

### Box Properties

--Description--

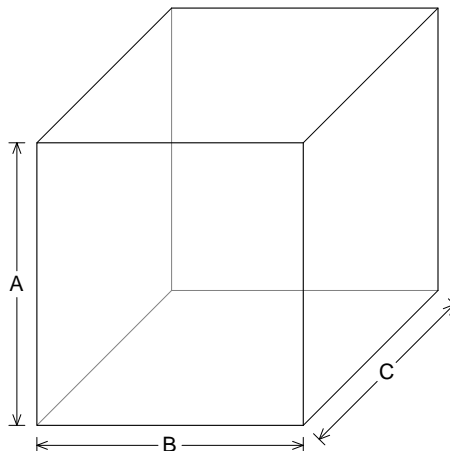
Name: Mod fEARful 12sub  
Type: Passive Radiator Box  
Shape: Prism, square

--Box Parameters--

Vb = 2.354 cu.ft  
V(total) = 2.183 cu.ft  
QL = 10  
F3 = 29.8 Hz  
Fill = minimal

--Passive Radiators--

No. of Passive Radiators = 2  
Fs = 13.02 Hz  
Qms = 6.791  
Vas = 147 liters  
Cms = 0.45 mm/N  
Mms = 332 g  
Rms = 4 kg/s  
Sd = 480 sq.cm



--External Dimensions--

A = 17.5 in  
B = 16.5 in  
C = 15.75 in

--Internal Dimensions--

A = 16.5 in  
B = 15.5 in  
C = 14.75 in

--Wall Thickness--

Front = 0.5 in  
Side = 0.5 in

### Driver Properties

--Description--

Name: LAB 12C  
Type: Standard one-way driver  
Company: Eminence Speaker LLC  
Piston: Kevlar reinforced paper cone.  
Suspension: Foam surround.  
Dust Cap: Dual inverted dust caps.  
Frame: 12-spoke diecast aluminum basket.  
Voice Coil: 2.5 inch (63.5 mm) copper coil. Polyimide former.  
Magnet: 160 oz ferrite dual-stacked magnet.

--Configuration--

No. of Drivers = 1

--Mechanical Parameters--

Fs = 22.85 Hz  
Qms = 11.7  
Vas = 128.3 liters  
Cms = 0.36 mm/N  
Mms = 135.6 g  
Xmax = 13 mm  
Xmech = 22 mm  
Sd = 506.7 sq.cm  
P-Vd = 0.659 liters

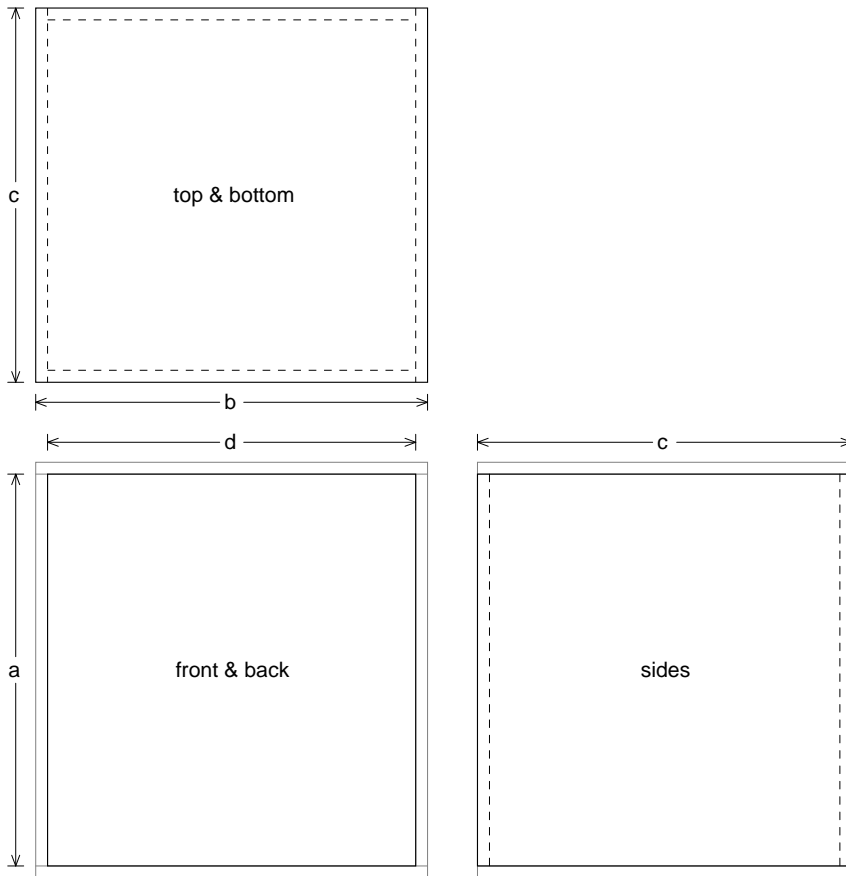
--Electrical Parameters--

Qes = 0.34  
Re = 3.11 ohms  
Le = 1.09 mH  
Z = 4 ohms  
BL = 13.36 Tm  
Pe = 500 watts

--Electromech. Parameters--

Qts = 0.33  
1-W SPL = 88.9 dB





**Box Parts**

Box Shape: Square Prism

1 Top, 1 Bottom: depth (c) = 15.75 in  
width (b) = 16.5, thickness = 0.5 in

1 Front, 1 Back: height (a) = 16.5 in  
width (d) = 15.5, thickness = 0.5 in

2 Sides: height (a) = 16.5 in  
depth (c) = 15.75, thickness = 0.5 in

--Driver Mounting--  
Mounting: Front

--Misc Objects Inside or Part of Box--  
Object: PR

No. of Objects: 2

Each Object: 0.0829 cu.ft

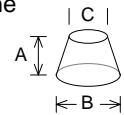
Total Volume: 0.166 cu.ft (reduces box)

Shape: Truncated Cone

A = 2.5 in

B = 10 in

C = 7 in



Object: bracing

No. of Objects: 1

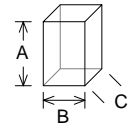
Volume: 0.0391 cu.ft (reduces box)

Shape: Square Prism

A = 90 in

B = 0.5 in

C = 1.5 in



Object: test volume

No. of Objects: 1

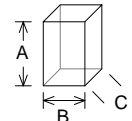
Volume: 0.132 cu.ft (adds to box)

Shape: Square Prism

A = 15.5 in

B = 14.75 in

C = 1 in



Object: Port blocked to add volume - 2

No. of Objects: 1

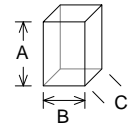
Volume: 0.37 cu.ft (adds to box)

Shape: Square Prism

A = 2.5 in

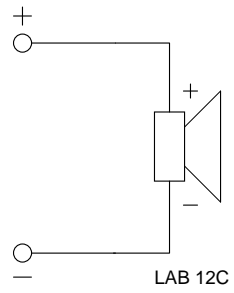
B = 15.5 in

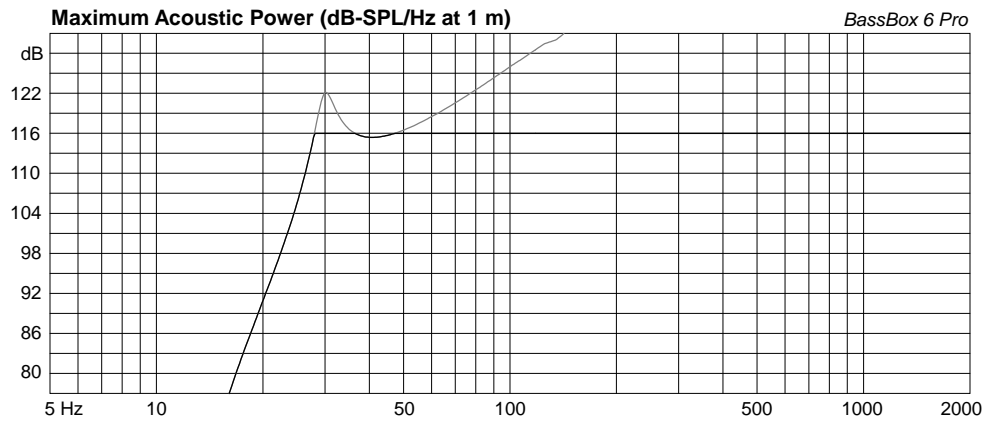
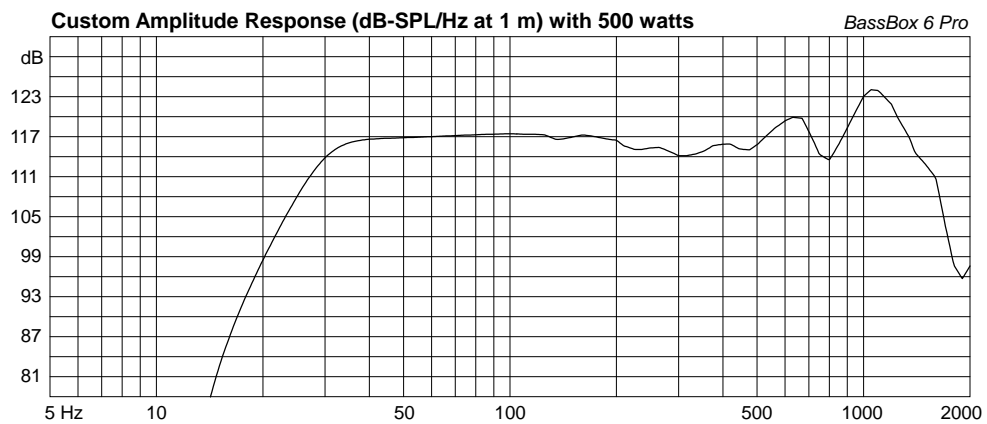
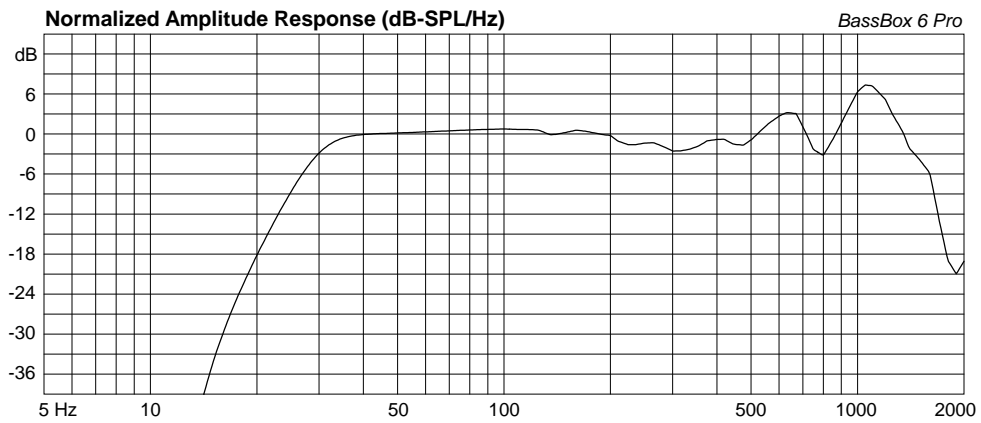
C = 16.5 in

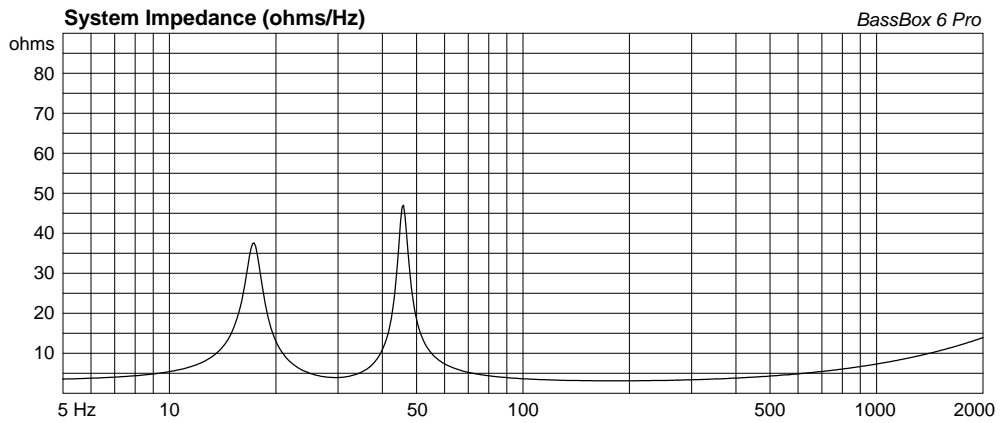
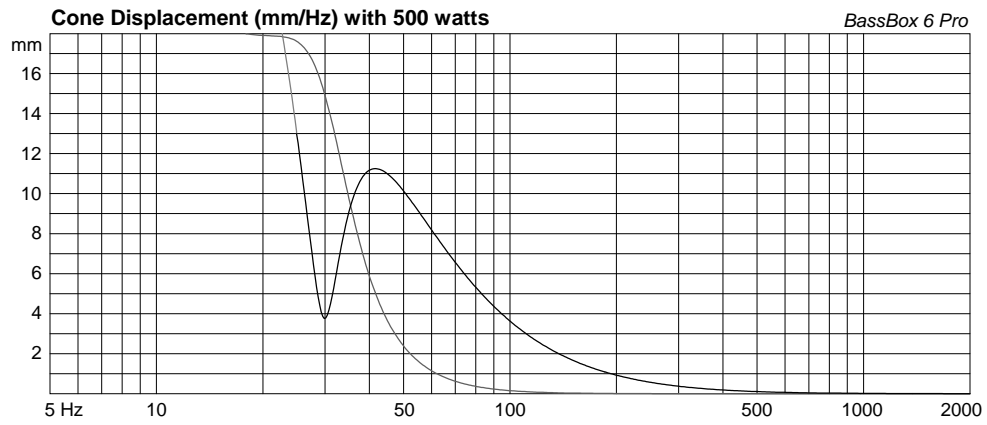
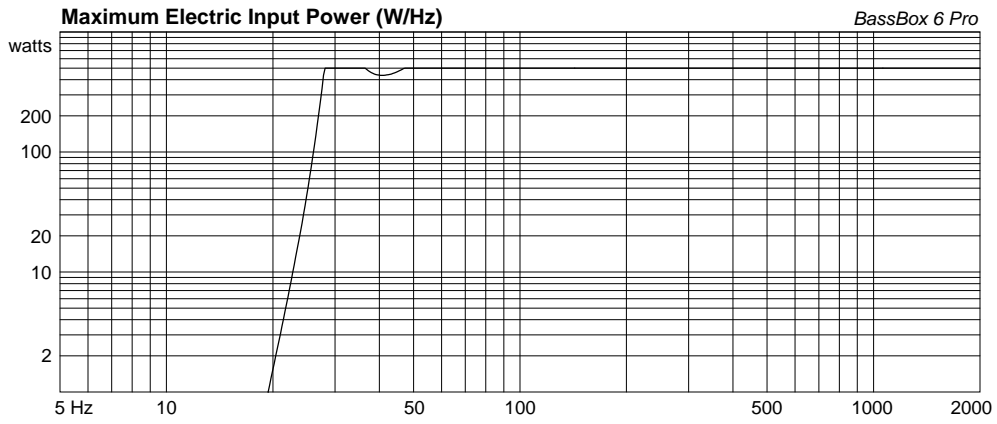


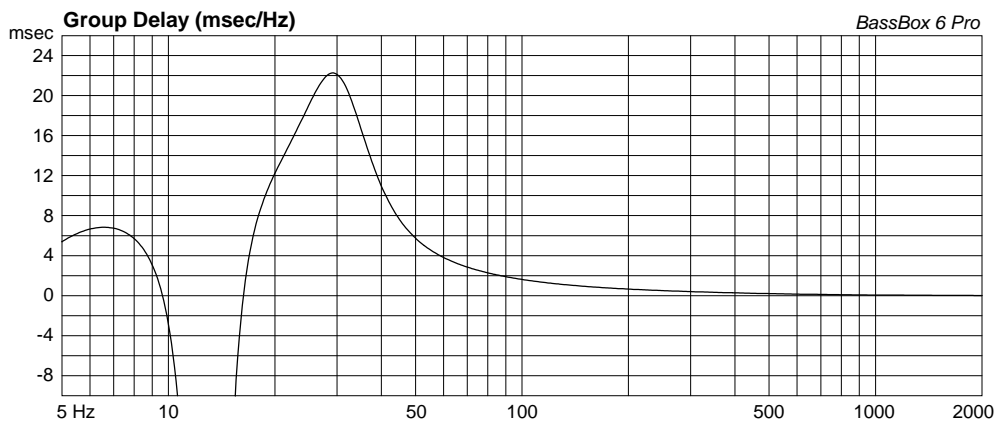
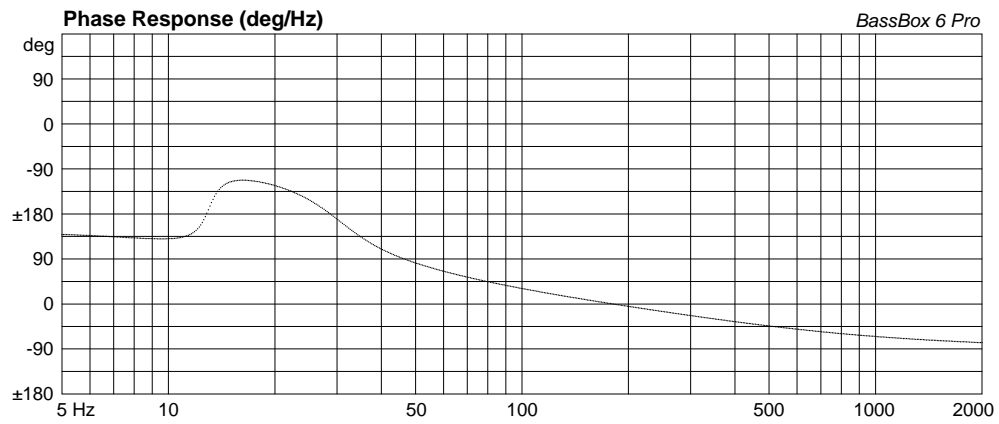


### Wiring Diagram









3/15/14 BNF

1/2

2014 Bass Cab #1

CAB 12C -1

14 washers  $\Rightarrow$  132g  $\Rightarrow$  332g mass

Crown XLS 1500 — 753  $\Omega$

400V o/p



200 Hz	0.240 v
18.8 Hz	<del>2.18</del>
21 Hz	1.09
62.9	0.30
44.5	1.52
49.6	0.76
47.7	1.0
44.5	1.52
42.4	1.0
41.4	0.76
32.8	0.256
18.7	2.18

18

← Driver installed in cab

17.1	1.9	A - Flow
29.0	2.14	C - Fres
42.6	2.51	B - Fhigh



2/2

CAS #2 - 14 watts

200		0.23	
✓ 17.1		1.80	A - 37.6 ohms Flow
19.5		0.95	
<del>42.8</del> 42.8		2.43	B - 48.0 ohms - Fhigh
40.86		1.23	
29.3		0.210	C - 4.15 ohms - Fres

Fsb=25.0 Hz; Rm = Ro/Re= 4.15/3.11 = 1.33; Fh=42.7; Fl=17.1; Fb=29.1  
 Fs=22.85; Fs/Fb=22.85/25=0.914; Ha=Fb/Fsb=29.1/25=1.164; alpha-prime= 1.015  
 1.164/1.015=1.146; Qesb=0.34; 1/(Qesb(.33))=8.912; 0.914\*11.70=10.7;  
 1/10.7=0.09345; 8.912\*0.09345=8.8; 8.8\*1.146=10.1

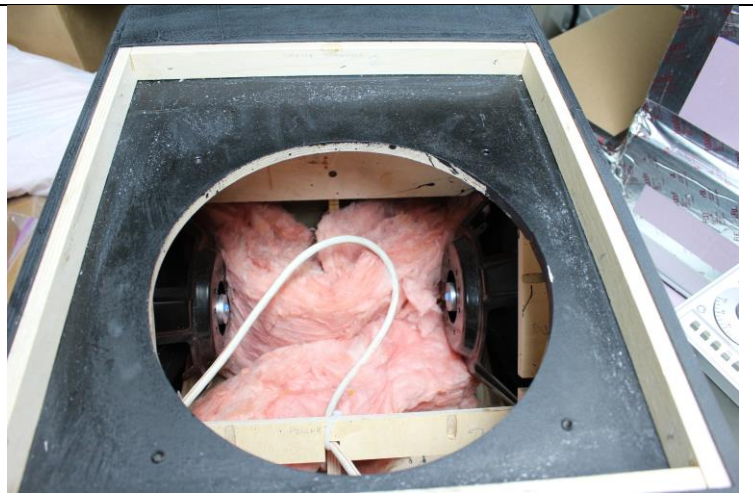
QL = 10

FROM CH 7 LOUDSPEAKER DESIGN COOKBOOK

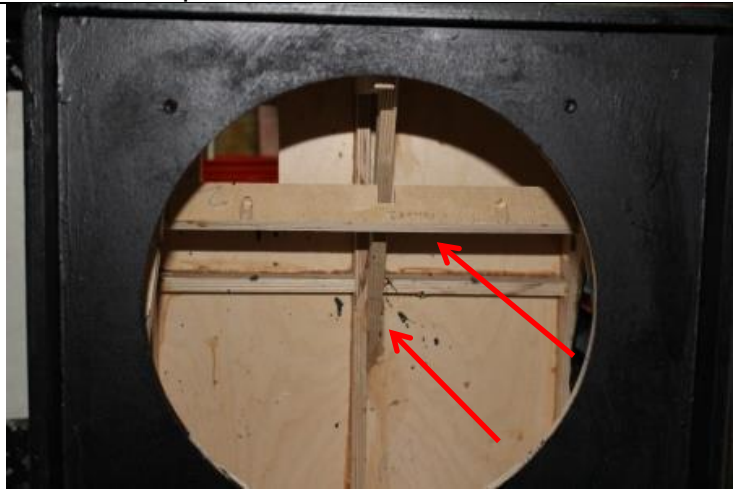




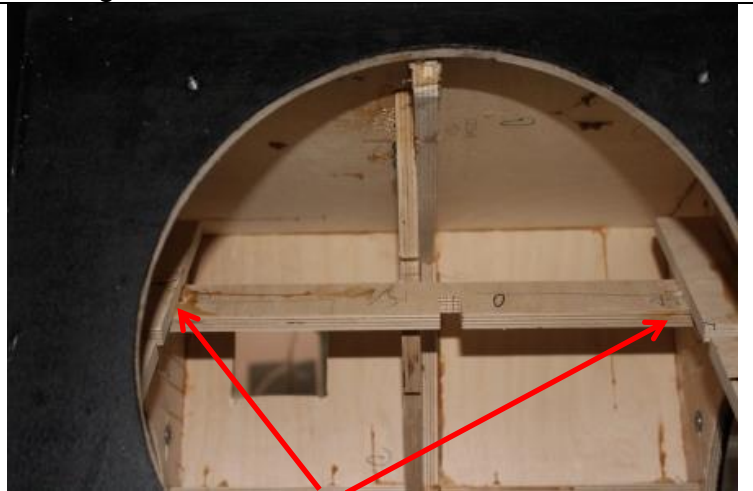
First coat of primer



Bracing & Passive Radiators



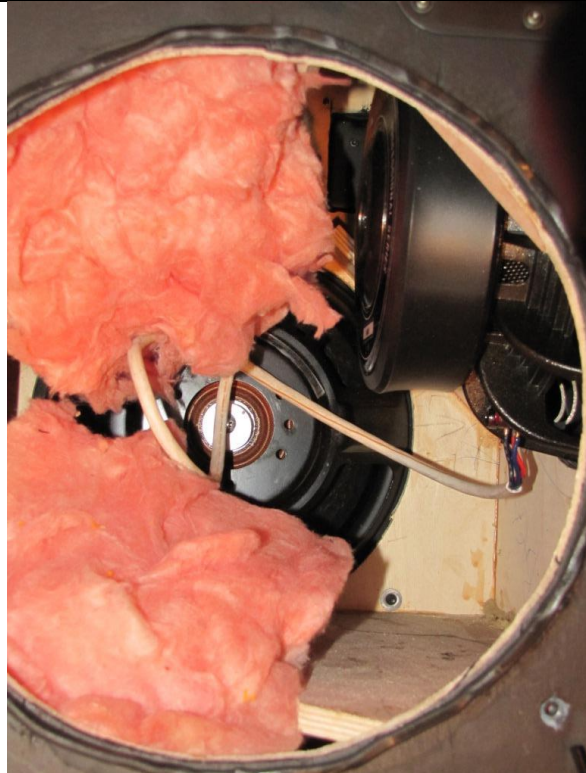
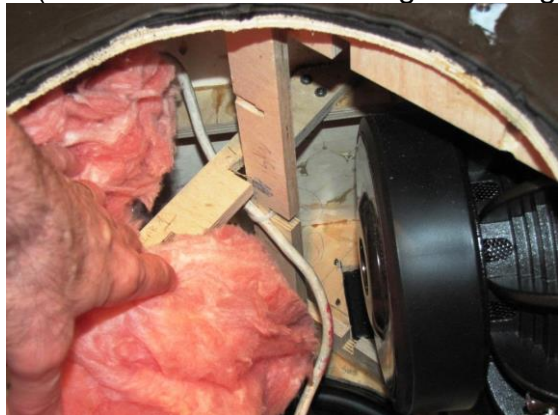
Bracing – Diagonal Back-to-top; side-to-side



Bracing – Side braces at PRs

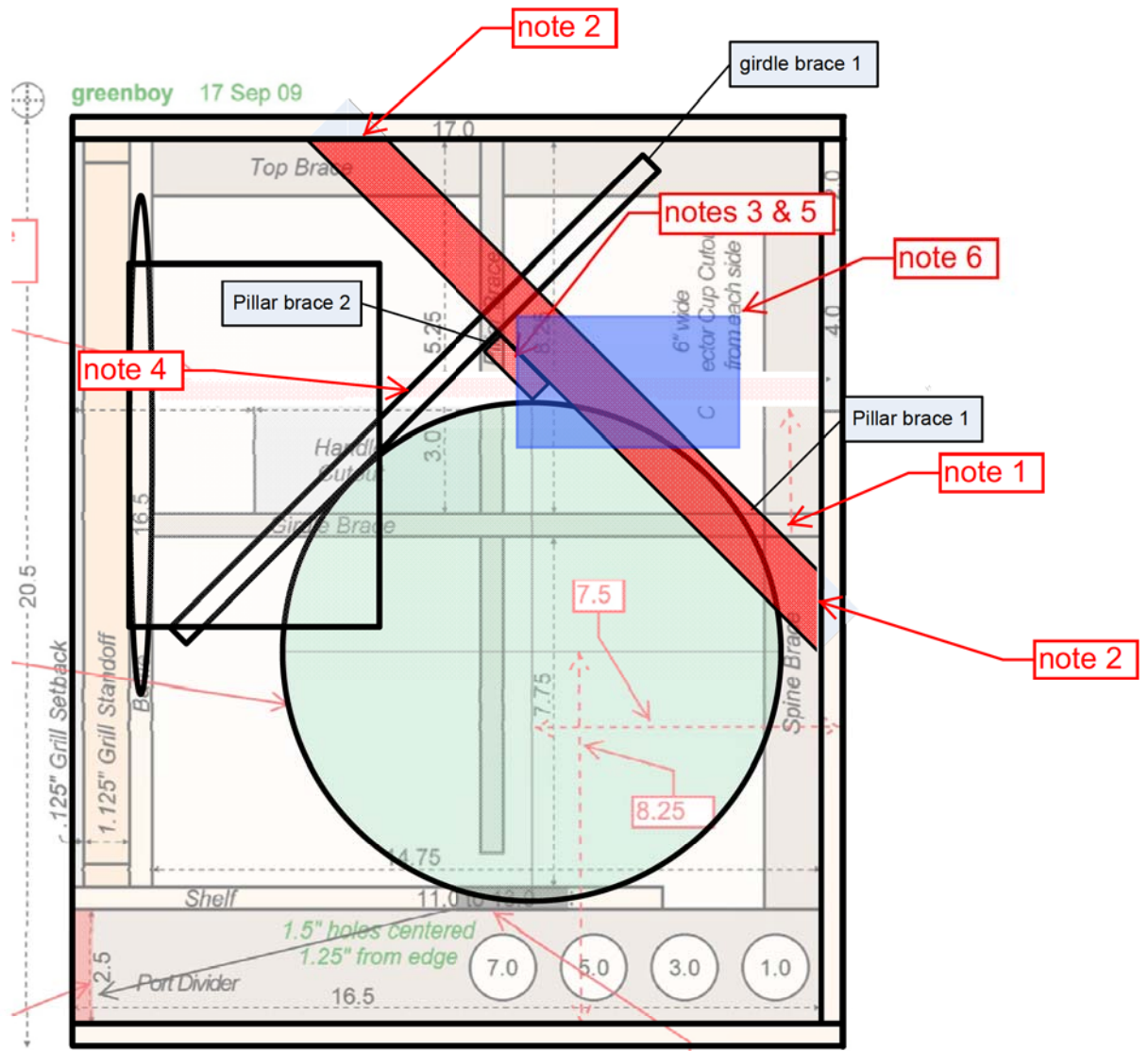


Extra spacers for cone excursion at LAB 12C & PRs (LAB12C excursion too high for full grill)



(note former "port shelf" at bottom)

(Left Photograph): Bracing & stuffings



- 1 - Notch rear Girdle Brace to accommodate slanted Pillar Brace 1
- 2 - Trim ends to 45 & install Pillar Brace 1 onto Spine Brace & Top Brace & Top & Back
- 3 - Shorten Pillar Brace 2 to 15.5-" and set temporarily in place with screws to Pillar Brace 1
- 4 - Install 2 Girdle Braces onto Sides, using Pillar Brace 2 to locate
- 5 - Remove Pillar Brace 2, then apply glue & install to Sides/Pillar Brace 1/Girdle Braces
- 6 - Cutout for handle (5 1/8" X 3")