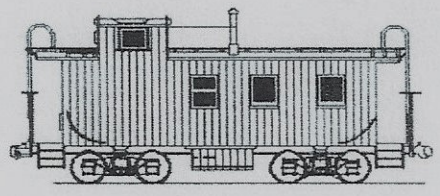


CLIFTON ARCHITECTURAL REVIEW BOARD
TOWN OF CLIFTON, VIRGINIA
APPLICATION FOR CERTIFICATE OF APPROPRIATENESS

DATE OF APPLICATION: NOVEMBER 29, 2018
NAME OF APPLICANT OR AGENT: DAVID GUGLIELMI
ADDRESS: 10918 WOODFAIR RD, FAIRFAX STATION, VA 22039
TELEPHONE: 703 623 4343 email dguglielmi@yahoo.com
LOCATION OF PROPERTY INCLUDING STREET ADDRESS AND TAX MAP NUMBER: 7184 CLIFTON RD, TAX MAP 0754 02 0106
GENERAL DESCRIPTION OF PROPOSAL:

I propose to construct a soldier pile wood retaining wall from 6 inches in height up to 6 feet in height in the rear of the property. The topography of my site, as well as the location of the house, will prevent the retaining wall from being visible from the road or any public space. The State Building Code mandates a handrail for any section of the wall that is greater than 30 inches. Thus, I also propose to install a black metal hand rail at the top of the wall where required.

☒ Two (2) HARD COPIES AND ONE ELECTRONIC COPY OF APPLICATION WITH PLATS, ARCHITECTURAL DRAWINGS, FLOOR PLANS, ETC.

I UNDERSTAND THAT ALL SUBMISSION REQUIREMENTS MUST BE MET BEFORE THE ARB WILL REVIEW AN APPLICATION

SIGNATURE OF APPLICANT OR AGENT — DATE 11/29/18

CERTIFICATE ISSUED: (YES) NO

(When marked "YES" and signed, this document becomes the "certificate of Appropriateness")

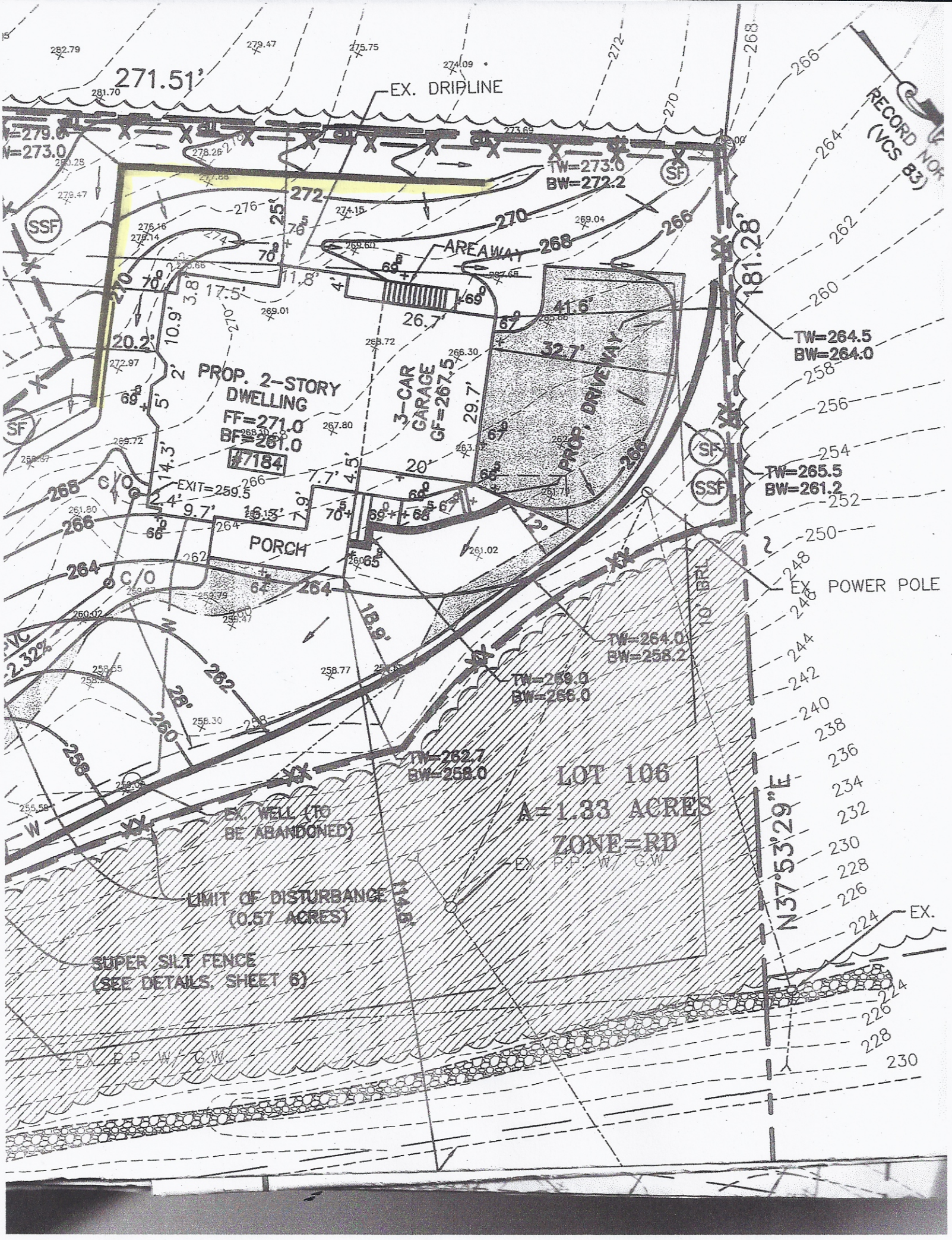
BY: _____ CHAIRMAN, ARB — DATE 12/5/18

ARB MEMBERS' INITIALS: _____

CONDITIONS: APPROVAL IS FOR REAR WALL ONLY

IF CERTIFICATE IS NOT TO BE ISSUED, THE ARB SHALL STATE THE BOARD'S REASON: _____

*Application fee:
Sign/Fence: $10.00; if after installation: $50.00
Addition/remodeling project up to 200 SF: $100.00
Addition/remodeling project exceeding 200 SF $250.00
New home construction: $250.00
The applicant shall also pay any actual costs of any review fees incurred by the ARB, including any consultant's fees and other costs set forth in Virginia State Code Section 15.2-2286.


271.51'
EX. DRIPLINE
RECORD NOR (VCS 83)
181.28'
TW=273.0
BW=272.2
AREAWAY
PROP. 2-STORY DWELLING
FF=271.0
BF=261.0
#7184
3-CAR GARAGE
GF=267.5
PROP. DRIVEWAY
TW=264.5
BW=264.0
TW=265.5
BW=261.2
EXIT=259.5
PORCH
EX POWER POLE
TW=264.0
BW=258.2
TW=259.0
BW=266.0
TW=262.7
BW=258.0
LOT 106
A=1.33 ACRES
ZONE=RD
N37°53'29"E
EX. WELL (TO BE ABANDONED)
EX. P.P. W/ G.W.
LIMIT OF DISTURBANCE (0.57 ACRES)
SUPER SILT FENCE (SEE DETAILS, SHEET 6)
EX.

$Q_{Allowable} = 2500$ PSF

$P_a = 45$ PSF / Ft

Bending Capacity For Wood Post

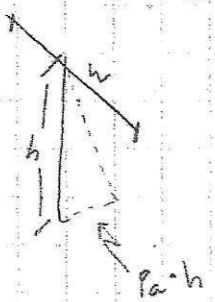
$F_b' = F_b \cdot 0.9 \cdot 1.5 \cdot 0.8$ $\quad M' = F_b' S$

4x4 $\quad F_b' = 945$ PSI $\quad M' = 945 PSI \cdot 3.5^3/6 = 562.7$ ft-#

4x6 $\quad F_b' = 819$ PSI $\quad M' = 819 PSI \cdot 3.5 \cdot 5.5^2/6 = 1204.3$ ft-#

Bending on post equ.

$$M_o = [P_a \cdot h \cdot w \cdot h/2] \cdot h/3 = \frac{P_a h^3 w}{6}$$



Solve For height & Spacing

4x4 $\quad 562.7$ ft-# $\geq 45 PSF \cdot h^3 \cdot w/6$ $\quad$ if $w = 3'$ $\quad h = 3'$

4x6 $\quad 1204.3$ ft-# $\geq 45 PSF \cdot h^3 w/6$ $\quad$ if $w = 4'$ $\quad h = 3.5'$

if $w = 2.5'$ $\quad h = 4'$

USING STEEL W 8x10 $\quad M_o = 7957.44$ ft-Lb

W8x10 $\quad 7957$ ft-Lb $\geq 45 PSF \cdot h^3 w/6$ $\quad$ if $w = 4'$ $\quad h = 6$

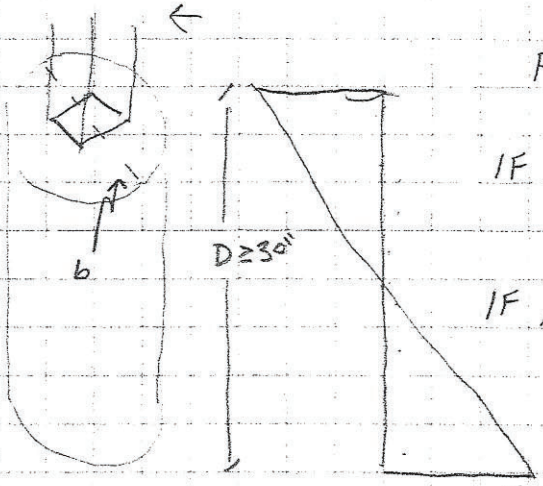
if $w \leq 8$ $\quad h = 5$

COMMONWEALTH OF VIRGINIA
DAVID M. GRIGGS
Lic. No. 58389
4-13-16
PROFESSIONAL ENGINEER

Solve For Footing Size

Moment Req'

W8×10	7951 ft-Lb
4×4	562.7 ft-Lb
4×6	1204.3 ft-Lb



Footing bending Equ. $\sigma = \frac{M}{S} = \frac{6M}{b \cdot D^2}$

$b = 6M/\sigma D^2$

IF $M = 1.4 \cdot 1204.3$ ft-Lb & $D = 30" \rightarrow 2.5'$ $q_A = 1500$ PSF

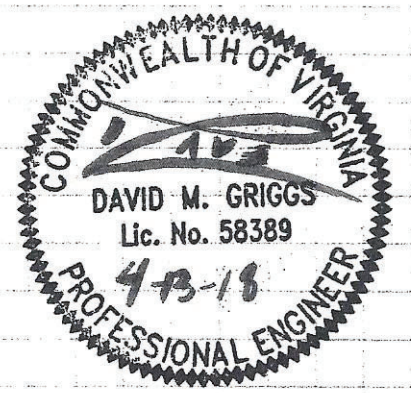
$b \geq 13"$

IF $M = 1.4 \times 7290$ ft-Lb & $b = 30"$ $q_A = 1500$ PSF

$D = 4'$

$\sigma \leq P_a$: IF $M = 1.4 \times 562.7$, $D = 30"$ $q_A = 1500$

$B \geq 6"$



Solve Lagging

2x8 SYP P.T. #2 Bending Equ.

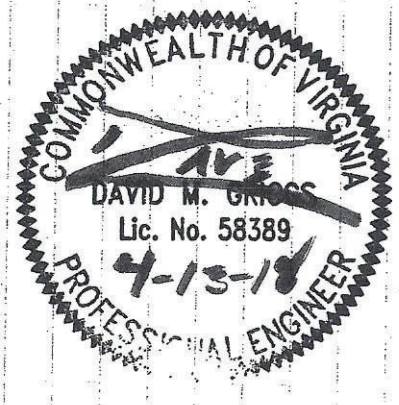
$M' = F_b' b d^2/6$ $\quad F_b' = F_b C_d C_M C_F C_{Fu} C_i$

$1242\,PSI = 1500\,PSI \cdot 0.9 \cdot 0.8 \cdot (N/A) \cdot 0.85 \cdot 1.15$

(1) 2x8 $M' = 1242\,PSI \cdot 7.5 \cdot 1.5 \cdot 1.5/6 = 3493\ in\text{-}Lb = 291.1\ Ft\text{-}Lb$

(2) 2x8 $M' = 1242\,PSI \cdot 7.5 \cdot 3 \cdot 3/6 = 13972.5\ in\text{-}Lb = 1164.4\ Ft\text{-}Lb$

Spans & Depth Per Post

Depth	SPAN(ℓ)	ρ @ Depth(w)	$w\ell^2/8$	PLYS Req.	1 PLY(H)
≤ 3'	3'	135 PSF	151.8 ft-lb	1	
3.5	4'	158 PSF	316.0 ft-Lb	2	3'
4	2.5'	180 PSF	140.6 ft-lb	1	
5	6'	225 PSF	1012.5 ft-Lb	2	1.5'
6	4.5	270 PSF	683.4 ft-Lb	2	2.5'

$H = \frac{291.8}{\ell^2 .45} = 51.7/\ell_2$