st327.1.73

sumtone

:

michael edwards

for rei as a doe

for piano and computer

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programme note

Without wishing to appear esoteric, boastful, or holier-than-thou, it's relevant to the reception and contextualisation of this piece to point out that it would have been impossible for me to write it without years of practice of Vipassana (Insight) meditation. In contrast to most of my music, the piece is very slow and calm, lasting a total of 37 minutes or so, but with possible stopping points at 15 and 21 minutes along the way. It demands extremely quiet playing from the pianist almost all the way through, thus putting the piano back into the pianoforte you might say.

That Rei Nakamura, for whom this piece was written, could carry off virtuosic, fast, complex music was made clear to me in a couple of projects we have done together recently; hence the perhaps counter-intuitive response—or challenge even—represented by this soft, gentle meditation on the piano's resonant properties. The title, with its image of a gentle woodland creature, is meant ironically—again: as a challenge—not in a new-agey manner.

The skill demanded of the pianist consists amongst other things in very accurately playing together the notes of each of the quiet chords, in order to properly fuse the sonorities; playing evenly, so as not to disturb the sense of line and serenity; and, perhaps dialectically opposed to the latter, the subtly different colouring and shading of isolated notes and chords in different registers, to place them spatially and create variety in an otherwise dynamically and rhythmically rather uniform piece.

PS: For the geeks amongst us: This piece was created with my *slippery chicken* algorithmic composition software. It is conceived in four voices: one for each of the pianist's hands, and another two for the high and low voices of an analogue synthesis emulation played back from the computer and mixed with various other sound files (some algorithmic, some ambient) in four channels. Essentially there are three nine-bar phrases in 4/4 meter, each in four part counterpoint. The assignment of contrapuntal parts to each of the four voices (computer high/low, piano left-hand/right-hand) is determined by a permutation routine in which there are 24 possible permutations of the four voices. The selection of which of the three phrases to use is also decided by a partially repeated permutation (there being only six possible permutations of three items). Inserted into these longer phrases are an ever increasing, ever more frequently recurring set of shorter repeating bars, each of which is extracted from the longer sequences. Where these repeats are inserted is determined by a Fibonacci-based transition algorithm; the number of repeats by a sequence of ascending prime numbers (3 5 3 5 7 11 7 13 11 13 17).

The harmonic material was created by ear. There are twelve chords, or harmonic sets, which may or may not be used by the algorithm in their entirety—either linearly or vertically—during one rhythmic sequence. The determination of which chord(s) can follow which was also determined by ear, and a varying but internally consistent linear sequence extended algorithmically from this. (In fact, chord nine is missing in this piece, not so much by design as by algorithmic coincidence.) The harmonies are transposed by a minor third during the second half of the piece.

notes

The piece may be performed in a 15, 21, or 37 minute version, simply by stopping at the indicated points in the score. Naturally, the full 37 minute version is preferred as this allows the increasing number of repetitions throughout the piece to come to the fore.

Blue arrows indicate a trigger point in the computer part. The number above the arrow indicates the trigger number that should be visible on the computer interface before triggering. Press either the space bar of the computer or any key (except tab) on the numeric keypad to start the next soundfile. Note that the sound file might not be immediately audible but the computer screen should briefly flash green in order to register the trigger. See the readme file that comes with the max/msp patches for more details.

The pause in the first bar should be held as long as possible in order to focus the audience's attention on the very quiet sounds created by the e-bow in bar 2 (as well as the quiet dynamics of the rest of the piece). Once the e-bow tone is ringing, remove it and sit down, let the tone decay a little, then move to the first trigger and chord. Similarly, the final e-bow tone (on the pitch C) should be held for a long time, well beyond the duration of the final sound file.

Pauses are generally of a long duration though of course their length is at the discretion of the performer and they should be varied. Occasionally waiting for up to 20-30 seconds is recommended (as sometimes indicated over the pauses) so that the next notes are fresh and felt by the audience and performer alike to be really necessary. Shorter pauses are indicated by //.

The string plucks should be performed serenely, without any sudden movements causing extraneous noises or otherwise disturbing the piece. If this is not possible, then the notes may be played on the keyboard instead.

The speed of the grace notes is not necessarily as fast as possible. They can be considered to be out-of-time, and thefore considerable rubato may be employed.

Dynamics apply only to the hand they are immediately below, e.g., if *pppp* is indicated below the right-hand staff but none is indicated below the left-hand, then the *pppp* only applies to the right-hand and the left-hand continues with whatever dynamic it last saw.

technical requirements

There are two different ways of diffusing the computer part of this piece. In a small performance space, amplification of the piano will not be necessary so two or four speakers may be placed under the sound board of the piano or immediately around it. If only two speakers are to be used then the four channel outputs of the computer must be mixed down onto two channels either within max/msp or elsewhere. With such a setup, the levels of the computer playback can be controlled by the pianist during the performance though minimal adjustment should be necessary once general levels are set during rehearsal. See the readme file that comes with the max/msp patches for more details.

In a larger hall, four speakers should surround the audience in a typical quadraphonic setup using the channel layout below:

1 2

3 4

In such a hall, transparent, gentle amplification of the piano will be required. Two microphones of the same type will be necessary: high-quality cardioid condenser microphones are preferred. More microphones may be required in order to capture all of the quiet resonances during the piece; this is left to the discretion of the pianist and/or engineer. The balance of the piano and computer signals should then be controlled at a mixing desk situated in the sweet spot of the audience.

As there is significant bass extension to the computer part, the use of one or two subwoofers is essential for both smaller and larger rooms. The placement of the subwoofer is at the discretion of the pianist/engineer.

To summarise, the required equipment for any performance is:
- 2-4 high-quality speakers
- 1-2 subwoofers
- computer running the max/msp performance software*
- high-quality sound card with at least 4 balanced outputs*
- USB numeric keypad connected to the computer and placed to the left of the bottom A key of the piano*
- small table close to the left of the piano for the computer and sound card
- e-bow for the pianist

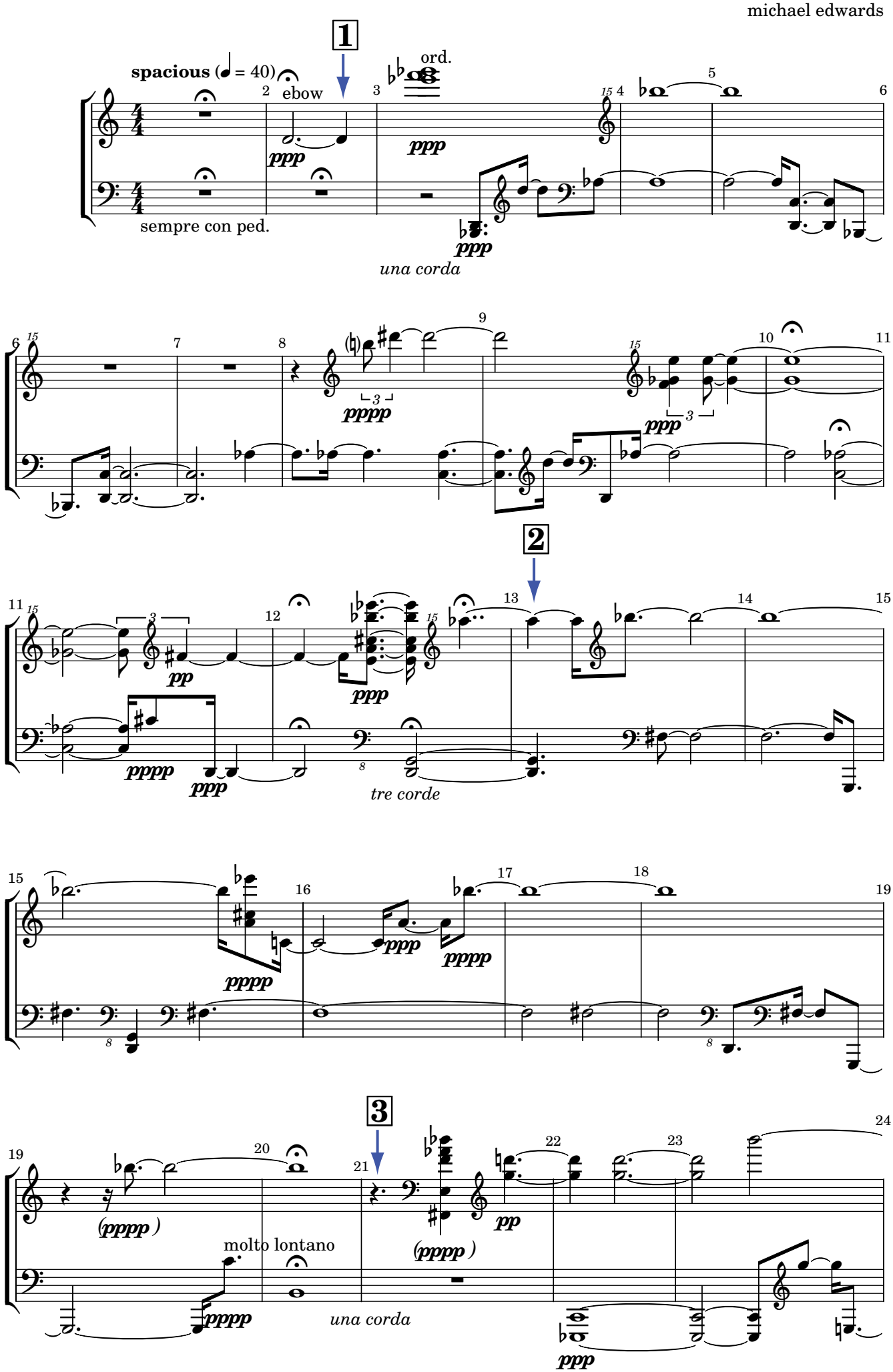
In addition, for larger halls:
- at least 2 high-quality cardioid condenser microphones
- mixing desk
- enough cables to run from the 4 outputs of the computer card (on-stage) and microphones

Or for smaller halls needing no piano amplification:
- analogue level control for the computer output, e.g. small mixing desk or SPL volume knob
- c. 5m cables to run from the sound card to the speakers

* usually provided by the composer if in attendance

for rei as a doe

michael edwards



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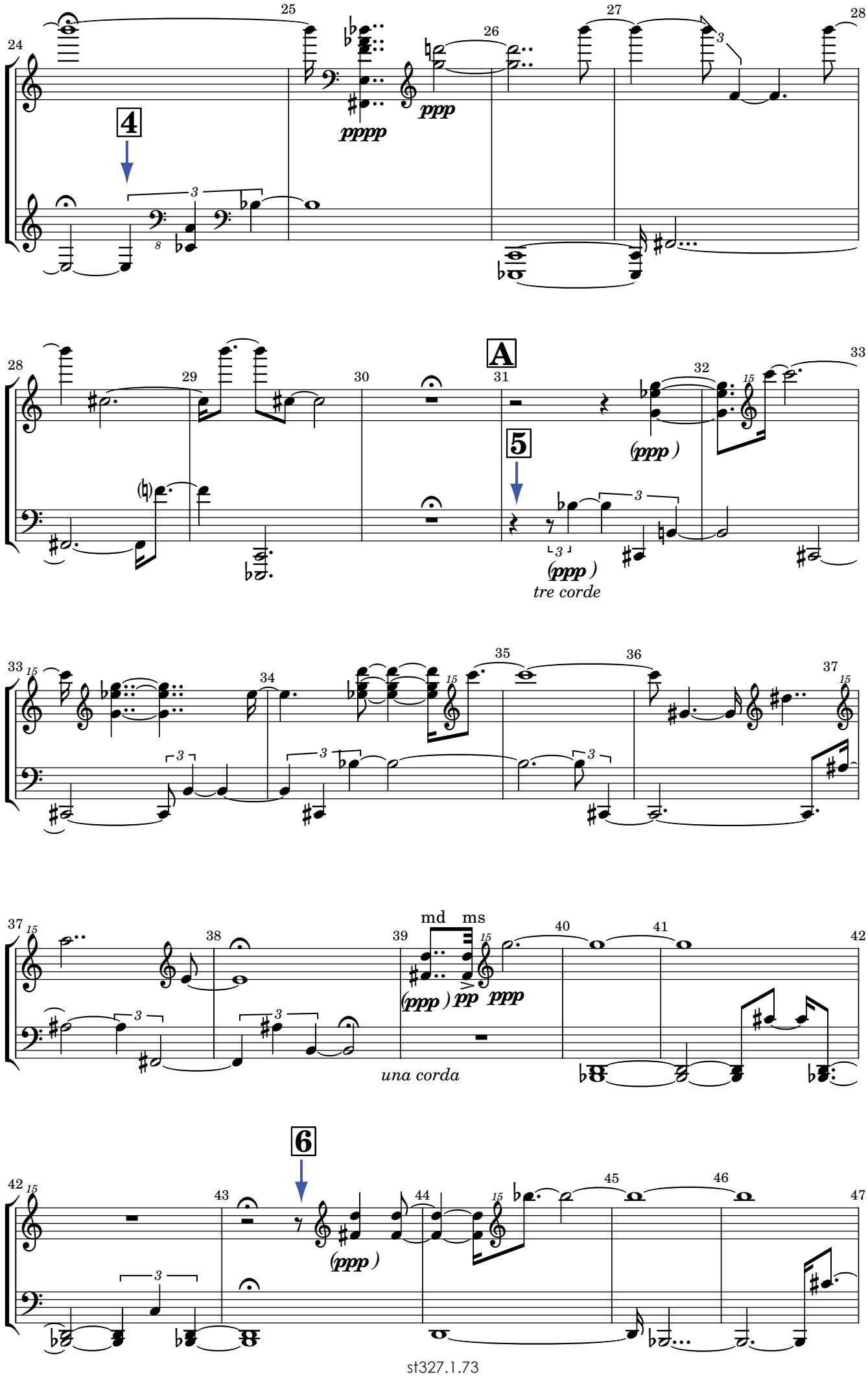
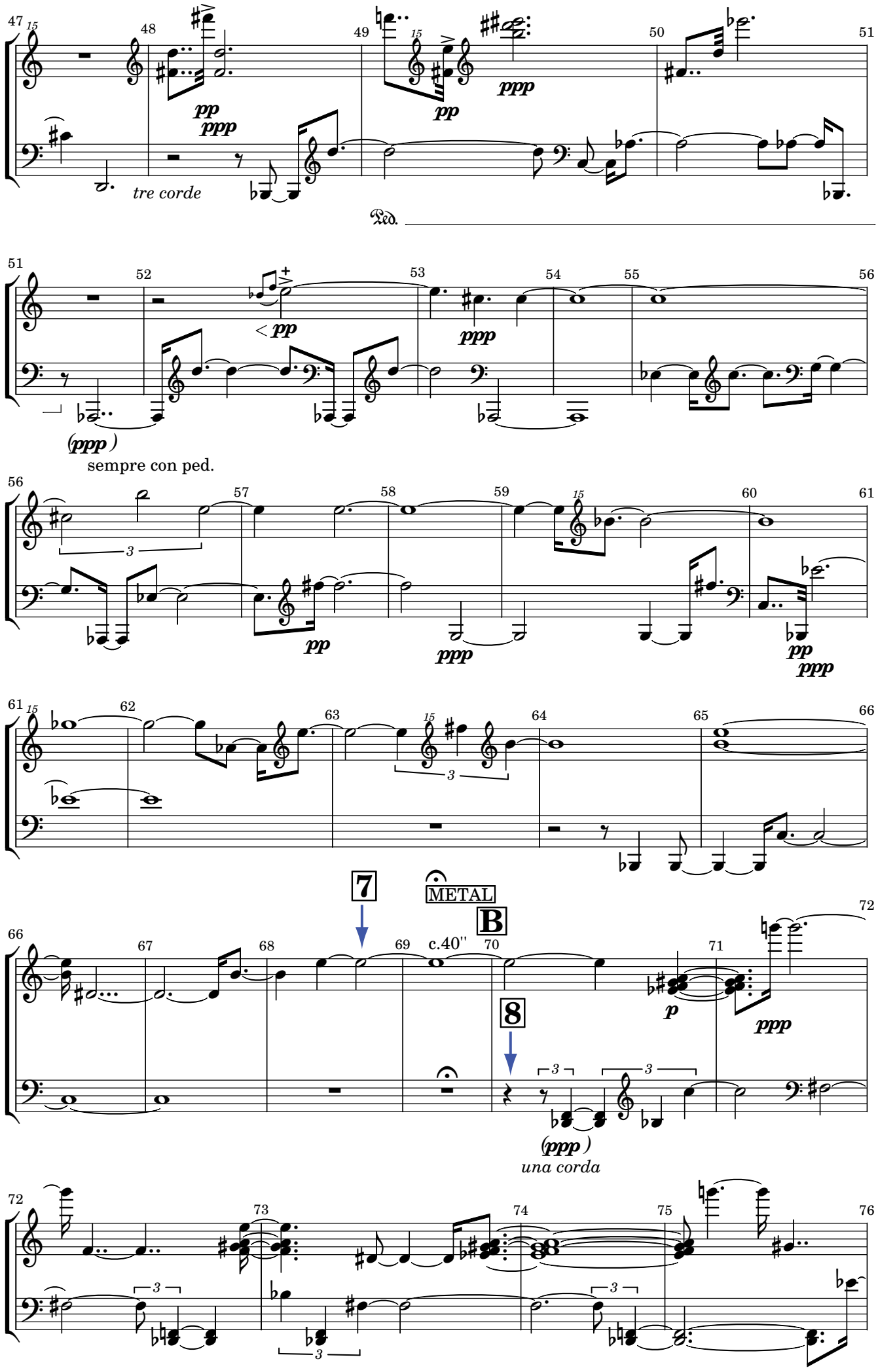
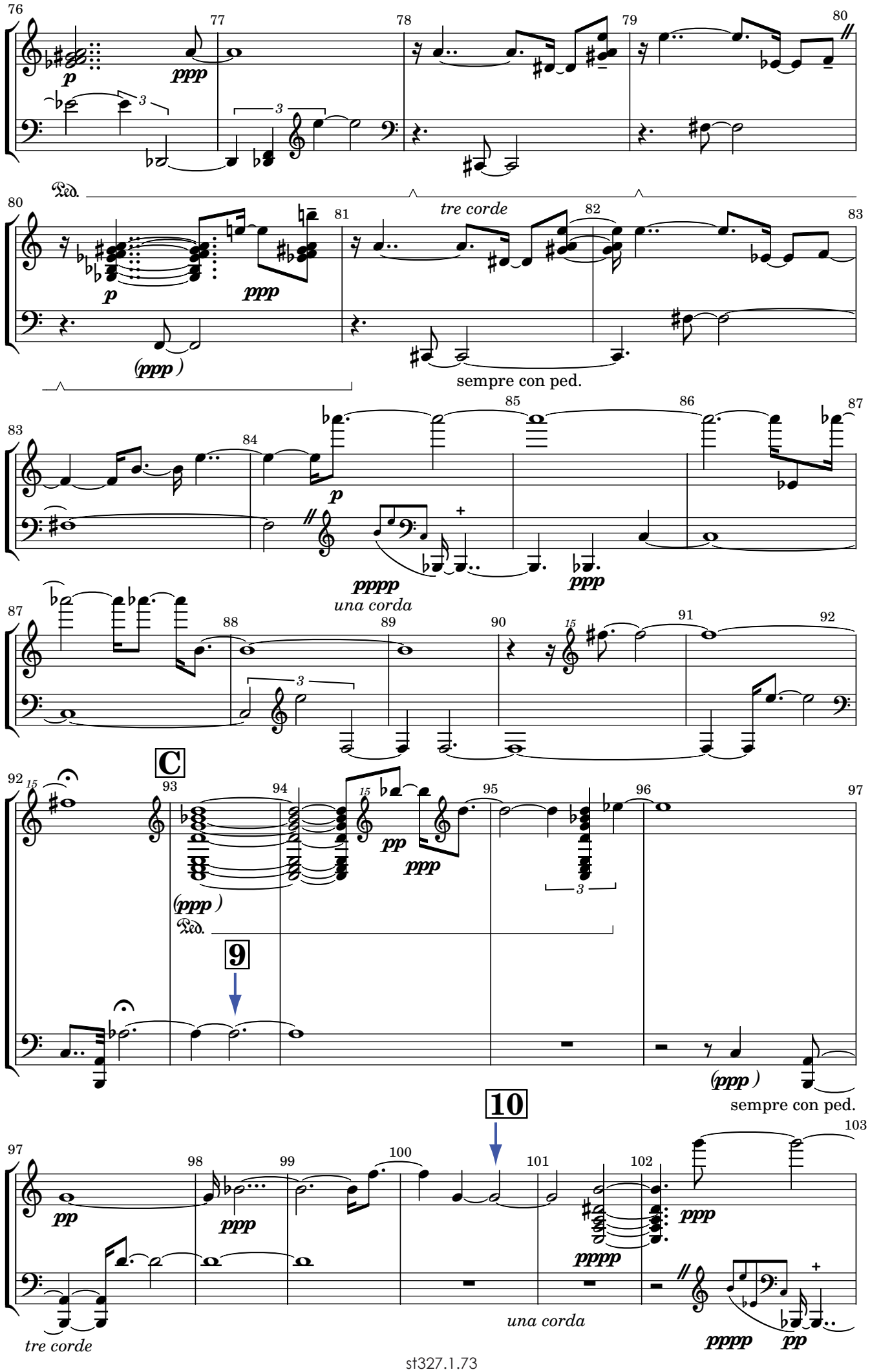
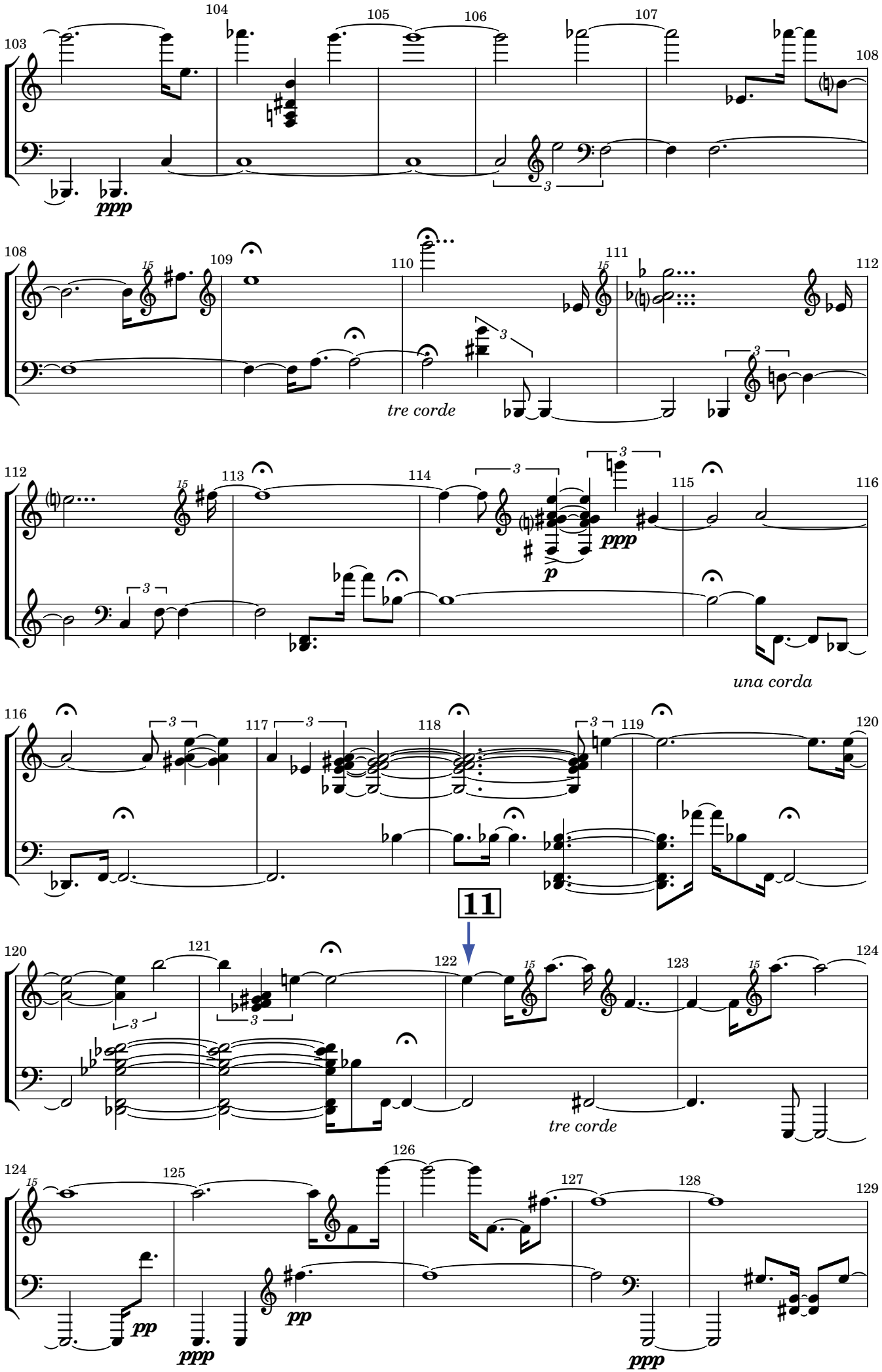
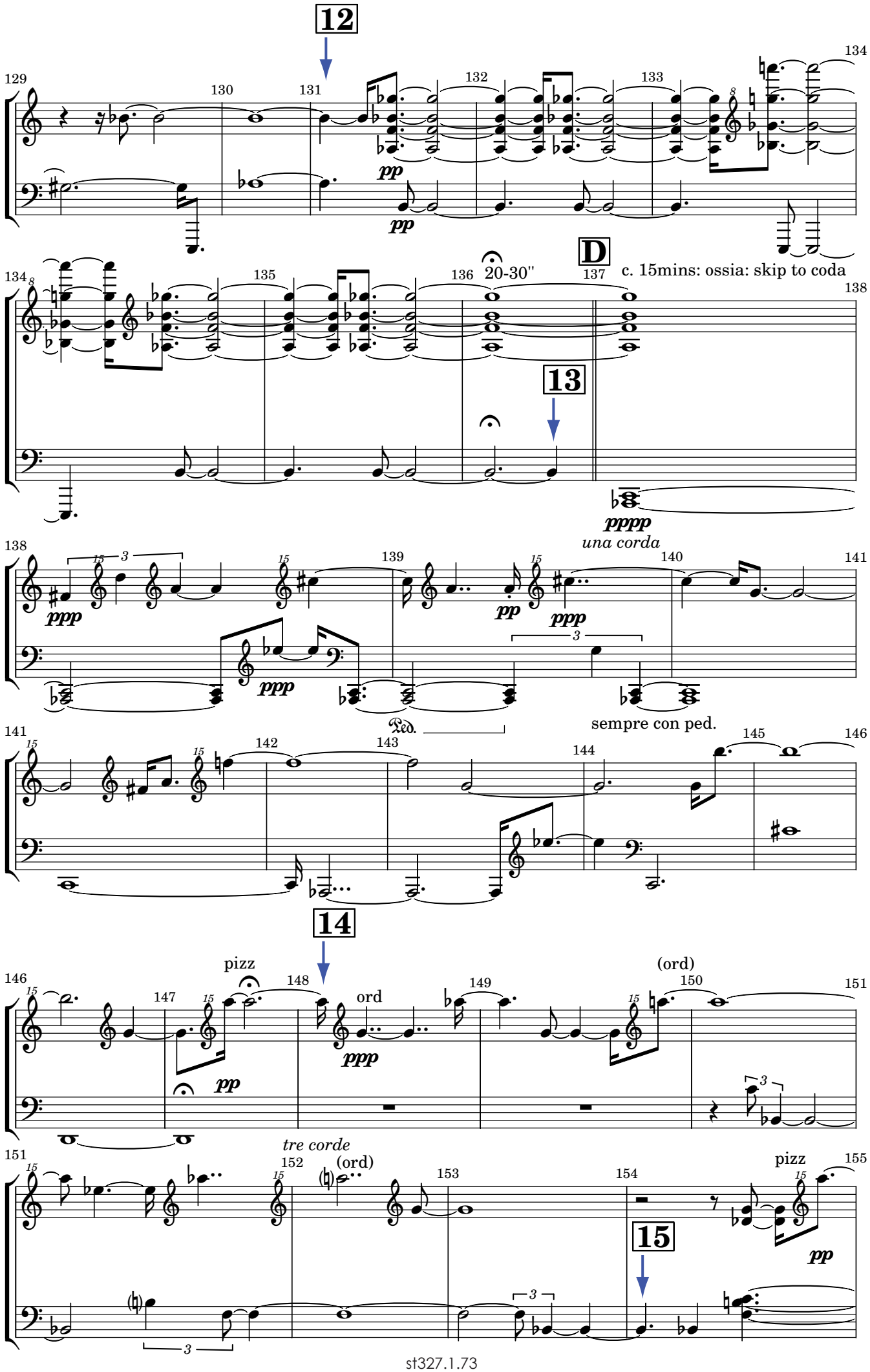
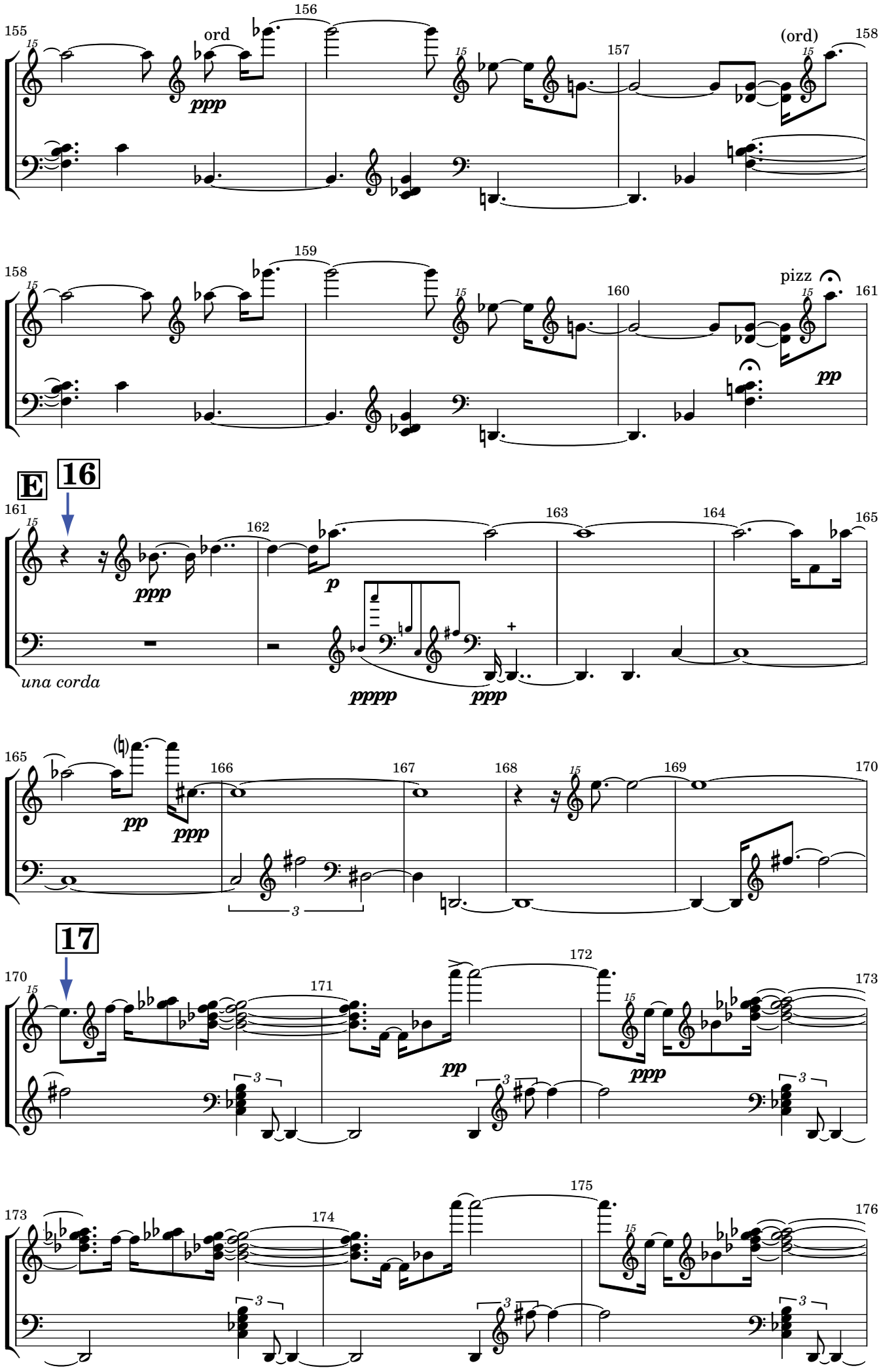

4
pppp
ppp
A
5
(ppp)
tre corde
md ms
(ppp) pp ppp
una corda
6
(ppp)

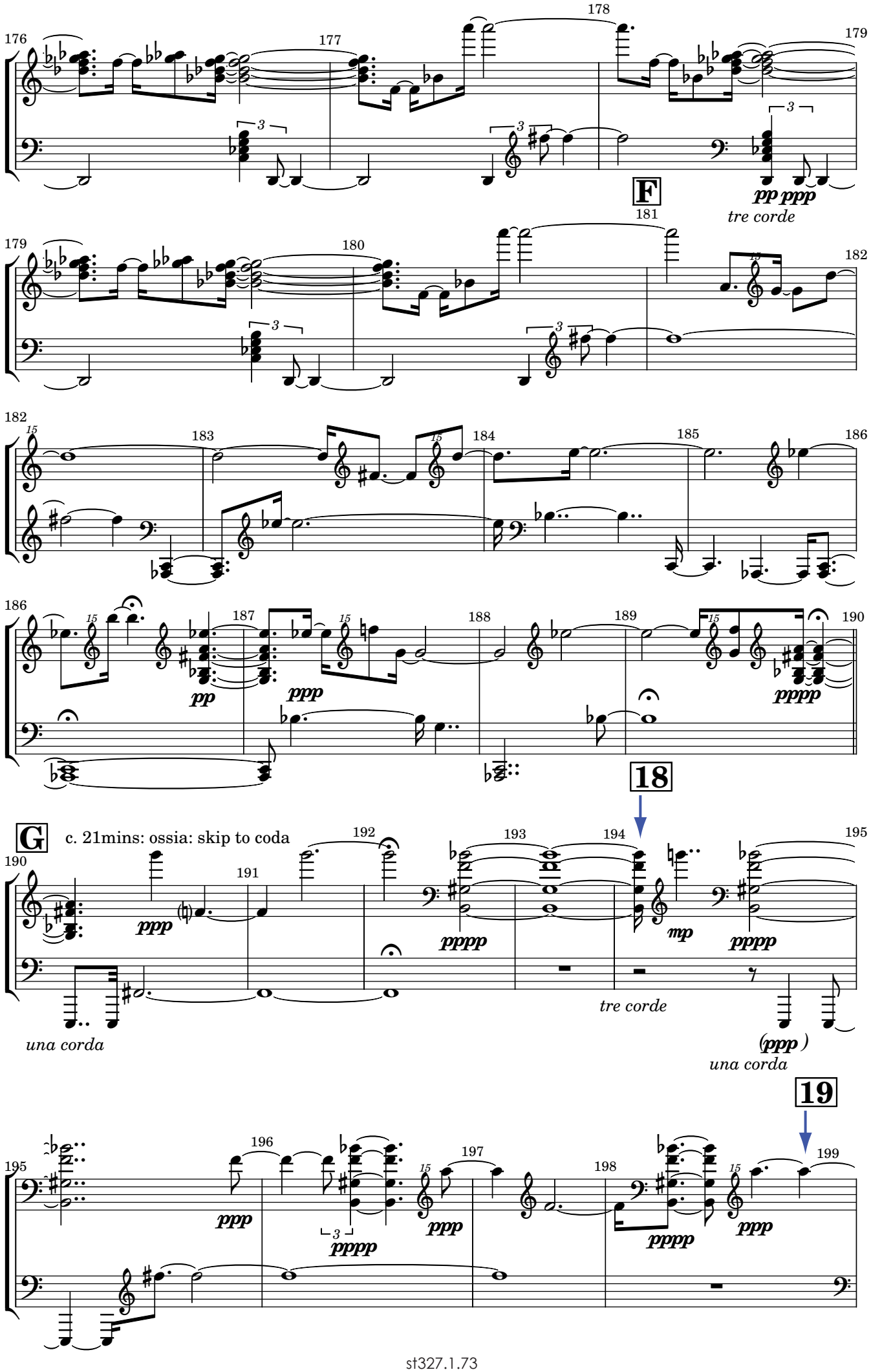

47
48
49
50
51
pp
ppp
pp
ppp
tre corde
Ped.
51
52
53
54
55
56
< pp
ppp
(ppp)
sempre con ped.
56
57
58
59
60
61
3
pp
ppp
pp
ppp
61
62
63
64
65
66
3
7
METAL
B
66
67
68
69
c.40"
70
71
72
8
p
ppp
3
3
(ppp)
una corda
72
73
74
75
76
3
3
3

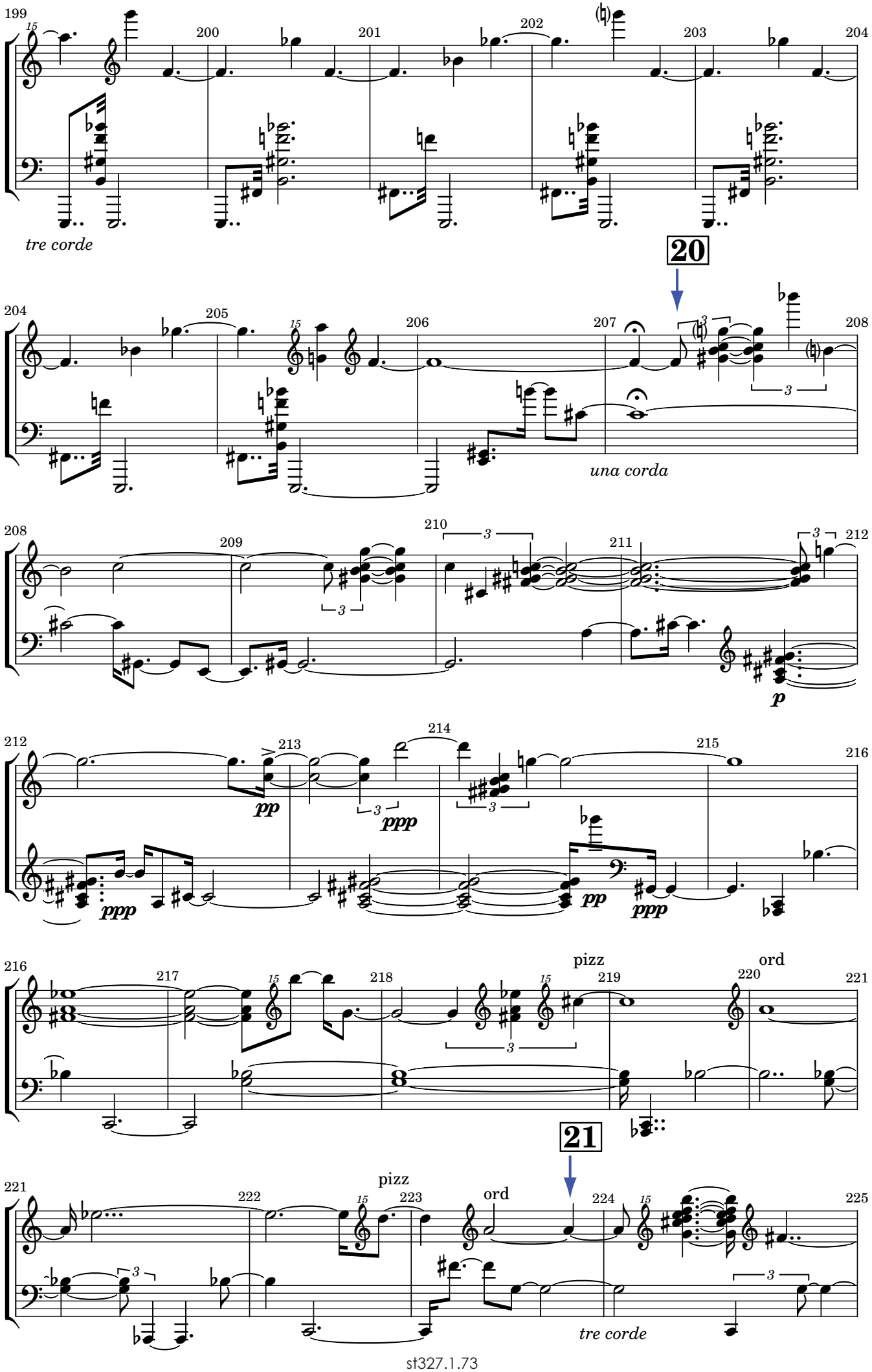

76
77
78
79
80
p
ppp
3
Ped.
tre corde
(ppp)
sempre con ped.
81
82
83
84
85
86
87
pppp
una corda
ppp
88
89
90
91
92
15
C
93
94
95
96
97
pp
9
10
98
99
100
101
102
103
una corda
sempre con ped.

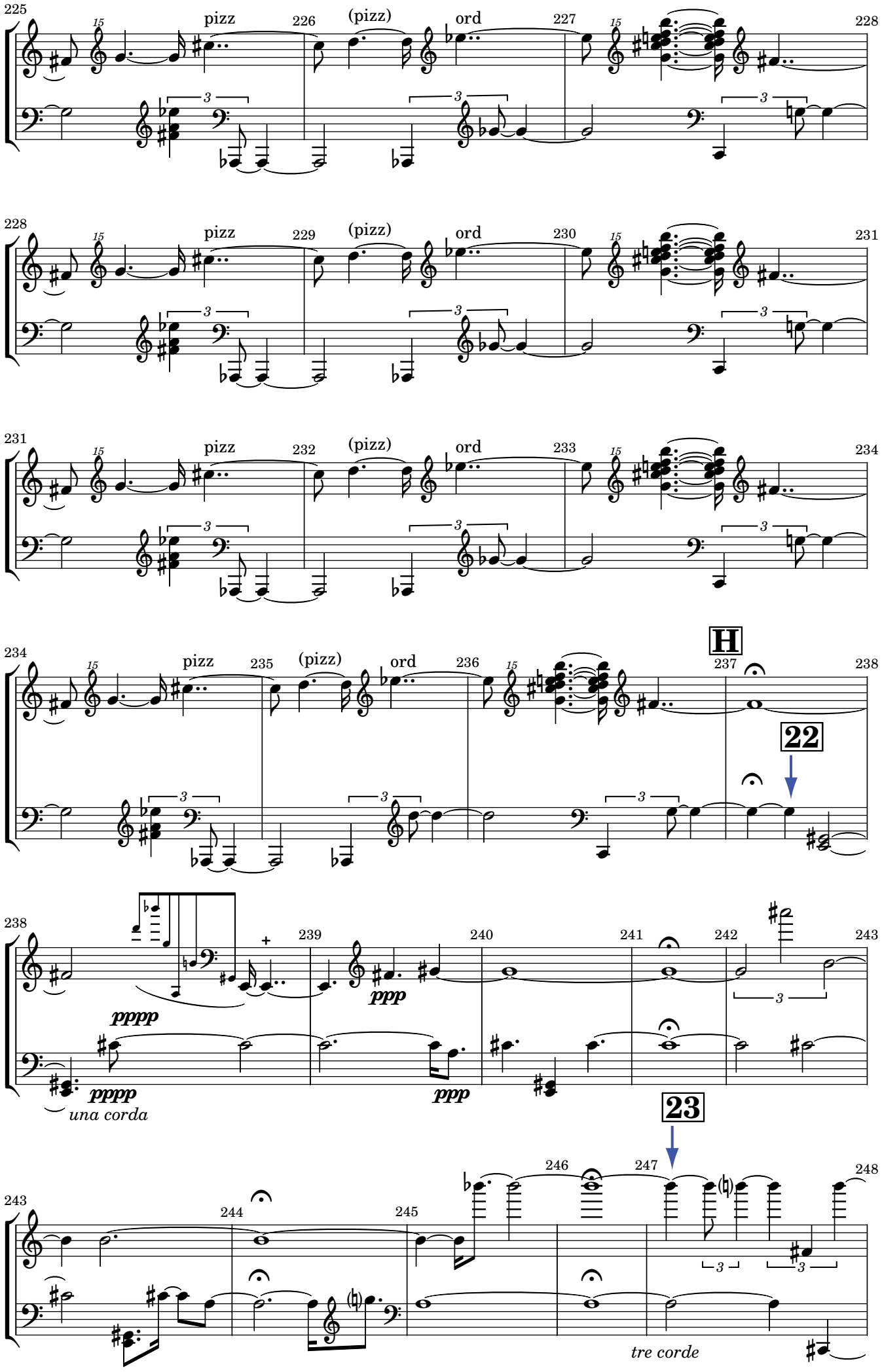

103
104
105
106
107
108
ppp
108
109
110
111
112
tre corde
112
113
114
115
116
p
ppp
una corda
116
117
118
119
120
11
120
121
122
123
124
tre corde
124
125
126
127
128
129
pp
ppp
pp
ppp

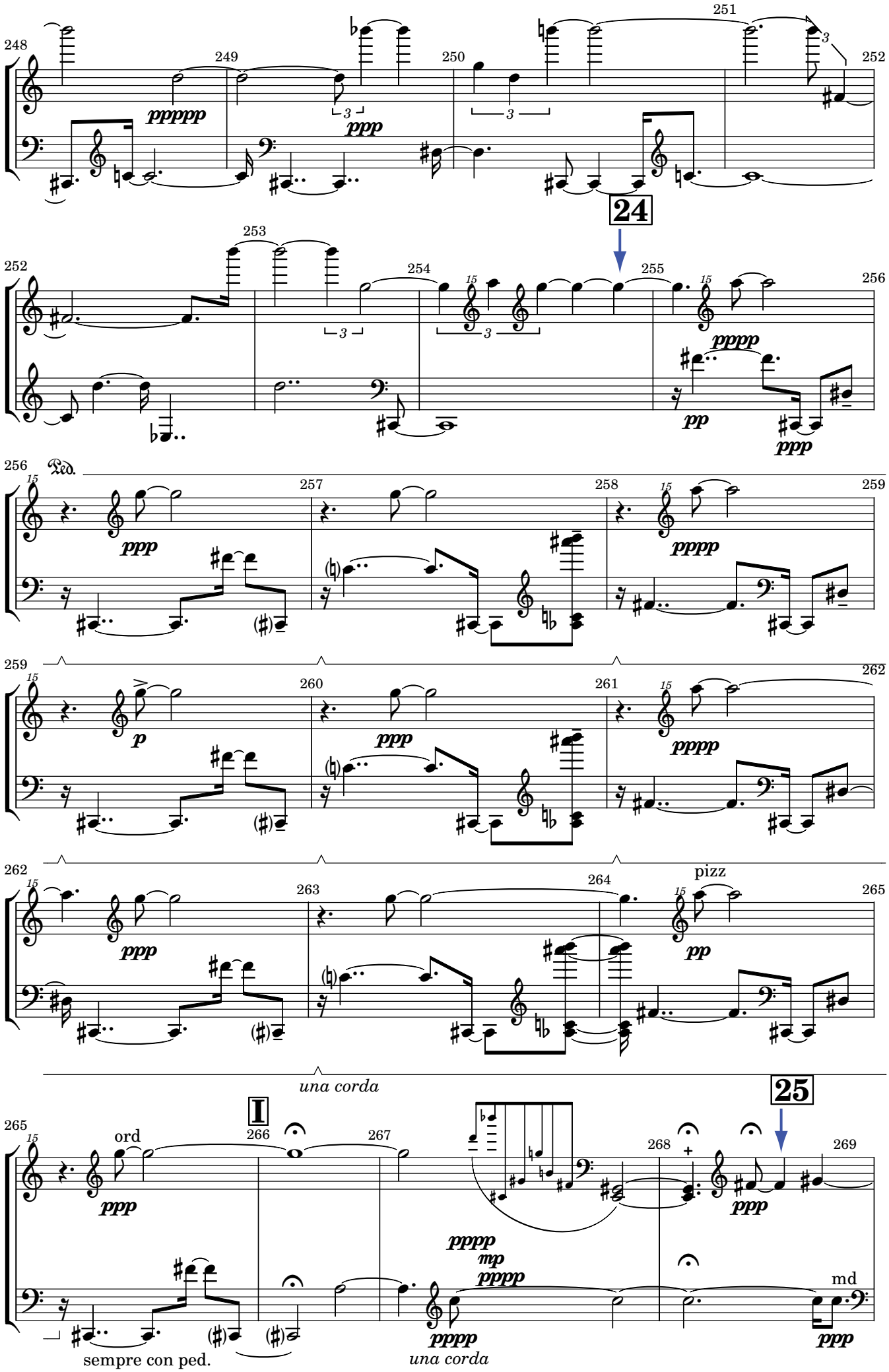

12
D
c. 15mins: ossia: skip to coda
20-30"
13
una corda
sempre con ped.
14
pizz
ord
(ord)
tre corde
15

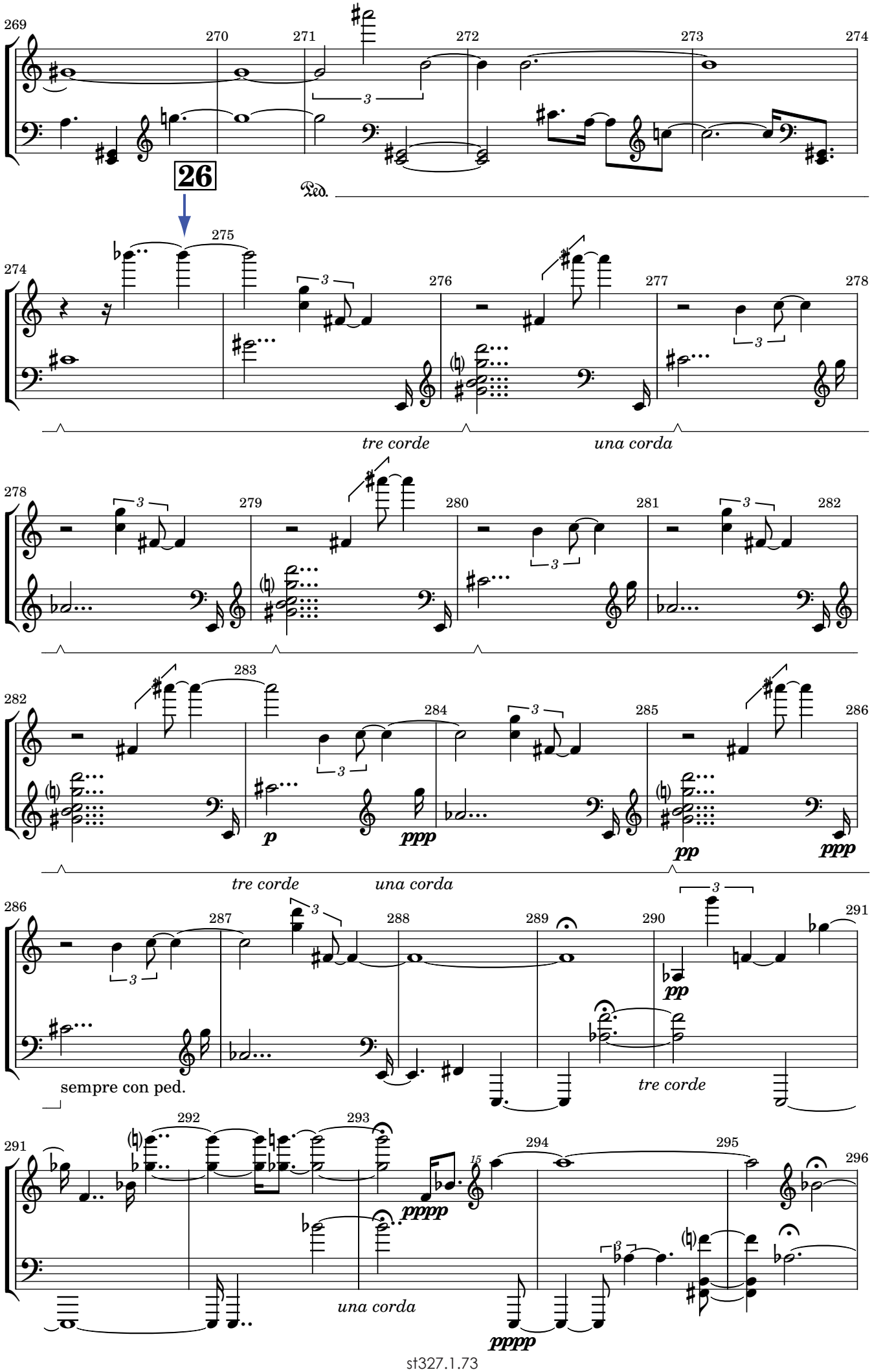

155
156
157
158
ord
(ord)
ppp
159
160
161
pizz
pp
E
16
162
163
164
165
p
una corda
pppp
166
167
168
169
170
17
171
172
173
174
175
176

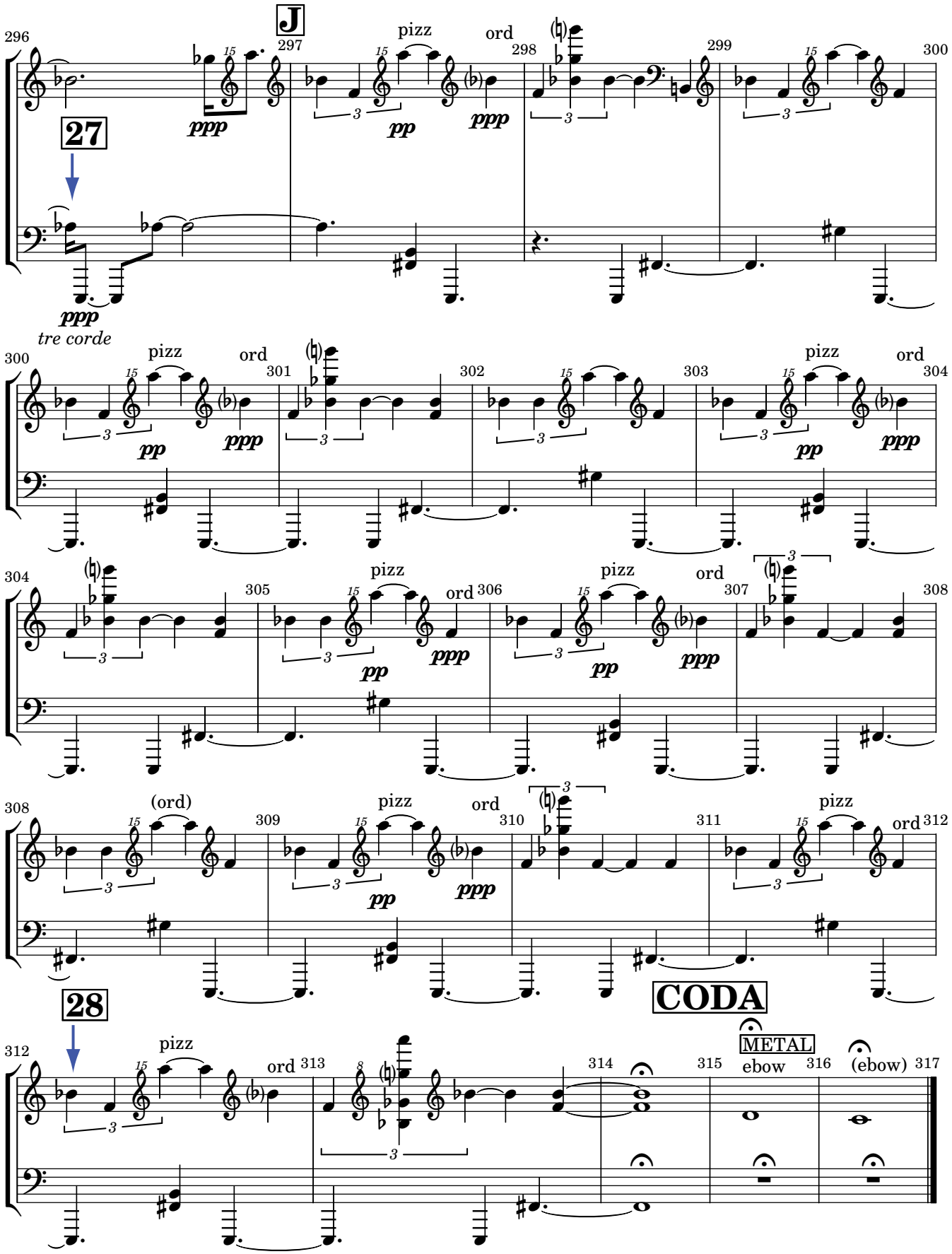

176
177
178
179
F
181
pp ppp
tre corde
179
180
182
182
183
184
185
186
186
187
188
189
190
pp
ppp
pppp
18
G
c. 21mins: ossia: skip to coda
190
191
192
193
194
195
ppp
pppp
mp
pppp
una corda
tre corde
(ppp)
una corda
19
195
196
197
198
199
ppp
pppp
ppp
pppp
ppp


199
200
201
202
203
204
tre corde
20
204
205
206
207
208
una corda
208
209
210
211
212
p
212
213
214
215
216
pp
ppp
ppp
pp
ppp
216
217
218
219
220
221
pizz
ord
21
221
222
223
224
225
pizz
ord
tre corde


225
pizz
226
(pizz)
ord
227
228
228
pizz
229
(pizz)
ord
230
231
231
pizz
232
(pizz)
ord
233
234
234
pizz
235
(pizz)
ord
236
237
H
238
22
238
239
240
241
242
243
pppp
ppp
pppp
ppp
una corda
23
243
244
245
246
247
248
tre corde


248
249
250
251
252
pppppp
ppp
3
24
253
254
255
256
pppp
pp
ppp
Ped.
257
258
259
p
260
261
262
pizz
263
264
265
una corda
I
266
267
268
269
25
ord
pppp
mp
md
sempre con ped.
tre corde
una corda


269
270
271
272
273
274
26
Ped.
274
275
276
277
278
tre corde
una corda
278
279
280
281
282
282
283
284
285
286
p
ppp
pp
ppp
tre corde
una corda
286
287
288
289
290
291
pp
sempre con ped.
tre corde
291
292
293
294
295
296
pppp
una corda
pppp


J
296
297
298
299
300
pizz
ord
27
ppp
pp
tre corde
301
302
303
304
305
306
307
308
(ord)
309
310
311
312
CODA
28
313
314
315
316
317
METAL
ebow
(ebow)