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# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)



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## STAFF REPORT

### CRITICAL AREA REVIEW 2

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<b>Project No.:</b>	CAO24-025
<b>Description:</b>	A request for a Critical Area Review 2 for the demolition of an existing two-car, attached garage and the construction of a new, two-car garage with new second floor above, and renovation of the existing single-family residence on a property containing geologically hazardous areas.
<b>Applicant / Owner:</b>	Jessyca Poole (Poole Architecture) / Nathan Korpela and Shaunna Wiens
<b>Site Address:</b>	8441 SE 33rd Place, Mercer Island, WA 98040; Identified by King County Assessor tax parcel number 666680-0290.
<b>Zoning District:</b>	Single Family Residential (R-9.6)
<b>Staff Contact:</b>	Molly McGuire, Planner
<b>Exhibits:</b>	<ol style="list-style-type: none"><li>1. Development Application, received by the City of Mercer Island on July 18, 2024</li><li>2. Revised Development Plan Set, dated September 26, 2024 and received November 27, 2024</li><li>3. Project Narrative, received July 18, 2024</li><li>4. Geotechnical Engineering Report prepared by Zipper Geo Associates, LLC, dated November 28, 2023 and received July 18, 2024</li><li>5. Plan Review Comments prepared by Zipper Geo Associates, LLC, dated June 27, 2024 and received July 18, 2024</li><li>6. Concurrent Review Request Form, received July 18, 2024</li><li>7. Critical Areas Disclosure and Notice on Title, recorded with the King County Recorder's Office on October 21, 2024, under Recorder's File No. 20241021000797</li><li>8. Landscaping Plan, received October 24, 2024</li><li>9. Hazard Report, generated by the City of Mercer Island on September 5, 2024</li><li>10. Letter of Complete Application issued by the City of Mercer Island on July 31, 2024</li><li>11. Notice of Application, dated August 5, 2024</li><li>12. City of Mercer Island Review Letters<ol style="list-style-type: none"><li>12.1. Review Letter 1, dated September 10, 2024</li></ol></li></ol>

13. Applicant Response to City Review Letters
  - 13.1. Applicant Response to Review Letter 1, dated October 24, 2024
14. Public Notice of Decision, dated December 23, 2024

## INTRODUCTION

### I. Project Description

The applicant has requested approval of a Critical Area Review 2 for the demolition of an existing two-car, attached garage and the construction of a new, two-car garage with new second floor above, and renovation of the existing single-family residence on a property containing geologically hazardous areas.

The proposal consists of the following components:

1. A request to demolish an existing two-car garage, construct a new, two-car garage with a second floor above, and renovate an existing single-family residence subject to the standards of Mercer Island City Code (MICC) 19.07.160.

### II. Site Description and Context

1. The proposed activity is to occur at 8441 SE 33rd Place, Mercer Island, WA 98040. The site is designated Single Family Residential (zoned R-9.6). Adjacent properties are within the R-9.6 and R-8.4 zone and contain residential and public park uses. The subject site contains potential slide, steep slope, erosion, and seismic geologically hazardous areas (**Exhibit 9**).

## Findings of Fact & Conclusions of Law

### III. Application Procedure

1. The application for a Critical Area Review 2 was received by the City of Mercer Island on July 18, 2024. The application was determined to be complete on July 31, 2024 (**Exhibit 10**).
2. Under MICC 19.15.030, Table A, applications for Critical Area Review 2 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, as set forth in MICC 19.15.090 (**Exhibit 11**). The comment period for the public notice period lasted for 30 days, from August 5, 2024 to September 4, 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.
4. No public comments were received during the public comment period.

### IV. State Environmental Policy Act (SEPA)

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

### 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 Disclosure and Notice on Title has been recorded with the King County Recorder's Office on October 21, 2024 under Recorder's File Number 20241021000797 (**Exhibit 7**). The Notice informs the public of the presence of critical areas and proposed mitigation due to the proposed development; 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 applicant submitted a Concurrent Review Request Form (**Exhibit 6**) requesting consolidation of the review of geologically hazardous areas together with construction permit review under Building Permit No. 2407-073.

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 Geotechnical Engineering Report (**Exhibit 4**) finds that the mitigation of potential landslide hazard impacts associated with the proposed remodel has been achieved by having no disturbance of the landslide hazard area itself and by limiting the proposed building alterations to a small footprint within an area that was graded during initial site construction. Limiting the proposed alterations to level portions of the site will effectively mitigate potential adverse impacts to the portions of the site inclined at 15 percent or greater which are erosion hazard areas per the MICC. The Report also finds that the risk of a seismic event presenting severe risk of damage is low, and as such, the site does not meet the MICC definition of a seismic hazard.

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 Geotechnical Engineering Report (**Exhibit 4**) includes all requirements for a critical area study, as modified due to the development proposal having limited impacts on the critical areas; therefore, this requirement is met.

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:** Mercer Island GIS Mapping indicates that the subject property contains landslide, steep slope, erosion, and seismic hazard areas (**Exhibit 9**). The Geotechnical Engineering Report finds that the subject property does not contain seismic hazard areas, based on site conditions observed by the qualified professional (**Exhibit 4**).

- 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:** Alteration to a landslide hazard area is proposed as part of the proposed development. The Geotechnical Engineering Report (**Exhibit 4**) contains recommendations and findings that mitigation of potential landslide hazard impacts associated with the proposed remodel has been achieved by having no disturbance of the landslide hazard area itself and by limiting the proposed building alterations to a small footprint within an area that was graded during initial site construction. A post-design memorandum finds that the proposed development is consistent with the recommendations in the report (**Exhibit 5**); therefore, this requirement is met.

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 Report (**Exhibit 4**) finds that the risk of a seismic event presenting severe risk of damage is low, and as such, the site does not meet the MICC definition of a seismic hazard. The report also finds that mitigation of potential landslide hazard impacts associated with the proposed remodel has been achieved by having no disturbance of the landslide hazard area itself and by limiting the proposed building alterations to a small footprint within an area that was graded during initial site construction; therefore, this requirement is met.

- 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 Geotechnical Engineering Report (**Exhibit 4**) provides a statement of risk matching statement (b) and (c) above. The proposed improvements have been designed so that the risk to the site and adjacent property are such that the site is determined to be safe. Construction practices as proposed for the alteration would render the development as safe as if it were not located in a geologically hazardous area and would not adversely impact adjacent properties. The applicant also submitted a post-design memorandum prepared by the qualified professional confirming that the proposed improvements comply with the design recommendations in the report (**Exhibit 5**); therefore, this requirement has been met.

- 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 proposed development would not be located closer to the landslide hazard area than the existing single-family residence. Minor modifications are proposed on the east side of the existing single-family residence, which include removal of a gravel path, stair and wall, and expansion of an existing deck. The Geotechnical Engineering Report (**Exhibit 4**) finds that the proposal effectively demonstrates that there is no impact on the regulated areas or that it adequately mitigates risks of the hazards. Mitigation of potential landslide hazard impacts associated with the proposed remodel has been achieved by having no disturbance of the landslide hazard area itself and by limiting the proposed building alterations to a small footprint within an area that was graded during initial site construction; therefore, these standards have been met.

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 (**Exhibit 4**) finds that the risk of a seismic event presenting a severe risk of damage is low, and as such, the site does not meet the MICC definition of a 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 proposed development has been reviewed for compliance with chapter 15.09 and approved by Senior Development Engineer, Ruji Ding. The Geotechnical Engineering Study (**Exhibit 4**) finds that, provided construction is completed in accordance with BMPs contained in a city-approved TESC plan, it is the geotechnical engineering professional's opinion that the risk of sediment generation and off-site sediment transport will be low. As conditioned, the proposed development shall obtain all applicable approvals

from the city, which includes a construction permit that will be reviewed by all review disciplines for compliance with the MICC; therefore, these standards will be met, as conditioned.

#### CONDITIONS OF APPROVAL

1. The project proposal shall be in substantial conformance with **Exhibit 2** and all applicable development standards contained within Mercer Island City Code (MICC) Chapter 19.07.
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. Any changes to the design as a result of the review of the associated building permit may require a new post-design memorandum prepared by the geotechnical professional confirming that the proposed development is consistent with the design recommendations in the Geotechnical Engineering Report (**Exhibit 4**) to be submitted.
4. 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.
5. Landscaping of all disturbed areas outside of building footprints and installation of hardscape consistent with the landscaping plan in **Exhibit 8**, or as revised under the associated building permit, is required prior to final inspection of the associated building permit.

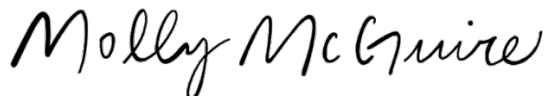
#### DEVELOPMENT REGULATION COMPLIANCE – DISCLOSURE

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 application **CAO24-025**, 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 December, 2024



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**Molly McGuire**  
**Senior 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](http://www.mercerisland.gov)



### CITY USE ONLY

PROJECT#	RECEIPT #	FEE

Date Received:

Received By:

### DEVELOPMENT APPLICATION

STREET ADDRESS/LOCATION		ZONE
COUNTY ASSESSOR PARCEL #'S		PARCEL SIZE (SQ. FT.)
PROPERTY OWNER <i>(required)</i>	ADDRESS <i>(required)</i>	CELL/OFFICE <i>(required)</i> E-MAIL <i>(required)</i>
PROJECT CONTACT NAME	ADDRESS	CELL/OFFICE E-MAIL
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

\_\_\_\_\_ DATE

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

ATTACH RESPONSE TO DECISION CRITERIA IF APPLICABLE

**CHECK TYPE OF LAND USE APPROVAL REQUESTED:**

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

**PROJECT INFORMATION**

**PROJECT OWNER:**  
NATHAN KORPELA AND SHAUNNA WIENS  
8441 SE 33rd PL  
Mercer Island, WA

**PROPERTY ADDRESS:**  
SAME AS ABOVE

**PROPERTY TAX ACCOUNT NO.:**  
666680-0290

**LEGAL DESCRIPTION:**  
PARKRIDGE ADD AND INT IN TR C  
PLAT BLOCK  
PLAT LOT 29

**PROJECT TEAM:**  
**ARCHITECT:**  
JESSYCA POOLE  
POOLE ARCHITECTURE  
7718 FREMONT AVE N  
SEATTLE, WA 98103  
CELL: 206-484-3802

**STRUCTURAL ENGINEER:**  
BRETT MOZDEN  
SWENSON SAY FAGET  
2124 THIRD AVE. SUITE 100  
SEATTLE, WA 98121  
PHONE: 206-443-6212

**GENERAL CONTRACTOR:**  
ALIGN BUILDS

**BUILDING CODES:**  
2021 INTERNATIONAL RESIDENTIAL CODE (IRC)  
2021 WASHINGTON STATE ENERGY CODE

**GSF: ALLOWABLE 40% OF LOT AREA = 4(11814) = 4726**  
BASEMENT: 503 (SEE BASEMENT FLOOR AREA CALC)  
1ST FLOOR (ALL CEILINGS <12'): 1257  
GARAGE >250SQFT: 372 SQFT  
2ND FLOOR: 710 < 12'  
PORTION OF 2ND FLR >12' BUT <16': 50X1.5= 75 SQFT  
TOTAL PROPOSED: 2917 [OK]

**HEATED FLOOR AREA**  
BASEMENT EXIST: 1185  
BASEMENT PROPOSED: 1046  
1ST EXIST: 1437  
1ST PROPOSED: 1195  
2ND PROPOSED: 688  
TOTAL EXIST: 2622  
TOTAL PROPOSED: 2925

**ENERGY CODE COMPLIANCE - 2021 WESC RESIDENTIAL**

**PERSCRIPITIVE PATH**  
NEED 5.0 CREDITS FOR ADDITION TO EXIST BUILDING GREATER THAN 500 SQFT BUT LESS THAN 1500 SQFT

**ENERGY EQUALIZATION CREDITS:**  
SYSTEM TYPE 3 (1.5 CREDITS)- INITIAL HEATING SYSTEM USING A HEAT PUMP AND SUPPLEMENTAL HEATING PROVIDED BY COMBUSTION FURNACE EMETING MINIMUM STANDARDS LISTED IN TABLE C403.3.2(5)b FOUND IN 2021 WESC COMMERCIAL ENERGY CODE

**OPTION 3.2 (.5 CREDITS) AIR SOURCE CENTRALLY DUCTED HEAT PUMP WITH MINIMUM (HSPF 9.5) HSPF2 8.5**  
**OPTION 6.1 (3.0 CREDITS) SOLAR ELECTRIC SYSTEM** GENERATING MINIMUM OF 3600WH ANNUALLY (SEE UPLOADED SOLAR REPORT FOR DOCUMENTATION AND SITE PLAN SHEET A1 FOR PROPOSED SOLAR ARRAY LOCATION)

5.0 CREDITS TOTAL PROPOSED [OK]

2. NOTE ALL NEW EXTERIOR WINDOWS, GLAZED EXTERIOR DOORS AND SKYLIGHTS TO BE NFRC CERTIFIED.  
3. A MINIMUM OF 90 PERCENT OF PERMANENTLY INSTALLED LAMPS SHALL BE HIGH EFFICACY LUMINAIRES  
4. PROVIDE A PROGRAMMABLE THERMOSTAT FOR THE PRIMARY SPACE CONDITIONING SYSTEM WITHIN EACH DWELLING UNIT PER SEC R403.1.1.

**ROOF VENTING**

VENTING REQ'S BASED ON 1/300 OF ROOF AREA PROVIDED THAT:  
1. CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN WINTER SIDE OF THE CEILING.  
2. AT LEAST 40% BUT NOT MORE THAN 50% OF THE VENTING IS PROVIDED BY VENTS LOCATED IN THE UPPER PORTION OF THE RAFTER SPACE.

**ROOF 1 @ 2ND FLOOR ADDITION:**  
760 SQ.FT. VENTED AREA/300 = 2.5 SQ.FT. = 360 SQ.IN. REQ'D  
UPPER AND LOWER EAVE VENTS - 24" T/W/ 12 SQ.IN./FT NFA 24"X2(12SQ.IN.) = 576 SQ.IN. NFA - OK  
(UPPER EAVE VENTING = 50% TOTAL VENTING - OK)

**ROOF 2 @ FIRST FLOOR:**  
751 SQ.FT. VENTED AREA/300 = 2.5 SQ.FT. = 360 SQ.IN. REQ'D  
LOWER EAVE VENT=18"-8" WITH 12SQ.IN./FT NFA 18.66'X12SQ.IN. = 233SQ.IN. NFA  
UPPER EAVE VENT = PROVIDE 18'  
18'X12SQ.IN. = 216 SQ.IN. NFA  
TOTAL VENTING AREA = 233 + 216 = 449SQ.IN. NFA - OK  
(UPPER EAVE VENTING = 216SQ.IN.=48% TOTAL NFA - OK)

**ROOF 3 @ FIRST FLOOR:**  
371 SQ.FT. VENTED AREA/300 = 1.2 SQ.FT. = 173 SQ.IN. REQ'D  
UPPER EAVE-USE COR-A-VENT ROOF-2-WALL WITH 6.75 SQ.IN. NFA PER 12"  
19'X6.75SQ.IN. = 128 SQ.IN. NFA (MUST BE 40-50% TOTAL NFA)  
LOWER EAVE VENT = PROVIDE 12" VENTING AT EAVE 12'X12SQ.IN. = 144 SQ.IN.NFA  
TOTAL VENTING AREA = 128+144= 272 SQ.IN. NFA - OK  
(UPPER EAVE VENTING = 128SQ.IN.= 47% TOTAL NFA - OK)

**ARCHITECTURAL DRAWING INDEX**  
A1 PROJECT INFORMATION, SITE PLAN, SITE DIAGRAMS  
A1.5 DEMOLITION PLANS  
A2 AS BUILT FLOOR PLANS AND ELEVATIONS  
A3 PROPOSED BASEMENT FLOOR PLAN  
A4 PROPOSED FIRST FLOOR PLAN  
A5 PROPOSED SECOND FLOOR PLAN  
A6 ELEVATIONS  
A7 ELEVATIONS AND WINDOW-DOOR SCHEDULE  
A8 BUILDING SECTIONS, DETAILS

**LOT SLOPE**  
261.6 HIGH POINT, 201.5 LOW POINT PER SURVEY  
60/97.8" = 61% SLOPE

9% HARDSCAPE ALLOWED  
20% LOT COVERAGE ALLOWED  
80% REQUIRED LANDSCAPING AREA

LOT SIZE = 11,814 SQFT

ALLOWABLE LOT COVERAGE = 20% (11,814) = 2,362.8  
HOUSE + GARAGE INCL EAVES = 2,659  
DRIVEWAY = 819  
TOTAL EXIST = 3478

DEMO EXIST GARAGE + EAVES = 653 SQFT  
DEMO EXIST DRIVEWAY = 819 SQFT  
DEMO EXIST PORTION OF HOUSE + EAVES = 631  
TOTAL PROPOSED REMOVED = 2103  
CAN REPLACE 1/2 (2103) = 1051.5 SQFT

REMAINING LEFT= 1375 + 1051.5 = 2426.5 ALLOWED

PROPOSED:  
ROOF AREA 1 (INCL EAVES) = 840 SQFT  
ROOF AREA 2 (INCL EAVES) = 1214 SQFT  
TOTAL ROOF AREA = 2054  
ROOF AREA REMAINING = 1375  
TOTAL ADDED ROOF AREA = 679 (2054-1375)  
DRIVEWAY = 364 SQFT  
TOTAL LOT COVERAGE PROPOSED = 1375+679+364 = 2418 = OK

ALLOWABLE HARDSCAPE COVERAGE = 9% = 1,063

CURRENT HARDSCAPE COVERAGE = 1099  
ROCKERIES - 147  
UNCOVERED DECKS - 202  
UNCOVERED PATIOS - 162 (REMOVE)  
GRAVEL PATHS - 510 (REMOVE)  
STAIRS - 78 (REMOVE)  
TOTAL REMAINING = 349

PROPOSED NEW  
UNCOVERED DECKS - 52  
UNCOVERED PATIOS - 294  
WALKWAYS - 253.5  
RETAINING WALLS - 37.5  
TOTAL NEW = 637

TOTAL PROPOSED = 986 SQFT - OK

ZONING  
PART R-8.4 ND PART R-9.6 - LOT GOVERNED BY R 9.6

SETBACKS

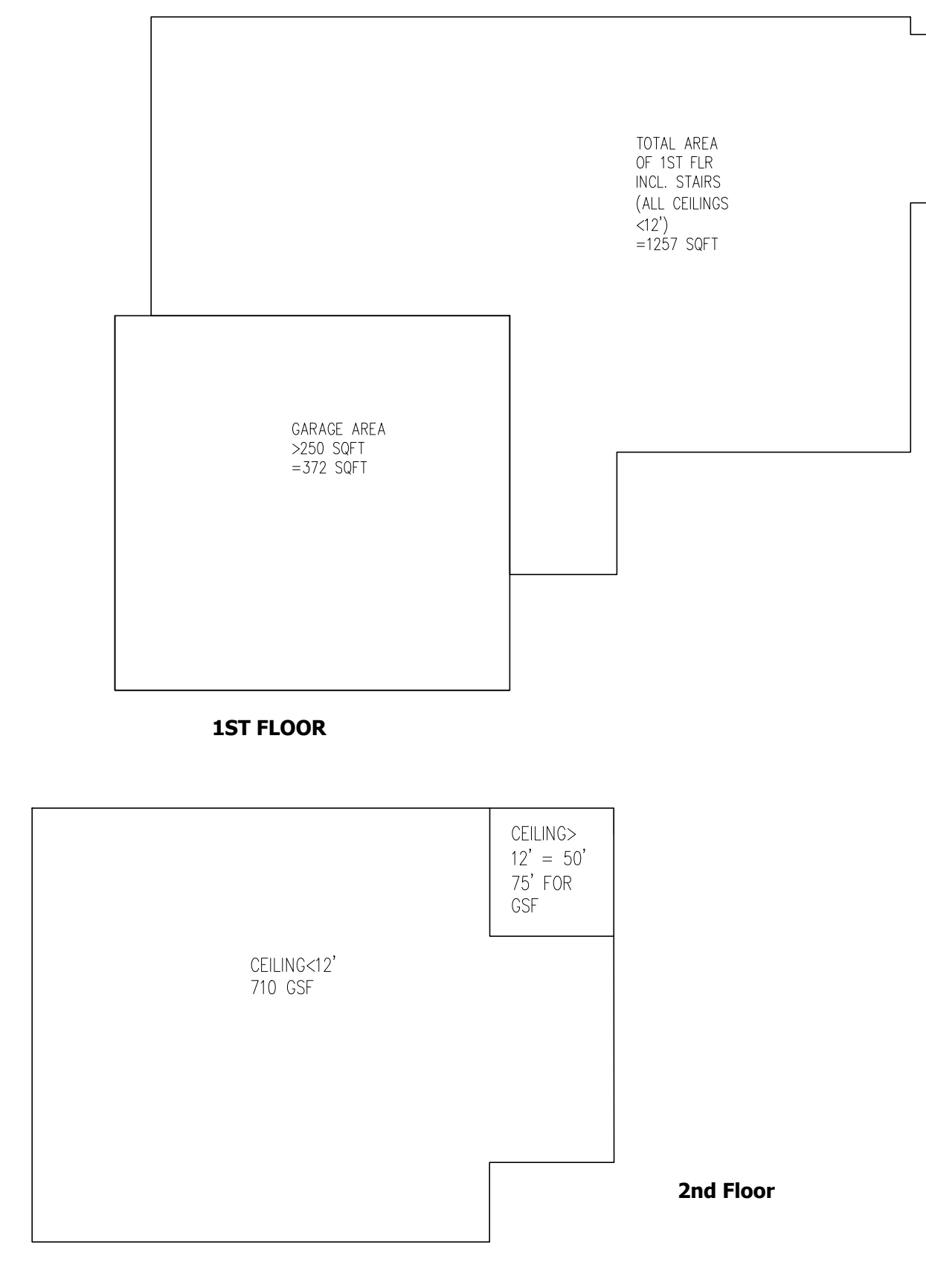
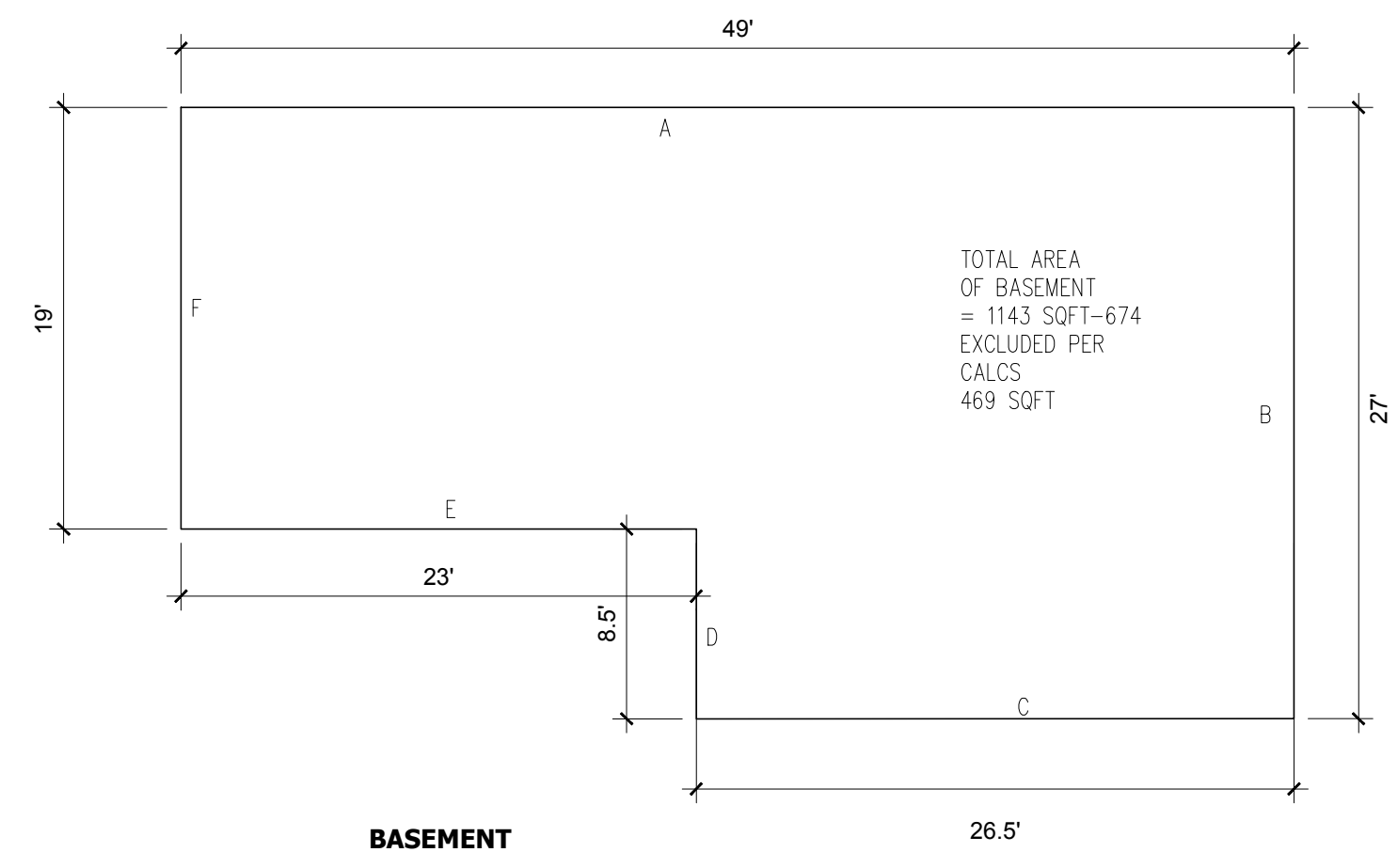
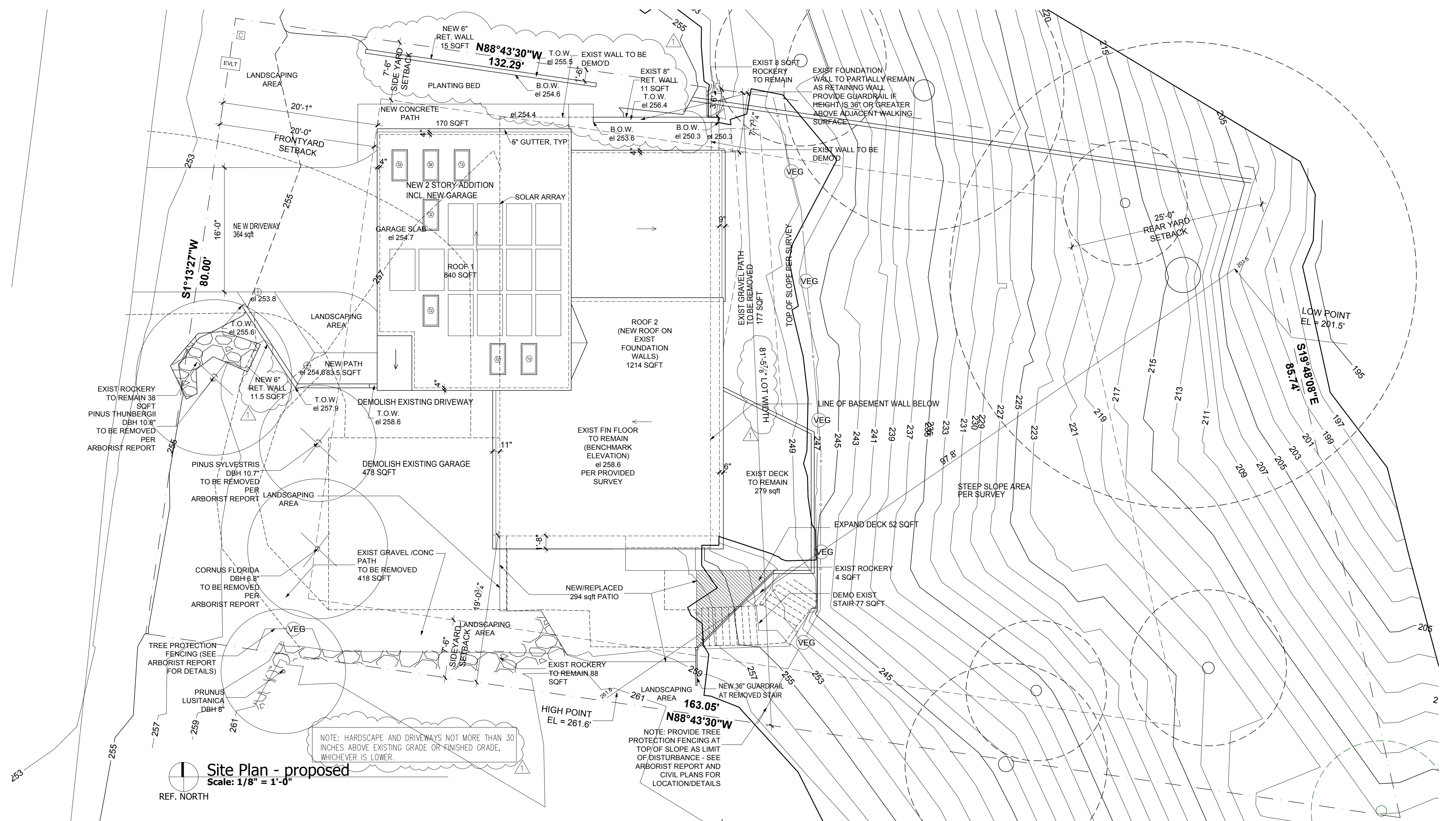
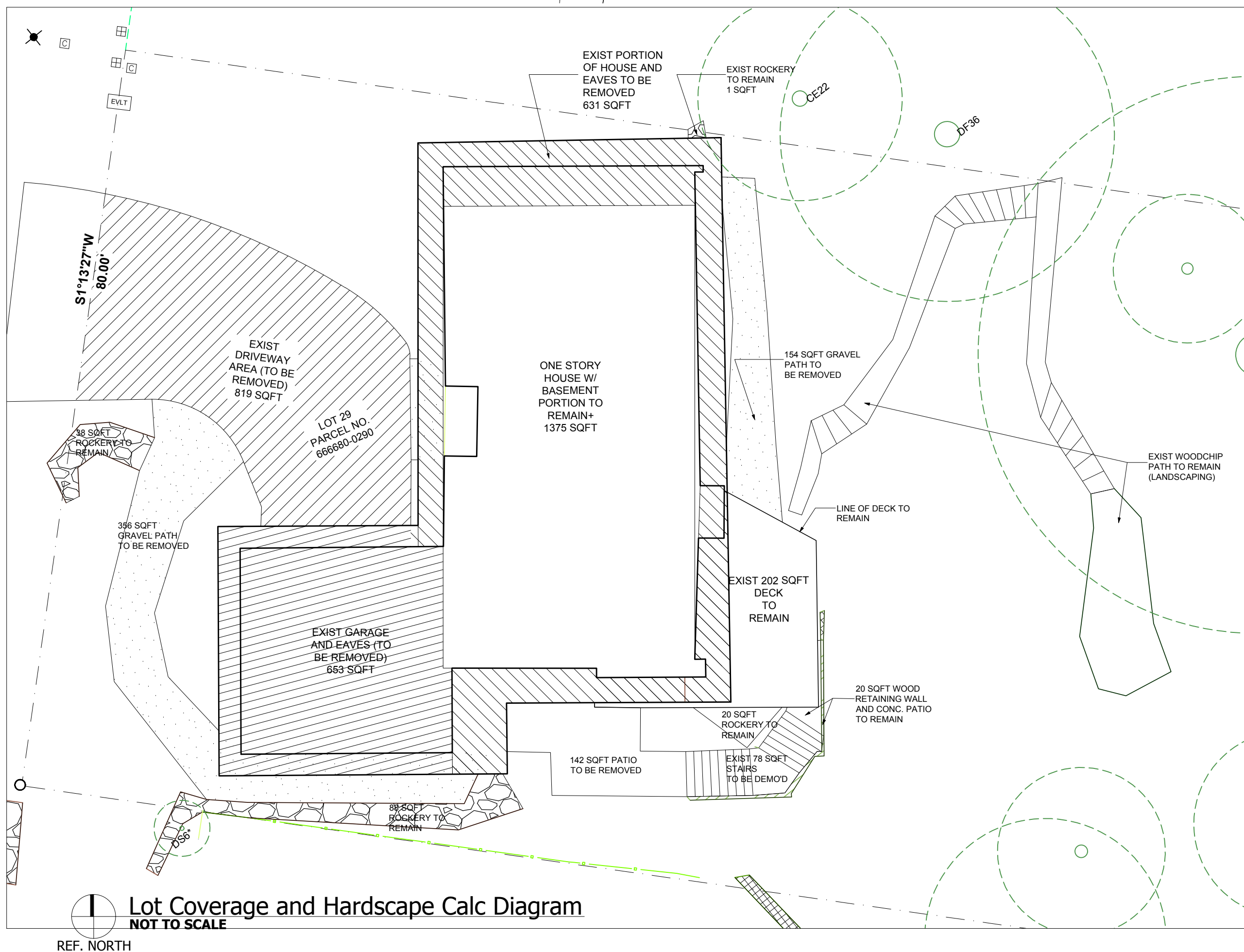
REAR SETBACK - 25'  
SIDEYARD SETBACKS - MUST ADD UP TO 15'  
DEMOLING NORTH SIDE OF HOUSE TO COME INTO COMPLIANCE,  
PROVIDING 7.5' SIDEYARD SETBACKS  
FRONT SETBACK - 20'

MAX BUILDING HEIGHT 30'  
MAX FACADE HEIGHT AT DOWNHILL SLOPE TO BE 30'  
(MEASURED FROM EXISTING GRADE TO TOP PLATE)  
MAX HEIGHT AT 7.5' FROM SIDEYARD SETBACK = 25'

GSF  
ALLOWABLE GSF = 5,000 SQFT OR 40% OF LOT AREA FOR R 8.4,  
8,000 SQFT OR 40% OF LOT AREA FOR R9.6

**Note: See sheet A6 for average building elevation calculations**

**Note:** A NFPA 130 FIRE SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA 130 AND CMI STANDARDS SHALL BE INSTALLED THROUGHOUT THE RESIDENCE. A SEPARATE FIRE PERMIT IS REQUIRED



**Korpela + Wiens Residence**  
Site Plan Existing and Proposed

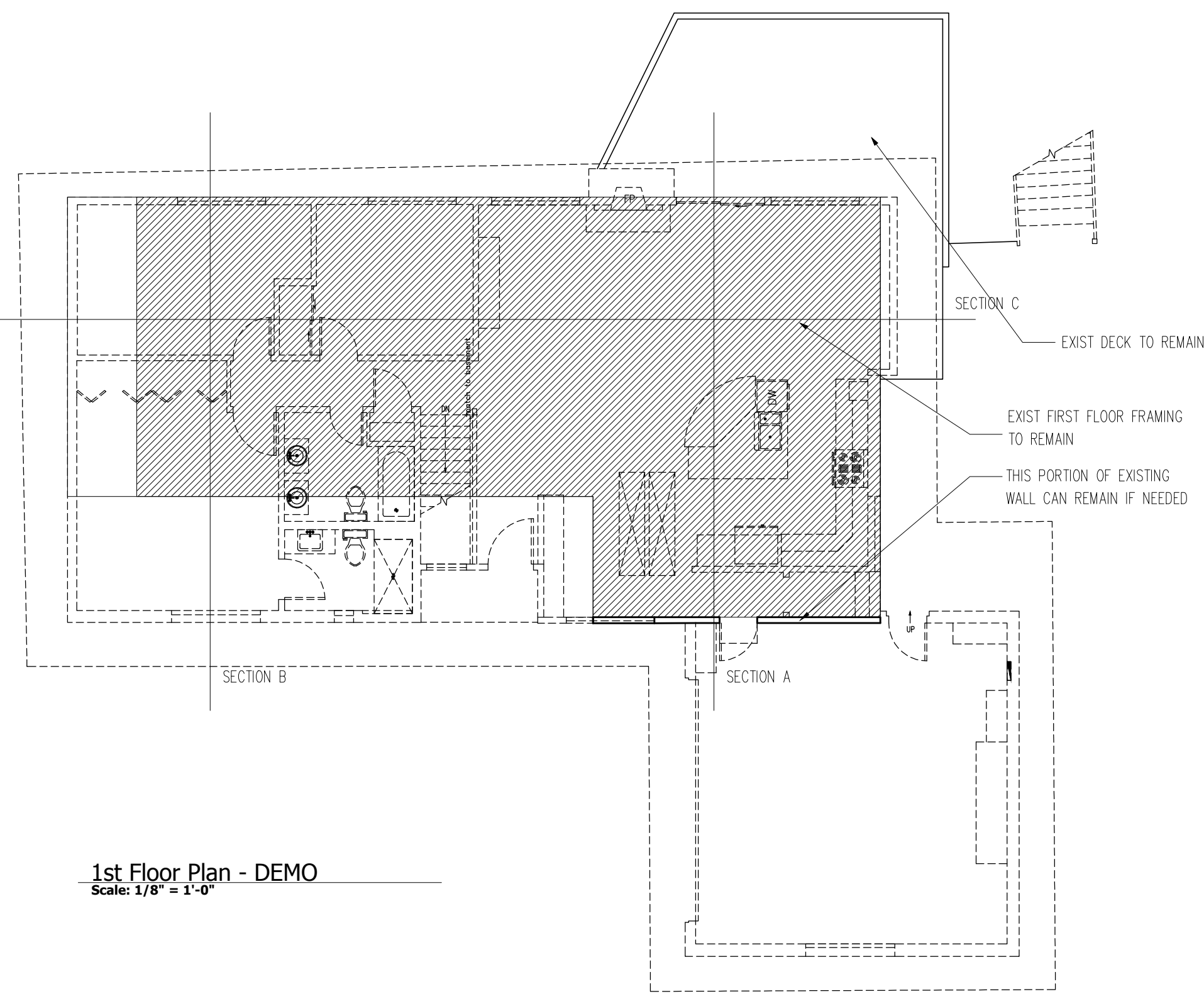
8441 SE 33rd Place  
Mercer Island, WA

6.26.24  
9.26.24 PERMIT REV 1

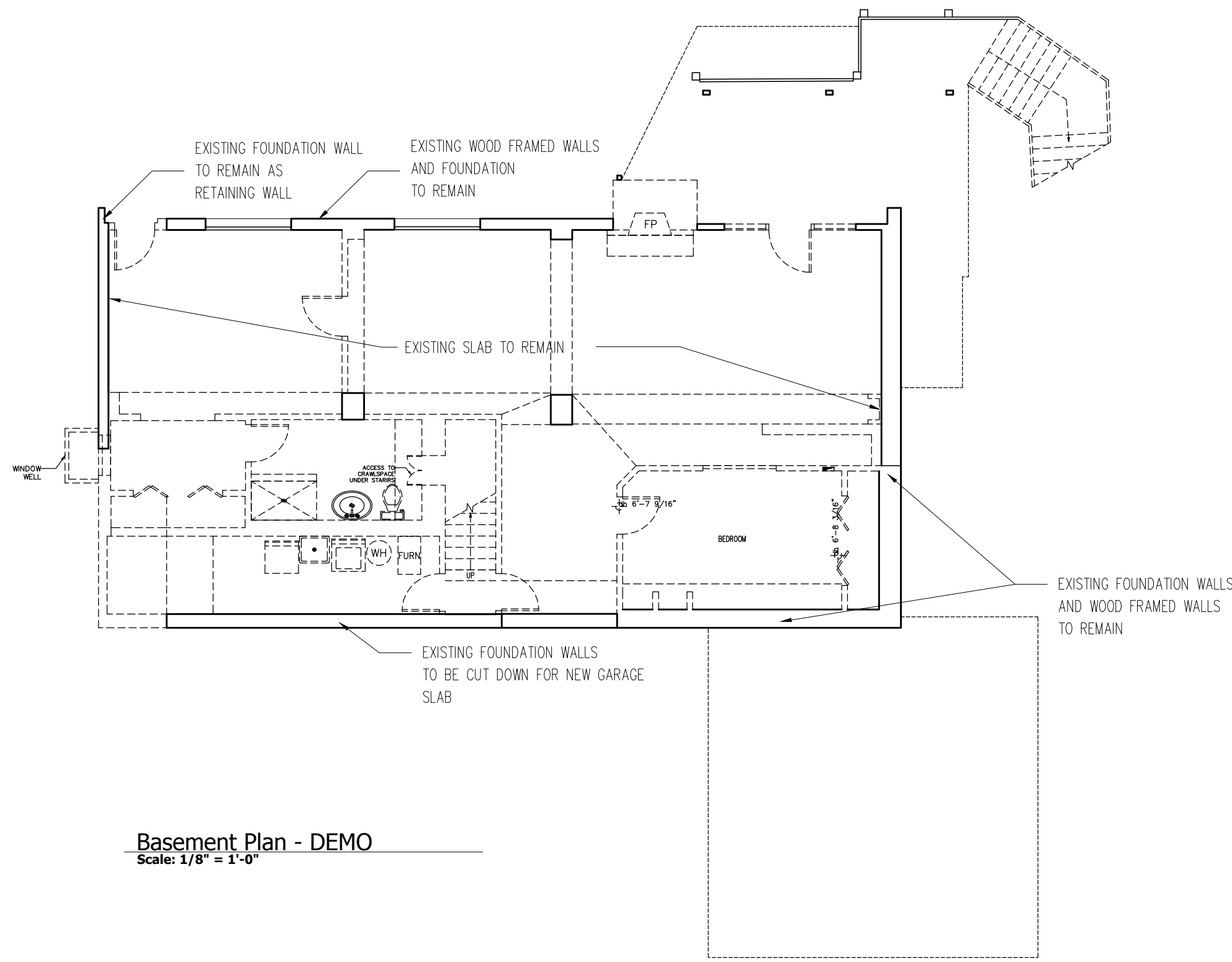
Jessyca Poole,  
architect

7718 Fremont Ave N  
Seattle, WA 98103  
206.484.3802

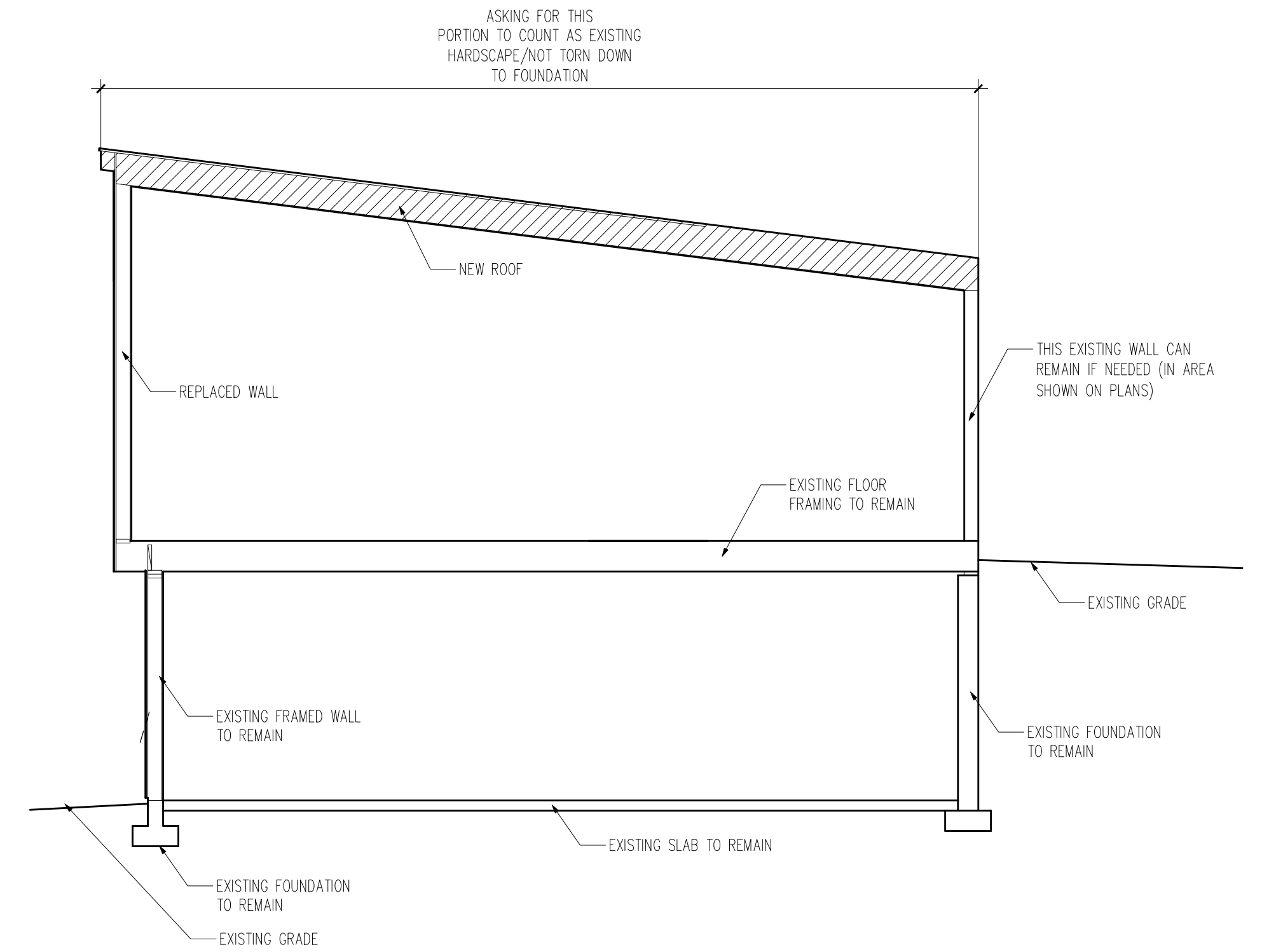
**A1**



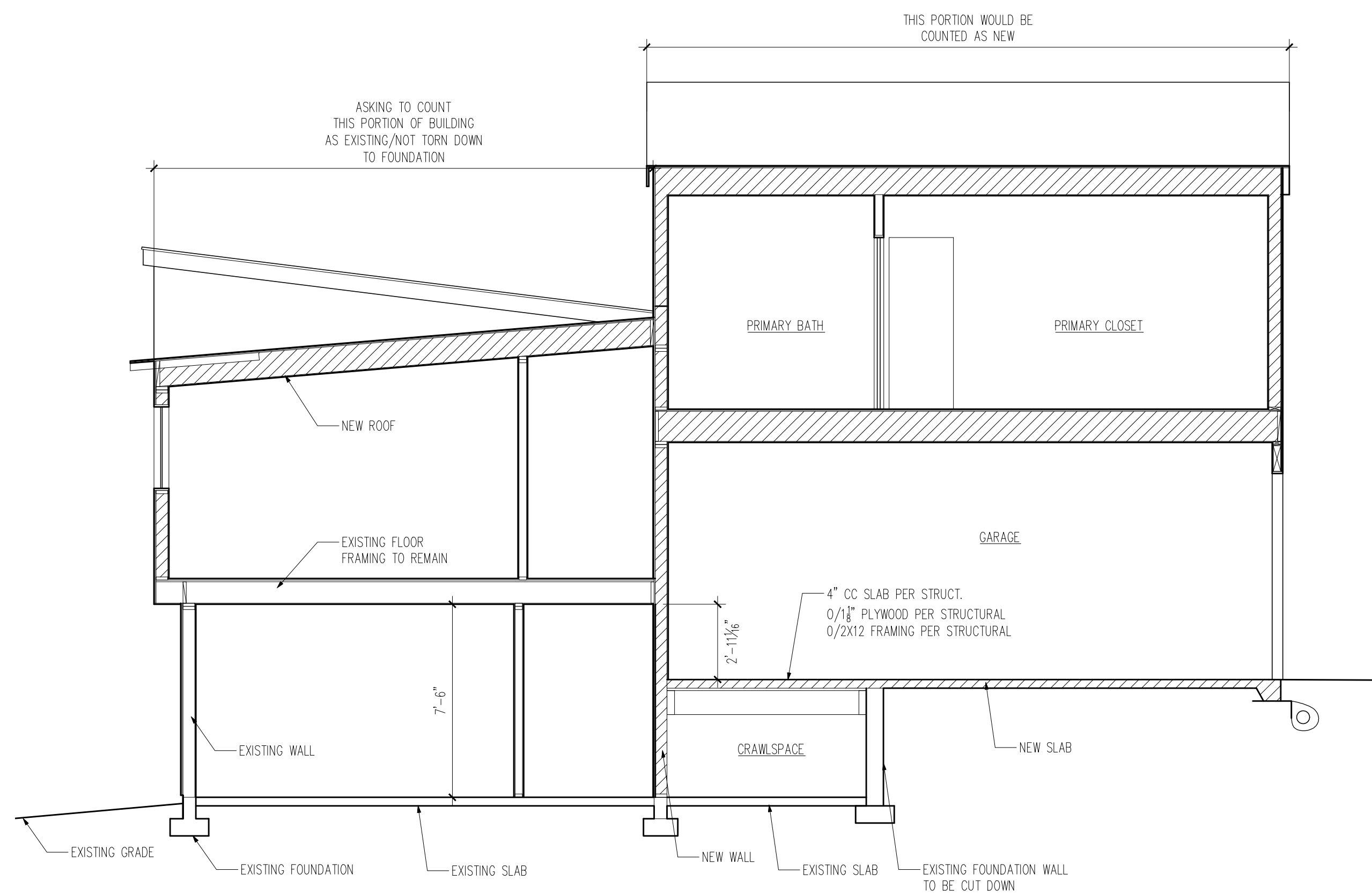
1st Floor Plan - DEMO  
Scale: 1/8" = 1'-0"



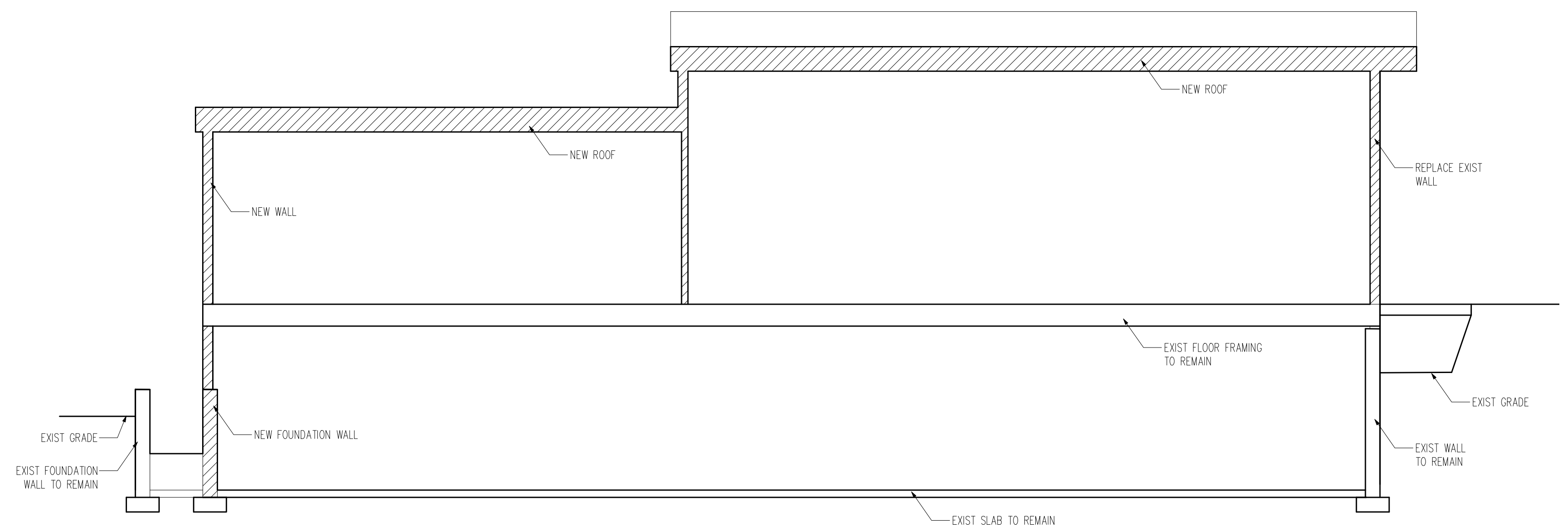
Basement Plan - DEMO  
Scale: 1/8" = 1'-0"



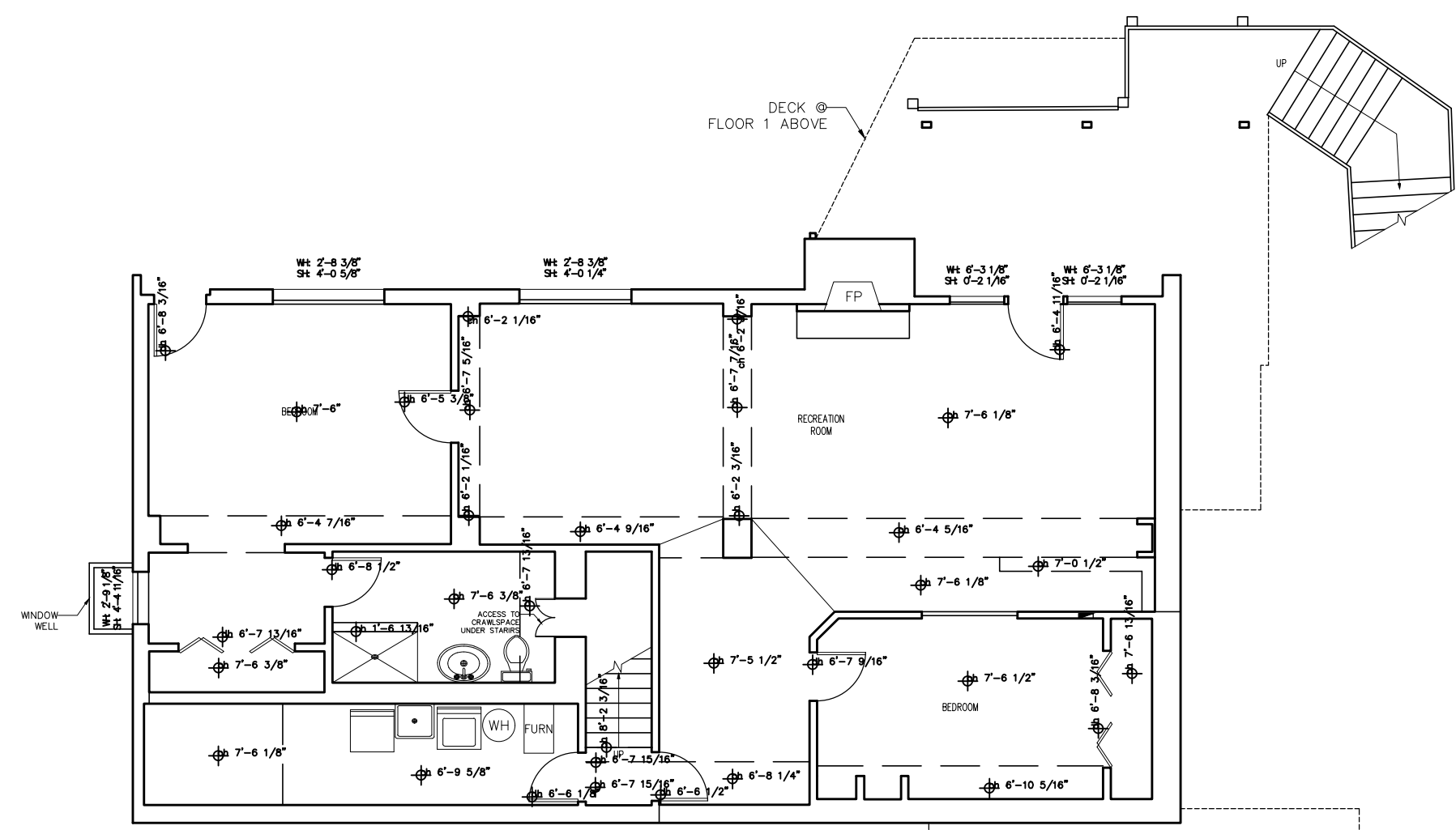
Demolition Section A  
Scale: 1/4" = 1'-0"



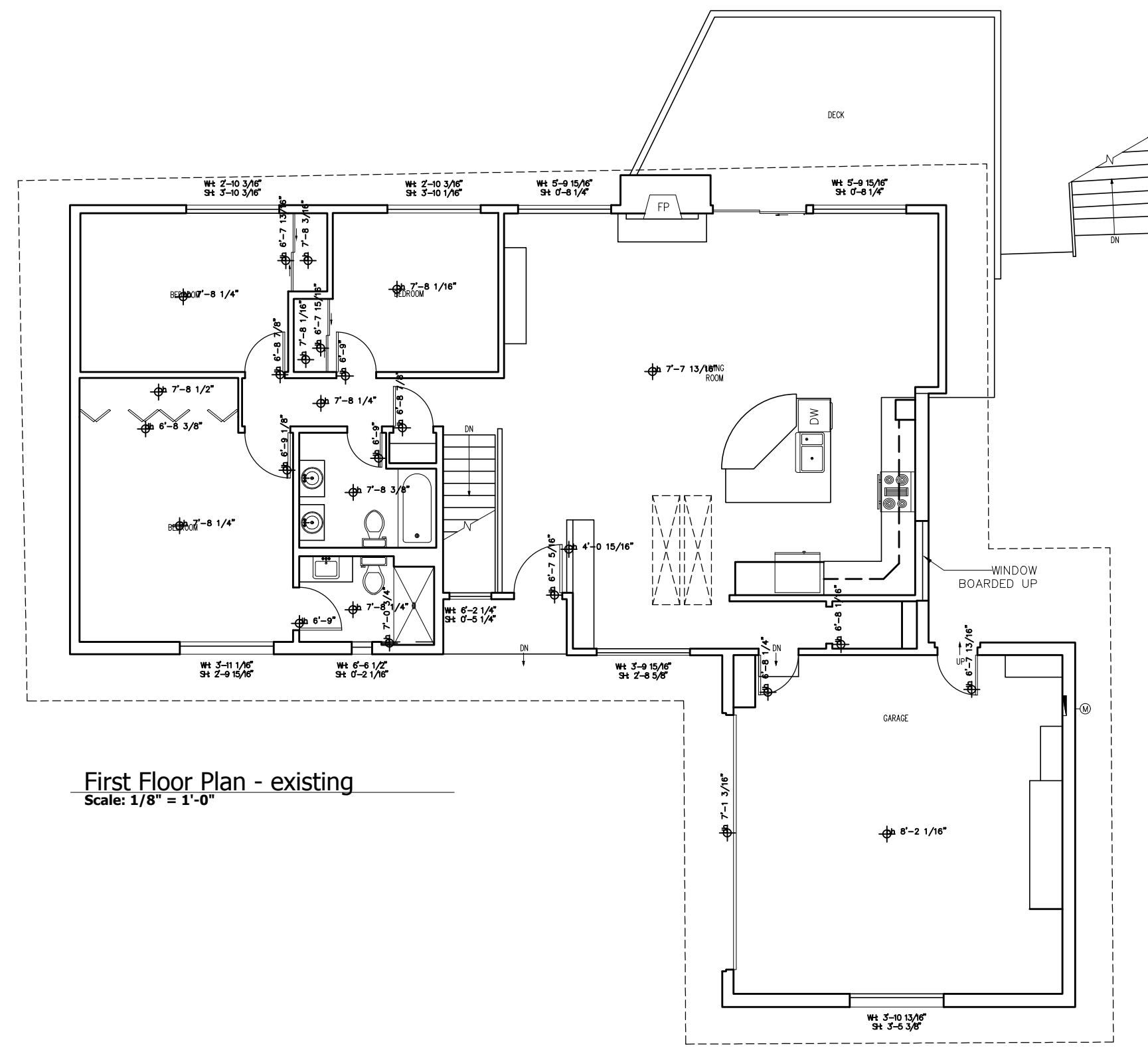
Demolition Section B  
Scale: 1/4" = 1'-0"



Demolition Section C  
Scale: 1/4" = 1'-0"



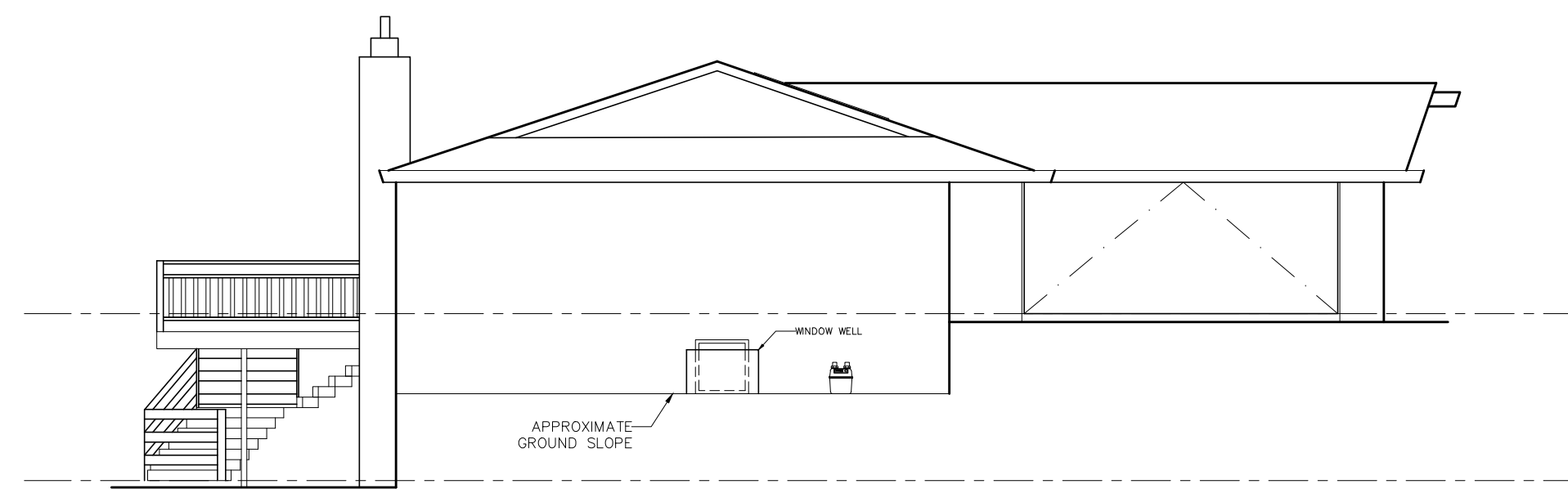
Basement Plan - existing  
Scale: 1/8" = 1'-0"



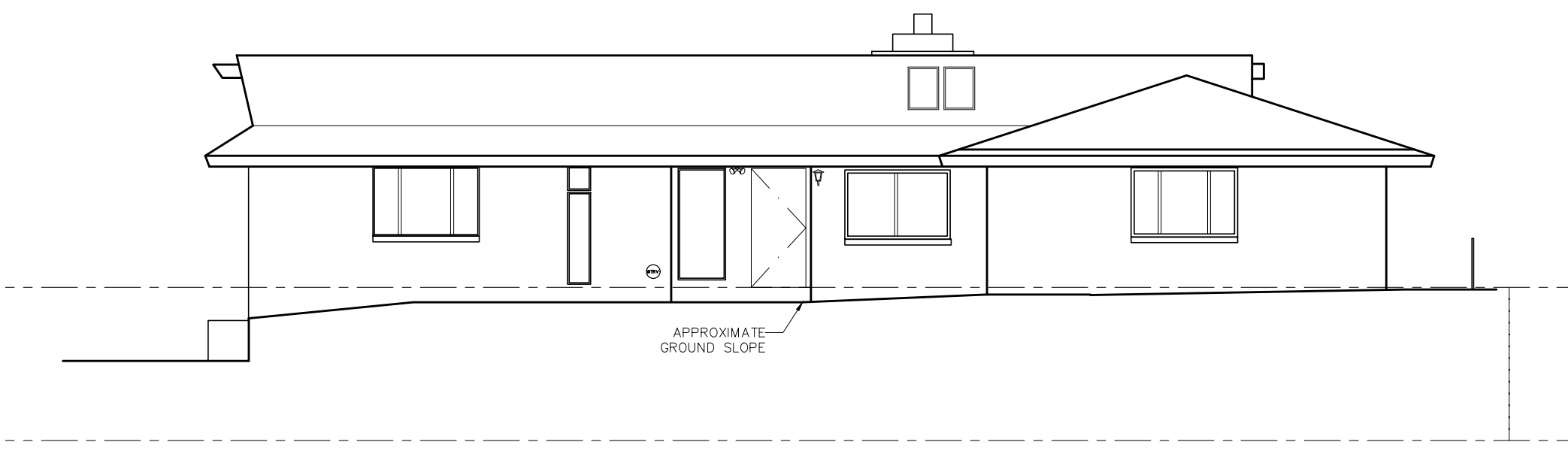
First Floor Plan - existing  
Scale: 1/8" = 1'-0"



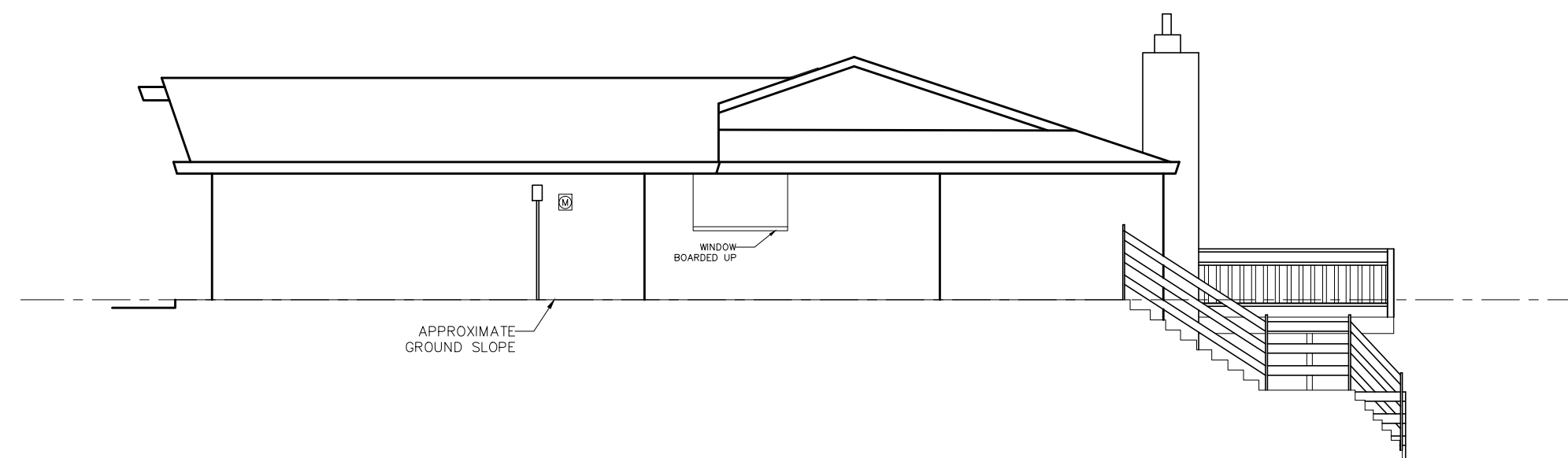
East Elevation - existing  
Scale: 1/8" = 1'-0"



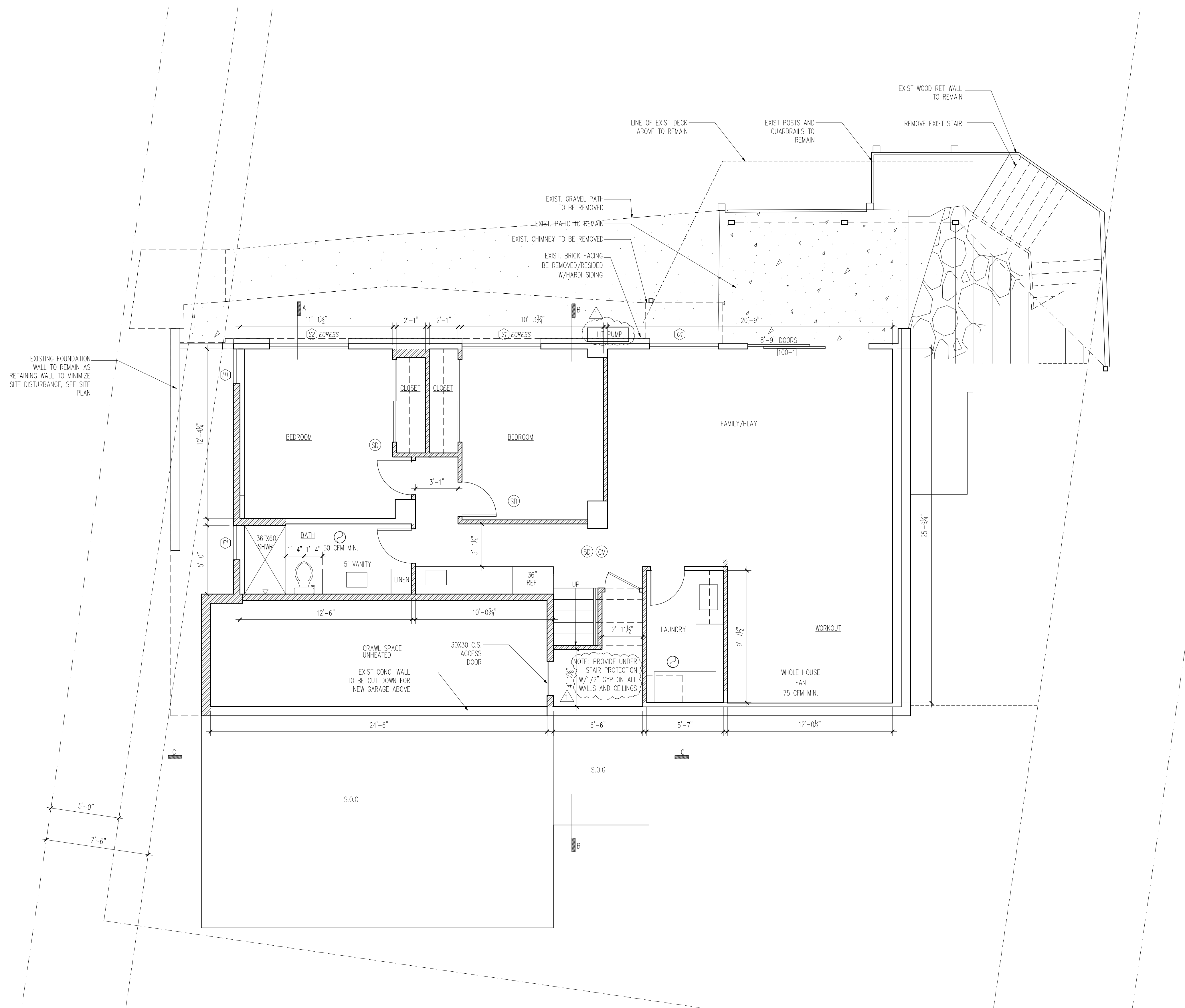
North Elevation - existing  
Scale: 1/8" = 1'-0"



West Elevation - existing  
Scale: 1/8" = 1'-0"



South Elevation - existing  
Scale: 1/8" = 1'-0"



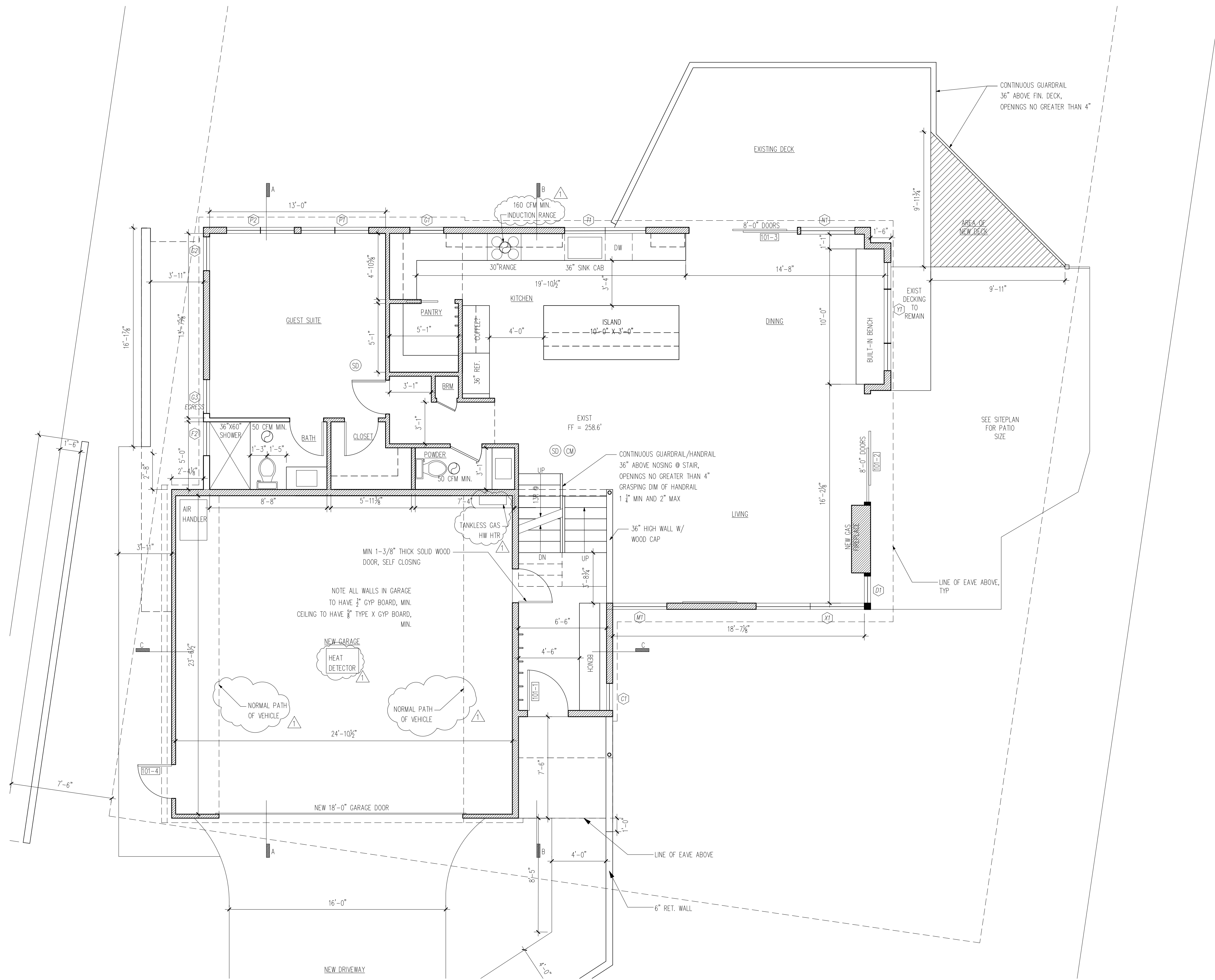
PLAN KEY:

- NEW WALL
- EXISTING WALL
- TO BE DEMOLISHED
- OVERHEAD
- SMOKE DETECTOR
- CARBON MONOXIDE DETECTOR
- EXHAUST FAN

PLAN NOTES:

1. INSULATE ALL EXISTING 2X4 EXTERIOR WALLS OPENED DURING CONSTRUCTION TO BE INSULATED TO A MINIMUM OF R-15. NEW WALLS TO BE INSULATED TO A MINIMUM OF R-21.
2. CONTRACTOR TO VERIFY THAT THERE IS A SMOKE DETECTOR INSIDE AND OUTSIDE EACH SLEEPING AREA AND ON ALL FLOORS, AND A CARBON MONOXIDE DETECTOR OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM AND ON EACH LEVEL OF THE DWELLING.
3. DIMENSIONS ARE TO ROUGH FRAMING, U.N.O.
4. ALL EXISTING WINDOWS AND DOORS TO REMAIN U.N.O.
5. NEW WINDOWS AND WINDOWS TO BE REPLACED TO HAVE MIN. U-VALUE OF .30
6. ALL SMOKE ALARMS IN THE PRIMARY DWELLING UNIT MUST BE INTERCONNECTED

Basement Plan - proposed  
 Scale: 1/4" = 1'-0"  
 REF. NORTH



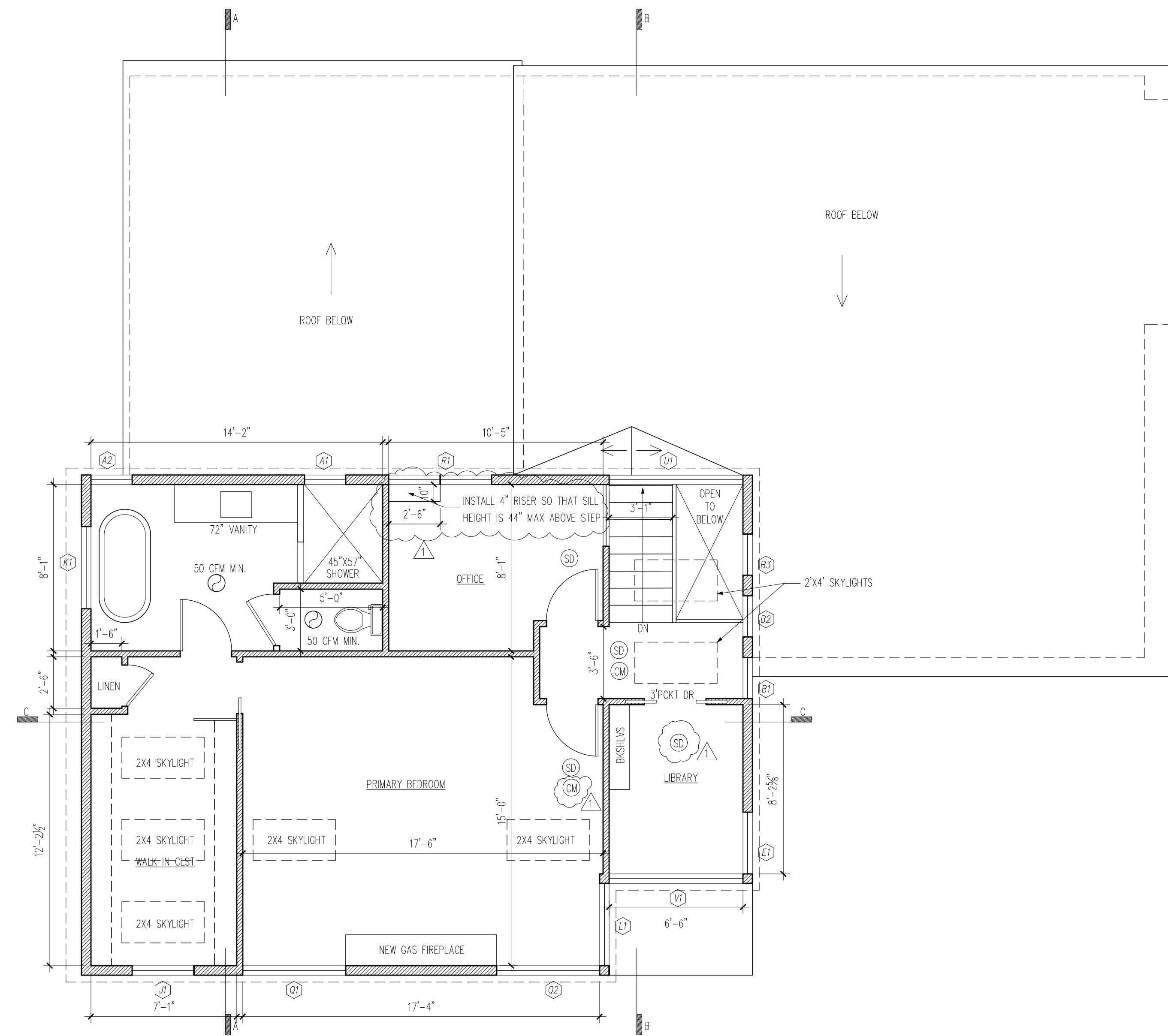
PLAN KEY:

- NEW WALL
- EXISTING WALL
- TO BE DEMOLISHED
- OVERHEAD
- SMOKE DETECTOR
- CARBON MONOXIDE DETECTOR
- EXHAUST FAN


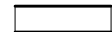
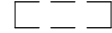




PLAN NOTES:

1. INSULATE ALL EXISTING 2X4 EXTERIOR WALLS OPENED DURING CONSTRUCTION TO BE INSULATED TO A MINIMUM OF R-15. NEW WALLS TO BE INSULATED TO A MINIMUM OF R-21.
2. CONTRACTOR TO VERIFY THAT THERE IS A SMOKE DETECTOR INSIDE AND OUTSIDE EACH SLEEPING AREA AND ON ALL FLOORS, AND A CARBON MONOXIDE DETECTOR OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM AND ON EACH LEVEL OF THE DWELLING.
3. DIMENSIONS ARE TO ROUGH FRAMING, U.N.O.
4. ALL EXISTING WINDOWS AND DOORS TO REMAIN U.N.O.
5. NEW WINDOWS AND DOORS TO BE REPLACED TO HAVE MIN. U-VALUE OF .30
6. ALL SMOKE ALARMS IN THE PRIMARY DWELLING UNIT MUST BE INTERCONNECTED

First Floor Plan - proposed  
Scale: 1/4" = 1'-0"  
REF. NORTH



PLAN KEY:

-  NEW WALL
-  EXISTING WALL
-  TO BE DEMOLISHED
-  OVERHEAD
-  SMOKE DETECTOR
-  CARBON MONOXIDE DETECTOR
-  EXHAUST FAN

PLAN NOTES:

1. INSULATE ALL EXISTING 2X4 EXTERIOR WALLS OPENED DURING CONSTRUCTION TO BE INSULATED TO A MINIMUM OF R-15. NEW WALLS TO BE INSULATED TO A MINIMUM OF R-21.
2. CONTRACTOR TO VERIFY THAT THERE IS A SMOKE DETECTOR INSIDE AND OUTSIDE EACH SLEEPING AREA AND ON ALL FLOORS, AND A CARBON MONOXIDE DETECTOR OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM AND ON EACH LEVEL OF THE DWELLING.
3. DIMENSIONS ARE TO ROUGH FRAMING, U.N.O.
4. ALL EXISTING WINDOWS AND DOORS TO REMAIN U.N.O.
5. NEW WINDOWS AND WINDOWS TO BE REPLACED TO HAVE MIN. U-VALUE OF .30
6. ALL SMOKE ALARMS IN THE PRIMARY DWELLING UNIT MUST BE INTERCONNECTED

Second Floor Plan - proposed  
 Scale: 1/4" = 1'-0"  
 REF. NORTH



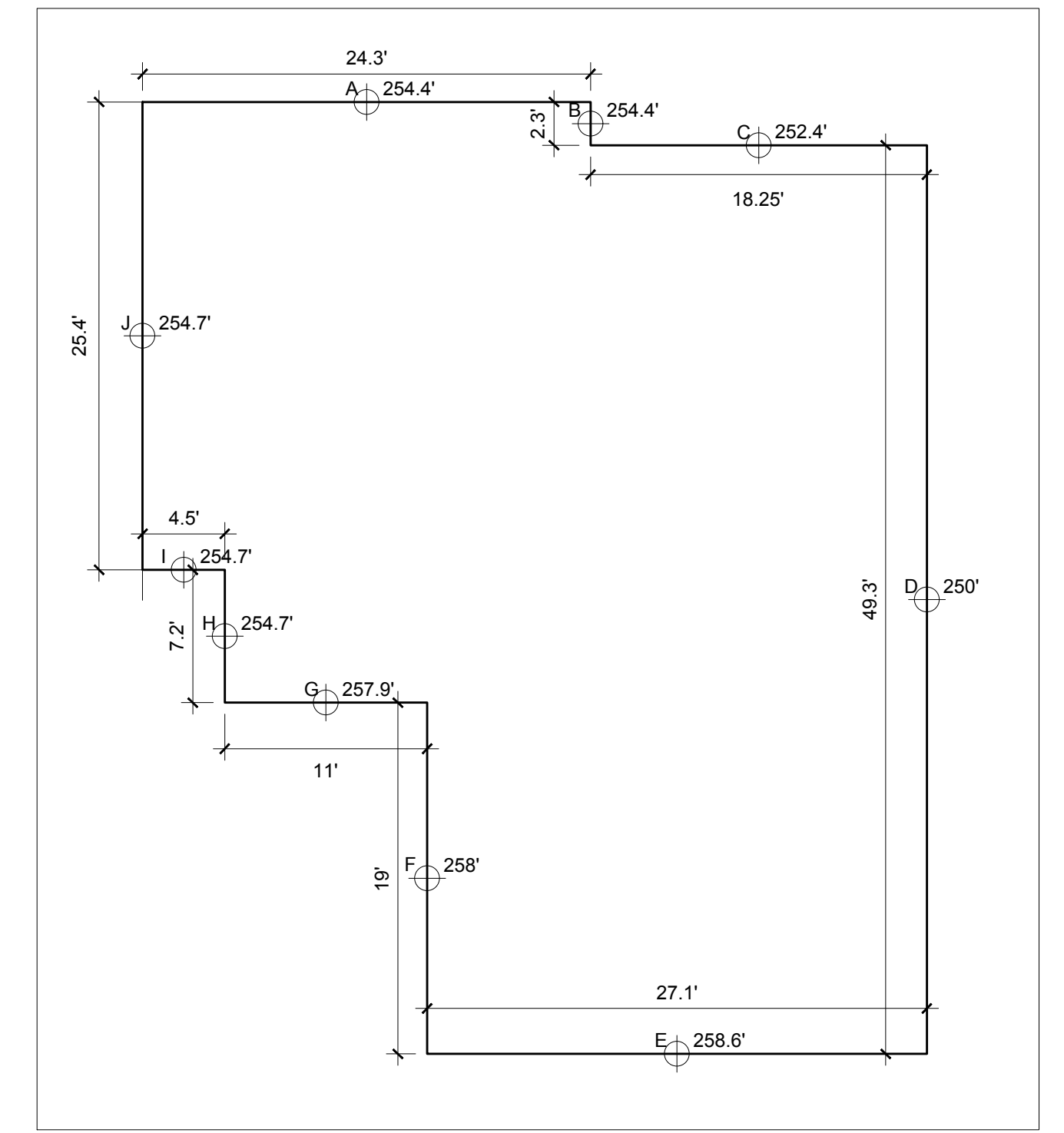
West Elevation - proposed  
Scale: 1/4" = 1'-0"

AVERAGE GRADE CALCULATION  
- PER DIRECTORS RULE 4-2012

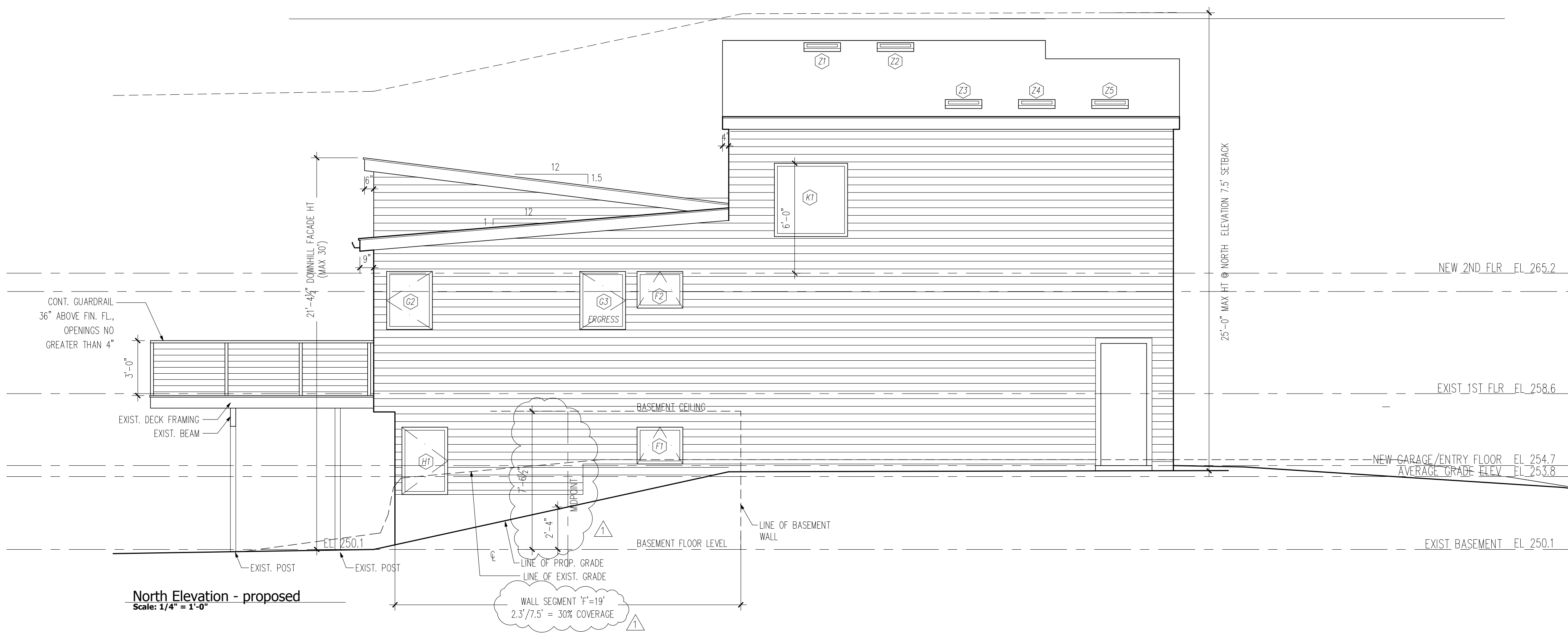
MIDPOINT ELEVATIONS	SECTION LENGTH
A = 254.4'	a = 24.3'
B = 254.4'	b = 2.3'
C = 252.4'	c = 18.25'
D = 250'	d = 49.3'
E = 258.6'	e = 27.1'
F = 258'	f = 19'
G = 257.9'	g = 11'
H = 254.7'	h = 7.2'
I = 254.7'	i = 4.5'
J = 254.7'	j = 25.4'

$$\frac{(Aa) + (Bb) + (Cc) + (Dd)}{a+b+c+d}$$

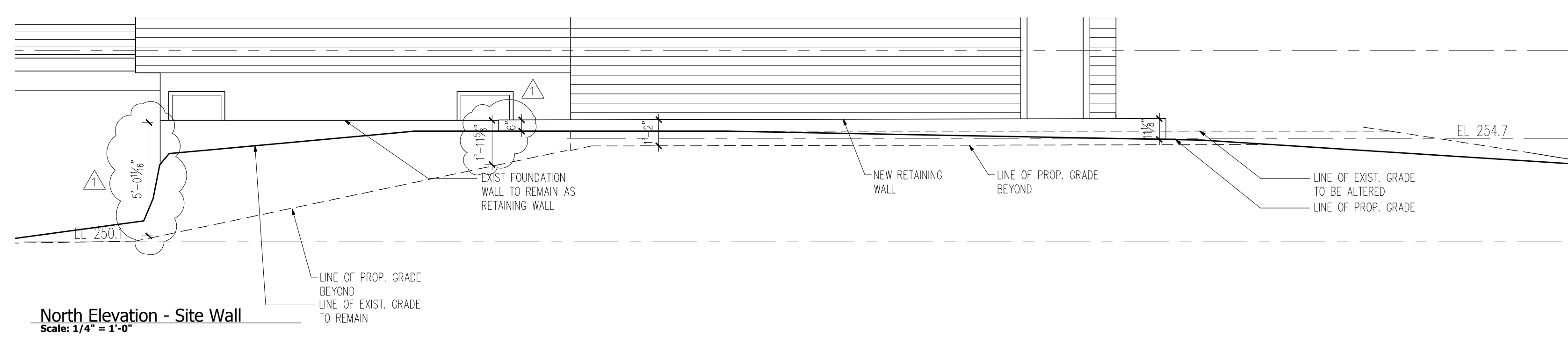
$$\frac{(6182) + (585) + (4606) + (12325) + (7008) + (4902) + (2837) + (1834) + (1146) + (6469)}{24.3 + 2.3 + 18.25 + 49.3 + 27.1 + 19 + 11 + 7.2 + 4.5 + 25.4}$$

$$\frac{47894}{188.65} = \text{AVE GRADE} = 253.8$$


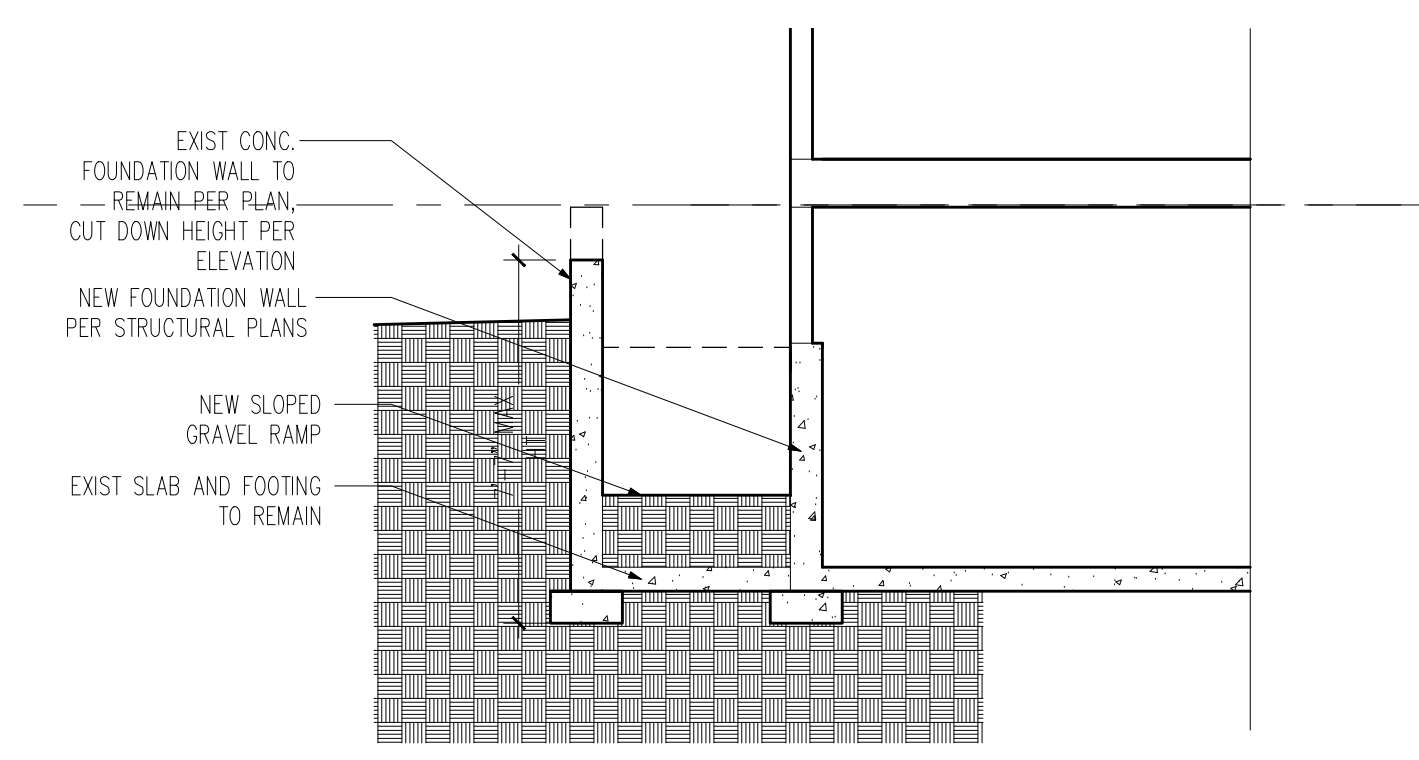
Average grade diagram  
NOT TO SCALE



North Elevation - proposed  
Scale: 1/4" = 1'-0"



North Elevation - Site Wall  
Scale: 1/4" = 1'-0"



North Elevation - Section at site wall  
Scale: 1/4" = 1'-0"

MAX HEIGHT EL 265.2



WINDOW SCHEDULE

NUMBER/SIZE	TYPE	JAMB	U-VALUE	NOTES
A1	2'-0" X 3'-0"	CASEMENT	.30	
A2	2'-0" X 3'-0"	CASEMENT	.30	
B1	2'-0" X 5'-0"	FIXED	.30	
B2	2'-0" X 5'-0"	FIXED	.30	
B3	2'-0" X 5'-0"	FIXED	.30	
C1	2'-0" X 5'-6"	FIXED	.30	TEMPERED
D1	2'-0" X 7'-0"	5' FIXED OVER 2' AWNING	.30	TEMPERED
E1	3'-0" X 9'-10"	5'-2" FIXED OVER 4'-8" CSMNT	.30	EGRESS
F1	2'-6" X 2'-0"	AWNING	.30	
F2	2'-6" X 2'-0"	AWNING	.30	
G1	2'-6" X 3'-2"	CASEMENT	.30	
G2	2'-6" X 3'-2"	CASEMENT	.30	
G3	2'-6" X 3'-2"	CASEMENT	.30	EGRESS
H1	2'-6" X 3'-8"	CASEMENT	.30	
I1	3'-0" X 1'-10"	FIXED	.30	
J1	3'-0" X 2'-6"	AWNING	.30	
K1	4'-0" X 4'-0"	FIXED	.30	TEMPERED
L1	4'-0" X 5'-8"	FIXED	.30	TEMPERED
M1	4'-0" X 7'-0"	5' FIXED OVER 2' AWNING	.30	TEMPERED
N1	4'-0" X 9'-6"	3' FIXED OVER 6'-6" FIXED	.30	
O1	5'-0" X 5'-0"	SLIDER	.30	
P1	5'-0" X 4'-2"	SLIDER	.30	
P2	5'-0" X 4'-2"	SLIDER	.30	
Q1	5'-0" X 5'-6"	SLIDER	.30	EGRESS
Q2	5'-0" X 5'-6"	SLIDER	.30	EGRESS
R1	5'-0" X 5'-0"	2' FIXED OVER 3' SLIDER	.30	EGRESS
S1	5'-9" X 4'-2"	SLIDER	.30	EGRESS
S2	5'-9" X 4'-2"	SLIDER	.30	EGRESS
T1	6'-0" X 7'-6"	3' FIXED OVER 4'-6" SLIDER	.30	
U1	6'-6" X 3'-0"	FIXED	.30	
V1	6'-6" X VARIES	FIXED OVER 3'-2" AWNING	.30	
W1	8'-0" X 3'-0"	FIXED	.30	
X1	8'-0" X 7'-0"	PAIR OF 3'-6" FIXED	.30	TEMPERED
Y1	8'-0" X 4'-0"	TWO 2' CSMTS W/FIXED BTWN	.30	
Z1	2'-0" X 4'-0"	SKYLIGHT		
Z2	2'-0" X 4'-0"	SKYLIGHT		
Z3	2'-0" X 4'-0"	SKYLIGHT		
Z4	2'-0" X 4'-0"	SKYLIGHT		
Z5	2'-0" X 4'-0"	SKYLIGHT		

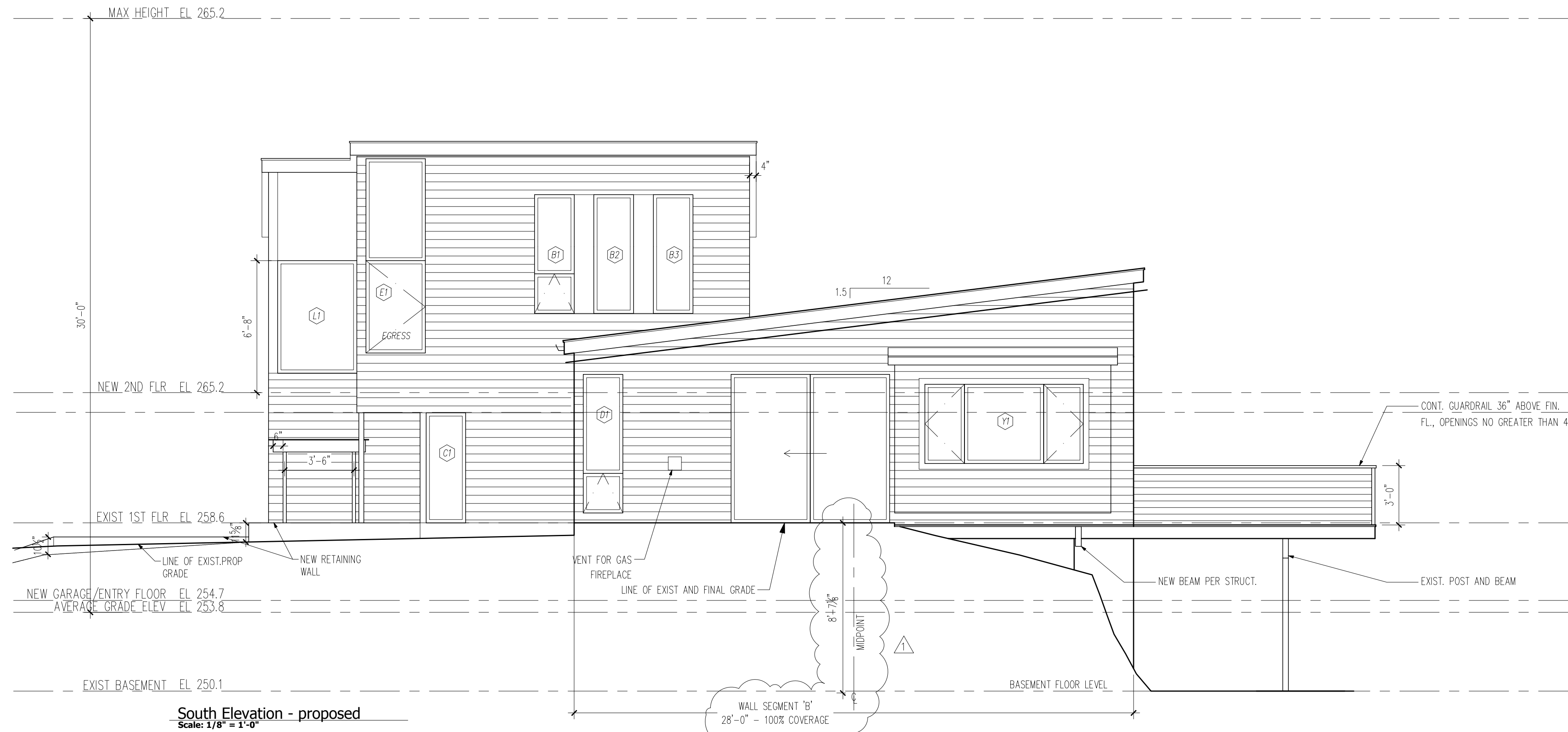
WINDOW GLAZING TOTAL  
684.5

NOTE: VERIFY ALL SIZES IN FIELD MANUFACTURER TO BE DETERMINED WOOD CLAD OR FIBERGLASS UNITS W/ARGON FILLED LOW E DOUBLE GLAZING TO BE U VALUE .30 OR BETTER

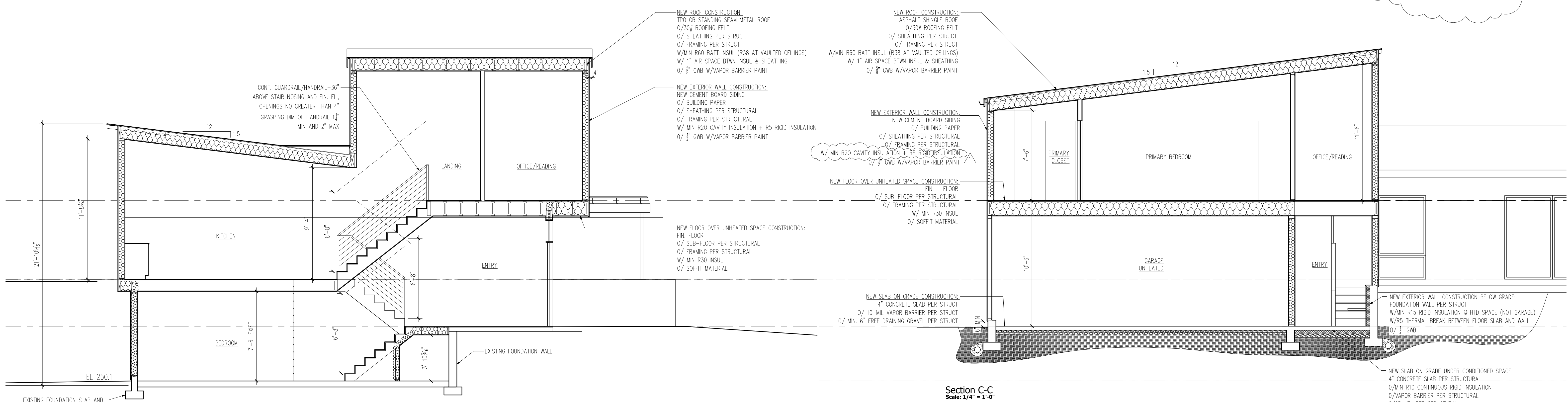
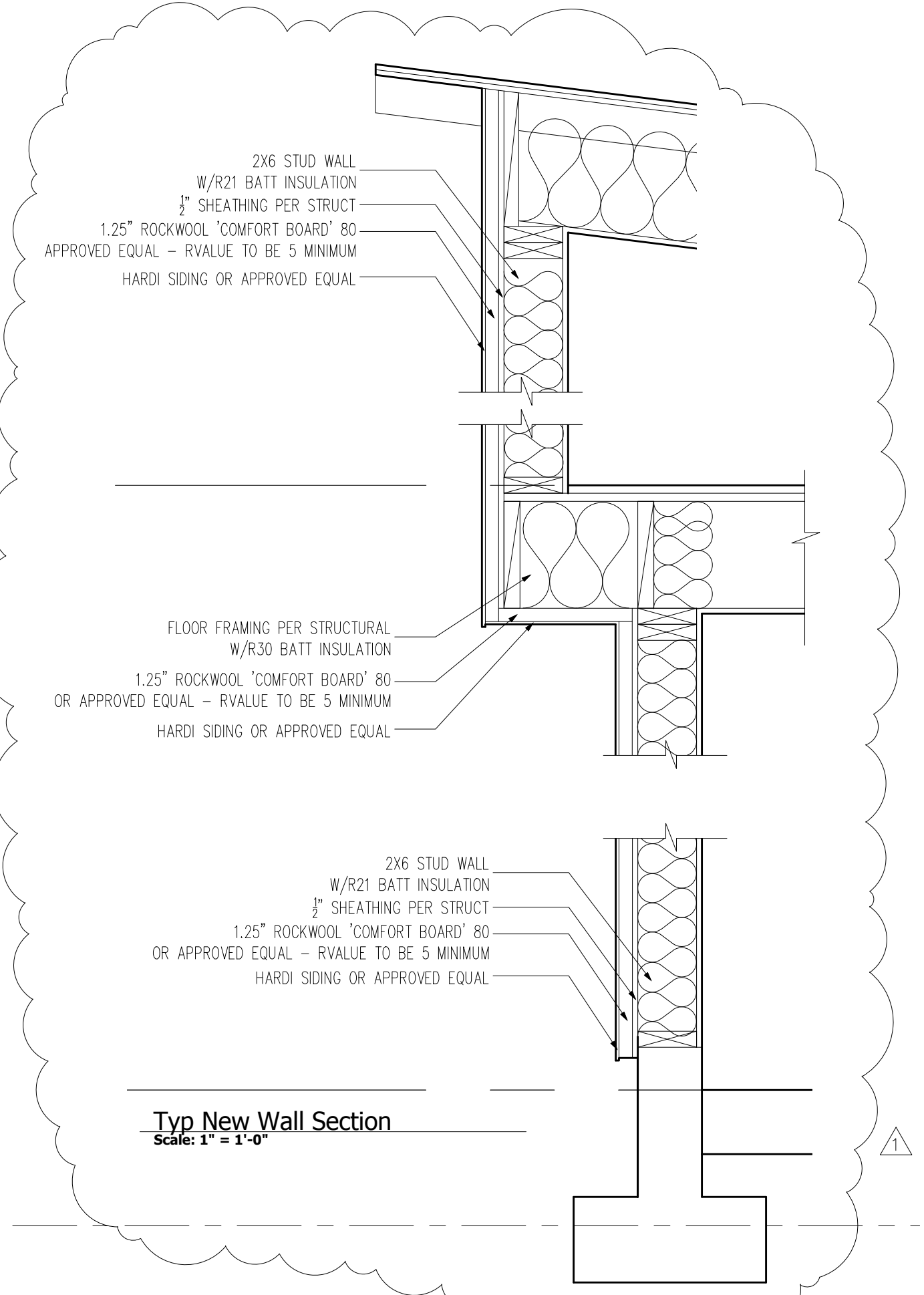
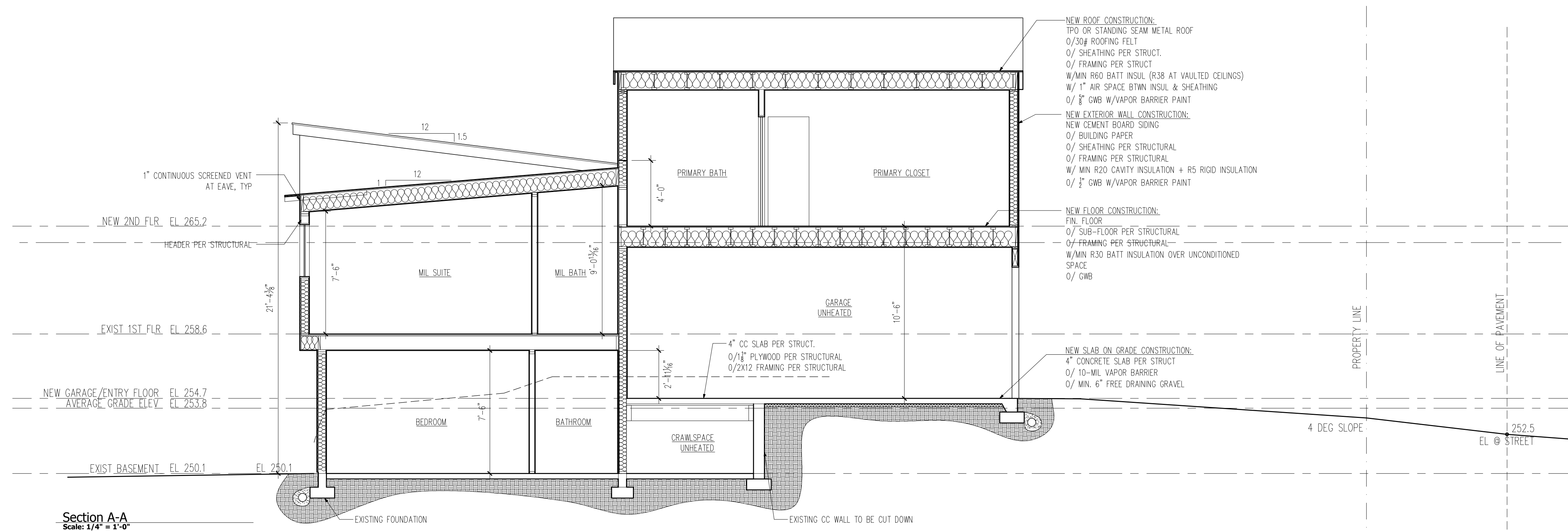
EXTERIOR DOOR SCHEDULE

NUMBER	LEAF SIZE	TYPE	THICKNESS	U-VALUE	NOTES	
30	100-1	4'-6" X 6'-8"	SLIDER	1-3/4"	.30	REPLACE EXISTING DOORS-PAIR OF SLIDING DOORS, GLASS LITES PER ELEVATIONS, CLAD, HARDWARE AND MANUFACTURER TBD
30	101-1	3'-0" X 7'-0"	SWING	1-3/4"	.30	STYLE TBD (ASSUME WOOD, SINGLE PANEL W/1 LITE)
30	101-2	4'-0" X 7'-6"	SLIDER	1-3/4"	.30	PAIR OF SLIDING DOORS, GLASS LITES PER ELEVATIONS, CLAD, HARDWARE AND MANUFACTURER TBD
30	101-3	4'-0" X 7'-6"	SLIDER	1-3/4"	.30	PAIR OF SLIDING DOORS, GLASS LITES PER ELEVATIONS, CLAD, HARDWARE AND MANUFACTURER TBD
30	101-4	2'-6" X 6'-8"	SWING	1-3/4"	.30	STYLE TBD (ASSUME SOLID WOOD, SINGLE PANEL)

East Elevation - proposed  
Scale: 1/4" = 1'-0"



South Elevation - proposed  
Scale: 1/8" = 1'-0"



**Korpela + Wiens Residence**  
Proposed Building Sections

8441 SE 33rd Place  
Mercer Island, WA  
6.26.24  
9.26.24

**Jessyca Poole,**  
architect  
7718 Fremont Ave N  
Seattle, WA 98103  
206.484.3802

**A8**

**General Structural Notes**

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

**CRITERIA**

- ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2018 EDITION).
- DESIGN LOADING CRITERIA:  
GARAGES  
FLOOR LIVE LOAD (PASSENGER VEHICLES) . . . . . 40 PSF  
FLOOR CONCENTRATED LOAD (PASSENGER VEHICLES) . . . . . 3000 LBS  
HANDRAILS AND GUARDS  
GUARDRAILS/BALCONY RAILS . . . . . 50 PLF  
GUARDRAILS/BALCONY RAILS CONCENTRATED LOAD . . . . . 200 LBS  
RESIDENTIAL – ONE AND TWO-FAMILY DWELLINGS  
FLOOR LIVE LOAD . . . . . 40 PSF  
ROOF  
ROOF LIVE LOAD . . . . . 25 PSF  
MISCELLANEOUS LOADS  
DECKS . . . . . 1.5 x AREA SERVED  
PHOTOVOLTAIC PANEL SYSTEMS . . . . . 5 PSF  
DEFLECTION CRITERIA  
LIVE LOAD DEFLECTION . . . . . L/360  
TOTAL LOAD DEFLECTION . . . . . L/240  
ENVIRONMENTAL LOADS  
SNOW . . . . . Ce=1.0, Is=1.0, Ct=1.1, Cs=1.0, Pg=25 PSF, Pf=20 PSF  
WIND . . . . . Gcpi=0.18, 98 MPH, RISK CATEGORY II, EXPOSURE "C"  
EARTHQUAKE . . . . . ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE  
LATERAL SYSTEM: LIGHT FRAMED SHEAR WALLS,  
SITE CLASS=D (DEFAULT), Ss=1.399, Sds=1.119, S1=0.487,  
Sd1=0.883, Cs=0.172, SDC D, Ie=1.0, R=6.5  
SEE PLANS FOR ADDITIONAL LOADING CRITERIA
- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATION, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.
- PRIMARY STRUCTURAL ELEMENTS NOT DIMENSIONED ON THE STRUCTURAL PLANS AND DETAILS SHALL BE LOCATED BY THE ARCHITECTURAL PLANS AND DETAILS. VERTICAL DIMENSION CONTROL IS DEFINED BY THE ARCHITECTURAL WALL SECTIONS, BUILDING SECTION, AND PLANS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN BOTH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
- CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. CONFORM TO ASCE 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION".
- 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.
- DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL NOTES AND DETAILS SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED OR REQUEST ADDITIONAL INFORMATION. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.
- ALL STRUCTURAL SYSTEMS, WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERCTED, SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
- SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.  
  
GLUED LAMINATED MEMBERS  
MANUFACTURED LUMBER (PSL'S, LSL'S, LVL'S)  
PLYWOOD WEB JOISTS  
STRUCTURAL STEEL

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

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

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

**QUALITY ASSURANCE**

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

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

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

- UNLESS OTHERWISE NOTED, THE FOLLOWING ELEMENTS COMPRISE THE SEISMIC-FORCE-RESISTING SYSTEM AND ARE SUBJECT TO SPECIAL INSPECTION FOR SEISMIC RESISTANCE IN ACCORDANCE WITH SECTION 1705.12 OF THE INTERNATIONAL BUILDING CODE.

A. STRUCTURAL WOOD SHEAR WALL SYSTEMS REQUIRE PERIODIC INSPECTION FOR FIELD GLUING, NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE SEISMIC FORCE, RESISTING SYSTEM INCLUDING SHEAR WALLS, DIAPHRAGMS, DRAG STRUTS, BRACES AND HOLDOWNS.

**GEOTECHNICAL**

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

ALLOWABLE SOIL PRESSURE (NATIVE SOILS / STRUCTURAL FILL) . . . . . 2500/2000 PSF  
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED) . . . . . 55 PCF/35 PCF  
ALLOWABLE PASSIVE EARTH PRESSURE (FS OF 1.5 INCLUDED) . . . . . 300 PCF  
COEFFICIENT OF FRICTION (FS OF 1.5 INCLUDED) . . . . . 0.3  
SEISMIC SURCHARGE PRESSURE (UNIFORM LOAD) . . . . . 8H PSF

SOILS REPORT REFERENCE: GEOTECHNICAL ENGINEERING REPORT PREPARED BY ZIPPERGEO DATED NOVEMBER 28 2023 PROJECT NO. 2727.01

**RENOVATION**

- DEMOLITION: CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. SHORING SHALL BE INSTALLED TO SUPPORT EXISTING CONSTRUCTION AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. LIMIT CONSTRUCTION LOADING (INCLUDING DEMOLITION DEBRIS) ON EXISTING FLOOR SYSTEMS TO 40 PSF.

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

- EXISTING REINFORCING SHALL BE SAVED WHERE AND AS NOTED ON THE PLANS. SAW CUTTING, IF AND WHERE USED, SHALL NOT CUT EXISTING REINFORCING THAT IS TO BE SAVED.

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

- CONTRACTOR SHALL CHECK FOR DRY ROT AT ALL AREAS OF NEW WORK. ALL ROT SHALL BE REMOVED AND DAMAGED MEMBERS SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE STRUCTURAL ENGINEER OR ARCHITECT.

**CONCRETE**

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

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

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

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

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

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

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

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

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

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

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

**ANCHORAGE**

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

- EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) INTO CONCRETE SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED USING "SET-36" HIGH STRENGTH EPOXY AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT NO. ESR-4057. MINIMUM BASE MATERIAL TEMPERATURE IS 40 DEGREES F. RODS SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED. PERIODIC SPECIAL INSPECTION OF INSTALLATION IS REQUIRED TO VERIFY ANCHOR OR EMBEDDED BAR TYPE AND DIMENSIONS, LOCATION, ADHESIVE IDENTIFICATION AND EXPIRATION, HOLE DIMENSIONS, HOLE CLEANING PROCEDURE, ANCHOR EMBEDMENT, AND ADHERENCE TO THE INSTALLATION INSTRUCTIONS. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR HORIZONTAL AND OVERHEAD INSTALLATIONS.

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

**STEEL**

- STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON:

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

- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

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

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

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

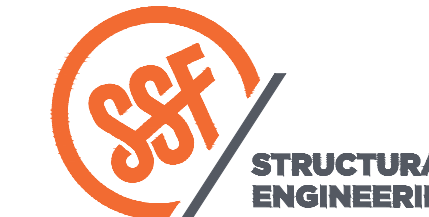
- SHOP PRIME ALL STEEL EXCEPT:

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

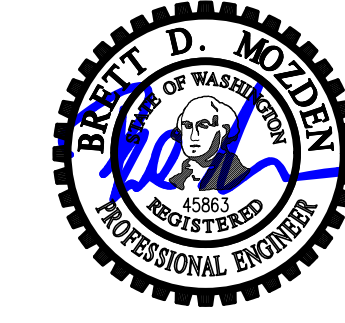
- ALL A-325N CONNECTION BOLTS NEED ONLY BE TIGHTENED TO A SNUG TIGHT CONDITION, DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH.

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

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



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DESIGN:	BDM
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REVISIONS:		
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SHEET TITLE:

**General  
Structural  
Notes**

SCALE:

DATE: Dec. 14, 2023

PROJECT NO: 02327-2023-04

SHEET NO:

**S1.1**

**General Structural Notes Continued**  
THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

**WOOD**

39. FRAMING LUMBER SHALL BE S-DRY, KD, OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLB STANDARD No. 17, GRADING RULES FOR WEST COAST LUMBER, 2018, OR WMPA STANDARD, WESTERN LUMBER GRADING RULES 2017. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS AND BEAMS	(2X & 3X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASE VALUE, Fb = 850 PSI
	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1000 PSI
BEAMS	(INCL. 6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1350 PSI
POSTS	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 2 MINIMUM BASE VALUE, Fc = 1350 PSI
	(6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fc = 1000 PSI
STUDS, PLATES & MISC. FRAMING:		DOUGLAS FIR-LARCH NO. 2 OR HEM-FIR NO. 2

40. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND ANSI/AITC STANDARDS. EACH MEMBER SHALL BEAR AN AITC OR APA IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC OR APA CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv = 265 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2400 PSI, Fv = 265 PSI.

41. MANUFACTURED LUMBER, PSL, LVL, AND LSL SHOWN ON PLAN ARE BASED PRODUCTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION IN ACCORDANCE WITH ICC-ES REPORT ESR-1387. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PSL (2.0E WS)	Fb = 2900 PSI, E = 2000 KSI, Fv = 290 PSI
LVL (2.0E-2600FB WS)	Fb = 2600 PSI, E = 2000 KSI, Fv = 285 PSI
LSL (1.55E)	Fb = 2325 PSI, E = 1550 KSI, Fv = 310 PSI

ALTERNATE MANUFACTURED LUMBER MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

MANUFACTURED LUMBER PRODUCTS SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%. EXCESSIVE DEFLECTIONS MAY OCCUR IF MOISTURE CONTENT EXCEEDS THIS VALUE.

42. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION, IN ACCORDANCE WITH ICC-ES REPORT ESR-1157. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

43. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1 OR PS 2. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD.

ROOF SHEATHING SHALL BE 1/2" (NOMINAL) WITH SPAN RATING 32/16.

FLOOR SHEATHING SHALL BE 3/4" (NOMINAL) WITH SPAN RATING 48/24.

WALL SHEATHING SHALL BE 1/2" (NOMINAL) WITH SPAN RATING 24/0.

PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING.

REFER TO WOOD FRAMING NOTES BELOW FOR TYPICAL NAILING REQUIREMENTS.

44. ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY.

45. PRESERVATIVE TREATED WOOD SHALL BE TREATED PER AWWA STANDARD U1 TO THE USE CATEGORY EQUAL TO OR HIGHER THAN THE INTENDED APPLICATION. TREATED WOOD FOR ABOVE GROUND USE SHALL BE TREATED TO AWWA UC3B. WOOD IN CONTINUOUS CONTACT WITH FRESH WATER OR SOIL SHALL BE TREATED TO AWWA UC4A. WOOD FOR USE IN PERMANENT FOUNDATIONS SHALL BE TREATED TO AWWA UC4B.

46. FASTENERS AND TIMBER CONNECTORS USED WITH TREATED WOOD SHALL HAVE CORROSION RESISTANCE AS INDICATED IN THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED.

WOOD TREATMENT	CONDITION	PROTECTION
HAS NO AMMONIA CARRIER	INTERIOR DRY	G90 GALVANIZED
CONTAINS AMMONIA CARRIER	INTERIOR DRY	G185 OR A185 HOT DIPPED OR CONTINUOUS HOT-GALVANIZED PER ASTM A653
CONTAINS AMMONIA CARRIER	INTERIOR WET	TYPE 304 OR 316 STAINLESS
CONTAINS AMMONIA CARRIER	EXTERIOR	TYPE 304 OR 316 STAINLESS
AZCA	ANY	TYPE 304 OR 316 STAINLESS

INTERIOR DRY CONDITIONS SHALL HAVE WOOD MOISTURE CONTENT LESS THAN 19%. WOOD MOISTURE CONTENT IN OTHER CONDITIONS (INTERIOR WET, EXTERIOR WET, AND EXTERIOR DRY) IS EXPECTED TO EXCEED 19%. CONNECTORS AND THEIR FASTENERS SHALL BE THE SAME MATERIAL. COMPLY WITH THE TREATMENT MANUFACTURERS RECOMMENDATIONS FOR PROTECTION OF METAL.

47. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-C-2021. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER FOR MAXIMUM LOAD CARRYING CAPACITY. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

ALL 2X JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS. ALL TJI JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "ITS" SERIES JOIST HANGERS. ALL DOUBLE-JOIST BEAMS SHALL BE CONNECTED TO FLUSH BEAMS WITH "MIT" SERIES JOIST HANGERS.

WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER.

ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

48. WOOD FASTENERS

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

SIZE	LENGTH	DIAMETER
6d	2"	0.113"
8d	2-1/2"	0.131"
10d	3"	0.148"
12d	3-1/4"	0.148"
16d BOX	3-1/2"	0.135"

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

NAILS - PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED. TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30 DEGREES WITH THE MEMBER AND STARTED 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END.

B. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG BOLTS BEARING ON WOOD. INSTALLATION OF LAG BOLTS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION WITH A LEAD BORE HOLE OF 60 TO 70 PERCENT OF THE SHANK DIAMETER. LEAD HOLES ARE NOT REQUIRED FOR 3/8" AND SMALLER LAG SCREWS.

49. NOTCHES AND HOLES IN WOOD FRAMING:

A. NOTCHES ON THE ENDS OF SOLID SAWN JOISTS AND RAFTERS SHALL NOT EXCEED ONE-FOURTH THE JOIST DEPTH. NOTCHES IN THE TOP OR BOTTOM OF SOLID SAWN JOISTS SHALL NOT EXCEED ONE-SIXTH THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN. HOLES BORED IN SOLID SAWN JOISTS AND RAFTERS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM OF THE JOIST, AND THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE JOIST.

B. IN EXTERIOR WALLS AND BEARING PARTITIONS, ANY WOOD STUD IS PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. A HOLE NOT GREATER IN DIAMETER THAN 40 PERCENT OF THE STUD WIDTH IS PERMITTED TO BE BORED IN ANY WOOD STUD. IN NO CASE SHALL THE EDGE OF THE BORED HOLE BE NEARER THAN 5/8 INCH TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A CUT OR NOTCH.

C. NOTCHES AND HOLES IN MANUFACTURED LUMBER AND PREFABRICATED PLYWOOD WEB JOISTS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS UNLESS OTHERWISE NOTED.

50. 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 INTERNATIONAL BUILDING CODE, THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE AWC "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION". 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.

B. WALL FRAMING: REFER ARCHITECTURAL DRAWINGS FOR THE SIZE OF ALL WALLS. ALL STUDS SHALL BE SPACED AT 16" O.C. UNO. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS, AND AT BEAM OR HEADER BEARING LOCATIONS. TWO 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS SOLID BLOCKING AT MID-HEIGHT OF ALL STUD WALLS OVER 10'-0" IN HEIGHT.

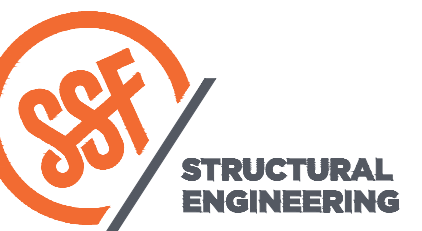
ALL WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16d NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16d NAILS. FACE NAIL DOUBLE TOP PLATE WITH 16d @ 12" O.C.. LAP TOP PLATES AT JOINTS A MINIMUM 4'-0" AND NAIL WITH TWELVE 16d NAILS @ 4" O.C. EACH SIDE JOINT.

ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH TWO ROWS OF 16d NAILS @ 12" ON-CENTER, OR ATTACHED TO CONCRETE BELOW WITH 5/8" DIAMETER ANCHOR BOLTS @ 4'-0" ON-CENTER EMBEDDED 7" MINIMUM, UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH TWO ROWS OF 16d @ 12" ON-CENTER. UNLESS OTHERWISE NOTED, GYPSUM WALLBOARD SHALL BE FASTENED TO THE INTERIOR SURFACE OF ALL STUDS AND PLATES WITH NO. 6 X 1-1/4" TYPE S OR W SCREWS @ 8" ON-CENTER. UNLESS INDICATED OTHERWISE, 1/2" (NOMINAL) APA RATED SHEATHING (SPAN RATING 24/0) SHALL BE NAILED TO ALL EXTERIOR SURFACES WITH 8d NAILS @ 6" ON-CENTER AT PANEL EDGES AND TOP AND BOTTOM PLATES (BLOCK UN-SUPPORTED EDGES) AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8d NAILS @ 12" ON-CENTER ALLOW 1/8" SPACING AT ALL PANEL EDGES AND PANEL ENDS.

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 BETWEEN RAFTERS AND JOISTS AT ALL BEARING POINTS WITH A MINIMUM OF (3) 16d TOE NAILS EACH END. TOE-NAIL JOISTS TO SUPPORTS WITH TWO 16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI JOIST BEAMS TOGETHER WITH TWO ROWS 16d @ 12" ON-CENTER.

UNLESS OTHERWISE NOTED ON THE PLANS, PLYWOOD ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED AT 6" ON-CENTER WITH 8d NAILS TO FRAMED PANEL EDGES, STRUTS AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" ON-CENTER TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G 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 16d @ 12" ON-CENTER, MINIMUM TWO NAILS PER BLOCK, UNLESS OTHERWISE NOTED.

D. WOOD SHRINKAGE: MECHANICAL, ELECTRICAL, PLUMBING FIRE PROTECTION, CLADDING, AND OTHER SYSTEMS INSTALLED WITHIN THE BUILDING SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE 3/8" OF VERTICAL MOVEMENT PER FLOOR LEVEL.



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DRAWN: CFG  
DESIGN: BDM  
CHECKED: BDM  
APPROVED: BDM

REVISIONS:  
1 Permit Set REV1 Nov. 8, 2024

JURISDICTIONAL APPROVAL STAMP:

PROJECT TITLE:  
**Korpela + Wiens  
Residence**  
8441 SE 33rd Place  
Mercer Island, WA

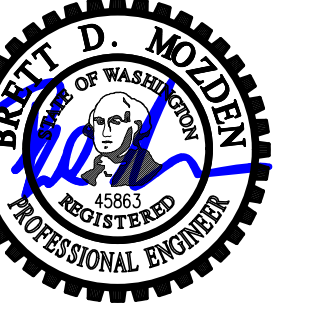
ARCHITECT:  
**Jessica Poole**  
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ISSUE:  
**Permit**

SHEET TITLE:  
**General  
Structural Notes  
Continued**

SCALE:  
DATE: Dec. 14, 2023  
PROJECT NO: 02327-2023-04  
SHEET NO:

**S1.2**



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
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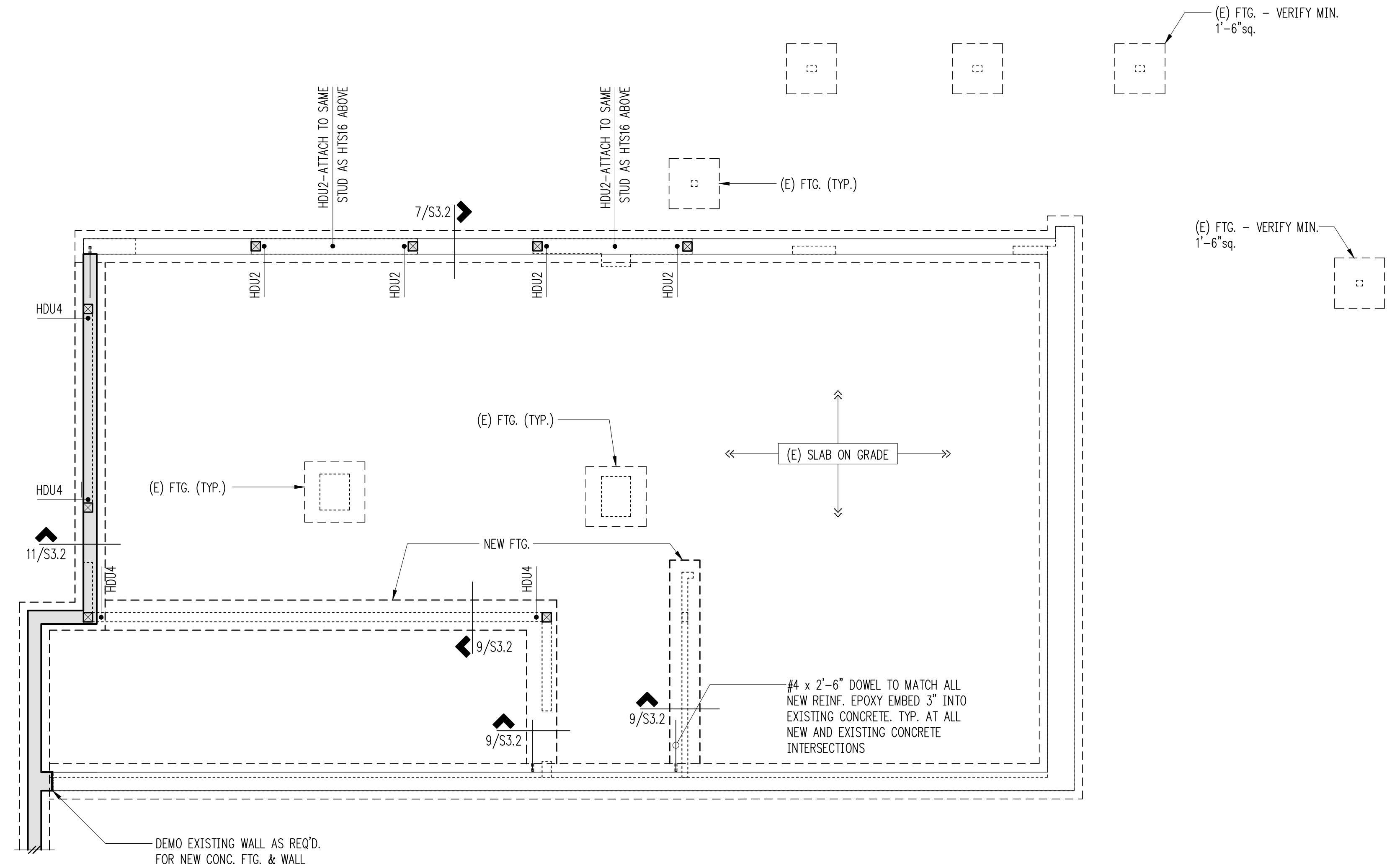
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ISSUE:  
**Permit**

SHEET TITLE:  
**Lower  
 Foundation  
 Plan**

SCALE: 1/4" = 1'-0"  
 DATE: Dec. 14, 2023  
 PROJECT NO: 02327-2023-04  
 SHEET NO:

**S2.1**

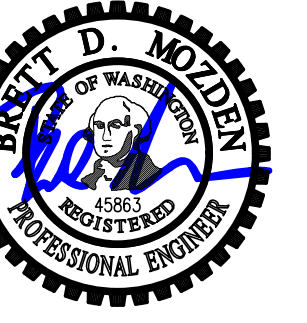


**Plan Notes**

- DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
- REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
- EXISTING FRAMING ON PLANS IS ASSUMED. CONTRACTOR TO VERIFY DIRECTIONS AND EXTENTS. NOTIFY ARCHITECT AND ENGINEER IF DIFFERENT.
- EXTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
- THE BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
- ALL NEW POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.

**Legend**

- STRUCTURAL WALL OR POST ABOVE
- (E) STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- EXISTING STEM WALL & FOOTING
- STEM WALL & FOOTING
- STRUCTURAL WALL OR POST BELOW
- HOLDOWN PER 11/S3.1 OR 9/S3.1 AT (E) U.N.O.



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
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JURISDICTIONAL APPROVAL STAMP:

PROJECT TITLE:  
**Korpela + Wiens Residence**  
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ARCHITECT:  
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ISSUE:  
**Permit**

SHEET TITLE:  
**Upper Foundation & Main Floor Plan**

SCALE: 1/4" = 1'-0"  
 DATE: Dec. 14, 2023  
 PROJECT NO: 02327-2023-04  
 SHEET NO:

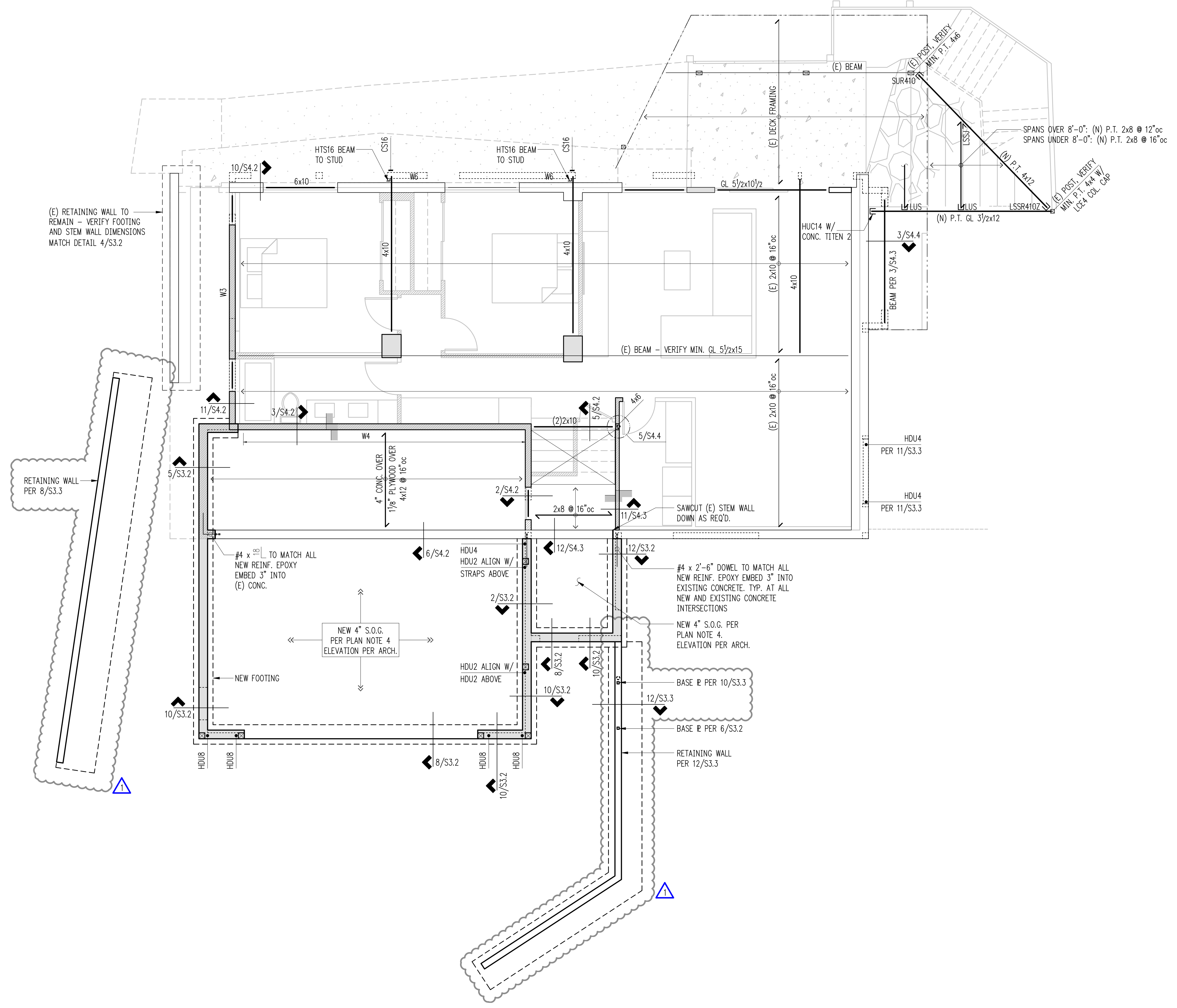
**S2.2**

**Plan Notes**

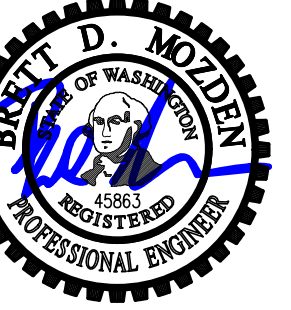
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- REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
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- NEW INTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
- NEW EXTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
- THE BOTTOM OF ALL NEW EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
- ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
- PROVIDE AC, ACE, PC, EPC, LPC, OR LCE COLUMN CAP AND BASE AT ALL NEW BEAM TO COLUMN CONNECTIONS U.O.N.
- NEW MANUFACTURED LUMBER PRODUCTS (LSL, LVL, PSL, GL) SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%.

**Legend**

- STRUCTURAL WALL OR POST BELOW
- STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- EXISTING WALL OR POST BELOW
- EXISTING STEM WALL & FOOTING
- STEM WALL & FOOTING
- SHEARWALL PER 4/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- EXISTING HEADER/BEAM
- CHANGE IN ELEVATION
- HOLDOWN PER 11/S3.1 OR 9/S3.1 AT (E)



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



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

JURISDICTIONAL APPROVAL STAMP:

PROJECT TITLE:  
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 Residence**  
 8441 SE 33rd Place  
 Mercer Island, WA

ARCHITECT:  
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ISSUE:  
**Permit**

SHEET TITLE:  
**Upper Floor  
 & Lower  
 Roof Plan**

SCALE:  
 1/4" = 1'-0"  
 DATE:  
 Dec. 14, 2023  
 PROJECT NO:  
 02327-2023-04  
 SHEET NO:

**Plan Notes**

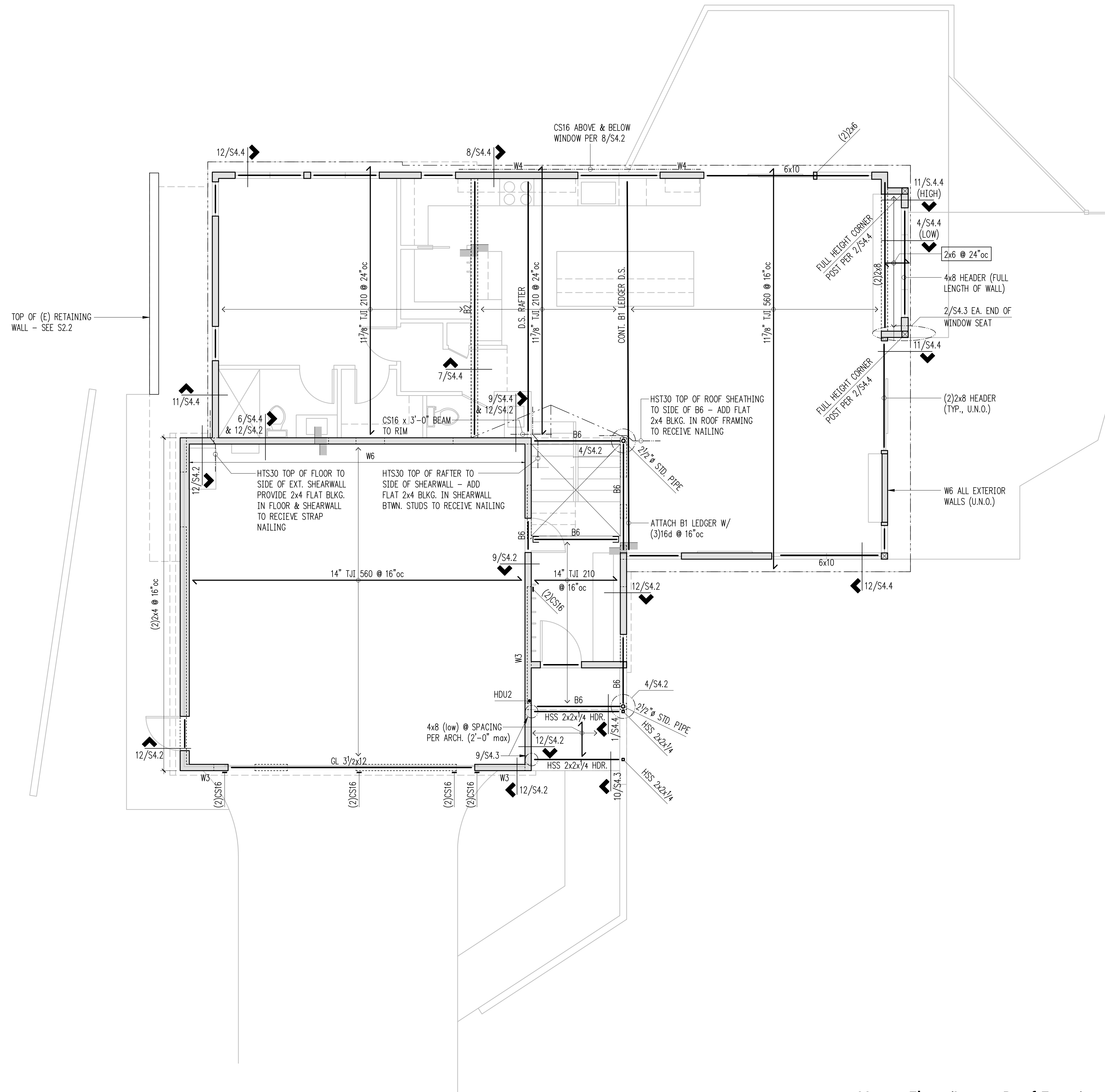
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- NEW MANUFACTURED LUMBER PRODUCTS (LSL, LVL, PSL, GL) SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%.
- TYPICAL FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 3/4" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
- NAIL FLOOR SHEATHING W/ 8D AT 6" OC AT FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" OC IN FIELD.
- PROVIDE BLOCKING/BRIDGING AT 8'-0" O.C. IN FLOOR FRAMING
- TYPICAL ROOF FRAMING OF ROOFING PER ARCHITECTURAL DRAWINGS OVER 1/2" CDX APA RATED SHEATHING (EXPOSURE 1), FACE PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
- NAIL ROOF SHEATHING WITH 8D AT 6" O.C. AT ALL FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" O.C. FIELD.
- "W\_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
- PROVIDE (2) BEARING STUDS AT EACH END OF ALL, HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.

**Legend**

- STRUCTURAL WALL OR POST BELOW XX HOLDOWN PER 11/S3.1
- STRUCTURAL WALL OR POST ABOVE D.S. DRAG STRUT: NAIL W/ 8d @ 4" oc THRU SHEATHING
- NON-STRUCTURAL WALL BELOW
- Wx SHEARWALL PER 4/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- CHANGE IN ELEVATION

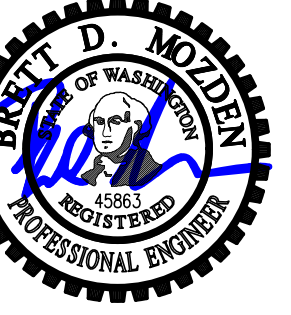
**Beam Schedule**

MARK	BEAM	HANGER	BRG. STUDS
B1	LVL 1 3/4x11 7/8	HU14	2
B2	LVL 3/2x11 7/8	HHUS410	3
B3	(3)LVL 1 3/4x11 7/8	HGUS5.50/14	4
B4	(4)LVL 1 3/4x11 7/8	HGUS7.25/14	5
B5	LSL 1 3/4x14	HU/HUC14	2
B6	LSL 3/2x14	HU/HUC416	3
B7	(3)LVL 1 3/4x14	HGUS5.50/14	4
B8	(4)LVL 1 3/4x14	HGUS7.25/14	5



**Upper Floor/Lower Roof Framing Plan**  
 Scale: 1/4" = 1'-0"





DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

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PROJECT TITLE:  
**Korpela + Wiens  
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 8441 SE 33rd Place  
 Mercer Island, WA

ARCHITECT:  
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ISSUE:  
**Permit**

SHEET TITLE:  
**Upper Roof  
 Plan**

SCALE: 1/4" = 1'-0"  
 DATE: Dec. 14, 2023  
 PROJECT NO: 02327-2023-04  
 SHEET NO:

**S2.4**

**Plan Notes**

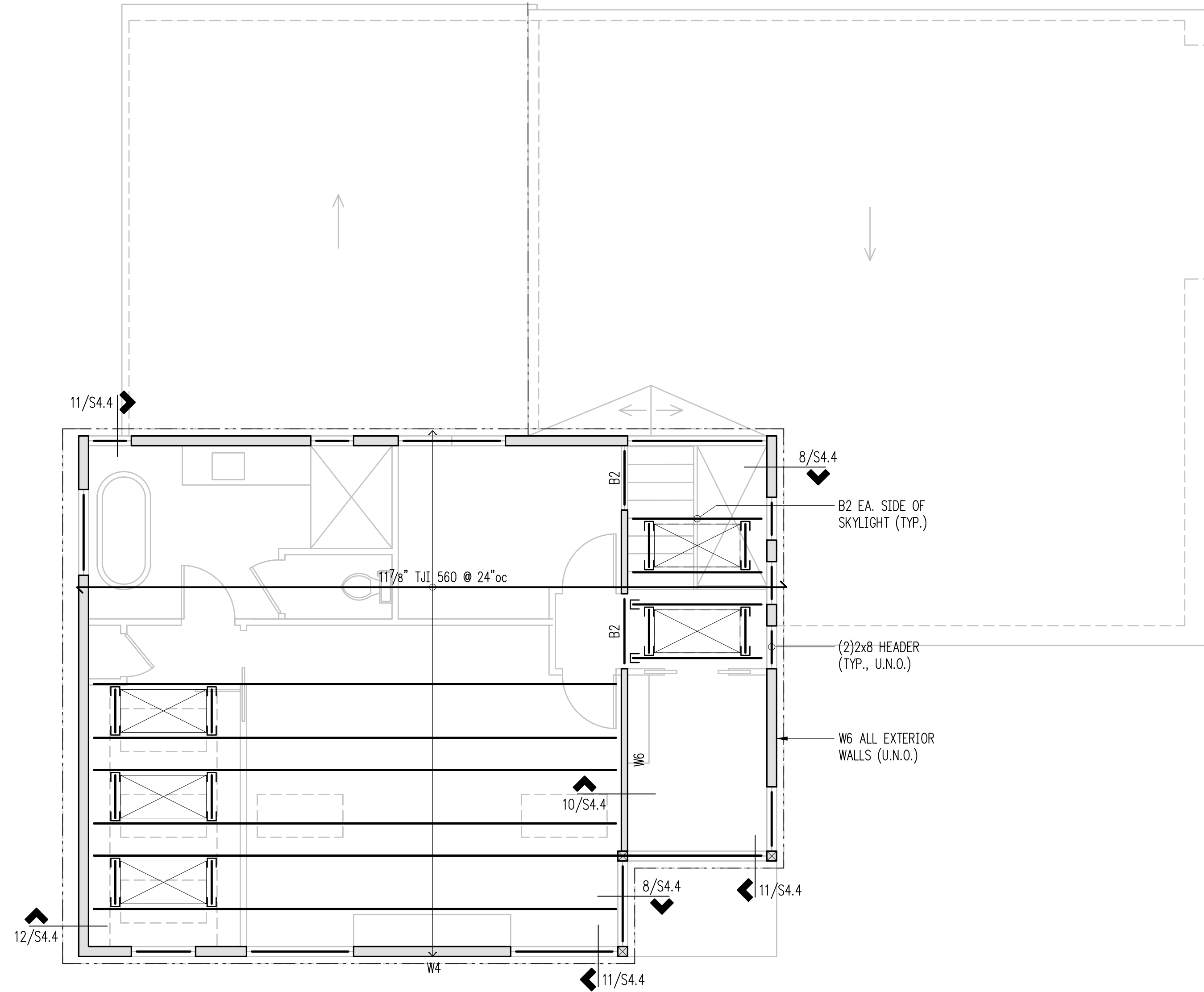
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- PROVIDE AC, ACE, PC, EPC, LPC, OR LCE COLUMN CAP AND BASE AT ALL NEW BEAM TO COLUMN CONNECTIONS U.O.N.
- NEW MANUFACTURED LUMBER PRODUCTS (LSL, LVL, PSL, GL) SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%.
- TYPICAL ROOF FRAMING OF ROOFING PER ARCHITECTURAL DRAWINGS OVER 1/2" CDX APA RATED SHEATHING (EXPOSURE 1), FACE PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
- NAIL ROOF SHEATHING WITH 8D AT 6" O.C. AT ALL FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" O.C. FIELD.
- "W\_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
- PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.

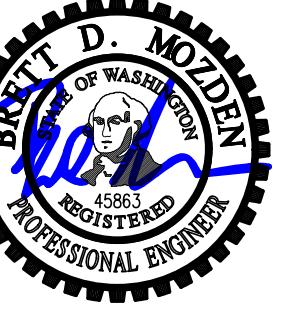
**Legend**

- STRUCTURAL WALL OR POST BELOW
- NON-STRUCTURAL WALL BELOW
- Wx SHEARWALL PER 4/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN

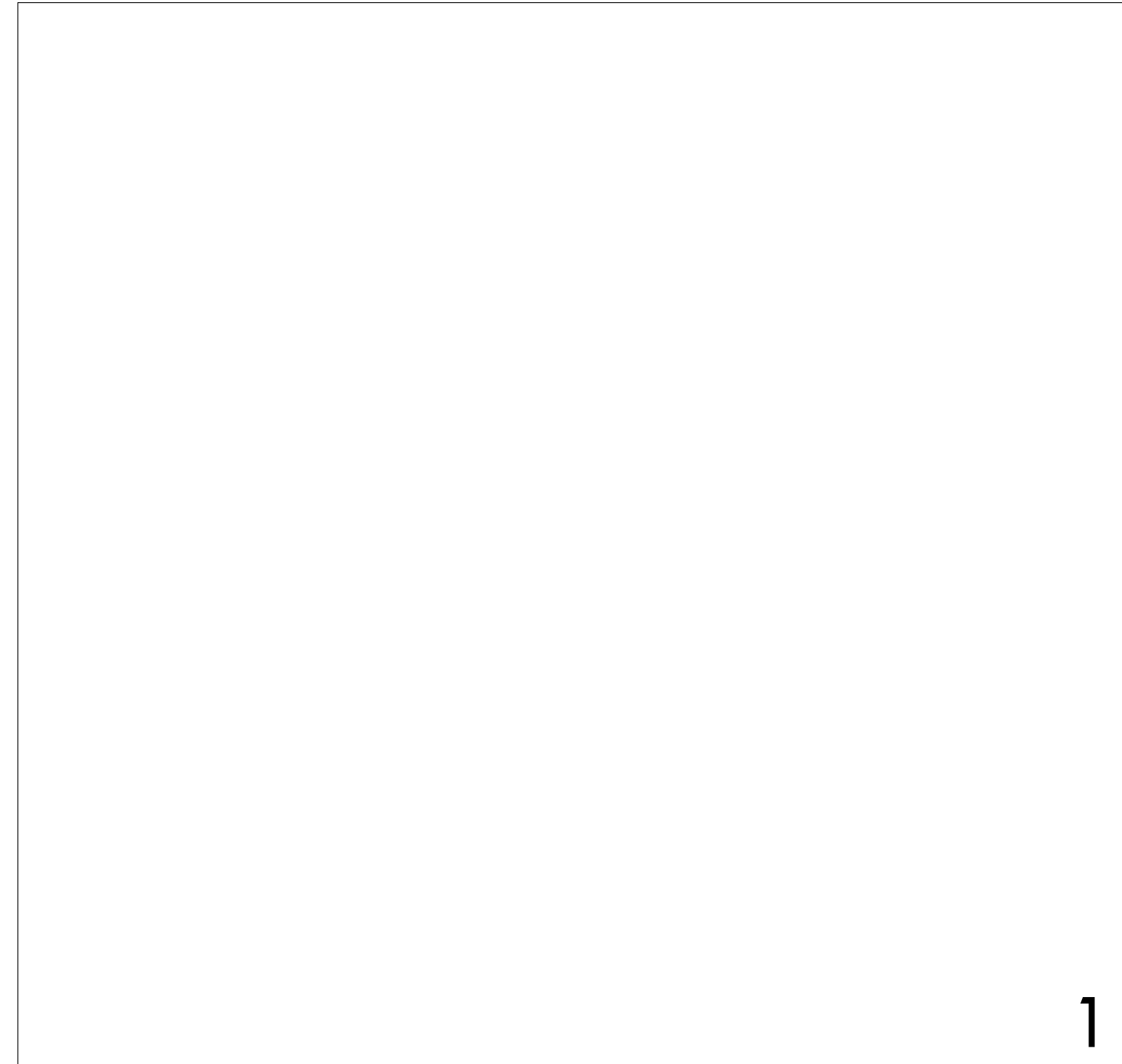
**Beam Schedule**

MARK	BEAM	HANGER	BRG. STUDS
B1	LVL 1 3/4x11 7/8	HU14	2
B2	LVL 3 1/2x11 7/8	HHUS410	3
B3	(3) LVL 1 3/4x11 7/8	HGUS5.50/14	4
B4	(4) LVL 1 3/4x11 7/8	HGUS7.25/14	5



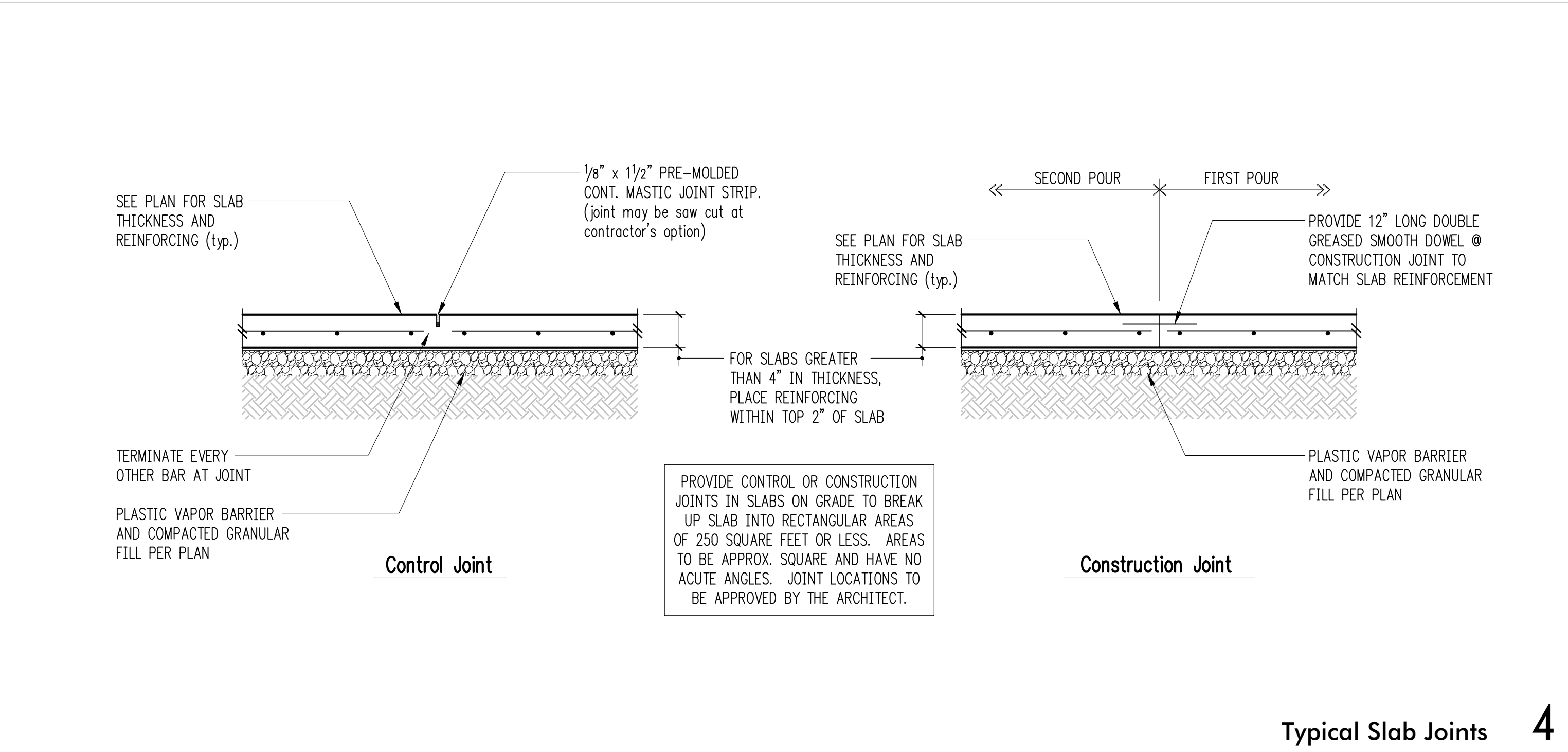


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 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM



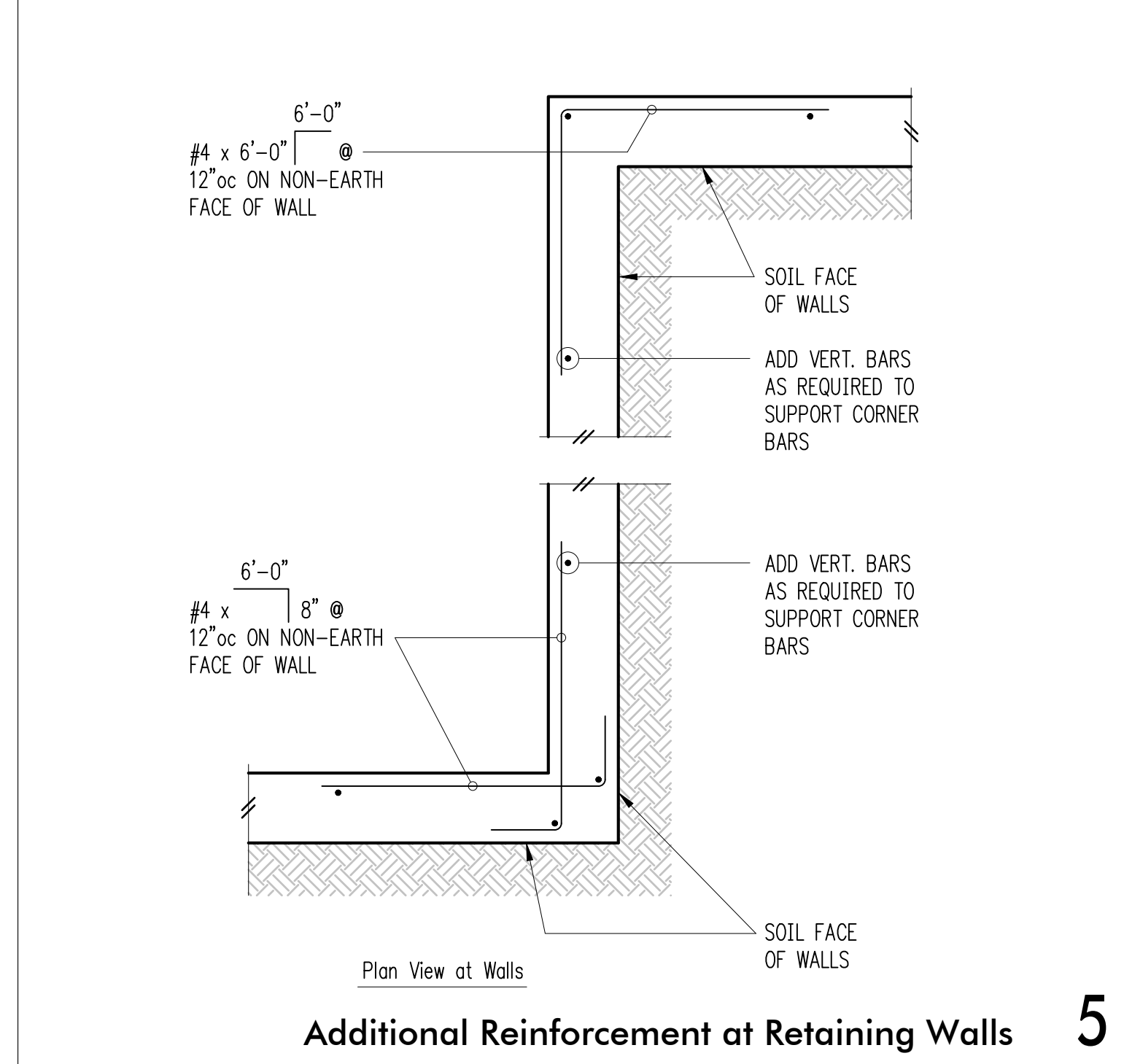
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Typical Stair On Grade 2



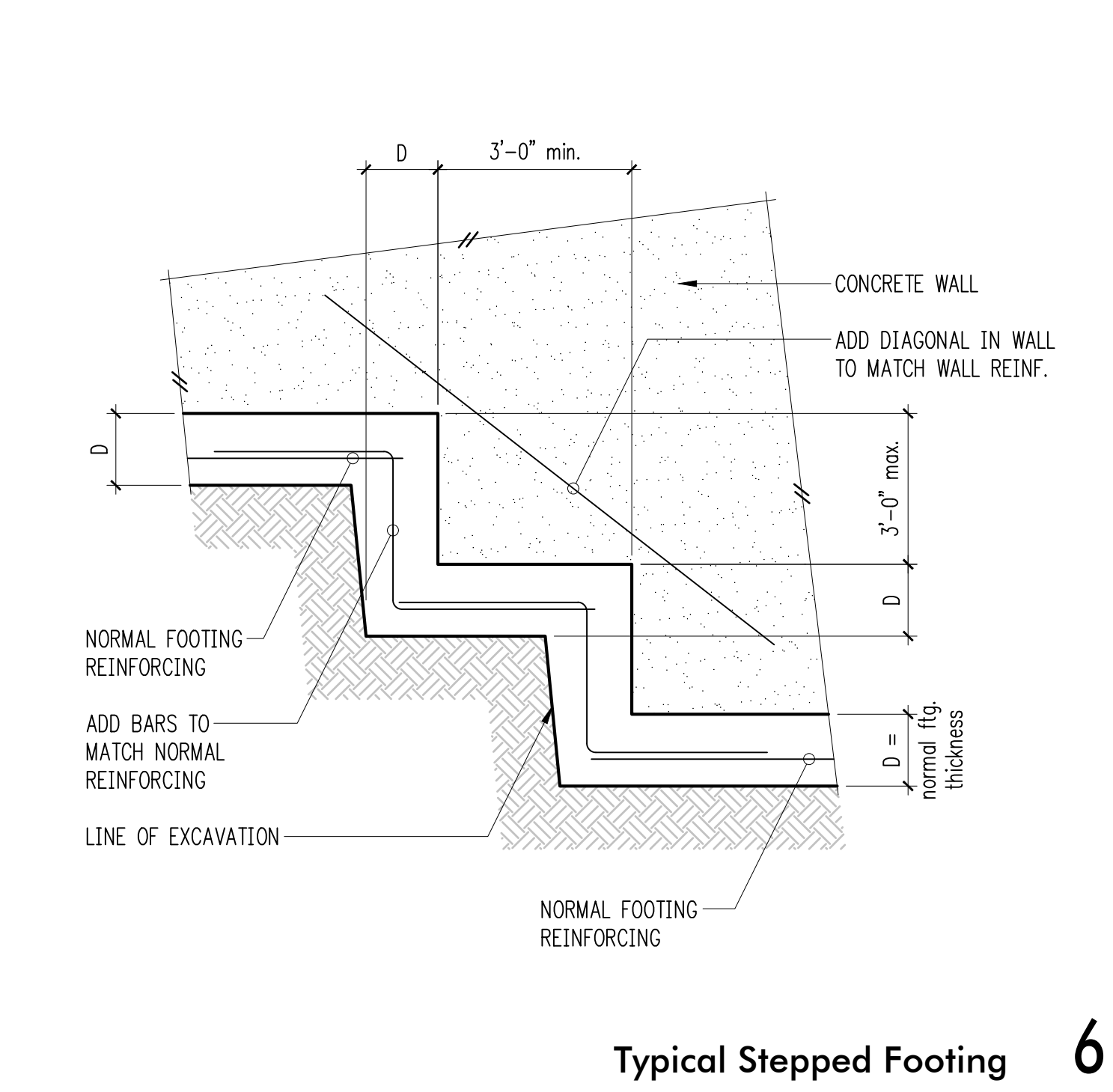
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Typical Slab Joints 4



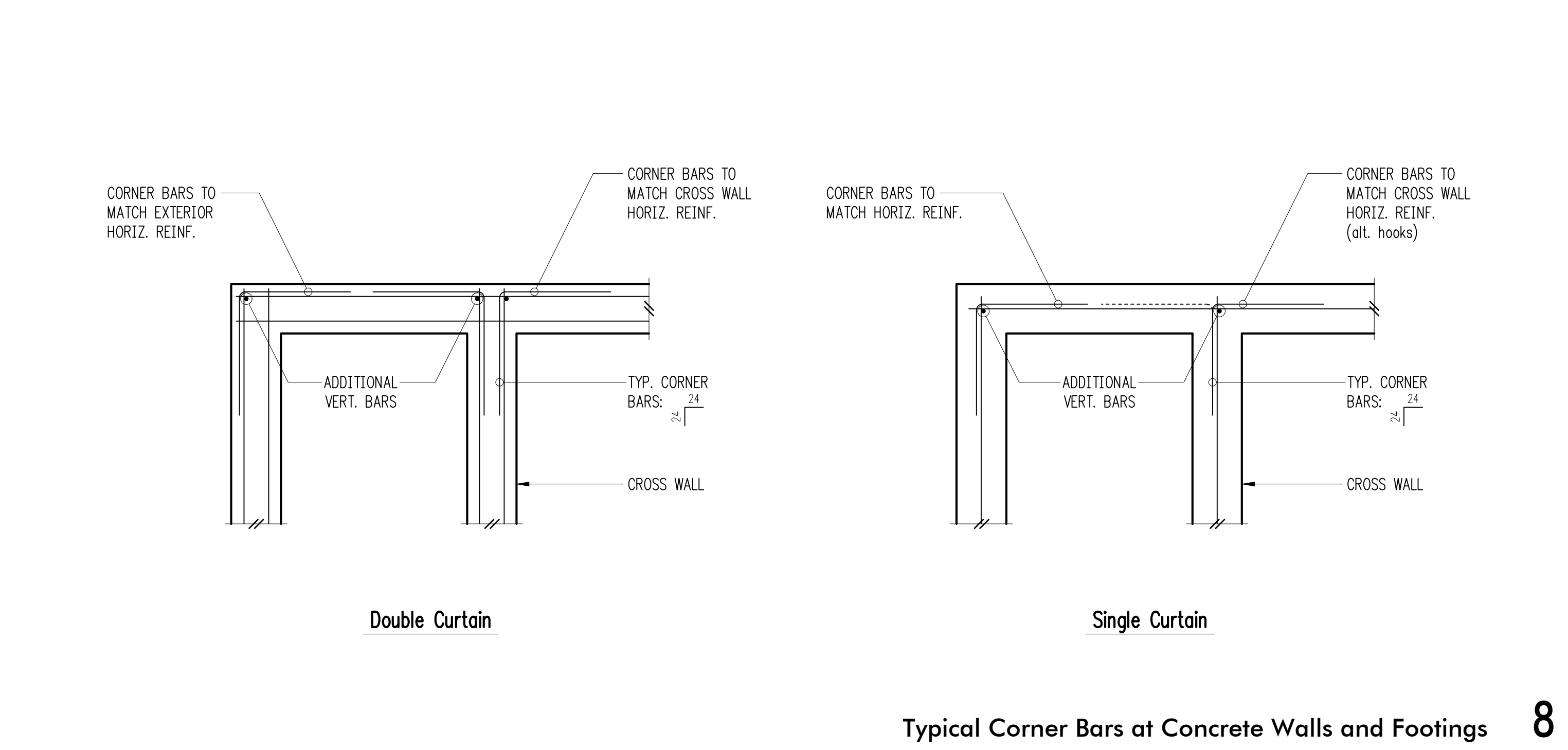
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Additional Reinforcement at Retaining Walls 5



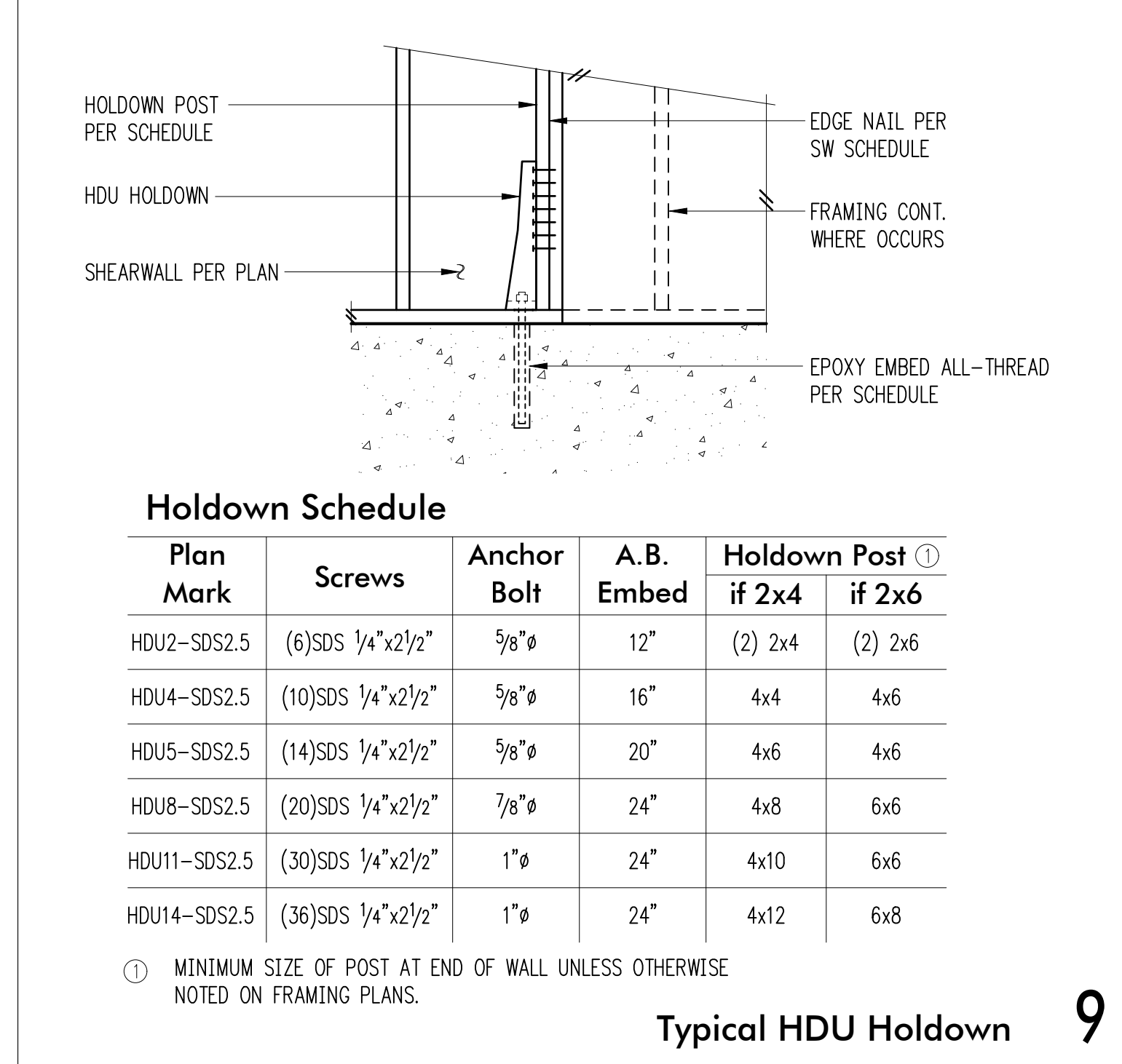
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Typical Stepped Footing 6



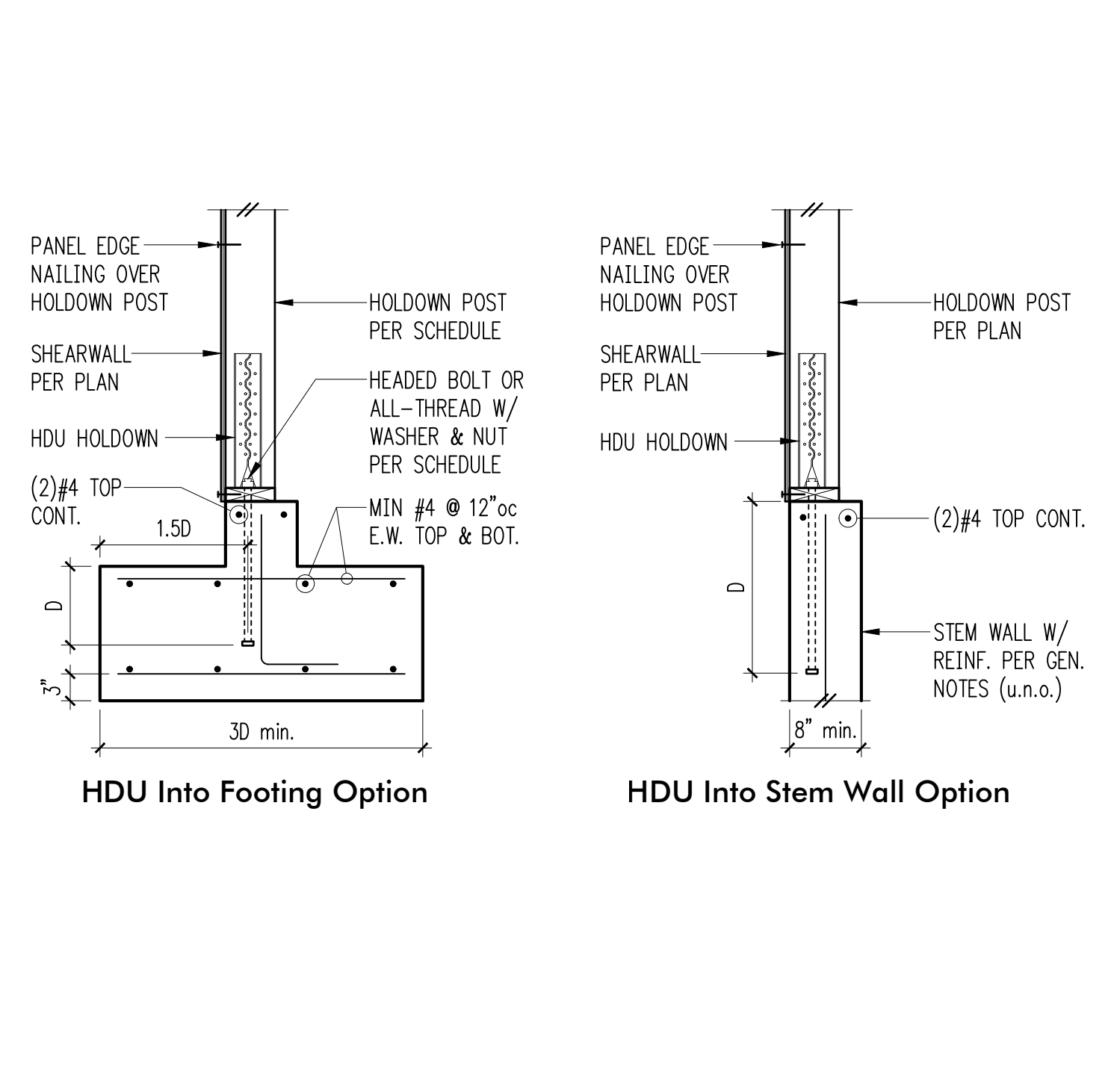
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Typical Corner Bars at Concrete Walls and Footings 8



9

Typical HDU Holddown 9



10

HDU Into Footing Option 10

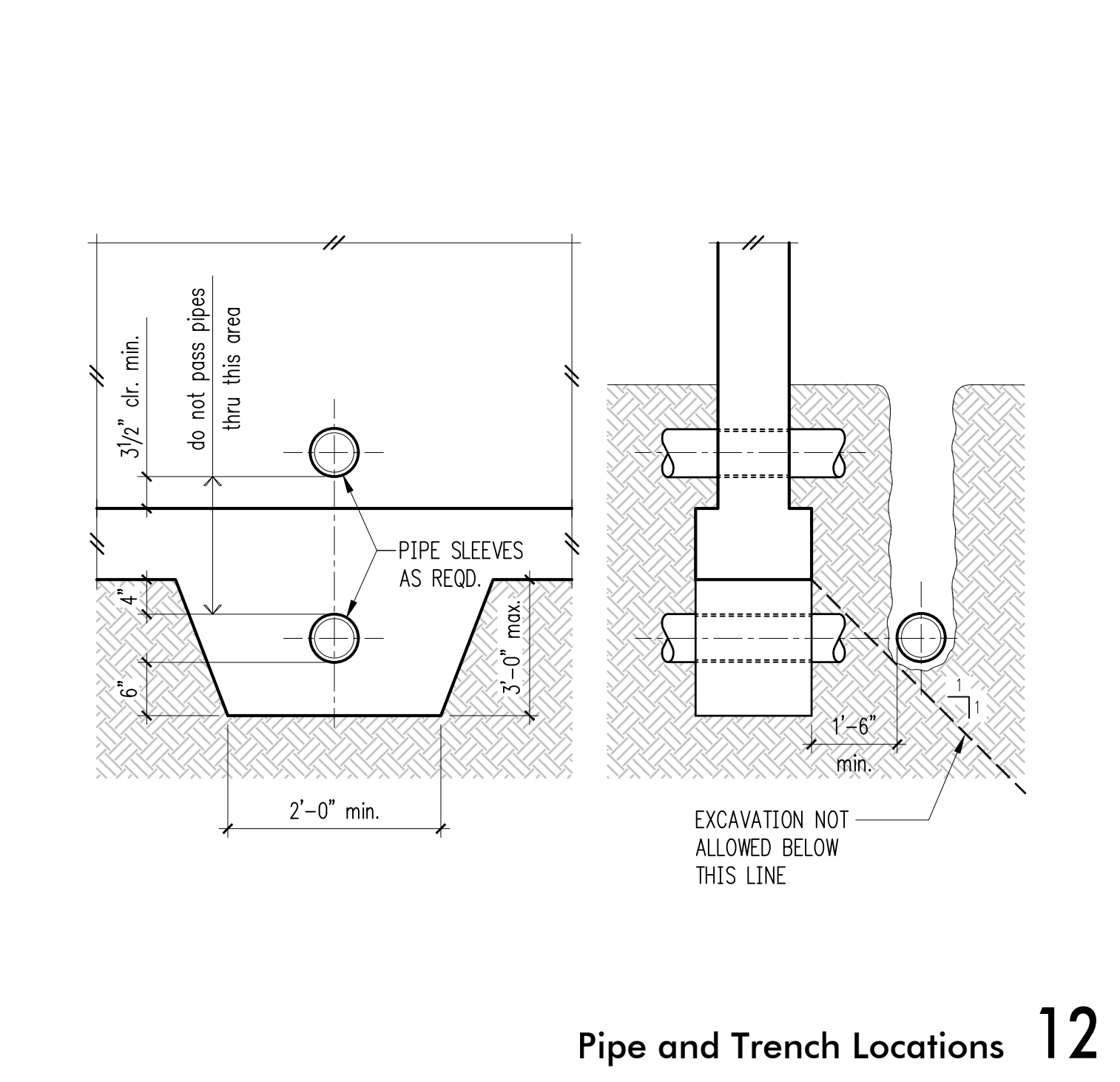
**Holddown Schedule**

Plan Mark	Screws	Anchor Bolt	Min. A.B. Embed (D)		Holdown Post ①	
			Stem Wall	Footing	if 2x4	if 2x6
HDU2-SDS2.5	(6)SDS 1/4"x2 1/2"	5/8"φ	12"	4"	(2) 2x4	(2) 2x6
HDU4-SDS2.5	(10)SDS 1/4"x2 1/2"	5/8"φ	18"	6"	4x4	4x6
HDU5-SDS2.5	(14)SDS 1/4"x2 1/2"	5/8"φ	SB5/8x24	7"	4x4	4x6
HDU8-SDS2.5	(20)SDS 1/4"x2 1/2"	7/8"φ	SSTB28	8"	4x6	6x6
HDU11-SDS2.5	(30)SDS 1/4"x2 1/2"	1"φ	SB1x30	10"	4x8	6x6
HDU14-SDS2.5	(36)SDS 1/4"x2 1/2"	1"φ	N/A	12"	4x8	6x6

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

11

Typical HDU Holddown 11



12

Pipe and Trench Locations 12

REVISIONS:  
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 8441 SE 33rd Place  
 Mercer Island, WA

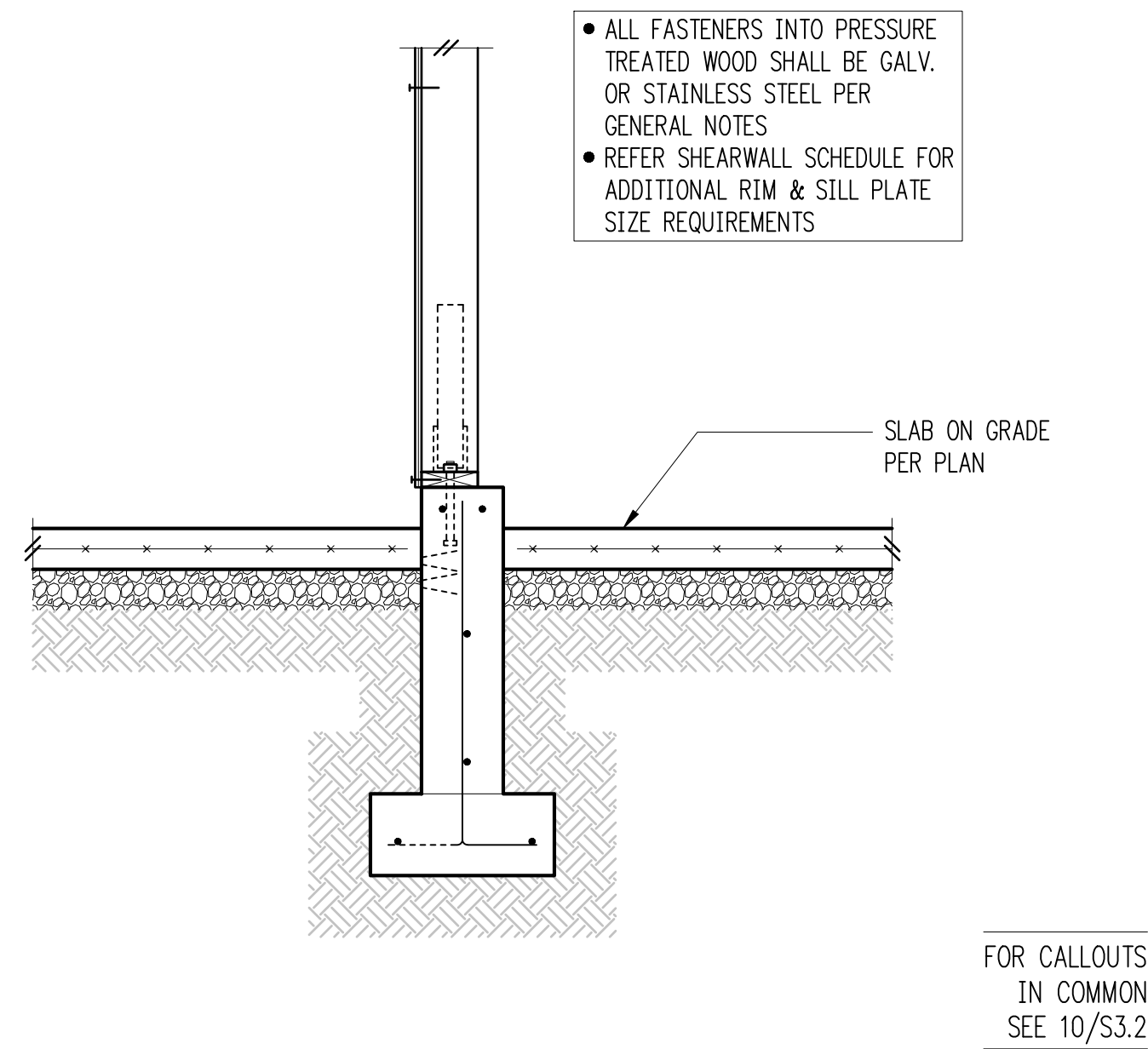
ARCHITECT:  
 Jessyca Poole  
 7718 Fremont Ave N  
 Seattle, WA 98103  
 PH 206.484.3802

ISSUE:  
 Permit

SHEET TITLE:  
 Typical  
 Concrete  
 Details

SCALE:  
 3/4" = 1'-0" U.N.O.  
 DATE:  
 Dec. 14, 2023  
 PROJECT NO:  
 02327-2023-04  
 SHEET NO:

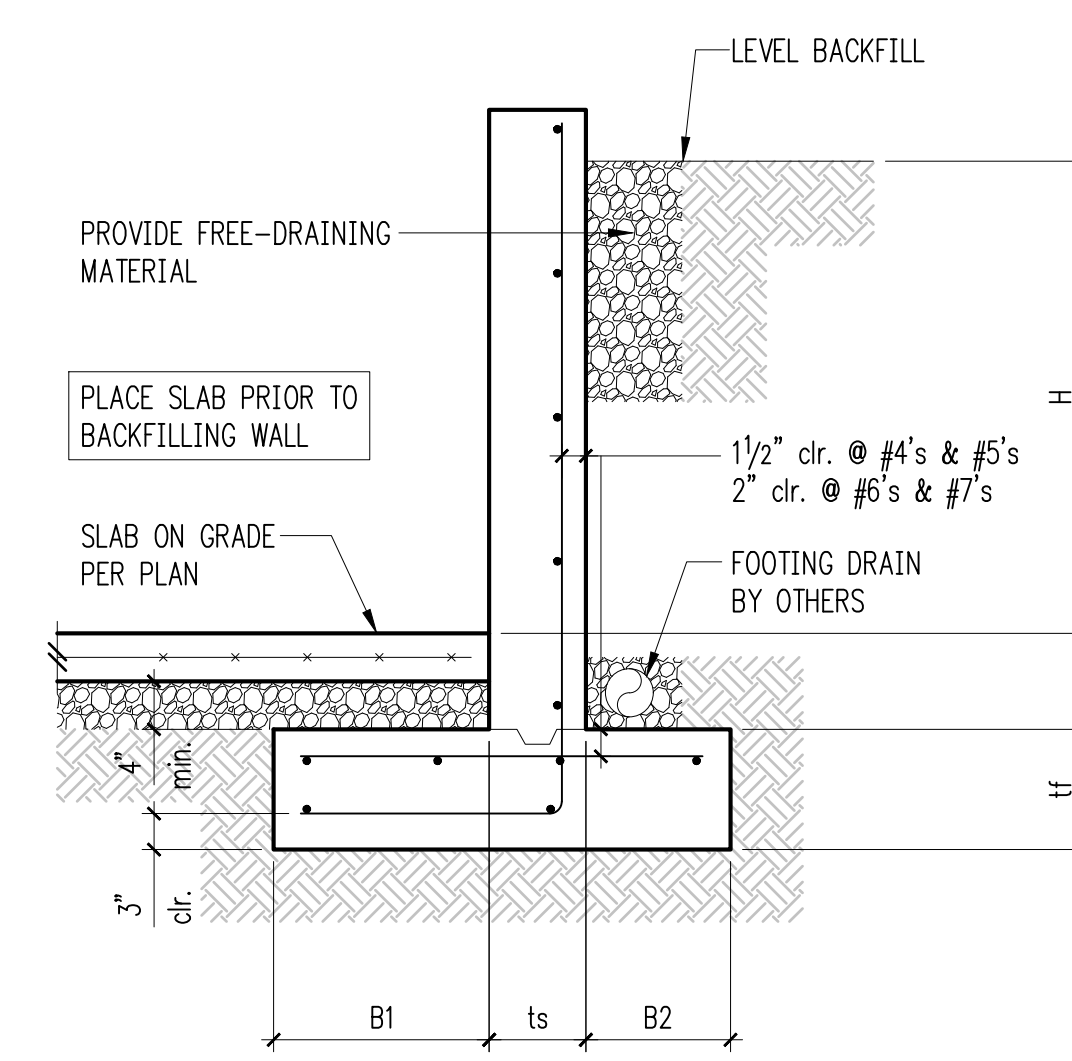
S3.1



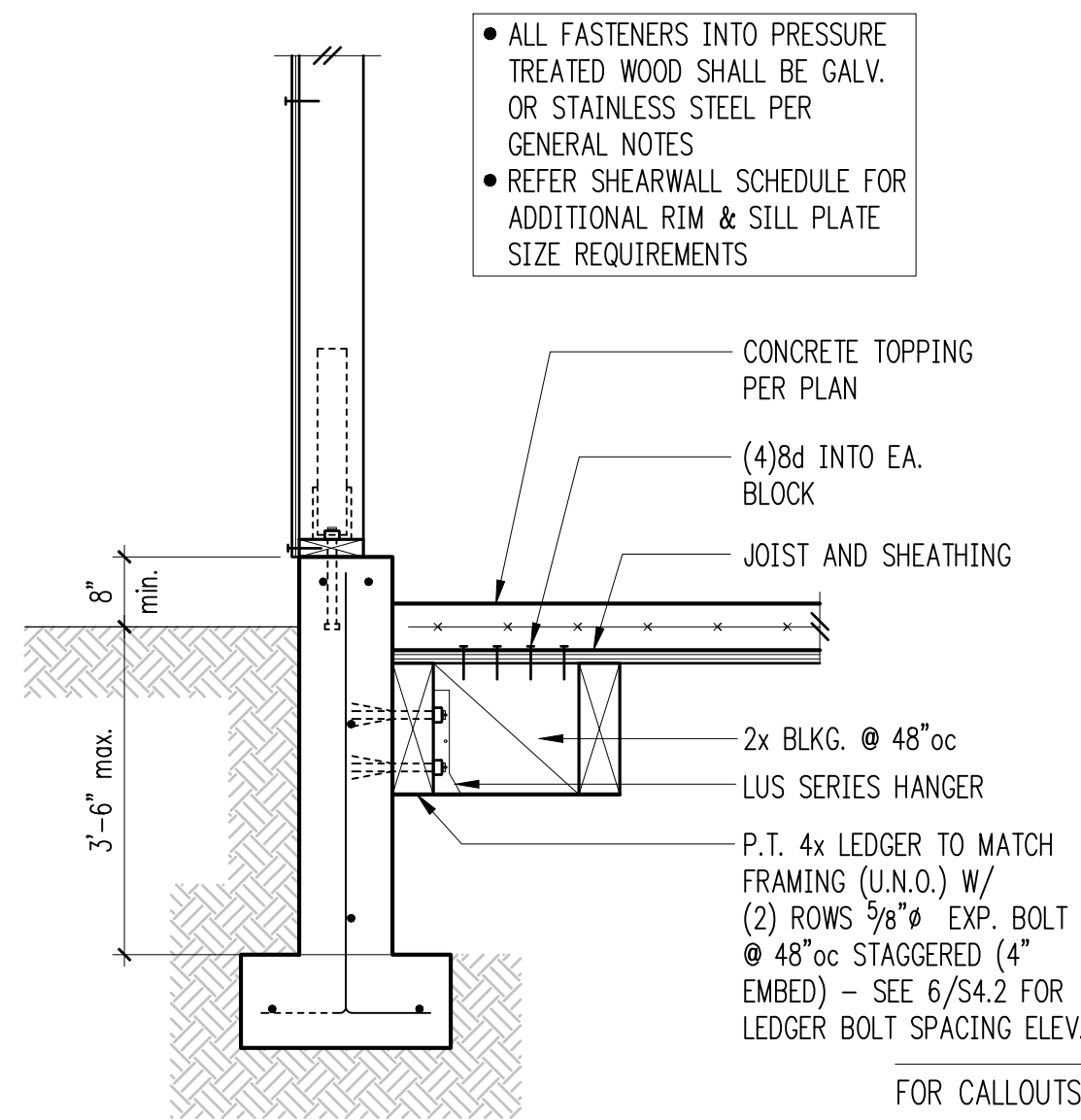
**Garage Wall w/ Slab on Grade 2**

**Retaining Wall Schedule W/ Slab**

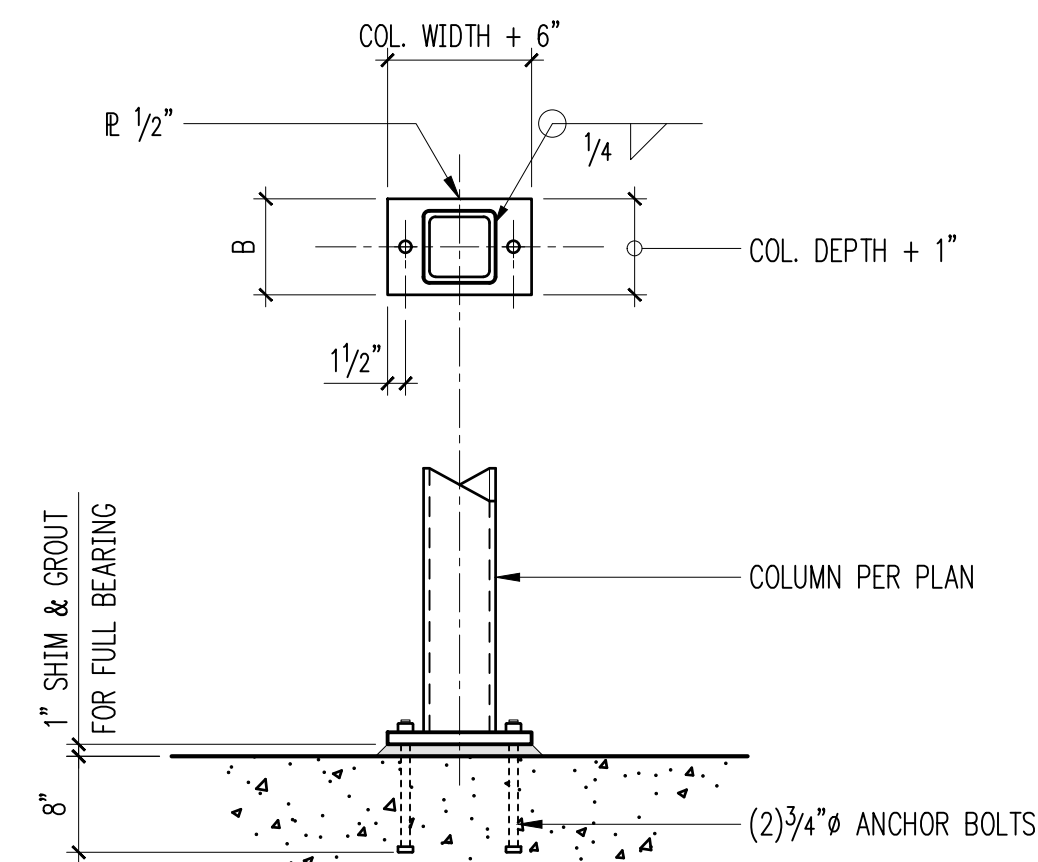
H (ft.)	B1	ts	B2	ff	Stem Reinforcing		Footing Reinforcing	
					Vert.	Horiz.	Top	Longit.
3'-0"	5"	8"	5"	8"	#4 @ 12"oc	#4 @ 12"oc	-	(2)#4
4'-0"	1'-0"	8"	5"	10"	#4 @ 12"oc	#4 @ 12"oc	-	(3)#5
6'-0"	1'-8"	8"	7"	10"	#5 @ 12"oc	#4 @ 12"oc	-	(4)#4
8'-0"	2'-9"	10"	1'-0"	12"	#6 @ 12"oc	#4 @ 12"oc	#5 @ 12"oc	(5)#5
10'-0"	3'-9"	10"	1'-6"	14"	#7 @ 10"oc	#4 @ 12"oc	#6 @ 12"oc	(6)#6



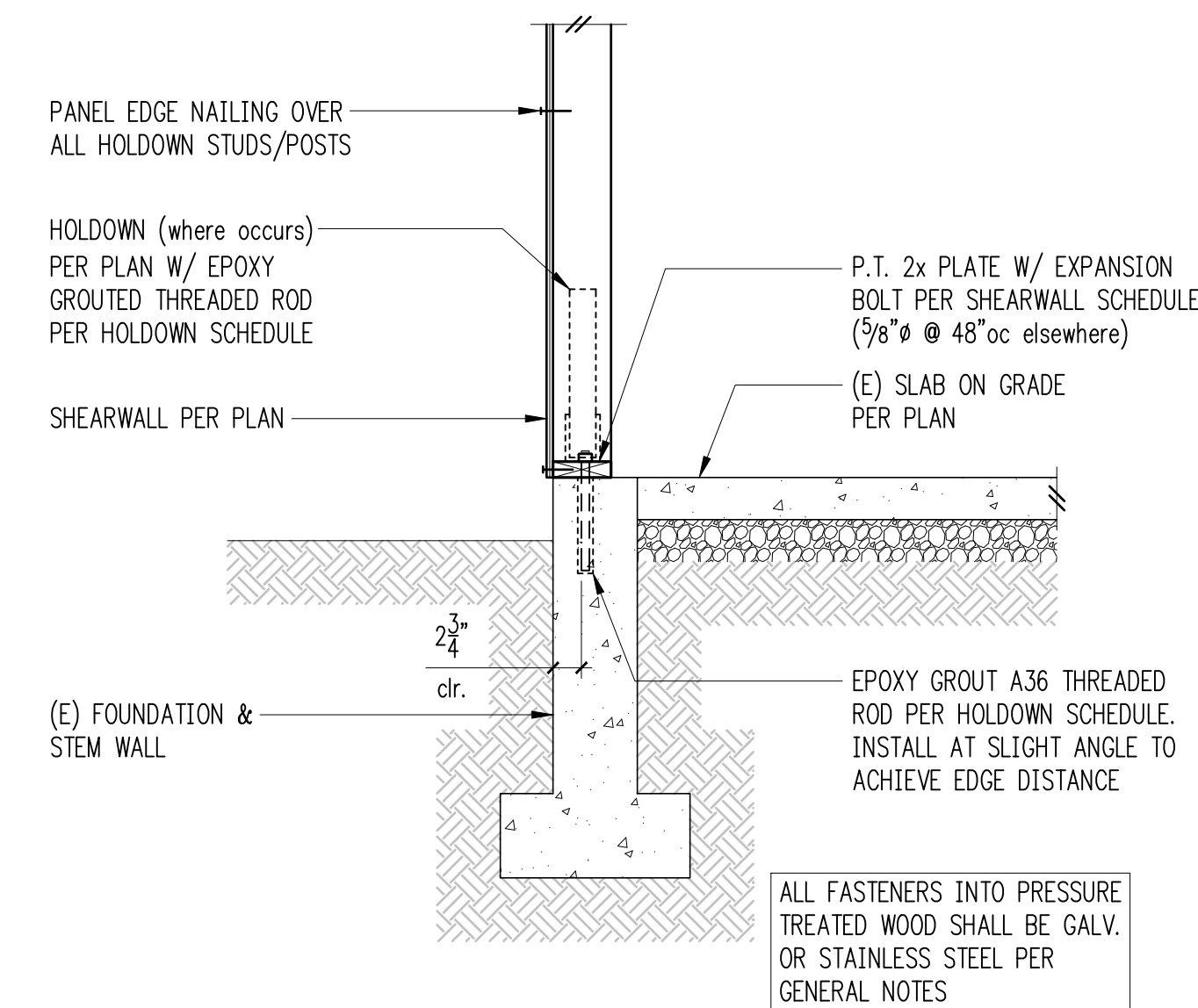
**4**



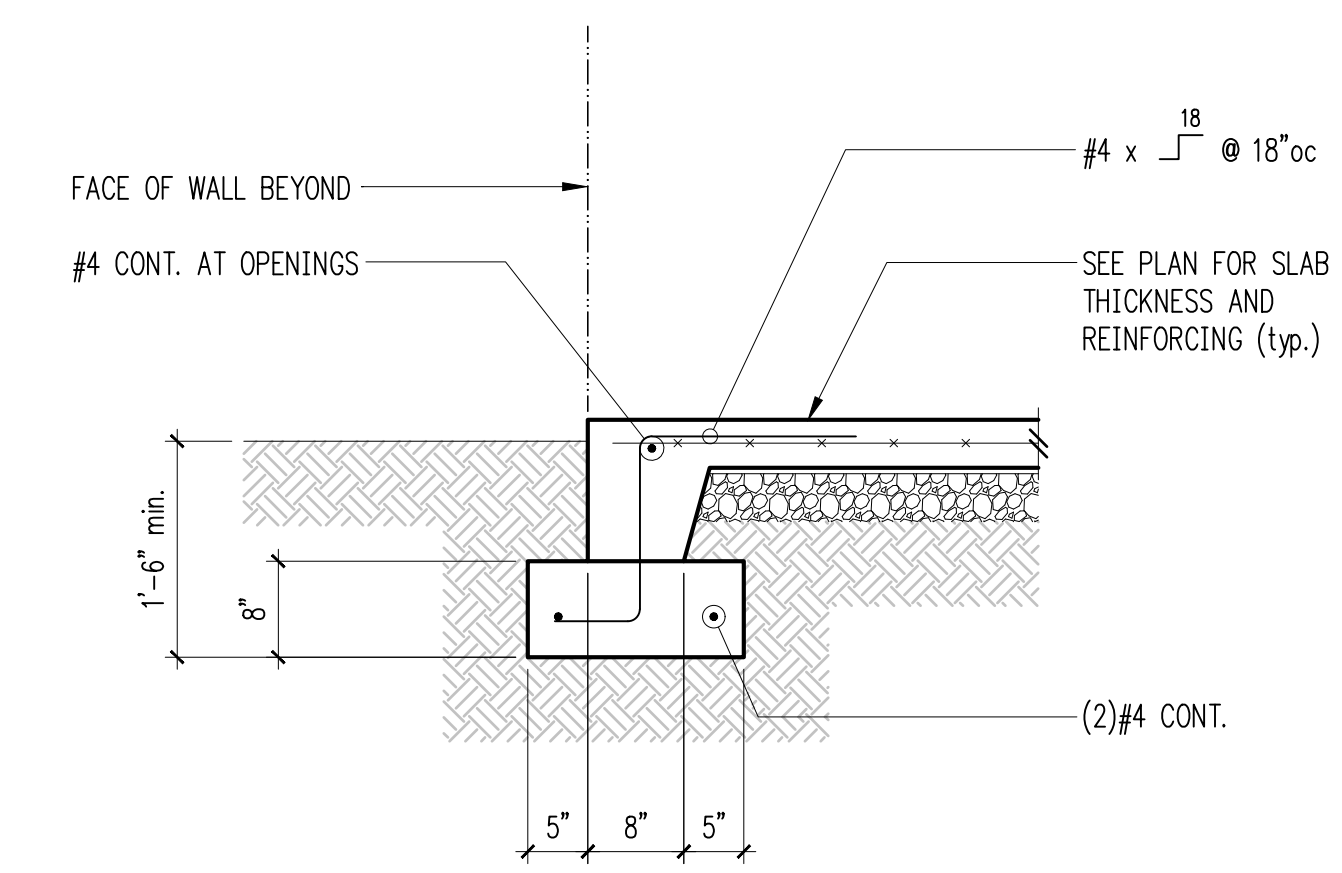
**Garage Wall w/ Slab on Grade 5**



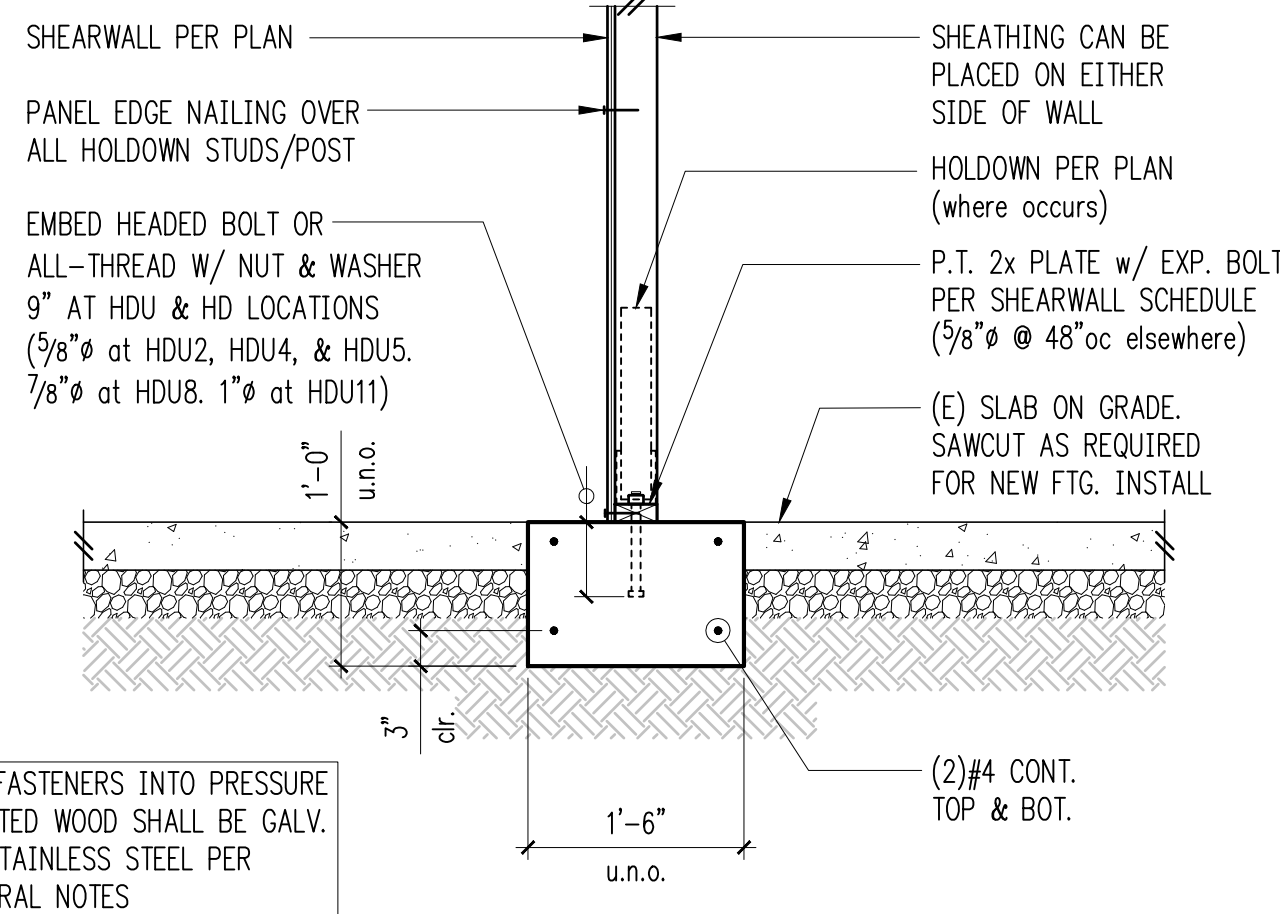
**Baseplate - HSS Column 6**



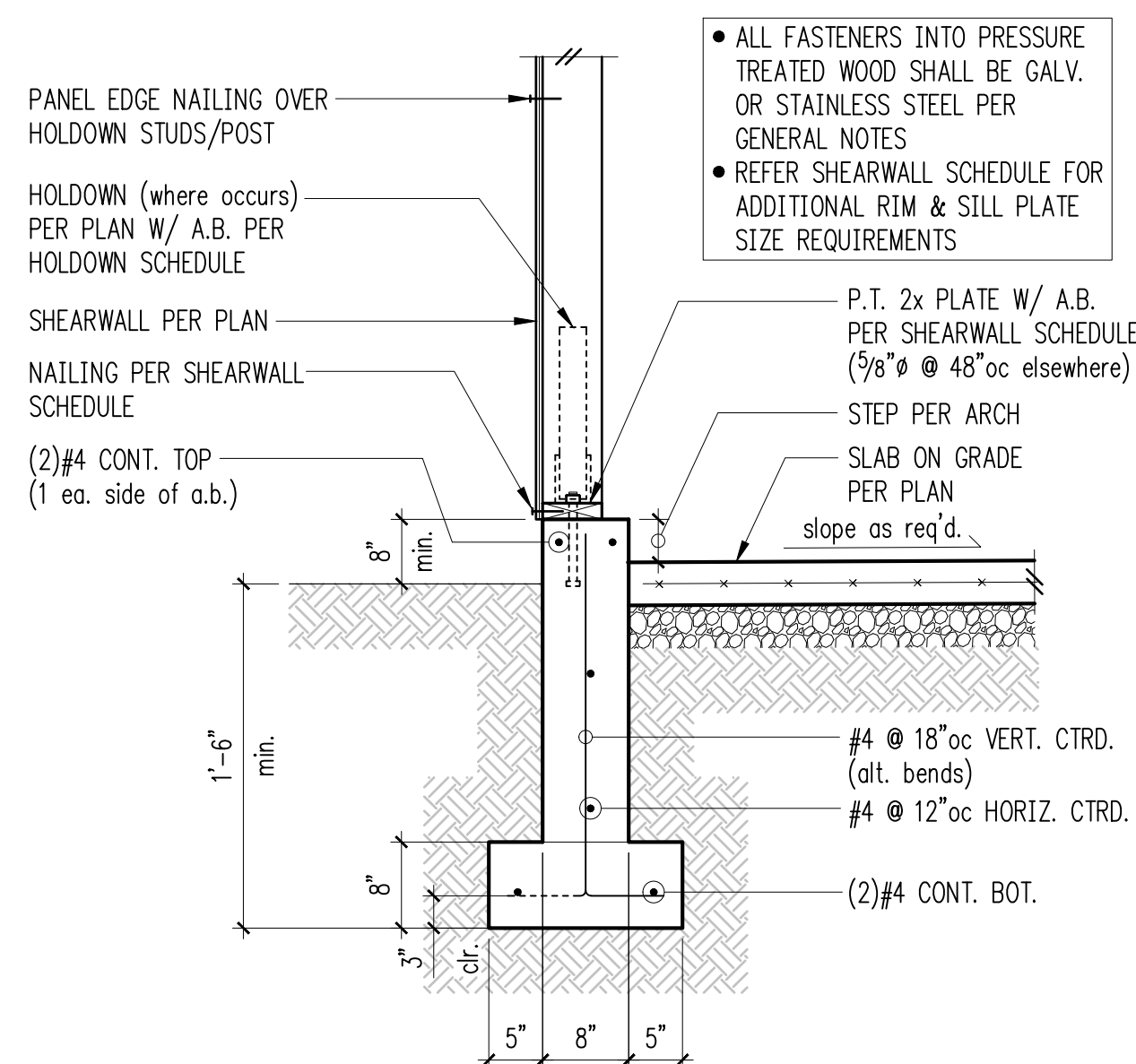
**New Exterior Wall W/ Existing Slab & Foundation 7**



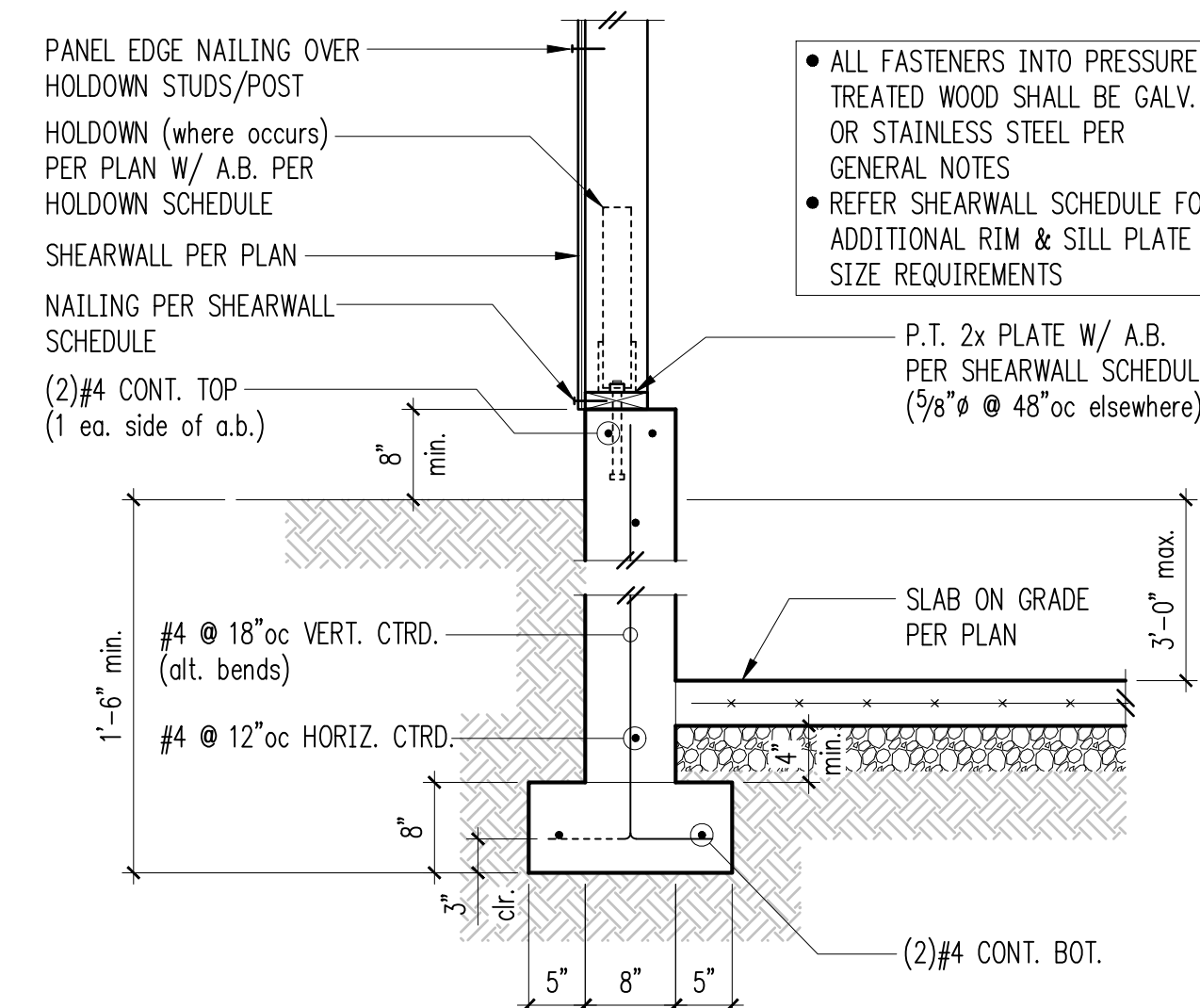
**Typical Turned-Down Slab Edge 8**



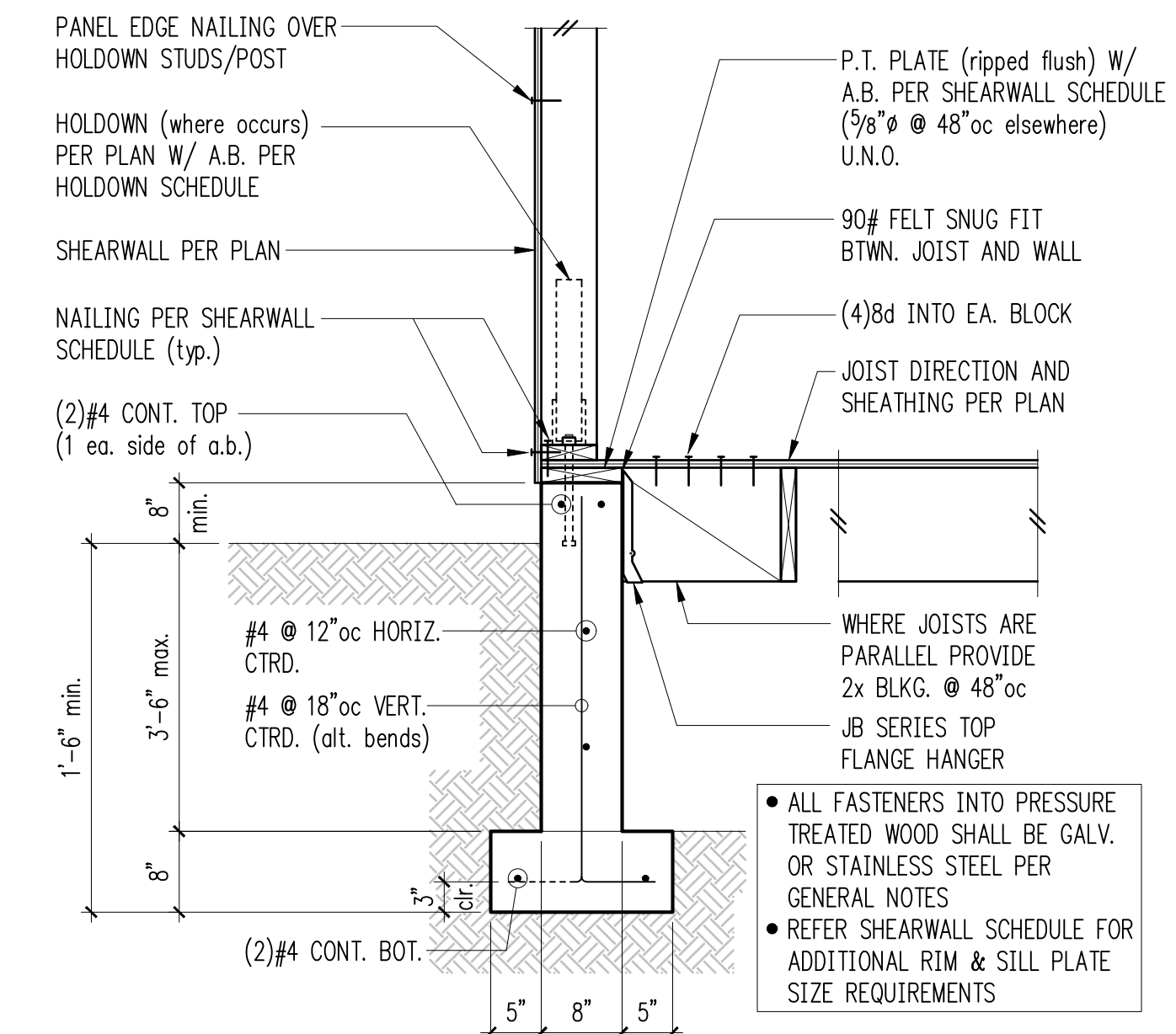
**New Interior Wall & Foundation W/ Existing Slab 9**



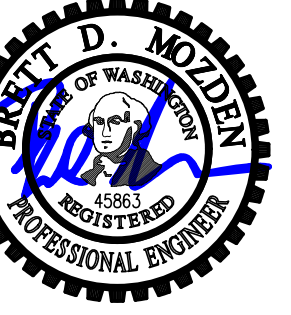
**6' Garage Wall w/ Slab on Grade 10**



**Exterior Wall w/ Slab on Grade & High Grade 11**



**Exterior Framing at Crawl Space 12**



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

1

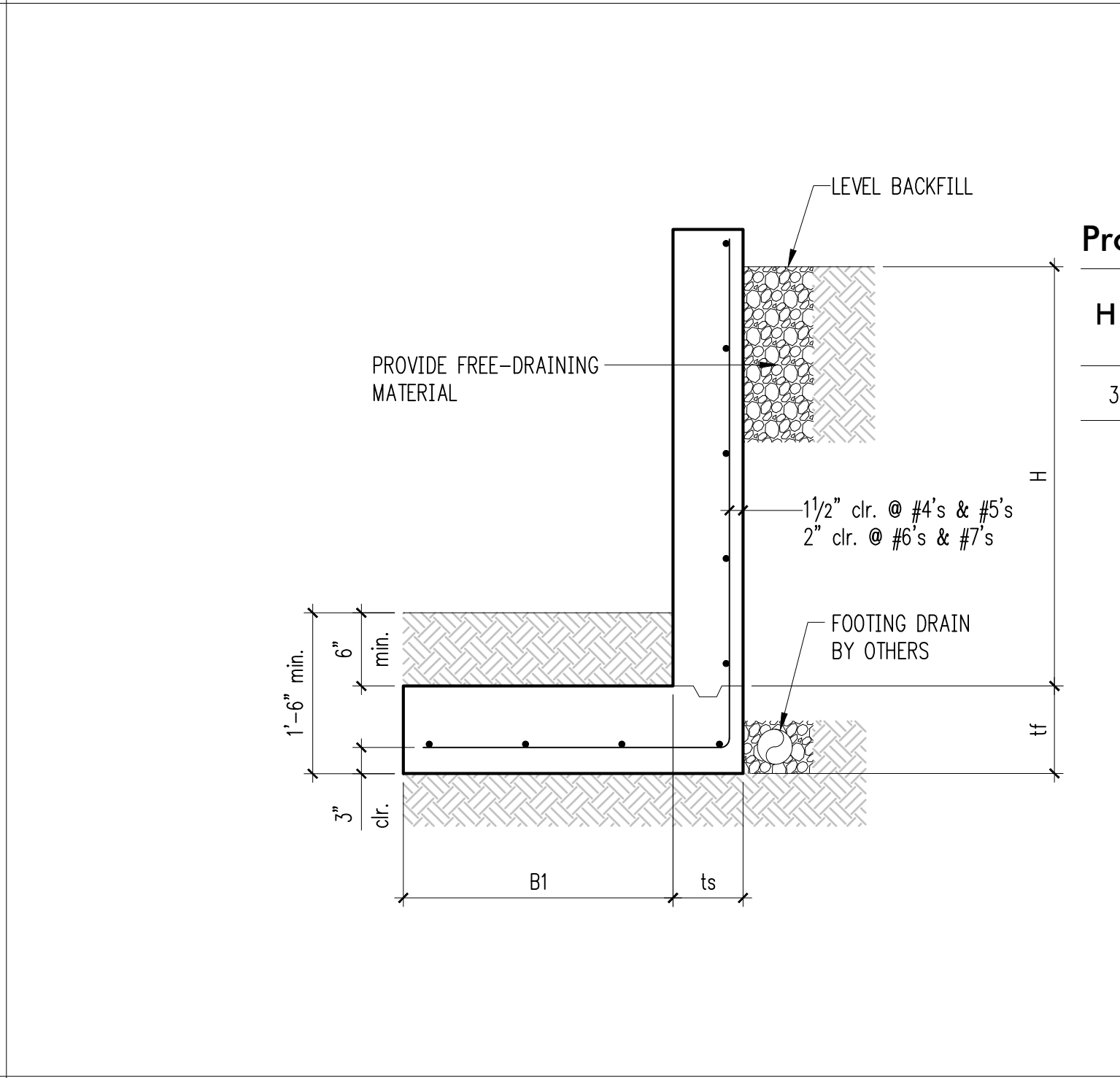
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3

4

5

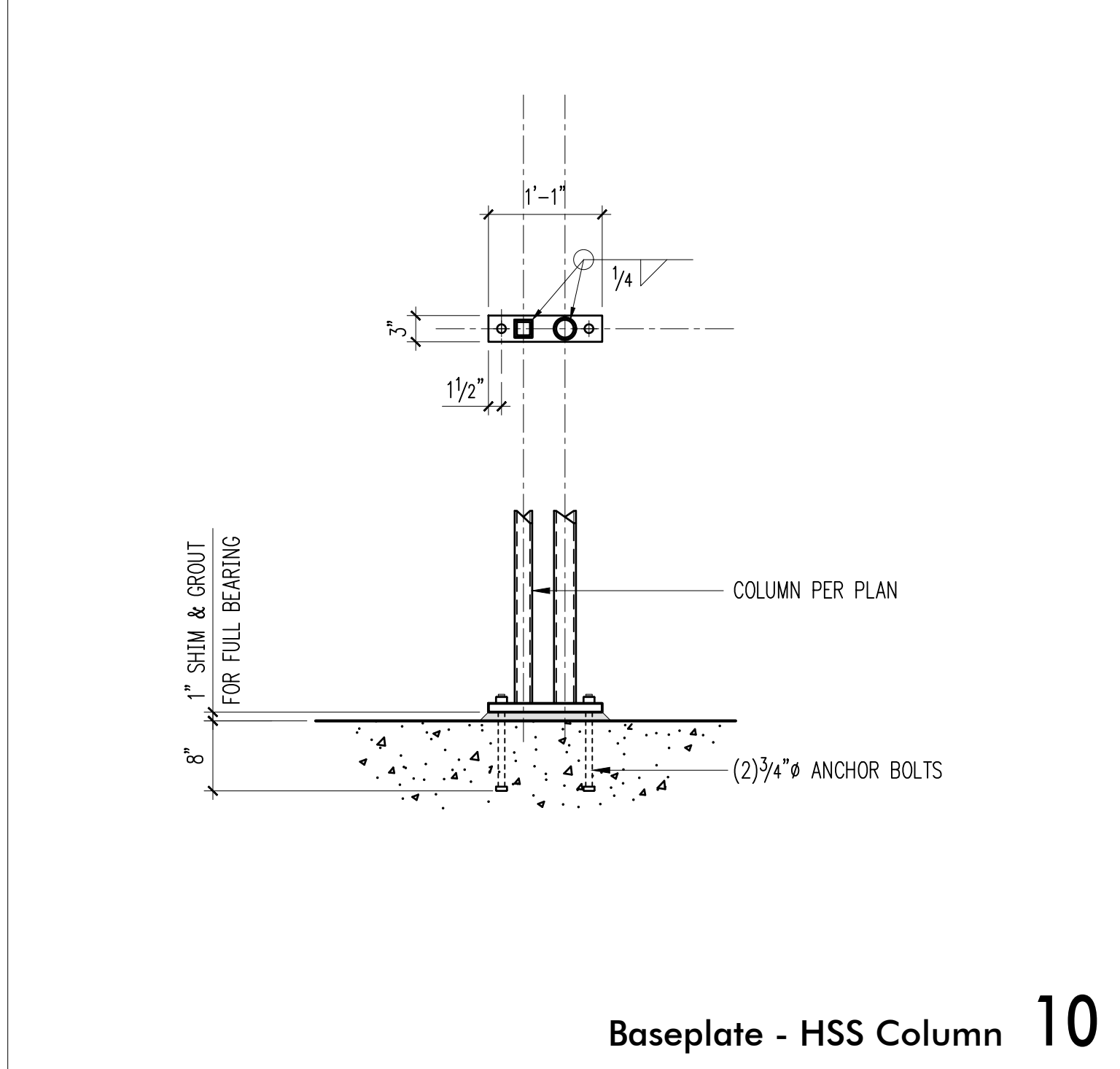
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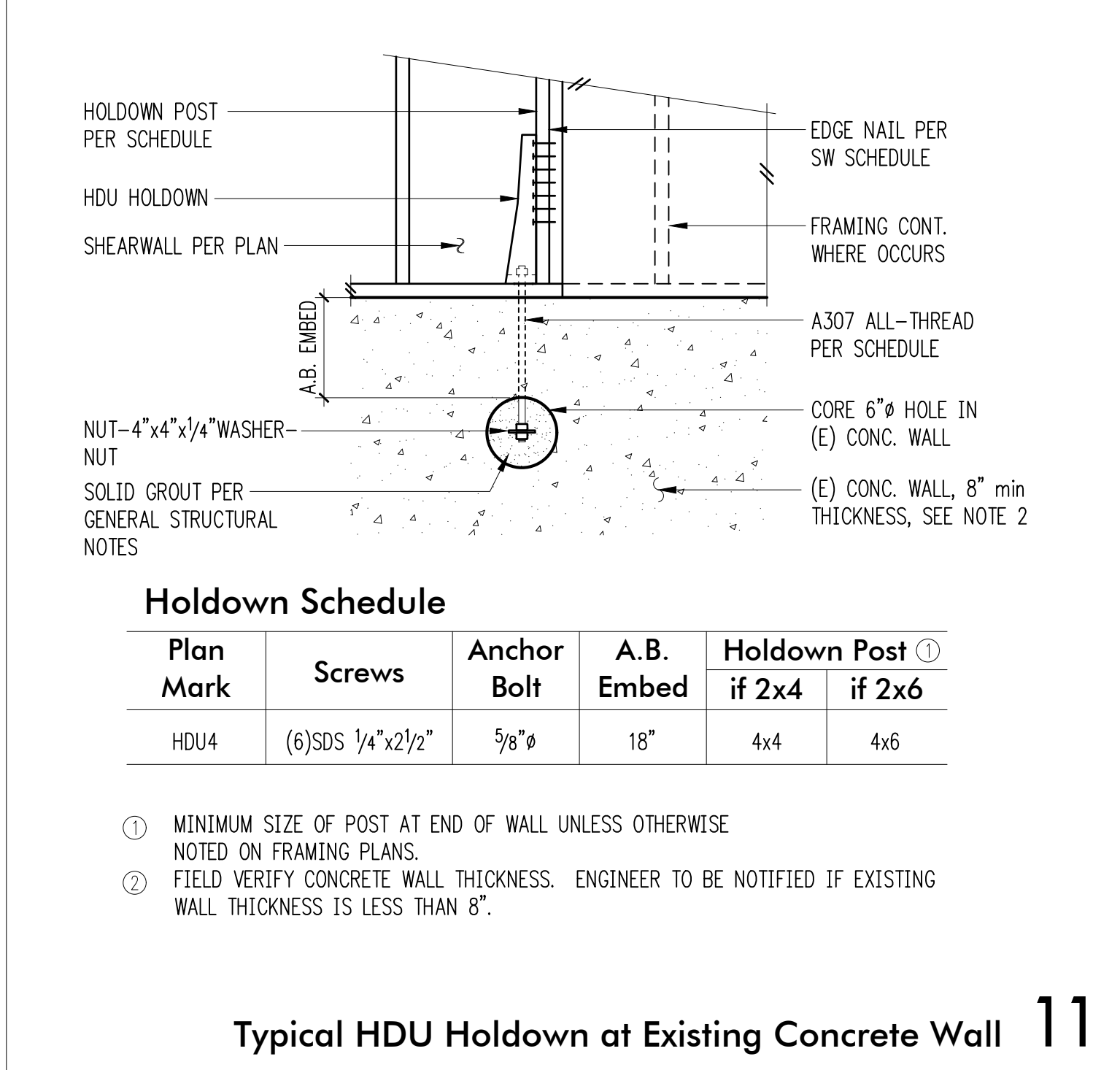
Property Line Wall w/ Key Schedule

H (ft.)	B1	ts	ff	D	Stem Reinforcing		Footing Reinforcing	
					Vert.	Horiz.	Bot.	Longit.
3'-0"	2'-5"	6"	10"	6"	#4 @ 12"oc	#4 @ 12"oc	-	(2)#4

9



Baseplate - HSS Column 10

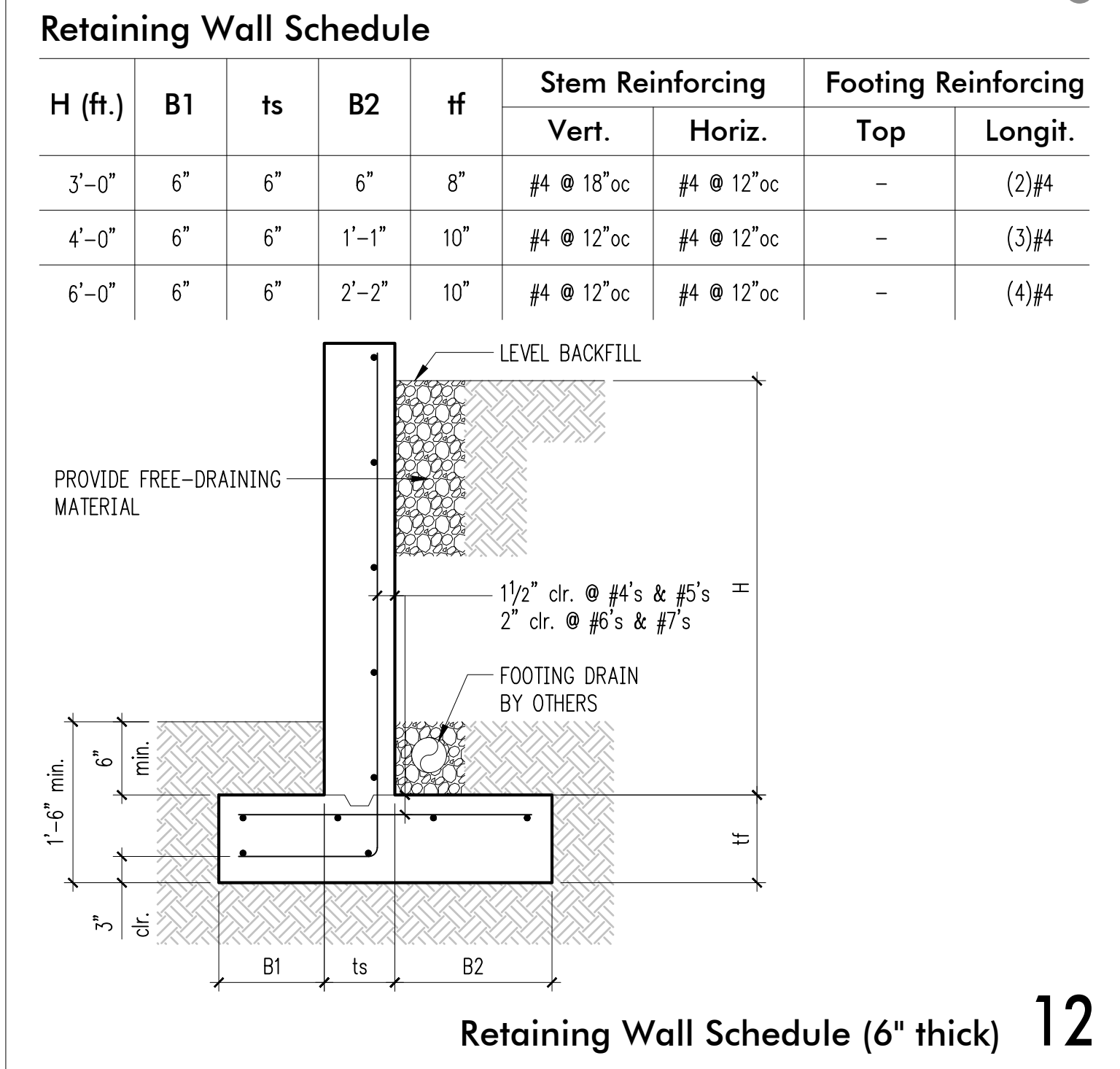


Holdown Schedule

Plan Mark	Screws	Anchor Bolt	A.B. Embed	Holdown Post	
				if 2x4	if 2x6
HDU4	(6)SDS 1/4"x2/2"	5/8"ø	18"	4x4	4x6

- ① MINIMUM SIZE OF POST AT END OF WALL UNLESS OTHERWISE NOTED ON FRAMING PLANS.
- ② FIELD VERIFY CONCRETE WALL THICKNESS. ENGINEER TO BE NOTIFIED IF EXISTING WALL THICKNESS IS LESS THAN 8".

Typical HDU Holdown at Existing Concrete Wall 11



Retaining Wall Schedule

H (ft.)	B1	ts	B2	ff	Stem Reinforcing		Footing Reinforcing	
					Vert.	Horiz.	Top	Longit.
3'-0"	6"	6"	6"	8"	#4 @ 18"oc	#4 @ 12"oc	-	(2)#4
4'-0"	6"	6"	1'-1"	10"	#4 @ 12"oc	#4 @ 12"oc	-	(3)#4
6'-0"	6"	6"	2'-2"	10"	#4 @ 12"oc	#4 @ 12"oc	-	(4)#4

Retaining Wall Schedule (6" thick) 12

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

JURISDICTIONAL APPROVAL STAMP:

PROJECT TITLE:  
 Korpela + Wiens  
 Residence  
 8441 SE 33rd Place  
 Mercer Island, WA

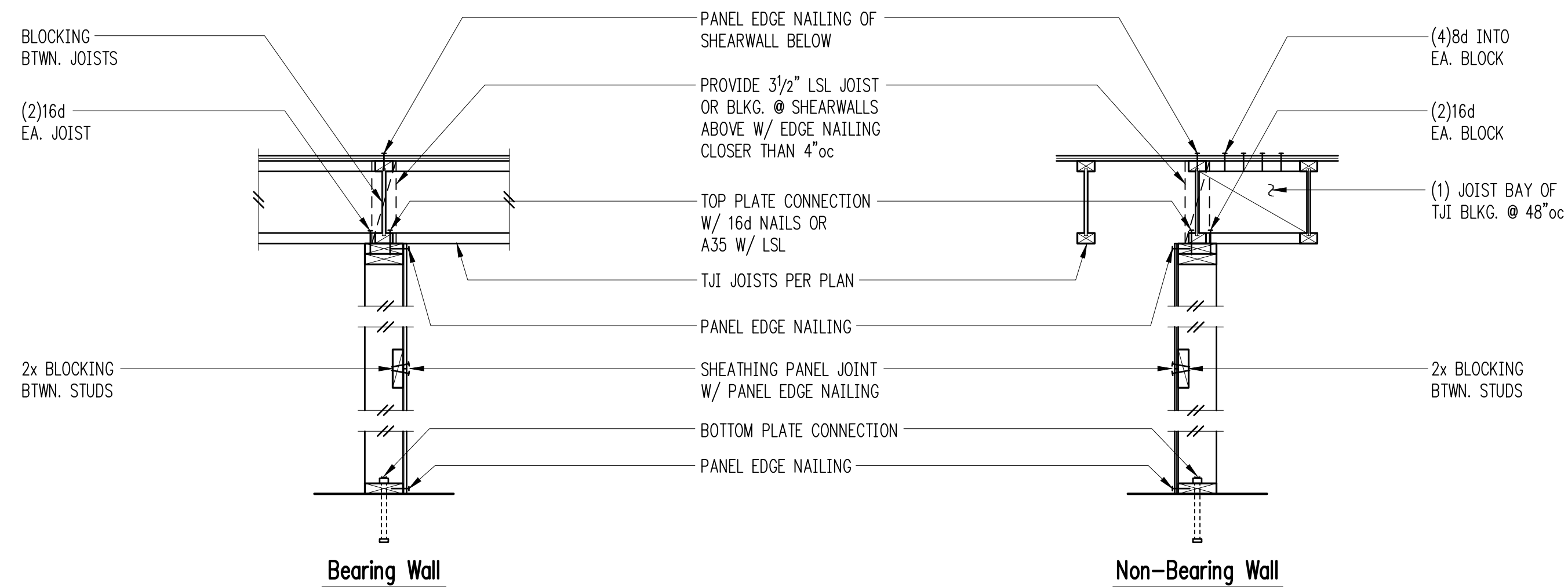
ARCHITECT:  
 Jessyca Poole  
 7718 Fremont Ave N  
 Seattle, WA 98103  
 PH 206.484.3802

ISSUE:  
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SHEET TITLE:  
 Concrete Details

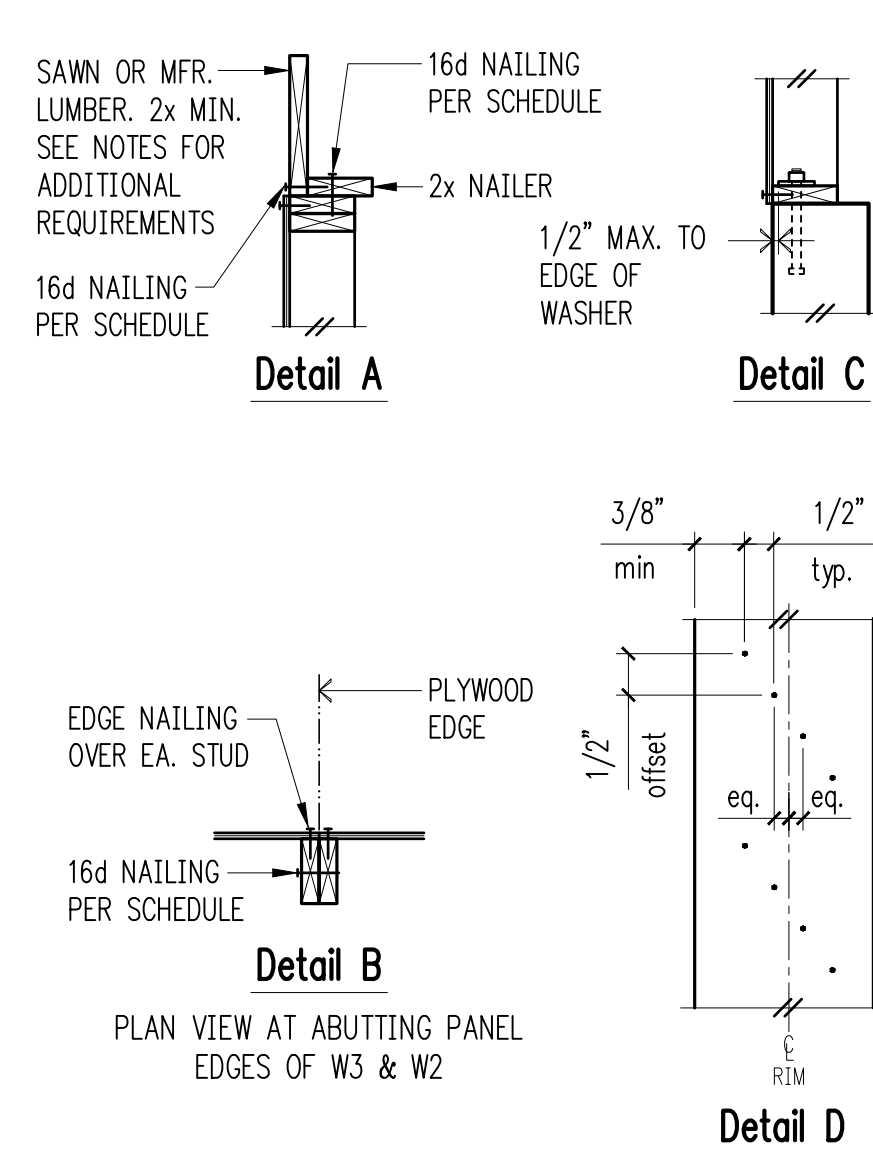
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 02327-2023-04  
 SHEET NO:

S3.3



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

Typical Shearwall Construction 2

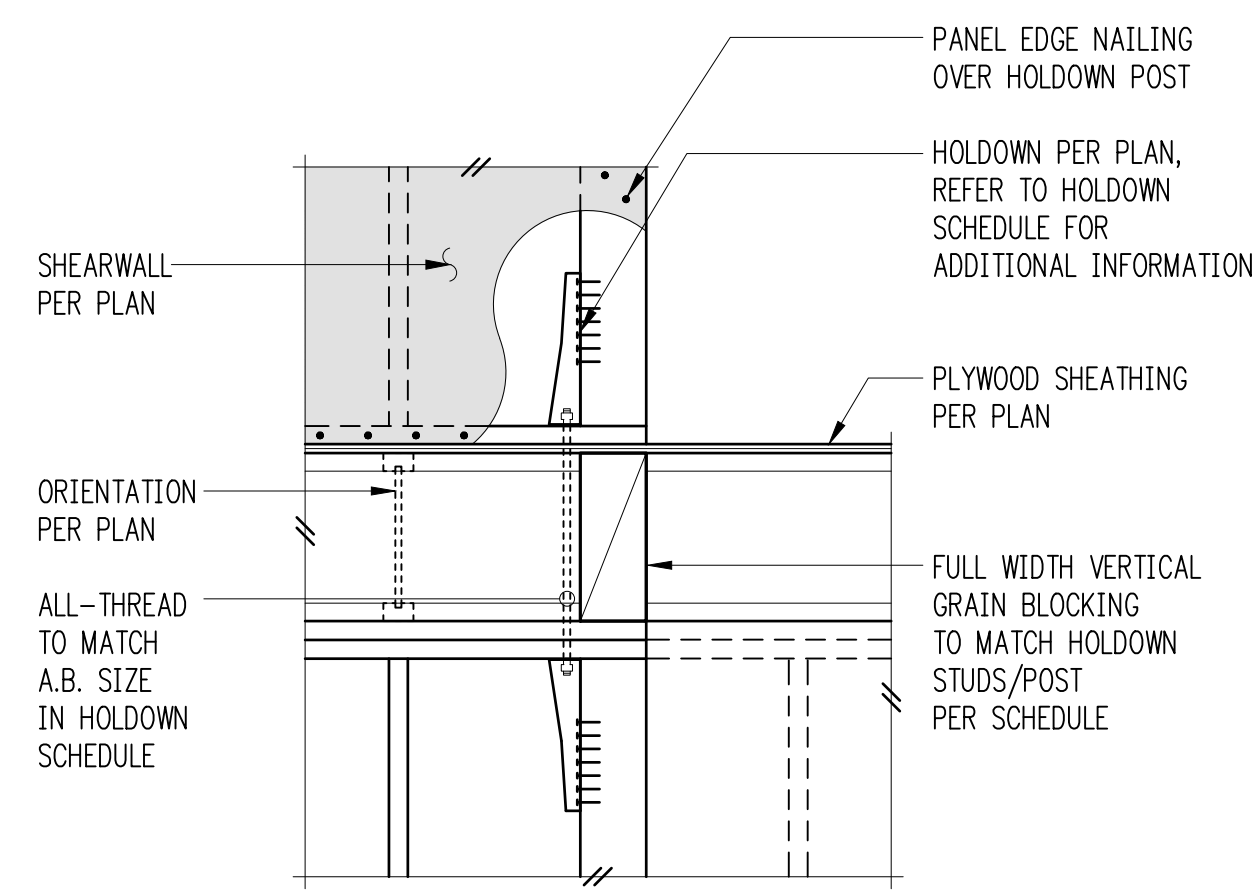


Shearwall Schedule ①②③④⑤⑥⑦

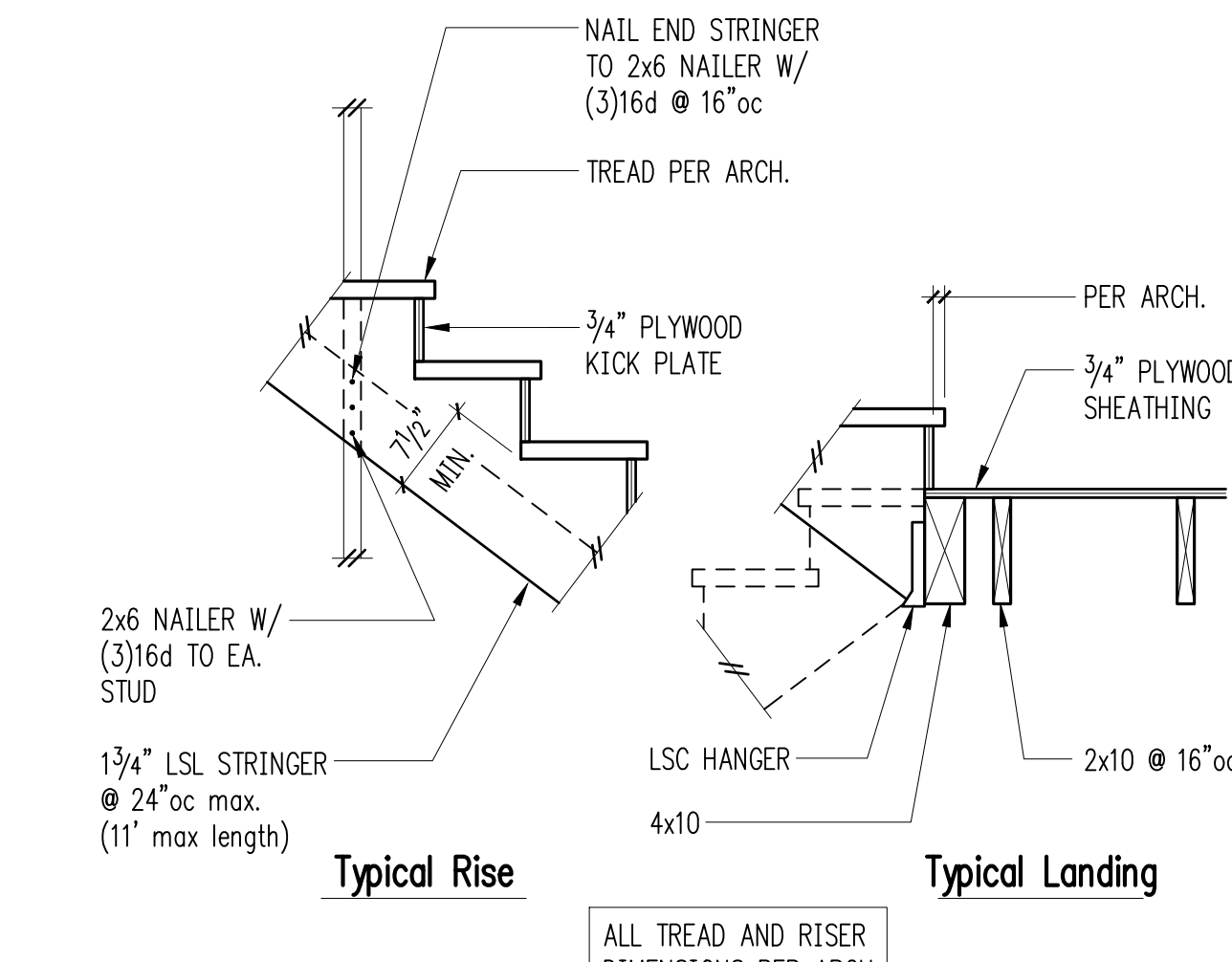
Mark	Sheathing	Panel Edge Nailing	Top Plate Connection		Base Plate Connection	
			if TJI	if Wood ⑧⑨	at Wood ⑩	at Concrete
W6	15/32" CDX PLYWOOD	8d @ 6"oc	16d @ 6"oc	A35 @ 24"oc	16d @ 6"oc	5/8" A.B. @ 48"oc
W4	15/32" CDX PLYWOOD	8d @ 4"oc	16d @ 4"oc	A35 @ 16"oc	(2)rows 16d @ 6"oc	5/8" A.B. @ 32"oc
W3 ①	15/32" CDX PLYWOOD	8d @ 3"oc	(2)rows 16d @ 4"oc	A35 @ 12"oc	(2)rows 16d @ 6"oc	5/8" A.B. @ 24"oc
W2 ②	15/32" CDX PLYWOOD	8d @ 2"oc	(2)rows 16d @ 4"oc	A35 @ 9"oc	(2)rows 16d @ 4"oc ⑪	5/8" A.B. @ 16"oc

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

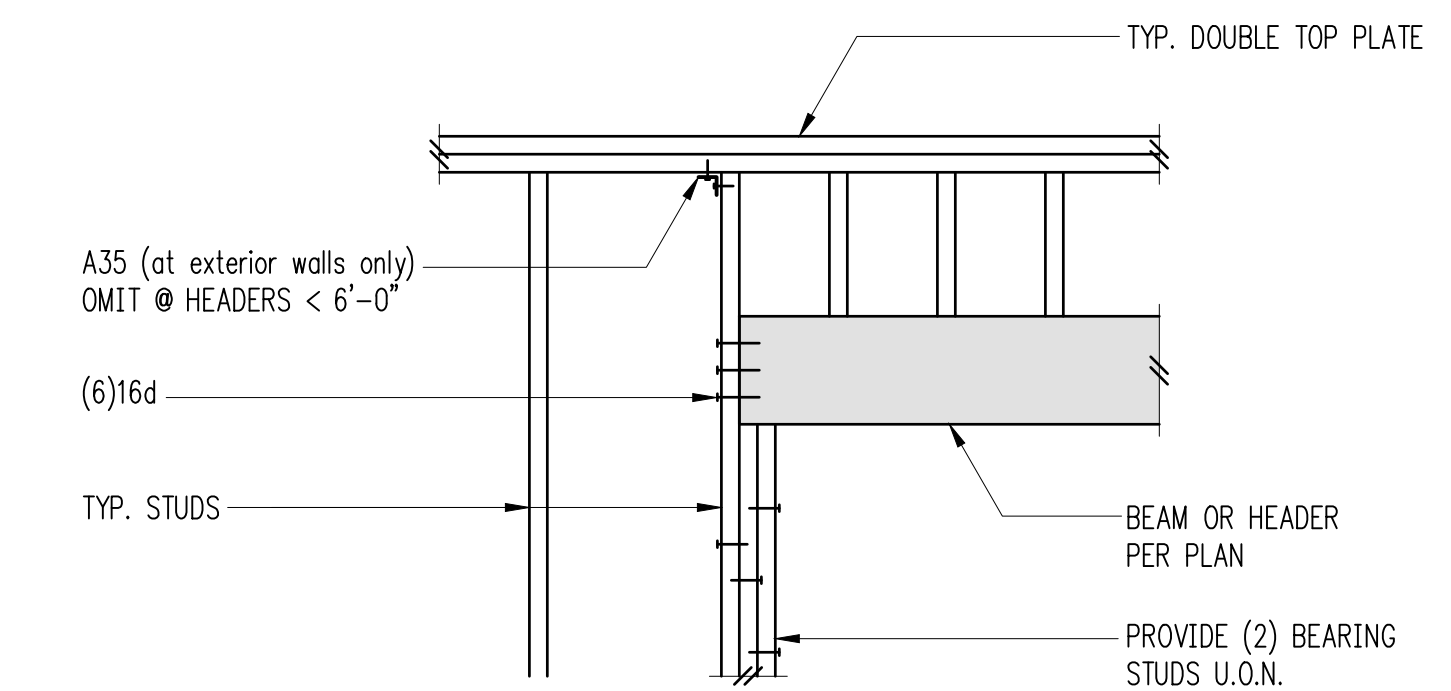
Shearwall Schedule - (Sheathed One Side) 4



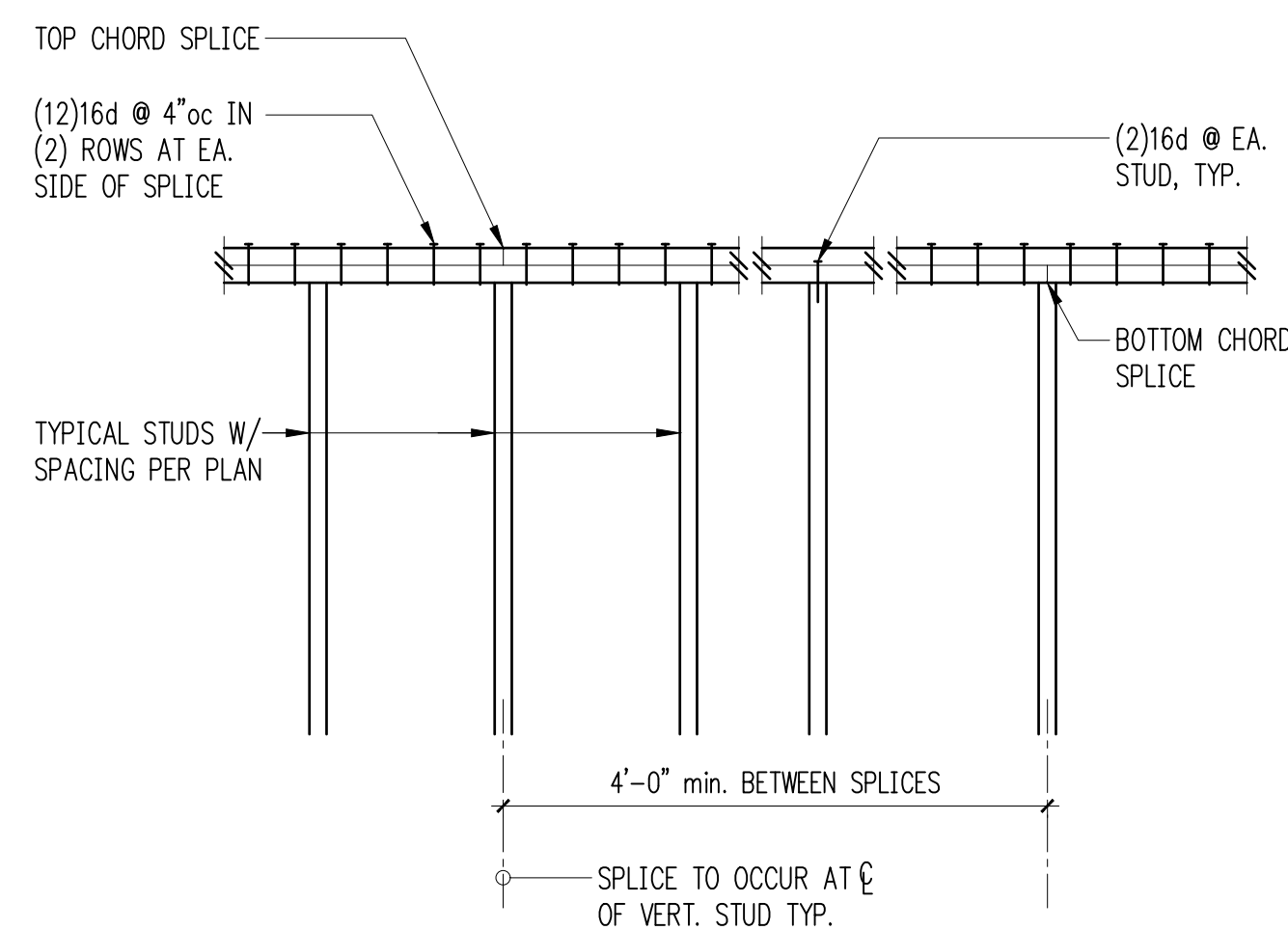
Typical HDU Holdowns (W/TJI) 5 6



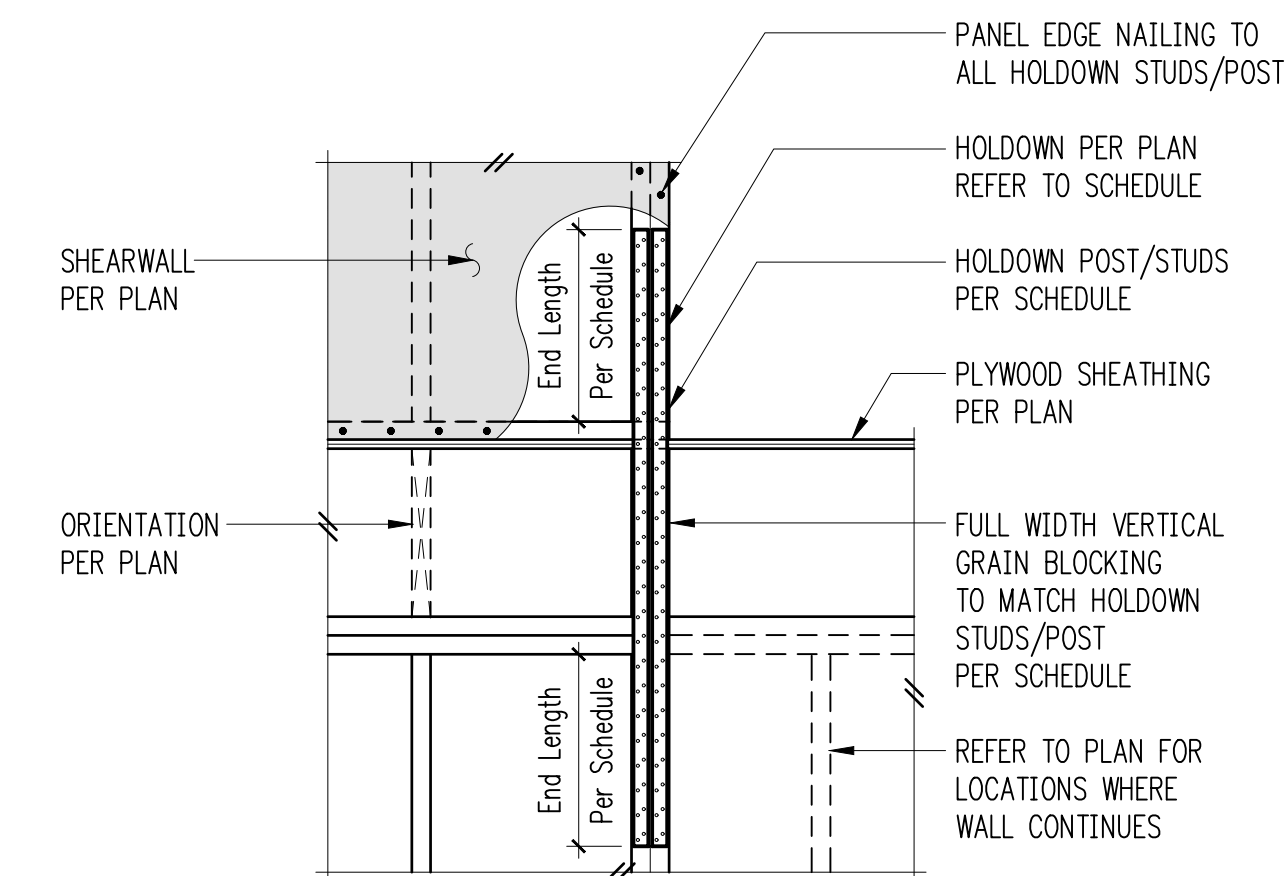
Typical Stair and Landing Detail 7



Typical Header Support w/2 Bearing Studs 8



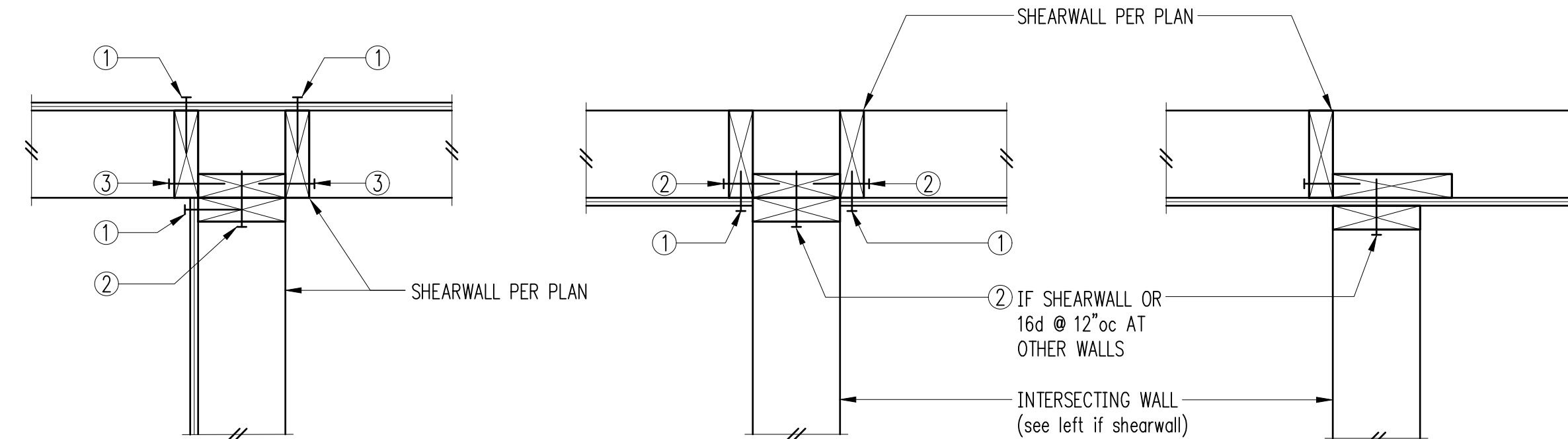
Typical Top Plate Splice 9



Holdown Strap Schedule

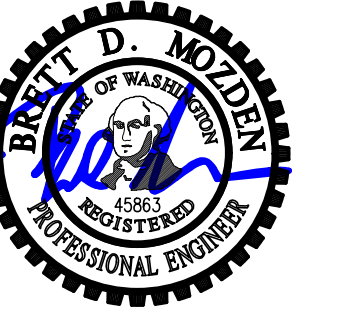
Plan Mark	End Length	#Nails Ea. End Length	Holdown Studs/Post	
			if 2x4	if 2x6
CS16	1'-2"	(13) 8d	(1) 2x4	(1) 2x6
CMST14	2'-6"	(33) 10d	4x6	4x6
CMST12	3'-3"	(43) 10d	4x8	6x6

Typical Holdown Schedule 10

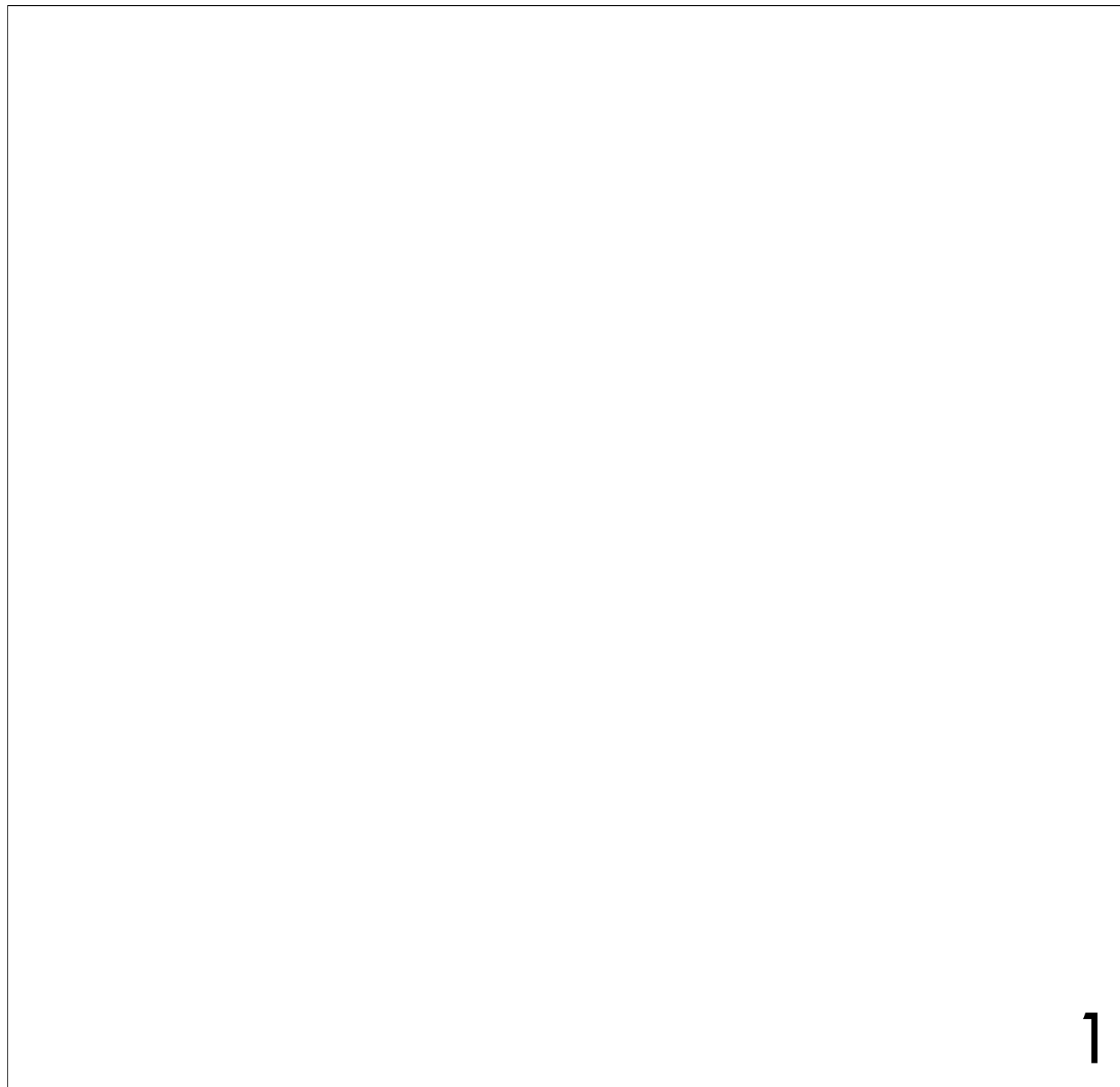


- ① PLYWOOD PANEL EDGE NAILING PER SHEARWALL SCHEDULE
- ② BASE PLATE NAILING PER SHEARWALL SCHEDULE
- ③ 16d @ 8"oc

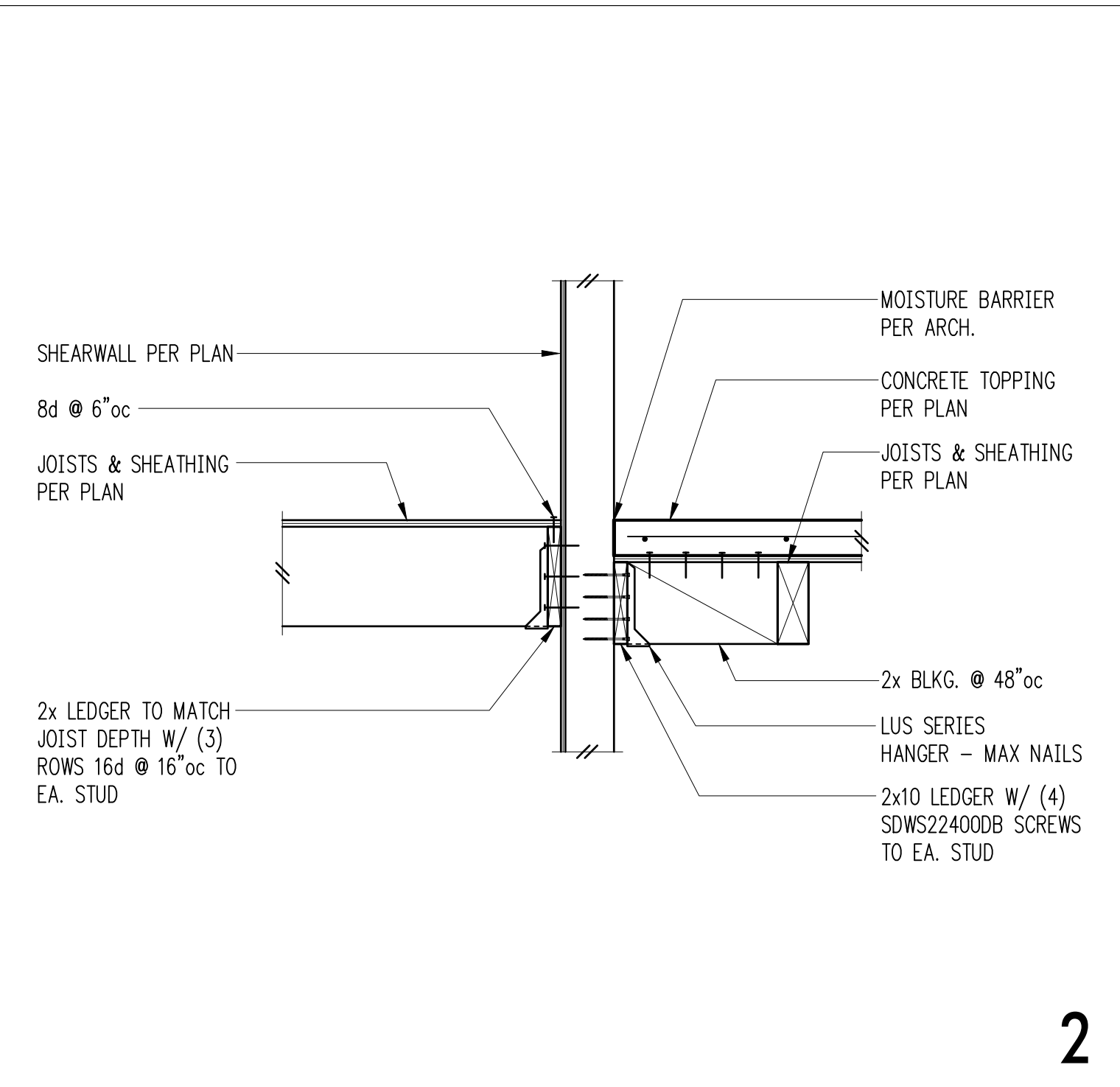
Typical Shearwall Intersections 12



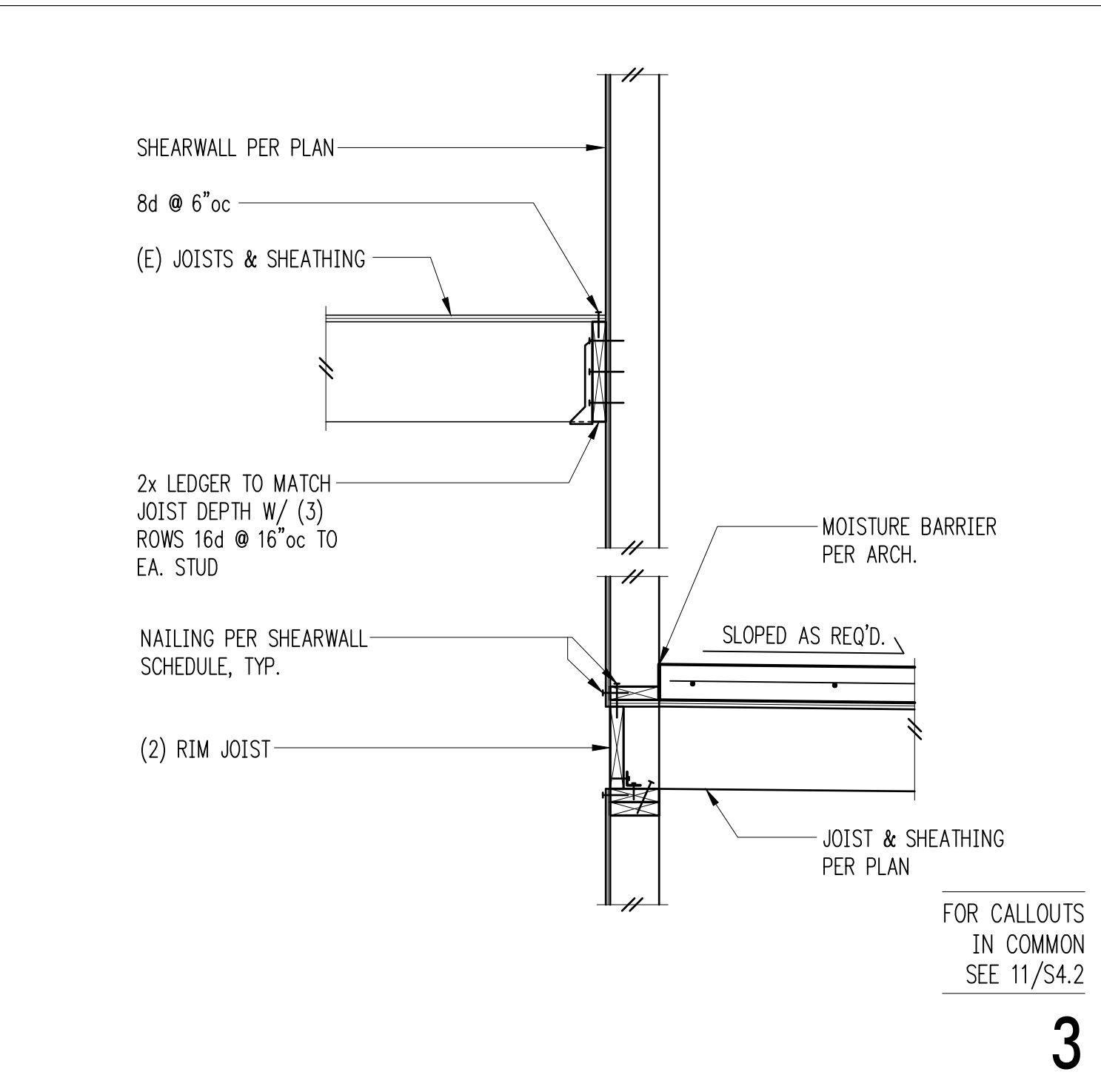
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 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM



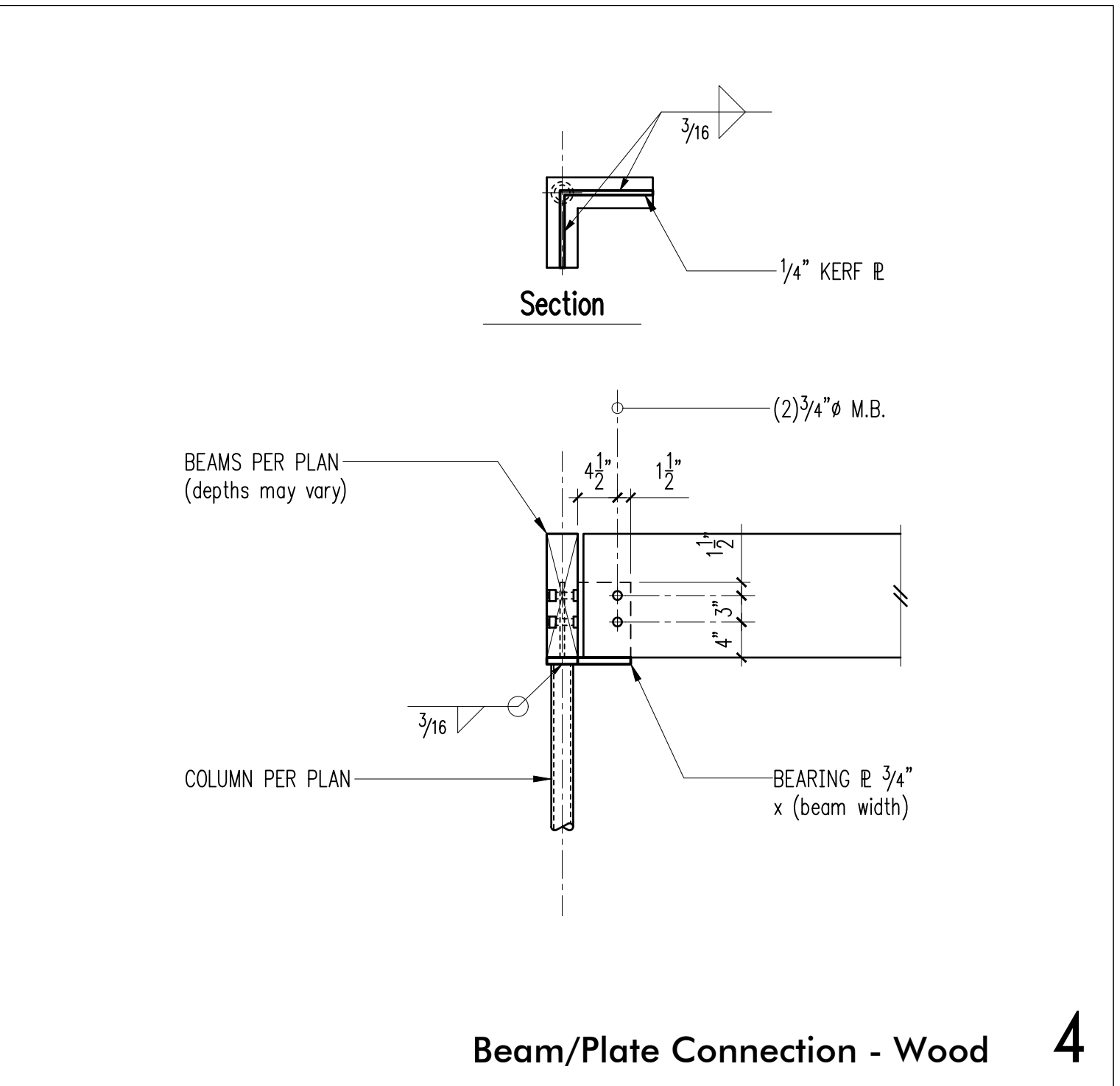
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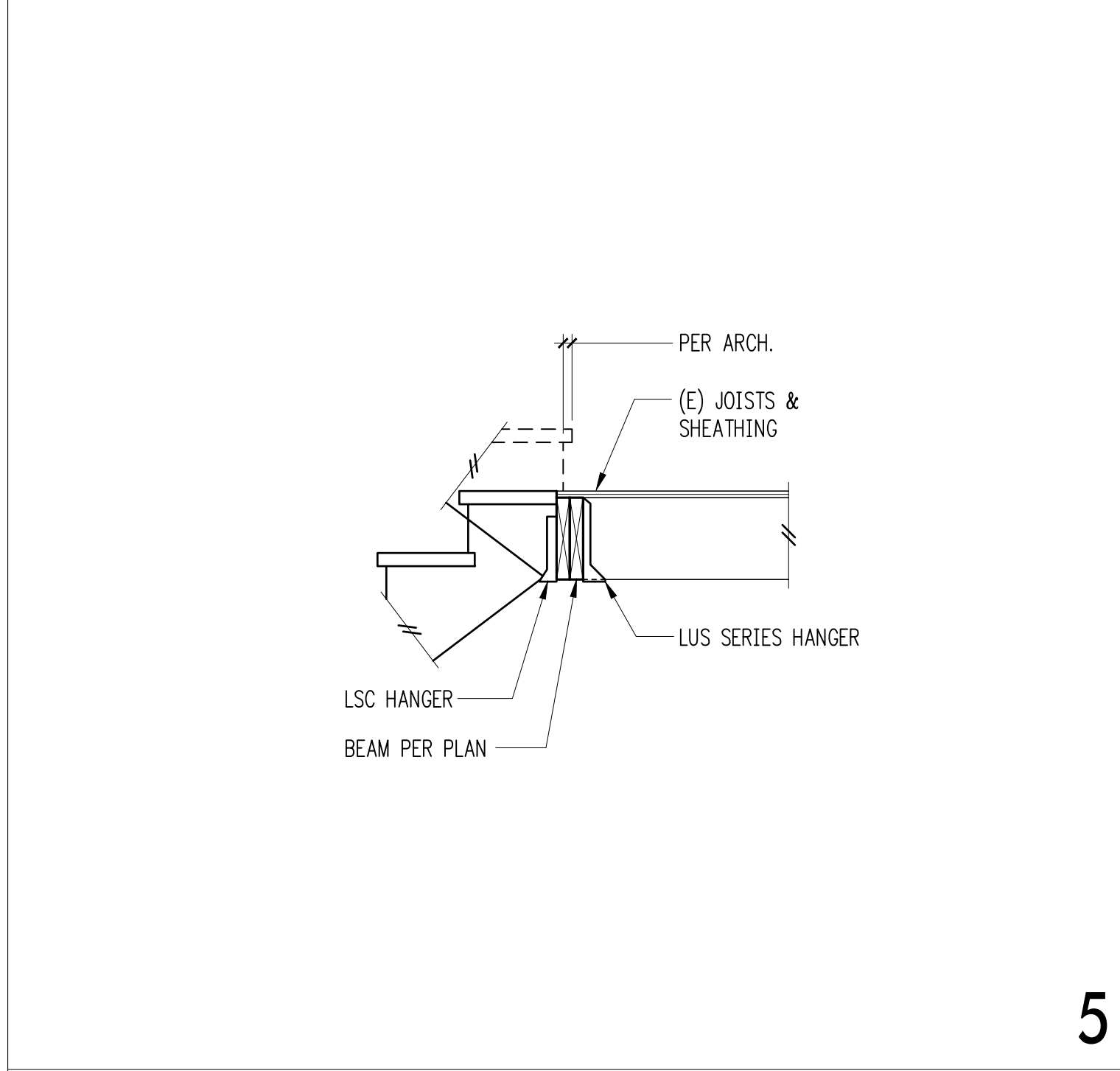


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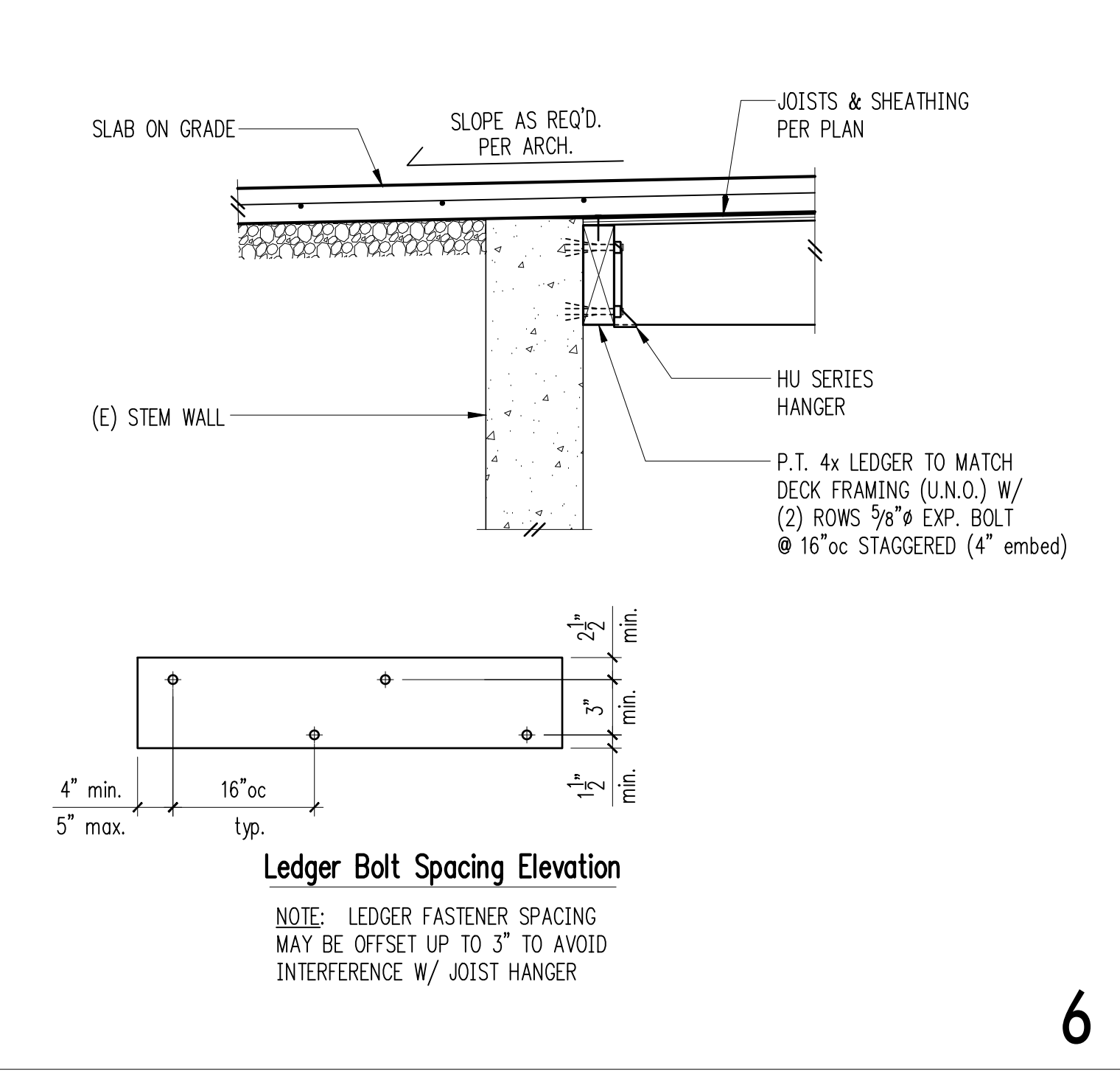


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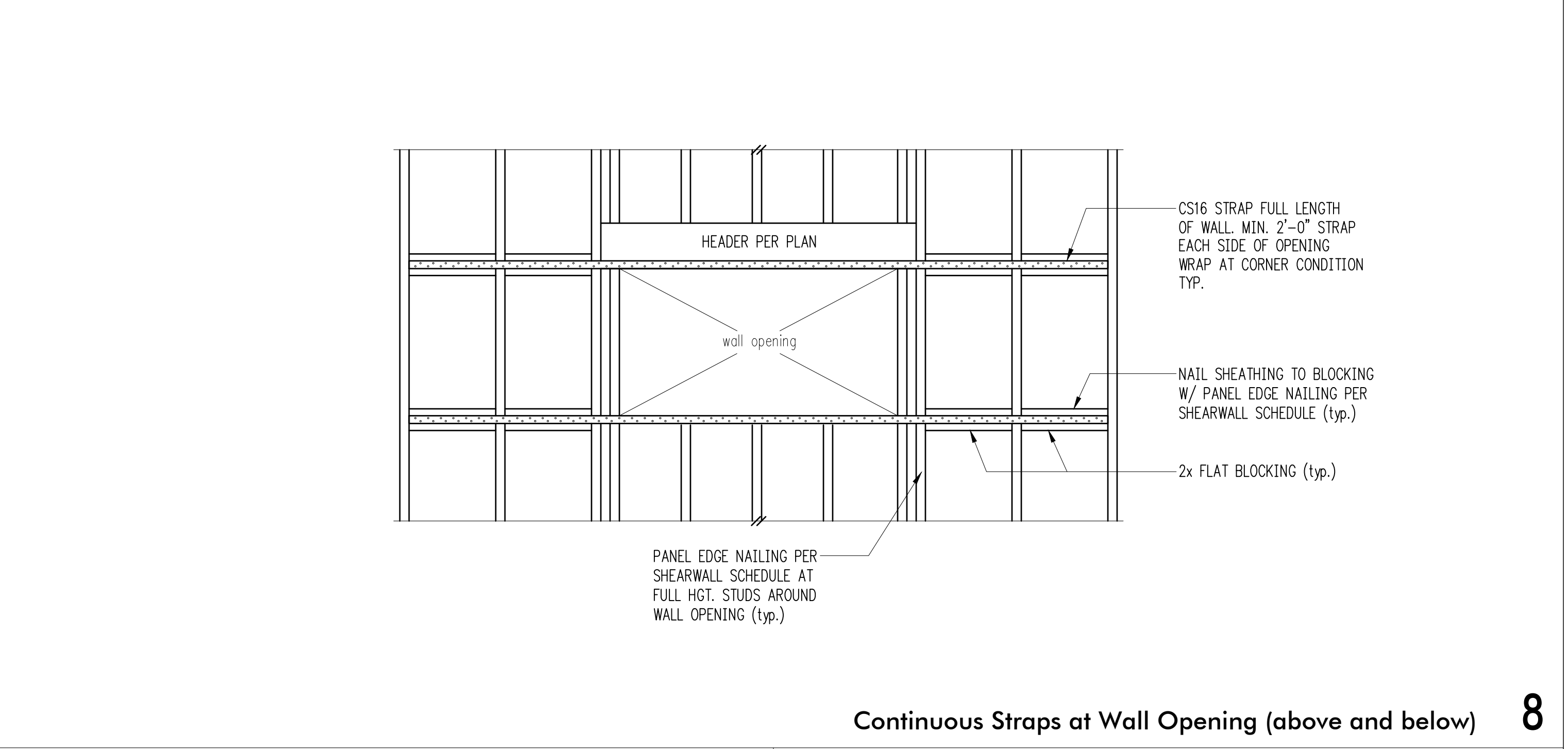
Beam/Plate Connection - Wood



5

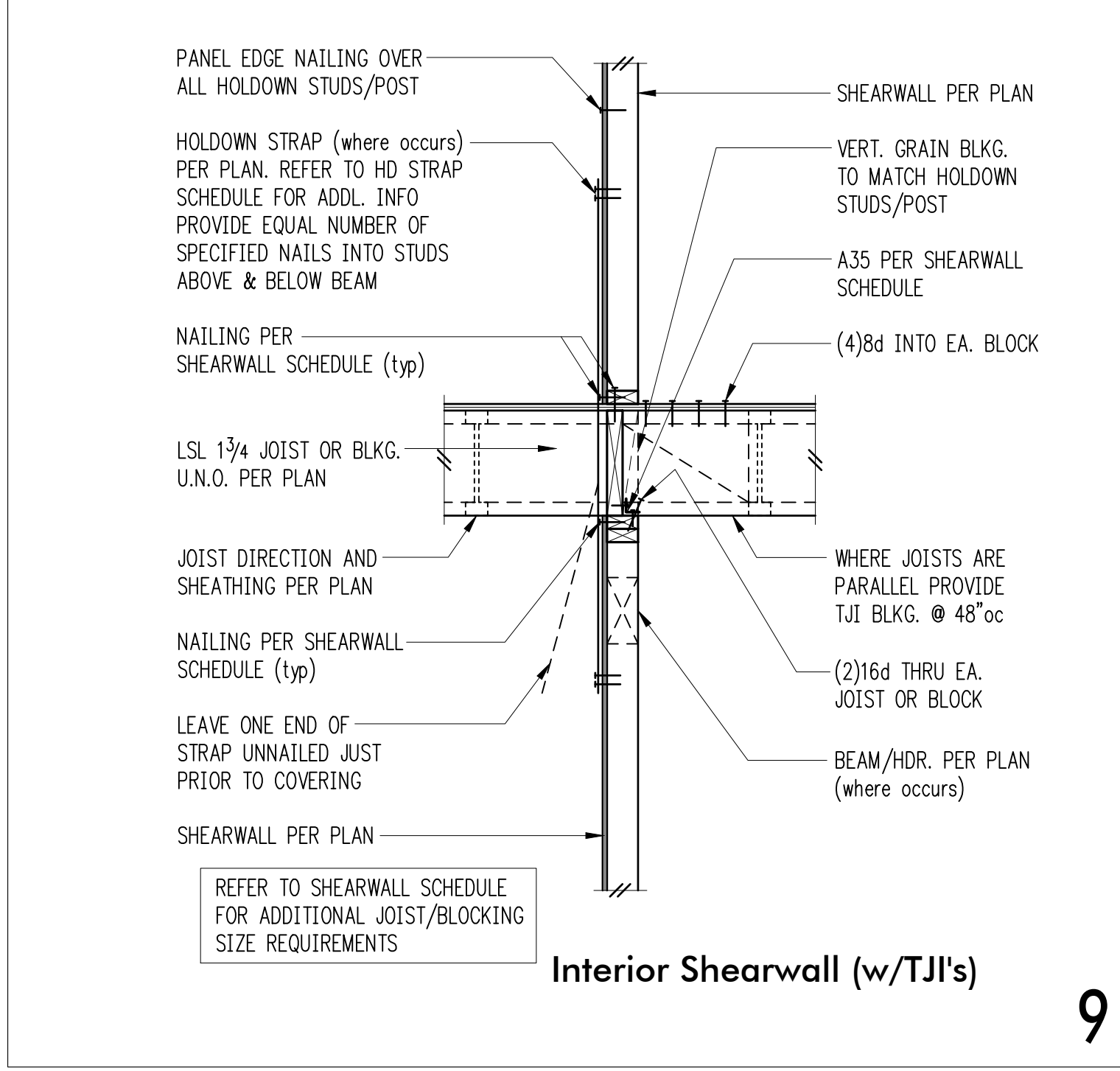


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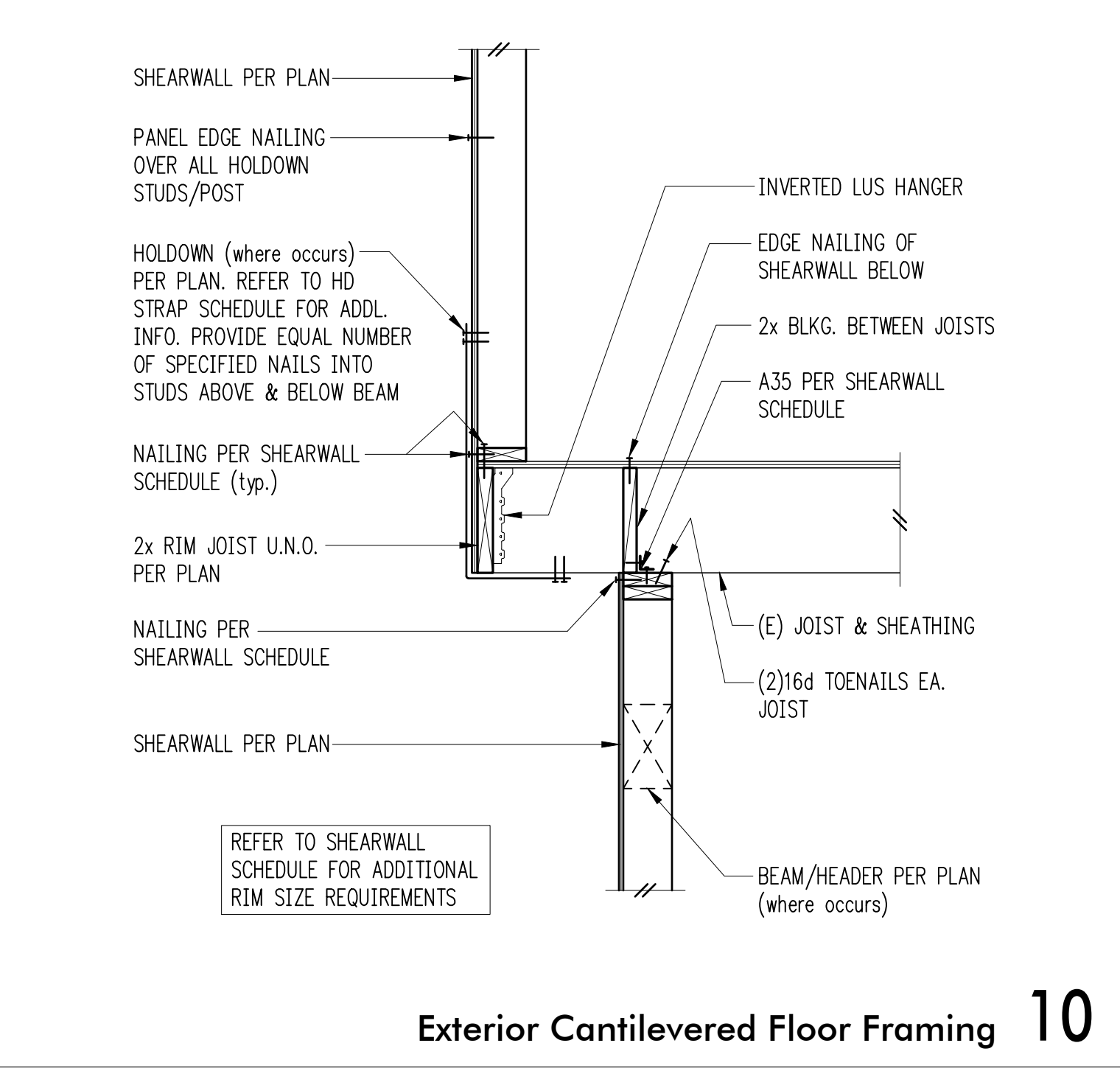
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Continuous Straps at Wall Opening (above and below)



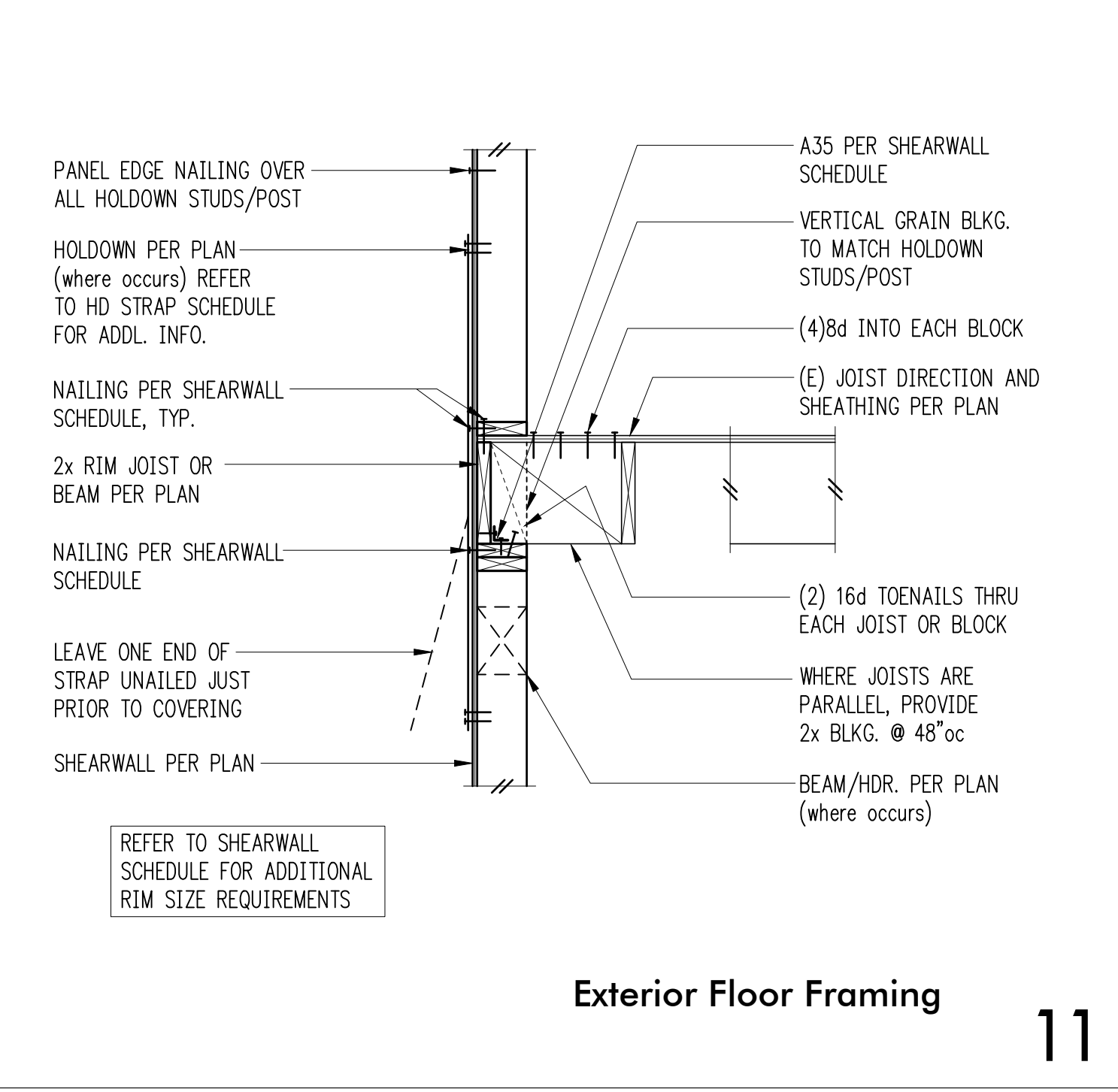
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Interior Shearwall (w/TJI's)



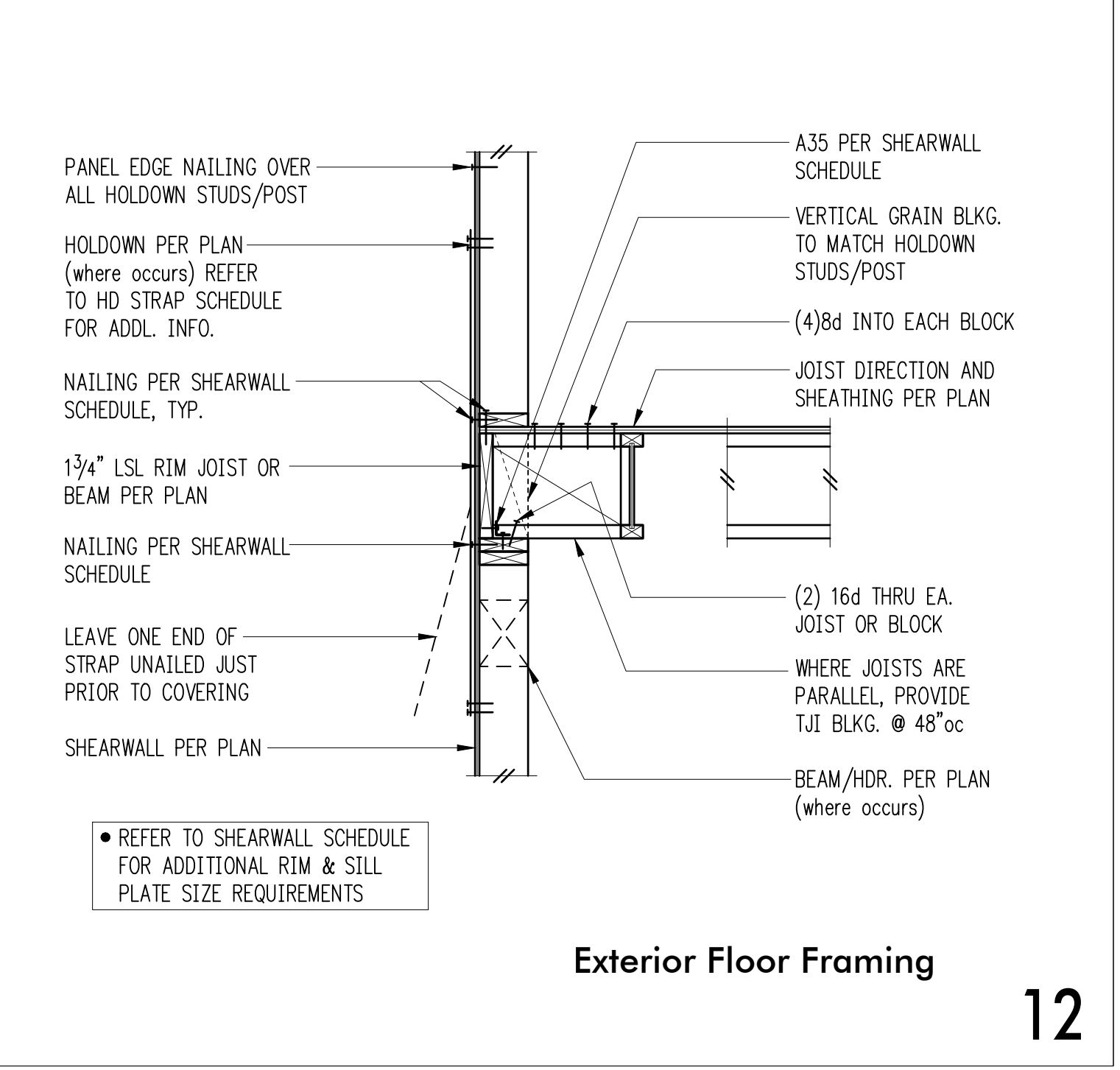
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Exterior Cantilevered Floor Framing



11

Exterior Floor Framing



12

Exterior Floor Framing

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

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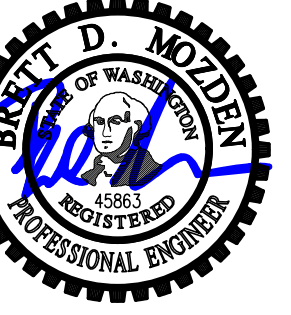
PROJECT TITLE:  
 Korpela + Wiens Residence  
 8441 SE 33rd Place  
 Mercer Island, WA

ARCHITECT:  
 Jessyca Poole  
 7718 Fremont Ave N  
 Seattle, WA 98103  
 PH 206.484.3802

ISSUE:  
 Permit  
 SHEET TITLE:

SCALE: 3/4" = 1'-0" U.N.O.  
 DATE: Dec. 14, 2023  
 PROJECT NO: 02327-2023-04  
 SHEET NO:

S4.2



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

JURISDICTIONAL APPROVAL STAMP:

PROJECT TITLE:  
 Korpela + Wiens  
 Residence  
 8441 SE 33rd Place  
 Mercer Island, WA

ARCHITECT:  
 Jessyca Poole  
 7718 Fremont Ave N  
 Seattle, WA 98103  
 PH 206.484.3802

ISSUE:  
 Permit

SHEET TITLE:  
 Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.  
 DATE: Dec. 14, 2023  
 PROJECT NO: 02327-2023-04  
 SHEET NO:

**S4.3**

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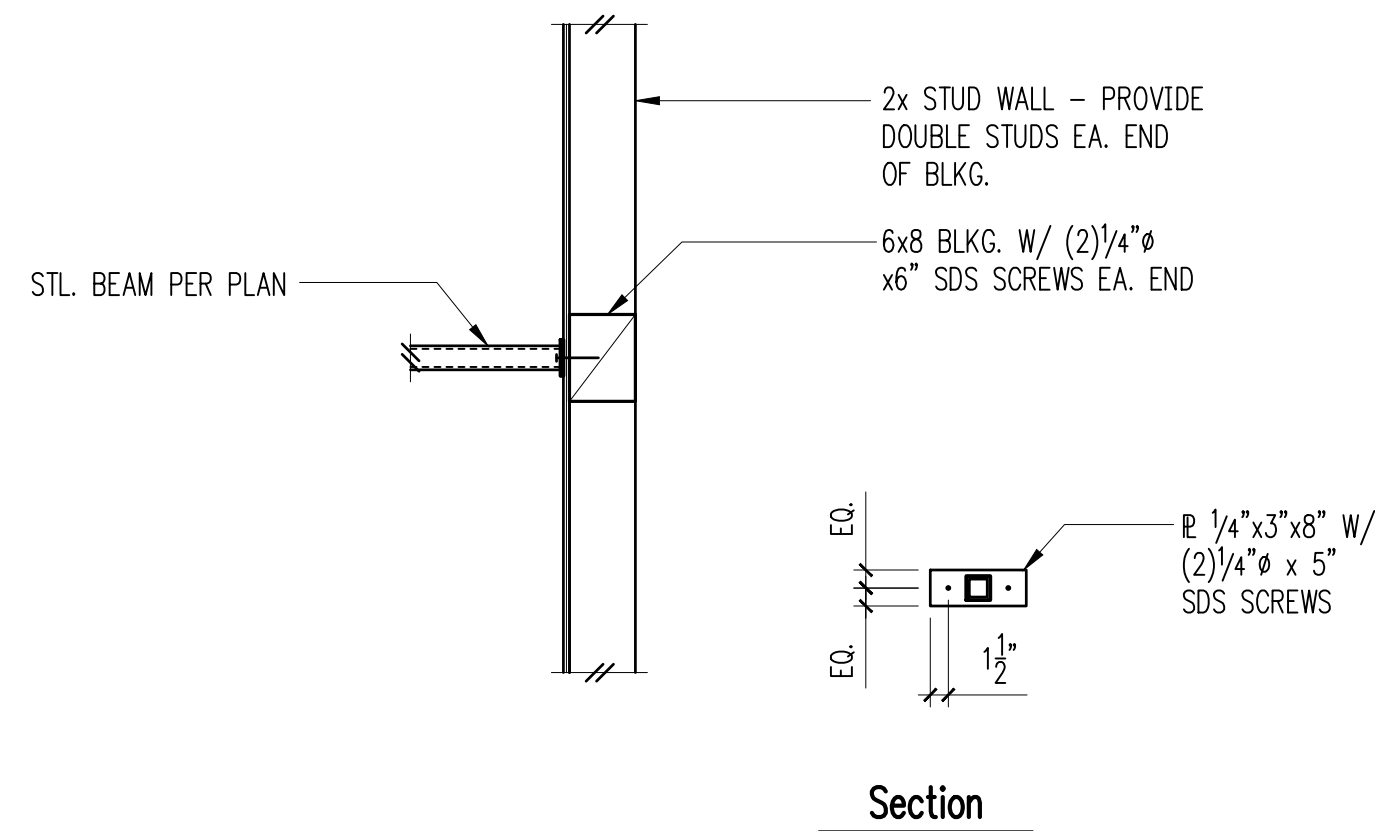
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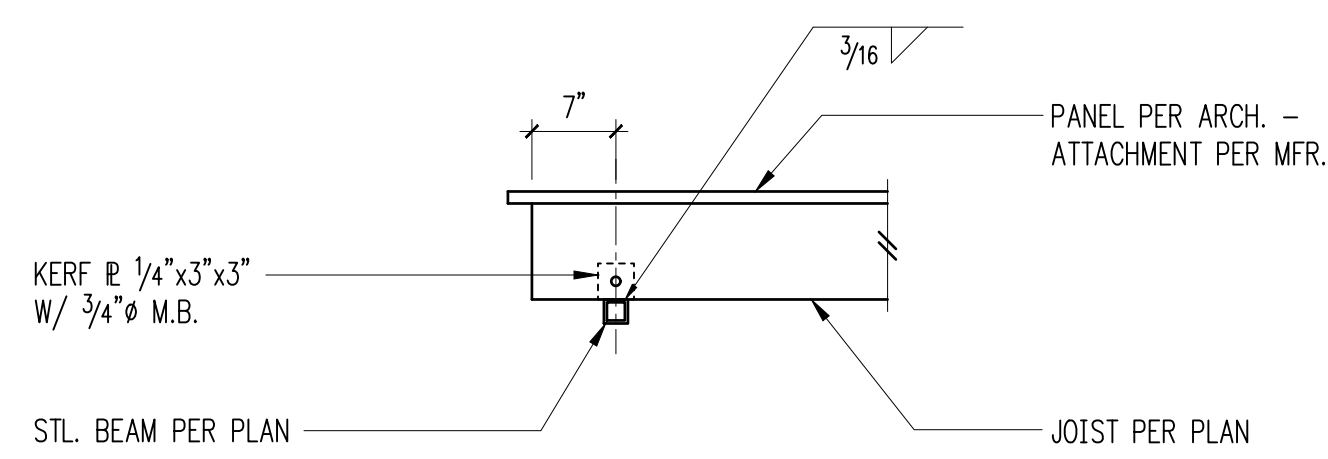
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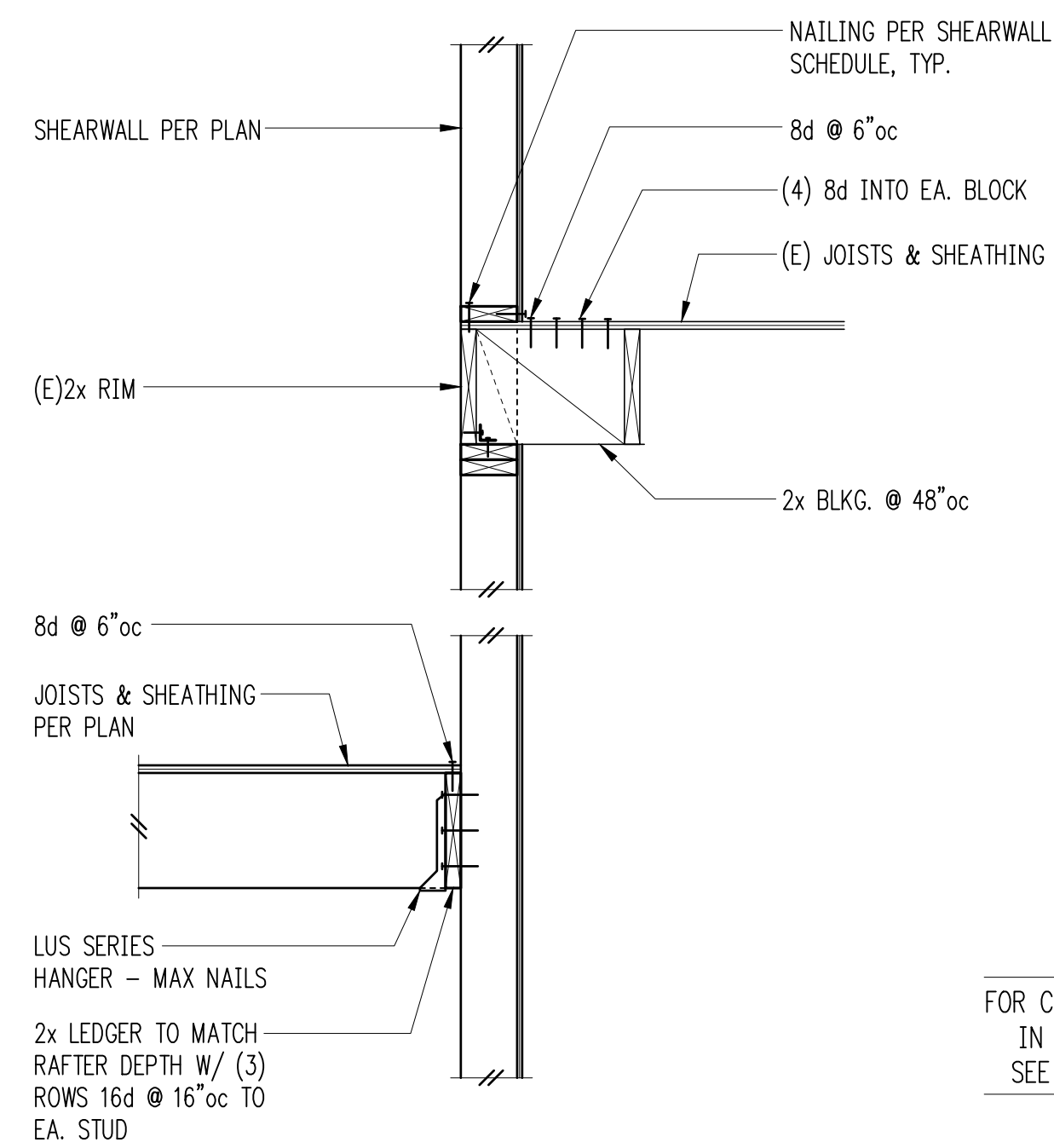
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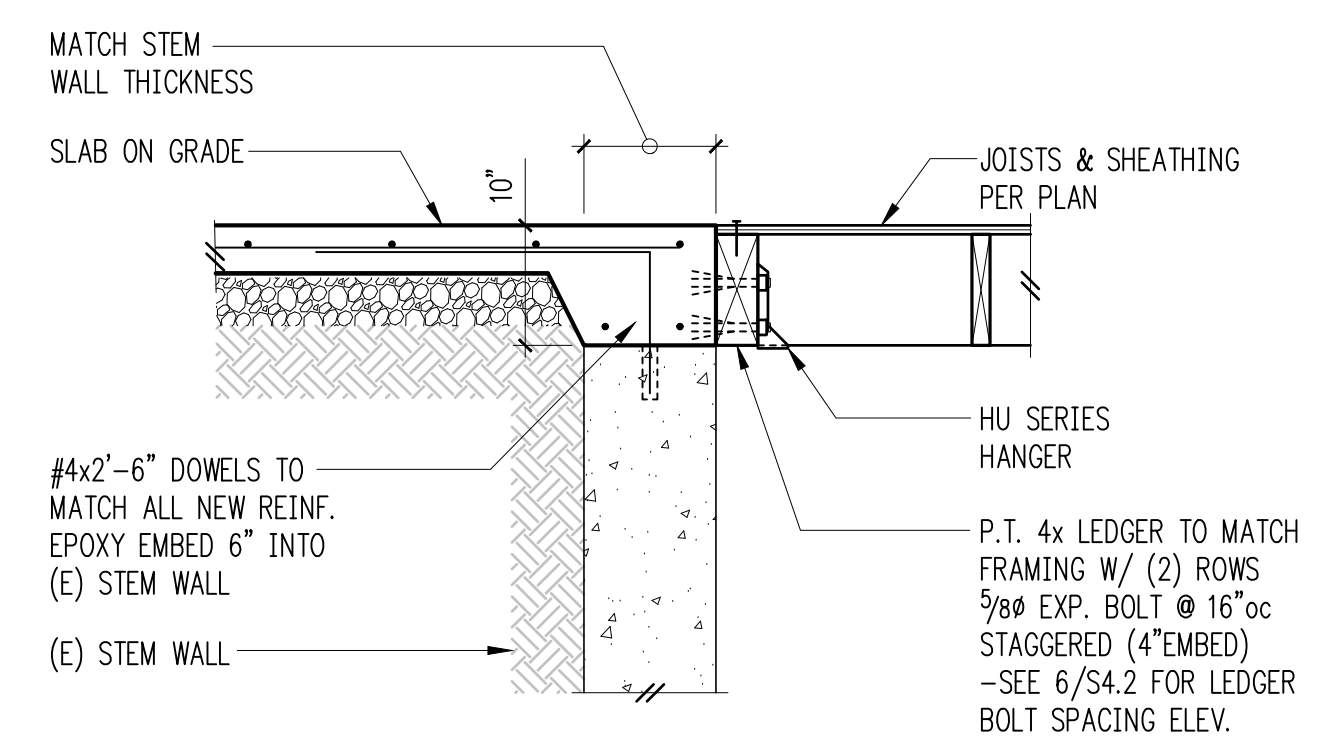


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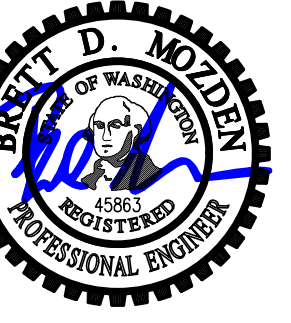


FOR CALLOUTS  
 IN COMMON  
 SEE 11/S4.2

11



12



DRAWN: CFG  
 DESIGN: BDM  
 CHECKED: BDM  
 APPROVED: BDM

REVISIONS:  
 1 Permit Set REV1 Nov. 8, 2024

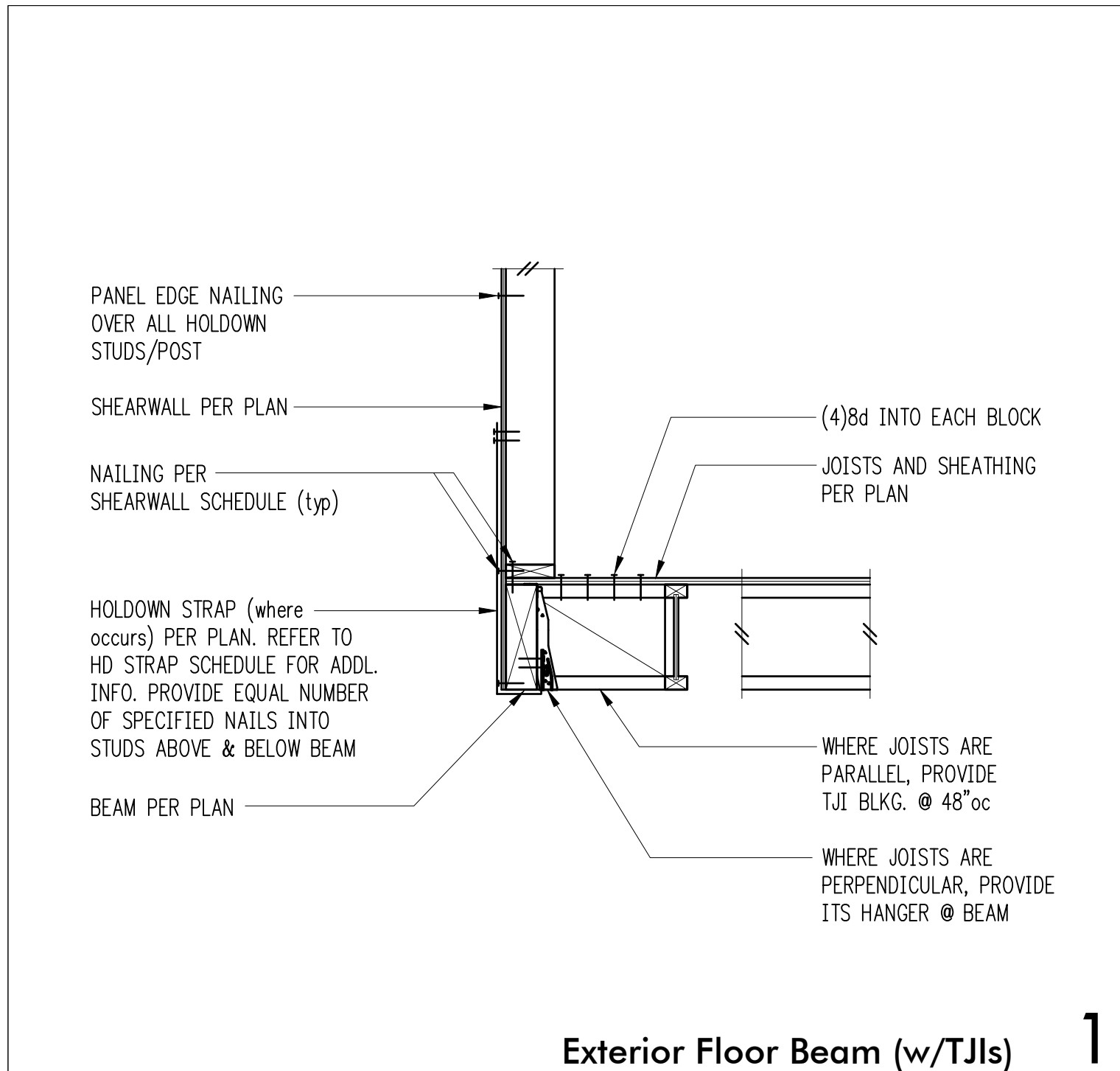
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**Korpela + Wiens Residence**  
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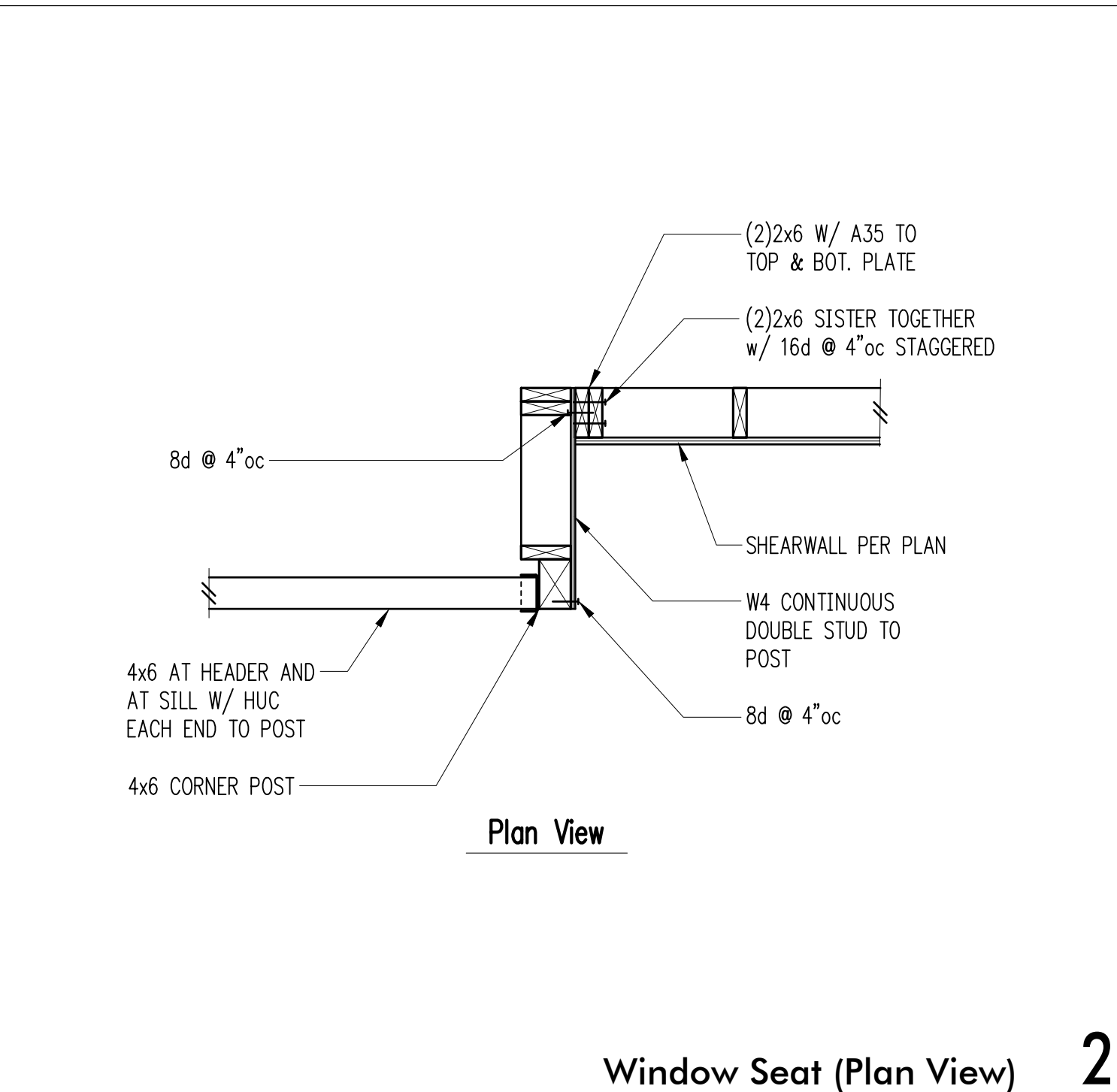
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**Jessica Poole**  
 7718 Fremont Ave N  
 Seattle, WA 98103  
 PH 206.484.3802

ISSUE:  
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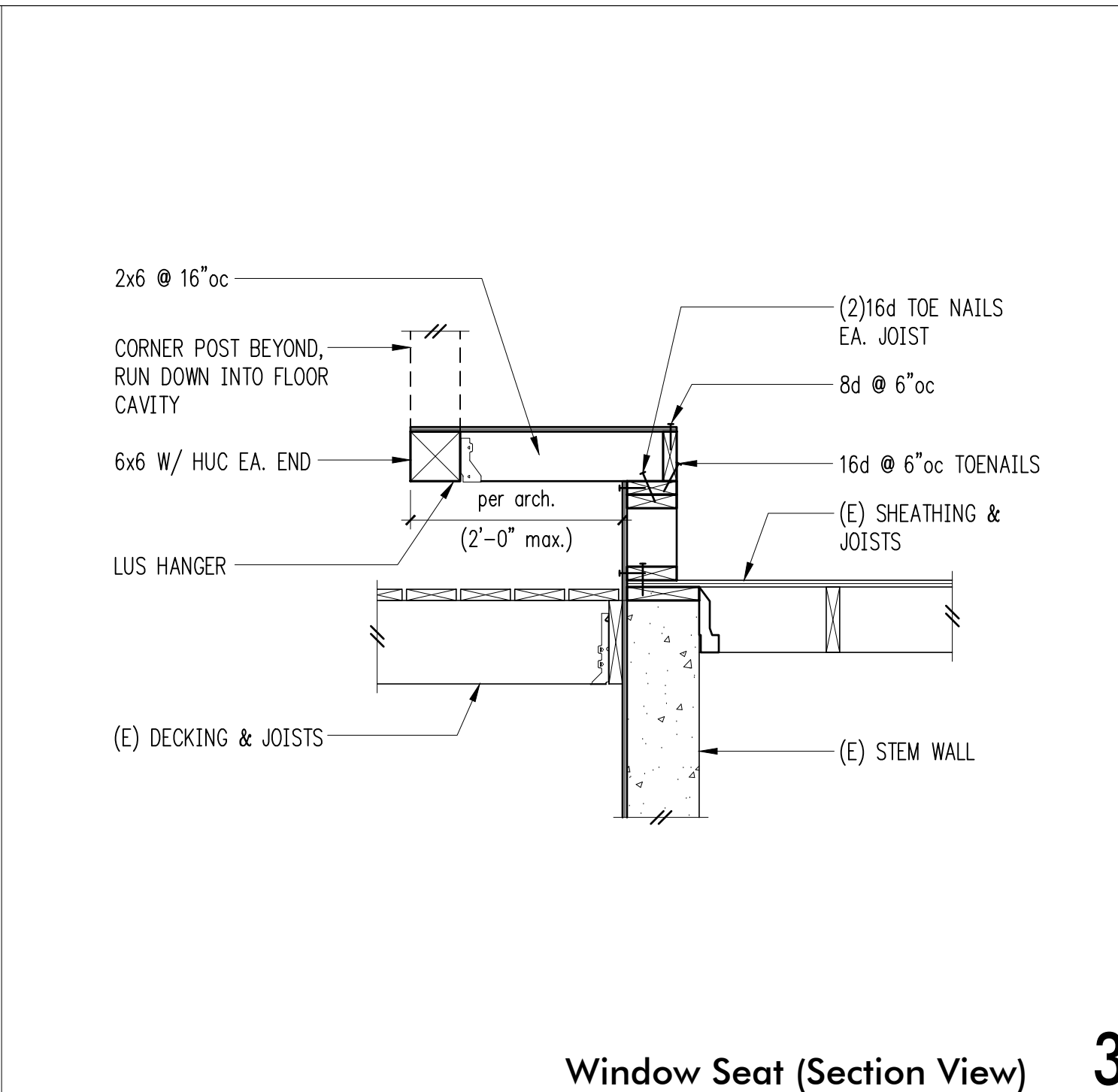
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 DATE: Dec. 14, 2023  
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 SHEET NO:



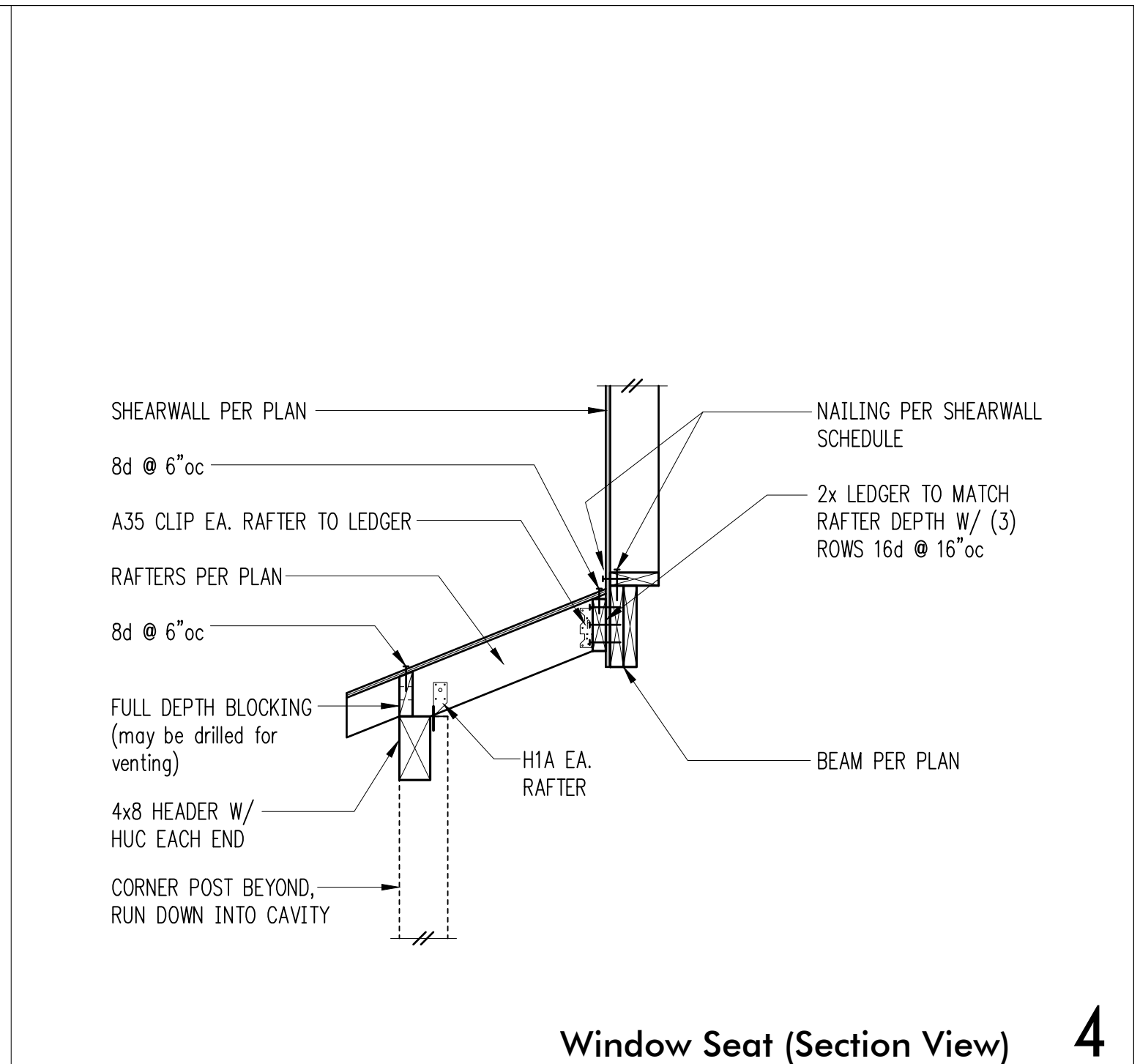
**Exterior Floor Beam (w/TJIs) 1**



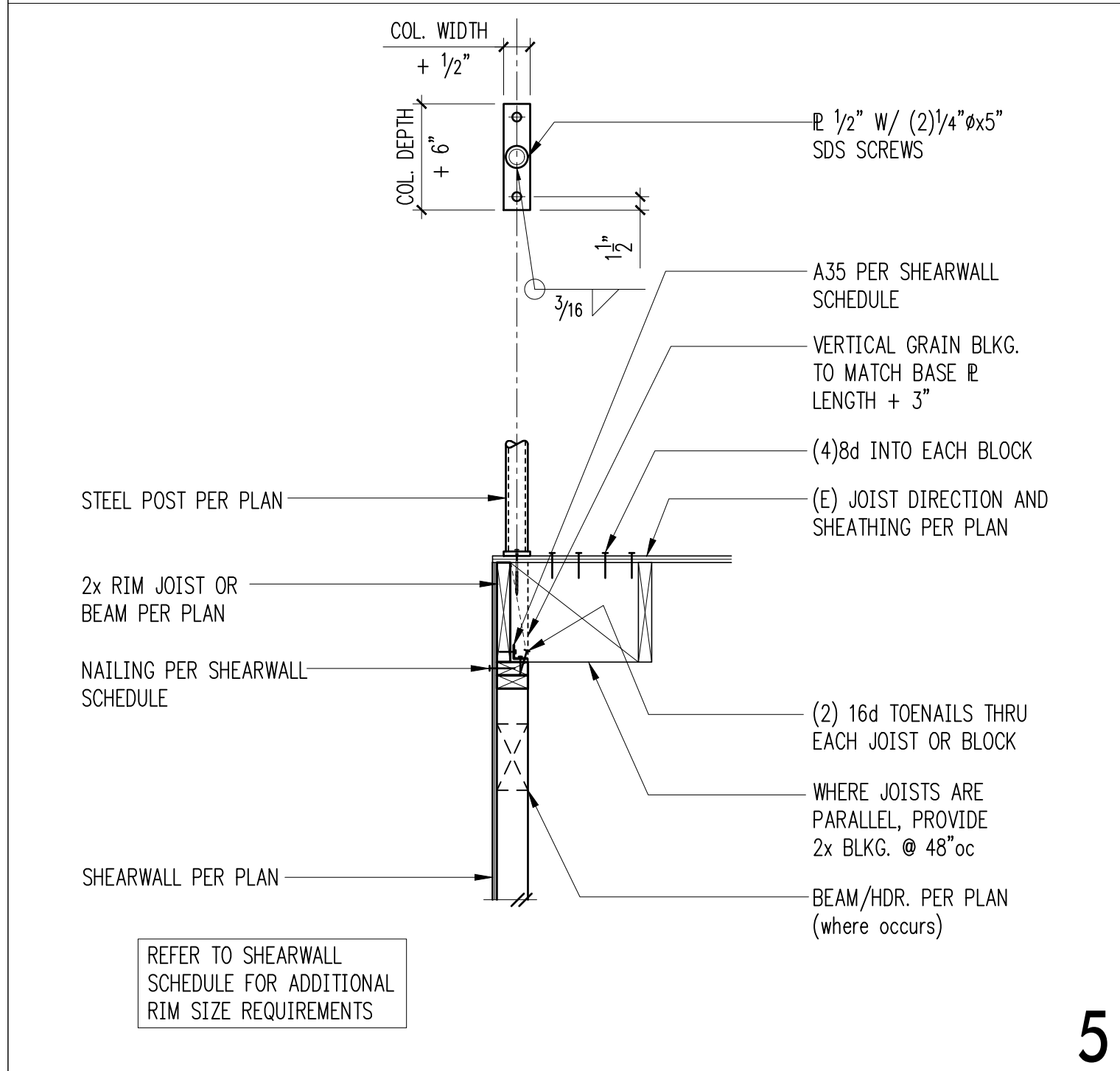
**Window Seat (Plan View) 2**



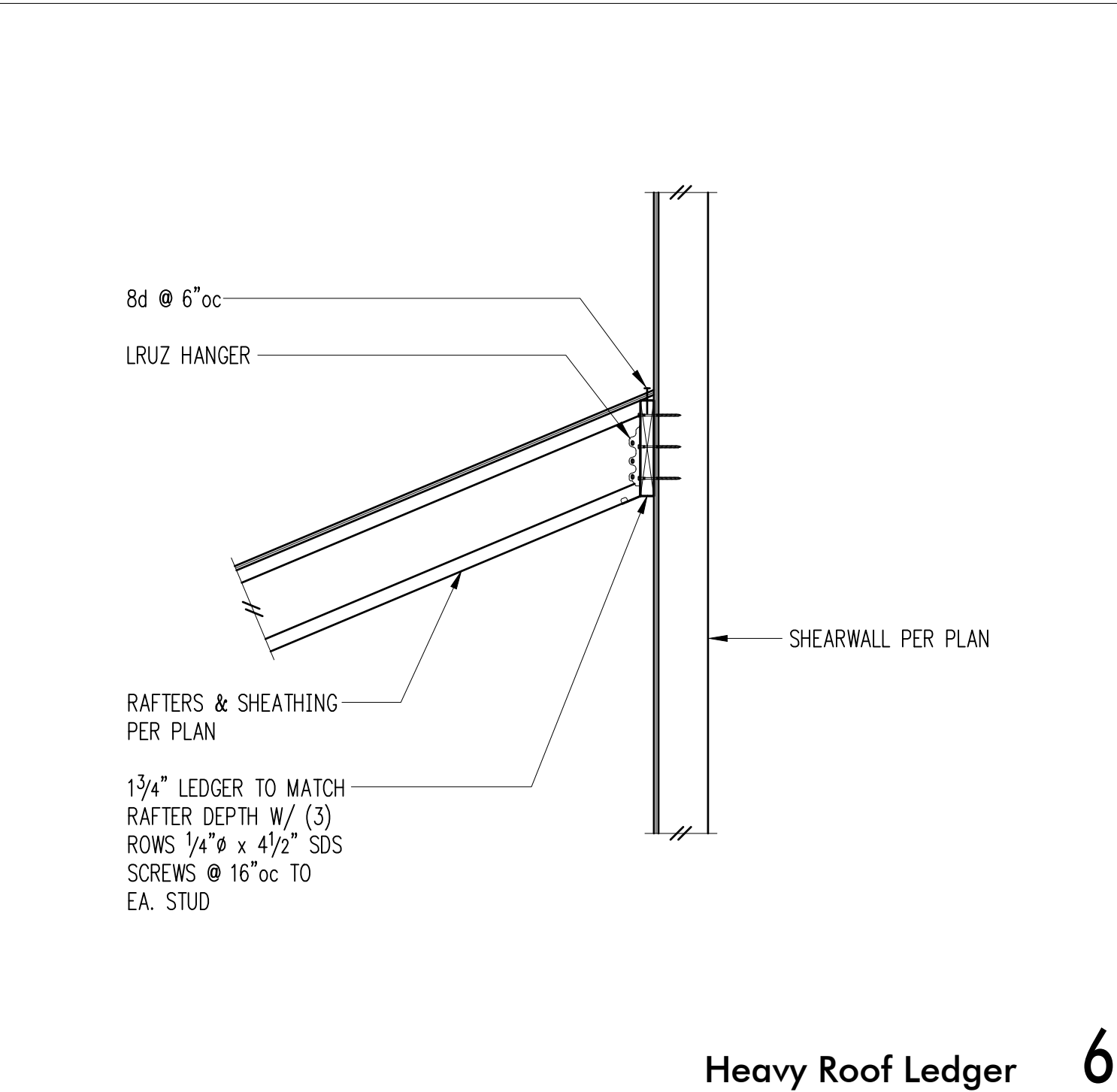
**Window Seat (Section View) 3**



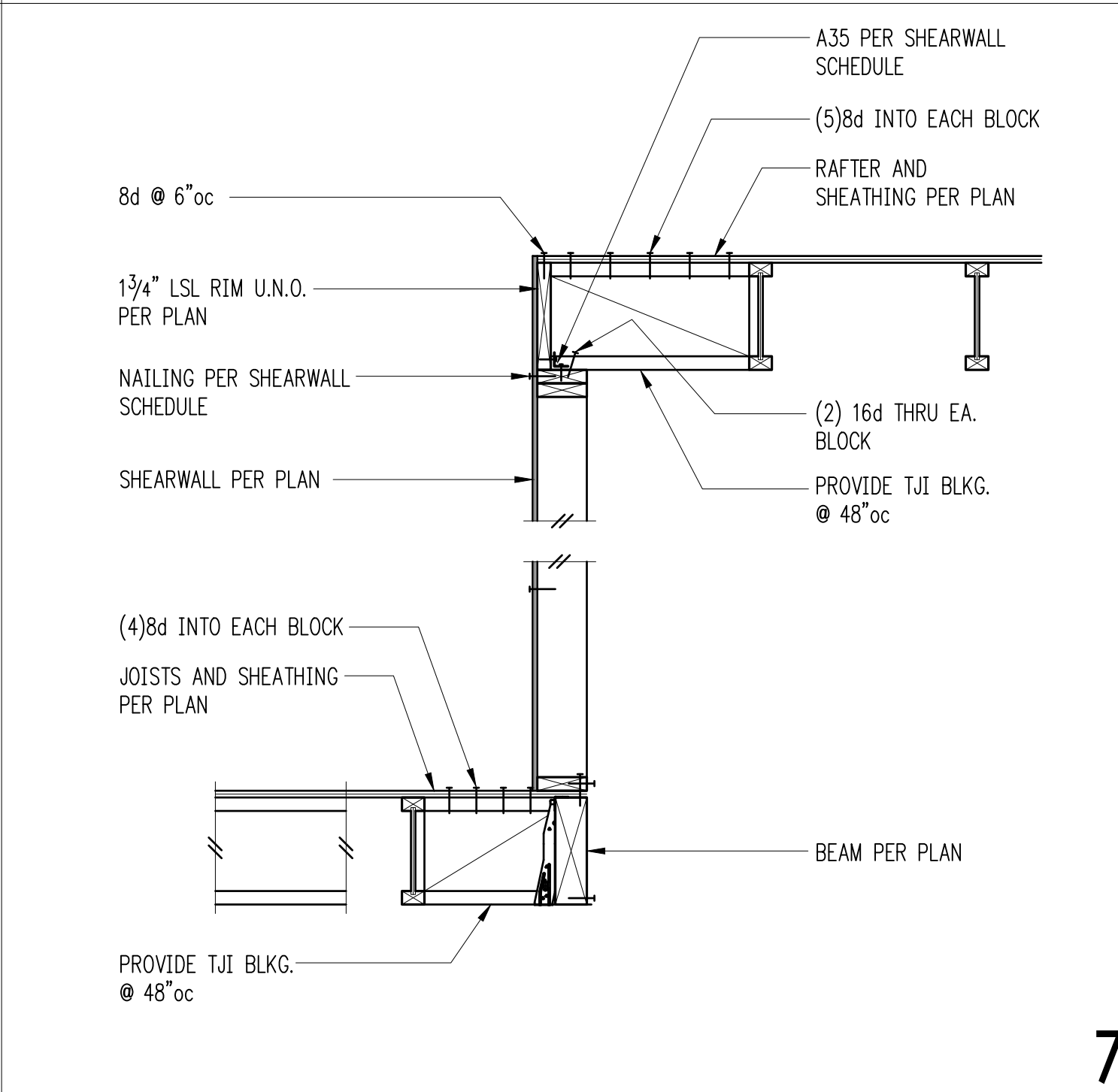
**Window Seat (Section View) 4**



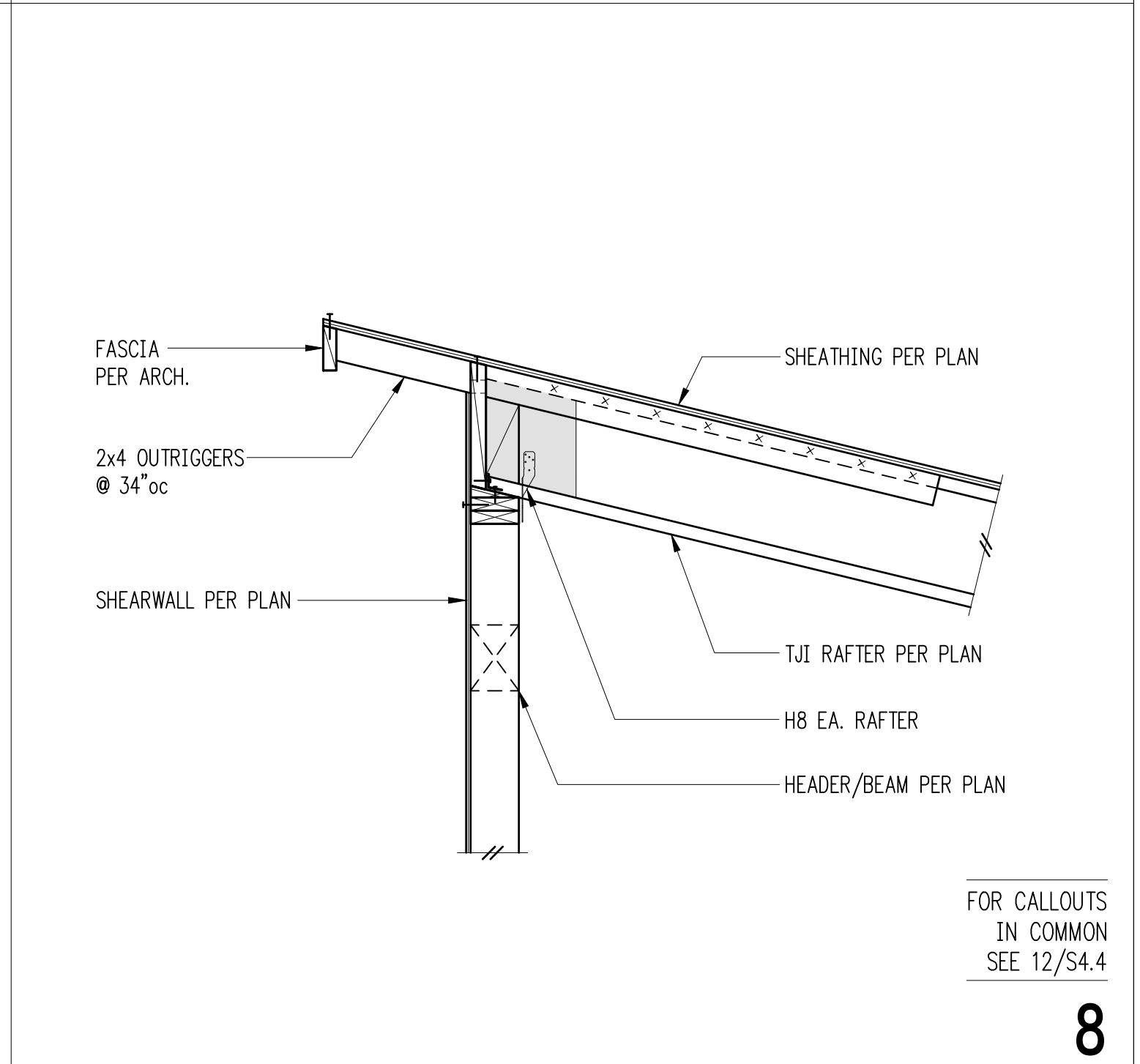
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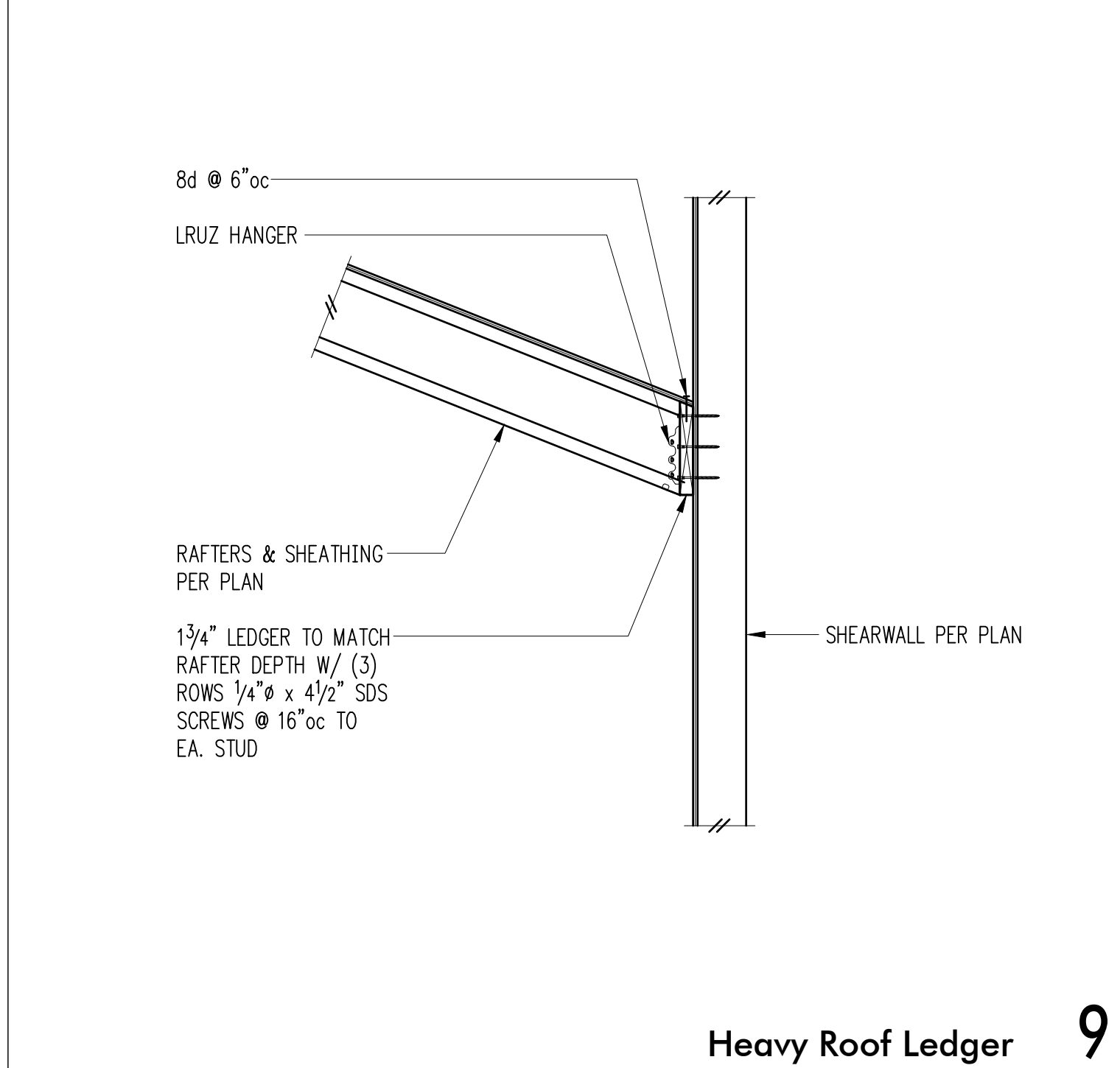
**Heavy Roof Ledger 6**



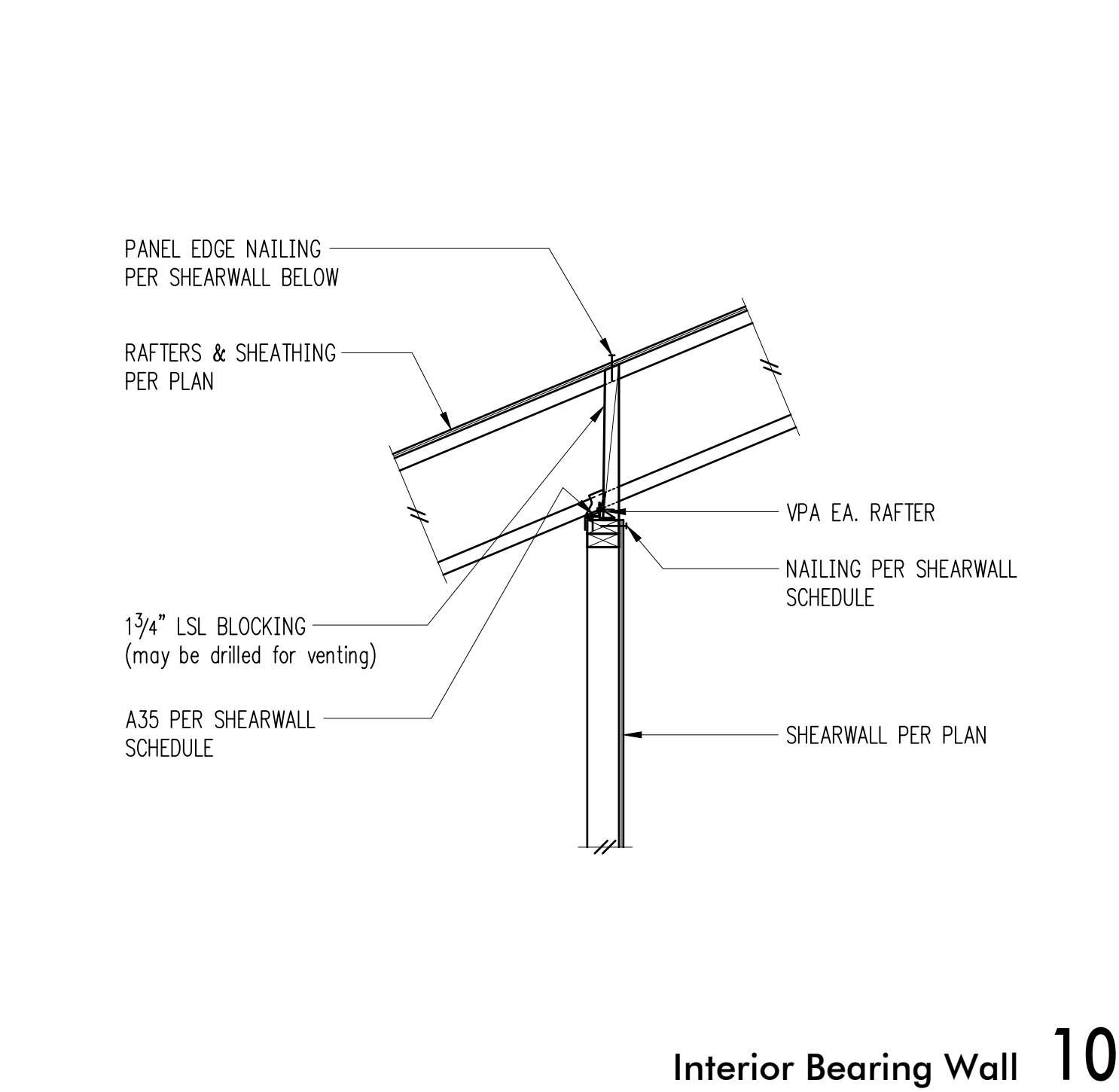
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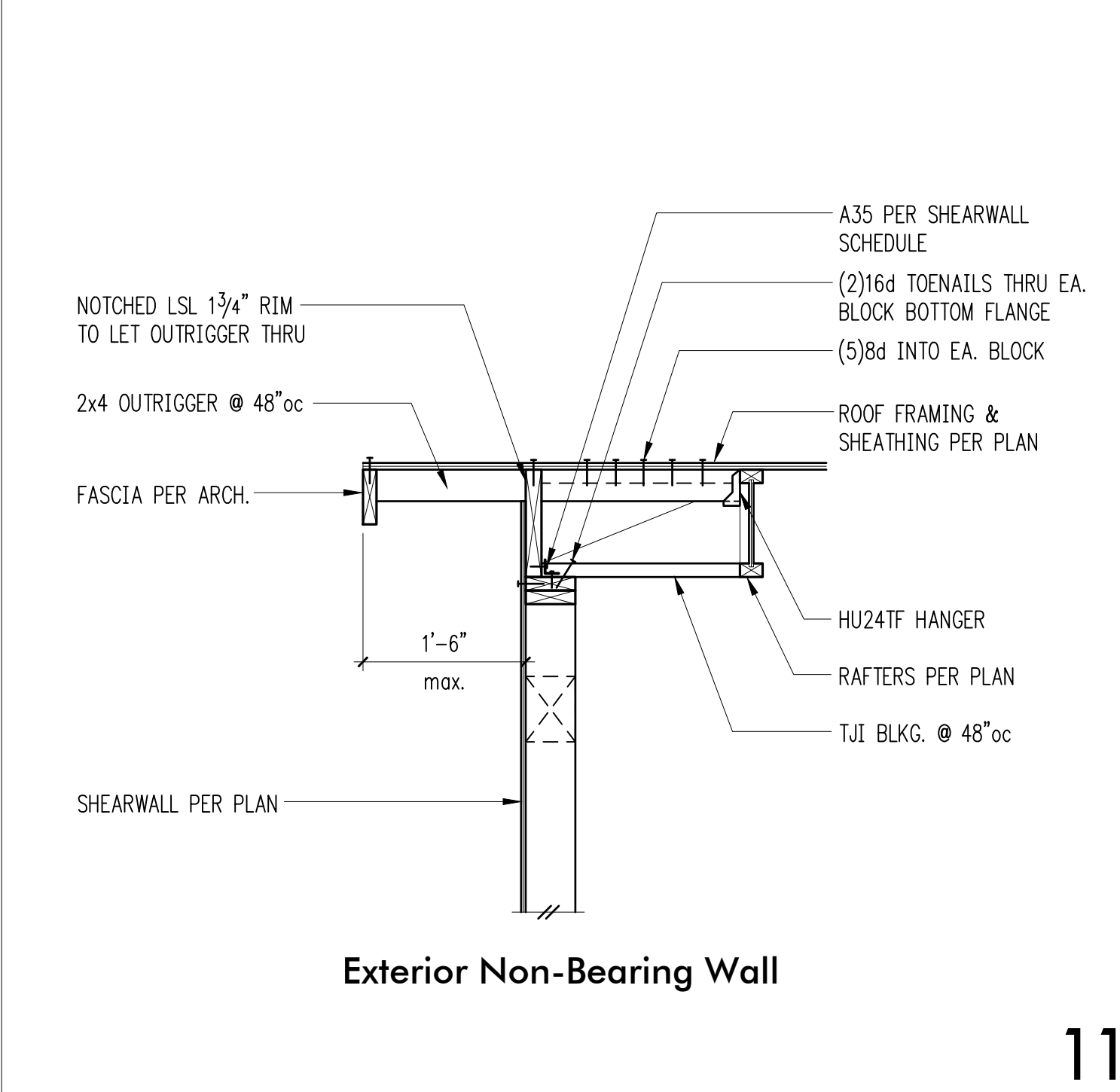
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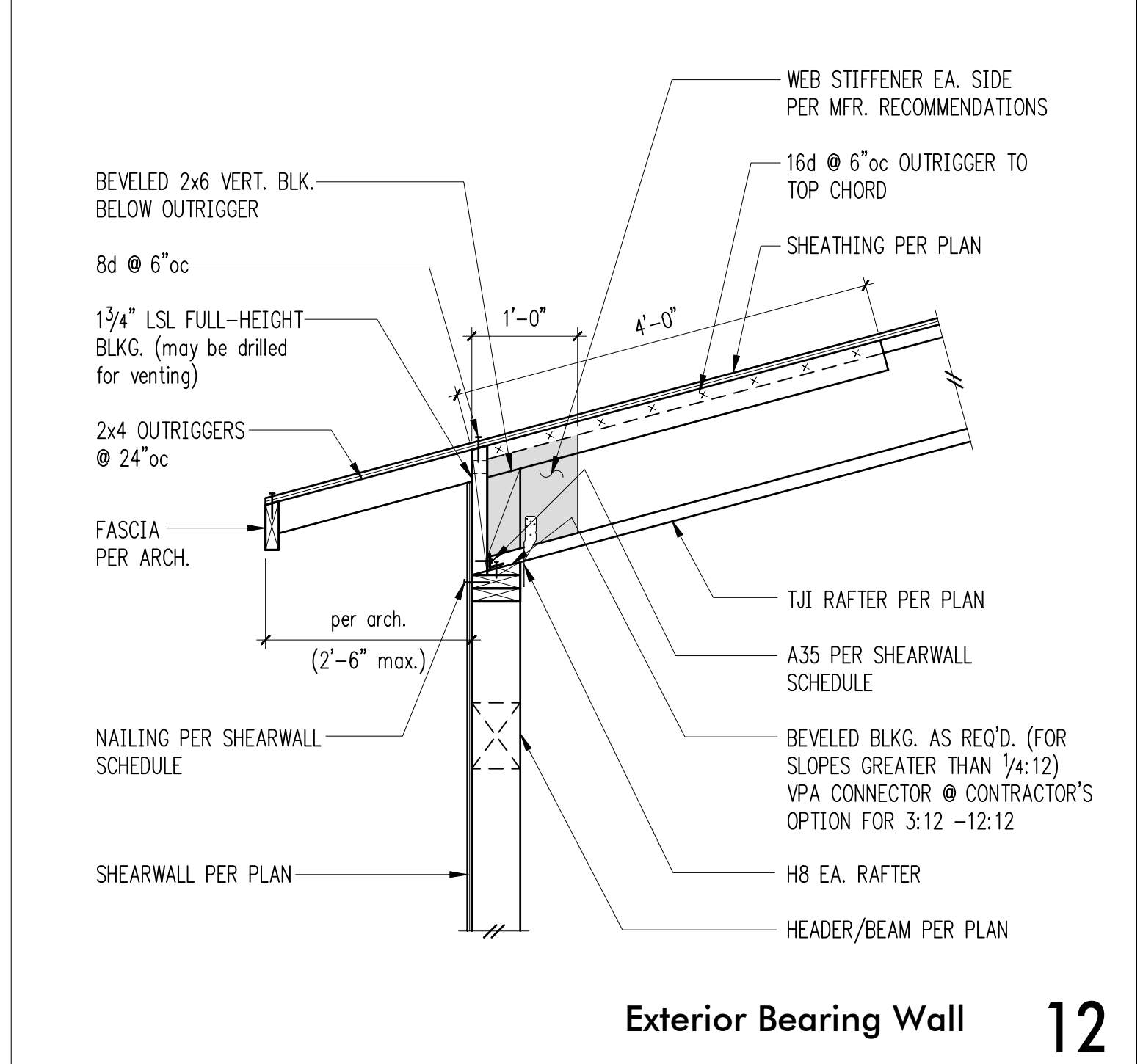
**Heavy Roof Ledger 9**



**Interior Bearing Wall 10**



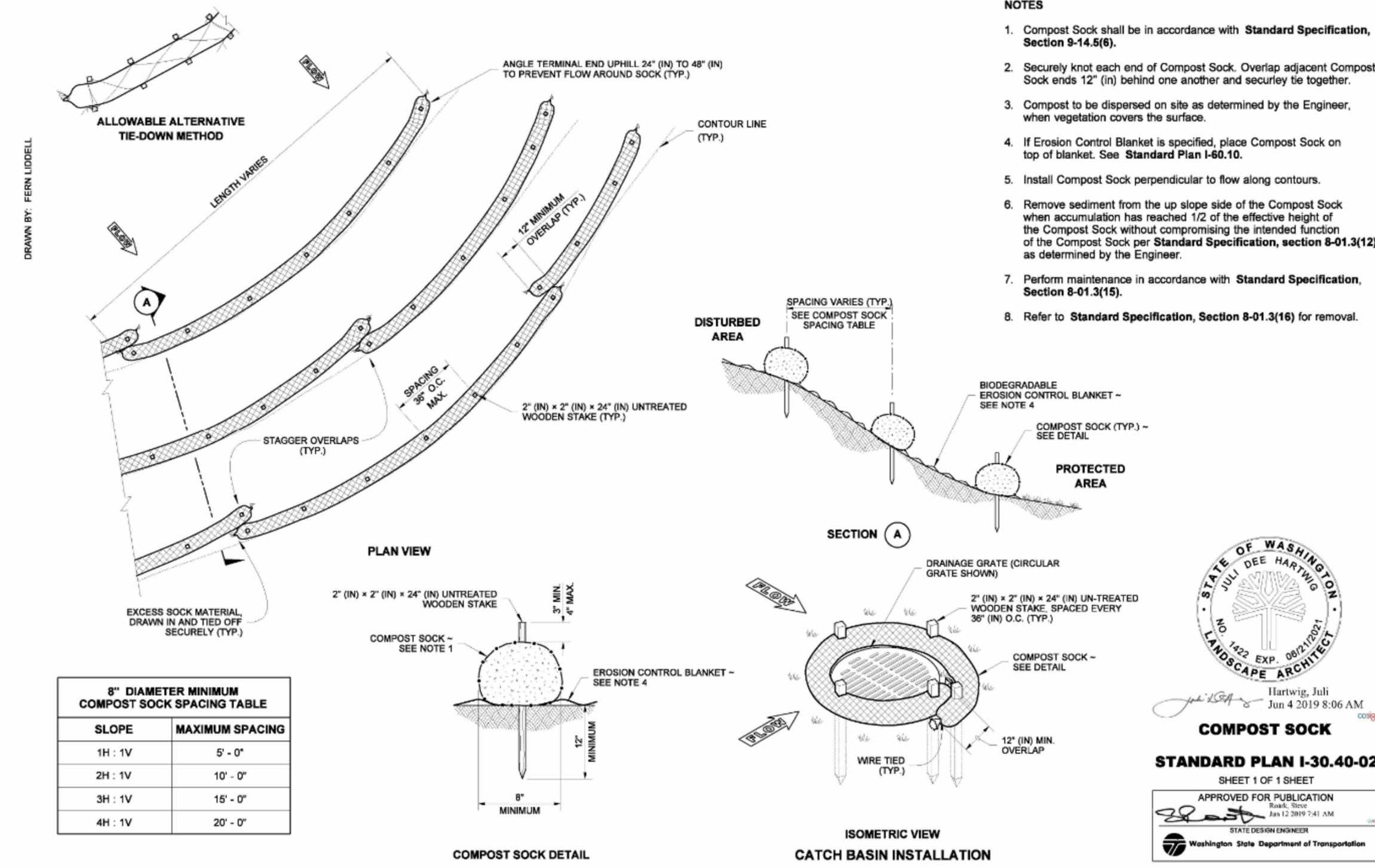
**11**



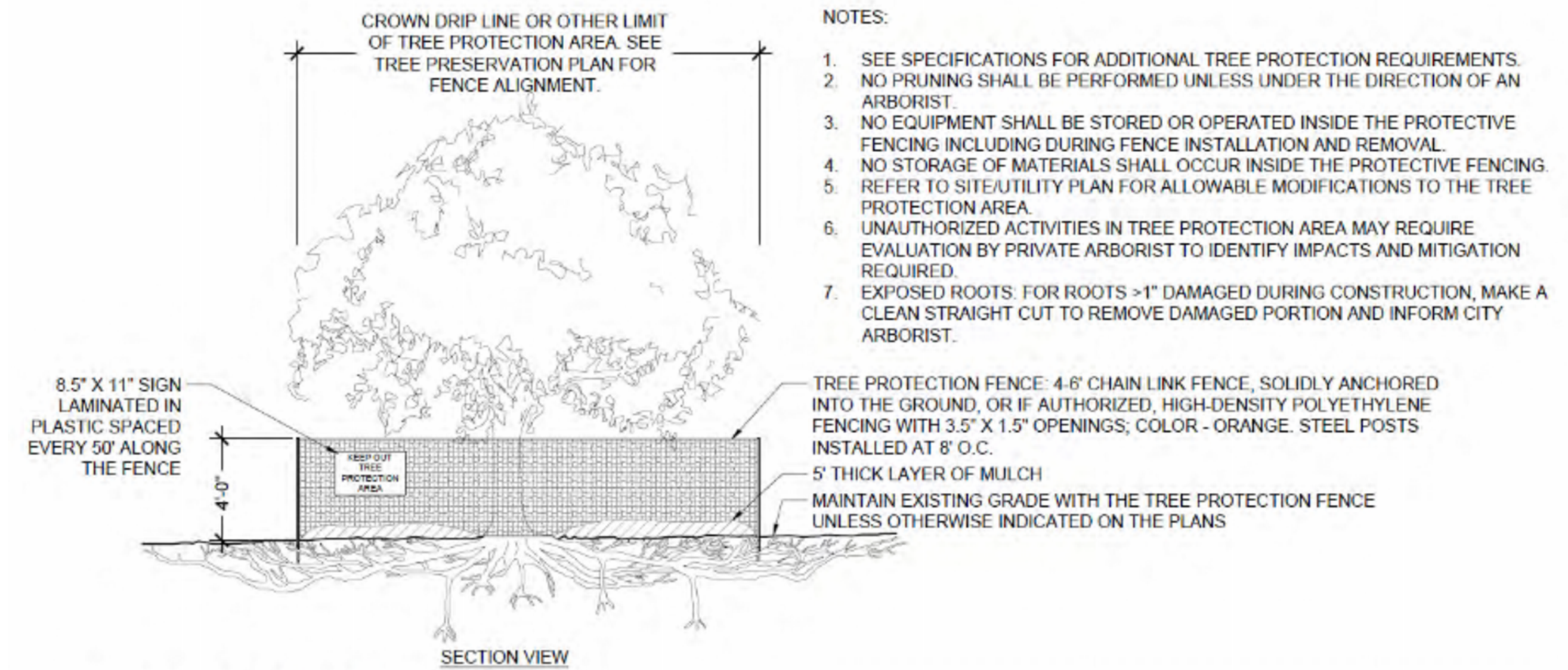
**12**







1 COMPOST STONE WSDOT STANDARD DETAIL  
SCALE: NTS



2 TREE PROTECTION FENCE  
SCALE: NTS

**Salish Restoration Associates**

**Tree Summary Table**  
For: Korpela Project  
At: 8441 SE 33rd Pl Mercer Island, WA

**Salish Restoration Associates LLC**  
Date: 8/29/2023  
Inspector: Benjamin Mark

Regulated (Large) Trees: Greater than 10".  
Exceptional trees: Per attached list. Trees on neighboring properties - Drip-line and Limits of Disturbance measurements from property lines  
ISA TRAQ Risk Assessments were not carried out for any tree in this report.

ON-SITE TREES																
Tree/ Tag #	Evergreen/Deciduous	Common Name	Genus species	DBH Inches (Multistem calc.)	Healthy	Fair	Dead/Dying	Dripline				Limits of Disturbance	Photo #	REGULATED?	Exceptional?	Comments
								N	S	E	W					
1	Evergreen	Japanese black pine	<i>Pinus thunbergii</i>	10.8	✓	■	■	10	8	10	12	8nsew	1, 2	Yes	No	Codominant stems forked at 10 feet 17 feet from the corner of the garage.
2	Evergreen	Scots pine	<i>Pinus sylvestris</i>	10.7	✓	■	■	7	10	8	7	8nsew	2	Yes	No	4.5 feet from the corner of the garage.
3	Deciduous	Florida dogwood	<i>Cornus florida</i>	6.8	■	■	✓	9	10	5	9	8nsew	3	No	No	Poor condition from extensive infection of anthracnose. 5 feet west of house
4	Evergreen	Western hemlock	<i>Tsuga heterophylla</i>	18.1	✓	■	■	16	12	11	11	13nsew		Yes	YES	Dominated by old growth Douglas fir to the south.
5	Evergreen	Douglas fir	<i>Pseudotsuga menziesii</i>	63	✓	■	■	20	25	28	20	25nsew	4	Yes	YES	Remnant old growth. Top blown out. On steep slope. Good flare and taper
6	Deciduous	Big leaf maple	<i>Acer macrophyllum</i>	32.8	✓	■	■	46	28	25	21	20nsew	5	Yes	YES	Very large crown. Curved drain pipe from house was found just north of its root flare.
7	Deciduous	Big leaf maple	<i>Acer macrophyllum</i>	13	■	✓	■	18	19	22	26	20nsew	6	Yes	YES	Dominated by adjacent trees. Crown is mostly lost. Codominant leader is dead.
8	Deciduous	Big leaf maple	<i>Acer macrophyllum</i>	24	■	✓	■	20	18	23	15	20nsew	7	Yes	YES	Large, dead, broken stems on the east side. Decay is present. Crown is off-balance to the east
9	Deciduous	Big leaf maple	<i>Acer macrophyllum</i>	19	■	✓	■	24	20	11	20	18nsew	8, 12	Yes	YES	Will not be affected by the planned construction.

NEIGHBORING TREES																	
Tree/ Tag #	Evergreen/Deciduous	Common Name	Genus species	DBH Inches (Multistem calc.)	Healthy	Fair	Dead/Dying	Dripline				Limits of Disturbance	Photo #	REGULATED?	Exceptional?	Comments	
								N	S	E	W						
A	Evergreen	Portuguese laurel	<i>Prunus lusitanica</i>	8, 8, 8 (13.8)	✓	■	■	8				4n	9	Yes	No	4' stone retaining wall just to the north and west.	
B	Deciduous	Japanese maple	<i>Acer palmatum</i>	8, 8, 8, 8 (15)	✓	■	■	10				19	6n	10	Yes	No	Rock retaining wall on subject property 6' to the north of this tree. It's lowest branch slightly overhangs the existing house 6' above the south gutter line.
C	Evergreen	Western red cedar	<i>Thuja plicata</i>	21.7	✓	■	■	17				17	12s, 20e, 12w	Yes	YES	Root flare buried by falling wood retaining wall. Corner of house is 12 feet to the southwest.	
D	Evergreen	Douglas fir	<i>Pseudotsuga menziesii</i>	45.4	✓	■	■	23				17	20nsew	11	Yes	YES	Low live crown ratio, top blown out. Girdling stem at 80 feet. Trunk is under rolled on the east side.
E	Evergreen	Douglas fir	<i>Pseudotsuga menziesii</i>	19	✓	■	■	8				10n	12	Yes	YES	Top blown out at 55 feet. Canopy mostly extends to the east and west.	

3 TREE INVENTORY (PER SALISH RESTORATION ASSOCIATES)  
SCALE: NTS



MARK	DATE	DESCRIPTION
	06/27/24	PERMIT SUBMITTAL
	11/14/24	PERMIT RESUBMITTAL

DESIGN: JCO  
DRAWN: JCP  
CHECK: JPU  
JOB NO: 23354.20  
DATE: 06/27/24

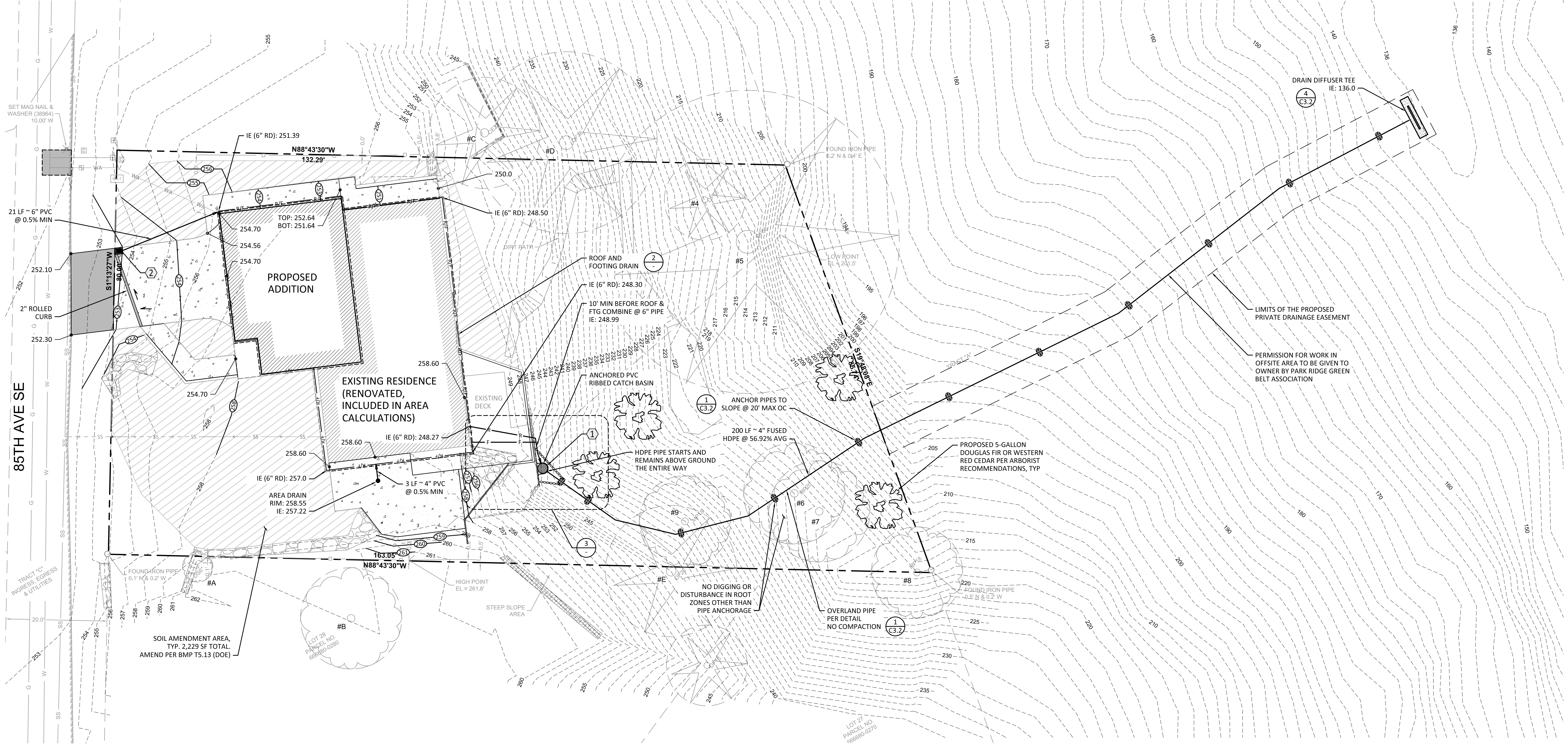
KORPELA RESIDENCE  
 8441 SE 33RD PL  
 MERCER ISLAND, WA 98040  
 TEMPORARY EROSION  
 CONTROL DETAILS

SHEET:  
**C2.2**



MARK	DATE	DESCRIPTION
	06/27/24	PERMIT SUBMITTAL
	11/14/24	PERMIT RESUBMITTAL

DESIGN:	JCO
DRAWN:	JCP
CHECK:	JPU
JOB NO:	23354.20
DATE:	06/27/24



**1 GRADING AND DRAINAGE PLAN**  
 SCALE: 1" = 10'

**GRADING AND DRAINAGE PLAN NOTES:**

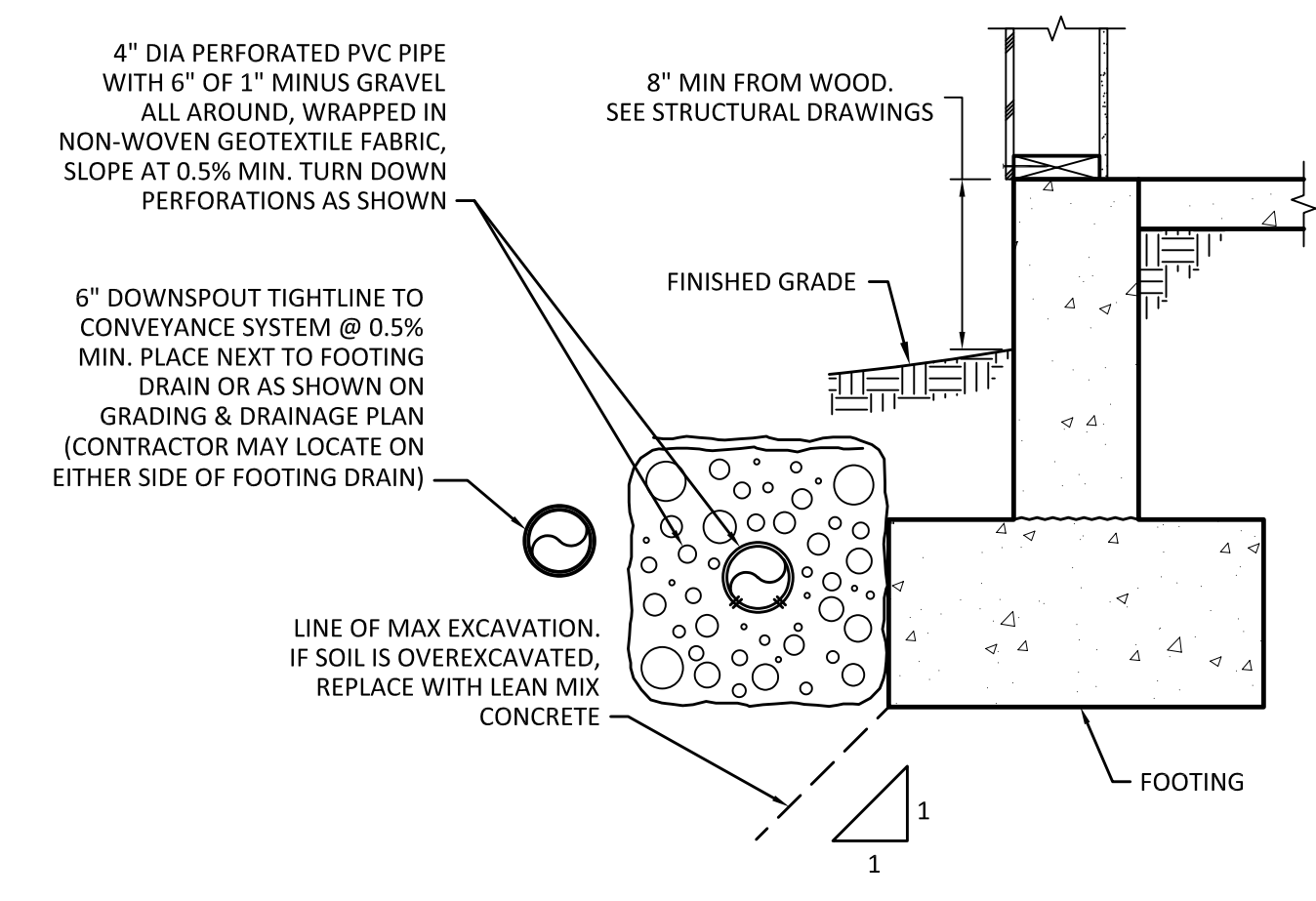
- SOILS REPORT  
 REPORT NUMBER: 2727.01  
 PREPARED BY: ZIPPERGEO  
 DATED: 11/28/23
- TOW AND BOW REFER TO FINISHED GRADE AT THE TOP AND BOTTOM OF THE WALLS, RESPECTIVELY.
- A MINIMUM OF 3' HORIZONTAL SEPARATION AND 1' VERTICAL SEPARATION IS REQUIRED BETWEEN DRY UTILITY (POWER, GAS, PHONE, CABLE, ETC) AND SEWER, WATER AND STORM, AND A MINIMUM OF 5' HORIZONTAL SEPARATION AND 1' VERTICAL SEPARATION FROM ANY CITY-OWNED LINES.
- A MINIMUM OF 2' OF COVER IS REQUIRED FOR ALL PIPES LOCATED UNDER DRIVABLE SURFACES AND 1' OF COVER UNDER LANDSCAPE SURFACES.
- CONTRACTOR SHALL INVESTIGATE THE FUNCTIONALITY OF PIPES AND TIGHTLINE THESE TO THE NEW CATCH BASIN AT THE SE PER DETAIL 3/C3.1 END OF THE WALL ALONG WITH DRAINAGE FROM RESIDENCE.
- REROUTE DRAINS TO NEW CATCH BASIN AT SE AND TIE INTO HDPE DRAINAGE SYSTEM.
- NEW/REPLACED IMPERVIOUS SURFACE (INCLUDING ROW): 3,150 SF  
 -- NEW RESIDENCE: 2,054 SF ROOF AREA DIRECTED TO DRAIN DIFFUSER TEE.  
 -- NEW WALKWAY: 255 SF DIRECTED TO DRAIN DIFFUSER TEE.  
 -- NEW PATIO: 343 SF DIRECTED TO DRAIN DIFFUSER TEE.  
 -- NEW DRIVEWAY: 498 SF SHEET FLOWS TO 85TH AVE SE.

GRADING QUANTITIES	
TOTAL EXCAVATION (CUT) -	150 CU YDS TOTAL
EMBANKMENT (FILL) -	35 CU YDS
<b>TOTAL</b>	<b>185 CU YDS</b>

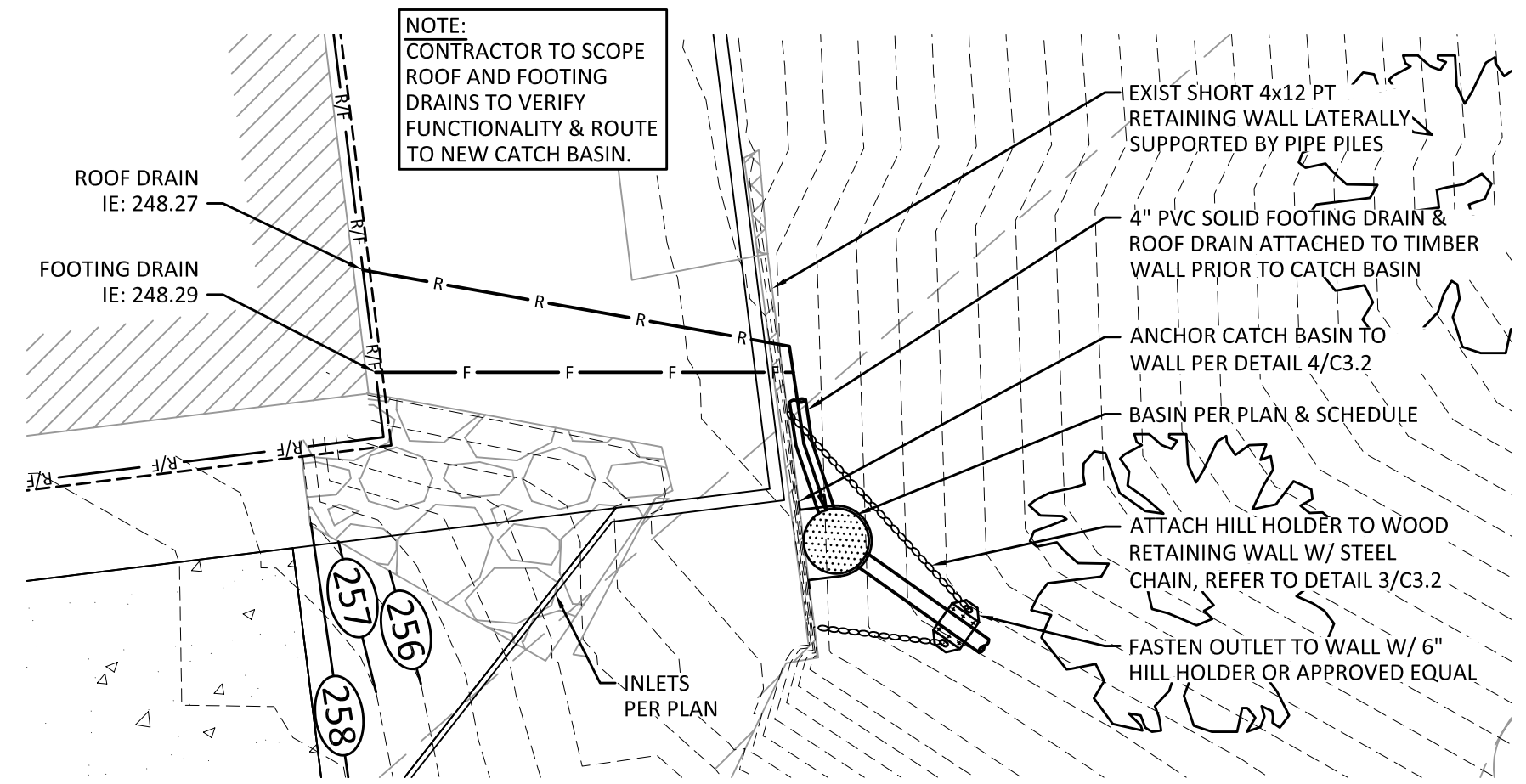
THE QUANTITIES SHOWN ABOVE ARE FOR THE PERMIT PROCESS ONLY. THESE VALUES ARE APPROXIMATE. DO NOT USE FOR BIDDING, PAYMENT, OR ESTIMATING PURPOSES.

CATCH BASIN SCHEDULE				
MARK	TYPE	RIM ELEV	INV ELEV	NOTES
1	24" Ø NYLOPLAST DRAIN BASIN	250.33	(6" N): 248.17 (4" SE): 248.07	2 3 C3.2 C3.2
2	TYPE 1 W/ FLOATABLE MATERIAL SEPARATOR	253.0	(6" E): 251.50	5 6 C3.2 C3.2

PAVING LEGEND	
	NEW ASPHALT
	NEW CONCRETE



**2 FOOTING AND ROOF DRAIN SECTION**  
 SCALE: NTS

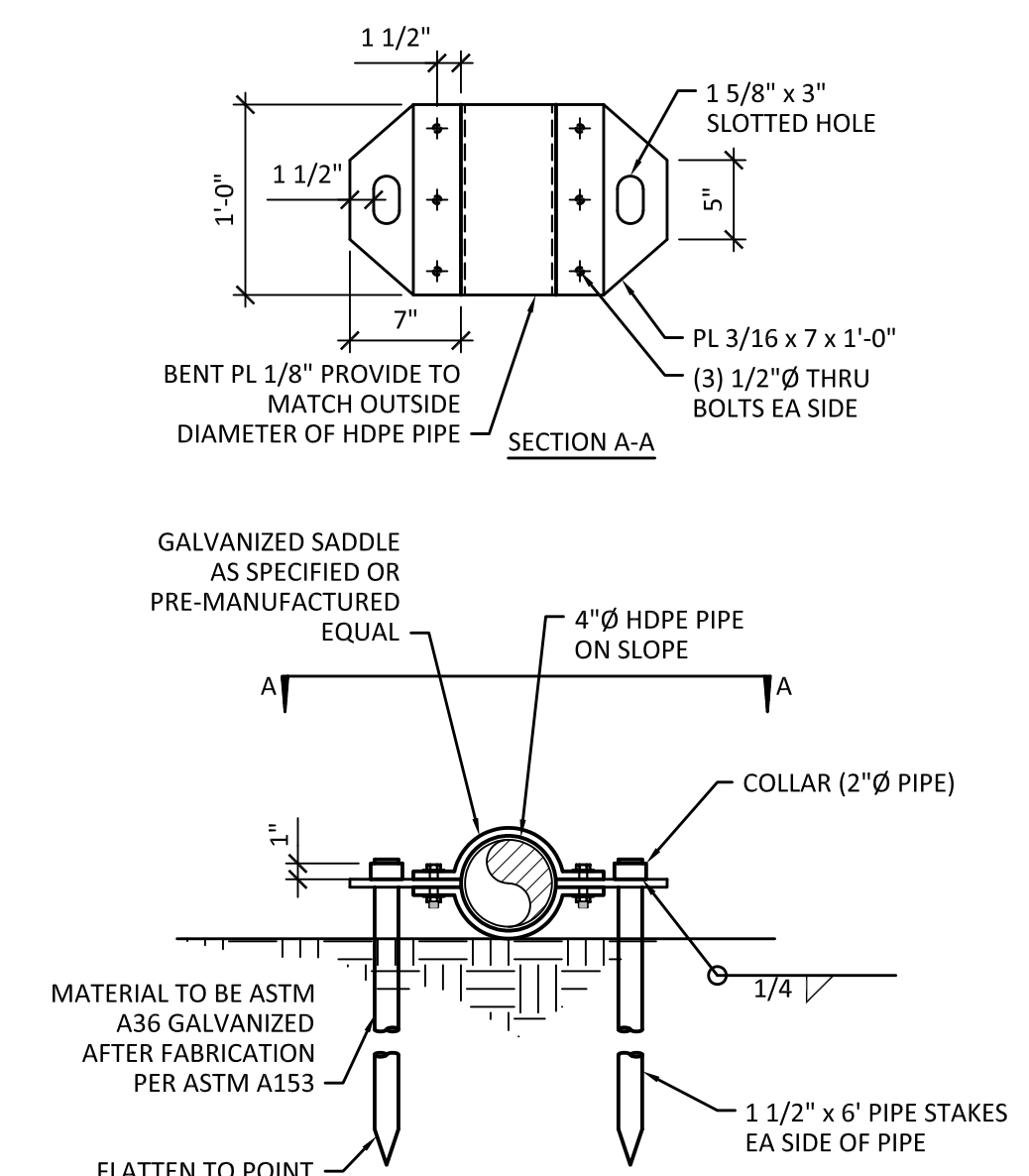


**3 GRADING AND DRAINAGE PLAN**  
 SCALE: 1" = 5'

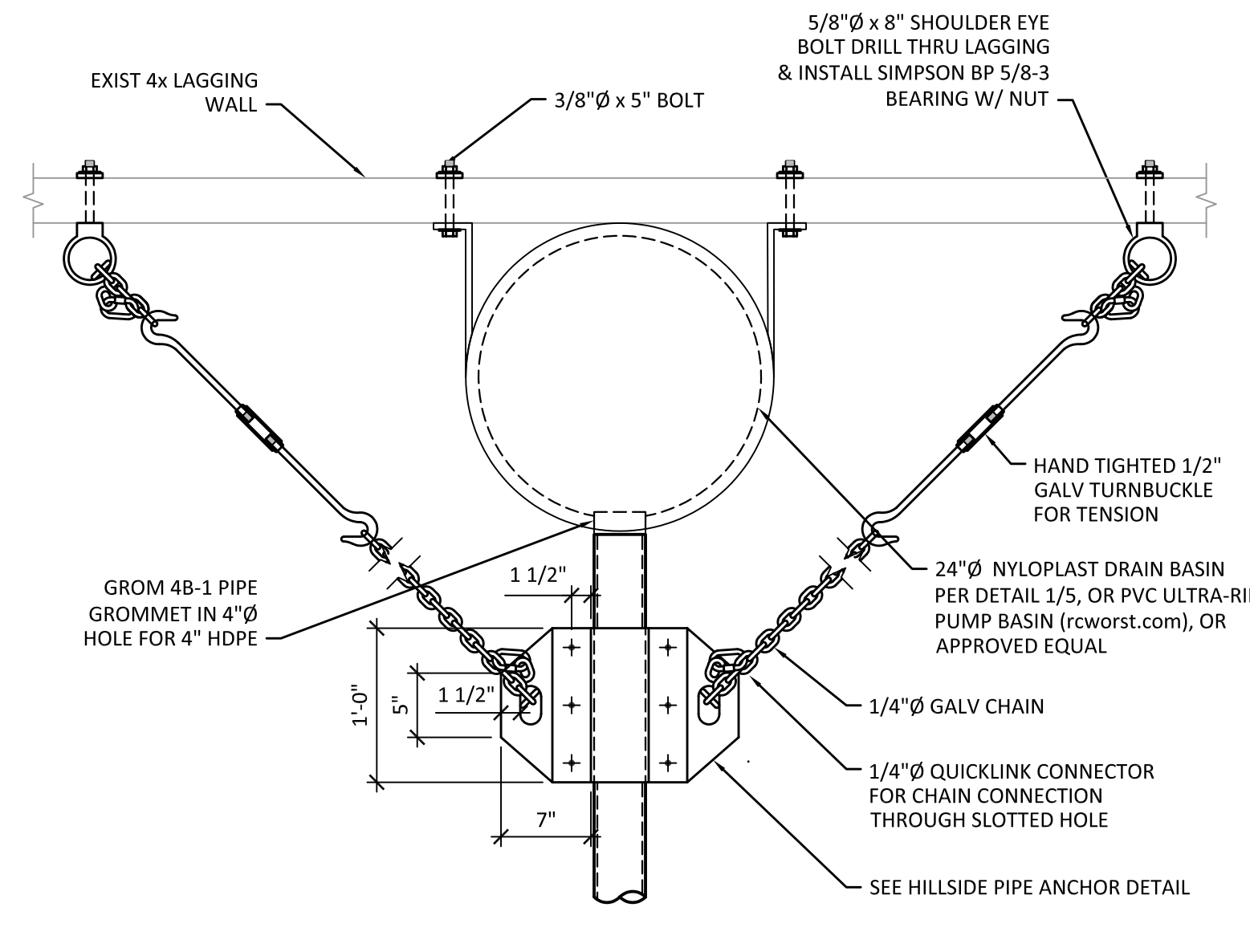
KORPELA RESIDENCE  
 8441 SE 33RD PL  
 MERCER ISLAND, WA 98040

GRADING AND DRAINAGE PLAN

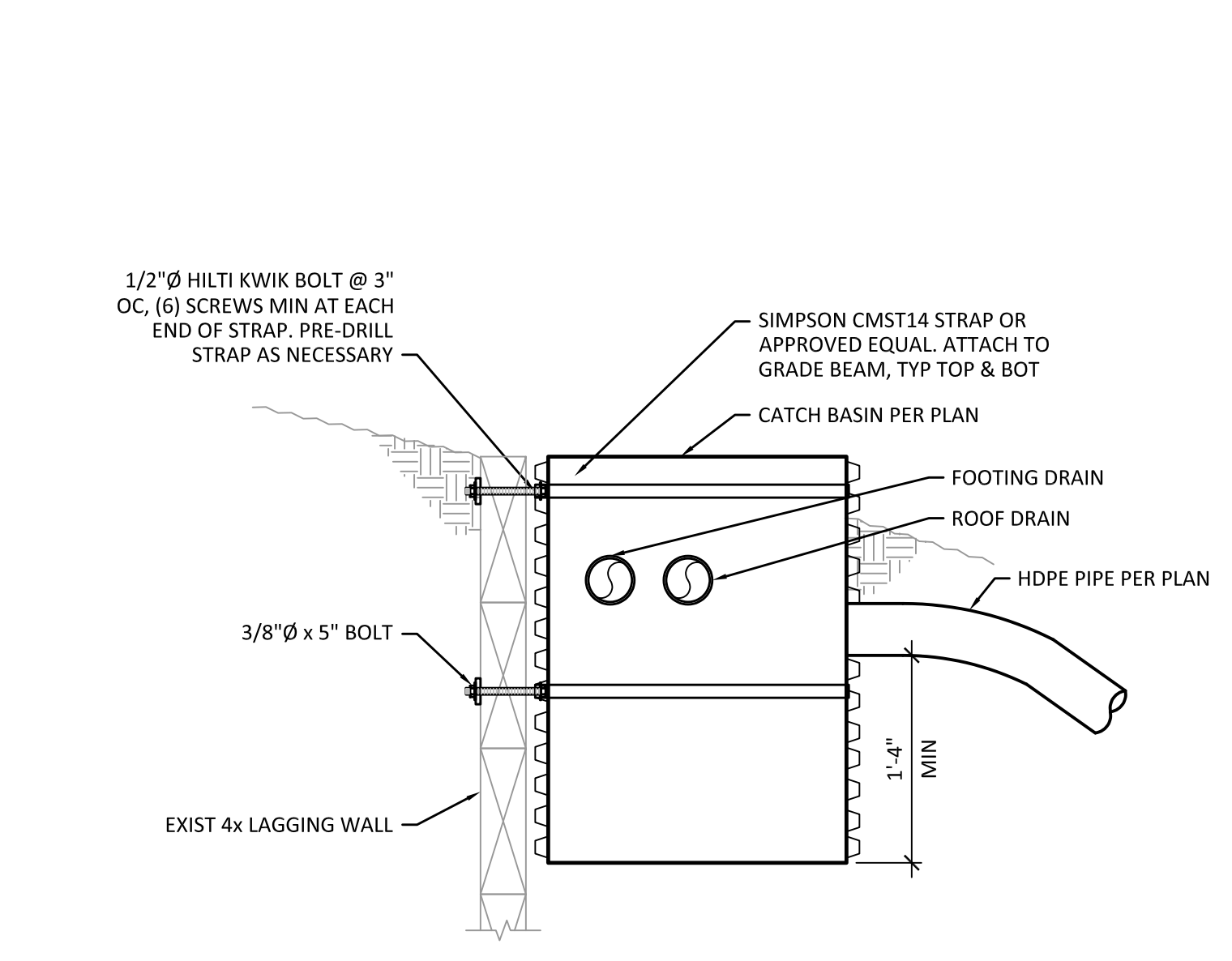
SHEET:  
**C3.1**



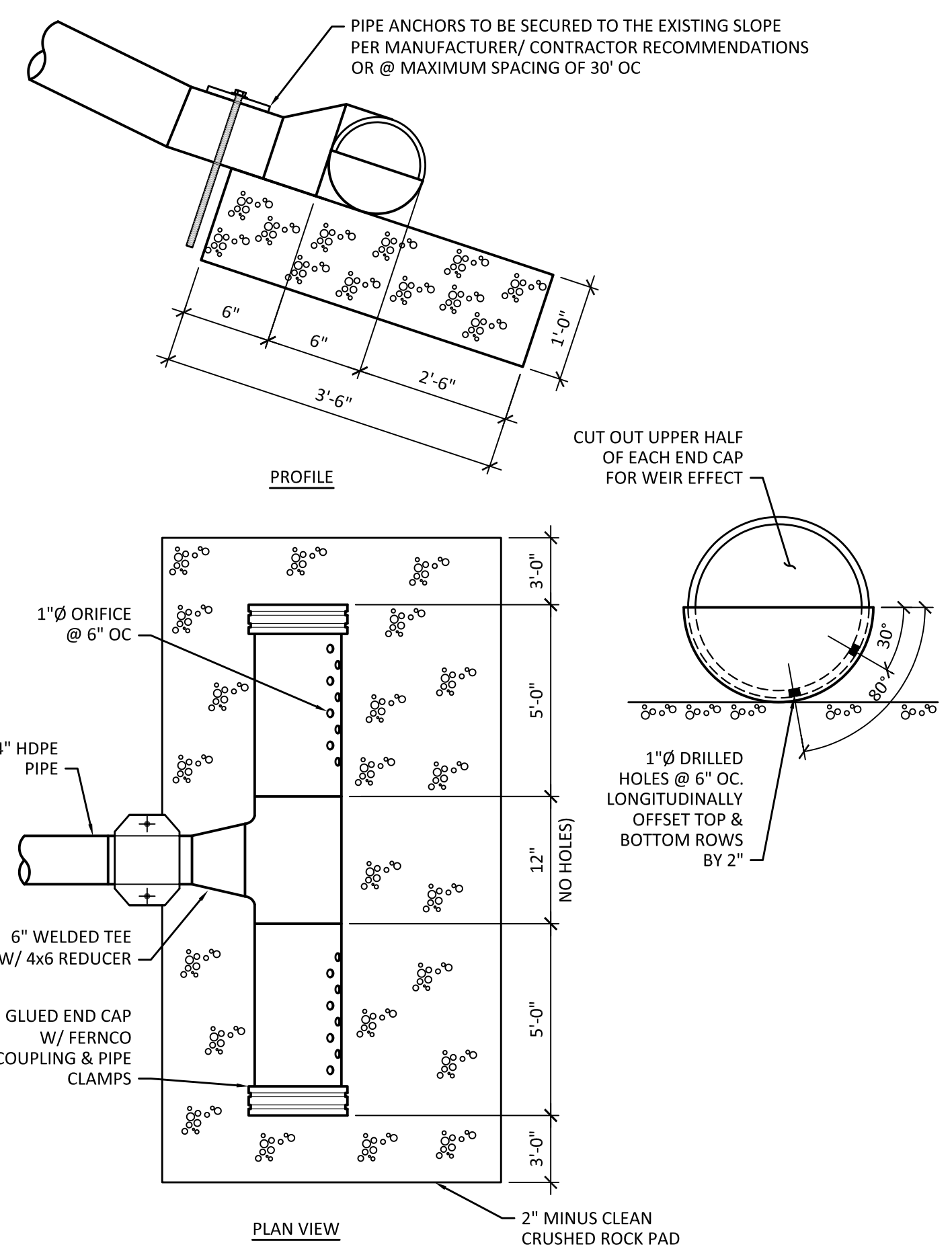
**1** PIPE ANCHOR DETAIL  
 SCALE: NTS



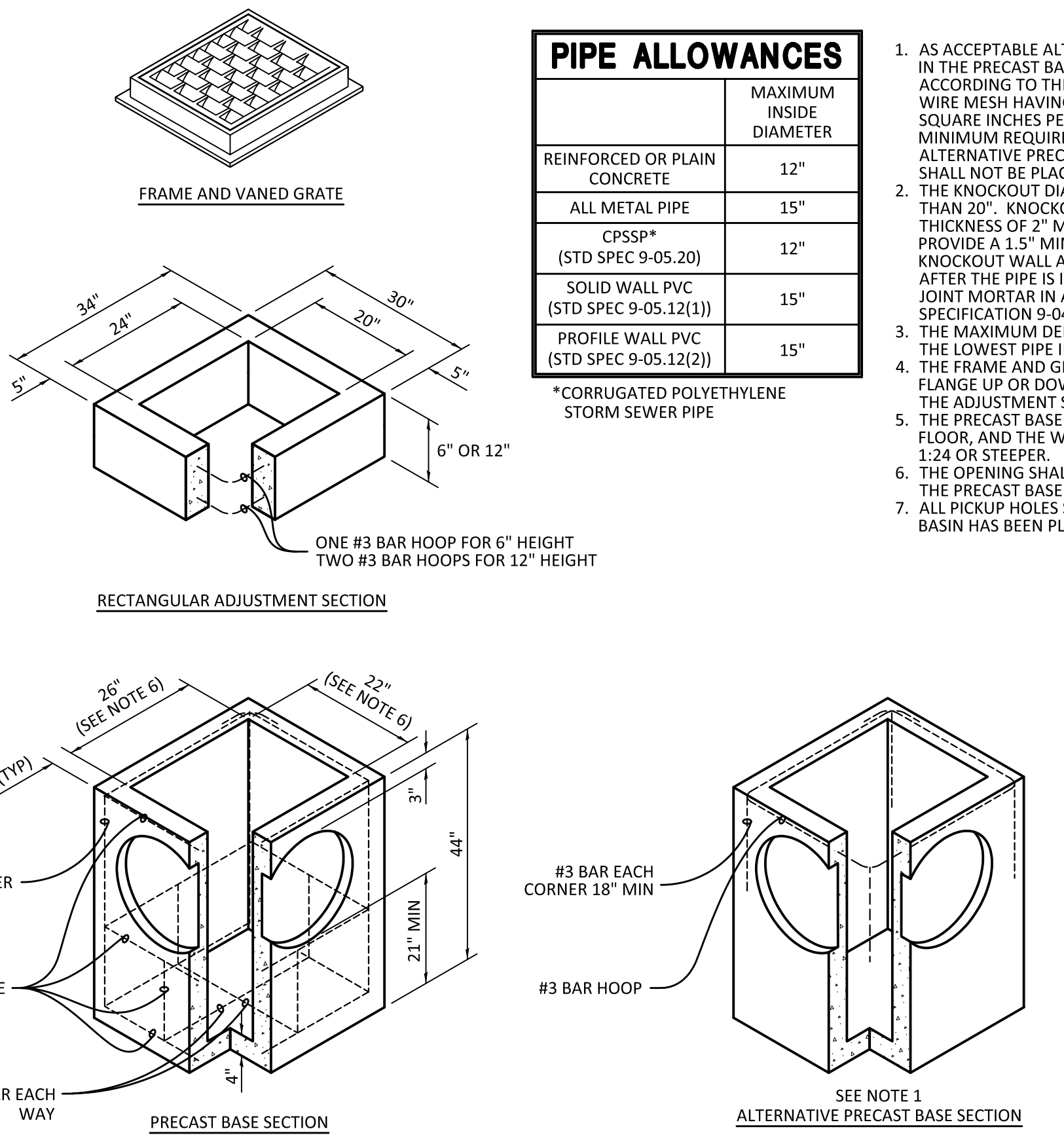
**2** HDPE PIPE ANCHOR DETAIL  
 SCALE: 1" = 1'-0"



**3** CATCH BASIN CONNECTION  
 SCALE: 1" = 1'-0"



**4** DRAIN DIFFUSER TEE DETAIL  
 SCALE: NTS

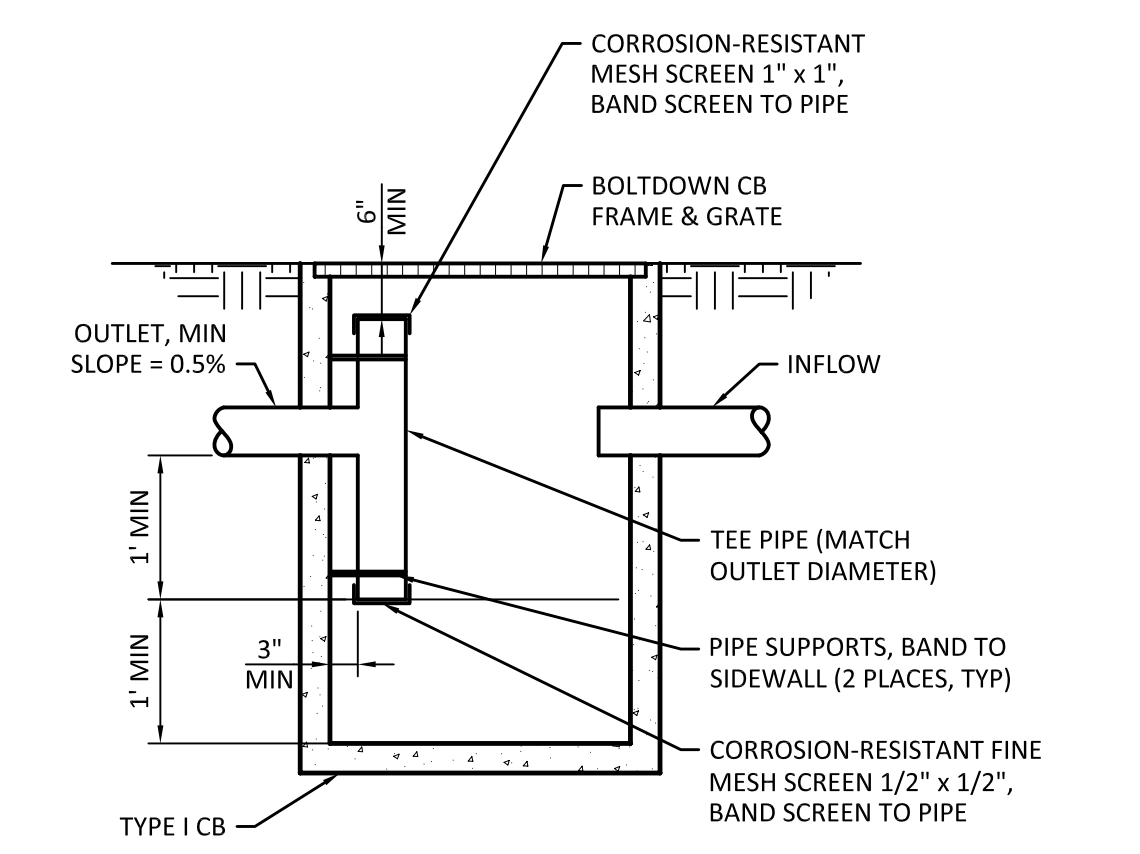


**5** TYPE I CATCH BASIN  
 SCALE: 1/2" = 1'-0"

PIPE ALLOWANCES	
	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSS* (STD SPEC 9-05.20)	12"
SOLID WALL PVC (STD SPEC 9-05.12(1))	15"
PROFILE WALL PVC (STD SPEC 9-05.12(2))	15"

\*CORRUGATED POLYETHYLENE STORM SEWER PIPE

- AS ACCEPTABLE ALTERNATIVES TO THE REBAR SHOWN IN THE PRECAST BASE SECTION, FIBERS (PLACED ACCORDING TO THE STANDARD SPECIFICATIONS), OR WIRE MESH HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT SHALL BE USED WITH THE MINIMUM REQUIRED REBAR SHOWN IN THE ALTERNATIVE PRECAST BASE SECTION. WIRE MESH SHALL NOT BE PLACED IN THE KNOCKOUTS.
- THE KNOCKOUT DIAMETER SHALL NOT BE GREATER THAN 20". KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM TO 2.5" MAXIMUM. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR IN ACCORDANCE WITH STANDARD SPECIFICATION 9-04.3.
- THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE LOWEST PIPE INVERT SHALL BE 5'.
- THE FRAME AND GRATE MAY BE INSTALLED WITH THE FLANGE UP OR DOWN. THE FRAME MAY BE CAST INTO THE ADJUSTMENT SECTION.
- THE PRECAST BASE SECTION MAY HAVE A ROUNDED FLOOR, AND THE WALLS MAY BE SLOPED AT A RATE OF 1:24 OR STEEPER.
- THE OPENING SHALL BE MEASURED AT THE TOP OF THE PRECAST BASE SECTION.
- ALL PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.



**6** FLOATABLE MATERIAL SEPARATOR  
 SCALE: NTS

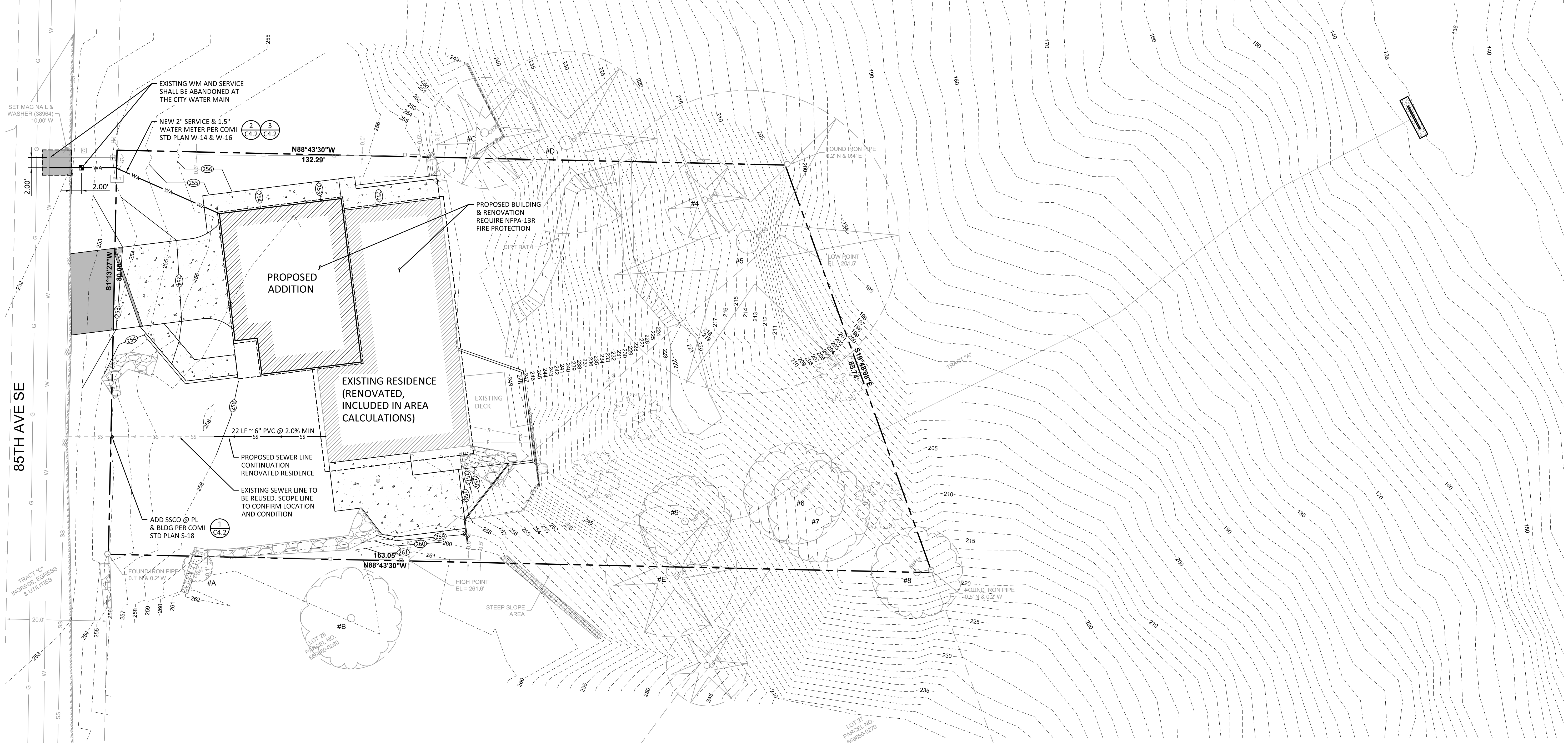
MARK	DATE	DESCRIPTION
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	11/14/24	PERMIT RESUBMITTAL

DESIGN: JCO  
 DRAWN: JCP  
 CHECK: JPU  
 JOB NO: 23354.20  
 DATE: 06/27/24

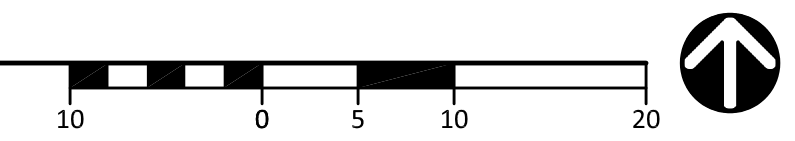
KORPELA RESIDENCE  
 8441 SE 33RD PL  
 MERCER ISLAND, WA 98040

GRADING AND DRAINAGE DETAILS

SHEET:



1 WATER AND SEWER PLAN  
SCALE: 1" = 10'



**ENGINEERING**  
250 4TH AVE. S., SUITE 200  
EDMONDS, WASHINGTON 98020  
PHONE (425) 778-8500  
FAX (425) 778-5536



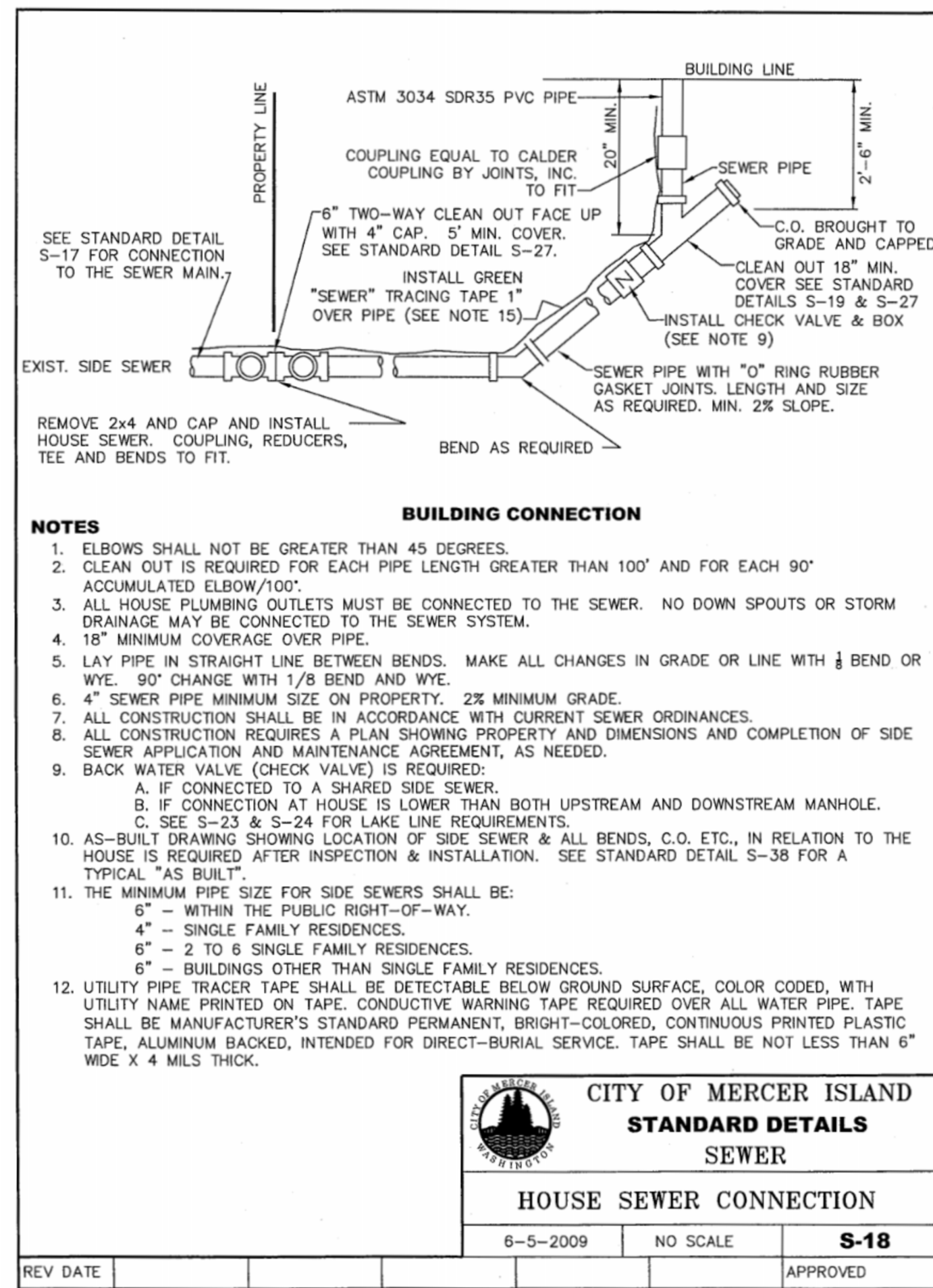
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	06/27/24	PERMIT SUBMITTAL
	11/14/24	PERMIT RESUBMITTAL

DESIGN:	JCO
DRAWN:	JCP
CHECK:	JPU
JOB NO:	23354.20
DATE:	06/27/24

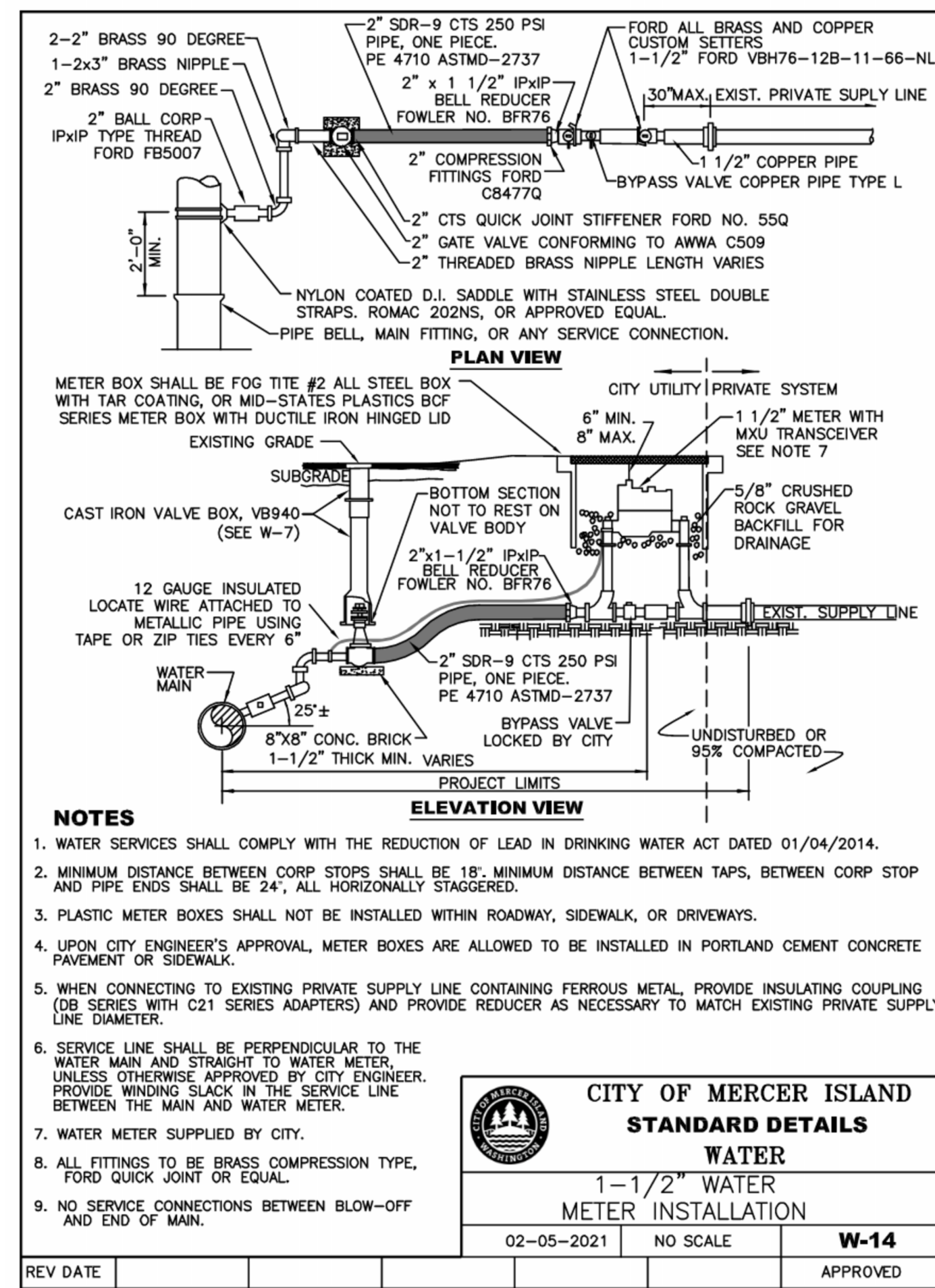
KORPELA RESIDENCE  
8441 SE 33RD PL  
MERCER ISLAND, WA 98040

WATER AND SEWER PLAN

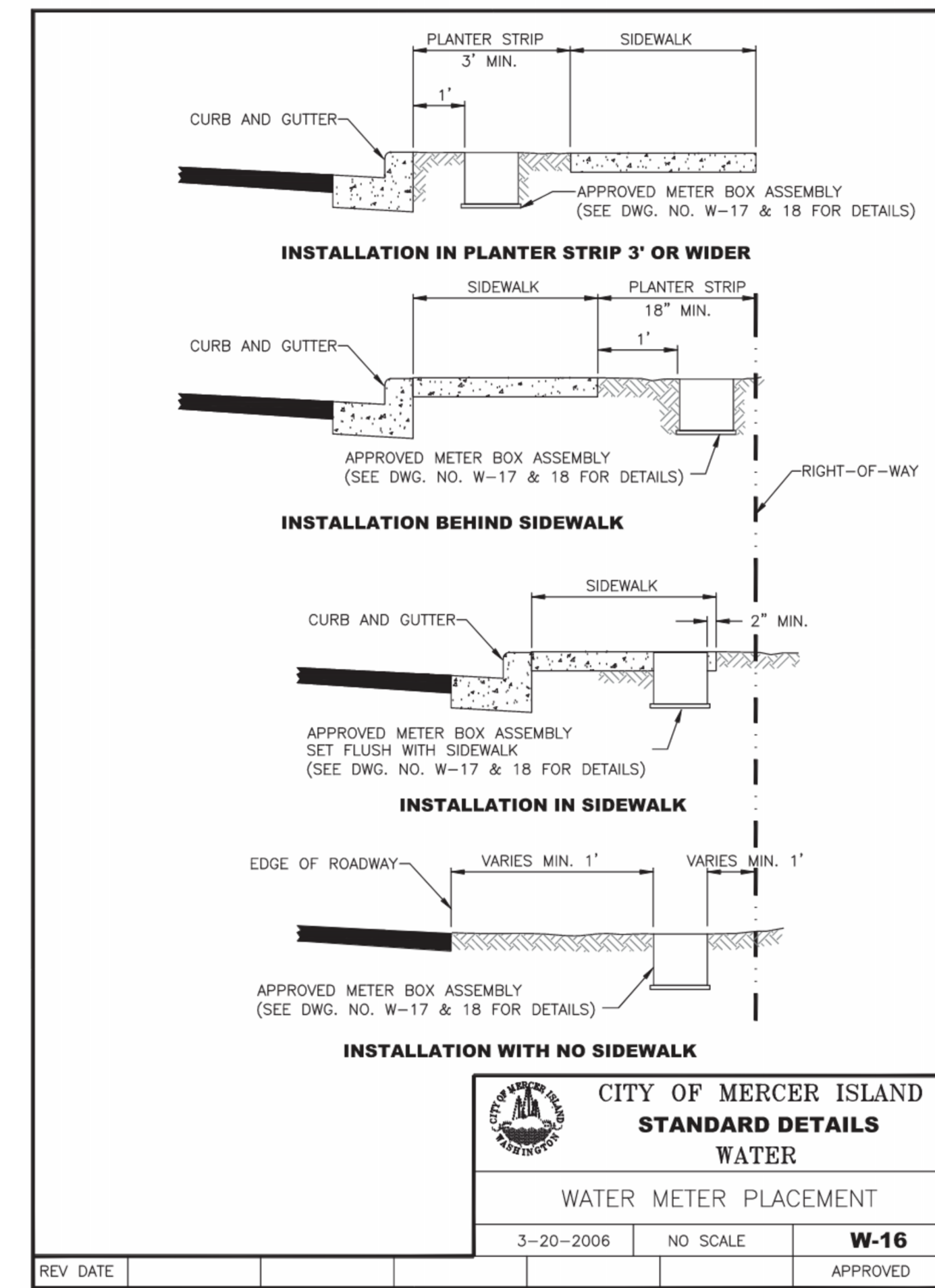
SHEET:  
**C4.1**



**1** CITY OF MERCER ISLAND STANDARD DETAIL  
SCALE: NTS



**2** CITY OF MERCER ISLAND STANDARD DETAIL  
SCALE: NTS



**3** CITY OF MERCER ISLAND STANDARD DETAIL  
SCALE: NTS



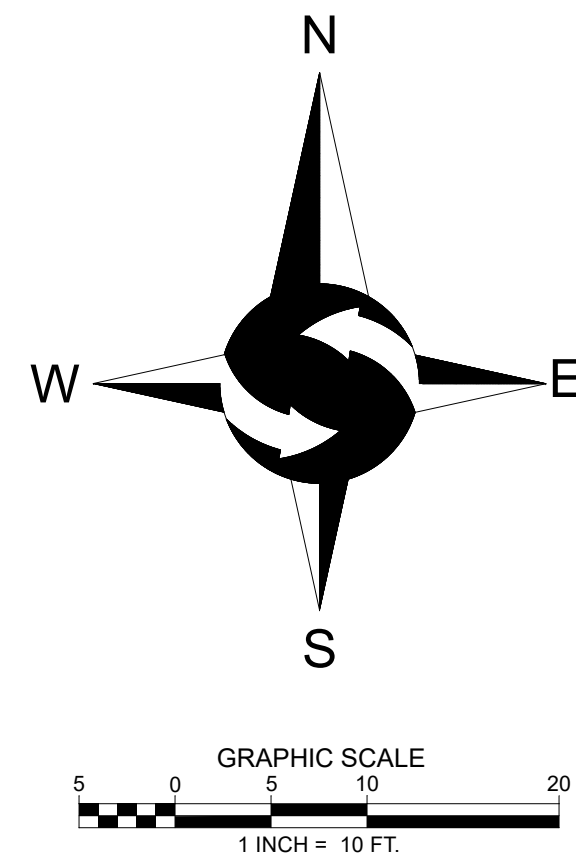
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	06/27/24	PERMIT SUBMITTAL
	11/14/24	PERMIT RESUBMITTAL

DESIGN:	JCO
DRAWN:	JCP
CHECK:	JPU
JOB NO:	23354.20
DATE:	06/27/24

KORPELA RESIDENCE  
8441 SE 33RD PL  
MERCER ISLAND, WA 98040

WATER AND SEWER DETAILS

SHEET:  
**C4.2**



**LEGEND**

	FOUND MONUMENT IN CASE		WOOD FENCE
	FOUND REBAR AS DESCRIBED		CONCRETE WALL
	SET MAG NAILS AS DESCRIBED		TIMBER WALL
	POWER METER		ROCKERY
	GAS METER		ASPHALT SURFACE
	ELECTRICAL VAULT		CONCRETE SURFACE
	CABLE PEDESTAL		GRAVEL SURFACE
	SANITARY SEWER MANHOLE		BRICK SURFACE
	WATER VALVE		CE CEDAR
	FIRE HYDRANT		DF DOUGLAS FIR
	WATER METER		DS DECIDUOUS
	APPROXIMATE LOCATION SANITARY SEWER LINE		MP MAPLE
	APPROXIMATE LOCATION UNDERGROUND GAS LINE		* INDICATES MULTI-TRUNK
	APPROXIMATE LOCATION UNDERGROUND WATER LINE		

**LEGAL DESCRIPTION**

LOT 29, PARKRIDGE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 78 OF PLATS, PAGES 29 AND 30, RECORDS OF KING COUNTY, WASHINGTON.  
SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

**BASIS OF BEARINGS**

THE PLAT OF PARKRIDGE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 78 OF PLATS, PAGES 29 AND 30, RECORDS OF KING COUNTY, WASHINGTON.

**PROJECT INFORMATION**

PROPERTY OWNER: NATHAN KORPELA & SHAUNNA WIENS  
8401 LINDEN AVENUE N  
SEATTLE, WA 98103

TAX PARCEL NUMBER: 666680-0290

PROJECT ADDRESS: 8441 SE 33RD PLACE  
MERCER ISLAND, WA 98040

ZONING: R-9.6

JURISDICTION: CITY OF MERCER ISLAND

PARCEL ACREAGE: 11,814 S.F. (0.271 ACRES) AS SURVEYED

**GENERAL NOTES**

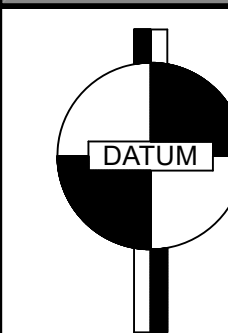
- THIS SURVEY WAS COMPLETED WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST ON THIS PROPERTY THAT ARE NOT SHOWN HEREON.
- INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND SPECTRAPRECISION FOCUS 35 TOTAL STATION AND AN EMLID REACH RS2 GPS RECEIVER. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.
- THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN AUGUST 2022 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
- UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.
- ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

**VERTICAL DATUM & CONTOUR INTERVAL**

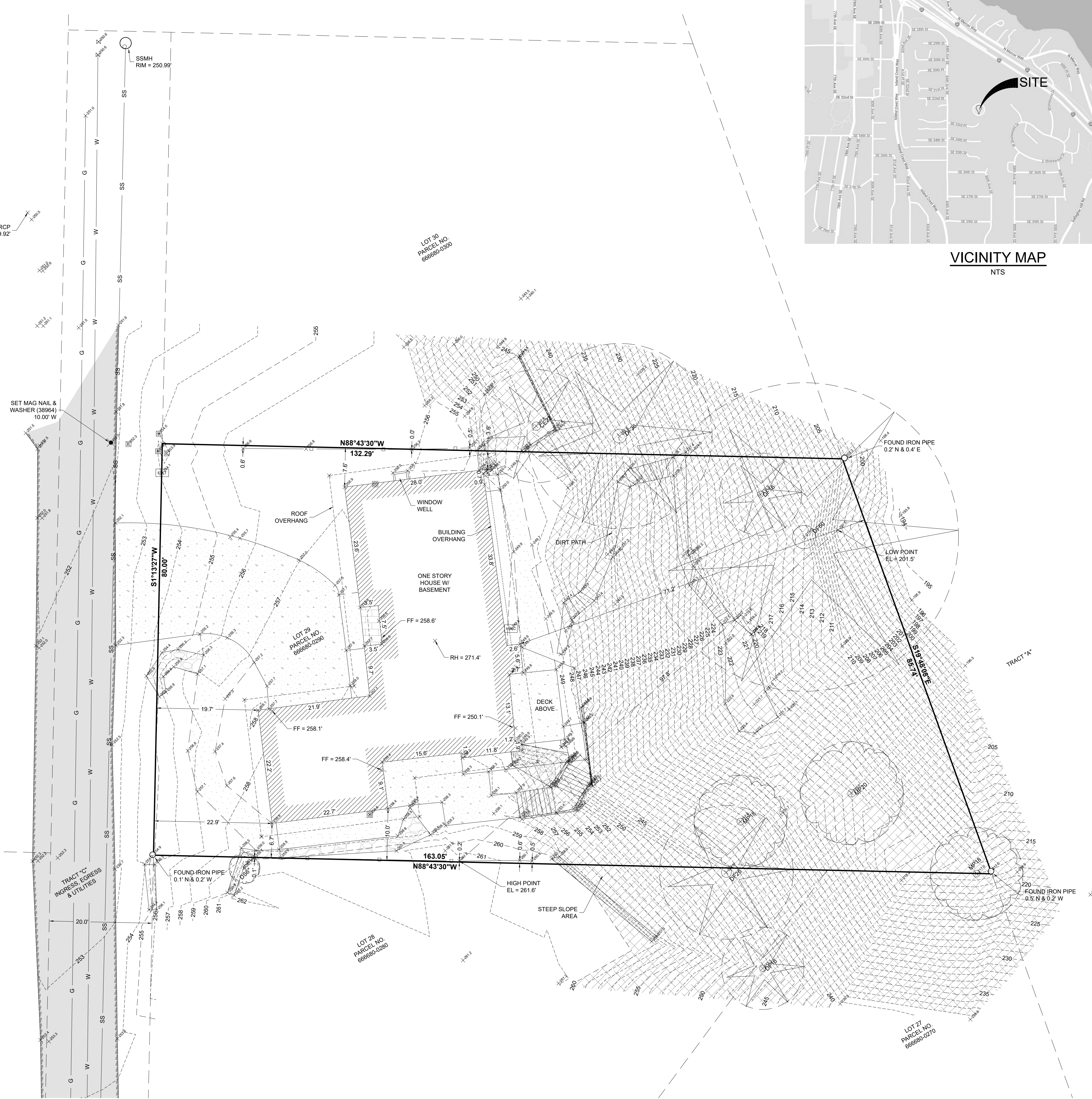
ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM GPS OBSERVATION USING THE WSRN.

DATUM - NAVD 88

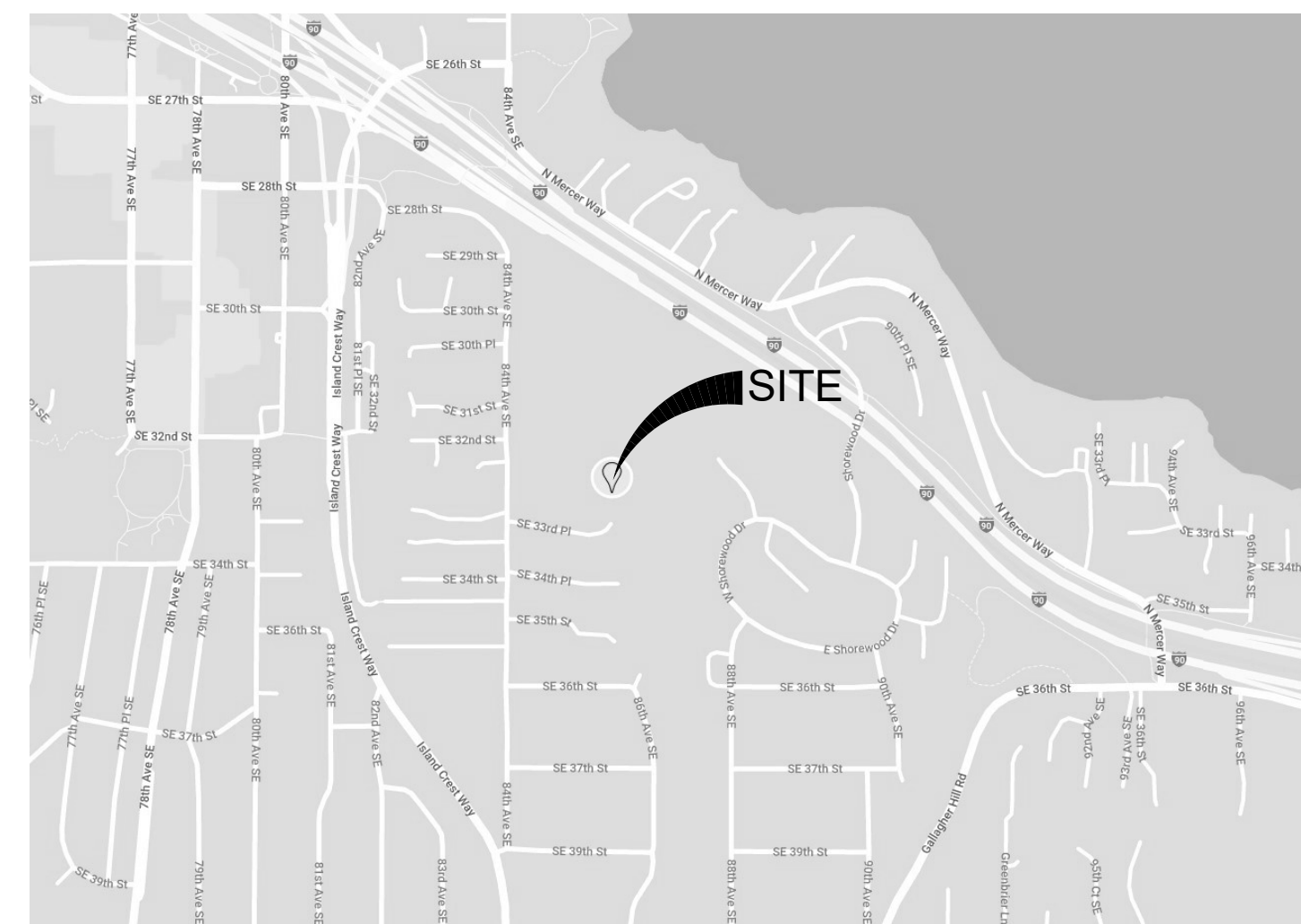
1.0' CONTOUR INTERVAL - THE EXPECTED VERTICAL ACCURACY IS EQUAL TO 1/2 THE CONTOUR INTERVAL OR PLUS / MINUS 0.5' FOR THIS PROJECT.



10" RCP  
IE = 249.92'



SHEET 2



VICINITY MAP  
NTS

NW 1/4, SW 1/4, SEC 7, TWP 24N, RNG 5E, W.M.



DATE	REVISION	DRN

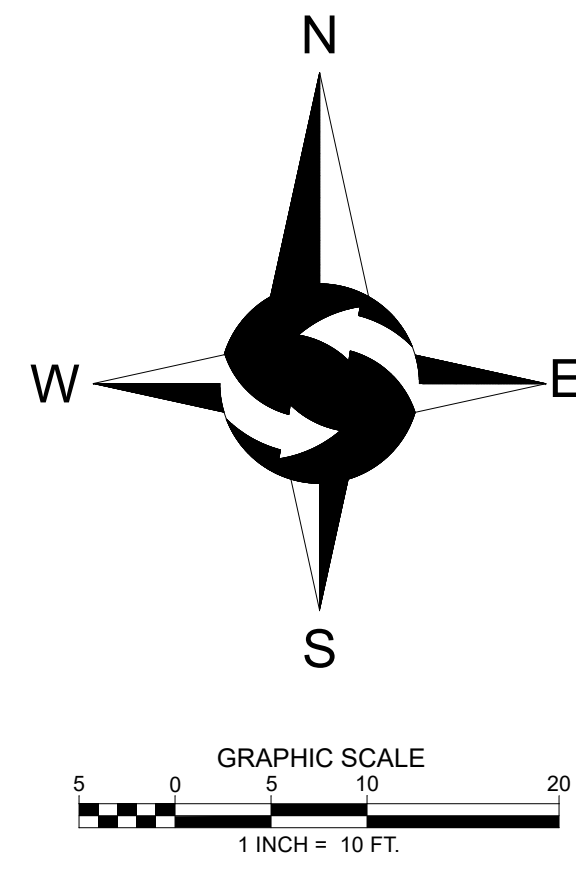
**TOPOGRAPHIC SURVEY**

NATHAN KORPELA  
8441 SE 33RD PLACE  
MERCER ISLAND, WA 98040

PROJECT NO. 22-401

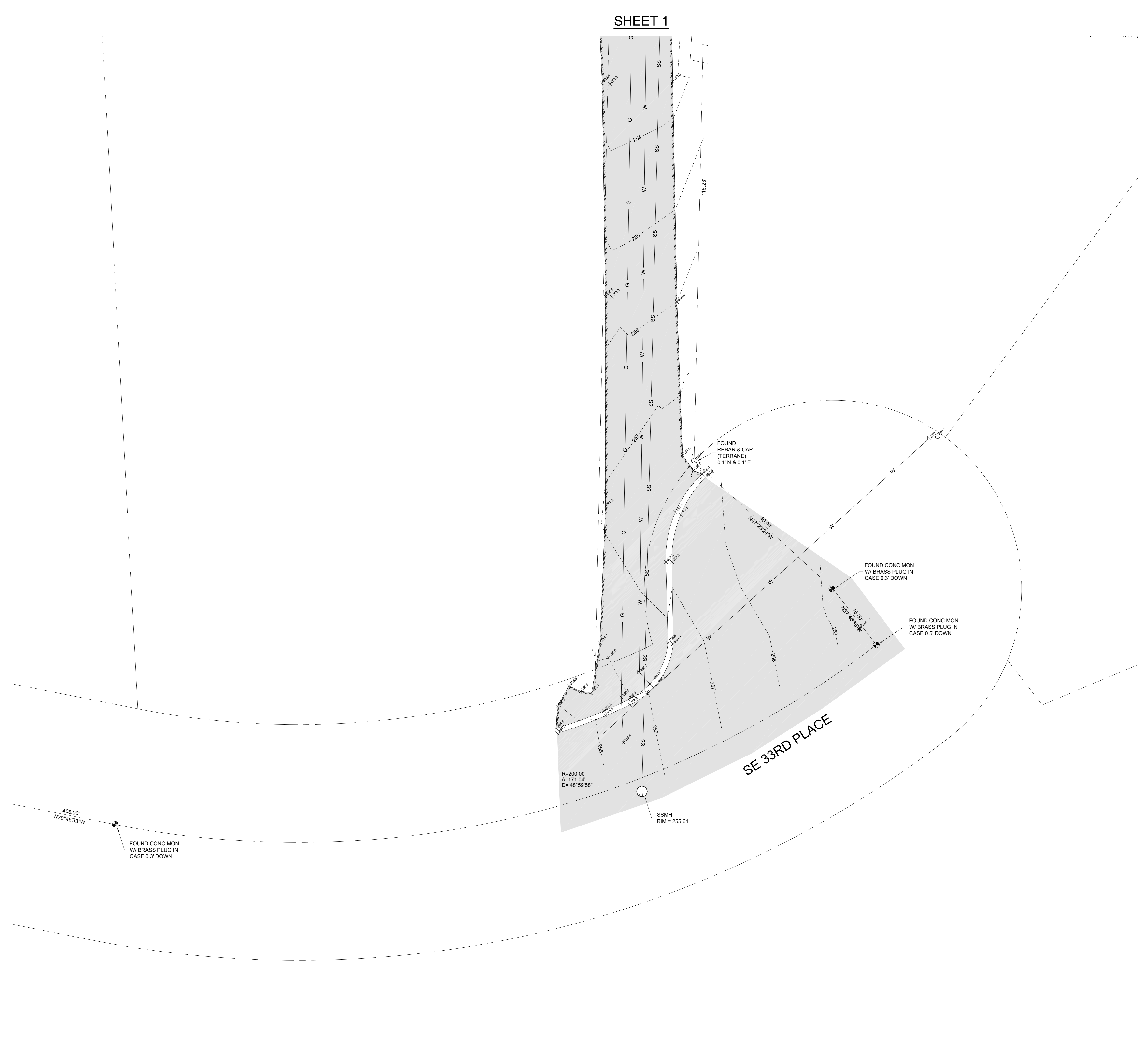
DRAWN BY: MTS  
CHECKED BY: TNW  
DATE: 8/8/2022

SHEET 1 OF 2

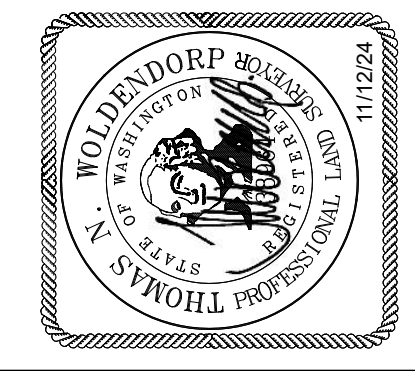


**LEGEND**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>○ FOUND MONUMENT IN CASE</li> <li>○ FOUND REBAR AS DESCRIBED</li> <li>✕ SET MAG NAILS AS DESCRIBED</li> <li>⊗ POWER METER</li> <li>⊗ GAS METER</li> <li>EXT ELECTRICAL VAULT</li> <li>⊗ CABLE PEDESTAL</li> <li>○ SANITARY SEWER MANHOLE</li> <li>⊗ WATER VALVE</li> <li>⊗ FIRE HYDRANT</li> <li>⊗ WATER METER</li> <li>—SS— APPROXIMATE LOCATION SANITARY SEWER LINE</li> <li>—G— APPROXIMATE LOCATION UNDERGROUND GAS LINE</li> <li>—W— APPROXIMATE LOCATION UNDERGROUND WATER LINE</li> </ul> | <ul style="list-style-type: none"> <li>—□— WOOD FENCE</li> <li>▨ CONCRETE WALL</li> <li>▨ TIMBER WALL</li> <li>▨ ROCKERY</li> <li>▨ ASPHALT SURFACE</li> <li>▨ CONCRETE SURFACE</li> <li>▨ GRAVEL SURFACE</li> <li>▨ BRICK SURFACE</li> <li>CE CEDAR</li> <li>DF DOUGLAS FIR</li> <li>DS DECIDUOUS</li> <li>MP MAPLE</li> <li>* INDICATES MULTI-TRUNK</li> </ul> |
|---|--|



NW 1/4, SW 1/4, SEC 7, TWP 24N, RNG 5E, W.M.



DATE	REVISION	DRN

**TOPOGRAPHIC SURVEY**

NATHAN KORPELA  
8441 SE 33RD PLACE  
MERCER ISLAND, WA 98040

PROJECT NO. 22-401  
DRAWN BY: MTS  
CHECKED BY: TNW  
DATE: 8/8/2022  
SHEET 2 OF 2

# Korpela+Wiens addition/remodel

## Project narrative

This project proposes the demolition of an existing 2 car attached garage and renovation of existing 2 story home to include the removal of existing north side of house to bring the house in compliance with side yard setbacks. Existing roof and first floor wall framing will be removed (existing west and south foundation walls and east daylight basement walls to remain). Construction of new 2 car garage on north side of property with new 2<sup>nd</sup> floor above, partially buried to allow for lower slope driveway into garage, and new entry and split level stair to existing house. Additional site work includes proposed expansion of existing deck on east side of house (no new structural work/ground disturbance proposed for this change), removal of existing stair on south side of home to lower patio. Expand patio on south side of home as shown on site plan. Remove existing gravel path on east side of home/replace with mulch. Retain portion of north existing foundation wall as retaining wall to minimize site disturbance for new north foundation wall/maintain access from west to east side of property.

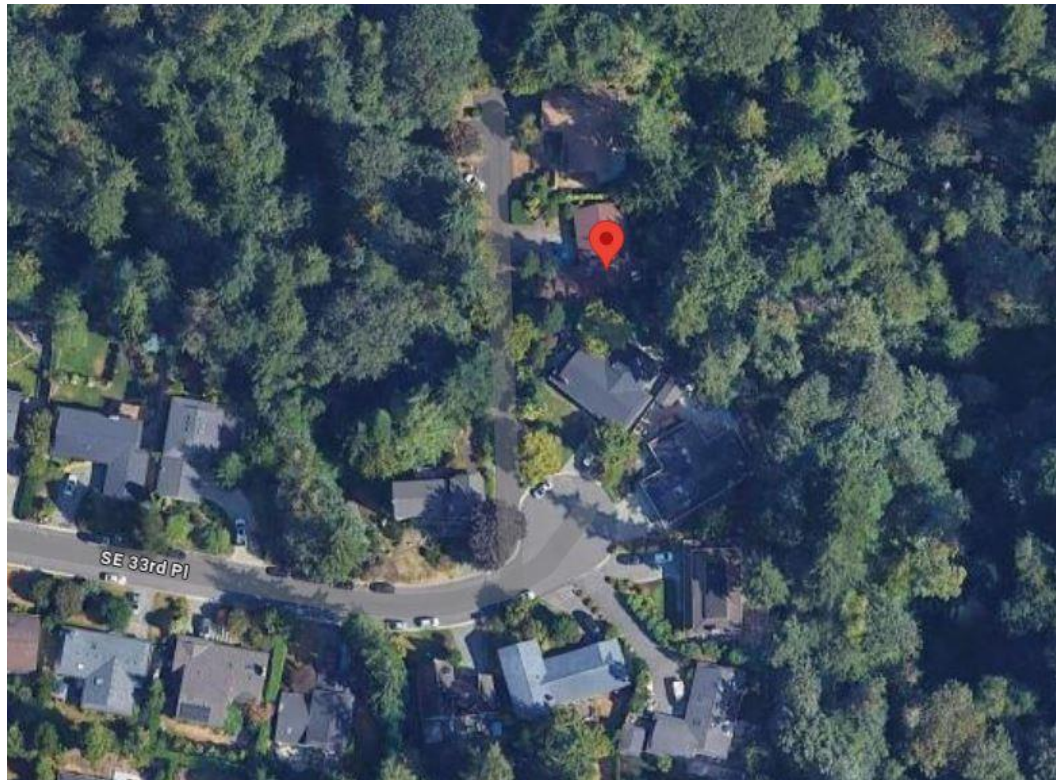


# GEOTECHNICAL ENGINEERING REPORT

## PROPOSED SINGLE-FAMILY RESIDENTIAL REMODEL 8441 SE 33<sup>rd</sup> Place Mercer Island, Washington 98040

Project No. 2727.01  
28 November 2023

Prepared for:  
**Mr. Nathan Korpela**



Prepared by:

**ZipperGeo**

Geoprofessional Consultants

19019 36<sup>th</sup> Avenue W., Suite E  
Lynnwood, WA 98036

ZGA Project No. 2727.01  
28 November 2023

Mr. Nathan Korpela  
8407 Linden Avenue North  
Seattle, Washington 98103

Subject: Geotechnical Engineering Report  
Proposed Single-family Residential Remodel  
8441 SE 33<sup>rd</sup> Place  
Mercer Island, Washington 98040

Dear Mr. Korpela:

In accordance with your request and written authorization, Zipper Geo Associates, LLC (ZGA) has completed the subsurface exploration and geotechnical engineering evaluation for the proposed single-family residential remodel at the above-referenced address. This report presents the findings of the subsurface exploration and geotechnical recommendations for the project. Our work was completed in general accordance with our *Scope of Geotechnical Engineering Services and Fee Estimate* (Proposal No. P22162) dated 31 May 2023. Written authorization to proceed was provided by you on 9 June 2023. We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further assistance, please contact us.

Respectfully submitted,  
Zipper Geo Associates LLC

Sincerely,  
Zipper Geo Associates LLC


David C. Williams, LG, LEG  
Principal Engineering Geologist

11.28.23


Robert A. Ross, P.E.  
Managing Principal

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**GEOTECHNICAL ENGINEERING REPORT  
PROPOSED SINGLE-FAMILY RESIDENTIAL REMODEL  
8441 SE 33<sup>rd</sup> PLACE  
MERCER ISLAND, WASHINGTON**

**Project No. 2727.01  
28 November 2023**

**INTRODUCTION**

This report documents the subsurface conditions encountered at the site and our geotechnical engineering recommendations for the proposed project. The project description, site conditions and our geotechnical conclusions and design recommendations are presented in the text of this report. Supporting data including detailed exploration logs and field exploration procedures, as well as results of laboratory testing are presented as appendices.

Our geotechnical engineering scope of services for the project included a site reconnaissance, subsurface evaluation, laboratory testing and preparation of this report. The subsurface evaluation consisted of completing four geotechnical hand auger borings (HA-1 to HA-4). The explorations extended to depths of approximately 2 ½ to 4 ½ feet below existing grade.

Figure 1, the Site and Exploration Plan, presents the approximate locations of our subsurface explorations. Appendix A contains a description of our field procedures and exploration logs. Appendix B contains a description of the laboratory testing procedures and the test results.

**SITE DESCRIPTION**

The property is located along the east side of a private drive that extends north from the east end of the SE 33<sup>rd</sup> Place cul-de-sac that borders an undeveloped and wooded area on a steep slope extending downward to the east. The 0.27-acre site is bordered to the north and south by developed single-family residential parcels. The dwelling has a daylight basement configuration with the two-story portion at the rear and facing east. Concrete flatwork, gravel-surfaced paths, a wood deck and steps, and landscaping surround the dwelling. A concrete driveway accesses the existing garage from SE 33<sup>rd</sup> Place at the west. The dwelling was constructed in 1966.

**PROJECT UNDERSTANDING**

It is our understanding that the proposed remodeling includes adding a new garage and living space to the northwest portion of the dwelling, relocating much of the north foundation wall to the south, removing the steps near the southeast portion of the dwelling, and establishing a path along the north side of the dwelling. No expansion of the dwelling toward the steep slope at the east is planned.

## **SITE CONDITIONS**

### **Surface Conditions**

The site currently supports a single-family dwelling as shown on Figure 1, the Site and Exploration Plan. The dwelling and driveway are in the middle to western portions of the site, while a narrow gravel-surfaced trail and small at-grade wood deck section at the daylight basement grade extend to the east and adjacent to the steep east slope. The ground surface elevation adjacent to the dwelling's main floor is about 258 feet while the path at the rear is at about 250 feet. A small, approximately 6-foot tall, rockery at the southeast corner of the dwelling effects the grade transition between the rear path and a small concrete slab and at-grade wood deck adjoining a wood stairway at the southeast. A second rockery, approximately 5 to 5 ½ feet tall extends from the dwelling's northeast foundation wall corner to the adjacent property boundary to the north.

The above-referenced improvements at the rear of the dwelling border an undeveloped slope descending to the east. The descending slope has ground surface elevations ranging from about 250 feet down to 198 feet at the east property line. The east slope vegetation consists of mature evergreen and deciduous trees, vines, and thick brush on the forest floor. A wood-chip surface trail with treated wood/pin pile steps extended part of the way from the rear path toward the east property line. We observed an arcuate and steeply sloped feature in the northeastern portion of the property and near the slope toe that we have interpreted as a relic landslide scarp, the approximate location of which is shown on Figure 1.

We observed that the majority of the mature trees on the east slope, which included some up to 53 inches diameter breast height (dbh) were characterized by straight trunks; i.e., the trees generally did not exhibit curved trunks or leaning orientations, characteristics that frequently indicate significant downslope soil displacement. This includes the area immediately below the relic landslide scarp which supported a straight trunked, 24-inch dbh mature maple tree.

We did not observe flowing surface water or groundwater seepage on the steep eastern slope during our site visits. We did observe some slight puddling of water on the gravel path at the rear of the dwelling during significant rain events. Much of the water at the puddle location was derived as runoff dripping from the main level wood deck that extends above the southern portion of the gravel path.

We observed that the visible portions of the perimeter foundation, and the dwelling's exterior brickwork, were in a serviceable condition and did not exhibit evidence of significant settlement. With the exception of the relic landslide scarp referenced above, we did not observe tension cracks, lobate mounds, or terrace features that may be considered representative of recent or ongoing slope instability.

## **Subsurface Conditions**

### Published Geologic Mapping

The October 2006 *Geologic Map of Mercer Island, Washington* (by Troost, KG and Wisner, AP) indicates that the site is underlain by Vashon glacial till deposited during the Fraser Glaciation in the late Pleistocene period. Vashon till is described as a light to dark gray, non-sorted, non-stratified mixture of clay, silt, sand and gravel up to boulder-size and being very stiff and impermeable. Older Vashon advance outwash deposits are also mapped in the immediate area. Vashon advance outwash is described as slightly oxidized, light red-brown gravel and sand and light brown to gray silt and clay, moderately- to well-sorted, well stratified. Based on our observations, advance outwash is the prevalent soil type at the site that is likely to be encountered in excavations associated with the planned remodeling. Please note that given the developed nature of the site, fill material may be expected in the form of foundation wall and underground utility trench backfill.

### Soil Conditions

Our subsurface evaluation consisted of excavating four hand auger borings (HA-1 through HA-4) on 20 June 2023. The approximate exploration locations are illustrated on Figure 1. Detailed descriptive logs presenting the subsurface conditions encountered and the procedures utilized in the subsurface exploration program are presented in Appendix A. Generalized descriptions of subsurface soil conditions observed in specific areas of the site are presented below.

Variations in subsurface conditions exist between the exploration locations and the nature and extent of variations between the explorations may not become evident until construction. Stratification boundaries on the logs represent the approximate depth of changes in soil types, although the transition between materials may have been gradual. If variations become apparent during construction, it may be necessary to reevaluate the recommendations of this report.

Hand auger boring HA-1, advanced in a landscaping area in the footprint of the proposed new garage, disclosed about 2 inches of organic-rich sod above loose silty sand with trace gravel, roots, and some fine and fibrous organic material that extended to about 10 inches below grade. Native advance outwash consisting of dense silty sand with trace gravel and scattered cobbles extended to the boring's 2.6-foot termination depth. The boring was terminated in nested gravel.

The remaining hand auger borings disclosed fill material consisting of pea gravel, some plastic sheeting, crushed rock, and waste concrete to depths of approximately 3 to 16 inches. The fill was underlain by native advance outwash consisting of medium dense to dense sand with a variable silt and gravel content to the borings' termination depths.

The moisture content of samples of the native sand that we tested ranged from about 8 to 20 percent. The wetter soils were observed at the boring HA-4 location in the gravel path along the east side of the dwelling where water from the deck above was ponding. Native soils exposed on the east slope below the dwelling were consistent with advance outwash.

### **Groundwater**

We did not observe groundwater at the time of drilling. Groundwater may tend to perch within fill material above the denser native soils during the winter and spring and during extended periods of precipitation. Fluctuation of the groundwater levels will likely occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the explorations were performed. Therefore, groundwater levels during construction or at other times in the life of the dwelling may vary from the conditions we observed.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **General Considerations**

In our opinion, the proposed remodel appears feasible from the geotechnical perspective utilizing conventional, shallow foundations. The following sections of this report present specific geotechnical recommendations for the project. Our recommendations are based on the observed soil conditions at specific exploration locations. Differing soil conditions than those observed at the exploration locations may become evident during construction. The risk of such differing conditions is elevated on sites where uncontrolled fill was placed in association with prior development. Our recommendations are further based on the assumption that earthwork for site grading, utilities, foundations, floor slabs, and pavements will be observed by a qualified geotechnical engineer.

### **Regulated Environmental Geologic Hazard Critical Areas**

Chapter 19 of the Mercer Island City Code (MICC) regulates development activities in critical areas and their associated buffers. The property has been mapped by the City of Mercer Island as being within the following regulated geologic hazard areas or their buffers: potential landslide, steep slope, erosion, and seismic. The approximate extents of these regulated hazards/buffers on and near the property as mapped by the City are shown on the Critical Areas Map, Figure 2. The steep slope, potential slide, and erosion hazards are all related to the eastern slope. The City may allow alteration within a regulated geologic hazard area or buffer if the alteration proposal effectively demonstrates that there is no impact on the regulated areas or that it adequately mitigates risks of the hazards.

The proposed remodel will include the addition of a new garage on the west side of the dwelling and about 25 feet from the regulated steep slope at the rear of the dwelling. The plans provided for our review do not show expansion of the dwelling footprint toward or into the eastern steep slope. Grading will consist of temporary excavations associated with partial removal of the north foundation wall and construction of a new one a few feet south of the existing one, construction of the garage, some excavation along the north side of the dwelling to establish a path, and likely some excavation/backfilling

associated with relocation of some of the utilities in the front yard. Otherwise, there will be no significant grade changes associated with the proposed improvements. Our conclusions regarding the nature of regulated geologic hazards and the potential impacts of the proposed site improvements are summarized below.

#### Landslide/Steep Slope Hazard

The slope to the east of the dwelling meets the criteria for landslide and steep slope hazards by virtue of having slope segments with 10 or more feet of relief and inclinations of 40 percent or greater. We have interpreted the landslide scarp we identified near the toe of the slope and located approximately as shown on Figure 1 as an old dormant feature. There has been no significant downslope displacement of the soil below the scarp for decades as evidenced by the straight-trunked 24-inch diameter maple tree growing at the base of the scarp.

As previously described, the site lacks tension cracks, lobate mounds, or terraces, features that are oftentimes associated with slope instability. The dwelling lacks evidence of settlement, further attesting to the site's overall stability.

A landslide impacted the steep east-facing slope of the residential property at 8429 SE 3<sup>rd</sup> Place (about 300 feet south of the project site) in 2007. However, that landslide was the result of a leaking landscape irrigation system, and not due to natural causes. Circumstances regarding the landslide and its subsequent restoration through the retaining wall construction, grading, and drainage improvements are described in the *Report on Geotechnical Investigation, Emergency Repair of Landslide Failure* prepared by Robert M. Pride, LLC (30 May 2007) which is included in Appendix C.

#### Seismic Hazards

Seismic hazard areas are those subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement or subsidence, soil liquefaction, surface faulting, or tsunamis. City mapping as shown on Figure 2 includes a very small area in the lower eastern portion of the site as within a seismic hazard area, and we suspect that this is likely due to mapping of non-glacially consolidated outwash soils at this location. The explorations completed for our evaluation disclosed some fill material above dense native advance outwash soils. We did not observe groundwater at our exploration locations, nor did we observe groundwater seepage on the eastern slope below the dwelling. Based on these conditions, it is our opinion that the risk of liquefaction and associated settlement is low. Given the site location, it would not be subject to tsunamis.

Our authorized scope of services did not include advancing borings and completing numerical stability analysis of the steep east slope and beyond, but we point out that this area is not included within the City-mapped seismic hazard area. According to the US Geological Survey online Quaternary fault mapping website, splays of the Southern Whidbey Island Fault have been mapped about 900 feet south of the

property. The splays are estimated to be less than 15,000 years old and are estimated to have a slip rate ranging from approximately 0.2 mm to 1.0 mm per year. Given presently available mapping, the proximity of the splays is such that the risk of fault rupture at the site is low, in our opinion. Given the above, it is our opinion that the risk of a seismic event presenting a severe risk of damage is low, and as such, the site does not meet the MICC definition of a seismic hazard.

#### Erosion Hazard

Erosion hazards are generally described as areas containing soils which are at high risk from water erosion according to the mapped description units of the US Department of Agriculture NRCS. NRCS mapping for the site describes the Kitsap silt loam, 2 to 8 percent slopes (KpB) in the western to middle portions of the site, while the Kitsap silt loam, 15 to 30 percent slopes (KpD) soils have been mapped in the eastern portion of the site. The KpD soils are described as presenting a severe risk of erosion when disturbed. Based on the published mapping, it appears that the portions of the site inclined at 15 percent or greater are consistent with erosion hazards as defined by the MICC.

It should be noted that the areas where some grading will occur, including for the new garage and the new north foundation wall, are relatively level. Provided that construction is completed in accordance with BMPs contained in a City-approved TESC plan, it is our opinion that the risk of sediment generation and off-site sediment transport will be low.

#### Minimal Risk Statement

The north foundation wall is about 5 feet from the regulated east slope, and consequently, inside the critical area buffers. The new north foundation wall and new interior foundations will be within the footprint of the existing building. The closest portion of the new garage will be about 25 feet from the east slope. Consequently, the new foundations will not exert new loading on the regulated slope and the proposed grade change will not significantly alter existing surface water drainage. We understand that the functional result of the remodel, which will include reconfiguration of the roof, is that less stormwater is likely to flow to the east compared to current conditions. For these reasons, and consistent with the requirements of MICC19.07.160(B), we have concluded the following:

Based on the favorable geologic conditions observed at the site, neither the proposed construction work nor the completed project will subject people or property, including areas off site, to an increased risk of associated impacts, in our opinion. The proposed improvements have been designed so that the risk to the site and adjacent property are such that the site is determined to be safe. Construction practices as proposed for the alteration would render the development as safe as if it were not located in a geologically hazardous area and would not adversely impact adjacent properties.

The City may allow alteration within a regulated geologic hazard area or buffer if the proposal effectively demonstrates that there is no impact on the regulated areas or that it adequately mitigates risks of the

hazards. Based upon our review of the plans received to date, it is our opinion that mitigation of potential landslide hazard impacts associated with the proposed remodel has been achieved by having no disturbance of the landslide hazard area itself and by limiting the proposed building alterations to a small footprint within an area that was graded during initial site construction. Limiting the proposed alterations to level portions of the site will also effectively mitigate potential adverse impacts to the portions of the site inclined at 15 percent or greater which are erosion hazard areas per the MICC.

## **Site Preparation**

### Existing Utility Removal

We recommend that all underground utilities within the proposed building addition footprint be completely removed if they are not going to be reused. Utility pipes outside the building envelope could be abandoned in place, provided they are fully grouted with controlled density fill (CDF) and the trench backfill is density tested to verify that it meets the compaction levels recommended herein. Localized excavations made for removal of utilities or existing unsuitable trench backfill should be backfilled with structural fill as recommended subsequently.

### Erosion Control Measures

Stripped surfaces and soil stockpiles are typically a source of runoff sediments. We recommend that silt fences, berms, and/or swales be installed around the downslope side of stripped areas and stockpiles in order to capture runoff water and sediment. If earthwork occurs during wet weather, we recommend that all stripped surfaces be covered with straw to reduce runoff erosion, whereas soil stockpiles should be protected with anchored plastic sheeting.

### Temporary Drainage

Stripping, excavation, grading, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and provide proper control of erosion. The site's sand soils have a moderate fines (soil particles finer than the US No. 200 sieve) content and will be susceptible to disturbance and erosion when wet. The site should be graded to prevent water from ponding in construction areas and/or flowing into and/or over excavations. Exposed grades should be crowned, sloped, and compacted to a smooth surface at the end of each day to facilitate drainage if inclement weather is forecasted. Accumulated water must be removed from subgrades and work areas immediately and prior to performing further work in the area. Equipment access may be limited and the amount of soil rendered unfit for use as structural fill may be greatly increased if drainage efforts are not accomplished in a timely manner.

### Demolition and Stripping

Once surface runoff is controlled, the proposed garage addition area should be stripped of topsoil and vegetation, along with the existing driveway as necessary. Based on our observations, we estimate that organic material stripping depths may range from about 4 to 6 inches. However, deeper areas of organic-rich soil may be encountered and should be removed to the recommended depth determined in the field by the owner's geotechnical representative. The north foundation wall and the adjacent portions of the east and west walls should be removed as necessary, along with the existing basement floor slab in the area of demolition.

### Subgrade Preparation

Once site preparation is complete, all areas of exposed subgrade that do not require over-excavation and are at design subgrade elevation should be compacted to a firm and non-yielding condition. Some moisture conditioning of site soils may be required to achieve a moisture content appropriate for compaction. During periods of extended wet weather, this could entail aeration and drying, although it may not be feasible depending on weather conditions and space available to spread wet soils. During the drier summer months, blending moisture into dry of optimum soils may be necessary. A suitable moisture content is generally within  $\pm 2$  percent of the soil's optimum moisture content.

Earthwork should be completed during drier periods of the year when the soil moisture content can be controlled by aeration and drying. If earthwork or construction activities take place during extended periods of wet weather, or if the *in situ* moisture conditions are elevated above the optimum moisture content, the soils could become unstable or not be compactable. In the event the exposed subgrade becomes unstable, yielding, or unable to be compacted due to high moisture conditions, we recommend that the materials be removed to a sufficient depth in order to develop stable subgrade soils that can be compacted to the minimum recommended levels. The severity of construction problems will be dependent, in part, on the precautions that are taken by the contractor to protect the subgrade soils during wet weather and wet site conditions.

Once compacted, floor slab and foundation subgrades should be evaluated through hand probing to assess the subgrade adequacy and to detect loose and/or yielding soils. In the event that the soils are not firm and unyielding, the upper 12 inches of subgrade should be scarified and moisture conditioned as necessary to obtain at least 95 percent of the maximum laboratory density (per ASTM D 1557). Those soils which are loose, yielding, or unable to be compacted to the specified criteria should be over-excavated and replaced with suitable material as recommended in the Structural Fill section of this report.

### Freezing Conditions

If earthwork takes place during freezing conditions, all exposed subgrades should be allowed to thaw and then be compacted prior to placing subsequent lifts of structural fill. Alternatively, the frozen material

could be stripped from the subgrade to expose unfrozen soil prior to placing subsequent lifts of fill or foundation components. The frozen soil should not be reused as structural fill until allowed to thaw and adjusted to the proper moisture content, which may not be possible during winter months.

### **Structural Fill Materials and Placement**

Structural fill includes any material placed below foundations, slabs, within utility trenches, and behind retaining walls. Prior to the placement of structural fill, all surfaces to receive fill should be prepared as previously recommended in the Site Preparation section of this report.

#### Laboratory Testing

Representative samples of on-site and imported soils to be used as structural fill should be submitted for laboratory testing at least four days in advance of its intended use in order to complete the necessary Proctor tests.

#### Re-use of Site Soils as Structural Fill

It is our opinion that the non-organic native and fill soils encountered on the site are suitable for re-use as general structural fill from a compositional standpoint provided they are placed and compacted in accordance with the recommendations presented in this report. Some of the site soils may be wet of optimum at the time of construction and will require moisture conditioning (drying) prior to use as structural fill. The re-use of site soils as structural fill during wet weather will be difficult or impossible. Re-using over-optimum soils during periods of wetter, cooler weather would likely require stabilization with Portland cement. We recommend that site soils used as structural fill have less than 4 percent organics by weight and have no woody debris greater than ½ inch in diameter. We recommend that all pieces of organic material greater than ½ inch in diameter be picked out of the fill before it is compacted. Organic-rich soil derived from earthwork activities should be used in landscaping areas or be wasted from the site.

#### Imported Structural Fill

Imported structural fill may be required due to weather, wet soil conditions, or other reasons. The appropriate type of imported structural fill will depend on the prevailing weather conditions. During extended periods of dry weather when soil moisture can be controlled, we recommend that imported fill meet the requirements of Common Borrow, Options 1 or 2, as specified in Section 9-03.14(3) of the Washington State Department of Transportation, *Standard Specifications for Road, Bridge, and Municipal Construction*. The non-organic on-site soils would be classified as Common Borrow. During wet weather, higher-quality (lower fines content) structural fill might be required, as Common Borrow may contain sufficient fines to be moisture sensitive. During wet weather we recommend that imported structural fill meet the general requirements of Gravel Borrow as specified in Section 9-03.14(1) of the WSDOT Standard

Specifications although we recommend that the fines content be limited to 5 percent based on the soil fraction passing the  $\frac{3}{4}$ -inch sieve.

#### Moisture Content

The suitability of soil for use as structural fill will depend on the prevailing weather at the time of construction, the *in situ* moisture content of the soil, and the fines content of the soil. As the amount of fines increases, the soil becomes increasingly sensitive to small changes in moisture content. Soils containing more than about 5 percent fines (which includes some of the on-site soils) cannot be consistently compacted to the appropriate levels when the moisture content is more than approximately 2 percent above or below the optimum moisture content (per ASTM D 1557). Optimum moisture content is that moisture content which results in the greatest compacted dry density with a specified compactive effort.

#### Fill Placement

Structural fill should be placed in horizontal lifts not exceeding 10 inches in loose thickness. Each lift of fill should be compacted using compaction equipment suitable for the soil type and lift thickness. Each lift of fill should be compacted to the minimum levels recommended below based on the maximum laboratory dry density as determined by the ASTM D 1557 Modified Proctor Compaction Test. Moisture content of fill at the time of placement should be within plus or minus 2 percent of optimum moisture content for compaction as determined by the ASTM D 1557 test method.

#### Compaction Criteria

We recommend compacting structural fill placed below new foundations or new concrete flatwork to at least 95 percent of the modified Proctor maximum dry density per ASTM D 1557. We recommend compacting structural fill placed in landscaping areas to between 88 and 90 percent. We recommend that a geotechnical engineer be present during grading so that an adequate number of density tests may be conducted as structural fill placement occurs. In this way, the adequacy of the earthwork may be evaluated as it proceeds.

#### **Temporary and Permanent Slopes**

Temporary excavation slope stability is a function of many factors, including:

- The presence and abundance of groundwater;
- The type and density of the various soil strata;
- The depth of cut;

- Surcharge loadings adjacent to the excavation; and
- The length of time the excavation remains open.

As the cut is deepened, or as the length of time an excavation is open, the likelihood of bank failure increases; therefore, maintenance of safe slopes and worker safety should remain the responsibility of the contractor, who is present at the site, able to observe changes in the soil conditions, and monitor the performance of the excavation.

It is exceedingly difficult under the variable circumstances to pre-establish a safe and “maintenance-free” temporary cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe temporary slope configurations since the contractor is continuously at the job site, able to observe the nature and condition of the cut slopes, and able to monitor the subsurface materials and groundwater conditions encountered. We recommend the contractor make a determination of excavation side slopes based on classification of soils encountered at the time of excavation in accordance with the guidelines presented in Section 296-155, Part N of the Washington State Administrative Code and applicable construction industry specific guidelines. Adjustments to the slope angles should be determined by the contractor at that time. Unsupported vertical slopes or cuts deeper than 4 feet are not recommended if worker access is necessary. The cuts should be adequately sloped, shored, or supported to prevent injury to personnel from local sloughing and spalling. Based on our observations, the existing fill soil likely to be exposed in excavations will be consistent with the Type C classification, while the undisturbed dense native soils is consistent with the Type B classification, in our opinion.

**Seismic Design Criteria**

IBC Seismic Design Parameters: 2018 IBC Seismic Design parameters are summarized in the table below.

Criteria	Factor
2018 International Building Code (IBC) <sup>1</sup>	C <sup>2</sup>
S <sub>s</sub> Spectral Acceleration for a Short Period	1.399g (Site Class B)
S <sub>1</sub> Spectral Acceleration for a 1-Second Period	0.487g (Site Class B)
F <sub>a</sub> Site Coefficient for a Short Period	1.2
F <sub>v</sub> Site Coefficient for a 1-Second Period	1.5
S <sub>MS</sub> Maximum considered spectral response acceleration for a Short Period	1.679g (Site Class C)
S <sub>M1</sub> Maximum considered spectral response acceleration for a 1-Second Period	0.73g (Site Class C)
S <sub>DS</sub> Five-percent damped design spectral response acceleration for a Short Period	1.119g

Criteria	Factor
S <sub>D1</sub> Five-percent damped design spectral response acceleration for a 1-Second Period	0.487g
<ol style="list-style-type: none"> <li>1. In general accordance with ASCE 7-16</li> <li>2. The 2018 International Building Code, and by reference ASCE 7-16, considers a site soil profile determination extending a depth of 100 feet for seismic site classification. The current authorized scope did not include the required 100-foot soil profile determination. The hand auger borings advanced as part of our evaluation extended to a maximum depth of approximately 4-1/2 feet and this seismic site class definition considers that dense to very dense soils as noted on the published geologic mapping exist below the maximum depth of the subsurface exploration. Additional exploration to greater depths could be considered to confirm the conditions below the current depth of exploration, if necessary.</li> </ol>	

**Foundation Considerations**

The explorations disclosed a variable depth of fill material mantling native advance outwash sand which is adequate for support of conventional shallow foundations. Our recommendations for conventional shallow foundations are presented below.

Allowable Bearing Pressure

We recommend supporting conventional spread and continuous foundations on at least medium dense native soils or above properly compacted structural fill or CDF with a 100 psi compressive strength placed above adequate native soils. Continuous and column footings bearing as described may be designed for a maximum allowable, net, bearing capacity of 2,500 psf. A one-third increase of the bearing pressure may be used for short-term dynamic loads such as wind and seismic forces. We recommend providing ZGA the opportunity to observe the foundation excavation subgrades prior to placement of forms and reinforcing steel.

Shallow Foundation Depth and Width

For frost protection, the bottom of all exterior footings should bear at least 18 inches below the lowest adjacent outside grade, whereas the bottoms of interior footings should bear at least 12 inches below the surrounding slab surface level. We recommend that all continuous wall and isolated column footings be at least 12 and 24 inches wide, respectively.

Lateral Resistance

We recommend considering ultimate base friction and passive earth values of 0.5 and 400 pcf equivalent fluid pressure, respectively. Appropriate safety factors should be used when evaluating lateral resistance. We recommend that passive resistance be neglected in the upper 18 inches of embedment.

### Estimated Settlement

Assuming the foundation subgrade soils are prepared in accordance with recommendations presented herein, we estimate that total and differential settlements will be less than 1 inch and 1/2 inch, respectively. Settlements should occur relatively soon after loading given the granular nature of the soils.

## **Backfilled Permanent Retaining Walls**

### Lateral Earth Pressures

The lateral soil pressures acting on backfilled retaining walls will depend on the nature and density of the soil behind the wall, and the ability of the wall to yield in response to the earth loads. Yielding walls (i.e. walls that are free to translate or rotate) that are able to displace laterally at least  $0.001H$ , where  $H$  is the height of the wall, may be designed for active earth pressures. Non-yielding walls (i.e. walls that are not free to translate or rotate) should be designed for at-rest earth pressures. Non-yielding walls include walls that are braced to another wall or structure, and wall corners.

Assuming that walls are backfilled and drained as described in the following paragraphs, we recommend that yielding walls supporting horizontal backfill be designed using an equivalent fluid density of 35 pcf (active earth pressure). Non-yielding walls should be designed using an equivalent fluid density of 50 pcf (at-rest earth pressure). Surcharge pressures due to sloping backfill, adjacent footings, vehicles, construction equipment, etc. must be added to these lateral earth pressure values.

For yielding walls with level backfill conditions, we recommend that a uniformly distributed seismic pressure of  $4.5H$  psf for the active case and  $9.0H$  psf for the at-rest case, where  $H$  is the height of the wall, be applied to the walls.

The above equivalent fluid pressures are based on the assumption of no buildup of hydrostatic pressure behind the wall. If groundwater is allowed to saturate the backfill soils, hydrostatic pressures will act against a retaining wall; however, if the recommended drainage system is included with each retaining wall, we do *not* expect that hydrostatic pressures will develop.

### Drainage

Adequate drainage measures must be installed to collect and direct subsurface water away from subgrade walls. All backfilled walls should include a drainage aggregate zone extending at least 12 inches from the back of wall for the full height of the wall. The drainage aggregate should consist of material meeting the requirements of WSDOT 9-03.12(2) Gravel Backfill for Walls. A minimum 4-inch diameter, perforated PVC drainpipe should be provided at the base of backfilled walls to collect and direct subsurface water to an

appropriate discharge point. Drainpipe perforations should be protected using a non-woven geotextile such as Mirafi 140N. Wall drainage systems should be independent of other drainage systems such as roof drains.

### **On-Grade Concrete Slabs**

Subgrade Preparation: In the event that the existing driveway slab at the proposed addition is removed and a new slab is constructed along with the proposed garage extension, the existing subgrade and any new fill placed beneath the floor slab should be compacted to a minimum of 95 percent of the modified Proctor maximum dry density. It is possible that some previously placed fill material or disturbed native soil below the driveway slab will not meet this recommended level of compaction. As such, the actual amount of over-excavation and replacement will be dependent on the horizontal and vertical extent of loose soil and its relative compaction. Existing fill material that is not compacted to a minimum of 95 percent of the modified Proctor maximum dry density should be reworked and compacted in order to achieve the minimum recommended compaction levels.

Capillary Break: We recommend the on-grade interior slabs be underlain by a 6-inch thick layer of compacted granular fill consisting of coarse sand and fine gravel containing less than 5 percent fines, based on that soil fraction passing the US No. 4 sieve. Alternatively, a clean angular gravel such as No. 7 aggregate per WSDOT: 9-03.1(4)C could be used for this purpose. Alternative capillary break materials should be submitted to ZGA for review and approval before use.

Vapor Barrier: The use of a vapor retarder should be considered beneath concrete slabs-on-grade that will be covered with wood, tile, carpet or other moisture-sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture or is otherwise considered moisture-sensitive. When conditions warrant the use of a vapor retarder, the slab designer and contractor should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Subgrade Modulus: We recommend a vertical modulus of subgrade reaction of 225 pounds per cubic inch (pci) be used for design of a new garage slab if one is constructed. This value is suitable for soil compacted to at least 95 percent density per ASTM D 1557.

### **Drainage Considerations**

Final site grades should be sloped to carry surface water away from the dwelling and other drainage-sensitive areas. Additionally, site grades should be designed such that concentrated runoff on softscape surfaces is avoided. We observed that some of the downspouts terminated in plastic pipes that extended below grade. We recommend determining the discharge locations for these pipes and their condition if additional water is directed to them as a result of the remodel.

## **CLOSURE**

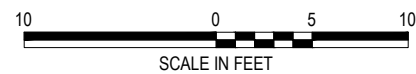
The analysis and recommendations presented in this report are based, in part, on the explorations completed for this study. The number, location, and depth of the explorations were completed within the constraints of budget and site access so as to yield the information to formulate our recommendations. Project plans were in the preliminary stage at the time this report was prepared. We therefore recommend we be provided an opportunity to review the final plans and specifications when they become available in order to assess that the recommendations and design considerations presented in this report have been properly interpreted and implemented into the project design.

The performance of earthwork, structural fill, foundations, and pavements depend greatly on proper site preparation and construction procedures. We recommend that Zipper Geo Associates, LLC be retained to provide geotechnical engineering services during the earthwork-related construction phases of the project. If variations in subsurface conditions are observed at that time, a qualified geotechnical engineer could provide additional geotechnical recommendations to the contractor and design team in a timely manner as the project construction progresses.



**LEGEND**

HA-1 HAND AUGER BORING NUMBER AND APPROXIMATE LOCATION



REFERENCE: TOPOGRAPHIC SURVEY, SHEET 1 OF 2, SITE SURVEYING INC., AUGUST 8, 2022

KORPELA RESIDENCE REMODEL 8441 SE 33RD PLACE MERCER ISLAND, WASHINGTON	
<b>SITE AND EXPLORATION PLAN</b>	
DATE: NOVEMBER 2023	Job No. 2727.01
<b>Zipper Geo Associates, LLC</b> 19019 36th Ave. W., Suite E Lynnwood, WA	<b>FIGURE</b> SHT.1 of 1



# City of Mercer Island Property Hazard Report

Site Address: 8441 SE 33RD PL

Parcel #: 6666800290

Report Generated on April 19, 2023

Snipping Tool is moving  
home. Try improved features and  
at Shift for try and snip tool  
Windows logo key - Shift - S

## Potential Slide:



## Steep Slope:



## Erosion:



## Seismic:



KORPELA RESIDENCE REMODEL 8441 SE 33RD PLACE MERCER ISLAND, WASHINGTON		
CRITICAL AREAS MAP		
DATE: NOVEMBER 2023	Job No.	2727.01
<b>Zipper Geo Associates, LLC</b> 19019 36th Ave. W., Suite E Lynnwood, WA	FIGURE	<b>2</b>
	SHT. 1 of 1	

**APPENDIX A**  
**FIELD EXPLORATION PROCEDURES AND LOGS**

## FIELD EXPLORATION PROCEDURES AND LOGS

### Field Exploration Description

Our field exploration for this project included completing a reconnaissance of surface conditions and advancing four hand auger explorations on 20 June 2023, the approximate locations of which are shown on the enclosed Site and Exploration Plan, Figure 1. Exploration locations were determined in the field by measuring distances from existing site features with a fiberglass and steel tapes relative to a *Topographic Survey* (dated 8 August 2022) prepared by Site Surveying, Inc. Ground surface elevations at the explorations interpolated from topographic lines presented on the referend survey. As such, the exploration locations and elevations should be considered accurate only to the degree implied by the means and methods to establish them. The following sections describe our procedures associated with the explorations. Descriptive logs of the explorations are enclosed in this appendix.

### Hand Auger Procedures

A ZGA engineering geologist advanced a 3.5-inch diameter auger by hand, continuously observing the soil cuttings as they were retrieved. Representative portions of the soils retrieved were placed in moisture tight containers and returned to our laboratory for further visual classification and testing. Granular soil density and cohesive soil consistency were evaluated subjectively through the use of a 0.5-inch diameter steel hand probe.

The enclosed hand auger logs indicate the vertical sequence of soils and materials encountered in each exploration, based primarily on our field classifications and supported by our subsequent laboratory testing. Where a soil contact was observed to be gradational or undulating, our logs indicate the average contact depth. Our logs also indicate the approximate depths of any sidewall caving or groundwater seepage observed in the explorations, as well as all sample numbers and sampling locations.



# ZIPPER GEO ASSOCIATES, LLC

19019 36<sup>th</sup> Avenue West, Suite E, Lynnwood, Washington 98036

	<u>Hand Auger HA-2</u>					
	<b>Location:</b> See Site and Exploration Plan, Figure 1 <b>Approx. Ground Surface Elevation:</b> 257 Feet	<b>Project:</b> Korpela Residence Remodel <b>Project No:</b> 2727.01 <b>Date Excavated:</b> 20 June 2023				
Depth (ft)	Material Description	Sample	PID	%M	Testing	
	3 inches very loose, wet, gray fine GRAVEL (pea gravel Fill) above plastic sheeting above dense, moist, brown SAND with silt, trace gravel (Qva)					
1						
			S-1 @ 1 foot		10	
2						
3						
4						
			S-2 @ 2.5 feet		11	
		Boring completed at approximately 4.2 feet. Groundwater not observed while excavating.				

# ZIPPER GEO ASSOCIATES, LLC

19019 36<sup>th</sup> Avenue West, Suite E, Lynnwood, Washington 98036

	<u>Hand Auger HA-3</u>					
	<b>Location:</b> See Site and Exploration Plan, Figure 1 <b>Approx. Ground Surface Elevation:</b> 249 Feet	<b>Project:</b> Korpela Residence Remodel <b>Project No:</b> 2727.01 <b>Date Excavated:</b> 20 June 2023				
Depth (ft)	Material Description	Sample	PID	%M	Testing	
	1 inch loose, wet, gray fine GRAVEL (pea gravel Fill) above loose, damp, brown, silty SAND with gravel, cobble-size concrete clast (Fill)					
1						
		.....				
		Medium dense to dense, moist, brown, SAND, trace silt and gravel (Qva)				
2						
			S-1 @ 2.5 feet		8	
		S-2 @ 2.5 feet		12		
	Boring completed at approximately 4.5 feet. Groundwater not observed while excavating.					

# ZIPPER GEO ASSOCIATES, LLC

19019 36<sup>th</sup> Avenue West, Suite E, Lynnwood, Washington 98036

	<u>Hand Auger HA-4</u>					
	<b>Location:</b> See Site and Exploration Plan, Figure 1 <b>Approx. Ground Surface Elevation:</b> 249 Feet	<b>Project:</b> Korpela Residence Remodel <b>Project No:</b> 2727.01 <b>Date Excavated:</b> 20 June 2023				
Depth (ft)	Material Description	Sample	PID	%M	Testing	
	3 inches loose, wet, gray fine GRAVEL (pea gravel and crushed rock Fill) above medium dense, wet, brown, fine SAND, trace silt (Qva)					
1						
			S-1 @ 1.5 feet		17	
2						
		Grades to dense and silty				
3						
		S-2 @ 3.5 feet		20		
	Boring completed at approximately 3.5 feet. Groundwater not observed while excavating.					
4						

**APPENDIX B**  
**LABORATORY TESTING PROCEDURES AND RESULTS**

## **LABORATORY TESTING PROCEDURES AND RESULTS**

A series of laboratory tests were performed during the course of this study to evaluate the index and geotechnical engineering properties of the subsurface soils. Descriptions of the types of tests performed are given below.

### **Visual Classification**

Samples recovered from the exploration locations were visually classified in the field during the exploration program. Representative portions of the samples were carefully packaged in moisture tight containers and transported to our laboratory where the field classifications were verified or modified as required. Visual classification was generally done in accordance with ASTM D 2488. Visual soil classification includes evaluation of color, relative moisture content, soil type based upon grain size, and accessory soil types included in the sample. Soil classifications are presented on the exploration logs in Appendix A.

### **Moisture Content Determinations**

Moisture content determinations were performed on representative samples obtained from the explorations in order to aid in identification and correlation of soil types. The determinations were made in general accordance with the test procedures described in ASTM D 2216. Moisture contents are presented on the exploration logs in Appendix A.

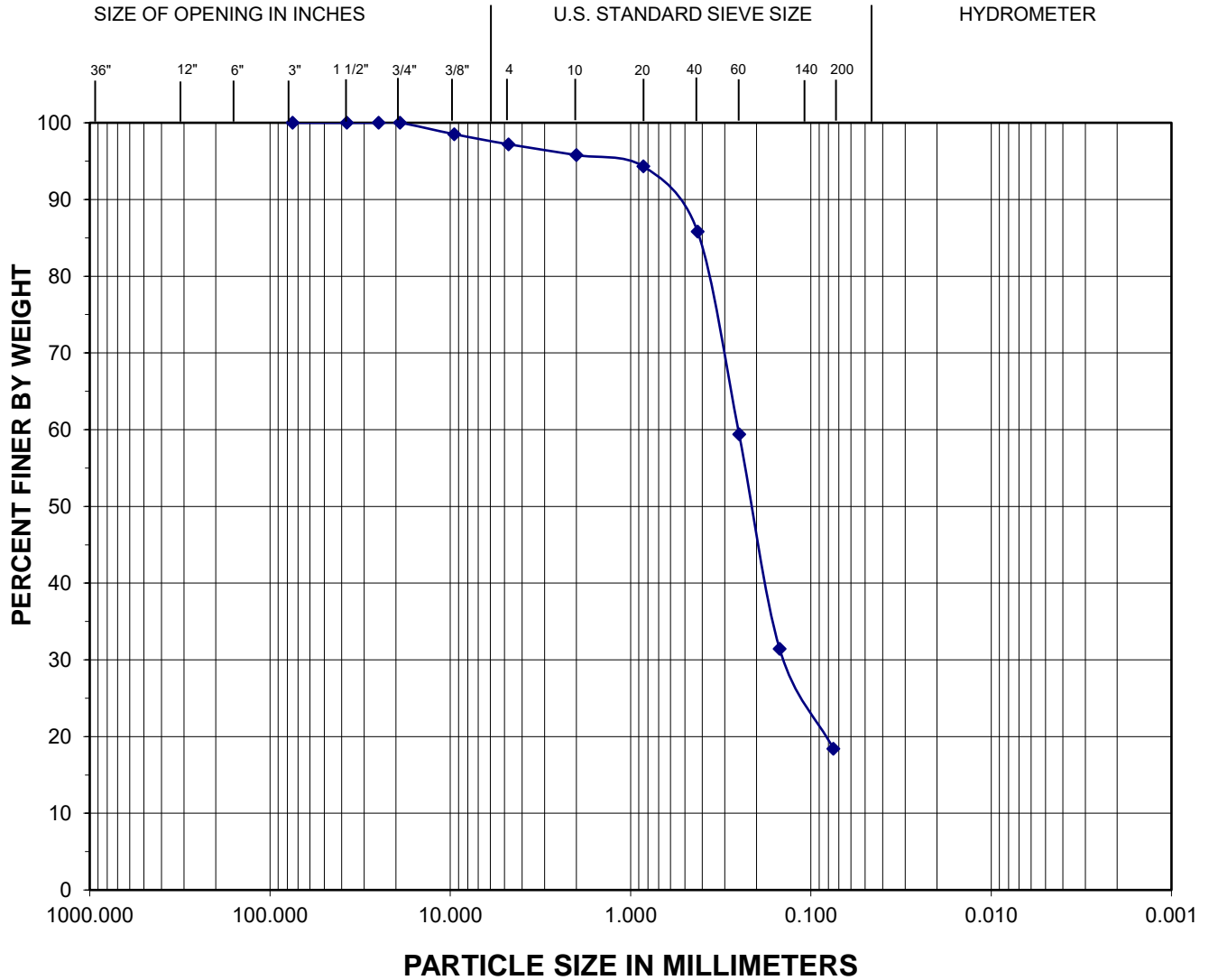
### **Grain Size Analysis**

A grain size analysis indicates the range in diameter of soil particles included in a particular sample. Grain size analyses were performed on representative samples in general accordance with ASTM D 6913. The results of the grain size determinations for the samples were used in classification of the soils, and are presented in this appendix.

# GRAIN SIZE ANALYSIS

Test Results Summary

ASTM D6913



BOULDERS	COBBLES	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		GRAVEL		SAND			FINE GRAINED	

Comments:

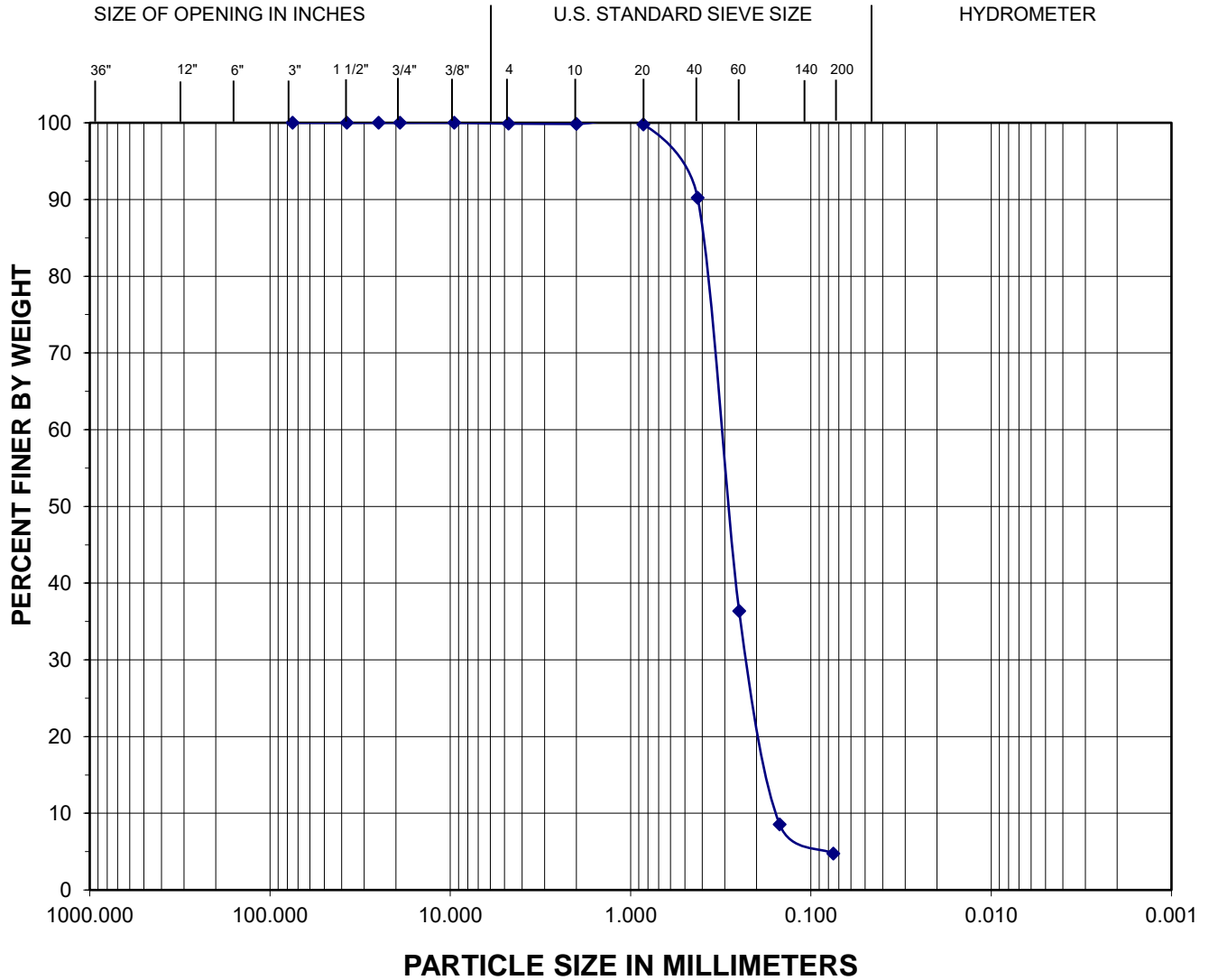
Exploration	Sample	Depth (feet)	Moisture (%)	Fines (%)	Description
HA-2	S-2	4.0	10.6	18.4	SAND with silt, and trace gravel

<b>Zipper Geo Associates, LLC</b> Geotechnical and Environmental Consultants	PROJECT NO: 2727.01	PROJECT NAME:
	DATE OF TESTING: 6/20/2023	Korpela Residence Remodel

# GRAIN SIZE ANALYSIS

Test Results Summary

ASTM D6913



BOULDERS	COBBLES	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		GRAVEL		SAND			FINE GRAINED	

Comments:

Exploration	Sample	Depth (feet)	Moisture (%)	Fines (%)	Description
HA-3	S-2	4.5	12.1	4.7	SAND, and trace silt and gravel

<b>Zipper Geo Associates, LLC</b> Geotechnical and Environmental Consultants	PROJECT NO: 2727.01	PROJECT NAME:
	DATE OF TESTING: 6/20/2023	Korpela Residence Remodel

**APPENDIX C**  
**ROBERT M. PRIDE, LLC MAY 2007 GEOTECHNICAL REPORT**

May 30, 2007

Mr. Kevin Piper  
8429 SE 33<sup>rd</sup> Place  
Mercer Island, WA 98040

Re: **Report on Geotechnical Investigation**  
Emergency Repair of Landslide Failure  
8429 SE 33<sup>rd</sup> Place  
Mercer Island, Washington  
Project No. 07-145-01

Dear Mr. Piper,

This report presents the results of our geologic and geotechnical investigation of the slope failure at the rear of your residence at 8429 SE 33<sup>rd</sup> Place Mercer Island. It is understood that this recent failure occurred along the easterly side of the house as a result of an irrigation system malfunction over the past two weeks.

The purpose of this report is to document subsurface soil and groundwater conditions, and to provide recommendations for the design of a new slope retention system. Structural calculations and design drawings are being prepared by Lucia Engineering that we will be submitted to the City of Mercer Island for permitting. Reference materials include recent geologic mapping (Troost – 2006) and the site topography provided by Touma Surveying.

#### Site Conditions

The two story residence is located at the easterly end of 33<sup>rd</sup> Place, and is situated at the top of a deep drainage ravine. A level building pad was created for the house and some fill soils were pushed out to create the easterly yard area. Observation of the slope failure showed that most of the fill that created this rear yard area was lost in the slide that carried much of these soils down into the drainage ravine.

Geologic exploration was performed by an engineering geologist to identify the subsoil profile extending below the rear yard. Several test pits were dug into the exposed steep slope to classify the native soils below the upper rear yard fill. Refer to the attached cross section on Drawing No 2 that shows the geologic profile based on our geologic site reconnaissance mapping.

Since the slide removed most of the loose fill at the top of the slope, there is only a minimal amount of fill remaining. A well-defined topsoil zone was seen under the fill, and below the organic topsoil layer were medium dense to dense silty sands that were

classified as recessional outwash deposits (Qvr). At some depth below the recessional silty sands is glacial till (Qvt) and/or pre-Olympia deposits. Test pits dug into the steep slide area encountered about 12 to 18 inches of the native silty sands that led into the dense recessional soils that underlie the entire slide area. No groundwater seepage was observed over the exposed slide area.

### Geotechnical Recommendations

At the present time the east foundation wall of the house ranges from 5 to more than 10 feet to the top of the slide scarp. While there is no immediate danger to the house, it is imperative that slope repairs be implemented as soon as possible to avoid additional loss of slope that could endanger the east foundation wall.

Our recommendation for repair of the existing slide and to protect the house foundation is to install a pipe pile wall as indicated on Drawing 1 attached to this report. Installation of the wall will require partial removal of landscaping along the north side of the property to allow access for equipment to install the pipe piles. Once the wall is constructed, the rear yard area will be brought back to grade with compacted backfill soil. A new subsurface drain line will be installed along the base of the wall and there will be area drains in the grass area of the rear yard. The new drains will help control surface runoff and aid in the protection of the lower portion of the slope.

### Pipe Pile Wall Installation

Driven pipe pile walls are commonly used to repair slope failures and to provide essential lateral retention of adjacent foundation walls. Treated wood lagging is set between adjacent pipe piles to retain the soil backfill that will be placed up to the original yard grade. Steel walers will need to be installed below the top of the new wall, and tieback anchors then drilled into the native soils under the existing residence to provide for lateral restraint for the new pipe pile wall.

A tieback anchor consists of an augured hole at an inclination below horizontal behind the face of the planned wall. The tieback extends beyond the retained soils into competent sediments beyond the active zone. A steel cable or rod is then inserted into the augured hole and the back of the anchor is grouted in place to resist lateral movement. The front of the cable or rod is then loaded to pre-tension the anchor and locked into place on the front of the soldier pile wall. Alternatively helical anchors can be used with the same capacity.

Due to the steep descent of the slope below the planned pile locations, we recommend that a single row of tieback anchors be installed at a depth of about four feet below the top of the wall to resist the lateral loading on the wall. This pipe pile wall may be designed using an equivalent fluid pressure of 40 pounds per cubic foot (pcf) for the active earth pressure

acting over the full height of the lagged wall. The wall should be designed to the height necessary to allow restoration of the previous grades. All pipe piles should be driven at least 8 feet into the underlying dense silty sands to be verified by field inspection during their installation.

The vertical load of the pile (including the pile weight and vertical component of the tieback anchor) may be resisted by end bearing for pipe piles driven to refusal. An allowable end bearing capacity of 10 kips for a 3 inch diameter pipe pile may be used. This value includes a factor of safety of 2.

Tieback anchors must be embedded into the dense recessional soils to a length of at least 20 feet for a 10 to 12 foot high wall, and 15 feet for a 5 to 8 foot high wall. The tieback anchors may be designed to utilize an allowable shaft friction of 500 psf acting beyond the active earth zone behind the wall. The active pressure zone at the back of the wall may be assumed to be a line extending up at a 60 degree inclination from the horizontal from the base of the piles.

All of the anchors should be performance tested prior to locking off to the design load. The performance testing should include at least one load test to 200 percent of the design load and all of the anchors should be loaded to 130 percent of design load. These tests should conform to the recommendations of the Post-Tensioning Institute for verification testing and proof-loading of production anchors. All anchor testing should be verified by a representative of this office.

The pipe pile spacing, pile embedment lengths and finish wall heights should be determined by the structural engineer. We recommend that two qualified pipe pile contractors experienced in this type of wall construction be contacted to discuss access conditions, pile installation requirements, and estimated costs for this work. All of the shoring installation operations should be observed and documented by a representative of this office.

#### Drainage Considerations

As previously stated, prior to backfilling behind the new wall, a drain should be installed at the back of the base of the temporary excavation. The drain should consist of 4 inch diameter perforated corrugated pipe surrounded by a minimum of 12 inches of washed drain rock or pea gravel. A "chimney drain" of pea gravel or drain rock should extend from the drain pipe up the back of the lagged wall to within 1 foot of the finish grade to collect potential ground water seepage emanating from the slope.

If free-draining backfill is used to backfill the upper portion of the wall, the chimney drain portion does not need to be installed in this area. However, the upper 1 foot of the backfill should not be free draining material as surface water should not be allowed to

May 30, 2007  
Mr. Kevin Piper  
Page 4

infiltrate behind the wall. Final rear yard grades should be designed with a slight gradient for surface water flow to new area drains. All drains should be installed to allow gravity discharge to the drainage ravine below the east side of the property.

### Summary

We recommend that we review the final structural plans to determine that they are consistent with the recommendations of this report. Construction monitoring and consultation services should also be provided to verify that subsurface conditions are similar to those reported in the field explorations. Should conditions be revealed during construction that differ from the anticipated subsurface profile, we will evaluate those conditions and provide alternative recommendations where appropriate.

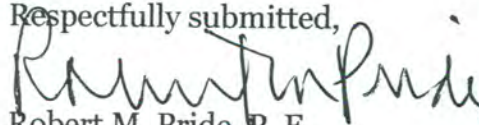
Field construction services should be considered an extension of this initial geotechnical investigation, and are essential to the determination of compliance with the project drawings and specifications. Such activities would include site and temporary slope excavations; subgrade preparation for floor slabs and pavement; subdrain installations; foundation excavations; and fill placement and compaction.

The conclusions and recommendations presented in this report are based on 1) our interpretation and evaluation of soil conditions between and beyond exploration locations, 2) confirmation of the actual subsurface conditions encountered during construction, and 3) the assumption that sufficient observation and testing will be provided during appropriate phases of the work.

Our findings and recommendations of this report were prepared in accordance with generally accepted principles of geotechnical engineering as practiced in the Puget Sound area at the time this report was submitted. We make no warranty, either express or implied.

Please call me if you have any questions, or you wish to discuss this report in greater detail.

Respectfully submitted,

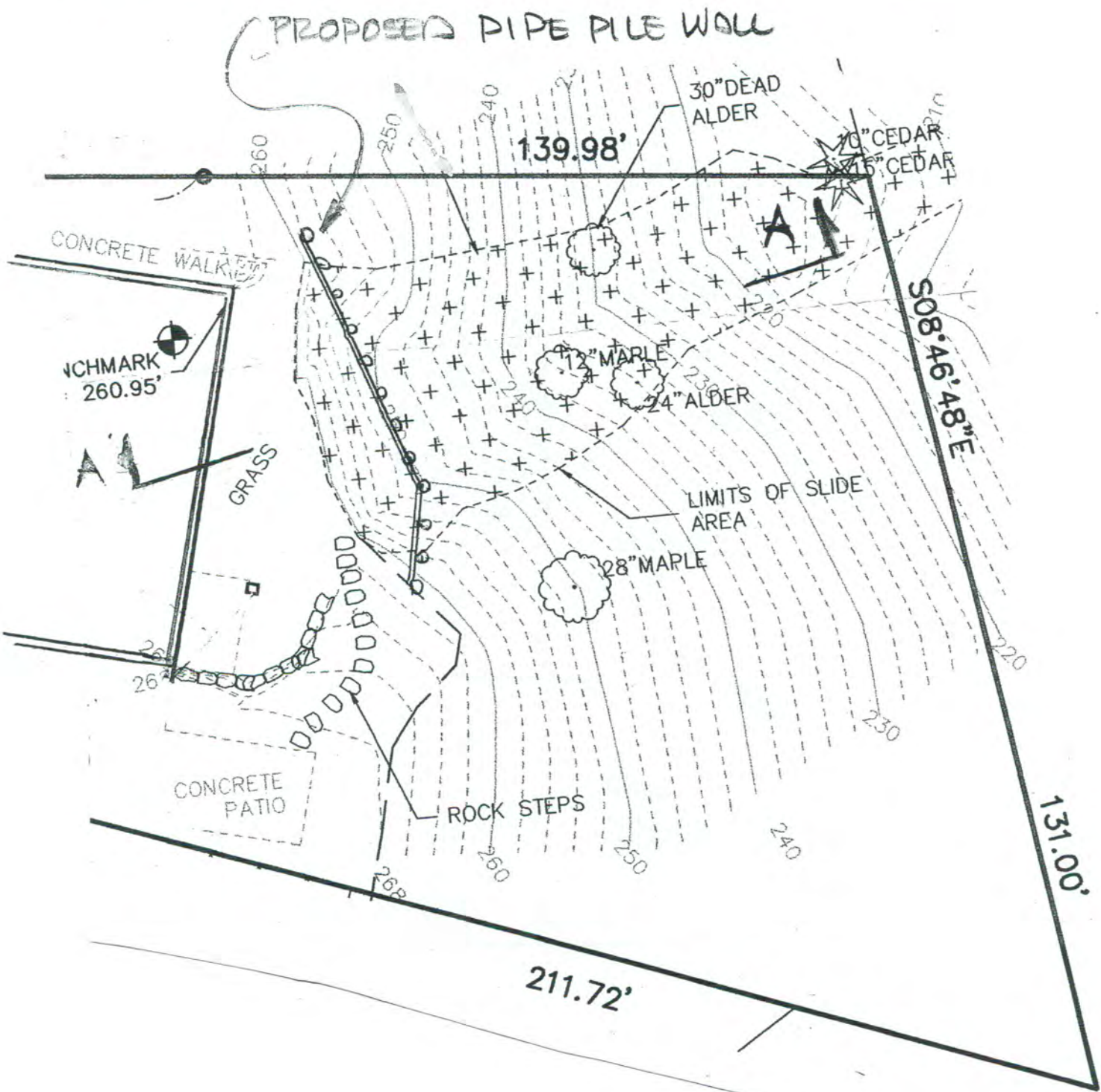
  
Robert M. Pride, P. E.  
Principal Geotechnical Engineer



dist: (3) Addressee  
encl: Drawing No. 1 and 2

rmp: PiperSlope1

EXPIRES 7-20-08



**SITE PLAN**

Proposed Slope Repair  
 8429 SE 33<sup>rd</sup> Place  
 Mercer Island, Washington

Project No. 07-145-01

Drawing No. 1

**Robert M. Pride, LLC**

Consulting Engineer

Date: August 14, 2007

Project: Piper Residence Slide Repair

Equipment In use: Pipe Pile Hammer McDowell

Weather: Sunny and cool

Report Number 2\_07-1219-012

*Perm # 0706-147*

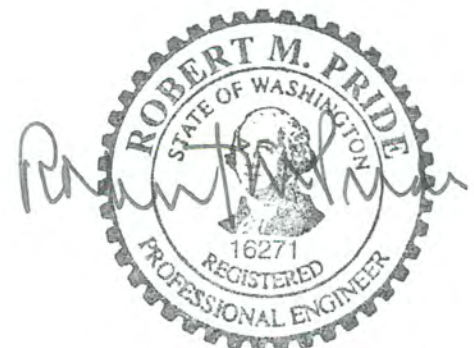
Piper Residence Slide Repair  
8427 33<sup>rd</sup> Place  
Mercer Island, Washington.

We were onsite at the request of Robert M. Pride to observe the installation of 4-inch diameter pipe piles for foundation support for addition of to the existing residence. Four scheduled 4-inch pipe piles were driven yesterday. Based on observation of the driving resistance, the piles meet refusal. Pipe pile hammer was set up on the two northern most piles (3 and 4 ) and were test driven for specifications of refusal. Both piles were driven for 16 seconds with no movement downward on the pipe pile. This exceeds the requirement of 1-inch per 6 seconds of driving. The stick up above ground is presented below:

- Pile 1 - Southern most 3.33 ft above ground 21 foot pipe pile
- Pile 2 - 2.2 feet above ground 21 foot pipe pile
- Pile 3 - 3.5 feet above ground 21 foot pipe pile
- Pile 4 - 2.5 feet above ground 21 foot pipe pile

### Conclusions

The installation of the 4-inch pipe piles were installed in accordance with the design specifications presented in construction drawings. All piles were approved;



EXPIRES

28 June 2024

ZGA Project No. 2727.01

Mr. Nathan Korpela  
8407 Linden Avenue North  
Seattle, Washington 98103

Subject: Plan Review Comments  
Proposed Single-family Residence Remodel  
8441 SE 33<sup>rd</sup> Place  
Mercer Island, Washington

Dear Mr. Korpela:

In accordance with your request, we have reviewed the following permit set design documents:

- Jessyca Poole, Architect, combined architectural and structural permit set, dated 26 June 2024.
- CG Engineering civil engineering plans dated 27 June 2024.
- Salish Restoration Associates, LLC, Arborist report (tree planting plan) dated 25 May 2024.

Based upon our review, it is our opinion that the documents listed above adequately reflect the recommendations contained in our geotechnical engineering report dated 28 November 2023 geotechnical engineering report.

Section 19.07.110 of the Mercer Island City Code (MICC) requires that projects mitigate potential impacts to regulated critical areas to the extent feasible. As described in our geotechnical engineering report, the property includes regulated landslide hazard and erosion hazard critical areas. The City may allow alteration within a regulated geologic hazard area or buffer if the proposal effectively demonstrates that there is no impact on the regulated areas or that it adequately mitigates risks of the hazards. Based upon our review of the above-referenced design documents, it is our opinion that mitigation of potential landslide hazard impacts associated with the proposed residential remodel has been achieved by having no disturbance of the landslide hazard area itself during dwelling construction, and only limited disturbance during installation of a small (4-inch diameter) butt-welded HDPE stormwater pipe on the ground surface with no excavation. In addition, the proposed remodel will largely include re-use of the existing foundations with no effective loading increase on the landslide hazard area. Limiting the proposed dwelling alterations to the upper portion of the site that is either level or very gently sloping to the west and away from the steep eastern slope will also effectively mitigate potential adverse impacts

to the portions of the site inclined at 15 percent or greater which are erosion hazard areas per the MICC. Likewise, the proposed planning of additional trees in the eastern portion of the site will require only small excavations completed by hand.

**CLOSURE**

We hope that that this letter meets your current needs. Please do not hesitate to contact the undersigned should you have any questions.

Regards,  
Zipper Geo Associates, LLC


Signed 6.28.24

David C. Williams, LG, LEG  
Principal Engineering Geologist


Robert A. Ross, PE  
Managing Principal

Signed 6.28.24

Distribution: Addressees (1 pdf)  
Jessyca Poole, Architect (1 pdf)

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# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)

Inspection Requests: Online: [www.MyBuildingPermit.com](http://www.MyBuildingPermit.com) VM: 206.275.7730

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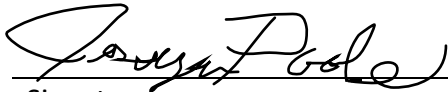


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## CONCURRENT REVIEW

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I am requesting that my permit submittal be accepted and reviewed concurrently during the review of our land use action (File # \_\_\_\_\_). I fully understand that the land use application must be approved prior to the issuance of the permit. I take full responsibility for all fees incurred for the permit review and understand that the fees are payable to the City of Mercer Island regardless of the land use outcome. I hold the City harmless for any actions arising from the concurrent review of the permit application, including but not limited to the potential denial of the permit if the land use action is denied.



Signature

Date

Name

Project Address

email

Phone #



20241021000797

NOTICE OF SENSITIVE AREA Rec: \$306.50  
10/21/2024 11:45 AM  
KING COUNTY, WA

Return Address:  
Nathan Korpela  
8401 Linden Ave N  
Seattle, WA 98103

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. Critical Areas Disclosure
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

**Reference Number(s) of Documents assigned or released:**

Additional reference #'s on page \_\_\_\_\_ of document

**Grantor(s)** Exactly as name(s) appear on document

- 1. Nathan Korpela
- 2. Shaunna Wiens

Additional names on page \_\_\_\_\_ of document.

**Grantee(s)** Exactly as name(s) appear on document

- 1. PUBLIC
- 2. \_\_\_\_\_

Additional names on page \_\_\_\_\_ of document.

**Legal description** (abbreviated: i.e. lot, block, plat or section, township, range)

Lot 29 of Parkridge, Vol 78 of Plats, Pages 29 and 30.

Additional legal is on page \_\_\_\_\_ of document.

**Assessor's Property Tax Parcel/Account Number**

assigned  
666680-0290-04

Assessor Tax # not yet

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**

For Permit Number CAO24-025

For Parcel Number 666680-0290-040

Street Address 8441 SE 33<sup>rd</sup> Place, Mercer Island, WA 98040

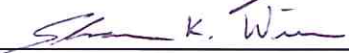
This property contains regulated landslide hazard and erosion hazard critical areas as defined by the Mercer Island City Code (MICC) 19.07 and regulated by provision in MICC 19.07.160.

Due to development activity within a critical area, a City of Mercer Island Critical Area Study and Mitigation Plan has been required to be prepared and implemented for this property. This mitigation plan included no disturbance of the landslide area itself during dwelling construction, and only limited disturbance during installation of a small (4-inch diameter) butt-welded HDPE stormwater pipe on the surface with no excavation. In addition, the proposed remodel will largely include re-use of the existing foundations with no effective loading increase on the landslide hazard area. Limiting the proposed dwelling alternations to the upper portion of the site that is either level or very gently sloping to the west and away from the steep eastern slope will also effectively mitigate potential adverse impacts to the portion of the site inclined at 15 percent or greater which are erosion hazards as defined per the MICC. Likewise, the proposed planting of additional trees in the eastern portion of the site will require only small excavations completed by hand. For further information regarding related requirements and limitations, please contact the City of Mercer Island Community Planning and Development Department.

This notice shall run with the land and shall not be removed except upon specific written authorization approved by the City of Mercer Island and recorded herein by King County.

We, Nathan Korpela and Shaunna Wiens, a married couple, hereby certify that we are the owner of the above-referenced property.

Owner's Signature 

Owner's Signature 

State of Washington, County of King

SUBSCRIBED AND SWORN TO before me this 18 day of October, 2024.

Notary Seal



*Kayla Edge*

Notary Public Signature

Kayla Edge

Notary Public Printed Name

8/07/2027

Commission Expiration

**Exhibit "A"**  
Legal Description

**For APN/Parcel ID(s): 666680-0290-04**

LOT 29 OF PARKRIDGE, AS PER PLAT RECORDED IN VOLUME 78 OF PLATS, PAGES  
29 AND 30, RECORDS OF KING COUNTY AUDITOR;

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON





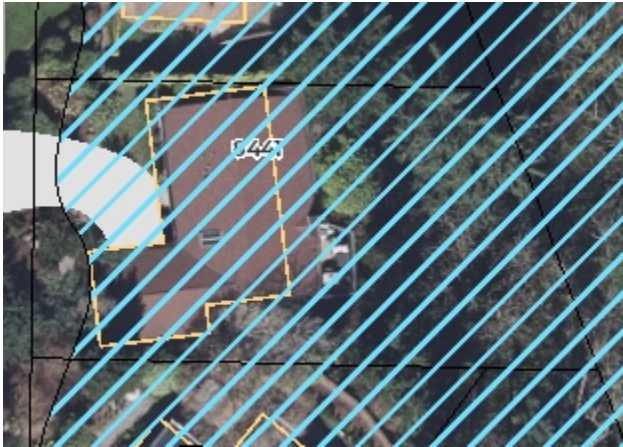
# City of Mercer Island Property Hazard Report

Site Address: 8441 SE 33RD PL

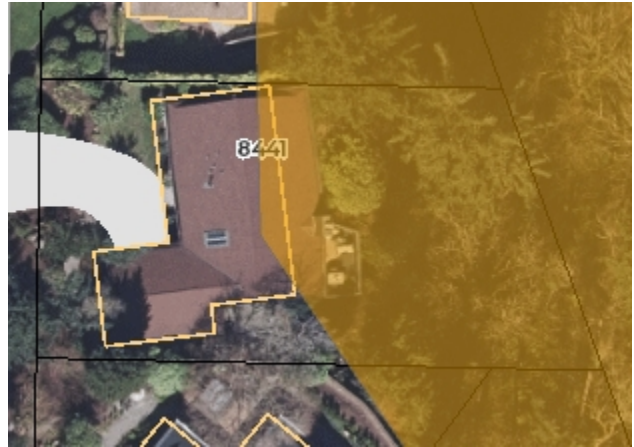
Parcel #: 6666800290

Report Generated on September 5, 2024

### Potential Slide:



### Steep Slope:



### Erosion:



### Seismic:



### Wind Exposure:

Wind Speed Up Values 1.0 1.3 1.6 1.9



## No Hazard Found

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

**July 31, 2024**

Poole Architects  
Attn: Jessyca Poole  
7718 Fremont Ave N  
Seattle, WA 98103  
Via: Email

RE: **CAO24-025** Letter of Completeness; 8441 SE 33rd Place, Mercer Island, WA 98040

The City of Mercer Island received the above referenced application for a Critical Area Review 2 for the property located at 8441 SE 33rd Place, Mercer Island, WA 98040 on July 18, 2024. The City has assigned file number CAO24-025 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 July 31, 2024.

The application is scheduled for mailing and posting on August 5, 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 206-275-7712 or via e-mail at [molly.mcguire@mercerisland.gov](mailto:molly.mcguire@mercerisland.gov) if you have any questions.

Sincerely,

Molly McGuire, Senior Planner  
City of Mercer Island Community Planning and Development

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# COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040  
206.275.7605 | [www.mercerisland.gov](http://www.mercerisland.gov)



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## PUBLIC NOTICE OF APPLICATION

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**NOTICE IS HEREBY GIVEN** for the application described below:

**File No.:** CAO24-025

**Permit Type:** Type III

**Description of Request:** A request for a Critical Area Review 2 for the demolition of an existing 2 car, attached garage and the construction of a new 2 car garage with new second floor above, and renovation of the existing single-family residence on a property containing geologically hazardous areas.

**Applicant/Owner:** JESSYCA POOLE (POOLE ARCHITECTURE) / NATHAN KORPELA & SHAUNNA WIENS

**Location of Property:** 8441 SE 33rd Place, Mercer Island WA 98040  
King County Assessor tax parcel number: 6666800290

**SEPA Compliance:**  
The project is exempt from SEPA Review pursuant to [WAC 197-11-800\(l\)\(b\)\(i\)](#).

**Project Documents:** <https://mieplan.mercergov.org/public/CAO24-025>

**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): 2407-073

**Environmental Documents:** Copies of all studies and/or environmental documents are available through the above project documents link.

**Application Process Information:**

Date of Application:	July 18, 2024
Determined to Be Complete:	July 31, 2024
Weekly Permit Bulletin Notice:	August 5, 2024
Date Mailed:	August 5, 2024
Date Posted on Site:	August 5, 2024

Comment Period Ends:

5:00PM on September 4, 2024

**Project Contact:**

Molly McGuire, Senior Planner

molly.mcguire@mercerisland.gov | (206) 275-7712



**September 10, 2024**

Poole Architecture  
Attn: Jessyca Poole  
7718 Fremont Ave N  
Seattle, WA 98103  
Via: Email

RE: **CAO24-025** Review Letter 1; 8441 SE 33rd Place, Mercer Island, WA 98040

Dear Jessyca Poole,

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 application. The following issues need to be addressed in your resubmission:

Planning:

1. It looks like the submitted document intended to satisfy the Critical Areas Disclosure and Notice on Title "Indemnification and Hold Harmless Agreement" was recorded in 2011 for tree removal and replacement. It was also not signed by the applicant for this project. The Disclosure and Notice on Title requires information that is not included in this agreement. Please provide a draft Critical Areas Disclosure and Notice on Title that meets the requirements of MICC 19.07.070 to [molly.mcguire@mercerisland.gov](mailto:molly.mcguire@mercerisland.gov) prior to notarizing and recording to ensure all the necessary information is included in the notice.
2. Please submit a post-design memorandum prepared by ZipperGeo confirming that the proposed improvements comply with the design recommendations in the Geotechnical Engineering Report.
3. Please provide a landscaping plan for all disturbed areas outside of building footprints and installation of hardscape which will be required to be completed prior to final inspection to comply with [MICC 19.07.160\(B\)\(2\)\(d\)](#).

The City's processing of the Critical Area Review 2 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 November 9, 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,



Molly McGuire, Senior Planner  
City of Mercer Island Community Planning and Development  
[molly.mcguire@mercerisland.gov](mailto:molly.mcguire@mercerisland.gov)  
(206) 275-7712

**Responding and Resubmitting: [Click for More Detailed Instructions](#)**

1. Reply to all review comments within the review letter.
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 MlePlan Comments](#)

[Troubleshooting MlePlan](#)

[MlePlan Overview](#)

**Thank you for your participation in the MlePlan review process.**

**Korpela+Wiens Residence**

RE: **CA024—25** REVIEW LETTER1,  
8441SE 33<sup>RD</sup> PLACE, MI, WA 98040

**Corrections Responses**

Item 1:

Please see uploaded PDF copy of recorded document 'Notice of Sensitive Area' for the Disclosure and Notice on Title.

Item 2:

Per email communication 9/17 this information was previously provided and this item can be disregarded. Reference uploaded copy of email exchange

Item 3:

Please see uploaded sheet 'L1' Landscape Plan for review.

Thanks much!



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## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040  
206.275.7605 | [www.mercerisland.gov/cpd](http://www.mercerisland.gov/cpd)



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## PUBLIC NOTICE OF DECISION

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

**File No.:** CAO24-025

**Permit Type:** Type III

**Description of Request:** A request for a Critical Area Review 2 for the demolition of an existing two-car, attached garage and the construction of a new, two-car garage with new second floor above, and renovation of the existing single-family residence on a property containing geologically hazardous areas.

**Applicant/Owner:** Jessyca Poole (Poole Architecture) / Nathan Korpela and Shaunna Wiens

**Location of Property:** 8441 SE 33rd Pl, Mercer Island, WA 98040  
King County Assessor tax parcel number: 666680-0290

**SEPA Compliance:**

The project is exempt from SEPA Review pursuant to [WAC 197-11-800\(1\)\(b\)\(i\)](#).

**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:** 2407-073.

**Project Documents:** <https://mieplan.mercergov.org/public/CAO24-025>

**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.

<b>Application</b>	Date of Application:	July 18, 2024
<b>Process</b>	Determined to Be Complete:	July 31, 2024
<b>Information:</b>	Public Comment Period:	August 5, 2024 through 5:00 PM on September 4, 2024
	Date Notice of Decision Issued:	December 23, 2024
	Appeal Filing Deadline:	5:00 PM on January 6, 2025
<b>Project Contact:</b>	Molly McGuire, Senior Planner molly.mcguire@mercerisland.gov   (206) 275-7712	