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8" L x 8" W x 0.25" wall, A500 46ksi HSS Steel Column, S=17.7 M=40.7

Acceptable Sign Support Columns

direct_embed type foundation

Grade offset (ft)

Florida, FBC 7th Ed (2020), Sect 1609 wind

ref ASCE 7-16

140 **Wind Speed, Vult,** mph, from ASCE 7-16, Figure 26.5

IV **Risk Category;** I, Low; II, Normal; III, Substantial Hazard; IV, Essential/Critical

C **Wind Exposure;** C, House size obstructions for > 600 ft; D, no obstructions > 5000 ft

Sand, silty sand, clayey sand, silty gravel, clayey gravel ← Presumptive soil type

WIND LOAD CALC: ASCE 7-16 Section 29.3.1, Solid Freestanding Signs

Terrain K_{zt}=1, no hill, ridge, or escarpment >15' high; Directionality K_d=0.85; Gust G=0.85 rigid structure;

K_z=2.01*(H/900)^(2/9.5)ExpC, (700&11.5)ExpD; $q_{h,ult}$=0.00256*K_z*K_{zt}*K_d*V^2_{ult}; load = 0.6W+0, D ≤ 15 psf

A	B	C	D	E	F	Sign Segment ID	OAH
15.0	10.0					Segment Top Above Grade, Top, ft	15.0
20.0	1.8					Segment Width, W, ft	7.9
5.0	10.0					Segment Height, H, ft	15.0
100	18.3333					Segment Area, ft², adjusted for grade offset	
0.85	0.85					Velocity Pressure Exposure Coeff; K_z	
36.2	36.2					Velocity Pressure, $q_{h,ult}$, psf (per segment)	
1.80	1.65					Force coefficient C_f (per segment)	1.80
55.4	50.8					Wind Pressure, P_{ult}, psf = $q_{h,ult}$*G*C_f	
33.2	30.5					Wind Pressure, P_{asd}, psf = P_{ult}*0.6	
3.3	0.6					Wind Force, F_{seg}, kips = P_{asd}*$Area_{seg}$	
41.5	2.8					Wind Moment$_{seg}$ kip*ft = F_{seg}*$centroid_{seg}$	
32.6	1.5					$M_{col,seg}$ = (F_{seg}/2+F_{seg}*0.2*W_{seg}/spacing)*$centroid_{seg}$	
		14.0	ft OC			Column Spacing	
"grade" =	0 ft	3.88	kip			Total Shear at Grade, V = Sum (F_{seg})	
11.421		44.3	kip.ft			Total Moment at Grade, M = Sum (F_{seg} * centroid of segment)	
		2.91	kip			Column Shear, V_c = sum(F_{seg})/2+sum((F_{seg}*0.2)*width)/Spacing	
11.741	0.77	34.1	kip.ft			Column Moment at Grade M_c = sum(column moment$_{seg}$)	

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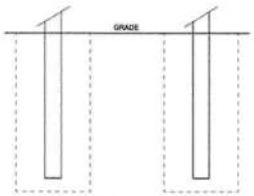
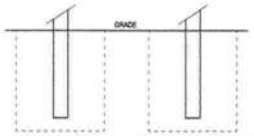
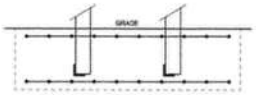
- Materials of construction: (Unless noted otherwise)
  - Structural steel (angles, shapes, plates, gussets): ASTM A-36, Fy = 36 ksi.
  - HSS round steel tubing: A-500, Grade B, Fy=42ksi; Rectangular: 46ksi.
  - Structural aluminum tubing: 6061-T5, or equivalent, Fy = 18 ksi at weld.
  - Structural pipe: A-53, Grade B, Type E or S, Fy = 35 ksi.
  - Anchor bolts: ASTM F1554 Grade 36 with heavy hex at bottom, not "L or J" bolts.
  - Connection bolts: A-325, snug tight.
  - Rebar: ASTM 615, #5 or larger - Grade 60, #5 or smaller - Grade 40, 3" cover.
  - Concrete: 2500 psi, 28 days.
  - Provide coatings to prevent any possibility of corrosion.
- Welding design and fabrication according to AWS D1.1.
  - AWS certification required for all structural welders.
  - Use D1.1 certified weld with same bending strength as column UNO.
- Embedded column acts as vertical reinforcement for drilled and cube foundations.
- Soil bearing capacity is Section 1806.2 Presumptive Load Bearing Value. Lateral bearing is doubled for sign poles per 1806.3.4. Soil choice types per Table 1806.2. **Soil type must be applicable for entire foundation. Flat level grade and presumptive soil type must be verified by sign installer.**



Drilled Shaft Foundation
3' dia x 7.8' deep
or 2.5' dia x 8.4' deep
or 2' dia x 9.1' deep



Cube Foundation
5.5' cube, L=W=D



Spread Foundation (Long is perpendicular to face)
5.6' long x 19' wide x 2.4' deep

#5, 12" OC each way, 2 mats, 3" from top and bottom, gentle bend around column

Weld 2' long 2" x 2" x 3/8" angle to bottom and side of column with 3/8" fillet weld all around

In 2500 psi or higher concrete, embed support columns, anchor bolts, and/or vertical rebar to 6" from bottom in drilled shaft and cube foundations, and to 3" from bottom in spread foundations.

Cube L=W=D	Drilled Shaft Foundation, laterally unconstrained at grade			Code Section 1807.3.2		
5.4	3.0	2.5	2.0	Diameter, b, ft	(or length and width of cube)	
5.4	7.8	8.3	9.1	Depth, D, ft	D= 0.5*A(1+[1+(4.36*Hcent/A)]^.5}	
1.6	2.9	3.3	3.8	A term	A = 2.34*F/(S1*b)	
544	775	831	905	S1 or S3	S1 = 2*Ssoil*D/3	
			150	psf/ft	Ssoil psf/ft for Sand, silty sand, clayey sand, silty gravel, clayey gravel	

Spread Foundation Q psf for Sand, silty sand, clayey sand, silty gravel, clayey gravel = 2000

5.6	Length, L, ft
19.0	Width, W, ft
2.3	Depth, D, ft
2687	Soil Bearing at Bottom of Foundation, Qbot, psf, Qbot = 1.3*(Q+100pcf*(D-1))
37.2	Total Weight, Wt, kips, Wt = L * W * D * .15 kips/ft3
1.5	Toe Length, Toe, ft, Toe = Wt / (W * Qbot)
2.3	Bearing Eccentricity, e, ft, e = L / 2 - Toe / 3
57.4	Overturning Capacity Calc, OT, kip.ft, OT = Wt / e / 1.5safety

MARK DISOSWAY, PE
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163 SW Midtown Place, Ste 103
Lake City, Florida 32025
386-754-5419

FLPE53915

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MARK D DISOSWAY LICENSE No 53915 STATE OF FLORIDA PROFESSIONAL ENGINEER

5/10/2022

This seal for structural engineering (Foundation & Support Column ONL

SCOPE OF WORK: Design sign support column and foundation to meet structural requirements of building code based on stated (not verified) site factors and size & shape based on sign installer's drawing, attached. **By using this engineering** the owner, manufacturer, and installer accept responsibility to: Design, build, and install sign cabinet, face, attachment, electrical, etc according to sign code, building code, and UL. Verify site conditions match stated wind speed, risk, exposure, topo, and soil factors or request engineering revision.

Signcraft & More, Inc

JOB # 220547

PYLON SIGN
2 Columns, Centered & Embedded in Foundation

Baya Pharmacy
1465 US Hwy 90 West
Lake City, FL

UNO valid for one sign at this location.

COLUMBIA COUNTY BUILDING DEPARTMENT REVIEWED FOR FIELD COPY CODE COMPLIANCE PLANS EXAMINER

COLUMBIA COUNTY BUILDING DEPARTMENT REVIEWED FOR FIELD COPY CODE COMPLIANCE PLANS EXAMINER

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COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

Acceptable Sign Support Columns	
direct_embed type foundation	
Grade offset (ft)	

Sand, silty sand, clayey sand, silty gravel, clayey gravel ← Presumptive soil type

WIND LOAD CALC: ASCE 7-16 Section 29.3.1, Solid Freestanding Signs
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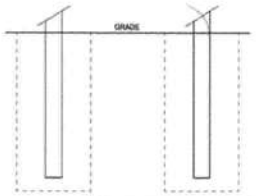

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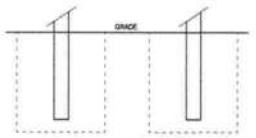

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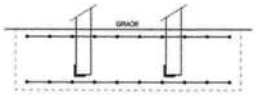

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