

FRONT ELEVATION W/ CAISSON FOUNDATIONS (4 REQ'D)

SCALE: N.T.S.

1

NOTES
1.) SEE MANUFACTURERS DRAWINGS FOR ADDITIONAL DETAILS AND DIMENSIONS.

2.) SIGN CABINET AND CONNECTION BY DENYSE.

- * CLIENT - DENYSE
- * 2018 IBC W/GA AMENDMENTS
- * RISK CATEGORY II
- * 135 MPH WIND SPEED, EXP. C
- * (4) POLES, (4) FOOTINGS

MBI

MBI COMPANIES INC.

299 N. WEISGARBER RD.
KNOXVILLE, TN 37919

PHONE 865.584.0999
SIGN-ENGINEER.COM

PROJECT:
100 SW HWY 80, POOLER, GA 31322

DRAWING TITLE:

CITY OF POOLER

DRAWN BY:
TSM

CHECKED BY:
DSA

COMM. NO.
220966.010

DATE:
09/12/22

REV #	DATE	DRAWN BY

DRAWING NO.

DWG.

1



GROUND SIGN DESIGN SPECIFICATIONS:

1. REFER TO SIGN COMPANY'S DRAWINGS FOR MORE DETAILS. ALL DESIGNS, DETAILING FABRICATION AND CONSTRUCTION SHALL CONFORM TO:
2018 IBC W/GA AMENDMENTS
ACI
AISC
AMERICAN WELDING SOCIETY
LOCAL BUILDING CODES & ORDINANCES
2. CONCRETE: 2500 PSI @ 28 DAYS
3. STD. STEEL PIPE SECTION: ASTM A53 GRADE B (Fy=35 KSI), U.N.O.
4. STEEL PIPE SECTION (> 20" Ø): ASTM A252 GRADE 3 (Fy=42 KSI MIN.) U.N.O.
5. HSS ROUND SECTION: ASTM A500 GRADE B (Fy=42 KSI) U.N.O.
6. HSS SQUARE/RECTANGULAR SECTION: ASTM A500 GRADE B (Fy=46 KSI)
7. W SHAPES: ASTM A992 (Fy = 50 KSI)
8. ANCHOR BOLTS: ASTM F1554 GRADE 36 U.N.O. (ALTERNATES GRADE 55 & 105)
9. CONNECTION BOLTS: ASTM A325
10. THREADED RODS: ASTM A193 GRADE B7
11. STEEL ANGLES, CHANNELS, STRUCTURAL SHAPES & PLATES ASTM A36
12. REINFORCING: GRADE 60 ASTM A615
13. PROVIDE A MINIMUM OF THREE INCHES OF CONCRETE COVER OVER EMBEDDED STEEL.
14. THE CONTRACTOR (INSTALLER) IS RESPONSIBLE FOR THE MEANS & METHODS OF CONSTRUCTION IN REGARDS TO JOBSITE SAFETY.
15. NO FIELD HEATING FOR BENDING OR CUTTING OF STEEL SHALL BE ALLOWED WITHOUT THE ENGINEER'S APPROVAL.
16. WELDING ELECTRODES: E70XX
17. ALLOWABLE SOIL BEARING PRESSURE ASSUMED: 2000 PSF
18. ASSUMED HORIZONTAL (PASSIVE PRESSURE) ASSUMED AT 150 PSF/FT OF DEPTH. ISOLATED LATERAL BEARING FOUNDATIONS FOR SIGNS NOT ADVERSELY AFFECTED A 1/2" MOTION AT THE GROUND SURFACE DUE TO SHORT TERM LATERAL LOADS SHALL BE PERMITTED TO BE DESIGNED USING TWO TIMES THE TABULATED CODE VALUES.
19. ALL FOOTINGS SHALL BEAR ON FIRM UNDISTURBED RESIDUAL SOIL AND/OR ENGINEERED EARTH.
20. FILL COMPACTED TO 98% OF ITS MAXIMUM DRY DENSITY AS PER ASTM D 698-70 (STANDARD PROCTOR) UNLESS NOTED OTHERWISE. THE SOIL BEARING CAPACITY IS TO BE VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION. IF ALLOWABLE BEARING AND/OR LATERAL PRESSURE IS LESS THAN THE ABOVE ASSUMED AND/OR CALCULATED PRESSURES, THE ENGINEER SHOULD BE CONTACTED FOR RE-EVALUATION.
21. EXCAVATION SHALL BE FREE OF LOOSE SOIL BEFORE POURING CONCRETE.
22. WELDERS SHALL BE CERTIFIED FOR THE TYPE OF WELDING.
23. ADEQUATELY BRACE POLE(S) UNTIL CONCRETE HAS SET UP FOR 14 DAYS.
24. GROUT UNDER BASE PLATES WITH NON-SHRINK GROUT.
25. THIS ENGINEER DOES NOT WARRANT THE ACCURACY OF DIMENSIONS FURNISHED BY OTHERS.
26. ALL EXPOSED STEEL SHALL BE PAINTED WITH AN ENAMEL PAINT TO INHIBIT CORROSION.
27. THIS DESIGN IS FOR THE INDICATED ADDRESS ONLY, AND SHOULD NOT BE USED AT OTHER LOCATIONS WITHOUT WRITTEN PERMISSION OF THE ENGINEER.
28. DESIGN OF DETAILS AND STRUCTURAL MEMBERS NOT SHOWN, BY OTHERS.

WIND DATA

Building Code	2018 IBC with GA A Importance Factor, I	1.0	Damping Ratio, β	0.005	
Wind Load Criteria	ASCE 7-16	Directionality Factor, K_d ⁽²⁾	0.85	Natural Frequency, n_1	2.27 Hz
Wind Speed, V	135 mph	Topography Factor, K_z	1.0	Gust Effect Factor, G	0.85
Exposure Category	C	Base Pressure, $q/(K_d)$	23.8 psf	ASD Wind Load Factor, γ ⁽³⁾	0.6
Wind Pressure Override per Jurisdiction Requirement	0 psf	Notes: (1) Loading values in chart below are based upon calculated on hidden sheet using derived V-M eq			

Notes: (1) Loading values in chart below are based upon average K_z values for each segment. Actual values are calculated on hidden sheet using derived V-M equations. Chart is provided for information purposes only.
(2) Wind directionality (K_d) factor is 0.95 for Single Pole (Round) segments instead of 0.85. The C_f value from Fig. 6-21 has been increased by 0.95/0.85 to account for this variation.
(3) Wind pressures listed below have already been multiplied by the ASD Wind Load Factor, γ .

DEFLECTION ANALYSIS

Deflection Limit	H/60
Deflection at 0.7"W	1.20 in
Deflection Ratio	H/139

GEOMETRY INPUT (1)

No. of Poles		1		No. of Footings		1		{3} Wind pressures listed below have already been multiplied by the ASD Wind Load Factor, γ .									
Section	Location	Type	Height	Width	Horiz. Offset	Area	Top Elev.	Centroid	K_z	C_f	Wind Press.	Support Pole Loads			Footings Loads		
			ft	ft	ft	sq ft	ft	ft			Trib. Factor	Shear kips	Moment k-ft	Trib. Factor	Shear kips	Moment k-ft	
1	Base	Subgrade	0.25			0.0	0.3	0.1	0.85	1.46	25.1	1.0	0.0	0.0	1.0	0.0	0.0
2		Multiple Poles w/ Cabinet	13.88	5.05		70.1	14.1	7.9	0.85	1.57	27.0	1.0	1.9	14.9	1.0	1.9	14.9
Overall Height:			13.88 ft			Summation based upon averages above:						1.9	14.9	1.9	14.9		
			Actual base reactions based upon V-M equations:						1.9	15.0	1.9	15.0					

SUPPORT POLE DESIGN SUMMARY

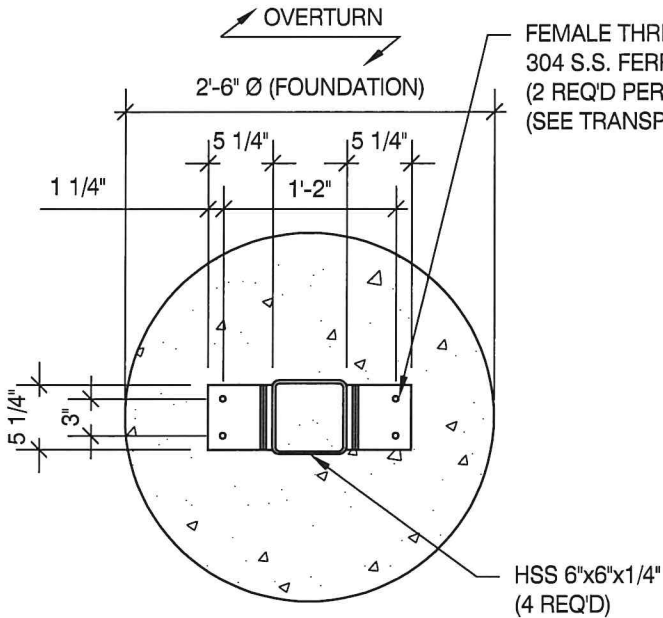
Base Elev	Section	Axis	Required Strength Values (ASD)				Allowable Strength Values (ASD)				Unity Ratios				Interaction Ratios		Status
			V_r	M_r	T_r	P_r	V_c	M_c	T_c	P_c	V_r/V_c	M_r/M_c	T_r/T_c	P_r/P_c	P-M	P-M-V-T	
			kips	kip-ft	kip-ft	kips	kips	kip-ft	kip-ft	kips							
ft																	
0.00	HSS6X6X1/4	Strong	1.9	15.0	1.9	1.0	45.5	25.7	21.2	38.9	4.2%	58.2%	9.0%	2.5%	60.7%	0.0%	✓

FOUNDATION DESIGN SUMMARY

Type	Diameter ft	Width ft	Thickness ft	Length ft	Depth ft	Volume CY	Reinforcing	Status	Allowable Soil Pressure
✓ Caisson	2.50	--	--	--	6.50	1.18	(4) #6 Vert. w/ #3 Ties @ 12 in o.c. and (6) @ 4 in o.c. Top	OK	300 psf/ft

CALCULATIONS BASED ON WORST-CASE TRIBUTARY AREA

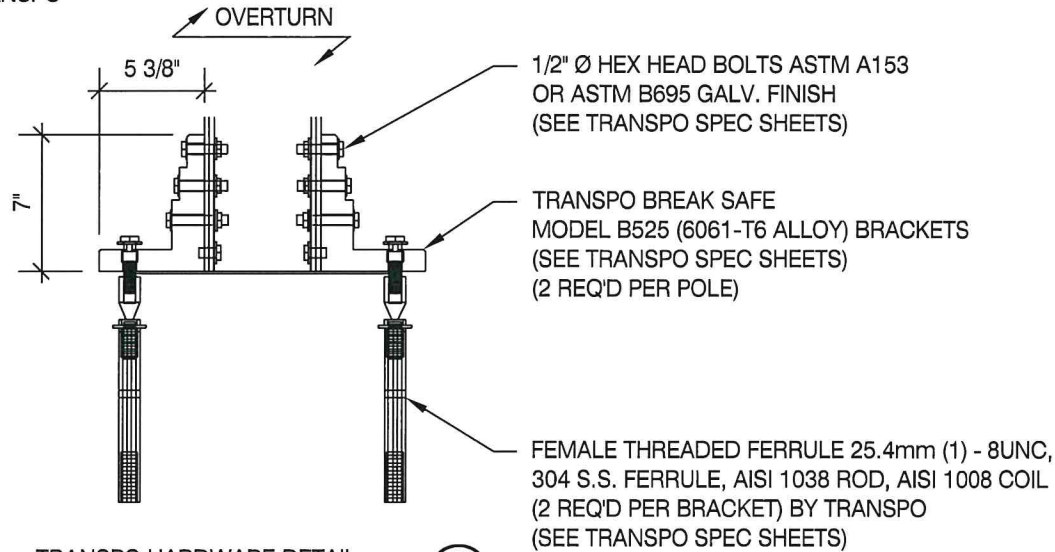
SCALE: N.T.S.



BOLT PATTERN

SCALE: N.T.S.

FEMALE THREADED FERRULE 25.4mm (1) - 8UNC,
304 S.S. FERRULE, AISI 1038 ROD, AISI 1008 COIL
(2 REQ'D PER BRACKET) BY TRANSP
(SEE TRANSP SPEC SHEETS)



TRANSP HARDWARE DETAIL

SCALE: N.T.S.

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