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www.pcs-structural.com

STRUCTURAL CALCULATIONS


FOR

TACO TIME
EAST MAIN STREET
PUYALLUP, WASHINGTON

PREPARED BY
PCS STRUCTURAL SOLUTIONS

**City of Puyallup
Building
REVIEWED
FOR
COMPLIANCE**

BSnowden
03/27/2024
2:30:35 PM



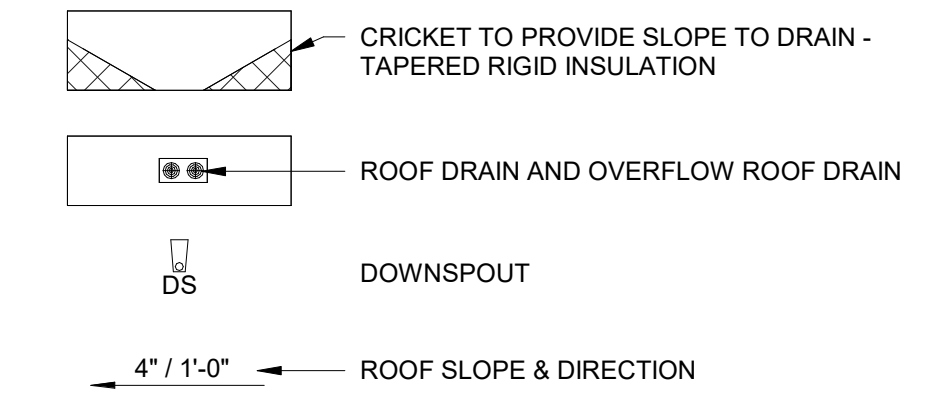
FEBRUARY 24, 2024
23-514

Calculations required to be provided by the Permittee on site for all Inspections

ROOF PLAN GENERAL NOTES

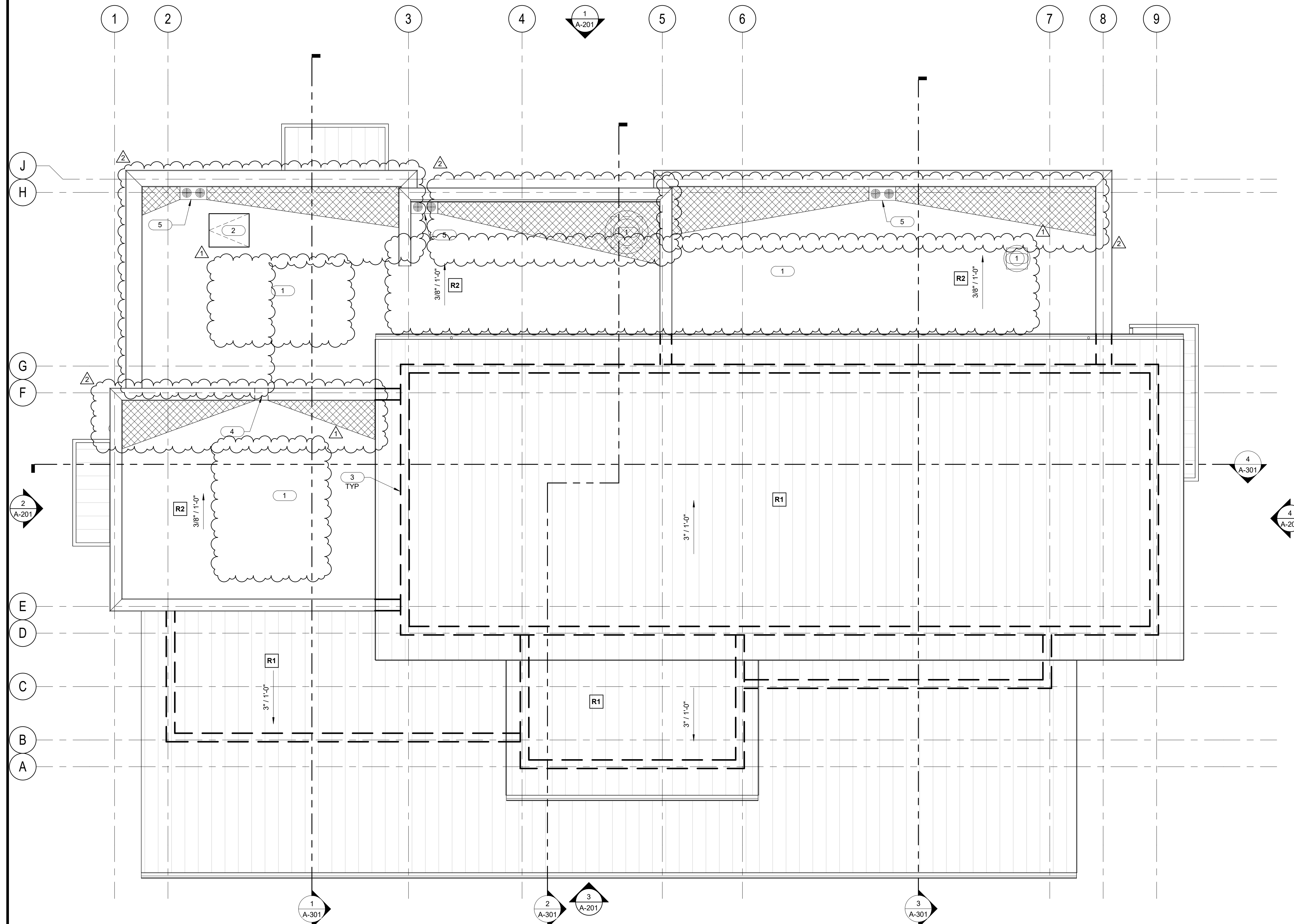
1. REFER TO A-621 FOR ROOF ASSEMBLY TYPES.
2. SEE ALSO FLOOR PLANS FOR OBSCURED ROOF ELEMENTS NOT CALLED OUT ON THIS DRAWING.
3. PROVIDE SHEET METAL SPLASH PAN AT ALL DOWNSPOUTS THAT DISCHARGE ONTO LOWER ROOF ASSEMBLIES.
4. SEE ALSO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON ROOFTOP EQUIPMENT AND FIXTURES.

ROOF PLAN LEGEND

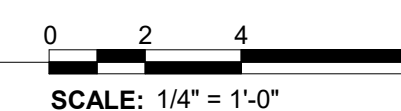


ROOF PLAN SHEET NOTES

1. LOCATIONS OF EQUIPMENT, REFER TO MEP DRAWINGS
2. ROOF ACCESS HATCH
3. LINE OF WALL BELOW
4. THRU-WALL SCUPPER
5. ROOF DRAIN AND OVERFLOW



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



PROJECT:
NEW CONSTRUCTION
TACO TIME
1115 EAST MAIN STREET
PUYALLUP, WA 98372

REVISIONS	DATE
1 ADDENDUM #1	2023.12.22
2 ADDENDUM #2	2024.01.31

DATE	7.1.2022
BCRA NO.	19110.00.00
DRAWN BY:	
REVIEWED BY:	
SHEET TITLE	ROOF PLAN

- NOTES:**
1. SEE S4.01, S4.02, AND S8.01 FOR TYPICAL DETAILS.
 2. 19/32" APA RATED SHEATHING TYPICAL FOR ROOF SHEATHING, NAIL WITH 8d @ 6" OC AT PANEL EDGES AND 12" OC IN THE FIELD.
 3. SEE ARCHITECTURAL DRAWINGS FOR TOP PLATE ELEVATIONS.
 4. TYPICAL HEADERS TO BE (2) 2x12 FOR OPENINGS UP TO 8'-0". (1) 4x12 ACCEPTABLE.
 5. SEE ARCH FOR PLATE HEIGHT.
 6. BLOCK BELOW SIMPSON CHORD STRAPS WITH 2x FLAT UNO.

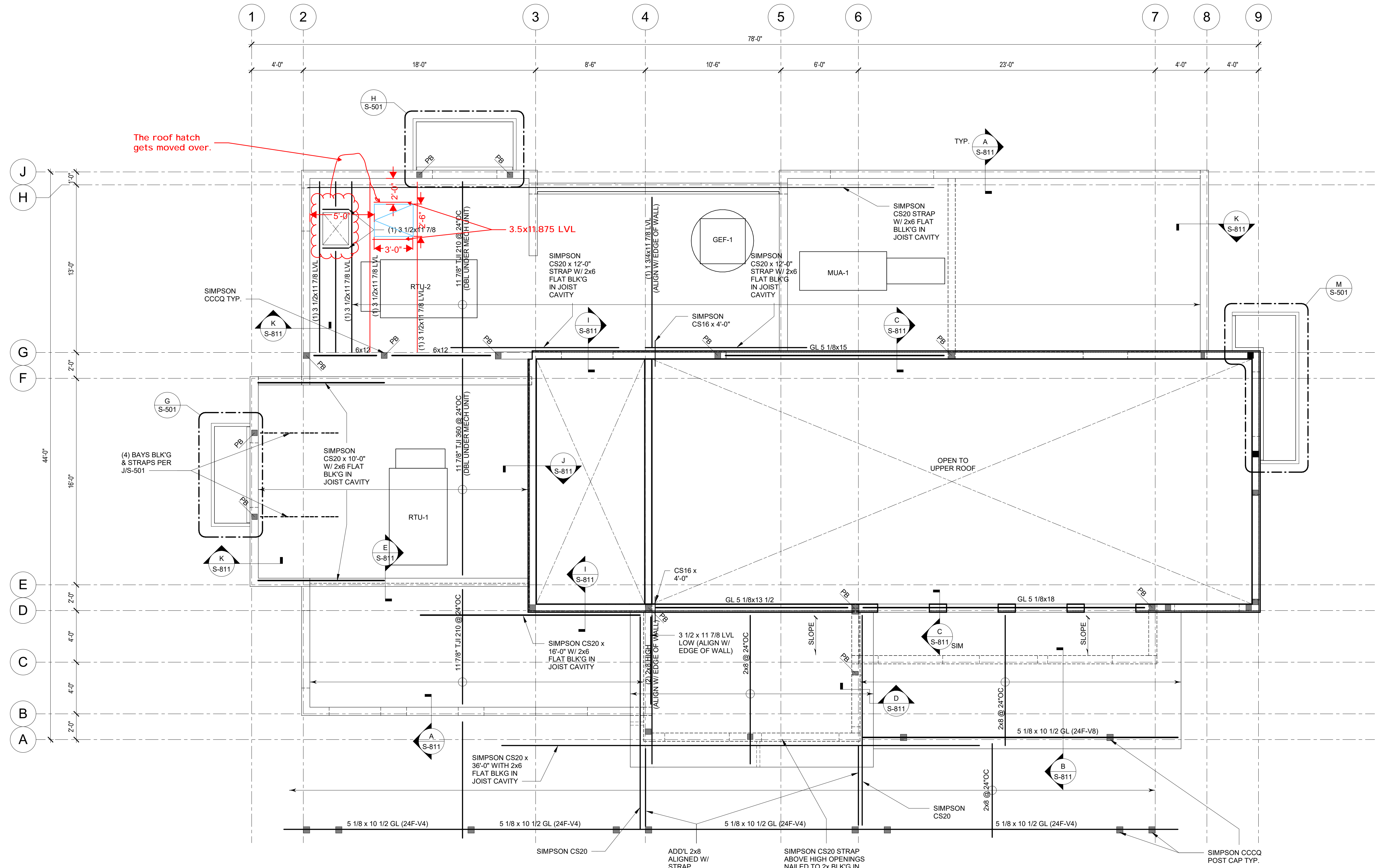


PROJECT:
NEW CONSTRUCTION
TACO TIME
EAST MAIN STREET
PUYALLUP, WA 98372

REVISIONS

NO.	DATE	DESCRIPTION

DATE: 7.18.2023
BCRA NO: 19110.00
DRAWN BY: Author
REVIEWED BY:
SHEET TITLE: LOWER ROOF FRAMING PLAN



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

Wood Beam

Project File: 23514 enercalc 2023-06-17 jmb.ec6

LIC#: KW-06014122, Build:20.23.08.30

PCS STRUCTURAL SOLUTIONS

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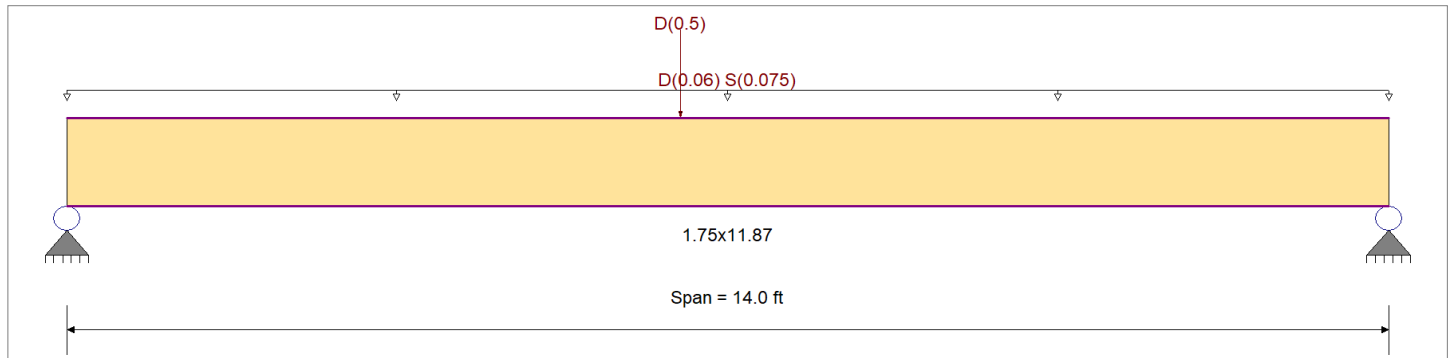
DESCRIPTION: J6 - Roof Hatch

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
 Load Combination Set : IBC 2021

Material Properties

Analysis Method : Allowable Stress Design	Fb +	2,900.0 psi	E : Modulus of Elasticity
Load Combination IBC 2021	Fb -	2,900.0 psi	Ebend- xx
	Fc - Prll	2,635.0 psi	Eminbend - xx
Wood Species : RedBuilt	Fc - Perp	750.0 psi	
Wood Grade : RedLam LVL Beam/Joist	Fv	285.0 psi	
	Ft	1,660.0 psi	Density
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling			42.010pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loading
 Uniform Load : D = 0.020, S = 0.0250 ksf, Tributary Width = 3.0 ft, (Roof)
 Point Load : D = 0.50 k @ 6.50 ft, (RTU)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.452	1	Maximum Shear Stress Ratio	=	0.246	: 1
Section used for this span		1.75x11.87		Section used for this span		1.75x11.87	
fb: Actual	=	1,510.08psi		fv: Actual	=	80.72 psi	
F'b	=	3,339.75psi		F'v	=	327.75 psi	
Load Combination		+D+S		Load Combination		+D+S	
Location of maximum on span	=	6.489ft		Location of maximum on span	=	0.000ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.134 in	Ratio =	1258	>=	360	Span: 1 : S Only
Max Upward Transient Deflection		0 in	Ratio =	0	<	360	n/a
Max Downward Total Deflection		0.352 in	Ratio =	477	>=	240	Span: 1 : +D+S
Max Upward Total Deflection		0 in	Ratio =	0	<	240	n/a

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios										Moment Values			Shear Values				
			M	V	CD	CM	C _t	CLx	C _F	C _{fu}	C _i	C _r	M	fb	F'b	V	fv	F'v		
D Only	Length = 14.0 ft	1	0.374	0.187	0.90	1.00	1.00	1.00	1.001	1.00	1.00	1.00	3.35	976.8	2,613.7	0.00	0.00	0.0	0.0	0.0
+D+S	Length = 14.0 ft	1	0.452	0.246	1.15	1.00	1.00	1.00	1.001	1.00	1.00	1.00	5.18	1,510.1	3,339.8	0.00	0.00	0.0	0.0	0.0
+D+0.750S	Length = 14.0 ft	1	0.412	0.221	1.15	1.00	1.00	1.00	1.001	1.00	1.00	1.00	4.72	1,376.8	3,339.8	0.00	0.00	0.0	0.0	0.0
+0.60D	Length = 14.0 ft	1	0.126	0.063	1.60	1.00	1.00	1.00	1.001	1.00	1.00	1.00	2.01	586.1	4,646.6	0.00	0.00	0.0	0.0	0.0

Project Title: Taco Time NW
 Engineer: JMB
 Project ID: 23514
 Project Descr:

Wood Beam

Project File: 23514 enercalc 2023-06-17 jmb.ec6

LIC# : KW-06014122, Build:20.23.08.30

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DESCRIPTION: J6 - Roof Hatch

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+S	1	0.3521	6.949		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Max Upward from all Load Conditions	1.255	1.220
Max Upward from Load Combinations	1.255	1.220
Max Upward from Load Cases	0.730	0.695
D Only	0.730	0.695
+D+S	1.255	1.220
+D+0.750S	1.124	1.088
+0.60D	0.438	0.417
S Only	0.525	0.525