Tran(ce)sients for large chamber ensemble and audio track with accompanying document

by

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Abstract

The purpose of *Tran(ce)sients* is to find ways to engage an audience in concentrated listening during a concert hall performance of challenging chamber music. For some time now, a point of great interest to me has been what could or will hold one's attention during a performance, particularly one of challenging music? To answer this question, a search into my own past experiences yielded results which proved to be helpful. This led to a synthesis of influences from three musical styles (namely *onkyô*, spectral music, and *musique concrète instrumentale*) and their philosophies, and past compositional processes that have shaped my current aesthetic.

In *Tran(ce)sients*, a 25:13 long work, I attempted to produce concentrated listening by way of analysis of electronically manipulated field recordings and their orchestration for a large chamber orchestra augmented by a small rock ensemble and pre-recorded audio track. The recordings used for *Tran(ce)sients* represent an abstracted "soundwalk"[1] of my journey from my former apartment in Edmonton to the University of Alberta campus. Using Max software and a USB MIDI controller, the recordings were first manipulated in an improvised manner, and subsequently used in two ways: (1) to supply a set, intermittent recorded background that is an essential part of the score; and (2) to be transcribed and orchestrated for large, acoustic chamber ensemble.

The title *Tran(ce)sients* represents a combination of two words that I feel best explains what this piece is about: a focus on noises we tune out on a day-to-day basis (unwanted, much like transients[2] in the world of studio recording) and the trance[3]-like

[1] Hildegard Westerkemp, "Soundwalking," in *Leaves, Sound and the Environment in Artistic Practice*, ed. Angus Carlyle (Paris: Double Entendre, 2007), 49.
[2] Jeff Strong, *Home Recording for Musicians for Dummies* (Hoboken, NJ: John Wiley & Sons, 2014), 148.

state that can be experienced while listening to extreme music and the kind of "state of other consciousness" one can experience listening to it.

The accompanying document is a paper that will take the form of a brief overview of (1) onkyô, (2) spectral music and (3) instrumental *musique concrète* followed by a detailed analysis of the entire process behind the piece, starting with manipulating the sounds in Max, moving on to their transcription into notated music and their orchestration for large chamber ensemble, and ending with a summary of the process and the future of the piece.

[3] OED online, s.v. "trance, n.1," Oxford University Press, accessed October 9, 2018, http://www.oed.com.login.ezproxy.library.ualberta.ca/view/Entry/204534?rskey=l9mwmW&result=1&isAdvanced=false.

Dedicated to my family, Daniel Brophy, and Maxim Guechtal-Brophy,

Sydny, Omar, Maria, Rebeka, Charlotte, and Beatrice Guechtal,

Andrew, Lynn, and Jim Brophy,

and all who have helped me get this far.

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I. Introduction

The primary goal of *Tran(ce)sients* is to create extreme sounds and a challenging listening experience, produced by way of both analysis and orchestration of electronically manipulated field recordings. These recordings, the compositional source material, were made in 2012-13 and represent a range of indoor and outdoor sound environments in and around Edmonton and University of Alberta (U of A) areas. Using Max software[4] and a USB MIDI controller, the recordings were first manipulated, and subsequently used in two ways: (1) they provide a fixed, intermittent recorded background that is an integral part of the score; and (2) they were transcribed and orchestrated for a large, acoustic chamber ensemble comprised of:

1 flute	2 Bb trumpet	2 violins
1 oboe	1 horn in F	1 viola
1 Bb clarinet	1 trombone	1 cello
1 bassoon	1 tuba	1 double bass

3 percussion (3 performers): 1 drum set, 1 pitched and 1 auxiliary percussion

1 electric guitar (with effects)
1 electric bass guitar

The title *Tran(ce)sients* is a combination of the definition of a transient in the world of studio recording, which means a sudden, extreme (and unwanted) increase in the sound signal,[5] and the word *trance,* meaning a state of mental abstraction from external things (i.e., absorption, exaltation, rapture, ecstasy).[6] This title seemed fitting because it relates to the sound sources used in *Tran(ce)sients* that are noises we tune out on a day-to-day basis (unwanted) and the trance-like state I feel while listening to extreme music,

[4] Max is a live processing programming environment initially developed in the mid-1980's by Miller Puckette under the name the Patcher during his time at IRCAM. David Zicarelli later extended it with the MSP suite. This added many audio processing features to Max. Since then composers, performers, and artists of many kinds have used it in their works and live performances. (Grove Music Online, s.v. "Computers and Music," by John Strawn and Alan Shockley, accessed December 10, 2018, http://www.oxfordmusiconline.com/).
[5] Strong, *Home Recording for Musicians*, 148.
[6] "trance, n.1."

my passion of the challenge it represents and the kind of "enlightenment" I experience from listening to it.

Tran(ce)sients, a 25:13 long work, consists of three linked, movement-like sections whose combined narrative represents a "soundwalk"[7] that starts within my former Edmonton residence and concludes at the University of Alberta. The first section focuses on indoor sounds only, the second on both indoor and outdoor sounds, and the third on outdoor sounds only.

The effect of the "extreme" arises in both the orchestration itself, and in the combination of the orchestration with the score's fixed, recorded sounds. These sounds are heard as an audio track played from the start of the piece in fixed time; the instruments react to the audio track throughout the work and the recorded sounds represent the basis for the structure and sonic materials for the score.

The score is designed to incorporate two dimensions: (1) a fixed, real time background recording (represented graphically); and (2) a conventional score conducted and cued in relation to the fixed background recording. To time the cues the conductor uses a stopwatch. The transcription process for the manipulated sound objects was completed in two stages: first, voices and effects were selected and extracted (included here were noises, melody, texture, sustained tones and rhythmic patterns) and were notated in a basic piano-like score; next, this summary of extracted content was translated and orchestrated into a language of colorful, contrasting extremes. In the second stage, these orchestrated sections were positioned so that they could alternate and interact with the fixed background recording. These sounds come and go much like a succession of interludes, and provide context for the orchestrations.

[7] Westerkemp, "Soundwalking," 49.

Over the course of the work, the background recording gradually recedes, leaving the orchestration in the foreground to ultimately conclude the work.

II. Onkyô, Spectralism and Sound Organization

The extreme nature of certain styles of music (such as noise, onkyô, extreme metal, and some chamber music of the past century), and particularly the extreme demands they put on the listener in terms of the discipline required to listen to and appreciate them, is of great interest to me. In particular, I find myself fascinated by the extremity of chamber and/or orchestral pieces such as Krysztof Penderecki's *Threnody to the Victims of Hiroshima* (1961),[8] Giacinto Scelsi's *Trio À Cordes* (1958)[9] and Iannis Xenakis' "Kassandra" (1987)[10] (from his *Oresteïa* (1966)). The use of restricted pitch content combined with at times rapidly changing or simultaneous contrasting dynamics, timbres, registers, articulations and agitated rhythms (as can also be found in extreme metal, harsh noise, and atonal and serial music) triggers in me instant anxiety, nausea and an extreme feeling of unease. I have always felt a sense of satisfaction, and even enlightenment, when I am able to sit through and listen attentively to a performance of such music, be it due to its aggressive aesthetic or its complex language. This quality of the extreme is the criterion for the styles of music and artists that I listen to today, and is the basis for my current aesthetic orientation. I have come to prefer music that, in various ways, is clearly more demanding of the listener. I prefer this over more conventional music from any era.

My interest in musical extremes, and the need to even force myself at times to listen with maximum focus, is akin to the philosophy of the late 1990s-early 2000s

[8] Krzysztof Penderecki, *Threnody to the victims of Hiroshima: for 52 strings = Threnos: Den Opfern von Hiroschima : für 52 Saiteninstrumente* (Van Nuys, CA: Alfred, 1961).
[9] Giacinto Scelsi, *Trio À Cordes* (Paris: Editions Salabert, 1990).
[10] Iannis Xenakis, "Kassandra," *Oresteia: for baritone, mixed and children's chorus, and chamber ensemble, Rev. version* (London: Boosey & Hawkes, 1996).

Japanese experimental music movement called onkyô. Onkyô, normally performed with electric or electronic instruments, is extreme in nature because "silences and pauses between sparingly placed singular sounds" are its main characteristic. Moreover, the quiet nature of onkyô concerts is such that "an emphasis on the environmental sounds of the performance space prevails, and players minimize expressive physical gestures."[11] Onkyô performances are also known to take place in venues where loud sounds were not permitted because the surrounding rooms were often places of business requiring a quiet environment. The most popular venue was called Off Site (2000-5), a very small room in an old apartment building in Tokyo. Because of Off Site's spatial restrictions, "performers were forced to play as quietly as possible," which in turn established onkyô's aesthetic of "quasi-silence".[12]

Environmental sounds coming off the streets such as "the whistle of a tofu vendor or the wooden clappers of people calling 'beware of fire' as they walked through the neighbourhood,"[13] became a part of onkyô performances at Off Site. Having to sit through such long silences led audience members to develop listening strategies. These strategies became a "learned bodily technique" that helped onkyô audiences better understand and appreciate the music. These strategies included staying silent, limiting eye contact with other people in the room, avoiding bodily contact despite the confined physical spaces and straining to hear any of the performance.[14]

Though I have never attended an onkyô performance, the writings by Lorraine Plourde, David Novak and Shûhei Hosokawa had a significant impact on me. In

[11] David Novak, "Playing Off-Site: The Untranslation of 'Onkyo,'" *Asian Music* 41, no. 1 (2010): 36.
[12] Hosokawa Shûhei. "音楽 Ongaku, Onkyô/Music, Sound." *Review of Japanese Culture and Society* 25 (2013): 15, https://muse.jhu.edu/article/555844
[13] Novak, "Playing Off-Site," 39
[14] Lorraine Plourde, "Disciplined Listening in Tokyo: Onkyô and Non-Intentional Sounds," *Ethnomusicology* 52, no. 2 (2008): 278.

particular, their descriptions of the sound-world created at these events and the ideas that came out of onkyô greatly inspired me to write *Tran(ce)sients*. Based on Plourde, Novak and Hosokawa's descriptions of onkyô, the album *Good Morning Good Night* (2004) [15] (a collaboration between Sachiko M, Otomo Yoshihide and Toshimaru Nakamura) comes to mind as the type of sound-worlds produced during onkyô performances. *Good Morning Good Night* is a good example of the sparseness interspersed with suddenly loud and extremely quiet sounds heard in onkyô. Though not a part of the onkyô scene, Japanese sound artist Ryoji Ikeda's album +/- (1996)[16] also has similar qualities to onkyô. On this album, Ikeda works with sounds that are not only quiet but also reach registers so high they barely fit in the range of human hearing. In terms of western music composers, Morton Feldman's aesthetic of quiet and sparse sounds has much the same aesthetic as onkyô. In particular, Feldman's solo piano work, *For Bunita Marcus* (1985)[17], and his chamber piece, *Piano and String Quartet* (1985)[18], come to mind, as these works are both quiet and use sparsely placed sounds throughout.

Tran(ce)sients is not an onkyô piece, but is perhaps best explained as being in dialogue with certain characteristics of onkyô. A first point of dialogue between *Tran(ce)sients* and onkyô is the way in which I chose to interpret the focus on incidental environmental sounds that came out of the long silences during onkyô performances. For my work, I chose to focus purposely on environmental sounds. Furthermore these sounds have been abstracted through processing, and consequently they have become the primary source of sonic material for the instrumental component of *Tran(ce)sients*.

[15] Sachiko M, Toshimaru Nakamura, Otomo Yoshihide, *Good Morning Good Night*. Erstwhile Records 042-2, 2004, 2 compact discs.
[16] Riyoji Ikeda, +/-. Touch, 1996, MP3 audio.
[17] Morton Feldman, *For Bunita Marcus*, ALM Records ALCD-88, 2013, sound file.
[18] Feldman, *Piano and String Quartet*. hat[now]ART 128, 2001, compact disc.

A second characteristic of onkyô that I found inspiring were the long pauses between sparingly placed singular sounds. I imagined a heightened sense of unease resulting from hearing this, followed by an increased focus on what was being played as is described by Lorraine Plourde.[19] In *Tran(ce)sients* the long pauses or silences are manifested as long sections of audio track interspersed with bursts of instrumental music. These bursts relate to the sparingly placed singular sounds. With this texture of long sections of audio track interspersed with bursts of instrumental music (which happens in the first two-thirds of my piece) my hope is to draw the listener into my sound-world. I also wish to create a similar inward listening experience for the audience to that of onkyô as this is essential to the relationship between sound and ear I am trying to express.

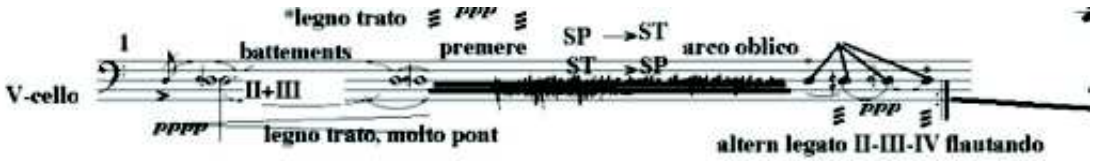
Another distinction between *Tran(ce)sients* and the music of onkyô is the physical space in which the work is to be performed. Onkyô, an underground and relatively unknown/niche style, was performed at Off Site, whereas my work, which is contemporary chamber music, is meant to be performed in a concert hall and was never intended to re-create the atmosphere present at Off Site in the mid-1990s. The only connection that can be made is that audience members are expected to be silent at both venues.

The quality of extreme I discussed in my introduction arises in my work in the acoustic orchestrations. I am interested in having instruments produce uncharacteristic or aggressive noise-like sounds as can be heard, for example, in *Shu Hai in an Orchestral Setting: For Female Singer, Her Recorded Voices, Orchestra and Live Electronics*

[19] Plourde, "Disciplined Listening," 271.

(1998)[20] by Chaya Czernowin, *Lux Animae for Ensemble and Computer Sounds* (2010)[21] by Ana-Maria Avram or *Das Mädchen mit den Schwefelhölzern* (1990-1996)[22] by Helmut Lachenmann. A more detailed example of this can be found in Avram's *Lux Animae* (2010). In the legend the composer describes one of the sounds to be produced by a stringed instrument as "distortion": meaning "sound and noise, either generated by a heavy pressure of the bow (combined with a slow bow speed) or by different beatings between two close pitches played together".[23] An example of this sound is represented on the second page of *Lux Animae* (2010) in the cello part where the wood of the bow is to be dragged across the strings (*legno trato) moving between the bridge (SP) and the finger board (ST).[24] Bowing strings in this way creates a type of quiet distortion (see **Figure 1** below).

Figure 1 Avram, *Lux Animae* (2010)



I have also used a compositional approach similar to that found in *Das Mädchen* (2002) in that the materials for my piece will be organized by way of (often noise-like) performance techniques associated with the acoustic instruments. Lachenmann himself has labeled this compositional approach as *musique concrète instrumentale,*[25] which

[20] Chaya Czernowin, Zohar Eitan, *Shu Hai in an Orchestral Setting: For Female Singer, Her Recorded Voices, Orchestra, and Live Electronics* (Mainz: Schott, 2002).
[21] Ana-Maria Avram, "Lux Animae for Ensemble and Computer Sounds," in *The Metamorphosis of Musical Text Book I Collection of Score by Iancu Dumitrescu and Ana-Maria Avram*, trans. Tim Hodgkinson (London: Edition Modern & ReR Megacorp, 2016): 268-278.
[22] Helmut Lachenmann, *Das Mädchen mit den Schwefelhölzern Musik mit Bildern* (Wiesbaden: Breitkopf & Härtel, 2007).
[23] Iancu Dumitrescu and Ana-Maria Avram, *The Metamorphosis of Musical Text Book I Collection of Score by Iancu Dumitrescu and Ana-Maria Avram*, trans. Tim Hodskinson (London: Edition Modern & ReR Megacorp, 2016): 340.
[24] Ibid.
[25] Abigail Heathcote and Helmut Lachenmann, "De La Musique Comme Situation," in *Helmut Lachenmann Écrits et Entretiens*, ed. Martin Kaltenecker, trans. Yves Saint-Amant (Genève: Editions Contrechamps, 2009): 262.

refers to Pierre Schaeffer's electronic *musique concrète.*. For Lachenmann, *musique concrète instrumentale* is a similar type of sound organization but is now associated with the acoustic realm. When asked what *musique concrète instrumentale* is to him, Lachenmann explains it as "sound as a message conveyed from its mechanical origin, or sound as energy."[26] His compositional approach focuses on "an extensive defamiliarization of instrumental techniques such as bowing, pressed, a pizzicato or a unison played by the same instrument or two different instruments."[27] To achieve this defamiliarization, Lachenmann explains:

> The known parameters of sound such as pitch, duration, timbre, volume and their derivatives must lose their importance and the physicality, or energy of a sound then becomes the source of compositional tools. In order to develop this, a process of "deconstruction" of the sound-technique must be invented, which leads of its own accord to a freshly illuminated, unknown sound.[28]

This concept of defamiliarization of sound seems to be the common ideal between Lachenmann's *musique concrète instrumentale* and Pierre Schaeffer's *musique concrète*. *Musique concrète* created by Schaeffer in 1948 Paris expressed the idea that "the composer was working directly (concretely) with the sound,"[29] without the use of notation. The sounds used could be taken from pre-existing recordings of environmental or instrumental sounds specifically made for the work, which then underwent various manipulations, and were finally combined experimentally into a structure. With *musique concrète,* Schaeffer sought to present sounds in a new, abstracted (even unfamiliar) way rather than "being attached to meanings or narratives associated with their sources and

[26] David Ryan and Helmut Lachenmann, "Composer in Interview: Helmut Lachenmann," *Tempo*, no. 210 (1999): 20.
[27] Ibid., 21
[28] Ibid.
[29] Grove Music Online, s.v. "Electro-acoustic music," by Simon Emmerson and Denis Smalley, accessed 31 Oct. 2018, https://oxfordmusiconline.com

causes."[30] The intent of presenting familiar sounds in an unfamiliar way appears to be a common goal in Lachenmann and Schaeffer's music, the main difference being the sound sources used by each composer: Schaeffer used pre-recorded sounds and Lachenmann used acoustic instruments. Both composers achieved this defamiliarazation of sound by finding ways to obscure the origins or mechanics of their sound sources with methods belonging to the electronic world (for Schaeffer) or the acoustic (for Lachenmann).

The defamiliarization of a sound source arises in my work in the following ways: (1) by processing the sounds in Max and (2) through the *common tone/sound technique*, a term I use to label a compositional technique whereby instruments, whether of the same or different groups (i.e., violin and clarinet or violin and cello), play a similar sound with a similar playing technique (for example, overpressed bow (violin) and overblowing (clarinet)). The first time I used the *common tone/sound technique* was for my string quartet *Reconstructing through a Sound Gallery*. For this piece the technique allowed for a smooth transition between musical parts of the different stringed instruments: as one part (say, the viola) ended on a specific extended technique, the cello could repeat that same technique and continue with its own part, thus creating a kind of common tone between the two parts. The next time I employed the *common tone/sound technique* was for *Hermes' Lure* which was written for instruments belonging to different families. In this composition, I further explored the defamiliarization of the playing technique by using different instruments to produce the sounds. Thus the sounds were presented in a

[30] Ibid.

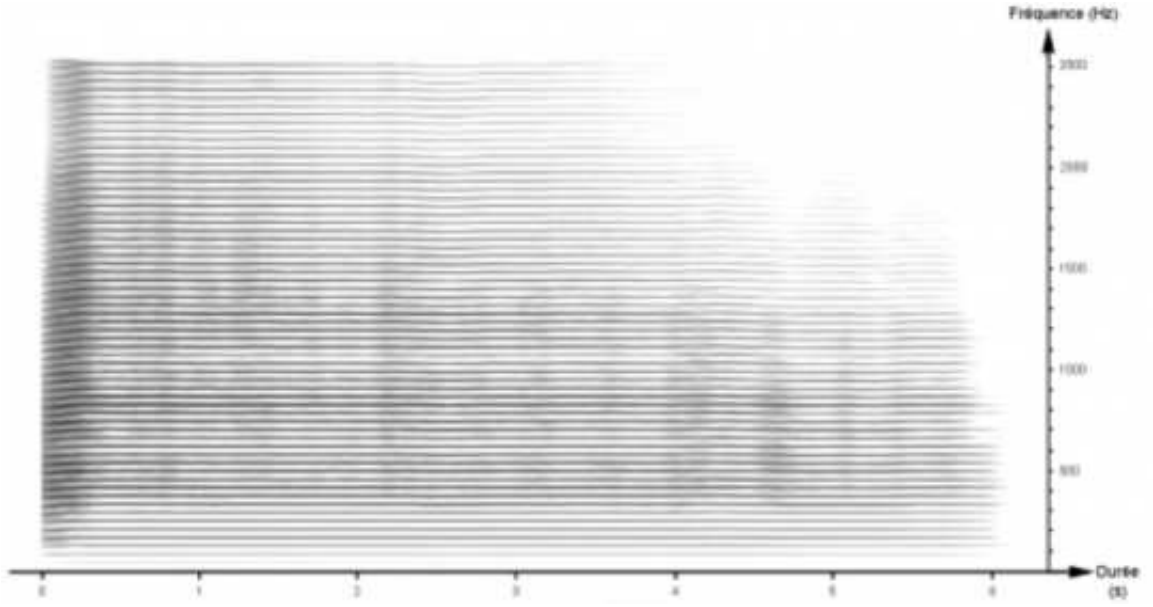
new light which, as Lachenmann states, "makes possible a fresh orientation for our ears."[31]

In addition to bearing stylistic similarities to sound-organization and *musique concrète instrumentale*, part of the compositional process I employed for *Tran(ce)sients* was greatly inspired by spectral music, a style that originated in Europe during the 1970s. Spectral music is defined as music that "uses the acoustic properties of sound itself (or sound spectra) as the basis of its compositional material."[32] It is also known for artificially re-synthesizing the timbre of one instrument with others, a technique metaphorically referred to by François Rose as *instrumental additive synthesis*.[33] This aspect of the style is what inspired a large part of my process for *Tran(ce)sients*.

What resonated with me was primarily the idea of re-synthesizing a software-generated representation of sound using acoustic instruments. Gérard Grisey used this approach in *Partiels* (1975),[34] wherein he re-synthesized a sonogram analysis (see **Figure 2** below) of a pedal low E1 on the trombone[35] for a large chamber ensemble of 18 players. Grisey then chose certain component frequencies of the sonogram analysis and orchestrated them for the chosen ensemble. This example of instrumental additive synthesis illustrates one of the main points of inspiration for my process when writing *Tran(ce)sients,* specifically the manner of transcription of the audio track that was then orchestrated for a large chamber ensemble.

[31] David Ryan and Helmut Lachenmann, "Composer in Interview: Helmut Lachenmann," *Tempo*, no. 210 (1999): 21.
[32] Grove Music Online, s.v. "Spectral music," by Julian Anderson, accessed February 17, 2016, http://www.oxfordmusiconline.com.
[33] François Rose, "Introduction to the Pitch Organization of French Spectral Music," *Perspective of New Music* 34, no. 2 (1996): 8.
[34] Gérard Grisey, *Partiels: Pour 18 Musiciens*, (Milano: Ricordi, 2001).
[35] Rose, "Pitch Organization of French Spectral Music," 8.

Figure 2 Sonogram analysis of a pedal low E1 on the trombone[36]



Although my work shares some similarities with spectral music in that I achieve a type of re-synthesizing of sounds with acoustic instruments, it is dissimilar in that the sounds re-synthesized are not those of other instruments but of the audio track. Moreover, I did not generate sonogram analyses of instrumental spectra but instead used patches built in Max software as tools to manipulate these sound files. These manipulations do not necessarily serve me better than spectral analyses but involve a method I have successfully used in the past (in *Reconstructing Through a Sound Gallery* (2012) and *Reverse Filter* (2012)), whereby I manipulated sound objects myself (during the orchestration process) by using compositional tools such as rhythmic augmentation and diminution, transposition, and retrograde and extended techniques, to name a few.

Using Max to manipulate my field recordings in *Tran(ce)sients* aided in the de-familiarization of the everyday sounds. In effect, I placed the sounds under a type of

[36] François-Xavier Féron, "Gérard Grisey: première section de *Partiels* (1975)," *Genesis*, 31 (2010): 79, accessed November 19, 2018, http://journals.openedition.org/genesis/352.

"aural microscope," in this case the Max patch, which I programmed to play the sound files in reverse, at half-speed, scrubbed [37] through, or with a comb filter.[38] Furthermore, I was able to record the sound files with the Max patch as they were being manipulated, and then loop the recording and play it back again. I could also apply all of this simultaneously to different sound files.

The resulting sounds were then heard in extremely low or high registers; their dynamic ranges were increased or decreased and portions of the sound file, which were not noise at first, became noise. I incorporated this new noise-like quality (which had been caused by the manipulation) into my transcription and orchestration of the audio track where it added to the extreme sound quality. Once de-familiarized in Max, the everyday sounds lend themselves better to extreme or sound magnifying orchestrations.

[37] Stanley R. Alten, *Audio in Media* (Belmont, CA: Thomson Wadsworth, 2005): 375.
[38] Ibid., 61-62.

III. Materials and Process

The compositional process of *Tran(ce)sients* involved four large stages, each of which were broken down further: 1) The gathering of materials; 2) The improvised manipulation of the gathered materials; 3) the transcription of the manipulated materials into a transitory piano-like score and; 4) the orchestration of the piano-like score onto a full score.

1. MANIPULATION AND TRANSCRIPTION OF FIELD RECORDINGS

1.1. The Sound Walk as a Structure

The structure for *Tran(ce)sients* is based a sound walk that begins in my former Edmonton residence and concludes at the University of Alberta (U of A). The three movement-like sections that emanated from that sound walk are categorized as follows: the first section focuses on indoor sounds only, the second on both indoor and outdoor sounds, and the third on outdoor sounds only.

The indoor sounds consist of noises produced by appliances, including electric fans, a toilet's overflow pump, a dishwasher, neon lights, a fridge, a washing machine and dryer, and a vacuum cleaner. The outdoor sounds include a loud passing car, street traffic, a flag pole cable hitting its post in the wind, the shifting gears of a passing bicycle, a mechanical digger, the U of A bus loop and LRT station, and the outdoor water pipes of the Agriculture Forestry building. I organized all of the recorded sounds into a sequenced narrative that retraced my day's journey: I began in the bathroom, moved to the kitchen, and exited to the hallway, at which time I passed the laundry room and someone running a vacuum cleaner. Outside of my building, first came the flagpole,

followed by a mechanical digger, a loud car, street traffic, the bicycle gears, the bus loop, the LRT station and, finally, the outdoor water pipes of the Agriculture Forestry building. Even after having completed all manipulations, I left the recordings in this same narrative order in the composition.

I then based my final selections strictly on the sounds that occurred in sequence on the sound walk (See **Appendix C** for a detailed list of each sound used).

1.2. Manipulation Process

1.2.1. *The Role of the Max Patch*

I used the Max patch, which I created, to process the field recordings I made of my walk to the U of A in an improvised manner. I performed three improvisations, which were recorded. These live improvisations of the processed field recordings became the audio track for the piece.

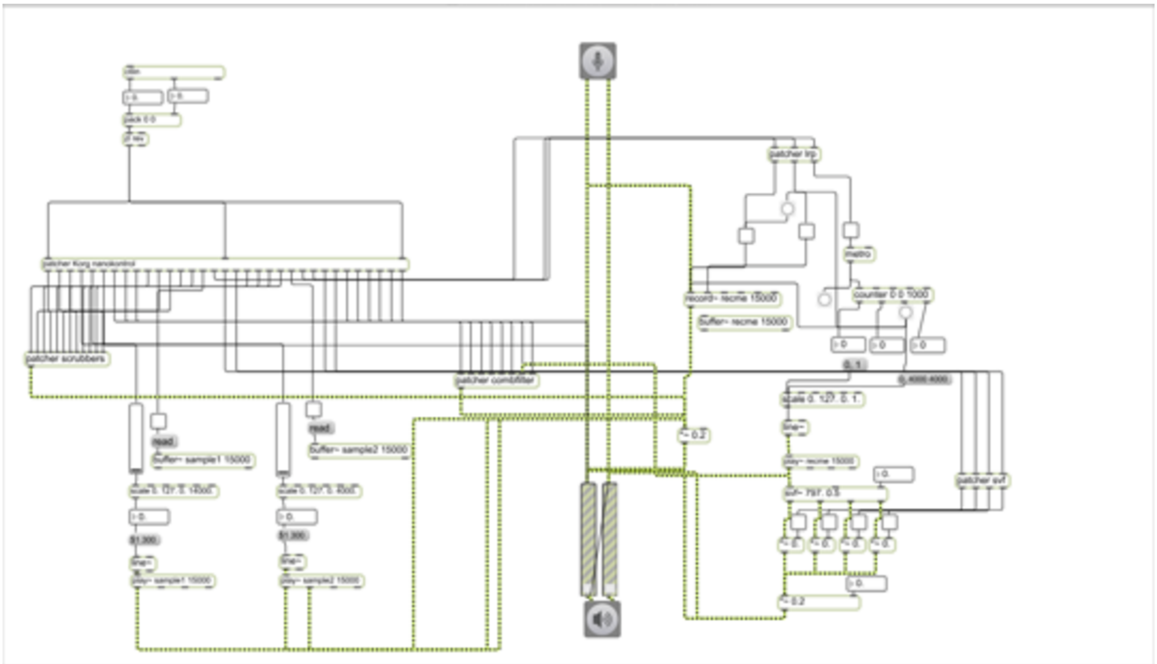
I used Max to manipulate and, in effect, magnify the sound walk recordings as I find it to be an effective method to hear things differently and in more detail. I have used Max in previous live performances because it is a robust program and easy to customize. To control the Max patch for *Tran(ce)sients*, I chose a Korg *nanoKONTROL* USB controller[39] which allowed me to map out my patch to each momentary or NC switch[40] and gain slider[41] on the controller. This made operating the patch easier than using my laptop's keyboard and mouse pad, and the controller is also inexpensive and durable.

I magnified the sound files during my improvisations through a type of processing to transform the recordings. During the improvisations, and with the patch I created, I was able to perform a looped playback of the selected sound files; record the sounds

[39] "Korg nanoKONTROL2", Korg, accessed May 13, 2016, http://www.korg.com/us/products/controllers/nanokontrol2/#sthash.kzrXuDyh.dpuf.
[40] Cathleen Shamieh and Gordon McComb, *Electronics for Dummies* (Hoboken: Wiley Publsihing. Inc., 2009), 179.
[41] Ibid., 47.

produced from the playback; scrub the sound files; play the sound files forward, backwards and at half speed; and apply a comb-filter to them. Furthermore, I was able to perform all of these manipulations in any order, which allowed for an intuitive approach to processing the recordings and transforming them into manipulations ranging anywhere from loud and aggressive to extremely quiet.

Figure 3 Screenshot of full Max patch



In the above screenshot of the full patch (**Figure 3**), I have included the various patchers (objects in Max which help to organize patches by embedding smaller patches within a larger one[42]). One of the ways in which I manipulated the recordings was with the subpatcher, the *scrubber patch*. Using the scrubber patch allowed me to play a sound file forwards, backwards while scrubbing it, and at half speed. (see **Figure 4** below); I also

[42] "Tutorial 14: Encapsulation", Max Basic, Cycling '74, accessed November 19, 2018, https://docs.cycling74.com/max5/tutorials/max-tut/basicchapter14.html.

used the comb-filter patch (see **Figure 5** below**)** and, as shown in the right of **Figure 4**, the live looping, recording and playback patches.

Figure 4 Screenshot of scrubber subpatcher

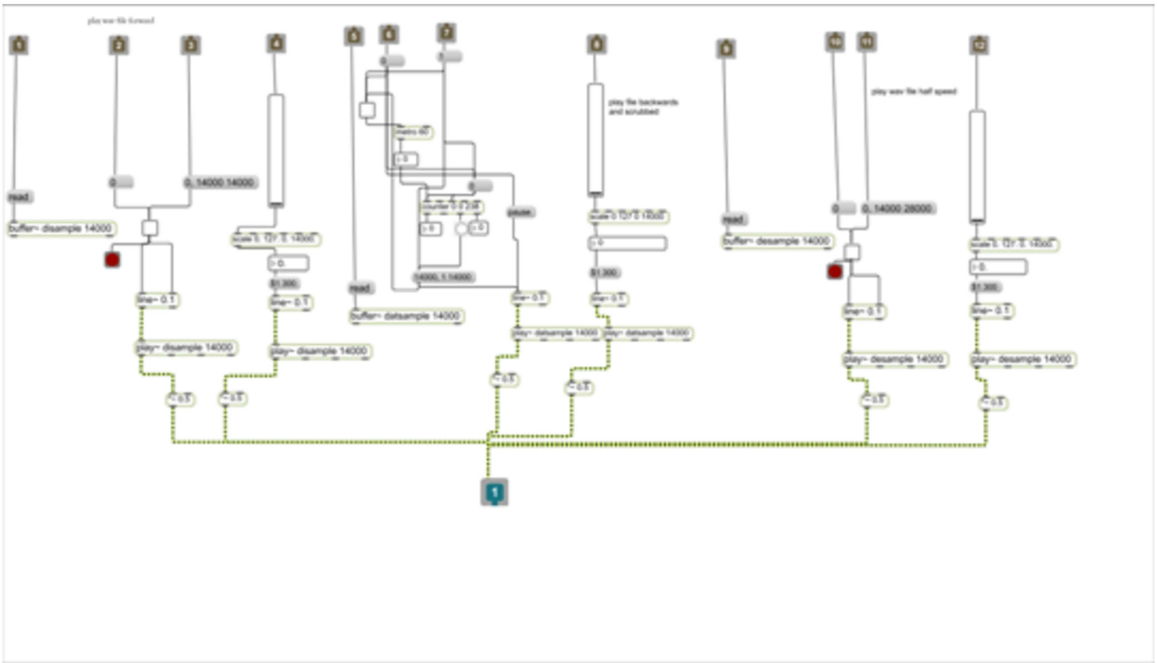
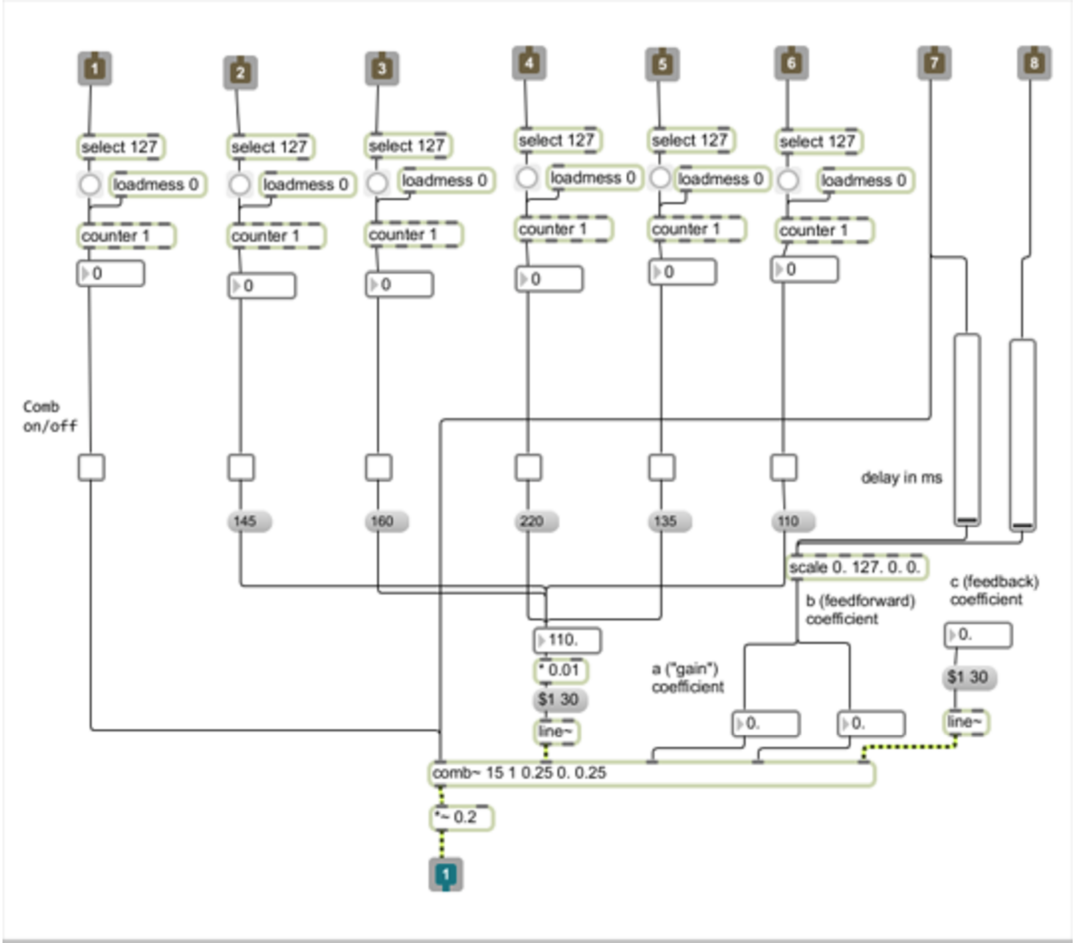


Figure 5 Screenshot of comb-filter subpatcher



Though the *scrubber patch* (**Figure 4**) already includes three scrubbers, I added two more in the main patch to give me the option to simultaneously scrub most of the sound files from a single section (the sections were indoor, indoor/outdoor and outdoor sounds). The patcher Korg *nanoKONTROL* found in the left of the main patcher contains the objects needed to connect the Korg controller to Max, which allows me to operate the whole patch. In order to keep greater control of the patch I also included a small subpatch for the momentary switches on the nano controller and a filter for the live playback patch (see svf~ object in bottom right of **Figure 3**) to avoid any feedback during the playback, which is in realtime.

1.2.2. *Structured/Intuitive Manipulations*

I accomplished the manipulation of the recordings in two overlapping steps: (1) structured and (2) intuitive. The structured part is reflected in the order of the sounds used, which follows that of the sound walk from my previous residence in Edmonton to the U of A. The intuitive part involves the order and combinations of the processing tools I applied to the recordings.

For the most part, I performed the manipulations separately, although I overlapped the processing of one sound file with the processing of another, which resulted in my manipulating two or more sound files at a time. Beyond this, I approached each manipulation as a live experimental improvisation whereby I intuitively chose how to process the sounds as they were being played.

Though I am still learning how to use Max MSP, I felt this patch helped me to successfully achieve what I had set out to do. Because some of the processing tools were embedded in subpatchers, I had to memorize which controls were assigned to each processing tool on the Korg *nanoKONTROL*. This in turn made it feel as though I was learning how to play a new instrument (that I had created, no less) which is an aspect of Max (and circuit bending) I deeply enjoy.

2. FROM THE DIGITAL TO THE ACOUSTIC MEDIUM

2.1. Transcription and Orchestration

The second part of the compositional process for *Tran(ce)sients* involved transcribing the recordings. Once the improvised manipulations were selected, I transcribed them onto a transitional, piano-like score, paying strict attention to specific

pitches and rhythms. I then determined the orchestration of each voice or effect based primarily on correlating expressive instrumental idioms and characteristics. To notate both the piano-like transcriptions and their subsequent orchestrations, I used a mixture of conventional and graphic notation.

2.1.1. *Initial Transcription: Extraction of Textural Voices and Effects*

The initial transcription stage involved primarily listening to the manipulated recording and transcribing all the information by ear. The aural transcription of the recordings is a process I first used in my master's thesis, *Le Sable Mouvant de l'Insanité* (2010). For that project I recorded vocal improvisations (instead of recorded soundscapes) processed with the recording software ProTools[43] (instead of the programming software Max MSP). This process eventually became a template for many of my future works, including *Tran(ce)sients*.

During the initial transcription stage for *Tran(ce)sients,* my main focus was on extracting pitches, rhythms and effects. It was during this stage that I also began assigning specific instruments to the sounds I heard based on my past experiences with this method and the work I had done with various performers. I used a guitar to determine the pitches and added a metronome track to help me more accurately notate the rhythms. The tempo I chose was always at 60 bpm since this is equivalent to seconds. Much of the sounds I transcribed were drone-like, with little to no pulse. This made connecting the rhythms to a time grid measured in seconds seem more logical and facilitated their transcription. Using this method for time measurement helped me to accurately transcribe the rhythm and made it easier for me to track each of sounds as I did so. To double check that the transcriptions were accurate I listened to the Finale audio rendition of the piece

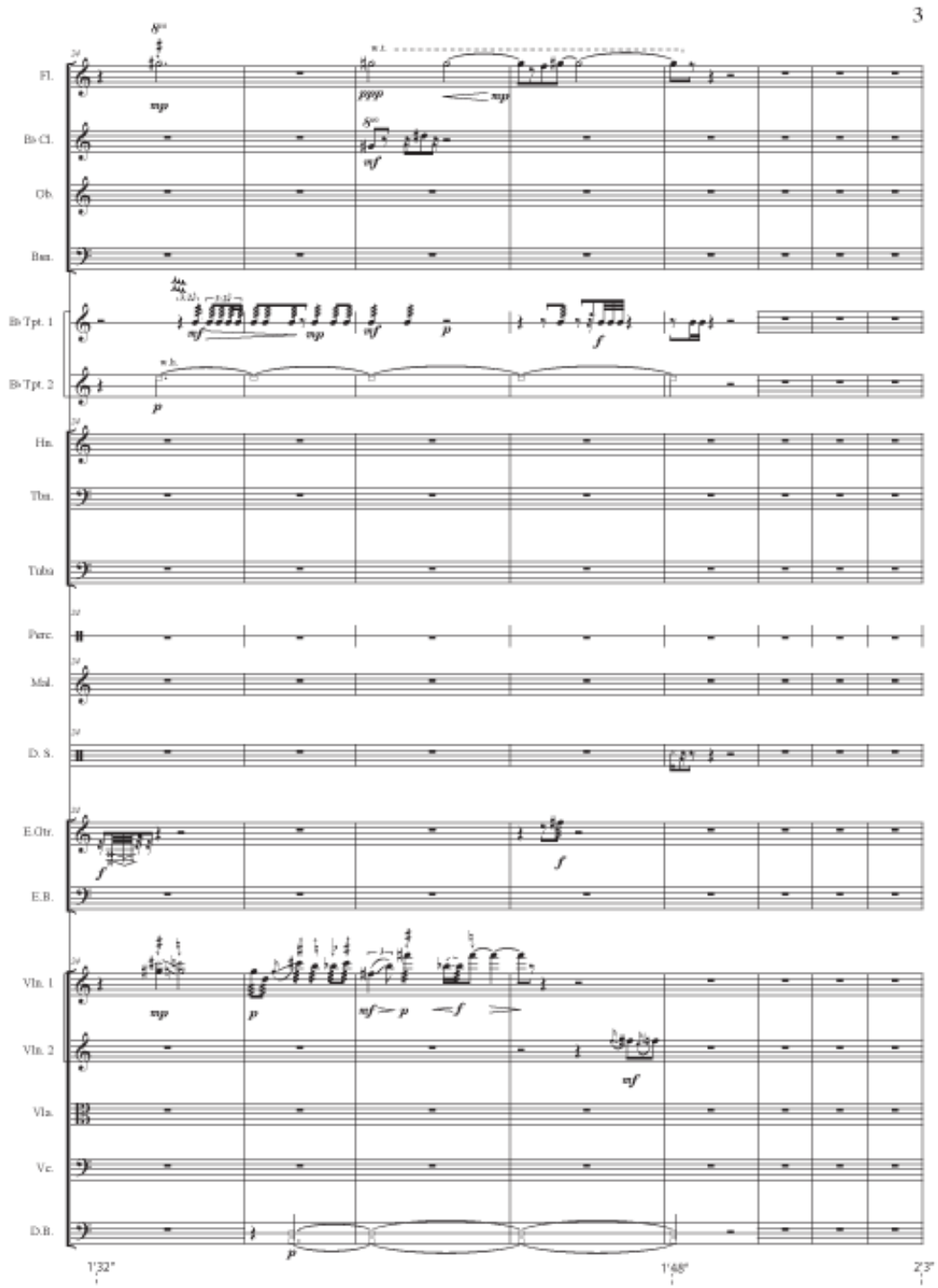
[43] "ProTools," Avid, accessed October 11, 2018, https://www.avid.com/pro-tools.

played simultaneously with the tape track and I found that the sounds were, for the most part, accurately transcribed.

2.1.2. *Final Transcription: Orchestration for Chamber Ensemble*

The orchestration stage of the transcription process I assigned the effects and textures to specific instruments based largely on the nature of the effect. If an effect was breathy or wind-like I chose wind instruments, if it was pitch-based with an overdriven effect (similar to the sound of guitar distortion), I found stringed instruments to be the best choice. Often a portion of a recording can be very complex with several sounds happening simultaneously, making it difficult for a single instrument to emulate. In such situations I chose several instruments to recreate the complex sound. It was for this reason that I chose a large chamber ensemble to orchestrate these sounds, which helped to convey the manipulated recordings more accurately. **Figure 6** is an example from the score for *Tran(ce)sients* where nine instruments were needed to orchestrate a 16-second portion of the audio track.

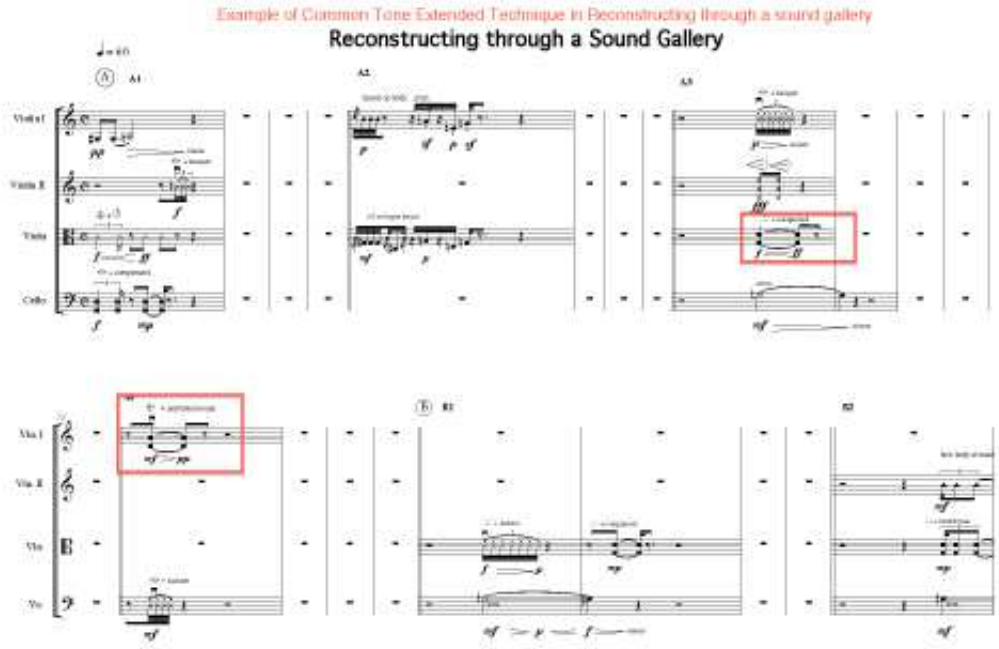
Figure 6 Guechtal *Tran(ce)sients* (2017), p. 2



2.1.3. *Common Tone/Sound Technique*

The common tone/sound technique is one I have used in the past. It has been especially useful when I have organized extended techniques in a piece and, on a larger scale, it has helped me to maintain a sense of cohesion in the overall structure of my compositions, as well as discover some new extended techniques. I first used this technique in my string quartet, *Reconstructing Through a Sound Gallery* (2012), in which an extended technique for one instrument worked as a common tone to transition from one section of the piece into another (see **Figure 7** below). For example, if one section ended with an overpressed bow on one instrument, the next section would begin with the same technique but for a different instrument.

Figure 7 Example of Common Tone/Sound with extended Technique used in *Reconstructing Through a Sound Gallery*



This was easily achieved for the string quartet because these instruments belong to the same family (and therefore produce a more homogenous sound). In turn, this

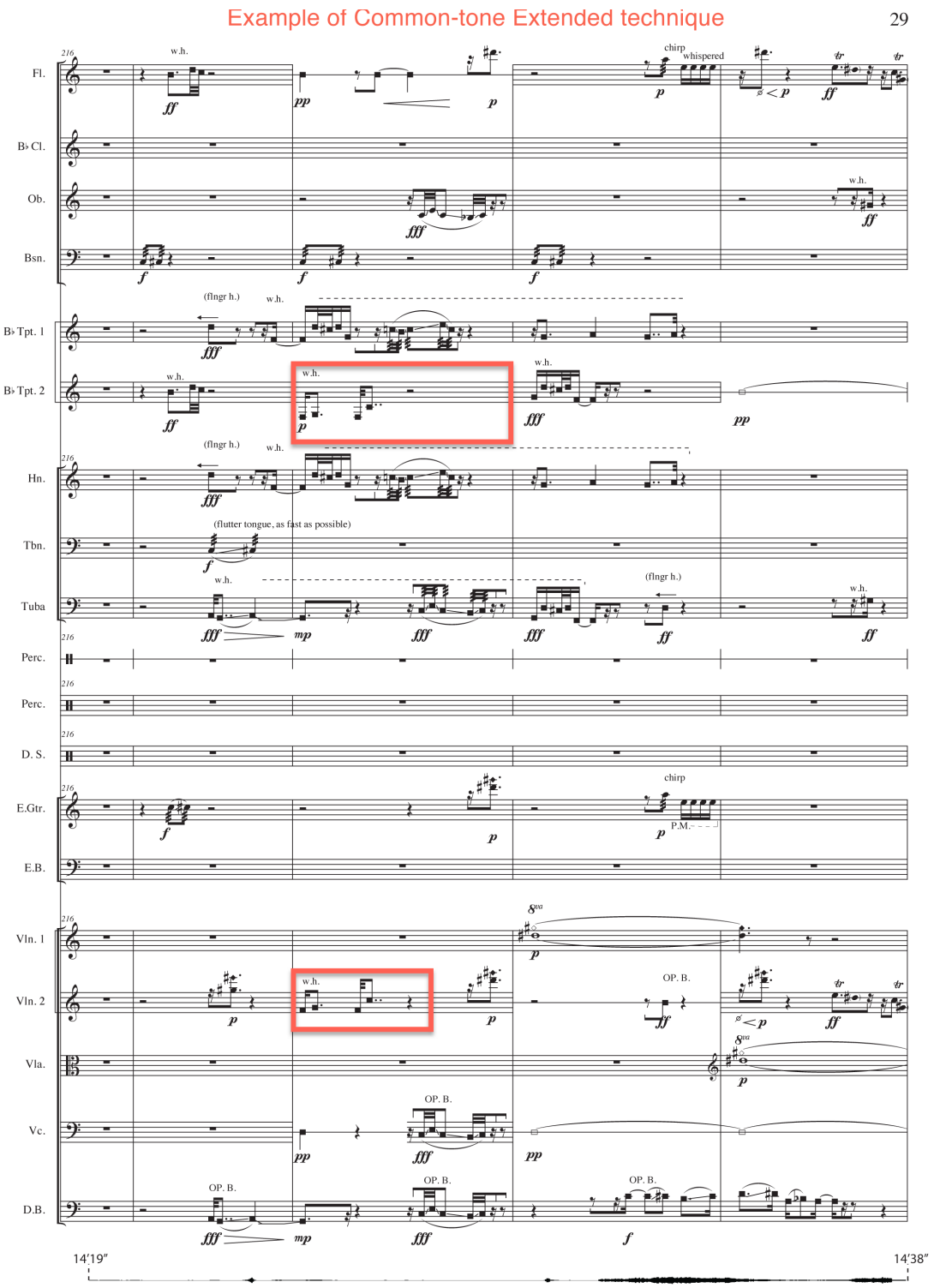
allowed me to replicate the extended techniques I used for each instrument (such as an overpressed bow or bowing the body of the instrument). I used a variation of this technique on my 2014 composition, *Hermes' Lure;* the common tone was not one particular playing technique but a specific sound I was able to orchestrate for more than one instrument in the ensemble.

The way in which I used the common/tone sound technique in *Tran(ce)sients* is different than it was in my previous works. This different approach proved to be useful in the third and last section of my piece where I begin exploring the literal orchestrations. I used it to hear the same portion of the tape track played by two or more different instruments. An example of it can be seen in **Figure 8** (below), where a violin and trumpet are both asked to play "with hiss" (w.h. above the staff). For the trumpet, the hiss is produced by blowing with more air than pitch into it. For the violin, it is often produced by applying less pressure on the strings both with the bow and the fingers. Therefore I did not use the common tone/sound technique to create smooth transitions between sections of *Tran(ce)sients*. Instead I used it as an added sound exploration device (or exploratory tool).

3. THE FINAL STAGE

The structure of *Tran(ce)sients* is based on recorded materials I gathered over the course of my doctorate. After analyzing them in more detail I realized that they could be organized in the same order as my daily walk from home to the University of Alberta (U of A) campus.

Figure 8 Guechtal *Tran(ce)sients* (2017), common-tone extended technique, p. 29

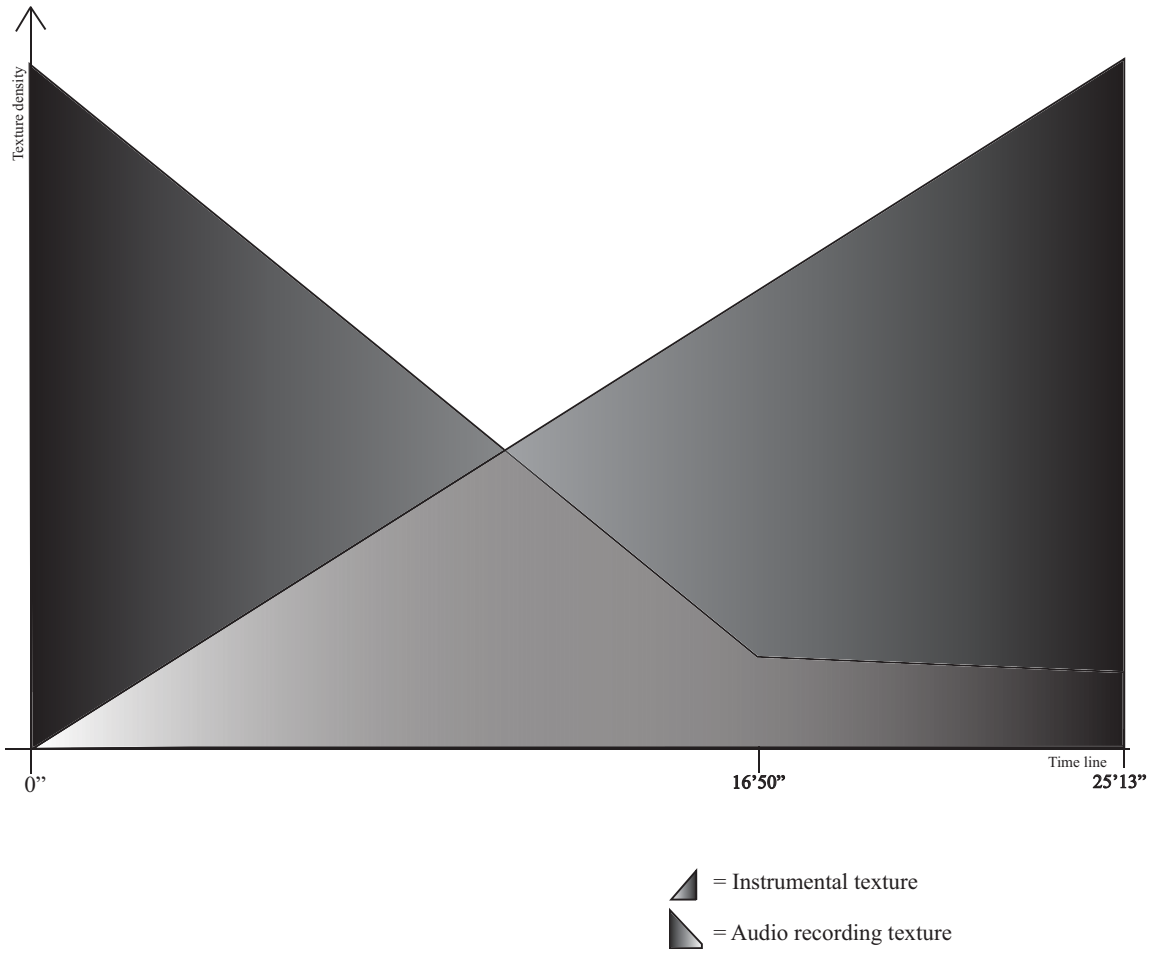


From this, I created three improvisations, which became three sections in the instrumental work: indoor sounds, indoor to outdoor sounds, and outdoor sounds. I transcribed the pitches and rhythmic content of each improvisation, which included notes about what instruments could play each recording's sonic components. It was in the last process of arranging and orchestrating these sketches that I was able to finalize the details of the structure which I will describe below.

First I decided that the overarching form of my work would resemble that of a crossfade between the pre-recorded track and instrumental parts. The pre-recorded track would begin in the foreground. Then the instrumental texture would gain more importance. The pre-recorded (or "tape") part would take up most of the sonic world first, eventually giving way to increasingly dense instrumental material**.** Next I figured out the total duration (25'13") of the tape sections (or improvisations). I then calculated the two-thirds mark (about 16'50") of this time duration and decided that at this point the instrumental texture would move mostly to the foreground, making the tape part move almost completely to the background of the piece.

This switch in foreground/background can be seen in **Graph 1** below. Based on this decision, the beginning of the piece was going to primarily feature the "tape" part and very few instruments. I thought of a way to determine when the instrumental moments were going to occur and this led me to characterize the sparse moments of instrumental bursts as "reactions" from the instruments to the pre-recorded audio. I then thought about what, for me, causes a reaction to sound and my answer was when something different happens or, beyond this, when a disruptive sound occurs.

Graph 1 Crossfade diagram of overall structure of *Tran(ce)sients*



I listened to the "tape" part in its entirety and marked times when I found myself reacting to it for various reasons: a change in texture, dynamics, pitch, color, the introduction of a new sound, etc. **Table 1** below shows the times in each of the three sections when I found myself reacting to the audio track due to a change in either of its components: loudness, notes, timbre, isolated sound, etc. As I had transcribed the entire pre-recorded audio with a time grid as well as measures, it was easy for me to find the moments in the tape which I wanted to arrange and orchestrate for the first part of the piece.

Table 1 Reaction times table

Section 1	0:09 - 0:19; 01:33 - 1:49; 2:30 - 3:00; 4:04 - 4:45; 5:13 - 5:30; 6:08 - 6:48; 7:09 - 8:00
Section 2	8:27 - 8:42; 9:39 - 9:56; 11:25 - 11:37; 11:55 - 12:04; 12:23 - 12:56; 13:6 - 13:34; 13:56 - 14:09; 14:31 - 14:58; 15:04 - 15:15; 15:55 - 16:13
Section 3	18:21 - 18:51; 19:17 - 19:31; 20:25 - 21:27; 21:37 - 22:37; 23:21 - 24:09; 24:38 - 25:13

After having chosen all of the "reaction moments," I decided that, for the sake of consistency, each section should have gradually more reaction moments than the previous one in order to achieve the increase-in-density characteristic of the whole piece. I realized that the number of reaction times themselves does not increase with each section; rather, each reaction moment becomes longer with each section. This realization helped me to solve my problem.

The next step was to decide how to organize the chosen materials and develop them in order to create an increasingly dense texture. So far I had been orchestrating the transcriptions as literally as possible for the ensemble. One of my goals with this compositional approach was to create noise by way of exploring various possibilities for extended techniques (an idea greatly inspired by Helmut Lachenmann). I also wanted to explore the sound worlds generated from the processed soundfiles with acoustic instruments. To achieve this, I thought about creating an *exploratory texture* (explained in detail below) to be heard against the more literal orchestrations whereby the transcriptions are explored using several developmental compositional techniques. To aid in this exploratory section I also incorporated the common tone/sound extended technique tool (described in section 2.1.3). This entails finding an extended technique to,

in this case, emulate a pre-recorded sound for one instrument and create the same sound for another instrument.

3.1. Exploratory Tools

The plan I devised to structure this exploratory section and make the transition into it gradual was to have subsets of the ensemble use *exploratory tools* to begin playing the orchestrated transcriptions less literally at specific points starting in the second half of the work. From the 19 instruments I formed four smaller ensembles of four or five instruments each. (See **Table 2** below.)

Table 2 Subset Instrumentation

subset 1	Bb clarinet; trombone; aux. percussion; electric bass; violin
subset 2	bassoon; French horn; 1 trumpet; drum set; viola
subset 3	oboe; 1 trumpet; 1 violin; cello
subset 4	flute; tuba; mallet percussion; electric guitar; double bass

To explore the literally orchestrated transcriptions I created compositional tools inspired by the processing tools I created in Max (see pp. 8-9). Once gathered, I assigned the exploratory techniques to each ensemble subset. But because there were fewer techniques than the number of instruments in the whole ensemble I introduced each

exploratory technique gradually and each technique could be played by more than one subset. Until measure 323, each subset introduced maintains the role of "exploratory subset," which results in an increase of exploratory texture versus literally transcribed texture. **Table 3** shows how I assigned the exploratory tools to each exploratory subset: Subset 2 retains the same tools from Subset 1 with the addition of *reverse (retrograde/inversion)* and *¼ speed (further augmentation)*. Subset 3 retains those from Subset 2 with the addition of *octave transposition*. Subset 4 uses the same tools as Subset 3.

Table 3 Subset/exploration tool assignment table

subset 1	common tone extended technique, half speed (rhythmic augmentation), "looping" (repeat)
subset 2	common tone extended technique, half speed (rhythmic augmentation), "looping" (repeat), "reverse" (retrograde/inversion), ¼ speed (further augmentation)
subset 3	common tone extended technique, half speed (rhythmic augmentation), "looping" (repeat), "reverse"(retrograde/inversion), ¼ speed (further augmentation), octave transposition
subset 4	common tone extended technique, half speed (rhythmic augmentation), "looping" (repeat), "reverse" (retrograde/inversion), ¼ speed (further augmentation), octave transposition

I numbered the exploratory subsets based on the order in which they stopped playing literal orchestrated transcriptions and began exploring them. As can be seen in **Table 4** below, Subset 1 is the first to "drop out" of the original (more literally) orchestrated texture, Subset 2 is the second, etc., and so on.

As explained earlier, when I began orchestrating the pre-recorded track, I chose specific times within the track that I felt piqued my interest or caused a reaction from me. As the track advanced, I transcribed and orchestrated more or longer sections of it. These specific "reaction" sections corresponded with portions of time from the audio track.

To further organize the exploratory texture in *Tran(ce)sients*, I counted how many portions of time (from the middle of the track to the end of it) I chose to orchestrate and the number was 12. Since I had divided the entire ensemble into four subsets, the formula was simply to divide the number of remaining portions by the number of ensemble subsets (12 divided by 4), for a total of three. From here I decided to add an "exploratory" ensemble subset after every third literal orchestration.

Table 4 Subset-Drop Times

subset 1	12:23; 13:06; 13:56
subset 2	14:31; 15:04; 15:55
subset 3	18:21; 19:17; 20:25
subset 4	21:37; 23:21; 24:38

This resulted in my having to orchestrate the reaction times from the halfway mark to the end of the piece both literally and non-literally (with the "exploratory" subsets). **Table 4** above represents the remaining reaction times and which ones were assigned to each of the four subsets.

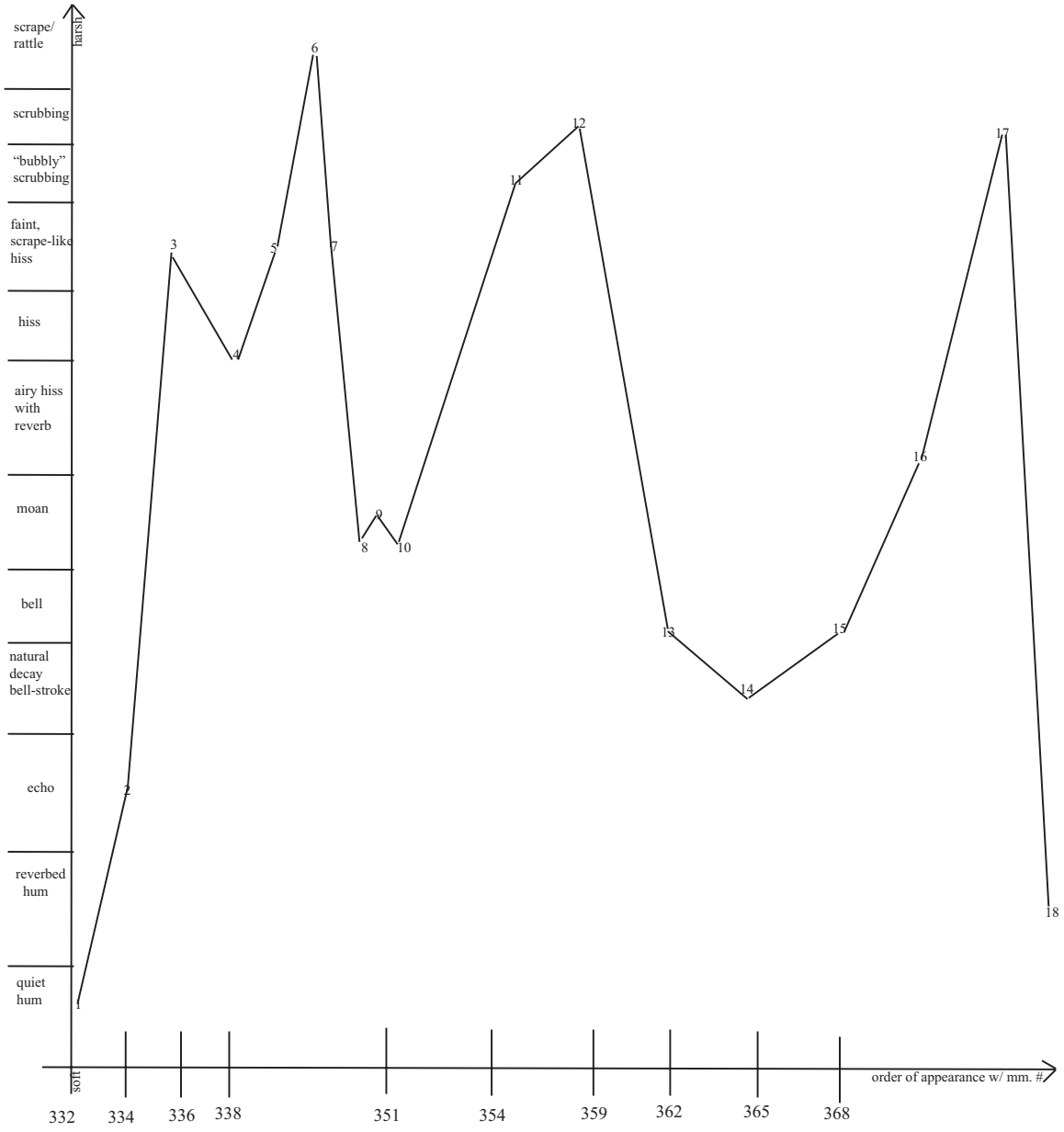
3.1.1. *Further Thickening of the Instrumental Texture*

Once Subset 4 began its "exploratory texture" in m. 323 I wanted there to be a change from every instrument exploring the literal transcriptions. I also realized that there were still some transcriptions of the third improvisation that had not yet been presented in *Tran(ce)sients.* I decided to include these unused transcriptions and explore and organize them by finding in them some common sounds or noises as opposed to playing techniques. This led me to organize them in (what made sense to me as) a gradation of similar/same-noise/sound.[44] The gradation represented in **Graph 2** (below) is organized in a progression of sounds whereby if any adjacent sounds had a similar characteristic (as, for example, the numbers 3, 4 and 5 have a hiss aspect to them, and 5 and 6 have a scrape), I thought they would sound interesting if heard in sequence. As per the overarching progression, it somewhat follows that of a *crescendo/decrescendo* in order of harshness of sound. Once numbered, I explored these sounds using also techniques taken from my Max patch. The "common sounds/noises" found in the unused transcriptions managed to fill almost every part until the end of the piece (dictated by the end of the pre-recorded track). There were, however, empty measures remaining in each instrumental part. To maintain the increase in density I set out to represent throughout the piece I felt that there should also be an increase in the number of instruments playing until the end of the work. To fill these empty measures gradually, I decided to overlap materials from the end of the piece in reverse. I then copied the last measure into m. 323 and moved backwards until I reached material that would have been heard in adjacent measures.

[44] Gradation of common noise/sound from unused transcription found in mm. 326 – 378: 1) quiet hum, 2) echo, 3) hiss, 4) airy hiss with reverb, 5) hiss, 6) scrape/rattle, 7) faint, scrape-like hiss, 8) moan-like, 9) moan, 10) moan-like, 11) "bubbly scrubbing," 12) scrubbing, 13) bell-like, 14) natural decay of bell-stroke, 15) bell, 16) very airy, reverbed hiss, 17) scrubbing, 18) reverbed hum.

Once I reached this point, I started copying material from the beginning of the piece for each instrument and pasting where the "meeting point" happened for each (m. 351). In this way, (from m. 351 and on) materials from the beginning and end of the piece are heard simultaneously in an "incomplete palindrome" of sorts.

Graph 2 Common-tone/sound technique gradation chart



Beyond this, to thicken the texture even more, I ensured that from m. 323 until the end of the work, the number of measures of silence again decreased gradually. To set up this process I counted how many instruments were playing at m. 323 (five) and subtracted that number from the total number of instruments in the ensemble (19-5=14). I

then divided the remaining number of measures in the piece (55) by the number of *tacet* instruments at m. 323 (14) and found that, as can be seen in **Table 5** (below), if I added one instrument every 3 ¾ measures (3 measures + 3 quarter notes since the time signature is 4/4), all 19 instruments would be playing by the last 3 ¾ measures of the piece. The three processes I used (reaction moments, exploratory subsets and partial palindrome) for the entire compositional aspect of this piece helped to fulfill my initial ideas for *Tran(ce)sients,* which were to thicken the texture while steadily using various methods to explore my transcriptions of the "tape" track.

Table 5 Density Increase Table for Section 4 of *Tran(ce)sient*

# of instruments playing	**measure and beat #**
5 instruments	323-326, beat 3
6 instruments	326, beat 4 - 330, beat 3
7 instruments	330, beat 3 - 334, beat 2
8 instruments	334, beat 2 - 338, beat 1
9 instruments	338, beat 1 - 341, beat 4
10 instruments	341, beat 4 - 345, beat 3
11 instruments	345, beat 4 - 349, beat 3
12 instruments	349, beat 4 - 353, beat 3
13 instruments	353, beat 4 - 357, beat 3
14 instruments	357, beat 4 - 361, beat 3
15 instruments	361, beat 4 - 365, beat 2
16 instruments	365, beat 3 - 369, beat 2
17 instruments	369, beat 3 - 373, beat 2
18 instruments	373, beat 2 - 377, beat 3
19 instruments	377, beat 3 - end of piece

IV. Conclusion

4.1 Summary and future goals

I created a challenging listening experience in *Tran(ce)sients* by processing field recordings gathered during a sound walk from my former residence in Edmonton to the University of Alberta. I then processed these recordings in the visual programming software Max MSP. Once processed, I transcribed these recordings, and orchestrated them into a 25-minute work for a large chamber ensemble.

After having used a similar compositional process for previous works, I feel the most grueling and time-consuming part of this was the aural transcription of audio recordings into music notation. I will be thinking of a less time-consuming method for future works. I will research existing software programs (open source or otherwise such as Orchidée[45] or Tony[46]) that could help me to save time with this aspect of the process. As for the orchestration portion, I felt this to be much more successful. It was very exciting for me as it allowed me to explore new playing techniques for acoustic instruments, which is a side of composition where I feel I have much more to learn. I was also pleased with the orchestrations in Finale. After listening to them against the audio track, I felt they were quite close to the sounds I was orchestrating for the instruments. The Max software proved to be the perfect sound-processing tool for *Tran(ce)sients* and I hope to use it again in my future works.

I intend to pursue a performance of this work by applying to competitions or hiring either already-formed ensembles or individual performers to play the piece, even if

[45] "Orchidée," Music Representation Team IRCAM-CNRS-UPMC, accessed October 11, 2018, http://repmus.ircam.fr/orchidee.
[46] "Tony: A Tool for Melody Transcription," Sound Software .ac.uk, accessed October 11, 2018, https://code.soundsoftware.ac.uk/projects/tony.

this means having each section of the work performed by three different ensembles. The ideal venue will require some research as well in order to sustain a balanced blend between the audio track and the acoustic instruments.

My goal with *Tran(ce)sients* is to engage the audience in concentrated listening by presenting everyday sounds in a concert hall setting through the synthesis of spectral music, *musique concrète instrumentale* and onkyô. In combining specific parameters of each (namely notation, performance and compositional techniques, and a sonic aesthetic) into one work, I expect to create a complete portrayal of my current compositional aesthetic and fully bring the audience into my sound world.

MUSICAL SCORE FOR TRAN(CE)SIENTS

RUTH GUECHTAL'S

Tran(ce)sients

For Flute, Oboe, Clarinet, Bassoon, 2 Trumpets, French Horn, Trombone, Tuba, 2 Percussion, Drum Set, Electric Guitar, Electric Bass, 2 Violins, Viola, Violoncello, Double Bass and pre-recorded audio track

Tran(ce)sients Program Notes

Tran(ce)sients is a piece inspired by my enduring interest in the discipline required to listen to and appreciate the extreme nature of certain styles of music.

I have always felt a sense of satisfaction, and even enlightenment, when I am able to sit through a performance of such music, be it due to its aggressive aesthetic (extreme metal or harsh noise), or its complex language (atonal, serial, minimal, spectral music). I have come to prefer music that in various ways is clearly more challenging to listen to than (relatively) more conventional music from any era.

Tran(ce)sients combines my current compositional interests, which revolve around orchestrating electronically manipulated sounds to create interesting noise-like textures for acoustic instruments, and orchestrating sounds that are challenging to listen to.

Because they are subtle and yet persistent, the sounds such as those coming from appliances, lights, and neighbors, were ideal materials for me to explore. I then decided to force myself to listen to these sounds by recording them. I also chose to record sounds heard outside on my daily walks to the University of Alberta campus. This listening experience changed my perspective on listening exponentially so I decided to use these field recordings as sonic materials for a live improvised processing I made using the programming software MaxMSP. This type of live processing was another musical interest that I wished to incorporate in *Tran(ce)sients*, as it too had a great impact on reshaping my approach to listening.

The live improvisation that resulted from this hyper-processing of field recordings became a pre-recorded track incorporated into the work, interpreted and expanded upon

in real time by a large chamber ensemble over the span of 25 minutes. The primary goal of this piece is to engage the listener in the concentrated listening of sounds they would otherwise ignore or learn to tune out. It is also an attempt to help the listener possibly attain a meditative state through focused listening, as often happens for me.

Tran(ce)sients Performance Notes

Woodwinds

w.t. Whistle tone.

*fl. t. Flutter tongue.

Slide down (or up) between notes while applying vibrato.

Play given note a quarter tone flat.

Play given note a quarter tone sharp.

Rectangular note heads are to be played with indicated noise, either hiss or overblown.

Play notes using half pitch, half air.

Play notes using a quarter air, three-quarters pitch.

Play notes using three-quarter air, a quarters pitch.

Start on given pitch and perform a contour glissando as drawn by figure.

w.h Play with hiss.

Measures with a single staff line represent non-pitched sounds. Specified sound is given above the staff.

Measures with a 3-line staff indicate an approximate contour in pitch to be played following the position of the notes in the staff.
Specified sound is given above the staff.

Use tongue to produce sound like running water.

× X-shaped noteheads represent a percussive sound, such as slap tongue or key clicks (depending on written instruction), to be played on given note.

T.R. Apply a tongue Ram.

Begin playing from complete silence or end playing in complete silence.

*k. cl. Apply a key click.

trem. - - - → *ord.* Begin playing with tremolo and move as gradually as possible to normal playing (ordinario).

mult. ph. Play a multiphonic sounding at the notated pitch.

A straight line between two notes means a simple glissando between them.

Inhale in time.

Exhale in time.

(flanger hiss into instrument) or (flngr. h.) Create a more pronounced hiss (produced further back in the throat, somewhat like Darth Vader breathing) to emulate the sound of a flanger effect such as one produced by an effects pedal for electric guitar.

(Jet whistle) Jet Whistle is a very loud glissando-like sound produced by sealing the embouchure hole completely with lips and blowing a fast, high-pressure air stream through the flute. The direction of a Jet Whistle can go from low to high; high to low; or low-high-low. This is a gesture that generally does not have an extended duration as all the air is expelled very quickly through the flute to create the sound. It should be noted, that this is primarily a technique only available on the C-flute.[44]

(inhaled gliss) For the clarinet, the performer inhales while playing an ascending or descending (see notation) scale, starting and ending on given notes, as fast as possible.

[44] "jet whistle," FluteXpansions, accessed November 20, 2018, https://www.flutexpansions.com/jet-whistle .

ord. → hiss — Begin playing note normally then gradually add hiss to pitch.

*play and sing into instrument › — Play note with stem down, sing note with stem up.

(spoken hiss),(s.h.) — Speak given text into instrument as best as possible.

(hum- like) — Play given note softly to sound like humming.

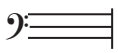
Brass

mult. ph. — Play a multiphonic sounding at the notated pitch.

(wet sounding flutter-tongue) — If at all possible, use more saliva with flutter tongue.

 — Apply flutter tongue.

fl. t., gurgling sound — Add gurgling quality to flutter tongue.

 — Measure with 3 line staff indicates an approximate contour in pitch to be played, following the position of the notes in the staff specified sound is given above the staff.

 — Measure with single staff line represents non-pitched sounds specified sound is given above the staff.

*play and sing into instrument › — Play note with stem down, sing note with stem up.

 — Start on given pitch and perform a contour glissando as drawn by figure.

 — Slide down (or up) between notes while applying vibrato.

 — Play given note a quarter tone flat.

 — Play given note a quarter tone sharp.

 — Rectangular note heads are to be played with indicated noise.

 — Play notes using half pitch, half air.

 — Play notes using a quarter air, three-quarters pitch.

 — Play notes using three-quarter air, a quarters pitch.

 — Inhale in time.

 — Exhale in time.

(flanger hiss into instrument) — Create a more pronounced hiss (produced further back in the throat, somewhat like Darth Vader breathing) to emulate the sound of a flanger effect such as one produced by an effects pedal for electric guitar.

T.R. — Apply a tongue ram.

 — Inhale on given rhythm, end inhalation with a tongue ram.

× — X-shaped noteheads represent a percussive sound, such as slap tongue or key clicks (depending on written instruction) , to be played on given note.

 — Begin playing from complete silence or end playing in complete silence.

(non p. to T.R.) — Non pitched to tongue ram, abbreviated.

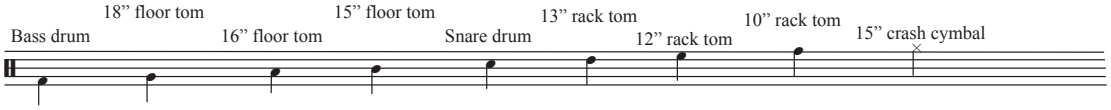
Breath attack — Blow through instrument, creates a similar sound to that of the jet whistle technique for the flute. Applies only to trumpets.

 — Perform a glissando with vibrato within the time frame given. The gesture does not need to be strictly measured, it can unfold at any speed, simply with the given time frame.

(spoken hiss) — Speak given text into instrument as best as possible.

Auxiliary Percussion, Mallet and Drum set

Drum Set



*brush hit — Using a brush and a stick, brush with one hand then strike with drum stick on given rhythm. Anytime the word “brush” appears in combination with another technique, simply follow the written instructions, alternate with brush and drum stick as needed.

(r.s.) — Play a rim shot.

(st. s) — Play a stick shot.

(rub comb against metal sheet) — Using a large comb, rub the teeth against metal sheet to create a drawn out moan-like tone (See video at 2:43 seconds for more details.)[45]

Begin playing from complete silence or end playing in complete silence.

Electric Guitar

Tremolo pick on given note.

Slide down (or up) between notes while applying vibrato with whamy bar.

Play given note a quarter tone flat.

Play given note a quarter tone sharp.

Rectangular note heads are to be played with indicated noise.

Measures with a three line staff indicate an approximate contour in pitch to be played, following the position of the notes in the staff specified sound is given above the staff.

Measures with a single staff line represent non-pitched sounds specified sound is given above the staff.

Play a harmonic on the given note.

trem. ord. — Begin playing with tremolo and move as gradually as possible to normal playing (*ordinario*).

Finger notes given (approximate or not) and scrape pick on corresponding string.

chirp — Emulate chirping sound with quiet tremolo picking.

Begin playing from complete silence or end playing in complete silence.

P.M. — Palm Mute: rest side of picking hand against strings to dampen them.

Electric Bass

Play a harmonic on the given note.

*Slapping — Use bass slapping technique on given notes.

(finger tremolo) — Use alternating fingers to play tremolo, not a pick.

(pick scrape, non-pitched) — Perform a pick scrape on any string, with very little pitch.

Measures with a 3-line staff indicate an approximate contour in pitch to be played, following the position of the notes in the staff specified sound is given above the staff.

Measures with a single staff line represent non-pitched sounds. Specified sound is given above the staff.

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45 “Steel Sheet: What Can It Do?” produced by Steve Forman Collection Percussion Series, July 2, 2010, YouTube video, 4:02, www.youtube.com/watch?v=0bQnrPDm78Q#action=share.

*bottle neck *gliss vib.* Using a bottle neck slide, slide up or down strings (as indicated) while applying vibrato with the bottle neck slide

Tremolo pick on given note.

Play given note a quarter tone flat.

Play given note a quarter tone sharp.

Rectangular note heads are to be played with indicated noise.

ord. Begin playing with tremolo and move as gradually as possible to normal playing (*ordinario.*)

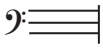
Strings

(vib. gliss.) Slide down (or up) between notes while applying vibrato.

Play given note a quarter tone flat.

Play given note a quarter tone sharp.

Rectangular note heads are to be played with indicated noise.


Measures with a 3-line staff indicate an approximate contour in pitch to be played, following the position of the notes in the staff. Specified sound is given above the staff.


Measures with a single staff line represent non-pitched sounds. Specified sound is given above the staff.

ASP *Alto Sul Ponticello* , bow placement should be almost on top of bridge.

OP. B. Use over pressed bow.

c.l. battuto, clb. Play *col legno battuto,* by bouncing wood of bow on strings.

1/2 c.l. *1/2 col legno*: rest bow on its side to have hairs and wood touch strings when bowing.

Balzato, Balz. Bounce bow on its hairs as in time as possible with notated part.

AST *Alto Sul Tasto,* bow placement should be almost on top of the finger board.

trem.- - - → ord. Begin playing with tremolo and move as gradually as possible to normal bowing (*ordinario.*)

Play harmonic a P4 above fingered note.

Begin playing from complete silence or end playing in complete silence.

X-shaped noteheads represent a percussive sound to be played on given note.

flautando Flute-like - producing a flute like tone on violin or other strings by playing nearer the fingerboard.

mezzo flautando A gradation of flautando, play not as close to the fingerboard but enough to create somewhat of a flute-like sound.

(L.H. pizz.) Use left hand pizzicato.

*perforated sound (or pressed bowing) Pressed bowing close to the bridge (to be used in combination with L.H. closed fist explained below): (as is heard in Helmut Lachenmann's solo cello piece *Pression*, 1969/2010) should sound like "a dry, perforated rattling".[46]

*L.H. closed fist Close left hand around neck and over strings.

(Knock on body) Knock on body of instrument to create percussive sound.

ORD *Ordinario*, bow in ususal place on strings.

Start on given pitch and perform a contour glissando as drawn by figure to next pitch.

ORD – ASP Gradually slide bow from *ord*. position to *alto sul ponticello*.

Apply Bartók (or snap) pizzicato.

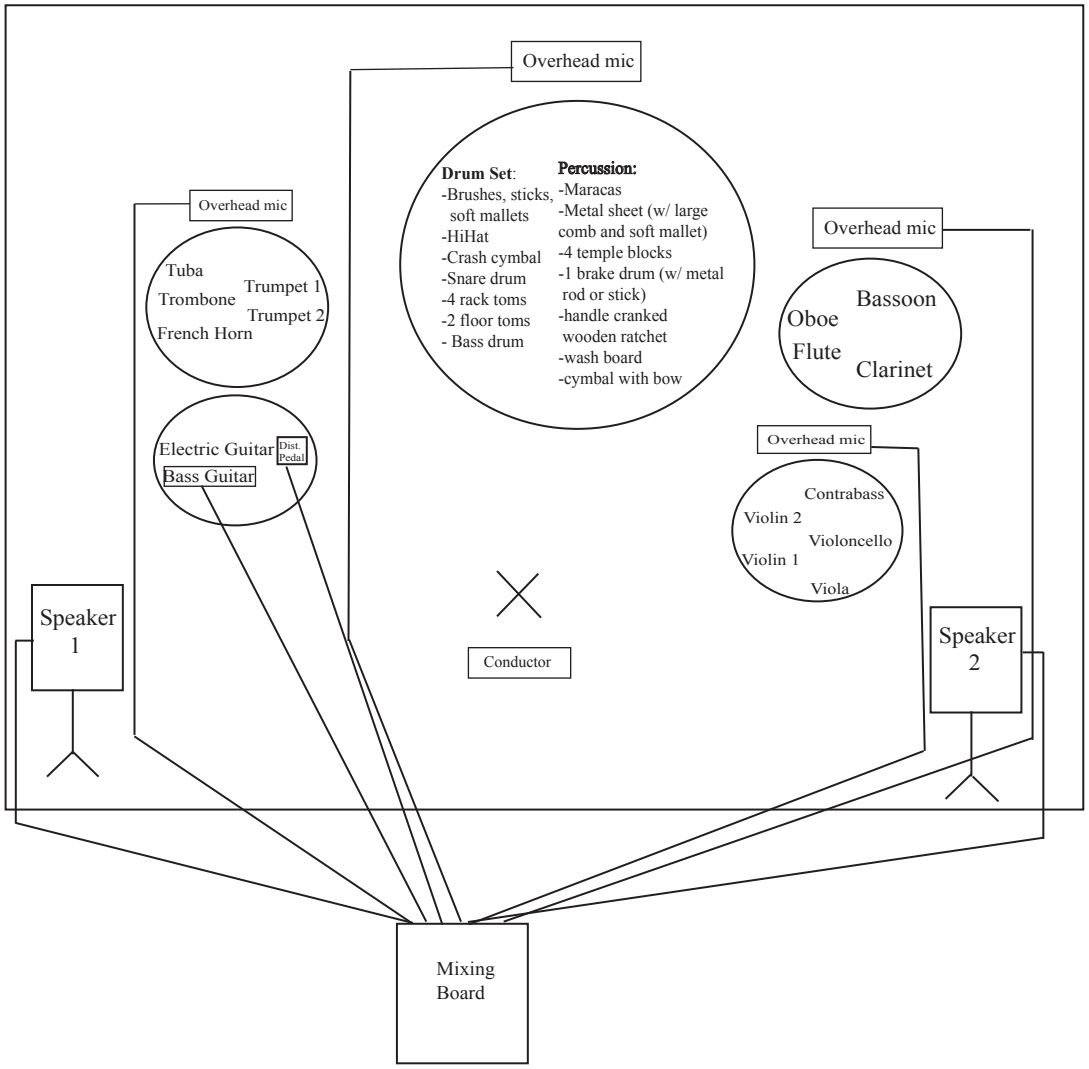
[46] Helmut Lachenmann, *Pression for one Cellist*, (Wiesbaden: Breitkopf & Härtel, 2011): 10.

Tran(ce)sients Stage and Audio Set up

When performing this piece, 2 speakers; 4 overhead small diaphragm condenser microphones and a mixing board to control the balance between the audio track and instruments are required. Written for wind quartet; brass quintet; string quintet; auxiliary percussion; drum set; electric guitar with distortion pedal and bass guitar; and pre-recorded audio, each section of acoustic instruments will have a microphone placed about 5-6 feet above the performers. The 2 speakers, out of which both the instruments and prerecorded audio will be heard, should be positioned on either side of the front of the stage. The electric and bass guitar can be directly connected (direct-in) into the mixing board.

Played in real time with the audio recording, the conductor will need a timer or stopwatch to help the performers keep track of key moments in the piece. To this end a wav file representation has been included in the score with marked timings and key moments.

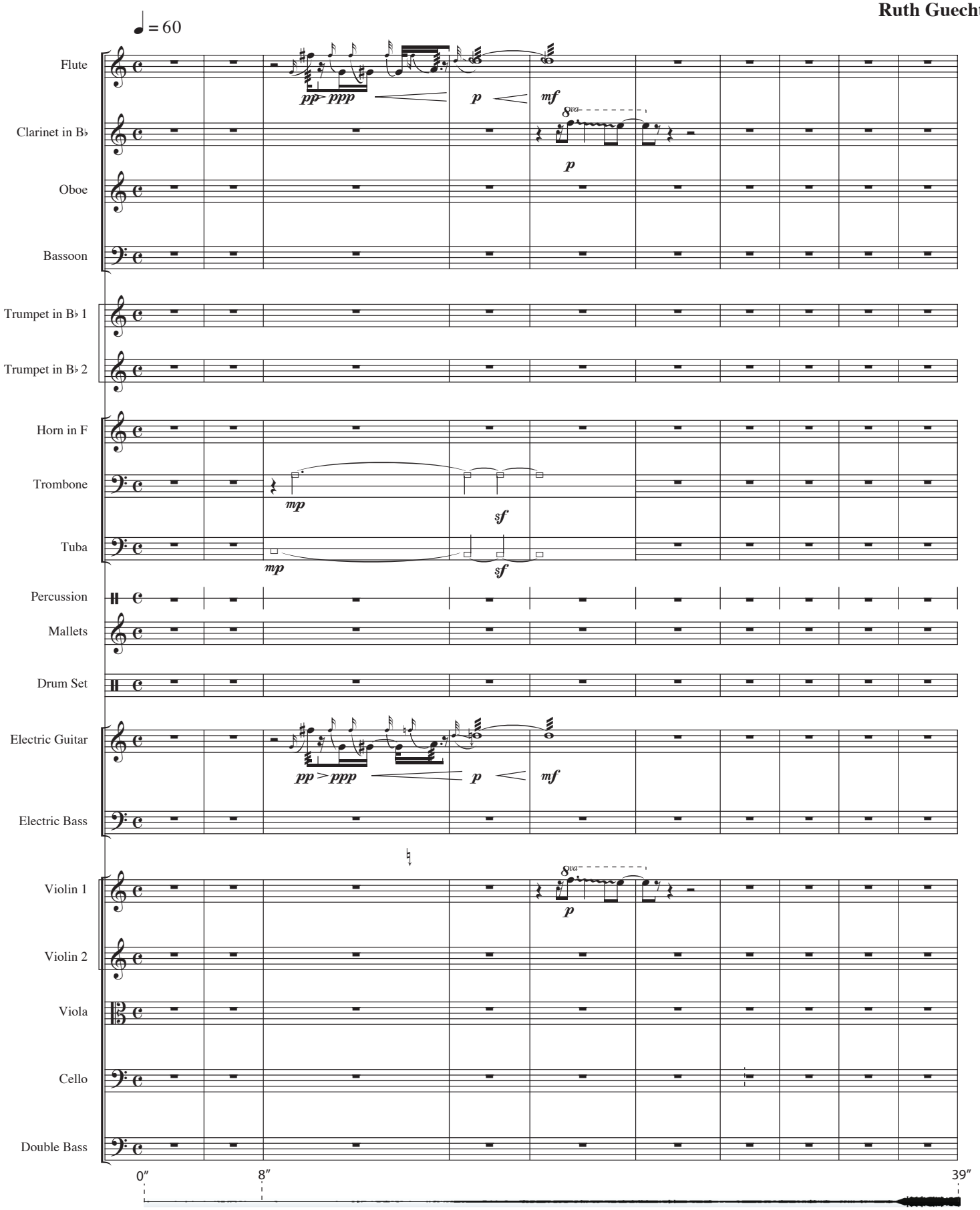
Tran(ce)sients Stage and Sound Set Up

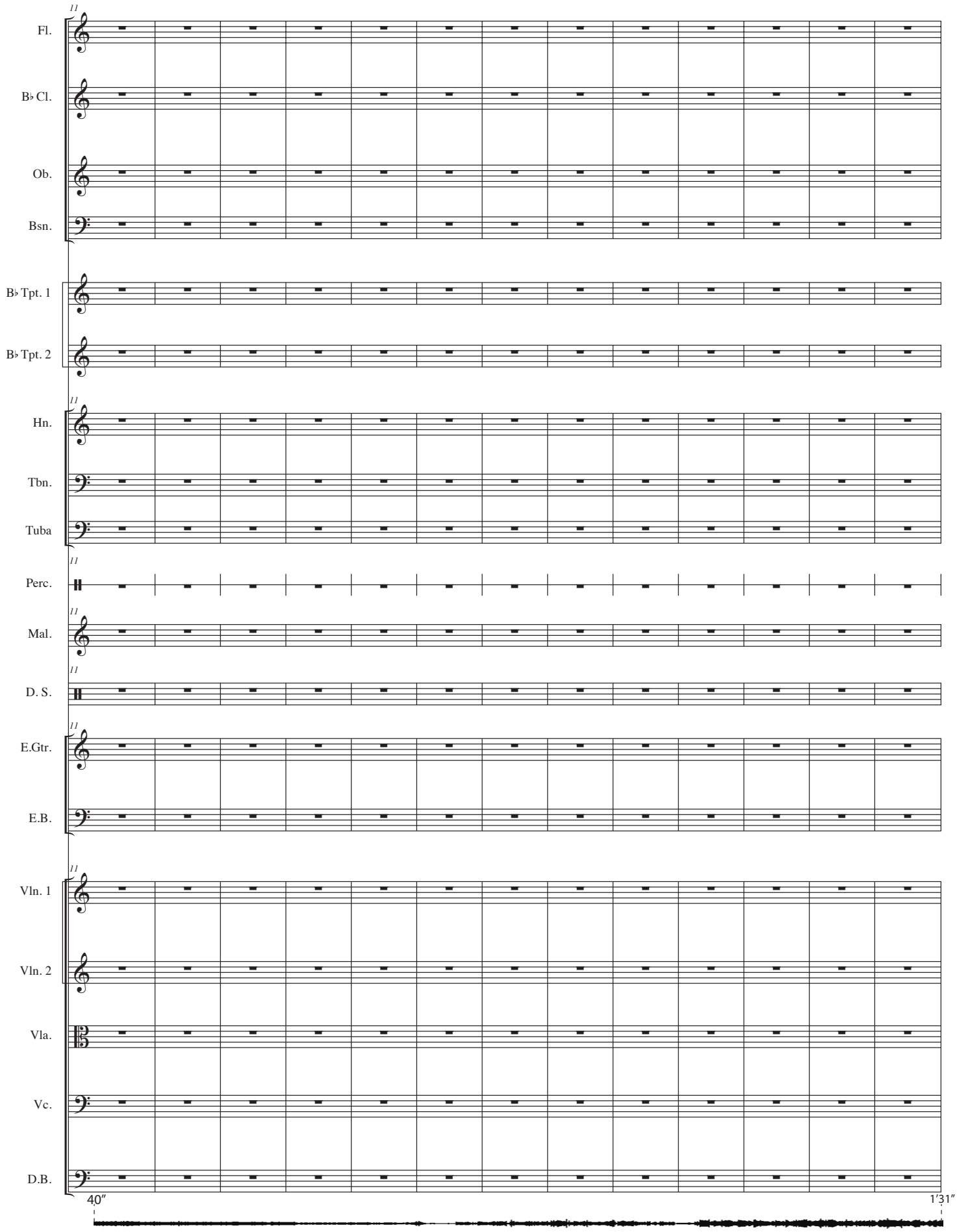


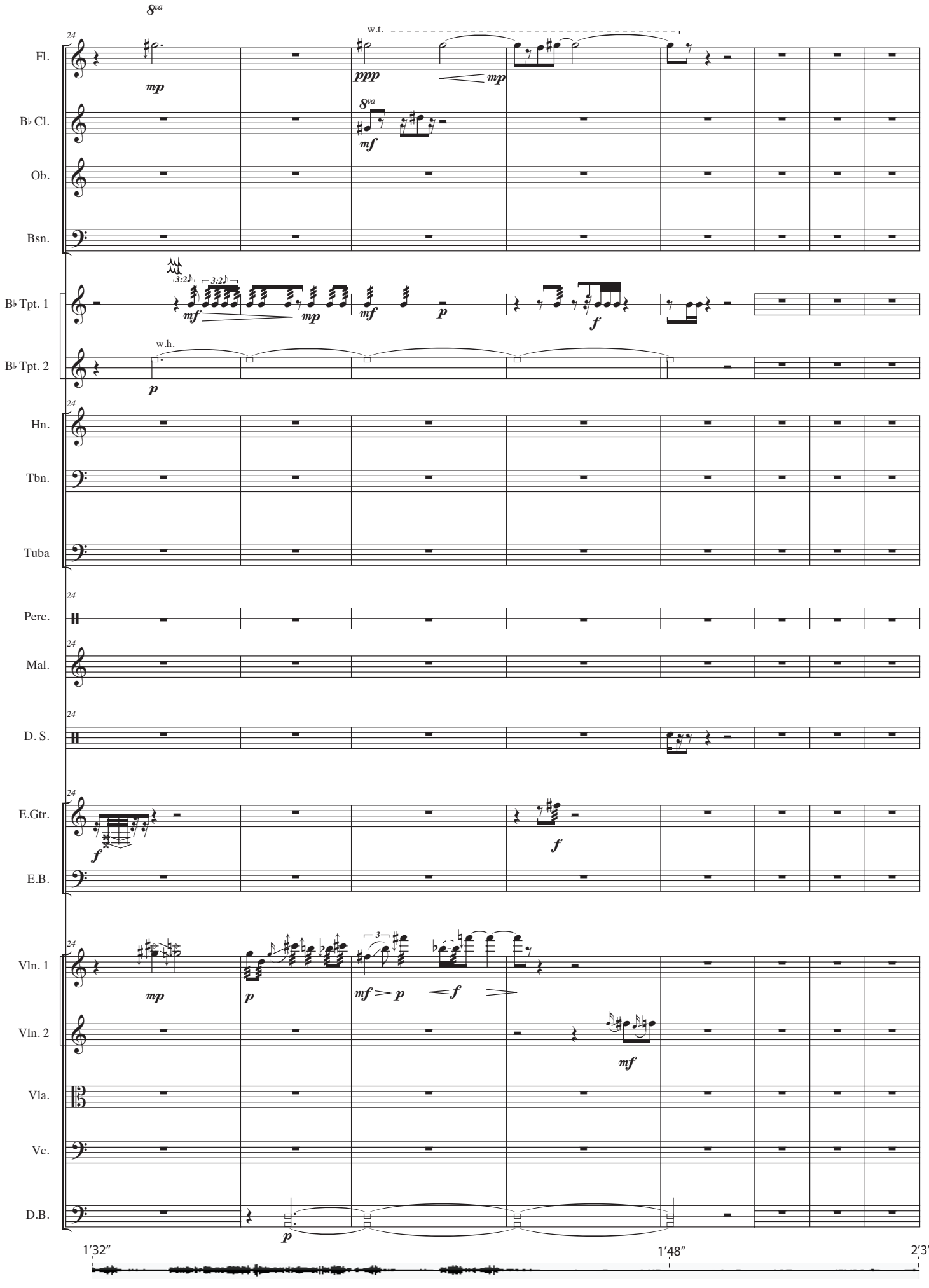
Tran(ce)sients

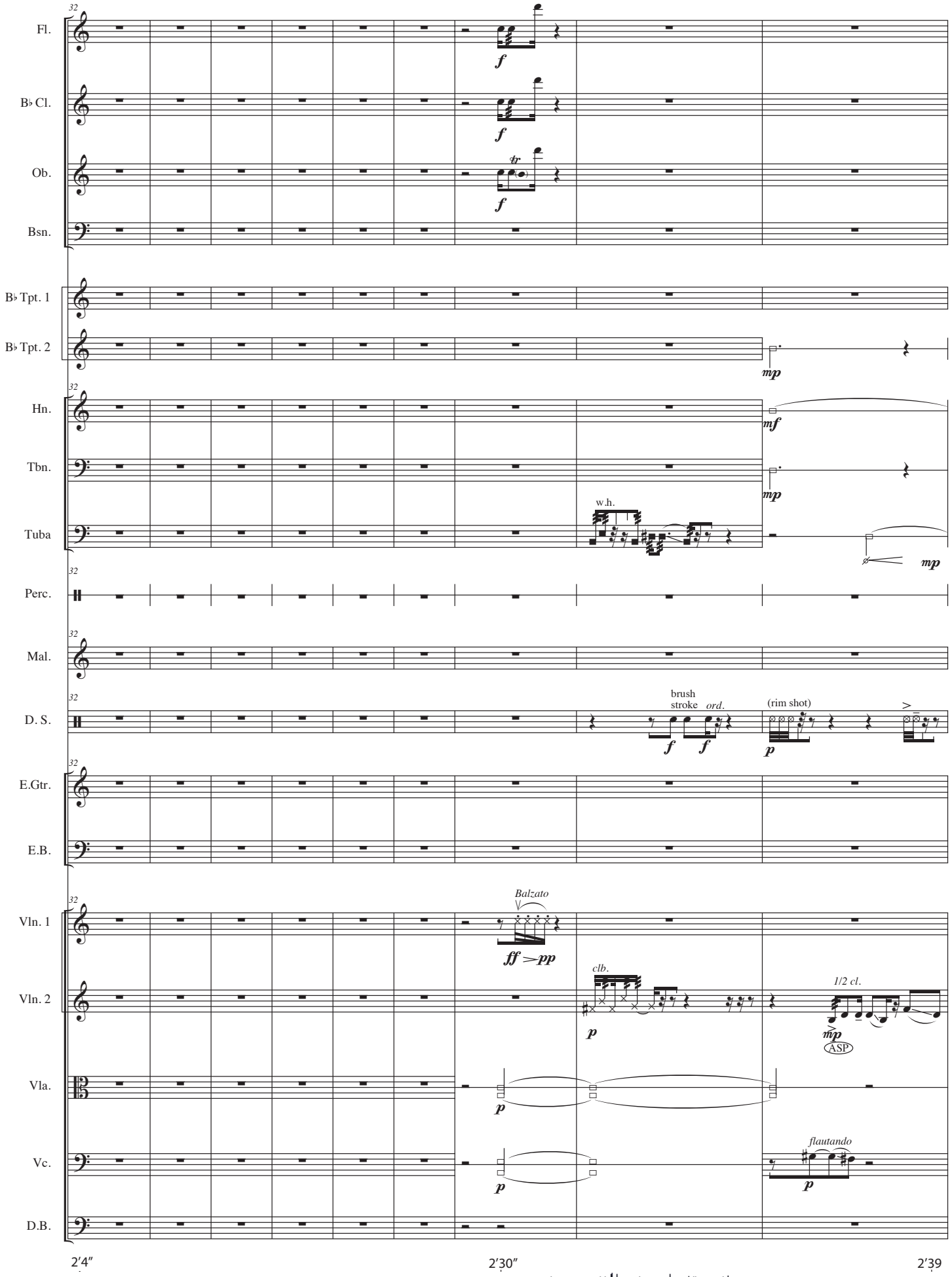
Score in C

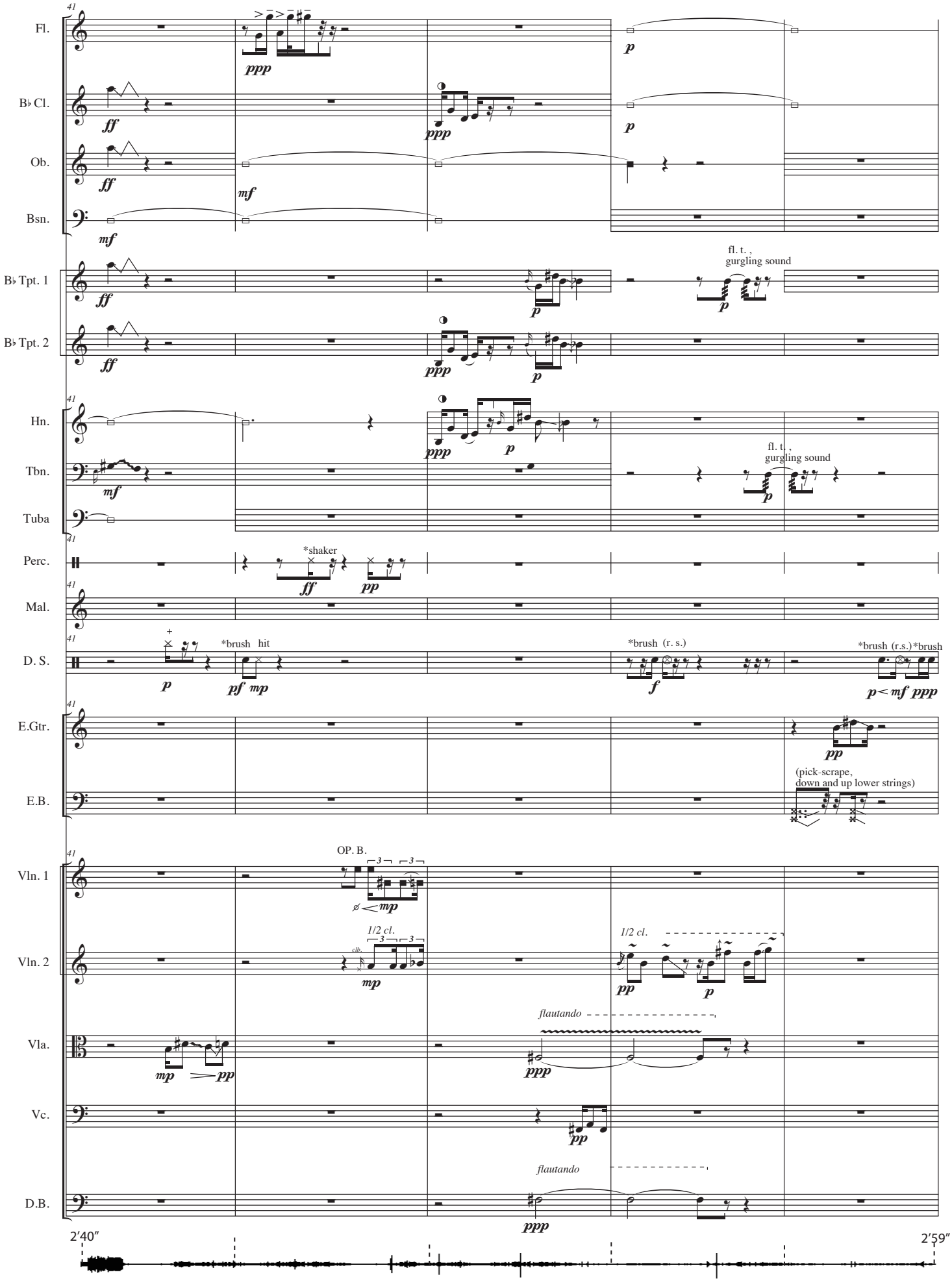
Ruth Guechtal

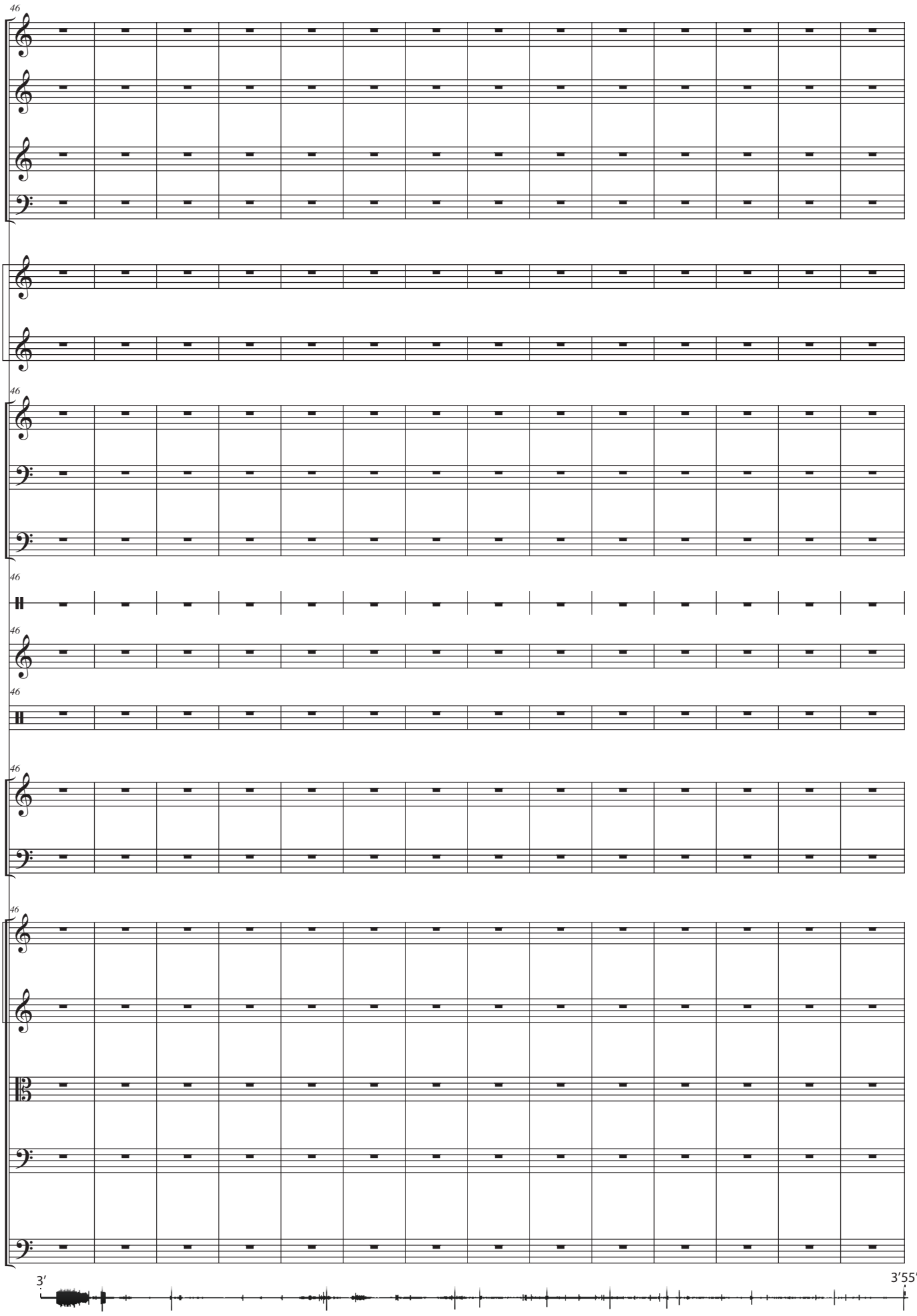


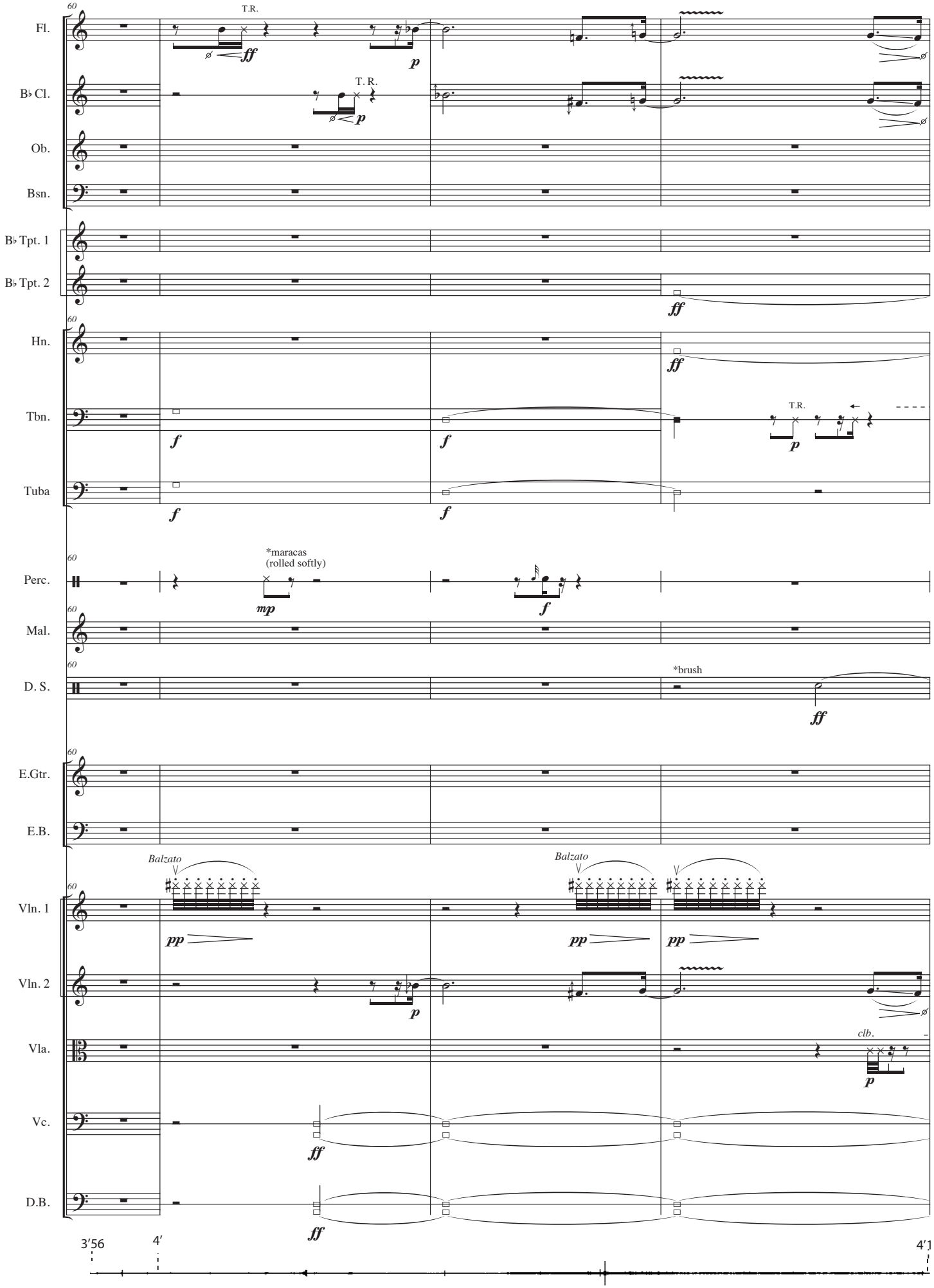

11
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
11
Hn.
Tbn.
Tuba
11
Perc.
11
Mal.
11
D. S.
11
E.Gtr.
E.B.
11
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
40″
1′31″

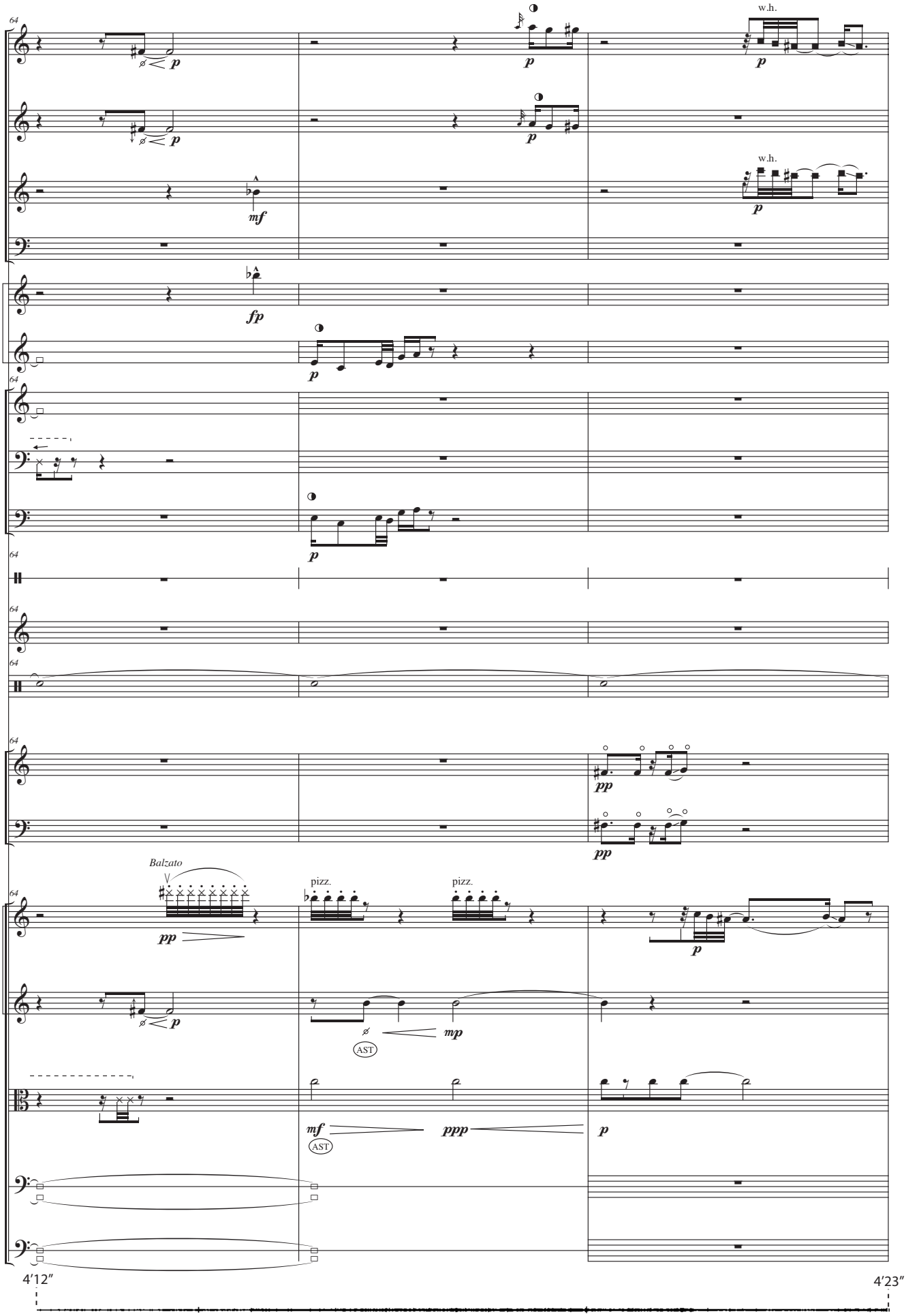

8va
w.t.
Fl.
mp
ppp
mp
B♭ Cl.
8va
mf
Ob.
Bsn.
B♭ Tpt. 1
3:2
mf
mp
mf
p
f
B♭ Tpt. 2
w.h.
p
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
f
f
E.B.
Vln. 1
mp
p
3
mf > p
< f
Vln. 2
mf
Vla.
Vc.
D.B.
p
1′32″
1′48″
2′3″

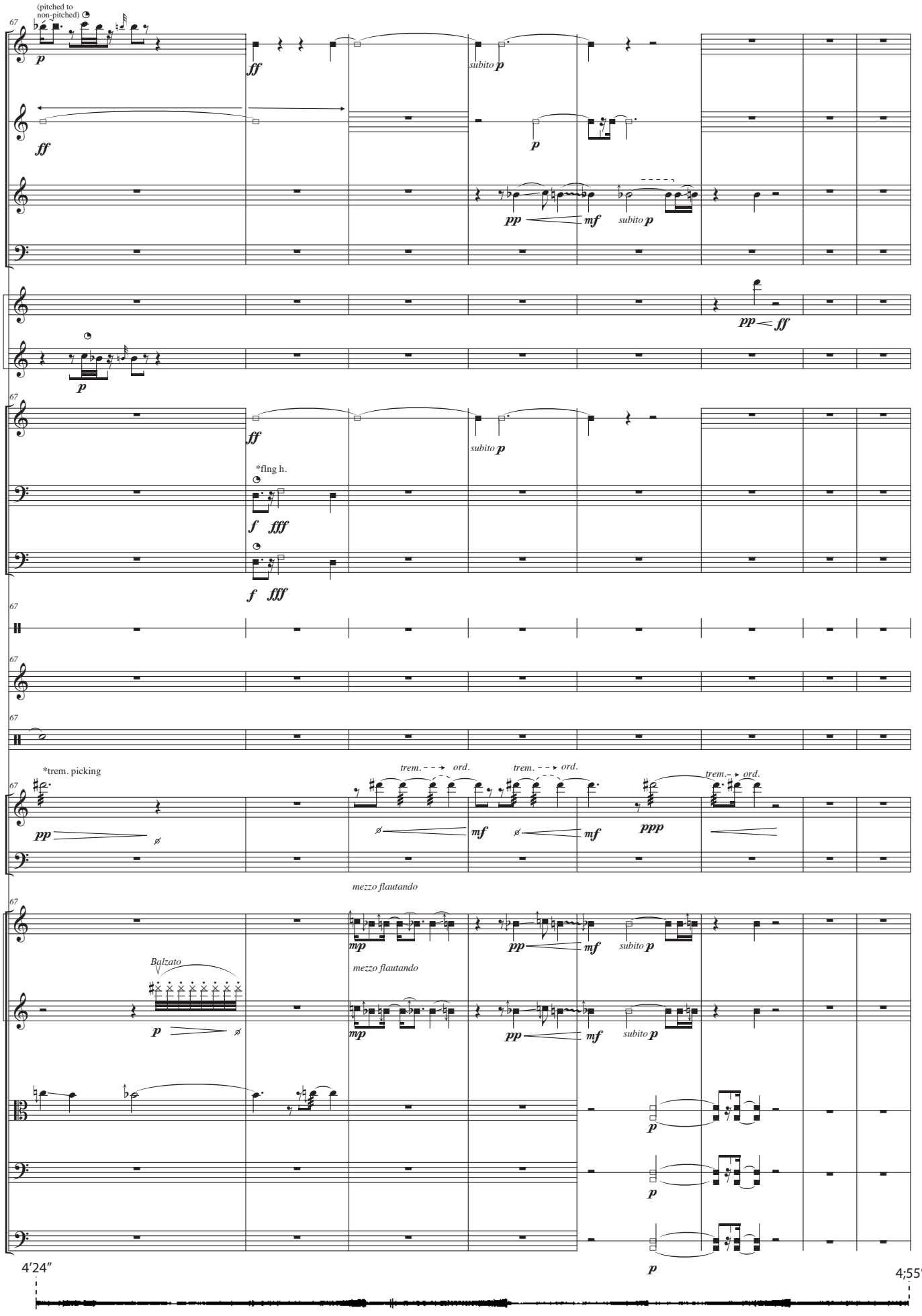

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
32
f
tr
mp
mf
w.h.
brush stroke
ord.
(rim shot)
Balzato
ff > pp
clb.
1/2 cl.
ASP
flautando
p
2′4″
2′30″
2′39

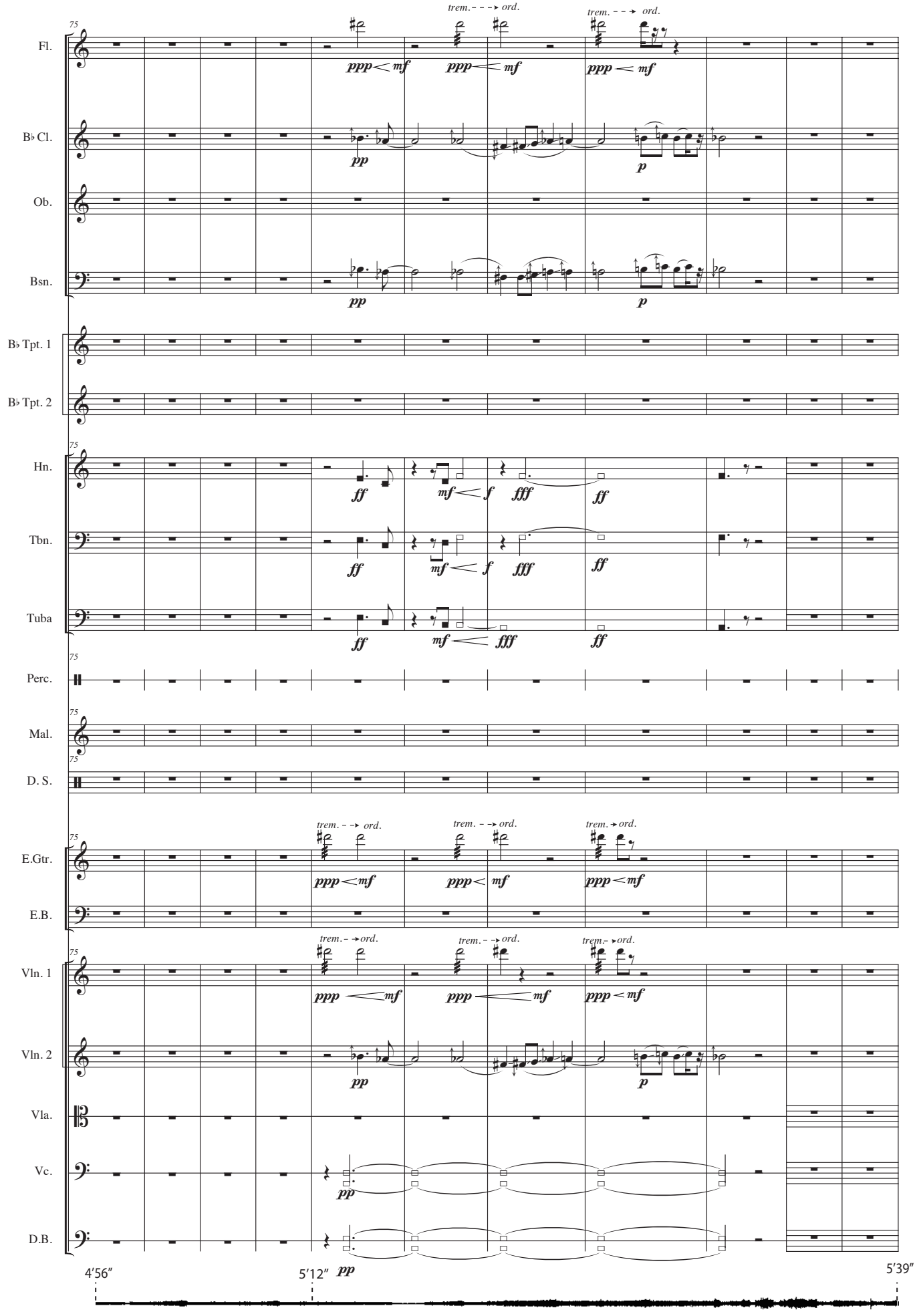

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
41
ppp
ff
mf
p
pp
fl. t. ,
gurgling sound
*shaker
*brush hit
*brush (r. s.)
*brush (r.s.)*brush
pf mp
f
p< mf ppp
(pick-scrape,
down and up lower strings)
OP. B.
1/2 cl.
flautando
mp
2′40″
2′59″

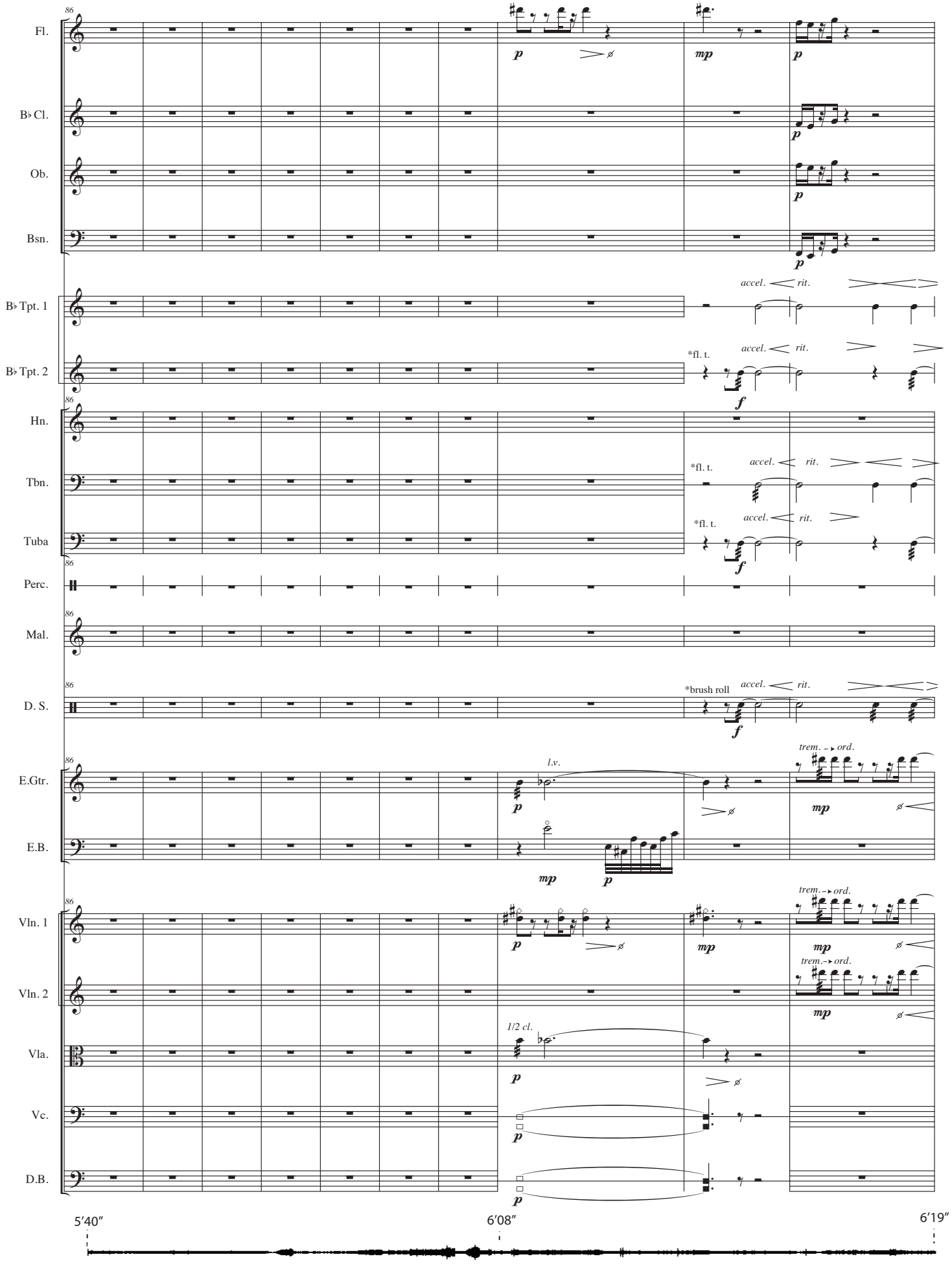

46
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
46
Hn.
Tbn.
Tuba
46
Perc.
46
Mal.
46
D. S.
46
E.Gtr.
E.B.
46
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
3′
3′55″

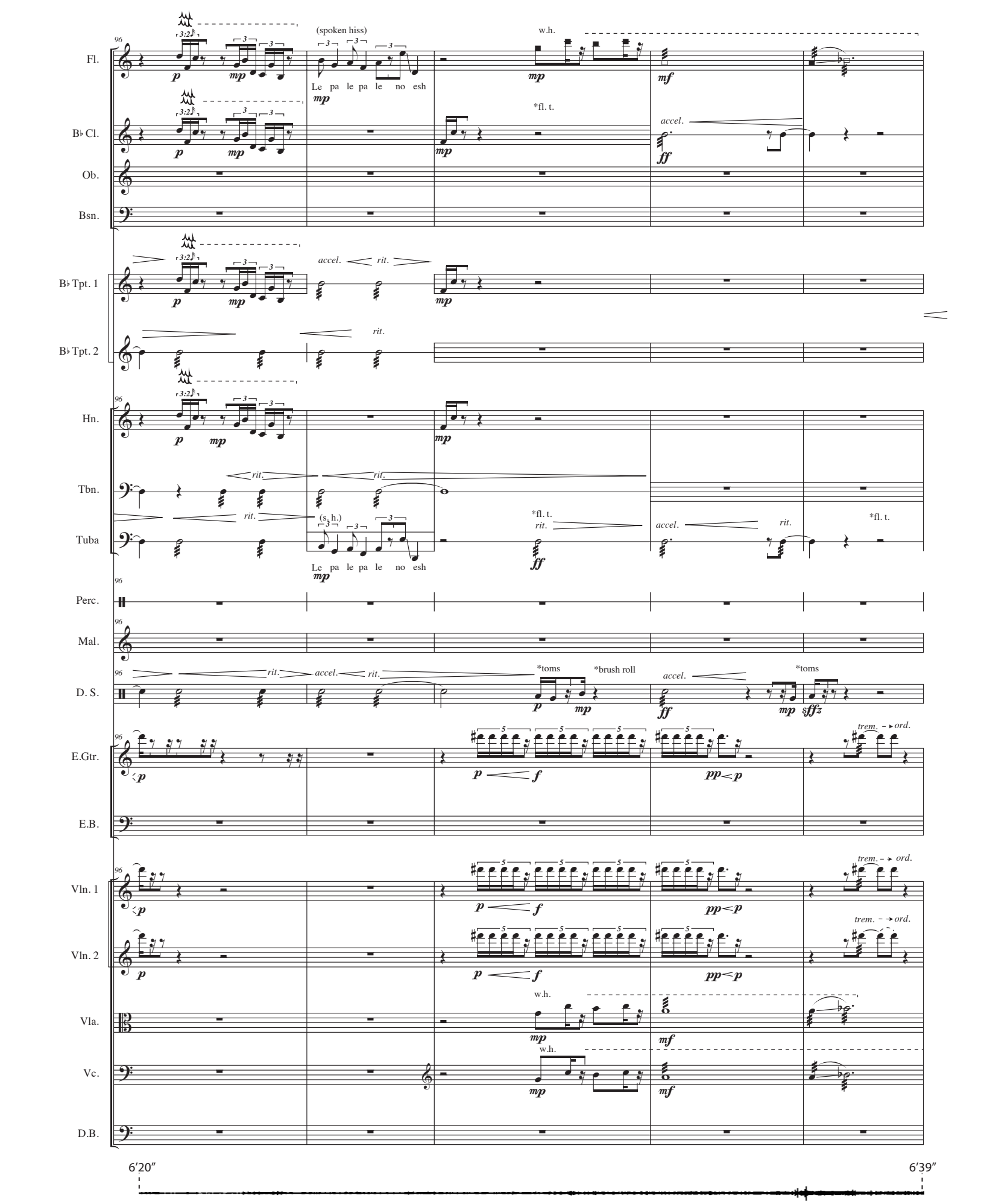

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
T.R.
*maracas
(rolled softly)
*brush
Balzato
clb.
3′56
4′
4′11″

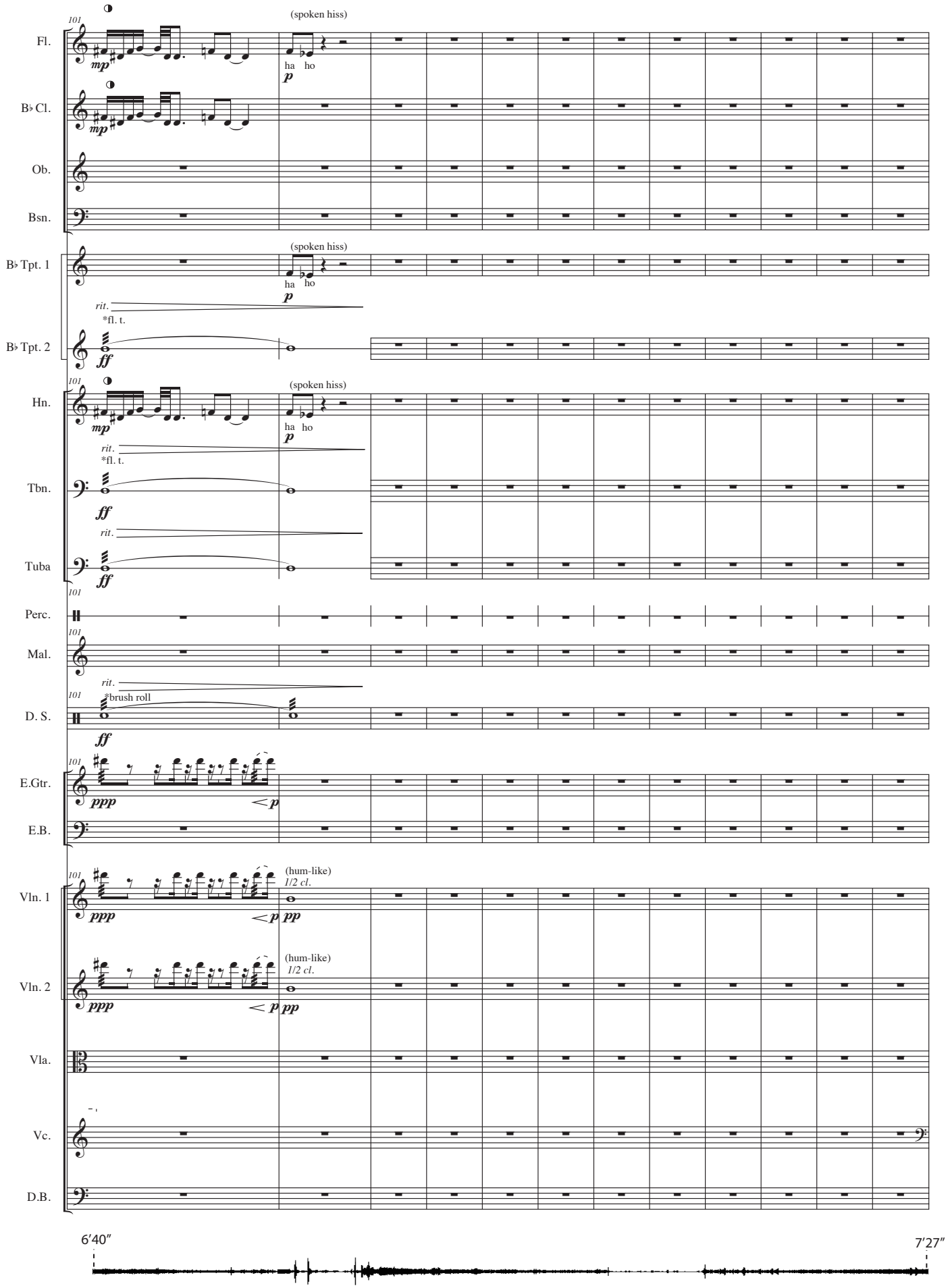

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.h.
w.h.
Balzato
pizz.
pizz.
AST
AST
4′12″
4′23″

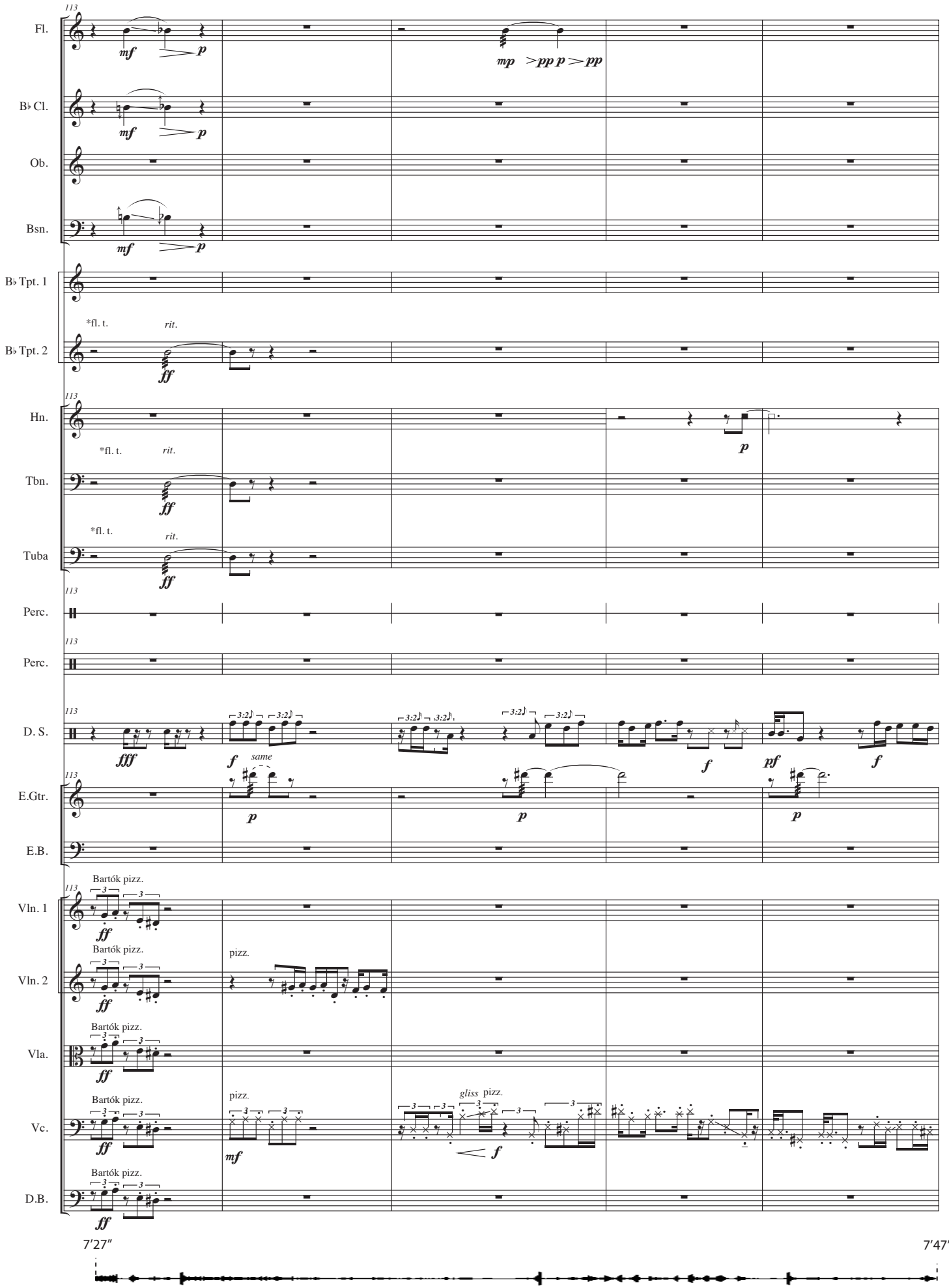

(pitched to non-pitched)
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
*flng h.
*trem. picking
trem. ord.
mezzo flautando
Balzato
4′24″
4;55″

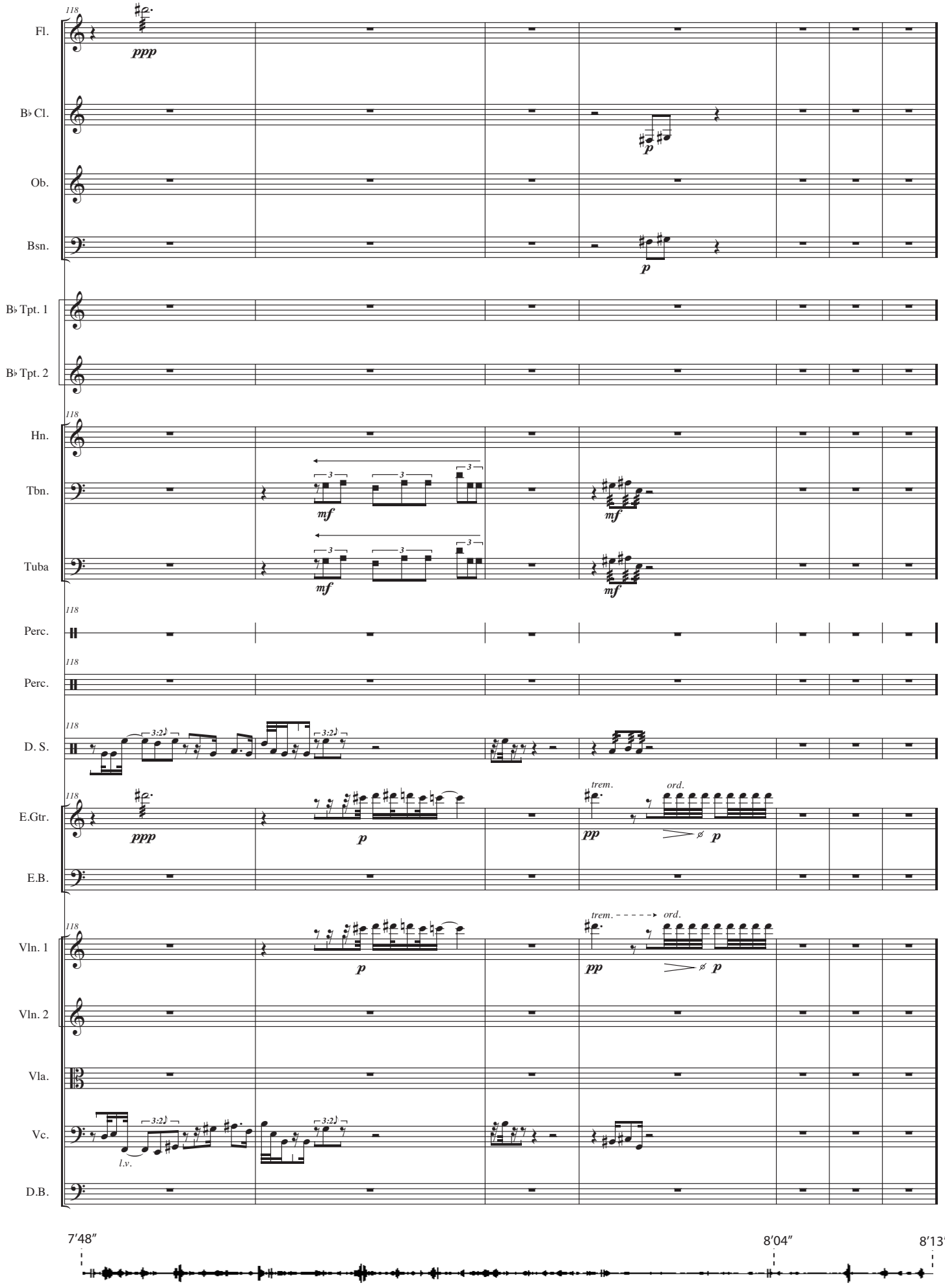

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
trem. ord.
4′56″
5′12″
5′39″

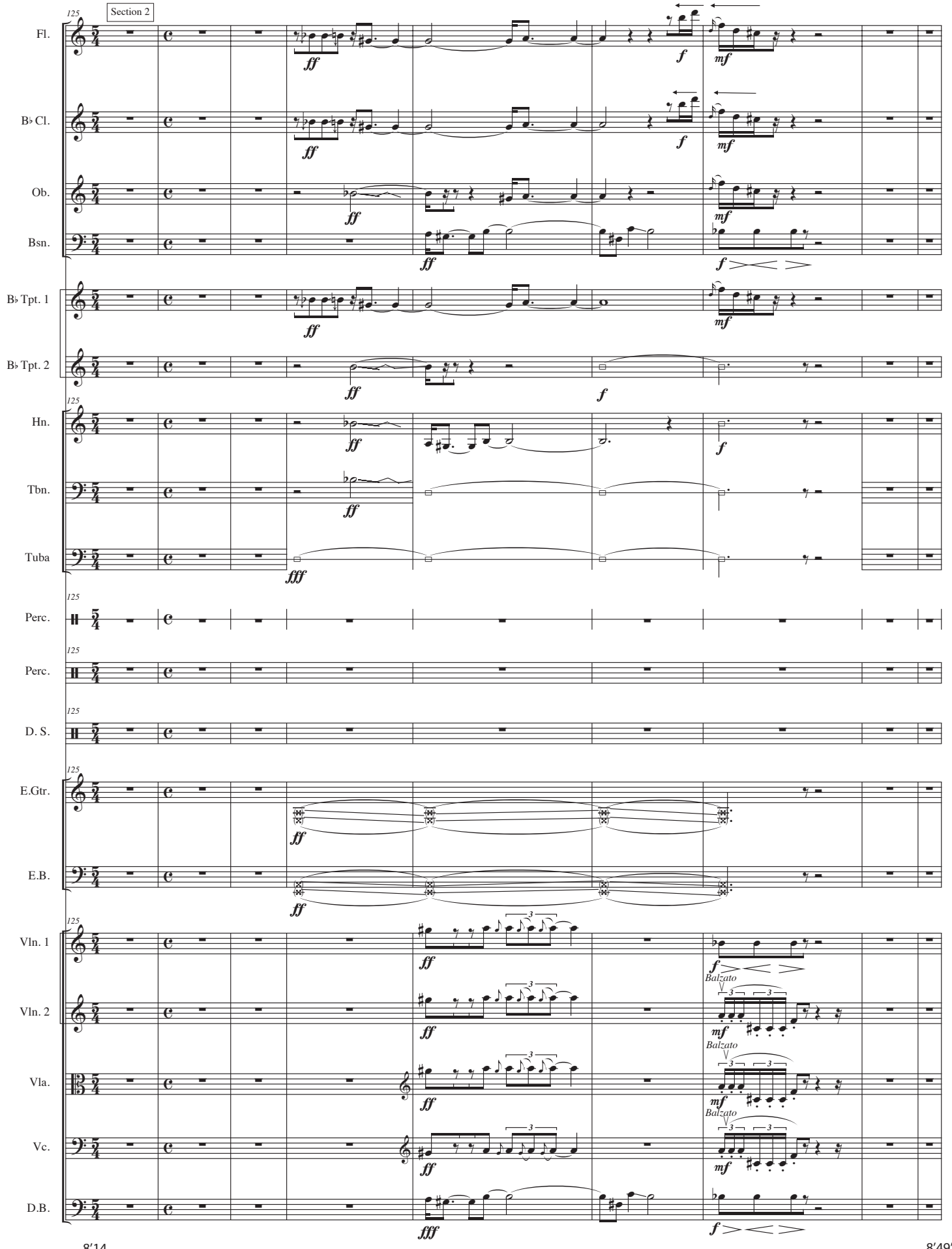

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
accel.
rit.
*fl. t.
*brush roll
l.v.
trem. → ord.
1/2 cl.
5′40″
6′08″
6′19″

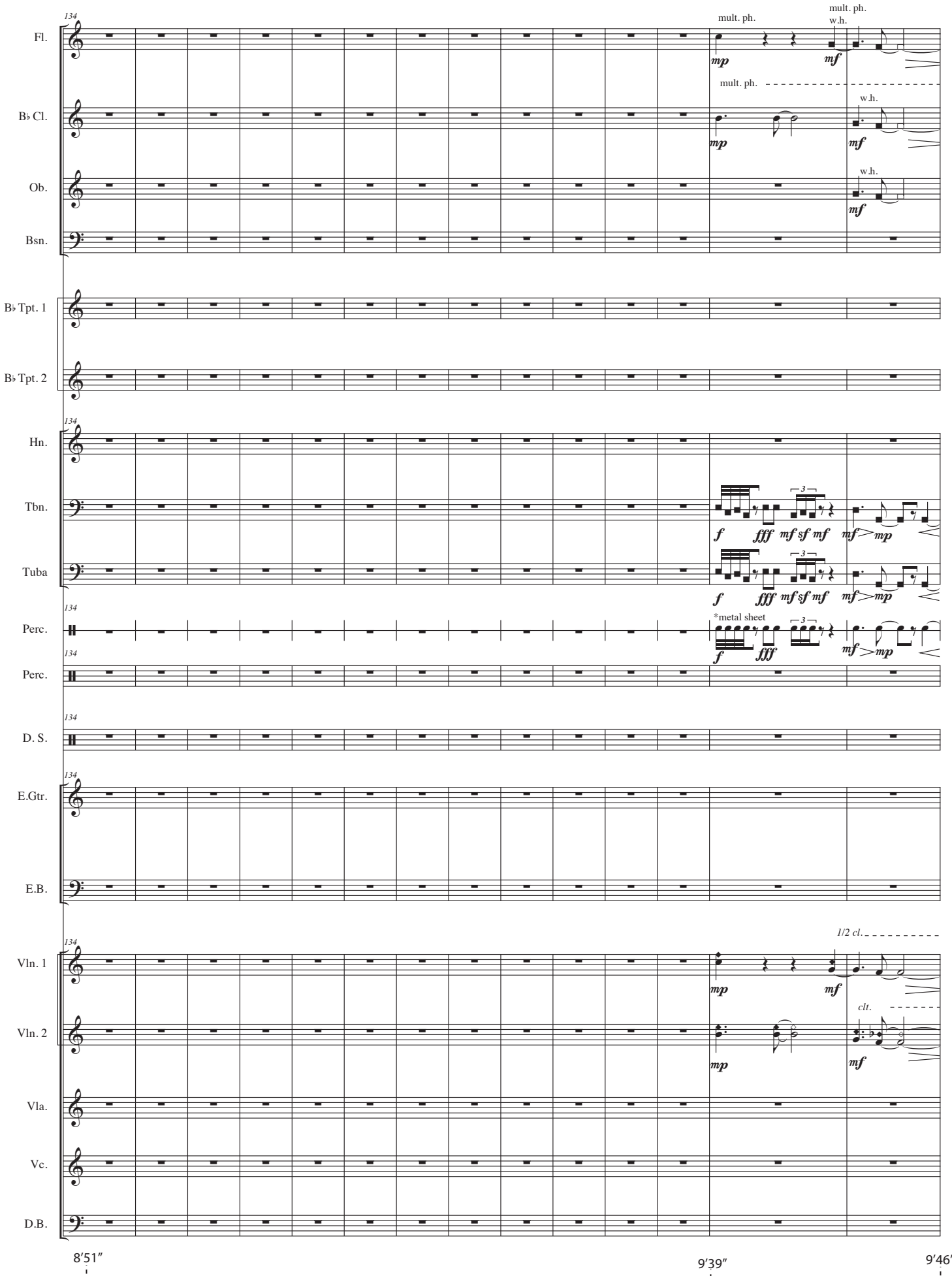

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(spoken hiss)
Le pa le pa le no esh
w.h.
*fl. t.
accel.
rit.
(s. h.)
*toms
*brush roll
trem. - - ord.
6'20"
6'39"

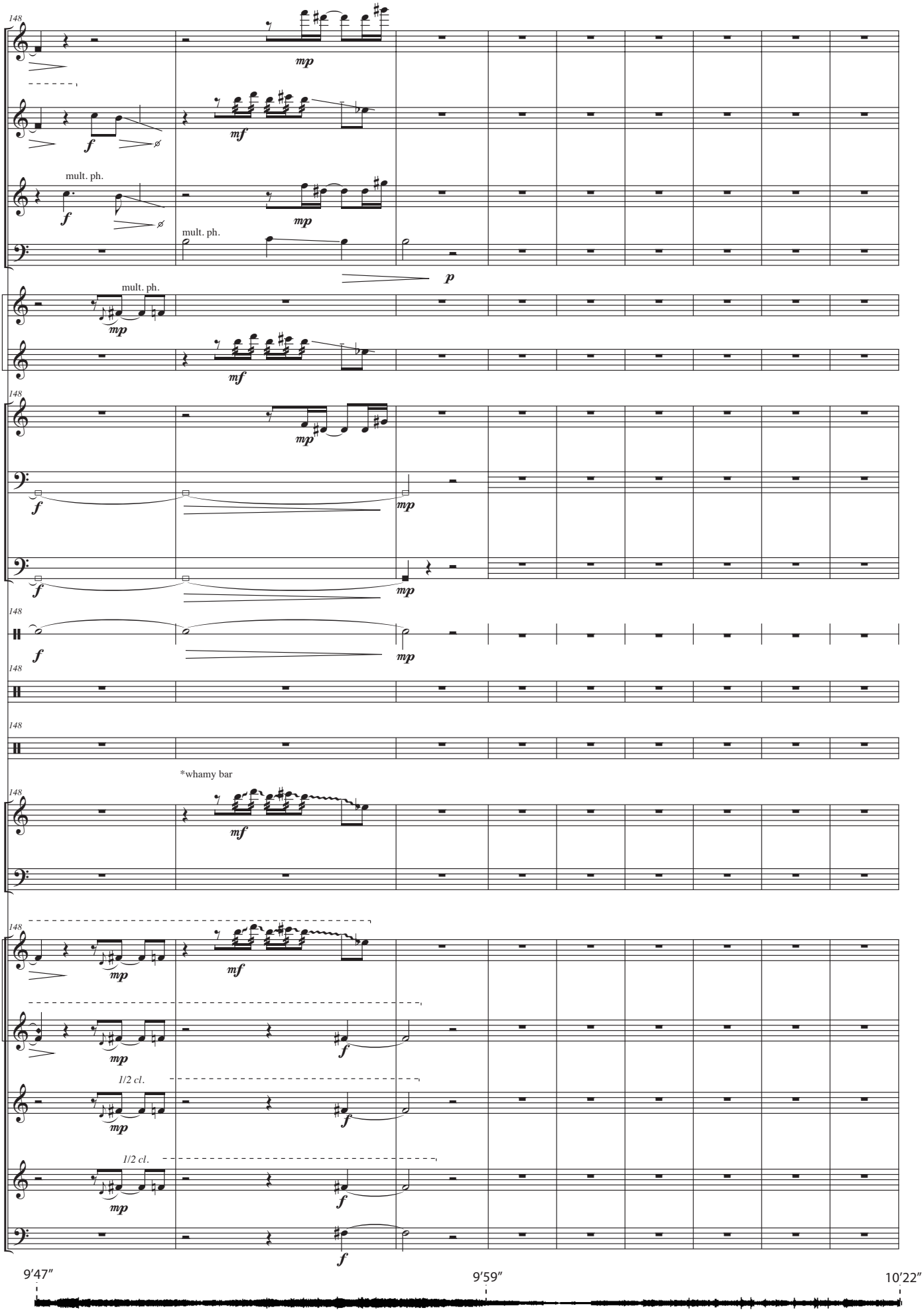

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Mal.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
101
(spoken hiss)
ha ho
mp
p
rit.
*fl. t.
ff
*brush roll
ppp
(hum-like)
1/2 cl.
pp
6′40″
7′27″

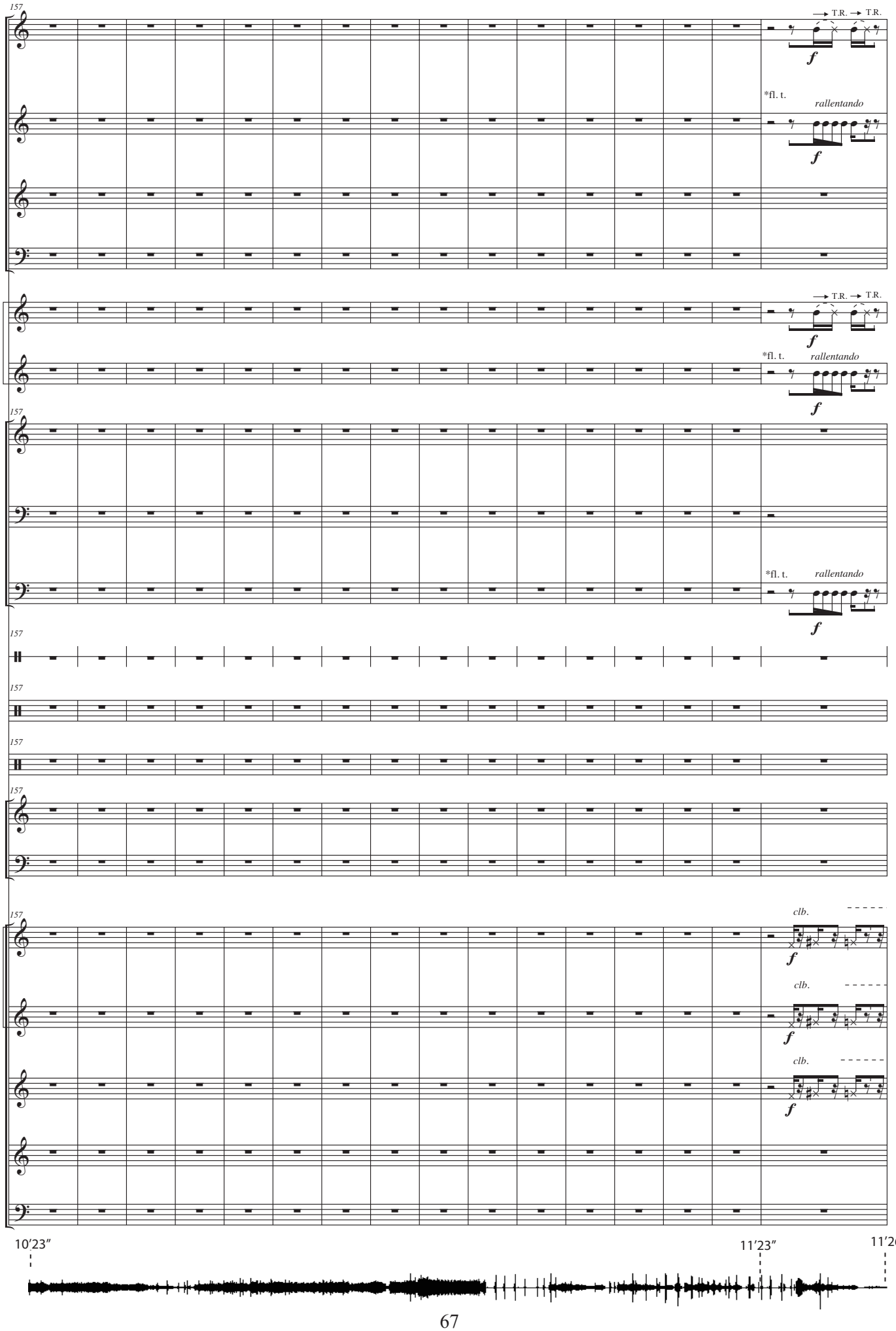

113
Fl.
mf p
mp >pp p >pp
B♭ Cl.
mf p
Ob.
Bsn.
mf p
B♭ Tpt. 1
*fl. t.
rit.
B♭ Tpt. 2
ff
113
Hn.
p
*fl. t.
rit.
Tbn.
ff
*fl. t.
rit.
Tuba
ff
113
Perc.
113
Perc.
113
D. S.
fff
3:2
f
same
f
pf
f
113
E.Gtr.
p
p
p
E.B.
Bartók pizz.
113
Vln. 1
ff
Bartók pizz.
pizz.
Vln. 2
ff
Bartók pizz.
Vla.
ff
Bartók pizz.
pizz.
gliss
pizz.
Vc.
mf
f
Bartók pizz.
D.B.
ff
7′27″
7′47″

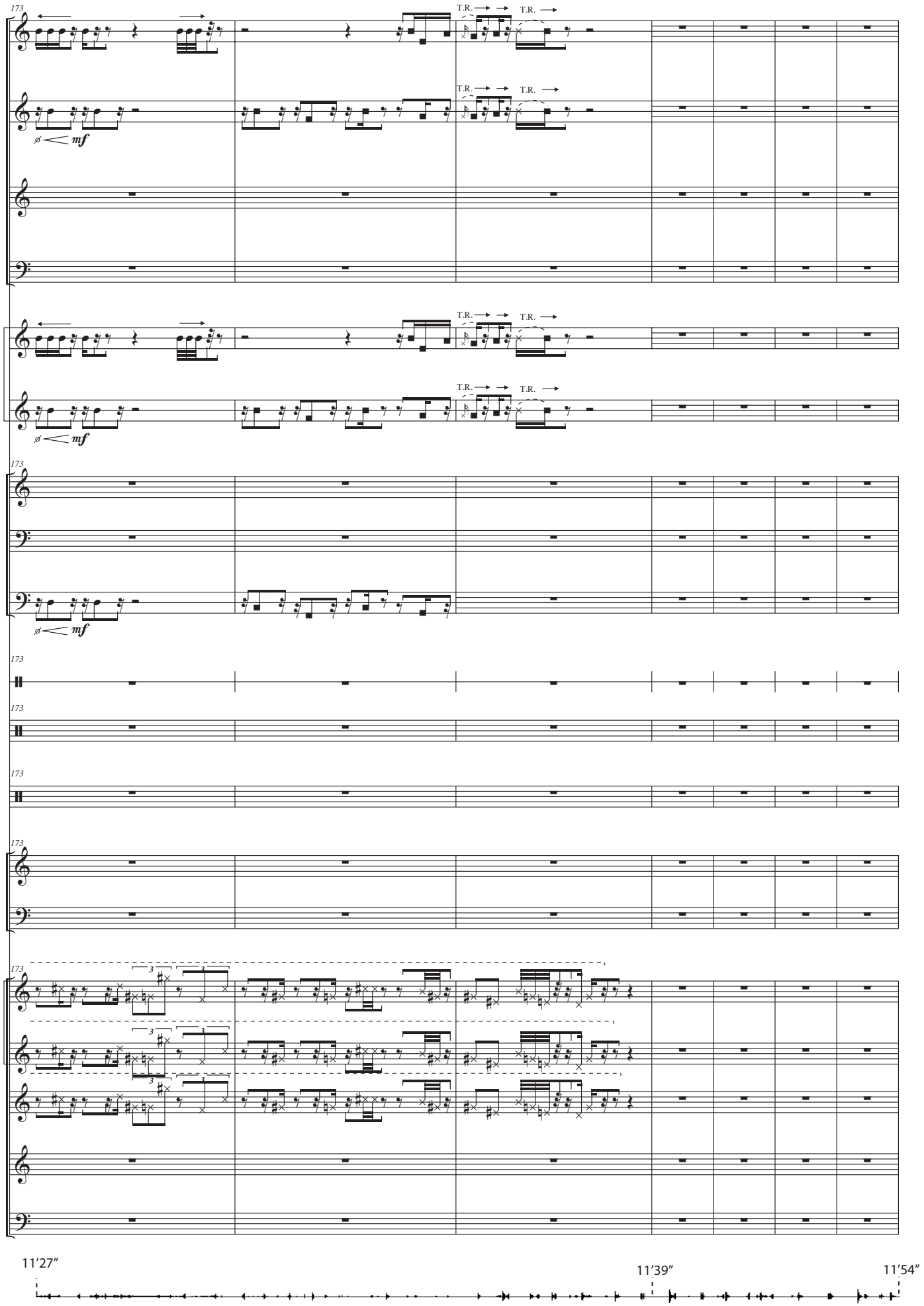

118
Fl.
ppp
B♭ Cl.
p
Ob.
Bsn.
p
B♭ Tpt. 1
B♭ Tpt. 2
118
Hn.
Tbn.
3
mf
Tuba
118
Perc.
118
Perc.
118
D. S.
3:2
118
E.Gtr.
ppp
p
trem.
ord.
pp
p
E.B.
118
Vln. 1
p
trem.
ord.
pp
p
Vln. 2
Vla.
Vc.
3:2
l.v.
D.B.
7′48″
8′04″
8′13″

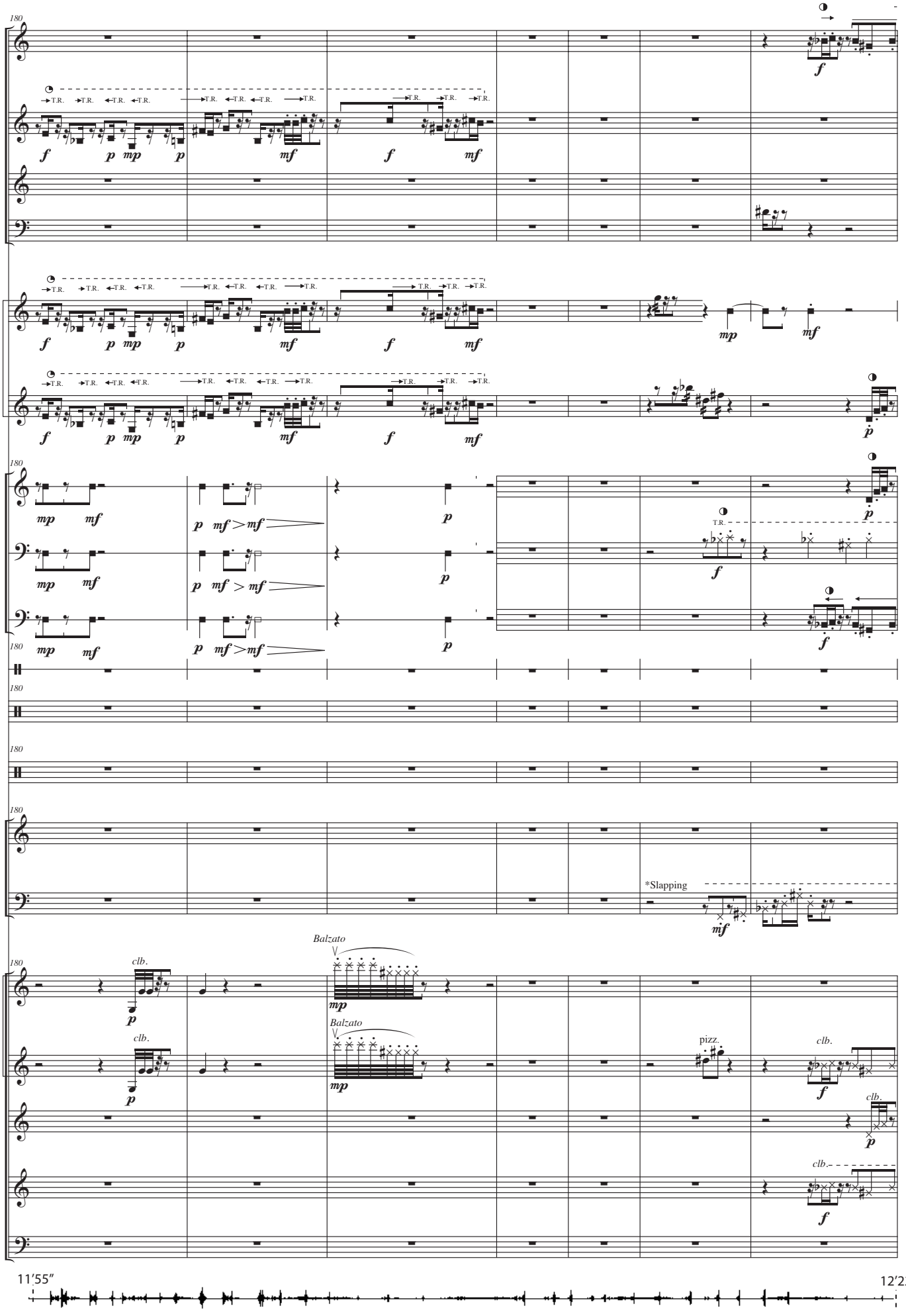

Section 2
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
125
ff
f
mf
fff
Balzato
3
8′14
8′27″
8′49″

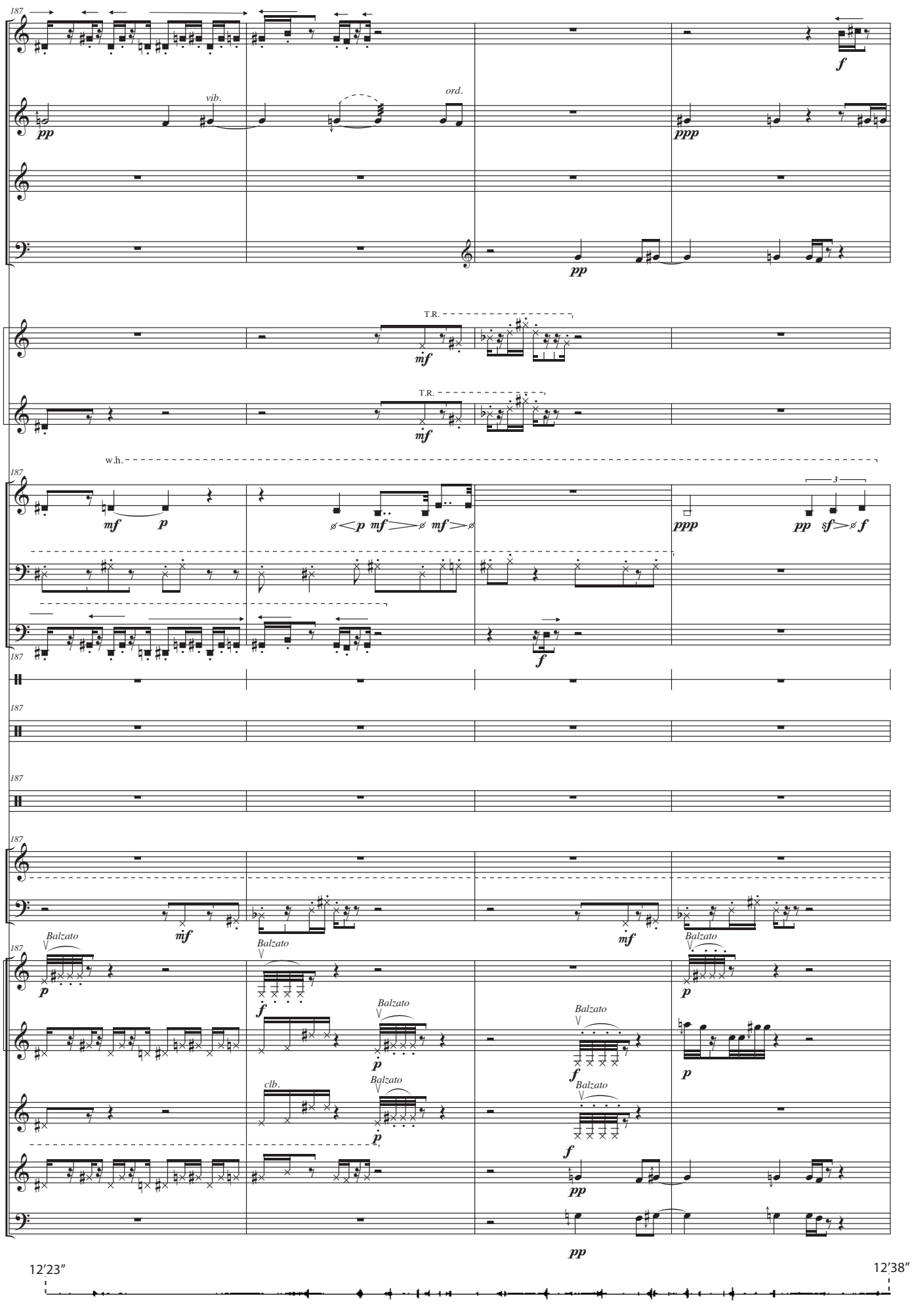

134
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
mult. ph.
w.h.
mp
mf
f
fff
mf sf mf
*metal sheet
1/2 cl.
clt.
8′51″
9′39″
9′46″

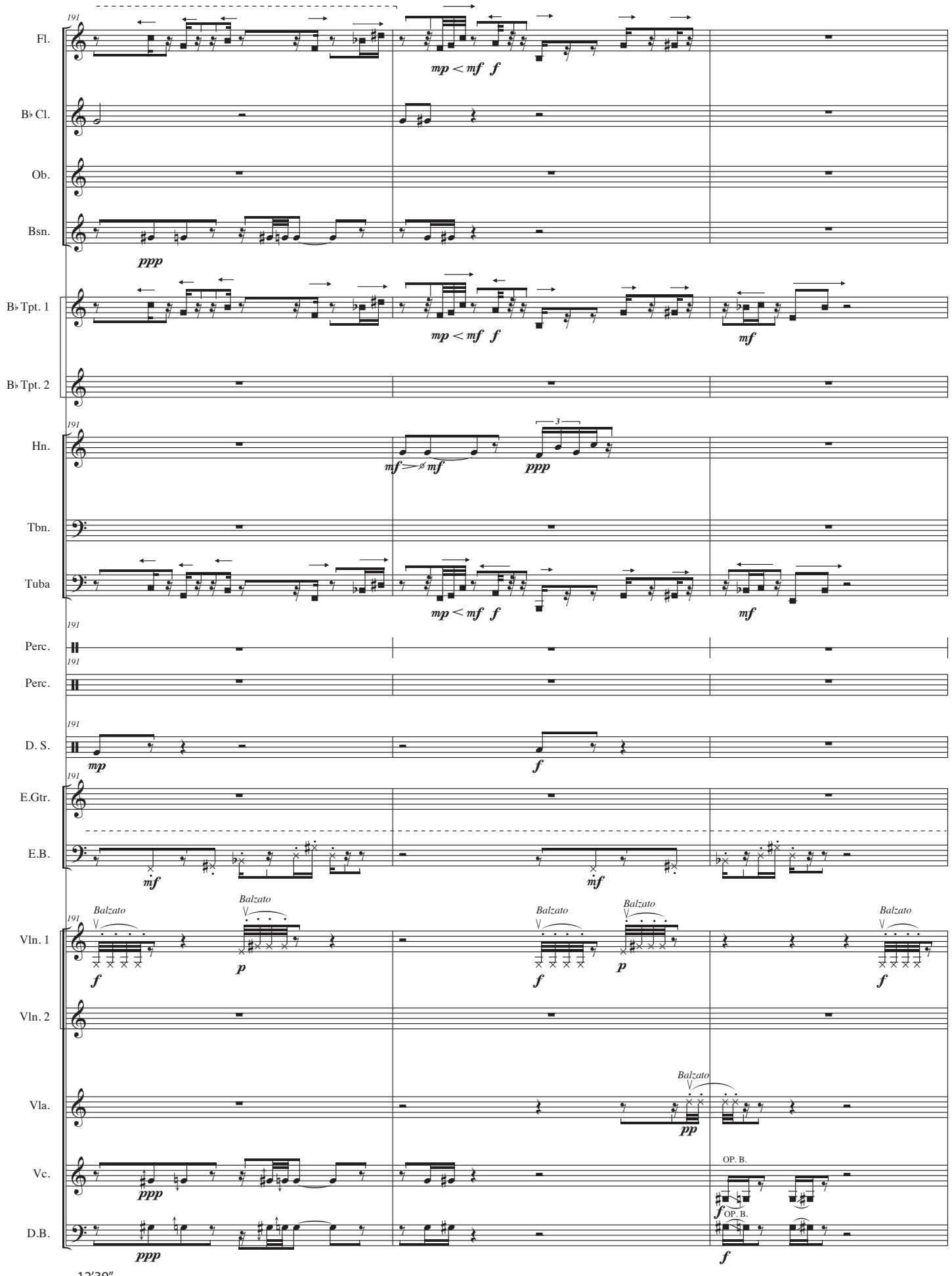

148
Fl.
B♭ Cl.
Ob.
mult. ph.
Bsn.
mult. ph.
B♭ Tpt. 1
mult. ph.
B♭ Tpt. 2
148
Hn.
Tbn.
Tuba
148
Perc.
148
Perc.
148
D. S.
*whamy bar
148
E.Gtr.
E.B.
148
Vln. 1
Vln. 2
1/2 cl.
Vla.
1/2 cl.
Vc.
D.B.
9′47″
9′59″
10′22″

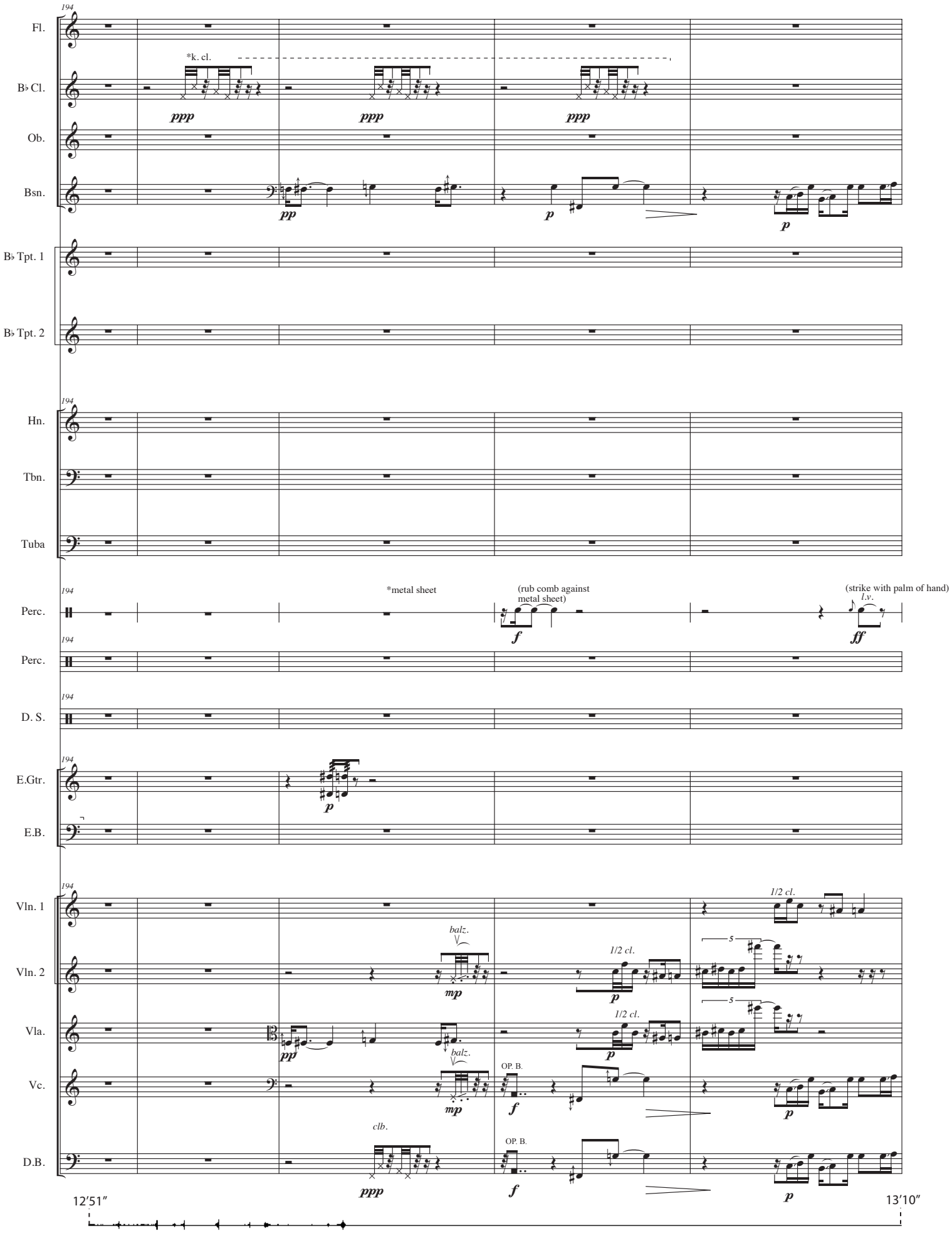

157
Fl.
T.R.
T.R.
f
B♭ Cl.
*fl. t.
rallentando
f
Ob.
Bsn.
B♭ Tpt. 1
T.R.
T.R.
f
B♭ Tpt. 2
*fl. t.
rallentando
f
157
Hn.
Tbn.
Tuba
*fl. t.
rallentando
f
157
Perc.
157
Perc.
157
D. S.
157
E.Gtr.
E.B.
157
Vln. 1
clb.
f
Vln. 2
clb.
f
Vla.
clb.
f
Vc.
D.B.
10′23″
11′23″
11′26″

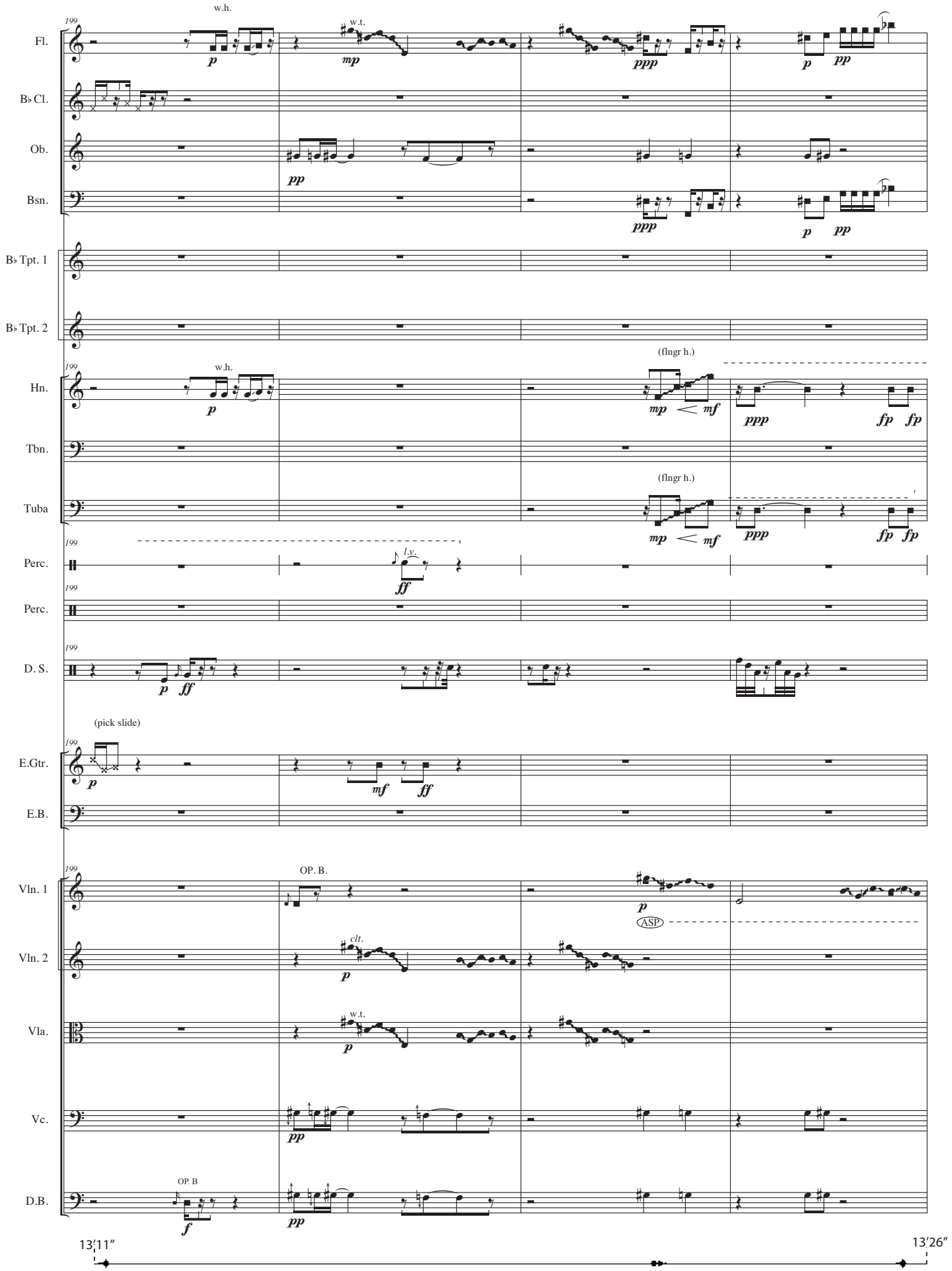

173
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
T.R.
mf
11′27″
11′39″
11′54″

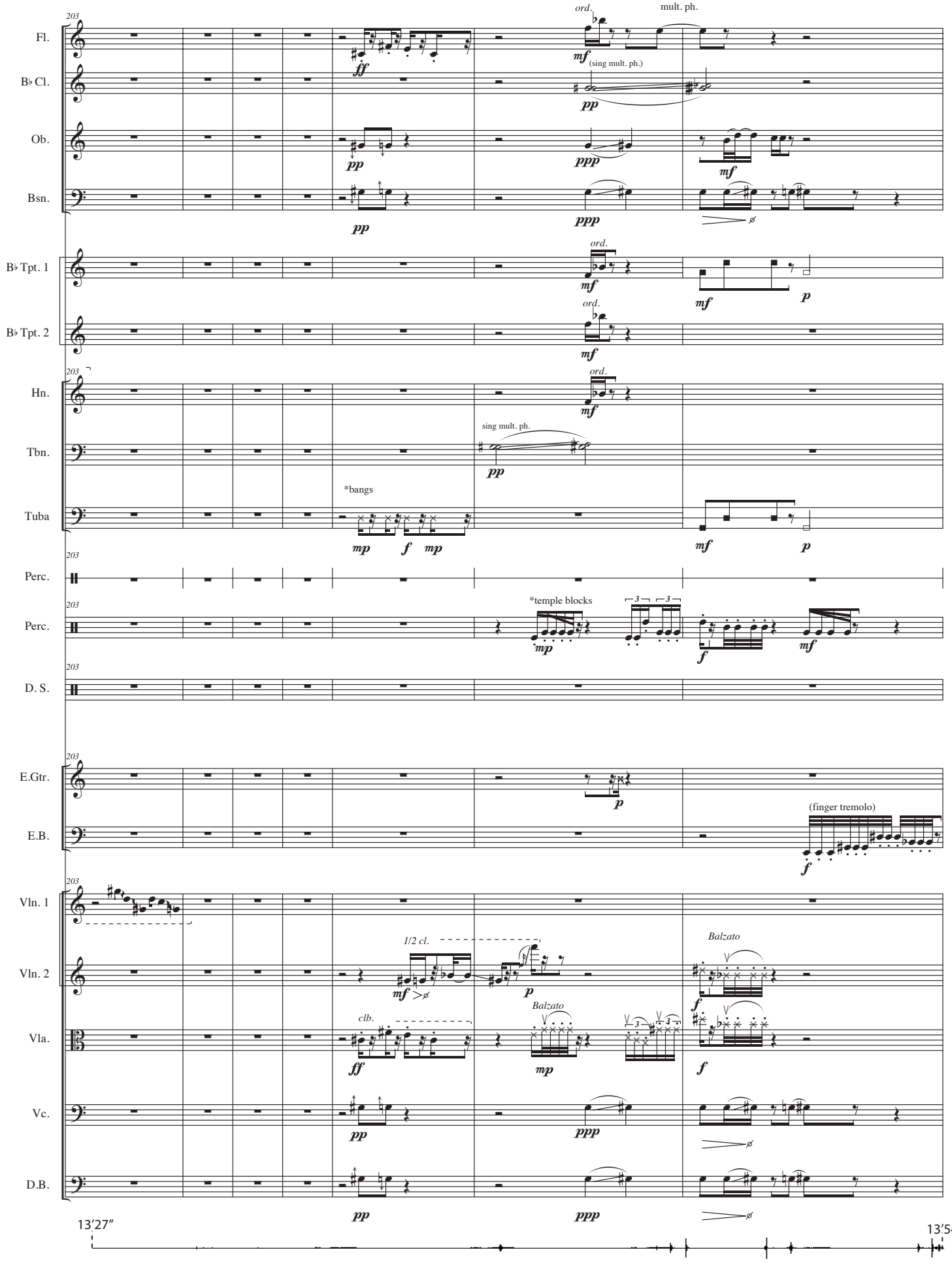

180
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
T.R.
*Slapping
Balzato
clb.
pizz.
11′55″
12′22″

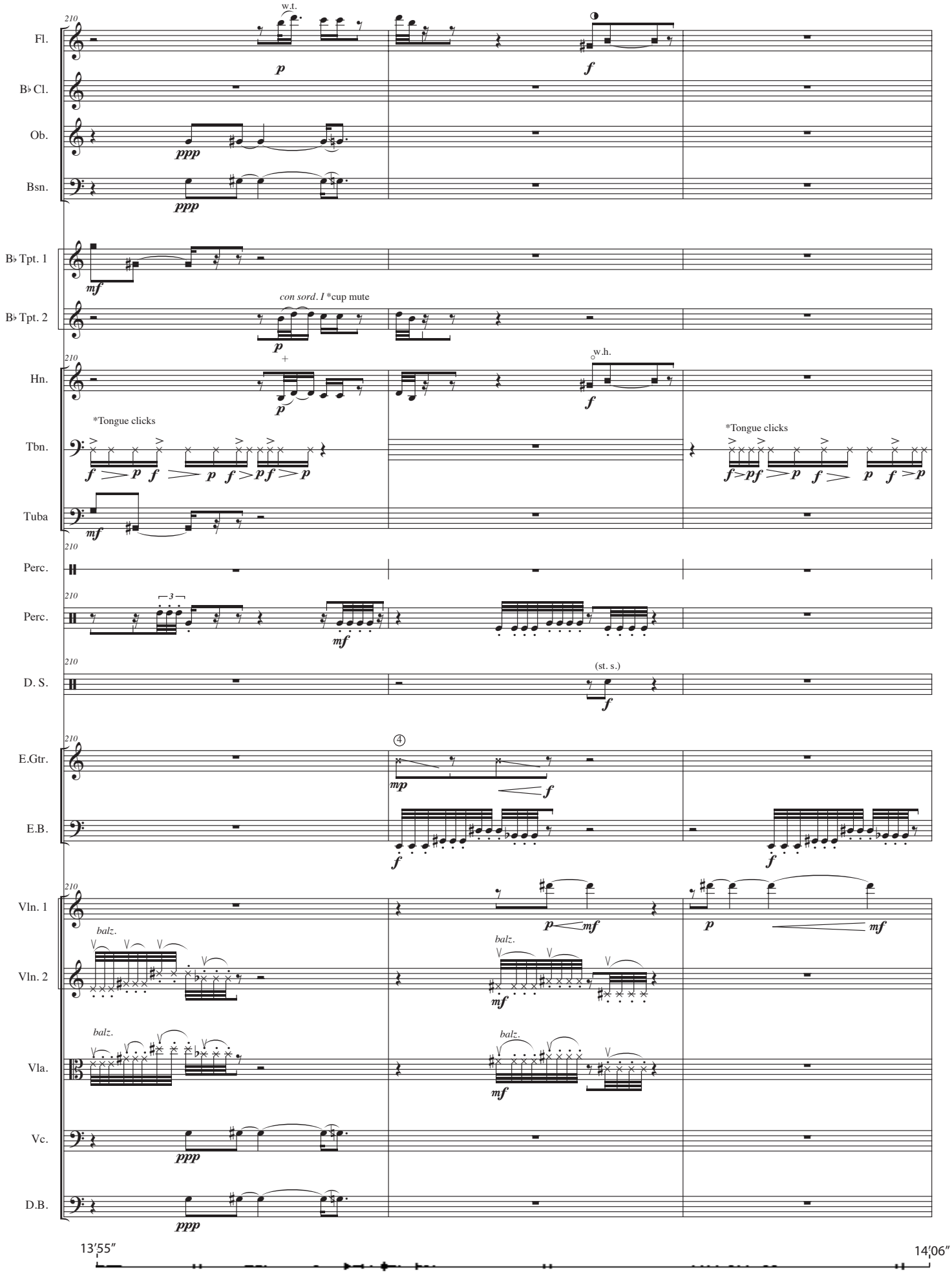

187
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
vib.
ord.
T.R.
w.h.
Balzato
clb.
12′23″
12′38″

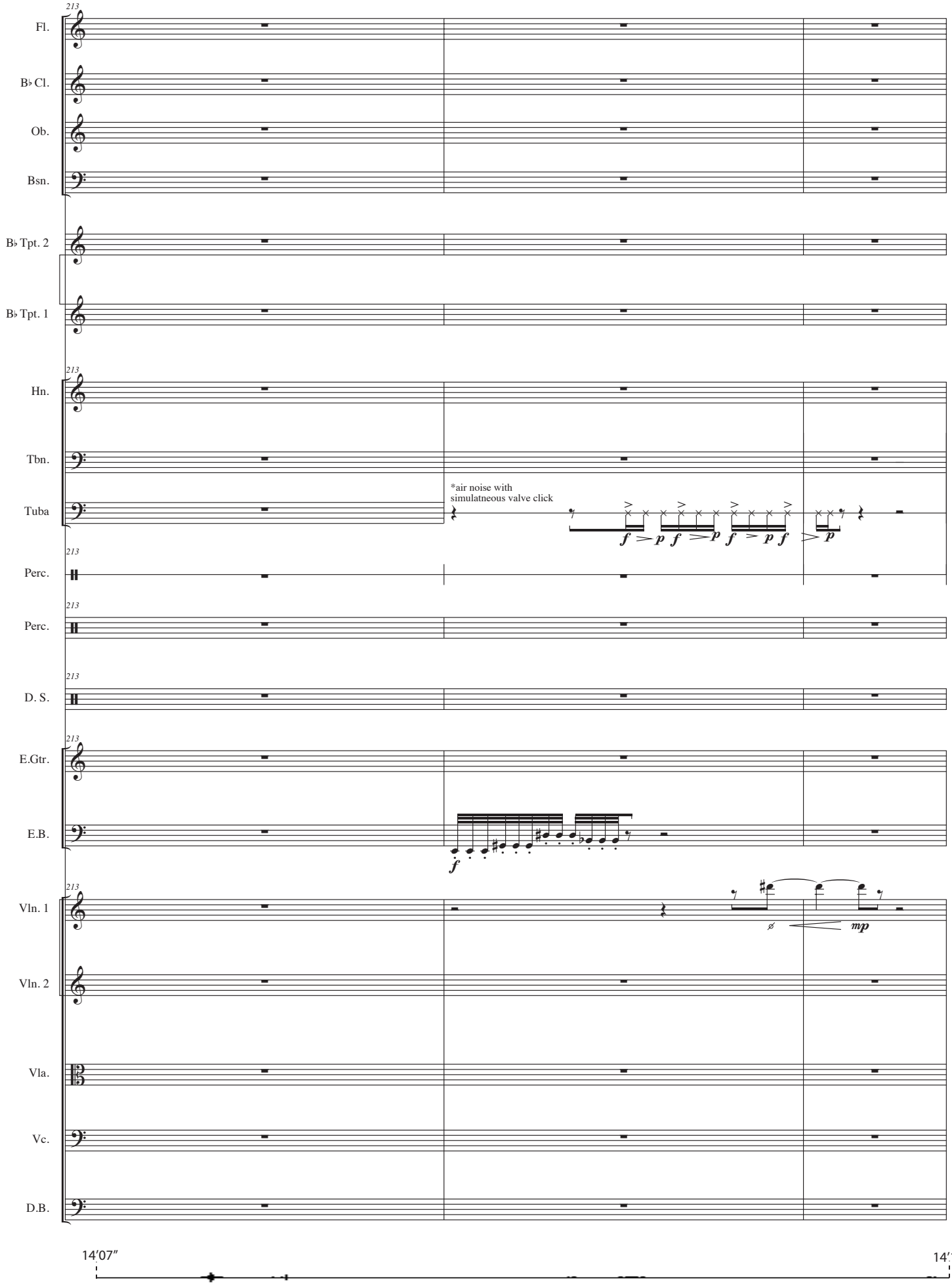

191
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
mp < mf f
mf
ppp
mf > ø mf
3
Balzato
OP. B.
12′39″
12′50″

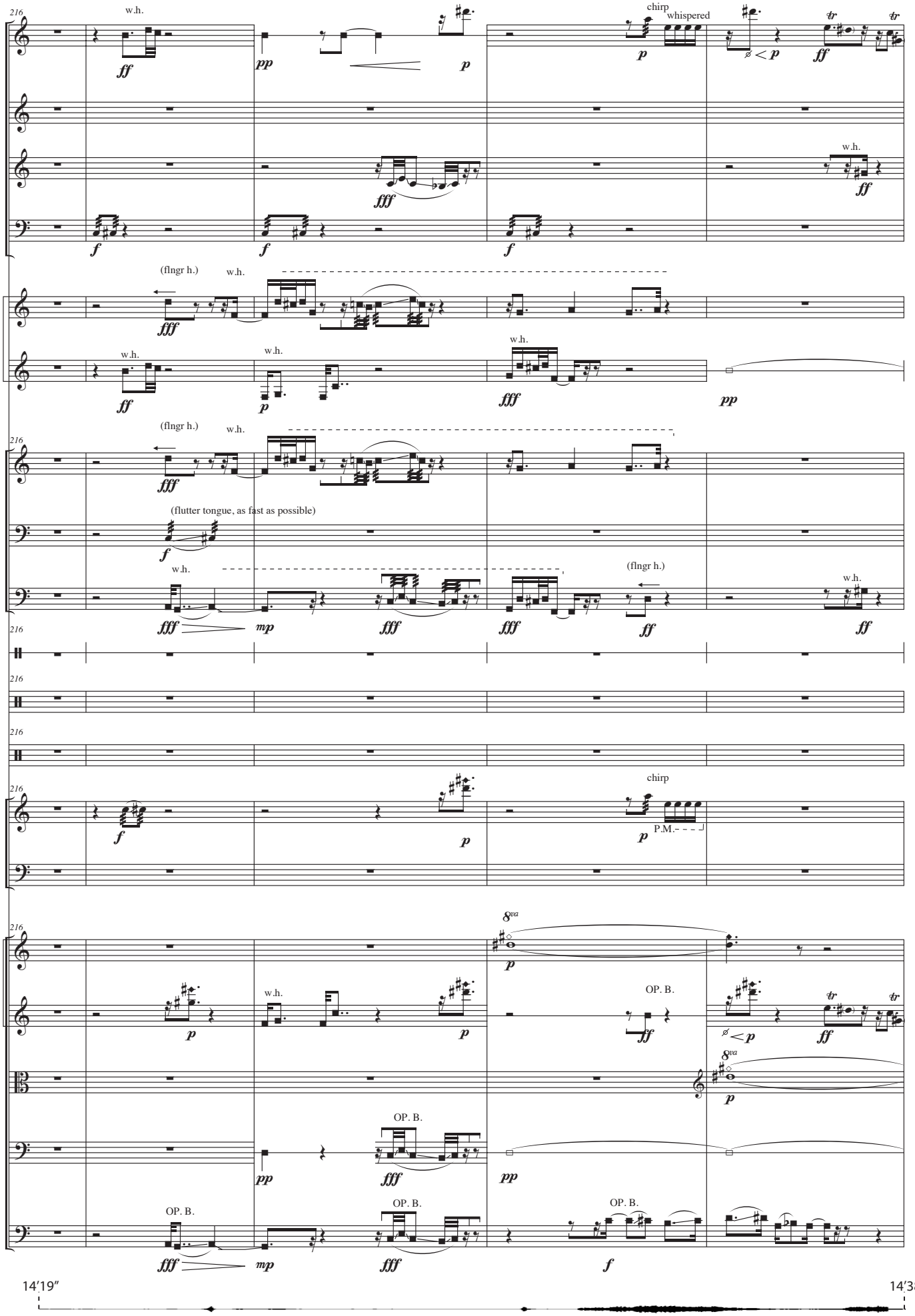

194
Fl.
B♭ Cl.
*k. cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
*metal sheet
(rub comb against metal sheet)
(strike with palm of hand)
l.v.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
balz.
clb.
1/2 cl.
OP. B.
12′51″
13′10″

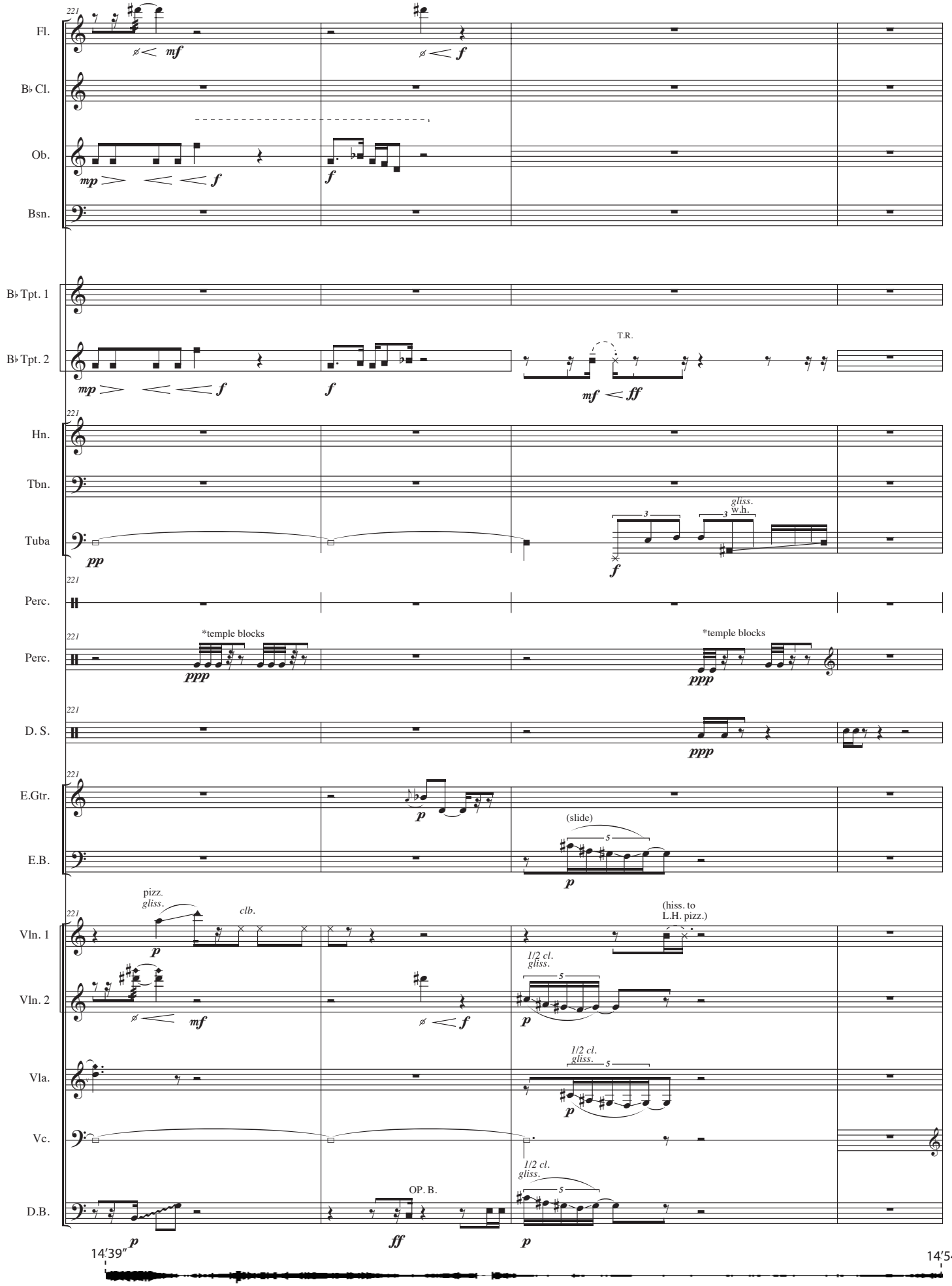

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.h.
w.t.
(flngr h.)
(pick slide)
OP. B.
OP. B
clt.
l.v.
ASP
13′11″
13′26″

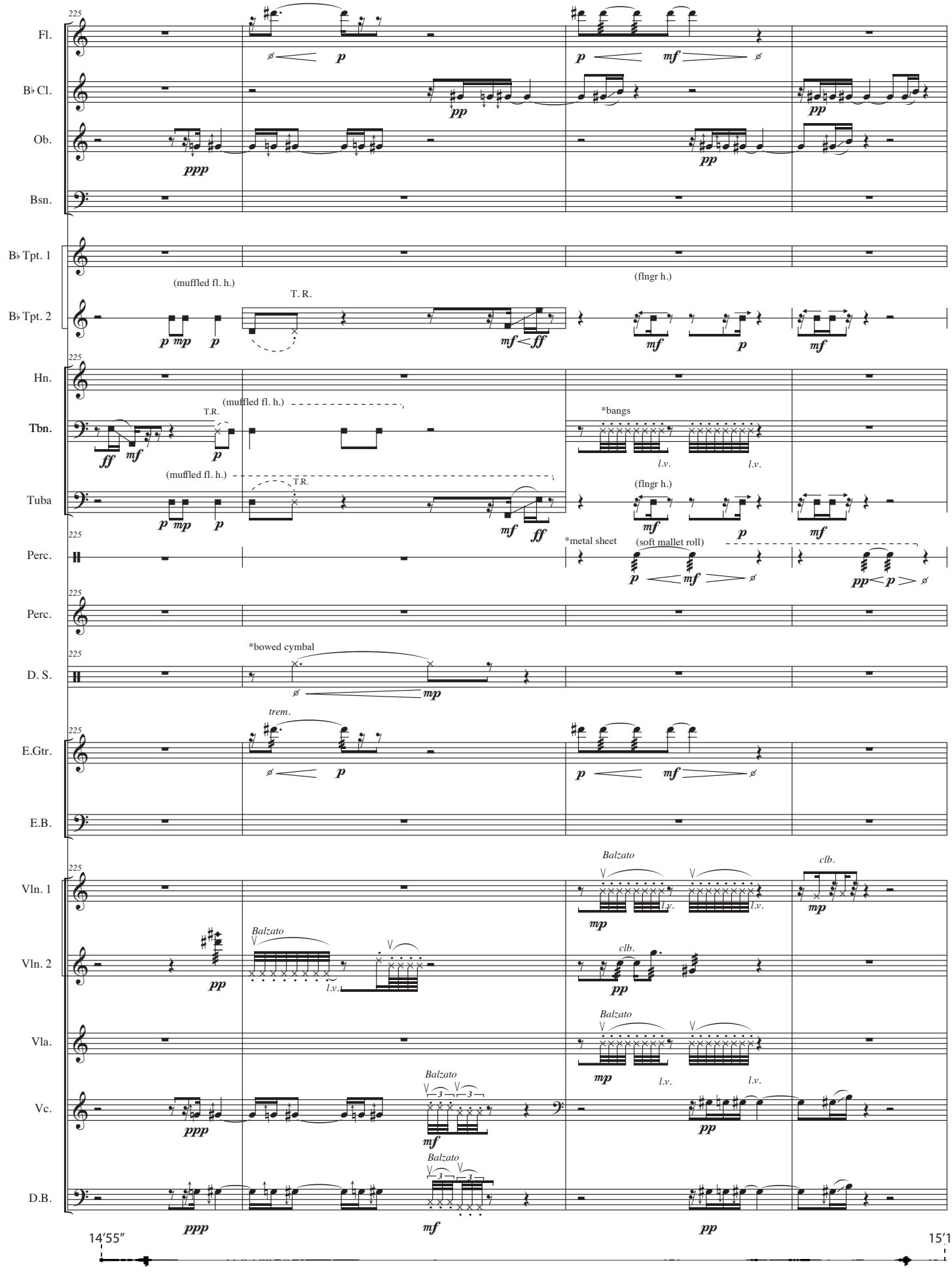

203
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
ord.
mult. ph.
(sing mult. ph.)
sing mult. ph.
*bangs
*temple blocks
(finger tremolo)
1/2 cl.
clb.
Balzato
13′27″
13′54″

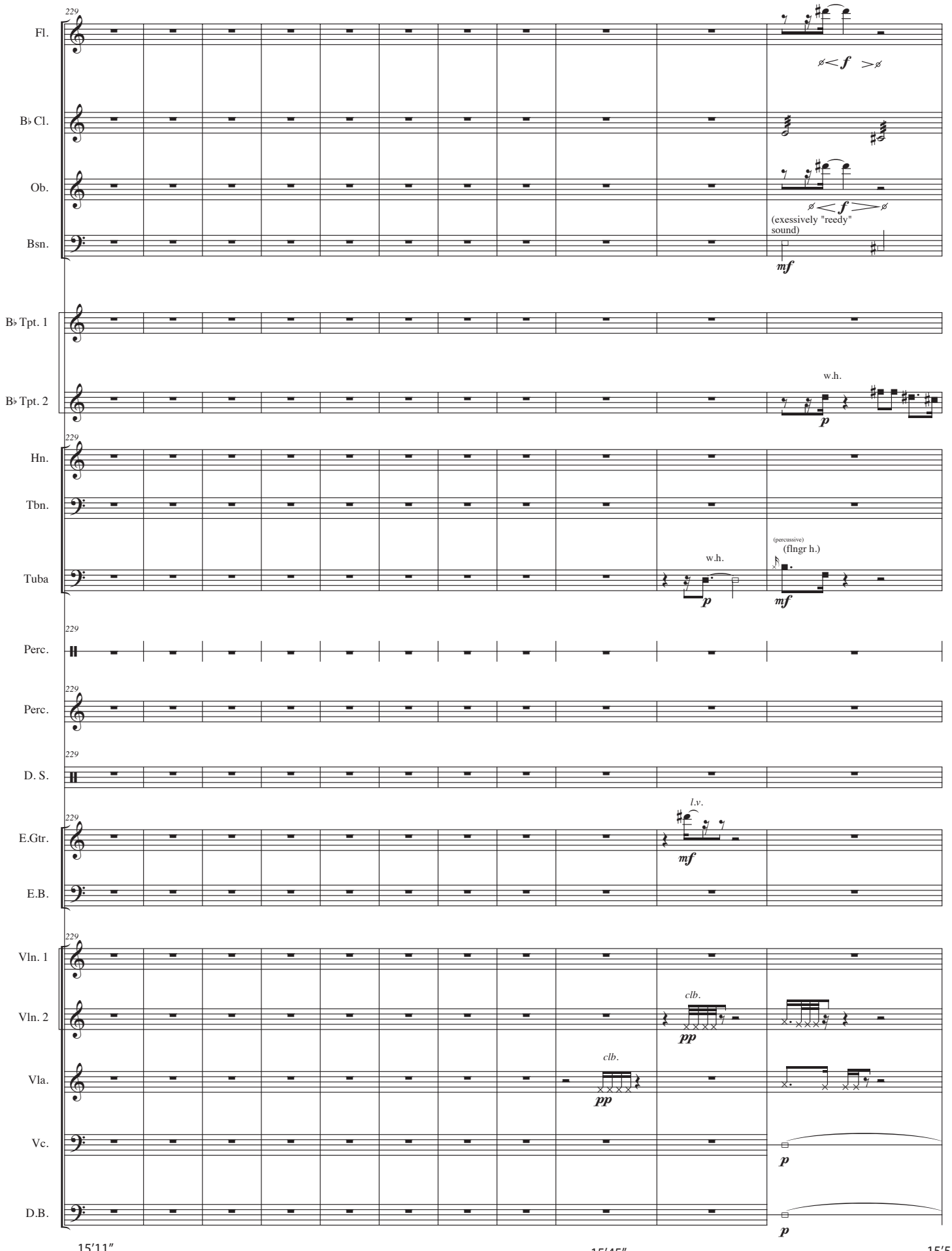

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.t.
con sord. 1 *cup mute
w.h.
*Tongue clicks
*Tongue clicks
(st. s.)
balz.
balz.
balz.
13′55″
14′06″

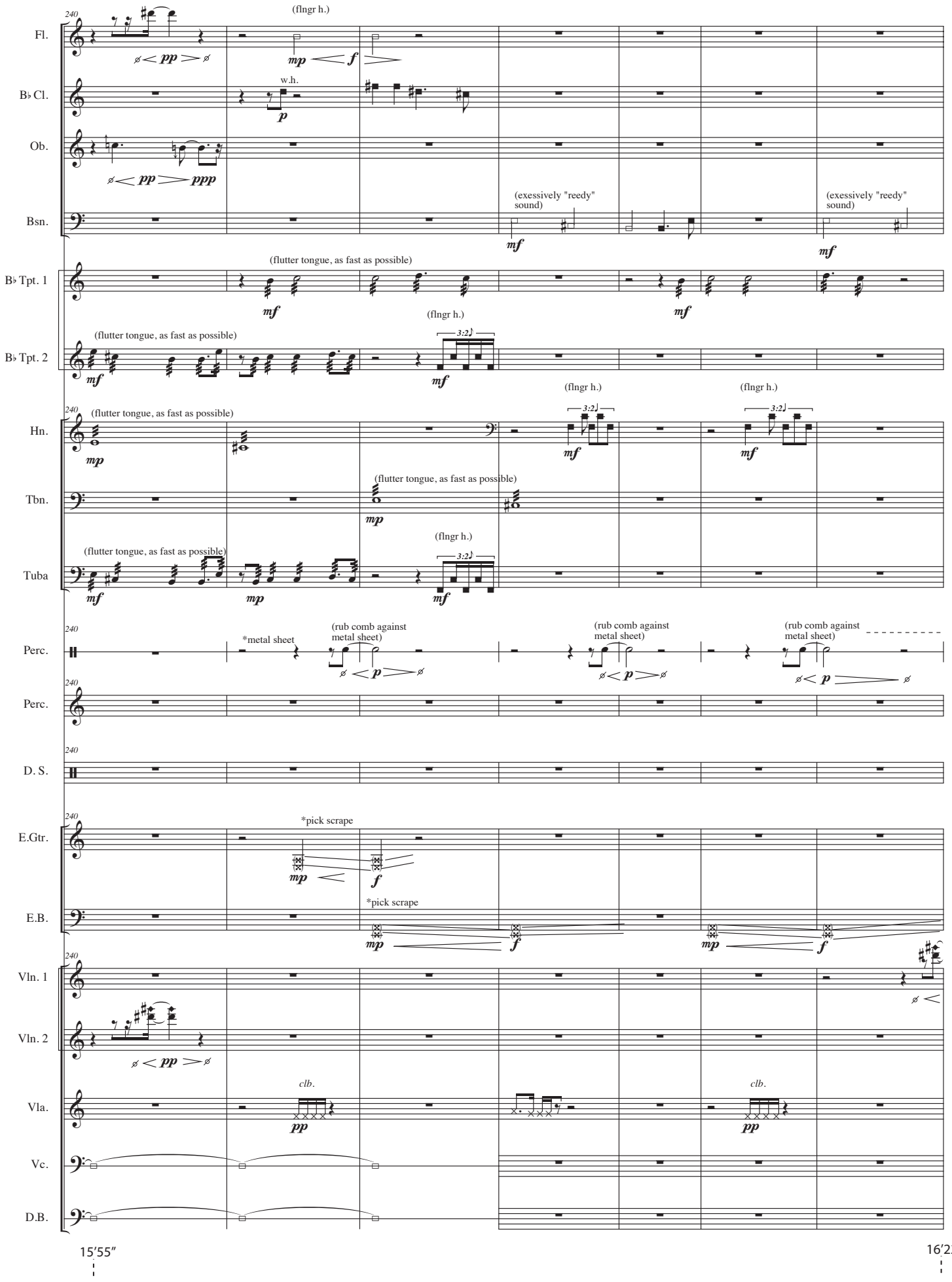

213
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 2
B♭ Tpt. 1
213
Hn.
Tbn.
Tuba
*air noise with
simulatneous valve click
213
Perc.
213
Perc.
213
D. S.
213
E.Gtr.
E.B.
213
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
14′07″
14′18″

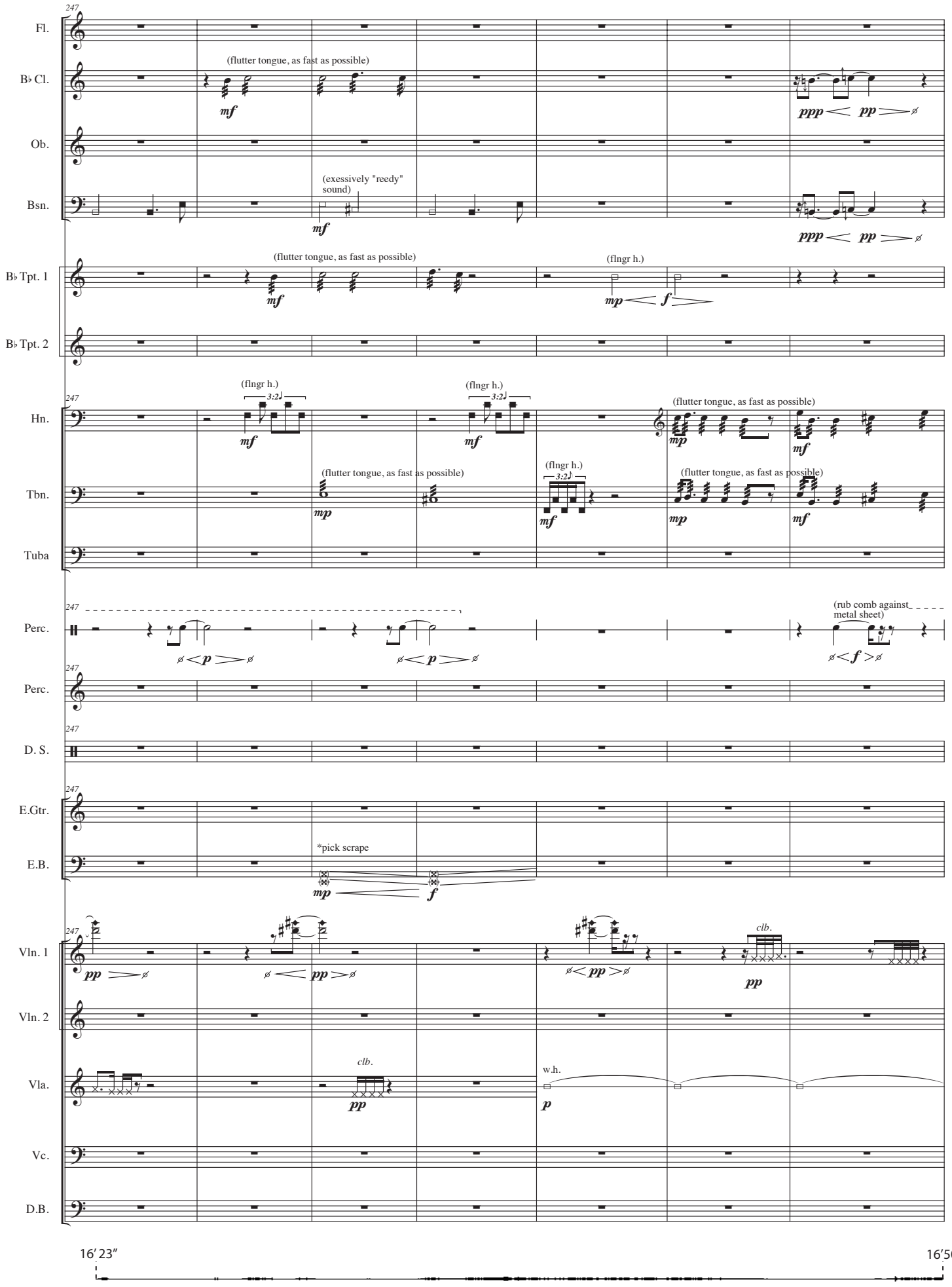

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.h.
chirp
whispered
(flngr h.)
(flutter tongue, as fast as possible)
OP. B.
P.M.
14′19″
14′38″

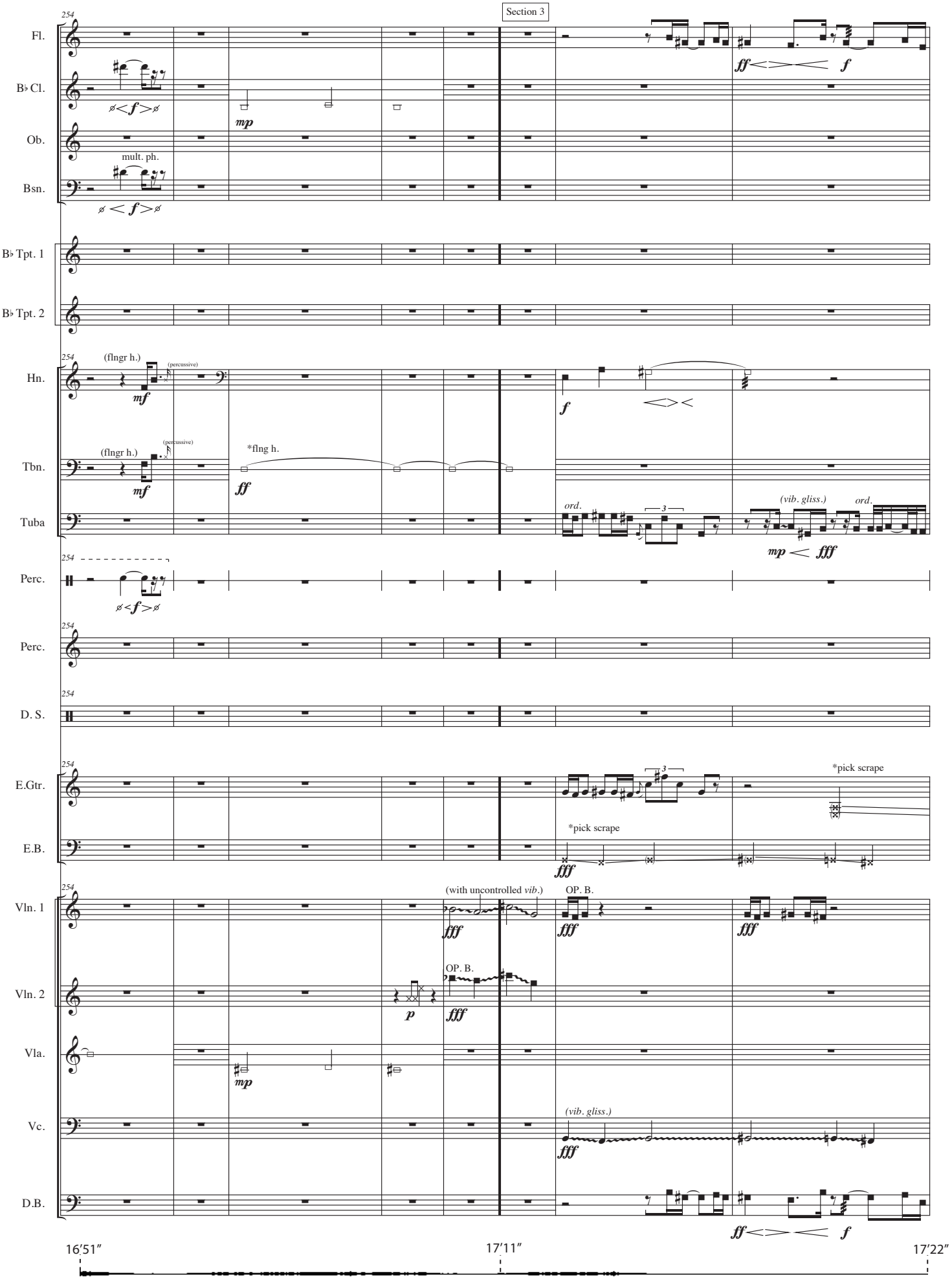

221
Fl.
mf
f
B♭ Cl.
Ob.
mp
f
f
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
mp
f
f
T.R.
mf
ff
221
Hn.
Tbn.
Tuba
pp
gliss.
w.h.
f
221
Perc.
221
Perc.
*temple blocks
ppp
*temple blocks
ppp
221
D. S.
ppp
221
E.Gtr.
p
(slide)
E.B.
p
pizz.
gliss.
clb.
221
Vln. 1
p
(hiss. to
L.H. pizz.)
Vln. 2
mf
f
1/2 cl.
gliss.
p
Vla.
1/2 cl.
gliss.
p
Vc.
1/2 cl.
gliss.
D.B.
p
OP. B.
ff
p
14′39″
14′54″

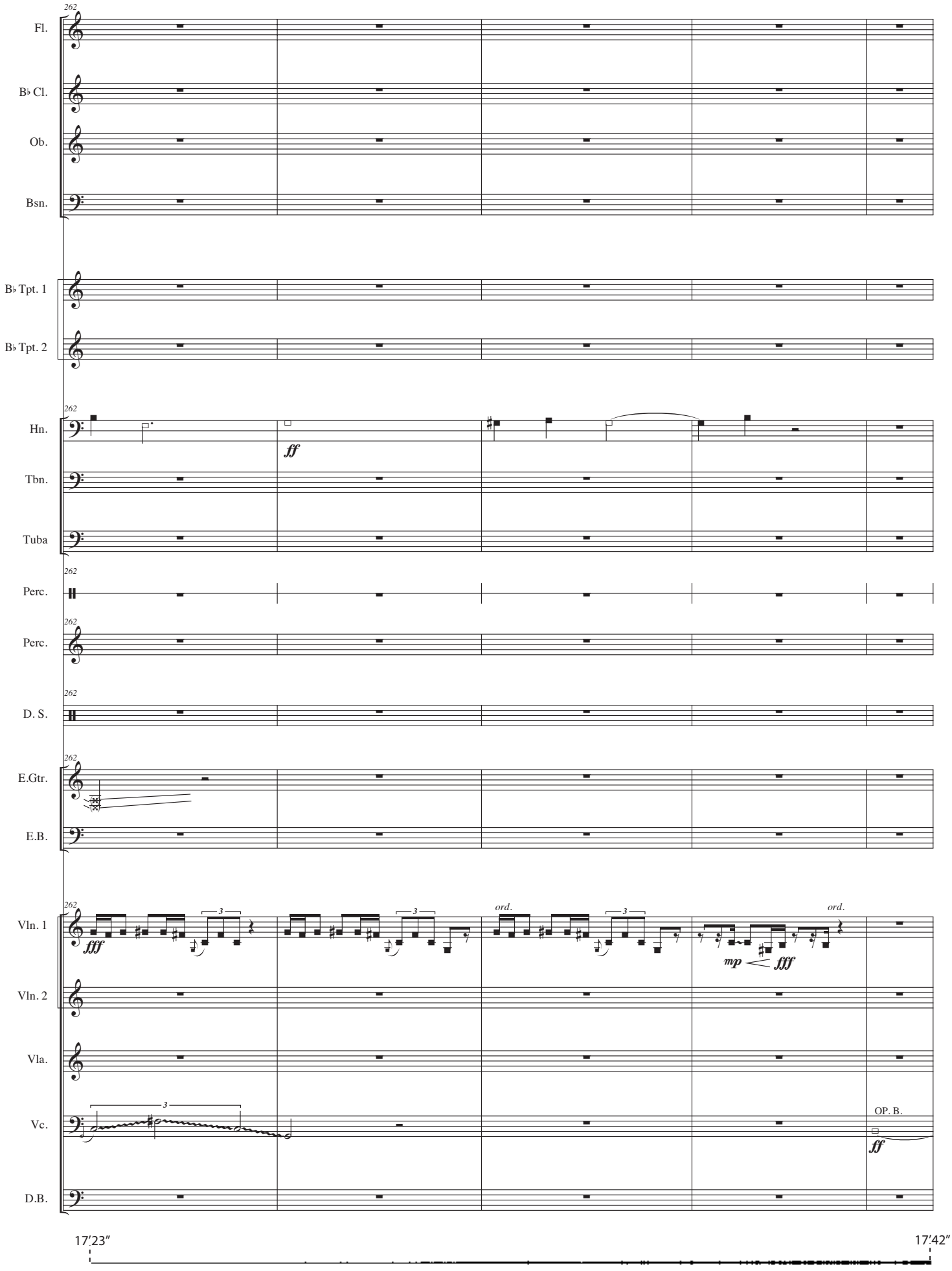

225
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(muffled fl. h.)
T. R.
(flngr h.)
*bangs
*metal sheet
(soft mallet roll)
*bowed cymbal
trem.
Balzato
clb.
l.v.
14′55″
15′10″

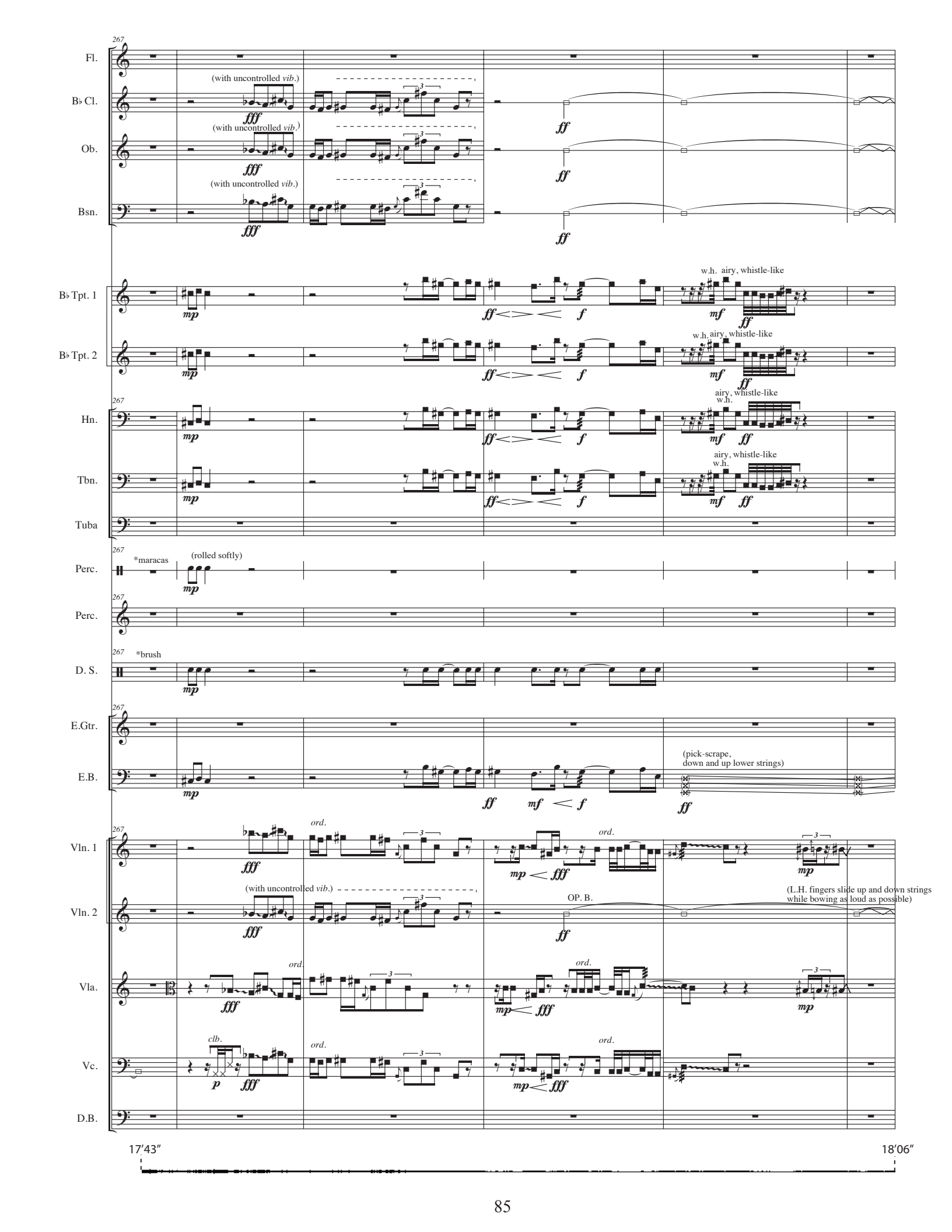

229
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
f
(exessively "reedy" sound)
mf
w.h.
p
(percussive)
(flngr h.)
l.v.
clb.
pp
15′11″
15′45″
15′54″

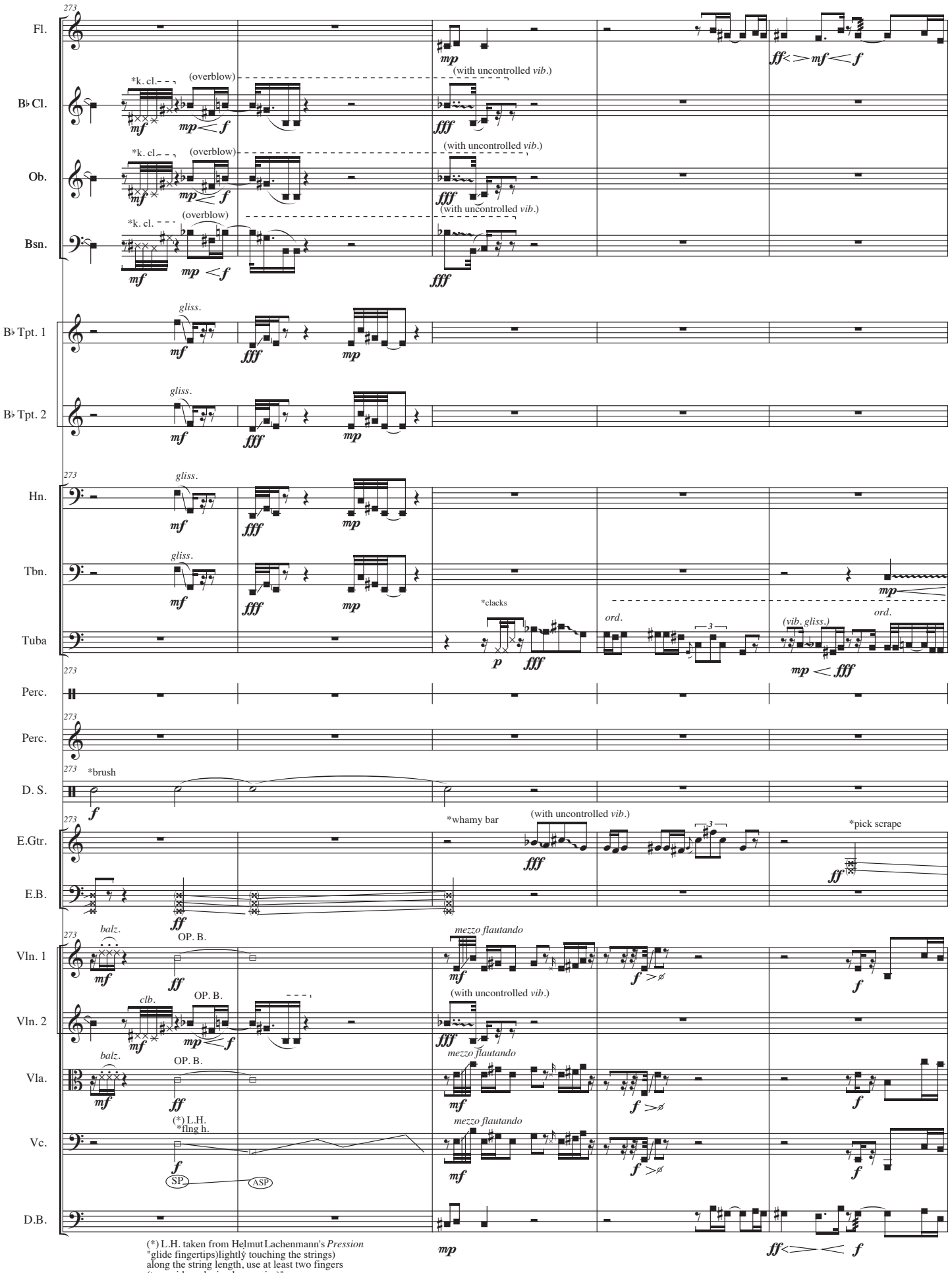

240
Fl.
(flngr h.)
pp
mp
f
B♭ Cl.
w.h.
p
Ob.
pp
ppp
Bsn.
(exessively "reedy" sound)
mf
(exessively "reedy" sound)
mf
B♭ Tpt. 1
(flutter tongue, as fast as possible)
mf
mf
B♭ Tpt. 2
(flutter tongue, as fast as possible)
mf
(flngr h.)
3:2
mf
Hn.
(flutter tongue, as fast as possible)
mp
(flngr h.)
3:2
mf
(flngr h.)
3:2
mf
Tbn.
(flutter tongue, as fast as possible)
mp
Tuba
(flutter tongue, as fast as possible)
mf
mp
(flngr h.)
3:2
mf
Perc.
*metal sheet
(rub comb against metal sheet)
p
(rub comb against metal sheet)
p
(rub comb against metal sheet)
p
Perc.
D. S.
E.Gtr.
*pick scrape
mp
f
E.B.
*pick scrape
mp
f
mp
f
Vln. 1
Vln. 2
pp
Vla.
clb.
pp
clb.
pp
Vc.
D.B.
15′55″
16′22″

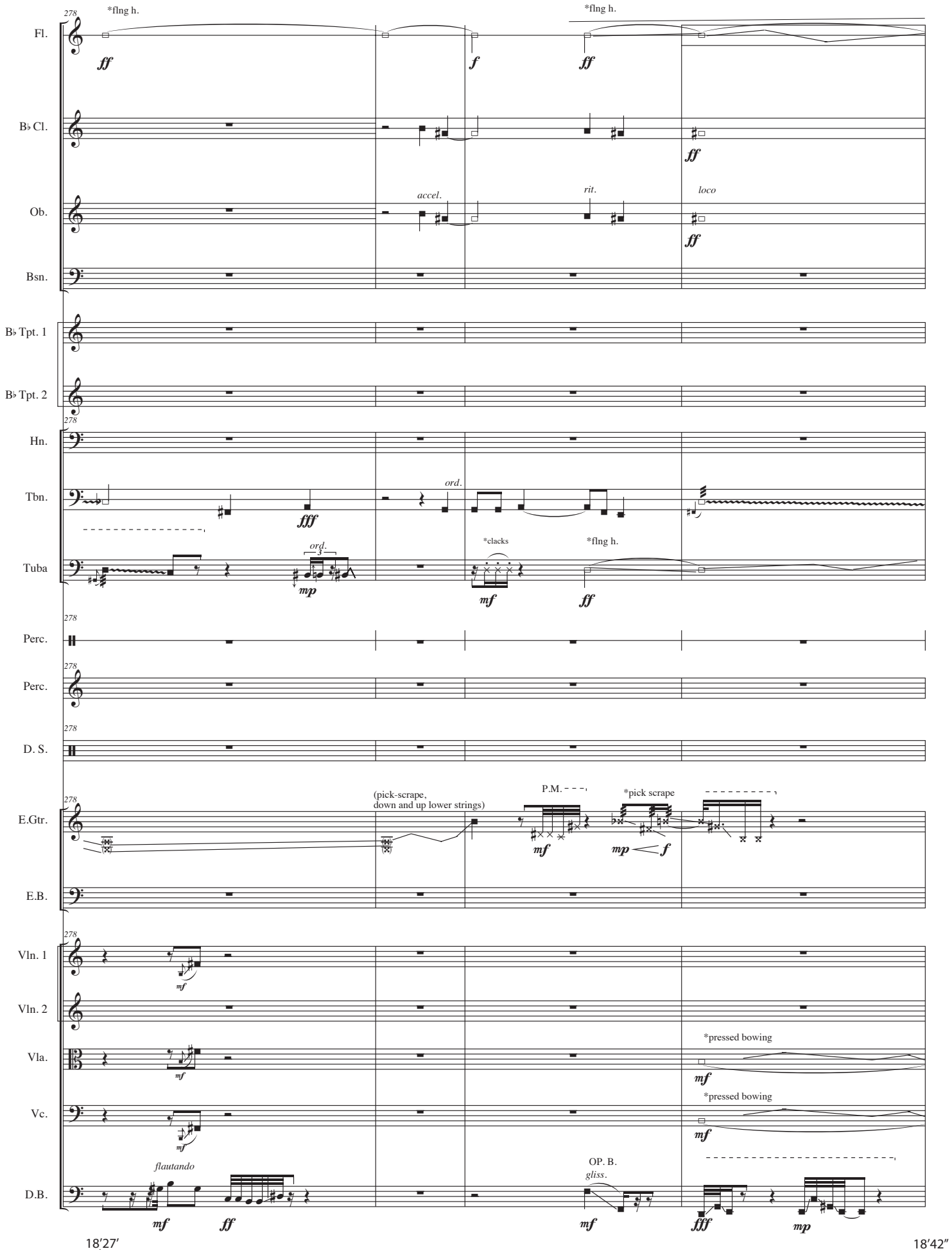

247
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(flutter tongue, as fast as possible)
(exessively "reedy" sound)
(flngr h.)
3:2
(rub comb against metal sheet)
*pick scrape
clb.
w.h.
16′ 23″
16′50″

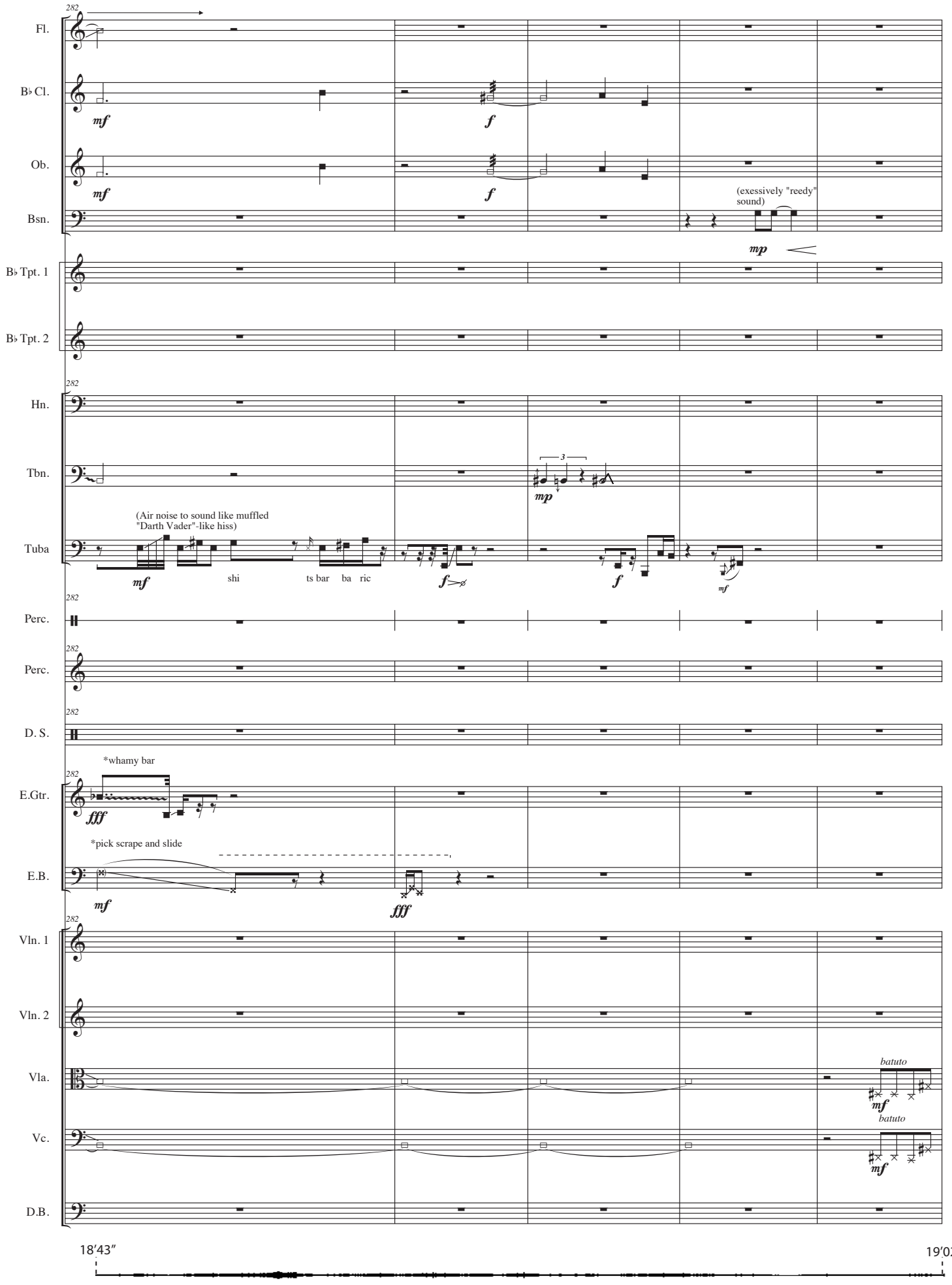

Section 3
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
mult. ph.
(flngr h.)
(percussive)
*flng h.
ord.
(vib. gliss.)
*pick scrape
(with uncontrolled vib.)
OP. B.
16′51″
17′11″
17′22″

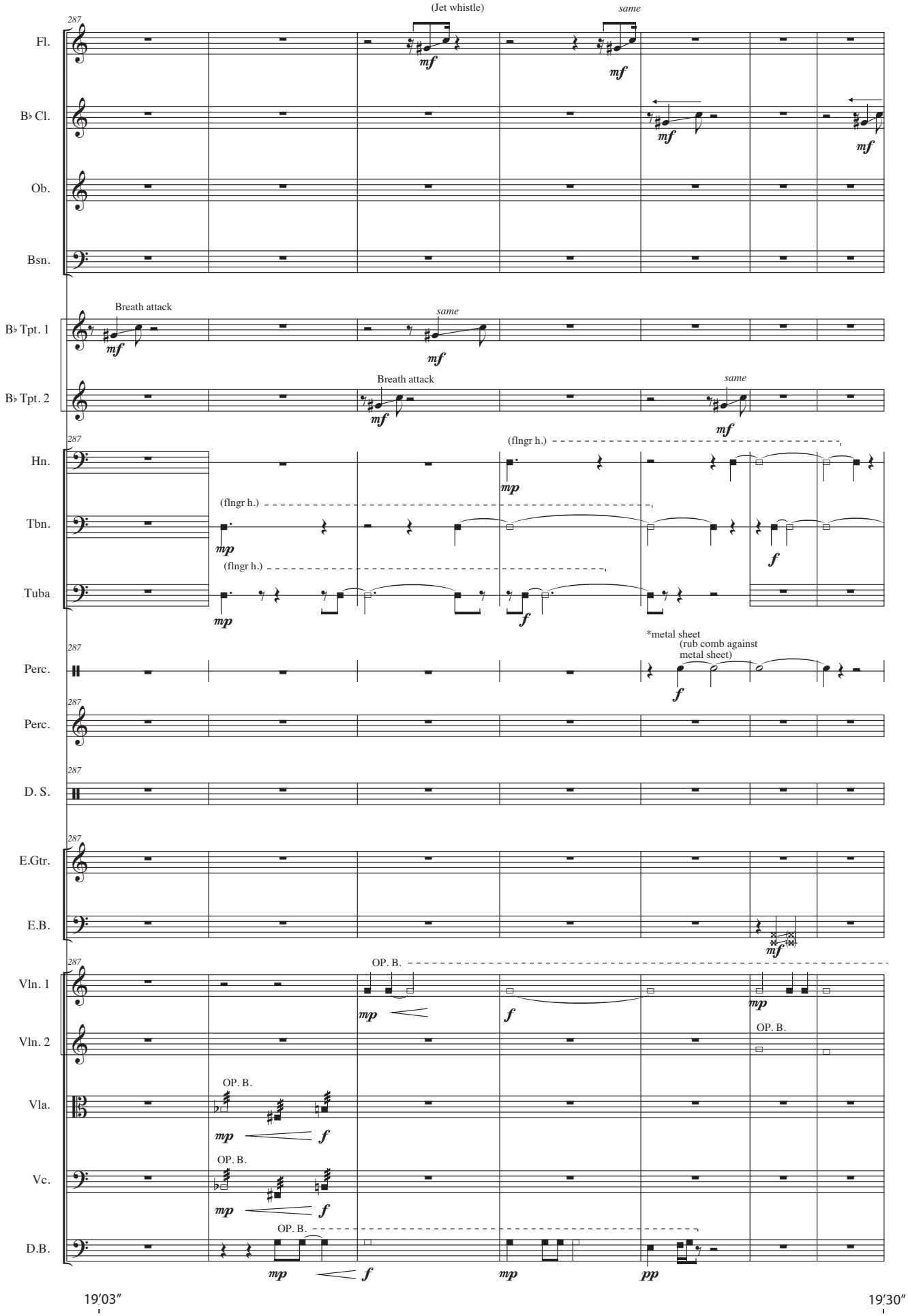

262
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
ff
fff
ord.
mp
OP. B.
17′23″
17′42″

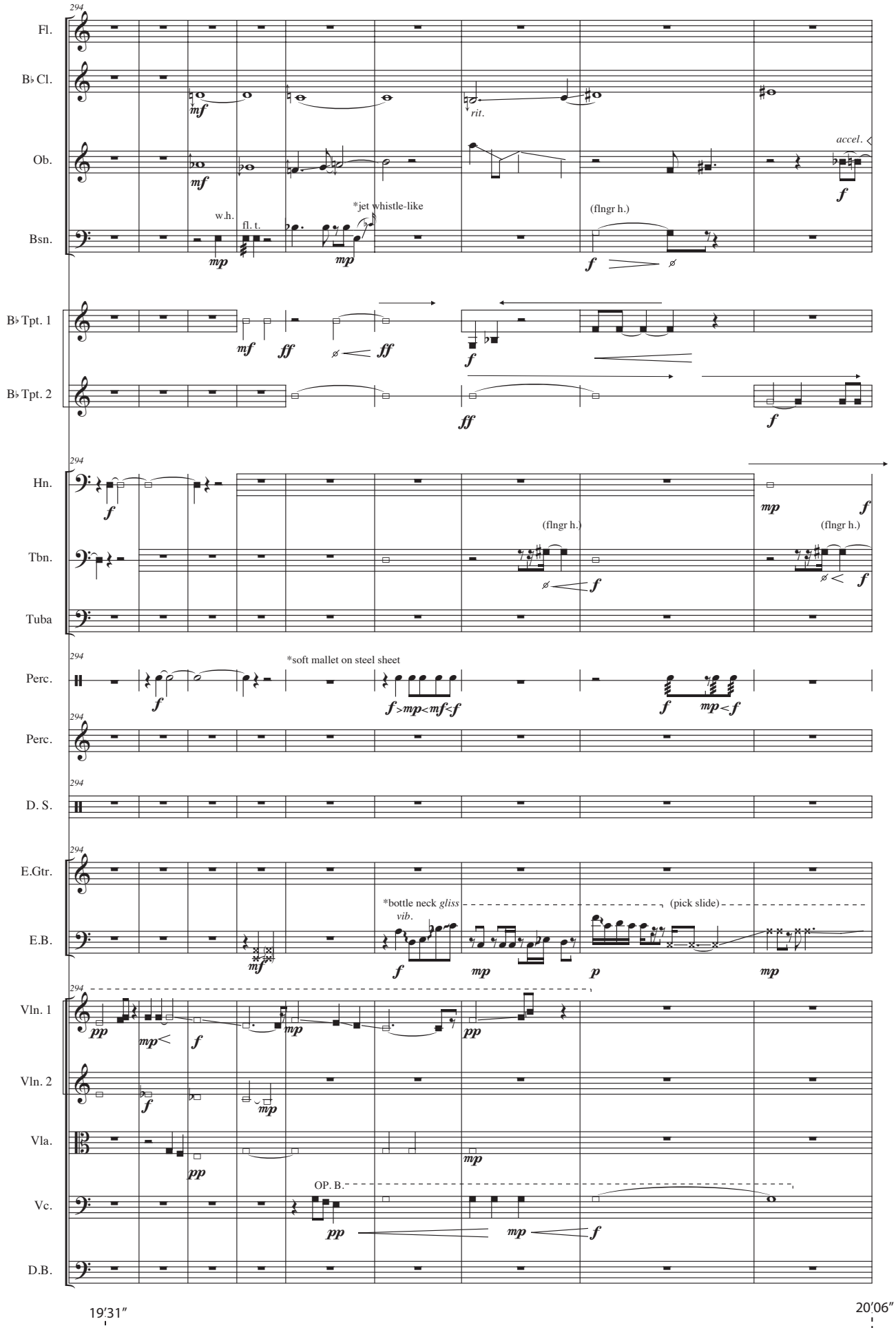

267
Fl.
B♭ Cl.
Ob.
Bsn.
(with uncontrolled vib.)
fff
ff
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
mp
f
mf
w.h. airy, whistle-like
Perc.
*maracas
(rolled softly)
*brush
D. S.
E.Gtr.
E.B.
(pick-scrape,
down and up lower strings)
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
ord.
clb.
p
OP. B.
(L.H. fingers slide up and down strings
while bowing as loud as possible)
17′43″
18′06″

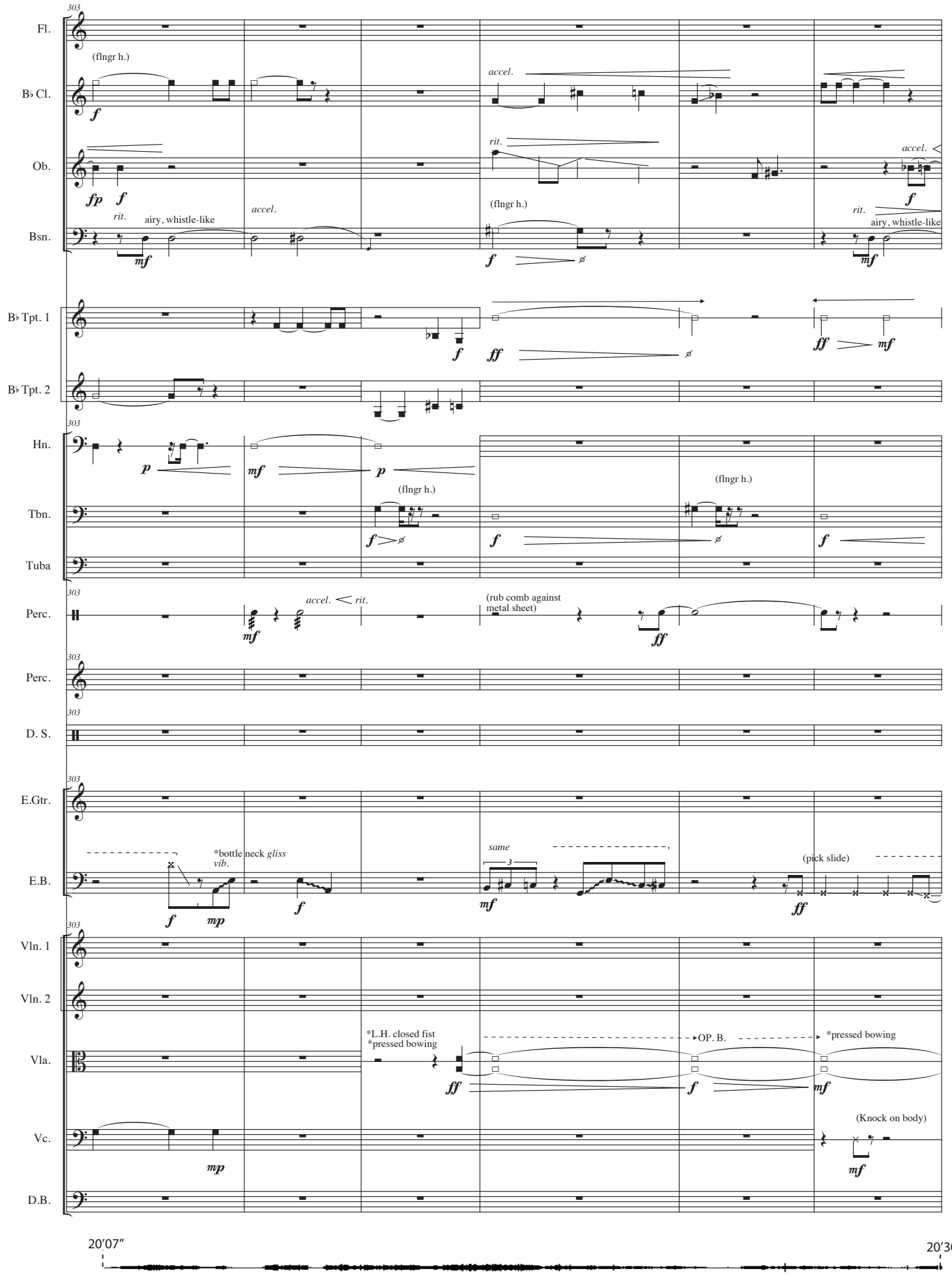

273
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
*k. cl.
(overblow)
(with uncontrolled vib.)
gliss.
*brush
*whamy bar
*pick scrape
*clacks
ord.
(vib. gliss.)
balz.
OP. B.
clb.
mezzo flautando
(*) L.H.
*flng h.
SP.
ASP
(*) L.H. taken from Helmut Lachenmann's Pression
"glide fingertips)lightly touching the strings)
along the string length, use at least two fingers
(to avoid producing harmonics)"
18′07″
18′26″

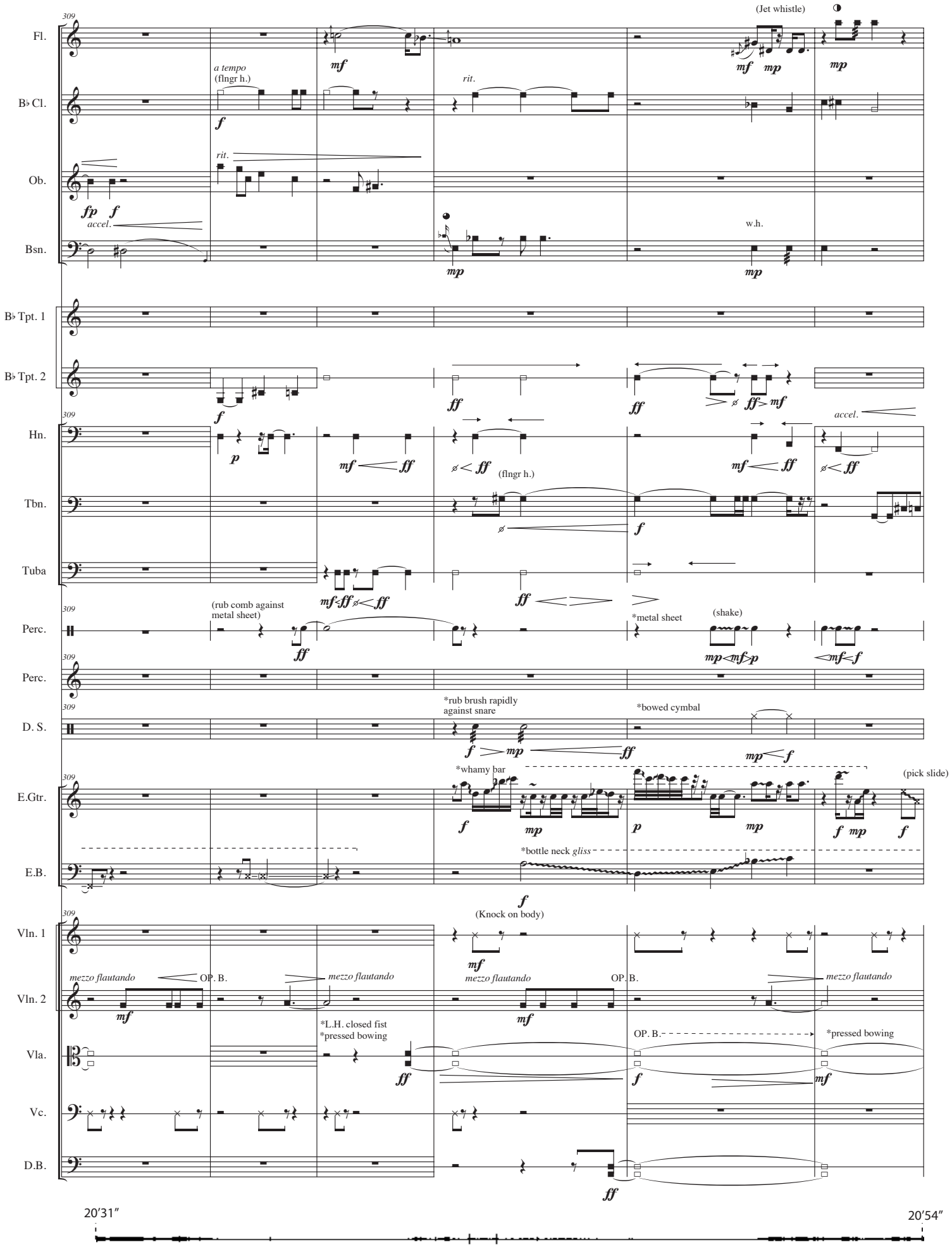

278
Fl.
*flng h.
ff
f
*flng h.
ff
B♭ Cl.
ff
Ob.
accel.
rit.
loco
ff
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
278
Hn.
Tbn.
ord.
fff
Tuba
ord.
3
mp
*clacks
mf
*flng h.
ff
278
Perc.
278
Perc.
278
D. S.
278
E.Gtr.
(pick-scrape,
down and up lower strings)
P.M.
*pick scrape
mf
mp
f
E.B.
278
Vln. 1
mf
Vln. 2
Vla.
mf
*pressed bowing
mf
Vc.
mf
*pressed bowing
mf
flautando
D.B.
mf
ff
OP. B.
gliss.
mf
fff
mp
18′27″
18′42″

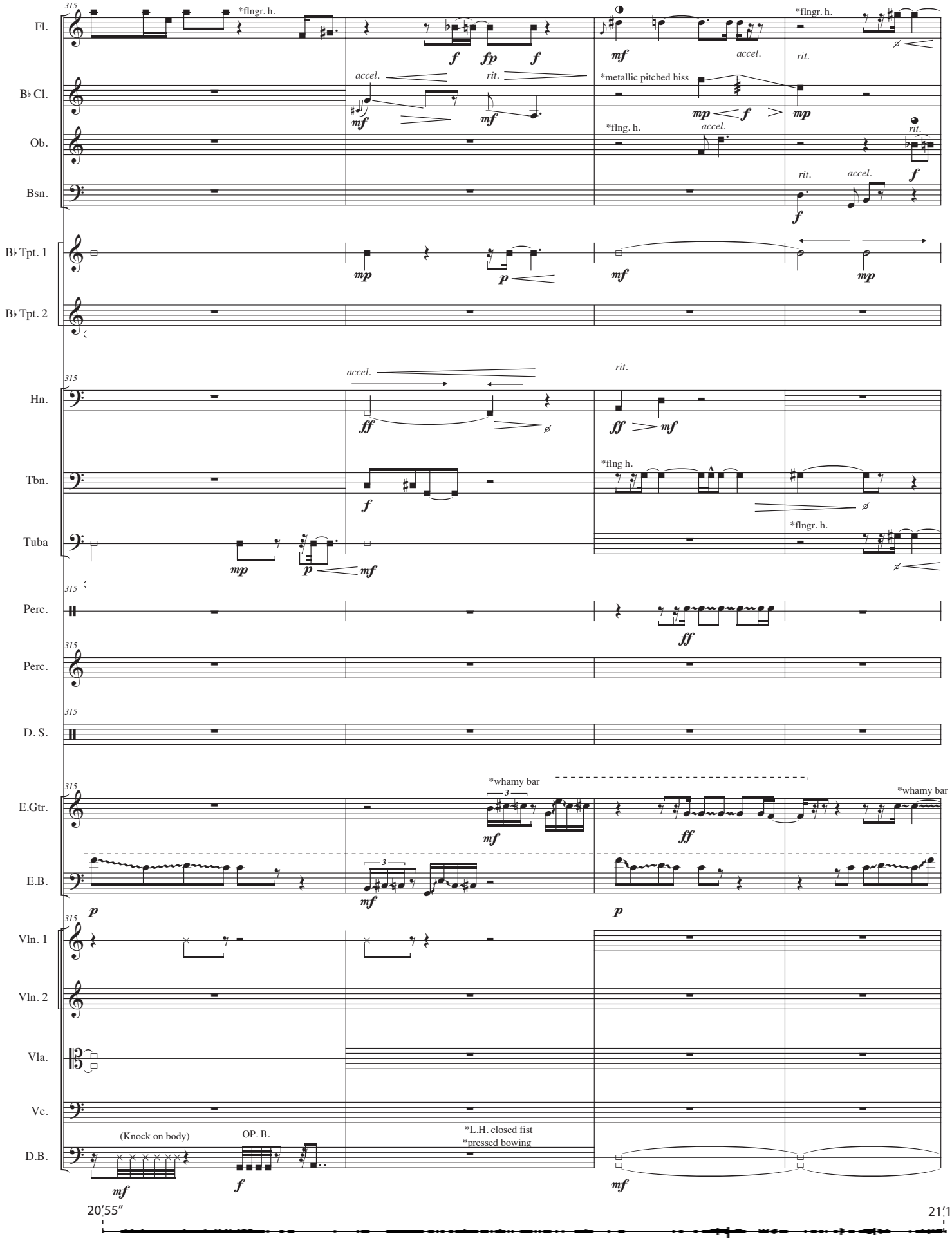

282
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
mf
f
mp
(exessively "reedy" sound)
3
(Air noise to sound like muffled "Darth Vader"-like hiss)
shi
ts bar ba ric
*whamy bar
fff
*pick scrape and slide
batuto
18′43″
19′02″

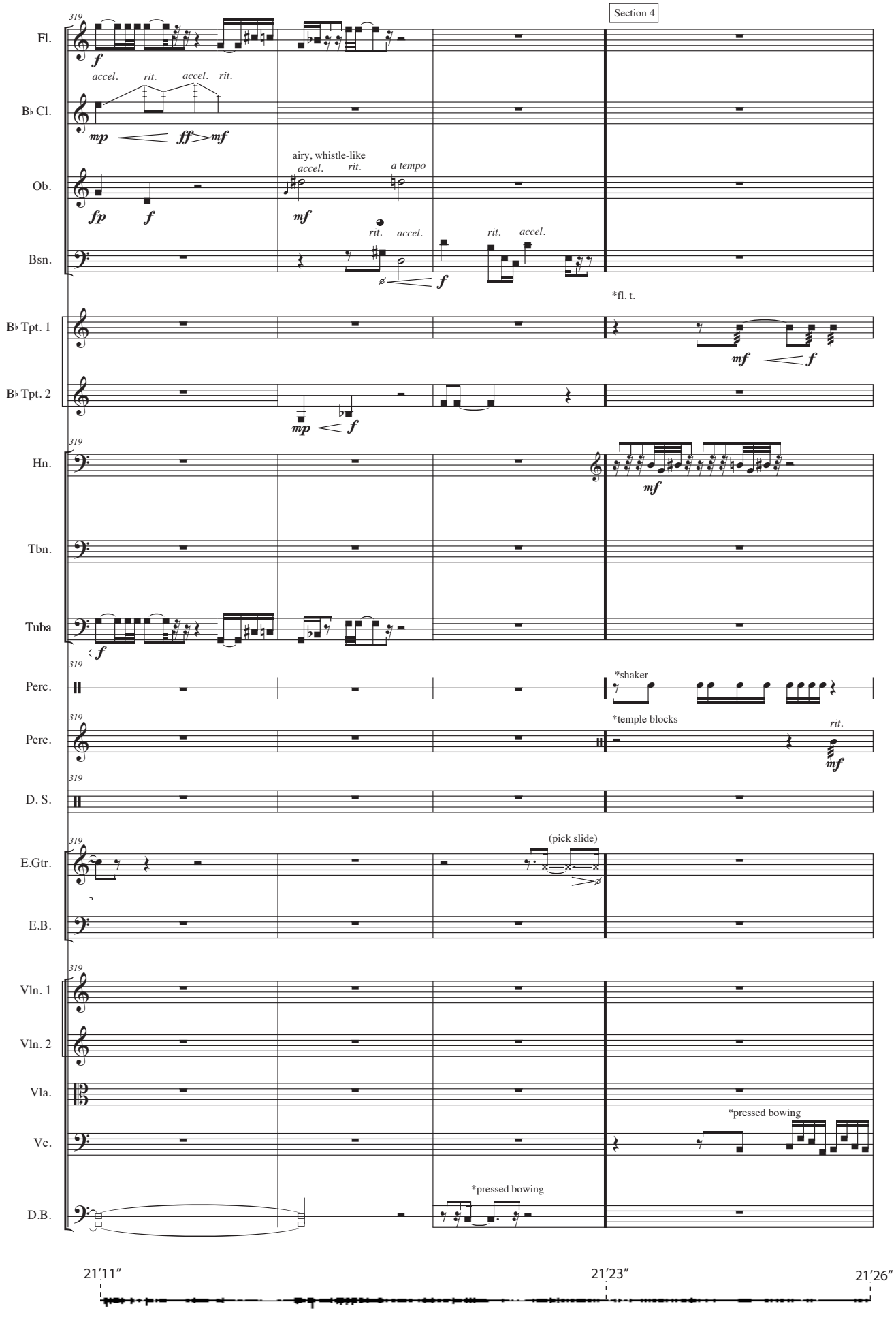

287
Fl.
(Jet whistle)
same
mf
B♭ Cl.
Ob.
Bsn.
Breath attack
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
(flngr h.)
mp
Tbn.
Tuba
f
*metal sheet
(rub comb against
metal sheet)
Perc.
D. S.
E.Gtr.
E.B.
OP. B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
pp
19′03″
19′30″

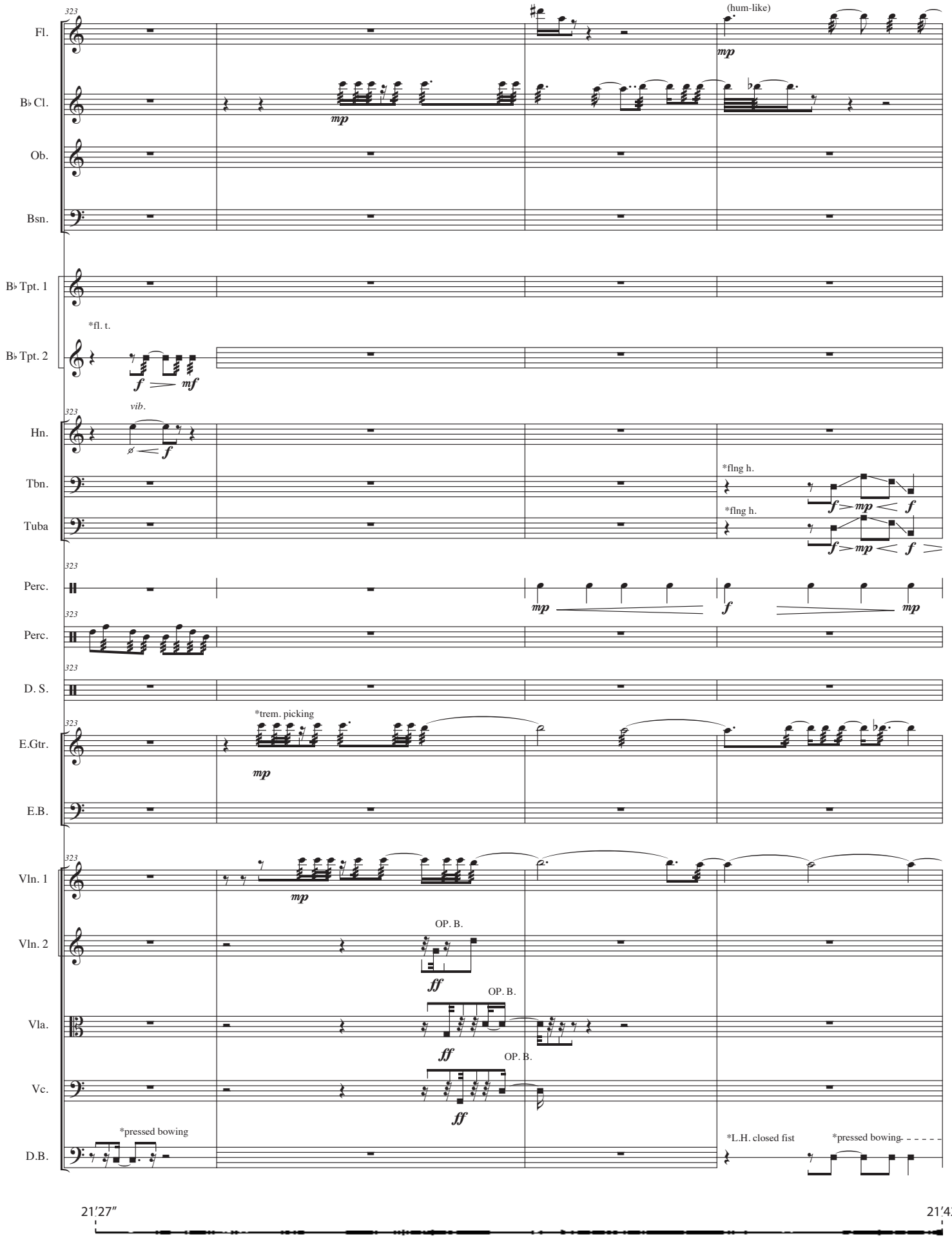

294
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
mf
rit.
accel.
f
w.h.
fl. t.
*jet whistle-like
mp
(flngr h.)
ff
*soft mallet on steel sheet
*bottle neck gliss
vib.
(pick slide)
p
pp
OP. B.
19′31″
20′06″

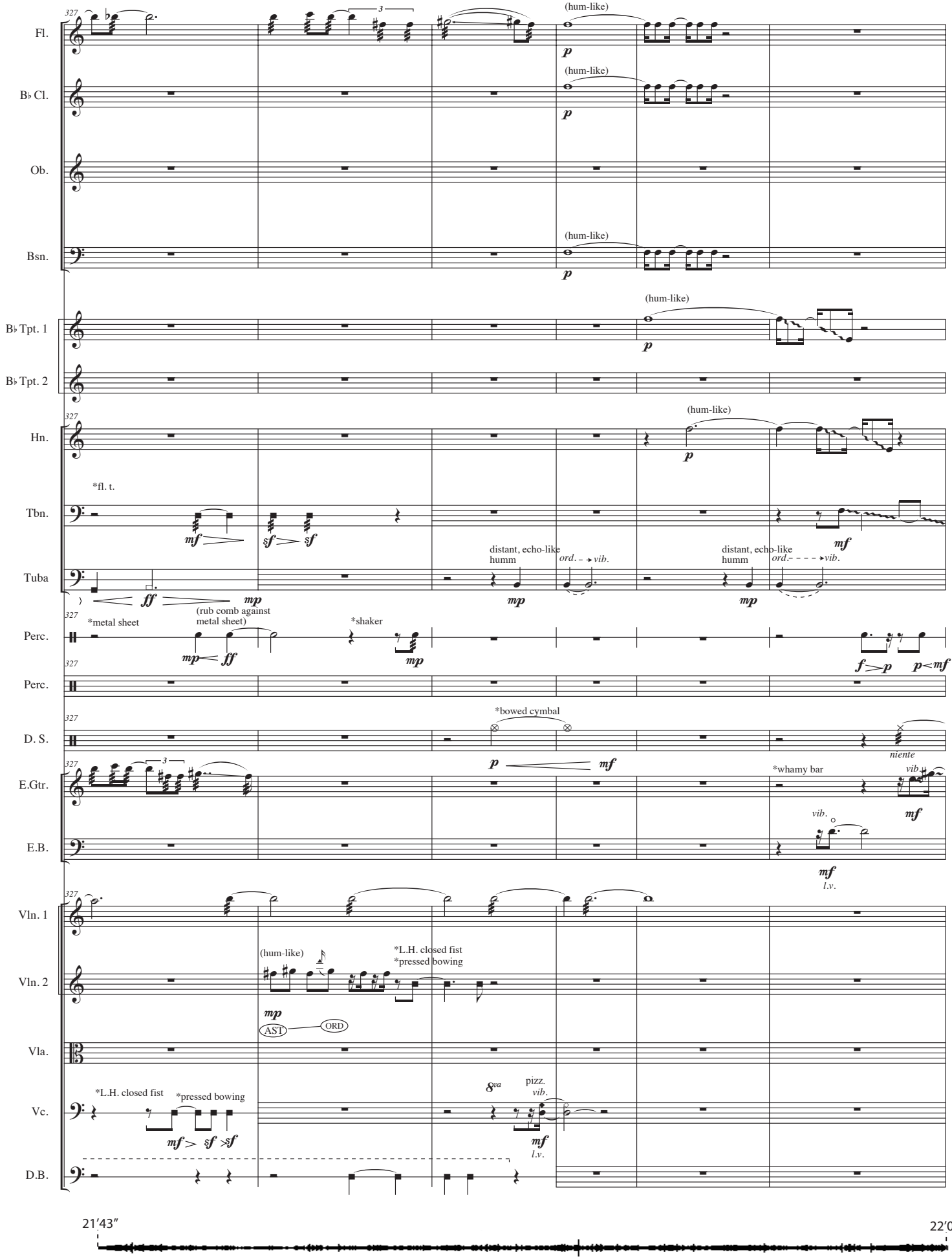

303
Fl.
(flngr h.)
B♭ Cl.
accel.
Ob.
rit.
accel.
fp
f
rit.
airy, whistle-like
accel.
(flngr h.)
rit.
airy, whistle-like
Bsn.
mf
f
mf
B♭ Tpt. 1
f
ff
ff
mf
B♭ Tpt. 2
303
Hn.
p
mf
p
(flngr h.)
(flngr h.)
Tbn.
f
f
f
Tuba
303
Perc.
accel.
rit.
mf
(rub comb against metal sheet)
ff
303
Perc.
303
D. S.
303
E.Gtr.
*bottle neck gliss
vib.
same
3
(pick slide)
E.B.
f
mp
f
mf
ff
303
Vln. 1
Vln. 2
*L.H. closed fist
*pressed bowing
OP. B.
*pressed bowing
Vla.
ff
f
mf
(Knock on body)
Vc.
mp
mf
D.B.
20′07″
20′30″

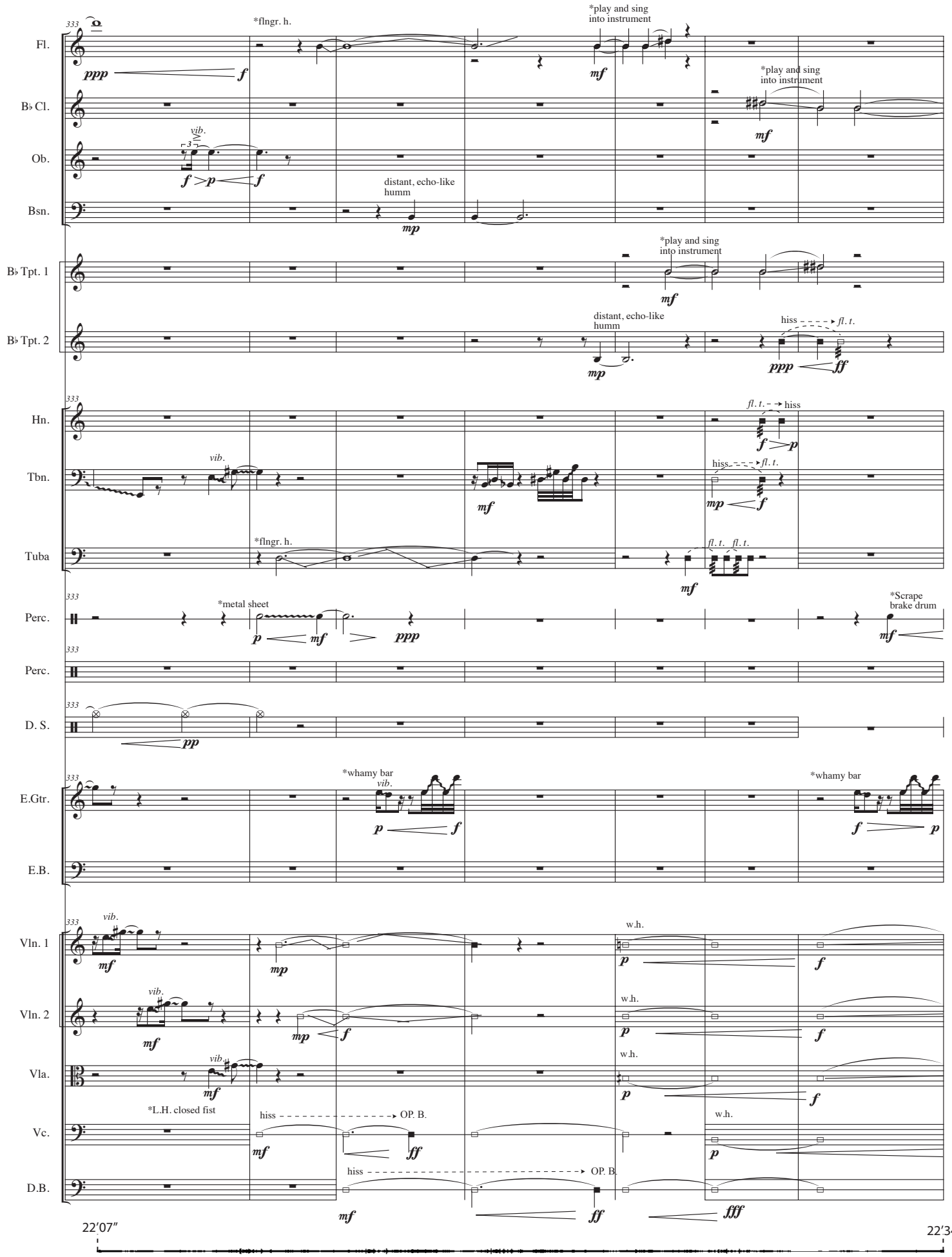

309
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(Jet whistle)
a tempo
(flngr h.)
rit.
accel.
w.h.
(flngr h.)
(rub comb against metal sheet)
*metal sheet
(shake)
*rub brush rapidly against snare
*bowed cymbal
*whamy bar
(pick slide)
*bottle neck gliss
(Knock on body)
mezzo flautando
OP. B.
*L.H. closed fist
*pressed bowing
20′31″
20′54″

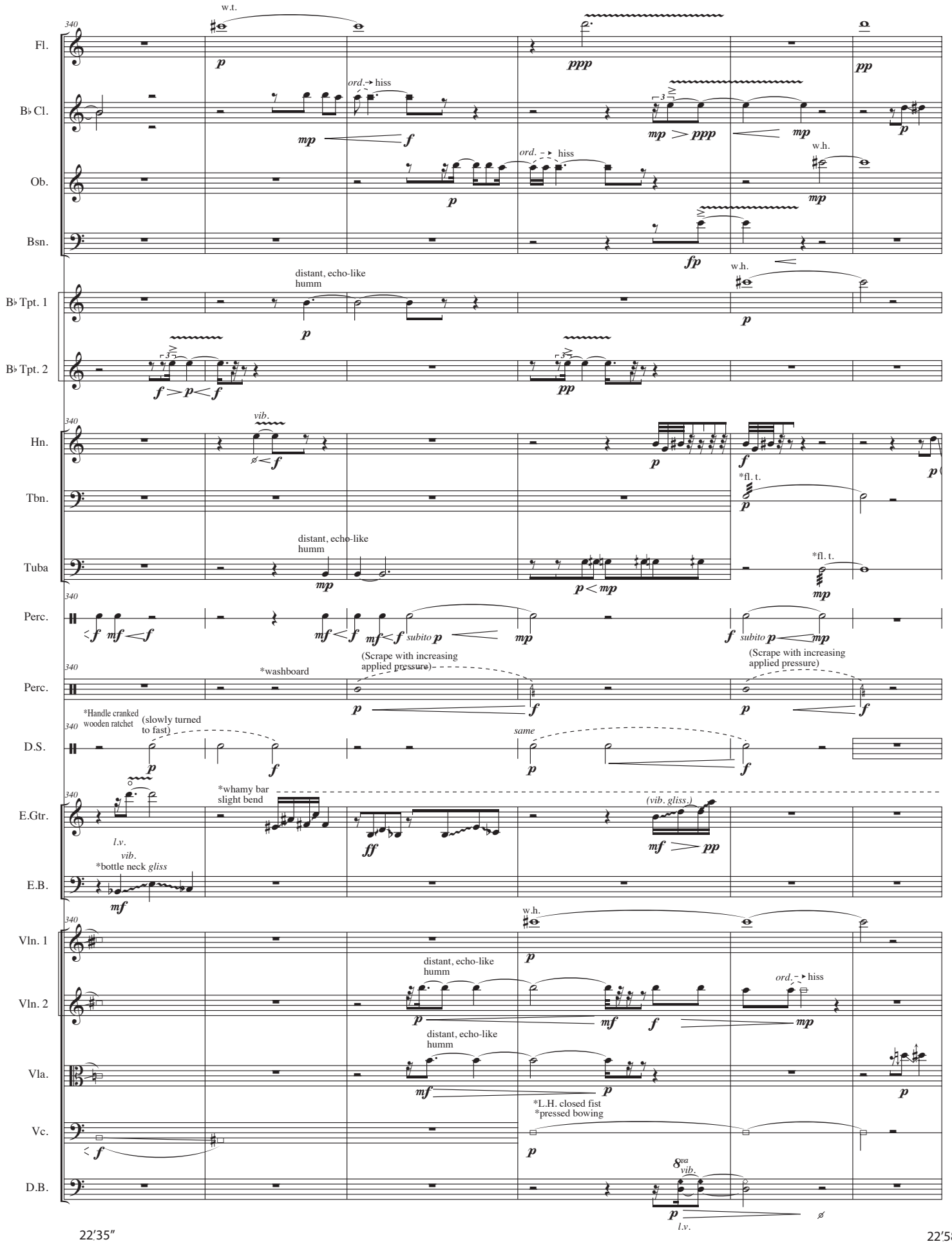

315
Fl.
*flngr. h.
f
fp
f
mf
accel.
rit.
*flngr. h.
B♭ Cl.
accel.
rit.
mf
mf
*metallic pitched hiss
mp
f
mp
Ob.
*flng. h.
accel.
rit.
Bsn.
rit.
accel.
f
f
B♭ Tpt. 1
mp
p
mf
mp
B♭ Tpt. 2
315
Hn.
accel.
rit.
ff
ff
mf
Tbn.
*flng h.
f
Tuba
*flngr. h.
mp
p
mf
315
Perc.
ff
315
Perc.
315
D. S.
315
E.Gtr.
*whamy bar
3
mf
ff
*whamy bar
E.B.
3
mf
p
p
315
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(Knock on body)
OP. B.
*L.H. closed fist
*pressed bowing
mf
f
mf
20′55″
21′10″

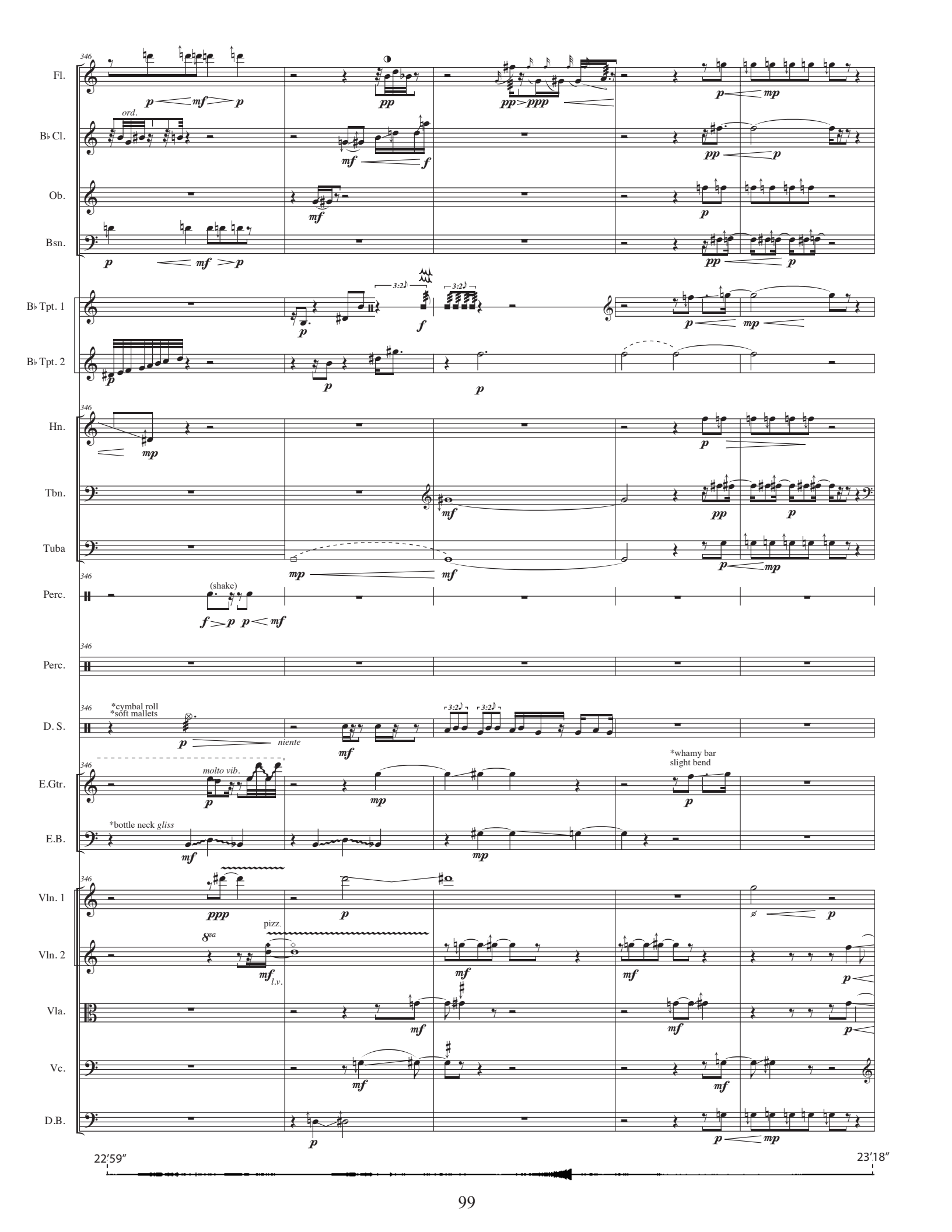

Section 4
319
Fl.
f
accel.
rit.
accel.
rit.
B♭ Cl.
mp
ff
mf
airy, whistle-like
accel.
rit.
a tempo
Ob.
fp
f
mf
rit.
accel.
rit.
accel.
Bsn.
f
*fl. t.
B♭ Tpt. 1
mf
f
B♭ Tpt. 2
mp
f
Hn.
mf
Tbn.
Tuba
f
Perc.
*shaker
Perc.
*temple blocks
rit.
mf
D. S.
E.Gtr.
(pick slide)
E.B.
Vln. 1
Vln. 2
Vla.
*pressed bowing
Vc.
*pressed bowing
D.B.
21′11″
21′23″
21′26″

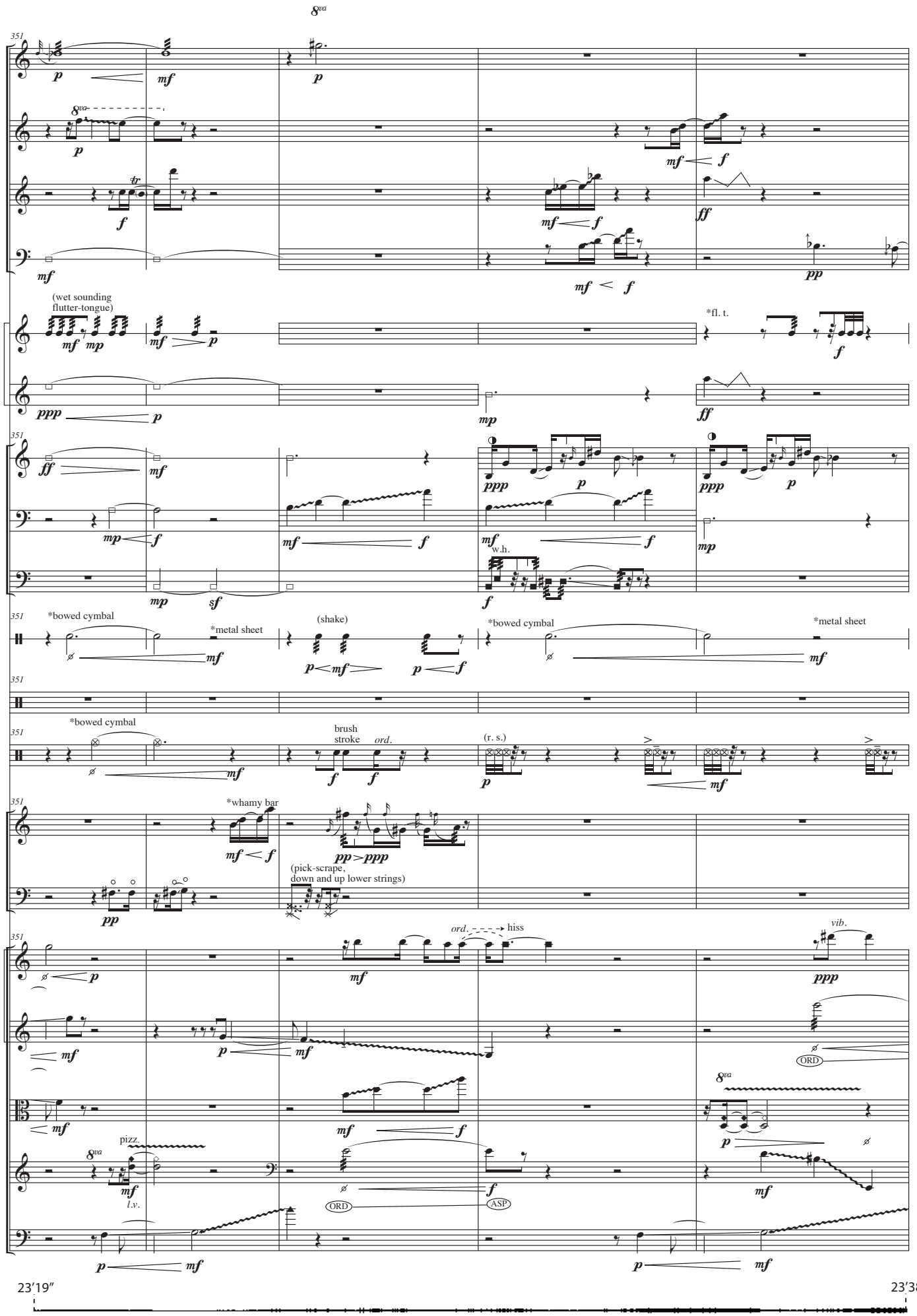

323
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(hum-like)
mp
*fl. t.
f
mf
vib.
*flng h.
*trem. picking
OP. B.
ff
*pressed bowing
*L.H. closed fist
21′27″
21′42″

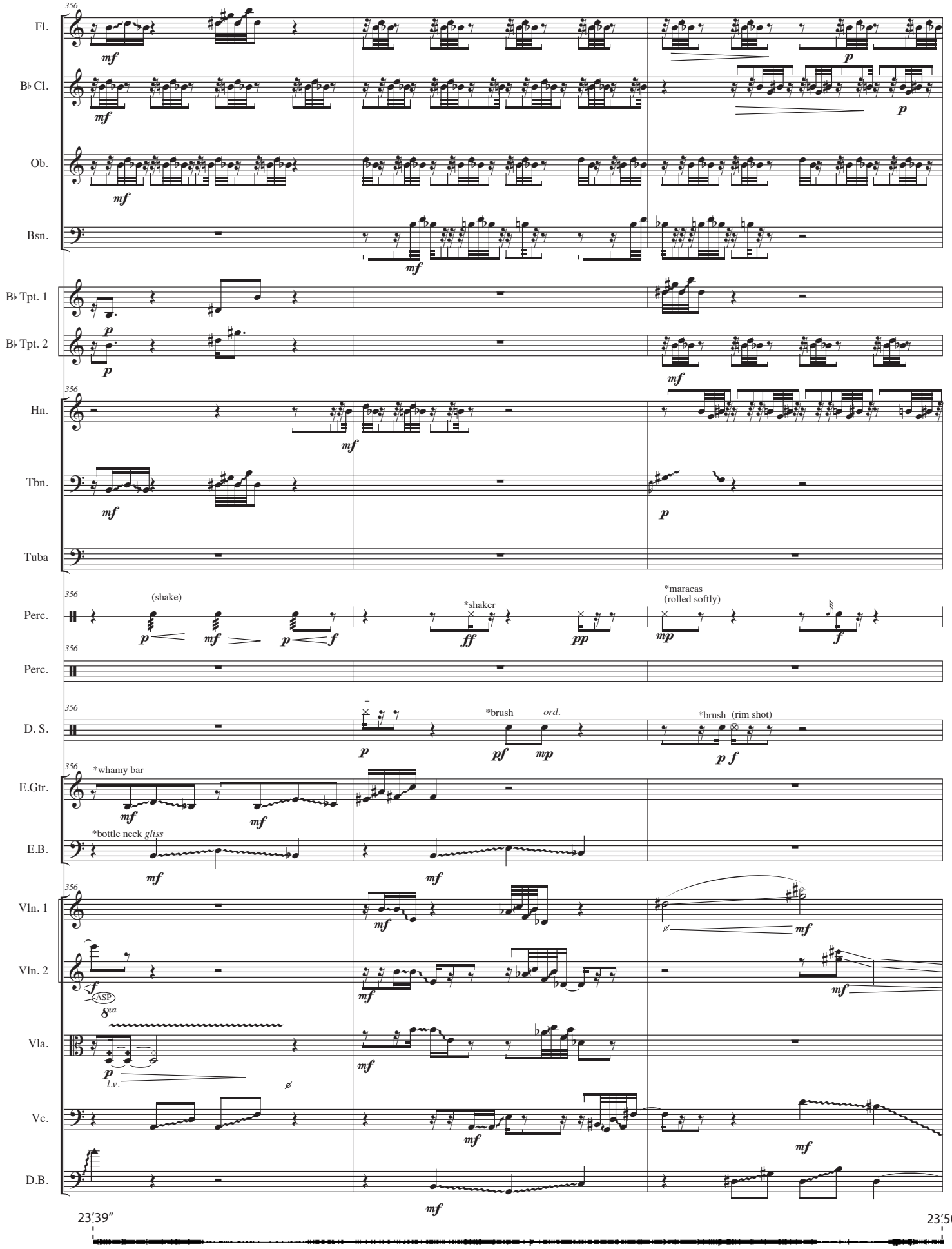

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(hum-like)
*fl. t.
*metal sheet
(rub comb against metal sheet)
*shaker
distant, echo-like humm
ord. → vib.
*bowed cymbal
niente
*whamy bar
vib.
l.v.
*L.H. closed fist
*pressed bowing
AST
ORD
8va
pizz.
21′43″
22′06″

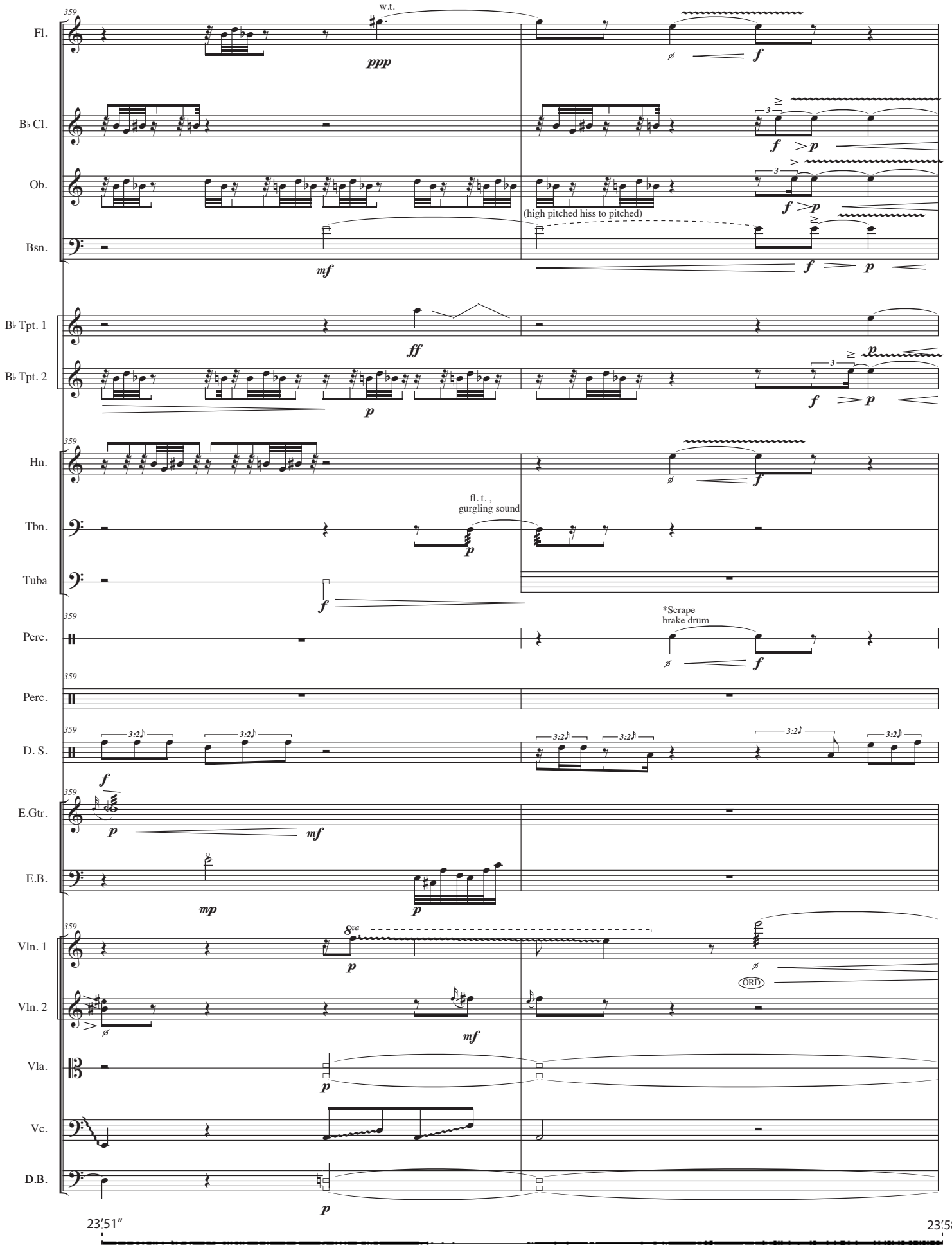

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
*flngr. h.
*play and sing into instrument
vib.
distant, echo-like humm
hiss
fl. t.
*metal sheet
*Scrape brake drum
*whamy bar
w.h.
*L.H. closed fist
OP. B.
22′07″
22′34″

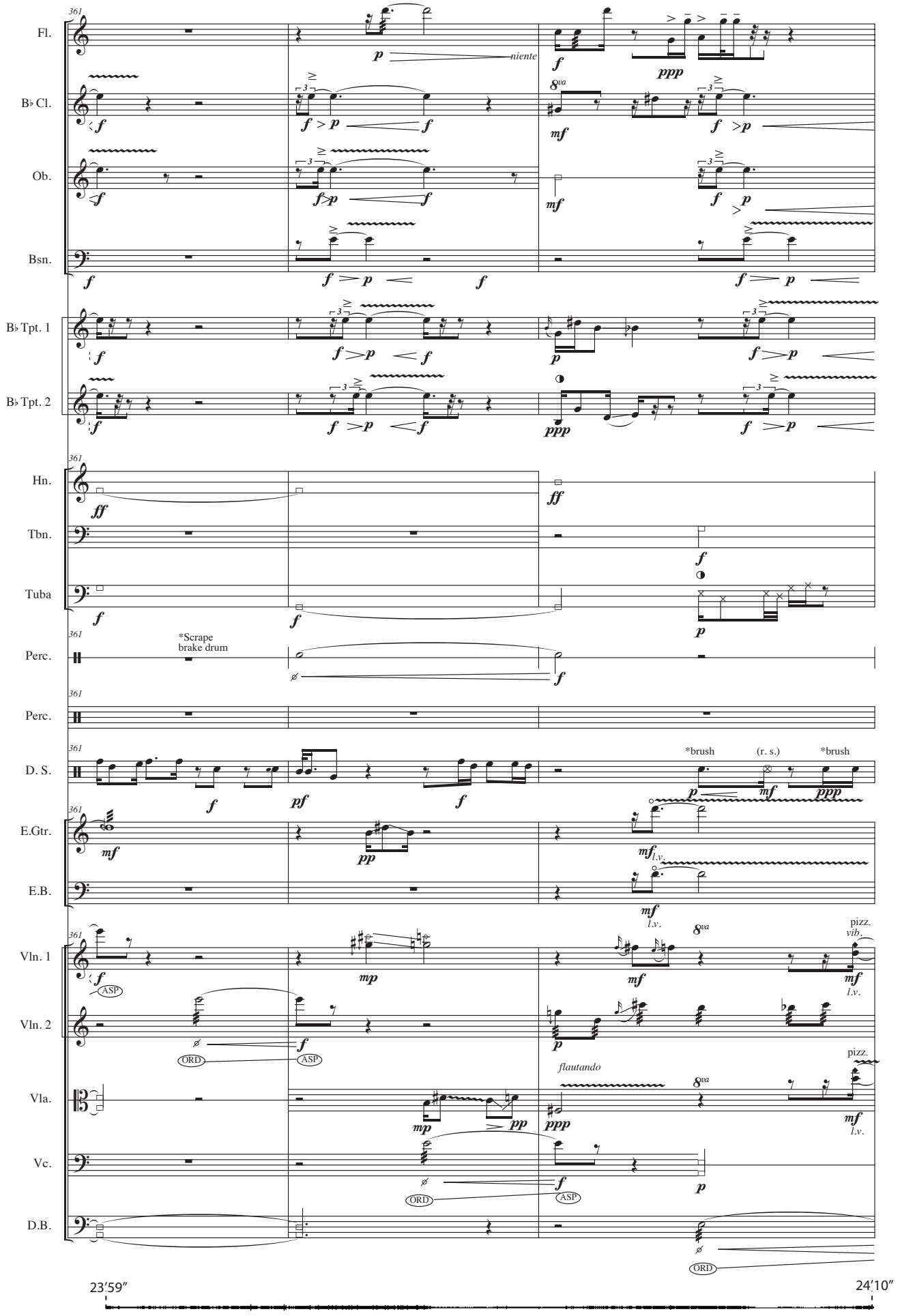

340
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D.S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.t.
ord. hiss
w.h.
distant, echo-like humm
vib.
*fl. t.
*washboard
(Scrape with increasing applied pressure)
*Handle cranked wooden ratchet
(slowly turned to fast)
same
*whamy bar slight bend
(vib. gliss.)
l.v.
vib.
*bottle neck gliss
*L.H. closed fist
*pressed bowing
8va
22′35″
22′58″

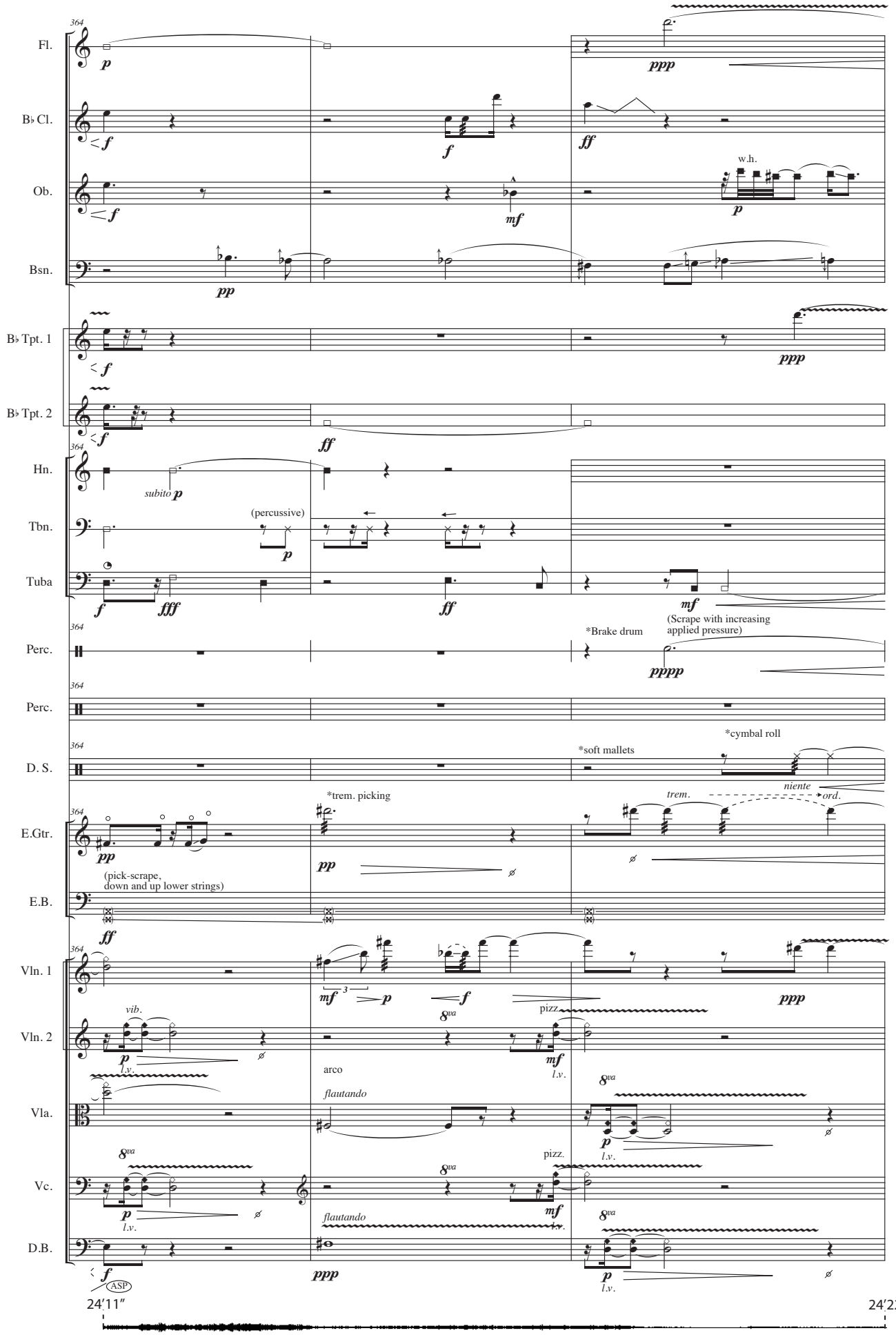

346
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
ord.
(shake)
*cymbal roll
*soft mallets
niente
molto vib.
*whamy bar
slight bend
*bottle neck gliss
pizz.
8va
l.v.
3:2
22′59″
23′18″

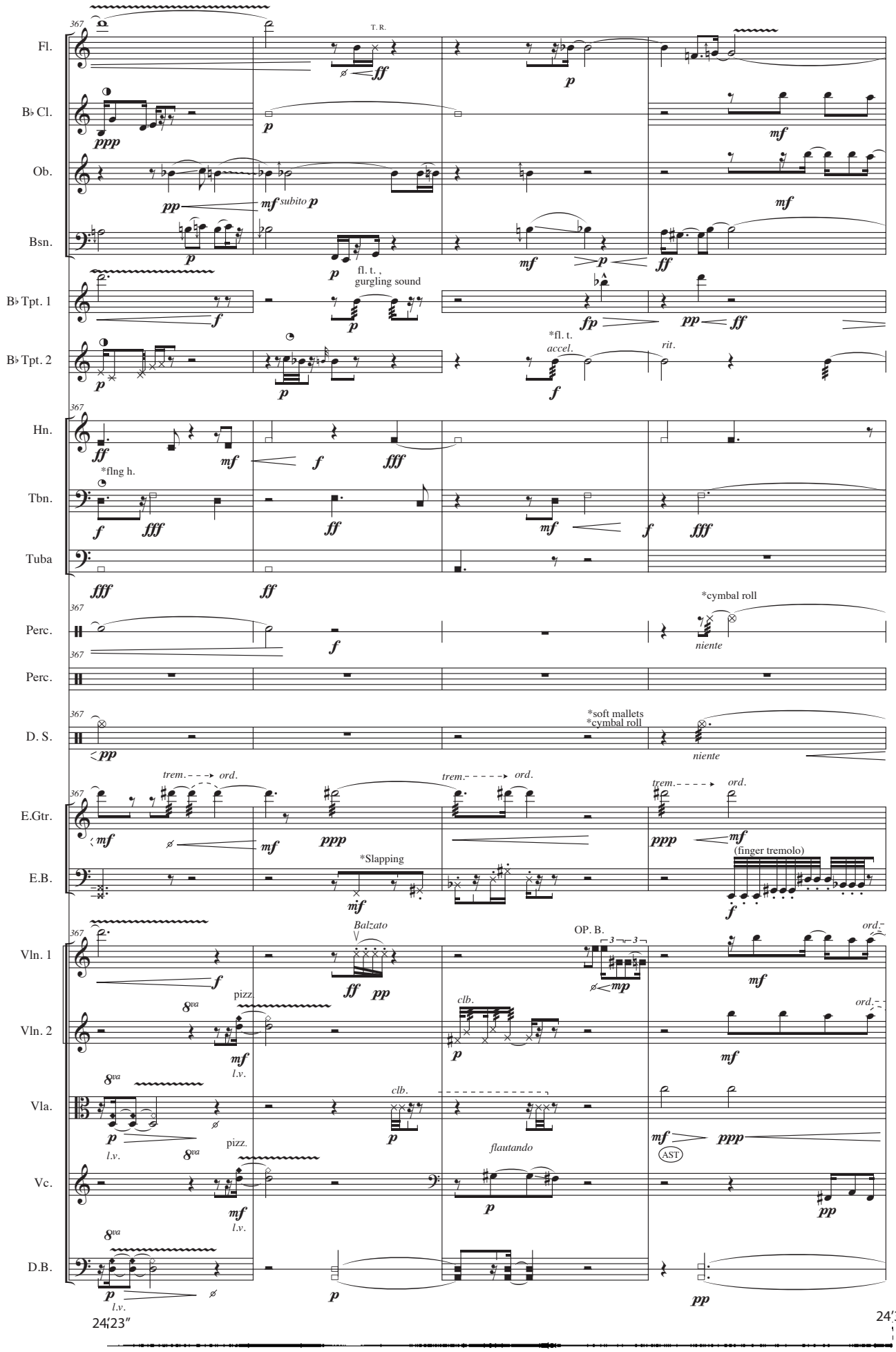

8va
351
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
(wet sounding flutter-tongue)
*fl. t.
*bowed cymbal
*metal sheet
(shake)
brush stroke
ord.
(r. s.)
*whamy bar
(pick-scrape, down and up lower strings)
hiss
vib.
pizz.
l.v.
ORD
ASP
w.h.
23′19″
23′38″

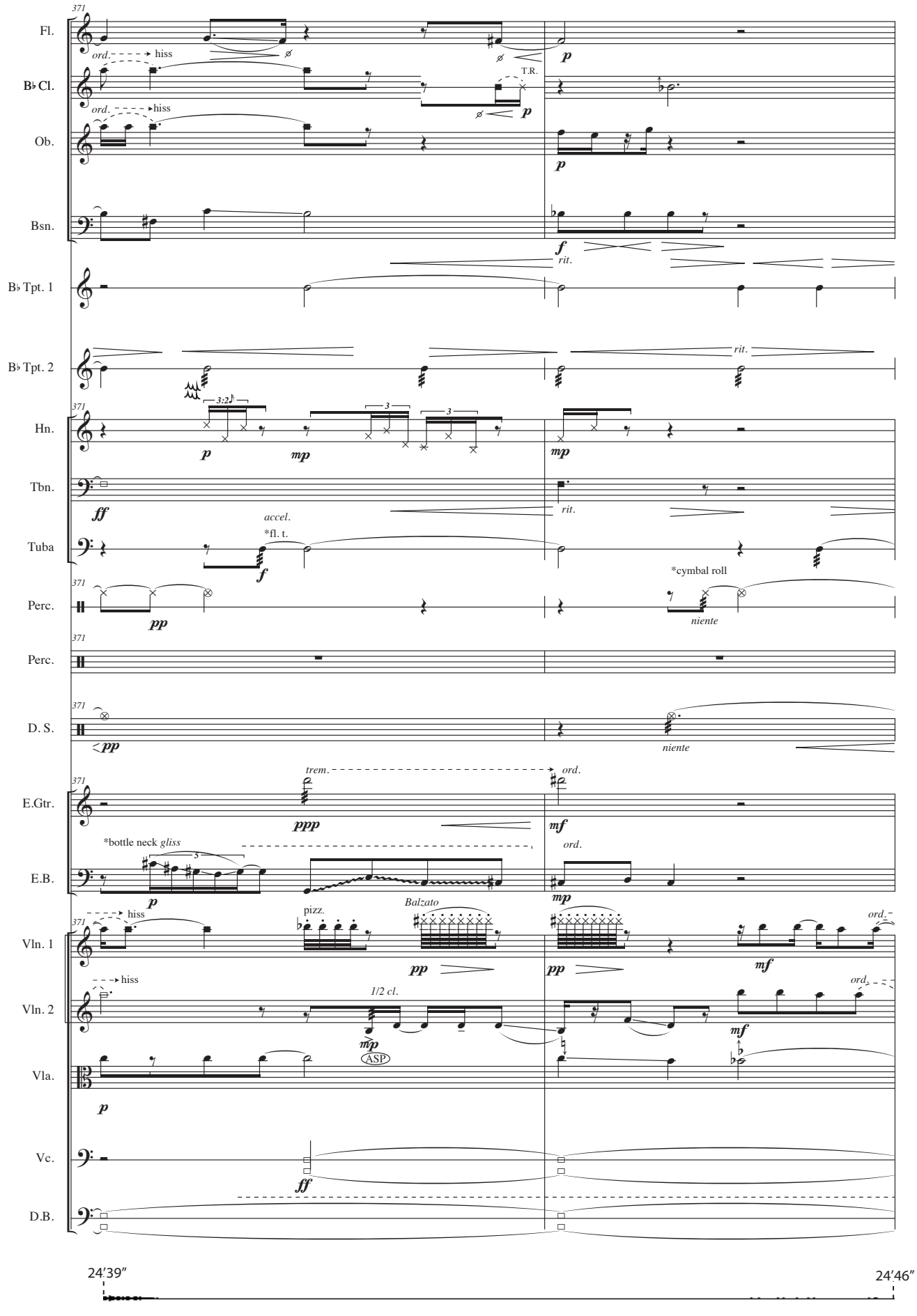

356
Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
(shake)
*shaker
*maracas
(rolled softly)
Perc.
D. S.
*brush
ord.
*brush (rim shot)
E.Gtr.
*whamy bar
E.B.
*bottle neck gliss
Vln. 1
Vln. 2
ASP
Vla.
l.v.
Vc.
D.B.
23′39″
23′50″

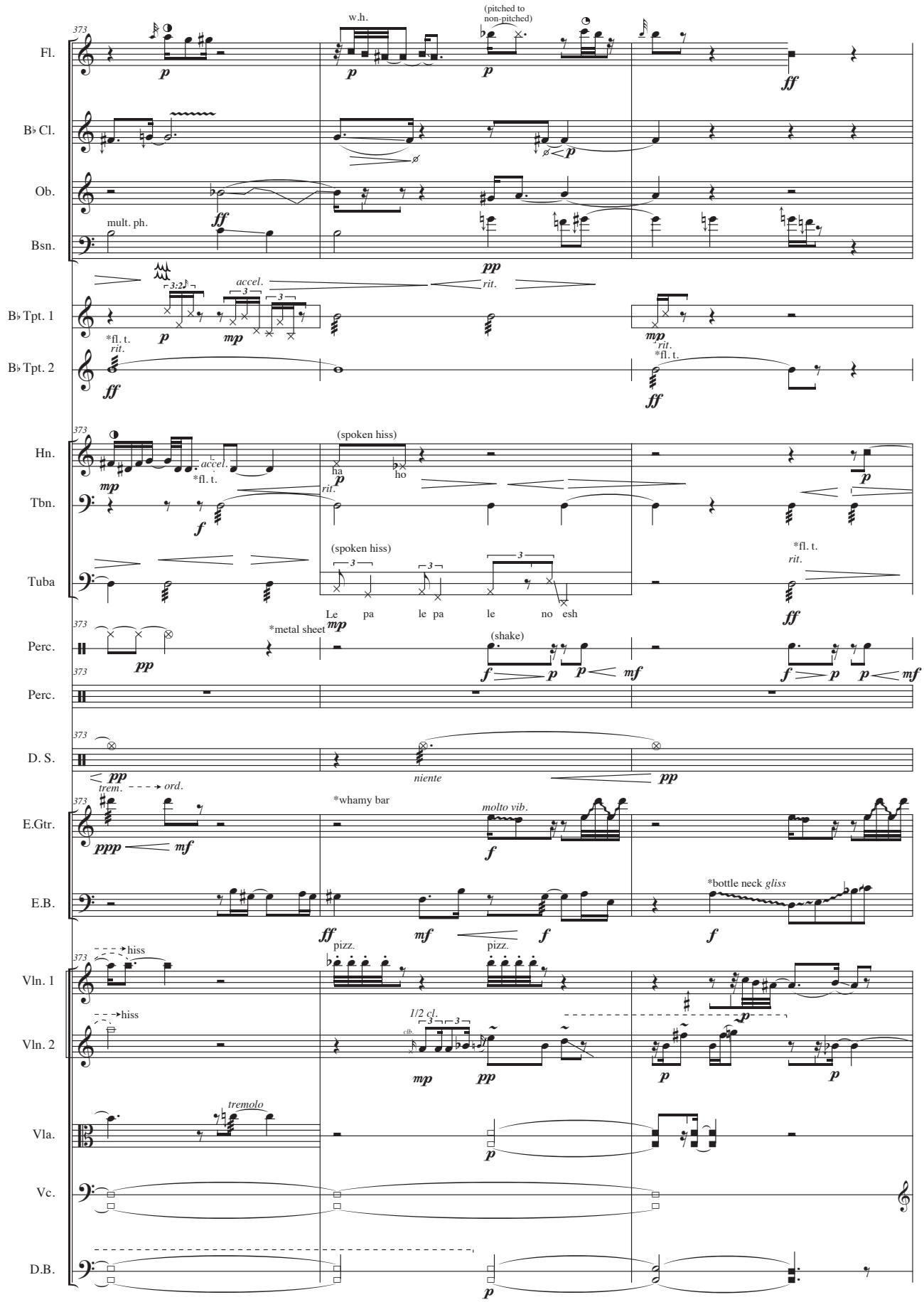

359
Fl.
w.t.
ppp
f
B♭ Cl.
3
f
p
Ob.
3
f
p
(high pitched hiss to pitched)
Bsn.
mf
f
p
B♭ Tpt. 1
ff
B♭ Tpt. 2
p
3
f
p
359
Hn.
f
fl. t. ,
gurgling sound
Tbn.
p
Tuba
f
359
Perc.
*Scrape
brake drum
f
359
Perc.
359
D. S.
3:2♪
f
359
E.Gtr.
p
mf
E.B.
mp
p
359
Vln. 1
8va
p
ORD
Vln. 2
mf
Vla.
p
Vc.
D.B.
p
23′51″
23′58″

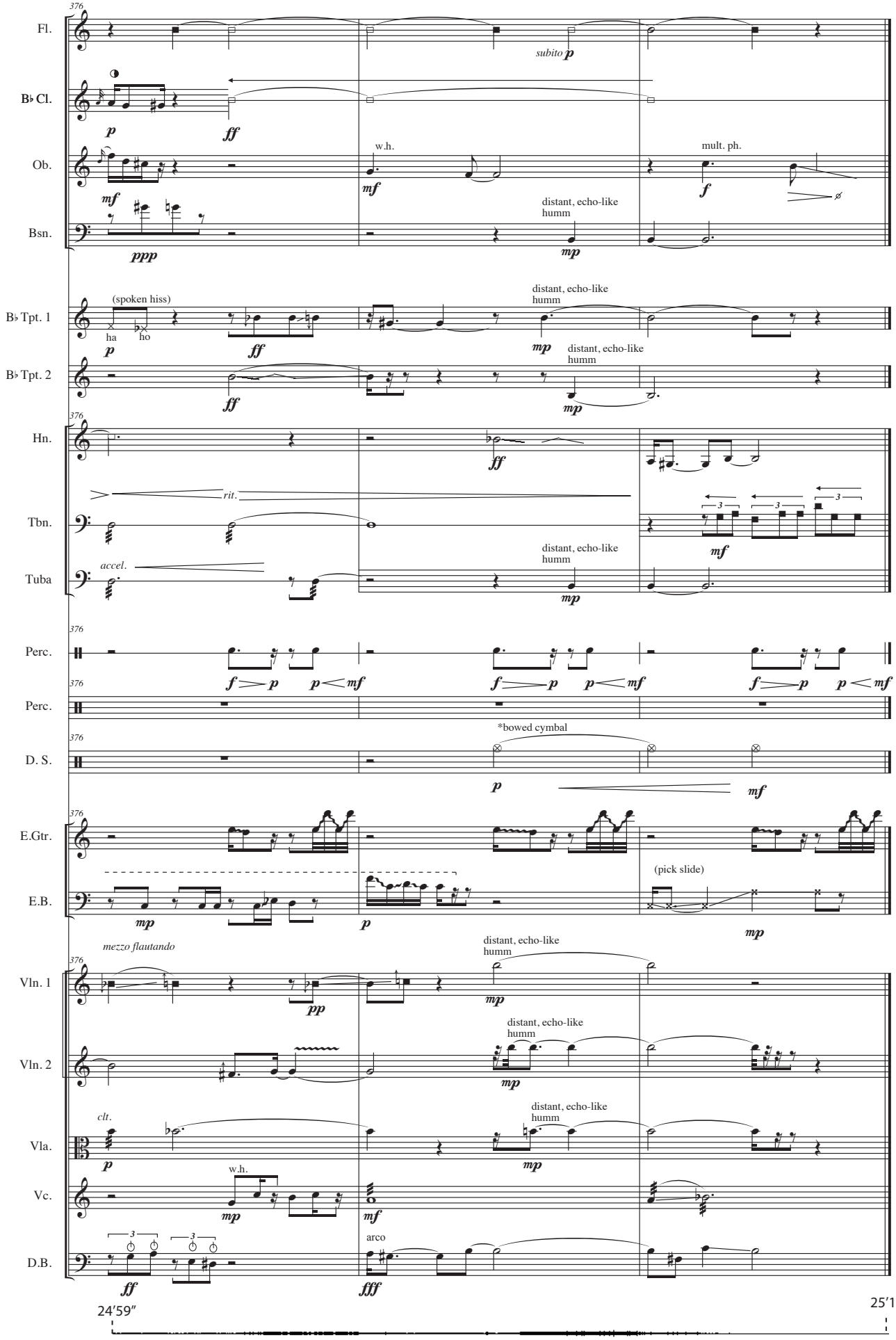

Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
*Scrape brake drum
Perc.
D. S.
*brush
(r. s.)
*brush
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
niente
flautando
pizz.
vib.
ASP
ORD
23′59″
24′10″


Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
w.h.
(percussive)
*Brake drum
(Scrape with increasing applied pressure)
*soft mallets
*cymbal roll
*trem. picking
(pick-scrape, down and up lower strings)
arco
flautando
pizz.
24′11″
24′22″


Fl.
B♭ Cl.
Ob.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
Hn.
Tbn.
Tuba
Perc.
Perc.
D. S.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vc.
D.B.
T. R.
fl. t. , gurgling sound
*fl. t.
accel.
rit.
*flng h.
*cymbal roll
niente
*soft mallets
*cymbal roll
niente
trem.
ord.
*Slapping
(finger tremolo)
Balzato
OP. B.
pizz.
clb.
flautando
l.v.
AST
24′23″
24′38″


371
Fl.
ord.
hiss
p
B♭ Cl.
T.R.
Ob.
Bsn.
f
rit.
B♭ Tpt. 1
B♭ Tpt. 2
3:2♪
Hn.
mp
Tbn.
ff
accel.
Tuba
*fl. t.
*cymbal roll
Perc.
pp
niente
D. S.
E.Gtr.
trem.
ppp
mf
*bottle neck gliss
E.B.
Balzato
pizz.
Vln. 1
Vln. 2
1/2 cl.
ASP
Vla.
Vc.
D.B.
24′39″
24′46″


373
Fl.
w.h.
(pitched to non-pitched)
B♭ Cl.
Ob.
mult. ph.
Bsn.
B♭ Tpt. 1
B♭ Tpt. 2
accel.
rit.
*fl. t.
Hn.
Tbn.
Tuba
(spoken hiss)
ha
ho
Le pa le pa le no esh
Perc.
*metal sheet
(shake)
D. S.
niente
trem.
ord.
E.Gtr.
*whamy bar
molto vib.
E.B.
*bottle neck gliss
pizz.
hiss
Vln. 1
Vln. 2
1/2 cl.
clb.
Vla.
tremolo
Vc.
D.B.
24′47″
24′58″


376
Fl.
subito p
B♭ Cl.
p
ff
Ob.
w.h.
mf
mult. ph.
f
Bsn.
distant, echo-like humm
ppp
mp
(spoken hiss)
ha
ho
B♭ Tpt. 1
distant, echo-like humm
B♭ Tpt. 2
Hn.
rit.
Tbn.
3
accel.
Tuba
Perc.
Perc.
D. S.
*bowed cymbal
E.Gtr.
(pick slide)
E.B.
mezzo flautando
Vln. 1
Vln. 2
clt.
Vla.
Vc.
arco
D.B.
fff
24′59″
25′13″

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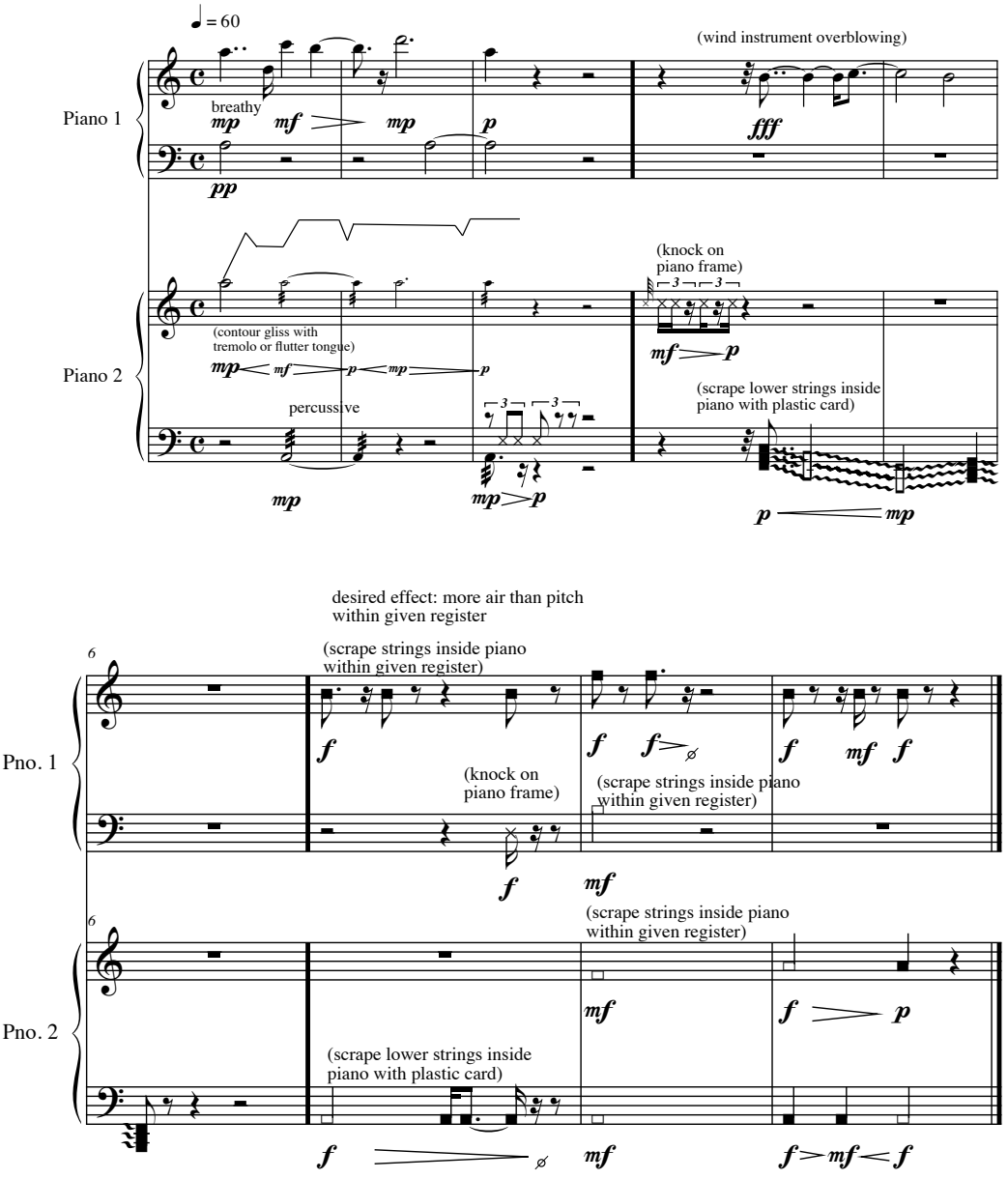
Appendix A

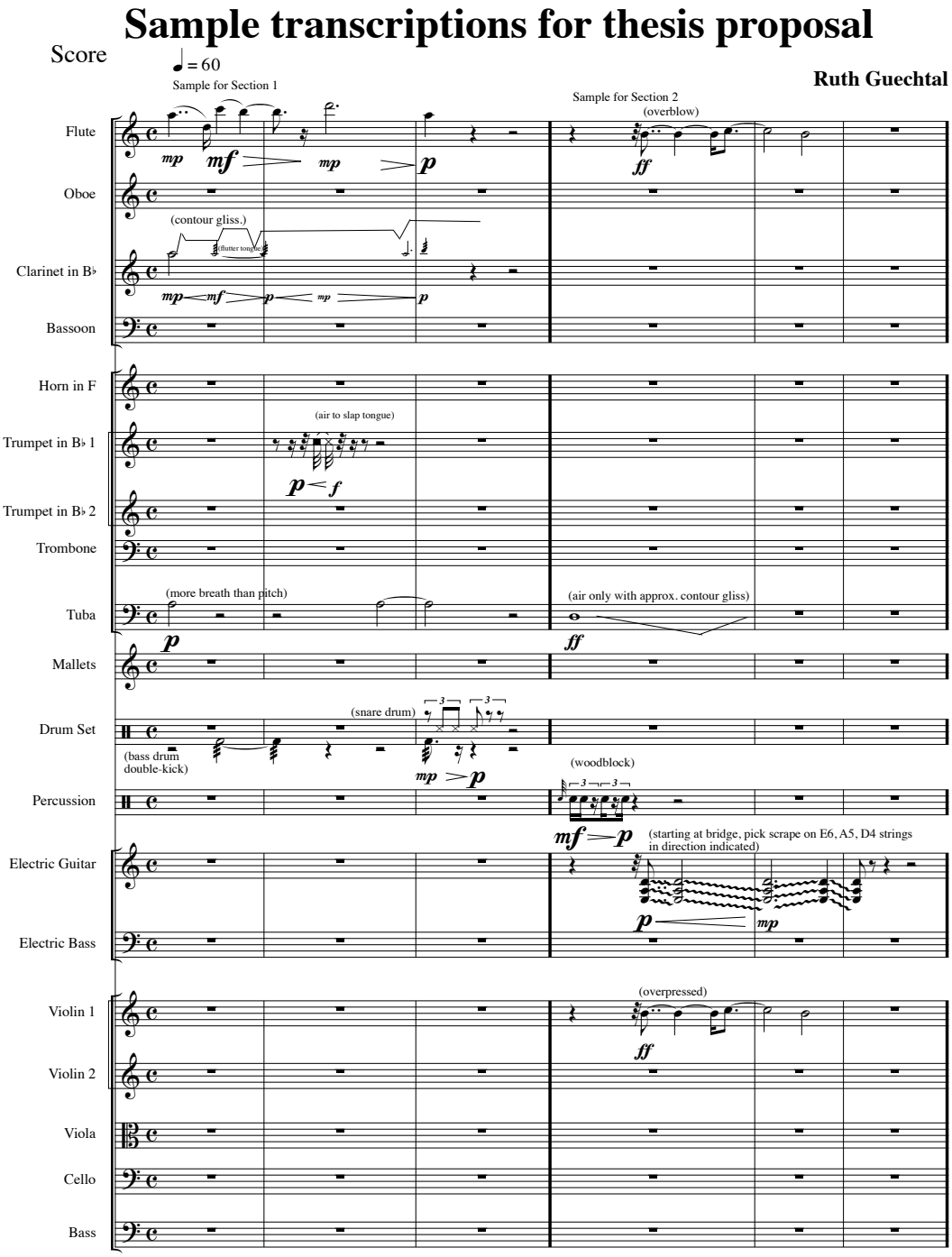
Piano Orchestration of Sample transcriptions for T.P.

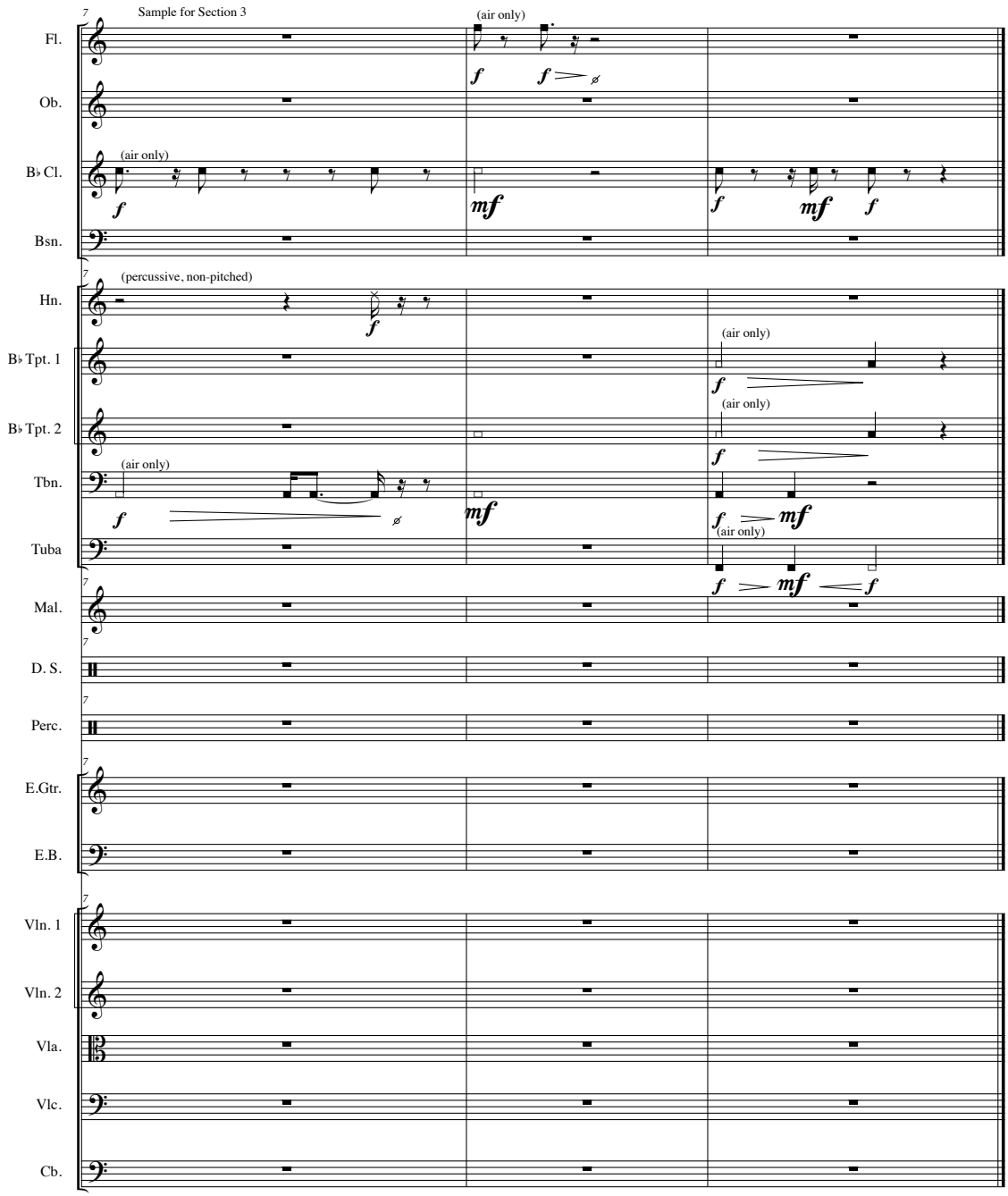
Score

Ruth Guechtal



Appendix B


Sample transcriptions for thesis proposal
Score
♩ = 60
Ruth Guechtal
Sample for Section 1
Sample for Section 2
(overblow)
Flute
Oboe
(contour gliss.)
(flutter tongue)
Clarinet in B♭
Bassoon
Horn in F
(air to slap tongue)
Trumpet in B♭ 1
Trumpet in B♭ 2
Trombone
(more breath than pitch)
(air only with approx. contour gliss)
Tuba
Mallets
(snare drum)
Drum Set
(bass drum
double-kick)
(woodblock)
Percussion
(starting at bridge, pick scrape on E6, A5, D4 strings
in direction indicated)
Electric Guitar
Electric Bass
(overpressed)
Violin 1
Violin 2
Viola
Cello
Bass


Sample for Section 3
(air only)
Fl.
Ob.
B♭ Cl.
Bsn.
(percussive, non-pitched)
Hn.
B♭ Tpt. 1
B♭ Tpt. 2
Tbn.
Tuba
Mal.
D. S.
Perc.
E.Gtr.
E.B.
Vln. 1
Vln. 2
Vla.
Vlc.
Cb.

Appendix C

List of Field recordings

The field recordings listed below are those made of my apartment and surrounding areas on my walk to the University of Alberta campus. These are unprocessed sounds and are listed in order of appearance in the three improvisations comprising the audio track included in the score.

Indoor Sounds

Ci) Neon lights.wav
Cii) Overflow tube.wav
Ciii) Bathroom fan.wav
Civ) Fridge.wav
Cv) Washing Machine.wav
Cvi) Our dryer.wav

Indoor/Outdoor Sounds

Cvii) Dishwasher.wav
Cviii) Vacuum.wav
Cix) Flag Pole.wav
Cx) Mechanical digger.wav

Outdoor Sounds

Cxi) Loud Car.wav
Cxii) Traffic on HLB.wav
Cxiii) Bike Gears.wav
Cxiv) LRT station.wav
Cxv) Ag Fo water pipes.wav

Appendix D

List of Manipulated Recordings and Max patch

The audio files listed below represent the processing of the field recordings into three live experimental improvisations and their final combination into a single track which became the accompanying audio track for *Tran(ce)sients*. These three improvisations provided the structure for the first three sections of the score for *Tran(ce)sients*: Sections A, B, and C.

Di) Section 1 thesis improv.wav
Dii) Section 2 thesis improv.wav
Diii) Section 3 thesis improv.wav
Div) Tran(ce)sients complete tape track.wav
Dv) Processing patch for Tran(ce)sients.maxpat