



Office of the City Clerk

City Hall
121 N. LaSalle St.
Room 107
Chicago, IL 60602
www.chicityclerk.com

Legislation Text

File #: Or2017-567, Version: 1

CITY COUNCIL
COMMITTEE ON ZONING, LANDMARKS AND BUILDING STANDARDS

COUNCIL ORDER

RE: Approval of sign over 100 square feet in area or over 24 feet above grade

ORDERED, that the City Council hereby approves the following sign application submitted by:

Applicant*: pOtf* t^CUU ~ PffcA,^ U(T DVI

(* The Applicant is the owner of the real property or the business tenant of the real property. Do not list the sign contractor, sign erector, sign company or advertising entity in the above space.)

This Order approves the following sign in accordance with Municipal Code of Chicago Section 13-20-680:

Address of Sign: ~7(f?OI 15. C\CpYO (oVf^d- Chicago, IL 606

Zoning District:

DOB Sign Permit Application #:

Sign Details: ly

1. On-premise /* OR Off-premise

2. Static sign OR Dynamic-image display sign

3. Number of sign faces ^

4. Projecting over the public way hJ (Yes or No) If yes. Public Way Use #:

5. Dimensions: Length?)^ feet Lo inches Height feet inches

Total square feet in area^/^. feet inches SJlQ CkjJrOJiJKSiCi

6. Height above grade: ~"7 feet inches

7. Elevation (side of building or lot where the sign will be erected): CDmCr 'JM"°4 CI CC TO

8. Name of Sign Contractor/Erector: Aril (k.rjhf &LPjY\ Inc

To be legal, such sign shall comply with all provisions of Title 17 of the Chicago Municipal Code ("Zoning Ordinance") and all other provisions of the Municipal Code governing the permitting, construction and maintenance and removal of signs and sign structures. Failure of the applicant and the applicant's sijeassors to comply shall be grounds for invalidation or revocation of the sign permit.

/Zth

Alderman Ward

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not

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LT
13"

4'-10" EXISTING SLA3

6'-3"
-C'0 C C TO C |

12'-6"
EXISTING SLAB
9'-0"
EXISTING SLAB

»3'-0"
CONCRETE "
»3'-0' CONCRETE

Qn. CONCRETE: 2.3 CU. TOS.

PLAN VIEW

QTY. CONCRETE: 2.0 CU. YDS. EACH
ELEVATION VIEW

PLAN VIEW

FOUNDATION NOTES:

1. Concrete shall have a minimum compressive strength of 3,000 PSI at 28 days.
2. Caisson footing designed using a soil bearing force of 250 PSF per foot Lateral.

DESIGN WIND LOAD: 30.0 PSF
Based on the Chicago Building Code 16 (13-52-310) (f) 1a for solid signs.

SITE:
Ford City Mall
7601 South Cicero Avenue
Chicago, Illinois 60652

A 08 Uay 17 RELEASED FOR PERMITTING J.
KV txsatmoN HOGAH

Robert-James & Associates, Inc.

12255 West 187th Street. Mokena Illinois 60448-9737 piione: 708-479-83B5 (ax: 708-479-8395 email: rjn379comcasl.net <http://rjn379comcasl.net>

FOUR 31'-6" OAH DIRECT BURY POLES FOR REPLACEMENT ID & TENANT SIGNS

DRAWING NUMBER

1705040

SHEET
1 OF 1

5-05-17

ROBERT-JAMES & ASSOCIATES, Inc.

Sht 1 of 5

12255 West 187th Street Mokena, Illinois
60448 (708)479-8385

File: QuantumSgn&FabQ12a.mcd

Site: Ford City Mall
7601 South Cicero Avenue Chicago, Illinois
60652

Project: Design of direct bury pole structures and caisson footings for replacement signage and base trim. Caisson footings will be set placed in cored holes thru existing 1'-2" thick slab footing where top of slab is 3'-0" below grade. This will be done for both the South and North elevation sign pylons. Drawing No. 1705040 rev. A

Design Wind Load : (PSF) WL := 30.0 Based on the Chicago BuildingCode 16 (13-52-310)(f) la.

Reference: Manual of Steel Construction, AISC 13th Edition.

Tube: ASTM-A-500 Gr. B Fy = 46.0ksi.; Fb = 30.36 ksi.; Fv = 18.40ksi.

Reference : American Concrete Institute, Code 318.10 Rebar. ASTM-A-615

Qade60 Fy =60.0 ksi. Concrete : 3,000 psi. compressive strength at 28 days.

Design Loads at Top of Footing, for the 16'-0" x 25'-0" Sign Section : (3'-0" Below Grade.)

Signage:

+ 10.0

SgnTrm := (17.0-25.67-WL)

Base = 38793.3 ft.Ibs.

+ 3.0

(Including 1'-0" of base trim and 8" of side trim.)

7.0

Base : Base := (7.0-28.42-WL)-

Moment: (ft.Ibs.) MtTOF := SgnTrm + Base MtTOF = 280989.75

Shear: (lbs.) ShrTOF := (17.0-25.67*WL) + (7.0-28.42-WL) ShrTOF = 19059.9

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081-005102 Y ~ LICENSED ' STRUSTUR ENONEFJ

EXPIRES: 11-30-18

MtPoLeTOF = 93663.25

Design of Pole Structures at Top of Footing for the 16'-0" x25'-0" Sign Section Section Modulus of Tube : (in.*) HSS 10" x 10" x 3/8" wall - TubeSM := 40.4

MtTOF

Moment per Pole: (ft.Ibs.) MtPoLeTOF :=

o j o / ■ x c MtPoLeTOF-12 ,,

Bending Stress : (psi.) fi, := fi, = 27820.767

TubeSM

ShrPoleTOF = 6353.3

Area of Tube : (in.2) HSS 10" x 10" x 3/8" wall - TubeArea := 13.2

ShrTOF

Shear per Pole: (lbs.) ShrPoleTOF:

Shear Stress : (psi.) fv :=

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Unity Check - Poles : UC Poles :

Design of Caisson Footings : Overturning Moment: (ft.Ibs.) Shear: (lbs.)

Applied Lateral Force ■ (lbs.)

Allowable Lateral Soil Pressure: (lbs.'ft.² per ft.)

Diameter of Round Footing: (ft.)

Distance in Feet From Ground Surface to Point of Application of "P"

Depth of Footing Below the Top of the Existing Slab : (ft.) (3'-0" below grade.)

Ma = 93663.25 Va = 6353.3 P = 6353.3 LP := 250

bl := 3.0

h = 14.742

dl := 8.5

Allowable Lateral Soil Bearing Pressure Pursuant to the 2012 International Building Code Section 1807.3 .2.2 and Table 1806.2.

d2 = 7.902 < dl = 8.5

Check Tensile Stress in Footing:

Overturning Moment About Heel Point: (ft.Ibs.) Mh := Ma + (Va-dl) Treat as a cantilever at bottom.

c Ji-(bl2)

Sw := - : -
32

4>Ft:= 0.65-(5-Vfc) (Mh-12)"

Compressive Strength of Concrete: (psi.) Yield Strength of Rebar: (psi.)

Section Modulus of Footing: (in.³)

Allowable Concrete Stress: (psi.)

Sw

Tensile Stress in Concrete: (psi.)

ft:=

(bl 121 - 10.0

Design of Reinforcing Steel in Caisson : Moment for USD Design : Mu := 1.7-Mh

coeff := •

coeff = 0.112

d:= [(bl2)-80) Mul2

To Plot for "ju ":

$$M_h = 147666.3$$

$$f_c := 3000 \quad f_y := 60000$$

$$S_w = 4580.442$$

$$o > F_t = 178.01$$

$f_t = 386.861 > dtF_t = 178.01$ REBAR REQUIRED FOR STRESS

$$M_u = 251032.71 \quad d = 15.8$$

$$j_u := 0.88$$

fc-bl-12-d

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Required Area : (in.²) Reinforcement Requirement:

Use yield strength of direct bury tube to check. Yield Strength of Tube (psi.)

$$A_s = \frac{M_u - 12}{j_u f_y d} = 0.90$$

$A_s = 5.233 < \text{TubeArea} = 13.2$ No rebar required with the direct bury tube.

$$f_y := 46000 \quad A_s = 5.233$$

$$f_t = \frac{1.25 M_u}{d^2} = 4.27$$

$$0.83 - (d_l - 0.25) \cdot 27$$

Note : Keep bottom of tube 3" from bottom of footing to create concrete cover for water exclusion.

Design Loads at Top of Footing for the 23'-6" x 9'-1 0" Section : (3'-0" Below Grade.)

$$\text{Base} = 15588.3 \text{ ft.Ibs}$$

$$\text{Signage:} \quad \text{SgnTrm} := (24.5 - 9.83 \text{ WL})$$

$$7.0, \quad + 3.0$$

2
(Including 1'-0" of base trim.)

Base: Base := (7.0-11.42-WL)

Moment: (ft lbs.) MtTOF := SgnTrm + Base MtTOF = 176345.663

Shear: (lbs.) ShrTOF := (24.5-9.83-WL) + (7.011.42 WL) ShrTOF = 9623.25

Design of Pole Structures at Top of Footing for the 23'-6" x 9'-10" Section :

Section Modulus of Tube: (in.³) HSS 14" x 14" x 3/8" wall - TubeSM := 82.5

Bending Stress : (psi.) $f_t := \frac{M_{tTOF-12}}{TubeSM}$ $f_t = 25650.278$

Area of Tube : (in.²) HSS 14"x14"x 3/8" wall - TubeArea := 18.7

Shear Stress : (psi.) $f_v := \frac{ShrTOF}{TubeArea}$ $f_v = 514.612$

Unity Check - Poles : UC Poles := $\frac{f_t}{f_t} + \frac{f_v}{f_v}$ UC Poles = 0.873 < 1.00 OK
30360 18400

Design of Caisson Footing :

Overturning Moment: (ft.lbs.) Ma := MtTOF Ma = 176345.663

Shear: (lbs.) Va := ShrTOF Va = 9623.25

Applied Lateral Force : (lbs.) P := Va P = 9623.25

Allowable Lateral Soil Pressure : (lbs./ft.² per ft.) LP := 250

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Diameter of Round Footing: (ft.)
h:-

Distance in Feet From Ground Surface to Point of Application of "P"

Depth of Footing Below the Top of the Existing Slab : (ft.) (3'-0" below grade.)

Ph S3bl
d2:= 4.25-

Allowable Lateral Soil Bearing Pressure Pursuant to the 2012 International Building Code Section 1807.3.2.2 and Table 1806.2.

Required Depth : (ft.)

bl := 3.0 h = 18.325

dl := 10.5 S3 = 2625

d2 = 9.756 < dl = 10.5

Check Tensile Stress in Footing:

Overturing Moment About Heel Point: (ft.lbs.) $M_h := M_a + (V_{adl})$ Treat as a cantilever at bottom.

Compressive Strength of Concrete: (psi.)

$$\frac{71(bl12)''}{32}$$

32

$$rJ)F_t := 0.65 - (5 - v/f_c)$$

$$(M_h - 12)'' S_w$$

Yield Strength of Rebar: (psi.)

Section Modulus of Footing: (in.³)

$S_w :=$

Allowable Concrete Stress : (psi.)

Tensile Stress in Concrete: (psi.)

$f_t :$

$$(bl - 12) - 14.0$$

Design of Reinforcing Steel in Caisson .

Moment for USD Design : $M_u := 1.7 - M_h$

coeff :=

$$\text{coeff} = 0.165$$

$$d := [(bl - 12) - .80] M_u l^2$$

To Plot for "ju":

$$M_h = 277389.787$$

$$f_c := 3000 \quad f_y := 60000$$

$$S_w = 4580.442$$

$$d \gg F_t = 178.01$$

$f_t = 726.715 > 4 * F_t = 178.01$ REBAR REQUIRED FOR STRESS

$$M_u = 471562.639 \quad d = 17.8$$

$$ju = 0.65$$

fc-bl-12-d

Use yield strength of direct bury tube to check.

Yield Strength of Tube ■ (psi.) Required Area : (in.²)

Reinforcement Requirement

Mu-12
jufy-d-0.90

As= 11.814 < TubeArea= 18.7 No rebar required with the direct bury tube.

fy := 46000 As= 11.814

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CY = 2.229

Quantity of Concrete . (yds.³) CY:=
27

V 4-27

Note . Keep bottom of tube 3" from bottom of footing to create concrete cover for water exclusion.

«4'-10" EXISTING SLAB

1T-2" C TO C "

6-3" C TO C

6-3" _ "C TO C

.2-6" EXISTING SLAB

9'-0" EXISTING SLAB

»3'-0"
CONCRETE
»3'-0" J
CONCRETE

PLAN VIEW

QTY. CONCRETE: 2.3 CU. YDS.

PLAN VIEW

QTY. CONCRETE: 2.0 CU. YDS. EACH

-42'-5%" BASE --35'-6" SIGNS -

I₁
-9'-10"--6"-0"-

FQRD

CIT Y

MAI _L

6'-3"
C TO C "

HSS 14" x 14" t_{y2}" ASTM A-500 Gr B · EMBEDDED IN FOUNDATION TO WITHIN 3" OF BOTTOM TO CREATE CONCRETE COVER UNDER POLE.

ELEVATION VIEW

GRADE

S0> .

THREE (3) HSS 10" x 10" x Vg" ASTM A-500 Gr. I -EMBEDDED IN FOUNDATION TO WITHIN 3" OF BOTTOM TO CREATE CONCRETE COVER UNDER POLE.

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7601 South Cicero Avenue
Chicago, Illinois 60652

FOUNDATION NOTES:

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DESIGN WIND LOAD: 30.0 PSF

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Robert-James & Associates, Inc.

12255 West 187th Street, Mokena Illinois 60448-9737 phone: 708-479-8385 fax: 708-479-8395 email: rjo37@comcast.net

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1 OF 1

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FOUR 31'-6" OAH DIRECT BURY POLES FOR REPLACEMENT ID & TENANT SIGNS

May 17

DRAWING NUMBER

1705040