
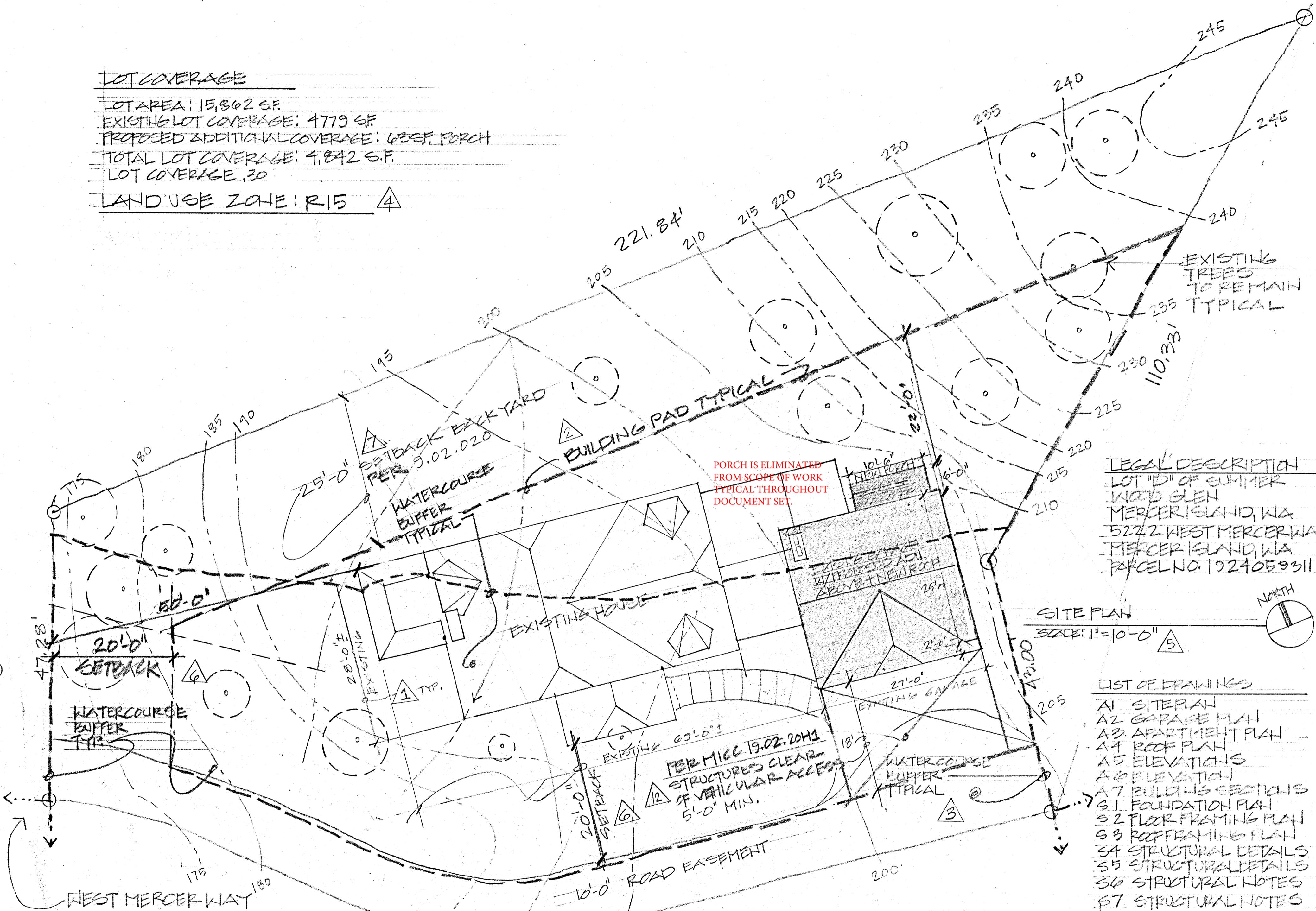



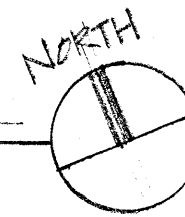
**LOT COVERAGE**

LOT AREA: 15,862 S.F.  
 EXISTING LOT COVERAGE: 4779 S.F.  
 PROPOSED ADDITIONAL COVERAGE: 603 S.F. PORCH  
 TOTAL LOT COVERAGE: 4,842 S.F.  
 LOT COVERAGE: .30


LAND USE ZONE: R15 




**LEGAL DESCRIPTION**  
 LOT "D" OF SUMMER WOOD GLEN MERCER ISLAND, WA  
 5222 WEST MERCER WAY MERCER ISLAND, WA  
 PARCEL NO. 1924059311

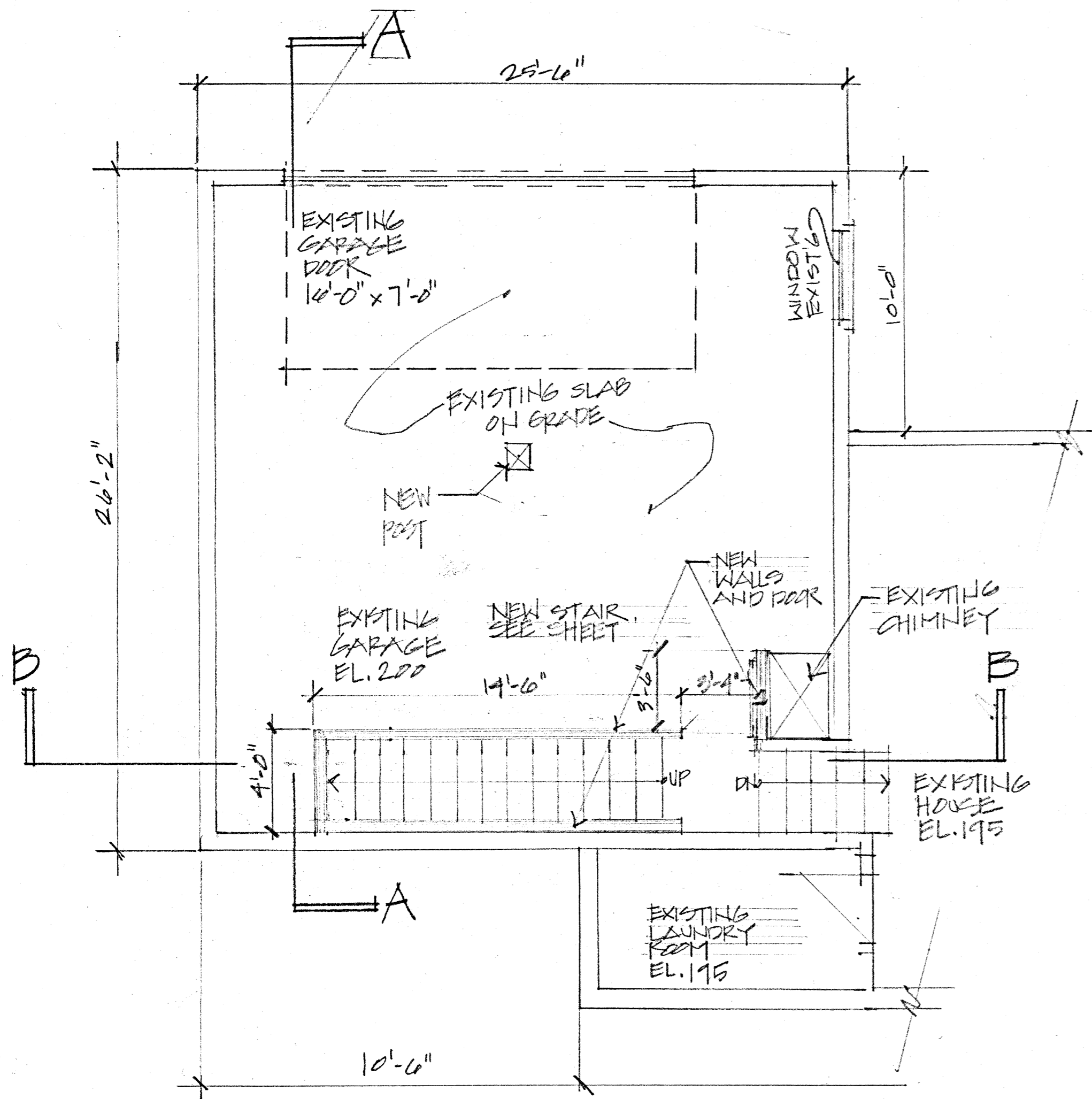
**SITE PLAN**  
 SCALE: 1" = 10'-0"  

- LIST OF DRAWINGS**
- A1 SITE PLAN
  - A2 GARAGE PLAN
  - A3 APARTMENT PLAN
  - A4 ROOF PLAN
  - A5 ELEVATIONS
  - A6 ELEVATION
  - A7 BUILDING SECTIONS
  - S1 FOUNDATION PLAN
  - S2 FLOOR FRAMING PLAN
  - S3 ROOF FRAMING PLAN
  - S4 STRUCTURAL DETAILS
  - S5 STRUCTURAL DETAILS
  - S6 STRUCTURAL NOTES
  - S7 STRUCTURAL NOTES
  - S8 STRUCTURAL NOTES
  - S9 STRUCTURAL NOTES
  - S10 STRUCTURAL NOTES
  - S11 STRUCTURAL NOTES

 **MICC 19.02.030 COMPLIANCE:**  
 OWNER OCCUPANCY: THE OWNER AND/OR DAUGHTER WILL BE PRIMARY OCCUPANT.  
 SUBDIVISION: NO SUBDIVISION WILL BE ALLOWED.  
 SIZE AND SCALE: ADU SQFT: 603  $\phi$  EXISTING RESIDENCE: 4779  $\square$   
 TOTAL PERCENTAGE IS 13% OF PRIMARY DWELLING S.F.  
 LOCATION: ADU IS ABOVE EXISTING GARAGE  
 ENTRANCE: ADU EXTERIOR ENTRANCE IS LOCATED ON NORTH ELEVATION  
 MAIN RESIDENCE ENTRANCE IS LOCATED ON SOUTH ELEVATION.  
 ADDITIONS: EXISTING ROOF CONSTRUCTION + MATERIALS WILL BE THE PRIMARY DESIGN OF A.D.U.

 **MICC 19.02.020 COMPLIANCE:**  
 PER CODE: EXISTING (2) COVERED PARKING SPACES + (1) ADDITIONAL PARKING SPACE REQ'D FOR 3000 S.F. DWELLING. ADDITIONAL 2 UNCOVERED SPACES FOR (5) TOTAL SPACES.

SITE PLAN  
 ADU DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TOHI SAITOS 206-854-8120  
 A1



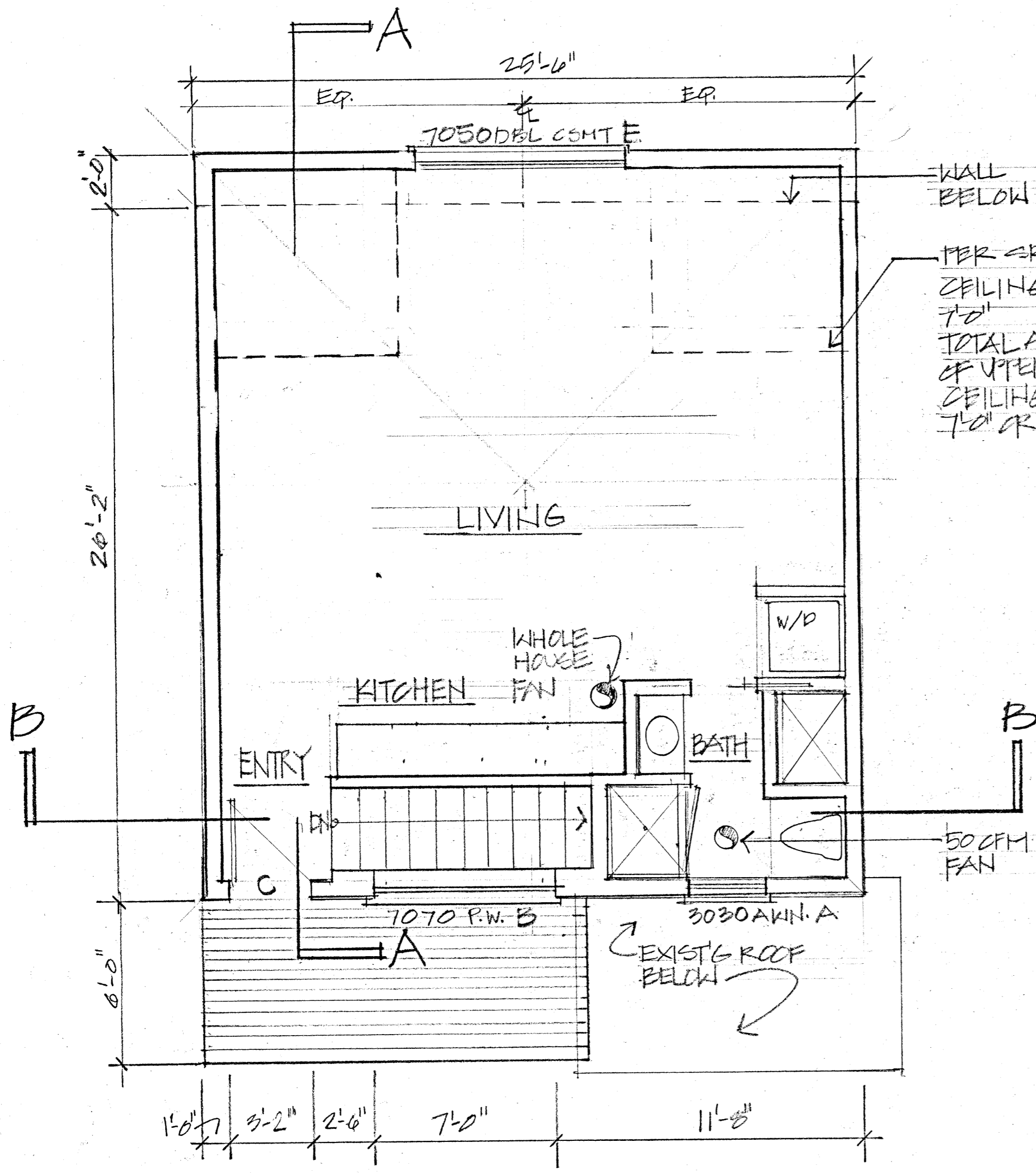
GARAGE PLAN

1/4" = 1'-0"

GARAGE PLAN

ADU DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TONI SANTOS 206-854-9120

A2



MARK	WINDOW FUNCTION	U VALUE	QTY	TOTAL
A	3030 AWNING	.30	1	9.0
B	7070 PICTURE	.30	1	49.0
C	3068 STORE DOOR	.30	1	21.0
D	7050 DBL CSMT	.30	1	35.0
E	2040 SKYLIGHT	.50	2	16.0
TOTAL GLAZING				130.0

ADU S.F. 663  
 $130.0 \div 663 = 19\%$  PROPOSED GLAZING AREA

WINDOW SCHEDULE + CALCULATIONS

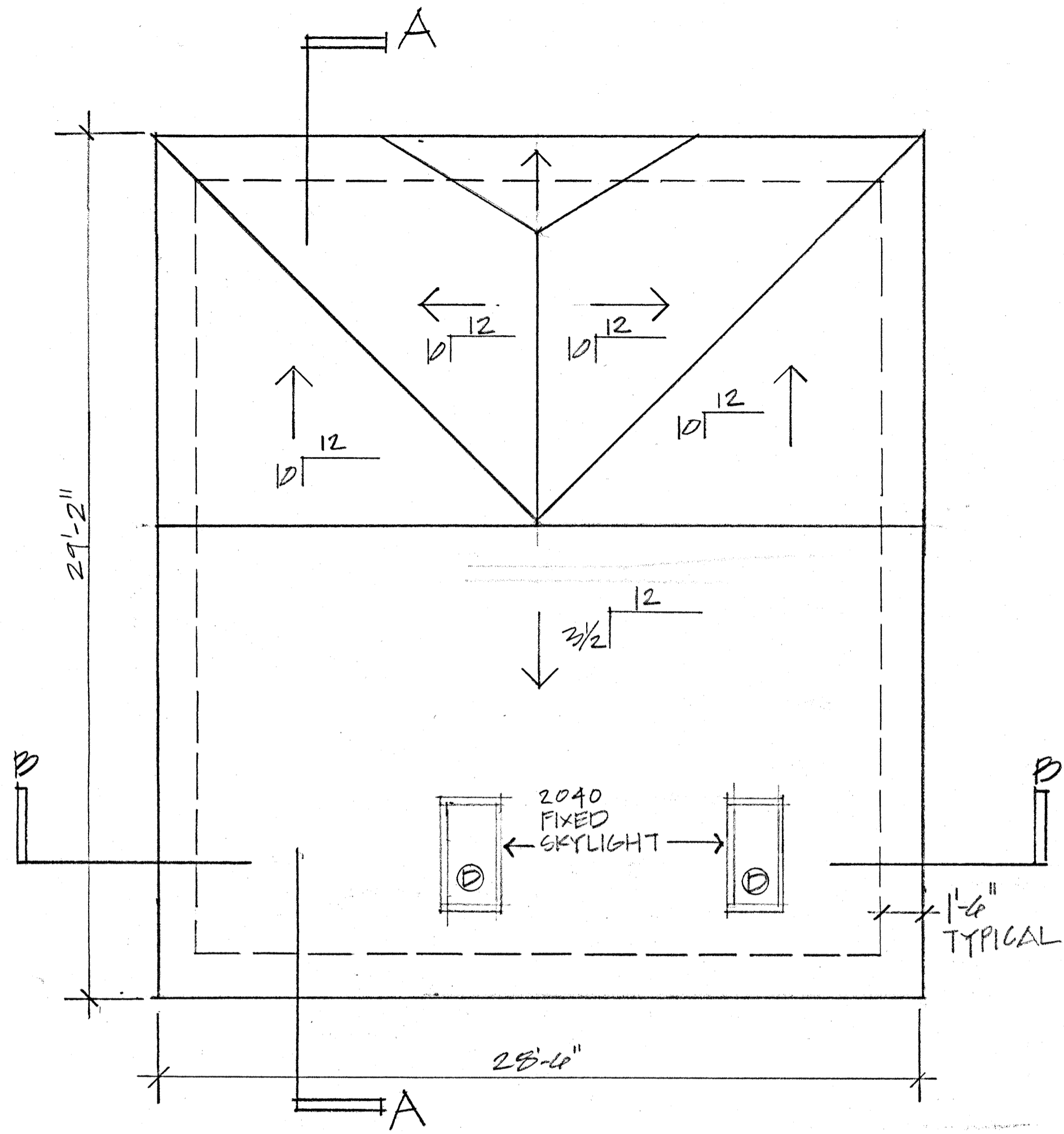
MANUFACTURER: MILGARD OR EQUAL

648 S.F.

APARTMENT LEVEL PLAN

ADU DESIGN FOR ELAINE BARR-YMAH  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TALL SANTOS 200 881 8120

A3

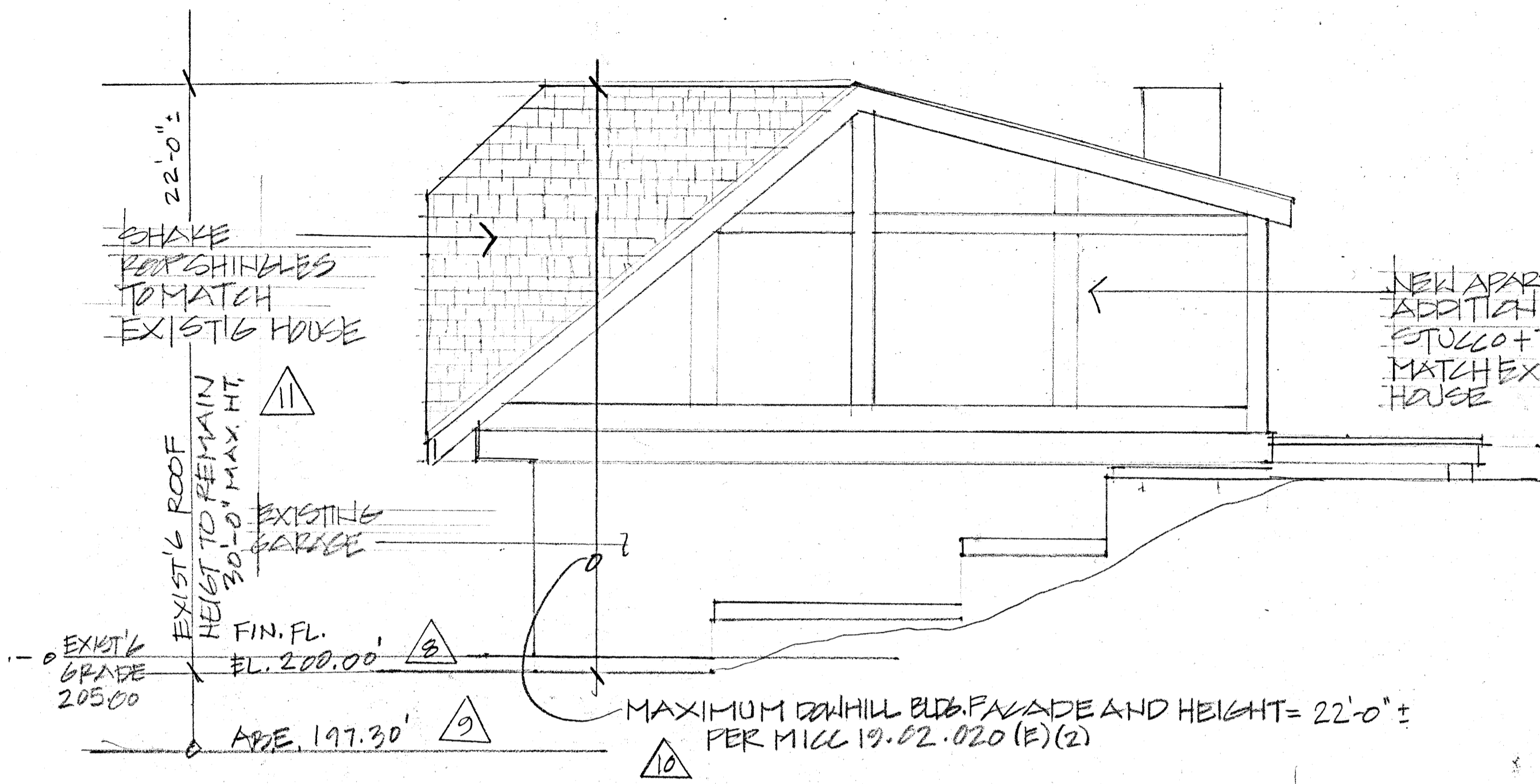


ROOF PLAN  
 1/4" = 1'-0"

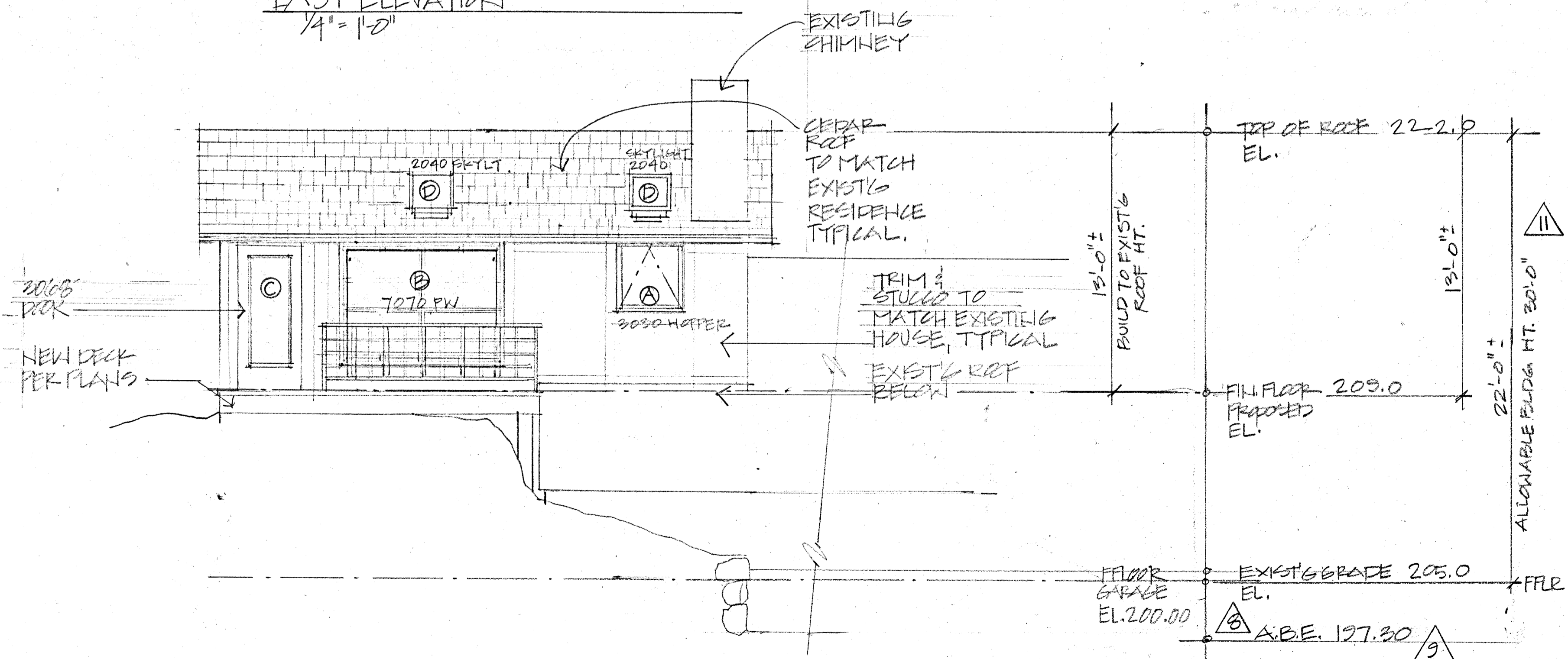
ROOF PLAN

ADU DESIGN FOR ELAHE BERRYMAN  
 5222 WEST MERCER RD  
 MERCER ISLAND WASHINGTON  
 BY TONI SANTOS 206-854-8120

A4



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

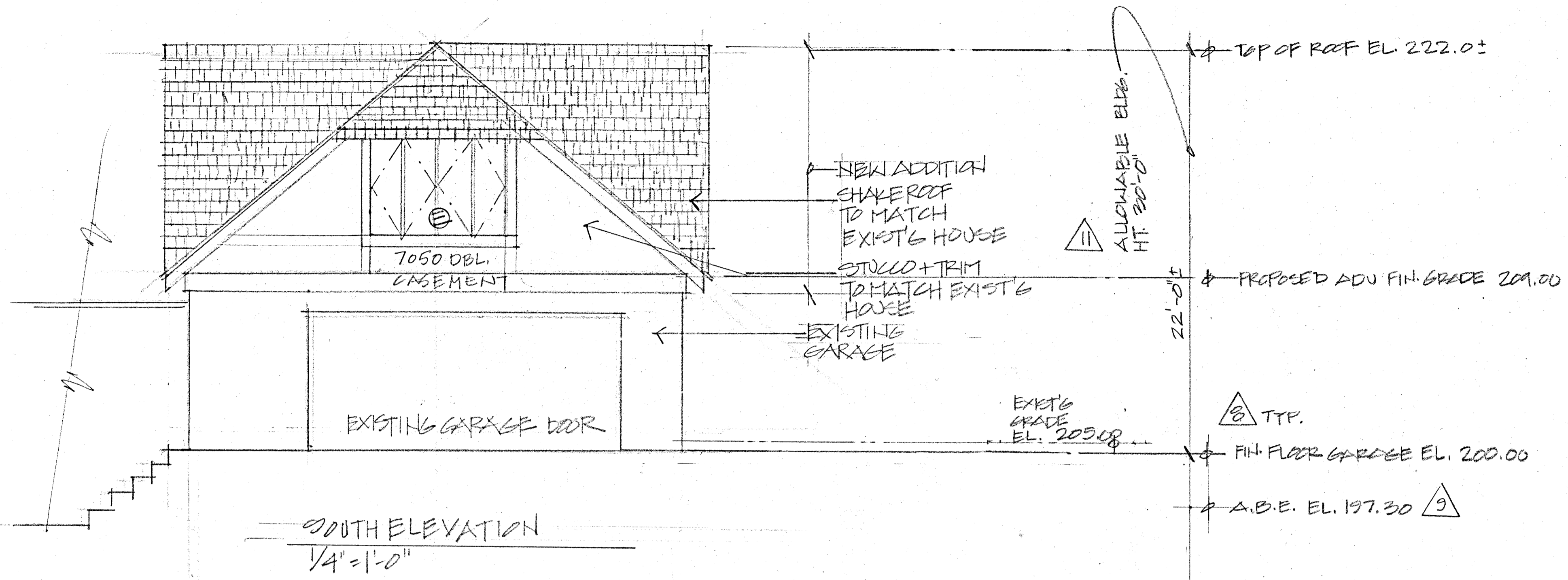


NORTH ELEVATION  
1/4" = 1'-0"

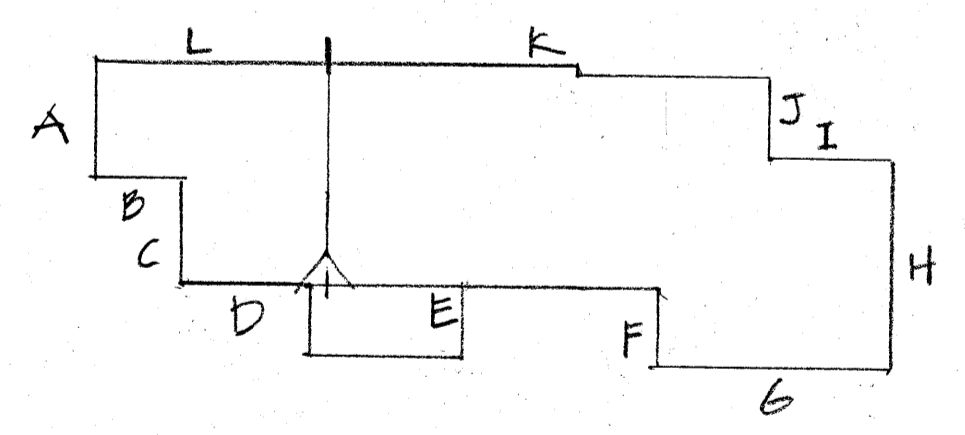
ELEVATIONS

ADU DESIGN FOR ELAINE BERRY/MAL  
5222 WEST MERCER WAY  
MERCER ISLAND, WASHINGTON  
BY TOHI SANTOS 200-854-8120

A5



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



A.B.E. CALCULATIONS / DIAGRAM (MEASURED FROM SITE PLAN)  
NOT TO SCALE

$$\frac{Aa(190 \times 16) + Bb(190 \times 10) + Cc(190 \times 12) + Dd(195 \times 16) + Ee(200 \times 40) + Ff(200 \times 10) + Gg(205 \times 22) + Hh(205 \times 20) + Ii(205 \times 16) + Jj(205 \times 10) + Kk(195 \times 54) + Ll(195 \times 28)}{a(16) + b(10) + c(12) + d(16) + e(40) + f(10) + g(22) + h(20) + i(16) + j(10) + k(54) + l(28)}$$

$$\frac{51,300}{260} = 197.30 \text{ AVERAGE BUILDING ELEV. A.B.E.}$$

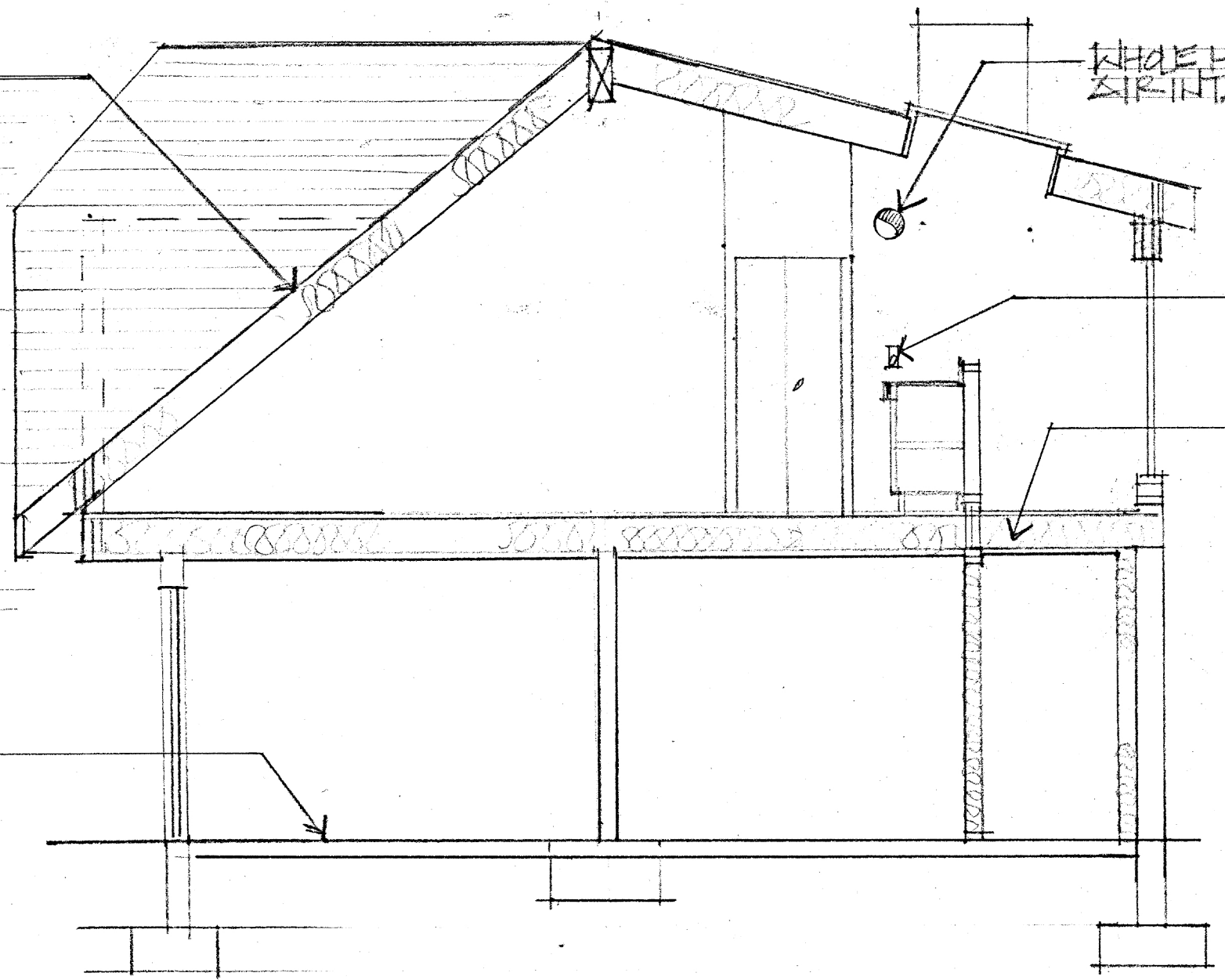
ELEVATION

ADU DESIGN FOR ELAINE BERRYMAN  
5222 WEST MERCER WAY  
MERCEK ISLAND, WASHINGTON  
BY TONI SANTOS 206.854.8120

A6

7-8" CERTA SPRAY  
 CERTA NEED RXXX R38  
 CLOSED CELL  
 AIR IMPERMEABLE  
 SPRAY FOAM INSULATION,  
 AIR IMPERMEABLE  
 INSULATION ONLY.  
 INSULATION SHALL  
 BE APPLIED IN DIRECT  
 CONTACT WITH THE  
 UNDERSIDE OF THE  
 STRUCTURAL ROOF  
 SHEATHING.  
 1/2" GYPSUM WALL BOARD  
 TO UNDERSIDE OF  
 RAFTERS.  
 COPY OF REPORT TO  
 BE ON SITE FOR  
 INSPECTOR.  
 ALTERNATE R38 BATTS

GARAGE FLOOR  
 MUST BE NON-  
 COMBUSTIBLE  
 AND MUST SLOPE  
 TO A DRAIN ON  
 FLOOR OR SLOPE  
 TOWARD THE  
 VEHICLE DOOR



WHOLE HOUSE FAN  
 AIR INTAKE LOCATION

WHOLE HOUSE  
 FAN SWITCH

R-30 BATT INSULATION  
 FLOOR, TYPICAL

SECTION A  
 1/4" = 1'-0"

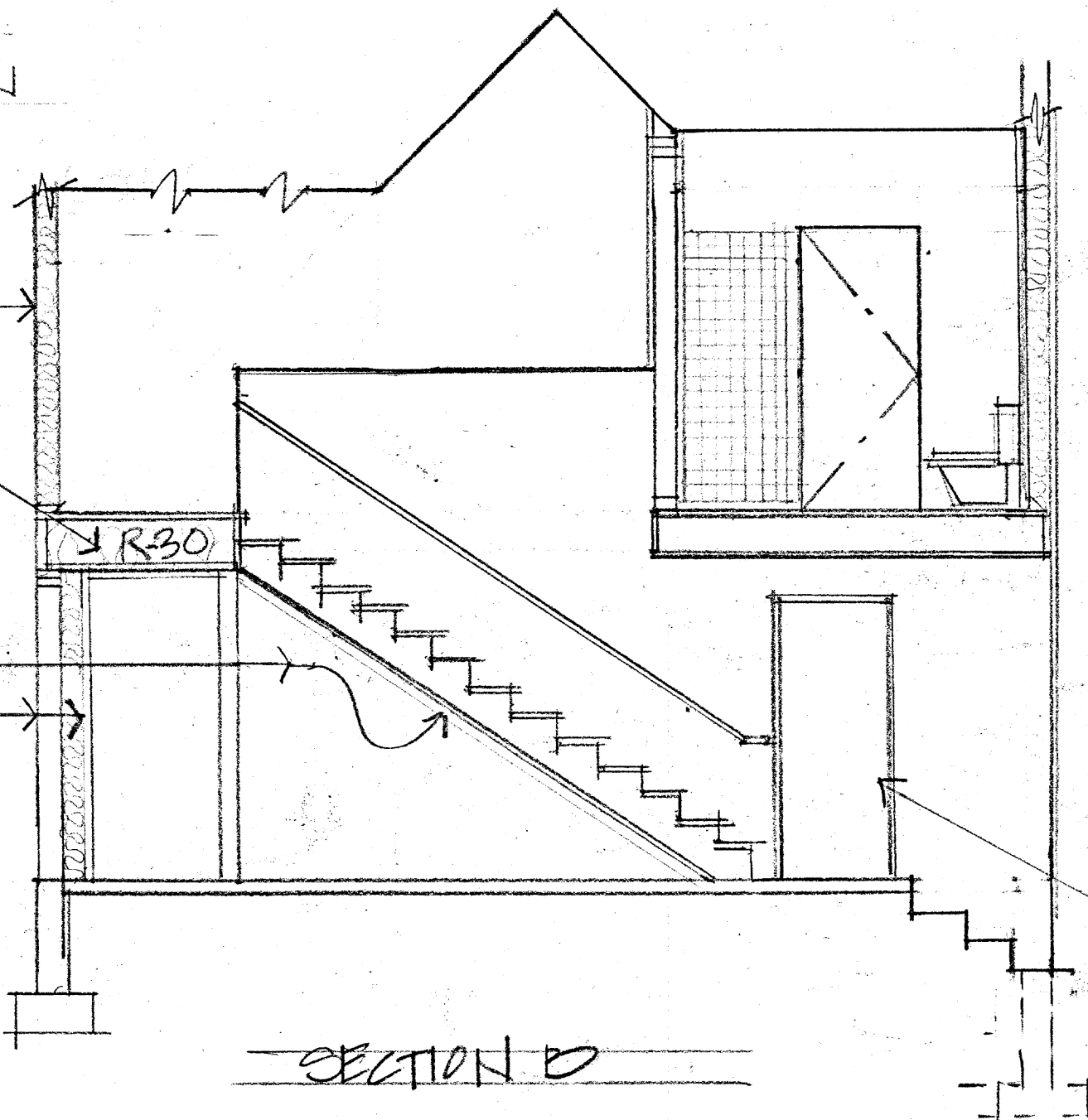
JOINTS WHERE GYPSUM  
 WALL BOARD IS REQ'D  
 ALL EDGES MUST BE  
 BACKED BY FRAMING  
 MEMBERS AND MUST BE  
 TAPED AND JOINTED TO  
 PROVIDE FIRE PROTECTION  
 FOR THE FRAMING

R-21 INSULATION  
 TO ABOVE GRADE  
 WALLS, TYP.

MIN 5/8" TYPE X GYPSUM  
 WALL BOARD ON THE GARAGE  
 SIDE OF CEILING COMMON TO  
 LIVING SPACE

MINIMUM 1/2" GYPSUM  
 WALL BOARD ON THE  
 GARAGE SIDE OF  
 COMMON WALLS TO  
 LIVING SPACE, TYP.

MINIMUM 1/2" GYPSUM  
 WALL BOARD ON THE  
 GARAGE SIDE OF  
 BEARING WALLS  
 SUPPORTING FIRE  
 PROTECTED GARAGE  
 CEILING



SECTION B

ENERGY CODE NOTES

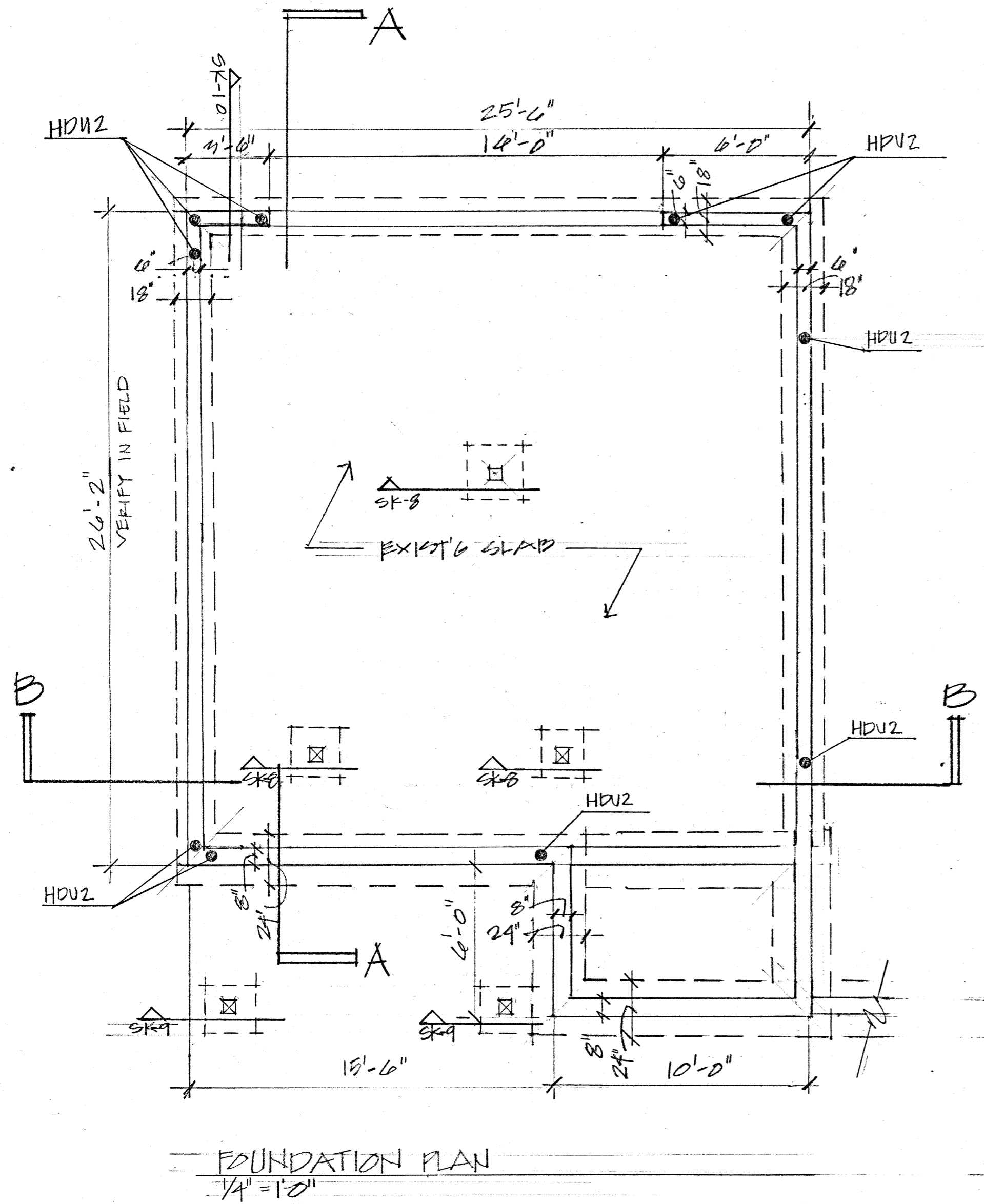
- SECTION 502.4.5-BUILDING AIR LEAKAGE TESTING OR DEMONSTRATING THE SPECIFIC LEAKAGE IS  $\leq 0.00030$  (SEC. 502.4.5 IS REQ'D PRIOR TO FINAL INSPECTION, THE TEST RESULTS SHALL BE POSTED ON THE RESIDENTIAL ENERGY COMPLIANCE CERTIFICATE (SEC. 105.4))
- SECTION 503.81 "EACH DWELLING UNIT IS REQUIRED TO BE PROVIDED WITH AT LEAST ONE PROGRAMMABLE THERMOSTAT FOR THE REGULATION OF TEMPERATURE.
- SECTION 503.10.2 "A SIGNED AFFIDAVIT DOCUMENTING THE DUCT LEAKAGE TEST RESULTS SHALL BE PROVIDED TO THE BUILDING INSPECTOR PRIOR TO THE APPROVED FINAL INSPECTION.
- SECTION 505 "MINIMUM 50% OF ALL INTERIOR LUMINAIRES SHALL BE HIGH EFFICIENCY LUMINAIRES" AND "ALL EXTERIOR LIGHTING SHALL BE HIGH EFFICIENCY LUMINAIRES.
- PREScriptive REQUIREMENTS OPTION PER TABLE G-1

DOOR BETWEEN GARAGE AND LIVING SPACE SHALL BE MINIMUM 1 3/8" TIGHT FITTING SOLID CORE DOOR OR METAL CLAD DOOR OR 20 MINUTE FIRE RATED DOOR ASSEMBLY. DOORS AND OTHER OPENINGS FROM GARAGE MAY NOT OPEN DIRECTLY INTO A ROOM USED FOR SLEEPING PURPOSES.

BUILDING SECTIONS

ARCH DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TONI SANTOS 206.854.8120

A7



FOUNDATION PLAN NOTES

1. AT HOLDDOWNS PROVIDE THE FOLLOWING ANCHOR BOLTS:  

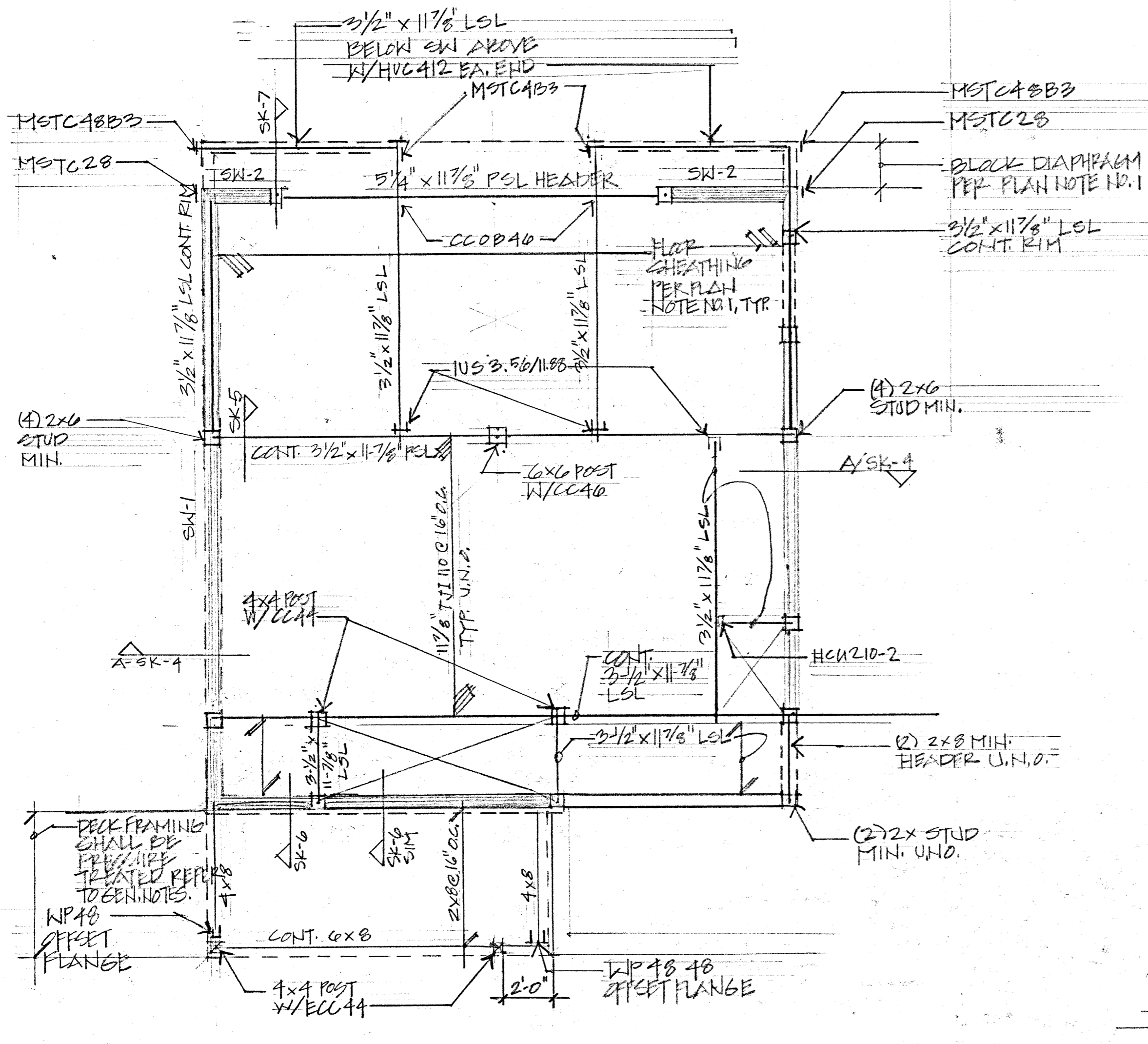
HOLDOWN	ANCHOR
HDU2	5/8" DIAMETER BOLT, SET-3GT EMBED 5" MIN. INTO EXISTING FOOTING.
2. ALL ANCHORS TO BE INSTALLED AS REQUIRED BY MANUFACTURER. MINIMUM (2) 2X STUDS UNLESS OTHERWISE NOTED ON PLANS.

FOUNDATION PLAN

ADU DESIGN FOR PLANE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TOHI SANTOS 206.854.8120

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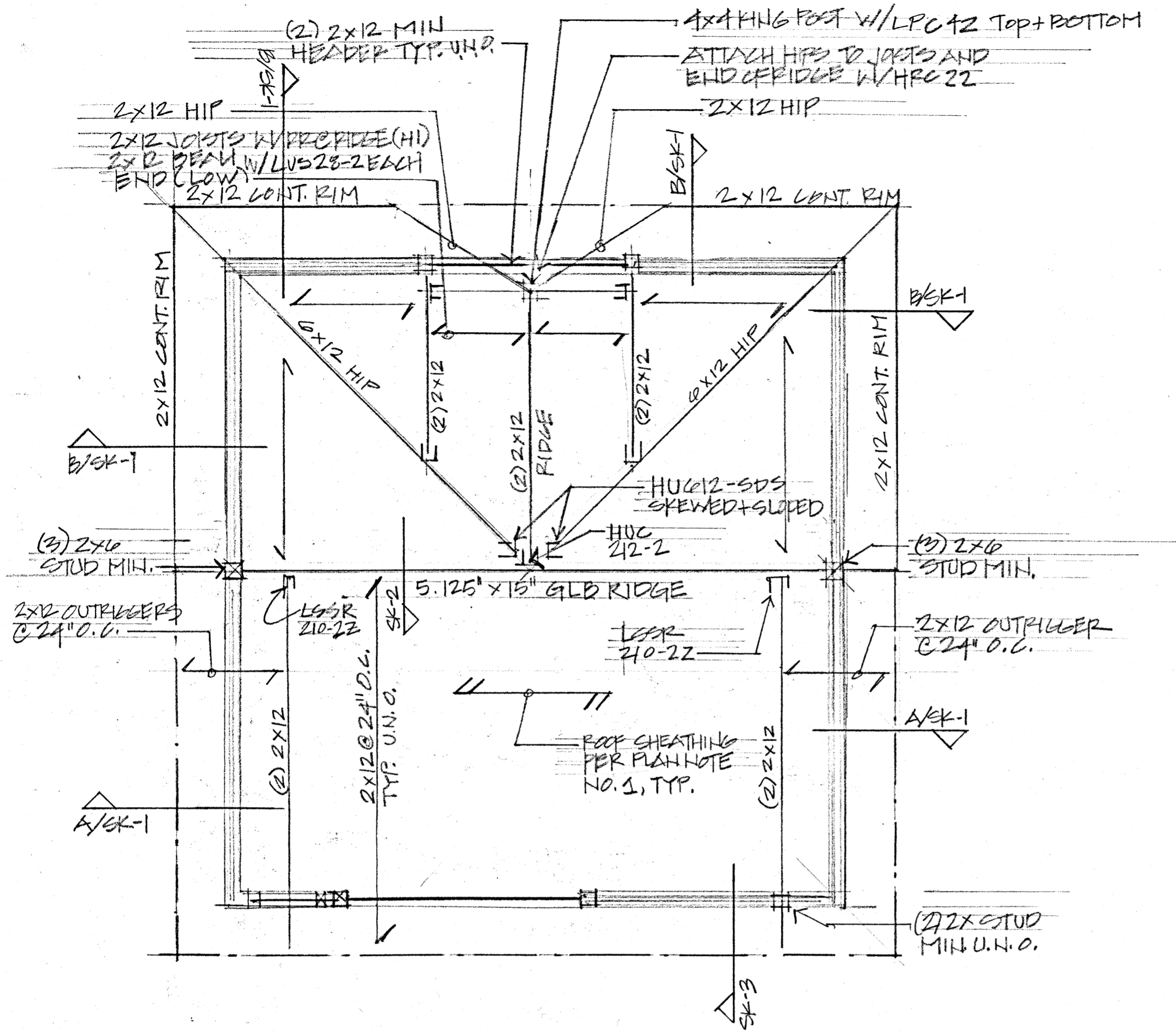
FLOOR FRAMING PLAN  
1/4" = 1'-0"

FLOOR FRAMING PLAN NOTES

1. FLOOR SHEATHING SHALL BE 23/32" APA STURD-1-FLOOR W/A PANEL INDEX OF 40/20. NAIL TO FRAMING W/10d COMMON NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. IN FIELD U.N.O. ON PLANS. WHERE NOTED ON THE PLANS ALL PANEL EDGES SHALL BE BLOCKED W/A MIN. 2X MATERIAL.
2. ALL HEADERS AND BEAMS SHALL BE (2) 2x8 MIN. U.N.O. REFER TO NOTE 3 FOR SUPPORT REQUIREMENTS.
3. ALL COLUMNS SHALL BE DOUBLE STUD MINIMUM, U.N.O., WITH THE BEAM OR HEADER BEARING FULLY ON THE COLUMN. INDIVIDUAL STUDS SHALL BE NAILED TOGETHER PER THE GENERAL STRUCTURAL NOTES. WHERE NOTED ON THE PLANS ALL THE PANEL EDGES SHALL BE BLOCKED WITH MINIMUM 2X MATERIAL.
4. EXTERIOR WALL SHEATHING SHALL BE 15/32" APA RATED SHEATHING WITH A PANEL INDEX OF 24/10 (ORIENTED STRAND BOARD OF EQUIV. THICKNESS, EXPOSURE RATING, AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD AT CONTRACTOR'S OPTION).

FLOOR FRAMING PLAN

ADU DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TONI SANTOS 206.854.8120



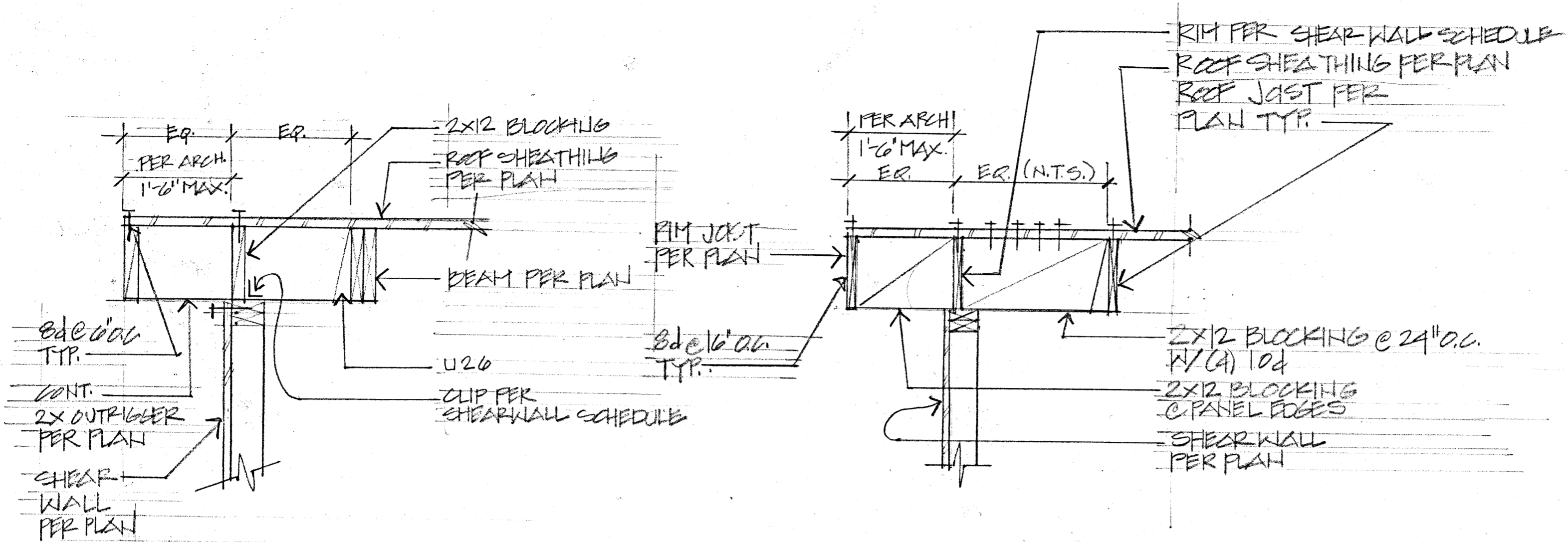
ROOF FRAMING PLAN  
 1/4" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. ROOF SHEATHING SHALL BE 15/32" APA RATED SHEATHING WITH A PANEL INDEX OF 2410. NAIL TO FRAMING W/ 8d COMMON NAILS AT 6" O.C. AT PANEL EDGES AND 12" O.C. IN FIELD U.N.O. ON PLANS.
2. ALL HEADERS AND BEAMS SHALL BE (2) 2X8 MIN. UNLESS NOTED OTHERWISE. REFER TO NOTE 3 FOR SUPPORT REQUIREMENTS.
3. ALL COLUMNS SHALL BE DOUBLE STUD MINIMUM, U.N.O., WITH THE BEAM OR HEADER BEARING FULLY ON THE COLUMN. INDIVIDUAL STUDS SHALL BE NAILED TOGETHER PER THE GENERAL STRUCTURAL NOTES.
4. EXTERIOR WALL SHEATHING SHALL BE 15/32" APA RATED SHEATHING WITH A PANEL INDEX OF 2410 (ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING, AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD AT CONTRACTOR'S OPTION).

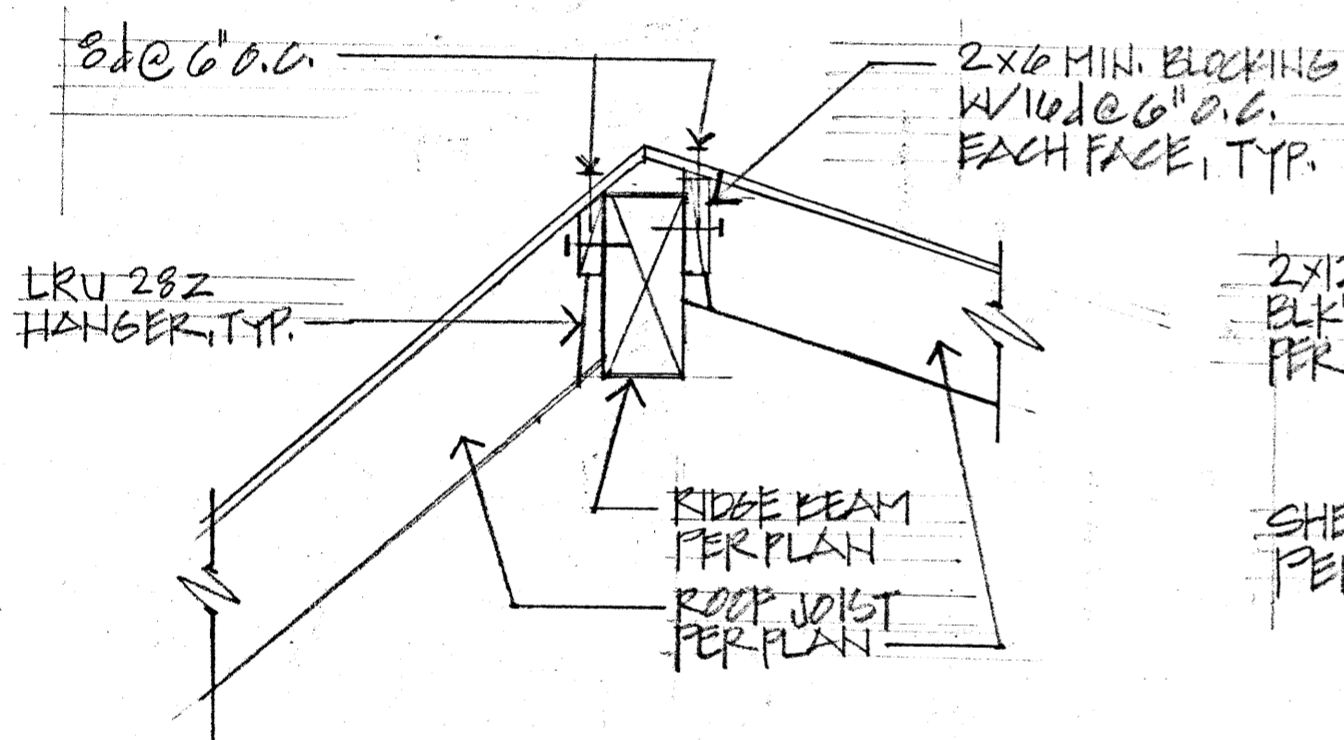
ROOF FRAMING PLAN

AD DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TONI SANTOS 206.854.8120

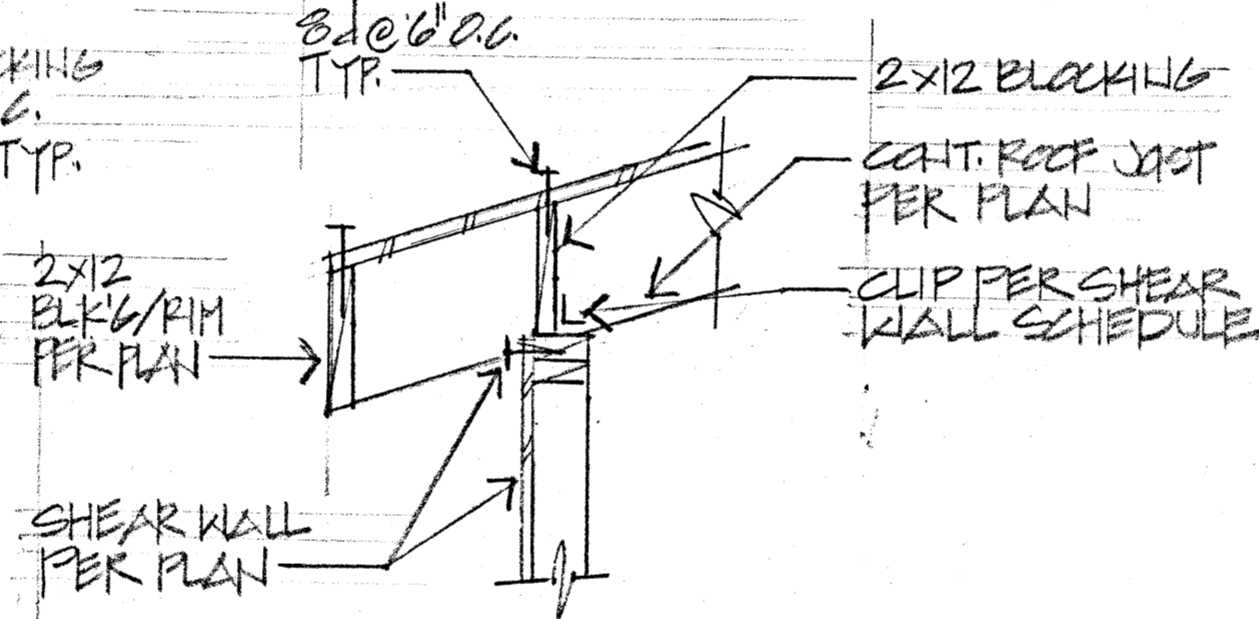


DETAIL A/SK-1

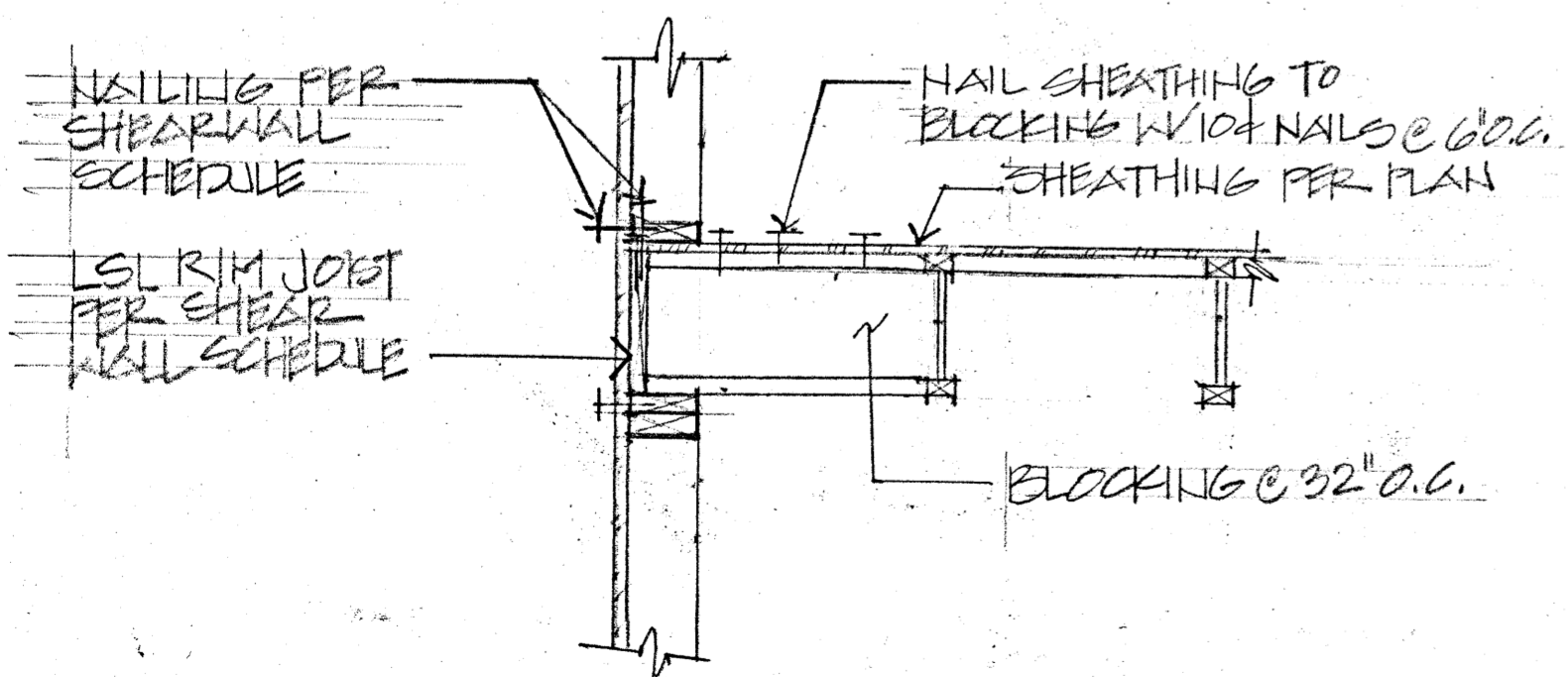
DETAIL B/SK-1



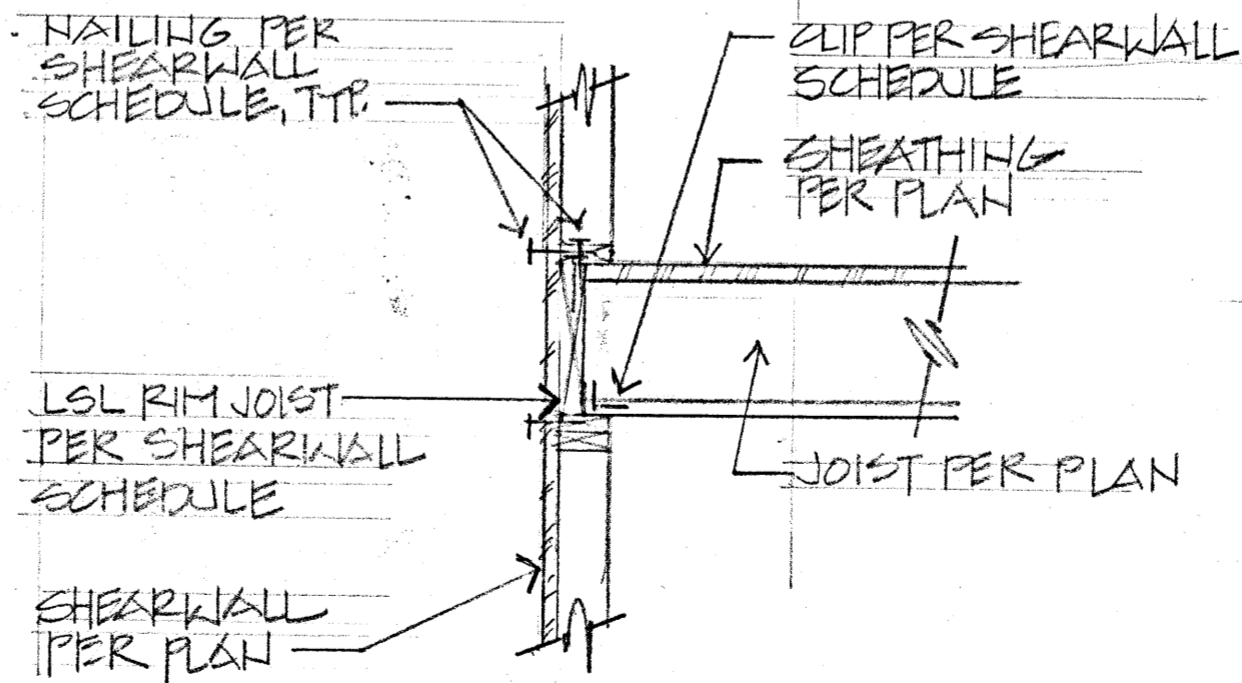
DETAIL SK-2



DETAIL SK-3



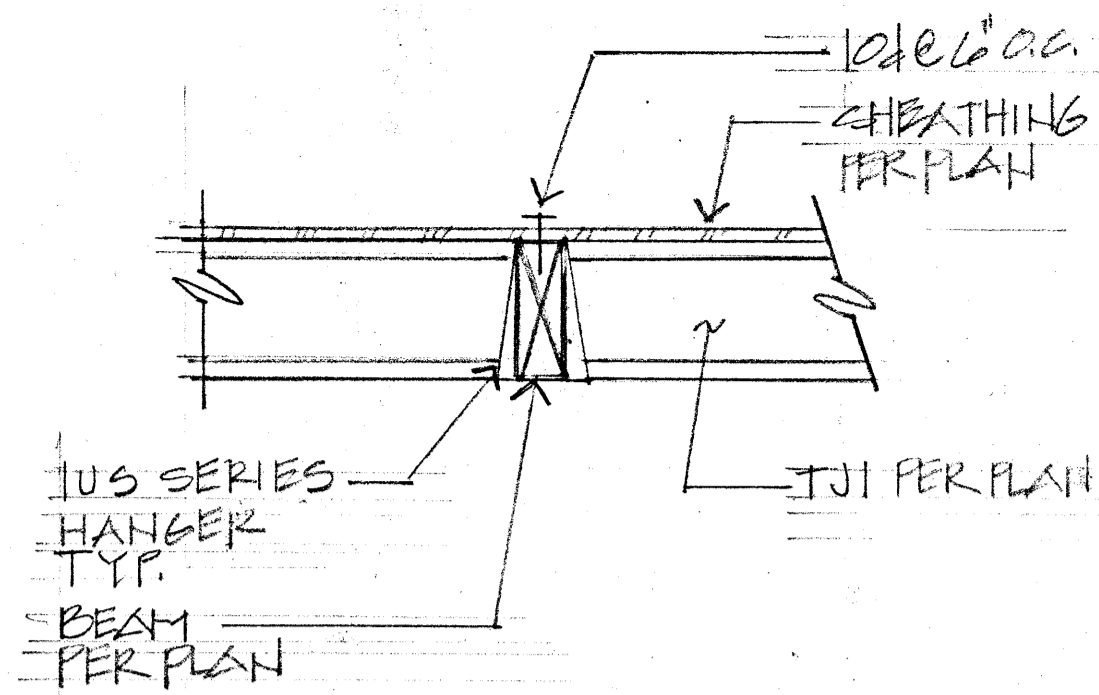
DETAIL A/SK-4



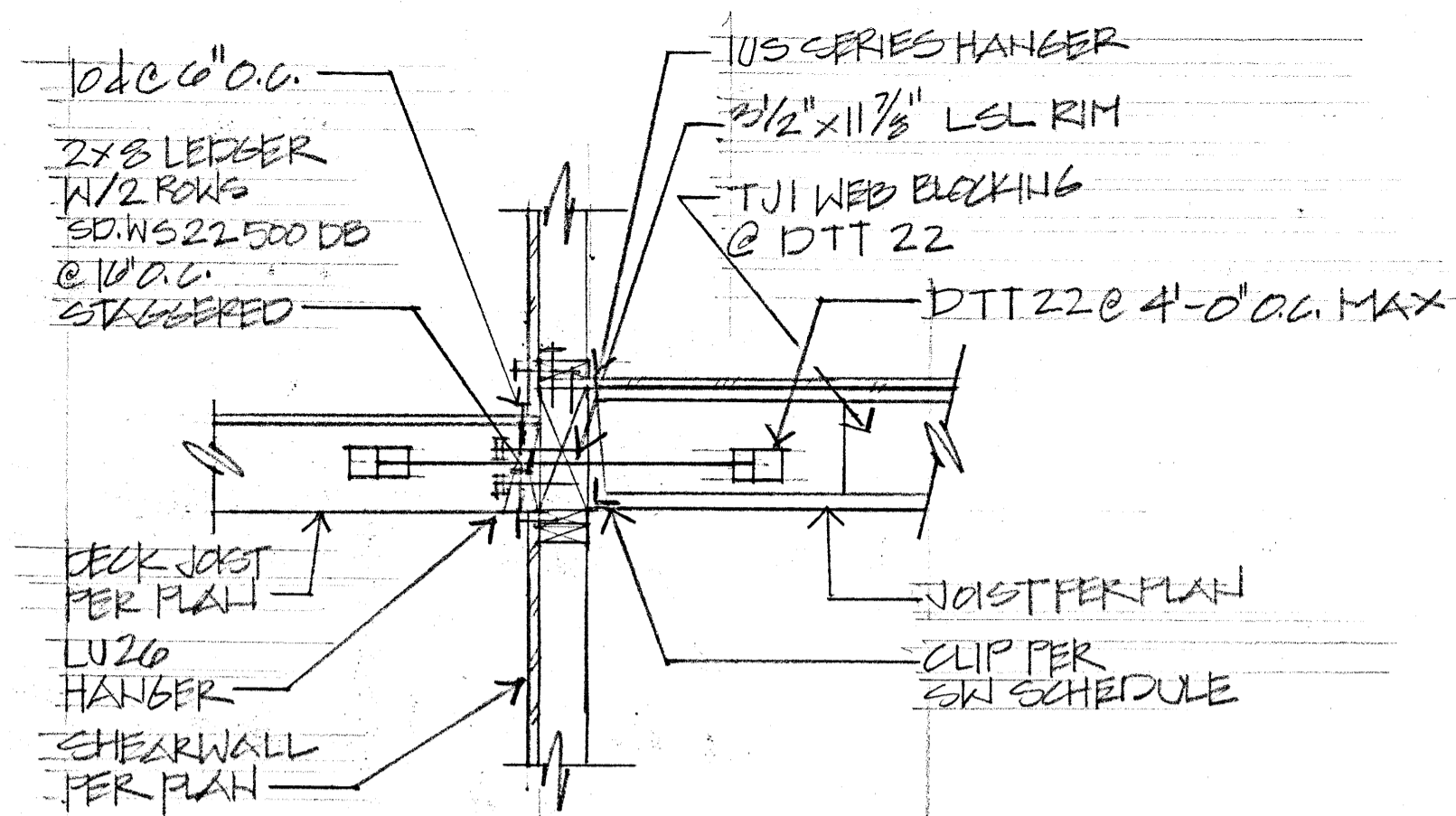
DETAIL B/SK-4

STRUCTURAL DETAILS

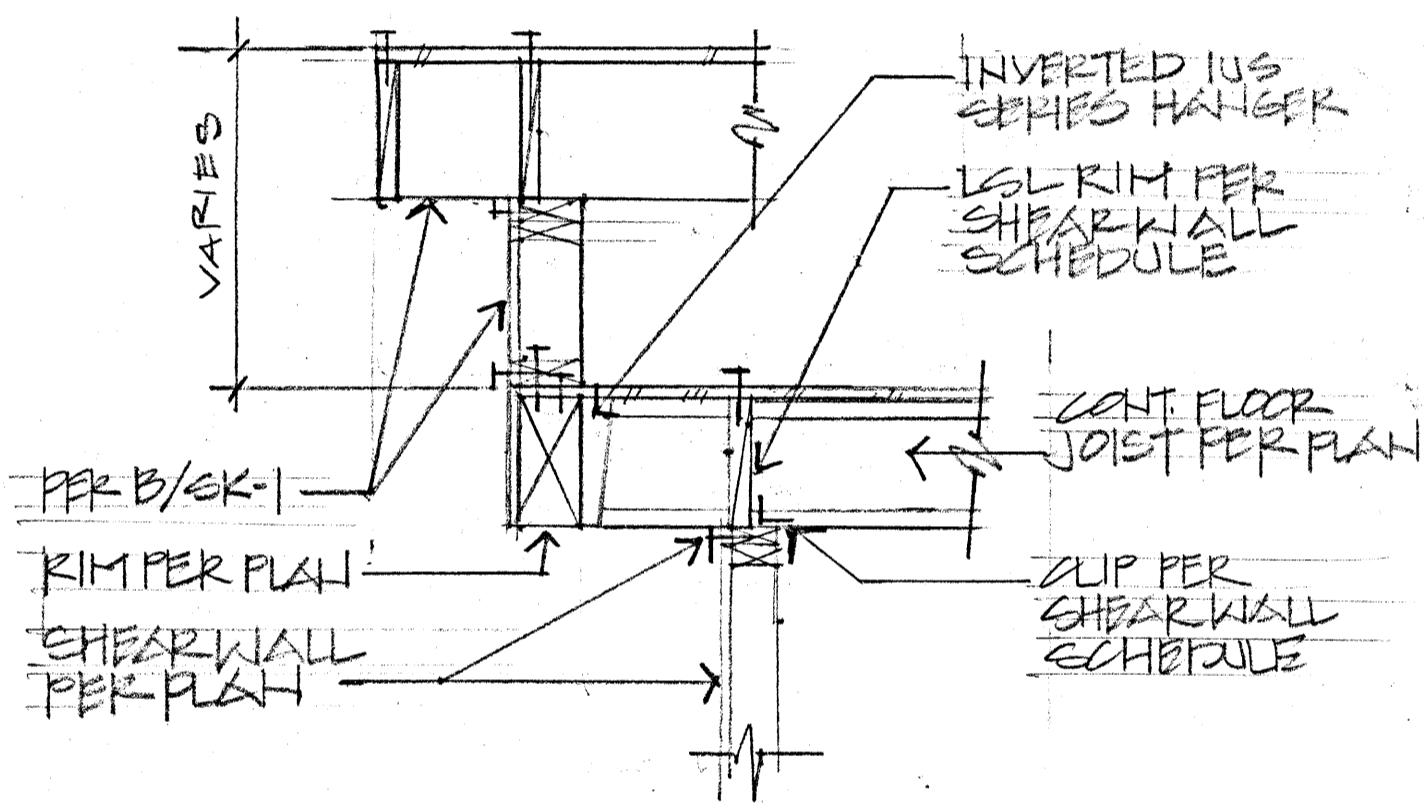
ADU DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND WASHINGTON  
 BY TONI SANTOS 206-854-8120



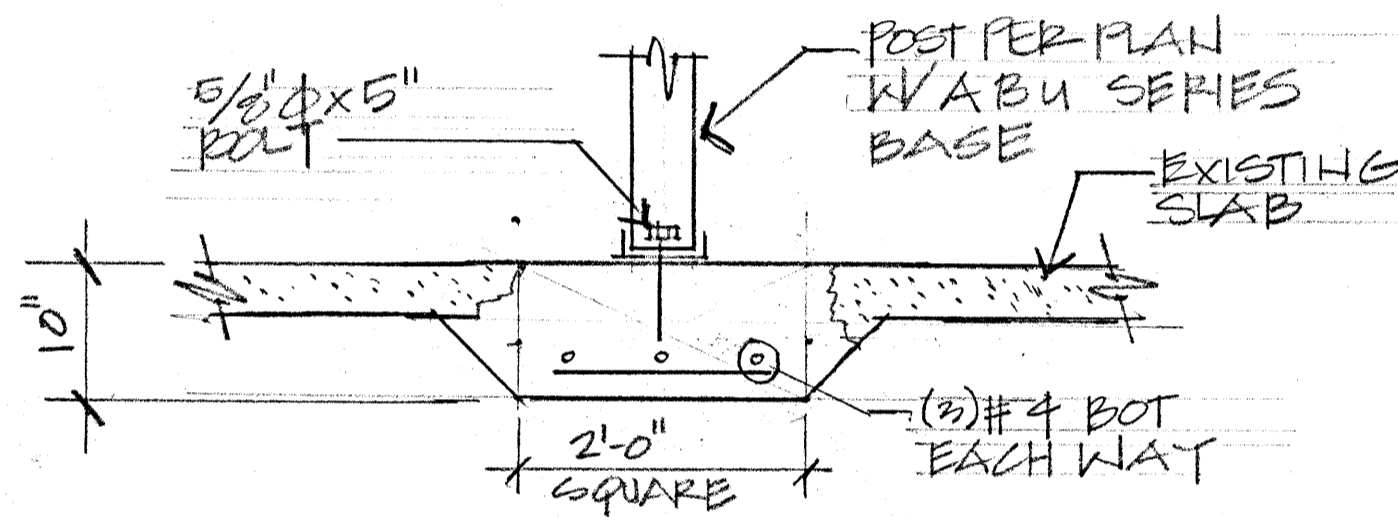
DETAIL SK-5



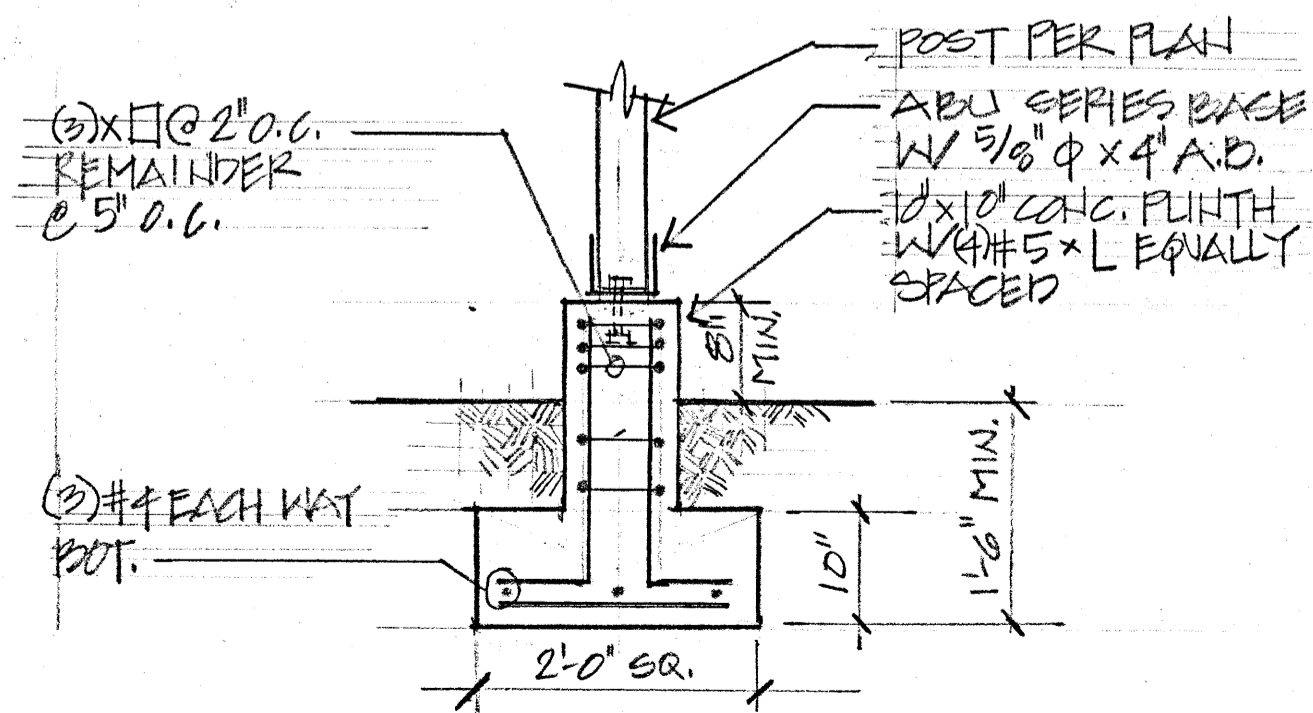
DETAIL SK-6



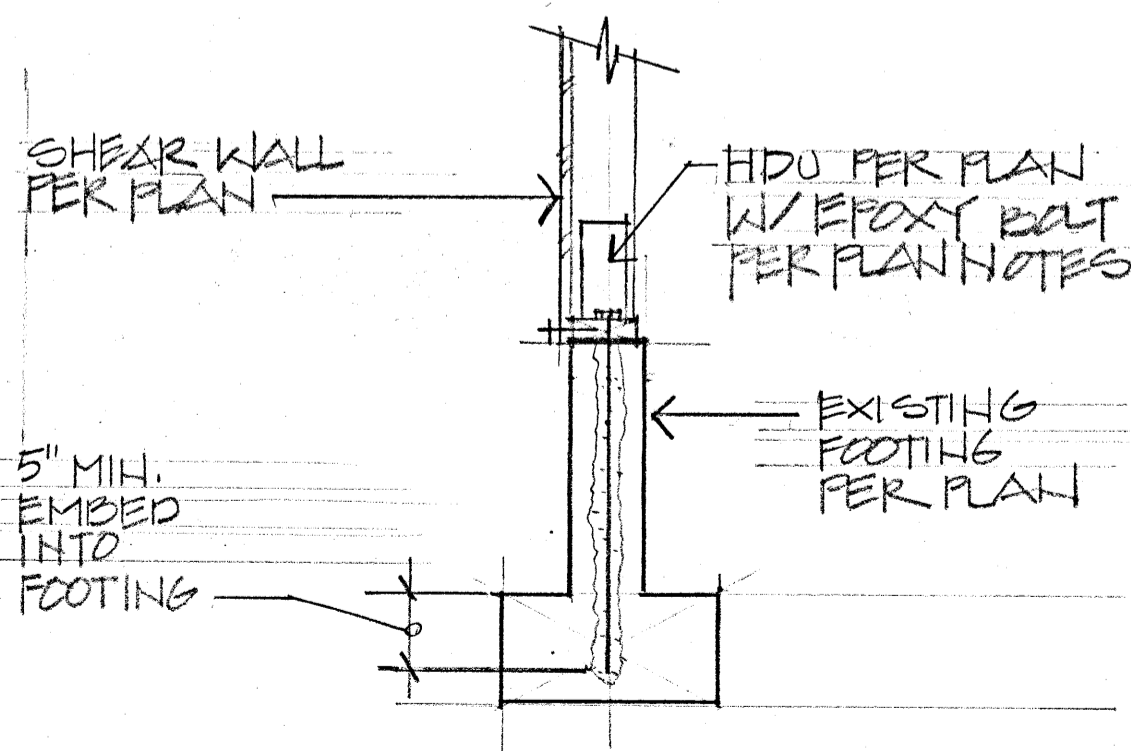
DETAIL SK-7



DETAIL SK-8



DETAIL SK-9



DETAIL SK-10

STRUCTURAL DETAILS

ADU DESIGN FOR ELAINE BERRYMAN  
 5222 WEST MERCER WAY  
 MERCER ISLAND, WASHINGTON  
 BY TOLI GANTOS 206.854.8120

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## GENERAL STRUCTURAL NOTES

(The following apply unless shown otherwise on the plans)

### CRITERIA

1. ALL MATERIALS WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE 2018 INTERNATIONAL BUILDING CODE (IBC) INCLUDING WASHINGTON STATE MODIFICATIONS.
2. DESIGN LOADING CRITERIA

SNOW LOAD	GROUND SNOW LOAD, $P_g = 25$ PSF
FLOOR LIVE LOAD (RESIDENTIAL)	40 PSF
FLOOR LIVE LOAD (RESIDENTIAL BALCONIES AND DECKS)	60 PSF
GUARDRAILS/BALCONY RAILS (RESIDENTIAL)	200 LBS.
WIND (MAIN WIND FORCE RESISTING SYSTEM)	BASIC WIND SPEED = 97 MPH ALLOWABLE STRESS DESIGN WIND SPEED = 75 MPH IMPORTANCE FACTOR, $I_w = 1.0$ RISK CATEGORY = II TOPOGRAPHIC FACTOR, $K_{zt} = 1.6$ EXPOSURE CATEGORY = B INTERNAL PRESSURE COEFFICIENT, $(GC_{pi}) = 0.18/-0.18$ WIND BASE SHEAR = 9.4 KIPS, 9.0 KIPS
EARTHQUAKE (EQUIVALENT LATERAL FORCE PROCEDURE)	$S_s = 1.448$ $S_{ds} = 1.158$ $S_1 = 0.503$ $S_{d1} = 0.503$ IMPORTANCE FACTOR, $I_e = 1.0$ SITE CLASS D SEISMIC DESIGN CATEGORY = D RISK CATEGORY = II R = 6.5 FOR WOOD STRUCTURAL PANEL SHEAR WALLS OVER STRENGTH FACTOR, $\Omega_o = 3.0$ DEFLECTION AMPLIFICATION FACTOR, $C_d = 4.0$ REDUNDANCY FACTOR = 1.0 SEISMIC RESPONSE COEFFICIENT, $C_s = 0.178$
RAIN INTENSITY	SEISMIC BASE SHEAR = 6.8 KIPS 1.0 INCHES/HOUR
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.
5. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THE WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED, BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
9. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE, AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
10. MECHANICAL / ELECTRICAL / PLUMBING: CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING THE LOCATION, LOADS, AND ANCHORAGE OF ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER ATTACHMENTS IN EXCESS OF 50 POUNDS TO STRUCTURAL ENGINEER FOR REVIEW PRIOR TO INSTALLATION. ALL DETAILS NECESSARY FOR ATTACHING THESE SYSTEMS TO THE BASE BUILDING STRUCTURE, INCLUDING THE DESIGN AND DETAILING OF THE DESIGNATED SEISMIC LOAD RESISTING SYSTEM AS REQUIRED BY SECTION 1705.12.4 OF THE INTERNATIONAL BUILDING CODE, ARE THE RESPONSIBILITY OF THE SUPPLIER OF THAT EQUIPMENT AND MUST BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WASHINGTON.
11. STATEMENT SPECIAL INSPECTIONS:

THE FOLLOWING CONSTRUCTION TYPES ARE TO BE REVIEWED BY A SPECIAL INSPECTOR DESIGNATED BY THE OWNER OR ARCHITECT. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. SPECIAL INSPECTION SHALL CONFORM TO SECTION 1704 OF THE 2018 INTERNATIONAL BUILDING CODE. SPECIAL INSPECTION AGENCY SHALL BE RESPONSIBLE FOR KEEPING RECORDS OF SPECIAL INSPECTIONS AND TESTS. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION REPORTS AND TEST RESULTS.

POST INSTALLED ANCHORS: PERIODIC SPECIAL INSPECTION IN ACCORDANCE WITH THE PRODUCTS APPROVED ICC-ES REPORT.
12. THE CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM, DESIGNATED WIND OR SEISMIC SYSTEM, OR SEISMIC FORCE RESISTING COMPONENT SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK AS REQUIRED BY SECTION 1704.4 OF THE INTERNATIONAL BUILDING CODE.

## GEOTECHNICAL

13. FOUNDATION NOTES: ALLOWABLE BEARING PRESSURE AND COEFFICIENT OF FRICTION HAVE BEEN ASSUMED PER IBC TABLE 1806.2. LATERAL EARTH PRESSURES HAVE BEEN ASSUMED PER IBC TABLE 1610.1. IT HAS BEEN ASSUMED THAT EXISTING SOILS ARE A COMBINATION OF SAND, SILTY SAND, AND POORLY GRADED SAND-SILT/SAND GRAVEL MIXES. IF SOILS ARE FOUND TO BE OTHER THAN ASSUMED, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED EARTH AT LEAST 18" BELOW ADJACENT FINISHED GRADE, UNLESS OTHERWISE NOTED, FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE.

BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE.

ALLOWABLE SOIL PRESSURE	2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	60 PCF/45 PCF
LATERAL EARTH PRESSURE (SEISMIC)	8H (ULTIMATE LOAD)
PASSIVE EARTH PRESSURE (INCLUDES FACTOR OF SAFETY = 1.5)	150 PCF
COEFFICIENT OF FRICTION (INCLUDES FACTOR OF SAFETY = 1.5)	0.25

## RENOVATION

14. 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. EXISTING REINFORCING SHALL BE SAVED WHERE AND AS NOTED ON THE PLANS. SAW CUTTING, IF AND WHERE USED, SHALL NOT CUT EXISTING REINFORCING THAT IS TO BE SAVED. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. LIMIT CONSTRUCTION LOADING (INCLUDING DEMOLITION DEBRIS) ON EXISTING FLOOR SYSTEMS TO 40 PSF.
  - a. ALL NEW OPENINGS THROUGH EXISTING WALLS, SLABS AND BEAMS SHALL BE ACCOMPLISHED BY SAW CUTTING WHEREVER POSSIBLE. OVERCUTTING AT CORNERS SHALL NOT BE PERMITTED.
  - b. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND LOCATION OF MEMBERS PRIOR TO CUTTING ANY OPENINGS.
  - c. SMALL ROUND OPENINGS SHALL BE ACCOMPLISHED BY CORE DRILLING, IF POSSIBLE.
  - d. WHERE NEW REINFORCING TERMINATES AT EXISTING CONCRETE, THREADED BARS INTO THREADED EXPANSION INSERTS IN EXISTING CONCRETE SHALL BE PROVIDED TO MATCH HORIZONTAL REINFORCING, UNLESS OTHERWISE NOTED ON PLANS.
15. CONTRACTOR SHALL CHECK FOR DRY ROT AT ALL EXTERIOR WALLS, EXISTING TOILET ROOM FLOORS AND WALLS, AREAS SHOWING WATER STAINS, AND ALL WOOD MEMBERS IN BASEMENT AND CRAWL SPACES. ALL ROT SHALL BE REMOVED AND DAMAGED MEMBERS SHALL BE REPLACED OR REPAIRED AS DIRECTED BY THE STRUCTURAL ENGINEER.
16. 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 BRING ALL CONFLICTS AND DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER.

## CONCRETE

17. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH ACI 318-14 AND ACI 301-16. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH ( $f'_c$ ) OF 3500 PSI BASED ON EXPOSURE CLASS F1, SHALL CONTAIN NO LESS THAN 5-1/2 SACKS OF CEMENT, HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.45, MAXIMUM AGGREGATE OF 3/4-INCH, AND A SLUMP OF 5 INCHES OR LESS. CONCRETE HAS BEEN DESIGNED BASED ON A CONCRETE STRENGTH ( $f'_c$ ) OF 2500 PSI PER INTERNATIONAL BUILDING CODE SECTION 1705.3 EXCEPTION 2.3 TO AVOID SPECIAL INSPECTIONS AND MATERIAL TESTING.

ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494M, AND C618. UNLESS OTHERWISE NOTED THE TOTAL AIR CONTENT SHALL BE 5%. AIR

CONTENT SHALL BE SAMPLED IN ACCORDANCE WITH ASTM C172 AND AIR CONTENT MEASURED IN ACCORDANCE WITH ASTM C231 OR C173.

18. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENTS S1), GRADE 60,  $F_y = 60,000$  PSI.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185

19. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI SP-66-04 AND ACI 318-14 CHAPTER 25. LAP ALL REINFORCEMENTS AS FOLLOWS:

BAR SIZE	MINIMUM LAP LENGTH	MINIMUM HOOK EMBEDMENT
#3	24-INCHES	6-INCHES
#4	31-INCHES	8-INCHES
#5	39-INCHES	11-INCHES

PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. 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. FIELD BENDING OF GRADE 60 REINFORCEMENT SHALL NOT BE ALLOWED.

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

FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
ALL OTHER CASES	1-1/2"

21. SLABS-ON-GRADE: UNLESS NOTED OTHERWISE SHALL BE 4" CONCRETE, REINFORCED WITH 6X6 W1.4XW1.4 WELDED WIRE FABRIC CENTERED IN SLAB. UNLESS OTHERWISE DIRECTED BY SOILS REPORT PROVIDE MINIMUM 10 MIL VAPOR BARRIER OVER 4" OF COMPACTED SAND OR GRAVEL.

22. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES. TOLERANCES FOR ALL STRUCTURAL CONCRETE AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI 117-10 AND ACI 117.1R-14.

23. 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 (3,000 PSI MINIMUM).

**POST INSTALLED ANCHORS**

24. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCEMENT. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND ICC-ES REPORT. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE INTERNATIONAL BUILDING CODE. SUBSTITUTIONS SHALL HAVE CURRENT ICC-ES APPROVAL.

**A. CONCRETE ANCHORS**

1. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 308.2 AND ICC-ES AC108. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
  - a. SIMPSON STRONG-TIE "STRONG-BOLT 2" (ICC-ES ESR-3037)
  - b. SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)
  - c. HILTI "KWIK BOLT TZ" (ICC-ES ESR-1917)
2. ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
  - a. SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)
  - b. SIMPSON STRONG-TIE "SET-3G" (ICC-ES ESR-4057)
  - c. SIMPSON STRONG-TIE "AT-XP" (IAPMO UES ER-263)
  - d. HILTI "HIT-RE 500-V3" (ICC-ES ESR-3814)
  - e. HILTI "HIT-HY 200" (ICC-ES ESR-3187)

**WOOD**

25. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17, LATEST EDITION. FURNISH TO THE FOLLOWING MINIMUM STANDARDS.

<p><b>JOISTS:</b> (2X, 3X, AND 4X MEMBERS) <b>BEAM AND STRINGERS:</b> (6 X AND LARGER MEMBERS) <b>POSTS AND TIMBERS:</b> (6 X AND LARGER MEMBERS) <b>STUDS PLATES &amp; MISCELLANEOUS LIGHT FRAMING</b> (FINGER JOINTED STUDS MAY NOT BE USED UNLESS WITH APPROVAL FROM STRUCTURAL ENGINEER)</p>	<p>HEM-FIR NO. 2 MINIMUM BASE VALUE, F<sub>b</sub> = 850 PSI DOUGLAS FIR LARCH NO. 1 MINIMUM BASIC DESIGN STRESS, F<sub>b</sub> = 1,350 PSI DOUGLAS FIR LARCH NO. 1 MINIMUM BASIC DESIGN STRESS, F<sub>b</sub> = 1,200 PSI, F<sub>c</sub> = 1,000 PSI DOUGLAS FIR LARCH OR HEM-FIR NO. 2,</p>
<p><b>2X AND 3X TONGUE AND GROOVE DECKING</b></p>	<p>MINIMUM BASIC DESIGN STRESS F<sub>b</sub> = 850 PSI, F<sub>c</sub> = 1,300 PSI HEM-FIR COMMERCIAL DEX, F<sub>b</sub> = 1,350 PSI</p>

26. **PARALLEL STRAND LUMBER (PSL):** EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED ICC-ES EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F<sub>b</sub> = 2900 PSI, E = 2000,000 PSI, F<sub>v</sub> = 290 PSI.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

27. **LAMINATED VENEER LUMBER (LVL):** EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED ICC-ES EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F<sub>b</sub> = 2600 PSI, F<sub>v</sub> = 285 PSI, E = 2,000,000 PSI.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER, ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

28. **LAMINATED STRAND LUMBER (LSL):** EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, PRODUCT DESIGNATION OR TYPE, THE PRODUCTION DATE, SPECIES OR SPECIES GROUP DESIGNATION, AND THE QUALITY CONTROL AGENCY. MEMBERS SHALL BE GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED IN ACCORDANCE WITH ASTM D5456 AND PRODUCT SHALL HAVE AN APPROVED ICC-ES EVALUATION REPORT. MEMBERS SHALL BE TRANSPORTED AND STORED PER MANUFACTURERS RECOMMENDATIONS AND SHALL NOT BE EXPOSED TO PROLONGED MOISTURE. MINIMUM REQUIRED DESIGN PROPERTIES: F<sub>b</sub> = 2325 PSI, F<sub>v</sub> = 310 PSI, E = 1,550,000 PSI,

LSL RIM JOISTS SHALL CONFORM TO ANSI/APA PRR 410 AND SHALL BE MARKED IN ACCORDANCE WITH THE STANDARD.

DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY WEYERHAEUSER. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER, ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.

29. **PREFABRICATED PLYWOOD WEB JOIST** DESIGN SHOWN ON PLANS IS BASED ON JOIST MANUFACTURED BY THE WEYERHAEUSER. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

30. **PLYWOOD SHEATHING** SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1-09 OR PS 2-18 AND AMERICAN PLYWOOD ASSOCIATION PERFORMANCE STANDARD PRP-108. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS. EACH PANEL SHALL BE IDENTIFIED FOR GRADE AND GLUE TYPE BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY.

ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.

30. **PLYWOOD SHEATHING** SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1-09 OR PS 2-18 AND AMERICAN PLYWOOD ASSOCIATION PERFORMANCE STANDARD PRP-108. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD. SEE PLANS FOR THICKNESS, PANEL IDENTIFICATION INDEX AND NAILING REQUIREMENTS. EACH PANEL SHALL BE IDENTIFIED FOR GRADE AND GLUE TYPE BY THE TRADEMARKS OF AN APPROVED TESTING AND GRADING AGENCY.

31. **ALL WOOD PLATES** IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE, PROVIDE 2 LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER BETWEEN UNTREATED LEDGERS, BLOCKING, ETC. AND CONCRETE OR MASONRY.

PRESSURE TREATED LUMBER SHALL COMPLY WITH THE AMERICAN WOOD PROTECTION ASSOCIATION (AWPA) STANDARD U1, COMMODITY SPECIFICATION A AS INDICATED BELOW OR HAVE EQUIVALENT ICC-ES APPROVAL.

PROPOSED USE		AWPA USE CATEGORY
RESIDENTIAL DECKS	DECKING	3B
	JOISTS ABOVE GROUND	3B
	JOISTS IN CONTACT WITH GROUND	4A
	POSTS	4A
	RAILING	3B
	LEDGERS	3B
SAWN LUMBER	ABOVE GROUND	3B
	GROUND CONTACT	4A
PLYWOOD	DAMP ABOVE GROUND	2
	EXTERIOR ABOVE GROUND	3B
	GROUND CONTACT	4A
POLES	ROUND	4B
	SAWN	3B
FENCING	PICKETS, SLATS, AND TRIM	3B
	SAWN POSTS	4A
	ROUND POSTS	4A
	RAILS	3B
	SILL PLATES	2
	INTERIOR LEDGERS	2

ALL TREATED LUMBER SHALL BEAR THE QUALITY MARK OF AN ACCREDITED INSPECTION AGENCY. THE QUALITY MARK SHALL INCLUDE:

- A. IDENTIFICATION OF TREATING MANUFACTURER
- B. TYPE OF PRESERVATIVE USED
- C. MINIMUM PRESERVATIVE RETENTION (PCF)
- D. END USE FOR WHICH THE PRODUCT IS TREATED
- E. IDENTITY OF THE ACCREDITED INSPECTION AGENCY
- F. STANDARD TO WHICH THE PRODUCT IS TREATED

32. **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 TO ACHIEVE THE MAXIMUM PUBLISHED ALLOWABLE LOAD. ALL CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER. SHIMS, WHERE REQUIRED, SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. ALL LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES.

UNLESS NOTED OTHERWISE ALL SAWN LUMBER JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS AND ALL PREFABRICATED PLYWOOD WEB JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "IUS" SERIES JOIST HANGERS.

ALL CONNECTIONS/FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED OR FIRE-RETARDANT-TREATED WOOD, SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL. HOT DIPPED GALVANIZED FASTENERS SHOULD CONFORM TO ASTM STANDARD 153, AND HOT DIPPED GALVANIZED CONNECTORS SHOULD CONFORM TO ASTM STANDARD A653 (CLASS G-185). STAINLESS STEEL FASTENERS AND CONNECTORS SHOULD BE TYPE 304 OR 316. NOTE: ELECTROPLATED GALVANIZED FASTENERS AND CONNECTORS ARE NOT TO BE USED WITH PRESSURE TREATED WOOD. SIMPSON PRODUCT FINISHES CORRESPONDING TO THE ABOVE REQUIREMENTS ARE ZMAX (HOT DIPPED GALVANIZED) AND SST300 (STAINLESS STEEL). STAINLESS STEEL HARDWARE AND FASTENERS SHALL NOT BE COMBINED WITH UNTREATED OR GALVANIZED MATERIAL.

33. **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	3-1/2"	0.162"

DESIGN IS BASED ON COMMON STEEL WIRE NAILS MEETING THE REQUIREMENTS OF ASTM F1667. USE OF ALTERNATE FASTENERS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.

B. **NAILS – PLYWOOD (APA RATED SHEATHING)** FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.

34. **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. MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO TABLE 2304.10.1 OF THE INTERNATIONAL BUILDING CODE. UNLESS NOTED OTHERWISE, ALL NAILS SHALL BE AS SPECIFIED ABOVE.

COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. INSTALLATION OF BOLTS AND LAG SCREWS SHALL CONFORM TO SECTIONS 12.1.3 AND 12.1.4 OF THE 2018 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. NATURALLY DURABLE OR PRESSURE TREATED WOOD SHALL BE PROVIDED WHERE REQUIRED BY SECTION 2304.12 OF THE INTERNATIONAL BUILDING CODE.

- B. WALL FRAMING: ALL STUD WALLS SHOWN AND NOT OTHERWISE NOTED SHALL BE 2X6 AT 16" O.C. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS. TWO 2 x 8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED AND SHALL BEAR FULLY ON A MINIMUM OF TWO STUDS. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE SOLID BLOCKING BETWEEN STUDS AT MID-HEIGHT OF ALL STUD WALLS OVER 10' IN HEIGHT.

STUDS MAY BE NOTCHED, CUT, OR PENETRATED WITH ROUND BORED HOLES AS FOLLOWS:

STUD SIZE	MAXIMUM NOTCH / CUT	MAXIMUM BORED HOLE
2X4	7/8"	1-3/8"
2X6	1-3/8"	2-1/8"

BORED HOLES SHALL NOT BE LOCATED WITH 5/8" FROM THE EDGE OF THE STUD OR AT THE SAME LOCATION AS A NOTCH OR CUT.

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 AT 12" O.C. AND LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE EIGHT 16d NAILS AT 4" O.C. EACH SIDE OF JOINT.

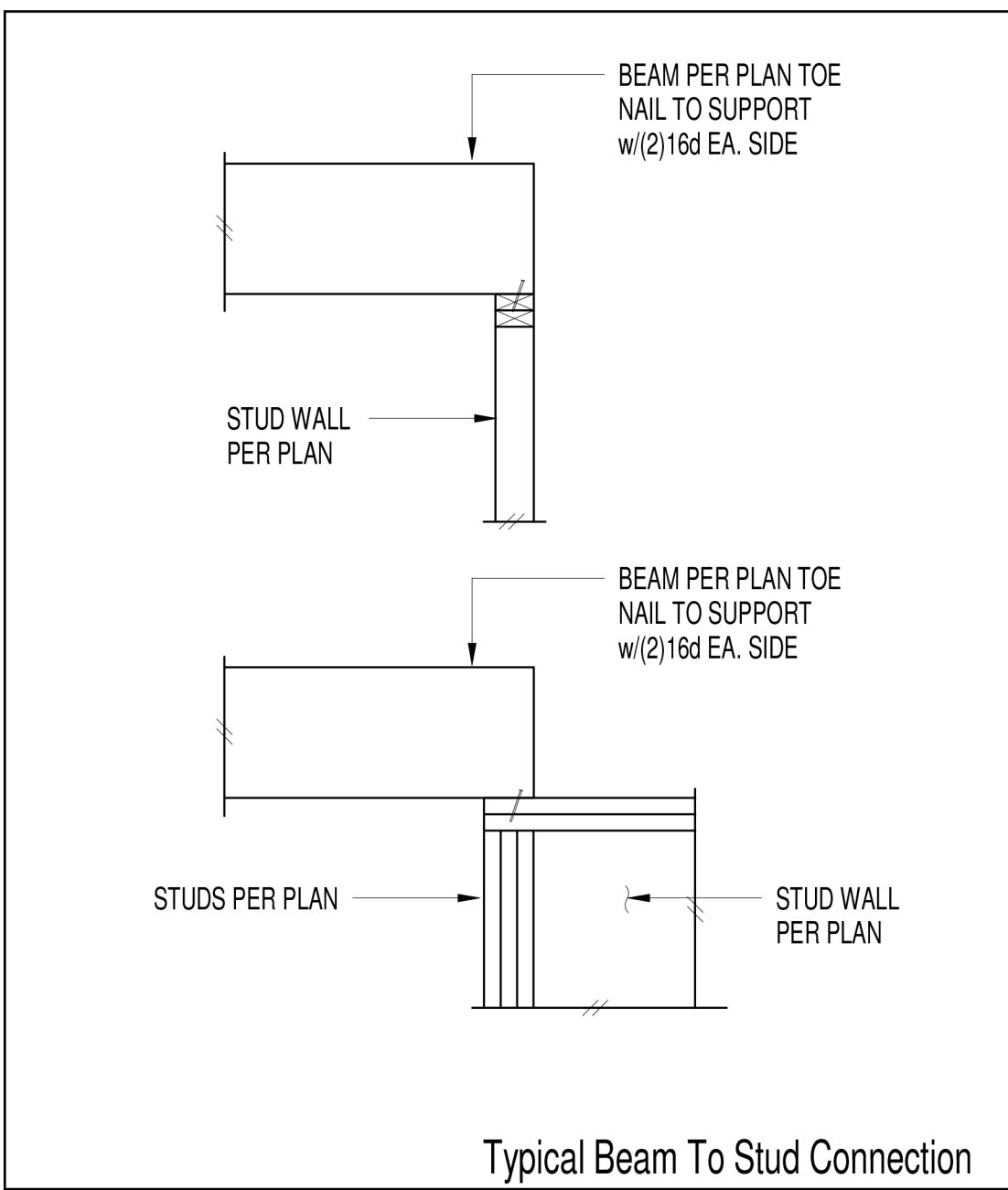
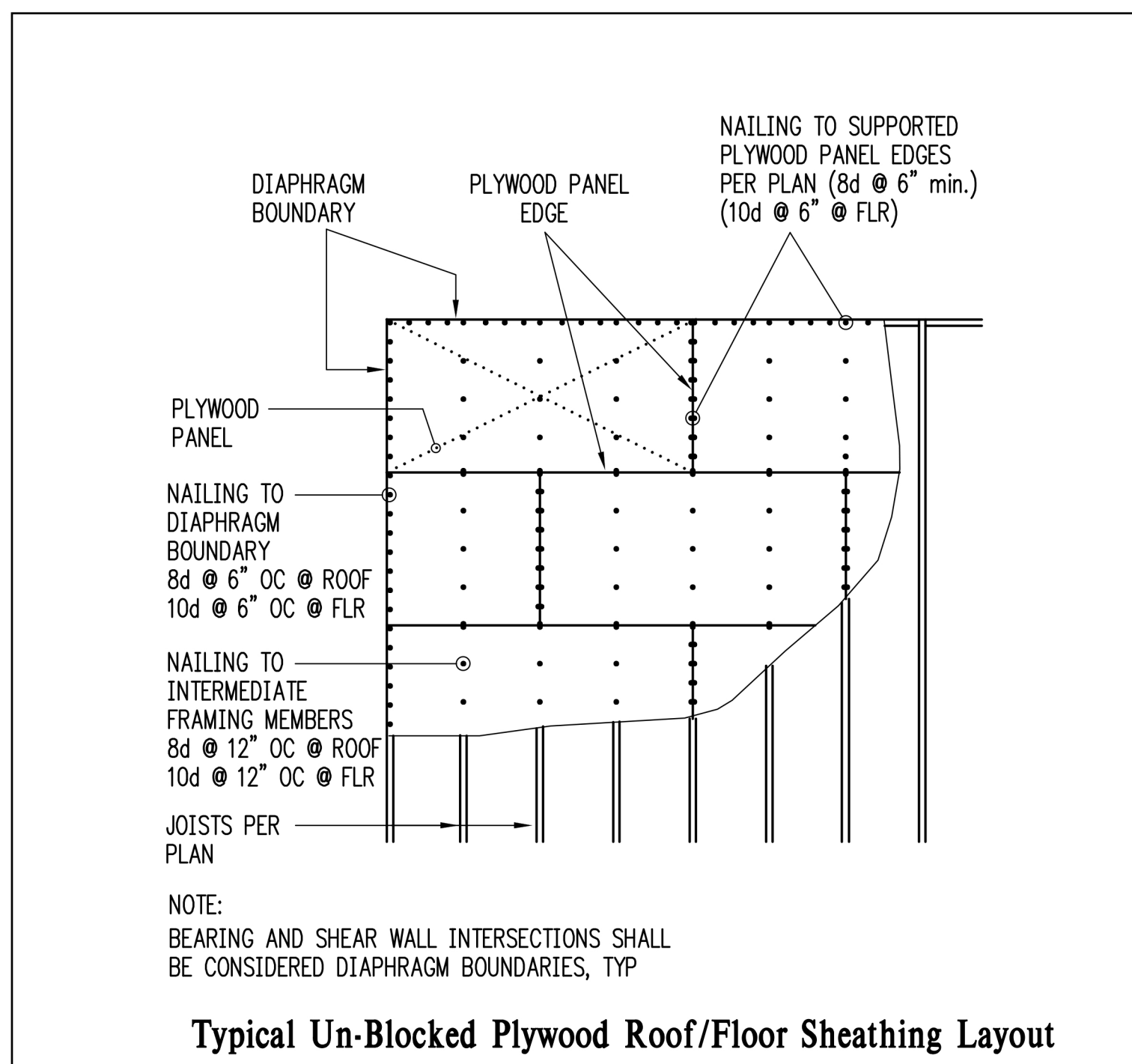
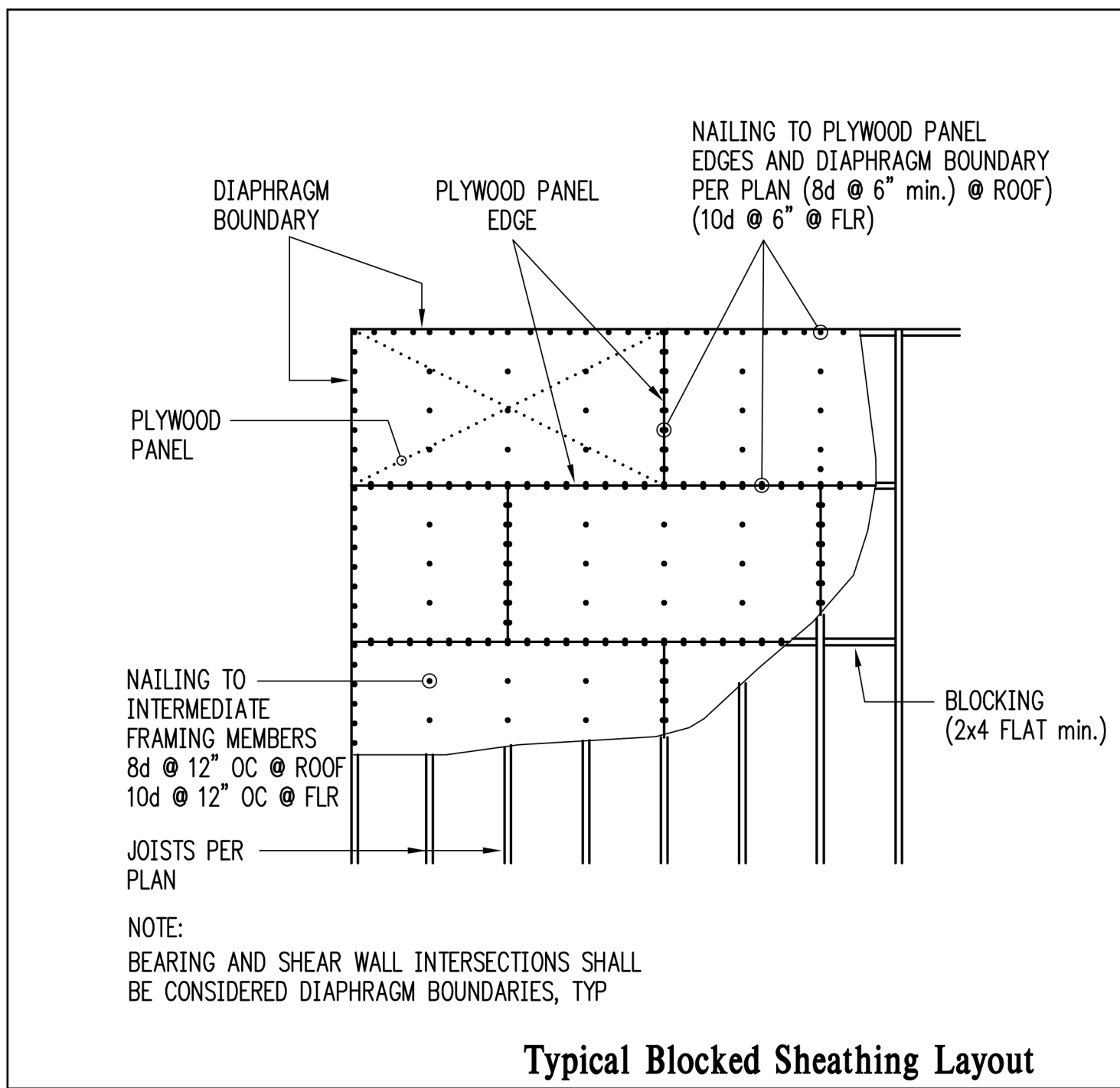
ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS AT 12" O.C. STAGGERED OR BOLTED TO CONCRETE WITH 5/8" DIAMETER ANCHOR BOLTS (WITH 7" MINIMUM EMBEDMENT) @ 4'-0" O.C. UNLESS INDICATED OTHERWISE. PROVIDE 3"x3" x1/4" HOT-DIPPED GALVANIZED PLATE WASHERS AT ALL ANCHOR BOLTS. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH 16d NAILS @ 12" O.C. STAGGERED. REFER TO THE PLANS AND SHEAR WALL SCHEDULE FOR REQUIRED SHEATHING AND NAILING. WHEN NOT OTHERWISE NOTED, PROVIDE GYPSUM WALLBOARD ON INTERIOR SURFACES NAILED TO ALL STUDS, TOP AND BOTTOM PLATES AND BLOCKING WITH NAILS AT 7" O.C. USE 5d COOLER NAILS FOR 1/2" GWB AND 6d COOLER NAILS FOR 5/8" GWB. PROVIDE 15/32" APA RATED SHEATHING (SPAN RATING 24/0) ON EXTERIOR SURFACES NAILED AT ALL PANEL EDGES (BLOCK UNSUPPORTED EDGES), TOP AND BOTTOM PLATES WITH 8d NAILS @ 6" O.C. AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH NAILS @ 12" O.C. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND 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 AT ALL BEARING POINTS.

NOTCHES AT THE END OF JOISTS AND RAFTERS SHALL NOT EXCEED 1/4 THE DEPTH OF THE MEMBER. NOTCHES IN THE TOP OR BOTTOM SHALL NOT EXCEED 1/6 THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN THE MIDDLE 1/3 OF THE SPAN. THE DIAMETER OF ROUND HOLES BORED IN JOISTS AND RAFTERS SHALL NOT EXCEED 1/3 OF THE DEPTH OF THE MEMBER AND SHALL NOT BE LOCATED WITHIN 2" FROM THE TOP OR BOTTOM EDGE.

TOENAIL 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 OF 16d @ 12" O.C. ATTACH RAFTERS AND ROOF TRUSSES AT BEARING LINES WITH H2.5 @ 24" O.C. UNLESS OTHER METAL CONNECTIONS ARE INDICATED.

UNLESS OTHERWISE NOTED ON THE PLANS, APA RATED ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS AND ATTACHED WITH 10d NAILS @ 6" O.C. TO FRAMED PANEL EDGES AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" O.C. TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF ALL ROOF AND FLOOR SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d NAILS @ 12" O.C. UNLESS OTHERWISE NOTED. AT BLOCKED FLOOR AND ROOF DIAPHRAGMS PROVIDE FLAT 2X BLOCKING AT ALL UNFRAMED PANEL EDGES AND FASTEN SHEATHING TO FRAMING/BLOCKING AS SPECIFIED.



**SHEARWALL SCHEDULE**

Mark	Sheathing	Blok'g	Panel Nailing <sup>1</sup>	Attachment to top plate <sup>3</sup>	Bottom Plate Attachment			Capacity (plf) (Seismic)
					Rim Joist Req'd	Nailing to <sup>4</sup> wood below	A. Bolts to <sup>5</sup> concrete below	
SW 1	15/32" APA Sheathing	Yes	8d @ 6"oc	CLIP @ 24"oc	2x or 1 3/4" LSL	16d @ 6"oc	5/8" @ 48"oc	240
SW 2	15/32" APA Sheathing	Yes	8d @ 4"oc <sup>2</sup>	CLIP @ 20"oc	2x or 1 3/4" LSL	16d @ 4 3/4"oc	5/8" @ 48"oc	355

<sup>1</sup> Nails shall be 8d box. Nailing applies to all panel edges (block all unsupported panel edges), top & bottom plates and blocking. Nail to intermediate framing members w/ 8d @ 12"oc. (Note: where stud spacing is 24"oc, nail to intermediate framing members with 8d@6"oc.)

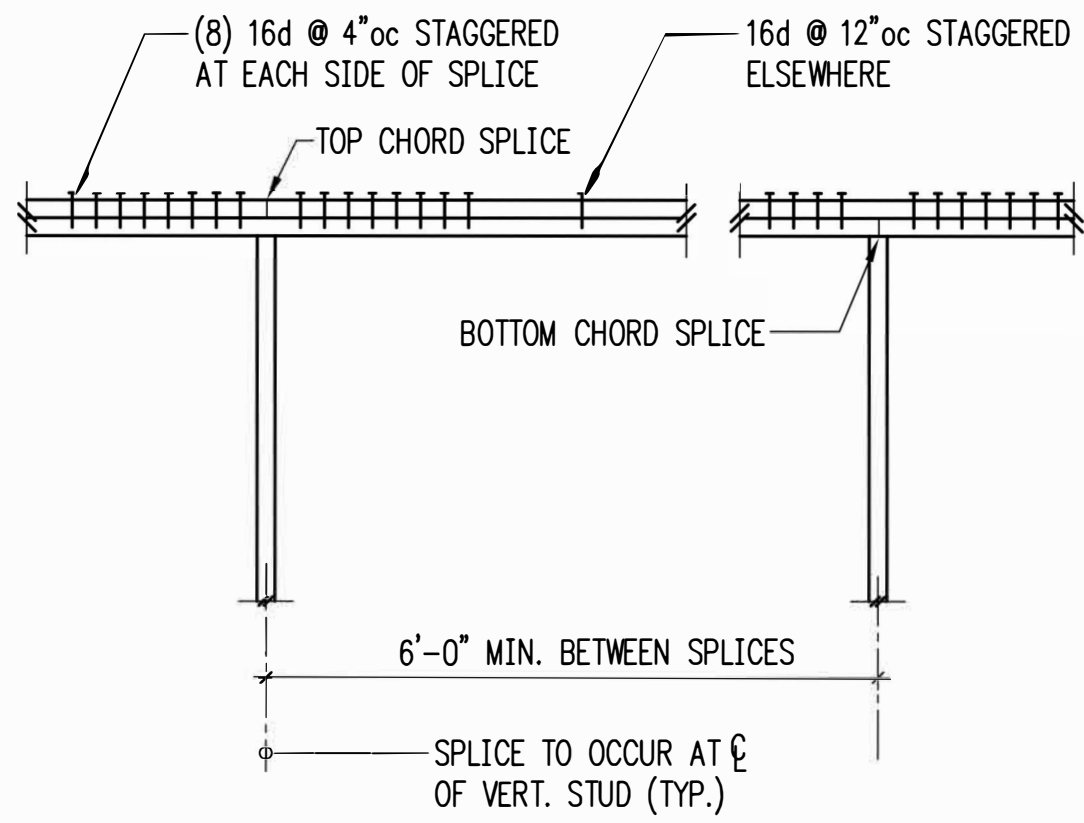
<sup>2</sup> Framing at adjoining panel edges shall be 3-inch nominal or wider and nails shall be staggered.

<sup>3</sup> Clip shall be either A35, LTP4.

<sup>4</sup> Nails shall be 16d box (0.135Øx3 1/2") or 10d common (0.148Øx3 1/2")  
Screws shall be Simpson SDS25412 (1/4"Øx4 1/2"min).

<sup>5</sup> Provide 3"x3"x0.229" plate washer at all anchor bolts. Anchor bolts shall be positioned such that plate edge of plate washer is with 1/2" of the edge of the bottom plate.  
(Plate washers may be diagonally slotted with a width of up to 13/16" and a length not to exceed 1 3/4")





Typical Top Plate Splice - Side View

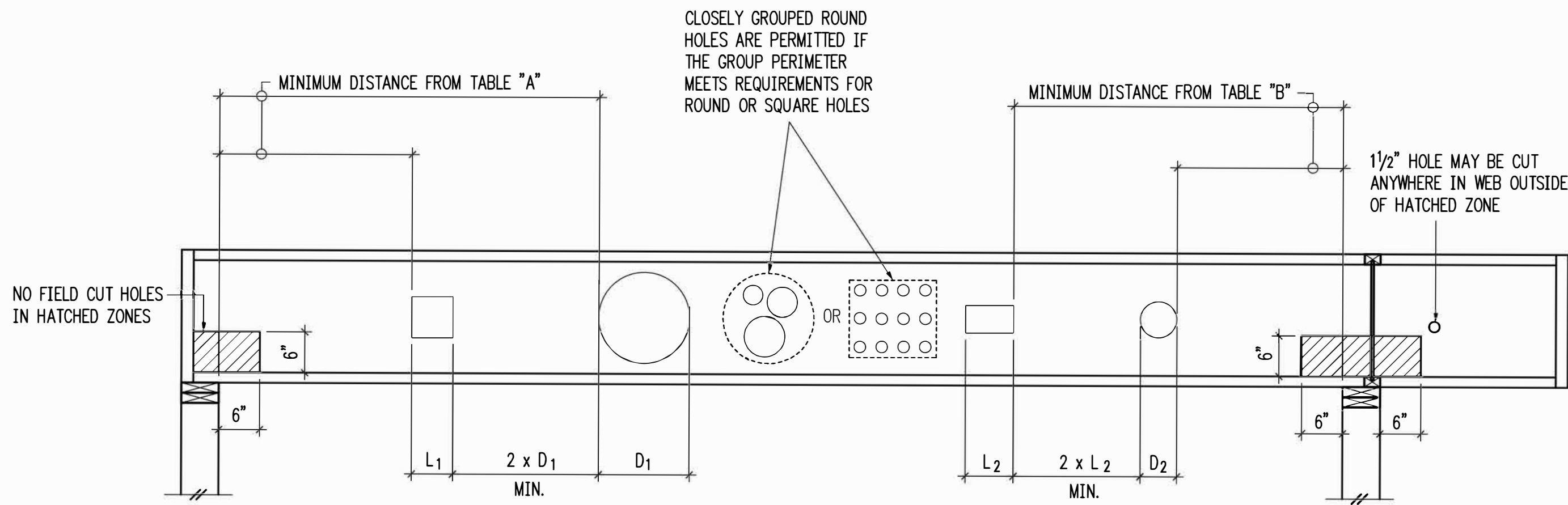
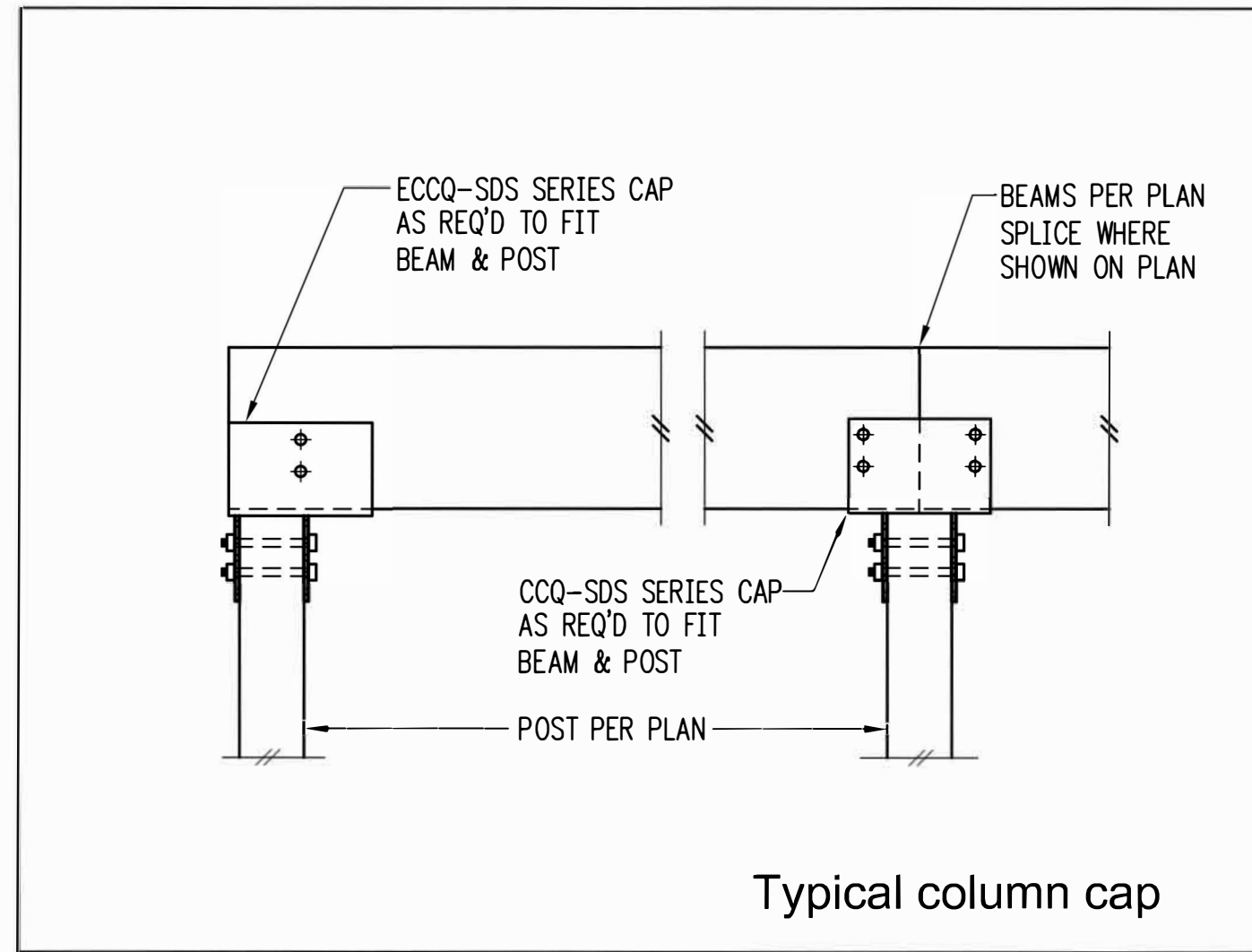


TABLE A - END SUPPORT

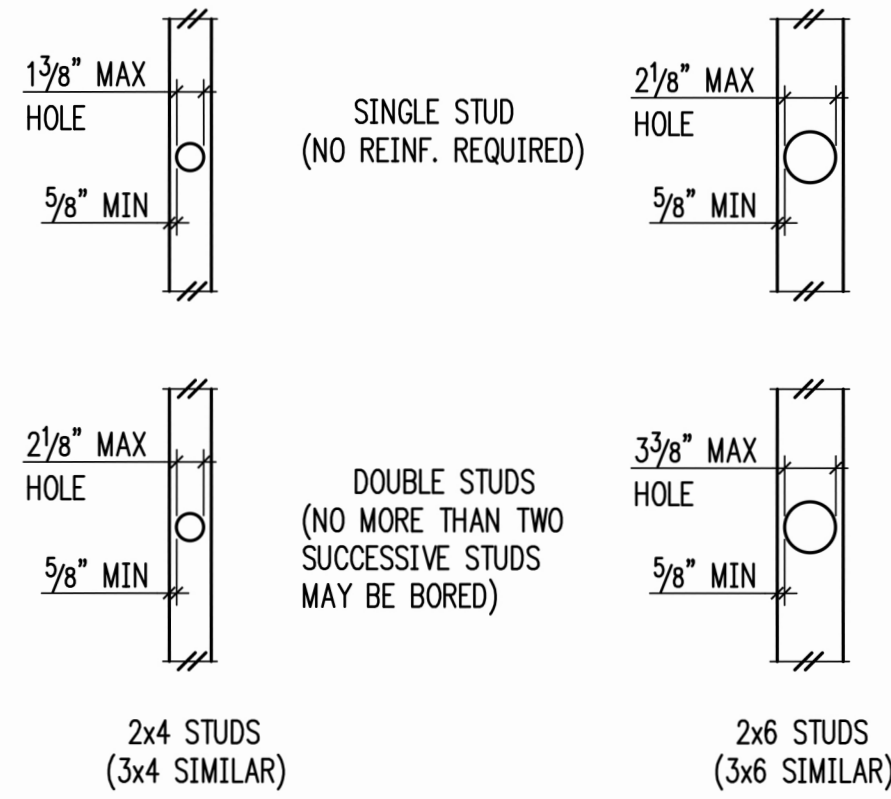
MINIMUM DISTANCE FROM EDGE OF HOLE TO INSIDE FACE OF NEAREST END SUPPORT

DEPTH	TJI	○ ROUND HOLE SIZE									□ SQUARE OR RECTANGULAR HOLE SIZE								
		2"	3"	4"	5"	6 1/2"	7"	8 7/8"	11"	13"	2"	3"	4"	5"	6 1/2"	7"	8 7/8"	11"	13"
9 1/2"	110	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"	-	-	-	-	1'-0"	1'-6"	2'-6"	3'-6"	4'-6"	-	-	-	-
	210	1'-0"	1'-6"	2'-6"	3'-0"	5'-6"	-	-	-	-	1'-0"	2'-0"	2'-6"	4'-0"	5'-0"	-	-	-	-
	230	1'-6"	2'-0"	2'-6"	3'-6"	5'-6"	-	-	-	-	1'-0"	2'-0"	3'-0"	4'-6"	5'-0"	-	-	-	-
11 7/8"	110	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	5'-6"	-	-	1'-0"	1'-6"	2'-0"	2'-6"	4'-6"	5'-0"	6'-0"	-	-
	210	1'-0"	1'-6"	2'-0"	2'-0"	3'-0"	3'-6"	6'-0"	-	-	1'-0"	1'-6"	2'-6"	3'-0"	5'-0"	5'-6"	6'-6"	-	-
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	6'-6"	-	-	1'-0"	2'-0"	2'-6"	3'-6"	5'-6"	5'-6"	7'-0"	-	-
	360	1'-6"	2'-0"	3'-0"	3'-6"	4'-6"	5'-0"	7'-0"	-	-	1'-6"	2'-6"	3'-6"	4'-6"	6'-6"	6'-6"	7'-6"	-	-
	560	1'-6"	2'-6"	3'-0"	4'-0"	5'-6"	6'-0"	8'-0"	-	-	2'-6"	3'-6"	4'-6"	5'-6"	7'-0"	7'-6"	8'-0"	-	-

S10



NOTE: BORED HOLES SHALL NOT BE LOCATED @ THE SAME SECTION OF STUD AS A NOTCH.

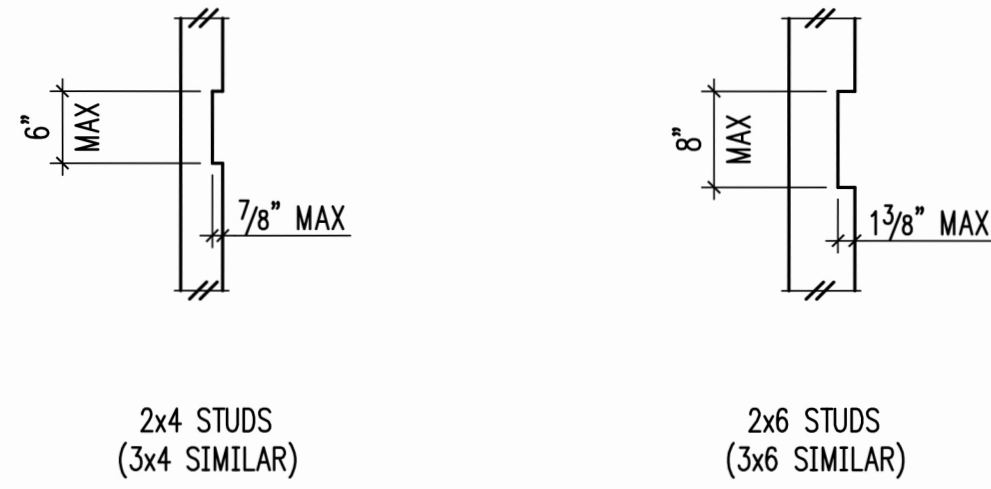


- NOTES:
1. BORED HOLES SHALL NOT BE LOCATED @ THE SAME SECTION OF STUD AS A NOTCH.
  2. WHERE HOLES EXCEED MAX. SIZE ABOVE, PROVIDE CS14 STRAP x 2'-0" CENTERED ON HOLE.

**Holes Allowed Through Studs**

Scale : N.T.S.

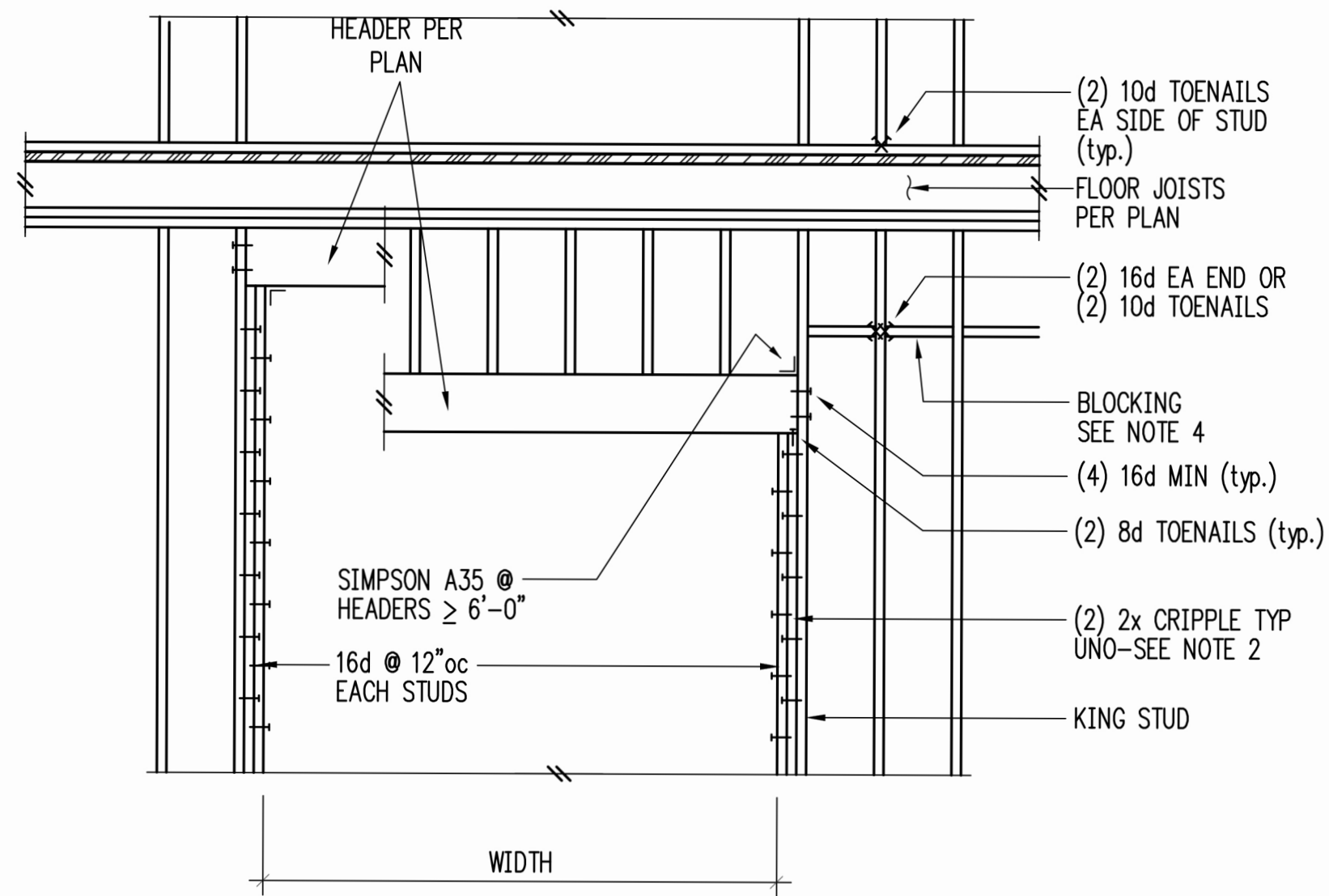
NOTE: NOTCHES SHALL NOT OCCUR IN MORE THAN (2) SUCCESSIVE STUDS



- NOTES:
1. ANY NOTCH OR HOLE THRU STUDS EXCEEDING ABOVE DETAIL PROVIDE CS14 STRAP x 2'-0" CENTERED ON HOLE.

**Allowable Notches In Studs**

Scale : N.T.S.



NOTES:

1. HEADERS PER PLAN
2. PROVIDE (2) 2x CRIPPLE STUDS MINIMUM TYPICAL, U.O.N.
3. SEE ARCHITECTURAL DRAWINGS FOR OPENING SIZES AND LOCATIONS
4. 2x SOLID BLOCKING REQUIRED AT CEILING LINE, ALL PANEL EDGES, AND @ 8'-0"oc MAX.

**Typical Wall Opening Framing Elevation**

TABLE B - INTERMEDIATE OR CANTILEVER SUPPORT

MINIMUM DISTANCE FROM EDGE OF HOLE TO INSIDE FACE OF NEAREST INTERMEDIATE OR CANTILEVER SUPPORT

DEPTH	T/J	□ SQUARE OR RECTANGULAR HOLE SIZE													
		2"	3"	4"	5"	6 1/2"	7"	8 7/8"	11"	13"					
9 1/2"	110	1'-0"	2'-0"	2'-6"	3'-6"	4'-6"	5'-6"	7'-6"	8'-0"	8'-6"	9'-0"	10'-0"	11'-0"	12'-0"	
	210	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-6"	8'-6"	9'-6"	10'-6"	
	230	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-6"	8'-6"	9'-6"	10'-6"	11'-0"	
	110	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	210	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	360	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	9'-6"	
	560	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	
	11 7/8"	110	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
		210	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
230		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
110		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
210		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
230		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
360		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	9'-6"	
560		1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	
13"		110	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
		210	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	110	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	210	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
	360	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	9'-6"	
	560	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	
	15"	110	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
		210	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"
230		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
110		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
210		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
230		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	
360		2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	9'-6"	
560		1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"	6'-6"	7'-0"	7'-6"	8'-6"	

GENERAL NOTES

- HOLES MAY BE LOCATED VERTICALLY ANYWHERE WITHIN THE WEB. LEAVE 1/8" OF WEB (MINIMUM) AT TOP AND BOTTOM OF HOLE.
- KNOCKOUTS ARE LOCATED IN WEB AT APPROXIMATELY 12" ON-CENTER, THEY DO NOT AFFECT HOLE PLACEMENT.
- DO NOT CUT OR NOTCH FLANGE.