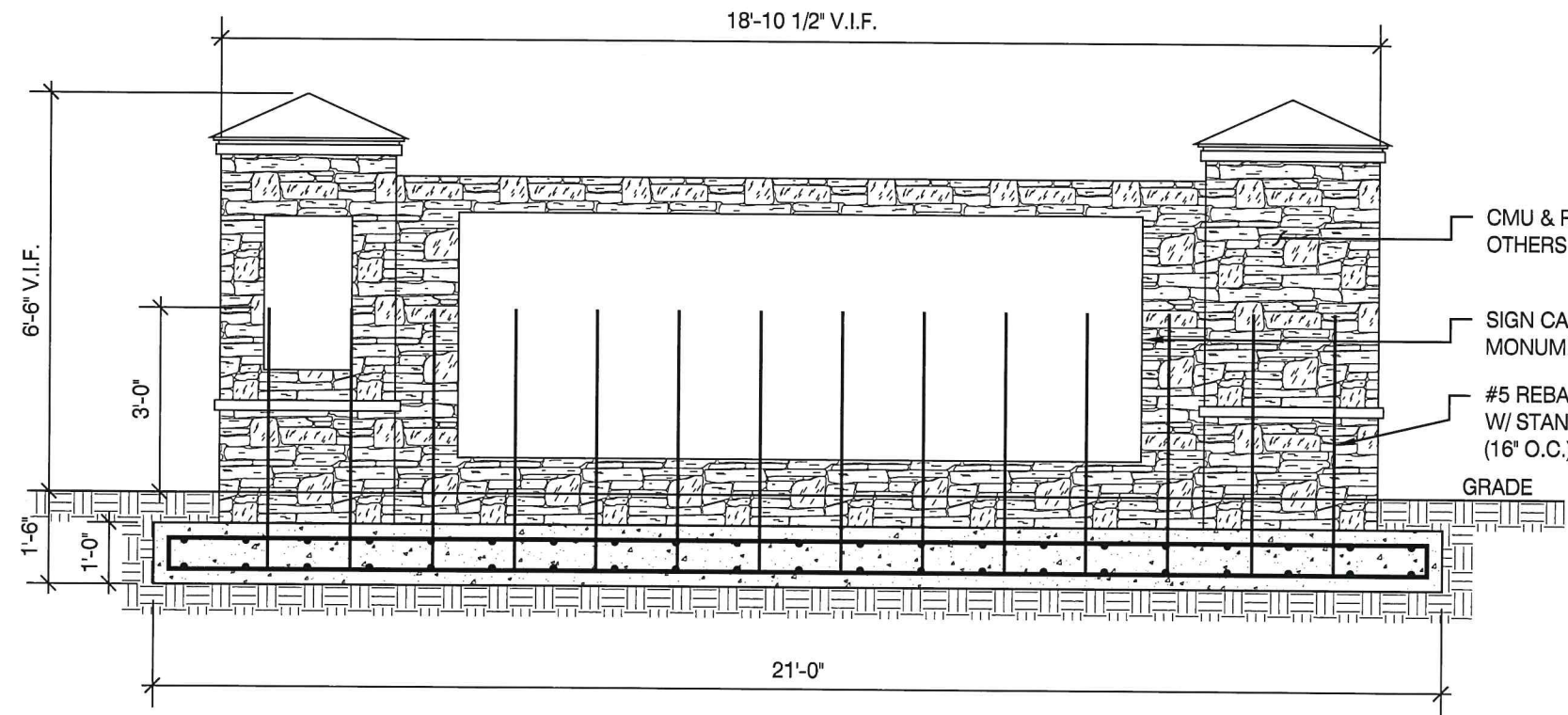


THE SCOPE OF THIS ENGINEERING IS LIMITED TO FOUNDATION ONLY. ALL OTHER ASPECTS ARE EXCLUDED FROM THE SCOPE OF THIS ENGINEERING

- NOTES
- 1.) SEE MANUFACTURERS DRAWINGS FOR ADDITIONAL DETAILS AND DIMENSIONS.
 - 2.) SIGN CABINET AND CONNECTION BY SIGNS UNLIMITED - NC.

- * CLIENT - SIGNS UNLIMITED - NC
- * 2018 NORTH CAROLINA BUILDING CODE
- * RISK CATEGORY II
- * 120 MPH WIND SPEED, EXP. C
- * SEISMIC DESIGN CATEGORY C
- * (1) FOOTING



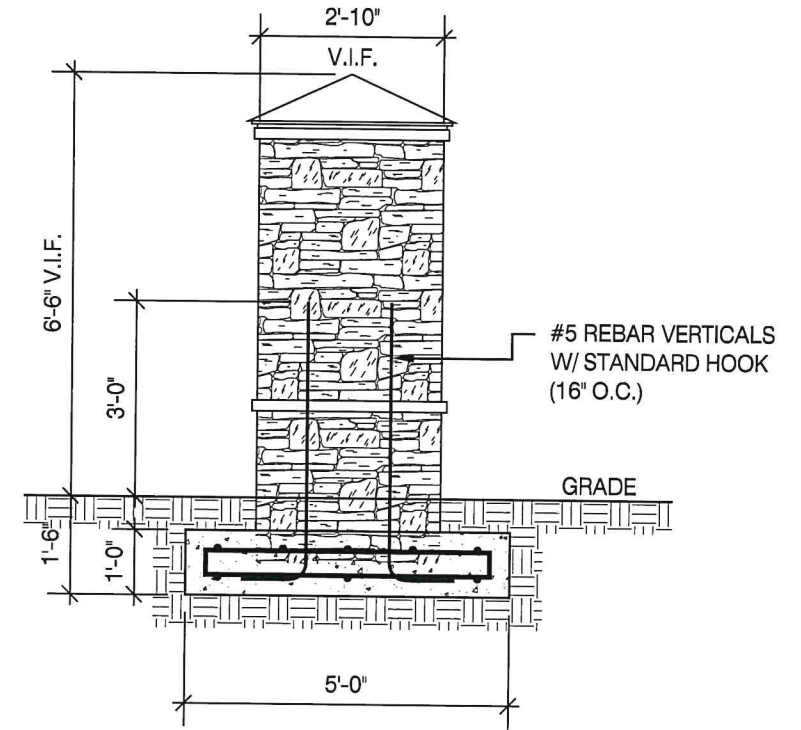
SPREAD FOUNDATION FRONT VIEW
SCALE: N.T.S.

1

FOUNDATION TO BE A MAX OF 2'-0" BELOW GRADE. CAN BE ADJUSTED AS NEEDED FOR COURSING OF CMU.

- CMU & ROCK VENEER BY OTHERS
- SIGN CABINET AND CONNECTION TO MONUMENT BY SIGNS UNLIMITED - NC
- #5 REBAR VERTICALS W/ STANDARD HOOK (16" O.C.)

SPREAD FOUNDATION
REQUIRED REINFORCEMENT
#6 BAR @ 18" O.C. MAX. EACH WAY T+B
#5 BAR VERT. AS REQ'D TO HOLD REBAR MATS IN PLACE



SPREAD FOUNDATION SIDE VIEW
SCALE: N.T.S.

2



MBI COMPANIES INC.
299 N. WEISGARBER RD.
KNOXVILLE, TN 37919
PHONE 865.584.0999
SIGN-ENGINEER.COM

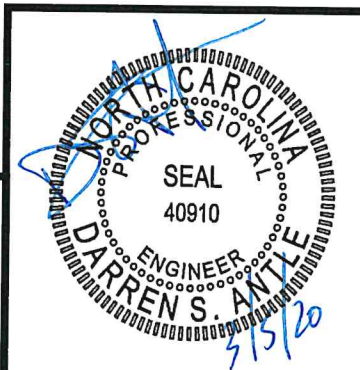
PROJECT:
215 Brightwater Dr., Lillington, NC 27546
DRAWING TITLE:
Brightwater Campus Harnett Health

DRAWN BY: FCM
CHECKED BY: DSA
COMM. NO.: 200149.011

DATE: 03/05/20

DRAWING NO.
DWG.
1

REV #	DATE	DRAWN BY



GROUND SIGN DESIGN SPECIFICATIONS:

REFER TO SIGN COMPANY'S DRAWINGS FOR MORE DETAILS.
ALL DESIGNS, DETAILING FABRICATION AND CONSTRUCTION SHALL CONFORM TO:

- 2018 NORTH CAROLINA BUILDING CODE
- ACI
- AISC
- AMERICAN WELDING SOCIETY
- LOCAL BUILDING CODES & ORDINANCES

CONCRETE: 3000 PSI @ 28 DAYS

STD. STEEL PIPE SECTION: ASTM A53 GRADE B (Fy=35 KSI), U.N.O.

STEEL PIPE SECTION (> 20" Ø): ASTM A252 GRADE 3 (Fy=42 KSI MIN.) U.N.O.

HSS ROUND SECTION: ASTM A500 GRADE B (Fy=42 KSI) U.N.O.

HSS SQUARE/RECTANGULAR SECTION: ASTM A500 GRADE B (Fy=46 KSI)

W SHAPES: ASTM A992 (Fy = 50 KSI)

ANCHOR BOLTS: ASTM F1554 GRADE 36 U.N.O. (ALTERNATES GRADE 55 & 105)

CONNECTION BOLTS: ASTM A325

THREADED RODS: ASTM A193 GRADE B7

STEEL ANGLES, CHANNELS, STRUCTURAL SHAPES & PLATES ASTM A36

REINFORCING: GRADE 60 ASTM A615

PROVIDE A MINIMUM OF THREE INCHES OF CONCRETE COVER OVER EMBEDDED STEEL.

THE CONTRACTOR (INSTALLER) IS RESPONSIBLE FOR THE MEANS & METHODS OF CONSTRUCTION IN REGARDS TO JOBSITE SAFETY.

NO FIELD HEATING FOR BENDING OR CUTTING OF STEEL SHALL BE ALLOWED WITHOUT THE ENGINEER'S APPROVAL.

WELDING ELECTRODES: E70XX

ALLOWABLE SOIL BEARING PRESSURE ASSUMED: 2000 PSF

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.

ALL FOOTINGS SHALL BEAR ON FIRM UNDISTURBED RESIDUAL SOIL AND/OR ENGINEERED EARTH.

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.

EXCAVATION SHALL BE FREE OF LOOSE SOIL BEFORE POURING CONCRETE.

WELDERS SHALL BE CERTIFIED FOR THE TYPE OF WELDING.

ADEQUATELY BRACE POLE(S) UNTIL CONCRETE HAS SET UP FOR 14 DAYS.

GROUT UNDER BASE PLATES WITH NON-SHRINK GROUT.

THIS ENGINEER DOES NOT WARRANT THE ACCURACY OF DIMENSIONS FURNISHED BY OTHERS.

ALL EXPOSED STEEL SHALL BE PAINTED WITH AN ENAMEL PAINT TO INHIBIT CORROSION.

THIS DESIGN IS FOR THE INDICATED ADDRESS ONLY, AND SHOULD NOT BE USED AT OTHER LOCATIONS WITHOUT WRITTEN PERMISSION OF THE ENGINEER.

DESIGN OF DETAILS AND STRUCTURAL MEMBERS NOT SHOWN, BY OTHERS.

WIND DATA

Building Code	2018 North Carolina	Importance Factor, I	1.0	Damping Ratio, β	0.005
Wind Load Criteria	ASCE 7-10	Directionality Factor, K_d ⁽⁷⁾	0.85	Natural Frequency, n	0.00 Hz
Wind Speed, V	120 mph	Topography Factor, K_z	1.0	Gust Effect Factor, G	0.85
Exposure Category	C	Base Pressure, $v(q_z/K_z)$	18.8 psf	ASD Wind Load Factor, γ ⁽⁴⁾	0.6
Wind Pressure Override per Jurisdiction Requirement	0 psf				

DEFLECTION ANALYSIS

Deflection Limit	H/60
Deflection at 0.7*W	
Deflection Ratio	

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 .

GEOMETRY INPUT ⁽¹⁾

Section	Location	Type	Height ft	Width ft	Horiz. Offset ft	Area sq ft	Top Elev. ft	Centroid ft	K_z	C_f	Wind Press. psf	Support Pole Loads			Footing Loads		
												Trib. Factor	Shear kips	Moment k-ft	Trib. Factor	Shear kips	Moment k-ft
1	Base	Subgrade	0.50			0.0	0.5	0.3	0.85	1.46	19.8	1.0	0.0	0.0	1.0	0.0	0.0
2		Single Pole w/ Cabinet	6.50	19.00		123.5	7.0	4.1	0.85	1.43	19.4	1.0	2.4	9.8	1.0	2.4	9.8
3		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
4		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
5		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
6		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
7		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
8		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
9		None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
10	Top	None				0.0	7.0	7.0	0.85	1.46	19.8	0.0	0.0	0.0	0.0	0.0	0.0
Overall Height:			6.50 ft				Summation based upon averages above:			2.4	9.8	2.4	9.8	Actual base reactions based upon V-M equations:			

FOUNDATION DESIGN SUMMARY

Type	Diameter ft	Width ft	Thickness ft	Length ft	Depth ft	Volume CY	Reinforcing	Status	Allowable Soil Pressure
<input type="checkbox"/> Caisson									
<input type="checkbox"/> Vertical Slab									
<input checked="" type="checkbox"/> Spread	--	21.00	--	5.00	1.00	3.89	#6 at 18 in o.c. E.W. T&B	OK	2000 psf

NOTES

- 1.) SEE MANUFACTURERS DRAWINGS FOR ADDITIONAL DETAILS AND DIMENSIONS.
- 2.) SIGN CABINET AND CONNECTION BY SIGNS UNLIMITED - NC.

- * CLIENT - SIGNS UNLIMITED - NC
- * 2018 NORTH CAROLINA BUILDING CODE
- * RISK CATEGORY II
- * 120 MPH WIND SPEED, EXP. C
- * SEISMIC DESIGN CATEGORY C
- * (1) FOOTING

THE SCOPE OF THIS ENGINEERING IS LIMITED TO FOUNDATION ONLY. ALL OTHER ASPECTS ARE EXCLUDED FROM THE SCOPE OF THIS ENGINEERING



MBI COMPANIES INC.
299 N. WEISGARBER RD.
KNOXVILLE, TN 37919
PHONE 865.584.0999
SIGN-ENGINEER.COM

PROJECT:
215 Brightwater Dr., Lillington, NC 27546

DRAWING TITLE:

Brightwater Campus Harnett Health

DRAWN BY: FCM
CHECKED BY: DSA
COMM. NO. 200149.011

DATE: 03/05/20

REV #	DATE	DRAWN BY

DRAWING NO.
DWG.
2

