pondpy

pondpy v0.1.5
Company: Example Company
Project: 12345-Example Project
Date: 2024-06-07, 00:52:13

Description: A sample calculation

Input Model Parameters

Roof Bay Parameters

Num. of Primary Members: 2
Num. of Secondary Members: 5
Roof Slope: 0.25:12
Mirrored Left: False
Mirrored Right: False

Loading Parameters

Surface Dead Load: 20.0 psf
Surface Rain Load: 22.4 psf
Initial Impounded Rain Depth: 3.85 in

Results

The model ran 4 iterations in 1.33 s.

Final Impounded Water Weight: 4.72 kips

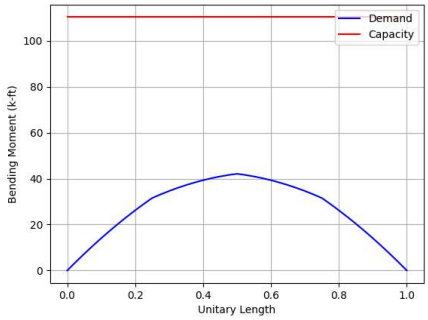
Detailed Member Results

Primary Members

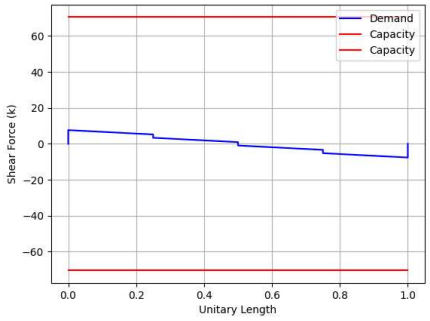
Primary Member 1: W16X26

Max Deflection: -0.33 in @ 9.82 ft
Max Moment: 42.08 k-ft @ 9.82 ft
Max Shear: 7.63 k @ 0.0 ft

Bending Moment Diagram



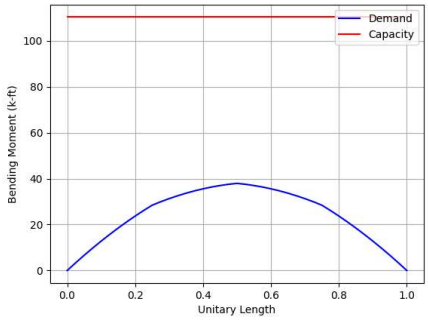
Shear Force Diagram



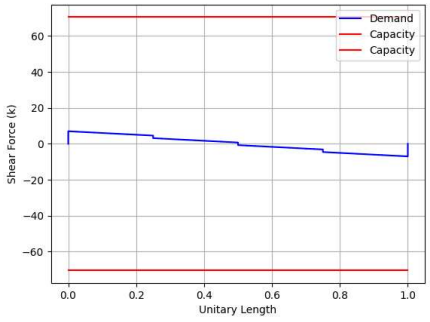
Primary Member 2: W16X26

Max Deflection: -0.3 in @ 9.82 ft
Max Moment: 37.93 k-ft @ 9.82 ft
Max Shear: 7.0 k @ 19.65 ft

Bending Moment Diagram



Shear Force Diagram

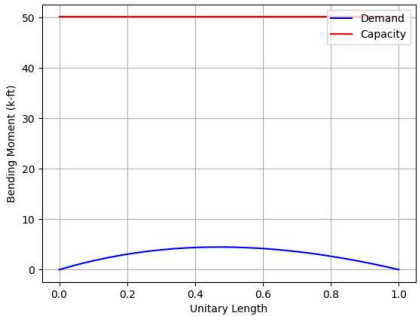


Secondary Members

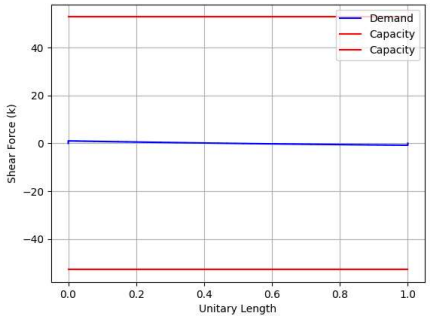
Secondary Member 1: W12X16

Max Deflection: -0.11 in @ 9.82 ft Max Moment: 4.49 k-ft @ 9.33 ft Max Shear: 1.0 k @ 0.0 ft

Bending Moment Diagram



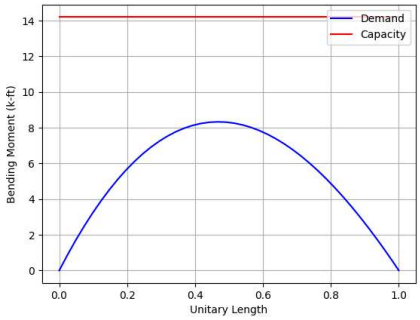
Shear Force Diagram



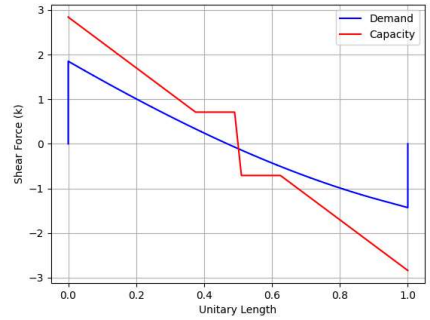
Secondary Member 2: 14K1

Max Deflection: -0.51 in @ 9.82 ft Max Moment: 8.33 k-ft @ 9.33 ft Max Shear: 1.85 k @ 0.0 ft

Bending Moment Diagram



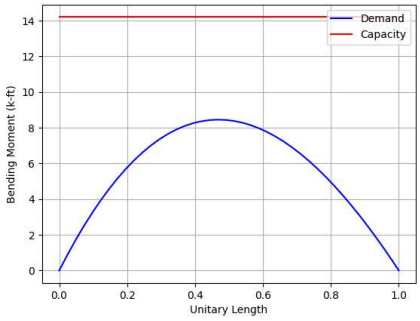
Shear Force Diagram



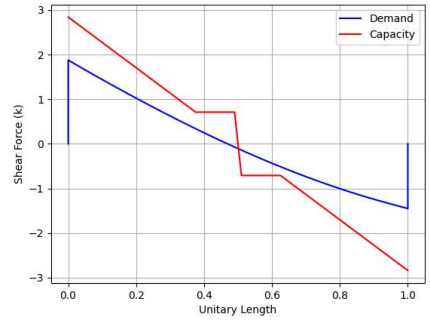
Secondary Member 3: 14K1

Max Deflection: -0.52 in @ 9.82 ft Max Moment: 8.45 k-ft @ 9.33 ft Max Shear: 1.88 k @ 0.0 ft

Bending Moment Diagram



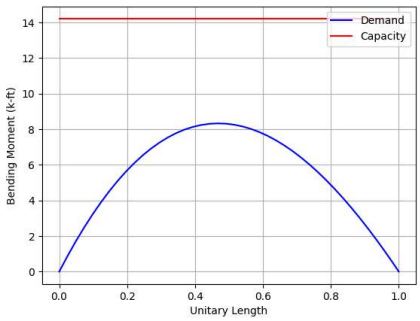
Shear Force Diagram



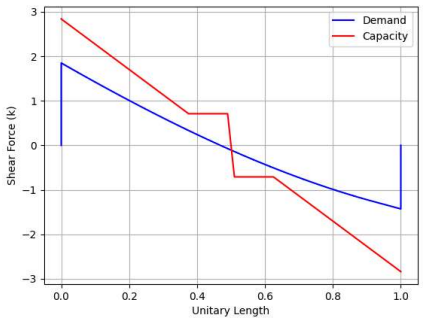
Secondary Member 4: 14K1

Max Deflection: -0.51 in @ 9.82 ft Max Moment: 8.33 k-ft @ 9.33 ft Max Shear: 1.85 k @ 0.0 ft

Bending Moment Diagram



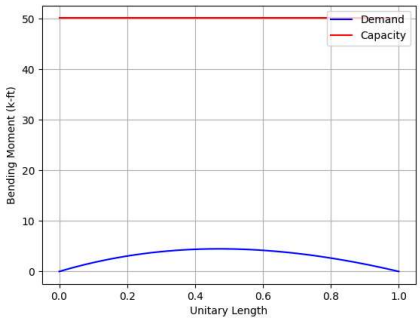
Shear Force Diagram



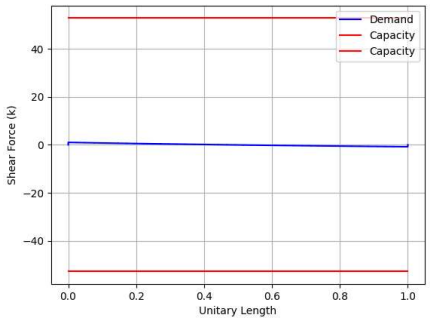
Secondary Member 5: W12X16

Max Deflection: -0.11 in @ 9.82 ft Max Moment: 4.49 k-ft @ 9.33 ft Max Shear: 1.0 k @ 0.0 ft

Bending Moment Diagram



Shear Force Diagram



Design Summary

Member	Size	Moment Demand (k-ft)	Moment Capacity (k-ft)	Shear Demand (k)	Shear Capacity (k)	Deflection (in)	L/d
P - 1	W16X26	42.08	110.28	7.63	70.51	-0.33	714.55
P - 2	W16X26	37.93	110.28	7.0	70.51	-0.3	786.0
S - 1	W12X16	4.49	50.15	1.0	52.8	-0.11	2181.82
S - 2	14K1	8.33	14.2	1.85	2.84	-0.51	470.59
S - 3	14K1	8.45	14.2	1.88	2.84	-0.52	461.54
S - 4	14K1	8.33	14.2	1.85	2.84	-0.51	470.59
S - 5	W12X16	4.49	50.15	1.0	52.8	-0.11	2181.82

Disclaimer

The creator of this Python package (pondpy) does not guarantee the accuracy, completeness, or reliability of the results presented in this report. The results are intended for informational purposes only. They should not be relied upon as a substitute for engineering judgment. It is essential that all

designs and calculations be verified and approved by a qualified design professional to ensure their suitability and compliance with applicable standards and regulations.