1978

Geometries for Orchestra.

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GEOMETRIES FOR ORCHESTRA

A Dissertation

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requirements for the degree of
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in

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by
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M.M., University of Alabama, 1974
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TABLE OF CONTENTS

LIST OF TABLES iii

ABSTRACT iv

GEOMETRIES FOR ORCHESTRA vi

GEOMETRIES FOR ORCHESTRA 1

BIBLIOGRAPHY 32

VITA 33

LIST OF TABLES

1. Special Symbols and Abbreviations xvi

2. Instrumentation xix

ABSTRACT

Geometries for Orchestra consists of a composition for full orchestra (with augmented percussion section) together with an analytical commentary in the form of a monograph.

The composition itself, which has a total duration of twelve minutes, is divided into three movements of four, five, and three minutes, respectively. The written score employs a notational technique in which the duration and sequence of individual events are represented on the page by the relative position of symbols within a segment of specified duration. The temporal dimensions of structural units are governed by the proportions of the Fibonacci series and related proportional concepts.

The principal shaping forces in the composition, those which are most significant in delimiting structural units, are timbre and texture. Timbre is controlled through the choice of specific combinations of instruments and playing techniques, and texture is controlled by the selection of various degrees of density, activity, and pitch definition.

The specific pitch content of individual sounds,

though less significant structurally than timbre and texture, is controlled by relation to an eight-tone pitch set. This set is generated, through a process of interval multiplication, from the same proportions which govern temporal relationships. Surface details project similar proportional concepts in a variety of ways.

In the compositional process, the composer has accepted both traditional and nontraditional elements as potentially valid ingredients for a musical work. Particular events have been selected according to their inherent interest as sounds and their ability to assist in the delineation of the structural framework. As a further constraint in the selection of elements for this work, the composer has chosen to employ a frame of reference based on certain analogies between musical and geometrical concepts (such as "lines," "shapes," and "proportions").

The monograph provides a detailed discussion of the concepts and techniques outlined above, and cites examples from the musical work. Also included are brief discussions concerning the significance of discipline in the compositional approach, and the relationship of the written score to live performance. The monograph concludes with suggestions on conducting the work and tables of special notational symbols and instrumentation.

GEOMETRIES FOR ORCHESTRA

Geometries for Orchestra was composed between June 1977 and June 1978 in Birmingham, Alabama. In conceiving, refining, and organizing the sound materials in this piece, the composer has been guided by three a priori assumptions: (1) structural relationships within a composition may be made clear by means other than the traditional thematic and harmonic associations, although these need not be eliminated, (2) surface details of a composition may consist of sonic complexes which have little relation to familiar melodic or chordal successions, though, once again, the latter need not be rejected, and (3) any particular sound event has potential aesthetic value to the extent that it contributes to the whole of the composition through some combination of its inherent interest as a sound and its capacity to assist in the delineation of the structure of the work.

The term "geometries" in the title of the work is intended to suggest certain analogies between aural perceptions of the sonic and temporal dimensions of the musical substance and visual (or tactile) perceptions of the spacial dimensions of geometric constructs (viz., "lines," "shapes," and "proportions"). In this composition such

analogies have often served as a source of musical ideas, and, in several cases, the details of particular sound events have crystallized as a direct result of the process of working out a "geometry" for the notation on the page of score.

The composition divides into three movements which are to be played without pause. Each movement utilizes different portions of the orchestra: first movement--strings, second movement--percussion and winds, and third movement--various combinations of instruments within the entire orchestra.

The total duration of the piece is twelve minutes; the durations of the three movements are in the proportions 4:5:3, respectively. These proportions derive from the Pythagorean theorem ($c^2 = a^2 + b^2$), where "a" and "b" are the legs of a right triangle and "c" is the hypotenuse. In the composition, "a" corresponds to the duration of the opening movement, "b" corresponds to the duration of the final movement, and "c" corresponds to the duration of the middle movement.

Each movement is made up of segments (the musical material notated between two numbered bar lines in the score). The duration (in seconds) for each segment is indicated below the score system, and the circled numbers at each bar line show the elapsed time for the movement to that point. These segments first appear in durational

units which reflect the proportions of the Fibonacci series (...3:5:8:13:21...). In this series the sum (or difference) of two adjacent members gives the next larger (or smaller) value. This series approximates (to the nearest whole number) the proportions of the golden section, where segment "a" is to segment "b" as segment "b" is to the sum of segments "a" and "b" [a:b = b:(a + b)]. (Note that the ratio 3:5 is common to both the Pythagorean and Fibonacci sets, and the the "4" of the Pythagorean set is related as 1:2, the simplest whole number ratio, to the "8" of the Fibonacci series). Following initial presentation, durational units which follow the proportions of the Fibonacci series become free to return in new orders and to combine with units of other durations which have been determined by that series. Thus, for example, a segment with a duration of eleven seconds would result if units of three and eight seconds were combined.

As mentioned above, the assignment of specific instrumental groups serves to delineate the three movements. The delineation of segments (or sections in which several segments combine to make a larger structure) is accomplished principally through changes in timbre (including selection of instrumental subgroups and playing techniques), and texture (including control of density, degree of activity, and degree of pitch definition). Such delineation is, at times, sharply defined by a sudden shift

in the character of the sound (e.g., segment thirteen of the third movement). At other times, the transition is progressive, as prominent features of one section are gradually overcome by the prominent features of the following section (e.g., segment eighty-three of the second movement). Such progressive changes may be contained within a single durational segment (as in the previous example), or they may evolve over two or more segments and, in effect, combine them into a larger structural unit (e.g., from the beginning of the first movement through the end of segment seventy-seven).

Of the several timbral and textural structural delimiters mentioned above (instrumentation, density, etc.), the treatment and function of pitch definition is perhaps most distant from conventional techniques. Throughout the composition the degree of pitch definition (the extent to which any definite pitch, or the specific pitch content of any sonority may be aurally perceived with a high degree of accuracy) is at least as significant as any set of particular pitches which may be present.

The degree of pitch definition operates in a continuum from indefinite pitch ("noise"), through semi-definite pitch (sounds which include a high proportion of "noise" along with a perceptible definite pitch component), through partially or wholly indeterminate pitch (sounds with definite, but continuously changing or unspecified

pitch content), to definite pitch. Sounds of indefinite pitch, for example, include tapping on the body of various instruments, rattling of valves, and striking percussion instruments such as the snare drum. Sounds of semi-definite pitch include tapping the strings of an instrument with the wood of the bow, and striking percussion instruments such as the temple blocks. Indeterminate pitch is produced through such devices as glissando and indications which call for the highest possible note to be played. Definite pitches comprise systematically structured sonorities of varying complexity: unisons, chords, and clusters.

The contours of both large and small sections of the composition are at least partially the result of controlled progressions through (or sudden shifts between) various levels in the pitch definition continuum. The first movement, for example, is essentially an arch form in which the music progresses from, and ultimately returns to sounds of indefinite pitch. Sonorities of definite pitch serve as the focus of the middle of this movement.

In the second movement, where the sections are clearly marked by changes in instrumentation, a secondary pattern, based on the concepts of pitch definition, controls the class of sounds to be presented by each instrumental group at each entrance. Throughout the movement the percussion instruments move toward increasingly definite pitch. At each entrance the woodwinds and brass,

which are consistently treated as separate choirs, present material in one of three modes: (1) sounds of indefinite pitch--tapping, rattling, clicking, blowing, etc. (e.g., woodwinds at segment 72 and brass at segment 153), (2) detached points of sound with definite pitch (e.g., woodwinds at segment 109 and brass at segment 282), and (3) sustained or continuous tones (e.g., woodwinds at segment 83 and brass at segment 168).

In the third movement, where previously heard materials are modified and reassembled in a new arch-like framework, the degree of pitch definition serves as one of the several referent parameters which help to establish a connection to the antecedent materials. (Here the contour of the movement is projected through progressive changes in dynamics and density, and through motivic similarities between the materials in corresponding positions in the "ascending" and "descending" legs of the arch).

Throughout the work the sonorities which include perceptible definite pitches are freely derived from a symmetrical eight-tone referent pitch set. The complete set first appears in segment 198 of the first movement (q.v., page nine). The relationship of this pitch set to the proportional scheme of the temporal domain may be understood by noting that the sonority of segment 198 evolves from the unison of the previous segment (193) through a process of interval multiplication. In this

process, each instrumental line progresses upward or downward from the unison by an interval which is three, five, or eight times the half step movement in the lower second violin and viola parts.

The pitch content of other harmonic and melodic materials in the work has been derived from this basic set by a variety of methods. In the opening two segments of the third movement, for example, a smaller set of pitches has been extracted from the basic set. At segment 168 of the second movement the pitches are distributed according to a pattern in which the sonorities are symmetrically arranged, at first with intervals of the second, then the third, fourth, fifth, sixth, and finally the seventh controlling the spacing of the tones. The pitches of the basic set are distributed according to the natural harmonic series (with Contra b as the fundamental) at segment 96 of the second movement, and at segment 219 of the first movement the basic set is transposed by the interval of a tritone (the violins, higher; the other strings, lower).

Numerous surface details are also associated in certain ways with the concepts of proportionality from which the structural units have been developed. In the first movement, for example, the number of "voices" (as represented by the number of separate staves in the score) is either five, eight, or thirteen. Throughout the work,

rhythmic patterns frequently express division or multiplication of some constant durational unit by factors of three, five, eight, etc. (e.g., segment 168 of the second movement), and the number of articulations in a given pattern is often governed by these same values. Within segment 141 in the second movement, for example, a total of three articulations occur in the first subsegment, five occur in the next, eight in the third, and thirteen occur in the fourth subsegment, producing a textural crescendo based on the density of attack points.

The score itself represents an idealized model of the musical conception. The differences which must be expected to occur from performance to performance will not alter the essence of the concept. In fact, within the controlling limits of the structural framework, the composer has included processes which are designed to result in such differences, making each performance unique in some details, even as it projects the essential qualities of the model. For example, by giving a range of desired tempi, rather than a single specific tempo for a repeated group of events (e.g., segment 109 of the second movement), it becomes highly improbable that any two readings would produce precisely the same synchronization among the various instruments. In such passages the surface details of the sound mass can be expected to differ slightly with each performance, but the constituent materials, the

structural design, and the overall momentum remain consistent with the fundamental concepts of the work. In short, the notated score is intended to provide a point of (limited) departure with respect to the realization of surface details, and a target toward which to aim with respect to the realization of the structural outline.

In the foregoing analytical commentary it has been shown that virtually every facet of the composition has been governed, in one way or another, by a particular set of numerical relationships. It is important to note, however, that the specific set of controls employed is less significant (outside the context of the present composition) than the general compositional approach of establishing certain controls and creating a musical substance and architecture which are consistent with such controls. The proportions of Fibonacci and Pythagoras and the analogies which have been suggested between musical and geometrical concepts have served their function in the discipline of the creative process only because the composer chose to work with them in this piece. It has not been the intention of the composer to attempt to prove or disprove the aesthetic validity of such linkages for other contexts. The creation of the composition has been approached as a creative and artistic effort, and not as a scientific experiment. The existence of the completed piece does confirm, however, that contemplation of a

nonmusical system can be an impetus toward the development of systematic and workable compositional approaches.

In performance, players should read from a copy of the full score in order that they can see how their material relates to the other players' parts. The principal functions of the conductor are to signal the temporal boundaries of each segment, to cue those entrances and exits which are to be ordered or synchronized in a particular manner (as indicated by dotted lines in the score), and to assure that the intended momentum of the work emerges clearly in the performance. While there is no need to conduct beats as would be the standard practice for a work notated in metrical notation, the conductor will need to employ a set of gestures which enable him to communicate his intentions with respect to those functions mentioned above. Traditional conducting gestures could be adapted quite easily to express such intentions. A large downward beat, for example, could be used to signal the segmental boundaries, and smaller beat gestures could be used to cue entrances. The rise and fall of dynamics, density, or dramatic intensity could be conveyed through such signals as the normal crescendo and diminuendo gestures.

TABLE 1

SPECIAL SYMBOLS AND ABBREVIATIONS

General

accelerando within the note group

ritardando within the note group

Woodwinds

strike wood parts of instrument with old reed

"roll" effect produced by rattling old reed against inside of bell (as rapidly as possible)

rapid, irregular tremolo

Brass

cup mute

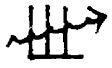
straight mute

open spit valve and allow it to snap back with audible click

tap with fingernail on tubing of instrument

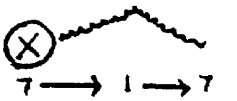
tap with fingernail on bell of instrument (single stroke)

"drumming" with four fingers (or fingernails) on bell of instrument (i.e., )

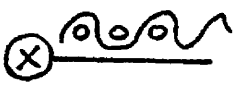


rapid stroke across tuning slides with back of the hand (fingernails)

TABLE 1--Continued



rising and falling breath sounds (no tone) while moving trombone slide



rattle valves rapidly while blowing air through instrument (no tone)

Percussion

hard mallet

medium mallet

soft mallet

bass drum beater

wire brush

rim shot

(Special percussion effects are described in the score as they occur)

Strings

c.l.	col legno; play with bow turned on its side so that both the wood and hair touch the strings
l.batt., l.b.	legno battuto; strike strings with the wood of the bow only
n.v.	no vibrato
ord.	bow in the normal location on the strings
s.p.	sul ponticello; bow very near the bridge
spicc., spc.	spiccato; bounce bow on the strings
s.t.	sul tasto; bow over the fingerboard

TABLE 1--Continued

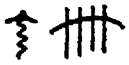
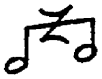
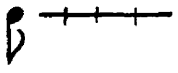
	percussive effect; strike body of instrument with knuckle or finger tip
	"drumming" with four fingers on body of instrument (i.e., )
	slap instrument with flat hand
	bow on tailpiece
	arpeggio over the four strings between the bridge and tailpiece
	rapid, irregular bowed tremolo
	rapid, irregular fingered tremolo
	glissando with finger lightly touching string to produce harmonics
	highest possible harmonic
	highest note of the instrument
	wide, slow vibrato (quarter tone pitch variation)
	transition from scratchy tone (produced by heavy, slow bowing) to normal tone
	snap pizzicato
	pizzicato with the fingernail
	pizzicato between the bridge and tailpiece
	repeated articulation of the same pitch

TABLE 2

INSTRUMENTATION

Woodwinds

2 Flutes (one doubling Piccolo)
2 Oboes (one doubling English Horn)
2 B♭ Clarinets (one doubling E♭ Soprano Clarinet)
2 Bassoons (one doubling Contrabassoon)

Brass

4 Horns in F
2 Trumpets in C
2 Tenor Trombones
Bass Trombone
Tuba

Percussion

(6 players)

Metal Instruments:
- Suspended Cymbals (lg., med., sm.)
- Hand Cymbals (one lg., one sm.)
- Tam-tams (lg., sm.)
- Jingle Bells
- Triangles (lg., sm.)
- Crotales (d, f♯, g♯, b)
- Vibraphone

Wood Instruments:
- Claves
- Guiro
- Maracas
- Castanets
- Wood Block
- Ratchet
- Slapstick
- Temple Blocks (lg., med., sm.)
- Xylophone

TABLE 2--Continued

Skin Instruments:
- Tambourine
- Snare Drums (lg., sm.)
- Bongos (high, low)
- Congas (high, low)
- Large Bass Drum
- Timpani (4 drums)

Strings

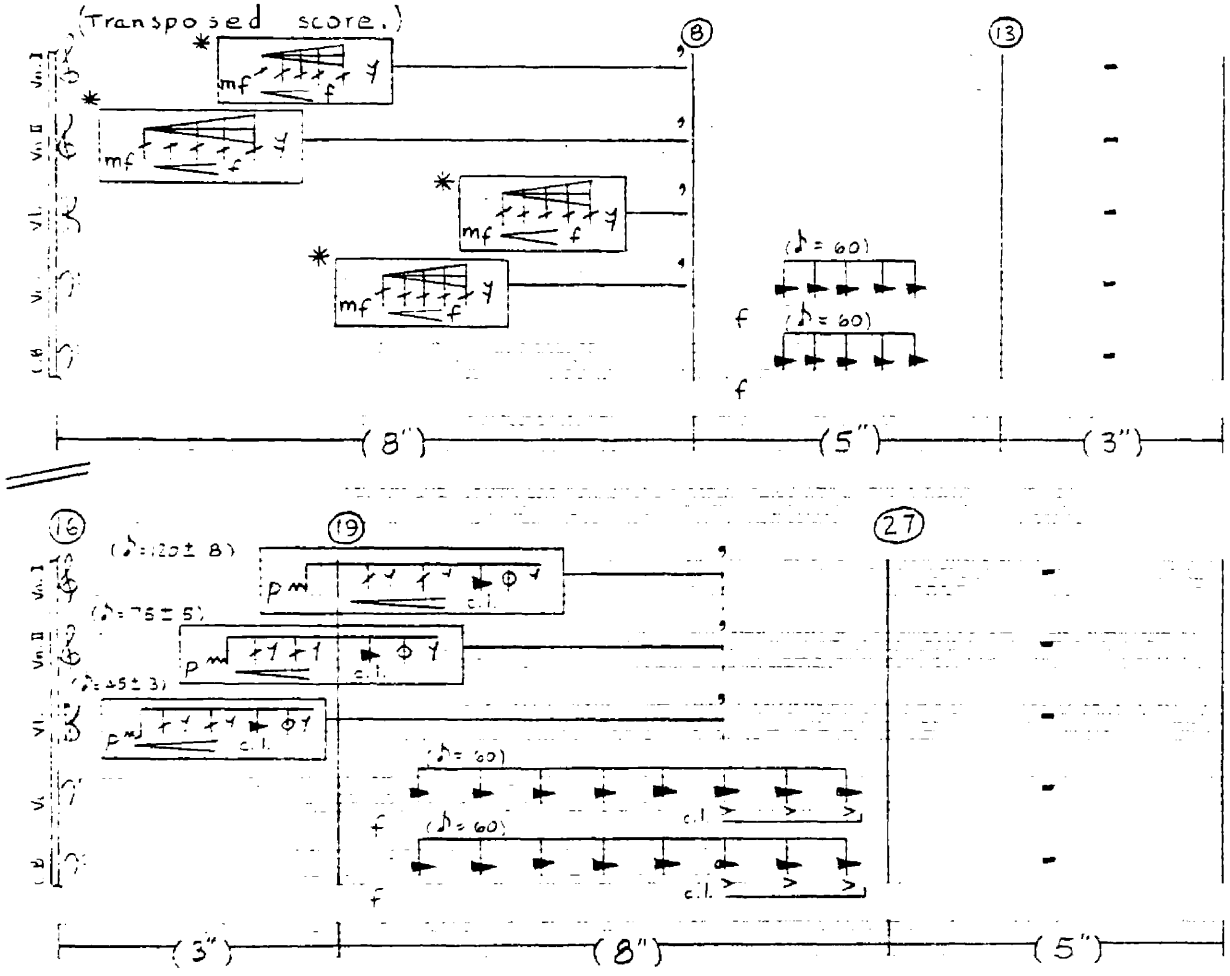
Violin I (12 or more players)
Violin II (12 or more players)
Viola (8 or more players)
Cello (10 or more players)
Contrabass (6 or more players)

GEOMETRIES FOR ORCHESTRA

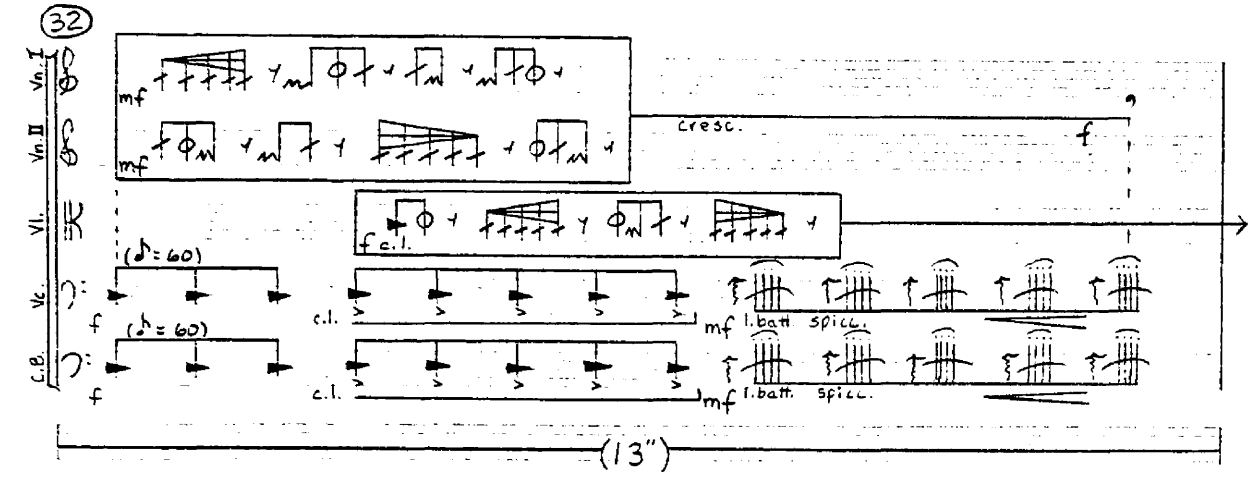
W.R.Clemmons (1978)

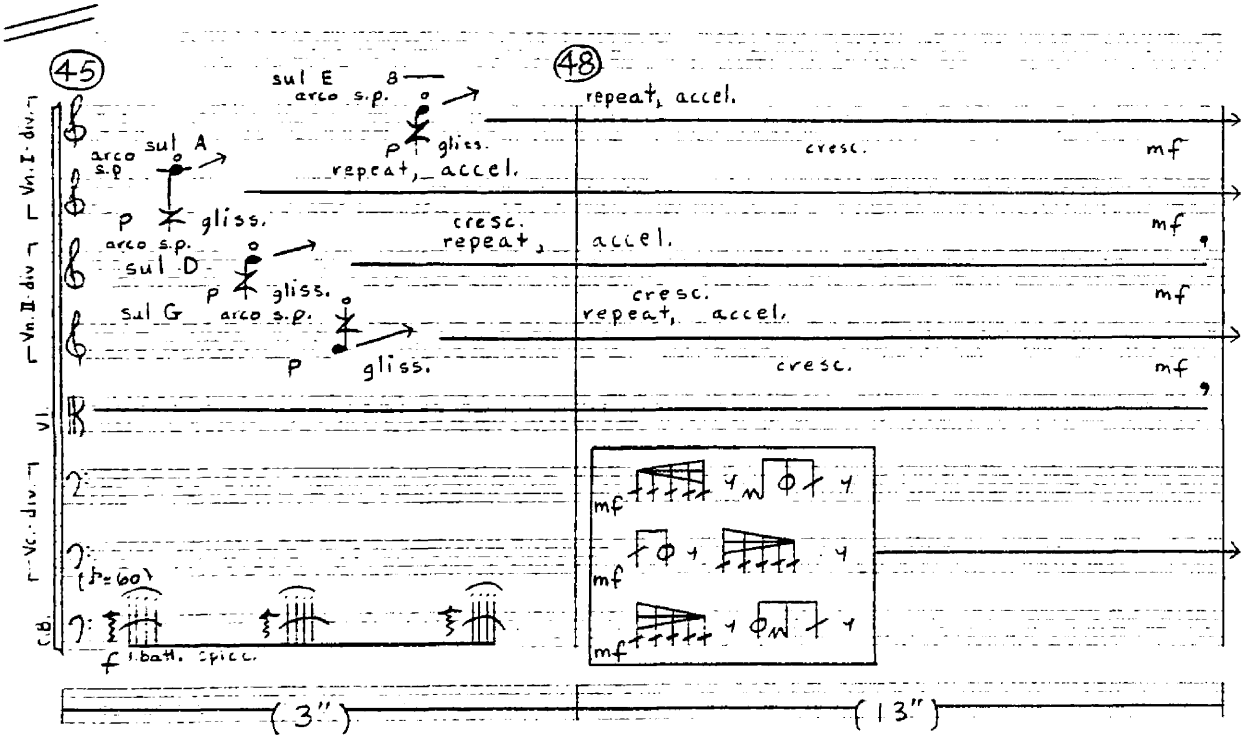
I.

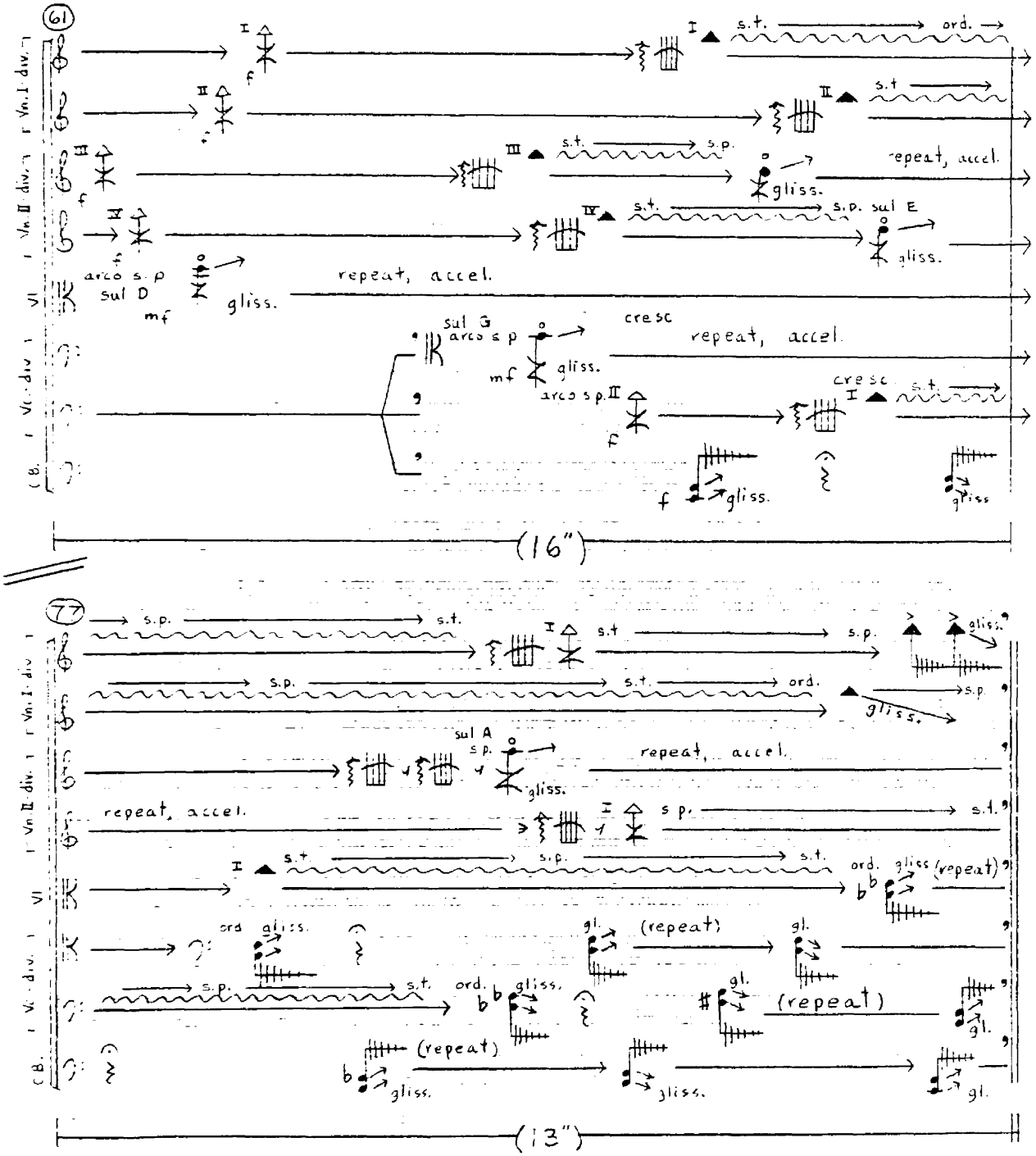
(Brass & Percussion: TACET)

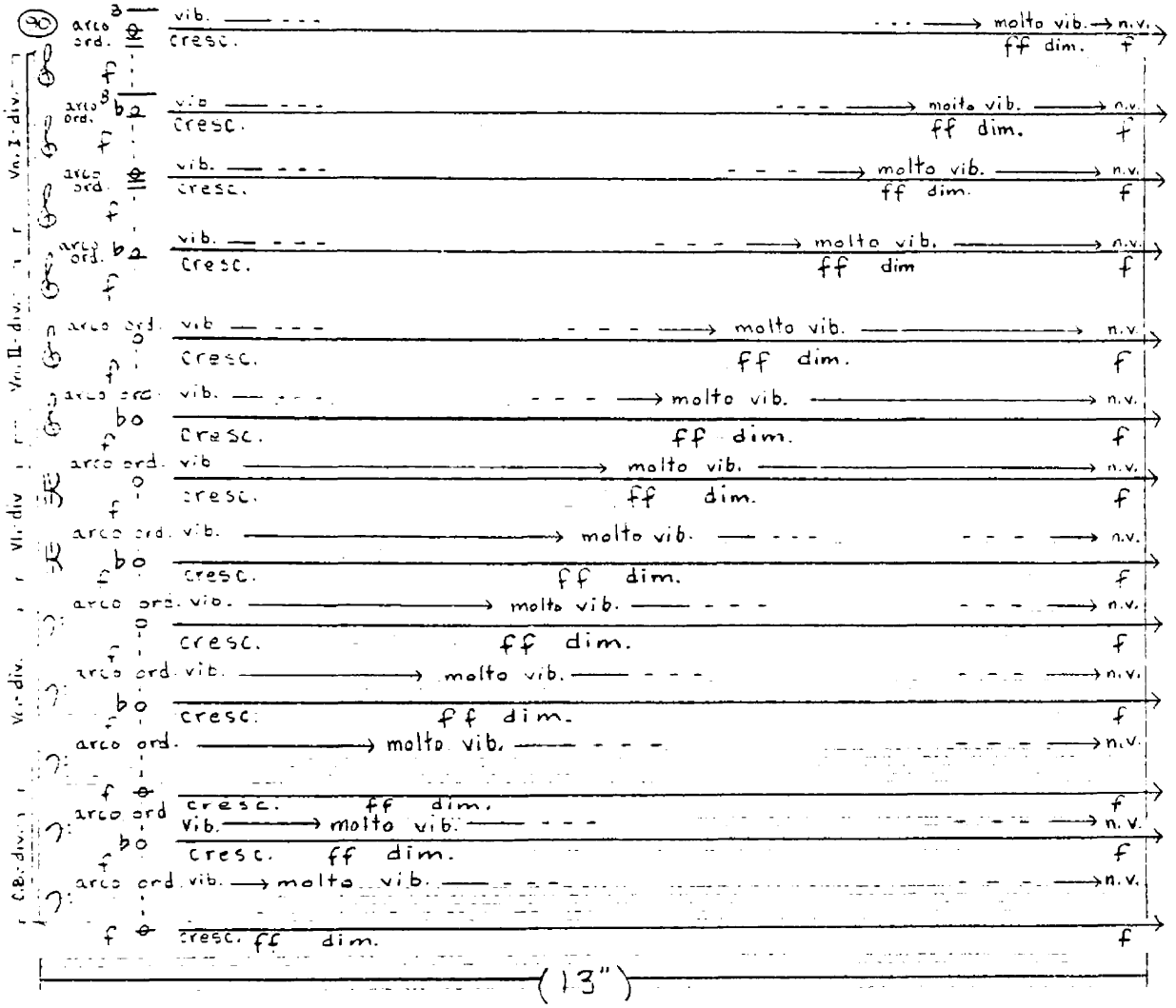


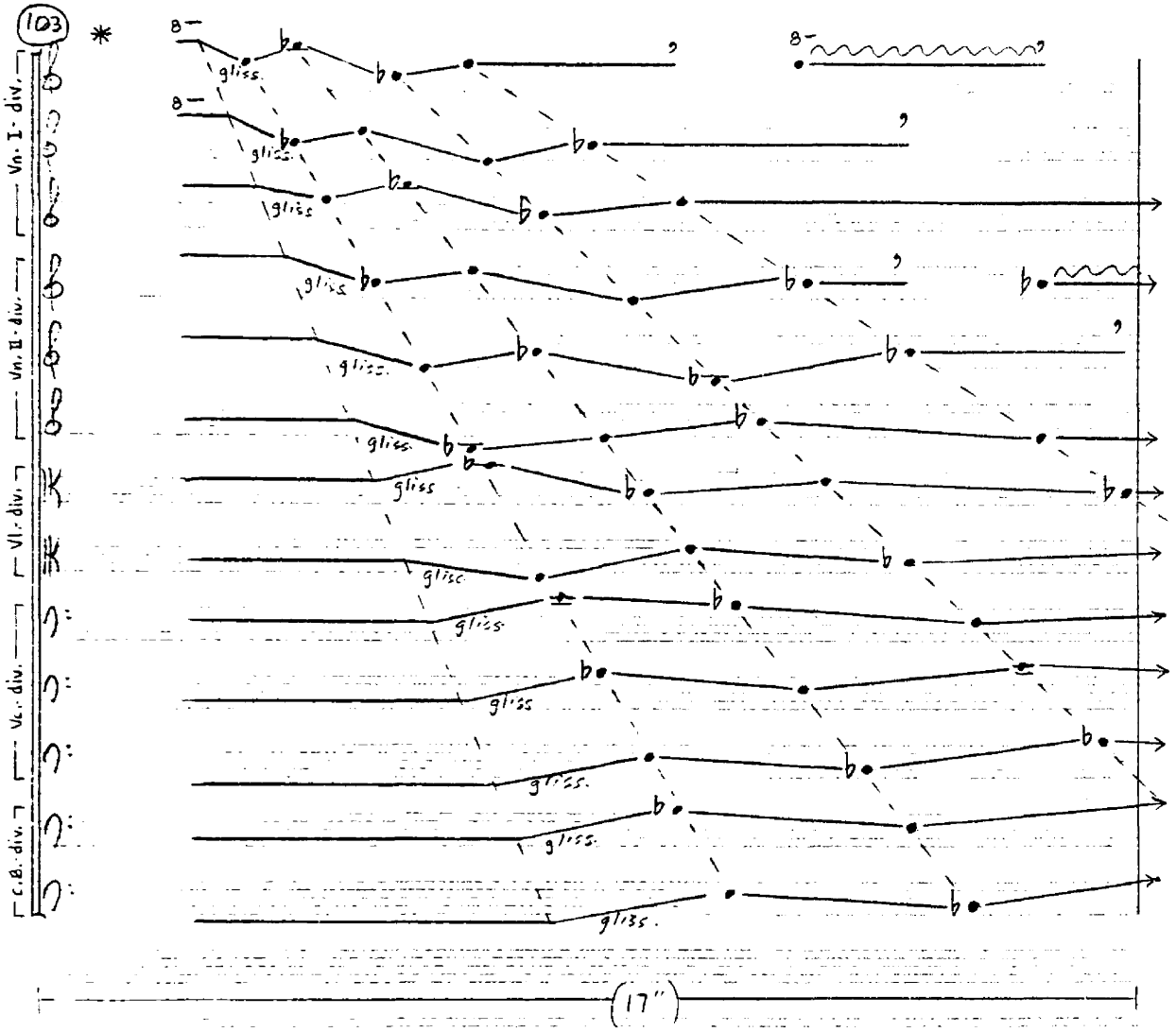
* - Each player repeats the material within the frame for the duration indicated by the line which follows.


32
Vn. I
Vn. II
Vl.
Vc.
C.B.
mf
cresc.
f
f c.l.
(♪= 60)
f
c.l.
mf
l.batt.
spicc.
(13")

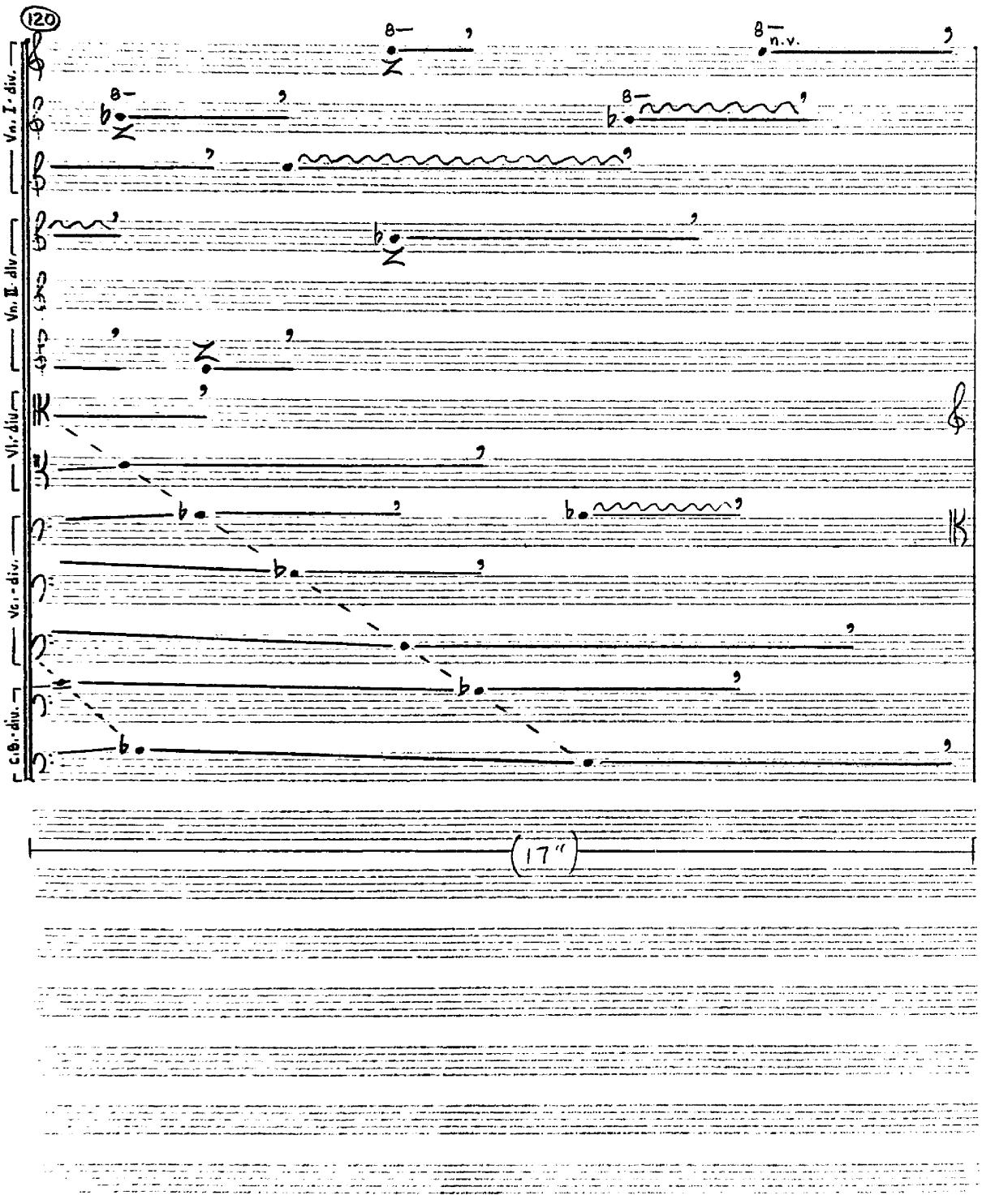

45
48
sul E
arco s.p.
repeat, accel.
sul A
arco s.p.
P
gliss.
cresc.
mf
sul D
sul G
Vn. I div.
Vn. II div.
Vl.
Vc. div.
C.B.
(♪= 60)
f
l.batt.
spicc.
(3")
(13")

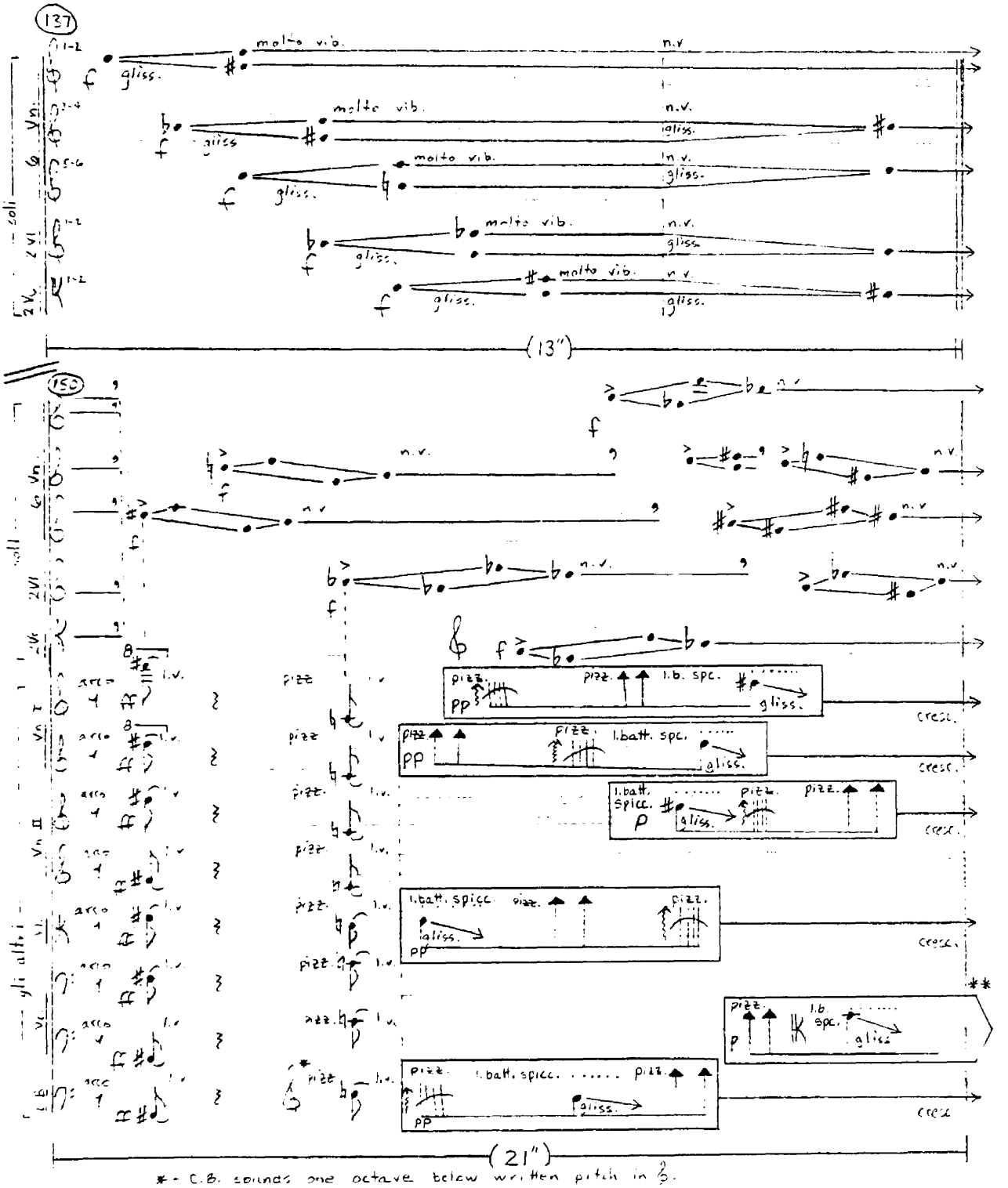

61
Vn. I div. 1
Vn. II div. 1
Vl.
Vc. div. 1
C.B.
I
II
III
IV
f
mf
s.t.
ord.
s.p.
s.p. sul E
gliss.
repeat, accel.
arco s.p
sul D
sul G
cresc
sul A
(repeat)
gl.
(16")
77
(13")


Vn. I - div.
Vn. II - div.
Vla. div.
Vc. - div.
C.B. div.
arco ord.
vib.
molto vib.
n.v.
cresc.
ff dim.
f
(13")

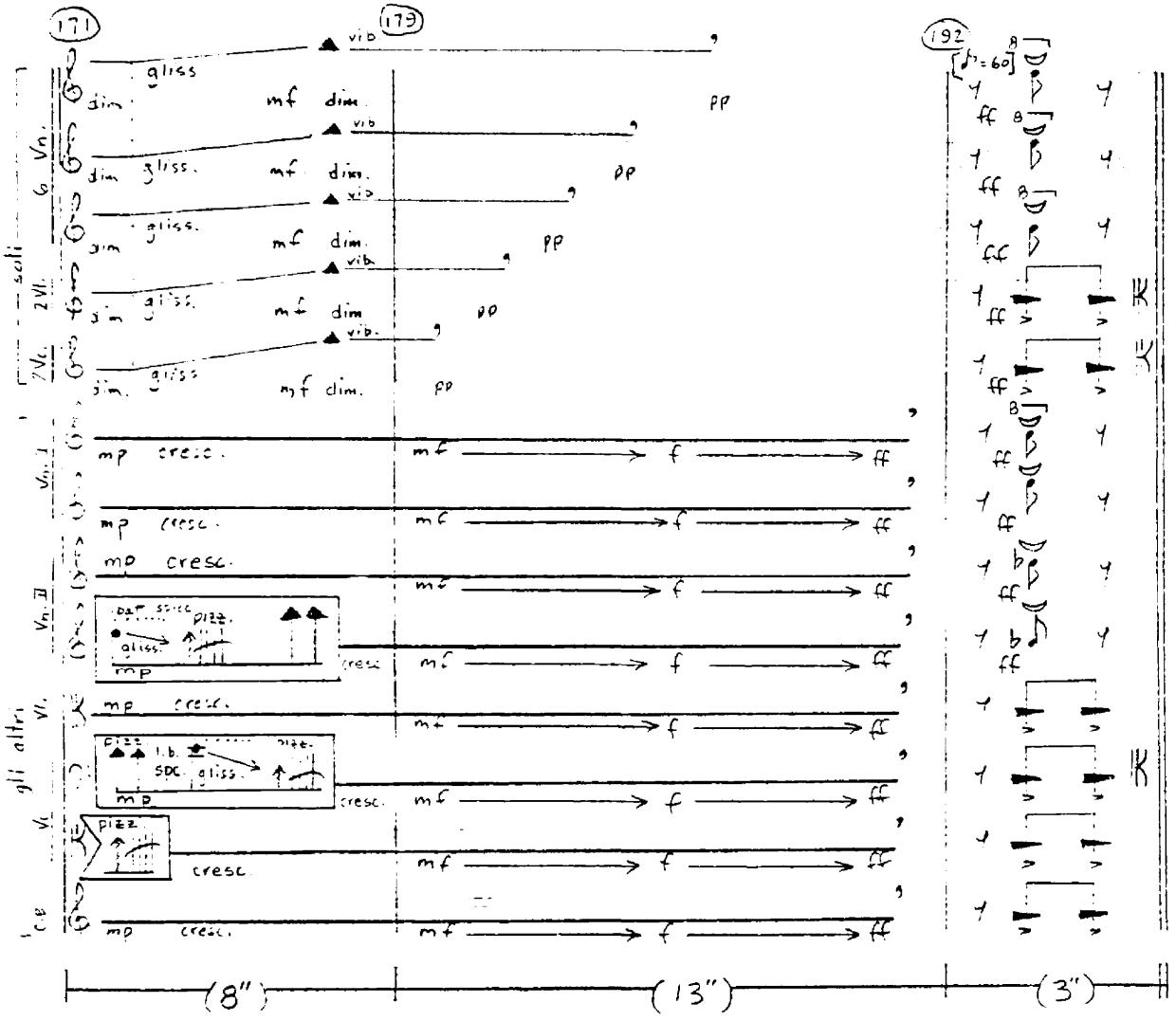


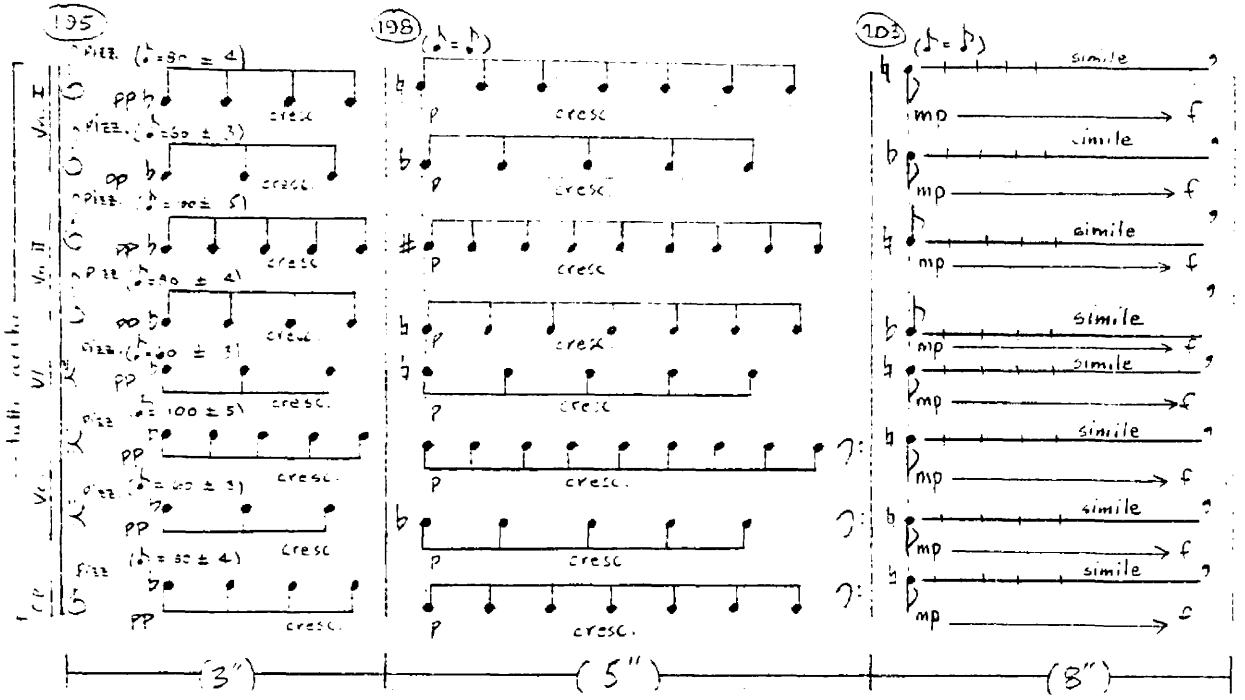
* - The beginning of the first glissando in each part is to be given by 13 even cues from the conductor. The top violin players should complete their final glissando by the time of the conductor's last cue. Each of the remaining players should take their subsequent cues from the part notated immediately above theirs, as indicated by the dotted lines. Precise synchronization is not required after the beginning of the first glissando in each part.

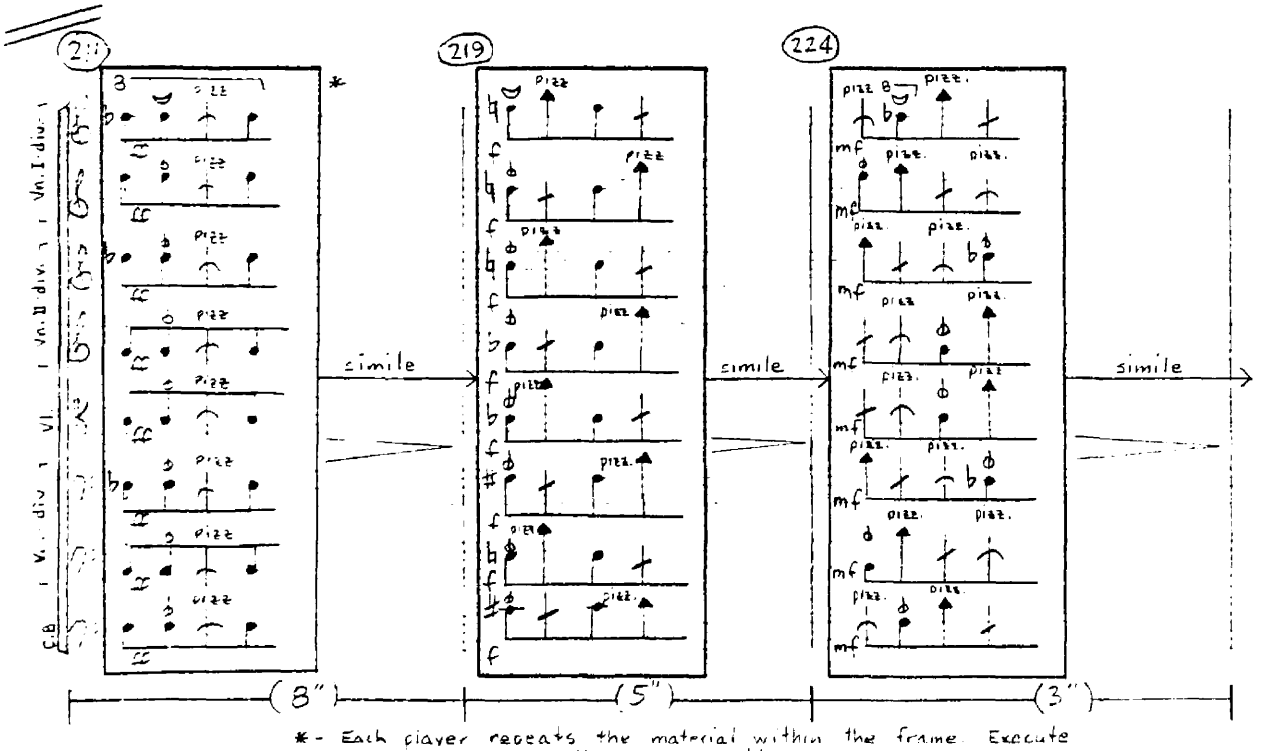

120
Vn. I · div.
Vn. II · div
Vl. · div.
Vc. · div.
C.B. · div.
8va
8va n.v.
(17")



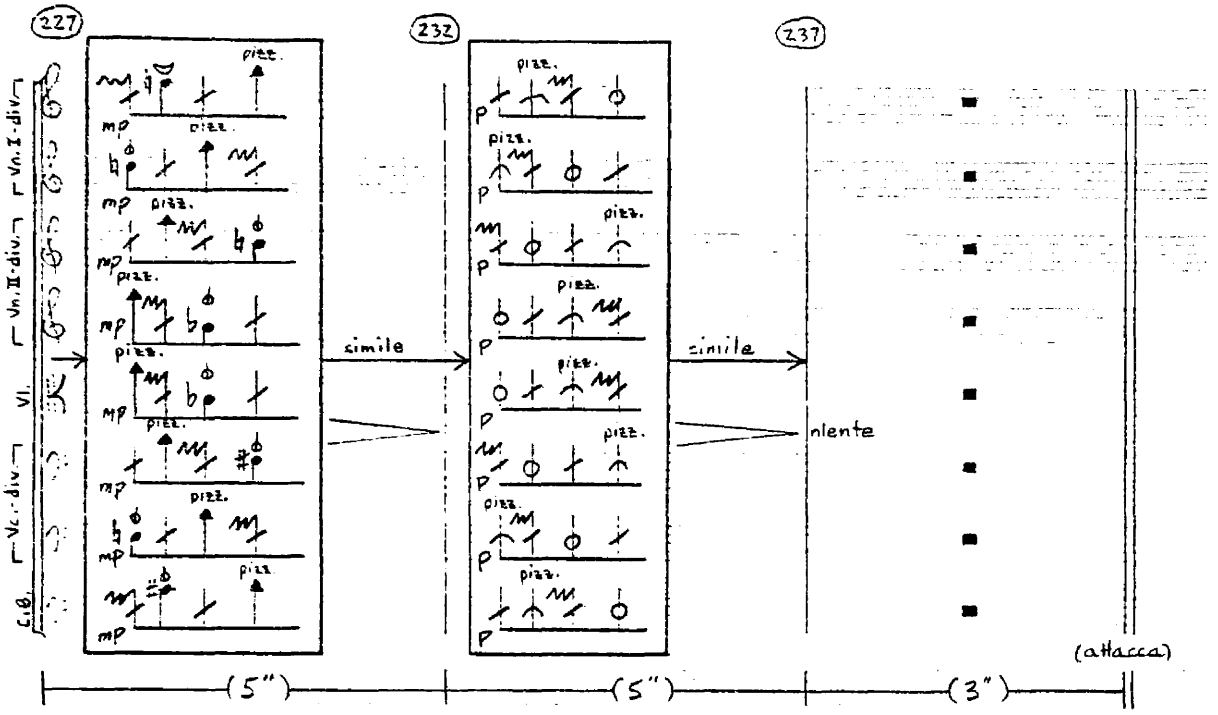
* - C.B. sounds one octave below written pitch in 𝄢.
** - Frame continues on next system.

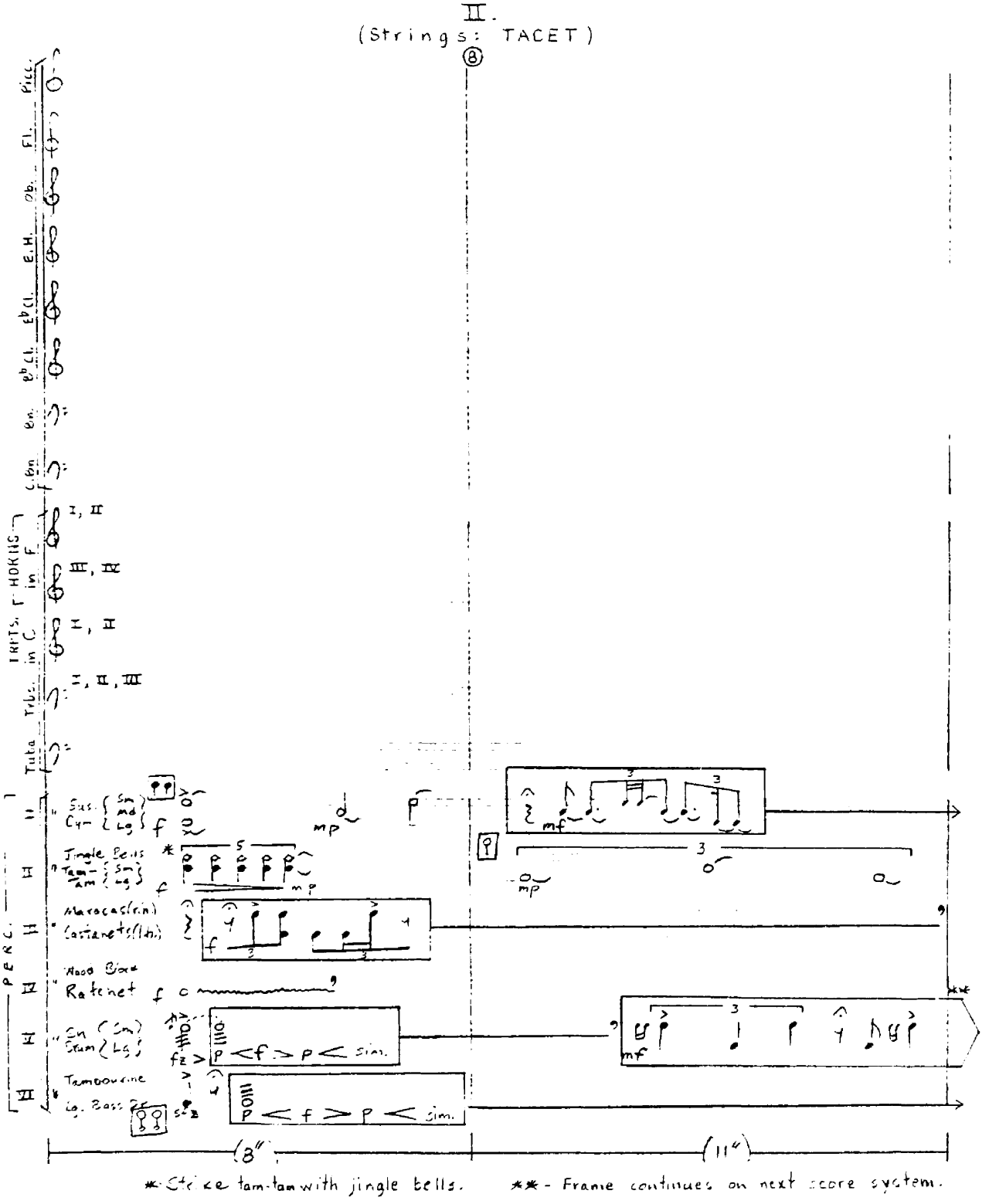

171
179
192
vib
gliss
dim
mf
pp
mp
cresc.
f
ff
pizz.
l.b.
SDC
(8")
(13")
(3")

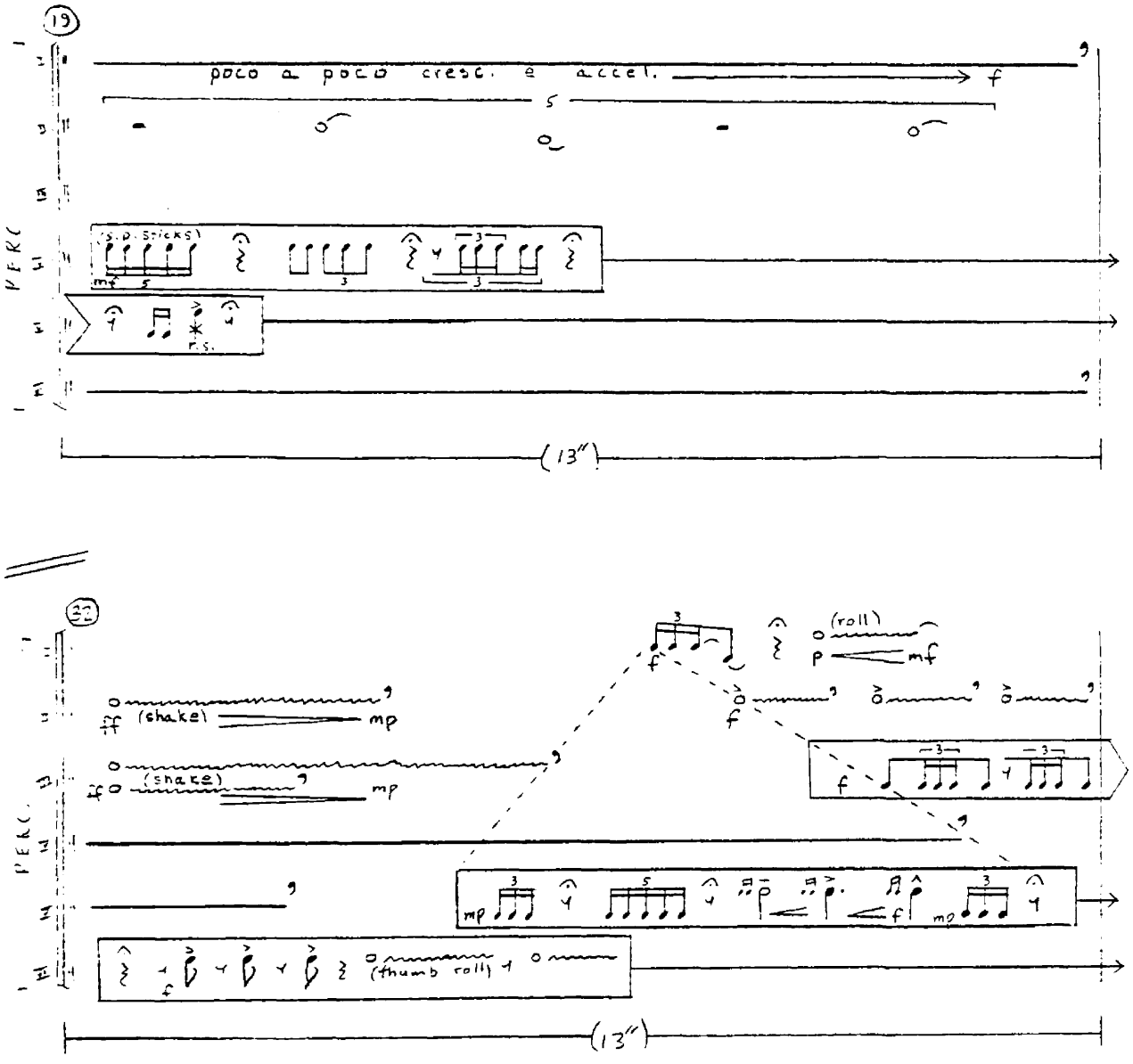


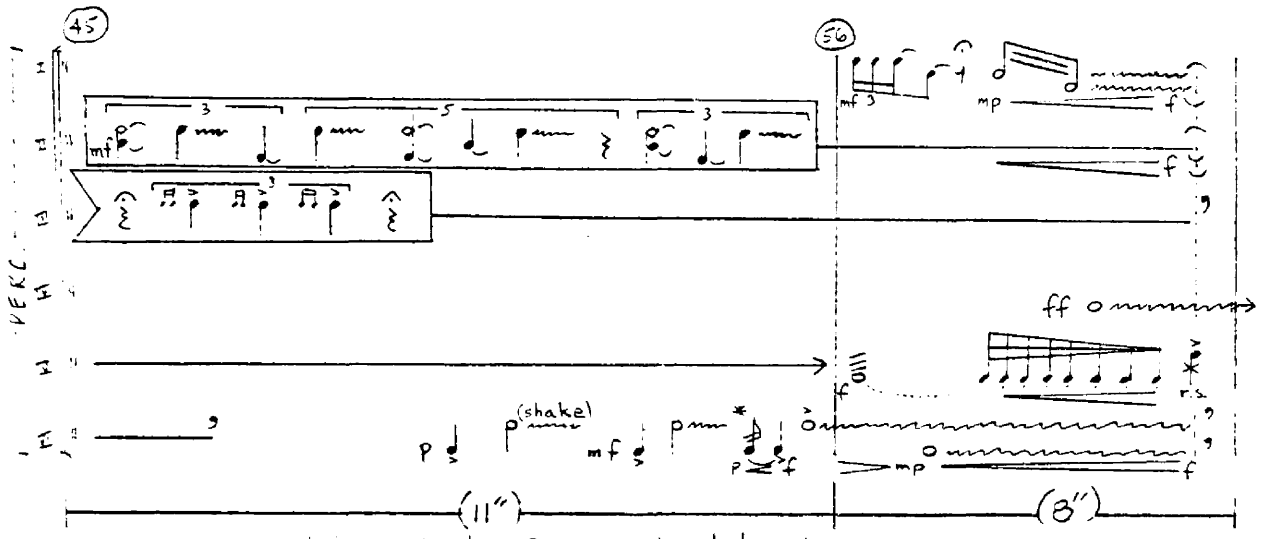


*- Each player repeats the material within the frame. Execute as rapidly as possible.

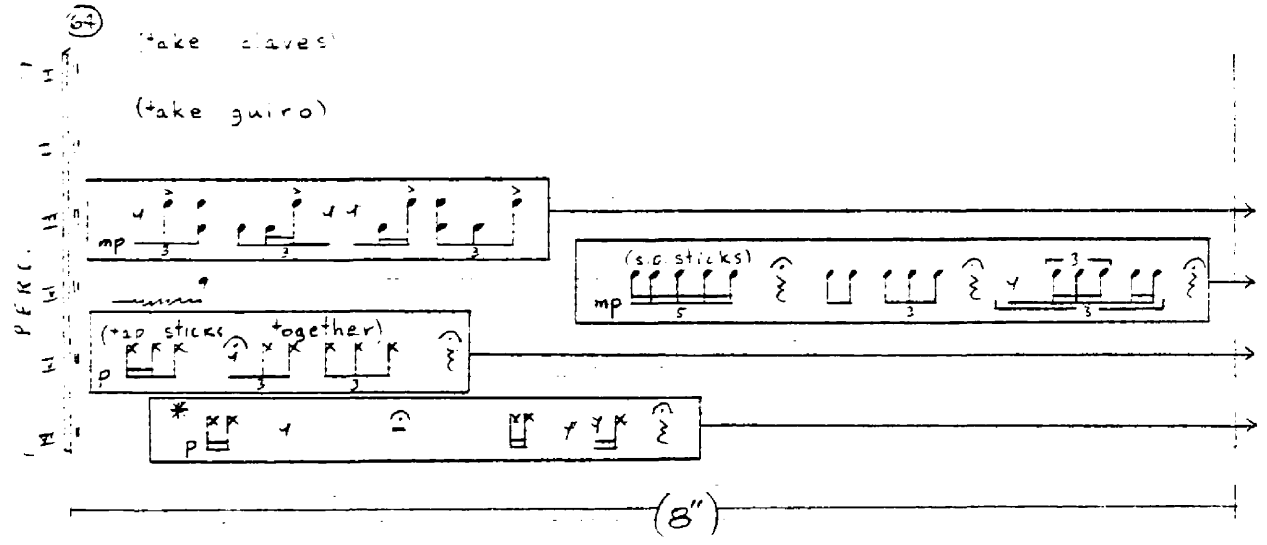

227
232
237
Vn. I - div.
Vn. II - div.
Vl.
Vc. - div.
C.B.
pizz.
mp
p
simile
simile
nlente
(attacca)
(5")
(5")
(3")


II.
(Strings: TACET)
8
Picc.
Fl.
Ob.
E.H.
Eb Cl.
Bb Cl.
B. Cl.
C Bsn.
I, II
III, IV
I, II
I, II, III
Tuba
HRNS. in F
TRPTS. in C
Tbns.
PERC.
Sus. Cym
Jingle Bells
Tam-Tam
Maracas(rim)
Castanets(lids)
Wood Block
Ratchet
Sm Stum
Lg Stum
Tambourine
Lg. Bass Dr.
mp
f
mf
fz
p < f > p < sim.
(8")
(11")
* Strike tam-tam with jingle bells.
** - Frame continues on next score system.

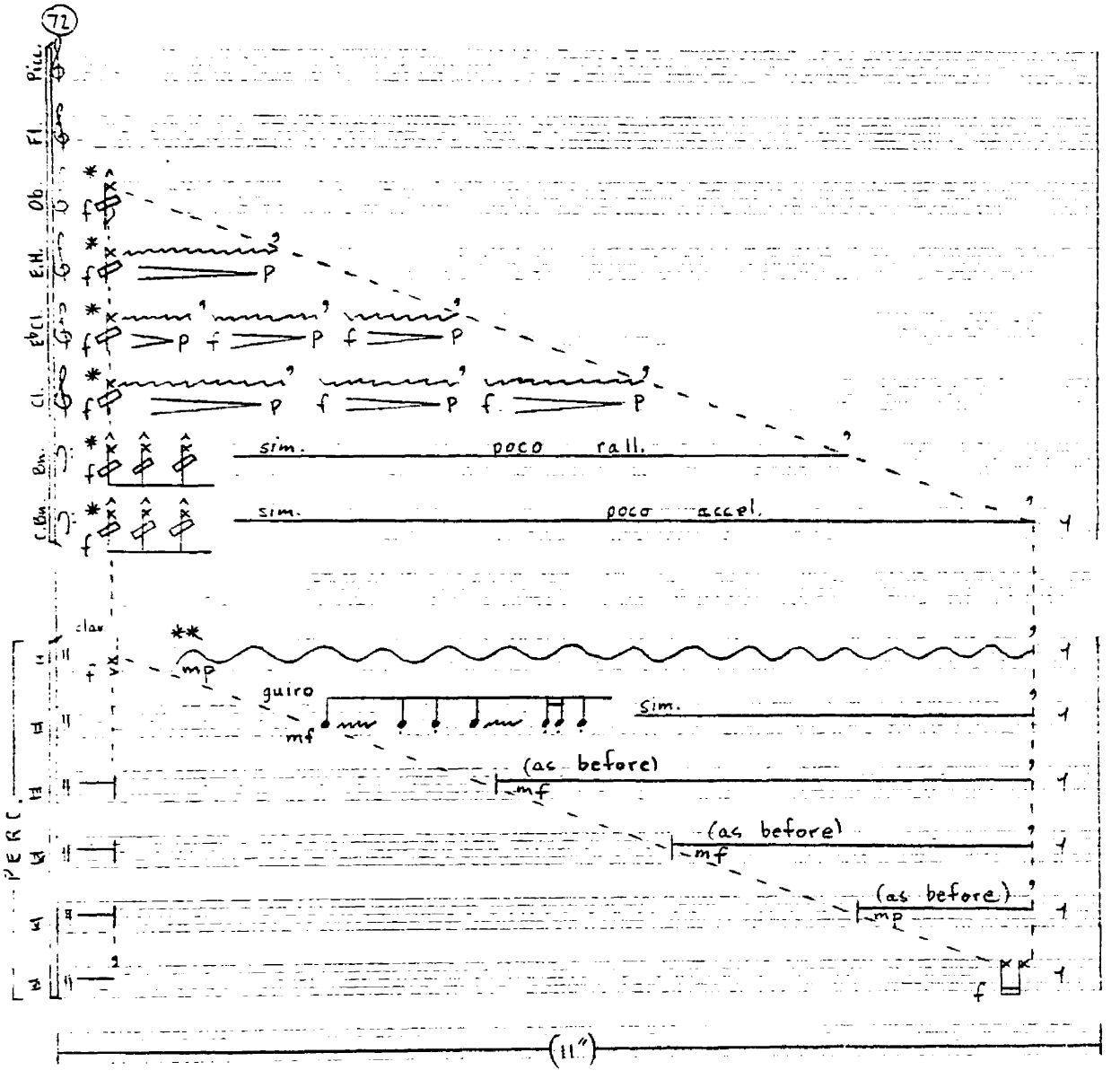

19
poco a poco cresc. e accel.
f
5
PERC.
(s.p. sticks)
mf
3
3
3
n.s.
(13")
32
(shake)
ff
mp
(shake)
ff
mp
f
(roll)
p
mf
f
f
3
3
mp
3
5
mp
f
mp
3
(thumb roll)
(13")



* Use double-ended B.D. beater for one-handed roll.

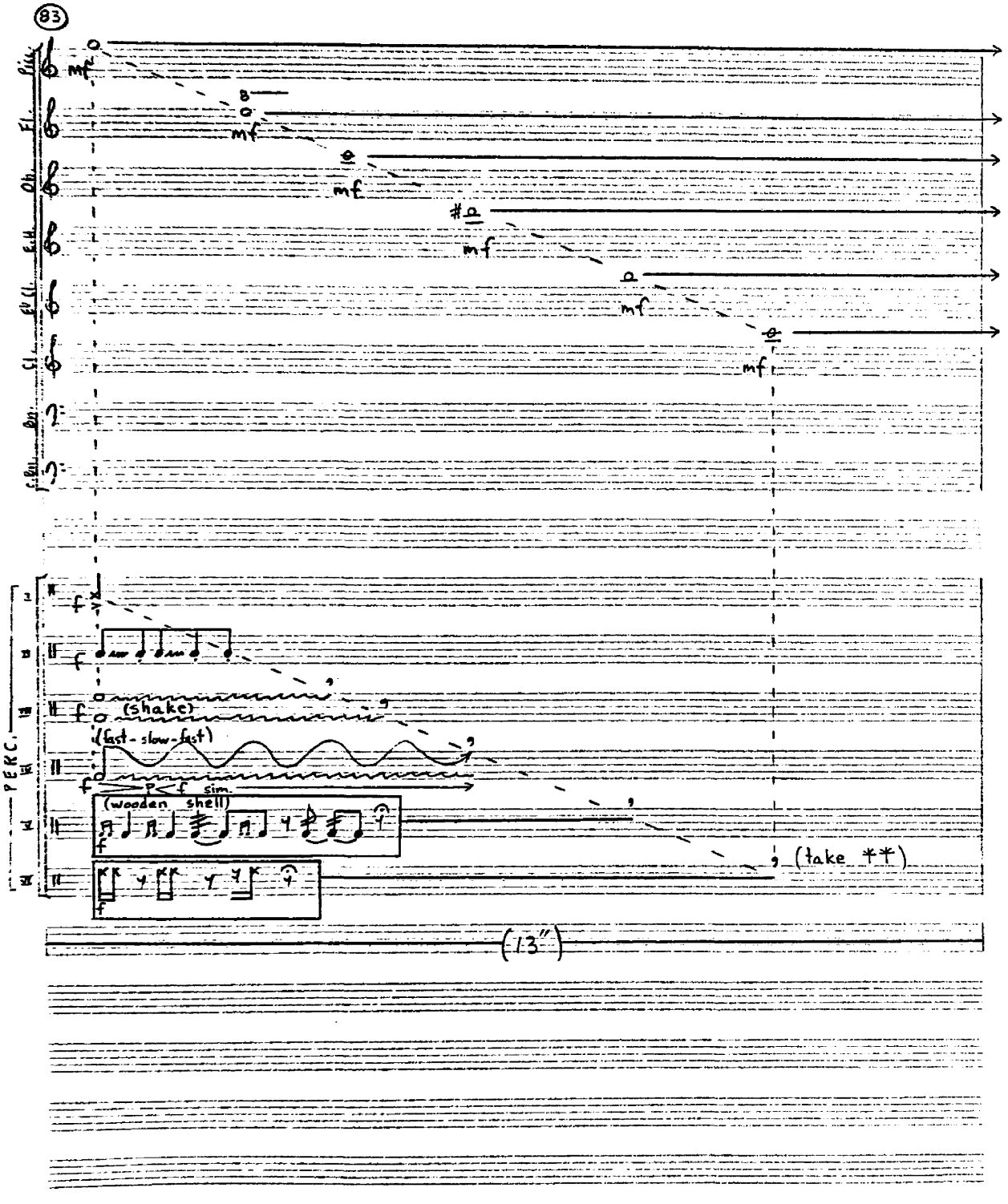


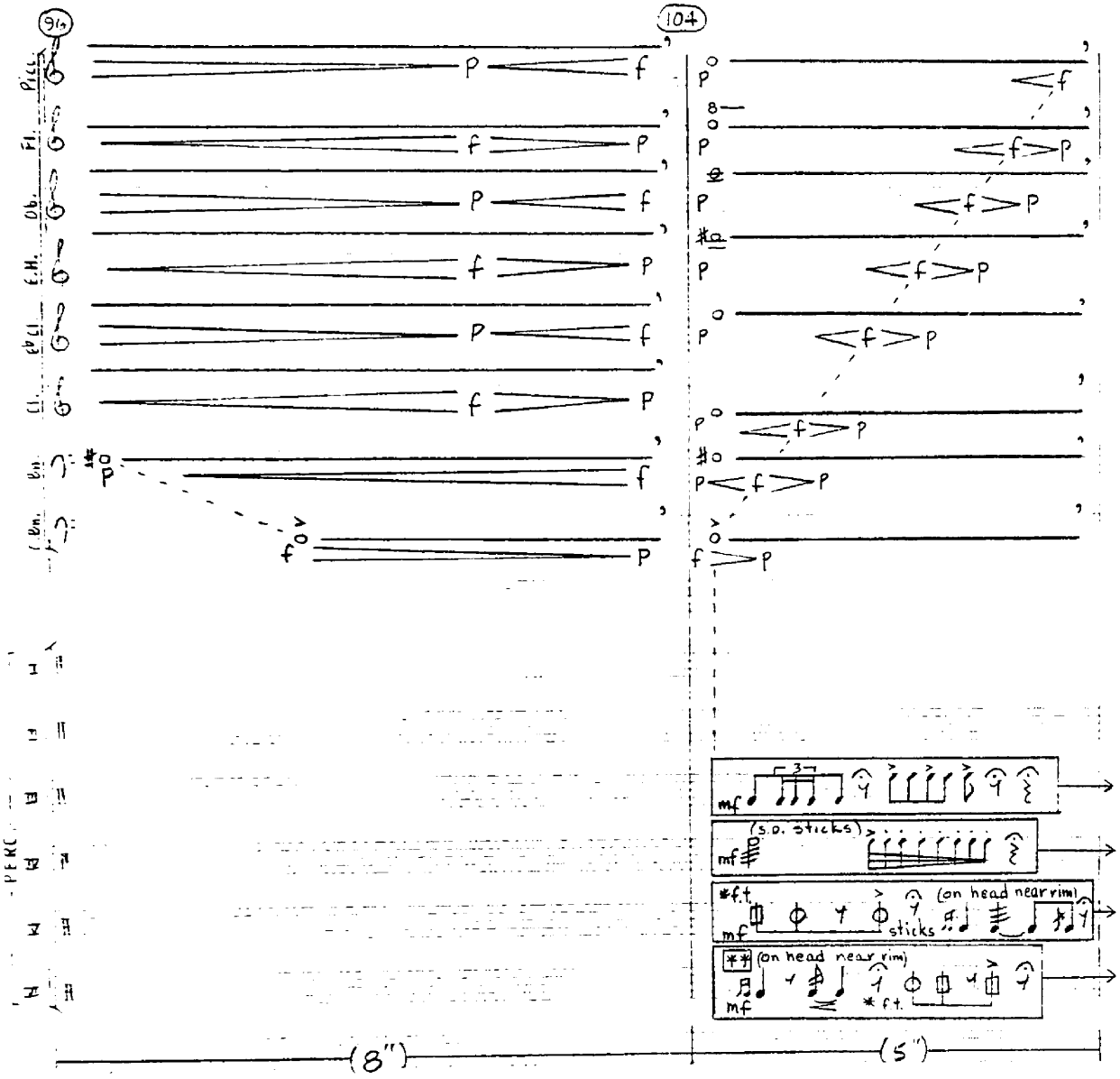
* - tap wooden part of B.D. stick on rim of B.D.



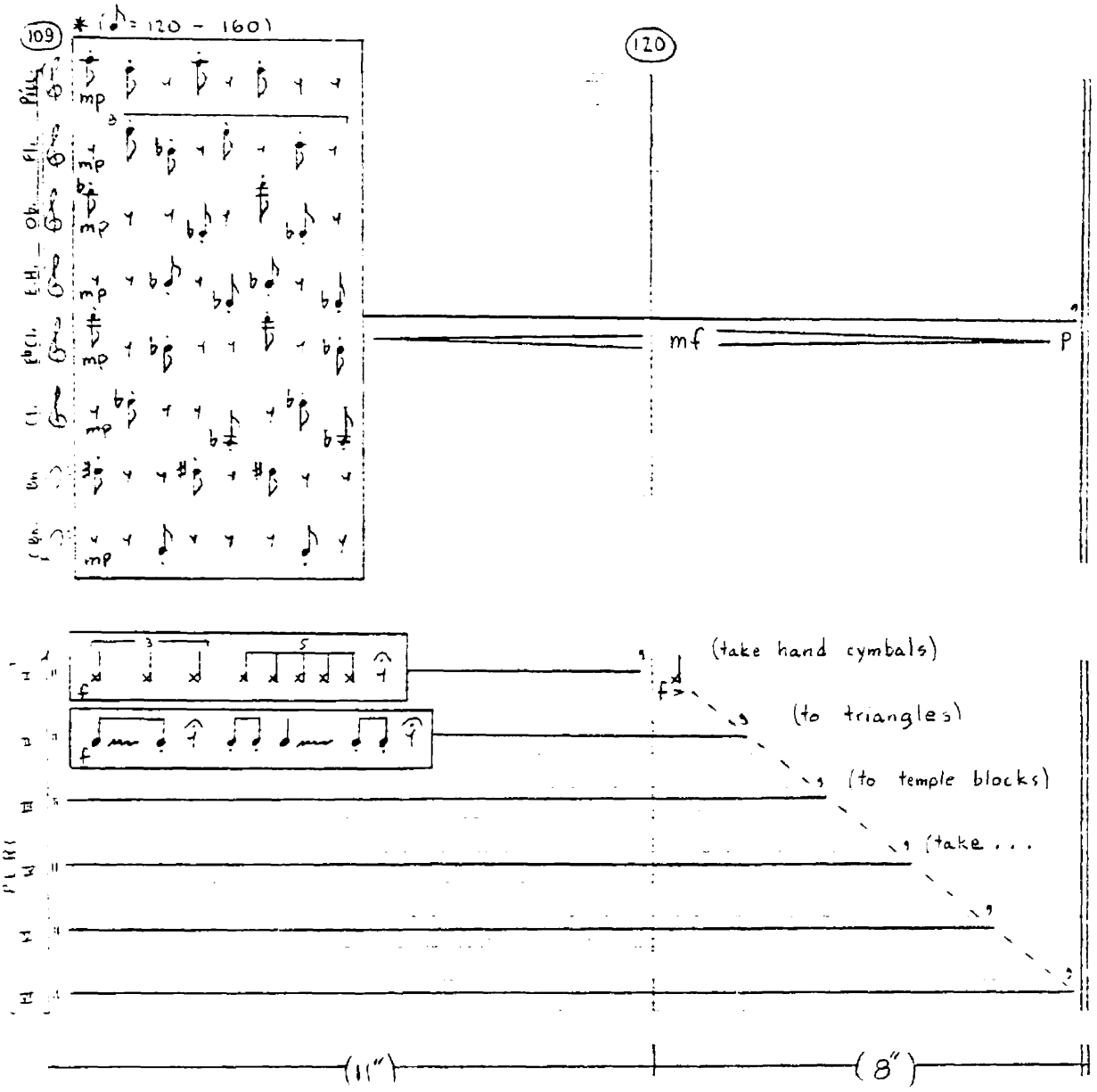
* - Strike wood parts of instrument with old reed. To produce "roll" effect (𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯𝅘𝅥𝅯), rattle reed against the inside of the bell (as rapidly as possible).

** - While holding both claves in the palm of one hand, grip and release them repeatedly, producing muffled clicking sounds.

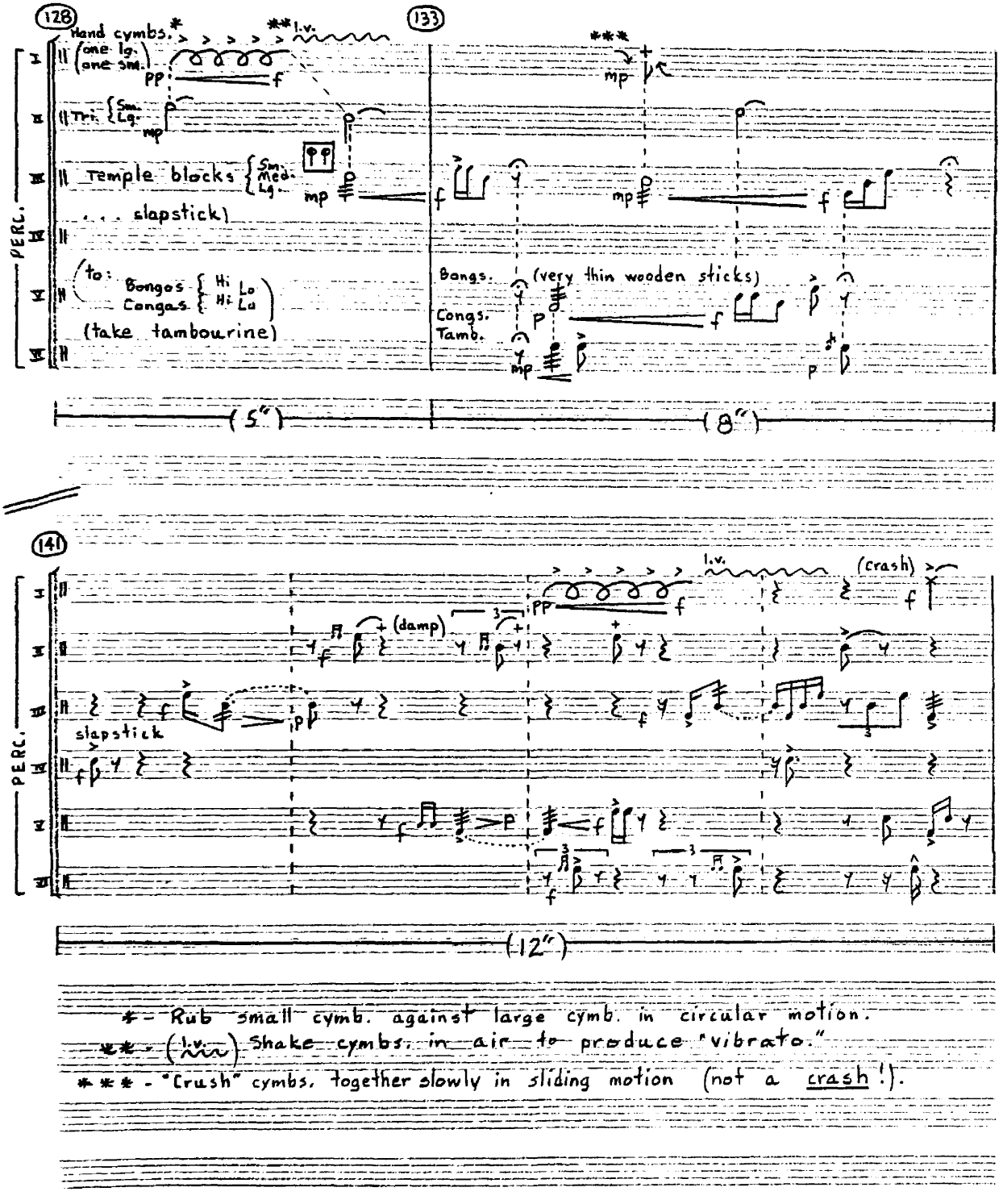

83
Fl.
Ob.
E.H.
Cl.
B. Cl.
C. Bsn.
PERC.
(shake)
(fast - slow - fast)
(wooden shell)
sim.
(take **)
(13")



* - (f.t.) Strike with finger tips: ϕ at center of head; ⊡ on shell.



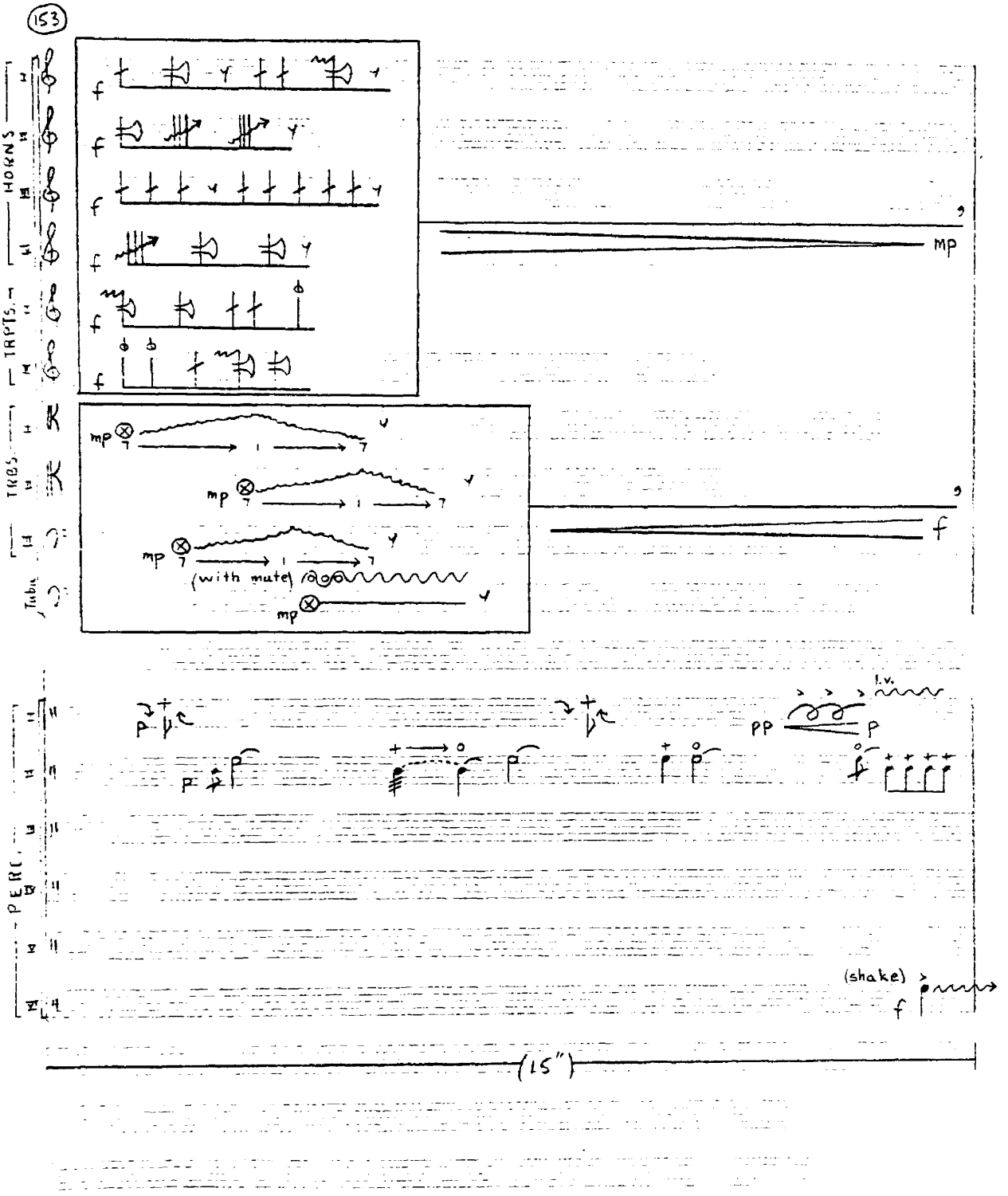
* - Each player execute the given material repeatedly in strict rhythm at any tempo in the indicated range.

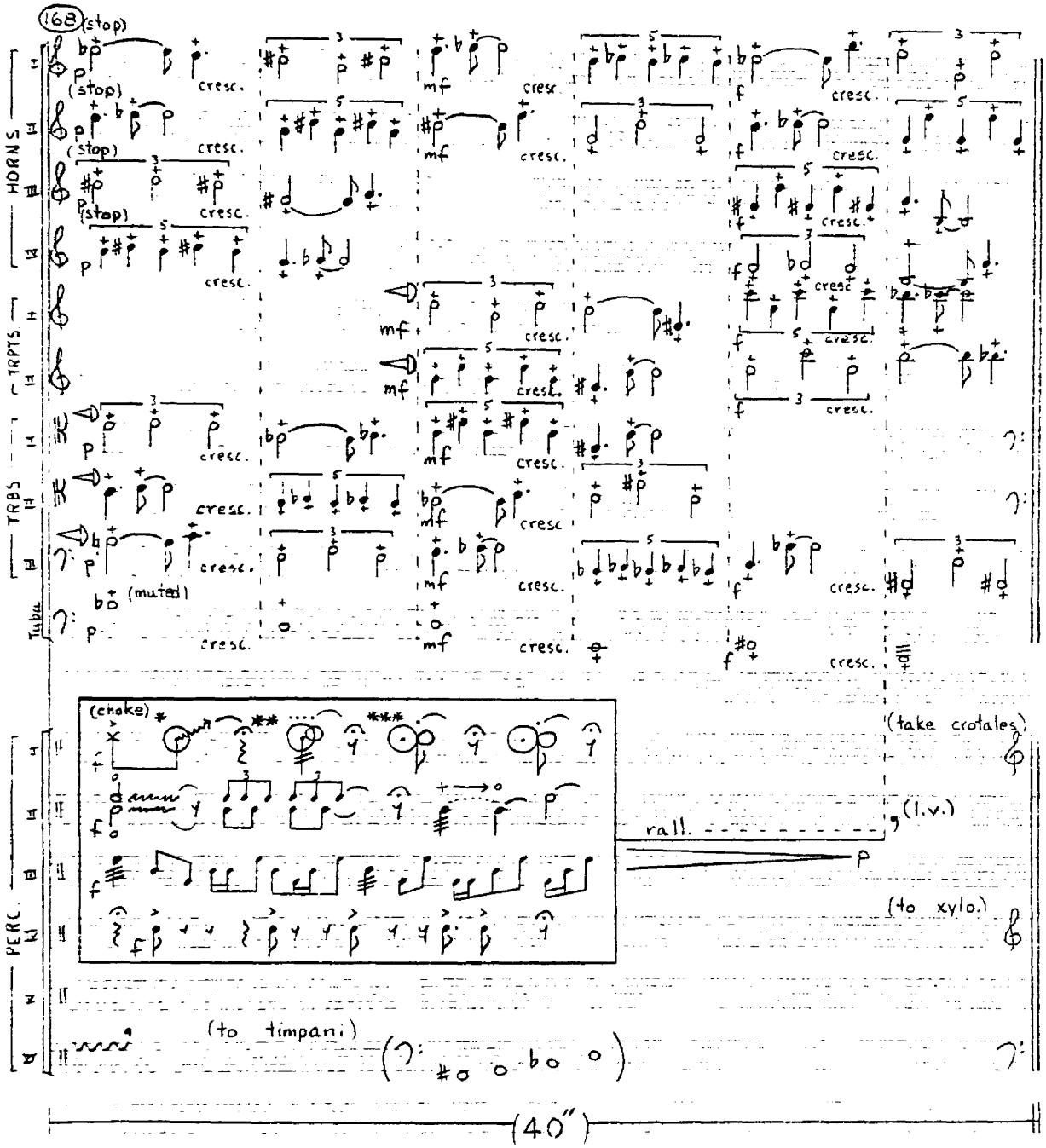


* - Rub small cymb. against large cymb. in circular motion.

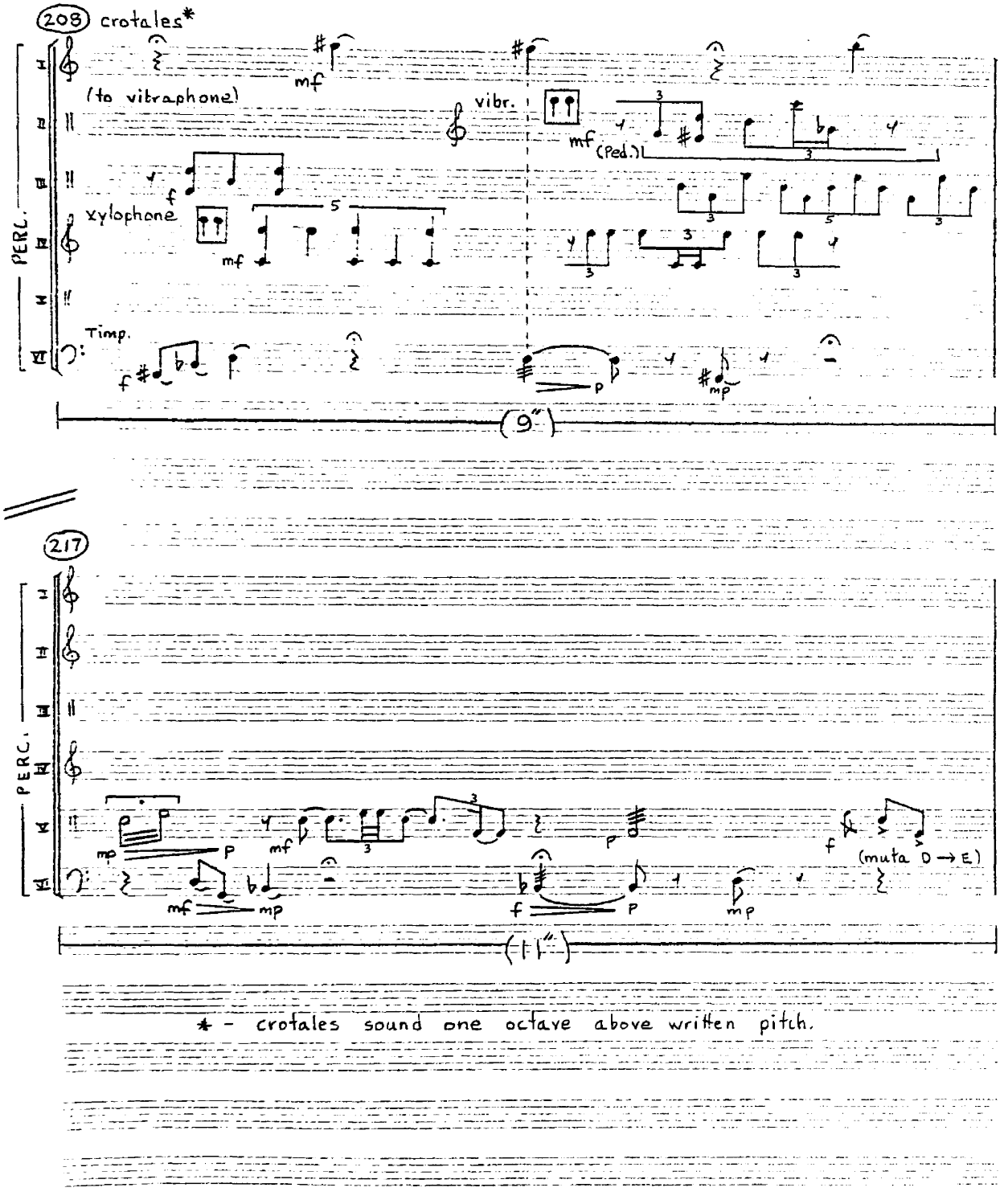
** - (l.v.) Shake cymbs. in air to produce "vibrato."

*** - "Crush" cymbs. together slowly in sliding motion (not a crash!).

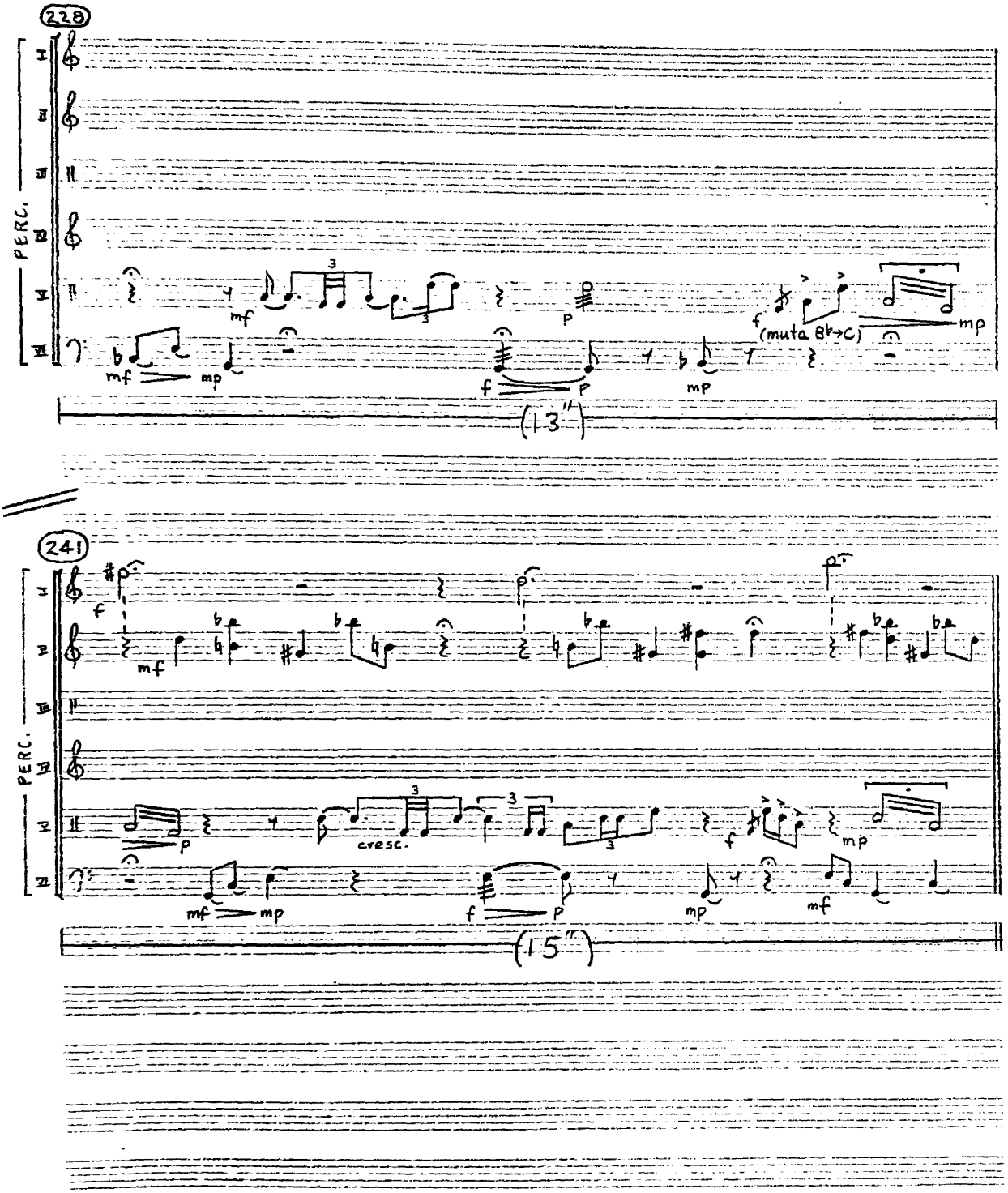

153
HORNS
TRPTS.
TRBS.
Tuba
PERC.
f
mp
(with mute)
pp
l.v.
(shake)
(15")

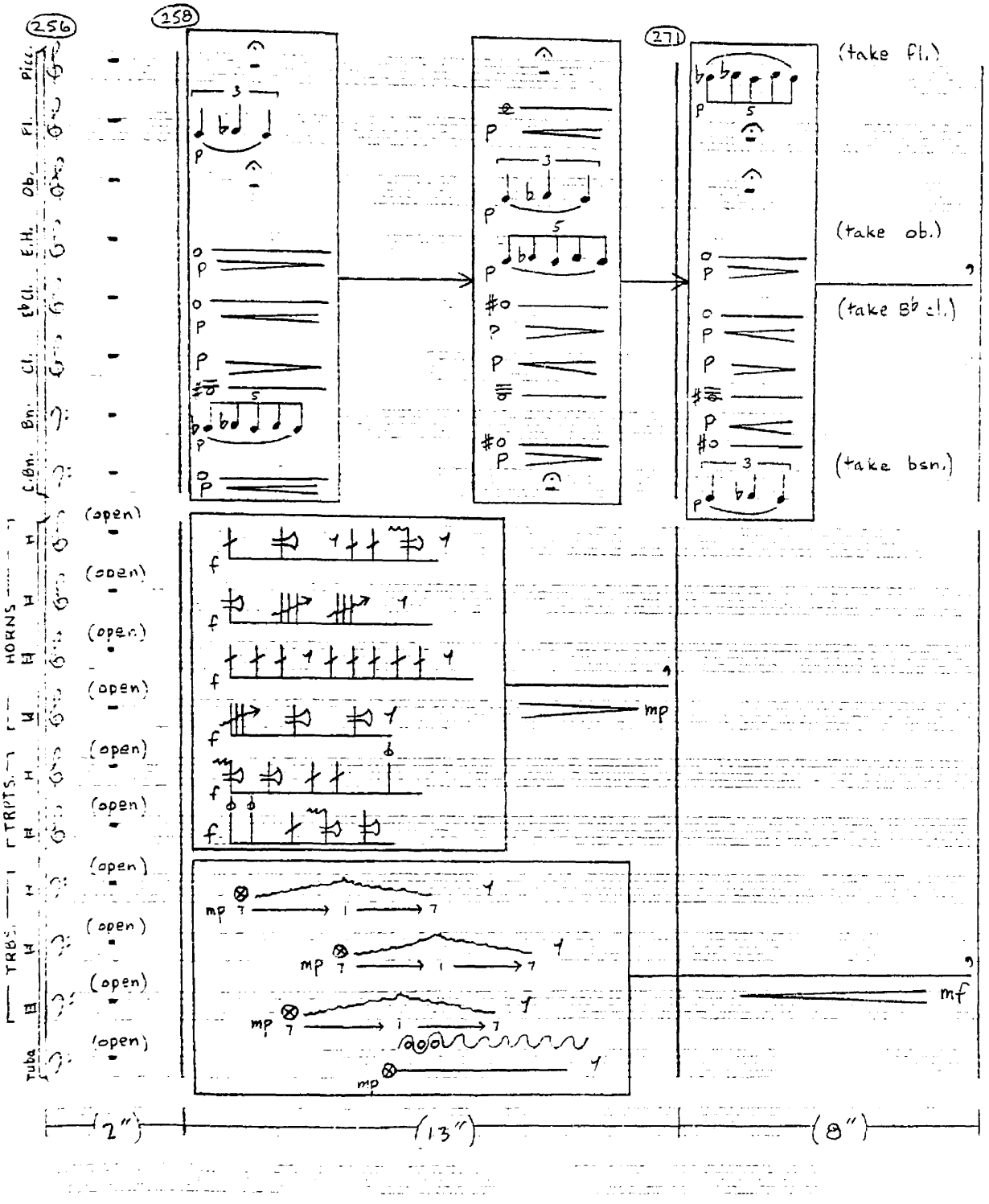


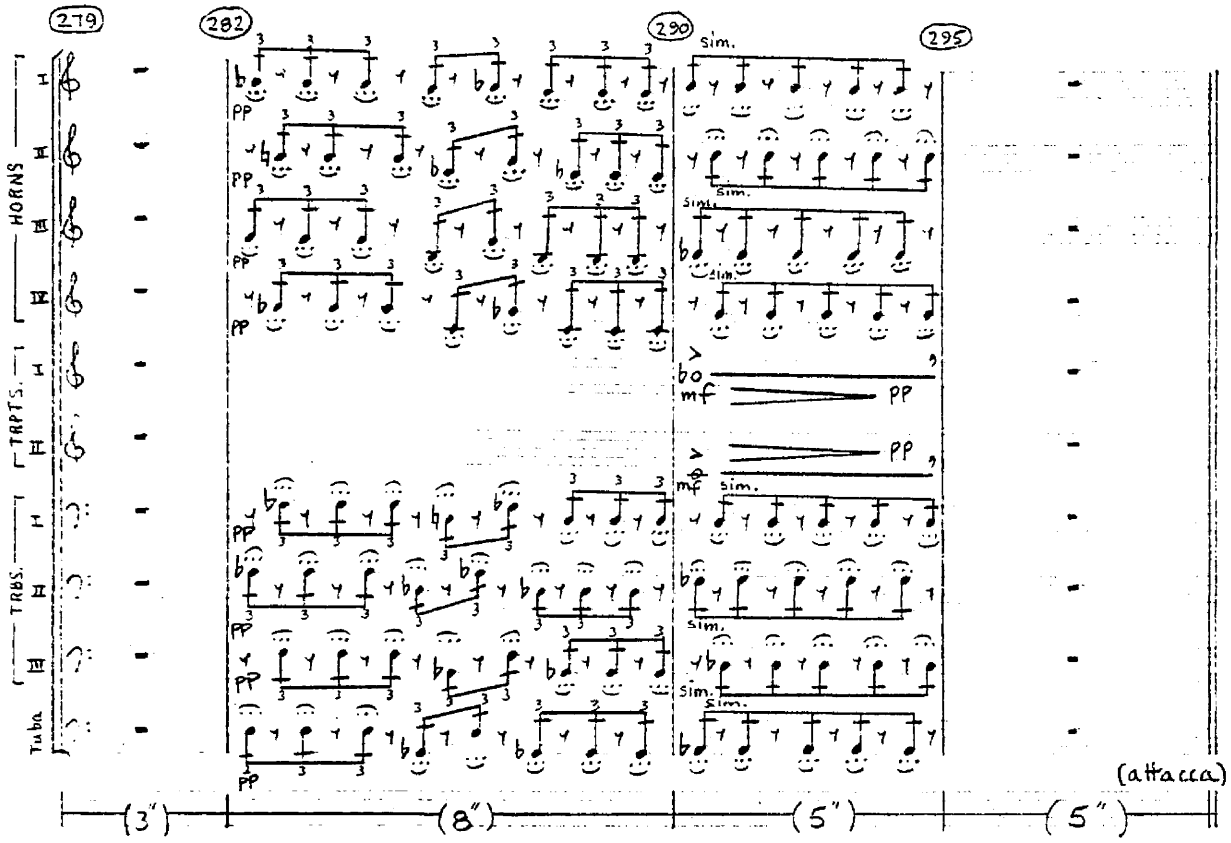
* - Scrape edge of small cymb. across large cymb. from dome to edge.
** - Tap edge of sm. cymb. against dome of lg. cymb.
*** - Tap edge of sm. cymb. against edge of lg. cymb.



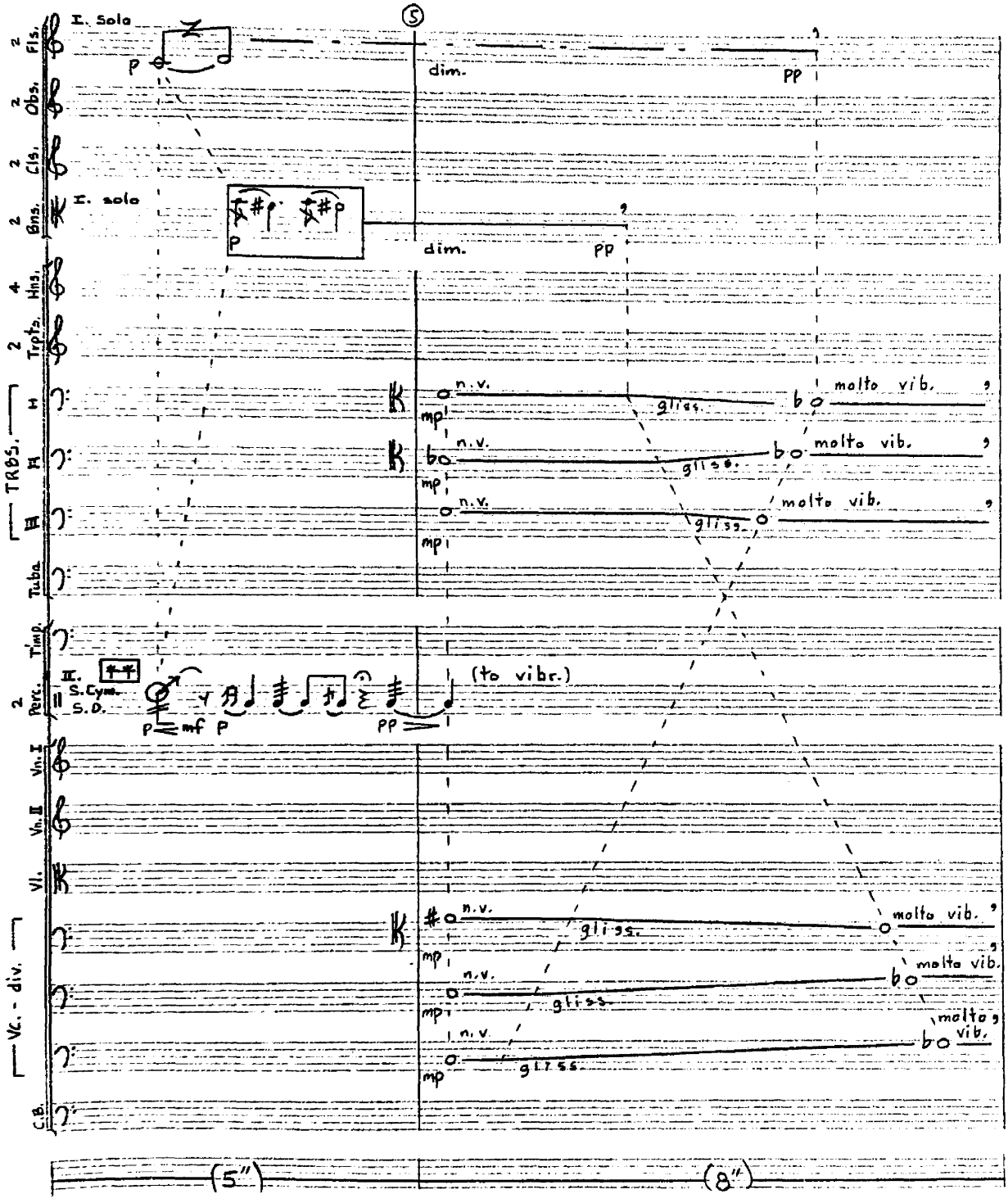
* - crotales sound one octave above written pitch.

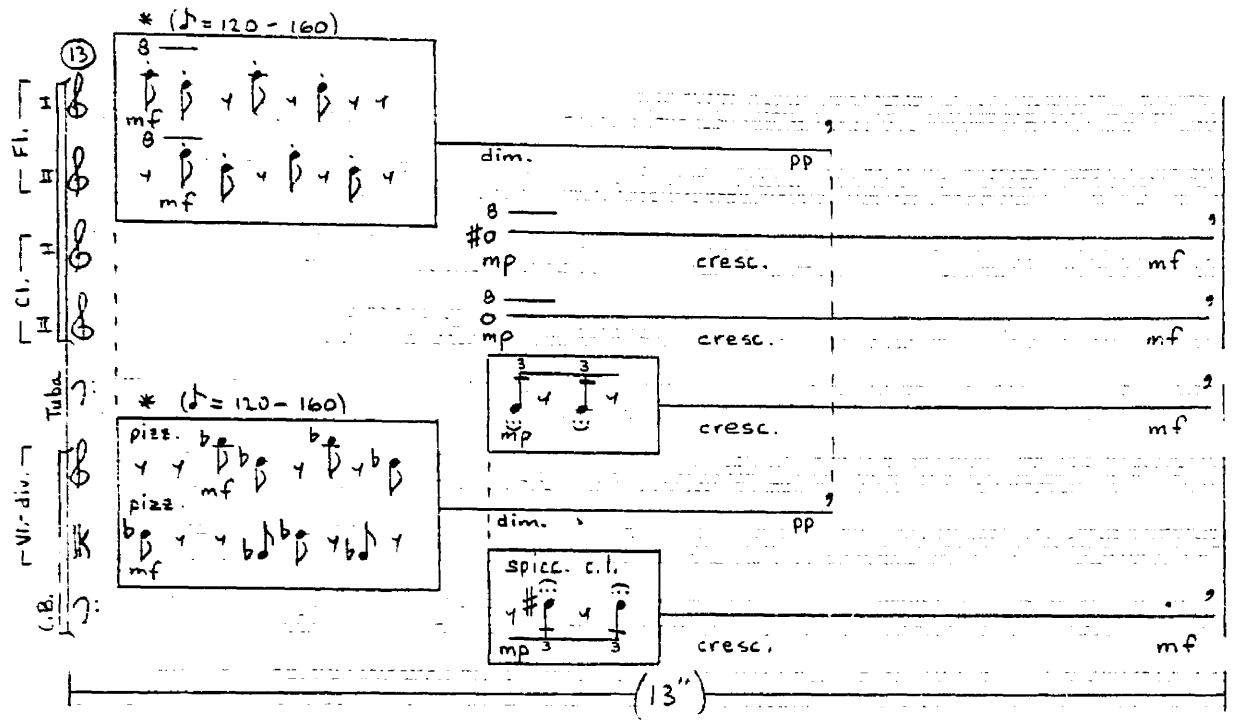

228
PERC.
mf
mp
f
p
(muta Bb→C)
(13")
241
PERC.
cresc.
(15")

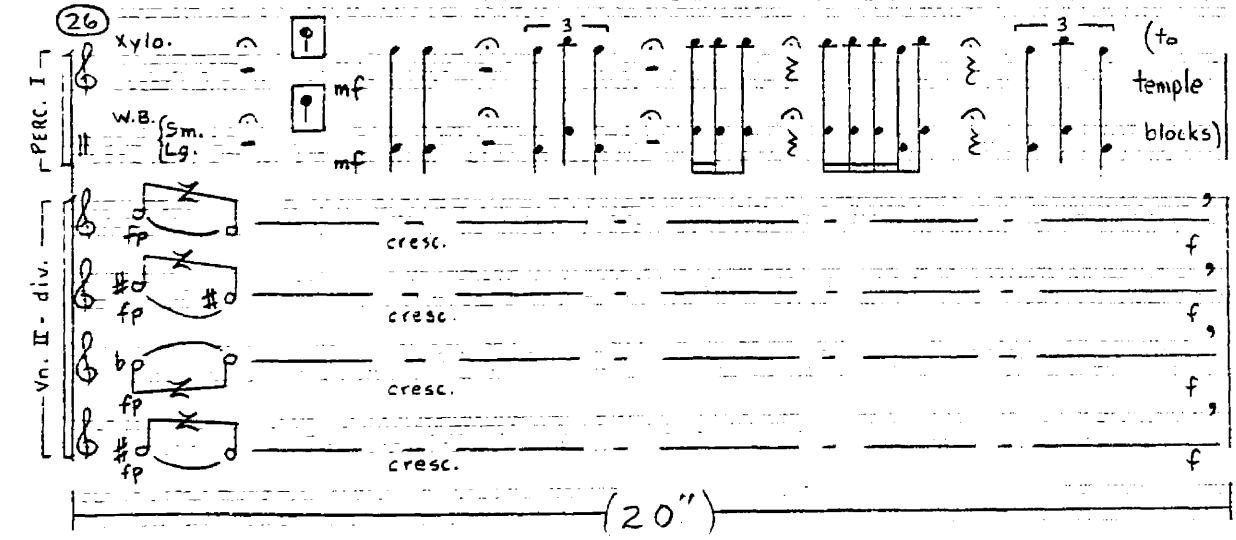

256
258
271
Picc.
Fl.
Ob.
E.H.
E♭Cl.
Cl.
Bn.
C.Bn.
HORNS
TRPTS.
TRBS.
Tuba
(open)
(take Fl.)
(take ob.)
(take B♭ cl.)
(take bsn.)
mp
mf
2"
13"
8"


279
282
290
295
HORNS
TRPTS.
TRBS.
Tuba
I
II
III
IV
PP
Sim.
mf
(attacca)
(3")
(8")
(5")
(5")

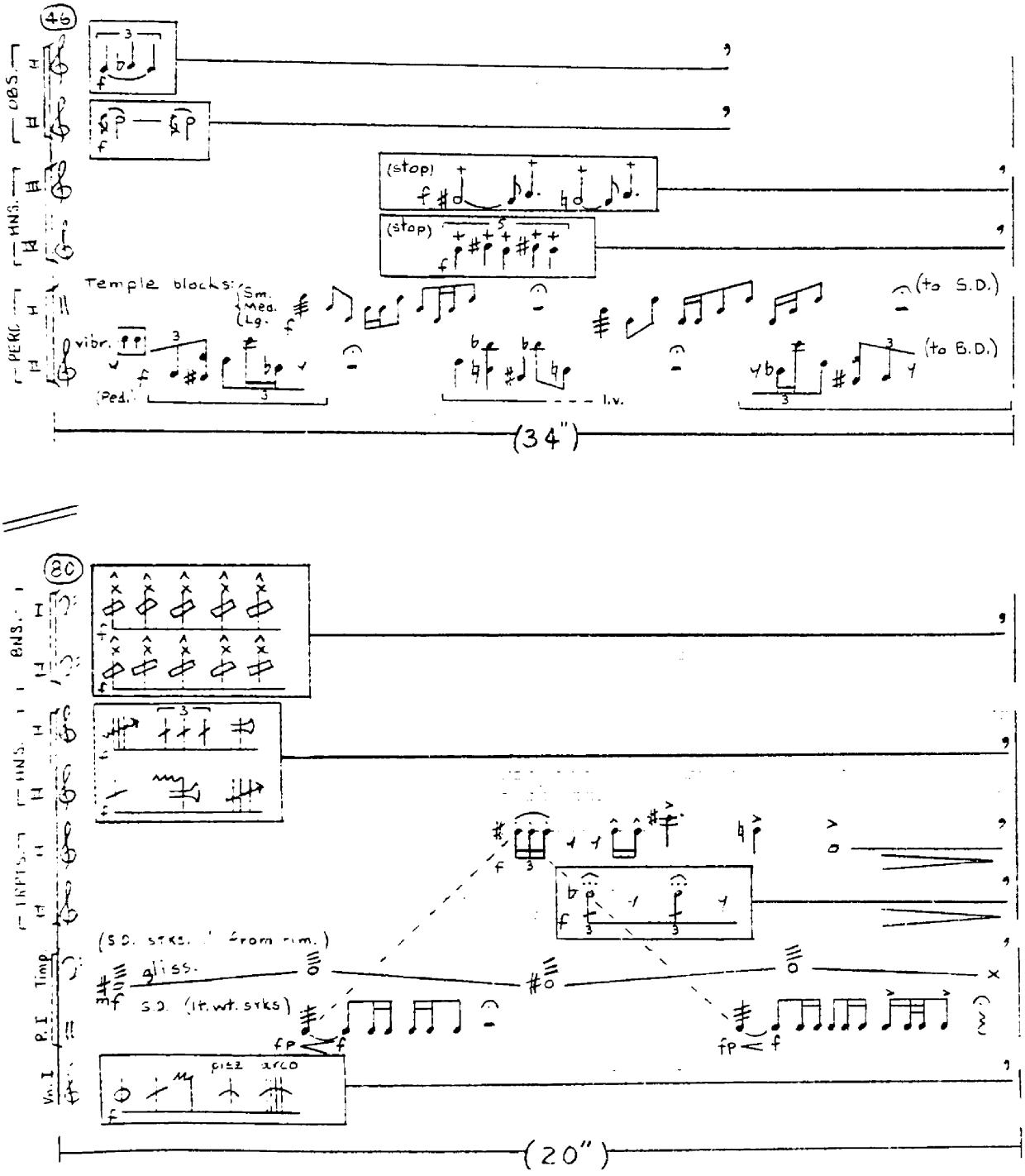
III.

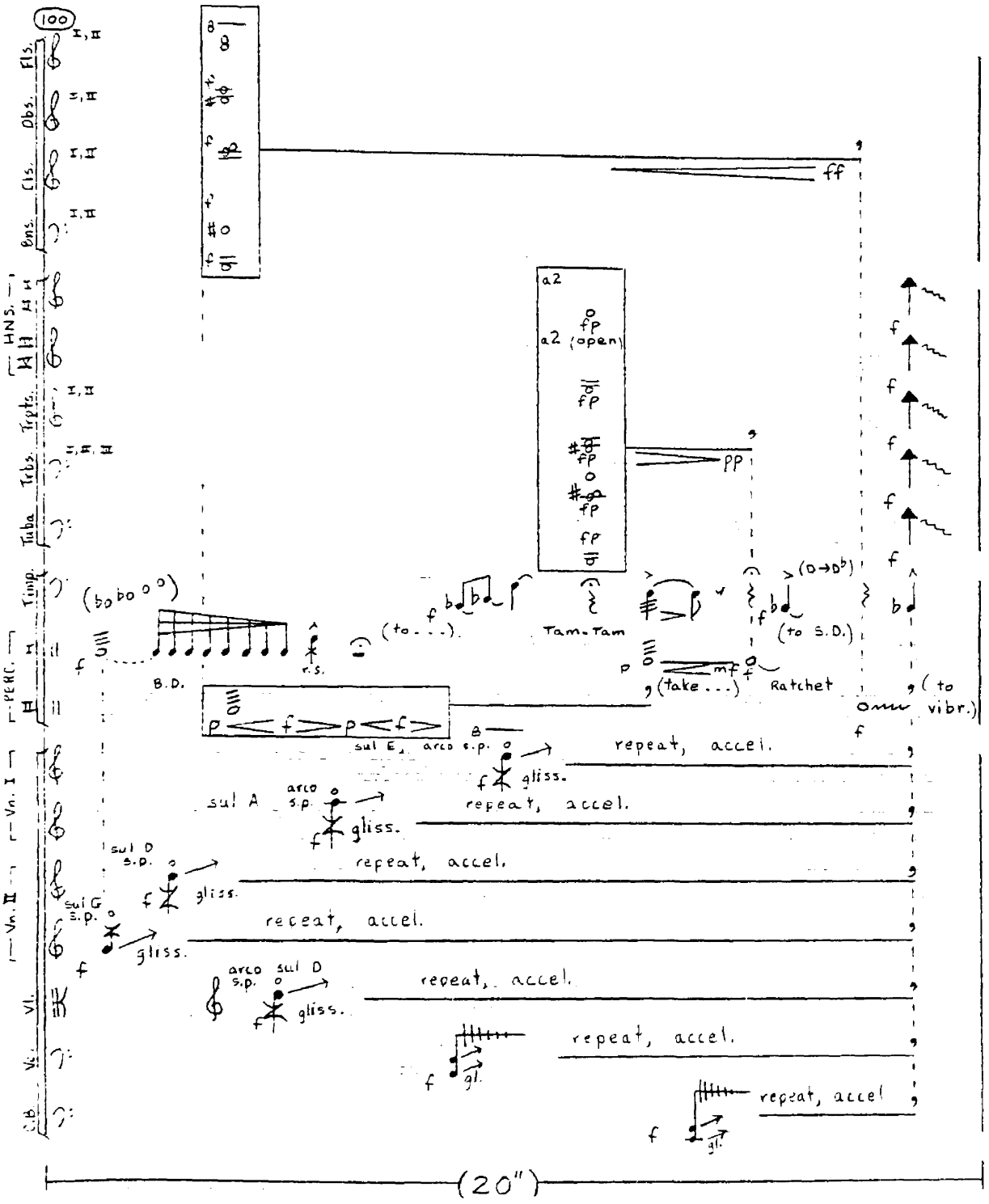

I. Solo
I. solo
dim.
PP
n.v.
gliss.
molto vib.
mp
TABS.
(to vibr.)
S.Cym.
S.D.
Vc. - div.
(5")
(8")

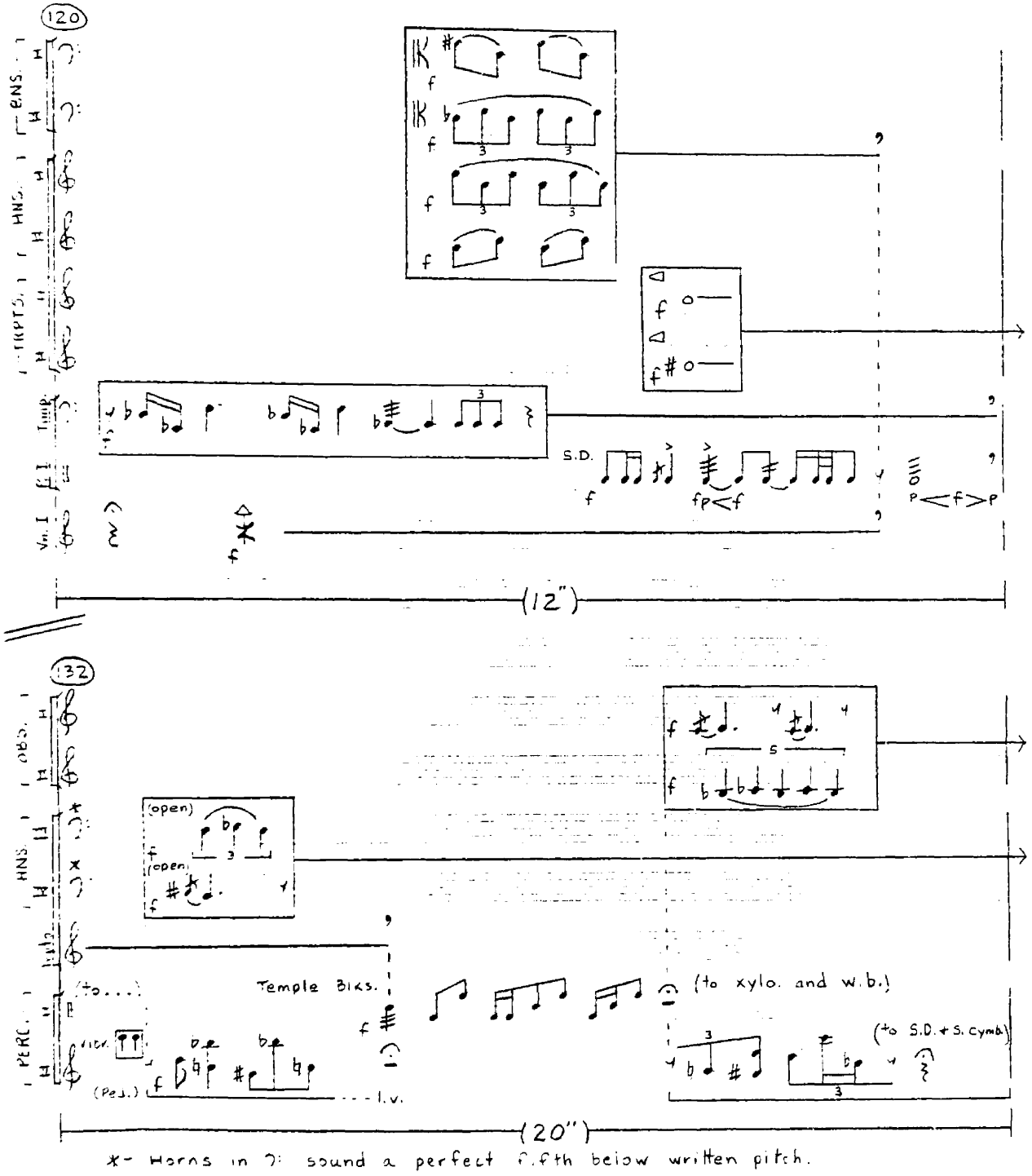




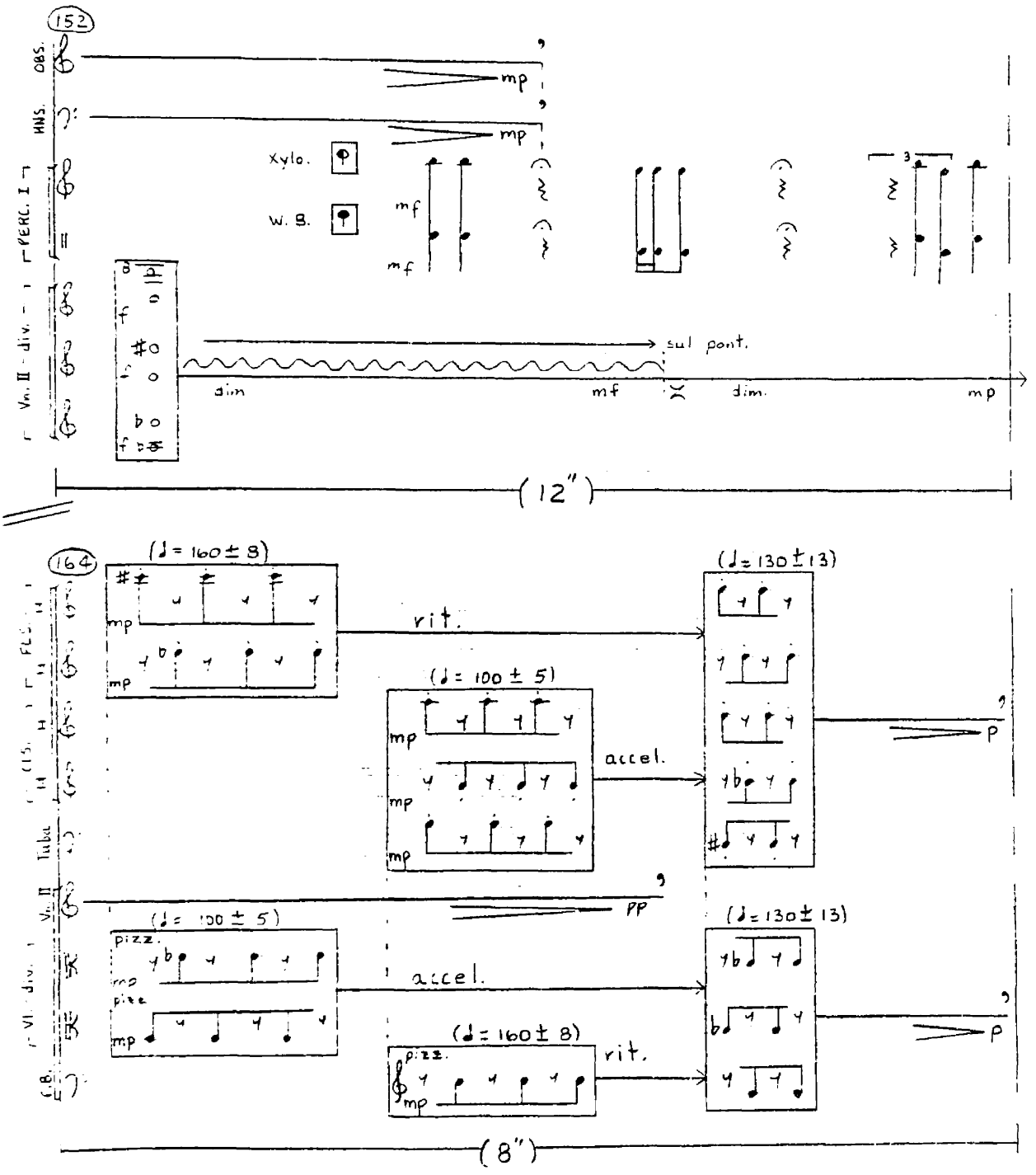
* - See note on page 17.

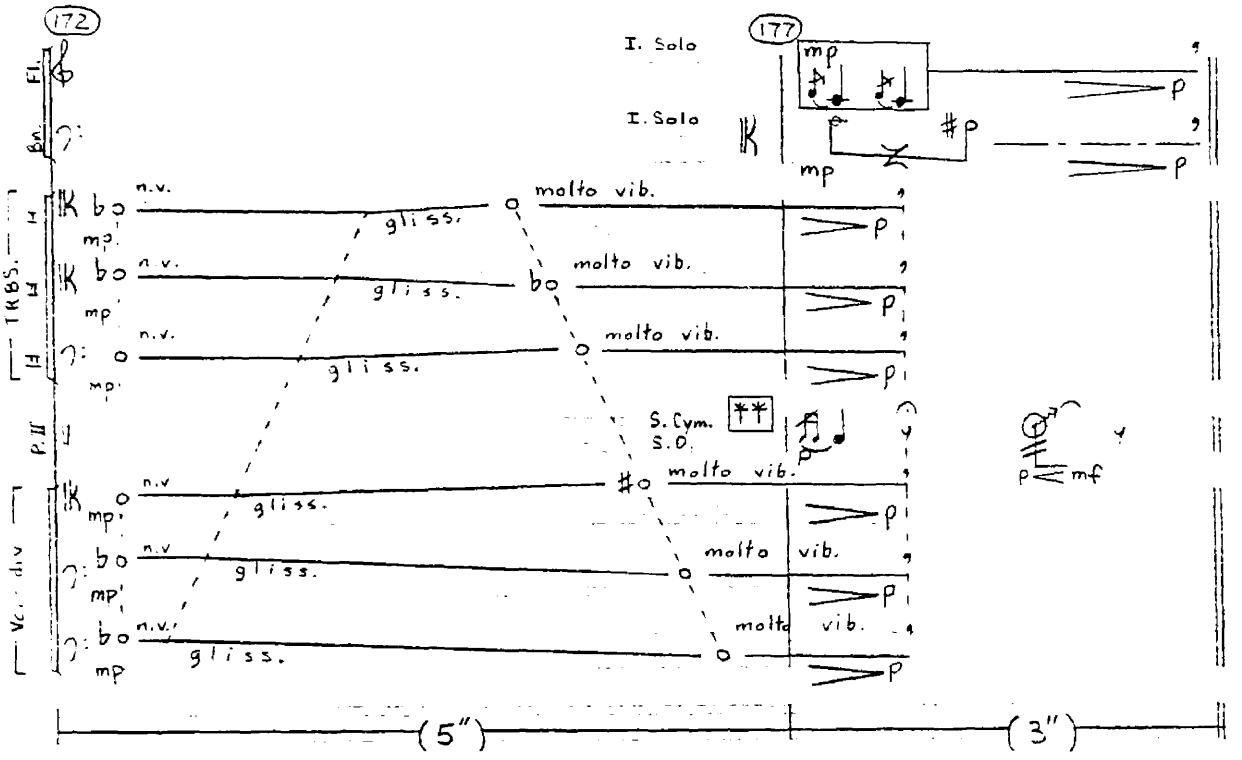

45
OBS.
HNS.
PERC.
(stop)
(stop)
Temple blocks: Sm. Med. Lg.
vibr.
(Ped.)
(to S.D.)
(to B.D.)
l.v.
(34")
38
BNS. I
TRPTS.
HNS.
Timp.
(S.D. strks. from rim.)
gliss.
S.D. (lt. wt. strks)
pizz
arco
Vn. I
(20")


100
Fls.
Obs.
Cls.
Bns.
HNS.
Trpts.
Trbs.
Tuba
Timp.
PERC.
Vn. I
Vn. II
Vla.
Vc.
D.B.
a2
a2 (open)
Tam-Tam
B.D.
s.s.
Ratchet
(to S.D.)
(to vibr.)
sul E
arco s.p.
sul A
sul D
sul G
gliss.
repeat, accel.
(20")



*- Horns in 7: sound a perfect fifth below written pitch.


152
OBS.
HNS.
PERC. I
Vn. II - div.
Xylo.
W. B.
mp
mf
sul pont.
dim
mf
dim.
mp
(12")
164
(♩= 160 ± 8)
rit.
(♩= 130 ± 13)
(♩= 100 ± 5)
accel.
p
pp
Tuba
Vc. II
pizz.
(8")


172
177
I. Solo
I. Solo
Fl.
Bn.
TRBS.
P.II
Vc. div
n.v.
gliss.
molto vib.
S. Cym.
S.D.
molto
vib.
(5")
(3")

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Kotónski, Włodzimierz. Schlaginstrumente im modernen Orchester. Mainz: B. Schott's Soehne, 1968.

Peinkofer, Karl, and Tannigel, Fritz. Handbuch des Schlagzeugs: Praxis und Technik. Mainz: B. Schott's Soehne, 1969.

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Smith Brindle, Reginald. Contemporary Percussion. London: Oxford University Press, 1970.

VITA

WILLIAM RONALD CLEMMONS

Date of Birth: 12 October 1946
Place of Birth: New Orleans, Louisiana
Marital Status: Married, one son

Education

Decatur High School, Decatur, Alabama: Graduated 1964
University of Alabama, Tuscaloosa, Alabama: Bachelor of Music (Theory and Composition), 1968
University of Alabama, Tuscaloosa, Alabama: Master of Music (Composition, minor in Theory), 1974
Louisiana State University, Baton Rouge, Louisiana: Doctor of Musical Arts (Composition, minors in Theory and Music History), candidate for Fall Commencement, 1978

Teaching Experience

Abbeville (Alabama) High School (1968-69): Director of Band and Chorus; taught Music Appreciation
Opp (Alabama) High School (1969-72): Director of Bands; taught Music Theory
University of Alabama in Birmingham (UAB)(1973-present): Instructor in Music; teach Music Theory, Twentieth-Century Music Literature, and Electronic Music

VITA--Continued

Arrangements and Original Compositions

Approximately fifteen arrangements written for University of Alabama "Million Dollar" Band for nationally televised football halftime shows (1966-67)

Two arrangements written for University of Alabama Jazz Ensemble, one of which was recorded by the ensemble, (1967-68)

Fifteen original compositions for voice, instrumental ensemble, orchestra, or tape (1967-present), eleven of these have been performed publicly

Awards, Honors, and Activities

University of Alabama: Graduate Assistant (1972-73)

Louisiana State University: Graduate Assistant (1976-77)

Pi Kappa Lambda (National Music Honor Society)

Phi Kappa Phi (National Honor Society)

Original compositions selected for performance: Louisiana State University Festivals of Contemporary Music (1976, 1977)

Senior Clarinet Player with 151st Army National Guard Band, Montgomery, Alabama (1969-75)

Publications, Presentations, and Research

Review of series of multi-media concerts given at George Peabody College, Nashville, Tennessee: "Comments on Electronic Music Plus." Numus West (May, 1974)

Article: "The Coordination of Motivic and Harmonic Elements in the 'Dirge-Canons' of Stravinsky's In Memoriam Dylan Thomas." In Theory Only: Journal of the Michigan Music Theory Society (April, 1977)

Article: "Computer-Based Music Instruction." Chronos: Alabama Teachers of Music Theory Newsletter (April, 1978)

VITA--Continued

Editor: Chronos: Alabama Teachers of Music Theory Newsletter (1978-79)

Series of three lectures: "Techniques of Electronic Composition." University of Alabama (1974)

Lecture: "Electronic Processes for Musical Composition and Performance." Humanities Forum, University of Alabama in Birmingham (1975)

Presentation: "The Role of Composition in Music Theory Classes." Alabama Teachers of Music Theory (Winter Meeting, 1978)

Presentation: "Computer Assisted Theory Instruction." Alabama Teachers of Music Theory (Summer Meeting, 1978)

Grant: "An Investigation of Some Current Systems and Materials for Computer Assisted Instruction in Music." Project on Teaching and Learning in University College, University of Alabama in Birmingham (March, 1978)

Developing course materials and writing computer program for Computer Assisted Instruction in the Fundamentals of Music

Professional and Service Affiliations

College Music Society

Association for the Development of Computer-Based Instructional Systems

National Consortium for Computer-Based Music Instruction

Alabama Teachers of Music Theory (Executive Board, 1975-76; Second Vice President, 1978-79; Newsletter Editor, 1978-79)

University College Senate, University of Alabama in Birmingham (1978-79)

EXAMINATION AND THESIS REPORT

Candidate: William Ronald Clemmons

Major Field: Music

Title of Thesis: Geometries for Orchestra

Approved:

Kenneth Klaus
Major Professor and Chairman

Carolyn W. Hargrove
Dean of the Graduate School

EXAMINING COMMITTEE:

C.O. Constantinides

R. Donald Wilson

Paul Lavis Abel

John T. Edmunds

Date of Examination:

October 26, 1978