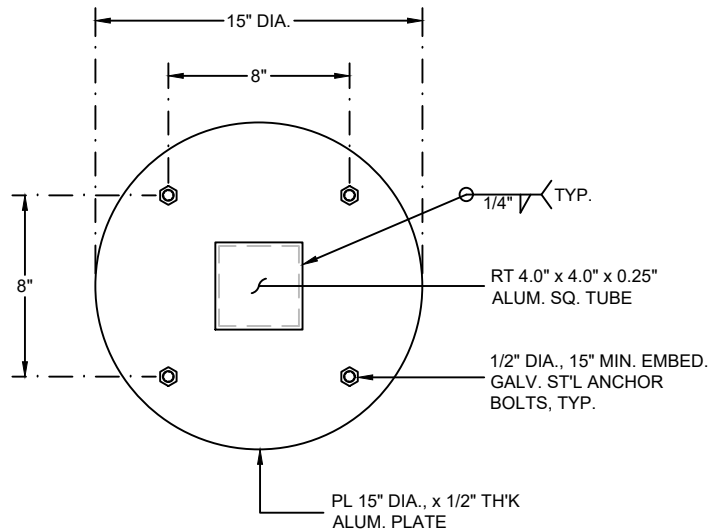


ELEVATION

N.T.S.



BASE PLATE

t=1/2"

N.T.S.

Outrigger Design		ALUM. RECT. TUBE		6061-T6 W			
Sec. Mod. Req'd.		USE					
Sy =	0.27	RT	4.0" x	2.0" x	0.125"	Sy =	0.992 (OK)
Base Plate		ALUM. PLATE		6061-T6			
Thickness Req'd.		USE					
t =	0.29	PL 15" DIA., x	1/2" THK.			t =	0.500 (OK)
Anchor Design		GALV. STL. ANCHOR BOLT					
Tension Req'd.		USE					
T =	530	1/2" DIA., x	15" MIN. EMBED			T =	4260
Shear Req'd.							
V =	38					V =	2270
Unity =		( 530 /	4260 ) +	( 38 /	2270 ) =	0.14	< 1 (OK)

Sign Design Based On 2018 IBC

Job #	JTS_248821
Project	Chipotle Mexican Grill #4098 - Clearance Bar
Job Location	1103 SW Oldham Parkway Lee's Summit, MO

#### INPUT DATA

Exposure category (B, C or D)	=	C
Risk Category	=	II
Ultimate Design Windspeed	V <sub>ULT</sub>	= 110 MPH
Topographic factor	K <sub>zt</sub>	= 1 Flat
Height of the sign	h	= 9.33 FT
Average Vertical dimension (for wall, s = h)	s	= 0.69 FT
Horizontal dimension	B	= 8.00 FT
Dimension of return corner	L <sub>r</sub>	= 0.17 FT

#### ANALYSIS

##### Velocity pressure

$$q_z = 0.00256 K_z K_{zt} K_d V^2 K_e = 22.38 \text{ PSF}$$

where:

q<sub>z</sub> = velocity pressure at height h. ( Eq. 26.10-1 page. 268)

K<sub>z</sub> = velocity pressure exposure coefficient

evaluated at height above gRnd. level, h (Tab. 26.10-1, page 268)

K<sub>d</sub> = wind directionality factor. (Tab. 26.6-1, page 266)

K<sub>e</sub> = ground elevation factor, see (Tab. 26.9-1, page 268)

##### Wind Force Case A: resultant force through geometric center

Max horizontal wind pressure =	p = q <sub>h</sub> G C <sub>f</sub> =	=	35	PSF
where:	G = gust effect factor. (Sec. 26.11-1, page 269).	=	0.85	
	C <sub>f</sub> = net force coefficient. (Fig. 29.3-1, page 323)	=	1.86	
	A <sub>e</sub> = B s = the gross area	=	5.49	FT <sup>2</sup>
	Estimated sign cabinet weight	=	34	LBS.

#### DESIGN SUMMARY

Allowable Stress Design Wind Factor =

Design Wind Pressure = 0.6 x p = 21.21 PSF

Design Windforce, F = 21.21 x A s = 0.12 KIPS

Moment Arm = 6.30 FT

Design Moment = F x Moment Arm = 0.73 KIP-FT

#### Footing Design (Nonconstrained)

Diameter =	2.00	FT
Soil Pressure =	150.00	PSF/FT
S <sub>1</sub> =	232.19	PSF
A =	0.59	FT
EMBED. =	2.32	FT
	33" FROST DEPTH	

24" DIA. DEPTH = 3' - 3"

#### Pole Design

Sec. Mod. Req'd.				USE	6061-T6 W	$F_{ty} = 15.00$	KSI
S =	1.03	RT	4.0" x	4.0" x	0.25"	S =	4.41 IN <sup>3</sup>
		Torsion =	1.93		KIP-IN	t =	0.250 IN
Torsion constant, C:				b - t =	3.750	d =	4.0 IN
C = 2(b-t)(d-t)t - 4.5(4.1416)t <sup>4</sup> /3				d - t =	3.750	b =	4.0 IN
$F_s =$		9.00	KSI	C =	6.971		
$T_n = F_s C =$		62.74		a =	14.063		
$T_n / \Omega =$		38.02	KSI				
Torsional stress =		0.27	KSI				
Unity =		( 1.03 / 4.41 ) <sup>2</sup> +		( 0 /	38.0 ) <sup>2</sup> =	0.05	< 1 (OK)

#### NOTES :

##### GENERAL :

- SIGN DESIGN IS BASED ON ADEQUATE EXISTING SUPPORT ELEMENTS.
- PROVIDE ISOLATION OF DISSIMILAR MATERIALS.
- COAT ALUMINUM IN CONTACT WITH CONCRETE WITH ZINC RICH PAINT.
- THERE IS NO PROTECTION ZONE AS DEFINED IN AISC 341-16.
- PROVIDE FULLY WELDED END CAPS AT EXPOSED OPEN ENDS OF STEEL / ALUM. TUBES, MATCH THICKNESS LIKE FOR LIKE.
- SLOPE TOP OF EXPOSED FOOTING AWAY FROM DIRECT BURIAL POSTS
- ALL EXPOSED STEEL TO BE PRIMED & PAINTED (POWDER COAT AS AN OPTION) OR ALTERNATIVELY USE GALVANIZED STEEL.

##### ANCHORS :

- BRAND NAME APPROVED POST INSTALLED ANCHORS SPECIFIED ON PLANS MAY BE SUBSTITUTED BY APPROVED EQUAL.

##### STEEL :

DESIGN AND FABRICATION ACCORDING TO 2018 IBC

- PLATE, ANGLE, CHANNEL TEE: ASTM A36
- WIDE FLANGE: ASTM A992
- ROUND PIPE: ASTM A53 GRADE B OR EQUIVALENT.
- HSS ROUND, SQUARE, AND RECTANGULAR TUBE: ASTM A500 GRADE B OR EQUIVALENT.
- ALL ANCHORS BOLTS SHOULD BE: ASTM F1554
- ALL STEEL MACHINED BOLTS SHOULD BE: ASTM A307 OR ASTM A449
- ALL STAINLESS STEEL MACHINED BOLTS SHOULD BE: ASTM A276
- ALL BOLTS TO BE ZINC COATED: ASTM B633
- DEFORMED REINFORCING REBAR: ASTM A615 GRADE 60.

##### ALUMINUM :

DESIGN AND FABRICATION ACCORDING TO 2015 ALUM. DESIGN MANUAL  
PLATES, ANGLES, CHANNELS, TEE, AND SQUARE TUBING: ALUMINUM  
ALLOY 6061 - T6 WITH 0.098 LBS PER CUBIC INCH.

##### WELDING :

##### STEEL

DESIGN AND FABRICATION ACCORDING TO AWS D1.1. / D1.3

- AWS CERTIFICATION REQUIRED FOR ALL STRUCTURAL WELDERS.
- E70 XX ELECTRODE FOR SMAW PROCESS.
- E70S XX ELECTRODE FOR GMAW PROCESS.
- E77 XX ELECTRODE FOR GTAW PROCESS.
- E70T XX ELECTRODE FOR FCAW PROCESS.

ALL WELDS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20FT-LB AT ZERO 0° AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD OR MFG'S. CERTIFICATION.

##### ALUMINUM

DESIGN AND FABRICATION ACCORDING TO AWS D1.2. ALL WELDING IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS A.5.10.  
FILLER ALLOYS PER TABLES M.9.1 & M.9.2 OF 2015 ALUMINUM DESIGN MANUAL.

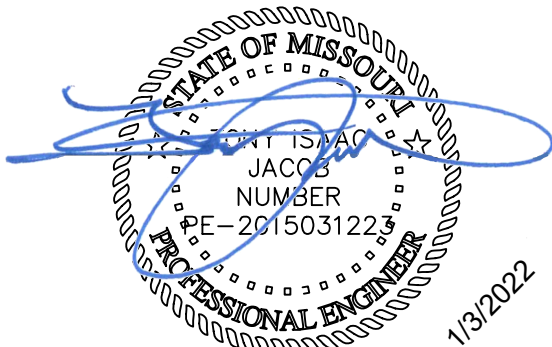
##### CONCRETE :

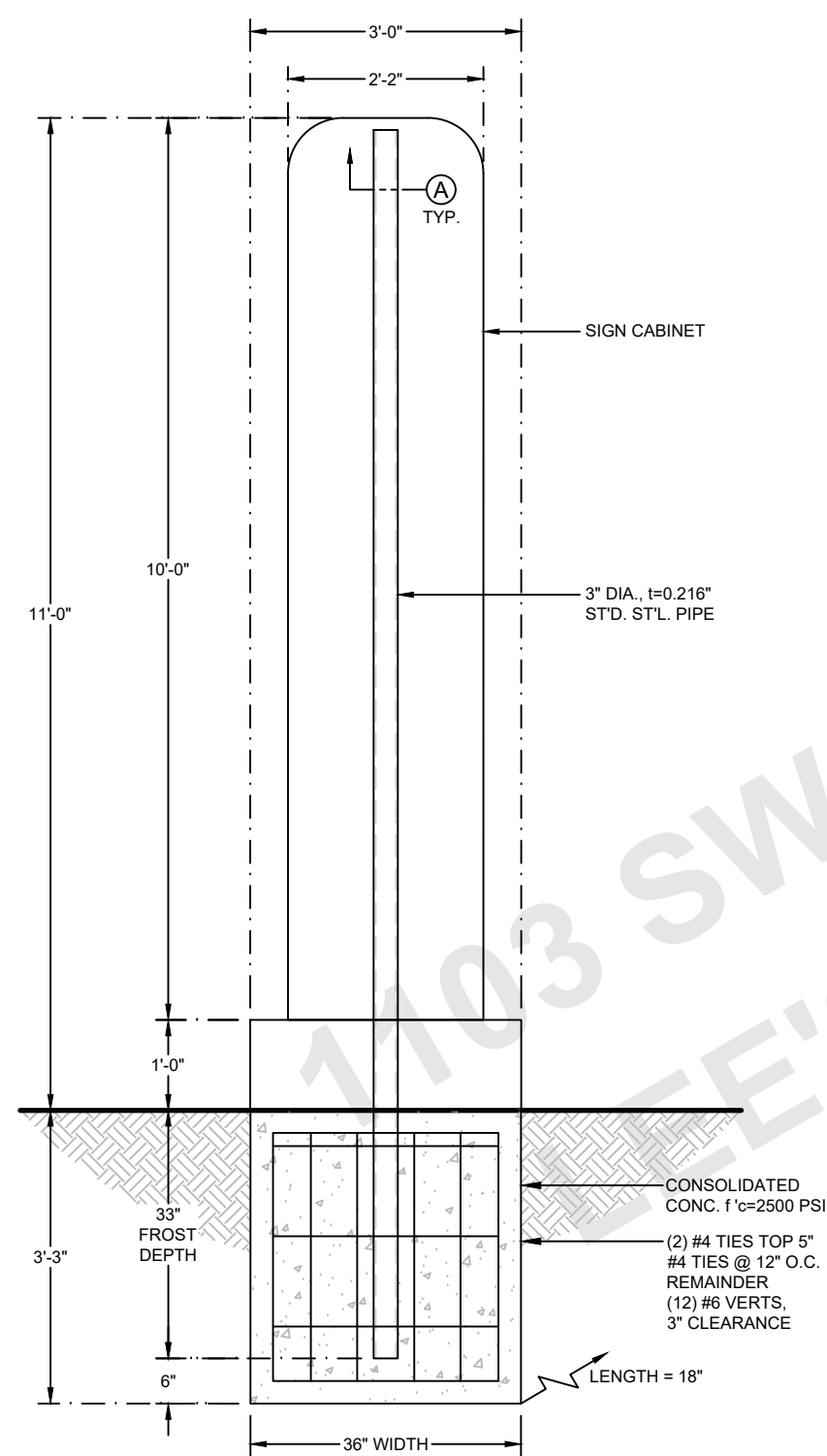
DESIGN AND CONSTRUCTION ACCORDING TO ACI 318-14

- COMPRESSIVE STRENGTH AT 28 DAYS, f'c= 2500 PSI MINIMUM.
- CEMENT TYPE II OR IV. W/C RATIO 0.45 BY WEIGHT FOR PIER AND CAISSON
- FOOTINGS CONCRETE MUST BE POURED AGAINST UNDISTURBED EARTH.
- MAINTAIN A MINIMUM 3" CONCRETE COVER OVER ALL EMBEDDED STEEL.

##### SOIL:

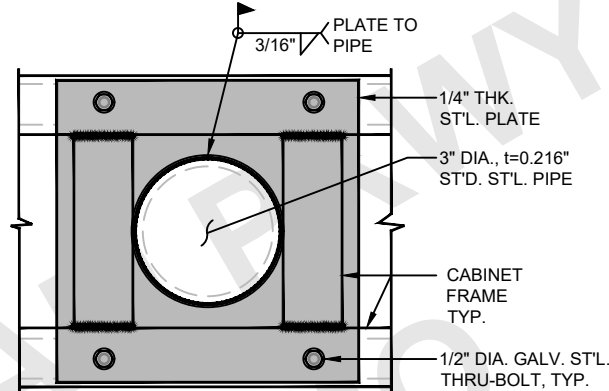
LATERAL SOIL BEARING PER IBC CLASS 4 TABLE 1806.2 (150 PSF/FT). MODIFIED PER SECTION 1806.3.4.





ELEVATION

N.T.S.



CONNECTION

(3 PLACES)

N.T.S.

(SPECIAL INSPECTION REQUIRED FOR FIELD WELD)

NOTES :

GENERAL :

- SIGN DESIGN IS BASED ON ADEQUATE EXISTING SUPPORT ELEMENTS.
- PROVIDE ISOLATION OF DISSIMILAR MATERIALS.
- COAT ALUMINUM IN CONTACT WITH CONCRETE WITH ZINC RICH PAINT.
- THERE IS NO PROTECTION ZONE AS DEFINED IN AISC 341-16.
- PROVIDE FULLY WELDED END CAPS AT EXPOSED OPEN ENDS OF STEEL / ALUM. TUBES, MATCH THICKNESS LIKE FOR LIKE.
- SLOPE TOP OF EXPOSED FOOTING AWAY FROM DIRECT BURIAL POSTS
- ALL EXPOSED STEEL TO BE PRIMED & PAINTED (POWDER COAT AS AN OPTION) OR ALTERNATIVELY USE GALVANIZED STEEL.

ANCHORS :

- BRAND NAME APPROVED POST INSTALLED ANCHORS SPECIFIED ON PLANS MAY BE SUBSTITUTED BY APPROVED EQUAL.

STEEL :

DESIGN AND FABRICATION ACCORDING TO 2018 IBC

- PLATE, ANGLE, CHANNEL TEE: ASTM A36
- WIDE FLANGE: ASTM A992
- ROUND PIPE: ASTM A53 GRADE B OR EQUIVALENT.
- HSS ROUND, SQUARE, AND RECTANGULAR TUBE: ASTM A500 GRADE B OR EQUIVALENT.
- ALL ANCHORS BOLTS SHOULD BE: ASTM F1554
- ALL STEEL MACHINED BOLTS SHOULD BE: ASTM A307 OR ASTM A449
- ALL STAINLESS STEEL MACHINED BOLTS SHOULD BE: ASTM A276
- ALL BOLTS TO BE ZINC COATED: ASTM B633
- DEFORMED REINFORCING REBAR: ASTM A615 GRADE 60.

ALUMINUM :

DESIGN AND FABRICATION ACCORDING TO 2015 ALUM. DESIGN MANUAL PLATES, ANGLES, CHANNELS, TEE, AND SQUARE TUBING: ALUMINUM

- ALLOY 6061 - T6 WITH 0.098 LBS PER CUBIC INCH.

WELDING :

STEEL

DESIGN AND FABRICATION ACCORDING TO AWS D1.1. / D1.3

- AWS CERTIFICATION REQUIRED FOR ALL STRUCTURAL WELDERS.
- E70 XX ELECTRODE FOR SMAW PROCESS.
- E70S XX ELECTRODE FOR GMAW PROCESS.
- ER7 XX ELECTRODE FOR GTAW PROCESS.
- E70T XX ELECTRODE FOR FCAW PROCESS.

ALL WELDS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20FT-LB AT ZERO 0° AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD OR MFG'S. CERTIFICATION.

ALUMINUM

DESIGN AND FABRICATION ACCORDING TO AWS D1.2. ALL WELDING IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS A.5.10.

FILLER ALLOYS PER TABLES M.9.1 & M.9.2 OF 2015 ALUMINUM DESIGN MANUAL.

CONCRETE :

DESIGN AND CONSTRUCTION ACCORDING TO ACI 318-14

- COMPRESSIVE STRENGTH AT 28 DAYS, f'c= 2500 PSI MINIMUM.
- CEMENT TYPE II OR IV. W/C RATIO 0.45 BY WEIGHT FOR PIER AND CAISSON
- FOOTINGS CONCRETE MUST BE POURED AGAINST UNDISTURBED EARTH.
- MAINTAIN A MINIMUM 3" CONCRETE COVER OVER ALL EMBEDDED STEEL.

SOIL:

LATERAL SOIL BEARING PER IBC CLASS 4 TABLE 1806.2 (150 PSF/FT). MODIFIED PER SECTION 1806.3.4.

Sign Design Based On 2018 IBC

Job # JTS\_248821  
Project Chipotle Mexican Grill #4098 - Monument  
Job Location 1103 SW Oldham Parkway  
Lee's Summit, MO

INPUT DATA

Exposure category (B, C or D)	=	C
Risk Category	=	II
Ultimate Design Windspeed	V <sub>ULT</sub> =	110 MPH
Topographic factor	K <sub>zt</sub> =	1 Flat
Height of the sign	h =	11.00 FT
Vertical dimension (for wall, s = h)	s =	11.00 FT
Average Horizontal dimension	B =	2.23 FT
Dimension of return corner	L <sub>r</sub> =	0.83 FT

ANALYSIS

Velocity pressure

$$q_z = 0.00256 K_z K_{zt} K_d V^2 K_e = 22.38 \text{ PSF}$$

where:

q<sub>z</sub> = velocity pressure at height h. ( Eq. 26.10-1 page. 268)

$$K_z = \text{velocity pressure exposure coefficient} = 0.85$$

evaluated at height above gRnd. level, h (Tab. 26.10-1, page 268)

$$K_d = \text{wind directionality factor. (Tab. 26.6-1, page 266)} = 0.85$$

$$K_e = \text{ground elevation factor, see (Tab. 26.9-1, page 268)} = 1.00$$

Wind Force Case A: resultant force through geometric center

Max horizontal wind pressure =	p = q <sub>h</sub> G C <sub>f</sub> =	=	31	PSF
where: G = gust effect factor. (Sec. 26.11-1, page 269).	=		0.85	
C <sub>f</sub> = net force coefficient. (Fig. 29.3-1, page 323)	=		1.65	
A <sub>s</sub> = B s = the gross area	=		24.51	FT <sup>2</sup>
Estimated sign cabinet weight	=		148	LBS.

DESIGN SUMMARY

Allowable Stress Design Wind Factor =		0.60
Design Wind Pressure =	0.6 x p =	18.82 PSF
Design Windforce, F =	18.82 x A <sub>s</sub> =	0.46 KIPS
Moment Arm =		6.05 FT
Design Moment =	F x Moment Arm =	2.79 KIP-FT

Footing Design (Nonconstrained)

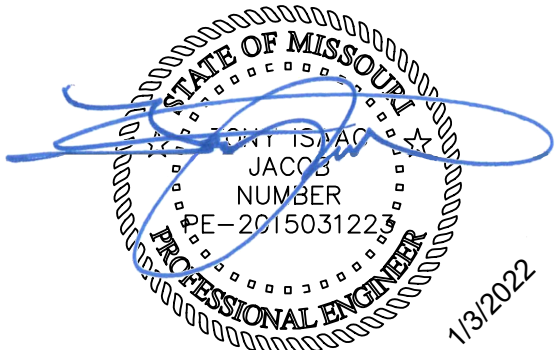
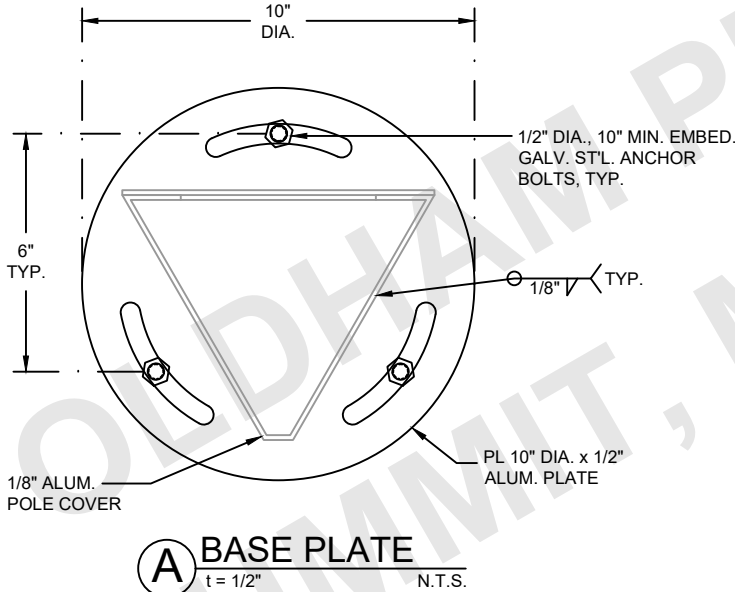
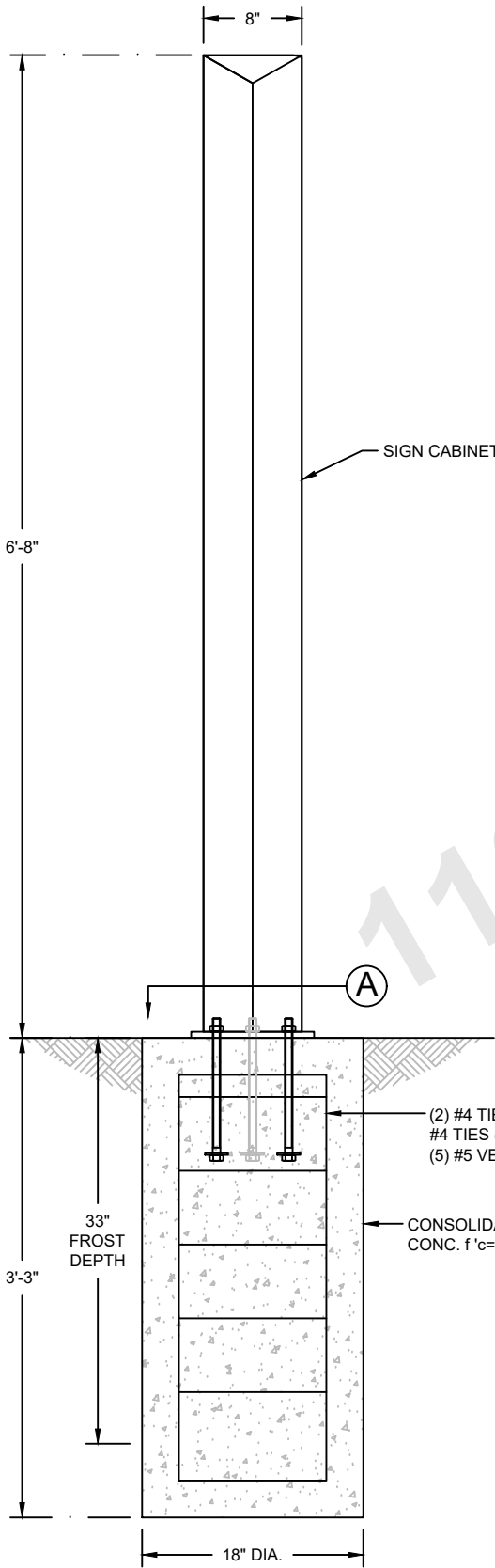
Diagonal =	3.35 FT
Soil Pressure =	150.00 PSF/FT
S <sub>1</sub> =	315.00 PSF
A =	1.02 FT
EMBED. =	3.16 FT
	33" FROST DEPTH

WIDTH = 36"	LENGTH = 18"	DEPTH = 3' - 3"
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Pole Design

Sec. Mod. Req'd.	STD. ST'L. PIPE USE A53 GR. B	S = 1.63 (OK)
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NOTES :

GENERAL :

- SIGN DESIGN IS BASED ON ADEQUATE EXISTING SUPPORT ELEMENTS.
- PROVIDE ISOLATION OF DISSIMILAR MATERIALS.
- COAT ALUMINUM IN CONTACT WITH CONCRETE WITH ZINC RICH PAINT.
- THERE IS NO PROTECTION ZONE AS DEFINED IN AISC 341-16.
- PROVIDE FULLY WELDED END CAPS AT EXPOSED OPEN ENDS OF STEEL / ALUM. TUBES, MATCH THICKNESS LIKE FOR LIKE.
- SLOPE TOP OF EXPOSED FOOTING AWAY FROM DIRECT BURIAL POSTS
- ALL EXPOSED STEEL TO BE PRIMED & PAINTED (POWDER COAT AS AN OPTION) OR ALTERNATIVELY USE GALVANIZED STEEL.

ANCHORS :

- BRAND NAME APPROVED POST INSTALLED ANCHORS SPECIFIED ON PLANS MAY BE SUBSTITUTED BY APPROVED EQUAL.

STEEL :

- DESIGN AND FABRICATION ACCORDING TO 2018 IBC
- PLATE, ANGLE, CHANNEL TEE: ASTM A36
- WIDE FLANGE: ASTM A992
- ROUND PIPE: ASTM A53 GRADE B OR EQUIVALENT.
- HSS ROUND, SQUARE, AND RECTANGULAR TUBE: ASTM A500 GRADE B OR EQUIVALENT.
- ALL ANCHORS BOLTS SHOULD BE: ASTM F1554
- ALL STEEL MACHINED BOLTS SHOULD BE: ASTM A307 OR ASTM A449
- ALL STAINLESS STEEL MACHINED BOLTS SHOULD BE: ASTM A276
- ALL BOLTS TO BE ZINC COATED: ASTM B633
- DEFORMED REINFORCING REBAR: ASTM A615 GRADE 60.

ALUMINUM :

- DESIGN AND FABRICATION ACCORDING TO 2015 ALUM. DESIGN MANUAL PLATES, ANGLES, CHANNELS, TEE, AND SQUARE TUBING: ALUMINUM
- ALLOY 6061 - T6 WITH 0.098 LBS PER CUBIC INCH.

WELDING :

STEEL

- DESIGN AND FABRICATION ACCORDING TO AWS D1.1. / D1.3
- AWS CERTIFICATION REQUIRED FOR ALL STRUCTURAL WELDERS.
- E70 XX ELECTRODE FOR SMAW PROCESS.
- E70S XX ELECTRODE FOR GMAW PROCESS.
- ER7 XX ELECTRODE FOR GTAW PROCESS.
- E70T XX ELECTRODE FOR FCAW PROCESS.
- ALL WELDS SHALL BE MADE WITH A FILLER METAL THAT CAN PRODUCE WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20FT-LB AT ZERO 0° AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD OR MFG'S. CERTIFICATION.

ALUMINUM

- DESIGN AND FABRICATION ACCORDING TO AWS D1.2. ALL WELDING IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS A.5.10.
- FILLER ALLOYS PER TABLES M.9.1 & M.9.2 OF 2015 ALUMINUM DESIGN MANUAL.

CONCRETE :

- DESIGN AND CONSTRUCTION ACCORDING TO ACI 318-14
- COMPRESSIVE STRENGTH AT 28 DAYS, f'c= 2500 PSI MINIMUM.
- CEMENT TYPE II OR IV. W/C RATIO 0.45 BY WEIGHT FOR PIER AND CAISSON
- FOOTINGS CONCRETE MUST BE POURED AGAINST UNDISTURBED EARTH.
- MAINTAIN A MINIMUM 3" CONCRETE COVER OVER ALL EMBEDDED STEEL.

SOIL:

- LATERAL SOIL BEARING PER IBC CLASS 4 TABLE 1806.2 (150 PSF/FT). MODIFIED PER SECTION 1806.3.4.

Sign Design Based On 2018 IBC

Job #	JTS_248821				
Project	Chipotle Mexican Grill #4098 - Directional				
Job Location	1103 SW Oldham Parkway				
	Lee's Summit, MO				

INPUT DATA

Exposure category (B, C or D)	=	C	
Risk Category	=	II	
Ultimate Design Windspeed	V <sub>ULT</sub> =	110	MPH
Topographic factor	K <sub>zt</sub> =	1	Flat
Height of the sign	h =	6.67	FT
Vertical dimension (for wall, s = h)	s =	6.67	FT
Horizontal dimension	B =	0.67	FT
Dimension of return corner	L <sub>r</sub> =	0.50	FT

ANALYSIS

Velocity pressure

q <sub>z</sub> = 0.00256 K <sub>z</sub> K <sub>zt</sub> K <sub>d</sub> V <sup>2</sup> K <sub>e</sub>	=	22.38	PSF
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where:

q<sub>z</sub> = velocity pressure at height h. (Eq. 26.10-1 page. 268)

K <sub>z</sub> = velocity pressure exposure coefficient	=	0.85	
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evaluated at height above gRnd. level, h (Tab. 26.10-1, page 268)

K <sub>d</sub> = wind directionality factor. (Tab. 26.6-1, page 266)	=	0.85	
--	---	------	--

K <sub>e</sub> = ground elevation factor, see (Tab. 26.9-1, page 268)	=	1.00	
---	---	------	--

Wind Force Case A: resultant force through geometric center

Max horizontal wind pressure = p = q <sub>h</sub> G C <sub>f</sub> =	=	32	PSF
--	---	----	-----

where: G = gust effect factor. (Sec. 26.11-1, page 269).	=	0.85	
--	---	------	--

C <sub>f</sub> = net force coefficient. (Fig. 29.3-1, page 323)	=	1.70	
---	---	------	--

A <sub>s</sub> = B s = the gross area	=	4.47	FT <sup>2</sup>
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Estimated sign cabinet weight	=	12	LBS.
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DESIGN SUMMARY

Allowable Stress Design Wind Factor =	=	0.60	
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Design Wind Pressure =	0.6 x p =	19.40	PSF
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Design Windforce, F =	19.40 x A <sub>s</sub> =	0.09	KIPS
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Moment Arm =	=	1.50	FT
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Design Moment = F x Moment Arm =	=	0.13	KIP-FT
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Footing Design (Nonconstrained)

Diameter =	1.50	FT
Soil Pressure =	150.00	PSF/FT
S <sub>1</sub> =	165.00	PSF
A =	0.82	FT
EMBED. =	1.64	FT
		33" FROST DEPTH

18 IN. DIA.	DEPTH =	3' - 3"
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Anchor Design

	GALV. STL. ANCHOR BOLT	
Tension Req'd.	USE F 1554 GR. 36	
T = 130	1/2" DIA., x 10" MIN. EMBED	T = 4260
Shear Req'd.		
V = 49		V = 2270
Unity =	( 130 / 4260 ) + ( 49 / 2270 ) = 0.05	< 1 (OK)

Mounting Plate

	Alum. Plate	
Thickness Req'd.	USE 6061-T6	
t = 0.19	10" DIA. x 1/2"	t=0.50



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P.O. BOX 802050  
SANTA CLARITA, CA. 91380  
TEL. (661)259-0700 FAX. (661)259-0900

SHEET TITLE:

**CHIPOTLE MEXICAN GRILL #4098**  
**DIRECTIONAL**

DRN BY: B.B.	DATE LAST REVISED: Dec 29, 2021	REV. NO.	REV. DATE	REVISED BY
CHK BY: T.J.	PROJ. START DATE: DEC. 29, 2021	1	--/--	--
REV BY: T.J.	SCALE: AS SHOWN	2	--/--	--
PLOTTED BY: Local User	ON 12/29/2021 4:26:02 PM	3	--/--	--

PROJECT JOB #:	JTS_248821_Chipotle Mexican Grill #4098_Signage_1103 SW Oldham Parkway_Lee's Summit MO	SHEET #
PROJECT LOCATION:	CHIPOTLE MEXICAN GRILL #4098 1103 SW OLDHAM PARKWAY LEE'S SUMMIT, MO	1 OF 1