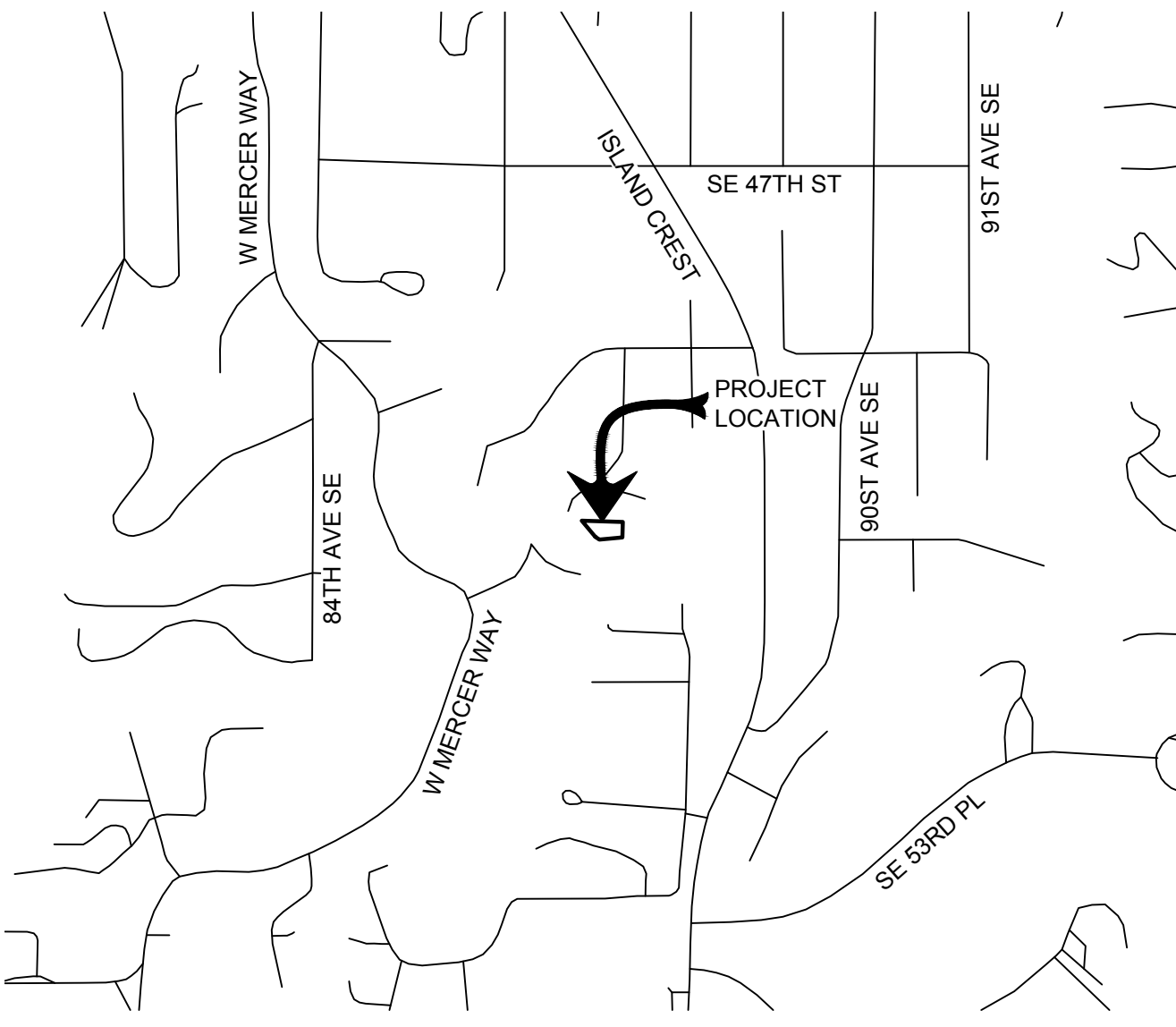
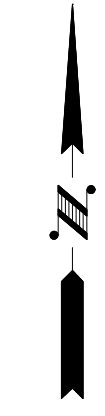
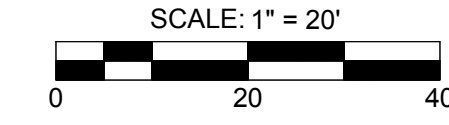
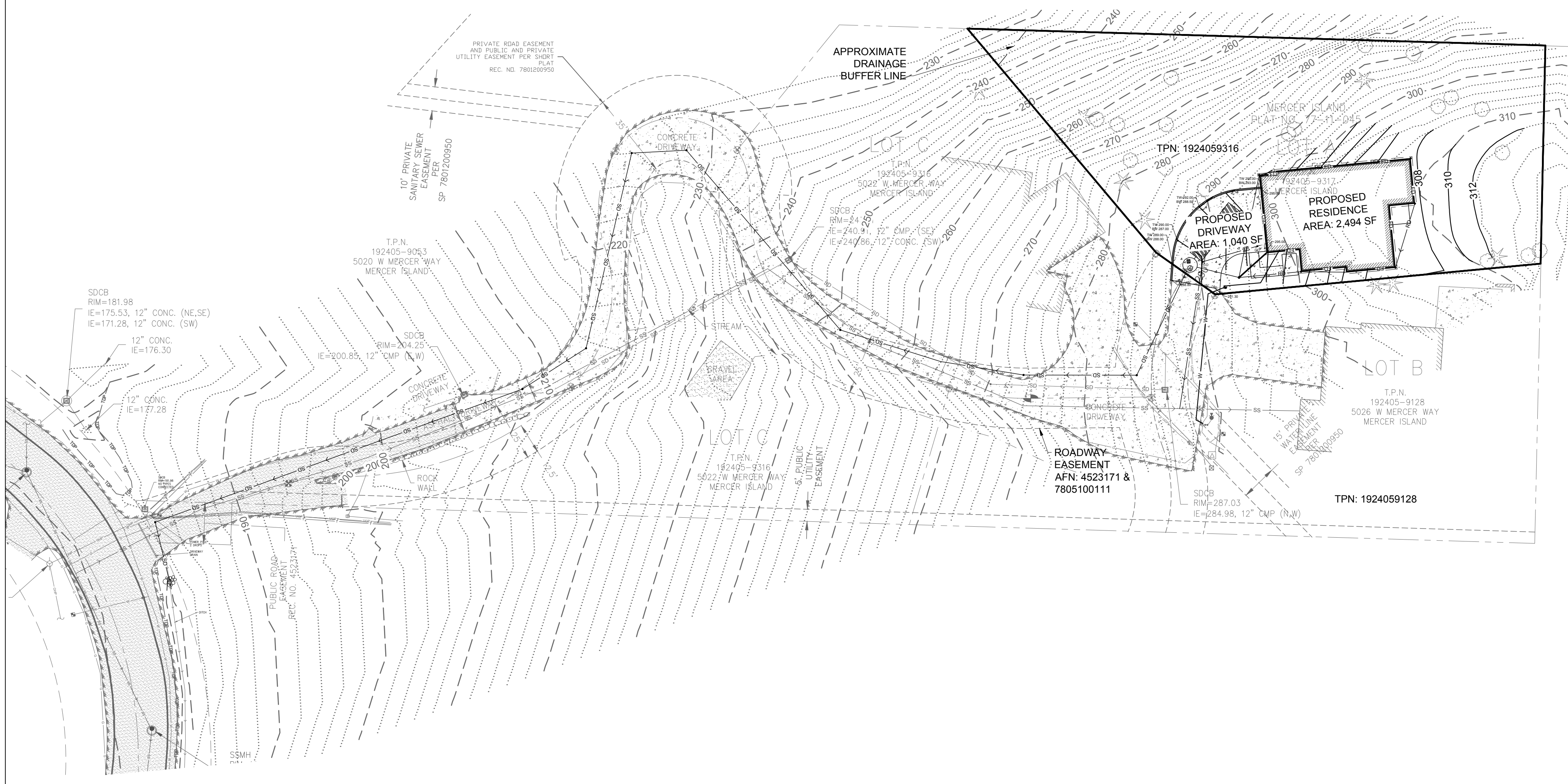


# CHEN RESIDENCE

TPN: 1924059317



VICINITY MAP  
NTS



**PROJECT INFO**

OWNER:  
ATERA HOMES, LLC  
451 DUVAL AVE NE, SUITE 115  
RENTON, WA 98059

**VERTICAL DATUM**

NAVD-88

**PARCEL NUMBER**

TPN: 1924059317

**BUILDING AREA**

LOT SIZE:	19,343 SF
FOOTPRINT:	2,188 SF
ROOF:	2,494 SF
DRIVEWAY/PARKING:	1,040 SF
SIDEWALK/PORCH:	170 SF
TOTAL COVERAGE:	3,704 SF OR 19.1%

**LEGAL DESCRIPTION**

THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 200.00 FEET; THENCE N 01°16'04" E, A DISTANCE OF 116.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE S 84°38'18" W A DISTANCE OF 135.06 FEET; THENCE N 54°46'00" W, A DISTANCE OF 30.00 FEET; THENCE N 40°04'12" W, A DISTANCE OF 121.05 FEET TO THE SOUTHERLY BOUNDARY OF MERHAVEN DIVISION NO. 3, AS RECORDED IN VOLUME 68 OF PLATS, PAGES 7 AND 8, RECORDS OF KING COUNTY, WASHINGTON; THENCE 86°17'59" E ALONG SAID SOUTHERLY BOUNDARY LINE, A DISTANCE OF 239.00 FEET; THENCE S 01°16'04" W, A DISTANCE OF 90.25 FEET TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH AND SUBJECT TO A PRIVATE ROAD EASEMENT AND PUBLIC AND PRIVATE UTILITY EASEMENT OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 25 FEET WIDE LYING 12.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 739.80 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 71°25'41" E, A DISTANCE OF 25.87 FEET TO A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 55.59 FEET; THENCE EASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 20°23'38", AN ARC DISTANCE OF 19.79 FEET TO A REVERSE CURVE HAVING A RADIUS OF 135.00 FEET; THENCE NORTHEASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 45°17'19", AN ARC DISTANCE OF 106.71 FEET TO A COMPOUND CURVE HAVING A RADIUS OF 55.00 FEET; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°57'00", AN ARC DISTANCE OF 63.31 FEET TO A POINT HEREINAFTER DESCRIBED AS POINT "A" AND TERMINUS OF SAID 25-FOOT STRIP OF LAND.

TOGETHER WITH A STRIP OF LAND 35 FEET WIDE LYING 17.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "A", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 45.00 FEET AND HAVING A RADIAL BEARING OF N 70°35'00" E; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 52°22'00", AN ARC DISTANCE OF 41.13 FEET TO A COMPOUND CURVE HAVING A RADIUS OF 30.00 FEET; THENCE EASTERLY AND SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 149°43'00", AN ARC DISTANCE OF 78.39 FEET TO A POINT HEREINAFTER DESCRIBED AS POINT "B", SAID POINT BEING THE TERMINUS OF SAID 35-FOOT STRIP OF LAND.

TOGETHER WITH A STRIP OF LAND 25 FEET WIDE LYING 12.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "B", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 72.00 FEET AND HAVING A RADIAL BEARING OF S 87°20'00" E; THENCE SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 77°59'00", AN ARC DISTANCE OF 98.00 FEET; THENCE S 75°19'00" E, A DISTANCE OF 30.00 FEET TO A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 127.00 FEET; THENCE EASTERLY ALONG SAID CURVE THROUGH A CENTER ANGLE OF 15°19'00", AN ARC DISTANCE OF 33.95 FEET; THENCE N 89°22'00" E, A DISTANCE OF 50.02 FEET TO A POINT HEREINAFTER DESCRIBED AS POINT "C", SAID POINT BEING THE TERMINUS OF SAID 25-FOOT STRIP OF LAND.

**LEGAL DESCRIPTION CONTINUED**

TOGETHER WITH A STRIP OF LAND 30 FEET WIDE LYING 15 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "C", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 78.00 FEET AND HAVING A RADIAL BEARING OF N 85°33'01" E; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°26'00", AN ARC DISTANCE OF 75.46 FEET TO A REVERSE CURVE HAVING A RADIUS OF 56.00 FEET; THENCE SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°40'43", AN ARC DISTANCE OF 35.85 FEET TO A POINT ON THE NORTHERLY LINE OF WESTAIR ESTATES, AS RECORDED IN VOLUME 104 OF PLATS, PAGES 18 AND 19, RECORDS OF KING COUNTY, WASHINGTON, SAID POINT BEING THE TERMINUS OF SAID EASEMENT.

TOGETHER WITH A PRIVATE AND PUBLIC ROAD EASEMENT AND PRIVATE AND PUBLIC UTILITY EASEMENT AS GRANTED BY INSTRUMENT RECORDED IN DECEMBER 29, 1954, UNDER AUDITOR'S FILE NUMBER 4523171 AND RESERVED BY INSTRUMENT RECORDED AUGUST 28, 1957, UNDER AUDITOR'S FILE NO. 4828502.

TOGETHER WITH A PUBLIC AND PRIVATE SANITARY SEWER EASEMENT OVER, UNDER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 10 FEET WIDE LYING 5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED PROPERTY: COMMENCING AT THE SOUTHEAST CORNER OF LOT 9 MERHAVEN DIVISION NO. 2, AS RECORDED IN VOLUME 67 OF PLATS, PAGES 27 AND 28, RECORDS OF KING COUNTY, WASHINGTON; THENCE N 88°17'59" W, A DISTANCE OF 0.08 FEET, THENCE S 42°17'56" W, A DISTANCE OF 45.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE S 83°17'59" E, A DISTANCE OF 79.34 FEET, MORE OR LESS, TO THE WEST LINE OF THE PREVIOUSLY DESCRIBED 35-FOOT WIDE STRIP OF LAND.

TOGETHER WITH A PRIVATE WATER LINE EASEMENT OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 15 FEET WIDE LYING 7.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED PROPERTY: THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTH EAST CORNER OF SDI SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 292.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 44°11'00" W, A DISTANCE OF 72.12 FEET TO THE EASTERLY LINE OF THE PREVIOUSLY DESCRIBED 30-FOOT STRIP OF LAND.

**CONTRACTOR AS-BUILT:**

THE CONTRACTOR SHALL MAINTAIN ONE SET OF THE CONTRACT DRAWINGS THAT SHALL INCLUDE, CLEARLY AND LEGIBLY MARKED, ANY ALTERATIONS OR LOCATIONS OF UNDERGROUND UTILITIES ENCOUNTERED DURING PROGRESS OF THIS PROJECT, AND ANY ALTERATIONS MADE TO THE FACILITIES BEING INSTALLED. SAID DRAWINGS SHALL BE MARKED "AS-BUILT" AND SHALL BE SUBMITTED TO THE PROJECT ENGINEER UPON COMPLETION OF THE PROJECT.

**CONSTRUCTION STAKING:**

THIS PROJECT MUST BE STAKED PRIOR TO CONSTRUCTION BY THE DESIGN ENGINEER OR BY A LICENSED LAND SURVEYOR.

THIS DRAWING DOES NOT REPRESENT A RECORD DOCUMENT UNLESS CERTIFIED BY THE LAND DEVELOPER'S INC.

ANY ALTERATIONS TO THE DESIGN SHOWN HEREON MUST BE REVIEWED AND APPROVED BY THE LAND DEVELOPER'S, INC

**TOPOGRAPHIC NOTE:**

THE EXISTING TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, THE LAND DEVELOPER'S, INC. CANNOT ENSURE ITS ACCURACY AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED INTO THESE DRAWINGS AS A RESULT.

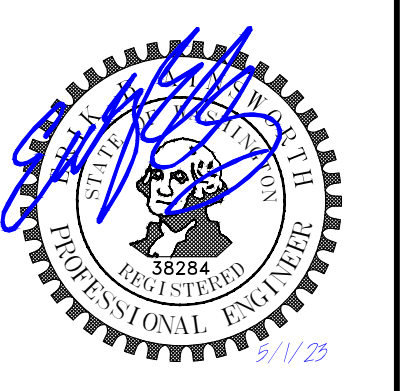
**NOTE:**

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 800-824-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION

**LEGEND**

	EXISTING	PROPOSED
SUBJECT PROPERTY LINE	---	---
ADJACENT LOT LINE	---	---
HABITAT BUFFER LINE	---	---
WETLAND BUFFER LINE	---	---
EASEMENT LINE	---	---
RIGHT-OF-WAY LINE	---	---
CENTER LINE	---	---
CONTOUR, MAJOR	---160---	---160---
CONTOUR, MINOR	---158---	---158---
CONIFEROUS TREE	☼	☼
DECIDUOUS TREE	⊙	⊙
STREET SIGN	⊥	⊥
POWER LINE	UGP	UGP
OVERHEAD POWER LINE	OHP	OHP
POWER POLE	⊕	⊕
GUY WIRE	⊥	⊥
POWER VAULT	⊕	⊕
STREET LIGHT	⊕	⊕
NATURAL GAS LINE	G	G
TELEPHONE LINE	T	T
TELEPHONE MANHOLE	⊕	⊕
TELEPHONE PEDESTAL	⊕	⊕
CABLE LINE	CTV	CTV
CABLE PEDESTAL	⊕	⊕
STORM MAIN LINE	SD	SD
FOOTING DRAIN LINE	FD	FD
ROOF DRAIN LINE	RD	RD
CATCH BASIN	CB	CB
TYPE I CATCH BASIN	I	I
YARD DRAIN	YD	YD
DOWNSPOUT	DS	DS
WATER MAIN LINE	W	W
WATER METER	WM	WM
BLOWOFF VALVE FIRE HYDRANT	BO	BO
GATE VALVE	G	G
SEWER MANHOLE	SM	SM
CLEANOUT	CO	CO
SEWER MAIN LINE	SS	SS
CONCRETE	▒	▒
ASPHALT PAVEMENT	▒	▒
POROUS ASPHALT	▒	▒
LANDSCAPING	▒	▒
GRAVEL	▒	▒

THE LAND DEVELOPER'S ENGINEERED SOLUTION  
an affiliate of THE LAND DEVELOPER, LLC  
5737 LINDERSON WAY SW,  
TUMWATER, WA 98501  
PO BOX 4420, TUMWATER, WA 98501  
(360) 890-4806  
E-MAIL: erik@thelanddeveloper.com



DATE:	
REVISIONS:	

CHEN RESIDENCE

COVER SHEET

PROJECT:  
CHEN RESIDENCE  
W MERCER WAY  
MERCER ISLAND, WA 98040  
CLIENT:  
ATERA HOMES, LLC  
451 DUVAL AVE NE, SUITE 155  
RENTON, WA 98059

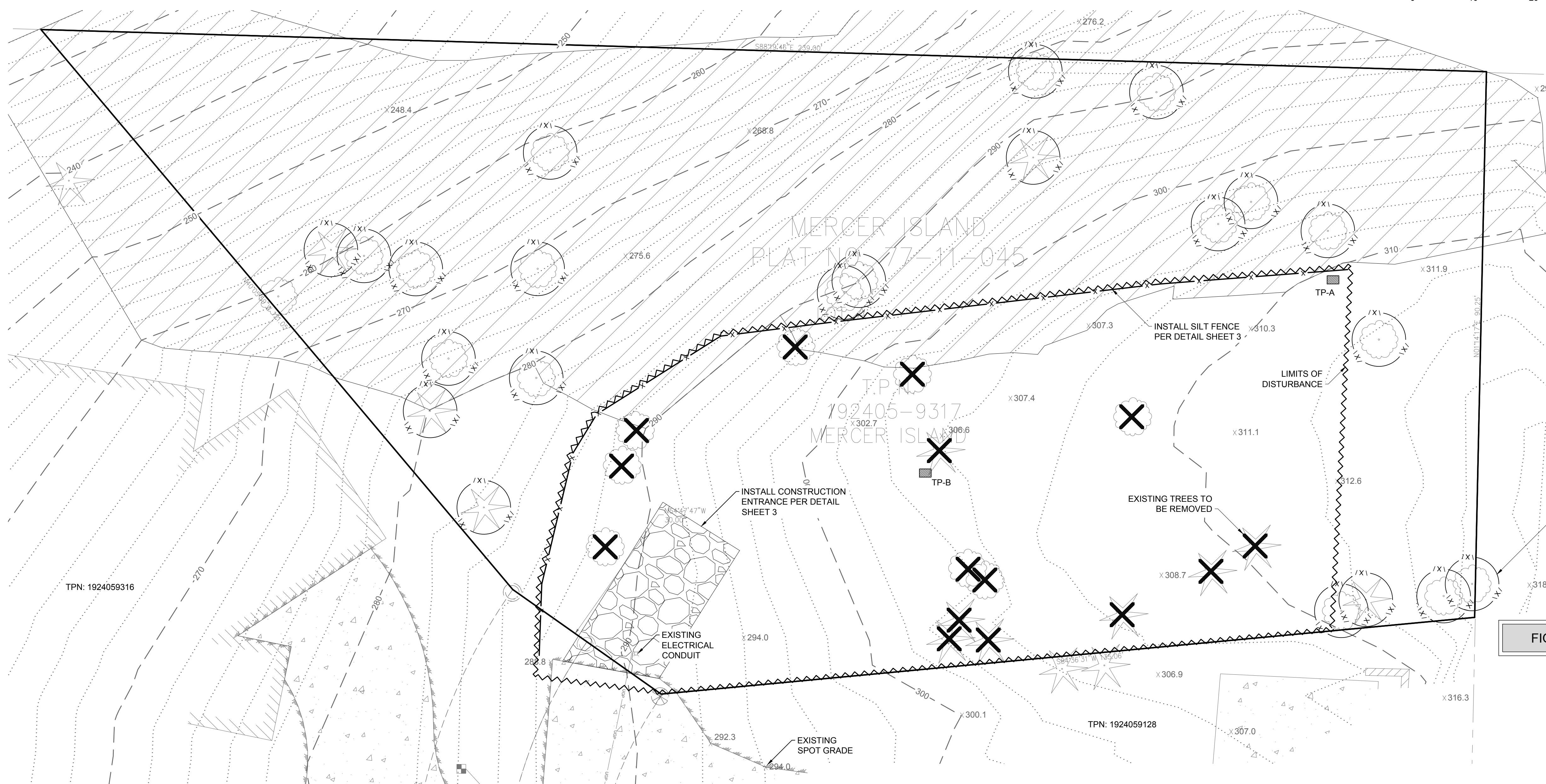
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DATE: 5/1/23  
AGENCY NO:  
SHEET: 1 OF 6  
JOB NO: 20-122





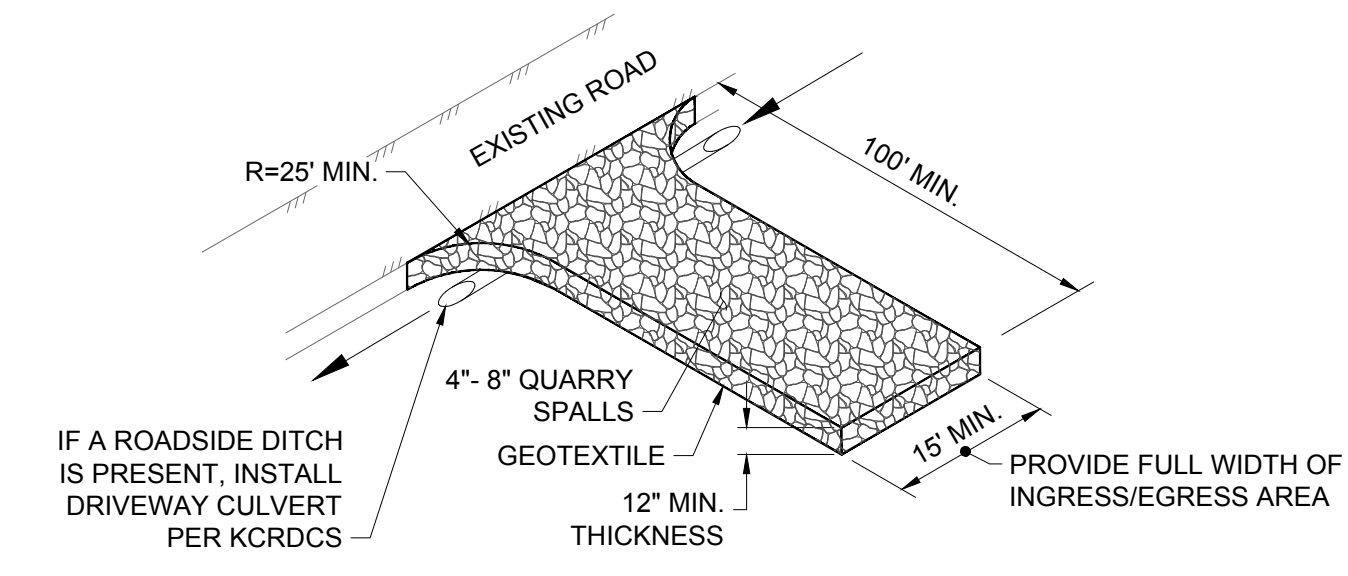
SE 1/4, SECTION 20, TOWNSHIP 26 N., RANGE 5 E., W.M.

SCALE: 1" = 10'  
0 10 20



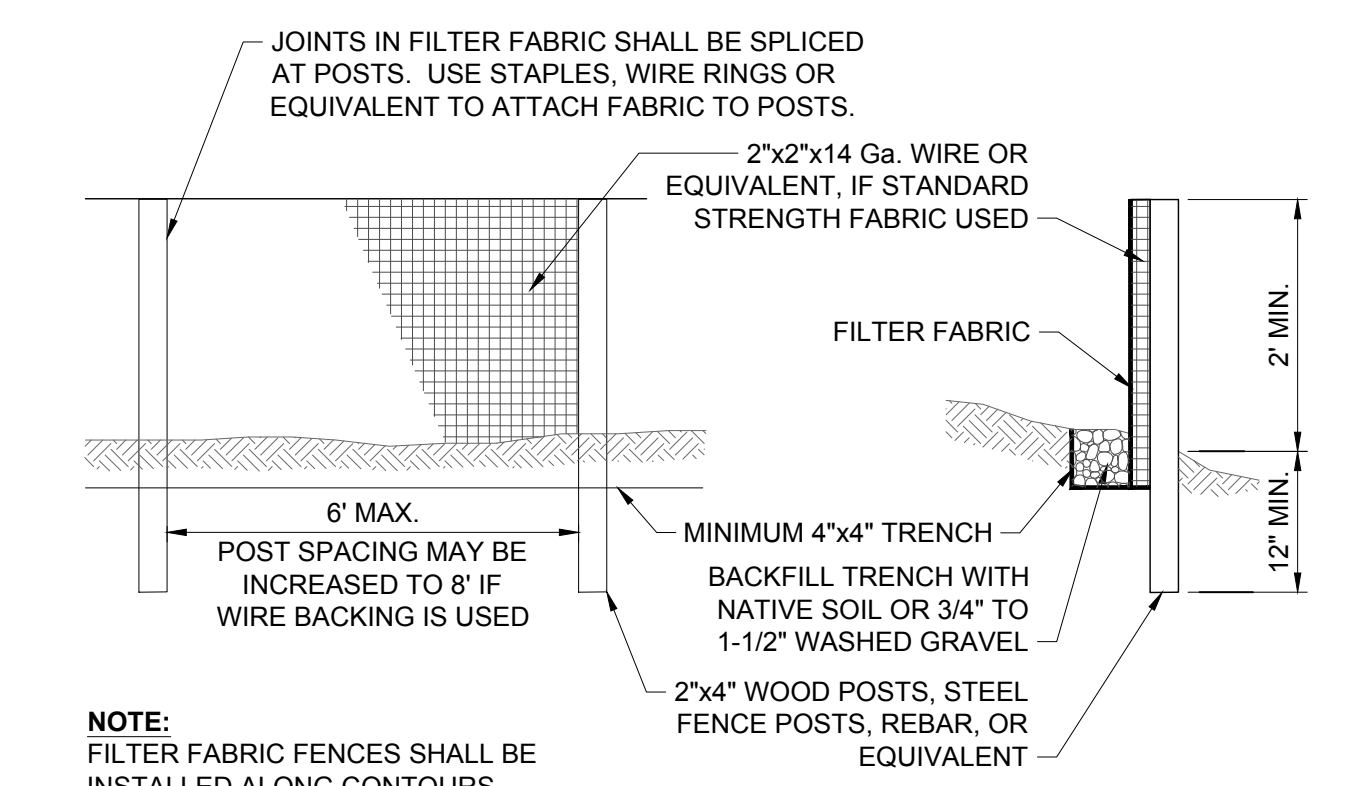
HATCHING INDICATES POSSIBLE AREAS OF 40% OR GREATER SLOPES

FIGURE D.2.1.4.A STABILIZED CONSTRUCTION ENTRANCE



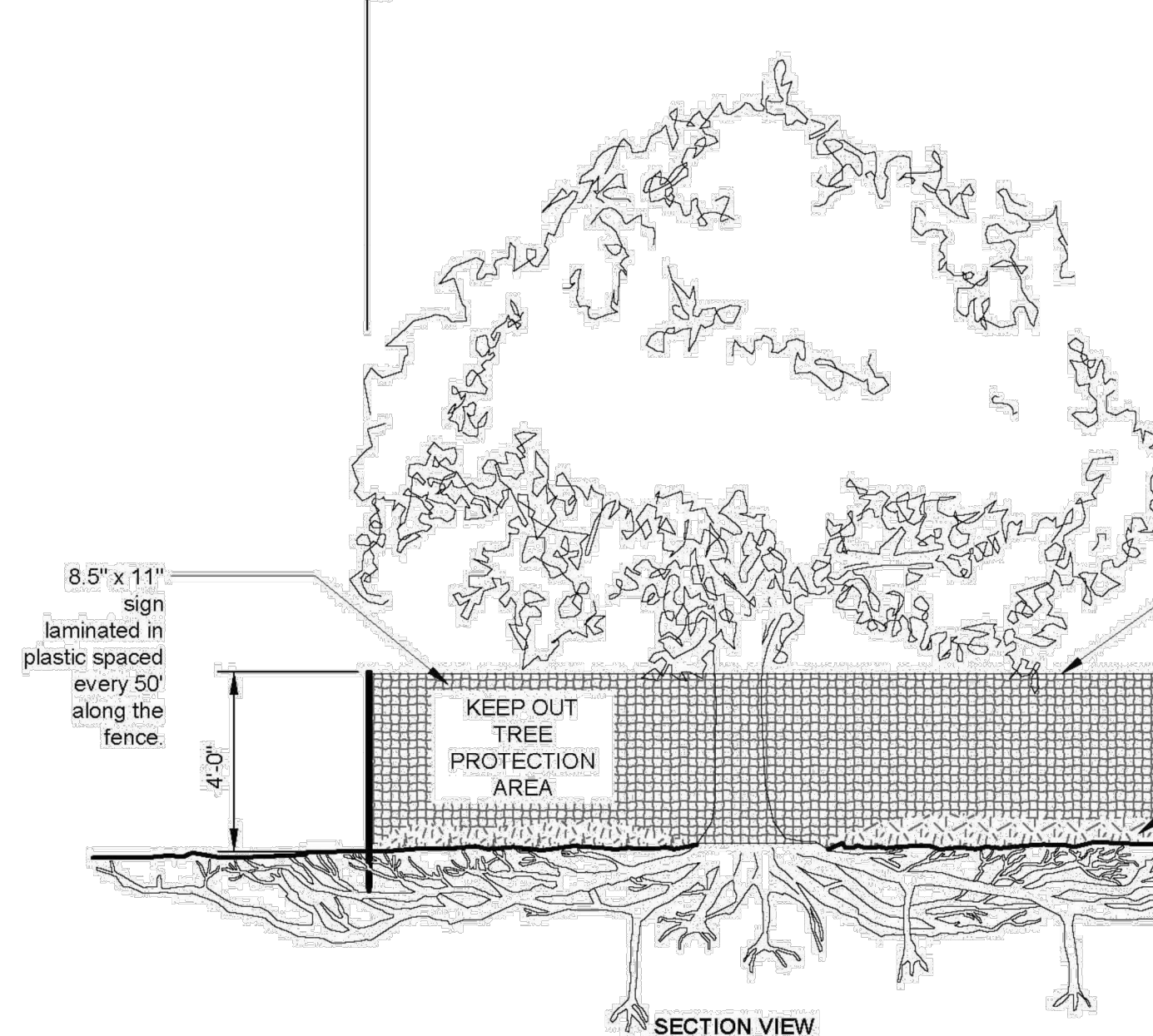
- NOTES:**
- PER KING COUNTY ROAD DESIGN AND CONSTRUCTION STANDARDS (KCRDCS), DRIVEWAYS SHALL BE PAVED TO EDGE OF R-O-W PRIOR TO INSTALLATION OF THE CONSTRUCTION ENTRANCE TO AVOID DAMAGING OF THE ROADWAY.
  - IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

FIGURE D.2.1.3.A SILT FENCE



**NOTE:** FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOURS WHENEVER POSSIBLE

Crown drip line or other limit of Tree Protection area. See Site/Utility Plan for fence alignment.



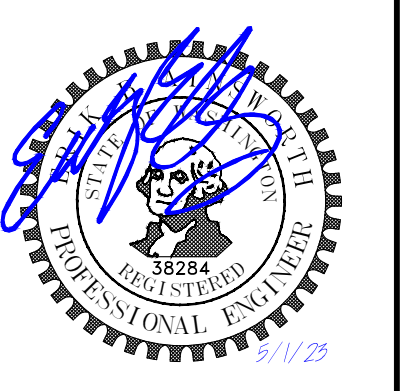
TREE PROTECTION DETAIL

- Notes:**
- No pruning shall be performed unless under the direction of an arborist.
  - No equipment shall be stored or operated inside the protective fencing including during fence installation and removal.
  - No storage of materials shall occur inside the protective fencing.
  - Refer to Site/Utility Plan for any modifications to the Tree Protection Area.
  - Unauthorized activities in tree protection area may require evaluation by private arborist to identify impacts and mitigation required.
  - Exposed Roots: For roots >1" damaged during construction, make a clean straight cut to removed damaged portion and inform city arborist.

TPN: 1924059316

TPN: 1924059128

THE LAND DEVELOPER'S ENGINEERED SOLUTION  
an affiliate of  
THE LAND DEVELOPER, LLC  
5737 LINDERSON WAY SW.  
TUMWATER, WA. 98501  
PO BOX 4420, TUMWATER, WA. 98501  
(360) 890-4806  
E-MAIL: erik@thelanddeveloper.com



DATE:	
REVISIONS:	

CHEN RESIDENCE  
TESC AND DEMO PLAN

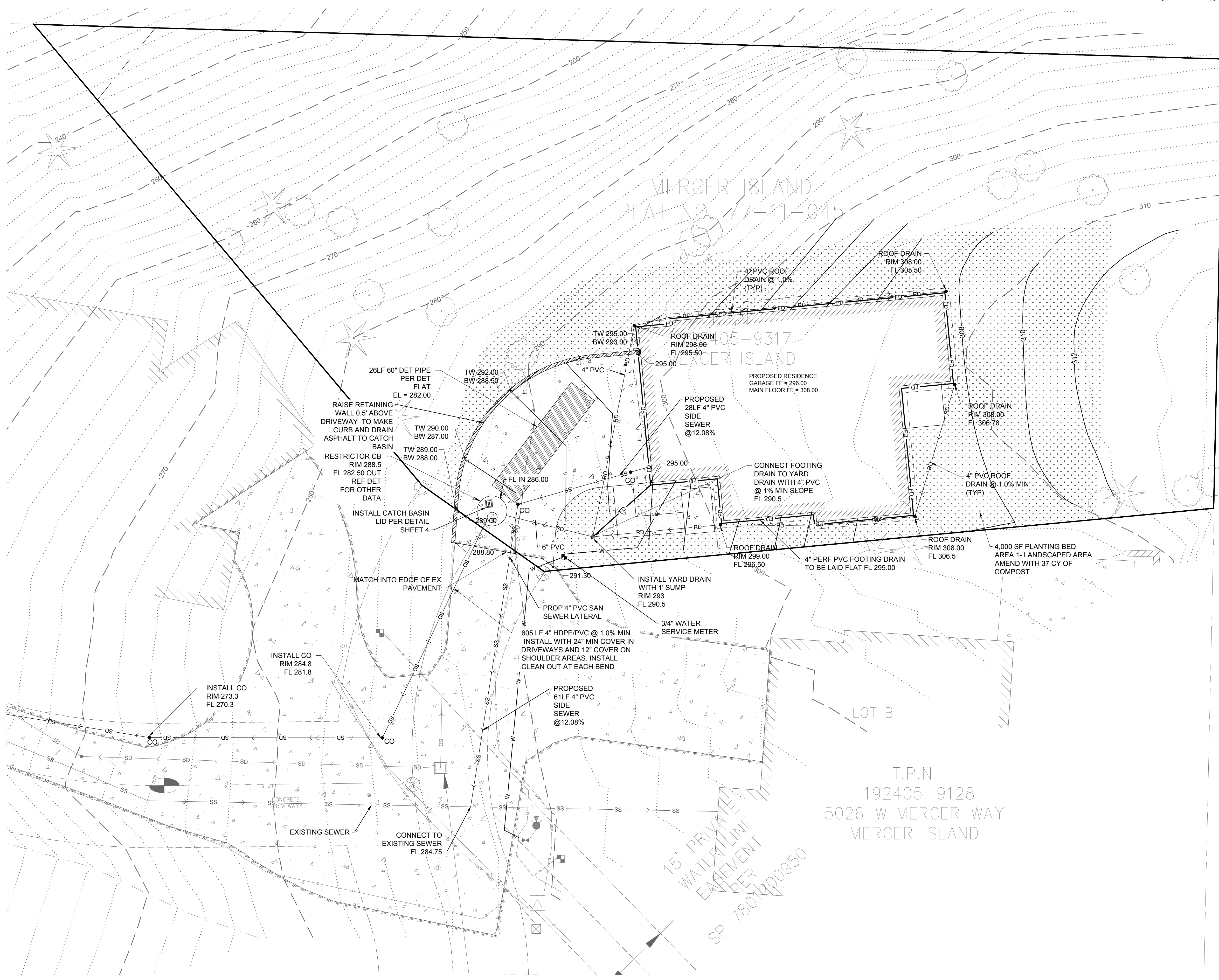
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CHEN RESIDENCE  
W MERCER WAY  
MERCER ISLAND, WA 98040  
CLIENT:  
ATERA HOMES, LLC  
451 DUVAL AVE NE, SUITE 155  
RENTON, WA 98059

DRAWN BY: EBA  
DATE: 5/1/23  
AGENCY NO:  
SHEET: 2 OF 6  
JOB NO: 20-122

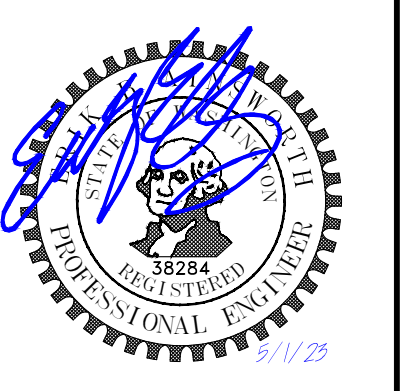


SE 1/4, SECTION 20, TOWNSHIP 26 N., RANGE 5 E., W.M.

SCALE: 1" = 10'



THE LAND DEVELOPER'S ENGINEERED SOLUTION  
 a division of THE LAND DEVELOPER, LLC  
 5737 LINDERSON WAY SW.  
 TUMWATER, WA. 98501  
 PO BOX 4420, TUMWATER, WA. 98501  
 (360) 890-4806  
 E-MAIL: erik@thelanddeveloper.com



DATE:	
REVISIONS:	

CHEN RESIDENCE  
 SITE, LANDSCAPE & DRAINAGE PLAN

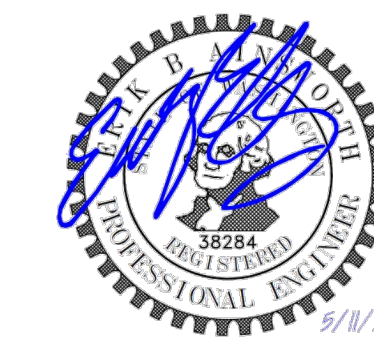
PROJECT:  
 CHEN RESIDENCE  
 W MERCER WAY  
 MERCER ISLAND, WA 98040

CLIENT:  
 ATERA HOMES, LLC  
 451 DUVALL AVE NE, SUITE 155  
 RENTON, WA 98059

DRAWN BY: EBA  
 DATE: 5/1/23  
 AGENCY NO:  
 SHEET: 3 OF 6  
 JOB NO: 20-122

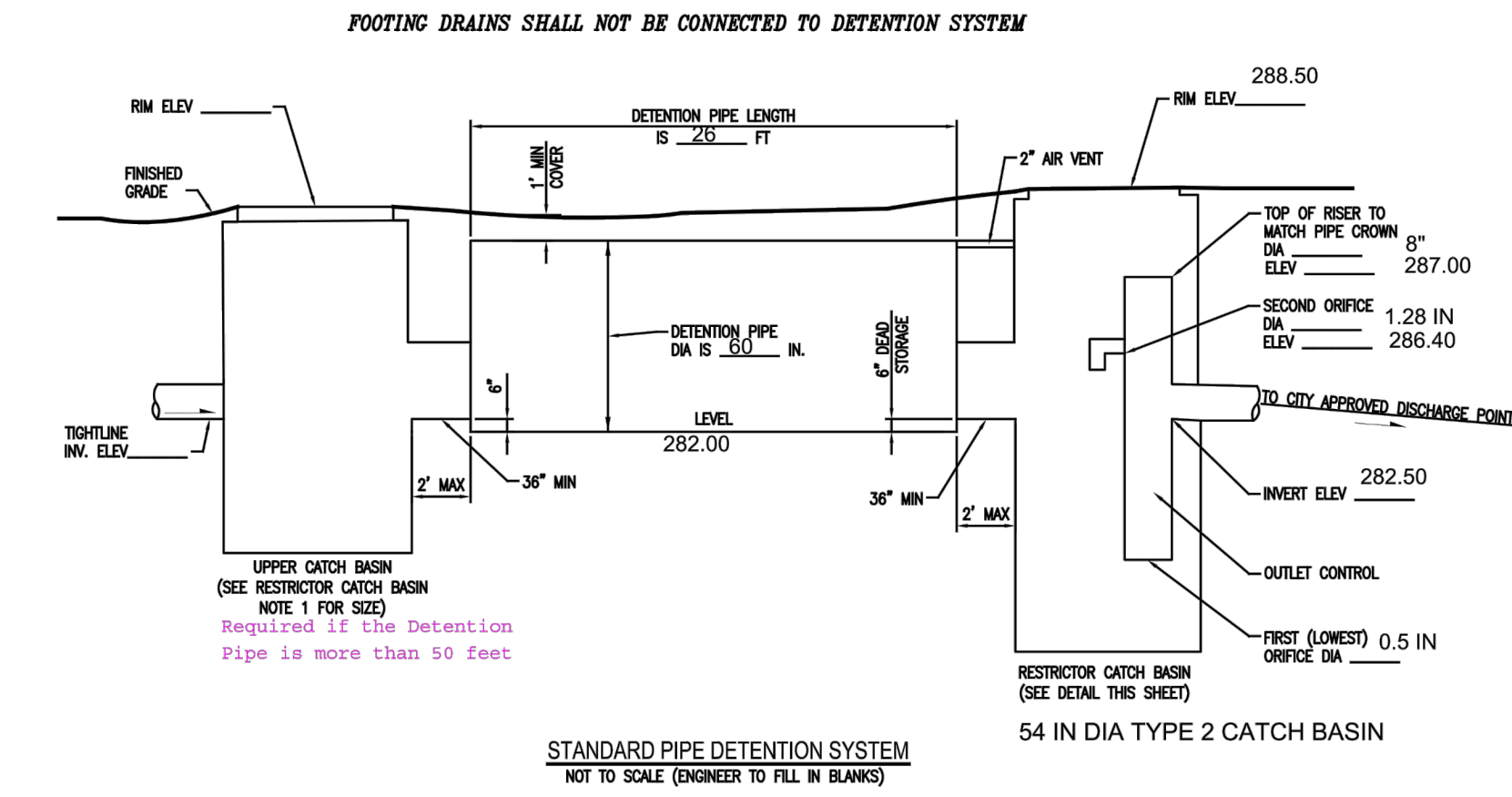
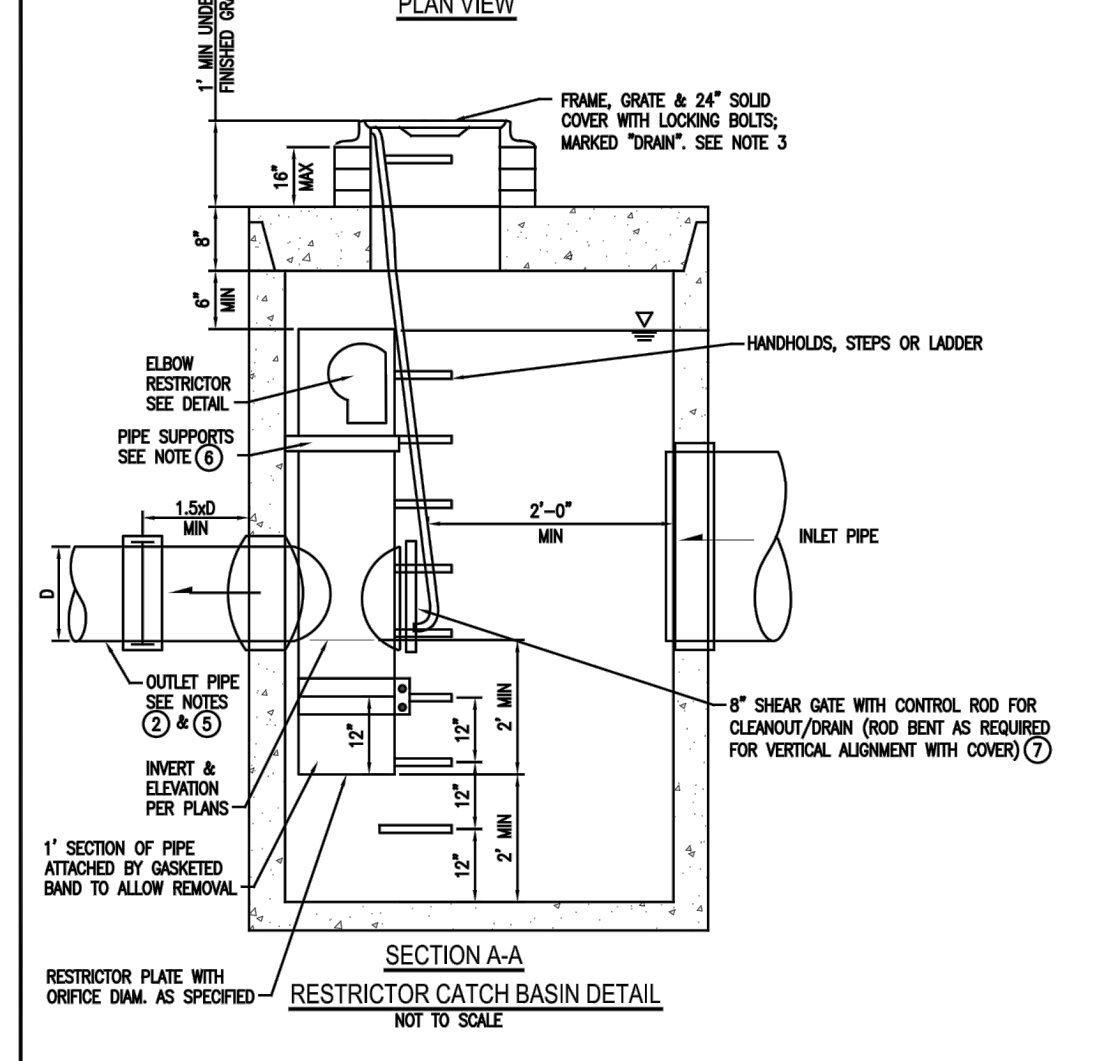
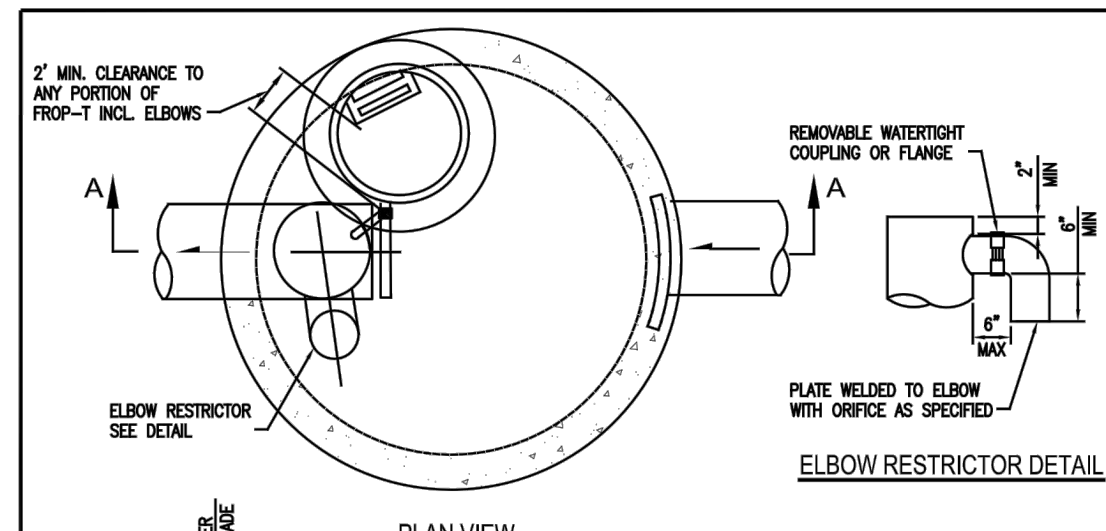


Attachment 1  
CITY OF MERCER ISLAND  
STANDARD DETENTION SYSTEM WORKSHEET  
(FOR IMPERVIOUS AREA OF 5,000 SF OR LESS)



OWNER: CHEN	ADDRESS: XXX West Mercer Way, Mercer Island, WA	PREPARED BY: THE LAND DEVELOPER, INC.
PERMIT #:		PHONE: 360-890-4806
		DATE: 5/11/21
IMPERVIOUS SURFACE AREA (SF): 3704	DETENTION PIPE DIA (INCH): 60	DETENTION PIPE LENGTH (FT): 26
	PIPE MATERIAL: CORR ALUM	ORFICE #1 DIA 0.5 INCH, ELEV 280.50
		ORFICE #2 DIA 1.25 INCH, ELEV 286.40

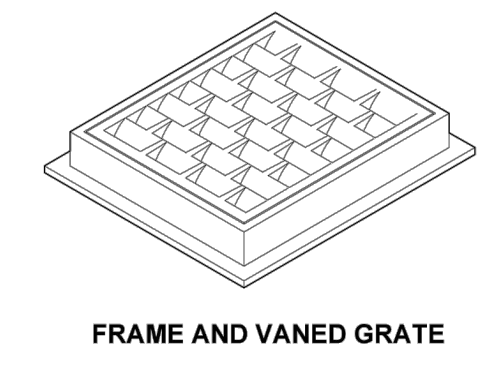
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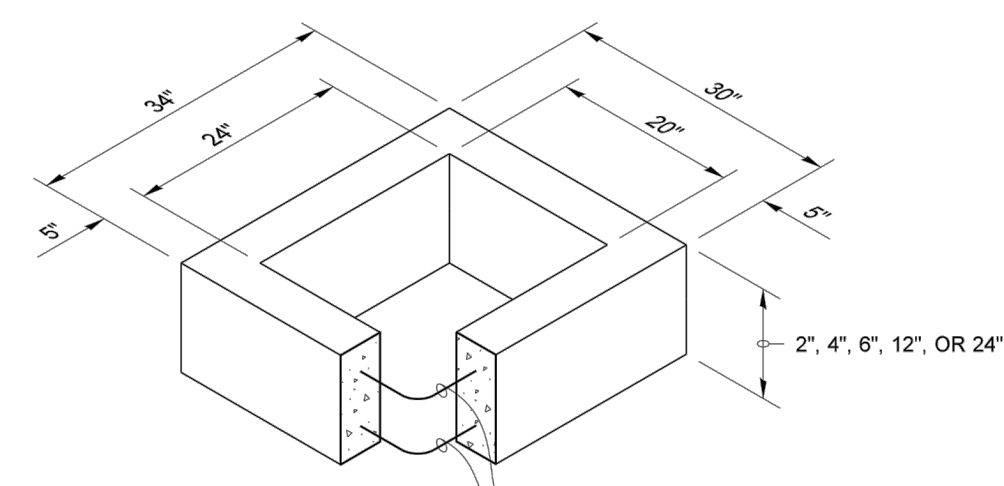
- RESTRICTOR CATCH BASIN NOTES**
- USE A MINIMUM OF A 72 IN. DIAM. TYPE 2 CATCH BASIN WHEN CONNECTING PIPE MATERIAL IS CONCRETE OR LIME A 34 IN. DIAM. TYPE 3 CATCH BASIN MAY BE USED FOR OTHER CIRCULAR SINGLE WALL PIPE (SUCH AS CORRUGATED ALUMINUM PIPE).
  - OUTLET PIPE: MIN. 6 INCH.
  - METAL PARTS: CORROSION RESISTANT, NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
  - FRAME AND LADDER OR STEPS OFFSET SO:
    - CLEANOUT GATE IS VISIBLE FROM TOP;
    - CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
    - FRAME IS CLEAR OF CURB.
  - IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
  - PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR DRIBBED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MINIMUM 3'-0" VERTICAL SPACING).
  - THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 286 AND ASTM B 275, DESIGNATION Z103A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. THE LEFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE TO PREVENT GALVANIC CORROSION. IT MAY BE OF SOLID ROD OR HOLLOW TUBING WITH ADJUSTABLE HOOP AS REQUIRED. A RESILIENT RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED. THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT. ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

- STANDARD DETENTION SYSTEM NOTES**
- CALL DEVELOPMENT SERVICES (206-275-7050) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
  - RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORFICE MUST BE KEPT OPEN AT ALL TIMES.
  - PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 8.03 OF THE MOST STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING: LINED CORRUGATED POLYETHYLENE PIPE (LOPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE HOOP (MEETS ASTM DESIGNATIONS M274 AND M282), CORRUGATED OR SPIRAL REINFORCED ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.

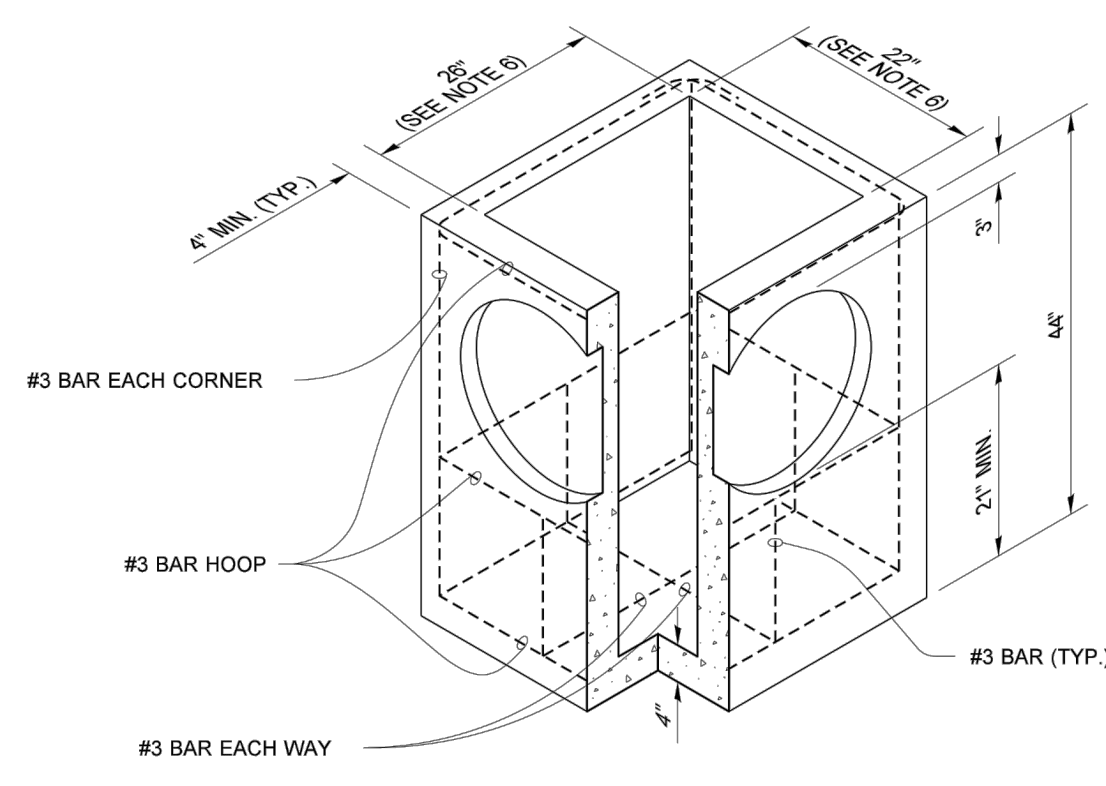
DRAWN BY: LISA CYFORD



FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

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

\* CORRUGATED POLYETHYLENE STORM SEWER PIPE

**NOTES**

- 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" (in). Knockouts shall have a wall thickness of 2" (in) minimum to 2.5" (in) maximum. Provide a 1.5" (in) 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 Section 9-04.3**.
- The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
- The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
- 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.

CHEN RESIDENCE

DETAILS



Heilman, Julie  
Jan 25 2017 2:53 PM

**CATCH BASIN TYPE 1**  
**STANDARD PLAN B-5.20-02**

SHEET 1 OF 1 SHEET  
APPROVED FOR PUBLICATION  
Corpus, Jeff  
Jan 25 2017 16:48 AM

STATE DESIGN ENGINEER  
Washington State Department of Transportation

PROJECT:  
CHEN RESIDENCE  
W MERCER WAY  
MERCER ISLAND, WA 98040

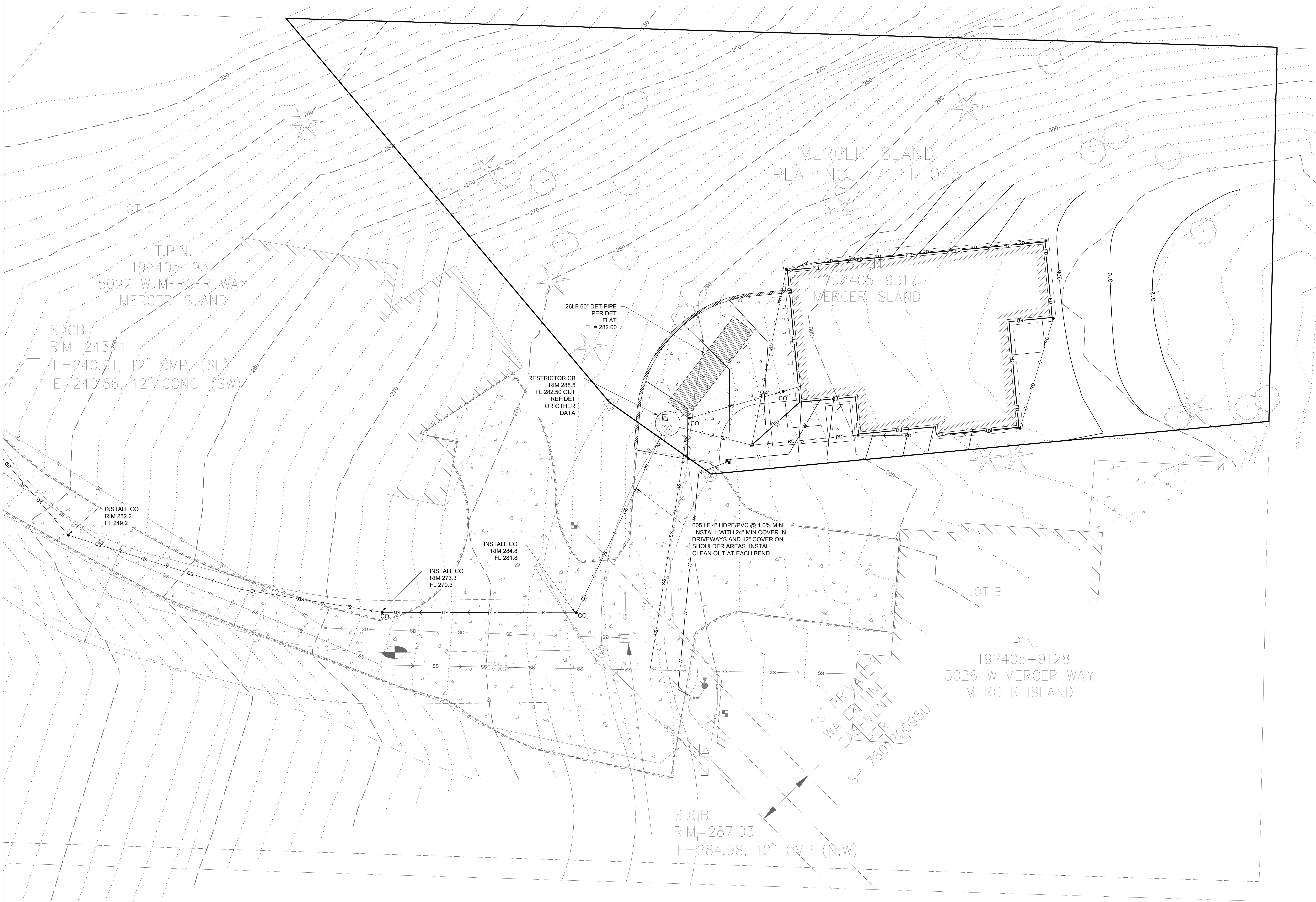
CLIENT:  
ATERA HOMES, LLC  
451 DUVAL AVE NE, SUITE 155  
RENTON, WA 98059

DRAWN BY: EBA  
DATE: 5/1/23  
AGENCY NO:  
SHEET: 4 OF 6  
JOB NO: 20-122

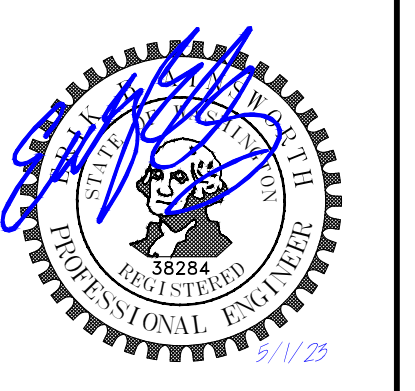


SE 1/4, SECTION 20, TOWNSHIP 26 N., RANGE 5 E., W.M.

SCALE: 1" = 10'



THE LAND DEVELOPER'S ENGINEERED SOLUTION  
*a division of* THE LAND DEVELOPER, LLC  
 5737 LINDERSON WAY SW,  
 TUMWATER, WA 98501  
 PO BOX 4420, TUMWATER, WA 98501  
 (360) 890-4806  
 E-MAIL: erik@thelanddeveloper.com



DATE:	
REVISIONS:	

**CHEN RESIDENCE**  
**OFFSITE DRAINAGE PLAN**

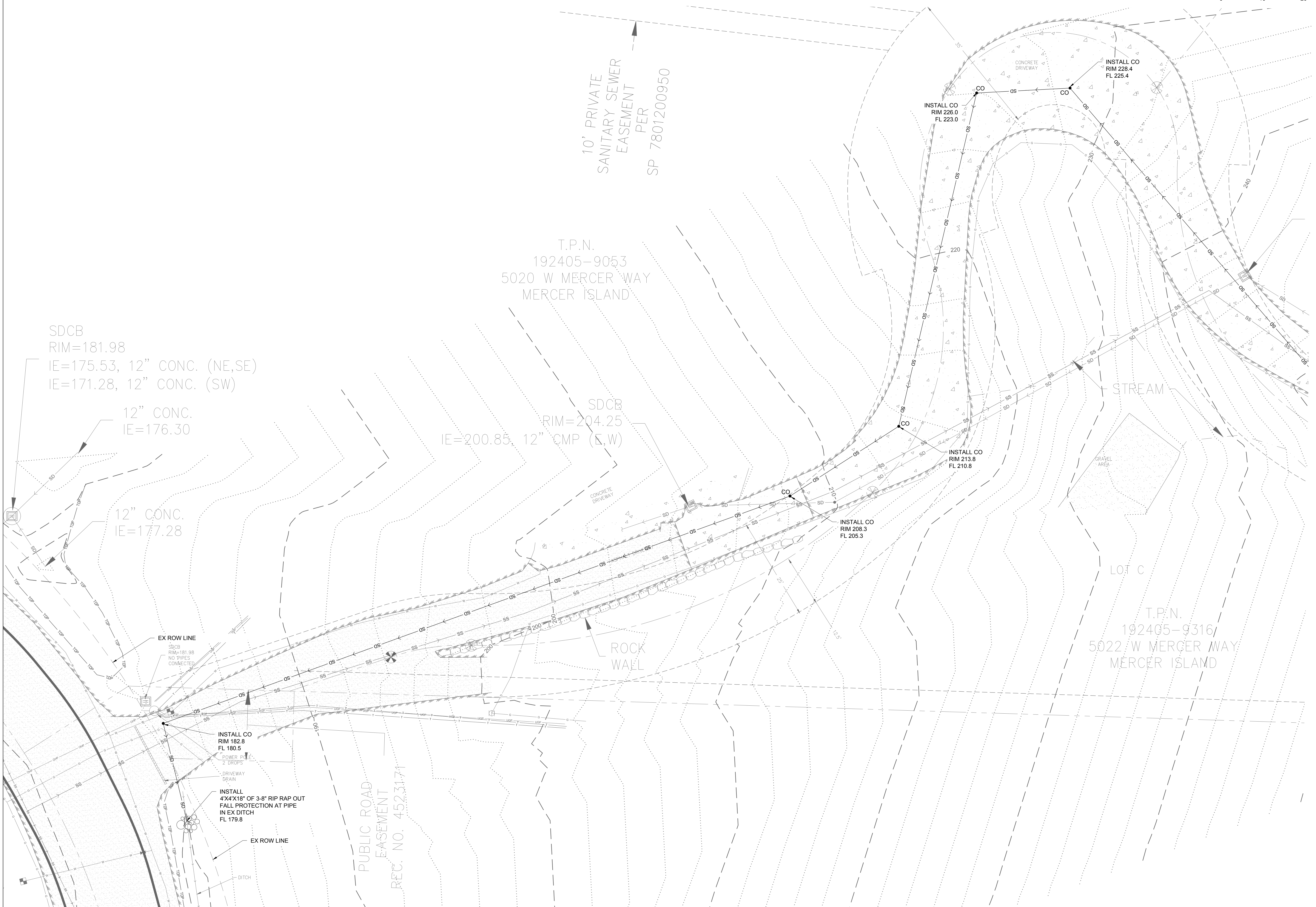
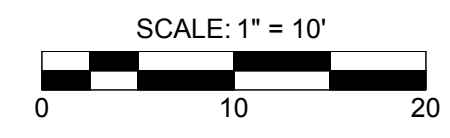
PROJECT:  
 CHEN RESIDENCE  
 W MERCER WAY  
 MERCER ISLAND, WA 98040

CLIENT:  
 ATERA HOMES, LLC  
 451 DUVALL AVE NE, SUITE 155  
 RENTON, WA 98059

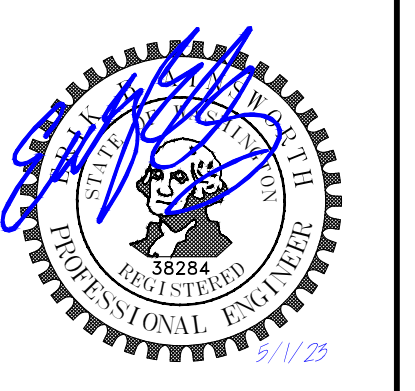
DRAWN BY: EBA  
 DATE: 5/1/23  
 AGENCY NO:  
 SHEET: 5 OF 6  
 JOB NO: 20-122



SE 1/4, SECTION 20, TOWNSHIP 26 N., RANGE 5 E., W.M.



THE LAND DEVELOPER'S ENGINEERED SOLUTION  
*a division of* THE LAND DEVELOPER, LLC  
 5737 LINDERSON WAY SW,  
 TUMWATER, WA. 98501  
 PO BOX 4420, TUMWATER, WA. 98501  
 (360) 890-4806  
 E-MAIL: erik@thelanddeveloper.com



DATE:	
REVISIONS:	

**CHEN RESIDENCE**  
**DRAINAGE PLAN**

PROJECT:  
 CHEN RESIDENCE  
 W MERCER WAY  
 MERCER ISLAND, WA 98040

CLIENT:  
 ATERA HOMES, LLC  
 451 DUVALL AVE NE, SUITE 155  
 RENTON, WA 98059

DRAWN BY: EBA  
 DATE: 5/1/23  
 AGENCY NO: \_\_\_\_\_  
 SHEET: 6 OF 6  
 JOB NO: 20-122





Scale 1" = 10'

**MERIDIAN**  
ASSUMED

**DATUM**  
NAVD 88

**CONTOUR INTERVAL = 2'**  
**1" CONTOUR AREA AS SHOWN**

**LEGAL DESCRIPTION**

THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 200.00 FEET; THENCE N 01°16'04" E, A DISTANCE OF 116.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE S 84°38'18" W, A DISTANCE OF 135.06 FEET; THENCE N 54°46'00" W, A DISTANCE OF 30.00 FEET; THENCE N 40°04'12" W, A DISTANCE OF 121.05 FEET TO THE SOUTHERLY BOUNDARY OF MERHAVEN DIVISION NO. 3, AS RECORDED IN VOLUME 98 OF PLATS, PAGES 7 AND 8, RECORDS OF KING COUNTY, WASHINGTON; THENCE 86°17'59" E ALONG SAID SOUTHERLY BOUNDARY LINE, A DISTANCE OF 239.00 FEET; THENCE S 01°16'04" W, A DISTANCE OF 90.25 FEET TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH AND SUBJECT TO A PRIVATE ROAD EASEMENT AND PUBLIC AND PRIVATE UTILITY EASEMENT OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 25 FEET WIDE LYING 12.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 739.80 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 71°25'41" E, A DISTANCE OF 25.87 FEET TO A TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 55.59 FEET; THENCE EASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 202°3'38", AN ARC DISTANCE OF 19.79 FEET TO A REVERSE CURVE HAVING A RADIUS OF 135.00 FEET; THENCE NORTHEASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 45°17'19", AN ARC DISTANCE OF 106.71 FEET TO A COMPOUND CURVE HAVING A RADIUS OF 55.00 FEET; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 65°57'00", AN ARC DISTANCE OF 63.31 FEET TO A POINT HERINAFTER DESCRIBED AS POINT "A" AND TERMINUS OF SAID 25-FOOT STRIP OF LAND.

TOGETHER WITH A STRIP OF LAND 35 FEET WIDE LYING 17.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "A", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 45.00 FEET AND HAVING A RADIAL BEARING OF N 70°55'00" E; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 52°22'00", AN ARC DISTANCE OF 41.13 FEET TO A COMPOUND CURVE HAVING A RADIUS OF 30.00 FEET; THENCE EASTERLY AND SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 149°43'00", AN ARC DISTANCE OF 78.39 FEET TO A POINT HERINAFTER DESCRIBED AS POINT "B", SAID POINT BEING THE TERMINUS OF SAID 35-FOOT STRIP OF LAND.

TOGETHER WITH A STRIP OF LAND 25 FEET WIDE LYING 12.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "B", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 72.00 FEET AND HAVING A RADIAL BEARING OF S 87°20'00" E; THENCE SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 77°59'00", AN ARC DISTANCE OF 98.00 FEET; THENCE S 75°19'00" E, A DISTANCE OF 30.00 FEET TO A TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 127.00 FEET; THENCE EASTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 15°19'00", AN ARC DISTANCE OF 33.95 FEET; THENCE N 89°22'00" E, A DISTANCE OF 50.02 FEET TO A POINT HERINAFTER DESCRIBED AS POINT "C", SAID POINT BEING THE TERMINUS OF SAID 25-FOOT STRIP OF LAND.

TOGETHER WITH A STRIP OF LAND 30 FEET WIDE LYING 15 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: BEGINNING AT AFOREMENTIONED POINT "C", SAID POINT LYING ON A CURVE HAVING A RADIUS OF 78.00 FEET AND HAVING A RADIAL BEARING OF N 85°33'01" E; THENCE NORTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 55°22'00", AN ARC DISTANCE OF 75.46 FEET TO A REVERSE CURVE HAVING A RADIUS OF 56.00 FEET; THENCE SOUTHERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 36°42'31", AN ARC DISTANCE OF 55.85 FEET TO A POINT ON THE NORTHERLY LINE OF WESTAIR ESTATES, AS RECORDED IN VOLUME 104 OF PLATS, PAGES 18 AND 19, RECORDS OF KING COUNTY, WASHINGTON, SAID POINT BEING THE TERMINUS OF SAID EASEMENT.

TOGETHER WITH A PRIVATE AND PUBLIC ROAD EASEMENT AND PRIVATE AND PUBLIC UTILITY EASEMENT AS GRANTED BY INSTRUMENT RECORDED IN DECEMBER 29, 1954, UNDER AUDITOR'S FILE NUMBER 4523171 AND RESERVED BY INSTRUMENT RECORDED AUGUST 28, 1957, UNDER AUDITOR'S FILE NO. 4828502.

TOGETHER WITH A PUBLIC AND PRIVATE SANITARY SEWER EASEMENT OVER, UNDER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 10 FEET WIDE LYING 5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: COMMENCING AT THE SOUTHEAST CORNER OF LOT 9, MERHAVEN DIVISION NO. 2, AS RECORDED IN VOLUME 67 OF PLATS, PAGES 27 AND 28, RECORDS OF KING COUNTY, WASHINGTON; THENCE N 88°17'59" W, A DISTANCE OF 0.08 FEET; THENCE S 42°17'56" W, A DISTANCE OF 45.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE S 83°17'59" E, A DISTANCE OF 78.34 FEET, MORE OR LESS, TO THE WEST LINE OF THE PREVIOUSLY DESCRIBED 35-FOOT WIDE STRIP OF LAND.

TOGETHER WITH A PRIVATE WATER LINE EASEMENT OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY: A STRIP OF LAND 15 FEET WIDE LYING 7.5 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTER LINE: THAT PORTION OF THE S 1/2 OF THE NW 1/4 OF THE NW 1/4 OF THE NW 1/4 OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTH EAST CORNER OF SAID SUBDIVISION; THENCE N 01°16'04" E ALONG THE EASTERLY LINE THEREOF, A DISTANCE OF 450.00 FEET; THENCE N 88°10'41" W, A DISTANCE OF 292.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 44°11'00" W, A DISTANCE OF 72.12 FEET TO THE EASTERLY LINE OF THE PREVIOUSLY DESCRIBED 30-FOOT STRIP OF LAND.

PARCEL # 1924059317  
SW1/4, SW1/4, SEC. 20, T. 26 N., R. 5 E., W.M.  
MERCER ISLAND, WASHINGTON

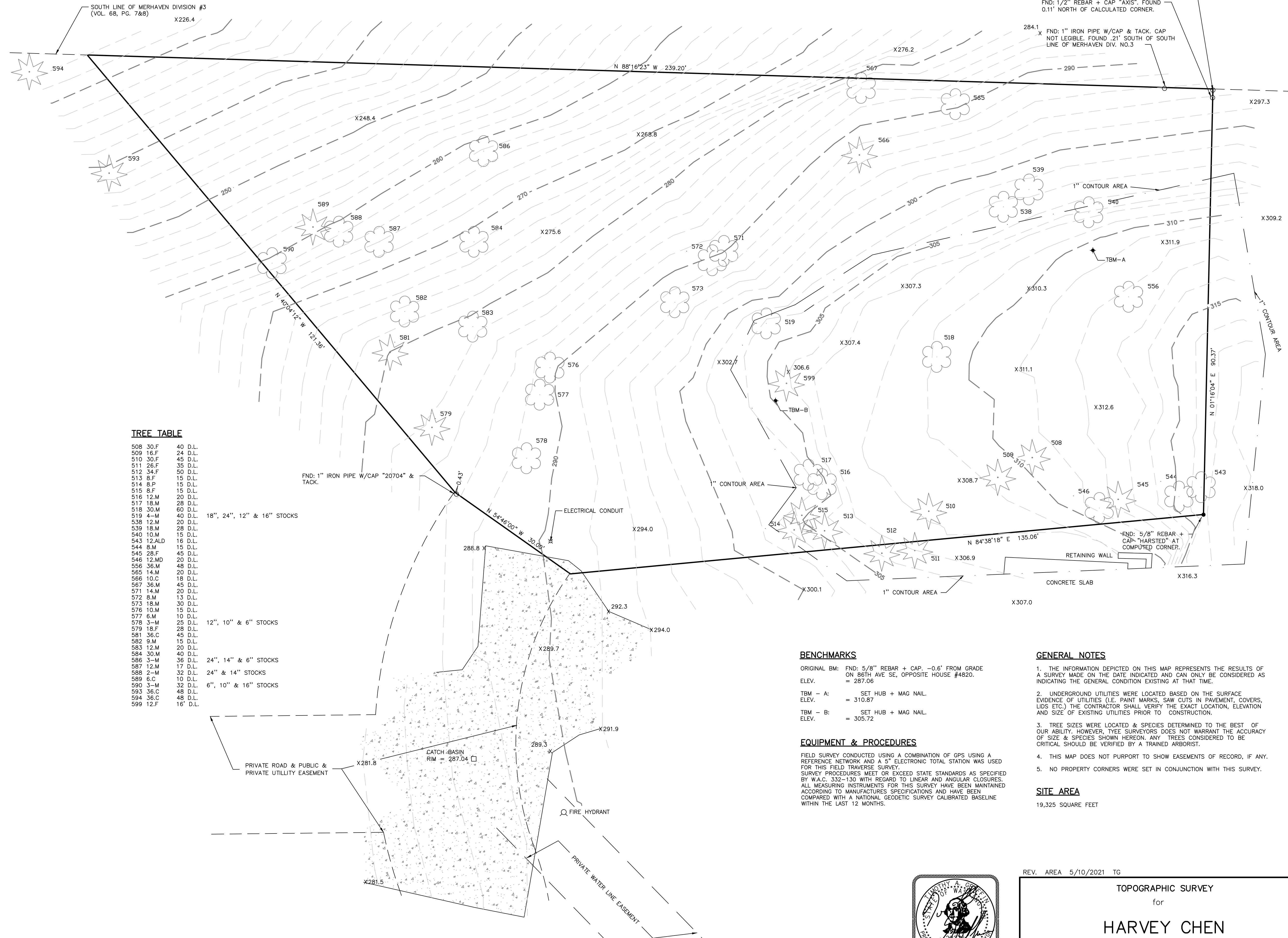
REV. AREA 5/10/2021 TG



TOPOGRAPHIC SURVEY  
for  
**HARVEY CHEN**

1542 24TH AVE NE ISSAQUAH WA, 98029

Tye Surveyors PROFESSIONAL LAND SURVEYORS 10007 GREENWOOD AV. N. SEATTLE, WA. 98133 206-525-3660		
DRAWN BY: RG	DATE: 5-29-18	JOB NO.: 18080
CHKD BY: TG	SCALE: 1" = 10'	SHEET: 1 OF 1



**TREE TABLE**

508 30.F	40 D.L.
509 16.F	24 D.L.
510 30.F	45 D.L.
511 26.F	35 D.L.
512 34.F	50 D.L.
513 8.F	15 D.L.
514 8.P	15 D.L.
515 8.F	15 D.L.
516 12.M	20 D.L.
517 18.M	28 D.L.
518 30.M	60 D.L.
519 4-M	40 D.L.
538 12.M	20 D.L.
539 18.M	28 D.L.
540 10.M	15 D.L.
543 12.ALD	16 D.L.
544 8.M	15 D.L.
545 28.F	45 D.L.
546 12.MD	20 D.L.
556 36.M	48 D.L.
565 14.M	20 D.L.
566 10.C	18 D.L.
567 36.M	45 D.L.
571 14.M	20 D.L.
572 8.M	13 D.L.
573 18.M	30 D.L.
576 10.M	15 D.L.
577 6.M	10 D.L.
578 3-M	25 D.L.
579 18.F	28 D.L.
581 36.C	45 D.L.
582 9.M	15 D.L.
583 12.M	20 D.L.
584 30.M	40 D.L.
586 3-M	36 D.L.
587 12.M	17 D.L.
588 2-M	32 D.L.
589 6.C	10 D.L.
590 3-M	32 D.L.
593 36.C	48 D.L.
594 36.C	48 D.L.
599 12.F	16 D.L.

**BENCHMARKS**

ORIGINAL BM: FND: 5/8" REBAR + CAP. -0.6' FROM GRADE ON 86TH AVE SE, OPPOSITE HOUSE #4820.  
ELEV. = 287.06

TBM - A: SET HUB + MAG NAIL.  
ELEV. = 310.87

TBM - B: SET HUB + MAG NAIL.  
ELEV. = 305.72

**EQUIPMENT & PROCEDURES**

FIELD SURVEY CONDUCTED USING A COMBINATION OF GPS USING A REFERENCE NETWORK AND A 5" ELECTRONIC TOTAL STATION WAS USED FOR THIS FIELD TRAVERSE SURVEY. SURVEY PROCEDURES MEET OR EXCEED STATE STANDARDS AS SPECIFIED BY W.A.C. 332-130 WITH REGARD TO LINEAR AND ANGULAR CLOSURES. ALL MEASURING INSTRUMENTS FOR THIS SURVEY HAVE BEEN MAINTAINED ACCORDING TO MANUFACTURERS SPECIFICATIONS AND HAVE BEEN COMPARED WITH A NATIONAL GEODETIC SURVEY CALIBRATED BASELINE WITHIN THE LAST 12 MONTHS.

**GENERAL NOTES**

- THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE DATE INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITION EXISTING AT THAT TIME.
- UNDERGROUND UTILITIES WERE LOCATED BASED ON THE SURFACE EVIDENCE OF UTILITIES (I.E. PAINT MARKS, SAW CUTS IN PAVEMENT, COVERS, LIDS ETC.) THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- TREE SIZES WERE LOCATED & SPECIES DETERMINED TO THE BEST OF OUR ABILITY. HOWEVER, TREE SURVEYORS DOES NOT WARRANT THE ACCURACY OF SIZE & SPECIES SHOWN HEREON. ANY TREES CONSIDERED TO BE CRITICAL SHOULD BE VERIFIED BY A TRAINED ARBORIST.
- THIS MAP DOES NOT PURPORT TO SHOW EASEMENTS OF RECORD, IF ANY.
- NO PROPERTY CORNERS WERE SET IN CONJUNCTION WITH THIS SURVEY.

**SITE AREA**  
19,325 SQUARE FEET

PRIVATE ROAD & PUBLIC & PRIVATE UTILITY EASEMENT

CATCH BASIN  
RIM = 287.04

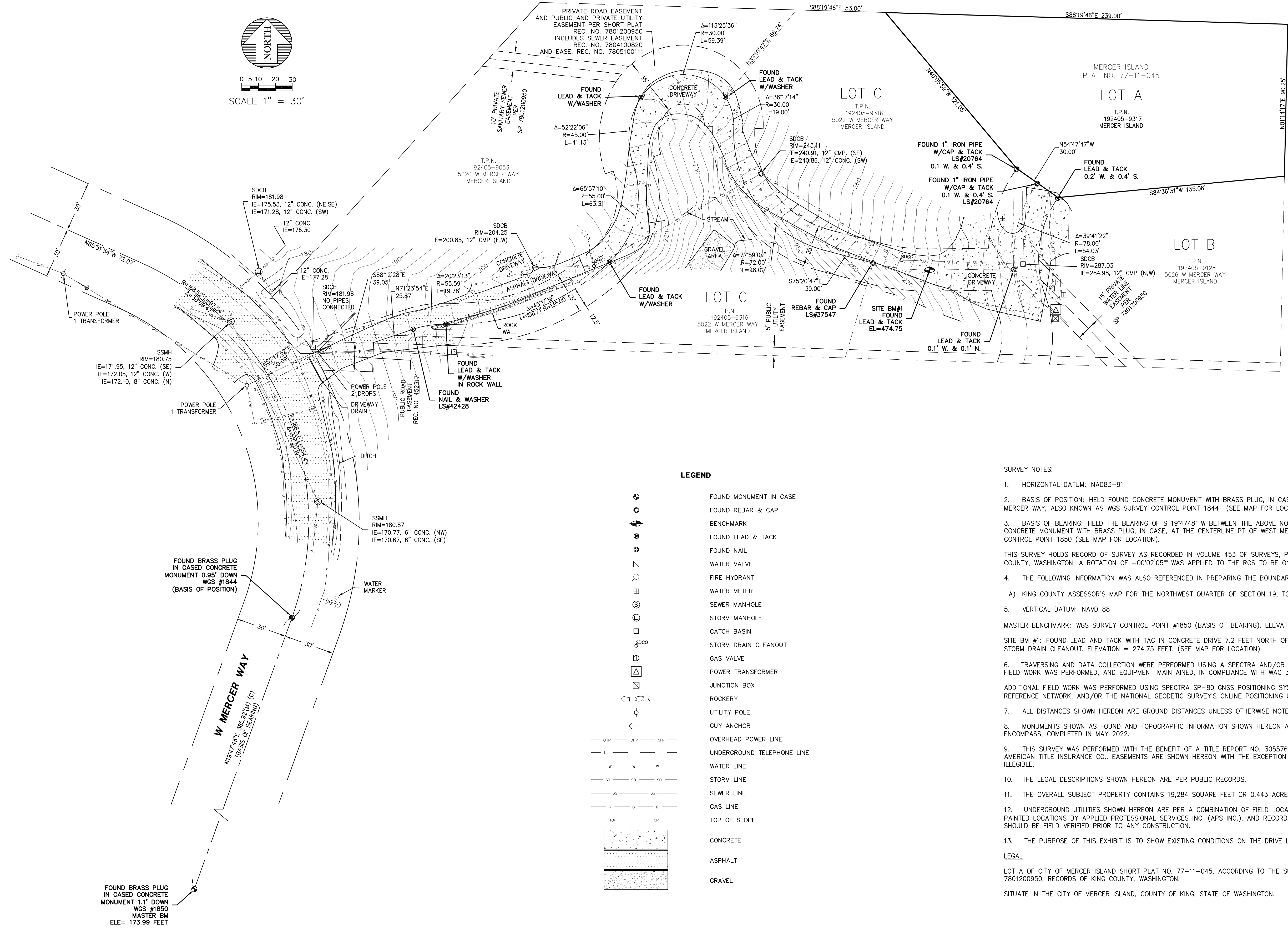
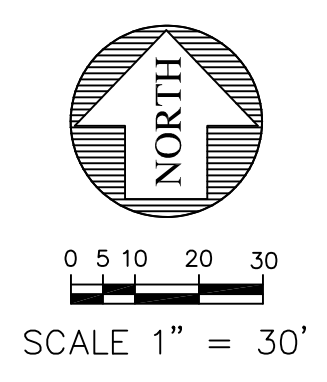
FIRE HYDRANT

PRIVATE WATER LINE EASEMENT



# HARVEY CHEN

A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SEC. 19, T 24 N., R 05 E., W.M.  
KING COUNTY, STATE OF WASHINGTON



### LEGEND

- FOUND MONUMENT IN CASE
- FOUND REBAR & CAP
- BENCHMARK
- FOUND LEAD & TACK
- FOUND NAIL
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- SEWER MANHOLE
- STORM MANHOLE
- CATCH BASIN
- STORM DRAIN CLEANOUT
- GAS VALVE
- POWER TRANSFORMER
- JUNCTION BOX
- ROCKERY
- UTILITY POLE
- GUY ANCHOR
- OVERHEAD POWER LINE
- UNDERGROUND TELEPHONE LINE
- WATER LINE
- STORM LINE
- SEWER LINE
- GAS LINE
- TOP OF SLOPE
- CONCRETE
- ASPHALT
- GRAVEL

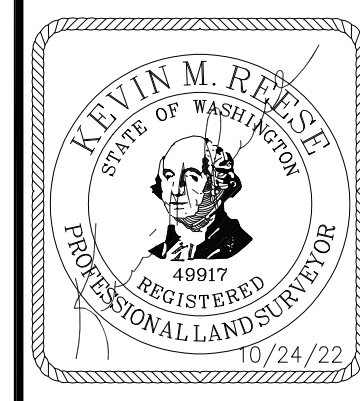
### SURVEY NOTES:

- HORIZONTAL DATUM: NAD83-91
  - BASIS OF POSITION: HELD FOUND CONCRETE MONUMENT WITH BRASS PLUG, IN CASE, AT THE CENTERLINE PC OF WEST MERCER WAY, ALSO KNOWN AS WGS SURVEY CONTROL POINT 1844 (SEE MAP FOR LOCATION).
  - BASIS OF BEARING: HELD THE BEARING OF S 19°47'48" W BETWEEN THE ABOVE NOTED BASIS OF POSITION AND THE FOUND CONCRETE MONUMENT WITH BRASS PLUG, IN CASE, AT THE CENTERLINE PT OF WEST MERCER WAY, ALSO KNOWN AS WGS SURVEY CONTROL POINT 1850 (SEE MAP FOR LOCATION).
- THIS SURVEY HOLDS RECORD OF SURVEY AS RECORDED IN VOLUME 453 OF SURVEYS, PAGE 132, RECORDS OF KING COUNTY, WASHINGTON. A ROTATION OF -00°02'05" WAS APPLIED TO THE ROS TO BE ON THE ABOVE NOTED DATUM.
- THE FOLLOWING INFORMATION WAS ALSO REFERENCED IN PREPARING THE BOUNDARY SHOWN HERE ON:
    - KING COUNTY ASSESSOR'S MAP FOR THE NORTHWEST QUARTER OF SECTION 19, TOWNSHIP 24N, RANGE 5E, W.M.
    - VERTICAL DATUM: NAVD 88
- MASTER BENCHMARK: WGS SURVEY CONTROL POINT #1850 (BASIS OF BEARING). ELEVATION = 173.99 FEET.
- SITE BM #1: FOUND LEAD AND TACK WITH TAG IN CONCRETE DRIVE 7.2 FEET NORTH OF SOUTH EDGE AND 18.5 FEET EAST OF STORM DRAIN CLEANOUT. ELEVATION = 274.75 FEET. (SEE MAP FOR LOCATION)
- TRAVERSING AND DATA COLLECTION WERE PERFORMED USING A SPECTRA AND/OR TRIMBLE 5 SECOND TOTAL STATION. ALL FIELD WORK WAS PERFORMED, AND EQUIPMENT MAINTAINED, IN COMPLIANCE WITH WAC 332-130.
- ADDITIONAL FIELD WORK WAS PERFORMED USING SPECTRA SP-80 GNSS POSITIONING SYSTEMS, THE WASHINGTON STATE REFERENCE NETWORK, AND/OR THE NATIONAL GEODETTIC SURVEY'S ONLINE POSITIONING USER SERVICE (OPUS).
- ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.
  - MONUMENTS SHOWN AS FOUND AND TOPOGRAPHIC INFORMATION SHOWN HEREON ARE THE RESULT OF A SURVEY BY ENCOMPASS, COMPLETED IN MAY 2022.
  - THIS SURVEY WAS PERFORMED WITH THE BENEFIT OF A TITLE REPORT NO. 3055767 DATED JUNE 11, 2018 BY FIRST AMERICAN TITLE INSURANCE CO. EASEMENTS ARE SHOWN HEREON WITH THE EXCEPTION OF EASEMENT NO. 5990949, WHICH WAS ILLEGIBLE.
  - THE LEGAL DESCRIPTIONS SHOWN HEREON ARE PER PUBLIC RECORDS.
  - THE OVERALL SUBJECT PROPERTY CONTAINS 19,284 SQUARE FEET OR 0.443 ACRES MORE OR LESS.
  - UNDERGROUND UTILITIES SHOWN HEREON ARE PER A COMBINATION OF FIELD LOCATED SURFACE OBSERVABLE FEATURES, PAINTED LOCATIONS BY APPLIED PROFESSIONAL SERVICES INC. (APS INC.), AND RECORDS OF THE APPLICABLE UTILITIES AND SHOULD BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION.
  - THE PURPOSE OF THIS EXHIBIT IS TO SHOW EXISTING CONDITIONS ON THE DRIVE LEADING TO THE SUBJECT PROPERTY.

### LEGAL

LOT A OF CITY OF MERCER ISLAND SHORT PLAT NO. 77-11-045, ACCORDING TO THE SURVEY RECORDED UNDER RECORDING NO. 7801200950, RECORDS OF KING COUNTY, WASHINGTON.  
SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

REVISIONS	DESCRIPTION	BY	DATE



**BOUNDARY TOPOGRAPHIC SURVEY**  
**FOR**  
**HARVEY CHEN**

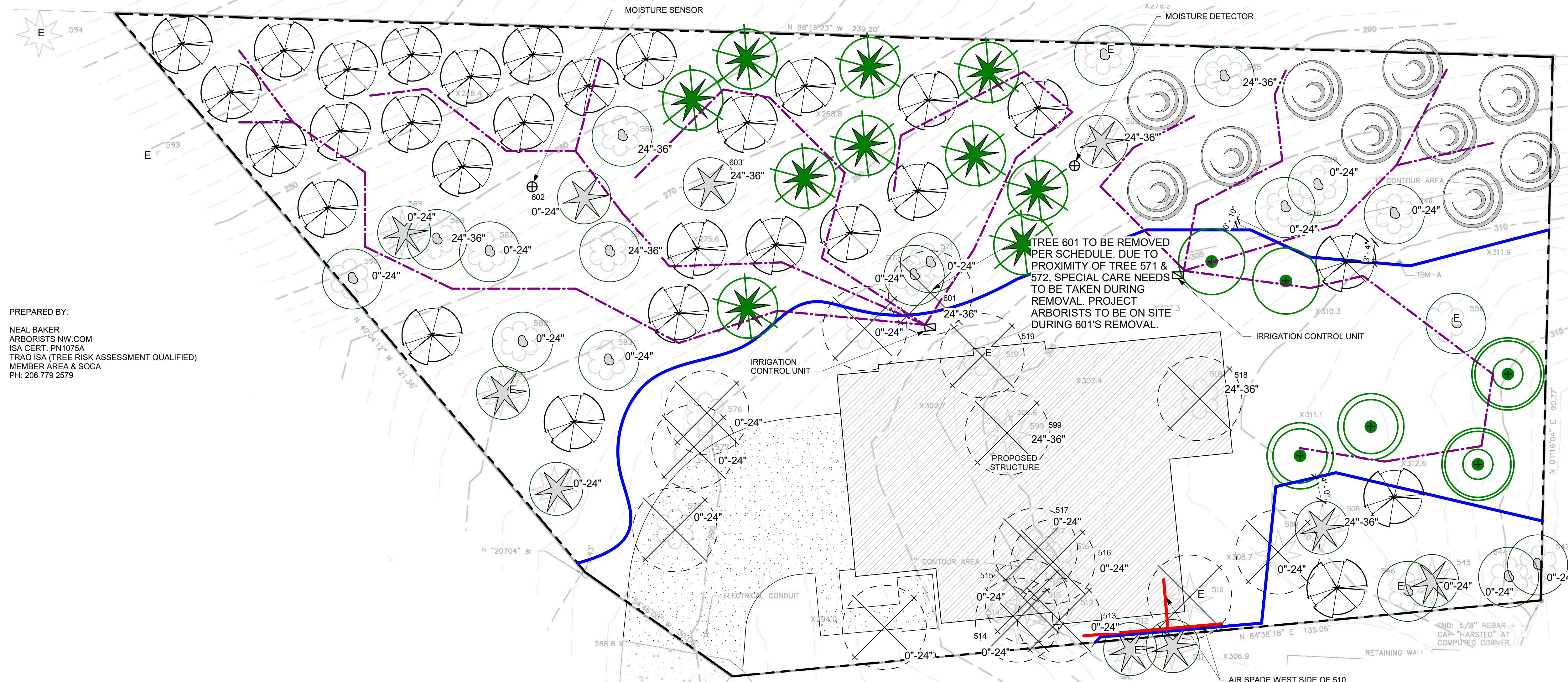
Encompass  
ENGINEERING & SURVEYING

Western Washington Division  
165 NE Juniper Street, Suite 700 • Everett, WA 98201 • Phone: (425) 392-0250  
Eastern Washington Division  
407 Southwater Blvd. • Clk. Elm, WA 98922 • Phone: (509) 674-7433

JOB NO.	22576
DATE	10/24/22
SCALE	1" = 30'
DESIGNED	N/A
DRAWN	LFM
CHECKED	JLS
APPROVED	KMR
SHEET	1 OF 1



No.	Description	Date



PREPARED BY:  
NEAL BAKER  
ARBORISTS NW.COM  
ISA CERT. PN1075A  
TRAQ ISA (TREE RISK ASSESSMENT QUALIFIED)  
MEMBER AREA & SOCA  
PH: 206 779 2579

TREE #	TREE TYPE	DBH	DRIPLINE CRZ/LOD	CONDITION	RETAIN OR REMOVE	VIABLE OR NOT VIABLE	NOTES
508.	DOUGLAS FIR (Pseudotsuga menziesii)	30"	40'	FAIR/GOOD	RETAIN	VIABLE	
509	DOUGLAS FIR (Pseudotsuga menziesii)	16"	24'	FAIR/GOOD	REMOVE	VIABLE	
510	DOUGLAS FIR (Pseudotsuga menziesii)	36.5"	45'	POOR	REMOVE	NOT VIABLE	SEE ARBORIST COVER DESCRIBING RESULTS OF ISA LEVEL 3 INSPECTION. DISTORTED WITH BUTT SWELL
511	DOUGLAS FIR (Pseudotsuga menziesii)	28"	35'	FAIR/GOOD	RETAIN	VIABLE	
512	DOUGLAS FIR (Pseudotsuga menziesii)	36"	50'	FAIR/GOOD	RETAIN	VIABLE	
513	DOUGLAS FIR (Pseudotsuga menziesii)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
514	BLACK PINE (Pinus thunbergia)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
515	DOUGLAS FIR (Pseudotsuga menziesii)	8"	15'	FAIR/GOOD	REMOVE	VIABLE	
516	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	REMOVE	VIABLE	
517	BIG LEAF MAPLE (Acer macrophyllum)	18"	28'	FAIR/GOOD	REMOVE	VIABLE	
518	BIG LEAF MAPLE (Acer macrophyllum)	30"	60'	EXC. LEAN	REMOVE	NOT VIABLE	TRUNK ROT
519	BIG LEAF MAPLE (Acer macrophyllum)	36"	40'	FAIR/GOOD	REMOVE	NOT VIABLE	18", 12" 24" & 16" STOCKS
538	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
539	BIG LEAF MAPLE (Acer macrophyllum)	18"	28'	FAIR/GOOD	RETAIN	VIABLE	
540	BIG LEAF MAPLE (Acer macrophyllum)	7"	15'	FAIR/GOOD	RETAIN	VIABLE	
543	RED ALDER (Alnus rubra)	12"	16'	POOR	RETAIN	NOT VIABLE	PARTIALLY DEAD AND TOPPED
544	BIG LEAF MAPLE (Acer macrophyllum)	8"	15'	FAIR/GOOD	RETAIN	VIABLE	
545	DOUGLAS FIR (Pseudotsuga menziesii)	28"	45'	FAIR/GOOD	RETAIN	VIABLE	
546	MADRONA (Arbutus menziesii)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
556	BIG LEAF MAPLE (Acer macrophyllum)	36"	48'	POOR	RETAIN	NOT VIABLE	LIVE HABITATE
565	BIG LEAF MAPLE (Acer macrophyllum)	14"	20'	FAIR/GOOD	RETAIN	VIABLE	
566	WESTERN RED CEDAR (Thuja plicata)	10"	18'	FAIR/GOOD	RETAIN	VIABLE	
567	BIG LEAF MAPLE (Acer macrophyllum)	36"	45'	FAIR/GOOD	RETAIN	VIABLE	
571	BIG LEAF MAPLE (Acer macrophyllum)	14"	20'	FAIR/GOOD	RETAIN	VIABLE	
572	BIG LEAF MAPLE (Acer macrophyllum)	8"	13'	FAIR/GOOD	RETAIN	VIABLE	
573	BIG LEAF MAPLE (Acer macrophyllum)	18"	30'	FAIR/GOOD	REMOVE	VIABLE	
576	BIG LEAF MAPLE (Acer macrophyllum)	11"	15'	FAIR/GOOD	REMOVE	VIABLE	
577	BIG LEAF MAPLE (Acer macrophyllum)	6"	10'	FAIR/GOOD	REMOVE	VIABLE	
578	BIG LEAF MAPLE (Acer macrophyllum)	16.7"	25'	FAIR/GOOD	REMOVE	VIABLE	12", 10", & 6" STOCKS
579	DOUGLAS FIR (Pseudotsuga menziesii)	18"	28'	FAIR/GOOD	RETAIN	VIABLE	
581	WESTERN RED CEDAR (Thuja plicata)	36"	45'	FAIR/GOOD	RETAIN	VIABLE	
582	BIG LEAF MAPLE (Acer macrophyllum)	9"	15'	FAIR/GOOD	RETAIN	VIABLE	
583	BIG LEAF MAPLE (Acer macrophyllum)	12"	20'	FAIR/GOOD	RETAIN	VIABLE	
584	BIG LEAF MAPLE (Acer macrophyllum)	30"	40'	FAIR/GOOD	RETAIN	VIABLE	
586	BIG LEAF MAPLE (Acer macrophyllum)	28.4"	25'	FAIR/GOOD	RETAIN	VIABLE	24", 14", & 6" STOCKS
587	BIG LEAF MAPLE (Acer macrophyllum)	12"	17'	FAIR/GOOD	RETAIN	VIABLE	
588	BIG LEAF MAPLE (Acer macrophyllum)	27.7"	32'	FAIR/GOOD	RETAIN	VIABLE	24" & 14" STOCKS (SPRAWL)
589	WESTERN RED CEDAR (Thuja plicata)	6"	10'	FAIR/GOOD	RETAIN	VIABLE	
590	BIG LEAF MAPLE (Acer macrophyllum)	19.7"	32'	FAIR/GOOD	RETAIN	VIABLE	16", 10", & 6" STOCKS
593	WESTERN RED CEDAR (Thuja plicata)	36"	48'	FAIR/GOOD	RETAIN	VIABLE	OFFSITE
594	WESTERN RED CEDAR (Thuja plicata)	36"	48'	FAIR/GOOD	RETAIN	VIABLE	OFFSITE
599	NORWAY SPRUCE (Picea abies)	11"	14'	GOOD	REMOVE	VIABLE	
600	PORTUGUESE LAUREL (Prunus lusitanica)	10.6"	14'	FAIR/GOOD	RETAIN	VIABLE	7" & 8" STOCKS
601	BIG LEAF MAPLE (Acer macrophyllum)	28"		DEAD	REMOVE	NOT VIABLE	CUT TO SHORT HABITAT TREE SEE ARBORIST COVER (SEE COMMENT ON PLAN)
602	DOUGLAS FIR (Pseudotsuga menziesii)	22"		DEAD	RETAIN	NOT VIABLE	SEE COVER LETTER WITH DISCUSSION
603	WESTERN RED CEDAR (Thuja plicata)	30"	STUB	DEAD	RETAIN	NOT VIABLE	SEE COVER LETTER WITH DISCUSSION

ARBORISTS SITE PLAN

1" = 10'-0"

TREE PROTECTION AREA (TPZ)

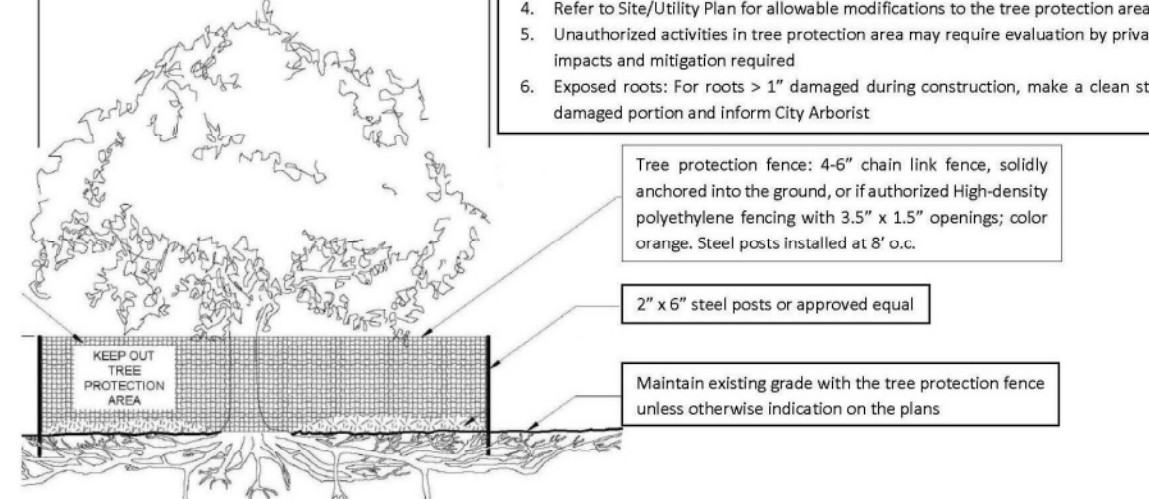
KEEP OUT!

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees
3. Arborist reports recommending mitigation

Cover dip line or other part of Tree Protection Area. See Site/Utility Plan for fence alignment.



Any Work in the protected area must be with the permission of the City Arborist [john.kennedy@mercergov.org](mailto:john.kennedy@mercergov.org)

	TREE DRIP LINE		DOUGLAS FIR	10
	EVERGREEN TREE		WESTER RED CEDAR	10
	DECIDUOUS TREE		VINE MAPLE	29
	TREE TO BE REMOVED		Fuyu persimmon	2
	TREE PROTECTION FENCING MUST BE PLACED PRIOR TO CONSTRUCTION ACTIVITY		Magnolia	2
	"E" REPRESENTS EXCEPTIONAL TREES. IN EXCESS OF 36" DBH		Flowering dogwoods	2

TROLMASTER IRRIGATION SYSTEM:

AQUATEX NFS-1 CONTROL UNIT	2	
WD-1 DETECTION UNIT	2	
IRRIGATION DRIPLINE	8	

REPLANTING PLAN:

WESTERN RED CEDAR	Thuja plicata
VINE MAPLE	Acer circinatum
DOUGLAS FIR	Pseudotsuga menziesii

Confers at least six feet tall and deciduous at least one and one-half inches in diameter at base.

NOTE: RANGE FINDER WAS USED TO DETERMIN DRIPLINE/CRZ/LOD

CHEN RESIDENCE

50xx W MERCER WAY, MERCER ISLAND 98040

CHEN RESIDENCE

ARBORIST TREE PLAN

Project number	
Date	
Drawn by	CW
Checked by	NB

A102

Scale As indicated

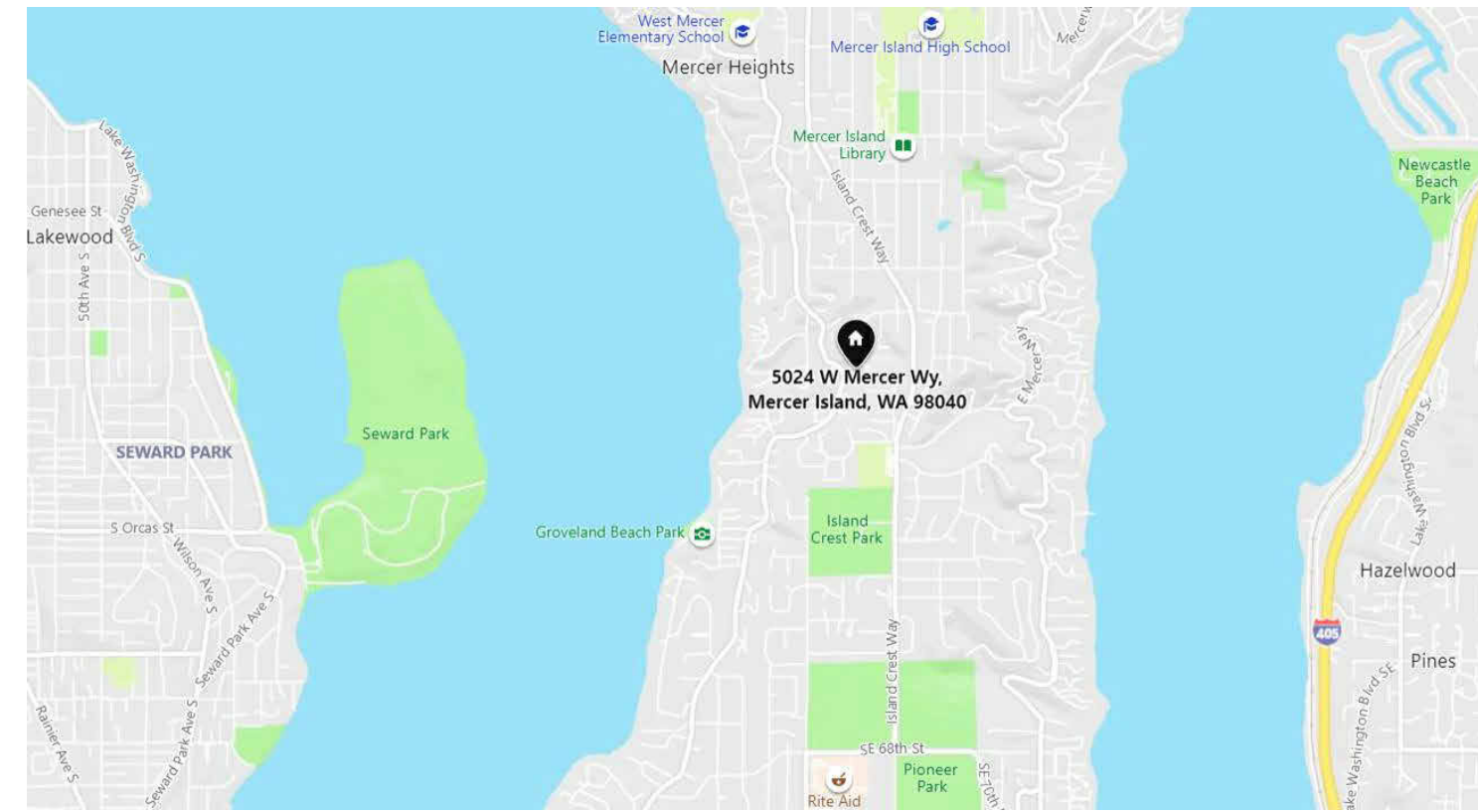


# Chen Residence

## ABBREVIATIONS

A.C.T.	ACOUSTICAL CLG TILE	REFER	REFRIGERATOR
CD	CARBON MONOXIDE DETECTOR	R.A.	RETURN AIR
CLG	CEILING	R.O.	ROUGH OPENING
C.T.	COMMON TRUSS	R&S	ROD AND SHELF
CLR	CLEAR	S.A.	SUPPLY AIR
COMP	COMPOSITION	SCHED	SCHEDULE
CONC	CONCRETE	SD	SMOKE DETECTOR
		SH	SHELVES
DBL	DOUBLE	SHT	SHEET
DIA	DIAMETER	SHWR	SHOWER
		SIM	SIMULAR
F.F.	FINISH FLOOR	S.S.	STAINLESS STEEL
F.E.	FIRE EXTINGUISHER	STOR	STORAGE
F.E.C.	FIRE EXTINGUISHER CABINET	SUSP	SUSPENDED
F.D.	FLOOR DRAIN		
FLR	FLOOR	TEL	TELEPHONE
		THERM	THERMOSTAT
G.T.	GIRDER TRUSS	TYP	TYPICAL
GWB	GYP SUM WALL BOARD		
GYP	GYP SUM	U.C.L.	UNDERCABINET LIGHTS
		U.N.O.	UNLESS NOTED OTHERWISE
		V	VINYL
HDWD	HARDWOOD	VB	VAPOR BARRIER
HGT	HEIGHT	V.C.T.	VINYL COMPOSITION TILE
H.M.	HIP MASTER	VTOS	VENT TO OUTSIDE
MFR	MANUFACTURER		
MIL	MILLIMETERS	W.C.	WATER CLOSET
		W.P.	WATER PROOF
N.I.C.	NOT IN CONTRACT	w/	WITH
N.T.S.	NOT TO SCALE	w/o	WITHOUT
		WD	WOOD
O.C.	ON CENTER	W/D	WASHER AND DRYER
PLYW'D	PLYWOOD		
P.T.	PRESSURE TREATED		

## VICINITY MAP



## ENERGY CODE NOTES

**ENERGY COMPLIANCE**  
PROPOSED RESIDENCE TO COMPLY WITH THE PRESCRIPTIVE REQUIREMENTS OF THE 2018 W.S.E.C. - SEE WSEC FORM/REQUIREMENTS ON SHEET A002.

**MECHANICAL VENTILATION REQUIREMENTS**  
PROPOSED RESIDENCE TO COMPLY WITH THE PRESCRIPTIVE VENTILATION REQUIREMENTS OF SECTION M1505 OF THE IRC.

WHOLE-HOUSE MECHANICAL VENTILATION SYSTEMS ARE REQUIRED TO BE TESTED, BALANCED AND VERIFIED PER IRC M1505.4.1.6 & M1505.4.1.7

WHOLE-HOUSE MECHANICAL SYSTEMS SHALL BE PROVIDED WITH ADVANCED CONTROLS THAT ARE CONFIGURED TO OPERATE AT 50% BUT WILL ALSO FUNCTION FOR AT LEAST 2 HOURS IN EACH FOUR-HOUR SEGMENT.

AN INTERMITTENT WHOLE HOUSE VENTILATION SYSTEM INTEGRATED WITHIN THE FORCED AIR SYSTEM. 24 HOUR TIMER & MANUAL OVERRIDE CONTROLS LOCATED IN MAIN LAUNDRY ROOM. 75 CFM AT 50% OPERATION WITH A SYSTEM TYPE NOT BALANCED AND NOT DISTRIBUTED = 225 CFM (TABLE M1505.4.3(1) & M1505.4.3(2) & m1505.4.3(3))

SEE SHEET A002 FOR WSEC GENERAL NOTES.

\*\*SEE THE MECHANICAL VENTILATION M1505 OF THE WA STATE RESIDENTIAL CODE SECTION ON SHEET A002

[2] HEAT PUMP - 1.0 CREDIT

[1.3] EFFICIENT BUILDING ENVELOPE - 0.5 CREDITS:  
PRESCRIPTIVE COMPLIANCE IS BASED ON TABLE R402.1.1 WITH THE FOLLOWING MODIFICATIONS:

- FENESTRATION U<sub>e</sub> = 0.28
- FLOOR R-38
- SLAB ON GRADE R-10 PERIMETER AND UNDER ENTIRE
- SLAB BELOW GRADE SLAB R-10 PERIMETER AND UNDER ENTIRE SLAB

[3.5] HIGH EFFICIENCY HVAC EQUIPMENT - 1.5 CREDITS:  
AIR-SOURCE, CENTRALLY DUCTED HEAT PUMP WITH MINIMUM HSPF OF 11.0.  
PROPOSED MODEL:

- HITACHI MINI VRF 208/230V HEAT PUMP SYSTEM
- EFFICIENCY: 11.0 HSPF

HEAT PUMP SUPPLEMENTARY HEAT, IF PROVIDED, SHALL BE PER R403.1.2.  
• AT FINAL INSPECTION THE AUXILIARY HEAT LOCK OUT CONTROL SHALL BE SET TO 35°F OR LESS.

[4.2] HIGH EFFICIENCY HVAC DISTRIBUTION - 1.0 CREDITS:

- ALL DUCT SYSTEMS SHALL BE LOCATED COMPLETELY WITHIN THE CONTINUOUS AIR BARRIER PER R403.3.7.
- ALL HEATING, COOLING AND VENTILATION SYSTEM COMPONENTS SHALL BE INSTALLED INSIDE THE CONDITIONED SPACE PER R403.3.7.

LOCATING SYSTEM COMPONENTS IN CONDITIONED CRAWL SPACE IS NOT PERMITTED UNDER THIS OPTION.

ELECTRIC RESISTANCE HEAT AND DUCTLESS HEAT PUMPS ARE NOT PERMITTED UNDER THIS OPTION.

DIRECT COMBUSTION HEATING EQUIPMENT WITH AFUE LESS THAN 80% IS NOT PERMITTED UNDER THIS OPTION.

[5.5] EFFICIENT WATER HEATING - 2.0 CREDITS:  
THE PROPOSED WATER HEATING SYSTEM SHALL INCLUDE A ELECTRIC HEAT PUMP WATER HEATER MEETING STANDARDS FOR TIER III OF NEEA'S ADVANCED WATER HEATING SPECIFICATION.

PROPOSED MODEL:  
• RUUD® HYBRID BUILDER RESIDENTIAL ELECTRIC WATER HEATER, MODEL PRO H80 T2RU310BM  
• UNIFORM ENERGY FACTOR: 3.5

TOTAL CREDITS - 6.0

## PROJECT INFO

### PROJECT ADDRESS:

5024 W MERCER WAY,  
MERCER ISLAND, 98040

### BUILDER:

ATERA HOMES, LLC  
451 DUVALL AVE NE, SUITE 115  
RENTON, WA, 98059

CONTACT: PAUL MONSEF  
PHONE: (206) 612-8647  
EMAIL: paul@monsefdesign.com

### DESIGNER:

MONSEF DESIGN STUDIO, LLC  
451 DUVALL AVE NE, SUITE 115  
RENTON, WA 98059

CONTACT: MILTON ORELLANA  
PHONE: (425) 306-2758  
EMAIL: Milton@aterahomes.com

### ENGINEER:

L2 ENGINEERS, LLC  
17848 NE 198TH PLACE  
WOODINVILLE, WA 98072

CONTACT: BRIAN LOSHBROUGH, P.E.  
PHONE: (206) 251-2346  
EMAIL: BRIAN@L2ENGINEERS.COM

### SCOPE OF WORK:

CONSTRUCT A NEW 3234 SQ FT SINGLE FAMILY RESIDENCE.

### BIDDER DESIGN:

ELECTRICAL, MECHANICAL, PLUMBING, MFR TRUSS CONNECTIONS, EXTERIOR CLADDING TO BE BIDDER DESIGNED/DEFERRED SUBMITTAL (PER 106.3.4.2)

### LEGAL DESCRIPTION:

PARCEL A CITY OF MERCER ISLAND SP MI 77-11-045 REC AF NO 7801200950 SD PLAT DAF - THAT POR OF S 1/2 OF NW 1/4 OF NW 1/4 DAF - BEG AT SE COR OF SD SUBD TH N 01-16-04 E ALG ELY LN TH OF 450 FT TH N 88-10-41 W A DIST OF 200 FT TO TPOB TH CONTG N 88-10-41 W A DIST OF 578.85 FT TAP ON NELY MGN OF W MERCER WAY SD PT LY ON A CRV HAVING A RAD OF 198.52 FT & HAVING A RAD BRG OF S 57-19-36 W TH NWLY ALG SD CRV THRU A C/A OF 09-31-54 AN ARC DIST OF 33.03 FT TH N 42-17-56 E A DIST OF 236.31 FT TO SLY BDRY OF MERHAVEN DIV 2 TH S 88-17-59 E ALG SLY BDRY OF MERHAVEN DIV 2 & CONTG ALG SLY BDRY OF MERHAVEN DIV 3 A DIST OF 444.33 FT TH S 01-16-04 W A DIST OF 206.25 FT TO TPOB

### CODE INFORMATION:

**GENERAL INFORMATION:**  
BUILDING AREAS: SEE SQUARE FOOTAGE SCHED THIS SHEET.  
CODE COMPLIANCE: 2018 IRC with statewide and City amendments  
CONTR. CLASS: TYPE Vb CONSTRUCTION  
GLAZING: SEE ENERGY CODE NOTES SHT A000  
PARCEL #: 192405-9317  
ZONE: R-15  
**PARCEL DESCRIPTION:**  
PROPERTY TYPE: R - RESIDENTIAL SINGLE FAMILY (RES USE /ZONE)  
PRESENT USE: VACANT (SINGLE-FAMILY)  
LOT AREA: 19,325 SF  
PLAT BLOCK: --  
PLAT LOT: --  
Q-S-T-R: NW-19-24-5

### AREA, SQUARE...

Name	Area
Foyer	119 SF
Lower Entry	122 SF
Lower Stairs	67 SF
Main Floor	1490 SF
Main Floor (+20ft Clg)	68 SF
Main Stairs	109 SF
Main Floor (+20ft Clg)	70 SF
Upper Floor	1469 SF
Gross Building Area: 8	3514 SF
Garage	671 SF
Exterior Area: 1	671 SF
Grand total: 9	4185 SF

### FIRE PROTECTION MEASURES:

- NFPA 13R-PLUS FIRE SPRINKLER SYSTEM REQUIRED
- NFPA 72 HOUSEHOLD FIRE ALARM SYSTEM SYSTEM
- MONITORED LOW VOLT SMOKE & CO DETECTORS
- SOLID CORE AND OR FIRE RATED DOORS THROUGHOUT
- 1-HR RATED GYPSUM WALL BOARD, ALL AREAS

## DRAWING INDEX

NUMBER	SHEET NAME	REV. ID	REV. DATE
A000	COVER SHEET	1	
A001	CODE NOTES		
A002	ENERGY NOTES	1	
A003	ENERGY/VENTING CALCULATIONS	1	
A100	SURVEY		
A101	SITE PLAN & AREA/HT CALCULATIONS	1	
A102	TEMPORARY EXCAVATION PLAN & SITE SECTIONS		
A104	PROPOSED GRADING PLAN	1	
A110	ARBORIST TREE PLAN		
A201	LOWER FLOOR	1	
A301	MAIN FLOOR	1	
A401	UPPER FLOOR		
A501	ROOF PLAN	1	
A601	ELEVATIONS	1	
A701	BUILDING SECTIONS		
A702	BUILDING SECTIONS		
A703	BUILDING SECTIONS		
ARCHITECTURAL 'A': 17			
D101	FOUNDATION & FRAMING DETAILS		
D102	FRAMING DETAILS	1	
D201	BASEMENT DETAILS	1	
D301	ROOF DETAILS		
D401	DECK DETAILS		
ARCHITECTURAL DETAIL 'D': 5			
C1	COVERSHEET		
C2	TESC AND DEMO PLAN		
C2.2	C2 - TESC DETAILS		
C3	SITE, LANDSCAPE & DRAINAGE PLAN		
C4	DETAILS		
C4.4	DRAINAGE PLAN		
C5	OFF-SITE STROM/WATER PLAN		
CIVIL 'C': 7			
S100	GENERAL STRUCTURAL NOTES		
S101	GENERAL STRUCTURAL NOTES		
S102	NOTES & SCHEDULE		
S200	FOUNDATION PLAN		
S201	MAIN FLOOR FRAMING PLAN		
S202	UPPER FLOOR FRAMING PLAN		
S203	ROOF FRAMING PLAN		
S300	STRUCTURAL DETAILS		
S301	STRUCTURAL DETAILS		
S302	STRUCTURAL DETAILS		
STRUCTURAL 'S': 10			

## SYMBOLS & LEGEND:

	NEW WALL: INFILL PHASE		EXISTING WALL: SHELL / CORE PHASE
	GRID LINES		SHEET LAYOUT DESIGNATION: VIEW # / SHEET #
	EXIST. CONTOURS		ELEVATION DESIGNATION: VIEW # / SHEET #
	NEW CONTOURS		DOOR TAG: -SEE DOOR SCHEDULE.
	WINDOW TAG: -SEE WINDOW SCHEDULE EXHAUST FAN PER M1 507.3: -50 CFM MIN., TYP. U.N.O. -100 CFM MIN. @ KITCH.		SHEARWALL TAG: SEE SHEARWALL SCHEDULE
	WHOLE HOUSE EXHAUST FAN: -150 CFM MIN. -SEE M1 508 ON SHT A002		INDICATES STRUCTURAL KEYNOTE WITH INDEXED NUMBER. SEE STRUCTURAL KEYNOTE SCHEDULE.
	THERMOSTAT: -PROVIDE 2x8 BLKG AT 5'1" A.F.F.		CARBON MONOXIDE DETECTOR PER R31.5. W/ INTERCONNECTIVITY PER R31.4.1
	24HR TIMER TO W.H. FAN -SEE M1 508 ON SHT A002		HEAT DETECTOR PER IRC31.4.2.3 W/ INTERCONNECTIVITY PER R31.4.1
			FURNACE/WATER HEATER: -PROVIDE COMBUSTIONABLE AIR FROM OUTSIDE WHEN REQD. -PROVIDE PRESSURE RELIEF LINE TO OUTSIDE. -SECURE WATER HEATER TOP & BOTTOM.

**TYP WINDOW NOTES:**

- SEE ARCHITECTURAL FLOOR PLANS FOR WINDOW LOCATIONS AND DESIGNATIONS. SEE ELEVATIONS & BUILDING SECTIONS FOR WINDOW HEAD/SILL LOCATIONS.
- ALL RESIDENTIAL WINDOWS ARE BASED UPON MILGARD VINYL WINDOWS OR EQ U.N.O.
- ALL WINDOWS TO BE FIXED UNLESS SHOWN/NOTED OTHERWISE.
- PROVIDE SAFETY GLAZING PER KEYNOTE P-4 AS LOCATED ON FLOOR PLANS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002

**TYP DOOR NOTES:**

- ALL RESIDENTIAL SLIDING GLASS DOORS ARE BASED ON MILGARD SERIES VINYL SLIDING DOORS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002.
- PROVIDE SAFETY GLAZING PER GENERAL NOTES.
- NOT USED.
- PROVIDE MIN 0.20 U-VALUE AT SOLID CORE FLUSH DOORS WHERE EXPOSED TO AMBIENT TEMPERATURE.

Description

No.

MONSEF DESIGN STUDIO

Chen Residence

PERMIT SET

COVER SHEET

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2023/06/20  
DRAWN BY: SPM

A000

SCALE 24X36: 1/4" = 1'-0"

NOTE: 1/4" X 1/7" SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

5024 W Mercer Way, Mercer Island

451 DUVALL AVE NE, RENTON, WA 98059  
206.612.8647 | WWW.ATERAHOMES.COM



CHAPTER 1: ADMINISTRATION

R101  
TITLE, SCOPE AND PURPOSE

1. THIS COVERSHEET HAS BEEN PREPARED IN A GENERIC OUTLINE FORM FOLLOWING THE STANDARDS SET BY THE INTERNATIONAL RESIDENTIAL CODE (IRC), NOT ALL ITEMS ARE NECESSARILY REQUIRED TO COMPLETE THIS SPECIFIC PROJECT, COORDINATE PLANS WITH IRC.
2. THIS SET OF WORKING DRAWINGS IS CONSIDERED A "BUILDER SET" AND DOES NOT INCLUDE SPECIFICATIONS OR BUILDING MATERIALS LIST. THEREFORE IT IS THE CONTRACTOR/OWNER RESPONSIBILITY TO PROVIDE AND COORDINATE SPECIFICATIONS, INCLUDING PRODUCT SELECTION AND INSTALLATION OR ASSEMBLY. ITEMS CALLED OUT ARE DONE SO FOR CONVENIENCE ONLY.
3. DO NOT SCALE THESE DRAWINGS FOR CRITICAL DIMENSIONS. VERIFY ALL DIMENSIONS AND DATUM'S BEFORE COMMENCING WORK AND BE RESPONSIBLE FOR THEIR ACCURACY AND REPORT DISCREPANCIES / OMISSIONS TO THE ARCHITECT IMMEDIATELY.

CHAPTER 3: BUILDING PLANNING

DESIGN CRITERIA

[B] **R301.2 CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA.** BUILDINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN THE IRC. ADDITIONAL CRITERIA SHALL BE ESTABLISHED BY THE LOCAL JURISDICTION AND SET FORTH IN **TABLE R301.2(1)** CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA.

GROUND SNOW LOAD:	25
WIND SPEED:	PER STRUCT
SEISMIC DESIGN CATEGORY:	
SUBJECT TO DAMAGE FROM:	
WEATHERING:	MODERATE
FROST LINE DEPTH:	18"
TERMITE:	MODERATE
WINTER DESIGN TEMP:	26
ICE SHIELD UNDERLAYMENT REQUIRED:	NO
FLOOD HAZARDS:	
AIR FREEZING INDEX:	175
MEAN ANNUAL TEMP:	50.5

**R01.4 DEAD LOAD.**  
THE ACTUAL WEIGHTS OF MATERIALS AND CONSTRUCTION SHALL BE USED FOR DETERMINING DEAD LOAD. DEAD LOADS USED FOR THIS PROJECT ARE AS FOLLOWS:

	15 PSF
	12 PSF
	10 PSF

**R01.5 LIVE LOAD.**  
THE MINIMUM UNIFORMLY DISTRIBUTED LIVE LOAD SHALL BE AS PROVIDED IN

**TABLE R301.5.**  
TABLE R301.5 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS

ATTICS WITH STORAGE:	20 PSF
WITHOUT STORAGE:	10 PSF
	40 PSF
EXTERIOR BALCONIES:	60 PSF
FIRE ESCAPES:	40 PSF
GUARDRAILS AND HANDRAILS:	200 PLF
GUARDRAIL IN-FILL COMPONENTS:	200 PLF
PASSENGER VEHICLE GARAGES:	200 PSF
ROOMS OTHER THAN SLEEPING ROOMS:	40 PSF
SLEEPING ROOMS:	30 PSF
	40 PSF

**R01.6 ROOF LOAD.**  
ROOF SHALL BE DESIGNED FOR THE LIVE LOAD INDICATED IN **TABLE R301.6** THE SNOW LOAD INDICATED IN **TABLE R301.2(1)**, WHICHEVER IS GREATER.

**TABLE R301.6.**  
MINIMUM ROOF LIVE LOADS IN POUNDS-FORCE PER SQUARE

ROOF SLOPE:	TRIBUTARY LOADED AREA IN SQUARE FEET FOR ANY STRUCTURAL MEMBER		
	0 to 200	2001 to 600	Over 600
FLAT OR RISE LESS THAN 4" PER FOOT (1:3).	20	16	12
RISE LESS 4" PER FLOOR (1:3) TO 12" PER FOOT (1:1).	16	14	12
RISE 12" PER FOOT (1:1) AND GREATER.	12	12	12

**R01.8 NOMINAL SIZES.**  
...WHERE DIMENSIONS OF LUMBER ARE SPECIFIED, THEY SHALL BE DEEMED TO BE NOMINAL DIMENSIONS UNLESS SPECIFICALLY DESIGNATED AS ACTUAL DIMENSIONS.

R317  
PROTECTION AGAINST DECAY

**317.1 LOCATION REQUIRED.**  
IN AREAS SUBJECT TO DECAY DAMAGE AS ESTABLISHED BY **TABLE R301.2(1)** LOCATIONS REQUIRED BY **SECTION R317.1**, SHALL BE PRESERVATIVE-TREATED IN ACCORDANCE WITH AWP A U1 FOR THE SPECIES, PRODUCT, PRESERVATIVE AND END USE. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWP A U1

**317.1.1 FIELD TREATMENT**  
FIELD-CUT ENDS, NOTCHES AND DRILLED HOLES OF PRESERVATIVE-TREATED WOOD SHALL BE TREATED IN THE FIELD IN ACCORDANCE WITH AWP A M4.

- 6.1 GENERAL**
- ALL CUTS, HOLES AND INJURIES SUCH AS ABRASIONS OR HOLES FROM REMOVAL OF NAILS AND SPIKES WHICH MAY PENETRATE THE TREATED ZONE SHALL BE FIELD TREATED. AN AWP A ACCEPTED PRESERVATIVE SYSTEM, DETERMINED APPROPRIATE IN ACCORDANCE WITH AWP A M4 SECTION 7, SHALL BE USED FOR FIELD TREATMENT.
  - APPLY PRESERVATIVES IN ACCORDANCE WITH THE PRODUCT LABEL.
  - COAT ANY SURFACE THAT IS EXPOSED BY DAMAGE OR FIELD FABRICATION WHILE NOT USING EXCESS PRESERVATIVE.
  - ANY EXCESS PRESERVATIVE NOT ABSORBED BY THE WOOD PRODUCT SHALL BE CLEANED FROM THE SURFACE PRIOR TO THE USE OF THE PRODUCT.
  - BORED HOLES FOR CONNECTORS OR BOLTS MAY BE TREATED BY PUMPING COAL-TAR ROOFING CEMENT MEETING ASTM D5643 INTO HOLES USING A GREASE GUN OR SIMILAR DEVICE.
  - CAREFUL ATTENTION SHOULD BE GIVEN TO MATERIALS PLACED INTO WET ENVIRONMENTS.
  - AREA TO BE TREATED SHALL BE CLEAN, DRY AND FREE OF EXCESS PRESERVATIVE.

- 7.1 PRESERVATIVES**
- THE PRESERVATIVE SYSTEM FOR FIELD TREATMENT SHALL BE DETERMINED BY THE TYPE OF PRESERVATIVE ORIGINALLY USED TO PROTECT THE PRODUCT.
  - THE PRESERVATIVES DESIGNATED IN AWP A M4 SECTIONS 7.1.1, AND 7.1.2 ARE SUITABLE ALTERNATIVES WHEN NO MATCH CAN BE FOUND.

**317.1.2 GROUND CONTACT.**  
ALL WOOD IN CONTACT WITH THE GROUND SHALL BE APPROVED PRESSURE-PRESERVATIVE-TREATED WOOD SUITABLE FOR GROUND CONTACT USE

**317.3 FASTENERS.**  
FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER.  
EXCEPTION:  
1. ONE-HALF-INCH DIAMETER OR GREATER STEEL BOLTS.  
2. FASTENERS OTHER THAN NAILS AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B 695, CLASS 55 MINIMUM

CHAPTER 4: FOUNDATIONS

R401  
**401.1 APPLICATION.**  
THE PROVISIONS SET FORTH IN CHAPTER 4 OF THE IRC SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE FOUNDATION AND FOUNDATION SPACES FOR ALL BUILDINGS. IN ADDITION TO THE PROVISIONS OF THIS CHAPTER, THE DESIGN AND CONSTRUCTION OF FOUNDATIONS IN AREAS PRONE TO FLOODING AS ESTABLISHED BY **TABLE R301.2(1)** SHALL MEET THE PROVISIONS OF SECTION R322.

**401.4 SOIL TESTS.**  
IN AREAS LIKELY TO HAVE EXPANSIVE, COMPRESSIBLE, SHIFTING OR OTHER UNKNOWN SOIL CHARACTERISTICS, THE BUILDING OFFICIAL SHALL DETERMINE WHETHER TO REQUIRE A SOIL TEST TO DETERMINE THE SOIL'S CHARACTERISTICS AT A PARTICULAR LOCATION.  
**401.4.1 GEOTECHNICAL EVALUATION.**  
IN LIEU OF A COMPLETE GEOTECHNICAL EVALUATION, THE LOAD-BEARING VALUES IN **TABLE R401.4.1** SHALL BE USED. **TABLE R401.4.1** PRESUMPTIVE LOAD-BEARING VALUES OF FOUNDATIONS MATERIALS

CLASS OF MATERIAL	LOAD BEARING PRESSURE (PSF)
CRYSTALLINE BEDROCK	12,000
SEDIMENTARY AND FOLIATED ROCK	4,000
SANDY GRAVEL AND/OR GRAVEL (GW AND GP)	3,000
SAND, SILTY SAND, CLAYEY SAND, SILTY GRAVEL AND CLAYEY GRAVEL (SW, SP, SM, SC, GM & GC)	2,000***
CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT AND SANDY SILT (CI, MI, MH & CH)	1,500

\*\*\*U.N.O. 2,000 PSF SOIL BEARING IS ASSUMED FOR THIS PROJECT. VERIFY WITH STRUCTURAL NOTES

R402  
**402.2 CONCRETE.**  
CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH AS SHOWN IN **TABLE R402.2**. CONCRETE SUBJECT TO WEATHERING AS INDICATED IN **TABLE R301.2(1)**, SHALL BE AIR ENTRAINED AS SPECIFIED IN **TABLE R402.2**

**TABLE R402.2.**  
MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE

TYPE OF LOCATIONS OF CONC. CONSTRUCTION	TRIBUTARY LOADED AREA IN SQUARE FEET FOR ANY STRUCTURAL MEMBER		
	NEGIGIBLE	MODERATE	SEVERE
BASEMENT WALLS, FNDN'S EXPOSED TO WEATHER.	2,500 psi	2,500 psi	2,500 psi
BASEMENT SLABS & INTERIOR SLABS ON GRADE, EXCEPT GAR. FLOOR SLABS.	2,500 psi	2,500 psi	2,500 psi
BASEMENT WALLS, FNDN WALLS, EXTERIOR WALLS EXPOSED TO WEATHER.	2,500 psi	3,000 psi	3,000 psi
PORCHES, CARPORT SLABS & STEPS EXPOSED TO WEATHER & GARAGE FLOOR SLABS.	2,500 psi	3,000 psi	3,500 psi

R403  
**403.1 GENERAL.**  
ALL EXTERIOR WALLS SHALL BE SUPPORTED ON CONTINUOUS SOLID OR FULLY GROUTED MASONRY OR CONCRETE FOOTINGS, WOOD FOUNDATIONS, OR OTHER APPROVED STRUCTURAL SYSTEMS, WHICH SHALL BE OF SUFFICIENT DESIGN TO ACCOMMODATE ALL LOADS ACCORDING TO **SECTION R301** AND BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF **SECTION R403**, OF THE IRC. FOOTINGS SHALL BE SUPPORTED ON UNDISTURBED NATURAL SOILS OR ENGINEERED FILL.

**403.1.4.1 FROST PROTECTION.**  
FOUNDATION WALLS, PIERS AND OTHER PERMANENT SUPPORTS OF BUILDINGS AND STRUCTURES SHALL BE PROTECTED FROM FROST BY EXTENDING FOOTINGS BELOW THE FROST LINE AS SPECIFIED IN **TABLE R301.2(1)**...  
EXCEPTION: DECKS NOT SUPPORTED BY A DWELLING NEED NOT BE PROVIDED WITH FOOTINGS THAT EXTEND BELOW THE FROST LINE.

**403.1.6 FOUNDATION ANCHORAGE.**  
WHEN BRACED WALL PANELS ARE SUPPORTED DIRECTLY ON CONTINUOUS FOUNDATIONS, THE WALL WOOD SILL PLATE SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH **SECTION 403.1.6**, OF THE IRC.  
• SILL PLATE SHALL BE ANCHORED TO THE FOUNDATION WITH ANCHOR BOLTS SPACED A MAXIMUM OF 6 FEET ON CENTER. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PLATE. SECTION WITH ONE BOLT LOCATED NOT MORE THAN 12 INCHES FROM EACH END OF THE PLATE SECTION.  
• BOLTS SHALL BE AT LEAST 1/2 INCH IN DIAMETER AND SHALL EXTEND A MINIMUM OF 7 INCHES INTO MASONRY OR CONCRETE.  
• SILLS AND SOLE PLATES SHALL BE PROTECTED AGAINST DECAY AND TERMITES WHERE REQUIRED BY SECTIONS R318 AND R319, OF THE IRC.  
EXCEPTION: FOUNDATION ANCHOR STRAPS, SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2-INCH-DIAMETER ANCHOR BOLTS.

**403.1.6.1 FOUNDATION ANCHORAGE IN SEISMIC DESIGN CATEGORIES D0, D1, D2, AND E.**

- IN ADDITION TO THE REQUIREMENTS OF **SECTION R403.1.6**, THE FOLLOWING REQUIREMENTS SHALL APPLY TO WOOD LIGHT-FRAME STRUCTURES IN SEISMIC DESIGN CATEGORIES D1 AND D2.
- 1/4" X 3" X 3" PLATE WASHERS CONFORMING TO **SECTION R602.11.1** SHALL BE USED ON EACH BOLT
  - INTERIOR BRACED WALL PLATES SHALL HAVE ANCHOR BOLTS SPACED AT NOT MORE THAN 6 FEET ON CENTER AND LOCATED WITHIN 12 INCHES FROM THE ENDS OF EACH PLATE SECTION WHEN SUPPORTED ON A CONTINUOUS FOUNDATION.
  - INTERIOR BEARING WALL SOLE PLATES SHALL HAVE ANCHOR BOLTS SPACED AT NOT MORE THAN 6 FEET ON CENTER AND LOCATED WITHIN 12 INCHES FROM THE ENDS OF EACH PLATE SECTION WHEN SUPPORTED ON A CONTINUOUS FOUNDATION.
  - THE MAXIMUM ANCHOR BOLT SPACING SHALL BE 4 FEET FOR BUILDINGS OVER TWO STORIES IN HEIGHT.
  - STEPPED CRIPPLE WALLS SHALL CONFORM TO **SECTION R602.11.3**.

R404  
FOUNDATION WALLS

**404.1 CONCRETE AND MASONRY FOUNDATION WALLS.**  
CONCRETE AND MASONRY FOUNDATION WALLS SHALL BE SELECTED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF **SECTION R404.1.3** OF THE IRC OR IN ACCORDANCE WITH ACI 318, NCMA TR68-A OR ACI 530/ASCE 5/TMS 402 OR OTHER APPROVED STRUCTURAL STANDARDS.

**404.3 WOOD SILL PLATES.**  
WOOD SILL PLATES SHALL BE A MINIMUM OF 2-INCH BY 4-INCH NOMINAL LUMBER. SILL PLATE ANCHORAGE SHALL BE IN ACCORDANCE WITH **SECTIONS R403.1.6** AND **R602.11**.

CHAPTER 5: FLOORS

R501  
GENERAL  
**501.1 APPLICATION.**  
FLOOR CONSTRUCTION SHALL BE IN ACCORDANCE TO THE PROVISIONS SET FORTH IN **CHAPTER 5** OF THE IRC.

**501.2 REQUIREMENTS.**  
FOR FLOOR CONSTRUCTION LOADING, SEE **SECTION R301**.

CHAPTER 6: WALL CONSTRUCTION

R601  
GENERAL  
**601.1 APPLICATION.**  
WALL CONSTRUCTION SHALL BE IN ACCORDANCE TO THE PROVISIONS SET FORTH IN **CHAPTER 6** OF THE IRC.

**601.2 REQUIREMENTS.**  
FOR WALL CONSTRUCTION LOADING, SEE **SECTION R301**.

R602.3. DESIGN & CONSTRUCTION  
SEE **TABLE R602.3(1)** ON THIS SHEET FOR FASTENER / NAILING SCHEDULE

R613  
EXTERIOR WINDOWS AND GLASS DOORS

**613.1 GENERAL.**  
THE PROVISIONS SET FORTH IN **SECTION 613**, OF THE IRC, SHALL CONTROL THE PERFORMANCE AND CONSTRUCTION REQUIREMENTS FOR EXTERIOR WINDOW SYSTEMS INSTALLED IN WALL SYSTEMS. WATERPROOFING, SEALING AND FLASHING SYSTEMS ARE NOT INCLUDED IN THE SCOPE OF THIS SECTION.

**613.2 PERFORMANCE.**  
EXTERIOR WINDOWS AND DOORS SHALL BE DESIGNED TO RESIST THE DESIGN WIND LOADS SPECIFIED IN **TABLE R301.2(2)**. ADJUSTED FOR HEIGHT AND EXPOSURE PER **TABLE R301.2(3)**.

CHAPTER 7: WALL COVERING

R701  
GENERAL

**701.1 APPLICATION.**  
THE PROVISIONS SET FORTH IN **CHAPTER 7** OF THE IRC, SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE INTERIOR AND EXTERIOR WALL COVERING FOR ALL BUILDINGS.

**701.2 INSTALLATION.**  
PRODUCTS SENSITIVE TO ADVERSE WEATHER SHALL NOT BE INSTALLED UNTIL ADEQUATE WEATHER PROTECTION FOR THE INSTALLATION IS PROVIDED. EXTERIOR SHEATHING SHALL BE DRY BEFORE APPLYING EXTERIOR COVER.

CHAPTER 8: ROOF-CEILING CONSTRUCTION

R801  
**801.1 APPLICATION.**  
THE PROVISIONS SET FORTH IN **CHAPTER 8**, OF THE IRC, SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE ROOF-CEILING SYSTEM FOR ALL BUILDINGS.

**801.2 REQUIREMENTS.**  
ROOF AND CEILING CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED ACCORDING TO SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS.

**801.3 ROOF DRAINAGE.**  
IN AREAS WHERE EXPANSIVE OR COLLAPSIBLE SOILS ARE KNOWN TO EXIST, ALL DWELLINGS SHALL HAVE A CONTROLLED METHOD OF WATER DISPOSAL FROM ROOFS THAT WILL COLLECT AND DISCHARGE ALL ROOF DRAINAGE TO THE GROUND SURFACE AT LEAST 5 FEET FROM FOUNDATION WALLS OR TO AN APPROVED DRAINAGE SYSTEM.

CHAPTER 9: ROOF ASSEMBLIES

R901  
GENERAL  
**901.1 SCOPE.**  
THE PROVISIONS SET FORTH IN **CHAPTER 9** OF THE IRC, SHALL GOVERN THE DESIGN, MATERIALS, CONSTRUCTION AND QUALITY OF ROOF ASSEMBLIES.

2015 UNIFORM PLUMBING CODE

- 313  
PROTECTION OF PIPING, MATERIALS, AND STRUCTURES  
SECTION 313.12 RAIN PROOFING
- a. STRAINER PLATES ON DRAIN INLETS SHALL HAVE 1/2-INCH OPENINGS MAX.
  - b. METER BOXES SHALL BE CONSTRUCTED IN SUCH A MANNER THAT RATS CANNOT ENTER A BLDG BY FOLLOWING THE SERVICE PIPES FROM THE BOX INTO THE BLDG.
  - c. WHERE OPENINGS HAVE BEEN MADE IN WALLS, FLOORS, OR CLGS FOR THE PASSAGE OF PIPES, SUCH OPENINGS SHALL BE CLOSED AND PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS SECURELY FASTENED TO THE ADJOINING STRUCTURE.
  - d. TUB WASTE OPENINGS IN FRAMED CONSTRUCTION TO CRAWL SPACES AT OR BELOW THE FIRST FLOOR SHALL BE PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS OR METAL SCREEN, WITH 1/2-INCH OPENINGS MAX, AND SECURELY FASTENED TO THE ADJOINING STRUCTURE.

GENERAL CONSTRUCTION SPECS. AND CODE COMPLIANCE (2018 IRC, UPC & 2018 W.S.E.C.)

Description

Date

No.



MONSEF DESIGN  
STUDIO

451 DUVALL AVE NE, RENTON, WA 98059  
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

CODE NOTES

PROJECT NO:	20008
ISSUE DATE:	2023/08/01
SHT ISSUE DATE:	2021/01/08
DRAWN BY:	SPM

**A001**

SCALE 24X36:  
\* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



Window, Skylight and Door Schedule

Table with Project Information (CHEN RESIDENCE, 5024 W. MERCER WAY, MERCER ISLAND, WA 98040) and Contact Information (MILTON ORELLANA, 451 DUVAL AVE NE, SUITE 115, RENTON, WA 98059). Includes a table for window/door specifications with columns for Ref., U-factor, Width, Height, Area, and UA.

Vertical Fenestration (Windows and doors)

Table listing vertical fenestration components like 'HORZ SLIDING DBL VENT' and 'PICTURE' with their respective U-factors, dimensions, areas, and UA values.

Sum of Vertical Fenestration Area and UA: 801.5, 224.42. Vertical Fenestration Area Weighted U = UA/Area: 0.28

Overhead Glazing (Skylights)

Table for overhead glazing with columns for Component, Description, Ref., U-factor, Width, Height, Area, and UA.

Sum of Overhead Glazing Area and UA: 16.0, 8.00. Overhead Glazing Area Weighted U = UA/Area: 0.50

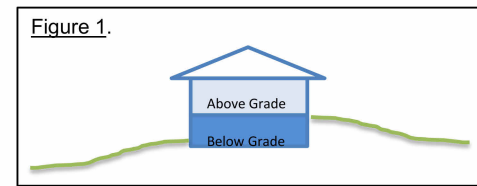
Total Sum of Fenestration Area and UA (for heating system sizing calculations): 856.5, 241.57

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This tool will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please complete the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please contact the WSU Energy Program at energycode@wsu.edu or (360) 956-2042 for assistance.

Interactive software interface for heating system sizing. Includes sections for Project Information, Heating System Type, Design Temperature, Area of Building, Glazing and Doors, Skylights, Insulation, Single Rafter or Joist Vaulted Ceilings, Above Grade Walls, Floors, Below Grade Walls, Slab Below Grade, Slab on Grade, and Location of Ducts.



Sum of UA: 595.29. Envelope Heat Load: 26,788 Btu / Hour. Air Leakage Heat Load: 15,324 Btu / Hour. Building Design Heat Load: 42,112 Btu / Hour. Building and Duct Heat Load: 42,112 Btu / Hour. Maximum Heat Equipment Output: 52,640 Btu / Hour.

2018 WASHINGTON STATE / IRC EXHAUST SYSTEM REQUIREMENTS

M1503.6 MAKEUP AIR REQUIRED: DIRECT-VENT OR MORE GAS, LIQUID OR SOLID FUEL-BURNING APPLIANCE THAT IS NEITHER DIRECT-VENT NOR USES A MECHANICAL DRAFT VENTING SYSTEM IS LOCATED WITHIN A DWELLING UNIT'S AIR BARRIER... M1503.6.2 MAKEUP AIR DAMPERS: EACH DAMPER SHALL BE A GRAVITY DAMPER OR AN ELECTRICALLY OPERATED DAMPER THAT AUTOMATICALLY OPENS WHEN THE EXHAUST SYSTEM OPERATES...

M1505 MECHANICAL VENTILATION

M1505.1 SOURCE SPECIFIC VENTILATION: WHERE LOCAL EXHAUST OR WHOLE-HOUSE MECHANICAL VENTILATION IS PROVIDED, THE EQUIPMENT SHALL BE DESIGNED IN ACCORDANCE SECTION M1505. M1505.2 RECIRCULATION OF AIR: EXHAUST AIR FROM BATHROOMS AND TOILET ROOMS SHALL NOT BE RECIRCULATED DIRECTLY TO THE OUTDOORS... M1505.3 EXHAUST EQUIPMENT: EXHAUST EQUIPMENT SERVING SINGLE DWELLING UNITS SHALL BE LISTED AND LABELED AS PROVIDING THE MINIMUM REQUIRED AIRFLOW...

M1505.4 WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM: WHOLE-HOUSE MECHANICAL VENTILATION SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH SECTIONS M1505.4.1 THROUGH M1505.4.4. M1601 DUCT CONSTRUCTION: M1601.1 DESIGN: DUCT SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISION OF THIS SECTION AND ACCA MANUAL D, THE APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS...

2018 WASHINGTON STATE ENERGY REQUIREMENTS

CHAPTER 3 GENERAL REQUIREMENTS: R301 CLIMATE ZONES: CLIMATE ZONES FROM TABLE R301.1 SHALL BE USED IN DETERMINING THE APPLICABLE REQUIREMENTS FROM CHAPTER 4. R302 DESIGN CONDITIONS: THE INTERIOR DESIGN TEMPERATURES USED FOR HEATING AND COOLING LOAD CALCULATIONS SHALL BE A MAXIMUM OF 72°F FOR HEATING AND MINIMUM OF 75°F FOR COOLING...

CHAPTER 4 RESIDENTIAL ENERGY EFFICIENCY: R401 GENERAL: A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN 36" OF THE ELECTRICAL DISTRIBUTION PANEL PER WSEC R401.3. THE CERTIFICATE SHALL LIST THE PREDOMINANT R-VALUES OF INSULATION INSTALLED IN OR ON CEILING/ROOF, WALLS, FOUNDATION (SLAB, BASEMENT WALL, CRAWLSPACE WALL AND/OR FLOOR)... R402 BUILDING THERMAL ENVELOPE: THE BUILDING THERMAL ENVELOPE WILL MEET THE REQUIREMENTS OF SECTIONS R402.1.1 THROUGH R402.1.6

Table with U-Factor and R-Value requirements for various components: VERTICAL U-FACTOR: 0.28, SKYLIGHT U-FACTOR: 0.50, CEILING R-VALUE: R-49 OR R-38 IF VAULTED (0.026), WOOD FRAME WALL: R-21 (0.056) + INSULATED HEADERS W/ R-10 FLOOR: R-38 (0.029), BELOW GRADE WALL: R-21 + THERMAL BREAK (0.047), SLAB ON GRADE: R-10 / L=24"

R402.2.1 CEILINGS WITH ATTIC SPACES: WHERE SECTION R402.1.1 WOULD REQUIRE R-49 IN THE CEILING, INSTALLING R-38 OVER 100 PERCENT OF THE CEILING AREA REQUIRING INSULATION SHALL BE DEEMED TO SATISFY THE REQUIREMENT FOR R-49... R402.2.1.1 LOOSE INSULATION IN ATTIC SPACES: OPEN-BLOWN OR POURED LOOSE FILL INSULATION MAY BE USED IN ATTIC SPACES WHERE THE SLOPE OF THE CEILING IS NOT MORE THAN 3 FEET IN 12 AND THERE IS AT LEAST 30 INCHES OF CLEAR DISTANCE FROM THE TOP OF THE BOTTOM CHORD OF THE TRUSS OR CEILING JOIST TO THE UNDERSIDE OF THE SHEATHING AT THE ROOF EDGE.

R402.2.3 EAVE BAFFLE: FOR AIR PERMEABLE INSULATIONS IN VENTED ATTICS, A BAFFLE SHALL BE INSTALLED ADJACENT TO SOFFIT AND EAVE VENTS. BAFFLES SHALL MAINTAIN AN OPENING EQUAL OR GREATER THAN THE SIZE OF THE VENT. THE BAFFLE SHALL EXTEND OVER THE TOP OF THE ATTIC INSULATION. THE BAFFLE SHALL BE PERMITTED TO BE ANY SOLID MATERIAL. R402.2.4 ACCESS HATCHES AND DOORS: ACCESS DOORS FROM CONDITIONED SPACES TO UNCONDITIONED SPACES (E.G., ATTICS AND CRAWL SPACES) SHALL BE WEATHERSTRIPPED AND INSULATED TO A LEVEL EQUIVALENT TO THE INSULATION ON THE SURROUNDING SURFACES.

R402.2.7 FLOORS: FLOOR INSULATION SHALL BE INSTALLED TO MAINTAIN PERMANENT CONTACT WITH THE UNDERSIDE OF THE SUBFLOOR DECKING. INSULATION SUPPORTS SHALL BE INSTALLED SO SPACING IS NO MORE THAN 24-INCHES ON CENTER. FOUNDATION VENTS SHALL BE PLACED SO THAT THE TOP OF THE VENT IS BELOW THE LOWER SURFACE OF THE FLOOR INSULATION. R402.2.8 BELOW-GRADE WALLS: EXTERIOR WALL INSULATION USED ON THE EXTERIOR (COLD) SIDE OF THE WALL SHALL EXTEND FROM THE TOP OF THE BELOW-GRADE WALL TO THE TOP OF THE FOOTING AND SHALL BE APPROVED FOR BELOW-GRADE USE...

R402.4 AIR LEAKAGE: THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS R402.4.1 THROUGH R402.4.4. R402.4.1 THROUGH R402.4.4. PROVIDE AN AIR BARRIER AND INSULATION INSTALLATION PER TABLE R402.1.1. R403 SYSTEMS: R403.1 AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM. R403.2 DUCTS AND AIR HANDLERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS R403.2.1 THROUGH R403.2.3. R403.3 DUCTS SHALL BE INSULATED TO A MINIMUM OF R-8 PER R403.3.1. R403.4 MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F OR BELOW 55°F SHALL BE INSULATED TO A MINIMUM OF R-6.

2018 Washington State Energy Code - Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family - New & Additions (effective February 1, 2021)

These requirements apply to all IRC building types, including detached one- and two-family dwellings and multiple single-family dwellings (townhouses).

Table with Project Information (CHEN RESIDENCE, 5024 W. MERCER WAY, MERCER ISLAND) and Contact Information (ATERA DESIGN STUDIO, STUDIO@ATERAHOMES.COM, 425-306-2758).

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative: [Redacted] Date: 01/04/2022

Table for All Climate Zones (Table R402.1.1) showing R-Value and U-Factor requirements for Fenestration, Skylight, Glazed Fenestration, Ceiling, Wood Frame Wall, Floor, and Slab.

R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table. The fenestration U-factor column excludes skylights. "10/15/21+5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21+5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall. R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1. For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall. R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics. For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400. Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

2018 Washington State Energy Code - Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family - New & Additions (effective February 1, 2021)

Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

- 1. Small Dwelling Unit: 3 credits. Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area. Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
2. Medium Dwelling Unit: 6 credits. All dwelling units that are not included in #1 or #3
3. Large Dwelling Unit: 7 credits. Dwelling units exceeding 5,000 sf of conditioned floor area
4. Additions less than 500 square feet: 1.5 credits. All other additions shall meet 1-3 above

Before selecting your credits on this Summary table, review the details in Table 406.3 (Single Family), on page 4.

Summary of Table R406.2 table with columns for Heating Options, Fuel Normalization Descriptions, Credits - select ONE heating option, Energy Options, Energy Credit Option Descriptions, Credits - select ONE energy option from each category, and User Notes.

2018 Washington State Energy Code - Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family - New & Additions (effective February 1, 2021)

Summary of Table R406.2 (cont.) table with columns for Energy Options, Energy Credit Option Descriptions (cont.), Credits - select ONE energy option from each category, and User Notes.

- a. An alternative heating source sized at a maximum of 0.5 W/sf (equivalent of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
b. Equipment listed in Table C403.3.2(4) or C403.3.2(5)
c. Equipment listed in Table C403.3.2(1) or C403.3.2(2)
d. You cannot select more than one option from any category EXCEPT in category 5. Option 5.1 may be combined with options 5.2 through 5.6. See Table 406.3.
e. 1.0 credit for each 1,200 kWh of electrical generation provided annually, up to 3 credits max. See the complete Table R406.2 for all requirements and option descriptions.
f. Use the single radiobutton in the upper right of the second column to deselect radiobuttons in that group.

GENERAL CONSTRUCTION SPECS. AND CODE COMPLIANCE (2018 IRC, UPC & 2018 W.S.E.C.)

ATERA HOMES logo and contact information: 451 DUVAL AVE NE, RENTON, WA 98059, 206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence 5024 W Mercer Way, Mercer Island PERMIT SET ENERGY NOTES PROJECT NO: 20008 ISSUE DATE: 2023/08/01 SHEET NO: 2021/01/08 DRAWN BY: SPM A002 SCALE 24X36. \* NOTE: 1 X 17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



### Area Schedule (Energy/Venting Calculations)

Name	Area	Perimeter	Level
SLAB ON GRADE	162 SF	48'-0"	Level 0
FLOOR INSUL	1518 SF	165'-6"	Level 1
FLOOR INSUL	156 SF	48'-6"	Level 1
CEILING - FLAT	73 SF	30'-0"	Level 2
FLOOR INSUL	290 SF	165'-6"	Level 2
FLOOR INSUL	39 SF	27'-0"	Level 2
CEILING - FLAT	1798 SF	194'-6"	T.O. PL LV2
CEILING - VAULT	91 SF	35'-0"	T.O. PL LV2

### ROOF VENTING SCHEDULE

NAME	GROSS AREA	AREA CALCULATIONS				EAVE/PARAPET VENTING CALCULATIONS			ROOF JACKS CALCULATIONS		
		REQ'D VENT AREA	NET AREA	REQUIRED VENTING	% AT EAVES	REQUIRED EAVE	LF OF VENT	PROVIDED	REQUIRED JACKS	# OF JACKS	AREA PROVIDED
1A	71 SF	150	71 SF	0.47 SF	50%	0.24 SF	18	0.44 SF	0.24 SF	1	0.35 SF
1B	54 SF	150	54 SF	0.36 SF	50%	0.18 SF	16	0.39 SF	0.18 SF	1	0.35 SF
2A	1695 SF	300	1695 SF	5.65 SF	40%	2.26 SF	194	4.76 SF	3.39 SF	10	3.47 SF
2B	80 SF	150	80 SF	0.53 SF	100%	0.53 SF	18	0.44 SF	0.00 SF	0	0.00 SF

### ROOF VENTING NOTES:

- (4) 2" DIA EAVE VENTS PER BLOCK = 5.024 SQ. IN. / L.F. (80% NET FREE AREA)
- ROOF JACKS = 50 SQ. IN. EACH
- INSTALL ONE LOW ROOF JACK, WITHIN 36" OF EAVE, FOR EVERY 12 LF OF EAVE WITHIN 60" OF PROPERTY LINE. MINIMUM NET AREA SHALL BE NOT LESS THAN 1 S.F. PER 150 S.F. OF ATTIC AREA OR 1 S.F. PER 300 S.F. OF ATTIC AREA IF 80% IS IN THE SOFFIT AND 20% IS AT LEAST 3' ABOVE THE PLATE LINE PER IRC SECTION R806.2 AND ENERGY REQUIREMENTS.
- AS AN ALTERNATIVE, THE NET FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR II VAPOR BARRIER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.

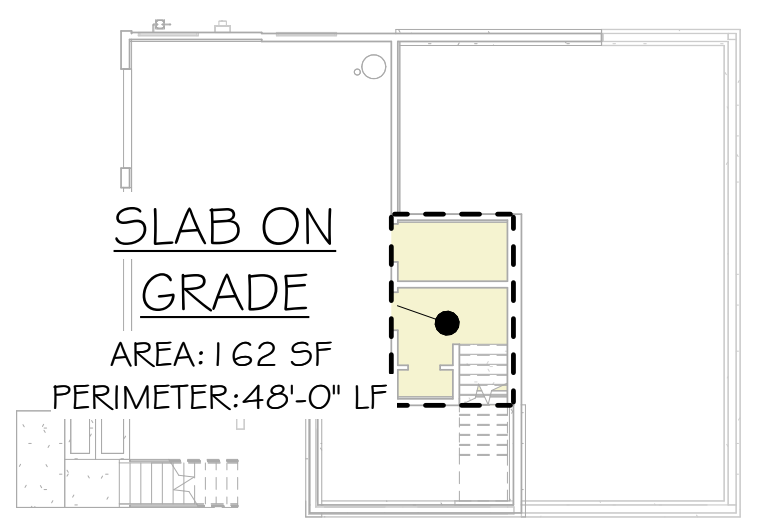
### CRAWL SPACE VENTING NOTES:

- THE UNCONDITIONED, UNDER-FLOOR, SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING SHALL HAVE VENTILATION OPENINGS THROUGH FOUNDATION WALLS OR EXTERIOR WALLS.
- A GROUND COVER OF SIX MIL (0.006 INCH THICK) BLACK POLYETHYLENE OR APPROVED EQUAL SHALL BE LAID OVER THE GROUND WITHIN CRAWL SPACES. THE GROUND COVER SHALL BE OVERLAPPED SIX INCHES MINIMUM AT THE JOINTS AND SHALL EXTEND TO THE FOUNDATION WALL.
- \*\*\*THE GROUND COVER MAY BE OMITTED IN CRAWL SPACES IF THE CRAWL SPACE HAS A CONCRETE SLAB FLOOR WITH A MINIMUM THICKNESS OF TWO INCHES\*\*\*
- THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 SQUARE FOOT FOR EACH 300 SQUARE FEET OF UNDER-FLOOR AREA. REQUIRED OPENINGS SHALL BE EVENLY PLACED TO PROVIDE CROSS VENTILATION OF THE SPACE EXCEPT ONE SIDE OF THE BUILDING SHALL BE PERMITTED TO HAVE NO VENTILATION OPENINGS.
- VENTILATION OPENINGS SHALL BE COVERED FOR THEIR HEIGHT AND WIDTH WITH ANY OF THE FOLLOWING MATERIALS PROVIDED THAT THE LEAST DIMENSION OF THE COVERING SHALL NOT EXCEED 1/4 INCH:
  - PERFORATED SHEET METAL PLATES NOT LESS THAN 0.070 INCH THICK.
  - EXPANDED SHEET METAL PLATES NOT LESS THAN 0.047 INCH THICK.
  - CAST-IRON GRILL OR GRATING.
  - EXTRUDED LOAD-BEARING BRICK VENTS.
  - HARDWARE CLOTH OF 0.035 INCH (0.89 MM) WIRE OR HEAVIER.
  - CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION BEING 1/8 INCH.

**GROSS FLOOR AREA CALCULATIONS:**  
 SITE AREA: 19,325 SF  
 MAX COVERAGE: 40% (7,730)  
 PROPOSED AREA: 4,185 SF  
 PROPOSED COVERAGE: 21.65%

#### AREA SCHEDULE - GROSS

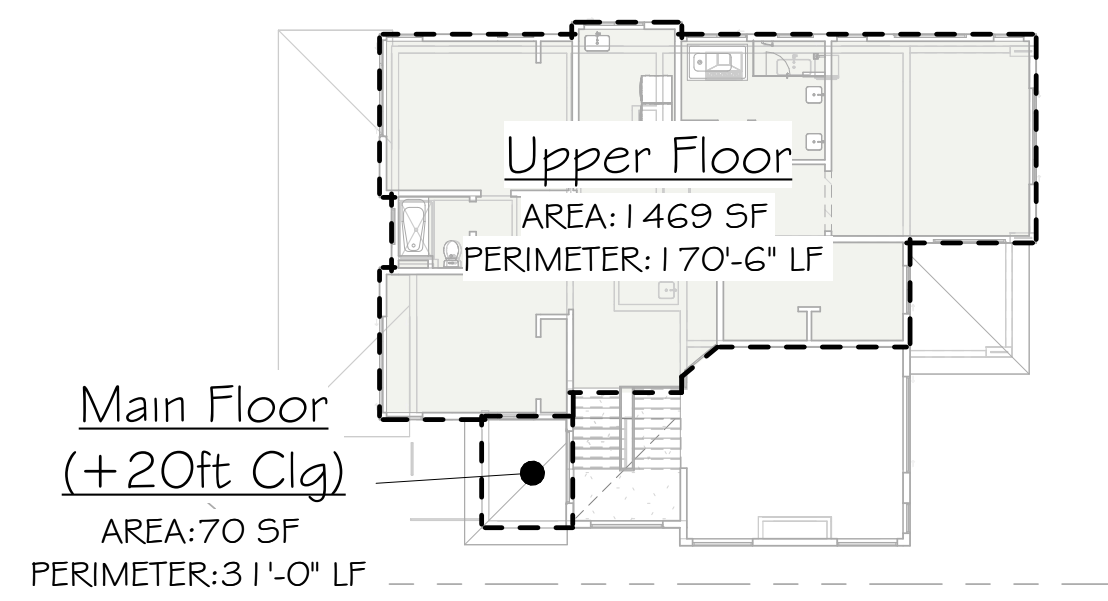
NAME	AREA
Foyer	119 SF
Lower Entry	122 SF
Lower Stairs	67 SF
Main Floor	1490 SF
Main Floor (+20ft Clg)	138 SF
Main Stairs	109 SF
Upper Floor	1469 SF
	3514 SF
Garage	671 SF
	671 SF
	4185 SF



### Area Schedule (F.A.R.)

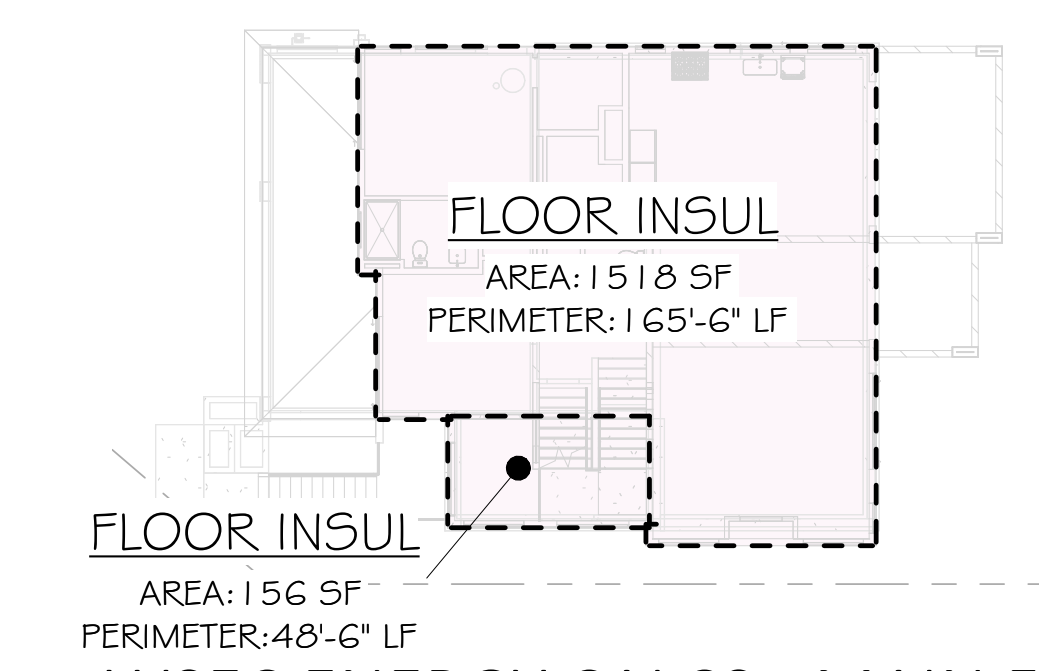
Name	Area
Garage	658 SF
Lower Floor	217 SF
Lower Stairs	57 SF
	933 SF
Main Floor	1433 SF
Main Flr (+20ft Clg)	59 SF
Main Stairs	102 SF
	1593 SF
Main Floor +20ft Clg	59 SF
Upper Floor	1398 SF
Upper Flr (+20ft Clg)	303 SF
	1760 SF
	4285 SF

**F.A.R. COVERAGE CALCULATIONS:**  
 SITE AREA: 19,325 SF  
 MAX COVERAGE: 40%  
 PROPOSED AREA: 4,285 SF  
 PROPOSED COVERAGE: 22.17%

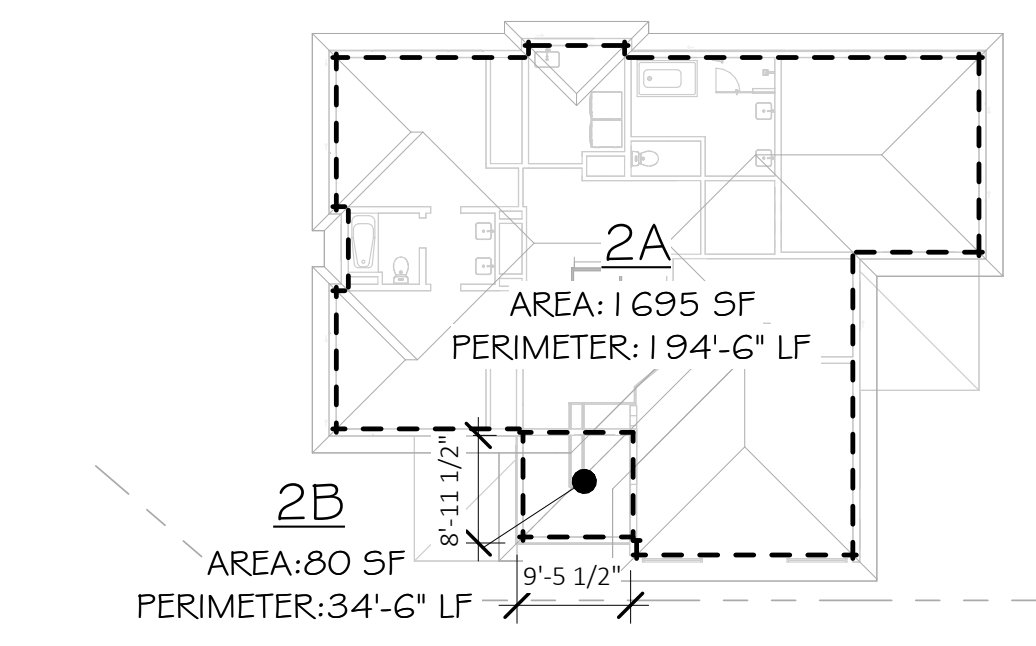


13 GROSS FLOOR AREA - UPPER FLR  
 SCALE: 1/16" = 1'-0"

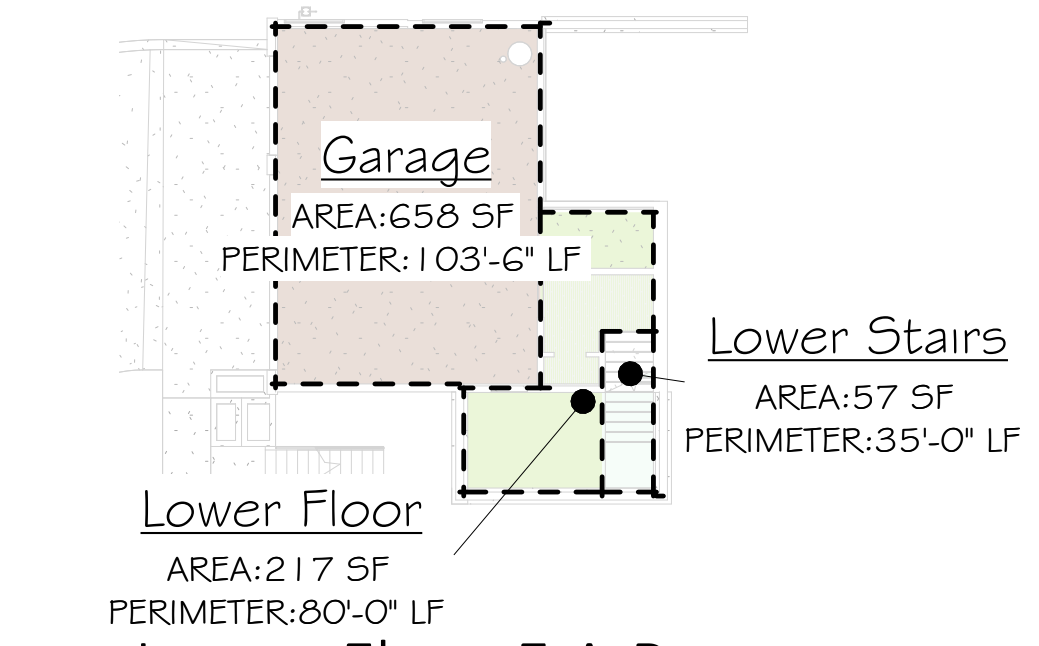
10 WSEC ENERGY CALCS - LOWER FLR  
 SCALE: 1/16" = 1'-0"



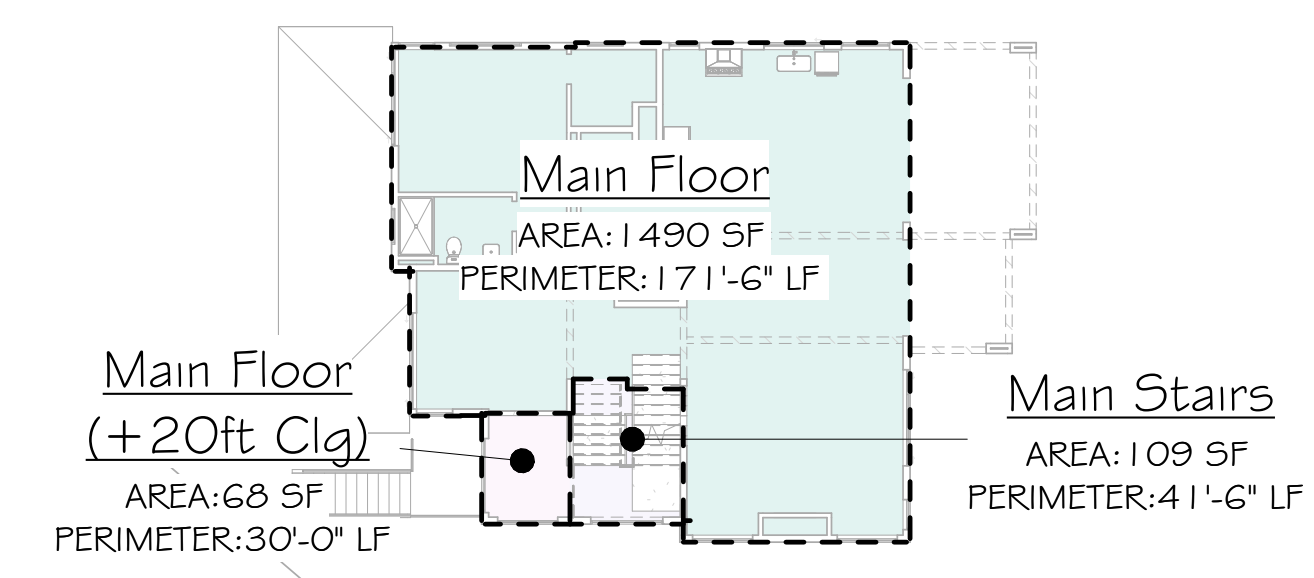
9 WSEC ENERGY CALCS - MAIN FLR  
 SCALE: 1/16" = 1'-0"



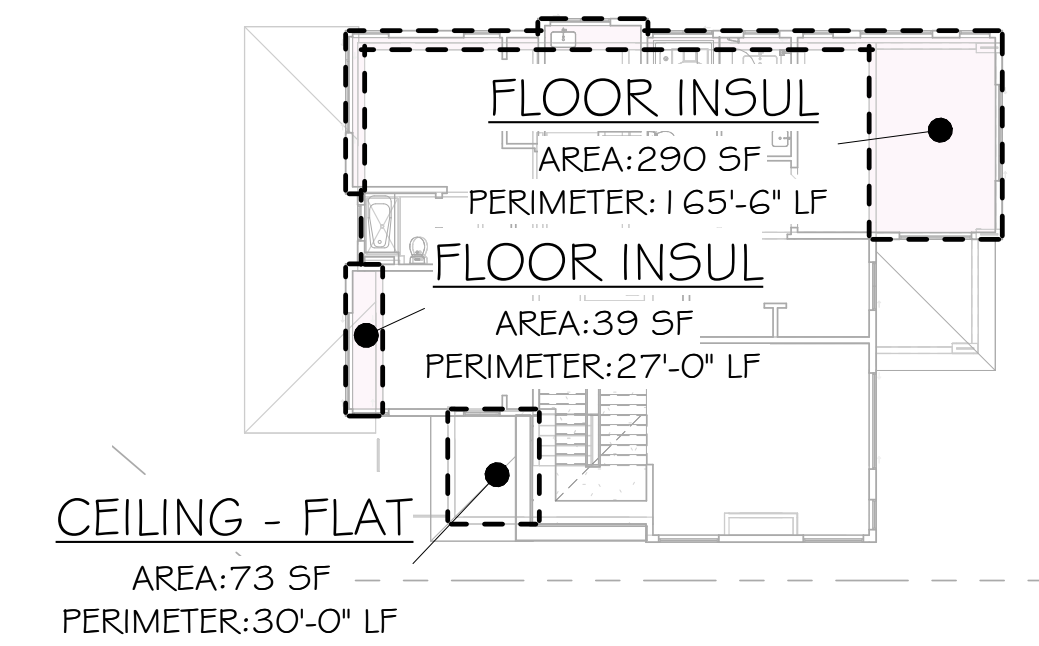
6 ROOF VENTING - UPPER  
 SCALE: 1/16" = 1'-0"



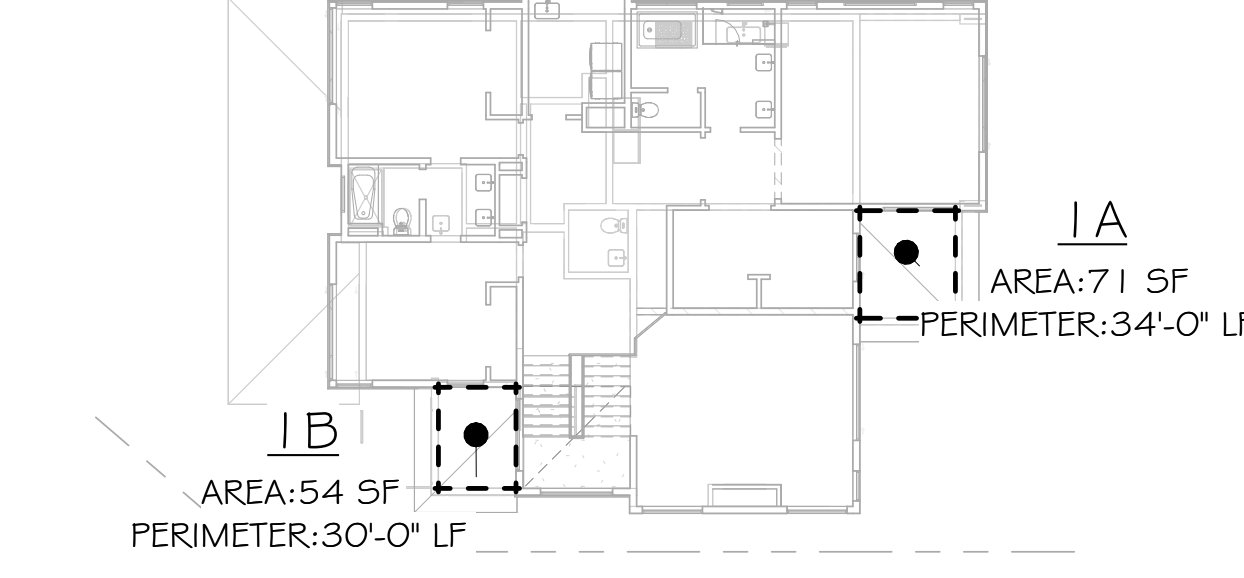
1 Lower Floor F.A.R.  
 SCALE: 1/16" = 1'-0"



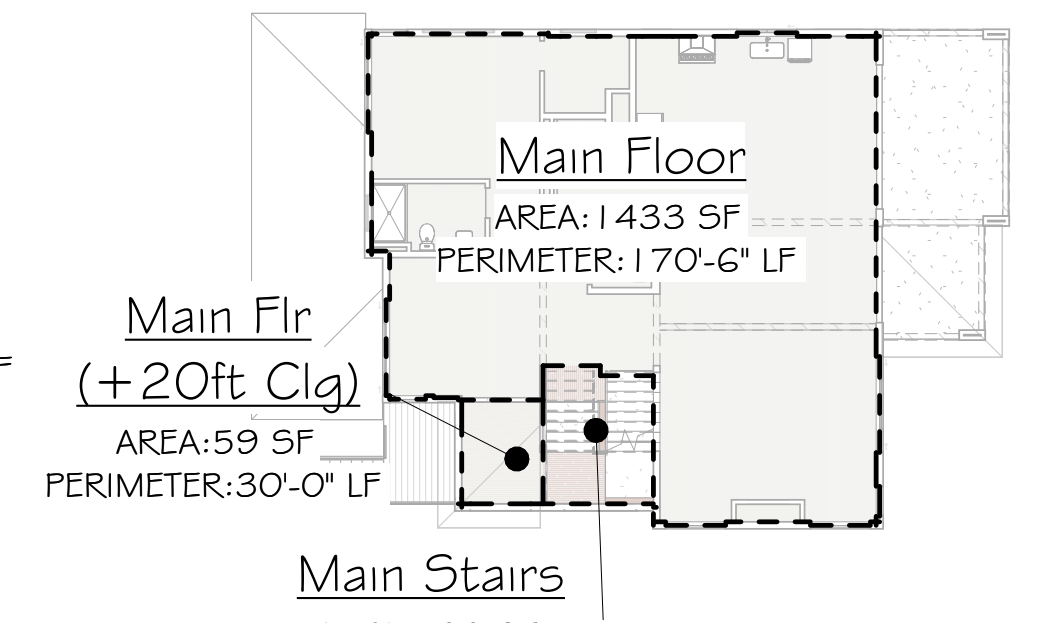
12 GROSS FLOOR AREA - MAIN FLR  
 SCALE: 1/16" = 1'-0"



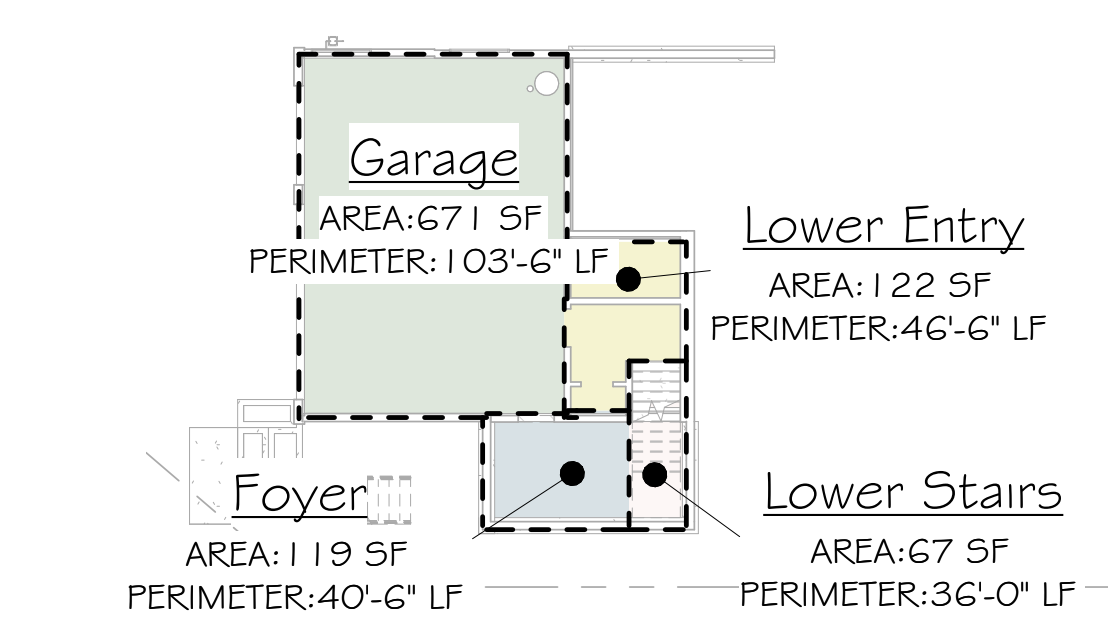
8 WSEC ENERGY CALCS - UPPER FLR  
 SCALE: 1/16" = 1'-0"



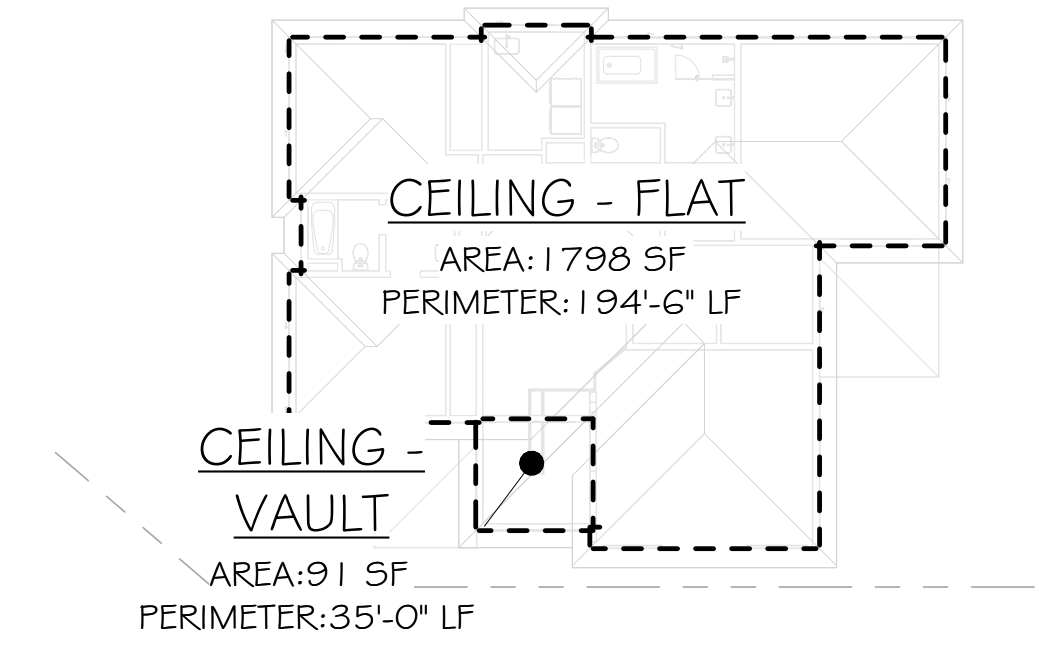
5 ROOF VENTING - MAIN  
 SCALE: 1/16" = 1'-0"



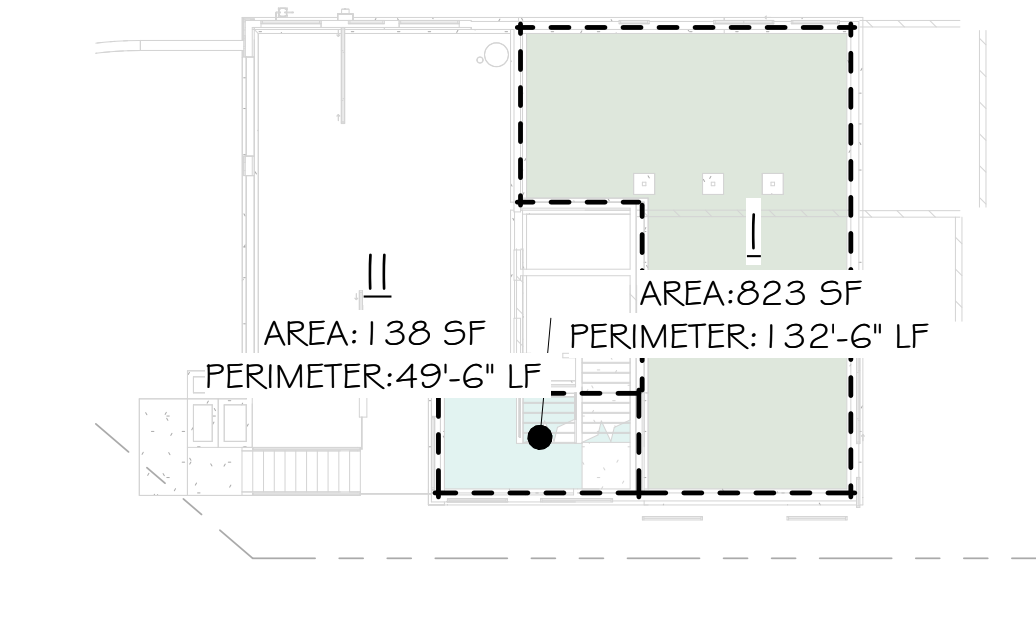
2 Main Floor F.A.R.  
 SCALE: 1/16" = 1'-0"



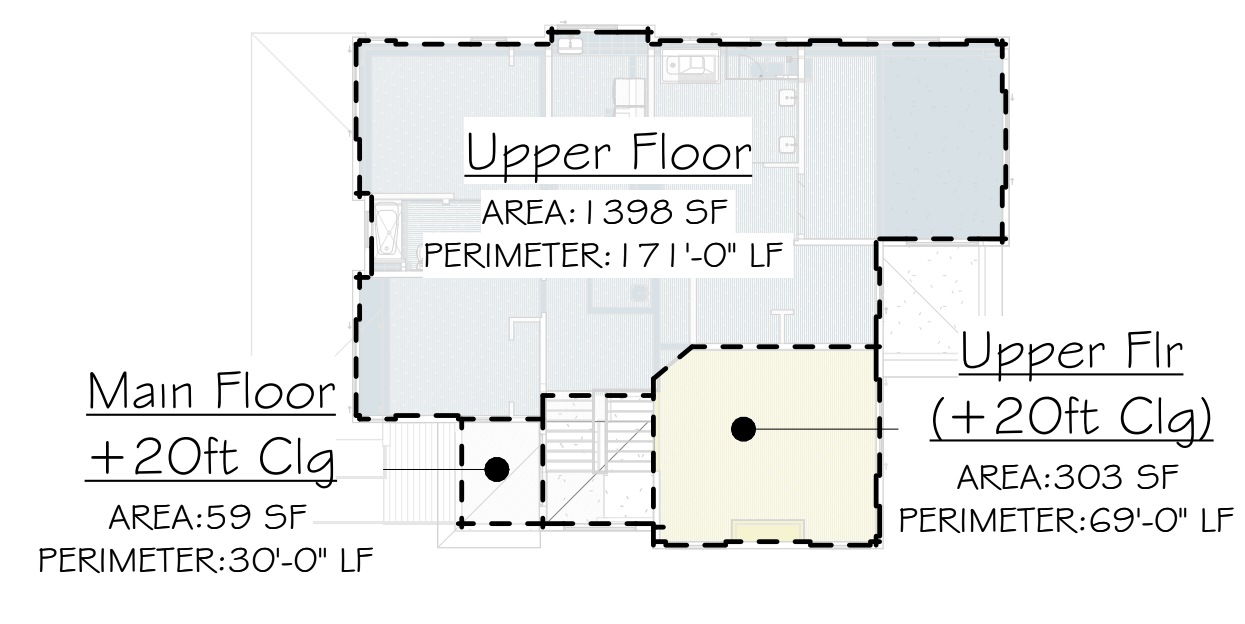
11 GROSS FLOOR AREA - LOWER FLR  
 SCALE: 1/16" = 1'-0"



7 WSEC ENERGY CALCS - ROOF  
 SCALE: 1/16" = 1'-0"



4 CRAWL SPACE VENTING  
 SCALE: 1/16" = 1'-0"



3 Upper Floor F.A.R.  
 SCALE: 1/16" = 1'-0"

Description  
Date  
No.



MONSEF DESIGN  
 STUDIO  
 451 DUVAL AVE NE, RENTON, WA 98059  
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Chen Residence  
 5024 W Mercer Way, Mercer Island  
 PERMIT SET

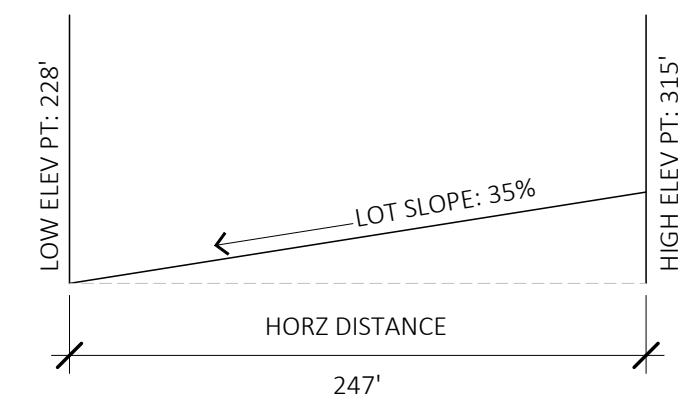
### ENERGY/VENTING CALCULATIONS

PROJECT NO: 20008  
 ISSUE DATE: 2023/08/01  
 SHT ISSUE DATE: 2023/06/20  
 DRAWN BY: SPM

### A003

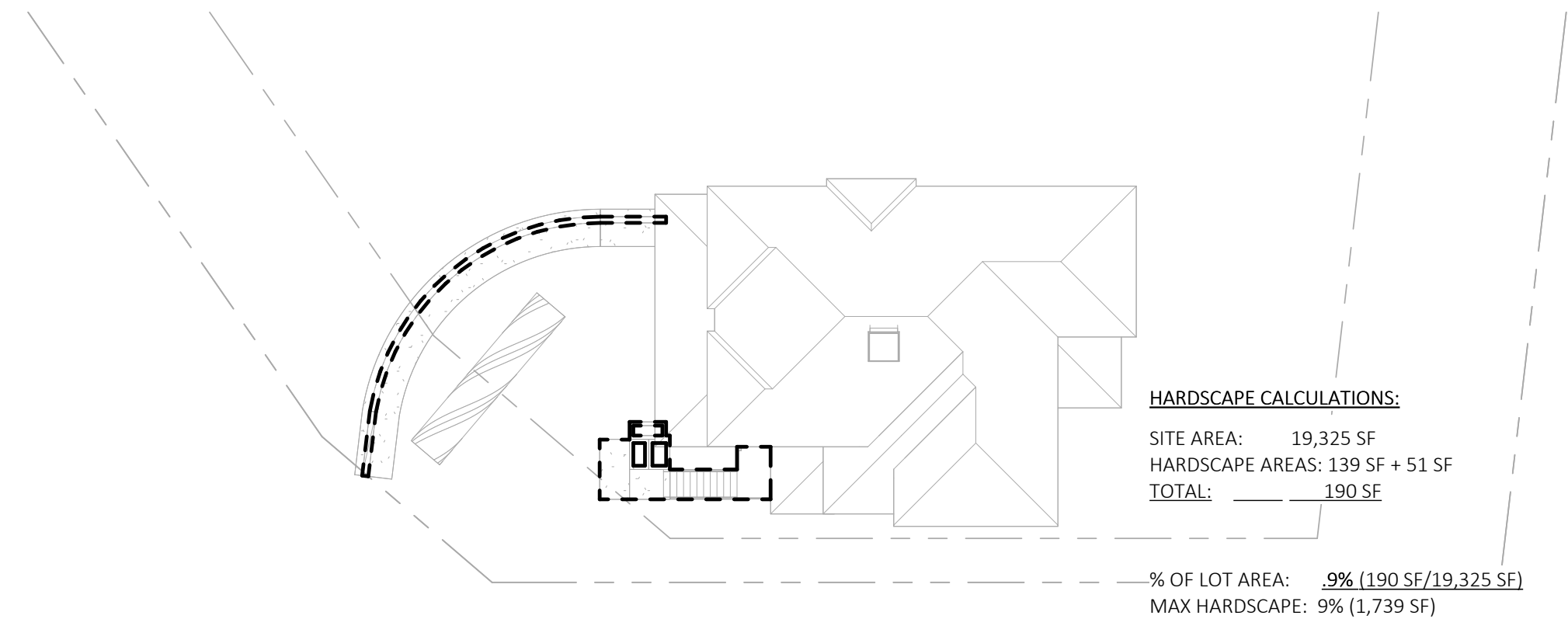
SCALE 24X36: 1/16" = 1'-0"  
 \* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



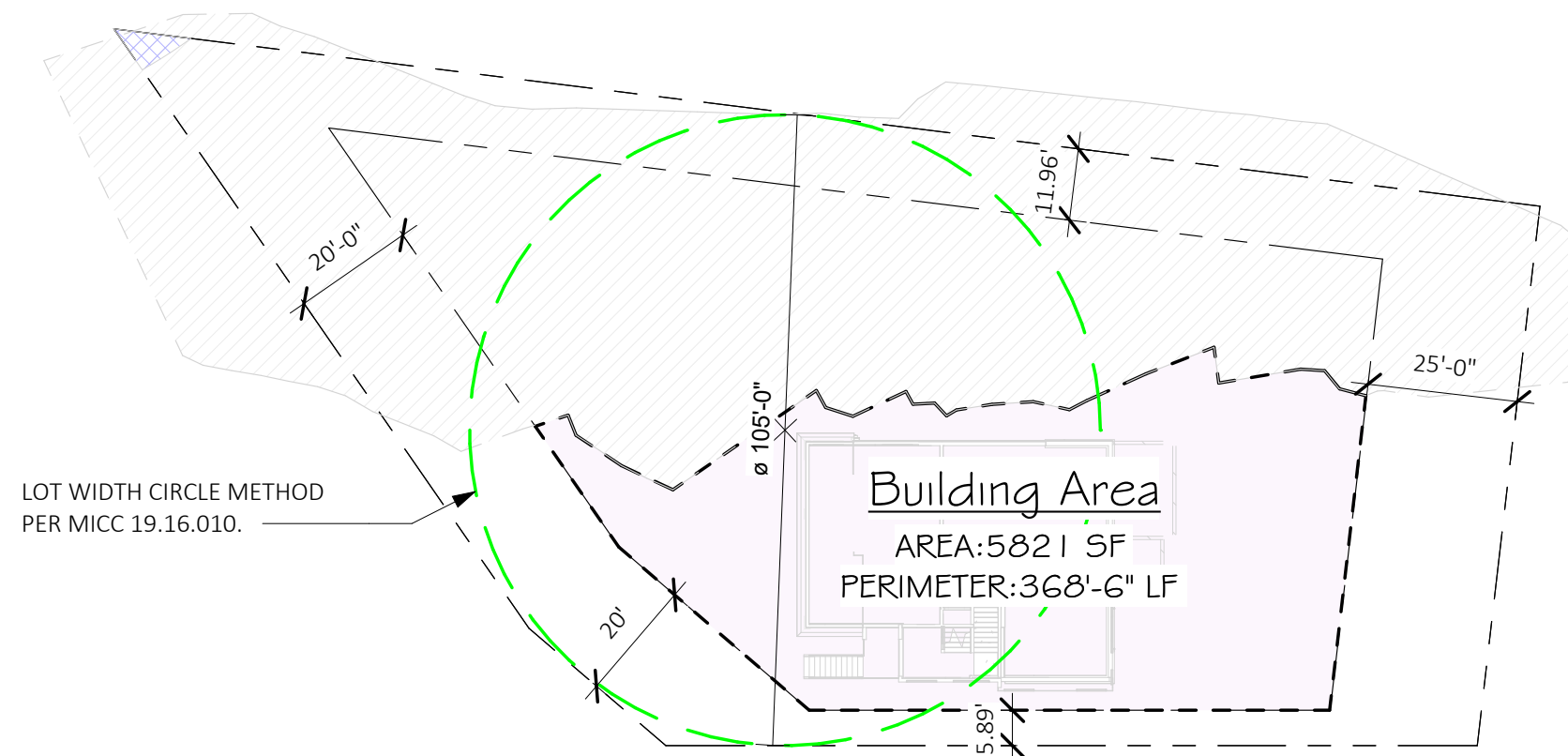


**LOT SLOPE CALCULATIONS:**  
 HT ELEV POINT: 315 FT  
 LW ELEV POINT: 228 FT  
 ELEV DIFFERENCE: 87 FT  
 HORZ DISTANCE: 247 FT  
 LOT SLOPE:  $(87/247) * 100 = 35\%$

**6 Lot Slope**  
 SCALE: 1/8" = 1'-0"



**5 B.O. FTG**  
 SCALE: 1" = 20'-0"



**4 Allowable Building Pad - MICC 19.02.020(j)**  
 SCALE: 1" = 30'-0"

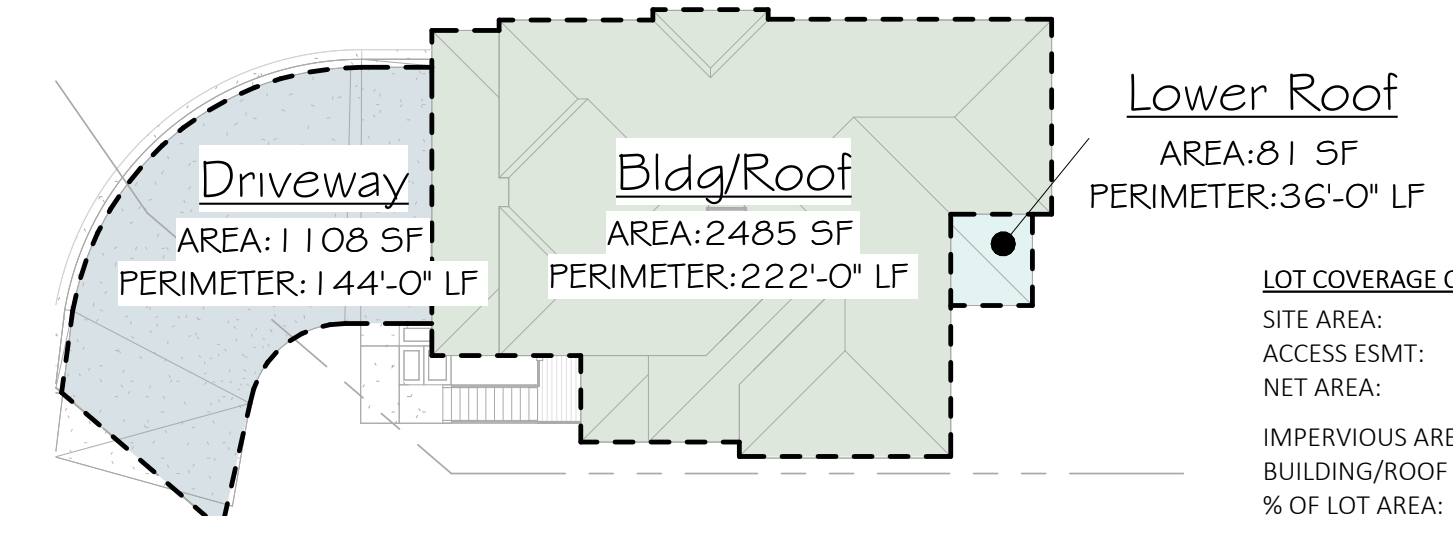
**YARDS: 19.02.020(C)**  
 FRONT: 20 FT MIN  
 REAR: 25 FT MIN  
 SIDES: 11.96 FT MIN  
 SIDES: 5.89 FT MIN  
 LOT WIDTH: 105'  
 17% OF LOT WIDTH = 17.85'  
 33% OF TOTAL SIDE YARD SETBACK = 5.89' MIN

**GFA CALCULATIONS**  
 SITE AREA: 19,325 SF  
 ALLOWED GFA: 7,730 SF (40%)  
 PROPOSED GFA: 3,950 SF (20.4%)

**TREE RETENTION CALCULATIONS: (19.10.010)**  
 REQUIRED: 30 PERCENT OF THE TREES WILL NEED TO BE RETAINED. TREES THAT ARE EXCEPTIONAL, ARE LARGE, AND HAVE A HIGH LIKELIHOOD FOR LONG-TERM SURVIVAL ARE PRIORITIZED FOR RETENTION  
 PROPOSED:  
 EXISTING D.B.H.: 875.6" (576.4 / 875.6 = 65.8% RETAINED)  
 RETAINED D.B.H.: 576.4"  
 REMOVED D.B.H.: 299.2"

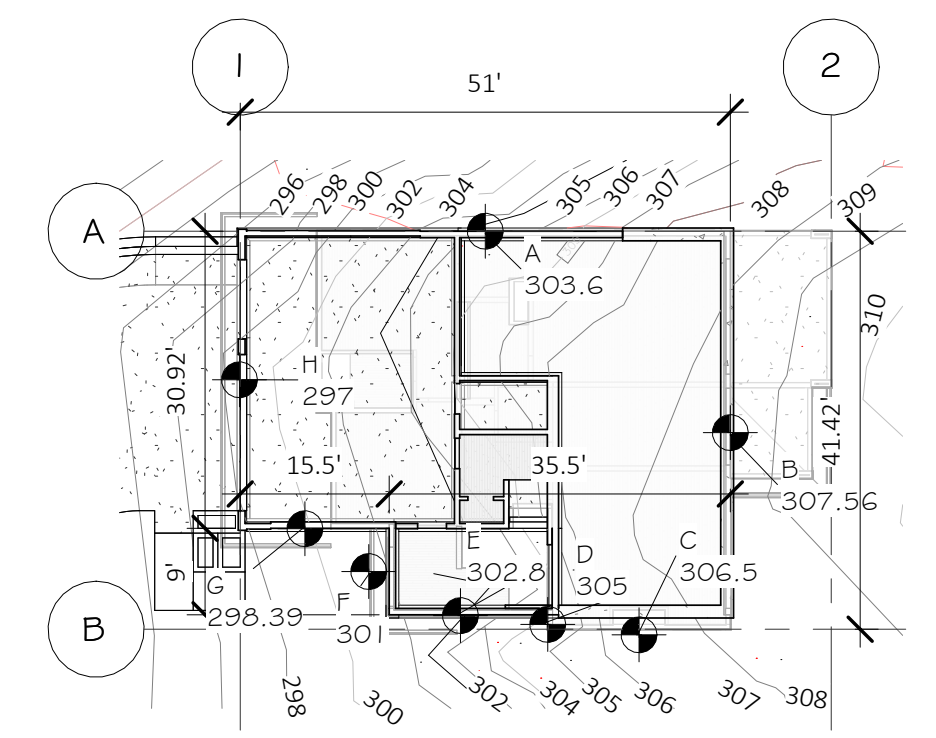
**NOTE:**  
 PER MICC 19.02.020(F)(3)(D)  
 DEVELOPMENT PROPOSALS FOR A NEW SINGLE-FAMILY HOME SHALL REMOVE JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM) AND REGULATED CLASS A, REGULATED CLASS B, AND REGULATED CLASS C WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED, FROM REQUIRED LANDSCAPING AREAS ESTABLISHED PURSUANT TO SUBSECTION (F)(3)(A) OF THIS SECTION. NEW LANDSCAPING ASSOCIATED WITH NEW SINGLE-FAMILY HOME SHALL NOT INCORPORATE ANY WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED. PROVIDED, THAT REMOVAL SHALL NOT BE REQUIRED IF THE REMOVAL WILL RESULT IN INCREASED SLOPE INSTABILITY OR RISK OF LANDSLIDE OR EROSION.

**LOT SLOPE 30-50%**  
 HARDSCAPES: 9%  
 LOT COVERAGE: 30%  
 LOT AREA = 19,325 \* 30% = MAX COVERAGE OF 5,797.5 SF  
 MAX HARDSCAPE OF 1,739.25 SF



**LOT COVERAGE CALCULATIONS:**  
 SITE AREA: 19,325 SF  
 ACCESS ESMT: -- SF  
 NET AREA: 19,325 SF  
 IMPERVIOUS AREAS:  
 BUILDING/ROOF AREA: 3,674 SF  
 % OF LOT AREA:  $19\% (3,674 / 19,325)$

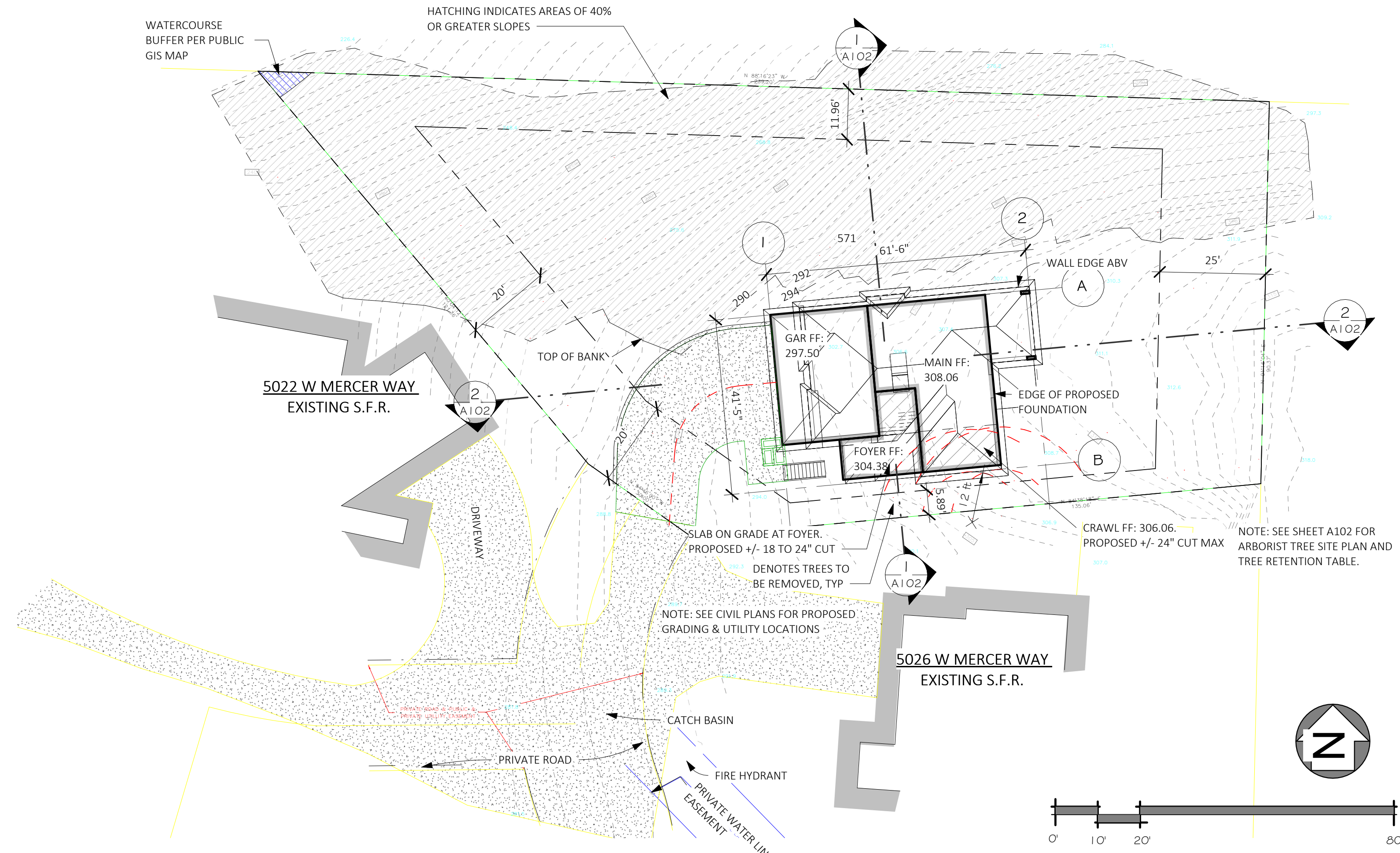
**2 LOT COVERAGE CALCULATIONS**  
 SCALE: 1" = 20'-0"



A.B.E. CHART			
MARK	A.B.E. DATA	A.B.E. CALCULATIONS (ELEV * LENGTH)	
	MID PT ELEV	SEGMENT LENGTH	
A	303.6	51	15483.6
B	307.56	41.92	12892.9152
C	306.5	19	5823.5
D	305	2	610
E	302.8	18.54	5613.912
F	301	9	2709
G	298.39	13.46	4016.3294
H	297	30.92	9183.24
	185.84		56332.4966

**AVERAGE BUILDING ELEVATION (A.B.E.) CALCULATIONS:**  
 $56,332.4966 / 185.84 = 303.12$   
 AVERAGE BUILDING ELEVATION (A.B.E.): 303.12

**3 AVERAGE BLDG HT CALCULATIONS**  
 SCALE: 1" = 20'-0"



**1 SITE PLAN**  
 SCALE: 1" = 20'-0"

8/16/2023 1:06:58 PM Autodesk Docs://20008 Chen Residence - Mercer Island/20008-05 Chen Residence, MI - 50482.rvt

Description

Date

No.

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Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

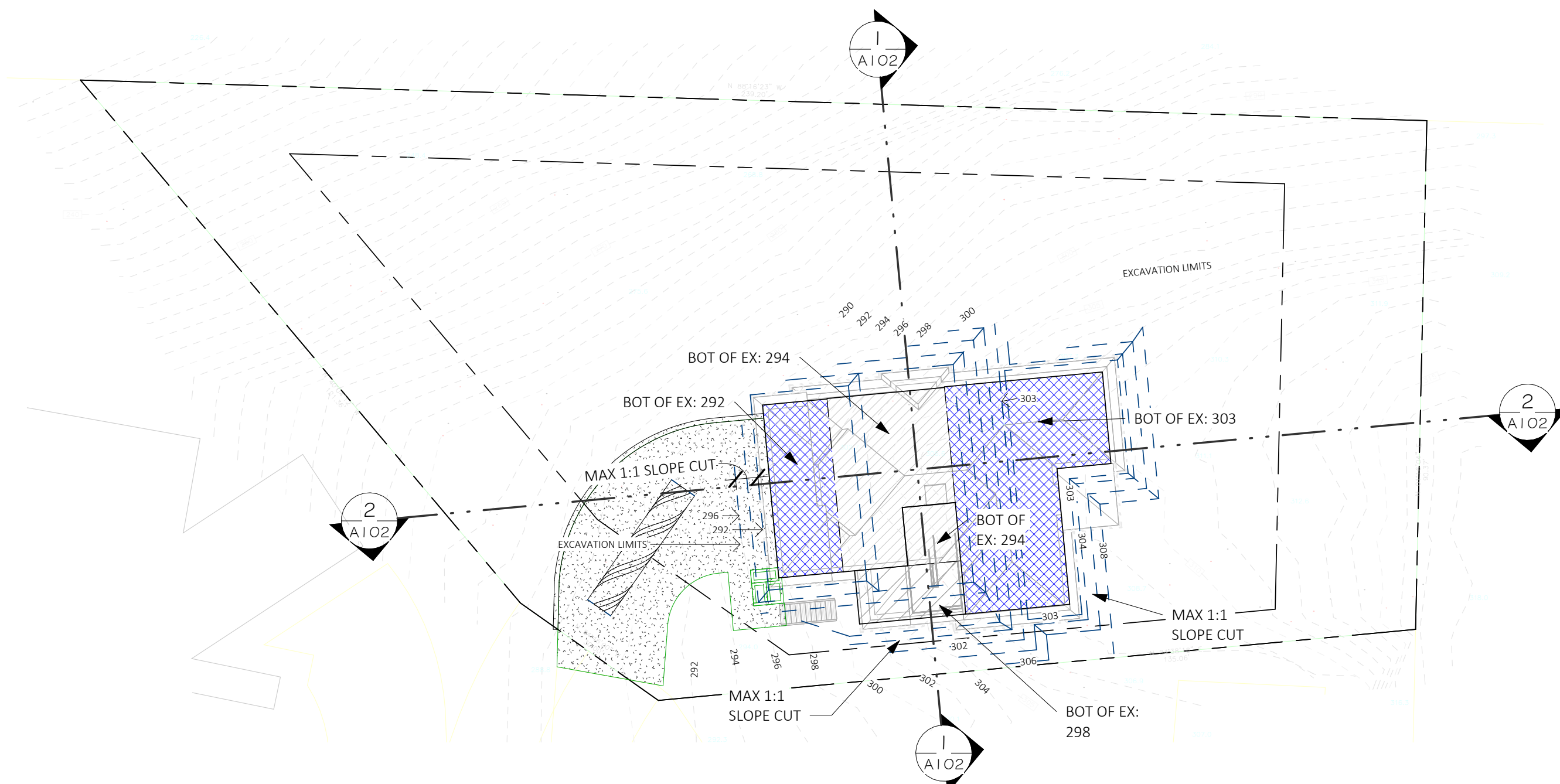
SITE PLAN & AREA/HT CALCULATIONS

PROJECT NO: 20008  
 ISSUE DATE: 2023/08/01  
 SHT ISSUE DATE: 2021/10/1/08  
 DRAWN BY: SPM

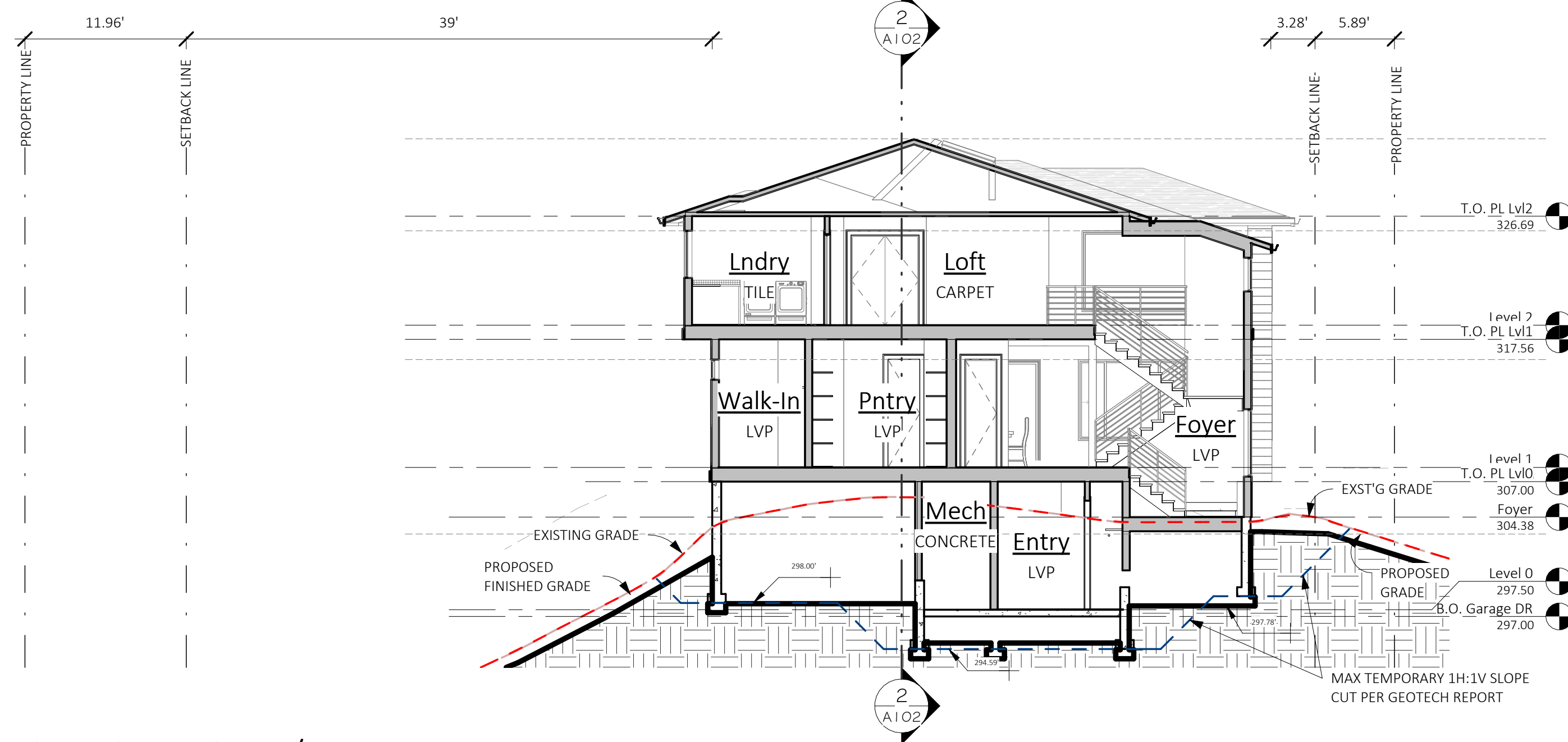
**A101**

SCALE 24X36: As indicated  
 \* NOTE: 1/4" X 1/7" SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

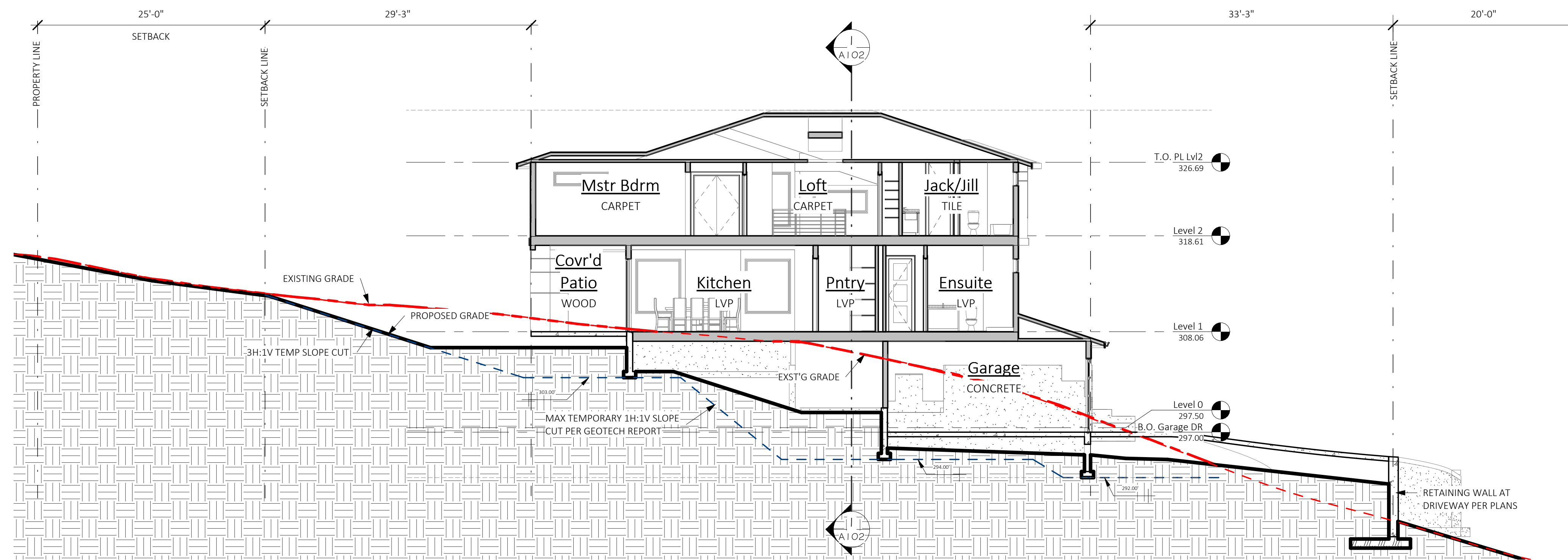




**3** TEMP EXCAVATION PLAN  
SCALE: 1" = 20'-0"



**1** SITE SECTION E/W  
SCALE: 1/8" = 1'-0"



**2** SITE SECTION N/S  
SCALE: 1/8" = 1'-0"

Description

Date

No.



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TEMPORARY EXCAVATION PLAN & SITE SECTIONS

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 03/02/23  
DRAWN BY: Author

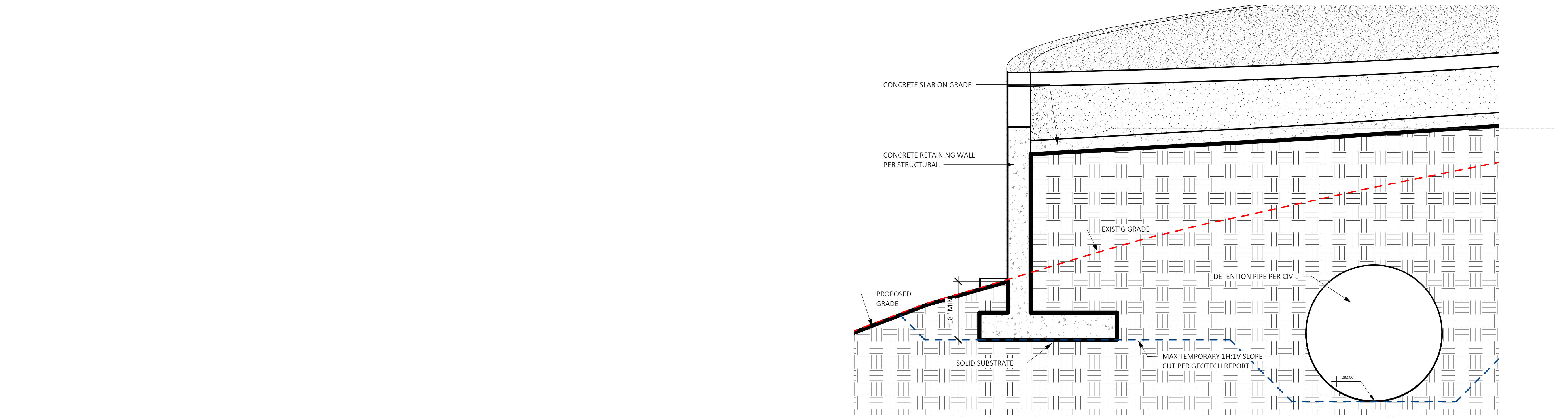
**A102**

SCALE 24X36: As indicated  
NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

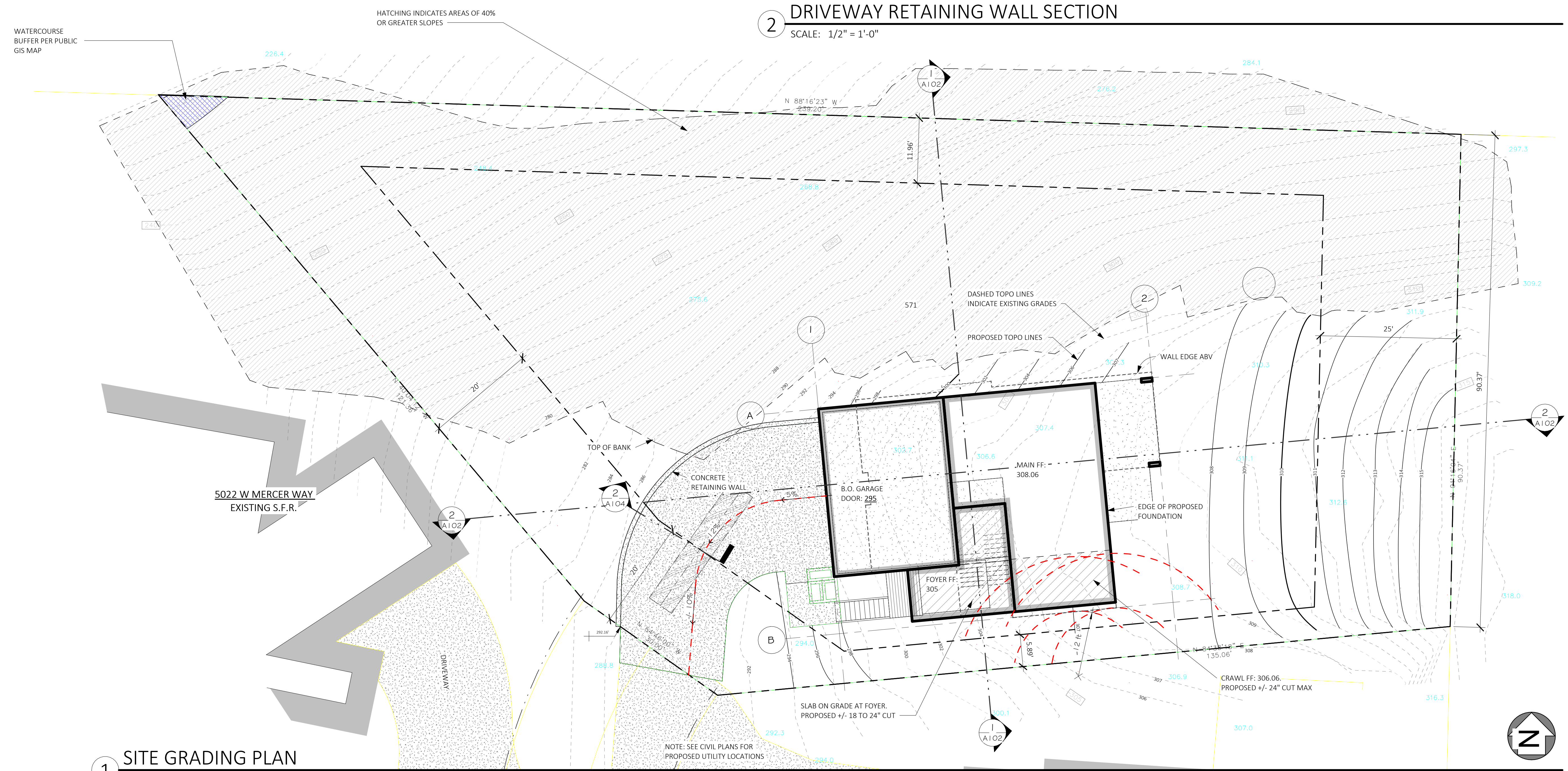
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8/16/2023 1:07:02 PM Autodesk Docs://20008 Chen Residence, Mercer Island/20008-05 Chen Residence, MI - 5UB2.rvt



**2 DRIVEWAY RETAINING WALL SECTION**  
SCALE: 1/2" = 1'-0"



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

No. \_\_\_\_\_  
Date \_\_\_\_\_  
Description \_\_\_\_\_



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STUDIO  
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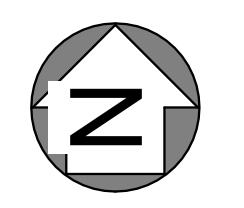
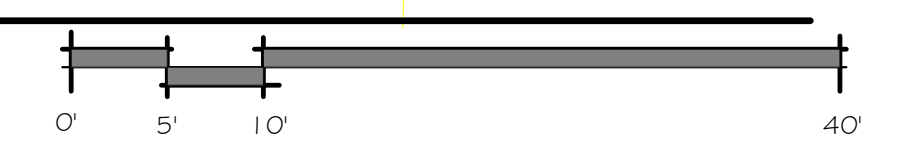
PERMIT SET

PROPOSED  
GRADING PLAN

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 04/04/23  
DRAWN BY: SPM

**A104**

SCALE 24X36: As indicated  
\*NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.





Door Schedule					
TYPE MARK	DOOR STYLE	COMMENTS	SIZE		DOOR PANEL CONSTRUCTION
			WIDTH	HT	
10	Hinged-Double-Exterior-Entrance, InSwing		6'-0"	8'-0"	1 S.C.
20	Hinged-Double-Interior-Panel		3'-6"	6'-8"	1 H.C.
21	Hinged-Double-Interior-Panel		5'-0"	6'-8"	4 H.C.
30	Hinged-Single-Exterior-Panel, InSwing		3'-0"	8'-0"	2 S.C.
40	Hinged-Single-Interior-Panel		2'-4"	8'-0"	7 S.C.
41	Hinged-Single-Interior-Panel		2'-4"	6'-8"	1 H.C.
42	Hinged-Single-Interior-Panel		2'-4"	6'-8"	1 H.C.
43	Hinged-Single-Interior-Panel		2'-6"	8'-0"	1 S.C.
44	Hinged-Single-Interior-Panel		2'-6"	6'-8"	2 H.C.
45	Hinged-Single-Interior-Panel		2'-6"	8'-0"	1 S.C.
46	Hinged-Single-Interior-Panel		2'-8"	6'-8"	1 H.C.
50	Milgard-Sliding-2 Panel	Sliding Door, Two Panels	8'-0"	8'-0"	1 VINYL
60	Milgard-Sliding-4 Panel	Sliding Door, Four Panels	12'-0"	8'-0"	1 VINYL
70	Overhead_Door 2 Panel		8'-0"	8'-0"	1
71	Overhead_Door 4 Panel		16'-0"	8'-0"	1

Grand total: 26

Window Schedule							
Type Mark	STYLE	SIZE		COUNT	DESCRIPTION	IS EGRESS	
		WIDTH	HT				
100	Horz Sliding Dbl-Vent	8'-0"	5'-0"	5	Vinyl	Yes	
101	Horz Sliding Dbl-Vent	8'-0"	6'-0"	1	Vinyl	Yes	
110	Horz Sliding Half-Vent	4'-0"	4'-0"	1	Vinyl	Yes	
111	Horz Sliding Half-Vent	5'-0"	3'-6"	1	Vinyl	No	
112	Horz Sliding Half-Vent	5'-0"	4'-0"	1	Vinyl	Yes	
113	Horz Sliding Half-Vent	5'-0"	5'-0"	1	Vinyl	Yes	
120	Picture	2'-6"	1'-0"	1	Vinyl	No	
121	Picture	2'-6"	5'-0"	2	Vinyl	No	
122	Picture	2'-6"	6'-0"	2	Vinyl	No	
123	Picture	3'-0"	1'-6"	4	Vinyl	No	
124	Picture	3'-0"	3'-0"	2	Vinyl	No	
125	Picture	3'-0"	5'-0"	4	Vinyl	No	
126	Picture	4'-0"	1'-0"	1	Vinyl	No	
127	Picture	5'-0"	2'-6"	3	Vinyl	No	
128	Picture	5'-0"	5'-0"	1	Vinyl	No	
129	Picture	5'-0"	6'-0"	4	Vinyl	No	
130	Picture	6'-0"	1'-6"	3	Vinyl	No	
131	Picture	6'-0"	2'-6"	3	Vinyl	No	
132	Picture	6'-0"	5'-0"	1	Vinyl	No	
133	Picture	8'-0"	6'-0"	1	Vinyl	No	
150	Skylight	4'-0"	4'-0"	1	SKYLIGHT		

Grand total: 43

**TYP WINDOW NOTES:**

- SEE ARCHITECTURAL FLOOR PLANS FOR WINDOW LOCATIONS AND DESIGNATIONS. SEE ELEVATIONS & BUILDING SECTIONS FOR WINDOW HEAD/SILL LOCATIONS.
- ALL RESIDENTIAL WINDOWS ARE BASED UPON MILGARD VINYL WINDOWS. EXCEPT AS NOTED.
- ALL WINDOWS SHALL HAVE THROUGH-WINDOW AIR INLETS AS PER WASHINGTON STATE VENTILATION CODE.
- NOT USED.
- ALL WINDOWS TO BE FIXED UNLESS SHOWN/NOTED OTHERWISE.
- PROVIDE SAFETY GLAZING PER KEYNOTE P-4 AS LOCATED ON FLOOR PLANS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002

**TYP DOOR NOTES:**

- ALL RESIDENTIAL SLIDING GLASS DOORS ARE BASED ON MILGARD SERIES VINYL SLIDING DOORS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002.
- PROVIDE SAFETY GLAZING PER GENERAL NOTES.
- NOT USED.
- PROVIDE MIN 0.20 U-VALUE AT SOLID CORE FLUSH DOORS WHERE EXPOSED TO AMBIENT TEMPERATURE.

**GENERAL PLAN NOTES:**

- SEE SHEET A001 FOR GENERAL CONSTRUCTION SPECIFICATIONS.
- SEE BUILDING ELEVATIONS FOR WINDOW OPERATION.
- SEE "TYPICAL BUILDING MATERIALS" LIST ON THE ELEVATION SHEETS.
- FOR THE SYMBOLS & LEGEND SEE SHEET A000.
- SEE STRUCTURAL SHEETS FOR SHEARWALL DESIGNATIONS & HOLDDOWNS AND SHEET S100 FOR SHEARWALL DETAILS/SCHEDULE.

**KEYNOTES - FLOORPLAN**

ID	DESCRIPTION
P-1	GARAGE/HOUSE OCCUPANCY SEPARATION. PER IRC R302.6 a) 1/2" GYP. AT GARAGE SIDE BETWEEN RESIDENCE AND ATTIC. b) 5/8" TYPE 'X' GYP IS REQUIRED WHERE THERE IS LIVING SPACE ABOVE. c) 1/2" GYP. AT SUPPORTING COLUMNS, WALLS AND BEAMS ABOVE."
P-2	DOOR BETWEEN GARAGE AND HOUSE SHALL BE EQUIPPED WITH A SELF-CLOSING DEVICE, AND BE A MIN 1 3/8" THICK SOLID WOOD DOOR OR 20 MIN. F.R. DOOR. PER IRC SECTION R302.5.1
P-3	STAIR ASSEMBLY: PER IRC SECTION R311.7" a) WIDTH 36" MIN.; HEADROOM 6'-8" MIN. b) RISER 7-3/4" MAX.; TREAD 10" MIN. c) TOP OF HANDRAIL AT 34" MIN. AND 38" MAX ABOVE TREAD NOSING d) HANDRAIL WIDTH 1-1/4" MIN. AND 2" MAX. e) INSTALL FIRE BLOCKING IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. f) COVER USABLE SPACE UNDER STAIR WITH 1/2" GYP."
P-4	SAFETY GLAZING PER IRC SECTION R308.4
P-5	EGRESS WINDOW PER IRC SECTION R310. PROVIDE MIN NET CLEARANCE OF 5 SF AT GRADE FLOOR OPENINGS AND 5.7 SF ABOVE. MIN SILL HEIGHT TO BE 44" A.F.F.
P-6	IGNITERS: A) FOR GAS FIRED APPLIANCES IN GARAGE TO BE 18" MIN ABOVE TOP OF SLAB, PROVIDE (2) LAYERS OF FLOOR SHEATHING OVER FRAMING. PER IRC SECTION G2408. B) HEAT-PRODUCING EQUIPMENT AND APPLIANCES SHALL BE INSTALLED TO MAINTAIN THE REQUIRED CLEARANCES TO COMBUSTIBLE CONSTRUCTION AS SPECIFIED IN THE LISTING AND MANUFACTURER'S INSTRUCTIONS. PER IRC G2408.5
P-7	COVER WALLS ADJACENT TO TUBS AND SHOWERS WITH NONABSORBENT MATERIAL TO 72" ABOVE DRAIN INLETS. PER IRC SECTION R307.2. FOR GROUND FLR WASTE OPENING REQ SEE UPC NOTES ON SHIT A001
P-8	HIGH EFFICIENCY GAS FURNACE, SIZE PER WSEC PRESCRIPTIVE ENERGY CODE COMPLIANCE FORMS. a) PROVIDE DUCT LEAKAGE, SEALING & TESTING PER WSEC 502 & 503. b) THERMOSTAT PER WSEC 503.8. c) SEE WSEC NOTES ON SHEET A001
P-9	7-3/4" MAX. RISER WITH 10" MIN. TREAD DEPTH. IF MORE THAN (4) RISERS HANDRAIL REQUIRED PER IRC SECTION R311.7.7. a) PROVIDE 36"x36" MIN. LANDING AT EXTERIOR DOORS PER IRC SECTION R311.3
P-10	PROVIDE CRAWL SPACE ACCESS, MIN. 18" X 24" UNOBSTRUCTED ACCESS. PER IRC SECTION R408.4
P-11	PROVIDE ATTIC ACCESS, MIN. 22" X 30" WITH 30" MIN. HEADROOM AT UNOBSTRUCTED READILY ACCESSIBLE OPENING. PER IRC SECTION R807.1
P-13	FIREPLACE ASSEMBLY. PER IRC CHAPTER 10. a) FACTORY-BUILT FIREPLACES TO BE INSTALLED PER MFR. PER IRC SECTION R1004. b) INSTALL MASONRY FIREPLACES PER IRC SECTION R1003. c). HEARTH SHALL CONFORM TO IRC REQUIREMENTS.
P-15	36" MIN. GUARDRAIL. AT STAIRS SLOPES AT 36" ABOVE STAIR NOSINGS. PER SEE IRC SECTION 312
P-16	8" VENT FOR MECHANICAL. 1" CLEARANCE ALL SIDES.
P-17	2x6 WALL FOR PLUMBING / HVAC.
P-18	A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN 36" OF THE ELECTRICAL DISTRIBUTION PANEL. SEE WSEC SECTION 105 ON SHEET A001
P-19	3" DIA GALL BOLLARD OR EQ. PER G2408.3 & M1307.3.1

**KEYNOTES - FOUNDATION**

ID	DESCRIPTION
FP-3	CONCRETE SLAB ON GRADE SHALL BE 4" THICK STEEL TROWLED FINISH w/ W1.4xW1.4 WWF ON 4" GRANULAR FILL. SLOPE TO AND PROVIDE THICKENED EDGE AT O.H. GAR DOOR. PER IRC SECTION R506
FP-4	14"x8" CRAWL SPACE VENT INSTALLED IN RIM JOIST. SEE CRAWL SPACE CALCULATIONS THIS SHEET.
FP-5	CRIPPLE WALL W/ 2x6 OR 3x4 STUDS @ 16" O.C. U.N.O. PER IRC SECTION R602.9.
FP-8	6 MIL BLACK POLYETHYLENE GROUND COVER OR APPROVED EQ. OVERLAP EDGES 12" MIN AT JOINTS AND EXTEND UP FOUNDATION WALL. PER WSEC 502.1.6.7.
FP-12	MAT FOOTING PER FTG STRUCTURAL. SEE DETAILS FOR ADDITIONAL INFORMATION.
FP-16	EXTEND PIER MIN. 18" BELOW SURROUNDING GRADE. PER IRC TABLE R301.2.

**AREA SCHEDULE - GROSS**

NAME	AREA
Foyer	119 SF
Lower Entry	122 SF
Lower Stairs	67 SF
Main Floor	1490 SF
Main Floor (+20ft Clg)	138 SF
Main Stairs	109 SF
Upper Floor	1469 SF
	3514 SF
Garage	671 SF
	4185 SF

Description  
Date  
No.



MONSEF DESIGN  
STUDIO  
451 DUVALLE AVE NE, RENTON, WA 98059  
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence  
5024 W Mercer Way, Mercer Island

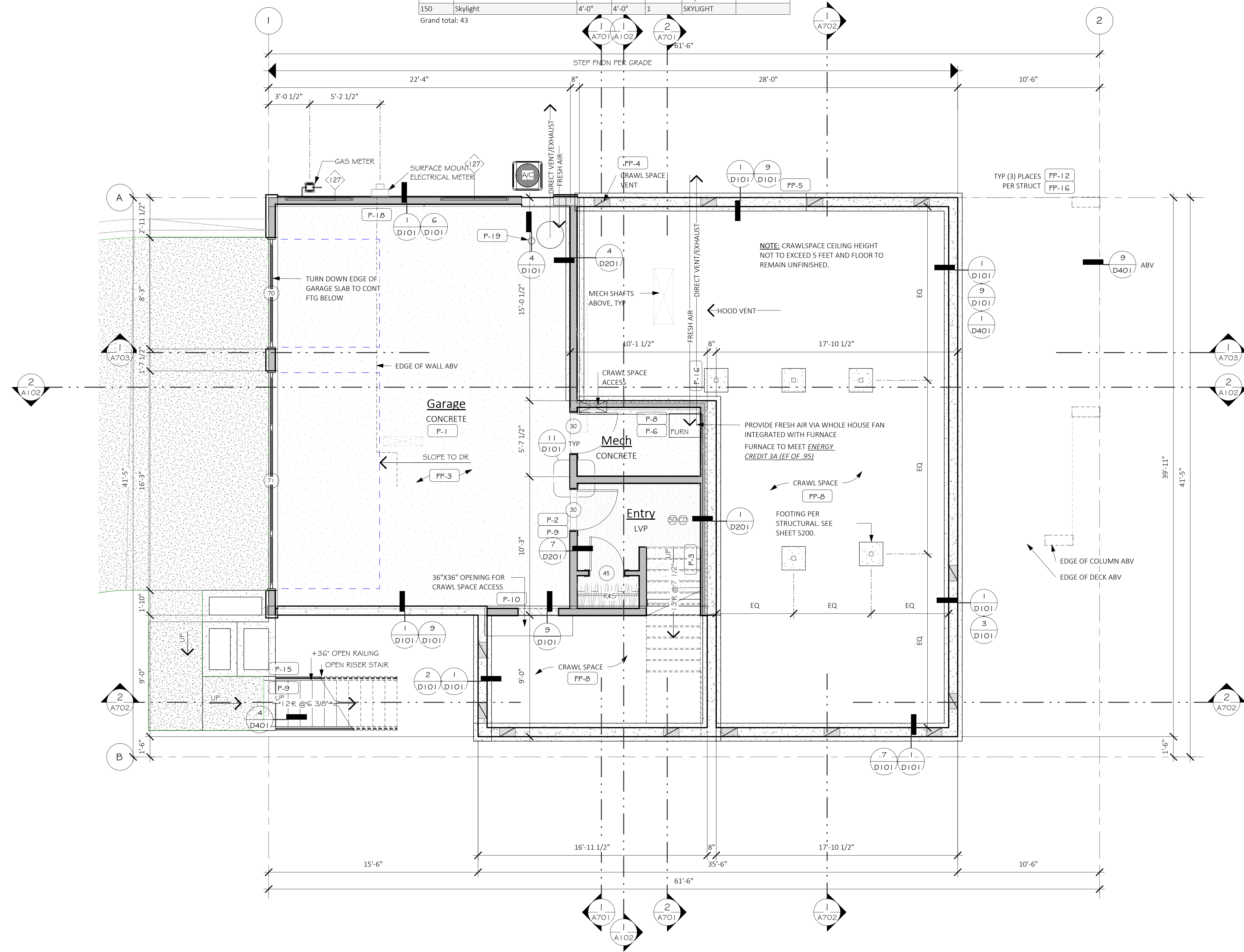
PERMIT SET

LOWER FLOOR

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: JPM

A201

SCALE 24X36: 1/4" = 1'-0"  
\*NOTE: 1 X 17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.





Door Schedule						
TYPE MARK	DOOR STYLE	COMMENTS	SIZE		COUNT	DOOR PANEL CONSTRUCTION
			WIDTH	HT		
10	Hinged-Double-Exterior-Entrance, InSwing		6'-0"	8'-0"	1	S.C.
20	Hinged-Double-Interior-Panel		3'-6"	6'-8"	1	H.C.
21	Hinged-Double-Interior-Panel		5'-0"	6'-8"	4	H.C.
30	Hinged-Single-Exterior-Panel, InSwing		3'-0"	8'-0"	2	S.C.
40	Hinged-Single-Interior-Panel		2'-4"	8'-0"	7	S.C.
41	Hinged-Single-Interior-Panel		2'-4"	6'-8"	1	H.C.
42	Hinged-Single-Interior-Panel		2'-4"	6'-8"	1	H.C.
43	Hinged-Single-Interior-Panel		2'-6"	8'-0"	1	S.C.
44	Hinged-Single-Interior-Panel		2'-6"	6'-8"	2	H.C.
45	Hinged-Single-Interior-Panel		2'-6"	8'-0"	1	S.C.
46	Hinged-Single-Interior-Panel		2'-8"	6'-8"	1	H.C.
50	Milgard-Sliding-2 Panel	Sliding Door, Two Panels	8'-0"	8'-0"	1	VINYL
60	Milgard-Sliding-4 Panel	Sliding Door, Four Panels	12'-0"	8'-0"	1	VINYL
70	Overhead_Door 2 Panel		8'-0"	8'-0"	1	
71	Overhead_Door 4 Panel		16'-0"	8'-0"	1	
Grand total: 26						

Window Schedule						
Type Mark	STYLE	SIZE		COUNT	DESCRIPTION	IS EGRESS
		WIDTH	HT			
100	Horz Sliding Dbl-Vent	8'-0"	5'-0"	5	Vinyl	Yes
101	Horz Sliding Dbl-Vent	8'-0"	6'-0"	1	Vinyl	Yes
110	Horz Sliding Half-Vent	4'-0"	4'-0"	1	Vinyl	Yes
111	Horz Sliding Half-Vent	5'-0"	3'-6"	1	Vinyl	No
112	Horz Sliding Half-Vent	5'-0"	4'-0"	1	Vinyl	Yes
113	Horz Sliding Half-Vent	5'-0"	5'-0"	1	Vinyl	Yes
120	Picture	2'-6"	1'-0"	1	Vinyl	No
121	Picture	2'-6"	5'-0"	2	Vinyl	No
122	Picture	2'-6"	6'-0"	2	Vinyl	No
123	Picture	3'-0"	1'-6"	4	Vinyl	No
124	Picture	3'-0"	3'-0"	2	Vinyl	No
125	Picture	3'-0"	5'-0"	4	Vinyl	No
126	Picture	4'-0"	1'-0"	1	Vinyl	No
127	Picture	5'-0"	2'-6"	3	Vinyl	No
128	Picture	5'-0"	5'-0"	1	Vinyl	No
129	Picture	5'-0"	6'-0"	4	Vinyl	No
130	Picture	6'-0"	1'-6"	3	Vinyl	No
131	Picture	6'-0"	2'-6"	3	Vinyl	No
132	Picture	6'-0"	5'-0"	1	Vinyl	No
133	Picture	8'-0"	6'-0"	1	Vinyl	No
150	Skylight	4'-0"	4'-0"	1	SKYLIGHT	
Grand total: 43						

**TYP WINDOW NOTES:**

- SEE ARCHITECTURAL FLOOR PLANS FOR WINDOW LOCATIONS AND DESIGNATIONS. SEE ELEVATIONS & BUILDING SECTIONS FOR WINDOW HEAD/SILL LOCATIONS.
- ALL RESIDENTIAL WINDOWS ARE BASED UPON MILGARD VINYL WINDOWS. EXCEPT AS NOTED.
- ALL WINDOWS SHALL HAVE THROUGH-WINDOW AIR INLETS AS PER WASHINGTON STATE VENTILATION CODE.
- NOT USED.
- ALL WINDOWS TO BE FIXED UNLESS SHOWN/NOTED OTHERWISE.
- PROVIDE SAFETY GLAZING PER KEYNOTE P-4 AS LOCATED ON FLOOR PLANS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002

**TYP DOOR NOTES:**

- ALL RESIDENTIAL SLIDING GLASS DOORS ARE BASED ON MILGARD SERIES VINYL SLIDING DOORS.
- GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002.
- PROVIDE SAFETY GLAZING PER GENERAL NOTES.
- NOT USED.
- PROVIDE MIN 0.20 U-VALUE AT SOLID CORE FLUSH DOORS WHERE EXPOSED TO AMBIENT TEMPERATURE.

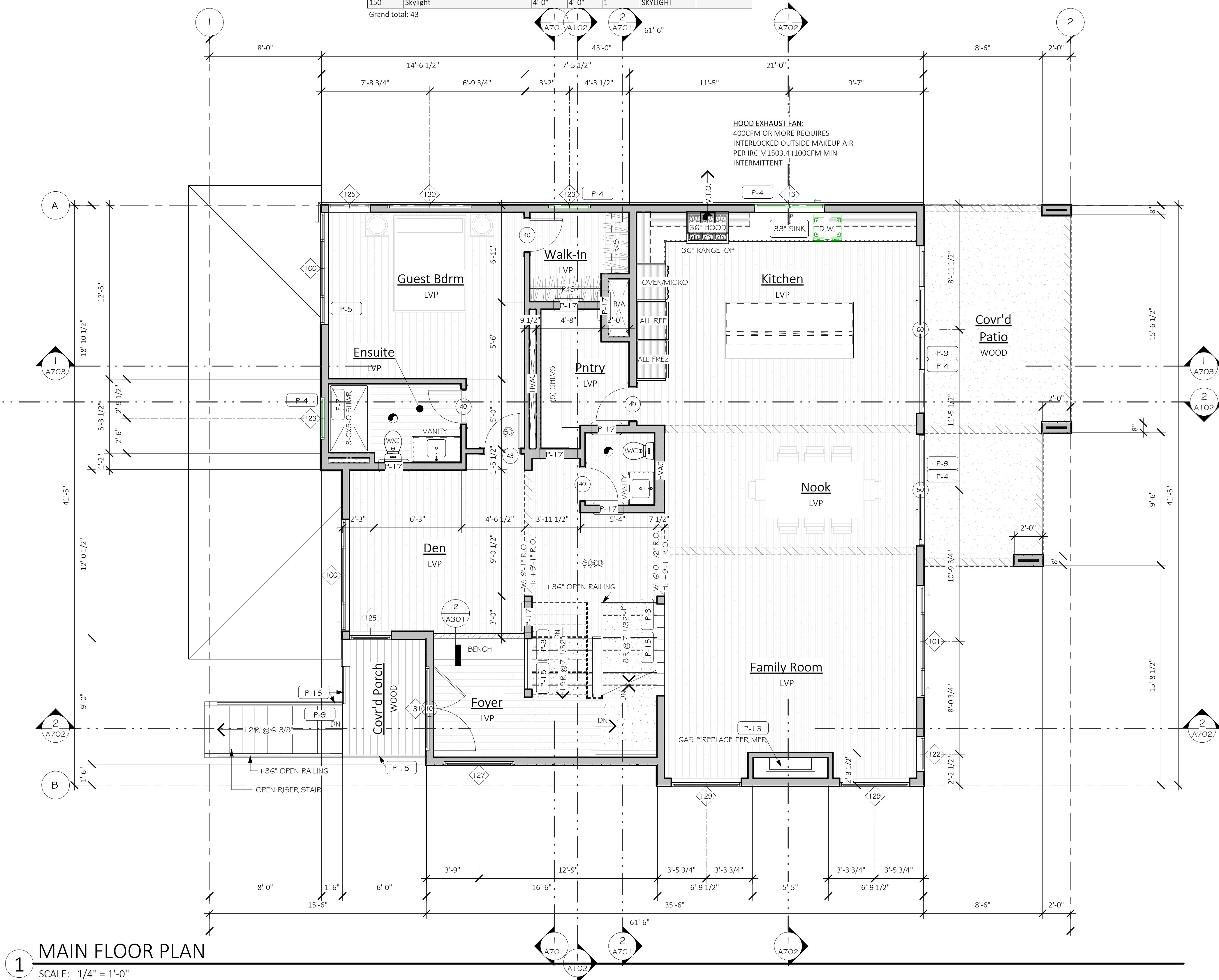
**GENERAL PLAN NOTES:**

- SEE SHEET A001 FOR GENERAL CONSTRUCTION SPECIFICATIONS.
- SEE BUILDING ELEVATIONS FOR WINDOW OPERATION.
- SEE "TYPICAL BUILDING MATERIALS" LIST ON THE ELEVATION SHEET(S).
- FOR THE SYMBOLS & LEGEND SEE SHEET A000.
- SEE STRUCTURAL SHEETS FOR SHEARWALL DESIGNATIONS & HOLD-DOWNS AND SHEET S100 FOR SHEARWALL DETAILS/ SCHEDULE.

**KEYNOTES - FLOORPLAN**

ID	DESCRIPTION
P-1	GARAGE/HOUSE OCCUPANCY SEPARATION. PER IRC R302.6 a) 1/2" GYP. AT GARAGE SIDE BETWEEN RESIDENCE AND ATTIC. b) 5/8" TYPE 'X' GYP IS REQUIRED WHERE THERE IS LIVING SPACE ABOVE. c) 1/2" GYP. AT SUPPORTING COLUMNS, WALLS AND BEAMS ABOVE."
P-2	DOOR BETWEEN GARAGE AND HOUSE SHALL BE EQUIPPED WITH A SELF-CLOSING DEVICE, AND BE A MIN 1 3/8" THICK SOLID WOOD DOOR OR 20 MIN. F.R. DOOR. PER IRC SECTION R302.5.1
P-3	STAIR ASSEMBLY. PER IRC SECTION R311.7" a) WIDTH 36" MIN.; HEADROOM 6'-8" MIN. b) RISER 7-3/4" MAX.; TREAD 10" MIN. c) TOP OF HANDRAIL AT 34" MIN. AND 38" MAX ABOVE TREAD NOSING d) HANDRAIL WIDTH 1-1/4" MIN. AND 2" MAX. e) INSTALL FIRE BLOCKING IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. f) COVER USABLE SPACE UNDER STAIR WITH 1/2" GYP."
P-4	SAFETY GLAZING PER IRC SECTION R308.4
P-5	EGRESS WINDOW PER IRC SECTION R310. PROVIDE MIN NET CLEARANCE OF 5 SF AT GRADE FLOOR OPENINGS AND 5.7 SF ABOVE. MIN SILL HEIGHT TO BE 44" A.F.F.
P-6	IGNITERS: A) FOR GAS FIRED APPLIANCES IN GARAGE TO BE 18" MIN ABOVE TOP OF SLAB, PROVIDE (2) LAYERS OF FLOOR SHEATHING OVER FRAMING. PER IRC SECTION G2408. B) HEAT-PRODUCING EQUIPMENT AND APPLIANCES SHALL BE INSTALLED TO MAINTAIN THE REQUIRED CLEARANCES TO COMBUSTIBLE CONSTRUCTION AS SPECIFIED IN THE LISTING AND MANUFACTURER'S INSTRUCTIONS. PER IRC G2408.5
P-7	COVER WALLS ADJACENT TO TUBS AND SHOWERS WITH NONABSORBENT MATERIAL TO 72" ABOVE DRAIN INLETS. PER IRC SECTION R307.2. FOR GROUND FLR WASTE OPENING SEE UPC NOTES ON SHT A001
P-8	HIGH EFFICIENCY GAS FURNACE, SIZE PER WSEC PRESCRIPTIVE ENERGY CODE COMPLIANCE FORMS. a) PROVIDE DUCT LEAKAGE, SEALING & TESTING PER WSEC 502 & 503. b) THERMOSTAT PER WSEC 503.8. c) SEE WSEC NOTES ON SHEET A001
P-9	7-3/4" MAX. RISER WITH 10" MIN. TREAD DEPTH. IF MORE THAN (4) RISERS HANDRAIL REQUIRED PER IRC SECTION R311.7.7. a) PROVIDE 36"x36" MIN. LANDING AT EXTERIOR DOORS PER IRC SECTION R311.3
P-10	PROVIDE CRAWL SPACE ACCESS, MIN. 18" X 24" UNOBSTRUCTED ACCESS. PER IRC SECTION R408.4
P-11	PROVIDE ATTIC ACCESS, MIN. 22" X 30" WITH 30" MIN. HEADROOM AT UNOBSTRUCTED READILY ACCESSIBLE OPENING. PER IRC SECTION R807.1
P-13	FIREPLACE ASSEMBLY. PER IRC CHAPTER 10. a) FACTORY-BUILT FIREPLACES TO BE INSTALLED PER MFR. PER IRC SECTION R1004. b) INSTALL MASONRY FIREPLACES PER IRC SECTION R1003. c) HEARTH SHALL CONFORM TO IRC REQUIREMENTS.
P-15	36" MIN. GUARDRAIL. AT STAIRS SLOPES AT 36" ABOVE STAIR NOSINGS. PER SEE IRC SECTION 312
P-16	B" VENT FOR MECHANICAL. 1" CLEARANCE ALL SIDES.
P-17	2x6 WALL FOR PLUMBING / HVAC.
P-18	A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN 36" OF THE ELECTRICAL DISTRIBUTION PANEL. SEE WSEC SECTION 105 ON SHEET A001
P-19	3" DIA GALV BOLLARD OR EQ PER G2408.3 & M1307.3.1

**2 Bench Detail**  
SCALE: 1/4" = 1'-0"



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

AREA SCHEDULE - GROSS	
NAME	AREA
Foyer	119 SF
Lower Entry	122 SF
Lower Stairs	67 SF
Main Floor	1490 SF
Main Floor (+20ft Clg)	138 SF
Main Stairs	109 SF
Upper Floor	1469 SF
	3514 SF
Garage	671 SF
	671 SF
	4185 SF

PROJECT NO:	20008
ISSUE DATE:	2023/08/01
SHT ISSUE DATE:	2021/01/08
DRAWN BY:	SPM
<b>A301</b>	
SCALE 24X36: 1/4" = 1'-0"	
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 PERMIT SET  
 MAIN FLOOR

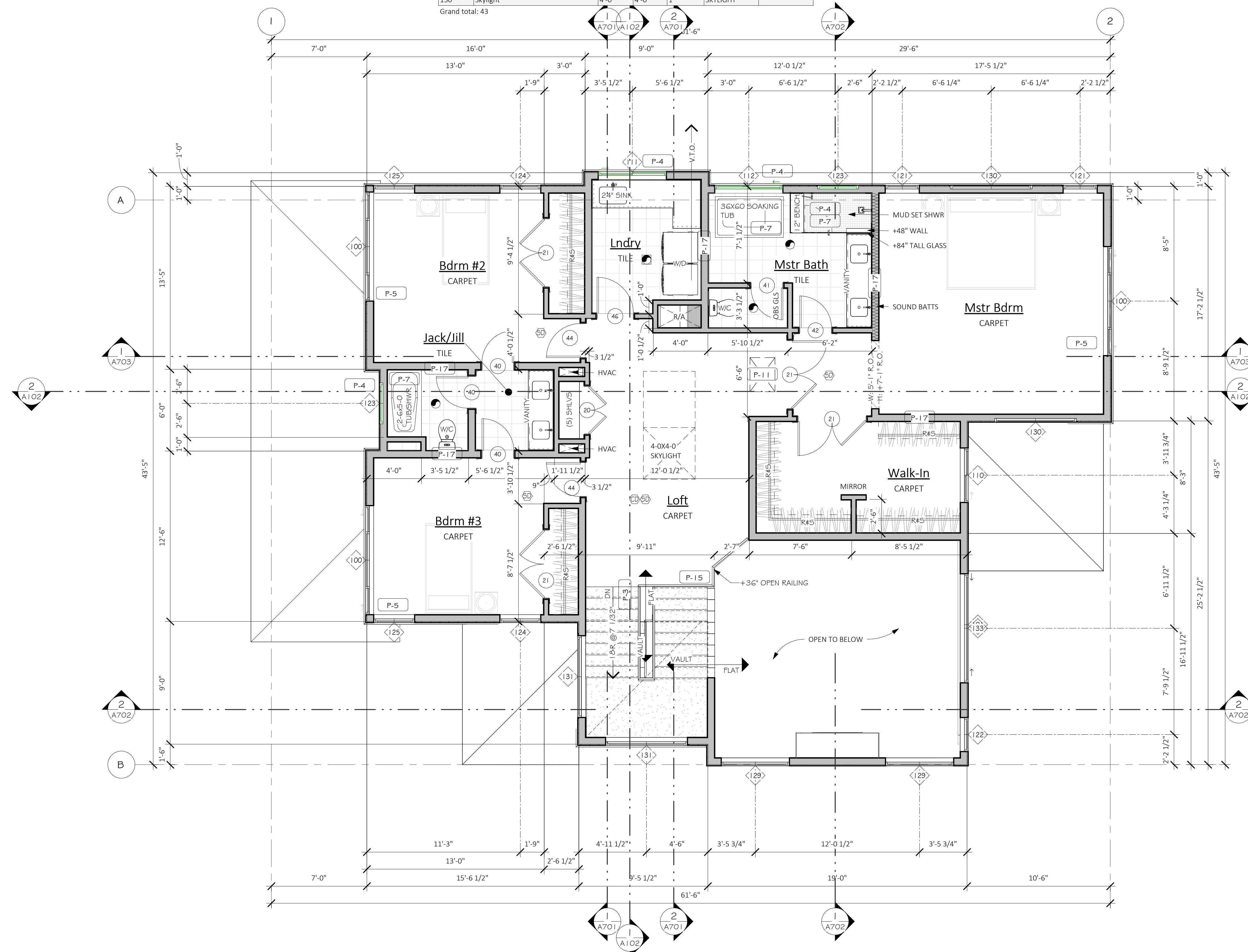


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TYPE MARK	DOOR STYLE	COMMENTS	SIZE		COUNT	DOOR PANEL CONSTRUCTION
			WIDTH	HT		
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Window Schedule						
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111	Horz Sliding Half-Vent	5'-0"	3'-6"	1	Vinyl	No
112	Horz Sliding Half-Vent	5'-0"	4'-0"	1	Vinyl	Yes
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Grand total: 43



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**KEYNOTES - FLOORPLAN**

ID	DESCRIPTION
P-1	GARAGE/HOUSE OCCUPANCY SEPARATION. PER IRC R302.6 a) 1/2" GYP. AT GARAGE SIDE BETWEEN RESIDENCE AND ATTIC. b) 5/8" TYPE 'X' GYP IS REQUIRED WHERE THERE IS LIVING SPACE ABOVE. c) 1/2" GYP. AT SUPPORTING COLUMNS, WALLS AND BEAMS ABOVE.
P-2	DOOR BETWEEN GARAGE AND HOUSE SHALL BE EQUIPPED WITH A SELF-CLOSING DEVICE, AND BE A MIN 1 3/8" THICK SOLID WOOD DOOR OR 20 MIN. F.R. DOOR. PER IRC SECTION R302.5.1
P-3	STAIR ASSEMBLY: PER IRC SECTION R311.7.7 a) WIDTH 36" MIN.; HEADROOM 6'-8" MIN. b) RISER 7-3/4" MAX.; TREAD 10" MIN. c) TOP OF HANDRAIL AT 34" MIN. AND 38" MAX ABOVE TREAD NOSING d) HANDRAIL WIDTH 1-1/4" MIN. AND 2" MAX. e) INSTALL FIRE BLOCKING IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. f) COVER USABLE SPACE UNDER STAIR WITH 1/2" GYP.
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P-5	EGRESS WINDOW PER IRC SECTION R310. PROVIDE MIN NET CLEARANCE OF 5 SF AT GRADE FLOOR OPENINGS AND 5.7 SF ABOVE. MIN SILL HEIGHT TO BE 44" A.F.F.
P-6	IGNITERS: A) FOR GAS FIRED APPLIANCES IN GARAGE TO BE 18" MIN ABOVE TOP OF SLAB, PROVIDE (2) LAYERS OF FLOOR SHEATHING OVER FRAMING. PER IRC SECTION G2408. B) HEAT-PRODUCING EQUIPMENT AND APPLIANCES SHALL BE INSTALLED TO MAINTAIN THE REQUIRED CLEARANCES TO COMBUSTIBLE CONSTRUCTION AS SPECIFIED IN THE LISTING AND MANUFACTURER'S INSTRUCTIONS. PER IRC G2408.5
P-7	COVER WALLS ADJACENT TO TUBS AND SHOWERS WITH NONABSORBENT MATERIAL TO 72" ABOVE DRAIN INLETS. PER IRC SECTION R307.2. FOR GROUND FLR WASTE OPENING REQ SEE UPC NOTES ON SHT A001
P-8	HIGH EFFICIENCY GAS FURNACE, SIZE PER WSEC PRESCRIPTIVE ENERGY CODE COMPLIANCE FORMS. a) PROVIDE DUCT LEAKAGE, SEALING & TESTING PER WSEC 502 & 503. b) THERMOSTAT PER WSEC 503.8. c) SEE WSEC NOTES ON SHEET A001
P-9	7-3/4" MAX. RISER WITH 10" MIN. TREAD DEPTH. IF MORE THAN (4) RISERS HANDRAIL REQUIRED PER IRC SECTION R311.7.7. a) PROVIDE 36"x36" MIN. LANDING AT EXTERIOR DOORS PER IRC SECTION R311.3
P-10	PROVIDE CRAWL SPACE ACCESS, MIN. 18" X 24" UNOBSTRUCTED ACCESS. PER IRC SECTION R408.4
P-11	PROVIDE ATTIC ACCESS, MIN. 22" X 30" WITH 30" MIN. HEADROOM AT UNOBSTRUCTED READILY ACCESSIBLE OPENING. PER IRC SECTION R807.1
P-13	FIREPLACE ASSEMBLY PER IRC CHAPTER 10. a) FACTORY-BUILT FIREPLACES TO BE INSTALLED PER MFR. PER IRC SECTION R1004. b) INSTALL MASONRY FIREPLACES PER IRC SECTION R1003. c) HEARTH SHALL CONFORM TO IRC REQUIREMENTS.
P-15	36" MIN. GUARDRAIL AT STAIRS SLOPES AT 36" ABOVE STAIR NOSINGS. PER SEE IRC SECTION 312
P-16	B' VENT FOR MECHANICAL. 1" CLEARANCE ALL SIDES.
P-17	2x6 WALL FOR PLUMBING / HVAC.
P-18	A PERMANENT CERTIFICATE SHALL BE POSTED WITHIN 36" OF THE ELECTRICAL DISTRIBUTION PANEL. SEE WSEC SECTION 105 ON SHEET A001
P-19	3" DIA GALV BOLLARD OR EQ PER G2408.3 & M1307.3.1

**AREA SCHEDULE - GROSS**

NAME	AREA
Foyer	119 SF
Lower Entry	122 SF
Lower Stairs	67 SF
Main Floor	1490 SF
Main Floor (+20ft Clg)	138 SF
Main Stairs	109 SF
Upper Floor	1469 SF
	3514 SF
Garage	671 SF
	671 SF
	4185 SF

Description  
Date  
No.



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PERMIT SET  
UPPER FLOOR

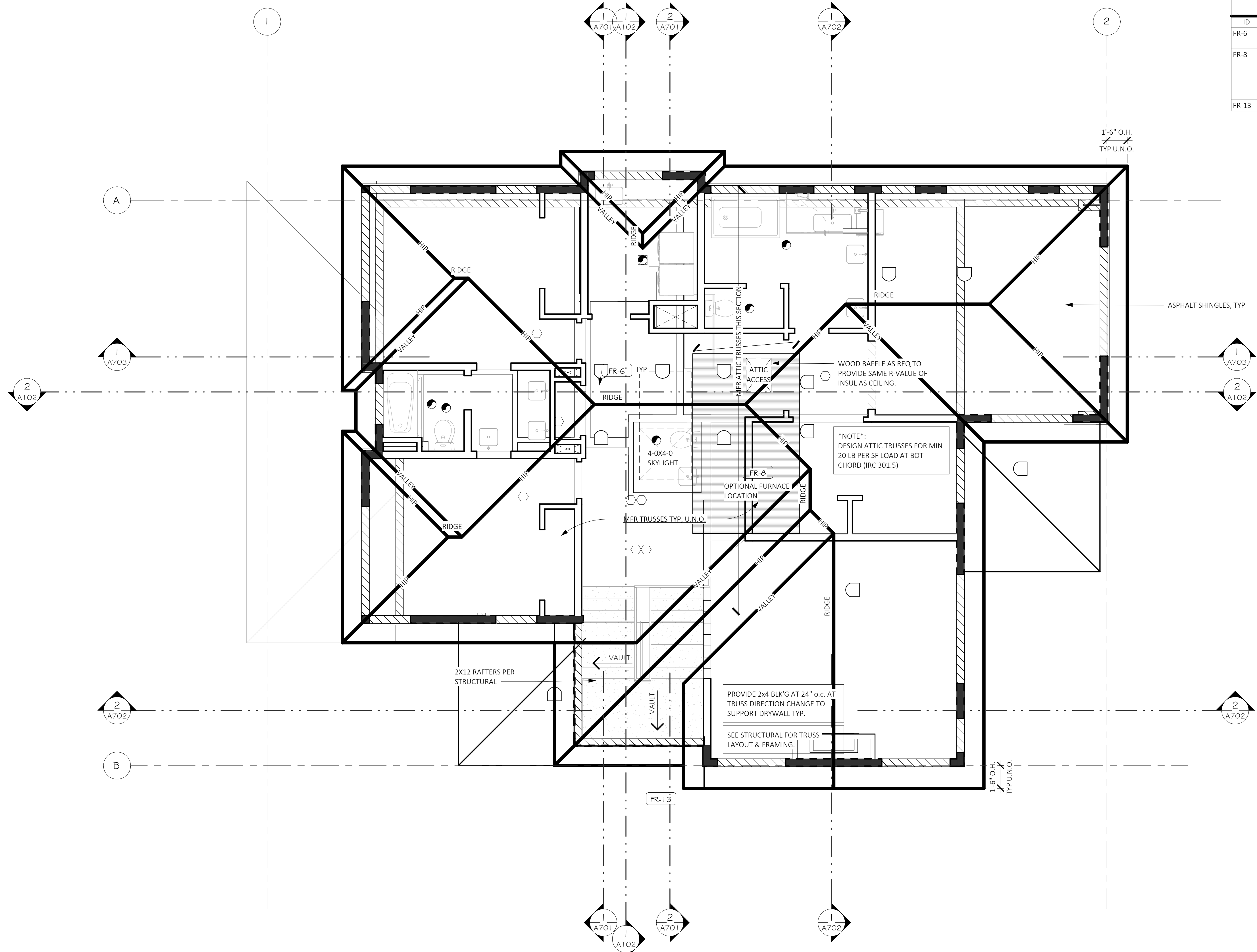
PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: SPM  
**A401**  
SCALE 24X36: 1/4" = 1'-0"  
\* NOTE: 1 X 17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



### GENERAL FRAMING NOTES:

- SEE SECTION R301, SHEET A001 FOR GENERAL DESIGN CRITERIA.
- SEE STRUCTURAL SHEETS FOR SHEARWALL DESIGNATIONS & HOLDDOWNS AND SHEET 5100 FOR SHEARWALL DETAILS/ SCHEDULE.
- TRUSS DESIGN BY MANUFACTURER. TRUSS DESIGN DRAWINGS SHALL BE PREPARED PER IRC SECTION R802.10.1 AND SHALL BE PROVIDED TO THE BUILDING OFFICIAL AND APPROVED PRIOR TO INSTALLATION.
  - TRUSS DESIGN PER IRC SECTION R802.10.2
  - FIELD ALTERATIONS MUST BE DESIGNED BY MFR. PER IRC SECTION R802.10.4
  - SEE STRUCTURAL PLANS FOR DESIGN LOADS.
  - TRUSS MFR TO PROVIDE ADEQUATE BEARING AREA TO RESOLVE REACTION (PERPENDICULAR TO GRAIN) AT ALL HIGHLY LOADED GIRDER TRUSSES.
- PROVIDE 2x4 RAFTER/TRUSS TAIL - TYP. U.N.O.
- ROOF PITCH: EXTERIOR PER ELEVATIONS & INTERIOR PER SECTIONS.
- ROOF FRAMING SPACING, 24" o.c. U.N.O.
- SEE ELEVATIONS AND/OR SECTIONS FOR ROOF PITCH, PLATE HEIGHT AND HEADER HEIGHT.
- FASTENERS: ALL FRAMING SHALL BE NAILED IN ACCORDANCE WITH THE STRUCTURAL DRAWINGS. POSITIVE CONNECTIONS SHALL BE PROVIDED WHERE POSTS AND BEAM OR GIRDER CONSTRUCTION IS USED TO SUPPORT FLR FRAMING.
- INSTALL 2X FIREBLOCKING PER R302.11 AS FOLLOWS:
  - IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS, VERT AT THE CLG AND FLR LEVELS AND HORZ AT INTERVALS NOT EXCEEDING 10 FEET.
  - AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERT AND HORZ SPACES SUCH AS OCCUR AT SOFFITS, DROP CLGS AND COVE CLGS.
  - IN CONCEALED SPACES BTWN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
  - AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E 136 REQUIREMENTS. THE INTEGRITY OF ALL FIREBLOCKS SHALL BE MAINTAINED.
- SEE SHT A003 FOR ROOF & CRAWL SPACE AREA VENTILATION CALCULATIONS

KEYNOTES - FRAMING	
ID	DESCRIPTION
FR-6	ATTIC SPACE VENT PER IRC R806. SEE ROOF VENT CALCULATIONS ON SHEET A003.
FR-8	HIGH EFFICIENCY GAS FURNACE, SIZE PER WSEC (PRESCRIPTIVE ENERGY CODE COMPLIANCE FORMS. a) PROVIDE DUCT LEAKAGE, SEALING & TESTING PER WSEC 502 & 503. b) THERMOSTAT PER WSEC 503.8. c) SEE WSEC NOTES ON SHEET A001
FR-13	SEE ELEVATIONS AND SECTIONS FOR PLATE HEIGHT.



Description

Date

No.



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PERMIT SET

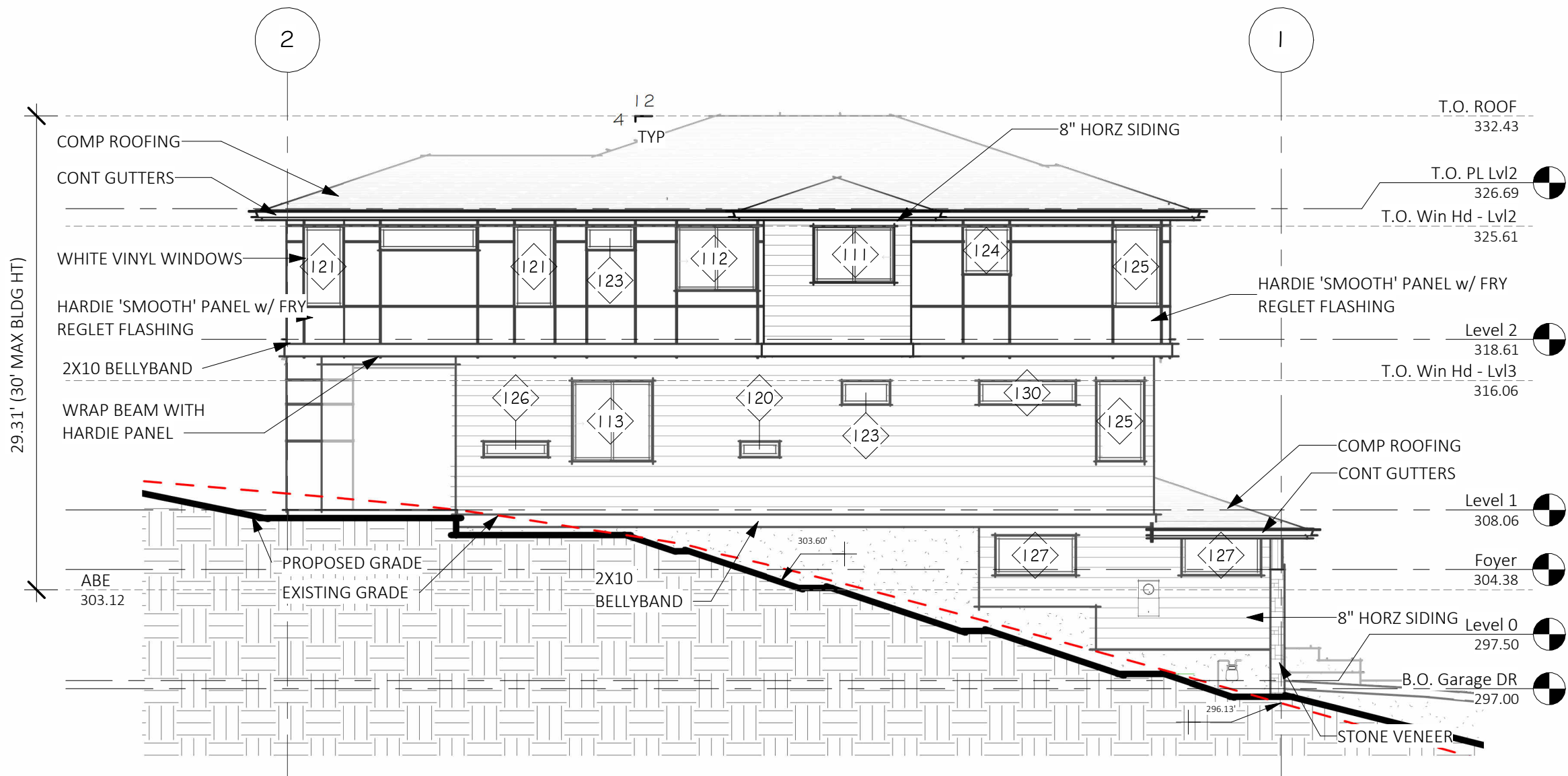
ROOF PLAN

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: SPM

A501

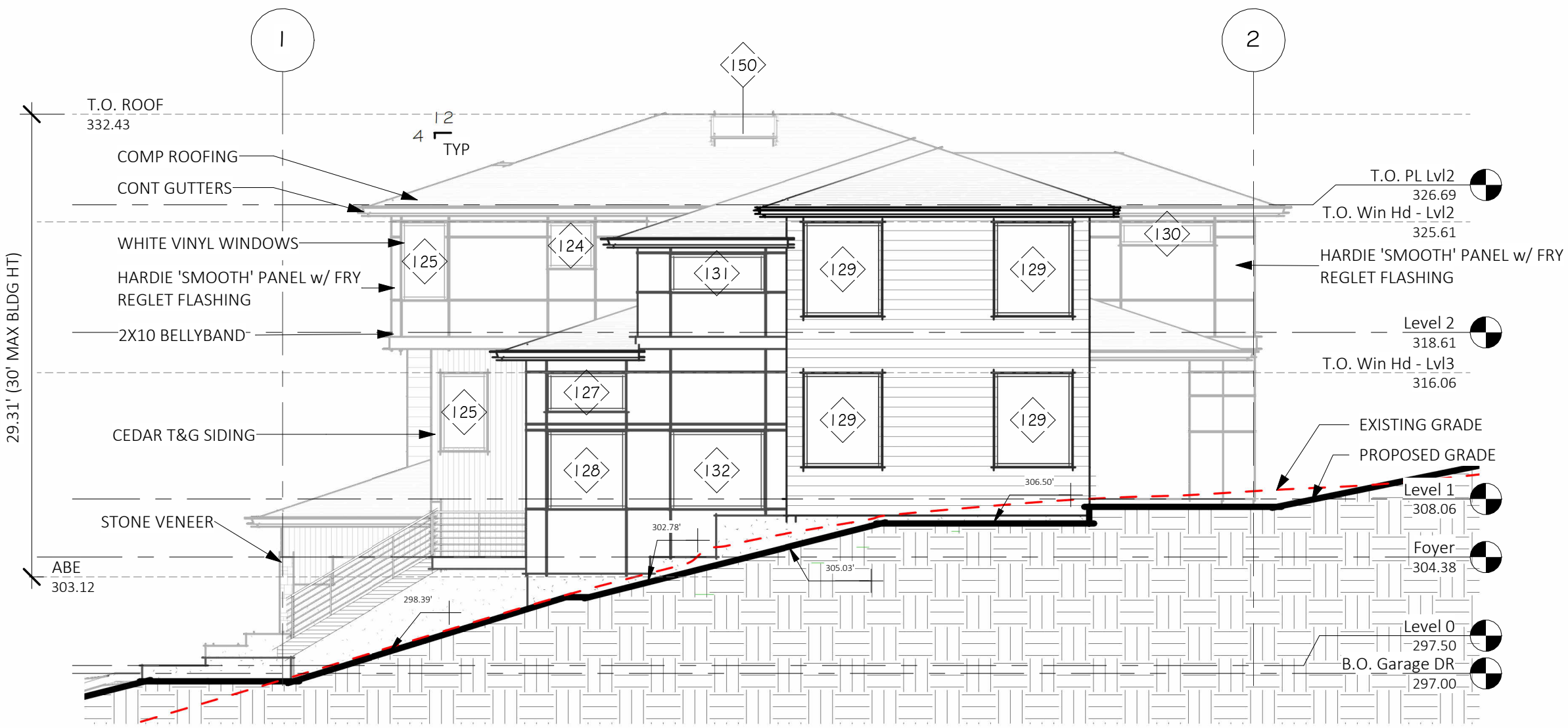
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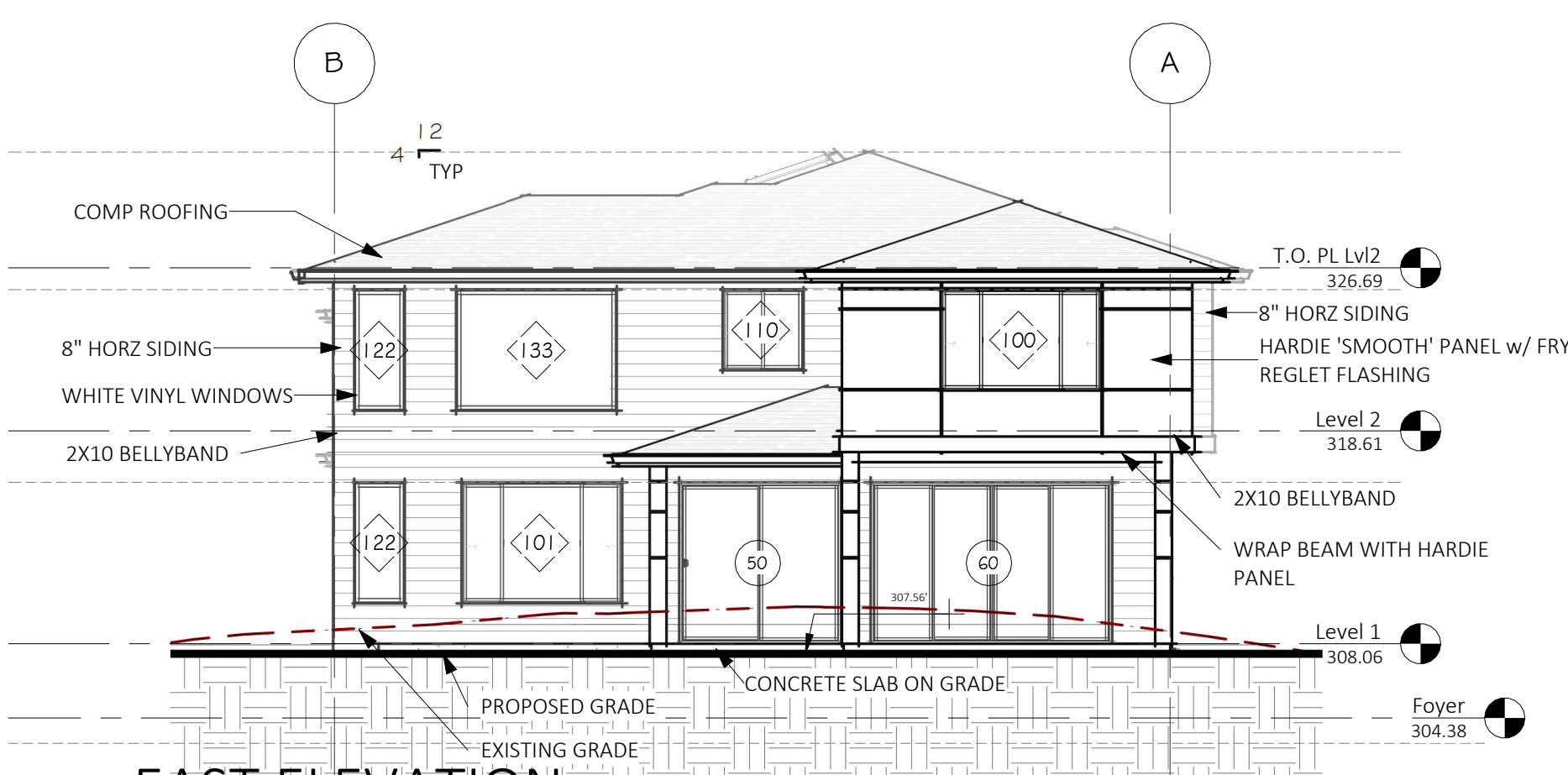
**3 NORTH ELEVATION**

SCALE: 1/8" = 1'-0"



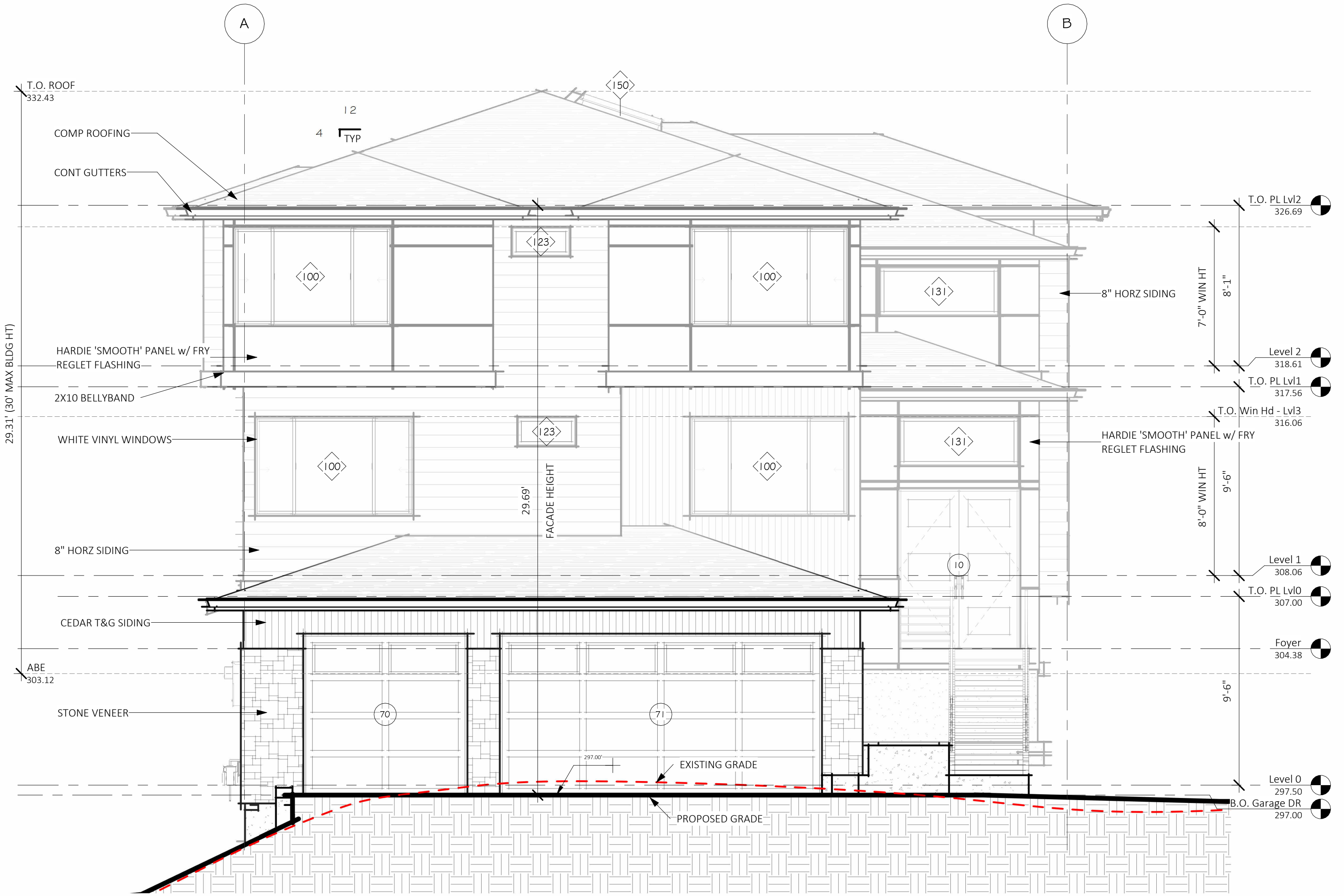
**4 SOUTH ELEVATION**

SCALE: 1/8" = 1'-0"



**2 EAST ELEVATION**

SCALE: 1/8" = 1'-0"



**1 WEST ELEVATION**

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

**TYPICAL BUILDING MATERIALS:**

**ROOF CONSTRUCTION**

ROOFING: ASPHALT SHINGLES  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: PER PLANS  
 INSULATION: R-49 BLOWN-IN (R-38 VAULTED)  
 SOFFIT: HARDIE PANEL SOFFIT  
 GWB: 5/8" GWB

**FLOOR CONSTRUCTION**

FLOORING: FINISH PER PLANS  
 SUBFLOOR: 3/4" T&G (PLYWOOD, COMPLY OR EQUAL)  
 FRAMING: PER PLANS  
 INSULATION: R-38 BATT  
 SOFFIT: HARDIE PANEL SOFFIT

**EXTERIOR WALL CONSTRUCTION**

SIDING MATERIAL: PER ELEVATIONS  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: 2x6 STUDS AT 16" oc U.N.O.  
 INSULATION: R-21 BATT w/ INTEGRAL VAPOR BARRIER  
 GWB: 1/2" GWB

**TRIM**

WINDOW: (WITH NO BRICK MOLD) 5/4x4 WRAP  
 CORNER BOARDS: INSIDE: 2x2  
 OUTSIDE: MTL X FLASHING  
 FASCIA: 2x8 w/ 2x3 (PER DETAILS) U.N.O.

**ELEVATION NOTES:**

- INSTALL APPROVED CORROSION-RESISTANT FLASHING, TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS PER R703.3. SELF-ADHERED MEMBRANES USED AS FLASHING SHALL COMPLY WITH AAMA 711. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH. APPROVED CORROSION-RESISTANT FLASHINGS SHALL BE INSTALLED AT ALL OF THE FOLLOWING LOCATIONS:
  - EXTERIOR WINDOW AND DOOR OPENINGS. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER FOR SUBSEQUENT DRAINAGE.
  - AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS. WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
  - UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
  - CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
  - WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
- AT WALL AND ROOF INTERSECTIONS.
- AT BUILT-IN GUTTERS.

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PERMIT SET

ELEVATIONS

PROJECT NO: 20008  
 ISSUE DATE: 2023/08/01  
 SHT ISSUE DATE: 2023/08/01  
 DRAWN BY: SPM

A601

SCALE 24X36: As indicated  
 \* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



**TYPICAL BUILDING MATERIALS:**

**ROOF CONSTRUCTION**

ROOFING: ASPHALT SHINGLES  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: PER PLANS  
 INSULATION: R-49 BLOWN-IN (R-38 VAULTED)  
 SOFFIT: HARDIE PANEL SOFFIT  
 GWB: 5/8" GWB

**FLOOR CONSTRUCTION**

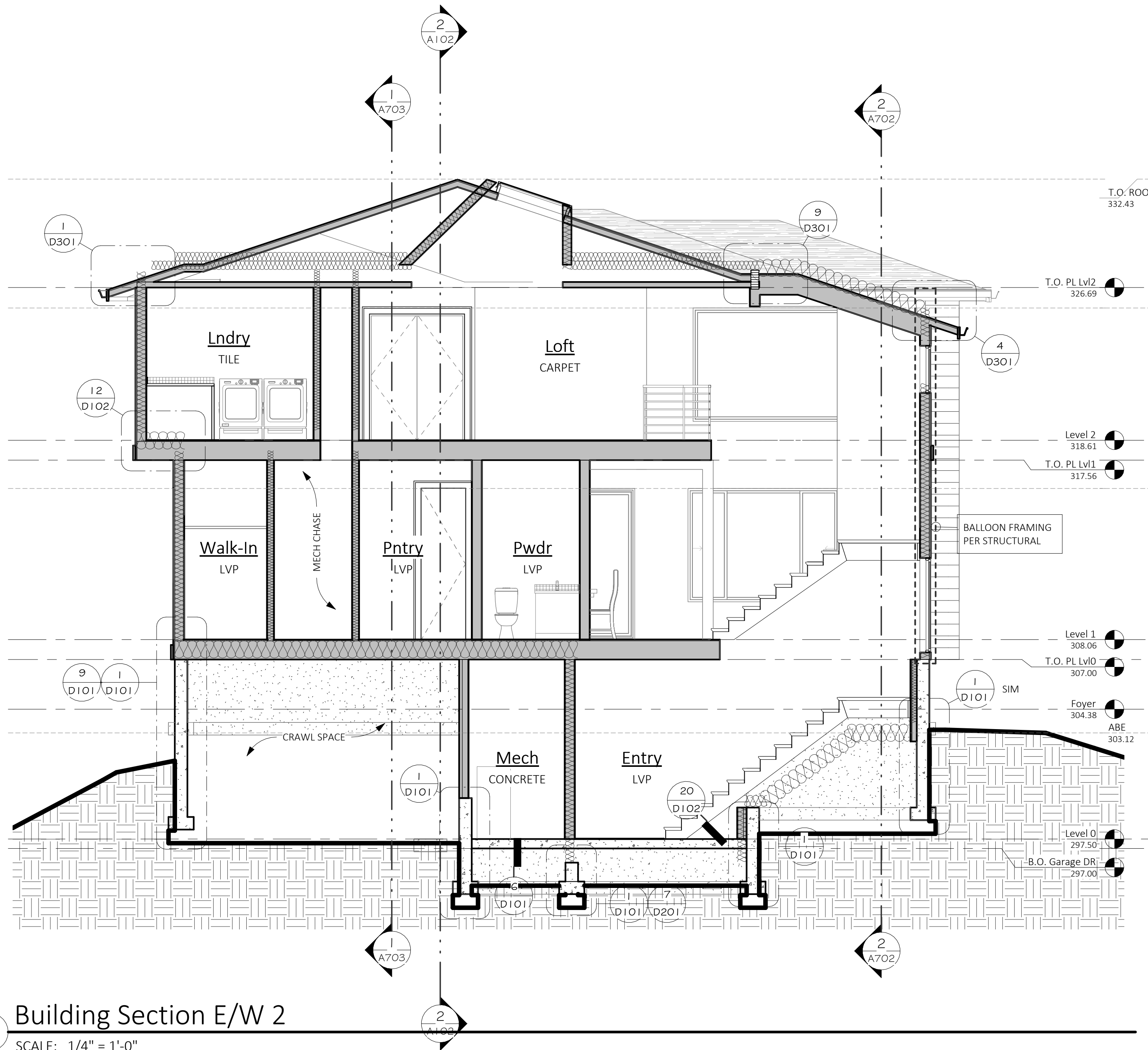
FLOORING: FINISH PER PLANS  
 SUBFLOOR: 3/4" T&G (PLYWOOD, COMPLY OR EQUAL)  
 FRAMING: PER PLANS  
 INSULATION: R-38 BATT  
 SOFFIT: HARDIE PANEL SOFFIT

**EXTERIOR WALL CONSTRUCTION**

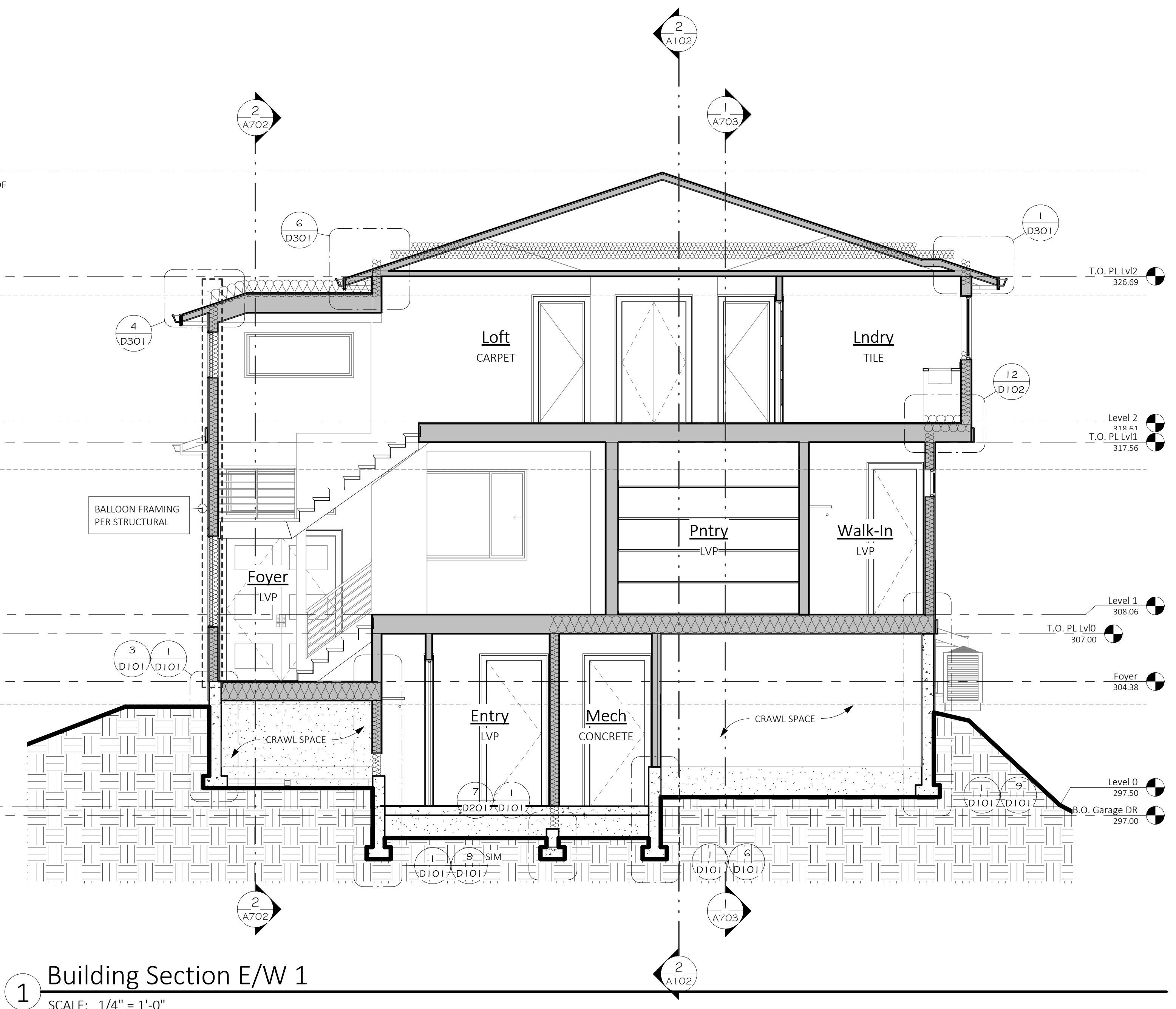
SIDING MATERIAL: PER ELEVATIONS  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: 2x6 STUDS AT 16" oc U.N.O.  
 INSULATION: R-21 BATT w/ INTEGRAL VAPOR BARRIER  
 GWB: 1/2" GWB

**TRIM**

WINDOW: (WITH NO BRICK MOLD) 5/4x4 WRAP  
 CORNER BOARDS: INSIDE: 2x2  
 OUTSIDE: MTL X FLASHING  
 FASCIA: 2x8 w/ 2x3 (PER DETAILS) U.N.O.



**2 Building Section E/W 2**  
 SCALE: 1/4" = 1'-0"



**1 Building Section E/W 1**  
 SCALE: 1/4" = 1'-0"

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BUILDING SECTIONS

PROJECT NO: 20008  
 ISSUE DATE: 2023/08/01  
 SHT ISSUE DATE: 2021/01/08  
 DRAWN BY: SPM

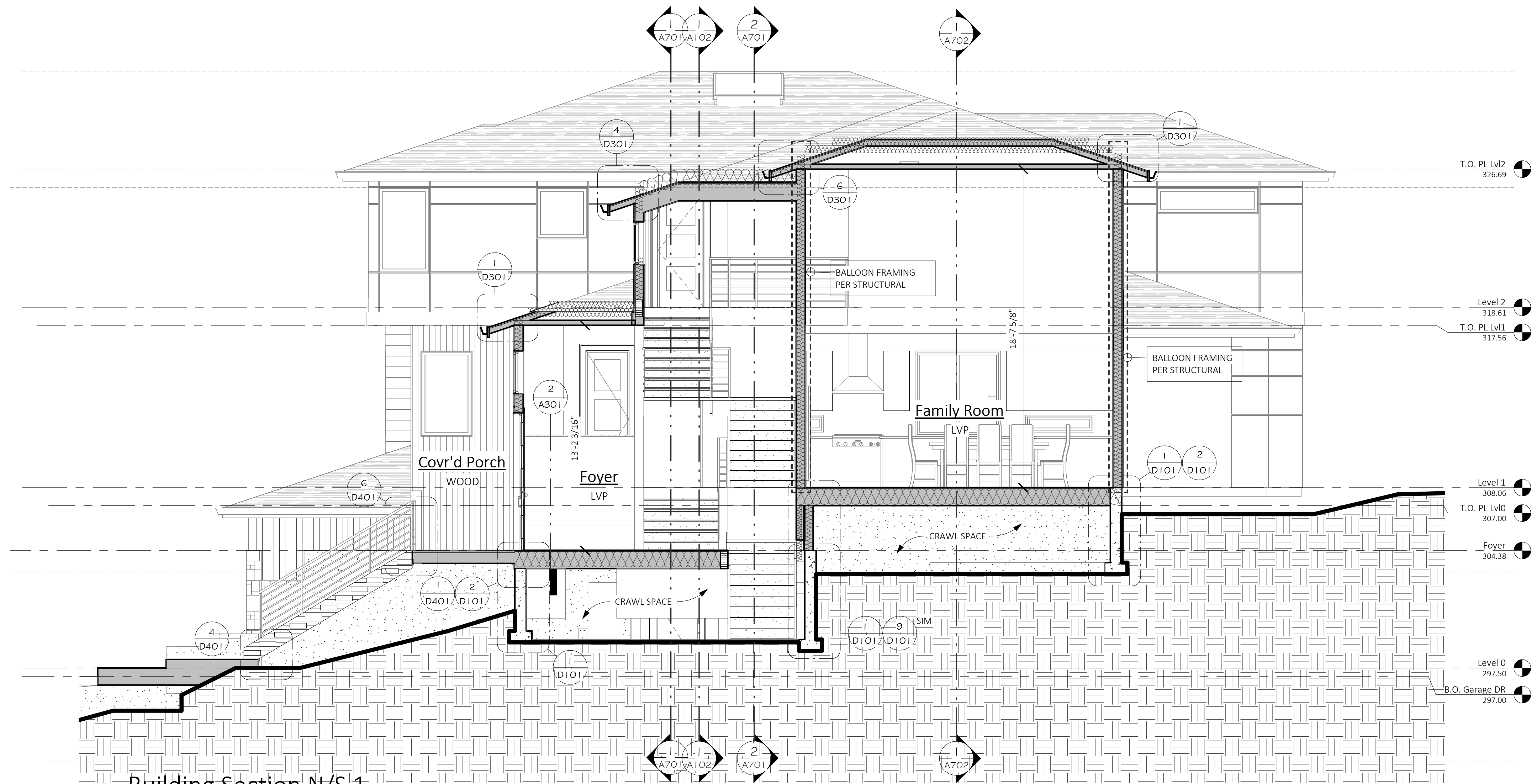
**A701**

SCALE 24X36: 1/4" = 1'-0"  
 \* NOTE: 1 X 17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

8/16/2023 1:07:17 PM Autodesk Docs://20008.Chen Residence - Mercer Island/20008-05.Chen Residence, MI - 5U82.rvt



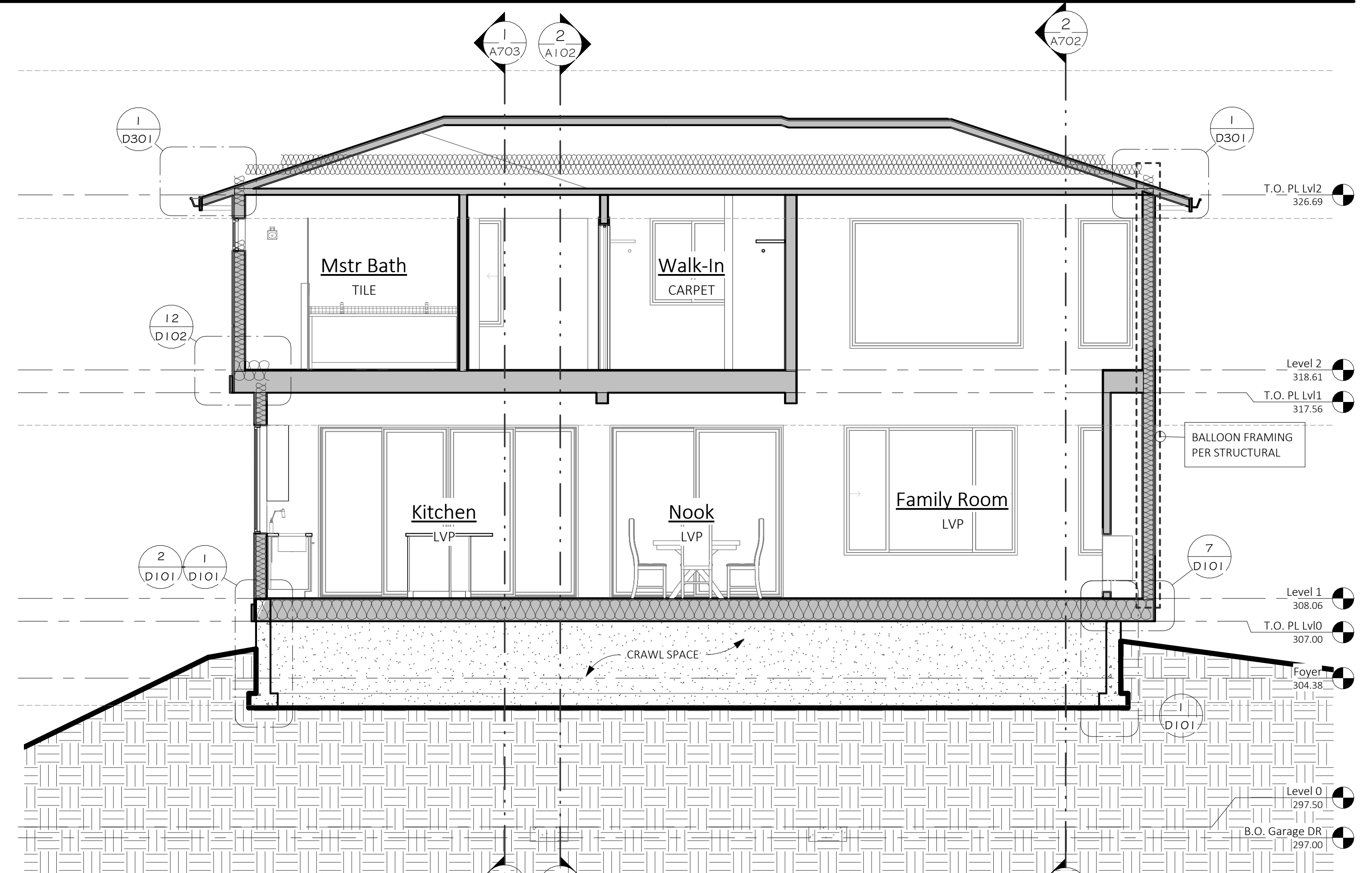
8/16/2023 1:07:19 PM Autodesk Docs://20008 Chen Residence - Mercer Island/20008-05 Chen Residence, MI - 5U82.rvt



**2** Building Section N/S 1  
SCALE: 1/4" = 1'-0"

**TYPICAL BUILDING MATERIALS:**

<b>ROOF CONSTRUCTION</b>	
ROOFING:	ASPHALT SHINGLES
BUILDING PAPER:	1.5# BUILDING PAPER
SHEATHING:	PER SHEARWALL SCHEDULE
FRAMING:	PER PLANS
INSULATION:	R-49 BLOW-IN (R-38 VAULTED)
SOFFIT:	HARDIE PANEL SOFFIT
GWB:	5/8" GWB
<b>FLOOR CONSTRUCTION</b>	
FLOORING:	FINISH PER PLANS
SUBFLOOR:	3/4" T&G (PLYWOOD, COMPLY OR EQUAL)
FRAMING:	PER PLANS
INSULATION:	R-38 BATT
SOFFIT:	HARDIE PANEL SOFFIT
<b>EXTERIOR WALL CONSTRUCTION</b>	
SIDING MATERIAL:	PER ELEVATIONS
BUILDING PAPER:	1.5# BUILDING PAPER
SHEATHING:	PER SHEARWALL SCHEDULE
FRAMING:	2x6 STUDS AT 16" oc U.N.O.
INSULATION:	R-21 BATT w/ INTEGRAL VAPOR BARRIER
GWB:	1/2" GWB
<b>TRIM</b>	
WINDOW: (WITH NO BRICK MOLD)	5/4x4 WRAP
CORNER BOARDS:	INSIDE: 2x2 OUTSIDE: MTL X FLASHING
FASCIA:	2x8 w/ 2x3 (PER DETAILS) U.N.O.



**1** Building Section E/W 3  
SCALE: 1/4" = 1'-0"

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BUILDING SECTIONS

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
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DRAWN BY: SPM

**A702**

SCALE 24X36: 1/4" = 1'-0"  
\*NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



### TYPICAL BUILDING MATERIALS:

#### ROOF CONSTRUCTION

ROOFING: ASPHALT SHINGLES  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: PER PLANS  
 INSULATION: R-49 BLOWN-IN (R-38 VAULTED)  
 SOFFIT: HARDIE PANEL SOFFIT  
 GWB: 5/8" GWB

#### FLOOR CONSTRUCTION

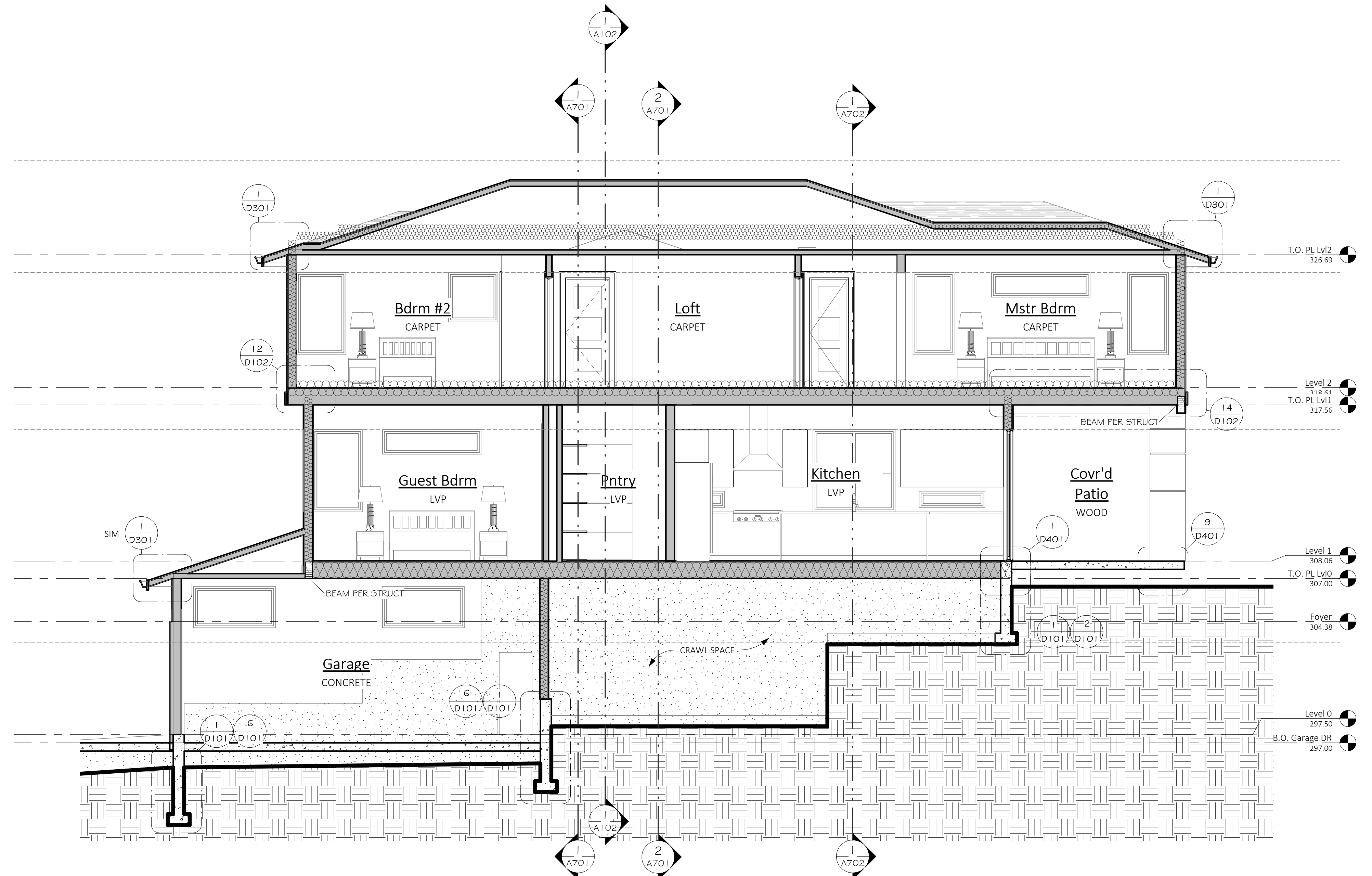
FLOORING: FINISH PER PLANS  
 SUBFLOOR: 3/4" T&G (PLYWOOD, COMPLY OR EQUAL)  
 FRAMING: PER PLANS  
 INSULATION: R-38 BATT  
 SOFFIT: HARDIE PANEL SOFFIT

#### EXTERIOR WALL CONSTRUCTION

SIDING MATERIAL: PER ELEVATIONS  
 BUILDING PAPER: 15# BUILDING PAPER  
 SHEATHING: PER SHEARWALL SCHEDULE  
 FRAMING: 2x6 STUDS AT 16" oc U.N.O.  
 INSULATION: R-21 BATT w/ INTEGRAL VAPOR BARRIER  
 GWB: 1/2" GWB

#### TRIM

WINDOW: (WITH NO BRICK MOLD) 5/4x4 WRAP  
 INSIDE: 2x2  
 CORNER BOARDS: OUTSIDE: MTL X FLASHING  
 FASCIA: 2x8 w/ 2x3 (PER DETAILS) U.N.O.



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BUILDING SECTIONS

PROJECT NO: 20008  
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 DRAWN BY: SPM

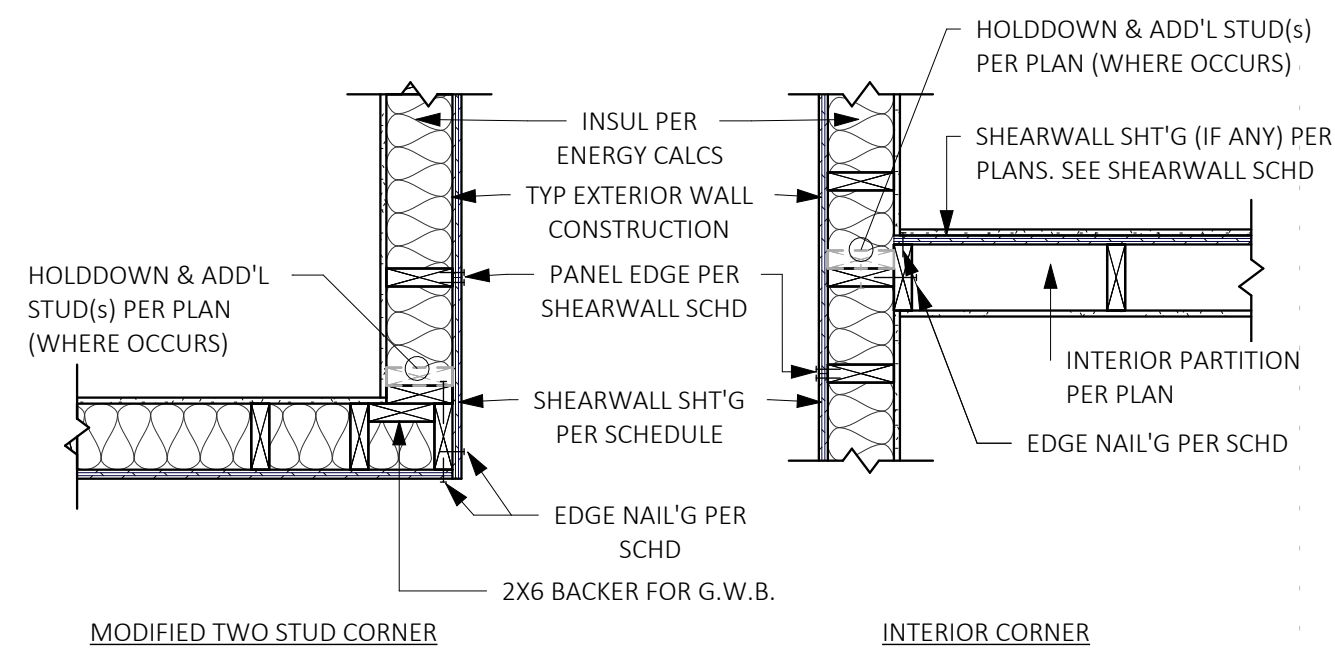
A703

SCALE 24X36: 1/4" = 1'-0"  
 \*NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

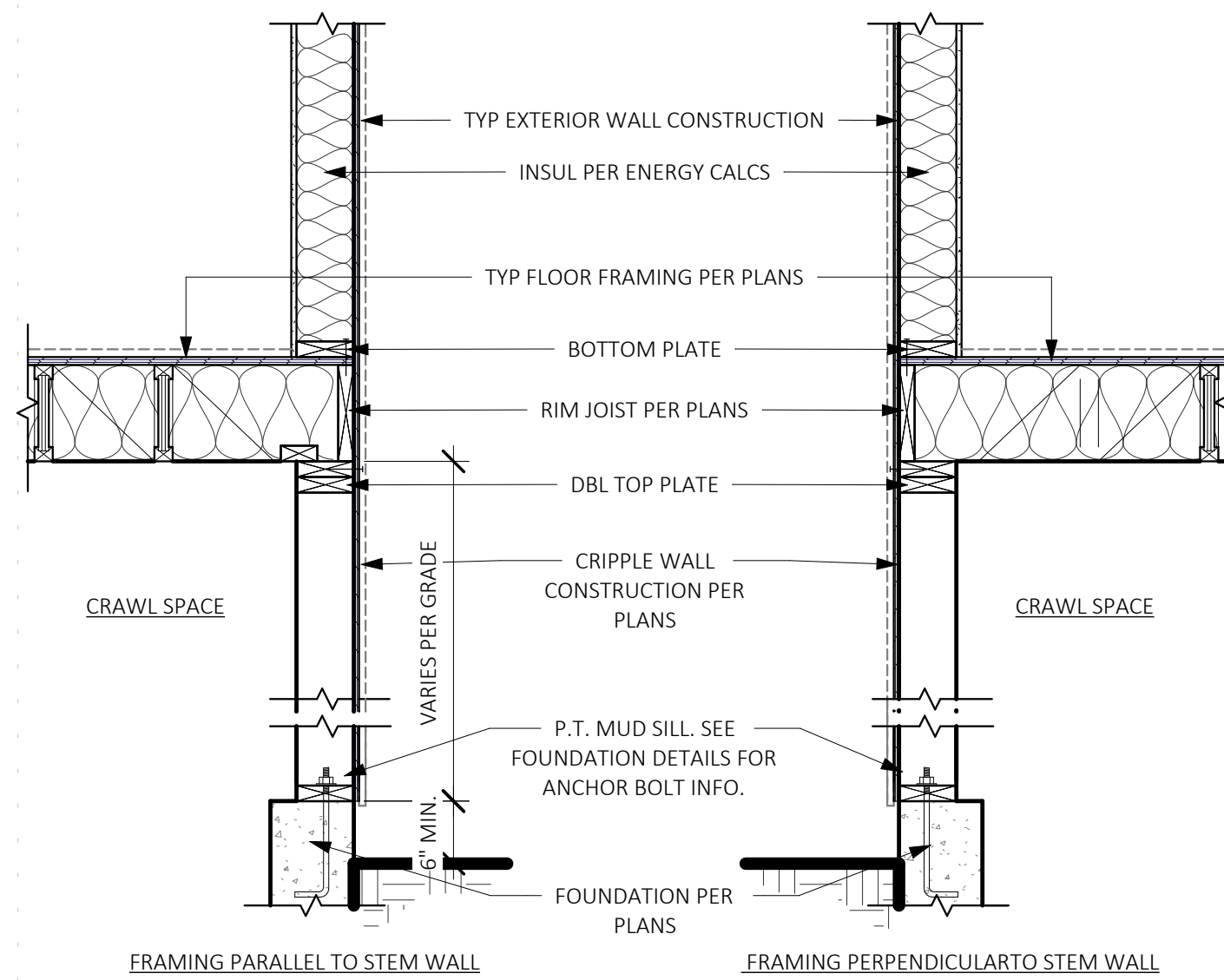


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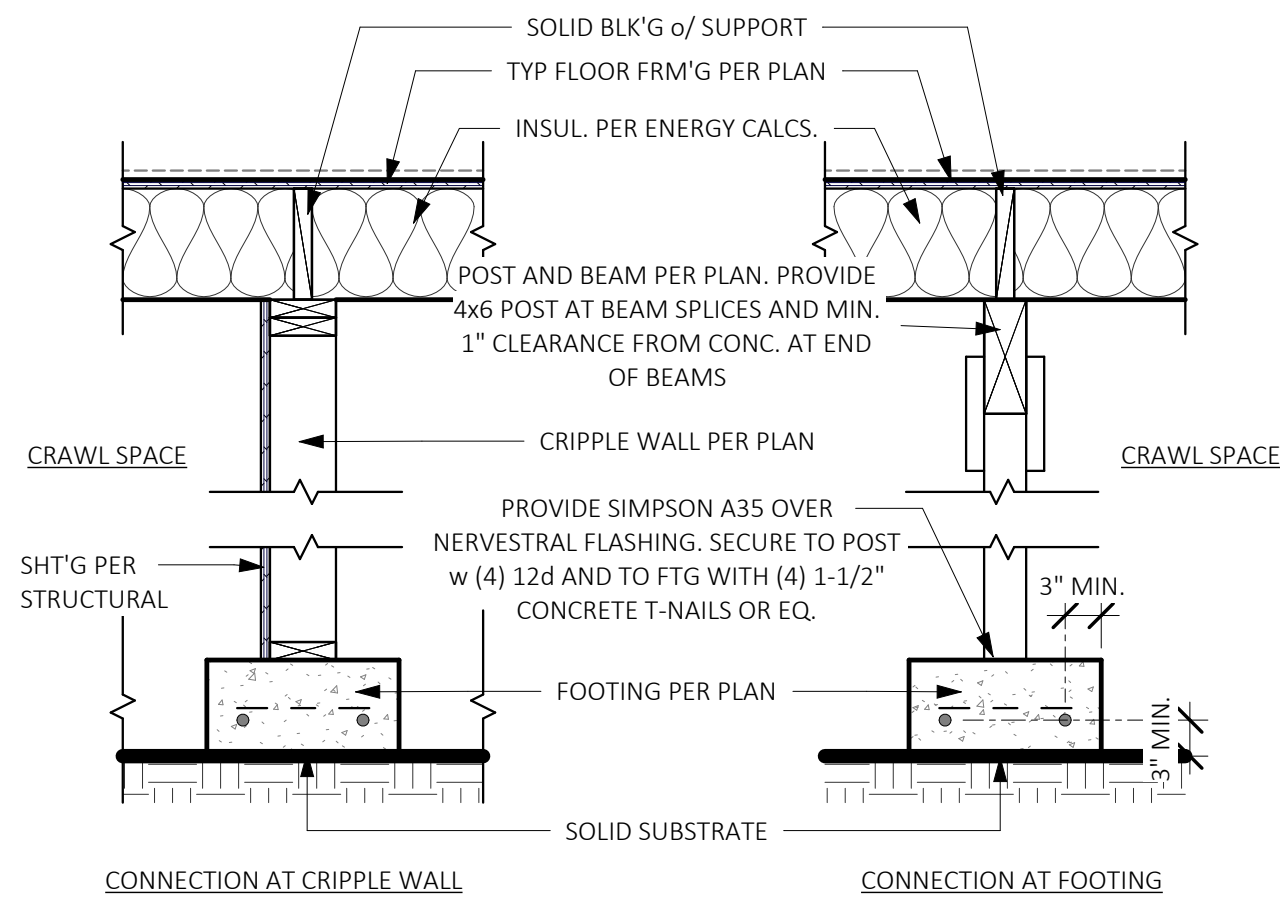
**11** INT/EXT WALL FRAMING DETAIL  
SCALE: 3/4" = 1'-0"



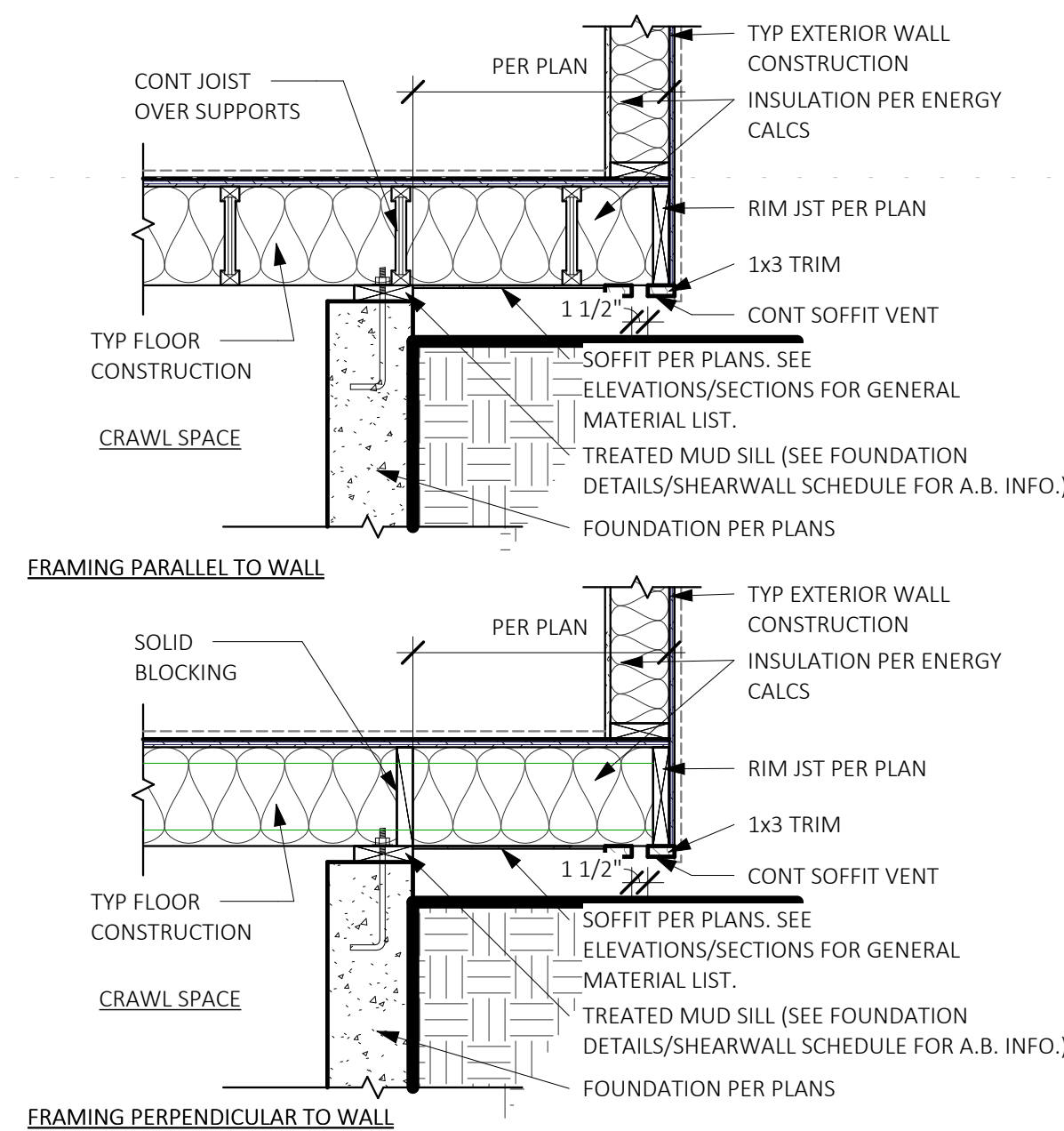
**9** CRIPPLE WALL AT FOUNDATION  
SCALE: 3/4" = 1'-0"



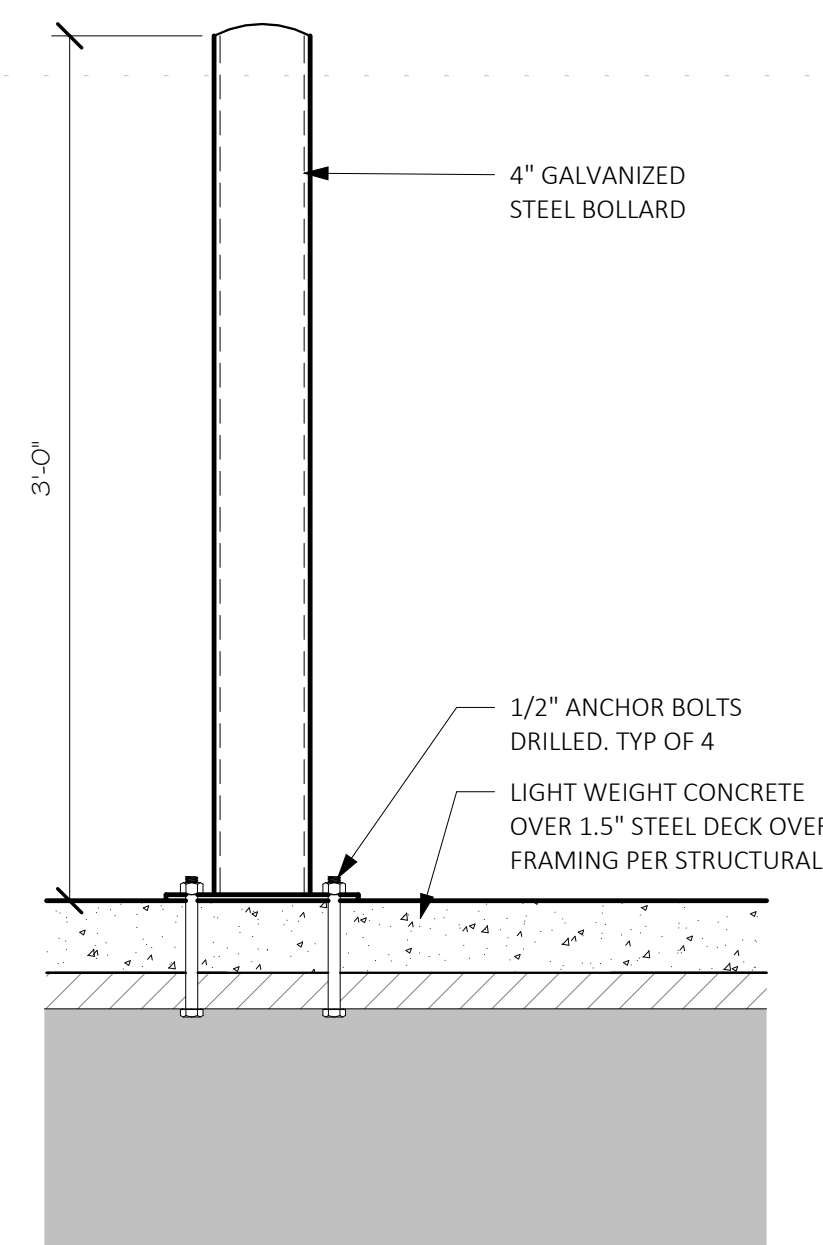
**8** POST / FTG CONNECTION  
SCALE: 3/4" = 1'-0"



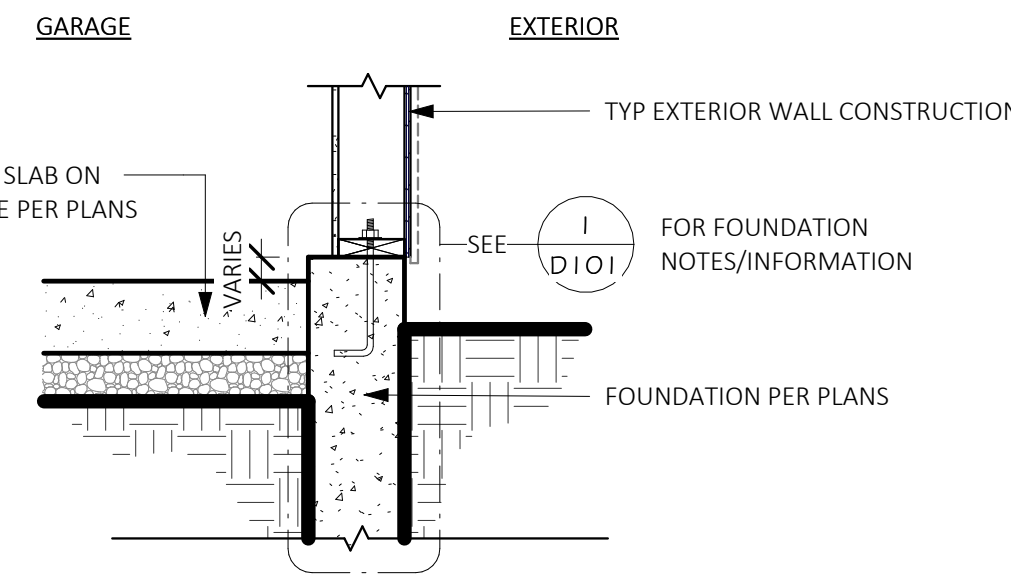
**7** CANTILEVER FRM'G AT FNDN.  
SCALE: 3/4" = 1'-0"



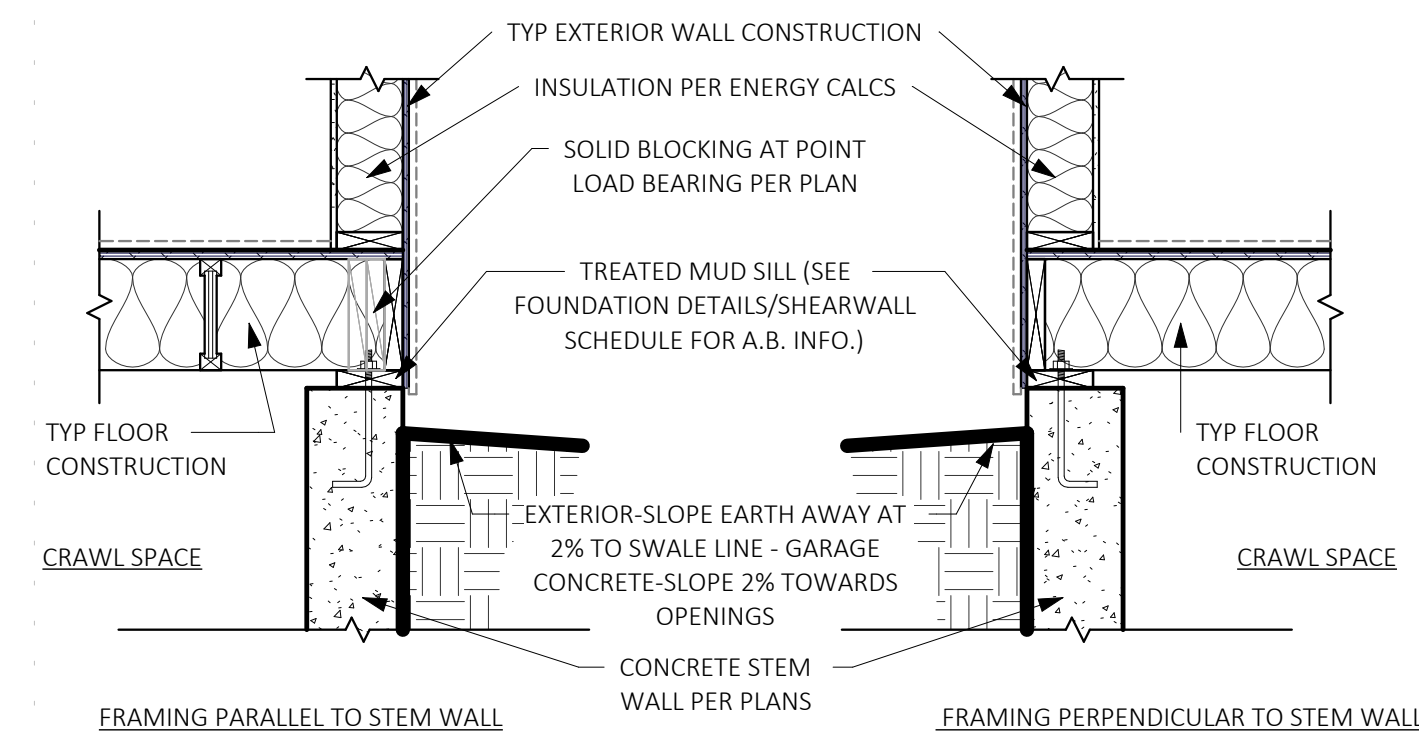
**4** BOLLARD DETAIL  
SCALE: 1 1/2" = 1'-0"



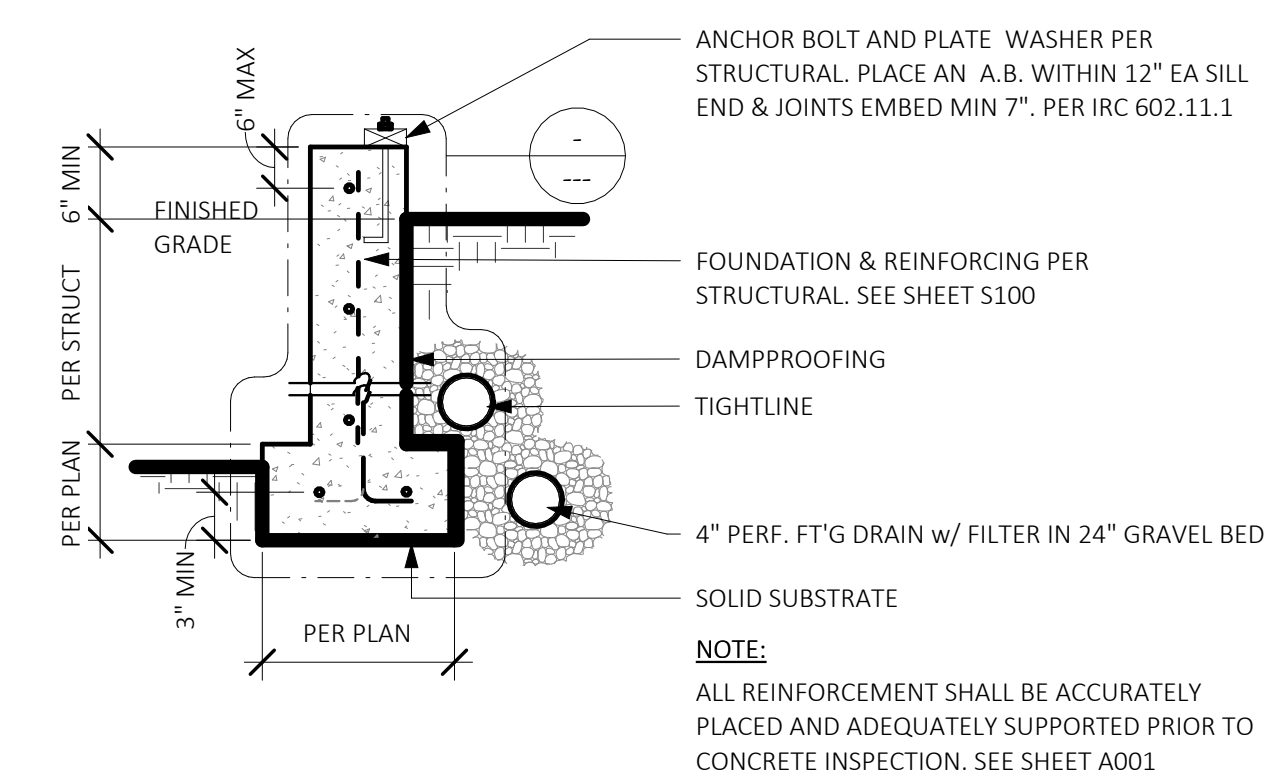
**6** SLAB AT STEM WALL  
SCALE: 3/4" = 1'-0"



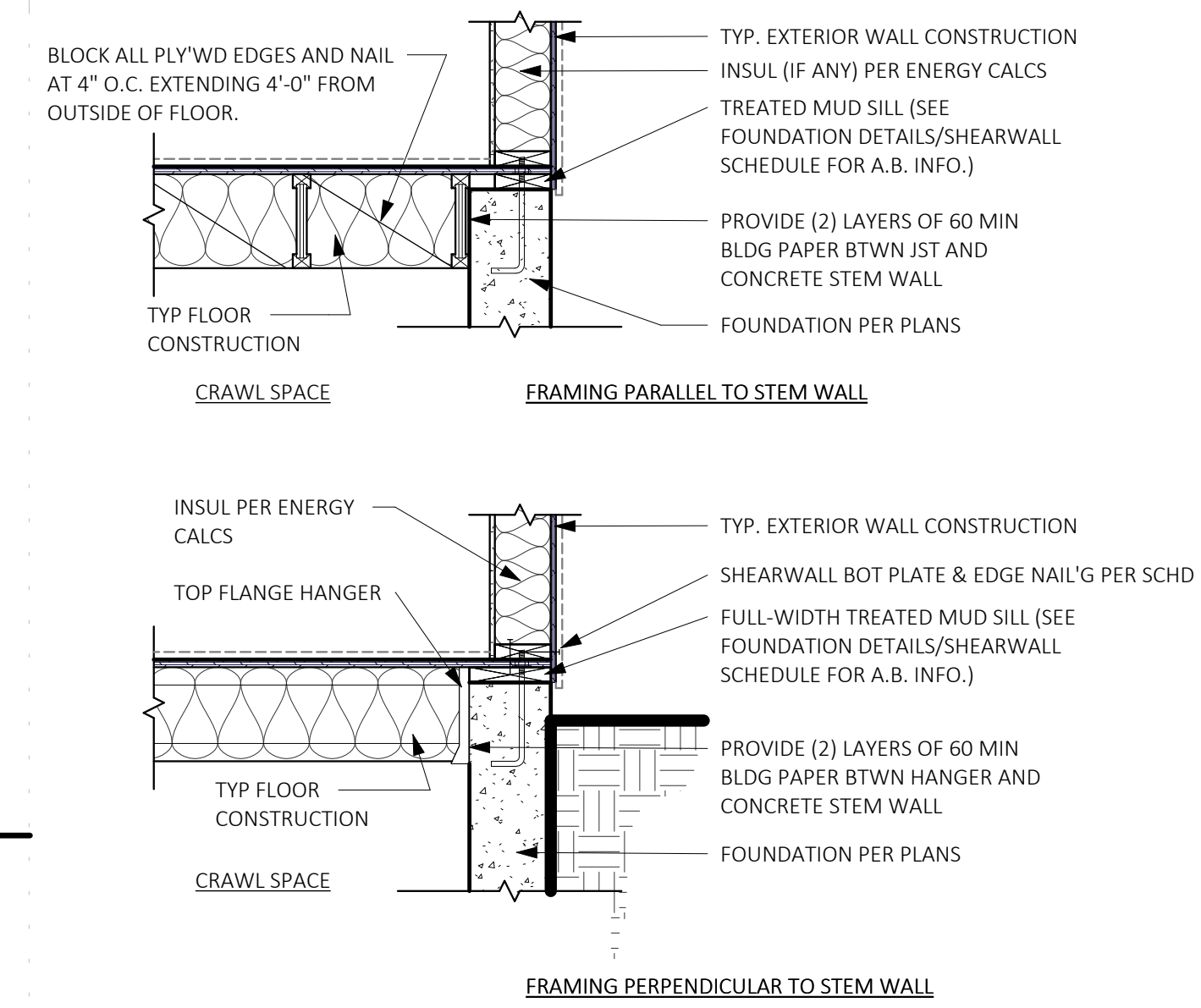
**2** FRAMING / FNDN. CONNECTION  
SCALE: 3/4" = 1'-0"



**1** FOUNDATION DETAIL  
SCALE: 3/4" = 1'-0"



**3** FRAMING / FNDN. CONNECTION  
SCALE: 3/4" = 1'-0"



STANDARD DETAIL SHEET

NOTE: THIS IS A STANDARD DETAIL SHEET PREPARED FOR SINGLE FAMILY HOUSING TYPE V NONRATED CONSTRUCTION. THESE DETAILS HAVE BEEN PREPARED TO COVER GENERAL CONSTRUCTION CONDITIONS. NOT ALL DETAILS ON THIS SHEET ARE NECESSARILY INCORPORATED INTO THIS PROJECT. COORDINATE WITH PLANS.

SCALE 24X36: As indicated  
\* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

PROJECT NO: 20008  
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FOUNDATION & FRAMING DETAILS

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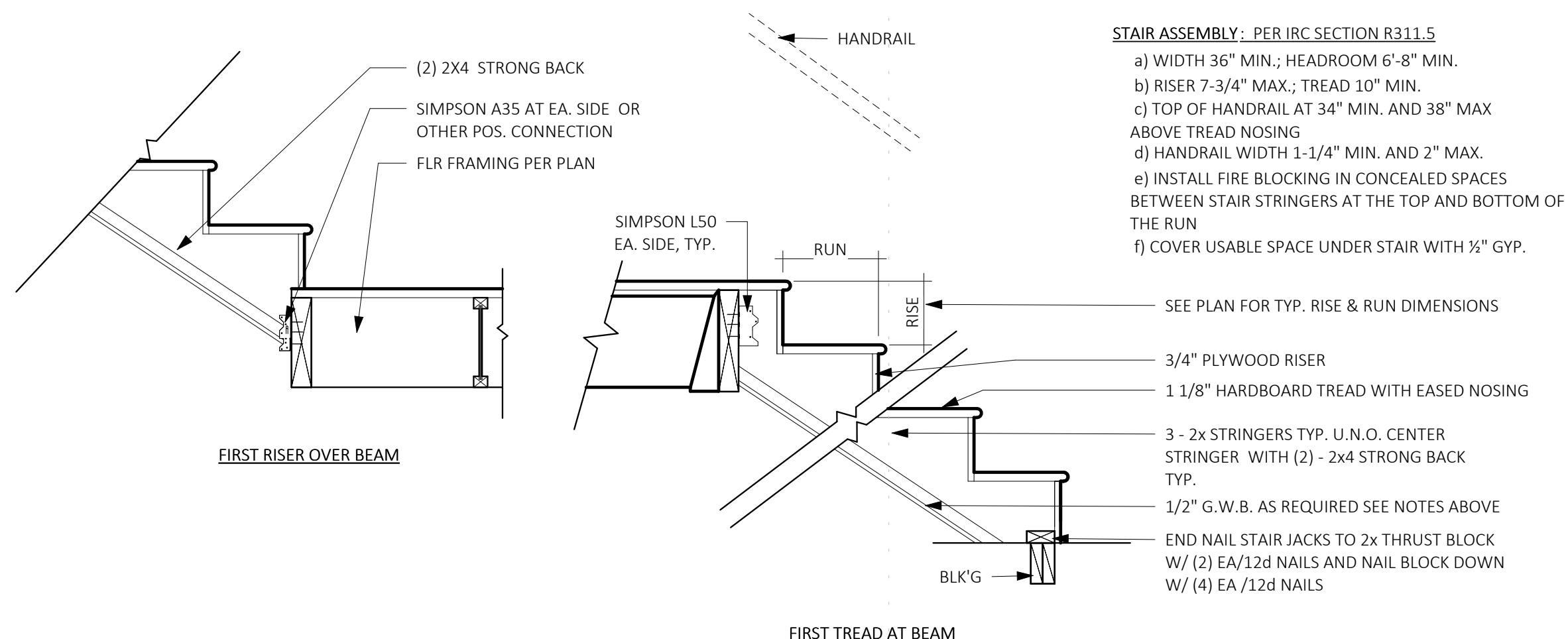
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STUDIO  
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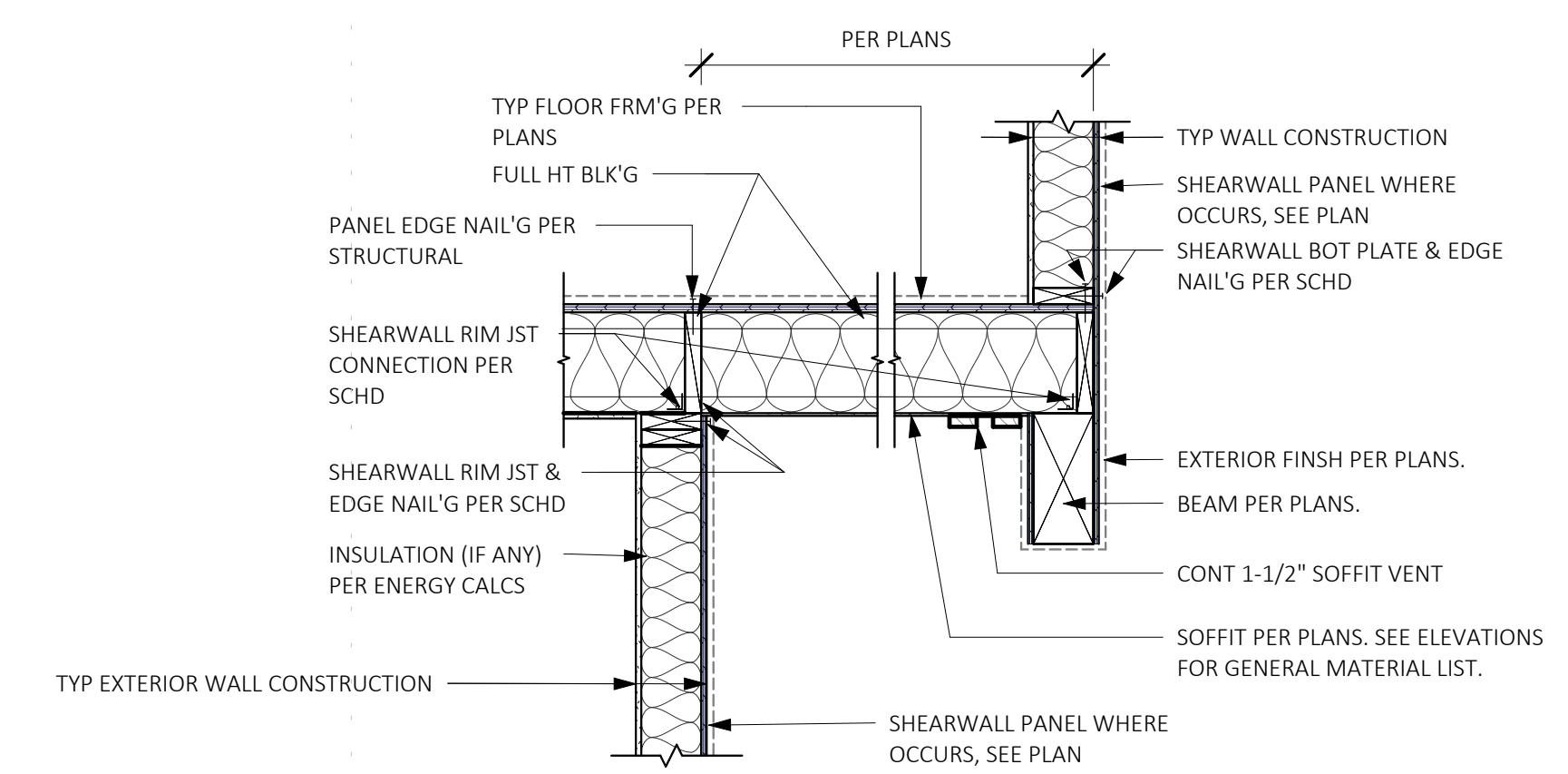
No. \_\_\_\_\_  
Date \_\_\_\_\_  
Description \_\_\_\_\_

**D101**

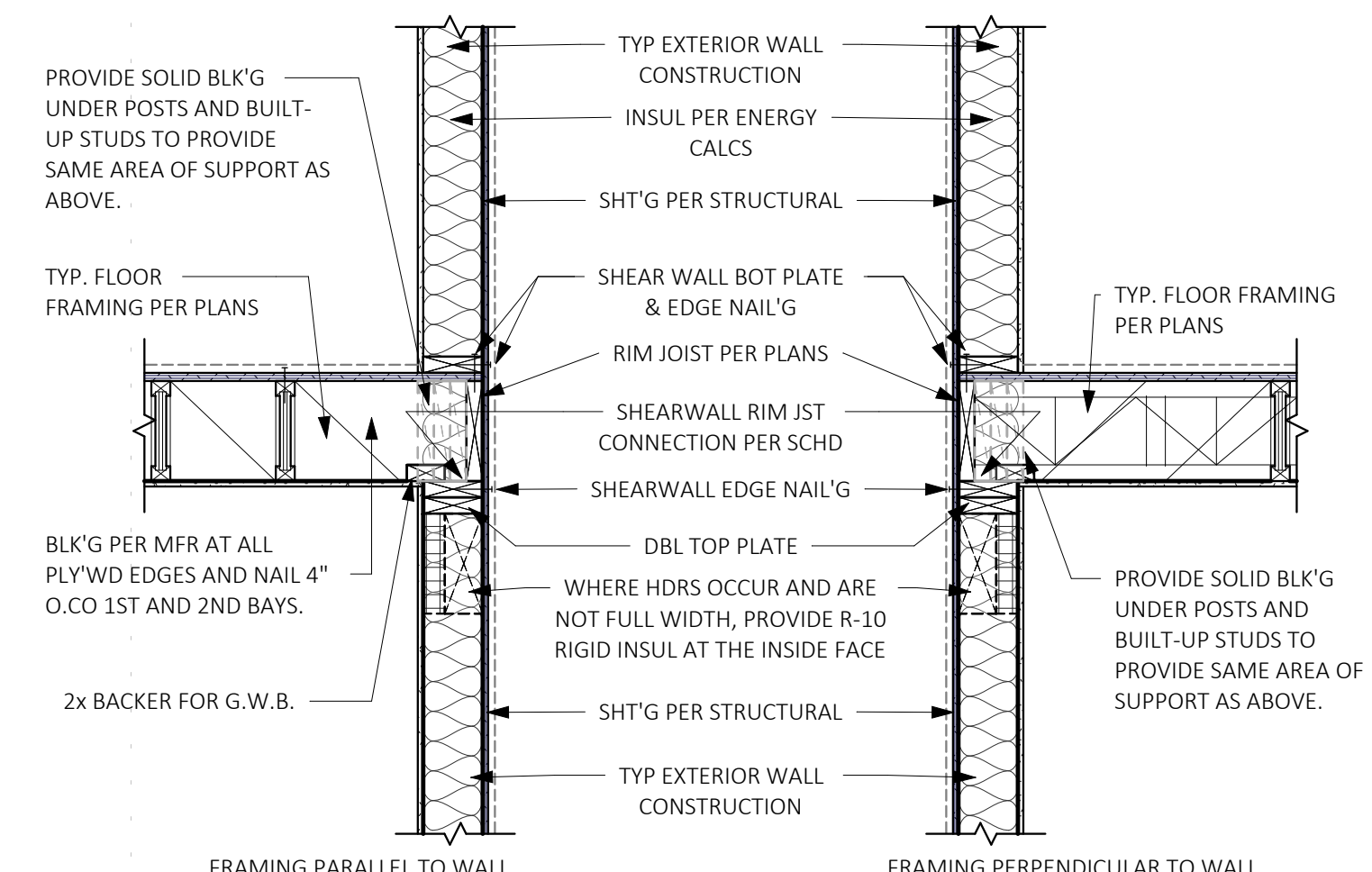




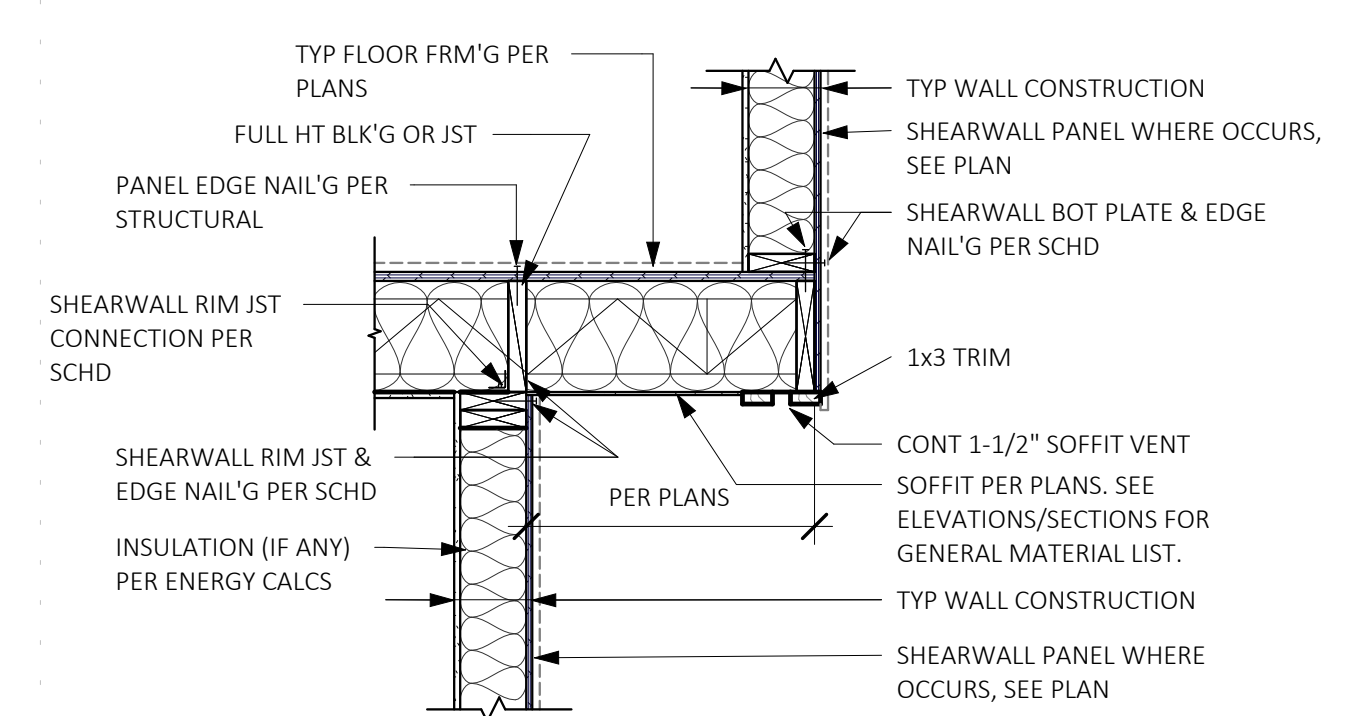
**20 STAIR SECTION DETAIL**  
SCALE: 3/4" = 1'-0"



**14 CANTILEVER FRM'G AT EXT. WALL**  
SCALE: 3/4" = 1'-0"



**13 EXTERIOR WALL TO FLOOR JOISTS**  
SCALE: 3/4" = 1'-0"



**12 CANTILEVER FRM'G AT EXT. WALL**  
SCALE: 3/4" = 1'-0"

STANDARD DETAIL SHEET

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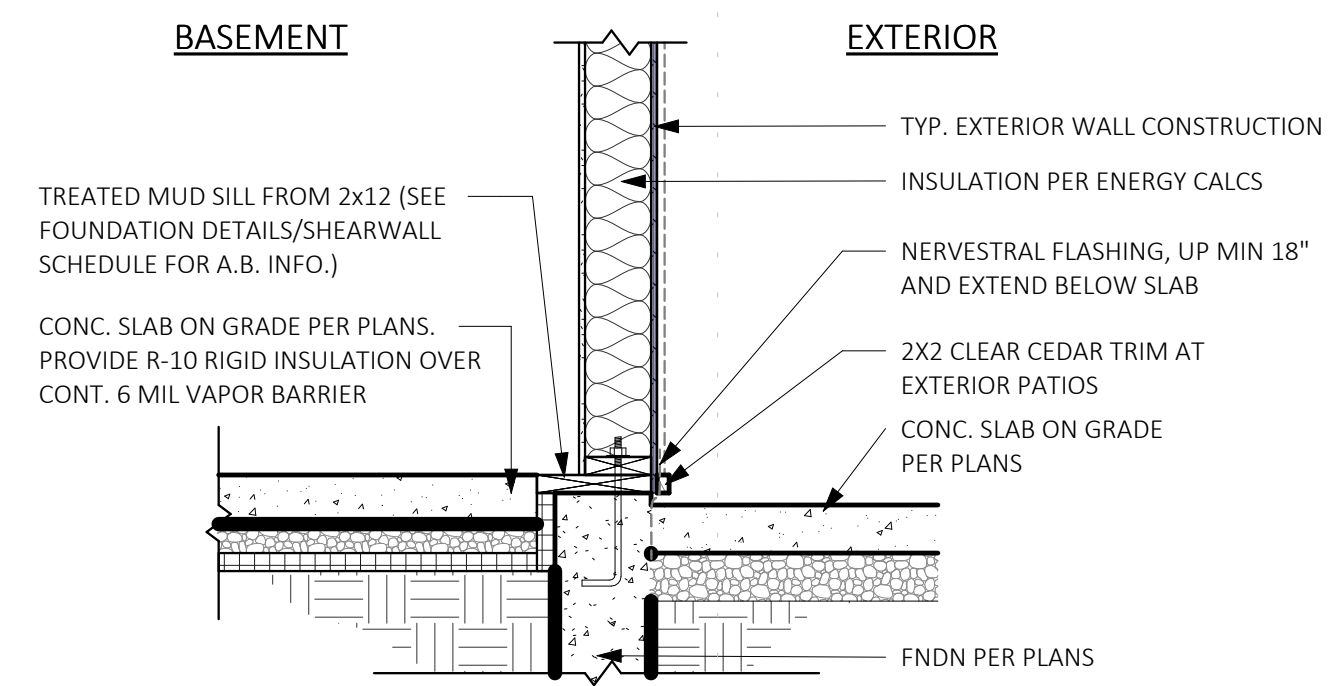
FRAMING  
DETAILS

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: SPM

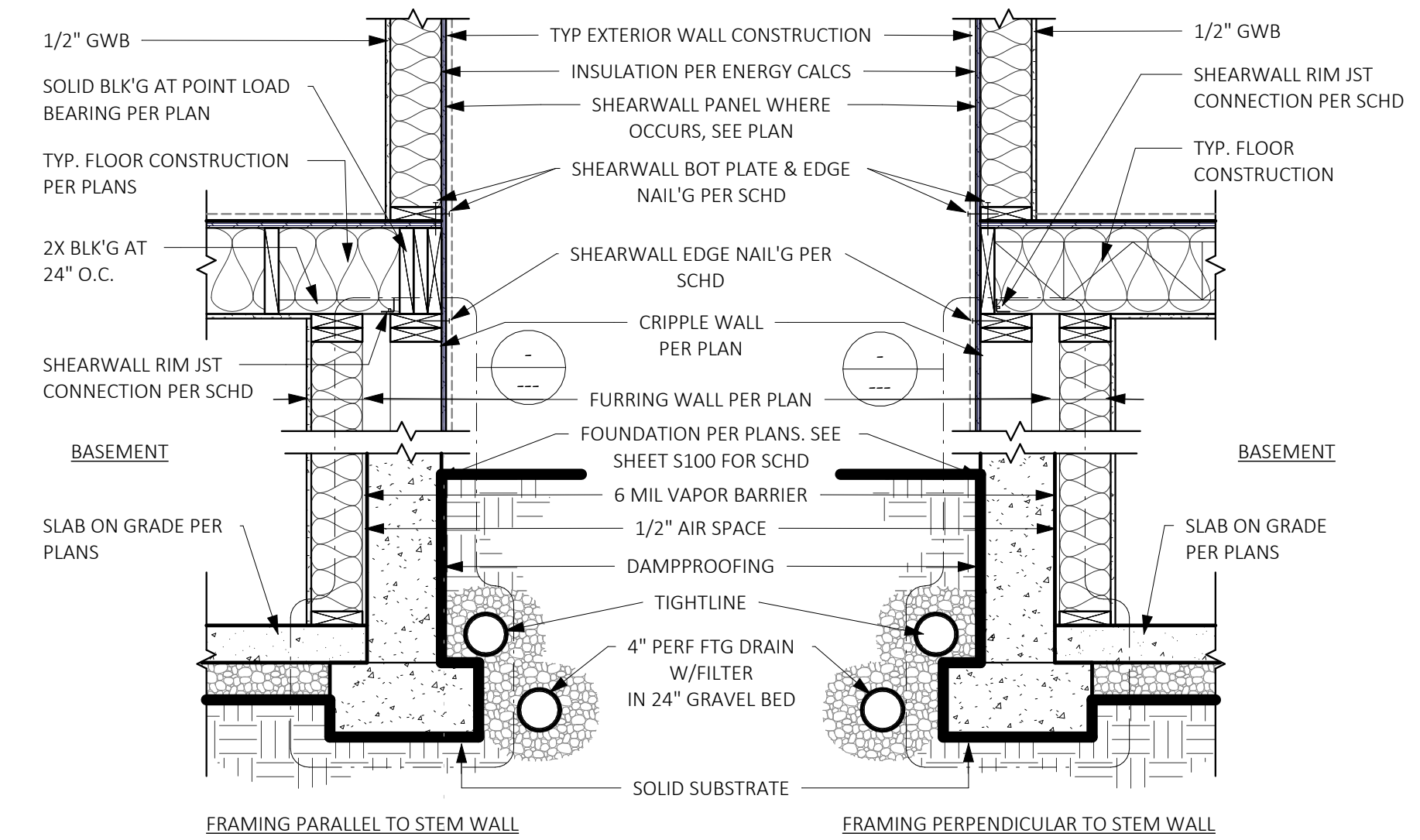
D102

SCALE 24X36: 3/4" = 1'-0"  
\* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

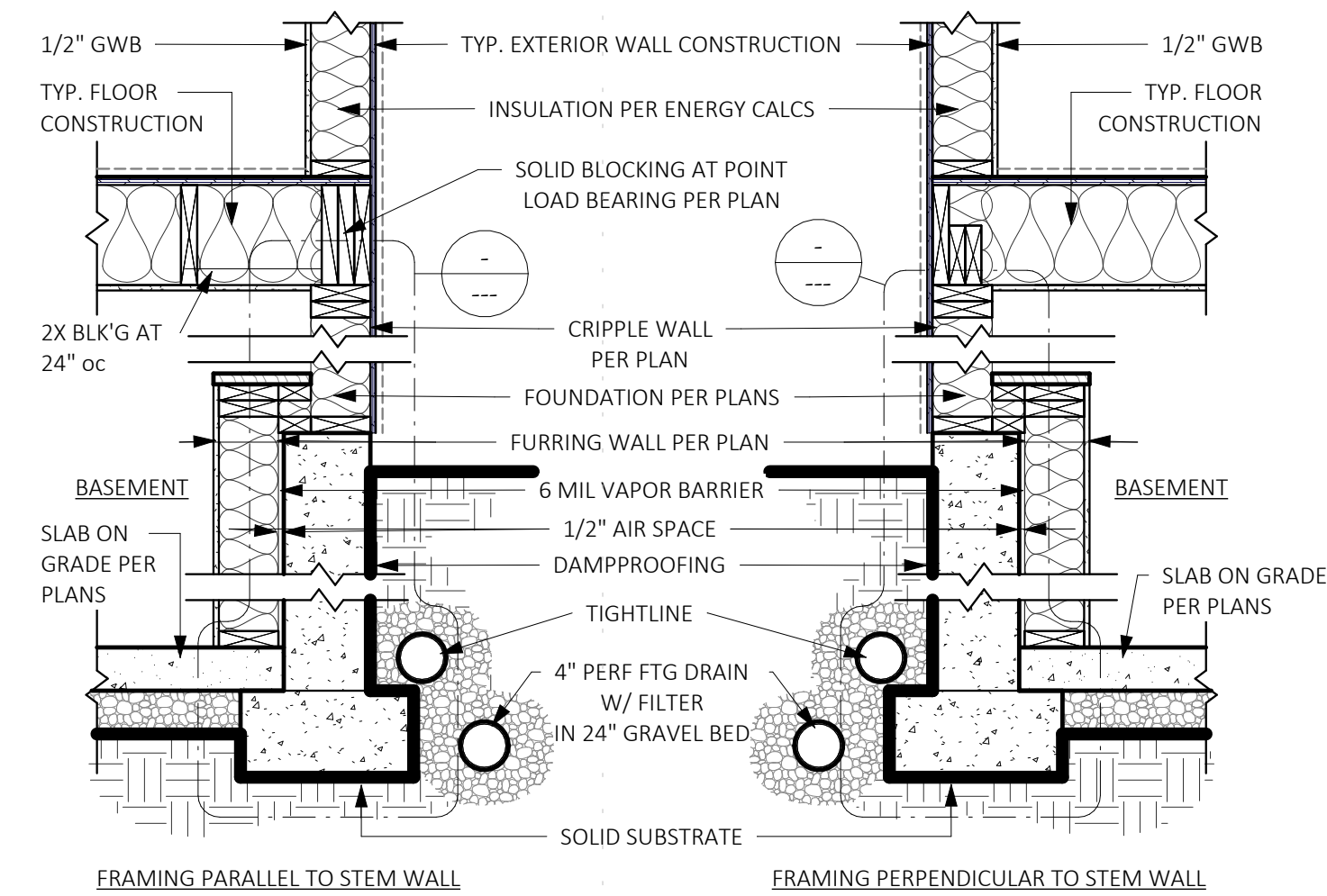




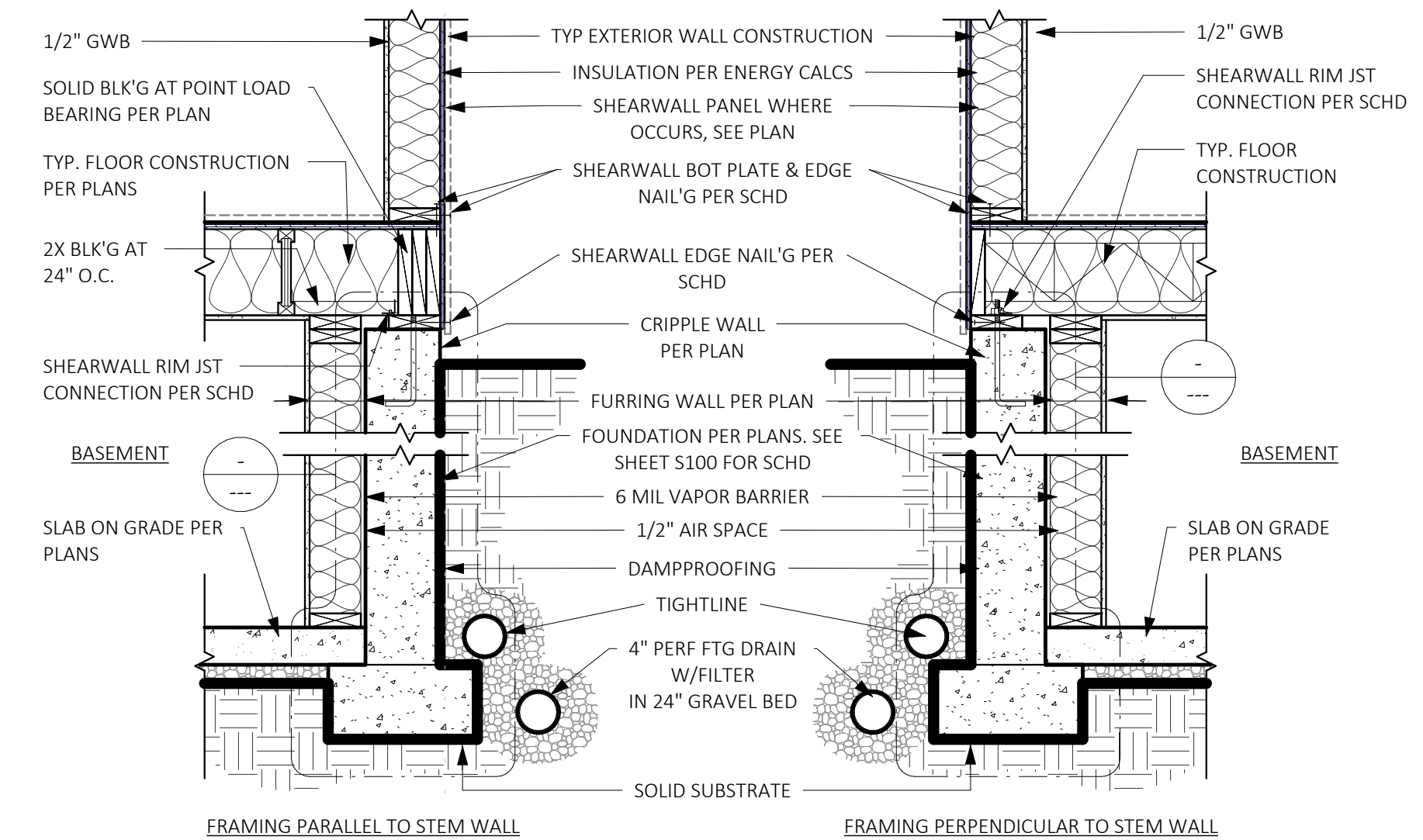
**7** FRAMING/FNDN. AT INT SLAB  
SCALE: 3/4" = 1'-0"



**4** FRAMING / FNDN. - CRIPPLE WALL  
SCALE: 3/4" = 1'-0"



**5** FRAMING / FNDN. CONNECTION  
SCALE: 3/4" = 1'-0"



**1** FRAMING / FNDN. - FULL HT, JSTS OVER  
SCALE: 3/4" = 1'-0"

STANDARD DETAIL SHEET

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PERMIT SET

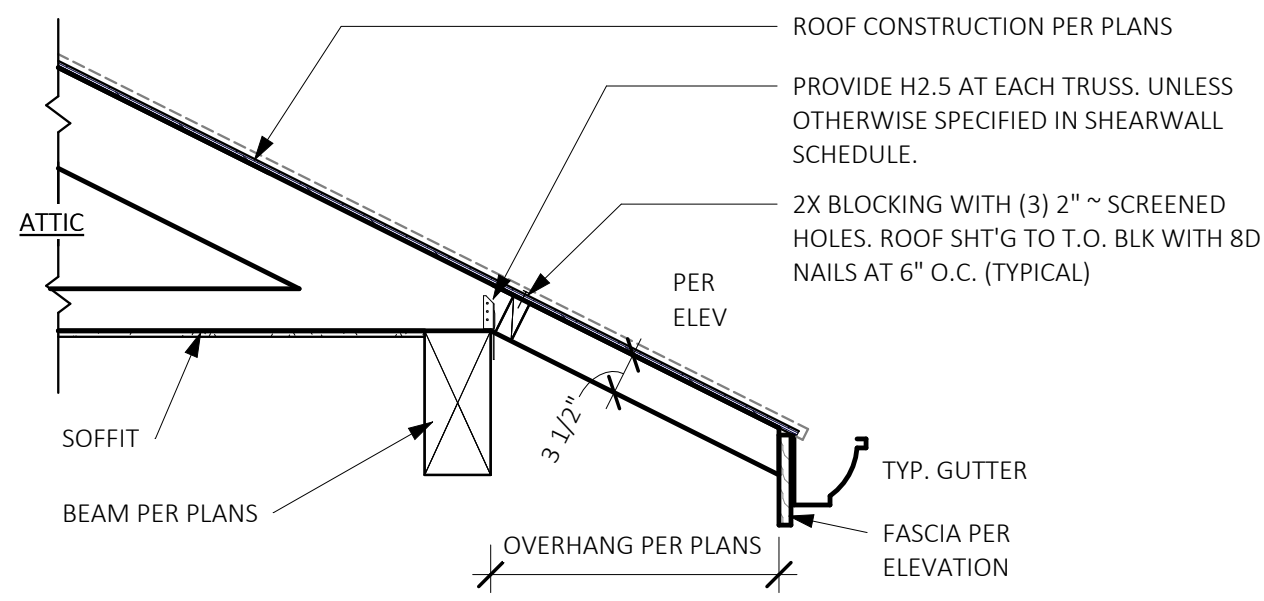
BASEMENT  
DETAILS

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: SPM

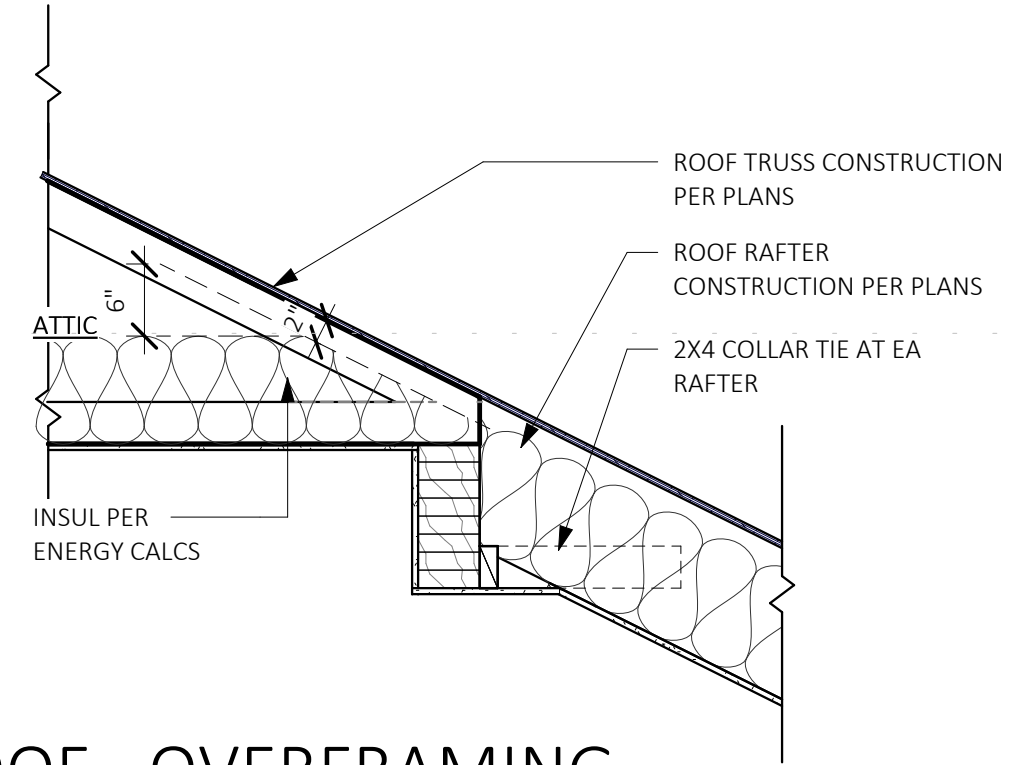
D201

SCALE 24X36: 3/4" = 1'-0"  
\* NOTE: 11X17 SETS ARE  
REDUCED 50% SCALE  
DRAWINGS ACCORDINGLY.

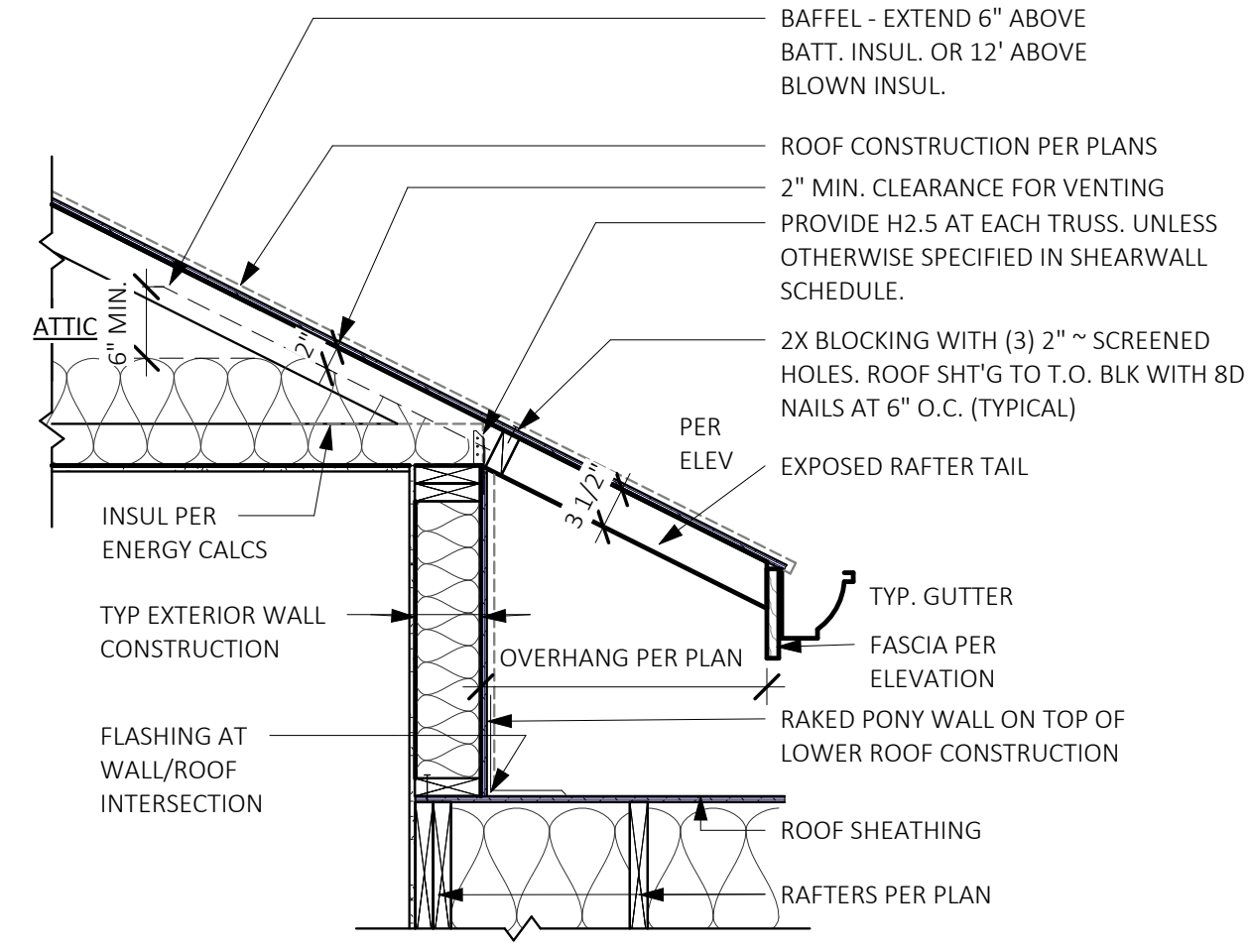




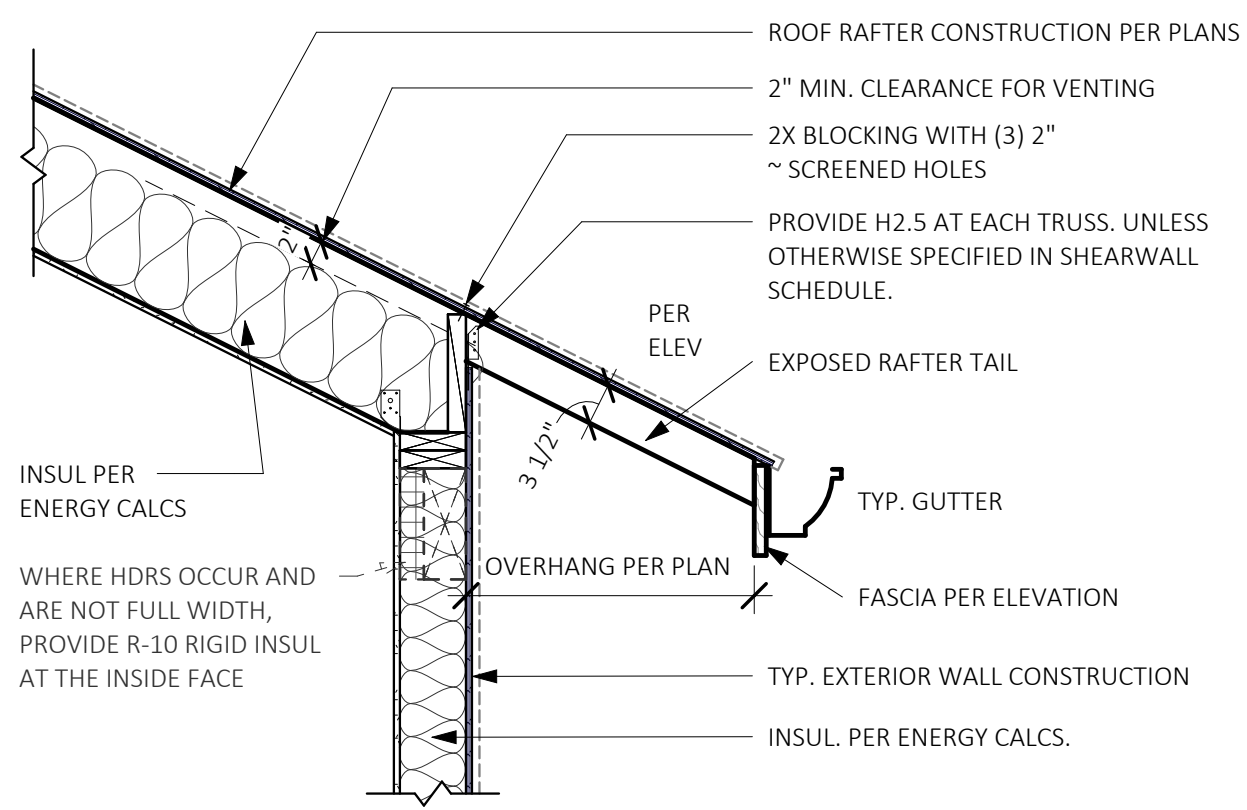
10 EAVE DETAIL - RAFTER  
 SCALE: 3/4" = 1'-0"



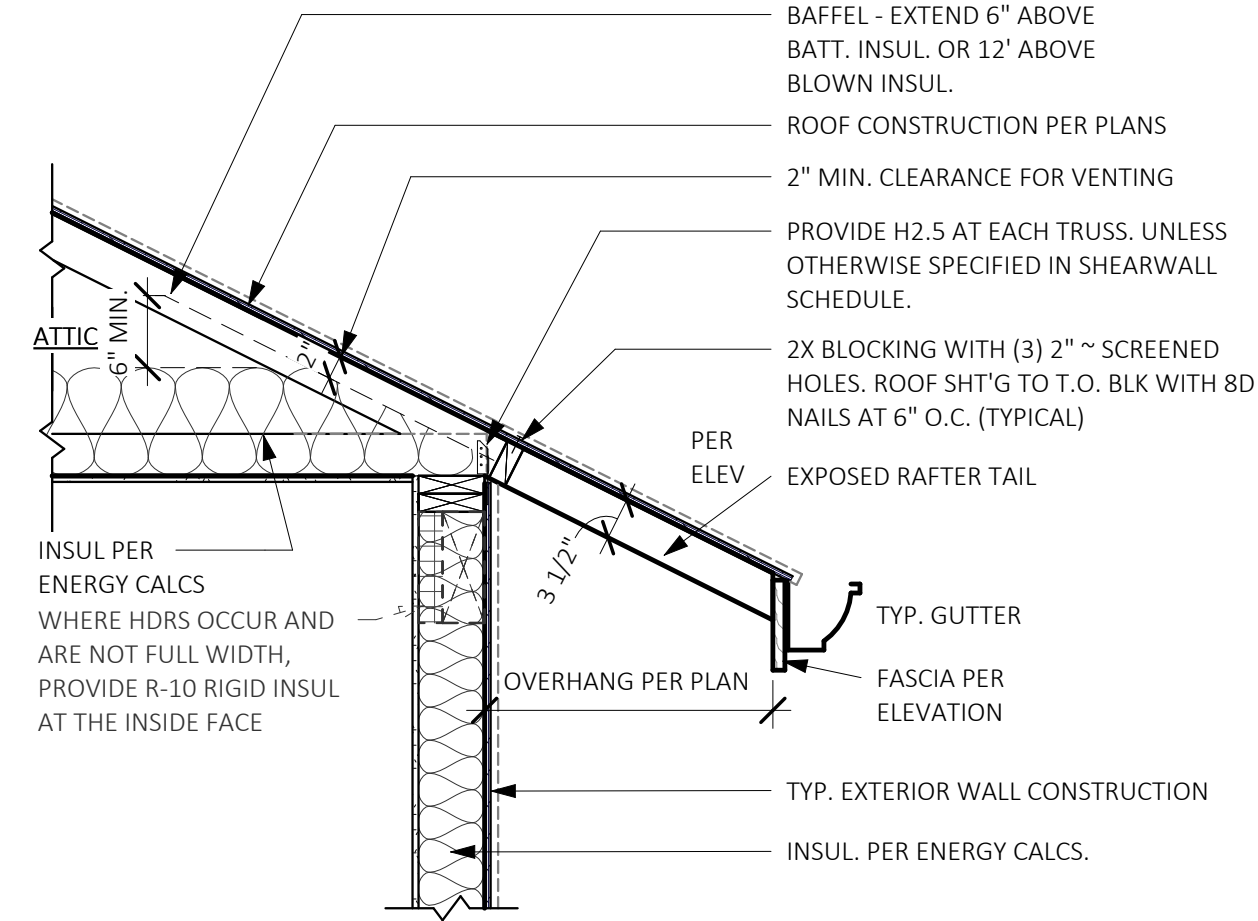
9 ROOF - OVERFRAMING  
 SCALE: 3/4" = 1'-0"



6 EAVE DETAIL OVER PONY WALL  
 SCALE: 3/4" = 1'-0"



4 EAVE DETAIL - RAFTER  
 SCALE: 3/4" = 1'-0"



1 EAVE DETAIL - TRUSS  
 SCALE: 3/4" = 1'-0"

STANDARD DETAIL SHEET

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Date \_\_\_\_\_

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PERMIT SET

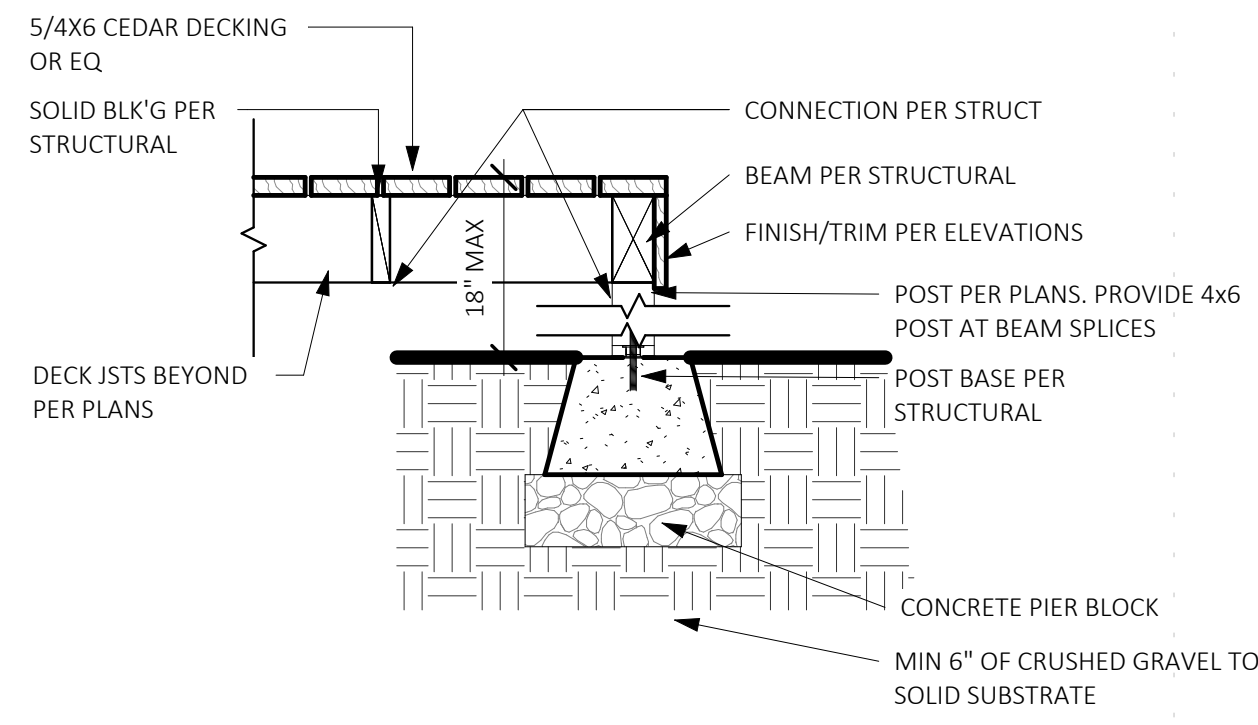
ROOF DETAILS

PROJECT NO: 20008  
 ISSUE DATE: 2023/08/01  
 SHT ISSUE DATE: 2021/01/08  
 DRAWN BY: SPM

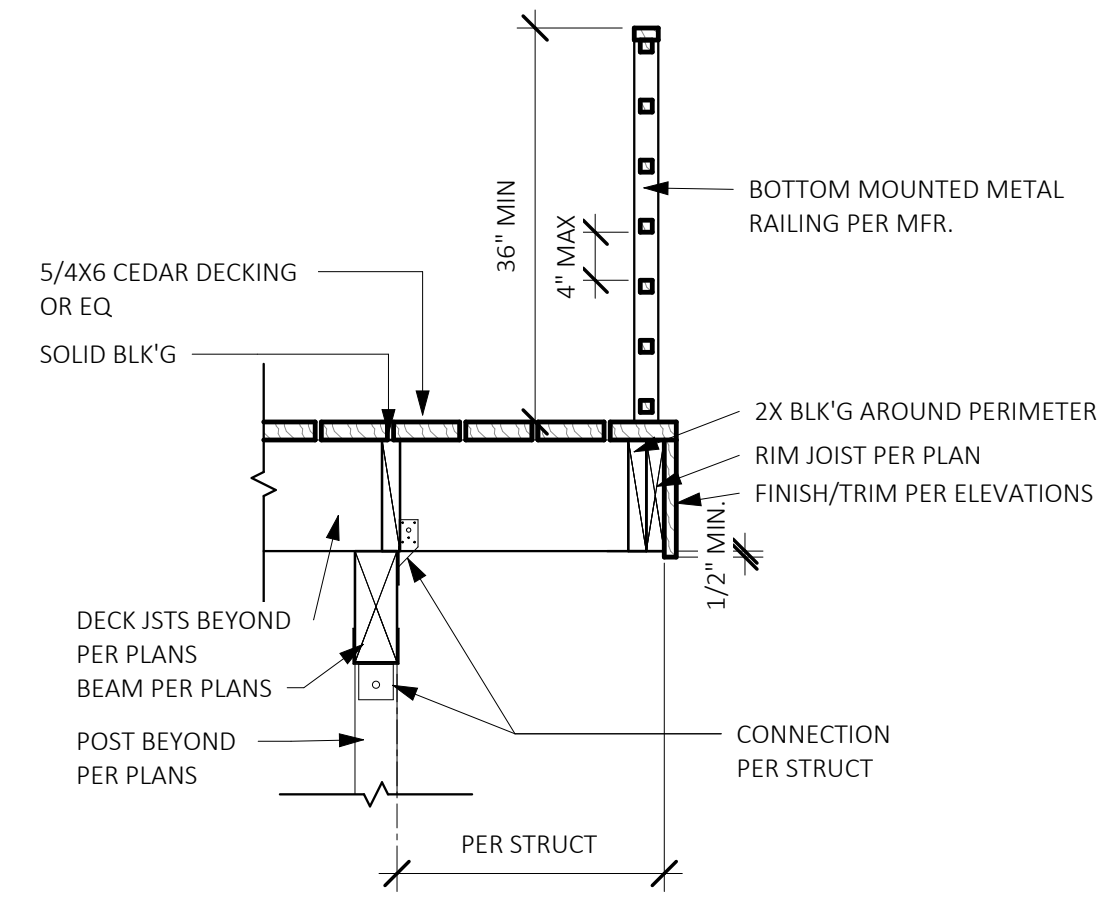
D301

SCALE 24X36: 3/4" = 1'-0"  
 \* NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.

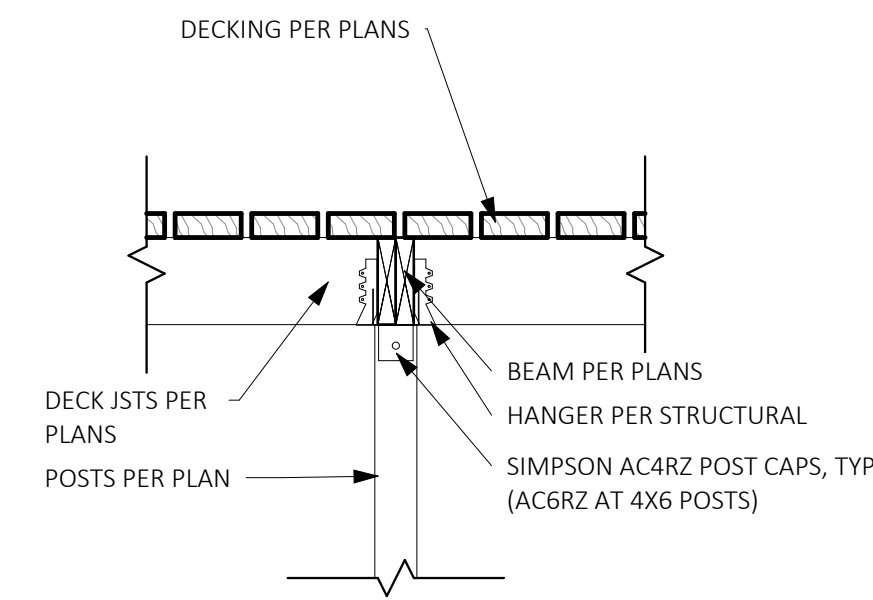




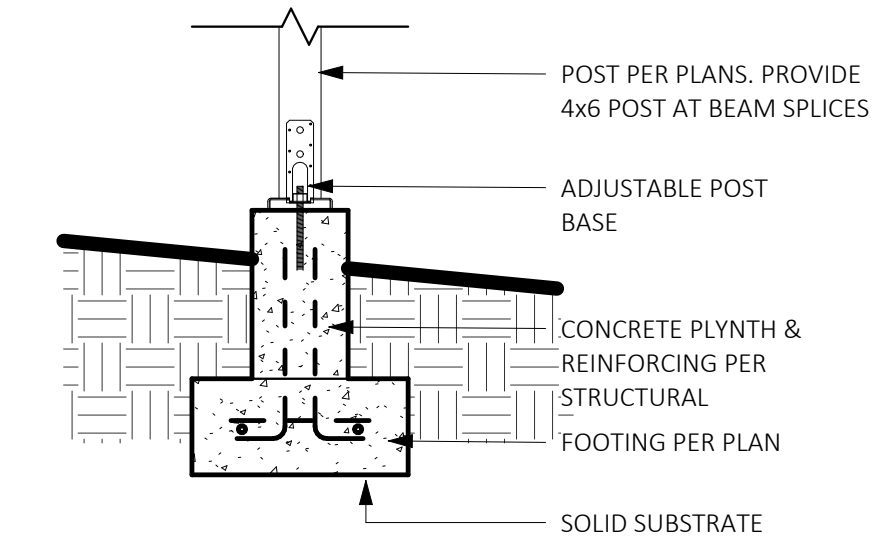
9 FRM'G CONNECTION @ DECK  
SCALE: 3/4" = 1'-0"



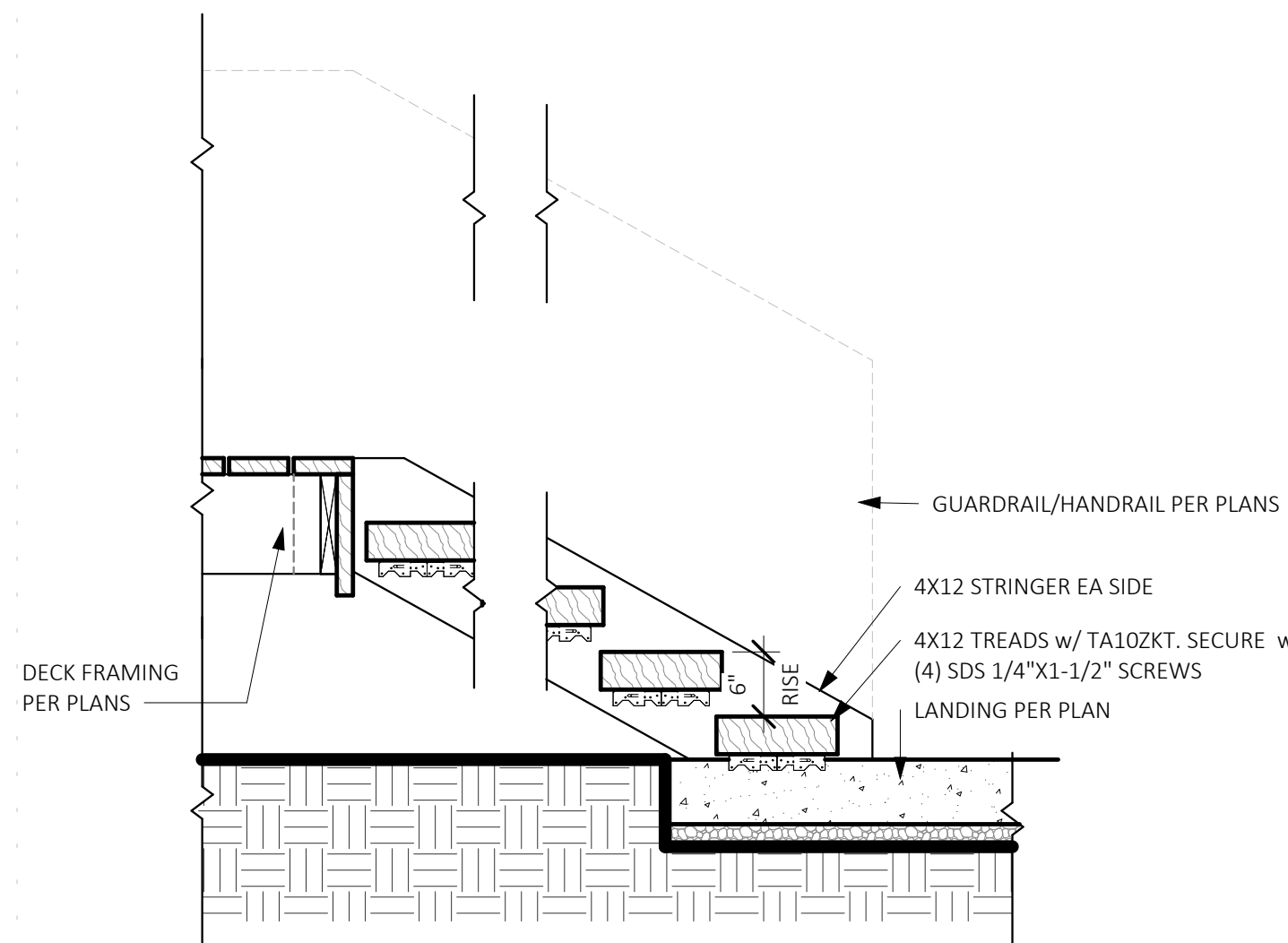
6 FRM'G CONNECTION @ DECK RAILING  
SCALE: 3/4" = 1'-0"



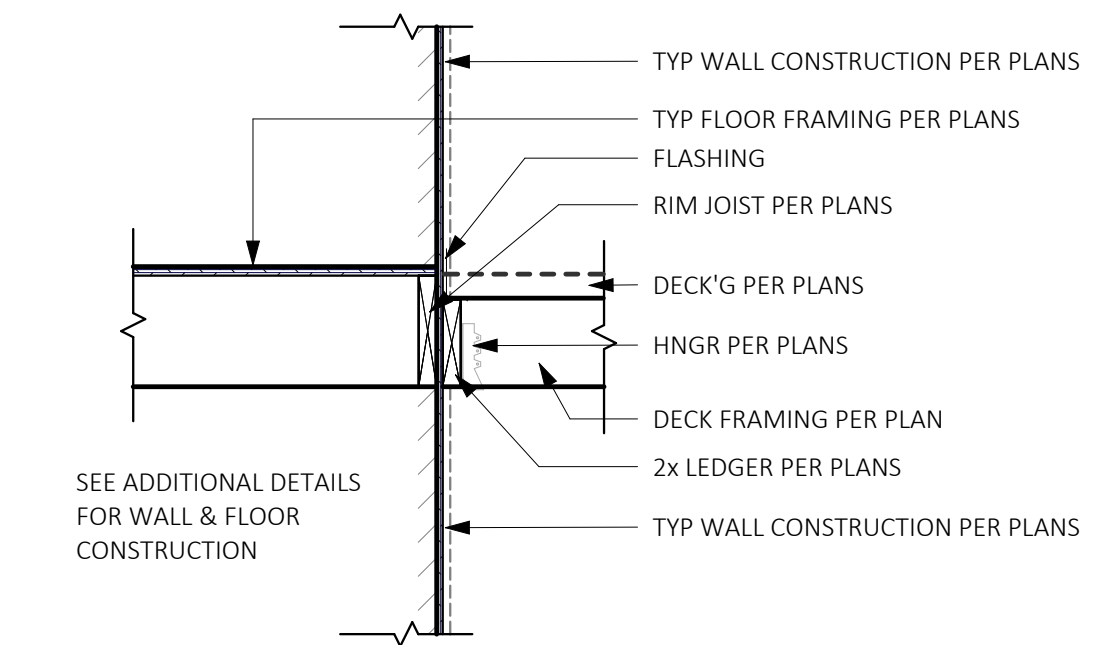
5 FRM'G CONNECTION @ DECK POST  
SCALE: 3/4" = 1'-0"



2 FRM'G CONNECTION @ DECK POST  
SCALE: 3/4" = 1'-0"



4 STAIR SECTION DETAIL  
SCALE: 3/4" = 1'-0"



1 EXTERIOR WALL FRM'G CONNECTION  
SCALE: 3/4" = 1'-0"

STANDARD DETAIL SHEET

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PERMIT SET

DECK DETAILS

PROJECT NO: 20008  
ISSUE DATE: 2023/08/01  
SHT ISSUE DATE: 2021/01/08  
DRAWN BY: SPM

D401

SCALE 24X36: 3/4" = 1'-0"  
\*NOTE: 11X17 SETS ARE REDUCED 50% SCALE DRAWINGS ACCORDINGLY.



STRUCTURAL NOTES

GENERAL REQUIREMENTS

BUILDING CODE & REFERENCE STANDARDS: THE "INTERNATIONAL BUILDING CODE" (IBC), 2018 EDITION, AS ADOPTED AND MODIFIED BY THE CITY OF MERCER ISLAND, GOVERNS THE DESIGN AND CONSTRUCTION OF THIS PROJECT. REFERENCE TO A SPECIFIC SECTION IN THE CODE DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE ENTIRE MATERIALS REFERENCE STANDARDS NOTED BELOW. THE LATEST EDITION OF THE MATERIALS REFERENCE STANDARDS SHALL BE USED.

SCOPE OF STRUCTURAL WORK: STRUCTURAL DESIGN OF NEW SINGLE FAMILY RESIDENCE.

DEFINITIONS: THE FOLLOWING DEFINITIONS APPLY TO THESE GENERAL NOTES:

- "ENGINEER OF RECORD" (EOR) - THE ENGINEER WHO IS LEGALLY RESPONSIBLE FOR STAMPING & SIGNING THE STRUCTURAL DOCUMENTS FOR THE PROJECT. THE EOR IS RESPONSIBLE FOR THE DESIGN OF THE PRIMARY STRUCTURAL SYSTEM.
"SPECIALTY STRUCTURAL ENGINEER" (SSE) - A LICENSED PROFESSIONAL ENGINEER, NOT THE EOR, WHO PERFORMS SPECIALTY STRUCTURAL ENGINEERING SERVICES NECESSARY TO COMPLETE THE STRUCTURE, WHO HAS EXPERIENCE AND TRAINING IN THE SPECIFIC SPECIALTY. THE GENERAL CONTRACTOR, SUBCONTRACTOR, OR SUPPLIER WHO IS RESPONSIBLE FOR THE DESIGN, FABRICATION AND INSTALLATION OF SPECIALTY-ENGINEERED ELEMENTS SHALL RETAIN THE SSE. SUBMITTALS SHALL BE STAMPED AND SIGNED BY THE SSE. DOCUMENTS STAMPED AND SIGNED BY THE SSE SHALL BE COMPLETED BY OR UNDER THE DIRECT SUPERVISION OF THE SSE WITH A PE OR SE LICENSE ISSUED BY THE STATE OF WASHINGTON.

NOTE PRIORITIES: NOTES ON THE INDIVIDUAL DRAWINGS SHALL GOVERN OVER THESE GENERAL NOTES.

STRUCTURAL DETAILS: THE STRUCTURAL DRAWINGS ARE INTENDED TO SHOW THE GENERAL CHARACTER AND EXTENT OF THE PROJECT AND ARE NOT INTENDED TO SHOW ALL DETAILS OF THE WORK.

ARCHITECTURAL DRAWINGS: REFER TO THE ARCHITECTURAL DRAWINGS FOR INFORMATION INCLUDING, BUT NOT LIMITED TO: DIMENSIONS, ELEVATIONS, SLOPES, DOOR AND WINDOW OPENINGS, NON-BEARING WALLS, STAIRS, CURBS, DRAINS, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES AND OTHER NONSTRUCTURAL ITEMS.

STRUCTURAL RESPONSIBILITIES: THE EOR IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE PRIMARY STRUCTURE IN ITS COMPLETED STATE.

CONTRACTOR RESPONSIBILITIES: THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND ALL JOB RELATED SAFETY STANDARDS SUCH AS OSHA AND WSHA. THE CONTRACTOR IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING, BRACING AND OTHER ELEMENTS REQUIRED TO MAINTAIN STABILITY UNTIL THE STRUCTURE IS COMPLETED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE WORK REQUIRED IN THE CONSTRUCTION DOCUMENTS AND THE REQUIREMENTS FOR EXECUTING IT PROPERLY.

DISCREPANCIES: IN CASE OF DISCREPANCIES BETWEEN THESE GENERAL NOTES, THE CONTRACT DRAWINGS AND SPECIFICATIONS, AND/OR REFERENCE STANDARDS, THE EOR SHALL DETERMINE WHICH SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE EOR BEFORE PROCEEDING WITH THE WORK. ACCORDINGLY, ANY CONFLICT IN OR BETWEEN THE CONTRACT DOCUMENTS SHALL NOT BE A BASIS FOR ADJUSTMENT IN THE CONTRACT PRICE.

SITE VERIFICATION: THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR CONSTRUCTION. CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE EOR BEFORE PROCEEDING WITH THE WORK. ALL UNDERGROUND UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO EXCAVATION OR DRILLING.

ADJACENT UTILITIES: THE CONTRACTOR SHALL DETERMINE THE LOCATIONS OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO EXCAVATION OR PILE PLACEMENT. ANY UTILITY INFORMATION SHOWN ON THE DRAWINGS AND DETAILS IS APPROXIMATE AND NOT NECESSARILY COMPLETE.

DESIGN CRITERIA

CONSTRUCTION LOADS: LOADS ON THE STRUCTURE DURING CONSTRUCTION SHALL NOT EXCEED THE DESIGN LOADS OR THE CAPACITY OF THE PARTIALLY COMPLETED CONSTRUCTION.

SNOW LOAD: THE ROOF SNOW LOAD IS DETERMINE BY USING CHAPTER 7 OF ASCE 7-10 IN ACCORDANCE WITH IBC SECTION 1608 AND WITH THE FOLLOWING FACTORS:

MINIMUM ROOF DESIGN LOAD 25 PSF WITHOUT DRIFT
GROUND SNOW LOAD, PG = 20 PSF
IMPORTANCE FACTOR, IS = 1.0
THERMAL FACTOR, CT = 1.0

DEFLECTIONS:

ROOF / FLOOR TOTAL LOAD DEFLECTION LIMIT: L/240
ROOF / FLOOR LIVE LOAD DEFLECTION LIMIT: L/360

LIVE LOADS:

ROOF (LIVE) 20 PSF
ROOF (SNOW) 25 PSF

WIND DESIGN: WIND LOAD IS DETERMINED USING CHAPTER 28 OF ASCE 7-16 IN ACCORDANCE WITH IBC SECTION 1609 WITH THE FOLLOWING FACTORS:

BASIC WIND SPEED (3-SECOND GUST) V = 110 MPH
WIND IMPORTANCE FACTOR IW = 1.0 RISK CATEGORY = II
EXPOSURE CATEGORY = B GCPI = ±0.18

FOR COMPONENTS & CLADDING AS DEFERRED SUBMITTAL, THE DESIGN WIND PRESSURES FOR DETERMINING FORCES ON COMPONENTS AND CLADDING SHALL BE 40 PSF UNLESS OTHERWISE DETERMINED USING CHAPTER 30 OF ASCE 07-10 IN ACCORDANCE WITH IBC SECTION 1609 BY THE [WASHINGTON] STATE REGISTERED PROFESSIONAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN OF SUCH ELEMENTS.

SEISMIC DESIGN: EARTHQUAKE DESIGN IS DETERMINED USING CHAPTER 12 ASCE 7-10 IN ACCORDANCE WITH IBC CHAPTER 16 WITH THE FOLLOWING FACTORS:

IMPORTANCE FACTOR IE = 1.0
RISK CATEGORY = II
SS = 1.437 G SDS = 0.958 G
S1 = 0.499 G SD1 = N/A
SITE CLASS = D SEISMIC DESIGN CATEGORY = D

WOOD STRUCTURE (SUPER-STRUCTURE)

BASIC SEISMIC FORCE RESISTING SYSTEM: A-15 (BEARING WALL SYSTEMS) LIGHT-FRAMED WALLS WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE, PER ASCE 7-10, SECTION 12.8
R=6.5
CS=0.147
W = 2.5

TESTS & INSPECTIONS

INSPECTIONS: ALL CONSTRUCTION IS SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL IN ACCORDANCE WITH IBC SEC 110. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS WITH THE BUILDING OFFICIAL. SUBMIT COPIES OF ALL INSPECTION REPORTS TO THE ARCHITECT/EOR FOR REVIEW. THE BUILDING OFFICIAL MAY ACCEPT INSPECTION OF AND REPORTS BY APPROVED INSPECTION AGENCIES IN LIEU OF BUILDING OFFICIAL'S INSPECTIONS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF BUILDING OFFICIAL TO USE THE THIRD-PARTY INSPECTION AGENCY AND CONTRACTOR SHALL ALERT THE ARCHITECT/EOR AS SUCH.

SOILS AND FOUNDATIONS

REFERENCE STANDARDS: CONFORM TO IBC CHAPTER 18 "SOILS AND FOUNDATIONS."

GEOTECHNICAL INSPECTION: THE GEOTECHNICAL ENGINEER OR THIRD-PARTY INSPECTOR SHALL INSPECT ALL PREPARED SOIL BEARING SURFACES PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING STEEL AND PROVIDE A LETTER TO THE OWNER STATING THAT SOILS ARE ADEQUATE TO SUPPORT THE "ALLOWABLE FOUNDATION PRESSURE" SHOWN BELOW. SOIL COMPACTION SHALL BE SUPERVISED BY AN APPROVED TESTING AGENCY OR GEOTECHNICAL E ENGINEER. SITE SOIL CONDITIONS, FILL PLACEMENT, AND LOAD-BEARING REQUIREMENTS SHALL BE AS REQUIRED BY SECTION 1705.6 AND TABLE 1705.6 ASSUMED VALUES SHALL BE FIELD VERIFIED BY THE BUILDING OFFICIAL OR THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE. THE BUILDING OFFICIAL SHALL BE PERMITTED TO WAIVE THE REQUIREMENT FOR A GEOTECHNICAL INVESTIGATION WHERE SATISFACTORY DATA FROM ADJACENT AREA IS AVAILABLE THAT DEMONSTRATES AN INVESTIGATION IS NOT NECESSARY FOR ANY OF THE CONDITIONS IN SECTIONS 1803.5.1 - 1803.5.6 AND SECTIONS 1803.5.10 - 1803.5.11.

DESIGN SOIL VALUES: (ASSUMED)
ALLOWABLE SOIL BEARING PRESSURE
2,500 PSF DL + LL

SLABS-ON-GRADE & FOUNDATIONS: ALL SLABS-ON-GRADE AND FOUNDATIONS SHALL BEAR ON STRUCTURAL COMPACTED FILL OR COMPETENT NATIVE SOIL PER THE GEOTECHNICAL REPORT OR AS NOTED IN THESE DOCUMENTS. EXTERIOR PERIMETER FOOTINGS SHALL BEAR NOT LESS THAN 18 INCHES BELOW FINISH GRADE, OR AS REQUIRED BY THE GEOTECHNICAL ENGINEER AND THE BUILDING OFFICIAL. INTERIOR FOOTINGS SHALL BEAR NOT LESS THAN 12 INCHES BELOW FINISH FLOOR.

FOUNDATION STEM WALLS: UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE MAXIMUM UNBALANCED SOIL CONDITION FOR ALL FOUNDATION STEM WALLS (DIFFERENCE IN ELEVATION BETWEEN INTERIOR AND EXTERIOR SOIL GRADES) SHALL BE 2'-6". MAINTAIN A MINIMUM 8" SEPARATION BETWEEN FINISH GRADE AND UNTREATED WOOD FRAMING.

BACKFILLING: BACKFILL BEHIND RETAINING AND FOUNDATION WALLS SHALL BE OF FREE-DRAINING MATERIAL PLACED IN MAXIMUM LOOSE LIFTS OF 12" OR AS DIRECTED BY THE GEOTECHNICAL REPORT. BACKFILL BEHIND WALLS SHALL NOT BE PLACED BEFORE THE WALL IS PROPERLY SUPPORTED BY THE FLOOR SLAB OR TEMPORARY BRACING. BACKFILL SHALL BE COMPACTED USING HAND-OPERATED EQUIPMENT ONLY. THE CONTRACTOR SHALL REFRAIN FROM OPERATING HEAVY EQUIPMENT BEHIND RETAINING AND FOUNDATION WALLS WITHIN A DISTANCE EQUAL TO OR GREATER THAN THE HEIGHT OF THE WALL, UNLESS OTHERWISE APPROVED BY THE EOR. ALL TOPSOIL ORGANICS AND LOOSE SURFACE SOIL SHALL BE REMOVED FROM BENEATH FILL SUPPORTING CONCRETE SLAB OR PAVING.

CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: CONFORMS TO THE LATEST EDITIONS OF THE FOLLOWING:
(1) ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY"
(2) IBC CHAPTER 19.

FIELD REFERENCE: THE CONTRACTOR SHALL KEEP A COPY OF ACI FIELD REFERENCE MANUAL, SP-15, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301) WITH SELECTED ACI AND ASTM REFERENCES."

CONCRETE MIXTURES: CONFORM TO ACI 318 CHAPTER 19 "CONCRETE: DESIGN AND DURABILITY REQUIREMENTS."

MATERIALS: CONFORM TO ACI 318 CHAPTERS 19 & 20.

SUBMITTALS: PROVIDE ALL SUBMITTALS REQUIRED BY ACI 301 SEC 4.1.2. SUBMIT MIX DESIGNS FOR EACH MIX IN THE TABLE BELOW.

Table with columns: MEMBER, STRENGTH, TEST AGE, MAXIMUM, EXPOSURE, MAX, TYPE/LOCATION, MINIMUM (PSI), (DAYS), AGGREGATE, CLASSIFICATION, W/C RATIO, AIR CONTENT. Row: FOUNDATION ELEMENTS, 3,500, 28, 1", F1, C0, 0.45, 4.5%

MIX DESIGN NOTES:

- 1) W/C RATIO: WATER-CEMENTITIOUS MATERIAL RATIOS SHALL BE BASED ON THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS. RATIOS NOT SHOWN IN THE TABLE ABOVE ARE CONTROLLED BY STRENGTH REQUIREMENTS.
2) CEMENTITIOUS CONTENT: THE USE OF FLY ASH, OTHER POZZOLANS, SILICA FUME, OR SLAG SHALL CONFORM TO ACI 301 SEC 4.2.2.9B. MAXIMUM AMOUNT OF FLY ASH SHALL BE 20% OF TOTAL CEMENTITIOUS CONTENT UNLESS REVIEWED AND APPROVED OTHERWISE BY EOR.
3) AIR CONTENT: CONFORM TO ACI 301 SEC 4.2.2.4. HORIZONTAL EXTERIOR SURFACES IN CONTACT WITH THE SOIL REQUIRE ENTRAINED AIR. USE EXPOSURE CATEGORY F0, S0, W0, AND C0 UNLESS NOTED OTHERWISE. TOLERANCE IS +/- 1.5%. AIR CONTENT SHALL BE MEASURED AT POINT OF PLACEMENT.
4) EXPOSURE CLASSIFICATION: THE MIX DESIGN PROVIDED SHALL MEET THE REQUIREMENTS OF ACI 318 CHAPTER 19, BASED ON THE EXPOSURE CLASSIFICATION INDICATED IN THE TABLE ABOVE.
5) SLUMP: UNLESS OTHERWISE SPECIFIED OR PERMITTED, CONCRETE SHALL HAVE AT THE POINT OF DELIVERY, A SLUMP OF 4" +/- 1". FOR ADDITIONAL CRITERIA, REFERENCE ACI 301 SEC 4.2.2.2.

FORMWORK: CONFORM TO ACI 301 SEC 2 "FORMWORK AND FORM ACCESSORIES." REMOVAL OF FORMS SHALL CONFORM TO SEC 2.3.2 EXCEPT STRENGTH INDICATED IN SEC 2.3.2.5 SHALL BE 0.75 FC.

MEASURING, MIXING, AND DELIVERY: CONFORM TO ACI 301 SEC 4.3.

HANDLING, PLACING, CONSTRUCTING, AND CURING: CONFORM TO ACI 301 SEC 5.

EMBEDDED ITEMS: POSITION AND SECURE IN PLACE EXPANSION JOINT MATERIAL, ANCHORS AND OTHER STRUCTURAL AND NON-STRUCTURAL EMBEDDED ITEMS BEFORE PLACING CONCRETE. CONTRACTOR SHALL REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND ARCHITECTURAL DRAWINGS AND COORDINATE ALL OTHER EMBEDDED ITEMS.

CONCRETE REINFORCEMENT

REFERENCE STANDARDS: CONFORM TO:

- (2) ACI 301 "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE "SEC 3" REINFORCEMENT, AND REINFORCEMENT SUPPORTS."
(3) IBC CHAPTER 19, CONCRETE.
(4) ACI 318 AND ACI 318R.
(5) ACI SP-66 "ACI DETAILING MANUAL" INCLUDING ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
(6) CRSI MSP-2 "MANUAL OF STANDARD PRACTICE."
(7) ANSIAWS D1.4 "STRUCTURAL WELDING CODE - REINFORCING STEEL."

MATERIALS:

REINFORCING BARS ASTM A615, GRADE 60, DEFORMED BARS.
DEFORMED WELDED WIRE FABRIC ASTM A497
BAR SUPPORTS CRSI MSP-2, CHAPTER 3 "BAR SUPPORTS."
TIE WIRE 16.5 GAGE OR HEAVIER, BLACK ANNEALED.

FABRICATION: CONFORM TO ACI 301, SEC 3.2.2 "FABRICATION," AND ACI SP-66 "ACI DETAILING MANUAL."

WELDING: BARS SHALL NOT BE WELDED UNLESS AUTHORIZED. WHEN AUTHORIZED, CONFORM TO ACI 301, SEC 3.2.2.2. "WELDING" AND PROVIDE ASTM A706, GRADE 60 REINFORCEMENT.

PLACING: CONFORM TO ACI 301, SEC 3.3.2 "PLACEMENT." PLACING TOLERANCES SHALL CONFORM TO SEC 3.3.2.1 "TOLERANCES."

CONCRETE COVER: CONFORM TO THE FOLLOWING COVER REQUIREMENTS FROM ACI 301, TABLE 3.3.2.3.

- CONCRETE CAST AGAINST EARTH 3"
• CONCRETE EXPOSED TO EARTH OR WEATHER (#5 & SMALLER) 1-1/2"
• CONCRETE EXPOSED TO EARTH OR WEATHER (#6 & LARGER) 2"
• TIES IN COLUMNS AND BEAMS 1-1/2"
• BARS IN SLABS AND WALLS 3/4"

LAP & DEVELOPMENT SCHEDULE (CONCRETE STRENGTH FC = UP TO 4,500)

Table with columns: BAR DESIGNATION, LAP LENGTH, LS, DEVELOPMENT LENGTH, LD. Rows: #4 (32", 24"), #5 (39", 30"), WWF (8" ON ALL SIDES AND EDGES)

FIELD BENDING: CONFORM TO ACI 301 SEC 3.3.2.8. "FIELD BENDING OR STRAIGHTENING." BAR SIZES #3 THROUGH #5 MAY BE FIELD BENT COLD THE FIRST TIME. OTHER BARS REQUIRE PREHEATING. DO NOT TWIST BARS.

WOOD FRAMING

REFERENCE STANDARDS: CONFORM TO:

- (1) IBC CHAPTER 23 "WOOD."
(2) NDS AND NDS SUPPLEMENT - "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."
(3) ANS/ITPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION."
(4) BCSI 2013 "BUILDING COMPONENT SAFETY INFORMATION."

ALTERNATES: ALTERNATES FOR SPECIFIED ITEM MAY BE SUBMITTED TO THE EOR FOR REVIEW. CONTRACTOR SHALL SUBMIT A CURRENT ICC-ES/RIAPMO-ER REPORT IDENTIFYING THAT AN ALTERNATIVE COMPONENT HAS THE SAME OR GREATER LOAD CAPACITY THAN THE SPECIFIED ITEM.

IDENTIFICATION: ALL SAWN LUMBER AND PRE-MANUFACTURED WOOD PRODUCTS SHALL BE IDENTIFIED BY THE GRADE MARK OR A CERTIFICATE OF MATERIALS:

SAWN LUMBER: CONFORM TO GRADING RULES OF WFWA, WCLIB, OR NLGA. FINGER JOINTED STUDS ACCEPTABLE AT INTERIOR NON-STRUCTURAL WALLS ONLY.

Table with columns: MEMBER USE, SIZE, SPECIES, GRADE. Rows: STUDS & PLATES (2X4, 2X6 HF NO. 2), POSTS (4X4 HF NO. 2, 6X DF NO. 1), BEAMS & HEADERS (4X8 - 4X12 HF NO. 2, 6X DF NO. 1)

GLUED LAMINATED TIMBER: CONFORM TO AITC 117 "STANDARD SPECIFICATIONS FOR STRUCTURAL GLUED LAMINATED TIMBER OF SOFTWOOD SPECIES, MANUFACTURING AND DESIGN" AND ANS/ITC A190.1 "STRUCTURAL GLUED LAMINATED TIMBER." GLUED LAMINATED MEMBER BEAMS SHALL NOT BE CAMBERED, UNLESS SHOWN OTHERWISE ON THE PLANS OR SPECIFICATIONS.

Table with columns: MEMBER USE, SIZES, SPECIES, STRESS CLASS, USES. Row: BEAMS ALL DF/DF 24F-V4 ALL SPANS

ENGINEERED WOOD PRODUCTS (EWP): THE FOLLOWING MATERIALS ARE BASED ON LUMBER MANUFACTURED BY [TRUSJOIST BY WEYERHAEUSER, REDBUILT]. TRUS-JOIST BY WEYERHAEUSER WAS USED AS THE BASIS OF DESIGN FOR THIS PROJECT. ALTERNATE PRODUCTS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED THEY HAVE CURRENT ICC-ES/RIAPMO-ER APPROVAL FOR EQUIVALENT OR GREATER LOAD AND STIFFNESS PROPERTIES AND ARE REVIEWED AND APPROVED BY THE EOR. A HUD MATERIAL RELEASE FORM IS REQUIRED FOR ALL MANUFACTURED WOOD PRODUCTS LISTED BELOW.

- LAMINATED VENEER LUMBER (LVL): CONFORM TO ICC ES REPORT NO. [ESR-1387/ESR-2993], CCMC REPORT NO. [12627-R/13485-R], OR NES REPORT NO. NER-481.
• PARALLEL STRAND LUMBER (PSL): CONFORM TO ICC ES REPORT NO. ESR-1387, CCMC REPORT NO. 11161-R, OR NES REPORT NO. NER-481. USE 2.2E UNLESS NOTED OTHERWISE.
• LAMINATED STRAND LUMBER (LSL): CONFORM TO ICC ES REPORT NO. ESR-1387, CCMC REPORT NO. 12627-R, OR NES REPORT NO. NER-481.
• OPEN WEB WOOD TRUSS (OWWT): CONFORM TO ICC ES REPORT NO. [PFC-4354/ESR-1774] OR NES REPORT NO. NER-148. THE MANUFACTURER SHALL DESIGN THE JOISTS FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS. JOISTS SHALL HAVE WOOD CHORDS AND EITHER WOOD OR METAL WEBS.

WOOD STRUCTURAL SHEATHING (PLYWOOD): WOOD APA-RATED STRUCTURAL SHEATHING INCLUDES: ALL VENEER PLYWOOD, ORIENTED STRAND BOARD, WAFERBOARD, PARTICLEBOARD, T1-11 SIDING, AND COMPOSITES OF VENEER AND WOOD BASED MATERIAL. CONFORM TO PRODUCT STANDARDS PS-1-95 AND PS-2-92 OF THE U.S. DEPT. OF COMMERCE AND THE AMERICAN PLYWOOD ASSOCIATION (APA)

Table with columns: LOCATION, THICKNESS, SPAN RATING, PLYWOOD GRADE, EXPOSURE. Rows: ROOF (15/32" 24/16 C-D 1), FLOOR (23/32" T&G 24 OC STURD-I-FLOOR 1), WALLS (15/32" 32/16 C-D 1)

JOIST HANGERS AND CONNECTORS: SIMPSON STRONG-TIE COMPANY INC. AS SPECIFIED IN THEIR LATEST CATALOGS WAS USED AS THE BASIS OF DESIGN FOR THIS PROJECT. ALTERNATE CONNECTORS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED THEY HAVE CURRENT ICC-ES/RIAPMO-ER APPROVAL FOR EQUIVALENT OR GREATER LOAD CAPACITIES AND ARE REVIEWED AND APPROVED BY THE EOR PRIOR TO ORDERING. CONNECTORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE 1/2 OF THE NAILS OR BOLTS IN EACH MEMBER. NAIL STRAPS TO WOOD FRAMING AS LATE AS POSSIBLE IN THE FRAMING PROCESS TO ALLOW THE WOOD TO SHRINK AND THE BUILDING TO SETTLE.

NAILS AND STAPLES: CONFORM TO IBC SEC 2303.6 "NAILS AND STAPLES." UNLESS NOTED ON PLANS, NAIL PER IBC TABLE 2304.10.1. UNLESS NOTED OTHERWISE ALL NAILS SHALL BE COMMON. NAIL SIZES SPECIFIED ON THE DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

Table with columns: COMMON NAILS, SIZE, LENGTH, DIAMETER. Rows: 8D (2-1/2" 0.131"), 10D (3" 0.148"), 16D (3-1/2" 0.162"), 16D SINKER (3-1/4" 0.148")

LAG BOLTS/BOLTS: CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD.

WOOD HOLDOWNS: HOLDOWNS SPECIFIED ARE AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY INC. ADDITIONAL FRAMING MEMBERS SHALL BE PROVIDED PER THE MANUFACTURER'S REQUIREMENTS. ACCEPTABLE EQUIVALENT PRODUCT SUBSTITUTIONS ARE AVAILABLE FROM OTHER MANUFACTURERS WITH EOR APPROVAL. DO NOT COUNTERSINK HOLDOWN BOLTS.

NAILING REQUIREMENTS: PROVIDE MINIMUM NAILING IN ACCORDANCE WITH IBC TABLE 2304.10.1 "FASTENING SCHEDULE" EXCEPT AS NOTED ON THE DRAWINGS. NAILING FOR ROOF/FLOOR DIAPHRAGMS/SHEAR WALLS SHALL BE PER DRAWINGS. NAILS SHALL BE DRIVEN FLUSH AND SHALL NOT FRACTURE THE SURFACE OF SHEATHING.

STANDARD LIGHT-FRAME CONSTRUCTION: UNLESS NOTED ON THE DRAWINGS, CONSTRUCTION SHALL CONFORM TO IBC SEC 2308 "CONVENTIONAL LIGHT-FRAME CONSTRUCTION" AND IBC SEC 2304 "GENERAL CONSTRUCTION REQUIREMENTS."

- (1) WALL FRAMING (UNLESS NOTED OTHERWISE ON PLANS AND DETAILS) ALL INTERIOR WALLS SHALL BE 2X4 @ 16"OC AND ALL EXTERIOR WALLS SHALL BE 2X6 @ 16"OC. PROVIDE (2) BUNDLED STUDS MIN AT WALL ENDS AND EACH SIDE OF ALL OPENINGS. ALL SOLID SAWN LUMBER BEAMS AND HEADERS SHALL BE SUPPORTED BY A MINIMUM OF (1) TRIM AND (1) KING STUD AND ALL GLULAM OR ENGINEERED WOOD BEAMS AND HEADERS BY (2) TRIM AND (2) KING STUDS. PROVIDE MINIMUM 4X10) HEADERS AT ALL INTERIOR AND EXTERIOR WALL OPENINGS. STITCH-NAIL BUNDLED STUDS WITH (2) 10D @ 12"OC. PROVIDE SOLID BLOCKING THRU FLOORS TO SUPPORTS BELOW FOR BEARING WALLS AND POSTS. ATTACH BOTTOM PLATES OF STUD WALLS TO WOOD FRAMING BELOW WITH 16D @ 12"OC OR TO CONCRETE WITH 5/8"-DIA. ANCHOR BOLTS X 7" EMBEDMENT AT 48"OC. REFER TO SHEAR WALL SCHEDULE FOR SPECIFIC SHEATHING, STUD, AND NAILING REQUIREMENTS AT SHEAR WALLS. PROVIDE GYPSUM SHEATHING ON INTERIOR SURFACES AND PLYWOOD SHEATHING ON EXTERIOR SURFACES.
(2) ROOF/FLOOR FRAMING: (UNLESS NOTED OTHERWISE ON PLANS AND DETAILS) PROVIDE DOUBLE JOISTS/RAFTERS UNDER ALL PARALLEL BEARING PARTITIONS AND SOLID BLOCKING AT ALL BEARING POINTS. PROVIDE DOUBLE JOISTS AROUND ALL ROOF/FLOOR OPENINGS. MULTI-JOISTS/RAFTERS SHALL BE STITCH-NAILED TOGETHER WITH (2)10D @ 12"OC. PROVIDE ROOF SHEATHING EDGE CLIPS CENTERED BETWEEN FRAMING AT UNBLOCKED PLYWOOD EDGES. ALL FLOOR SHEATHING SHALL HAVE TONGUE AND GROOVE JOINTS OR BE SUPPORTED BY SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF ROOF/FLOOR SHEATHING. ROOF/FLOOR SHEATHING SHALL BE LAID FACE GRAIN PERPENDICULAR TO FRAMING MEMBERS.

MOISTURE CONTENT: WOOD MATERIAL USED FOR THIS PROJECT SHALL HAVE MAXIMUM MOISTURE CONTENT OF 19% EXCEPT FOR THE PRESSURE-TREATED WOOD SILL PLATE.

PRESERVATIVE TREATMENT: WOOD MATERIALS ARE REQUIRED TO BE "TREATED WOOD" UNDER CERTAIN CONDITIONS IN ACCORDANCE WITH IBC SEC 2304.12 "PROTECTION AGAINST DECAY AND TERMITES." CONFORM TO THE APPROPRIATE STANDARDS OF THE AMERICAN WOOD-PRESERVERS ASSOCIATION (AWPA) FOR SAWN LUMBER, GLUED LAMINATED TIMBER, ROUND POLES, WOOD PILES, AND MARINE PILES. FOLLOW WOOD STANDARDS COMMITTEE (ALSC) QUALITY ASSURANCE PROCEDURES. PRODUCTS SHALL BEAR THE APPROPRIATE MARK.

METAL CONNECTORS/PT WOOD: ALL METAL HARDWARE AND FASTENERS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE STAINLESS STEEL TYPE 316L. AT THE OWNER'S RISK AND DISCRETION, HOT-DIPPED GALVANIZED METAL HARDWARE AND FASTENERS MAY BE INVESTIGATED FOR USE IN LIEU OF STAINLESS STEEL PROVIDED THAT THE FINISH HAS A MINIMUM ZINC CONTENT OF AT LEAST 1.85 OZ./SF AND ITS USE IS COORDINATED BY THE CONTRACTOR AND WOOD SUPPLIER FOR THE EXPECTED ENVIRONMENT AND MOISTURE EXPOSURE FOR APPROPRIATE USE BASED ON THE METHOD OF PRESERVATIVE TREATMENT OF THE WOOD.

CHECK SET - NOT FOR CONSTRUCTION

L2 ENGINEERS DESIGN AND PLANNING 17848 NE 198TH PLACE WOODINVILLE, WA 98072

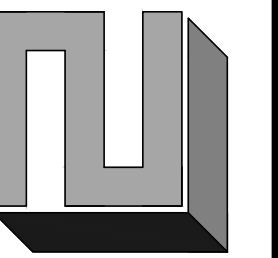


Table with columns: DATE, REVISION



CHEN RESIDENCE 5024 MERCER WAY, MERCER ISLAND, WA 98040 GENERAL STRUCTURAL NOTES

CHK BY: L2E DRW BY: TNT

SCALE: AS SHOWN BAR = 1" FULL SIZE

DATE: 06/22/2023

JOB NO: 20-084

SHEET: 1 OF 10

DWG NO: S100



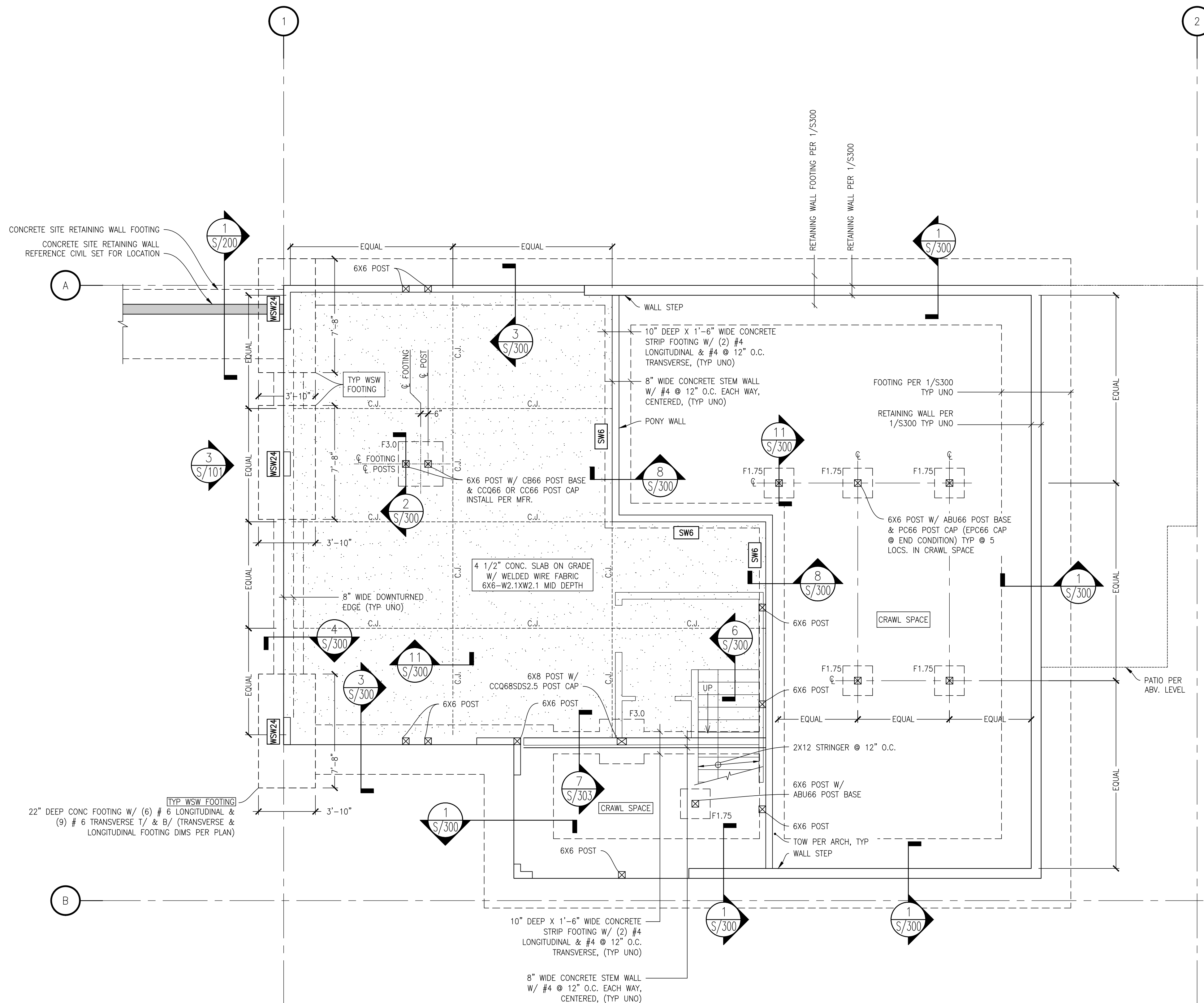




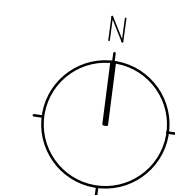




CHECK SET - NOT FOR CONSTRUCTION



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



- PLAN NOTES
1. REFERENCE ROOF FRAMING PLAN FOR APPLICABLE FRAMING PLAN NOTES.
  2. REFERENCE S1.0 FOR GENERAL STRUCTURAL NOTES AND OTHER DESIGN CRITERIA.
  3. CONTRACTOR TO COORDINATE CURBS AND ELECTRICAL AND MECHANICAL FLOOR OPENINGS AND PENETRATIONS WITH ARCHITECTURAL DRAWINGS.
  4. THE BOTTOM OF ALL PERIMETER FOOTINGS SHALL BE A MINIMUM OF 18" BELOW GRADE AND BEAR UPON FIRM UNDISTURBED SOIL.
  5. ALL WOOD IN CONTACT WITH WEATHER, EXPOSED CONCRETE, OR WITHIN 8" OF FINISHED GRADE SHALL BE PRESSURE-TREATED.
  6. USE HOT DIPPED GALVANIZED FASTENERS AND ZMAX HARDWARE AT CONNECTIONS TO PRESSURE TREATED LUMBER.
  7. SLAB ON GRADE SHALL BE 4 1/2" THICK WITH WWF 6X6-W2.1X2.1 MID DEPTH TYP. CRACK CONTROL JOINT PLACEMENT PER CONTRACTOR / ARCH.
  8. TYPICAL STEM WALL PER S/300
  9. REFERENCE ARCHITECTURAL ELEVATIONS & SECTIONS FOR TOP OF WALL ELEVATIONS.

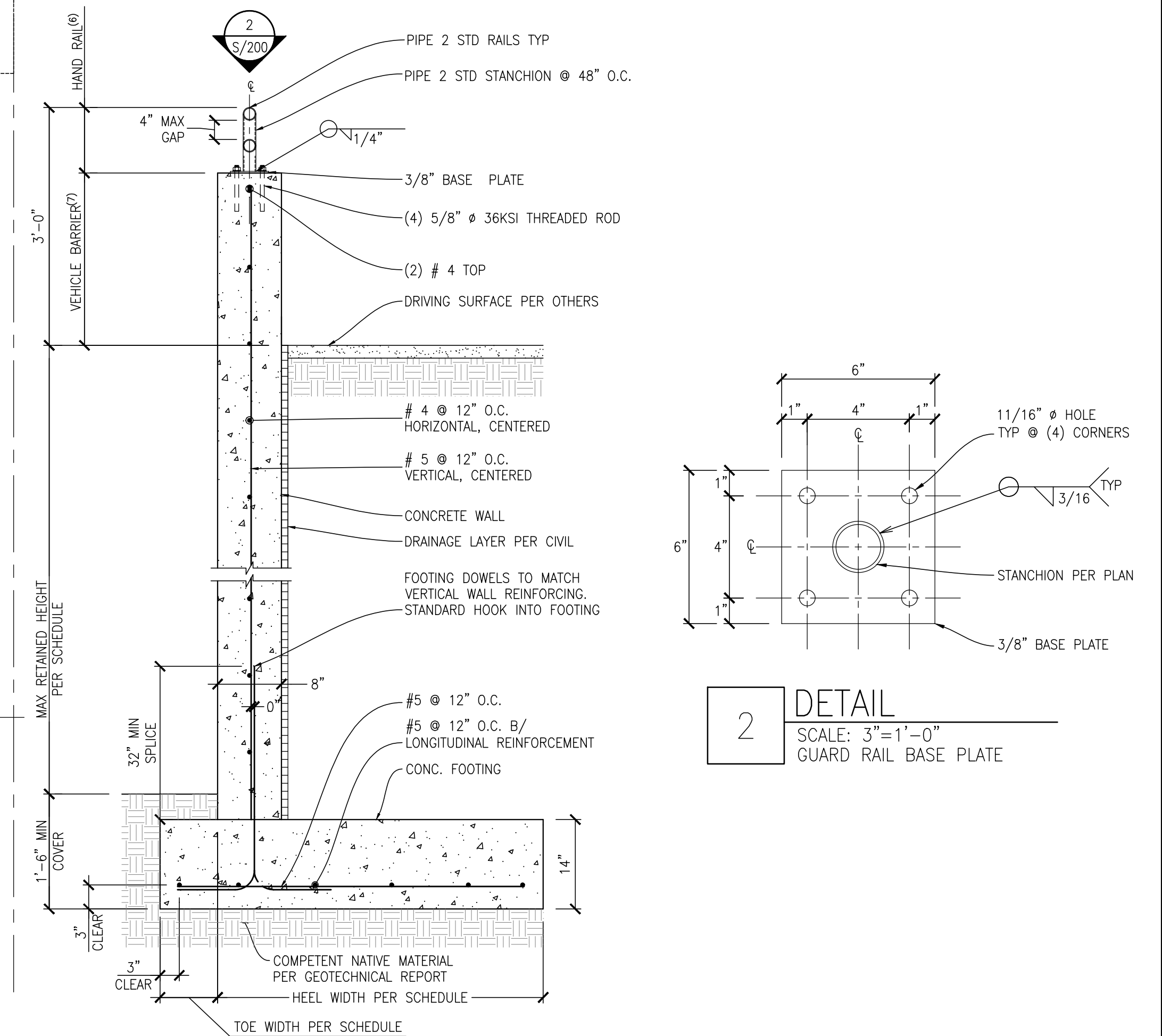
FOOTING SCHEDULE

F1.75	1'-9" X 1'-9" X 8" DEEP CONC. FOOTING W/ (2) #4 EACH WAY ON BOTTOM
F3.0	3'-0" X 3'-0" X 12" DEEP THICKENED SLAB W/ (4) #4 EACH WAY IN BOTTOM

- KEY
- CIP CONCRETE STEM WALL
  - - - CONCRETE SPREAD FOOTING
  - WALL
  - SW# SHEAR WALL INDICATOR (REF. SHEAR WALL SCHEDULE)
  - XX HOLDDOWN
  - ⊠ POST

WALL SECTION GENERAL NOTES:

1. ROOF AND SURFACE RUNOFF SHOULD NOT DISCHARGE INTO THE FOOTING DRAIN SYSTEM.
2. DRAINAGE LAYER & FOOTING DRAINS PER CIVIL / ARCHITECT
3. SHORING WHERE REQUIRED PER OTHERS
4. NO HEAVY EQUIPMENT SURCHARGE PERMITTED NEAR WALL, COMPACT BACKFILL WITH HAND TOOLS.
5. PLACE BACKFILL IN LOOSE LIFTS NOT TO EXCEED 8" DEPTH AND COMPACT TO 90% OF ASTM D-1557. HIGHER DEGREE OF COMPACTION IS NOT RECOMMENDED AS THIS WILL INCREASE THE PRESSURE ACTING ON THE WALL.
6. HAND RAIL ONLY REQUIRED WHEN SOIL IMBALANCE IS GREATER THAN 30". ALTERNATELY, VEHICLE BARRIER MAY BE EXTENDED TO 3'-0" AND HAND RAIL OMITTED. ALTERNATE HAND RAIL CONFIGURATION ALSO PERMISSIBLE. TO BE REVIEWED AS DEFERRED SUBMITTAL BY EOR.
7. VEHICLE BARRIER SHALL BE 6" WHERE SOIL IMBALANCE IS LESS THAN 30", AND 27" WHERE SOIL IMBALANCE IS GREATER THAN 30".



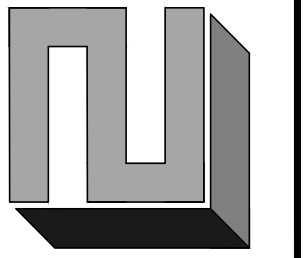
2 DETAIL  
SCALE: 3/8"=1'-0"  
GUARD RAIL BASE PLATE

RETAINING WALL SCHEDULE (3,500 PSI)

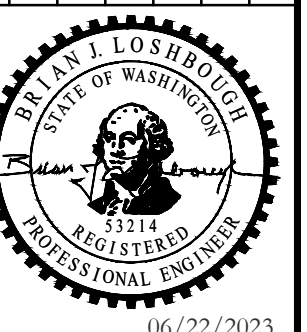
MAX RETAINED HEIGHT	TOE WIDTH	HEEL WIDTH
2'-0" & LESS	1'-0"	2'-9"
4'-0"	1'-0"	3'-3"
6'-0"	1'-0"	3'-9"

1 DETAIL  
SCALE: 3/4"=1'-0"  
REINFORCED CONCRETE SITE WALL

L2 ENGINEERS  
DESIGN AND PLANNING  
17848 NE 198TH PLACE  
WOODINVILLE, WA 98072



REVISION

CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
FOUNDATION PLAN

CHK BY: L2E  
DRW BY: TNT

SCALE: AS SHOWN  
BAR = 1" FULL SIZE

DATE: 06/22/2023

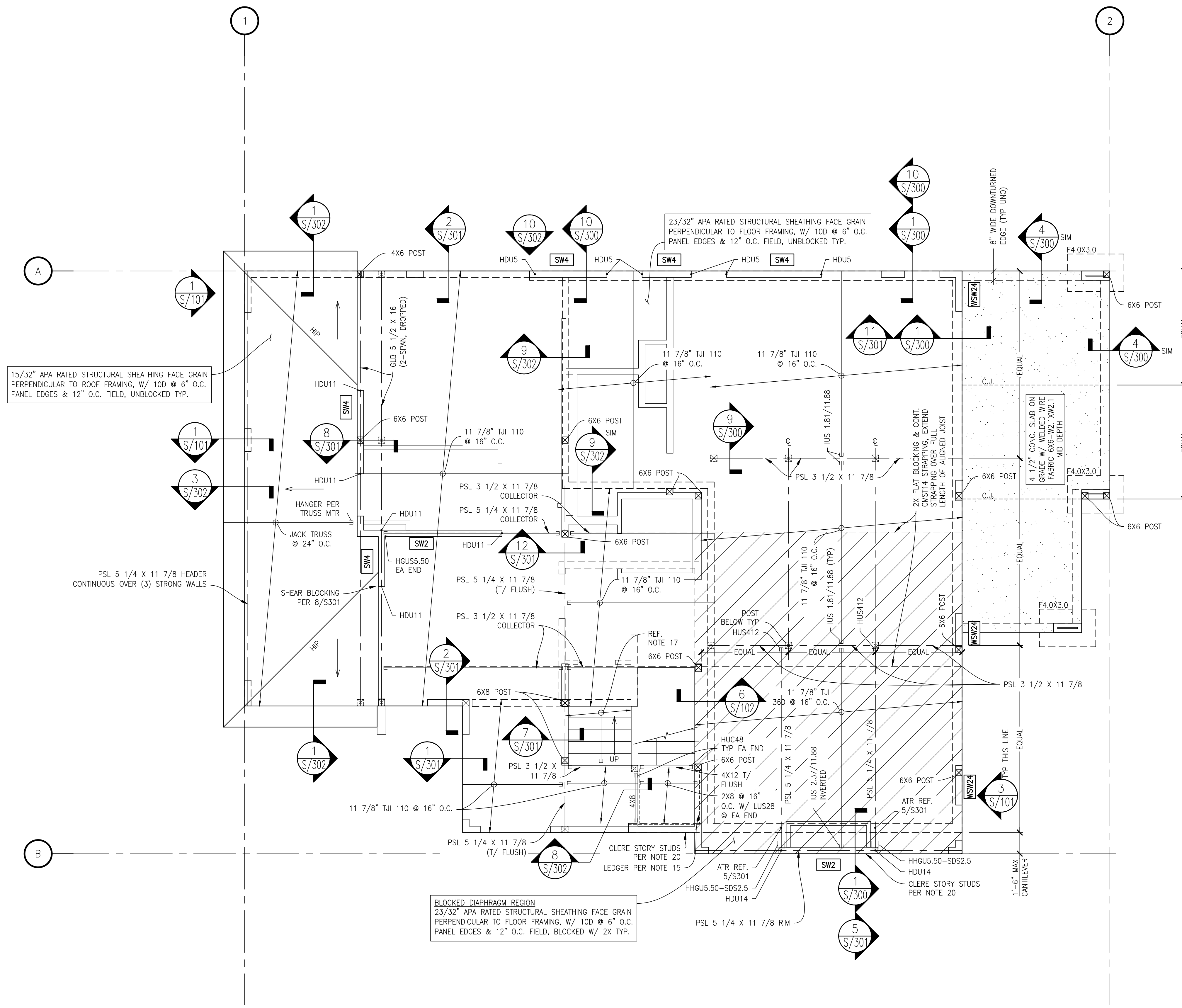
JOB NO: 20-084

SHEET: 4 OF 10

DWG NO: S200



CHECK SET - NOT FOR CONSTRUCTION

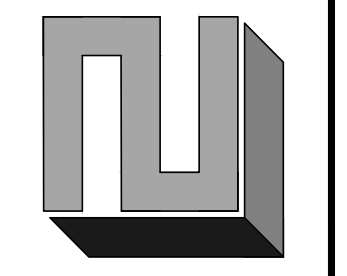


**MAIN FLOOR FRAMING PLAN**  
 SCALE: 1/4"=1'-0"

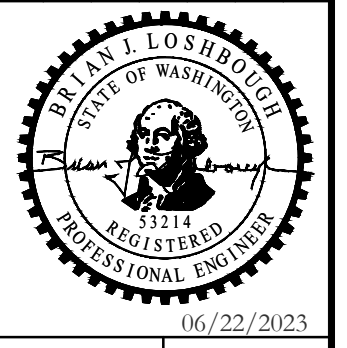
- PLAN NOTES**
- DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
  - ALL RIMS SHALL BE 1-3/4" LSL TYP. U.N.O.
  - MATCH BUNDLED STUDS FROM ABOVE TYP. U.N.O.
  - FLOOR SHEATHING SHALL BE 23/32" APA-RATED STURD-I-FLOOR T&G SHEATHING FACE GRAIN PERPENDICULAR TO FLOOR FRAMING, GLUE & NAIL W/ 10D @ 6" OC EDGES, 10D @ FIELD (UNBLOCKED), TYP.
  - FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
  - ALL EXTERIOR WALLS SHALL BE SW-6, UNO ON PLAN.
  - PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
  - AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
  - ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP. U.N.O.
  - PROVIDE LUS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP. U.N.O.
  - PROVIDE ITS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP. U.N.O.
  - ENGINEERED JOIST BRACING PER JOIST MANUFACTURER, TYP.
  - FULLY BLOCK FLOOR CAVITY AT ALL POINT LOADS. VERIFY POINT LOADS ARE SUPPORTED CONTINUOUSLY THROUGH FLOORS TO THE FOUNDATION.
  - ALL HEADERS TO BE 4x10 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
  - 2X8 LEDGER WITH (2) 5/8" DIAMETER X 5" LONG TITAN HD @ 16" O.C. (CTR'D BETWEEN JOISTS)
  - SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
  - TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS.
  - ROOF SHEATHING SHALL BE 15/32" APA-RATED PLYWOOD STRUCTURAL SHEATHING FACE GRAIN PERPENDICULAR TO ROOF FRAMING, NAIL W/ 8D @ 6" OC EDGES, 8D @ 12" O.C. FIELD, UNBLOCKED, TYP.
  - OFFSET JOISTS AS REQUIRED TO AVOID PLUMBING FIXTURES
  - CLERESTORY STUDS SHALL BE LSL 1 3/4 X 5 1/2 @ 12" O.C. FASTEN TOP AND BOTTOM W/ (1) A35 FRAMING CLIP.

**FOOTING SCHEDULE**  
 F4.0X3.0 4'-0" X 3'-0" X 12" DEEP CONC. FOOTING  
 W/ # 4 @ 12" O.C. EACH WAY IN BOTTOM

- KEY**
- CIP CONCRETE STEM WALL
  - - - CONCRETE SPREAD FOOTING
  - == WALL BELOW
  - WALL
  - SW# SHEAR WALL INDICATOR (REF. SHEAR WALL SCHEDULE)
  - XX HOLDDOWN
  - ⊠ POST
  - ⊠ POST BELOW
  - HANGER



DATE	REVISION

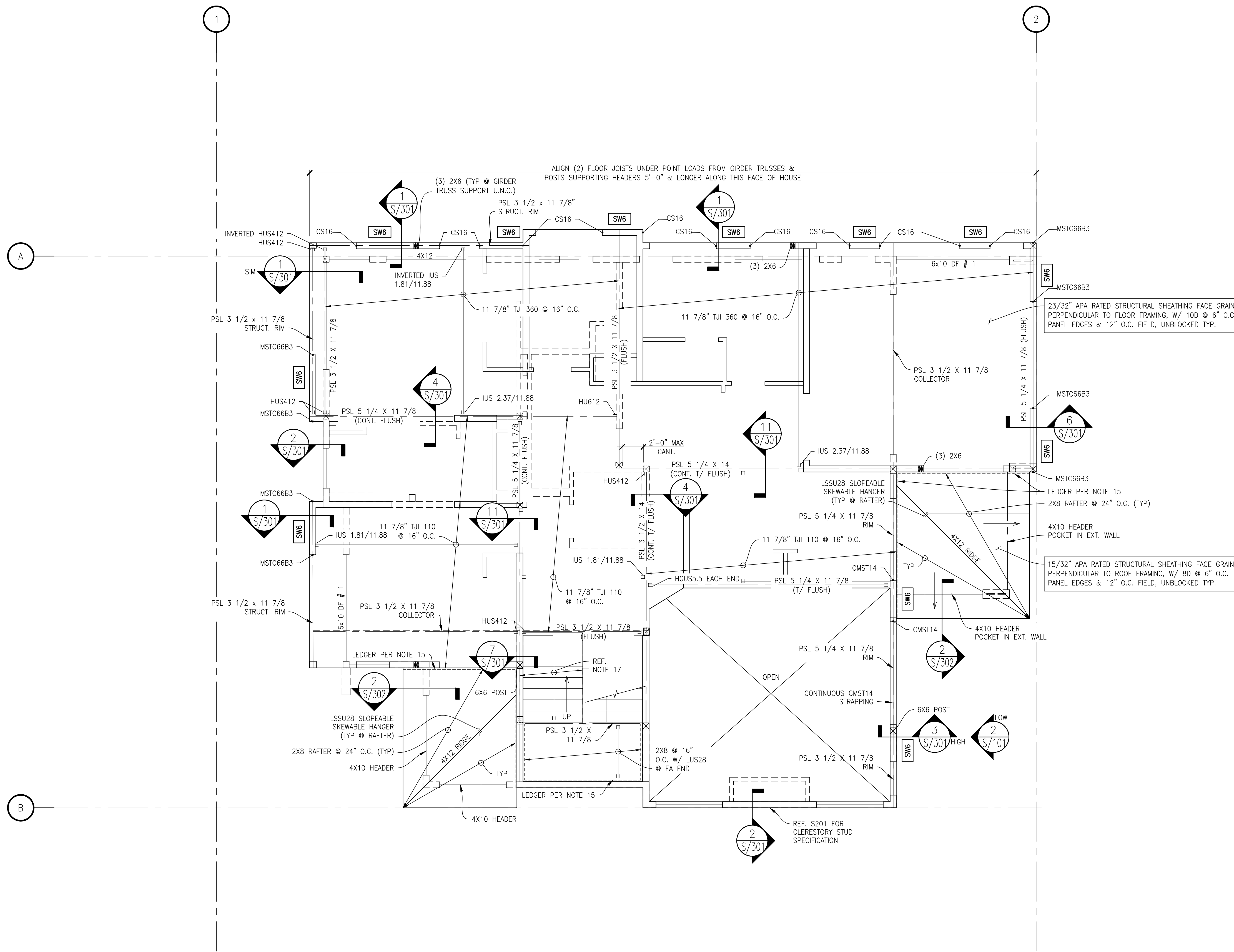


5024 MERCER WAY, MERCER ISLAND, WA 98040  
**CHEN RESIDENCE**  
 MAIN FLOOR FRAMING PLAN

CHK BY: LZE	DRW BY: TNT
SCALE: AS SHOWN BAR = 1" FULL SIZE	
DATE: 06/22/2023	
JOB NO: 20-084	
SHEET: 5 OF 10	
DWG NO: S201	



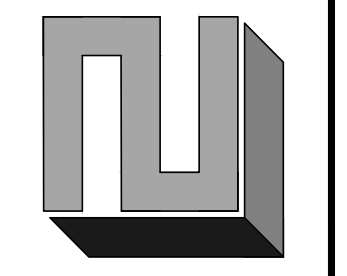
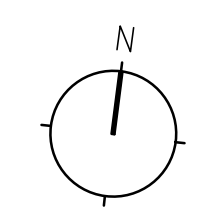
CHECK SET - NOT FOR CONSTRUCTION



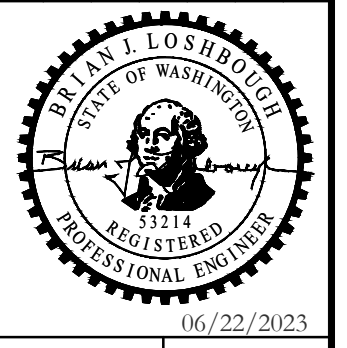
- PLAN NOTES**
- DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
  - ALL RIMS SHALL BE 1-3/4" LSL TYP. U.N.O.
  - MATCH BUNDLED STUDS FROM ABOVE TYP. U.N.O.
  - FLOOR SHEATHING SHALL BE 23/32" APA-RATED STURD-I-FLOOR T&G SHEATHING FACE GRAIN PERPENDICULAR TO FLOOR FRAMING, GLUE & NAIL W/ 10D @ 6" OC EDGES, 10D @ FIELD (UNBLOCKED), TYP.
  - FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
  - ALL EXTERIOR WALLS SHALL BE SW-6, UNO ON PLAN.
  - PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
  - AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
  - ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP. U.N.O.
  - PROVIDE LUS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP. U.N.O.
  - ENGINEERED JOIST BRACING PER JOIST MANUFACTURER, TYP.
  - FULLY BLOCK FLOOR CAVITY AT ALL POINT LOADS. VERIFY POINT LOADS ARE SUPPORTED CONTINUOUSLY THROUGH FLOORS TO THE FOUNDATION.
  - ALL HEADERS TO BE 4X10 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
  - 2X8 LEDGER FASTEN TO WOOD FRAMING W/ (2) 1/4" Ø X 4 1/2 SDS @ 24" O.C.
  - SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
  - TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS.
  - OFFSET JOISTS AS REQUIRED TO AVOID PLUMBING FIXTURES

- KEY**
- WALL BELOW
  - == WALL
  - SW# SHEAR WALL INDICATOR (REF. SHEAR WALL SCHEDULE)
  - XX HOLDDOWN
  - ⊠ POST
  - ⊠ POST BELOW
  - HANGER

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



NO.	REVISION	DATE

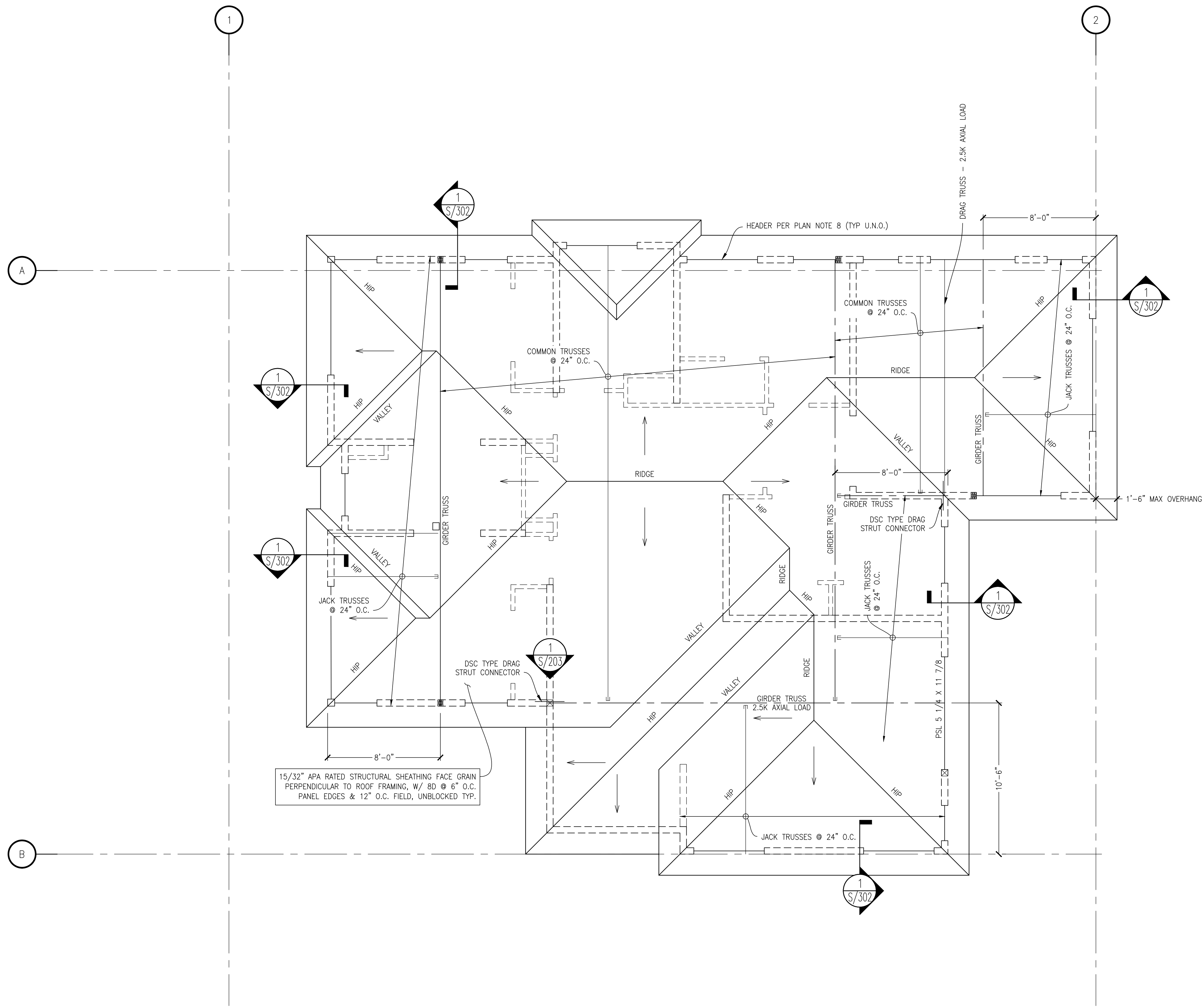


CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
UPPER FLOOR FRAMING PLAN

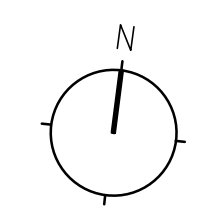
CHK BY: LZE	DRW BY: TNT
SCALE: AS SHOWN BAR = 1" FULL SIZE	
DATE: 06/22/2023	
JOB NO: 20-084	
SHEET: 6 OF 10	
DWG NO: S202	



CHECK SET - NOT FOR CONSTRUCTION

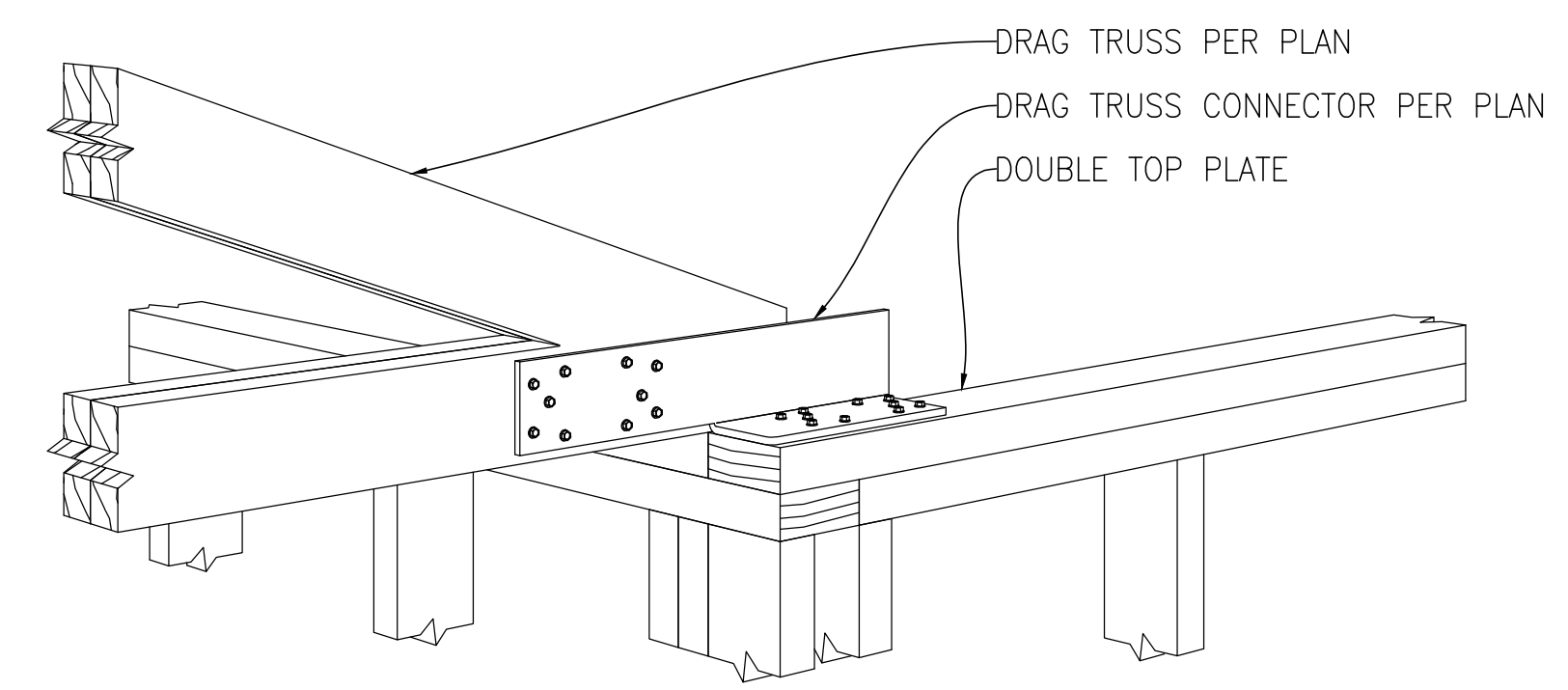


ROOF FRAMING PLAN  
SCALE: 1/4"=1'-0"

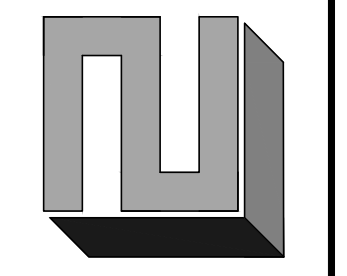


- PLAN NOTES**
- DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
  - ROOF SHEATHING SHALL BE 15/32" APA-RATED PLYWOOD STRUCTURAL SHEATHING FACE GRAIN PERPENDICULAR TO ROOF FRAMING, NAIL W/ 8D @ 6" OC EDGES, 8D @ 12" O.C. FIELD, UNBLOCKED, TYP.
  - FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
  - PROVIDE SIMPSON H1 AT ALL ROOF FRAMING TO EXTERIOR WALLS.
  - PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
  - TRUSS BRACING PER TRUSS MANUFACTURER, TYP.
  - SUPPORT GIRDER/MASTER TRUSSES WITH (3) 2X STUDS MINIMUM, TYP, U.N.O.
  - ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP, U.N.O.
  - ALL EXTERIOR WALLS SHALL BE SW6, U.N.O.
  - AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
  - AT SHEAR WALLS PARALLEL TO FRAMING, ALIGN RAFTER OR BEAM PER PLAN OVER AND UNDER ALL SHEAR WALLS AND BEARING WALLS.
  - ALL HEADERS TO BE 4X8 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
  - TYPICAL LEDGER SHALL BE 2X12 WITH (2) 1/4" DIAMETER X 5" LONG SDS SCREW CTR'D IN EACH STUD @ 16" O.C..
  - SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
  - TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS
  - OPEN WEB WOOD TRUSS (OWWT) LOADING:  
TRUSS SELF WEIGHT IS NOT INCLUDED IN DEAD LOADS. SELF WEIGHT SHALL BE DETERMINED BY TRUSS MANUFACTURER AND INCLUDED IN TRUSS CALCULATIONS.  
TOP CHORD: DEAD LOAD: 10 PSF  
LIVE LOAD: 20 PSF  
SNOW LOAD: 25 PSF  
BOTTOM CHORD: DEAD LOAD: 5 PSF

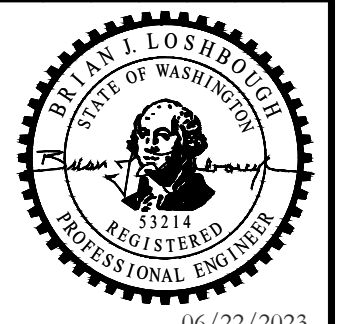
- KEY**
- WALL BELOW
  - POST BELOW
  - HANGER



1 DETAIL  
NTS  
DRAG STRUT CONNECTOR



REVISION	DATE



CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
ROOF FRAMING PLAN

CHK BY: LZE  
DRW BY: TNT

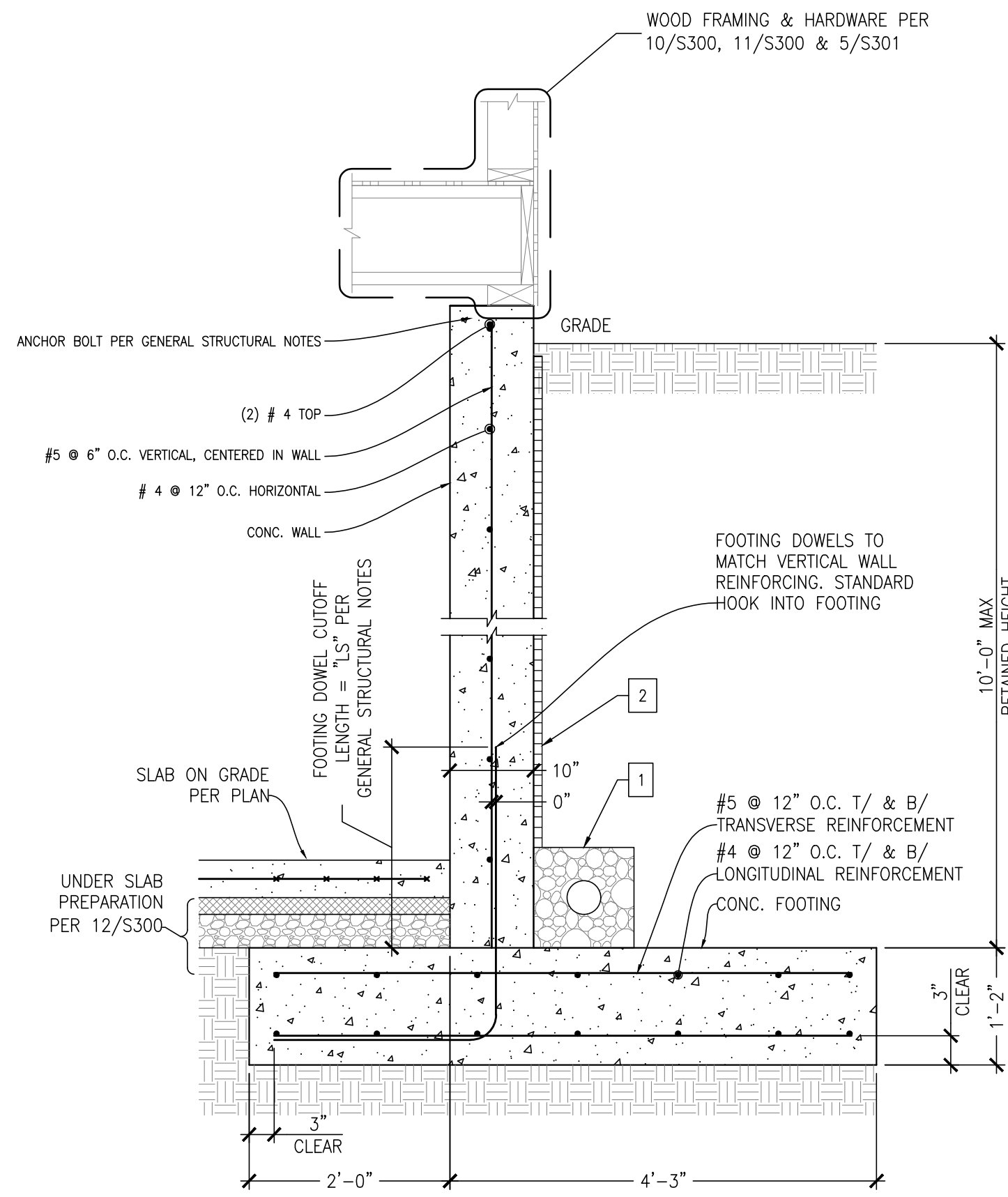
SCALE: AS SHOWN  
BAR = 1"  
FULL SIZE

DATE: 06/22/2023  
JOB NO: 20-084  
SHEET: 7 OF 10  
DWG NO: S203

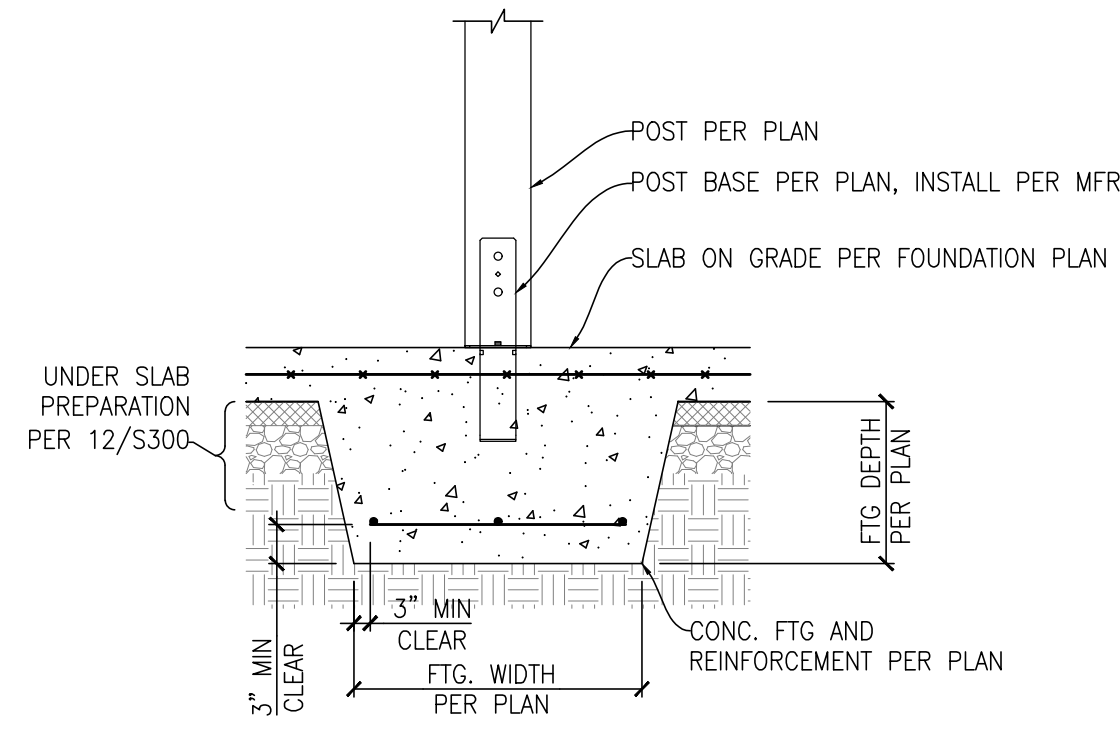


**WALL SECTION GENERAL NOTES:**

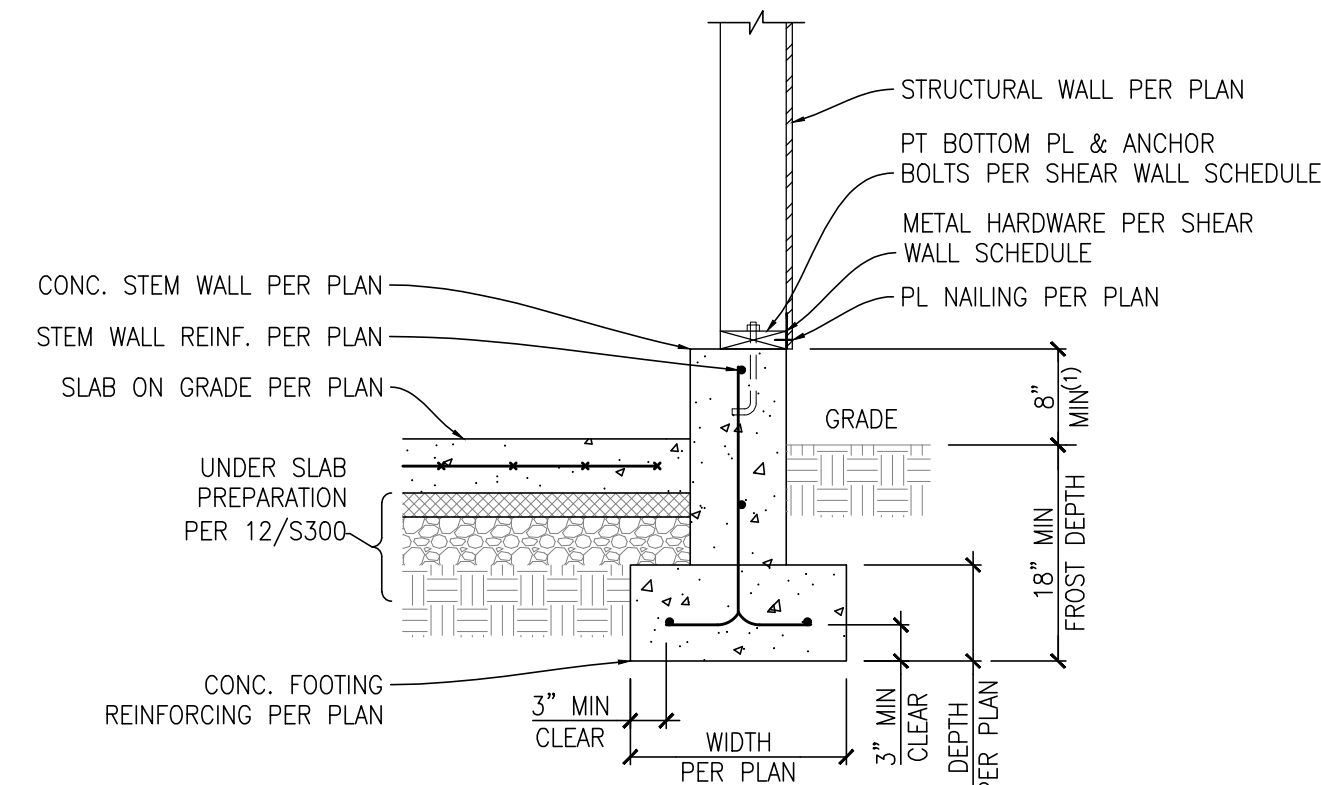
- 4" PERFORATED PVC FOOTING DRAIN WRAPPED IN FILTER FABRIC.
- APPLY PRE-FABRICATED DRAINAGE PANEL (MIRADRAIN 6000 OR EQUIVALENT) TO ALL PERIMETER RETAINING WALLS. EXTEND DRAINAGE PANEL OVER THE FULL HEIGHT OF THE WALL. A 12" THICK LAYER OF FREE-DRAINING GRANULAR FILL MAY BE USED IN LIEU OF THE DRAINAGE PANEL.
- ROOF AND SURFACE RUNOFF SHOULD NOT DISCHARGE INTO THE FOOTING DRAIN SYSTEM.
- SHORING WHERE REQUIRED PER OTHERS
- HEEL AND TOE NOT TO SCALE, BUILD ACCORDING TO DETAIL DIMENSIONS.
- HEAVY EQUIPMENT SURCHARGE NOT PERMITTED ADJACENT TO RETAINING WALL, HEEL SIDE.



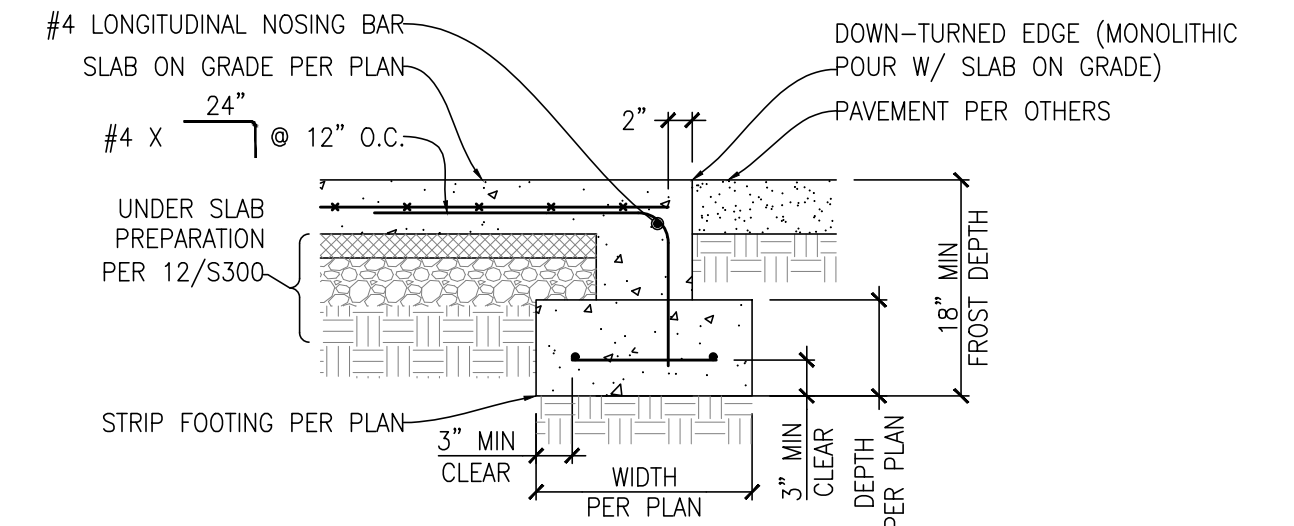
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SCALE: 3/4"=1'-0"  
EXTERIOR RETAINING WALL



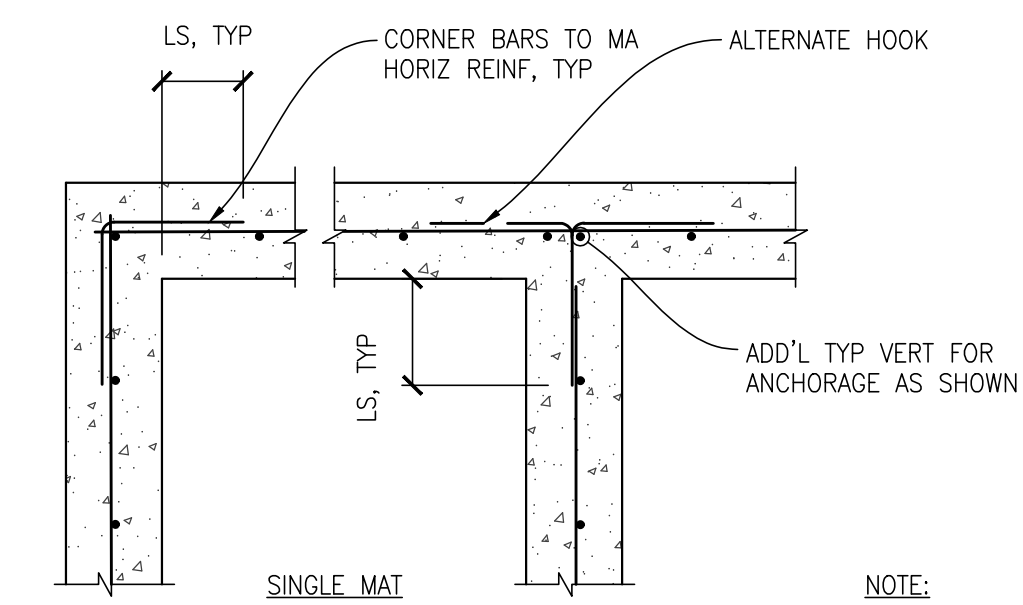
**2 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL THICKENED SLAB



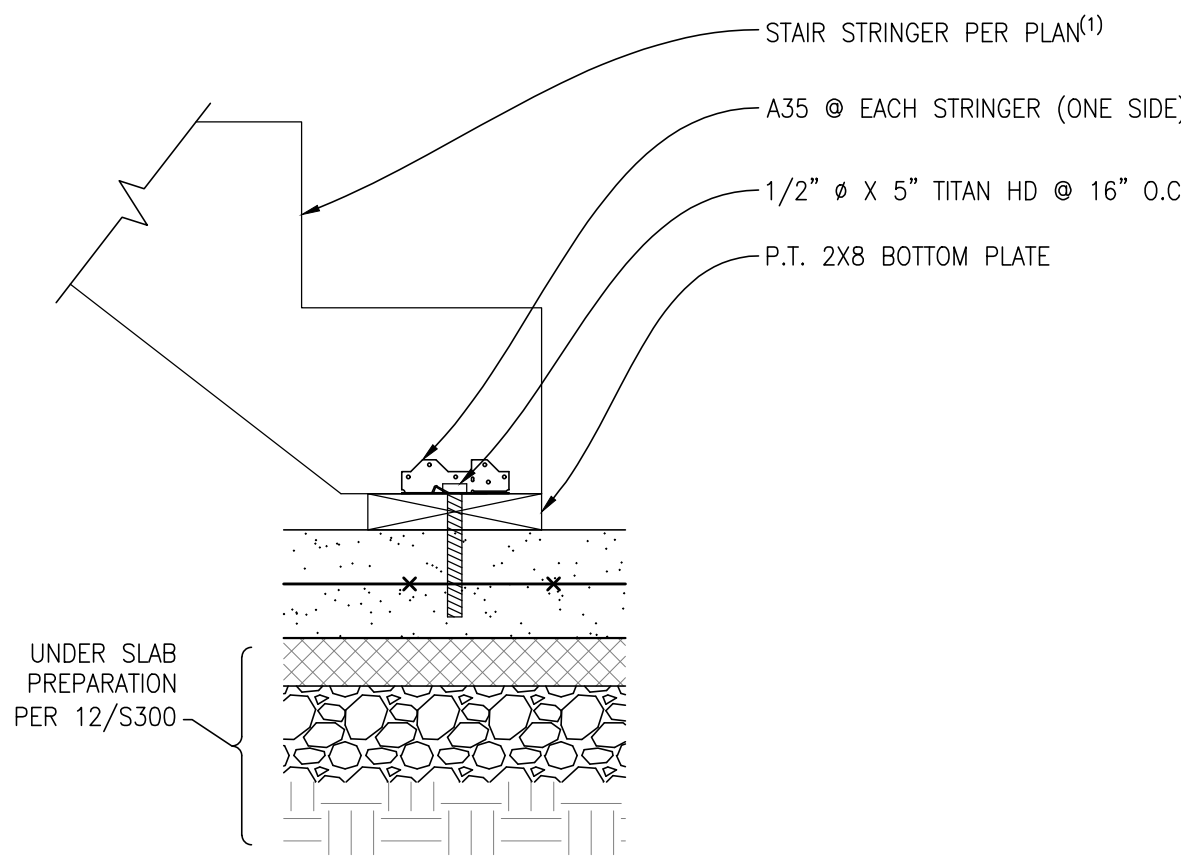
**3 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL EXTERIOR STRIP FOOTING



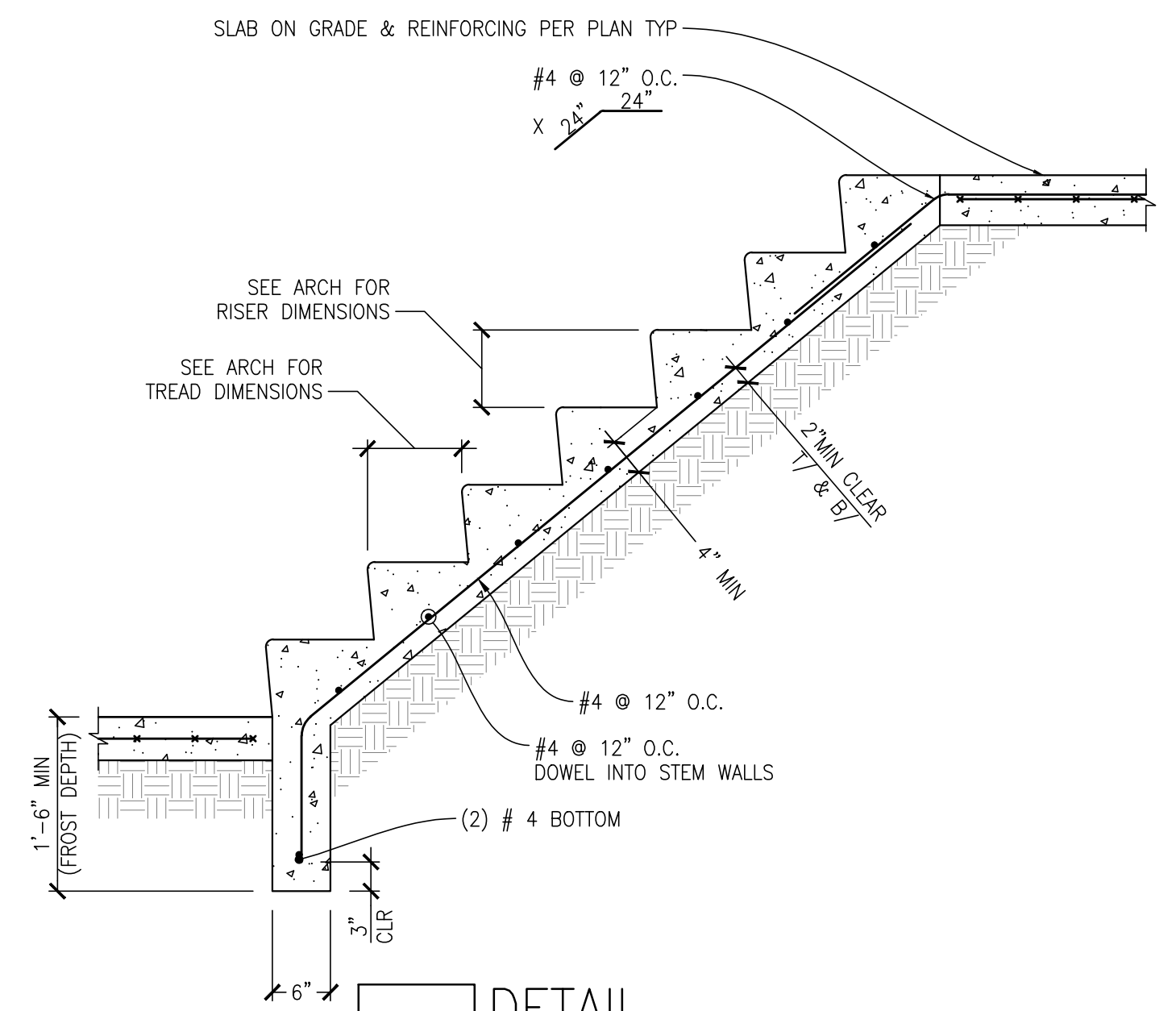
**4 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL DOWNTURNED EDGE



**5 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL CORNER REINFORCING

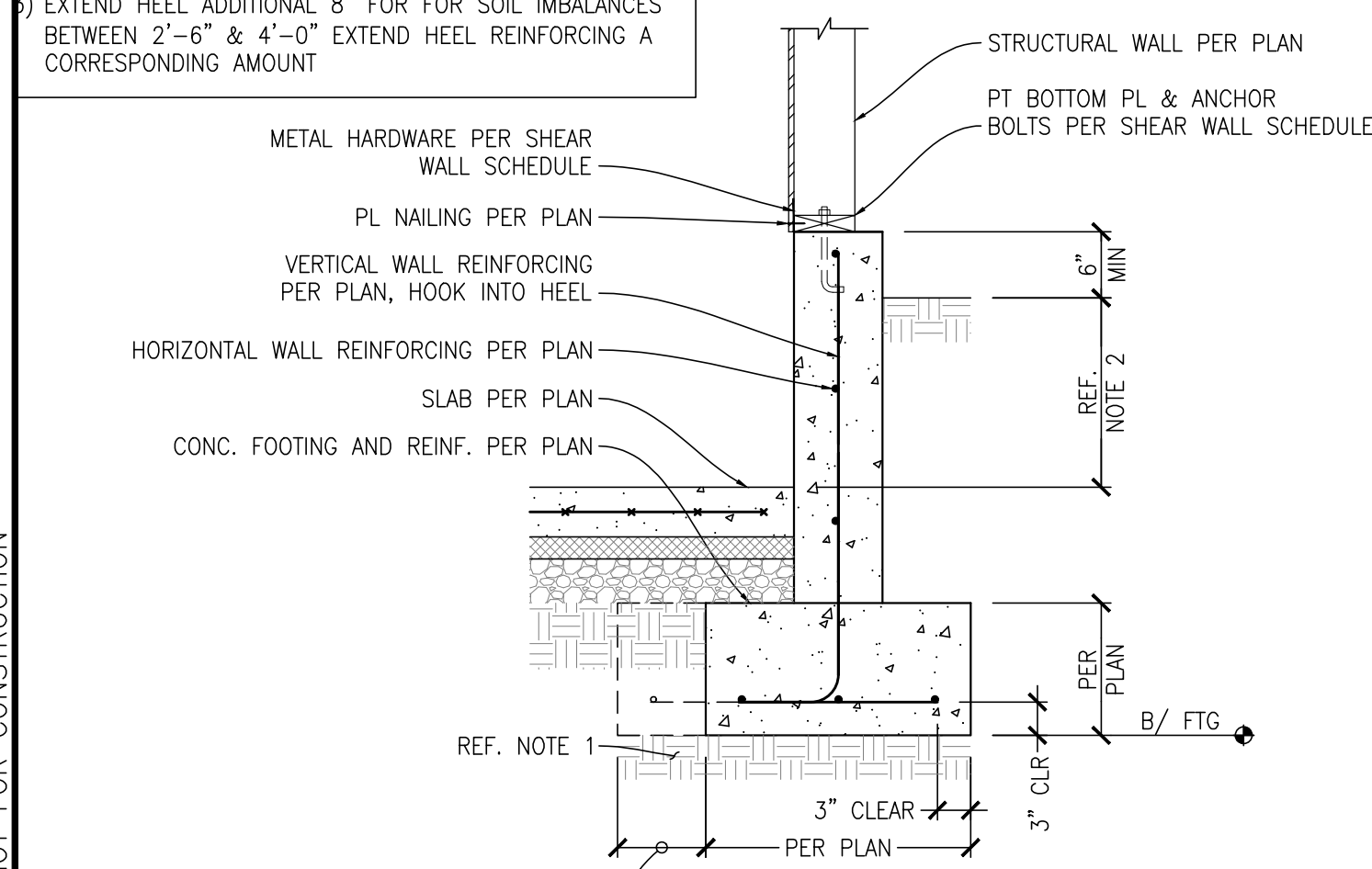


**6 DETAIL**  
SCALE: 1 1/2"=1'-0"  
WOOD STRINGER TO SOG

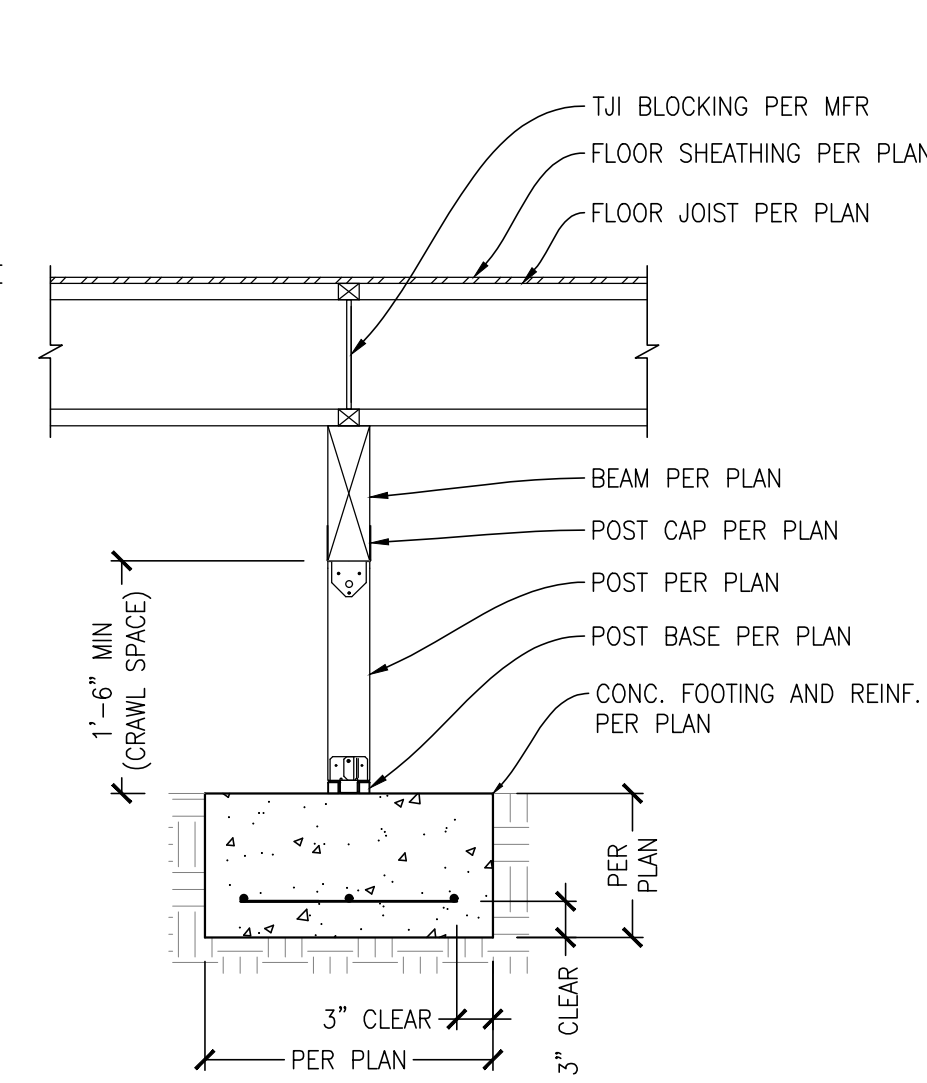


**7 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL CONC. STAIR ON GRADE

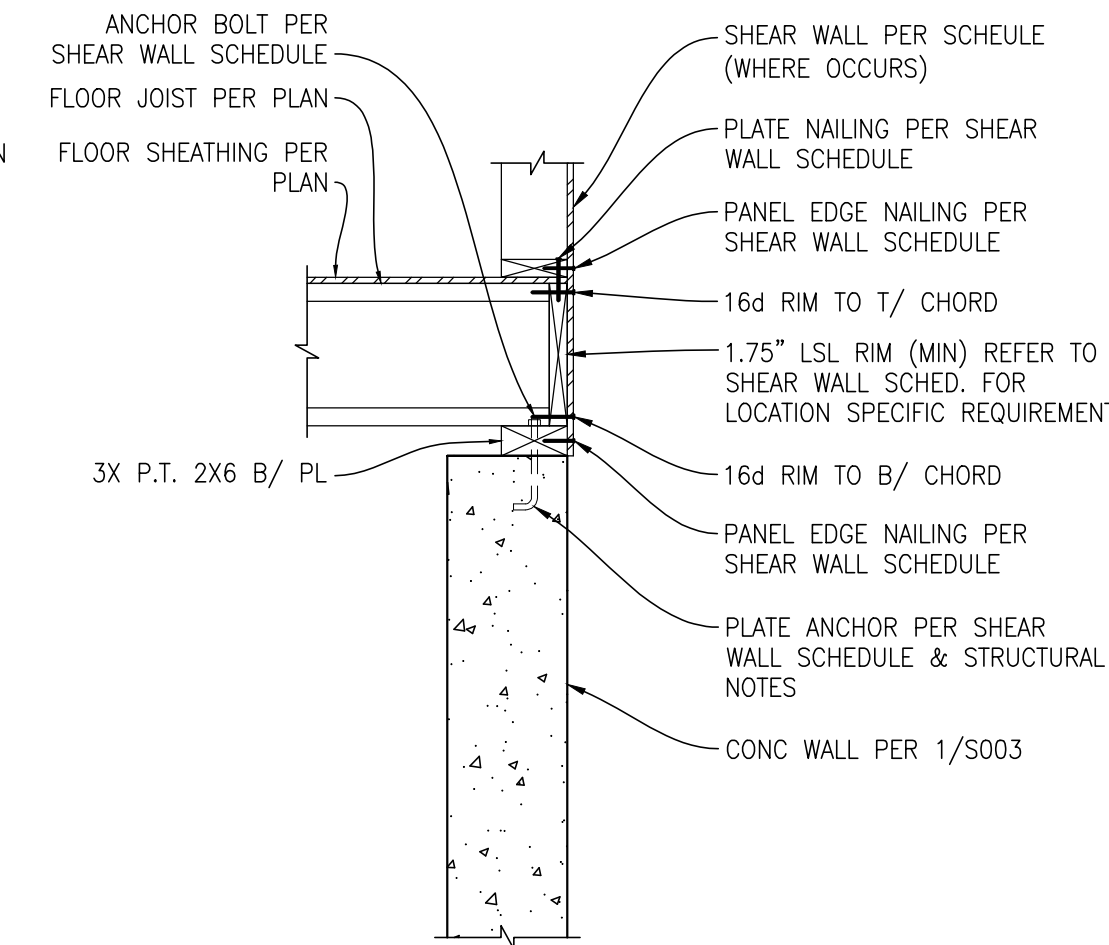
- NOTES**
- UNDER FOOTING PREPARATION PER GEOTECHNICAL ENGINEER
  - FOOTING WIDTH AS NOTED ON PLAN CORRESPONDS TO 2'-6" MAX SOIL IMBALANCE
  - EXTEND HEEL ADDITIONAL 8" FOR SOIL IMBALANCES BETWEEN 2'-6" & 4'-0" EXTEND HEEL REINFORCING A CORRESPONDING AMOUNT



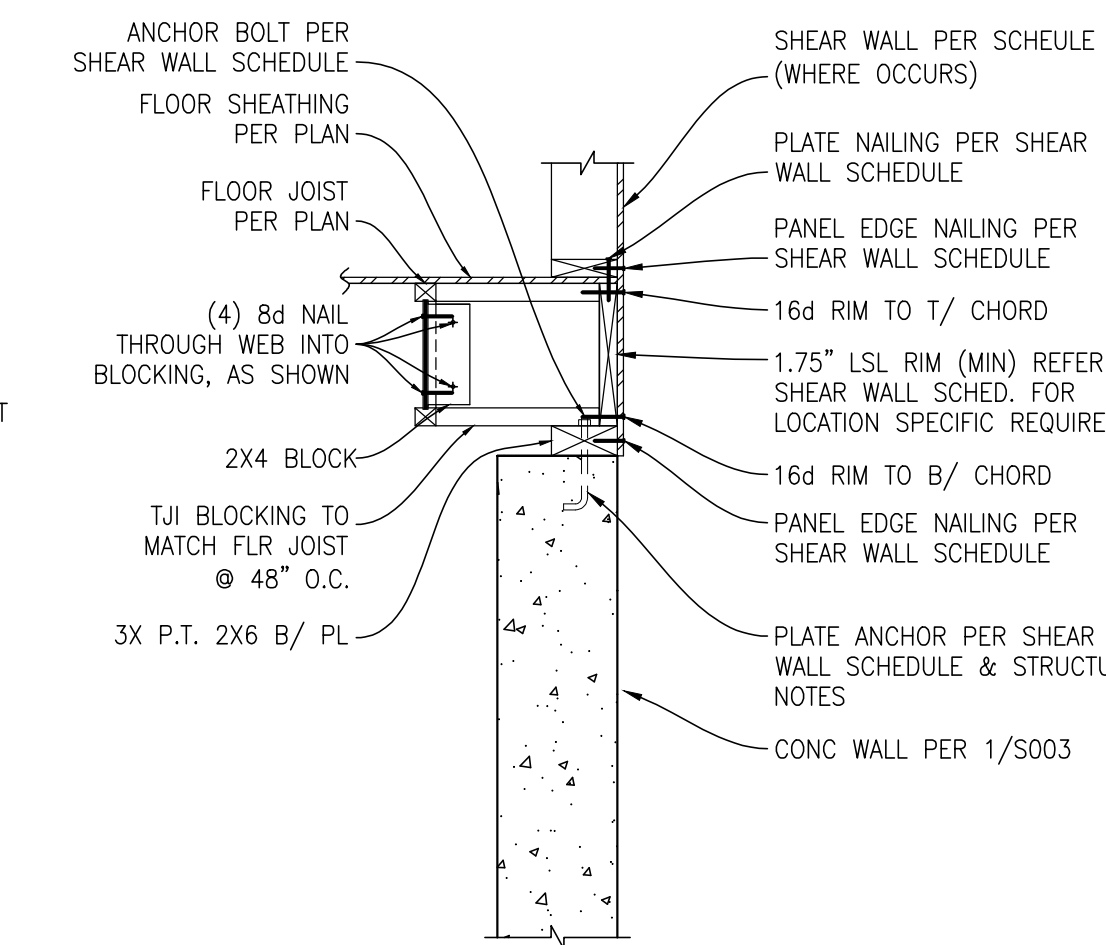
**8 DETAIL**  
SCALE: 3/4"=1'-0"  
INTERIOR RETAINING WALL



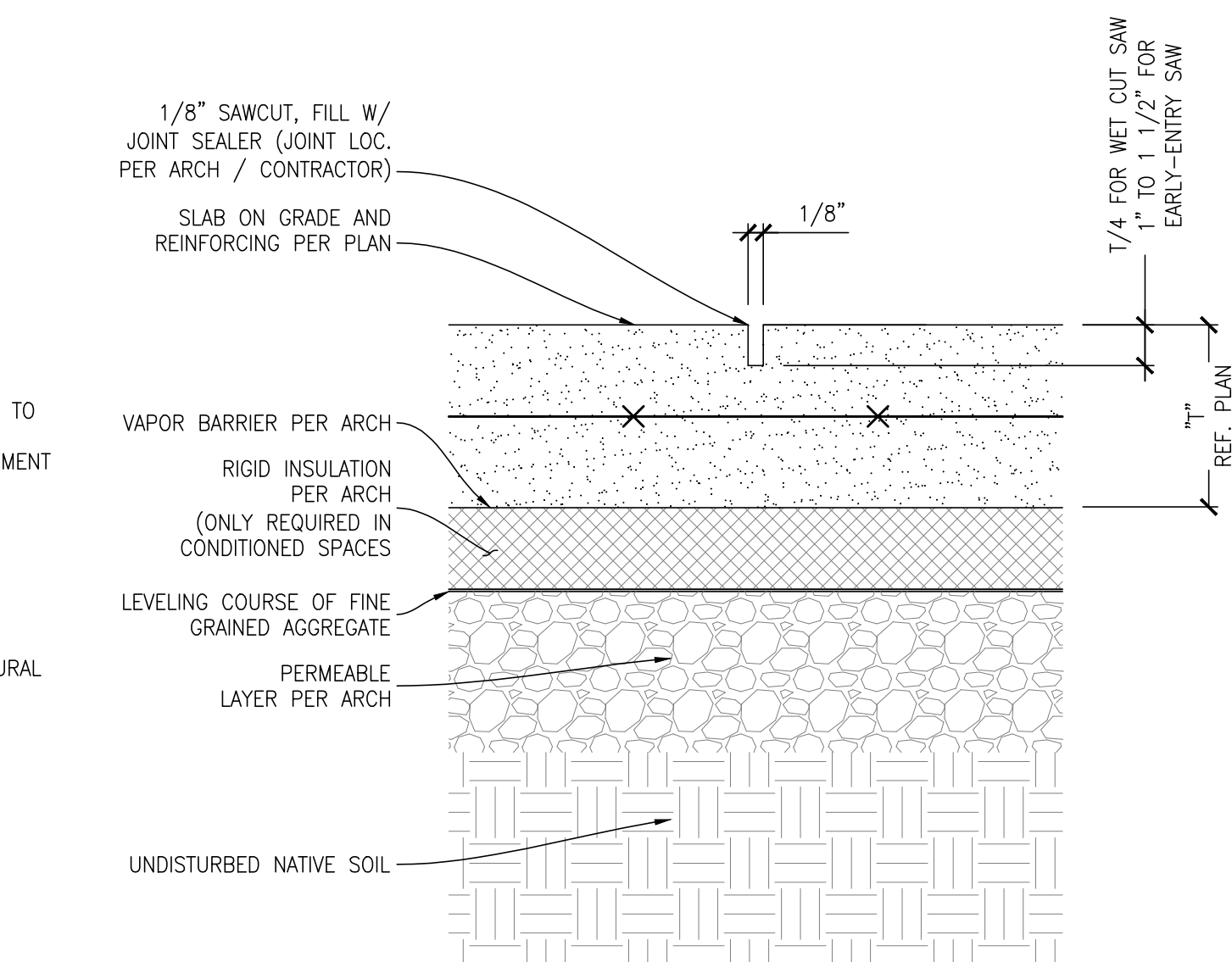
**9 DETAIL**  
SCALE: 3/4"=1'-0"  
ISOLATED POST BASE



**10 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PERP. TO CONC. WALL



**11 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PARALLEL TO CONC. WALL



**12 DETAIL**  
SCALE: 3/4"=1'-0"  
TYPICAL SAW CUT JOINT

CHECK SET - NOT FOR CONSTRUCTION

**L2 ENGINEERS**  
DESIGN AND PLANNING  
17848 NE 198TH PLACE  
WOODINVILLE, WA 98072

CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
STRUCTURAL DETAILS

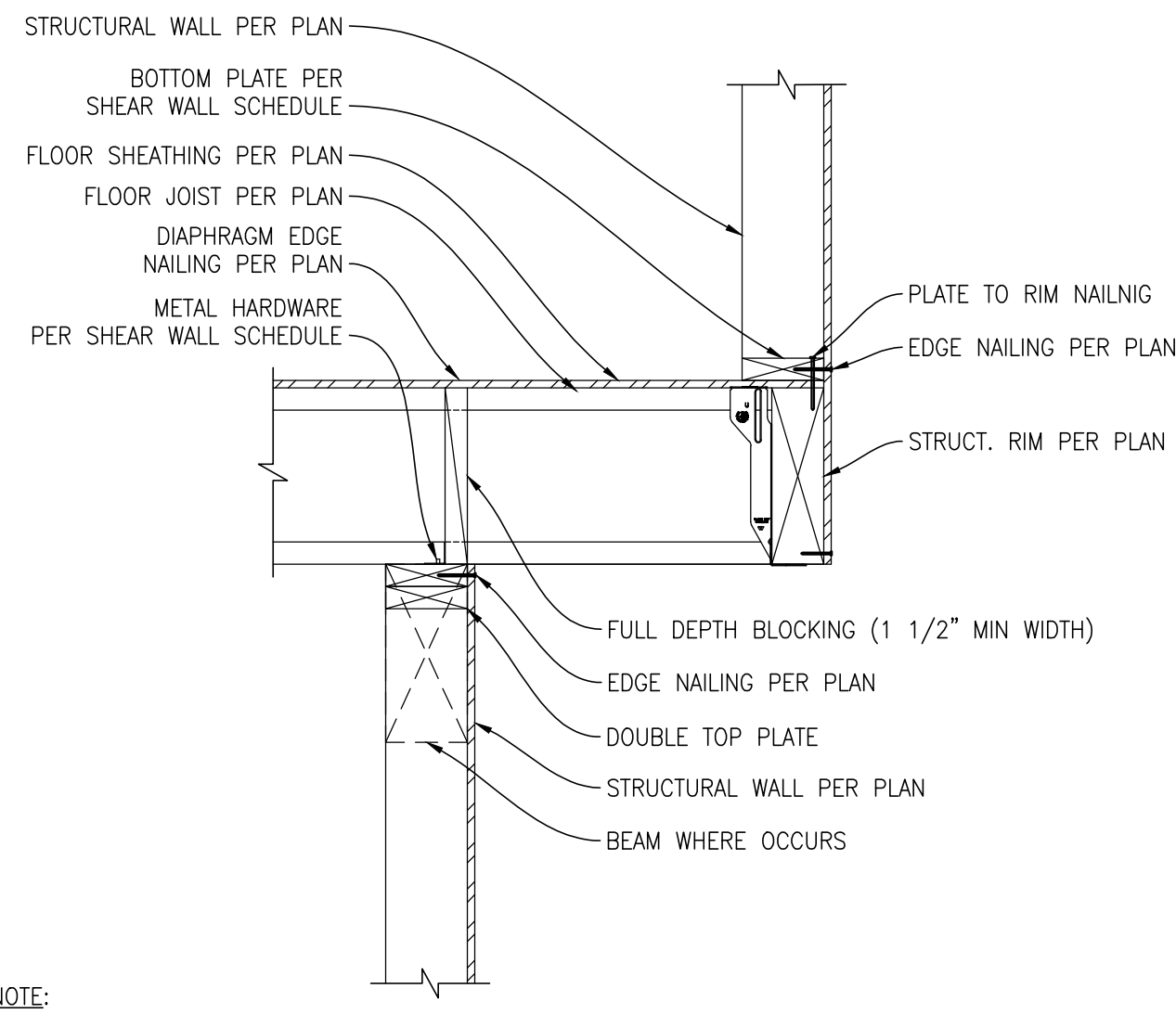
DATE: 06/22/2023  
REVISION: [ ]  
DATE: [ ]  
DATE: [ ]

CHK BY: LZE  
DRW BY: TNT

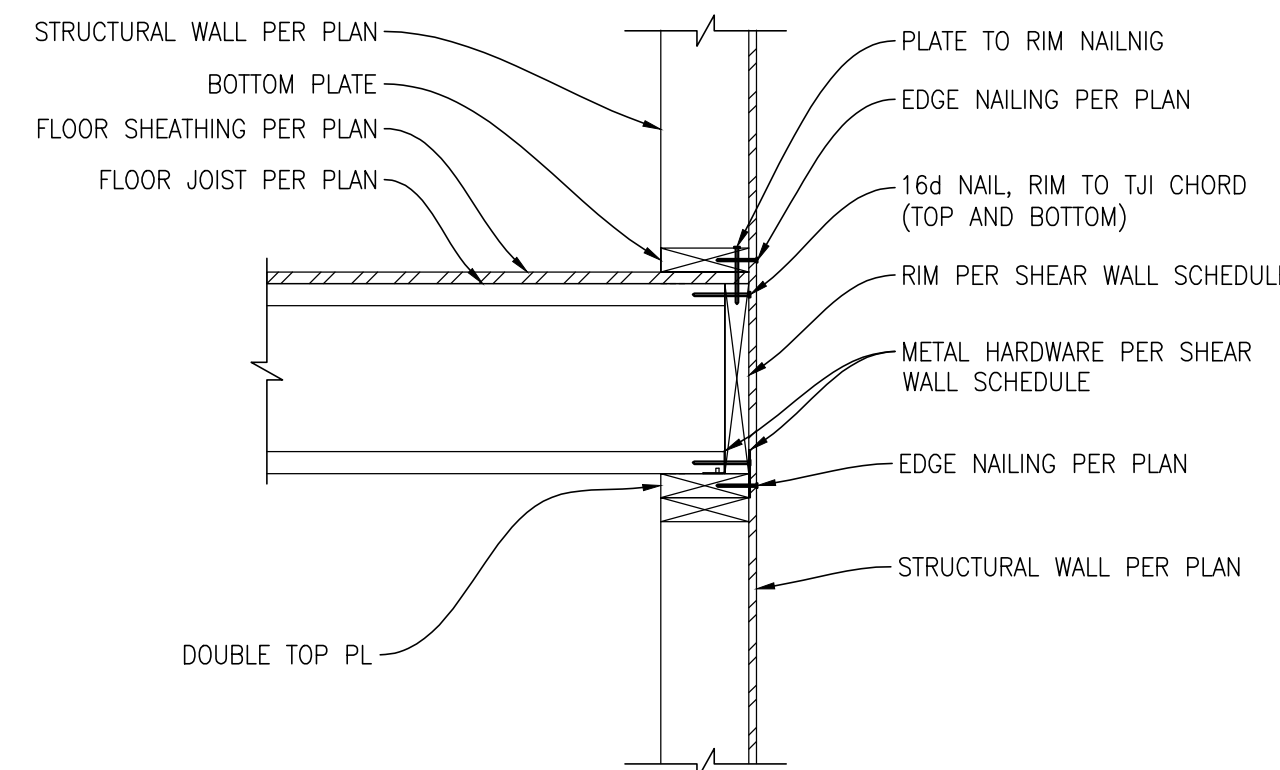
SCALE: AS SHOWN  
BAR = 1" FULL SIZE

DATE: 06/22/2023  
JOB NO: 20-084  
SHEET: 8 OF 10  
DWG NO: S300

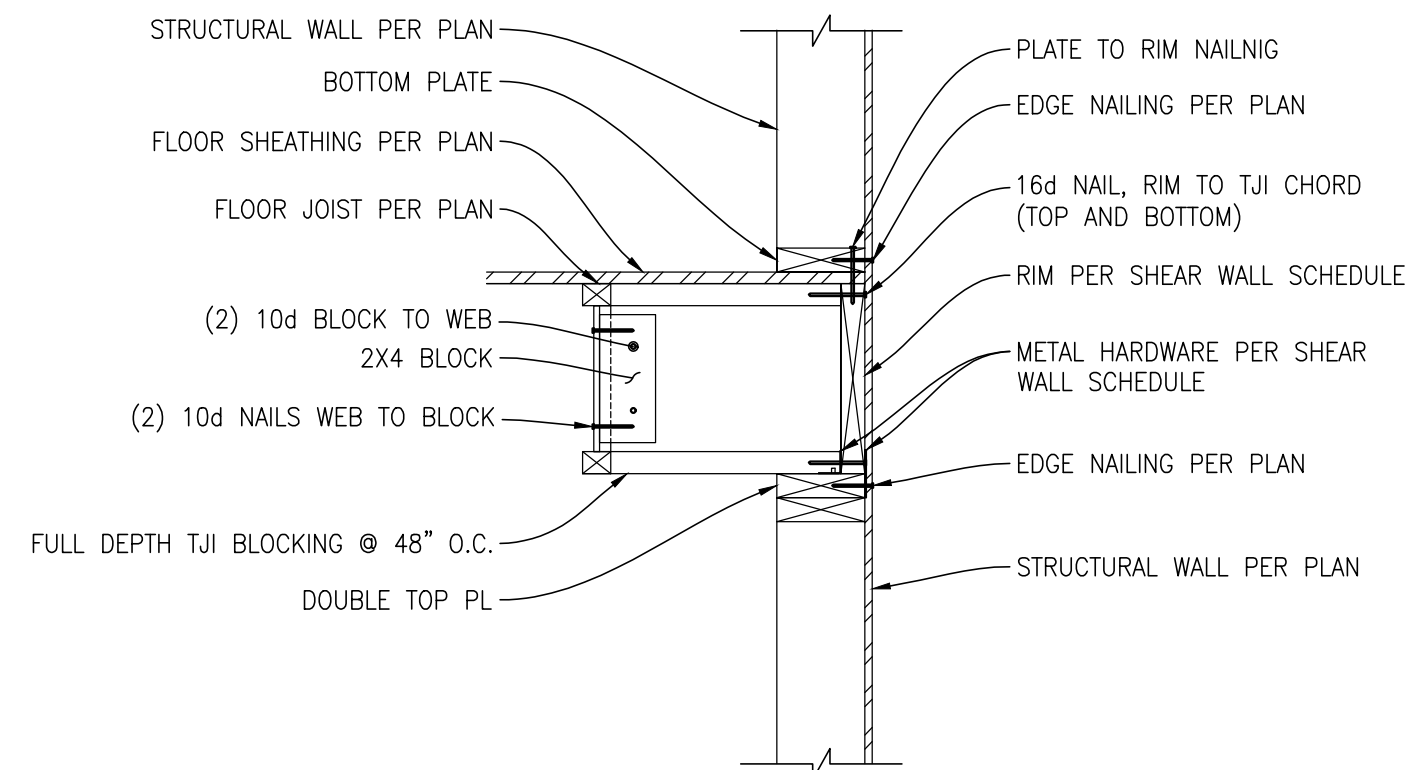




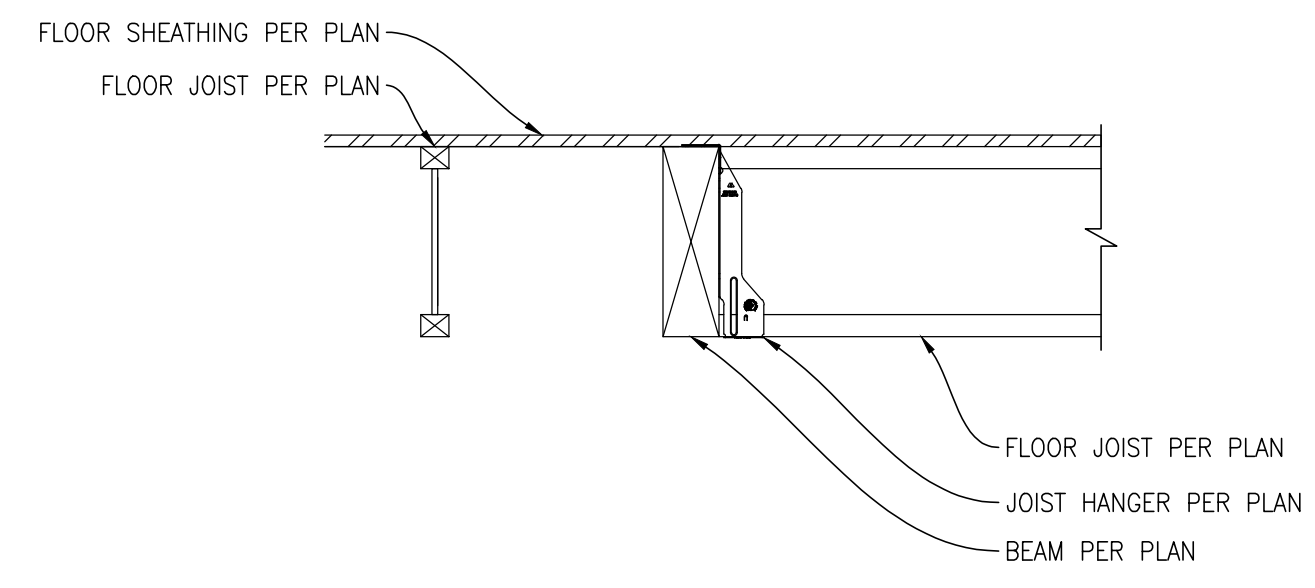
**1 DETAIL**  
SCALE: 3/4"=1'-0"  
CANTILEVERED FLOOR



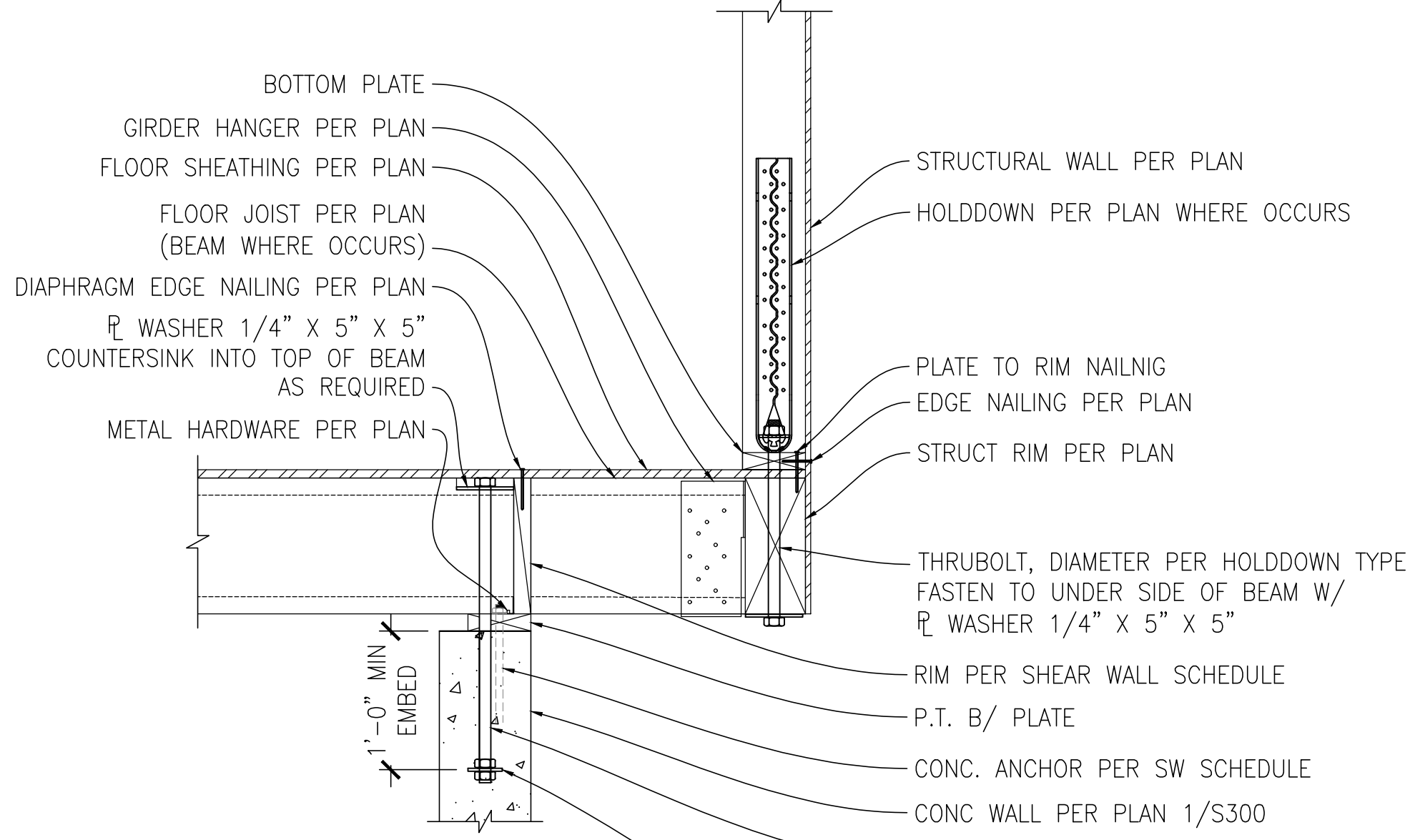
**2 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PERP TO WALL



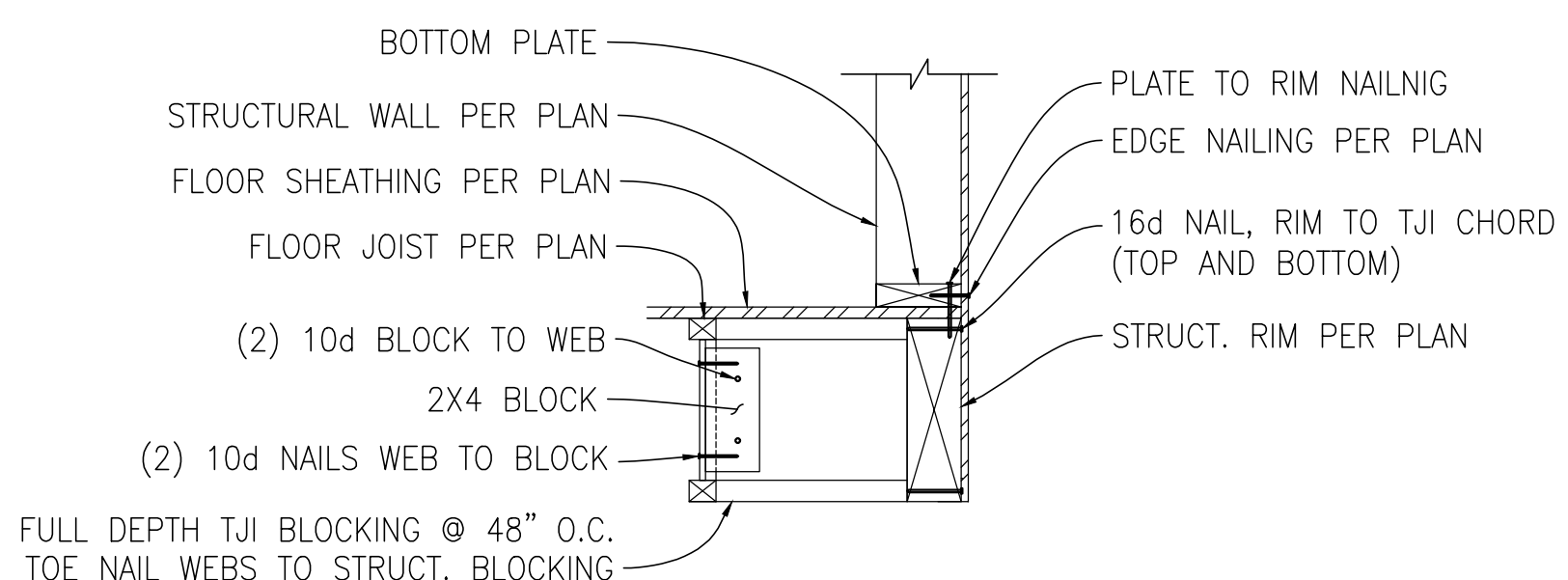
**3 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PARALLEL TO WALL



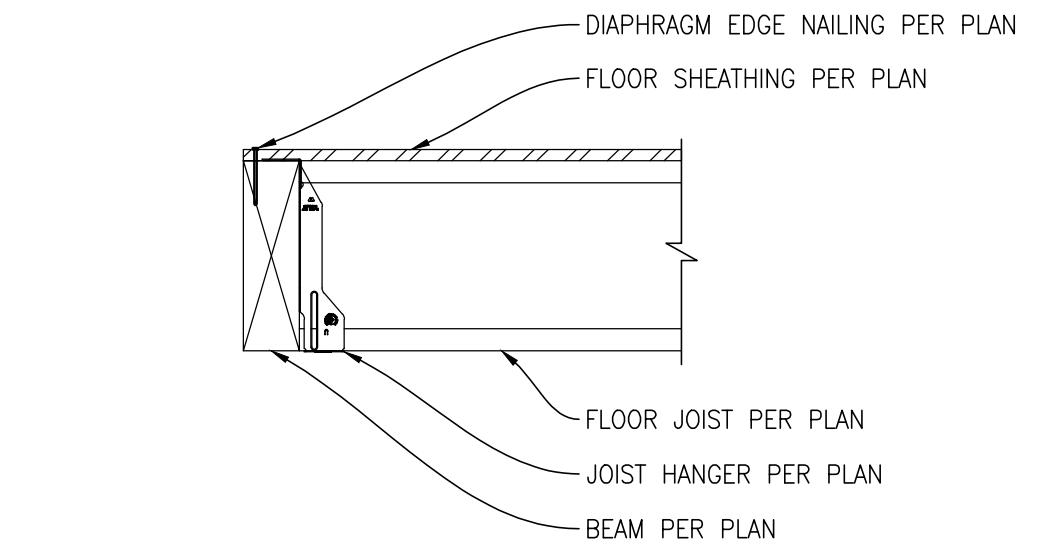
**4 DETAIL**  
SCALE: 3/4"=1'-0"  
JOIST TO BEAM



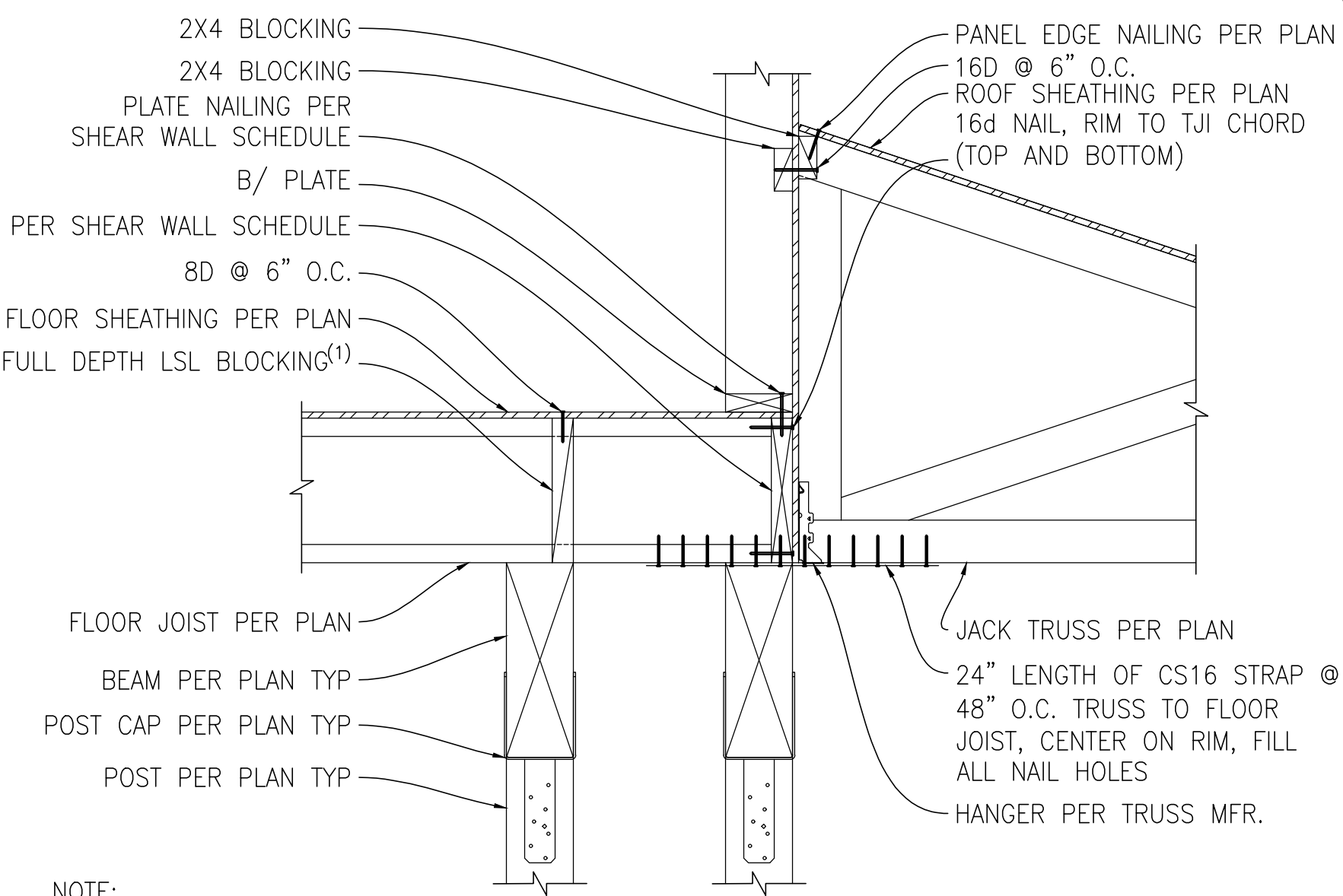
**5 DETAIL**  
SCALE: 3/4"=1'-0"  
UPLIFT TRANSFER BEAM



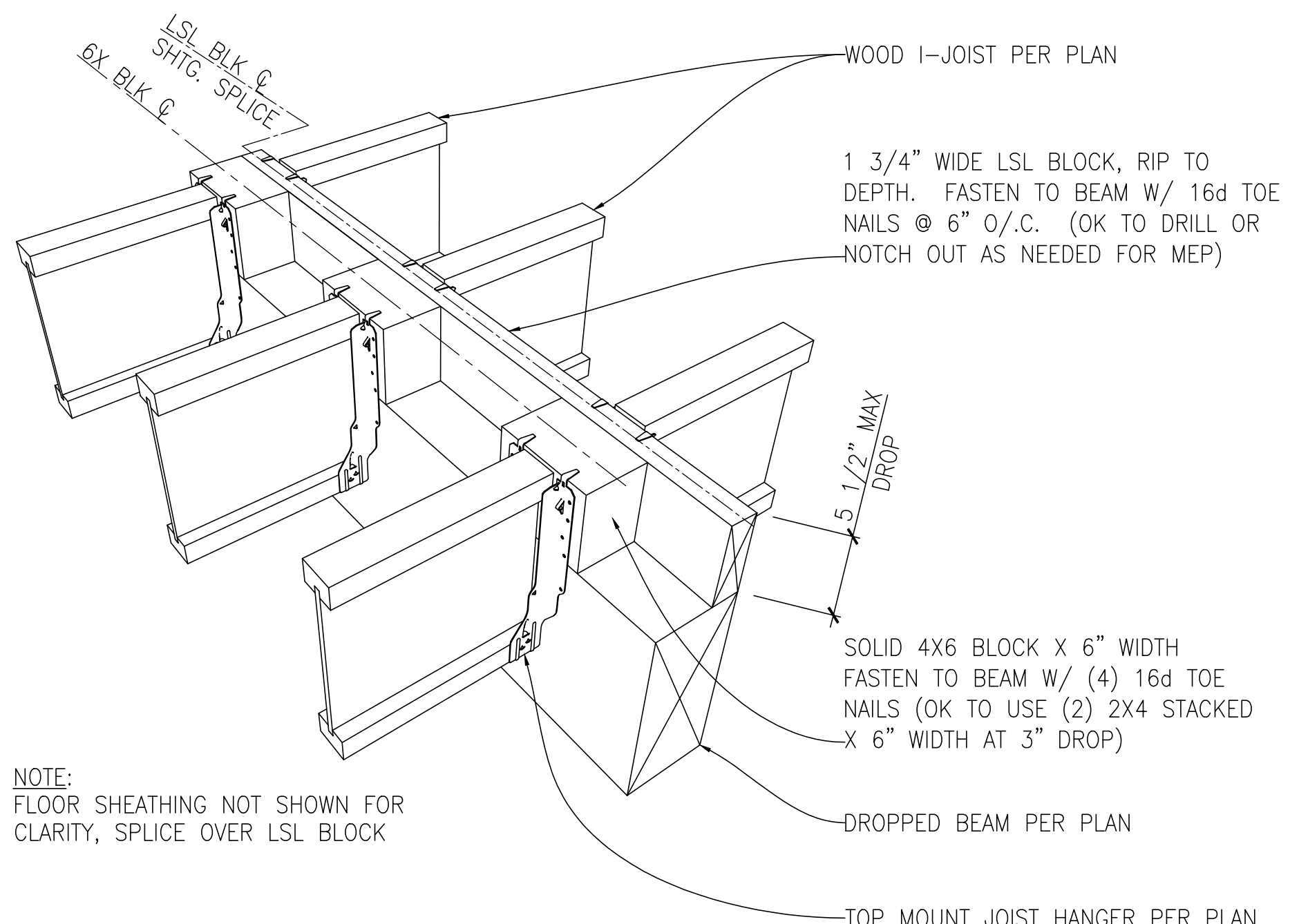
**6 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PARALLEL TO BEAM



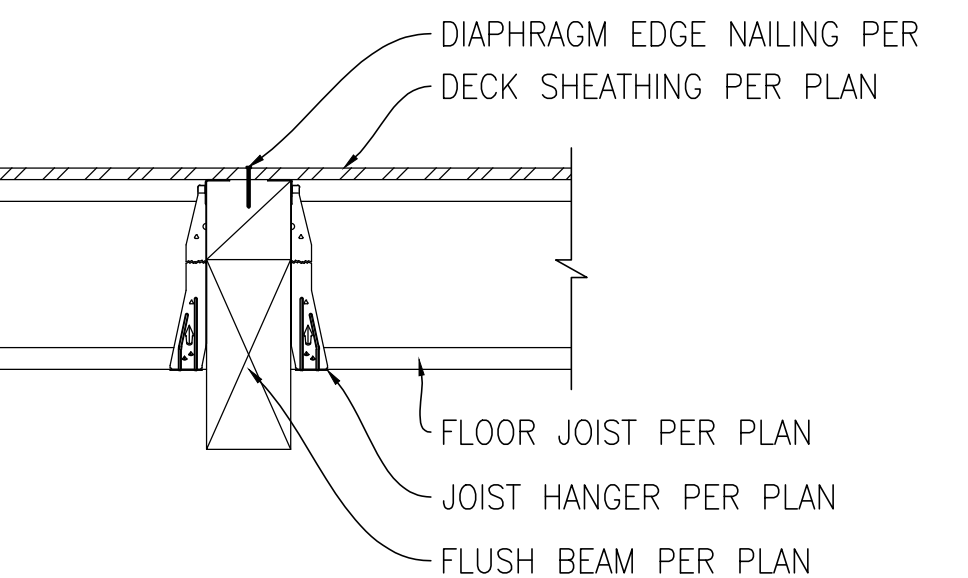
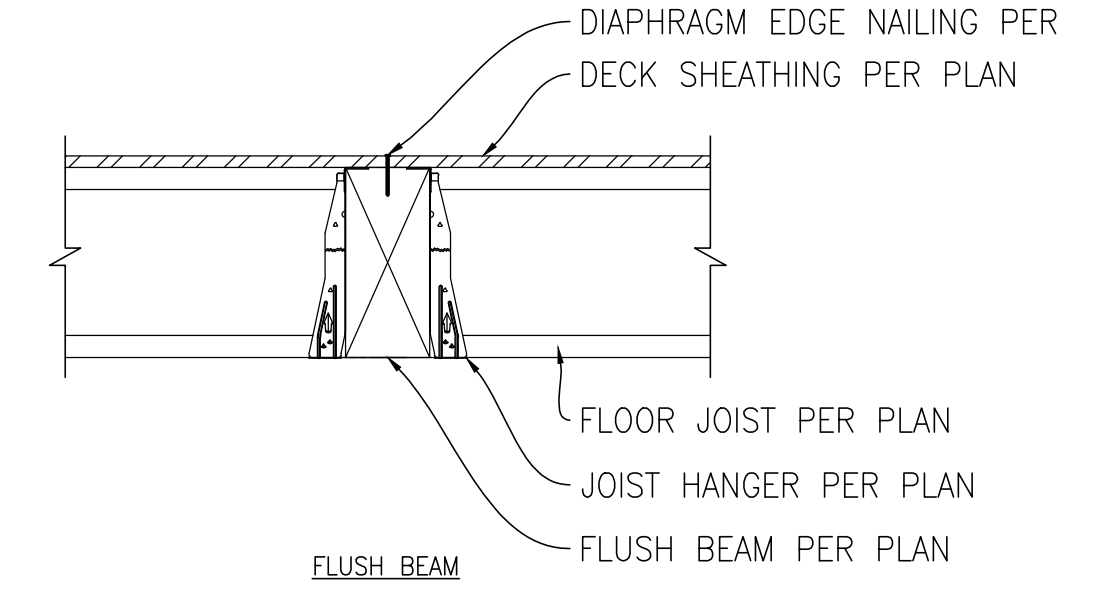
**7 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PERP. TO BEAM (ONE SIDE)



**8 DETAIL**  
SCALE: 3/4"=1'-0"  
EXTERIOR WALL TO JACK TRUSS CONNECTION



**9 DETAIL**  
SCALE: NTS  
JOIST TO BEAM / PARTIALLY DROPPED VARIANT

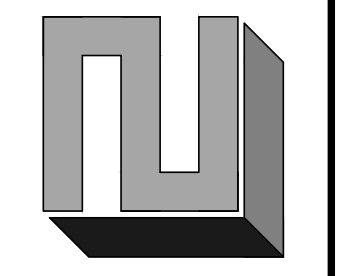


**11 DETAIL**  
SCALE: 3/4"=1'-0"  
TJI PERP. TO BEAM (BOTH SIDES)

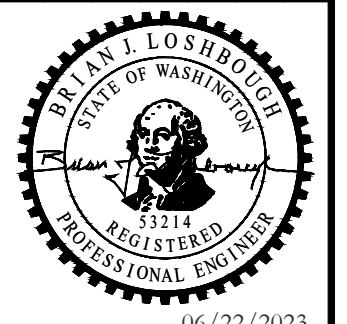
NOTE:  
1. FASTEN RIM TO BEAM W/ A34 @ 48" O.C.

NOTE:  
FLOOR SHEATHING NOT SHOWN FOR CLARITY, SPLICE OVER LSL BLOCK

CHECK SET - NOT FOR CONSTRUCTION



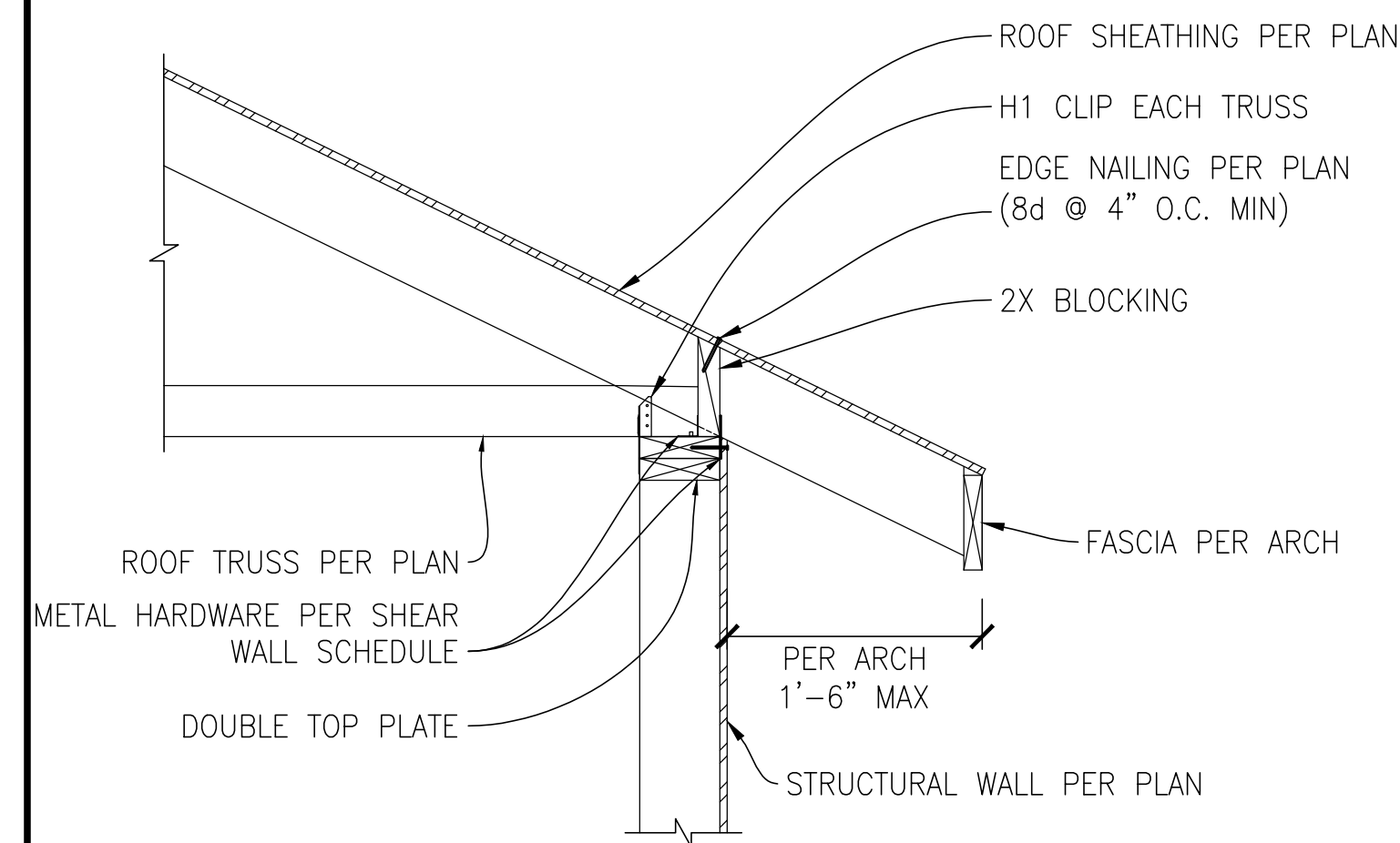
REVISION	DATE



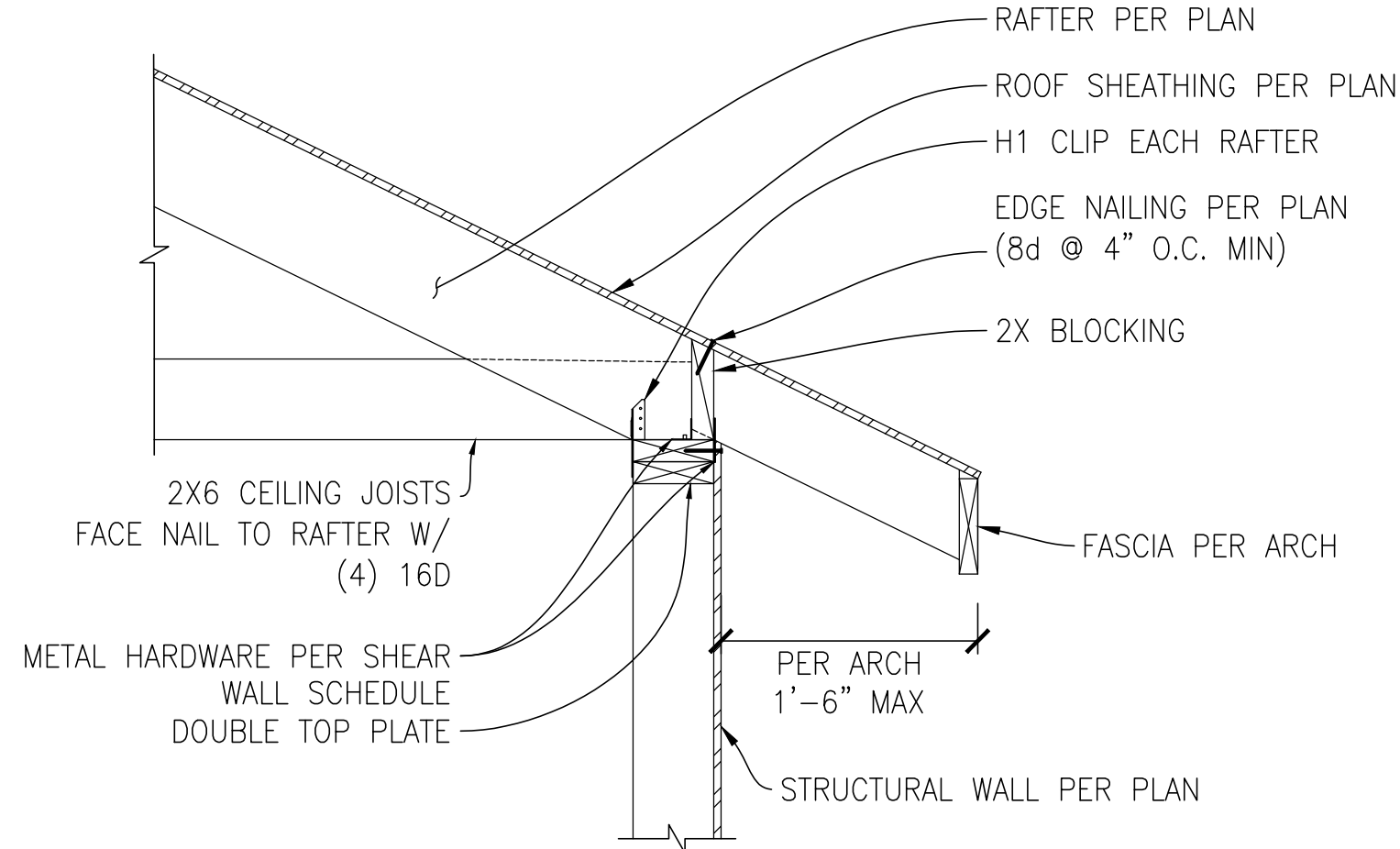
CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
STRUCTURAL DETAILS

CHK BY: LZE	DRW BY: TNT
SCALE: AS SHOWN BAR = 1" FULL SIZE	
DATE: 06/22/2023	
JOB NO: 20-084	
SHEET: 9 OF 10	
DWG NO: S301	

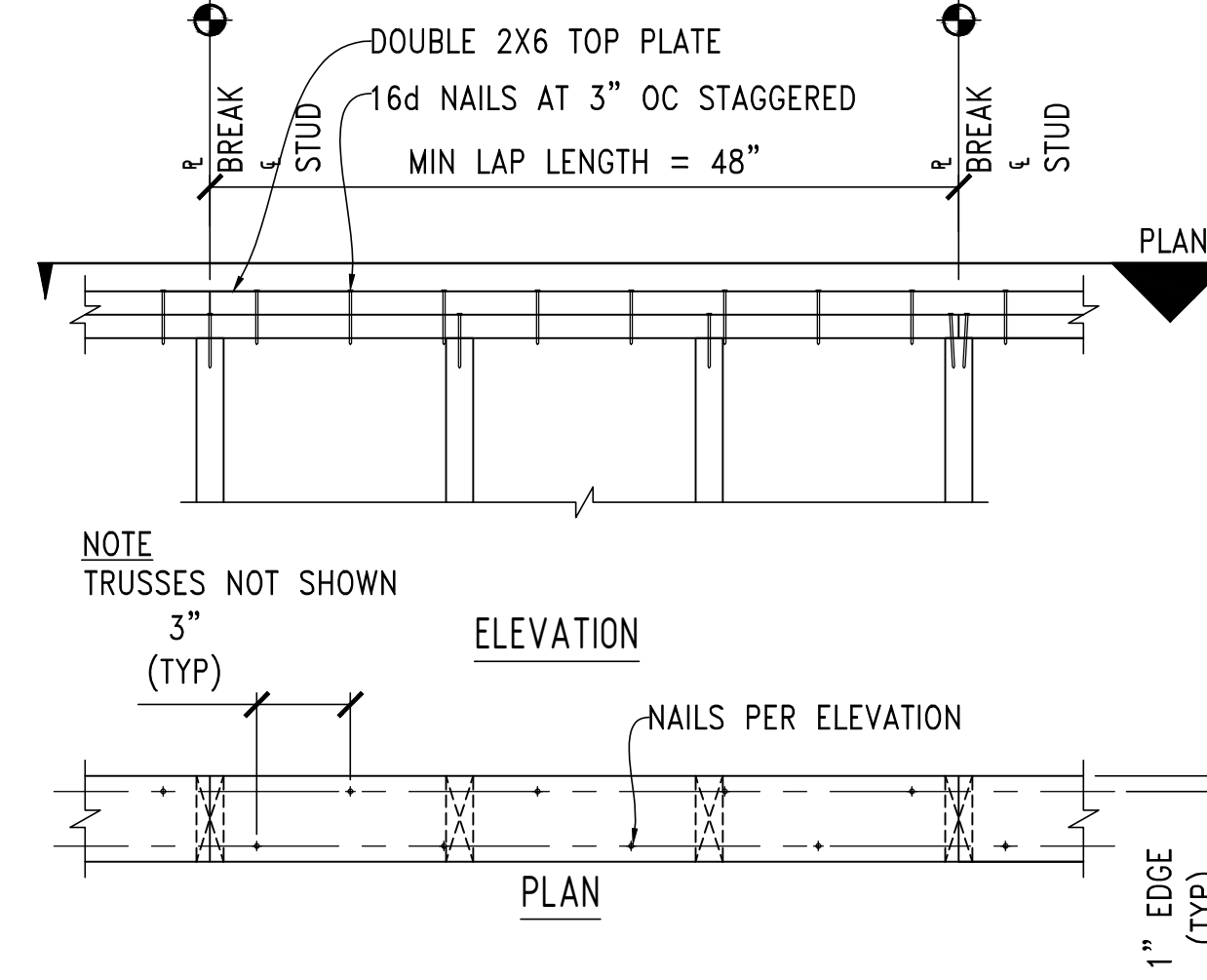




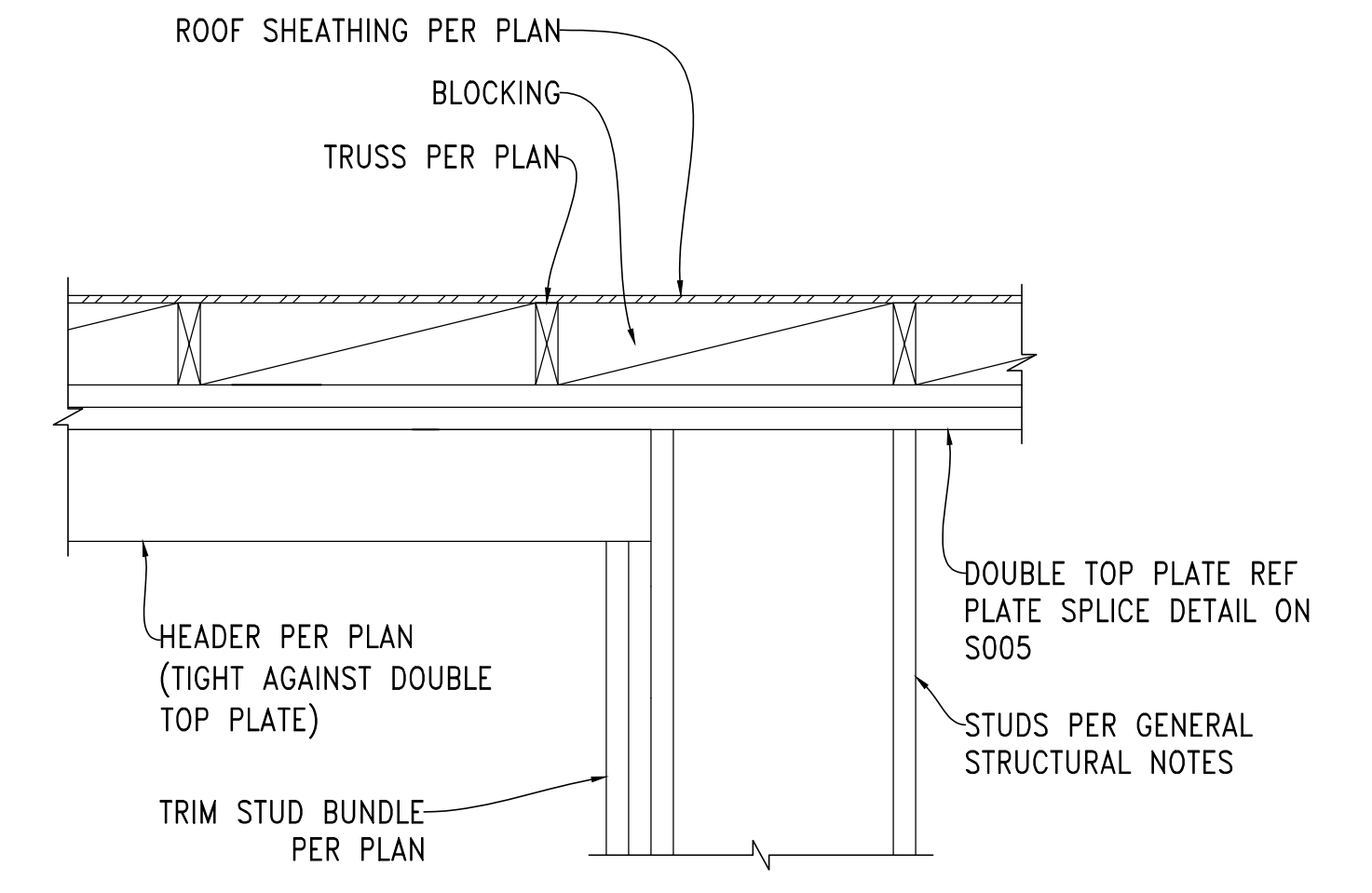
**1** DETAIL  
SCALE: 3/4"=1'-0"  
TYPICAL ROOF TRUSS PERP TO WALL



**2** DETAIL  
SCALE: 3/4"=1'-0"  
TYPICAL RAFTER PER TO WALL

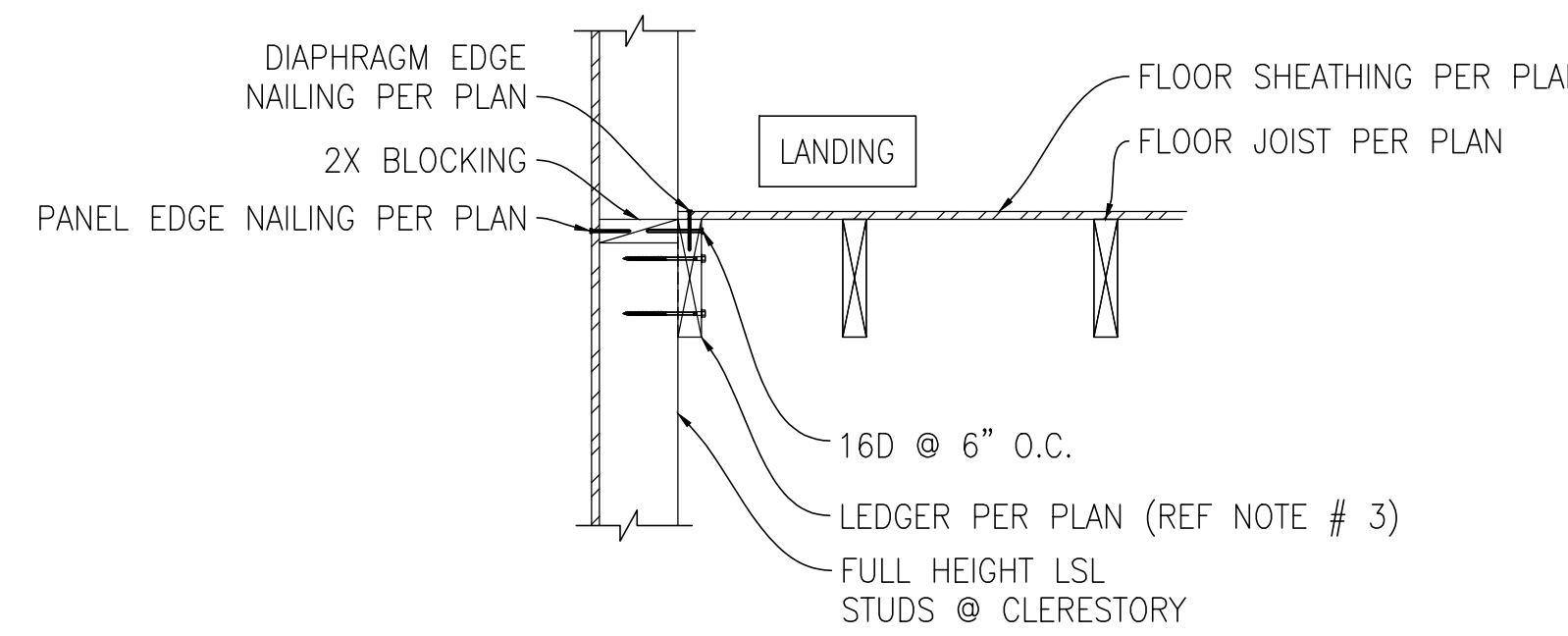


**3** DETAIL  
SCALE: 3/4"=1'-0"  
TYPICAL PLATE SPLICE

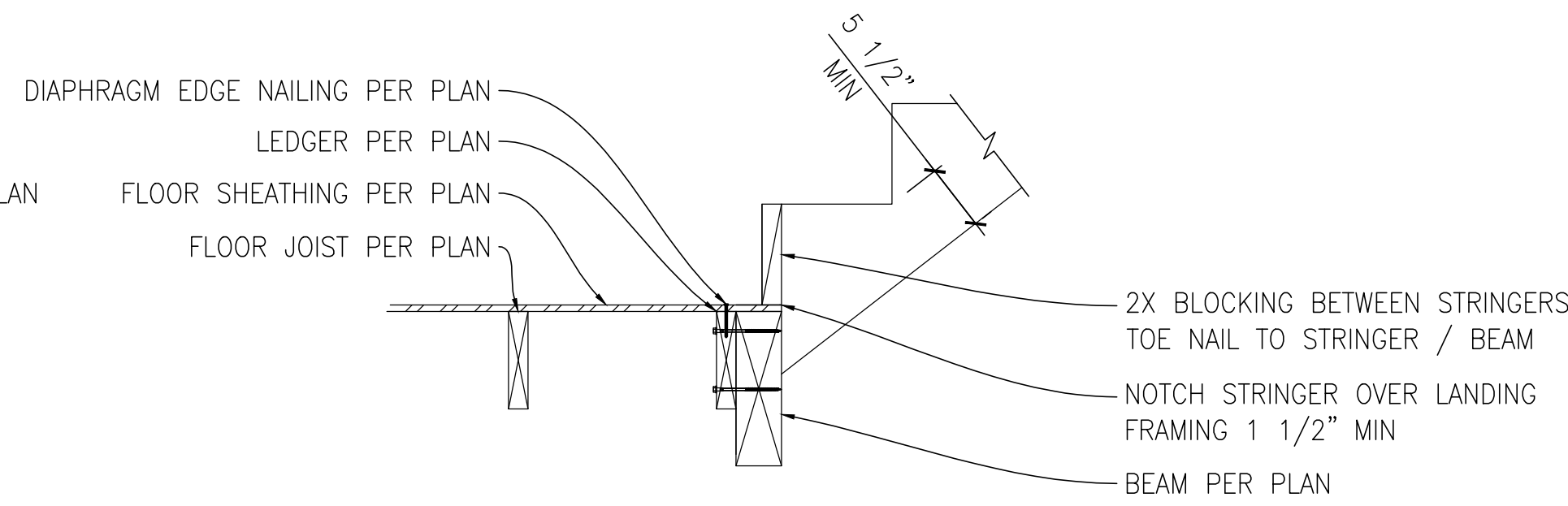


**4** DETAIL  
SCALE: 3/4"=1'-0"  
TYPICAL HEADER

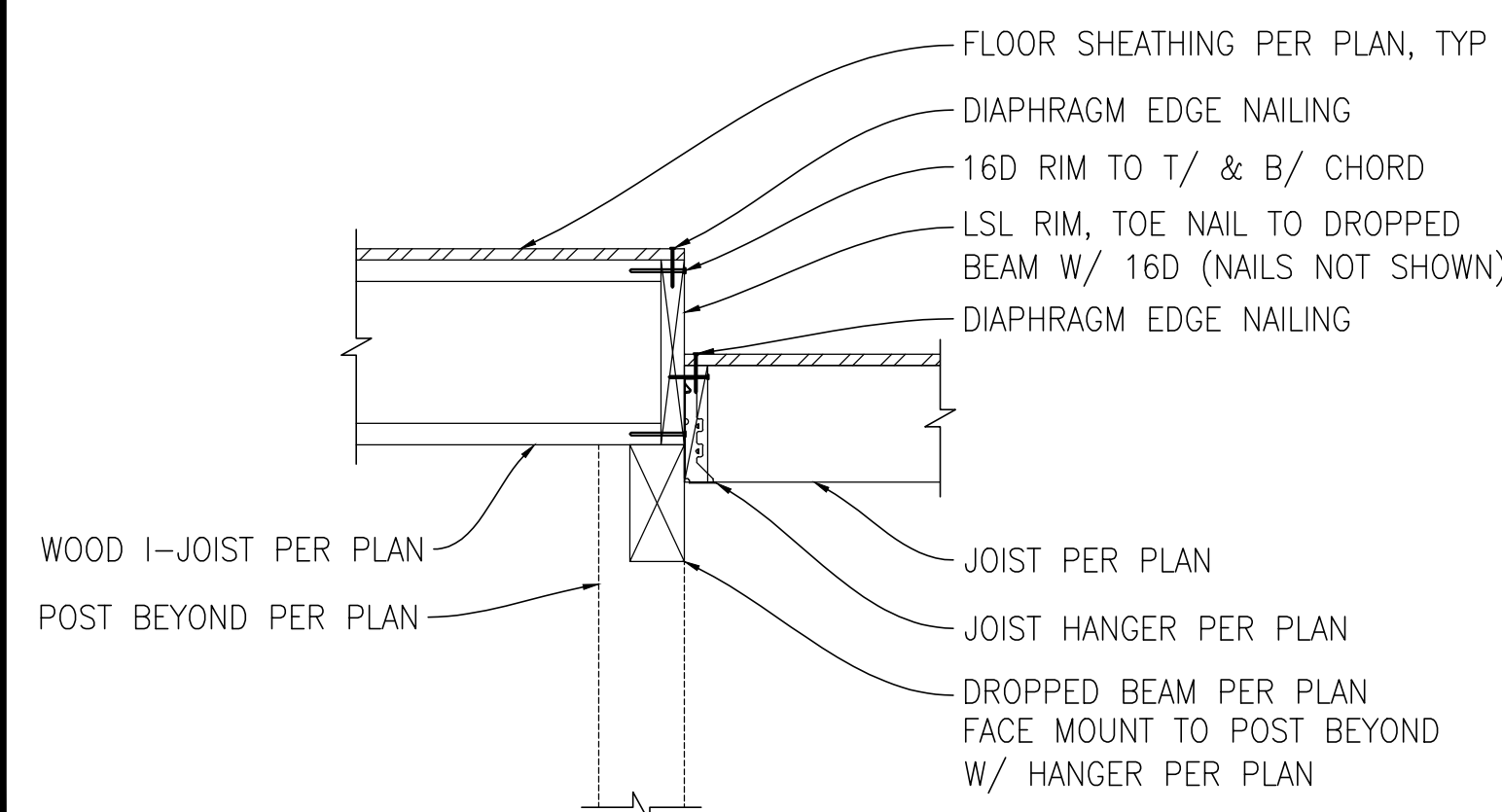
- STAIR / LANDING FRAMING NOTES**
- RISE / RUN PER ARCHITECT
  - TREAD AND RISER PER ARCHITECT
  - CENTER LEDGER SCREWS IN PERIMETER WALLS IN LSL STUDS. POSITION SCREWS 1 1/2" MIN FROM T/ & B/ OF LEDGER RESPECTIVELY.
  - STAIR FRAMING SHOWS WOOD STRINGERS OPTION. STEEL STAIR FRAMING OR OTHER IS ACCEPTABLE, DESIGN PER OTHERS.



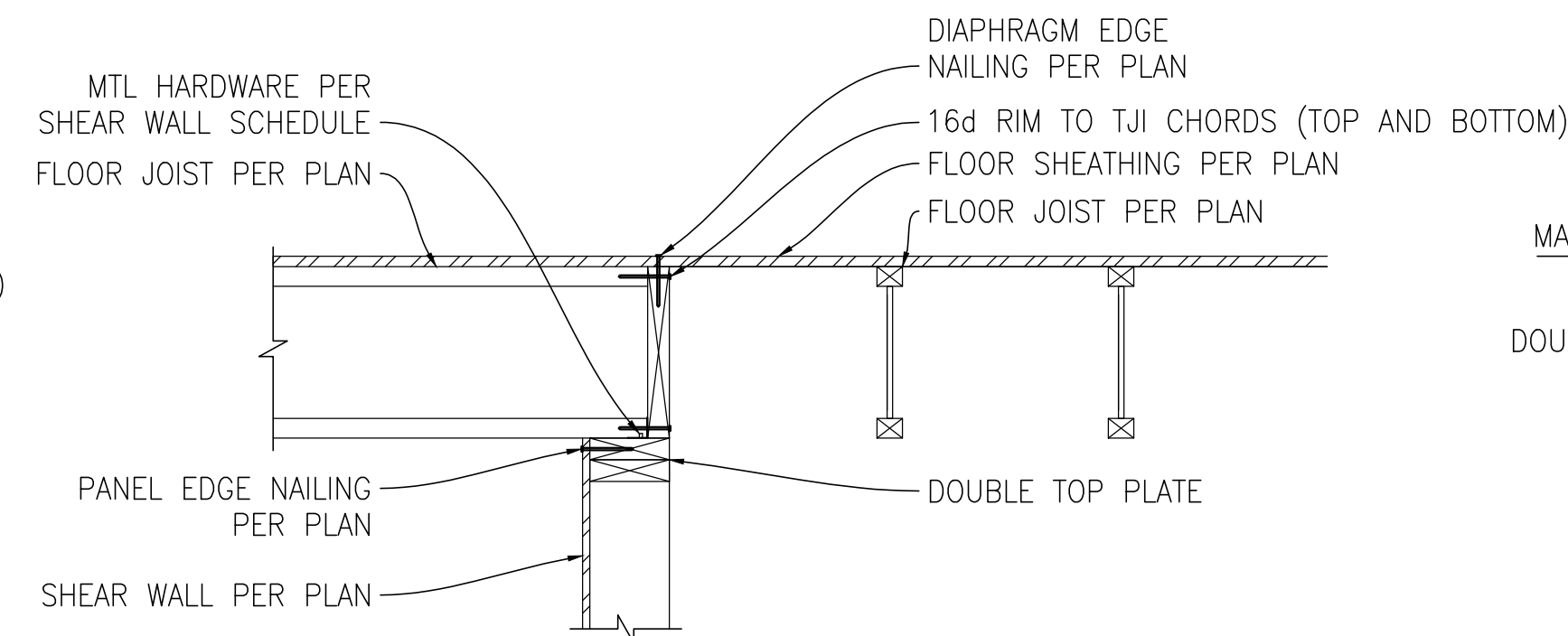
**5** DETAIL  
SCALE: 3/4"=1'-0"  
TYPICAL LANDING FRAMING



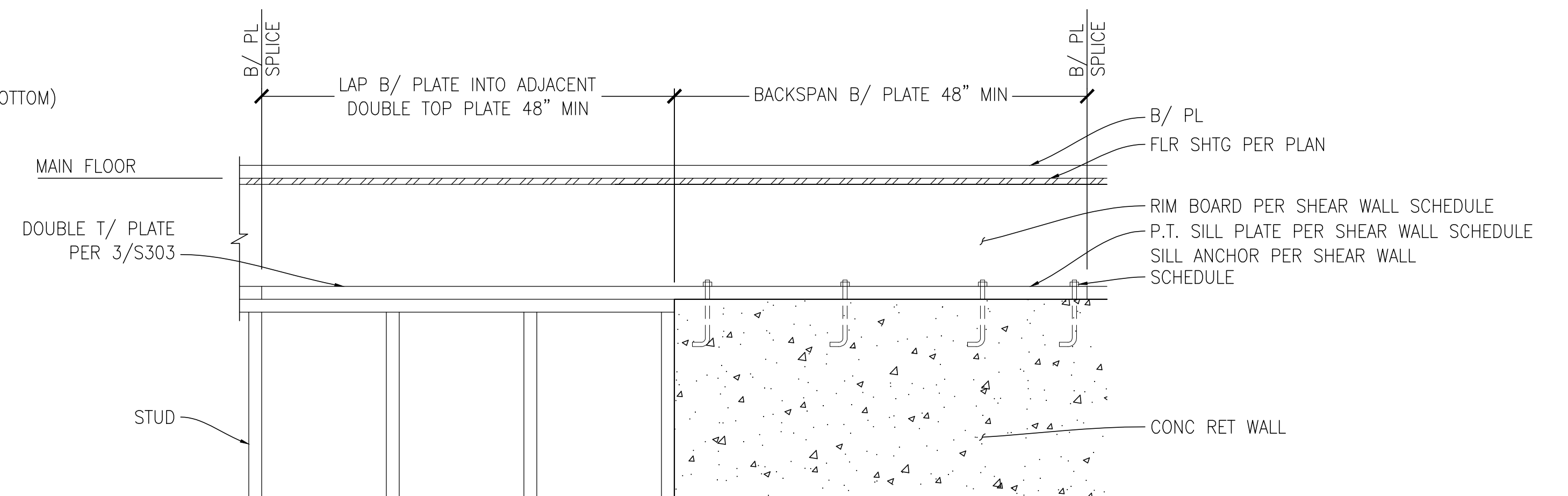
**6** DETAIL  
SCALE: 3/4" = 1'-0"  
TYPICAL STRINGER FRAMING



**8** DETAIL  
SCALE: 1"=1'-0"  
FRAMING @ DROPPED LANDING

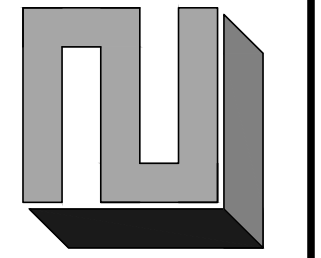


**9** DETAIL  
SCALE: 1"=1'-0"  
INT SHEAR WALL

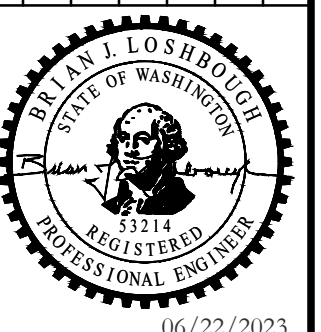


**10** DETAIL  
SCALE: 1"=1'-0"  
B/ PLATE TO T/ PLATE SPLICE

CHECK SET - NOT FOR CONSTRUCTION



REVISION	DATE



CHEN RESIDENCE  
5024 MERCER WAY, MERCER ISLAND, WA 98040  
STRUCTURAL DETAILS

CHK BY: LZE	DRW BY: TNT
SCALE: AS SHOWN BAR = 1" FULL SIZE	
DATE: 06/22/2023	
JOB NO: 20-084	
SHEET: 10 OF 10	
DWG NO: S302	