



DEVELOPMENT APPLICATION

City of Rockwall
Planning and Zoning Department
385 S. Goliad Street
Rockwall, Texas 75087

STAFF USE ONLY

PLANNING & ZONING CASE NO.

NOTE: THE APPLICATION IS NOT CONSIDERED ACCEPTED BY THE CITY UNTIL THE PLANNING DIRECTOR AND CITY ENGINEER HAVE SIGNED BELOW.

DIRECTOR OF PLANNING:

CITY ENGINEER:

PLEASE CHECK THE APPROPRIATE BOX BELOW TO INDICATE THE TYPE OF DEVELOPMENT REQUEST (SELECT ONLY ONE BOX):

PLATTING APPLICATION FEES:

- MASTER PLAT (\$100.00 + \$15.00 ACRE)¹
- PRELIMINARY PLAT (\$200.00 + \$15.00 ACRE)¹
- FINAL PLAT (\$300.00 + \$20.00 ACRE)¹
- REPLAT (\$300.00 + \$20.00 ACRE)¹
- AMENDING OR MINOR PLAT (\$150.00)
- PLAT REINSTATEMENT REQUEST (\$100.00)

SITE PLAN APPLICATION FEES:

- SITE PLAN (\$250.00 + \$20.00 ACRE)¹
- AMENDED SITE PLAN/ELEVATIONS/LANDSCAPING PLAN (\$100.00)

ZONING APPLICATION FEES:

- ZONING CHANGE (\$200.00 + \$15.00 ACRE)¹
- SPECIFIC USE PERMIT (\$200.00 + \$15.00 ACRE)¹⁺²
- PD DEVELOPMENT PLANS (\$200.00 + \$15.00 ACRE)¹

OTHER APPLICATION FEES:

- TREE REMOVAL (\$75.00)
- VARIANCE REQUEST/SPECIAL EXCEPTIONS (\$100.00)²

NOTES:

¹ IN DETERMINING THE FEE, PLEASE USE THE EXACT ACREAGE WHEN MULTIPLYING BY THE PER ACRE AMOUNT. FOR REQUESTS ON LESS THAN ONE ACRE, ROUND UP TO ONE (1) ACRE.
² A \$1,000.00 FEE WILL BE ADDED TO THE APPLICATION FEE FOR ANY REQUEST THAT INVOLVES CONSTRUCTION WITHOUT OR NOT IN COMPLIANCE TO AN APPROVED BUILDING PERMIT.

PROPERTY INFORMATION (PLEASE PRINT)

ADDRESS 1540 I-30 Rockwall, TX 75087

SUBDIVISION Rockwall Recreation Addition

LOT 1

BLOCK 1

GENERAL LOCATION Located off I-30 Service Road & Commerce Street

ZONING, SITE PLAN AND PLATTING INFORMATION (PLEASE PRINT)

CURRENT ZONING L1

CURRENT USE Auto Dealer

PROPOSED ZONING

PROPOSED USE

ACREAGE 7.17

LOTS [CURRENT]

LOTS [PROPOSED]

SITE PLANS AND PLATS: BY CHECKING THIS BOX YOU ACKNOWLEDGE THAT DUE TO THE PASSAGE OF HB3167 THE CITY NO LONGER HAS FLEXIBILITY WITH REGARD TO ITS APPROVAL PROCESS, AND FAILURE TO ADDRESS ANY OF STAFF'S COMMENTS BY THE DATE PROVIDED ON THE DEVELOPMENT CALENDAR WILL RESULT IN THE DENIAL OF YOUR CASE.

OWNER/APPLICANT/AGENT INFORMATION (PLEASE PRINT/CHECK THE PRIMARY CONTACT/ORIGINAL SIGNATURES ARE REQUIRED)

OWNER 1540 East IH 30 Rockwall, LLC

APPLICANT The Charles Morgan Group, LP

CONTACT PERSON Chase Cooley

CONTACT PERSON Davin Marceau

ADDRESS 1540 E. IH 30, STE 150

ADDRESS 1540 E. IH 30, STE 150

CITY, STATE & ZIP

CITY, STATE & ZIP

PHONE

PHONE

E-MAIL

E-MAIL

NOTARY VERIFICATION (REQUIRED)

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED CHASE E. COOLEY [OWNER] THE UNDERSIGNED, WHO STATED THE INFORMATION ON THIS APPLICATION TO BE TRUE AND CERTIFIED THE FOLLOWING:

"I HEREBY CERTIFY THAT I AM THE OWNER FOR THE PURPOSE OF THIS APPLICATION: ALL INFORMATION SUBMITTED HEREIN IS TRUE AND CORRECT; AND THE APPLICATION FEE OF \$ 100.00, TO COVER THE COST OF THIS APPLICATION, HAS BEEN PAID TO THE CITY OF ROCKWALL ON THIS THE 11th DAY OF December, 2025. BY SIGNING THIS APPLICATION, I AGREE THAT THE CITY OF ROCKWALL (I.E. 'CITY') IS AUTHORIZED AND PERMITTED TO PROVIDE INFORMATION CONTAINED WITHIN THIS APPLICATION TO THE PUBLIC. THE CITY IS ALSO AUTHORIZED AND PERMITTED TO REPRODUCE ANY COPYRIGHTED INFORMATION SUBMITTED IN CONJUNCTION WITH THIS APPLICATION, IF SUCH REPRODUCTION IS ASSOCIATED OR IN RESPONSE TO A REQUEST FOR PUBLIC INFORMATION."

GIVEN UNDER MY HAND AND SEAL OF OFFICE ON THIS THE 11th DAY OF December, 2025.

OWNER'S SIGNATURE

Linda Suzanne Groover

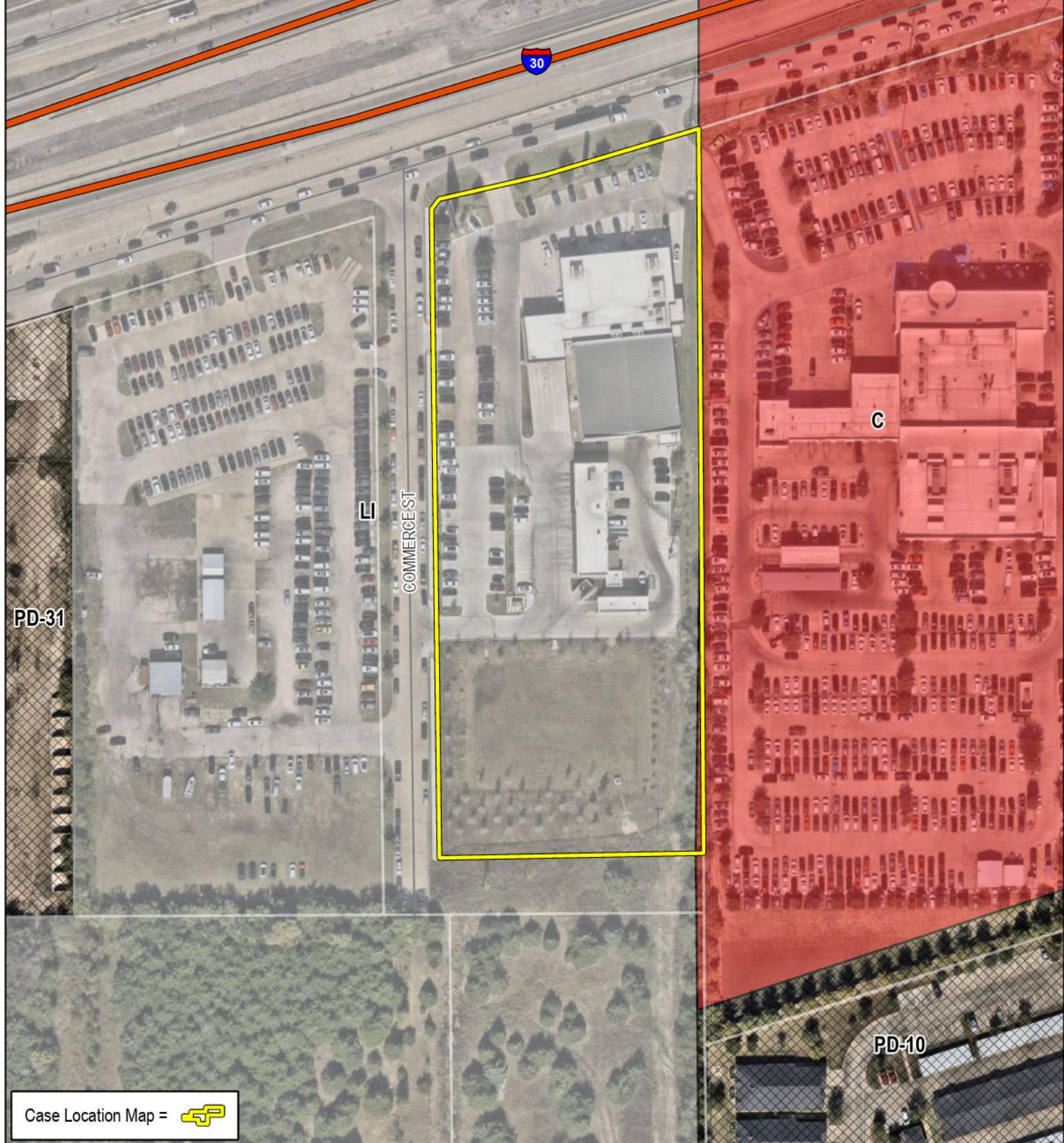
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS





0 50 100 200 300 400 Feet

Z2025-076: Specific Use Permit (SUP) to Exceed the Maximum Permissible Height at 1540 E. IH-30



Case Location Map = 

City of Rockwall



Planning & Zoning Department
385 S. Goliad Street
Rockwall, Texas 75087
(P): (972) 771-7745
(W): www.rockwall.com

The City of Rockwall GIS maps are continually under development and therefore subject to change without notice. While we endeavor to provide timely and accurate information, we make no guarantees. The City of Rockwall makes no warranty, express or implied, including warranties of merchantability and fitness for a particular purpose. Use of the information is the sole responsibility of the user.

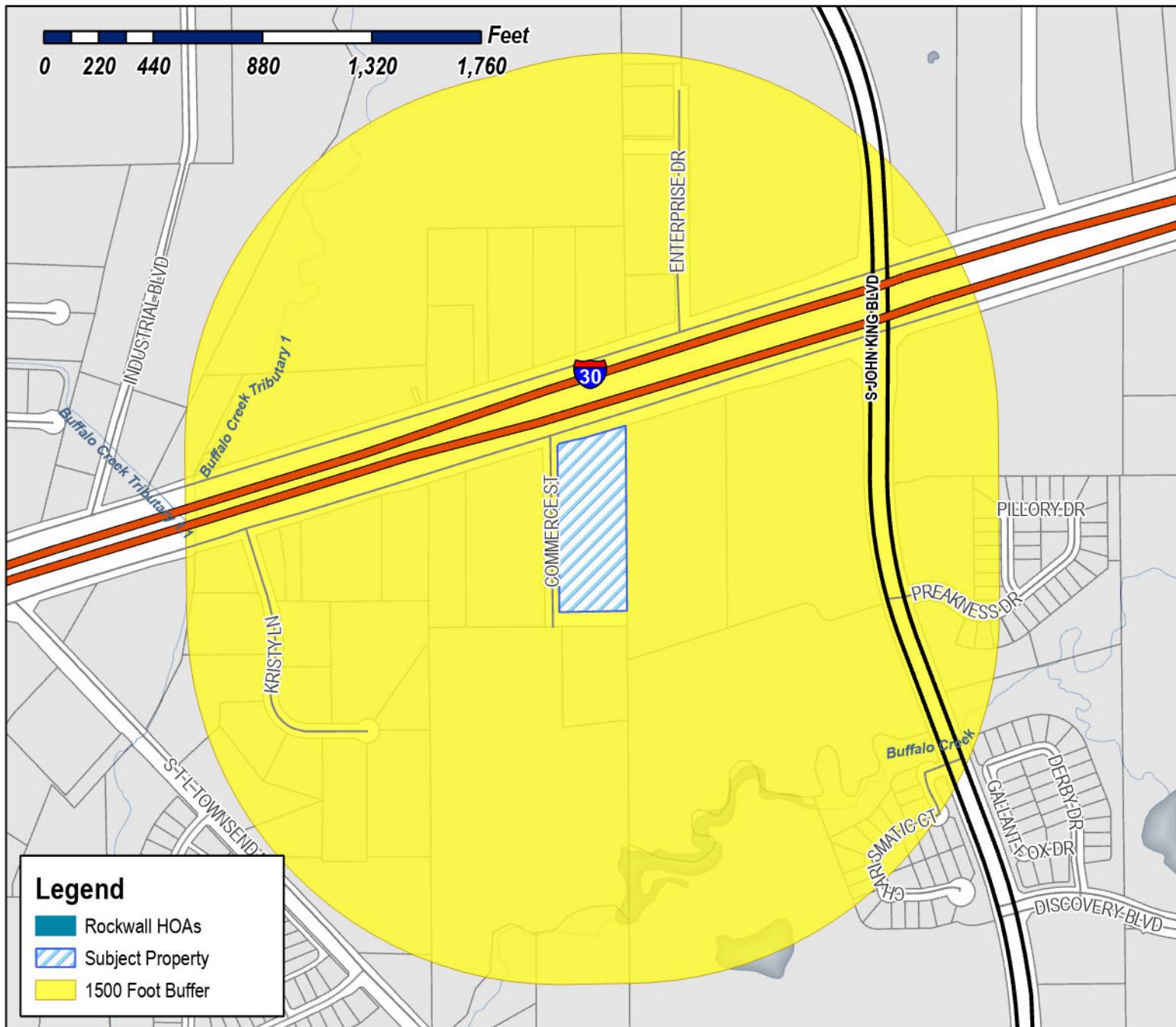




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Legend

- Rockwall HOAs
- Subject Property
- 1500 Foot Buffer

Case Number: Z2025-076

Case Name: Specific Use Permit (SUP) to Exceed the Maximum Permissible Height

Case Type: Zoning

Zoning: Light Industrial (LI) District

Case Address: 1540 I-30

Date Saved: 12/15/2025

For Questions on this Case Call (972) 771-7745

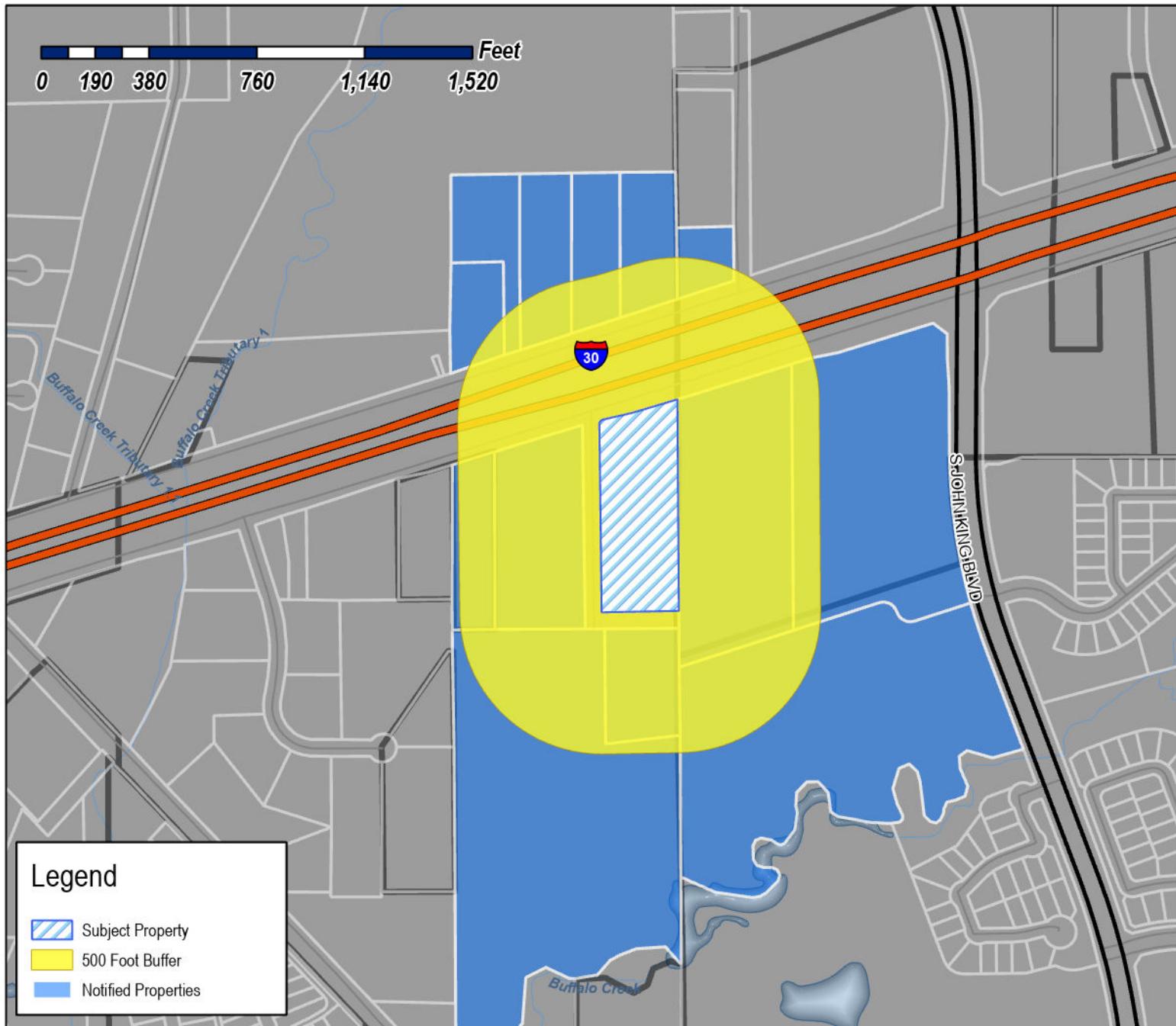




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RESIDENT
130 NORTH SERVICE RD
ROCKWALL, TX 75087

LITHIA REAL ESTATE INC
150 N BARTLETT STREET
MEDFORD, OR 97501

RESIDENT
1520 E I30
ROCKWALL, TX 75087

RESIDENT
1530 S I30
ROCKWALL, TX 75087

RESIDENT
1535 I30
ROCKWALL, TX 75087

RESIDENT
1540 I30
ROCKWALL, TX 75087

RESIDENT
1545 E INTERSTATE 30
ROCKWALL, TX 75087

RESIDENT
1550 E I30
ROCKWALL, TX 75087

RESIDENT
1551 E I30
ROCKWALL, TX 75087

AM ROCKWALL INVESTMENTS LP
A TEXAS LTD PARTNERSHIP
1551 E Interstate 30 Ste A
Rockwall, TX 75087

RESIDENT
1600 E INTERSTATE 30
ROCKWALL, TX 75087

RESIDENT
1650 S JOHN KING
ROCKWALL, TX 75087

DVB FAMILY LIMITED PARTNERSHIP
2421 KATHRYN DR
HEATH, TX 75032

DVB FAMILY LIMITED PARTNERSHIP
2421 KATHRYN DR
HEATH, TX 75032

C2LA, LLC
382 Ranch Trl
Rockwall, TX 75032

H E B LP
646 SOUTH FLORES STREET
SAN ANTONIO, TX 78204

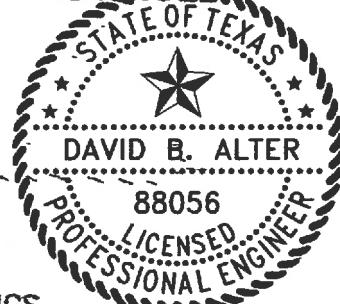
DYNACAP HOLDINGS LTD &
CHARLES SMITH
709 W Rusk St Ste B
Rockwall, TX 75087

ZBH/1535 E INTERSTATE 30 LTD
9669 JOURDAN WAY
DALLAS, TX 75230

1540 EAST IH 30 ROCKWALL LLC
M/R
ROCKWALL, TX 75087

STAR HUBBARD LLC
C/O STEADFAST COMPANIES
PO BOX 530292
BIRMINGHAM, AL 35253

DIMINISHING SECTION STEEL
CONCEALED HALYARD
GROUND SET FLAGPOLE



STANDARD FITTINGS

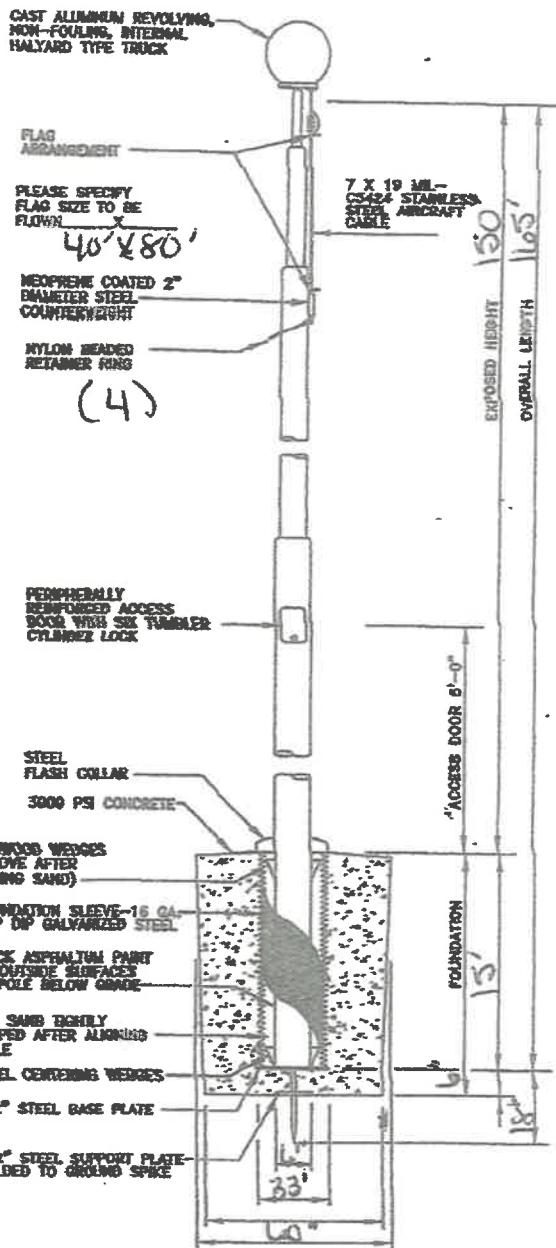
FINAL: (The flagpole division of NAAMM recommends that no final, other than the internal Halyard Truck itself be used on the Concealed Halyard Flagpole.)

TRUCK: Heavy duty, cast aluminium, internal halyard type, revolving non-fouling, gold powder coated, equipped with upper and lower sealed bearings assemblies and a stainless steel spindle for flagpoles up to 130'. Larger flagpoles will come with two spun steel hemispheres, automotive type sealed bearing assemblies and a welded in steel spindle.

HALYARD: Halyard and flag arrangement are 1/8" and 3/16" stainless steel aircraft cable, with attachment ends crimped over 1/8" stainless steel yokes and joined by a stainless steel quicklink. Cable is two piece, joined by a stainless steel swivel at mid-point. The flag arrangement is sized to accommodate an appropriate size flag and is supplied complete with two heavy duty swivel snaps, neoprene coated counterweight, and beaded nylon retainer rings.

WINCH: Stainless steel, direct drive, accessible for maintenance only through a reinforced access opening, which is covered by a removable door finished to match flagpole shaft and contains a six tumber cylinder lock. Winch is gearless, operable only by a removable crank handle and locks in any position upon removal of the crank handle.

FOUNDATION TUBE: Fabricated from 16GA. galvanized steel, with a steel base plate whose square dimension is 4" larger than the I.D. of the sleeve. A setting plate 6" square is securely welded to the ground spike 6" below the base plate. The ground spike is 3/4" diameter and 36" in length.



PROJECT NO.	GROUND SET DIM. SECTION STEEL FLAGPOLE	
LOC. 1540-130	EXP. HT. 150'	OVERALL HT. 116 1/2'
ARCHT:		NO. OF SEC. 5
CONT R:	BUTT. DIA. 24"	TOP DIA. 10 3/4" WALL THICKNESS .375"
CUST: Clay Colby Hyundai Ranch	SHP IN 5 SEC.	FINISH: Powder Coat White

EXPOSED HEIGHT	OVERALL LENGTH	TOP DIAMETER	BOTTOM DIAMETER	BUTT WALL THICKNESS	SHIP SECTIONS	NO. OF SECTIONS	FLAG SIZE	SHIPPING WEIGHT
150'	116 1/2'	10 3/4"	24"	.375"	5	5	40'x80'	15,000 lbs

WARNING: Extreme Caution should be exercised when installing flagpoles near overhead power lines, or in the vicinity of buried cables.

DIMINISHING SECTION STEEL
CONCEALED HALYARD
GROUND SET FLAGPOLE



STANDARD FITTINGS

10/30/2025

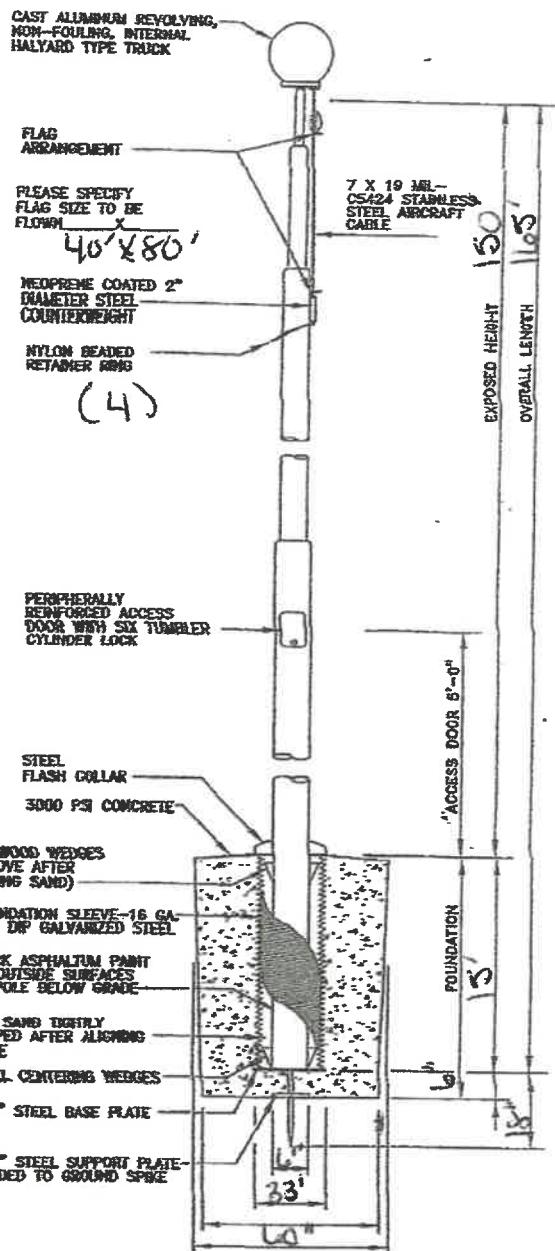
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WINCH: Stainless steel, direct drive, accessible for maintenance only through a reinforced access opening, which is covered by a removable door finished to match flagpole shaft and contains a six tumber cylinder lock. Winch is gearless, operable only by a removable crank handle and locks in any position upon removal of the crank handle.

FOUNDATION TUBE: Fabricated from 16GA. galvanized steel, with a steel base plate whose square dimension is 4" larger than the I.D. of the sieve. A setting plate 6" square is securely welded to the ground spike 6" below the base plate. The ground spike is 3/4" diameter and 36" in length.



PROJECT NO.	GROUND SET OVAL SECTION STEEL FLAGPOLE		
LOC. 1540 - I 30	EXP. HT. 150'	OVERALL HT. 115'	NO. OF SEC. 5
ARCHT:	BUTT. DIA. 34"	TOP DIA. 103/4"	WALL THICKNESS .375"
CONT. R:	SHP IN 5	SEC.	FINISH: Powder Coat
CUST: Clay Colby Hyundai Ranch	White		

US Flag,
40' x 80'

EXPOSED	OVERALL	TOP	BOTTOM	BUTT WALL	SHIP	NO. OF	FLAG	SHIPPING
HEIGHT	LENGTH	DIAMETER	DIAMETER	THICKNESS	SECTIONS	SECTIONS	SIZE	WEIGHT
150	165'	10 3/4"	24"	.375"	5	5	40x50'	15,000 lbs

WARNING: Extreme Caution should be exercised when installing flagpoles near overhead power lines, or in the vicinity of buried cables.

STRUCTURAL CALCULATIONS

Project:

Clay Cooley Hyundai Flagpole & Footing

1540 I-30

Rockwall, TX 75087

Project Number: 14520

Prepared For:

Symonds Flags and Poles

250 W. Airport Freeway

Irving, TX 75062

Date:

October 2025

Prepared By:

Adam Pope, EIT

Reviewed By:

David B. Alter, PE



10/30/2025

Ensign Engineering

45 West 10000 South, Suite 500

Sandy, Utah 84070

P: (801) 255-0529

F: (801) 255-4449

ensigneng.com

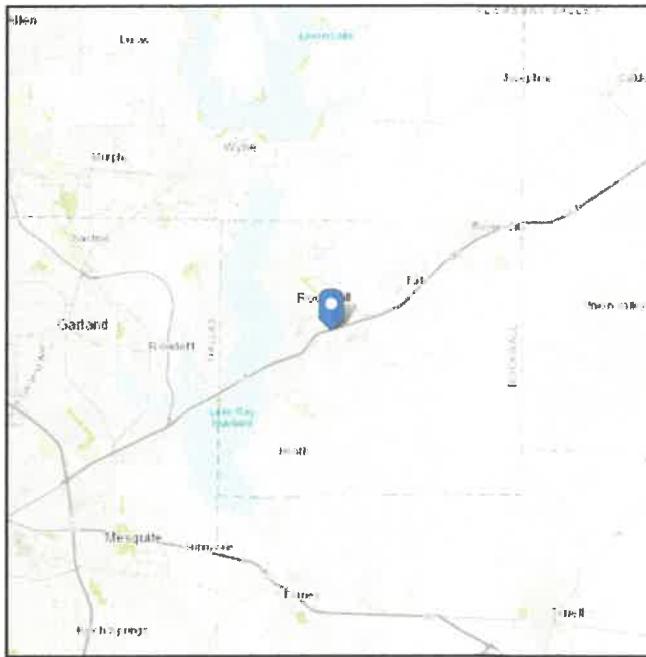
ENSIGN
THE STANDARD IN ENGINEERING



Address:
1540 E Interstate 30
Rockwall, Texas
75087

ASCE Hazards Report

Standard: ASCE/SEI 7-22 **Latitude:** 32.914362
Risk Category: II **Longitude:** -96.436478
Soil Class: Default **Elevation:** 573.0197118668139 ft
(NAVD 88)



Wind

Results:

Wind Speed	105 Vmph
10-year MRI	75 Vmph
25-year MRI	80 Vmph
50-year MRI	85 Vmph
100-year MRI	90 Vmph
300-year MRI	100 Vmph
700-year MRI	105 Vmph
1,700-year MRI	115 Vmph
3,000-year MRI	117 Vmph
10,000-year MRI	126 Vmph
100,000-year MRI	145 Vmph
1,000,000-year MRI	162 Vmph

Data Source:

ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed:

Wed Oct 29 2025



Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.



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GENERAL PROJECT INFORMATION

Latitude: 32.91 North (Approximate)
 Longitude: -96.44 West (Approximate)

Client: Symonds Flags and Poles

PROJECT DESCRIPTION

Structural Calculations for $h := 150 \text{ ft}$ flag pole footing

GENERAL DESIGN CRITERIA

Structure Type: Flag Pole
 Design Code: 2021 IBC / FP1001-07
 Risk Category: II

DESIGN LOADS

Wind Loads:

Wind Speed: $WS := 105 \text{ mph}$ - 3 second gust (strength level)
 Exposure: C

FOUNDATION CRITERIA & SPECIFICATIONS

Soils Report:	Company: Presumptive
	Date: N/A
	Report/Project Number: N/A
	Contact: N/A

Allowable Bearing Pressure: 1500 psf

Passive Pressure: $P_{\text{passive}} := 2 \cdot 150 \frac{\text{psf}}{\text{ft}} = 300 \frac{\text{psf}}{\text{ft}}$
 Increase Per IBC 1806.3.4

Coefficient of Friction, μ : 0.35

Foundation Type:

Footing Type: Pole Footing

FOUNDATION CRITERIA & SPECIFICATIONS

CONCRETE & REINFORCING STEEL SPECIFICATIONS

Concrete Strength, $f'c$:

Footings/Foundation Walls: 3000 psi

Steel Pole Segments: API 5Lx46 Grade B (fy=46 ksi)

Flagpole Design

Flagpole Geometry

$$h = 150 \text{ ft}$$

Total Pole Height from the Ground

$$w_1 := 24 \text{ in}$$

$$w_3 := 15 \text{ in}$$

Pole Widths

$$w_2 := 19.5 \text{ in}$$

$$w_4 := 10.75 \text{ in}$$

$$h_1 := 50 \text{ ft}$$

$$h_3 := 40 \text{ ft}$$

Respective Pole Heights

$$h_2 := 40 \text{ ft}$$

$$h_4 := 20 \text{ ft}$$

Wind loads on pole (Per NAAMM / FP1001-07)

$$WS = 105$$

Wind speed (mph)

$$V := \sqrt{0.6 \cdot WS}$$

Wind velocity ASCE 7-16 (mph) adjusted to ASCE 7-05

$$G := 1.14$$

Gust effect factor recommended for flag poles

Segment 4 Calculations

$$z_4 := 140 \text{ ft}$$

Avg. Distance From Ground (ft)

$$d_4 := \frac{w_4}{ft} = 0.896$$

$$C_{deq4} := \frac{129}{(V \cdot d_4)^{1.3}} = 0.49$$

Drag coefficient FP1001 Table 3.2.4.

$$C_{d4} := \text{if}(C_{deq4} < 0.45, 0.45, \text{if}(C_{deq4} > 1.1, 1.1, C_{deq4})) = 0.489$$

$$C_{h4} := 2.01 \cdot \left(\frac{z_4}{900 \text{ ft}} \right)^{\frac{2}{9.5}} = 1.36$$

Height coefficient FG1001 Eq. 2

$$P_4 := 0.00256 \cdot V^2 \cdot C_{d4} \cdot C_{h4} \cdot G = 12.826$$

Wind Pressure (psf) FP1001 Eq. 1

$$A_4 := h_4 \cdot w_4 = 17.917 \text{ ft}^2$$

Pole Area

$$F_4 := P_4 \cdot \text{psf} \cdot A_4 = 229.799 \text{ lbf}$$

Wind Force as a Point Load (Lbs)

$$M_{b4} := A_4 \cdot P_4 \cdot \text{psf} \cdot z_4 = 32.172 \text{ kip} \cdot \text{ft}$$

Moment @ base resulting from segment 4

Segment 3 Calculations

$$z_3 := 110 \text{ ft}$$

Avg. Distance From Ground (ft)

$$d_3 := \frac{w_3}{ft} = 1.25$$

$$C_{deq3} := \frac{129}{(V \cdot d_3)^{1.3}} = 0.32$$

Drag coefficient FP1001 Table 3.2.4.

$$C_{d3} := \text{if}(C_{deq3} < 0.45, 0.45, \text{if}(C_{deq3} > 1.1, 1.1, C_{deq3})) = 0.45$$

$$C_{h3} := 2.01 \cdot \left(\frac{z_3}{900 \text{ ft}} \right)^{\frac{2}{9.5}} = 1.29$$

Height coefficient FG1001 Eq. 2

$$P_3 := 0.00256 \cdot V^2 \cdot C_{d3} \cdot C_{h3} \cdot G = 11.218$$

Wind Pressure (psf) FP1001 Eq. 1

$$A_3 := h_3 \cdot w_3 = 50 \text{ ft}^2$$

Pole Area

$$F_3 := P_3 \cdot psf \cdot A_3 = 560.886 \text{ lbf}$$

Wind Force as a Point Load (Lbs)

$$M_{b3} := A_3 \cdot P_3 \cdot psf \cdot z_3 = 61.697 \text{ kip} \cdot \text{ft}$$

Moment @ base resulting from segment 3

Segment 2 Calculations

$$z_2 := 70 \text{ ft}$$

Avg. Distance From Ground (ft)

$$d_2 := \frac{w_2}{ft} = 1.625$$

$$C_{deq2} := \frac{129}{(V \cdot d_2)^{1.3}} = 0.23$$

Drag coefficient FP1001 Table 3.2.4.

$$C_{d2} := \text{if}(C_{deq2} < 0.45, 0.45, \text{if}(C_{deq2} > 1.1, 1.1, C_{deq2})) = 0.45$$

$$C_{h2} := 2.01 \cdot \left(\frac{z_2}{900 \text{ ft}} \right)^{\frac{2}{9.5}} = 1.17$$

Height coefficient FG1001 Eq. 2

$$P_2 := 0.00256 \cdot V^2 \cdot C_{d2} \cdot C_{h2} \cdot G = 10.2$$

Wind Pressure (psf) FP1001 Eq. 1

$$A_2 := h_2 \cdot w_2 = 65 \text{ ft}^2$$

Pole Area

$$F_2 := P_2 \cdot psf \cdot A_2 = 662.968 \text{ lbf}$$

Wind Force as a Point Load (Lbs)

$$M_{b2} := A_2 \cdot P_2 \cdot psf \cdot z_2 = 46.408 \text{ kip} \cdot \text{ft}$$

Moment @ base resulting from segment 2

Segment 1 Calculations

$$z_1 := 25 \text{ ft}$$

Avg. Distance From Ground (ft)

$$d_1 := \frac{w_1}{ft} = 2$$

$$C_{deq1} := \frac{129}{(V \cdot d_1)^{1.3}} = 0.17$$

Drag coefficient FP1001 Table 3.2.4.

$$C_{d1} := \text{if}(C_{deq1} < 0.45, 0.45, \text{if}(C_{deq1} > 1.1, 1.1, C_{deq1})) = 0.45$$

$$C_{h1} := \text{if}\left(z_1 < 16.4 \text{ ft}, 0.86, 2.01 \cdot \left(\frac{z_1}{900 \text{ ft}}\right)^{\frac{2}{9.5}}\right) = 0.95 \quad \text{Height coefficient FG1001 Eq. 2 (if } z_1 < 16.4' \text{ } C_h = 0.86)$$

$$P_1 := 0.00256 \cdot V^2 \cdot C_{d1} \cdot C_{h1} \cdot G = 8.212$$

Wind Pressure (psf) FP1001 Eq. 1

$$A_1 := h_1 \cdot w_1 = 100 \text{ ft}^2$$

Pole Area

$$F_1 := P_1 \cdot \text{psf} \cdot A_1 = 821.184 \text{ lbf}$$

Wind Force as a Point Load (Lbs)

$$M_{b1} := A_1 \cdot P_1 \cdot \text{psf} \cdot z_1 = 20.53 \text{ kip} \cdot \text{ft}$$

Moment @ base resulting from segment 1

$$M_{bpole} := M_{b1} + M_{b2} + M_{b3} + M_{b4} = 160.807 \text{ kip} \cdot \text{ft}$$

Wind loads on flag (per NAAMM / FP1001-07)

$$h_f := 40 \text{ ft} \quad w_f := 80 \text{ ft} \quad z_f := 130 \text{ ft}$$

Flag geometry

$$C_{hf} := 2.01 \cdot \left(\frac{z_f}{900 \text{ ft}}\right)^{\frac{2}{9.5}} = 1.34$$

Height coefficient FG1001 Eq. 2

$$A_f := h_f \cdot w_f = 3200 \text{ ft}^2$$

Flag Area

$$F_f := 0.0014 \frac{\text{lbf}}{\text{ft}} \cdot V^2 \cdot \sqrt{A_f} \cdot C_{hf} \cdot G = 798.783 \text{ lbf}$$

Force on flag FG1001 Eq. 5
 (polyester flag = worst case)

$$M_{bf} := F_f \cdot z_f = 103.842 \text{ kip} \cdot \text{ft}$$

Moment @ base resulting from the flag

$$F_d := \frac{F_f}{h_f} = 19.97 \text{ plf}$$

Moment @ Base

$$M_{btotal} := M_{bf} + M_{bpole} = 264.648 \text{ kip} \cdot \text{ft}$$

Moment @ Base of Segment 2

$$M_2 := F_4 \cdot (z_4 - h_1) + F_3 \cdot (z_3 - h_1) + F_2 \cdot (z_2 - h_1) + F_f \cdot (z_f - h_1)$$

$$M_2 = 131.497 \text{ kip} \cdot \text{ft}$$

Moment @ Base of Segment 3

$$M_3 := F_4 \cdot (z_4 - h_1 - h_2) + F_3 \cdot (z_3 - h_1 - h_2) + F_f \cdot (z_f - h_1 - h_2)$$

$$M_3 = 54.659 \text{ kip} \cdot \text{ft}$$

Moment @ Base of Segment 4

$$M_4 := F_4 \cdot (z_4 - h_1 - h_2 - h_3) + F_d \cdot h_4 \cdot \left(\frac{h_4}{2} \right) = 6.292 \text{ kip} \cdot \text{ft}$$

*Worst loading case for segment 4
=full length of segment*

Section Modulii of Each Segment

$$T = 0.375 \text{ in}$$

$$S_1 := \frac{\pi \cdot (w_1^4 - (w_1 - 2T)^4)}{32 \cdot w_1} = 161.858 \text{ in}^3$$

$$S_3 := \frac{\pi \cdot (w_3^4 - (w_3 - 2T)^4)}{32 \cdot w_3} = 61.461 \text{ in}^3$$

$$S_2 := \frac{\pi \cdot (w_2^4 - (w_2 - 2T)^4)}{32 \cdot w_2} = 105.696 \text{ in}^3$$

$$S_4 := \frac{\pi \cdot (w_4^4 - (w_4 - 2T)^4)}{32 \cdot w_4} = 30.637 \text{ in}^3$$

$$Z_1 := \frac{w_1^3 - (w_1 - 2T)^3}{6} = 209.32 \text{ in}^3$$

$$Z_3 := \frac{w_3^3 - (w_3 - 2T)^3}{6} = 80.227 \text{ in}^3$$

$$Z_2 := \frac{w_2^3 - (w_2 - 2T)^3}{6} = 137.18 \text{ in}^3$$

$$Z_4 := \frac{w_4^3 - (w_4 - 2T)^3}{6} = 40.383 \text{ in}^3$$

Bending Stress Check of Each Segment (16.1-F8 AISC)

$$E := 29000 \text{ ksi} \quad F_y := 42 \text{ ksi} \quad \Omega_b := 1.67$$

**ALLOWABLE FACTORED
STRENGTH PER CODE IS 40
KSI FOR 42 KSI STEEL**

Segment 4

$$D_t := \frac{w_4}{T} = 28.667 \quad F_8 := \frac{0.45 \cdot E}{F_y} = 310.714 \quad F_{cr} := \frac{0.33 \cdot E}{(D_t)} = 333.837 \text{ ksi}$$

$$F_{8apply} := \text{if}(D_t < F_8, \text{"PROCEED"}, \text{"REVISE"}) = \text{"PROCEED"}$$

Yielding

$$M_{ny} := F_y \cdot Z_4 = 141.34 \text{ kip} \cdot \text{ft} \quad \frac{\Omega_b \cdot M_4}{M_{ny}} = 0.074 \quad \text{Must be} < 1$$

Local Buckling

$$\lambda_p := 0.07 \cdot \frac{E}{F_y} = 48.333 \quad \lambda_r := 0.31 \cdot \frac{E}{F_y} = 214.048$$

$$\text{Check}_c := \text{if}(D_t < \lambda_p, \text{"Compact"}, \text{if}(D_t > \lambda_r, \text{"Slender"}, \text{"Non-compact"})) = \text{"Compact"}$$

$$M_{nb} := \text{if}\left(\text{Check}_c = \text{"Compact"}, \text{"N/A"}, \text{if}\left(\text{Check}_c = \text{"Slender"}, F_{cr} \cdot S_4, \left(\frac{0.021 \cdot E}{D_t} + F_y\right) \cdot S_4\right)\right) = \text{"N/A"}$$

Segment 3

$$D_t := \frac{w_3}{T} = 40 \quad F_8 := \frac{0.45 \cdot E}{F_y} = 310.714 \quad F_{cr} := \frac{0.33 \cdot E}{(D_t)} = 239.25 \text{ ksi}$$

$$F_{8apply} := \text{if}(D_t < F_8, \text{"PROCEED"}, \text{"REVISE"}) = \text{"PROCEED"}$$

Yielding

$$M_{ny} := F_y \cdot Z_3 = 280.793 \text{ kip} \cdot \text{ft} \quad \frac{\Omega_b \cdot M_3}{M_{ny}} = 0.325 \quad \text{Must be} < 1$$

Local Buckling

$$\lambda_p := 0.07 \cdot \frac{E}{F_y} = 48.333 \quad \lambda_r := 0.31 \cdot \frac{E}{F_y} = 214.048$$

$$\text{Check}_c := \text{if}(D_t < \lambda_p, \text{"Compact"}, \text{if}(D_t > \lambda_r, \text{"Slender"}, \text{"Non-compact"})) = \text{"Compact"}$$

$$M_{nb} := \text{if}\left(\text{Check}_c = \text{"Compact"}, \text{"N/A"}, \text{if}\left(\text{Check}_c = \text{"Slender"}, F_{cr} \cdot S_3, \left(\frac{0.021 \cdot E}{D_t} + F_y\right) \cdot S_3\right)\right) = \text{"N/A"}$$

Segment 2

$$D_t := \frac{w_2}{T} = 52 \quad F_8 := \frac{0.45 \cdot E}{F_y} = 310.714 \quad F_{cr} := \frac{0.33 \cdot E}{(D_t)} = 184.038 \text{ ksi}$$

$$F_{8apply} := \text{if}(D_t < F_8, \text{"PROCEED"}, \text{"REVISE"}) = \text{"PROCEED"}$$

Yielding

$$M_{ny} := F_y \cdot Z_2 = 480.129 \text{ kip} \cdot ft \quad \frac{\Omega_b \cdot M_2}{M_{ny}} = 0.457 \quad \text{Must be} < 1$$

Local Buckling

$$\lambda_p := 0.07 \cdot \frac{E}{F_y} = 48.333 \quad \lambda_r := 0.31 \cdot \frac{E}{F_y} = 214.048$$

$$\text{Check}_c := \text{if}(D_t < \lambda_p, \text{"Compact"}, \text{if}(D_t > \lambda_r, \text{"Slender"}, \text{"Non-compact"})) = \text{"Non-compact"}$$

$$M_{nb} := \text{if}\left(\text{Check}_c = \text{"Compact"}, \text{"N/A"}, \text{if}\left(\text{Check}_c = \text{"Slender"}, F_{cr} \cdot S_2, \left(\frac{0.021 \cdot E}{D_t} + F_y\right) \cdot S_2\right)\right) = 15221234.198 \frac{\text{lb} \cdot \text{ft}^2}{\text{s}^2}$$

Segment 1

$$D_t := \frac{w_1}{T} = 64 \quad F_8 := \frac{0.45 \cdot E}{F_y} = 310.714 \quad F_{cr} := \frac{0.33 \cdot E}{(D_t)} = 149531.25 \text{ psi}$$

$$F_{8apply} := \text{if}(D_t < F_8, \text{"PROCEED"}, \text{"REVISE"}) = \text{"PROCEED"}$$

Yielding

$$M_{ny} := F_y \cdot Z_1 = 732.621 \text{ kip} \cdot ft \quad \frac{\Omega_b \cdot M_{btotal}}{M_{ny}} = 0.603 \quad \text{Must be} < 1$$

Local Buckling

$$\lambda_p := 0.07 \cdot \frac{E}{F_y} = 48.333 \quad \lambda_r := 0.31 \cdot \frac{E}{F_y} = 214.048$$

$$\text{Check}_c := \text{if}(D_t < \lambda_p, \text{"Compact"}, \text{if}(D_t > \lambda_r, \text{"Slender"}, \text{"Non-compact"})) = \text{"Non-compact"}$$

$$M_{nb} := \text{if}\left(\text{Check}_c = \text{"Compact"}, \text{"N/A"}, \text{if}\left(\text{Check}_c = \text{"Slender"}, F_{cr} \cdot S_1, \left(\frac{0.021 \cdot E}{D_t} + F_y\right) \cdot S_1\right)\right) = 694.852 \text{ kip} \cdot ft$$

$$\frac{\Omega_b \cdot M_{btotal}}{M_{nb}} = 0.636 \quad \text{Must be} < 1$$

At maximum wind, the pole with attached flag would not fail. However, the flag is not expected to stay attached with winds exceeding 50 mph. Calculations without the flag follow. The assumption is that the flag will rip from the pole before it is able to transfer maximum load to the pole.

FLAG SHALL BE REMOVED BEFORE WIND SPEEDS REACH 75 MPH.

Moment @ Base w/out Flag

$$M_{btotalwof} := M_{bpole} = 160.807 \text{ kip} \cdot \text{ft}$$

Moment @ base of segment 2 w/out flag

$$M_{2wof} := F_4 \cdot (z_4 - h_1) + F_3 \cdot (z_3 - h_1) + F_2 \cdot (z_2 - h_1) = 67.594 \text{ kip} \cdot \text{ft}$$

Moment @ base of segment 3 w/out flag

$$M_{3wof} := F_4 \cdot (z_4 - h_1 - h_2) + F_3 \cdot (z_3 - h_1 - h_2) = 22.708 \text{ kip} \cdot \text{ft}$$

Moment @ base of segment 4 w/out flag

$$M_{4wof} := F_4 \cdot (z_4 - h_1 - h_2 - h_3) = 2.298 \text{ kip} \cdot \text{ft}$$

Loads on steel sections less than when the flag is present. **Steel is adequate by inspection.**

Footing Design

$$b := 4.5 \text{ ft}$$

Diameter of footing in ft

$$P' := F_1 + F_2 + F_3 + F_4 + F_f = 3073.62 \text{ lbf}$$

Applied lateral force in lbs

$$h' := \frac{M_{btotal}}{P'} = 86.103 \text{ ft}$$

Distance in ft from ground surface to point of application of "P"

$$S_1 := 1191.237 \text{ psf}$$

Allowable Lateral soil bearing pressure as set forth in the IBC, Section 1806.2 based on depth of one-third the depth of embedment in psf

*Note to Engineer: Iterate Lateral Bearing Soil Pressure

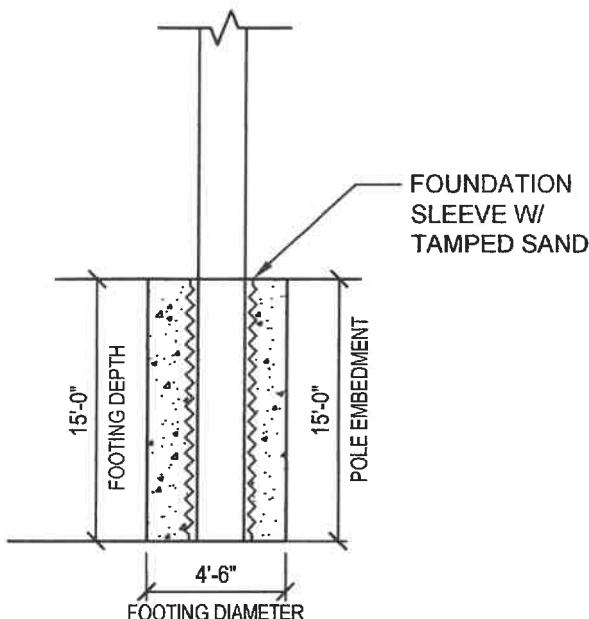
$$A := \frac{2.34 \cdot P'}{S_1 \cdot b} = 1.342 \text{ ft}^2$$

$$d := 0.5 \cdot A \cdot \left(1 + \left(1 + \left(\frac{4.36 \cdot h'}{A} \right) \right)^{\frac{1}{2}} \right) = 11.91 \text{ ft}$$

Depth of embedment in earth in ft but not over 12 ft for purpose of computing lateral pressure (IBC 1807.3, EQ 18-1)

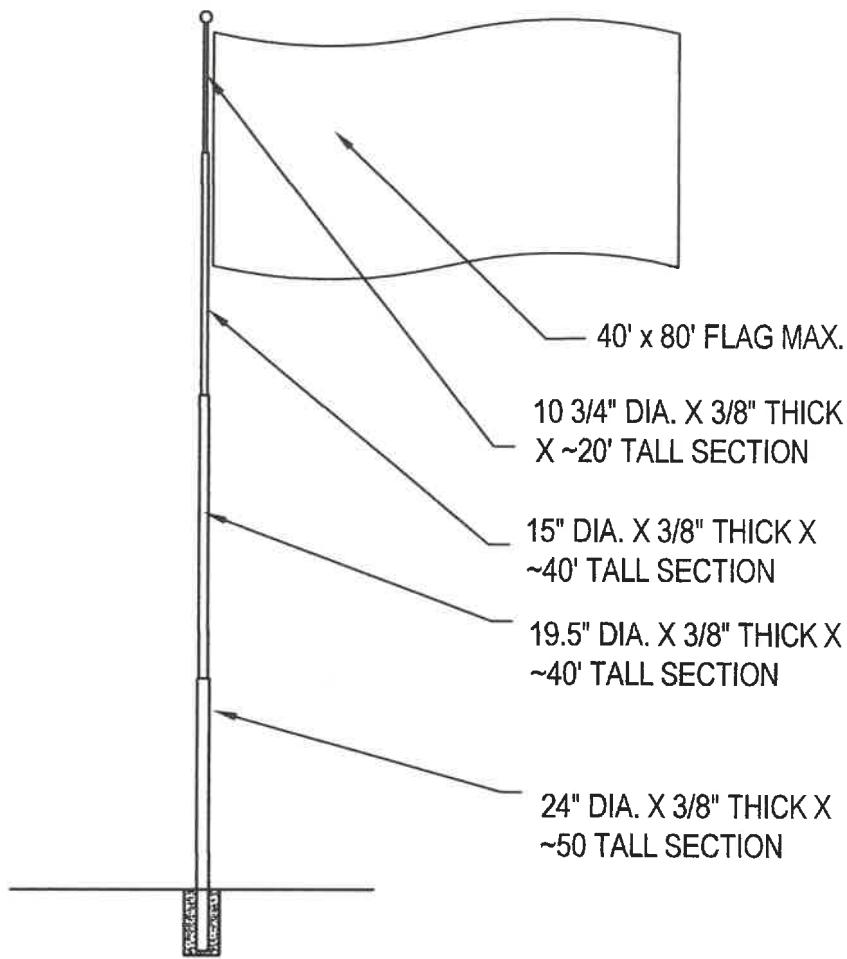
Footing Depth to be: **12 ft** min

**WARNING: FLAG MUST BE
REMOVED IF WINDS
WILL EXCEED 75 MPH**



FOOTING

FOUNDATION DESIGN IS BASED ON ASSUMED SOIL PROPERTIES. IF THE SOIL ENCOUNTERED IN THE EXCAVATION IS NOT SAND, SILTY SAND, CLAYER SAND, SILTY GRAVEL OR CLAYEY GRAVEL, PLEASE NOTIFY THE ENGINEER. ALSO, IF THE WATER TABLE IS ENCOUNTERED IN THE EXCAVATION, PLEASE CONTACT THE ENGINEER

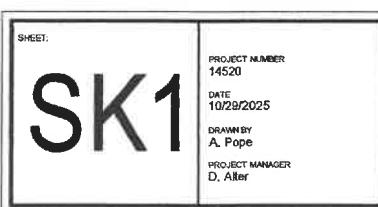


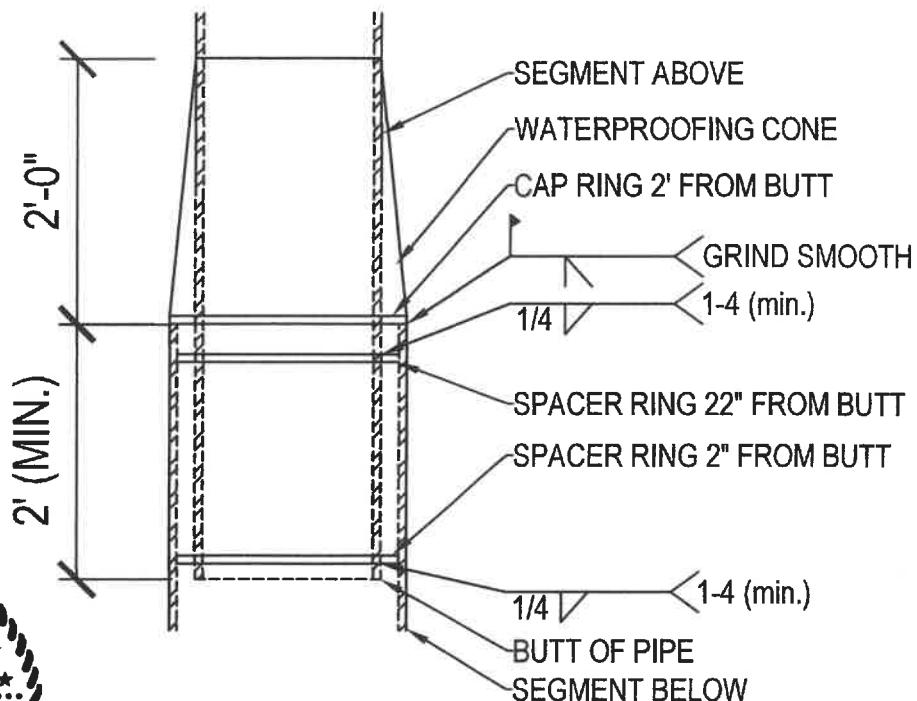
ELEVATION

1

FLAGPOLE

SCALE: N.T.S.





1

CONNECTION SLEEVE

SCALE: N.T.S.

SHEET:	SK2
PROJECT NUMBER	14520
DATE	10/29/2025
DRAWN BY	A. Pope
REVIEWED BY	D. Alter

PROJECT NAME:
Clay Cooley Hyundai Flagpole & Ftg
1540 I-30
Rockwall, TX 75087

SHEET TITLE:

SALT LAKE CITY
45 WEST 10000 SOUTH
Suite 500
Sandy, UT 84070
P. 801.255.0529
F. 801.255.4449

ENSIGN
THE STANDARD IN ENGINEERING
WWW.ENSIGNUTAH.COM

DIMINISHING SECTION STEEL CONCEALED HALYARD GROUND SET FLAGPOLE

STANDARD FITTINGS

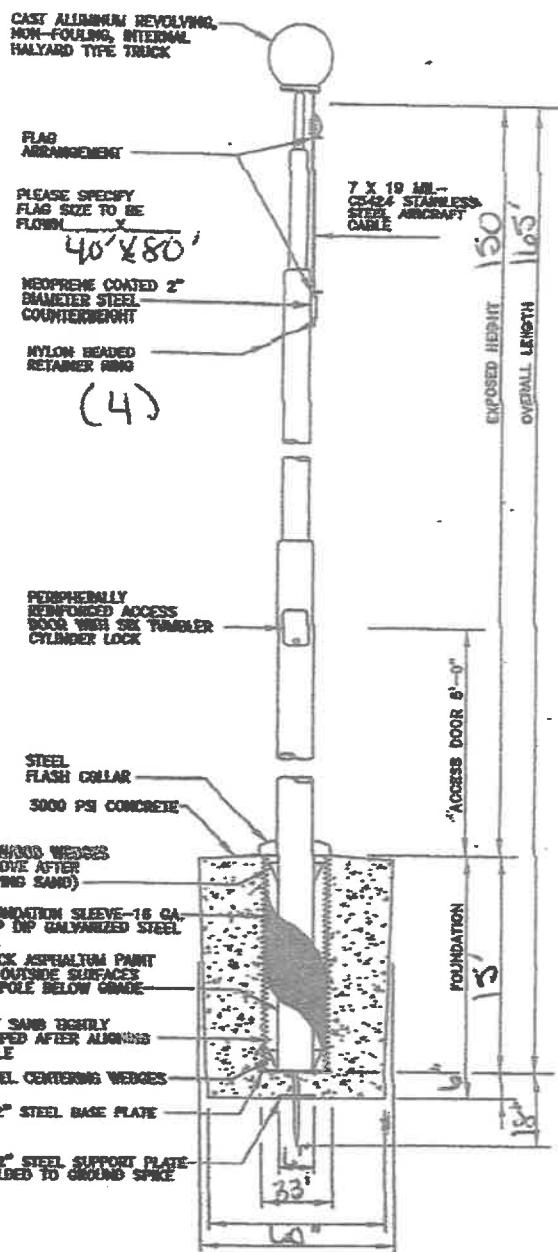
FINAL: (The flagpole division of NAAMM recommends that no final, other than the internal halyard truck itself be used on the concealed halyard flagpole.)

TRUCK: Heavy duty, cast aluminum, internal halyard type, revolving non-fouling, gold powder coated, equipped with upper and lower sealed bearings assemblies and a stainless steel spindle for flagpoles up to 130'. Larger flagpoles will come with two spun steel hemispheres, automotive type sealed bearing assemblies and a welded in steel spindle.

HALYARD: Halyard and flag arrangement are 1/8" and 3/16" stainless steel aircraft cable, with attachment ends crimped over 1/8" stainless steel yokes and joined by a stainless steel quicklink. Cable is two piece, joined by a stainless steel swivel at mid-point. The flag arrangement is sized to accommodate an appropriate size flag and is supplied complete with two heavy duty swivel snaps, neoprene coated counterweight, and beaded nylon retainer rings.

WINCH: Stainless steel, direct drive, accessible for maintenance only through a reinforced access opening, which is covered by a removable door finished to match flagpole shaft and contains a six tumber cylinder lock. Winch is gearless, operable only by a removable crank handle and locks in any position upon removal of the crank handle.

FOUNDATION TUBE: Fabricated from 16GA. galvanized steel, with a steel base plate whose square dimension is 4" larger than the I.D. of the sleeve. A setting plate 6" square is securely welded to the ground spike 6" below the base plate. The ground spike is 3/4" diameter and 36" in length.



PROJECT NO.		GROUND SET DIM. SECTION STEEL FLAGPOLE					
LOC. 1540-130		EXP. HT 150'	OVERALL HT 110.5'	NO. OF SEC. 5			
ARCHT:		BUTT. DIA 24"	TOP DIA 10 3/4"	WALL THICKNESS .375"			
CONT R:		SHP IN 5 SEC.					
CUST: Clay Cady Hyundai Retailer						PAINT COAT	White

EXPOSED HEIGHT	OVERALL LENGTH	TOP DIAMETER	BOTTOM DIAMETER	BUTT WALL THICKNESS	SHIP SECTIONS	NO. OF SECTIONS	FLAG SIZE	SHIPPING WEIGHT
150'	110.5'	10 3/4"	24"	.375"	5	5	40'x80'	15,000 lbs

WARNING: Extreme Caution should be exercised when installing flagpoles near overhead power lines, or in the vicinity of buried cables.

DIMINISHING SECTION STEEL CONCEALED HALYARD GROUND SET FLAGPOLE

STANDARD FITTINGS

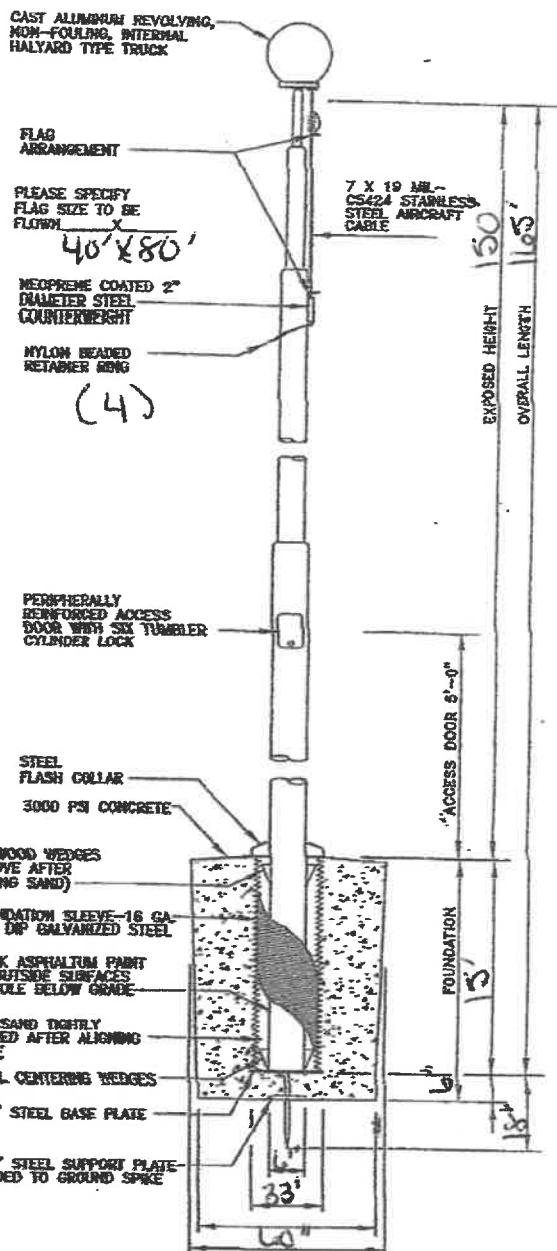
FINIAL: (The flagpole division of NAAMM recommends that no Finial, other than the internal Halyard Truck itself be used on the Concealed Halyard Flagpole.)

TRUCK: Heavy duty, cast aluminum, internal halyard type, revolving non-fouling, gold powder coated, equipped with upper and lower sealed bearings assemblies and a stainless steel spindle for flagpoles up to 130'. Larger flagpoles will come with two spun steel hemispheres, automotive type sealed bearing assemblies and a welded in steel spindle.

HALYARD: Halyard and flag arrangement are 1/8" and 3/16" stainless steel aircraft cable, with attachment ends crimped over 1/8" stainless steel yokes and joined by a stainless steel quicklink. Cable is two piece, joined by a stainless steel swivel at mid-point. The flag arrangement is sized to accommodate an appropriate size flag and is supplied complete with two heavy duty swivel snops, neoprene coated counterweight, and beaded nylon retainer rings.

WINCH: Stainless steel, direct drive, accessible for maintenance only through a reinforced access opening, which is covered by a removable door finished to match flagpole shaft and contains a six tumbler cylinder lock. Winch is gearless, operable only by a removable crank handle and locks in any position upon removal of the crank handle.

FOUNDATION TUBE: Fabricated from 16GA. galvanized steel, with a steel base plate whose square dimension is 4" larger than the I.D. of the sleeve. A setting plate 6" square is securely welded to the ground spike 6" below the base plate. The ground spike is 3/4" diameter and 36" in length.



PROJECT NO.	GROUND SET OBL. SECTION STEEL FLAGPOLE	
LOC. 1540-130	EXP. HT. 150'	OVERALL HT. 165'
ARCHT:	BUTT. DIA. 24"	TOP DIA. 10 3/4"
CONT R:	SHP IN 5 SEC.	WALL THICKNESS .375"
CUST: Clay/Cathy Hyundai Robert		FINISH: Powder Coat White

EXPOSED HEIGHT	OVERALL LENGTH	TOP DIAMETER	BOTTOM DIAMETER	BUTT WALL THICKNESS	SHIP SECTIONS	NO. OF SECTIONS	FLAG SIZE	SHIPPING WEIGHT
150'	165'	10 3/4"	24"	.375"	5	5	40'x80'	15,000 lbs

WARNING: Extreme Caution should be exercised when installing flagpoles near overhead power lines, or in the vicinity of buried cables.

US Flag,
40'x80'