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Composer Zachary M. Watkins is from Sacramento, California. In addition to composing, he also collaborates with popular music artists and operates a music engraving service. Watkins is a member of BMI, and of the Phi Kappa Phi and Pi Kappa Lambda honor societies. The composer currently resides in Sacramento with his partner, Erin.

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Sacramento, CA 95826
www.zacharymwatkins.com

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for
Stephen Blumberg and Leo Eylar

and the California State University Sacramento School of Music
Symphony Orchestra

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THESIS

Many years ago, I took an Intro to Psychology class. We watched a documentary in one of our sessions that purported to debunk astrology. The most memorable scene featured a group of adults who had been given a horoscope written for their zodiac sign. They were told these horoscopes were authored by a prominent astrologer and tailored to everyone's specific date and time of birth. The participants gushed at the insightful readings, and they all agreed it was amazing how the astrologer had been able to discern such specific details about them. Then the discussion took a turn. The man leading the group asked if everyone felt comfortable sharing their readings with each other. They did, and so began exchanging them. Much to the participants' chagrin, they soon discovered they'd all received the exact same reading. Stunned and embarrassed, they fell silent.

After watching this video, my psychology class descended into a heated discussion about astrology and other so-called pseudosciences. The professor mostly let everyone talk, occasionally planting a choice comment how our perceptions help shape our reality. The pseudoscience unit lasted a week, and discussions about the debunking video continued throughout. As the days went by, my class continued to argue about whether astrology was real or fake and to question why people 'believed' in it. But it seemed to me that, in all those discussions, many students missed the unit's main point.

To me, the important takeaway was that the human mind works by creating connections. It is because of this that we can be given a paragraph containing vague descriptors and (with a certain amount of willingness) turn those descriptors into deeply personal statements representative of our hidden selves. We find ways to make vagaries specific, and can draw binding connections between entirely unrelated things. Constellations in the night sky are an excellent example of this ability at work. We look up, draw lines in our minds between the stars, and create familiar shapes. We've created stories about these constellations, too; legends of who and what they are, and how and why they came to be in the sky above us. The mind's ability to create connections allows us to imbue with meaning things that have none.

I have often wondered to what degree this ability is at play when we experience art, especially the aural art, music. Does music have any inherent meaning at all, or is it simply a

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"For I consider that music is, by its very nature, essentially powerless to *express* anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature, etc. . . . *Expression* has never been an inherent property of music. That is by no means the purpose of its existence. If, as is nearly always the case, music appears to express something, this is only an illusion and not a reality. It is simply an additional attribute which, by tacit and inveterate agreement, we have lent it, thrust upon it, as a label, a convention—in short, an aspect unconsciously or by force of habit, we have come to confuse with its essential being."

—Igor Stravinsky and Robert Craft, *Dialogues and a Diary* [London: Faber, 1968], 53–54)

sequence of sounds happening over time into which we infuse otherwise unrelated associations? I am not the first composer to consider this idea of pure music; Igor Stravinksy's views above are cited often.

Though it is possible Stravinsky was responding more to the specific question of whether his piece *Rite of Spring* functioned without the ballet it was written to accompany, his suggestion that music exists independent of any meaning we ascribe to it is worth considering. As Richard Taruskin writes when examining this very idea, "Why not admit that music has an intrinsic value, independent of the sentiments or images that it may evoke by analogy, and that can only corrupt the hearer's judgment? Music needs no help. It is sufficient unto itself. Don't look for anything else in it beyond what it already contains."[1]

In selecting the zodiac as inspiration for my composition, I intentionally create a relationship between these two underlying philosophical concepts: 1) the idea that music by itself may not necessarily have any inherent meaning, and 2) the mind's ability to create connections may be what allows us to ascribe associations to music and imbue it with meaning. Only through performance will I discover what associations audiences make between the music and their own knowledge and experiences. This is, of course, a universal truth for all music compositions.

II.
OTHER WORKS BASED ON THE ZODIAC; MUSICAL INFLUENCES

Taking musical inspiration from the western zodiac is rare but not unheard of. When composers do use the zodiac, they typically incorporate the zodiac signs and their number, twelve, into the piece. This most frequently takes shape as twelve individual movements, or significant sections if the piece is contiguous. The 12-tone composition system is also employed frequently.

Karlheinz Stockhausen's *Tierkreis* (1975) is a group of twelve melodies written for no particular instrument. Each of the melodies represents a zodiac sign and is written as a 12-tone row. This piece has been included in many recordings [2] and includes instructions for improvisation, resulting in a different performance each time. George Rochberg's pursuit of serialism led to his composing *Twelve Bagatelles* for piano in 1952, a set he orchestrated in 1964 and retitled *Zodiac*. [3] Perhaps the most prominent example of a composer taking inspiration from the zodiac is George Crumb's work, *Makrokosmos*. This work for amplified piano consists of 12 fantasy-pieces, each of which are associated with a zodiac sign (though not in the standard order). The pieces are considered "studies in avant-garde [piano]

[1] Richard Taruskin, "A Myth of the Twentieth Century: The Rite of Spring, the Tradition of the New, and 'The Music Itself,'" *Modernism/Modernity* 2, no. 1 (1995): 4.

[2] Allen Gimbel, review of *Tierkreis*, by Karlheinz Stockhausen, performed by artist Dominik Susteck, *American Record Guide* 75, no. 1 (January 2012): 172

[3] "George Rochberg," Encycolpedia.com, accessed January 31, 2016, http://www.encyclopedia.com/topic/George_Rochberg.aspx#2

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technique."[4]

Other examples of composers taking inspiration from the zodiac include the Belgian composer Piet Swerts who has written *Zodiac* (1992) for violin and orchestra. Croation composer Milo Cipra completed *The Path of the Sun* (1959), a twelve-movement work with each movement named after a zodiac sign in which the composer also utilizes the 12-tone composition system. And in American jazz, composer and pianist Mary Lou Williams wrote and recorded *Zodiac Suite* in 1945, an album of 12 pieces, each of which is named after a different sign and explores a different theme. Composer Stephen Blumberg has written *Zodiac* (1986) for piano and percussion duo. This work also contains the twelve signs, though here they are structured into four movements to be performed with brief pauses between each 'season.' In this, the piece stands in contrast to other zodiac-related works.

My composition, *Zodiac*, also contrasts with these examples from the literature in several ways. Like the Blumberg work, it is structured by collecting sets of three signs into four 'season' movements. The piece is a large orchestral work, and the four movements evoke a more traditional symphonic structure. This is further aided by its idiom being generally neo-romantic, though it does contain avant-garde and atonal leanings at times. Whereas the Blumberg work represents solar events (i.e., equinoxes and solstices) through pauses in the music, in my work these events have been fully composed as introductory material in each movement—an apparently unique interpretation. My composition also interrelates in significant ways that others did not attempt, as will be discussed further later.

It is important to mention that none of the works I reference here served as inspiration for my own musical exploration of the zodiac; I had already written my piece before doing this survey of the existing literature. It is also noteworthy that I unknowingly chose as inspiration a subject my advisor had also previously chosen. Being able to sense the potential for inspiration in the zodiac speaks to our similar compositional instincts, even though we chose to explore that inspiration in markedly different ways.

It is difficult for me to cite direct musical inspiration for my composition *Zodiac*, with the exception of Frédéric Chopin whose *Scherzi* I studied in preparation for writing the "Libra" section of the third movement. Perhaps I could also claim that the violin solo during "Pisces" in the fourth movement was indirectly inspired by Mahler's 8th Symphony. It is much easier for me to draw a broad stroke of influence from pieces and composers I learned as part of my piano studies when I was younger such as Bach's two-part inventions, Handel's keyboard works, and Beethoven's *Moonlight* Sonata. And though I am also very fond of Brahms and Chopin, Fauré and Ravel, it is Claude Debussy who looms largest. His piano works *Clair de Lune*, *Rêverie*, and "Sarabande" from the *Pour le Piano* suite, are all long-standing inspirations to me for their beauty, use of modal mixture, parallel motion, and extended harmony techniques. His orchestral work *La Mer* continues to be a source of great joy. Most listeners familiar with Debussy's compositions will undoubtedly hear his influence on mine.

Additionally, I would be remiss not to mention my love of popular music and its influence on my composing. Because of the constantly shifting styles and techniques, there is little point in citing specific artists or songs. In general, though, popular music embraces a number of aspects I consider appealing: the importance of a constant pulse, either literally present or instead implied through the music; an emphasis on melody, harmony, and rhythm; an enthusiasm for and prevalence of syncopation; and a general inclination towards more emotionally-oriented content. These techniques and values can be included in art music as well; I favor including them in my own compositions because they tend to result in material that is more accessible, allowing me to better reach audiences and provide them with an emotional journey. Another technique

[4] "Makrokosmos," Oxford Music Online, accessed January 31, 2016, http://www.oxfordmusiconline.com.proxy.lib.csus.edu/subscriber/article/opr/t237/e6439.

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favored by popular music is the crafting of a 'hook' or catchy melody. The focus on thematic material in *Zodiac* has been an excellent opportunity for me to employ this skill as well, one I have spent many years cultivating.

III.
CYCLICAL STRUCTURES AS MUSICAL CONSTRAINTS

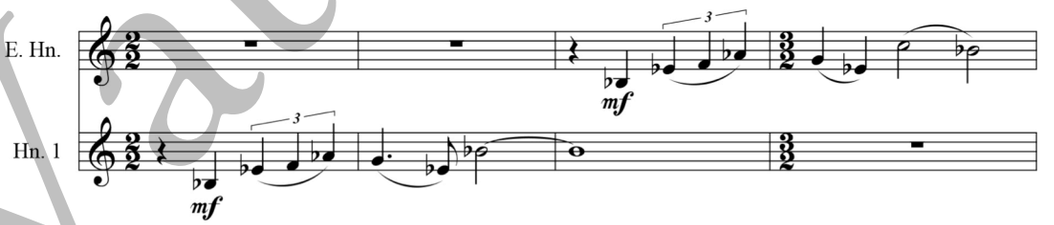
The western zodiac is, at minimum, an annual calendar. Its twelve divisions—the signs—move from one to the next, denoting the progression of the year from springtime through all four seasons, ultimately returning to where they began. In my piece, I reference this largest cyclical aspect through a series of phrases that 'bookend' the work. In the "Vernal Equinox" section at the beginning of the first movement, the 1st horn plays a phrase which is echoed by the english horn in a slight variation [Example 1].

These two phrases are later reprised at the end of the fourth movement, following the "Pisces" section—a reference to springtime's return after winter [Example 2].

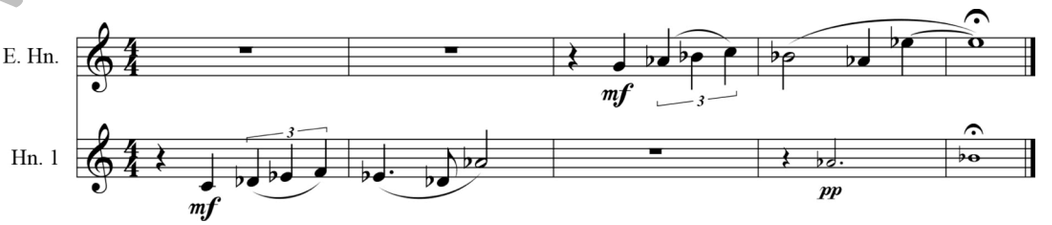
Within the zodiac, the twelve signs are subdivided into a number of different categories simultaneously. The simplest of these is the Duality bifurcation into Masculine and Feminine signs. This is an alternating binary from sign to sign, and does not refer to a sexual division so much as it does the way individuals born under these particular signs are said to be more outwardly- or inwardly-directed in their energy, and in the way they seek balance with others. In my work, I incorporate this distinction through the use of dynamic contrast. Masculine signs are generally louder in volume; feminine signs are generally quieter. As part of my preparation, I marked out the general dynamic contours of the piece as shown in Figure 1. It is important to note that the intention here was never to unilaterally enforce any one particular dynamic level over an extended section. Rather, this is intended to summarize the general dynamic level of each particular sign, understanding that internal dynamic contrasts would still be present as determined by the musical requirements of the piece in the course of its composition.

Another way signs of the zodiac are divided into groups is by Modality. Each sign falls into one of three 'modes' that are said to describe how individuals interact with their environment and the larger world around them. These three aspects—Cardinal, Fixed, and Mutable—proceed in order as they cycle through the zodiac and are said to describe the quality of each sign. Cardinal signs are thought to be initiators and are associated with beginnings and, specifically, the beginnings of the seasons.

EXAMPLE 1. *Zodiac*, movt. I "Spring," mm6–9.



EXAMPLE 2. *Zodiac*, movt. IV "Winter," mm128–132.



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Fixed signs are considered to be sustaining aspects and correspond to the height of each season. The Mutable signs are regarded as flexible and adaptable, which reflects their position in the calendar at a season's end. In my composition, I interpreted these modes somewhat literally as musical modes. I assigned the major mode to the Cardinal signs, the minor mode to Fixed signs, and allowed the Mutable modes to exist outside of either. As is the case for the Dualities, this was not a hard and fast rule but instead an over-arching guideline.

The third and final aspect I employ as a constraint is what is referred to as the Triplicities. This is the division of the zodiac signs into four elemental groups: Fire, Earth, Air, and Water. Each of these elements are said to reflect certain personality traits common in signs of these aspects. Fire signs are generally thought of as warm and energetic. Earth signs are steady and dependable. The air signs are seen as intellectual and communicative. And the Water signs are considered the most emotional and nurturing. These distinctions have been incorporated into *Zodiac* via melodic content, i.e., the Triplicities are all represented by a different theme. Each of the four themes are then altered according to the other constraints of the particular sign in which they occur.

Because these zodiac aspects—Duality, Modality, and Triplicity—are all cycles of differing lengths, they result in a unique combination for each zodiac sign. When I combine my musical interpretations of the zodiac aspects, the result is twelve unique sections that all interrelate with each other on multiple levels, musically. I call this method

FIGURE 1. Alternating dynamic contour of *Zodiac* with assigned general dynamic level.

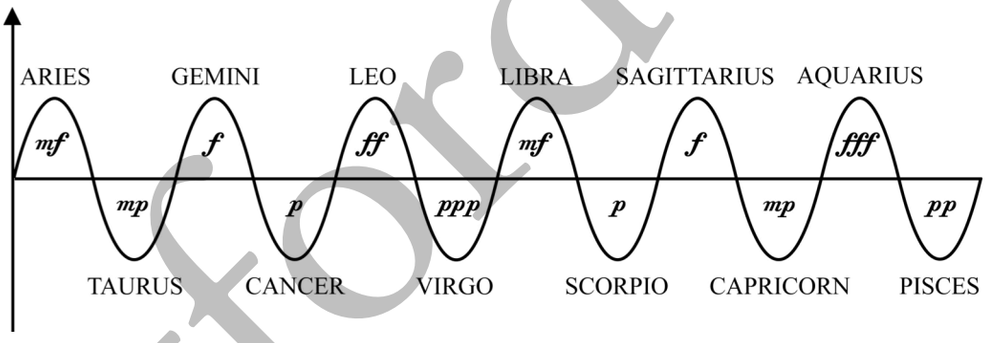

FIGURE 2. Kaleidoscopic Development structure of *Zodiac*.

I. SPRING	*Vernal Equinox*	**ARIES** Masculine/louder Cardinal/major Fire theme	**TAURUS** Feminine/softer Fixed/minor Earth theme	**GEMINI** Masculine/louder Mutable/alt.tonality Air theme
II. SUMMER	*Summer Solstice*	**CANCER** Feminine/softer Cardinal/major Water theme	**LEO** Masculine/louder Fixed/minor Fire theme	**VIRGO** Feminine/softer Mutable/alt.tonality Earth theme
III. FALL	*Autumnal Equinox*	**LIBRA** Masculine/louder Cardinal/major Air theme	**SCORPIO** Feminine/softer Fixed/minor Water theme	**SAGITTARIUS** Masculine/louder Mutable/alt.tonality Fire theme
IV. WINTER	*Winter Solstice*	**CAPRICORN** Feminine/softer Cardinal/Major Earth theme	**AQUARIUS** Masculine/louder Fixed/minor Air theme	**PISCES** Feminine/softer Mutable/alt.tonality Water theme

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"Kaleidoscopic Development." The full structure of each movement and how the constraints are applied to the twelve signs can be seen in Figure 2. It is also important to note that, because only the zodiac signs are said to exhibit these aspects, I composed the solar events independent of the cyclical constraints.

IV.
KALEIDOSCOPIC DEVELOPMENT

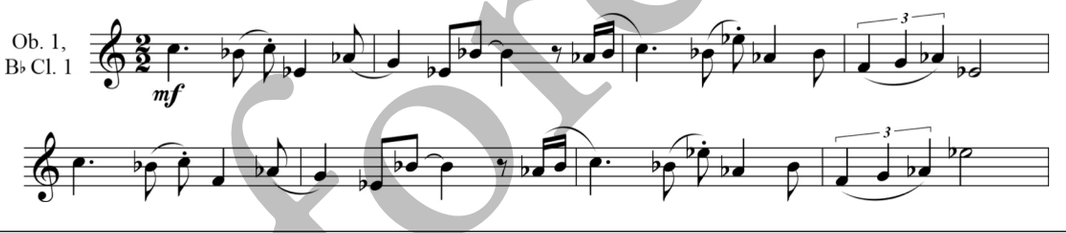
Due to the non-linear musical development structure in *Zodiac*, an examination and analysis of the piece is most illuminating if done with a primarily non-linear approach. As mentioned earlier, the heart of this work is the four Triplicity themes—Fire, Earth, Air, and Water—and how each theme is reinterpreted in different signs according to the constraints of those signs.

FIRE THEME

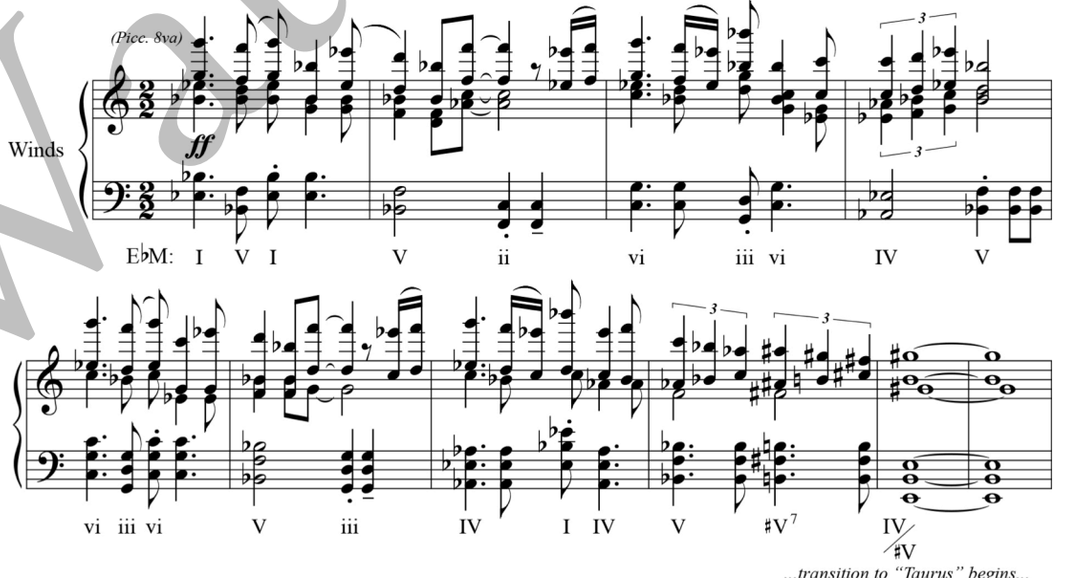
All instances of the Fire theme are at a generally louder dynamic. The theme is first stated at the very beginning of "Aries," immediately following the opening "Vernal Equinox" section, at measure 10. The winds play the theme in harmony at a *mezzo-forte*. The 1st oboe and 1st clarinet have its purest form, as shown in Example 3.

The theme passes to the flutes, then is absent until returning in a large *tutti* statement at measure 39. The winds retain the theme, backed by the rest of the orchestra with the brass in a doubling, supporting role. The harmony is purposely traditional; audiences are presented with a familiar-sounding circle of fifths-based progression. This grounds the listener and provides for the greatest contrast with later, more harmonically complex sections. At m39, the oboes are joined in the Fire theme by the flutes an octave above, and the piccolo an

EXAMPLE 3. *Zodiac*, movt. I "Spring," mm10–17.



EXAMPLE 4. *Zodiac*, movt. I "Spring," mm39–49.



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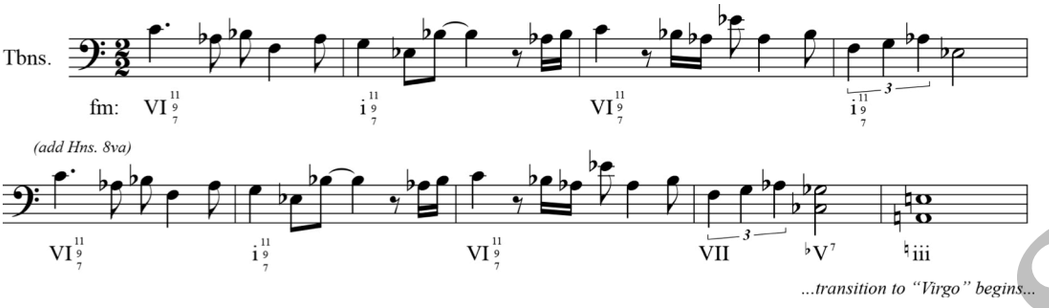
EXAMPLE 5. *Zodiac*, movt. II "Summer," mm107–115.



octave above that. In a nod to more traditional development structures, this larger statement of the theme is made in E-flat, which is V of the initial statement in A-flat [Example 4].

The next section to be based around the Fire theme is "Leo" in the middle of the second movement. Beginning at measure 60, variations of the Fire theme are employed in a pointillistic manner. Nearly every instrument's part is derived from it, or from the accompanying material that begins at rehearsal mark 'D'. As a result, the theme is somewhat obfuscated. Ultimately, I dispense with this technique following the *lunga* fermata gesture at measure 102. Another large *tutti* section begins at measure 103, and at 107 all three trombones play the theme, as shown in Example 5.

The notes are pitched similarly to "Aries," but the phrase has been re-harmonized in accordance with the Fixed Modality constraint of minor tonality. The time signature returns to 2/2 in a callback to the first movement statement, though the tempo here is slower—56 beats-per-minute instead of the faster 72 bpm in the theme's previous statement. The "Leo" Fire theme is also supported in the orchestra by the extended harmony that is common throughout *Zodiac*. This harmony, hinted at in the beginning of the movement, is given its first significant featuring here, which denotes how the piece has moved into a higher level of developmental complexity—as it should, since "Leo" is the beginning of the second cycle through the Triplicities. Though this harmony might be interpreted as polytonal, in compositional practice I crafted the harmony through extension of the root and have therefore represented it in these analyses from that perspective. Note also the move to ♮iii—a chromatic mediant—to complete the phrase. *Zodiac* contains many direct shifts in harmony through parallel motion, and I use the chromatic mediant relationship frequently.

The final instance of the Fire theme is during "Sagittarius" in the third movement. This instance is even more obfuscated due to the Fixed Modality constraint of an alternate tonality. The theme is closest to its previous forms when played by the tuba at mm209–216, though it can be found in many other locations as well. It is played in a greatly elongated form by the 1st horn in mm193–202. It is played at double-speed by the xylophone and piano on multiple occasions, such as mm189–192 and 201–204. This faster styling of the theme is also played by the 1st violins from mm. 200–209. Though the theme is not presented in a large *tutti* as it is in the other two movements, it does serve as inspiration for compositional material and its influence is particularly felt as repeated rhythmic motives.

EARTH THEME

The dynamic oscillation of the Duality constraint in *Zodiac* results in alternating general dynamic levels from sign to sign. Whereas the fire signs are all louder in volume, each instance of the Earth theme that follows is at a contrasting, generally softer dynamic. This is true of the theme's first appearance in "Taurus." A solo cello plays variations of the theme, backed by pizzicato strings at a largely *piano* dynamic. As the solo progresses and the winds are brought in to thicken the texture, the orchestral support behind the soloist remains

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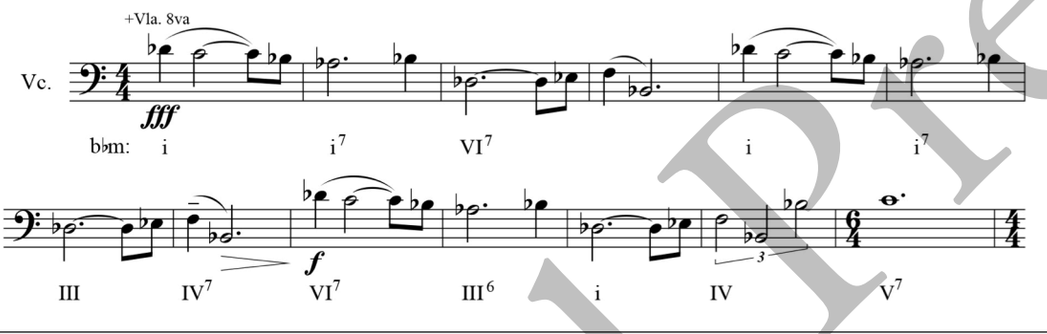
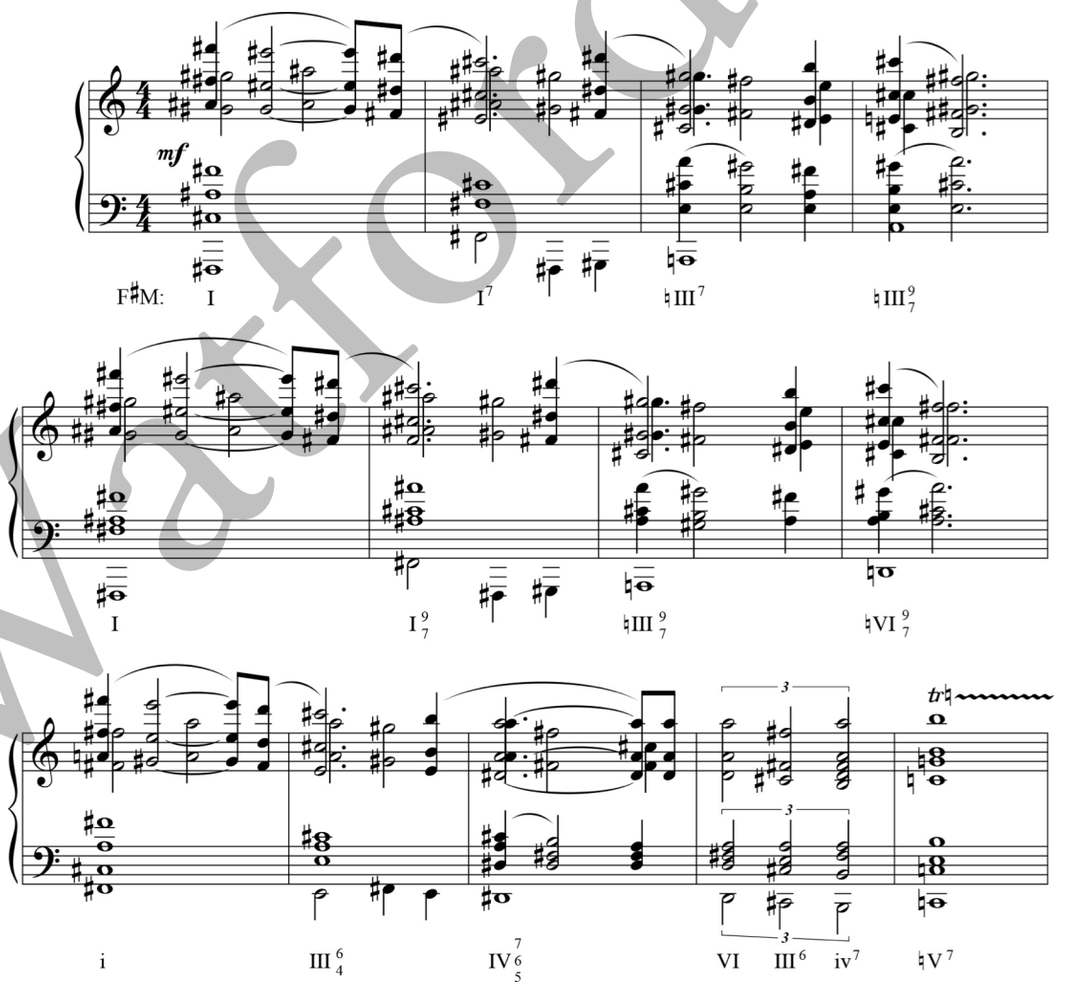
largely at *mezzo-piano* until a crescendo into the *tutti* section that begins measure 108. At the *tutti*, the Earth theme is clarified. It moves into the full cello section and is doubled an octave above by the violas [Example 6]. The trombones double as well, and the english horn and bass clarinet join them to provide additional color. Since "Taurus" has a Fixed Modality, the minor tonality constraint is applied.

Whereas the Fire theme is in two parts, consisting of an antecedent and consequent subphrase, the Earth theme consists of three subphrases in a roughly A – A' – A'' series; the difference is driven exclusively by changing harmony beneath a repeated melody. Note also the use of the i – IV modal mixture, which is a reference to the *Zodiac* harmonic motive. It is used here as a subtle foreshadowing for later

EXAMPLE 6. *Zodiac*, movt. I "Spring," mm108–120.



EXAMPLE 7. *Zodiac*, movt. IV "Winter," mm42–55.



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instances in the Water theme. The recurrence of this harmonic motive throughout the piece is discussed in further detail later.

The Earth theme's next appearance is in "Virgo" at the end of the second movement. As with other sections of the piece written with the alternate tonality constraint, the theme is highly obfuscated in this section. An analysis of the harmony underlying the tones fading in and out of the winds section (which I will not replicate here because of space and time constraints) will reveal it. Also, the theme can be discovered by simplifying the lead part played by the glockenspiel in mm130–142. The three sub-phrases of the Earth theme are used in the larger construction of the "Virgo" section as well: mm127–142 are the first sub-phrase, mm143–150 the second, and the third is mm151–155. This is highlighted when the concluding triplet figure is played by the bass clarinet and violas in measure 154.

The Earth theme returns in full force during the "Capricorn" section of the fourth movement. With extensive use of chromatic mediants in the harmony, I place nearly every supporting chord of the melody in a major sonority as a way to fully express the Fixed Modality constraint [Example 7]. This is partly in preparation to contrast the "Aquarius" section coming next, which will be in a minor tonality. The section's A – A' structure, with a softer beginning and larger *tutti* second half, recalls how the "Taurus" section from the first movement moved similarly from a quieter cello solo into a larger full orchestra passage.

AIR THEME

Unlike other themes, the Air theme must contend with a number of additional structural challenges. Its initial statement is in the "Gemini" section that ends the "Spring" movement, where it is played first by the piano [Example 8]. This means the theme must comply with the Mutable Modality constraint of an alternate tonality, and also successfully end the first movement. Fortunately, the Duality constraint requires the sign be presented at a generally louder volume. This is helpful; the resulting symmetry of the first movement's loud-soft-loud dynamic curve is a naturally conclusive shape. I have placed the Air theme's initial statement in a nearly pure whole tone system. The rhythmic structure of the figure is striking by design, and it is played at a much quicker tempo than has been heard up to this point in the piece. "Gemini" is marked at a 'lively' 168 beats-per-minute.

The human ear has more difficulty distinguishing melody in non-traditional tonalities.[5] Because the Air theme is initially stated with the alternate tonality constraint, I anticipated the need to highlight its recurrence in multiple ways, and so laid other foundations for its recurrences later in the piece. A heavily syncopated supporting rhythm captures the audience's attention as it moves throughout the orchestra. At measure 168, a counter-melody comprised of long, sustained tones by the trumpets and trombones contrasts with the frenetic energy of the main Air theme. This countermelody quickly spreads to other instruments of the orchestra for the final passage of the movement. Since similarities and differences in the Air theme's recurrent forms are not reflected in the harmony in the same way as in other themes, I have not included any harmonic analysis with the relevant examples here.

The Air theme's instance in "Gemini" can be considered its most modern use; in contrast, the theme's "Libra" incarnation is far more traditional. Though the passage is at a faster tempo and a louder dynamic, the Air theme is cast in the major tonality dictated by the Cardinal Modality constraint and is transformed into a scherzo-like passage which begins the third movement (reproduced here in piano reduction as Example 9).

"Libra" contains considerable development for its short length. The 125-measure section goes by quickly, but within those measures the Air theme is stated, then restated in a thinner texture at the subdominant (relative to its

[5] Diana Deutsch, "The Puzzle of Absolute Pitch," *Current Directions in Psychological* Science, 11, no. 6 (2002): 203, 203. http://www.jstor.org/stable/20182812.

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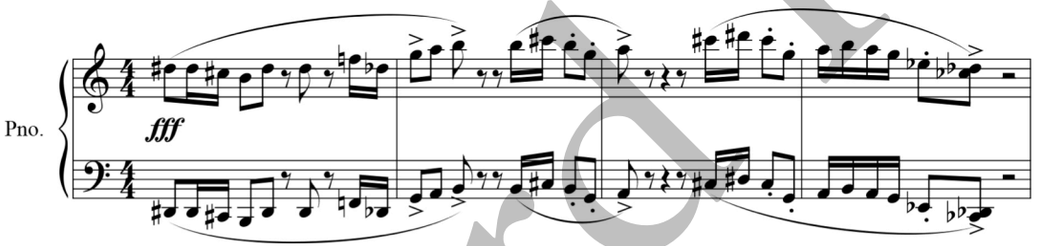
introduction), and then restated again in a rich, full texture at the dominant. With each restatement, the harmony beneath the melody becomes progressively less traditional. Interspersed between these statements are briefer passages which employ an underlying harmony extrapolated from the Air theme's countermelody used as a bass line. The rousing passage is capped by a coda-like, simplified version of the Air theme, backed by trills and rhythmic variation that build in intensity until the orchestra figuratively explodes to begin the transition into the "Scorpio" passage that follows.

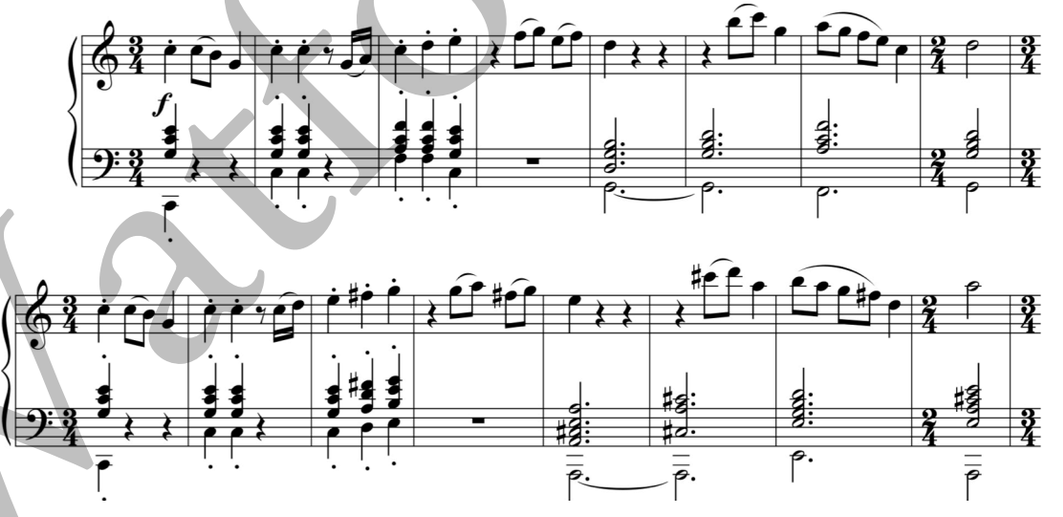
In "Aquarius," the Air theme bears its heaviest structural responsibility—the final large, climactic passage. It is the last dynamically louder passage and the only one in the fourth movement to be so. As a section with Fixed Modality, it is decidedly minor in tonality, a characteristic stated firmly when the section begins at measure 56. A variation of the syncopated rhythmic content from "Gemini" returns, as does the countermelody. The bassoons have the Air theme first at measure 64, then the piccolo at 77, with the violins joining at 81 [Example 10].

The tempo here is fast as well; "Aquarius" is marked with the eighth note at 160 beats per minute. Building on the energy begun in the previous "Capricorn" section, the frenzy continues until its peak at measure 89.

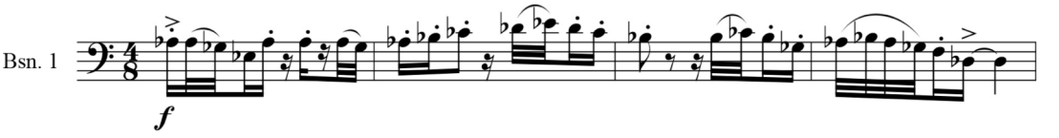
EXAMPLE 8. *Zodiac*, movt. I "Spring," mm168–171.



EXAMPLE 9. *Zodiac*, movt. III "Fall," mm10–25.



EXAMPLE 10. *Zodiac*, movt. IV "Winter," mm64–67.



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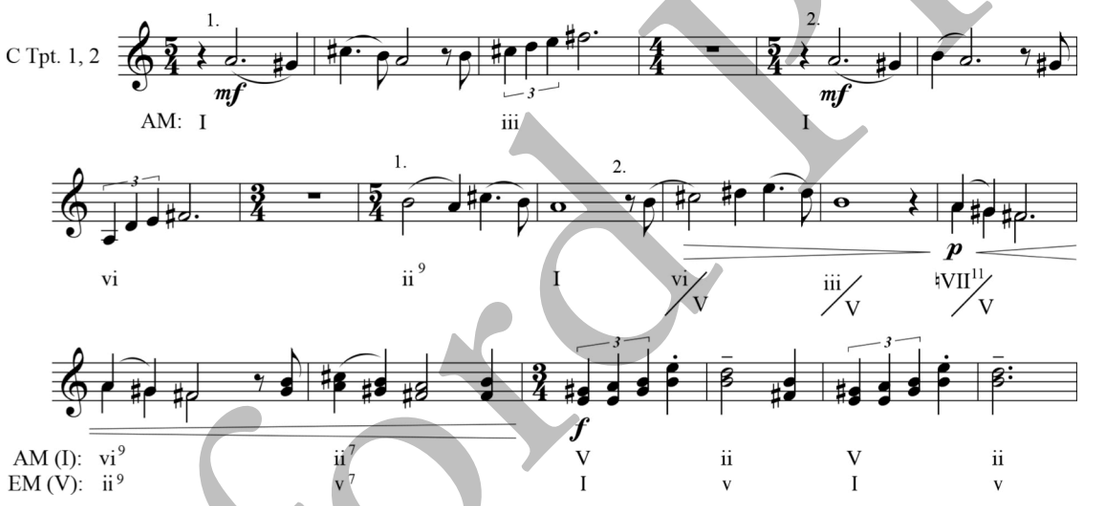
WATER THEME

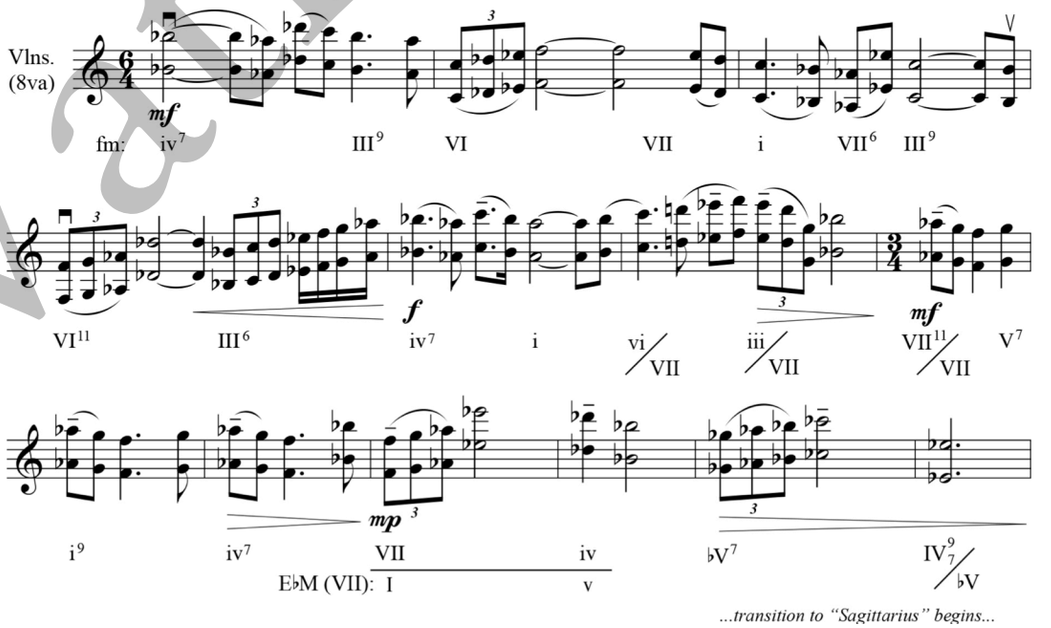
Due to the three-signs per movement structure, each of the four movements is 'missing' a sign. Since the water signs are fourth in the Triplicities sequence, the Water theme does not make its debut until the start of the second movement in the "Cancer" section. In this instance, it is quieter (Duality constraint of a generally softer dynamic) and written in a largely major tonality (Fixed Modality constraint). The theme passes among various brass solo instruments; from the horn to the trombone and back, then among the trumpets [Example 11].

The longest of the Triplicity themes, the Water theme is also the only theme to incorporate the full *Zodiac* harmonic motive on a structural level. Whereas the other signs occasionally include this harmony, here it is built directly into the theme. Note how the theme shifts to the dominant level of the harmony in its 11th bar. Even though this temporary shift lasts only a few measures, the

EXAMPLE 11. *Zodiac*, movt. II "Summer," mm35–53.



EXAMPLE 12. *Zodiac*, movt. III "Fall," mm167–180.



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addition of the D♯ and the repeated common tone G♯ (the major third of the dominant E Major) remain influential. Mapping out the harmonic progression through the rest of the theme at the dominant level shows how the ending bars also function as a I – v oscillation. This oscillation between major tonic and minor dominant—and its inverse, minor tonic to major subdominant—is the *Zodiac* main harmonic motive. Though hinted at previously during "Taurus" in the first movement and the "Summer Solstice" that begins the second, it is this passage here in "Cancer" where the audience hears it formally and fully stated for the first time.

The Water theme's next incarnation is in the "Scorpio" section in the third movement. A strings-only passage (save for the partial celesta accompaniment), the theme is presented very similarly to the "Cancer" version of the prior movement. In a prominent position as the second sign of the movement, the Water theme takes on a minor sonority due to the sign's Fixed Modality. Viola sola performs material similar to the dialog between the horn and trombone in "Cancer" before giving way to a *tutti* section in which *divisi* violins assume the theme [Example 12].

Though the Fixed Modality constraint may appear to be loosely applied, analysis shows the passage is in the key of f minor, and the harmony of this iteration of the theme can be best understood from that perspective. While the progression spends much time on major chords, they are all inherent to the diatonic harmony of f minor. Because the orchestration is so dramatically different here than from in "Cancer," this iteration can mirror the theme's previous version closely; aside from some octave displacement, the melody is nearly identical. Note the vi – iii – VII ascending fifths progression, just as in "Cancer," though here it takes place on the subtonic VII. The structural inclusion of the *Zodiac* harmonic motive then takes place at the subtonic level as well. Note the common tone A♭ through the seventh, eight, and ninth bars of the phrase—the enharmonic equivalent of the G♯ in the "Cancer" section, and how it functions here as an 11th, 9th, and then 7th as well.

The *divisi* strings "Scorpio" passage is a highlight of my piece, and perhaps the most significant one. It is passionate, deeply moving, and climactic. The position of "Scorpio" in *Zodiac* also corresponds to the "Golden Mean,"[6] which signifies and reinforces the passage's prominence. When applied as a percentage of the piece's total performance time, the resulting number occurs during the "Scorpio" passage.

The Water theme's final appearance is at the very end of *Zodiac*, in the "Pisces" section. Unlike its previous two highly similar instances, here the theme is almost entirely obfuscated. Instead, the passage relies on a more programmatic use of the zodiac sign it represents. Other passages in the piece have this programmatic aspect to them to varying degrees, such where the "Leo" section invokes the proud imagery of a Lion, or how the Air theme motive is balanced with a counter-melody to represent the dual nature of the Gemini twins. For "Pisces," the flute and solo violin represent the symbolic two fish of that sign. They duet over a bed of shifting textures loosely derived from the Water theme. This extremely soft ending section bears a strong resemblance to the "Virgo" section at the end of the second movement. The fact that this similarity occurs between signs that are opposite each other in the zodiac calendar is not a coincidence; it is one of several emergent characteristics in the piece.

[6] The Golden Ratio (Φ, 1.618) is a ratio with unique properties in mathematics and geometry that occurs naturally throughout nature. It can be found in art, architecture, and design throughout history, and in music as well. The Golden Ratio has also held philosophical and spiritual significance for many. Most simply, it is the ratio that results when a line is divided in such a way that the ratio between the small and the large sections are the same as the ratio between the large section and the line's full length. When expressed as part of a whole, 1, the ratio equates to roughly 0.618—the Golden Mean.

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V.
EMERGENT CHARACTERISTICS; THE HARMONIC MOTIVE

If the twelve zodiac signs are drawn in a circle beginning with Aries, proceeding through to Pisces, and then returning to the beginning, certain signs become diametrically opposed. Even though I did not intentionally draw parallels between these pairs, some naturally emerged in the writing of the piece. A prominent example is "Virgo" and "Pisces," with their places at the end of the second and fourth movement. Both sections are quieter and employ the non-traditional tonality. When I became aware of the potential for these parallels, I enhanced the effect by utilizing a similar compositional technique for both sections: tones from individual instruments staggered throughout the orchestra fade in-and-out. This is by no means the only instance of diametrically opposed parallels in the piece. "Gemini" and "Sagittarius" at the end of the first and third movements are also similar, with both of those sections being louder and the two most rhythmically centric sections of the larger work. The transitional material from "Libra" to "Scorpio" is a reharmonization of the transition from "Aries" to "Taurus." Also, "Taurus" and "Scorpio" both contain significant solo sections for the cello and viola, respectively.

Another emergent characteristic is the similarity in tonal structure of the four movements. Due to the sequential nature of the Modalities in the zodiac, the tonality and harmonic content of each movement progresses from major, to minor, and finally to an alternate tonality. Because this same process is repeated in all four movements, it is particularly pronounced. Anticipating a need to avoid a sense of repetition for the audience, I composed the final sections of each movement in a different alternate tonality. "Gemini" is purely whole tone; "Virgo" is whole tone with what could be described as non-harmonic tone substitutions; "Sagittarius" is almost purely atonal, but has been composed in such a way that the most egregious of its non-harmonic tones resemble the extended harmonies found in more aggressive jazz solos; and "Pisces," which moves in and out of tonality and atonality seemingly at whim. The overall effect within each movement can also be considered as a loose mimicking of the progression of tonality through western music history from a rigid, purely modal tonal construction, through increasing use of modal mixture, to the free atonality of 20th-century modernism.

There is one final feature of *Zodiac* worth mentioning, and that is the main harmonic motive. At varying points throughout my piece, the harmony consists of a progression I – v or its inverse, i – IV. Usually the music will oscillate between the two chords of either pattern, though both configurations do occasionally follow one after the other. As mentioned previously, these harmonic phrases are built directly into the Water theme, and are hinted at during its diametrically opposed Earth theme. This harmonic motive also forms a backdrop in the climax of "Leo" even though that section is based around the Fire theme, as well as its diametrically opposed sign, "Aquarius." And even though "Aquarius" is based around the Air theme, that instance of the *Zodiac* harmonic motive marks the final climactic moment of the entire piece. The harmonic progression is paired with a unique, stirring melody to further emphasize its status as an over-arching, composition-wide motive.

VI.
IN CONCLUSION

My composition, *Zodiac*, is not a symphony in name, though it does make many references to traditional symphonic structure and features. I originally conceived the work as a single movement with the equinoxes and solstices providing contrasting breaks in the material. However, when it became clear how difficult it would be to maintain the compositional structure I'd envisioned over such length, I decided to split the piece into four 'seasons' of three signs each. Each movement could then begin with the appropriate solar event as introductory material.[7]

[7] In the zodiac calendar, the equinoxes and solstices mark

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At the height of the genre's popularity in the 19th century, traditional symphonic structure called for four movements.[8] The first movement sometimes included a slow introduction, not unlike the tension-filled "Vernal Equinox" section of *Zodiac.* Second movements were typically slower. In my composition, the second movement is the only movement of the four that does not include a fast-paced segment. Third movements were frequently a scherzo or other dance-inspired style, and in a triple-meter. The third movement of my piece *Zodiac* begins with the scherzo-like "Libra" which is in 3/4 time, though many measures are cut short to 2/4 to increase the tension and avoid sameness. The third movement of *Zodiac* also contains the strings-only "Scorpio" section, strings-only passages being another frequent feature of symphonies. Lastly, the fourth movement is traditionally almost always a fast, climactic movement. Though *Zodiac* is not fast the entire length of its fourth movement, the centerpiece of that movement, "Aquarius," is brisk and reaches a powerful climax.

Some composers enjoy the freedom of unlimited possibilities. Perhaps they feel a lack of boundaries gives them the independence to create anything they envision. I am not this type of composer; total freedom is stymying for me. I work best within constraints. I tend to think an artist's ability to create and produce within constraints is a good measure of skill at their craft. How well can an artist work with what they have been given to work with? For my major project, I was seeking a series of constraints from the beginning. Writing for a large ensemble—the orchestra—was a large constraint. Some might see the orchestra as having unlimited sonorous possibilities, and this is true, but with that potential comes the unspoken requirement that it be utilized properly. In composing a large work for orchestra, I would need to honor the instrument I was writing for; I would need to use the orchestra's potential well.

I knew also that I wanted to attempt a work not just for a large ensemble, but that was also of a large scale and scope. To do so, I would need a structure that could sustain itself over the lengthy performance time and provide areas for exploration. I also wanted to create a work that would be enjoyable for performers and audiences. I chose the zodiac as inspiration not for any mystical qualities it might be seen to contain, but because it was something I could expect most audience members would be familiar with. I suspect most people know what their zodiac sign is, even if it isn't something they put stock in or pay attention to. In this way, they would have a personal stake in the work, something personal they could use to access the music. Just as how skeptics of astrology read a horoscope or description of a sign, trying to determine how well it suits or describes them, I suspect much the same will happen with audience members hearing my work *Zodiac* for the first time—they will listen intently as their own particular zodiac sign approaches, then make a determination of how well the music suits or describes them. Regardless of whether they can relate to their sign's material or not, they will be engaged with the music.

There are many aspects of my composition *Zodiac* I am proud of. Foremost in all of these is the extent to which I have been able to carry out the structure I designed for it. One of the most difficult tasks in any art work is the journey from concept to execution. Granted, how closely (or not) an artist's finished work resembles the original concept isn't always the best measure of that work. Compositions, once undertaken, often take on a life of their own and lead their creators down avenues those creators never thought the work would explore. For myself and my conceptualization of *Zodiac*, the envisioned structure was part of the work itself; the Kalidescopic Development that comprises the skeleton of the piece is as much a part of the composition as is the music written to flesh out that outline. Being able to incorporate this structure into the work was of

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the beginning of a new season; each season consists of three signs.

[8] Mark Evan Bonds, "Symphony §II: 19th century," *Oxford Music Online,* accessed March 1, 2016, http://www.oxfordmusiconline.com.proxy.lib.csus.edu/subscriber/article/grove/music/27254pg2

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highest priority for me from the outset. The structures I designed were to be the constraints I would work with and against in composing the piece.

In *Zodiac*, I hope that I have created a work that is enjoyable to performers and audiences alike. Some might argue that I could have (or even should have) placed greater emphasis on my own vision for the music. But such criticism is based in misunderstanding. I have created in *Zodiac* a work I am passionate about that adheres to the guidelines I set out for it and that is of a tone and style that feels very much in keeping with my unique voice as a composer. It displays well my compositional skill level, and I grew a great deal as a composer in the course of writing it—particularly in my orchestration techniques. The piece is unquestionably one of my own vision. I see my job as a composer, and the true measure of skill at my craft, as a function of how well I am able to communicate to the audience, through the players, the vision I have for my work.

—Zachary M. Watkins
May, 2016

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PREMIERE

The world premiere of *Zodiac* was held Tuesday, May 10th 2016. It was performed by the California State University Sacramento School of Music Symphony Orchestra on campus in the Capistrano Concert Hall. Other pieces on the program included *Night on Bald Mountain* by Modest Moussorgsky, the Concerto for Clarinet and String Orchestra Op. 31 by Gerald Finzi, and the Serenade for 13 Winds in E-flat Major Op. 7 by Richard Strauss. *Zodiac* was conducted by Professor Leo Eylar.

LISTING

Due to a printing error, the program on premiere night listed the work incorrectly. For clarity: the four seasons are the movement titles. If also included, the individual subsections should be listed below in italics. When the work is listed in full, *Zodiac* reads as follows:

Zodiac — Zachary M. Watkins (b. 1976)

I. Spring
Equinox, Aries, Taurus, Gemini
II. Summer
Solstice, Cancer, Leo, Virgo
III. Fall
Equinox, Libra, Scorpio, Sagittarius
IV. Winter
Solstice, Capricorn, Aquarius, Pisces

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OPENING COMMENTS

Conductor Leo Eylar made the following opening comments prior to the performance.

"Ladies and gentlemen I want to say just a couple of things before we start. I usually don't talk, but I'm going to talk just for a minute. You're about to hear a world premiere of a very large orchestra piece never been heard by human ears except for these people up here and that's really something remarkable. We've been very fortunate in the twenty-seven years that I've been here to be able to play a number of world premieres in the orchestra. We had one by Ryan Suleiman last year, we've played works by Glenn Disney, Sunny Knable, many people actually over the years and it's really something special. For those of you that may not be composers—and I'm primarily a composer although I don't make my living at that—you need to know that to write an orchestra piece is kind of like painting a Sistine Chapel. It's a huge, incredible undertaking to write, to write any music, but especially to write a vast orchestra piece. And Zach, who has been working on this he says for nine months but it's really more like well over a year and has worked with both Stephen—really the lion's share of the work was with Stephen Blumberg—and myself, has put just an incredible amount of care and devotion and hard work into this graduate thesis which you're about to hear. So as you listen to it—I know that you'll enjoy it; it's an amazing piece of music—think about what it's like to write for all of these combinations of instruments. And think about the orchestration, think about the harmony, think about the overall structure and the form and how the piece moves through time and the trajectory, which is all very, very well thought-out in this piece. It's really, truly amazing. So we hope you enjoy this world premiere of *Zodiac*."

PROGRAM NOTES

Zodiac is the first major work for symphony orchestra by Zachary M. Watkins, written in partial satisfaction of the requirements for the CSUS Master of Music degree in composition. The piece's movements each consist of three zodiac signs grouped together by 'season,' and are introduced by a depiction of the appropriate solstice or equinox. The work is inspired by the western zodiac and contains programmatic representations of each sign, performed in order. These twelve passages are all distinctly different from one another, like mini-movements within the larger structure. A challenging work for performers and audience, the piece moves through a wide variety of idioms over the course of its 25-minute length.

Though not a symphony in name, *Zodiac* contains many features reminiscent of that form. The work is in four movements and features recurring thematic material. The dramatic introduction of the first movement, the slower second movement, the scherzo-like passage that begins the third movement, and the energetic climax in the middle of the fourth movement are all call-outs to traditional symphonic structures and stylings.

The western zodiac has within it a series of cyclical structures. Each sign is said to have a Duality (Masculine or Feminine), a Modality (Cardinal, Fixed, or Mutable), and a Triplicity (Fire, Earth, Air, or Water). Each of these characteristics cycle through all twelve zodiac signs, and because the cycles differ in length, each of the signs contain a unique combination of these three aspects.

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In *Zodiac*, these cyclical structures have been replicated as musical constraints. For example, Duality has been interpreted dynamically—each particular sign is generally louder or generally softer in volume. The Modality aspect has been incorporated as harmonic modality—Cardinal signs are in generally major key areas, Fixed signs are in generally minor key areas, and Mutable signs are of alternate harmonic content such as whole-tone and atonality. The piece's thematic material mirrors the Triplicities; *Zodiac* has four themes—Fire, Earth, Air, and Water. These themes are incorporated musically in accordance with the other constraints, resulting in twelve unique sections which nevertheless interrelate with each other in multiple ways. The composer refers to this technique as Kaleidoscopic Development.

[A table from Watkins' thesis showing *Zodiac's* full Kaleidoscopic Development structure was also included.]

COMPOSER BIO

Zachary M. Watkins has a Bachelor of Arts in music composition from California State University, Hayward—now California State University, East Bay—where he studied with Dr. Frank La Rocca. This spring, he graduates with a Master of Music in composition from California State University, Sacramento. A Sacramento native, his works have been performed extensively by students and staff from The California State Universities in East Bay and Sacramento, the San Francisco Contemporary Music Players, and the San Francisco Cabaret Opera company, Goat Hall Productions. Outside of the classical music realm, he has worked with artists from the Sacramento area from a wide variety of genres, including local hip-hop legends Mr. P Chill and Mr. Hooper (also known as Crazy Ballhead). He is an active member of the Phi Kappa Phi and Pi Kappa Lambda honor societies and currently resides in Sacramento with his partner, Erin. Zachary M. Watkins is a student of Dr. Stephen Blumberg and Leo Eylar.

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ZODIAC *for Orchestra*

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CONDUCTOR'S SCORE
(TRANSPOSED)

INSTRUMENTATION

Piccolo
Flute 1, 2
Oboe 1, 2
English Horn
Clarinet 1, 2 in B♭
Bass Clarinet
Bassoon 1, 2
Horn 1, 2, 3, 4 in F
Trumpet 1, 2, 3 in C
Trombone 1, 2
Bass Trombone
Tuba
Violin I, II
Viola
Cello
Double Bass

Timpani
PERCUSSION 1, 2, 3, 4
Bass Drum
Castanets
Chimes
Claves
Crash Cymbals
Crotales
Glockenspiel
Snare Drum
Suspended Cymbals
Tambourine
Tamtam
6" Triangle
3 Wood Blocks
Xylophone
Celesta / Piano

Performance time: 27 minutes

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ZODIAC

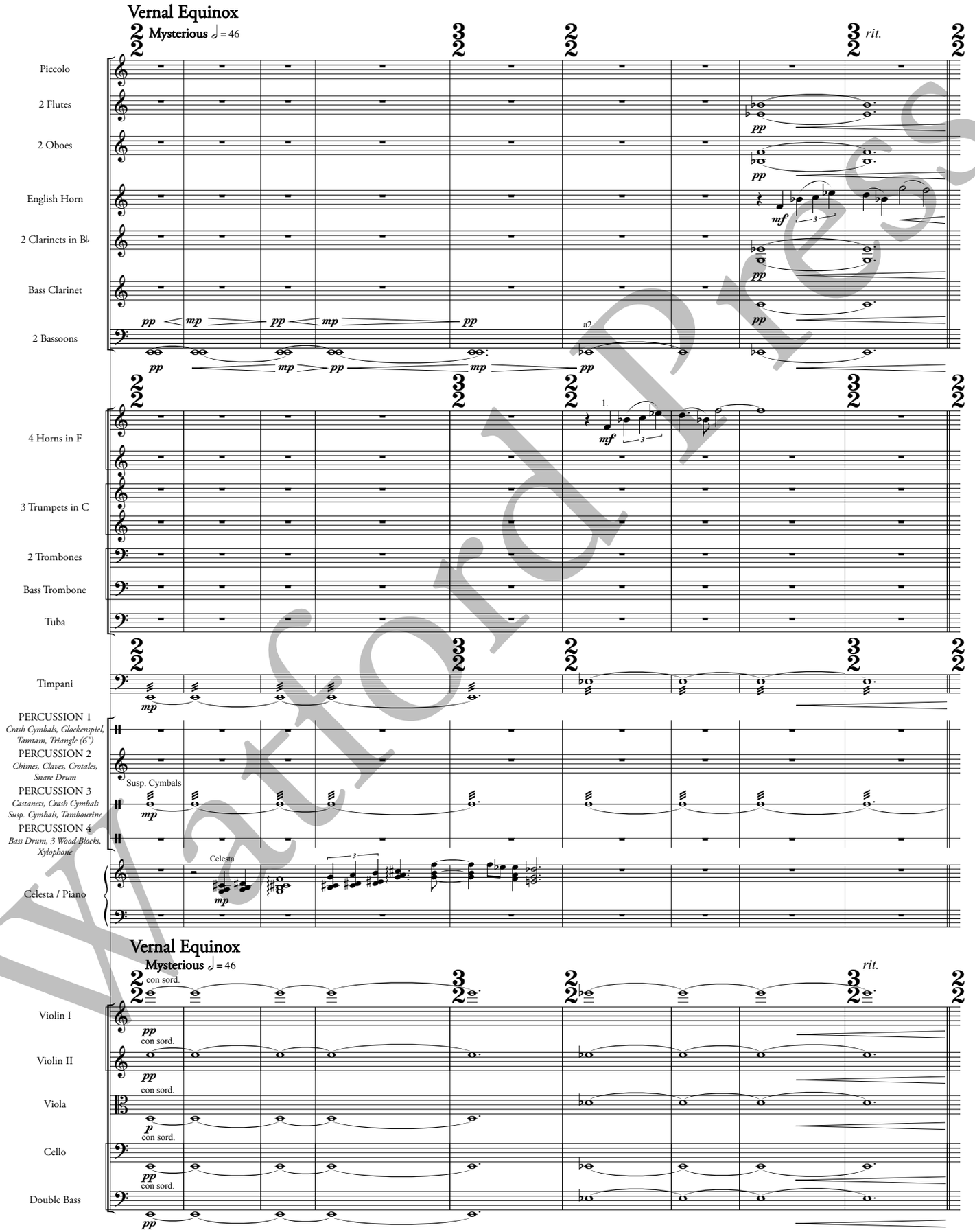
I. SPRING

Equinox, Aries, Taurus, Gemini

Transposed Score

MWV 3

Zachary M. Watkins, 2016



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I. SPRING

A Aries, the Ram

10 **Bright** ♩ = 72

Picc.
Fl. 1 2
Ob. 1 2
E. Hn.
B♭ Cl. 1 2
B. Cl.
Bsn. 1 2
Hrn. 1 2 3 4
C Tpt. 1 2 3
Tbn. 1 2
B. Tbn.
Tuba
Timp.
Trgl.
Chm.
S. Cym.
B. Dr.
Cel.

mf *mp* Triangle damp. 3

A Aries, the Ram

Bright ♩ = 72

Vln. I
Vln. II
Vla.
Vc.
D.B.

senza sord. pizz. *mf* *mp*

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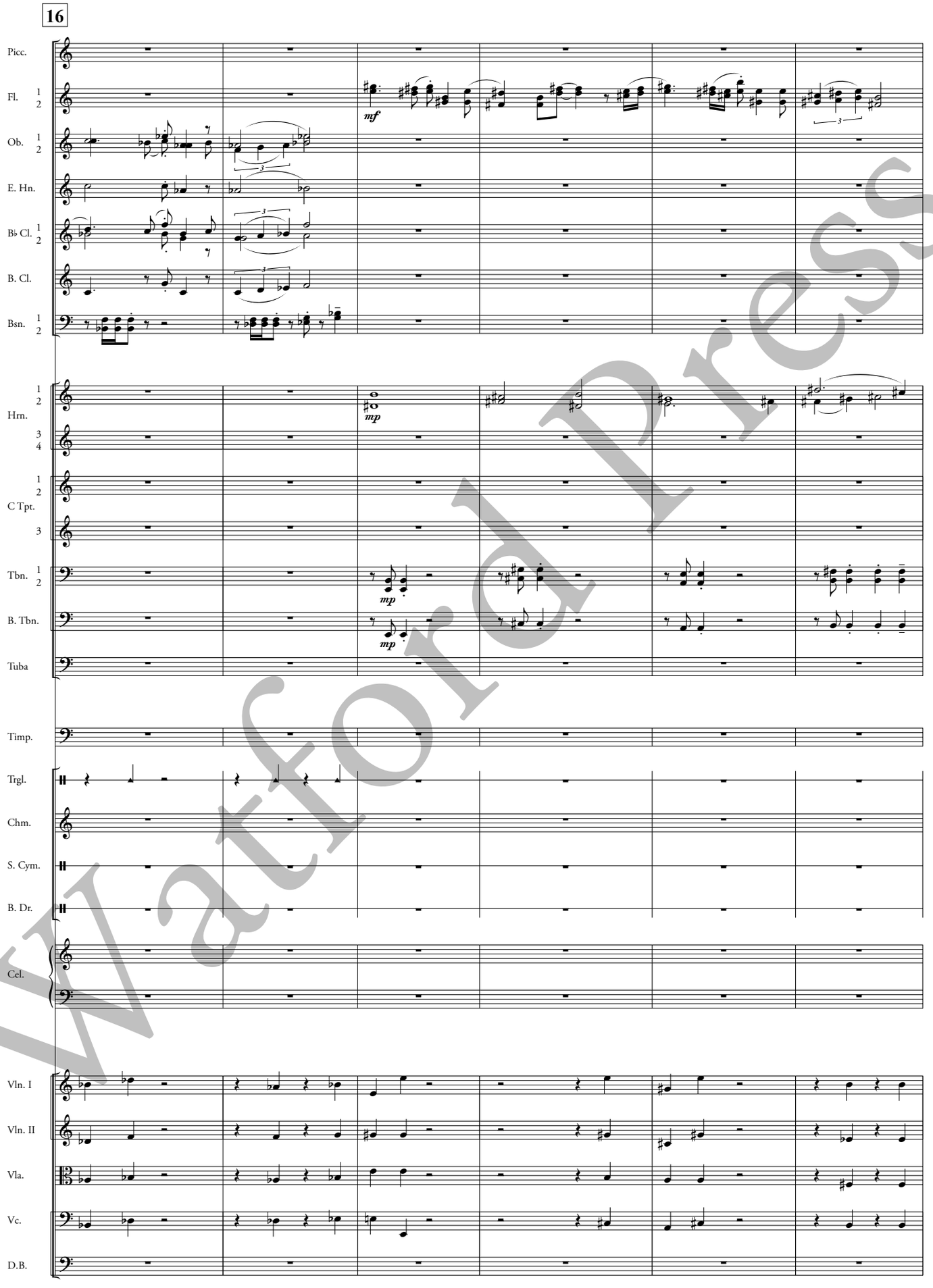

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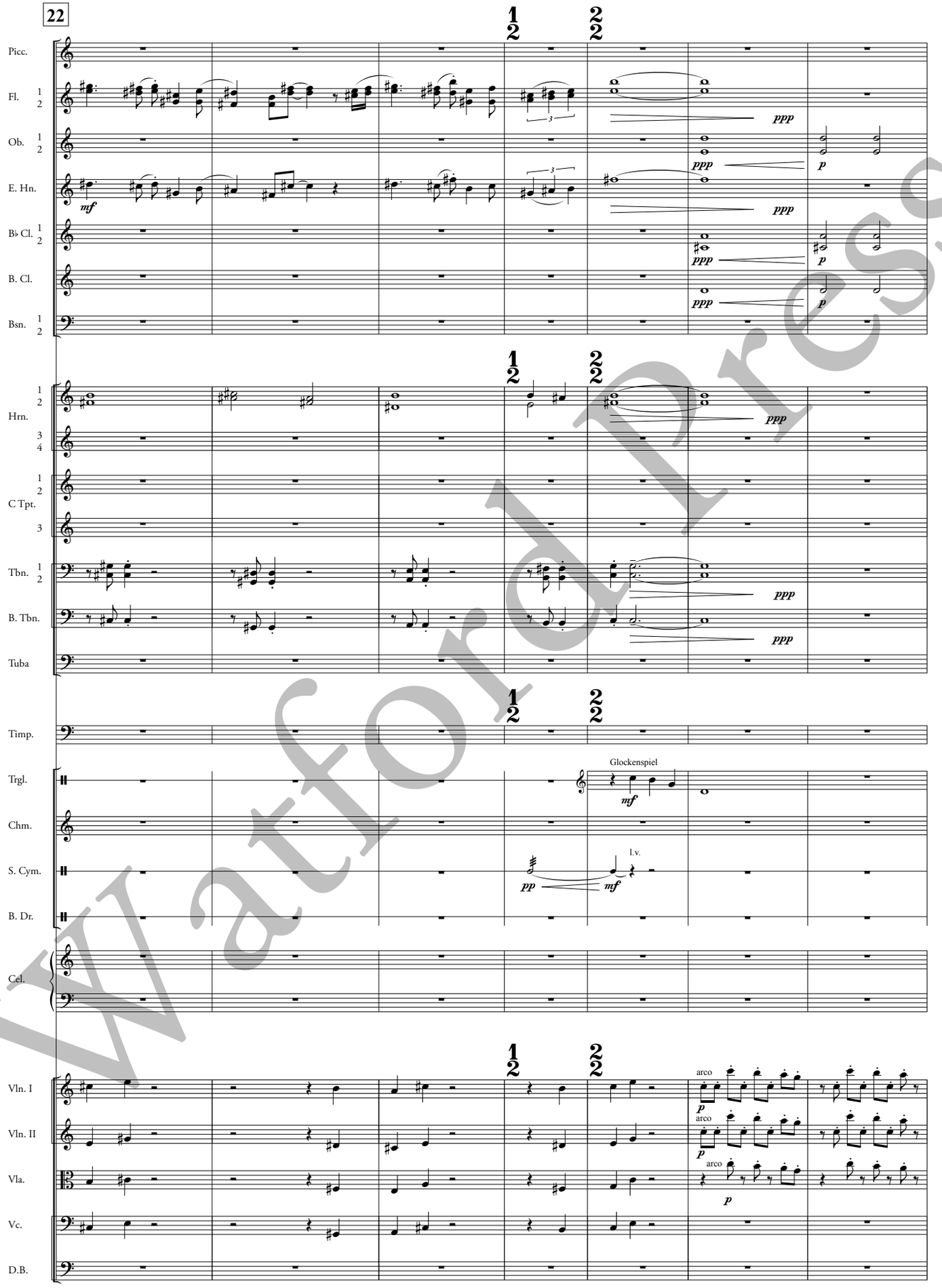

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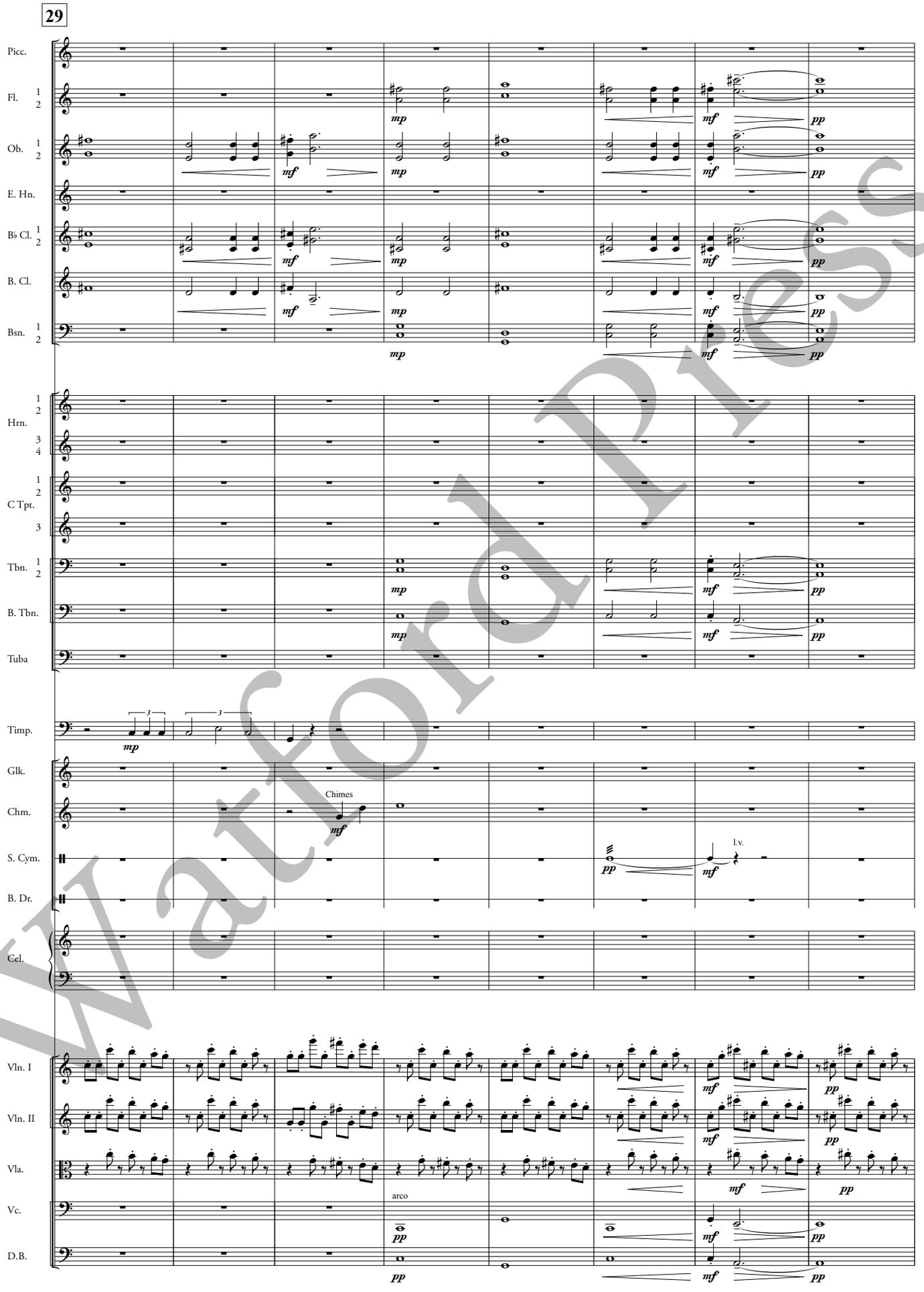

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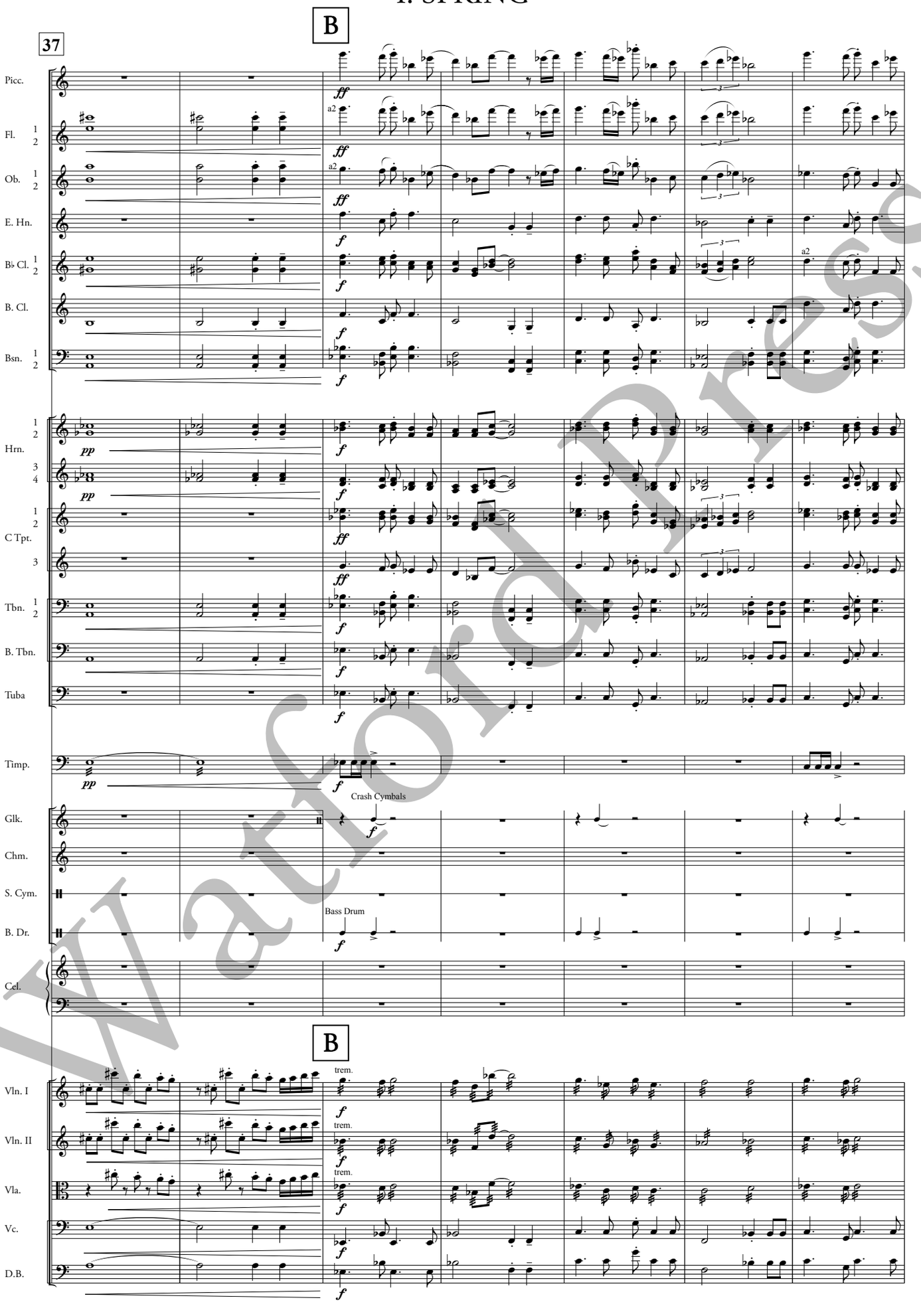

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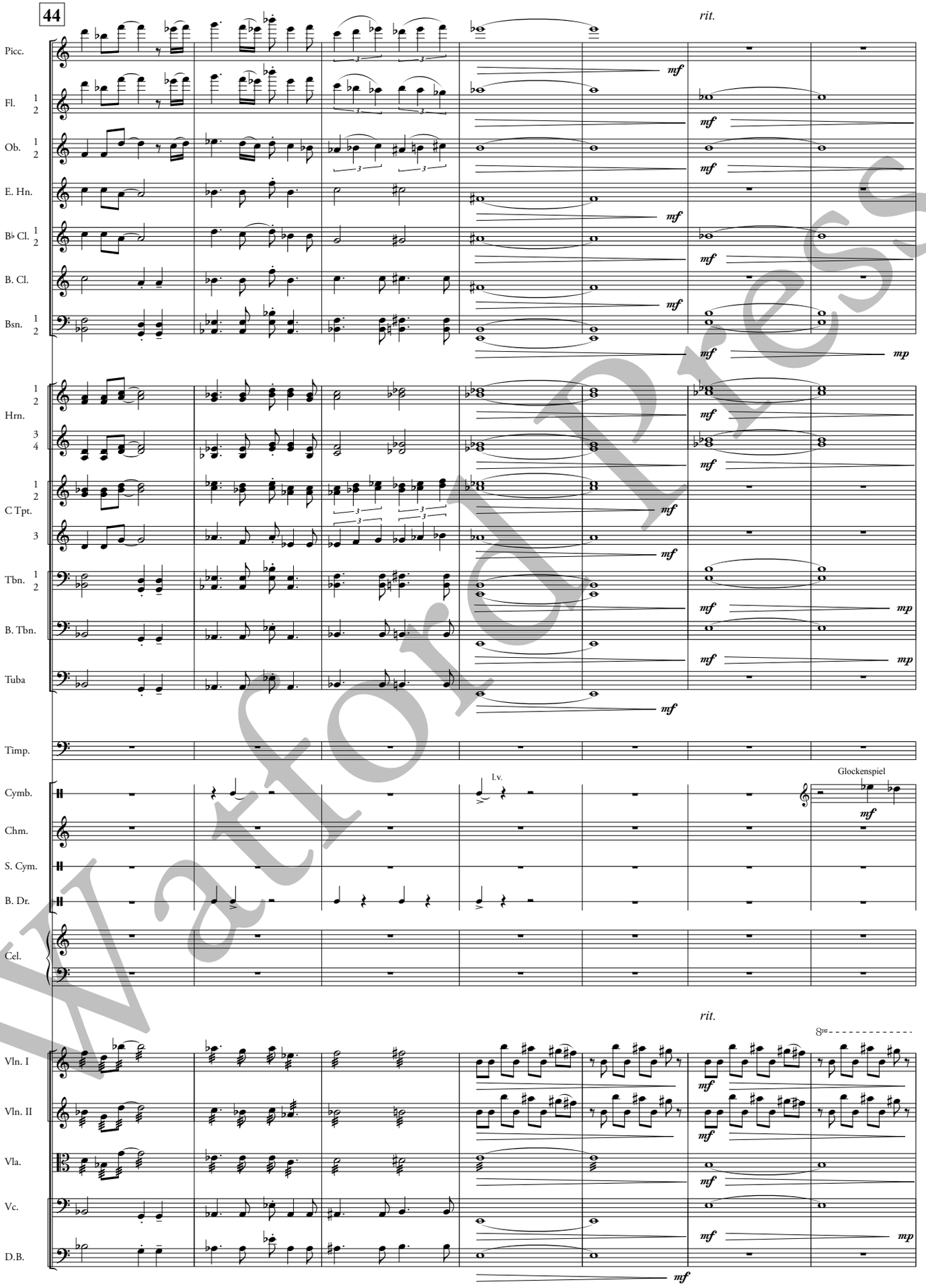

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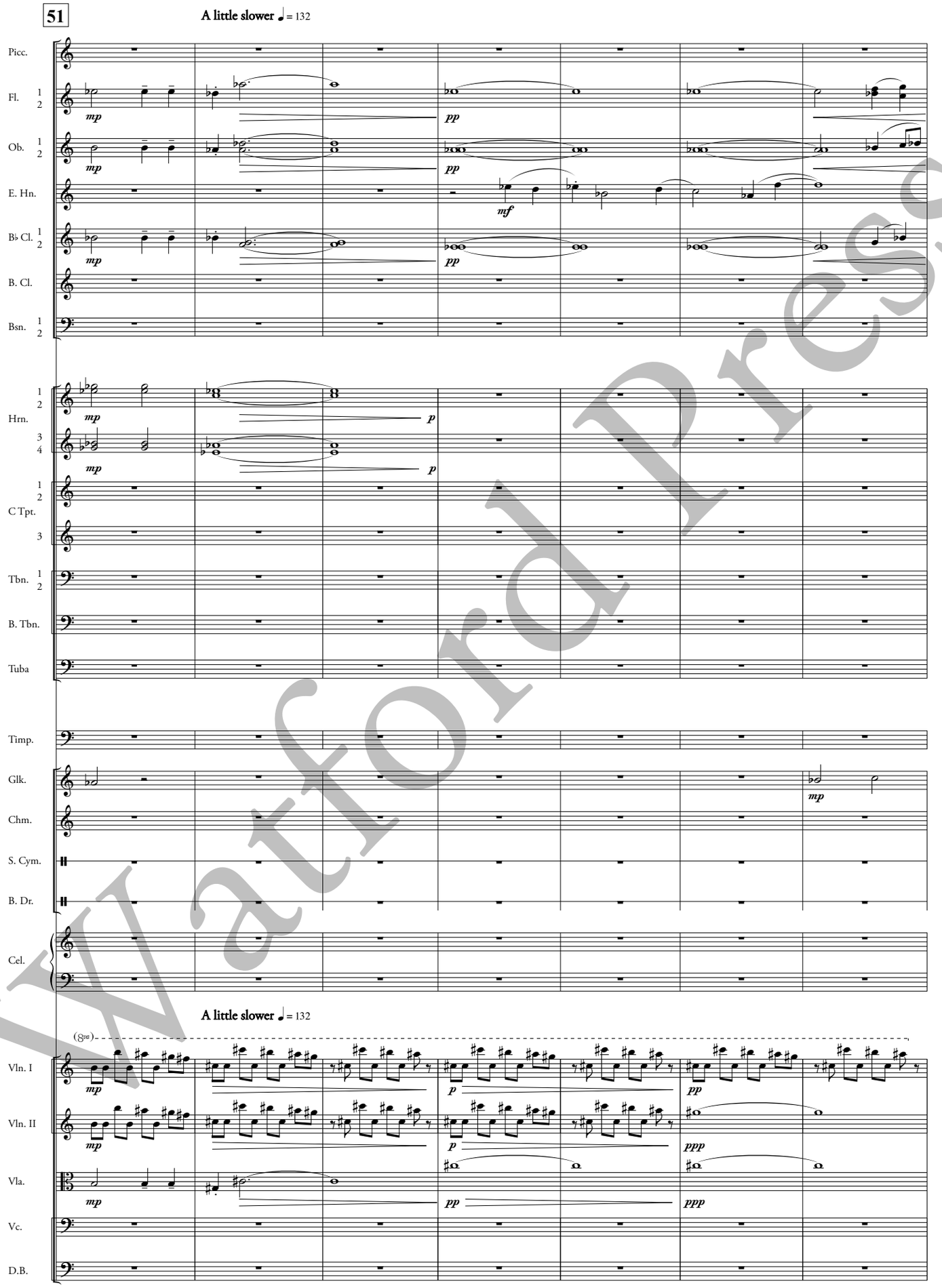

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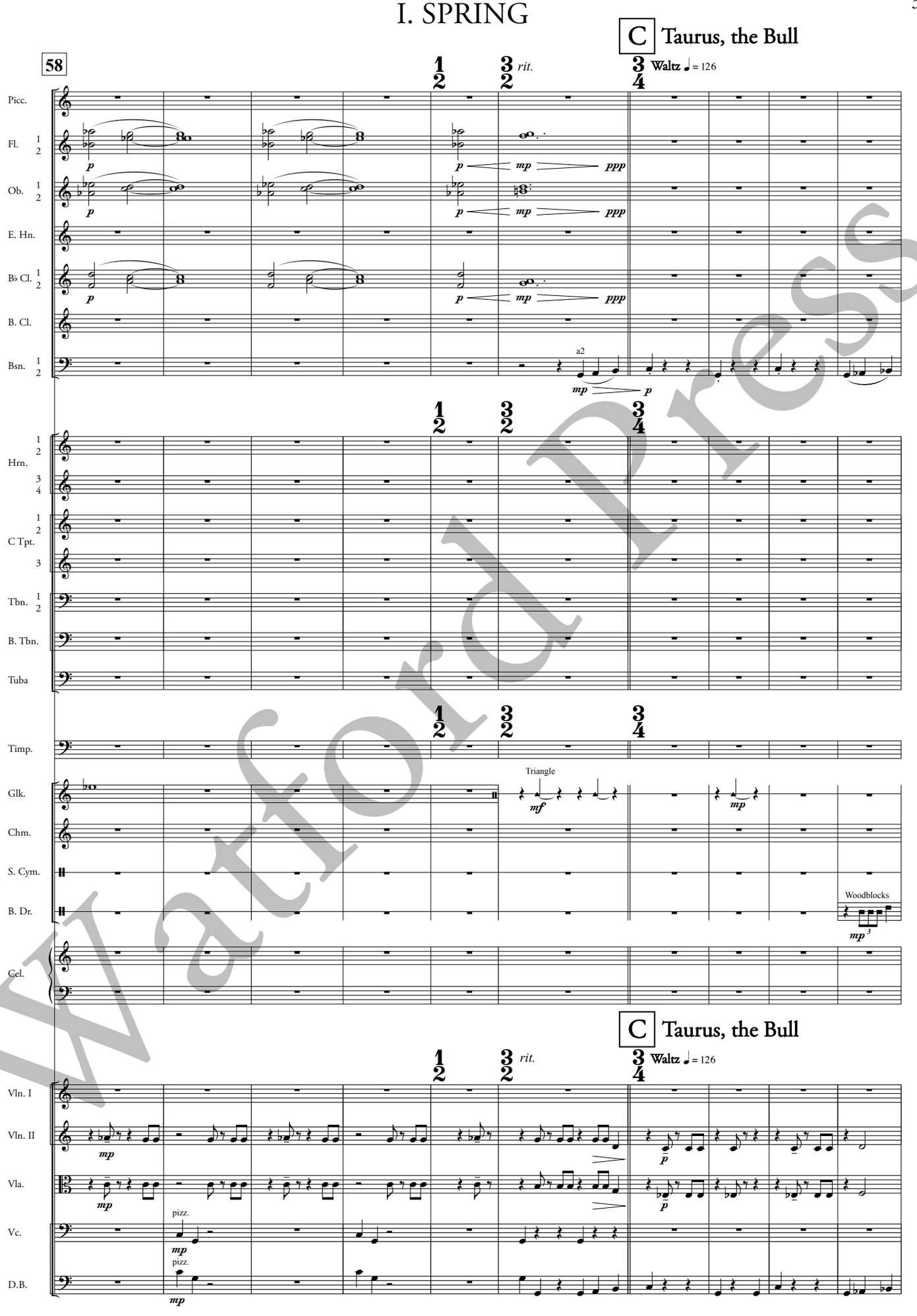

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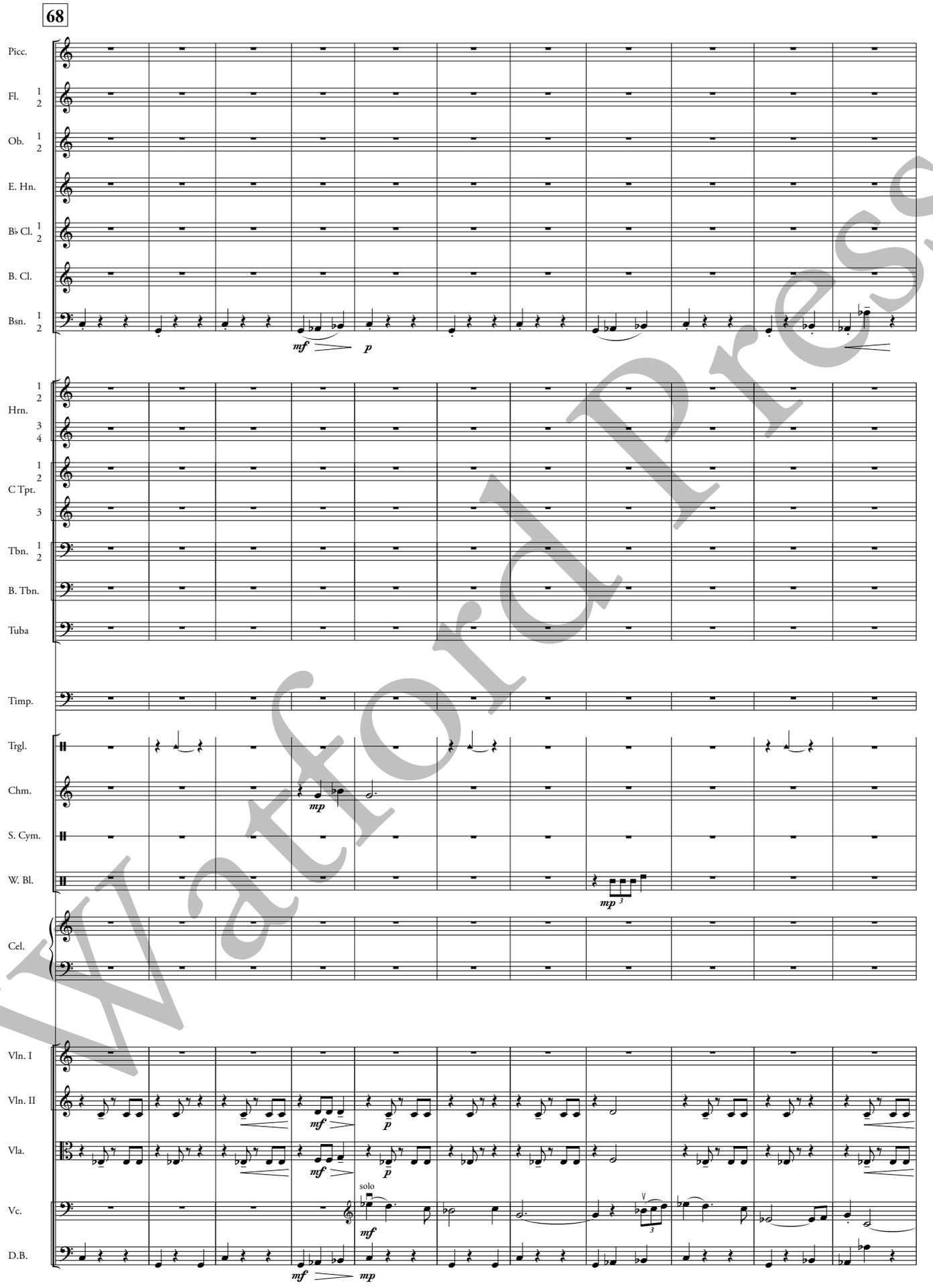

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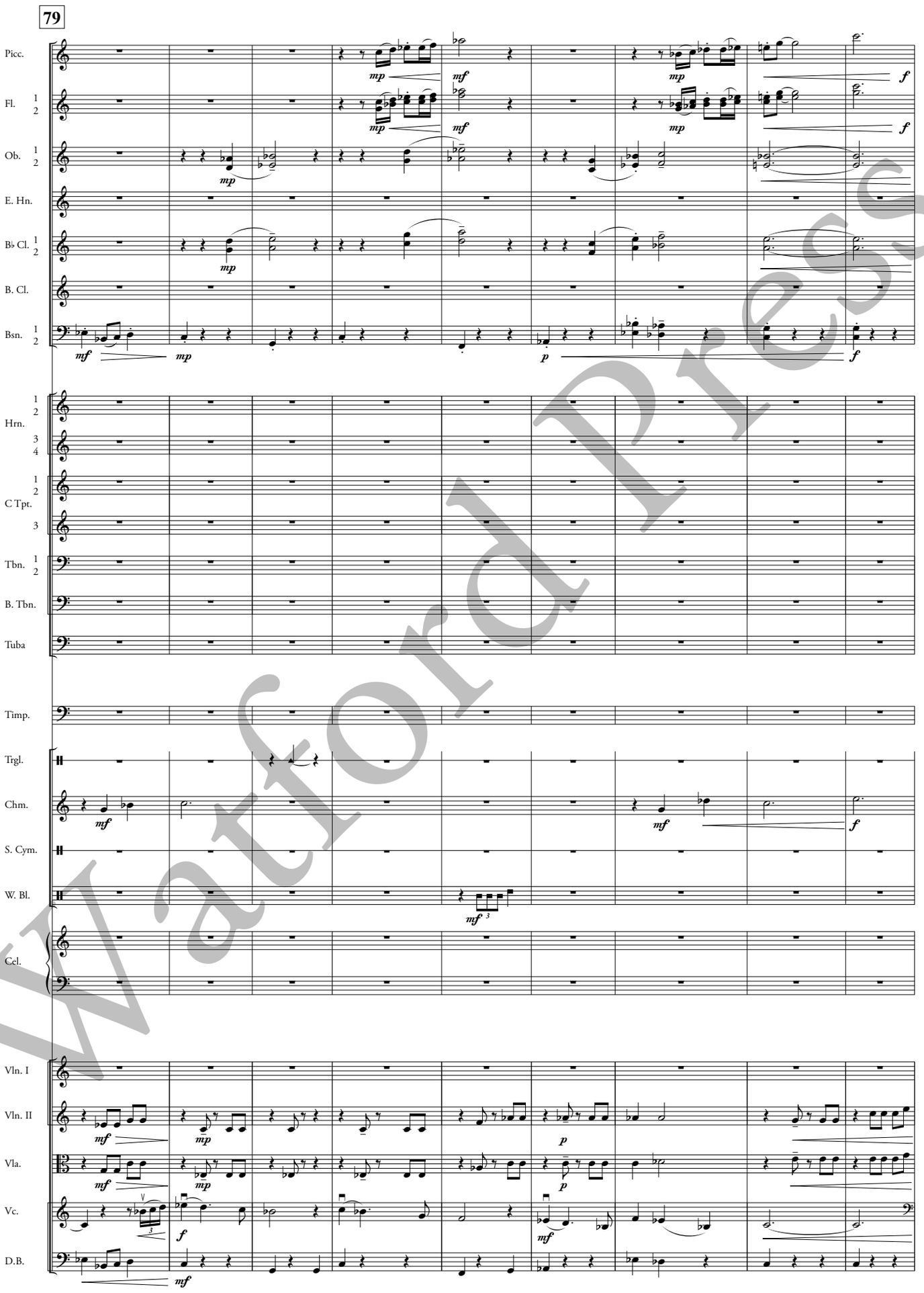

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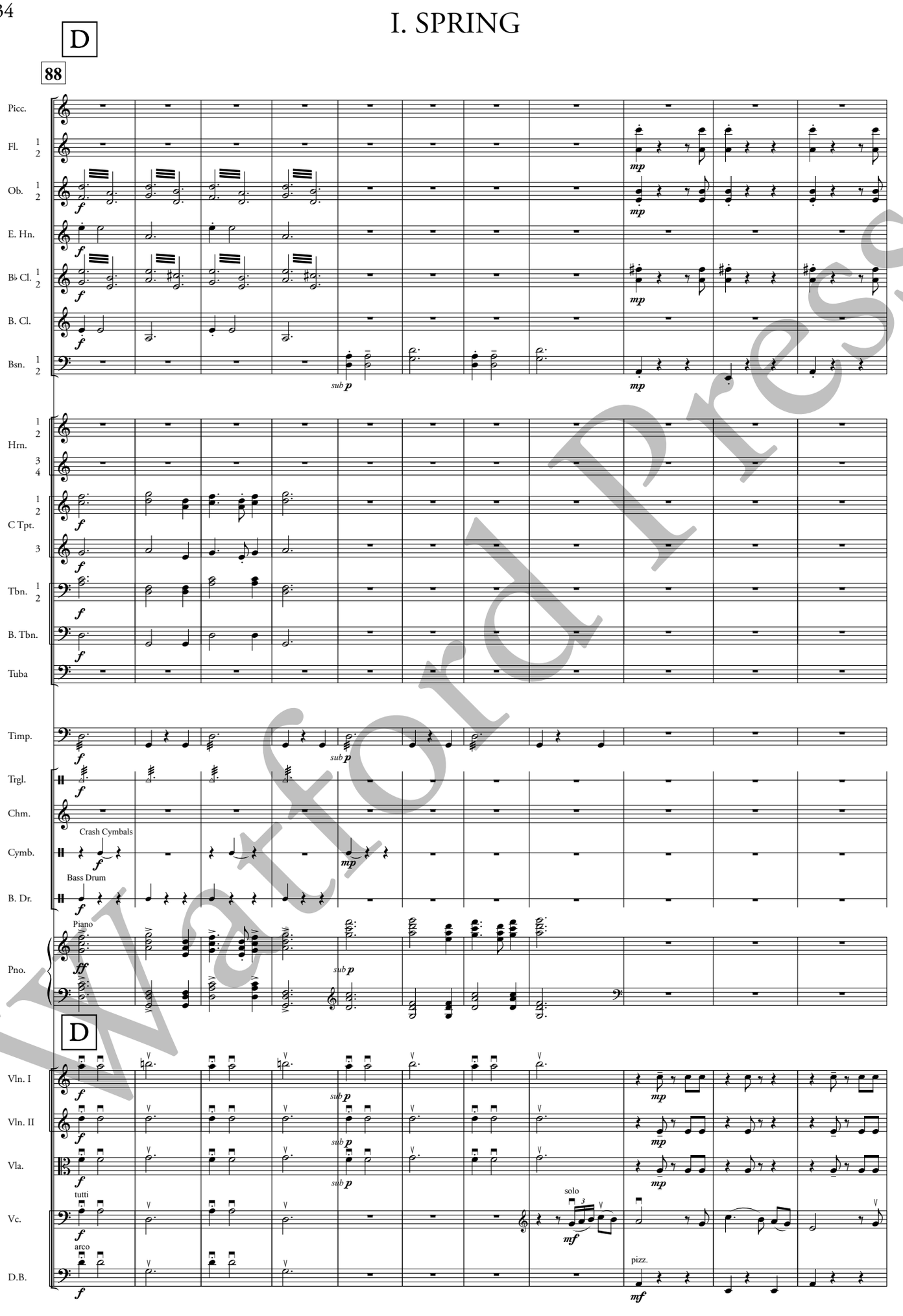

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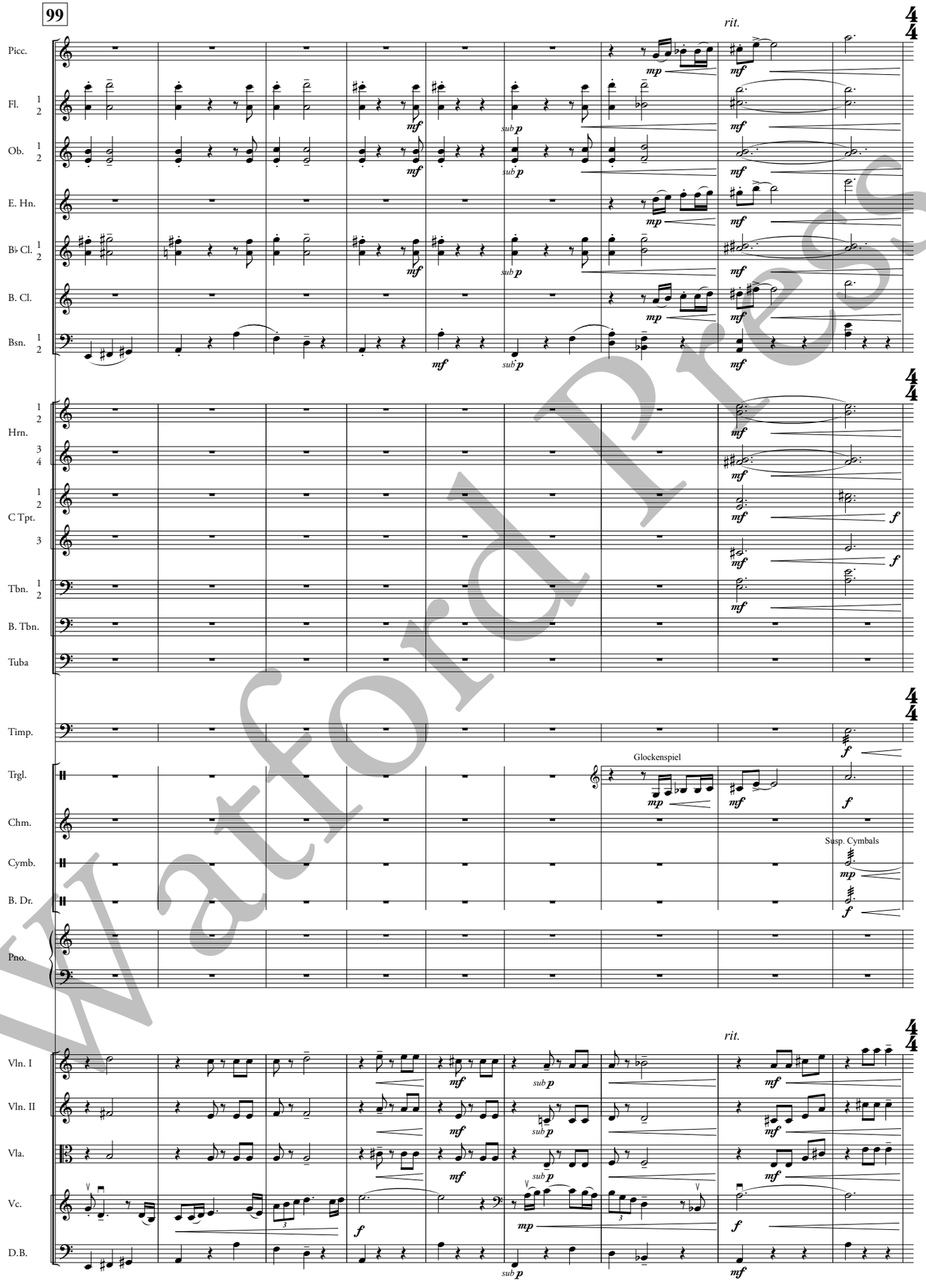
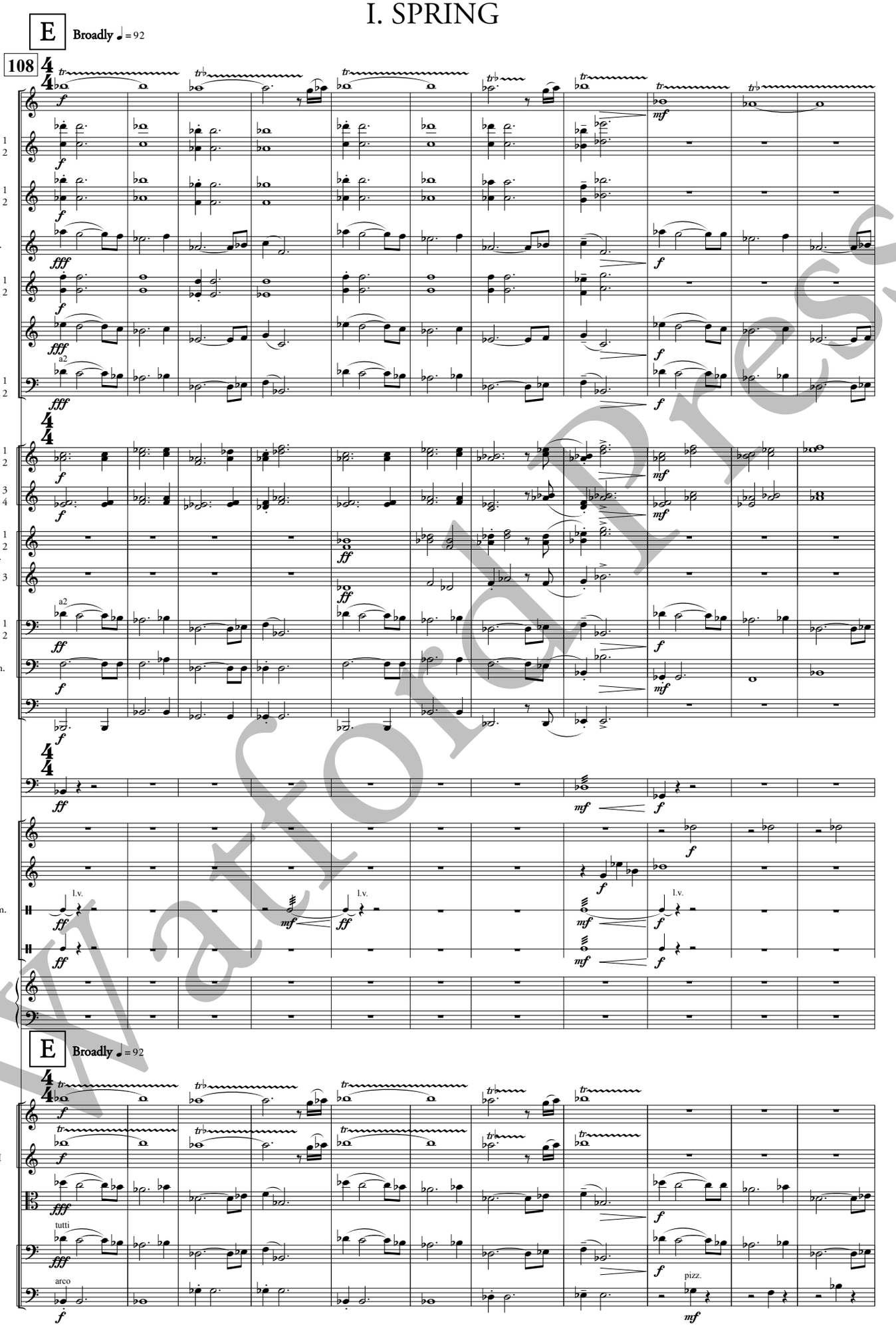


Watford Press

I. SPRING



Watford Press

I. SPRING

F Gemini, the Twins

119

Lively ♩ = 168

Picc.
Fl. 1 2
Ob. 1 2
E. Hn.
B♭ Cl. 1 2
B. Cl.
Bsn. 1 2
Hrn. 1 2 3 4
C Tpt. 1 2 3
Tbn. 1 2
B. Tbn.
Tuba
Timp.
Glk.
Chm.
S. Cym.
B. Dr.
Pno.

mp *mf* *ff* Triangle secco

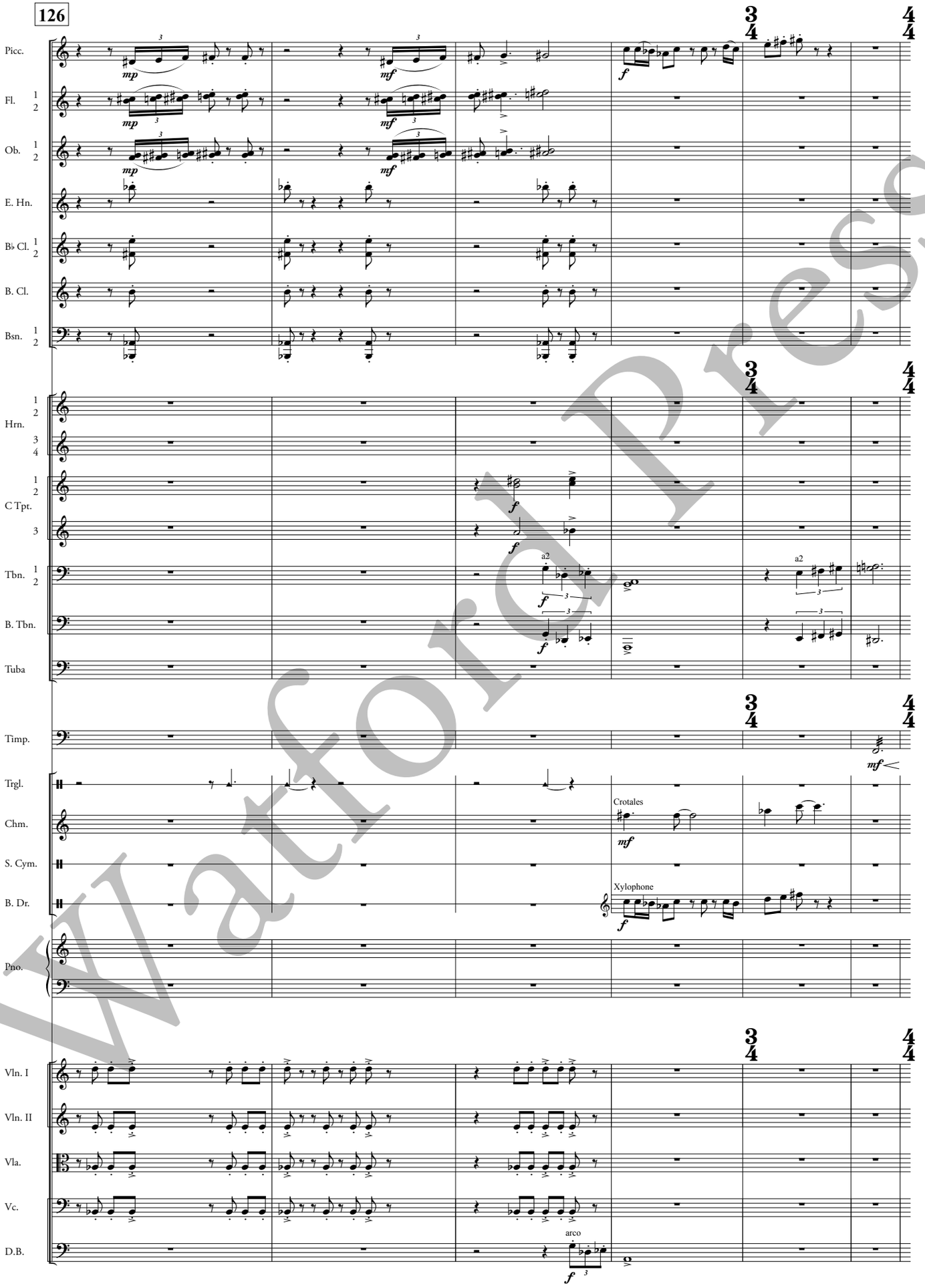
F Gemini, the Twins

Lively ♩ = 168

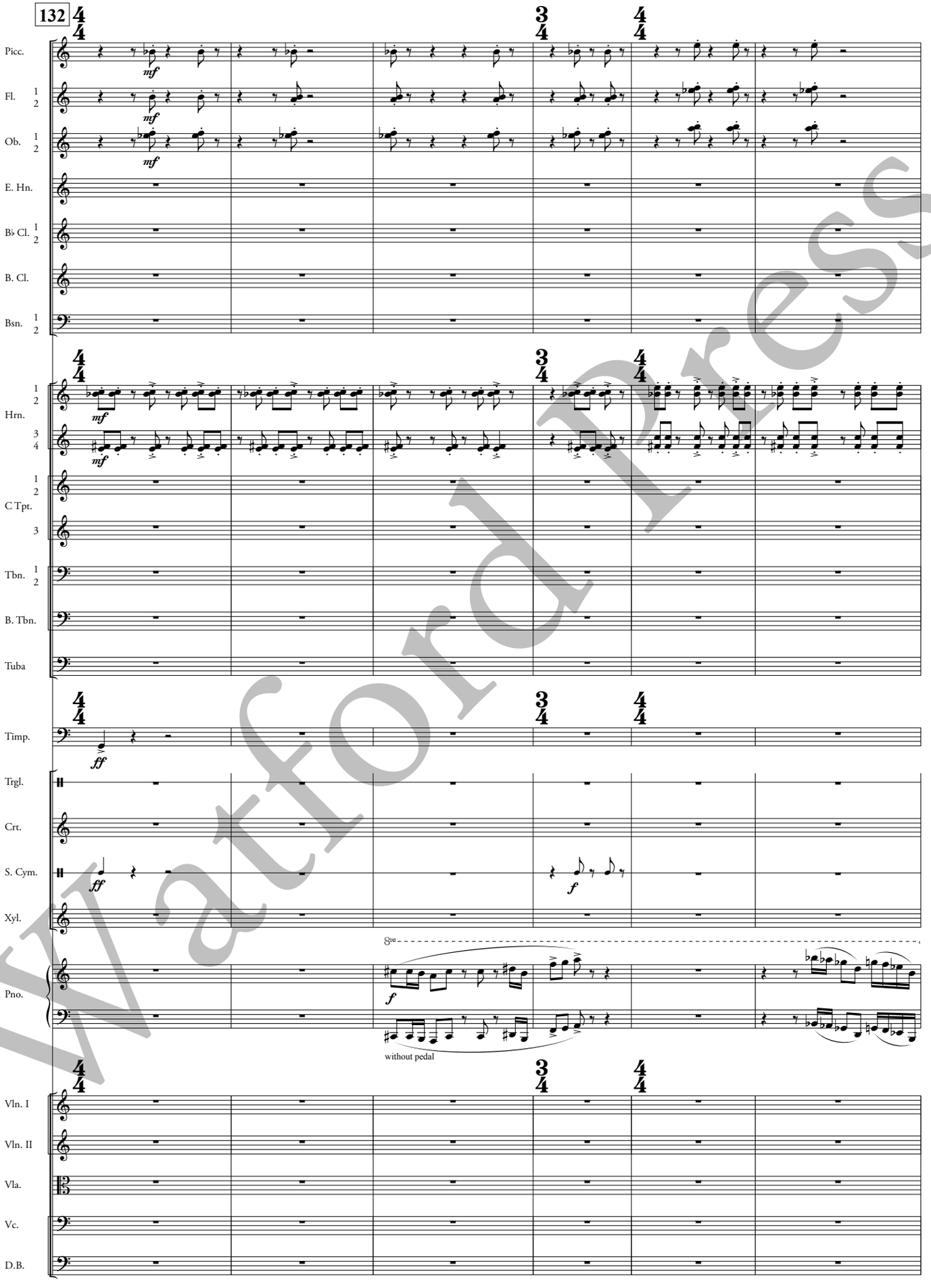
Vln. I
Vln. II
Vla.
Vc.
D.B.

Watford Press

I. SPRING



Watford Press



Watford Press

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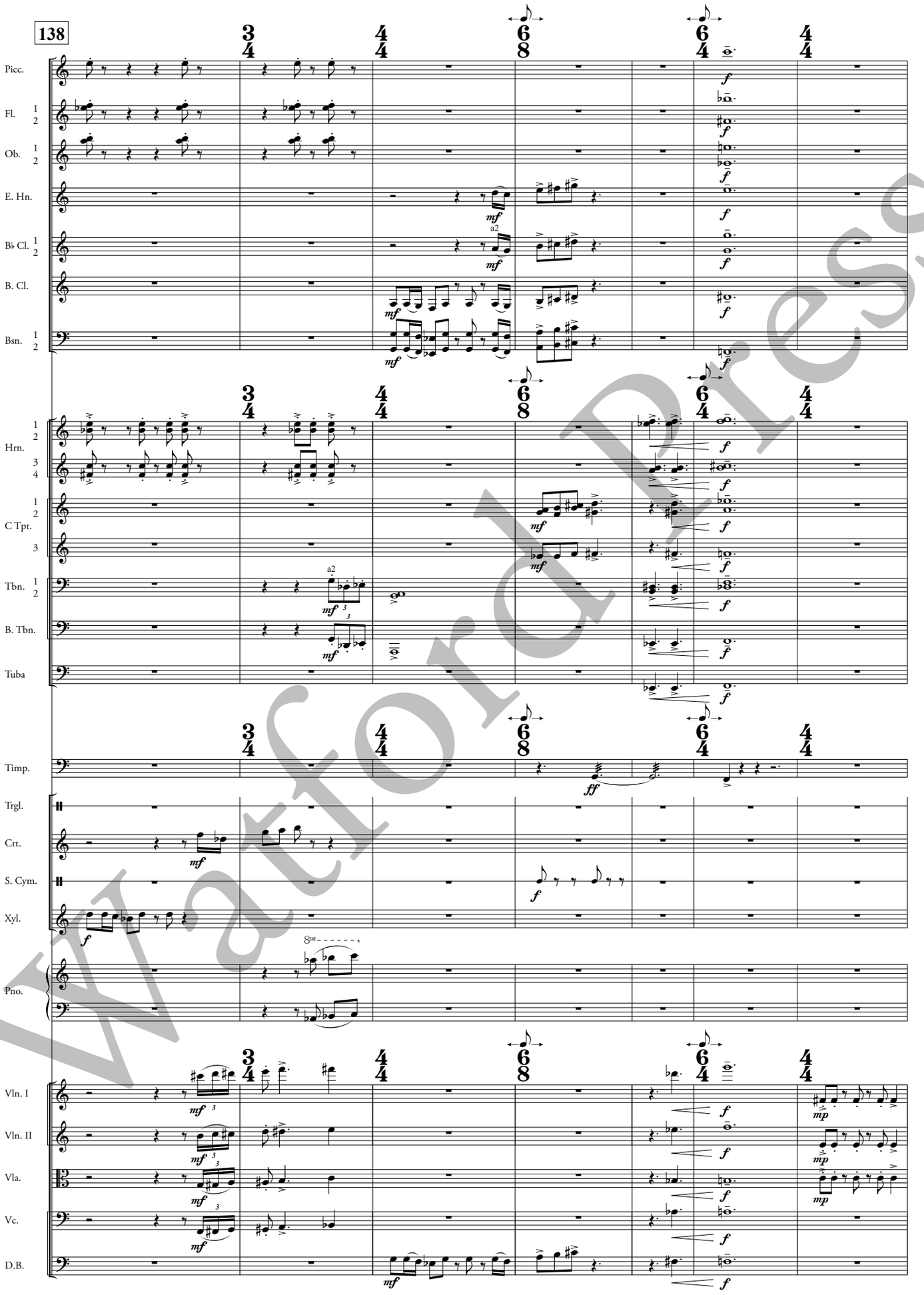

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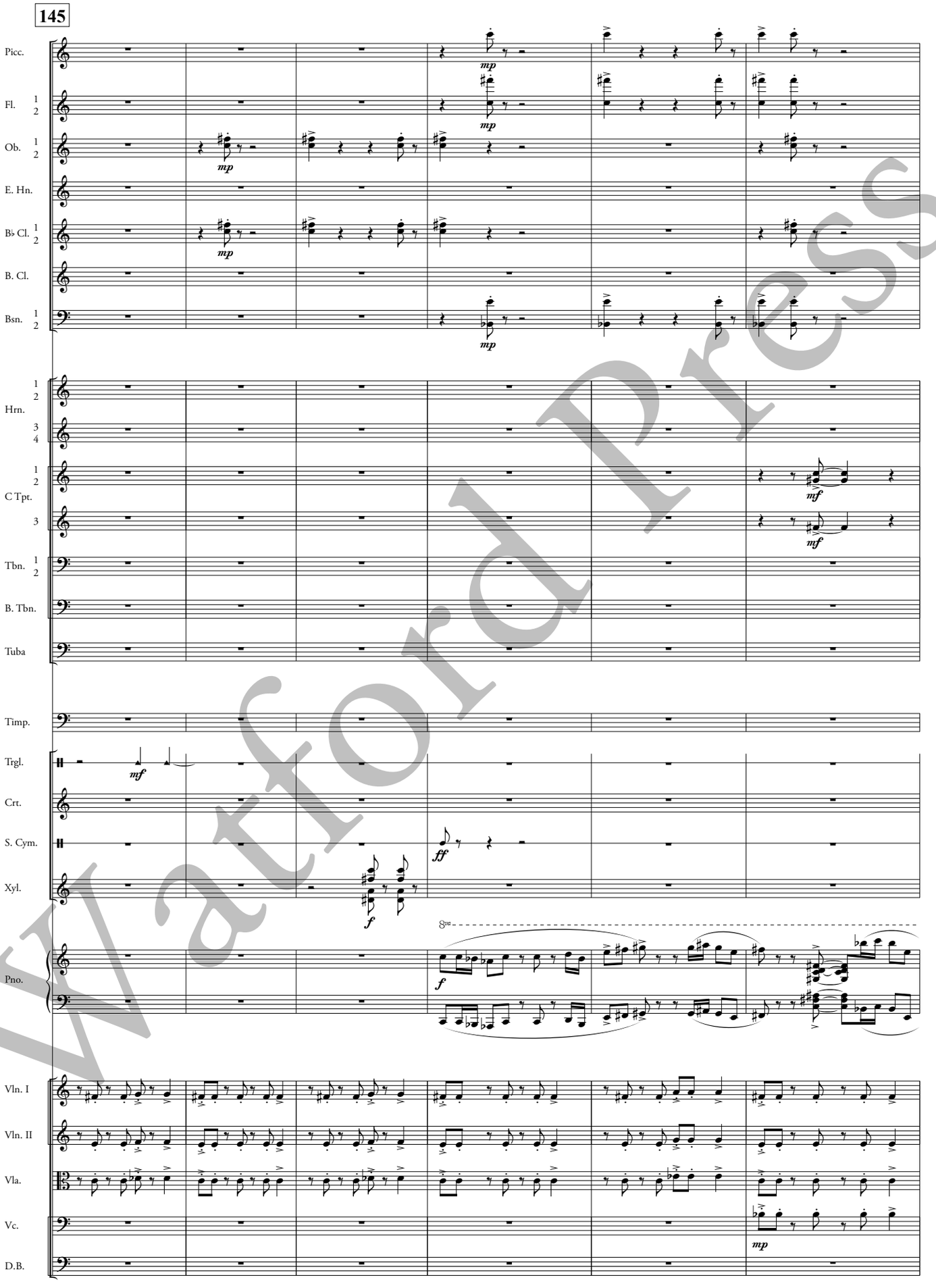

Watford Press

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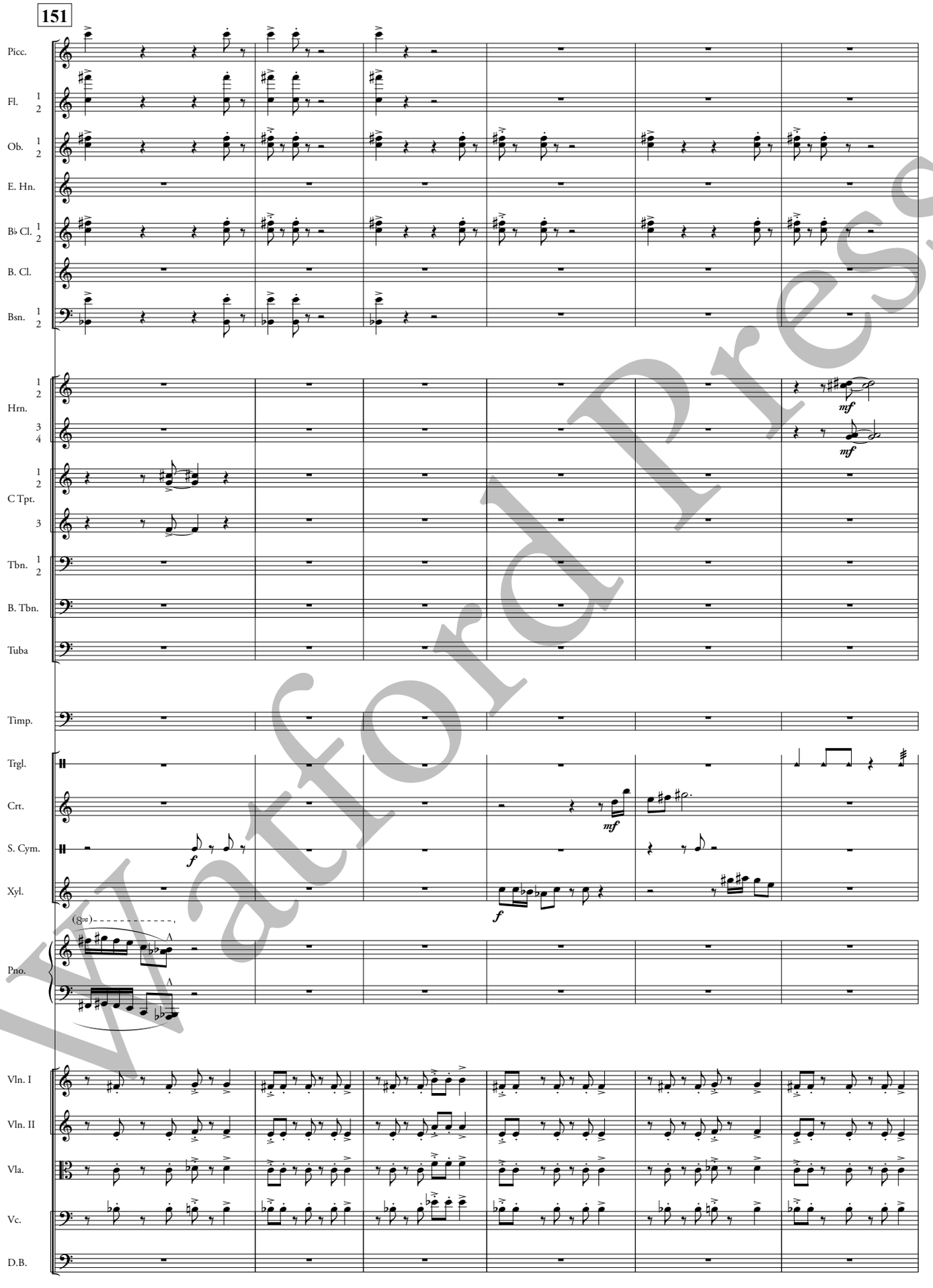

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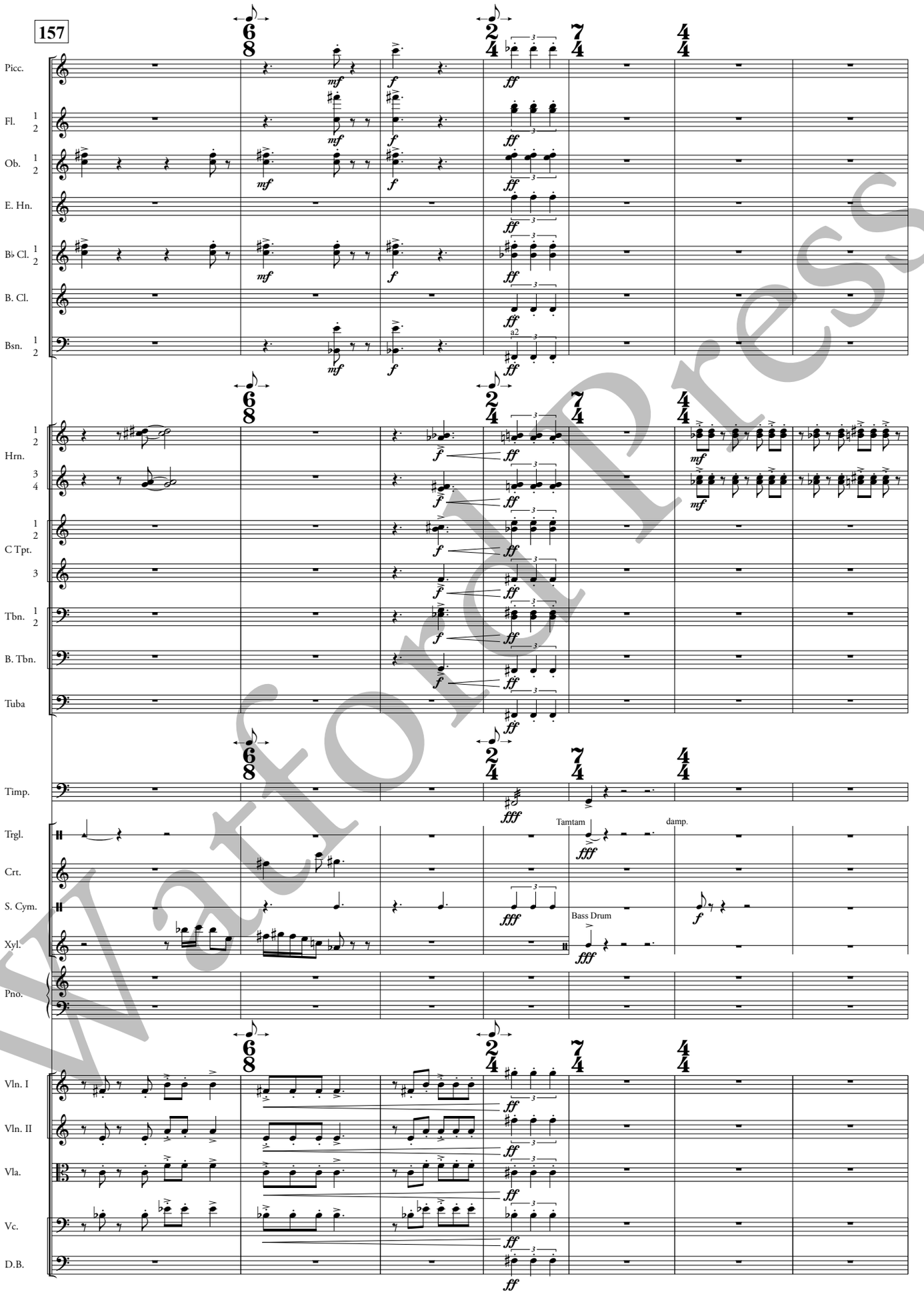

Watford Press

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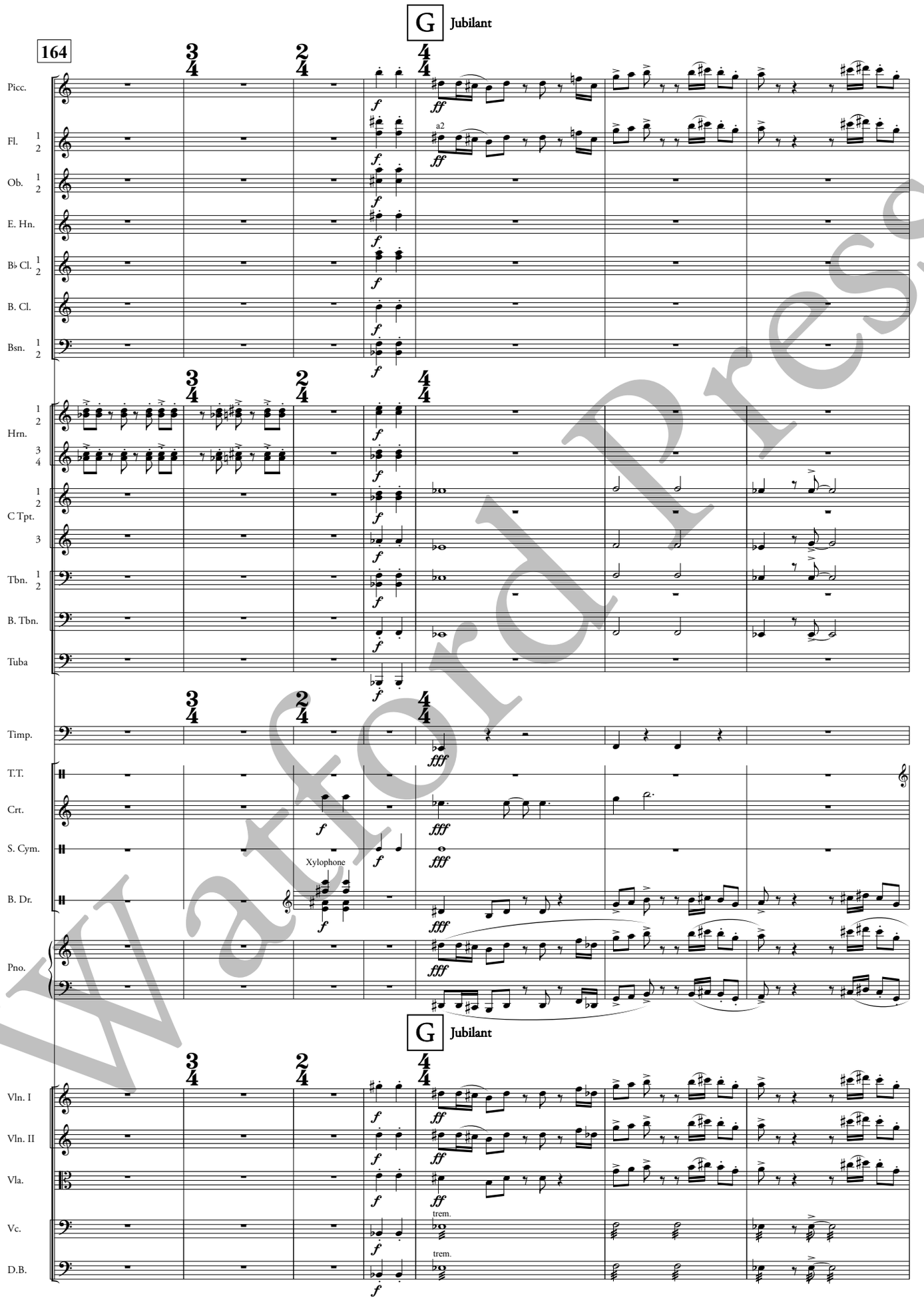

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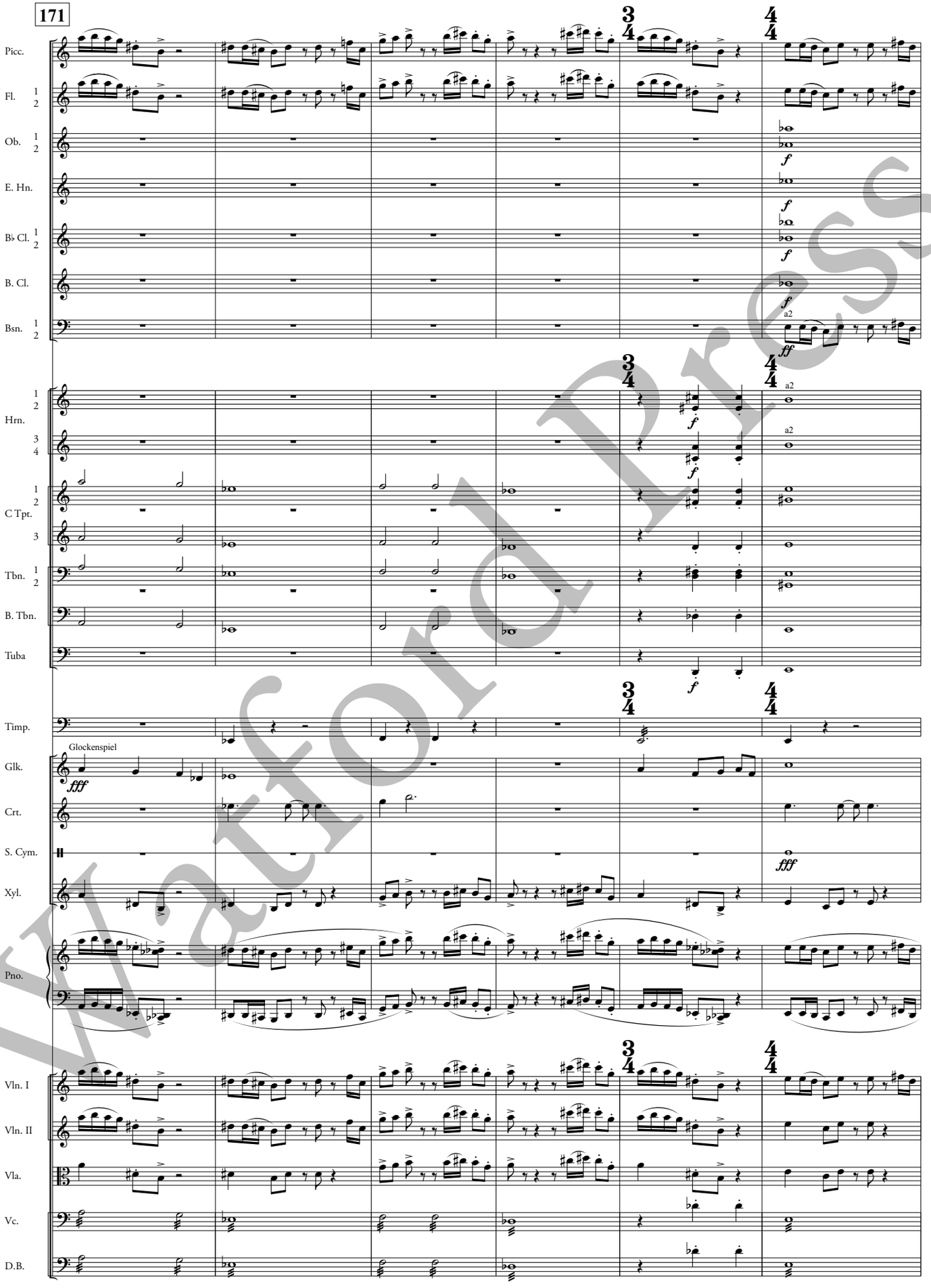

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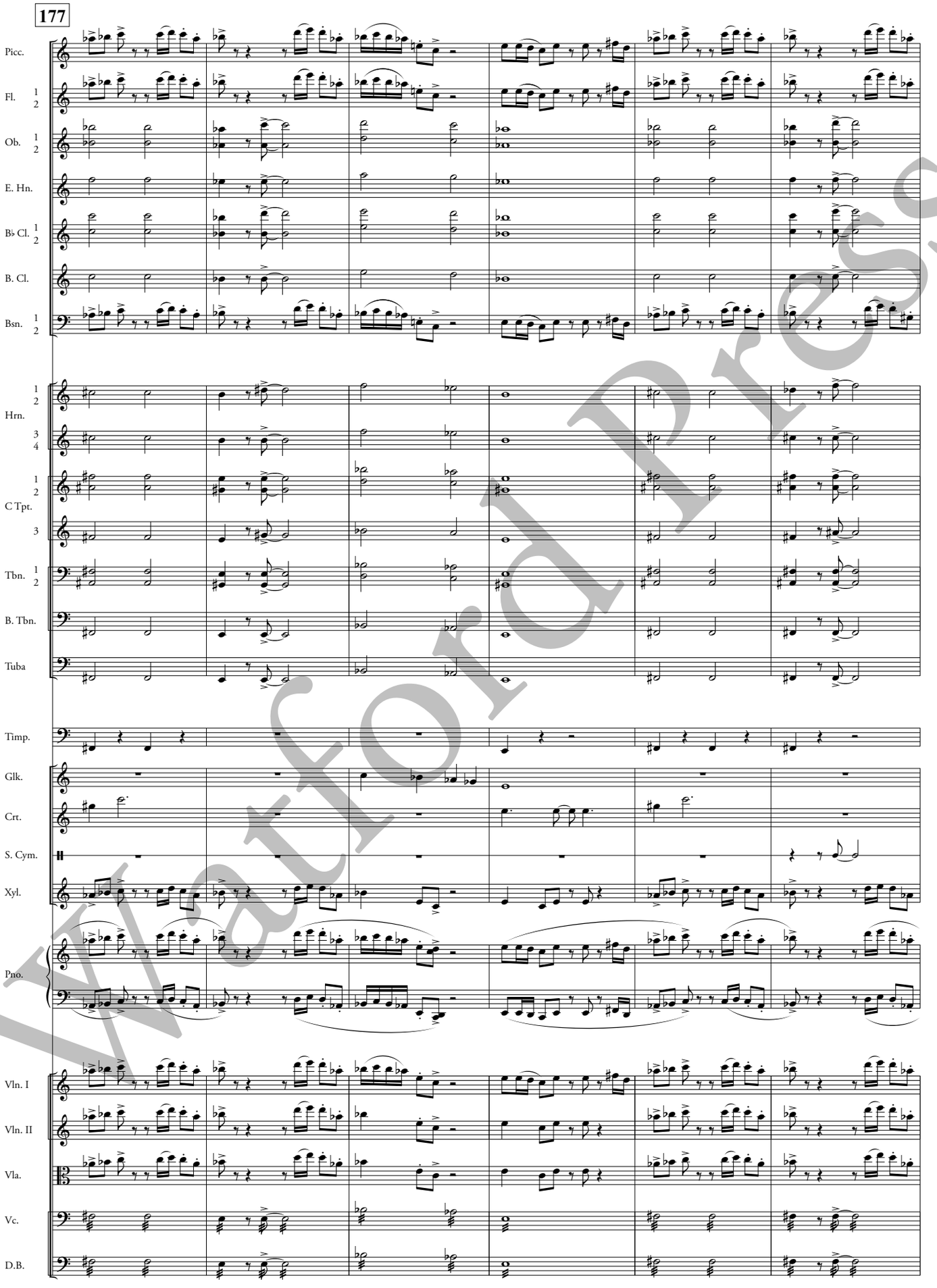

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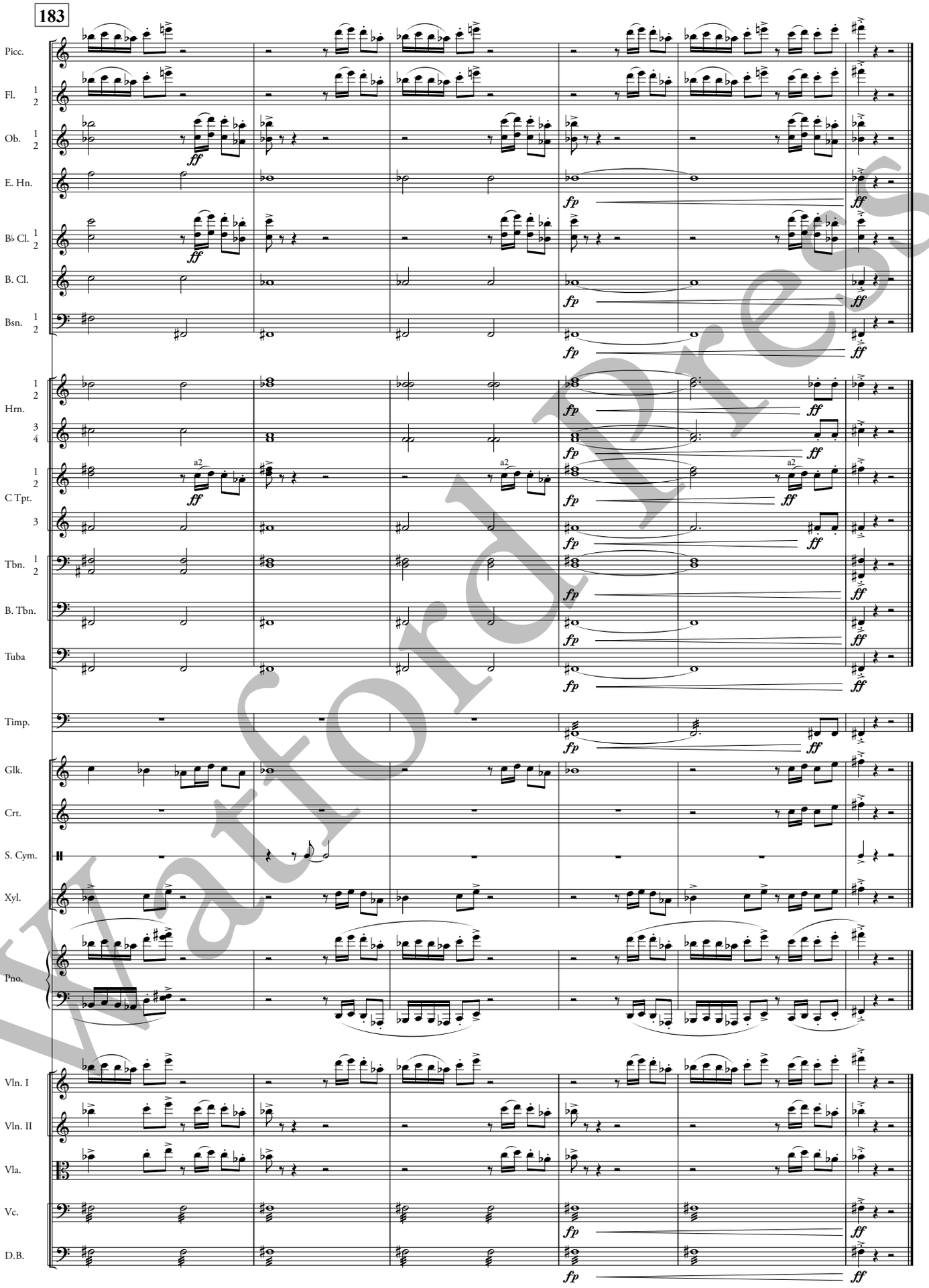
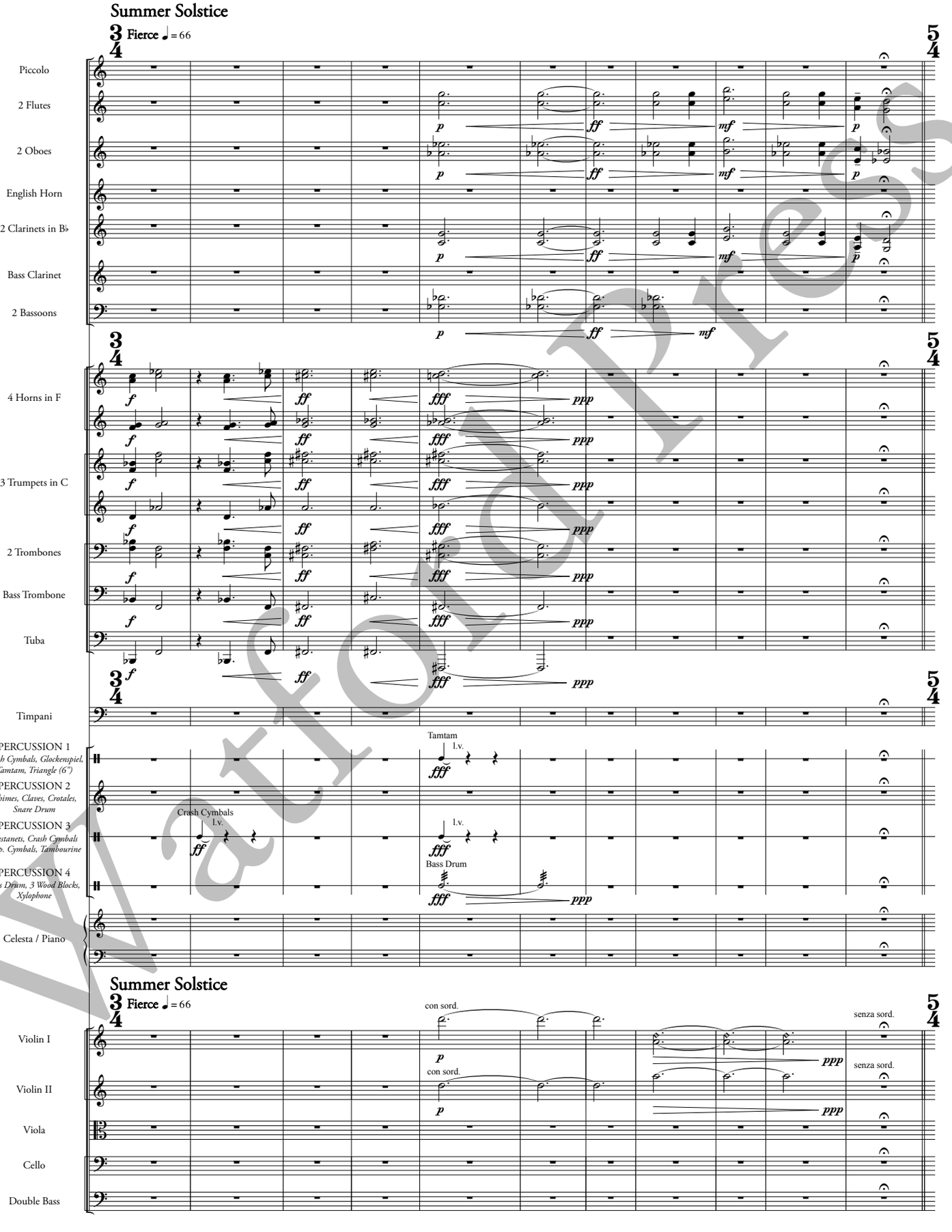


Watford Press

Watford Press

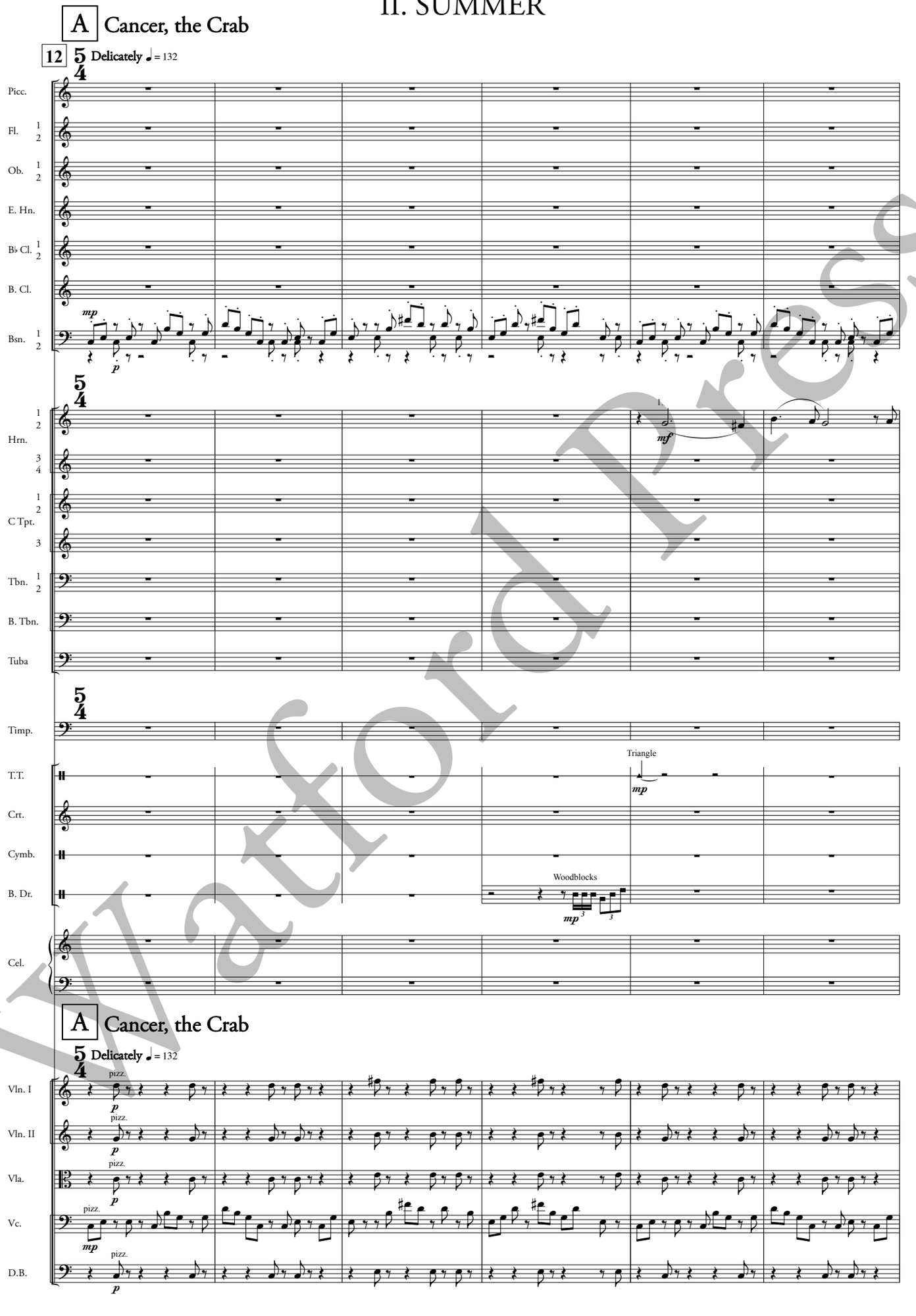
II. SUMMER

Solstice, Cancer, Leo, Virgo



Watford Press

II. SUMMER



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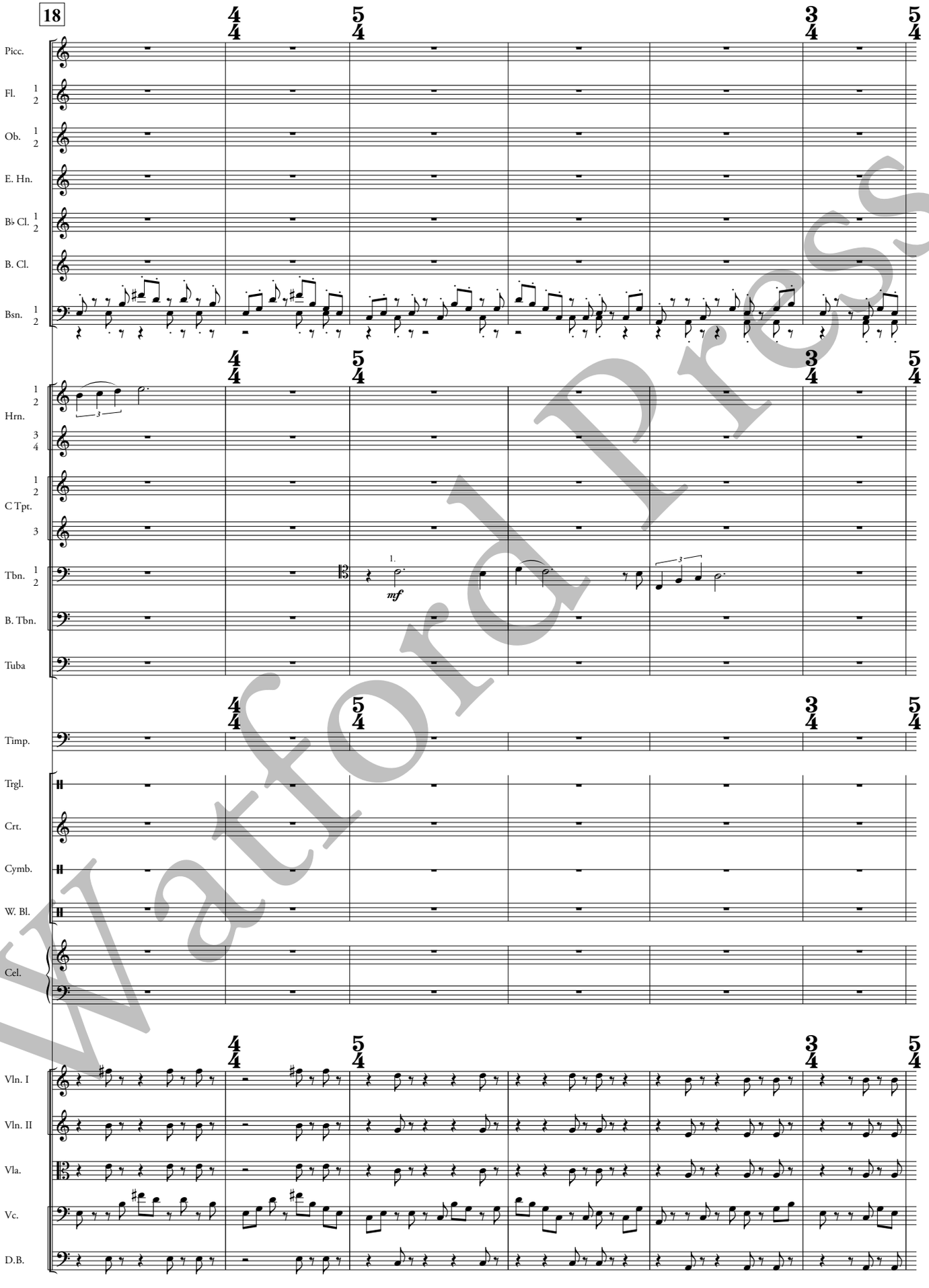

Watford Press

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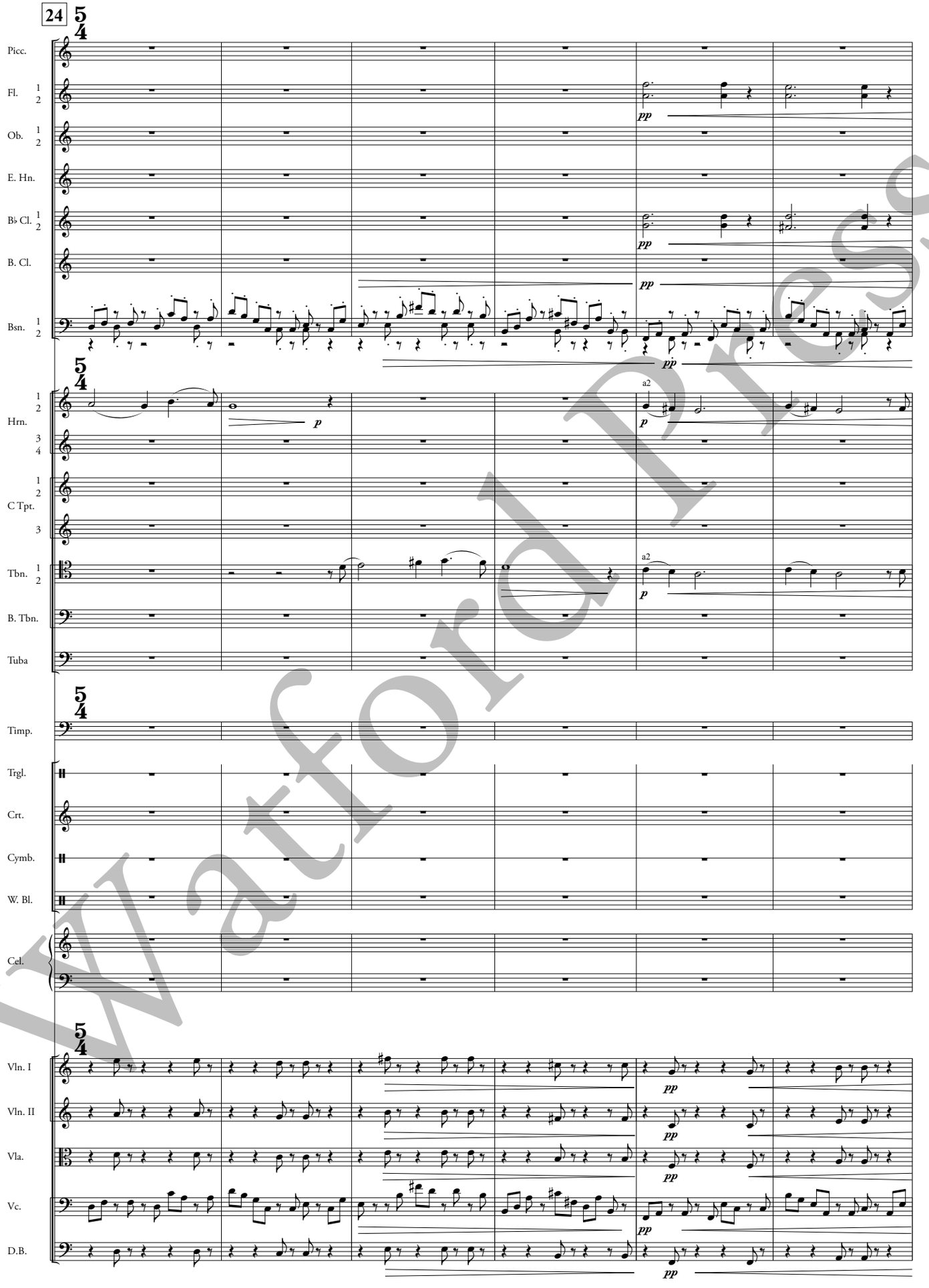

Watford Press

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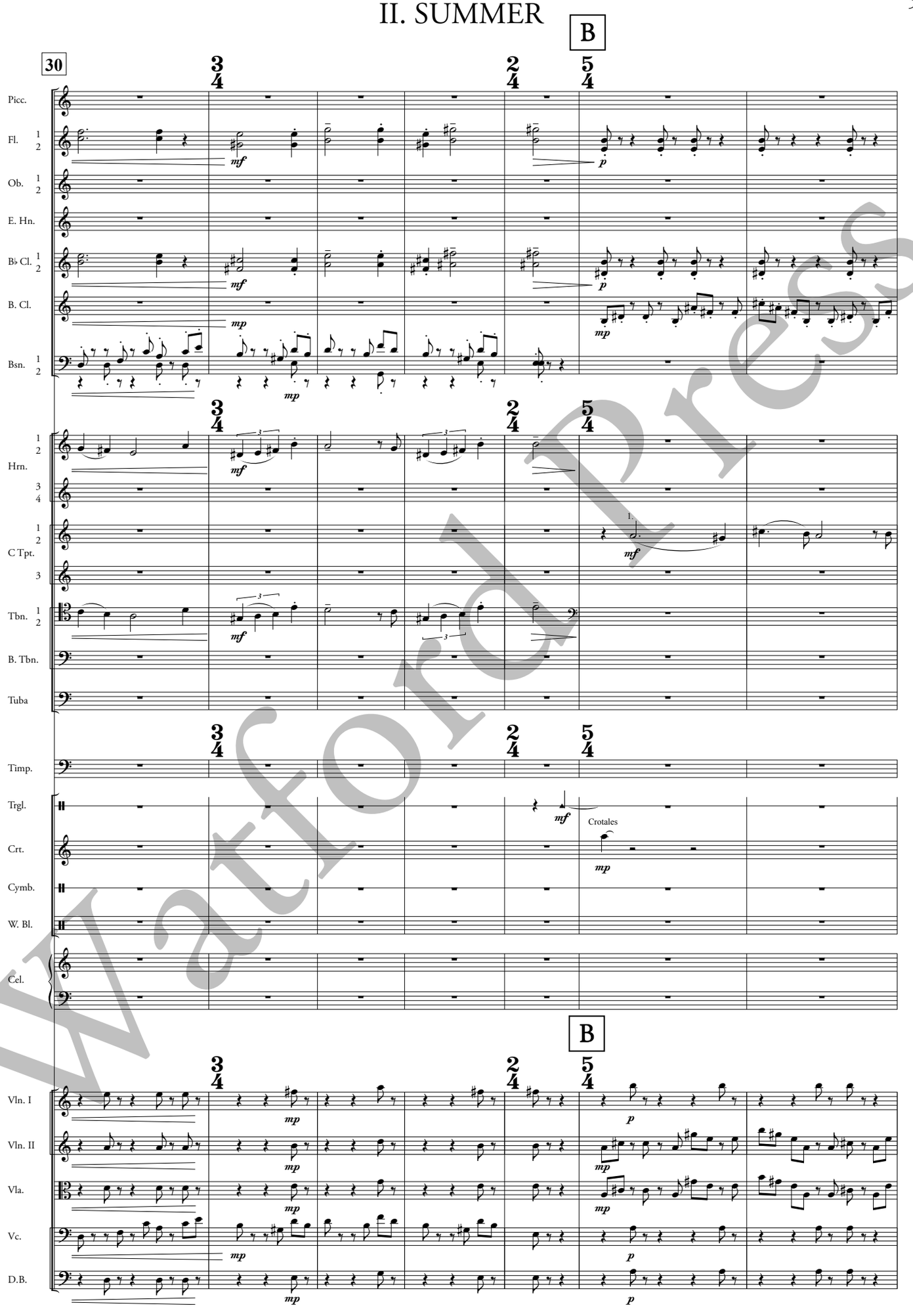

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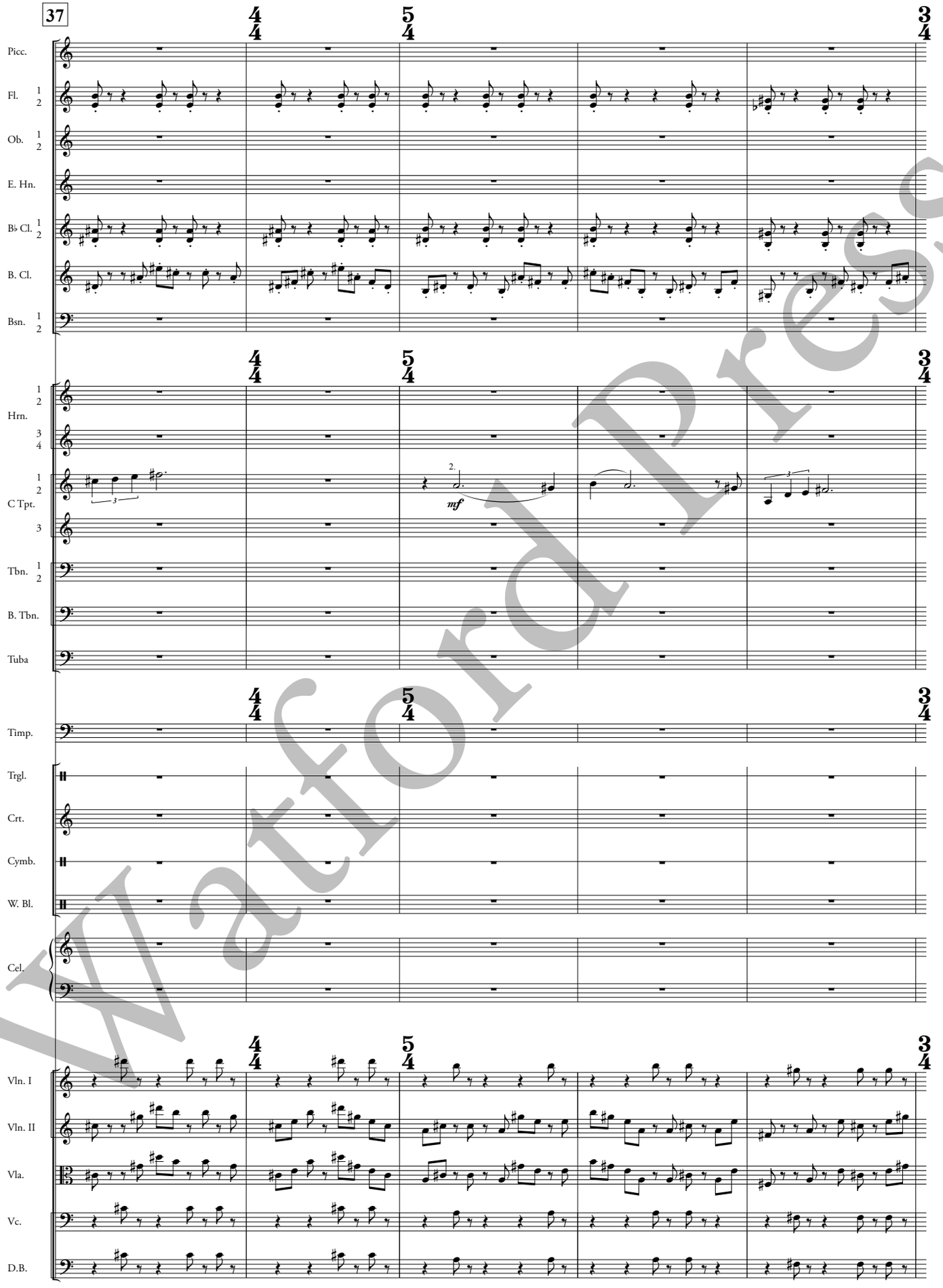

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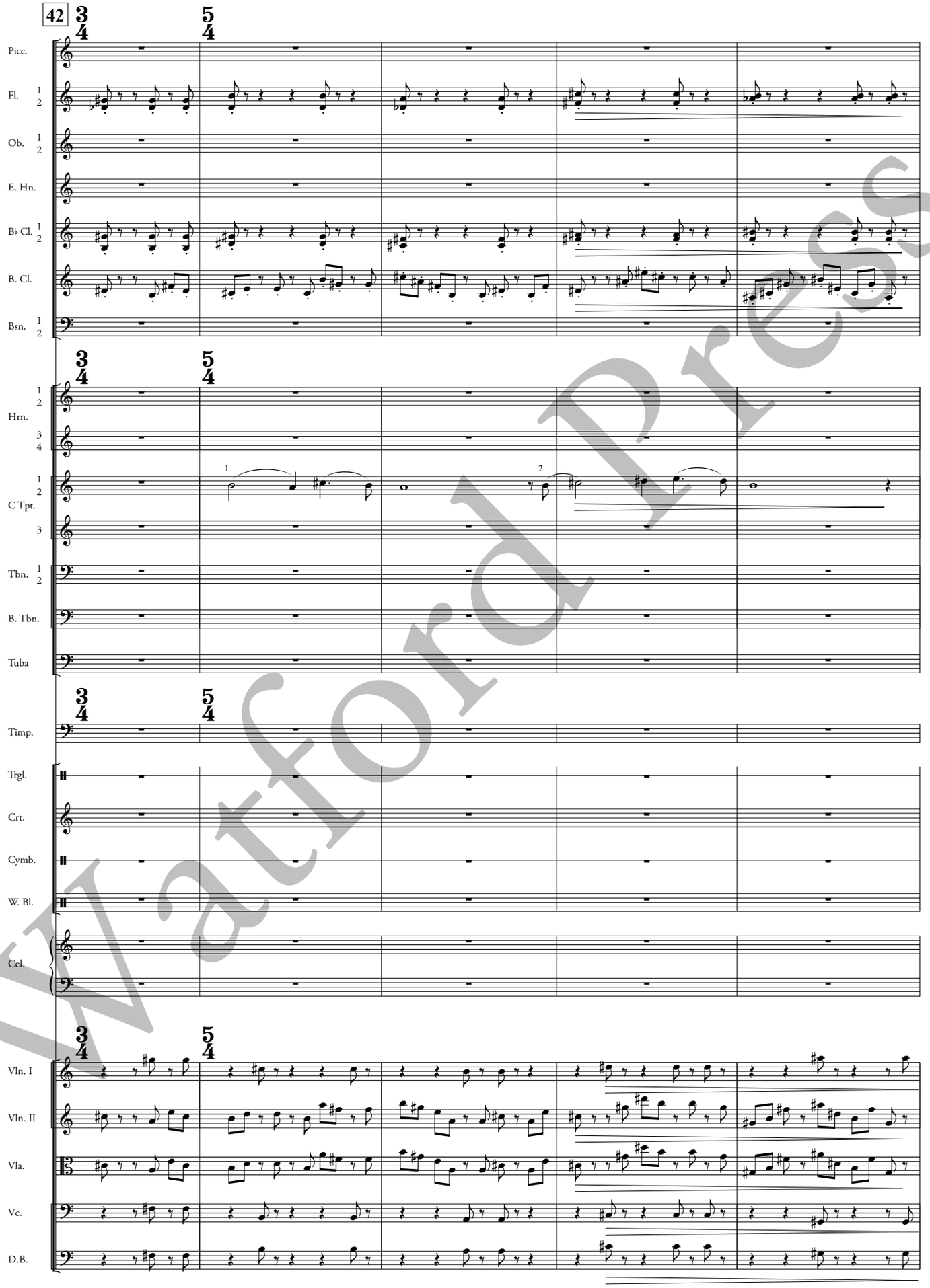

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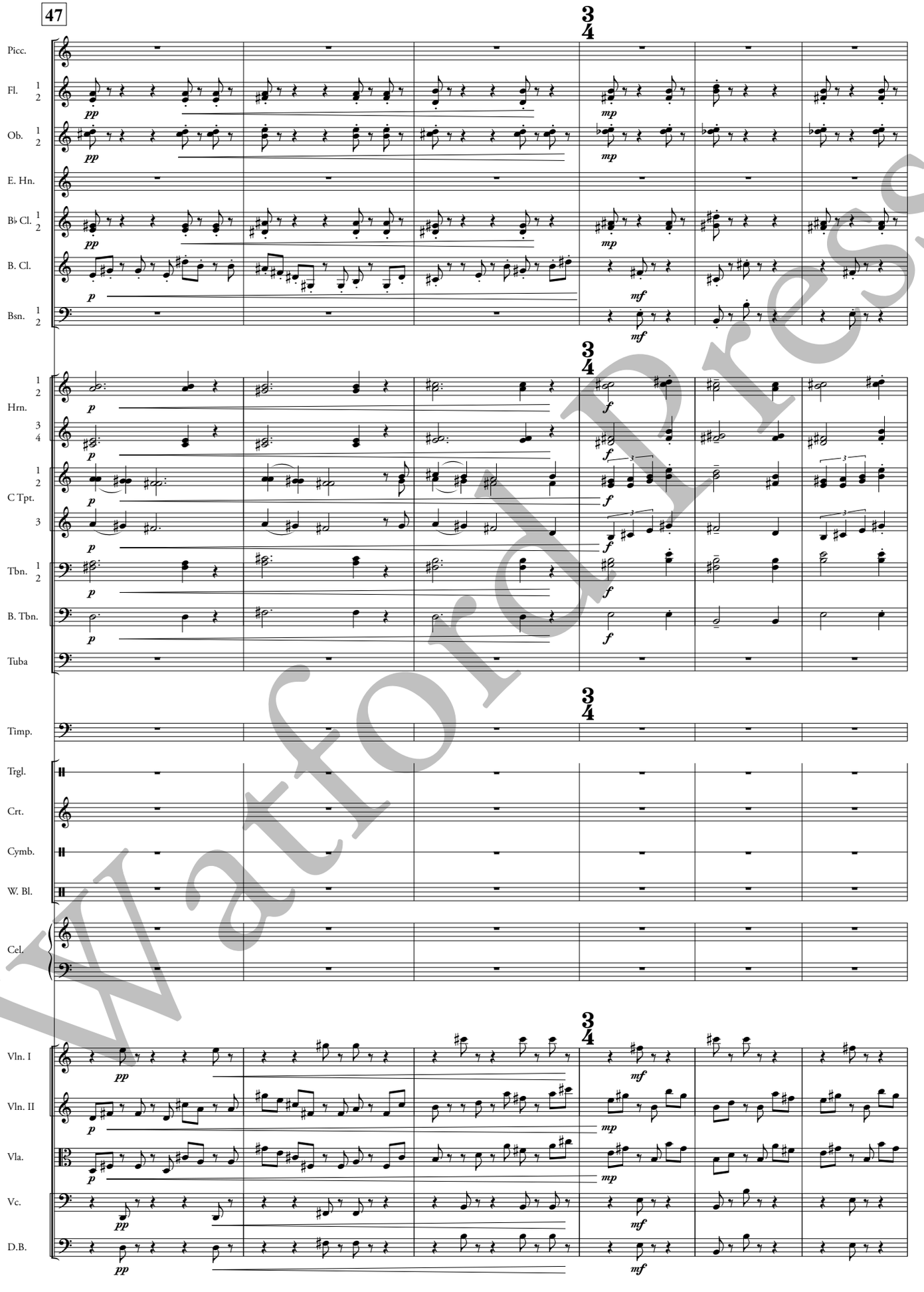

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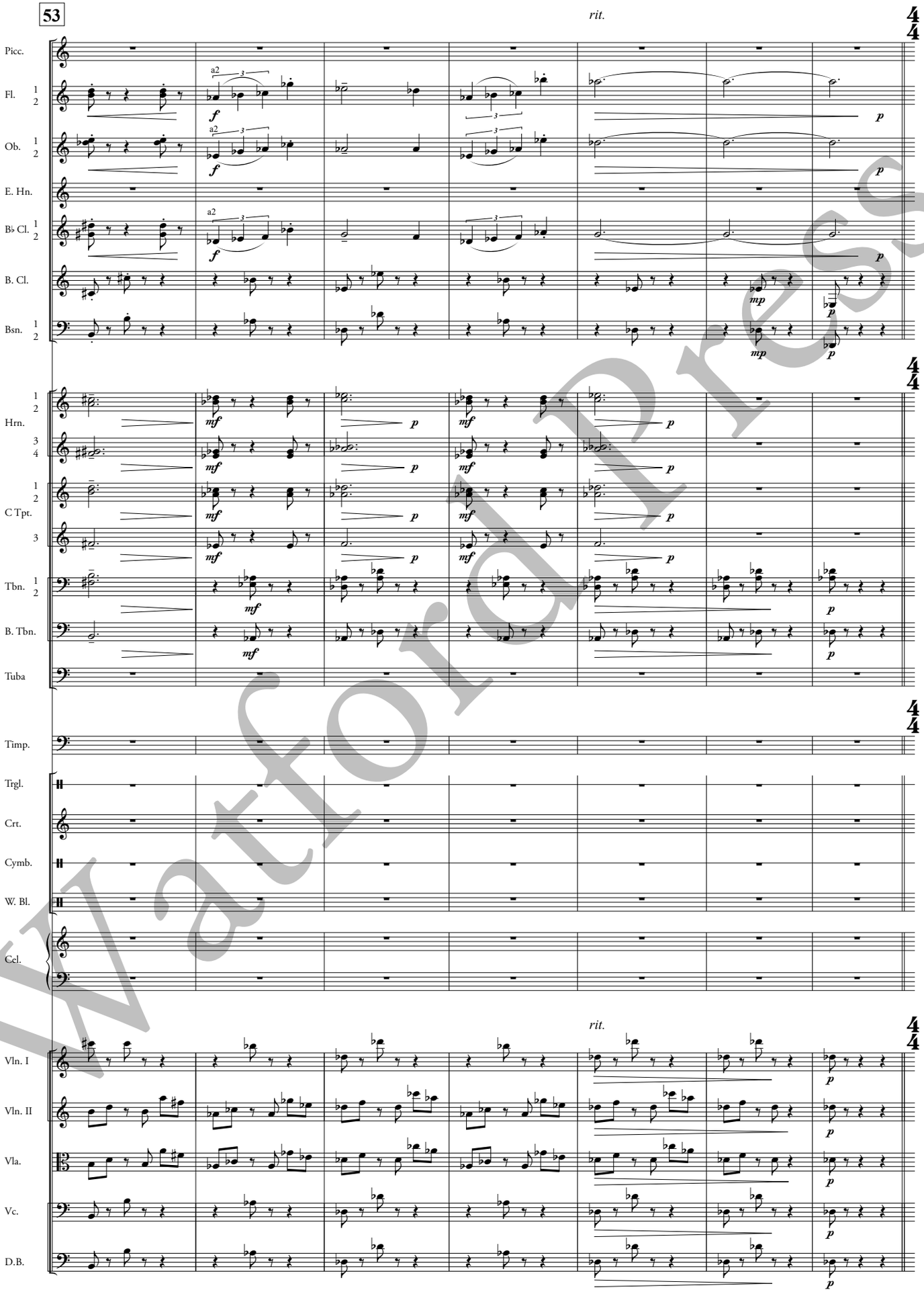
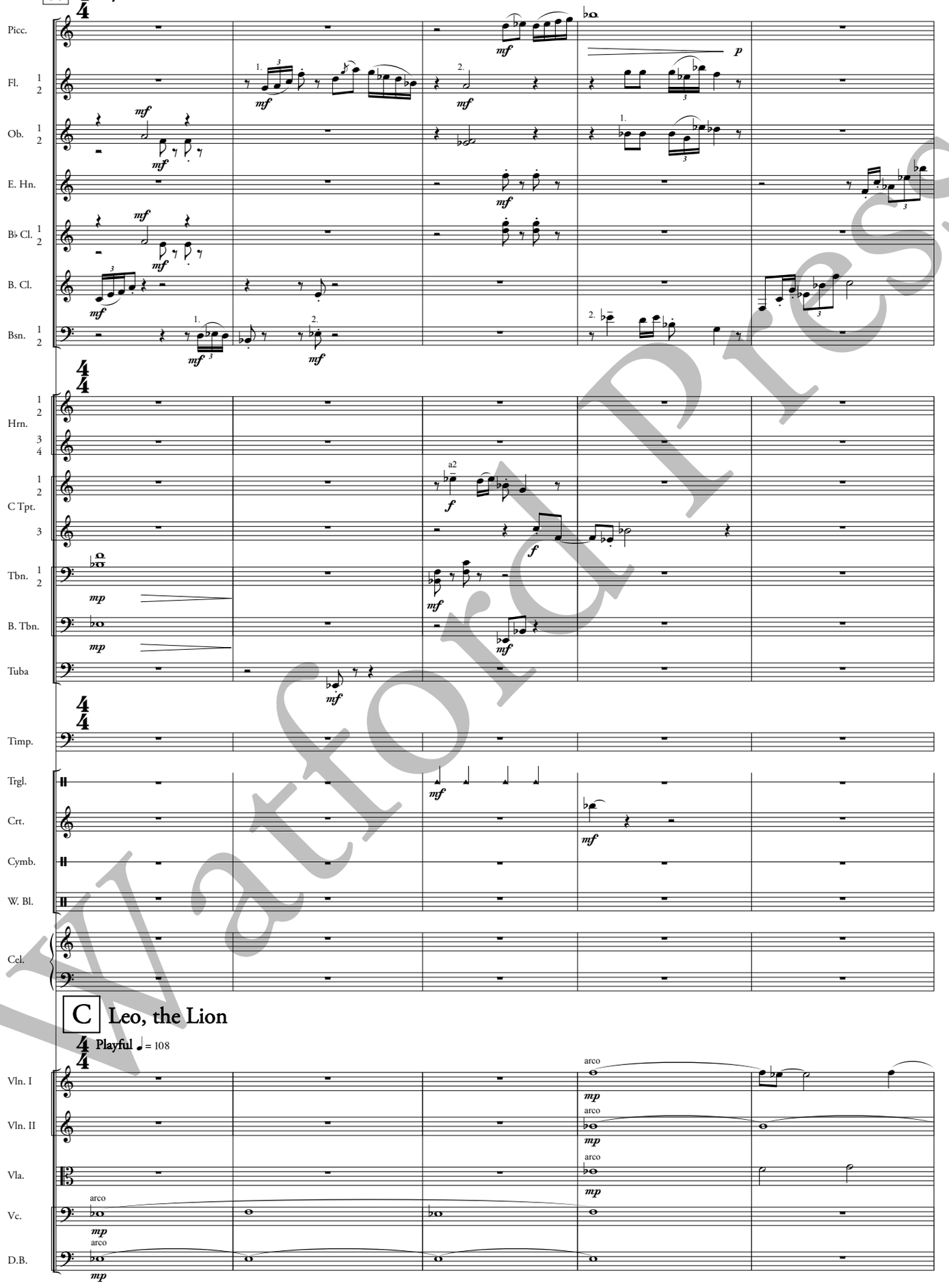


Watford Press

II. SUMMER

C Leo, the Lion

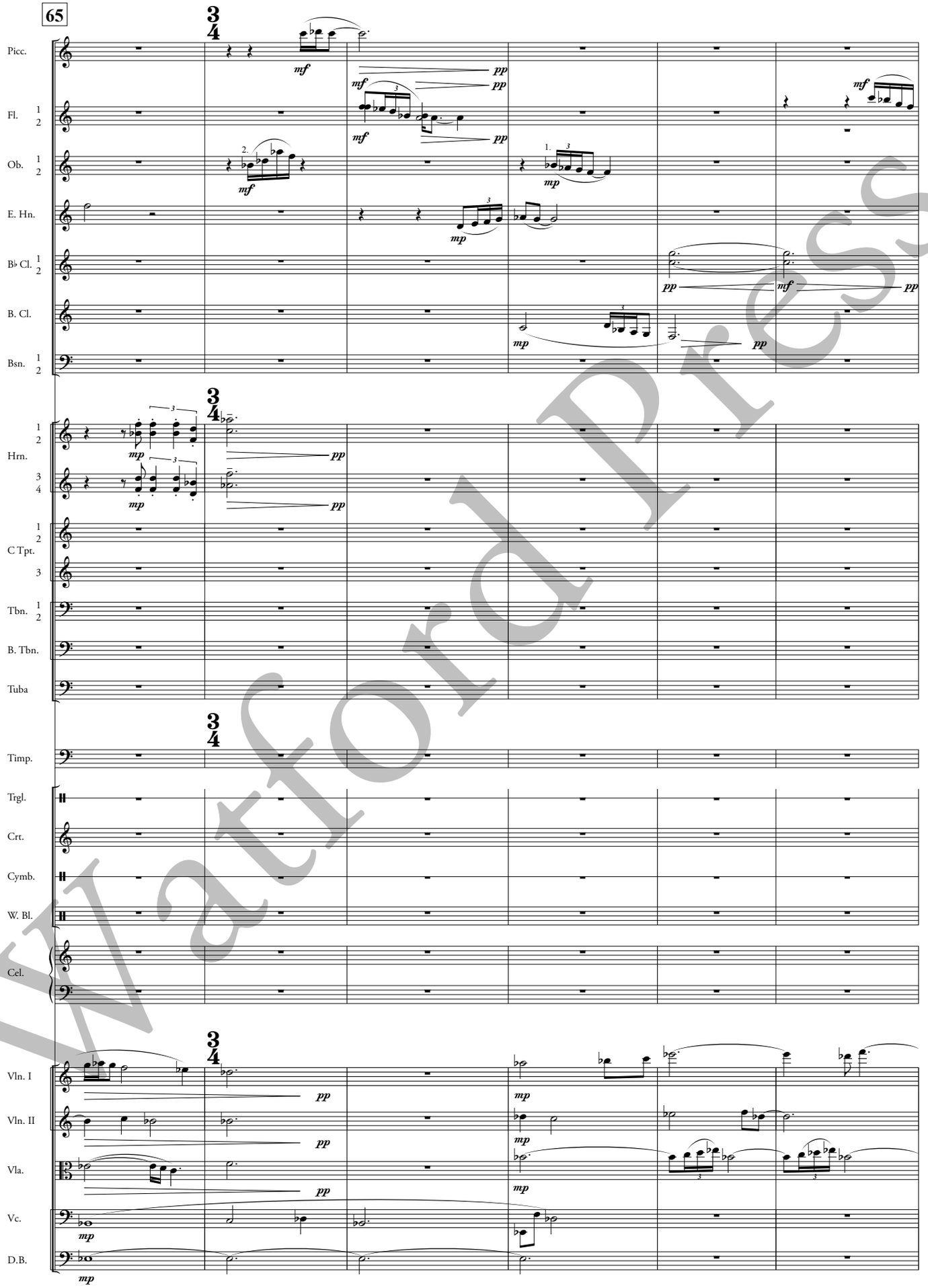
60 **Playful** ♩ = 108



C Leo, the Lion

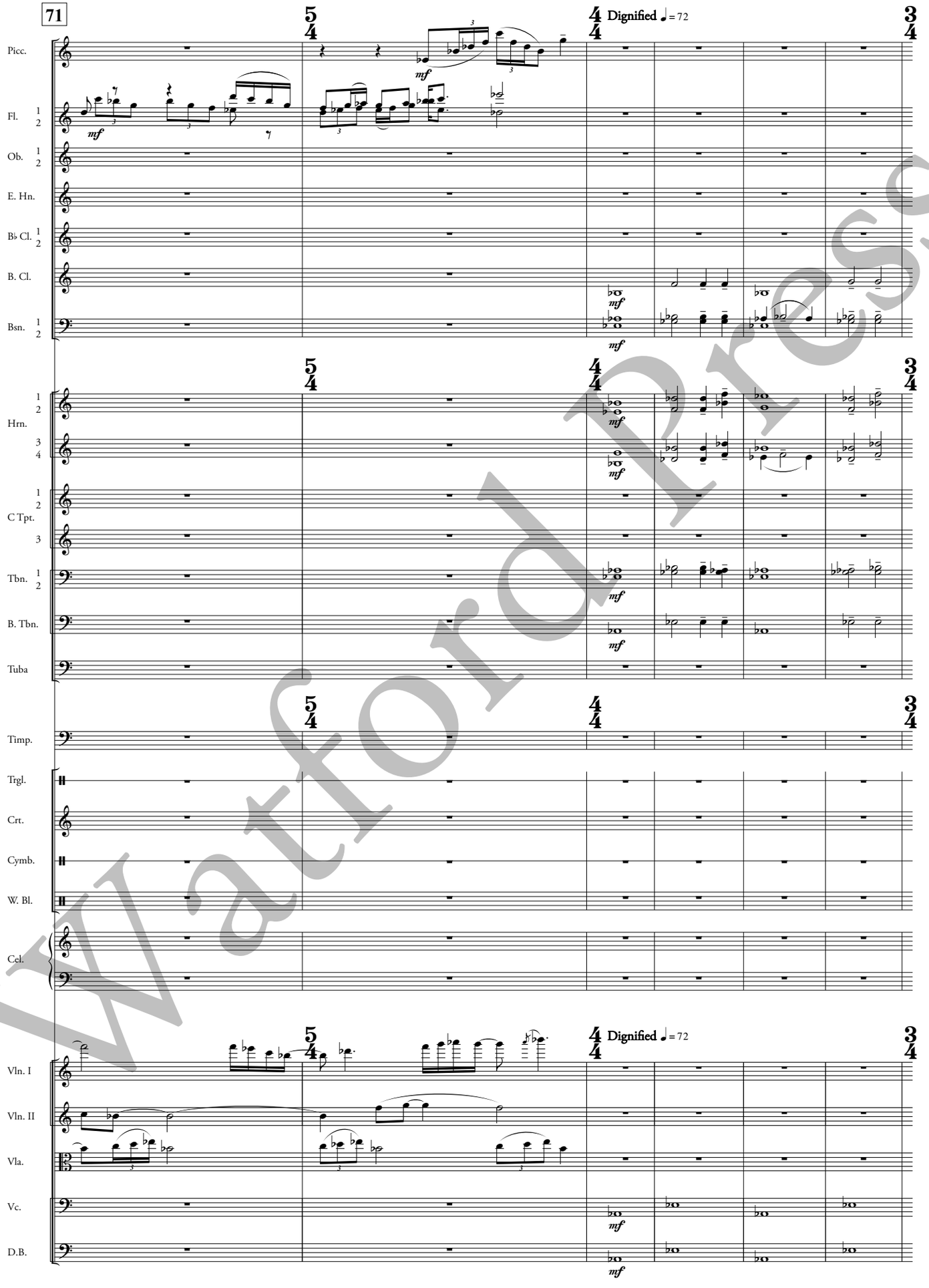
Playful ♩ = 108

Watford Press



Watford Press

II. SUMMER



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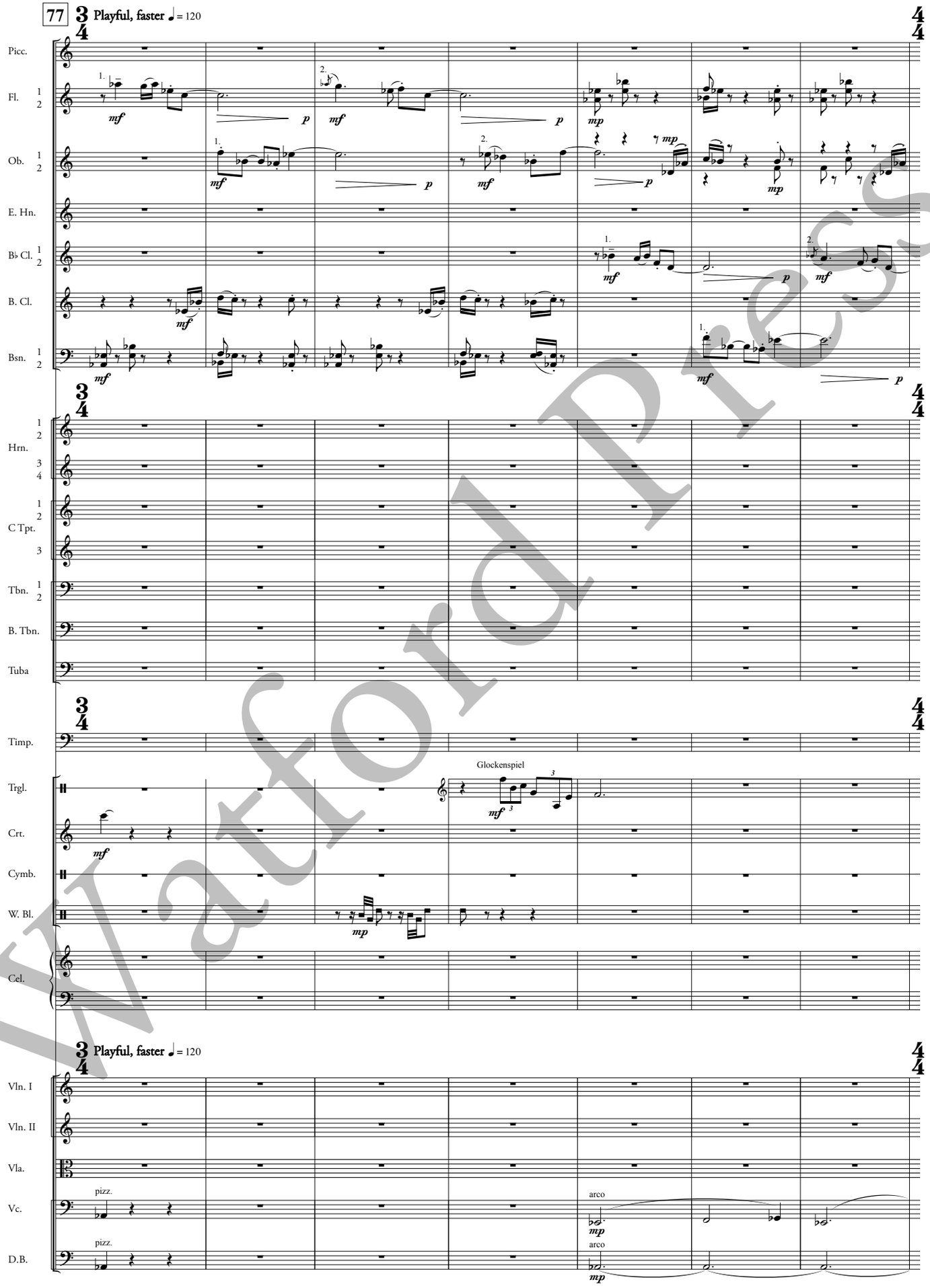

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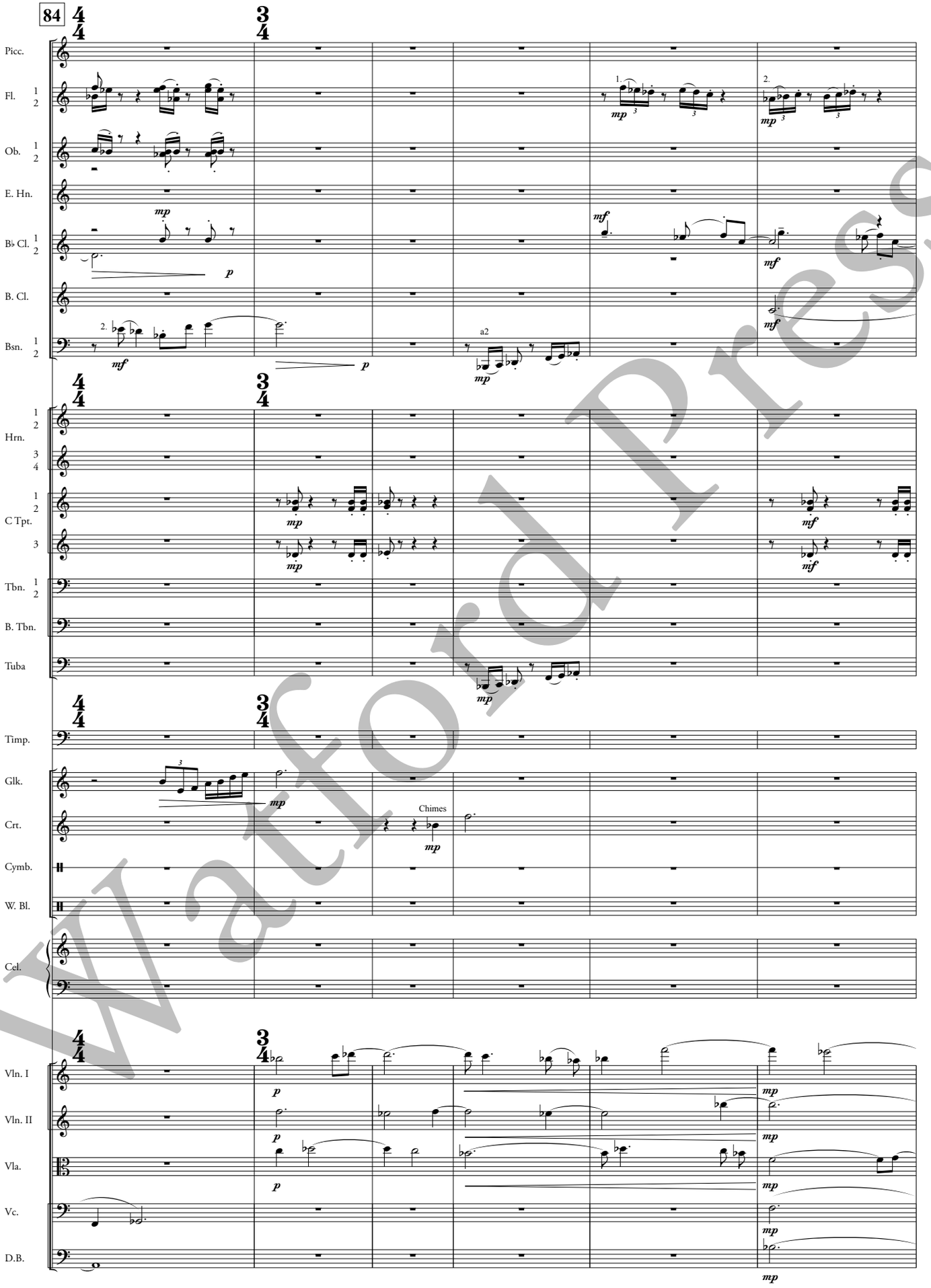

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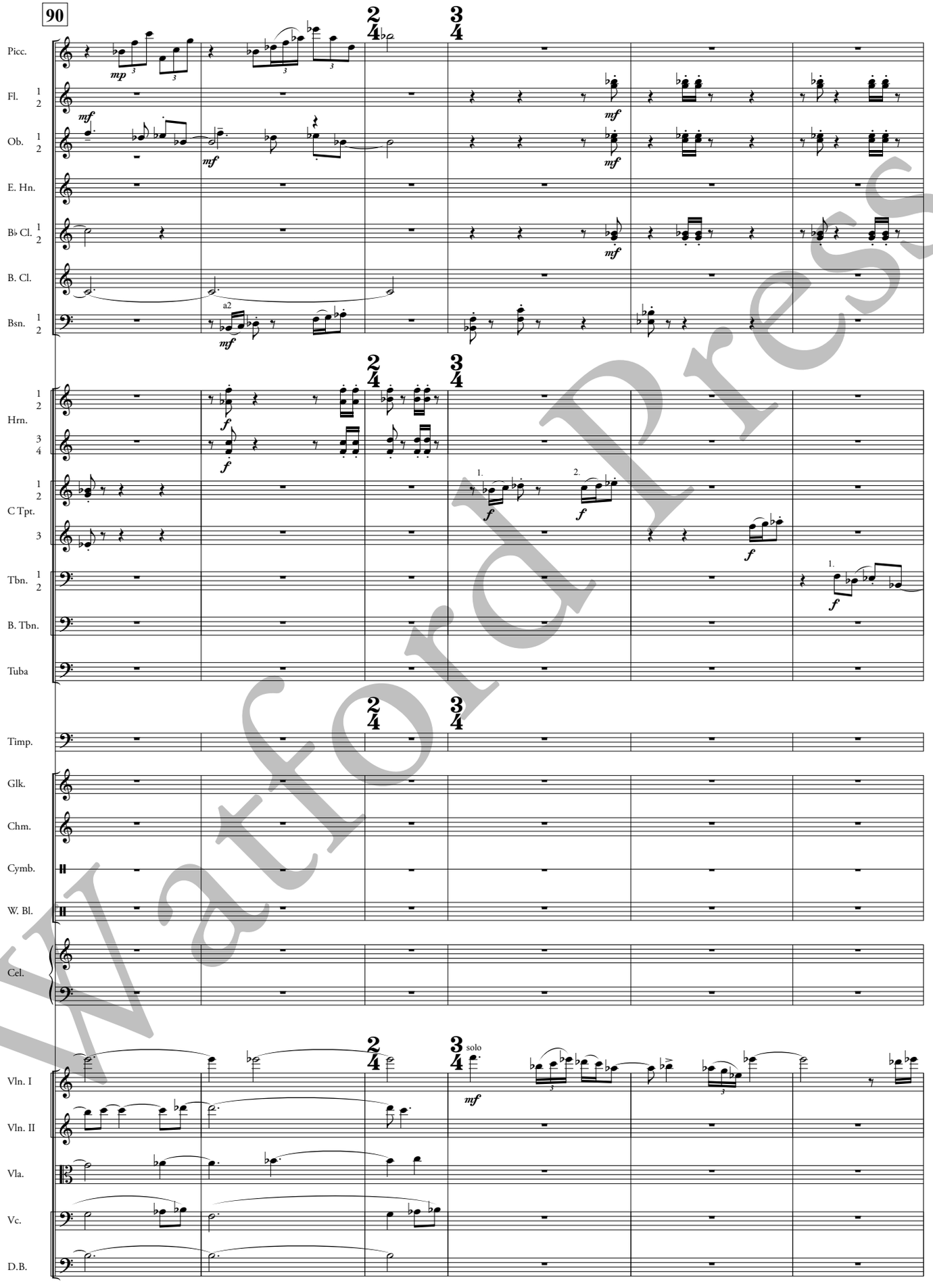

Watford Press

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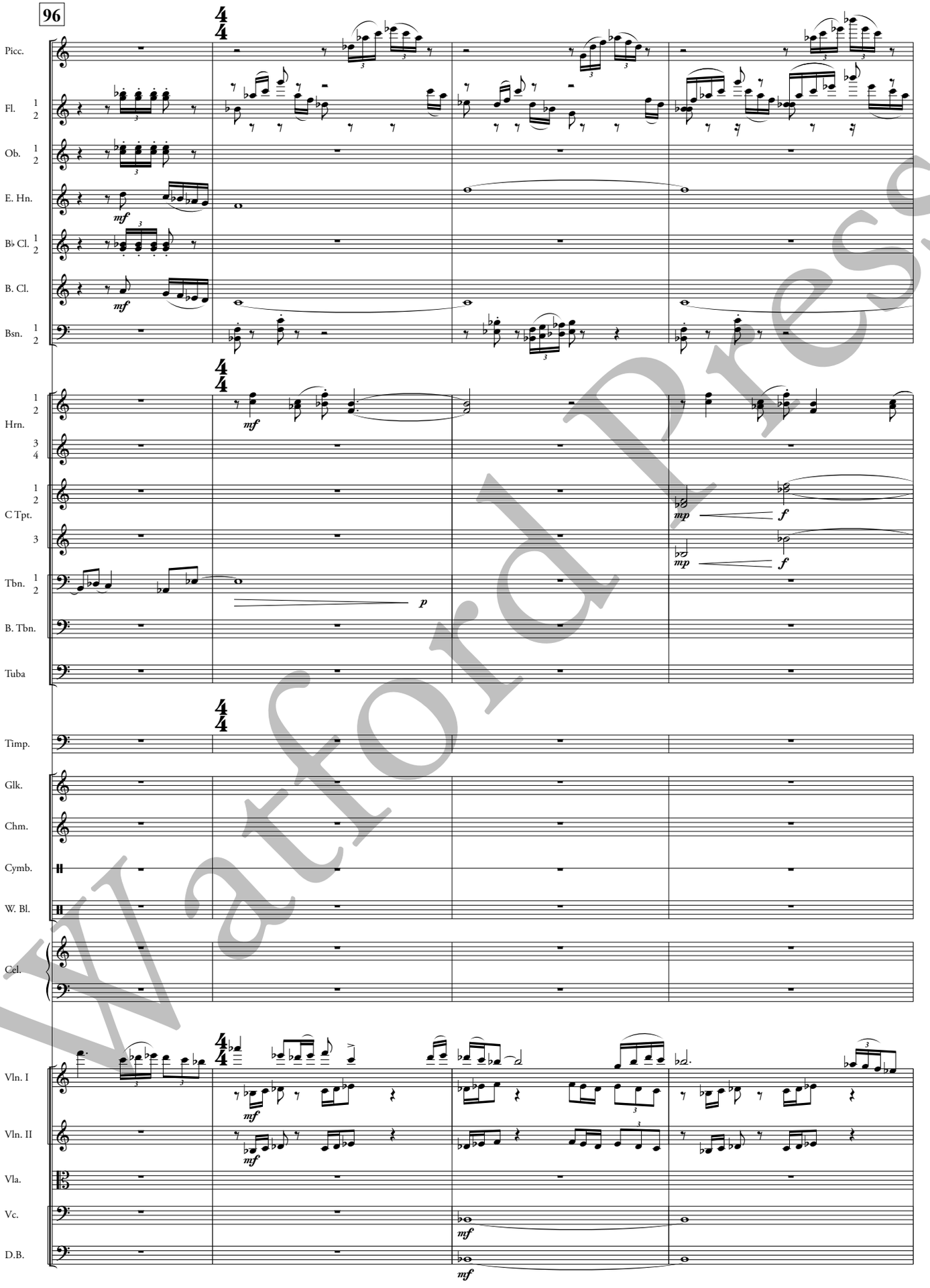

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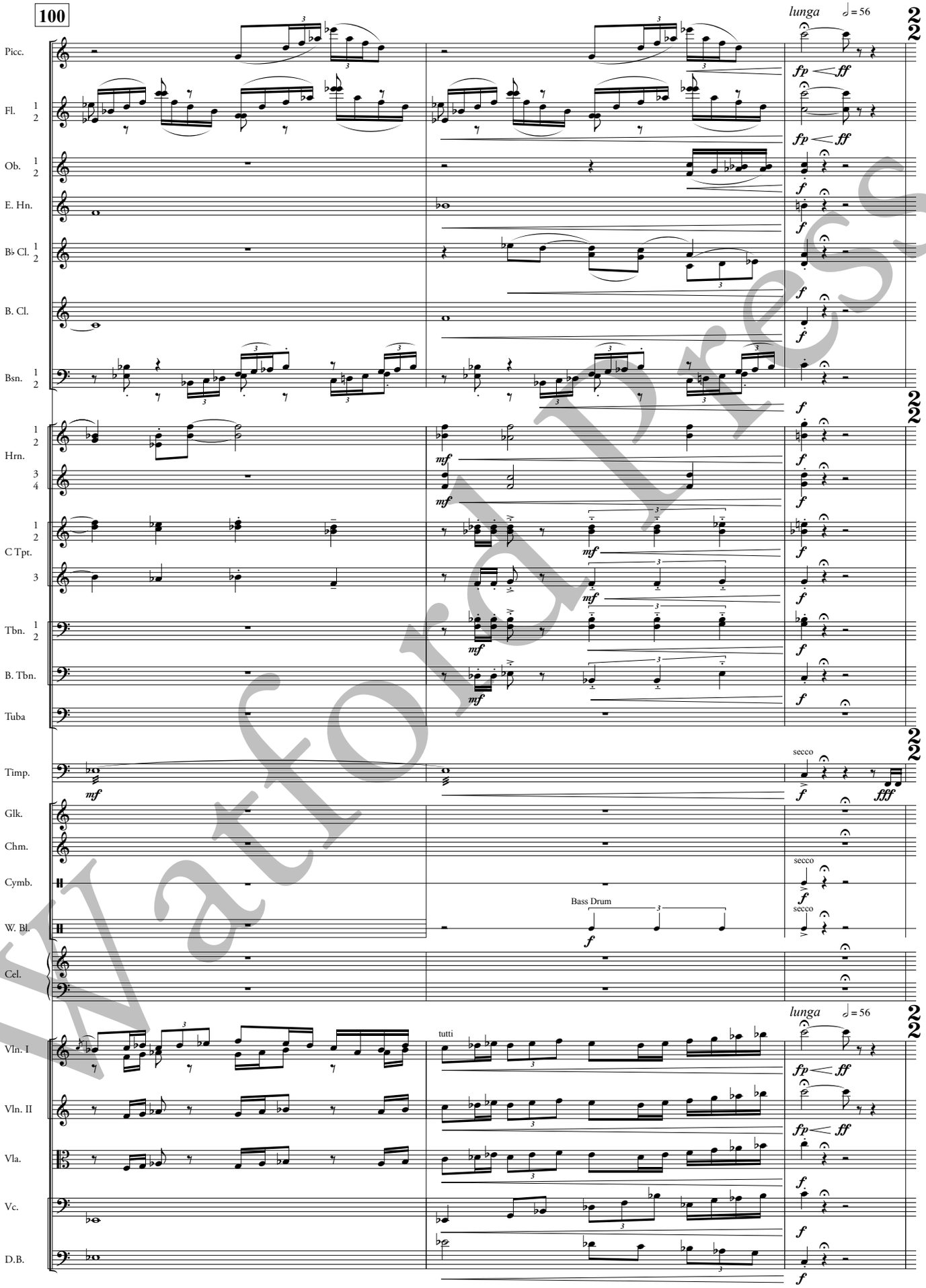

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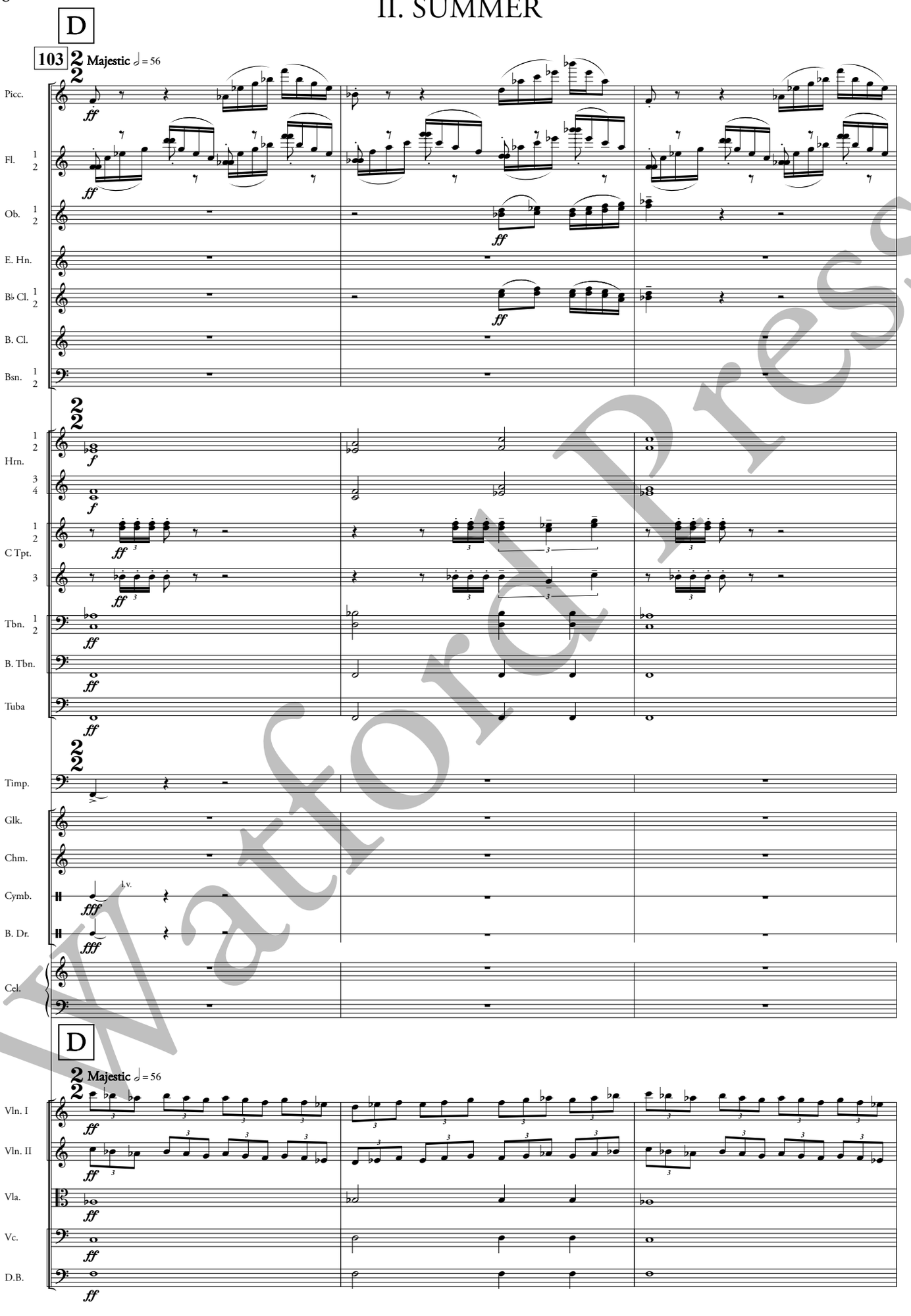

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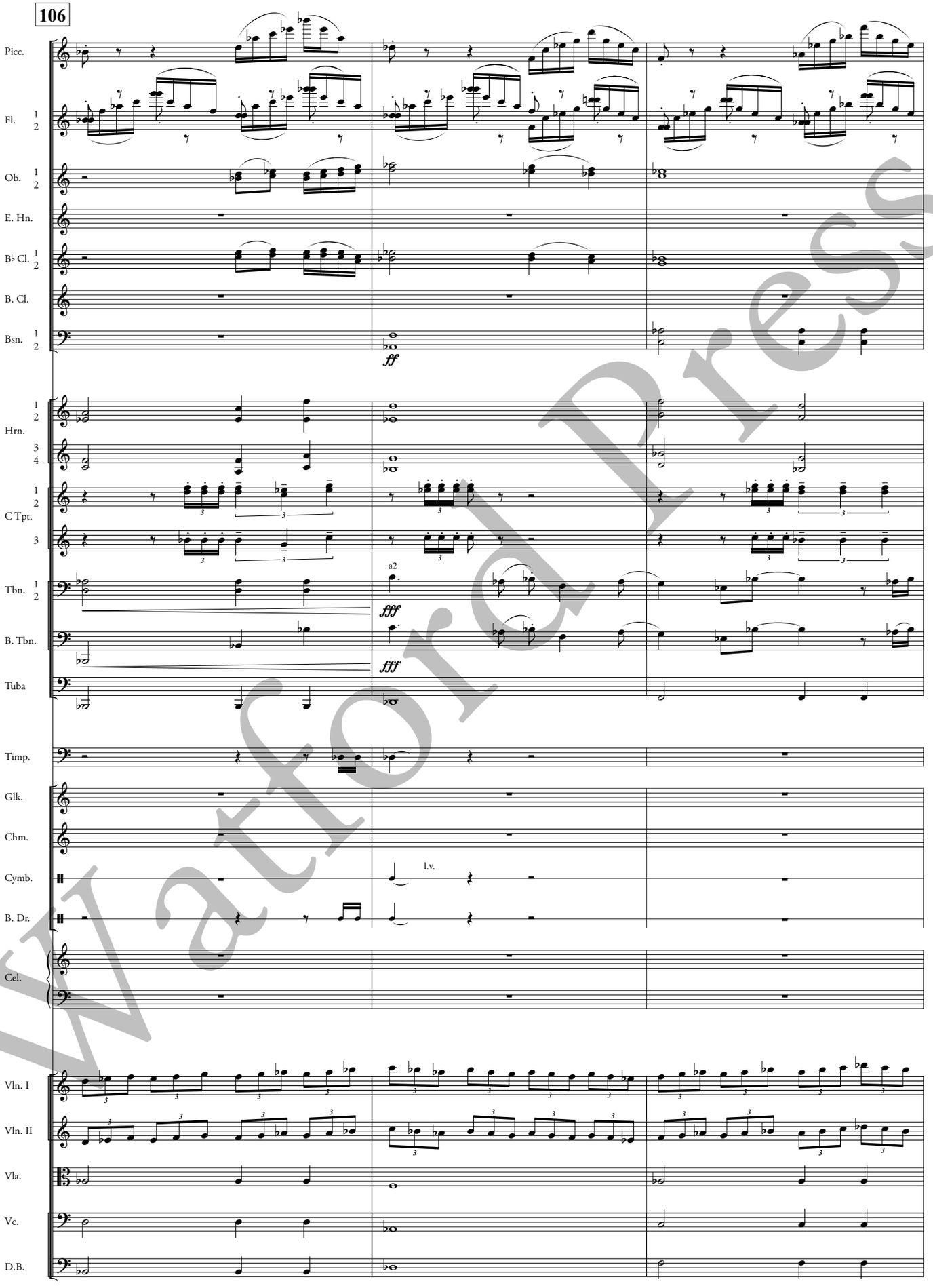

Watford Press

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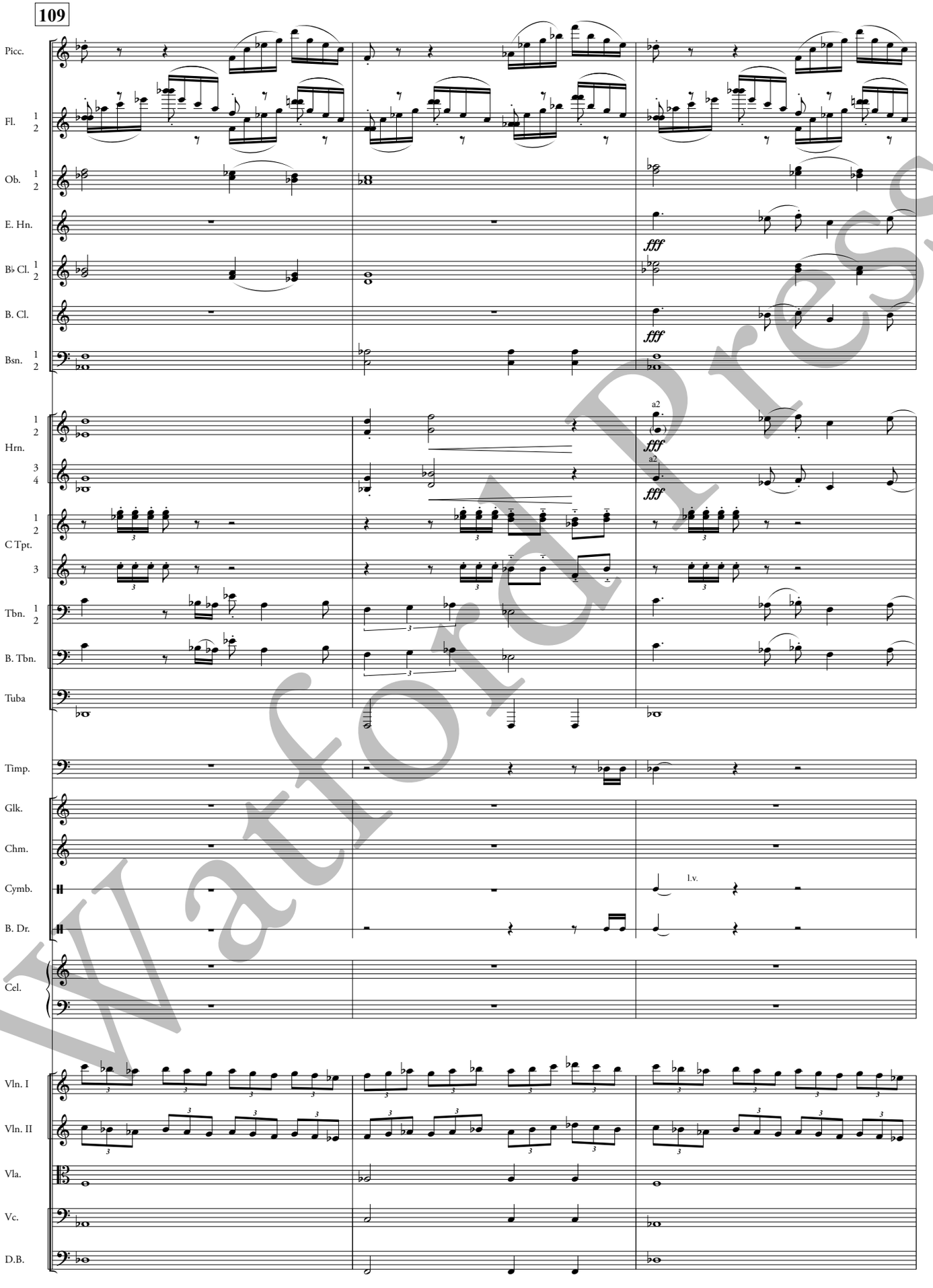

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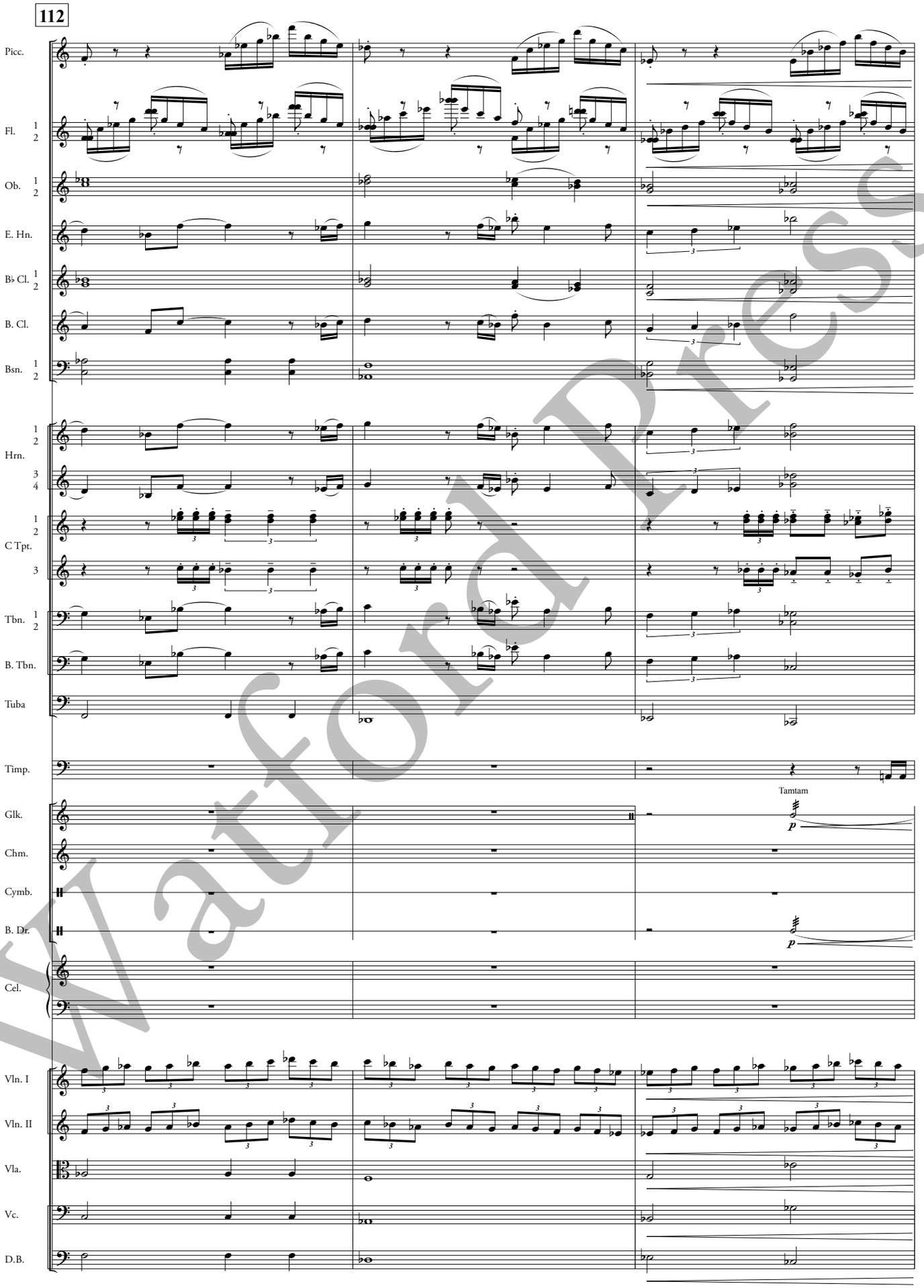

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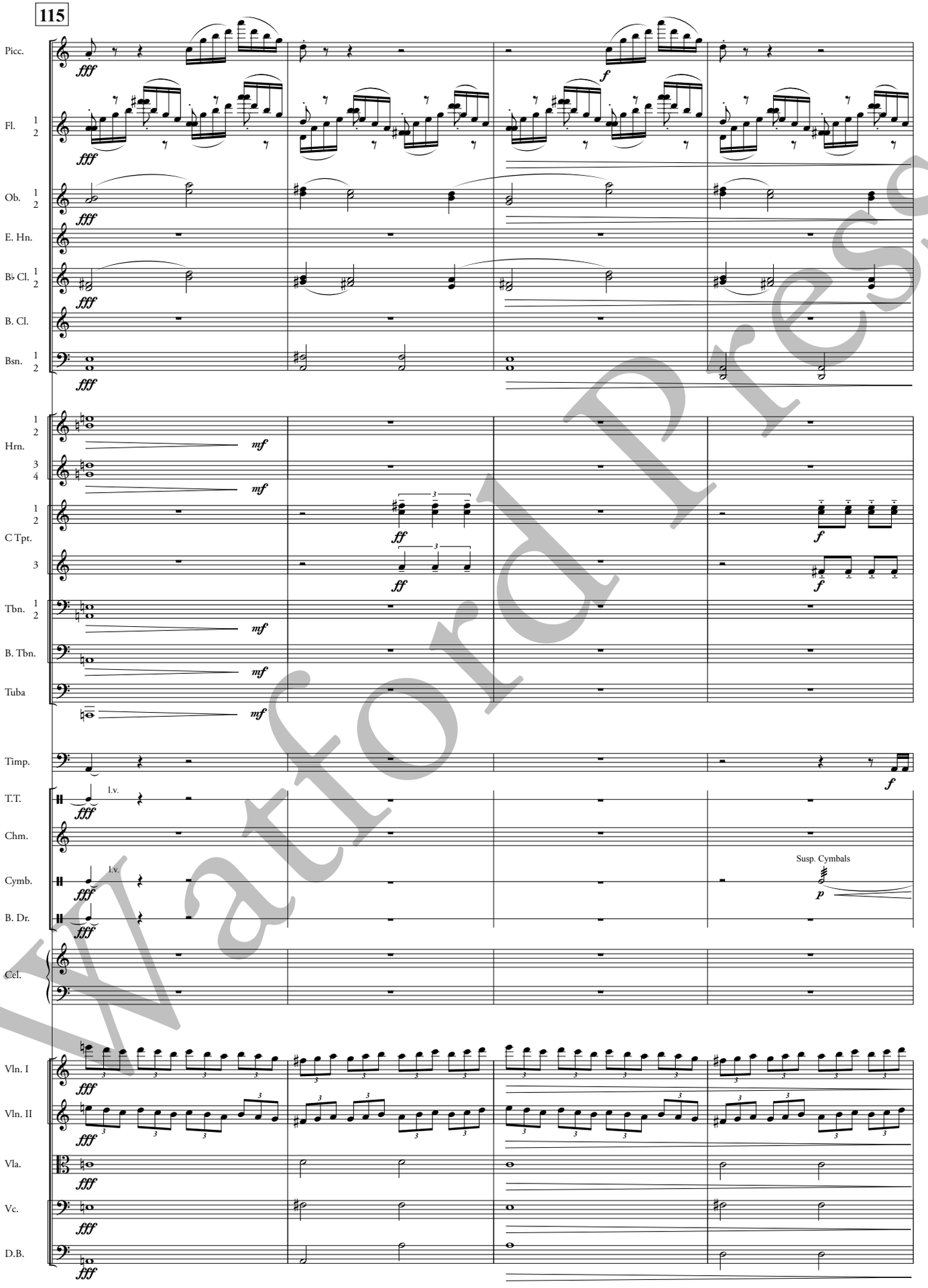

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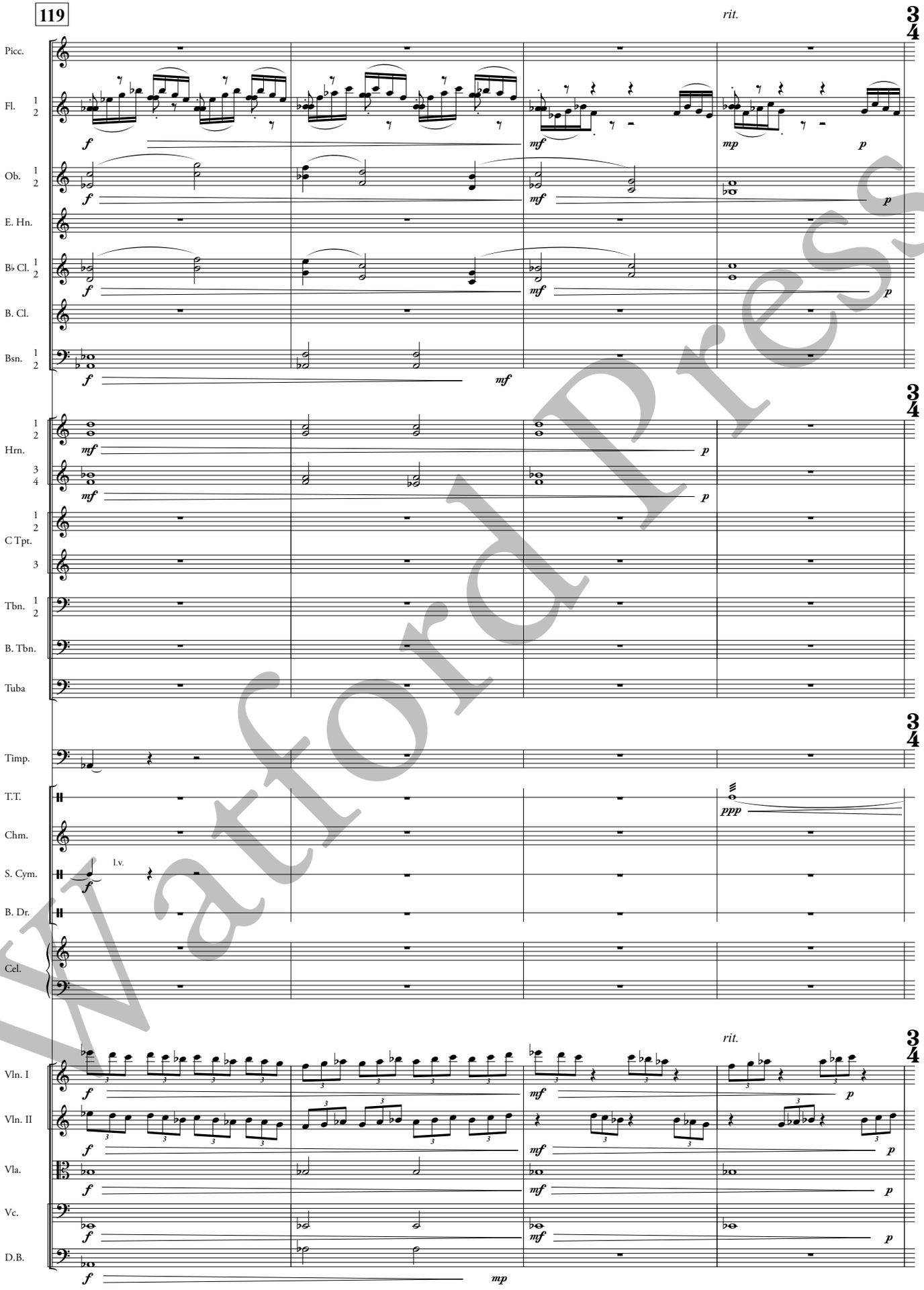


Watford Press

II. SUMMER

E Virgo, the Maiden

123 **Slower** ♩ = 84

Ethereal ♩ = 80

Picc.

Fl. 1 2

Ob. 1 2

E. Hn.

B♭ Cl. 1 2

B. Cl.

Bsn. 1 2

Hrn. 1 2 3 4

C Tpt. 1 2 3

Tbn. 1 2

B. Tbn.

Tuba

Timp.

T.T.

l.v.

Glockenspiel

Chm.

S. Cym.

B. Dr.

Celesta

Cel.

E Virgo, the Maiden

Slower ♩ = 84

Ethereal ♩ = 80

Con sord.

Vln. I

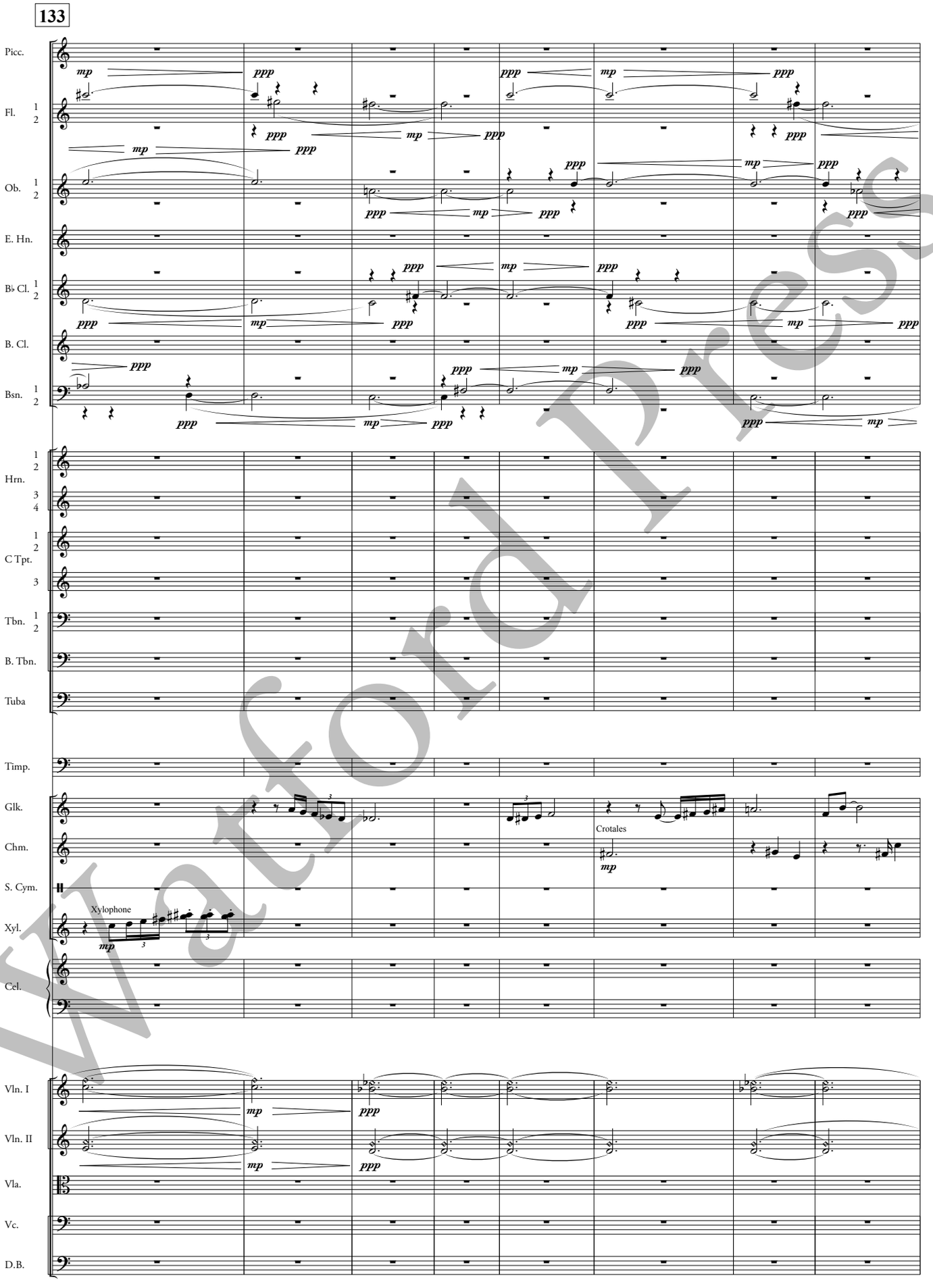
Vln. II

Vla.

Vc.

D.B.

Watford Press



Watford Press

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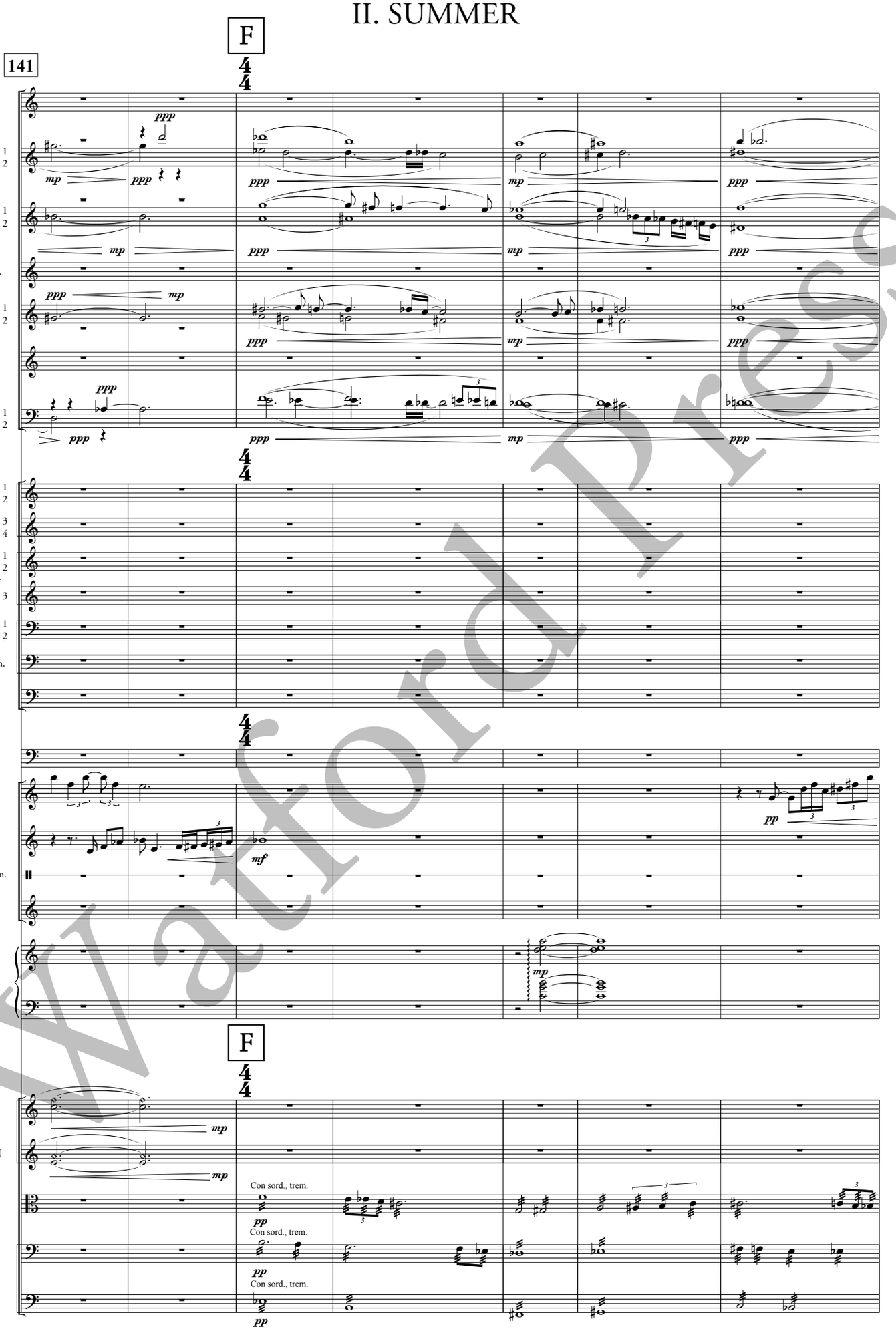

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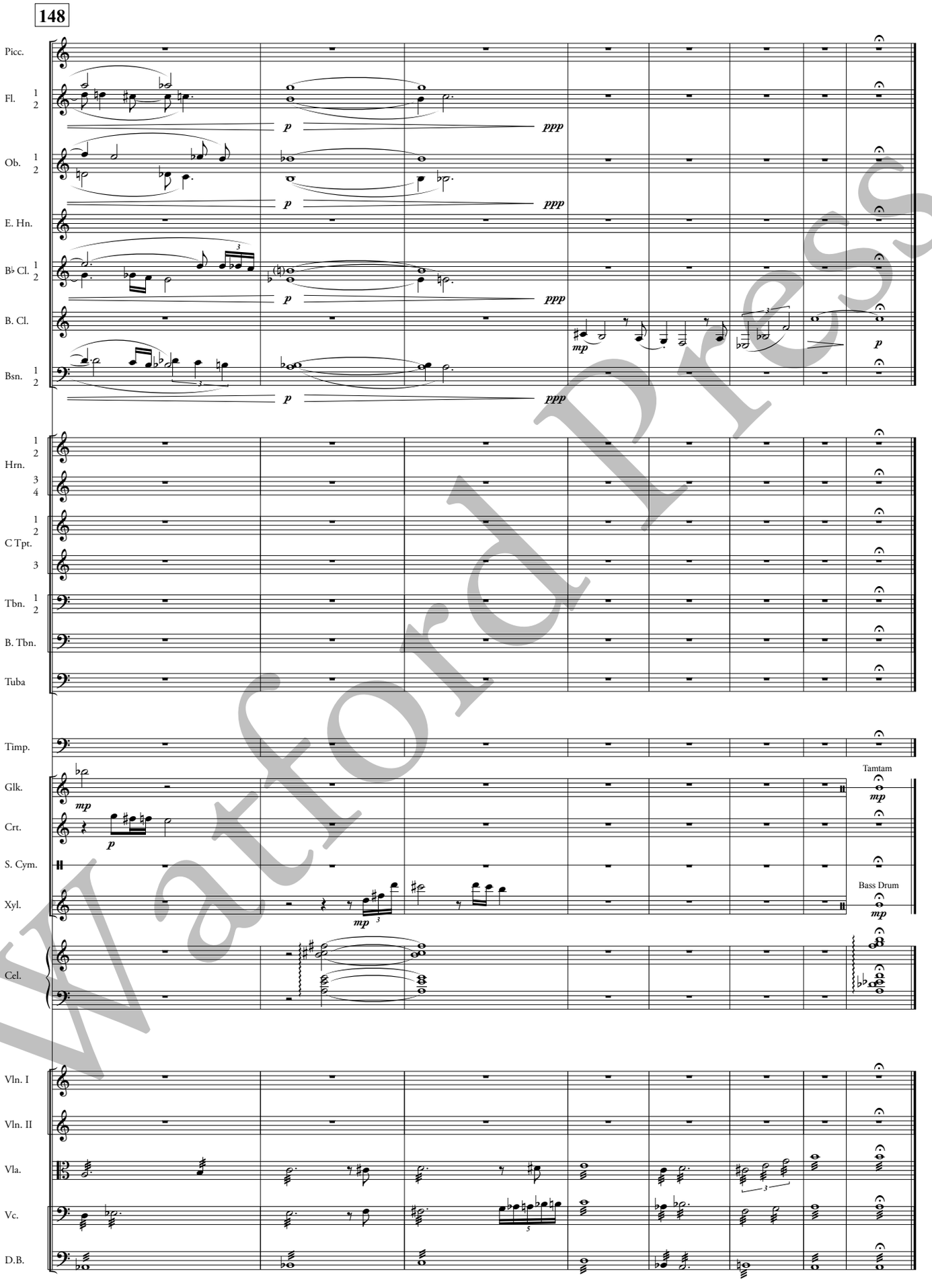
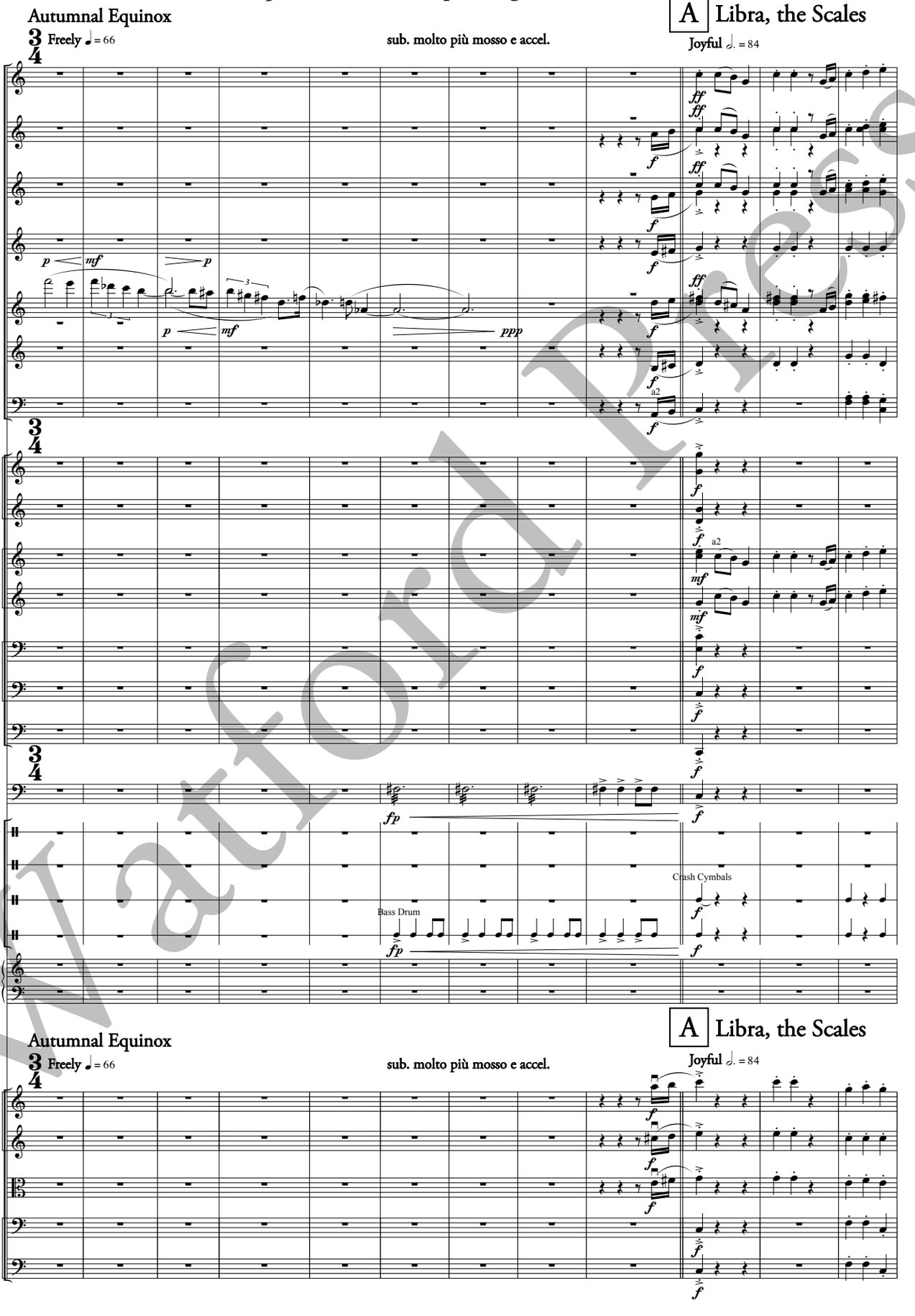


Watford Press

III. FALL

Equinox, Libra, Scorpio, Sagittarius



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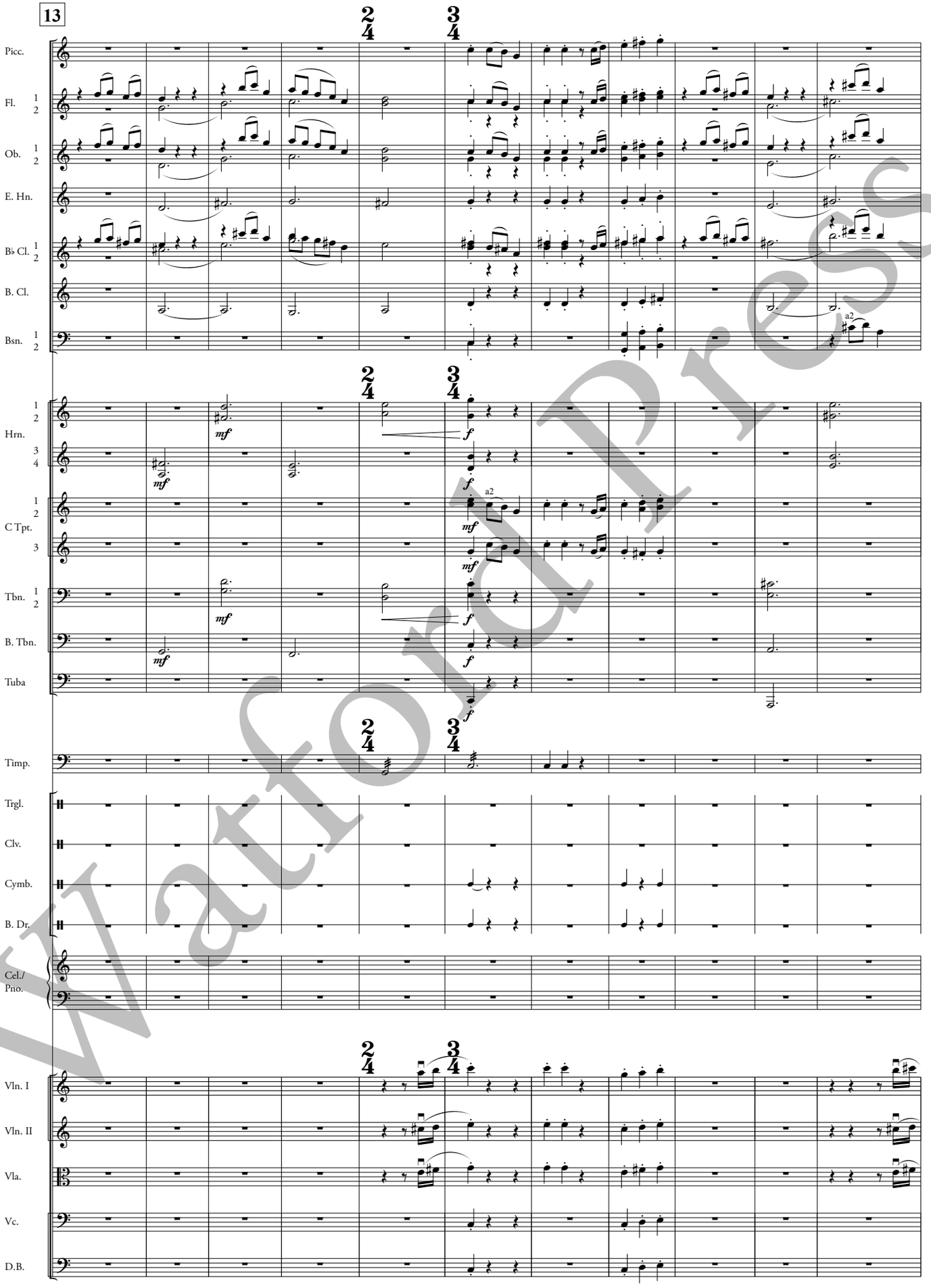
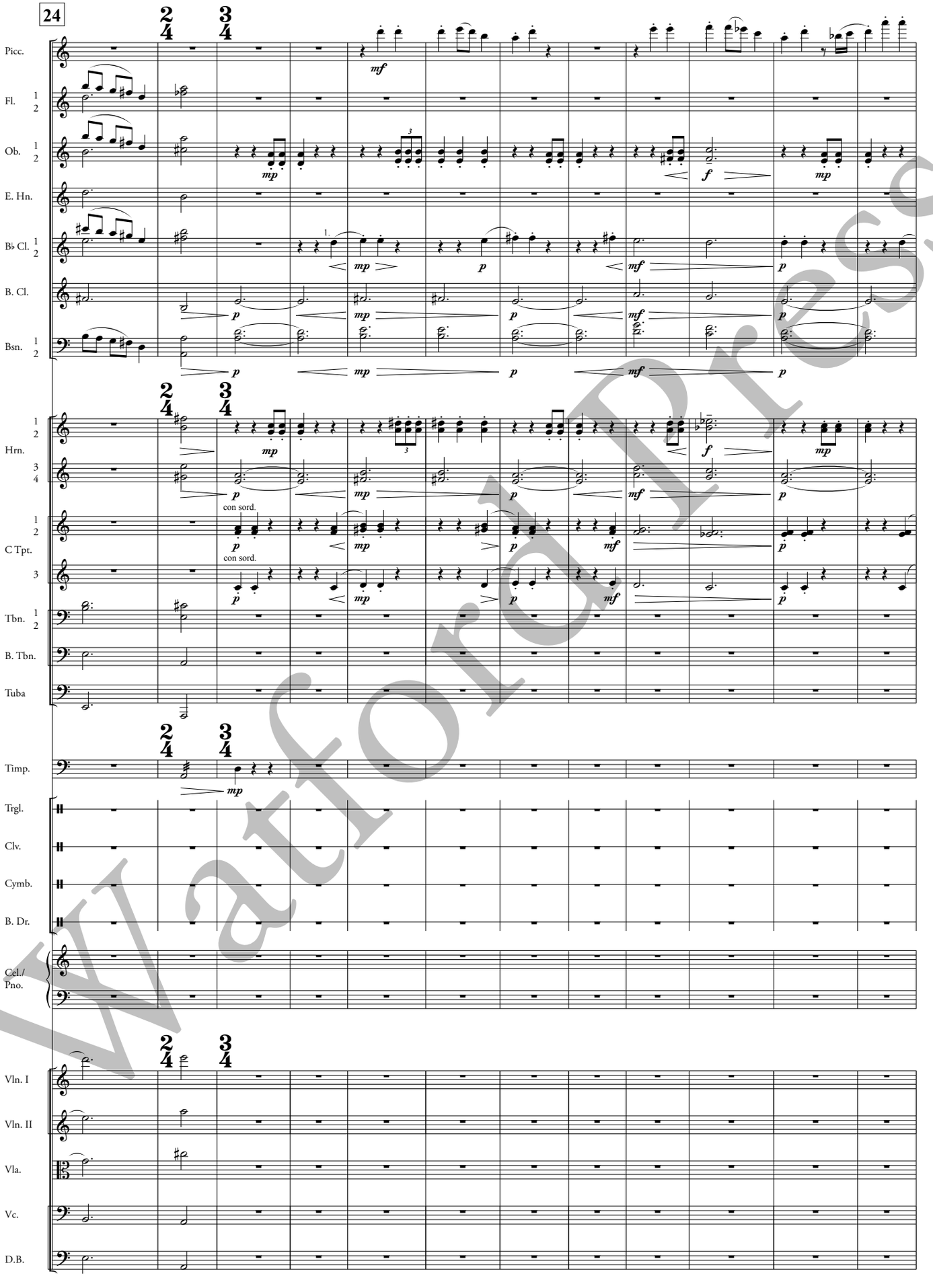


Watford Press

III. FALL



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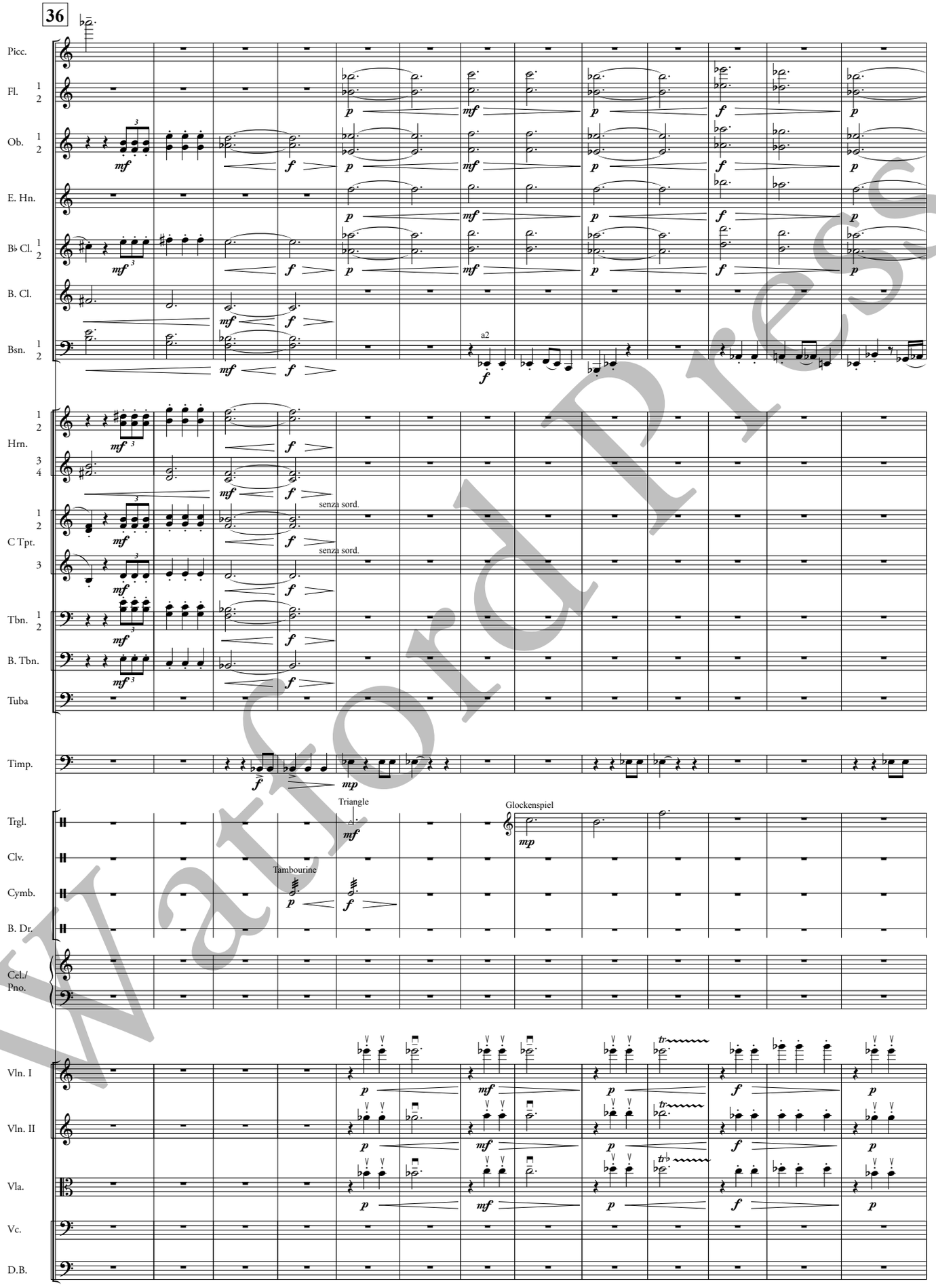

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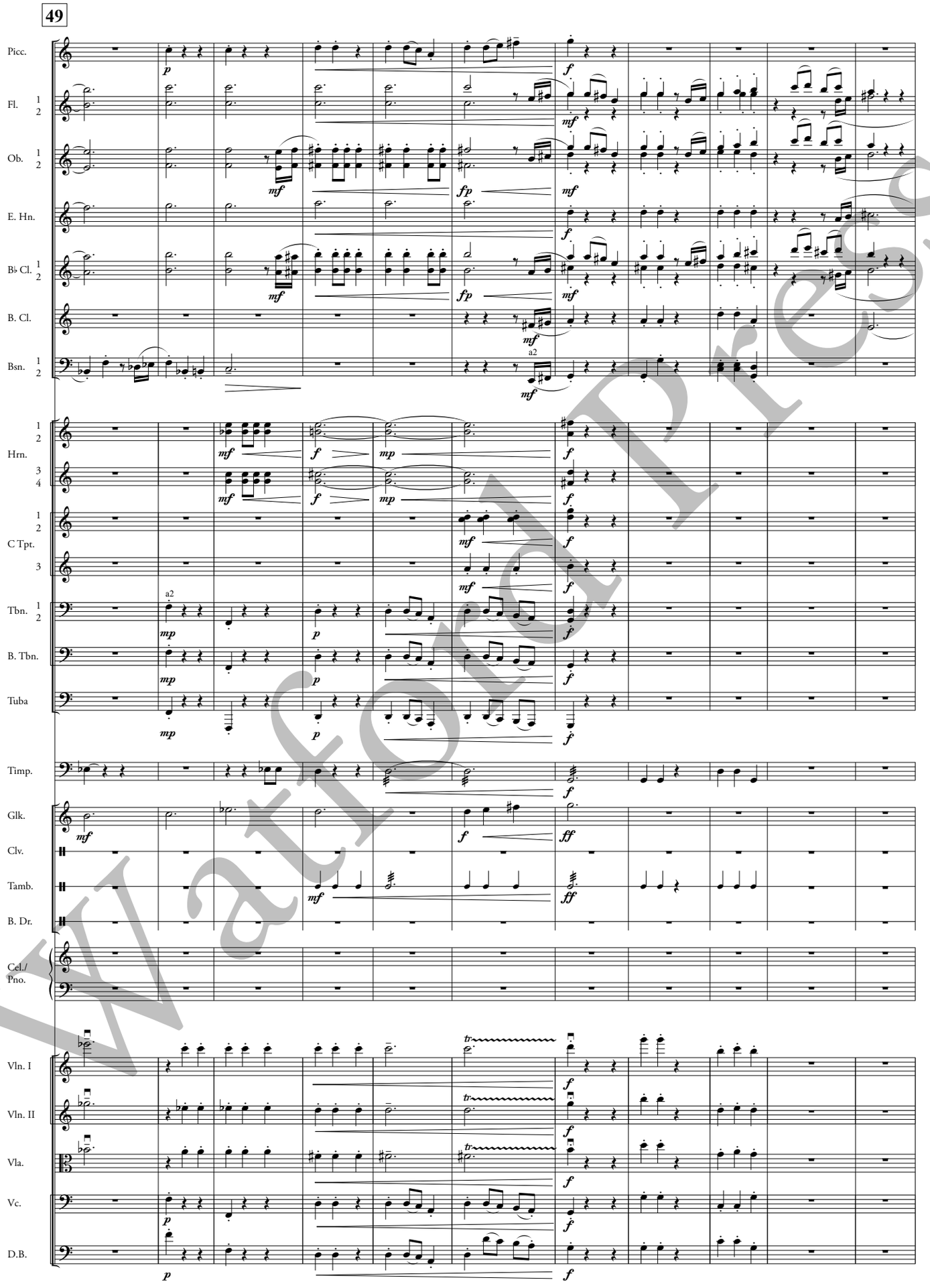

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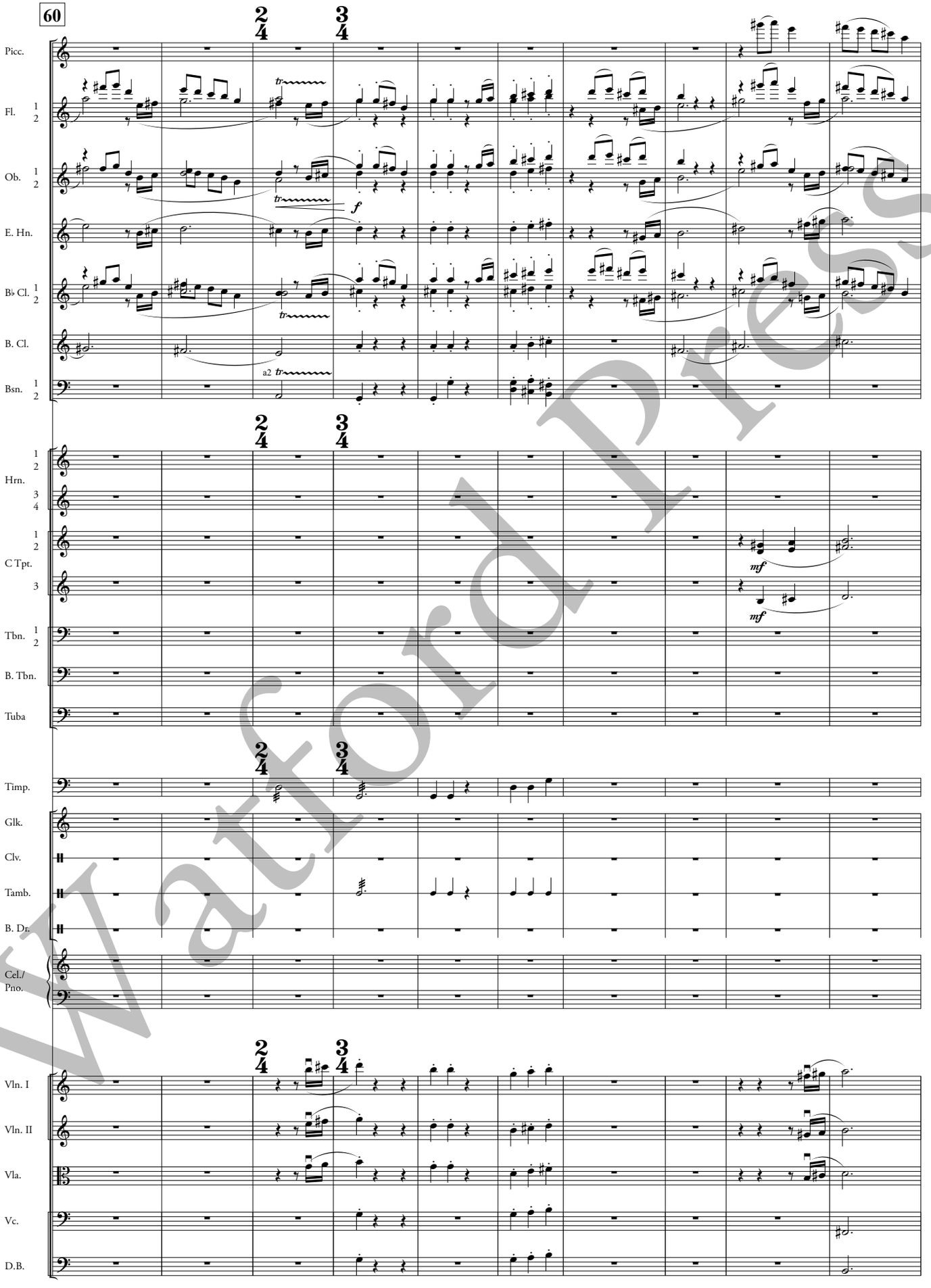

Watford Press

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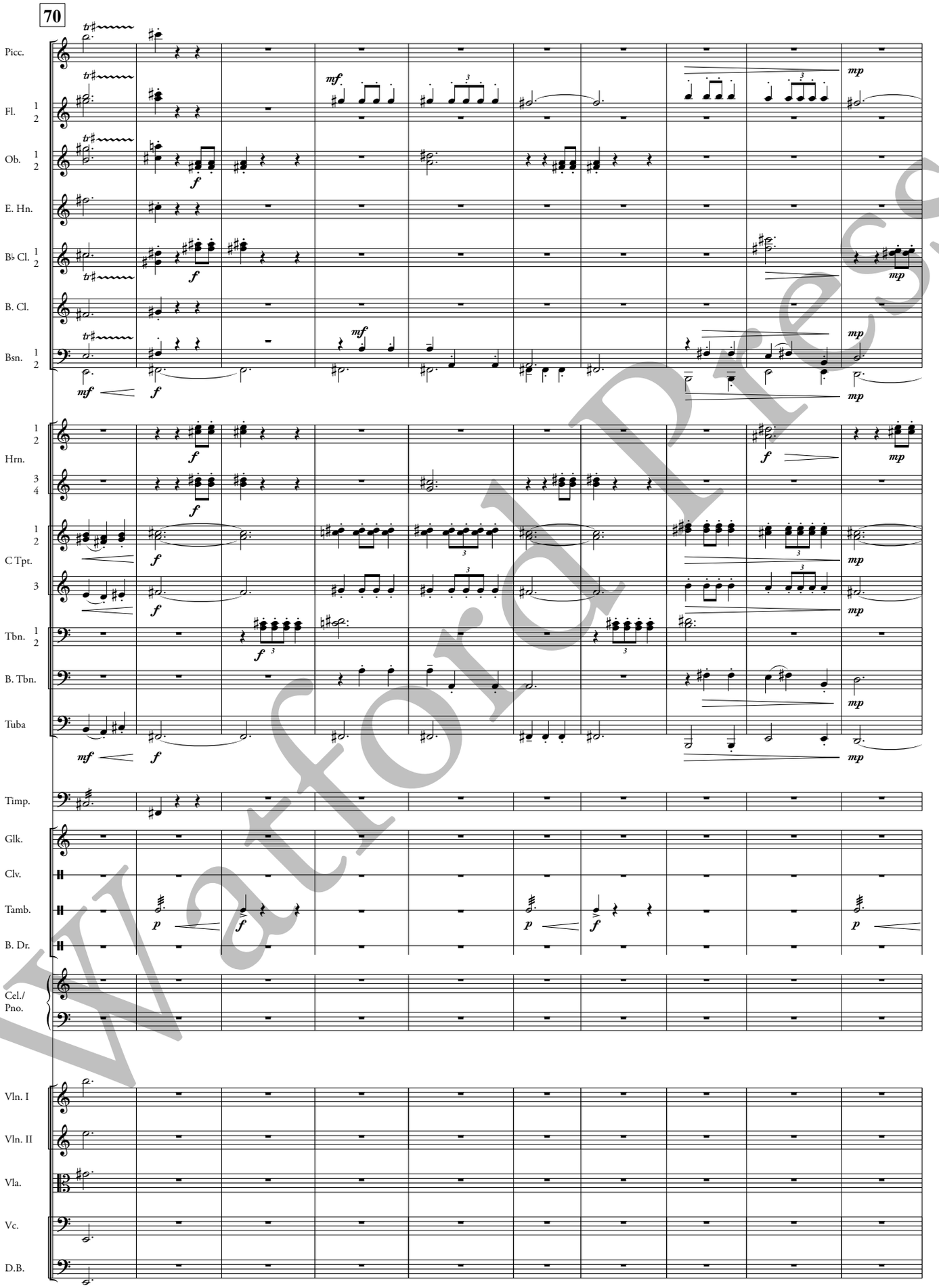

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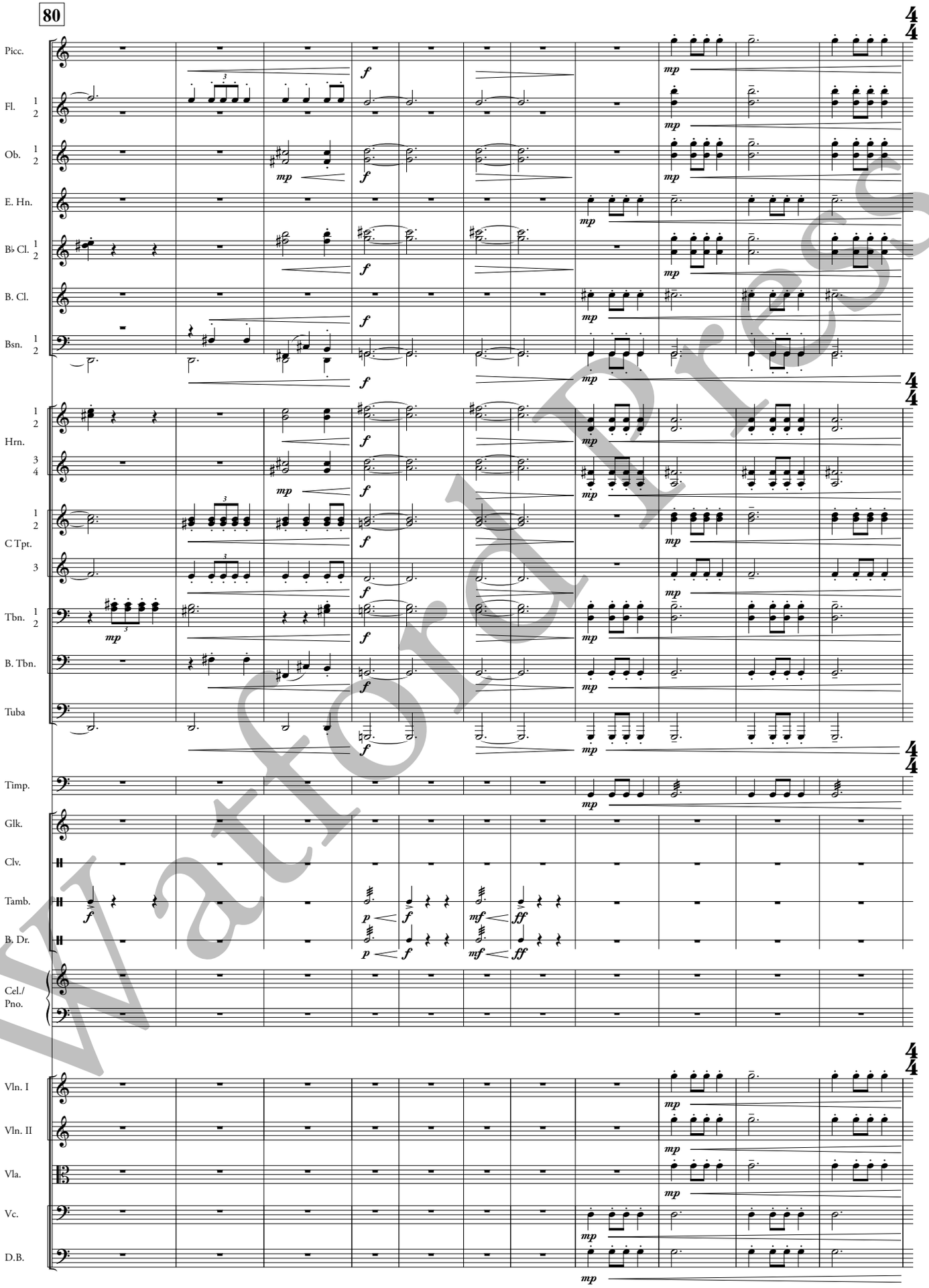

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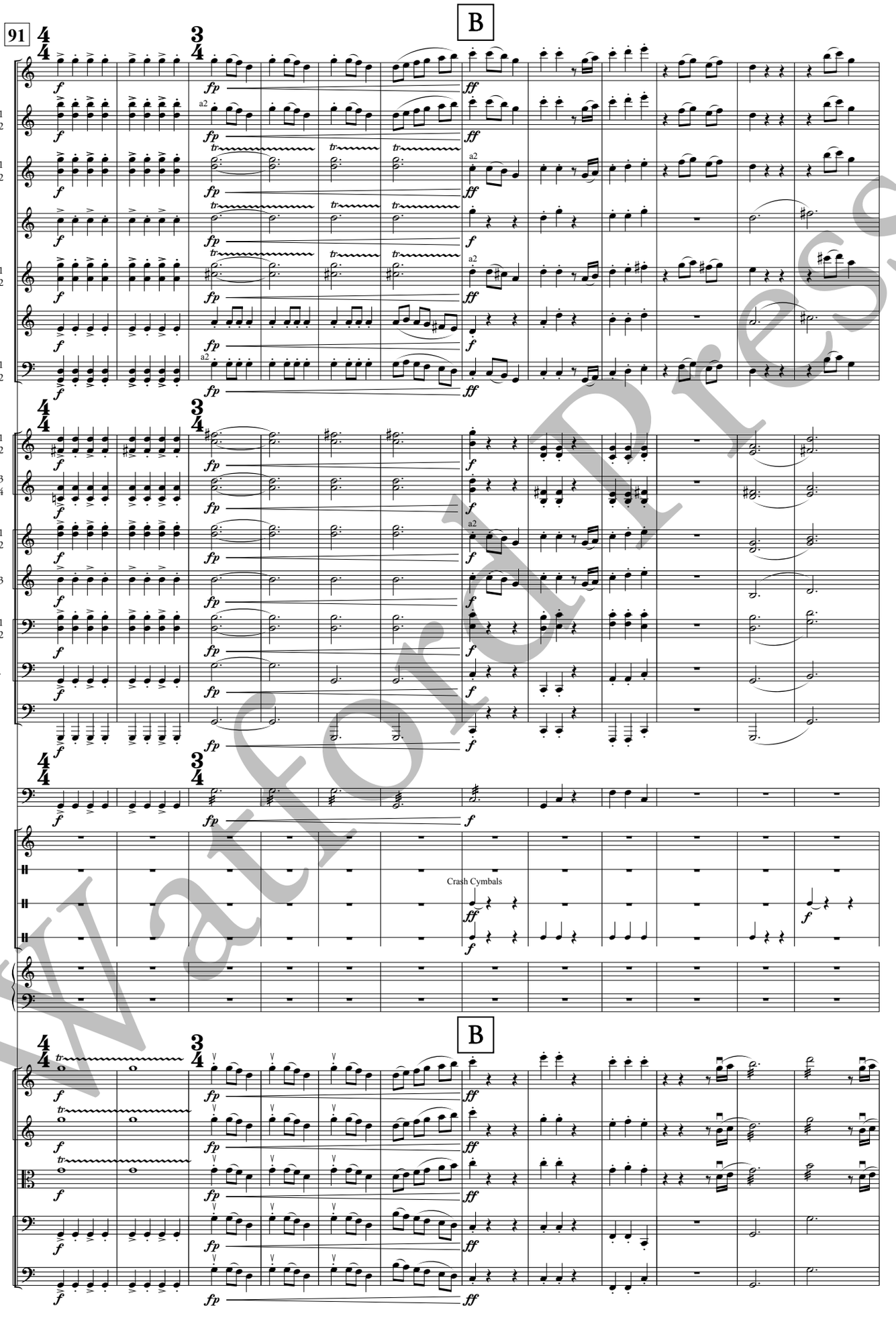

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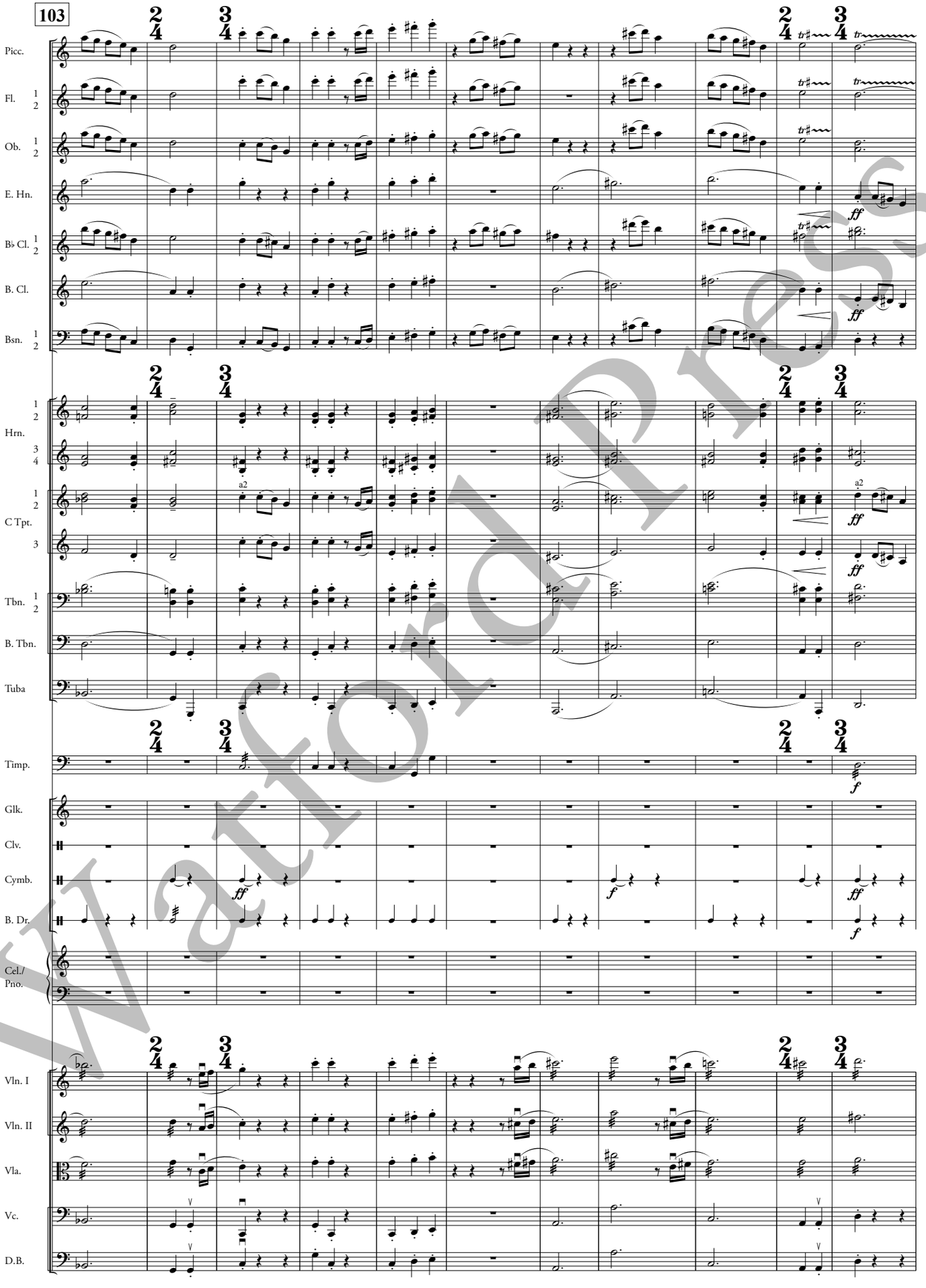

Watford Press

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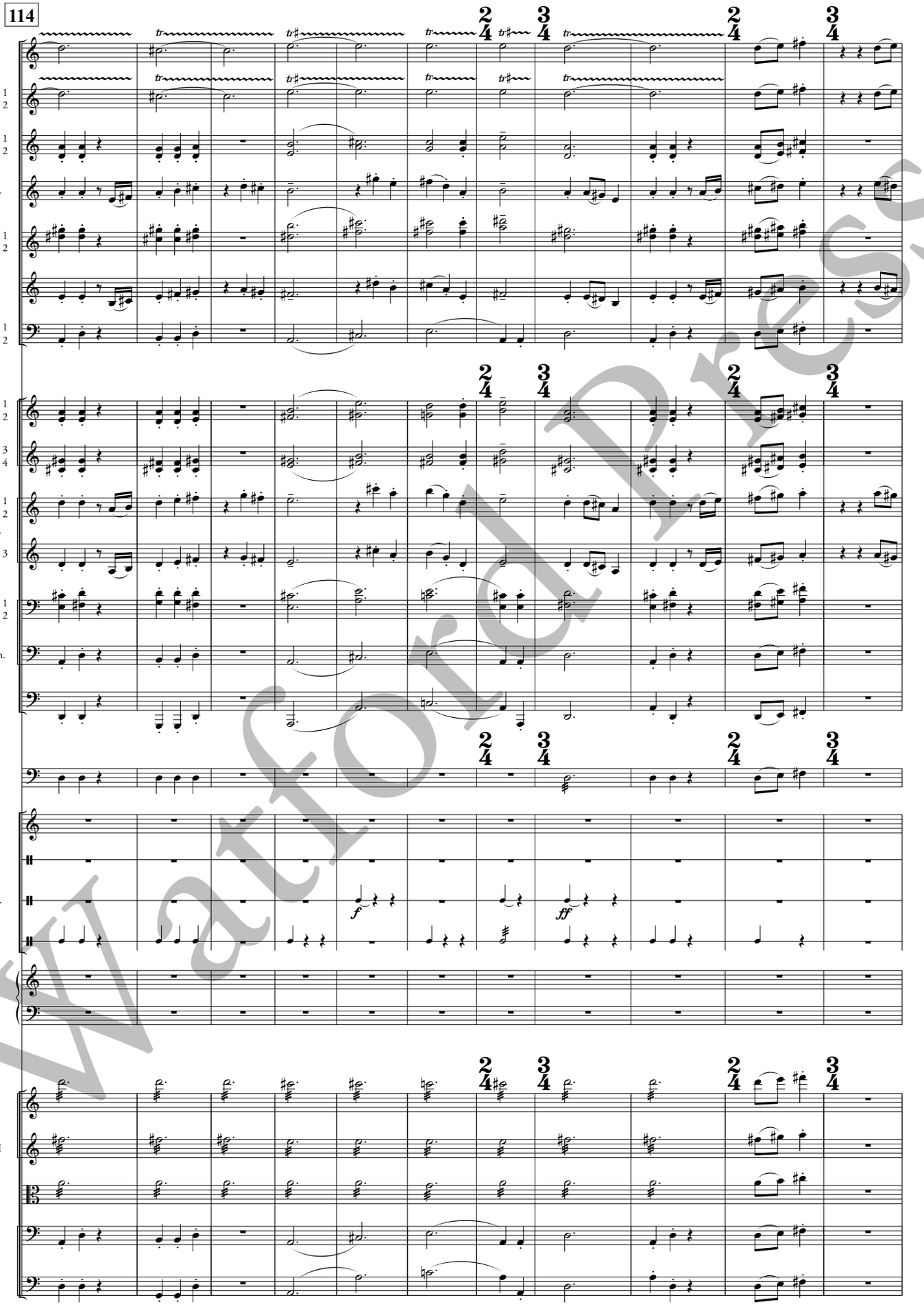

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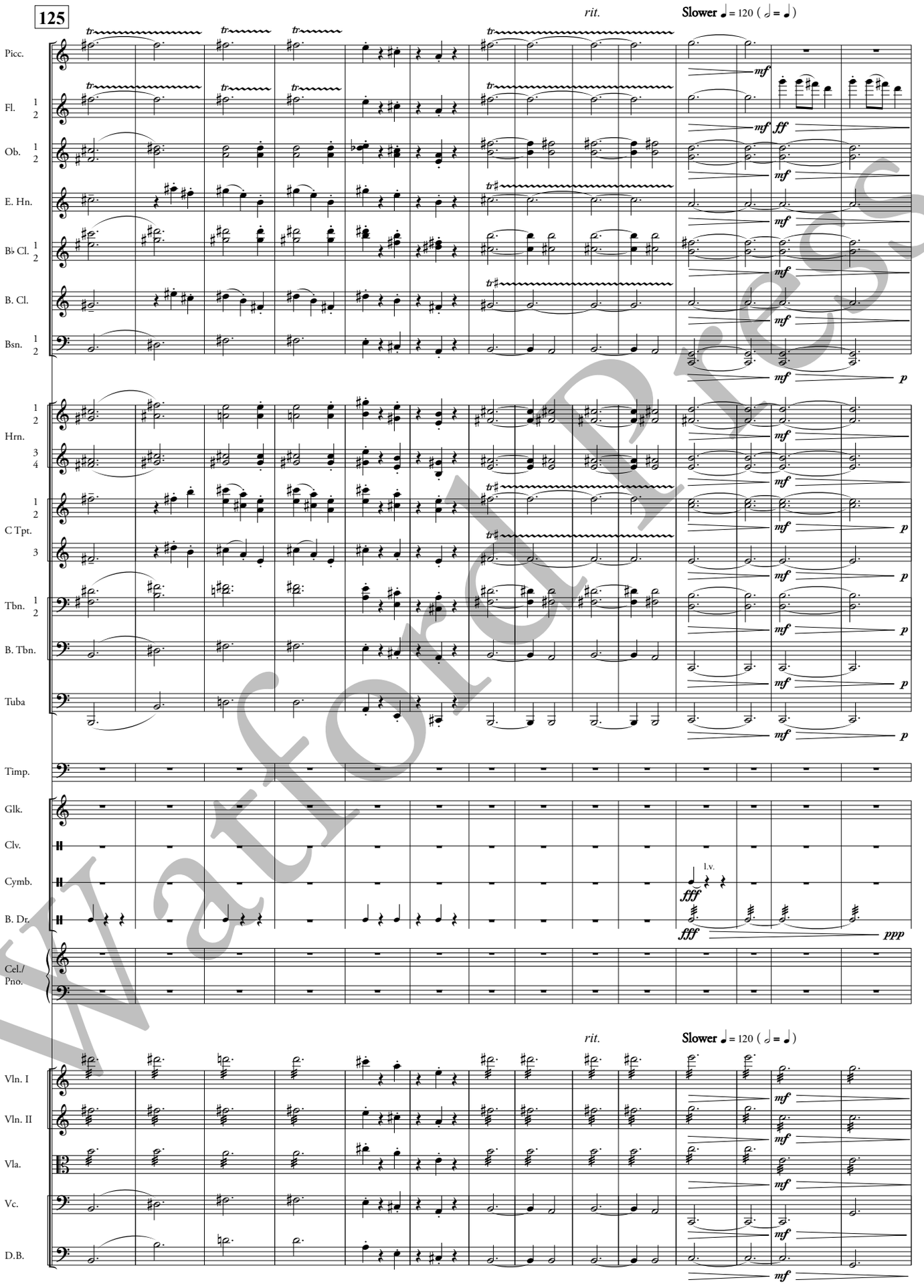
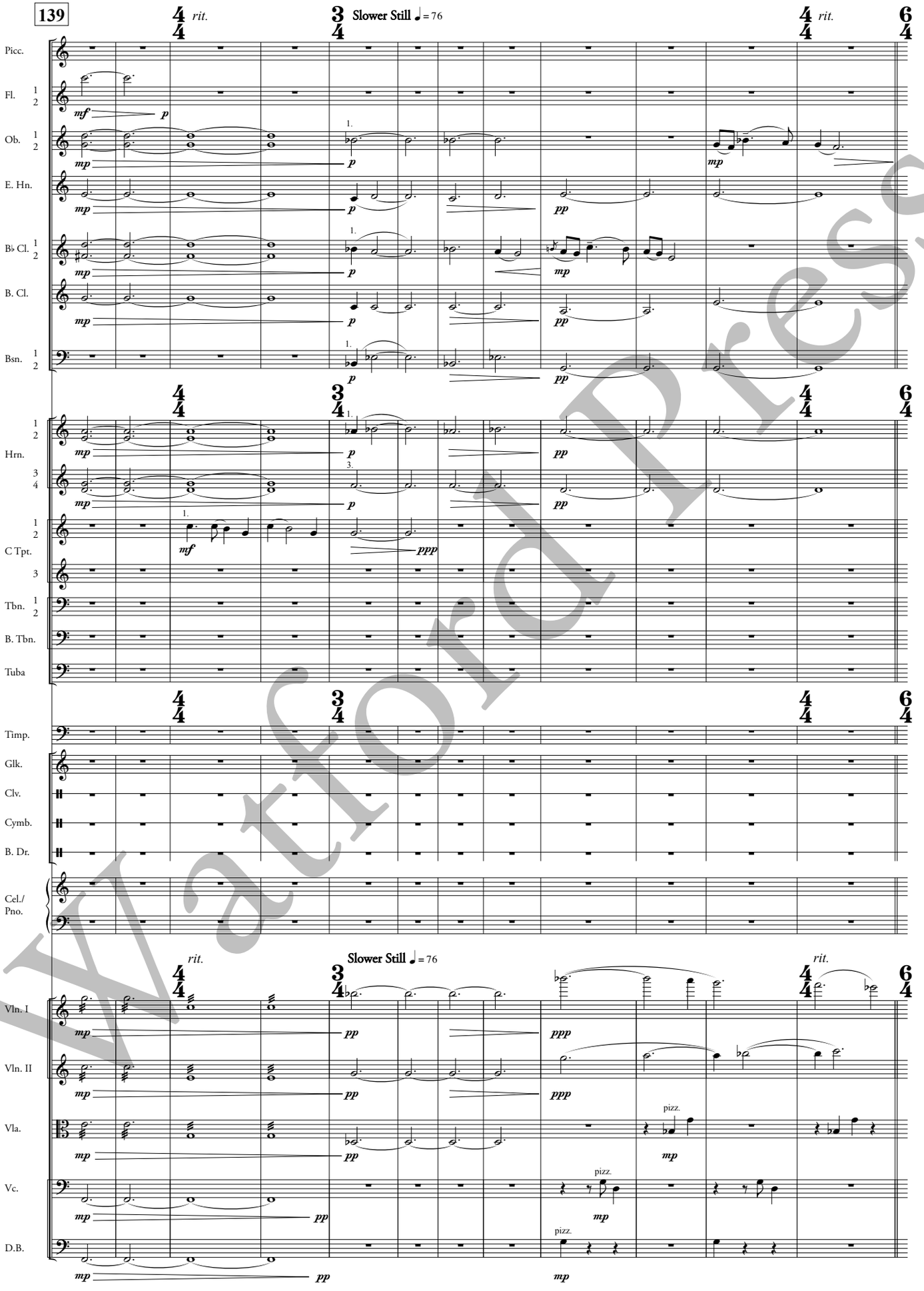
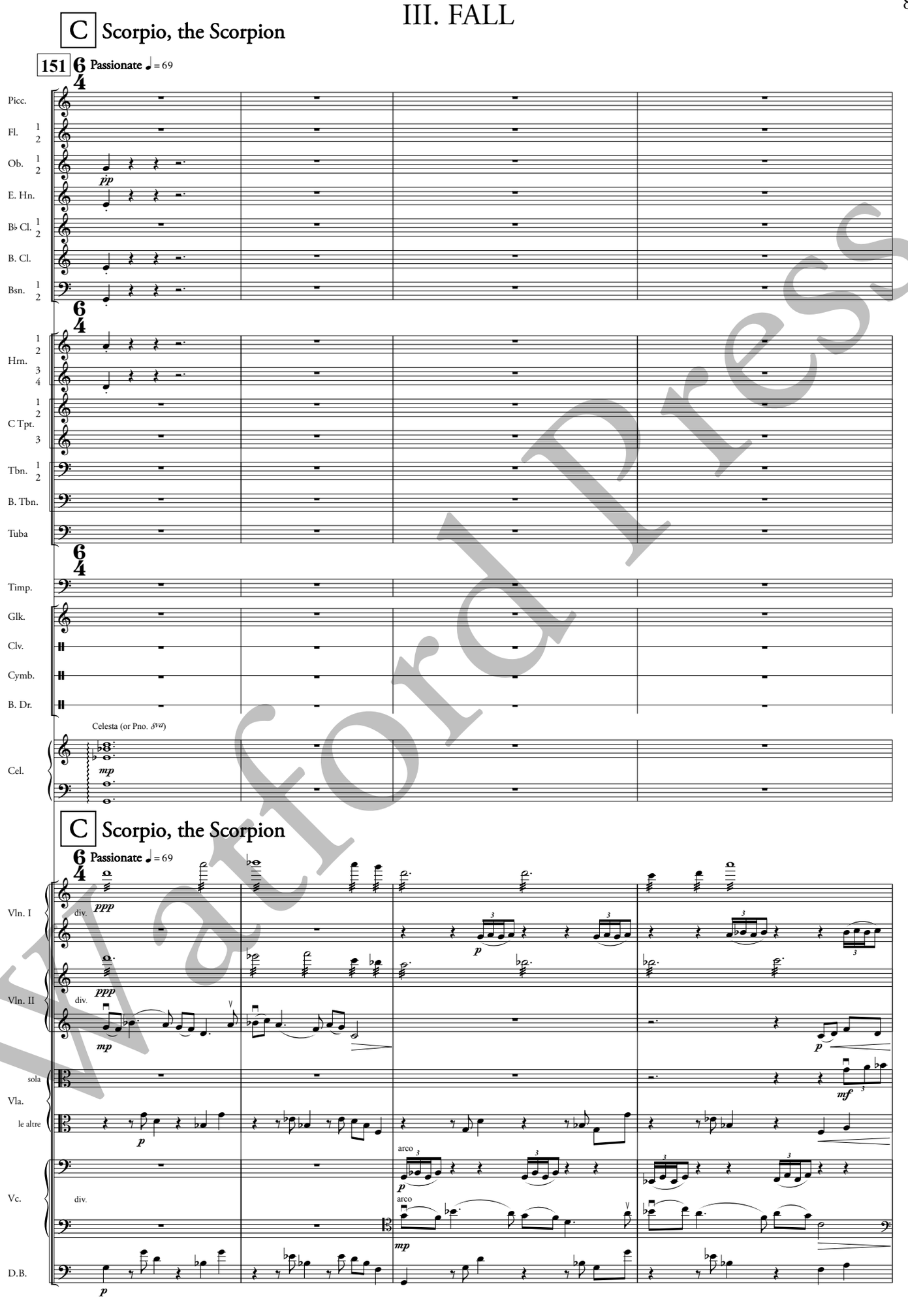


Watford Press

III. FALL



Watford Press



Watford Press

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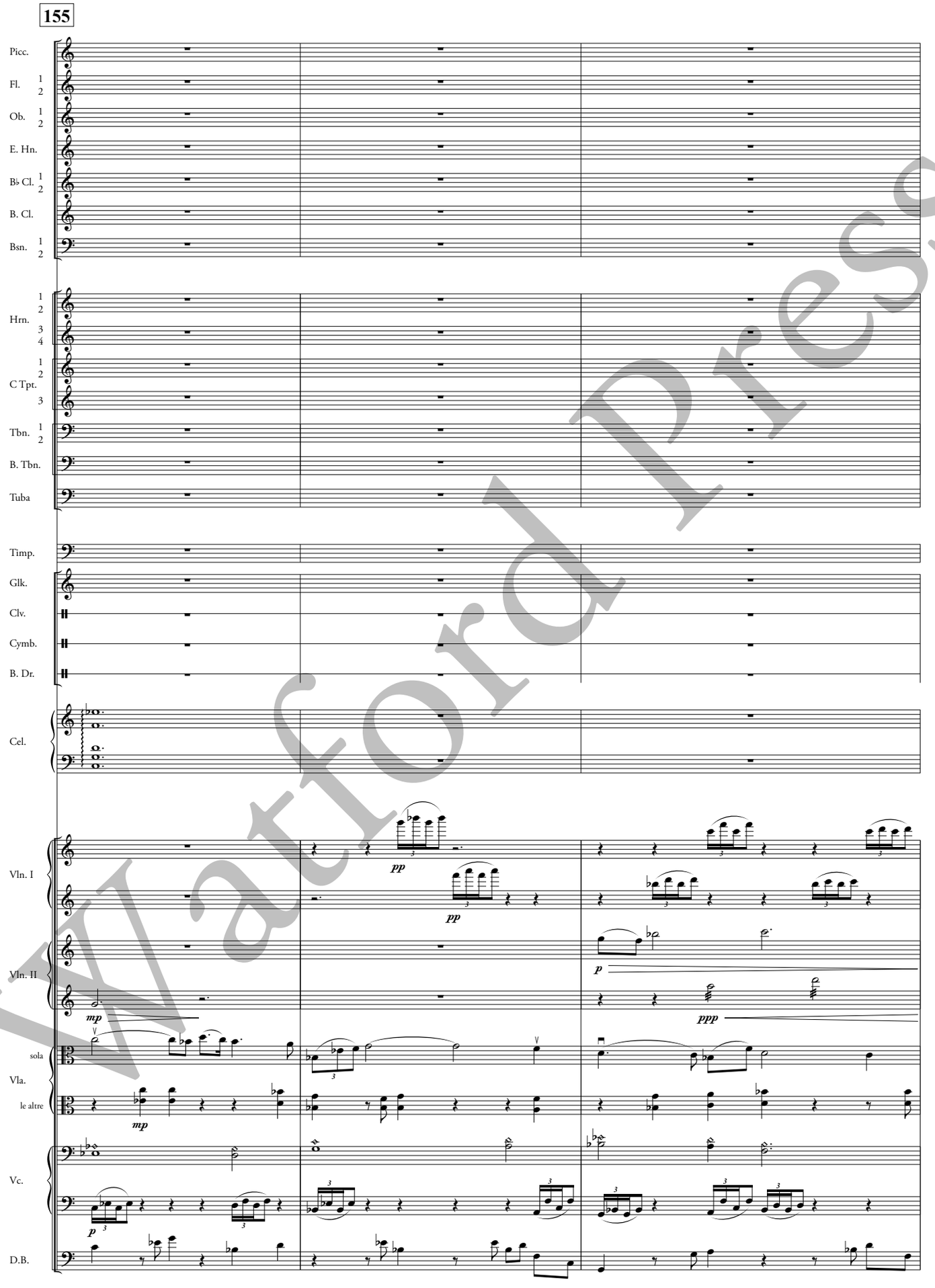

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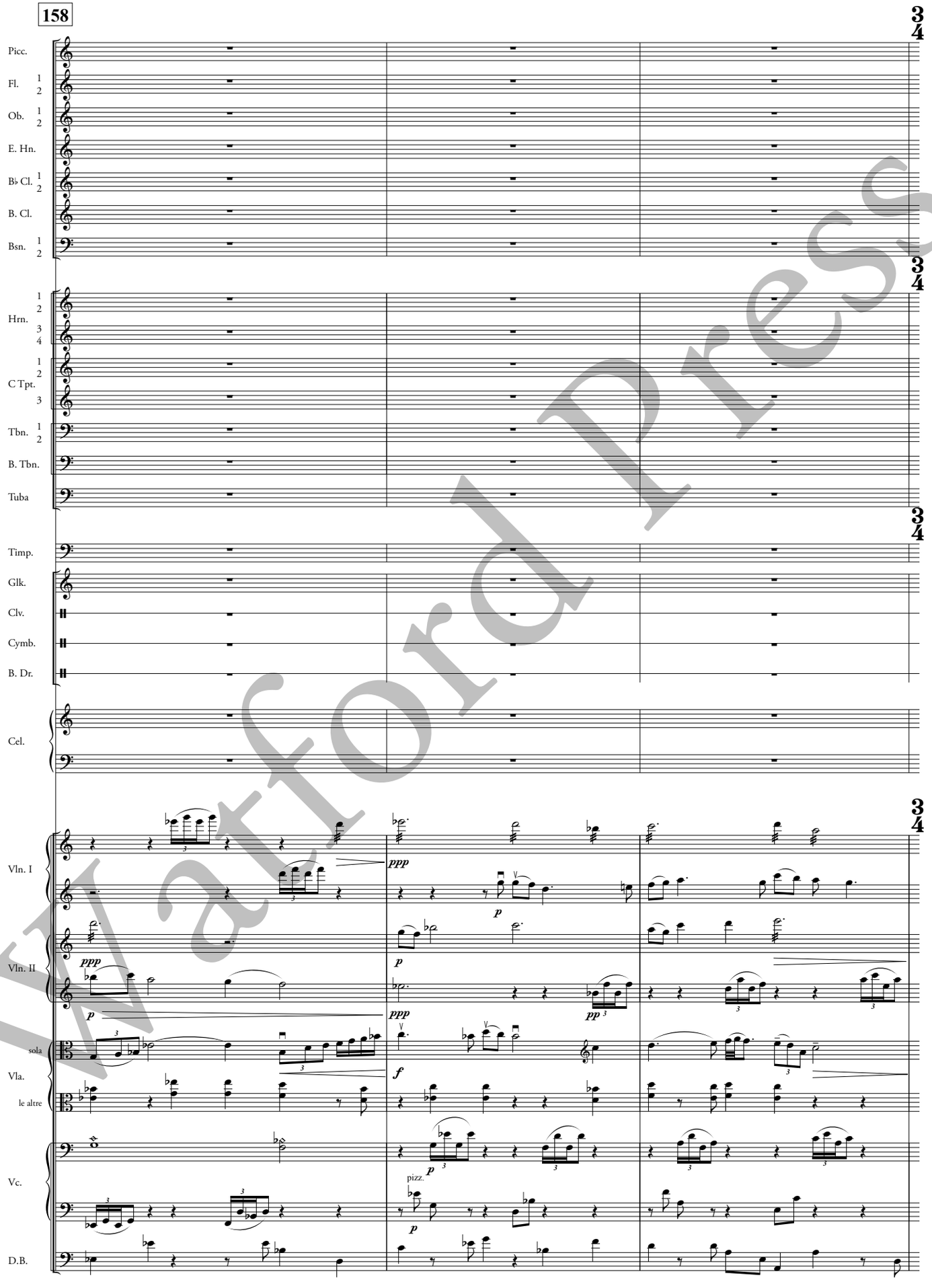

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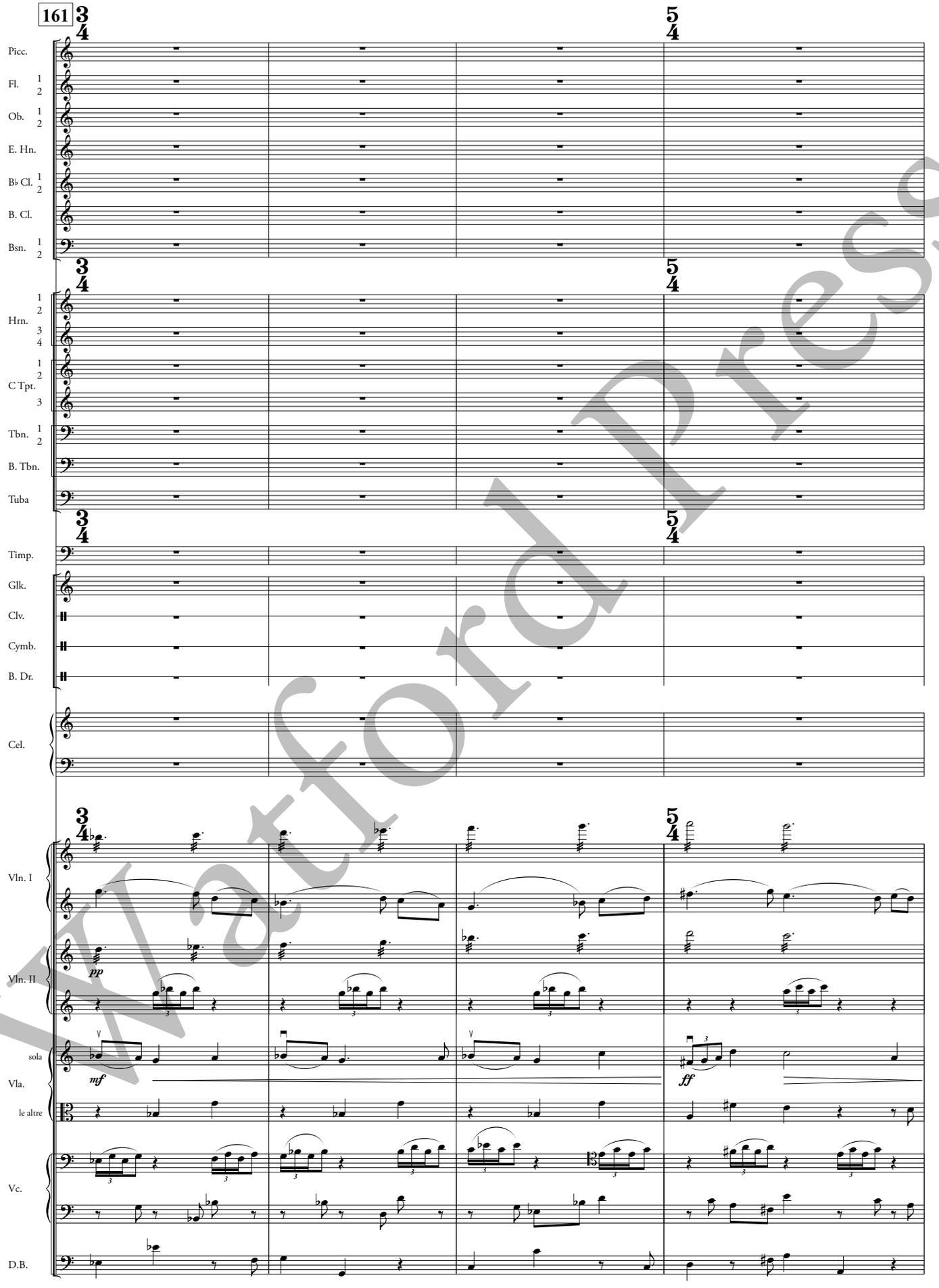

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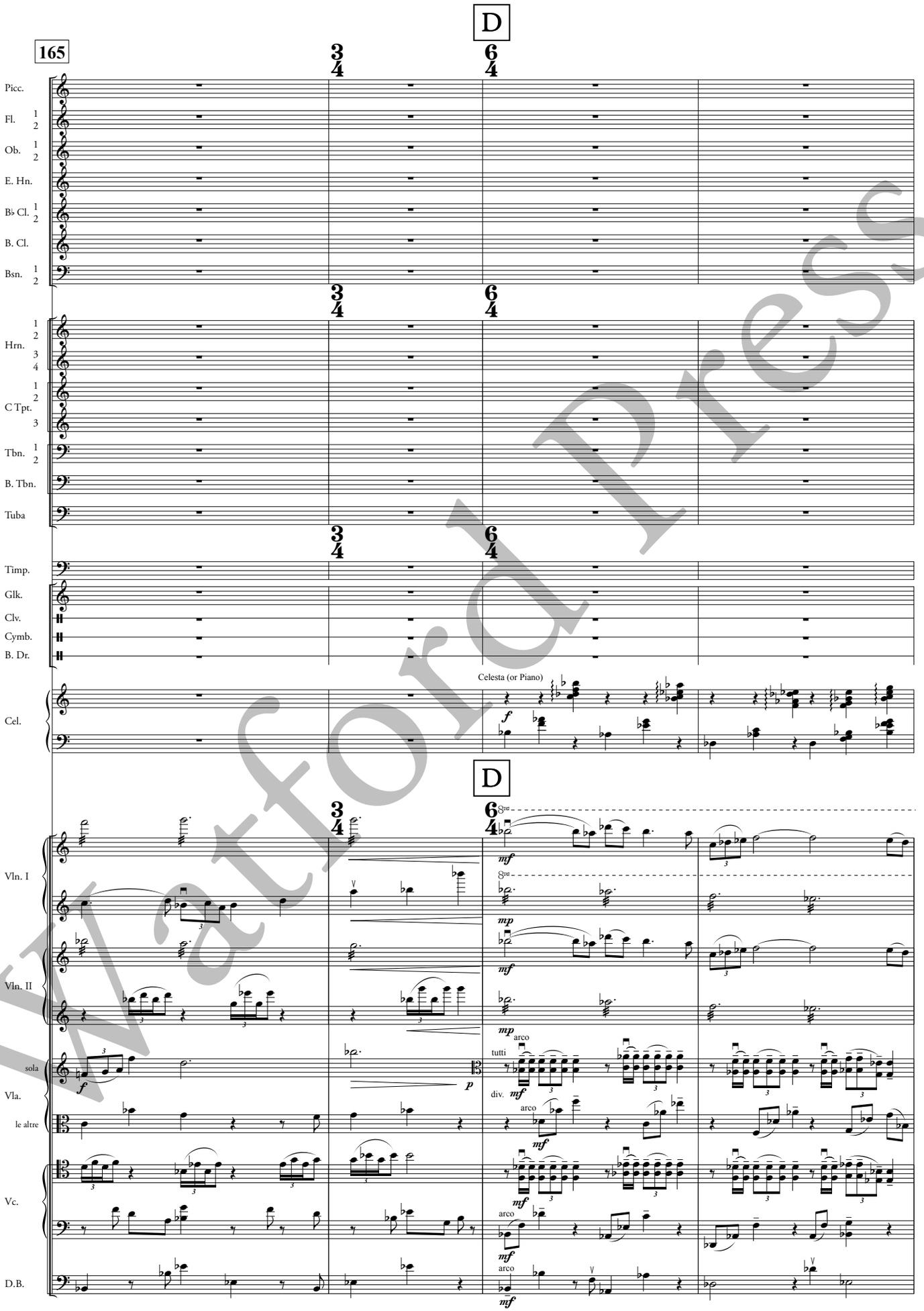

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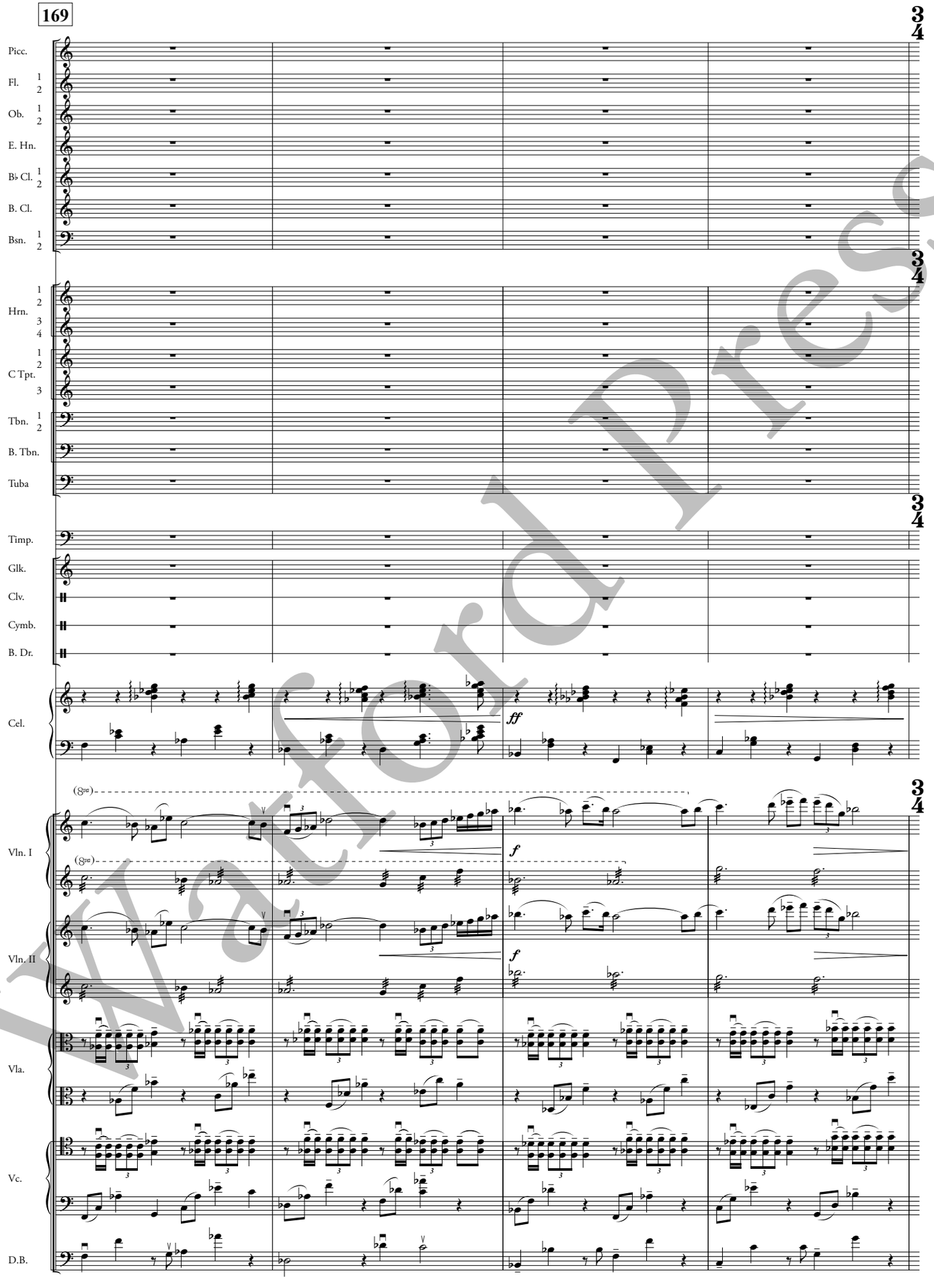

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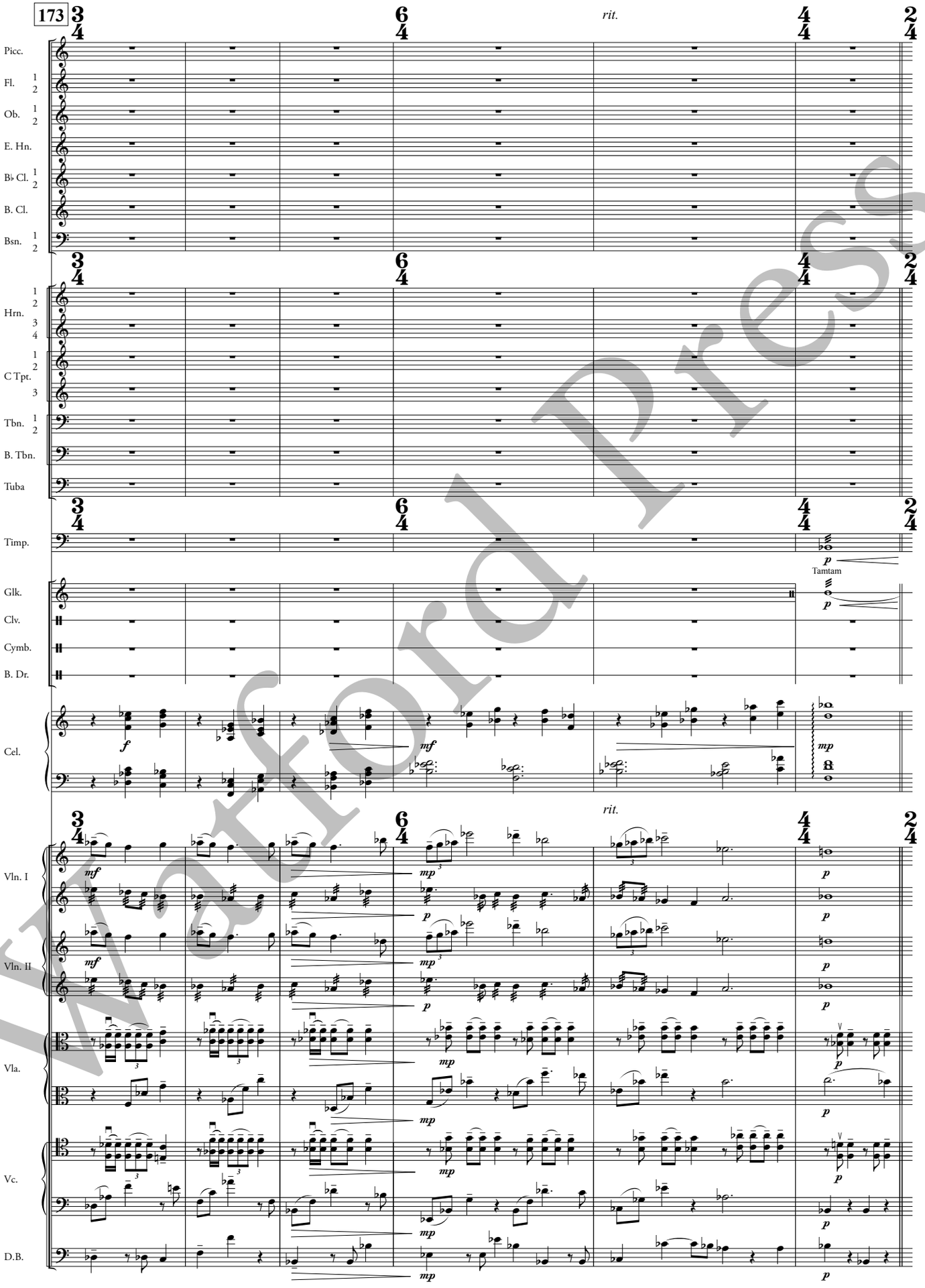

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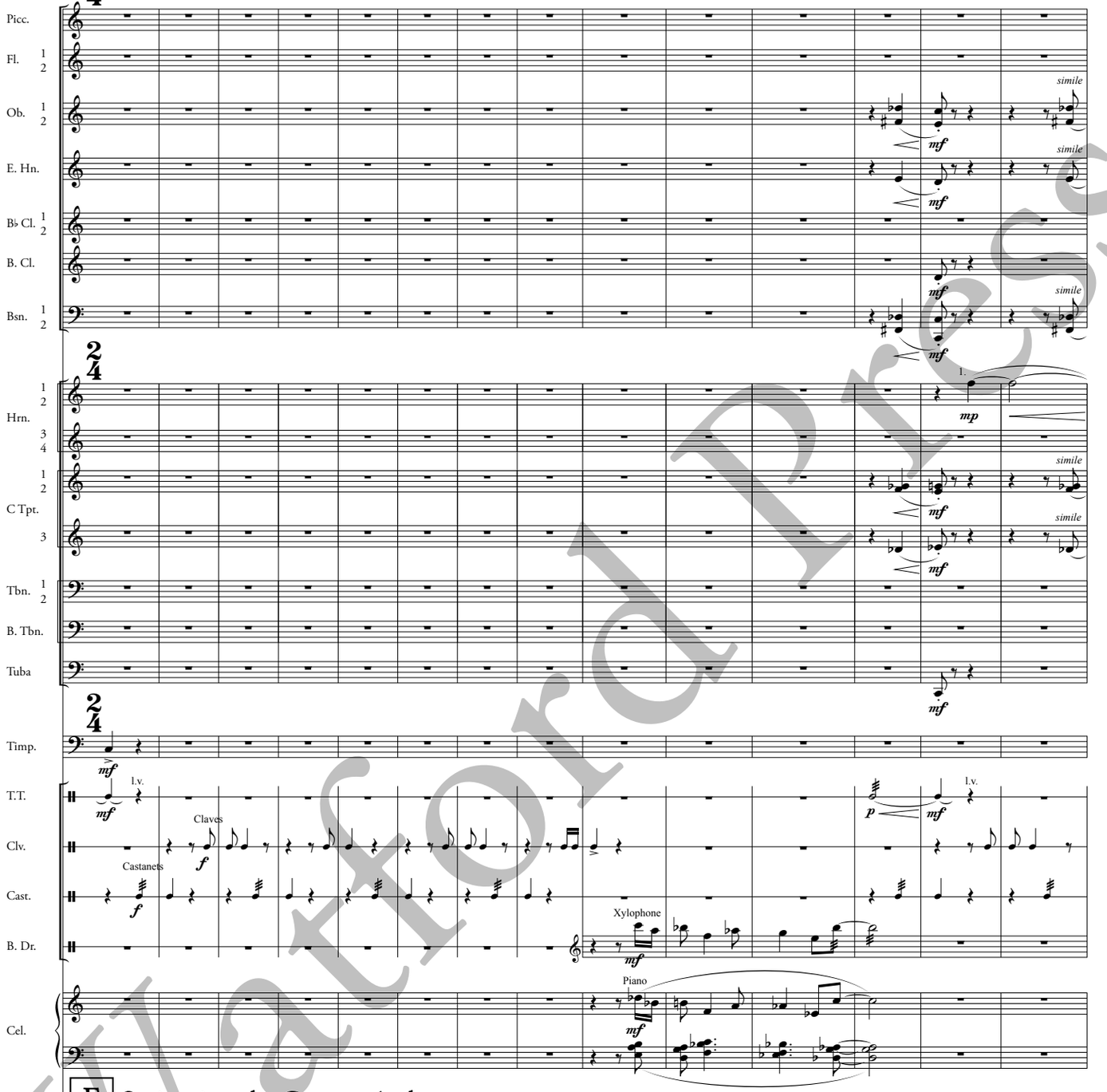
III. FALL

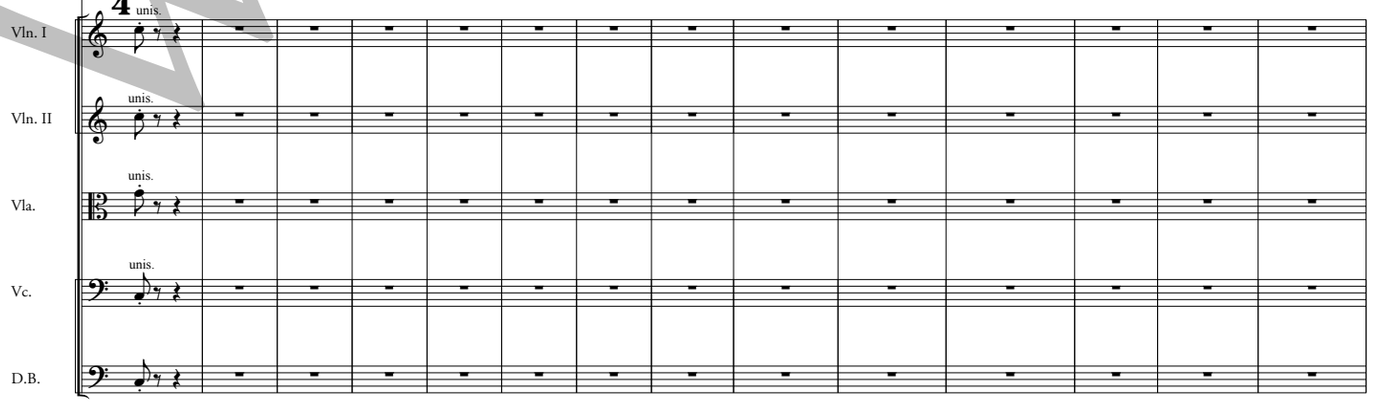
E Sagittarius, the Centaur Archer

179 **With Intensity** ♩ = 138



E Sagittarius, the Centaur Archer

With Intensity ♩ = 138



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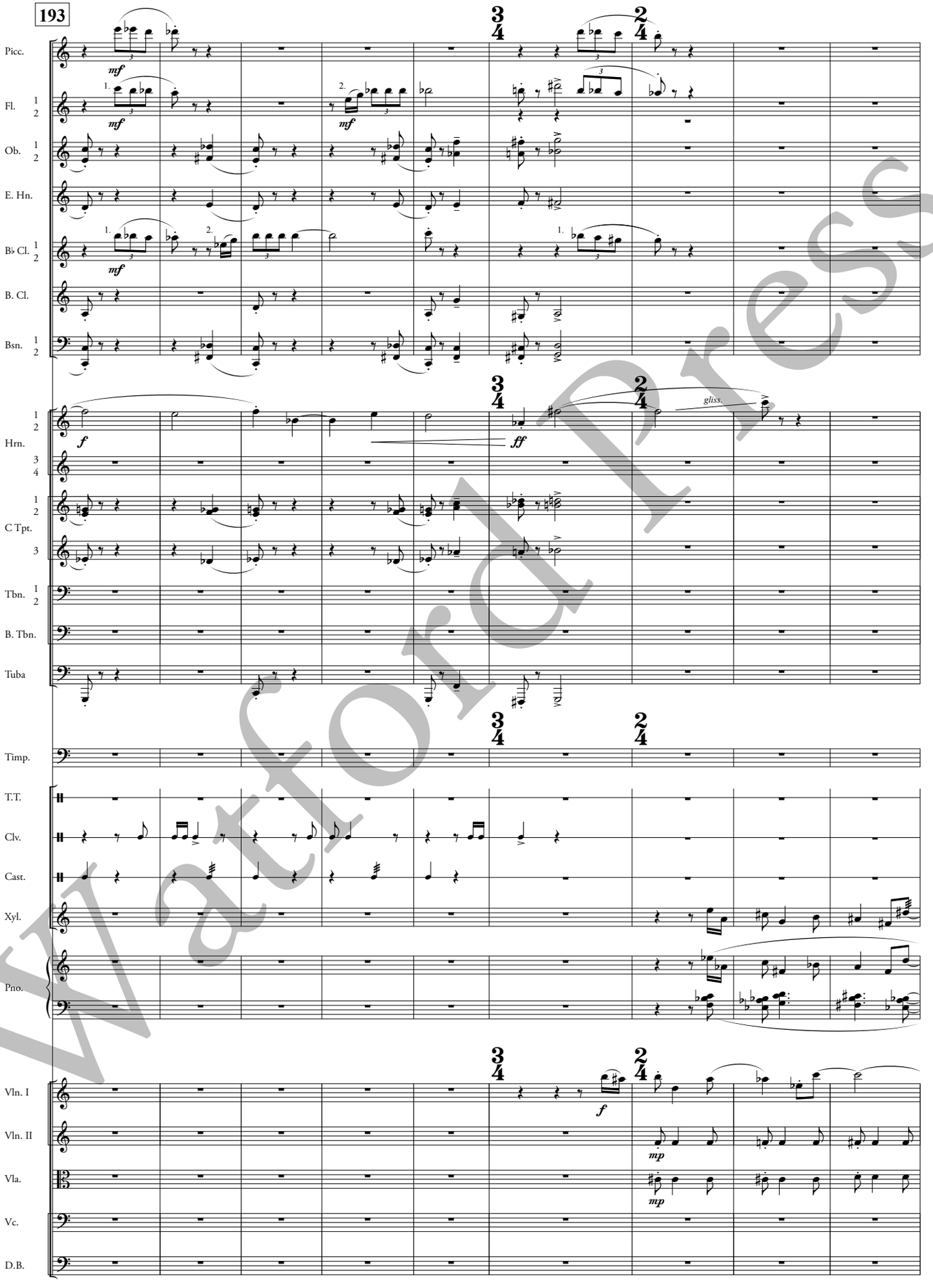

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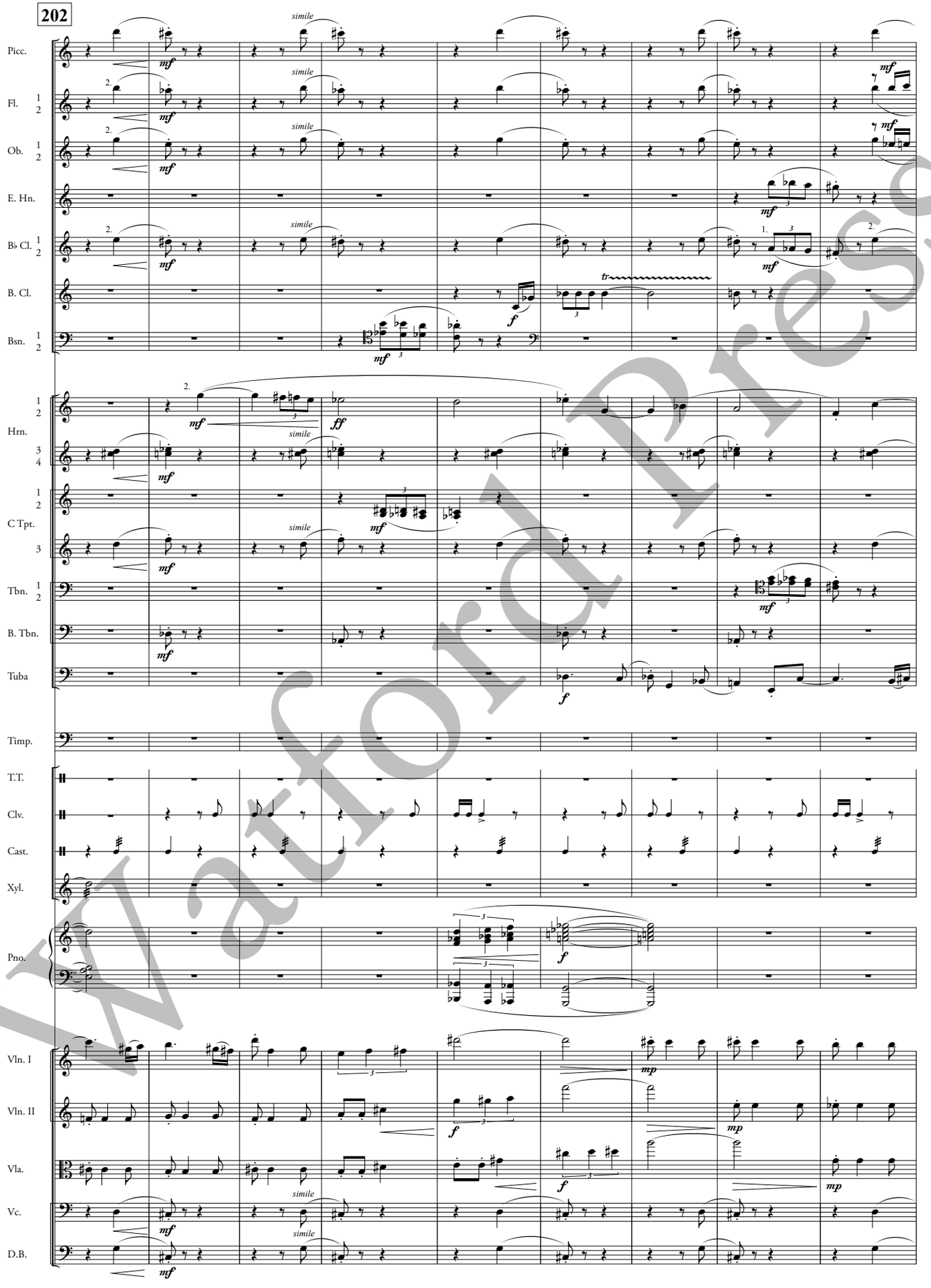

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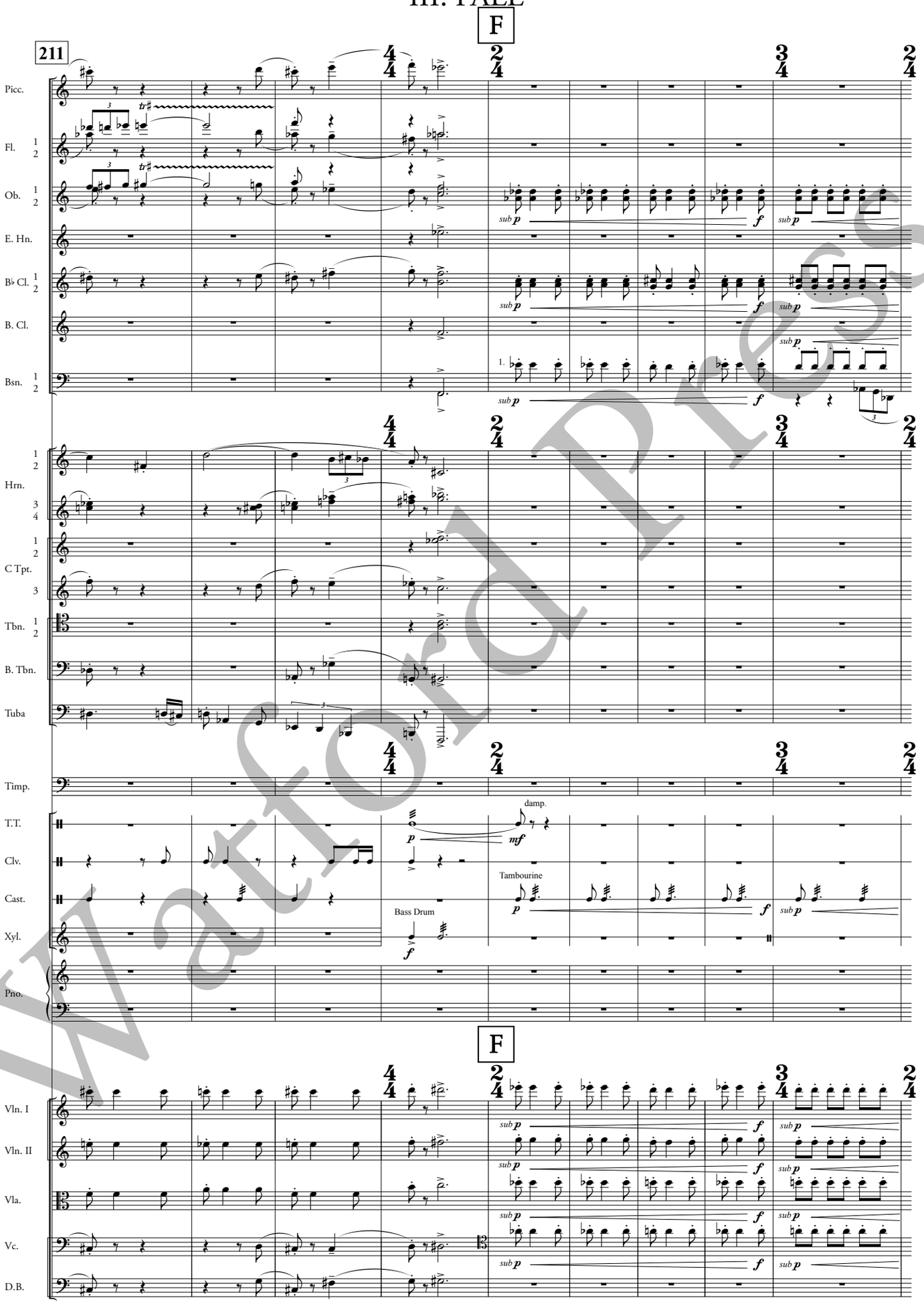

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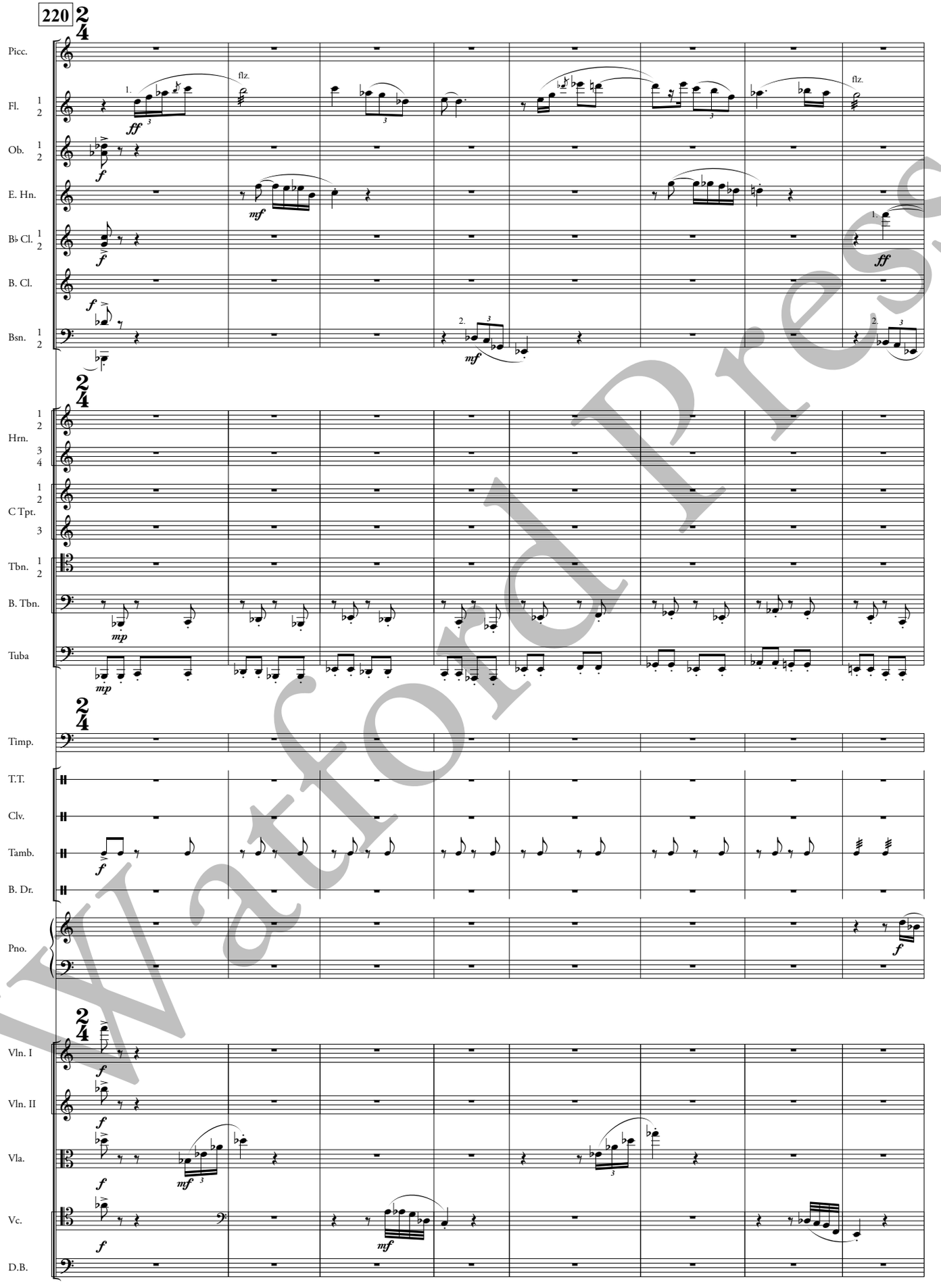

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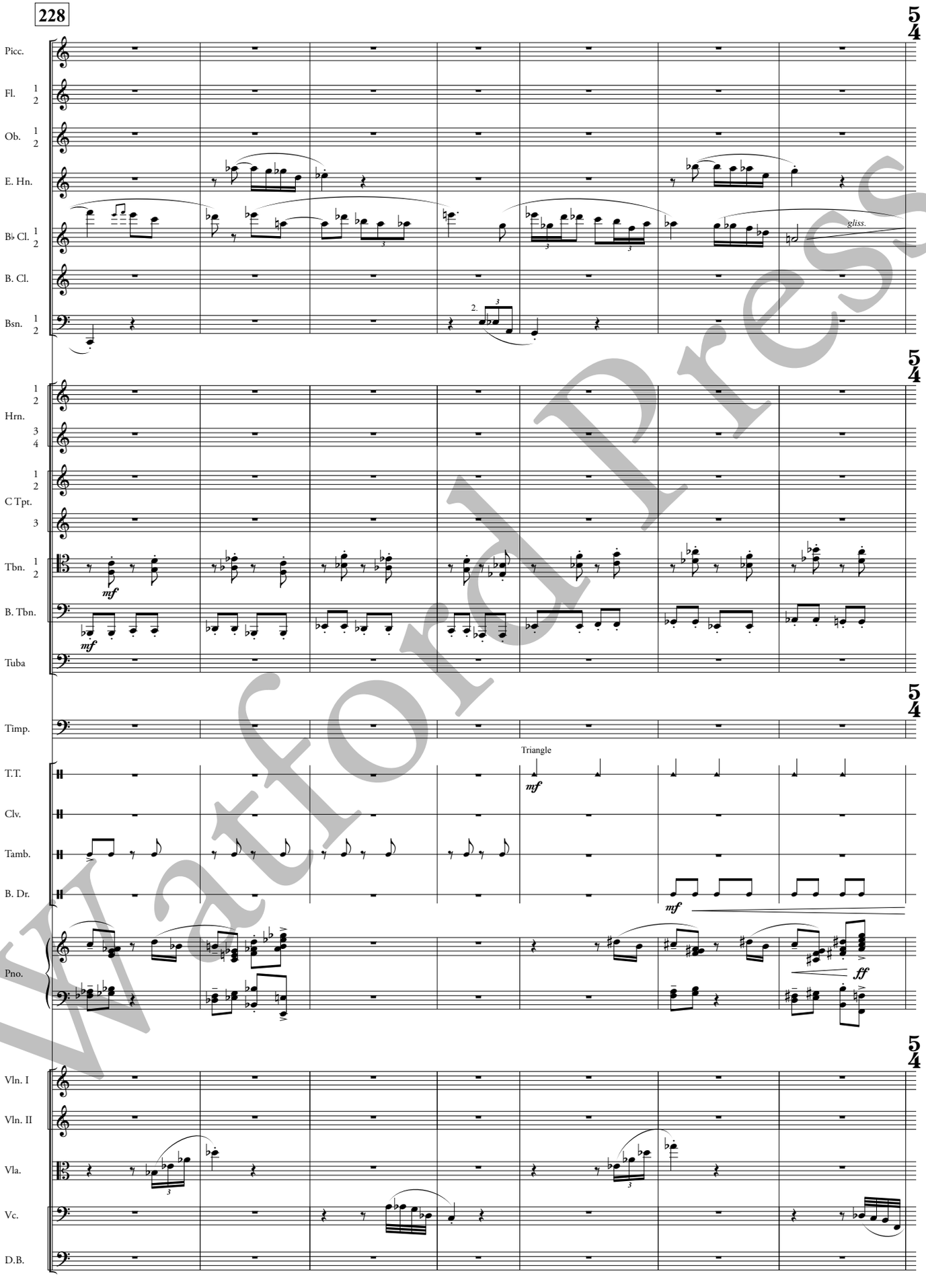

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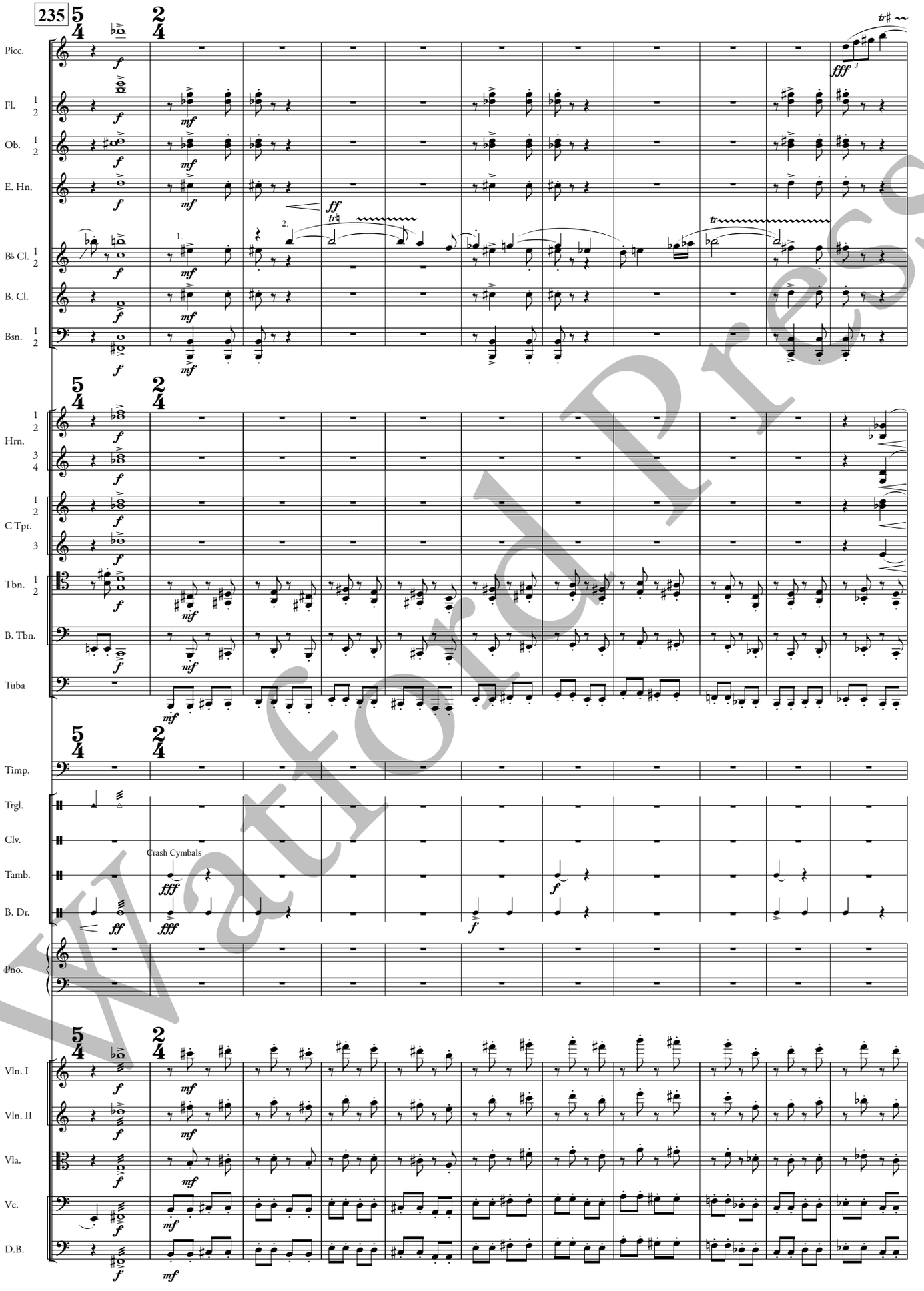

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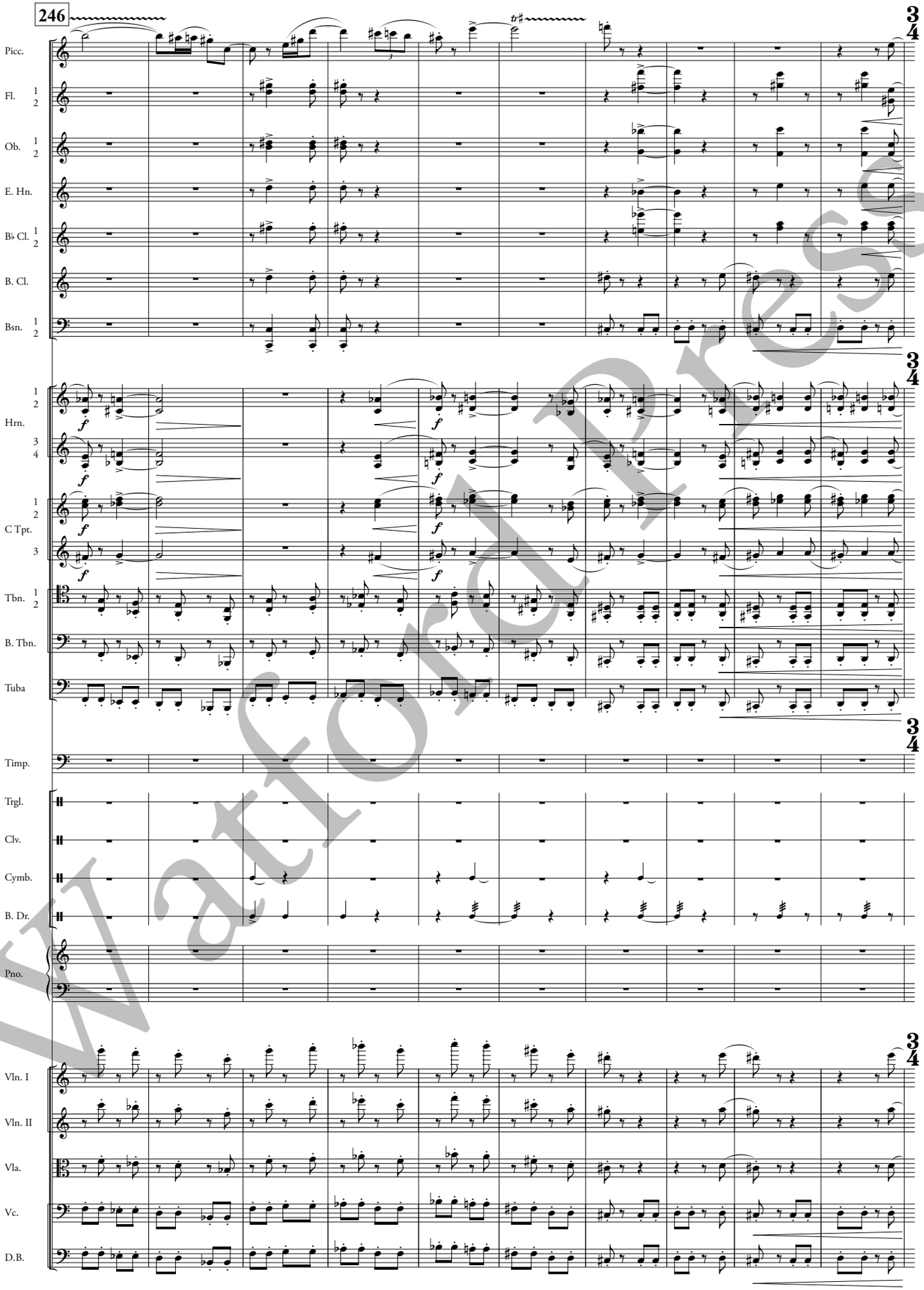

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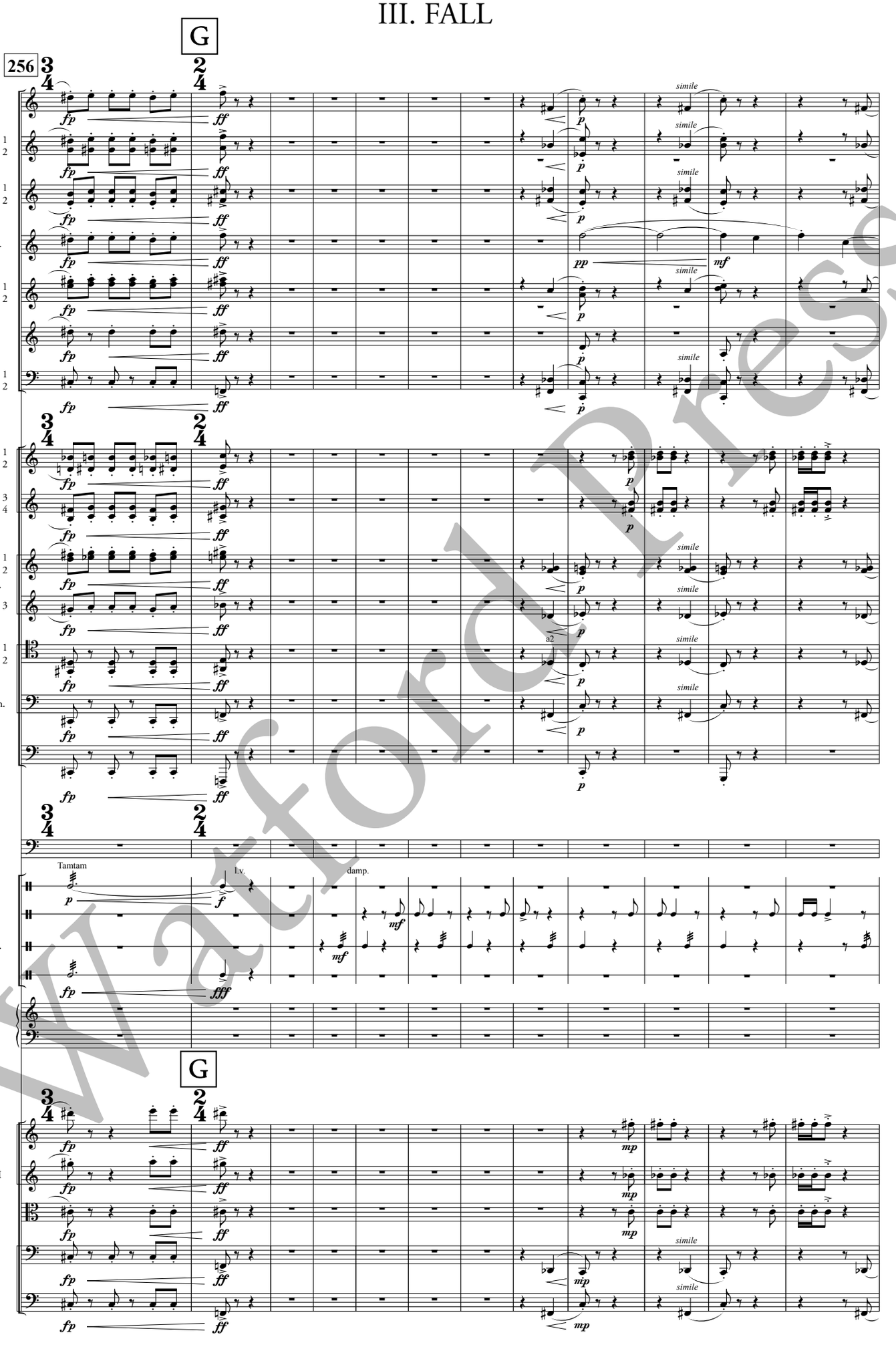

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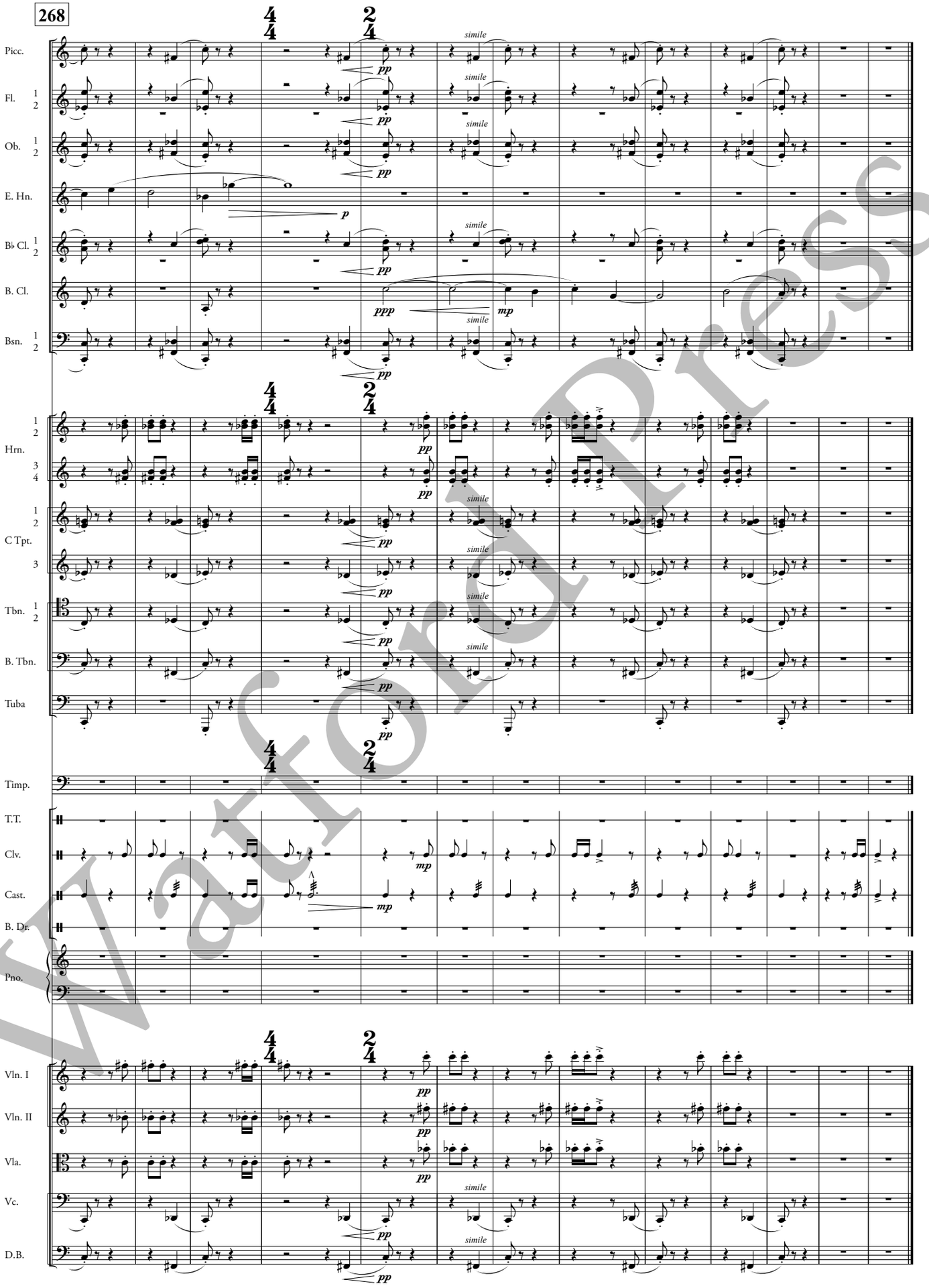

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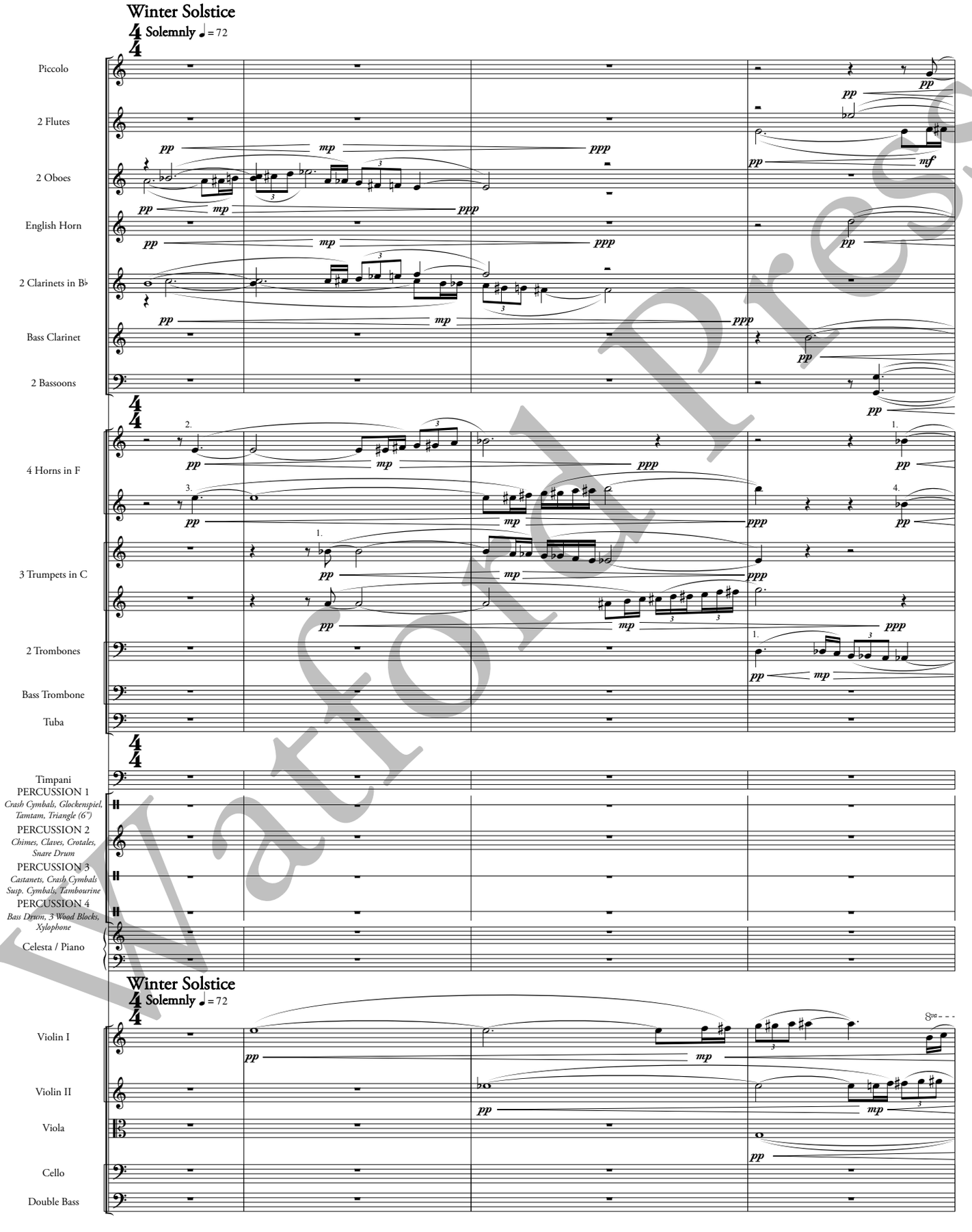
IV. WINTER

Solstice, Capricorn, Aquarius, Pisces



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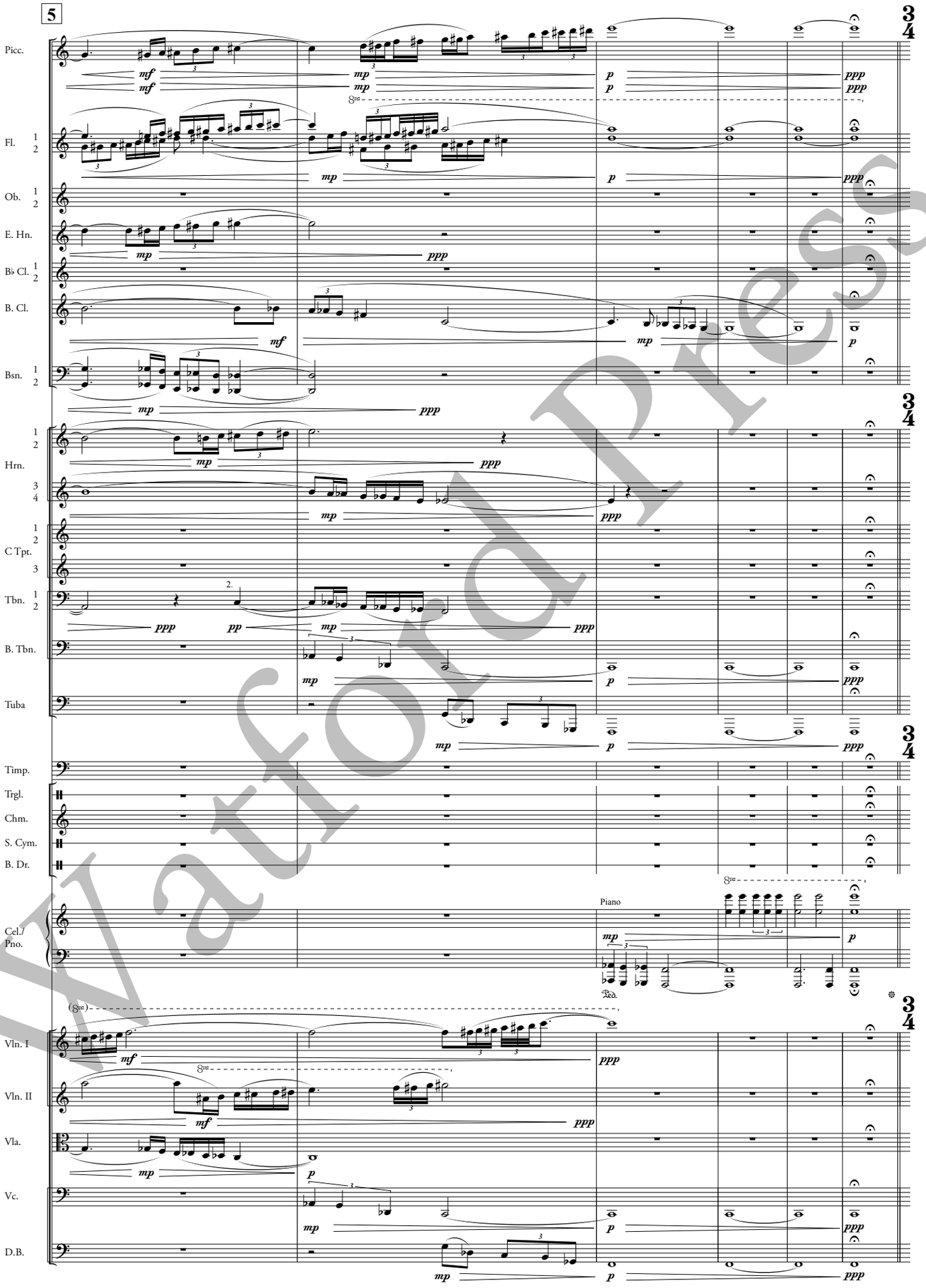

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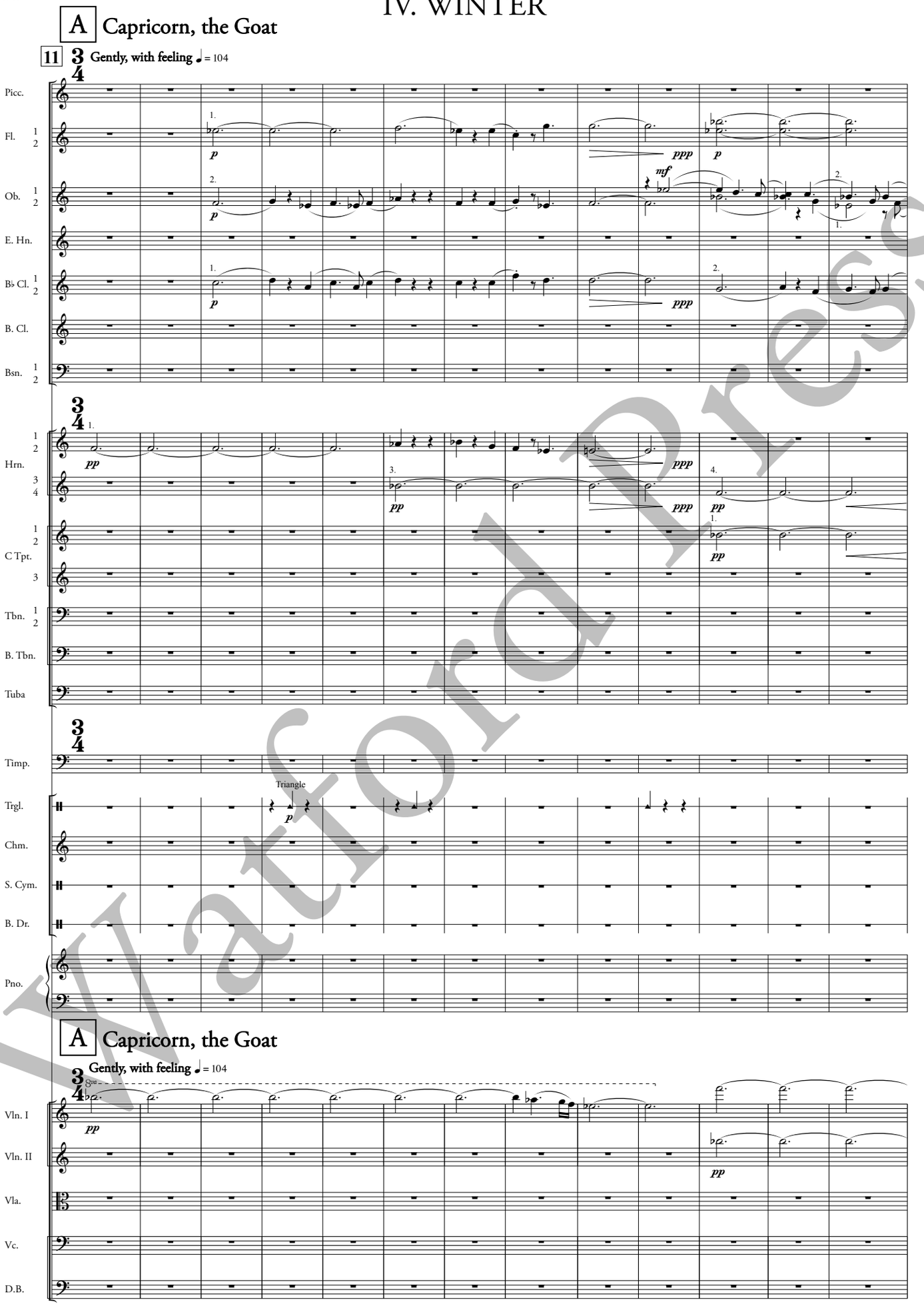

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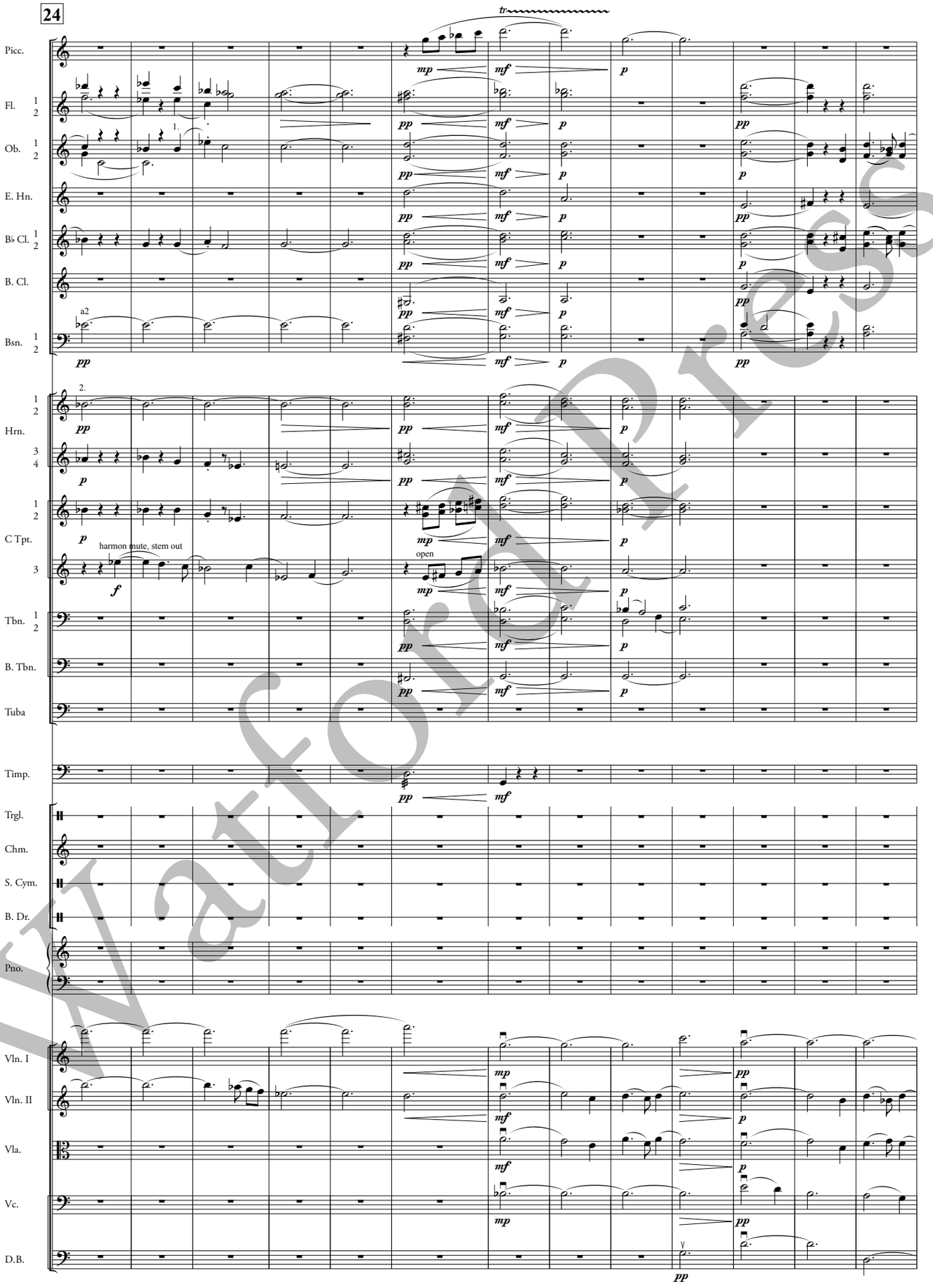

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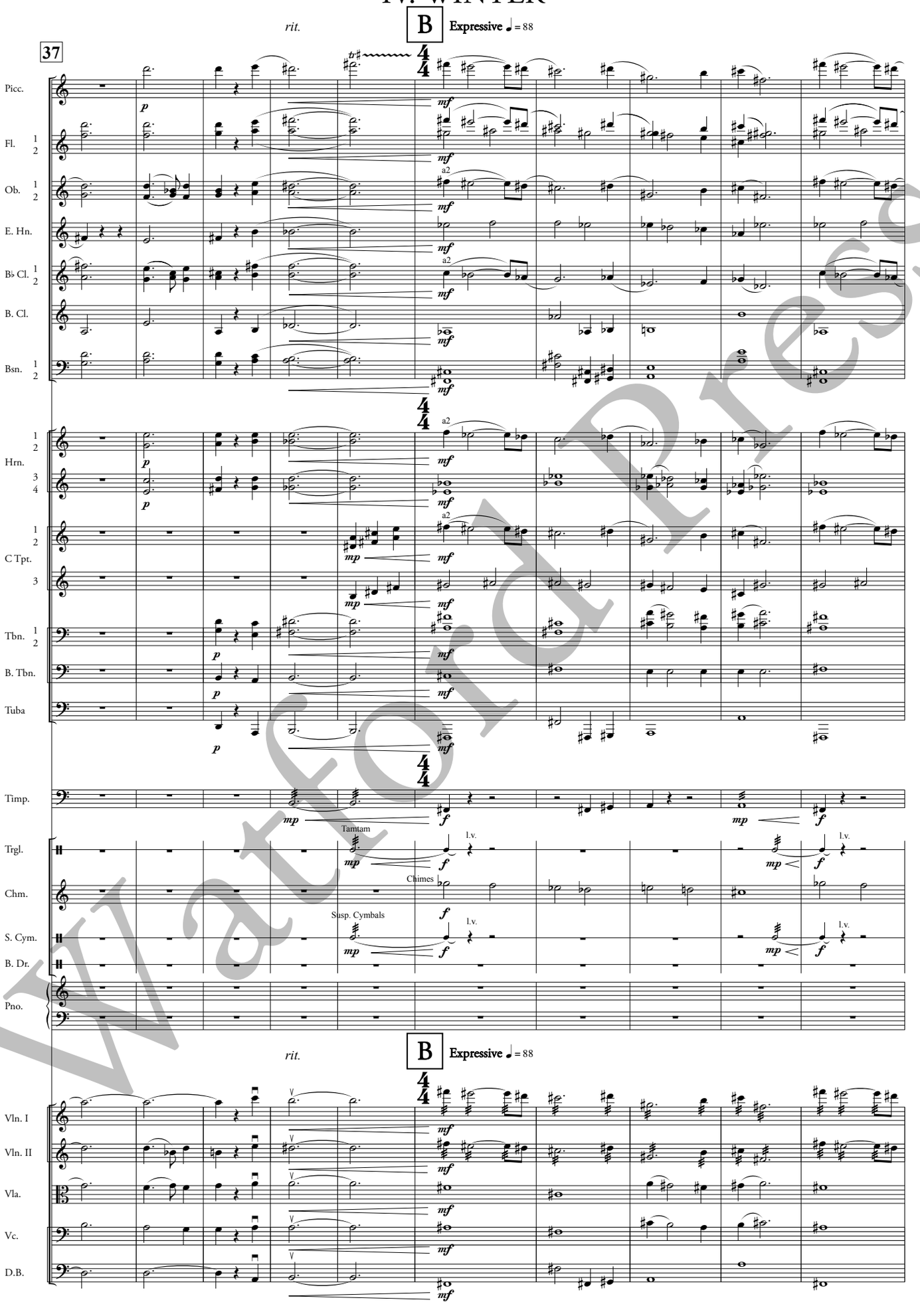

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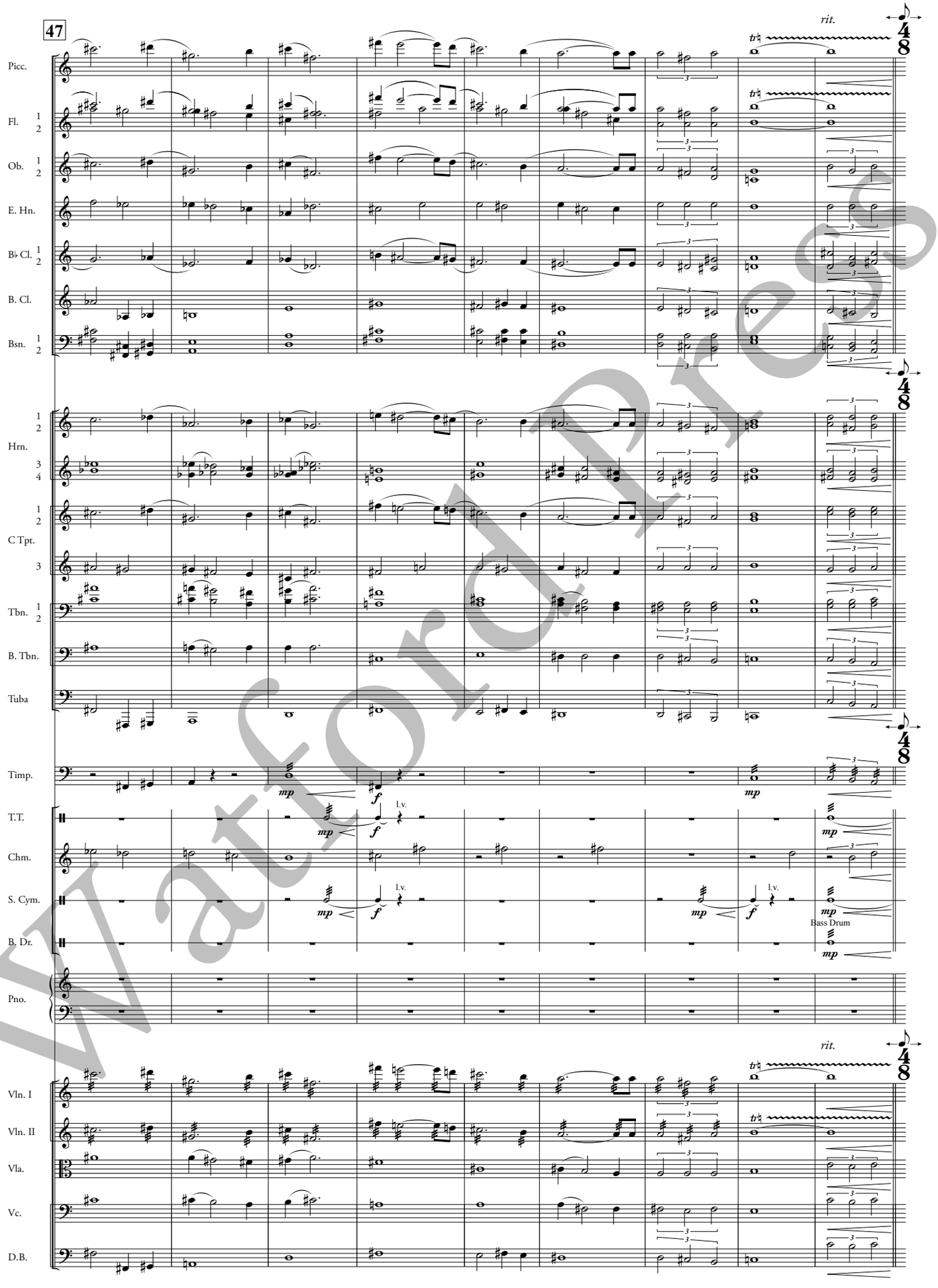

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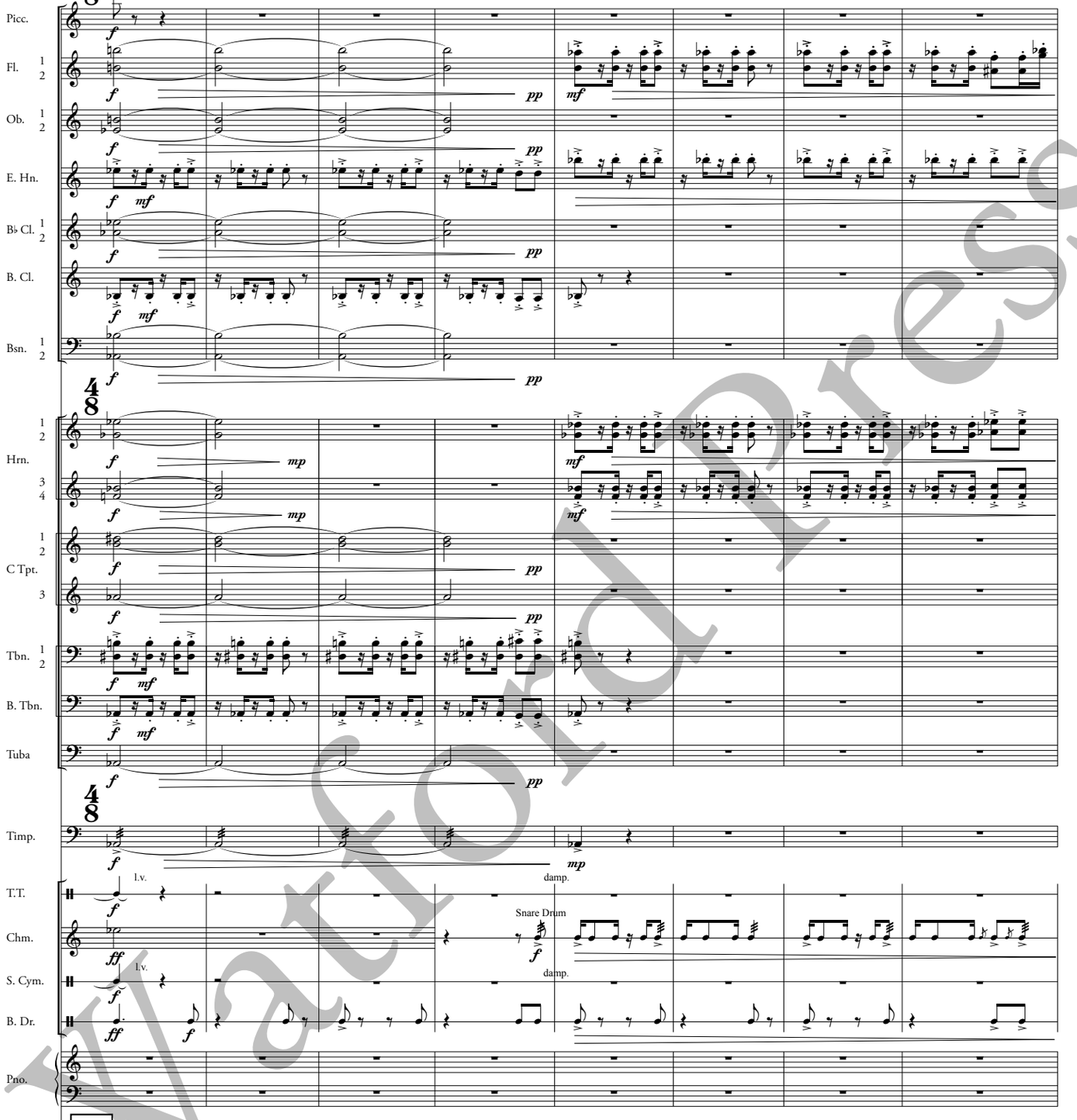
IV. WINTER

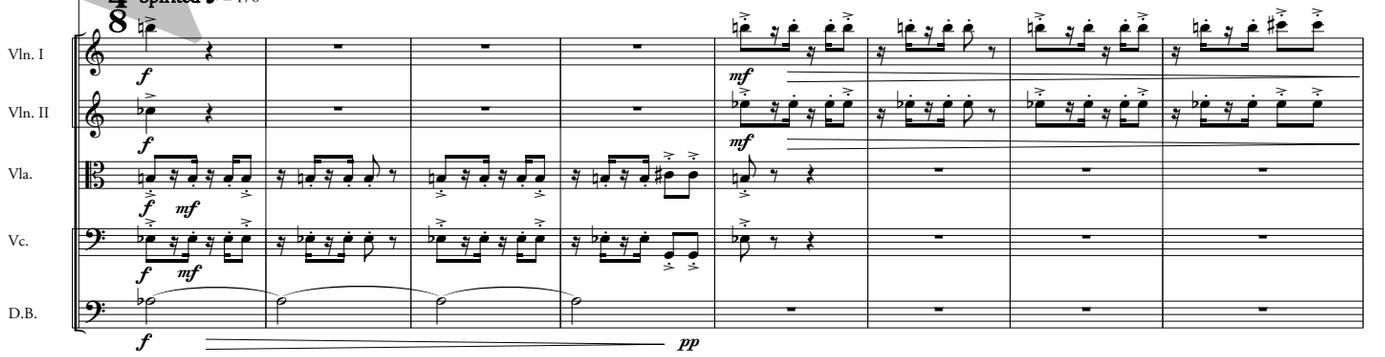
C Aquarius, the Water-Bearer

56 Spirited ♪ = 176



C Aquarius, the Water-Bearer

Spirited ♪ = 176



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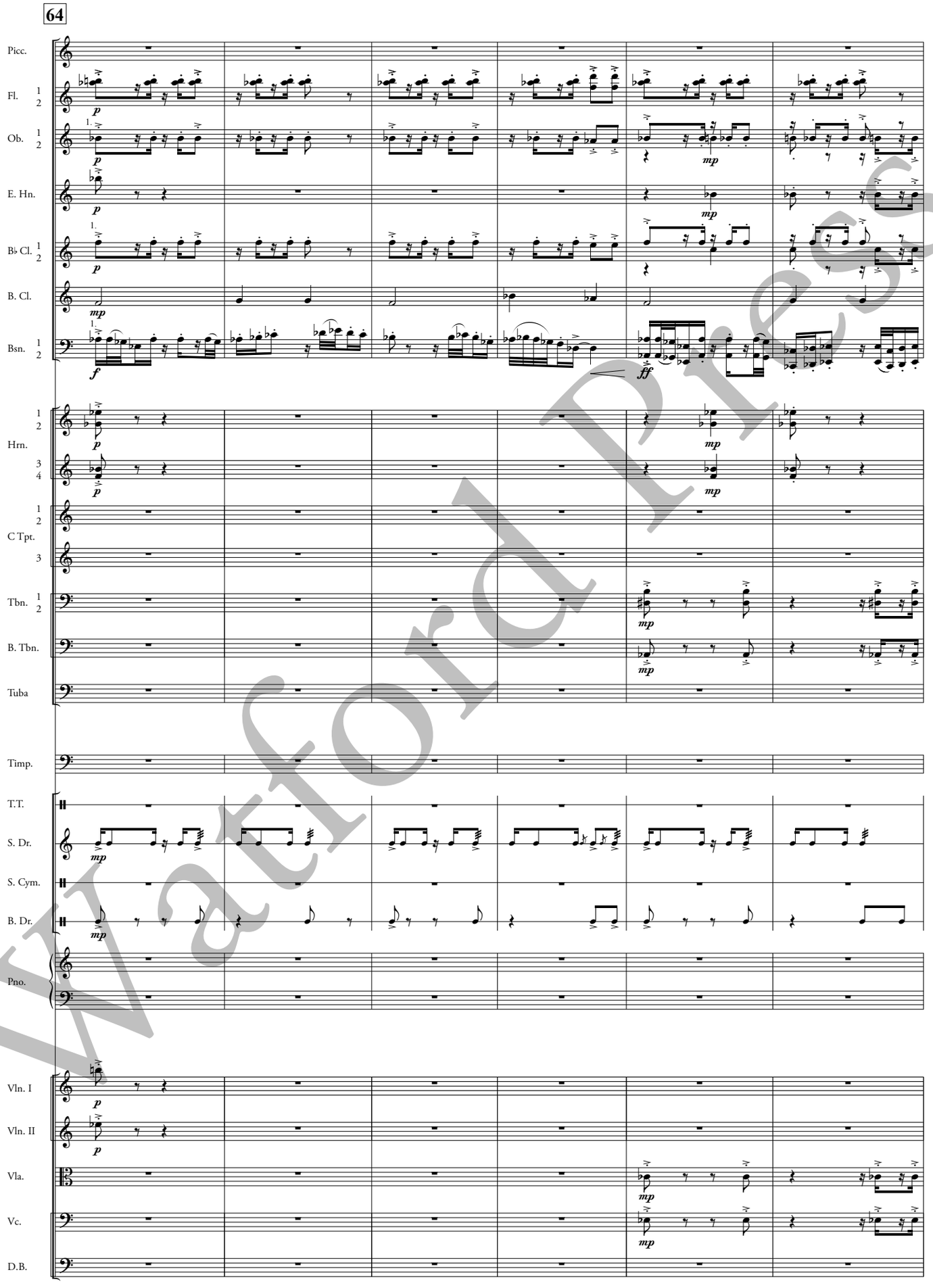

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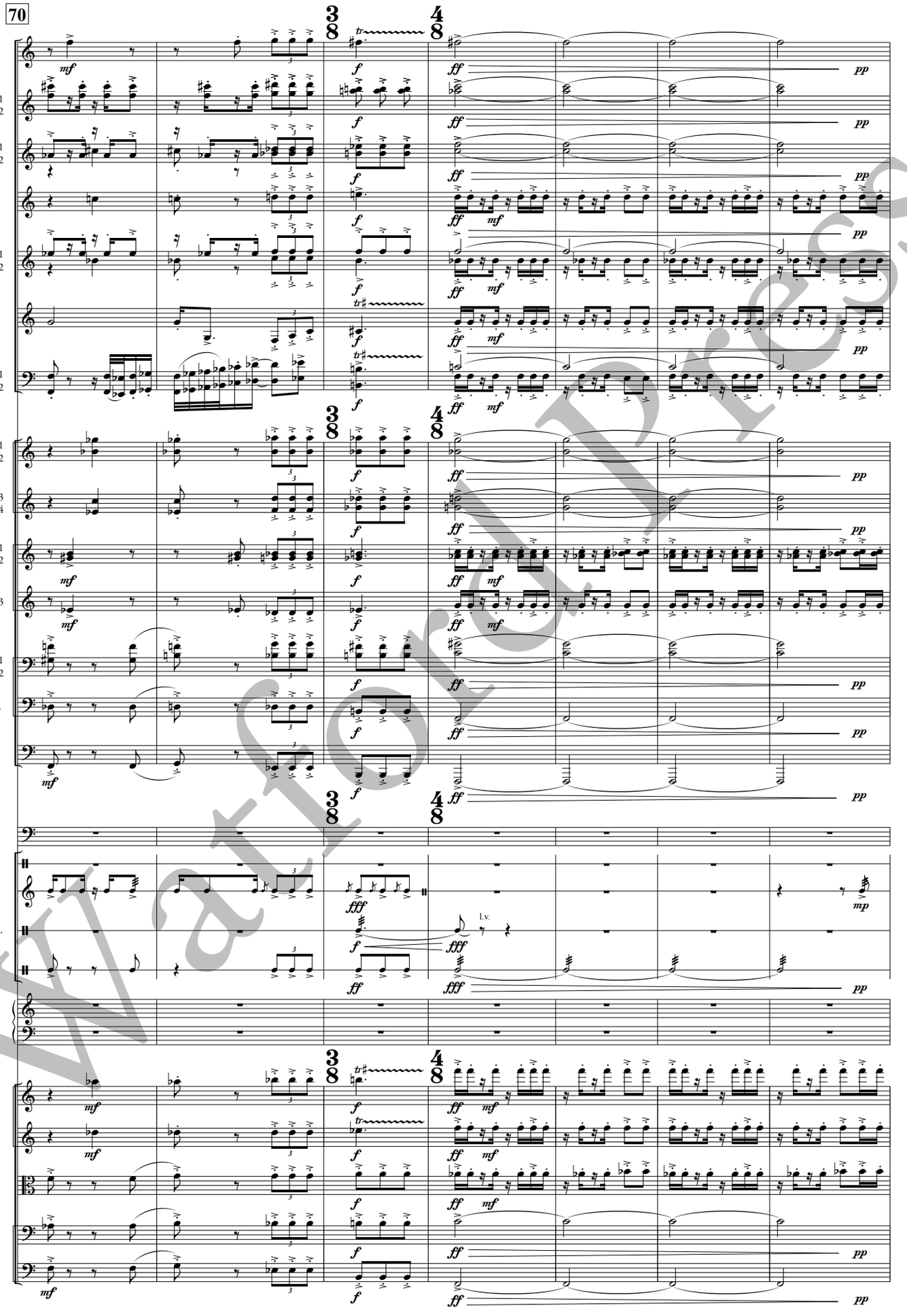

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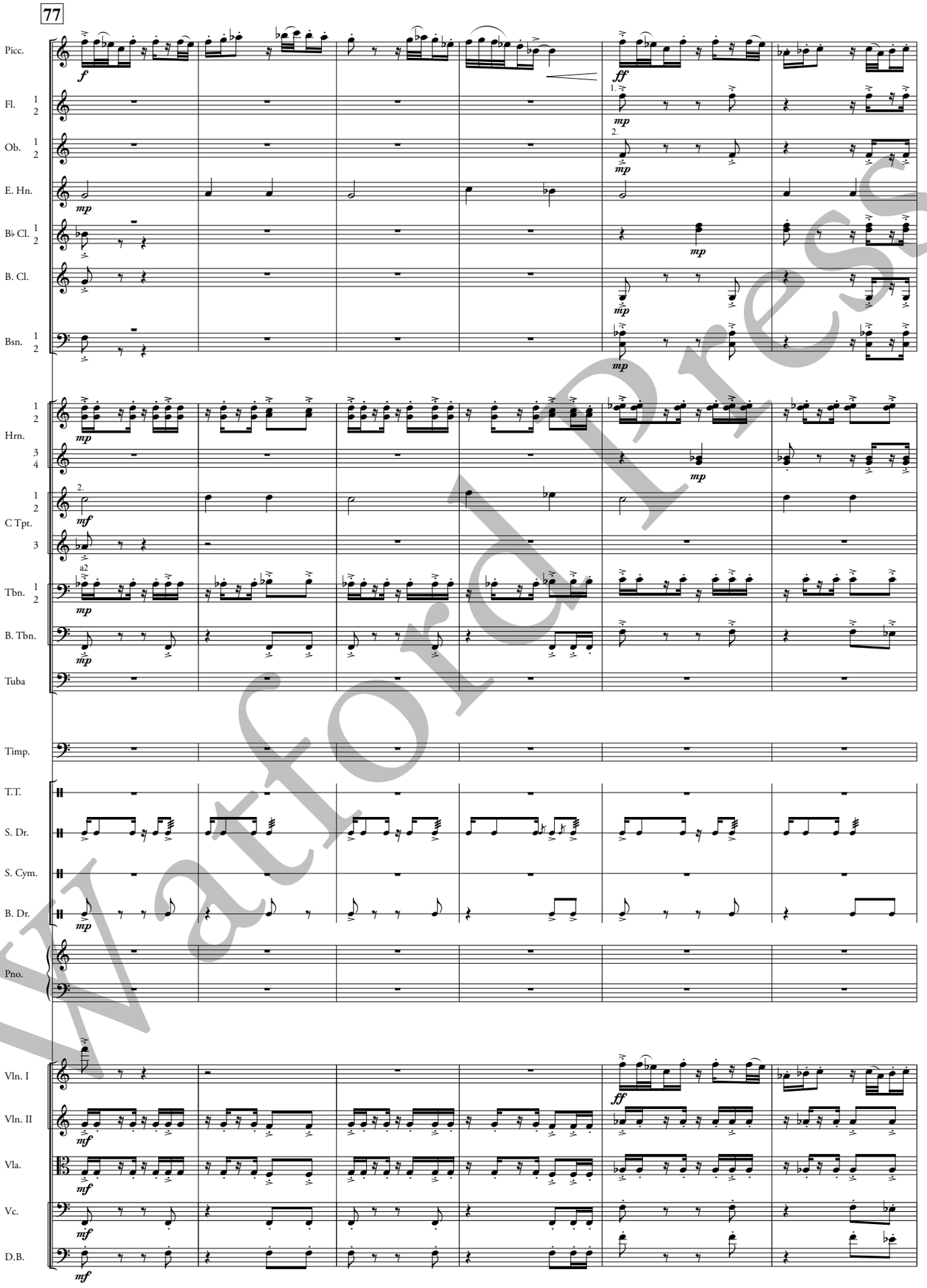

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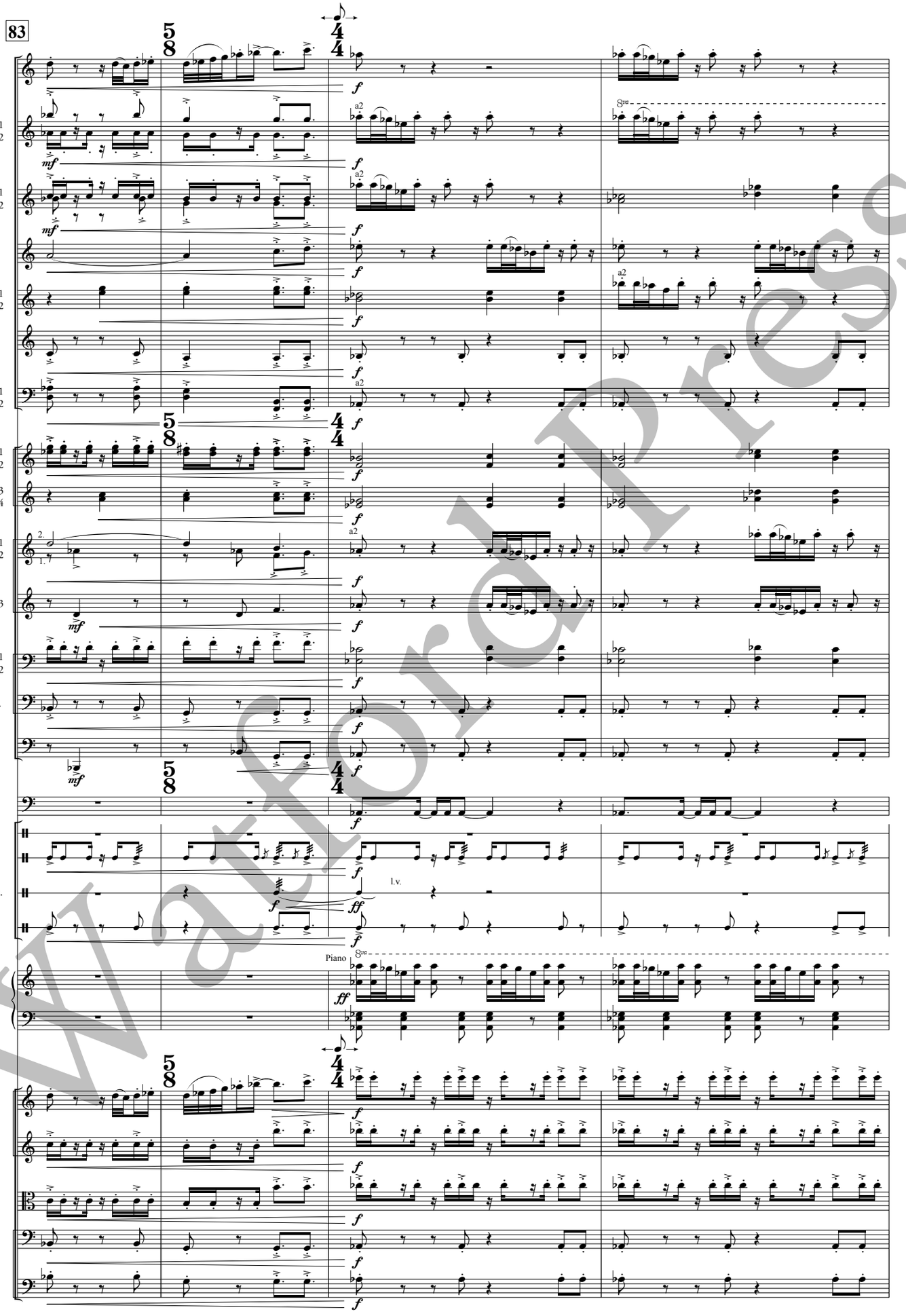

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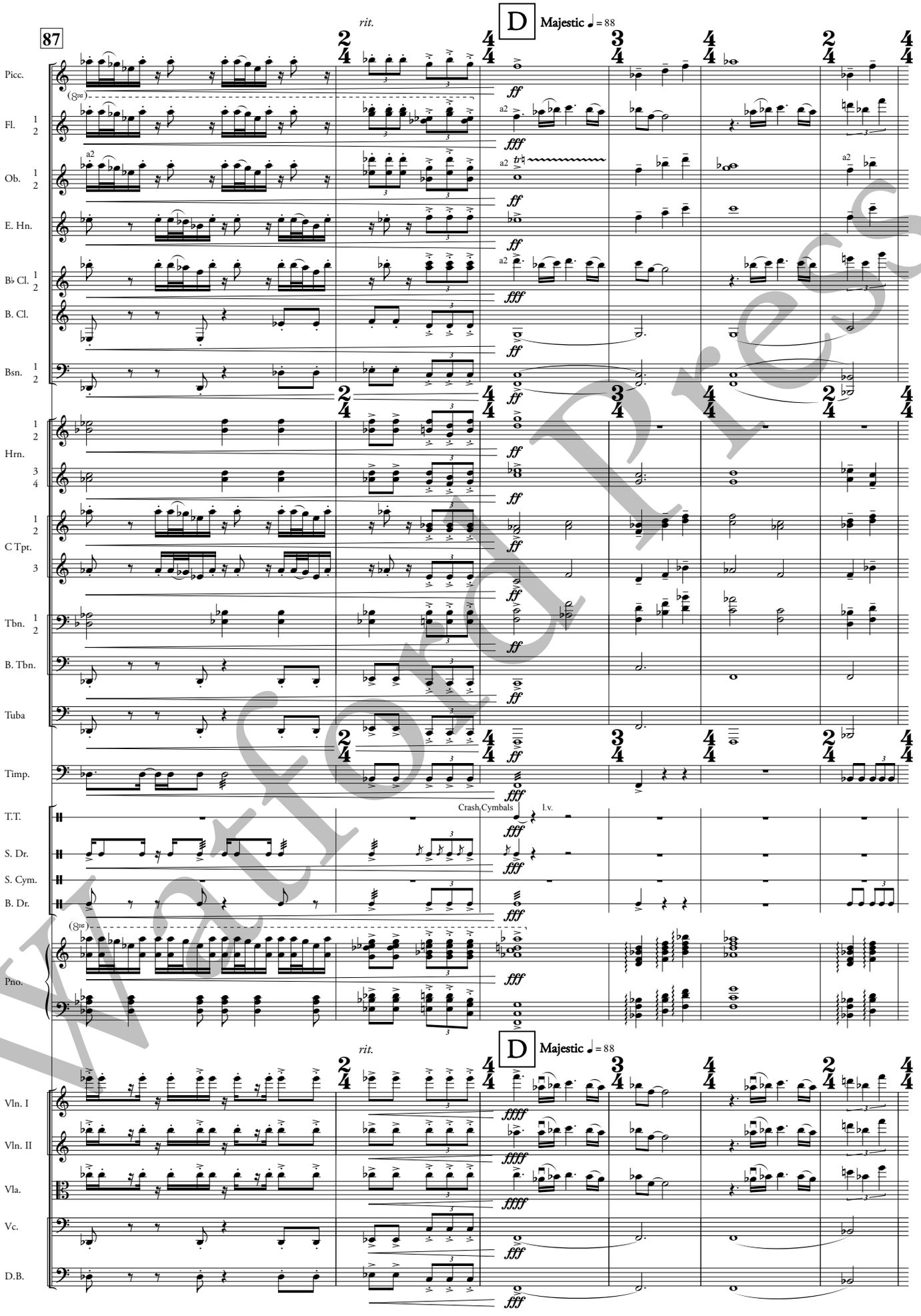

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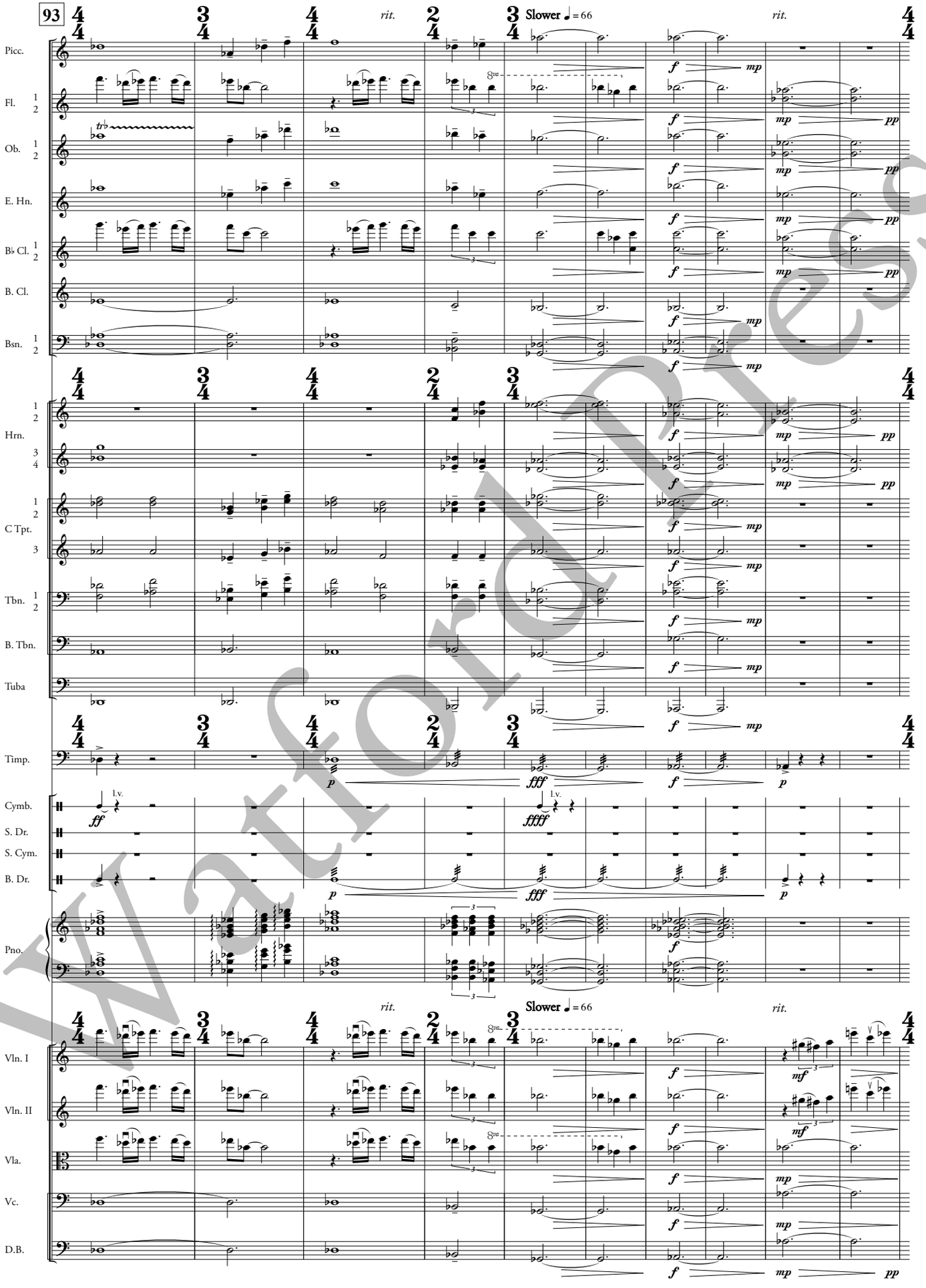

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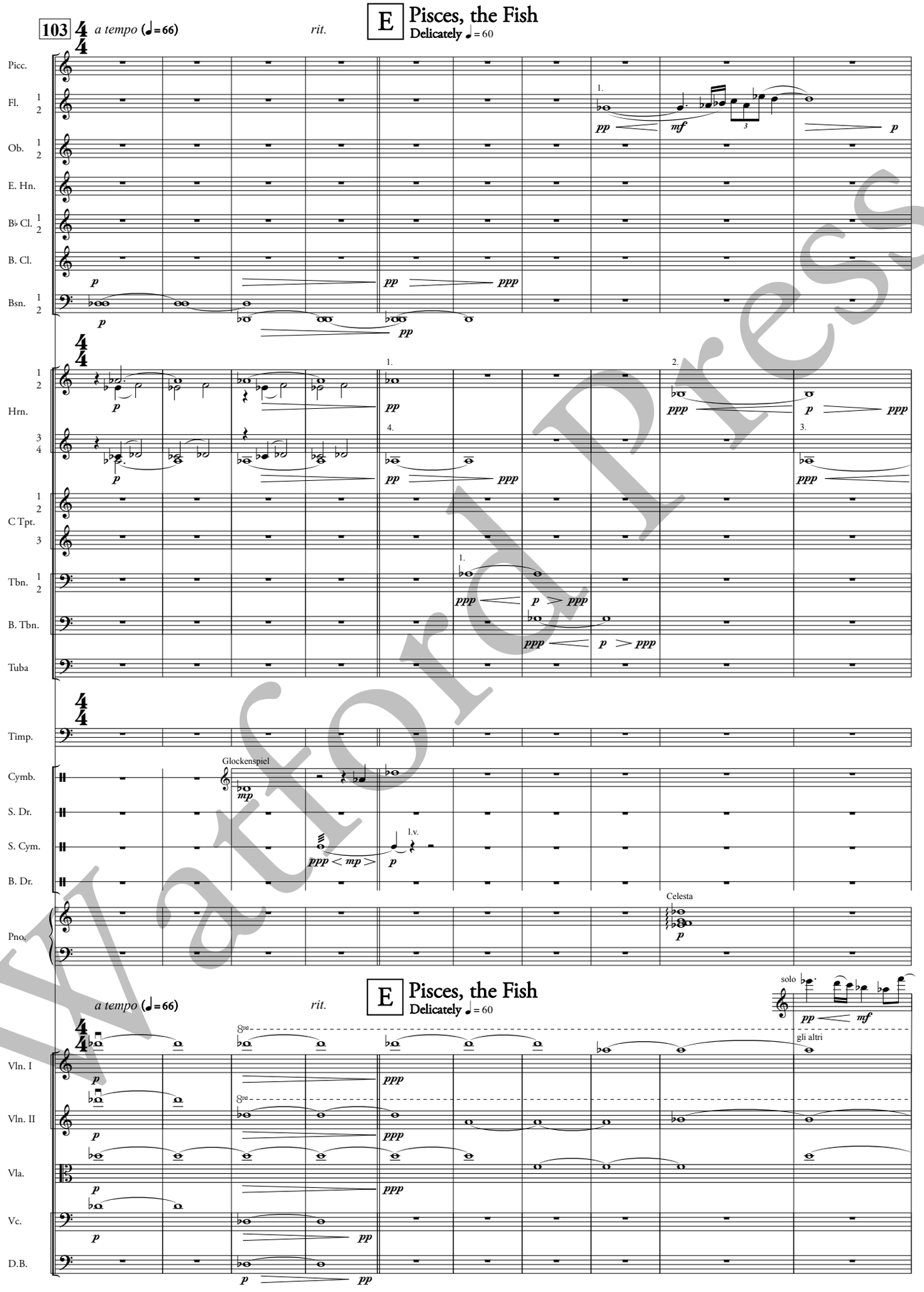

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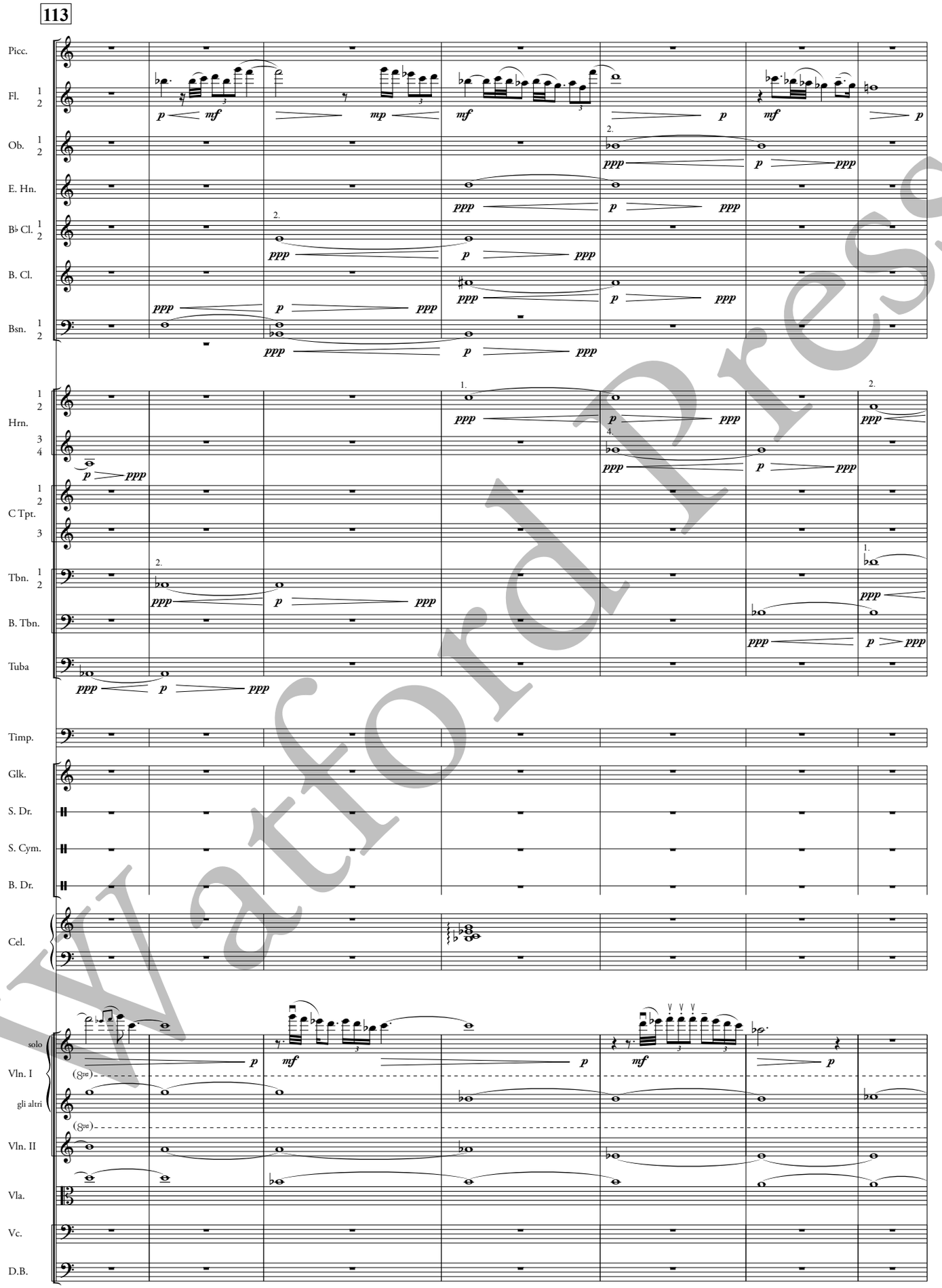

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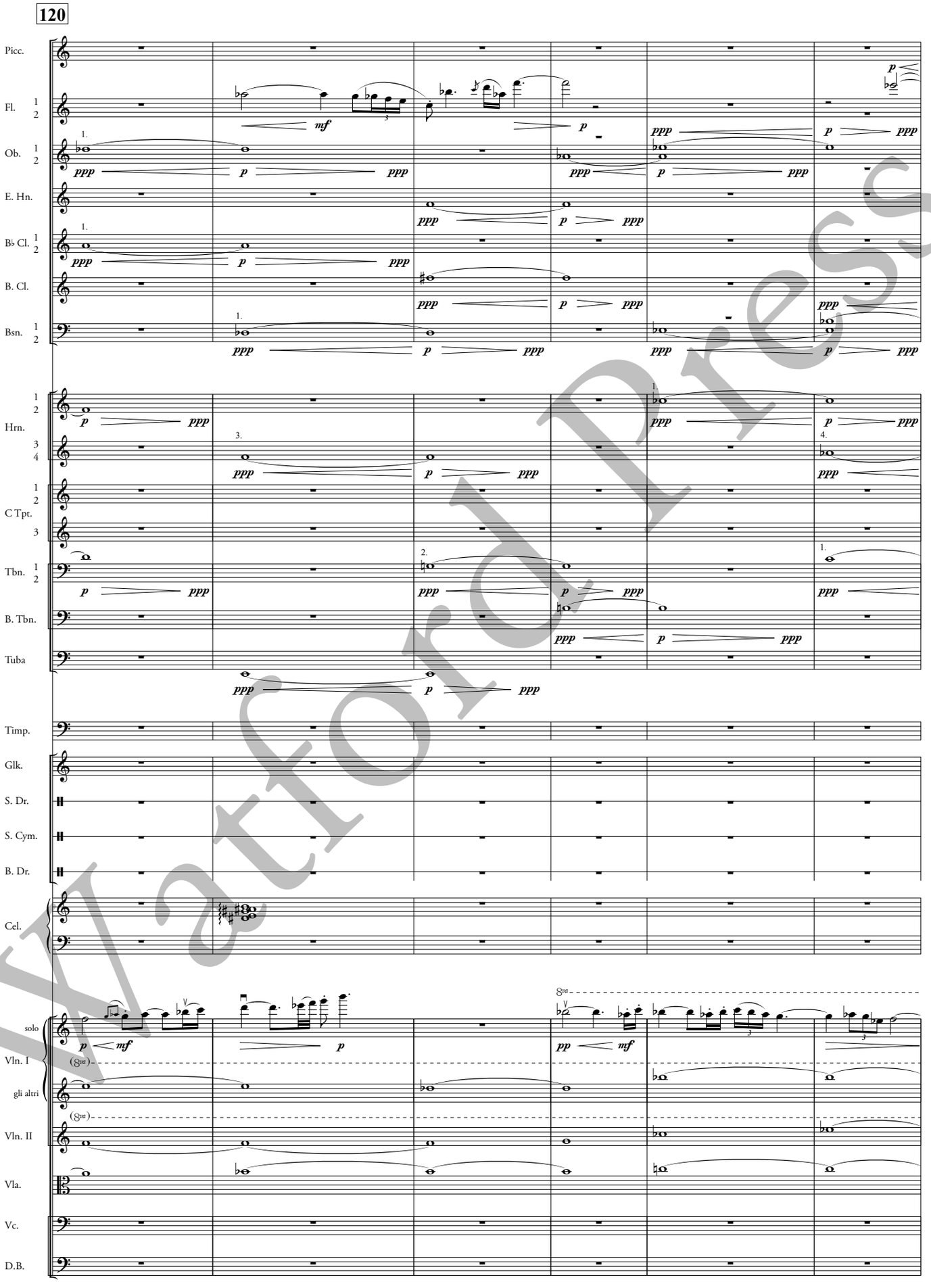

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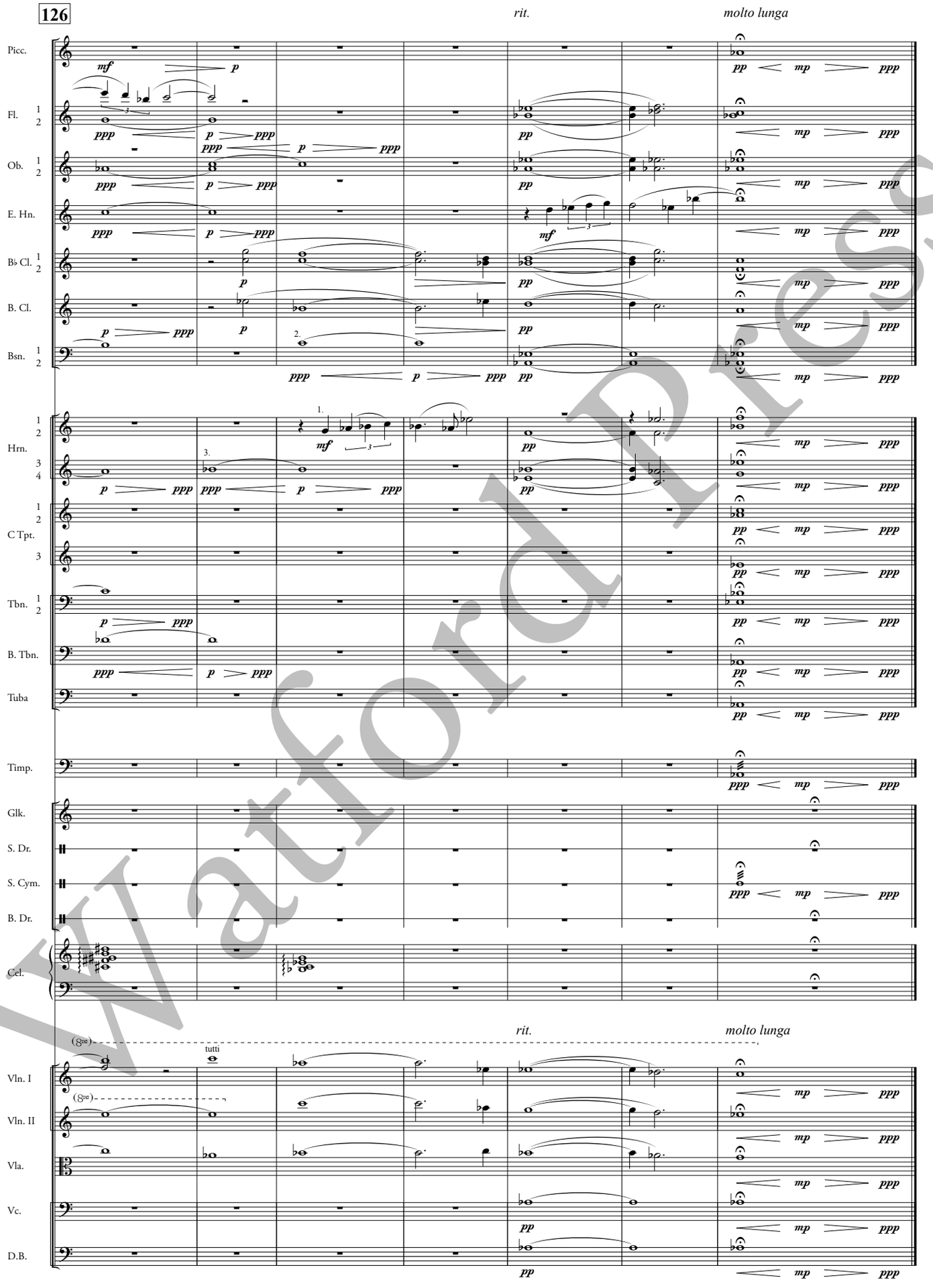

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