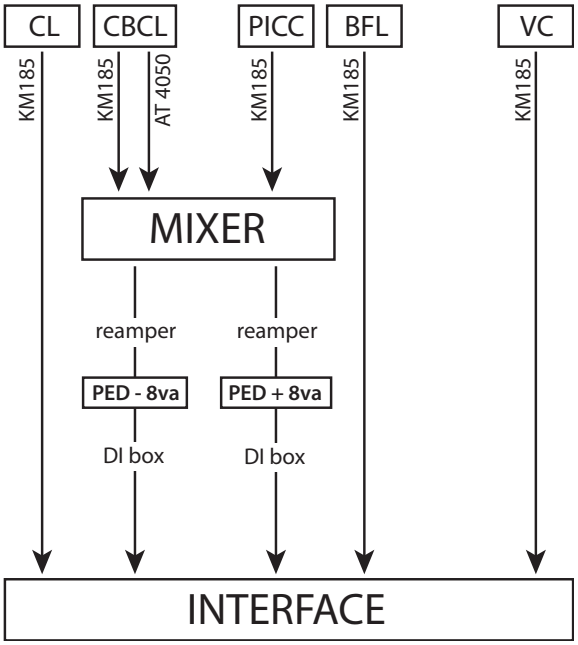
MAM

for flute, cello, clarinet, and electronics

Julio Zúñiga
(2017 - 2018)

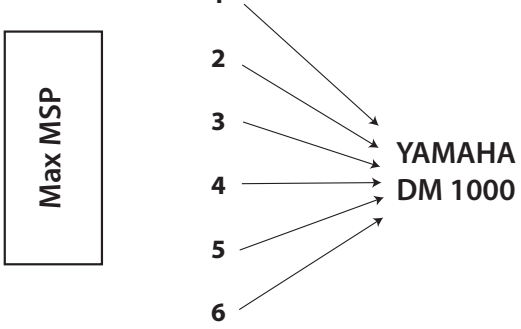
ROUTING DIAGRAM



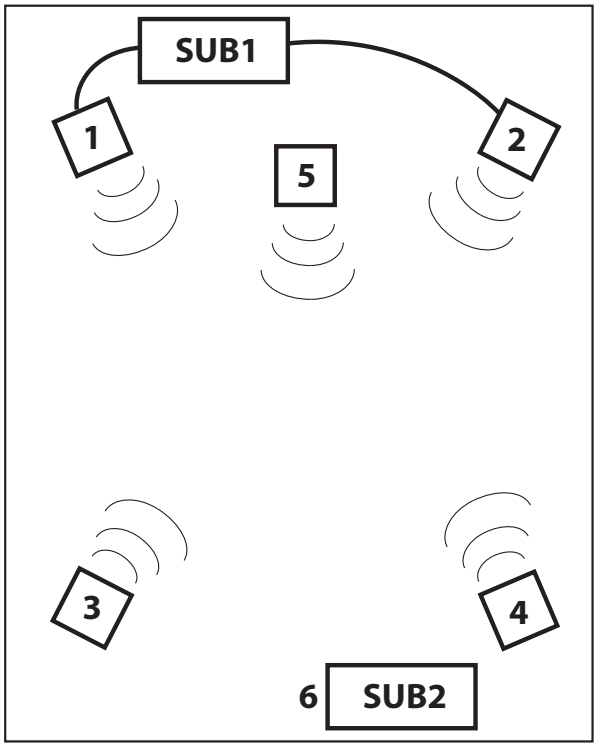
The performers must not be on stage. Rather, they should be amplified from a separate room and invisible to the audience. This room may be backstage or similar, from which the signal can be fed into the hall.

Channels 1 and 2 are sent to sub 1 as well.

AUDIO INTERFACE OUTPUTS



speakers in hall:



* the six outputs from DM 1000 are routed to their corresponding speaker #'s in hall; sub1 receives signal from channels 1 & 2; sub2 receives channel 6 only

INSTRUMENTATION AND SETUP

piccolo flute, bass flute

analog pitch shifter pedal on piccolo, transposing one octave up

(1st performance: EHX Pitch Fork)

violoncello

2 MIDI foot pedals: 1 cue ped., 1 expression ped.

(scordatura: tune 4th string down to 60Hz)

clarinet in B♭, contrabass clarinet

analog pitch shifter pedal, transposing one octave down

(1st perf.: EHX Bass Micro Synth)

1 MIDI cue pedal

6 condenser microphones

(1st perf.: 4 Neumann KM 185 on piccolo, cello, bass flute, and middle portion of contrabass cl.; 1 AT 4050 on lower portion of cb. cl)

2 subwoofers, 1 speaker center stage, 4 speakers around the audience

GENERAL INDICATIONS AND PEDALS

This is a **transposing** score. In addition to the customary transposition applied to the piccolo flute and contrabass clarinet, the pitch shifter pedals will transpose the resulting pitch yet one more octave up, in the case of the piccolo, and one more octave down, in the case of the contrabass clarinet.

Small arrows on accidentals indicate subdivisions smaller than a quarter-tone.

Tiny numbers like the 5 below the bridge clef in measure 1 or the ones preceding the first electronic part in m. 73 simply indicate the speakers that the subsequent passage on given staff comes out of. This becomes particularly relevant in m. 135, for example, where the whole trio is redirected inside the Max patch to a quad arrangement.

Dynamics are to be interpreted very literally throughout. *Cresc*. and *decresc*. should not be applied to note onsets and offsets, respectively. Rather, **the impression of crude sonic blocks** is desired. (Think of **NOTE ON**, **NOTE OFF**.)

CELLO

The cello is sent directly to the computer through the audio interface. It is very heavily amplified throughout. From mm. 1-131, the amplified, mono signal comes out of the center speaker after it is filtered using a band-pass filter in Max-MSP (notated in gray in the score).

While the first MIDI pedal triggers cues (notated in boxed numbers in the score), the expression pedal moves the BPF's outer frequencies from an initial (ped. down) to a final point (ped. up) that change with each cue number. Note that the direction of the filter—whether it moves up or down in the register—does not correspond with pedal motion: the pedal simply carries the BPF filter from an initial set of values to a final one.

The expression pedal's function changes once the BPF disappears, after m. 131: in the last page of the score, it acts as a volume pedal. The cue pedal, on the other hand, retains its cueing function.

CONTRABASS CLARINET

With the exception of cue 68, in m. 166, the contrabass clarinet's MIDI pedal always triggers the low sine tones. These will come out of the second subwoofer, in the back of the hall, while the contrabass clarinet's octave-shifted signal comes out of speakers 1 and 2, and subwoofer 1. There is thus an antiphonal relationship between the two subs while the contrabass clarinet is present. It is important for this effect that the tone is kept dark—poor in upper partials, with a strong emphasis on the fundamental—throughout this entire section.

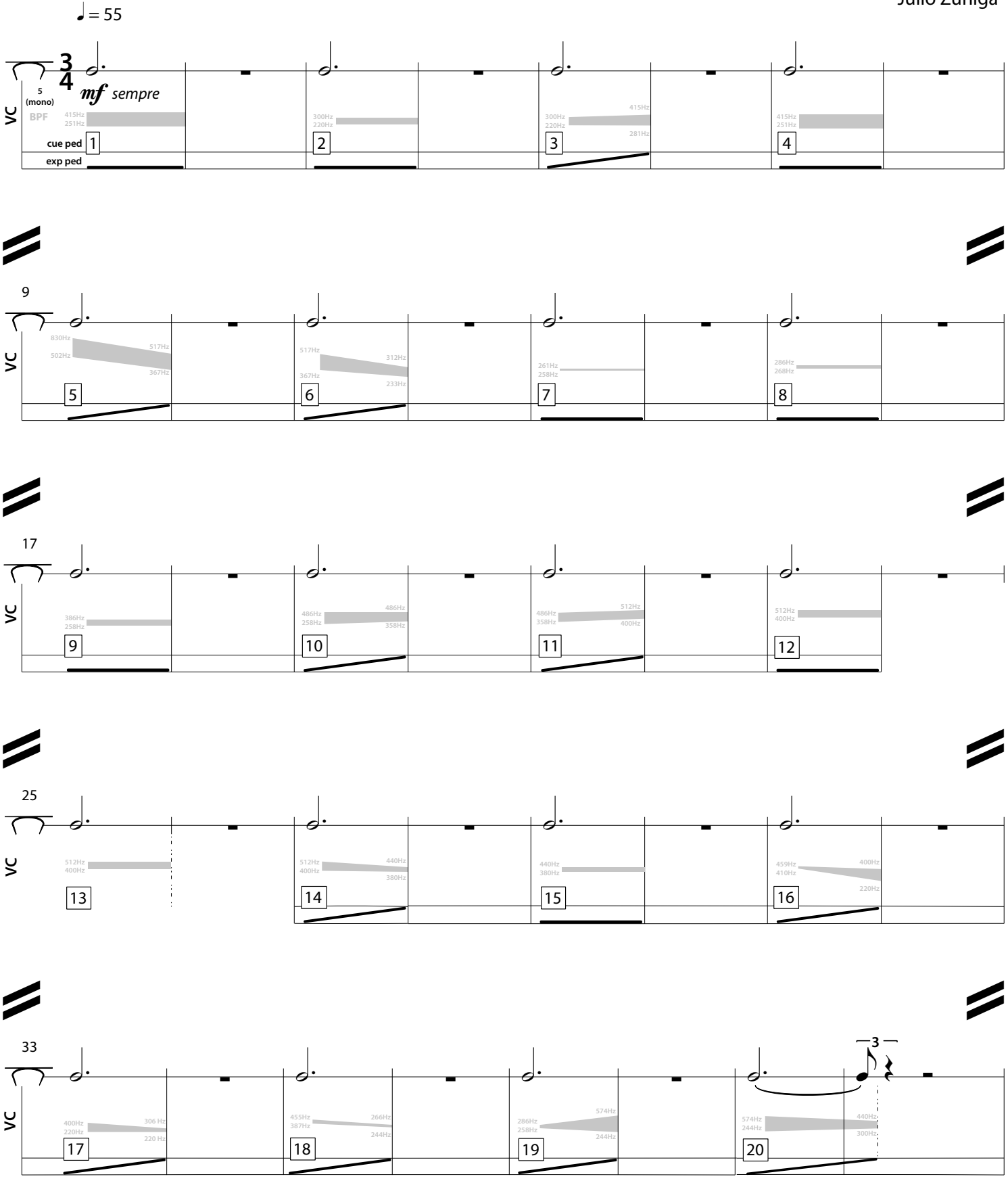
Approximate duration: 15 minutes

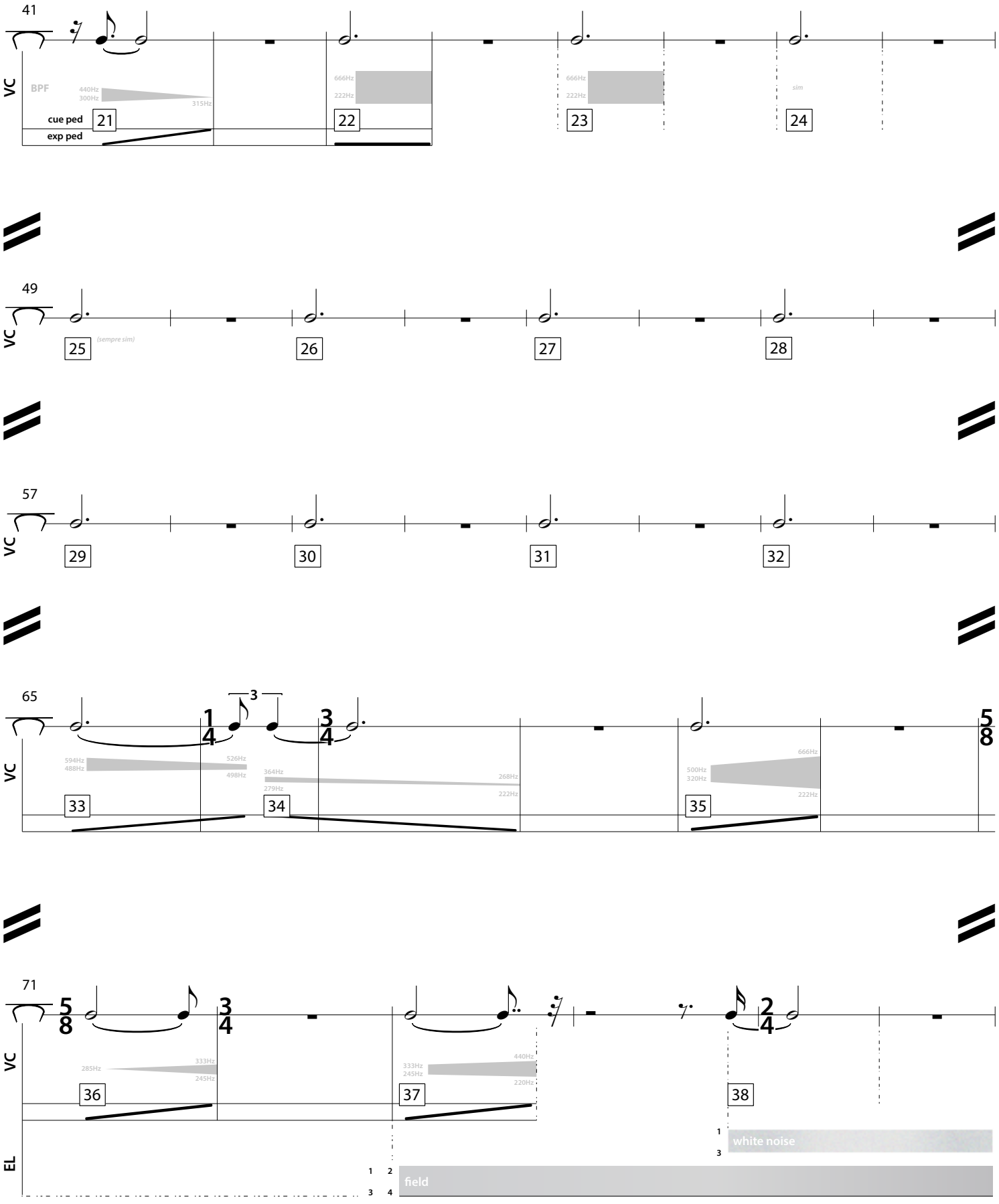
Written for **DAD**: Madison Greenstone,
TJ Borden, and Michael Matsuno

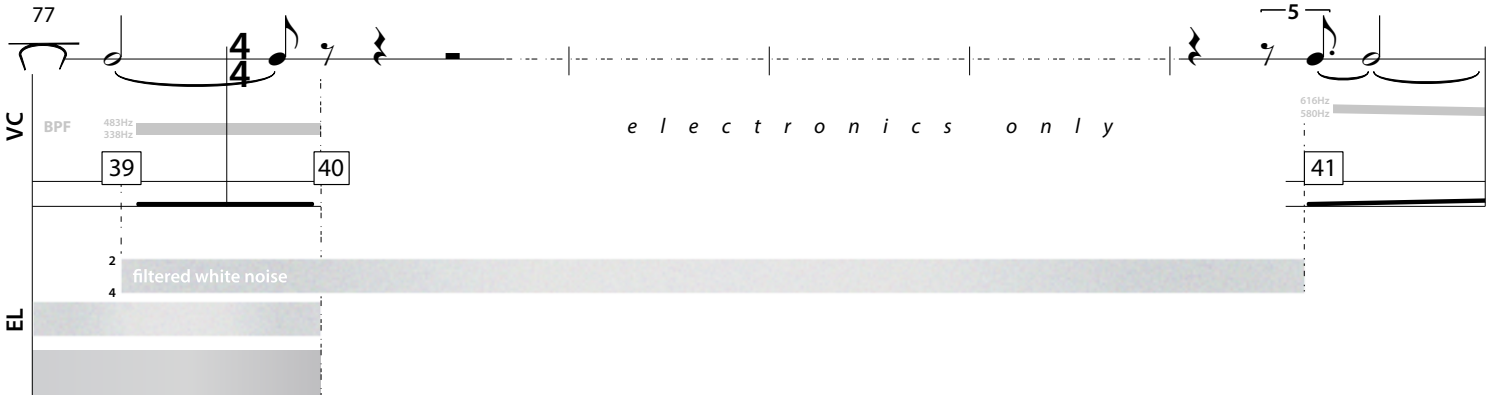
MAM

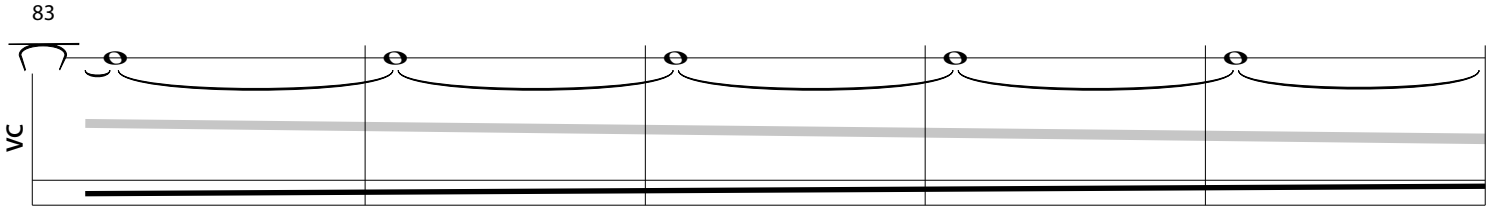
*for **DAD**: Madison, TJ, Michael*

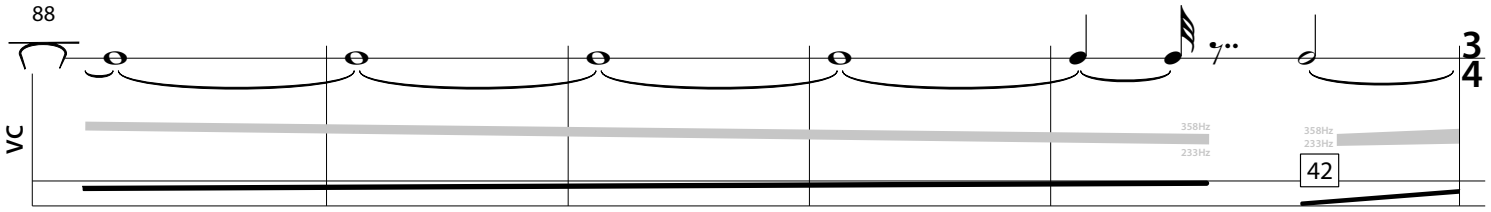
Julio Zúñiga

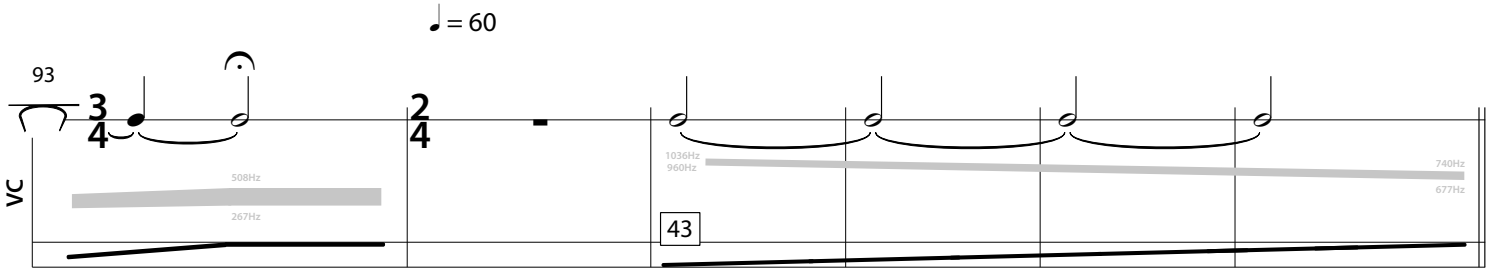


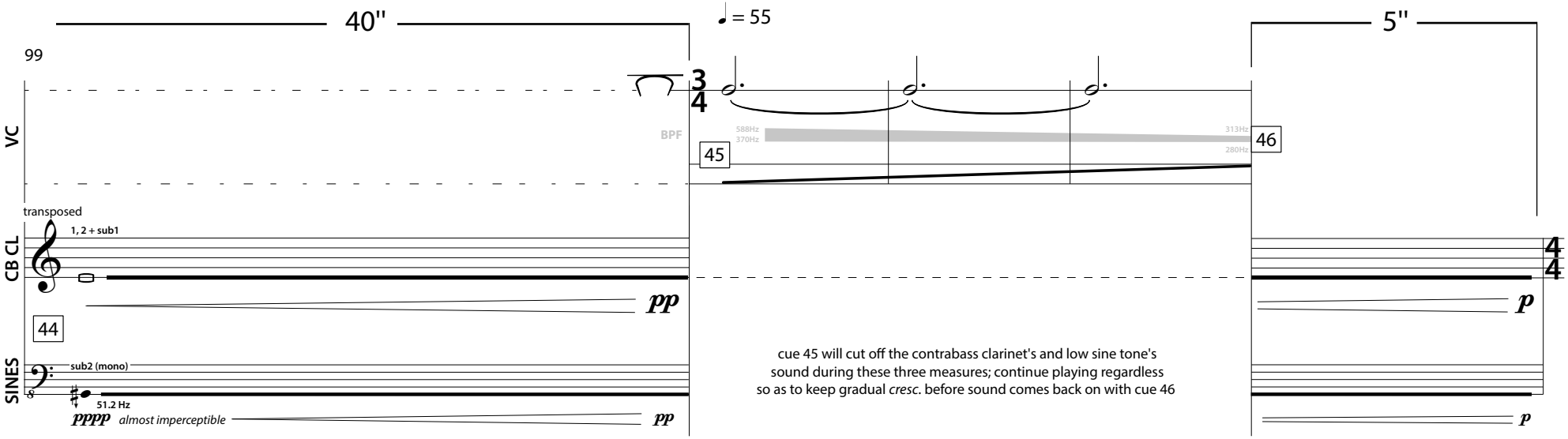

41
VC
BPF
440Hz
300Hz
315Hz
cue ped
exp ped
21
22
666Hz
222Hz
23
666Hz
222Hz
sim
24
49
VC
25
(sempre sim)
26
27
28
57
VC
29
30
31
32
65
VC
3
1
4
3
4
5
8
594Hz
488Hz
526Hz
498Hz
364Hz
279Hz
268Hz
222Hz
500Hz
320Hz
666Hz
222Hz
33
34
35
71
VC
5
8
3
4
2
4
285Hz
333Hz
245Hz
333Hz
245Hz
440Hz
220Hz
36
37
38
EL
1
3
white noise
1
2
3
4
field

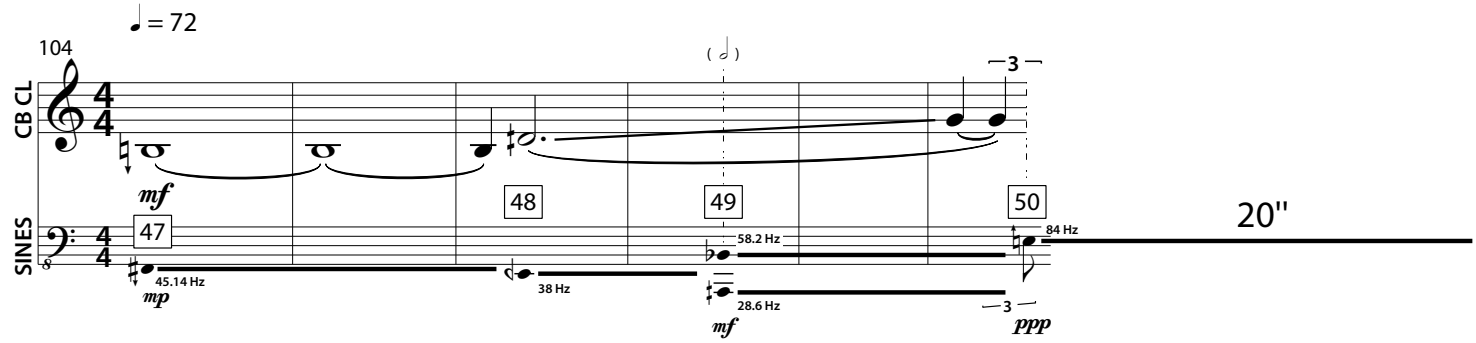

77
5
VC
BPF
483Hz
338Hz
e l e c t r o n i c s o n l y
616Hz
580Hz
39
40
41
2
4
filtered white noise
EL

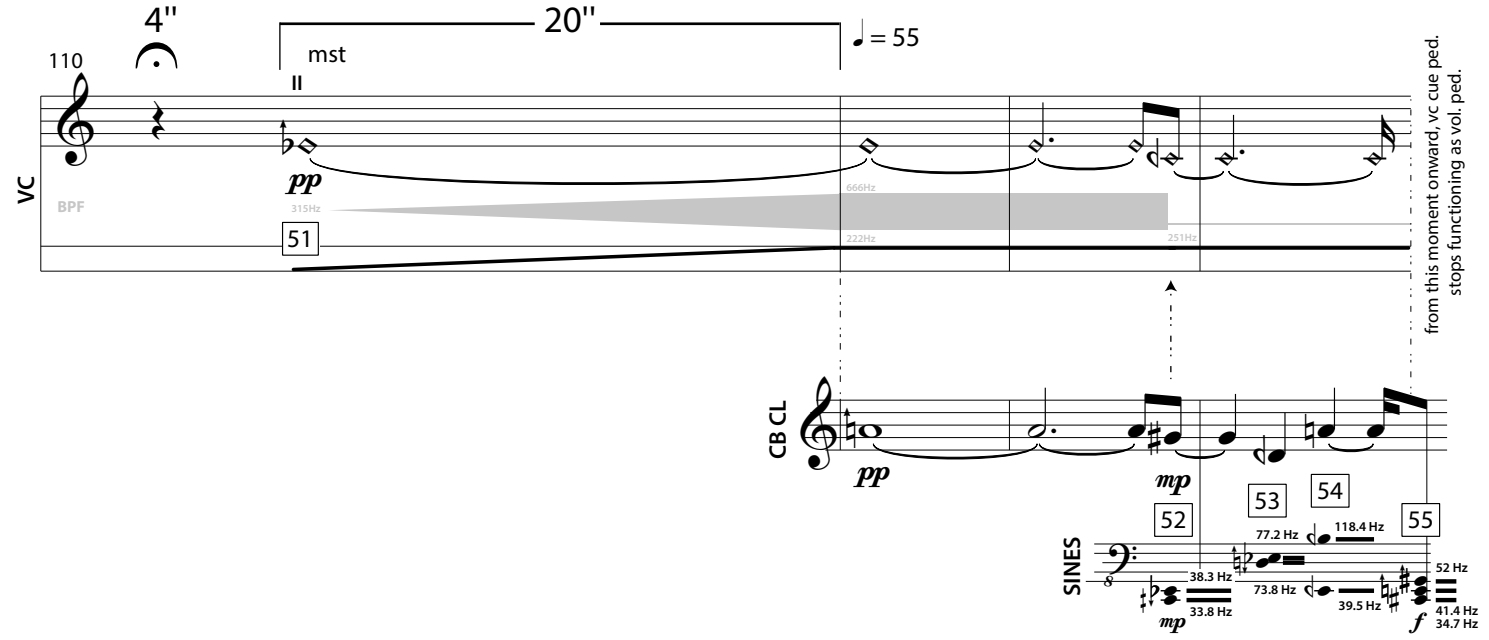

83
VC

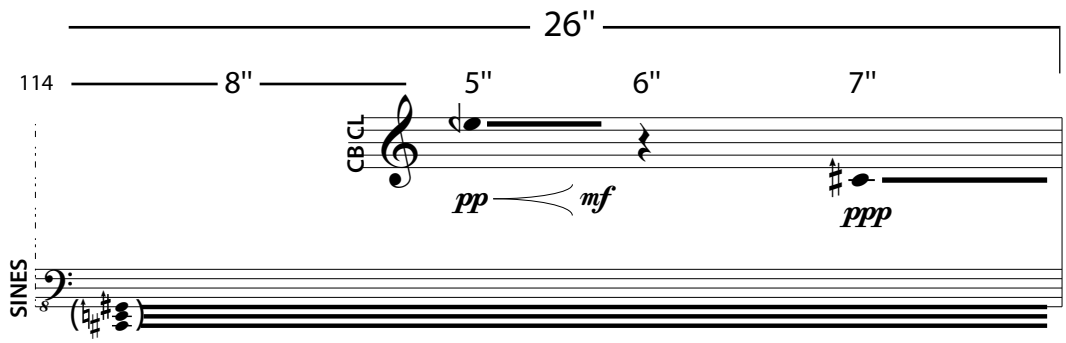

88
VC
358Hz
233Hz
358Hz
233Hz
42

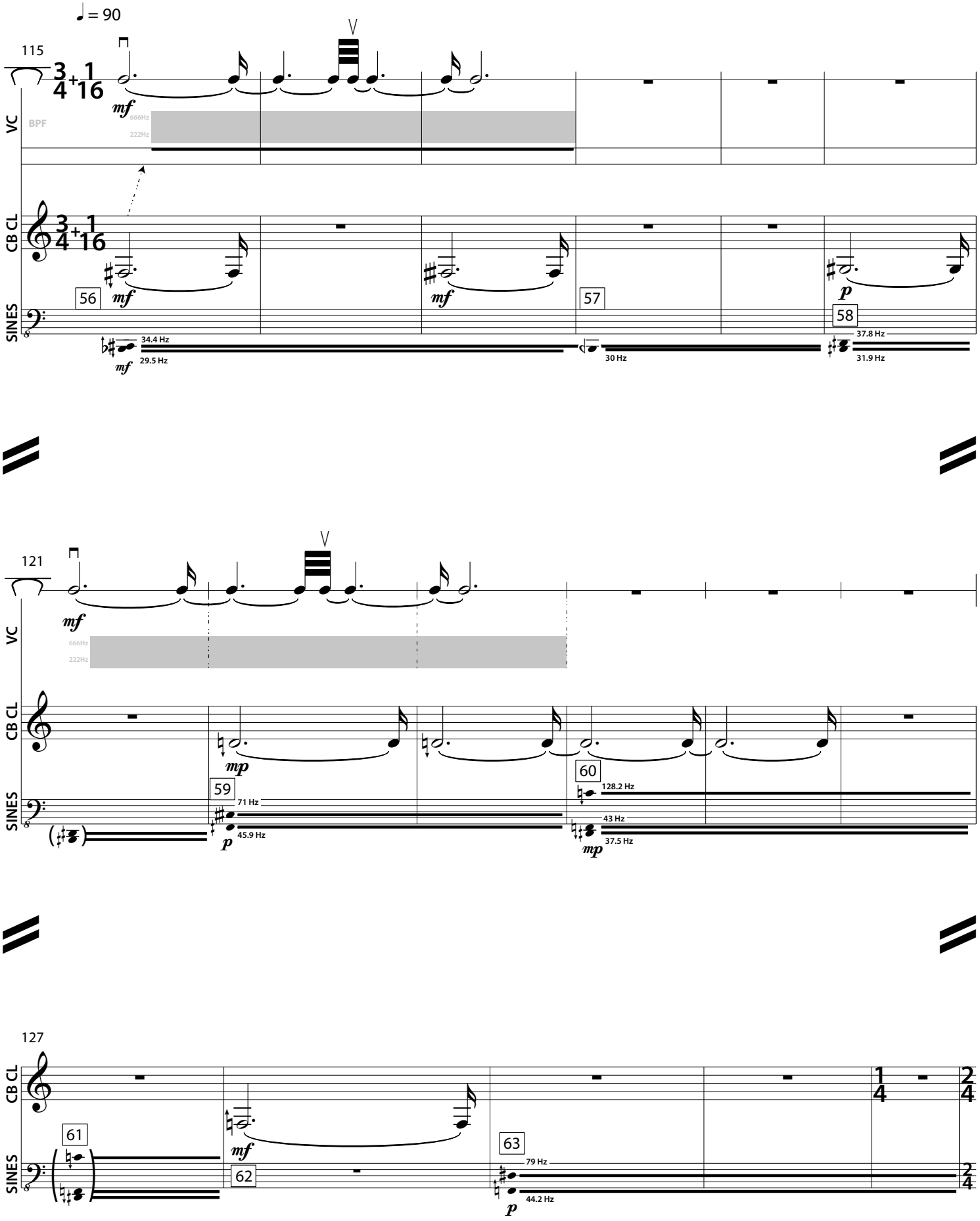

♩= 60
93
VC
508Hz
267Hz
1036Hz
960Hz
740Hz
677Hz
43

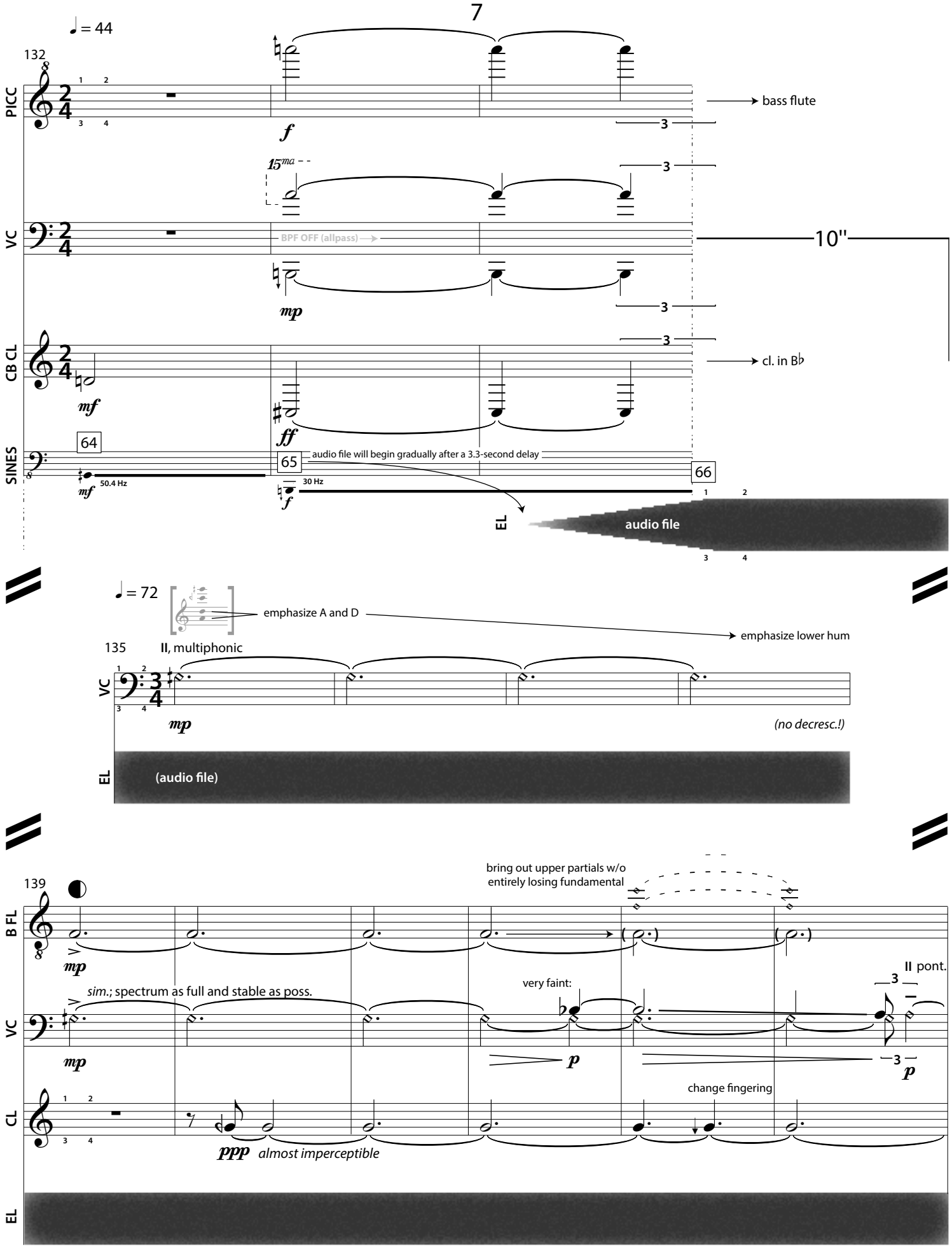

40"
= 55
5"
99
VC
3
4
BPF
588Hz
370Hz
313Hz
280Hz
45
46
transposed
CB CL
1, 2 + sub1
pp
44
p
4
4
SINES
sub2 (mono)
51.2 Hz
pppp
almost imperceptible
pp
p
cue 45 will cut off the contrabass clarinet's and low sine tone's
sound during these three measures; continue playing regardless
so as to keep gradual cresc. before sound comes back on with cue 46

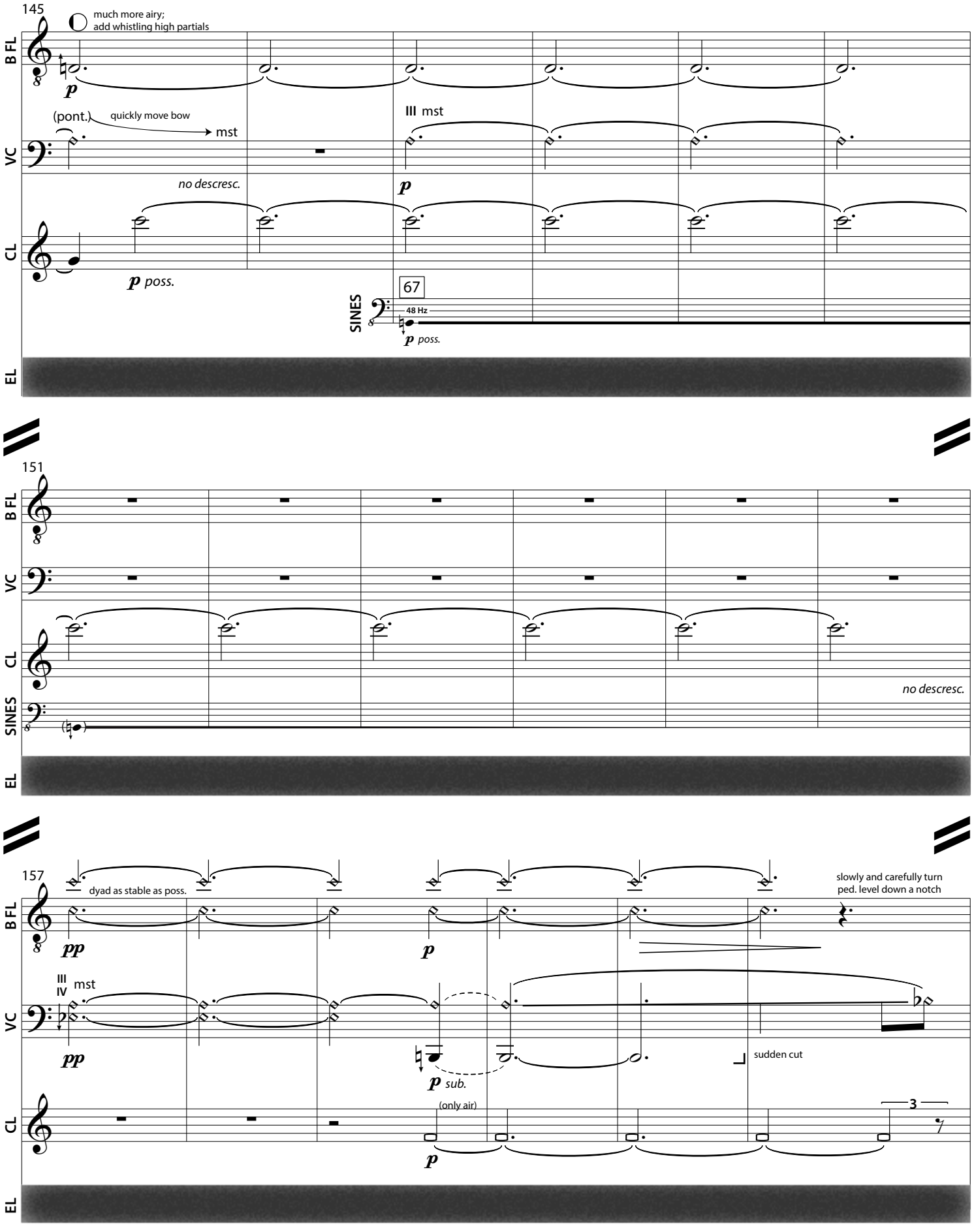

♩ = 72
104
CB CL
SINES
mf
47
48
49
50
3
20''
45.14 Hz
38 Hz
58.2 Hz
28.6 Hz
84 Hz
mp
mf
ppp

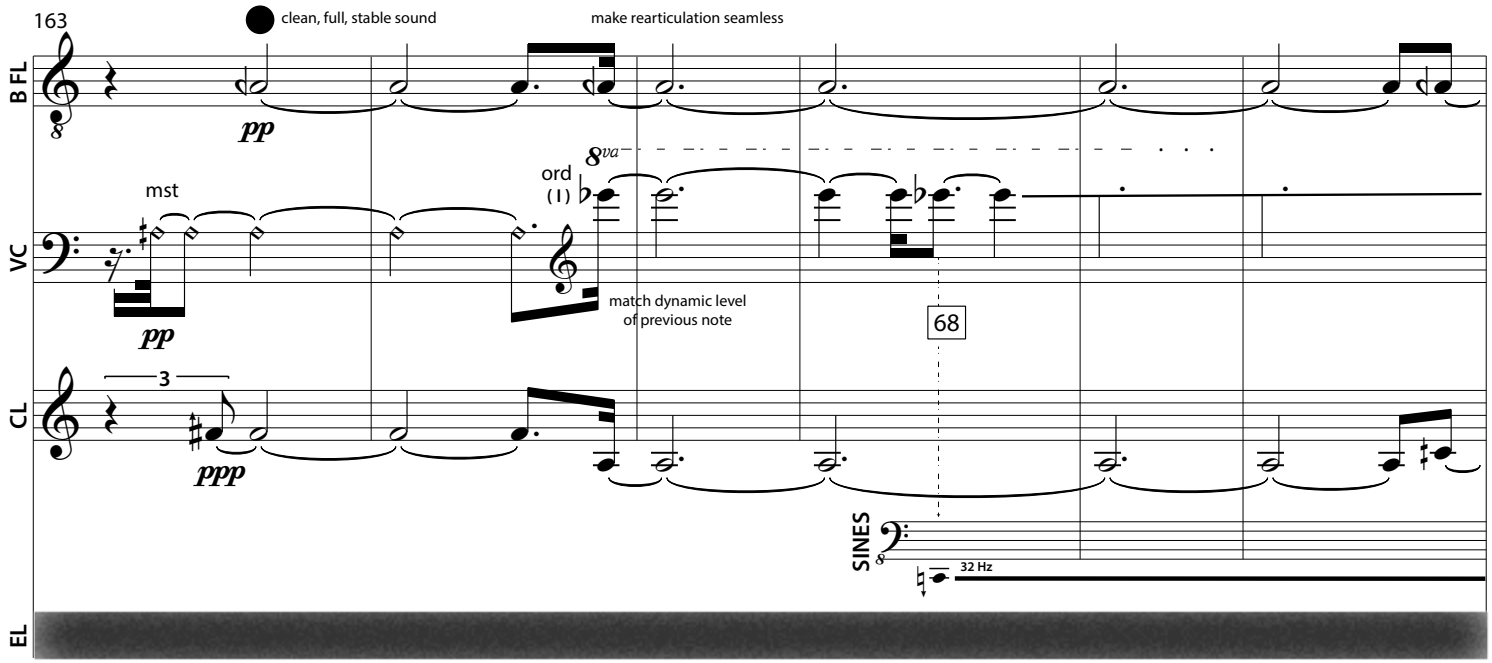

4''
20''
♩ = 55
110
mst
II
VC
BPF
pp
315Hz
666Hz
222Hz
251Hz
51
from this moment onward, vc cue ped.
stops functioning as vol. ped.
CB CL
pp
mp
52
53
54
55
SINES
77.2 Hz
118.4 Hz
38.3 Hz
33.8 Hz
73.8 Hz
39.5 Hz
52 Hz
41.4 Hz
34.7 Hz
mp
f


26''
114
8''
5''
6''
7''
CB CL
pp
mf
ppp
SINES

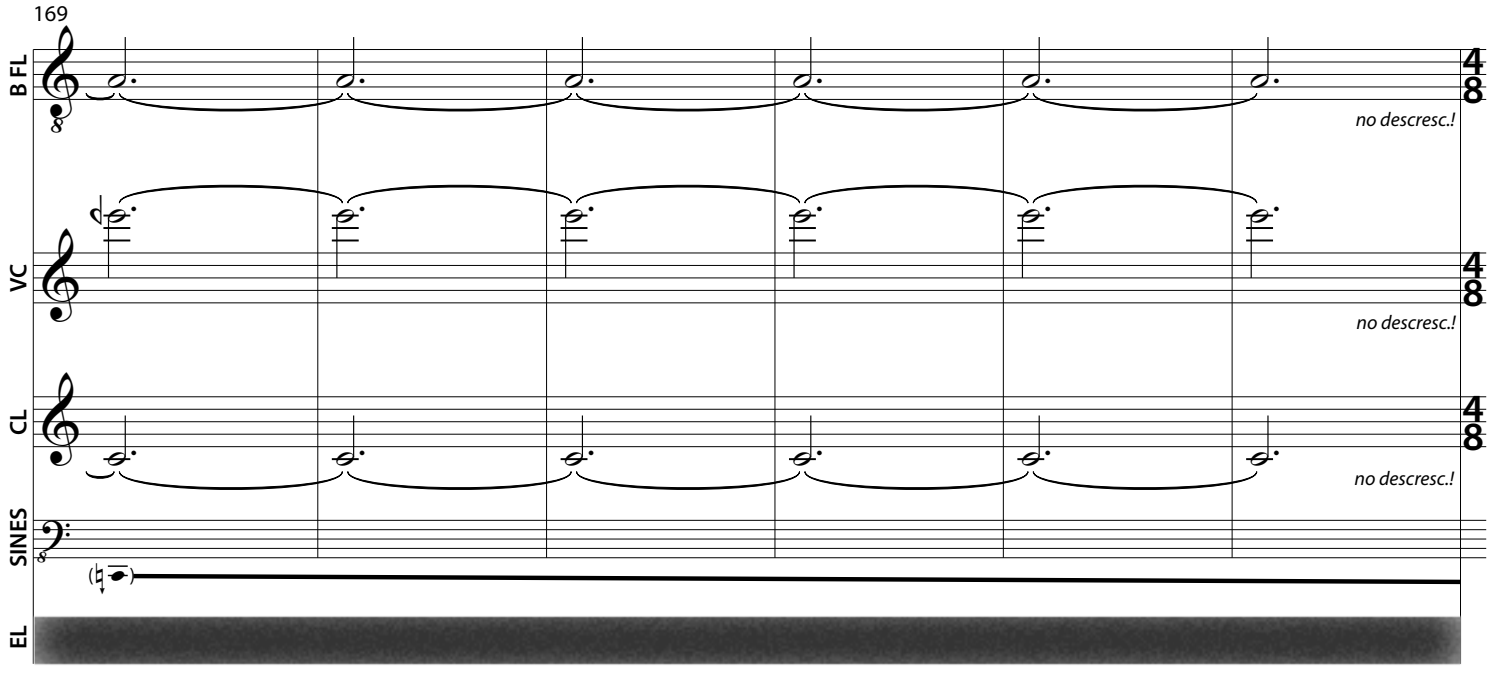

♩ = 90
115
3+1
4 16
VC
BPF
666Hz
222Hz
CB CL
SINES
56
57
58
mf
p
34.4 Hz
29.5 Hz
30 Hz
37.8 Hz
31.9 Hz
121
59
60
mp
71 Hz
45.9 Hz
128.2 Hz
43 Hz
37.5 Hz
127
61
62
63
79 Hz
44.2 Hz
1
4
2
4

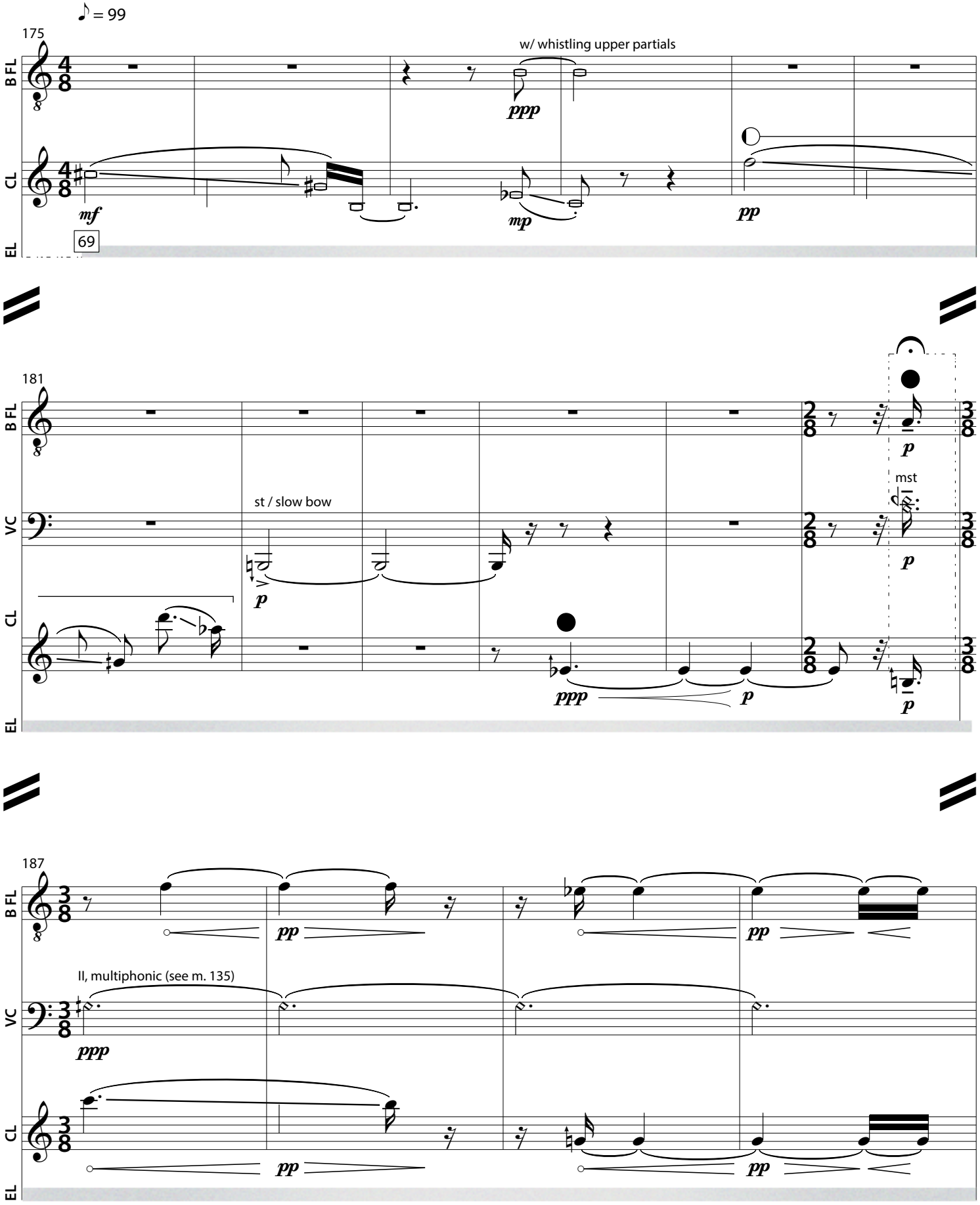

♩ = 44
132
PICC
VC
CB CL
SINES
EL
f
15ma
BPF OFF (allpass)
mp
mf
ff
3
bass flute
cl. in B♭
10"
64
65
66
50.4 Hz
30 Hz
audio file will begin gradually after a 3.3-second delay
audio file
♩ = 72
emphasize A and D
emphasize lower hum
135
II, multiphonic
(no decresc.!)
(audio file)
139
B FL
CL
bring out upper partials w/o
entirely losing fundamental
sim.; spectrum as full and stable as poss.
very faint:
II pont.
change fingering
ppp
almost imperceptible

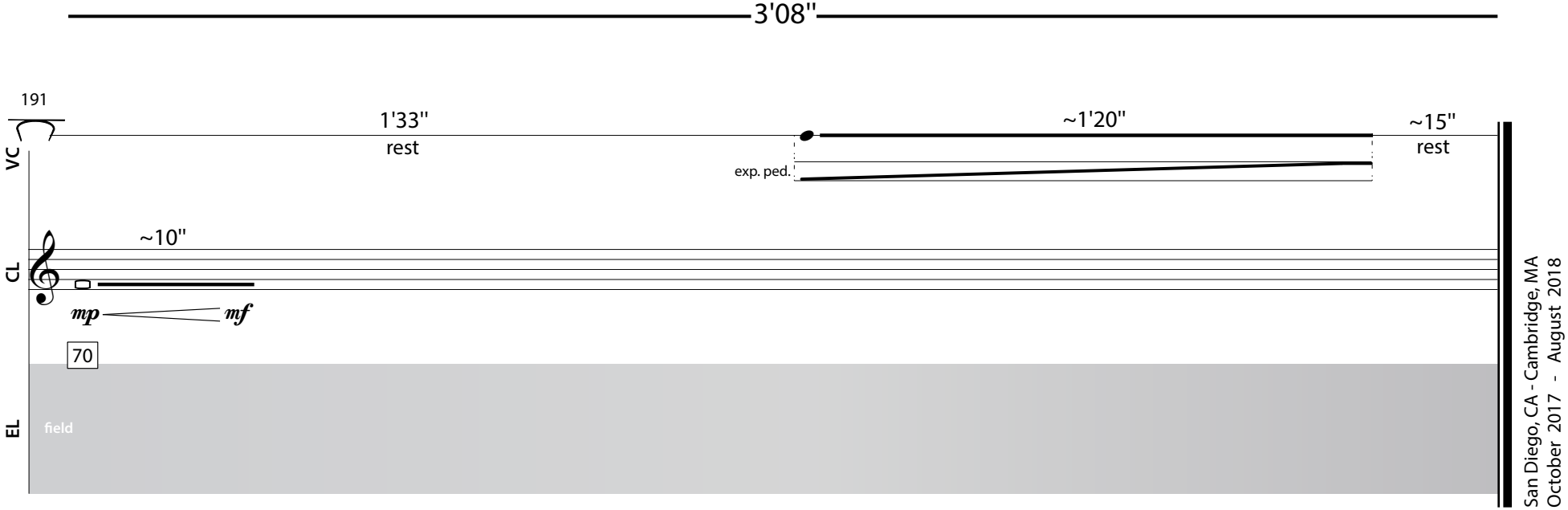

145
much more airy;
add whistling high partials
B FL
p
(pont.)
quickly move bow
mst
VC
III mst
p
no descresc.
CL
p poss.
67
SINES
48 Hz
p poss.
EL
151
B FL
VC
CL
SINES
no descresc.
EL
157
dyad as stable as poss.
slowly and carefully turn
ped. level down a notch
B FL
pp
p
III
IV
mst
VC
pp
p sub.
sudden cut
(only air)
3
CL
p
EL



. . . c o m p l e t e s t a s i s . . .




♪ = 99
175
B FL
CL
EL
w/ whistling upper partials
ppp
mf
mp
pp
69
181
VC
st / slow bow
mst
187
II, multiphonic (see m. 135)


3'08"
191
VC
1'33"
rest
~1'20"
exp. ped.
~15"
rest
CL
~10"
mp
mf
70
EL
field
San Diego, CA - Cambridge, MA
October 2017 - August 2018