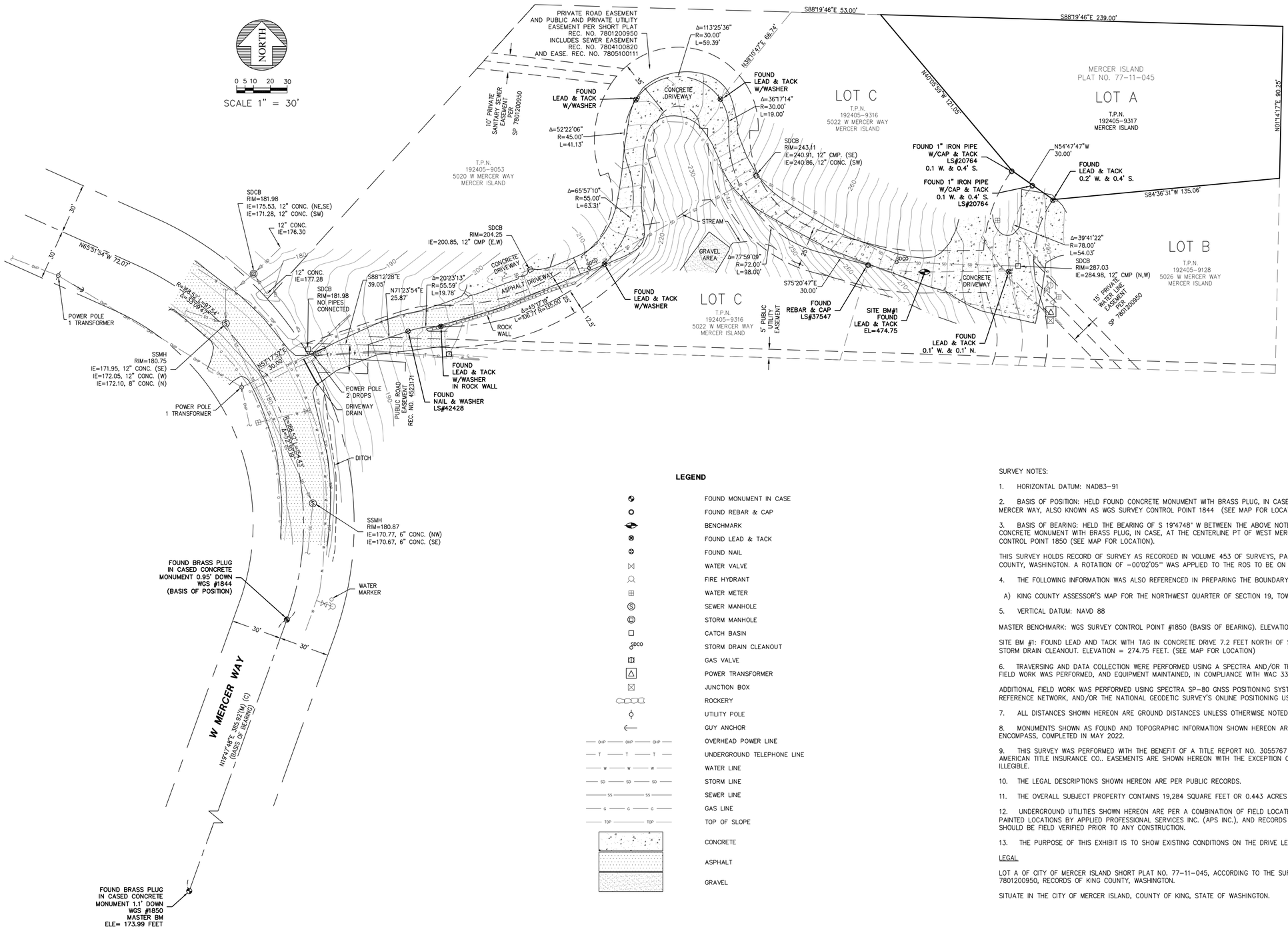
HARVEY CHEN

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
S	SEWER MANHOLE
	STORM MANHOLE
	CATCH BASIN
SDCO	STORM DRAIN CLEANOUT
	GAS VALVE
	POWER TRANSFORMER
	JUNCTION BOX
	ROCKERY
	UTILITY POLE
	GUY ANCHOR
OHP	OVERHEAD POWER LINE
T	UNDERGROUND TELEPHONE LINE
W	WATER LINE
SD	STORM LINE
SS	SEWER LINE
G	GAS LINE
TOP	TOP OF SLOPE
	CONCRETE
	ASPHALT
	GRAVEL

SURVEY NOTES:

1. HORIZONTAL DATUM: NAD83-91

2. 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).

3. 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 A 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.

4. THE FOLLOWING INFORMATION WAS ALSO REFERENCED IN PREPARING THE BOUNDARY SHOWN HERE ON:

A) KING COUNTY ASSESSOR'S MAP FOR THE NORTHWEST QUARTER OF SECTION 19, TOWNSHIP 24N, RANGE 5E, W.M.

5. 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)

6. 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 GEODETIC SURVEY'S ONLINE POSITIONING USER SERVICE (OPUS).

7. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.

8. MONUMENTS SHOWN AS FOUND AND TOPOGRAPHIC INFORMATION SHOWN HEREON ARE THE RESULT OF A SURVEY BY ENCOMPASS, COMPLETED IN MAY 2022.

9. 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.

10. THE LEGAL DESCRIPTIONS SHOWN HEREON ARE PER PUBLIC RECORDS.

11. THE OVERALL SUBJECT PROPERTY CONTAINS 19,284 SQUARE FEET OR 0.443 ACRES MORE OR LESS.

12. 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.

13. 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

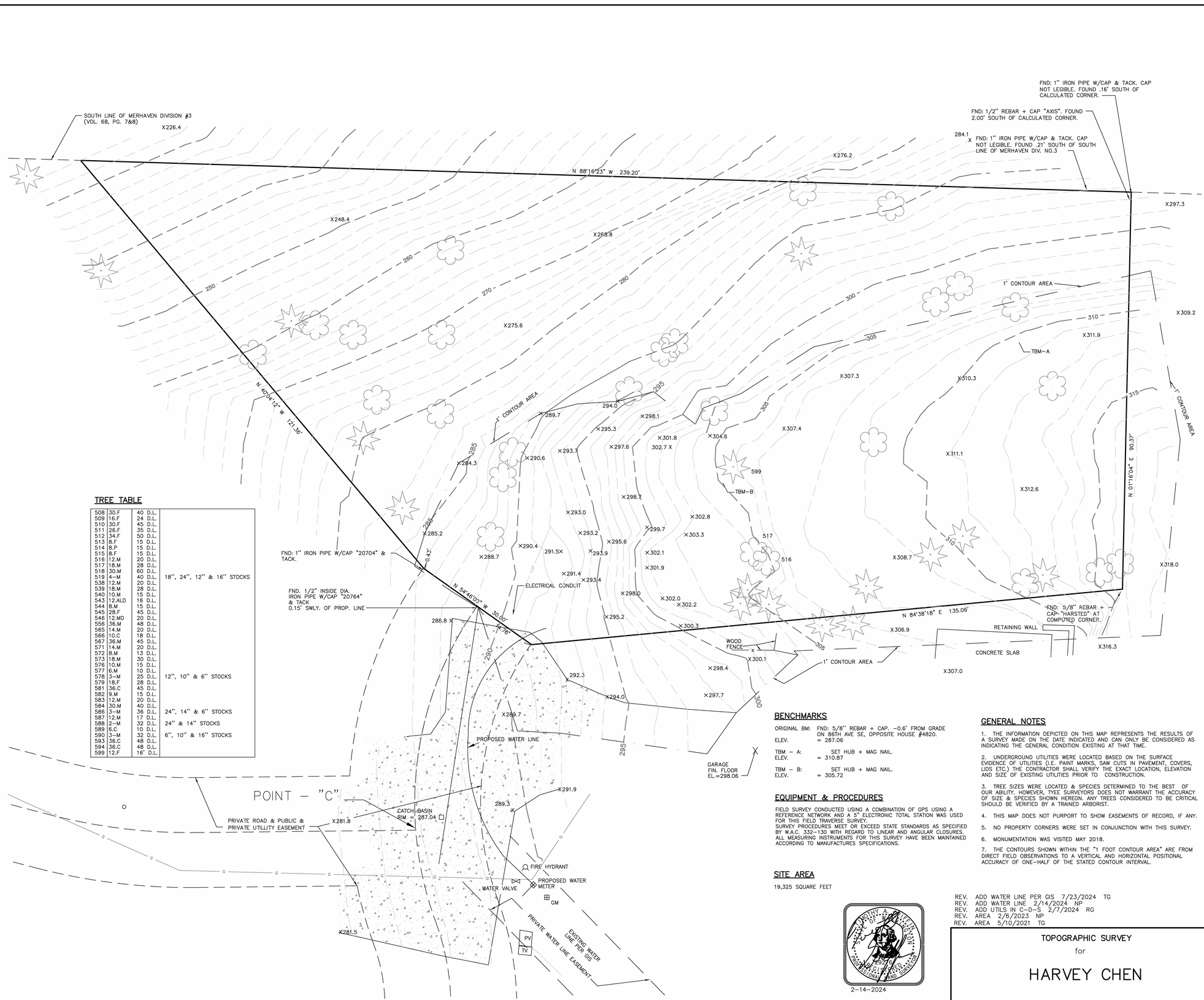
© THE PLANS SET FORTH ON THIS SHEET ARE AND SHALL REMAIN THE PROPERTY OF ENCOMPASS ENGINEERING & SURVEYING.

KEVIN M. REESE — STATE OF WASHINGTON — 49917 — REGISTERED PROFESSIONAL LAND SURVEYOR — 10/24/22

BOUNDARY TOPOGRAPHIC SURVEY
FOR
HARVEY CHEN

Encompass
ENGINEERING & SURVEYING
Western Washington Division
165 NE Juniper Street, Suite 201 • Issaquah, WA 98027 • Phone: (425) 392-0250
Eastern Washington Division
407 Swiftwater Blvd. • Cle Elum, 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



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. 18", 24", 12" & 16" STOCKS
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. 12", 10" & 6" STOCKS
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. 24", 14" & 6" STOCKS
587	12.M	17	D.L.
588	2-M	32	D.L. 24" & 14" STOCKS
589	6.C	10	D.L.
590	3-M	32	D.L. 6", 10" & 16" STOCKS
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 MANUFACTURES SPECIFICATIONS.

SITE AREA

19,325 SQUARE FEET

GENERAL NOTES

1. 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.

2. 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.

3. TREE SIZES WERE LOCATED & SPECIES DETERMINED TO THE BEST OF OUR ABILITY. HOWEVER, TYEE SURVEYORS DOES NOT WARRANT THE ACCURACY OF SIZE & SPECIES SHOWN HEREON. ANY TREES CONSIDERED TO BE CRITICAL SHOULD BE VERIFIED BY A TRAINED ARBORIST.

4. THIS MAP DOES NOT PURPORT TO SHOW EASEMENTS OF RECORD, IF ANY.

5. NO PROPERTY CORNERS WERE SET IN CONJUNCTION WITH THIS SURVEY.

6. MONUMENTATION WAS VISITED MAY 2018.

7. THE CONTOURS SHOWN WITHIN THE "1 FOOT CONTOUR AREA" ARE FROM DIRECT FIELD OBSERVATIONS TO A VERTICAL AND HORIZONTAL POSITIONAL ACCURACY OF ONE-HALF OF THE STATED CONTOUR INTERVAL.

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" WA 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 88°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.

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.

REGISTERED PROFESSIONAL LAND SURVEYOR
TIMOTHY A. GOSE
STATE OF WASHINGTON
20792
2-14-2024

REV. ADD WATER LINE PER GIS 7/23/2024 TG
REV. ADD WATER LINE 2/14/2024 NP
REV. ADD UTILS IN C-D-S 2/7/2024 RG
REV. AREA 2/6/2023 NP
REV. AREA 5/10/2021 TG

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

TOPOGRAPHIC SURVEY
for
HARVEY CHEN
1542 24TH AVE NE ISSAQUAH WA., 98029

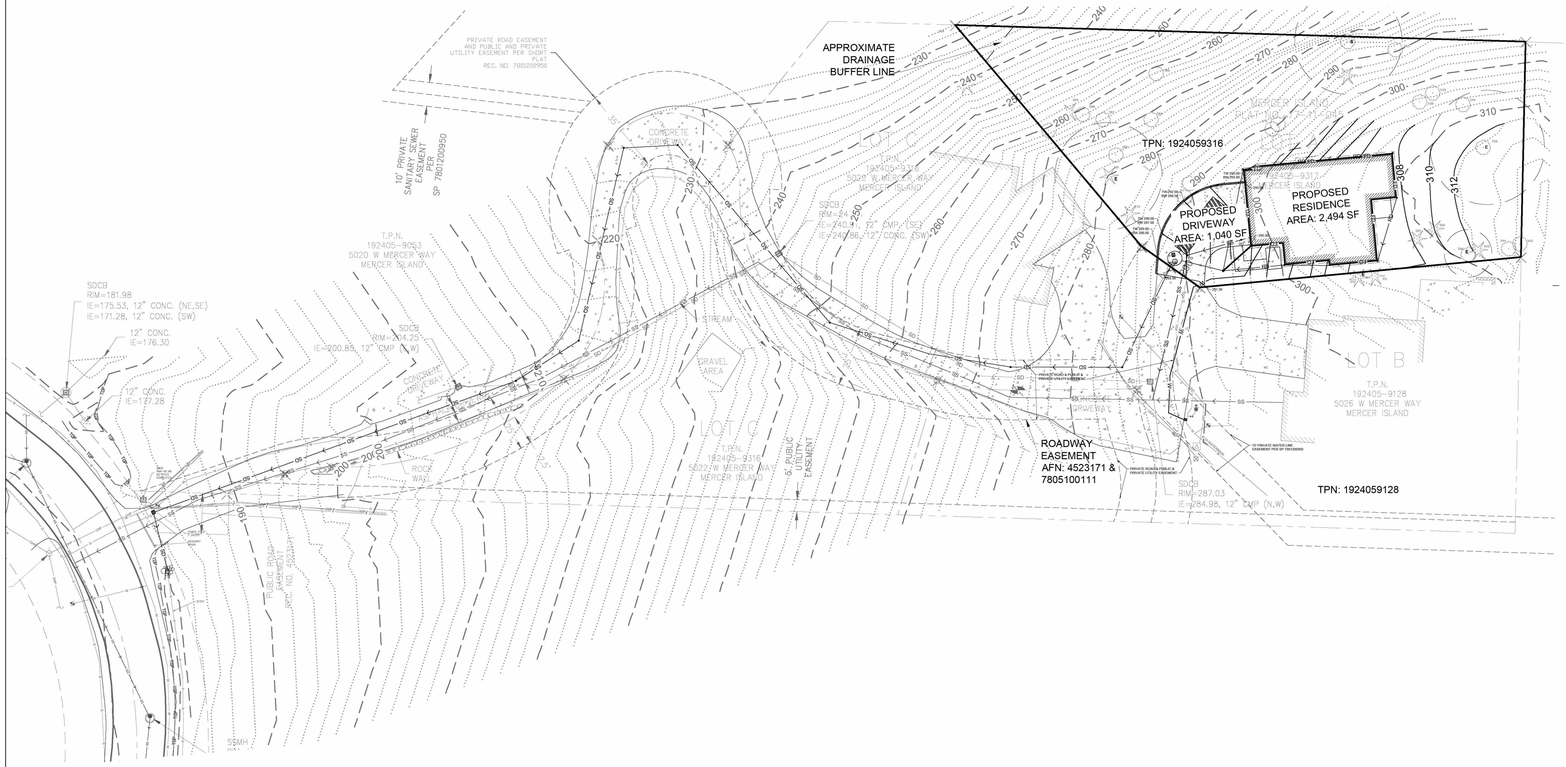
TYEE SURVEYORS
Tyee Surveyors
PROFESSIONAL LAND SURVEYORS
10007 GREENWOOD AV. N. SEATTLE, WA. 98133 206-525-3660

DRAWN BY:	DATE:	JOB NO.:
RG	5-29-18	18080
CHKD BY:	SCALE:	SHEET:
TG	1" = 10'	1 OF 1

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

CHEN RESIDENCE

TPN: 1924059317



VICINITY MAP

NTS

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		T
TELEPHONE PEDESTAL		T
CABLE LINE	CTV	CTV
CABLE PEDESTAL	TV	TV
STORM MAIN LINE	SD	SD
FOOTING DRAIN LINE	FD	FD
ROOF DRAIN LINE	RD	RD
CATCH BASIN		
TYPE I CATCH BASIN		
YARD DRAIN		YD
DOWNSPOUT		DS
WATER MAIN LINE	W	W
WATER METER		
BLOWOFF VALVE FIRE HYDRANT		BO
GATE VALVE		
SEWER MANHOLE		
CLEANOUT		CO
SEWER MAIN LINE	SS	SS
CONCRETE		
ASPHALT PAVEMENT		
POROUS ASPHALT		
LANDSCAPING		
GRAVEL		

PROJECT INFO

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

VERTICAL DATUM

NAVD-88

PARCEL NUMBER

TPN: 1924059317

BUILDING AREA

LOT SIZE:	19,325 SF
FOOTPRINT:	2,188 SF
ROOF:	2,566 SF
DRIVEWAY/ PARKING:	1,108 SF
SIDEWALK/PORCH:	INCL. IN OTHER NUMBERS
TOTAL COVERAGE:	3,674 SF OR 19%
MAX ALLOW COVERAGE:	5,797.5 OR 30%

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" WA 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 HERON 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 THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN 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

811 Know what's below. Call before you dig.

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

STATE OF WASHINGTON ERIK A. BENTSEN 38284 REGISTERED PROFESSIONAL ENGINEER 7/19/24

REVISIONS: DATE:

CHEN RESIDENCE

COVER SHEET

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: 7/19/24

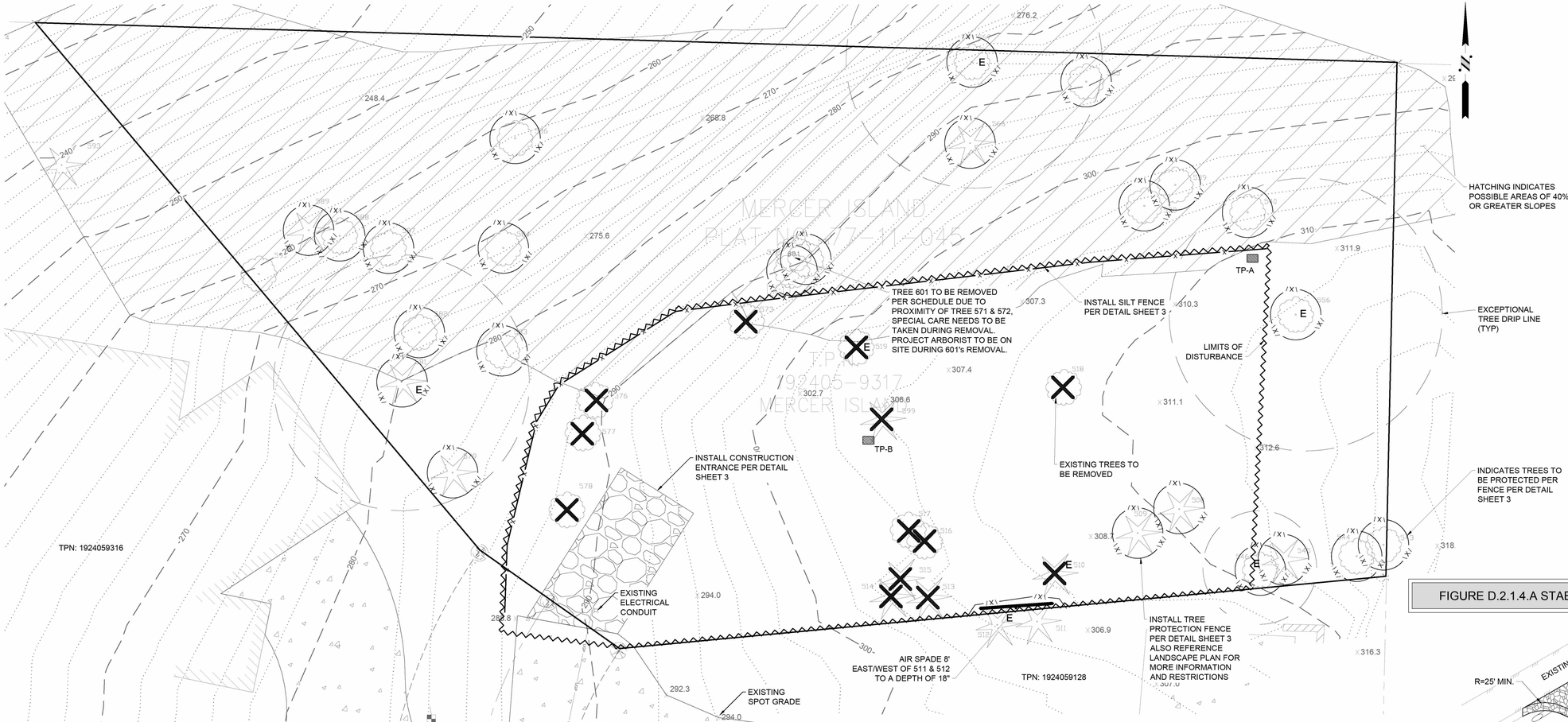
AGENCY NO:

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

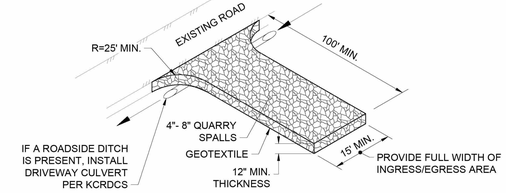


NOTE:
E = EXCEPTIONAL TREE

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.
600	10.6.L	14" D.L.
601	28.M	
602	22.F	
603	30.F	

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.

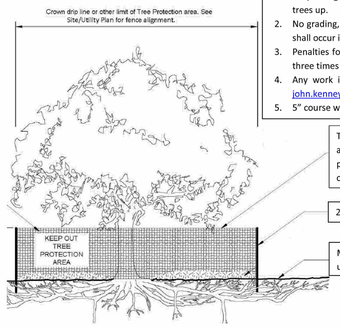
TREE PROTECTION AREA (TPZ)

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/financial penalties
3. Arborist reports recommending mitigation



Notes
1. No pruning shall be performed unless under the direction of the Project Arborist. Including limbing trees up.
2. No grading, excavation, storage (materials, equipment, vehicles, etc.), or other unpermitted activity shall occur inside the protective fencing.
3. Penalties for damaging by root damage/compaction or removing a saved tree may be a fine up to three times the value of the tree plus restoration (MICC 19.10.160).
4. Any work in approved TPZ must be with the permission of the City Arborist (206) 275-7713, john.kenney@mercergov.org.
5. 5" course woodchips within the tree protection zone, but not against the tree trunk.

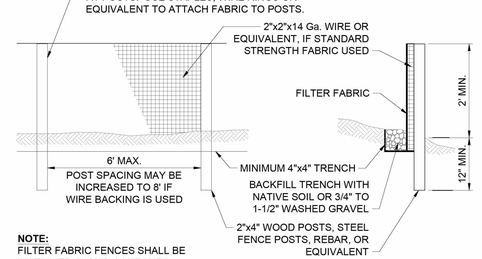
Tree protection fence: 6' **chain link** fence, solidly anchored into the ground, or if authorized High-density polyethylene fencing with 3.5" x 1.5" openings; color orange. Steel posts installed at 8' o.c.

2" x 6" steel posts or approved equal

Maintain existing grade with the tree protection fence unless otherwise indication on the plans

Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org

FIGURE D.2.1.3.A SILT FENCE



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

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

REVISIONS: DATE:

CHEN RESIDENCE

TESC AND DEMO 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: 7/19/24
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'
0 10 20

N

MERCER ISLAND
PLAT NO. 77-11-045
LOT A
T.P.N.
192405-9317
MERCER ISLAND

PROPOSED RESIDENCE
GARAGE FF = 296.00
MAIN FLOOR FF = 308.00

4" PVC ROOF DRAIN @ 1.0% (TYP)

ROOF DRAIN
RIM 308.00
FL 305.50

TW 295.00
BW 293.00

ROOF DRAIN
RIM 298.00
FL 295.50

4" PVC

295.00

TW 292.00
BW 288.50

PROPOSED
28LF 4" PVC
SIDE
SEWER
@12.08%

RAISE RETAINING WALL 0.5' ABOVE DRIVEWAY TO MAKE CURB AND DRAIN ASPHALT TO CATCH BASIN

TW 290.00
BW 287.00

TW 289.00
BW 288.00

FL IN 286.00

CONNECT FOOTING DRAIN TO YARD DRAIN WITH 4" PVC @ 1% MIN SLOPE
FL 290.5

ROOF DRAIN
RIM 308.00
FL 306.78

4" PVC ROOF DRAIN @ 1.0% MIN (TYP)

INSTALL CATCH BASIN LID PER DETAIL SHEET 4

289.00

288.80

6" PVC

291.30

MATCH INTO EDGE OF EX PAVEMENT

INSTALL YARD DRAIN WITH 1' SUMP
RIM 293
FL 290.5

ROOF DRAIN
RIM 299.00
FL 296.50

4" PERF PVC FOOTING DRAIN TO BE LAID FLAT FL 295.00

ROOF DRAIN
RIM 308.00
FL 306.5

REFERENCE LANDSCAPED PLAN FOR POST CONSTRUCTION AMENDED SOIL PLAN AND SPECIFICATIONS

1" WATER SERVICE LINE

PROP 4" PVC SAN SEWER LATERAL

PROPOSED
61LF 4" PVC
SIDE
SEWER
@12.08%

LOT B

T.P.N.
192405-9128
5026 W MERCER WAY
MERCER ISLAND

PRIVATE ROAD & PUBLIC & PRIVATE UTILITY EASEMENT

CONNECT TO EXISTING SEWER FL 283.75 DIG THIS END FIRST PRIOR TO INSTALL OF SERVICE

EXISTING SEWER

3/4" WATER SERVICE METER W/ TRAFFIC RATED LID

8" DI WATERMAIN

15' PRIVATE WATER LINE EASEMENT PER SP 7801200950

PRIVATE ROAD & PUBLIC & PRIVATE UTILITY EASEMENT

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

38284 REGISTERED PROFESSIONAL ENGINEER
7/19/24

REVISIONS: DATE:

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: 7/19/24
AGENCY NO:
SHEET: 3 OF 6
JOB NO: 20-122

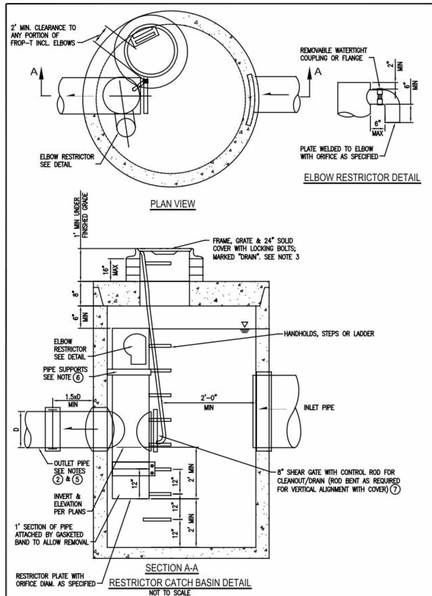
TABLE 2 – STANDARD DETENTION PIPE DESIGN FOR PROJECTS BETWEEN 500 SF AND 5,000 SF IMPERVIOUS AREA (WITH 120% CORRECTION FACTOR)

	New Impervious Area (sf)															
	500 to 1,000 sf			1,001 to 2,000 sf			2,001 to 3,000 sf			3,001 to 4,000 sf			4,001 to 5,000 sf		
	Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)		
Soil Type*	36"	48"	60"	36"	48"	60"	36"	48"	60"	36"	48"	60"	36"	48"	60"
B	30	18	11	66	34	22	90	48	30	120	62	42	186	90	48
C	22	11	7	43	23	14	66	36	20	78	42	26	132	60	37

	Outlet Orifice Size and Design Height for Type B Soils Only														
	Lowest Orifice	Distance from Outlet to Second Orifice (feet)	Second Orifice	Lowest Orifice	Distance from Outlet to Second Orifice (feet)	Second Orifice	Lowest Orifice	Distance from Outlet to Second Orifice (feet)	Second Orifice	Lowest Orifice	Distance from Outlet to Second Orifice (feet)	Second Orifice	Lowest Orifice	Distance from Outlet to Second Orifice (feet)	Second Orifice
Detention Pipe Size (in)	Diameter (inches)[1]		Diameter (inches)	Diameter (inches)[1]		Diameter (inches)	Diameter (inches)[1]		Diameter (inches)	Diameter (inches)[1]		Diameter (inches)	Diameter (inches)[1]		Diameter (inches)
36	0.5	2.2	0.5	0.5	2.2	0.94	0.5	2.2	0.94	0.5	2.4	1.4	0.5	2.44	1.4
48	0.5	3.3	0.94	0.5	3.2	0.9	0.5	3.1	0.9	0.5	2.8	0.8	0.5	2.7	0.75
60	0.5	4.15	0.47	0.5	4.3	0.94	0.5	4.2	0.94	0.5	3.8	0.94	0.5	4.14	0.9

	Outlet Orifice Size and Design Height for Type C Soils Only														
	Lowest Orifice Diameter (inches)[1]	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)[1]	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)[1]	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)[1]	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)[1]	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)
Detention Pipe Size (in)															
36	0.5	2	0.8	0.5	2.3	1.41	0.5	2.4	1.9	0.5	2.15	2.3	0.5	1.72	2.3
48	0.5	3.2	0.8	0.5	3.3	1.17	0.5	2.83	1.5	0.5	2.9	1.3	0.5	2.43	1.6
60	0.5	3.4	0.6	0.5	3.6	0.89	0.5	3.7	1.1	0.5	3.9	1.28	0.5	4.3	2.2

[1]Minimum diameter = 0.5 inches
*Geotechnical Analysis or Soil Map Required
Basis of Sizing Assumptions:
-Based on the Stormwater Management Manual for Puget Sound Basin (1992 Manual)
-Converting 2nd growth forest to impervious
-Assumes 0.5 foot sediment storage in detention pipe
-Moderate slope
-Include Volume Correction Factor, assuming 120% safety factor



RESTRICTOR CATCH BASIN NOTES:

1. USE A MINIMUM OF A 72 IN. DIAM. TYPE 2 CATCH BASIN WHEN CONNECTING PIPE MATERIAL IS CONCRETE OR LCPE. A 54 IN. DIAM. TYPE 2 CATCH BASIN MAY BE USED FOR OTHER CIRCULAR SINGLE WALL PIPE (SUCH AS CORRUGATED ALUMINUM PIPE).
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. 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.
6. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION 2G33A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B.
   THE LIFT 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 HOOK AS REQUIRED.
   A NEOPRENE 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.

Attachment 1

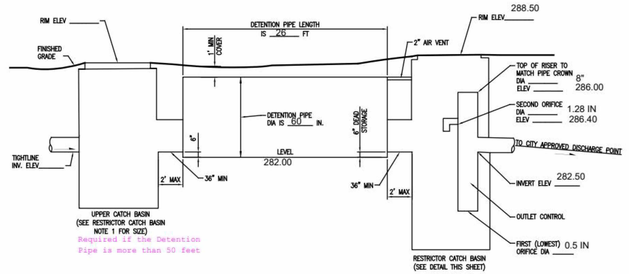
CITY OF MERCER ISLAND
STANDARD DETENTION SYSTEM WORKSHEET
(FOR IMPERVIOUS AREA OF 5,000 SF OR LESS)

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

Revised 07/2014

S:\DSG\FORMS\PDF files --CURRENT\Flowcontrolless1acre w attachFINAL01-10.pdf

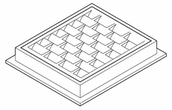
FOOTING DRAINS SHALL NOT BE CONNECTED TO DETENTION SYSTEM



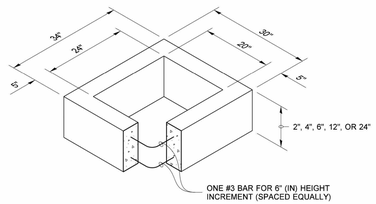
STANDARD PIPE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)

STANDARD DETENTION SYSTEM NOTES:

1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE 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 ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING, LINED CORRUGATED POLYETHYLENE PIPE (LCPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36), CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.



FRAME AND VANED GRATE



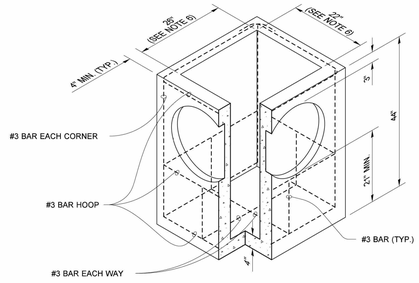
RECTANGULAR ADJUSTMENT SECTION

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"

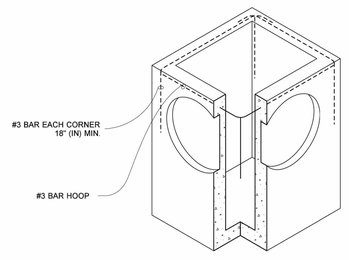
★ CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

1. 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.
2. 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**.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5' (ft).
4. The frame and grate may be installed with the flange down, or integrally cast into the adjustment section with flange up.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1 : 24 or steeper.
6. The opening shall be measured at the top of the **Precast Base Section**.
7. All pickup holes shall be grouted full after the basin has been placed.



PRECAST BASE SECTION



(SEE NOTE 1)
ALTERNATIVE PRECAST BASE SECTION

JULIE HEILMAN STATE OF WASHINGTON 21811 REGISTERED PROFESSIONAL ENGINEER
Heilman, Julie
Jan 25 2017 2:53 PM
cosign

CATCH BASIN TYPE 1

STANDARD PLAN B-5.20-02

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Carpenter, Jeff
Jan 26 2017 6:48 AM
cosign
STATE DESIGN ENGINEER
Washington State Department of Transportation

DRAWN BY: LISA CYFORD

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

REVISIONS: DATE:

CHEN RESIDENCE

DETAILS

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: 7/19/24
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'
0 10 20

N

26LF 60" DET PIPE
PER DET
FLAT
EL = 282.00

RESTRICTOR CB
RIM 288.5
FL 282.50 OUT
REF DET
FOR OTHER
DATA

INSTALL CO
RIM 252.2
FL 249.2

INSTALL CO
RIM 284.8
FL 281.8

INSTALL CO
RIM 273.3
FL 270.3

605 LF 4" HDPE/PVC @ 1.0% MIN
INSTALL WITH 24" MIN COVER IN
DRIVEWAYS AND 12" COVER ON
SHOULDER AREAS. INSTALL
CLEAN OUT AT EACH BEND

PRIVATE ROAD & PUBLIC &
PRIVATE UTILITY EASEMENT

PRIVATE ROAD & PUBLIC &
PRIVATE UTILITY EASEMENT

15' PRIVATE WATER LINE
EASEMENT PER SP 7801200950

8" DI WATERMAIN

CONCRETE DRIVEWAY

LOT C
T.P.N.
192405-9316
5022 W MERCER WAY
MERCER ISLAND

SDCB
RIM=243.11
IE=240.01, 12" CMP (SE)
IE=240.86, 12" CONC. (SW)

MERCER ISLAND
PLAT NO. 77-11-045
LOT A
T.P.N.
192405-9317
MERCER ISLAND

LOT B
T.P.N.
192405-9128
5026 W MERCER WAY
MERCER ISLAND

SDCB
RIM=287.03
IE=284.98, 12" CMP (N,W)

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

ERIK A. BENSON — 38284 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON
7/19/24

REVISIONS: DATE:

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: 7/19/24
AGENCY NO:
SHEET: 5 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

N.

10' PRIVATE SANITARY SEWER EASEMENT PER SP 7801200950

T.P.N. 192405-9053
5020 W MERCER WAY
MERCER ISLAND

SDCB
RIM=181.98
IE=175.53, 12" CONC. (NE,SE)
IE=171.28, 12" CONC. (SW)

12" CONC.
IE=176.30

12" CONC.
IE=177.28

SDCB
RIM=204.25
IE=200.85, 12" CMP (S,W)

INSTALL CO
RIM 226.0
FL 223.0

INSTALL CO
RIM 228.4
FL 225.4

FL EX SD EL 240.66; PROP TOP NEW SD FL 239.50, PROVIDE 12" SEPERATION BETWEEN PIPES

INSTALL CO
RIM 213.8
FL 210.8

INSTALL CO
RIM 208.3
FL 205.3

EX ROW LINE

SDCB
RIM=181.98
NO PIPES CONNECTED

INSTALL
TYPE 1 CATCH BASIN
RIM 182.8
FL 180.5
2 DROPS

INSTALL
4'X4'X18" OF 3-8" RIP RAP OUT
FALL PROTECTION AT PIPE
IN EX DITCH
FL 179.8

EX ROW LINE

DITCH

PUBLIC ROAD EASEMENT REC. NO. 4523171

ROCK WALL

STREAM

LOT C

T.P.N. 192405-9316
5022 W MERCER WAY
MERCER ISLAND

CONCRETE DRIVEWAY

GRAVEL AREA

DRIVEWAY DRAIN

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

STATE OF WASHINGTON
38284
REGISTERED
PROFESSIONAL ENGINEER
7/19/24

REVISIONS: DATE:

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: 7/19/24
AGENCY NO:
SHEET: 6 OF 6
JOB NO: 20-122

TREE PROTECTION

CHAIN LINK FENCE REQUIRED FOR TREE PROTECTION

TREE PROTECTION

CHAIN LINK FENCE REQUIRED FOR TREE PROTECTION

SOIL INSPECTION
REQUIRED BY ENGINEER

MINIMUM 10% ORGANIC
MULCH AND COMPOST
SOIL REQUIRED

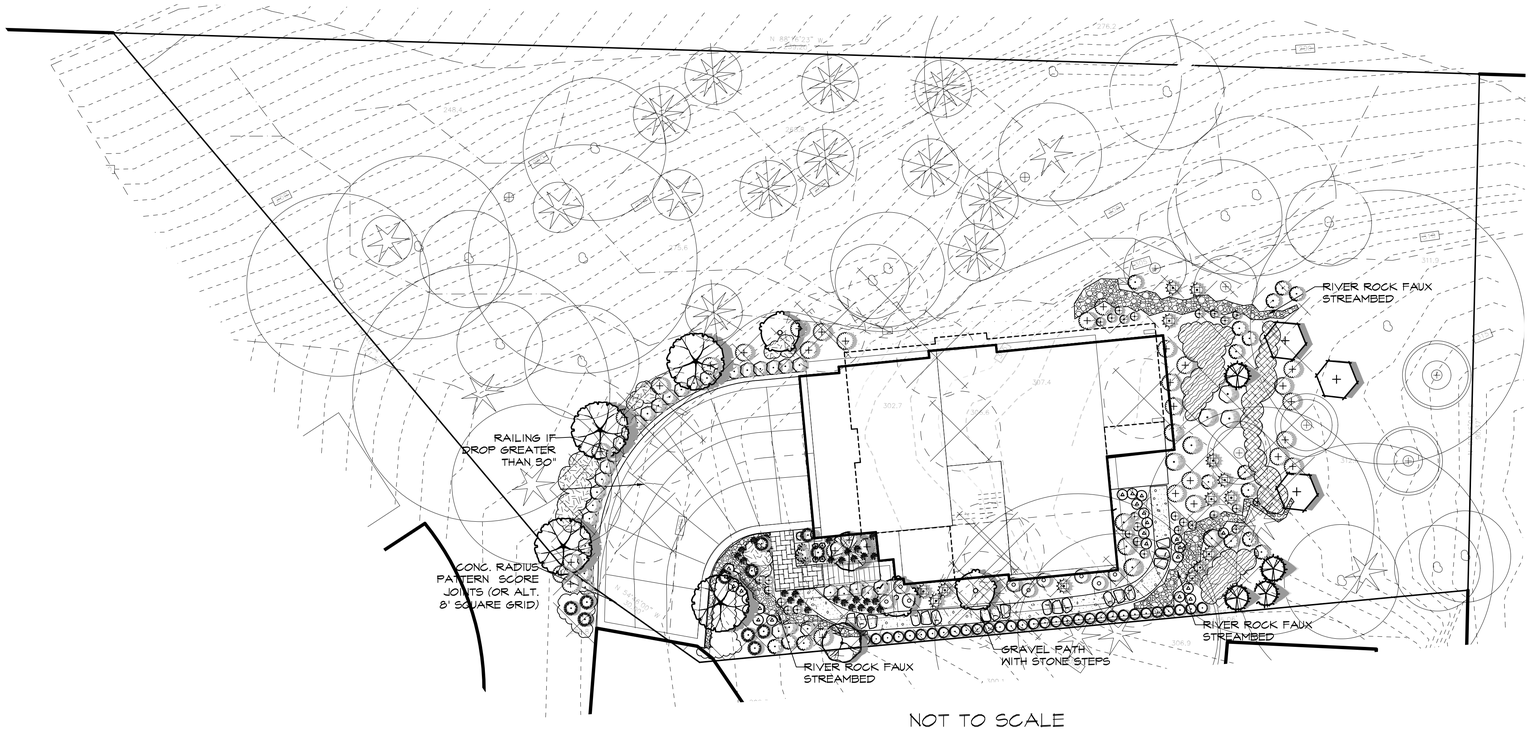
SOIL AMENDMENT REQUIRED

COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION.
SEE DETAIL.

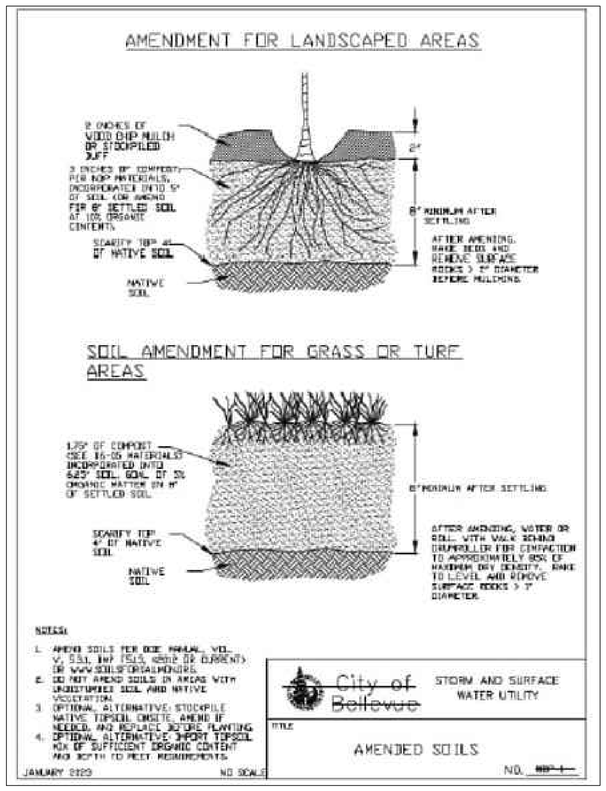
SOIL INSPECTION REQUIRED BY ENGINEER

A POST CONSTRUCTION INSPECTION AND CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER. THIS IS REQUIRED BEFORE FINAL SIGN-OFF BY CITY.

COMPOST AMENDED SOIL SPEC



NOT TO SCALE



Created: 12-8-23, PRELIMINARY PLAN
1 1-26-24 REVISED TO ADD TREES AND SOIL REQUIRMENTS

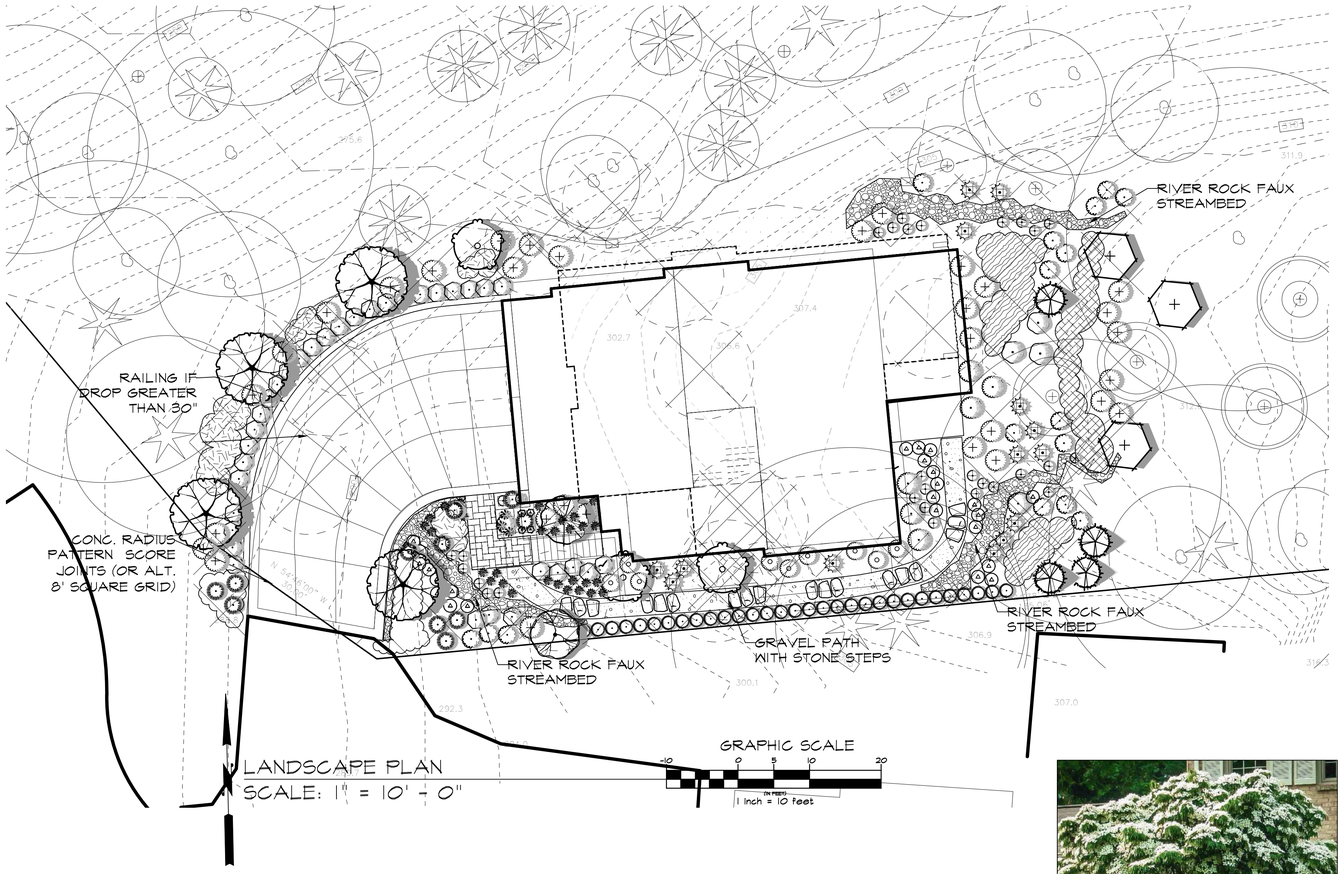
Drawn: REB
SCA

CRAMER DESIGN CONSULTANTS, INC.
LANDSCAPE ARCHITECT
1909 242ND STREET SE
BOTHELL, WA 98021
425-241-6258

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
KYLE L. CRAMER
CERTIFICATE NO. 634

CHEN RESIDENCE
5024 W. MERCER WAY, MERCER ISLAND, WA

SHEET
L-01
OF 2 SHEETS



LANDSCAPE PLAN
SCALE: 1" = 10' - 0"

	TREE DRIP LINE
	EVERGREEN TREE
	DECIDUOUS TREE
	TREE TO BE REMOVED
	TREE PROTECTION FENCING MUST BE PLACED PRIOR TO CONSTRUCTION ACTIVITY
E	"E" REPRESENTS EXCEPTIONAL TREES. IN EXCESS OF 36" DBH

	DOUGLAS FIR	10
	WESTER RED CEDAR	10
	VINE MAPLE	29
	Fuyu persimmon	2
	Magnolia	2
	Flowering dogwoods	2

NOTES:
NO LAWN IS PROPOSED
ALL LANDSCAPING IS IN PLANTING BEDS
TOTAL PLANTING AREAS = 2789 SF
TOTAL MULCH/ BARK AREAS = 225 SF

Pacific Fire Vine Maple

Bloodgood Japanese maple

Coral Bark Maple

Kousa Dogwood

Pyramidal Hornbeam

PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QTY
DECIDUOUS TREES			
	Acer palmatum `Sango Kaku` / Coral Bark Maple or similar small specimen tree	6`-7` Ht.	1
	Carpinus betulus `Columnaris` / Columnar European Hornbeam	2"Cal	3
REPLACEMENT TREES			
	Acer circinatum / Vine Maple	2"Cal	3
	Acer palmatum `Bloodgood` / Bloodgood Japanese Maple	6`-7` Ht	1
	Cornus kousa / Kousa Dogwood	6`-7` Ht	4
	Tsuga mertensiana / Mountain Hemlock	4`-6` Ht	4
			12 TOTAL
SHRUBS			
	Azalea x `Hino-crimson` / Hino-crimson Kurume Azalea	2 gal	30
	Choisya ternata `Sundance` / Golden Mexican Mock Orange	5 gal	14
	Euonymus japonicus `Silver King` / Silver King Euonymus	5 gal	1
	Hydrangea macrophylla `Coerulea Lace` / Blue Lacecap Hydrangea	24/30"	3
	Hydrangea quercifolia / Oakleaf Hydrangea	5 gal	7
	Ilex crenata `Green Lustre` / Green Luster Japanese Holly	3 gal	24
	Pieris japonica / Lily of the Valley Bush	24/30"	9
	Prunus laurocerasus `Otto Luyken` / Otto Luyken Laurel	24/30"	35
	Rhododendron var. / Rhododendron	5 gal	31
	Rhododendron x `Scarlet Wonder` / Scarlet Wonder Dwarf Rhododendron	5 gal	16
	Thuja occidentalis / Emerald Green thuja Match Existing	5`-6` Ht	31
GRASSES			
	Carex oshimensis `Evergold` / Variegated Japanese Sedge	1 gal	29
	Helictotrichon sempervirens / Blue Oat Grass	1 gal	3
	Miscanthus sinensis `Morning Light` / Eulalia Grass	5 gal	11
ANNUALS/PERENNIALS			
	Bergenia x `Morning Red` / Bergenia	1 gal	4

SYMBOL	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY
GROUND COVERS				
	Arctostaphylos uva-ursi `Emerald Carpet` / Emerald Carpet Manzanita	1 gal	30" o.c.	28
	Liriope muscari / Lily Turf	1 gal	36" o.c.	26
	Ophiopogon planiscapus `Nigrescens` / Black Mondo Grass	4"pot	12" o.c.	127
SITE WORK				
	BARK 2" Depth	None		225 sf
	PLANTING BEDS 2" Bark, 6" Soil	None		2,789 sf
	RIVER ROCK	None		260 sf

Sundance Choisya

Silver King Eounymus

Hydrangea

Oakleaf Hydrangea

Ilex Crenata

Pieris Varigated

Ottoluyken laurel

Hino Crimson Azalea

Rhododendron

Scarlet Rhododendron

EG Thuja and Miscanthus Morning Light

Carex Evergold

Blue Oat grass

Bergina

Kinnikinnick

Liriope

Created: 12-8-23 PRELIMINARY PLAN
1 - 2-26-24 added ex trees and added plants removed trails GCA
2 - 4-26-24 added ex trees, and replacement trees GCA

CRAMER DESIGN CONSULTANTS, INC.
LANDSCAPE ARCHITECT
1909 242ND STREET SE
BOTHELL, WA 98021
425-241-6258

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
KYLE L. CRAMER
CERTIFICATE NO. 634

CHEN RESIDENCE
5024 W. MERCER WAY, MERCER ISLAND, WA

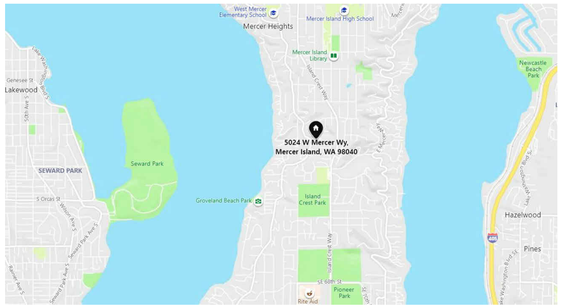
SHEET
L-02
OF 2 SHEETS

Chen Residence

ABBREVIATIONS

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

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 REQUIERED 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 .= 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, COOING AND VENTILATION SSYSTEM 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

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

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

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 LOSHBOUGH, 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 THOF A DIST 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 IBC 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:

1. NFPA 13R-PLUS FIRE SPRINKLER SYSTEM REQUIRED
2. NFPA 72 HOUSEHOLD FIRE ALARM SYSTEM SYSTEM
3. MONITORED LOW VOLT SMOKE & CO DETECTORS
4. SOLID CORE AND OR FIRE RATED DOORS THROUGOUT
5. 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		
C3	SITE, LANDSCAPE & DRAINAGE PLAN		
C4	DETAILS		
C5	OFFSITE DRAINAGE PLAN		
C6	DRAINAGE PLAN		
CIVIL 'C': 6			
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
EXIST. CONTOURS
NEW CONTOURS
SIM A101 SHEET LAYOUT DESIGNATION: VIEW # / SHEET #
SHT # ELEVATION DESIGNATION: VIEW # / SHEET #
003 DOOR TAG: -SEE DOOR SCHEDULE.
sw# SHEARWALL TAG: SEE SHEARWALL SCHEDULE
HD# INDICATES STRUCTURAL KEYNOTE WITH INDEXED NUMBER. SEE STRUCTURAL KEYNOTE SCHEDULE.
5D 110V OR LOW VOLT SMOKE DETECTOR PER R314: -W/ DISCONNECTION SWITCH & BATTERY BACKUP
CD CARBON MONOXIDE DETECTOR PER R315: W/ INTERCONNECTIVITY PER R315.5
HD HEAT DETECTOR PER IRC314.2.3 w/ INTERCONNECTIVITY PER R314.4.1
WH FURN FURNACE/WATER HEATER: -PROVIDE COMBUSTIONABLE AIR FROM OUTSIDE WHEN REQD. -PROVIDE PRESSURE RELIEF LINE TO OUTSIDE. -SECURE WATER HEATER TOP & BOTTOM.
GRID GRID GRID LINES
01 WINDOW TAG: -SEE WINDOW SCHEDULE
EXHAUST FAN PER M1507.3: -50 CFM MIN., TYP. U.N.O. -100 CFM MIN. @ KITCH.
WHOLE HOUSE EXHAUST FAN: -150 CFM MIN. -SEE M1508 ON SHT A002
T THERMOSTAT: -PROVIDE 2x8 BLK'G AT 51" A.F.F.
T 24HR TIMER TO W.H. FAN -SEE M1508 ON SHT A002

No. | Description | Date

ATERA HOMES

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

COVER SHEET

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A000

SCALE 24X36: 1 : 1

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

C:\Users\MiltonOrellana\DCACCDocs\STUDIO20006 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt
7/29/2024 12:26:33 PM

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

301.4 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

301.5 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

301.6 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

301.8 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 AWPA U1 FOR THE SPECIES, PRODUCT, PRESERVATIVE AND END USE. PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA 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 AWPA 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 AWPA ACCEPTED PRESERVATIVE SYSTEM, DETERMINED APPROPRIATE IN ACCORDANCE WITH AWPA 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 AWPA 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
GENERAL
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,ML,MH & CH)	1,500

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

R402
MATERIALS
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		
	NEGLIGIBLE	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
FOOTINGS
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, NCMAA 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
R601.1 APPLICATION.
WALL CONSTRUCTION SHALL BE IN ACCORDANCE TO THE PROVISIONS SET FORTH IN CHAPTER 6 OF THE IRC.

R601.2 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
GENERAL
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 RATPROOFING

a. STRAINER PLATES ON DRAIN INLETS SHALL HAVE ½-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 ½-INCH OPENINGS MAX, AND SECURELY FASTENED TO THE ADJOINING STRUCTURE.

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

No.	Date	Description

ATERA HOMES
MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence
5024 W Mercer Way, Mercer Island

PERMIT SET

CODE NOTES

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A001

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

7/29/2024 12:26:35 PM C:\Users\WiltonOrellana\DC\ACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt

Window, Skylight and Door Schedule

Project Information

CHEN RESIDENCE
5024 W. MERCER WAY
MERCER ISLAND, WA 98040

Contact Information

MILTON ORELLANA
451 DUVALL AVE NE, SUITE 115
RENTON, WA 98059

	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
Exempt Swinging Door (24 sq. ft. max.)	30	0.20	1	3	0	8	0	24.0	4.80
Exempt Glazed Fenestration (15 sq. ft. max.)	125	.29	1	3	0	5	0	15.0	4.35

Vertical Fenestration (Windows and doors)

Component Description	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
HORZ SLIDING DBL VENT	100	0.28	5	8	0	5	0	200.0	56.00
HORZ SLIDING DBL VENT	101	0.28	1	8	0	6	0	48.0	13.44
HORZ SLIDING HALF VENT	110	0.28	1	4	0	4	0	16.0	4.48
HORZ SLIDING HALF VENT	111	0.28	1	5	0	3	6	17.5	4.90
HORZ SLIDING HALF VENT	112	0.28	1	5	0	4	0	20.0	5.60
HORZ SLIDING HALF VENT	113	0.28	1	5	0	5	0	25.0	7.00
PICTURE	120	0.28	1	2	6	1	0	2.5	0.70
PICTURE	121	0.28	2	2	6	5	0	25.0	7.00
PICTURE	122	0.28	2	2	6	6	0	30.0	8.40
PICTURE	123	0.28	4	3	0	1	6	18.0	5.04
PICTURE	124	0.28	2	3	0	3	0	18.0	5.04
PICTURE	125	0.28	3	3	0	5	0	45.0	12.60
PICTURE	126	0.28	1	4	0	1	0	4.0	1.12
PICTURE	127	0.28	3	5	0	2	6	37.5	10.50
PICTURE	128	0.28	1	5	0	5	0	25.0	7.00
PICTURE	129	0.28	4	5	0	6	0	120.0	33.60
PICTURE	130	0.28	3	6	0	1	6	27.0	7.56
PICTURE	131	0.28	3	6	0	2	6	45.0	12.60
PICTURE	132	0.28	1	6	0	5	0	30.0	8.40
PICTURE	133	0.28	1	8	0	6	0	48.0	13.44
Sum of Vertical Fenestration Area and UA								801.5	224.42
Vertical Fenestration Area Weighted U = UA/Area									0.28

Overhead Glazing (Skylights)

Component Description	Ref.	U-factor	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
150	150	0.50	1	4	0	4	0	16.0	8.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
								0.0	0.00
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

7/29/2024 12:26:42 PM

C:\Users\MiltonOrellana\DOCACCDocs\ST\UDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021) Version 1.0

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

Project Information	*Contact Information*
CHEN RESIDENCE	ATERA DESIGN STUDIO
5024 W. MERCER WAY, MERCER ISLAND	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		*Date*	01/04/2022

All Climate Zones (Table R402.1.1)	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Glazed Fenestration SHGC [b,e]	n/a	n/a
Ceiling [f]	49	0.026
Wood Frame Wall [g,h]	21 int	0.056
Floor	30	0.029
Below Grade Wall [c,h]	10/15/21 int + TB	0.042
Slab [d,f] R-Value & Depth	10, 2 ft	n/a

a *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.

b The fenestration *U*-factor column excludes skylights.

c "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.

d R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.

e 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.

f 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.

g For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone* 5 of ICC 400.

h 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.

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@energy.wsu.edu or (360) 956-2042 for assistance.

Project Information

CHEN RESIDENCE
5024 W. MERCER WAY
MERCER ISLAND, WA 98040

Contact Information

MILTON ORELLANA
451 DUVALL AVE NE, SUITE 115
RENTON, WA 98059

Heating System Type: ○ All Other Systems ● Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions"

Design Temperature
Instructions: Mercer Island
Design Temperature Difference (ΔT) 45
ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building
Conditioned Floor Area
Instructions: Conditioned Floor Area (sq ft) 3,234
Average Ceiling Height
Instructions: Average Ceiling Height (ft) 9.8
Conditioned Volume 31,532

Glazing and Doors
Instructions: U-0.28

U-Factor	X	Area	=	UA
0.280		802		224.42

Skylights
Instructions:

U-Factor	X	Area	=	UA
0.50		16		8.00

Insulation
Attic
Instructions: R-49

U-Factor	X	Area	=	UA
0.026		1,798		46.75

Single Rafter or Joist Vaulted Ceilings
Instructions: R-38 Vented

U-Factor	X	Area	UA
0.027		91	2.46

Above Grade Walls *(see Figure 1)*
Instructions: R-21 Intermediate

U-Factor	X	Area	UA
0.056		2,840	159.01

Floors
Instructions: R-30

U-Factor	X	Area	UA
0.029		2,003	58.09

Below Grade Walls *(see Figure 1)*
Instructions: R-21 Interior

U-Factor	X	Area	UA
0.042		1,982	83.24

Slab Below Grade *(see Figure 1)*
Instructions: No Slab Below Grade in this project.

F-Factor	X	Length	UA
0.303			---

Slab on Grade *(see Figure 1)*
Instructions: R-10 Fully Insulated

F-Factor	X	Length	UA
0.360		37	13.32

Location of Ducts
Instructions: Conditioned Space
Duct Leakage Coefficient 1.00

Figure 1:

Sum of UA	595.29	
Envelope Heat Load	26,788	Btu / Hour
Sum of UA x ΔT		
Air Leakage Heat Load	15,324	Btu / Hour
Volume x 0.6 x ΔT x 0.018		
Building Design Heat Load	42,112	Btu / Hour
Air leakage + envelope heat loss		
Building and Duct Heat Load	42,112	Btu / Hour
Ducts in unconditioned space: sum of building heat loss x 1.10		
Ducts in conditioned space: sum of building heat loss x 1		
Maximum Heat Equipment Output	52,640	Btu / Hour
Building and duct heat loss x 1.40 for forced air furnace		
Building and duct heat loss x 1.25 for heat pump		

(07/01/13)

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			
Heating Options	**Fuel Normalization Descriptions**	**Credits - select ONE heating option**	**User Notes**
1	Combustion heating minimum NAECA[b]	0.0 ☐	
2	Heat pump[c]	1.0 ☑	
3	Electric resistance heat only - furnace or zonal	-1.0 ☐	
4	DHP with zonal electric resistance per option 3.4	0.5 ☐	
5	All other heating systems	-1.0 ☐	
Energy Options	**Energy Credit Option Descriptions**	**Credits - select ONE energy option from each category [d]**	
1.1	[illegible]	0.5 ☐	
1.2	Efficient Building Envelope	1.0 ☐	
1.3	Efficient Building Envelope	0.5 ☑	.028 + R38 Floors
1.4	Efficient Building Envelope	1.0 ☐	
1.5	Efficient Building Envelope	2.0 ☐	
1.6	Efficient Building Envelope	3.0 ☐	
1.7	Efficient Building Envelope ☐	0.5 ☐	
2.1	Air Leakage Control and Efficient Ventilation	0.5 ☐	
2.2	Air Leakage Control and Efficient Ventilation	1.0 ☐	
2.3	Air Leakage Control and Efficient Ventilation	1.5 ☐	
2.4	Air Leakage Control and Efficient Ventilation ☐	2.0 ☐	
3.1[a]	High Efficiency HVAC	1.0 ☐	
3.2	High Efficiency HVAC	1.0 ☐	
3.3[a]	High Efficiency HVAC	1.5 ☐	
3.4	High Efficiency HVAC	1.5 ☐	
3.5	High Efficiency HVAC	1.5 ☑	
3.6[a]	High Efficiency HVAC ☐	2.0 ☐	
4.1	High Efficiency HVAC Distribution System	0.5 ☐	
4.2	High Efficiency HVAC Distribution System ☐	1.0 ☑	

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.)				
Energy Options	**Energy Credit Option Descriptions (cont.)**	**Credits - select ONE energy option from each category [d]**		**User Notes**
5.1[d]	Efficient Water Heating	0.5	☐	
5.2	Efficient Water Heating	0.5	☐	
5.3	Efficient Water Heating	1.0	☐	
5.4	Efficient Water Heating	1.5	☐	
5.5	Efficient Water Heating	2.0	☑	PRO H80 T2RU310BM
5.6	Efficient Water Heating ☐	2.5	☐	
6.1[e]	Renewable Electric Energy (3 credits max)	1.0	☐	
7.1	Appliance Package	0.5	☐	
	Total Credits	6.0	Calculate Total	Clear Form

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.

2018 WASHINGTON STATE / IRC EXHAUST SYSTEM REQUIREMENTS

M1503

M1503.6 MAKEUP AIR REQUIRED
WHERE ONE 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, EACH EXHAUST SYSTEM CAPABLE OF EXHAUSTING IN EXCESS OF 400 CUBIC FEET PER MINUTE (0.19 M3/S) SHALL BE MECHANICALLY OR PASSIVELY PROVIDED WITH MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST AIR RATE. SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH NOT FEWER THAN ONE DAMPER COMPLYING WITH SECTION M1503.6.2.

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. DAMPERS SHALL BE LOCATED TO ALLOW ACCESS FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION OR ANY OTHER DUCTS NOT CONNECTED TO THE DAMPER BEING INSPECTED, SERVICED, REPAIRED OR REPLACED. GRAVITY OR BAROMETRIC DAMPERS SHALL NOT BE USED IN PASSIVE MAKEUP AIR SYSTEMS EXCEPT WHERE THE DAMPERS ARE RATED TO PROVIDE THE DESIGN MAKEUP AIRFLOW AT A PRESSURE DIFFERENTIAL OF 0.01 IN. W.C. (3 PA) OR LESS.

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
a. SEE TABLE M1505.4.3 FOR MINIMUM VENTILATION RATES.

M1505.2 RECIRCULATION OF AIR.
EXHAUST AIR FROM BATHROOMS AND TOILET ROOMS SHALL NOT BE RECIRCULATED WITHIN A RESIDENCE OR CIRCULATED TO ANOTHER DWELLING UNIT AND SHALL BE EXHAUSTED DIRECTLY TO THE OUTDOORS. EXHAUST AIR FROM BATHROOMS, TOILET ROOMS AND KITCHENS SHALL NOT DISCHARGE INTO AN ATTIC, CRAWL SPACE OR OTHER AREAS INSIDE THE BUILDING.

M1505.3 EXHAUST EQUIPMENT.
EXHAUST EQUIPMENT SERVING SINGLE DWELLING UNITS SHALL BE LISTED AND LABELED AS PROVIDING THE MINIMUM REQUIRED AIRFLOW IN ACCORDANCE WITH ANSI/AMCA 210-ANSI/ASHRAE 51.

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.
a. PER IRC M1505.4.1.1, WHOLE-HOUSE VENTILATION FANS MUST BE RATED FOR SOUND AT A MAXIMUM OF 1.0 SONE. THIS SOUND RATING SHALL BE AT A MINIMUM OF 0.1 IN. W.C. STATIC PRESSURE IN ACCORDANCE WITH HVI PROCEDURES SPECIFIED IN IRC M1505.4.1.2 AND M1505.4.1.3.
b. WHOLE-HOUSE MECHANICAL VENTILATION SYSTEMS ARE REQUIRED TO BE TESTED, BALANCED, AND VERIFIED TO PROVIDE A FLOW RATE NOT LESS THAN THE MINIMUM REQUIRED BY IRC M1505.4.3 AND M1505.4.4 PER IRC M1505.4.1.6.
c. THE WHOLE HOUSE MECHANICAL SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE.

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, OR OTHER APPROVED METHODS.

M1601.1.1 ABOVE GROUND DUCTS
a. DISCHARGE TEMP LIMIT OF 250 DEGREES FAHRENHEIT
b. LABEL WITH UL 181 AND INSTALLED TO MANUF. SPECS
c. FIELD-FABRICATED, SHOP-FABRICATED, AND FLEXIBLE DUCT CONSTRUCTION SHALL CONFORM TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE EXCEPT AS ALLOWED BY TABLE M1601.1.1 GALVANIZED STEEL SHALL CONFORM TO ASTM A 653
d. GYPSUM PERMITTED PROVIDED AIR TEMP IS LESS THAN 125 DEGREES F AND NOT SUBJECT TO CONDENSATION
e. DUCT SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS OF LESS THAN 200 FLAME SPREAD INDEX
f. STUD WALL CAVITIES, SEE 7.1-7.5

M1601.2 VIBRATION ISOLATORS
VIBRATION ISOLATORS INSTALLED BETWEEN MECHANICAL EQUIPMENT AND DUCTS SHALL BE FABRICATED FROM APPROVED MATERIALS LIST AND SHALL NOT EXCEED 10" IN LENGTH.

M1601.3 DUCT INSULATION MATERIALS
DUCT INSULATION MATERIALS TO CONFORM TO THE FOLLOWING:
1. DUCT COVERS AND LININGS TO MEET ASTM E 84 OR UL 723, AND ASTM E 2231
2. DUCT COVERINGS AND LININGS SHALL MEET ASTM C 411
3. REFLECTIVE DUCT INSULATION SHALL BE VISIBLE AT INTERVALS NO GREATER 36". R-VALUE IS DETERMINED IN ACCORDANCE WITH ASTM C 1668

M1601.4 INSTALLATION
DUCT INSTALLATION SHALL COMPLY WITH SECTIONS M1601.1.1 THROUGH M1601.4.10

M1701 COMBUSTION AIR
M1701.1 SCOPE
SOLID FUEL-BURNING APPLIANCES SHALL BE PROVIDED WITH COMBUSTION AIR IN ACCORDANCE WITH THE APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS. METHODS OF PROVIDING COMBUSTION AIR IN THIS CHAPTER DO NOT APPLY TO FIREPLACES, FIREPLACE STOVES AND DIRECT-VENT APPLIANCES. THE REQUIREMENTS FOR COMBUSTION AND DILUTION AIR FOR GAS-FIRED APPLIANCES SHALL BE IN ACCORDANCE WITH CHAPTER 24.

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. KING, SNOHOMISH & PIERCE COUNTY – **4C (MARINE)**
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. THE HEATING OR COOLING OUTDOOR DESIGN TEMPERATURES SHALL BE SELECTED FROM APPENDIX RC.

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), AND DUCTS OUTSIDE THE CONDITIONED SPACES; U-FACTORS FOR FENESTRATION; AND THE SOLAR HEAT GAIN COEFFICIENT (SHGC) OF FENESTRATION; THE RESULTS FROM ANY REQUIRED DUCT SYSTEM AND BUILDING ENVELOPE AIR LEAKAGE TESTING DONE ON THE BUILDING; AND THE RESULTS FROM THE WHOLE HOUSE MECHANICAL VENTILATION SYSTEM FLOW RATE TEST. THE CERTIFICATE SHALL ALSO LIST THE TYPE AND EFFICIENCY OF HEATING, COOLING, AND SERVICE WATER HEATING EQUIPMENT.
R402 BUILDING THERMAL ENVELOPE
THE BUILDING THERMAL ENVELOPE WILL MEET THE REQUIREMENTS OF SECTIONS R402.1.1 THROUGH R402.1.6

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 WHEREVER THE FULL HEIGHT OF UNCOMPRESSED R-38 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES. THIS REDUCTION SHALL NOT APPLY TO THE U-FACTOR ALTERNATIVE APPROACH IN SECTION R402.1.3 AND THE TOTAL UA ALTERNATIVE IN SECTION R402.1.4.
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.
a. PROVIDE R-10 CONTINUOUS INSULATION UNDER HEATED SLAB ON GRADE FLOORS PER R402.2.9.1.
b. PROVIDE CLASS I VAPOR RETARDER AT CRAWL SPACE & LAP 12" AT SEAMS AND EXTEND TO FOUNDATION WALL.
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. ABOVE-GRADE INSULATION SHALL BE PROTECTED. INSULATION USED ON THE INTERIOR (WARM) SIDE OF THE WALL SHALL EXTEND FROM THE TOP OF THE BELOW-GRADE WALL TO THE BELOW-GRADE FLOOR LEVEL AND SHALL INCLUDE R-5 RIGID BOARD PROVIDING A THERMAL BREAK BETWEEN THE CONCRETE WALL AND THE SLAB.
ABOVE GRADE WALLS: PROVIDE FACE STAPLED BATTS TO AVOID COMPRESSION. *PROVIDE MIN R-10 INSULATION AT WALL HEADER.* (R402.1.1[M])
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. PROVIDE AN AIR BARRIER AND INSULATION INSTALLATION PER TABLE R402.1.1
a. THE *BUILDING THERMAL ENVELOPE* SHALL COMPLY WITH SECTIONS R402.4.1.1 AND R402.4.1.2 PER R402.4.1 THE SEALING METHODS BETWEEN DISSIMILAR MATERIALS SHALL ALLOW FOR DIFFERENTIAL EXPANSION AND CONTRACTION.
b. THE COMPONENTS OF THE *BUILDING THERMAL ENVELOPE* AS LISTED IN TABLE R402.4.1.1 SHALL BE INSTALLED PER R402.4.1. WHERE REQUIRED BY THE *CODE OFFICIAL*, AN *APPROVED* THIRD PARTY SHALL INSPECT ALL COMPONENTS AND VERIFY COMPLIANCE.
c. THE BUILDING OR DWELLING UNIT SHALL BE TESTED PER R402.4.1.2 AND VERIFIED AS HAVING AN AIR LEAKAGE RATE OF NOT EXCEEDING ***5.0*** AIR CHANGES PER HOUR. TESTING SHALL BE CONDUCTED WITH A BLOWER DOOR AT A PRESSURE OF 0.2 INCHES W.G.
d. NEW WOOD-BURNING FIREPLACES SHALL HAVE TIGHT-FITTING FLUE DAMPERS AND OUTDOOR COMBUSTION AIR PER R402.4.2
e. WINDOWS, SKYLIGHTS AND SLIDING GLASS DOORS SHALL HAVE AN AIR INFILTRATION RATE PER R402.4.2
f. RECESSED LUMINARIES INSTALLED IN THE *BUILDING THERMAL ENVELOPE* SHALL BE TYPE IC-RATED AND CERTIFIED UNDER ASTM E283 AS HAVING AN AIR LEAKAGE RATE PER R402.4.4

R403 SYSTEMS
R403.1 AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM.
a. WHERE THE PRIMARY HEATING SYSTEM IS A FORCED-AIR FURNACE, AT LEAST ONE PROGRAMMABLE THERMOSTAT PER DWELLING UNIT SHALL BE INSTALLED PER R403.1.1
b. UNITARY AIR COOLED HEAT PUMPS SHALL INCLUDE CONTROLS PER R403.1.2
R403.3 DUCTS AND AIR HANDLERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS R403.2.1 THROUGH R403.2.3
a. DUCTS SHALL BE INSULATED TO A MINIMUM OF R-8 PER R403.3.1
b. DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED PER R403.3.2
c. AIR HANDLERS SHALL HAVE A MANUFACTURER'S DESIGNATION FOR AN AIR LEAKAGE IN ACCORDANCE WITH ASHRAE 193 PER R403.3.2.1
d. PER R403.3.5, BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.
e. DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RS-33, USING THE MAXIMUM DUCT LEAKAGE SPECIFIED PER R403.3.3.
   - TOTAL LEAKAGE MUST BE VERIFIED BY EITHER THE ROUGH-IN TEST OR POSTCONSTRUCTION TEST PER WSEC R403.3.3.
   - TOTAL LEAKAGE MUST BE LESS THAN OR EQUAL TO 4 CFM PER 100 S.F. OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 " W.G. (25 PA) ACROSS THE ENTIRE SYSTEM.

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.
a. PIPING INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE PER R403.4.1
R403.5 ENERGY CONSERVATION MEASURES FOR SERVICE HOT WATER SYSTEMS SHALL BE IN ACCORDANCE WITH SECTIONS R403.5.1 THROUGH R403.5.5
a. CIRCULATING HOT WATER SYSTEMS SHALL BE INSTALLED PER R403.5.1.1
b. INSULATION FOR HOT WATER PIPE SHALL HAVE A MINIMUM THERMAL RESISTANCE (*R*-VALUE) OF R-3. (R403.5.3)
c. ALL ELECTRIC WATER HEATERS IN UNHEATED SPACES OR ON CONCRETE FLOORS SHALL BE PLACED ON AN INCOMPRESSIBLE, INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10. (R403.5.5)

R404 POWER AND LIGHTING SYSTEMS
R404.1 A MINIMUM OF 90 PERCENT OF PERMANENTLY INSTALLED LAMPS IN LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.
a. PER R404.1.1 FUEL GAS LIGHTING SYSTEMS SHALL NOT HAVE CONTINUOUSLY BURNING PILOT LIGHTS.

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

No.	Description	Date

ATERA HOMES
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

ENERGY NOTES

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A002

SCALE 24X36:
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWING

Area Schedule (Energy/Venting Calculations)

Name	Area	Perimeter	Level
SLAB ON GRADE	162 SF	52'-0"	Level 0
FLOOR INSUL	1518 SF	170'-6"	Level 1
FLOOR INSUL	156 SF	52'-0"	Level 1
CEILING - FLAT	73 SF	34'-6"	Level 2
FLOOR INSUL	290 SF	170'-0"	Level 2
FLOOR INSUL	39 SF	32'-0"	Level 2
CEILING - FLAT	1798 SF	199'-6"	T.O. PL LvI2
CEILING - VAULT	91 SF	38'-0"	T.O. PL LvI2

ROOF VENTING SCHEDULE

NAME	GROSS AREA	AREA CALCULATIONS			% AT EAVES	EAVE/PARAPET VENTING			ROOF JACKS		
		REQ'D VENT AREA	NET AREA	REQUIRED VENTING		REQUIRED EAVE	CALCULATIONS LF OF VENT	CALCULATIONS PROVIDED	REQUIRED JACKS	CALCULATIONS # OF JACKS	CALCULATIONS 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

CRAWL SPACE VENTING

NAME	AREA	PERIMETER	AREA CALCULATIONS NET AREA	NET FREE AREA	VENTING REQUIRED	VENTS REQUIRED VENT SIZE: 14" x 8" VENT AT .75 EFF	TOTAL VENTS REQUIRED	VENTING PROVIDED TOTAL VENTS SHOWN	TOTAL VENTING AREA PROVIDED
I	823 SF	133'-0 1/2"	825 SF	300	2.75 SF	0.583	4.72	9	5 SF
II	138 SF	49'-11 1/2"	138 SF	300	0.46 SF	0.583	0.79	6	3 SF

ROOF VENTING NOTES:

1. (4) 2" DIA EAVE VENTS PER BLOCK= 5.024 SQ. IN. / L.F. (60% NET FREE AREA)
2. ROOF JACKS = 50 SQ. IN. EACH
3. INSTALL ONE LOW ROOF JACK, WITHIN 36" OF EAVE, FOR EVERY 12 LF OF EAVE WITHIN 60" OF PROPERTY LINE.
4. 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.
5. 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:

1. 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.
2. 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

3. 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.
4. 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:
   - A. PERFORATED SHEET METAL PLATES NOT LESS THAN 0.070 INCH THICK.
   - B. EXPANDED SHEET METAL PLATES NOT LESS THAN 0.047 INCH THICK.
   - C. CAST-IRON GRILL OR GRATING.
   - D. EXTRUDED LOAD-BEARING BRICK VENTS.
   - E. HARDWARE CLOTH OF 0.035 INCH (0.89 MM) WIRE OR HEAVIER.
   - F. CORROSION-RESISTANT WIRE MESH, WITH THE LEAST DIMENSION BEING 1/8 INCH

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: 4,185 SF
PROPOSED COVERAGE: 22.17%

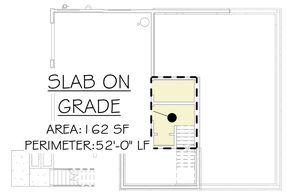
GROSS FLOOR AREA CALCULATIONS:

SITE AREA: 19,325 SF
MAX COVERAGE: 40% (7,730)

PROPOSED AREA: 4,185 SF
PROPOSED COVERAGE: 21.65%

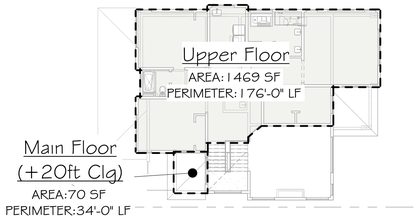
AREA SCHEDULE - GROSS

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



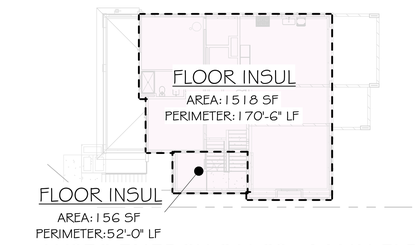
10 WSEC ENERGY CALCS - LOWER FLR

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



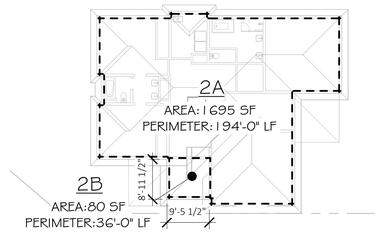
13 GROSS FLOOR AREA - UPPER FLR

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



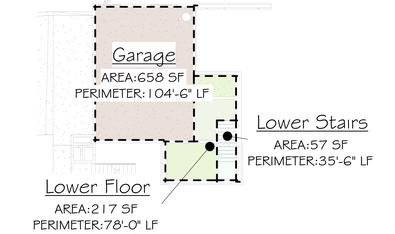
9 WSEC ENERGY CALCS - MAIN FLR

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



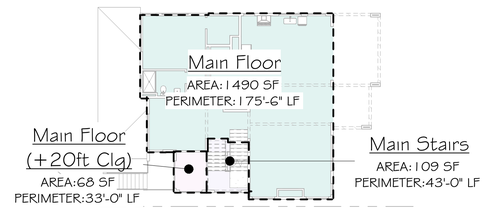
6 ROOF VENTING - UPPER

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



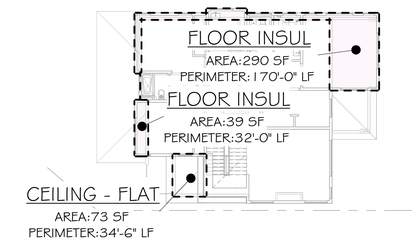
1 Lower Floor F.A.R.

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



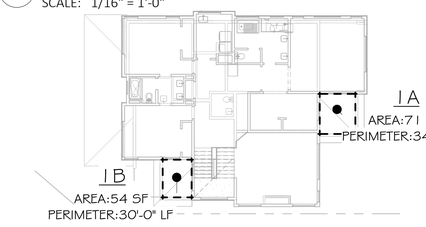
12 GROSS FLOOR AREA - MAIN FLR

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



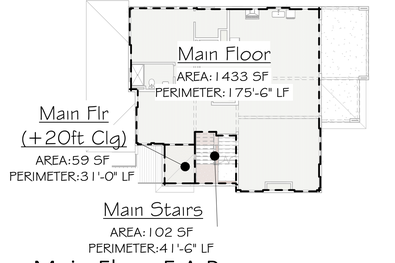
8 WSEC ENERGY CALCS - UPPER FLR

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



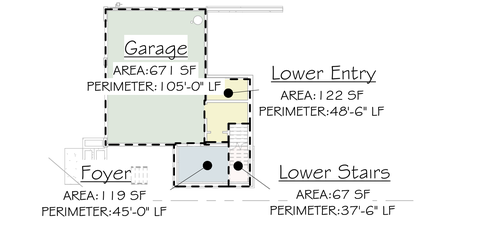
5 ROOF VENTING - MAIN

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



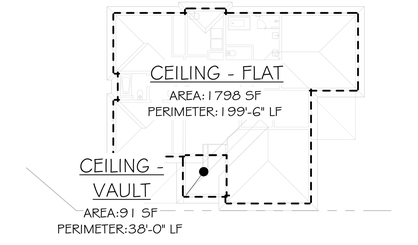
2 Main Floor F.A.R.

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



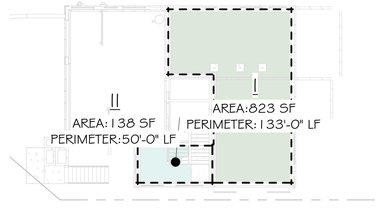
11 GROSS FLOOR AREA - LOWER FLR

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



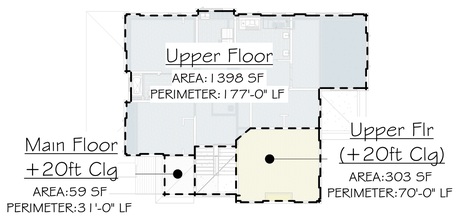
7 WSEC ENERGY CALCS - ROOF

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"

No.	Description	Date

ATERA HOMES
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

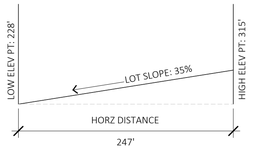
ENERGY/VENTING CALCULATIONS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A003

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

C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, Mercer Island_SUB2.rvt
7/29/2024 12:26:46 PM



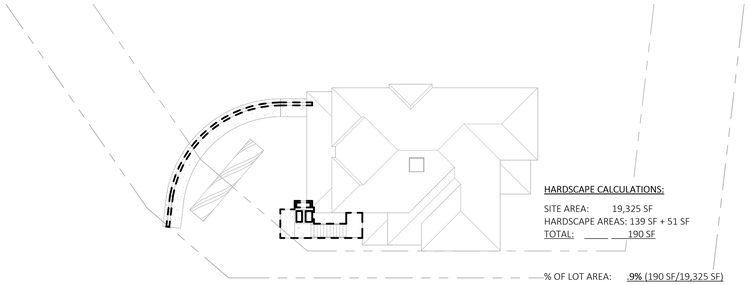
LOT SLOPE CALCULATIONS:
HT ELEV POINT: 315 FT
LW ELEV POINT: 228 FT

ELEV DIFFERNCE: 87 FT
HORZ DISTANCE: 247 FT

LOT SLOPE: (87/247)*100 = 35%

6 Lot Slope

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



HARDSCAPE CALCULATIONS:
SITE AREA: 19,325 SF
HARDSCAPE AREAS: 139 SF + 51 SF
TOTAL: 190 SF

% OF LOT AREA: .9% (190 SF/19,325 SF)
MAX HARDSCAPE: 9% (1,739 SF)

5 B.O. FTG

SCALE: 1" = 20'-0"

LOT WIDTH CIRCLE METHOD
PER MICC 19.16.010.

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)*

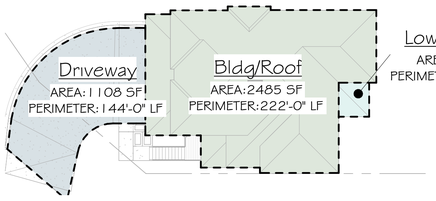
REQUIRED: 30 PERCENT OF THE TREES WILL NEED TO BE RETAINED. TREES THAT ARE EXCEPTIONAL, ARE LARGE, AND HAVE A HIGH LIKELIHOOD FOR LONG-TERM SURVIVAL ARE PRIORITIZED FOR RETENTION

PROPOSED:
EXISTING D.B.H.: 875.6"
RETAINED D.B.H.: 576.4" (576.4 / 875.6 = **65.8%**
REMOVED D.B.H.: 299.2" **RETAINED**

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

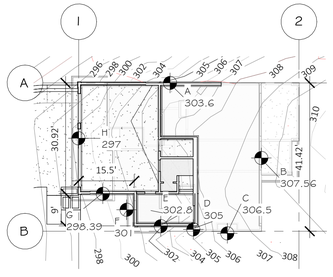


LOT COVERAGE CALCULATIONS:
SITE AREA: 19,325 SF
ACCESS ESMT: -- SF
NET AREA: 19,325 SF

IMPERVIOUS AREAS:
BUILDING/ROOF AREA: 3,674 SF
% OF LOT AREA: **19%** *(3,674 / 19,325)*

2 LOT COVERAGE CALCULATIONS

SCALE: 1" = 20'-0"

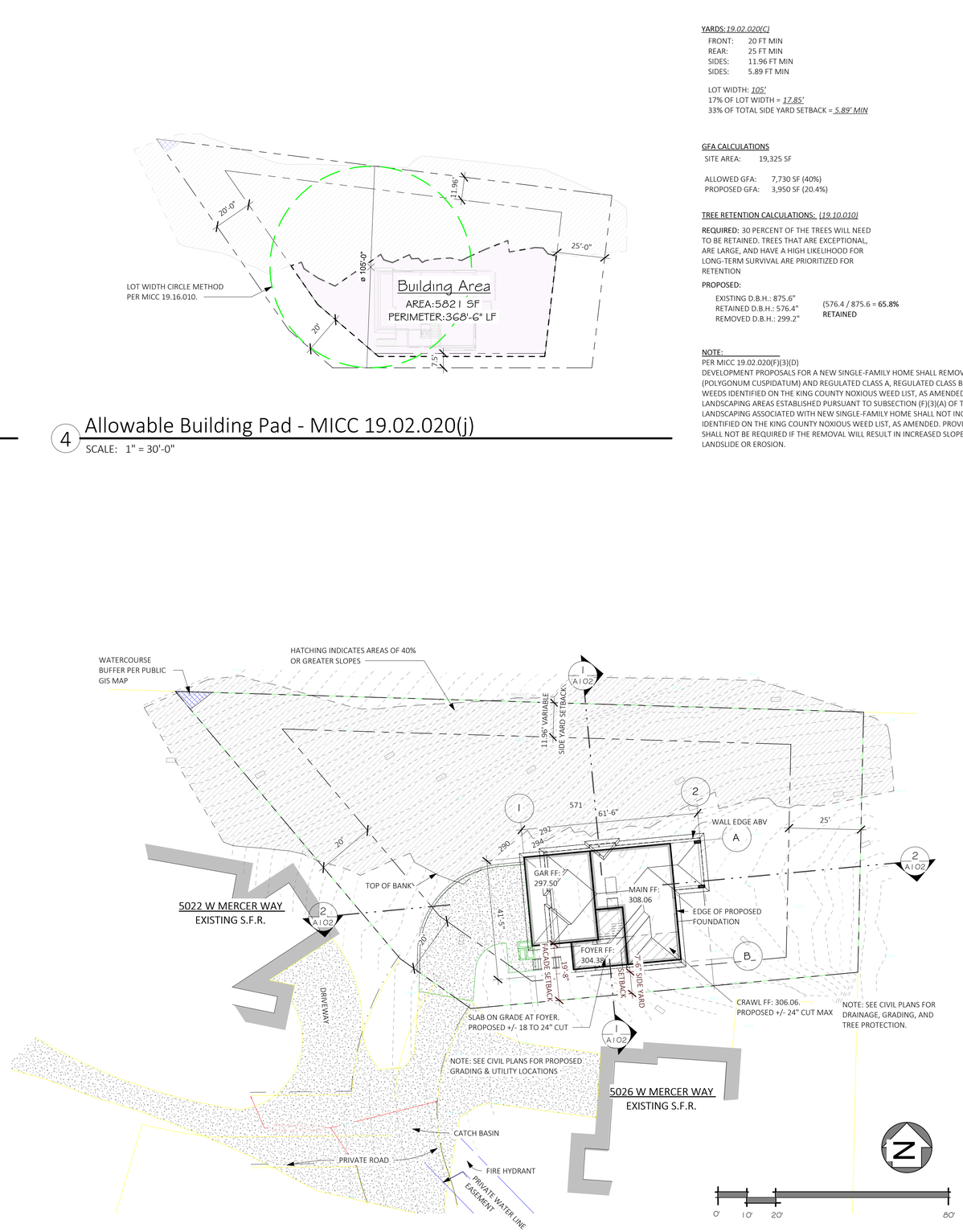


A.B.E. CHART			
	A.B.E. DATA		A.B.E. CALCULATIONS (ELEV * LENGTH)
MARK	MID PT ELEV	SEGMENT LENGTH	
A	303.6	51	15483.6
B	307.56	41.92	12892.9152
C	306.5	19	5823.5
D	305	2	610
E	302.8	18.54	5613.912
F	301	9	2709
G	298.39	13.46	4016.3294
H	297	30.92	9183.24
		185.84	56332.4966

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

3 AVERAGE BLDG HT CALCULATIONS

SCALE: 1" = 20'-0"



1 SITE PLAN

SCALE: 1" = 20'-0"

No.	Description	Date

ATERA HOMES

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

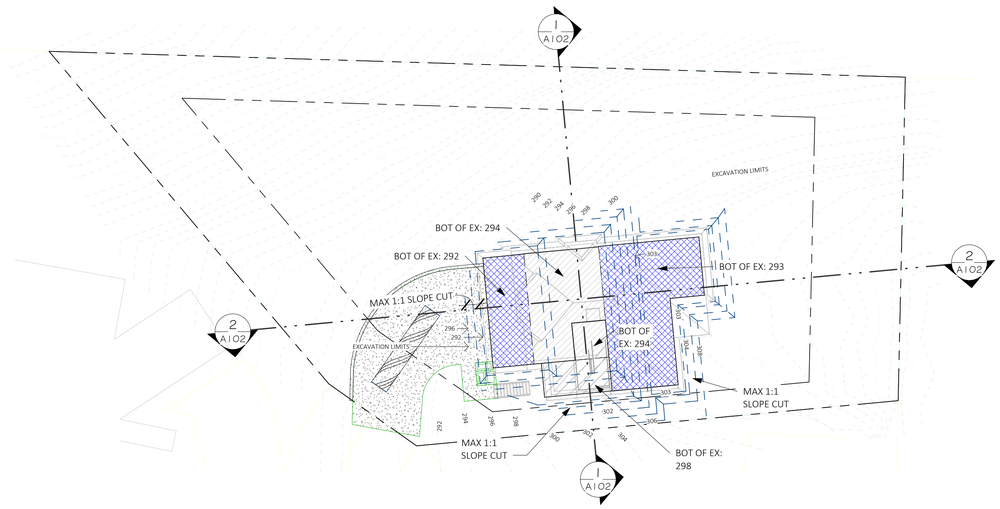
SITE PLAN & AREA/HT CALCULATIONS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A101

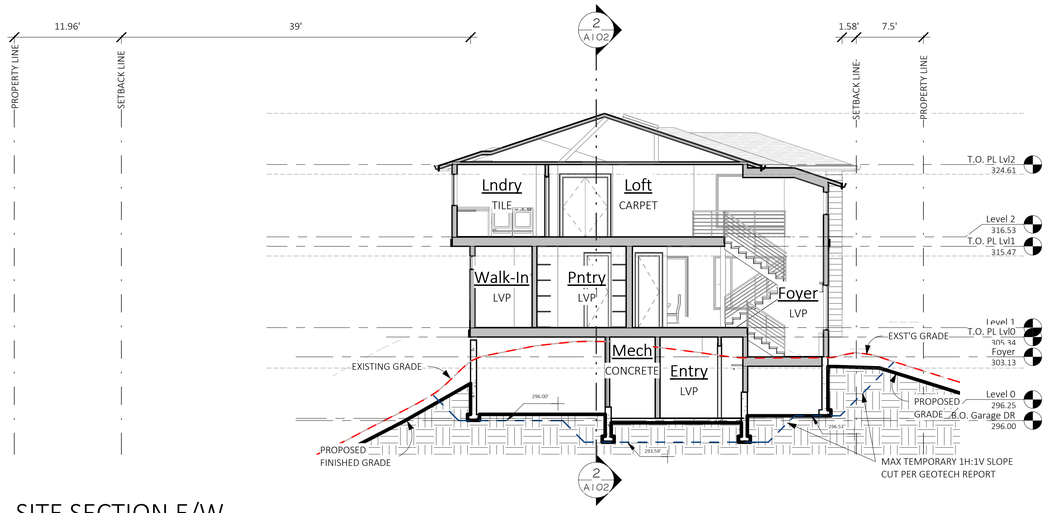
SCALE 24X36: As indicated
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence_MI - SUB2.rvt
7/29/2024 12:27:10 PM



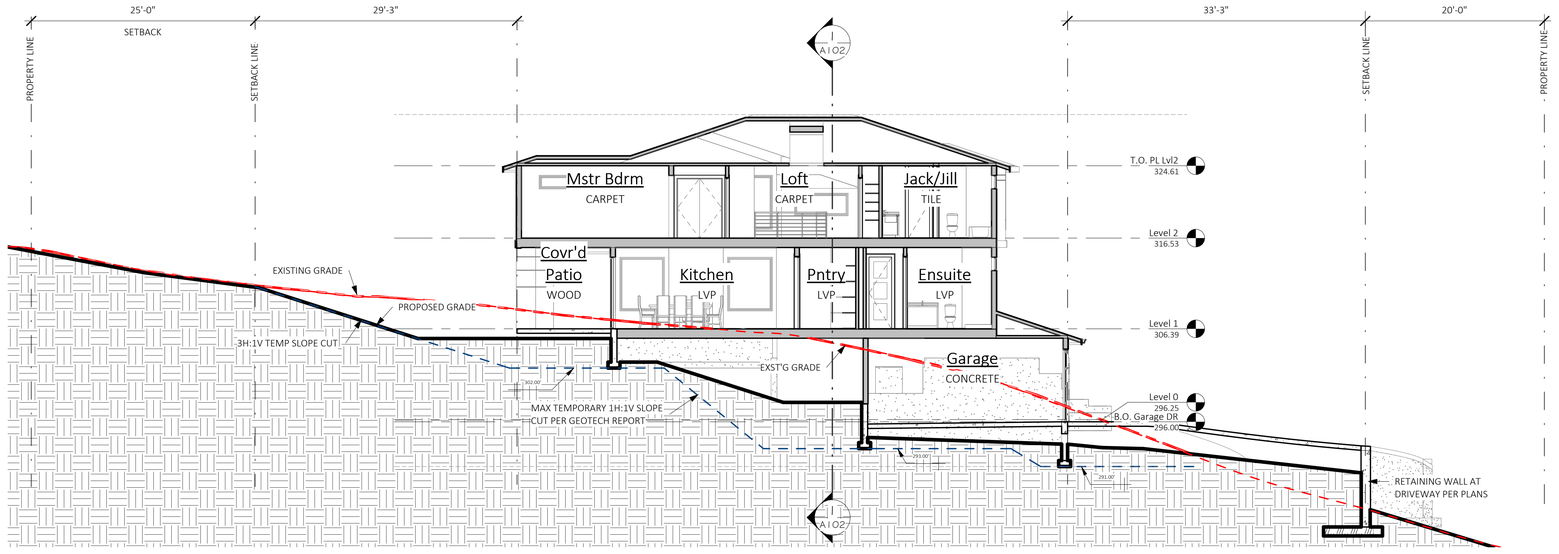
3 TEMP EXCAVATION PLAN

SCALE: 1" = 20'-0"



1 SITE SECTION E/W

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



2 SITE SECTION N/S

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

7/29/2024 12:27:13 PM

C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence_MI - SUB2.rvt

No.	Description	Date

ATERA HOMES

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

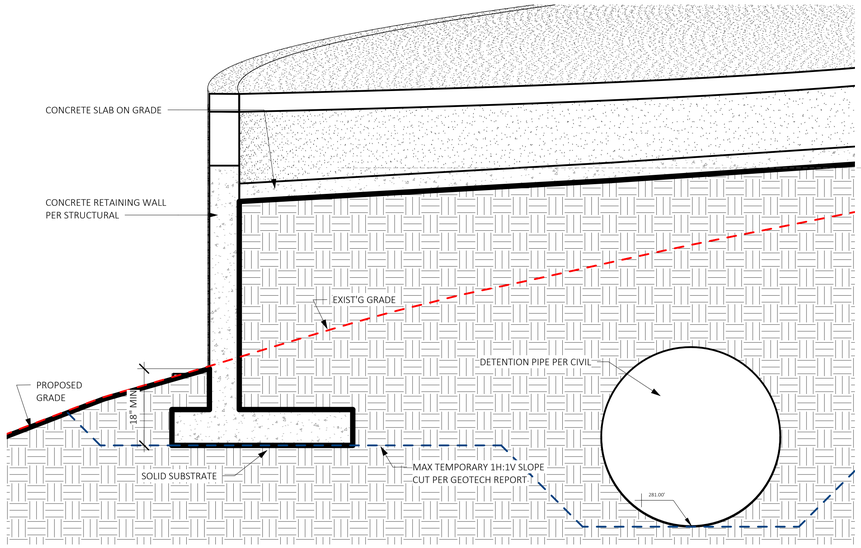
TEMPORARY EXCAVATION PLAN & SITE SECTIONS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	MEO

A102

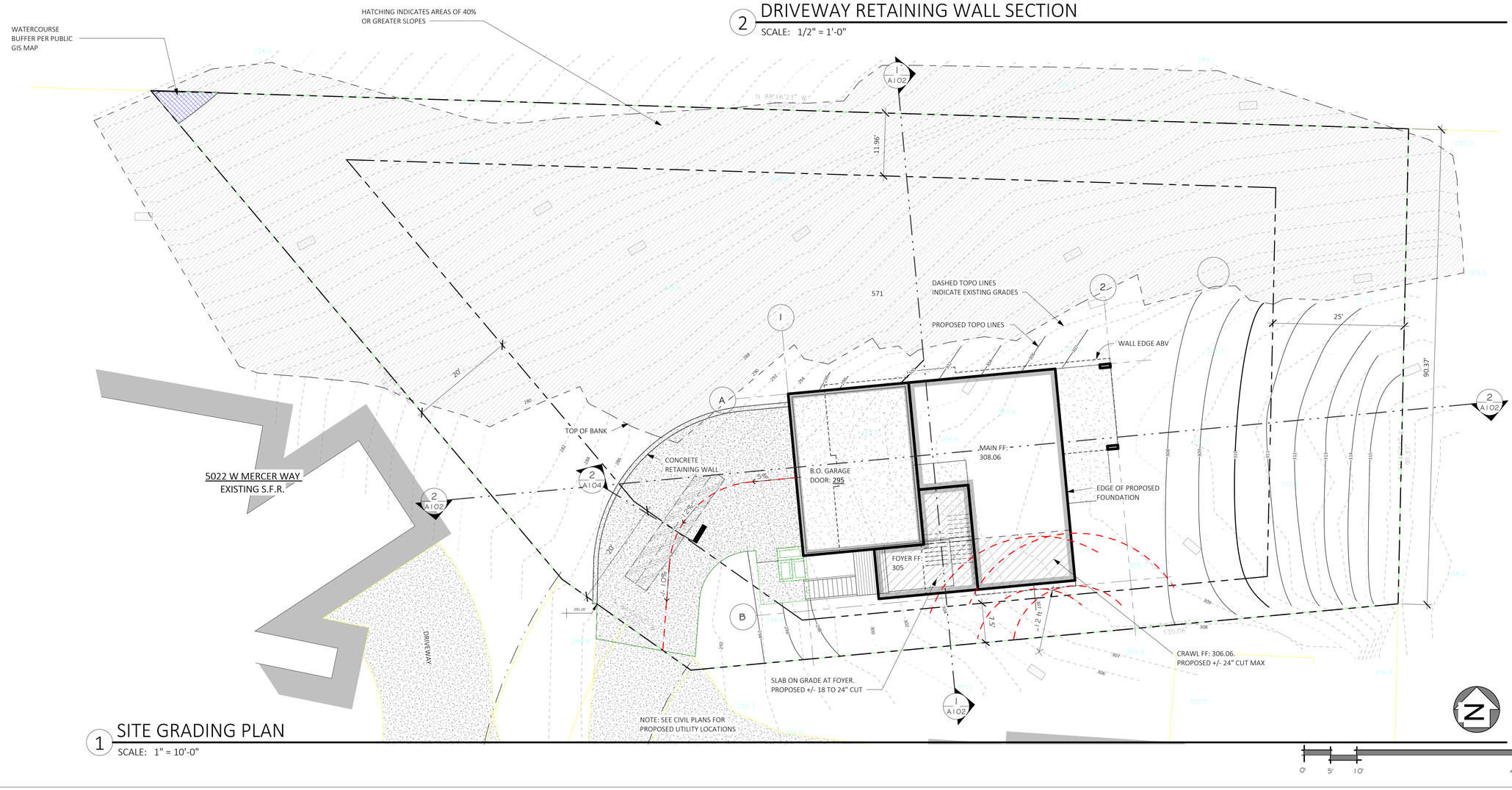
SCALE 24X36: As indicated

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.



2 DRIVEWAY RETAINING WALL SECTION

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



1 SITE GRADING PLAN

SCALE: 1" = 10'-0"

No.	Description	Date

ATERA HOMES

MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

PROPOSED GRADING PLAN

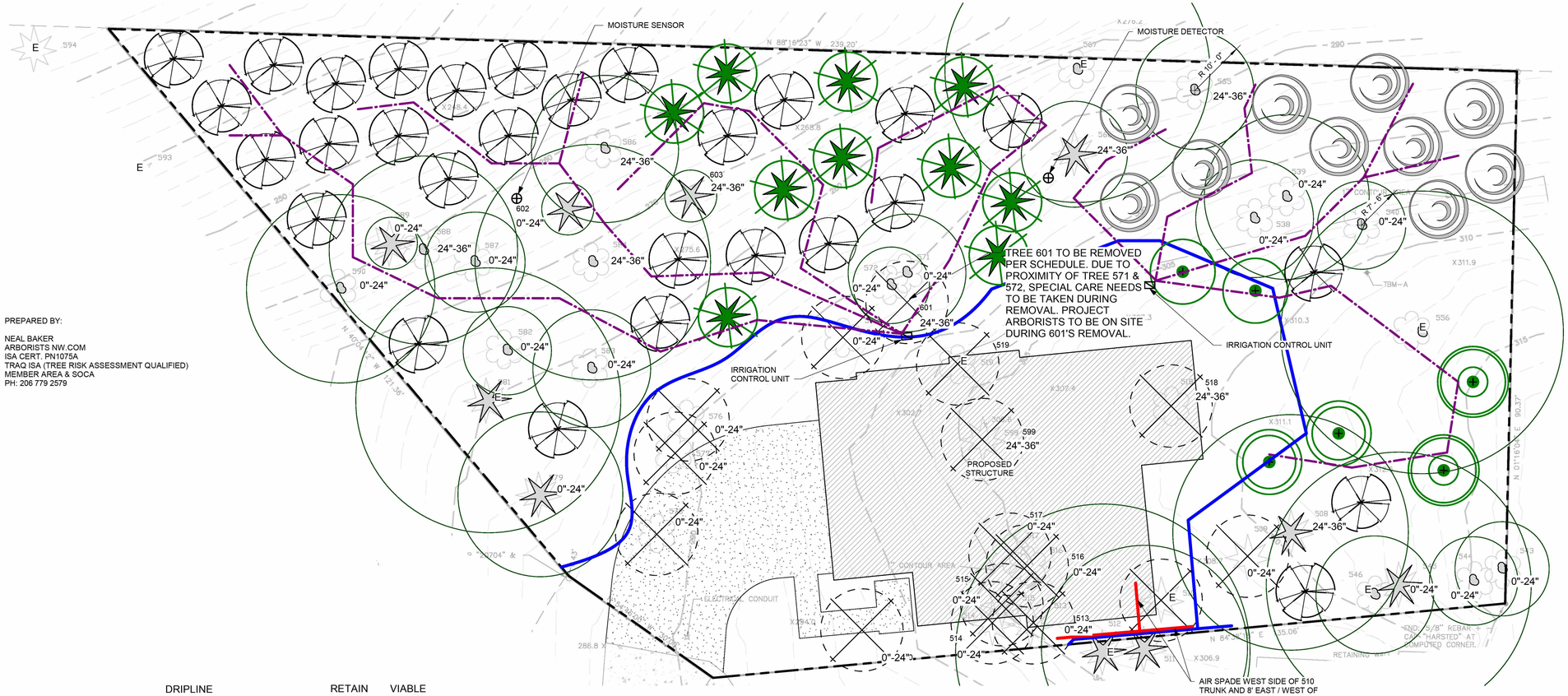
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A104

SCALE 24X36: As indicated

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:27:16 PM
C:\Users\MiltonOrellana\DOCACCDocs\ST\UDI\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt



ARBORISTS SITE PLAN
1" = 10'-0"

0' 5' 10' 40' NORTH

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 (DIA) 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.
511	DOUGLAS FIR	(Pseudotsuga menziesii)	28"	35'	FAIR/GOOD	RETAIN	VIABLE	DISTORTED WITH BUTT SWELL
512	DOUGLAS FIR	(Pseudotsuga menziesii)	36"	50'	FAIR/GOOD	RETAIN	VIABLE	DISTORTED
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

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

TREE PROTECTION AREA (TPZ)

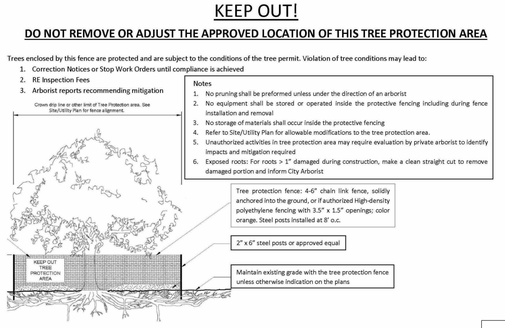
KEEP OUT!

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

Notes
1. No pruning shall be preformed unless under the direction of an arborist
2. No equipment shall be stored or operated inside the protective fencing including during fence installation and removal
3. No storage of materials shall occur inside the protective fencing
4. Refer to Site/Utility Plan for allowable modifications to the tree protection area.
5. Unauthorized activities in tree protection area may require evaluation by private arborist to identify impacts and mitigation required
6. Exposed roots: For roots > 1" damaged during construction, make a clean straight cut to remove damaged portion and inform City Arborist



Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org

	TREE DRIP LINE	
	EVERGREEN TREE	
	DECIDUOUS TREE	
	TREE TO BE REMOVED	
	TREE PROTECTION FENCING MUST BE PLACED PRIOR TO CONSTRUCTION ACTIVITY	
E	"E" DELINEATES ALL EXCEPTIONAL TREES PER CITY LIST AND THOSE WITH DBH'S 24" AND ABOVE	
	DOUGLAS FIR	10
	WESTER RED CEDAR	10
	VINE MAPLE	29
	Fuyu persimmon	2
	Magnolia	2
	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*

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

arboristsNW

Arborists NW is a full spectrum arboricultural, consulting and landscape design and installation provider. When you think tree and landscape services, think Arborists NW.

ONLINE: https://arboristsnw.com/
PHONE: 206-779-2579
EMAIL: neal@arboristsnw.com

No.	Description	Date

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

7/11/2024 9:11:45 PM

Door Schedule

TYPE MARK	DOOR STYLE	COMMENTS	SIZE WIDTH	SIZE HT	COUNT	DOOR PANEL CONTRUCTION
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 WIDTH	SIZE HT	COUNT	DESCRIPTION	IS EGRESS
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:

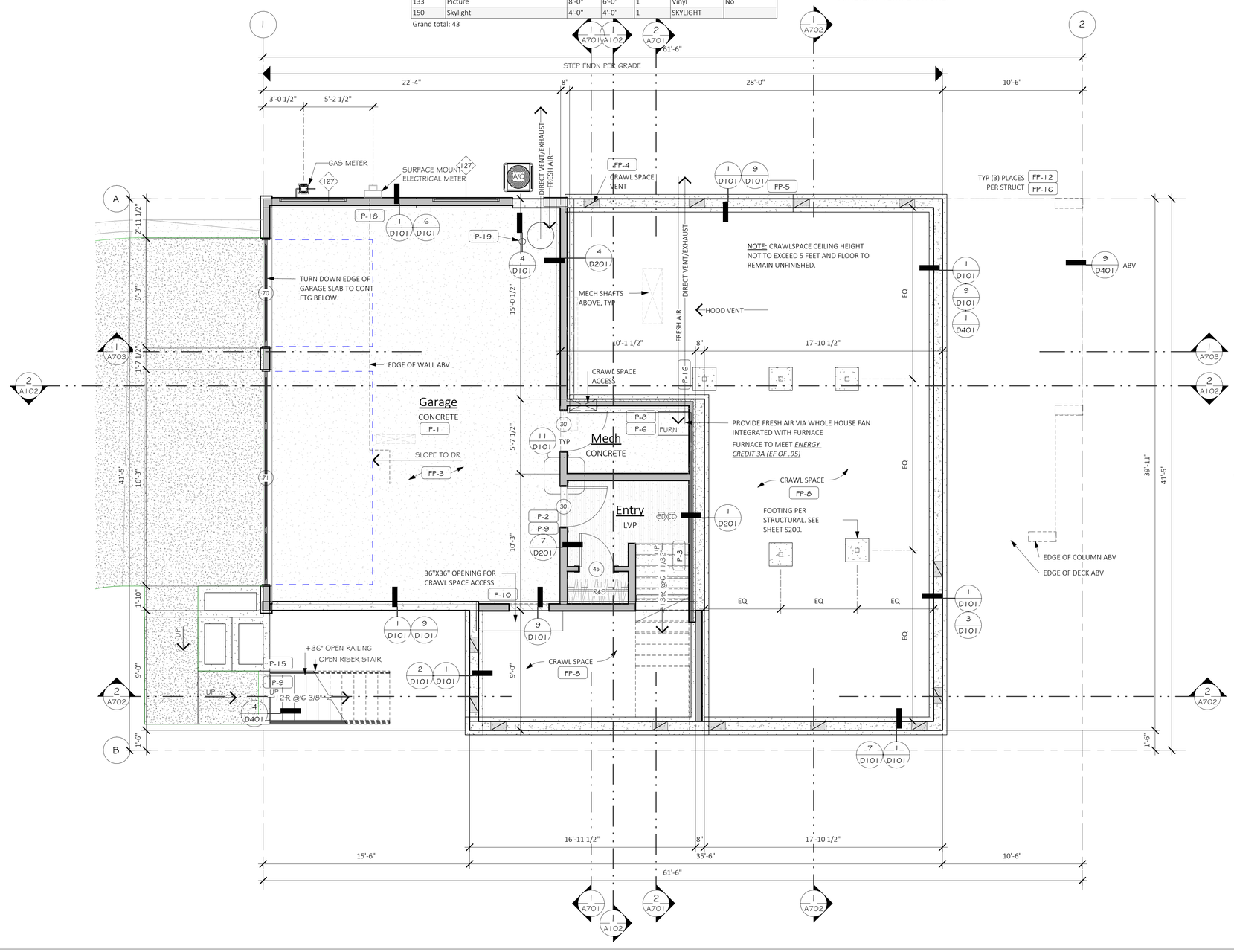
1. SEE ARCHITECTURAL FLOOR PLANS FOR WINDOW LOCATIONS AND DESIGNATIONS. SEE ELEVATIONS & BUILDING SECTIONS FOR WINDOW HEAD/SILL LOCATIONS.
2. ALL RESIDENTIAL WINDOWS ARE BASED UPON MILGARD VINYL WINDOWS. EXCEPT AS NOTED.
3. ALL WINDOWS SHALL HAVE THROUGH-WINDOW AIR INLETS AS PER WASHINGTON STATE VENTILATION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

TYP DOOR NOTES:

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

GENERAL PLAN NOTES:

1. SEE SHEET A001 FOR GENERAL CONSTRUCTION SPECIFICATIONS.
2. SEE BUILDING ELEVATIONS FOR WINDOW OPERATION.
3. SEE "TYPICAL BUILDING MATERIALS" LIST ON THE ELEVATION SHEET(s).
4. FOR THE SYMBOLS & LEGEND SEE SHEET A000.
5. 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 EQUIPED 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 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

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
	671 SF
	4185 SF

No. | Description | Date

ATERA HOMES
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

LOWER FLOOR

PROJECT NO: 20008
ISSUE DATE: 2024/07/29
SHT ISSUE DATE: 2024/07/29
DRAWN BY: SPM

A201

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

7/29/2024 12:27:23 PM
C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, Mercer Island - SUB2.rvt

Door Schedule

TYPE MARK	DOOR STYLE	COMMENTS	SIZE WIDTH	SIZE HT	COUNT	DOOR PANEL CONTRUCTION
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 WIDTH	SIZE HT	COUNT	DESCRIPTION	IS EGRESS
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:

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

TYP DOOR NOTES:

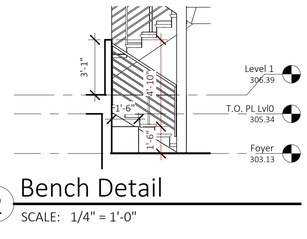
1. ALL RESIDENTIAL SLIDING GLASS DOORS ARE BASED ON MILGARD SERIES VINYL SLIDING DOORS.
2. GLAZING TO BE PER ENERGY COMPLIANCE NOTES. SEE SHEETS A000 - A002.
3. PROVIDE SAFETY GLAZING PER GENERAL NOTES.
4. NOT USED.
5. PROVIDE MIN 0.20 U-VALUE AT SOLID CORE FLUSH DOORS WHERE EXPOSED TO AMBIENT TEMPERATURE.

GENERAL PLAN NOTES:

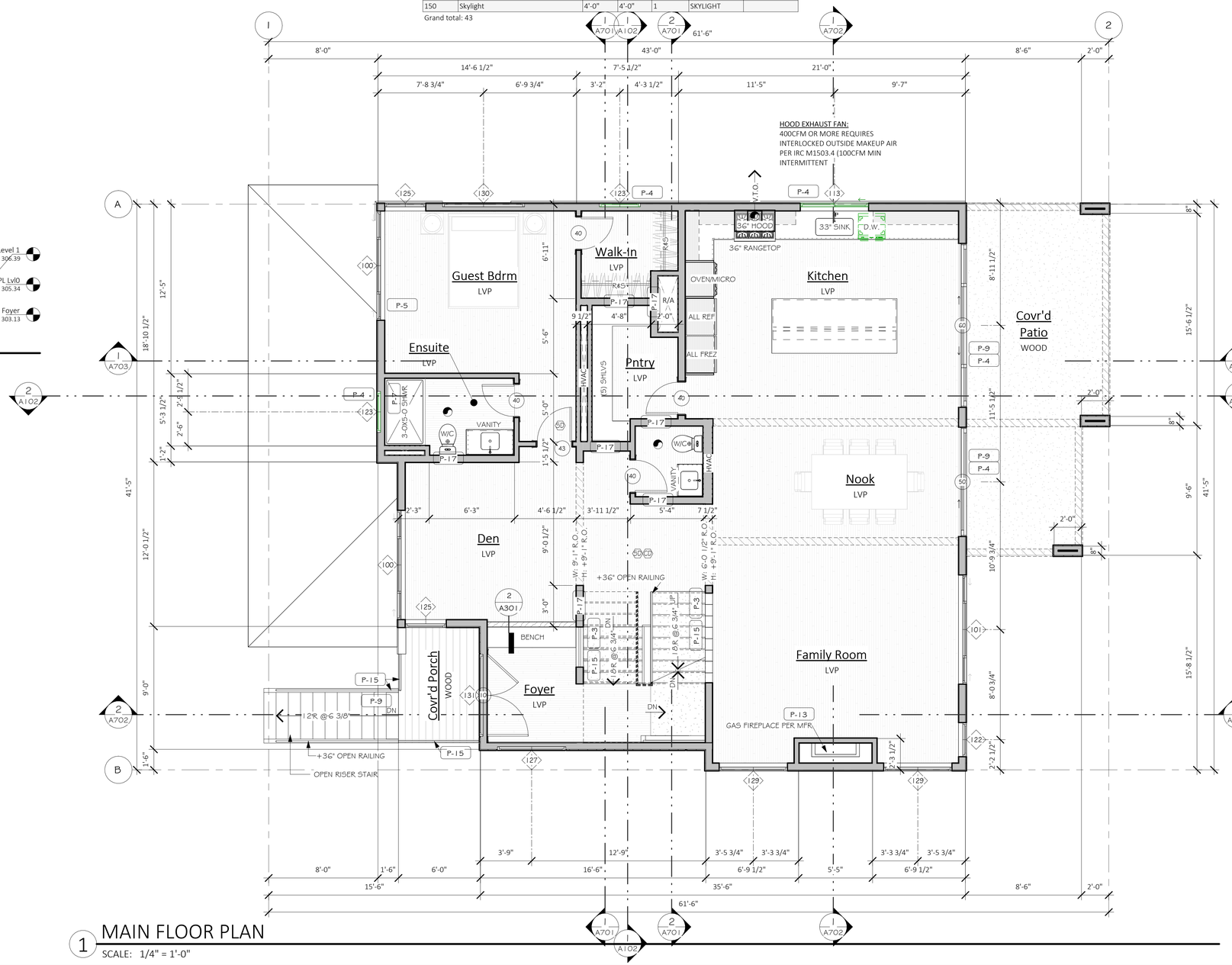
1. SEE SHEET A001 FOR GENERAL CONSTRUCTION SPECIFICATIONS.
2. SEE BUILDING ELEVATIONS FOR WINDOW OPERATION.
3. SEE "TYPICAL BUILDING MATERIALS" LIST ON THE ELEVATION SHEET(s).
4. FOR THE SYMBOLS & LEGEND SEE SHEET A000
5. SEE STRUCTURAL SHEETS FOR SHEARWALL DESIGNATIONS & HOLDDOWNS AND SHEET S100 FOR 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 EQUIPED 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 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

No.	Date	Description

ATERA HOMES
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

MAIN FLOOR

PROJECT NO: 20008
ISSUE DATE: 2024/07/29
SHT ISSUE DATE: 2024/07/29
DRAWN BY: SPM

A301

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

C:\Users\WiltonOrellana\DCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt
7/29/2024 12:27:27 PM

Door Schedule

TYPE MARK	DOOR STYLE	COMMENTS	SIZE WIDTH	SIZE HT	COUNT	DOOR PANEL CONTRUCTION
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 WIDTH	SIZE HT	COUNT	DESCRIPTION	IS EGRESS
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:

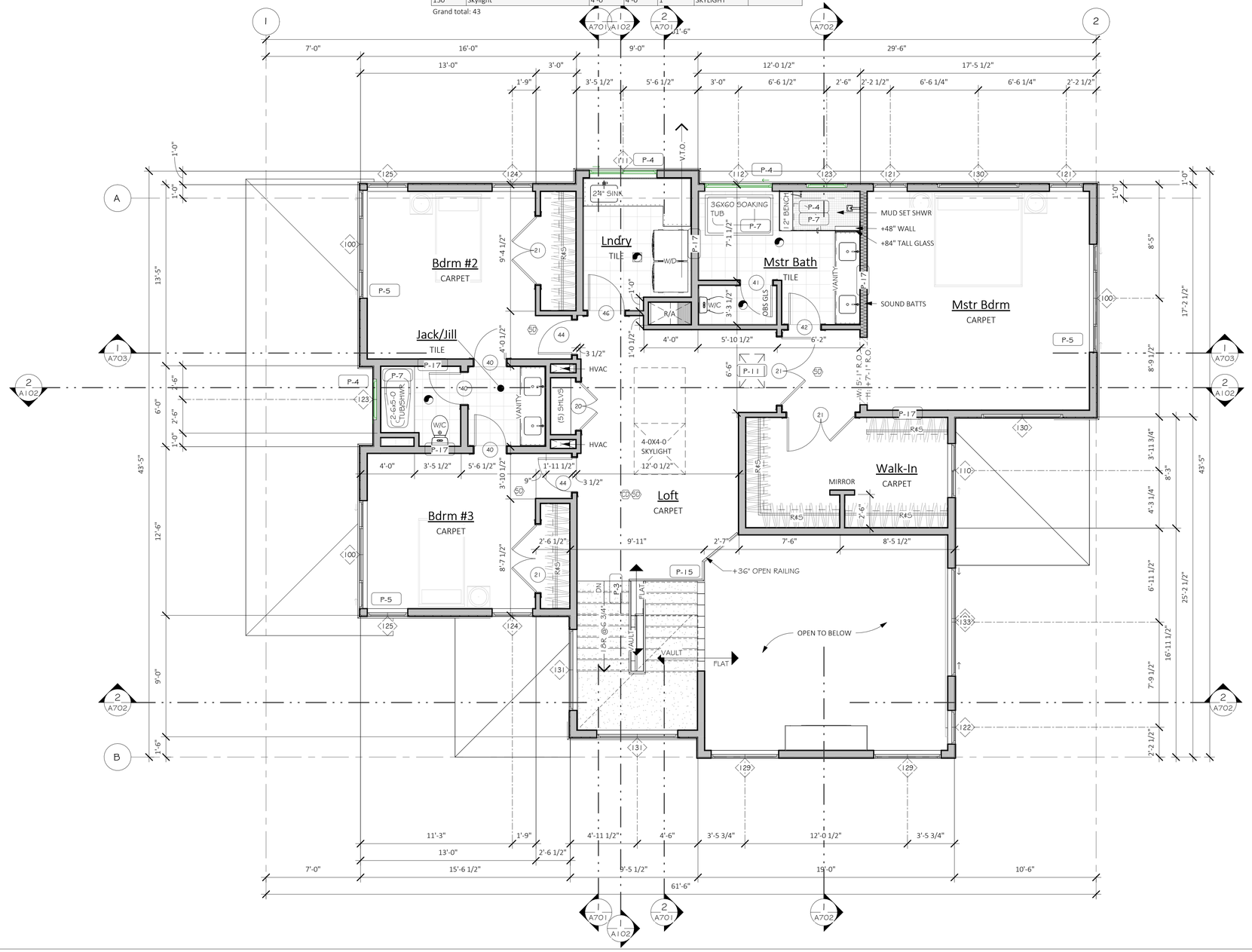
1. SEE ARCHITECTURAL FLOOR PLANS FOR WINDOW LOCATIONS AND DESIGNATIONS. SEE ELEVATIONS & BUILDING SECTIONS FOR WINDOW HEAD/SILL LOCATIONS.
2. ALL RESIDENTIAL WINDOWS ARE BASED UPON MILGARD VINYL WINDOWS. EXCEPT AS NOTED.
3. ALL WINDOWS SHALL HAVE THROUGH-WINDOW AIR INLETS AS PER WASHINGTON STATE VENTILATION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

TYP DOOR NOTES:

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

GENERAL PLAN NOTES:

1. SEE SHEET A001 FOR GENERAL CONSTRUCTION SPECIFICATIONS.
2. SEE BUILDING ELEVATIONS FOR WINDOW OPERATION.
3. SEE "TYPICAL BUILDING MATERIALS" LIST ON THE ELEVATION SHEET(s).
4. FOR THE SYMBOLS & LEGEND SEE SHEET A000.
5. 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 EQUIPED 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 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	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 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

No. | Date | Description

ATERA HOMES
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

UPPER FLOOR

PROJECT NO: 20008
ISSUE DATE: 2024/07/29
SHT ISSUE DATE: 2024/07/29
DRAWN BY: SPM

A401

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

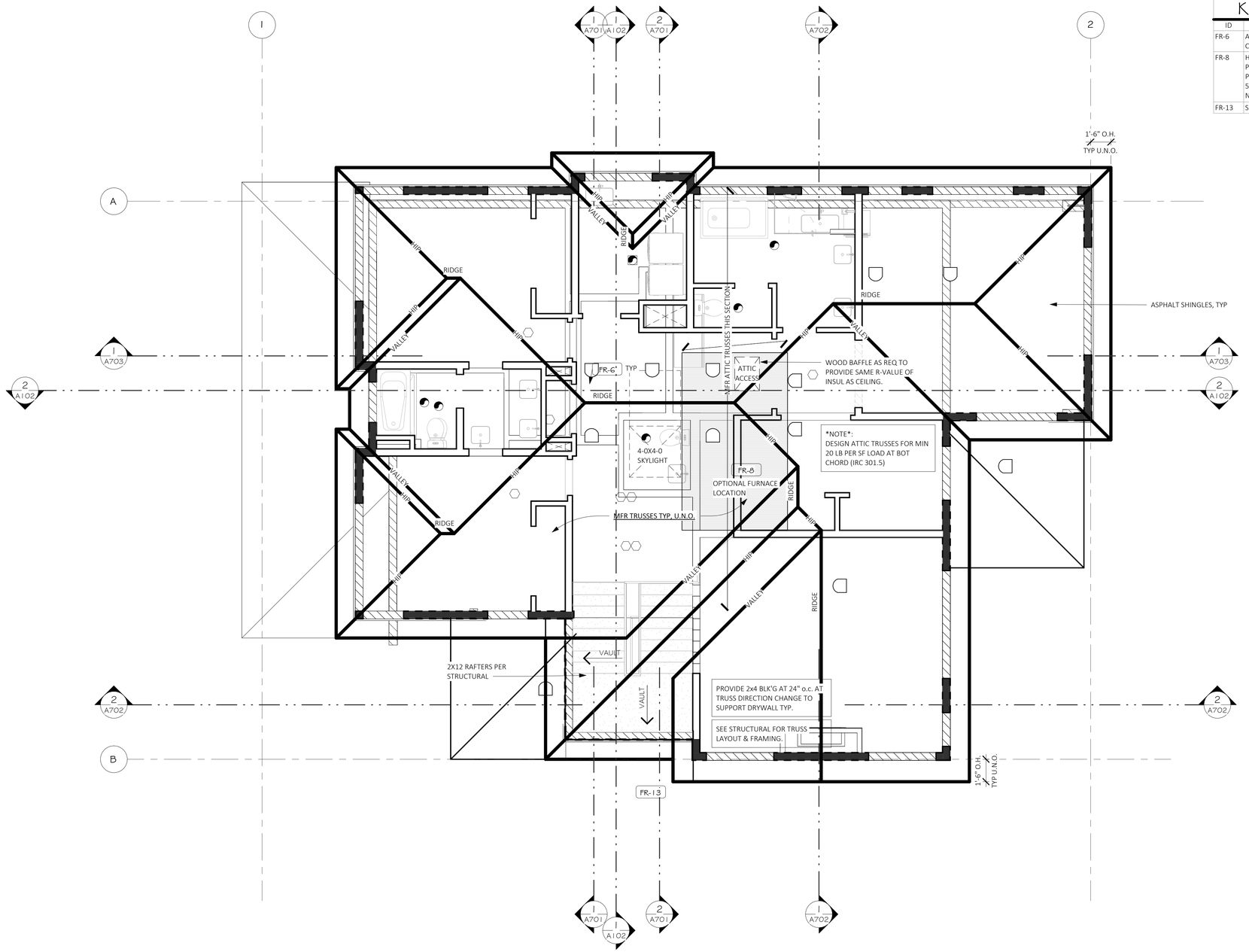
C:\Users\MiltonOrellana\DCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt
7/29/2024 12:27:32 PM

GENERAL FRAMING NOTES:

1. SEE SECTION R301, SHEET A001 FOR GENERAL DESIGN CRITERIA.
2. SEE STRUCTURAL SHEETS FOR FOR SHEARWALL DESIGNATIONS & HOLDDOWNS AND SHEET S100 FOR SHEARWALL DETAILS/ SCHEDULE.
3. 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.
4. PROVIDE 2x4 RAFTER/TRUSS TAIL - TYP. U.N.O.
5. ROOF PITCH: EXTERIOR PER ELEVATIONS & INTERIOR PER SECTIONS.
6. ROOF FRAMING SPACING, 24" o.c. U.N.O.
7. SEE ELEVATIONS AND/OR SECTIONS FOR ROOF PITCH,PLATE HEIGHT AND HEADER HEIGHT.
8. 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 FRAM'G.
9. INSTALL 2X FIREBLOCKING PER R302.11 AS FOLLOWS:
   a) 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.
   b) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERT AND HORZ SPACES SUCH AS OCCUR AT SOFFITS, DROP CLGS AND COVE CLGS.
   c) IN CONCEALED SPACES BTWN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
   d) 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.
10. 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.



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

No.	Description	Date

ATERA HOMES

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

ROOF PLAN

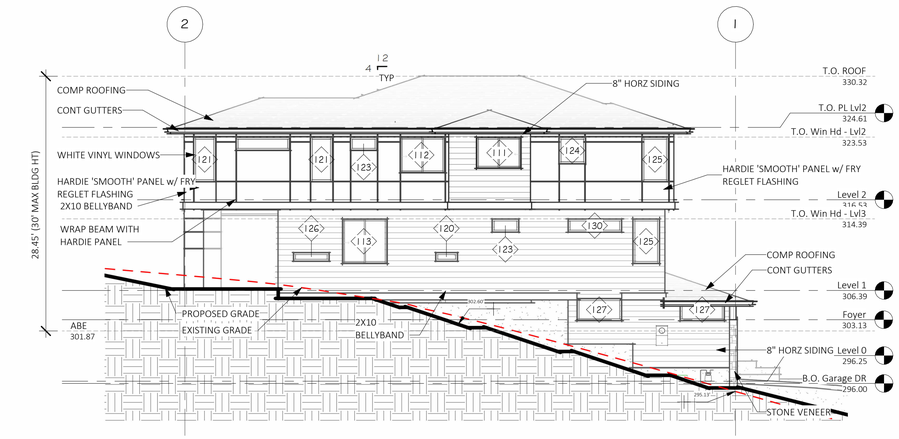
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A501

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

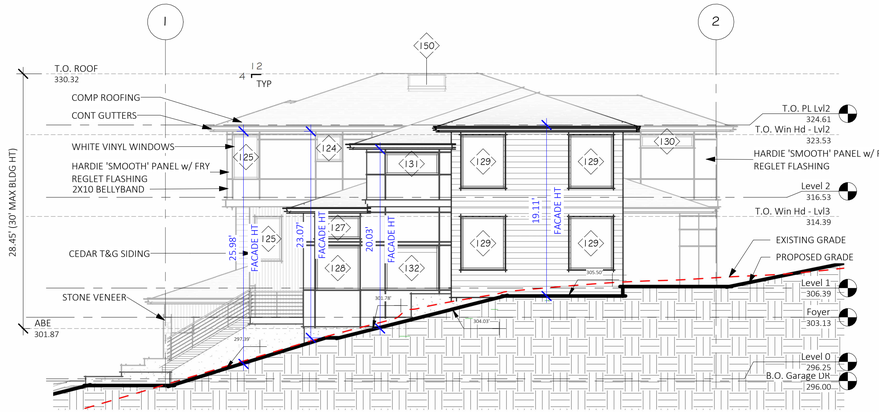
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:27:34 PM
C:\Users\WiltonOrellana\DCIACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, Mercer Island_SUB2.rvt



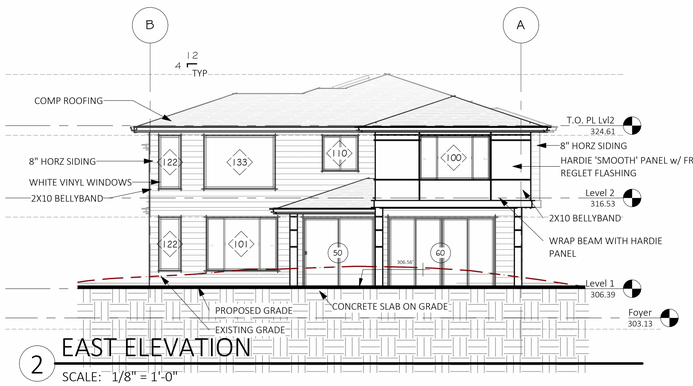
3 NORTH ELEVATION

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



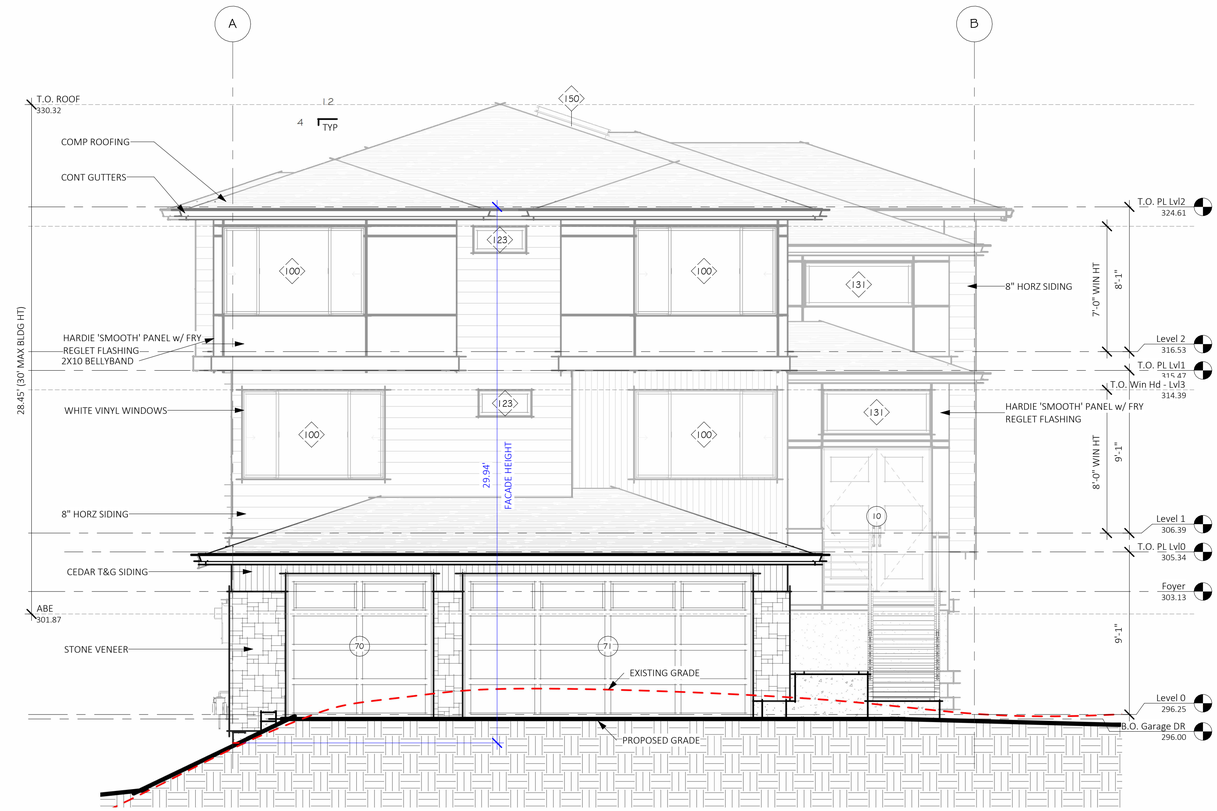
4 SOUTH ELEVATION

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:

1. 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 R708.3. 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:
   a. 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.
   b. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
   c. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
   d. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
   e. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
   f. AT WALL AND ROOF INTERSECTIONS.
   g. AT BUILT-IN GUTTERS.

No. | Description | Date

ATERA HOMES
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

ELEVATIONS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A601

SCALE 24X36: As indicated

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, Mercer Island_SUB2.rvt
7/29/2024 12:27:46 PM

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

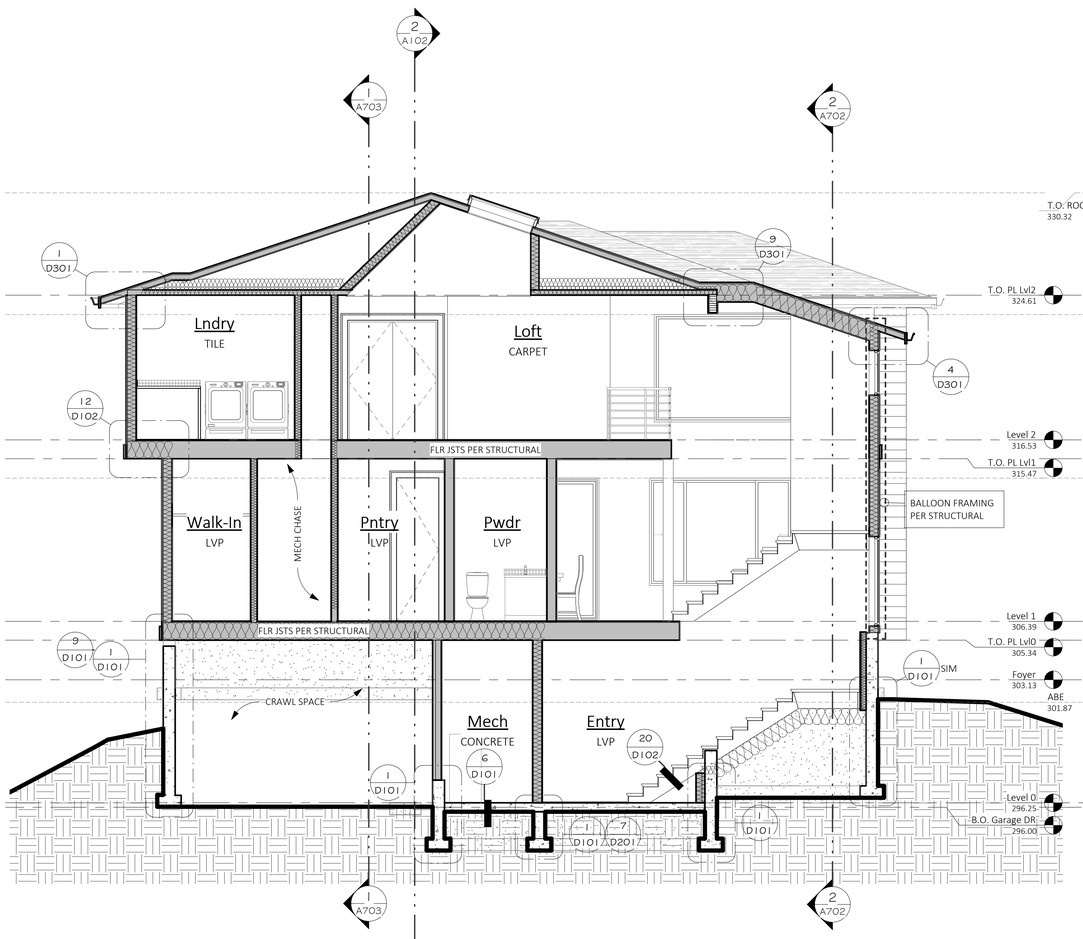
FLOORING:	FINISH PER PLANS
SUBFLOOR:	3/4" T&G (PLYWOOD, COMPLY OR EQUAL)
FRAMING:	PER PLANS
INSULATION:	R-38 BATT
SOFFIT:	HARDIE PANEL SOFFIT

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

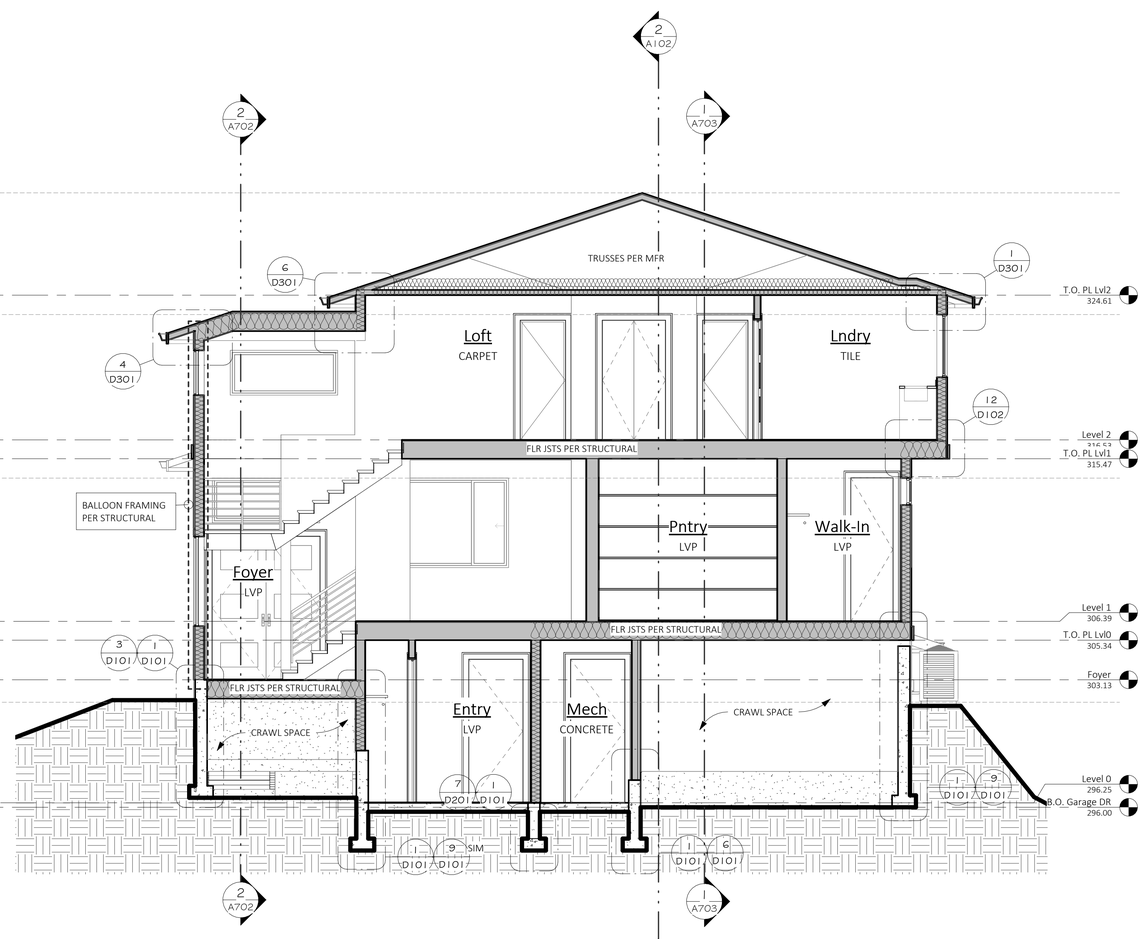
TRIM

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"

No.	Date	Description

ATERA HOMES

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

BUILDING SECTIONS

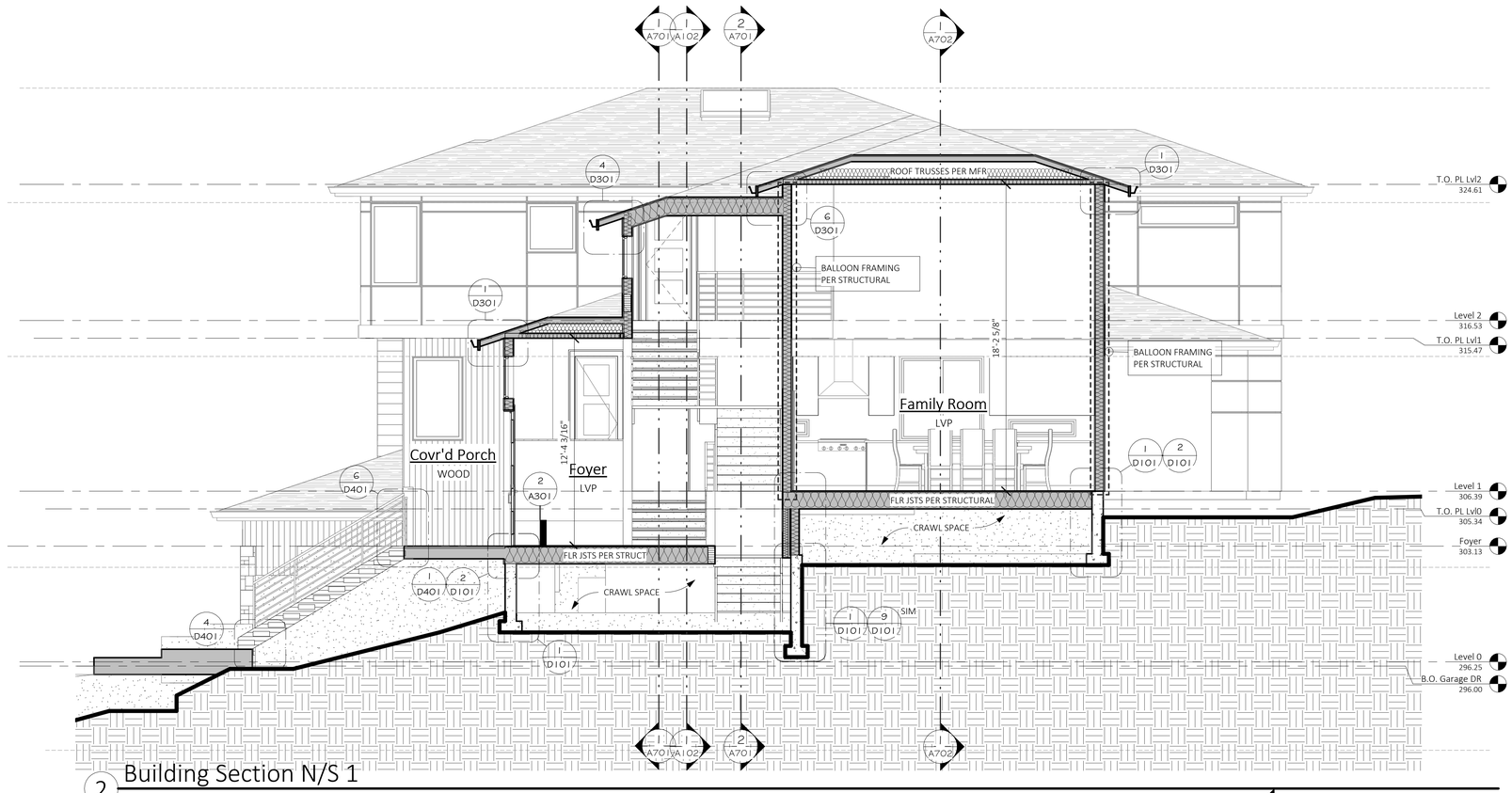
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A701

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

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:27:50 PM C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence_MI - SUB2.rvt



2 Building Section N/S 1

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

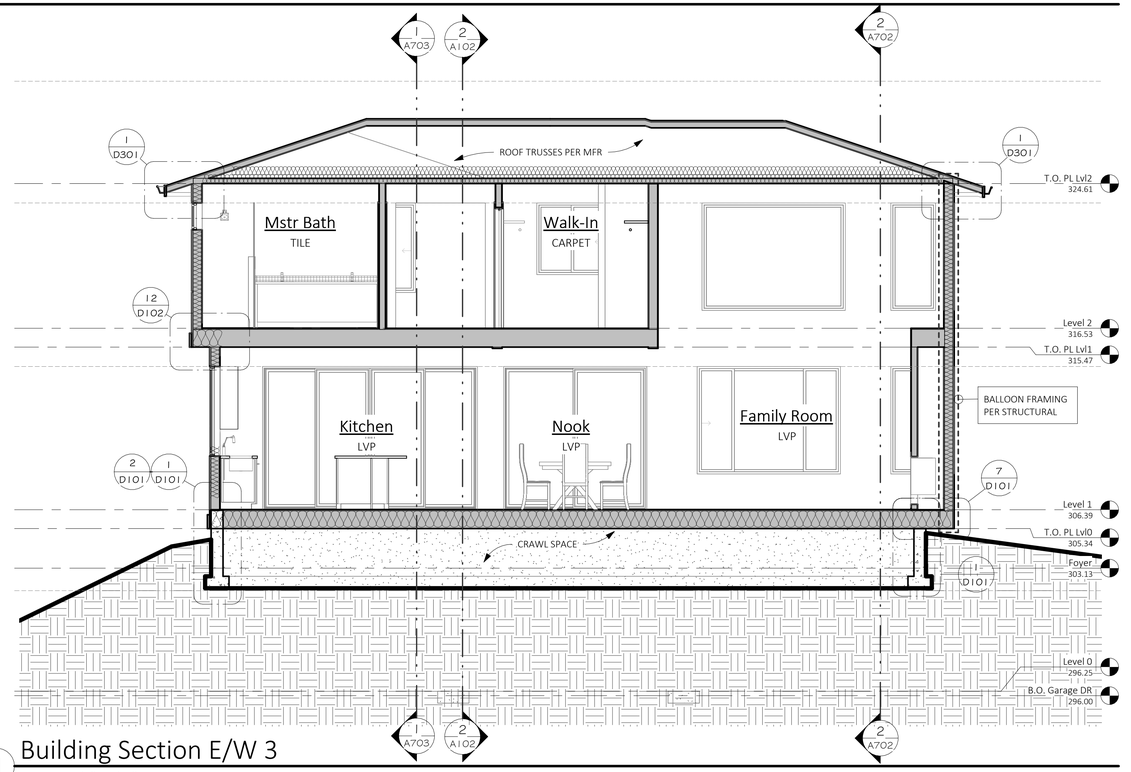
FLOORING:	FINISH PER PLANS
SUBFLOOR:	3/4" T&G (PLYWOOD, COMPLY OR EQUAL)
FRAMING:	PER PLANS
INSULATION:	R-38 BATT
SOFFIT:	HARDIE PANEL SOFFIT

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.



1 Building Section E/W 3

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

No.	Date	Description

ATERA HOMES

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

BUILDING SECTIONS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A702

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

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

C:\Users\MiltonOrellana\DOCACCDocs\STUDIO\20008-Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt
7/29/2024 12:27:53 PM

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

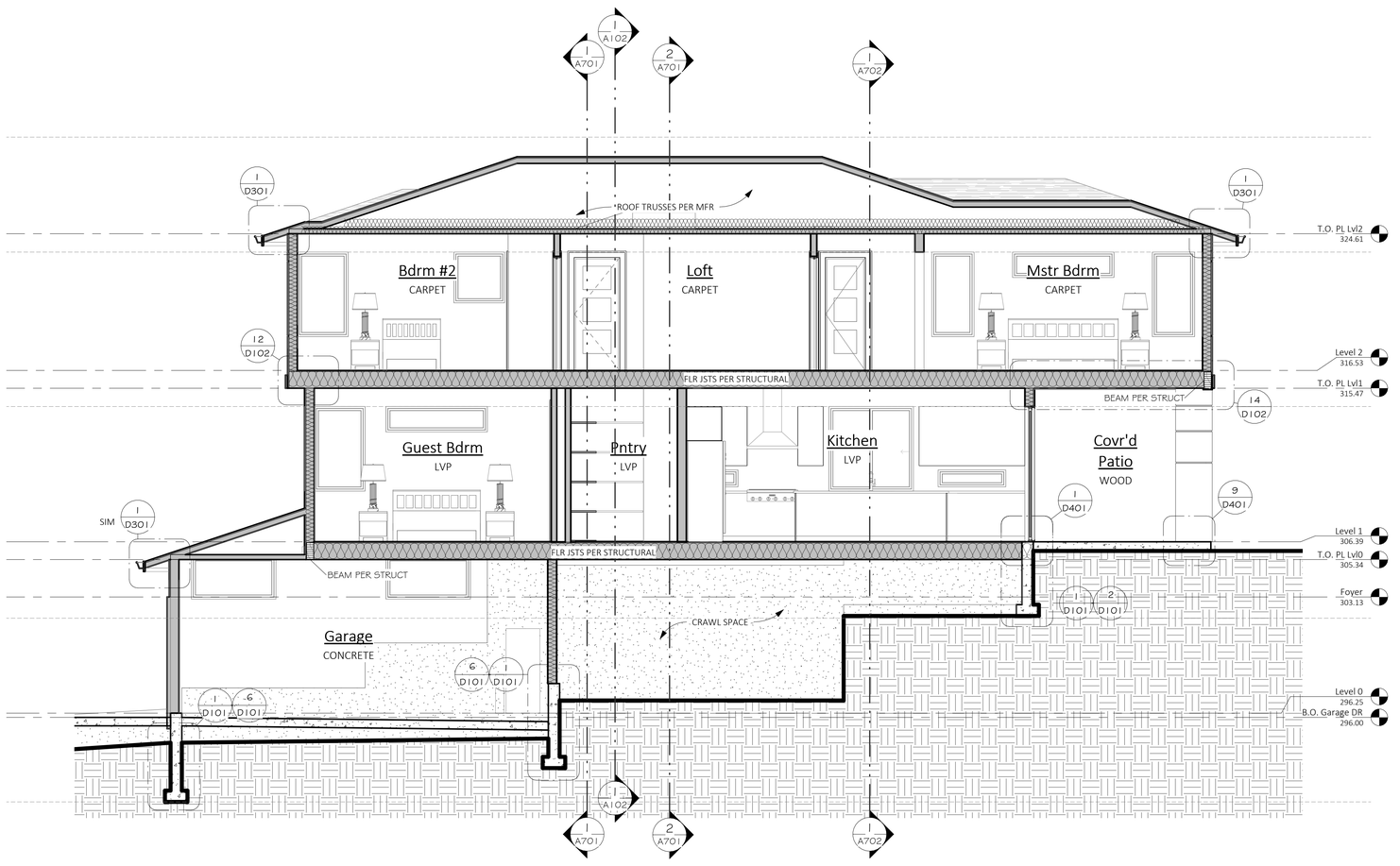
FLOORING:	FINISH PER PLANS
SUBFLOOR:	3/4" T&G (PLYWOOD, COMPLY OR EQUAL)
FRAMING:	PER PLANS
INSULATION:	R-38 BATT
SOFFIT:	HARDIE PANEL SOFFIT

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.



No.	Date	Description

ATERA HOMES

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

BUILDING SECTIONS

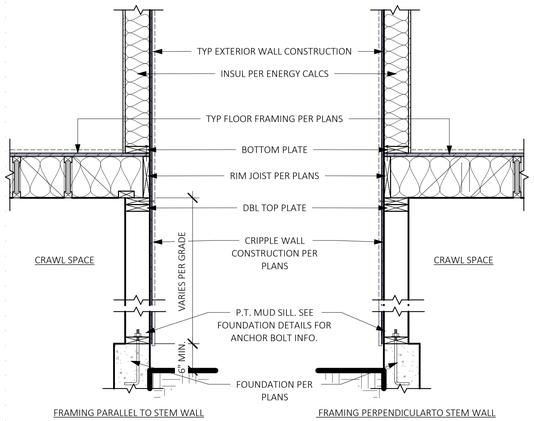
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

A703

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

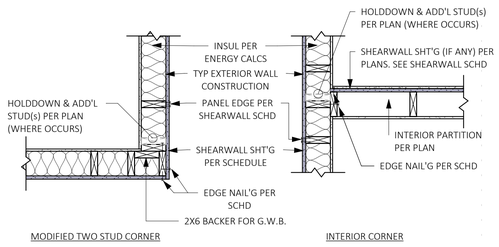
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

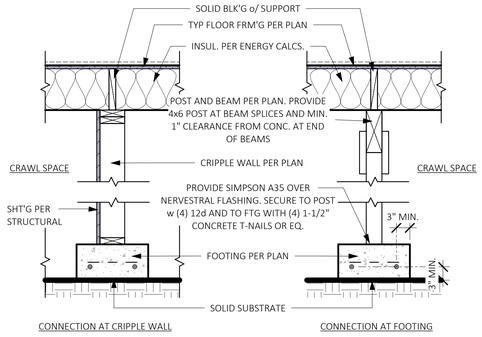
7/29/2024 12:27:55 PM
C:\Users\WiltonOrellana\DCAACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence_MI - SUB2.rvt



9 CRIPPLE WALL AT FOUNDATION

SCALE: 3/4" = 1'-0"



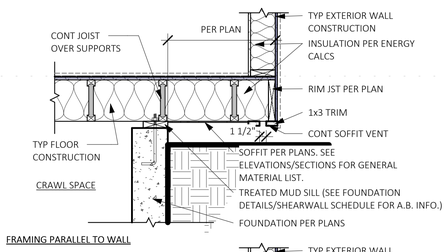


8 POST / FTG CONNECTION

SCALE: 3/4" = 1'-0"

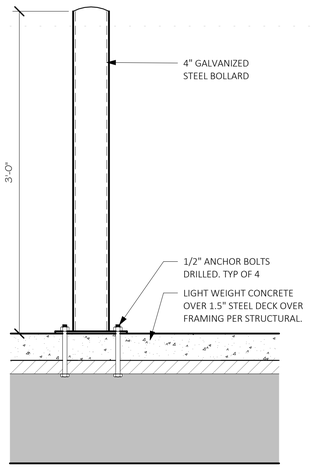
11 INT/EXT WALL FRAMING DETAIL

SCALE: 3/4" = 1'-0"



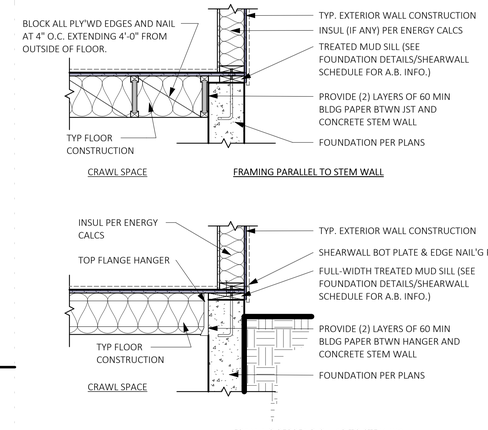
7 CANTILEVER FRM'G AT FNDN.

SCALE: 3/4" = 1'-0"



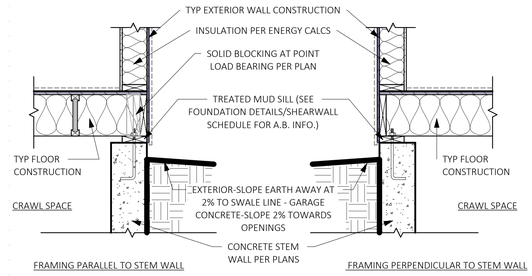
4 BOLLARD DETAIL

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



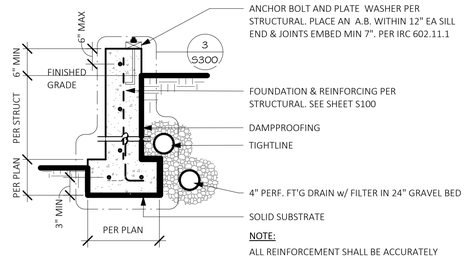
3 FRAMING / FNDN. CONNECTION

SCALE: 3/4" = 1'-0"



2 FRAMING / FNDN. CONNECTION

SCALE: 3/4" = 1'-0"



1 FOUNDATION DETAIL

SCALE: 3/4" = 1'-0"

NOTE: THIS IS A STANDARD DETAILS 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.

STANDARD DETAIL SHEET

No.	Date	Description

ATERA HOMES
MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

FOUNDATION & FRAMING DETAILS

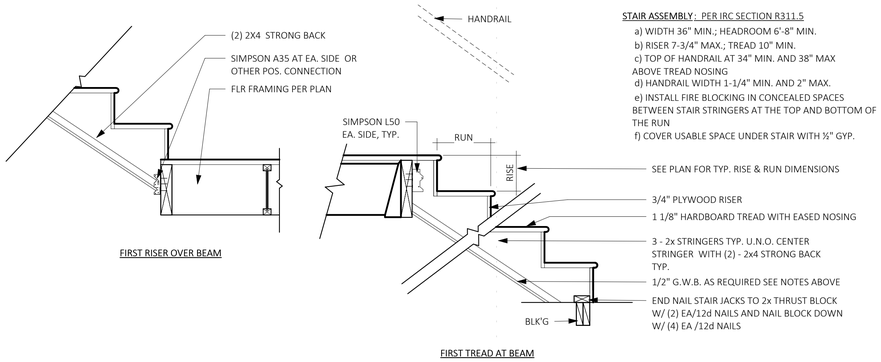
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

D101

SCALE 24X36: As indicated

* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:28:19 PM C:\Users\WiltonOrellana\DOCACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt



FIRST RISER OVER BEAM

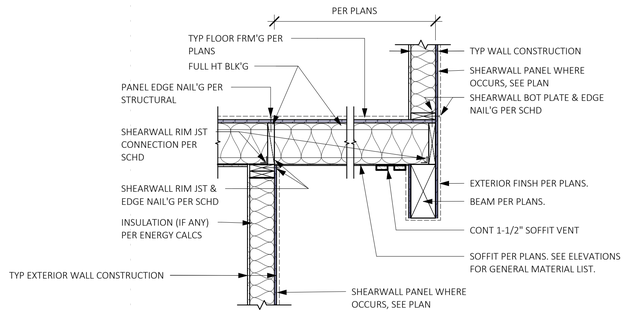
FIRST TREAD AT BEAM

STAIR ASSEMBLY : PER IRC SECTION R311.5

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 ½" GYP.

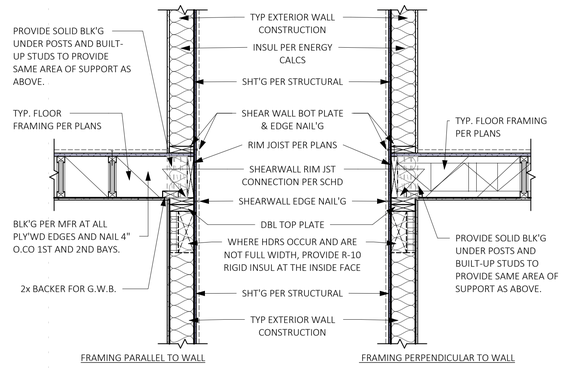
20 STAIR SECTION DETAIL

SCALE: 3/4" = 1'-0"



14 CANTILEVER FRM'G AT EXT. WALL

SCALE: 3/4" = 1'-0"

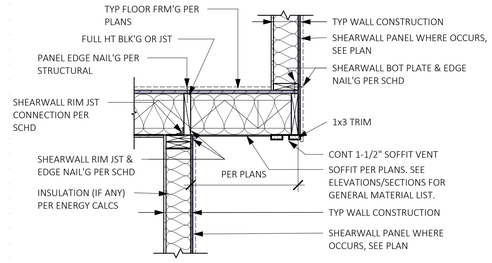


FRAMING PARALLEL TO WALL

FRAMING PERPENDICULAR TO WALL

13 EXTERIOR WALL TO FLOOR JOISTS

SCALE: 3/4" = 1'-0"



12 CANTILEVER FRM'G AT EXT. WALL

SCALE: 3/4" = 1'-0"

NOTE: THIS IS A STANDARD DETAILS 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.

STANDARD DETAIL SHEET

No.	Date	Description

ATERA HOMES
MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence
5024 W Mercer Way, Mercer Island

PERMIT SET

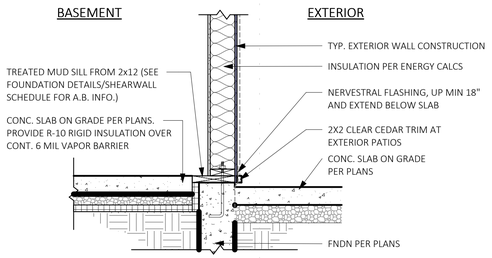
FRAMING DETAILS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2021/01/08
DRAWN BY:	SPM

D102

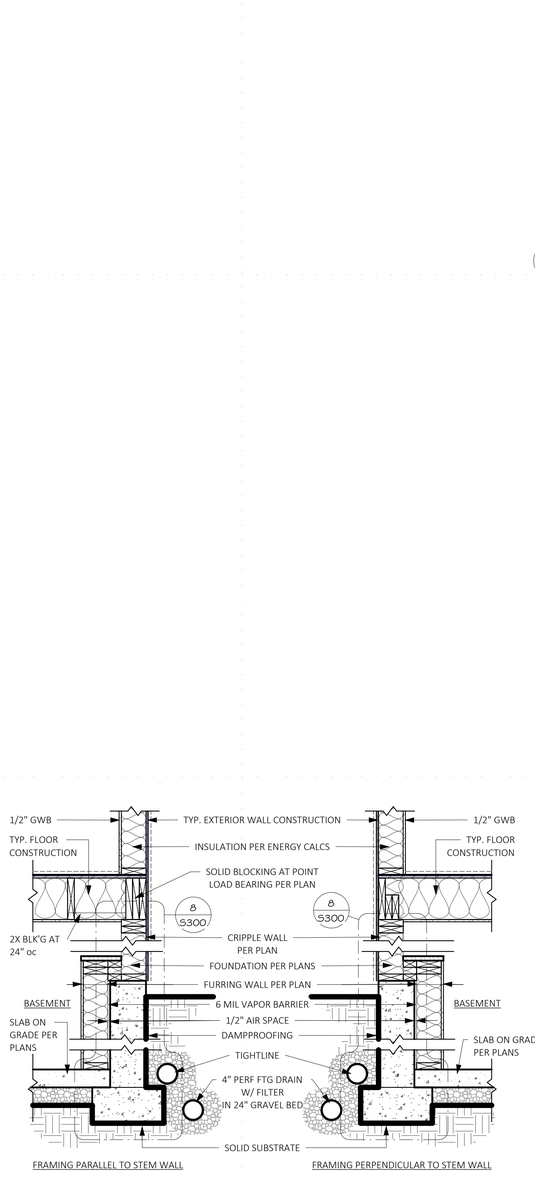
SCALE 24X36: 3/4" = 1'-0"
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:28:21 PM C:\Users\WiltonOrellana\DOACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt



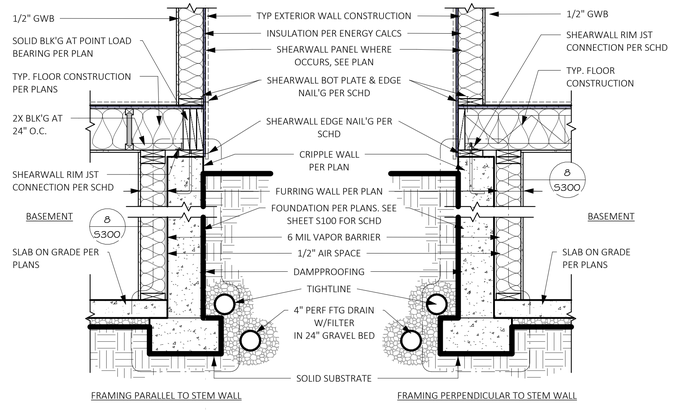
7 FRAMING/FNDN. AT INT SLAB

SCALE: 3/4" = 1'-0"



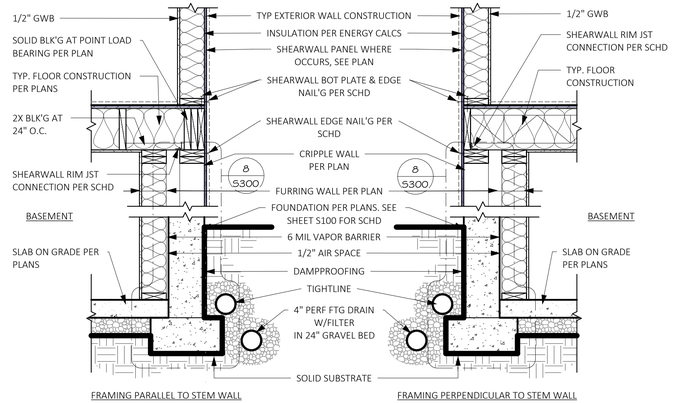
5 FRAMING / FNDN. CONNECTION

SCALE: 3/4" = 1'-0"



1 FRAMING / FNDN. - FULL HT, JSTS OVER

SCALE: 3/4" = 1'-0"



4 FRAMING / FNDN. - CRIPPLE WALL

SCALE: 3/4" = 1'-0"

NOTE: THIS IS A STANDARD DETAILS 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.

STANDARD DETAIL SHEET

No.	Date	Description
1		

ATERA HOMES

MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

BASEMENT DETAILS

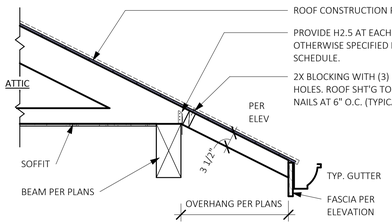
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2024/07/29
DRAWN BY:	SPM

D201

SCALE 24X36: 3/4" = 1'-0"

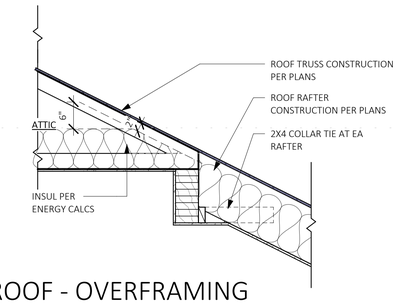
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

C:\Users\WiltonOrellana\DC\ACCDocs\STUDIO\20008 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence_MI - SUB2.rvt
7/29/2024 12:28:22 PM



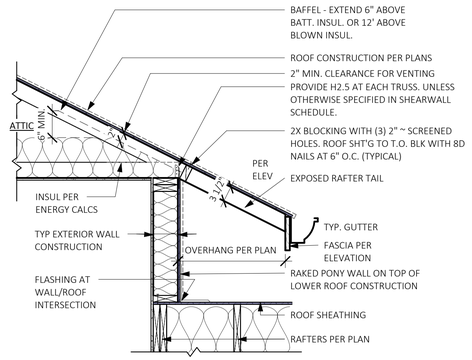
10 EAVE DETAIL - RAFTER

SCALE: 3/4" = 1'-0"



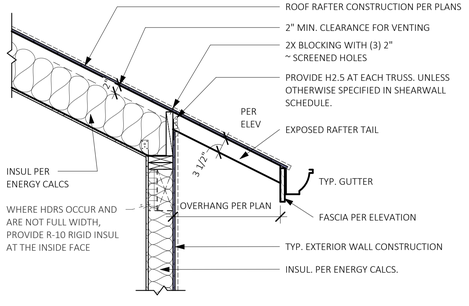
9 ROOF - OVERFRAMING

SCALE: 3/4" = 1'-0"



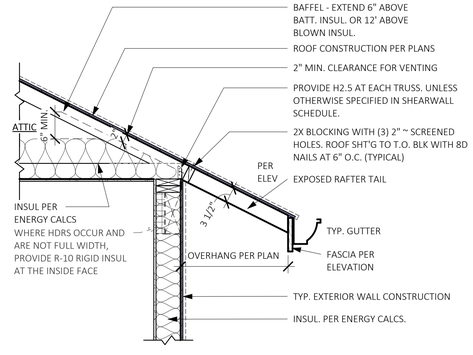
6 EAVE DETAIL OVER PONY WALL

SCALE: 3/4" = 1'-0"



4 EAVE DETAIL - RAFTER

SCALE: 3/4" = 1'-0"



1 EAVE DETAIL - TRUSS

SCALE: 3/4" = 1'-0"

NOTE: THIS IS A STANDARD DETAILS 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.

STANDARD DETAIL SHEET

No.	Date	Description

ATERA HOMES

MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence

5024 W Mercer Way, Mercer Island

PERMIT SET

ROOF DETAILS

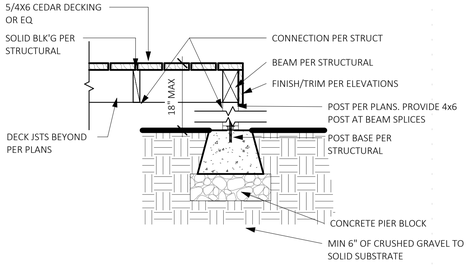
PROJECT NO:	20008
ISSUE DATE:	2024/07/29
SHT ISSUE DATE:	2021/01/08
DRAWN BY:	SPM

D301

SCALE 24X36: 3/4" = 1'-0"

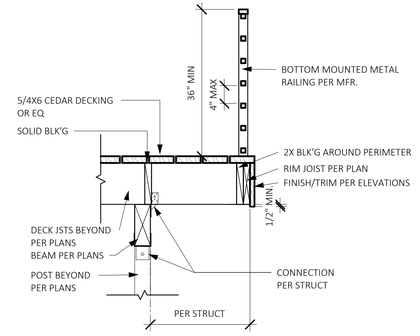
* NOTE: 11X17 SETS ARE REDUCED 50%; SCALE DRAWINGS ACCORDINGLY.

7/29/2024 12:28:23 PM C:\Users\WiltonOrellana\DOACCDocs\STUDIO\20006 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt



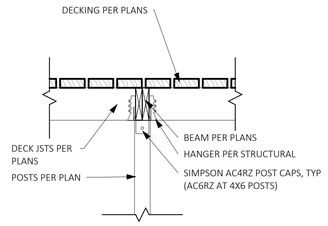
9 FRM'G CONNECTION @ DECK

SCALE: 3/4" = 1'-0"



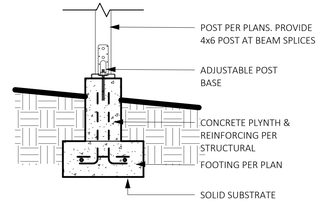
6 FRM'G CONNECTION @ DECK RAILING

SCALE: 3/4" = 1'-0"



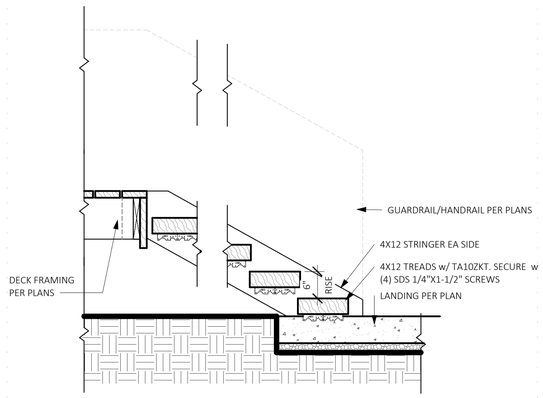
5 FRM'G CONNECTION @ DECK POST

SCALE: 3/4" = 1'-0"



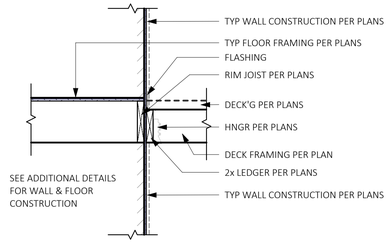
2 FRM'G CONNECTION @ DECK POST

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"

NOTE: THIS IS A STANDARD DETAILS 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.

STANDARD DETAIL SHEET

No.	Date	Description

ATERA HOMES

MONSEF DESIGN STUDIO
451 DUVALL AVE NE, RENTON, W A 98059
206.612.8647 | WWW.ATERAHOMES.COM

Chen Residence
5024 W Mercer Way, Mercer Island

PERMIT SET

DECK DETAILS

PROJECT NO:	20008
ISSUE DATE:	2024/07/29
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.

7/29/2024 12:28:25 PM C:\Users\MittonOrellana\DCACCDocs\STUDIO\20006 Chen Residence, Mercer Island\Project Files\05 Construction Docs\20008-05 Chen Residence, MI - SUB2.rvt

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 LICE 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 OF MIX DESIGN REQUIREMENTS

MEMBER TYPE/LOCATION	STRENGTH MINIMUM (PSI)	TEST AGE (DAYS)	MAXIMUM AGGREGATE	EXPOSURE CLASSIFICATION	MAX W/C RATIO	AIR CONTENT
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 F'C.

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) ANSI/AWS 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 F'C = UP TO 4,500)

BAR DESIGNATION	LAP LENGTH, LS	DEVELOPMENT LENGTH, LD
#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) ANSI/TPI 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-ESR/IAPMO-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 WWPA, WCLIB, OR NLGA. FINGER JOINTED STUDS ACCEPTABLE AT INTERIOR NON-STRUCTURAL WALLS ONLY.

MEMBER USE	SIZE	SPECIES	GRADE
STUDS & PLATES	2X4, 2X6	HF	NO. 2
POSTS	4X4	HF	NO. 2
POSTS	6X	DF	NO. 1
BEAMS & HEADERS	4X8 -- 4X12	HF	NO. 2
BEAMS & HEADERS	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 ANSI/AITC A190.1 "STRUCTURAL GLUED LAMINATED TIMBER." GLUED LAMINATED MEMBER BEAMS SHALL NOT BE CAMBERED, UNLESS SHOWN OTHERWISE ON THE PLANS OR SPECIFICATIONS.

MEMBER USE	SIZES	SPECIES	STRESS CLASS	USES
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-ESR/IAPMO-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 2.2EUNLESS 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)

	MINIMUM APA RATING			
LOCATION	THICKNESS	SPAN RATING	PLYWOOD GRADE	EXPOSURE
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-ESR/IAPMO-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:

COMMON NAILS

SIZE	LENGTH	DIAMETER
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 AMERICAN LUMBER 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

REVISION | DATE

BRIAN J. LOSHBAUGH
STATE OF WASHINGTON
23214
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

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

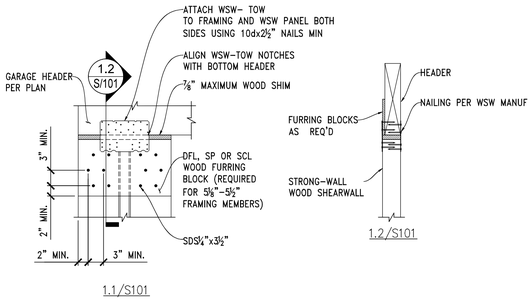
DATE: 06/22/2023

JOB NO: 20-084

SHEET: 1 OF 10

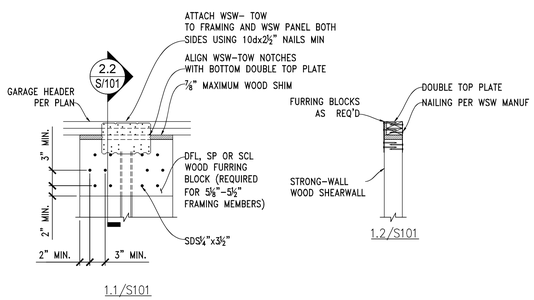
DWG NO: S100

STRUCTURAL ABBREVIATIONS			
&	AND	IF	INSIDE FACE
@	AT	IN	INCH
#	NUMBER	INT	INTERIOR
AB	ANCHOR BOLT	INV	INVERT
ABV	ABOVE	KIP, K	1,000 POUNDS
ADD'L	ADDITIONAL	KSI	KIPS PER SQUARE INCH
ADJ	ADJACENT	LB	POUND
ALT	ALTERNATE	Ld	DEVELOPMENT LENGTH
APPROX	APPROXIMATE(LY)	LL	LIVE LOAD
ARCH	ARCHITECT(URAL)	LLH	LONG LEG HORIZONTAL
ATR	ALL-THREADED ROD	LLV	LONG LEG VERTICAL
B/	BOTTOM OF	LONGIT	LONGITUDINAL
BN	BOUNDARY NAILING	Ls	LAP SPLICE LENGTH
BLDG	BUILDING	LSL	LAMINATED STRAND LUMBER
BLKG	BLOCKING	LVL	LAMINATED VENEER LUMBER
BM	BEAM	MAX	MAXIMUM
BOTT	BOTTOM OF	MECH	MECHANICAL
BR	BRACE	MFR	MANUFACTURER
BRG	BEARING	MIN	MINIMUM
BTWN	BETWEEN	MISC	MISCELLANEOUS
C	STANDARD CHANNEL	MTL	METAL
CC	CENTER TO CENTER	(N)	NEW
CDF	CONTROLLED DENSITY FILL	NIC	NOT IN CONTRACT
CIP	CAST IN PLACE	NOM	NOMINAL
CJ	CONSTRUCTION OR CONTROL JOINT	NTE	NOT TO EXCEED
CJP	COMPLETE JOINT PENETRATION	NTS	NOT TO SCALE
CL	CENTERLINE	OC	ON CENTER
CLR	CLEAR(ANCE)	OD	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	OPNG	OPENING
COL	COLUMN	OPP	OPPOSITE
CONC	CONCRETE	OSB	ORIENTED STRAND BOARD
CONN	CONNECTION	OWSJ	OPEN WEB STEEL JOIST
CONST	CONSTRUCTION	OWWJ	OPEN WEB WOOD JOIST
CONT	CONTINUOUS	PC	PRECAST
CTRD	CENTERED	PCF	POUNDS PER CUBIC FOOT
CTSK	COUNTERSINK	PL	PLATE
d	PENNY (NAILS)	PERP	PERPENDICULAR
DBL	DOUBLE	PLY	PLYWOOD
DEMO	DEMOLITION	PRE-MFR	PRE-MANUFACTURED
DET	DETAIL	PS	PRESTRESSED
DF	DOUGLAS FIR	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	PSL	PARALLEL STRANDED LUMBER
DIAG	DIAGONAL	PT	PRESSURE TREATED
DL	DEAD LOAD	R	RADIUS
DN	DOWN	REF	REFERENCE
DP	DEPTH	REINF	REINFORCING
DWG(S)	DRAWING(S)	REQ'D	REQUIRED
DWL(S)	DOWEL(S)	RET	RETAINING
EA	EACH	RJ	ROOF JOIST
EF	EACH FACE	RT	ROOF TRUSS
EN	EDGE NAILING	REV	REVISION
EL	ELEVATION	SCHED	SCHEDULE
EMBED	EMBEDMENT	SECT	SECTION
ENGR	ENGINEER	SHTG	SHEATHING
EQ	EQUAL(LY)	SIM	SIMILAR
EW	EACH WAY	SOG	SLAB ON GRADE
EXIST, (E)	EXISTING	SPEC	SPECIFICATION
EXP	EXPANSION	SQ	SQUARE
EXT	EXTERIOR	SS	STAINLESS STEEL
FB	FLAT BAR	STD	STANDARD
FD	FLOOR DRAIN	STIFF	STIFFENER
FIN	FINISH	STL	STEEL
FJ	FLOOR JOIST	STRUCT	STRUCTURAL
FLR	FLOOR	SW	SHEAR WALL
FDN	FOUNDATION	SYM	SYMMETRICAL
FT	FOOT, FEET	T/	TOP OF
FTG	FOOTING	T&B	TOP AND BOTTOM
GA	GAUGE	T&G	TONGUE AND GROOVE
GALV	GALVANIZED	THK	THICK
GB	GRADE BEAM	THRU	THROUGH
GEN	GENERAL	TJI	TRUSS JOIST
GEOTECH	GEOTECHNICAL	TOW	TOP OF WALL
GLB	GLUE LAMINATED BEAM	TRANSV	TRANSVERSE
GRTG	GRATING	TYP	TYPICAL
GT	GIRDER TRUSS	UNO	UNLESS NOTED OTHERWISE
HD	HOLDOWN	VERT	VERTICAL
HDR	HEADER	W	WIDE FLANGE, WIDE
HF	HEM FIR	W/	WITH
HORIZ	HORIZONTAL	W/O	WITHOUT
HSS	HOLLOW STRUCTURAL SECTION	WWF	WELDED WIRE FABRIC
HT	HEIGHT	X-STR	EXTRA STRONG
ID	INSIDE DIAMETER	XX-STR	DOUBLE EXTRA STRONG



1.1/S101

NOTES
MATCH PLATE FROM HEADER TO T/ PLATE



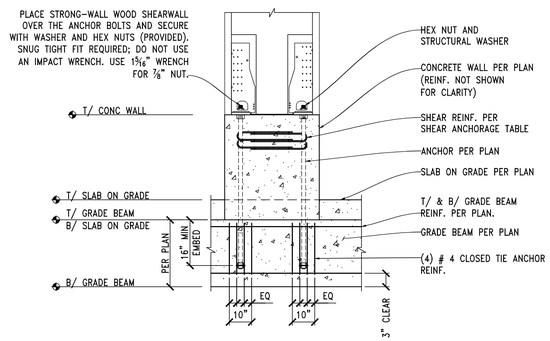
1.1/S101

NOTES
MATCH PLATE FROM HEADER TO T/ PLATE

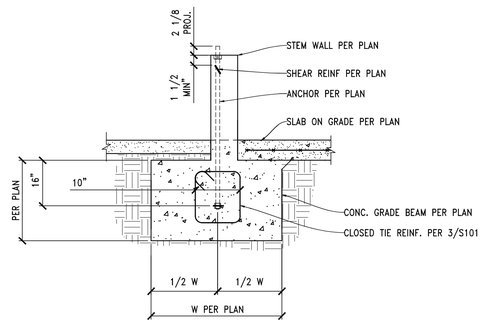
1 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL STRONG WALL TOP CONNECTION – HEADER

2 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL STRONG WALL TOP CONNECTION – TOP PLATE

NOTE
REF. 3/S101 & PLAN FOR GRADE BEAM REINFORCING.



3 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL STRONG WALL ANCHORAGE – ELEVATION



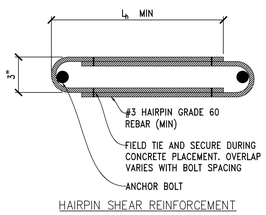
4 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL STRONGWALL ANCHORAGE – SECTION

STRONG-WALL® WOOD SHEARWALL SHEAR ANCHORAGE					
MODEL	L_h (in.)	SEISMIC [3]			
		SHEAR REINFORCEMENT	MINIMUM CURB/ STEMWALL WIDTH (in.)	ASD ALLOWABLE SHEAR LOAD, V (lb.) [4]	
				UNCRACKED	CRACKED
WSW12	10¾	(1) #3 HAIRPIN[2]	8	1,035	740
WSW18	15	(1) #3 HAIRPIN[2]	8	HAIRPIN REINFORCEMENT ACHIEVES MAXIMUM ALLOWABLE SHEAR LOAD OF THE WSW	
WSW24	19	(2) #3 HAIRPINS[2]	8		

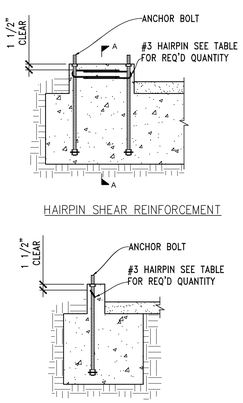
NOTES:
1. SHEAR ANCHORAGE DESIGNS CONFORM TO ACI 318-11 AND ACI 318-14 AND ASSUME MINIMUM 2,500 PSI CONCRETE.
2. SHEAR REINFORCEMENT IS NOT REQUIRED FOR INTERIOR FOUNDATION APPLICATIONS (PANEL INSTALLED AWAY FROM EDGE OF CONCRETE), OR BRACED WALL PANEL APPLICATIONS.
3. SEISMIC INDICATES SEISMIC DESIGN CATEGORY C THROUGH F. DETACHED 1 AND 2 FAMILY DWELLINGS IN SDC C MAY USE WIND ANCHORAGE SOLUTIONS.
4. USE (1) #3 TIE FOR WSW12 WHEN PANEL DESIGN SHEAR FORCE EXCEEDS TABULATED ANCHORAGE ALLOWABLE SHEAR LOAD.
5. 60 KSI REINFORCING SHALL BE USED.

5 DETAIL
SCALE: 3/4"=1'-0"
STRONG WALL ANCHORAGE SCHEDULE

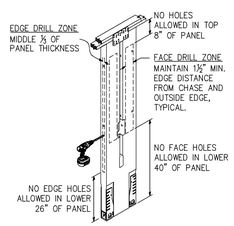
NOTE
REF. 3/S101 & PLAN FOR GRADE BEAM REINFORCING.



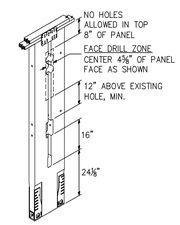
HAIRPIN SHEAR REINFORCEMENT



6 DETAIL
SCALE: 3/4"=1'-0"
STRONG WALL ANCHORAGE SHEAR REINFORCEMENT



ALLOWABLE SMALL HOLES
FACE AND EDGE DRILL ZONES



ALLOWABLE LARGE HOLES
IN ADDITION TO ALLOWABLE SMALL HOLES

7 DETAIL
SCALE: 3/4"=1'-0"
ALLOWABLE STRONG WALL HOLES

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION | DATE

MARIAN J. LOSHBAUGH — STATE OF WASHINGTON — 22716 — REGISTERED PROFESSIONAL ENGINEER

06/22/2023

CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040

STRUCTURAL ABBREVIATIONS & STRONG WALL DETAILS / SCHEDULES

CHK BY: L2E | DRW BY: TNT

SCALE: AS SHOWN
BAR = 1"
FULL SIZE

DATE: 06/22/2023

JOB NO: 20-084

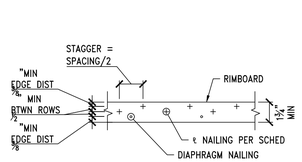
SHEET: 2 OF 10

DWG NO: S101

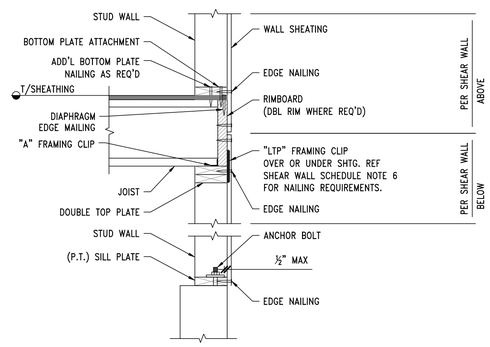
WOOD-FRAMED SHEAR WALL SCHEDULE											
FOR HEM-FIR FRAMING W/ 8d COMMON NAILS (2015 IBC)											
SW TYPE	WALL SHEATHING APA RATED	EDGE NAILING	BOTTOM PLATE ATTACHMENT	FRAMING CLIP TO WALL BELOW	MINIMUM RIM BOARD THICKNESS	FRAMING AT PANEL EDGES	BLOCKING AT ALL PANEL EDGES	ANCHOR BOLT TO CONCRETE FOUNDATION	SILL PLATE AT FOUNDATION	ALLOWABLE SHEAR WALL CAPACITY (PLF)	
SW6	15/32"	8d @ 6" OC	16d COMMON @ 5" OC	LTP5 @ 18" OC	1 1/4"	2X	2X	5/8" DIA @ 48" OC	PT 2X	242	339
								5/8" DIA @ 60" OC	PT 3X		
SW4	15/32"	8d @ 4" OC	(2) ROWS 16d COMMON @ 6" OC, STAGGERED	LTP5 @ 12" OC	1 3/4"	2X	2X	5/8" DIA @ 32" OC	PT 2X	353	495
								5/8" DIA @ 40" OC	PT 3X		
SW3	15/32"	8d @ 3" OC	(2) ROWS 16d COMMON @ 6" OC, STAGGERED	LTP5 @ 10" OC	1 3/4"	2X	2X	5/8" DIA @ 24" OC	PT 2X	456	637
								5/8" DIA @ 32" OC	PT 3X		
SW2	15/32"	8d @ 2" OC	(2) ROWS 16d COMMON @ 4" OC, STAGGERED	LTP5 @ 6" OC	3 1/2"	3X	3X OR FLAT 2X	5/8" DIA @ 18" OC	PT 2X	595	832
								5/8" DIA @ 24" OC	PT 3X		
2SW4	15/32" BOTH SIDES	8d @ 4" OC	(3) ROWS 16d COMMON @ 6" OC, STAGGERED	LTP5 @ 6" OC	3 1/2"	3X	3X	5/8" DIA @ 24" OC	PT 3X	707	990
2SW3	15/32" BOTH SIDES	8d @ 3" OC	(3) ROWS 16d COMMON @ 4" OC, STAGGERED	LTP5 @ 8" OC & A35 @ 8" OC	3 1/2"	3X	3X	5/8" DIA @ 16" OC	PT 3X	911	1274
2SW2	15/32" BOTH SIDES	8d @ 2" OC	(3) ROWS 16d COMMON @ 4" OC, STAGGERED	LTP5 @ 6" OC & A35 @ 6" OC	3 1/2"	3X	3X	5/8" DIA @ 12" OC	PT 3X	1190	1469

SHEAR WALL SCHEDULE NOTES:

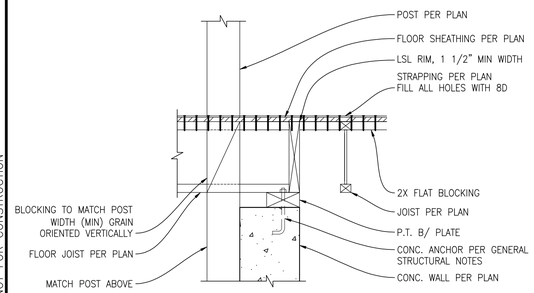
1. ALL NAILS ARE COMMON, UNO. REFERENCE GENERAL STRUCTURAL NOTES FOR NAIL DIAMETER AND LENGTH.
2. REFERENCE SHEAR WALL KEY DETAIL FOR DESCRIPTION OF TERMS.
3. PROVIDE SHEAR WALL SHEATHING AND NAILING FOR ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF SHEAR WALLS ARE TYPICALLY AT WINDOWS, DOORWAYS OR AS SHOWN ON PLAN.
4. EDGE NAILING IS REQUIRED AT ALL HOLDOWN POSTS. EDGE NAILING IS REQUIRED TO EACH STUD USED IN BUILT-UP HOLDOWN POSTS. REFERENCE HOLDOWN SCHEDULE & DETAILS FOR ADDITIONAL INFORMATION.
5. INTERMEDIATE FRAMING TO BE 2x MINIMUM MEMBERS UNO IN SCHEDULE. ATTACH SHEATHING TO INTERMEDIATE FRAMING WITH EDGE NAILING AT 12"OC WHERE STUDS ARE SPACED AT 16"OC AND EDGE NAILING AT 6"OC WHERE STUDS ARE SPACED AT 24"
6. SIMPSON STRONG-TIE "A35" MAY BE USED IN LIEU OF "LTP5." "LTP5" CLIPS SHALL BE ORIENTED LENGTHWISE (HORIZONTAL) AT PLATE TO RIM. USE 0.131"Ø x 1½ NAILS WHERE "LTP" TYPE CLIPS ARE ATTACHED DIRECTLY TO FRAMING AS OPPOSED TO OVER SHEATHING. USE 0.131"Ø x 2½ NAILS WHERE "LTP" TYPE CLIPS ARE INSTALLED OVER SHEATHING. REFERENCE DETAIL 2/S102 FOR CLARIFICATION.
7. (2) 2x STUDS NAILED TOGETHER MAY BE USED IN PLACE OF SINGLE 3x STUD. DOUBLE 2x STUDS SHALL BE SECURED TOGETHER WITH FASTENERS OF THE SAME DIAMETER AND SPACING AS THE BOTTOM PLATE ATTACHMENT PER SCHEDULE.
8. WHERE SHEATHING IS APPLIED ON BOTH SIDES OF A SHEAR WALL AND NAIL SPACING IS LESS THAN 6"OC ON EITHER SIDE, THE WIDTH OF THE NAILED FACE OF THE FRAMING MEMBER SHALL BE 3" NOMINAL OR GREATER AT ADJOINING PANEL EDGES AND NAILS AT ALL PANEL EDGES SHALL BE STAGGERED. ALTERNATIVELY, PANELS SHALL BE STAGGERED SO THAT EDGE JOINTS ON OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUD.
9. ANCHOR BOLTS SHALL BE PROVIDED WITH HOT-DIPPED GALVANIZED STEEL PLATE WASHERS PER DETAILS ON DRAWINGS. EMBED ANCHOR BOLTS 7" MINIMUM INTO THE CONCRETE PROVIDE AN ANCHOR BOLT AT EACH END OF EACH PLATE AND SHALL BE AT LEAST 7 TIMES THE ANCHOR BOLT DIAMETER FORM THE ENDS OF THE PLATE, BUT NOT MORE THAN ½ THE TABULATED ANCHOR BOLT SPACING OR 12", WHICHEVER IS LESS. SEE ANCHOR BOLT DETAIL FOR PLATE WASHER REQUIREMENTS. [ALT: ⅜"Ø x 8" TITEN HD ANCHOR SCREWS MAY BE USED IN LIEU OF ANCHOR BOLTS AT EXISTING CONCRETE, WITH PLATE WASHER & SPACING REQUIREMENTS PER SCHEDULE.]
10. PROVIDE HOT-DIPPED GALVANIZED NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) AT ALL PRESSURE TREATED LUMBER. REFERENCE GENERAL STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
11. PANELS MAY BE INSTALLED HORIZONTALLY IF STUDS ARE SPACED AT 16"OC MAX.
12. STAGGER EDGE NAILING.
13. THE TOP EDGE OF THE WOOD STRUCTURAL PANEL SHALL BE ATTACHED TO THE UPPER TOP PLATE. ROOF OR UPPER LEVEL UPLIFT CONNECTORS SHALL BE ON THE SAME SIDE OF THE WALL AS THE SHEATHING.
14. THE BOTTOM EDGE OF THE WOOD STRUCTURAL PANEL SHALL EXTEND TO AND BE ATTACHED TO THE BOTTOM OR SILL PLATE.
15. REFERENCE DETAIL BELOW FOR STAGGERED NAIL AND SCREW SPACING AT RIM BOARDS.
16. WALL TYPE ACCEPTABLE WITH TRUSJOIST AND BOISE CASCADE RIM JOIST AND BLOCKING.
17. PROVIDE PLATE WASHERS AT EACH ANCHOR BOLT THAT IS NOT LESS THAN 0.229" X 3" X 3".
18. FOR SW2, 3X FRAMING MEMBERS AND BLOCKING MUST BE PROVIDED AT ADJOINING PANEL EDGES, AND NAILS MUST BE STAGGERED AT PANEL EDGES.



4 DETAIL
SCALE: NTS
TYPICAL RIM NAILING



5 DETAIL
SCALE: NTS
TYPICAL SHEAR WALL SECTION

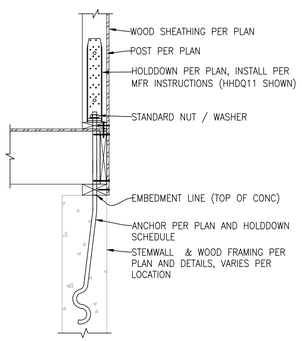


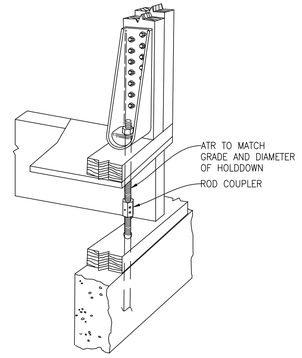
6 DETAIL
SCALE: 1"=1'-0"
DIAPHRAGM STRAPPING

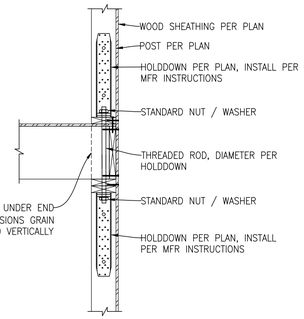
HOLDOWN SCHEDULE (HF)							
MARK	MODEL #	ALLOWABLE UPLIFT			MIN END STUDS	STUD FASTENERS	CONCRETE ANCHOR
		MID WALL	CORNER	END WALL			
HDU2	HDU2-SDS2.5	2,215			(2) 2X	(6) 1/4X2 1/2 SDS	SSTB16
HDU4	HDU4-SDS2.5	3,285			(2) 2X	(10) 1/4X2 1/2 SDS	SSTB16
HDU5	HDU5-SDS2.5	4,340			(2) 2X	(14) 1/4X2 1/2 SDS	SSTB20
HDU8	HDU8-SDS2.5	5,820			(2) 2X	(20) 1/4X2 1/2 SDS	SSTB
HDU11	HDU11-SDS2.5	8,030			4X6	(30) 1/4X2 1/2 SDS	PAB8
HDU14	HDU14-SDS2.5	9,260			4X6	(36) 1/4X2 1/2 SDS	PAB8

HOLDOWN SCHEDULE NOTES

1. REFERENCE FOUNDATION PLAN NOTE 1 FOR HOLDDOWNS AT EXISTING FOUNDATION LOCATIONS
2. HOLDOWNS SPECIFIED ARE BY SIMPSON STRONGTIE
3. REFERENCE PLANS FOR ADDITIONAL STUD REQUIREMENTS WHERE OCCUR
4. PROVIDE 1/4" X 3" SQ PLATE WASHER BETWEEN STANDARD DOUBLE NUTS. EMBED LENGTH EQUAL TO TOP OF CONCRETE DOWN TO TOP OF PLATE WASHER
5. INCREASE FOOTING DEPTH LOCALLY AS REQUIRED TO ACHIEVE REQUIRED EMBEDMENT DEPTH AS SPECIFIED BY HOLDDOWN MANUFACTURER
6. REF. 7/S102 FOR PAB ANCHOR DETAIL
7. REF. 1/S102 & 2/S102 FOR STHD ANCHOR DETAIL
8. INCREASE FOOTING WIDTH AND DEPTH AS REQUIRED @ PAB ANCHORS





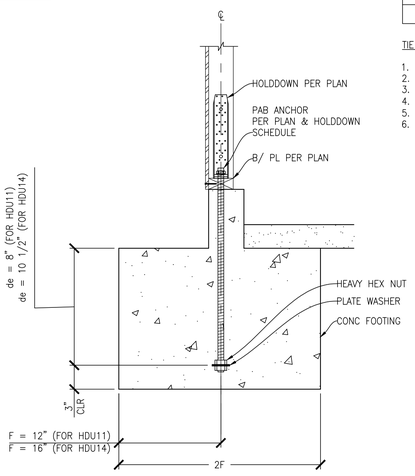


NOTE
1) FULL DEPTH COMPRESSION BLOCKING MATCHING STUD / POST WIDTH (GRAIN ORIENTED VERTICALLY) SHALL BE REQUIRED IN FLOOR INTERSTITIAL SPACE UNDER COLUMNS, STUD PACKS, AND HOLDDOWNS.
1) RIM & COMPRESSION BLOCKING NOT SHOWN FOR CLARITY.

1 DETAIL
SCALE: NTS
TYPICAL HDU TYPE HOLDDOWN

2 DETAIL
SCALE: NTS
TYPICAL HDU TYPE HOLDDOWN ISOMETRIC

3 DETAIL
SCALE: NTS
THRU FLOOR HOLDDOWN W/ HDU

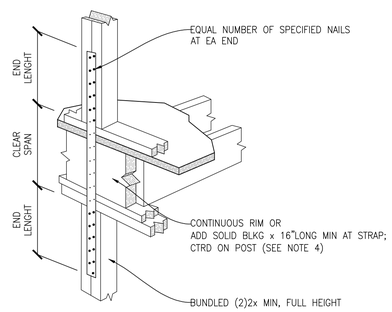


7 DETAIL
SCALE: 1"=1'-0"
PAB ANCHOR

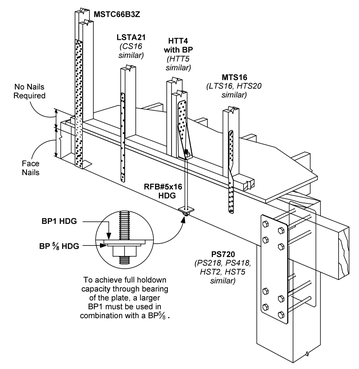
TIEDOWN STRAP SCHEDULE			
STRAP	MINIMUM END LENGTH	NAILING REQ'D AT EA END LENGTH	ALLOWABLE UPLIFT (LBS)
CS20	9"	(16) 0.131 x 2 1/2"	1,030
CS16	15"	(26) 0.131 x 2 1/2"	1,370
CS14	19"	(36) 0.131 x 2 1/2"	2,490
CMSTC16	25"	(56) 0.148 x 3"	4,585
CMST14	34"	(76) 0.148 x 3"	6,490
CMST12	44"	(98) 0.148 X 3"	9,215

TIE DOWN STRAP SCHEDULE NOTES

1. FOLLOW ALL SIMPSON STRONG-TIE GUIDELINES NECESSARY TO ACHIEVE FULL ICC DESIGN VALUES.
2. STRAP MAY BE INSTALLED OVER OR UNDER PLYWOOD.
3. EDGE NAIL PLYWOOD TO STRAPPED POST.
4. WHERE STRAPS OCCUR OVER FLOOR BEAM, REFER STRUCTURAL DRAWINGS FOR ADD'L DETAIL.
5. ADDED BLKG MAY BE ELIMINATED WHERE FLOOR FRAMING IS DIRECTLY BETWEEN POST.
6. NAILS NOT REQUIRED IN CLEAR SPAN.



8 DETAIL
SCALE: NTS
TYPICAL FLOOR TO FLOOR STRAP



9 DETAIL
SCALE: NTS
FLOOR TO BEAM / RIM HOLDDOWNS

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION
DATE

MARIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040
NOTES & SCHEDULES

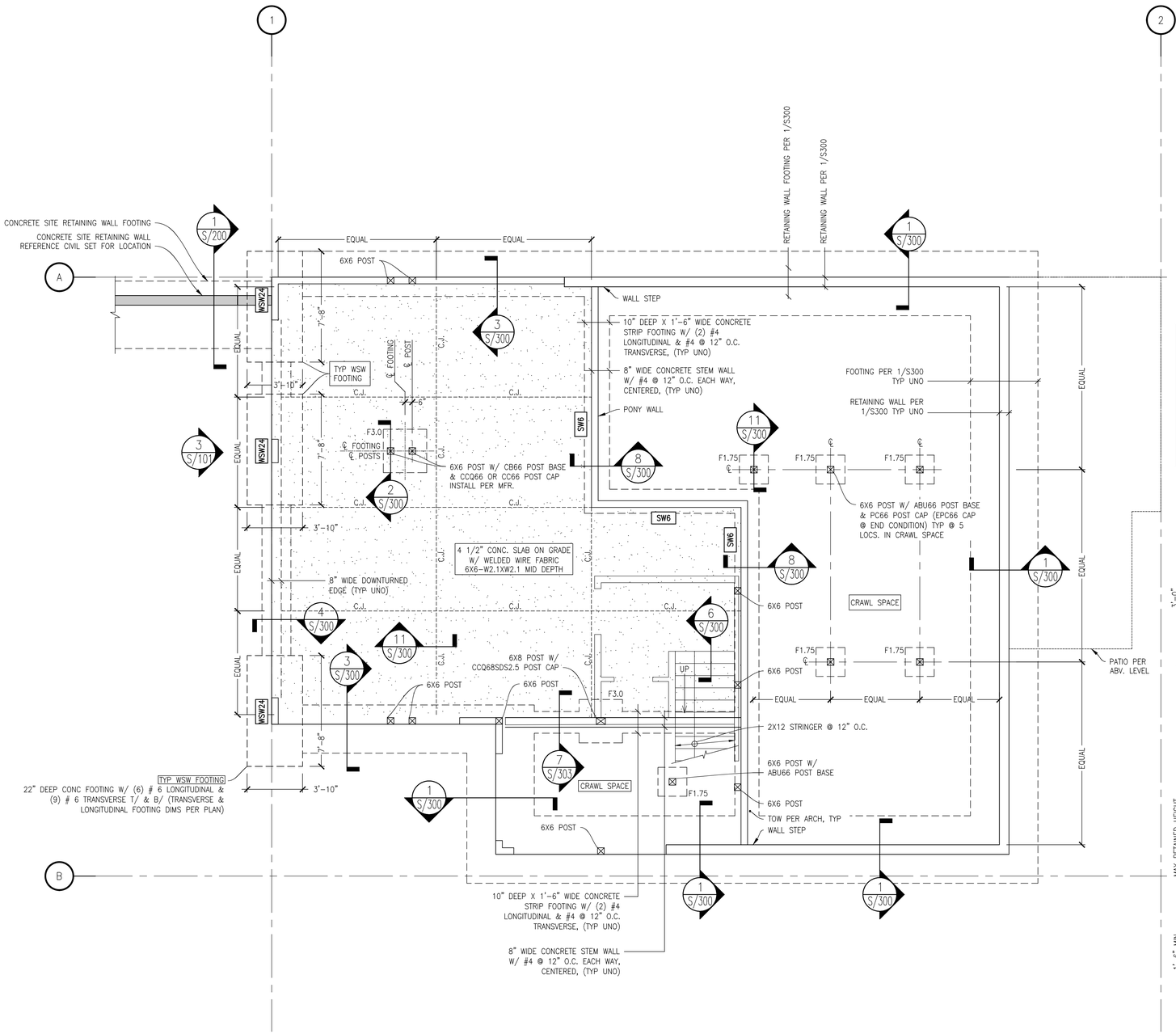
CHK BY: L2E | DRW BY: TNT
SCALE: AS SHOWN
BAR = 1"
FULL SIZE
DATE: 06/22/2023
JOB NO: 20-084
SHEET: 3 OF 10
DWG NO: S102

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 5/S300
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 WAB IN BOTTOM

KEY

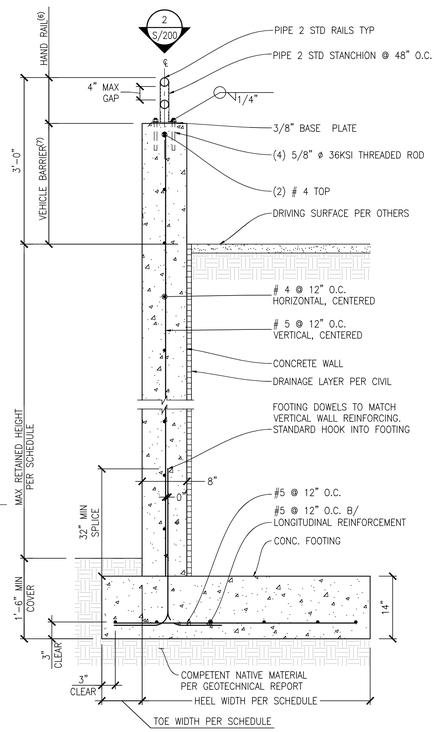
- CIP CONCRETE STEM WALL
- CONCRETE SPREAD FOOTING
- WALL
- SW# SHEAR WALL INDICATOR (REF. SHEAR WALL SCHEDULE)
- XX HOLDDOWN
- POST



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

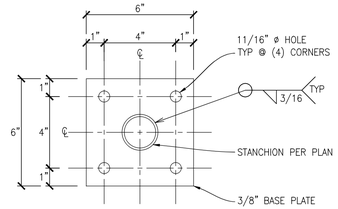
WALL SECTION GENERAL NOTES:

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".



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

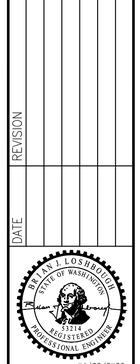


2 DETAIL
SCALE: 3"=1'-0"
GUARD RAIL BASE PLATE

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION
DATE



06/22/2023

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

CHK BY: L2E
DRW BY: TNT

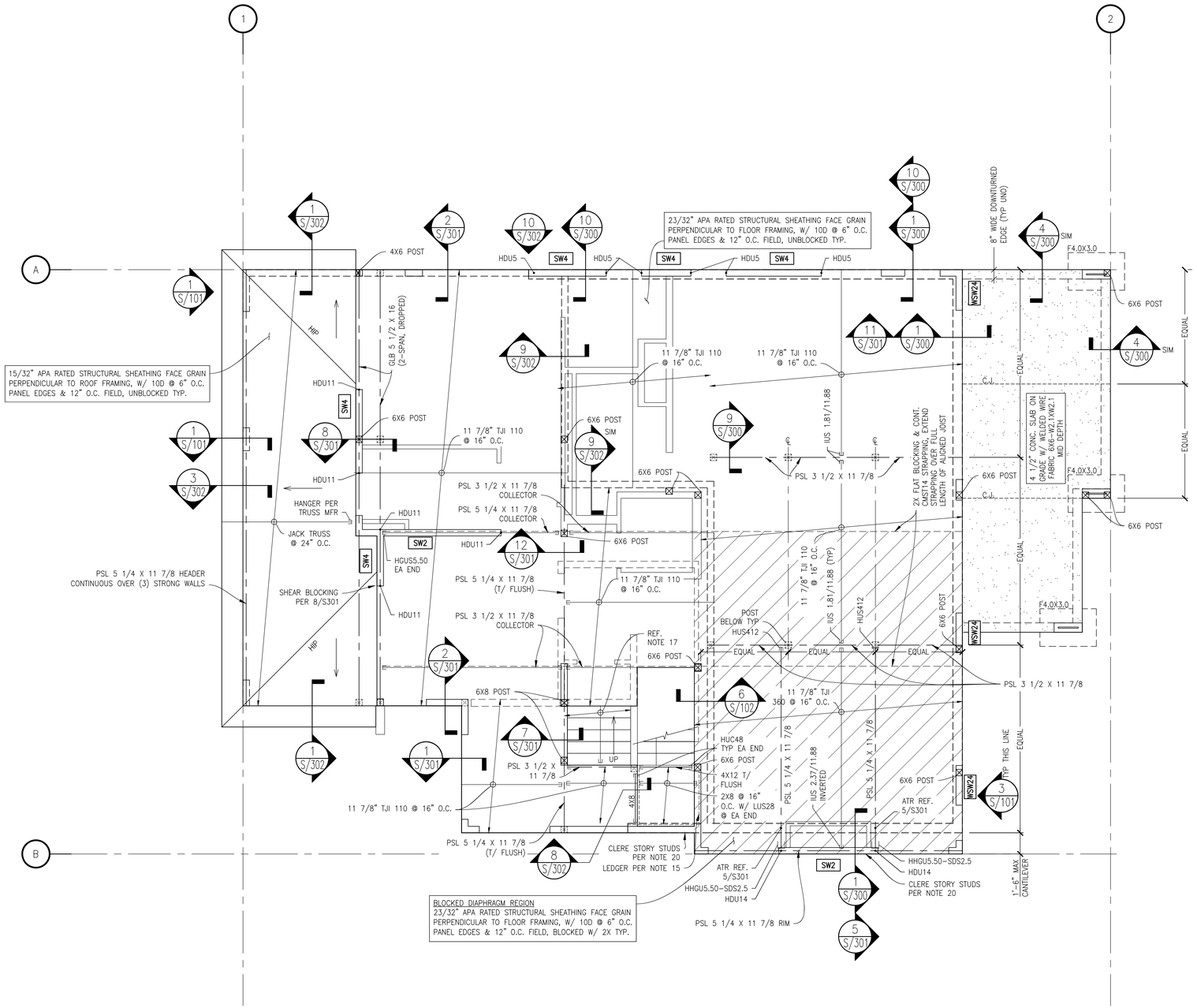
SCALE: AS SHOWN
BAR = 1"
FULL SIZE

DATE: 06/22/2023

JOB NO: 20-084

SHEET: 4 OF 10

DWG NO: S200



MAIN FLOOR FRAMING PLAN

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

PLAN NOTES

1. DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
2. ALL RIMS SHALL BE 1-3/4" LSL TYP, U.N.O.
3. MATCH BUNDLED STUDS FROM ABOVE TYP, U.N.O.
4. 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.
5. FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
6. ALL EXTERIOR WALLS SHALL BE SW-6, UNO ON PLAN.
7. PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
8. AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
9. ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP, U.N.O.
10. PROVIDE LUS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP, U.N.O.
11. PROVIDE ITS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP, U.N.O.
12. ENGINEERED JOIST BRACING PER JOIST MANUFACTURER, TYP.
13. FULLY BLOCK FLOOR CAVITY AT ALL POINT LOADS. VERIFY POINT LOADS ARE SUPPORTED CONTINUOUSLY THROUGH FLOORS TO THE FOUNDATION.
14. ALL HEADERS TO BE 4x10 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
15. 2X8 LEDGER WITH (2) 5/8" DIAMETER X 5" LONG TITAN HD @ 16" O.C. (CTR'D BETWEEN JOISTS)
16. SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
17. TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS.
18. 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.
19. OFFSET JOISTS AS REQUIRED TO AVOID PLUMBING FIXTURES
20. 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

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION

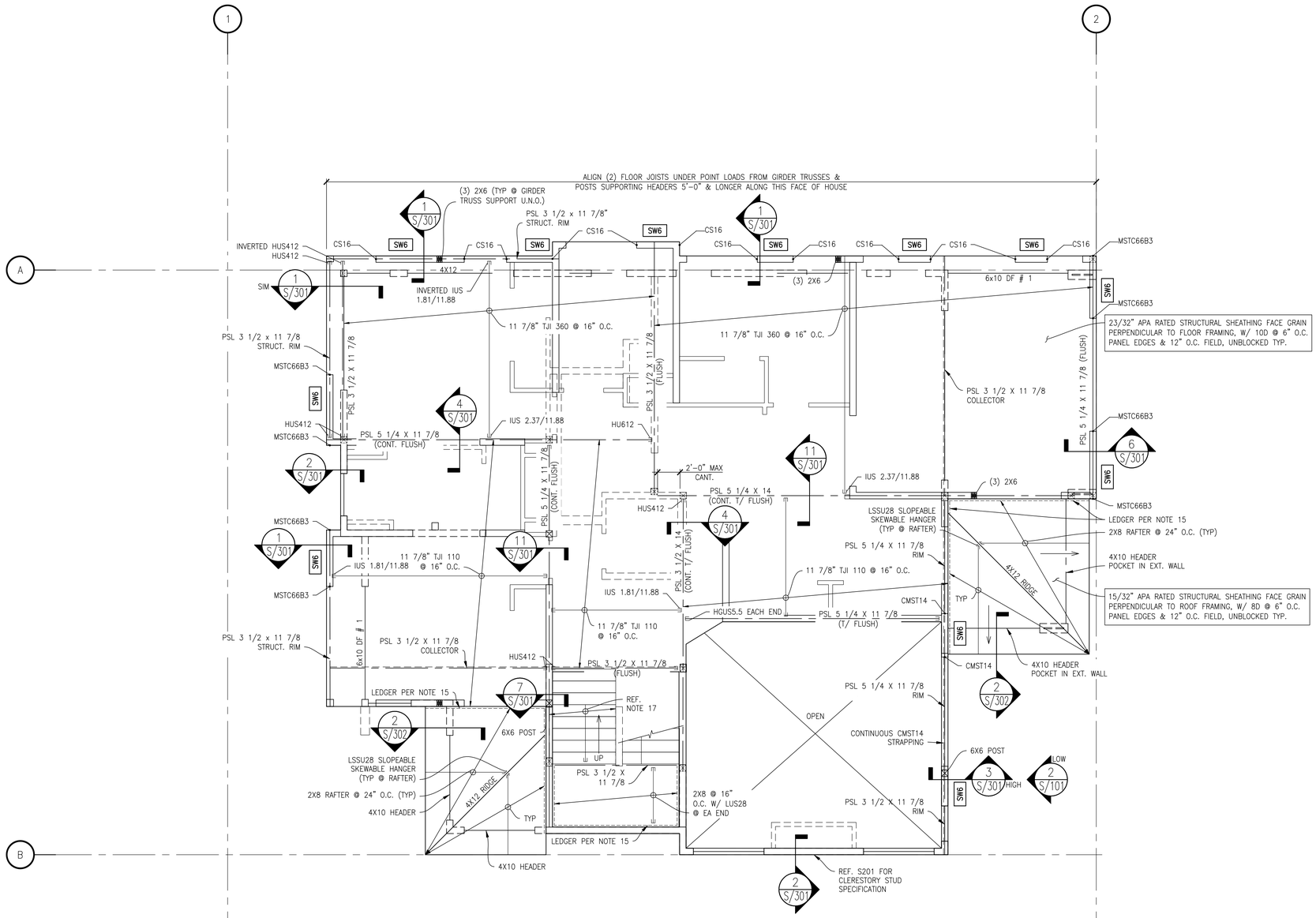
DATE

06/22/2023

CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040

MAIN FLOOR FRAMING PLAN

CHK BY: L2E	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	



UPPER FLOOR FRAMING PLAN

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

N

PLAN NOTES

1. DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
2. ALL RIMS SHALL BE 1-3/4" LSL TYP, U.N.O.
3. MATCH BUNDLED STUDS FROM ABOVE TYP, U.N.O.
4. 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.
5. FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
6. ALL EXTERIOR WALLS SHALL BE SW-6, UNO ON PLAN.
7. PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
8. AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
9. ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP, U.N.O.
10. PROVIDE LUS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP, U.N.O.
11. PROVIDE ITS SERIES HANGERS AT ALL FLUSH FRAMED JOIST CONDITIONS, TYP, U.N.O.
12. ENGINEERED JOIST BRACING PER JOIST MANUFACTURER, TYP.
13. FULLY BLOCK FLOOR CAVITY AT ALL POINT LOADS. VERIFY POINT LOADS ARE SUPPORTED CONTINUOUSLY THROUGH FLOORS TO THE FOUNDATION.
14. ALL HEADERS TO BE 4x10 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
15. 2X8 LEDGER FASTEN TO WOOD FRAMING W/ (2) 1/4" ø X 4 1/2 SDS @ 24" O.C.
16. SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
17. TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS.
18. 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

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION

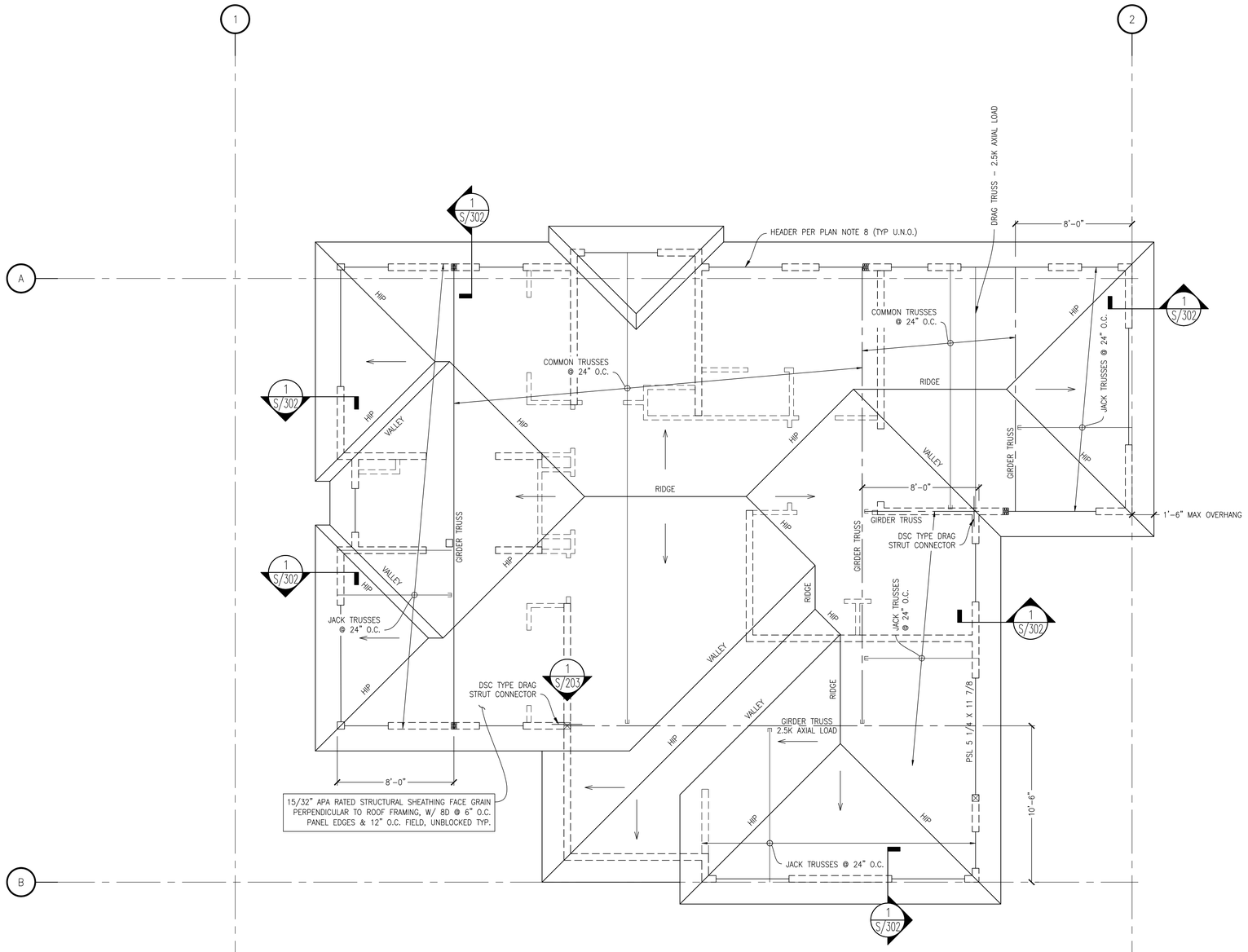
DATE

BRIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040

UPPER FLOOR FRAMING PLAN

CHK BY: L2E	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	

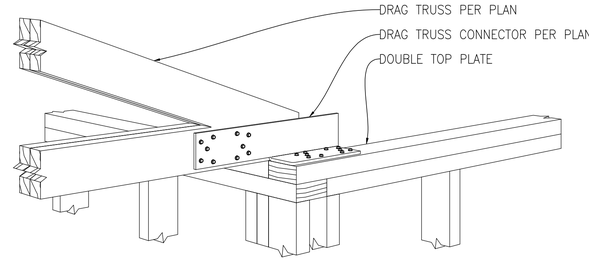


ROOF FRAMING PLAN
SCALE: 1/4"=1'-0"

PLAN NOTES
1. DIMENSIONS: VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
2. 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.
3. FULLY BLOCK ALL REPETITIVE MEMBERS AT BEARING CONDITIONS, TYP.
4. PROVIDE SIMPSON H1 AT ALL ROOF FRAMING TO EXTERIOR WALLS.
5. PANEL EDGE NAIL SHEATHING TO FRAMING MEMBERS ALIGNED OVER SHEAR WALLS, TYP.
6. TRUSS BRACING PER TRUSS MANUFACTURER, TYP.
7. SUPPORT GIRDER/MASTER TRUSSES WITH (3) 2X STUDS MINIMUM, TYP, U.N.O.
8. ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2X6 STUDS AT 16" ON CENTER, TYP, U.N.O.
9. ALL EXTERIOR WALLS SHALL BE SW6, U.N.O.
10. AT ALL WOOD-FRAMED, BEARING AND SHEAR WALLS, REFERENCE STUD GRADE, SIZES AND SPACING PER GENERAL NOTES.
11. AT SHEAR WALLS PARALLEL TO FRAMING, ALIGN RAFTER OR BEAM PER PLAN OVER AND UNDER ALL SHEAR WALLS AND BEARING WALLS.
14. ALL HEADERS TO BE 4X8 MINIMUM. HEADERS SHALL BE SUPPORTED BY (2) 2X STUDS MINIMUM, UNO ON PLAN.
15. TYPICAL LEDGER SHALL BE 2X12 WITH (2) ¼" DIAMETER X 5" LONG SDS SCREW CTR'D IN EACH STUD (STUDS @ 16" O.C.).
16. SUPPORT BEAMS WITH (3) 2X STUDS MINIMUM, UNO ON PLAN.
17. TYP STAIR STRINGERS - 2X12 @ 12" O.C. W/ LSC ADJUSTABLE STRINGER CONNECTOR AT ENDS
18. 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

CHECK SET - NOT FOR CONSTRUCTION

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

REVISION
DATE

MARIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

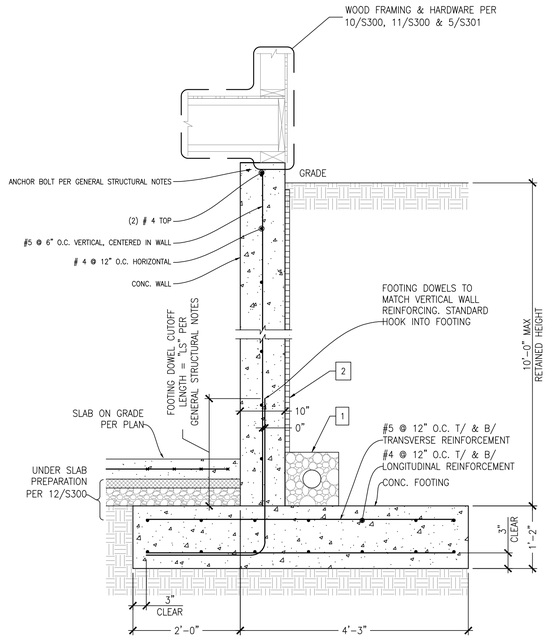
CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040

ROOF FRAMING PLAN

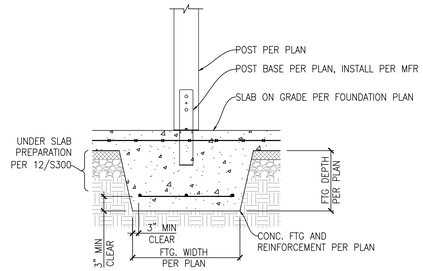
CHK BY: L2E	DRW BY: TNT
SCALE: AS SHOWN BAR = 1" FULL SIZE	
DATE: 06/22/2023	
JOB NO: 20-084	
SHEET: 7 OF 10	
DWG NO: S203	

WALL SECTION GENERAL NOTES:

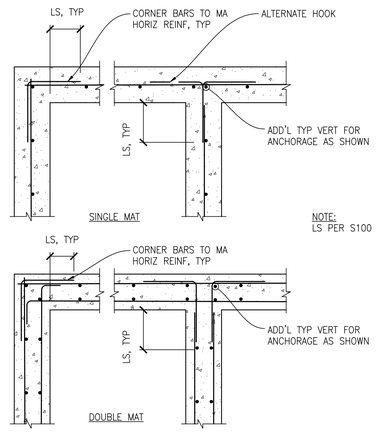
1. 4" PERFORATED PVC FOOTING DRAIN WRAPPED IN FILTER FABRIC .
2. APPLY PRE-FABRICATED DRAINAGE PANEL (MIRADRAIN 6000 OR EQUIVALENT) TO ALL PERIMETER RETAINING WALLS. EXTEND DRAINAGE PANEL OVER THE FULL HEIGHT OF THE WALL. A 12" THICK LAYER OF FREE-DRAINING GRANULAR FILL MAY BE USED IN LIEU OF THE DRAINAGE PANEL.
3. ROOF AND SURFACE RUNOFF SHOULD NOT DISCHARGE INTO THE FOOTING DRAIN SYSTEM.
4. SHORING WHERE REQUIRED PER OTHERS
5. HEEL AND TOE NOT TO SCALE, BUILD ACCORDING TO DETAIL DIMENSIONS.
6. HEAVY EQUIPMENT SURCHARGE NOT PERMITTED ADJACENT TO RETAINING WALL, HEEL SIDE.



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

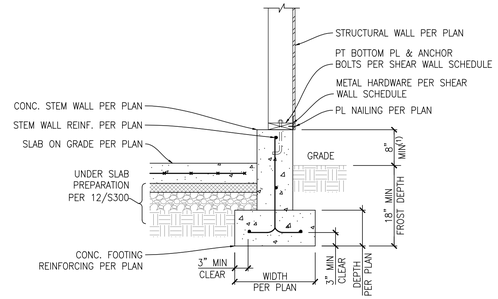


2 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL THICKENED SLAB



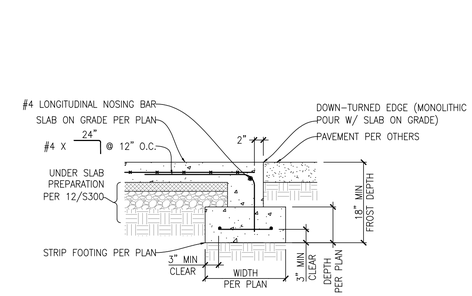
NOTE:
LS PER S100 SERIES STRUCTURAL NOTES

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



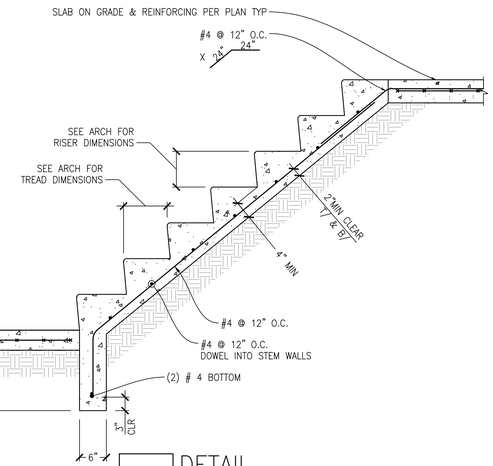
NOTE
1) 2'-6" MAXIMUM SOIL IMBALLANCE, ELSE USE DETAIL 1/S300

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



NOTE
NO STRIP FOOTING AT "SIM" CONDITION, EXTEND DOWNTURNED EDGE TO FROST DEPTH.

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

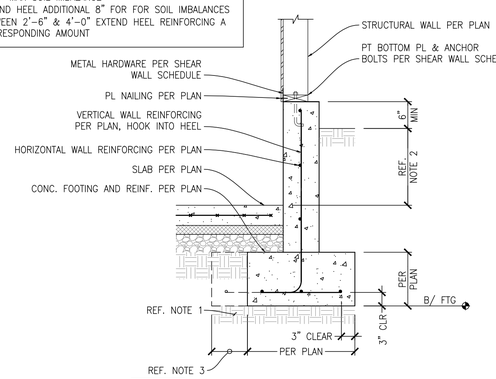


NOTE
1) RISE / RUN PER ARCH

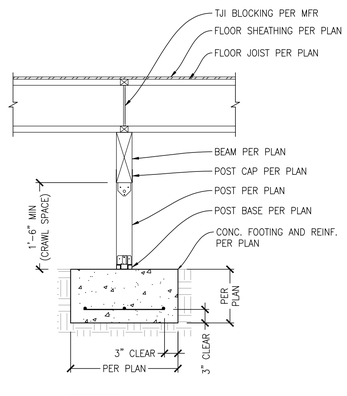
6 DETAIL
SCALE: 1 1/2"=1'-0"
WOOD STRINGER TO SOG

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

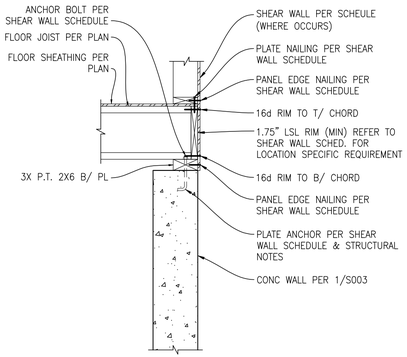
NOTES
1) UNDER FOOTING PREPARATION PER GEOTECHNICAL ENGINEER
2) FOOTING WIDTH AS NOTED ON PLAN CORRESPONDS TO 2'-6" MAX SOIL IMBALANCE
3) EXTEND HEEL ADDITIONAL 8" FOR FOR SOIL IMBALANCES BETWEEN 2'-6" & 4'-0" EXTEND HEEL REINFORCING A CORRESPONDING AMOUNT



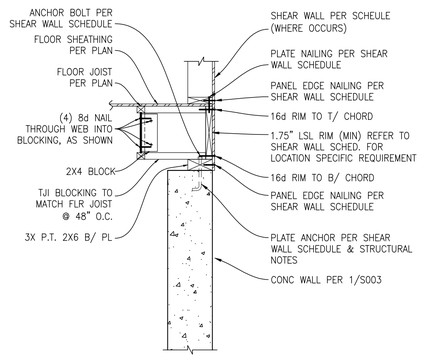
8 DETAIL
SCALE: 3/4 = 1'-0"
INTERIOR RETAINING WALL



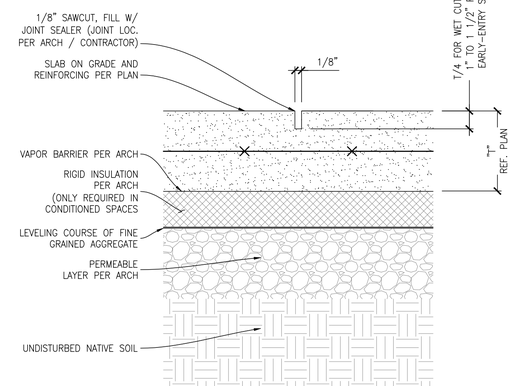
9 DETAIL
SCALE: 3/4 = 1'-0"
ISOLATED POST BASE



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

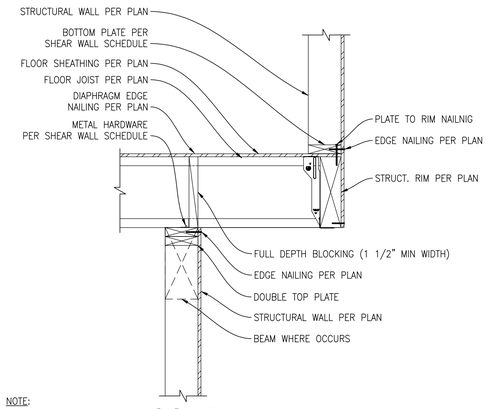
L2 ENGINEERS
DESIGN AND PLANNING
17848 NE 198TH PLACE
WOODINVILLE, WA 98072

REVISION
DATE

MARIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

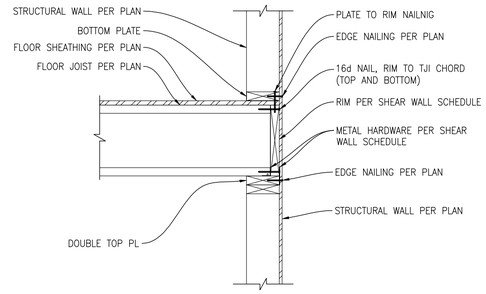
CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040
STRUCTURAL DETAILS

CHK BY: L2E	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	

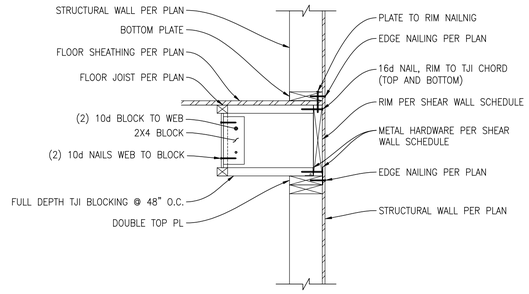


NOTE:
1. JOISTS PARALLEL TO WALL AT "SIM" CONDITION

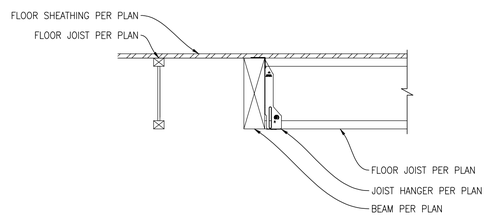
1 DETAIL
SCALE: 3/4"=1'-0"
CANTILEVERED FLOOR



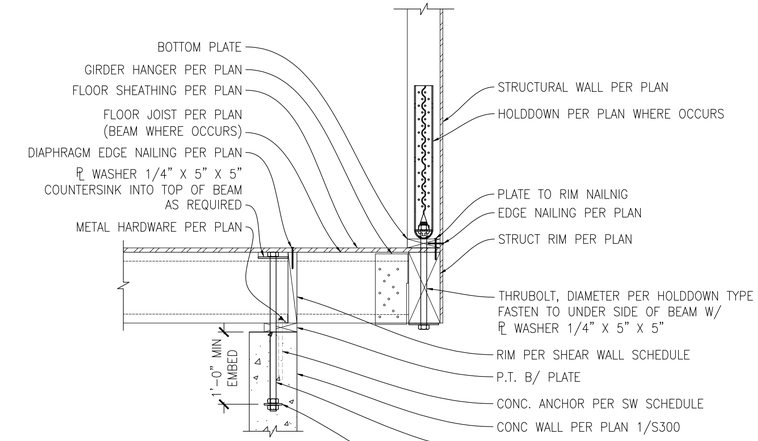
2 DETAIL
SCALE: 3/4"=1'-0"
TJI PERP TO WALL



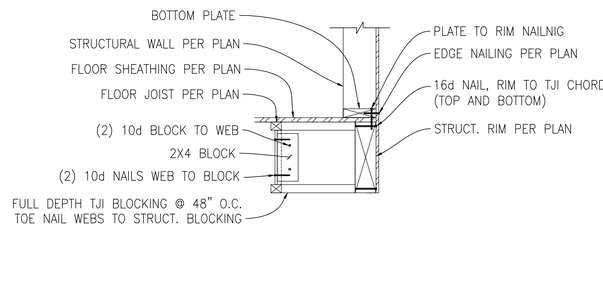
3 DETAIL
SCALE: 3/4"=1'-0"
TJI PARALLEL TO WALL



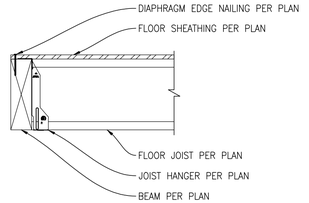
4 DETAIL
SCALE: 3/4"=1'-0"
JOIST TO BEAM



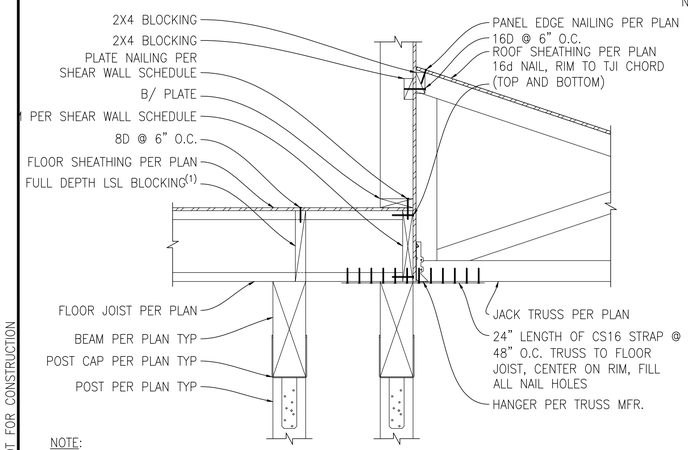
5 DETAIL
SCALE: 3/4"=1'-0"
UPLIFT TRANSFER BEAM



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

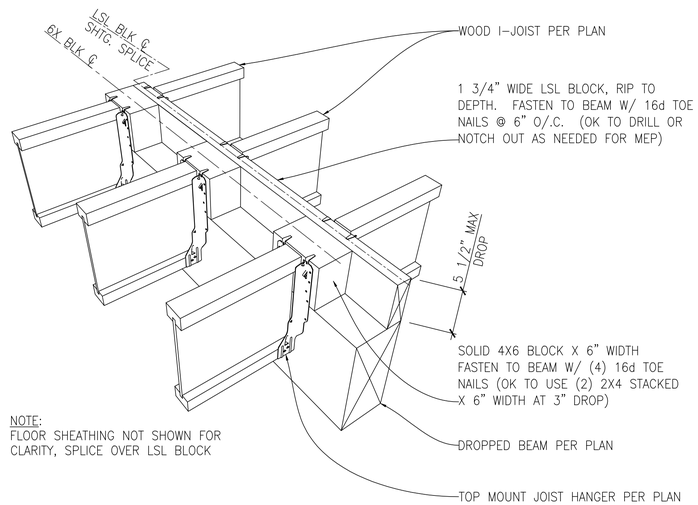


7 DETAIL
SCALE: 3/4"=1'-0"
TJI PERP. TO BEAM (ONE SIDE)



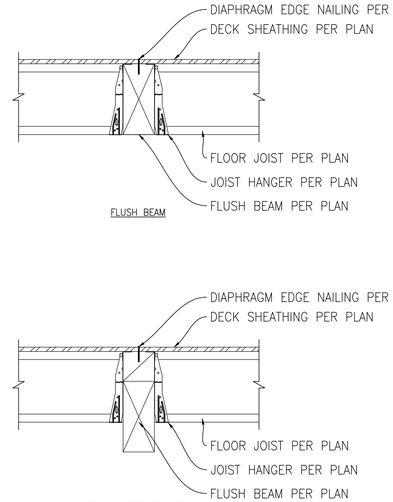
NOTE:
1. FASTEN RIM TO BEAM W/ A34 @ 48" O.C.

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



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

10 DETAIL
SCALE: NTS
JOIST TO BEAM / PARTIALLY DROPPED VARIANT



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

CHECK SET - NOT FOR CONSTRUCTION

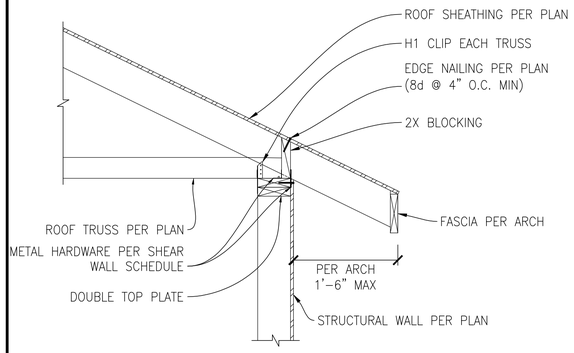
L2 ENGINEERS
DESIGN AND PLANNING
17848 NE 198TH PLACE
WOODINVILLE, WA 98072

REVISION
DATE

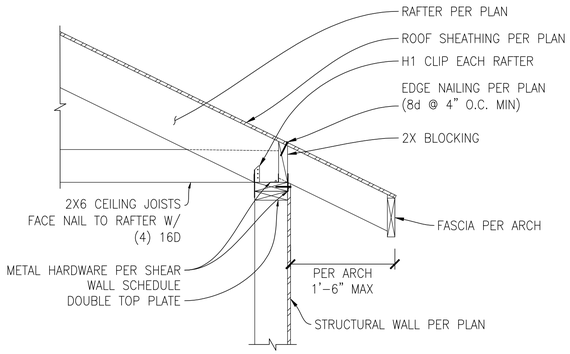
BRIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

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

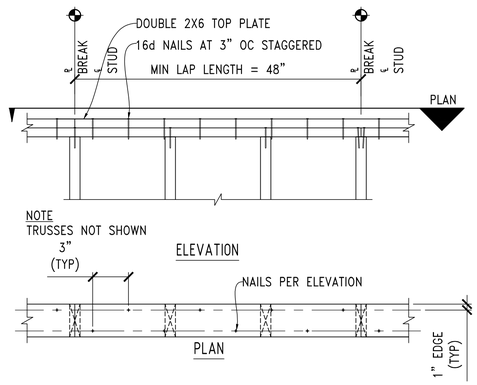
CHK BY: L2E
DRW BY: TNT
SCALE: AS SHOWN
BAR = 1"
FULL SIZE
DATE: 06/22/2023
JOB NO: 20-084
SHEET: 9 OF 10
DWG NO: S301



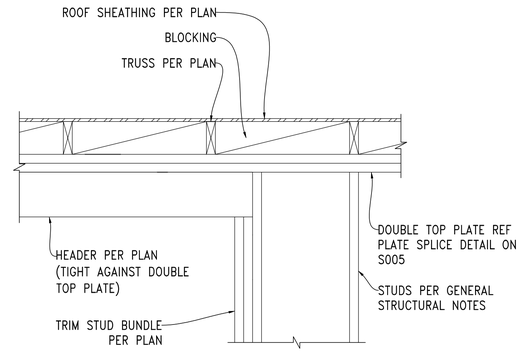
1 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL ROOF TRUSS PERP TO WALL



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



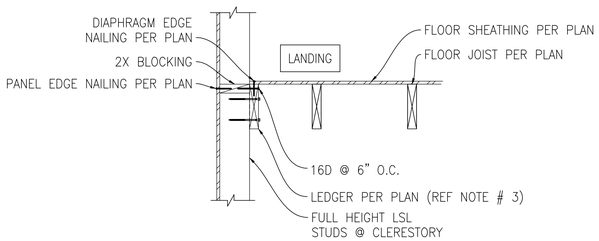
3 DETAIL
SCALE: 3/4"=1'-0"
TYPICAL PLATE SPLICE



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

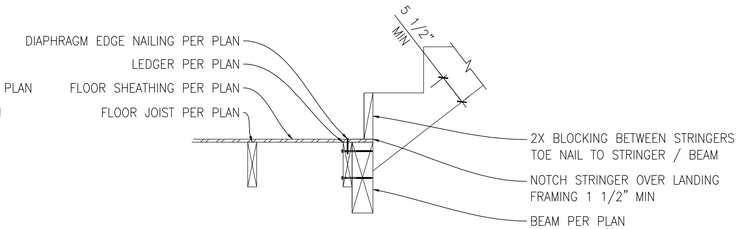
STAIR / LANDING FRAMING NOTES

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

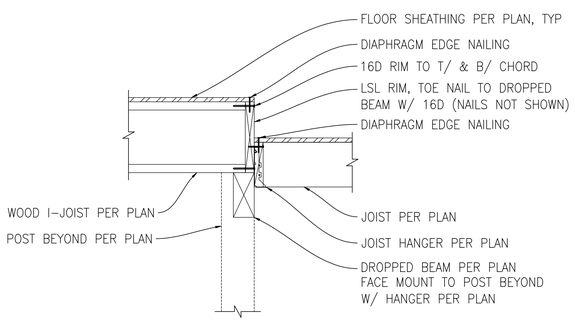


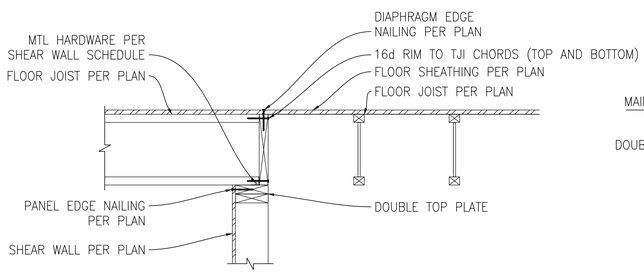
NOTE:
JOISTS PERP @ SIM CONDITION W/ JOIST HANGER PER PLAN AT SIM CONDITION

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



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

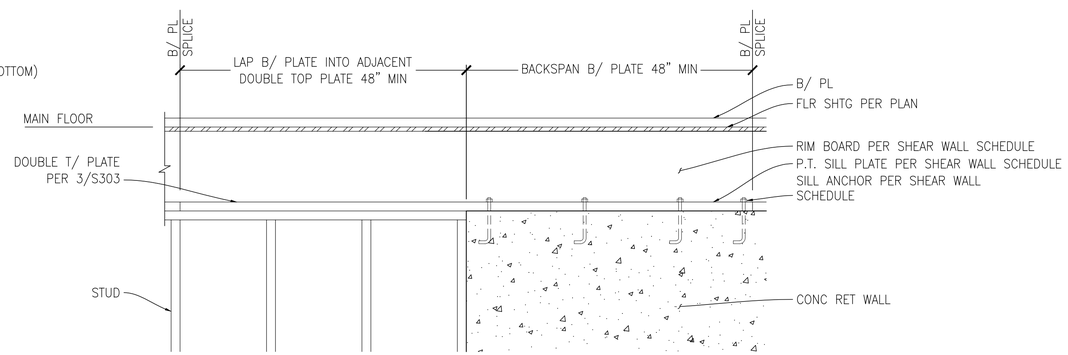




NOTE:
FLOOR FRAMING DIRECTION REVERSED BOTH SIDES OF WALL @ SIM

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

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

REVISION

DATE

BRIAN J. LOSHBAUGH
STATE OF WASHINGTON
23716
REGISTERED
PROFESSIONAL ENGINEER
06/22/2023

CHEN RESIDENCE
5024 MERCER WAY, MERCER ISLAND, WA 98040

STRUCTURAL DETAILS

CHK BY: L2E
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