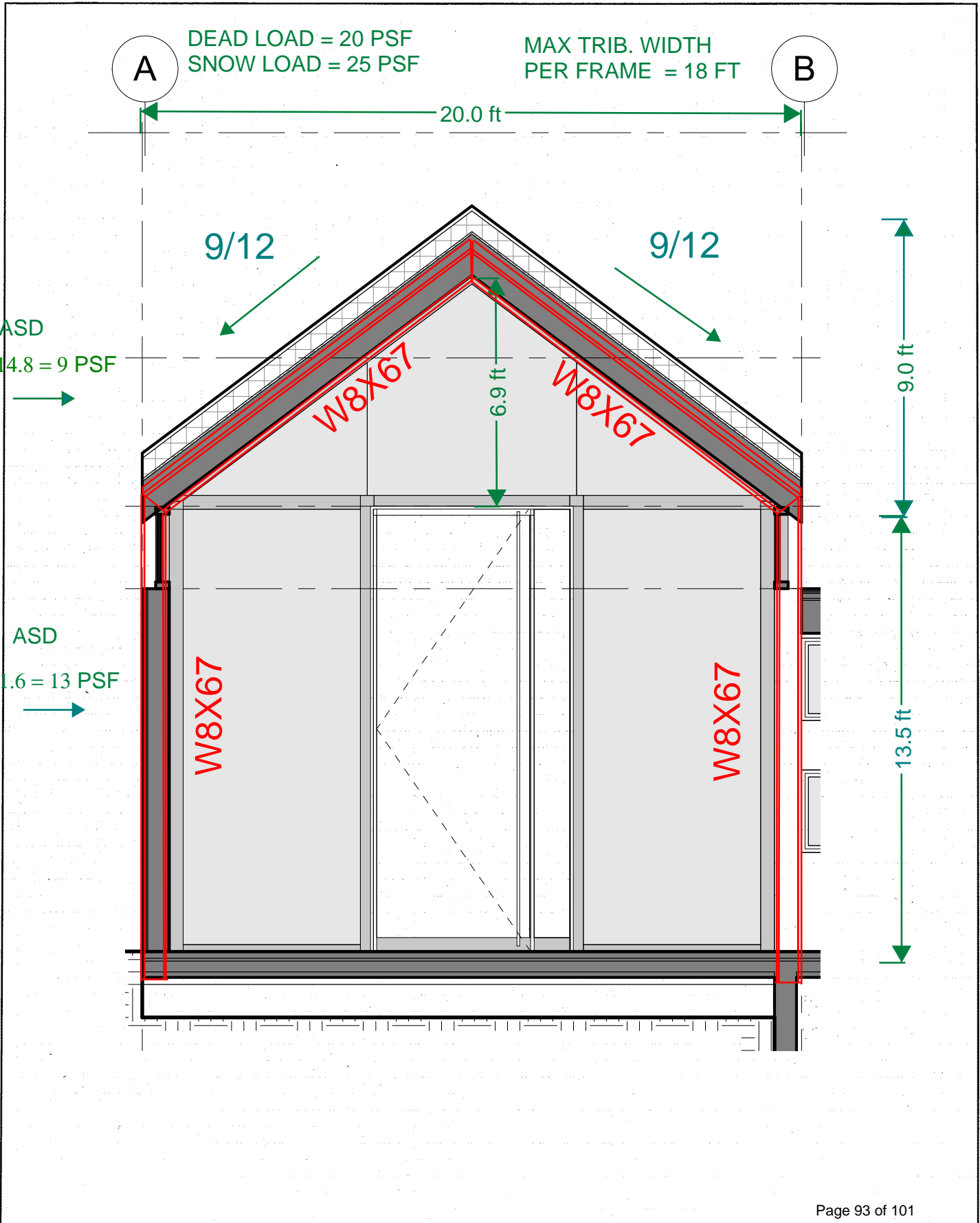


STEEL FRAME CALCULATIONS

FOO FRAMES

Project: _____ Date: _____

Client: _____ Page Number: _____



Mercer Island Wind Exposure and Wind Speed-Up (Topographic Effect)

by Development Services Group (DSG), City of Mercer Island
April 2009

180 Nickerson St.
Suite 302
Seattle, WA
98109

(206) 285-4512

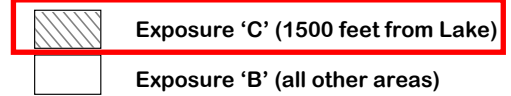
FAX:

(206) 285-0618

COPY

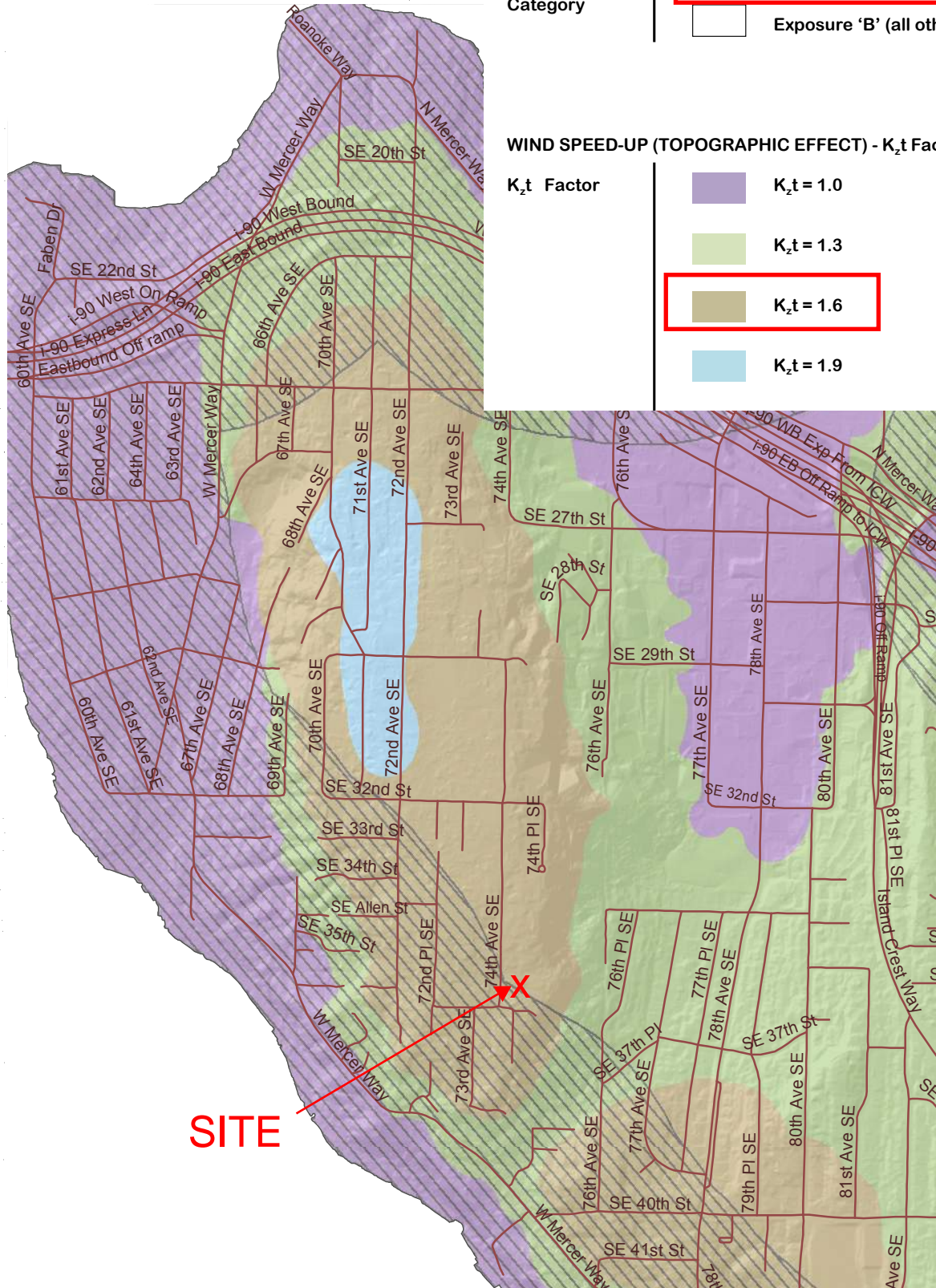
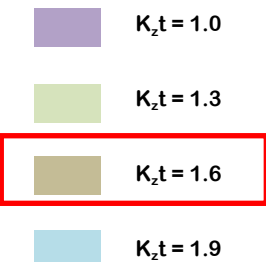
WIND EXPOSURE CATEGORIES:

Wind Exposure Category

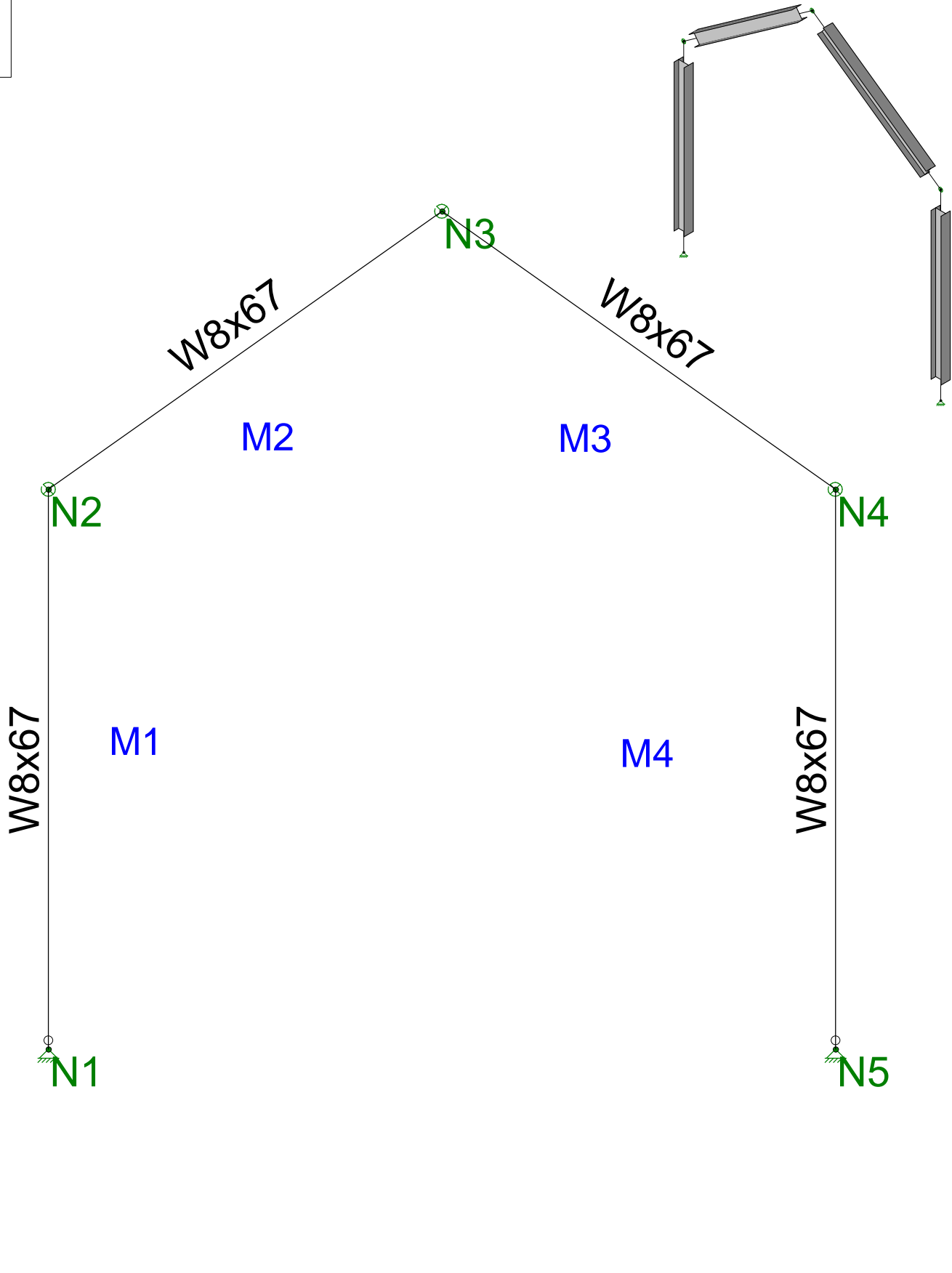


WIND SPEED-UP (TOPOGRAPHIC EFFECT) - $K_z t$ Factor :

$K_z t$ Factor



SITE



CT Engineering

STG

20035

Foo Frames
max load middle frame

June 4, 2020 at 8:23 AM

Foo frames W8x67.r2d



Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in ²]	I (90,270) [i...I (0,180) [in ⁴]
1	HR1A	W8x67	Column	Wide Flange	A500 Gr.B R...	Typical	19.7	88.6 272
2	HR2	W8x67	Beam	Wide Flange	A500 Gr.B R...	Typical	19.7	88.6 272

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Temp [F]
1	N1	0	0	0
2	N2	0	13.75	0
3	N3	9.665	20.58	0
4	N4	19.33	13.75	0
5	N5	19.33	0	0

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Rotation[k-ft/rad]
1	N1	Reaction	Reaction	
2	N2			Reaction
3	N3			Reaction
4	N4			Reaction
5	N5	Reaction	Reaction	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lb-out[ft]	Lb-in[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	K-out	K-in	Cb	Function
1	M1	HR1A	13.75			Lb out						Lateral
2	M2	HR2	11.835			Lb out						Lateral
3	M3	HR2	11.835			Lb out						Lateral
4	M4	HR1A	13.75			Lb out						Lateral

Joint Loads and Enforced Displacements (BLC 1 : Dead Load)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft...]
1	N3	L	Y	-7.2

Joint Loads and Enforced Displacements (BLC 2 : Snow Load)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft...]
1	N3	L	Y	-9

Joint Loads and Enforced Displacements (BLC 3 : Wind Load)

	Joint Label	L,D,M	Direction	Magnitude[(k.k-ft), (in.rad), (k*s^2/ft...]
1	N2	L	X	5.17

Member Distributed Loads (BLC 1 : Dead Load)

	Member Label	Direction	Start Magnitude[k/ft....]	End Magnitude[k/ft.F....]	Start Location[ft.%]	End Location[ft.%]
1	M2	Y	0	0	0	0
2	M1	Y	0	0	0	0
3	M1	Y	0	0	0	0
4	M2	Y	-.04	-.04	0	0
5	M3	Y	-.04	-.04	0	0



Member Distributed Loads (BLC 2 : Snow Load)

	Member Label	Direction	Start Magnitude[k/ft....	End Magnitude[k/ft.F....	Start Location[ft.%]	End Location[ft.%]
1	M2	Y	-.05	-.05	0	%100
2	M3	Y	-.05	-.05	0	%100

Load Combination Design

	Description	ASIF	CD	Service	Hot Roll...	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless
1					Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	IBC 16-8		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-10 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-10 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-10 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-11 (a)		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-11 (b)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-11 (c)		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-12 (a)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-12 (b)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	IBC 16-13 (a)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	IBC 16-13 (b)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	IBC 16-13 (c)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	IBC 16-14 (a)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	IBC 16-14 (b)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	IBC 16-14 (c)		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	IBC 16-15		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	IBC 16-16		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Moment [k-ft]	LC
1	N1	max	.648	5	9.165	5	0	2
2		min	-1.462	18	2.444	18	0	2
3	N2	max	0	2	0	2	40.184	13
4		min	0	2	0	2	13.976	2
5	N3	max	0	2	0	2	0	18
6		min	0	2	0	2	0	2
7	N4	max	0	2	0	2	16.792	18
8		min	0	2	0	2	-31.445	5
9	N5	max	-.288	2	9.165	5	0	2
10		min	-1.755	10	2.444	18	0	2
11	Totals:	max	0	2	18.33	5		
12		min	-3.102	10	4.888	18		

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Rotation [rad]	LC
1	N1	max	0	18	0	18	0	2
2		min	0	5	0	5	0	2
3	N2	max	.352	18	0	18	0	2
4		min	-.156	5	-.003	5	0	13
5	N3	max	.374	10	-.033	18	0	2
6		min	0	2	-.227	5	0	18
7	N4	max	.423	10	0	18	0	5
8		min	.069	2	-.003	5	0	18
9	N5	max	0	10	0	18	0	2
10		min	0	2	0	5	0	2

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
1	M1	1	max	9.165	5	1.462	18	0	2
2			min	2.444	18	-.648	5	0	2
3		2	max	9.165	5	1.462	18	2.229	5
4			min	2.444	18	-.648	5	-5.027	18
5		3	max	9.165	5	1.462	18	4.458	5
6			min	2.444	18	-.648	5	-10.053	18
7		4	max	9.165	5	1.462	18	6.687	5
8			min	2.444	18	-.648	5	-15.08	18
9		5	max	9.165	5	1.462	18	8.916	5
10			min	2.444	18	-.648	5	-20.107	18
11	M2	1	max	5.909	13	7.111	5	40.36	5
12			min	2.586	2	1.05	18	5.754	18
13		2	max	5.777	13	6.893	5	19.644	5
14			min	2.518	2	.992	18	2.734	18
15		3	max	5.644	13	6.676	5	-.114	18
16			min	2.45	2	.934	18	-.429	5
17		4	max	5.512	13	6.458	5	-2.791	18
18			min	2.381	2	.876	18	-19.859	5
19		5	max	5.38	13	6.241	5	-5.296	18
20			min	2.313	2	.818	18	-38.645	5
21	M3	1	max	5.38	13	-.818	18	-5.296	18
22			min	2.313	2	-6.241	5	-38.645	5
23		2	max	5.512	13	-.876	18	-2.791	18
24			min	2.381	2	-6.458	5	-19.859	5
25		3	max	5.644	13	-.934	18	-.114	18
26			min	2.45	2	-6.676	5	-.429	5
27		4	max	5.777	13	-.992	18	19.644	5
28			min	2.518	2	-6.893	5	2.734	18
29		5	max	5.909	13	-1.05	18	40.36	5
30			min	2.586	2	-7.111	5	5.754	18
31	M4	1	max	9.165	5	1.755	10	24.131	10
32			min	2.444	18	.288	2	3.962	2
33		2	max	9.165	5	1.755	10	18.098	10
34			min	2.444	18	.288	2	2.972	2
35		3	max	9.165	5	1.755	10	12.065	10
36			min	2.444	18	.288	2	1.981	2
37		4	max	9.165	5	1.755	10	6.033	10
38			min	2.444	18	.288	2	.991	2
39		5	max	9.165	5	1.755	10	0	2
40			min	2.444	18	.288	2	0	2

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	Shear[k]	Loc[ft]	LC	Moment[k-ft]	Loc[ft]	LC
1	M1	max	9.165	0	5	1.462	0	18	8.916	13.75	5
2		min	2.444	0	18	-.648	0	5	-20.107	13.75	18
3	M2	max	5.909	0	13	7.111	0	5	40.36	0	5
4		min	2.313	11.835	2	.818	11.835	18	-38.645	11.835	5
5	M3	max	5.909	11.835	13	-.818	0	18	40.36	11.835	5
6		min	2.313	0	2	-7.111	11.835	5	-38.645	0	5
7	M4	max	9.165	0	5	1.755	0	10	24.131	0	10
8		min	2.444	0	18	.288	0	2	0	13.75	2

Envelope Member End Reactions

Member	Member...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
1	M1	I	max	9.165	5	1.462	18	0
2			min	2.444	18	-.648	5	0
3		J	max	9.165	5	1.462	18	8.916
4			min	2.444	18	-.648	5	-20.107
5	M2	I	max	5.909	13	7.111	5	40.36
6			min	2.586	2	1.05	18	5.754
7		J	max	5.38	13	6.241	5	-5.296
8			min	2.313	2	.818	18	-38.645
9	M3	I	max	5.38	13	-.818	18	-5.296
10			min	2.313	2	-6.241	5	-38.645
11		J	max	5.909	13	-1.05	18	40.36
12			min	2.586	2	-7.111	5	5.754
13	M4	I	max	9.165	5	1.755	10	24.131
14			min	2.444	18	.288	2	3.962
15		J	max	9.165	5	1.755	10	0
16			min	2.444	18	.288	2	0

Envelope AISC 14th(360-10): ASD Steel Code Checks

Member	Shape	Code Ch...	Loc[ft]	LC	Shear C...	Loc[ft]	LC	Pnc/om [k]	Pnt/om [k]	Mn/om [k-ft]	Cb	Eqn
1	M1	W8x67	- P-Delta...									
2	M2	W8x67	- P-Delta...									
3	M3	W8x67	- P-Delta...									
4	M4	W8x67	- P-Delta...									

Envelope Member Section Deflections Service

Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
1	M1	1	max	0	2	0	2	NC
2			min	0	2	0	2	NC
3		2	max	0	18	.057	5	NC
4			min	0	5	-.129	18	4057.787
5		3	max	0	18	.107	5	NC
6			min	-.002	5	-.241	18	2536.117
7		4	max	0	18	.142	5	NC
8			min	-.002	5	-.321	18	2898.42
9		5	max	0	18	.156	5	NC
10			min	-.003	5	-.352	18	NC
11	M2	1	max	.287	18	.087	5	NC
12			min	-.129	5	-.204	18	NC
13		2	max	.287	18	.042	5	NC
14			min	-.13	5	-.21	18	3144.465
15		3	max	.287	18	-.022	2	7332.588
16			min	-.13	5	-.232	10	1032.51
17		4	max	.287	18	-.063	2	4423.407
18			min	-.131	5	-.271	13	620.089
19		5	max	.286	18	-.082	2	3718.942
20			min	-.131	5	-.304	13	520.143
21	M3	1	max	.347	10	.189	18	NC
22			min	.058	2	-.186	5	520.143
23		2	max	.347	10	.195	18	NC
24			min	.058	2	-.142	5	620.089
25		3	max	.347	10	.208	18	7546.248
26			min	.058	2	-.05	5	1032.51
27		4	max	.346	10	.228	10	7075.046



Envelope Member Section Deflections Service (Continued)

Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
28		min	.058	2	.019	2	813.872	13
29	5	max	.346	10	.243	10	NC	2
30		min	.058	2	.039	2	679.031	13
31	M4	max	.003	5	.423	10	NC	2
32		min	0	18	.069	2	NC	2
33	2	max	.002	5	.385	10	NC	2
34		min	0	18	.063	2	2415.091	10
35	3	max	.002	5	.289	10	NC	2
36		min	0	18	.048	2	2113.205	10
37	4	max	0	5	.154	10	NC	2
38		min	0	18	.025	2	3381.128	10
39	5	max	0	2	0	2	NC	2
40		min	0	2	0	2	NC	2

Envelope Beam Deflections

	Member Label	Span		Location [ft]	y' [in]	(n) L'/y' Ratio	LC
1	M2	1	max	.37	-.096	NC	13
2		1	min	11.835	-.186	1040	5
3	M3	1	max	11.465	.227	NC	13
4		1	min	0	-.186	1040	5

Envelope Beam Deflection Checks

Be...	Design Rule	Span	Defl [in]	Ratio	LC	Defl [in]	Ratio	LC	Defl [in]	Ratio	LC
1	M2	Typical	1	N/A	N/A	N/A	-.121	2340	2(DL)	N/A	N/A
2	M3	Typical	1	N/A	N/A	N/A	-.121	2340	2(DL)	N/A	N/A

BUILDING PERMIT PLANS FOR 3453 74TH AVE W FOR JIMMY & SHANNON FOO

VERTICAL DATUM, BENCHMARK & CONTOUR INTERVAL

ELEVATIONS SHOWN ON THIS DRAWING WERE DERIVED FROM INFORMATION PROVIDED BY WCCS SURVEY CONTROL DATABASE.

POINT ID NO. 238

ELEVATION: 324.56 FEET (98.926 METERS) NAVD88

2" BRASS CAP IN MONUMENT CASE AT THE INTERSECTION OF SE 32ND ST & 74TH AVE SE

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

BASIS OF BEARING

HELD RECORD OF SURVEY BY MS WEBB SURVEYING AS RECORDED IN VOLUME 135 OF SURVEYS, PAGE 243, RECORDS OF KING COUNTY, WASHINGTON AND RECORDED UNDER RECORDING NUMBER 200000215900011. ACCEPTED A BEARING OF N 90°00'00" W FOR THE CENTERLINE OF SE 32ND STREET BASED ON FOUND MONUMENTS IN CASE.

SURVEY NOTES

THIS SURVEY WAS COMPLETED WITHOUT BENEFIT OF A CURRENT TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST ON THIS PROPERTY THAT ARE NOT SHOWN HEREON.

INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND NIKON NIVO 5.C TOTAL STATION. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090.

THE INFORMATION ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE IN JUNE 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

UTILITIES SHOWN ON THIS SURVEY ARE BASED UPON ABOVE GROUND OBSERVATIONS AND AS-BUILT PLANS WHERE AVAILABLE. ACTUAL LOCATIONS OF UNDERGROUND UTILITIES MAY VARY AND UTILITIES NOT SHOWN ON THIS SURVEY MAY EXIST ON THIS SITE.

ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.

LEGAL DESCRIPTION

PARCEL: 130030-1965
LOTS 16 THROUGH 20 AND THE EAST 15 FEET OF LOTS 21 THROUGH 25, BLOCK 7, C.C. CALKINS FIRST ADDITION TO EAST SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 4 OF PLATS, PAGE 88, RECORDS OF KING COUNTY, WASHINGTON, TOGETHER WITH THE WEST HALF OF VACATED 74TH PLACE SE LYING NORTH OF THE SOUTH MARGIN OF SAID PLAT AND SOUTH OF THE EASTERLY EXTENSION OF THE NORTH LINE OF SAID LOT 16, AND TOGETHER WITH THAT PORTION OF VACATED SE 36TH STREET, LYING WITHIN SAID PLAT AND WEST OF THE CENTERLINE OF 74TH PLACE SE AND EAST OF THE SOUTHERLY EXTENSION OF THE WEST LINE OF SAID LOT 20.

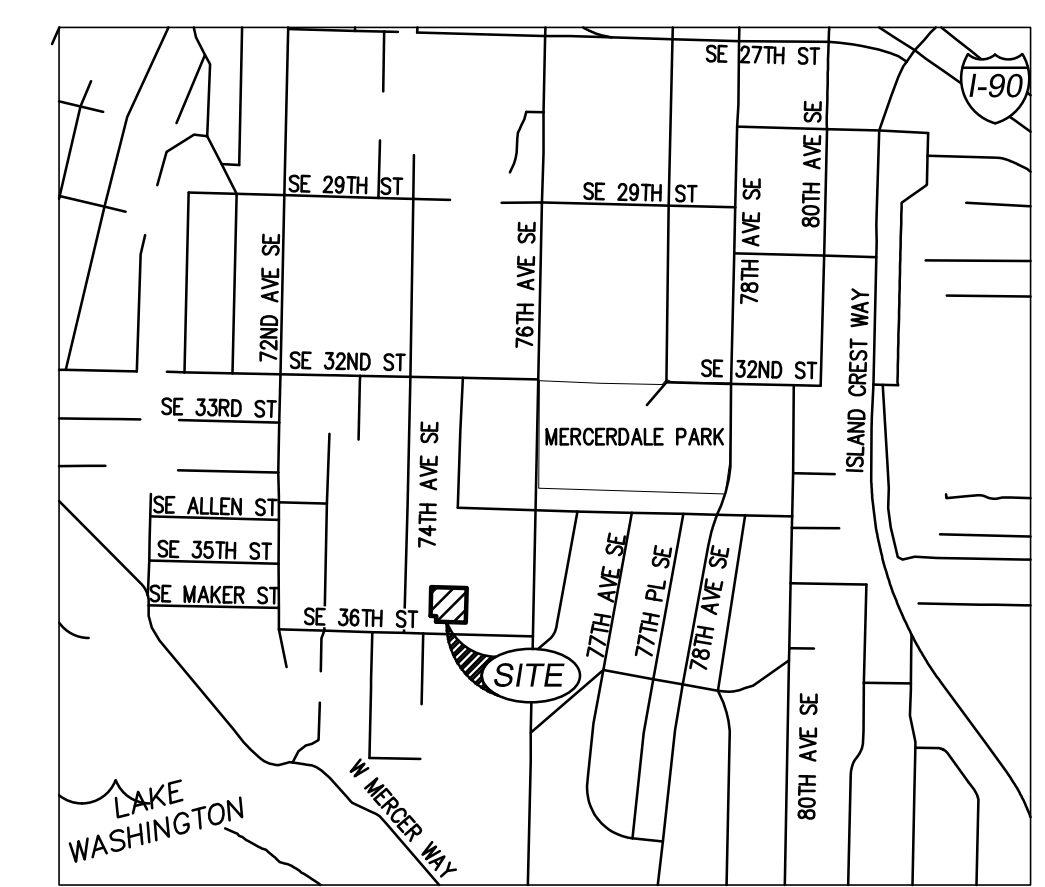
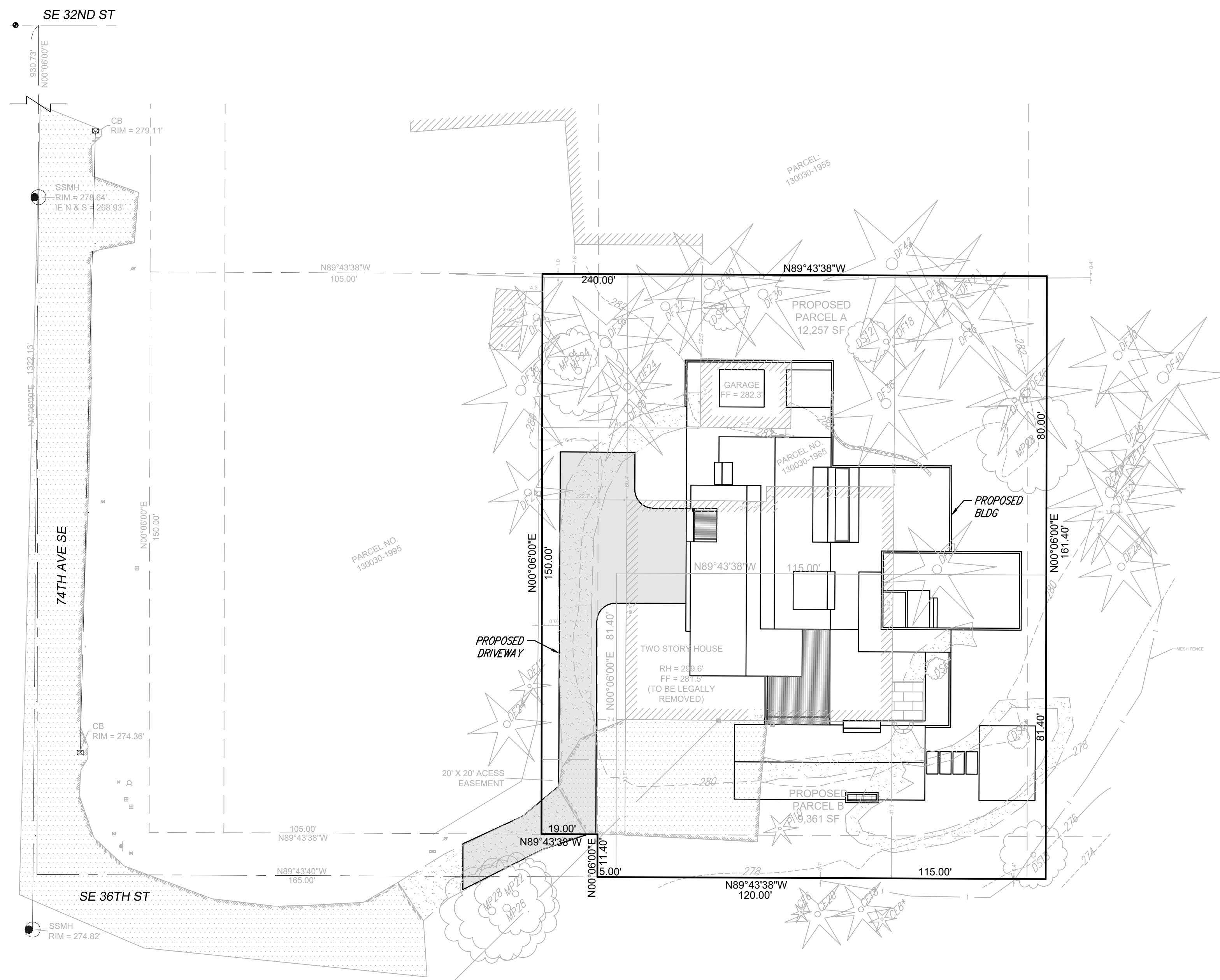
SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

SITE STATISTICS

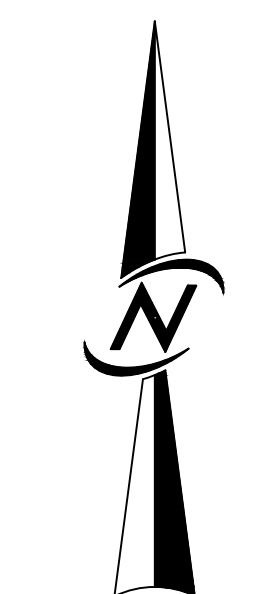
ZONING: R-8.4 (RESIDENTIAL-SINGLE FAMILY)
SITE AREA: 21,618 SF (±0.496 ACRES)
TAX PARCEL: 130030-1965
LOT SLOPE STATISTICS: XX%

LEGEND

EXISTING			
●	FOUND MONUMENT AS DESCRIBED	-x-	CHAINLINK FENCE
○	FOUND REBAR AS DESCRIBED	-□-	WOOD FENCE
⊗	TACK IN LEAD FOUND	▨	CONCRETE WALL
●	SET 5/8" X 24" IRON ROD W/1" YELLOW PLASTIC CAP	⊠	ROCKERY
⊠	POWER METER	▭	ASPHALT SURFACE
⊠	UTILITY POLE	▭	GRAVEL SURFACE
⊠	GAS METER	SQ	SEQUOIA
●	SANITARY SEWER MANHOLE	CE	CEDAR
⊗	WATER VALVE	DF	DOUGLAS FIR
⊠	FIRE HYDRANT	HE	HEMLOCK
⊠	WATER METER	MP	MAPLE
●	SIGN	PI	PINE
-SS-	APPROXIMATE LOCATION SANITARY SEWER LINE	SP	SPRUCE
-SD-	APPROXIMATE LOCATION STORM DRAIN LINE	DS	DECIDUOUS
-OHP-	OVERHEAD POWER	*	DENOTES MULTI-TRUNK
-OHU-	OVERHEAD UTILITIES		



VICINITY MAP
SCALE: 1:1000



SCALE: 1" = 20'
0 10 20 40

OWNER:
JIMMY & SHANNON FOO
2820 29TH AVE W
SEATTLE, WA 98199
CONTACT: SHANNON FOO
PHONE: (306) 613-5505

ENGINEER:
CORE DESIGN INC
12100 NE 195TH ST, SUITE 300
BOTHELL, WASHINGTON 98011
(425) 885-7877
CONTACT: MICHAEL A. MOODY, P.E.

SURVEY:
SITE SURVEYING INC
21923 NE 11TH ST
SAMMAMISH, WASHINGTON 98074
(425) 298-4412

SHEET INDEX
C1.01 COVER SHEET
C1.02 TOPOGRAPHIC SURVEY
C1.03 SITE PLAN
C2.01 TESC PLAN

UNDERGROUND LOCATOR SERVICE
CALL BEFORE YOU DIG!
811
PERMIT #XXXX-XXX

DATE	DESIGNED	DRAWN	APPROVED	PROJECT MANAGER
SEE STAMP DATE	FLAVIO R. BAINOTTI	MARY MOORE	MICHAEL A. MOODY, PE	JOSHUA BEARD
SHEET	OF			
C1.01	4			
PROJECT NUMBER 20034				

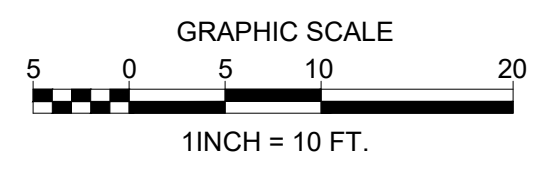
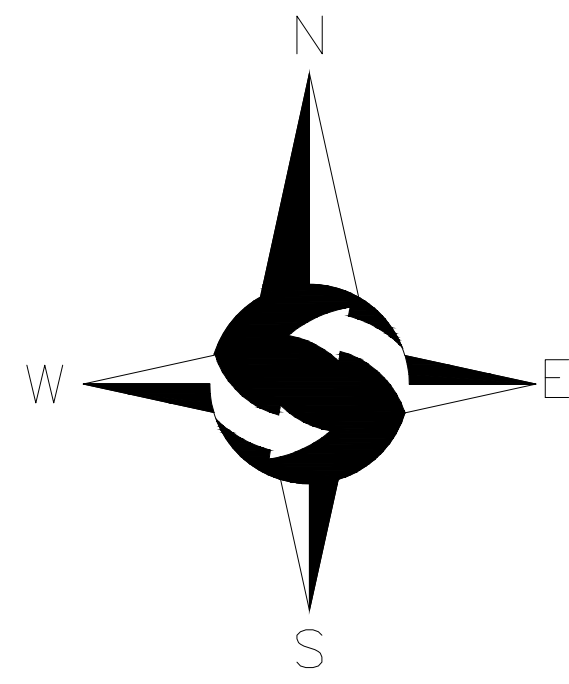
NO.	REVISIONS	DATE

CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING

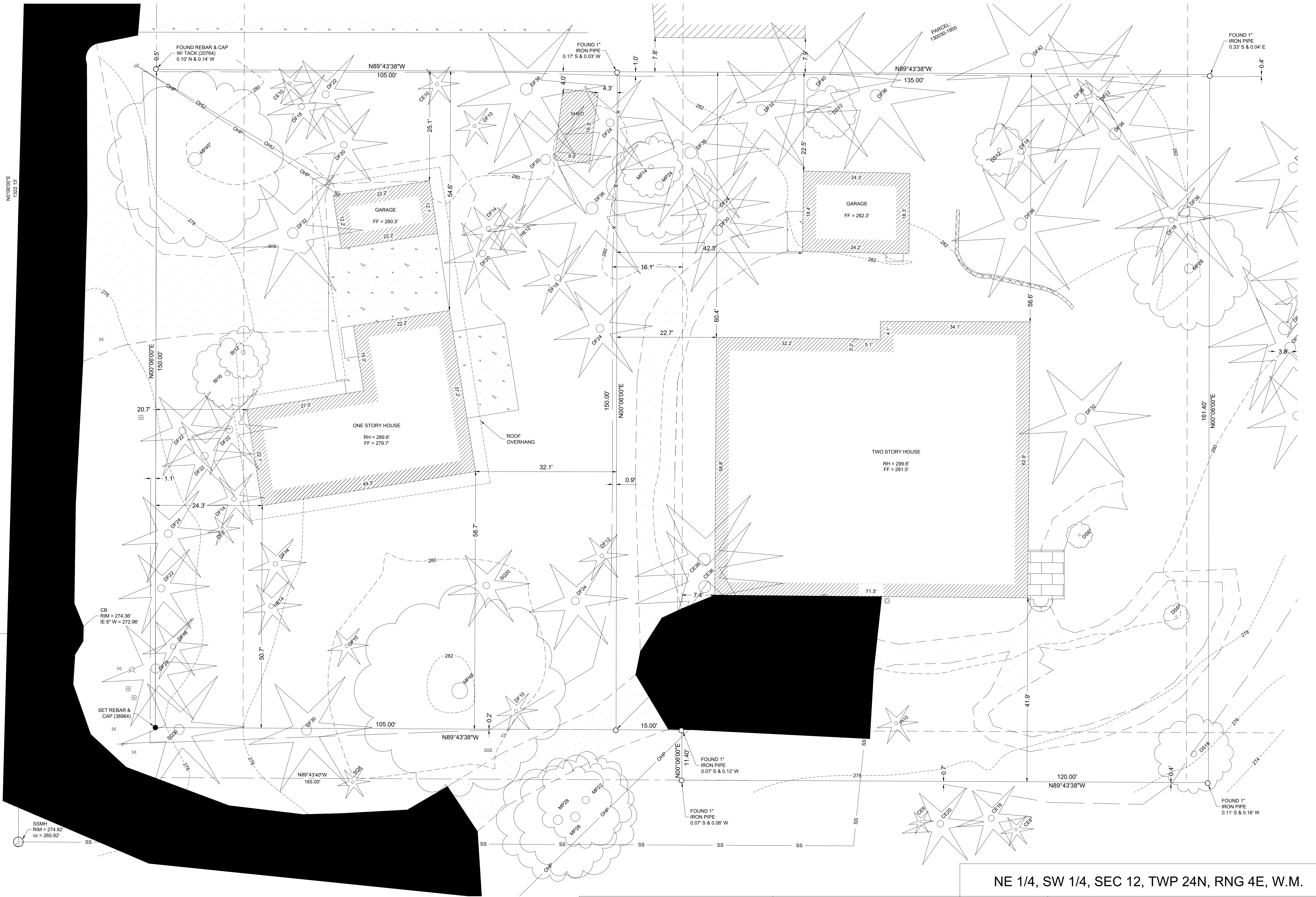
12100 NE 195th St, Suite 300, Bothell, Washington 98011, 425.885.7877

SITE PLAN
3453 74TH AVE SE
JIMMY & SHANNON FOO
2820 29TH AVE W
SEATTLE, WA 98199

DATE: SEE STAMP DATE
DESIGNED: FLAVIO R. BAINOTTI
DRAWN: MARY MOORE
APPROVED: MICHAEL A. MOODY, PE
PROJECT MANAGER: JOSHUA BEARD



N00°06'00"E
1322.13'



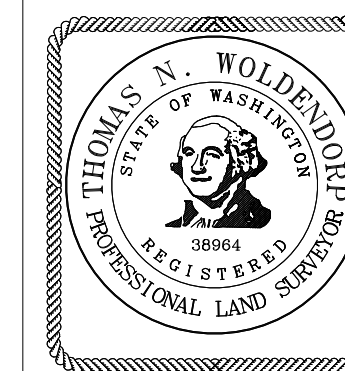
SSM1
RIM = 274.82'
cc = 265.92'

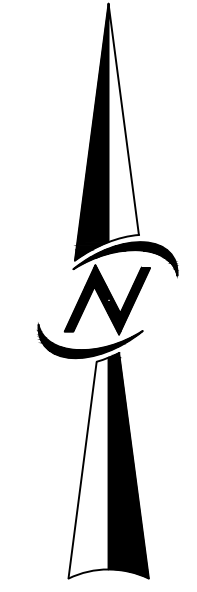
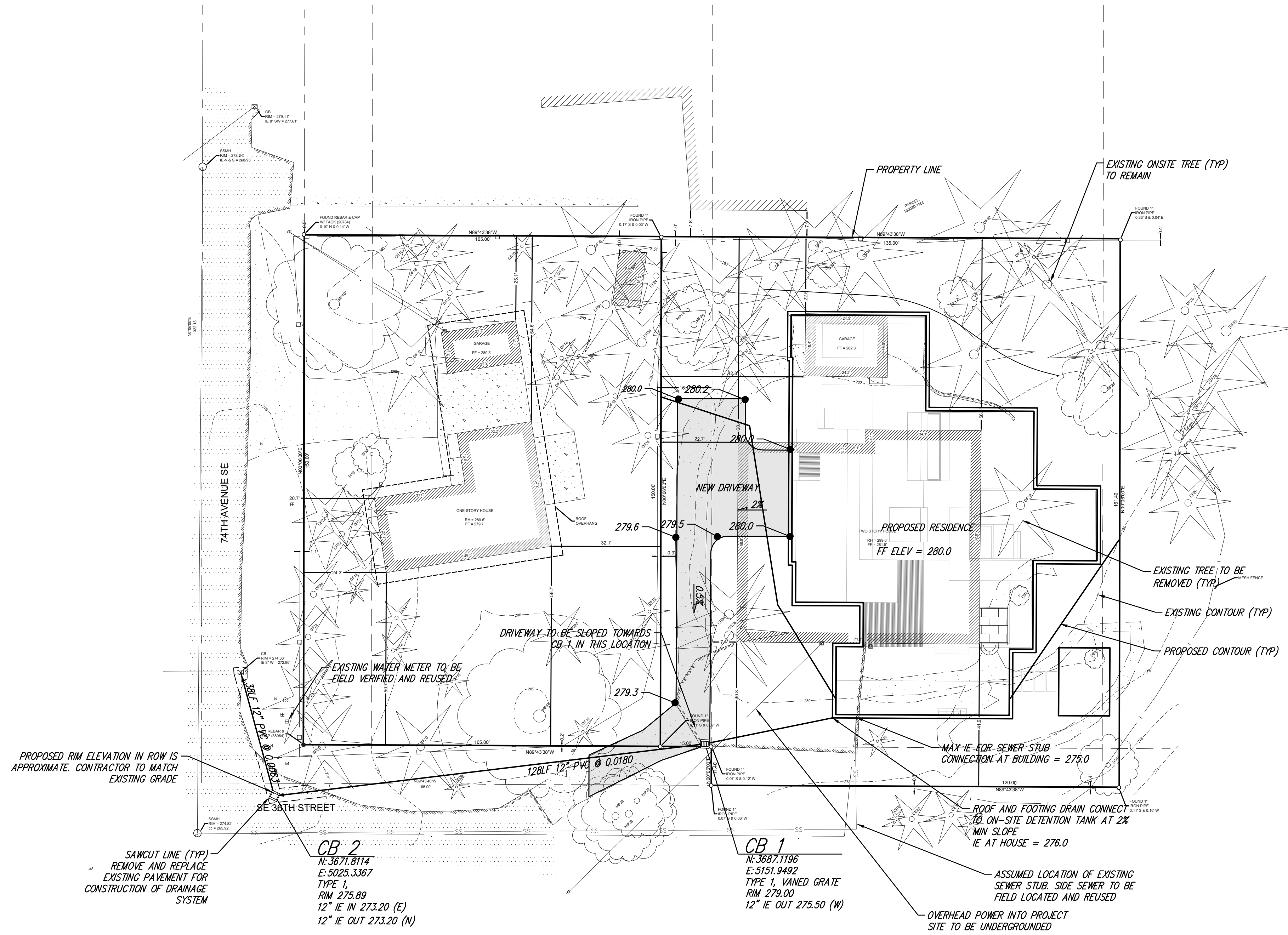
NE 1/4, SW 1/4, SEC 12, TWP 24N, RNG 4E, W.M.

PROJECT NO. 18-243
DRAWN BY: EFJ
CHECKED BY: TNW
DATE: 6/14/18
SHEET 1 OF 1

TOPOGRAPHIC SURVEY
DAVID ARMITAGE
3450 & 3453 74TH AVENUE SE
MERCER ISLAND, WA 98040

DATE	REVISION	DRN





SCALE: 1" = 10'

NO.	REVISIONS	DATE

CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING

12100 NE 195th St, Suite 300, Bothell, Washington 98011 425.885.7877

SITE PLAN
3453 74TH AVE SE
JIMMY & SHANNON FOO
2820 29TH AVE W
SEATTLE, WA 98199

DATE	SEE STAMP DATE
DESIGNED	FLAVIO R. BAINOTTI
DRAWN	MARY MOORE
APPROVED	MICHAEL A. MOODY, PE
PROJECT MANAGER	JOSHUA BEARD

LOT COVERAGE PROPOSED

LOT	21,618 SQ.FT.	ROOF AREA=	7,467 SQ.FT.
FOOTPRINT =	7,467 SQ.FT.	DRIVE / WALK =	1,979 SQ.FT.
PERCENT LOT COVERAGE =	34.5%	TOTAL IMPERVIOUS =	9,446 SQ.FT.
		PROPOSED IMPERVIOUS =	43.7%

NOTES

- SEE PSE PLANS FOR LOCATION OF UTILITIES. PROPOSED DRY UTILITIES WILL BE BURIED.
- EXISTING SEWER AND WATER CONNECTION TO BE FIELD LOCATED AND REUSED

UNDERGROUND LOCATOR SERVICE
CALL BEFORE YOU DIG!
811

PERMIT #XXXX-XXX

SHEET	OF
C1.03	4
PROJECT NUMBER	20034

6/12/2020 7:59 PM J. J. [2020] 20034 [ENGINEERING] [FINAL] [SHEETS] 20034 SITE PLAN.DWG

