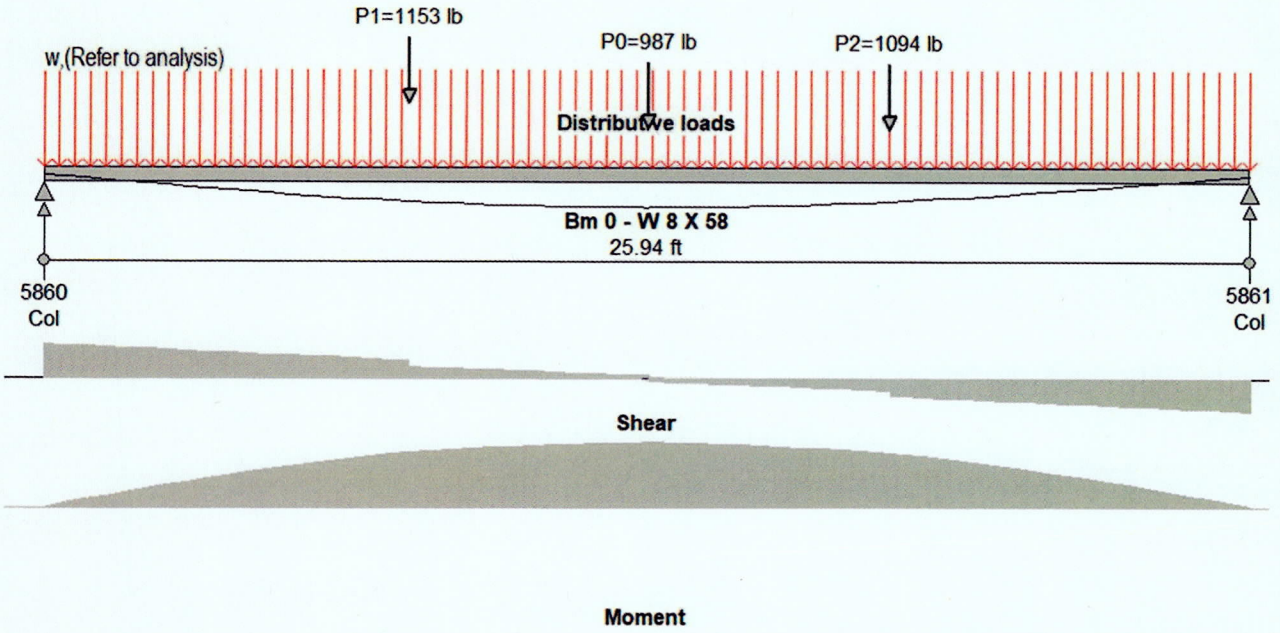
ANALYSIS ADDENDUM – LATEST FRAMING REVISIONS

Contents

April 2, 2025

Beam Framing Analysis

1.1 Analysis of Bm 0 - W 8 X 58



NOTE THE LOADS SHOWN ABOVE ARE UNFACTORED - SEE BELOW FOR FACTORED LOADS

->Design Loads:

Notes: (1) Point and distributive loads are sequential.

(2) wD = Dead, wS = Snow, wL = Live, wW = Wind (similar for point loads).

(3) All loads are measured from the left end of member.

Point load 0 from Supported Beam #16, Level 2

P-SNOW = 616.6 lb @ loc = 13.03 ft

P-DEAD = 370.0 lb @ loc = 13.03 ft

Point load 1 from Supported Beam #17, Level 2

P-SNOW = 720.4 lb @ loc = 7.85 ft

P-DEAD = 432.2 lb @ loc = 7.85 ft

Point load 2 from Supported Beam #18, Level 2

P-SNOW = 683.5 lb @ loc = 18.21 ft

P-DEAD = 410.1 lb @ loc = 18.21 ft

->Distributive load on beam, w3 - from level 2

->From location 0.00 ft to 25.75 ft

Compute typical distributive loads

Joist cantilever span 1, a = 0.00 ft

Joist cantilever span 2, c = 0.00 ft

b1 = L1 - a - c = 14.63 - 0.00 - 0.00 = 14.63 ft

b2 = L2 - a - c = 14.63 - 0.00 - 0.00 = 14.63 ft

w1 or w2 = load, psf x L x (L - 2 x c) / (2 x b1 or b2)

wS = 25.00 psf x 14.63 ft x (14.63 ft - 2 x 0.00) / (2 x 14.63) = 182.92 lb/ft

wD = 15.00 psf x 14.63 ft x (14.63 ft - 2 x 0.00) / (2 x 14.63) = 109.75 lb/ft

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->Distributive load on beam, w4 - from level 2

->From location 25.75 ft to 25.94 ft

wS = 25.00 psf x 14.63 ft x (14.63 ft - 2 x 0.00) / (2 x 14.63) = 182.92 lb/ft

wD = 15.00 psf x 14.63 ft x (14.63 ft - 2 x 0.00) / (2 x 14.63) = 109.75 lb/ft

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->Distributive load on beam, w5 - from level 2

->From location 4.00 ft to 0.25 ft

wS = 25.00 psf x 3.49 ft x (3.49 ft - 2 x 0.00) / (2 x 3.49) = 43.64 lb/ft

wD = 15.00 psf x 3.49 ft x (3.49 ft - 2 x 0.00) / (2 x 3.49) = 26.19 lb/ft

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->Distributive load on beam, w6 - from level 2

->From location 7.50 ft to 4.50 ft

wS = 25.00 psf x 0.35 ft x (0.35 ft - 2 x 0.00) / (2 x 0.35) = 4.39 lb/ft

wS = 25.00 psf x 3.37 ft x (3.37 ft - 2 x 0.00) / (2 x 3.37) = 42.11 lb/ft

wD = 15.00 psf x 0.35 ft x (0.35 ft - 2 x 0.00) / (2 x 0.35) = 2.64 lb/ft

wD = 15.00 psf x 3.37 ft x (3.37 ft - 2 x 0.00) / (2 x 3.37) = 25.27 lb/ft

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->Distributive load on beam, w7 - from level 2

->From location 25.94 ft to 21.95 ft

wS = 25.00 psf x 3.49 ft x (3.49 ft - 2 x 0.00) / (2 x 3.49) = 43.64 lb/ft

wD = 15.00 psf x 3.49 ft x (3.49 ft - 2 x 0.00) / (2 x 3.49) = 26.19 lb/ft

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->Distributive load on beam, w8 - from level 2

->From location 21.45 ft to 18.70 ft

wS = 25.00 psf x 3.27 ft x (3.27 ft - 2 x 0.00) / (2 x 3.27) = 40.86 lb/ft

wS = 25.00 psf x 0.50 ft x (0.50 ft - 2 x 0.00) / (2 x 0.50) = 6.29 lb/ft

wD = 15.00 psf x 3.27 ft x (3.27 ft - 2 x 0.00) / (2 x 3.27) = 24.52 lb/ft

wD = 15.00 psf x 0.50 ft x (0.50 ft - 2 x 0.00) / (2 x 0.50) = 3.77 lb/ft

->Computed moments and shears (Un-Factored) :

LOAD CASE	MIN SHEAR LB	MAX SHEAR LB	MIN MOMENT FT-LB	MAX MOMENT FT-LB
SNOW	-3663	3663	-0	25864
LIVE	0	0	0	0
DEAD	-2198	2198	-0	15518
WIND_POS	0	0	0	0
SEISMIC_POS	0	0	0	0
WIND_NEG	0	0	0	0
SEISMIC_NEG	0	0	0	0

->Computed moments and shears (Factored) :

Max shear, Vu = 8497 lbs 1.2D + 1.6S + 0.5W (2.3.2-3b)

Min shear, Vu = -8498 lbs 1.2D + 1.6S + 0.5W (2.3.2-3b)

Max moment, Mu = 60004 ft-lbs 1.2D + 1.6S + 0.5W (2.3.2-3b)

Min moment, Mu = -0 ft-lbs 1.2D + 1.6S + 0.5W (2.3.2-3b)

*** Strength Check ***

Beam properties (2D xy axis) :

Span = 25.94 ft

ry = 2.10 in

Jc = 3.33 in^4

Sx = 52.00 in^3

Zx = 59.80 in^3

Fy = 50.0 ksi

*** Check Bending ***

Maximum unbraced span, Lb = 25.81 in. (2.15 ft)

Lp = 1.76 x ry x (E/Fy)^1/2 = 1.76 x 2.10 x (29000/50)^1/2 = 89.01 in (7.42 ft)

Lr = 1.95 x rts x E / 0.7Fy x [Jc/(Sx)(ho) + ((Jc/(Sx)(ho))^2 = 6.76*(0.7Fy/E)^2]^1/2 = 461.824 in (38.49 ft)

rts = bf / [12 x (1 + 1/6 x h x tw/(bf x tf)]^1/2 = 2.251

ho = 7.94 distance between flanges

Lb = 25.81 in < Lp = 89.01 in, therfore Mn = (Fy)(Zx) (F2-1)

Mn = 50000 psi x 59.800 in^3 = 2990000 in-lb or 249167 ft-lb

fee(Mn) = 0.9 x 2990000 = 2691000 in-lb (224250 ft-lb)

fee(Mn) = 224250 ft-lb > Mu = 60004 ft-lb - OK

*** Check Shear ***

Vn = 0.6(Fy)(Aw)(Cv) --> G2-1

Aw = h x tw = 8.75 x 0.51 = 4.46 sq.in.

Cv = 1 --> G2-2

Vn = 0.6(50000)(4.462)(1.0) = 133875 lbs

feeVn = 0.9(133875) = 120487 lbs

fee(Vn) = 120487 lb > Vu = 8498 lb - OK

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*** Deflection Check ***

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Design span = 25.94 ft (311.25 in)

Based on deflection criteria of L/360

Allowable deflection = 0.865 in

Design deflection = 0.837 in
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1.2 Analysis of Bm 1 - 6 x 12 DF #2

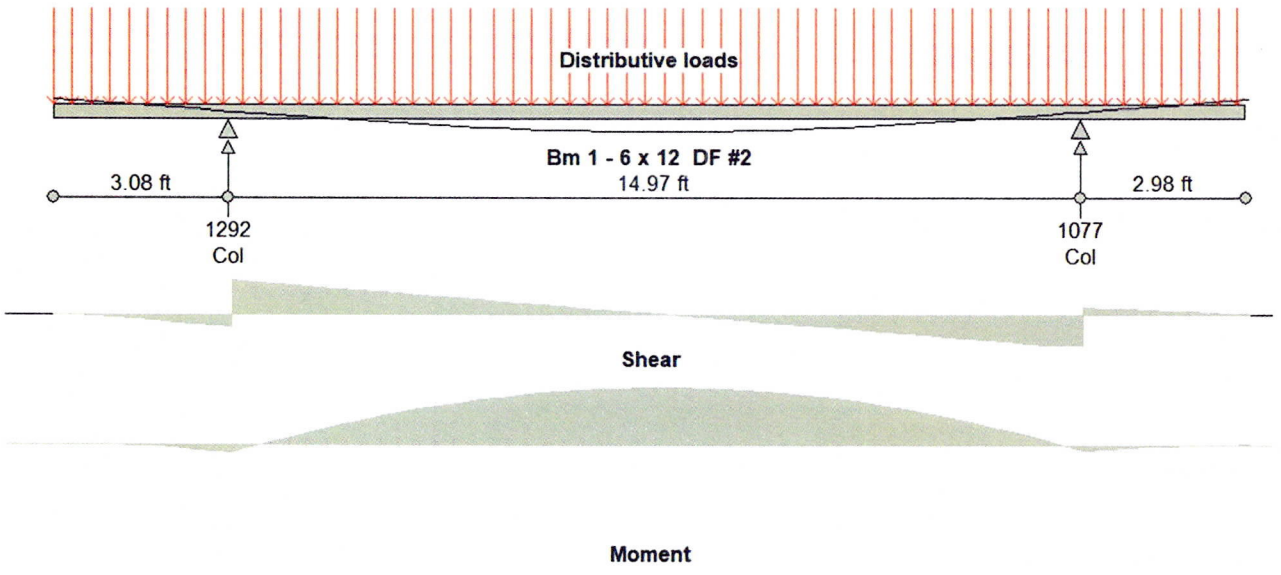

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
0	Floor/Roof	0	-	15.0	25.0	0.0
1	Floor/Roof	0	-	15.0	25.0	0.0
2	Floor/Roof	0	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	3.6	21.1	18.2	27.1	45.1	0.0
1	Floor/Roof	6.2	17.7	3.2	46.7	77.9	0.0
2	Floor/Roof	6.2	3.2	0.2	46.7	77.9	0.0

---

(1) From loc and to loc are load segments starting and ending

measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear =	944 lbs	D + S (2.4-3)
Min shear =	-865 lbs	D + S (2.4-3)
Max moment =	3084 ft-lbs	D + S (2.4-3)
Min moment =	-488 ft-lbs	D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 21.06 ft

Area = 63.25 sq.in

Sx = 121.23 sq.in

Ixx = 697.07 sq.in

->Check shear :

fv = 1.5 x V / Area = 944 / 63.25 = 22.38 psi

F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 = 207.00 psi

Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

fb-top = M x 12 / Sx = 37004 / 121.23 = 305.24 psi

fb-btm = M x 12 / Sx = 5860 / 121.23 = 48.34 psi

Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.00, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1033 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 3

Deflection span 0, Length = 14.97 ft Combined deflection = -0.109 [D + S (2.4-3)]

Allowed = 14.97 x 12 / 360.0 = 0.499 in.

Allowed (Seismic controled) = 14.97 x 12 / 180.0 = 0.998 in.

Cantilever Deflection span 1, Length = 3.16 ft Combined deflection = 0.068 [D + S (2.4-3)]

Allowed = 3.16 x 12 / 240.0 = 0.158 in.

Cantilever Deflection span 2, Length = 2.94 ft Combined deflection = 0.065 [D + S (2.4-3)]

Allowed = 2.94 x 12 / 240.0 = 0.147 in.

1.3 Analysis of Bm 2 - 6 x 12 DF #2

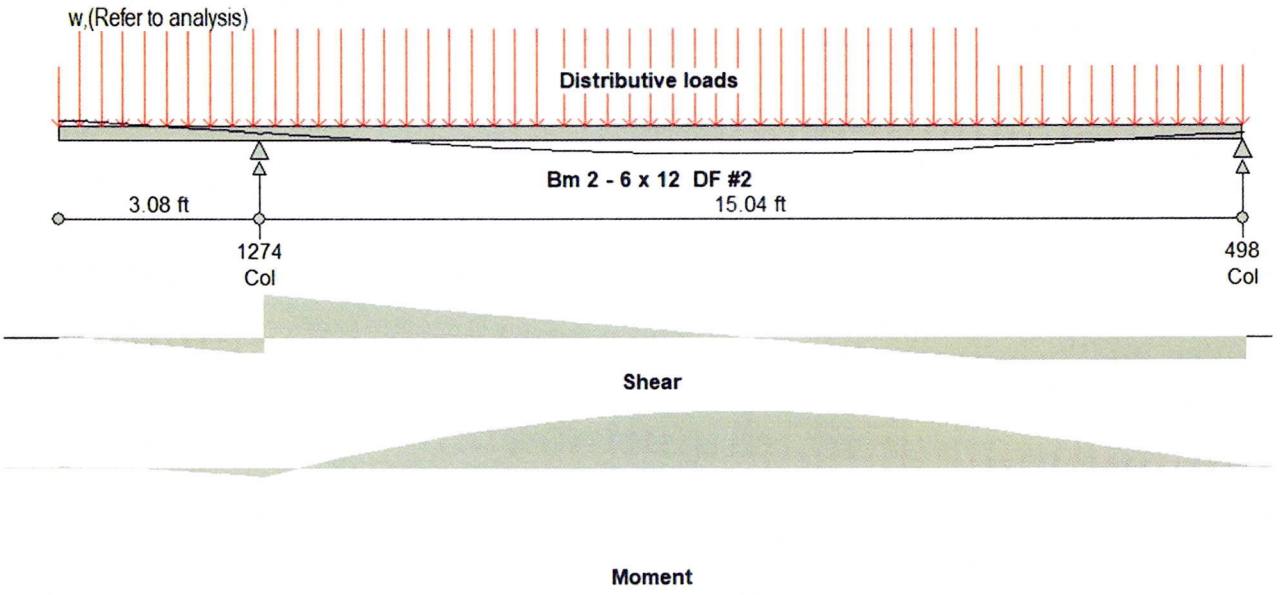

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID		HEIGHT		
0	Floor/Roof	1	-	15.0	25.0	0.0
1	Floor/Roof	1	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	6.4	0.2	3.2	48.0	80.0	0.0
1	Floor/Roof	6.4	3.2	14.5	48.0	80.0	0.0

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 934 lbs D + S (2.4-3)

Min shear = -498 lbs D + S (2.4-3)

Max moment = 2889 ft-lbs D + S (2.4-3)

Min moment = -516 ft-lbs D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 18.20 ft

Area = 63.25 sq.in

Sx = 121.23 sq.in

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        Ixx    = 697.07 sq.in

->Check shear :

        fv = 1.5 x V / Area  = 934 / 63.25 = 22.14 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 34669 / 121.23 = 285.98 psi

        fb-btm = M x 12 / Sx  = 6192 / 121.23 = 51.07 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.00, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1033 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 15.04 ft Combined deflection = -0.101 [D + S (2.4-3)]

                Allowed = 15.04 x 12 / 360.0 = 0.501 in.

                Allowed (Seismic controled) = 15.04 x 12 / 180.0 = 1.003 in.

(2.4-3)]Cantilever Deflection span 1, Length = 3.16 ft Combined deflection = 0.063 [D + S

                Allowed = 3.16 x 12 / 240.0 = 0.158 in.
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1.4 Analysis of Bm 3 - 6 x 12 DF #2

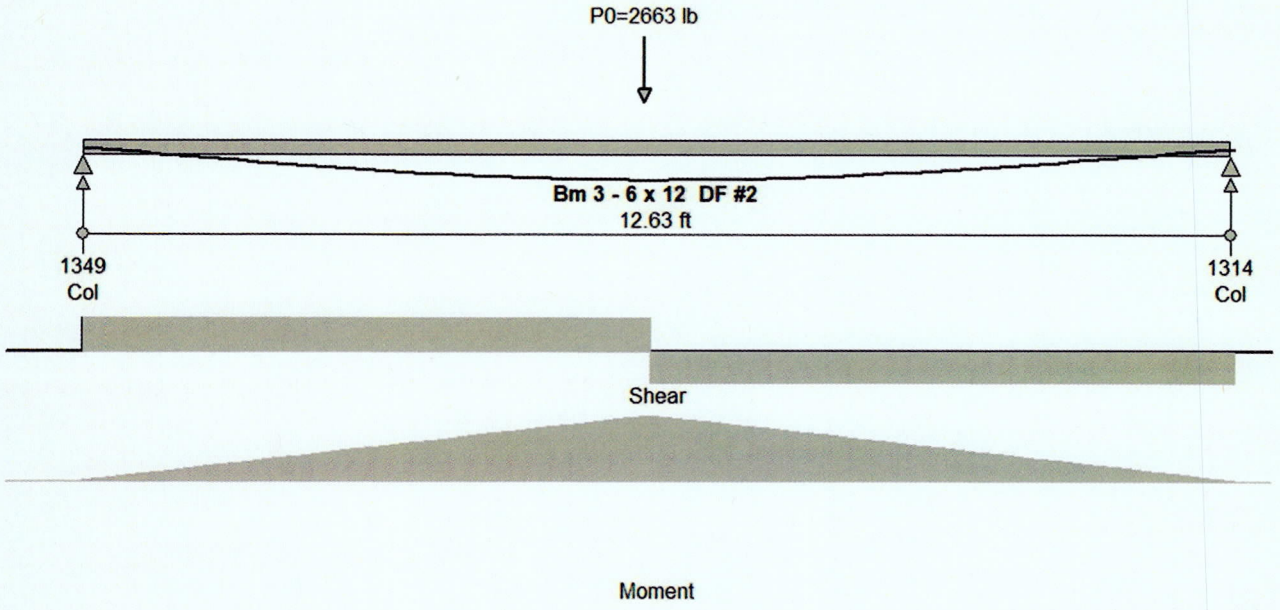

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	999	1664	0	0	0	6.23	From BM 4 from Level 2

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

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                    ID    HEIGHT

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No distributive loads

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(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD  ELEMENT              TRIB      from     to        D          S       L

                           WIDTH      loc     loc

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No distributive loads

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(1) From loc and to loc are load segments starting and ending

    measured from the left of the beam

->Computed moments and shears (Factored) :

        Max shear  =        1349 lbs           D + S (2.4-3)

        Min shear  =       -1314 lbs           D + S (2.4-3)

        Max moment =        8406 ft-lbs        D + S (2.4-3)

        Min moment =           0 ft-lbs  D - (0.6)W (2.4-5b)

->Beam properties (2D xy axis) :

        Span  = 12.63 ft

        Area  = 63.25 sq.in

        Sx    = 121.23 sq.in

        Ixx   = 697.07 sq.in

->Check shear :
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```
        fv = 1.5 x V / Area  = 1349 / 63.25 = 31.99 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 100868 / 121.23 = 832.05 psi

        fb-btm = M x 12 / Sx  = 0 / 121.23 = 0.00 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.00, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1035 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 1

        Deflection span 0, Length = 12.63 ft Combined deflection = -0.173 [D + S (2.4-3)]

                Allowed = 12.63 x 12 / 360.0 = 0.421 in.

                Allowed (Seismic controled) = 12.63 x 12 / 180.0 = 0.842 in.
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1.5 Analysis of Bm 4 - 6 x 12 DF #2

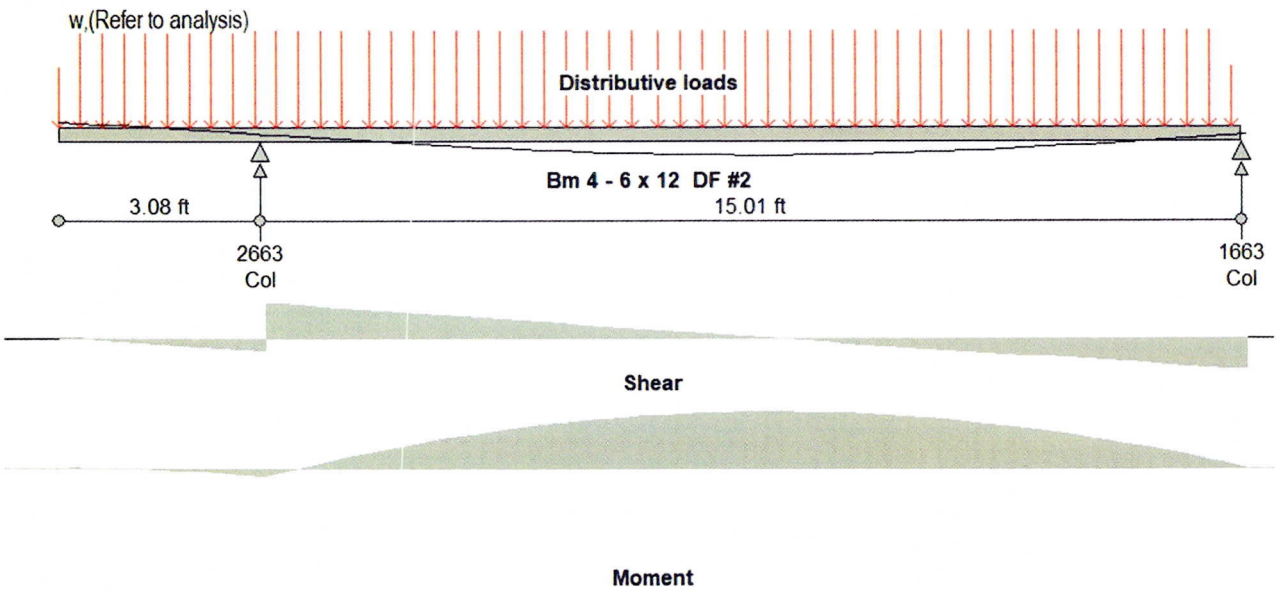

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID		HEIGHT		
0	Floor/Roof	0	-	15.0	25.0	0.0
1	Floor/Roof	1	-	15.0	25.0	0.0
2	Floor/Roof	1	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	6.2	0.2	17.7	46.7	77.9	0.0
1	Floor/Roof	5.3	17.7	15.0	39.5	65.9	0.0
2	Floor/Roof	6.4	14.5	0.2	48.0	80.0	0.0

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 1943 lbs D + S (2.4-3)

Min shear = -1663 lbs D + S (2.4-3)

Max moment = 6449 ft-lbs D + S (2.4-3)

Min moment = -1025 ft-lbs D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 18.16 ft

Area = 63.25 sq.in

Sx = 121.23 sq.in

Ixx = 697.07 sq.in

->Check shear :

fv = 1.5 x V / Area = 1943 / 63.25 = 46.08 psi

F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 = 207.00 psi

Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

fb-top = M x 12 / Sx = 77388 / 121.23 = 638.36 psi

fb-btm = M x 12 / Sx = 12299 / 121.23 = 101.45 psi

Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.00, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1033 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 2

Deflection span 0, Length = 15.01 ft Combined deflection = -0.230 [D + S (2.4-3)]

Allowed = 15.01 x 12 / 360.0 = 0.500 in.

Allowed (Seismic controled) = 15.01 x 12 / 180.0 = 1.000 in.

Cantilever Deflection span 1, Length = 3.16 ft Combined deflection = 0.142 [D + S (2.4-3)]

Allowed = 3.16 x 12 / 240.0 = 0.158 in.

1.6 Analysis of Bm 5 - 6 x 12 PT HF #2

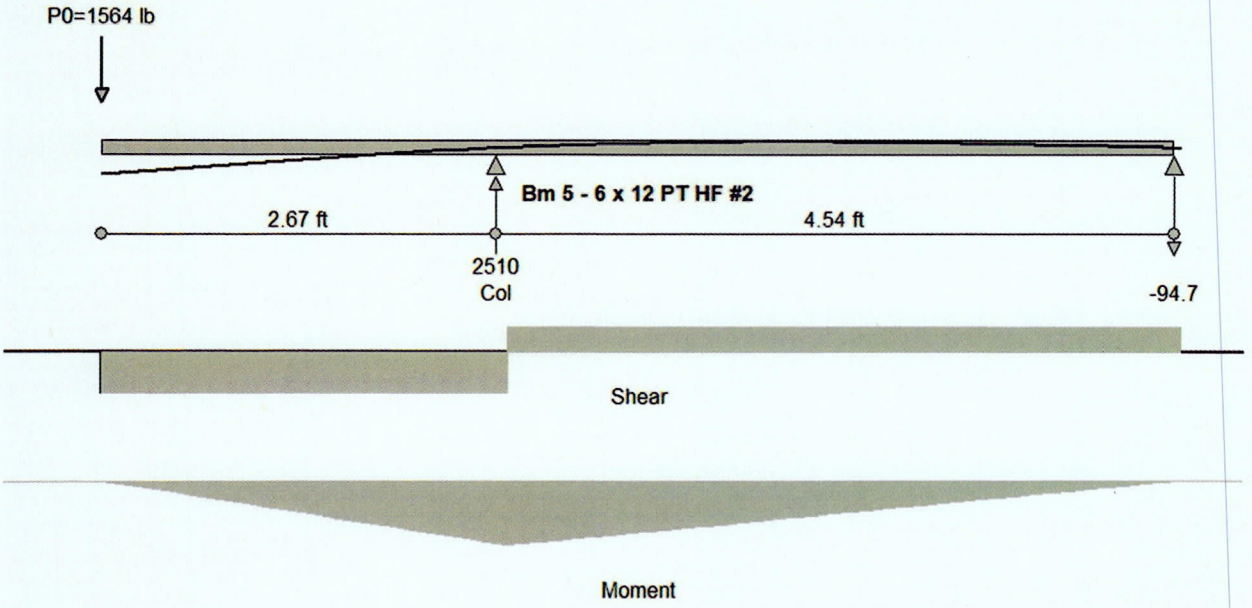

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	261	0	1303	0	0	0.00	From BM 6 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L
			ID	HEIGHT		

No distributive loads

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB	from	to	D	S	L
		WIDTH	loc	loc			

No distributive loads

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear =	947 lbs	D + L (2.4-2)
Min shear =	-1564 lbs	D + L (2.4-2)
Max moment =	-0 ft-lbs	D + L (2.4-2)
Min moment =	-4300 ft-lbs	D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 7.29 ft

Area = 63.25 sq.in

Sx = 121.23 sq.in

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        Ixx    = 697.07 sq.in

        Pressure Treated = True

->Check shear :

        fv = 1.5 x V / Area  = 1564 / 63.25 = 37.09 psi

        F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 =  120.00 psi

          Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 121.23 = 0.00 psi

        fb-btm = M x 12 / Sx  = 51597 / 121.23 = 425.61 psi

          Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.00, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 679 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 4.54 ft Combined deflection = 0.011 [D + L (2.4-2)]

                Allowed = 4.54 x 12 / 360.0 = 0.151 in.

                Allowed (Seismic controled) = 4.54 x 12 / 180.0 = 0.303 in.

Cantilever Deflection span 1, Length = 2.75 ft Combined deflection = -0.055 [D + L
(2.4-2)]
                Allowed = 2.75 x 12 / 240.0 = 0.137 in.
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1.7 Analysis of Bm 6 - (2) 2 x 10 PT HF #2

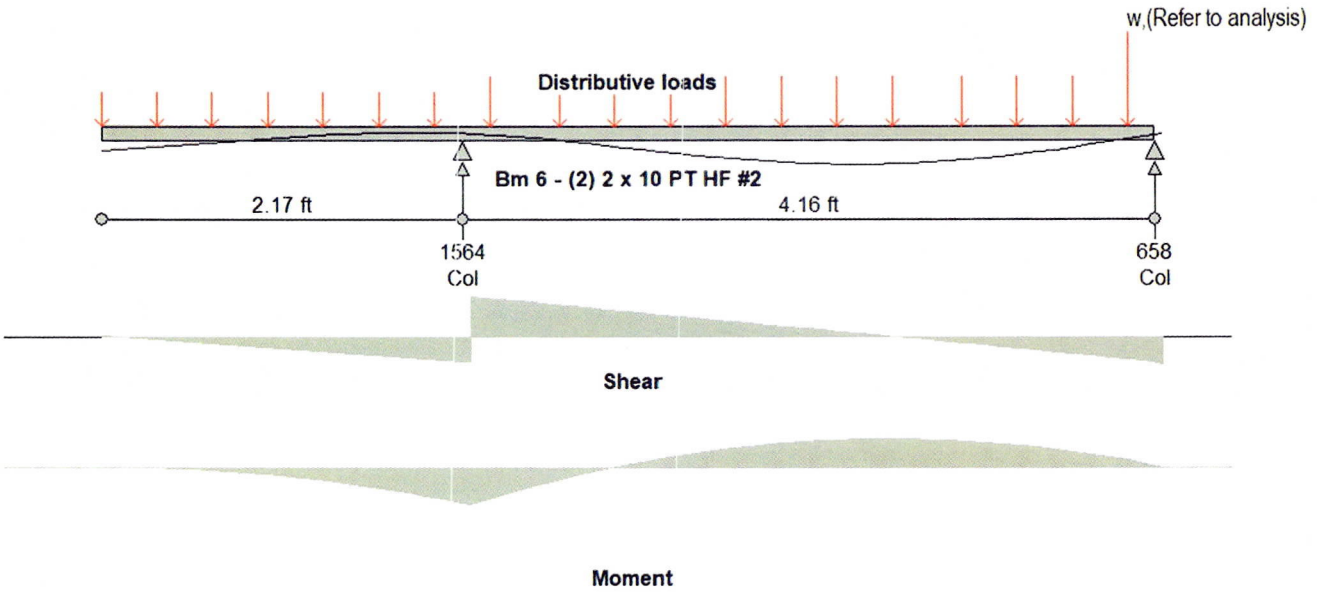


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
0	Floor/Roof	2	-	12.0	0.0	60.0
1	Floor/Roof	2	-	12.0	0.0	60.0
2	Floor/Roof	2	-	12.0	0.0	60.0
3	Floor/Roof	3	-	12.0	0.0	60.0
4	Floor/Roof	3	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	7.7	6.3	6.4	46.2	0.0	231.2
1	Floor/Roof	7.7	6.4	2.2	46.2	0.0	231.2
2	Floor/Roof	7.7	2.2	0.0	46.2	0.0	231.2
3	Floor/Roof	2.7	2.2	6.2	16.5	0.0	82.5
4	Floor/Roof	2.7	6.2	6.4	16.5	0.0	82.5

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 948 lbs D + L (2.4-2)

```
        Min shear   =       -658 lbs          D + L (2.4-2)

        Max moment  =        511 ft-lbs       D + L (2.4-2)

        Min moment  =       -683 ft-lbs       D + L (2.4-2)

->Beam properties (2D xy axis) :

        Span  = 6.38 ft

        Area  = 27.75 sq.in

        Sx    = 42.78 sq.in

        Ixx   = 197.86 sq.in

        Pressure Treated = True

->Check shear :

        fv = 1.5 x V / Area  = 948 / 27.75 = 51.25 psi

        F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 =  120.00 psi

          Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

        fb-top = M x 12 / Sx  = 6126 / 42.78 = 143.20 psi

        fb-btm = M x 12 / Sx  = 8200 / 42.78 = 191.67 psi

          Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.10, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 745 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 4.16 ft Combined deflection = -0.005 [D + L (2.4-2)]

                Allowed = 4.16 x 12 / 360.0 = 0.139 in.
```

Allowed (Seismic controled) = 4.16 x 12 / 180.0 = 0.277 in.

(2.4-2)] Cantilever Deflection span 1, Length = 2.22 ft Combined deflection = -0.003 [D + L

Allowed = 2.22 x 12 / 240.0 = 0.111 in.

1.8 Analysis of Bm 7 - (2) 2 x 10 PT HF #2

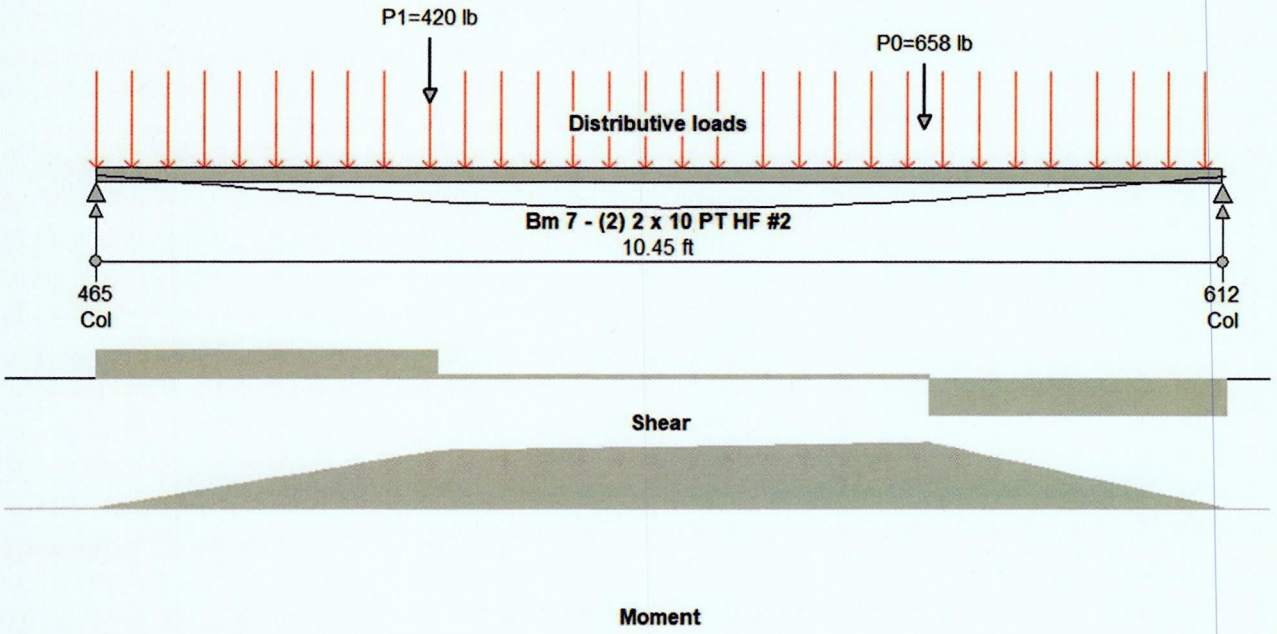


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

0	110	0	548	0	0	0.00	From BM 6 from Level 1
1	70	0	350	0	0	0.00	From BM 15 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
2	Floor/Roof	2	-	12.0	0.0	60.0
3	Floor/Roof	3	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
2	Floor/Roof	7.7	0.0	0.0	46.2	0.0	231.2
3	Floor/Roof	2.7	10.5	10.5	16.5	0.0	82.5

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

```
        Max shear   =        465 lbs          D + L (2.4-2)

        Min shear   =       -612 lbs          D + L (2.4-2)

        Max moment  =       1679 ft-lbs       D + L (2.4-2)

        Min moment  =         -0 ft-lbs  D - (0.6)W (2.4-5b)

->Beam properties (2D xy axis) :

        Span  = 10.45 ft

        Area  = 27.75 sq.in

        Sx    = 42.78 sq.in

        Ixx   = 197.86 sq.in

        Pressure Treated = True

->Check shear :

        fv = 1.5 x V / Area  = 612 / 27.75 = 33.10 psi

        F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 =  120.00 psi

          Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

        fb-top = M x 12 / Sx  = 20153 / 42.78 = 471.08 psi

        fb-btm = M x 12 / Sx  = 0 / 42.78 = 0.00 psi

          Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.10, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 748 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 1

        Deflection span 0, Length = 10.45 ft Combined deflection = -0.129 [D + L (2.4-2)]
```

Allowed = 10.45 x 12 / 360.0 = 0.348 in.

Allowed (Seismic controled) = 10.45 x 12 / 180.0 = 0.697 in.

1.9 Analysis of Bm 8 - 6 x 10 PT HF #2

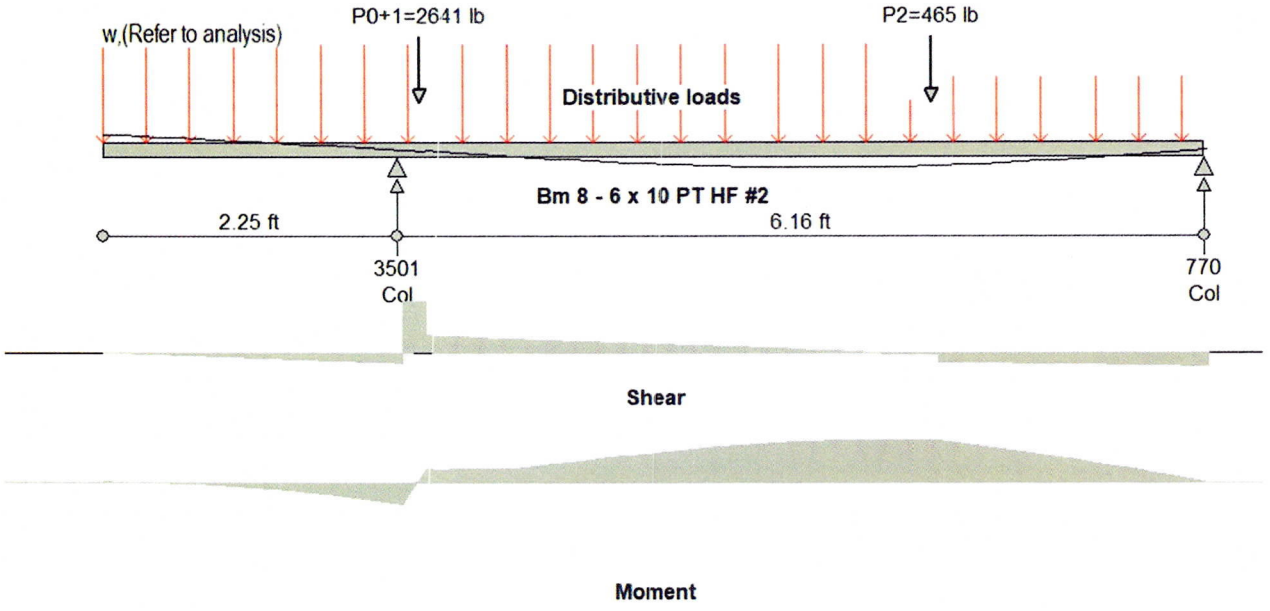


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

0	485	808	0	0	0	2.47	From BM 1 from Level 2
1	506	843	0	0	0	2.47	From BM 3 from Level 2
2	78	0	388	0	0	6.38	From BM 7 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
3	Floor/Roof	2	-	12.0	0.0	60.0
4	Floor/Roof	6	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
3	Floor/Roof	7.7	0.0	6.3	46.2	0.0	231.2
4	Floor/Roof	3.2	6.4	8.4	19.0	0.0	94.9

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

```
        Max shear  =        2998 lbs     D + 0.75S + 0.75L (2.4-4)

        Min shear  =        -770 lbs           D + L (2.4-2)

        Max moment =        1376 ft-lbs        D + L (2.4-2)

        Min moment =        -727 ft-lbs        D + L (2.4-2)

->Beam properties (2D xy axis) :

        Span  = 8.45 ft

        Area  = 50.88 sq.in

        Sx    = 78.43 sq.in

        Ixx   = 362.75 sq.in

        Pressure Treated = True

->Check shear :

        fv = 1.5 x V / Area  = 2998 / 50.88 = 88.39 psi

        F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 =  120.00 psi

          Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

        fb-top = M x 12 / Sx  = 16509 / 78.43 = 210.48 psi

        fb-btm = M x 12 / Sx  = 8722 / 78.43 = 111.21 psi

          Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.02, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 693 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 6.16 ft Combined deflection = -0.018 [D + L (2.4-2)]
```

Allowed = 6.16 x 12 / 360.0 = 0.205 in.

Allowed (Seismic controled) = 6.16 x 12 / 180.0 = 0.411 in.

Cantilever Deflection span 1, Length = 2.29 ft Combined deflection = 0.015 [D + 0.75S + 0.75L (2.4-4)]

Allowed = 2.29 x 12 / 240.0 = 0.114 in.

1.10 Analysis of Bm 9 - 6 x 10 PT HF #2

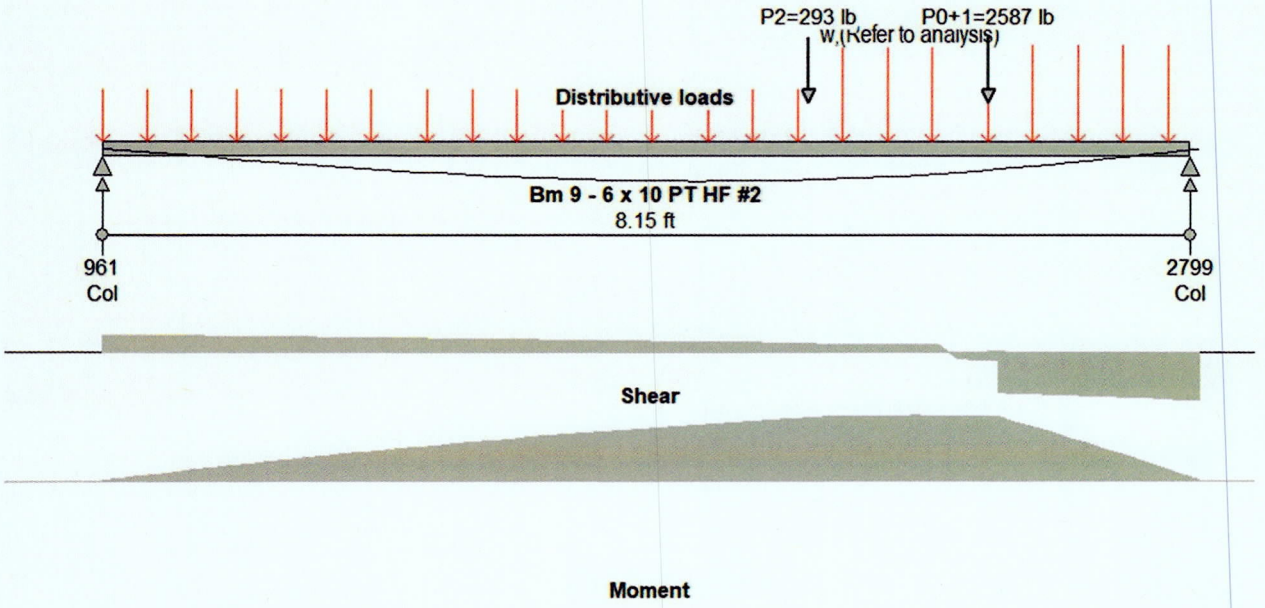


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	478	796	0	0	0	6.66	From BM 2 from Level 2
1	493	821	0	0	0	6.66	From BM 3 from Level 2
2	49	0	244	0	0	5.31	From BM 10 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
3	Floor/Roof	5	-	12.0	0.0	60.0
4	Floor/Roof	6	-	12.0	0.0	60.0
5	Floor/Roof	6	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
3	Floor/Roof	10.5	5.3	8.2	62.7	0.0	313.7
4	Floor/Roof	3.2	0.0	5.2	19.0	0.0	94.9
5	Floor/Roof	3.2	5.2	5.3	19.0	0.0	94.9

---

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 961 lbs D + 0.75S + 0.75L (2.4-4)

Min shear = -2799 lbs D + 0.75S + 0.75L (2.4-4)

Max moment = 4273 ft-lbs D + 0.75S + 0.75L (2.4-4)

Min moment = 0 ft-lbs D + 0.75S + 0.75L (2.4-4)

->Beam properties (2D xy axis) :

Span = 8.15 ft

Area = 50.88 sq.in

Sx = 78.43 sq.in

Ixx = 362.75 sq.in

Pressure Treated = True

->Check shear :

fv = 1.5 x V / Area = 2799 / 50.88 = 82.54 psi

F'v = 150.00 x 1.15 x 1.00 x 1.00 x 0.80 = 138.00 psi

Fv = 150 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

fb-top = M x 12 / Sx = 51274 / 78.43 = 653.74 psi

fb-btm = M x 12 / Sx = 0 / 78.43 = 0.00 psi

Fb = 850 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.02, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 798 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 1

Deflection span 0, Length = 8.15 ft Combined deflection = -0.089 [D + 0.75S + 0.75L (2.4-4)]

Allowed = 8.15 x 12 / 360.0 = 0.272 in.

Allowed (Seismic controled) = 8.15 x 12 / 180.0 = 0.544 in.

1.11 Analysis of Bm 10 - (2) 2 x 10 PT HF #2

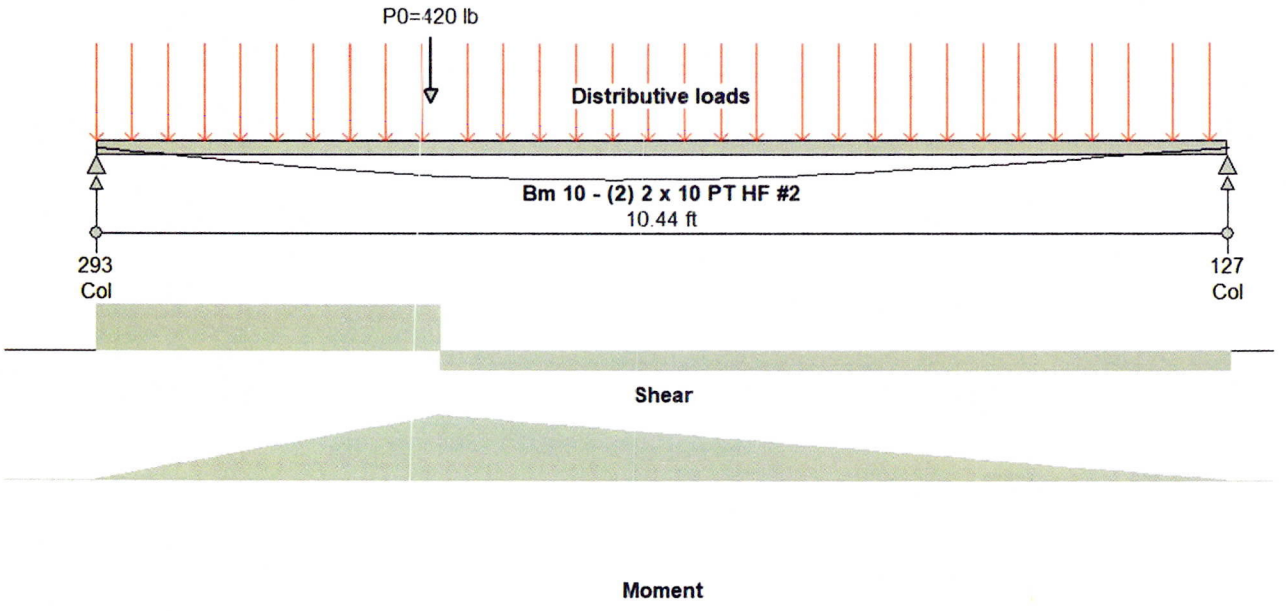


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	70	0	350	0	0	0.00	From BM 15 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
1	Floor/Roof	6	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
1	Floor/Roof	3.2	3.2	3.2	19.0	0.0	94.9

(1) From loc and to loc are load segments starting and ending
measured from the left of the beam

->Computed moments and shears (Factored) :

```
        Max shear  =        293 lbs          D + L (2.4-2)

        Min shear  =       -127 lbs          D + L (2.4-2)

        Max moment =        926 ft-lbs       D + L (2.4-2)

        Min moment =         -0 ft-lbs       D + L (2.4-2)

->Beam properties (2D xy axis) :

        Span  = 10.44 ft

        Area  = 27.75 sq.in

        Sx    = 42.78 sq.in

        Ixx   = 197.86 sq.in

        Pressure Treated = True

->Check shear :

        fv = 1.5 x V / Area  = 293 / 27.75 = 15.82 psi

        F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 =  120.00 psi

          Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

        fb-top = M x 12 / Sx  = 11112 / 42.78 = 259.75 psi

        fb-btm = M x 12 / Sx  = 0 / 42.78 = 0.00 psi

          Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

         Cf = 1.10, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 748 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 1

        Deflection span 0, Length = 10.44 ft Combined deflection = -0.054 [D + L (2.4-2)]
```

Allowed = 10.44 x 12 / 360.0 = 0.348 in.

Allowed (Seismic controled) = 10.44 x 12 / 180.0 = 0.696 in.

1.12 Analysis of Bm 11 - 6 x 12 PT HF #2

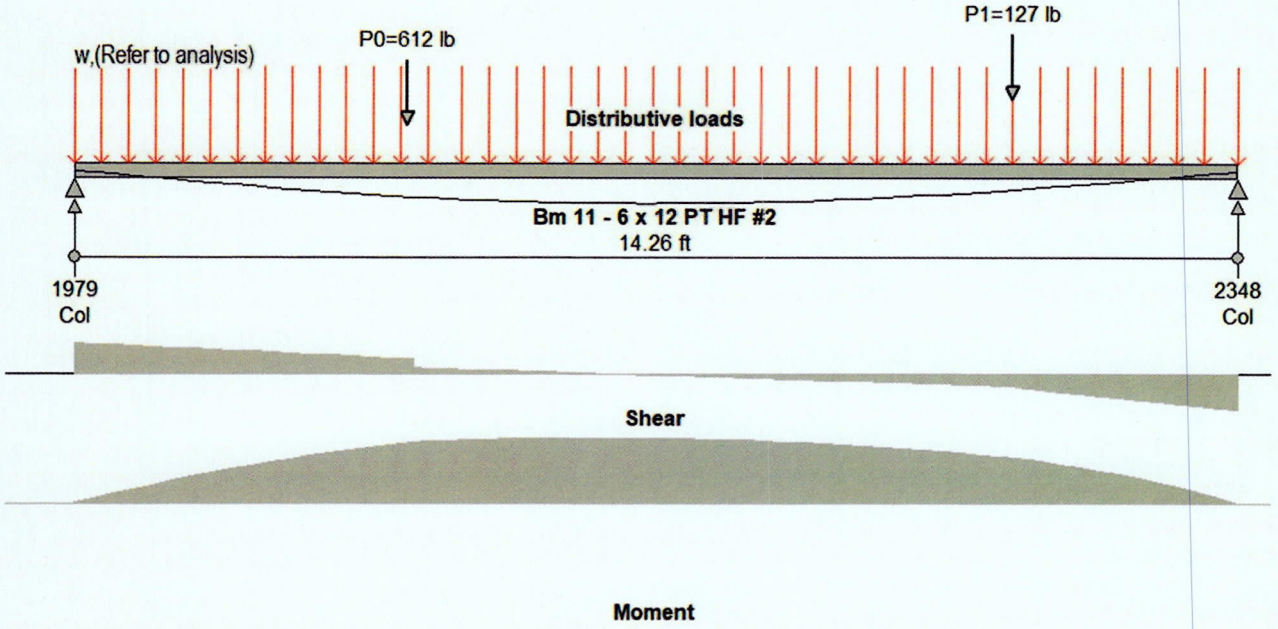


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

0	102	0	510	0	0	4.16	From BM 7 from Level 1
1	21	0	106	0	0	11.53	From BM 10 from Level 1

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
2	Floor/Roof	3	-	12.0	0.0	60.0
3	Floor/Roof	4	-	12.0	0.0	60.0
4	Floor/Roof	4	-	12.0	0.0	60.0
5	Floor/Roof	4	-	12.0	0.0	60.0
6	Floor/Roof	5	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
2	Floor/Roof	2.7	4.2	0.0	16.5	0.0	82.5
3	Floor/Roof	4.3	0.0	4.2	25.7	0.0	128.7
4	Floor/Roof	4.3	4.2	11.5	25.7	0.0	128.7
5	Floor/Roof	4.3	11.5	14.3	25.7	0.0	128.7

6	Floor/Roof	10.5	14.3	11.5	62.7	0.0	313.7

---

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 1979 lbs D + L (2.4-2)

Min shear = -2348 lbs D + L (2.4-2)

Max moment = 6440 ft-lbs D + L (2.4-2)

Min moment = -0 ft-lbs D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 14.26 ft

Area = 63.25 sq.in

Sx = 121.23 sq.in

Ixx = 697.07 sq.in

Pressure Treated = True

->Check shear :

fv = 1.5 x V / Area = 2348 / 63.25 = 55.69 psi

F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 = 120.00 psi

Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

fb-top = M x 12 / Sx = 77280 / 121.23 = 637.47 psi

fb-btm = M x 12 / Sx = 0 / 121.23 = 0.00 psi

Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.00, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

```
        Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 680 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 1

        Deflection span 0, Length = 14.26 ft Combined deflection = -0.269 [D + L (2.4-2)]

                Allowed = 14.26 x 12 / 360.0 = 0.475 in.

                Allowed (Seismic controled) = 14.26 x 12 / 180.0 = 0.950 in.
```

1.13 Analysis of Bm 12 - 4 x 12 PT HF #2

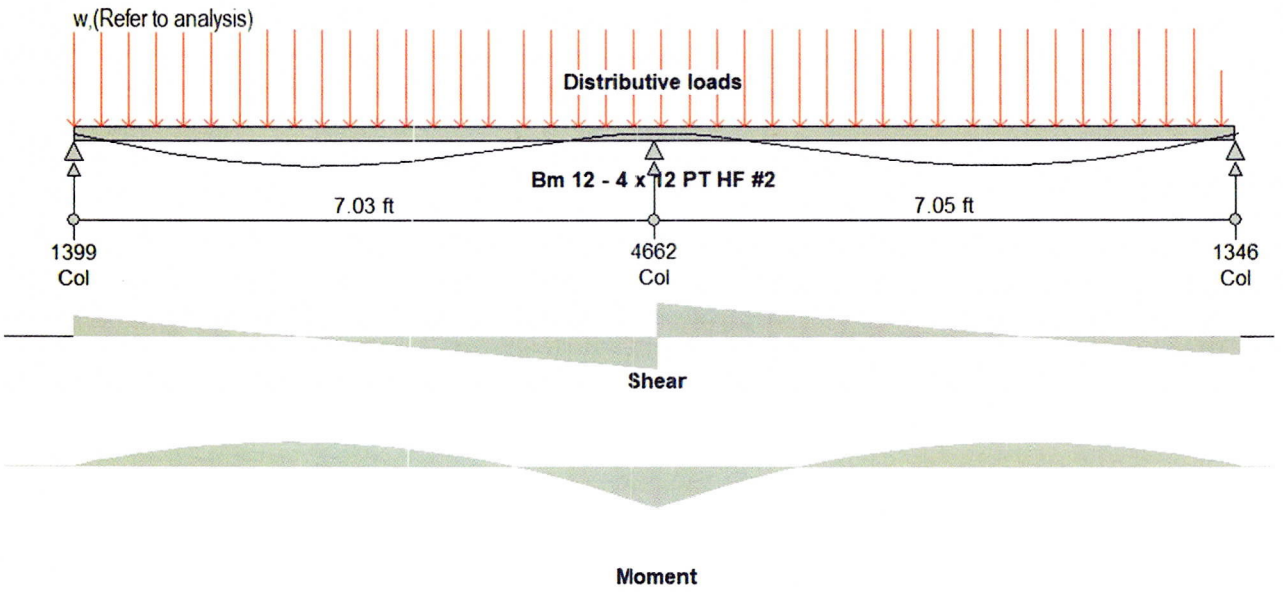


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
0	Floor/Roof	4	-	12.0	0.0	60.0
1	Floor/Roof	5	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	4.3	0.0	13.7	25.7	0.0	128.7
1	Floor/Roof	10.5	14.1	0.0	62.7	0.0	313.7

(1) From loc and to loc are load segments starting and ending

measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 2330 lbs D + L (2.4-2)

Min shear = -2268 lbs D + L (2.4-2)

Max moment = 1844 ft-lbs D + L (2.4-2)

Min moment = -3275 ft-lbs D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 14.05 ft

Area = 39.38 sq.in

Sx = 73.83 sq.in

Ixx = 415.28 sq.in

Pressure Treated = True

->Check shear :

fv = 1.5 x V / Area = 2330 / 39.38 = 88.76 psi

F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 = 120.00 psi

Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

fb-top = M x 12 / Sx = 22132 / 73.83 = 299.78 psi

fb-btm = M x 12 / Sx = 39297 / 73.83 = 532.27 psi

Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.00, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 680 psi

->Check bearing :

```
->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 7.03 ft Combined deflection = -0.022 [D + L (2.4-2)]

                Allowed = 7.03 x 12 / 360.0 = 0.234 in.

                Allowed (Seismic controled) = 7.03 x 12 / 180.0 = 0.468 in.

        Deflection span 1, Length = 7.03 ft Combined deflection = -0.022 [D + L (2.4-2)]

                Allowed = 7.03 x 12 / 360.0 = 0.234 in.

                Allowed (Seismic controled) = 7.03 x 12 / 180.0 = 0.468 in.
```

1.14 Analysis of Bm 13 - 4 x 10 PT HF #2

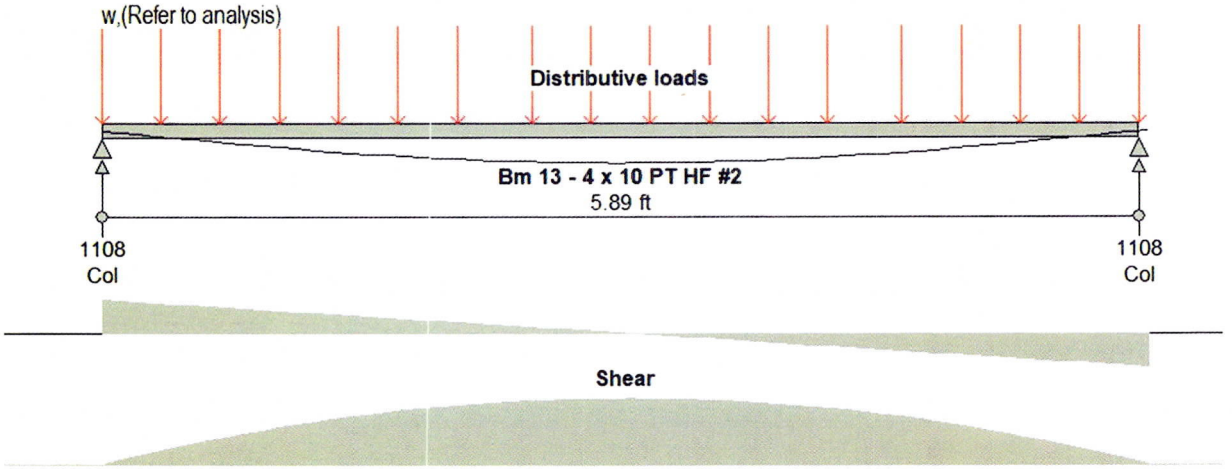


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID		HEIGHT		
0	Floor/Roof	5	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	10.5	0.0	5.9	62.7	0.0	313.7

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 1108 lbs D + L (2.4-2)

Min shear = -1108 lbs D + L (2.4-2)

Max moment = 1631 ft-lbs D + L (2.4-2)

Min moment = -0 ft-lbs D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 5.89 ft

Area = 32.38 sq.in

Sx = 49.91 sq.in

Ixx = 230.84 sq.in

Pressure Treated = True

->Check shear :

fv = 1.5 x V / Area = 1108 / 32.38 = 51.36 psi

F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 = 120.00 psi

Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

fb-top = M x 12 / Sx = 19576 / 49.91 = 392.22 psi

fb-btm = M x 12 / Sx = 0 / 49.91 = 0.00 psi

Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.10, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 748 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 1

Deflection span 0, Length = 5.89 ft Combined deflection = -0.034 [D + L (2.4-2)]

Allowed = 5.89 x 12 / 360.0 = 0.196 in.

Allowed (Seismic controled) = 5.89 x 12 / 180.0 = 0.393 in.

1.15 Analysis of Bm 14 - 4 x 10 PT HF #2

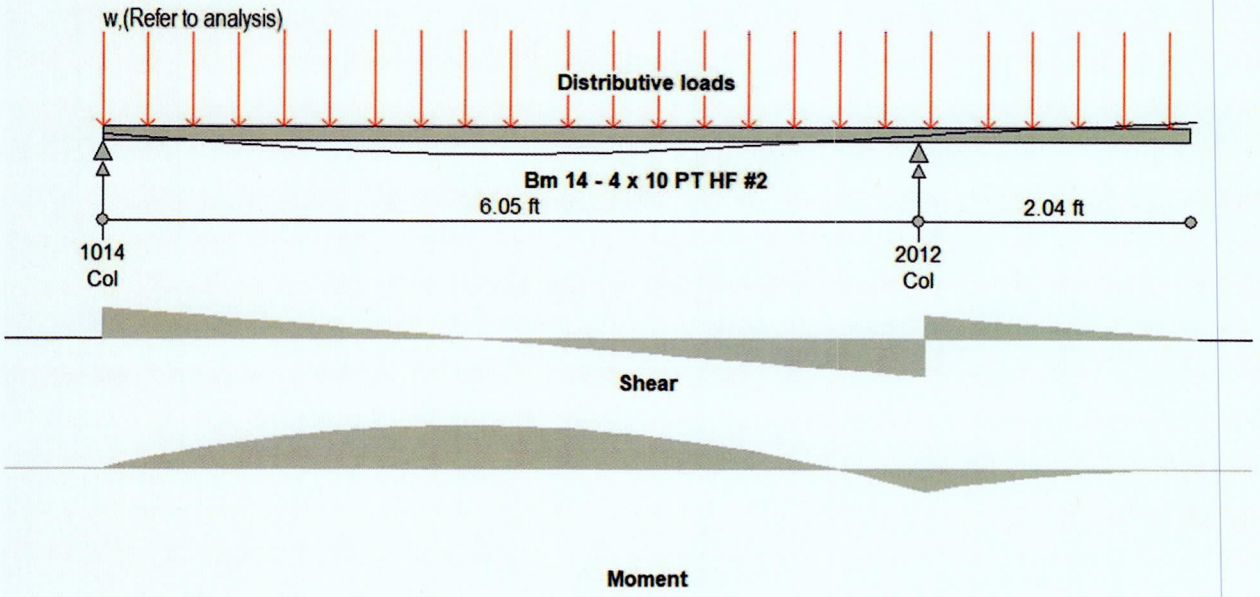


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID		HEIGHT		
0	Floor/Roof	5	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	10.5	0.0	8.0	62.7	0.0	313.7

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 1014 lbs D + L (2.4-2)

Min shear = -1192 lbs D + L (2.4-2)

Max moment = 1367 ft-lbs D + L (2.4-2)

Min moment = -748 ft-lbs D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 8.04 ft

Area = 32.38 sq.in

Sx = 49.91 sq.in

Ixx = 230.84 sq.in

Pressure Treated = True

->Check shear :

fv = 1.5 x V / Area = 1192 / 32.38 = 55.21 psi

F'v = 150.00 x 1.00 x 1.00 x 1.00 x 0.80 = 120.00 psi

Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 0.80.

->Check bending :

fb-top = M x 12 / Sx = 16400 / 49.91 = 328.58 psi

fb-btm = M x 12 / Sx = 8978 / 49.91 = 179.88 psi

Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.10, Cfu = 1.00, Ci = 0.80, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 746 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 2

Deflection span 0, Length = 6.05 ft Combined deflection = -0.028 [D + L (2.4-2)]

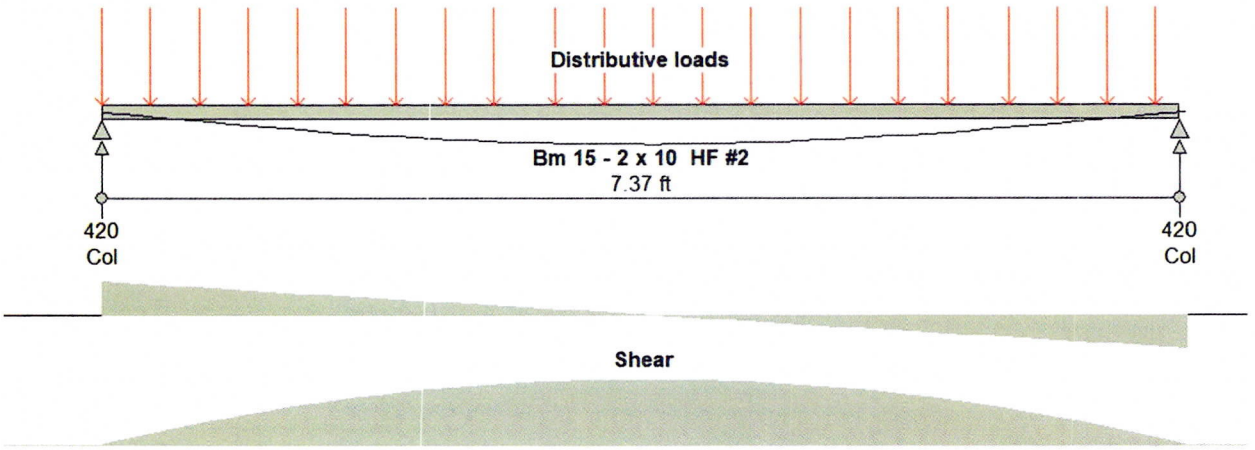
Allowed = 6.05 x 12 / 360.0 = 0.202 in.

Allowed (Seismic controled) = 6.05 x 12 / 180.0 = 0.403 in.

Cantilever Deflection span 1, Length = 1.99 ft Combined deflection = 0.018 [D + L (2.4-2)]

Allowed = 1.99 x 12 / 240.0 = 0.100 in.

1.16 Analysis of Bm 15 - 2 x 10 HF #2



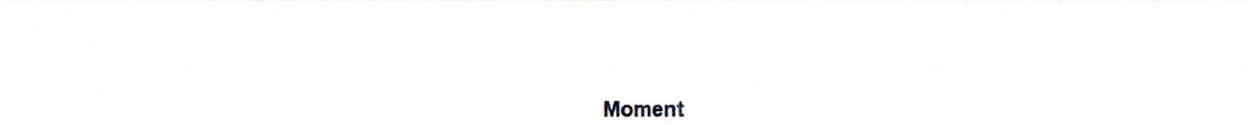


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID	HEIGHT			
0	Floor/Roof	6	-	12.0	0.0	60.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	3.2	7.4	0.0	19.0	0.0	94.9

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 420 lbs D + L (2.4-2)

Min shear = -420 lbs D + L (2.4-2)

Max moment = 774 ft-lbs D + L (2.4-2)

Min moment = -0 ft-lbs D + L (2.4-2)

->Beam properties (2D xy axis) :

Span = 7.37 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

Ixx = 197.86 sq.in

->Check shear :

fv = 1.5 x V / Area = 420 / 27.75 = 22.70 psi

F'v = 150.00 x 1.00 x 1.00 x 1.00 x 1.00 = 150.00 psi

Fv = 150 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

fb-top = M x 12 / Sx = 9287 / 42.78 = 217.07 psi

fb-btm = M x 12 / Sx = 0 / 42.78 = 0.00 psi

Fb = 850 psi, CD = 1.00, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 935 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 1

Deflection span 0, Length = 7.37 ft Combined deflection = -0.029 [D + L (2.4-2)]

Allowed = 7.37 x 12 / 360.0 = 0.246 in.

Allowed (Seismic controled) = 7.37 x 12 / 180.0 = 0.492 in.

1.17 Analysis of Bm 16 - (2) 2 x 10 DF #2

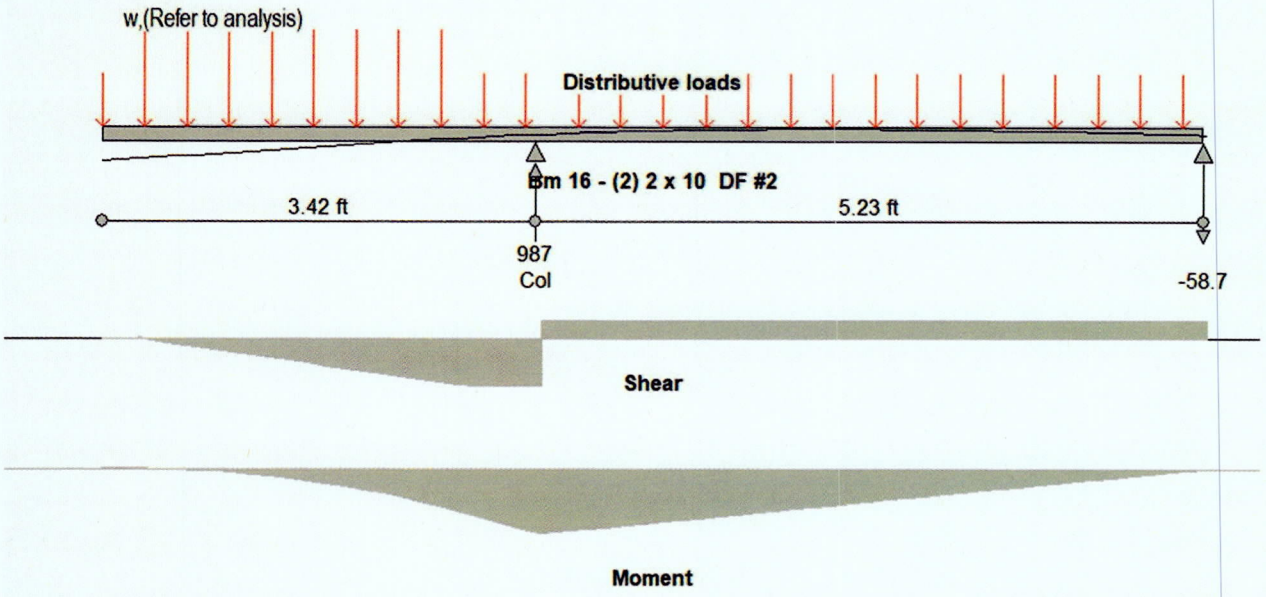


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID		HEIGHT		
0	Floor/Roof	9	-	15.0	25.0	0.0
1	Floor/Roof	10	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	8.4	0.2	3.0	63.0	105.0	0.0
1	Floor/Roof	5.7	3.0	0.2	42.5	70.8	0.0

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 261 lbs D + S (2.4-3)

Min shear = -726 lbs D + S (2.4-3)

Max moment = 0 ft-lbs D + S (2.4-3)

Min moment = -1365 ft-lbs D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 8.70 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

```
        Ixx    = 197.86 sq.in

->Check shear :

        fv = 1.5 x V / Area  = 726 / 27.75 = 39.24 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 42.78 = 0.00 psi

        fb-btm = M x 12 / Sx  = 16376 / 42.78 = 382.79 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 0.99,

         Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1130 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 5.23 ft Combined deflection = 0.013 [D + S (2.4-3)]

                Allowed = 5.23 x 12 / 360.0 = 0.174 in.

                Allowed (Seismic controled) = 5.23 x 12 / 180.0 = 0.349 in.

(2.4-3)]Cantilever Deflection span 1, Length = 3.47 ft Combined deflection = -0.067 [D + S

                Allowed = 3.47 x 12 / 240.0 = 0.173 in.
```

1.18 Analysis of Bm 17 - 4 x 10 DF #2

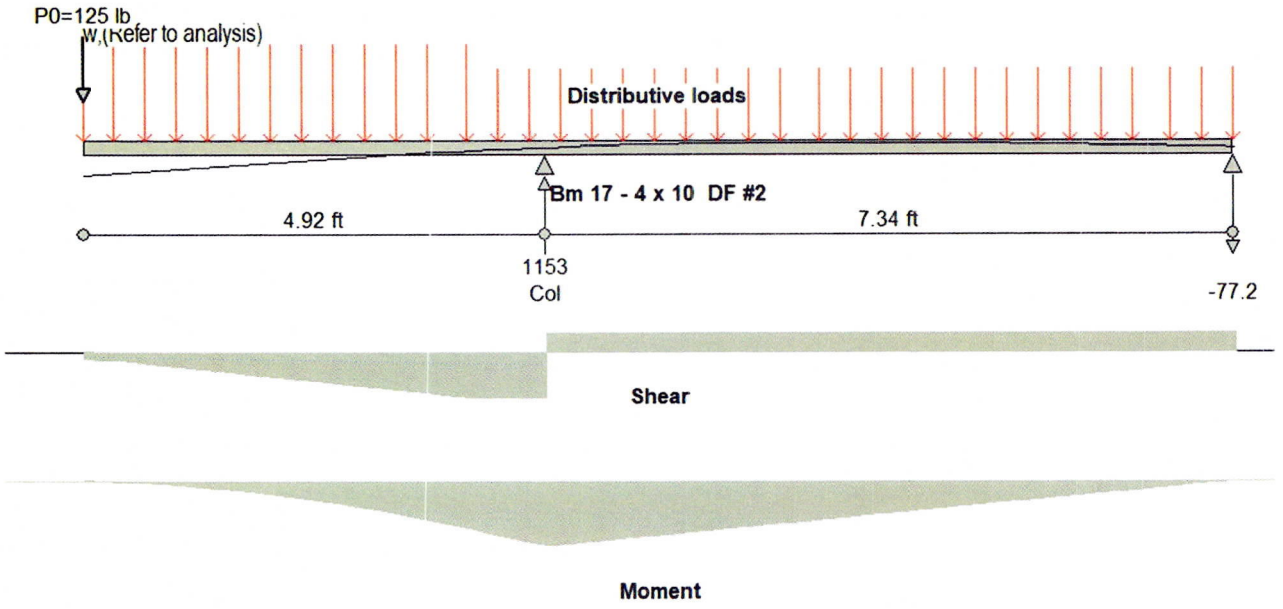


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	47	78	0	0	0	0.00	From BM 21 from Level 2

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID	HEIGHT			
1	Floor/Roof	8	-	15.0	25.0	0.0
2	Floor/Roof	8	-	15.0	25.0	0.0
3	Floor/Roof	9	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
1	Floor/Roof	3.4	0.2	0.0	25.3	42.1	0.0
2	Floor/Roof	3.5	0.0	4.4	26.2	43.6	0.0
3	Floor/Roof	5.7	4.2	0.4	42.5	70.8	0.0

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 343 lbs D + S (2.4-3)

Min shear = -809 lbs D + S (2.4-3)

Max moment = 0 ft-lbs D - (0.6)W (2.4-5b)

Min moment = -2520 ft-lbs D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 12.27 ft

```
        Area  = 32.38 sq.in

        Sx    = 49.91 sq.in

        Ixx   = 230.84 sq.in

->Check shear :

        fv = 1.5 x V / Area  = 809 / 32.38 = 37.50 psi

        F'v = 180.00 x 1.60 x 1.00 x 1.00 x 1.00 =  288.00 psi

          Fv = 180 psi, CD = 1.60, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 49.91 = 0.00 psi

        fb-btm = M x 12 / Sx  = 30244 / 49.91 = 605.96 psi

          Fb = 900 psi, CD = 1.60, Cm = 1.00, Ct = 1.00, Cl = 0.99,

         Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1566 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 7.34 ft Combined deflection = 0.041 [D + S (2.4-3)]

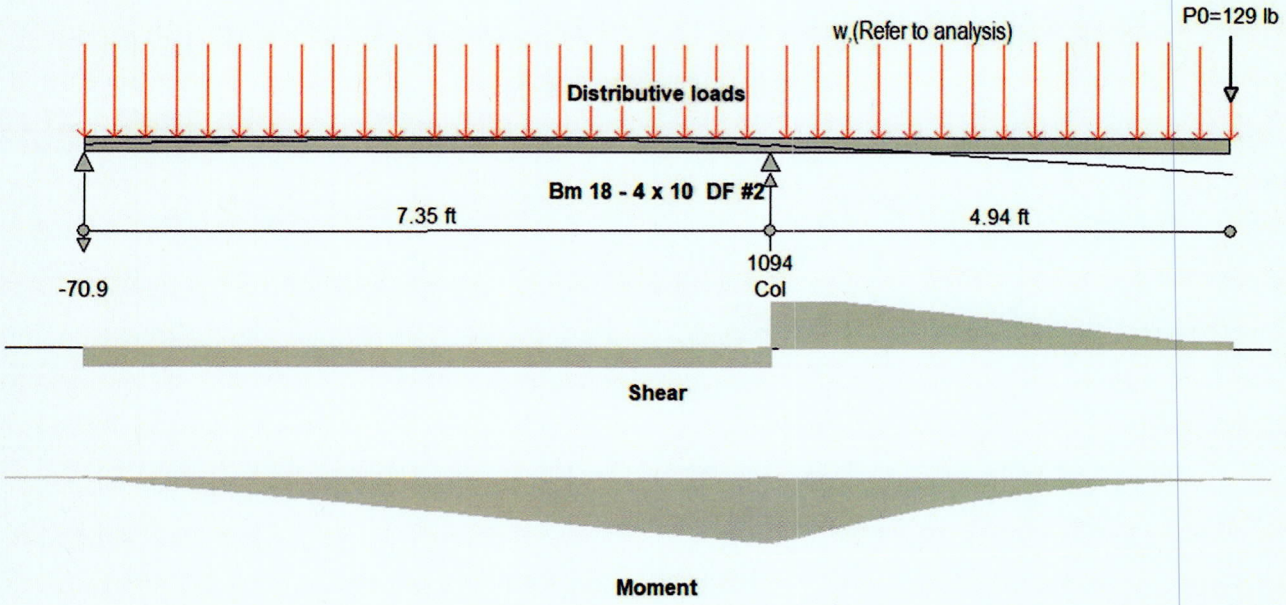
                Allowed = 7.34 x 12 / 360.0 = 0.245 in.

                Allowed (Seismic controled) = 7.34 x 12 / 180.0 = 0.490 in.

(2.4-3)]Cantilever Deflection span 1, Length = 4.92 ft Combined deflection = -0.219 [D + S

                Allowed = 4.92 x 12 / 240.0 = 0.246 in.
```

1.19 Analysis of Bm 18 - 4 x 10 DF #2



Shear

Moment

Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	48	81	0	0	0	8.66	From BM 22 from Level 2

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA ID	WALL HEIGHT	D	S	L
1	Floor/Roof	10	-	15.0	25.0	0.0
2	Floor/Roof	11	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
1	Floor/Roof	8.4	11.9	8.0	63.0	105.0	0.0
2	Floor/Roof	0.5	8.1	12.0	3.8	6.3	0.0

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear =	778 lbs	D + S (2.4-3)
Min shear =	-315 lbs	D + S (2.4-3)
Max moment =	0 ft-lbs	D + S (2.4-3)
Min moment =	-2316 ft-lbs	D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 12.27 ft

```
        Area  = 32.38 sq.in

        Sx    = 49.91 sq.in

        Ixx   = 230.84 sq.in

->Check shear :

        fv = 1.5 x V / Area  = 778 / 32.38 = 36.06 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 49.91 = 0.00 psi

        fb-btm = M x 12 / Sx  = 27789 / 49.91 = 556.76 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 0.99,

         Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1130 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 7.35 ft Combined deflection = 0.037 [D + S (2.4-3)]

                Allowed = 7.35 x 12 / 360.0 = 0.245 in.

                Allowed (Seismic controled) = 7.35 x 12 / 180.0 = 0.490 in.

Cantilever Deflection span 1, Length = 4.93 ft Combined deflection = -0.200 [D + S
(2.4-3)]

                Allowed = 4.93 x 12 / 240.0 = 0.246 in.
```

1.20 Analysis of Bm 19 - (2) 2 x 10 DF #2

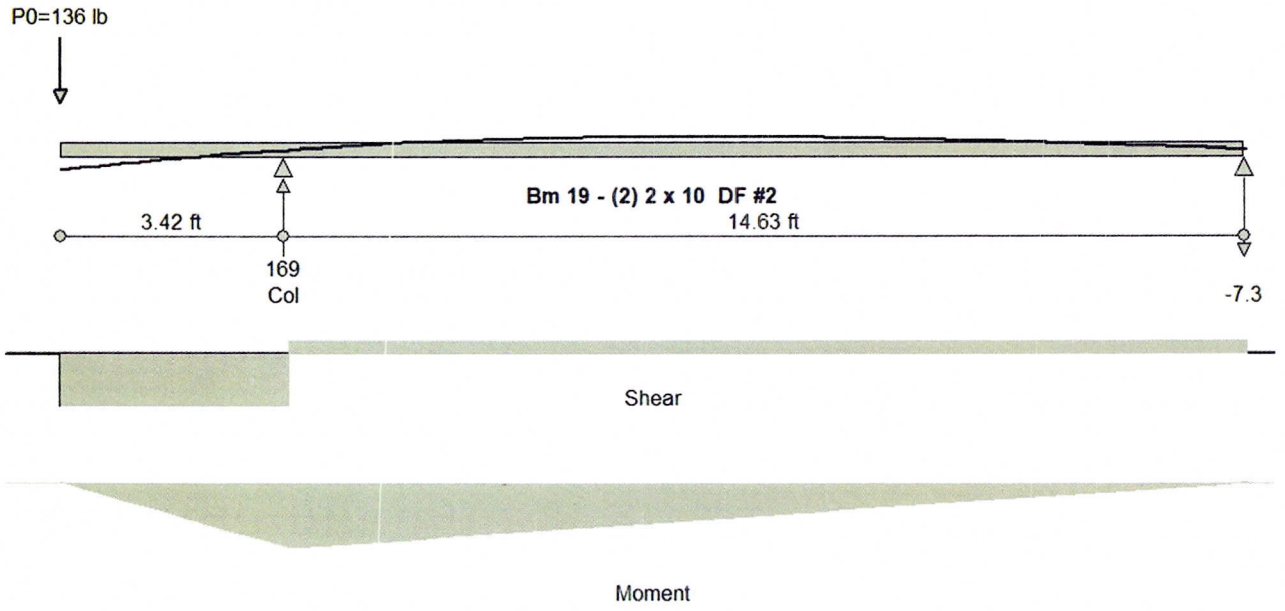


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	51	85	0	0	0	0.00	From BM 21 from Level 2

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT ID	AREA	WALL HEIGHT	D	S	L

No distributive loads

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L

No distributive loads

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear =	33 lbs	D + S (2.4-3)
Min shear =	-136 lbs	D + S (2.4-3)
Max moment =	0 ft-lbs	D + S (2.4-3)
Min moment =	-476 ft-lbs	D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 18.13 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

```
        Ixx    = 197.86 sq.in

->Check shear :

        fv = 1.5 x V / Area  = 136 / 27.75 = 7.37 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 42.78 = 0.00 psi

        fb-btm = M x 12 / Sx  = 5714 / 42.78 = 133.56 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 0.99,

         Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1130 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 14.63 ft Combined deflection = 0.036 [D + S (2.4-3)]

                Allowed = 14.63 x 12 / 360.0 = 0.488 in.

                Allowed (Seismic controled) = 14.63 x 12 / 180.0 = 0.976 in.

(2.4-3)]Cantilever Deflection span 1, Length = 3.49 ft Combined deflection = -0.055 [D + S

                Allowed = 3.49 x 12 / 240.0 = 0.175 in.
```

1.21 Analysis of Bm 20 - (2) 2 x 10 DF #2

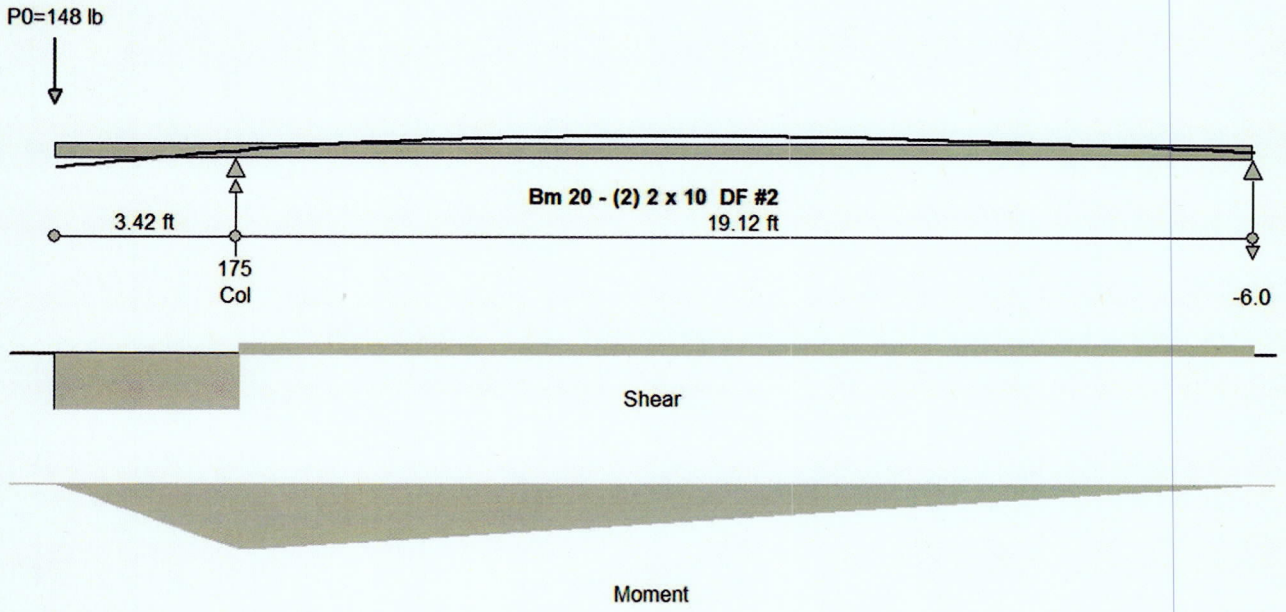


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES
0	55	92	0	0	0	0.00	From BM 22 from Level 2

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

ID HEIGHT

No distributive loads

.---

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L

No distributive loads

.---

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear =	27 lbs	D + S (2.4-3)
Min shear =	-148 lbs	D + S (2.4-3)
Max moment =	-0 ft-lbs	D + S (2.4-3)
Min moment =	-512 ft-lbs	D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 22.61 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

Ixx = 197.86 sq.in

->Check shear :

```
        fv = 1.5 x V / Area  = 148 / 27.75 = 7.99 psi

        F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 =  207.00 psi

          Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

        fb-top = M x 12 / Sx  = 0 / 42.78 = 0.00 psi

        fb-btm = M x 12 / Sx  = 6146 / 42.78 = 143.65 psi

          Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 0.99,

         Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

          Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1130 psi

->Check bearing :

->Check deflections :

        Number of deflection spans = 2

        Deflection span 0, Length = 19.12 ft Combined deflection = 0.066 [D + S (2.4-3)]

                Allowed = 19.12 x 12 / 360.0 = 0.637 in.

                Allowed (Seismic controled) = 19.12 x 12 / 180.0 = 1.274 in.

(2.4-3)]Cantilever Deflection span 1, Length = 3.49 ft Combined deflection = -0.073 [D + S

                Allowed = 3.49 x 12 / 240.0 = 0.175 in.
```

1.22 Analysis of Bm 21 - (2) 2 x 10 DF #2

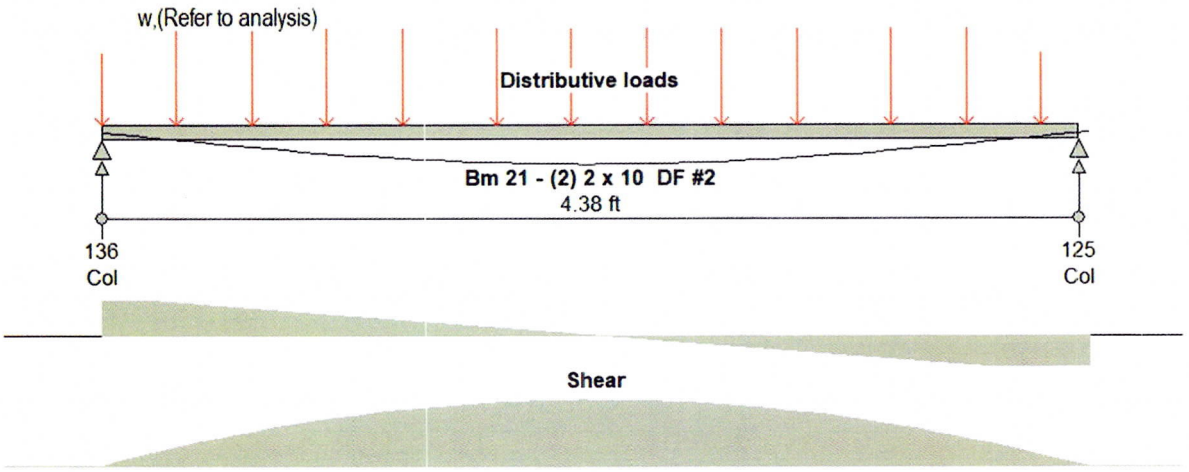


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID	HEIGHT			
0	Floor/Roof	8	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	3.5	0.2	4.0	26.2	43.6	0.0

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 136 lbs D + S (2.4-3)

Min shear = -125 lbs D + S (2.4-3)

Max moment = 164 ft-lbs D + S (2.4-3)

Min moment = 0 ft-lbs D - (0.6)W (2.4-5b)

->Beam properties (2D xy axis) :

Span = 4.38 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

Ixx = 197.86 sq.in

->Check shear :

fv = 1.5 x V / Area = 136 / 27.75 = 7.37 psi

F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 = 207.00 psi

Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

fb-top = M x 12 / Sx = 1962 / 42.78 = 45.87 psi

fb-btm = M x 12 / Sx = 0 / 42.78 = 0.00 psi

Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1138 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 1

Deflection span 0, Length = 4.38 ft Combined deflection = -0.002 [D + S (2.4-3)]

Allowed = 4.38 x 12 / 360.0 = 0.146 in.

Allowed (Seismic controled) = 4.38 x 12 / 180.0 = 0.292 in.

1.23 Analysis of Bm 22 - (2) 2 x 10 DF #2

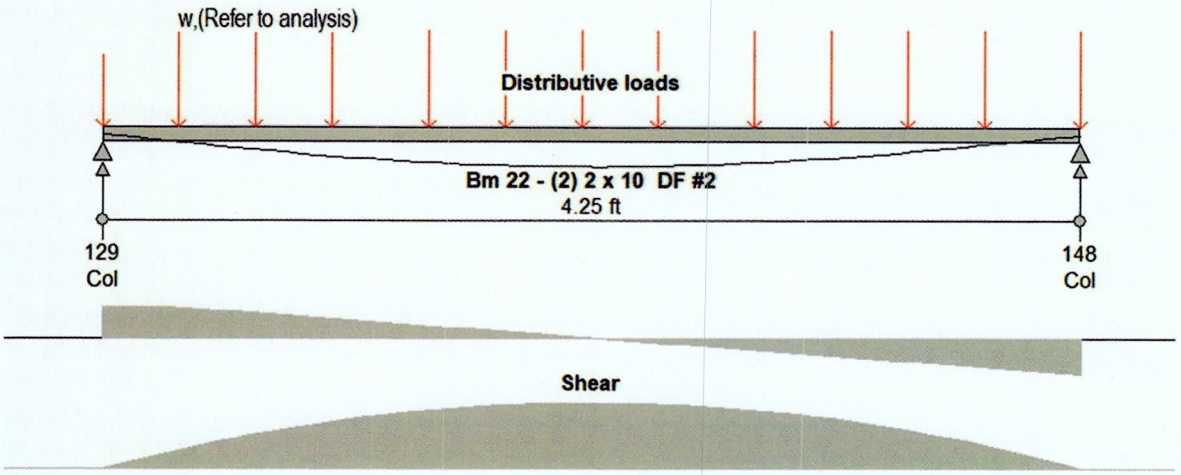


Table 1 - Point load table

LOAD	D	S	L	W+/-	E+/-	LOC	NOTES

No Applied point loads

(1) Un-factored loads in lbs.

(2) Load location measured from left end of beam.

Table 3 - Distributive load table (pressures)

LOAD	ELEMENT	AREA	WALL	D	S	L

		ID	HEIGHT			
0	Floor/Roof	11	-	15.0	25.0	0.0

(1) loads in psf.

Table 4 - Distributive load table (line loads)

LOAD	ELEMENT	TRIB WIDTH	from loc	to loc	D	S	L
0	Floor/Roof	3.5	0.3	4.3	26.2	43.6	0.0

(1) From loc and to loc are load segments starting and ending measured from the left of the beam

->Computed moments and shears (Factored) :

Max shear = 129 lbs D + S (2.4-3)

Min shear = -148 lbs D + S (2.4-3)

Max moment = 156 ft-lbs D + S (2.4-3)

Min moment = -0 ft-lbs D + S (2.4-3)

->Beam properties (2D xy axis) :

Span = 4.25 ft

Area = 27.75 sq.in

Sx = 42.78 sq.in

Ixx = 197.86 sq.in

->Check shear :

fv = 1.5 x V / Area = 148 / 27.75 = 7.99 psi

F'v = 180.00 x 1.15 x 1.00 x 1.00 x 1.00 = 207.00 psi

Fv = 180 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Ci = 1.00.

->Check bending :

fb-top = M x 12 / Sx = 1877 / 42.78 = 43.87 psi

fb-btm = M x 12 / Sx = 0 / 42.78 = 0.00 psi

Fb = 900 psi, CD = 1.15, Cm = 1.00, Ct = 1.00, Cl = 1.00,

Cf = 1.10, Cfu = 1.00, Ci = 1.00, Cr = 1.00.

Fb'x CD x CM x CT x CL x CFx CFU x CI x CR = 1138 psi

->Check bearing :

->Check deflections :

Number of deflection spans = 1

Deflection span 0, Length = 4.25 ft Combined deflection = -0.002 [D + S (2.4-3)]

Allowed = 4.25 x 12 / 360.0 = 0.142 in.

Allowed (Seismic controled) = 4.25 x 12 / 180.0 = 0.284 in.