TOCCATA AD SANCTA CAECILIA

~ IN DULCI JUBILO ~

JORDAN ALEXANDER KEY

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"TOCCATA AD SANCTA CAECILIA"

FOR

PIPE ORGAN

Composed for

- Jessica Bailes -

December, 2019

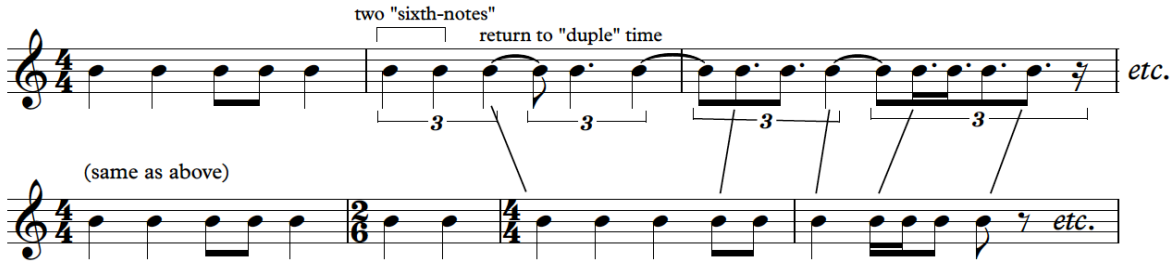
Performance Notes:

This work uses what I call "non-dyadic time signatures" (known elsewhere and erroneously as "irrational time signatures"). I do not call them "irrational" since they are in no way "irrational" (either psychologically or mathematically). They are "rational" proportions, but do not use powers of 2 for the bottom number, hence "non-dyadic" (not written over 2, 4, 8, 16, 32, 64, etc.). Such a system of time signature grew out of questions like "why isn't there a 'fifth' or 'third' note?" Well, many music teachers will simply say, "because there isn't one," but of course there is.

What we call a triplet is actually just some multiple or divisions of a "third note," and similarly the quintuplet some "fifth note." Systems of subdividing fundamental note values (like the breve or whole-note) into groups other than "dyadic-rationals" (third, fifth, seventh as compared to half, fourth, eighth, sixteenth, etc.) have existed at prior points in music history (particularly the late Middle Ages and Renaissance), using uncommon and arcane systems of mensuration. Such systems have long fallen out of favor; however, if reincorporated into our system of musical language, they can allow for the fluid notations of some rather complex rhythmic ideas without the use of perhaps excessive tempo changes or tuplet (and embedded tuplet) markings.

For example, imagine if I wanted to write a quarter note triplet in a 4/4 time signature, but I only wanted two-thirds of that triplet (namely, two quarter notes of the three within the quarter-note triplet), and then I wanted to return directly to duple time with no hint of the prior triplet. What would I do? Well, I would have to write the two notes of the triplet, but then, in returning to the simple duple time from the 4/4, I would have to endlessly tie over values from within triplets. However, if I just recognize that I can create "sixth notes," then I can specify that I want two "sixth-notes" without the use of triplet and many ties subsequently. This can be done using a "non-dyadic" time signature, namely 2/6. See Figure 1.

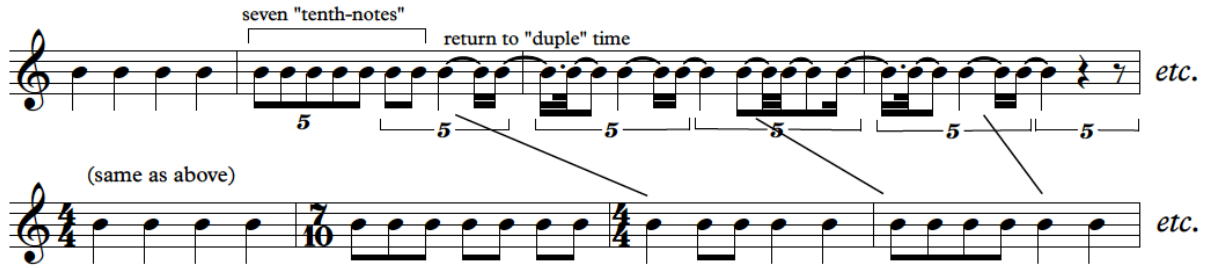
Figure 1:



Why "2/6" and "sixth-notes" rather than "third-notes"? Well, if we consider the "whole-note" as the fundamental value of rhythm (perhaps appropriately since it is "whole"), then to get the quarter-note triplets, we must recognize that the whole-note must be divided equally into six parts. Then, to get only two of these six equal divisions of the whole note, we simply specify "2," just as one might specify "3" in 4 equal divisions of the whole to get 3/4 rather than 4/4.

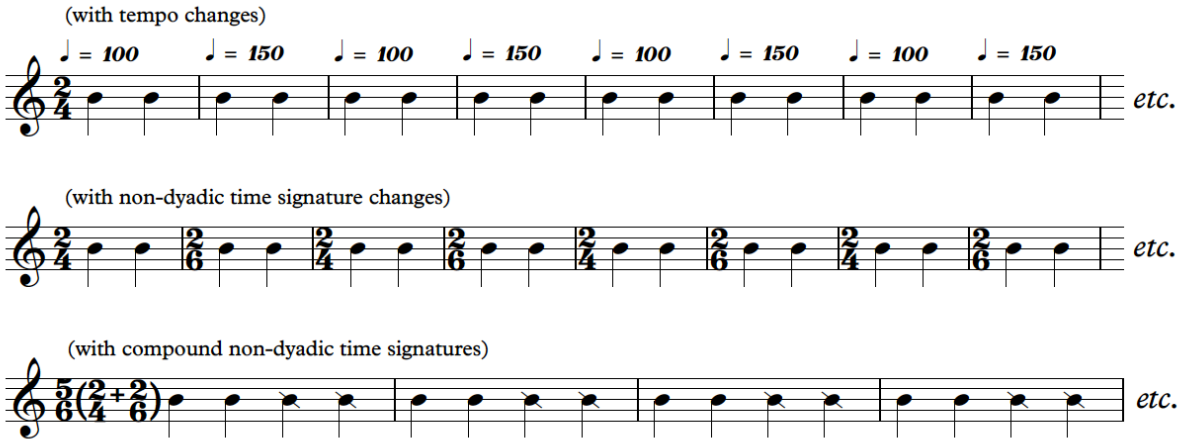
Similarly, if we want seven units of five equal divisions of the whole note (1 and 2/5's of an eighth-note quintuplet), we would recognize that we must divide the whole into 10 equal parts and play seven of those parts, thus requiring a 7/10 time signature and "tenth-notes." See Figure 2.

Figure 2:



Such a system allows for the rapid alternation between different tempos without the use of tempo markings on each measure. Furthermore, it utilizes and recognizes those rhythmic fluctuations that are proportional to each other. The notational possibilities of non-dyadic time signatures as compared to tempo changes are demonstrated, in a rudimentary form, in Figure 3.

Figure 3:



All **diamond-shaped note heads** in this work correspond to "seventh notes" and **all binary and multiples/divisions of them** (1/14, 1/7, 2/7, 4/7 etc.) by conventional usage of stems, flags, and/or coloration; the time signatures within the piece will suggest as such. The tempo of the seventh-notes is given at the beginning of the score, but one may discover the "feel" of the seventh-note simply by finding the tempo of the half-note, dividing it into a septuplet, and taking the septuplet as the 1/14th note (namely, half of the seventh note).

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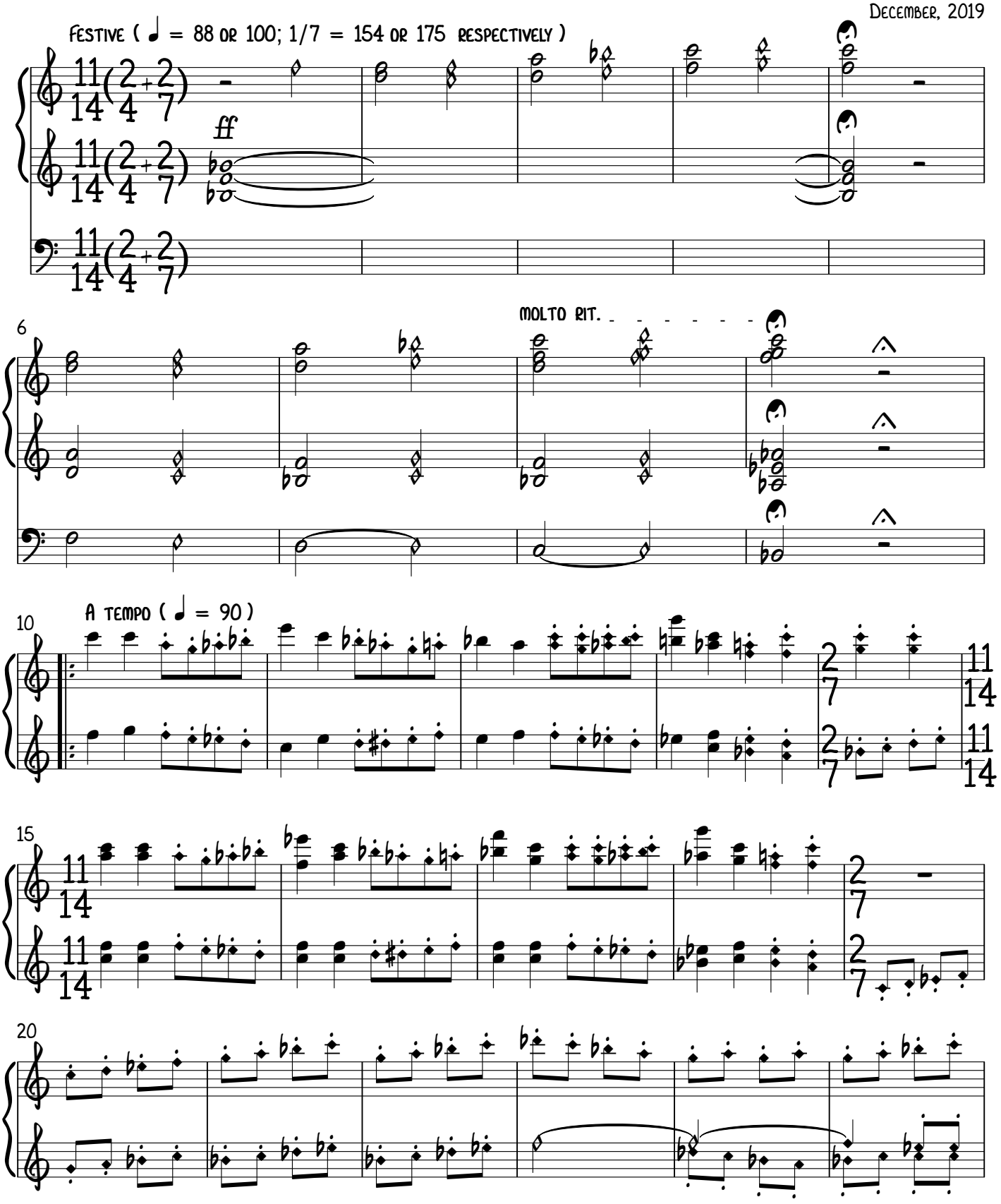
DECEMBER, 2019



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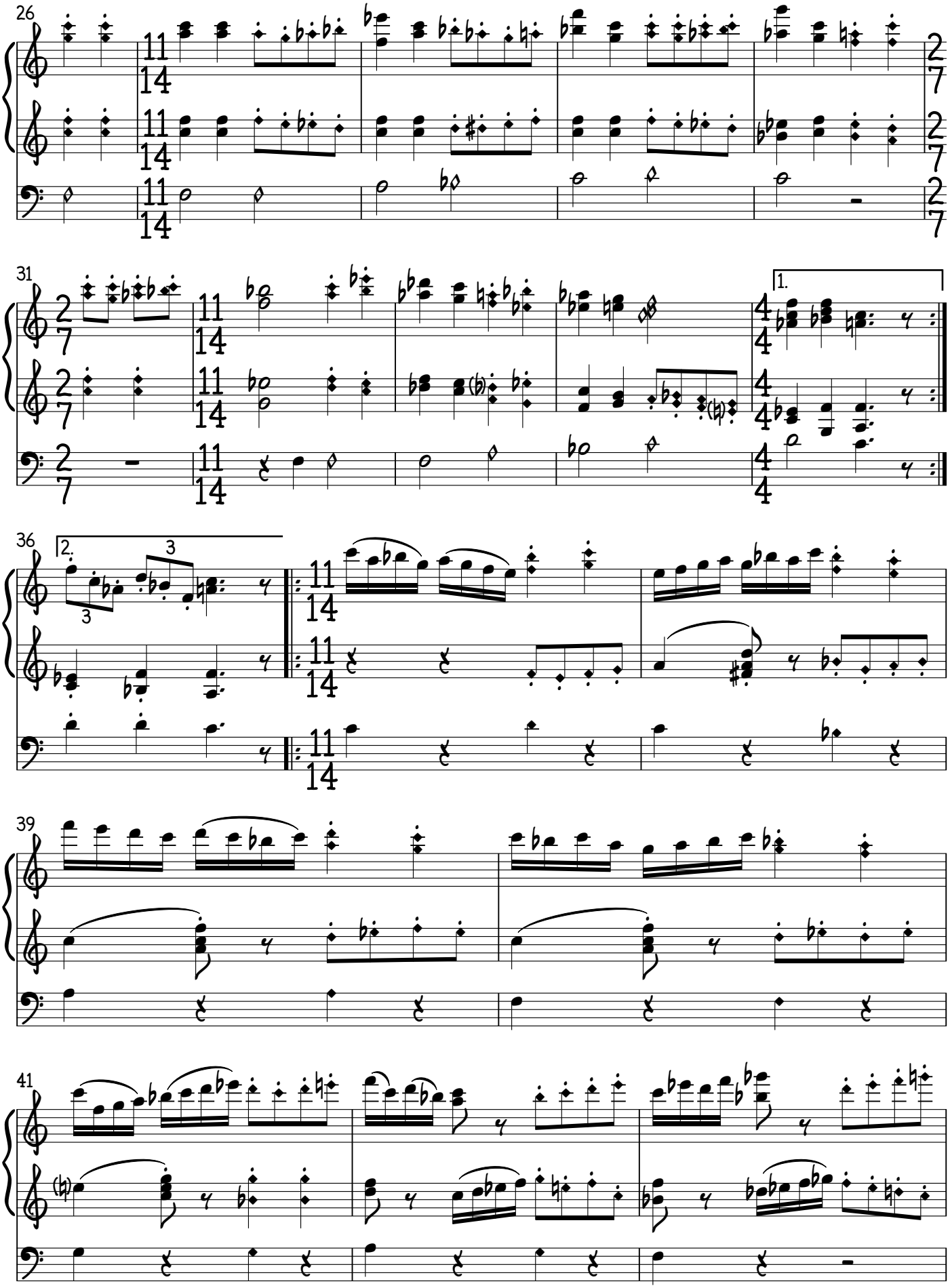
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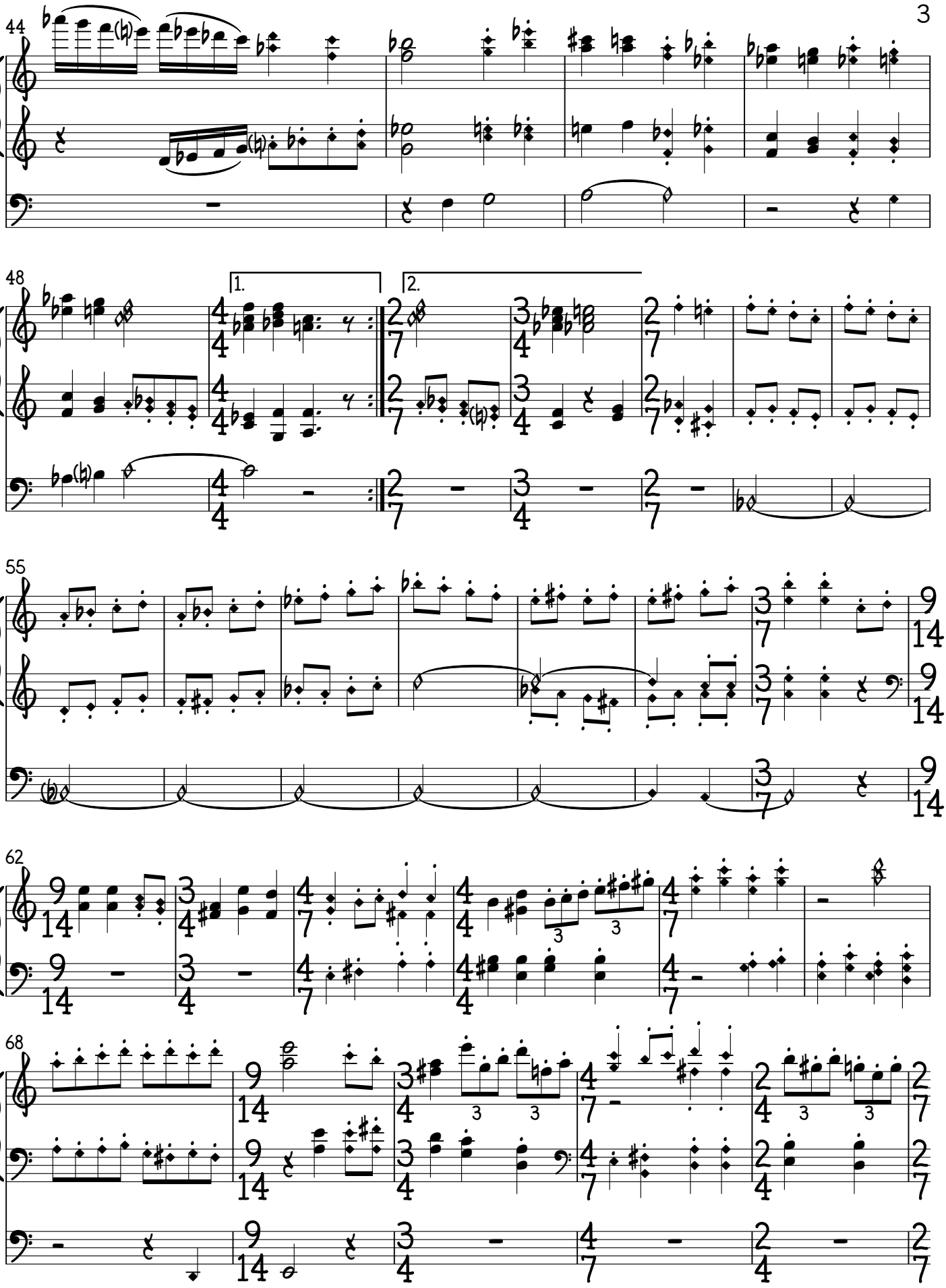
11/14
2/7
31
2/7
11/14
4/4
1.
36
2.
3
3
11/14
39
41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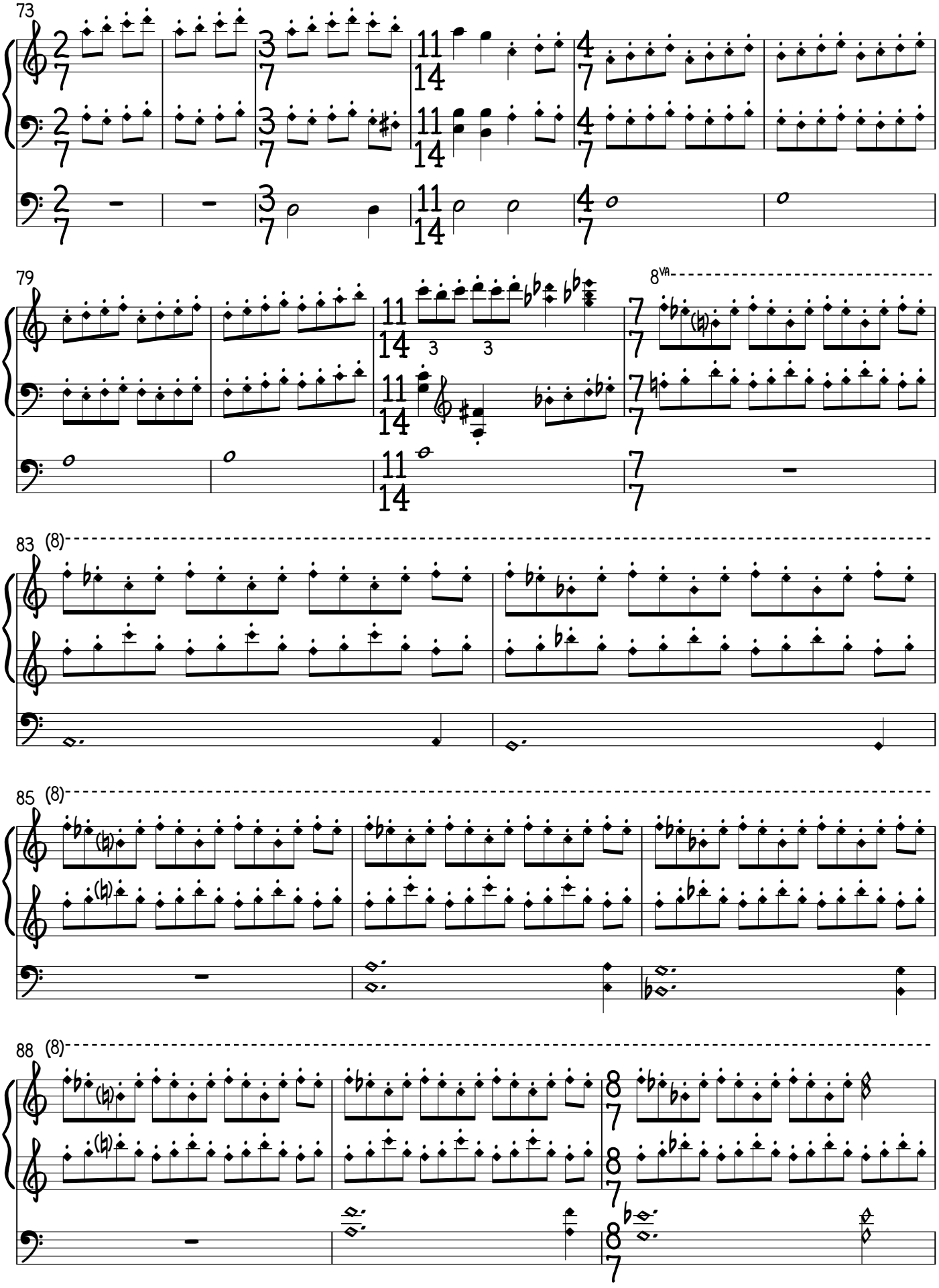
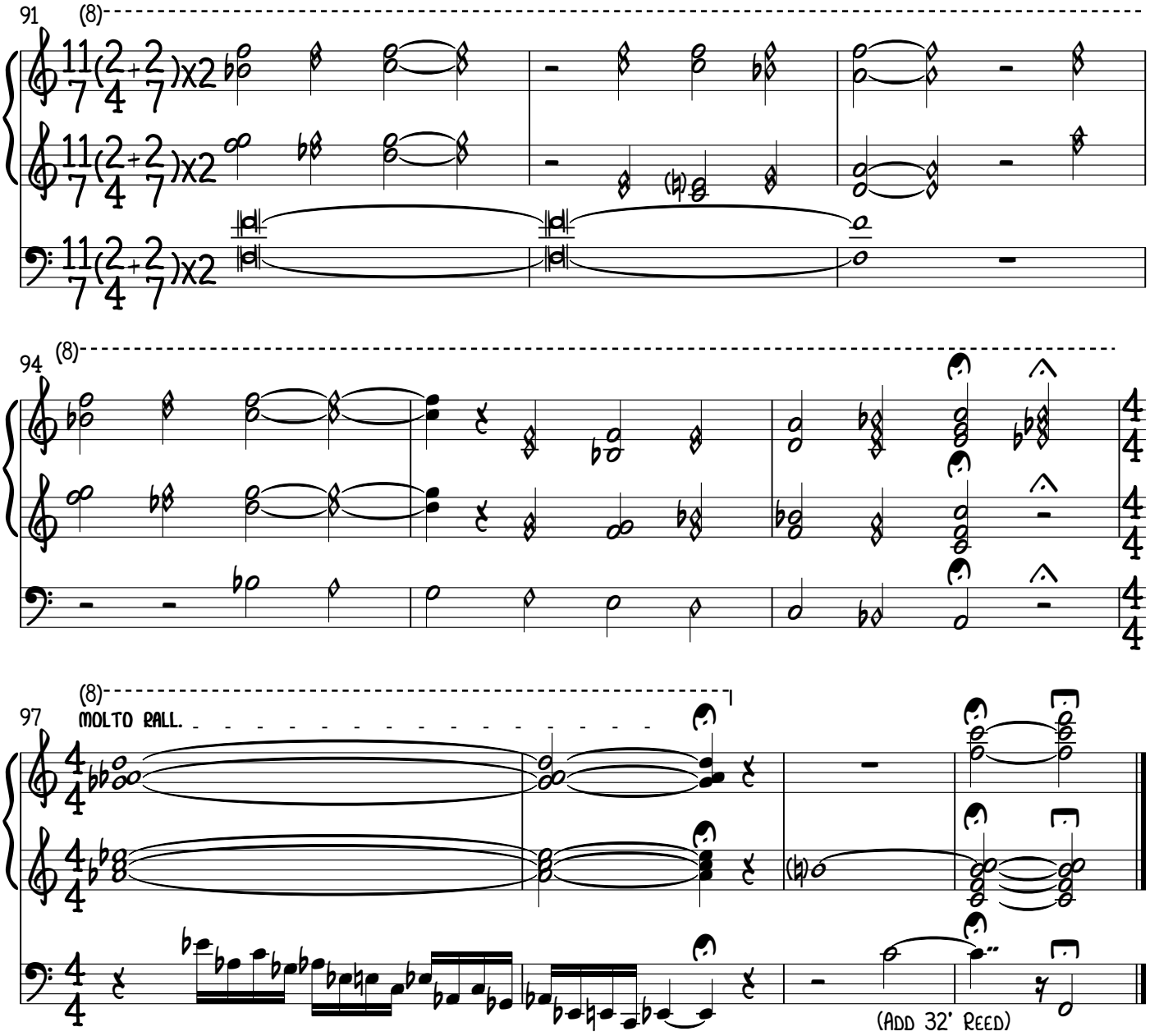
48
1.
2.
55
62
68


73
79
8va
83
(8)
85
(8)
88
(8)


91
(8)
11/7 (2/4 + 2/7) x2
11/7 (2/4 + 2/7) x2
11/7 (2/4 + 2/7) x2
94
(8)
4/4
97
(8)
MOLTO RALL.
(ADD 32' REED)