HD 181068 (‘Trinity’)

for amplified cello, clarinet in B♭ [or alto sax] and horn [or trombone] + effects pedals and fixed-electronics

2022

raphaël languillat

HD 181068 — is a hierarchical star system in the constellation of the Lyra. Consisting of a massive red giant primary [component A - Cello] orbited by two main-sequence stars ('red dwarf stars' [component B - Clarinet + Horn]). This system is compact and very stable, with regular orbital periods. All three components orbit each other in such a way that they eclipse each other — forming a rare triply eclipsing system, evolving in a '*Walzer*'-like motion.

This sound sculpture takes as a point of departure different processes observed in the hierarchical structure of HD 181068 — orbits, eclipses, occultation moments and tidal oscillations with changing amplitudes and beating patterns, as well as occasional flare events of component A. One of the most intriguing results of its orbital period is that prominent frequencies (*f1* to *f5)* extracted from the harmonic spectrum of this star system are linear combinations of the two orbital frequencies of Stars A and B — resulting in an '*out of tune*' octaves spectrum. These frequencies evolve in a beating pattern during their periodic cycle, contracting into a '*quasi-unisono*' phase during eclipses and occultations of component B, before returning to their initial state.

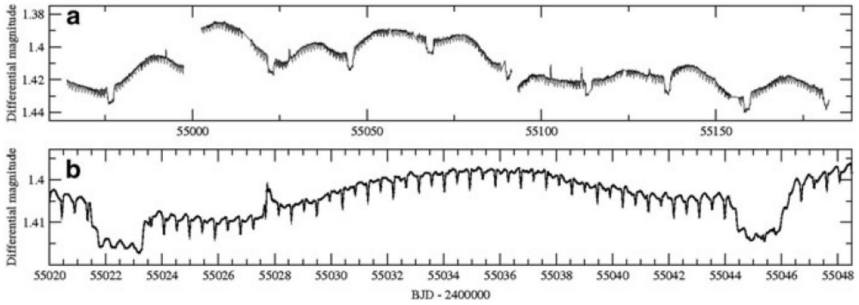
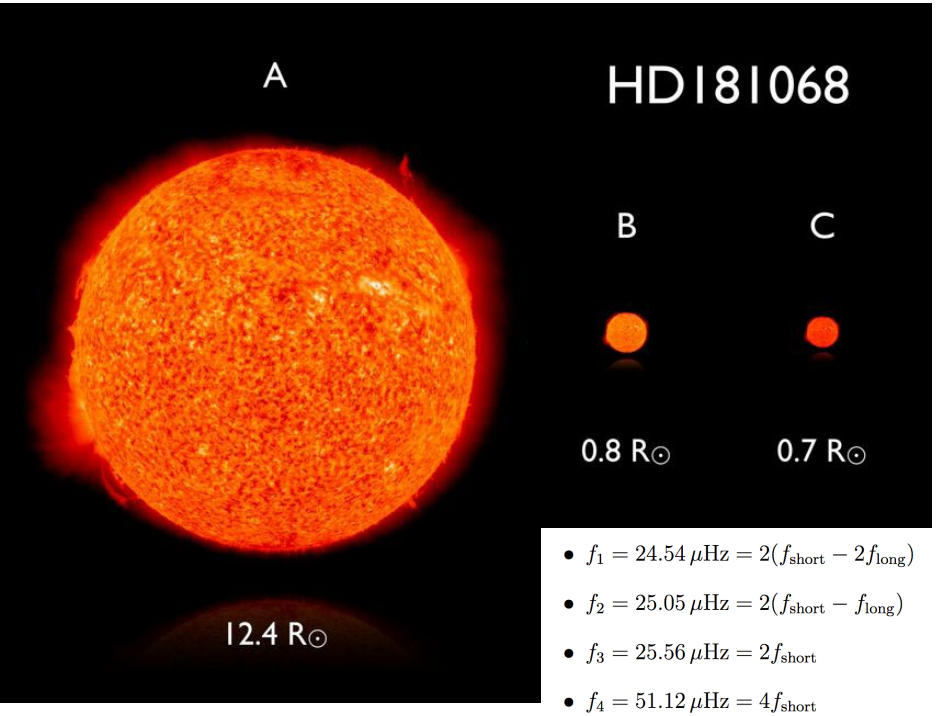


Fig. 7.8 *Upper:* Discovery light curve of HD 181068 ('Trinity'), a triply-eclipsing triple system consisting of a red giant primary and two main-sequence stars. *Lower:* Close-up of one orbital period, showing a primary and secondary eclipse interleaved by ∼0.9-day eclipses of the main-sequence binary (*Reproduced, with kind permission, from Derekas et al. (2011)*)



- $f_1 = 24.54\,\mu\text{Hz} = 2(f_{\text{short}} - 2f_{\text{long}})$
- $f_2 = 25.05\,\mu\text{Hz} = 2(f_{\text{short}} - f_{\text{long}})$
- $f_3 = 25.56\,\mu\text{Hz} = 2f_{\text{short}}$
- $f_4 = 51.12\,\mu\text{Hz} = 4f_{\text{short}}$
- $f_5 = 12.83\,\mu\text{Hz} = f_{\text{short}} + 1/T_{\text{obs}}$

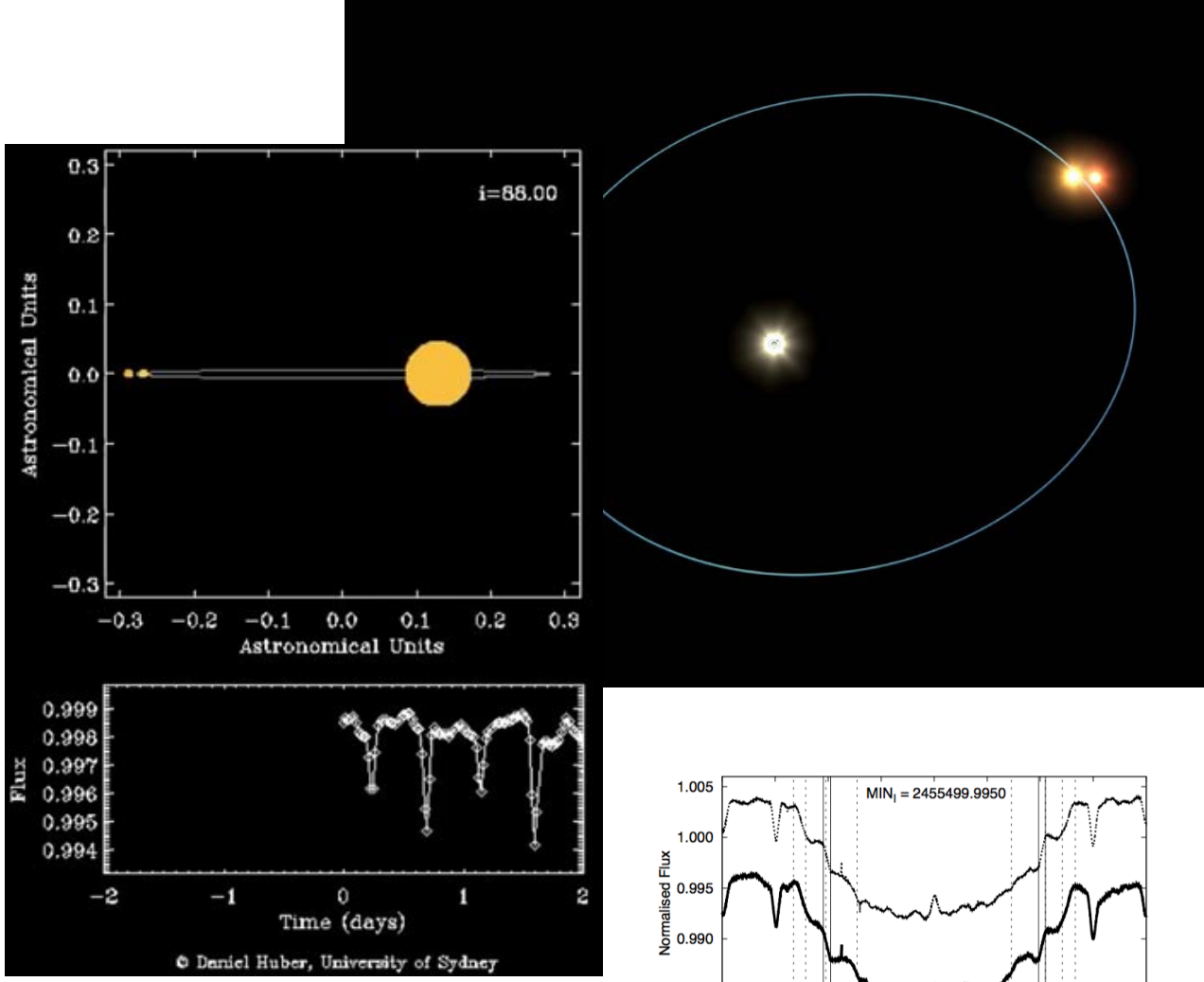


Figure 3. Red curve: sample of light curve of HD 181068 between long-duration eclipses. The *x*-axis is the phase of the long-period orbit, measured from the primary minimum at BJD 55545.466. Green curve: the simulated light curve of the oscillations. Note the beating pattern due to two close frequency oscillations.

technical requirements

Stage Setup
- 3 Music stands for the digital score
N.B. : please use a tablet (if possible)
- 3 Bluetooth pedals
- 3 Chairs

Amplification
vlc.
- 1 hypercardioid DPA or Pickup
(i.e. KNA vv-3 for Vl.)
- 1 TR cable *if passive Pickup* (max. 1,5m)
- 1 Active DI-Box *if a passive Pickup is used*
(i.e. Millenium DI-A)

cl. + hn.
- 2 hypercardioid DPA w/ their respective clamps

Sound Setup
- 1 analog or digital Mixer (i.e. Mackie 802 VLZ4)
- 6 Loudspeakers (i.e. x2 Genelec 8020/30/40 or 8050 if possible)
- 1 Subwoofer (if possible and at least 7050 CPM)

Live-electronics (Effects pedals)
- AUX 1 (vlc.)
> Ventris Reverb

- AUX 2 (cl. + hn.)
> Boss RV-6
> EHX Canyon

- AUX 3
> Red Panda Particle v2

- AUX 4
> EHX Ring Thing

Contact
- please contact me for the Live-electronics part at rlanguillat@gmail.com

notes for performance

ACCIDENTALS apply for the whole measure

AMPLIFICATION the instruments are amplified and spatialized through their own pair of LS in stereo (VLC) or mono (CL and HN). This ensures the acoustic coherence of the instruments within the samples.

ARTICULATIONS & TECHNIQUES must be always played organically, with microvariations (never in a mechanical way).

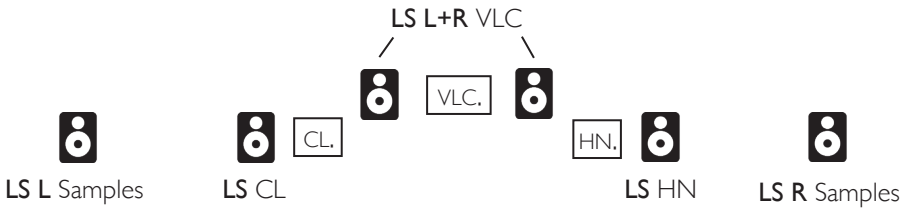
FLOW fluid like a continuous, uninterrupted celestial movement (slowed down '*Walzer*'). Without accent, break or sudden events (unless otherwise indicated, i.e. with Ⓕ events of the VLC.).

GLISSANDI always played in a linear, continuous and regular manner, spanning the entire duration of the initial note (NO portamento and WITHOUT exponentional morphology).

MUSICALITY the interpretation should be near to Baroque phrasing: contoured as possible, emphasizing the play of energies and the setting in motion of the sound forms (lightness and fluidity, flairs, oscillations, suspensions, shifts and contrasts).

SAMPLES are launched through an Ableton Live session (or Max /MSP Patch) and are spatialized through their own pair of LS. They are conceived as soundscapes — at the same level as the acoustic instruments, sometimes encompassing them or fading in the background.

stage directions / set-up



LS = Loudspeaker

symbols

1/4 tone flat and sharp

3/4 tone flat and sharp

 Ligatura

Glissando

 Continuous transition between two states

Ad libitum alternation between two states

techniques

Scordatura

Cello — I -31c / II +50c / III -50c / IV -100c

Clefs

Area located between the bridge (upper line) and the end of the fngerboard (lower line)

Area located between the end (upper line) and the beginning of the fngerboard (lower line)

Others

a.s.t.	Very high on the fingerboard
m.s.t.	High on the fingerboard
s.t.	At the beginning of the fingerboard
n.	Normal playing position
s.p.	Near the bridge
m.s.p.	Very close to the bridge (rich in high harmonics)
s.p.	On the bridge (white noise)

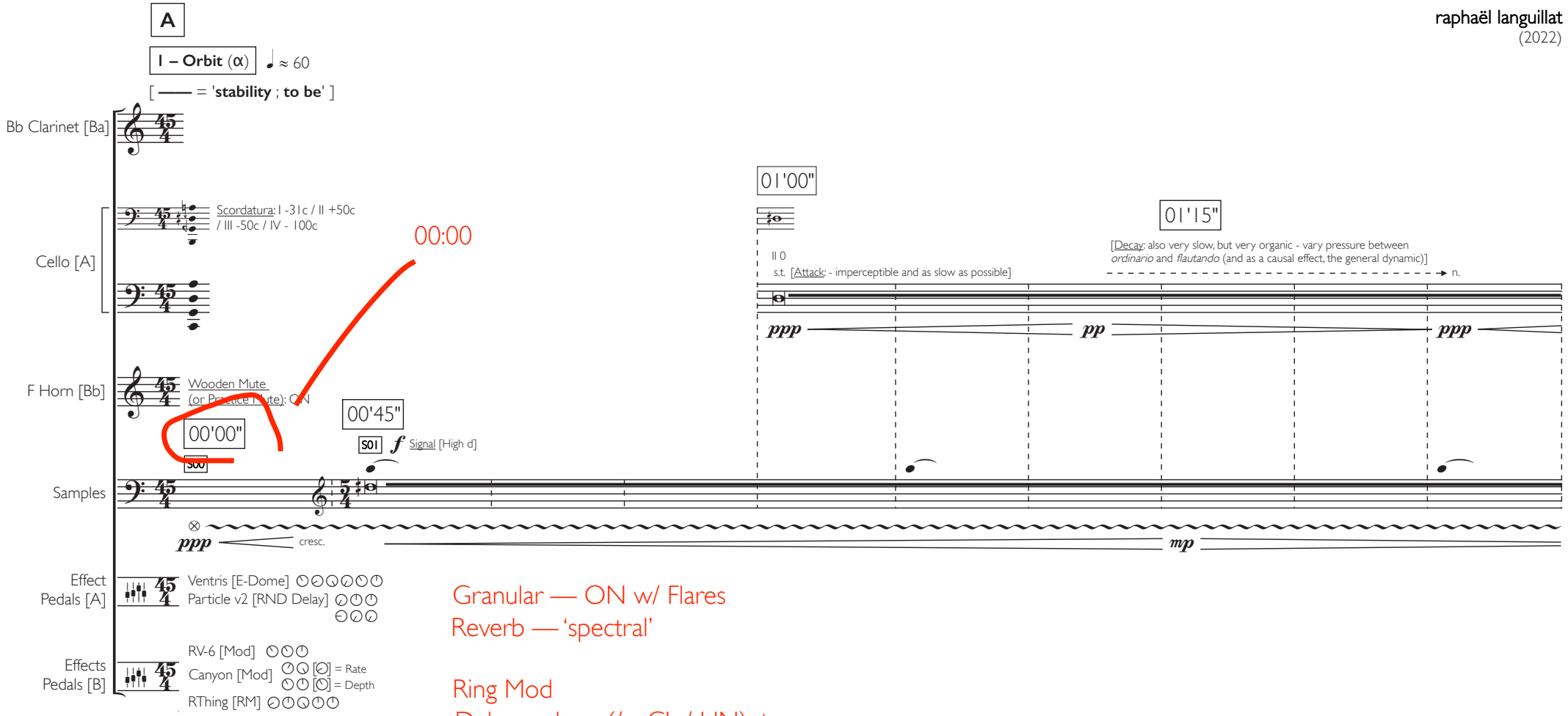
Bow pressure: extremely light, normal, more than medium, quasi-écrasé

Natural harmonic pressure on the indicated string

HD 181068 ('Trinity')

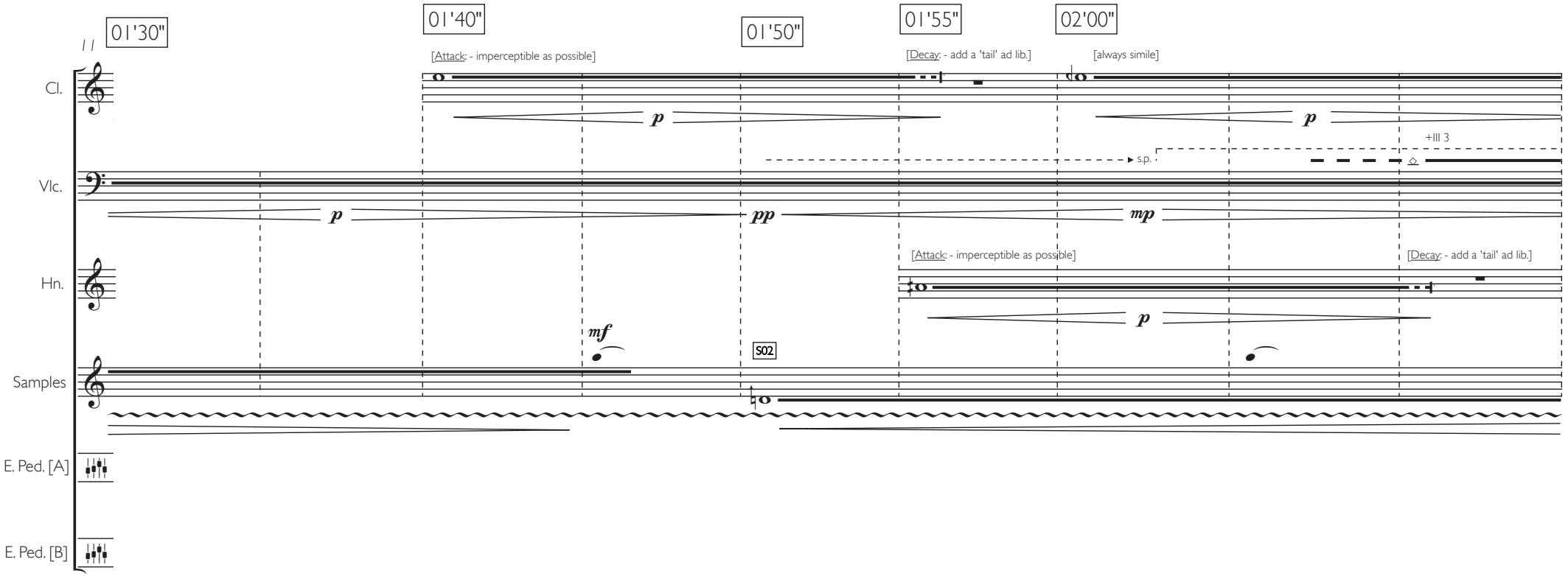
for Trio Radial

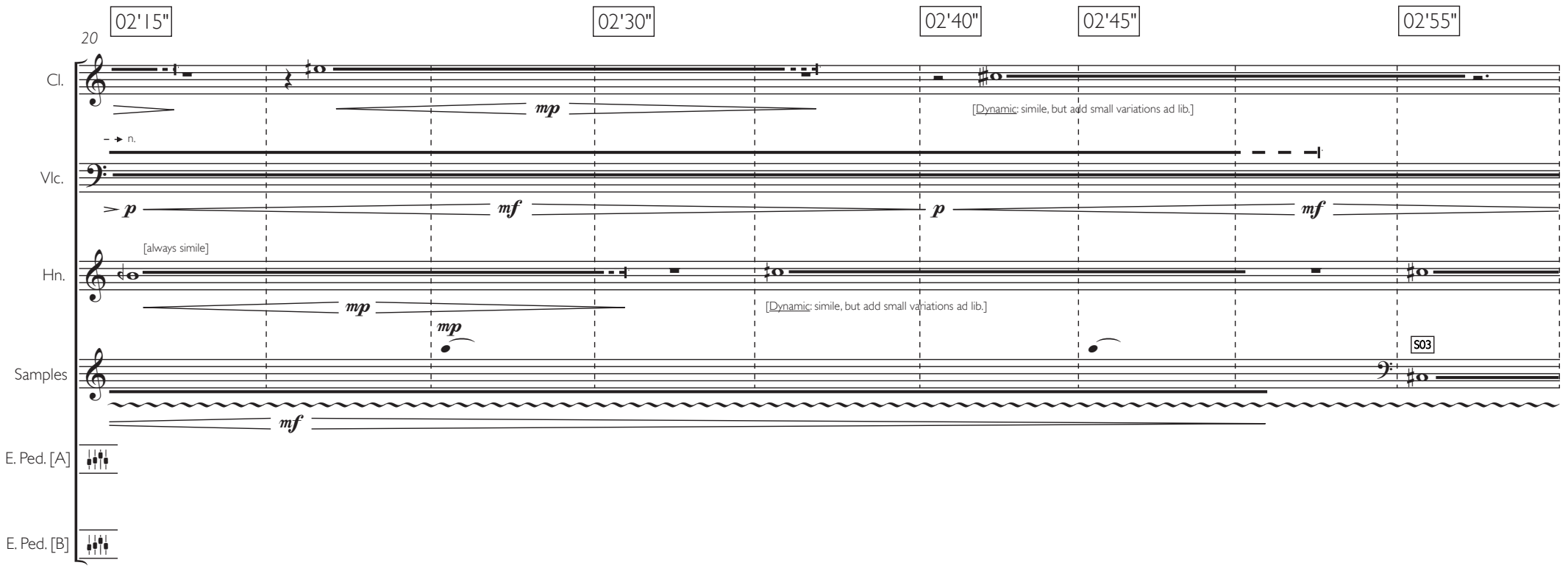
raphaël languillat
(2022)

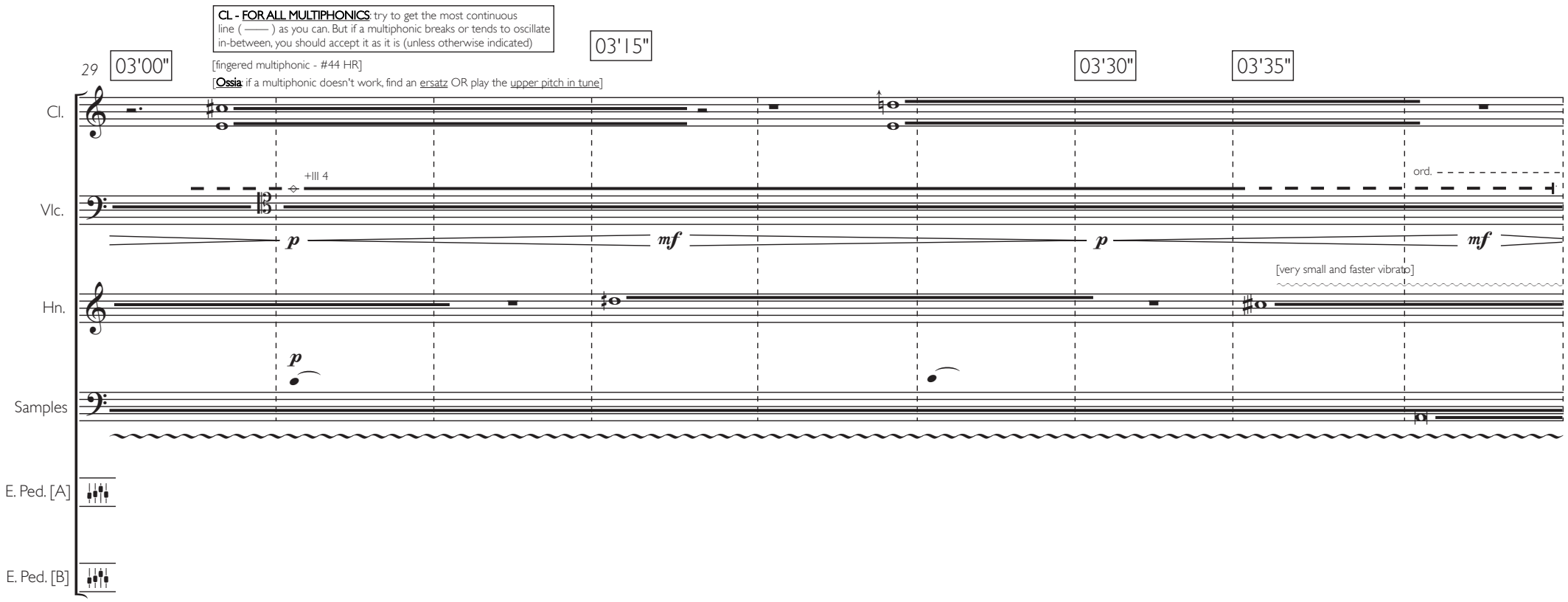


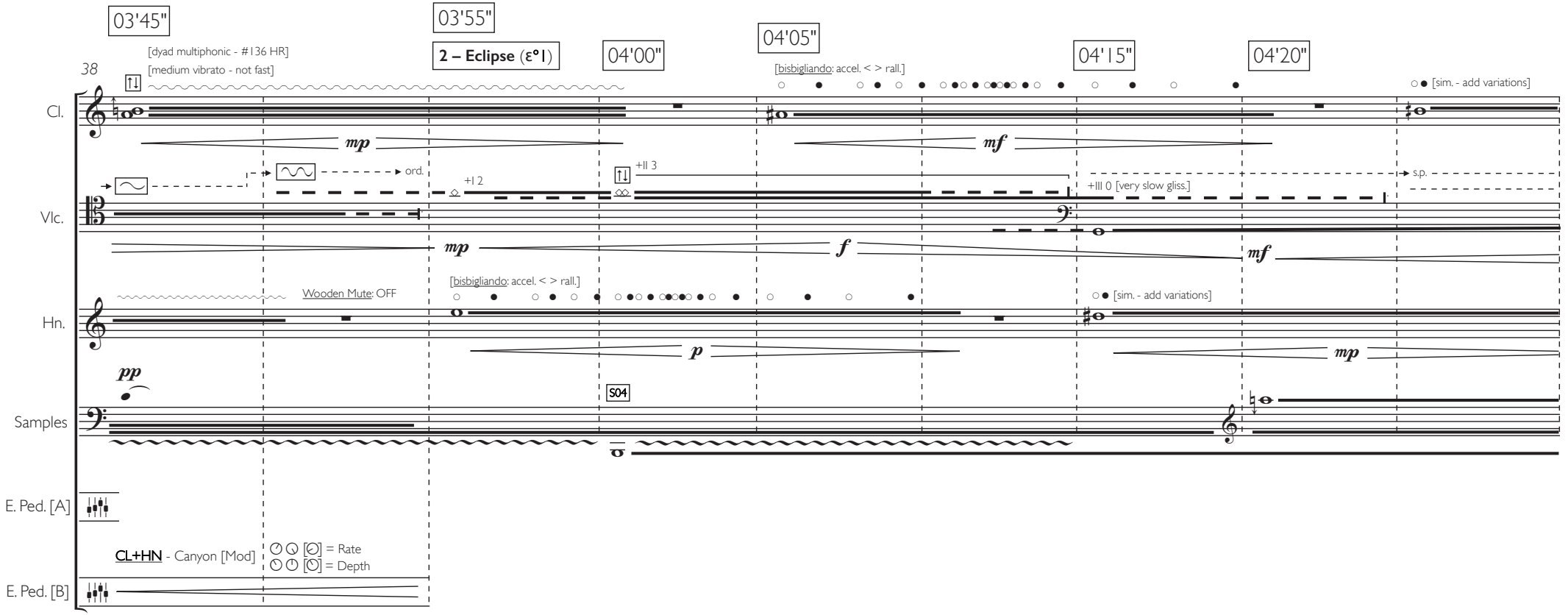
Granular — ON w/ Flares
Reverb — 'spectral'

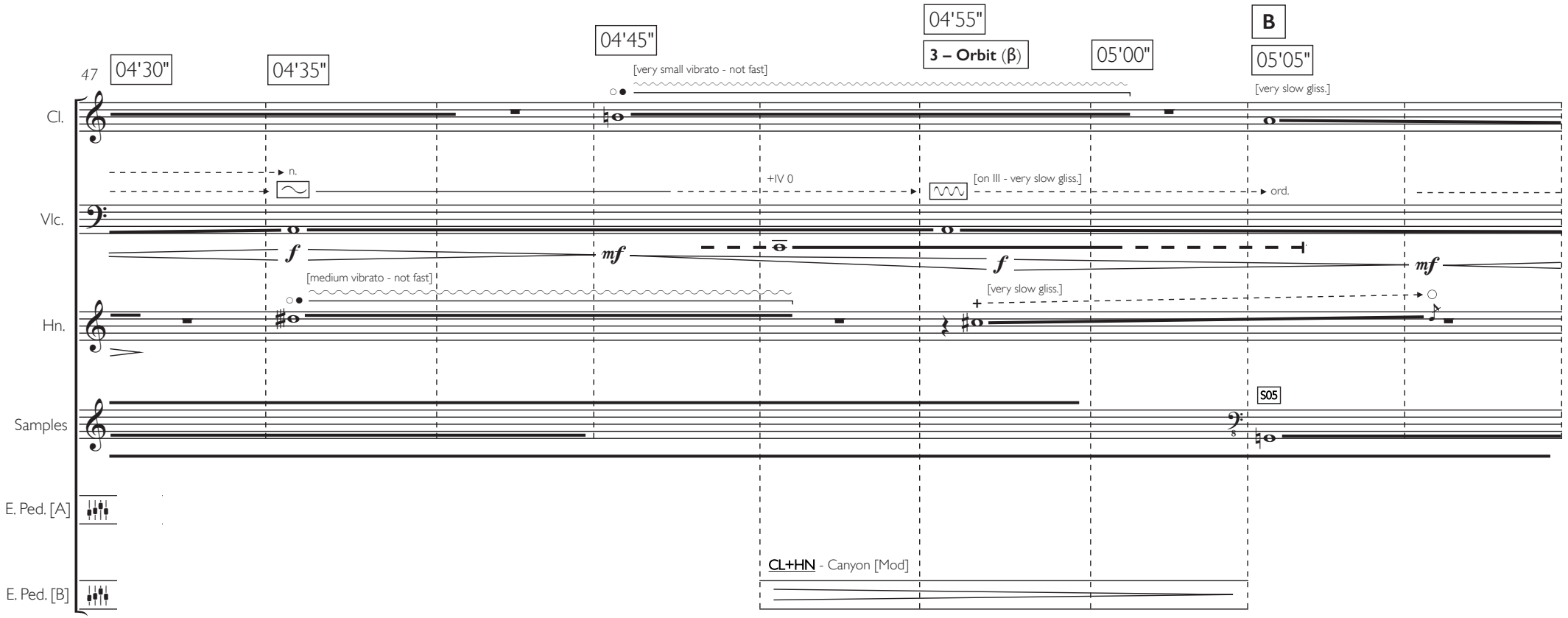
Ring Mod
Delay — long (/= CL / HN) + pan
Reverb — 'modulation'

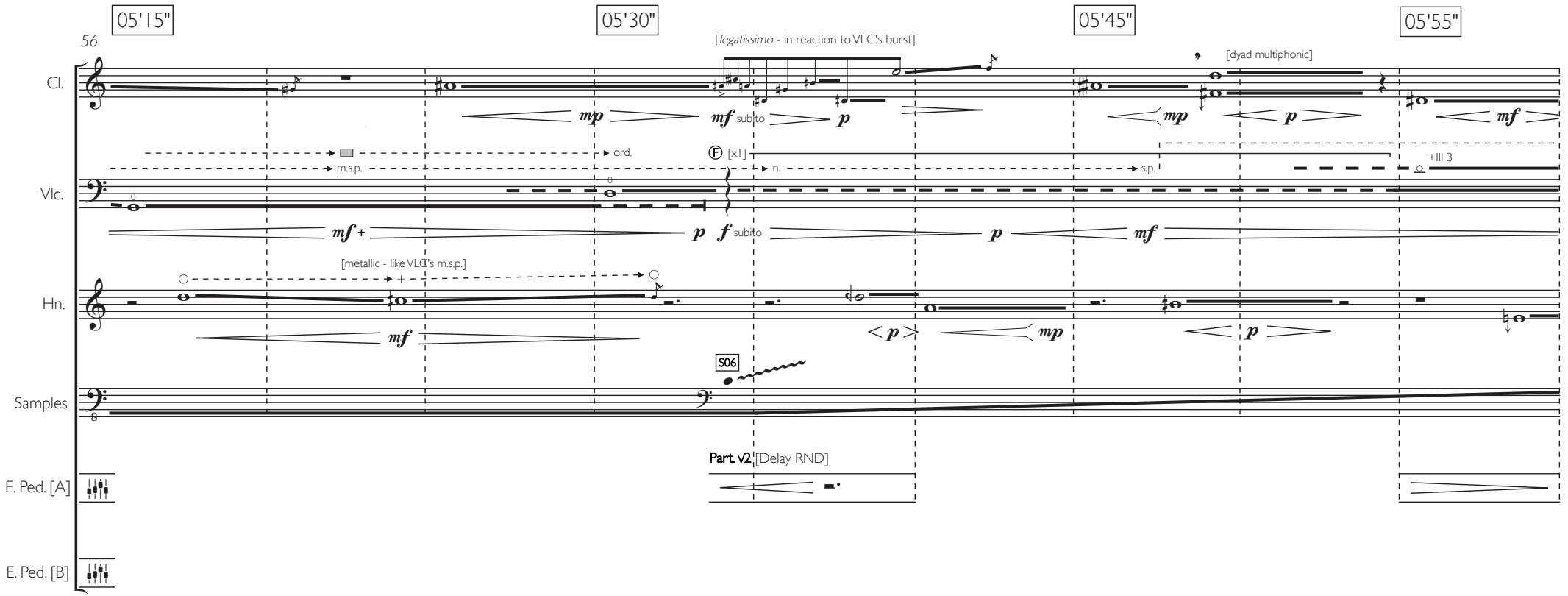

01'30"
01'40"
01'50"
01'55"
02'00"
[Attack: - imperceptible as possible]
[Decay: - add a 'tail' ad lib.]
[always simile]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
p
pp
mp
mf
s.p.
+III 3
S02
[Attack: - imperceptible as possible]
[Decay: - add a 'tail' ad lib.]

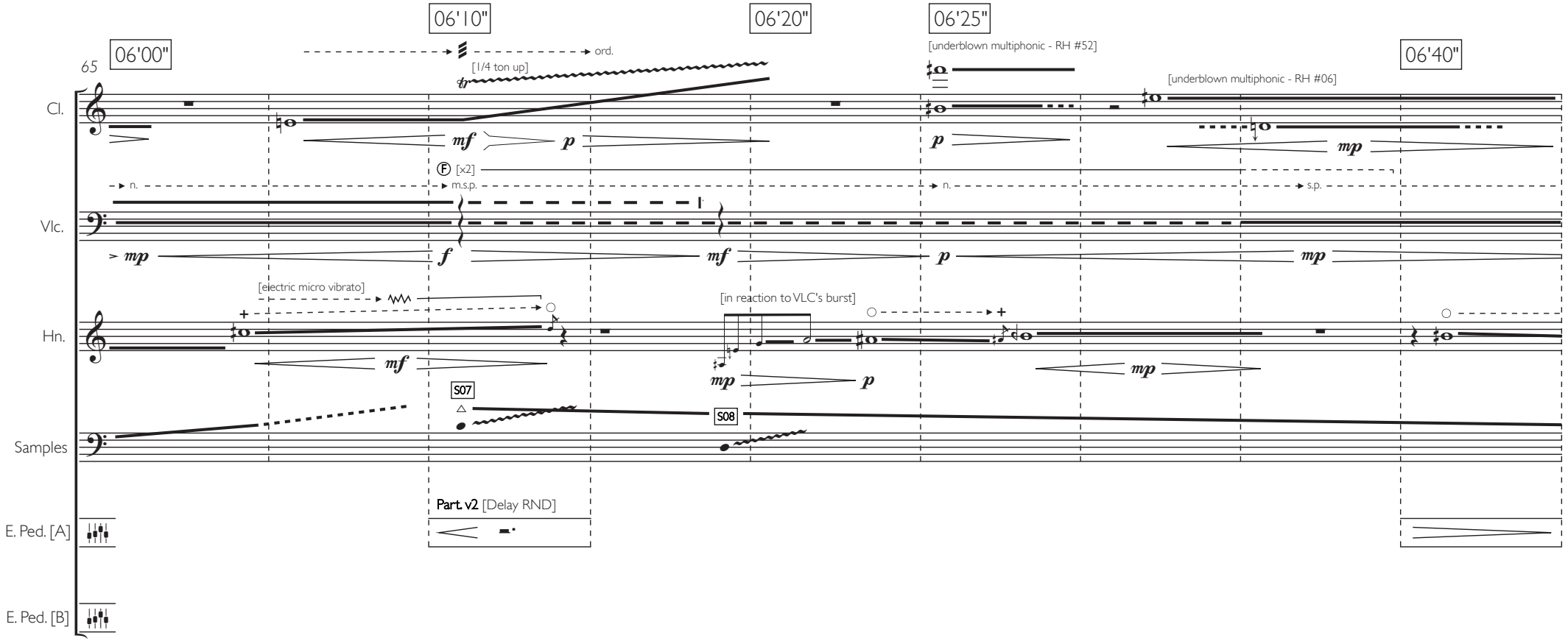

02'15"
02'30"
02'40"
02'45"
02'55"
20
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mp
n.
[Dynamic: simile, but add small variations ad lib.]
p
mf
[always simile]
[Dynamic: simile, but add small variations ad lib.]
S03

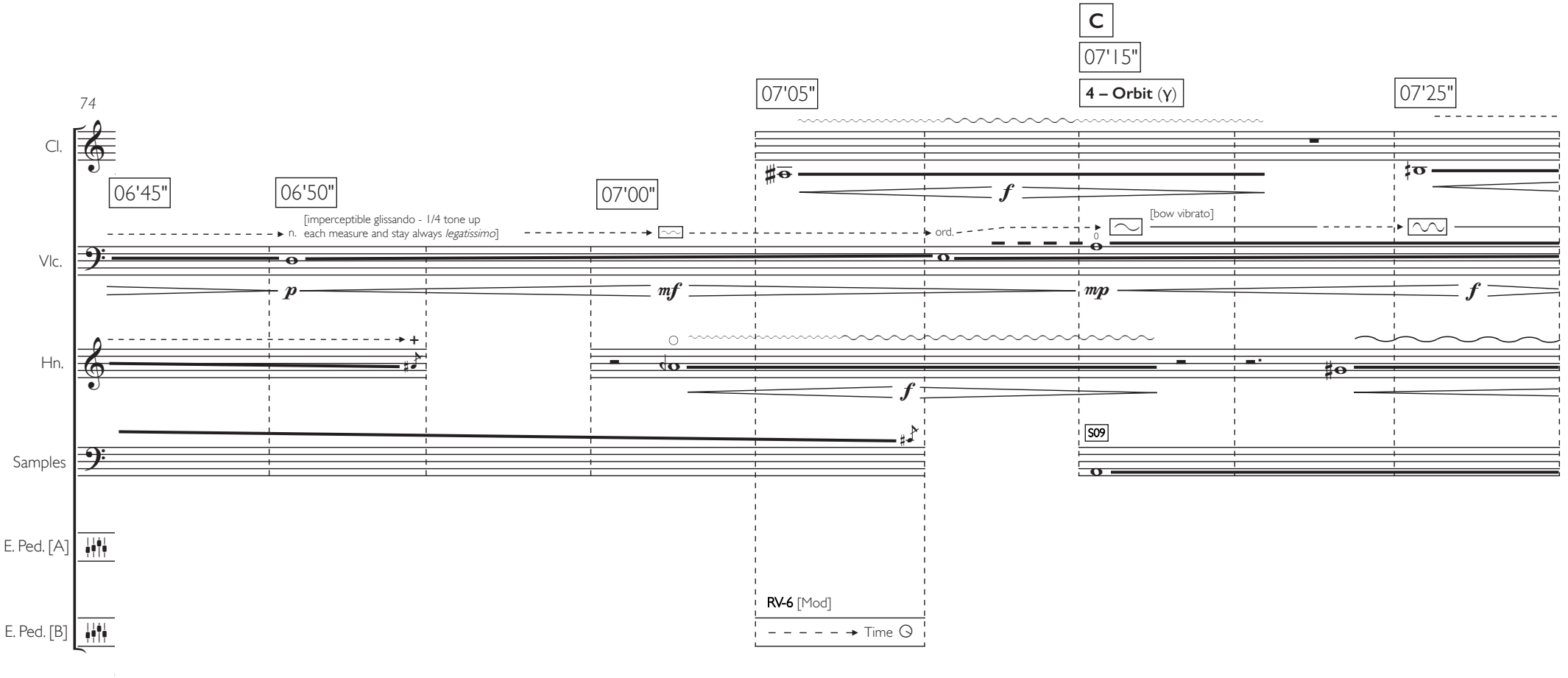

CL - FOR ALL MULTIPHONICS: try to get the most continuous line (——) as you can. But if a multiphonic breaks or tends to oscillate in-between, you should accept it as it is (unless otherwise indicated)
[fingered multiphonic - #44 HR]
[Ossia: if a multiphonic doesn't work, find an ersatz OR play the upper pitch in tune]
29
03'00"
03'15"
03'30"
03'35"
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
+III 4
ord.
p
mf
p
mf
[very small and faster vibrato]
p

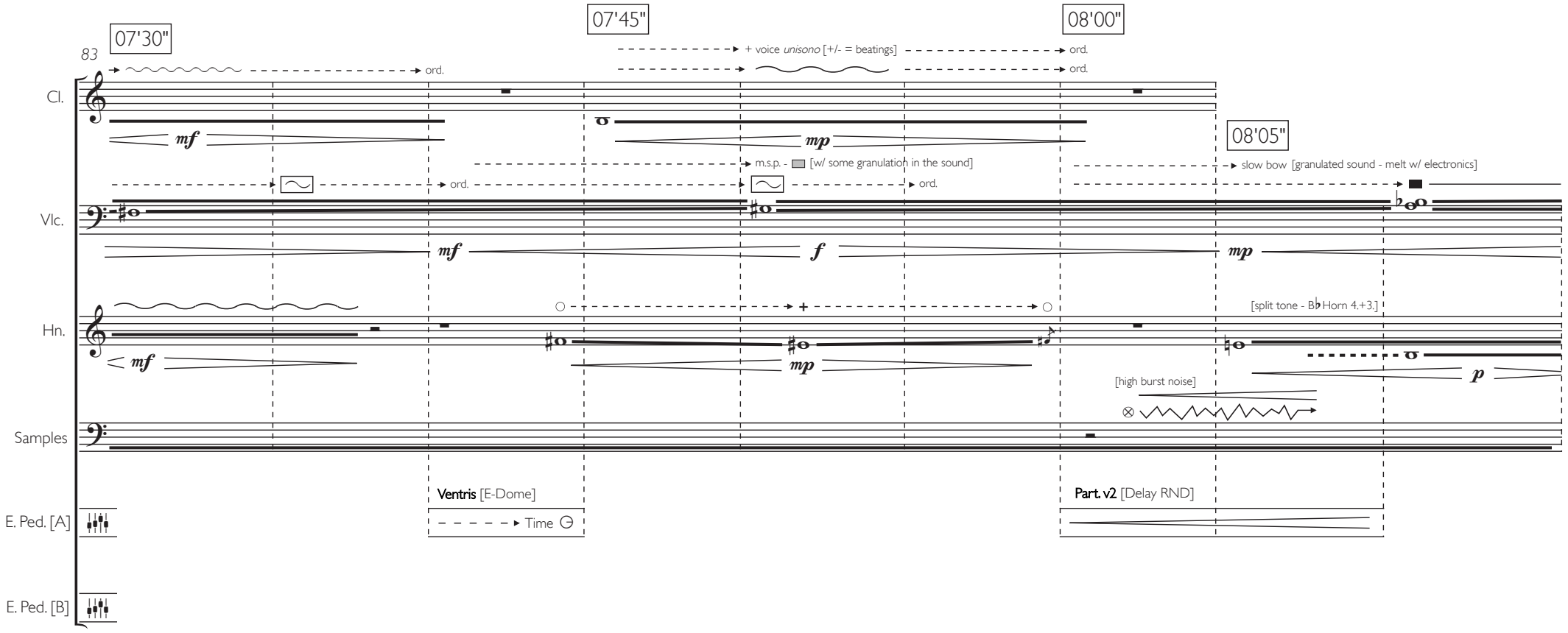

03'45"
03'55"
04'00"
04'05"
04'15"
04'20"
38
[dyad multiphonic - #136 HR]
[medium vibrato - not fast]
2 – Eclipse (ε°I)
[bisbigliando: accel. < > rall.]
○● [sim. - add variations]
Cl.
mp
mf
Vlc.
ord.
+I 2
+II 3
+III 0 [very slow gliss.]
s.p.
mp
f
mf
Hn.
Wooden Mute: OFF
[bisbigliando: accel. < > rall.]
○● [sim. - add variations]
p
mp
pp
S04
Samples
E. Ped. [A]
CL+HN - Canyon [Mod]
= Rate
= Depth
E. Ped. [B]

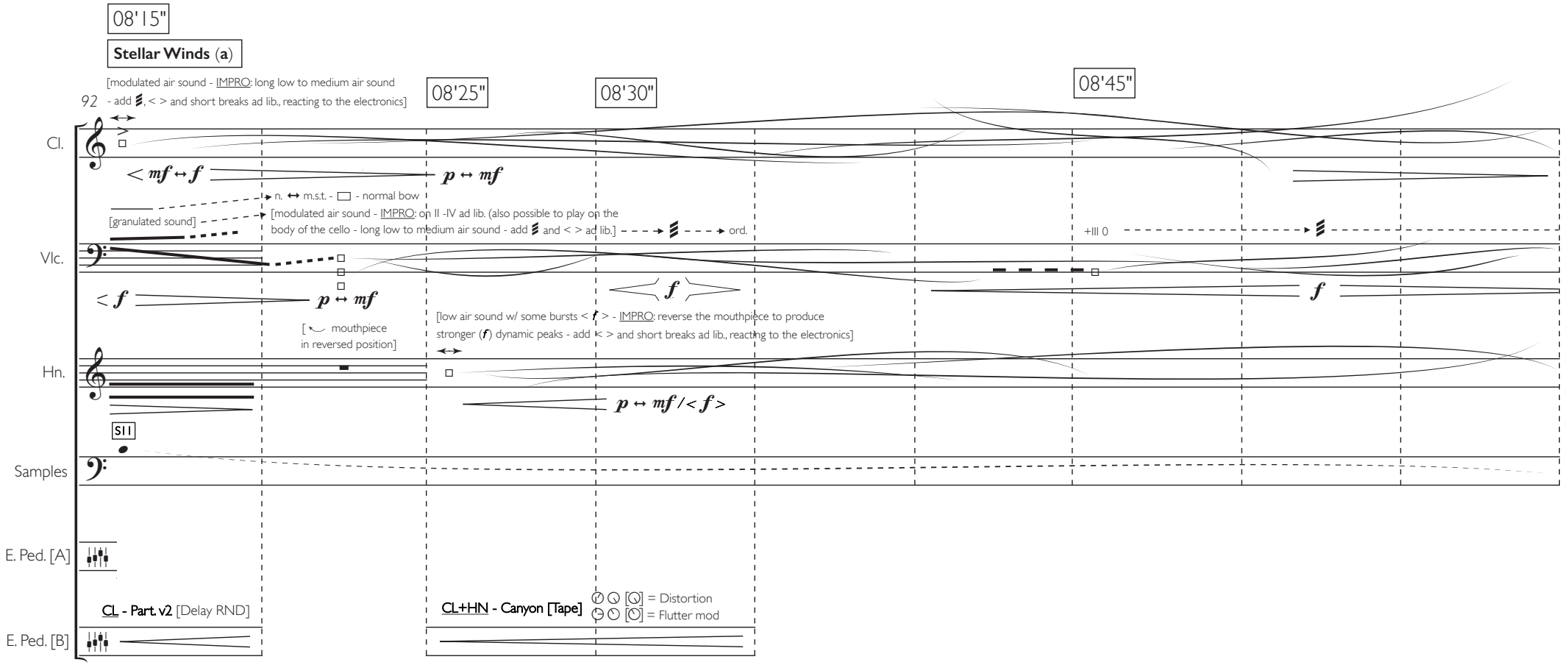

47
04'30"
04'35"
04'45"
04'55"
3 – Orbit (β)
05'00"
B
05'05"
[very small vibrato - not fast]
[very slow gliss.]
Cl.
n.
+IV 0
[on III - very slow gliss.]
ord.
Vlc.
f
mf
f
mf
[medium vibrato - not fast]
[very slow gliss.]
Hn.
Samples
S05
E. Ped. [A]
CL+HN - Canyon [Mod]
E. Ped. [B]

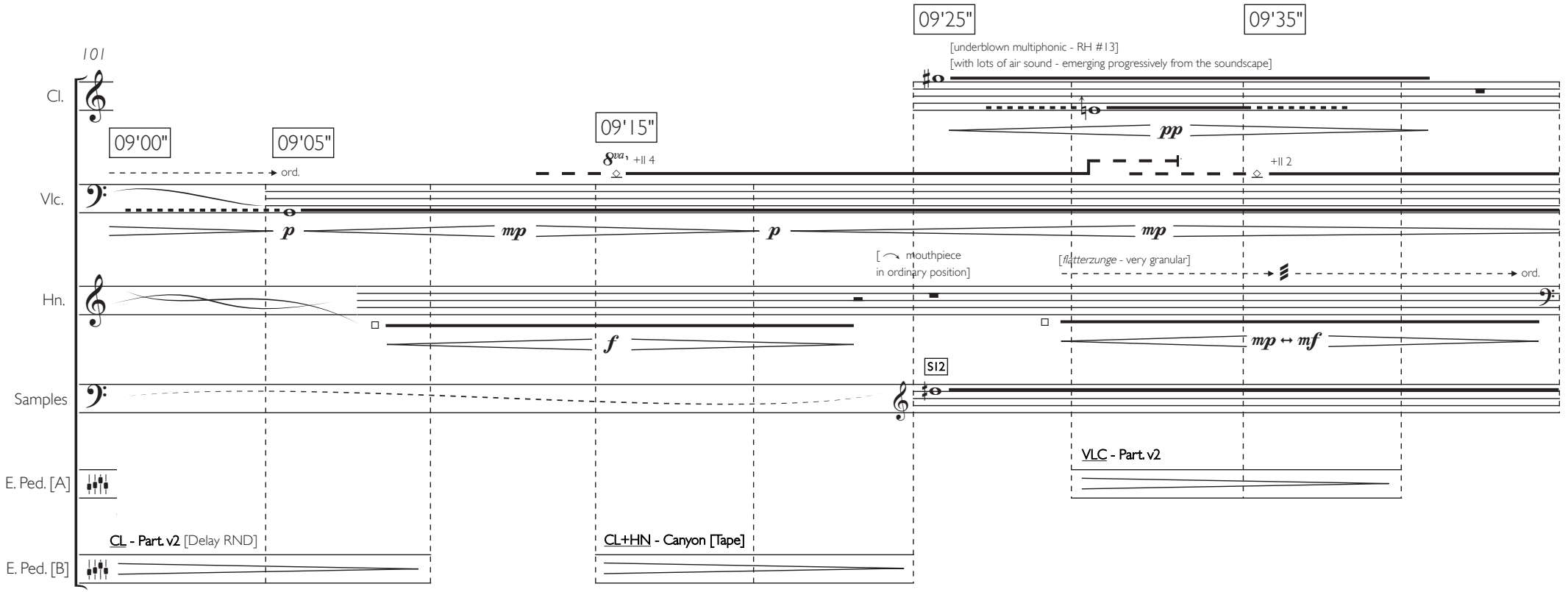

05'15"
05'30"
05'45"
05'55"
56
[legatissimo - in reaction to VLC's burst]
[dyad multiphonic]
Cl.
mp
mf sub to
p
mp
p
mf
ord.
m.s.p.
Ⓕ [x1]
n.
s.p.
+III 3
Vlc.
mf +
p
f subito
p
mf
[metallic - like VLC's m.s.p.]
Hn.
mf
< p >
mp
p
S06
Samples
Part. v2 [Delay RND]
E. Ped. [A]
E. Ped. [B]

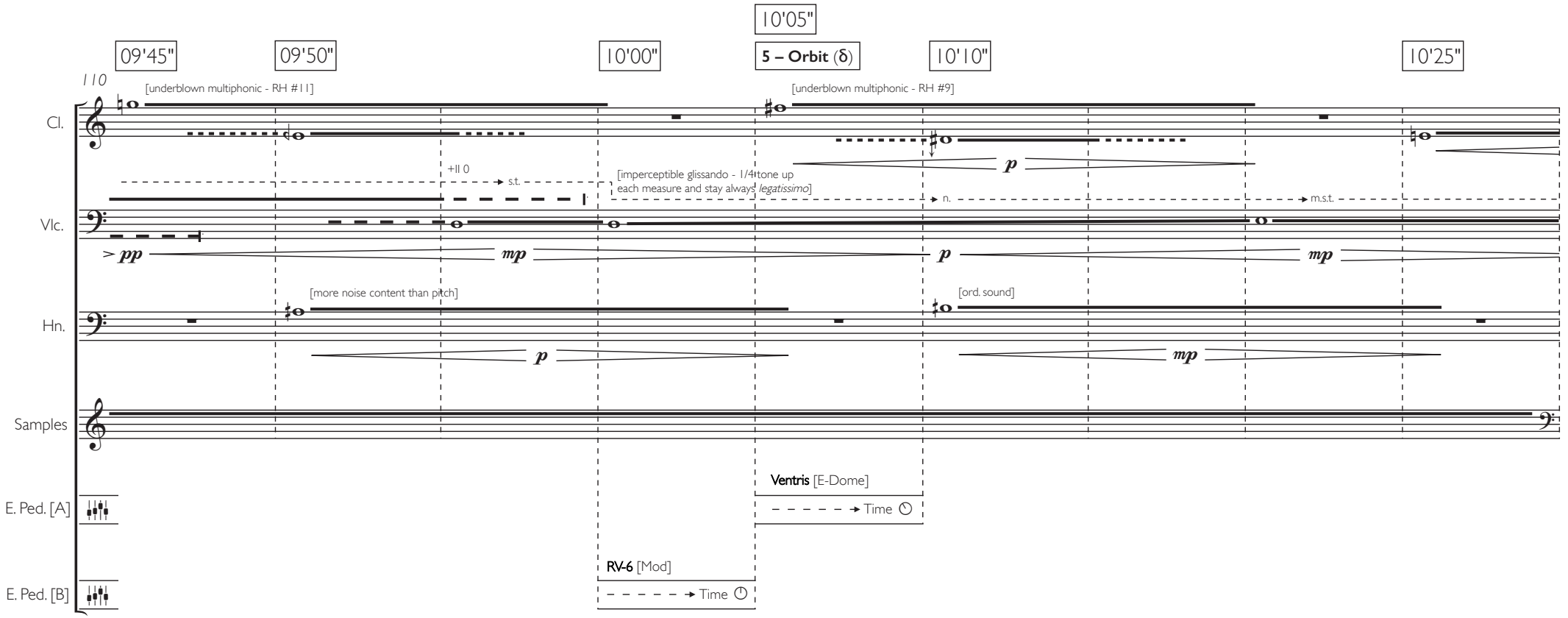

65
06'00"
06'10"
06'20"
06'25"
06'40"
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
[1/4 ton up]
ord.
[underblown multiphonic - RH #52]
[underblown multiphonic - RH #06]
mf
p
mp
f
Ⓕ [x2]
n.
m.s.p.
s.p.
[electric micro vibrato]
[in reaction to VLC's burst]
S07
S08
Part. v2 [Delay RND]

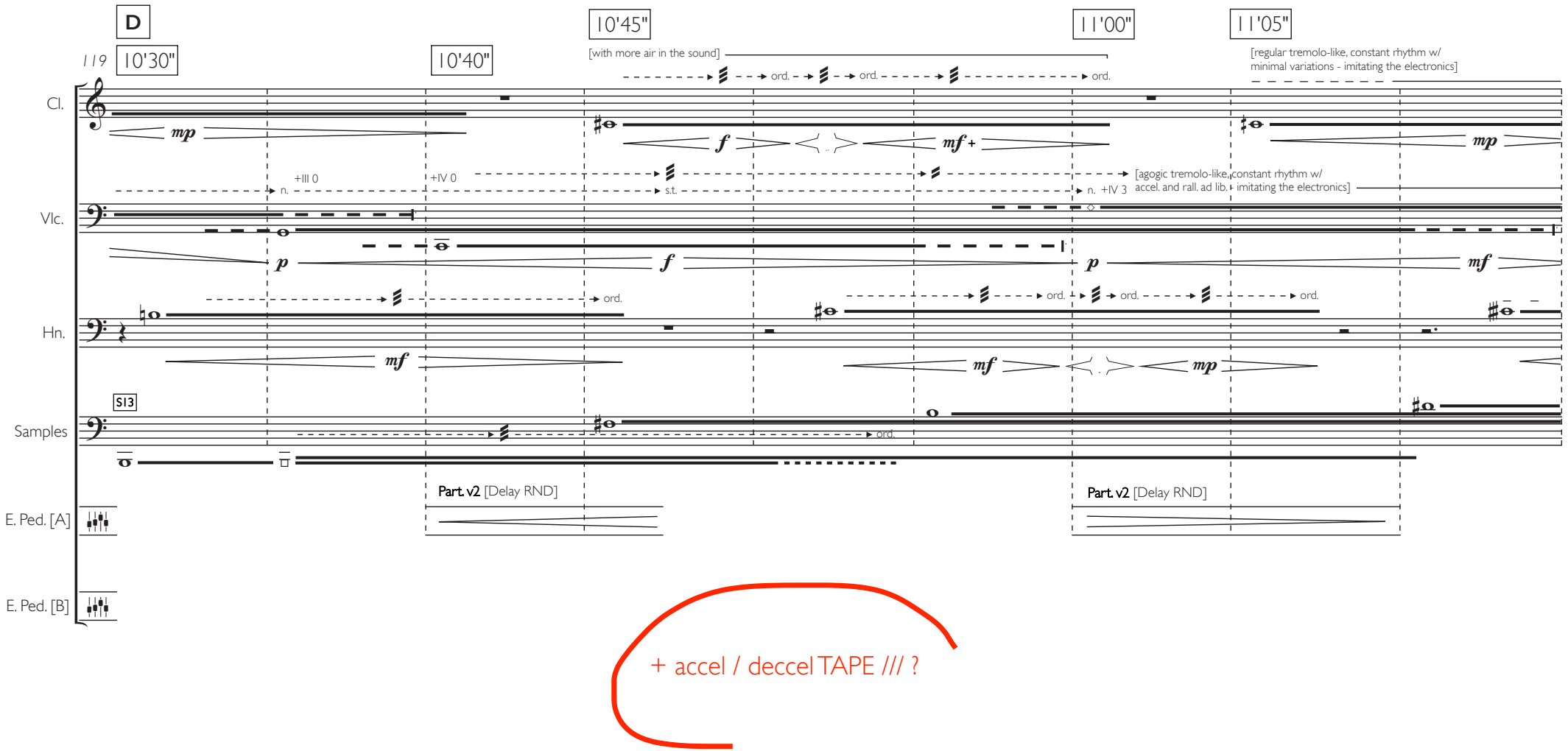

74
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
06'45"
06'50"
07'00"
07'05"
C
07'15"
4 – Orbit (γ)
07'25"
[imperceptible glissando - 1/4 tone up
each measure and stay always legatissimo]
n.
ord.
[bow vibrato]
p
mf
f
mp
f
f
S09
RV-6 [Mod]
Time

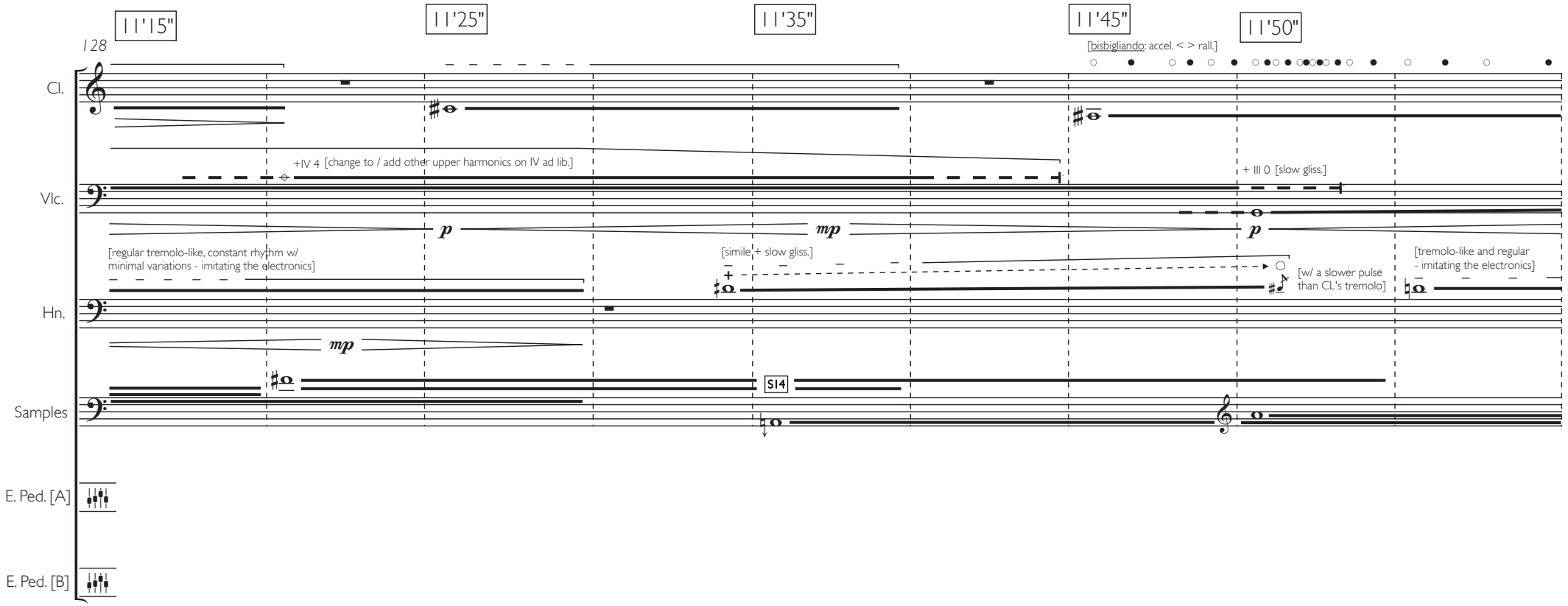

07'30"
07'45"
08'00"
08'05"
83
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
ord.
+ voice unisono [+/- = beatings]
m.s.p. - [w/ some granulation in the sound]
slow bow [granulated sound - melt w/ electronics]
[split tone - B♭ Horn 4.+3.]
[high burst noise]
mf
mp
f
p
Ventris [E-Dome]
Time
Part. v2 [Delay RND]

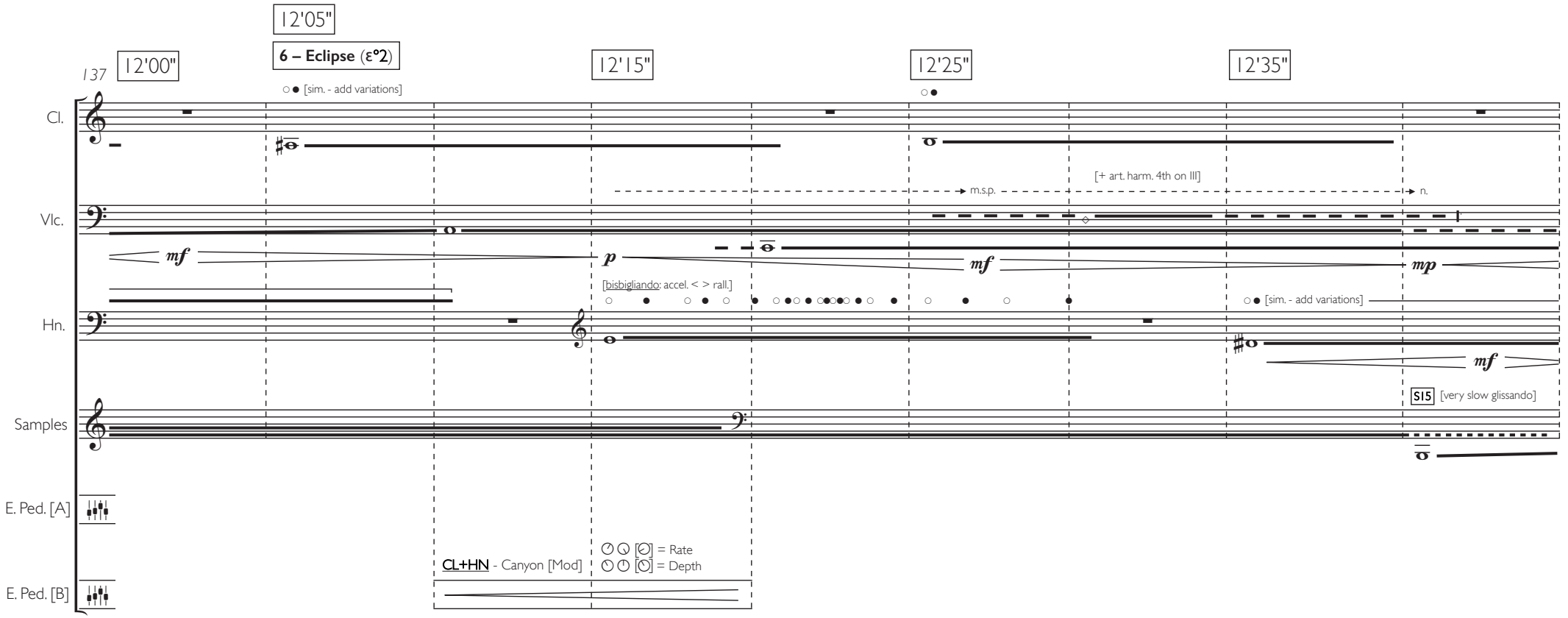

08'15"
Stellar Winds (a)
92
[modulated air sound - IMPRO: long low to medium air sound - add ≋, < > and short breaks ad lib., reacting to the electronics]
08'25"
08'30"
08'45"
Cl.
< mf ↔ f
p ↔ mf
n. ↔ m.s.t. - □ - normal bow
[granulated sound]
[modulated air sound - IMPRO: on II -IV ad lib. (also possible to play on the body of the cello - long low to medium air sound - add ≋ and < > ad lib.]
ord.
+III 0
Vlc.
< f
p ↔ mf
f
f
[mouthpiece in reversed position]
[low air sound w/ some bursts < f > - IMPRO: reverse the mouthpiece to produce stronger (f) dynamic peaks - add < > and short breaks ad lib., reacting to the electronics]
Hn.
p ↔ mf / < f >
SII
Samples
E. Ped. [A]
CL - Part. v2 [Delay RND]
CL+HN - Canyon [Tape]
= Distortion
= Flutter mod
E. Ped. [B]

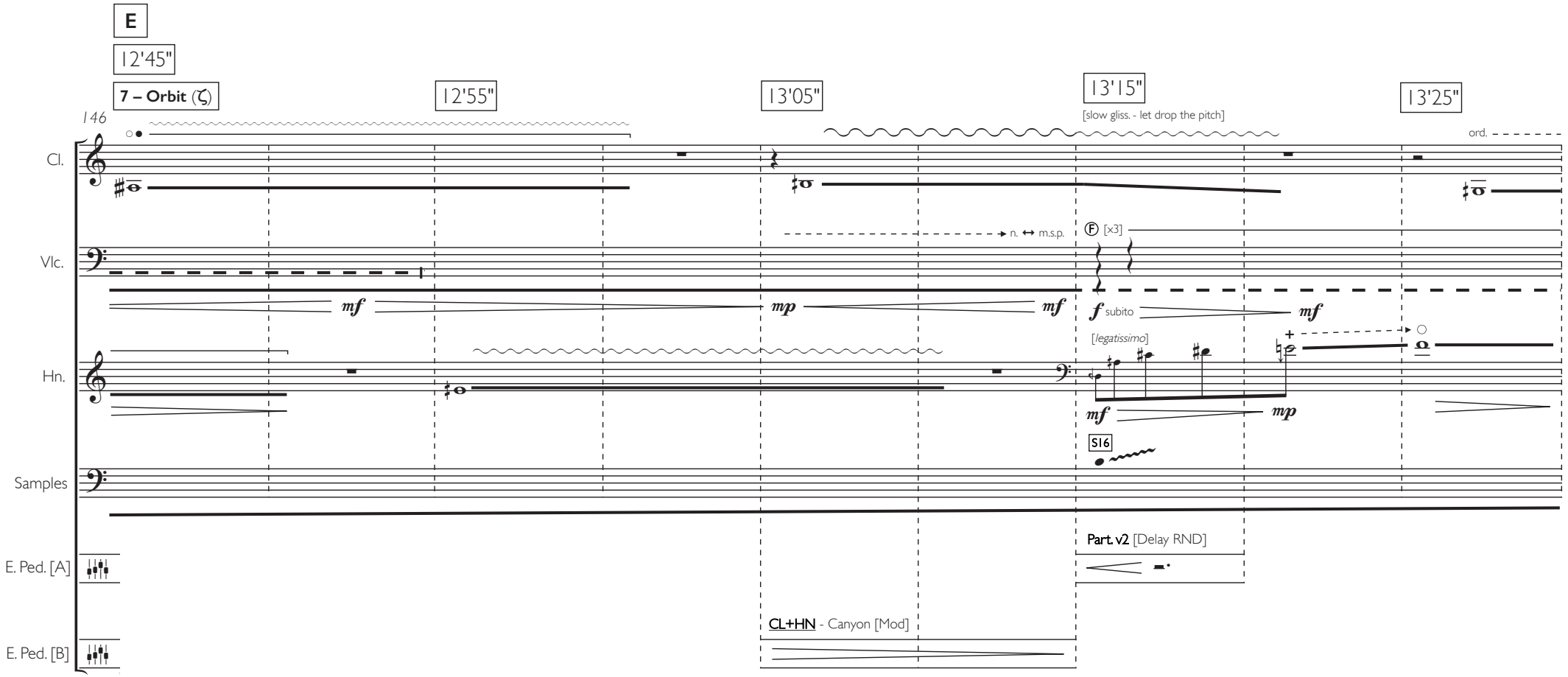

101
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
09'00"
09'05"
09'15"
09'25"
09'35"
ord.
+II 4
+II 2
[underblown multiphonic - RH #13]
[with lots of air sound - emerging progressively from the soundscape]
pp
p
mp
p
mp
[mouthpiece
in ordinary position]
[flatterzunge - very granular]
ord.
f
mp ↔ mf
S12
VLC - Part. v2
CL - Part. v2 [Delay RND]
CL+HN - Canyon [Tape]

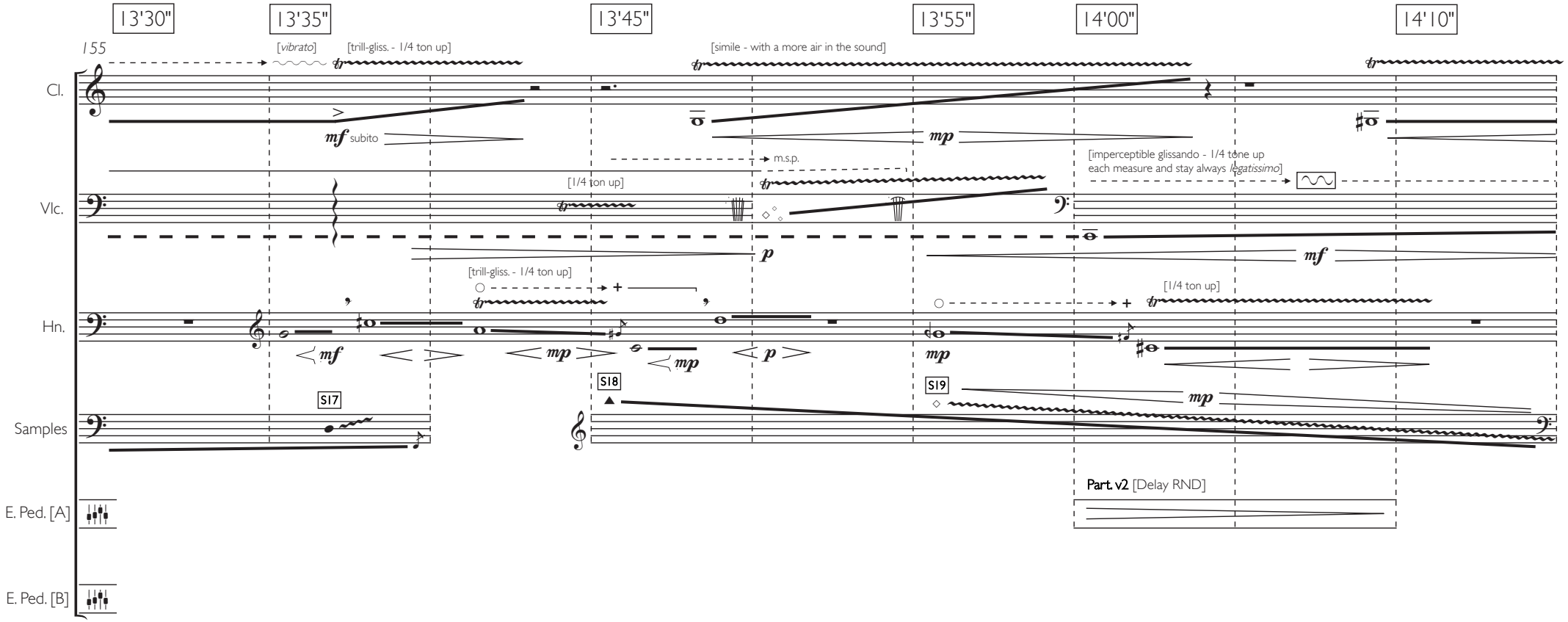

09'45"
09'50"
10'00"
10'05"
5 – Orbit (δ)
10'10"
10'25"
110
[underblown multiphonic - RH #11]
[underblown multiphonic - RH #9]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
+II 0
s.t.
[imperceptible glissando - 1/4 tone up each measure and stay always *legatissimo*]
n.
m.s.t.
pp
mp
p
mp
[more noise content than pitch]
[ord. sound]
p
mp
Ventris [E-Dome]
Time
RV-6 [Mod]
Time

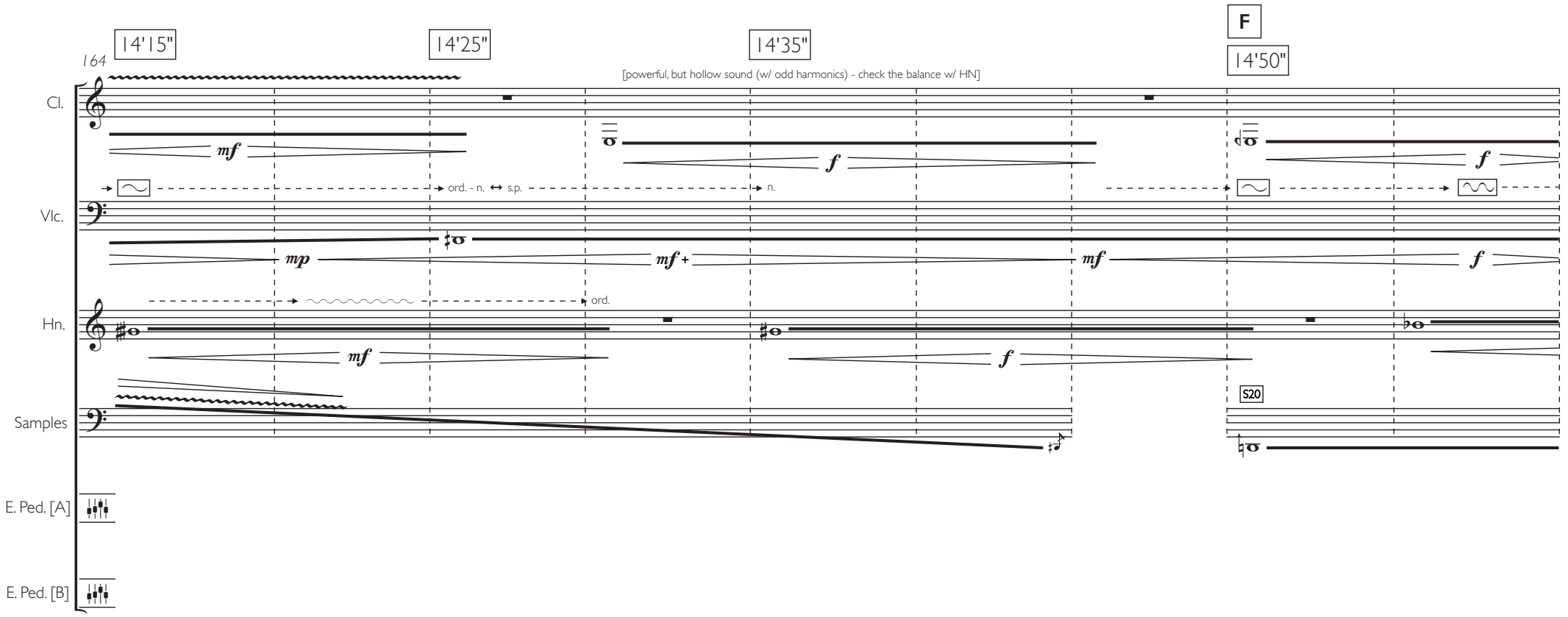

D
119
10'30"
10'40"
10'45"
11'00"
11'05"
[with more air in the sound]
[regular tremolo-like, constant rhythm w/ minimal variations - imitating the electronics]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
S13
+III 0
+IV 0
+IV 3
n.
s.t.
ord.
[agogic tremolo-like, constant rhythm w/ accel. and rall. ad lib. imitating the electronics]
Part. v2 [Delay RND]
Part. v2 [Delay RND]
+ accel / deccel TAPE /// ?

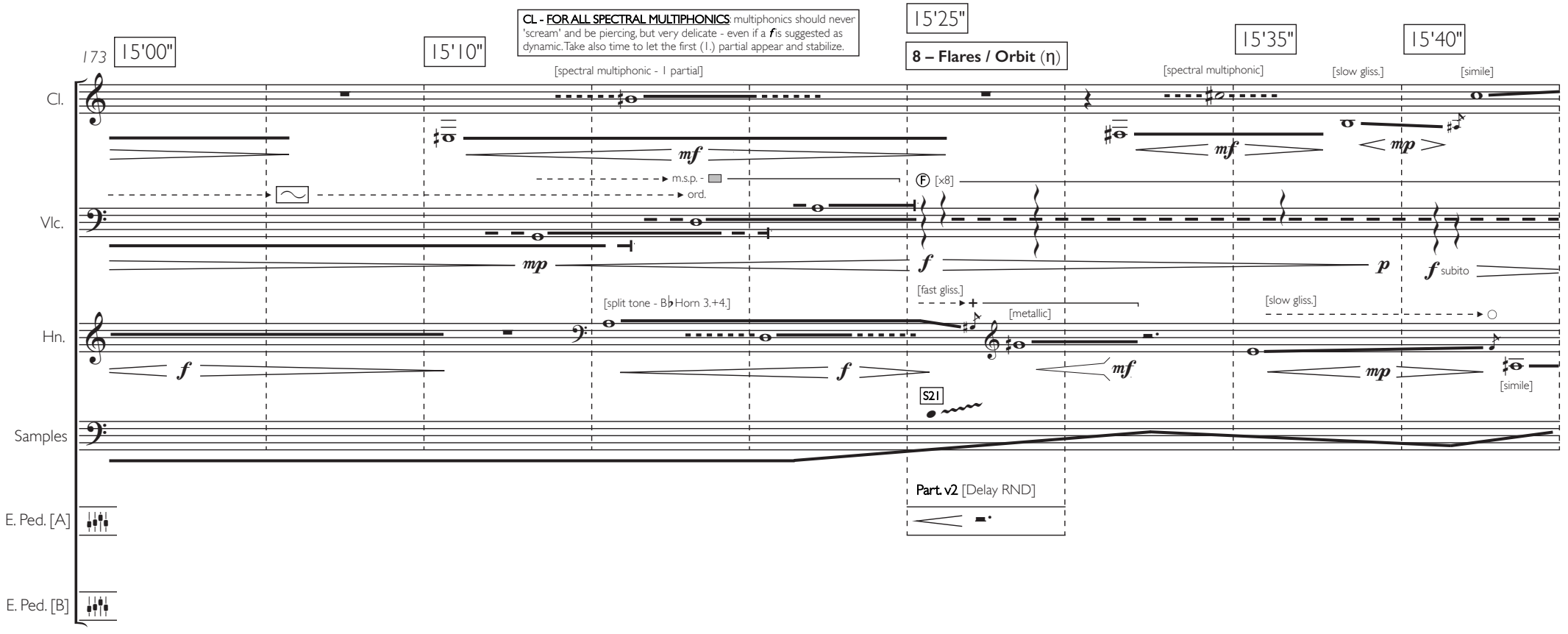

11'15"
11'25"
11'35"
11'45"
11'50"
128
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
[bisbigliando: accel. < > rall.]
+IV 4 [change to / add other upper harmonics on IV ad lib.]
+ III 0 [slow gliss.]
p
mp
p
[regular tremolo-like, constant rhythm w/ minimal variations - imitating the electronics]
[simile, + slow gliss.]
[w/ a slower pulse than CL's tremolo]
[tremolo-like and regular - imitating the electronics]
mp
S14

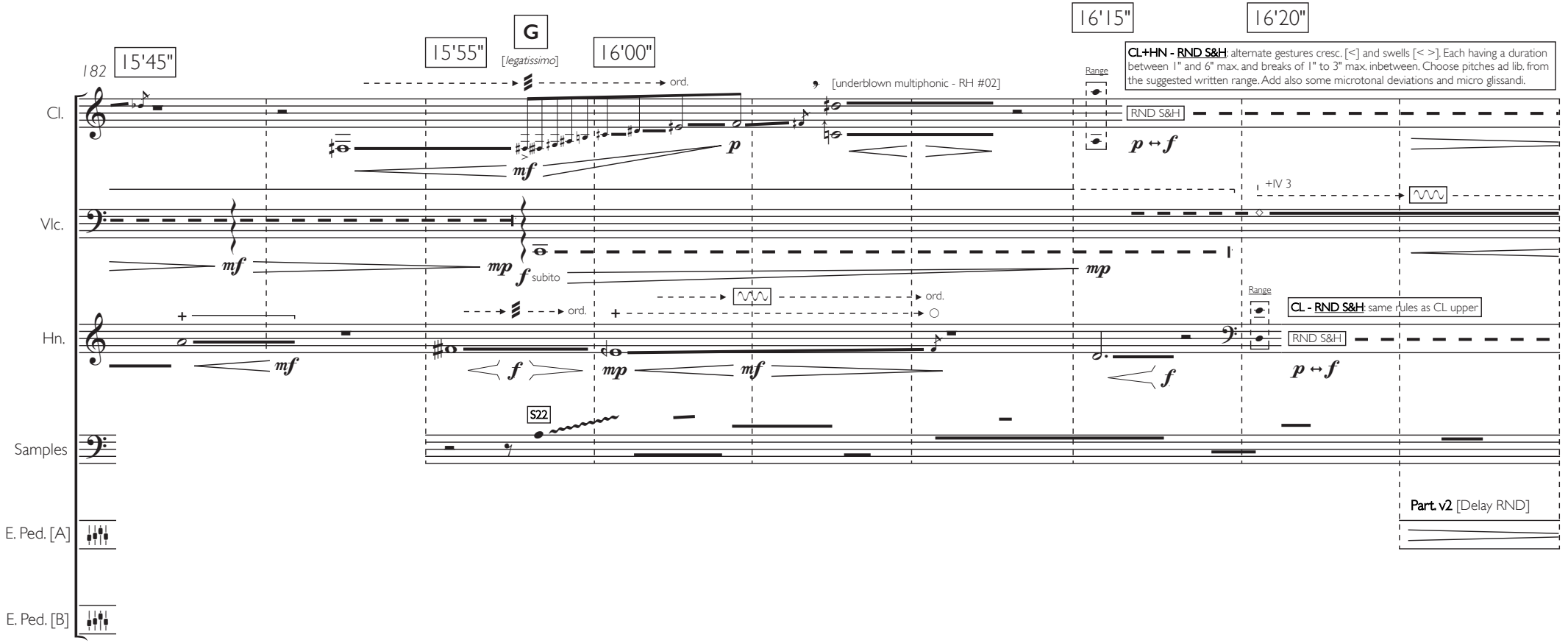

137
12'00"
12'05"
6 – Eclipse (ε°2)
12'15"
12'25"
12'35"
○ ● [sim. - add variations]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
[+ art. harm. 4th on III]
m.s.p.
n.
mf
p
mf
mp
[bisbigliando: accel. < > rall.]
○ ● [sim. - add variations]
mf
S15 [very slow glissando]
CL+HN - Canyon [Mod]
= Rate
= Depth

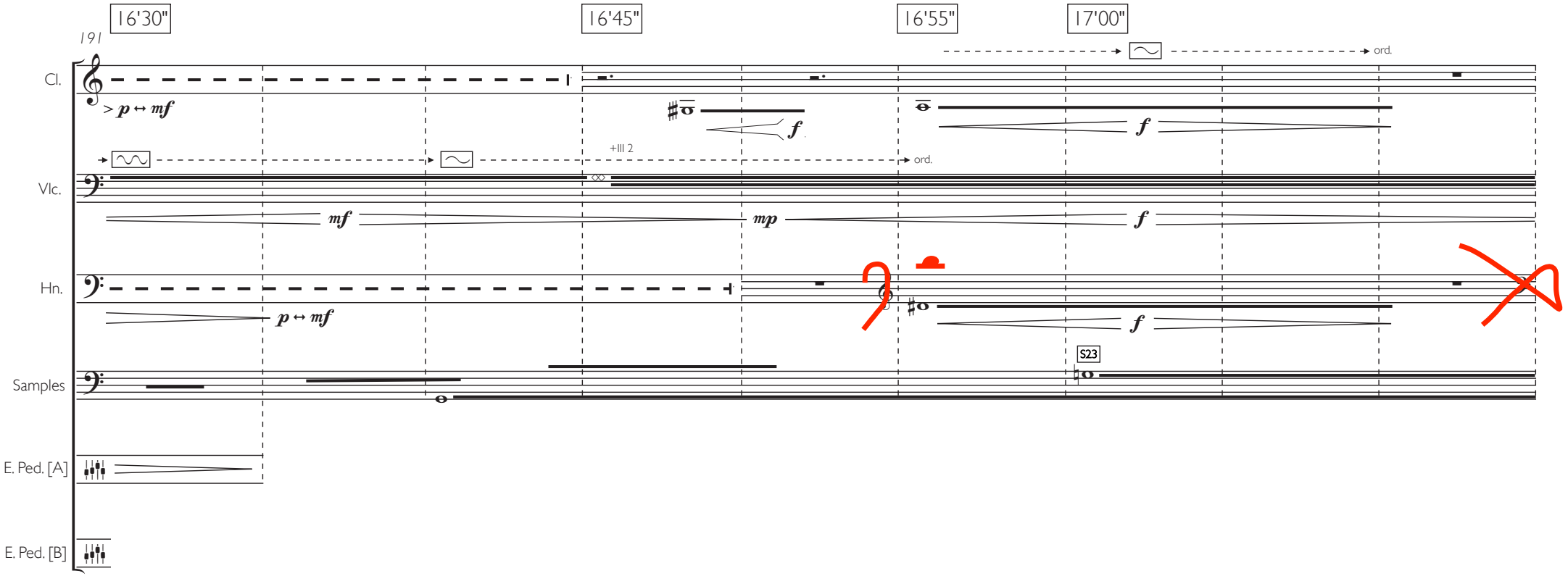

E
12'45"
7 – Orbit (ζ)
12'55"
13'05"
13'15"
[slow gliss. - let drop the pitch]
13'25"
146
ord.
Cl.
Vlc.
n. ↔ m.s.p.
Ⓕ [x3]
mf
mp
mf
f subito
mf
[legatissimo]
Hn.
mf
mp
S16
Samples
Part. v2 [Delay RND]
E. Ped. [A]
CL+HN - Canyon [Mod]
E. Ped. [B]

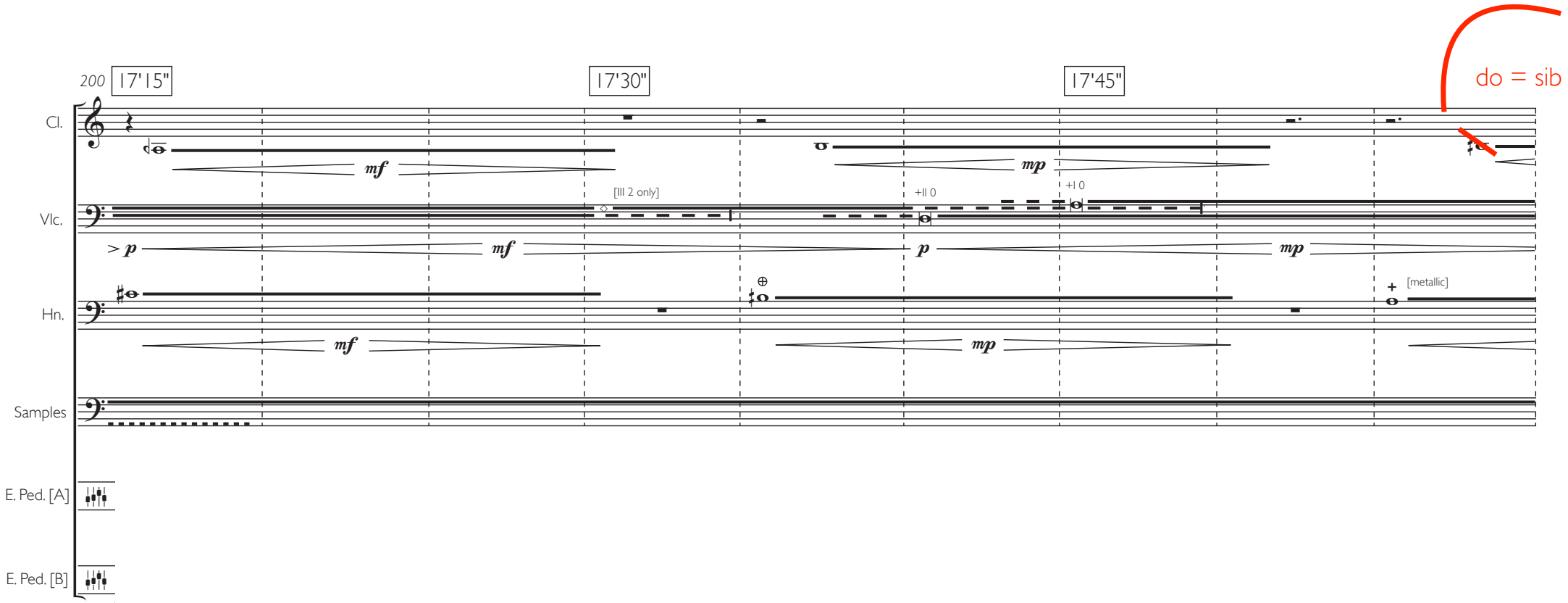

13'30"
13'35"
13'45"
13'55"
14'00"
14'10"
155
[vibrato]
[trill-gliss. - 1/4 ton up]
[simile - with a more air in the sound]
Cl.
mf subito
mp
m.s.p.
[imperceptible glissando - 1/4 tone up
each measure and stay always legatissimo]
Vlc.
[1/4 ton up]
p
mf
[trill-gliss. - 1/4 ton up]
Hn.
[1/4 ton up]
mf
mp
mp
p
mp
S17
S18
S19
mp
Samples
Part. v2 [Delay RND]
E. Ped. [A]
E. Ped. [B]

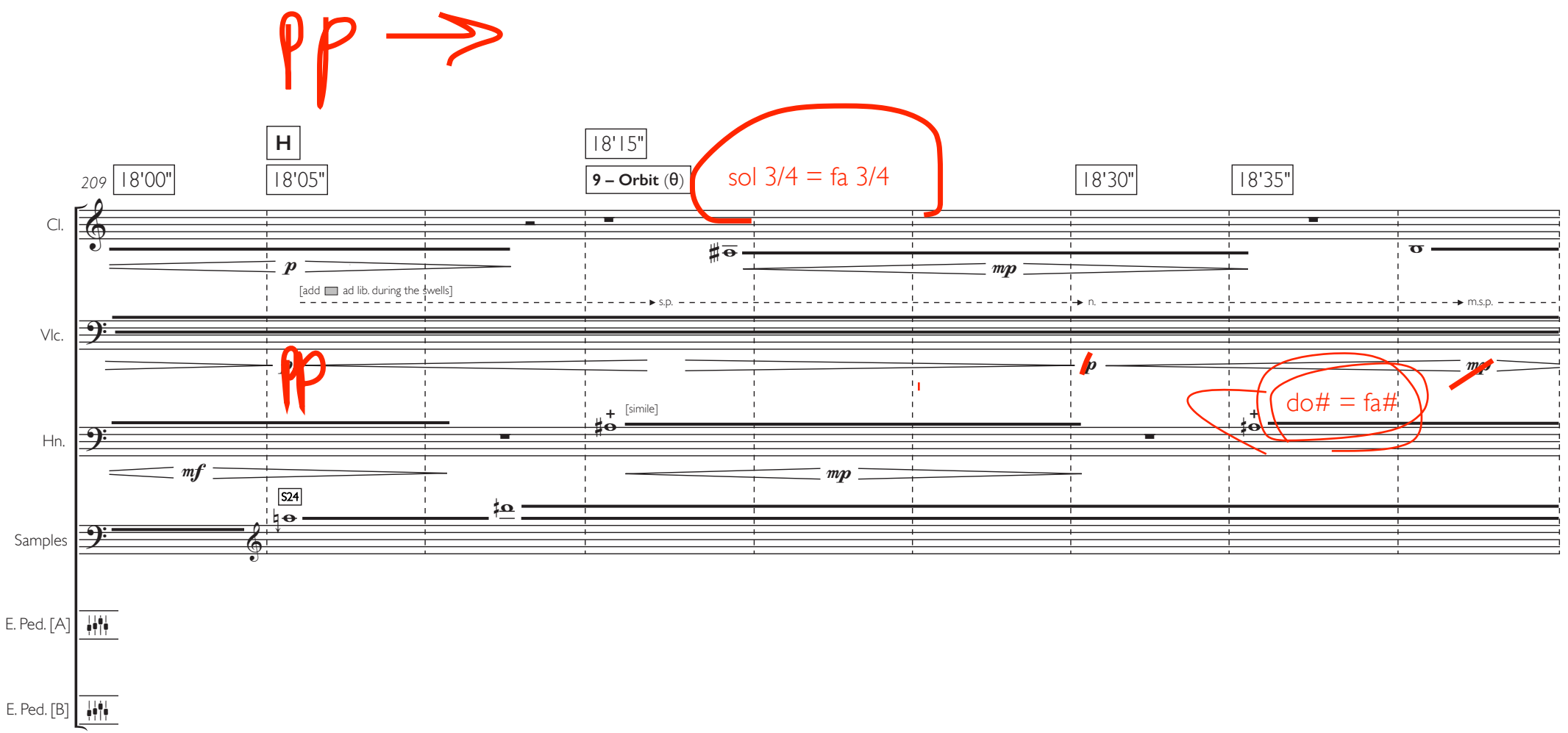

164
14'15"
14'25"
14'35"
F
14'50"
[powerful, but hollow sound (w/ odd harmonics) - check the balance w/ HN]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mf
f
mp
mf +
ord. - n. ↔ s.p.
n.
ord.
S20

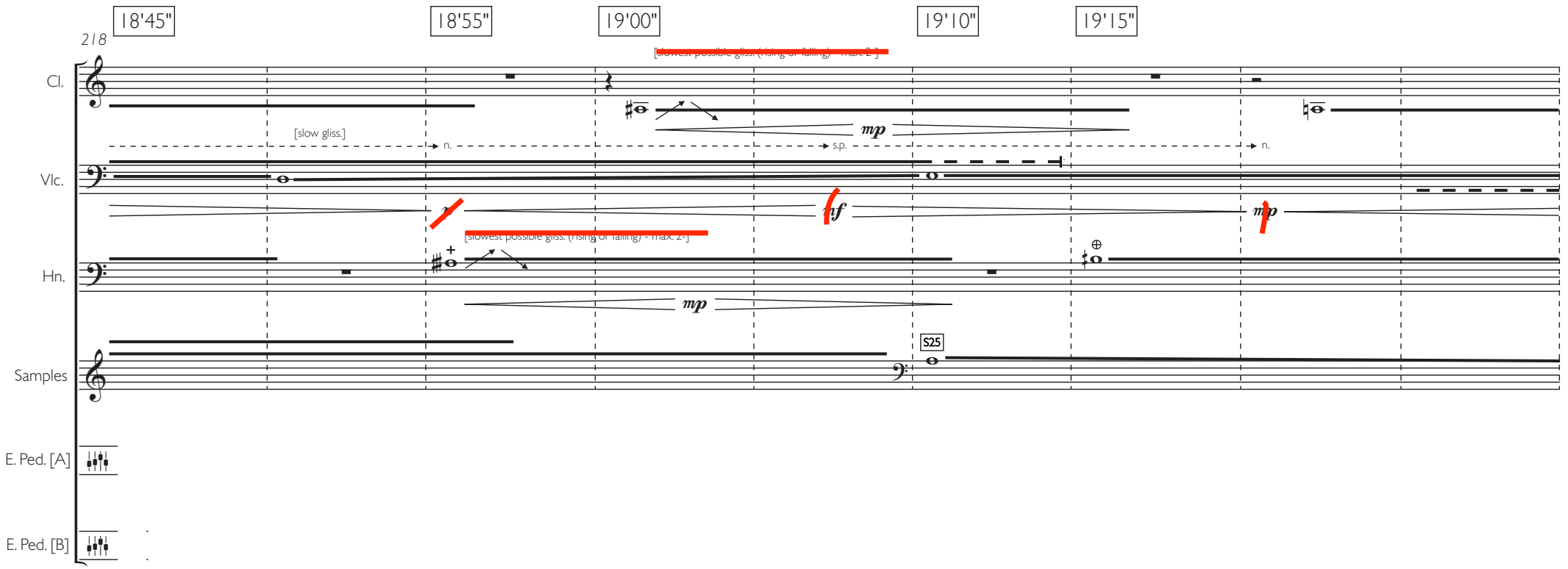

173
15'00"
15'10"
15'25"
15'35"
15'40"
CL - FOR ALL SPECTRAL MULTIPHONICS: multiphonics should never 'scream' and be piercing, but very delicate - even if a f is suggested as dynamic. Take also time to let the first (1.) partial appear and stabilize.
8 – Flares / Orbit (η)
[spectral multiphonic - 1 partial]
[spectral multiphonic]
[slow gliss.]
[simile]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
m.s.p. -
ord.
[x8]
[split tone - B♭ Horn 3.+4.]
[fast gliss.]
[metallic]
[slow gliss.]
[simile]
S21
Part. v2 [Delay RND]

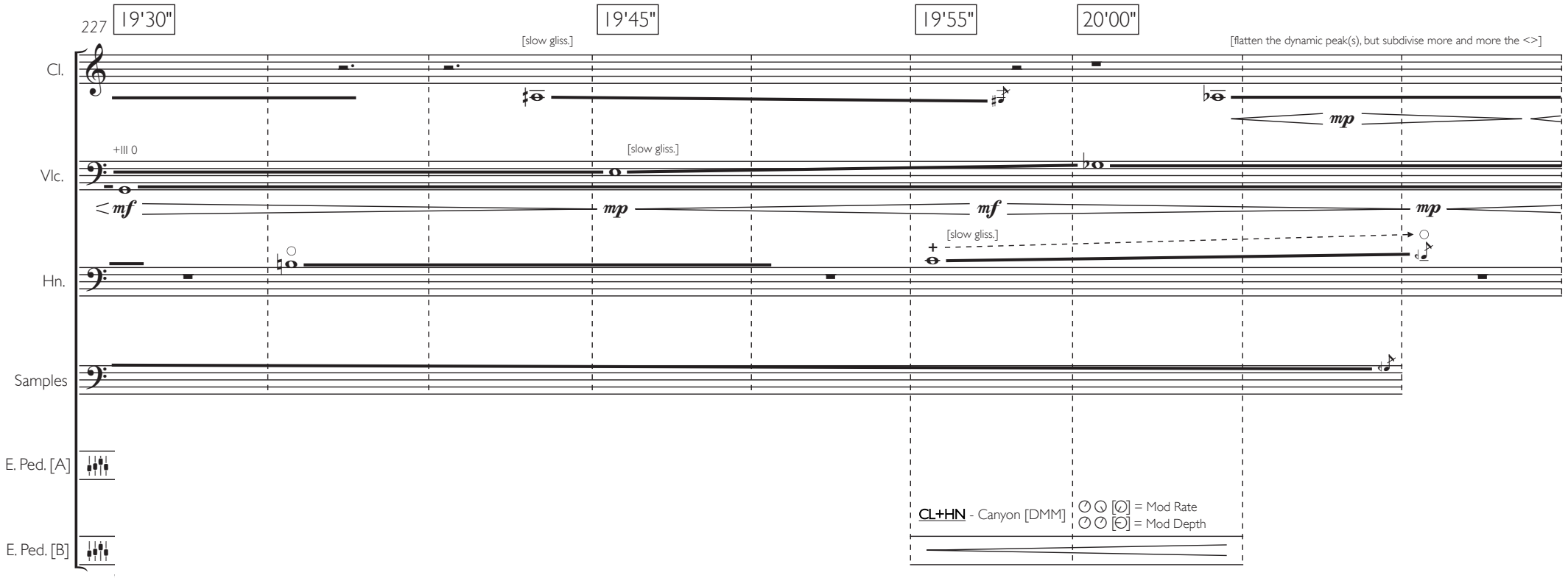

182
15'45"
15'55"
G
[legatissimo]
16'00"
16'15"
16'20"
CL+HN - RND S&H: alternate gestures cresc. [<] and swells [< >]. Each having a duration between 1" and 6" max. and breaks of 1" to 3" max. inbetween. Choose pitches ad lib. from the suggested written range. Add also some microtonal deviations and micro glissandi.
Range
RND S&H
[underblown multiphonic - RH #02]
ord.
+IV 3
subito
CL - RND S&H: same rules as CL upper
S22
Part. v2 [Delay RND]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]


16'30"
16'45"
16'55"
17'00"
191
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
> p ↔ mf
f
+III 2
ord.
mf
mp
p ↔ mf
S23

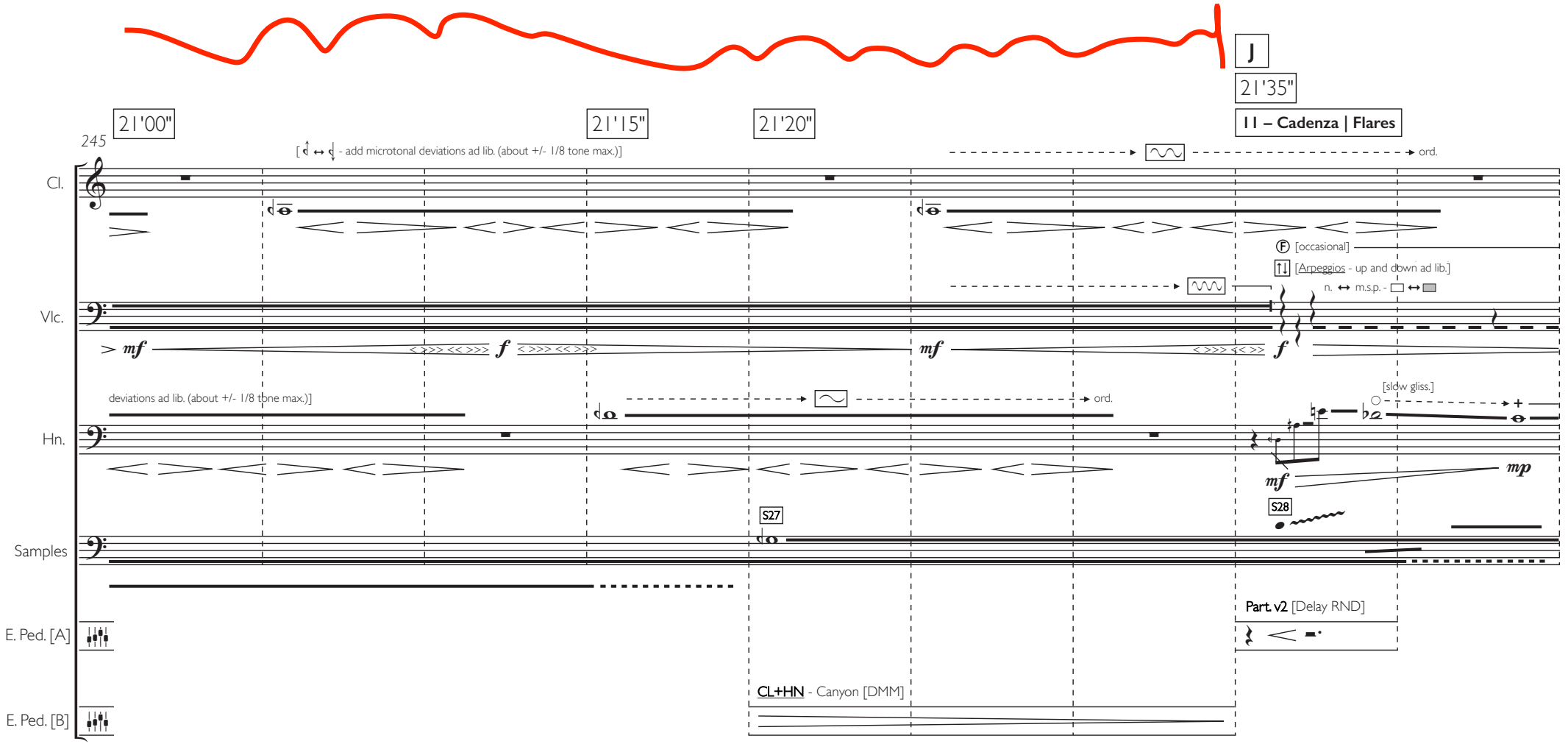

200
17'15"
17'30"
17'45"
do = sib
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mf
mp
[III 2 only]
+II 0
+I 0
[metallic]

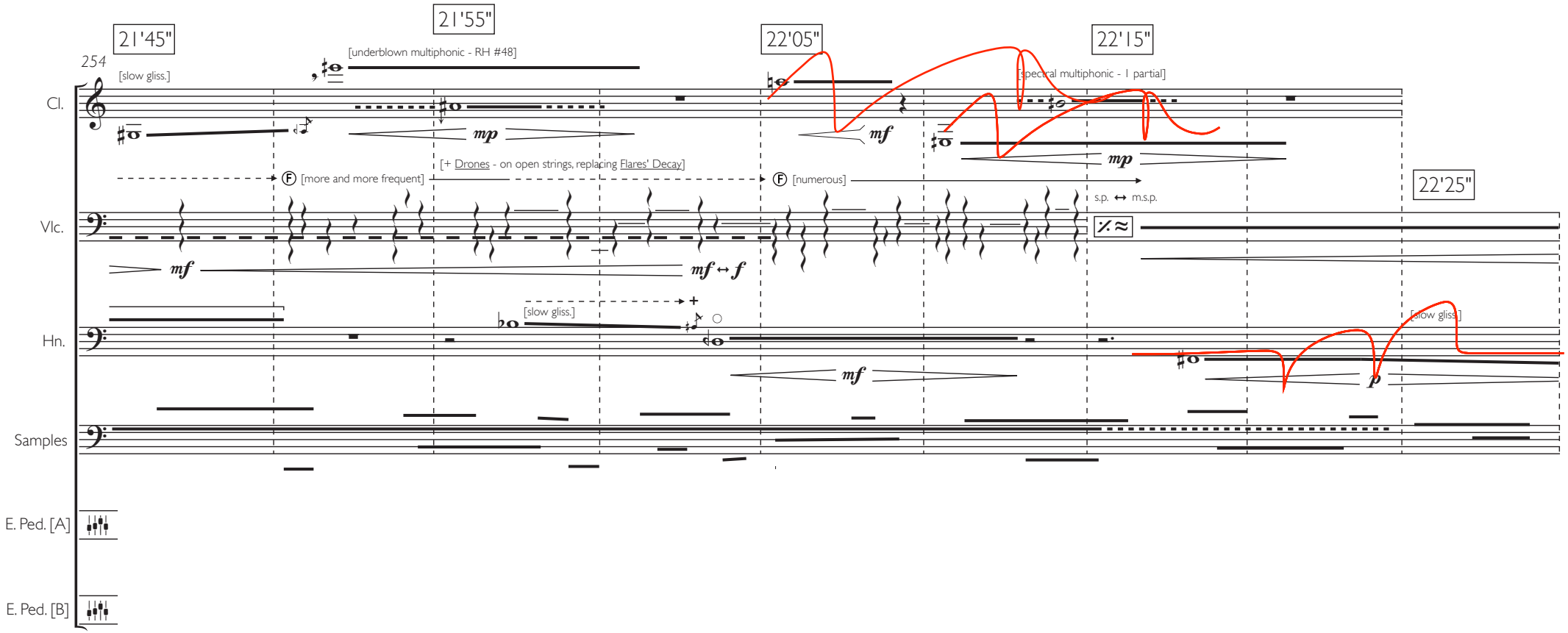

pp →
H
18'15"
209
18'00"
18'05"
9 – Orbit (θ)
sol 3/4 = fa 3/4
18'30"
18'35"
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
p
[add ad lib. during the swells]
s.p.
n.
m.s.p.
mp
pp
[simile]
do# = fa#
mf
S24

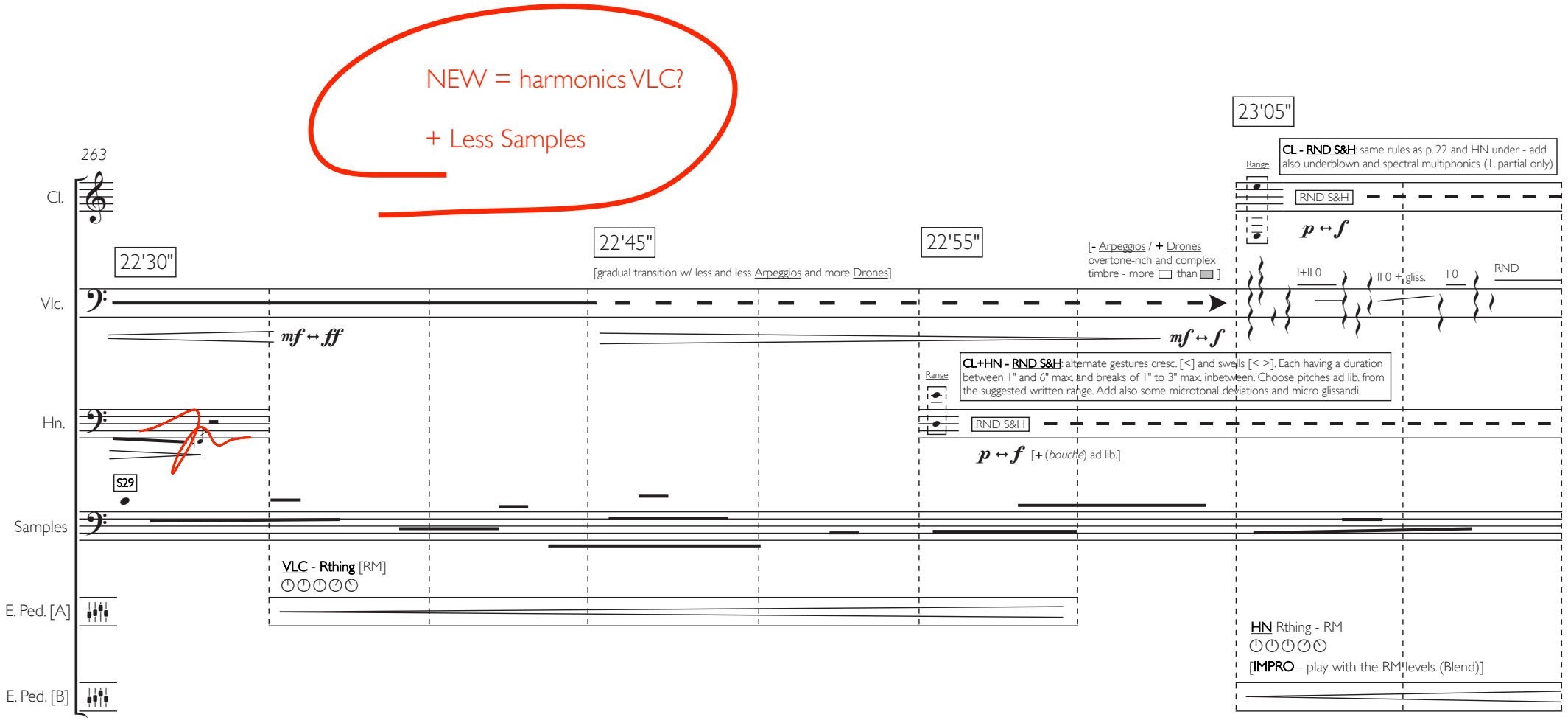

18'45"
18'55"
19'00"
19'10"
19'15"
218
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
[slow gliss.]
n.
s.p.
n.
mp
[slowest possible gliss. (rising or falling) - max. 2-]
mf
mp
mp
S25

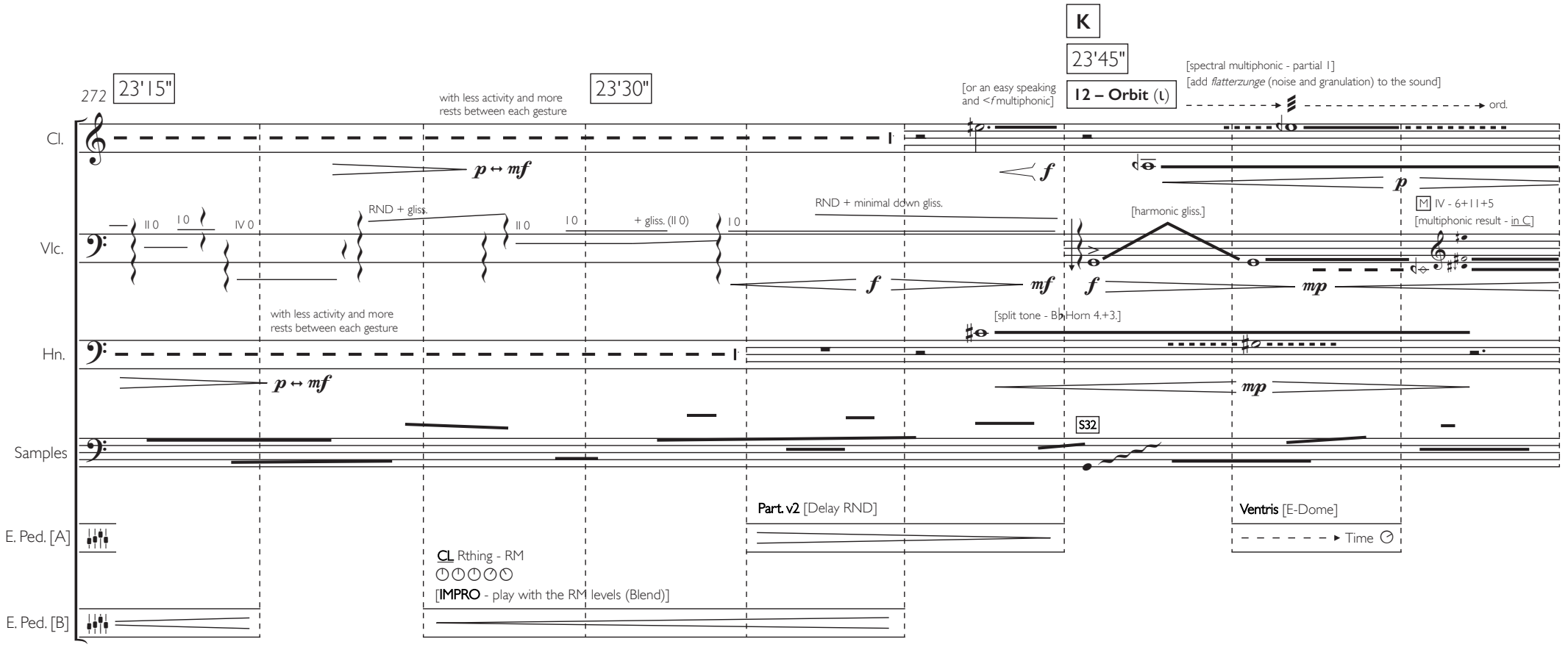

227
19'30"
19'45"
19'55"
20'00"
[slow gliss.]
[flatten the dynamic peak(s), but subdivise more and more the <>]
Cl.
mp
+III 0
[slow gliss.]
Vlc.
mf
mp
mf
mp
[slow gliss.]
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
CL+HN - Canyon [DMM]
[∅] = Mod Rate
[∅] = Mod Depth

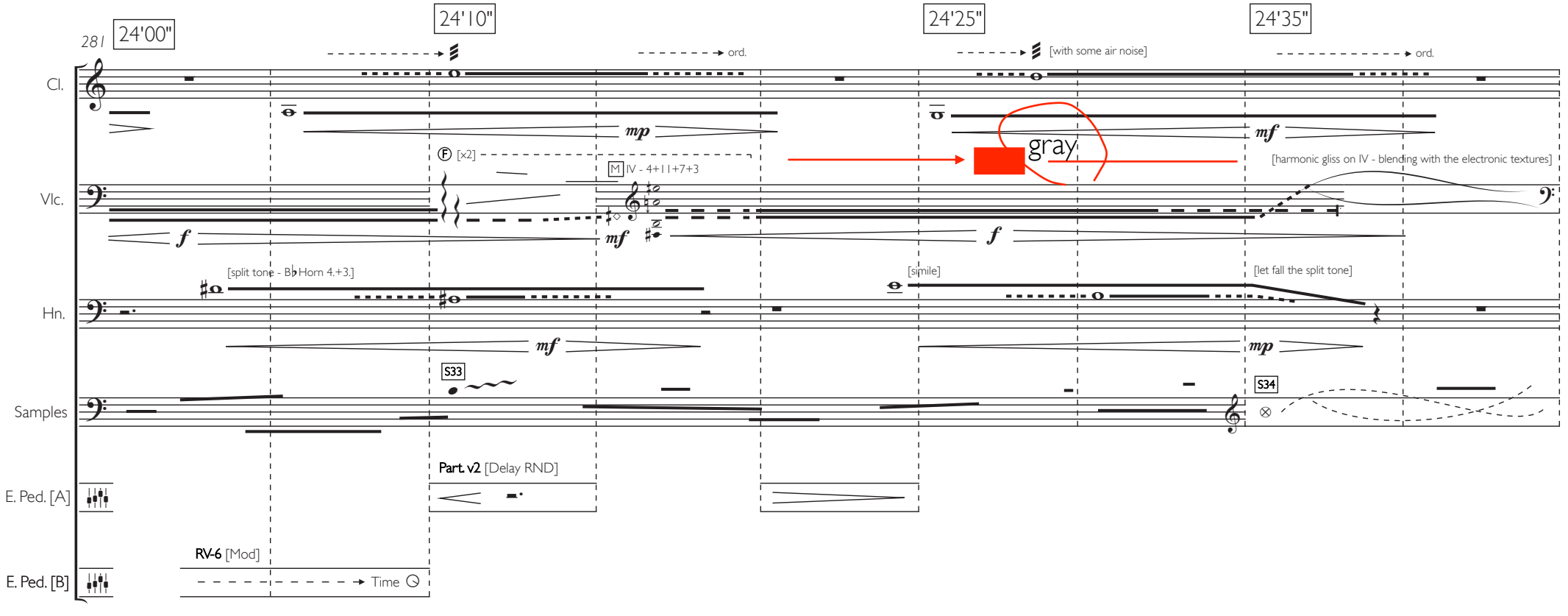
NEW MOTIV ?
NEW
I
20'15"
236
20'25"
10 – Occultation
[despite the swells, make one with the VLC]
20'45"
[simile - add more movement in the swells <> and play with the long 8" delay]
Cl.
mp
mp
[add micro-swells ad lib. to animate the dynamic and global texture]
[simile]
Vlc.
f
mf
ff
[despite the swells, make one with the VLC]
[simile - add more movement in the swells <> and play with the long 8" delay]
[flatten the dynamic peak(s), but subdivise more and more the <>]
[- add microtonal
Hn.
mp
mp
S26
Samples
E. Ped. [A]
E. Ped. [B]

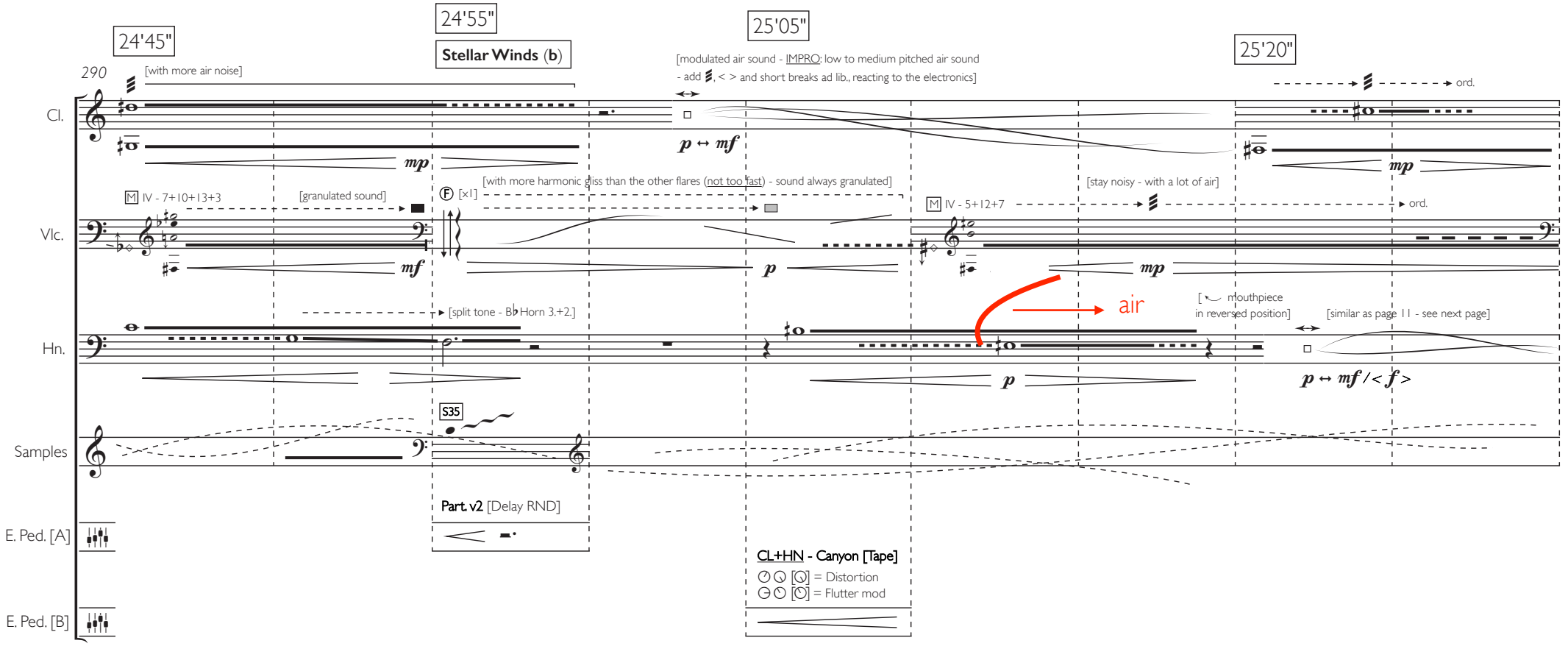

J
21'35"
21'00"
21'15"
21'20"
II – Cadenza | Flares
245
[- add microtonal deviations ad lib. (about +/- 1/8 tone max.)]
ord.
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mf
f
mf
f
Ⓕ [occasional]
[Arpeggios - up and down ad lib.]
n. ↔ m.s.p. -
deviations ad lib. (about +/- 1/8 tone max.)]
ord.
[slow gliss.]
mf
mp
S27
S28
Part. v2 [Delay RND]
CL+HN - Canyon [DMM]

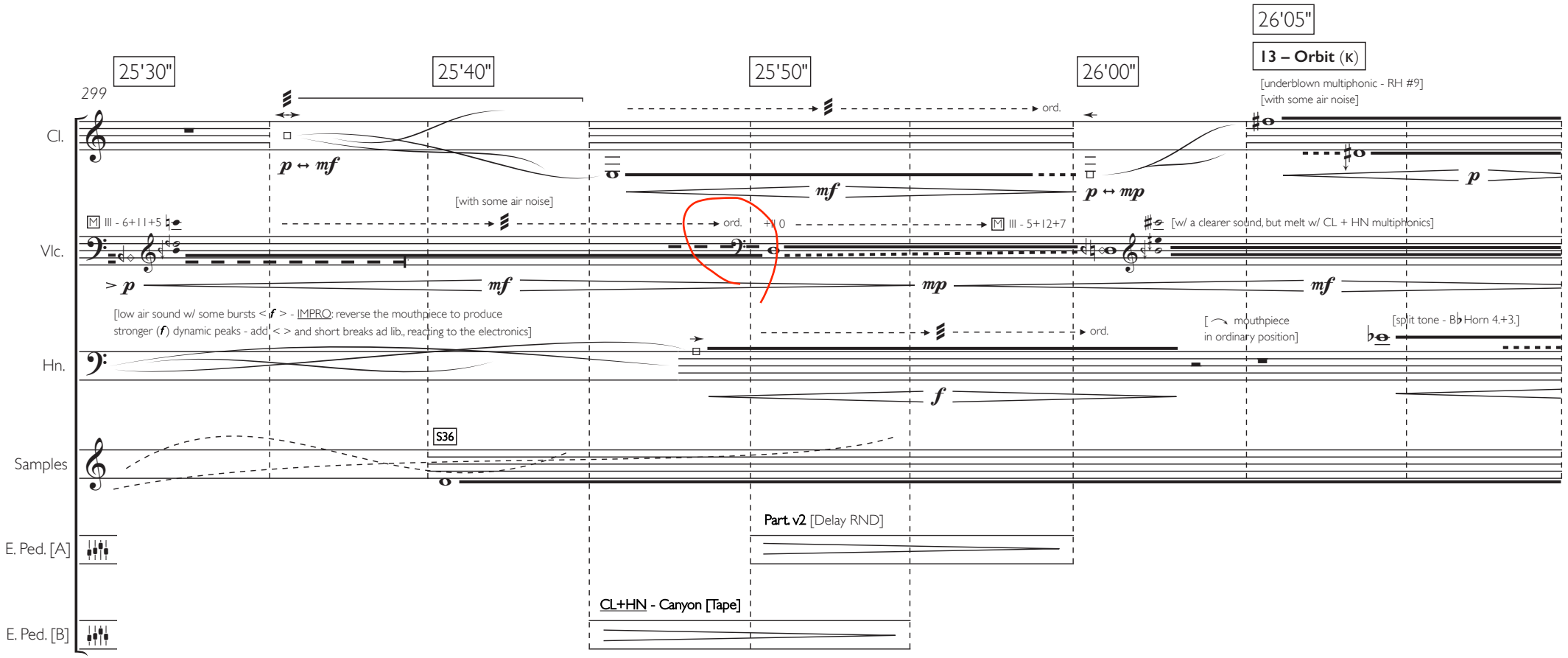

21'45"
21'55"
22'05"
22'15"
22'25"
254
[slow gliss.]
[underblown multiphonic - RH #48]
[spectral multiphonic - 1 partial]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mp
mf
mf ↔ f
[+ Drones - on open strings, replacing Flares' Decay]
Ⓕ [more and more frequent]
Ⓕ [numerous]
s.p. ↔ m.s.p.
[slow gliss.]
[slow gliss.]
p

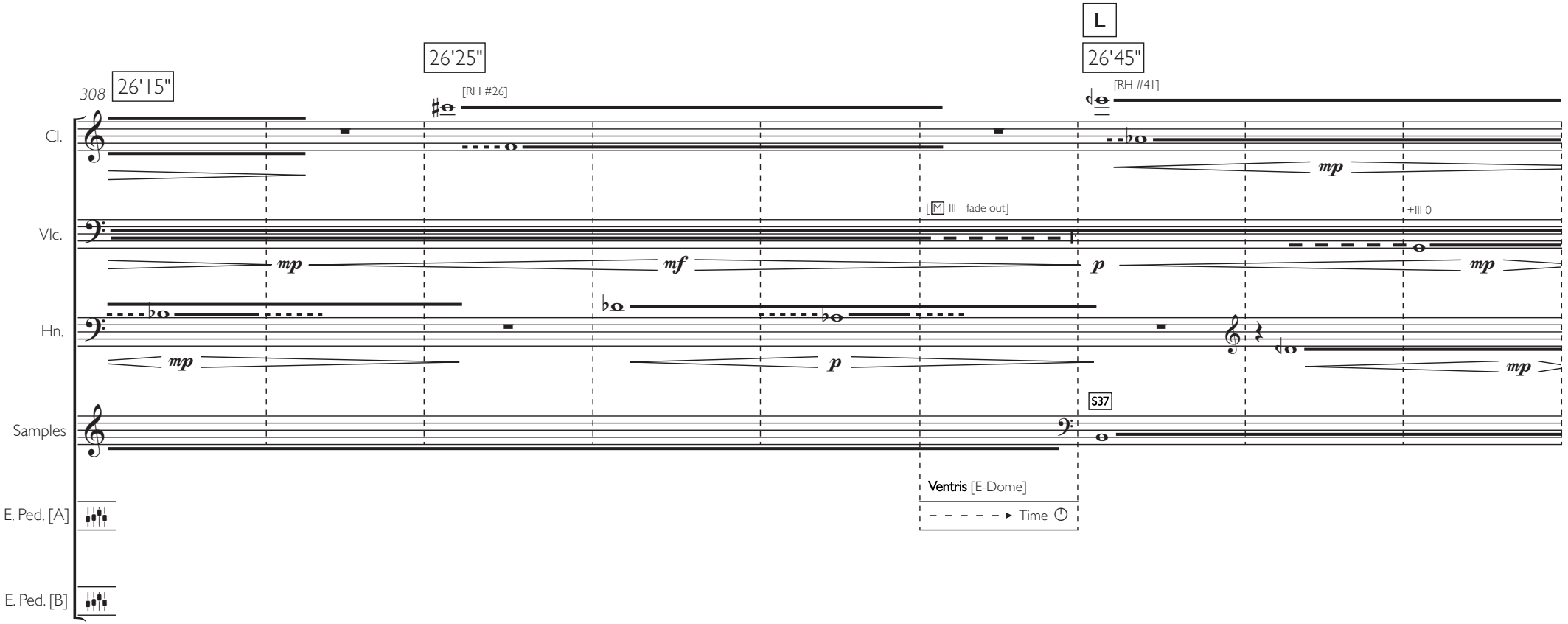

NEW = harmonics VLC?
+ Less Samples
263
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
22'30"
22'45"
22'55"
23'05"
[gradual transition w/ less and less Arpeggios and more Drones]
[- Arpeggios / + Drones
overtone-rich and complex
timbre - more than]
CL - RND S&H: same rules as p. 22 and HN under - add also underblown and spectral multiphonics (1. partial only)
Range
RND S&H
p ↔ f
I+II 0
II 0 + gliss.
I 0
RND
mf ↔ ff
mf ↔ f
CL+HN - RND S&H: alternate gestures cresc. [<] and swells [< >]. Each having a duration between 1" and 6" max. and breaks of 1" to 3" max. inbetween. Choose pitches ad lib. from the suggested written range. Add also some microtonal deviations and micro glissandi.
p ↔ f [+ (bouché) ad lib.]
S29
VLC - Rthing [RM]
HN Rthing - RM
[IMPRO - play with the RM levels (Blend)]

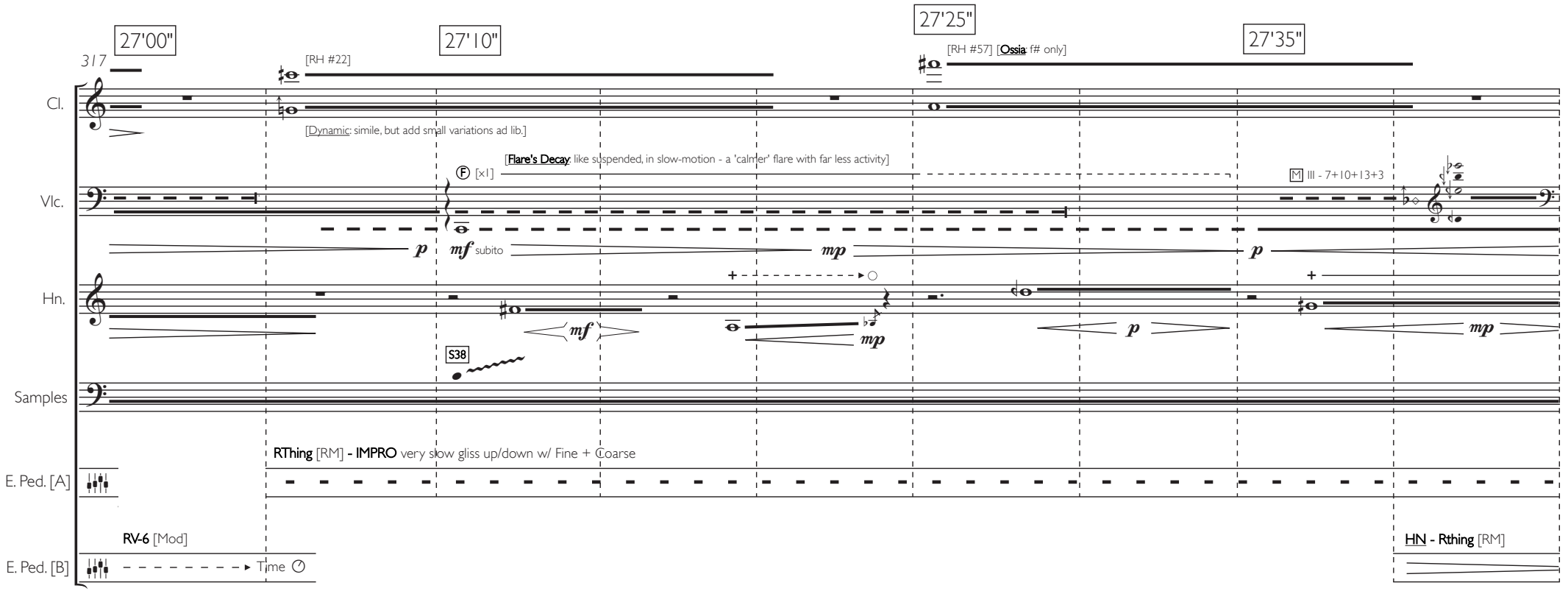

272
23'15"
23'30"
K
23'45"
12 – Orbit (t)
with less activity and more rests between each gesture
[or an easy speaking and <f multiphonic]
[spectral multiphonic - partial 1]
[add flatterzunge (noise and granulation) to the sound]
ord.
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
p ↔ mf
f
p
II 0
I 0
IV 0
RND + gliss.
+ gliss. (II 0)
RND + minimal down gliss.
[harmonic gliss.]
M IV - 6+11+5
[multiphonic result - in C]
mf
mp
[split tone - B♭ Horn 4.+3.]
S32
with less activity and more rests between each gesture
Part. v2 [Delay RND]
Ventris [E-Dome]
Time
CL Rthing - RM
[IMPRO - play with the RM levels (Blend)]

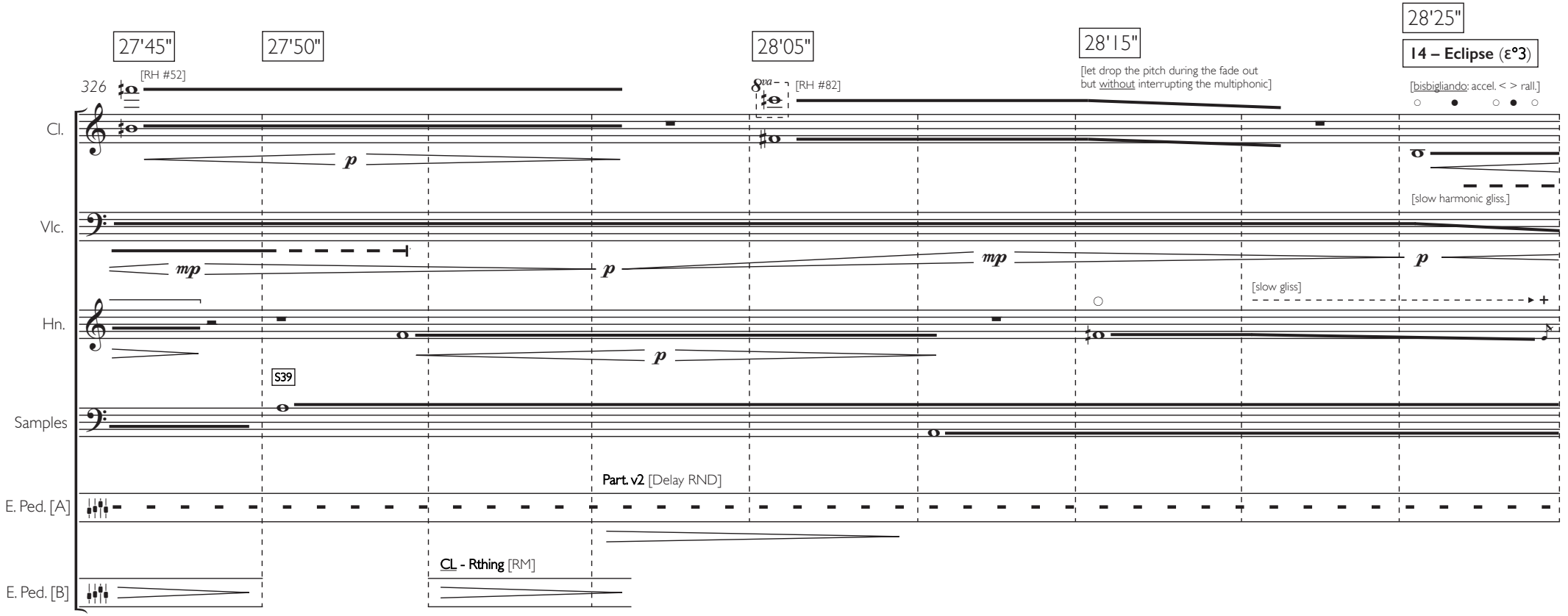

28 I
24'00"
24'10"
24'25"
24'35"
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
ord.
[with some air noise]
ord.
mp
mf
gray
[harmonic gliss on IV - blending with the electronic textures]
Ⓕ [x2]
Ⓜ IV - 4+1 1+7+3
f
mf
f
[split tone - B♭ Horn 4.+3.]
[simile]
[let fall the split tone]
mf
mp
S33
S34
Part. v2 [Delay RND]
RV-6 [Mod]
Time

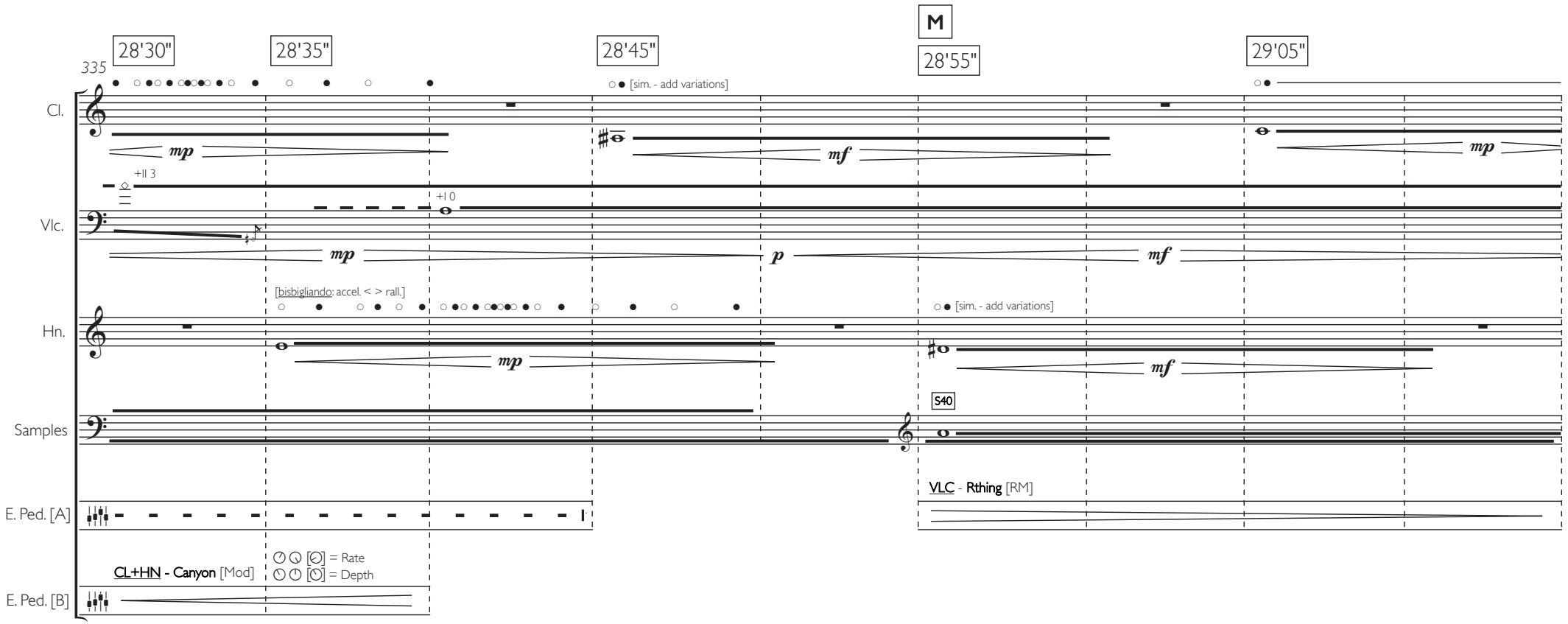

24'45"
24'55"
Stellar Winds (b)
25'05"
25'20"
290
[with more air noise]
[modulated air sound - IMPRO: low to medium pitched air sound
- add ♯, < > and short breaks ad lib., reacting to the electronics]
ord.
Cl.
mp
p ↔ mf
Vlc.
M IV - 7+10+13+3
[granulated sound]
Ⓕ [×1]
[with more harmonic gliss than the other flares (not too fast) - sound always granulated]
M IV - 5+12+7
[stay noisy - with a lot of air]
ord.
mf
p
mp
Hn.
[split tone - B♭ Horn 3.+2.]
air
[mouthpiece
in reversed position]
[similar as page 11 - see next page]
p
p ↔ mf / < f >
Samples
S35
Part. v2 [Delay RND]
E. Ped. [A]
CL+HN - Canyon [Tape]
[Q] = Distortion
[Q] = Flutter mod
E. Ped. [B]

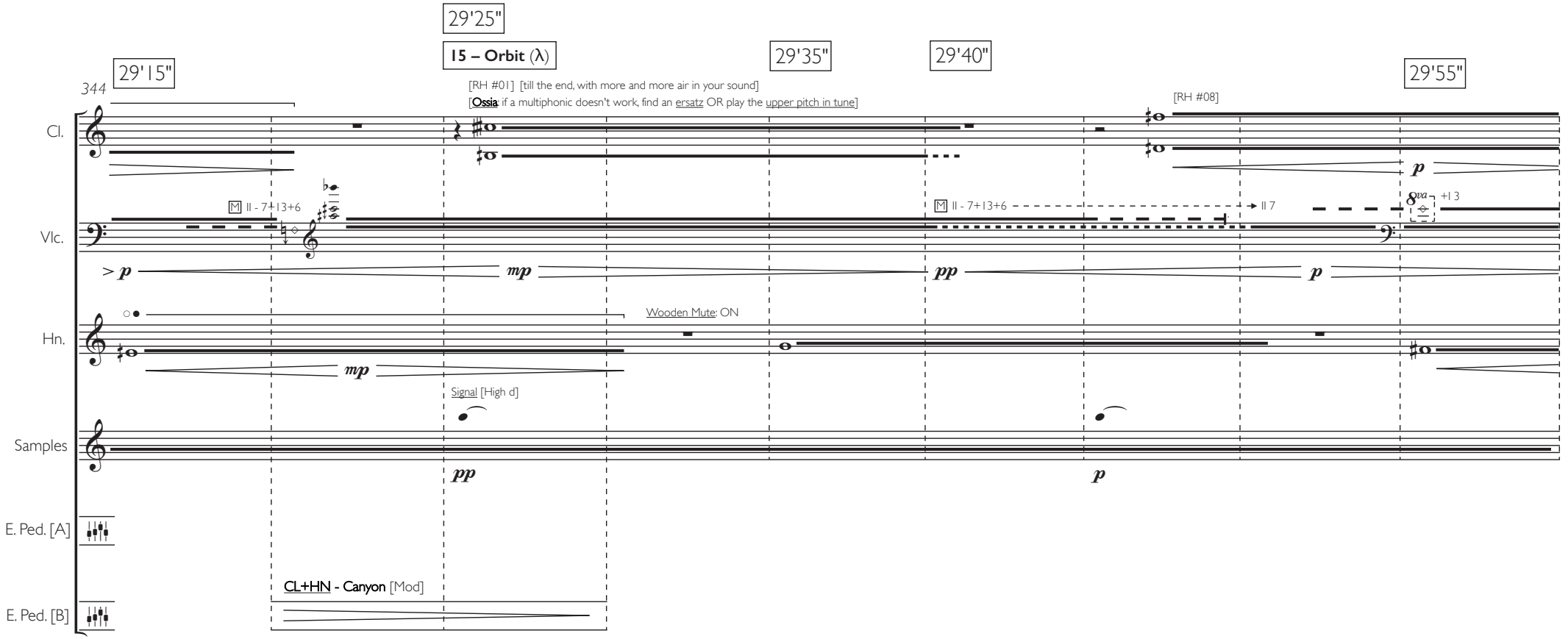

25'30"
25'40"
25'50"
26'00"
26'05"
13 – Orbit (κ)
[underblown multiphonic - RH #9]
[with some air noise]
299
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
ord.
[with some air noise]
III - 6+11+5
III - 5+12+7
[w/ a clearer sound, but melt w/ CL + HN multiphonics]
[low air sound w/ some bursts < f > - IMPRO: reverse the mouthpiece to produce stronger (f) dynamic peaks - add < > and short breaks ad lib., reacting to the electronics]
[mouthpiece in ordinary position]
[split tone - B♭ Horn 4.+3.]
S36
Part. v2 [Delay RND]
CL+HN - Canyon [Tape]

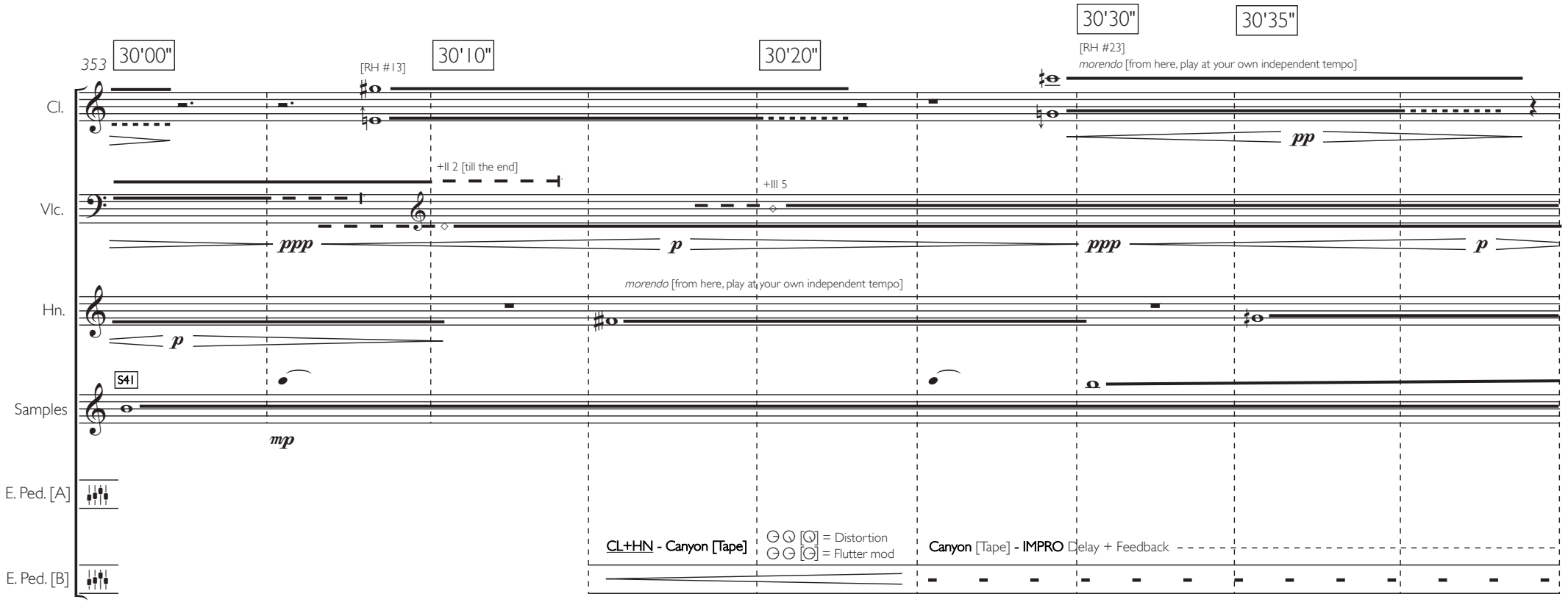

308
26'15"
26'25"
[RH #26]
L
26'45"
[RH #41]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mp
mf
p
mp
[M III - fade out]
+III 0
mp
p
mp
S37
Ventris [E-Dome]
Time

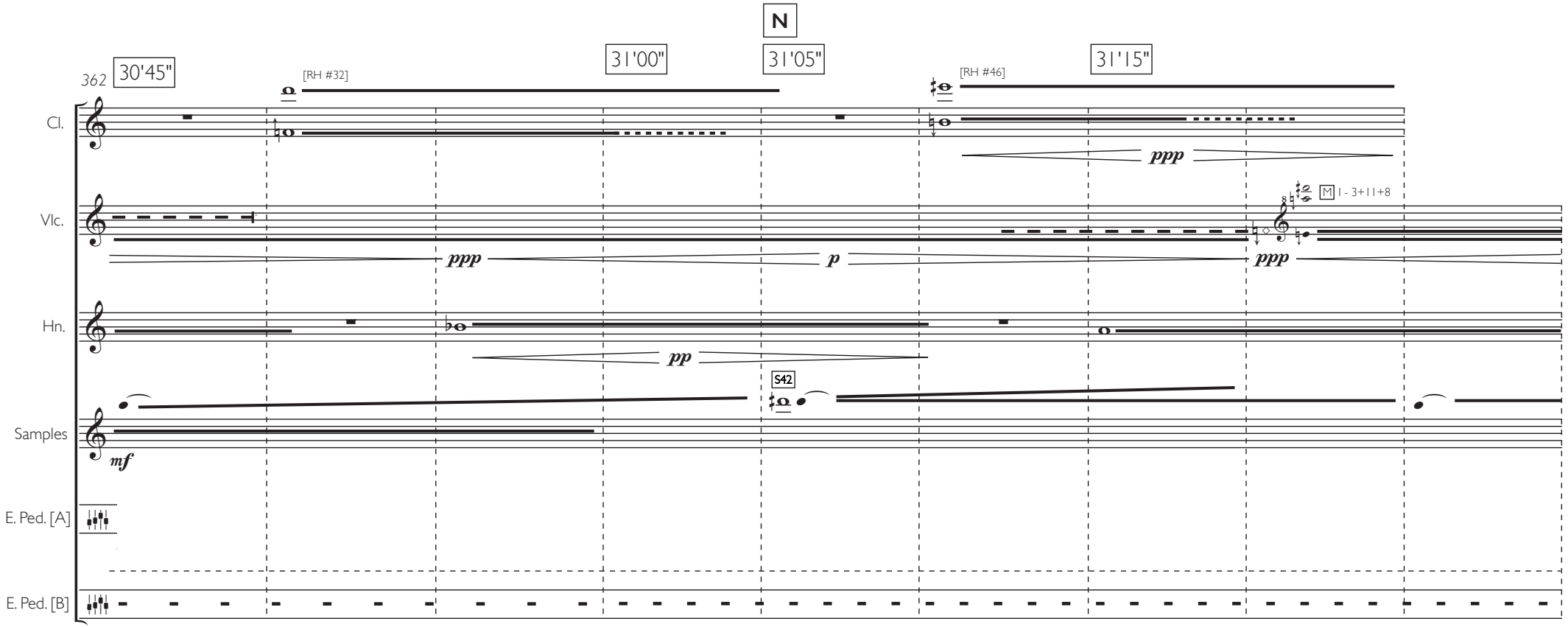

27'00"
27'10"
27'25"
27'35"
317
[RH #22]
[RH #57] [Ossia: f# only]
Cl.
[Dynamic: simile, but add small variations ad lib.]
[Flare's Decay: like suspended, in slow-motion - a 'calmer' flare with far less activity]
Ⓕ [x1]
Vlc.
M III - 7+10+13+3
p
mf subito
mp
p
Hn.
mf
mp
p
mp
S38
Samples
RThing [RM] - IMPRO very slow gliss up/down w/ Fine + Coarse
E. Ped. [A]
RV-6 [Mod]
E. Ped. [B]
Time
HN - Rthing [RM]

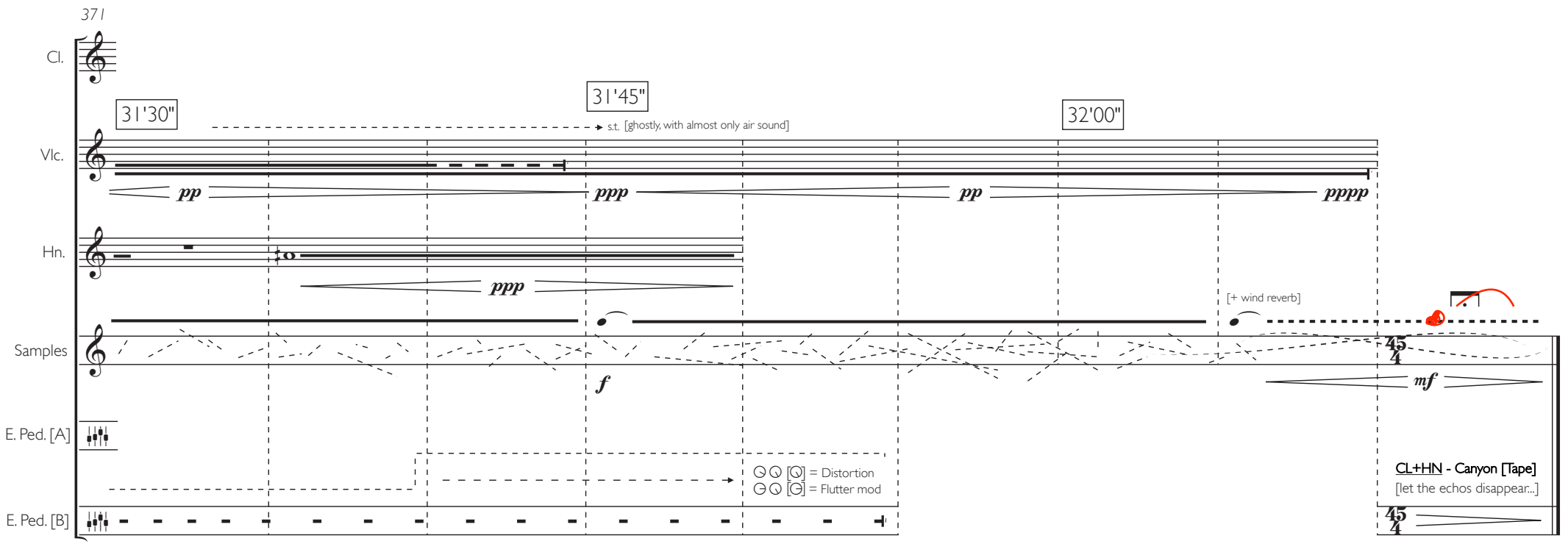

27'45"
27'50"
28'05"
28'15"
28'25"
14 – Eclipse (ε°3)
326
[RH #52]
[RH #82]
[let drop the pitch during the fade out
but without interrupting the multiphonic]
[bisbigliando: accel. < > rall.]
[slow harmonic gliss.]
[slow gliss]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
S39
Part. v2 [Delay RND]
CL - Rthing [RM]


28'30"
28'35"
28'45"
M
28'55"
29'05"
335
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
mp
mf
p
+II 3
+I 0
[sim. - add variations]
[bisbigliando: accel. < > rall.]
S40
VLC - Rthing [RM]
CL+HN - Canyon [Mod]
[ ] = Rate
[ ] = Depth


29'15"
29'25"
15 – Orbit (λ)
29'35"
29'40"
29'55"
344
[RH #01] [till the end, with more and more air in your sound]
[Ossia: if a multiphonic doesn't work, find an ersatz OR play the upper pitch in tune]
[RH #08]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
M II - 7+13+6
II 7
+13
Wooden Mute: ON
Signal [High d]
CL+HN - Canyon [Mod]


353
30'00"
30'10"
30'20"
30'30"
30'35"
[RH #13]
[RH #23]
morendo [from here, play at your own independent tempo]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
+II 2 [till the end]
+III 5
morendo [from here, play at your own independent tempo]
S41
ppp
p
mp
pp
CL+HN - Canyon [Tape]
= Distortion
= Flutter mod
Canyon [Tape] - IMPRO Delay + Feedback


N
362
30'45"
31'00"
31'05"
31'15"
[RH #32]
[RH #46]
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
ppp
p
pp
mf
S42
M 1 - 3+11+8


371
Cl.
Vlc.
Hn.
Samples
E. Ped. [A]
E. Ped. [B]
31'30"
31'45"
32'00"
s.t. [ghostly, with almost only air sound]
pp
ppp
pp
pppp
ppp
[+ wind reverb]
f
mf
45/4
= Distortion
= Flutter mod
CL+HN - Canyon [Tape]
[let the echos disappear...]