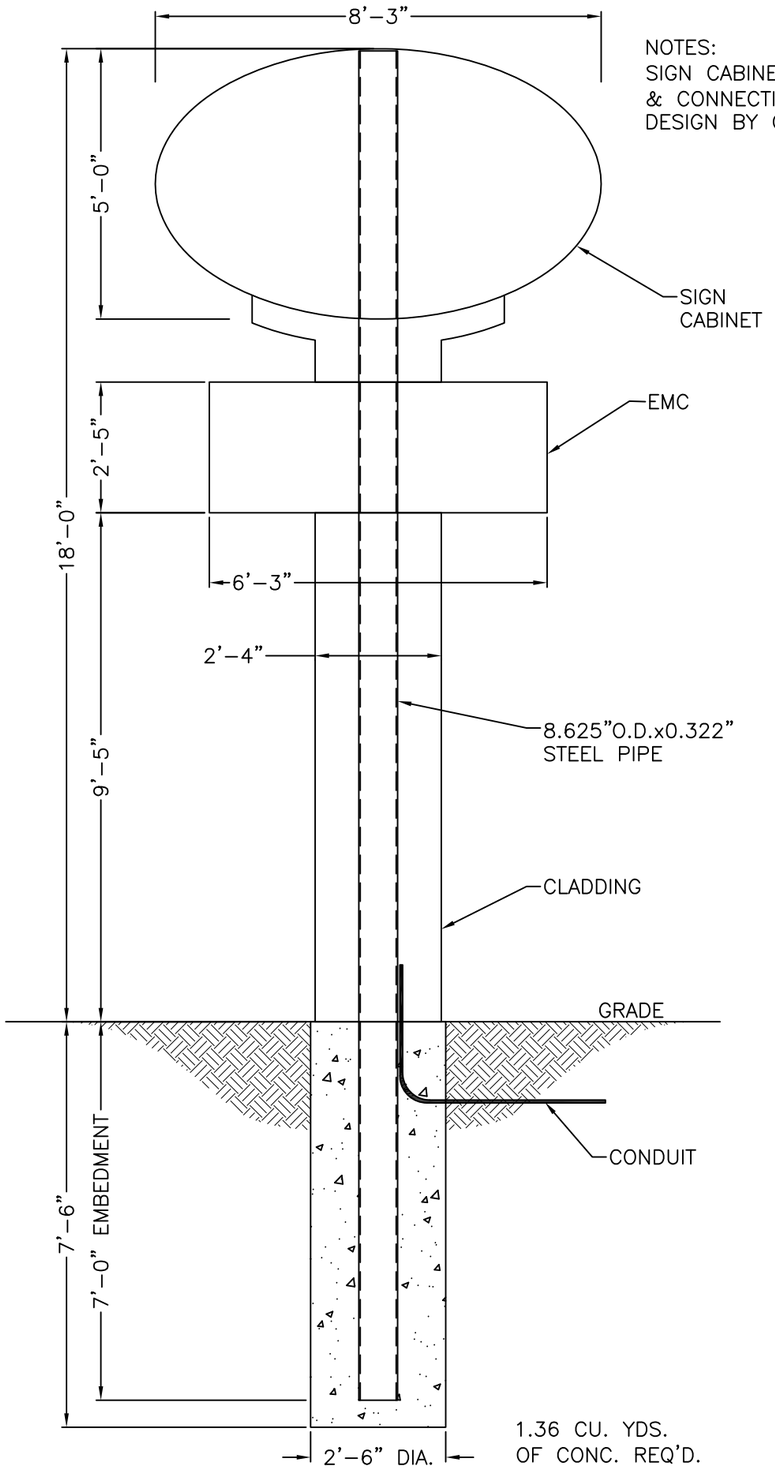
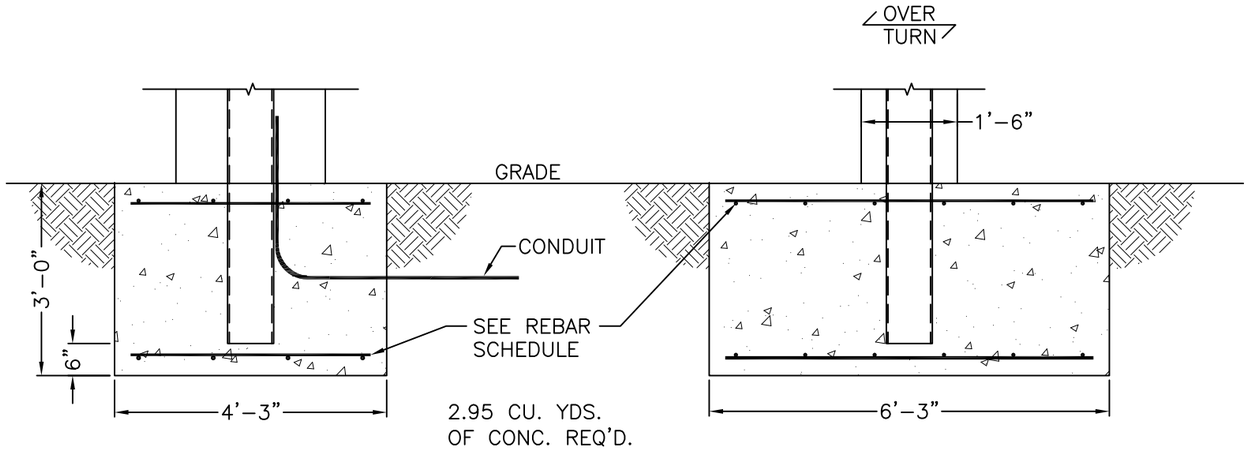
NOTES:
SIGN CABINET(S), CLADDING,
& CONNECTION(S)
DESIGN BY OTHERS.



ELEVATION



ELEVATION SIDE VIEW

OPTIONAL SPREAD FOUNDATION

REBAR SCHEDULE
SPREAD FOUNDATION

DO NOT WELD REBAR
3" MIN. COVER

PLACEMENT	SIZE	SPACING	QUANTITY
LONG BOTTOM STEEL	#4	14"	4
LONG TOP STEEL	#4	14"	4
BOTTOM CROSS STEEL	#4	13"	6
TOP CROSS STEEL	#4	13"	6

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

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IMAD N. KASHIF, P.E.
FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

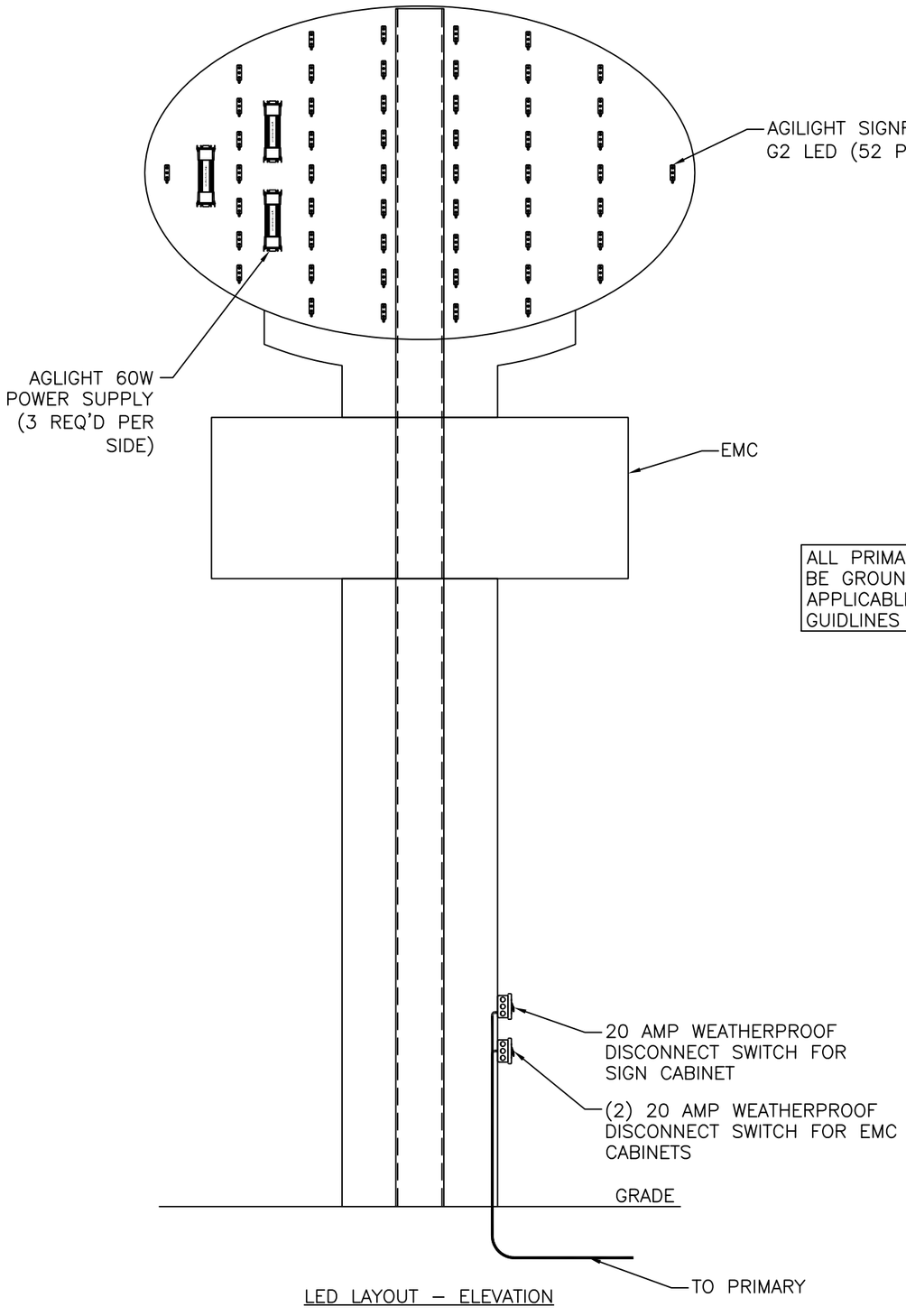
IMAD KASHIF
Digitally signed by IMAD KASHIF
DN: c=US, st=Tennessee, l=Knoxville, o=Link Engineering, LLC, cn=IMAD KASHIF, email=ikashif@linkengr.com
Date: 2022.08.12 12:56:30 -04'00'

IMAD N. KASHIF LICENSE No. 41374 STATE OF FLORIDA PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186649R3

SHT.	OF	DATE:	BY:
1	3	8/12/22	GHK



LED LAYOUT – ELEVATION

ALL PRIMARY WIRING MUST BE GROUNDED PER ALL APPLICABLE UL AND NEC GUIDLINES

ELECTRICAL REQUIREMENTS (FOR SIGN CABINET):
LEDs: (104) AGILIGHT SIGNRAYZ APEX G2
POWER SUPPLY TOTAL: (6) 12V/60W AGILIGHT #PS12-60W-100-277V @ 0.80A
LOAD: 4.8A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

ELECTRICAL REQUIREMENTS (FOR EMC):

VOLTAGE: 120VAC
CIRCUITS: (2) 20 AMP REQUIRED

TOTAL # OF CIRCUITS REQ'D:

CIRCUITS: (3) 20 AMP REQUIRED

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

PHOTOCELL, OR ASTRONOMICAL TIMER LIGHT CONTROL MANAGEMENT SYSTEM IS REQUIRED

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

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Date: 2022.08.12 12:56:13 -04'00'

IMAD A. KASHIF LICENSE No. 41374 STATE OF FLORIDA PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186649R3

SHT.	OF	DATE:	BY:
2	3	8/12/22	GHK

		PROJECT #	22-0282R3		OWNER:	CULVER'S				
		August 12, 2022				394 N.W. COMMONS LOOP				
		DRAWING #	B186649R3			LAKE CITY, FL 32055				
		WIND LOAD	25.37	PSF						
		WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON				
		# COLUMNS	1	Florida Building Code		2531 N. PATTERSON				
		DESIGNER	GHK	7th Ed (2020)		SPRINGFIELD, MO				
					SHAPE	CENTROID		TOTAL		
	ITEM	HEIGHT	WIDTH		FACTOR	HEIGHT	AREA	FORCE	MOMENT	
	SIGN	5.000	8.250		0.801	2.453	33.054	0.839	2.057	
	CLADDING	1.167	4.667		0.610	0.663	3.321	0.923	3.092	
	EMC	2.417	6.250		1.000	1.208	15.104	1.306	5.785	
	CLADDING	9.417	2.333		1.000	4.708	21.972	1.864	20.711	
	OAH	18.000								

COLUMN CALCULATIONS (CODES P=PIPE;O=OTHER;T=TUBE)

	ITEM	COLUMN WIDTH	COLUMN DEPTH	COLUMN WALL	Ixx	DESIGN MODULUS	REQUIRED MOMENT	AVAILABLE FLEXURAL STRENGTH	UNITY
=						COLUMN			
P	SIGN		8.625	0.300	68.1	20.80	2.057	36.33	0.057
P	CLADDING		8.625	0.300	68.1	20.80	3.092	36.33	0.085
P	EMC		8.625	0.300	68.1	20.80	5.785	36.33	0.159
P	CLADDING		8.625	0.300	68.1	20.80	20.711	36.33	0.570

SPREAD FOUNDATION		
MOMENT AT GRADE	20.711	
TOTAL FORCE	1.864	kip
WEIGHT OF SIGN	1.129	kip
SLAB WIDTH	4.250	ft
SLAB LENGTH	6.250	ft
SLAB DEPTH	3.000	ft
SLAB WEIGHT	11.953	kip
TOTAL WEIGHT	13.082	kip
OVERTURNING MOMENT	26.302	
FACTOR OF SAFETY	1.554	
e = OTM/WT	2.011	
L/2 - e	1.114	
SOIL PRESSURE 2*WT/(3*(L/2-e)*WIDTH)	1841	
CONCRETE	2.951	yd^3
EXCAVATION	2.951	yd^3
MIN.. THICKNESS W/O REBAR	16.212	in
SQRT(M*12*6*1.7*.75/(.178*12*WIDTH)		
ACTUAL THICKNESS	36.000	in
BOTTOM STEEL AREA REQ'D PER FT OF WIDTH	0.172	
TOP STEEL AREA REQ'D PER FT OF WIDTH	0.061	

LONG BOTTOM STEEL	REBAR SIZE	4.000
	WEIGHT PER FT	0.668
	SPACING	14.000 in
	AREA PER BAR	0.200 in^2
BOTTOM STEEL AREA REQ'D PER FT OF WIDTH		0.172
	AREA PER FT	0.188
	EST NO. REQ'D	3.643
	NUMBER REQ'D	4.000
	LENGTH	5.750 ft
	WEIGHT	15.364
	EDGE	4.500
LONG TOP STEEL	REBAR SIZE	4.000
	WEIGHT PER FT	0.668
	SPACING	14.000 in
	AREA PER BAR	0.200 in^2
TOP STEEL AREA REQ'D PER FT OF WIDTH		0.061
	AREA PER FT	0.188
	EST NO. REQ'D	3.643
	NUMBER REQ'D	4.000
	LENGTH	5.750 ft
	WEIGHT	15.364
	EDGE	4.500
CROSS STEEL	REBAR SIZE	4.000
	WEIGHT PER FT	0.668
	SPACING	13.000 in
	LENGTH	3.750 ft
	EST NO. REQ'D	5.769
	NUMBER REQ'D	6.000
	EDGE	5.000 in
	WEIGHT	30.060
	TOTAL WEIGHT	60.788
FOUNDATION WIDTH		4.250 ft
FOUNDATION LENGTH		6.250 ft
CAISSON		
MOMENT		20.711 FT-KIP
FORCE		1.864 KIP
REFERENCE IBC 1807.3.2 & TABLE 1806.2		
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC		
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH		150.0 PSF/FT
S1		750.0
DEPTH		7.500 FT.
DIAMETER		2.500 FT.
		11.112 FT.
		2.326 FT.
CALCULATED DEPTH		6.597 FT.
MINIMUM THICKNESS WITHOUT REINFORCEMENT		30.392 IN.
ACTUAL DIAMETER		30.000 IN.
CONCRETE		1.364 CU. YD.
EXCAVATION		1.364 CU. YD.

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code 7th Ed. (2020). Category II, Exposure C.
2. Spread foundation is based on a safe vertical soil bearing pressure minimum of 2000 psf. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short–term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re–evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All support members shall be free from defects. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
8. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
9. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn–of–Nut method unless noted otherwise.
10. The scope of this engineer does not include onsite observations.
11. LINK Engineering will not be responsible for the safety on this job site before, during or after installation of this structure. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of this structure is performed using methods that are in full compliance with OSHA regulations.
12. Any deviation from this design or from any part of this drawing, including the General Notes, without prior written consent from LINK Engineering voids this drawing in its entirety.
13. The structure designed on this drawing is intended to be installed at the address shown and should not be used at any other location.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

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IMAD N. KASHIF, P.E.
FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

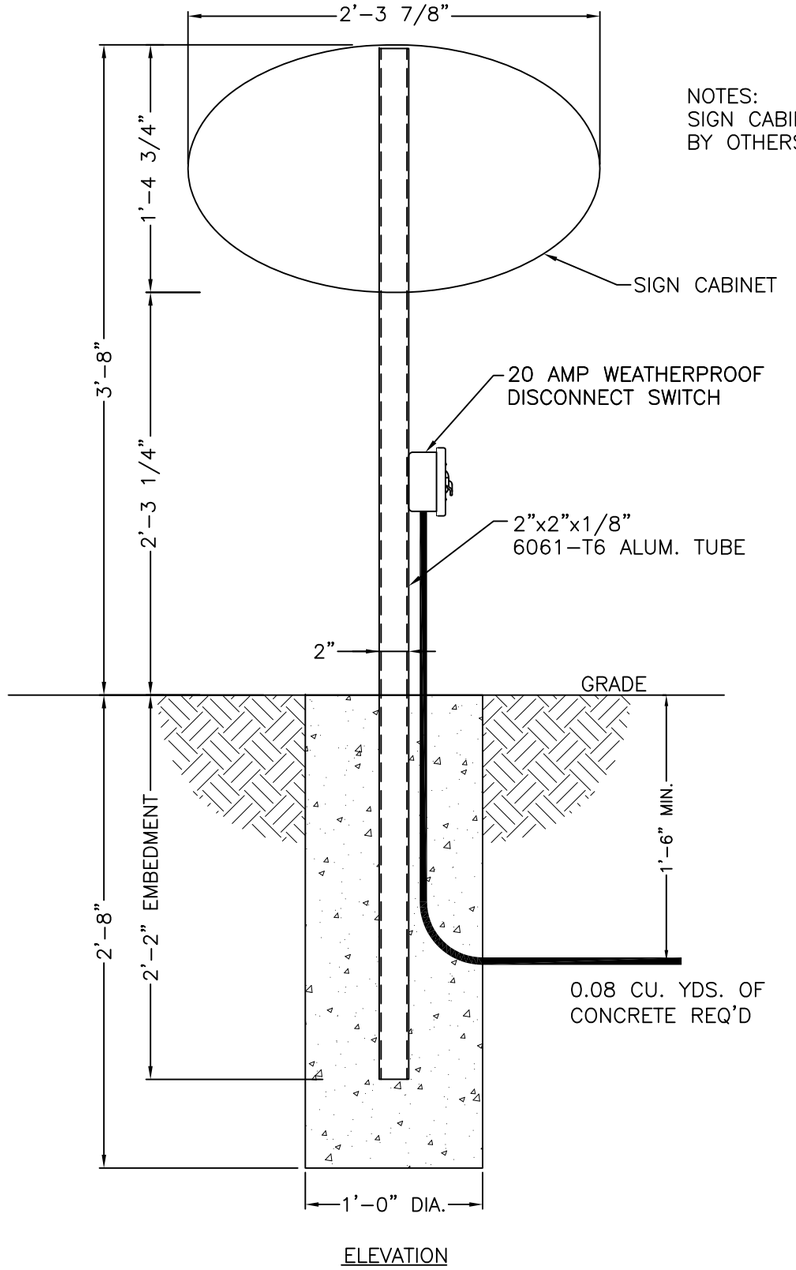
IMAD KASHIF
Digitally signed by IMAD KASHIF
DN: c=US, st=Tennessee, l=Knoxville, o=Link Engineering, LLC, cn=IMAD KASHIF, email=ikashif@linkengr.com
Date: 2022.08.12 12:55:53 -04'00'

IMAD N. KASHIF
LICENSE
No. 41374
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539–4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22–0282R3	B186649R3

SHT.	OF	DATE:	BY:
3	3	8/12/22	GHK



ELEVATION

NOTES:
SIGN CABINET DESIGN
BY OTHERS.

EMBEDDED ALUM. SHALL BE COATED WITH CARBOLINE BITUMASTIC 50 COAL TAR OR EQUAL PRIOR TO INSTALLATION.

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. All support members shall be free from defects. Aluminum tube shall be 6061-T6 alloy, channel shall be 6063-T6 and aluminum sheet 3003 H14.
7. Aluminum welds shall be made with 5356 filler by persons qualified in accordance with AWS standards within the past two years.
8. All fasteners shall be zinc coated to prevent corrosion.
9. The scope of this engineer does not include onsite observations.
10. LINK Engineering will not be responsible for the safety on this job site before, during or after installation of this structure. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of this structure is performed using methods that are in full compliance with OSHA regulations.
11. Any deviation from this design or from any part of this drawing, including the General Notes, without prior written consent from LINK Engineering voids this drawing in its entirety.
12. The structure designed on this drawing is intended to be installed at the address shown and should not be used at any other location.

	PROJECT #	22-0282R		OWNER:	CULVER'S			
	July 14, 2022				255 N.W. COMMONS LOOP			
	DRAWING #	B186705			LAKE CITY, FL 32055			
	WIND LOAD	23.96	PSF					
	WIND SPEED	120	MPH	CLIENT:	BLAIR SIGN COMPANY			
	# COLUMNS	1	FLORIDA BUILDING CODE		5107 KISSELL AVENUE			
	DESIGNER	SR	7th Ed. (2020)		ALTOONA, PA			

	ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT
	CABINET	1.396	2.323	0.785	0.698	2.547	0.061	0.043
	COLUMN	2.271	0.167	1.111	1.135	0.421	0.071	0.193
	OAH	3.667						

COLUMN CALCULATIONS (CODES P=PIPE;O=OTHER;T=TUBE)

=	ITEM	COLUMN WIDTH	COLUMN DEPTH	COLUMN WALL	Ixx COLUMN	DESIGN MODULUS COLUMN	REQUIRED MOMENT	AVAILABLE FLEXURAL STRENGTH	UNITY
T	CABINET	2.000	2.000	0.125	0.552	0.552	0.043	0.897	0.047
T	COLUMN	2.000	2.000	0.125	0.552	0.552	0.193	0.897	0.215

	CAISSON		
	MOMENT	0.193	FT-KIP
	FORCE	0.071	KIP
	REFERENCE IBC 1807.3.2 & TABLE 1806.2		
	ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC		
	LATERAL BEARING PRESSURE - PSF/FT OF DEPTH	150.0	PSF/FT
	S1	266.7	
	DEPTH	2.667	FT.
	DIAMETER	1.000	FT.
		2.709	FT.
		0.624	FT.
	CALCULATED DEPTH	1.705	FT.
	MINIMUM THICKNESS WITHOUT REINFORCEMENT	7.971	IN.
	ACTUAL DIAMETER	12.000	IN.
	CONCRETE	0.078	CU. YD.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

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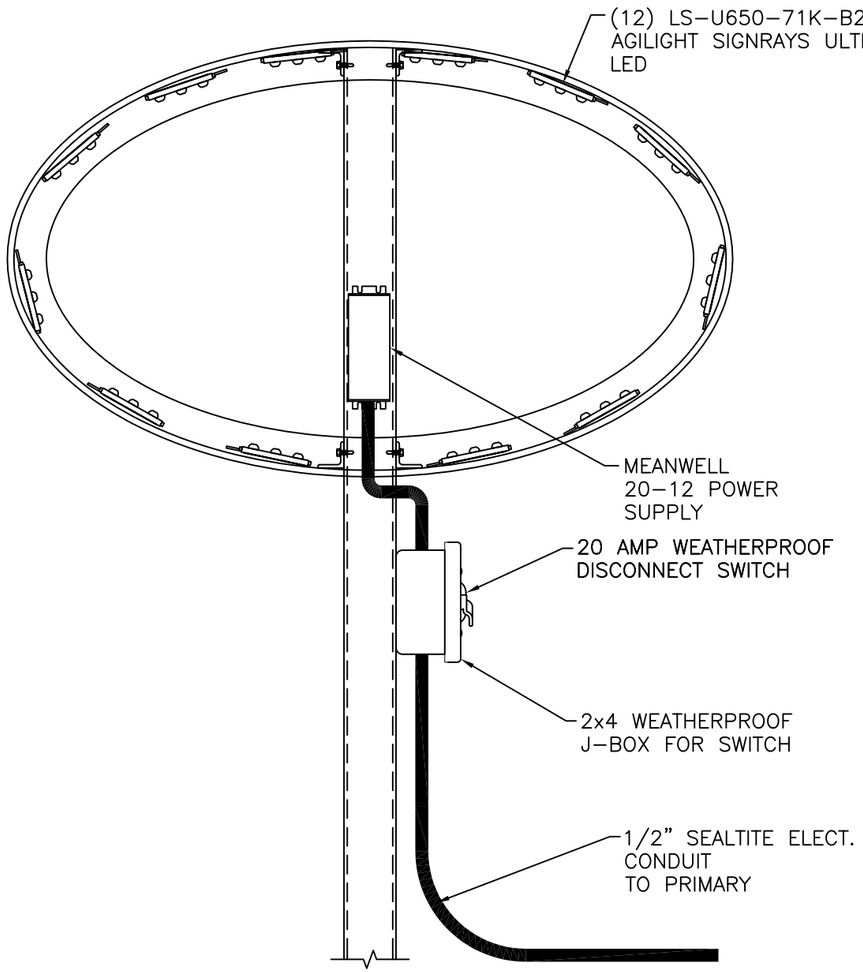
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186705R2

SHT.	OF	DATE:	BY:
1	2	8/12/22	GHK



ELECTRICAL ELEVATION

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

ELECTRICAL REQUIREMENTS:
LEDs: (12) AGILIGHT SIGNRAYS ULTRA LED
#LS-U650-71K-B200-A
POWER SUPPLY: (1) MEANWELL POWER SUPPLY
#MDR-20-12 @ 0.55A
TOTAL LOAD: .55A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

PHOTOCELL, OR ASTRONOMICAL TIMER LIGHT CONTROL MANAGEMENT SYSTEM IS REQUIRED

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

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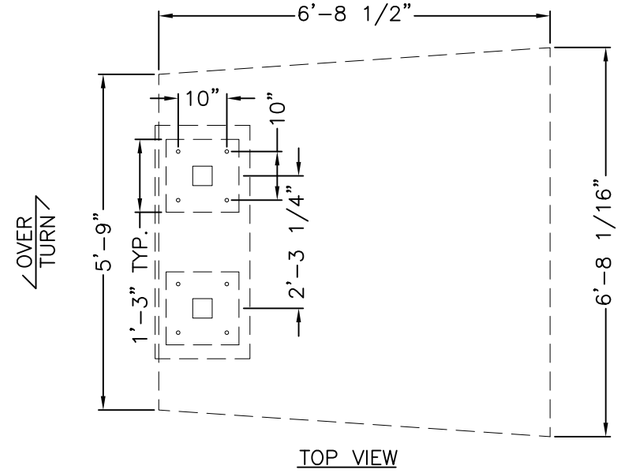
Florida State Certificate of Authorization No.: 27148

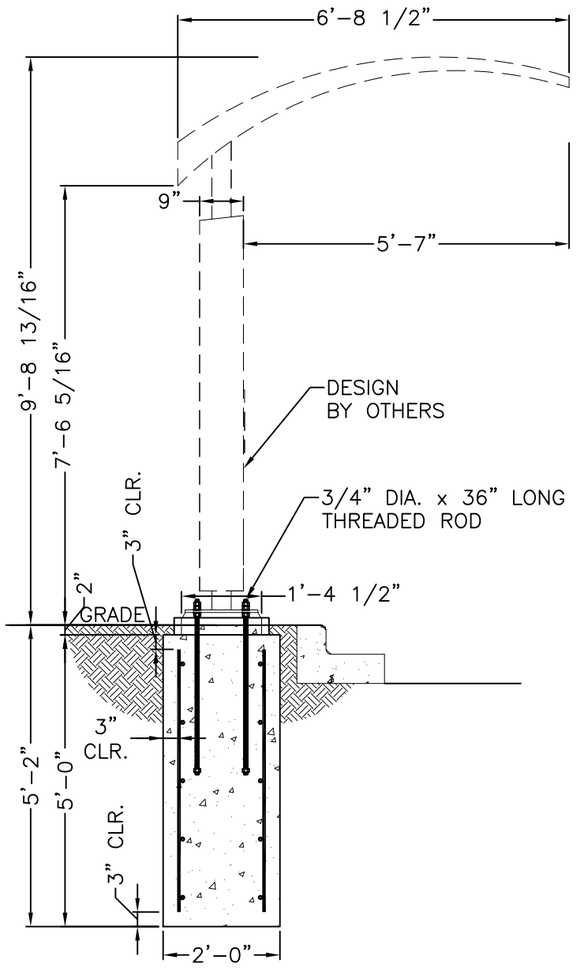
Project Number:	Drawing Number:
22-0282R3	B186705R2

SHT.	OF	DATE:	BY:
2	2	8/12/22	GHK

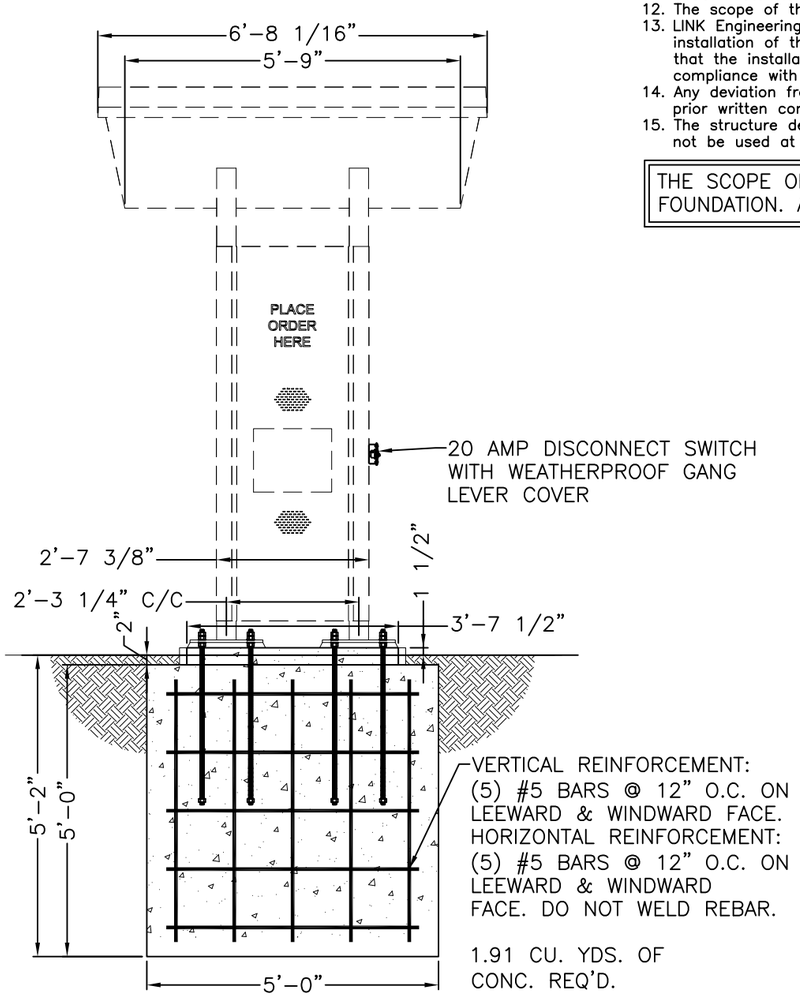


TOP VIEW

FOUNDATION & PEDESTAL
SHALL BE PLACED MONOLITHICALLY



SIDE VIEW



ELEVATION

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Vertical Slab foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All voids between column base plate and foundation surface shall be completely filled with high-strength, non-shrink grout.
8. Anchor bolts shall meet ASTM F1554 Grade 36. Exposed surfaces shall be galvanized or coated to prevent corrosion.
9. All support members shall be free from defects. Steel tube shall meet ASTM A500 Grade B with a minimum yield strength of 46000 psi. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
10. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
11. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn-of-Nut method unless noted otherwise.
12. The scope of this engineer does not include onsite observations.
13. LINK Engineering will not be responsible for the safety on this job site before, during or after installation of this structure. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of this structure is performed using methods that are in full compliance with OSHA regulations.
14. Any deviation from this design or from any part of this drawing, including the General Notes, without prior written consent from LINK Engineering voids this drawing in its entirety.
15. The structure designed on this drawing is intended to be installed at the address shown and should not be used at any other location.

THE SCOPE OF THIS ENGINEER IS LIMITED TO THE DESIGN OF THE ANCHORS, & FOUNDATION. ALL OTHER ASPECTS OF THIS PROJECT ARE EXPLICITLY EXCLUDED.

ELECTRICAL REQUIREMENTS:

POWER SUPPLY: 40 WATT POWER SUPPLY
TOTAL LOAD: .43A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

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IMAD N. KASHIF, P.E.
FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

IMAD KASHIF

Digitally signed by IMAD KASHIF
DN: c=US, st=Tennessee, l=Knoxville, o=Link Engineering, LLC, cn=IMAD KASHIF, email=ikashif@linkengr.com
Date: 2022.08.12 13:05:26 -04'00'

IMAD N. KASHIF
LICENSE
No. 41374
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:		
22-0282R3	B186706R2		
SHT.	**OF**	**DATE:**	**BY:**
1	2	8/12/22	GHK

	PROJECT #	22-0282R		OWNER:	CULVER'S		
	July 14, 2022				255 N.W. COMMONS LOOP		
	DRAWING #	B186706, B186707			LAKE CITY, FL 32055		
	WIND LOAD	24.749	PSF				
	WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON		
	# COLUMNS	2	FLORIDA BUILDING CODE		2531 N. PATTERSON		
	DESIGNER	SR	7TH EDITION (2020)		SPRINGFIELD, MO		

ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT
CANOPY	2.206	6.208	1.000	1.103	13.694	0.339	0.374
COLUMN	0.510	2.604	1.000	0.255	1.329	0.372	0.555
CLADDING	6.893	2.604	1.000	3.447	17.951	0.816	4.649
PEDESTAL	0.125	3.750	1.000	0.063	0.469	0.828	4.752
SUBGRADE	0.167			0.083	0.000	0.828	4.890
OAH	9.734						
DL MOMENT =	1.093		DL+WL	5.983			

BOLT CALCULATIONS

ITEM	MOMENT	BOLT SPACING	BOLTS/ PLATE	OBLIQUE TENSION/ BOLT	BOLT DIAM.	ALLOW. STRESS	ALLOWABLE TENSION
BASE PL.	5.983	10.000	4.000	3.758	0.750	19.100	8.438

ANCHOR BOLT PROJECTION	ANCHOR EMBEDMENT	ANCHOR BOLT MIN. LENGTH
3.750	9.968	14.000

VERTICAL SLAB		
MOMENT	5.983	FT-KIP
FORCE	0.828	KIP
REFERENCE IBC 1807.3.2 & TABLE 1806.2		
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC		
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH	150.0	PSF/FT
S1	500.0	
SLAB DEPTH (d)	5.000	FT.
SLAB WIDTH (b)	5.000	FT.
SLAB THICKNESS	2.000	FT.
AVERAGE HEIGHT (h)	7.229	FT.
A = 2.34*FORCE/(S1*b)	0.719	
CALCULATED DEPTH	2.767	FT.
MINIMUM THICKNESS WITHOUT REBAR	8.033	IN.
SQRT(M*12*6*1.7*.75/(.178*12*WIDTH))		
ACTUAL THICKNESS	24.000	IN.
CONCRETE	1.908	CU. YD.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
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8/12/22

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135 South David Lane • Knoxville, Tennessee 37922
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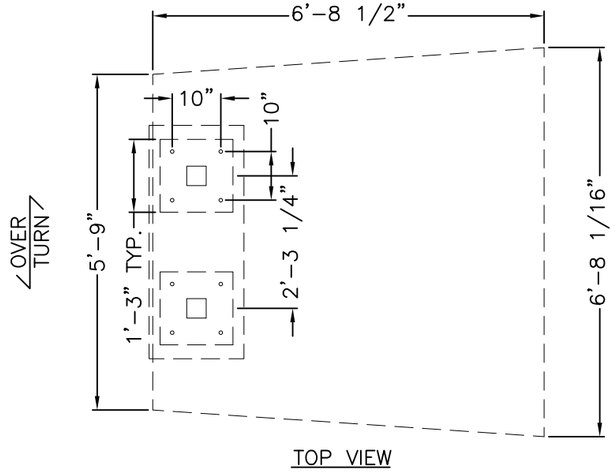
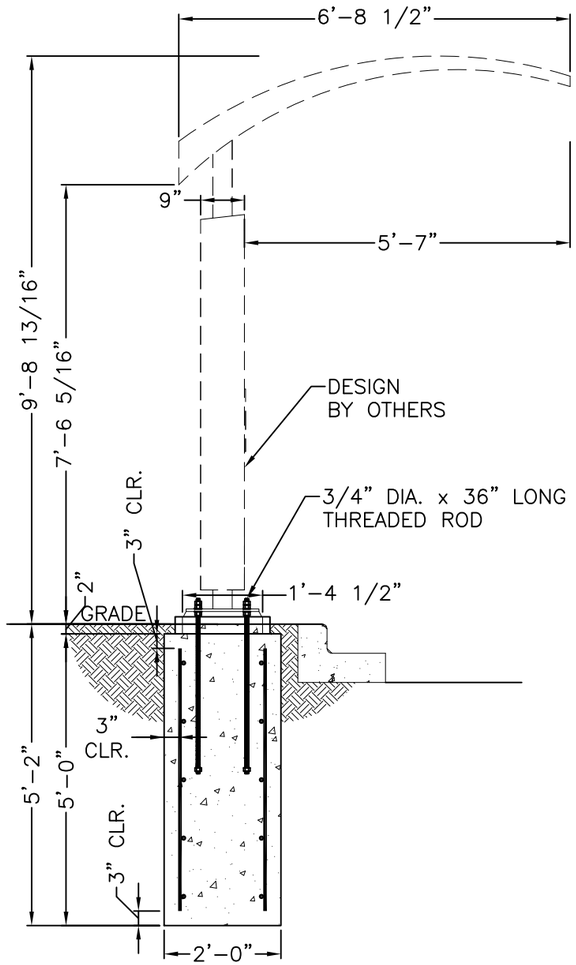
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:		
22-0282R3	B186706R2		
SHT.	OF	DATE:	BY:
2	2	8/12/22	GHK

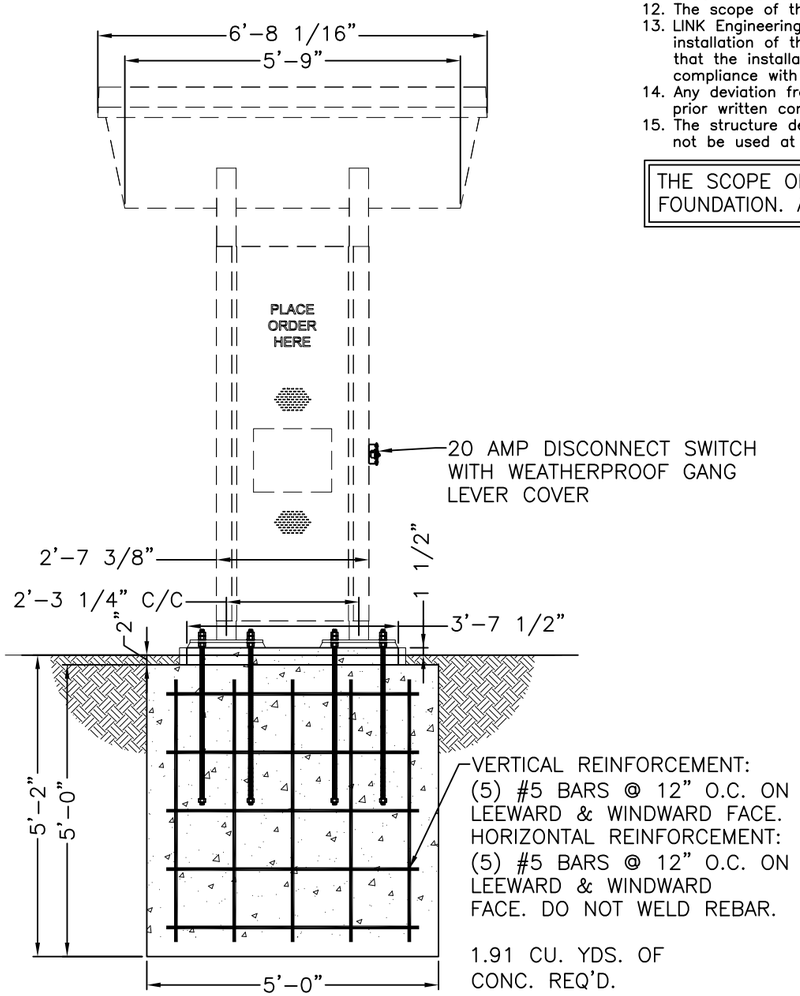


TOP VIEW

FOUNDATION & PEDESTAL
SHALL BE PLACED MONOLITHICALLY



SIDE VIEW



ELEVATION

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Vertical Slab foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All voids between column base plate and foundation surface shall be completely filled with high-strength, non-shrink grout.
8. Anchor bolts shall meet ASTM F1554 Grade 36. Exposed surfaces shall be galvanized or coated to prevent corrosion.
9. All support members shall be free from defects. Steel tube shall meet ASTM A500 Grade B with a minimum yield strength of 46000 psi. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
10. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
11. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn-of-Nut method unless noted otherwise.
12. The scope of this engineer does not include onsite observations.
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THE SCOPE OF THIS ENGINEER IS LIMITED TO THE DESIGN OF THE ANCHORS, & FOUNDATION. ALL OTHER ASPECTS OF THIS PROJECT ARE EXPLICITLY EXCLUDED.

ELECTRICAL REQUIREMENTS:

POWER SUPPLY: 40 WATT POWER SUPPLY
TOTAL LOAD: .43A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
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3	-/-/-	----------

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FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

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LICENSE
No. 41374
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186707R2

SHT.	OF	DATE:	BY:
1	2	8/12/22	GHK

	PROJECT #	22-0282R		OWNER:	CULVER'S		
	July 14, 2022				255 N.W. COMMONS LOOP		
	DRAWING #	B186706, B186707			LAKE CITY, FL 32055		
	WIND LOAD	24.749	PSF				
	WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON		
	# COLUMNS	2	FLORIDA BUILDING CODE		2531 N. PATTERSON		
	DESIGNER	SR	7TH EDITION (2020)		SPRINGFIELD, MO		

ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT
CANOPY	2.206	6.208	1.000	1.103	13.694	0.339	0.374
COLUMN	0.510	2.604	1.000	0.255	1.329	0.372	0.555
CLADDING	6.893	2.604	1.000	3.447	17.951	0.816	4.649
PEDESTAL	0.125	3.750	1.000	0.063	0.469	0.828	4.752
SUBGRADE	0.167			0.083	0.000	0.828	4.890
OAH	9.734						
DL MOMENT =	**1.093**		**DL+WL**	**5.983**			

BOLT CALCULATIONS

ITEM	MOMENT	BOLT SPACING	BOLTS/ PLATE	OBLIQUE TENSION/ BOLT	BOLT DIAM.	ALLOW. STRESS	ALLOWABLE TENSION
BASE PL.	**5.983**	10.000	4.000	3.758	0.750	19.100	8.438

ANCHOR BOLT PROJECTION	ANCHOR EMBEDMENT	ANCHOR BOLT MIN. LENGTH		
3.750	9.968	14.000		
VERTICAL SLAB				
MOMENT		**5.983**	FT-KIP	
FORCE		**0.828**	KIP	
REFERENCE IBC 1807.3.2 & TABLE 1806.2				
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC				
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH		150.0	PSF/FT	
S1		500.0		
SLAB DEPTH (d)		5.000	FT.	
SLAB WIDTH (b)		5.000	FT.	
SLAB THICKNESS		2.000	FT.	
AVERAGE HEIGHT (h)		7.229	FT.	
A = 2.34*FORCE/(S1*b)		0.719		
CALCULATED DEPTH		2.767	FT.	
MINIMUM THICKNESS WITHOUT REBAR		8.033	IN.	
SQRT(M*12*6*1.7*.75/(.178*12*WIDTH))				
ACTUAL THICKNESS		24.000	IN.	
CONCRETE		**1.908**	CU. YD.	

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
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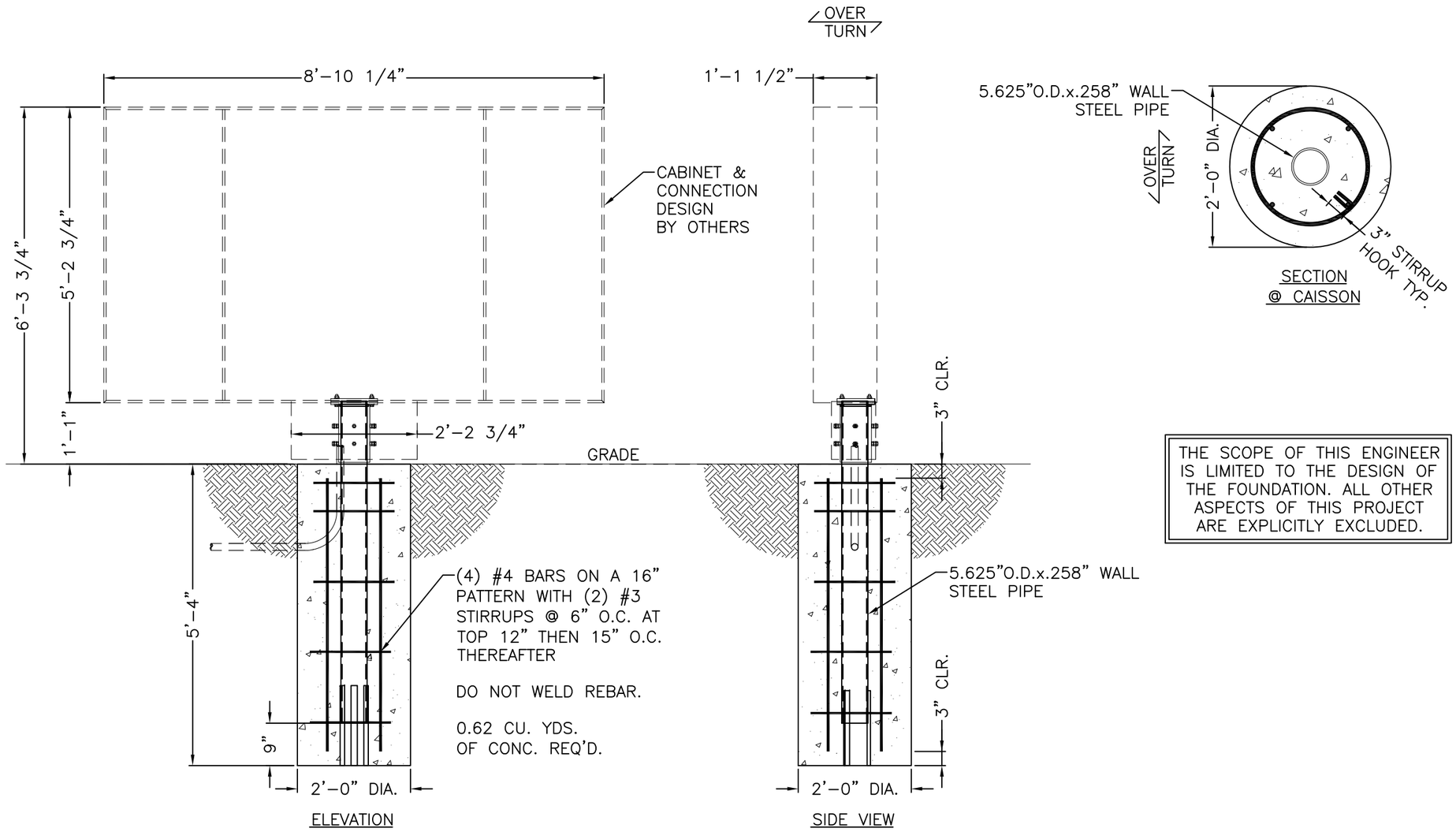
IMAD N. KASHIF
LICENSE
No. 41374
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186707R2

SHT.	OF	DATE:	BY:
2	2	8/12/22	GHK



ELEVATION

SIDE VIEW

SECTION @ CAISSON

THE SCOPE OF THIS ENGINEER IS LIMITED TO THE DESIGN OF THE FOUNDATION. ALL OTHER ASPECTS OF THIS PROJECT ARE EXPLICITLY EXCLUDED.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

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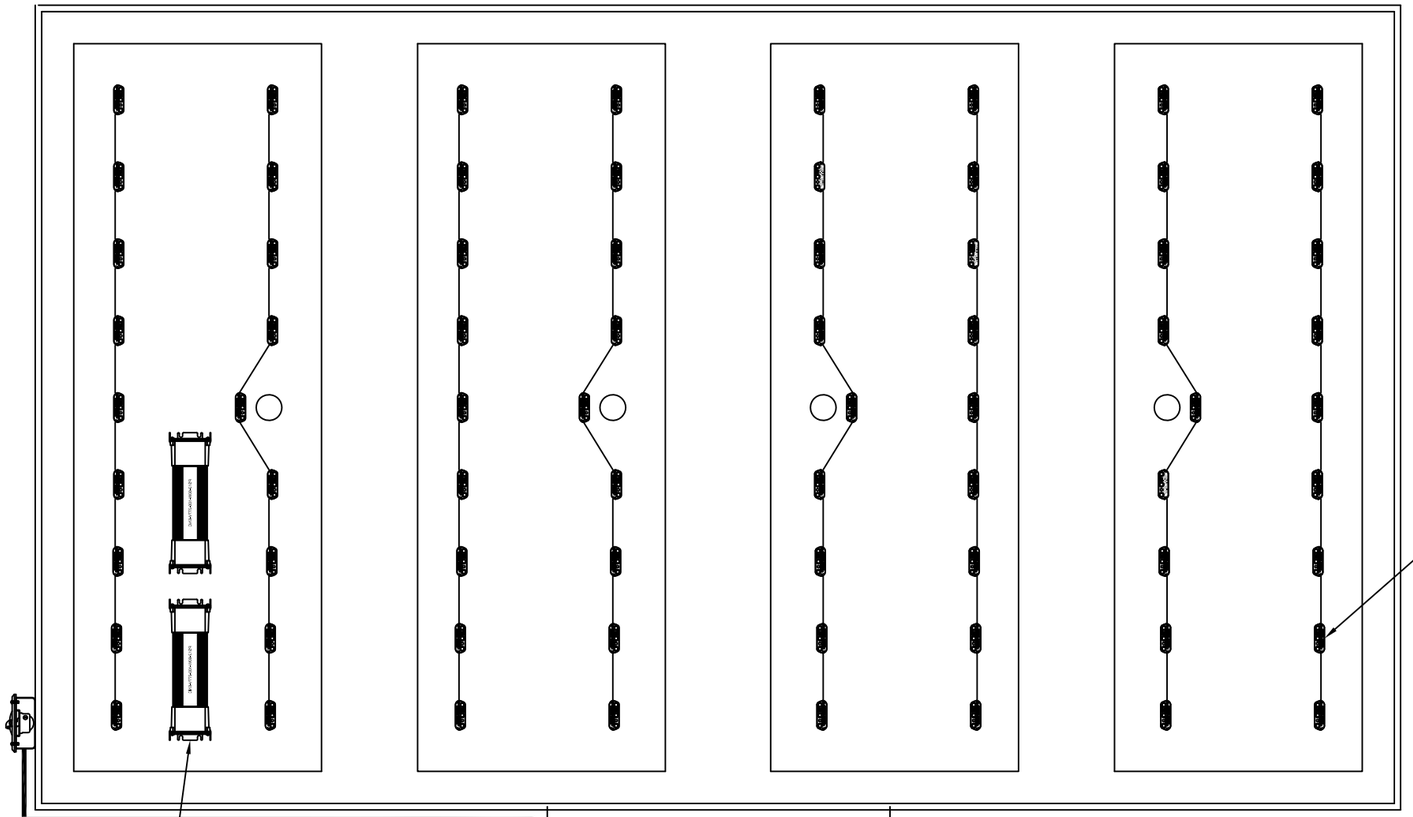
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186708R2

SHT.	OF	DATE:	BY:
1	3	8/12/22	GHK



LED LAYOUT – ELEVATION

PHOTOCELL, OR ASTRONOMICAL TIMER LIGHT CONTROL MANAGEMENT SYSTEM IS REQUIRED

ELECTRICAL REQUIREMENTS:
LEDs PER SIDE: (72) AGILIGHT SIGNRAYZ APEX G2
POWER SUPPLY PER SIDE: (2) 12V/60W AGILIGHT
#PS12-60W-100-277V @ 0.8A
TOTAL LOAD: 1.6A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

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417.862.2454 - FAX: 417.862.1887

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8/12/22

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Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186708R2

SHT.	OF	DATE:	BY:
2	3	8/12/22	GHK

		PROJECT #	22-0282R		OWNER:	CULVER'S			
		July 14, 2022				255 N.W. COMMONS LOOP			
		DRAWING #	B186708, B186709			LAKE CITY, FL 32055			
		WIND LOAD	20.610	PSF					
		WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON			
		# COLUMNS	1	FLORIDA BUILDING CODE		2531 N. PATTERSON			
		DESIGNER	SR	7TH EDITION (2020)		SPRINGFIELD, MO			
					SHAPE	CENTROID		TOTAL	
	ITEM	HEIGHT	WIDTH		FACTOR	HEIGHT	AREA	FORCE	MOMENT
	========	========	========		========	========	=======	========	========
	MENUBOARD	5.229	8.854		1.000	2.615	46.300	0.954	2.495
	SKIRT	1.083	2.229		1.000	0.542	2.415	1.004	3.556
	OAH	6.313							
	DL MOMENT	0.069							
		COLUMN CALCULATIONS			(CODES P=PIPE;O=OTHER T=TUBE)				
							DESIGN		AVAILABLE
		COLUMN	COLUMN	COLUMN	Ixx		MODULUS	REQUIRED	FLEXURAL
	ITEM	WIDTH	DEPTH	WALL	COLUMN		COLUMN	MOMENT	STRENGTH	UNITY
=	========	========	========	========	=======		========	========	========	========
P	SKIRT		5.563	0.241	14.3		6.83	3.625	11.93	0.304
	CAISSON									
	MOMENT						3.625	FT-KIP		
	FORCE						1.004	KIP		
	REFERENCE IBC 1807.3.2 & TABLE 1806.2									
	ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC									
	LATERAL BEARING PRESSURE - PSF/FT OF DEPTH						150.0	PSF/FT		
	S1						533.3			
	DEPTH						5.333	FT.		
	DIAMETER						2.000	FT.		
							3.611	FT.		
							2.203	FT.		
	CALCULATED DEPTH						4.245	FT.		
	MINIMUM THICKNESS WITHOUT REINFORCEMENT						17.882	IN.		
	ACTUAL DIAMETER						24.000	IN.		
	CONCRETE						0.621	CU. YD.		

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All support members shall be free from defects. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
8. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
9. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn-of-Nut method unless noted otherwise.
10. The scope of this engineer does not include onsite observations.
11. LINK Engineering will not be responsible for the safety on this job site before, during or after installation of this structure. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of this structure is performed using methods that are in full compliance with OSHA regulations.
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13. The structure designed on this drawing is intended to be installed at the address shown and should not be used at any other location.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

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IMAD N. KASHIF, P.E.
FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

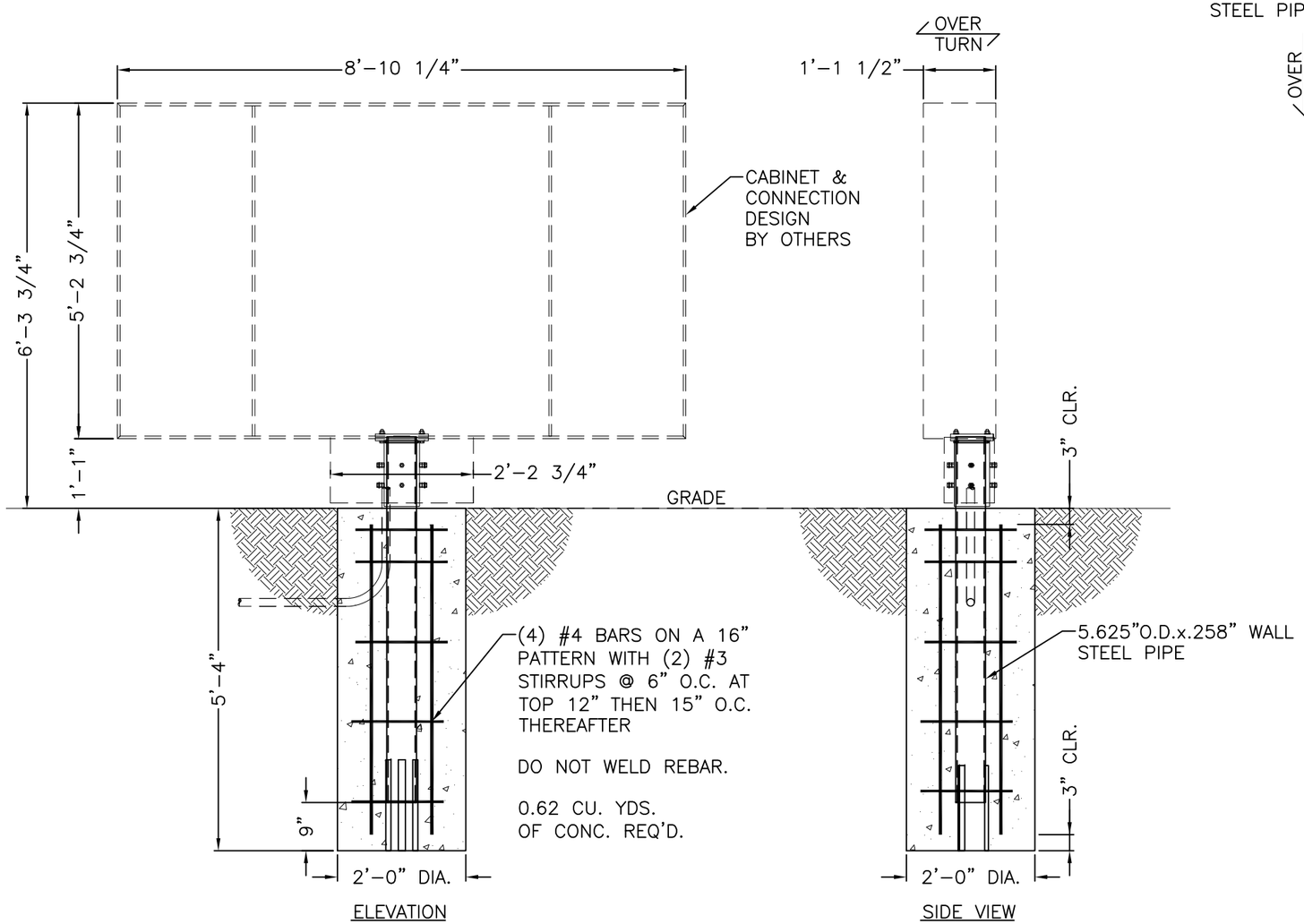
IMAD KASHIF

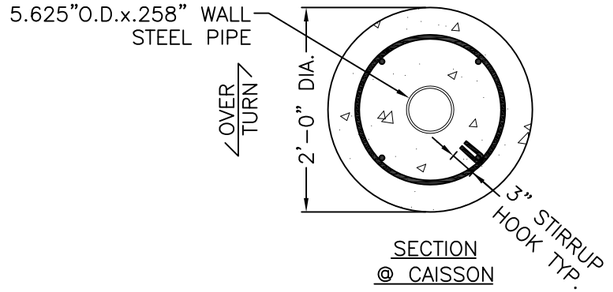
Digitally signed by IMAD KASHIF
DN: c=US, st=Tennessee, l=Knoxville, o=Link Engineering, LLC, cn=IMAD KASHIF, email=ikashif@linkengr.com
Date: 2022.08.12 13:07:38 -04'00'

IMAD N. KASHIF
LICENSE
No. 41374
STATE OF FLORIDA
PROFESSIONAL ENGINEER
8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:		
22-0282R3	B186708R2		
SHT.	OF	DATE:	BY:
3	3	8/12/22	GHK





THE SCOPE OF THIS ENGINEER IS LIMITED TO THE DESIGN OF THE FOUNDATION. ALL OTHER ASPECTS OF THIS PROJECT ARE EXPLICITLY EXCLUDED.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

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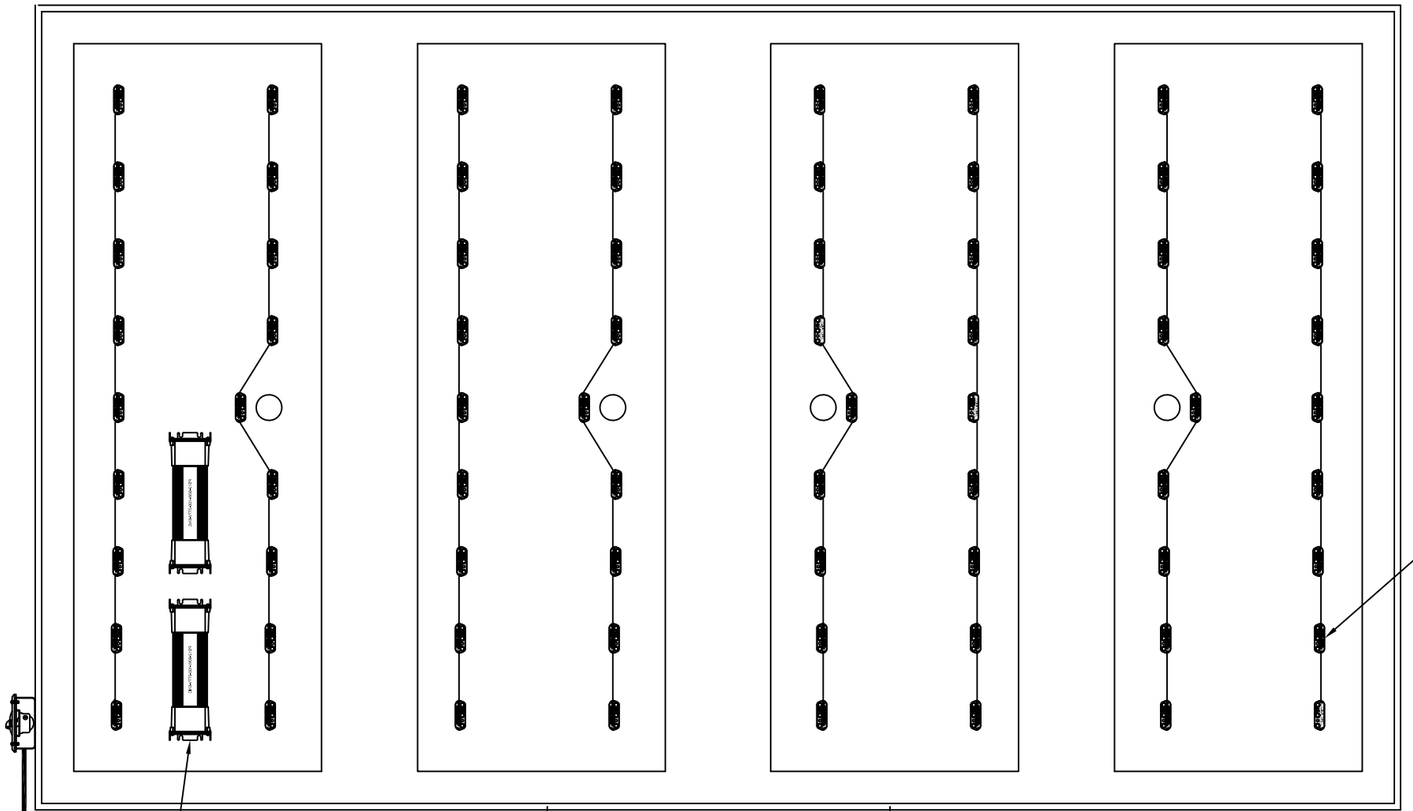
Project Number:	Drawing Number:
22-0282R3	B186709R2

SHT.	OF	DATE:	BY:
1	3	8/12/22	GHK



LED LAYOUT – ELEVATION

PHOTOCELL, OR ASTRONOMICAL TIMER LIGHT CONTROL MANAGEMENT SYSTEM IS REQUIRED

ELECTRICAL REQUIREMENTS:

LEDs PER SIDE: (72) AGILIGHT SIGNRAYZ APEX G2
POWER SUPPLY PER SIDE: (2) 12V/60W AGILIGHT #PS12-60W-100-277V @ 0.8A
TOTAL LOAD: 1.6A @ 120VAC
CIRCUITS: (1) 20 AMP REQUIRED

ELECTRICAL NOTES:

1. ALL ELECTRICAL COMPONENTS ARE UL LISTED AND APPROVED
2. SIGN GROUNDED ACCORDING TO NEC 600.7
3. SIGNS MANUFACTURED AND LISTED NEC 600.3 AND MARKED PER NEC 600.4
4. ALL BRANCH CIRCUITS PER NEC 600.5(B).1 OR (B).2
5. ALL SIGNS SHALL BE CONTROLLED BY PHOTOCELL OR TIME CLOCK
6. ONE VISIBLE 20 AMP DISCONNECT PER SIGN PER CIRCUIT PER NEC 600.6(A).1
7. ALL CLASS 2 RATED LED MODULES AND LED POWER SUPPLIES WILL BE IN COMPLIANCE WITH NATIONALLY RECOGNIZED TEST LABORATORY

INSTALLATION ADDRESS:

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No. 41374
STATE OF FLORIDA
PROFESSIONAL ENGINEER

8/12/22

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186709R2

SHT.	OF	DATE:	BY:
2	3	8/12/22	GHK

		PROJECT #	22-0282R		OWNER:	CULVER'S			
		July 14, 2022				255 N.W. COMMONS LOOP			
		DRAWING #	B186708, B186709			LAKE CITY, FL 32055			
		WIND LOAD	20.610	PSF					
		WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON			
		# COLUMNS	1	FLORIDA BUILDING CODE		2531 N. PATTERSON			
		DESIGNER	SR	7TH EDITION (2020)		SPRINGFIELD, MO			
				SHAPE	CENTROID		TOTAL		
	ITEM	HEIGHT	WIDTH	FACTOR	HEIGHT	AREA	FORCE	MOMENT	
	========	========	========	========	========	=======	========	========	
	MENUBOARD	5.229	8.854	1.000	2.615	46.300	0.954	2.495	
	SKIRT	1.083	2.229	1.000	0.542	2.415	1.004	3.556	
	OAH	6.313							
	DL MOMENT	0.069							
		COLUMN CALCULATIONS		(CODES P=PIPE;O=OTHER;T=TUBE)					
						DESIGN		AVAILABLE	
		COLUMN	COLUMN	COLUMN	Ixx	MODULUS	REQUIRED	FLEXURAL	
	ITEM	WIDTH	DEPTH	WALL	COLUMN	COLUMN	MOMENT	STRENGTH	UNITY
=	========	========	========	========	=======	========	========	========	========
P	SKIRT		5.563	0.241	14.3	6.83	3.625	11.93	0.304
	CAISSON								
	MOMENT					3.625	FT-KIP		
	FORCE					1.004	KIP		
	REFERENCE IBC 1807.3.2 & TABLE 1806.2								
	ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC								
	LATERAL BEARING PRESSURE - PSF/FT OF DEPTH					150.0	PSF/FT		
	S1					533.3			
	DEPTH					5.333	FT.		
	DIAMETER					2.000	FT.		
						3.611	FT.		
						2.203	FT.		
	CALCULATED DEPTH					4.245	FT.		
	MINIMUM THICKNESS WITHOUT REINFORCEMENT					17.882	IN.		
	ACTUAL DIAMETER					24.000	IN.		
	CONCRETE					0.621	CU. YD.		

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short–term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
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5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All support members shall be free from defects. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
8. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
9. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn–of–Nut method unless noted otherwise.
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INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
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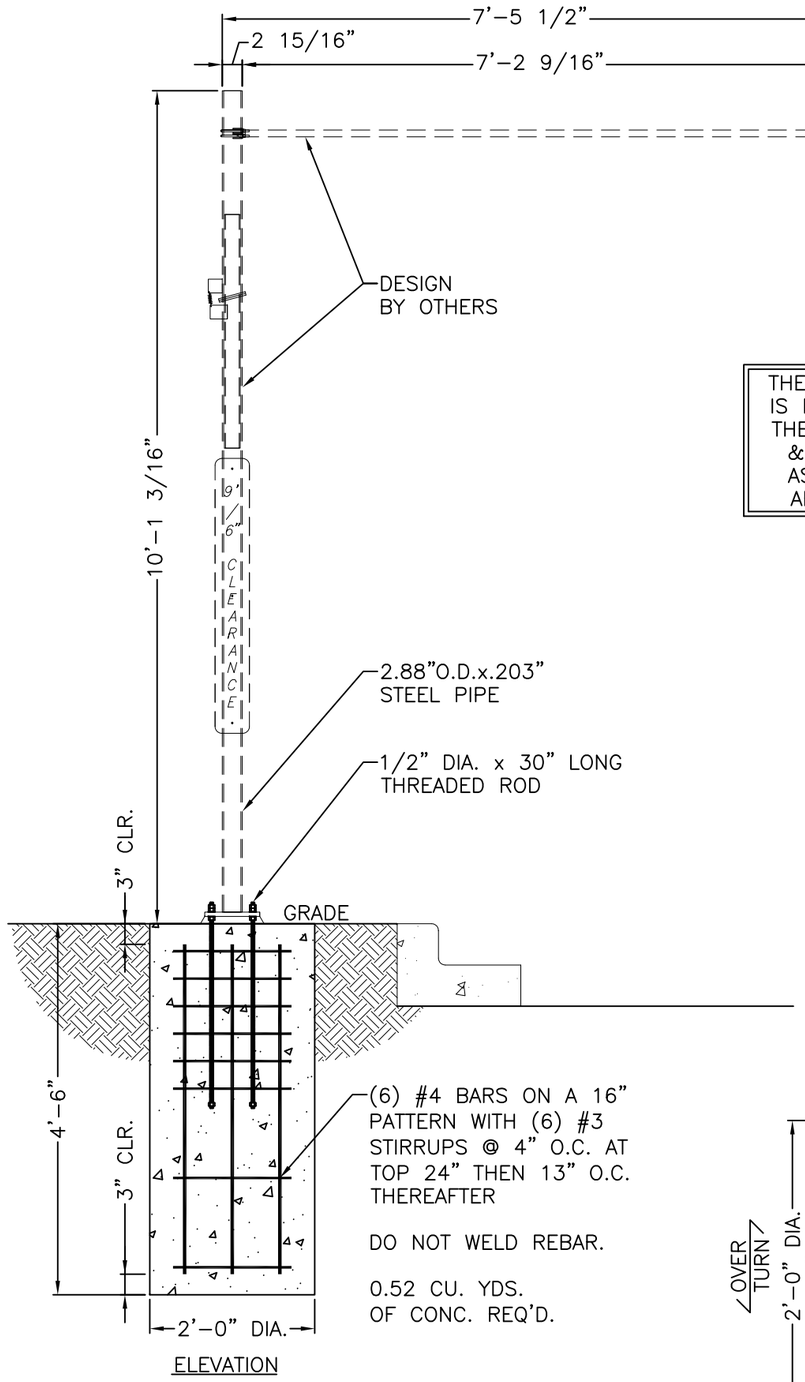
8/12/22

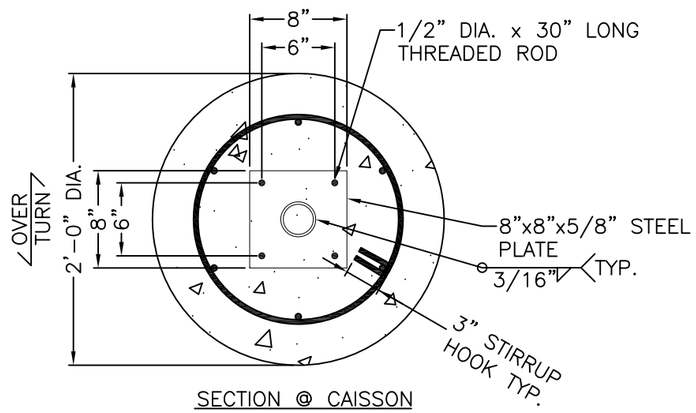
LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539–4001 • www.linkengr.com
Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:		
22–0282R3	B186709R2		
SHT.	OF	DATE:	BY:
3	3	8/12/22	GHK



ELEVATION

THE SCOPE OF THIS ENGINEER IS LIMITED TO THE DESIGN OF THE MAIN SUPPORT, ANCHORS & FOUNDATION. ALL OTHER ASPECTS OF THIS PROJECT ARE EXPLICITLY EXCLUDED.



SECTION @ CAISSON

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
2. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact SPRINGFIELD SIGN & NEON.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 4500 psi per sulfate resistance.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All voids between column baseplate and foundation surface shall be completely filled with high-strength, non-shrink grout.
8. Anchor bolts shall meet ASTM F1554 Grade 36. Exposed surfaces shall be galvanized or coated to prevent corrosion.
9. All support members shall be free from defects. Steel tube shall meet ASTM A500 Grade B with a minimum yield strength of 46000 psi. Steel Pipe up to 24 inch O.D. shall meet ASTM A53 Grade B with a minimum yield strength of 35000 psi. Steel angle, channel and plate shall meet ASTM A36.
10. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
11. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn-of-Nut method unless noted otherwise.
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	PROJECT #	22-0282R3		OWNER:	CULVER'S		
	August 12, 2022				394 N.W. COMMONS LOOP		
	DRAWING #	B186710R, B186711R			LAKE CITY, FL 32055		
	WIND LOAD	15.97	PSF				
	WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON		
	# COLUMNS	1	FLORIDA BUILDING CODE		2531 N. PATTERSON		
	DESIGNER	GHK	7TH EDITION (2020)		SPRINGFIELD, MO		

ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT
COLUMN	0.477	0.240	1.000	0.238	0.114	0.002	0.000
CLEARANCE BAR	0.083	7.458	1.000	0.042	0.622	0.012	0.001
COLUMN	9.542	0.417	1.000	4.771	3.976	0.075	0.416
OAH	10.102						
DL MOMENT =	0.026		DL+WL	0.442			

COLUMN CALCULATIONS (CODES P=PIPE,O=OTHER,T=TUBE)

	ITEM	COLUMN WIDTH	COLUMN DEPTH	COLUMN WALL	Ixx COLUMN	DESIGN MODULUS COLUMN	REQUIRED MOMENT	AVAILABLE FLEXURAL STRENGTH	UNITY
P	COLUMN		2.880	0.189	1.5	1.37	0.000	2.39	0.000
P	CLEARANCE BAR		2.880	0.189	1.5	1.37	0.027	2.39	0.011
P	COLUMN		2.880	0.189	1.5	1.37	0.442	2.39	0.185

BOLT CALCULATIONS

ITEM	MOMENT	BOLT SPACING	BOLTS/ PLATE	TENSION/ BOLT	BOLT DIAM.	ALLOW. STRESS	ALLOWABLE TENSION
BASE PL.	0.442	6.000	4.000	0.442	0.500	19.100	3.750

PLATE CALCULATIONS

ITEM	TENSION/ BOLT	MOMENT ARM	MOMENT PLATE	PLATE WIDTH	PLATE DEPTH	PLATE THICK.	MINIMUM THICK.
BASE PL.	0.442	2.813	1.244	5.625	8.000	0.625	0.222

ANCHOR BOLT PROJECTION	ANCHOR EMBEDMENT	ANCHOR BOLT MIN. LENGTH
3.125	1.760	5.000

CAISSON		
MOMENT	0.442	FT-KIP
FORCE	0.075	KIP
REFERENCE IBC 1807.3.2 & TABLE 1806.2		
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC		
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH	150.0	PSF/FT
S1	450.0	
DEPTH	4.500	FT.
DIAMETER	2.000	FT.
	5.877	FT.
	0.196	FT.
CALCULATED DEPTH	1.222	FT.
MINIMUM THICKNESS WITHOUT REINFORCEMENT	9.877	IN.
ACTUAL DIAMETER	24.000	IN.
CONCRETE	0.524	CU. YD.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

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Project Number:	Drawing Number:		
22-0282R3	B186710R		
SHT.	OF	DATE:	BY:
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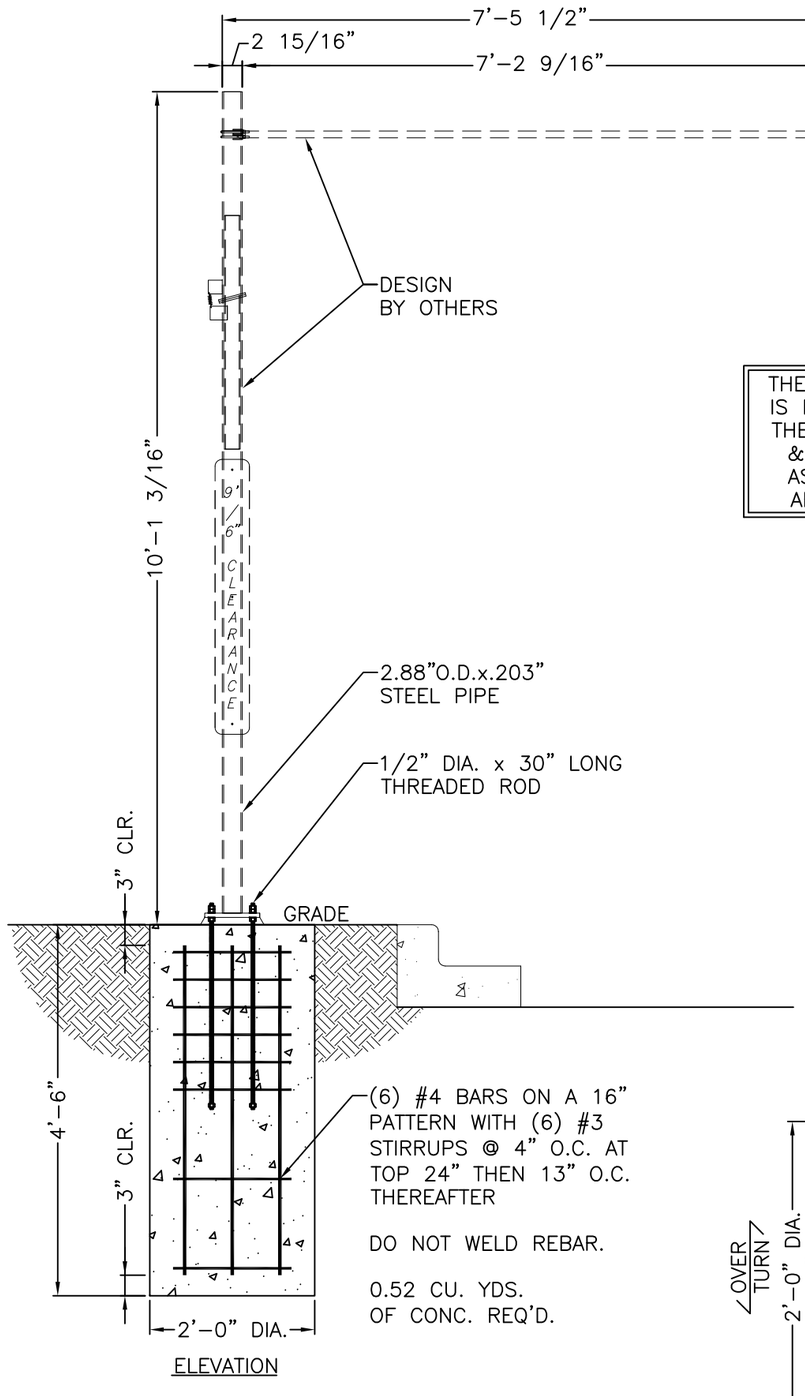

ELEVATION

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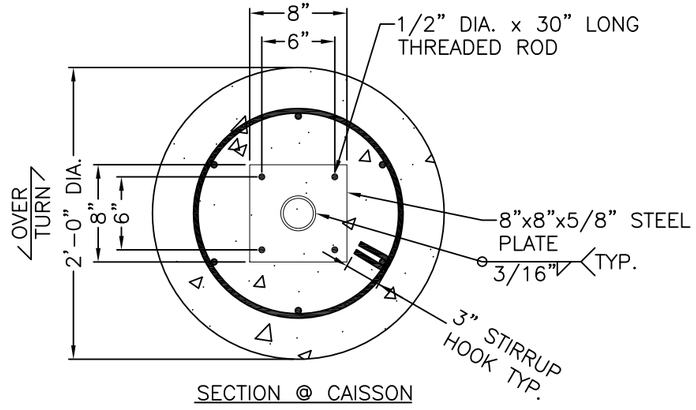

SECTION @ CAISSON

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per Florida Building Code, 7th Edition (2020). Category II, Exposure C.
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	PROJECT #	22-0282R3		OWNER	CULVER'S		
	August 12, 2022				394 N.W. COMMONS LOOP		
	DRAWING #	B186710R, B186711R			LAKE CITY, FL 32055		
	WIND LOAD	15.97	PSF				
	WIND SPEED	120	MPH	CLIENT:	SPRINGFIELD SIGN & NEON		
	# COLUMNS	1	FLORIDA BUILDING CODE		2531 N. PATTERSON		
	DESIGNER	GHK	7TH EDITION (2020)		SPRINGFIELD, MO		

ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT
COLUMN	0.477	0.240	1.000	0.238	0.114	0.002	0.000
CLEARANCE BAR	0.083	7.458	1.000	0.042	0.622	0.012	0.001
COLUMN	9.542	0.417	1.000	4.771	3.976	0.075	0.416
OAH	10.102						
DL MOMENT =	0.026		DL+WL	0.442			

COLUMN CALCULATIONS (CODES P=PPE;O=OTHER;T=TUBE)

	ITEM	COLUMN WIDTH	COLUMN DEPTH	COLUMN WALL	Ixx COLUMN	DESIGN MODULUS COLUMN	REQUIRED MOMENT	AVAILABLE FLEXURAL STRENGTH	UNITY
P	COLUMN		2.880	0.199	1.5	1.37	0.000	2.39	0.000
P	CLEARANCE BAR		2.880	0.199	1.5	1.37	0.027	2.39	0.011
P	COLUMN		2.880	0.199	1.5	1.37	0.442	2.39	0.185

BOLT CALCULATIONS

ITEM	MOMENT	BOLT SPACING	BOLTS/ PLATE	TENSION/ BOLT	BOLT DIAM.	ALLOW. STRESS	ALLOWABLE TENSION
BASE PL.	0.442	6.000	4.000	0.442	0.500	19.100	3.750

PLATE CALCULATIONS

ITEM	TENSION/ BOLT	MOMENT ARM	MOMENT PLATE	PLATE WIDTH	PLATE DEPTH	PLATE THICK.	MINIMUM THICK.
BASE PL.	0.442	2.813	1.244	5.625	8.000	0.625	0.222

ANCHOR BOLT PROJECTION	ANCHOR EMBEDMENT	ANCHOR BOLT MIN. LENGTH
3.125	1.760	5.000

CAISSON			
MOMENT		0.442	FT-KIP
FORCE		0.075	KIP
REFERENCE IBC 1807.3.2 & TABLE 1806.2			
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC			
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH		150.0	PSF/FT
S1		450.0	
DEPTH		4.500	FT.
DIAMETER		2.000	FT.
		5.877	FT.
		0.196	FT.
CALCULATED DEPTH		1.222	FT.
MINIMUM THICKNESS WITHOUT REINFORCEMENT		9.877	IN.
ACTUAL DIAMETER		24.000	IN.
CONCRETE		0.524	CU. YD.

INSTALLATION ADDRESS:

CULVER'S
394 N.W. COMMONS LOOP
LAKE CITY, FL 32055

CLIENT:

SPRINGFIELDSIGN
4825 EAST KEARNEY STREET
SPRINGFIELD, MO 65803
417.862.2454 - FAX: 417.862.1887

REV	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

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IMAD N. KASHIF, P.E.
FLORIDA STATE LICENSE NO.: 41374

SEAL & SIGNATURE:

IMAD KASHIF

Digitally signed by IMAD KASHIF
DN: c=US, st=Tennessee, l=Knoxville, o=Link Engineering, LLC, cn=IMAD KASHIF, email=ikashif@linkengr.com
Date: 2022.08.12 13:40:48 -04'00'

IMAD N. KASHIF
LICENSE
No. 41374
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
8/12/22

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Florida State Certificate of Authorization No.: 27148

Project Number:	Drawing Number:
22-0282R3	B186711R

SHT.	OF	DATE:	BY:
1	1	8/12/22	GHK