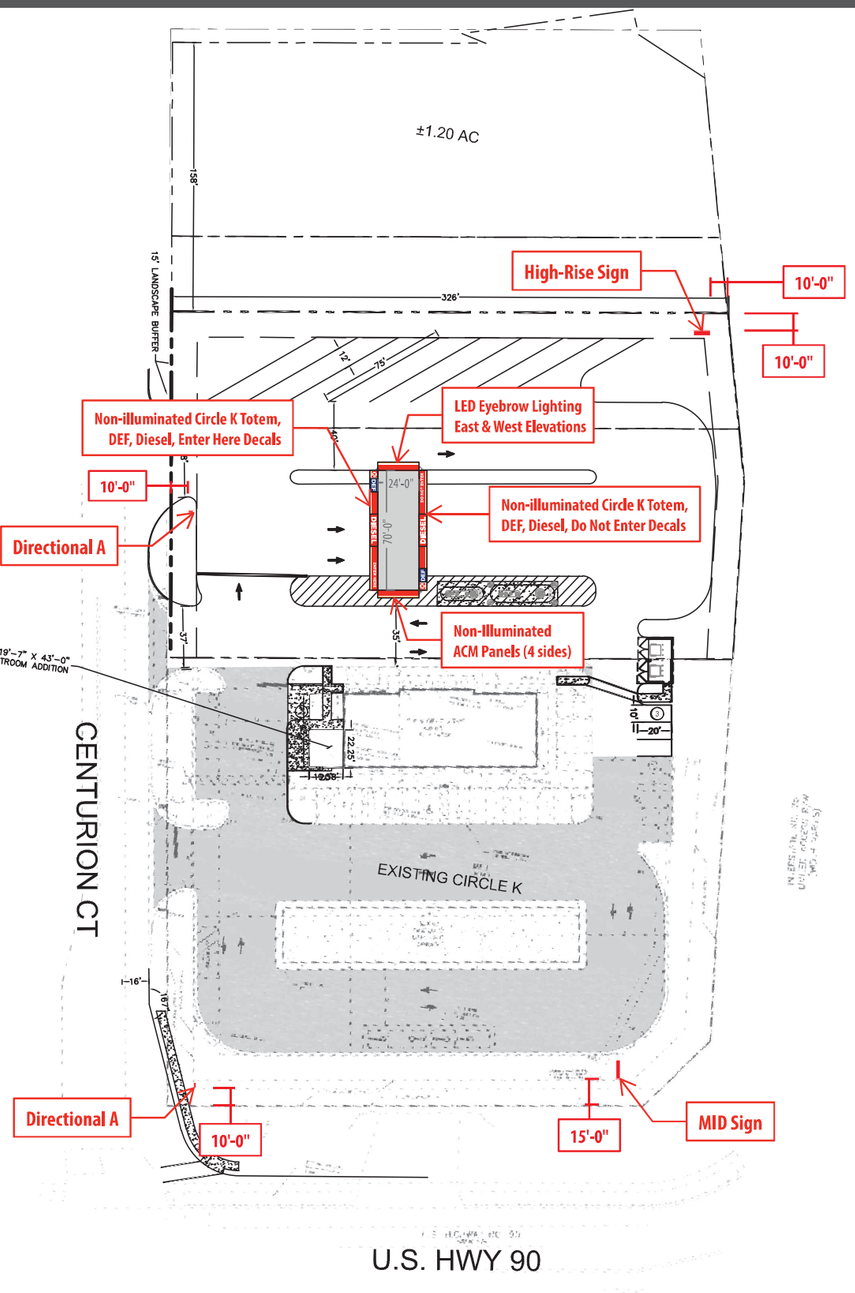
US HWY 90 & CENTURION CT



Christian Langley
Florida PE #67382
Cert of Auth #31124

1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 WIND LOADS: • V=120 mph • Exposure 'C' • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign above grade: **± 29.0 psf** • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

EXISTING

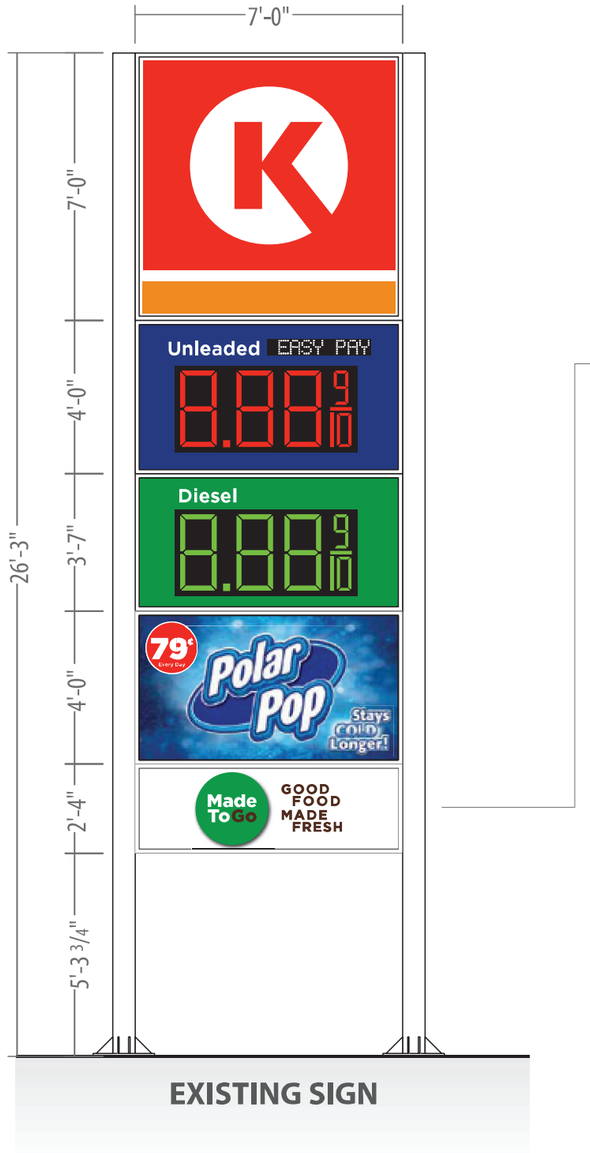
SCOPE OF WORK

- Re-use existing cabinets
- Move existing Made To Go cabinet underneath Circle K
- New Truck Diesel faces faces
- New Electronic Message Center

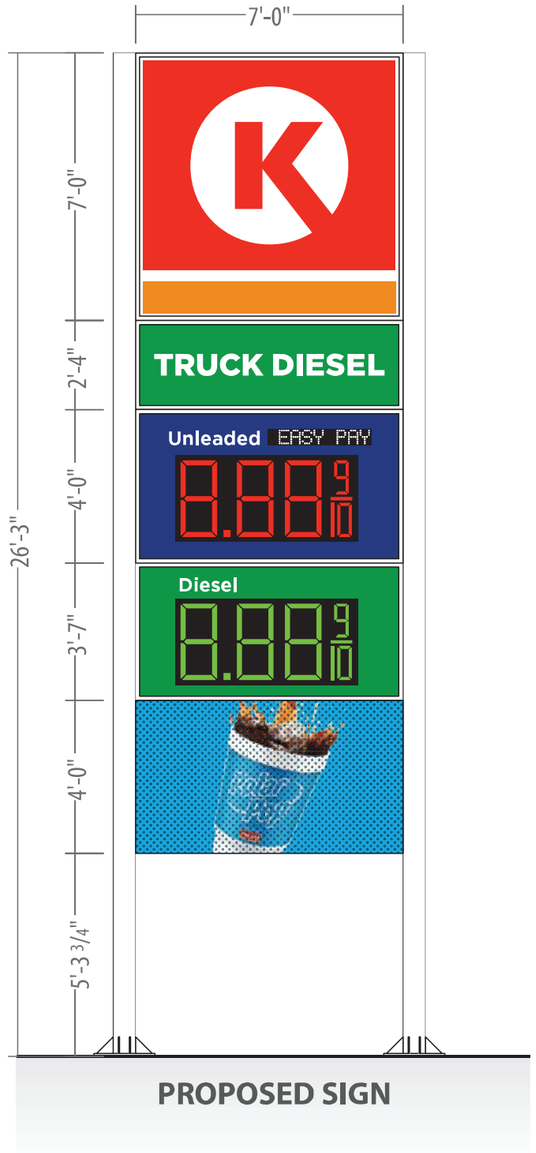
FIELD VERIFY PRIOR TO MANUFACTURE

REPLACEMENT FACE(S) SHALL NOT EXCEED EXISTING SIGNAGE OVERALL DIMENSIONS OR HEIGHT ABOVE GRADE. REACTIONS ON EXISTING SUPPORT STRUCTURE & FOOTING(S) UNDER REPLACEMENT SIGN FACE(S) ARE APPROXIMATELY EQUAL TO REACTIONS UNDER EXISTING FACE(S).

EXISTING FOOTING(S) & SUPPORT STRUCTURE MAY REMAIN. REPLACEMENT FACE(S) SHALL BE INSTALLED USING EXISTING CLIPS OR RETAINER SYSTEM.



EXISTING SIGN



PROPOSED SIGN

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

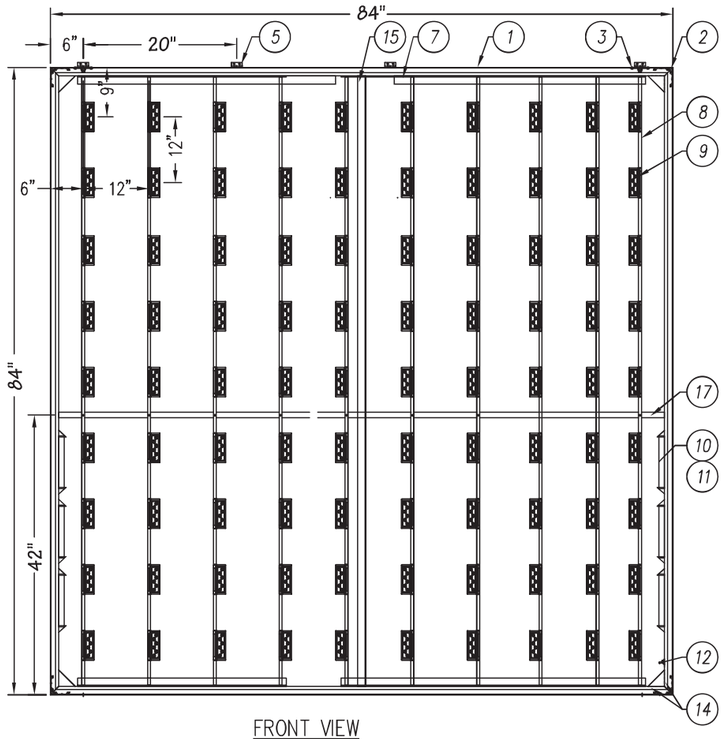
WIND LOADS: ASCE 7-16 • V=120 mph • Exposure 'C' • Risk Category 1 Struct. • ASD Load Coeff = 0.6 • Solid freestanding sign above grade: **± 29.0 psf** • Sign Height = 30 ft max • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

Christian Langley 1200 N Federal Hwy, #200 Boca Raton, FL 33432 1-888-371-3113
Florida PE #67382
Cert of Auth #31124

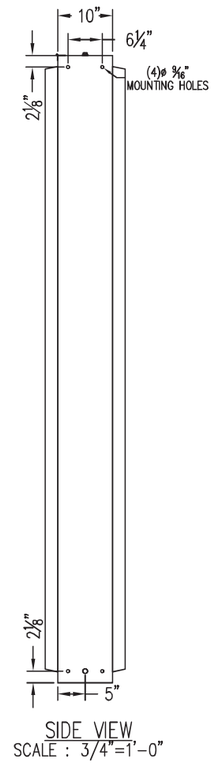
CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER — OCT 10 2022 — ENGINEER'S SIGNATURE

Easy Seals

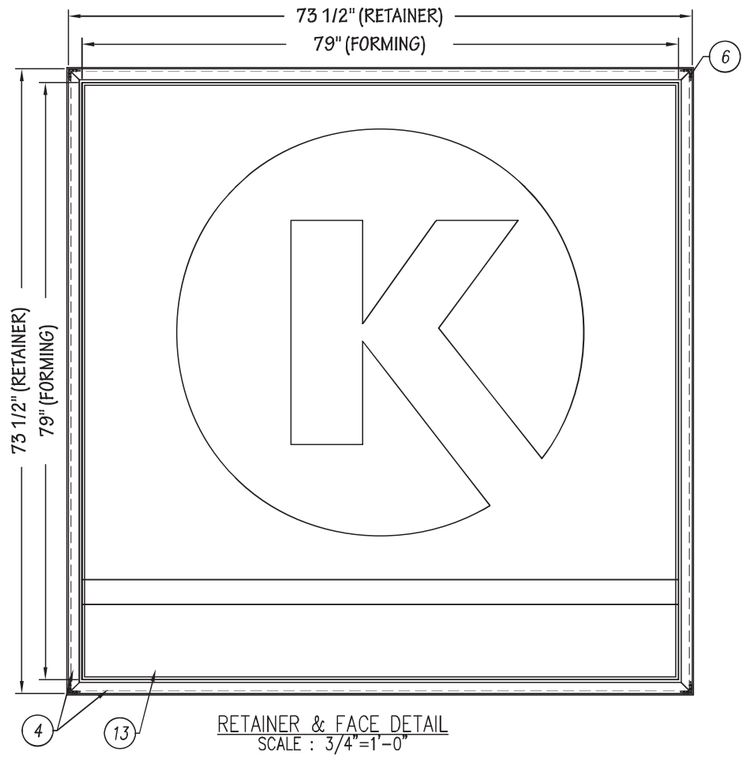
General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.



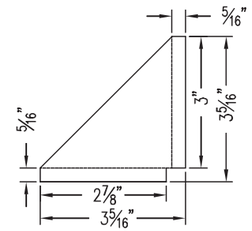
FRONT VIEW
SCALE : 3/4"=1'-0"



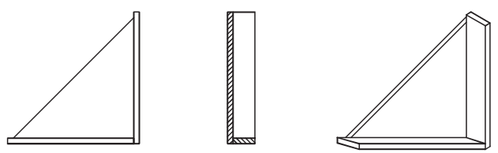
SIDE VIEW
SCALE : 3/4"=1'-0"



RETAINER & FACE DETAIL
SCALE : 3/4"=1'-0"

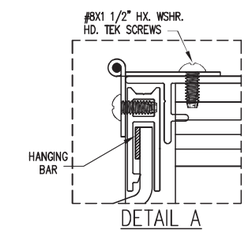


16 GUSSET FLAT LAYOUT
SCALE : 3 3/4"=1'-0"

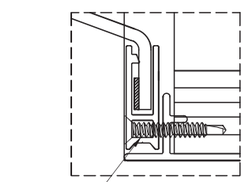


16 FRONT AND SIDE VIEW
SCALE : 3 3/4"=1'-0"

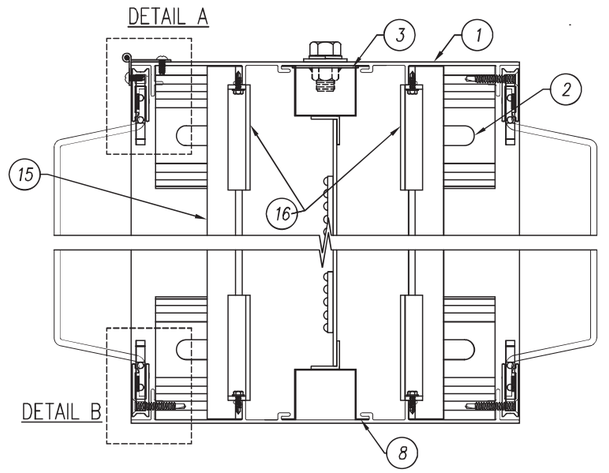
16 ISOMETRIC VIEW
SCALE : 3 3/4"=1'-0"



DETAIL A



DETAIL B



SECTION VIEW
SCALE : NTS

PARTS LIST			
NO	PART #	DESCRIPTION	QTY
1	OEXT009F10	10" ALUM. EXTRUS. FRAME SECTIONS	4
2	OMF03F	CORNER ANGLE KEY FOR 10" EXTRUSION	8
3	OMF016	1 7/8"x3 1/2"x.090" LIFT PLATE	2
4	OEXT009R20	2.0" STRAIGHT RETAINER EXTRUSION	8
5	OHIN000202	2-3/8" X 4" X .063" ALUMINUM HINGE	4
6	OMF29R	2" X 2" X 0.30"	8
7	OEXT000420	1" X 1.5" X .1875" ALUM ANGLE @ 38"	4
8	OEXTOBLTRK	MOUNTING TRACK FOR OSRAM BOXLED DS @ 110 15/16"	8
9	OLEDSYLV865	OSRAM-SYLVANIA BX-DS-PL-865	72
10	OLEDSYL96PS	SYLVANIA 24V-96W LED POWER SUPPLY	6
11	OMF022	ALUMINUM TEEPEES FOR BALLAST	12
12	OSWI000002	RUBBER BOOTED TOGGLE SWITCH BLK	1
13	3CKS0908RF	CKS 108 7/8" X 90 1/2" RAW FORMED FACE	2
14	OMF109	GALVANIZED STEEL HAT CHANNEL RACE	A/R
15	OEXT000007	1.5" X 1.5" X .125" ALUM ANGLE @ 74 5/16	2
16	OASH004878	.125" ALUMINUM GUSSET	8
17	OEXT000420	1" X 1.5" X .1875" ALUM ANGLE @ 95 13/16	1

Voltage	Circuits	Current	Drawn By	Date
120 AC	[1] ONE	5.82 AMPS	CR	08/11/17

Description	Checked By
ILLUM DOUBLE FACE BETWEEN TWO POLE SIGN	~

Sign Size	Design Load	Client	Page
37.0 SQ. FT.	30 PSF	CIRCKLE K	

Part Number	Drawing No.	Rev.
CKSZ0142-LED	CKSZ0142-LED	A

CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER
OCT 10 2022
ENGINEER'S SIGNATURE

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 • V=120 mph • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign above grade: **± 29.0 psf**
WIND LOADS: • Exposure 'C' • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

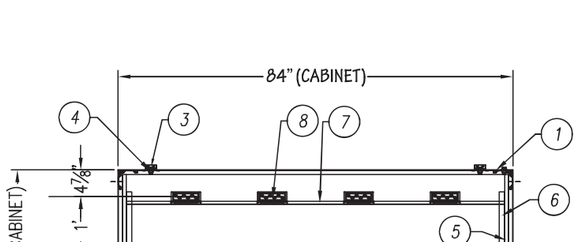
CORPORATE IDENTIFICATION SOLUTIONS

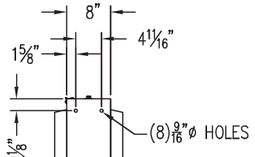
CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

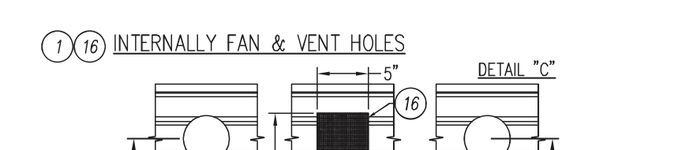
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

SIGNATURE _____ DATE _____

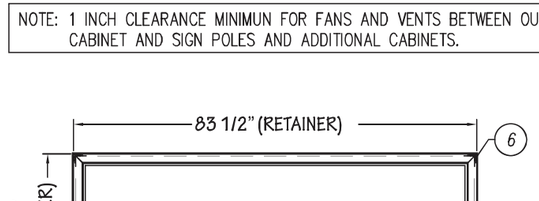
General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

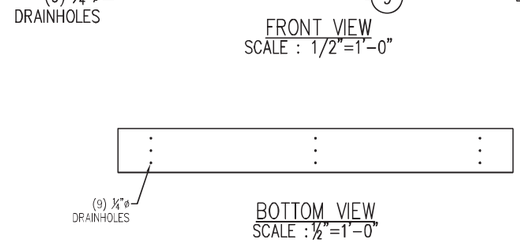


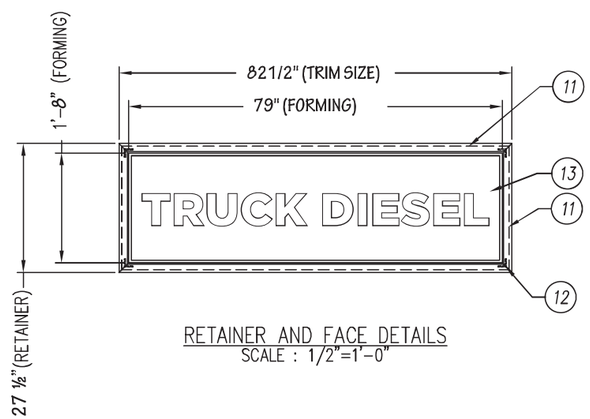


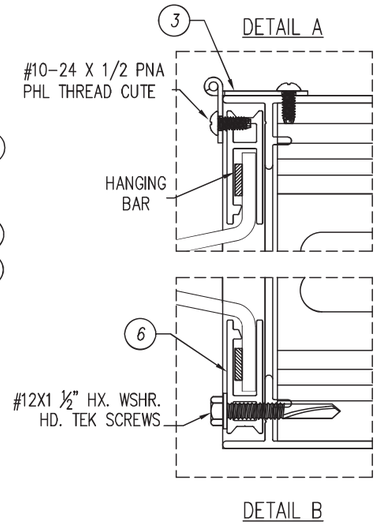


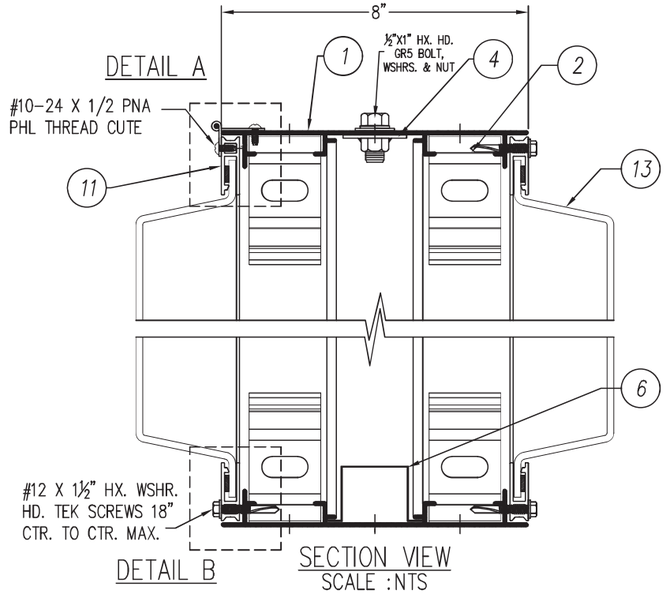
NOTE: 1 INCH CLEARANCE MINIMUN FOR FANS AND VENTS BETWEEN OUTER CABINET AND SIGN POLES AND ADDITIONAL CABINETS.











PARTS LIST			
NO	PART #	DESCRIPTION	QTY
1	OEXT009F08	8" ALUM. EXTRUS. FRAME SECTIONS	4
2	OMF02F	8" EXTRUSION FRAME CORNER KEY	8
3	OHIN000202	2" X 2" X .060" PIANO HINGE	2
4	OMF016	1 7/8"x3 1/2"-1/2" LIFT PLATE	2
5	OMF109	GALVANIZED STEEL HAT CHANNEL RACE WAY	A/R
6	OEXT000407	1" X 1" X .0625" ALUM ANGLE	2
7	OEXTOBLTRK	MOUNTING TRACK FOR OSRAM BOXLED DS	2
8	OLEDSYLV865	OSRAM-SYLVANIA BX-DS-PL-865	8
9	OLEDSYL96PS	OSRAM-SYLVANIA 0196W/24V/UNV POWER SUPPLY	1
10	OSWI000002	RUBBER BOOTED TOGGLE SWITCH BLK	1
11	OEXT009R15	1.500" RETAINER ALUM	8
12	OMF29R	RETAINER CORNER KEY	8
13	OLEX150100	.150" X 100" CLEAR POLYCARB. FACE	2

Voltage	Circuits	Current	Drawn By	Date
120 AC	[1] ONE	0.91 AMPS	C. ITO	11/15/16

Description	Checked By
2'-0"X6'-0" BETWEEN TWO POLE SIGN	~

Sign Size	Design Load	Client	Page
12.0 SQ. FT	140 MPH	CIRCLE K	1 OF 2

Part Number	Drawing No.	Rev.
1CKS02061XC-CW	CKSZLED0014-LED	B

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

WIND LOADS: **ASCE 7-16** • V=120 mph • Exposure 'C' • Risk Category 1 Struct. • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Sign Height = 30 ft max • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h) • Solid freestanding sign above grade: **± 29.0 psf**

CORPORATE IDENTIFICATION SOLUTIONS

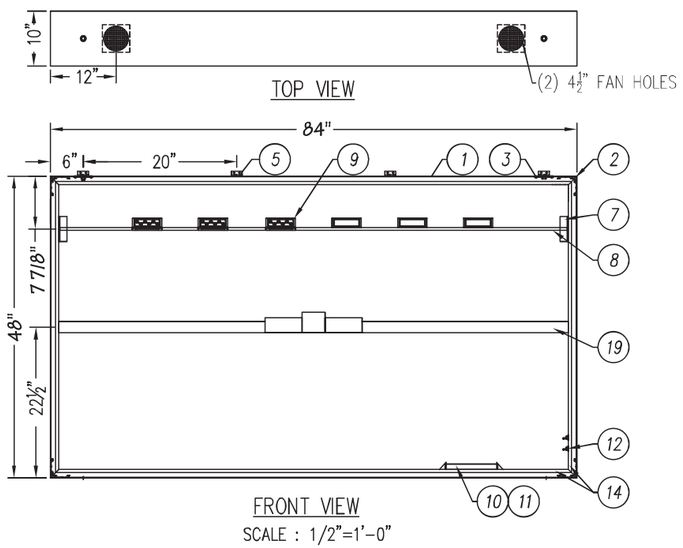
CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

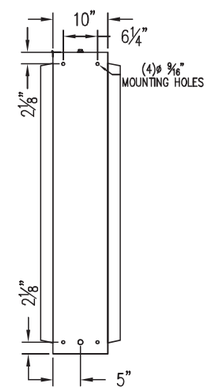
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

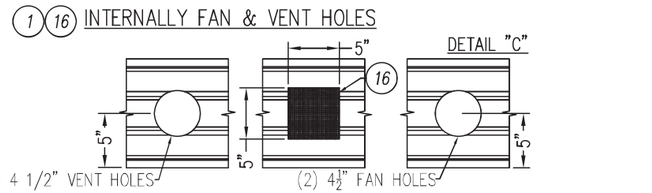
CUSTOMER ACCEPTANCE

SIGNATURE _____ DATE _____

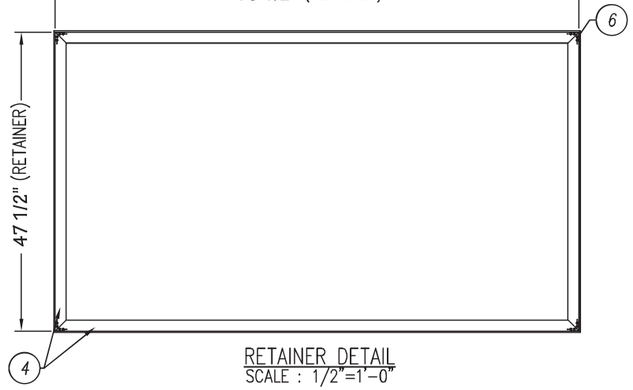
General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

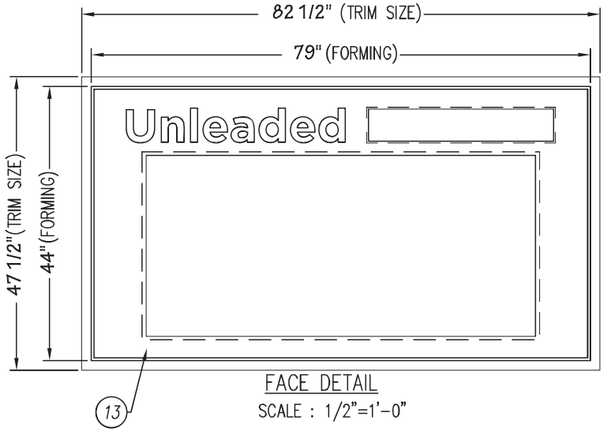


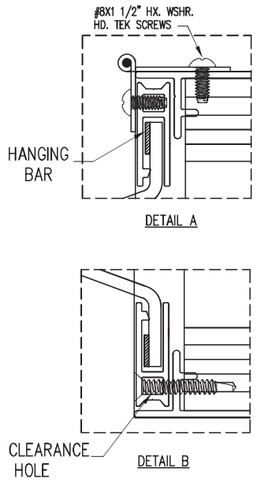


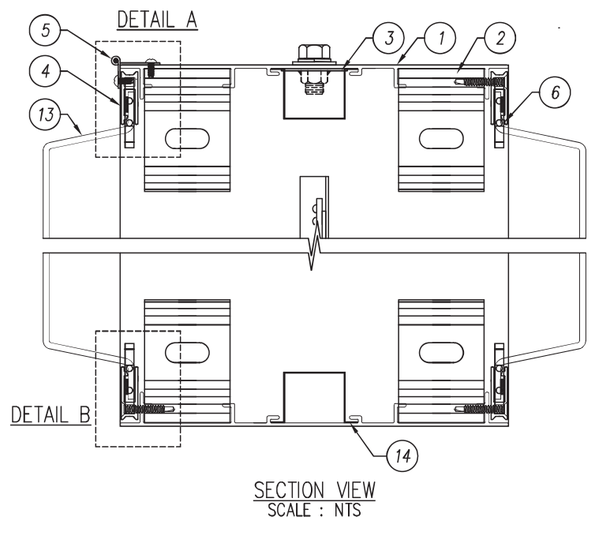


NOTE: 1 INCH CLEARANCE MINIMUN FOR FANS AND VENTS BETWEEN OUTER CABINET AND SIGN POLES AND ADDITIONAL CABINETS.









PARTS LIST			
NO	PART #	DESCRIPTION	QTY
1	OEXT009F10	10" ALUM. EXTRUS. FRAME SECTIONS	4
2	OMF03F	CORNER ANGLE KEY FOR 10" EXTRUSION	8
3	OMF016	1 7/8"x3 1/2"x.090" LIFT PLATE	2
4	OEXT009R20	2.0" STRAIGHT RETAINER EXTRUSION	8
5	OHIN000202	2-3/8" X 4" X .063" ALUMINUM HINGE	8
6	OMF29R	2" X 2" X 0.30"	8
7	OEXT000420	1" X 1.5" X .1875" ALUM ANGLE @ 3"	2
8	OEXTOBLTRK	MOUNTING TRACK FOR OSRAM BOXLED DS @ 92 9/16"	1
9	OLEDSYLS865	SYLVANIA BOXLED PLUS SS 6500K	6
10	OLEDSYL75PS	SYLVANIA 24V-75W LED POWER SUPPLY	1
11	OMF022	ALUMINUM TEEPEES FOR BALLAST	2
12	OSWI000002	RUBBER BOOTED TOGGLE SWITCH BLK	1
13	3RRF50X91X-177	FORM: 50" X 91" X 2 1/4" FORMED FACE	2
14	OMF109	GALVANIZED STEEL HAT CHANNEL RACE	A/R
16	OASH000205	.063 X 48 x 120 ALUM SHEET PERF 1/8	4
17	OEXT000412	1" X 1" X .125" ALUM ANGLE @ 10"	2
18	OASH000026	ALUMINUM FAN COVER (SEE PAGE 3)	1
19	OEXT000406	2" X 2" X .125" ALUM ANGLE @ 95 13/16	1

Voltage	Circuits	Current	Drawn By	Date
120 AC	[1] ONE	4.57 AMPS	CR	08/11/17

Description	Checked By
ILLUM DOUBLE FACE BETWEEN TWO POLE SIGN	~

Sign Size	Design Load	Client	Page
22.5 SQ FT	30 PSF	CIRCKLE K	1 OF 2

Part Number	Drawing No.	Rev.
CKSZLED0110-LED	CKSZLED0110-LED	A

CORPORATE IDENTIFICATION SOLUTIONS

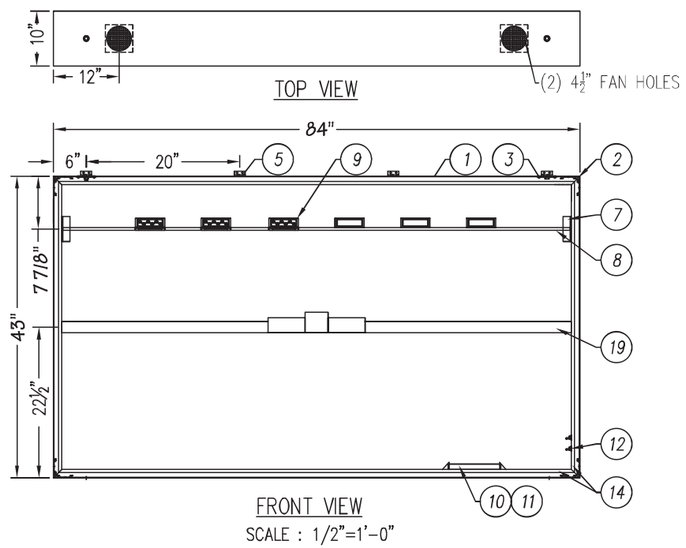
CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

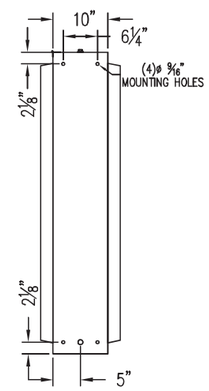
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

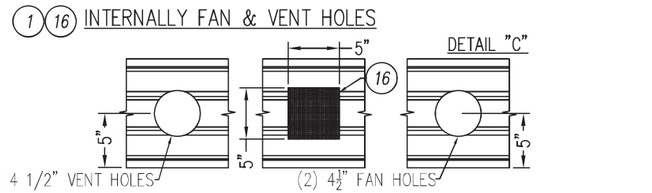
General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

ASCE 7-16 • V= 120 mph • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign
WIND LOADS: • Exposure 'C' • ASD Load Coeff = 0.6 • Kzt= 1.0, Kd=0.85, G=0.85 • Cf= 1.85 (w/h ratio = 0.2 to 10, any clearance ratio o/h) above grade: **± 29.0 psf**

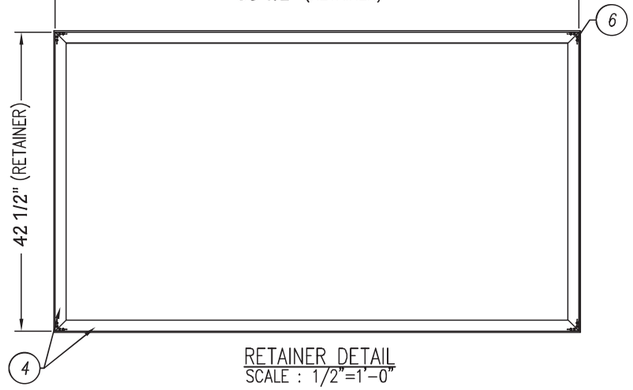
Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

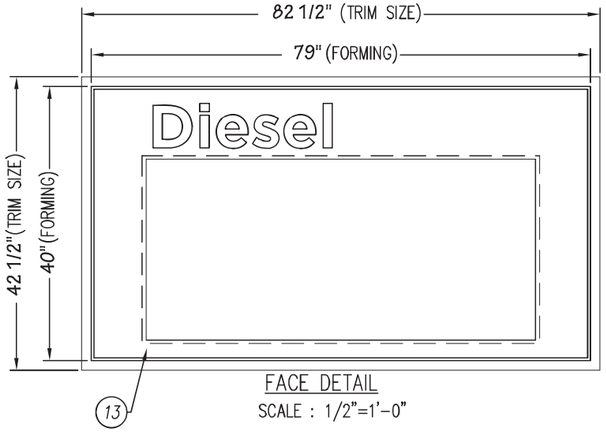


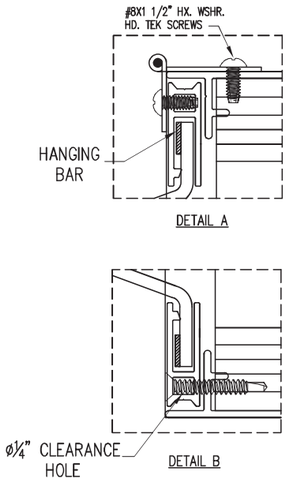


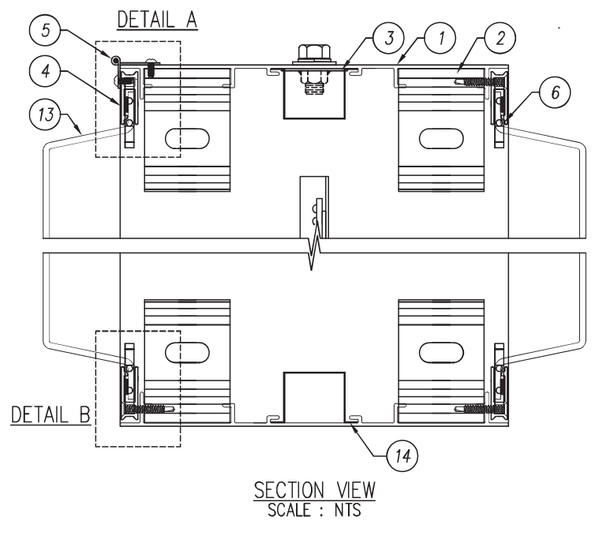


NOTE: 1 INCH CLEARANCE MINIMUN FOR FANS AND VENTS BETWEEN OUTER CABINET AND SIGN POLES AND ADDITIONAL CABINETS.









PARTS LIST			
NO	PART #	DESCRIPTION	QTY
1	OEXT009F10	10" ALUM. EXTRUS. FRAME SECTIONS	4
2	OMF03F	CORNER ANGLE KEY FOR 10" EXTRUSION	8
3	OMF016	1 7/8"x3 1/2"x.090" LIFT PLATE	2
4	OEXT009R20	2.0" STRAIGHT RETAINER EXTRUSION	8
5	OHIN000202	2-3/8" X 4" X .063" ALUMINUM HINGE	8
6	OMF29R	2" X 2" X 0.30"	8
7	OEXT000420	1" X 1.5" X .1875" ALUM ANGLE @ 3"	2
8	OEXTOBLTRK	MOUNTING TRACK FOR OSRAM BOXLED DS @ 92 9/16"	1
9	OLEDSYLS865	SYLVANIA BOXLED PLUS SS 6500K	6
10	OLEDSYL75PS	SYLVANIA 24V-75W LED POWER SUPPLY	1
11	OMF022	ALUMINUM TEEPEES FOR BALLAST	2
12	OSWI000002	RUBBER BOOTED TOGGLE SWITCH BLK	1
13	3RRF50X91X-177	FORM: 50" X 91" X 2 1/4" FORMED FACE	2
14	OMF109	GALVANIZED STEEL HAT CHANNEL RACE	A/R
16	OASH000205	.063 X 48 x 120 ALUM SHEET PERF 1/8	4
17	OEXT000412	1" X 1" X .125" ALUM ANGLE @ 10"	2
18	OASH000026	ALUMINUM FAN COVER (SEE PAGE 3)	1
19	OEXT000406	2" X 2" X .125" ALUM ANGLE @ 95 13/16	1

Voltage	Circuits	Current	Drawn By	Date
120 AC	[1] ONE	4.57 AMPS	CR	08/11/17

Description	Checked By
ILLUM DOUBLE FACE BETWEEN TWO POLE SIGN	~

Sign Size	Design Load	Client	Page
22.5 SQ FT	30 PSF	CIRCKLE K	1 OF 2

Part Number	Drawing No.	Rev.
CKSZLED0110-LED	CKSZLED0110-LED	A

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER: CIRCLE K
LOCATION: LAKE CITY, FL
DRAWN BY: KL
REVISION: 03
SITE NUMBER: 9831
ACCOUNT REP: BEN DEHAYES
DATE: 10/07/22
SCALE: NTS

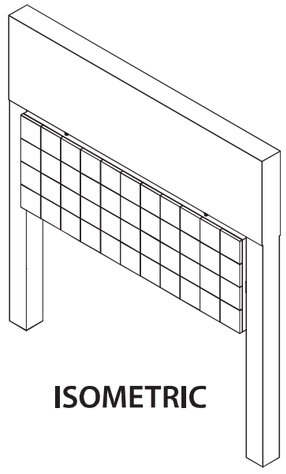
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

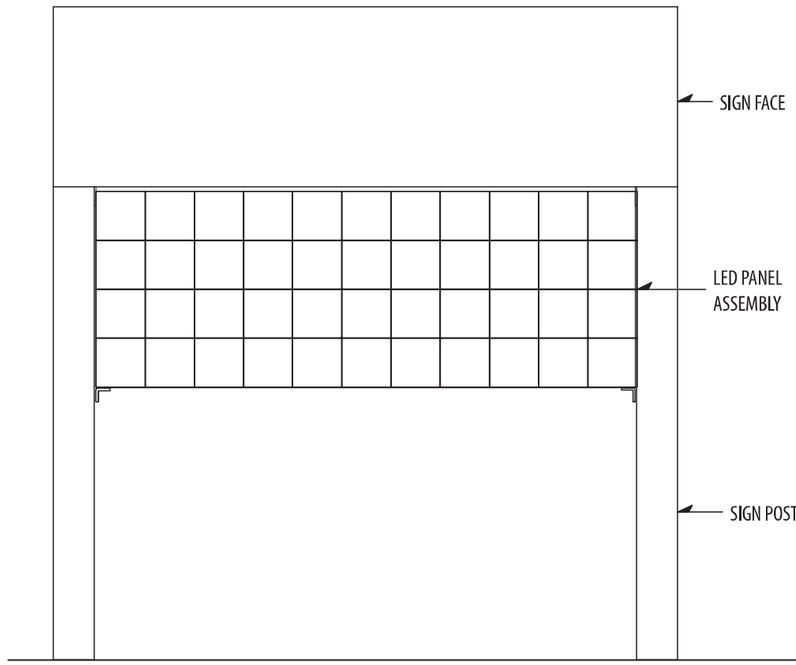
ASCE 7-16 • V=120 mph • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign
WIND LOADS: • Exposure 'C' • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio o/h) above grade: **± 29.0 psf**

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

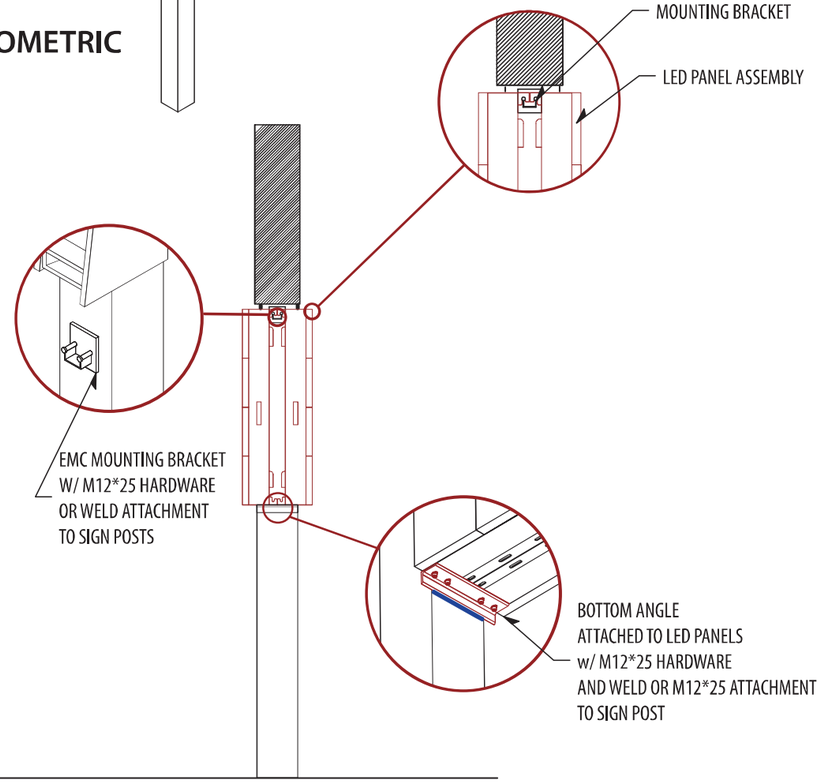
ELECTRONIC MESSAGE CENTER ATTACHMENT DETAIL



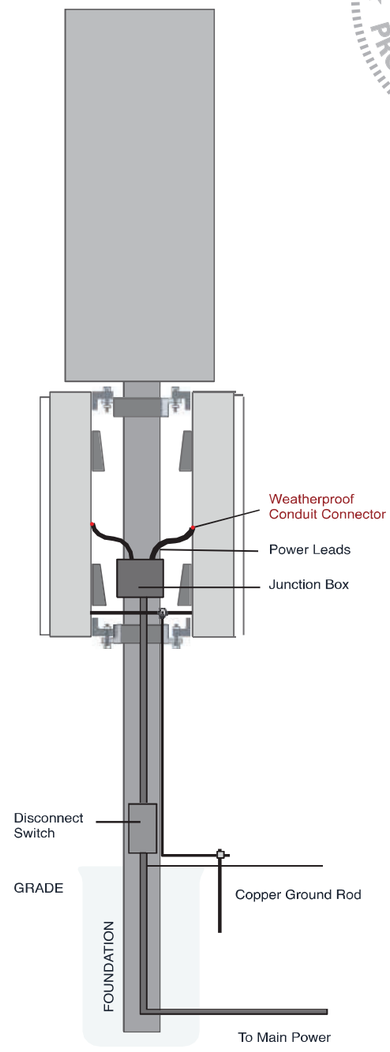
ISOMETRIC



FRONT



SIDE SECTION



ELECTRICAL DETAIL

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 WIND LOADS:
• V=120 mph • Exposure 'C' • Risk Category 1 Struct. • ASD Load Coeff = 0.6 • Sign Height = 30 ft max • Kzt=1.0, Kd=0.85, G=0.85 • Solid freestanding sign above grade: **± 29.0 psf** • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

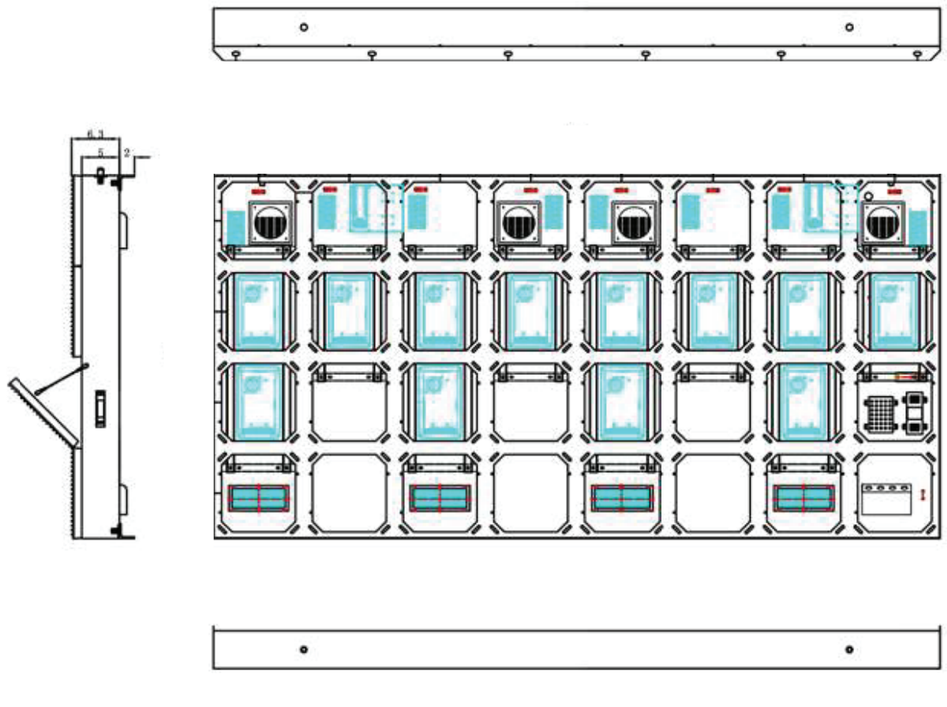
CORPORATE IDENTIFICATION SOLUTIONS

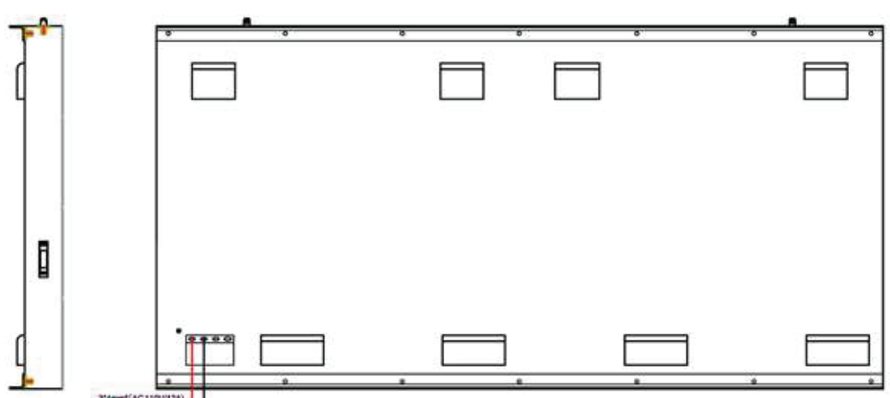
CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

SIGNATURE _____ **DATE** _____

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.





DISPLAY SPECIFICATIONS		
Pixel Pitch (Resolution)	9.5 mm	15.25 mm
LED Package Type	SMD	DIP
Pixels Per Sq. Foot (Density)	1024	400
Module Dimensions	12" x 12" (304.8mm x 304.8mm)	12" x 12" (304.8mm x 304.8mm)
Module Matrix	32 x 32	20 x 20
Module Weight	3 LB (1.4KG)	4.5 LB (2 KG)
Driving Method	1/2 constant current	Static
Refresh Rate	≥ 3840 Hz	≥ 3840 Hz
Grayscale	65536 (281 trillion colors)	65536 (281 trillion colors)
Color Depth	16 Bit	16 Bit
Contrast Ratio	3000 : 1	3000 : 1
Brightness	≥ 7000 Nits	≥ 10000 Nits
Brightness Control	256 levels	256 levels
Ideal Viewing Range	28° or greater	52° or greater
Ideal Viewing Angle	160°(H) / 120°(V)	120°(H) / 60°(V)
Max. Power Consumption	70W/Ft² (750W/m²) 0.59amps/Ft² @ 120VAC	35W/Ft² (380W/m²) 0.29amps/Ft² @ 120VAC
Avg. Power Consumption	23W/Ft² (250W/m²)	11W/Ft² (120W/m²)
Input Voltage	88 - 264VAC	88 - 264VAC
Ingress Protection	IP67 front / IP55 rear	IP67 front / IP55 rear
Operating Temperature	-40°F to +140°F (-40°C to +60°C)	-40°F to +140°F (-40°C to +60°C)
MTBF	≥ 5000 hours	≥ 5000 hours
LED Life Span	100,000 hours	100,000 hours
Cabinent Size	Custom	Custom
Cabinent Material	Aluminum	Aluminum
Cabinent Weight	7.78 LB/Ft² (38 KG/m²)	9 LB/Ft² (45 KG/m²)
FCC Rules Part 15 Compliant UL 48 Approved		

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER: CIRCLE K
LOCATION: LAKE CITY, FL
DRAWN BY: KL
REVISION: 03
SITE NUMBER: 9831
ACCOUNT REP: BEN DEHAYES
DATE: 10/07/22
SCALE: NTS

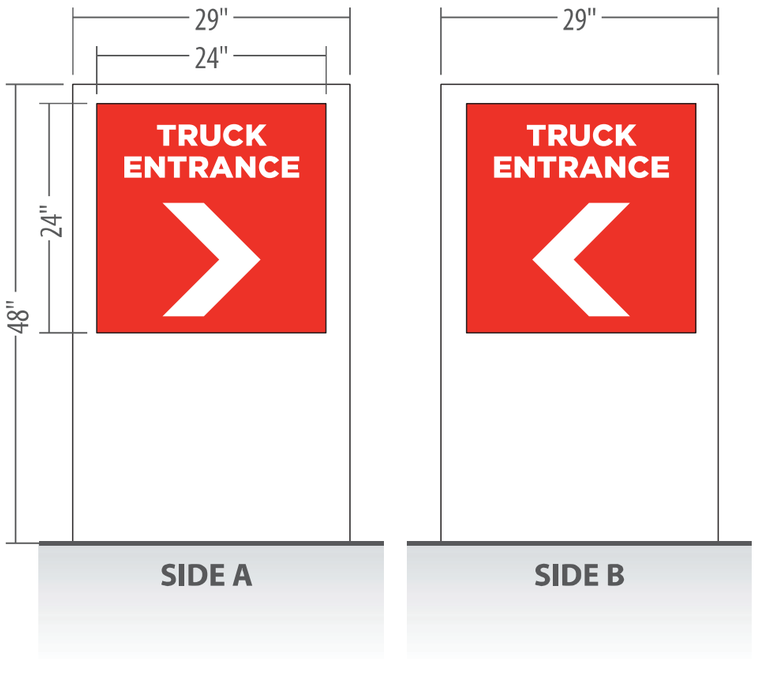
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 WIND LOADS: • V=120 mph • Exposure 'C' • Risk Category 1 Struct. • ASD Load Coeff = 0.6 • Sign Height = 30 ft max • Kzt=1.0, Kd=0.85, G=0.85 • Solid freestanding sign above grade: **± 29.0 psf** • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

QTY (2)



DIRECTIONAL A
ILLUMINATED
4.0 SF

Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 • V= 120 mph • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign above grade: **± 29.0 psf**
WIND LOADS: • Exposure 'C' • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

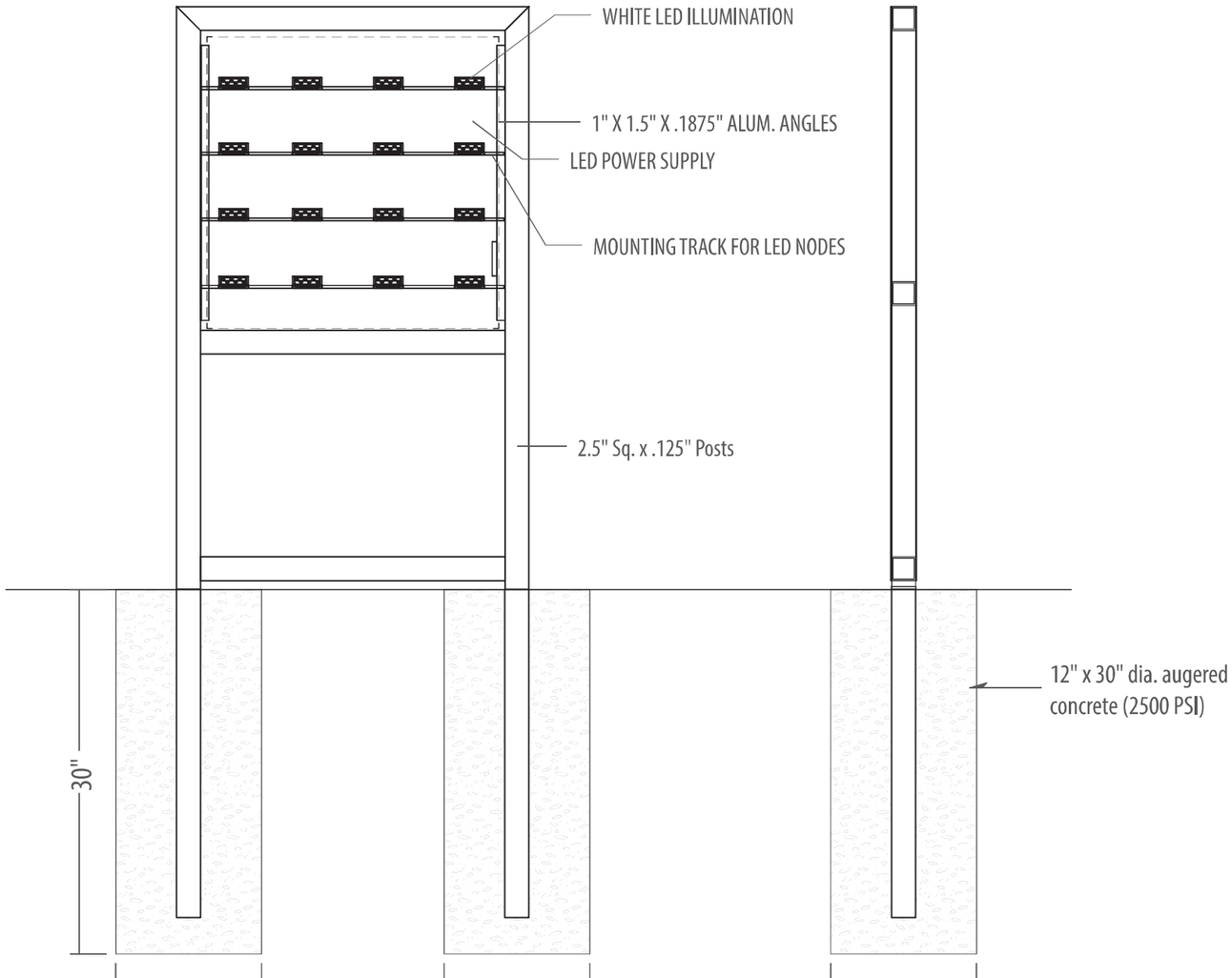
CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

SIGNATURE _____ DATE _____

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.



CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER

OCT 10 2022

ENGINEER'S SIGNATURE

Christian Langley
Florida PE #67382
Cert of Auth #31124

1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16
WIND LOADS: • V=120 mph • Risk Category 1 Struct. • Sign Height = 30 ft max • Solid freestanding sign
• Exposure 'C' • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Cf=1.85 (w/h ratio = 0.2 to 10, any clearance ratio s/h)

± 29.0 psf ding sign above grade:

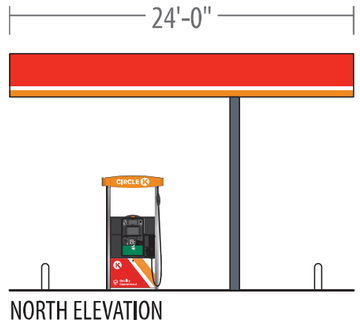
CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

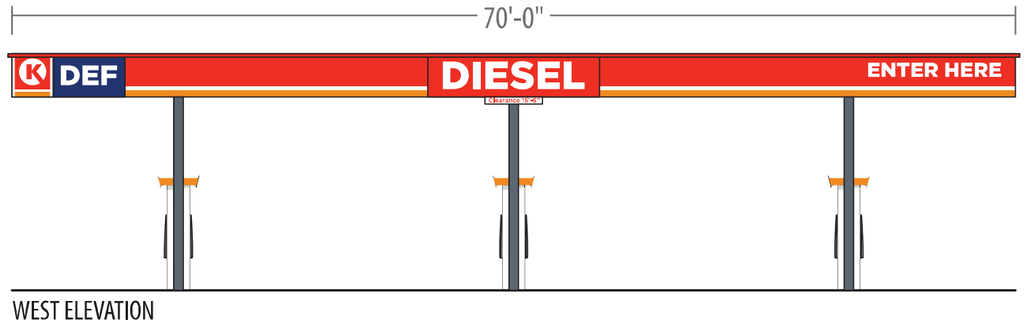
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

SIGNATURE _____ **DATE** _____

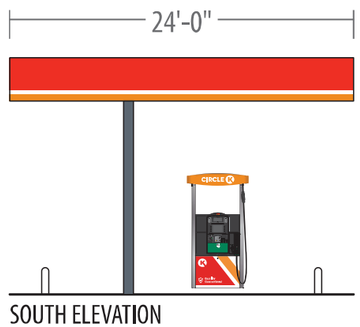
General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.



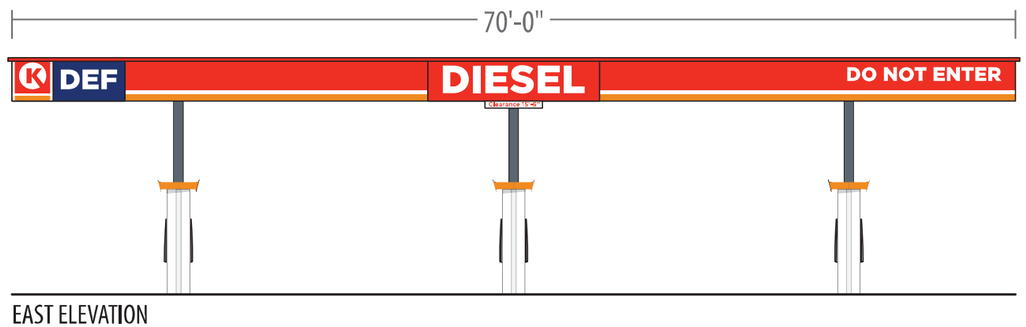
NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION

NEW CONSTRUCTION

EAST ELEVATION			
Gas Island Canopy Fascia	3'-0" x 70'-0"	210.0 SF	24.2% of available space
Non-Illum. Circle K Totem Decal	36" x 30"	7.5 SF	
Non-Illum. Diesel Letters	23" x 119.75"	19.1 SF	
Non-Illum. Enter Here Letters	12" x 111 1/8"	9.2 SF	
Non-Illum. DEF Decal	36" x 60"	15.0 SF	
WEST ELEVATION			
Gas Island Canopy Fascia	3'-0" x 70'-0"	210.0 SF	25.0% of available space
Non-Illum. Circle K Totem Decal	36" x 30"	7.5 SF	
Non-Illum. Diesel Letters	23" x 119.75"	19.1 SF	
Non-Illum. Do Not Enter Letters	12" x 133"	11.0 SF	
Non-Illum. DEF Decal	36" x 60"	15.0 SF	
NORTH ELEVATION			
Non-illuminated Red, White, and Orange ACM panels			
SOUTH ELEVATION			
Non-illuminated Red, White, and Orange ACM panels			

NON-ILLUMINATED RED, WHITE, AND ORANGE ACM PANELS
LED EYEBROW DOWNLIGHTING ON EAST & WEST ELEVATIONS

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

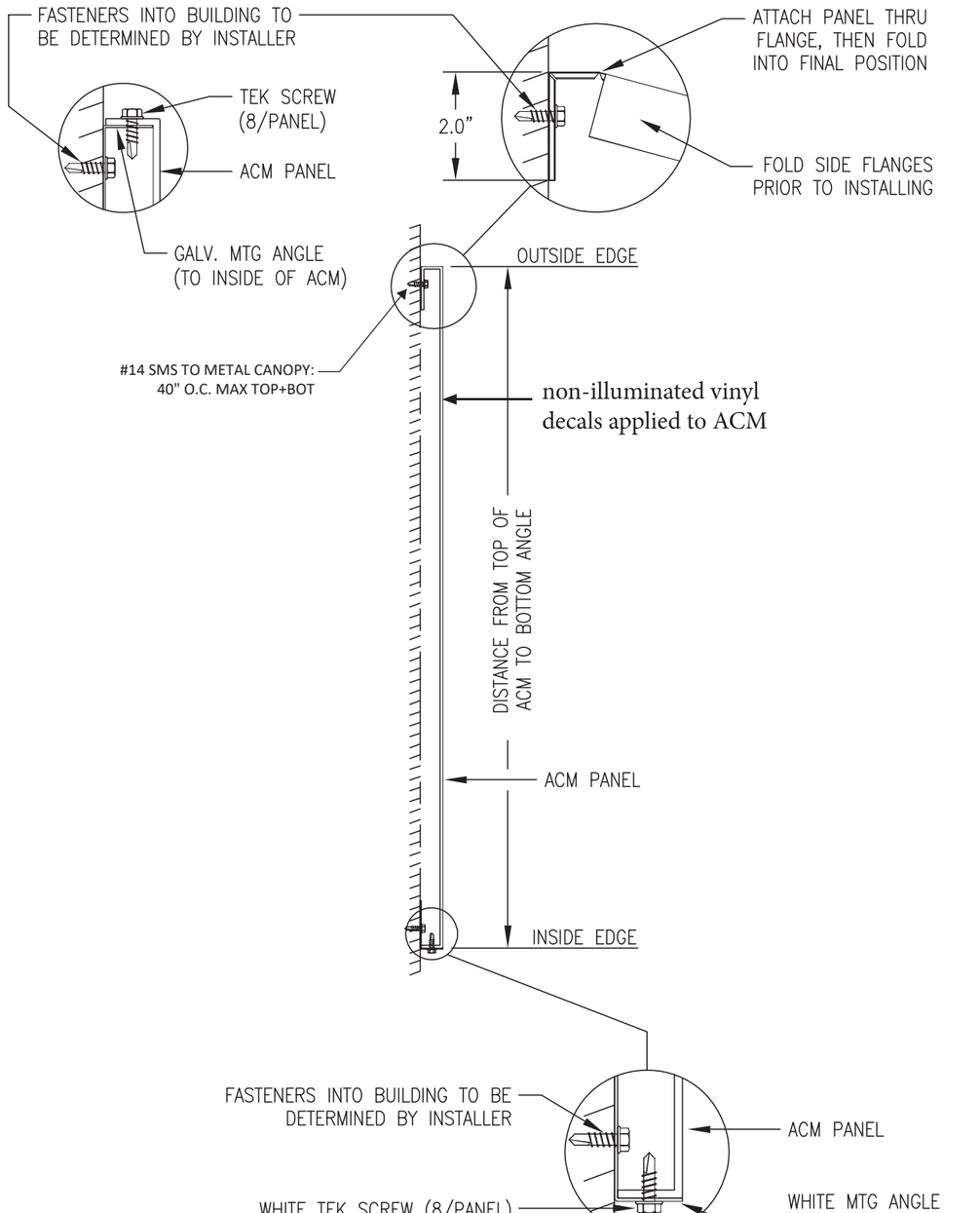
CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

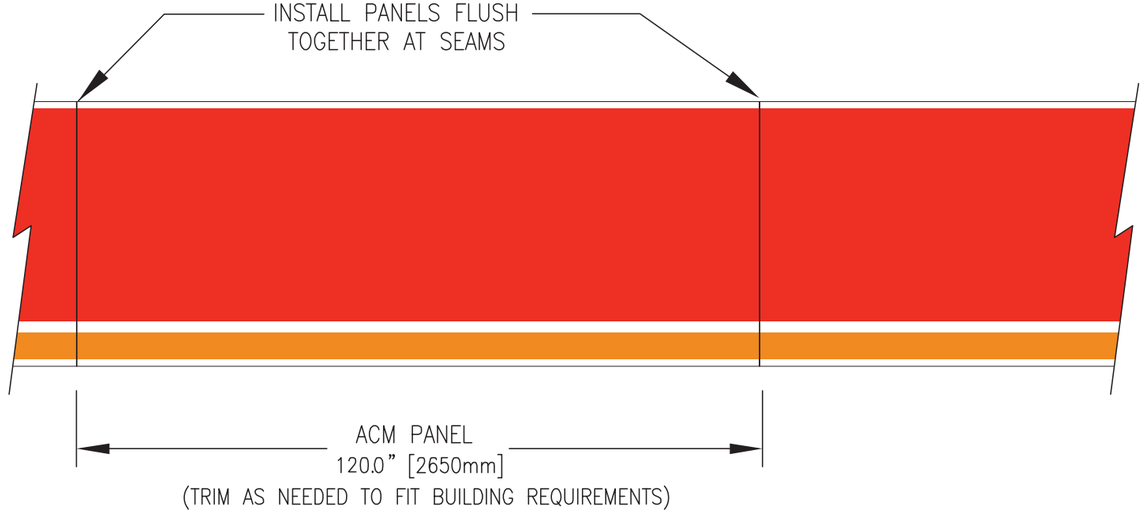
Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 WIND LOADS: • V=130 mph • Exposure 'C' • Risk Category 2 Struct. • ASD Load Coeff = 0.6 • Sign Height = 30 ft max • Kzt=1.0, Kd=0.85, G=0.85 Wall components & claddi • Zone 4: ± 23.8 psf • Zo ng: ne 5: ± 30.3 psf

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

TRI-COLOR ACM INSTALL





Christian Langley
Florida PE #67382
Cert of Auth #31124
1200 N Federal Hwy, #200
Boca Raton, FL 33432
1-888-371-3113

ASCE 7-16 • V=130 mph • Risk Category 2 Struct. • Sign Height = 30 ft max Wall components & cladding:
WIND LOADS: • Exposure 'C' • ASD Load Coeff = 0.6 • Kzt=1.0, Kd=0.85, G=0.85 • Zone 4: ± **23.8 psf** • Zone 5: ± **30.3 psf**

CORPORATE IDENTIFICATION SOLUTIONS

CUSTOMER	LOCATION	DRAWN BY	REVISION
CIRCLE K	LAKE CITY, FL	KL	03
SITE NUMBER	**ACCOUNT REP**	**DATE**	**SCALE**
9831	BEN DEHAYES	10/07/22	NTS

CORPORATE ID SOLUTIONS
5563 N ELSTON AVE.
CHICAGO, IL 60630
P: 773-763-9600 | F: 773-763-9606
CORPORATEIDSOLUTIONS.COM

SIGNATURE _____ **DATE** _____

General Notes: • Design is in accordance with the requirements of the **Fla Bldg Code 7th Ed (2020)** for use within & outside the High Velocity Hurricane Zone (HVHZ). • This engineering certifies only the structural integrity of those systems, components, and/or other construction explicitly specified herein. • Electrical notes, details, & specifications are provided by and are the sole responsibility of the electrical contractor. No electrical review has been performed and no certification of such is intended. • Structural design meets requirements of ACI 318-14, AISC 360-16, ADM1-15, & NDS-18, as applicable. • Steel components shall be coated, painted, or otherwise protected against corrosion per FBC Sec 2203.2/2222.6. • Alum components in contact with steel or embedded in concrete shall be painted or protected as prescribed in ADM1-15(1a), or plastic/neoprene spacers provided. • All exposed fasteners shall be S.S. or have a protective coating for corrosion protection. • All welding shall comply with AWS requirements. • Steel welds: E70xx electrodes. • Aluminum welds: 4043 filler alloy. • Alum extrusions: 6063-T6 or stronger, U.N.O.

Easy Seals
easyseals.com

DESIGN CALCULATIONS

FOR

CIRCLE K #9831
MID: REPL FACES AT PYLON

US HWY 90 & Centurion Ct – Lake City

Columbia County Building Department
Plans Reviewed for Code Compliance
State of Florida

GENERAL NOTES:

1. Design is in accordance with the Florida Building Code 7th Edition (2020) for use within and outside the High Velocity Hurricane Zone (HVHZ).
2. Wind loads have been calculated per the requirements of ASCE 7-16 as shown herein, except where noted otherwise.
3. These engineering calculations pertain only to the structural integrity of those systems, components, and/or other construction explicitly specified herein and/or in accompanying engineering drawings. The existing host structure (if any) is assumed to be in good condition, capable of supporting the loaded system, subject to building department approval. No warranty, either expressed or implied, is contained herein.
4. System components shall be as noted herein. All references to named components and installation shall conform to manufacturer's or industry specifications as summarized herein.
5. Where site conditions deviate from those noted herein, revisions may be required or a separate site-specific engineering evaluation performed.
6. Aluminum components in contact with steel or embedded in concrete shall be protected as prescribed in the 2015 Aluminum Design Manual, Part 1-A. Steel components in contact with, but not encased in, concrete shall be coated, painted, or otherwise protected against corrosion.
7. Engineer seal affixed hereto validates structural design as shown only. Use of this specification by contractor, et. Al, indemnifies and saves harmless this engineer for all costs & damages including legal fees & apellate fees resulting from deviation from this design.

Index:

Engineer's signature and seal valid for pages 1 through 3

CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER

Oct 10 2022

Christian Langley PE # 67382
Easy Seals Cert Auth # 31124

ASCE 7-16 Design Wind Loads

FREESTANDING SOLID SIGNS (ELEVATED)

Building Specs

V =	120 mph	*Basic wind speed (Vult)*	Risk Category 1 Structure		
Exposure	C		ASD Load Combo Coeff:	0.6	

Calculations

α =	9.5	*3-sec gust speed power law exponent*	Kd =	0.85	*Directionality factor*
z_g =	900'	*Nominal ht. of atmos. boundary layer*	Kzt =	1.0	*Topographic factor*
G =	0.85		Ke =	1.0	*Ground elevation factor*
			Cf =	1.85	*Force Coefficient*
					...Width / Height ratio = 0.2 to 10

120 mph - Exp "C"

Elevated Signs

W/Ht Ratio = 0.2 to 2.0

SIGN HEIGHT	DESIGN WIND PRESSURES	Kh = Kz	q_z
15 ft	± 25.1 psf	0.85	16.0
18 ft	± 26.1 psf	0.88	16.6
20 ft	± 26.7 psf	0.90	17.0
30 ft	± 29.0 psf	0.98	18.5
35 ft	± 30.0 psf	1.01	19.1
40 ft	± 30.9 psf	1.04	19.6
45 ft	± 31.6 psf	1.07	20.1
50 ft	± 32.3 psf	1.09	20.6
55 ft	± 33.0 psf	1.12	21.0
60 ft	± 33.6 psf	1.14	21.4
70 ft	± 34.7 psf	1.17	22.1
80 ft	± 35.7 psf	1.21	22.7
90 ft	± 36.6 psf	1.24	23.3
100 ft	± 37.4 psf	1.27	23.8
110 ft	± 38.2 psf	1.29	24.3
120 ft	± 38.9 psf	1.32	24.7
130 ft	± 39.5 psf	1.34	25.1
140 ft	± 40.2 psf	1.36	25.5
150 ft	± 40.8 psf	1.38	25.9
175 ft	± 42.1 psf	1.42	26.8
200 ft	± 43.3 psf	1.46	27.5
250 ft	± 45.4 psf	1.53	28.9

Foundation Design Check (Existing Structure)

Comparison of Reactions Under Proposed Signage vs Existing Signage

Structure Dimensions & Loading

Design wind pressure:	P =	29.0	psf	
Overturning Safety Factor:	Ω =	1.5		… FBC 1807.2.3

Existing Signage

Sign area 1:	A1 =	73.2	sq ft	… tributary area 1 for each footer (e.g. sign)
Height of applied force above grade:	h1 =	15.8	ft	… height of area 1 centroid
Sign area 2:	A2 =	0.0	sq ft	… tributary area 2 for each footer (e.g. post)
Height of applied force above grade:	h2 =	0.0	ft	… height of area 2 centroid

Overturning Moment:

Mne = P*(A1*h1+A2*h2)

Mne = 33.6 kip-ft

Proposed Signage

Sign area 1:	A1 =	73.2	sq ft	… tributary area 1 for each footer (e.g. sign)
Height of applied force above grade:	h1 =	15.8	ft	… height of area 1 centroid
Sign area 2:	A2 =	0.0	sq ft	… tributary area 2 for each footer (e.g. post)
Height of applied force above grade:	h2 =	0.0	ft	… height of area 2 centroid

Overturning Moment:

Mnp = P*(A1*h1+A2*h2)

Mnp = 33.6 kip-ft **Mnp < Mne** **OK**

DESIGN CALCULATIONS

FOR

CIRCLE K #9831
DIRECTIONALS

US HWY 90 & Centurion Ct – Lake City

GENERAL NOTES:

1. Design is in accordance with the Florida Building Code 7th Edition (2020) for use within and outside the High Velocity Hurricane Zone (HVHZ).
2. Wind loads have been calculated per the requirements of ASCE 7-16 as shown herein, except where noted otherwise.
3. These engineering calculations pertain only to the structural integrity of those systems, components, and/or other construction explicitly specified herein and/or in accompanying engineering drawings. The existing host structure (if any) is assumed to be in good condition, capable of supporting the loaded system, subject to building department approval. No warranty, either expressed or implied, is contained herein.
4. System components shall be as noted herein. All references to named components and installation shall conform to manufacturer's or industry specifications as summarized herein.
5. Where site conditions deviate from those noted herein, revisions may be required or a separate site-specific engineering evaluation performed.
6. Aluminum components in contact with steel or embedded in concrete shall be protected as prescribed in the 2015 Aluminum Design Manual, Part 1-A. Steel components in contact with, but not encased in, concrete shall be coated, painted, or otherwise protected against corrosion.
7. Engineer seal affixed hereto validates structural design as shown only. Use of this specification by contractor, et. Al, indemnifies and saves harmless this engineer for all costs & damages including legal fees & apellate fees resulting from deviation from this design.

Index:

Engineer's signature and seal valid for pages 1 through 4

CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER

Oct 10 2022

Christian Langley PE # 67382

Easy Seals Cert Auth # 31124

ASCE 7-16 Design Wind Loads

FREESTANDING SOLID SIGNS (ELEVATED)

Building Specs

V =	120 mph	*Basic wind speed (Vult)*	Risk Category 1 Structure		
Exposure	C		ASD Load Combo Coeff:	0.6	

Calculations

α =	9.5	*3-sec gust speed power law exponent*	Kd =	0.85	*Directionality factor*
z_g =	900'	*Nominal ht. of atmos. boundary layer*	Kzt =	1.0	*Topographic factor*
G =	0.85		Ke =	1.0	*Ground elevation factor*
			Cf =	1.85	*Force Coefficient*
					...Width / Height ratio = 0.2 to 10

120 mph - Exp "C"

Elevated Signs

W/Ht Ratio = 0.2 to 2.0

SIGN HEIGHT	DESIGN WIND PRESSURES	Kh = Kz	q_z
15 ft	± 25.1 psf	0.85	16.0
18 ft	± 26.1 psf	0.88	16.6
20 ft	± 26.7 psf	0.90	17.0
30 ft	± 29.0 psf	0.98	18.5
35 ft	± 30.0 psf	1.01	19.1
40 ft	± 30.9 psf	1.04	19.6
45 ft	± 31.6 psf	1.07	20.1
50 ft	± 32.3 psf	1.09	20.6
55 ft	± 33.0 psf	1.12	21.0
60 ft	± 33.6 psf	1.14	21.4
70 ft	± 34.7 psf	1.17	22.1
80 ft	± 35.7 psf	1.21	22.7
90 ft	± 36.6 psf	1.24	23.3
100 ft	± 37.4 psf	1.27	23.8
110 ft	± 38.2 psf	1.29	24.3
120 ft	± 38.9 psf	1.32	24.7
130 ft	± 39.5 psf	1.34	25.1
140 ft	± 40.2 psf	1.36	25.5
150 ft	± 40.8 psf	1.38	25.9
175 ft	± 42.1 psf	1.42	26.8
200 ft	± 43.3 psf	1.46	27.5
250 ft	± 45.4 psf	1.53	28.9

Footing Design for Freestanding Signs

Structure Dimensions & Loading

Design wind pressure:	P =	29.0	psf	
Overturning Safety Factor:	Ω =	1.5		… FBC 1807.2.3
Sign area 1:	A1 =	4.8	sq ft	… tributary area 1 for each footer (e.g. sign)
Height of applied force above grade:	h1 =	2.0	ft	… height of area 1 centroid
Sign area 2:	A2 =	0.0	sq ft	… tributary area 2 for each footer (e.g. post)
Height of applied force above grade:	h2 =	0.0	ft	… height of area 2 centroid

Overturning Moment: Mn = P*(A1*h1+A2*h2)

Mn = 0.3 kip-ft

Round — Footing Diameter: B = 1 ft

Footing depth: d = 2.5 ft — Soil cover: ds = 0 ft

Superstructure weight:	Dr =	200	lb	
Soil cover weight:	Ds =	0	lb	… = 100pcf*π*B^2/4*ds
Footing weight:	Df =	295	lb	… = 150pcf*π*B^2/4*d
Total weight:	D =	495	lb	… = Dr + Ds + Df

Soil Strength

…FBC Tables 1806.2, 1819.6

Soil class: 4. Sand, silty sand, silty gravel

Lateral bearing strength:	Plat =	150	psf/ft
Vertical bearing strength:	Pbrg =	2000	psf

Check Lateral Soil Bearing Pressures

(Empirical Method) *…FBC Sect 1807.3.2.1*

Unconstrained

(No rigid floor or pavement at ground surface)

Allowable lateral soil bearing pressure at 1/3 depth:

S_1 = 2*Plat * (d+ds)/3

S_1 = 250 psf

Total applied lateral load: Ptot = 0.14 kips

Equiv ht of applied load: heq = 2.00 ft

As = 2.34*Ptot/(S1*B)

As = 1.3 ft

dreq = As/2 * [1 + √(1+4.36*heq/As)]

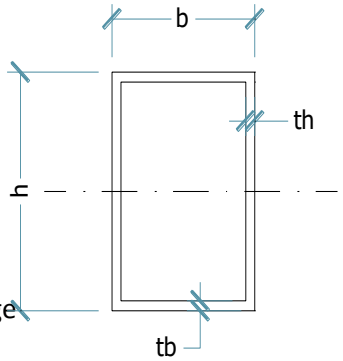
dreq = 2.47 ft — dreq < d **OK**

ALUMINUM DESIGN MANUAL

Specifications for Aluminum Structures (Buildings)

Design Check of 2.5''x2.5''x0.125''/0.125'' 6063-T6 Aluminum Tube

Alloy:	6063	Temper:	T6	Welded:	Y



SECTION PROPERTIES

b	2.500''	Flange width
tb	0.125''	Flange thickness
h	2.500''	Web height
th	0.125''	Web thickness
Ix	1.12 in^4	Moment of Inertia about axis parallel to flange
Iy	1.12 in^4	Moment of Inertia about axis parallel to web
Sc	0.90 in^3	Section modulus, compression side (about X-axis)
rx	0.97 in	Radius of gyration about centroidal axis parallel to flange
ry	0.97 in	Radius of gyration about centroidal axis parallel to web
J	1.67 in^4	Torsion constant
A	1.19 in^2	Cross sectional area of member

MEMBER SPANS

L	10.0 ft	Unsupported member length (between supports)
Lb	8.0 ft	Unbraced length for bending (between bracing against side-sway)
k	1.0	Effective length factor

MATERIAL PROPERTIES

Ftu	17 ksi	Tensile ultimate strength
Fty	8 ksi	Tensile yield strength
Fcy	8 ksi	Compressive yield strength
Fsu	11 ksi	Shear ultimate strength
E	10,100 ksi	Compressive Modulus of Elasticity

ALLOWABLE STRESSES

Fb =	**4.85 ksi**	**Allowable bending stress**
Fac =	**2.79 ksi**	**Allowable axial stress, compression**

MEMBER LOADING

Design wind pressure:	P =	29.0	psf	End Supports:	Cantiliever
Sign area:	A1 =	4.8	sq ft	... trib area for each post (e.g. sign+post)	
Eccentricity of applied force:	e1 =	2.0	ft	... dist to area centroid (weighted avg h1,h2)	

Bending Moments

Mz	0.28 kip-ft	Bending moment developed in member	*Ma = 0.36 kip-ft*	
fb =	3.76 ksi	Bending stress developed in member		
Fb =	4.85 ksi	Allowable bending stress of member	fb < Fb	OK

DESIGN CALCULATIONS

FOR

CIRCLE K #9831
PANELS AT FUEL CANOPY

US HWY 90 & Centurion Ct – Lake City

GENERAL NOTES:

1. Design is in accordance with the Florida Building Code 7th Edition (2020) for use within and outside the High Velocity Hurricane Zone (HVHZ).
2. Wind loads have been calculated per the requirements of ASCE 7-16 as shown herein.
3. These engineering calculations pertain only to the structural integrity of those systems, components, and/or other construction explicitly specified herein and/or in accompanying engineering drawings. The existing host structure (if any) is assumed to be in good condition, capable of supporting the loaded system, subject to building department approval. No warranty, either expressed or implied, is contained herein.
4. System components shall be as noted herein. All references to named components and installation shall conform to manufacturer's or industry specifications as summarized herein.
5. Where site conditions deviate from those noted herein, revisions may be required or a separate site-specific engineering evaluation performed.
6. Aluminum components in contact with steel or embedded in concrete shall be protected as prescribed in the 2015 Aluminum Design Manual, Part 1. Steel components in contact with, but not encased in, concrete shall be coated, painted, or otherwise protected against corrosion.
7. Engineer seal affixed hereto validates structural design as shown only. Use of this specification by contractor, et. Al, indemnifies and saves harmless this engineer for all costs & damages including legal fees & apellate fees resulting from deviation from this design.

Index:

Engineer's signature and seal valid for pages 1 through 3

CHRISTIAN LANGLEY LICENSE No. 67382 STATE OF FLORIDA PROFESSIONAL ENGINEER

Oct 10 2022

Christian Langley PE # 67382

Easy Seals Cert Auth # 31124

ASCE 7-16 Design Wind Loads

WALL-MOUNTED SIGNS

Building Specs

V =	130 mph	*Basic wind speed (Vult)*			
Exposure	C		ASD Load Combo Coeff:	0.6	

Calculations

α =	9.5	*3-sec gust speed power law exponent*	Kd =	0.85	*Directionality factor*
z_g =	900'	*Nominal ht. of atmos. boundary layer*	Kzt =	1.0	*Topographic factor*
Gcpi =	0	*Internal pressure coeff*	Ke =	1.0	*Ground elevation factor*
			A =	10 sq ft	*Tributary area*

130 mph - Exp "C"

WALL-MOUNTED SIGNS

SIGN HEIGHT	ASD WIND PRESSURES CENTER (Zone 4)	CORNER (Zone 5)	Kh = Kz	q_z	GCp (4)	GCp (5)
15 ft	**20.6 psf**	**26.2 psf**	0.85	18.7	-1.10	-1.40
20 ft	**21.9 psf**	**27.9 psf**	0.90	19.9	-1.10	-1.40
25 ft	**22.9 psf**	**29.2 psf**	0.95	20.9	-1.10	-1.40
30 ft	**23.8 psf**	**30.3 psf**	0.98	21.7	-1.10	-1.40
35 ft	**24.6 psf**	**31.3 psf**	1.01	22.4	-1.10	-1.40
40 ft	**25.3 psf**	**32.2 psf**	1.04	23.0	-1.10	-1.40
45 ft	**26.0 psf**	**33.0 psf**	1.07	23.6	-1.10	-1.40
50 ft	**26.5 psf**	**33.8 psf**	1.09	24.1	-1.10	-1.40
55 ft	**27.1 psf**	**34.5 psf**	1.12	24.6	-1.10	-1.40
60 ft	**27.6 psf**	**35.1 psf**	1.14	25.1	-1.10	-1.40
70 ft	**23.3 psf**	**46.6 psf**	1.17	25.9	-0.90	-1.80
80 ft	**24.0 psf**	**48.0 psf**	1.21	26.6	-0.90	-1.80
90 ft	**24.6 psf**	**49.2 psf**	1.24	27.3	-0.90	-1.80
100 ft	**25.1 psf**	**50.3 psf**	1.27	27.9	-0.90	-1.80
110 ft	**25.6 psf**	**51.3 psf**	1.29	28.5	-0.90	-1.80
120 ft	**26.1 psf**	**52.2 psf**	1.32	29.0	-0.90	-1.80
130 ft	**26.6 psf**	**53.1 psf**	1.34	29.5	-0.90	-1.80
140 ft	**27.0 psf**	**54.0 psf**	1.36	30.0	-0.90	-1.80
150 ft	**27.4 psf**	**54.7 psf**	1.38	30.4	-0.90	-1.80
175 ft	**28.3 psf**	**56.6 psf**	1.42	31.4	-0.90	-1.80
200 ft	**29.1 psf**	**58.2 psf**	1.46	32.3	-0.90	-1.80
250 ft	**30.5 psf**	**61.0 psf**	1.53	33.9	-0.90	-1.80

Wall Sign Anchor Design

Structure Dimensions & Loading

Design wind pressure: **P = 30.3 psf**

Sign type: Raceway
Sign size: h = 36.0 inches (height)

Wall material: Metal — Steel studs or extrusions/shapes
Anchor type/size: #14 SMS
Ref: Min 18ga studs (grd 33) or 0.090" 6063-T6
Min Embedment: Full
Min edge dist: 0.75"

Anchor tensile capacity: **Tcap = 152.0 lb** (per anchor)

Check Anchors for Pullout

Total Reaction:	Rt =	91	lb/ft	… = P*h (along raceway)
Anchor spacing req'd	s =	40.1	in O.C.	… = (2*cap)/Rt

Pairs of anchors at 40 inches on center (max)
3.3 feet on center

OK, use anchors at 40" O.C. max along top & bottom.