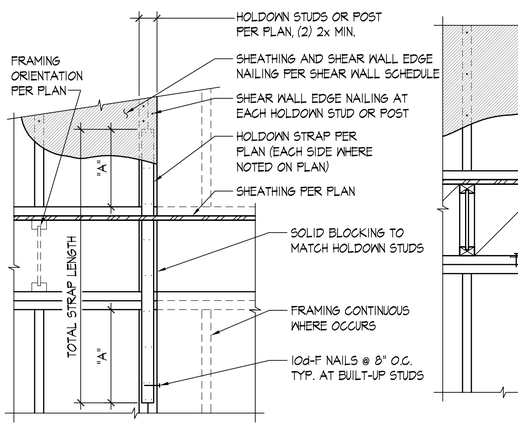
TYPICAL ROOF AND FLOOR DIAPHRAGM SHEATHING SCALE: NONE | 6

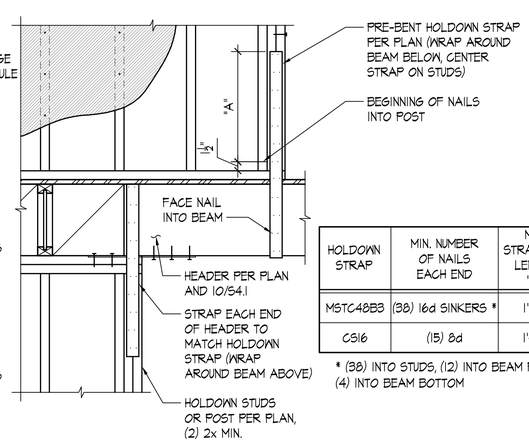


DETAIL A
FLAT BLOCKING AT PANEL EDGES (WHERE REQD.)

DETAIL B
PANEL EDGE NAILING AT JOIST SPLICE

NOTES:
1. RUN LONG DIMENSION OF SHEATHING PANELS PERPENDICULAR TO FRAMING.
2. WHERE FRAMING LAP SPLICE AND SHEATHING JOINTS ARE OFFSET, SEE DETAIL B ABOVE.



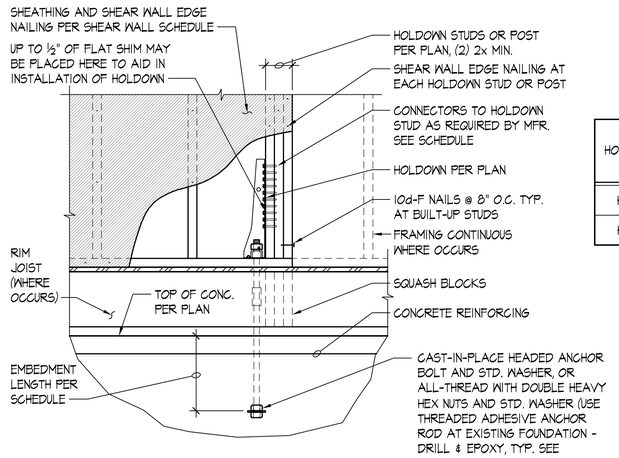


HOLDOWN STRAP	MIN. NUMBER OF NAILS EACH END	MIN. STRAP END LENGTH "A"
MSTC48B3	(38) 16d SINKERS *	1'-9"
CS16	(15) 8d	1'-4"

* (38) INTO STUDS, (12) INTO BEAM FACE, (4) INTO BEAM BOTTOM

TYPICAL FLOOR TO FLOOR HOLDOWN STRAP & FLOOR TO HEADER HOLDOWN STRAP SCALE: NONE | 10

SHEAR WALL SCHEDULE - 8d NAILS SCALE: NONE | 8



HOLDOWN	ANCHOR BOLT Φ	ANCHOR BOLT IN CONCRETE EMBED LENGTH	CONNECTORS TO HOLDOWN STUDS
HDU2	⅝"Φ	13"	(6) ¼"x2½" SDS
HDU5	⅝"Φ	13"	(14) ¼"x2½" SDS

NOTE:
PROVIDE HOT DIPPED GALVANIZED NAILS, BOLTS, OR METAL PLATES FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED MEMBERS

TYPICAL HOLDOWN TO CONCRETE SCALE: NONE | 12

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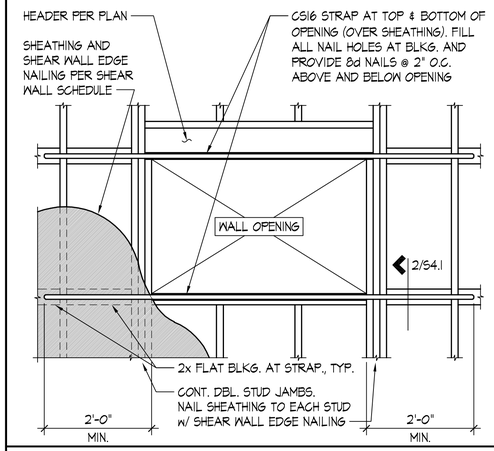
SHEET TITLE:

TYPICAL WOOD DETAILS

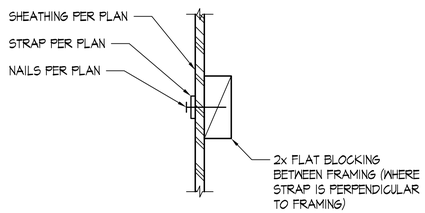
SHEET NO.

S4.0

File: 229-s400.dwg Plotted: Fri, 05/03/2024 9:28 am



STRAPPING AROUND SHEAR WALL OPENING SCALE: NONE | 1



STRAP TO BLOCKING DETAIL SCALE: NONE | 2

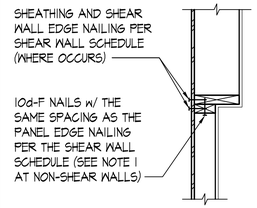
CEILING JOIST SCHEDULE	
SIZE	MAX. SPAN
2x4 @ 24" O.C. 2x4 @ 16" O.C.	8'-0" 9'-2"
2x6 @ 24" O.C. 2x6 @ 16" O.C.	12'-6" 14'-4"
2x8 @ 24" O.C. 2x8 @ 16" O.C.	16'-6" 19'-0"
2x10 @ 24" O.C. 2x10 @ 16" O.C.	21'-2" 24'-3"

NOTES:
CEILING JOIST TABLE BASED ON HF #2, Fb=850 PSI (REPETITIVE MEMBER USE), Fv = 150 PSI E=1.3X10^6 PSI, DEFL. < L/240

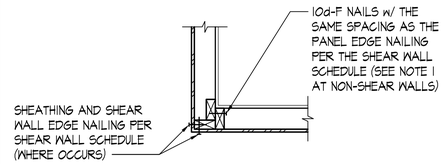
ATTIC LIVE LOAD = 10.0 PSF
CEILING DEAD LOAD = 5.0 PSF

CEILING JOIST SCHEDULE SCALE: NONE | 3

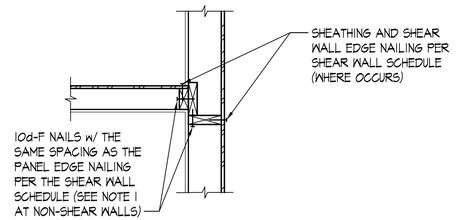
NOTES:
1. AT NON-SHEAR WALLS, NAIL STUDS TOGETHER WITH 10d-F NAILS @ 8" O.C.
2. ADDITIONAL STUDS REQUIRED AS NAILERS, ETC. ARE NOT SHOWN.



VARYING WALL SIZE

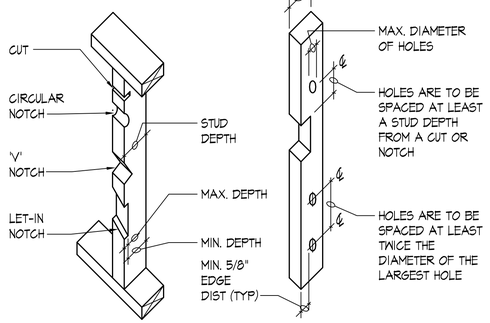


WALL CORNER



WALL INTERSECTION

TYPICAL WALL INTERSECTIONS - RESIDENTIAL SCALE: NONE | 8



A. CUTTING AND NOTCHING WOOD STUDS
(DO NOT NOTCH MORE THAN 3 ADJACENT STUDS w/o REVIEW BY ENGINEER)

BEARING WALL STUDS:

STUD SIZE	MAX. DEPTH OF SAW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	7/8"	2-3/8"
2x6	1-3/8"	4-1/8"
2x8	1-7/8"	5-3/8"

NON-BEARING WALL STUDS:

STUD SIZE	MAX. DEPTH OF SAW CUT OR NOTCH	MIN. DEPTH REMAINING AFTER CUT OR NOTCH
2x4	1-1/2"	2"
2x6	2-3/8"	3-1/8"
2x8	3"	4-1/4"

B. HOLES IN WOOD STUDS

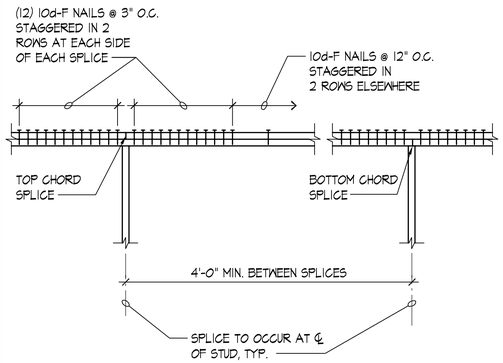
BEARING WALL:

STUD SIZE	MAX. DIAMETER OF HOLE
2x4	1-1/2"
2x6	2-3/8"
2x8	3"

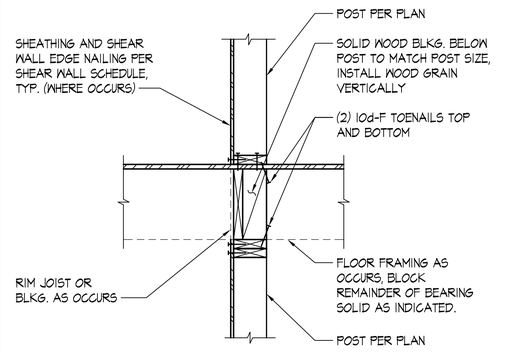
NON-BEARING WALL:

STUD SIZE	MAX. DIAMETER OF HOLE
2x4	2-1/4"
2x6	3-3/8"
2x8	4-1/2"

TYPICAL ALLOWABLE HOLES AND NOTCHES IN STUDS SCALE: NONE | 9



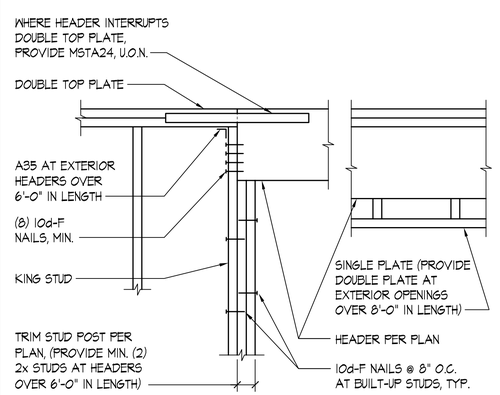
TYPICAL TOP PLATE SPLICE SCALE: NONE | 6



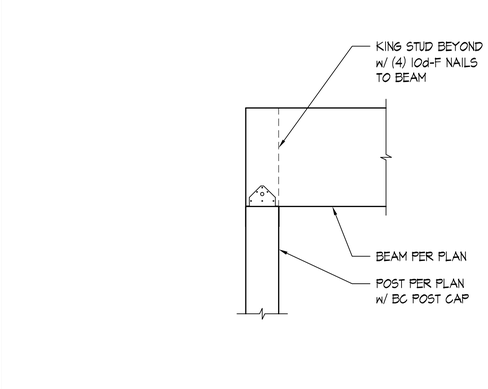
NOTE:
FRAMING CONDITIONS VARY, FOR INFORMATION NOT NOTED SEE PLAN & APPROPRIATE DETAILS

TYPICAL POST AT FLOOR SCALE: NONE | 7

BASEMENT STAIR STRINGER SCALE: NONE | 12



TYPICAL HEADER SCALE: NONE | 10



TYPICAL EXPOSED BEAM TO POST CONNECTION SCALE: NONE | 11

QUANTUM
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1511 THIRD AVENUE
SUITE 323
SEATTLE, WA 98101
TEL 206.957.3900
FAX 206.957.3901
www.quantumce.com

SEAL:



PROJECT:

ADAMS RESIDENCE

8035 SE 45TH ST
MERCER ISLAND, WA 98040

APPROVAL:

NO.	DESCRIPTION	DATE	BY
1	PERMIT REVISIONS	5/3/24	
	PERMIT SET	12/12/23	

ISSUES: ○ REVISIONS: △

P.M.	SKK
P.E.	MKS
DRAWN BY:	ATK
SCALE:	AS SHOWN
DATE:	12/12/23
JOB NO.	22229.01

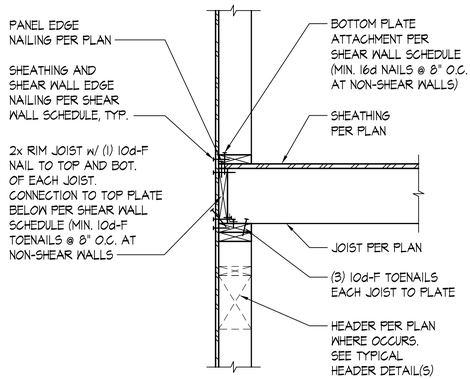
SHEET TITLE:

TYPICAL WOOD DETAILS

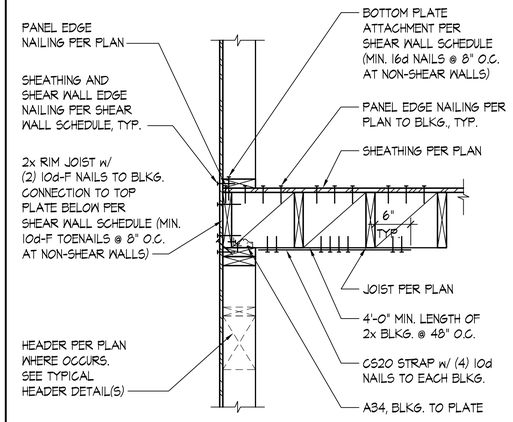
SHEET NO.

S4.1

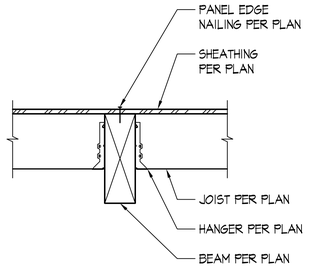
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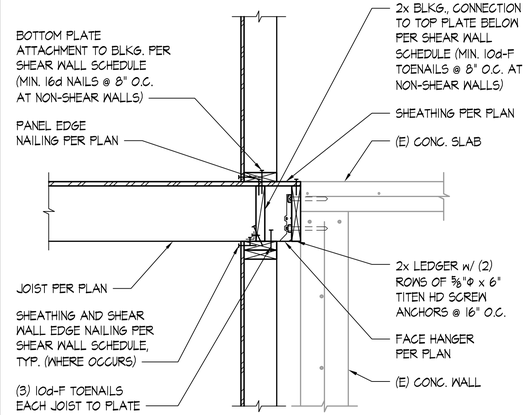
TYPICAL EXTERIOR WALL - 2x JOIST PERPENDICULAR SCALE: NONE | 1



TYPICAL EXTERIOR WALL - 2x JOIST PARALLEL SCALE: NONE | 2

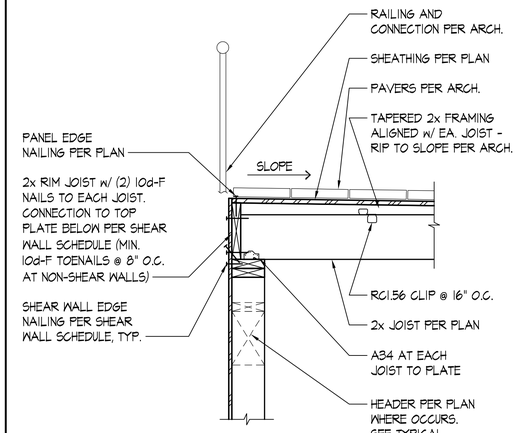


TYPICAL 2x JOIST TO FLUSH BEAM CONNECTION SCALE: NONE | 3



TYPICAL INTERIOR WALL - 2x JOIST PERPENDICULAR SCALE: NONE | 4

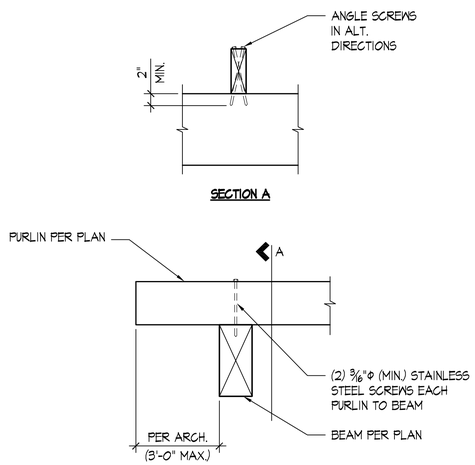
DETAIL SCALE: 1"=1'-0" | 5



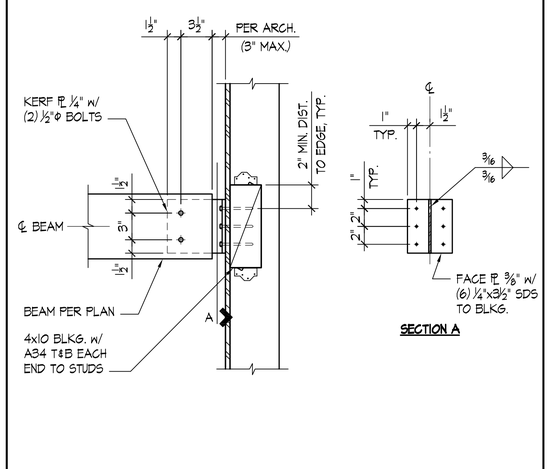
TYPICAL DECK EDGE - JOIST PERPENDICULAR TO WALL SUPPORT SCALE: 1"=1'-0" | 6

DETAIL SCALE: 1"=1'-0" | 7

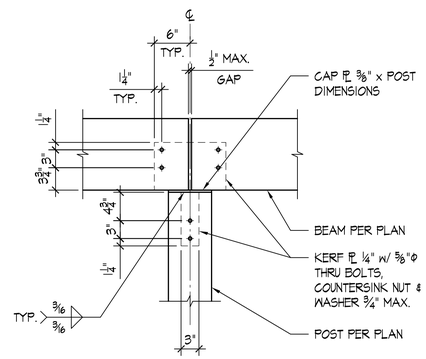
DETAIL SCALE: 1"=1'-0" | 8



TYPICAL TRELLIS PURLIN TO BEAM SCALE: NONE | 9



TYPICAL EXPOSED BEAM TO EXTERIOR WALL SCALE: NONE | 10



TYPICAL EXTERIOR BEAM TO WOOD POST SCALE: NONE | 11

DETAIL SCALE: 1"=1'-0" | 12

File: 239-x402.dwg Plotted: Fri, 05/03/2024 9:28 am

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SEAL:

SANDRO K. KODAMA
STATE OF WASHINGTON
36613
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

PROJECT:

ADAMS RESIDENCE

8035 SE 45TH ST
MERCER ISLAND, WA 98040

APPROVAL:

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ISSUES: ◯ REVISIONS: △

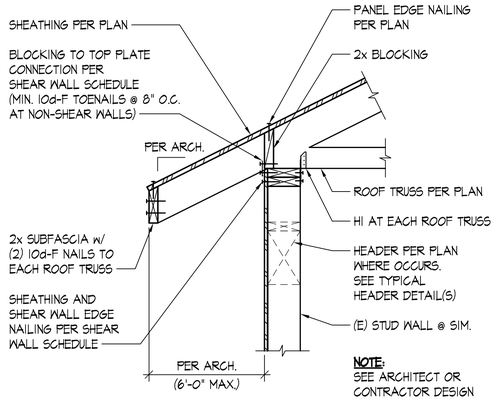
P.M.	SKK
P.E.	MKS
DRAWN BY:	ATK
SCALE:	AS SHOWN
DATE:	12/12/23
JOB NO.	22229.01

SHEET TITLE:

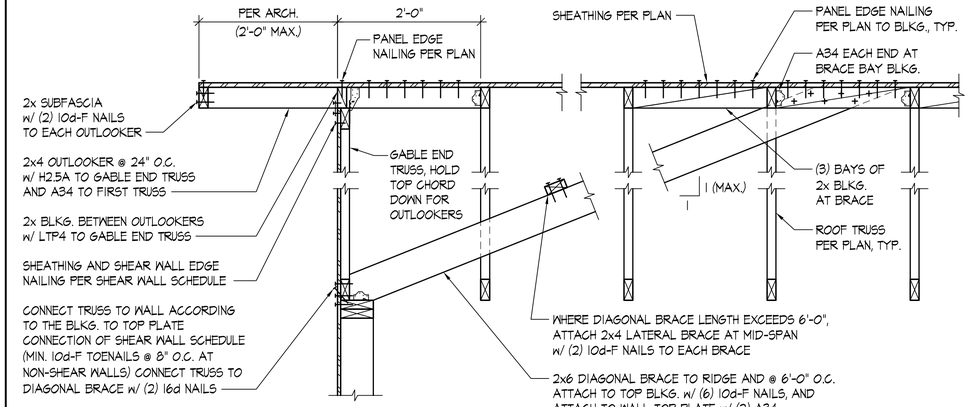
TYPICAL FLOOR DETAILS

SHEET NO.

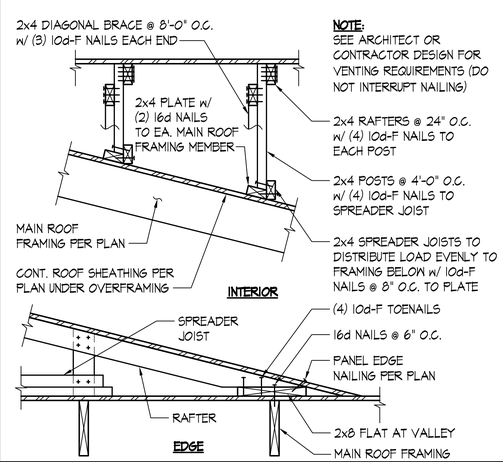
S4.2



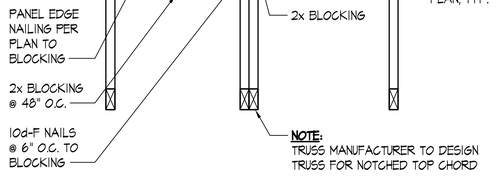
TYPICAL ROOF TRUSS TO EXTERIOR WALL - TRUSS PERPENDICULAR — SCALE: NONE — 1



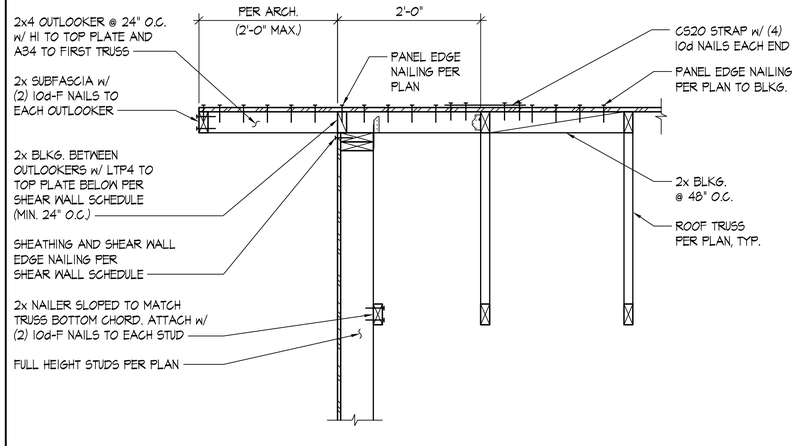
TYPICAL ROOF TRUSS TO EXTERIOR WALL - TRUSS PARALLEL — SCALE: NONE — 3



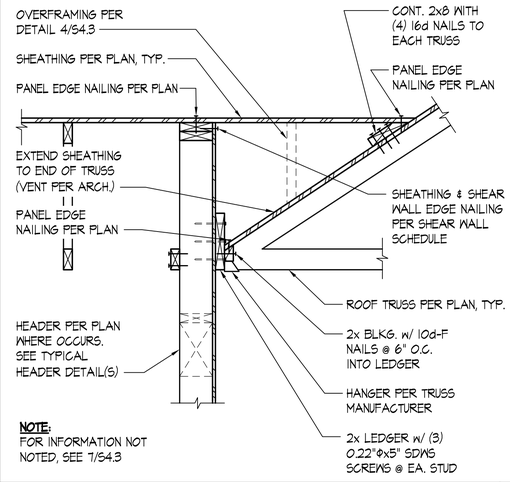
TYPICAL ROOF OVERFRAMING — SCALE: NONE — 4



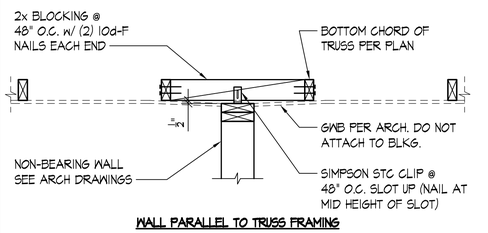
TYPICAL ROOF STEP - TRUSS PARALLEL — SCALE: NONE — 5



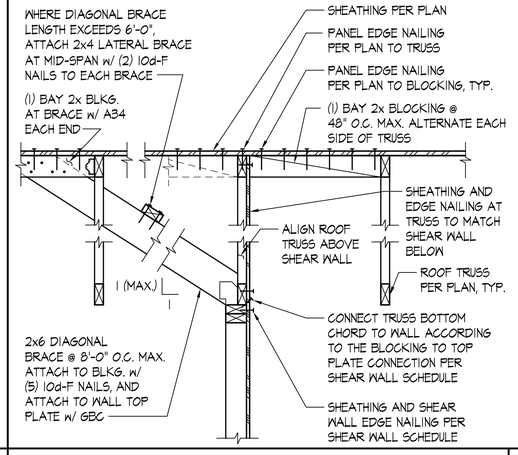
TYPICAL ROOF TRUSS TO EXTERIOR WALL - SCISSOR TRUSS PARALLEL — SCALE: 1"=1'-0" — 7



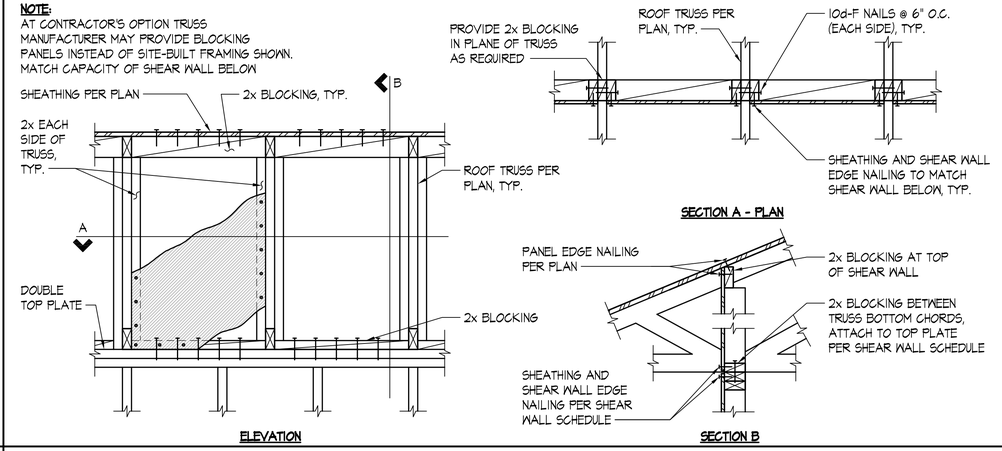
ROOF TRUSS TO INTERIOR WALL - ROOF TRUSS PARALLEL AND PERPENDICULAR — SCALE: NONE — 8



TYPICAL NON-STRUCTURAL WALL SUPPORT (TOP) - TRUSS — SCALE: NONE — 9



TYPICAL ROOF TRUSS TO INTERIOR SHEAR WALL - TRUSS PARALLEL — SCALE: NONE — 10



TYPICAL ROOF TRUSS TO SHEAR WALL - TRUSS PERPENDICULAR — SCALE: NONE — 12

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SEAL:



PROJECT:

ADAMS RESIDENCE

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MERCER ISLAND, WA 98040

APPROVAL:

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	PERMIT SET	12/12/23	

ISSUES: ◯ REVISIONS: △

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P.E.	MKS
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SCALE:	AS SHOWN
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JOB NO.	22229.01

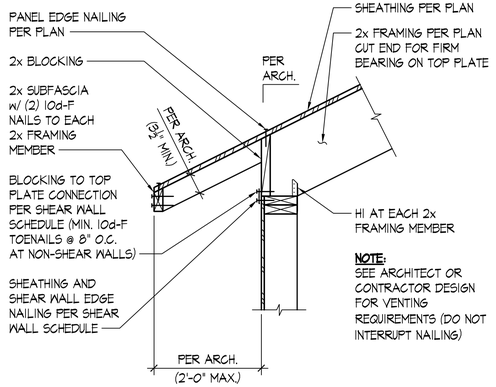
SHEET TITLE:

TYPICAL TRUSS DETAILS

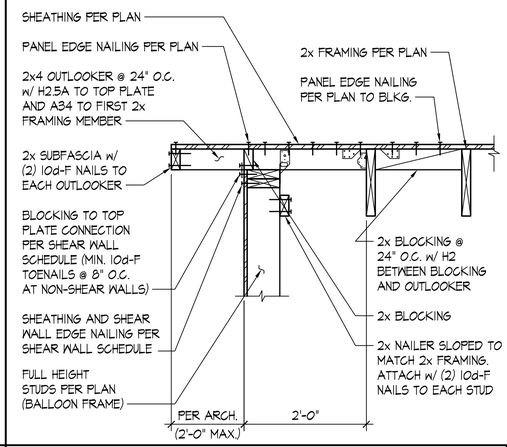
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S4.3

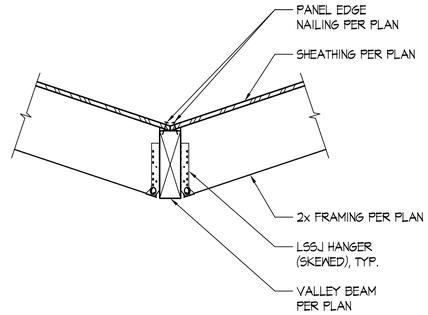
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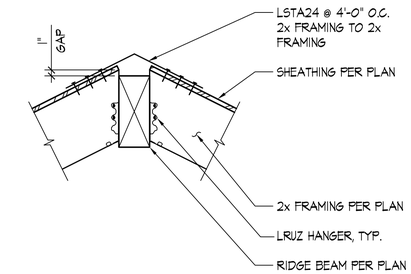
TYPICAL SLOPED ROOF FRAMING TO EXTERIOR WALL - 2x FRAMING PERPENDICULAR — SCALE: NONE — 1



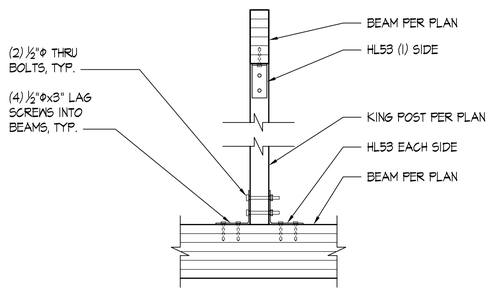
TYPICAL EXTERIOR WALL TO 2x ROOF OUTLOOKER - 2x FRAMING PARALLEL — SCALE: NONE — 2



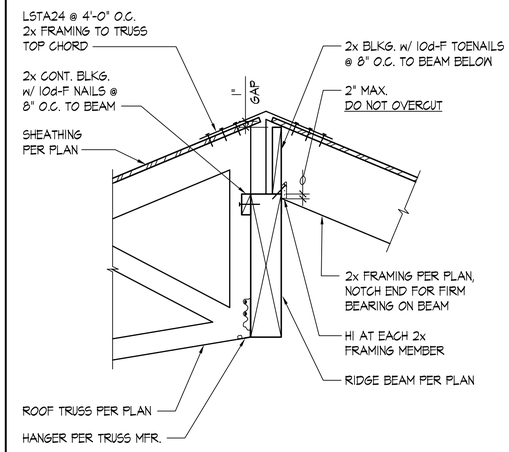
TYPICAL FLUSH VALLEY BEAM - 2x FRAMING — SCALE: NONE — 3



TYPICAL FLUSH RIDGE BEAM - 2x FRAMING PERPENDICULAR — SCALE: NONE — 4

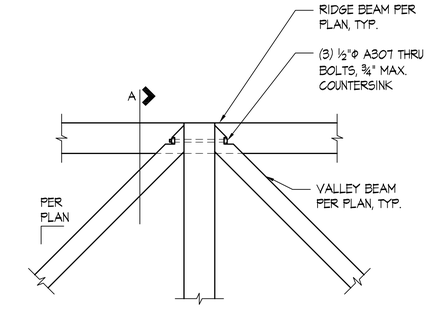


TYPICAL EXPOSED KING POST TO TRANSFER BEAM CONNECTION — SCALE: NONE — 5

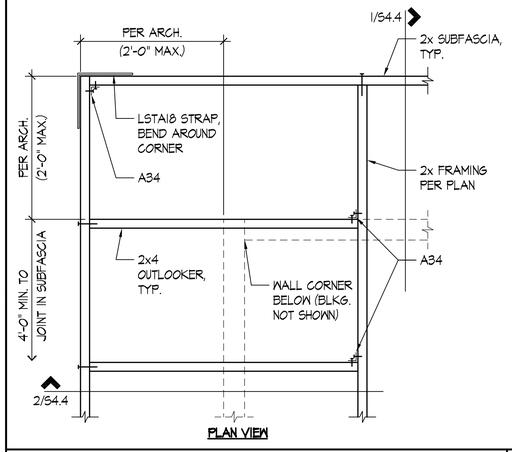


DROPPED RIDGE BEAM - ROOF TRUSS PERPENDICULAR — SCALE: NONE — 6

DETAIL — SCALE: NONE — 7



PLAN VIEW

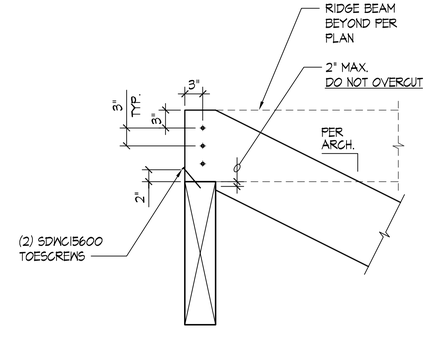


PLAN VIEW

TYPICAL EAVE CORNER - 2x FRAMING — SCALE: NONE — 9

DETAIL — SCALE: NONE — 10

DETAIL — SCALE: NONE — 11



SECTION A

VALLEY BEAM CONNECTION AT RIDGE BEAM — SCALE: NONE — 12

QUANTUM
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SEATTLE, WA 98101
TEL 206.957.3900
FAX 206.957.3901
www.quantumce.com

SEAL:

SANDRO K. KODAMA — STATE OF WASHINGTON — 36613 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

PROJECT:

ADAMS RESIDENCE

8035 SE 45TH ST
MERCER ISLAND, WA 98040

APPROVAL:

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1	PERMIT REVISIONS	5/3/24	
	PERMIT SET	12/12/23	

ISSUES: ○ REVISIONS: △

P.M.	SKK
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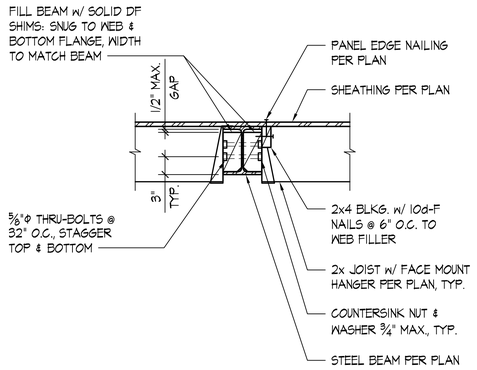
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TYPICAL ROOF DETAILS

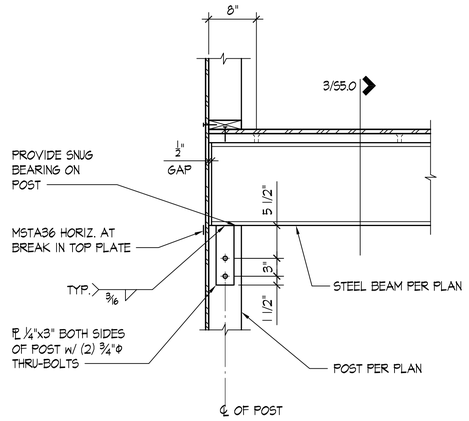
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S4.4

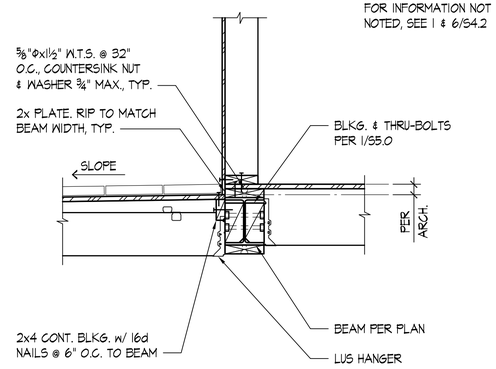
File: 229-s404.dwg Plotted: Fri, 05/03/2024 @ 9:39 am



TYPICAL WOOD JOIST TO STEEL BEAM - FACE MOUNT HANGER SCALE: NONE | 1



TYPICAL WOOD POST SUPPORTING STEEL BEAM SCALE: NONE | 2



FLUSH BEAM AT DECK - I-JOIST FLOOR SCALE: NONE | 3

DETAIL SCALE: 1"=1'-0" | 4

DETAIL SCALE: 1"=1'-0" | 5

DETAIL SCALE: 1"=1'-0" | 6

DETAIL SCALE: 1"=1'-0" | 7

DETAIL SCALE: 1"=1'-0" | 8

DETAIL SCALE: 1"=1'-0" | 9

DETAIL SCALE: 1"=1'-0" | 10

DETAIL SCALE: 1"=1'-0" | 11

DETAIL SCALE: 1"=1'-0" | 12

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SCALE:	AS SHOWN
DATE:	12/12/23
JOB NO.	22229.01

SHEET TITLE:

TYPICAL WOOD AND STEEL DETAILS

SHEET NO.

S5.0

File: 2229-s500.dwg Plotted: Fri, 05/03/2024 @ 8:29 am

City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040

RE: CAO24-001 Request for Information 1; 8035 SE 45th ST, Mercer Island, WA 98040

Project Description:

Project is a renovation of an existing single family house. A portion of the house will be removed, leaving stem walls and rebuilt in the existing footprint. Interior renovations will take place in other parts of the house. There are two small proposed additions to enlarge the garage and kitchen, with a total of about 390 square feet added to the house. In both locations, the additions will be expanded into areas that are existing developed areas. The garage will be expanding into the existing driveway and the kitchen expanded into the existing patio. There is no new development in undisturbed or landscaped areas.

Title report is being included as part of the resubmittal.

Instrument Number: 20240806000699 Document:N Rec: $304.50 Page-1 of 2
Record Date:8/6/2024 2:51 PM
King County, WA

Return Address: Steven Adams
8035 S.E. 45th Street
Mercer Island
WA
98040

Unofficial Copy

Please print or type information **WASHINGTON STATE RECORDER'S Cover Sheet** (RCW 65.04)

Document Title(s) (or transactions contained therein): (all areas applicable to your document **must** be filled in)
1. Disclosure and Notice 2. _____
3. _____ 4. _____

Reference Number(s) of Documents assigned or released:
Additional reference #'s on page 1 of document

Grantor(s) Exactly as name(s) appear on document
1. Steven Adams, _____
2. _____, _____
Additional names on page _____ of document.

Grantee(s) Exactly as name(s) appear on document
1. Steven Adams, _____
2. _____, _____
Additional names on page _____ of document.

Legal description (abbreviated: i.e. lot, block, plat or section, township, range)
Disclosure and Notice for 8035 S.E. 45th St. Mercer Island WA 98040
Additional legal is on page _____ of document.

Assessor's Property Tax Parcel/Account Number ☐ Assessor Tax # not yet assigned 770010-0091

The Auditor/Recorder will rely on the information provided on this form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.

"I am signing below and paying an additional $50 recording fee (as provided in RCW 36.18.010 and referred to as an emergency nonstandard document), because this document does not meet margin and formatting requirements. Furthermore, I hereby understand that the recording process may cover up or otherwise obscure some part of the text of the original document as a result of this request."

_____ Signature of Requesting Party

Note to submitter: Do not sign above nor pay additional $50 fee if the document meets margin/formatting requirements

Instrument Number: 20240806000699 Document:N Rec: $304.50 Page-2 of 2
Record Date:8/6/2024 2:51 PM King County, WA

Disclosure and Notice

Address: 8035 SE 45th ST, Mercer Island, WA 98040

For Permit Number: CAO24-001

Tax Parcel Number: 770010-0091

Legal Description:
SEWARD ADD POR OF 16 THRU 19 LY W OF LN RNG N 00-16-04 E 100 FT FR PT ON S LN OF 19 49.95 FT E OF SW COR TH S 89-43-56 W ALG S LN OF 17 0.25 FT M/L TO PT 81.10 FT E OF SW COR OF 17 TH N 00-16-04 E 101.28 FT M/L TO N LN OF 16 & POR 32 THRU 34 LY E OF LN BEG ON NLY LN OF LOT 34 5.28 FT W OF NE COR THOF TH S 27-09-40 W 24.75 FT TH ON CURVE TO LFT RAD 144 FT DIST 110.75 FT TH S 16-54-20 E 35.79 FT TH S 64-59-11 E 68.47 FT TO S LN LOT 32

Notice:
This property contains critical areas and/or critical area buffers. Limitations may exist on action in or affecting the critical areas or their buffer area present on this property. For more information regarding limitations please contact the permitting department of the City of Mercer Island. This notice shall run with the land in perpetuity.

Unofficial Copy

I, Steven Adams, hereby certify that I am the owner of the above reference property.

(Owner Signature) (Owner Signature)

Subscribed and sworn to before me this 6th day of August, 2024

TOKI PENNYWELL
Notary Public
State of Washington
Commission # 23000692
My Comm. Expires Dec 1, 2026

Notary Public in and for the State of Washington,

Residing at Mercer Island

Toki Pennywell
(Notary Printed Name)

(Notary's Signature)

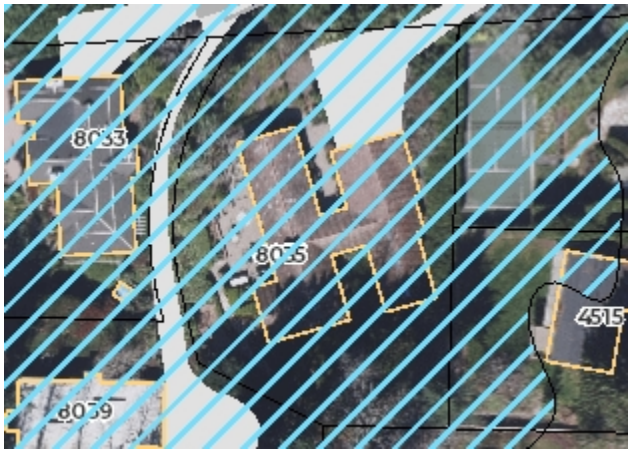
My appointment expires 12/01/2026

City of Mercer Island Property Hazard Report

Site Address: 8035 SE 45TH ST

Parcel #: 7700100091 **Report Generated on** September 11, 2024

Potential Slide:



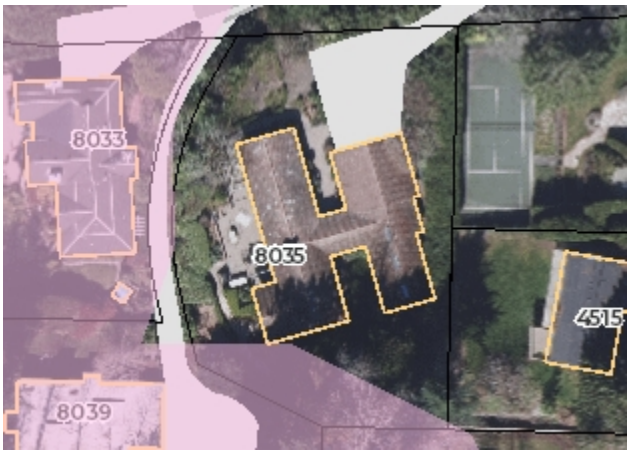
Steep Slope:

No Hazard Found

Erosion:



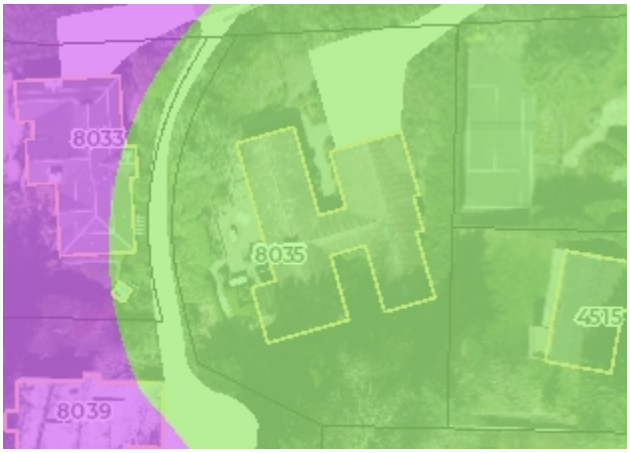
Seismic:



Wind Exposure:



Wind Speed Up Values **1.0** **1.3** **1.6** **1.9**



These maps are for the use of City of Mercer Island staff for the purposes of permit application evaluation. It provides a general assessment of known or suspect hazard areas for which the City will require site and project specific evaluation by a Washington State licensed engineer, geologist or engineering geologist prior to issuing a site for development. All areas have not specifically evaluated for hazards and there may be locations that are not correctly represented on these maps. It is the responsibility of the property owners and map users to evaluate risk associated with their proposed development. No site-specific assessment of risk is implied or otherwise indicated by the City of Mercer Island by these maps.

COMMUNITY PLANNING & DEVELOPMENT
206.275.7605
www.mercerisland.gov/cpd

4/24/2024

Attn: Craig Belcher
6947 Coal Creek Pkwy SE #122
Newcastle, WA 98056
Via: Email

RE: **CAO24-001** Letter of Completeness; 8035 SE 45th St, Mercer Island, WA 98040

The City of Mercer Island received the above referenced application for a Critical Area Review 2 permit for the property located at 8035 SE 45th ST, Mercer Island, WA 98040 on 2/7/2024. The City has assigned file number CAO24-001 to the Critical Area Review 2 application. Following review of the application, City staff has determined that the application is complete and has established a vesting date of 4/24/2024.

The application is scheduled for mailing and posting on May 6, 2024 as required by MICC 19.15.030.

Formal review of the application will now begin in compliance with Mercer Island City Code, Chapter 19. As review progresses, additional documentation will most likely be requested.

Pursuant to Mercer Island City Code 19.15.110(B), if the applicant fails to provide the required information within 60 days from the date of any request for information, the application shall lapse, and become null and void.

Please do not hesitate to contact me at 206-275-7764 or via e-mail at grace.manahan@mercerisland.gov if you have any questions.

Sincerely,

Grace Manahan

Grace Manahan, Assistant Planner
City of Mercer Island Community Planning and Development

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
206.275.7605 | www.mercerisland.gov

PUBLIC NOTICE OF APPLICATION

NOTICE IS HEREBY GIVEN for the application described below:

File No.:	CAO24-001
Permit Type:	Type III
Description of Request:	A request for a Critical Area Review 2 to remodel an existing sing-family residence within geological hazardous areas.
Applicant/Owner:	Craig Belcher / Steve & Joanne Adams
Location of Property:	8035 SE 45th ST, Mercer Island WA 98040 King County Assessor tax parcel number: 770010-0091

SEPA Compliance:
The project is exempt from SEPA Review pursuant to WAC 197-11-800(1).

Project Documents: https://mieplan.mercergov.org/public/CAO24-001

Written Comments: This may be the only opportunity to comment on this proposal. Written comments on this proposal may be submitted to the City of Mercer Island either by email, in person, or by mail to the City of Mercer Island, 9611 SE 36th Street, Mercer Island, WA 98040-3732. Anyone may comment on the application, receive notice, and request a copy of the decision once made. Only those persons who submit written comments or participate at the public hearing (if a hearing is required) will be parties of record; and only parties of record will have the right to appeal.

Public Hearing and Public Meeting:	Pursuant to MICC 19.15.030 Tables A and B, a public hearing is not required for Type I-III permits.
Applicable Development Regulations	Applications for Critical Area Review 2 are required to be processed as Type III land use reviews pursuant to Mercer Island City Code (MICC) 19.15.030. Processing requirements for Type III land use reviews are further detailed in MICC 19.15.030.
Other Associated Permits:	Permit No(s): 2307-175
Environmental Documents:	Copies of all studies and/or environmental documents are available through the above project documents link.

Application Process Information:

Date of Application:	February 7, 2024
Determined to Be Complete:	April 24, 2024
Weekly Permit Bulletin Notice:	May 6, 2024
Date Mailed:	May 6, 2024
Date Posted on Site:	May 6, 2024
Comment Period Ends:	5:00PM on June 5, 2024

Project Contact: Grace Manahan, Assistant Planner

grace.manahan@mercerisland.gov | (206) 275-7764

COMMUNITY PLANNING & DEVELOPMENT
206.275.7605
www.mercerisland.gov/cpd

6/26/2024

Attn: Craig Belcher
6947 Coal Creek Prkwy SE #122
Via: Email

RE: **CAO24-001** Review Letter 1; 8035 SE 45th ST, Mercer Island, WA 98040

Dear Craig Belcher,

The City of Mercer Island Community Planning and Development Department has completed a review for compliance with the zoning code, Title 19 of the Mercer Island City Code (MICC) for the above Critical Area Review 2 (CAR2) application. The following issues need to be addressed in your resubmission:

Planning:

1. Submit most recent plan set to match the most recent resubmittal of building permit 2307-175.
2. Further demonstrate compliance with MICC 19.07.110(B)(8) by addressing MICC 19.07.100, mitigation sequencing, and document how each measure listed has been addressed.
3. Provide the Disclosure and Notice on Title. A Disclosure and Notice on Title recorded with the King County Recorder's Office consistent with MICC 19.07.070 disclosing the presence of critical areas on the development proposal site and any mapped or identifiable critical areas within the distance equal to the largest potential required buffer applicable to the development proposal on the development proposal site.
4. A landscaping plan is required that includes the landscaping of all disturbed areas outside of the building footprints and installation on hardscape, prior to final inspection per MICC 19.07.160(B)(2)(d)

Geotechnical Peer Review:

1. Have the geotechnical engineer of record review the plan set and provide a letter stating whether the proposed design is in general accordance with their design recommendations. In this review letter the geotechnical engineer should also provide an updated statement of risk in accordance with MICC 19.07.160.B.3. Please be sure that the geotechnical engineer is reviewing the latest revision of the planset (currently dated as May 3, 2024 on the structural sheets that now show the

pin pile foundations originally recommended by the geotechnical engineer). This corresponds to SUB 3 of the building permit planset.

The City's processing of the CAR2 application has been put on hold until these issues are resolved. Pursuant to MICC 19.15.110, all requested information must be submitted within 60 days or a request for extension requested. The deadline for a complete response or request for extension is August 26, 2024. If a complete response is not received or an extension response has not been received prior to that date, the application will expire and be canceled for inactivity. No additional notification regarding this deadline or expiration of the application will be provided.

Sincerely,

Grace Manahan

Grace Manahan, Code Compliance Planner
City of Mercer Island Community Planning and Development
grace.manahan@mercerisland.gov
(206) 275-7764

Download the Correction Drawing File to Review and Respond to Comments:

Responding and Resubmitting: Click for More Detailed Instructions

1. Reply to all plan review comments within the correction drawing file.
2. Update your drawings, and any necessary supplemental documents or forms.
3. Upload updated drawings to the Mercer Island Permit Submittal Portal.

Having Trouble? Please Review the Following:

Accessing, Reviewing, and Responding to MIePlan Comments

Troubleshooting MIePlan

MIePlan Overview

Thank you for your participation in the MIePlan review process.

GEOTECH
CONSULTANTS, INC.

2401 10th Ave E
Seattle, Washington 98102
(425) 747-5618

December 1, 2023

JN 23365

Steve and Joanne Adams
8035 Southeast 45th Street
Mercer Island, Washington 98040

Sent to: McFadden Design
Attention: Michael McFadden
via email: michael@mcfaddendesign.com

Subject: **Transmittal Letter – Geotechnical Engineering Study**
Proposed Residence Addition Project
8035 Southeast 45th Street
Mercer Island, Washington

Greetings:

Attached to this transmittal letter is our geotechnical engineering report for the residence addition project to be constructed on Mercer Island, Washington. The scope of our services consisted of exploring site surface and subsurface conditions, and then developing this report to provide recommendations for general earthwork and design considerations for foundations, retaining walls, subsurface drainage, and temporary excavations. This work was authorized by your acceptance of our proposal, P-11490, dated October 3, 2023.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or for further assistance during the design and construction phases of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

D. Robert Ward, P.E.
Principal

DRW:kg

GEOTECHNICAL ENGINEERING STUDY
Residence Addition Project
8035 Southeast 45th Street
Mercer Island, Washington

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed residence project to be located at 8035 Southeast 45th Street on Mercer Island.

Based on information in a site plan that was given to us by McFadden Design LLC, we understand that a bedroom addition is proposed onto the lower, southwestern side of the existing residence, while a kitchen addition is proposed onto the west-central portion of the residence. Also, an addition is proposed onto the northern side of the existing detached garage. We believe the lower floor of the bedroom addition will be at the residence's basement level of approximately elevation 187 feet, while the other two additions will be at the main level grade of approximately elevation 195 to 196 feet. Excavations for these additions will likely be relatively minor.

If the scope of the project changes from what we have described above, we should be provided with revised plans in order to determine if modifications to the recommendations and conclusions of this report are warranted.

SITE CONDITIONS

SURFACE

The Vicinity Map, Plate 1, illustrates the general location of the site on Mercer Island. The irregularly-shaped subject site has 115.4 feet of frontage along the southern side of Southeast 45th Street and extends a depth of 201 feet to the south along the site's eastern property line. The western property line is roughly a large arc, such that the center of the property has a width of approximately 141 feet, while the southern property line has a length of only 62.5 feet.

A one-story, H-shaped residence is located in the center of the property. The residence has western and eastern wings (each long in the north-south direction), which are connected by a narrow hallway. The residence generally has a finished floor elevation of approximately 195.5 feet, which matches the relatively level ground surface that surrounds much of the residence. However, the southern end of the western wing overlies a basement that daylights to the west at an elevation of 187.2 feet. The northern end of the eastern wing contains a three-car garage. An asphalt motorcourt extends north from the garage, and a driveway extends from the motorcourt to Southeast 45th Street to the northeast. Brick walkways wrap around the residence and between the two wings of the residence. A grass lawn covers the southeast corner of the property and a brick patio which extends approximately 25 feet west off of the western side of the residence's western wing at the main floor elevation. A staircase descends from the western end of the patio and turns to the south to a lower stone paver walkway and brick patio off the daylight basement in the southwest corner of the residence.

As discussed above, the majority of the subject site is generally flat surrounding the residence with a grade near elevation 195 to 195.5 feet. However, the grade rises steeply to the east along the eastern property line, and slopes steeply downwards to the north and west along the northern and western perimeters of the site. Along the eastern property line, the ground surfaces rises

approximately 9 to 11.5 feet, up to the eastern adjacent properties over a series of short tiered wood walls, modular block walls, and rockeries. Along the northern and western perimeters of the property, the ground surface slopes steeply downward to the north and west over an ivy-covered slope. The majority of the northern steep slope is located within the northern adjacent Southeast 45th Street right-of-way; the 8 to 12-foot-tall northern slope has inclination of approximately 55 to 75 percent and terminates at the Southeast 45th Street pavement to the north. The slope on the western perimeter of the slope descends from the level western yard and patio, down to the western property line and a driveway on the western adjacent property; the western slope has an inclination of approximately 65 to 110 percent over a height of 10 to 12 feet. In the southwest corner of the property (west of the daylight basement), the grade drops only 2 to 4 feet over a short rockery to the driveway on the southwestern adjacent property.

Based on Building Intake Comments prepared by the City of Mercer Island, the entire property is noted as being in a Potential Slide Area and an Erosion Hazard Area.

As discussed above, the subject site is bordered by Southeast 45th Street to the north. Parcels containing single-family residences surround the remainder of the subject site. The neighboring residences generally have large setbacks from the shared property lines. However, a shared driveway for the western and southwestern adjacent properties follows the full length of the subject site's western property line. Also, a neighboring tennis court has little to no offset from the northern half of the subject site's eastern property line.

SUBSURFACE

The subsurface conditions were explored by drilling three test borings at the approximate locations shown on the Site Exploration Plan, Plate 2. We also excavated a test hole using hand equipment. Our exploration program was based on the proposed construction, anticipated subsurface conditions and those encountered during exploration, and the scope of work outlined in our proposal.

The test borings were drilled on November 9, 2023 using both a small track-mounted, hollow-stem auger drill and a portable Acker drill (this drill system utilizes a small, gasoline-powered engine to advance a hollow-stem auger to the sampling depth). Samples were taken at approximate 2.5- to 5-foot intervals with a standard penetration sampler. This split-spoon sampler, which has a 2-inch outside diameter, is driven into the soil with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler a given distance is an indication of the soil density or consistency. A geotechnical engineer from our staff observed the drilling process, logged the test borings, and obtained representative samples of the soil encountered. The Test Boring Logs are attached as Plates 3 through 5.

Soil Conditions

Native soils were revealed at a shallow depth in the test boring drilled in the upper, northeastern portion of the of the site just north of the garage (B-2). The uppermost soils consist of medium-dense silty sand that is underlain by very dense silty sand/sandy silt. The two test borings drilled on the western side of the residence encountered approximately 4 feet of loose, unengineered fill soil overlying native soils. In the southwestern test boring (B-1), approximately 4 feet of native, loose, sandy silt that appears to be colluvium (old landslide soil) was revealed below the fill. At approximately 8.5 feet, non-colluvial, medium-dense silty sand/sandy silt was revealed that became denser with depth (maximum explored

depth of B-1 was approximately 16 feet). In the west-central test boring (B-3), the fill soil was underlain by native, loose to medium-dense silty sand/sandy silt soil that became medium-dense at approximately 7 feet. At approximately 11 feet, this soil was underlain by dense sand that continued down to about 17 feet and was underlain by very stiff to hard silt. At a depth of about 28 feet, the silt was underlain by dense to very dense sand; this sand was revealed to the maximum explored depth of 31 feet.

No obstructions were revealed by our explorations. However, debris, buried utilities, and old foundation and slab elements are commonly encountered on sites that have had previous development.

Groundwater Conditions

Groundwater seepage was observed at a depth of approximately 30.5 feet in Test Boring 3. Groundwater levels encountered during drilling can be deceptive, because seepage into the boring can be blocked or slowed by the auger itself. We do not believe groundwater will be a geotechnical engineering issue for this project.

The stratification lines on the logs represent the approximate boundaries between soil types at the exploration locations. The actual transition between soil types may be gradual, and subsurface conditions can vary between exploration locations. The logs provide specific subsurface information only at the locations tested. Where a transition in soil type occurred between samples in the test borings, the depth of the transition was interpreted. The relative densities and moisture descriptions indicated on the test boring logs are interpretive descriptions based on the conditions observed during excavation drilling.

SEISMIC CONSIDERATIONS

In accordance with the International Building Code (IBC), the site class within 100 feet of the ground surface is best represented by Site Class Type D (Stiff Soil). As noted in the USGS website, the mapped spectral acceleration value for a 0.2 second (S_s) and 1.0 second period (S_1) equals 1.43g and 0.50g, respectively.

The IBC and ASCE 7 require that the potential for liquefaction (soil strength loss) during an earthquake be evaluated for the peak ground acceleration of the Maximum Considered Earthquake (MCE), which has a probability of occurring once in 2,475 years (2 percent probability of occurring in a 50-year period). The MCE peak ground acceleration adjusted for site class effects (F_{PGA}) equals 0.68g. The soils beneath the site are not susceptible to seismic liquefaction under the ground motions of the MCE because of their dense/stiff nature and/or the absence of near-surface groundwater.

Sections 1803.5 of the IBC and 11.8 of ASCE 7 require that other seismic-related geotechnical design parameters (seismic surcharge for retaining wall design and slope stability) include the potential effects of the Design Earthquake. The peak ground acceleration for the Design Earthquake is defined in Section 11.2 of ASCE 7 as two-thirds (2/3) of the MCE peak ground acceleration, or 0.45g.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

THIS SECTION CONTAINS A SUMMARY OF OUR STUDY AND FINDINGS FOR THE PURPOSES OF A GENERAL OVERVIEW ONLY. MORE SPECIFIC RECOMMENDATIONS AND CONCLUSIONS ARE CONTAINED IN THE REMAINDER OF THIS REPORT. ANY PARTY RELYING ON THIS REPORT SHOULD READ THE ENTIRE DOCUMENT.

In the area of the proposed garage addition, medium-dense soil was revealed in the test boring at a relatively shallow depth. Therefore, the foundation of the addition can consist of conventional footing provided they bear on the medium-dense soil. Information regarding footings is given in a subsequent section of this study.

Approximately 7 to 10 feet of relatively loose/soft soils were revealed in the test borings drilled on the western/southwestern portions of the site, respectively; these were located approximately where the kitchen and bedroom additions are proposed. Competent soil was revealed below these depths. A footing foundation could potentially be used for these additions, but the depth of excavation would be unreasonable for such a small project in our opinion. Therefore, we recommend that driven pipe piles be used for this project; these will extend through the incompetent upper soils and into the competent soils. Information regarding pipe piles is given in a subsequent section of this study.

The drainage and/or waterproofing recommendations presented in this report are intended only to prevent active seepage from flowing through concrete walls or slabs. Even in the absence of active seepage into and beneath structures, water vapor can migrate through walls, slabs, and floors from the surrounding soil, and can even be transmitted from slabs and foundation walls due to the concrete curing process. Water vapor also results from occupant uses, such as cooking, cleaning, and bathing. Excessive water vapor trapped within structures can result in a variety of undesirable conditions, including, but not limited to, moisture problems with flooring systems, excessively moist air within occupied areas, and the growth of molds, fungi, and other biological organisms that may be harmful to the health of the occupants. The designer or architect must consider the potential vapor sources and likely occupant uses, and provide sufficient ventilation, either passive or mechanical, to prevent a build up of excessive water vapor within the planned structure.

Geotech Consultants, Inc. should be allowed to review the final development plans to verify that the recommendations presented in this report are adequately addressed in the design. Such a plan review would be additional work beyond the current scope of work for this study, and it may include revisions to our recommendations to accommodate site, development, and geotechnical constraints that become more evident during the review process.

We recommend including this report, in its entirety, in the project contract documents. This report should also be provided to any future property owners so they will be aware of our findings and recommendations.

CRITICAL AREAS STUDY (MICC 19.07)

Potential Landslide Hazard Area: As noted earlier, the entire property is mapped as Potential Landslide Hazard Area. However, the area of the proposed garage addition is flat, and the new foundations will bear on competent soil. Therefore, this area does not have any potential for the occurrence of a landslide. At the southwestern addition area, the ground is flat directly at the

addition location and then only slopes moderately downward over a vertical height of 4 feet to an adjacent driveway. Because the area of the southwestern addition is flat and/or has only a small, moderate slope nearby, and because of the foundations that bear into competent soil, this area does not have a landslide potential. Lastly, the area of the proposed west-central kitchen addition is flat; this flat area extends out for about 22 to 24 feet west of the addition location. Below and west of this flat area is an approximate 10-foot-tall slope that ends at the adjacent driveway. Because there is a significant amount of flat area west of the addition and the steep slope below the flat slope is only about 10 feet tall, and because the foundation will bear into competent soil, it is our opinion that this area does not have a landslide potential. In summary, we believe that all of the addition areas are not landslide hazards, the project is very suitable from a geotechnical engineering standpoint. No adverse conditions will be made on the site or on adjacent sites if the recommendations in this report are followed.

Erosion Hazard: The site also meets the City of Mercer Island's criteria for an Erosion Hazard Area. However, the work areas for the proposed work are located where only flat to gently sloped areas and excavations for the project will not be substantial. Thus, typical erosion control measures will be very suitable to suitably control the potential of erosion. One of the most important considerations, particularly during wet weather, is to immediately cover any bare soil areas to prevent accumulated water or runoff from the work area from becoming silty in the first place. A wire-backed silt fence should be erected as close as possible to the western and southern sides of the planned work area, and the existing vegetation (mostly yard grass) east of the silt fence. Straw wattles may also be used in tandem with the silt fence as needed. Also, any soil stockpiles should be covered with plastic during wet weather. Soil stockpiles should be minimized. Following rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface.

Statement of Risk: In order to satisfy the City of Mercer Island's requirements, a statement of risk is needed. As such, we make the following statement:

> *It is our professional opinion that the recommendations presented in this report for the proposed additions project will render the development as safe as if it were not located in a geologically hazardous area and will not adversely impact adjacent properties.*

FOOTING FOUNDATIONS FOR GARAGE ADDITION

The proposed garage addition can be supported on conventional continuous and spread footings bearing on undisturbed, native, medium-dense soil. We recommend that continuous and individual spread footings have minimum widths of 16 and 24 inches, respectively. Exterior footings should also be bottomed at least 18 inches below the lowest adjacent finish ground surface for protection against frost and erosion. The local building codes should be reviewed to determine if different footing widths or embedment depths are required. Footing subgrades must be cleaned of loose or disturbed soil prior to pouring concrete. Depending upon site and equipment constraints, this may require removing the disturbed soil by hand.

An allowable bearing pressure of 2,000 pounds per square foot (psf) is appropriate for footings supported on medium-dense native soil. A one-third increase in this design bearing pressure may be used when considering short-term wind or seismic loads. For the above design criteria, it is anticipated that the total post-construction settlement of footings founded on competent native soil, will be about 3/4-inch, with differential settlements on the order of 1/2-inch in a distance of 25 feet along a continuous footing with a uniform load.

Lateral loads due to wind or seismic forces may be resisted by friction between the foundation and the bearing soil, or by passive earth pressure acting on the vertical, embedded portions of the foundation. For the latter condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level, well-compacted fill. We recommend using the following ultimate values for the foundation's resistance to lateral loading:

PARAMETER	ULTIMATE VALUE
Coefficient of Friction	0.40
Passive Earth Pressure	300 pcf

Where: pcf is Pounds per Cubic Foot, and Passive Earth Pressure is computed using the Equivalent Fluid Density.

If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. The above ultimate values for passive earth pressure and coefficient of friction do not include a safety factor.

PIPE PILES

Three- or 4-inch-diameter pipe piles driven with a 850- or 1,100- or 2,000-pound hydraulic jackhammer to the following final penetration rates may be assigned the following compressive capacities.

INSIDE PILE DIAMETER	FINAL DRIVING RATE (850-pound hammer)	FINAL DRIVING RATE (1,100-pound hammer)	FINAL DRIVING RATE (2,000-pound hammer)	ALLOWABLE COMPRESSIVE CAPACITY
3 inches	10 sec/inch	6 sec/inch	2 sec/inch	6 tons
4 inches	16 sec/inch	10 sec/inch	4 sec/inch	10 tons

Note: The refusal criteria indicated in the above table are valid only for pipe piles that are installed using a hydraulic impact hammer carried on leads that allow the hammer to sit on the top of the pile during driving. If the piles are installed by alternative methods, such as a vibratory hammer or a hammer that is hard-mounted to the installation machine, numerous load tests to 200 percent of the design capacity would be necessary to substantiate the allowable pile load. The appropriate number of load tests would need to be determined at the time the contractor and installation method are chosen.

As a minimum, Schedule 40 pipe should be used. The site soils are not highly organic, and are not located near salt water. As a result, they do not have an elevated corrosion potential. Considering this, it is our opinion that standard “black” pipe can be used, and corrosion protection, such as galvanizing, is not necessary for the pipe piles.

Seattle Director’s Rule 10-2009 contains several prescriptive requirements related to the use of pipe piles having a diameter of less than 10 inches. Under Director’s Rule 10-2009, load tests are required on 3 percent of the installed piles up to a maximum of 5 piles, with a minimum of one pile load test on each project. Additionally, full-time observation of the pile installation by the geotechnical engineer-of-record is required by Director’s Rule 10-2009.

We recommend a minimum pile length of 15 feet below the ground surface. However, our experience with installation of small-diameter pipe piles indicates that it is likely that they will be longer than this minimum length to reach refusal.

Pile caps and grade beams should be used to transmit loads to the piles. Isolated pile caps should include a minimum of two piles to reduce the potential for eccentric loads being applied to the piles. Subsequent sections of pipe can be connected with slip or threaded couplers, or they can be welded together. If slip couplers are used, they should fit snugly into the pipe sections. This may require that shims be used or that beads of welding flux be applied to the outside of the coupler.

Lateral loads due to wind or seismic forces may be resisted by passive earth pressure acting on the vertical, embedded portions of the foundation. For this condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level compacted fill. We recommend using a passive earth pressure of 300 pounds per cubic foot (pcf) for this resistance. This is an ultimate value that does not include a safety factor. If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate.

FOUNDATION AND RETAINING WALLS

Retaining walls backfilled on only one side should be designed to resist the lateral earth pressures imposed by the soil they retain. The following recommended parameters are for walls that restrain level backfill:

PARAMETER	VALUE
Lateral Earth Pressure *	35 pcf
Passive Earth Pressure	300 pcf
Coefficient of Friction **	0.40
Soil Unit Weight	125 pcf

Where: pcf is Pounds per Cubic Foot, and Lateral and Passive Earth Pressures are computed using the Equivalent Fluid Pressures.

*** For a restrained wall that cannot deflect at least 0.002 times its height, a uniform lateral pressure equal to 10 psf times the height of the wall should be added to the above lateral equivalent fluid pressure. This applies only to walls with level backfill.**

**** Not applicable for foundations on piles.**

The design values given above do not include the effects of any hydrostatic pressures behind the walls and assume that no surcharges, such as those caused by slopes, vehicles, or adjacent foundations will be exerted on the walls. If these conditions exist, those pressures should be added to the above lateral soil pressures. Where sloping backfill is desired behind the walls, we will need to be given the wall dimensions and the slope of the backfill in order to provide the appropriate design earth pressures. Heavy construction equipment should not be operated behind retaining and foundation walls within a distance equal to the height of a wall, unless the walls are designed for the additional lateral pressures resulting from the equipment.

The values given above are to be used to design only permanent foundation and retaining walls that are to be backfilled, such as conventional walls constructed of reinforced concrete or masonry.

It is not appropriate to use the above earth pressures and soil unit weight to back-calculate soil strength parameters for design of other types of retaining walls, such as soldier pile, reinforced earth, modular or soil nail walls. We can assist with design of these types of walls, if desired.

The passive pressure given is appropriate only for a shear key poured directly against undisturbed native soil, or for the depth of level, well-compacted fill placed in front of a retaining or foundation wall. The values for friction and passive resistance are ultimate values and do not include a safety factor. Restrained wall soil parameters should be utilized the wall and reinforcing design for a distance of 1.5 times the wall height from corners or bends in the walls, or from other points of restraint. This is intended to reduce the amount of cracking that can occur where a wall is restrained by a corner.

Wall Pressures Due to Seismic Forces

Per IBC Section 1803.5.12, a seismic surcharge load need only be considered in the design of walls over 6 feet in height. A seismic surcharge load would be imposed by adding a uniform lateral pressure to the above-recommended lateral pressure. The recommended seismic surcharge pressure for this project is 9**H** pounds per square foot (psf), where **H** is the design retention height of the wall. Using this increased pressure, the safety factor against sliding and overturning can be reduced to 1.2 for the seismic analysis.

Retaining Wall Backfill and Waterproofing

Backfill placed behind retaining or foundation walls should be coarse, free-draining structural fill containing no organics. This backfill should contain no more than 5 percent silt or clay particles and have no gravel greater than 4 inches in diameter. The percentage of particles passing the No. 4 sieve should be between 25 and 70 percent. The later section entitled ***Drainage Considerations*** should also be reviewed for recommendations related to subsurface drainage behind foundation and retaining walls.

The purpose of these backfill requirements is to ensure that the design criteria for a retaining wall are not exceeded because of a build-up of hydrostatic pressure behind the wall. Also, subsurface drainage systems are not intended to handle large volumes of water from surface runoff. The top 12 to 18 inches of the backfill should consist of a compacted, relatively impermeable soil or topsoil, or the surface should be paved. The ground surface must also slope away from backfilled walls at one to 2 percent to reduce the potential for surface water to percolate into the backfill.

Water percolating through pervious surfaces (pavers, gravel, permeable pavement, etc.) must also be prevented from flowing toward walls or into the backfill zone. Foundation drainage and waterproofing systems are not intended to handle large volumes of infiltrated water. The compacted subgrade below pervious surfaces and any associated drainage layer should therefore be sloped away. Alternatively, a membrane and subsurface collection system could be provided below a pervious surface.

Wall backfill should be placed in lifts and be properly compacted, in order for the above-recommended design earth pressures to be appropriate. The recommended wall design criteria assume that the backfill will be well-compacted in lifts no thicker than 12 inches. The compaction of backfill near the walls should be accomplished with hand-operated equipment to prevent the walls from being overloaded by the higher soil forces that occur during compaction. The section entitled ***General Earthwork and Structural Fill*** contains additional

recommendations regarding the placement and compaction of structural fill behind retaining and foundation walls.

The above recommendations are not intended to waterproof below-grade walls, or to prevent the formation of mold, mildew or fungi in interior spaces. Over time, the performance of subsurface drainage systems can degrade, subsurface groundwater flow patterns can change, and utilities can break or develop leaks. Therefore, waterproofing should be provided where future seepage through the walls is not acceptable. This typically includes limiting cold-joints and wall penetrations, and using bentonite panels or membranes on the outside of the walls. There are a variety of different waterproofing materials and systems, which should be installed by an experienced contractor familiar with the anticipated construction and subsurface conditions. Applying a thin coat of asphalt emulsion to the outside face of a wall is not considered waterproofing, and will only help to reduce moisture generated from water vapor or capillary action from seeping through the concrete. As with any project, adequate ventilation of basement and crawl space areas is important to prevent a buildup of water vapor that is commonly transmitted through concrete walls from the surrounding soil, even when seepage is not present. This is appropriate even when waterproofing is applied to the outside of foundation and retaining walls. We recommend that you contact an experienced envelope consultant if detailed recommendations or specifications related to waterproofing design, or minimizing the potential for infestations of mold and mildew are desired.

The ***General***, ***Slabs-On-Grade***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

SLABS-ON-GRADE

The building floors can be constructed as slabs-on-grade atop the existing native or fill soils, or on structural fill. However, for the additions off the western and southwestern sides of the residence, we recommend the existing soils be first recompacted and then at least 12 inches of compacted imported granular structural fill be placed beneath the floor slabs. The subgrade soil must be in a firm, non-yielding condition at the time of slab construction or underslab fill placement. Any soft areas encountered should be excavated and replaced with select, imported structural fill.

Even where the exposed soils appear dry, water vapor will tend to naturally migrate upward through the soil to the new constructed space above it. This can affect moisture-sensitive flooring, cause imperfections or damage to the slab, or simply allow excessive water vapor into the space above the slab. All interior slabs-on-grade should be underlain by a capillary break drainage layer consisting of a minimum 4-inch thickness of clean gravel or crushed rock that has a fines content (percent passing the No. 200 sieve) of less than 3 percent and a sand content (percent passing the No. 4 sieve) of no more than 10 percent. Pea gravel or crushed rock are typically used for this layer.

As noted by the American Concrete Institute (ACI) in the *Guides for Concrete Floor and Slab Structures*, proper moisture protection is desirable immediately below any on-grade slab that will be covered by tile, wood, carpet, impermeable floor coverings, or any moisture-sensitive equipment or products. ACI recommends a minimum 10-mil thickness vapor retarder for better durability and long term performance than is provided by 6-mil plastic sheeting that has historically been used. A vapor retarder is defined as a material with a permeance of less than 0.3 perms, as determined by ASTM E 96. It is possible that concrete admixtures may meet this specification, although the

manufacturers of the admixtures should be consulted. Where vapor retarders are used under slabs, their edges should overlap by at least 6 inches and be sealed with adhesive tape. The sheeting should extend to the foundation walls for maximum vapor protection.

If no potential for vapor passage through the slab is desired, a vapor *barrier* should be used. A vapor barrier, as defined by ACI, is a product with a water transmission rate of 0.01 perms when tested in accordance with ASTM E 96. Reinforced membranes having sealed overlaps can meet this requirement.

We recommend that the contractor, the project materials engineer, and the owner discuss these issues and review recent ACI literature and ASTM E-1643 for installation guidelines and guidance on the use of the protection/blotter material.

The ***General***, ***Permanent Foundation and Retaining Walls***, and ***Drainage Considerations*** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

EXCAVATIONS AND SLOPES

Temporary excavation slopes should not exceed the limits specified in local, state, and national government safety regulations. Also, temporary cuts should be planned to provide approximately a minimum 2 feet of space for construction of foundations, walls, and drainage. Temporary cuts to a maximum overall depth of about 4 feet may be attempted vertically in unsaturated soil, if there are no indications of slope instability. However, vertical cuts should not be made near property boundaries, or existing utilities and structures. Based upon Washington Administrative Code (WAC) 296, Part N, the soil at the subject site would generally be classified as Type B. Therefore, temporary cut slopes greater than 4 feet in height should not be excavated at an inclination steeper than 1:1 (Horizontal:Vertical), extending continuously between the top and the bottom of a cut.

The above-recommended temporary slope inclination is based on the conditions exposed in our explorations, and on what has been successful at other sites with similar soil conditions. It is possible that variations in soil and groundwater conditions will require modifications to the inclination at which temporary slopes can stand. Temporary cuts are those that will remain unsupported for a relatively short duration to allow for the construction of foundations, retaining walls, or utilities. Temporary cut slopes should be protected with plastic sheeting during wet weather. It is also important that surface runoff be directed away from the top of temporary slope cuts. Cut slopes should also be backfilled or retained as soon as possible to reduce the potential for instability. Please note that sand or loose soil can cave suddenly and without warning. Excavation, foundation, and utility contractors should be made especially aware of this potential danger. These recommendations may need to be modified if the area near the potential cuts has been disturbed in the past by utility installation, or if settlement-sensitive utilities are located nearby.

Water should not be allowed to flow uncontrolled over the top of any temporary or permanent slope. All permanently exposed slopes should be seeded with an appropriate species of vegetation to reduce erosion and improve the stability of the surficial layer of soil.

DRAINAGE CONSIDERATIONS

Footing drains should be used where: (1) crawl spaces or basements will be below a structure; (2) a slab is below the outside grade; or, (3) the outside grade does not slope downward from a building. Drains should also be placed at the base of all earth-retaining walls. These drains should be surrounded by at least 6 inches of 1-inch-minus, washed rock that is encircled with non-woven, geotextile filter fabric (Mirafi 140N, Supac 4NP, or similar material). At its highest point, a perforated pipe invert should be at least 6 inches below the bottom of a slab floor or the level of a crawl space. The discharge pipe for subsurface drains should be sloped for flow to the outlet point. Roof and surface water drains must not discharge into the foundation drain system. A typical footing drain detail is attached to this report as Plate 6. For the best long-term performance, perforated PVC pipe is recommended for all subsurface drains. Clean-outs should be provided for potential future flushing or cleaning of footing drains.

As a minimum, a vapor retarder, as defined in the ***Slabs-On-Grade*** section, should be provided in any crawl space area to limit the transmission of water vapor from the underlying soils. Crawl space grades are sometimes left near the elevation of the bottom of the footings. As a result, an outlet drain is recommended for all crawl spaces to prevent an accumulation of any water that may bypass the footing drains. Providing a few inches of free draining gravel underneath the vapor retarder is also prudent to limit the potential for seepage to build up on top of the vapor retarder.

Groundwater was observed during our field work. If seepage is encountered in an excavation, it should be drained from the site by directing it through drainage ditches, perforated pipe, or French drains, or by pumping it from sumps interconnected by shallow connector trenches at the bottom of the excavation.

The excavation and site should be graded so that surface water is directed off the site and away from the tops of slopes. Water should not be allowed to stand in any area where foundations, slabs, or pavements are to be constructed. Final site grading in areas adjacent to a building should slope away at least one to 2 percent, except where the area is paved. Surface drains should be provided where necessary to prevent ponding of water behind foundation or retaining walls. A discussion of grading and drainage related to pervious surfaces near walls and structures is contained in the ***Foundation and Retaining Walls*** section.

GENERAL EARTHWORK AND STRUCTURAL FILL

All building and pavement areas should be stripped of surface vegetation, topsoil, organic soil, and other deleterious material. The stripped or removed materials should not be mixed with any materials to be used as structural fill, but they could be used in non-structural areas, such as landscape beds.

Structural fill is defined as any fill, including utility backfill, placed under, or close to, a building, or in other areas where the underlying soil needs to support loads. All structural fill should be placed in horizontal lifts with a moisture content at, or near, the optimum moisture content. The optimum moisture content is that moisture content that results in the greatest compacted dry density. The moisture content of fill is very important and must be closely controlled during the filling and compaction process.

The allowable thickness of the fill lift will depend on the material type selected, the compaction equipment used, and the number of passes made to compact the lift. The loose lift thickness should

not exceed 12 inches, but should be thinner if small, hand-operated compactors are used. We recommend testing structural fill as it is placed. If the fill is not sufficiently compacted, it should be recompacted before another lift is placed. This eliminates the need to remove the fill to achieve the required compaction. The following table presents recommended levels of relative compaction for compacted fill:

LOCATION OF FILL PLACEMENT	MINIMUM RELATIVE COMPACTION
Beneath slabs or walkways	95%
Filled slopes and behind retaining walls	90%
Beneath pavements	95% for upper 12 inches of subgrade; 90% below that level

Where: Minimum Relative Compaction is the ratio, expressed in percentages, of the compacted dry density to the maximum dry density, as determined in accordance with ASTM Test Designation D 1557-91 (Modified Proctor).

Structural fill that will be placed in wet weather should consist of a coarse, granular soil with a silt or clay content of no more than 5 percent. The percentage of particles passing the No. 200 sieve should be measured from that portion of soil passing the three-quarter-inch sieve.

LIMITATIONS

The conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our exploration and assume that the soil and groundwater conditions encountered in the test borings are representative of subsurface conditions on the site. If the subsurface conditions encountered during construction are significantly different from those observed in our explorations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. Unanticipated conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking samples in test borings. Subsurface conditions can also vary between exploration locations. Such unexpected conditions frequently require making additional expenditures to attain a properly constructed project. It is recommended that the owner consider providing a contingency fund to accommodate such potential extra costs and risks. This is a standard recommendation for all projects.

This report has been prepared for the exclusive use of Steve and Joanne Adams and their representatives, for specific application to this project and site. Our conclusions and recommendations are professional opinions derived in accordance with our understanding of current local standards of practice, and within the scope of our services. No warranty is expressed or implied. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Our services also do not include assessing or minimizing the potential for biological hazards, such as mold, bacteria, mildew and fungi in either the existing or proposed site development.

ADDITIONAL SERVICES

In addition to reviewing the final plans, Geotech Consultants, Inc. should be retained to provide geotechnical consultation, testing, and observation services during construction. This is to confirm that subsurface conditions are consistent with those indicated by our exploration, to evaluate whether earthwork and foundation construction activities comply with the general intent of the recommendations presented in this report, and to provide suggestions for design changes in the event subsurface conditions differ from those anticipated prior to the start of construction. However, our work would not include the supervision or direction of the actual work of the contractor and its employees or agents. Also, job and site safety, and dimensional measurements, will be the responsibility of the contractor.

During the construction phase, we will provide geotechnical observation and testing services when requested by you or your representatives. Please be aware that we can only document site work we actually observe. It is still the responsibility of your contractor or on-site construction team to verify that our recommendations are being followed, whether we are present at the site or not.

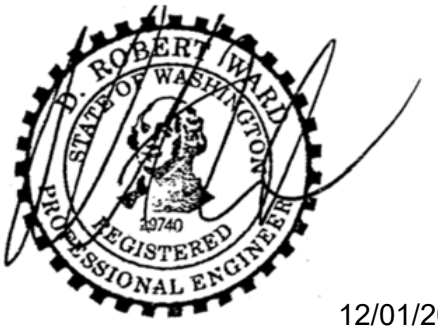
The following plates are attached to complete this report:

Plate 1	Vicinity Map
Plate 2	Site Exploration Plan
Plates 3 - 5	Test Boring Logs
Plate 6	Typical Footing Drain Detail

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.



12/01/2023

D. Robert Ward, P.E.
Principal

DRW:kg



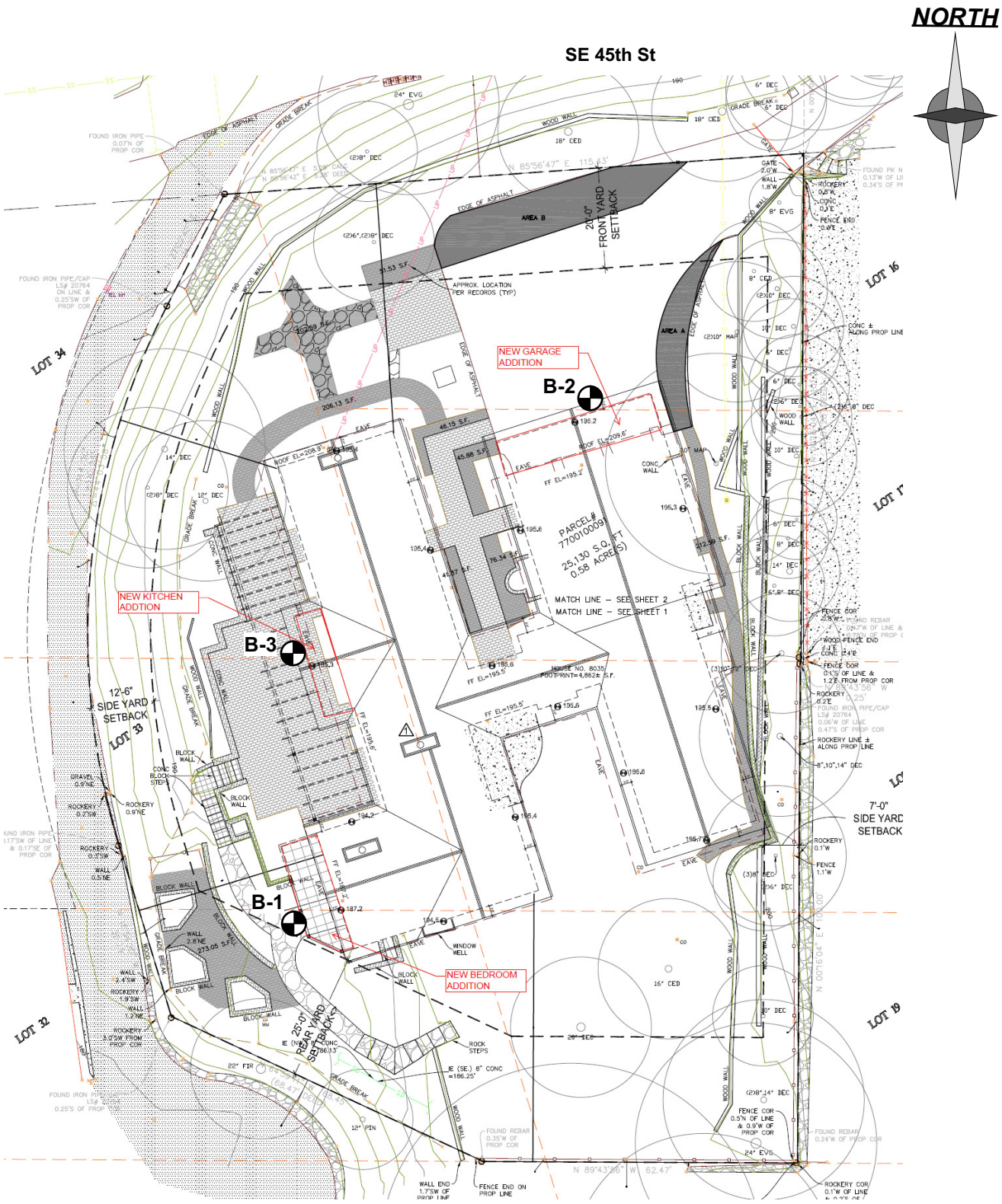
(Source: Microsoft MapPoint, 2013)

GEOTECH CONSULTANTS, INC.

VICINITY MAP

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:		Plate:
23365	Dec. 2023		1



Legend:

Test Boring Location

GEOTECH CONSULTANTS, INC.

SITE EXPLORATION PLAN

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:		Plate:
23365	Dec. 2023	No Scale	2

BORING 1

Elevation ±186.7 feet

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description
					FILL	Brown and gray-brown very silty SAND with gravel, organics, and wood debris, fine-grained, moist, loose **(FILL)**
			7	1		
						TOPSOIL
5			9	2	ML	Brown with rust mottling, sandy SILT with trace gravel and organics, non-plastic, jumbled, loose (Colluvium)
						-becomes gray with rust mottling, with no organics
			16	3		
						Brown SILT with sand and trace gravel, non-plastic, laminated, moist, medium-dense
10			29	4	ML	-becomes gray with rust mottling, medium-dense to dense, with occasional gravelly sand seams
			**66	5		-becomes slightly plastic, dense
15			50/6"	6	SM SP	Gray-brown gravelly slightly silty SAND, fine- to coarse-grained, moist, very dense
			50/4"	7		
20						
25						
30						

*** Test boring was terminated at 16.4 feet on November 9, 2023.**

*** No groundwater was encountered during drilling.**

**** Overstated blow counts due to driving on gravels.**

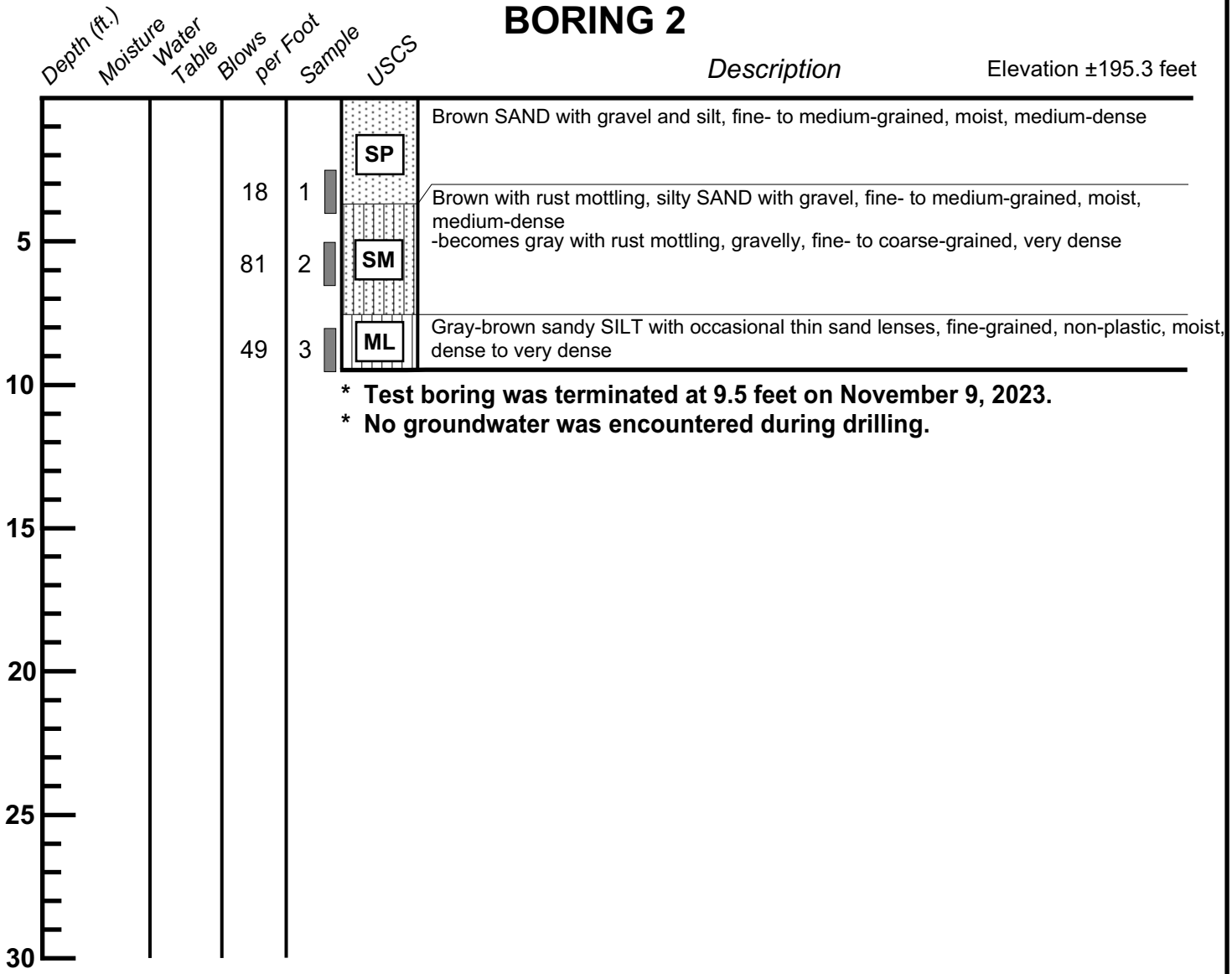
GEOTECH CONSULTANTS, INC.

TEST BORING LOG

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:	Logged by:	Plate:
23365	Dec. 2023	ASM	3

BORING 2



*** Test boring was terminated at 9.5 feet on November 9, 2023.**

*** No groundwater was encountered during drilling.**

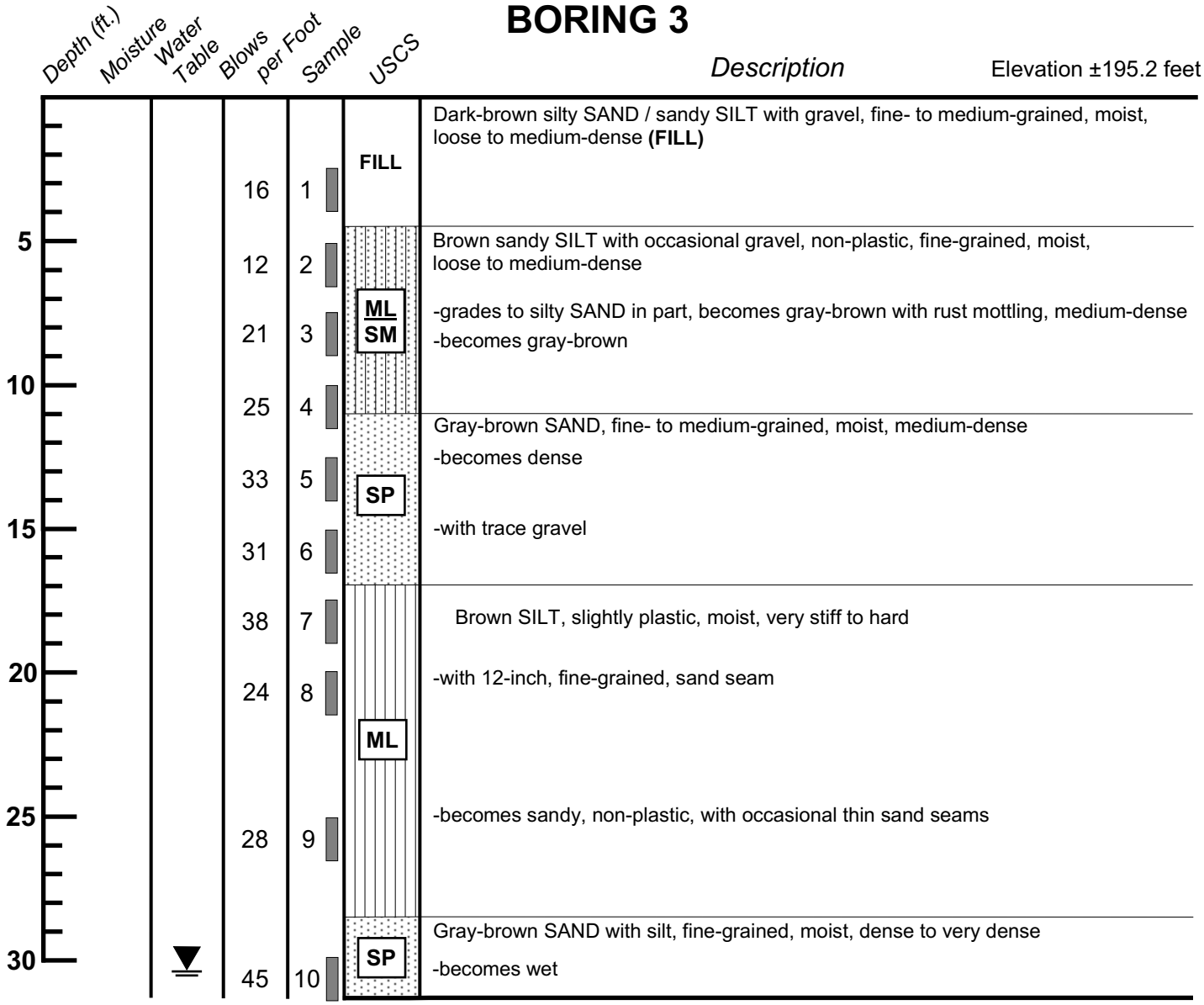
GEOTECH
CONSULTANTS, INC.

TEST BORING LOG

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:	Logged by:	Plate:
23365	Dec. 2023	ASM	4

BORING 3



*** Test boring was terminated at 31.5 feet on November 9, 2023.**

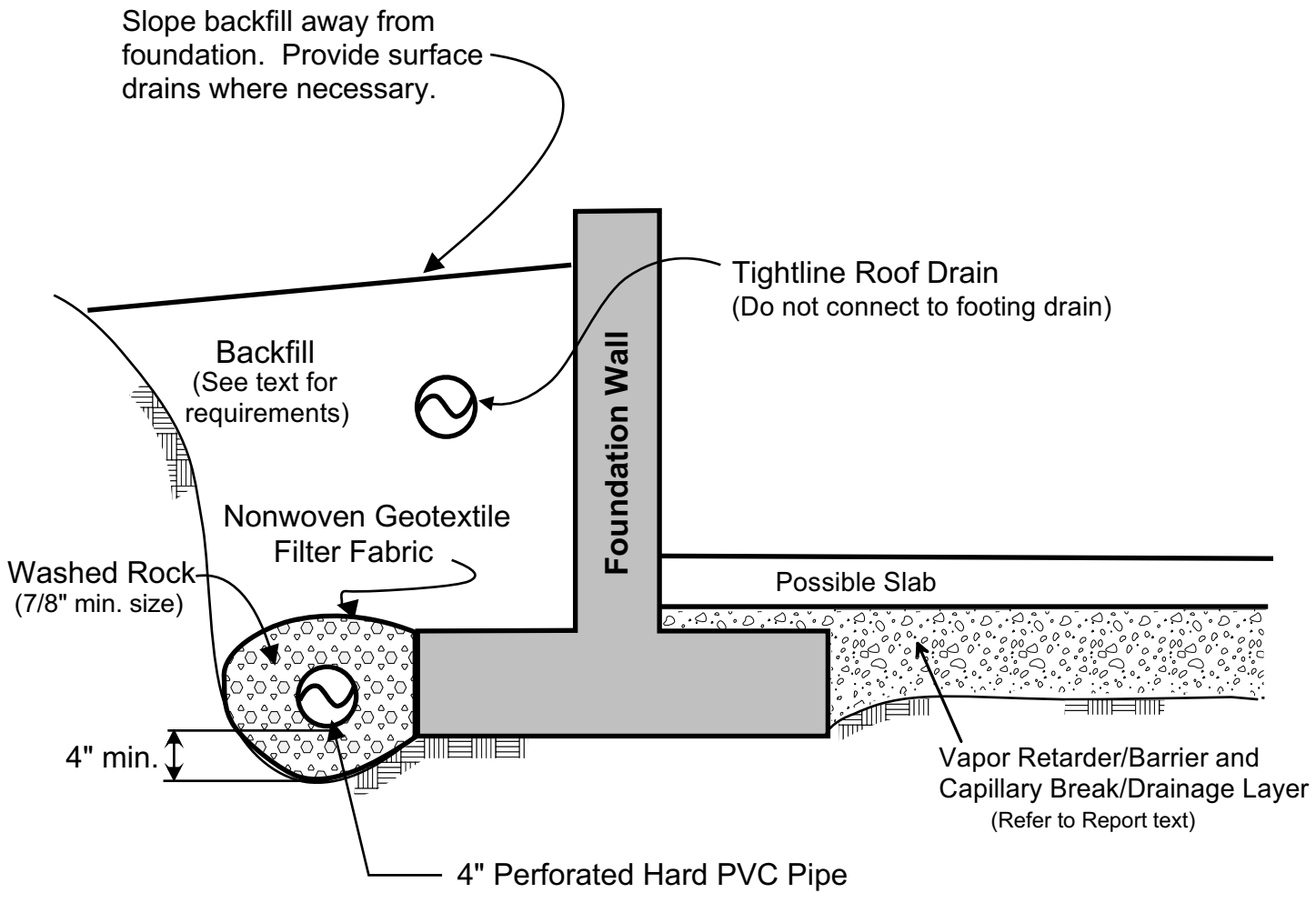
*** Groundwater seepage was encountered at 30.5 feet during drilling.**

GEOTECH
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TEST BORING LOG

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:	Logged by:	Plate:
23365	Dec. 2023	ASM	5



NOTES:

(1) In crawl spaces, provide an outlet drain to prevent buildup of water that bypasses the perimeter footing drains.

(2) Refer to report text for additional drainage, waterproofing, and slab considerations.

GEOTECH
CONSULTANTS, INC.

FOOTING DRAIN DETAIL

8035 Southeast 45th Street
Mercer Island, Washington

Job No:	Date:		Plate:
23365	Dec. 2023		6

GEOTECH
CONSULTANTS, INC.

2401 10th Ave E
Seattle, Washington 98102
(425) 747-5618

August 6, 2024

JN 23365

Steve and Joanne Adams
8035 Southeast 45th Street
Mercer Island, Washington 98040

Sent to: McFadden Design
Attention: Michael McFadden
via email: michael@mcfaddendesign.com

Subject: **Project Update and Review of Plans**
Proposed Residence Addition Project
8035 Southeast 45th Street
Mercer Island, Washington

Greetings:

We completed a geotechnical engineering study for this residence addition project to be constructed at 8035 Southeast 45th Street on Mercer Island dated December 1, 2023. Plans have subsequently been submitted to the City of Mercer Island. Based on recent comments by city personnel, some updated geotechnical information (specifically with regards to providing "mitigation sequencing") and our review of the project plans has been requested. This report provides information for both of these requests.

With regards to mitigation sequencing, we have provided the guidelines noted in the Mercer Island Municipal Code below, followed by our response/recommendations in *italics*.

A. Avoiding the impact altogether by not taking a certain action or parts of an action. The applicant shall consider reasonable, affirmative steps and make best efforts to avoid critical area impacts. However, avoidance shall not be construed to mean mandatory withdrawal or denial of the development proposal or activity if the proposal or activity is an allowed, permitted, or conditional use in this title. In determining the extent to which the proposal should be redesigned to avoid the impact, the code official may consider the purpose, effectiveness, engineering feasibility, commercial availability of technology, best management practices, safety and cost of the proposal and identified changes to the proposal. Development proposals should seek to avoid, minimize and mitigate overall impacts based on the functions and values of all of the relevant critical areas and based on the recommendations of a critical area study. If impacts cannot be avoided through redesign, use of a setback deviation pursuant to section 19.06.110(C), or because of site conditions or project requirements, the applicant shall then proceed with the sequence of steps in subsections B through E of this section.
The new development for the project will be located in flat areas that are essentially already covered by existing imperious surfaces. No development will be done on any steep slopes. All new building loads will be founded on or into competent native soil, and thus the steep slope on the western edge of the property will not be affected by this project.

B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, using a setback deviation pursuant to section 19.06.110(C), using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.

As noted above, the new development (building additions) will be located in flat areas that are covered with impervious surfaces. Also, the development will not extend into the western steep slope. Thus, the western slope will not be affected or impacted by the proposed development.

C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
Since the impacts are limited to the areas that are already covered with impervious surfaces, there are no needed repairs, rehabilitation, or restoration needed.

D. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
Areas of existing impervious surfaces will be replaced with new building roofs. Thus, no new impervious surfaces are proposed. Thus, the impact to the site is extremely limited and will not impact the site.

E. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.
None of these are needed for this project in our opinion.

E. Monitoring the impact and taking appropriate corrective measures to maintain the integrity of compensating measures.
During the project, the contractor will monitor the areas surrounding the areas of disturbance, which currently contain impervious surfaces. And damage to these the impervious-surface areas outside of the new additions will be repaired to current conditions.

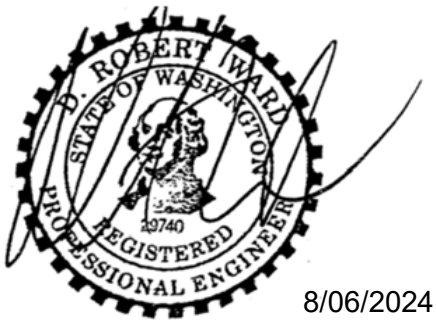
We have completed a general review of the geotechnical aspects of the plans for the residence addition project. The plans we reviewed include: 1) Sheets S1.0 through S5.0, which were prepared by Quantum Engineering dated May 3, 2024, and 2) Sheet A1.0 through A6.0, which were prepared by McFadden Design dated May 1, 2024. In our judgment, the plans conform to the recommendations in our geotechnical engineering report. We prepared a “Statement of Risk” in our 2023 study. However, we have been requested to update the statement based on our review of the project plans. As such, we make the following statement:

It is our professional opinion that the plans for the proposed project will render the development as safe as if it were not located in a geologically hazardous area and will not adversely impact adjacent properties.

If there are any questions regarding this review letter, or if we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.



D. Robert Ward, P.E.
Principal 8/06/2024

DRW:kg

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
206.275.7605 | www.mercerisland.gov/cpd

PUBLIC NOTICE OF DECISION

NOTICE IS HEREBY GIVEN that approval has been granted for the application described below:

File No.:	CAO24-001
Permit Type:	Type III
Description of Request:	A request for a Critical Area Review 2 to remodel an existing sing-family residence within geological hazardous areas.
Applicant/ Owner:	Craig Belcher / Steve & Joanne Adams
Location of Property:	8035 SE 45th St, Mercer Island, WA 98040 King County Assessor tax parcel number: 770010-0091

SEPA Compliance:
The project is exempt from SEPA Review pursuant to WAC 197-11-800(1).

Applicable Development Regulations:	Pursuant to Mercer Island City Code (MICC) 19.15.030 Table A, applications for Critical Area Review 2 are required to be processed as Type III land use reviews. Processing requirements for Type III land use reviews are further detailed in MICC 19.15.030 Table B.
Other Associated Permits:	2307-175
Project Documents:	https://mieplan.mercergov.org/public/CAO24-001
Decision:	Approved subject to conditions.

Appeal Rights: *DISCLAIMER: This information is provided as a courtesy. It is the ultimate responsibility of the appellant to comply with all legal requirements for the filing of an appeal.*

Parties of record have the right to appeal certain permit and land use decisions. In some cases, other affected parties also have appeal rights. Depending on the type of decision, the appeal may be heard by a City Hearing Examiner, Commission, Board, or City Council, or outside the City to the State Shoreline Hearings Board, the State Growth Management Hearings Board, or King County Superior Court. For a comprehensive list of actions and the applicable entity who will hear the appeal, see MICC 19.15.030 Table B.

If you desire to file an appeal of a decision that is appealable to the City, you must submit the appropriate form and file it with the City Clerk **within the time stated in the Notice of Decision.** Forms are available from Community Development and Planning. Upon receipt of a timely complete appeal application and appeal fee, an appeal hearing will be scheduled.

To reverse, modify or remand a decision, the appeal hearing body must find that there has been substantial error; the proceedings were materially affected by irregularities in procedure; the decision was unsupported by material and substantial evidence in view of the entire record; or the decision is in conflict with the City's applicable decision criteria.

Application Process Information:	Date of Application:	February 7, 2024
	Determined to Be Complete:	April 24, 2024
	Public Comment Period:	May 6, 2024 through 5:00 PM on June 5, 2024
	Date Notice of Decision Issued:	September 23, 2024
	Appeal Filing Deadline:	5:00 PM on October 7, 2024
Project Contact:	Grace Manahan, Code Compliance Planner grace.manahan@mercerisland.gov | (206) 275-7764	