



December 11, 2023

STRUCTURAL DESIGN ANALYSIS (Foundation)

For:

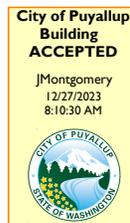
Copperberry Condominiums

1002 39th Ave. SW
Suite # 104
Puyallup, WA. 98373

SITE ADDRESS

North Building
4002 10th Street SE
Puyallup, WA. 98374

**FULL SIZED LEDGIBLE REPORT IS
REQUIRED TO BE PROVIDED BY THE
PERMITTEE ON SITE FOR ALL
INSPECTIONS**



12.11.2023



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All information for construction is detailed on the prints. This engineering report summarizes the engineering calculations and assumptions made to develop the print information. Contractor must review engineering assumptions for validity. Engineering assumptions are listed below. If these conditions are not present at the site these calculations are void and Attili Design & Engineering Inc. must be contacted immediately.

Scope of Services: The purpose of our services is engineering analysis and design to resist gravity loads in accordance with the 2018 IBC. Our services for foundation design. Foundations are engineered to support the structure on a flat surface with 2000 psf soil bearing. Special foundations for lots not level or with poor soil bearing are not provided unless noted otherwise.

The enclosed documents are to be used in conjunction with the house plans referenced on the cover. It is essential that the contractor study the engineering requirements and required changes to the architectural plan prior to the start of work. Changes may include additional foundations or footings, beam size changes, siding changes, etc.



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CODE CRITERIA

Building Codes	'2018 IBC Code
Seismic Zone	D
Period T (sec)	0.109645
Response Mod Factor	5.5
Soil Profile	D
Seismic Source Type	D
Distance To Source	0
Reliability Factor Rho	1
Wind Zone	110 mph Exposure B

SOILS CRITERIA

Soils Consultant	None
Soils Report #	None
Bearing Pressure Req'd	2000 psf uno
Bearing Depth	18"

MATERIALS CRITERIA

Concrete (28 day strength)	
Foundations and Slab	Fc= 2500 psi
Structural Slab	Fc= 2500 psi
Walls	Fc= 2500 psi
Reinforcing Steel	ASTM A-615 Grade 60

PLYWOOD APA RATED

Roof: 15/32 cdx or osb PI = 24/0
 Floor: ¾ T&G cdx or osb – PI = 48/24

LOADING CRITERIA FOR ROOF AND/OR CEILING

ITEM	MATERIAL	LOAD PSF
Roofing	Asphalt Shingles	3.0
Tile Roofing	Tile	20.0
Sheathing or Decking	15/32 CDX	1.5
Insulation	R38	3.0
Ceiling	5/8 GWB	2.8
Fixtures – Mech. Electrical Point loads		2.6
Framing	Truss	2.1



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TOTAL DEAD LOAD= 15 PSF comp 20 PSF tile

LIVE LOADS

Snow – 25 PSF (Non reducible)

Ceiling Only – 10 PSF

Increase in Fb and Fv of 15% allowed for duration of load when noted.

LOADING CRITERIA FOR FLOOR

ITEM	MATERIAL	LOAD PSF
Floor Covering	Carpet and Pad	3.0
Floor Sheathing	3/4" T&G CDX	2.3
Ceiling	1/2" GWB	2.2
Fixtures – Mech. Electrical Point loads		1.02
Framing, Joists Beams	TJI or BCI	2.48 1.0

TOTAL DEAD LOAD FLOOR = 10 PSF

Floor Live Loads

Residential – 40 psf (reducible)

Office – 50 psf (reducible)

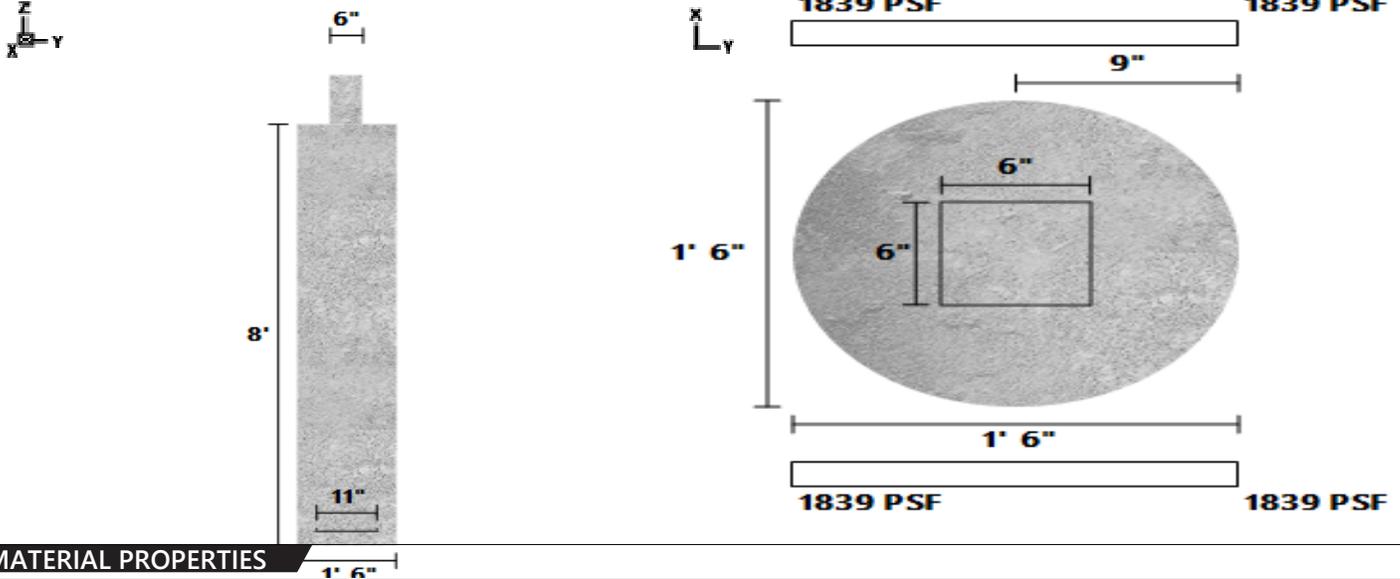
Assembly – 100 psf (non-reducible) Private Garage

Corridors and Exits – 100 psf (reducible)



DATE:	12/10/2023	COMPANY:	Attili Design & Engineering, Inc. P.S.
STRUCALC BUILD:	StruCalc Pro	DESIGNED BY:	Muhannad Attili
CUSTOMER:	--	REVIEWED BY:	--
PROJ. ADDRESS:	--	PROJECT NAME:	Cobberberry
LEVEL:	Roof	LOADING:	
MEMBER NAME:	New Isolated Footing	CODE:	2021 International Building Code
MEMBER TYPE:	ISOLATED FOOTING	ACI:	ACI 318-19
MATERIAL:	Concrete		
1.5 (ft) Dia. X 96 (in)		Soil Depth TOF: 0 (ft)	(2) #4 Long, (2) #4 Short

New Isolated Footing DIAGRAMS



MATERIAL PROPERTIES

FOOTING						
fc' (psi)	Ec (psi)	Density (lb/ft ³)	Width (ft)	Length (ft)	Depth (in)	Volume (ft ³)
2500	2880952	145	1.5	1.5	96	18

CALCULATION VARIABLES		
Bo (in)	Φ-X	Φ-Y
0	0	0

COLUMN			
Width (in)	Length (in)	Material	Offset (in)
6	6	Concrete	0

SOIL					
Bearing Strength (lb/ft ²)	Density (lb/ft ³)	Cohesion	Friction Angle	Depth (ft)	Rankine Coefficient (Kp)
2000	140	0	30	0	3

REBAR				
Bar Size #	# Bars Long	# Bars Short	fy (psi)	Es (psi)
4	2	2	40000	2.9E+07

PASS-FAIL

	PASS/FAIL	MAGNITUDE	STRENGTH	LOAD COMBO
Soil Bearing Pressure (lb/ft ²)	PASS (8.0%)	1839.1	2000.0	D+L
Moment X (lb-ft)	PASS (99.9%)	314.2	312399.8	1.2D+1.6L+0.5Lr
Moment Y (lb-ft)	PASS (99.8%)	551.7	312399.8	1.2D+1.6L+0.5Lr
Crushing (psi)	PASS (89.5%)	144.4	1381.3	1.2D+1.6L+0.5Lr

LOAD LIST

Type	Name	Left Magnitude	Right Magnitude	Load Start (ft)	Load End (ft)	Load Type	Direction
Point (lb)	Point	3250	-	0	-	Live	Z