

Company

Address
City
Phone
Other

JOB TITLE

JOB NO.

CALCULATED BY

CHECKED BY

SHEET NO.

DATE

DATE

CMU11 Ver 2013.04.30

CMU SLENDER WALL (ACI 530-11)

www.struware.com

DESCRIPTION: CMACN Example 5.5.2 (CMACN example uses per ft of wall, therefore need to divide 24" strip width results below by 2)

PANEL PROPERTIES

Wall Height: h =	15.00 ft	fm =	1,500 psi
Parapet Height =	0.00 ft	fy =	40,000 psi
Nominal Thickness (t) =	8.0 in		
Running Bond?	Yes	ungROUTED fr =	63.0 psi
All cells grouted?	Yes	interPOLATED fr =	163.0 psi
Block Weight =	Medium WT	Em factor =	900
Grout Weight =	140 psi	Deflection limit =	0.0070 h
		Min Defl ratio =	142.9
Vert Bar Location :	Centered	.20fm =	300.0 psi
Cover if Bar Ea Face =	2.000 in	Em =	1350.0 ksi
Bar Depth: d =	3.813 in	n =	21.48
		Wall Weight =	78 psf
Vertical Bar Size =	# 4	Tributary width =	2.00 ft
Typical Bar Spacing =	24.0 in		
As =	0.098 in ² /ft	Strip Width Properties	
Opening Properties		b =	24.0 in
Leg between 2 opngs? =	No	Ag =	183.0 in ²
Opening Width(s) =	0.00 ft	Sg =	232.6 in ³
EL Top of Opening =	0.00 ft	Ig =	886.6 in ⁴
EL Bottom Opening =	0.00 ft	Mcr =	3,159 lb
Opening Material Wt =	10.0 psf	ρ =	0.00214
# cells reinf @ opng =	2	ρ max =	0.01260
First cell reinforced? =	Yes	As =	0.20 in ²
		Opng Wall Wt =	0 psf

LOADING

Lateral Loading		plf	Ms ('lb)
Nominal Wind Pressure =	0.0 psf	0.0	0
Seismic Factor =	0.484	75.5	2,124
		Use this wind moment instead :	0
		Use this seismic moment instead :	0
Vertical Loading			
Sds =	1.210		
Uniform Vertical Loading		eccentricity	lb
Full ht wall wt =	585 plf	0.000 in	1,170
Dead Load =	275 plf	0.000 in	550
Floor Live Load =	0 plf	0.000 in	0
Roof Live Load =	400 plf	0.000 in	800
Roof Snow Load =	0 plf	0.000 in	0
			Ms ('lb)
			0
			0
			0
			0
			0
Concentrated Vertical Loading		eccentricity	
Opening wt midht =	0.0 k	0.000 in	0
Dead Load =	0.0 k	2.000 in	0
Floor Live Load =	0.0 k	2.000 in	0
Roof Live Load =	0.0 k	2.000 in	0
Roof Snow Load =	0.0 k	2.000 in	0
			0
			0
			0
			0
			0
			0
Garage, assembly or LL>100psf:	<input type="radio"/>	Roofs that don't shed snow:	<input checked="" type="radio"/>
All Others:	<input checked="" type="radio"/>	All Others:	<input type="radio"/>

TYPICAL WALL REINFORCING RESULTS

LRFD Combinations

	1.4D	1.2D +1.6L +0.5Lr	1.2D +0.5L +1.6Lr	1.2D +0.8W +1.6Lr	1.2D +1.6W +0.5Lr	(1.2+.2Sds)D +1.0E +0.5L +0.7S	0.9D +1.6W	(0.9-.2Sds)D +1.0E
Mua ('lb) =	0	0	0	0	0	2,124	0	2,124
Pu (lb) =	2,408	2,064	2,064	2,064	2,064	2,480	1,548	1,132
Pu /Ag (psi) =	13.2	11.3	11.3	11.3	11.3	13.6	8.5	6.2
Ase (in2) =	0.256	0.248	0.248	0.248	0.248	0.258	0.235	0.224
c (in) =	0.445	0.430	0.430	0.430	0.430	0.448	0.407	0.389
Icr (in4) =	63.1	61.5	61.5	61.5	61.5	63.5	59.0	56.9
a (in) =	0.365	0.352	0.352	0.352	0.352	0.368	0.332	0.316
δu (in) =	0.000	0.000	0.000	0.000	0.000	0.072	0.000	0.072
Mu ('lb) =	0	0	0	0	0	2,139	0	2,130
Capacity: φMn ('lb) =	2,863	2,764	2,764	2,764	2,764	2,884	2,615	2,494

NOTE: NOMINAL MOMENT CAPACITY LESS THAN Mcr

DEFLECTION

Service Load Combinations

	D	D +L or +Lr	D +Lr or +S	D +1.0W	D+0.75W +0.75L +0.75Lr	(1+.10SSds)D +0.525E +0.75(L+S)	0.6D +1.0W	(0.6-.14Sds)D +0.7E
Msa ('lb) =	0	0	0	0	0	0	0	1,486
Ps (lb) =	1,720	2,520	1,720	1,720	1,720	1,032	1,032	813
M ('lb) =	0	0	0	0	0	0	0	1,490
δs (in) =	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.050
Defl Ratio =	L / 9999	L / 9999	L / 9999	L / 9999	L / 9999	L / 9999	L / 9999	L / 3570

DEFLECTION OKAY

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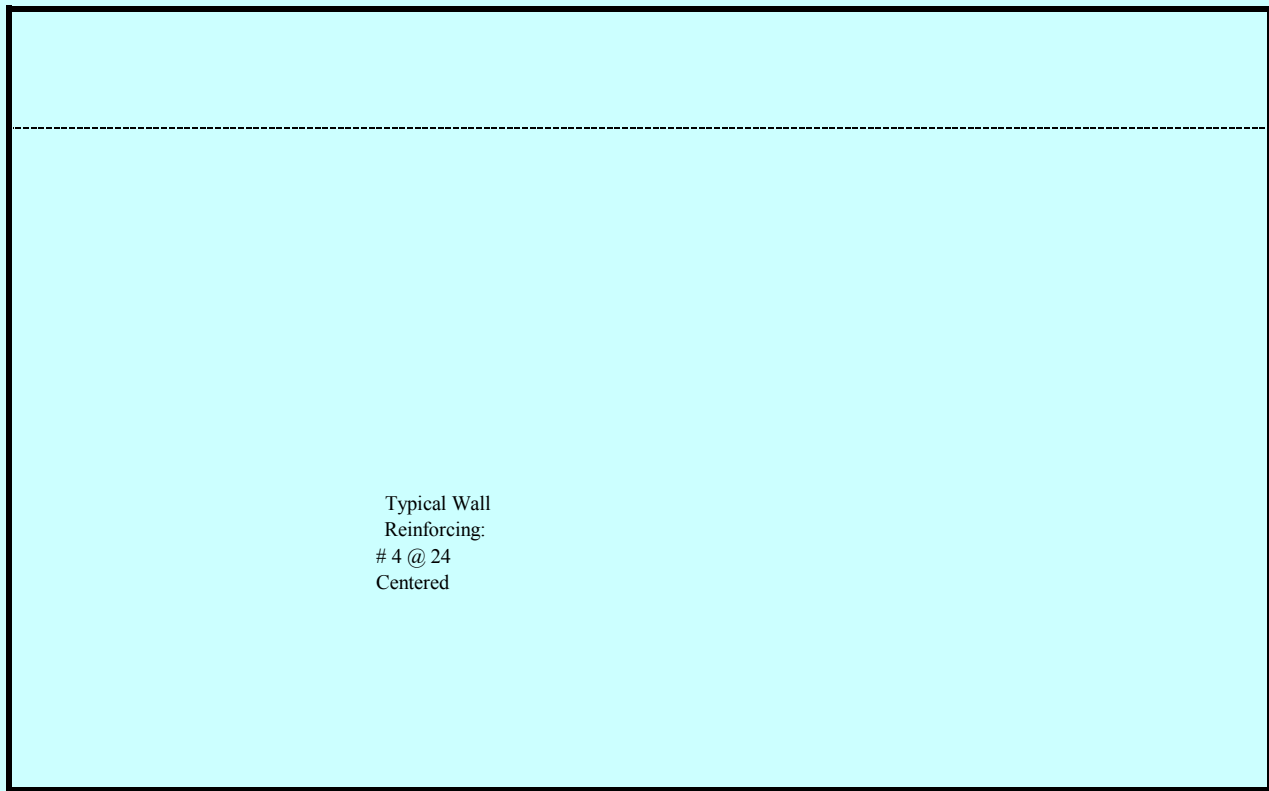
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Typical Wall
 Reinforcing:
 # 4 @ 24
 Centered

0.00 ft
 Parapet

h = 15.00 ft

WALL ELEVATION