NATHANIEL BARTLETT

IMPULSE RESPONSE

FOR FOUR PERCUSSIONISTS
PLAYING SIX SNARE DRUMS EACH

FOR LEE VINSON
COMPOSED JANUARY 2016

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GUIDE TO THE NOTATION

TIME

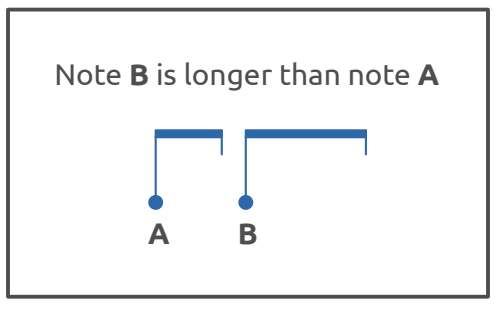
In this score, time is strictly graphically represented in the horizontal domain. Horizontal distances in the score are exactly proportional to duration (a horizontal distance of 2cm represents a span of time twice as long as a horizontal distance of 1cm). The vertical gray dashed lines serve as a guide for the performer in orienting musical events in time. These dashed lines are different from conventional measure lines in that they represent specific points in time. However, the time span between two adjacent gray dashed lines will be referred to as a measure.

The time scale of the piece (tempo) is given in in T=beats_per_minute format at the beginning of the piece.

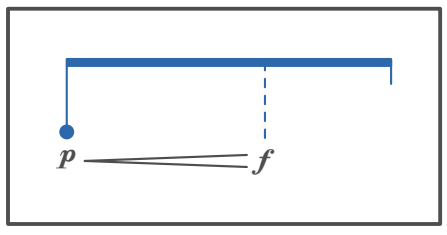
NOTES

A note begins at the point in time designated by the horizontal position of a stem, which is attached to a circular note head. Four different colors are used to distinguish between notes with different metrical and temporal properties: ametric notes (blue), quasi-metric notes (green), metric notes (dark gray), and time-shifted metric notes (purple). Metrical properties are the interpretive inflections (phrasing, accentuation, grouping, etc.) implied by conventional meter and notation.

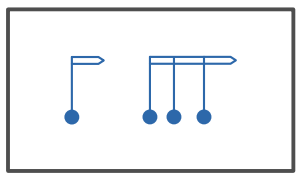
Ametric notes have no metrical properties. An ametric note's duration is graphically represented by the length of its beam. The termination of an ametric note is shown by the horizontal position of a final stem attached to the beam.



A headless dashed stem located between the first and final stems may be used to show a precise point in time, such as the exact temporal location of a dynamic marking.



Ametric notes which are *laissez vibrer* or that quickly decay naturally (for example, a single bongo strike with a snare drum stick) are depicted with a short, hollow, pointed beam and no terminal stem. In this abbreviated notation, the beam does not reflect duration. Such notes, if temporally close enough, will share a single beam.



Quasi-metric notes retain all the implications of meter and conventional notation, but move freely in time. In other words, *accelerando*, *rallentando*, etc., can be represented graphically.

Dark gray notes are strictly metric. These notes retain all conventional metrical properties. Like all notes stems, gray note stems also indicate the temporal location of the note, thus allowing all types of notes to be used in the same passage.

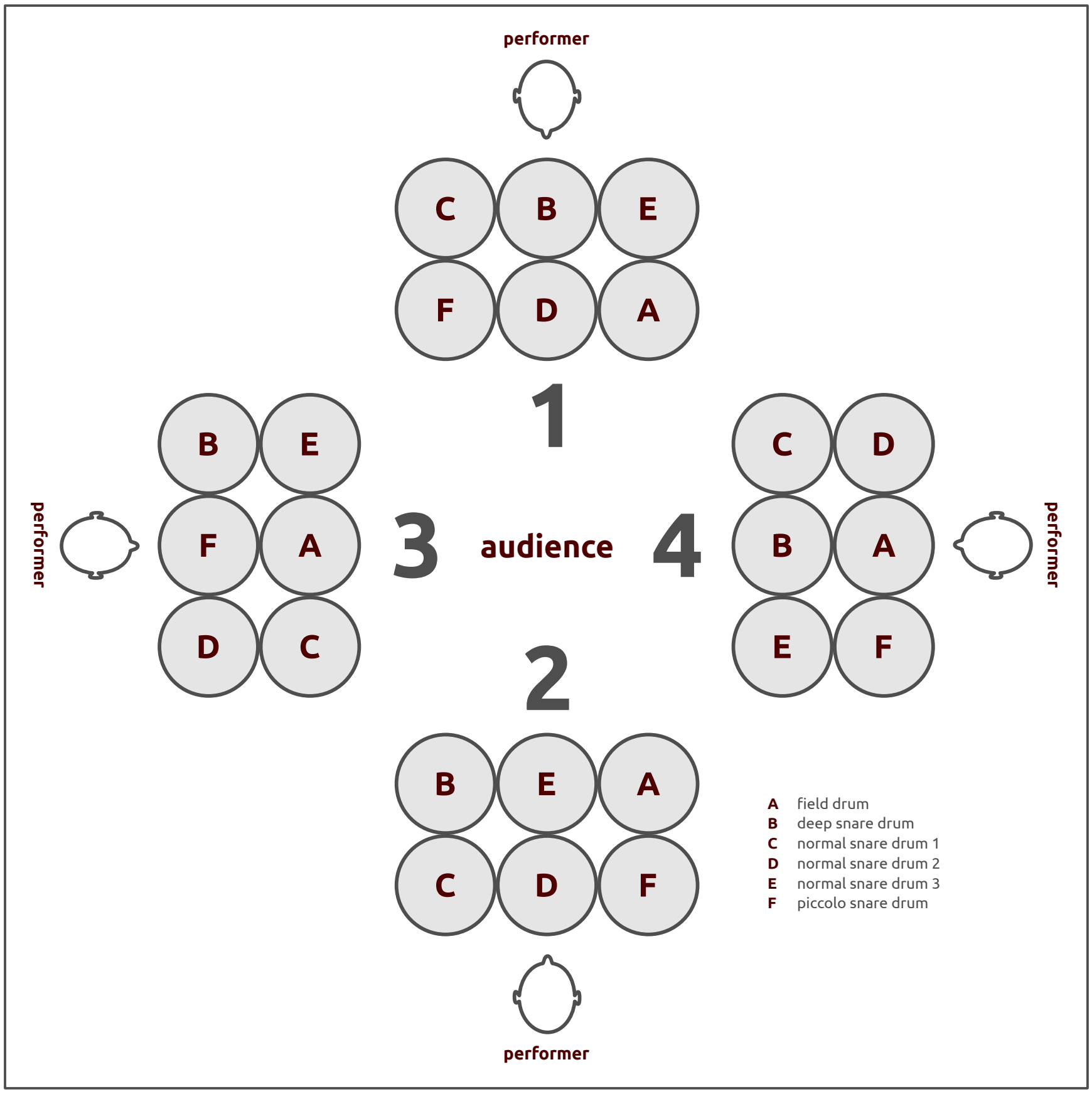
Time-shifted metric notes derive their tempo from the current master tempo of the music, but are shifted freely in time, out of sync with the master meter. Time-shifted notes may also exist in a different meter than the master meter, while maintaining their tempo relationship to the master tempo.

Grace notes are notated with smaller note heads, narrower beams (w/ 45 degree hash mark), and thinner note stems. They are to be played very quickly, but also freely and smoothly according to the performer's taste. Grace notes are anchored to the principal note, which has a precise temporal location. Thus, the horizontal location of a grace note's stem does not necessarily correspond to its temporal location.

PERFORMANCE NOTES

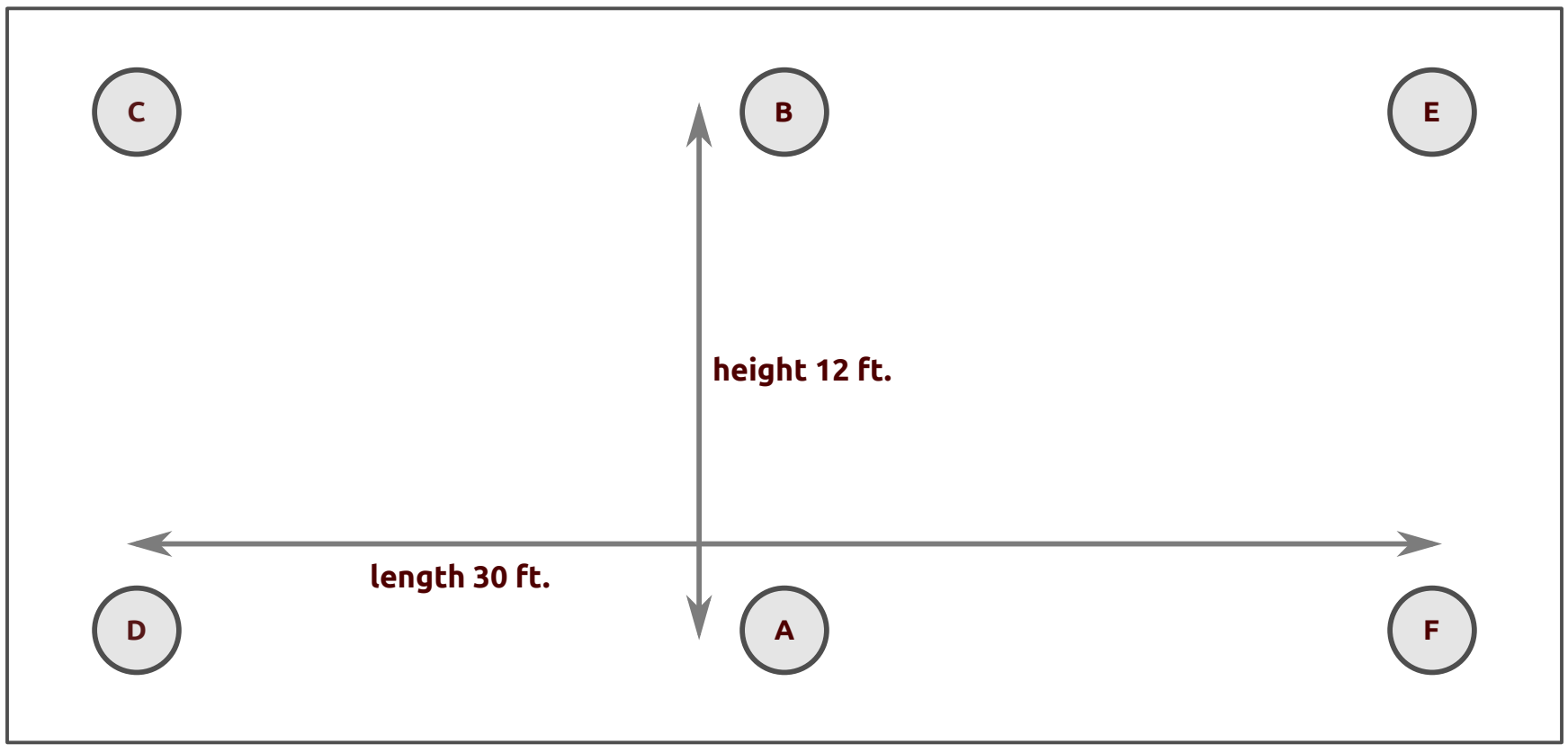
POSITIONING OF SETUPS

The four snare drum setups (six drums each) may be positioned around the audience (ideal) or in front of the audience.



If performing with all setups in front of the audience, the configuration should be 1, 4, 2, 3 (from left to right, audience's perspective).

Electronics may be used to spatialize the sound of each drum. If using electronic spatialization, the idea is to maintain the relative spatial positions of the drums, but as if they were separated by greater distances, and tilted forward toward the audience. The diagram below would be one possible spatial configuration for setup 4, to the east of the audience, from the audience's perspective.

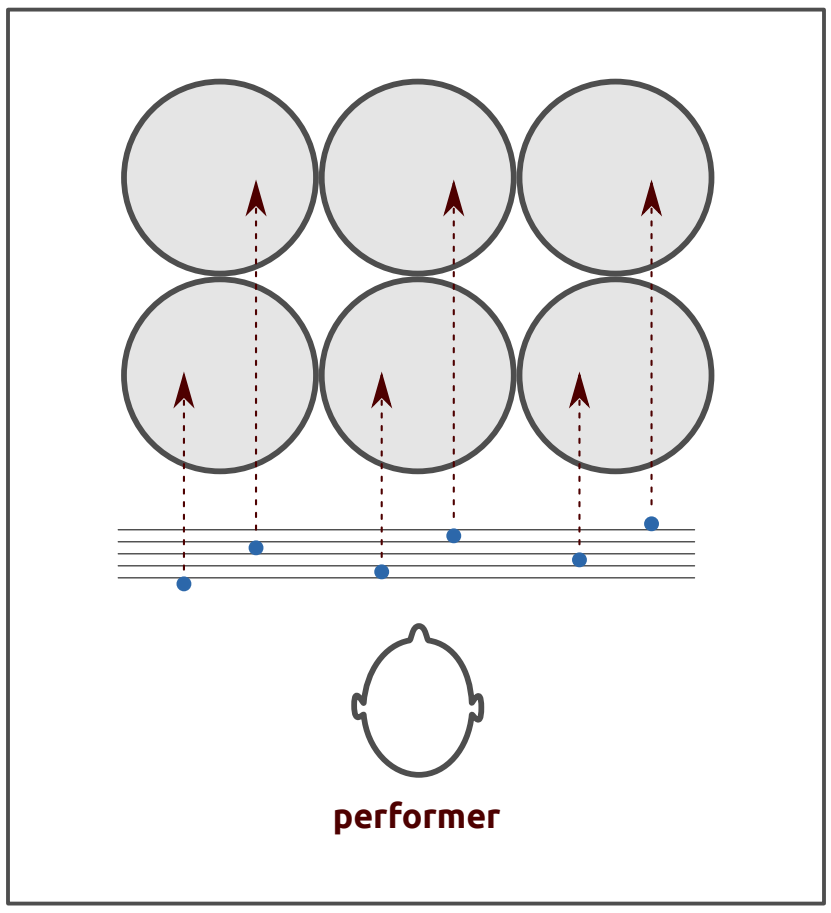


DRUM SELECTION

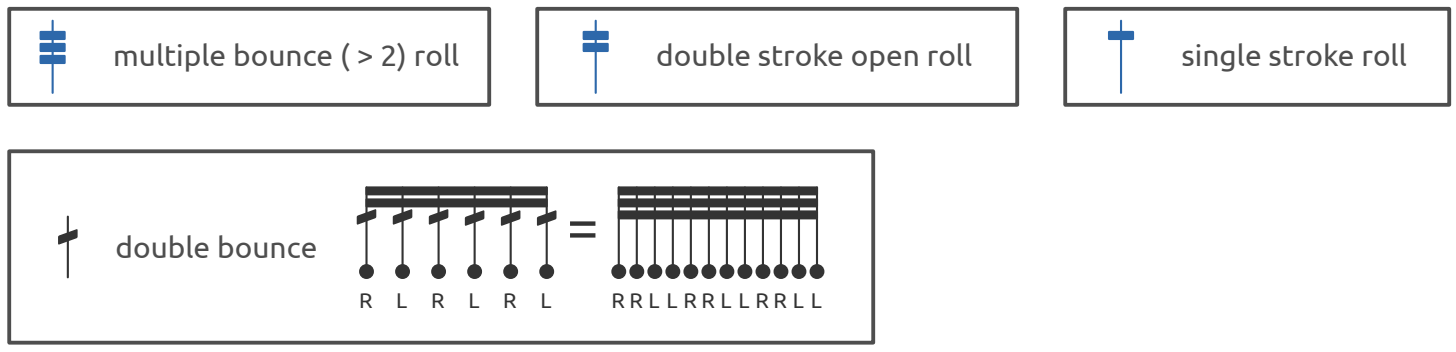
Six different types of snare drums are used in each setup. The deep snare (at least 6.5 in. shell) should have have a more robust sound than the normal snare drums and piccolo snare drum, but not as robust as the field drum. Normal snare drums 1 through 3 should have different characteristics, getting progressively higher/brighter from 1 to 3.

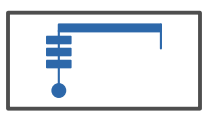
DRUM NOTATION

Drums are notated on a five-lined staff (six spaces). The position of the notes correspond to the position of the drum in the setup and not the type of drum.

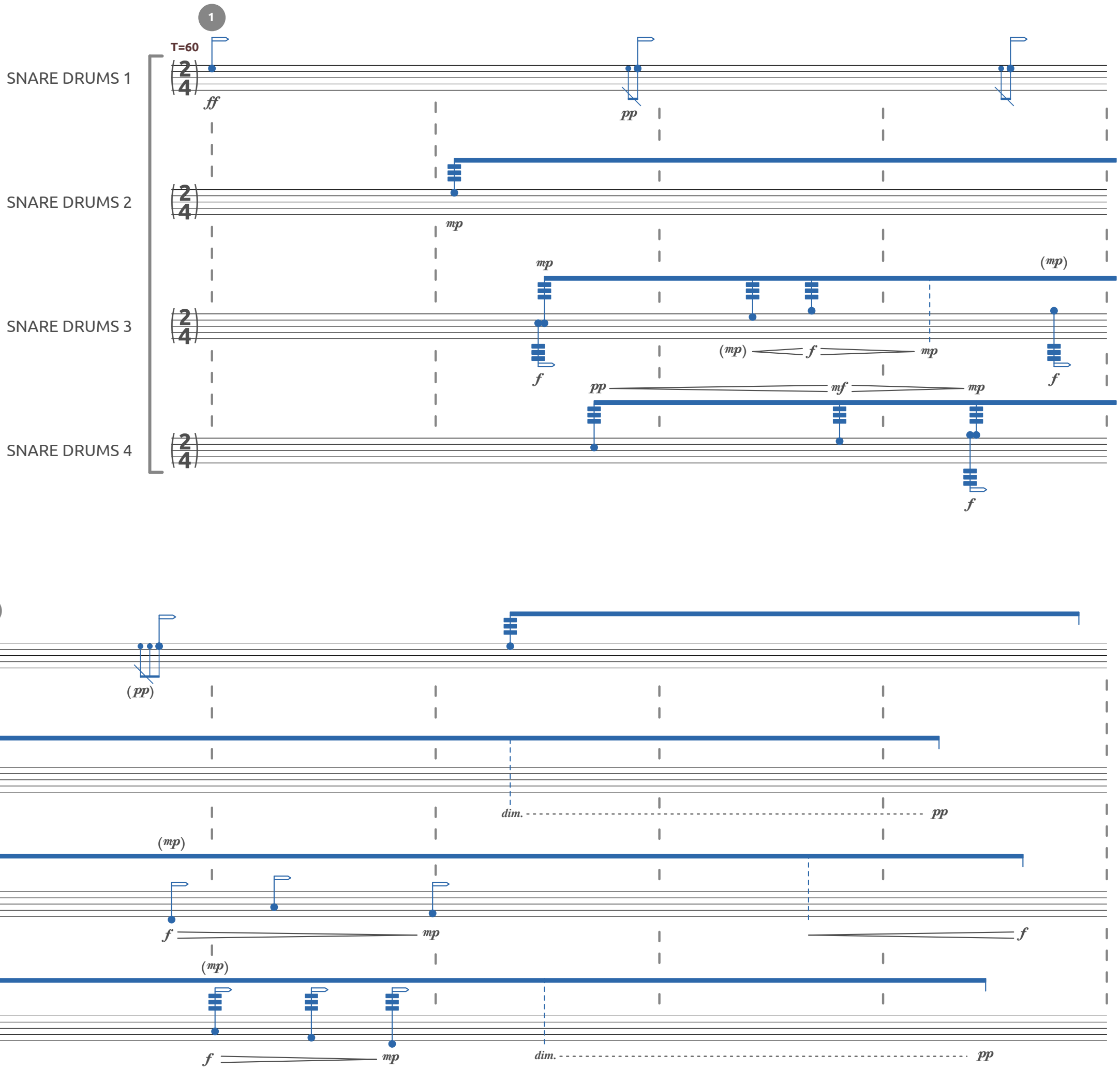


DRUM TECHNIQUES





Rolls terminate with the same stroke as used just prior to termination, except when notated otherwise. The below figure would terminate with a muliple bounce stroke (not a single stroke).


1
T=60
SNARE DRUMS 1
SNARE DRUMS 2
SNARE DRUMS 3
SNARE DRUMS 4
ff
pp
mp
mp
(mp)
(mp) f mp
f
pp mf mp
f
5
1
(pp)
(mp)
dim. pp
(mp)
(mp)
f mp
f
(mp)
(mp)
f mp
dim. pp
10
1
(pp)
p
2
3
f mp f
4
f

15

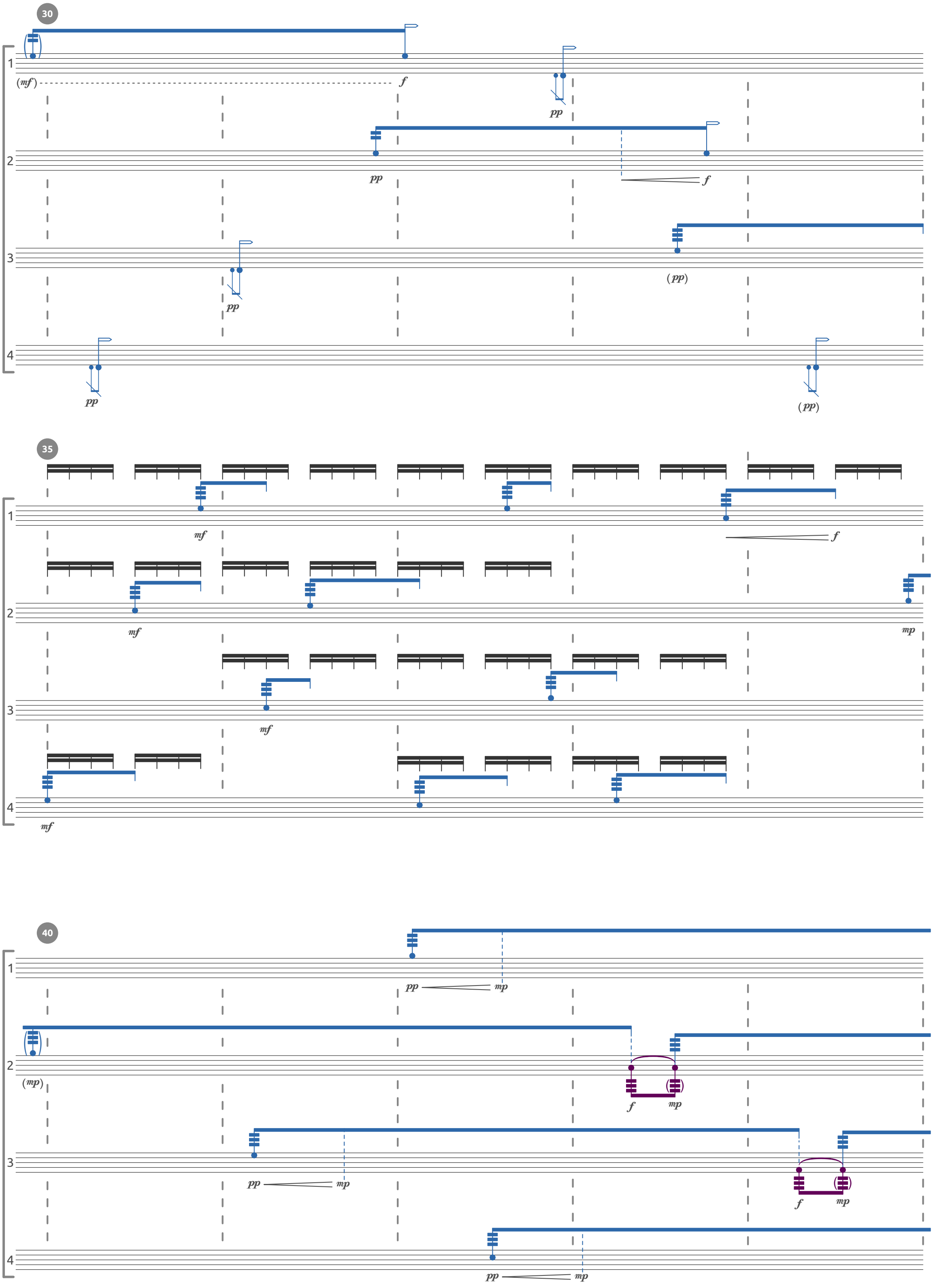
1
ff
mf
2
(p)
mf
3
mf
cresc. - -
4
mf

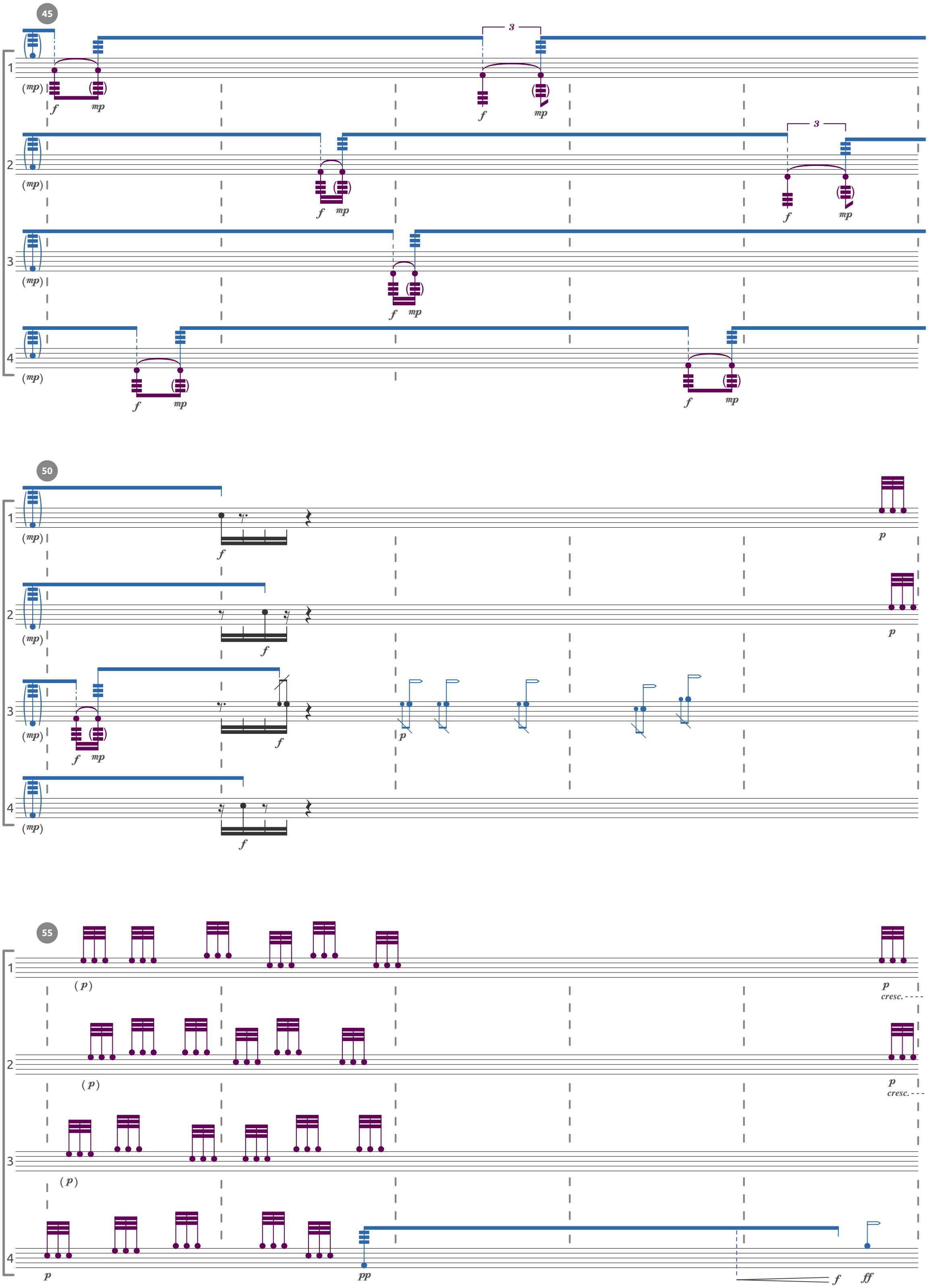
20

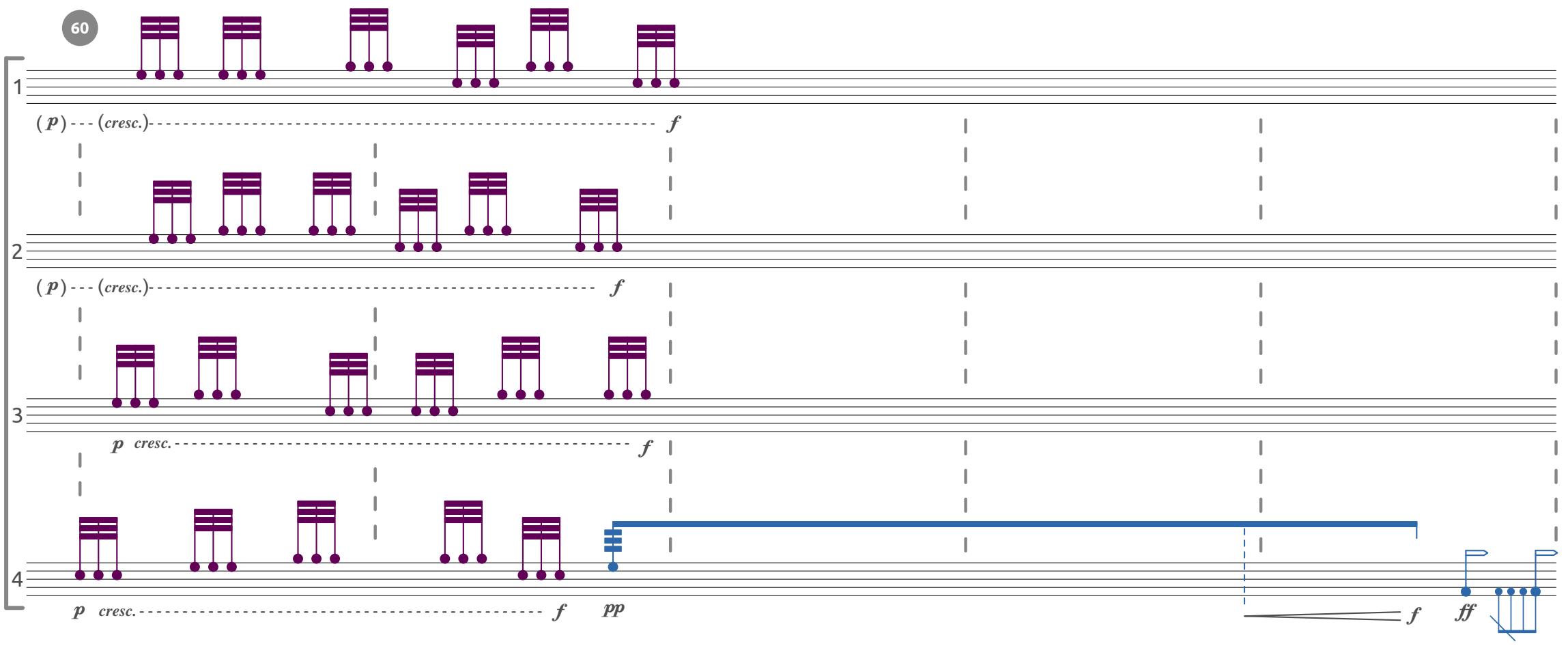
1
f
2
f
3
--- (cresc.) ----------
f
f
4
f

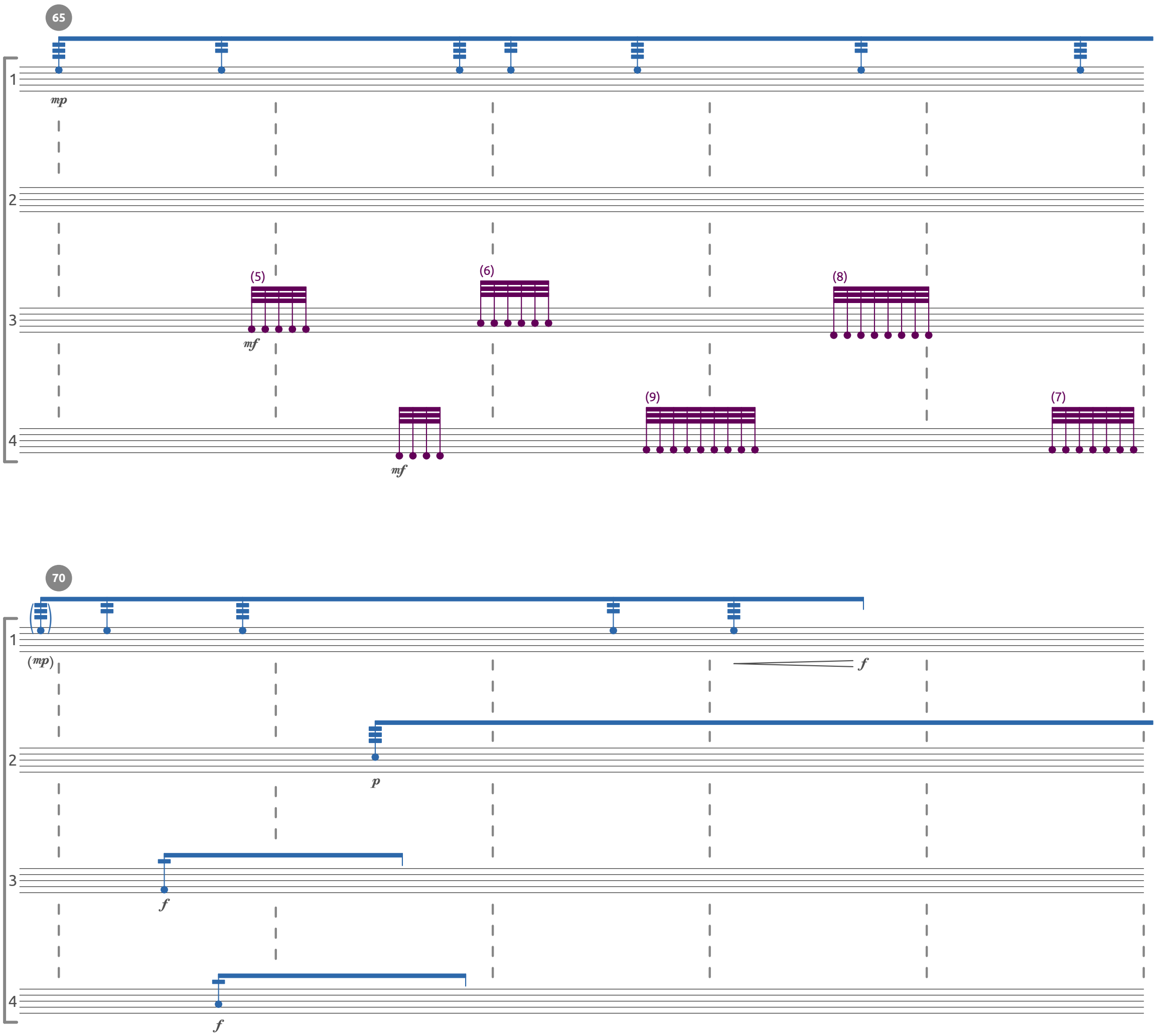
25

1
pp cresc. ---------- (mf) -----
2
(f)
3
(f)
4
(f)

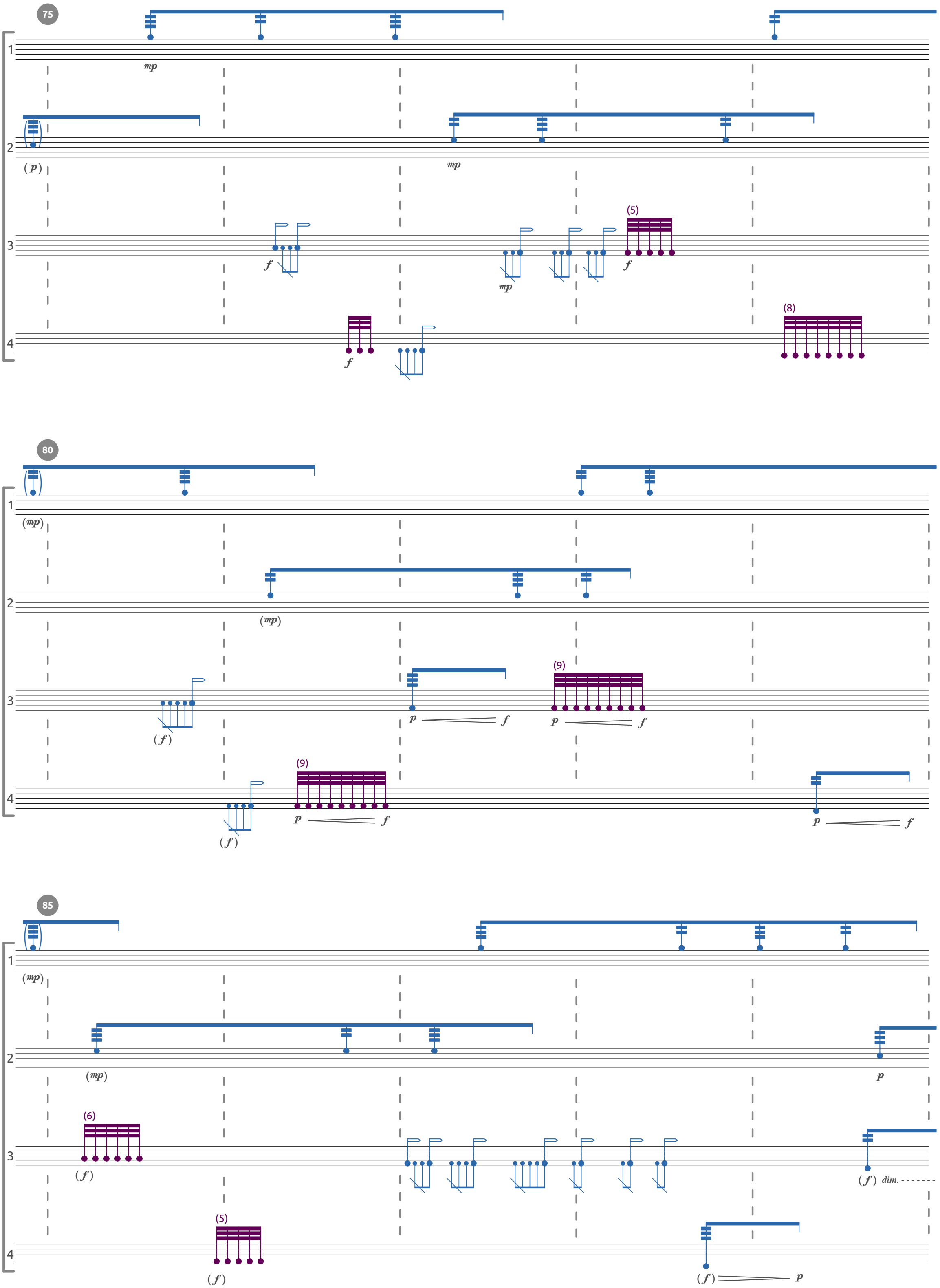

30
1
(mf)
f
pp
2
pp
f
3
pp
(pp)
4
pp
(pp)
35
1
mf
f
2
mf
mp
3
mf
4
mf
40
1
pp
mp
2
(mp)
f
mp
3
pp
mp
f
mp
4
pp
mp


45
1
2
3
4
(mp)
f
mp
3
50
p
55
(p)
cresc.
pp
ff


60
1
2
3
4
(p) --- (cresc.) ---------- f
p cresc. ---------- f
p cresc. ---------- f
pp
f
ff


65
1
2
3
4
mp
(5)
(6)
(8)
(9)
(7)
mf
mf

70
1
2
3
4
(mp)
f
p
f
f


75
1
mp
2
(p)
mp
3
f
mp
(5)
f
4
f
(8)
80
1
(mp)
2
(mp)
3
(f)
p
f
(9)
p
f
4
(f)
(9)
p
f
p
f
85
1
(mp)
2
(mp)
p
3
(6)
(f)
(f) dim.
4
(5)
(f)
(f)
p

90

1
2
3
4

(p)

- - - (dim.) - - - - p

mp

mp

95

1
2
3
4

(mp)

(p)

(mp)

(mp)

100

1
2
3
4

(mp)

(p)

(mp)

(mp)

cresc.

105

1

2

3

4

p mf p

(cresc.) f dim. p

110

1

(p) f p

2

(p)

3

p f p

4

p mf p

115

1

(p) f p

2

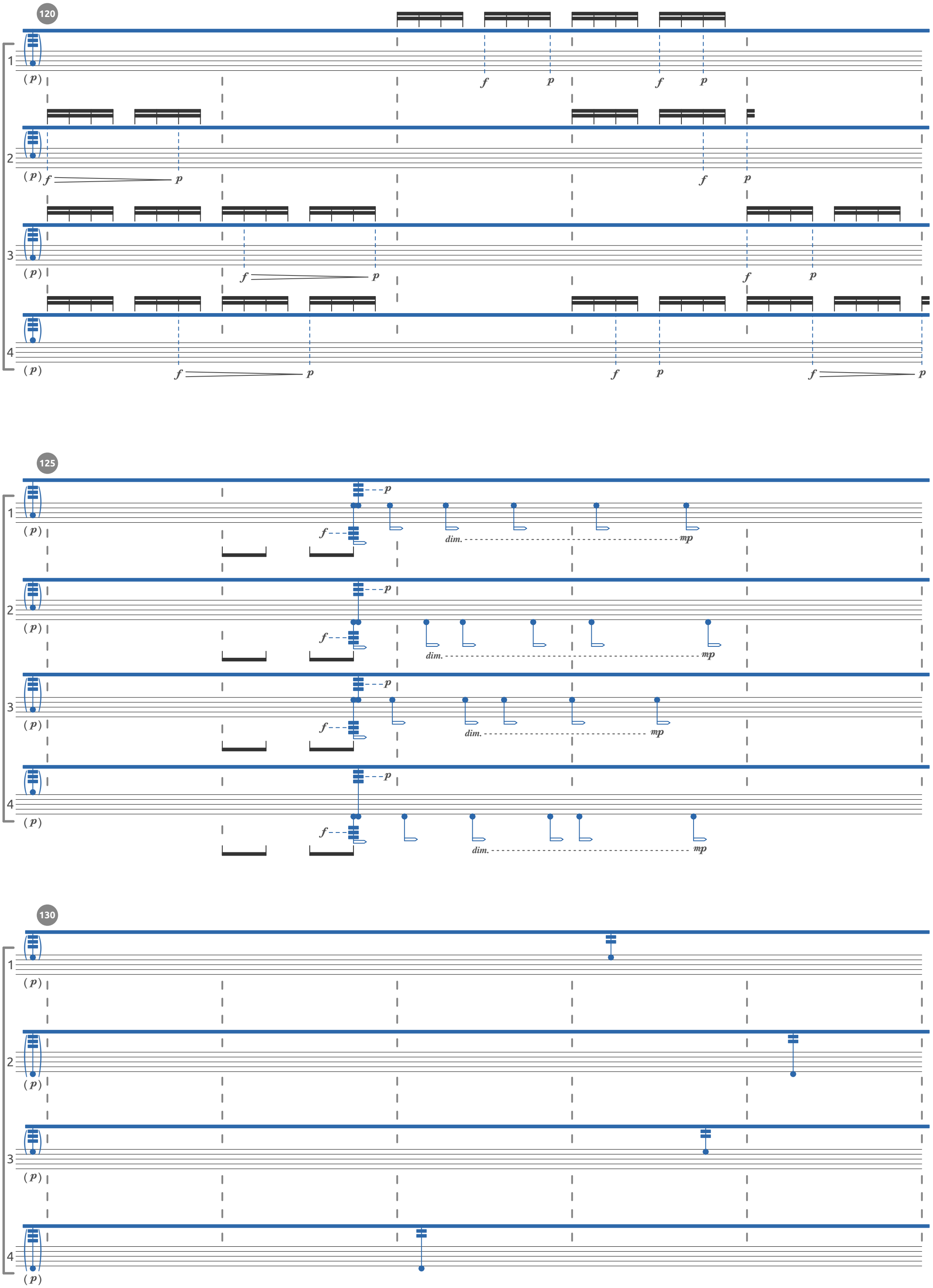
(p) mf p

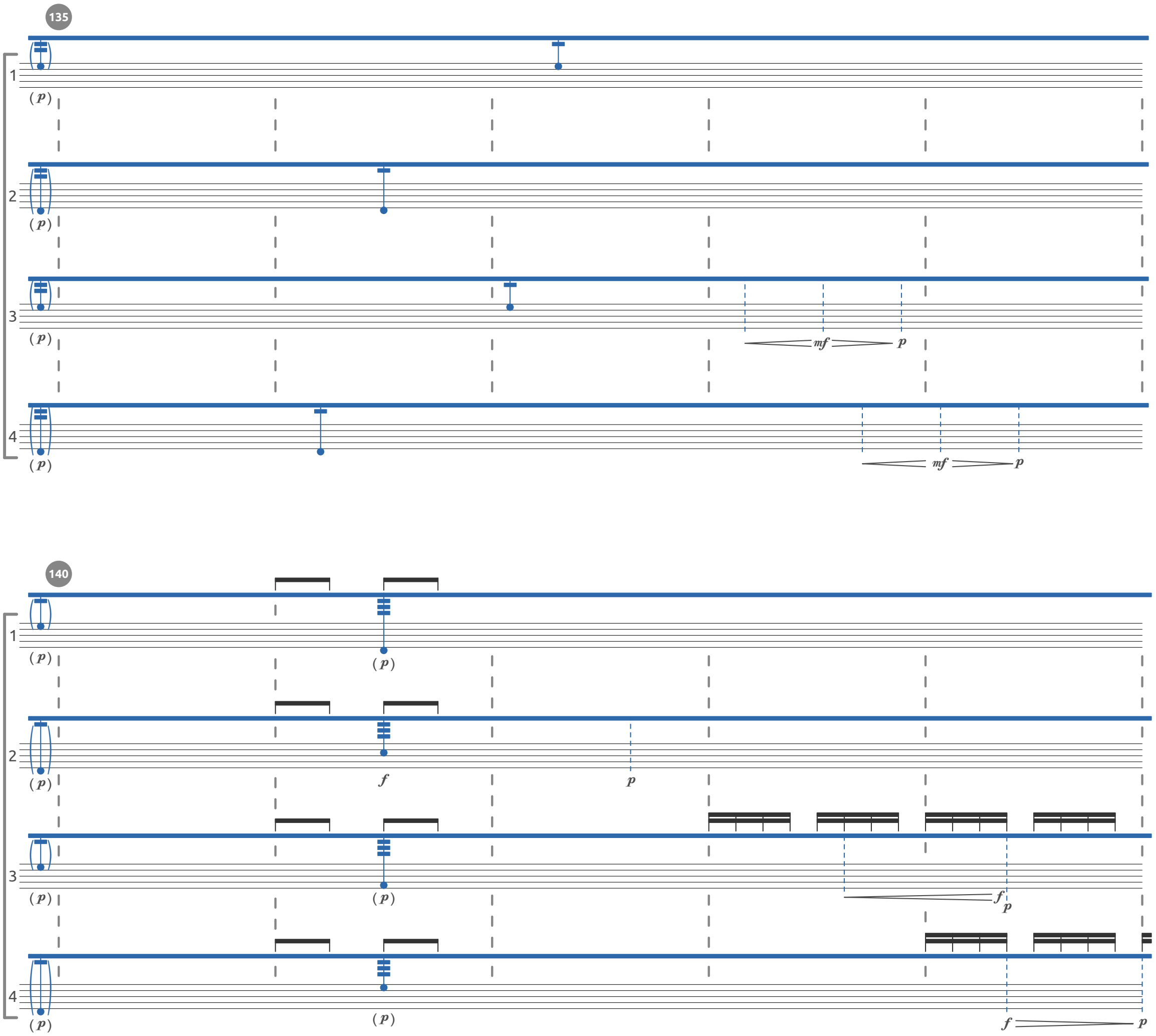
3

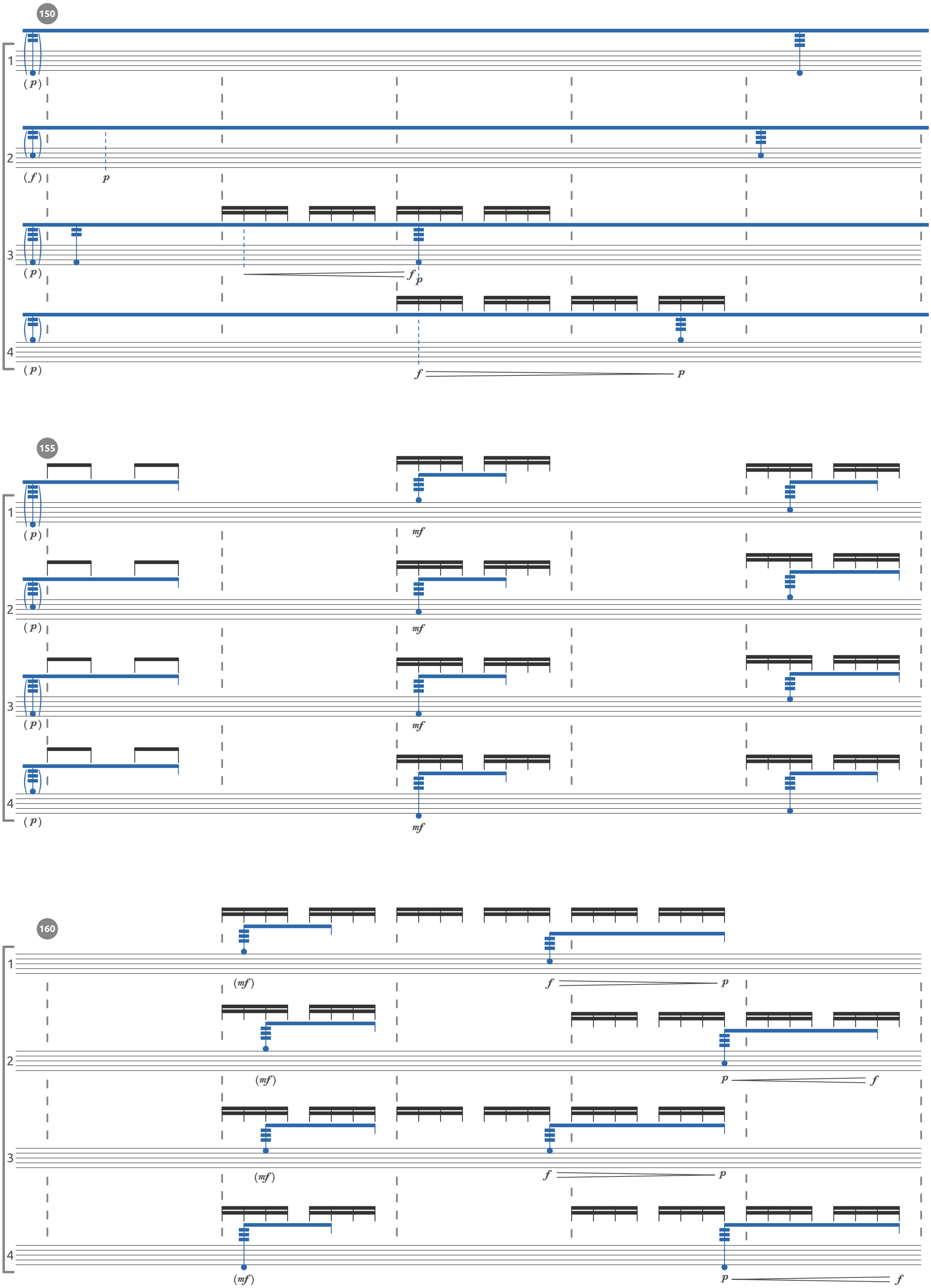
(p) mf f p

4

(p) f p


120
1
2
3
4
(p)
f
p
125
dim.
mp
130


135
1
(p)
2
(p)
3
(p)
mf
p
4
(p)
mf
p
140
1
(p)
(p)
2
(p)
f
p
3
(p)
(p)
f
p
4
(p)
(p)
f
p
145
1
(p)
f
p
(p)
2
(p)
f
3
(p)
f
p
4
(p)
f
p
(p)


150
1
(p)
2
(f)
p
3
(p)
f
p
4
(p)
f
p
155
1
(p)
mf
2
(p)
mf
3
(p)
mf
4
(p)
mf
160
1
(mf)
f
p
2
(mf)
p
f
3
(mf)
f
p
4
(mf)
p
f

165

1 f p f 6 p (p)

2 3 p 3 mf f

3 (p) p f

4 p p

170

1 pp mf pp 3

2 pp pp 3 3 mf (mf)

3 (f) mp

4 6 f mp

175

1 (pp) mp

2 (pp) mp

3 (mp)

4 (mp)

180

185

190

195

1 (f)

2 (f)

3 (f)

4 (f)

200

1 mf f

2 mf (mf) mf p

3 mf mf p

4 mf mf p

205

1 mf (mf) f mp

2 (p) mf (mf) mp f

3 (p) mf mp f mp

4 (p) mf (mf)

210

1
p
2
p
3
(*mp*)
4
p

215

1
(*p*)
mf
2
(*mp*)
cresc.
f
3
(*p*)
mf
4
(*p*)
mf
(*rall.*)
pp

220

1
2
3
(*rall.*)
mf
dim.
p
4
(*rall.*)
mp

225

1
mp
2
mp
3
(accel.)
mf
dim.
p
(accel.)
cresc.
f
3 3 3 3 3 3 3 3 3
4
pp

230

1
(8)
f
2
(9)
f
3
mp
3 3
4
(pp)
mp

235

1
(5)
(f)
dim.
p
2
(7)
(f)
dim.
p
3
(mp)
f
dim.
p
4
(mp)
f
dim.
p

240

1

(p)

3 3 3 3 3 3 3

f dim.

2

(p)

3 3 3 3 3 3 3

f dim.

3

(p) f

3 3 3 3 3 3 3

dim.

4

3 3 3 3 3 3 3

f dim.

245

1

3

---(dim.)--- p

2

3

---(dim.)--------- p

3

3

---(dim.)---- p

4

3

---(dim.) p

250

1

(p)

2

(p)

3

(p)

4

(p)

255

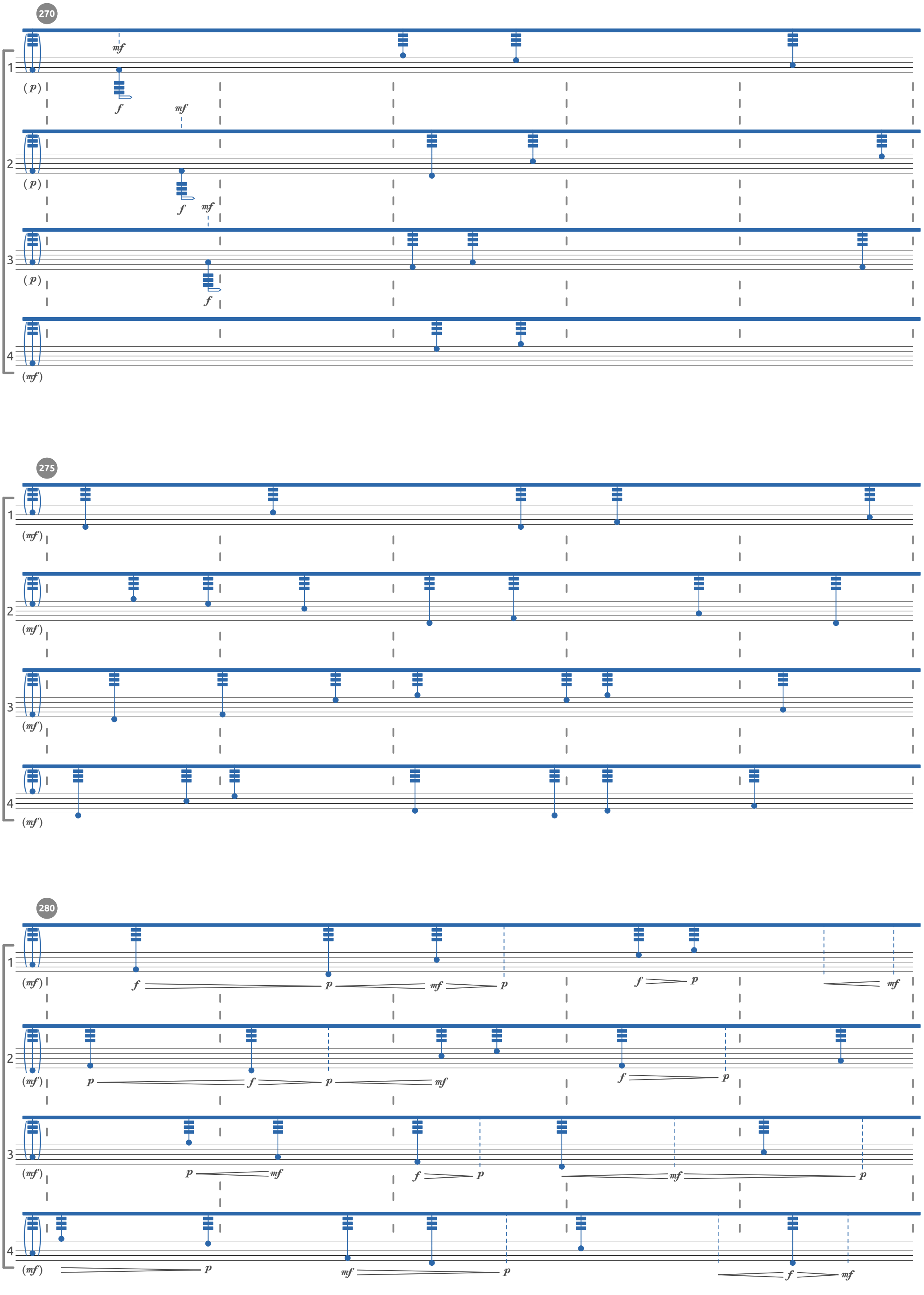
1
(accel.)
mp
2
(rall.)
cresc.
f
(p)
3
(p)
4
(p)

260

1
(mp)
mf
dim.
2
mf
3
(p)
mf
p
4
(p)

265

1
(dim.)
pp
p
2
(dim.)
pp
p
3
(p)
4
(p)
mf


270
1
2
3
4
275
1
2
3
4
280
1
2
3
4

285

1
(mf) f mf p

2
(p) mf p

3
(p) mf p

4
(mf) p mf p

290

1
(p) (p) f (f)

2
(p) f (p) (f)

3
(p) f (p) (f)

4
(p) f (p) f

295

(p)

1
(f) mf mp mp

(p)

2
(f) mf mp

(p)

3
(f) mf mp

(p)

4
(f) mf mp

300

(p)

1

f

(p)

2

f

(p)

3

f

(p)

4

f

305

1

ff

2

mf dim.

3

mf dim.

pp

4

mf dim.

310

1

2

(dim.)

pp

3

4

(dim.)

pp