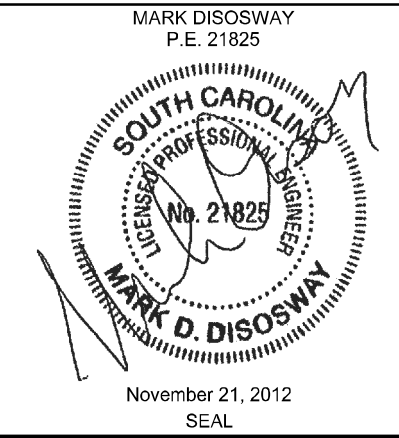


General Notes:

- NOTE: This report establishes the minimum requirements for wind load stability for the sign column and foundation design and square footage of signs as specified in outline drawing attached.** Sign board and face design is by manufacturer. It is the owner, contractor, and sign manufacturer's responsibility to provide sign face attachment, materials, and construction techniques, which comply with International Building Code 2009, requirements for the stated wind velocity.
- Construction Drawing Information
 - Basic Wind Speed, $V = 90$ MPH (3 second gust).
 - Wind Exposure = C.
 - Wind Importance Factor, $I = 1.0$.
 - Occupancy Classification, Category II.
 - Internal Pressure Coefficient, $C_{pi} = N/A$
- Wind pressures are determined using the criteria in ASCE 7-05.
 - Sign Height = 35 ft, $K_z = 1.02$; $K_d = 0.85$.
 - Figure 6-20, Solid Freestanding Walls and Solid Signs; Aspect Ratio, $B/s = 22/9' = 2.44$; Clearance Ratio, $s/h = 9/35' = .25$; $C_f = 1.8$ for Case A&B;
 - Rigid structure, gust factor $G = .85$.
 - Velocity Pressure = $q_h = 0.00256 * K_z * K_{zt} * K_d * V^2 * I = 0.00256 * 1.02 * 1.0 * 0.85 * 90^2 * 1.0 = 18$ psf
 - Factored Wind Pressure = $P = q_h * G * C_f = q_h * .85 * 1.8 = 27.5$ psf
 - Wind Force on Sign = $F = P * A = P * 304$ ft² = 8058 lb
 - Column Moment at Grade = $F * h = F * 24.7' = 198.9$ kip.ft
- Design, detailing, fabrication, and erection shall conform to the following specifications:
- International Building Code 2009, ASTM specifications, ACI-318 for reinforced concrete, American Welding Society Code for Welding in Building Construction, AISC Specification for Design, Fabrication, and Erection of Structural Steel for Buildings,
- Materials of construction: (Unless otherwise noted.)
 - Structural steel shall be A-36.
 - Structural steel tubing shall be A-500, Grade B, $F_y = 46$ ksi.
 - Structural aluminum tubing shall be 6053, 6061, or equivalent, $F_y = 20$ ksi minimum.
 - Structural piping shall be A-53, Grade B, Type E or S, $F_y = 35$ ksi.
 - Anchor bolts shall be A-307.
 - Connection bolts shall be A-325.
 - Rebar shall be Grade 60.
 - Concrete shall be 2500 psi.
- Welding...
 - Design and fabrication according to AWS D1.1.
 - AWS certification required for all structural welders.
 - E70XX electrodes for SMAW processes.
 - F7X-EXXX electrodes for SAW processes.
- Soil type and conditions must be verified by the contractor to assure minimum bearing capacity of 2000 psf and minimum lateral bearing capacity of 200 psf per foot of depth. If there is a question about bearing capacity, a soil test must be performed.
- Contractor shall verify all dimensions and conditions in the field before erection and notify the engineer of any discrepancies.
- Sign Column Bending, $S = M / F_b / sf = 198.9$ kip.ft * 0.7 twin column / 46 ksi / .66 = 55 in³
 - 12"x12"x3/8", .349" wall, HSS, 46ksi, Steel Tube; $S = 59.5$ in³
 - Above splice at 17' above grade: $S = M / F_b / sf = 68$ kip.ft / 46 ksi / .6 = 20.7 in³
8"x8"x3/8", .349" wall, HSS, 46ksi, Steel Tube; $S = 24.9$ in³
- Foundation Overturning
 - Drilled Shaft Foundation: $M_x = 198.9$ kip.ft * 0.7 twin column = 139.2 kip.ft
 - 3'-0" dia. x 10'-4" deep concrete caisson foundation. Calculated using FDOT Broms method in sand soil with 30 degree friction angle or clay with 1000 psf shear strength.

CERTIFICATION:
I hereby certify that the accompanying Wind Load Analysis demonstrates compliance with International Building Code 2009 to the best of my knowledge.

LIMITATION: This design is valid for one sign, at specified location. In case of conflict, structural requirements, scope of work, and builder responsibilities control.



Brandrite Sign Company, Inc.

Cook Out

LOCATION OF SIGN:
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Columbia, SC

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PRINTED DATE:
November 21, 2012

DRAWN BY: David Disosway	CHECKED BY: Mark Disosway P.E.
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FINALS DATE:
21Nov12

**JOB NUMBER:
1211051**

DRAWING NUMBER
S-1
OF 1 SHEET