A HIERARCHICAL GESTALT ANALYSIS

OF

RUGGLES' *PORTALS*

by

Larry Polansky

Toronto, Ontario

July 1978

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PREFACE

This paper is one product of several years of work by James Tenney and myself to develop a formal and computer model for the perception of hierarchical temporal-gestalts in music. The body of theory from which this algorithm proceeds was first presented in James Tenney's META/HODOS (1961) and subsequently in the same author's META Meta/Hodos (1975). The algorithm for TG-initiation and resultant computer programme is presented in "Hierarchical Temporal Gestalt Perception in Music: A 'Metric Space' Model" (1978) by James Tenney and myself.

The purpose of the current work is twofold. The first is to help illuminate a dificult musical work in which more traditional theories of musical form and perception are perhaps not so successful, especially in terms of making their a prioi musical assumptions explicit with regard to the analytic results. In this respect, I must admit that the choice of Portals was not haphazard. Ruggles' work has been of considerable import to me, both in my development as a musician and a composer, and I strongly feel that his rightful position as one of America's most significant and original composers has been somewhat overlooked. This lack of recognition is evidenced by the paucity of recordings, performances, and serious consideration of his work by musical theorists (although in the latter, matters have improved considerably in recent years). It is my aim that the current work should serve the same function as any good musical analysis: to educate and provide useful information about a piece, while making a serious attempt to make as few aesthetic judgements as possible. It is hoped that when these judgements are made, their motivations can be made as clear as possible.

The second purpose is to provide a detailed example of the analysis procedure, and to present certain possible extensions of the theory. Although many of these ideas are dificult to understand at first without having spent some amount of time considering their diverse ramifications, it is hoped that the current work is self-contained in presentation, and can be read and understood independently of the three earlier papers mentioned above. Those readers who wish to learn more and gain a deeper understanding of the subject should consult those papers, which, especially if read in their chronological order, provide a complete and detailed explanation of the topic, as well as an interesting intellectual history.

Chapter I (Introduction:Theory and Algorithm) is an introduction to the basic theory of hierarchical temporal-gestalts, and the algorithm of TG initiation. Computer and mathematical details are omitted for the most part in the interests of brevity and clarity, and for these the reader should consult "Hierarchical Temporal Gestalt Perception....". They are, in almost all cases, not essential to an understanding of the musical analysis.

Chapter II is a statistical gestalt analysis of Ruggles' Portals. It is not my intention, neither in the graphic musical analysis nor in the accompanying 'Notes', to convince the reader that the particular analysis/segmentation made by the programme's operation using the 'optimal' weights (or for that matter with any of the variant weights), is in any way definitive, or the 'right' way to consider the piece. It is hoped that the reader will make his own decisions as to which of the computer segmentations present a reasonable picture of his own musical perception, and indeed it is this very process which arises as one of the main goals of the programme. Often it seems as if it is the musical and perceptual ambiguities, which make the piece as interesting as it is, that the analysis focuses on most strongly.

Appendix I (Some Aspects of Morphology) contains a prolegomenon to an extension of the theory into the realm of morphology, a topic which I feel to be of great importance. The first part of this appendix is necessarily extremely condensed, and is intended to simply raise some vital questions about the nature of such a formal theory. This will be expanded upon considerably in the near future. The second part of the appendix presents visually some of the interesting morphological structures in Portals, on several hierarchical levels (according to the segmentations).

Appendix II contains certain statistics for the entire piece. These statistics have proved essential in the search for an automatic method for determining weights, but they are presented here as well for their purely musical interest with regards to Portals.

Appendix III is a complete listing of the FORTRAN programme itself. Flowcharts and an extended explanation of this programme appear in "Hierarchical Temporal Gestalt Perception.....".[1]

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[1]It should be noted here that there exists one small difference between the programme used here and the one used in "Hierarchical Temporal Gestalt Perception...". Intensity weights in the current work are exactly halved with regard to equivalent weights in the earlier paper, because in the current programme they are multiplied by two within the programme itself. Thus, a nominal (input) weight for intensity of six in the earlier paper corresponds to an intensity weight of three in the current analysis. This is of interest only if one is comparing the weights used in the two papers, and is **not** relevant in the understanding of the current work on its own.

Appendix IV is an actual programme output showing the segmentation made by the 'optimal' weights. Also given is the input data for <u>Portals</u> in its entirety, a coding of the melodic line of Chapter II.

I wish to thank the National Endowment for the Humanities, whose generous support made the current work possible (NEH YOUTHGRANT #   . In particular, Mr. Glen Marcus of NEH was very helpful with his quite understanding advice on the nature of the work, especially in its early stages. York University (Toronto, Ontario) generously provided me

with computer time, and for this I am grateful.

Last, but assuredly not least, I owe a huge debt of gratitude and an equal measure of respect to James Tenney, who has been teacher, friend and colleague for a number of years, and whose visionary conceptions have generated all of this work. It is my hope that this paper will make more availible some of these ideas to a greater number of musicians, so that perhaps others may pursue them in their own ways.

LARRY POLANSKY
TORONTO
JULY 1978

I. INTRODUCTION: THEORY AND ALGORITHM

In META Meta/Hodos James Tenney states that: "In the process of musical perception, temporal gestalt units (TG's) are formed, at several different hierarchical levels" (Proposition I.)

The purpose of the present algorithm and the resultant computer programme, developed by James Tenney and myself, is to formalize this perceptual process and to devise an automatic means for its analytic use. In doing so, we have preserved many of the ideas and terminology of META/ HODOS and META Meta / Hodos. However, many of the assumptions and operations of the computer algorithm involve simplifications and integrations of many concepts in the earlier papers. In this way, the current algorithm and resultant computer programme constitute a significant extension to and a specific implementation of the results of M/H and MM/H.

The concepts of temporal gestalt unit (TG), hierarchical level, and musical parameter are all used in the same fashion as in the earlier papers, and their meanings should be clear from their usage in the current paper. (The reader should refer to META Meta / Hodos for their precise definitions). TG's on the first hierarchical level are called elements, and are the smalles TG's in which no further segmentation is made. TG's on the secnnd level are called clangs, on the third sequences, on the fourth segments, and on the fifth sections. Sequences might correspond to what are traditionally called 'phrases', and clangs perhaps (less closely) to 'motives'. The elements of a piece are usually the notes themselves. Although the level process may extend upward idefinitely, in Portals no higher-level TG than a section was found.

The musical parameters considered by the programme are: pitch, duration, temporal density, intensity, and timbre. Pitch, intensity and duration all have the usual meanings. The temporal density of a TG is redefined now as the number of elements per unit time. Thus, it is a measure of the general 'tempo' of a TG.

Proximity has the same meaning as it had in META Meta/Hodos: "the'nearness' in time of two TG's".[1] The proximity of a TG

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[1] See the glossary of "Hierarchical Temporal Gestalt Perception in Music: A 'Metric Space' Model ", for this and various other definitions.

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is defined in the programme as the difference in starting-times between successive TG's. Note that whereas in MM/H, proximity was one of ".... a number of factors of cohesion and segregation" of the "....perceptual formation of TG's at any hierarchical level" (Proposition II), in the current algorithm the proximity of a TG is treated as a parametric interval in a similar fashion to intervals in pitch, intensity, timbre and temporal density. Thus, the factors of cohesion and segregation, proximity and similarity, have been integrated into one single factor, called disjunction (see below).

The <u>state</u> of a TG is the statistical or global values (mean, range, duration, etc.) of its parameters, irrespective of the time ordering of the individual component values. The 'profile' of parametric values in a TG through time is called the <u>shape</u> of a TG, and the general processes by which these shapes affect TG formation are called <u>morphology</u>. Some simple morphological aspects of <u>Portals</u> will be considered in Appendix I of this paper. At present, the computer algorithm deals only with state, and uses only statistical information (in particular the parametric means of TG's) to effect the hierarchical segmentation. This means that motivic organization has no effect per se on the computer segmentation of the music.

The states of elements are simply the various parametric values of the different notes: pitch, duration, timbre and intensity. In the case of intensity however, the programme inputs two values for each element- an initial and final intensity. These are averaged to obtain a mean intensity for each element, and it is this mean which is used to calculate the mean interval for intensity on the element level. The initial and final intensity values are used, however, in the calculation of <u>boundary-interval</u> on the element level, which will be discussed below. Temporal densities of elements are computed on the element level as follows:

$$TD_{ELEMENT} = LOG_2\left(\frac{MAX.}{DUR_{\ ELEMENT}}\right)$$

-where MAX is an arbitrary maximum element duration for the piece.(The reader should consult " Hierarchical Temporal Gestalt Perception In Music: A 'Metric Space' Model", for a fuller explanation of these and other programme operations.)

Parametric states of higher-level TG's are the means of their lower-level component TG parameters. For example, the 'pitch' of a clang is the mean of the pitches of its elements. Note that this is in reality a weighted mean, since each element's pitch is multiplied by its duration. Thus, the equation for the pitch value of a clang is:

$$P_{CLANG} = \frac{\sum_{i=1}^{J} P_i * DUR_i}{\sum_{i=1}^{J} DUR_i}$$

-where i indexes the elements 1 through J in the clang, and P_i and DUR_i are the pitch and duration of the elements.

Similarly, the pitch of a sequence is the mean of the pitches of its component clangs. For intensity and timbre, parametric states are computed in the same fashion. In the case of temporal density, clang states are computed in a slightly different manner: as an unweighted mean of element TD's. On all higher levels TD states are computed in the same way as the other parameters. The proximity value of a higher-level TG is not used as a factor in the segmentation process.

Although <u>M/H</u> and <u>MM/H</u> give quite a useful conceptual framework for the consideration of hierarchical TG formation in musical perception, no specific method is given for the determination of TG initiations (or conclusions). In "Hierarchical Temporal Gestalt Perception In Music....", such a method is given, and it is that which is used in the present work.

Since each parametric interval in itself forms a one-dimensional metric, or distance function, it was a natural 'next step' to seek to combine the different dimensions of the musical space into one unified distance function which would assign one value to the distance between two TG's, not a separate value to each of the parametric intervals. Such functions are quite common in mathematical contexts, but the choice of an appropriate one for musical space was dif-icult. The most common metric associated with the real-numbers in several dimensions is the Euclidean metric, because it most easily reflects physicality and our perceptual notions of 'distance', This was the metric first chosen. In the Euclidean metric in n-dimensions:

$$D(x_n,y_n) = \sqrt{(x_1-y_1)^2 + (x_2-y_2)^2 + (x_3-y_3)^2 + \ldots\ldots\ldots \ldots\ldots\ldots + (x_n-y_n)}$$

-where x_n, y_n are points in the n-dimensional space, and $D(x_n,y_n)$ is the distance or metric between them.

Note that this value is always positive (one of the char-acteristics of any metric). Distance in the Euclidean metric is merely the length of the hypotenuse of a right triangle described by two points (even though those two points may be multidimensional).

This metric was later replaced, after considerable experimentation, by another, commonly called the 'city-block' metric, which seems to more accurately reflect musical perception. In the city-block metric, the distance between two n-dimensional points is the sum of the absolute values of differences in each dimension, or the sum of the lengths of the sides of the right triangle. Thus:

$$D(x_n,y_n) = (|x_1-y_1| + |x_2-y_2| + \ldots\ldots+|x_n-y_n|)$$

By using such a metric on the means of TG's on all hierarchical levels, we obtain an actual value for the mean <u>segregation</u> of two TG's, or the <u>mean distance-measure</u>.

The second factor of distance between two TG's is what we call <u>boundary-distance</u>, the distance between the final lower-level component of one TG and the initial lower-level component of the next. On the element level, parametric <u>boundary-intervals</u> are computed as follows:

<u>Pitch</u>: Boundary-interval equals mean-interval.

<u>Proximity</u>: If there is a rest, that rest is assigned to the duration of the note preceeding it. The boundary-interval of the next note is then the duration of the rest preceeding it. If there is no rest, the boundary-interval is zero.

<u>Intensity</u>: If a rest preceeds a note, then the boundary-interval is the initial intensity of the note. If the note is not preceeded by a

rest, the intensity boundary-interval is the difference between the initial intensity of the current note and the final intensity of the previous note.

Temporal Density: Temporal density boundary-interval on the element level is zero.

The boundary-distance of a TG is the sum of the parametric boundary-intervals (note that this sum is precisely the same metric as is used for mean-distance).

Once boundary-distance and mean-distance for a TG have been computed for the element level, the disjunction-measure, a simple sum of the two distances, may be computed. The disjunction-measure of a TG is the final measure of perceptual 'segregation' in the algorithm, and it is these values which are used to compute the hierarchical segmentation of a piece. For all higher-levels, the boundary-distance of a TG is the disjunction-measure of its initial component. In this manner, boundary-interval values (and thus lower-level disjunction-measures) are retained from the lowest level to the highest. However, for each level the value of the boundary-interval is halved, so that the weights of lower-level boundary-intervals diminish by successive powers of two.

Even with such a mechanism for computing disjunctions, however, the question still remains: how are the boundaries of TG's determined, regardless of level. Once such boundaries have been distinguished, it is clear that parametric states may be computed and, subsequently, disjunction-measures.

The hypothesis for TG initiation (and thus previous TG conclusion) is this:

"A new TG at the next higher level will be initiated in perception whenever a TG occurs whose disjunction (with respect to the previous TG at the same hierarchical level) is greater than those immediately preceeding and following it."[2]

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[2] "Hierarchical Temporal Gestalt Perception In Music: A 'Metric Space' Model"; Chapter II.

In other words, when a greater change succeeds and preceeds lesser change, the greater change will tend to initiate a new perceptual grouping. This greater value in the series of disjunction-measures, is referred to, logically enough, as a peak. The hypothesis for TG initiation is the same for all hierarchical levels.

To summarize the TG initiation algorithm: Changes in musical parameters are integrated, through a multidimensional metric, into a single valued disjunction-measure, which gives a relative value for TG segregation. These disjunction-measures are searched for peaks. When a peak is found, the TG whose disjunction-measure formed it initiates a new TG on the next higher level.

An important consideration is that numerical values of the various parameters have no intrinsic relation to one another. An interval of 1.5 in pitch (or a semitone and a half) does not necessarily perceptually correspond to an equal numerical value for an interval in intensity, temporal density, timbre or proximity. A set of weights is used, one weight for each parameter, which scales parametric intervals in the metric to more appropriate values. Thus, each parametric interval in both the boundary-distance and the mean-distance is multiplied by its corresponding parametric weight before being summed. Weights are input in five parameters: proximity, pitch, intensity, temporal density, and timbre[3].

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[3] The parameter of timbre is used in the programme as a sort of 'vacant' parameter, which may be used to encode various textural aspects of the music, for it is clear that timbral parameters are not so easily quantifiable on an ordered scale as are pitch, duration, and intensity. Although this 'texture' parameter is used in the analysis of Portals, it has seldom been used on other works, and there is no consistent or even conventional coding procedure for its values. The particular system used for Portals is quite simple, dealing primarily with orchestral 'fullness', and will be explained in a later chapter.

As yet, no precise method for assigning weights has been found, and in each piece analysed we have used sets of weights which appear to give the 'best' segmentation. Clearly, this choice of values is very much dependant upon the musical opinions of the analyst. For this reason, much attention has been paid to finding methods for the selection of 'optimal' weights, and to the effects that weighting variants have upon the segmentation of pieces. The weightings are input by the user each time the programme is executed.

The hypothesis of TG formation does not allow for higher-level TG's to consist of only one lower-level component TG. Consequently, four TG's are needed (three disjunctions) to investigate for peak formation and higher-level TG initiation.

The algorithm used in the programme is a simple one. First, the elements (the note values themselves) are 'processed' for clang formations, computing the parametric means of clangs when initiations are found. When the element level is finished, the programme returns temporally to the beginning of the piece, but one level higher, this time processing clangs for sequence initiation. This upward process continues until a level is reached in which too few TG's have been formed to consider initiations on still a higher level. At this point, the programme terminates and prints its results: the hierarchical segmentation, and the values of TG states and disjunctions (see Appendix IV for a sample output for Portals).

At present, the programme only works on a monophonic input, and as such, the information loss occurring when analysing a piece such as Portals is significant. However, in Portals, as in much of Ruggles' music, a well-defined melody may be easily isolated throughout the piece. Whereas we do not purport that the programme results present a definitive structural analysis of the piece, we strongly feel that they yield some extremely interesting information, both about the individual pieces analysed and about the processes involved in musical perception itself.

Clearly, there are some important variables in the computer analysis. Coding of the score into numerical data requires a fair degree of interpretation (see Appendix IV for the complete input data for Portals), especially with regard to tempi, dynamics, and in the case of Portals, orchestral colour. The weights themselves require the analyst to have some preconcieved notions of how the analysis should turn out, and although there is a great deal of learning interaction between the computer output and the analyst's notions, he must in the end rely on his own musical ideas to find the 'proper' weights.

II. AN ANALYSIS OF PORTALS.

Introduction

In the following pages, I present a hierarchical analysis of the melodic line of Carl Ruggles' Portals, for String Orchestra. As I have said earlier, this analysis is dual in function: first, to serve as a highly detailed example of the previously described perceptual theory and resultant computer programme, and, second, to use this theory to help understand some of the complexities of a major musical work.

With regard to the former, it must be said that a programme such as this is never truly finished, it merely reaches various places of rest. Morphology, an automatic method for determining parametric weightings, and even the harmonic aspects of gestalt perception might be dealt with in extensions of the theory. All these are rather large topics, however, and each awaits its own general theory before it might be programmed.

As to the analysis' second function, the more traditional one of shedding some light on the perceptual and compositional structure of a piece of music, it need be said that when one is dealing with an 'automatic' analysis of this sort, a great degree of humility must be assumed by the analyst. The analysis is not presented as a truth about Portals nor about Ruggles' musical ideas, but rather as a commentary on the work, hopefully one leading to further investigation.

The variability of the analytical results with regard to the different sets of parametric weightings emphasises the necessity of humility. Although only a few sets of weights are analysed here, many more have been tried. The set which I call the <u>optimal weights</u>, represents those results which I find to be most accurate perceptually, and might not indeed be 'optimal' to someone else. For thisreason, in the accompanying notes I have tried not to judge the different sets as much as explain them. It is hoped that by explaining the segmentation process in detail at several points, the reader will begin to understand to some degree what is actually involved in the choice of such a set of weights, and, more importantly, what their effects are on musical perception.

CODING

Throughout most of <u>Portals</u>, there is a clear, easily percieved melodic line. Where it was more ambiguous (e.g. ms. 29-30; ms. 35-38; ms. 14-18; ms. 56; ms. 62) a decision was made, solely on the basis of my own aural judgement, as to which lime to consider the melody and which the counterpoint. Although my decisions are in many cases open to some question, I hope the reasons for them are at least understandable.

Pitches are coded as integers, each increment of one representing a semitone. C below middle C is 0, and the highest note in the piece is D-natural, 4 octaves and a major second above middle-C, whose value is 50.

Durations are coded as real numbers. 1.2 is used for the quarter-note, because of its convenient divisibility. In the programme, durations are rescaled to an input tempo (in this case ♩=60), so that in the output durations are in fact represented in 'real-time', in terms of seconds. The variations in tempi in the piece were coded both with regard to indications in the score, and to practical performance considerations of the piece. They may be readily inspected from the input data (Appendix IV). Since the tempo value for the piece scales the durations of notes, and consequently all values of proximity and rest, changing the input tempo is equivalent to altering the proximity-weight. Note that the tempo does not affect the values of temporal density, which are computed on a relative, not an absolute, scale.

Rest values are input in the same fashion as notes. The duration of a note includes also the rest succeeding it.

Intensity values are input as real numbers, with an increment of 1.0 for each dynamic level (p=3.0; mf=4.0; f=5.0;ff=6.0;fff=7.0). Crescendi, decrescendi and intermediate values are interpolated and computed with consideration to the orchestral volume as well as the indicated dynamic markings. Each note has an initial and final intensity to facilitate a more accurate coding of crescendi and decrescendi.

Timbral values are coded in a similar fashion, 0.0 being the 'thinnest' melodic texture (solo), and 3.5 being the 'fullest'. Octave and melodic doublings in other instruments were the most important considerations in this respect. Roughly, each octave doubling of the melody corresponds to an increase of 1.0 in the timbral value. In this sense, 'timbre' is perhaps a misnomer, but is used for convenience. This parameter is more accurately an approximate measure of the textural fullness of the melodic line.

Clearly, what this coding process represents is an interpretation of the piece in itself. Certain decisions, based upon a knowledge of the piece and a certain aural preconception, must be made a priori. All that can be said is that this process of coding is in itself a dificult and somewhat tedious task in which many of the analyst's ideas about the piece actually affect the final computer analysis.

COMPUTER ANALYSIS

(The melody line in the following analysis is taken from the American Music Edition of Portals, 1937, N.Y.,N.Y.).

Ruggles: *Portals* (melodic line)

Segment 1

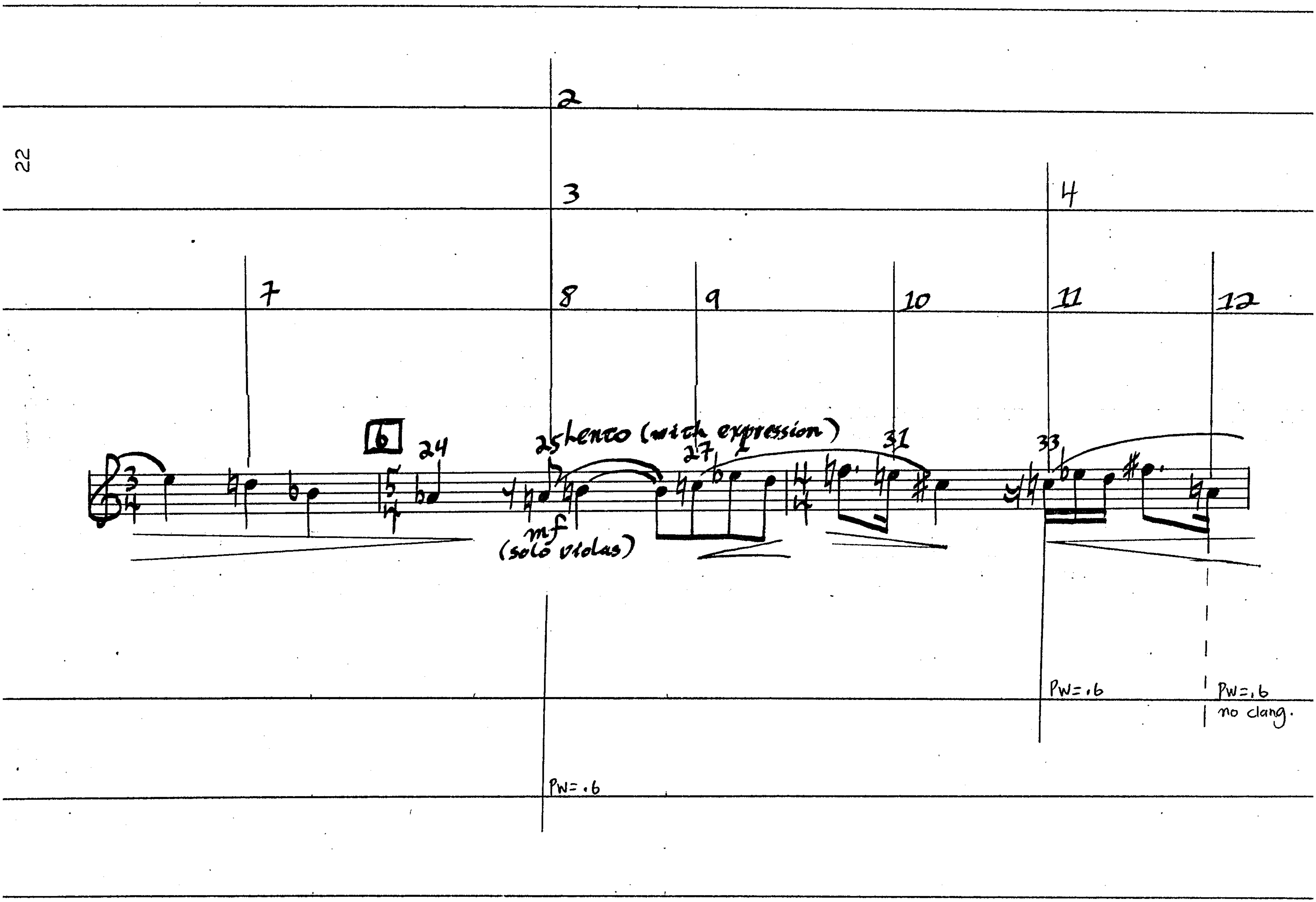
Optimal weights: Proximity = 1; Pitch (PW) = .5; Intensity (IW) = 1
Temporal Density = 1; Timbre = .2

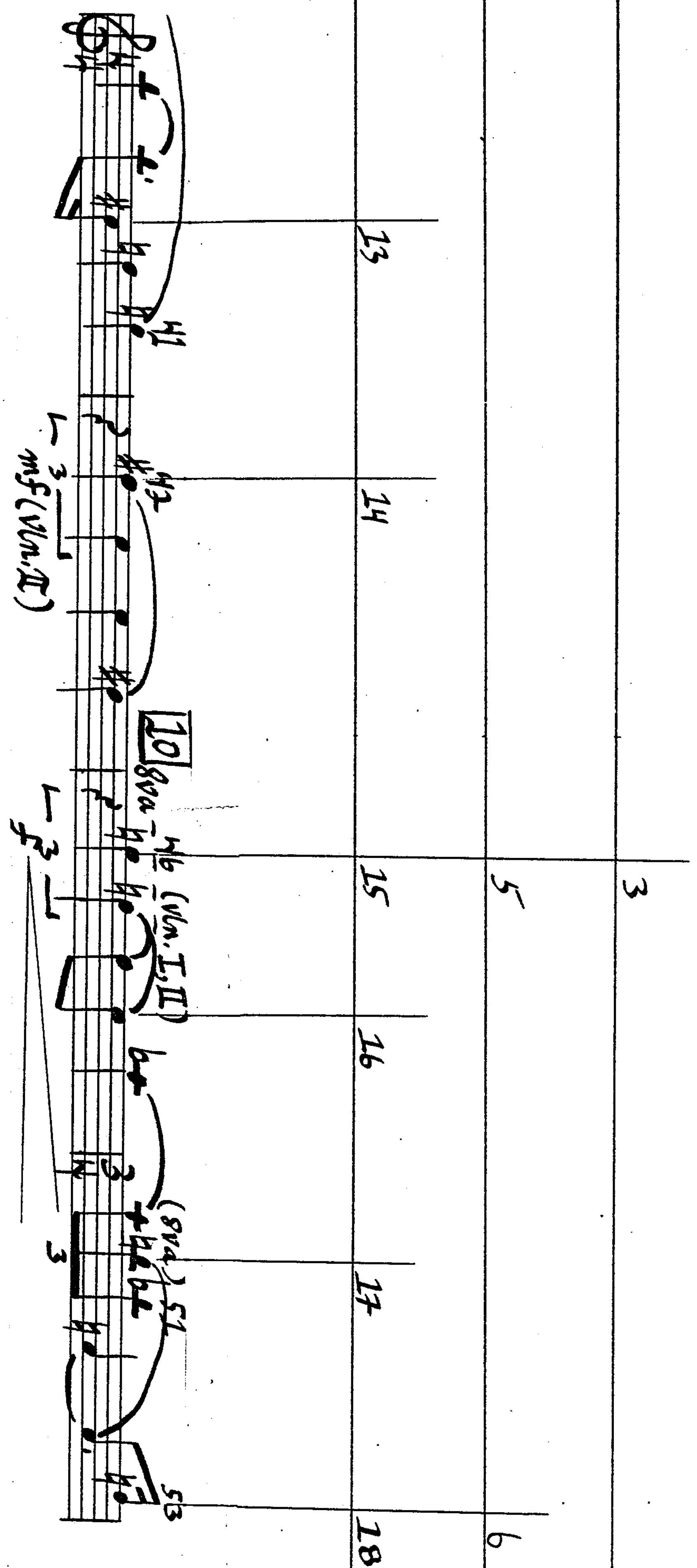
Sequence 1 | 2

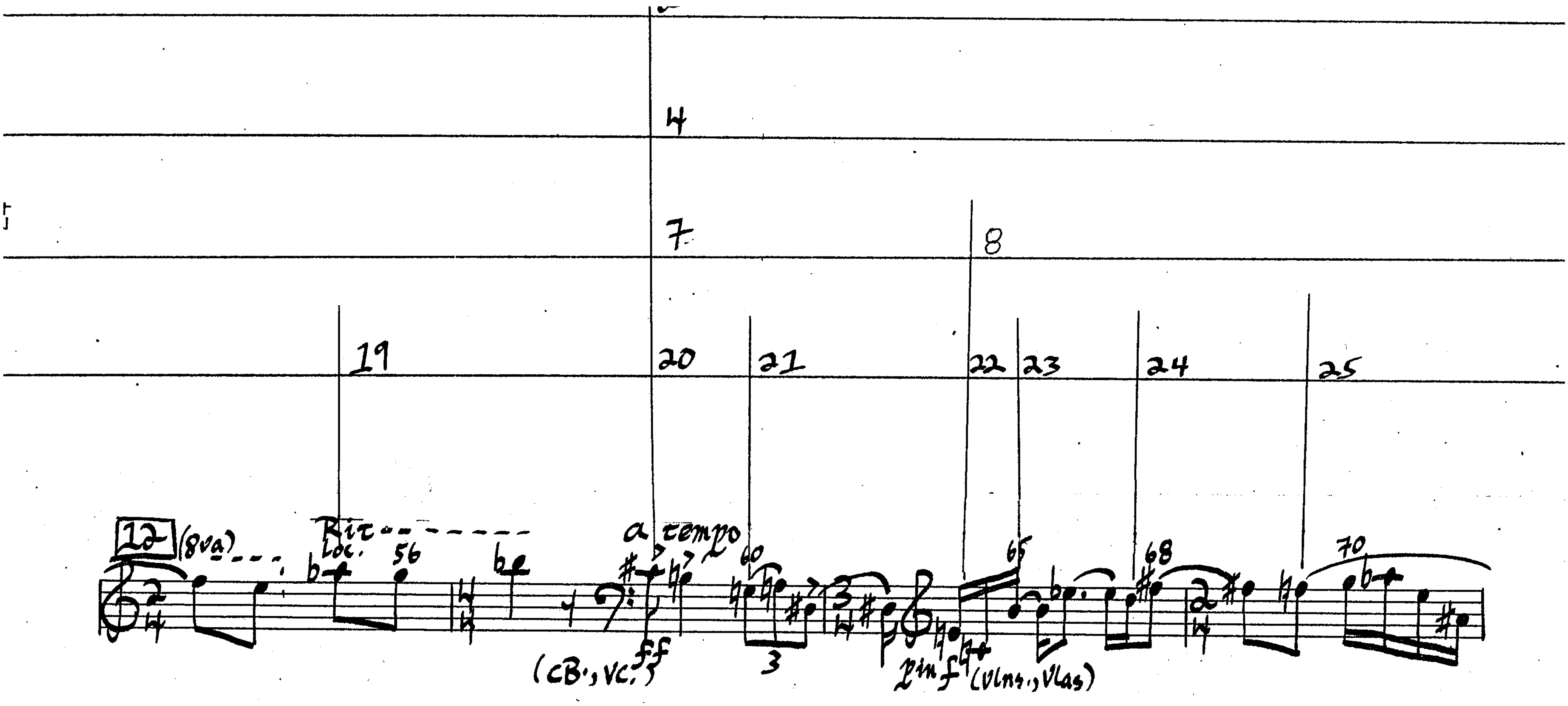
Clang 1 | 2 | 3 | 4 | 5 | 6

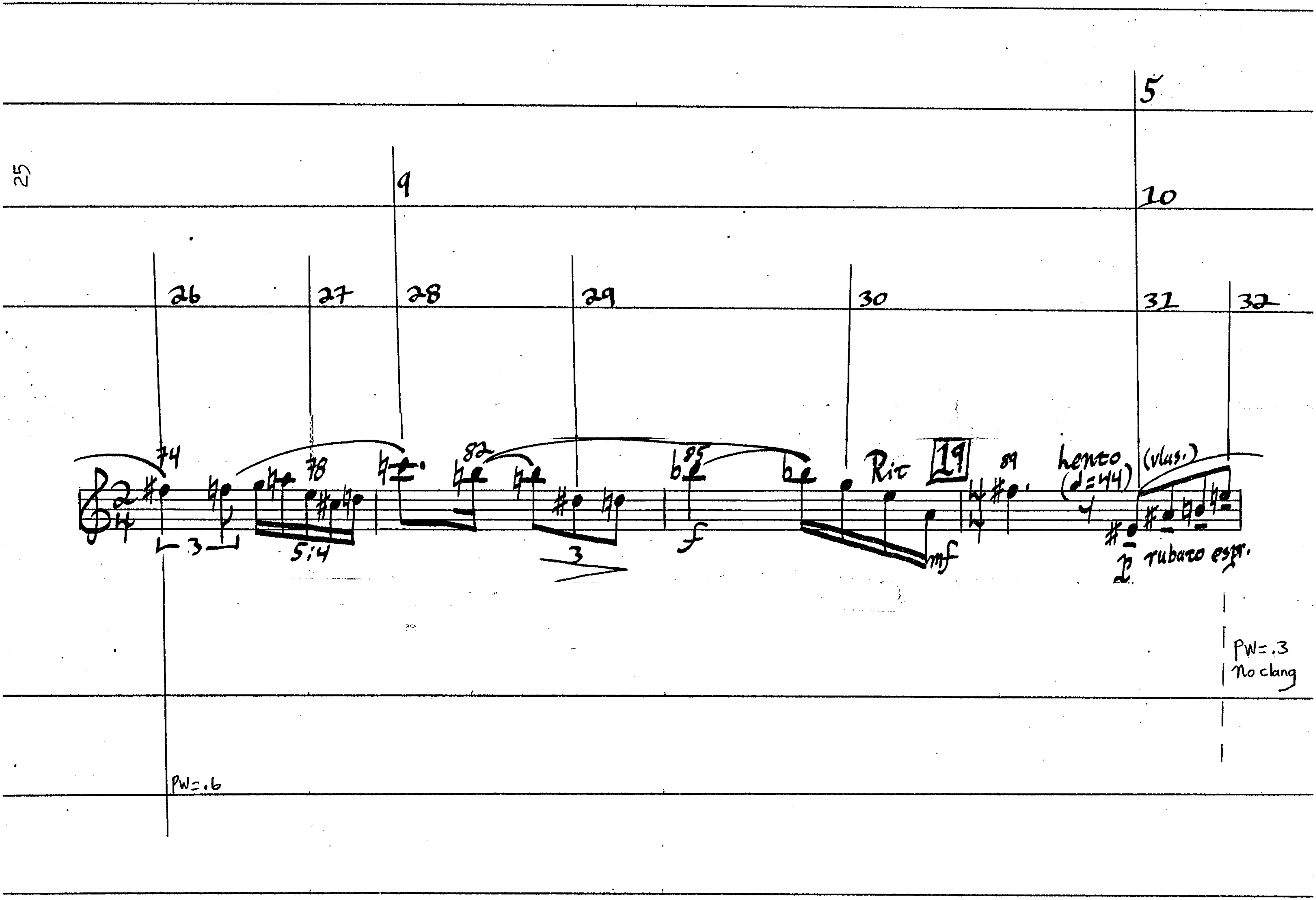
Variant weightings: PW = .3 (all other parameters as above)
PW = .6 (all other parameters as above)
IW = 3 (all other parameters as above)

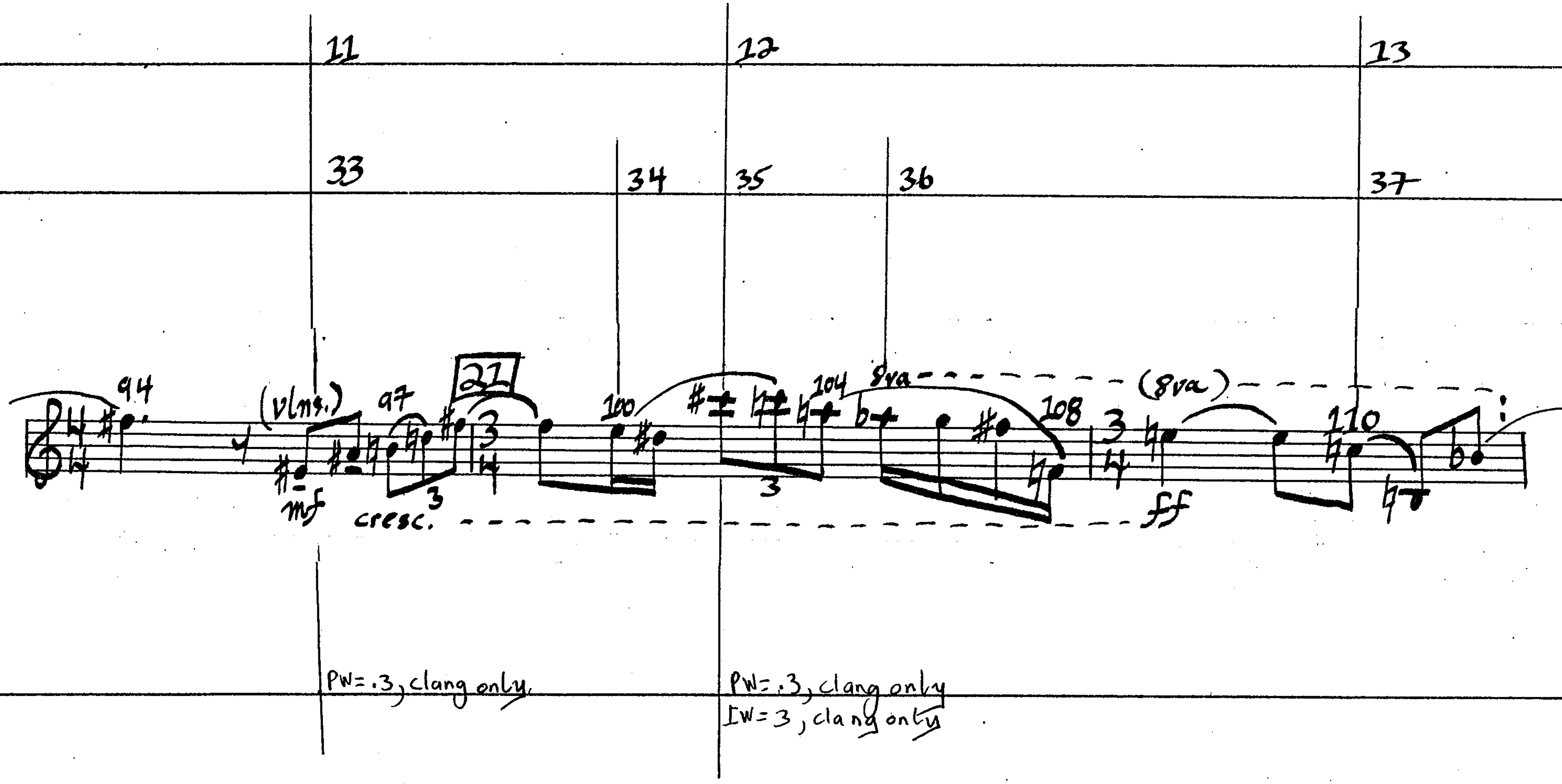
N.B. Segmentation lines are used for the variants when the segmentation differs from

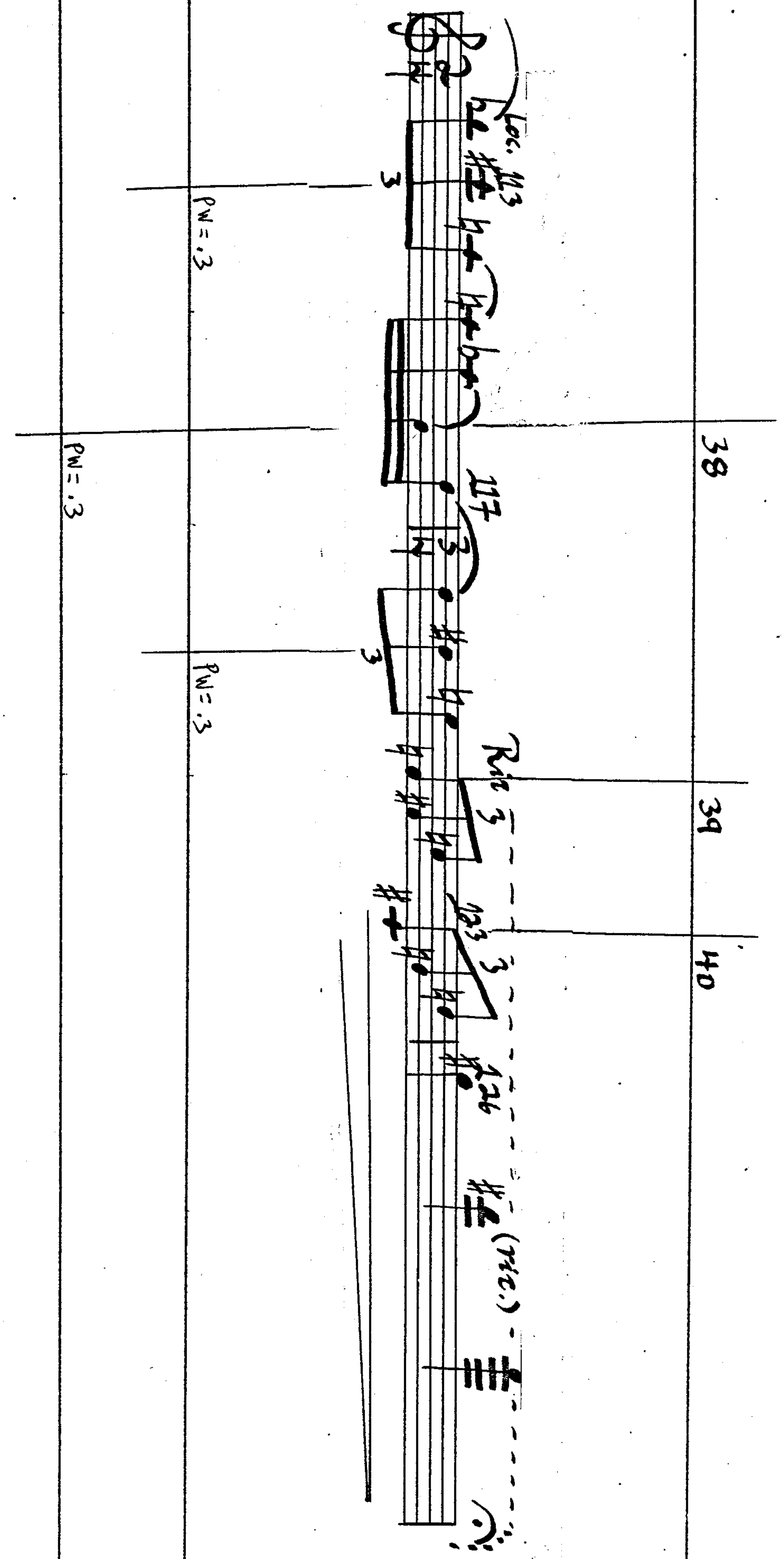

2
3
4
7
8
9
10
11
12
6
24
25 Lento (with expression)
27
31
33
mf
(solo violas)
PW=.6
PW=.6
PW=.6
no clang.

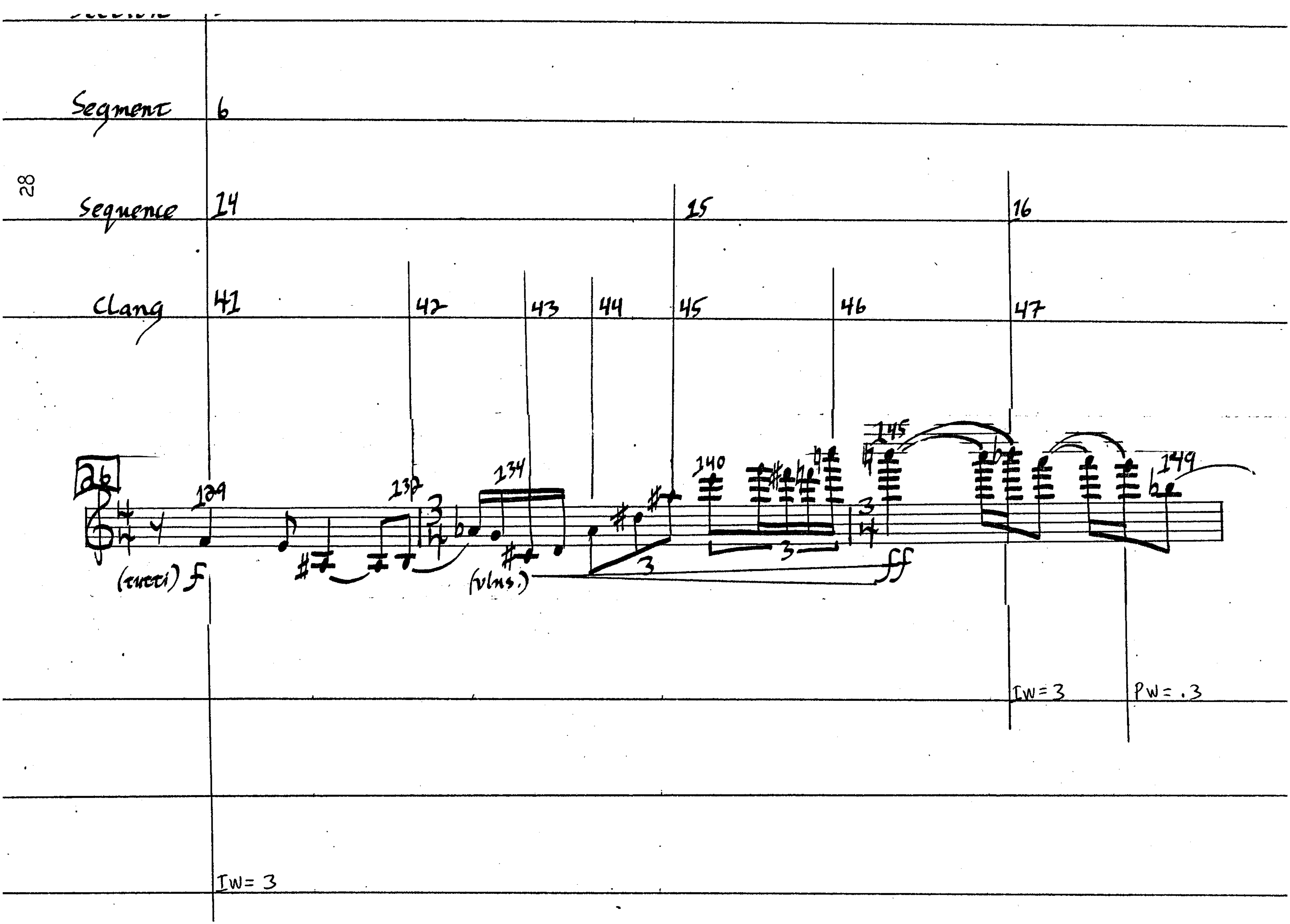

13
14
15
16
17
18
mf (Vln. II)
10
8va
f
(Vln. I, II)
(8va)
5
3
6

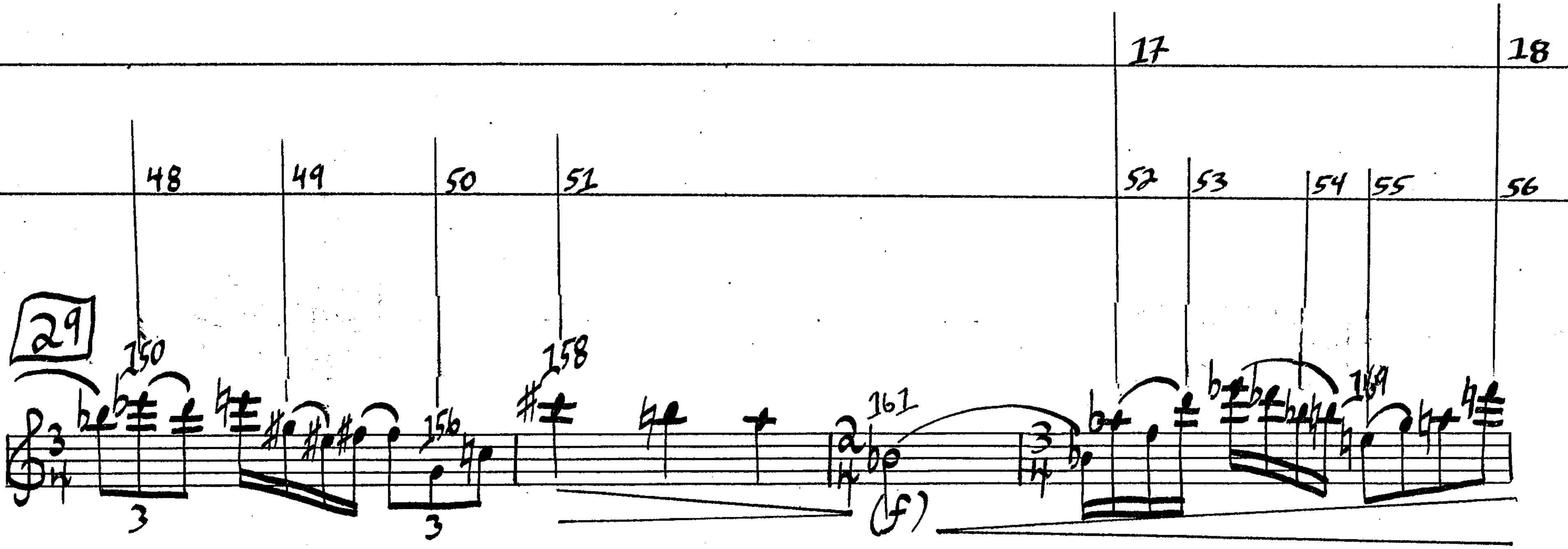

4
7
8
19
20
21
22
23
24
25
12
(8va)
Rit.
Loc.
56
a tempo
60
65
68
70
(CB., Vc.)
ff
3
(Vlns., Vlas)

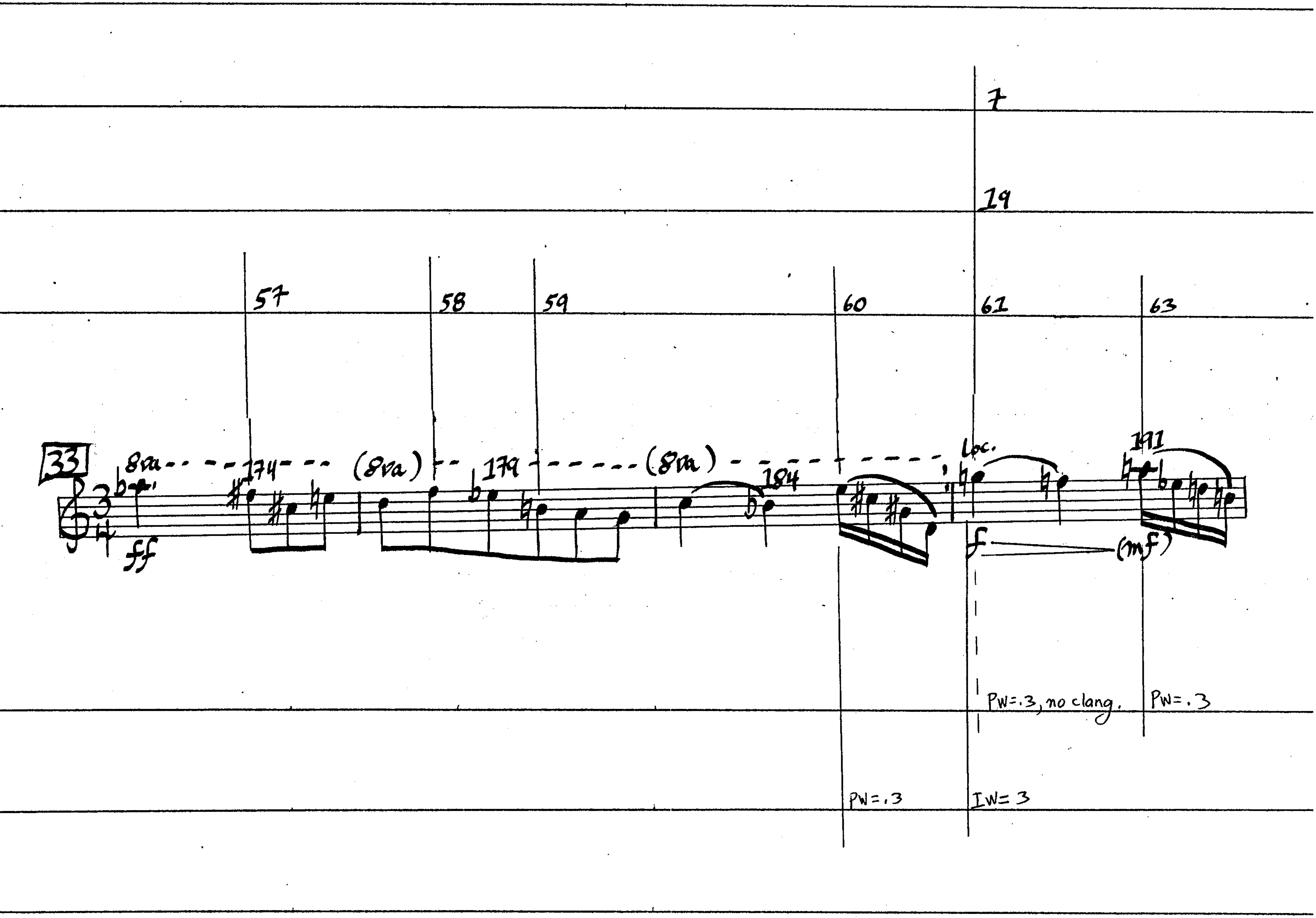

5
9
10
26
27
28
29
30
31
32
74
78
82
85
89
3
5:4
3
f
mf
p
Rit
19
Lento
(♩=44)
(vlas.)
rubato espr.
PW=.6
PW=.3
no clang

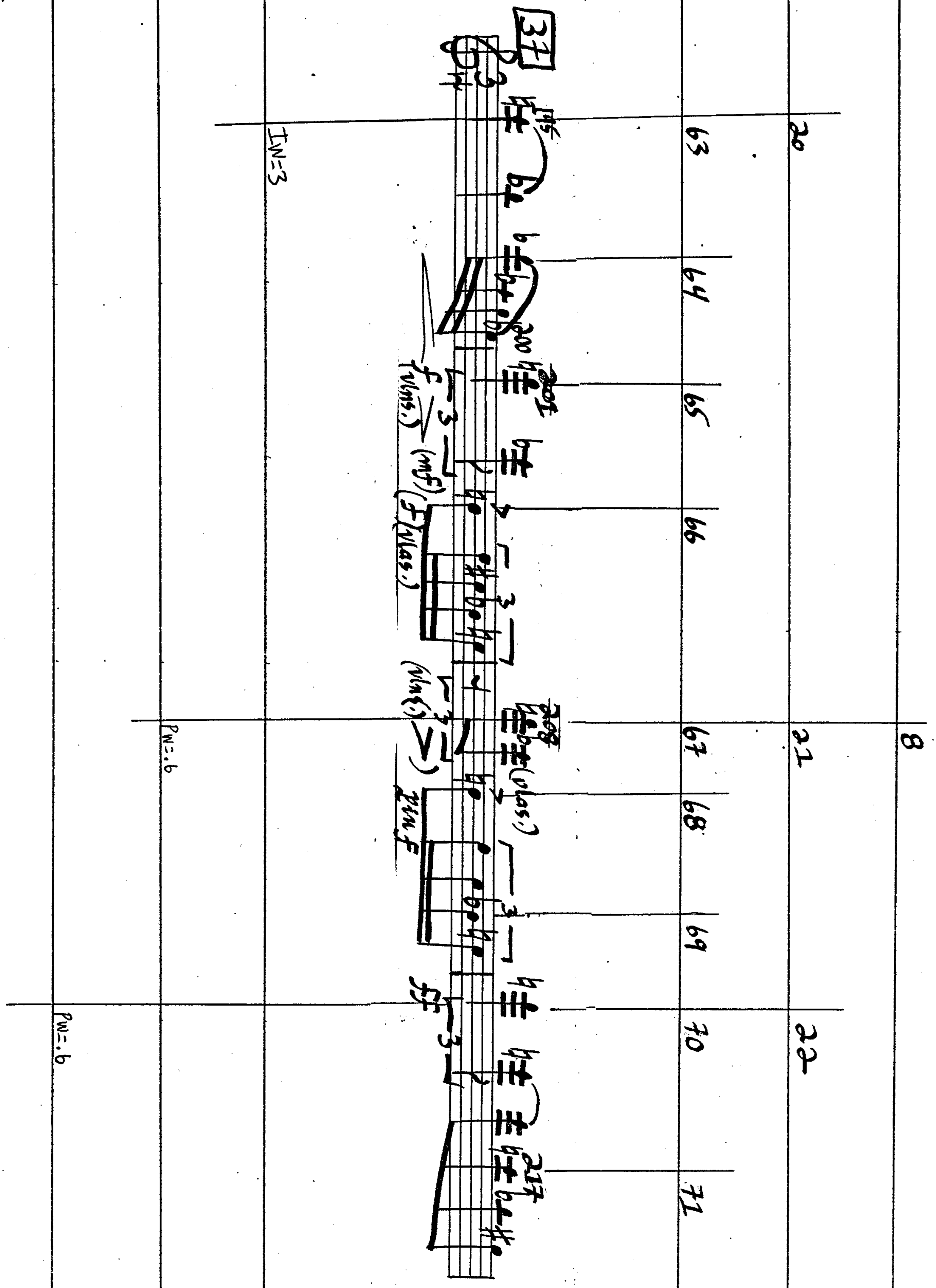

11
12
13
33
34
35
36
37
94
(vlns.)
97
21
100
104
8va
108
(8va)
110
mf
cresc.
ff
PW=.3, clang only.
PW=.3, clang only
IW=3, clang only

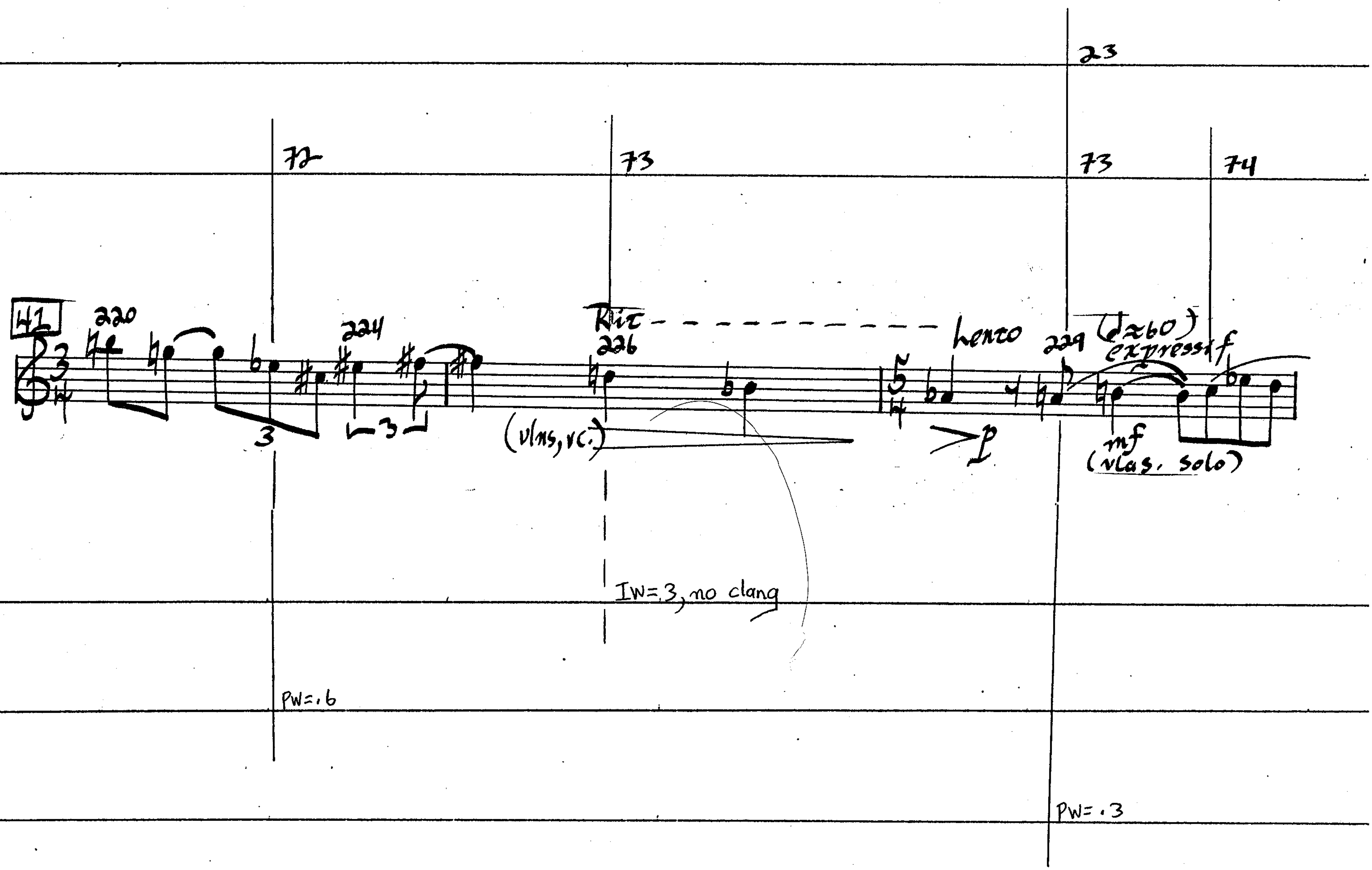

PW=.3
PW=.3
38
PW=.3
39
40
(rit.)

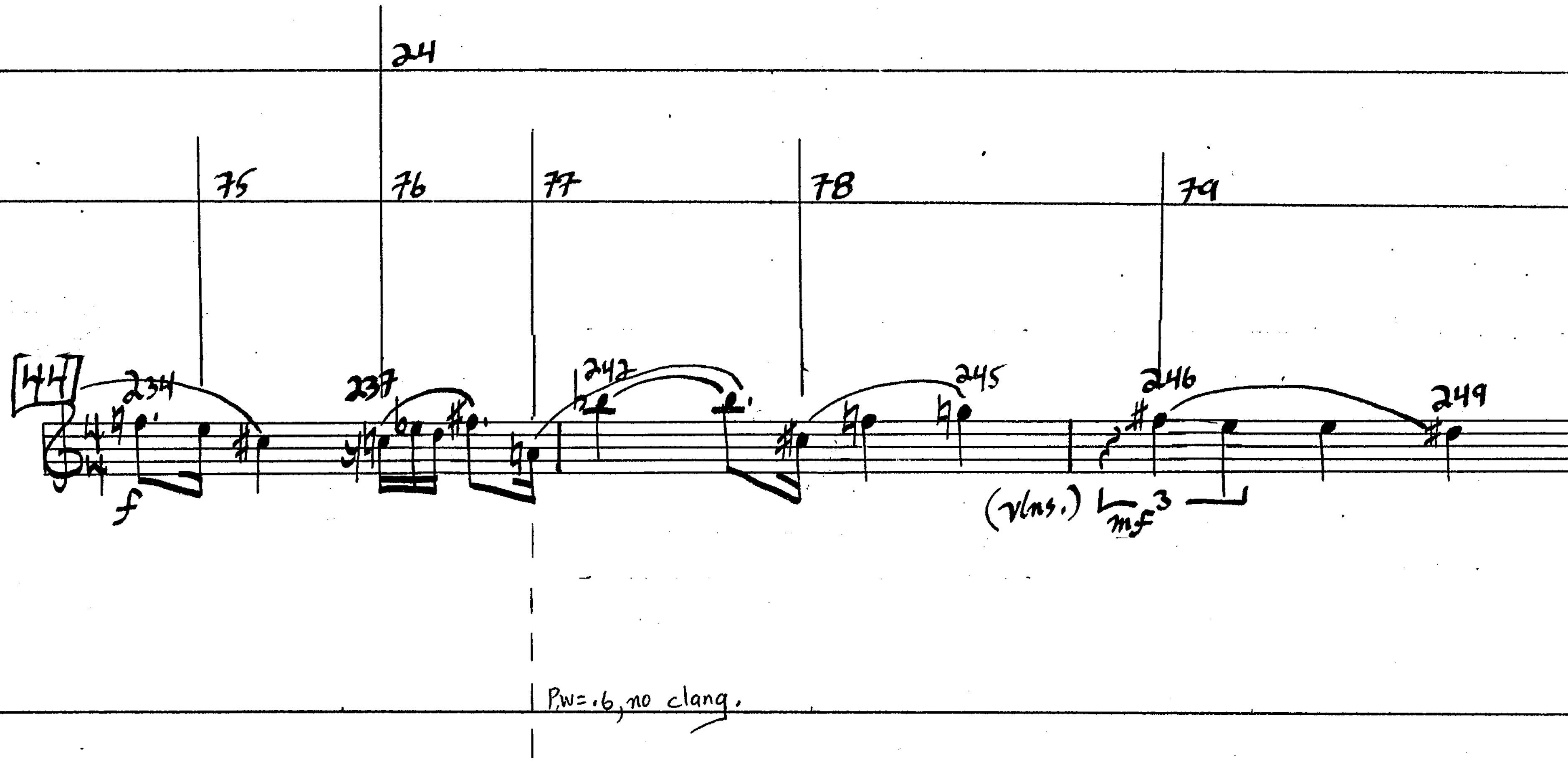

Segment
6
Sequence
14
15
16
Clang
41
42
43
44
45
46
47
26
129
132
134
140
145
149
(tutti) f
(vlns.)
ff
IW = 3
PW = .3
IW = 3

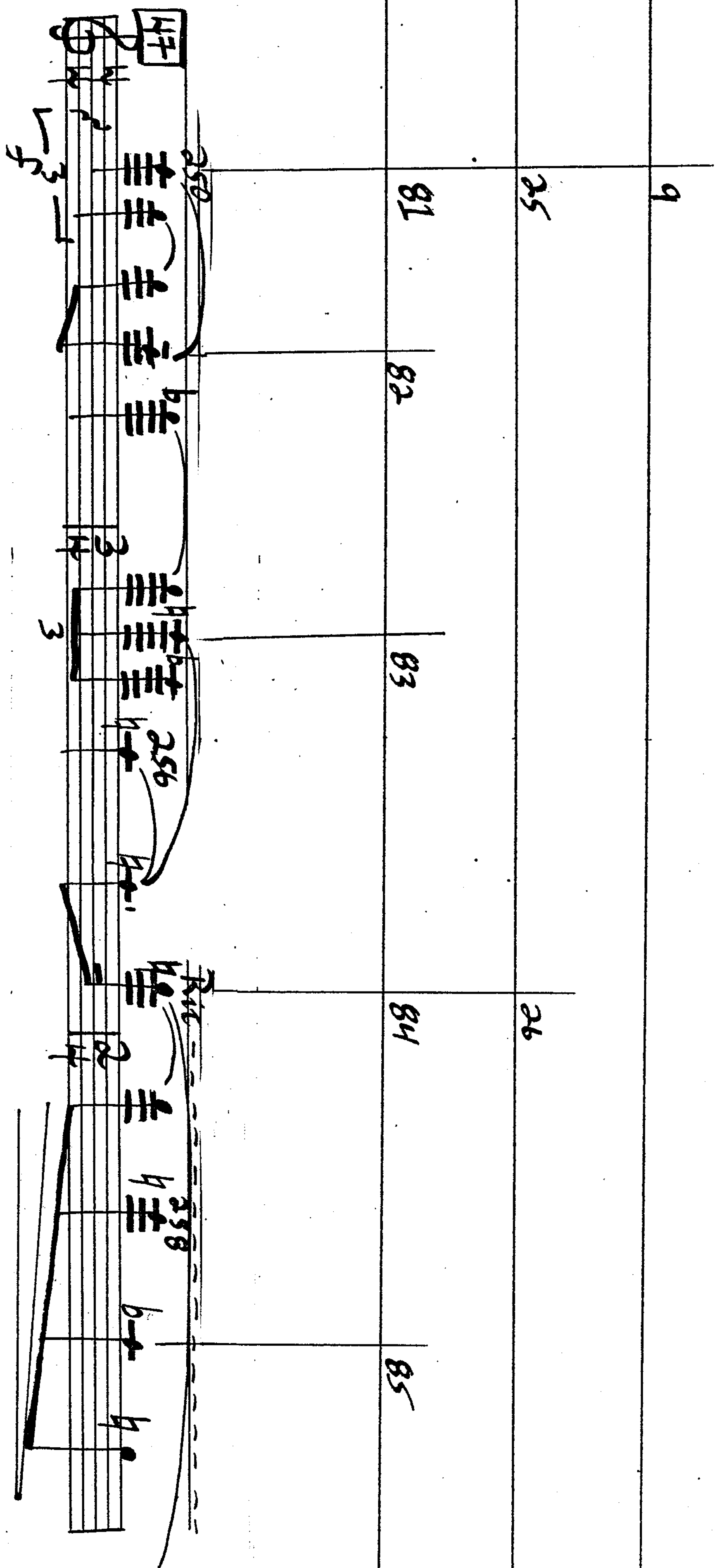

17
18
48
49
50
51
52
53
54
55
56
29
150
156
158
161
169
(f)


33
ff
8va
174
(8va)
179
(8va)
184
loc.
191
f
(mf)
57
58
59
60
61
63
19
7
PW=.3
IW=3
PW=.3, no clang.
PW=.3


37
IW=3
PW=.6
PW=.6
63
64
65
66
67
68
69
70
71
20
21
22
8


23
72
73
73
74
41
220
3
224
3
Rit
226
(vlns, vc.)
Lento
229
(♩≈60)
espressivo
f
p
mf
(vlas. solo)
IW=3, no clang
PW=.6
PW=.3

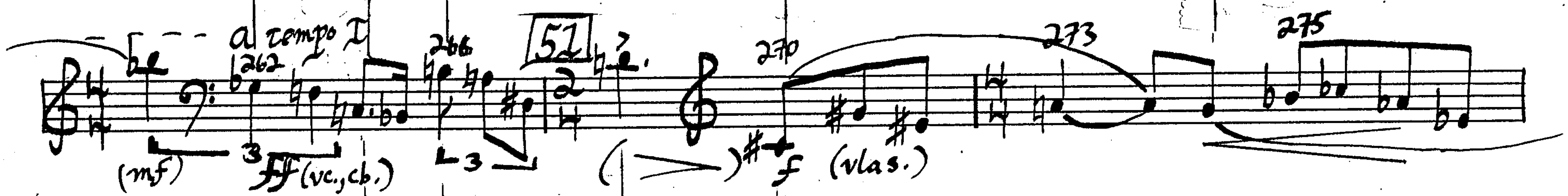

44
234
237
242
245
246
249
75
76
77
78
79
24
f
(vlns.)
mf
3
Pw=.6, no clang.


47
81
82
83
84
85

Segment 10

Sequence 27 28

Clang 86 87 88 89 90



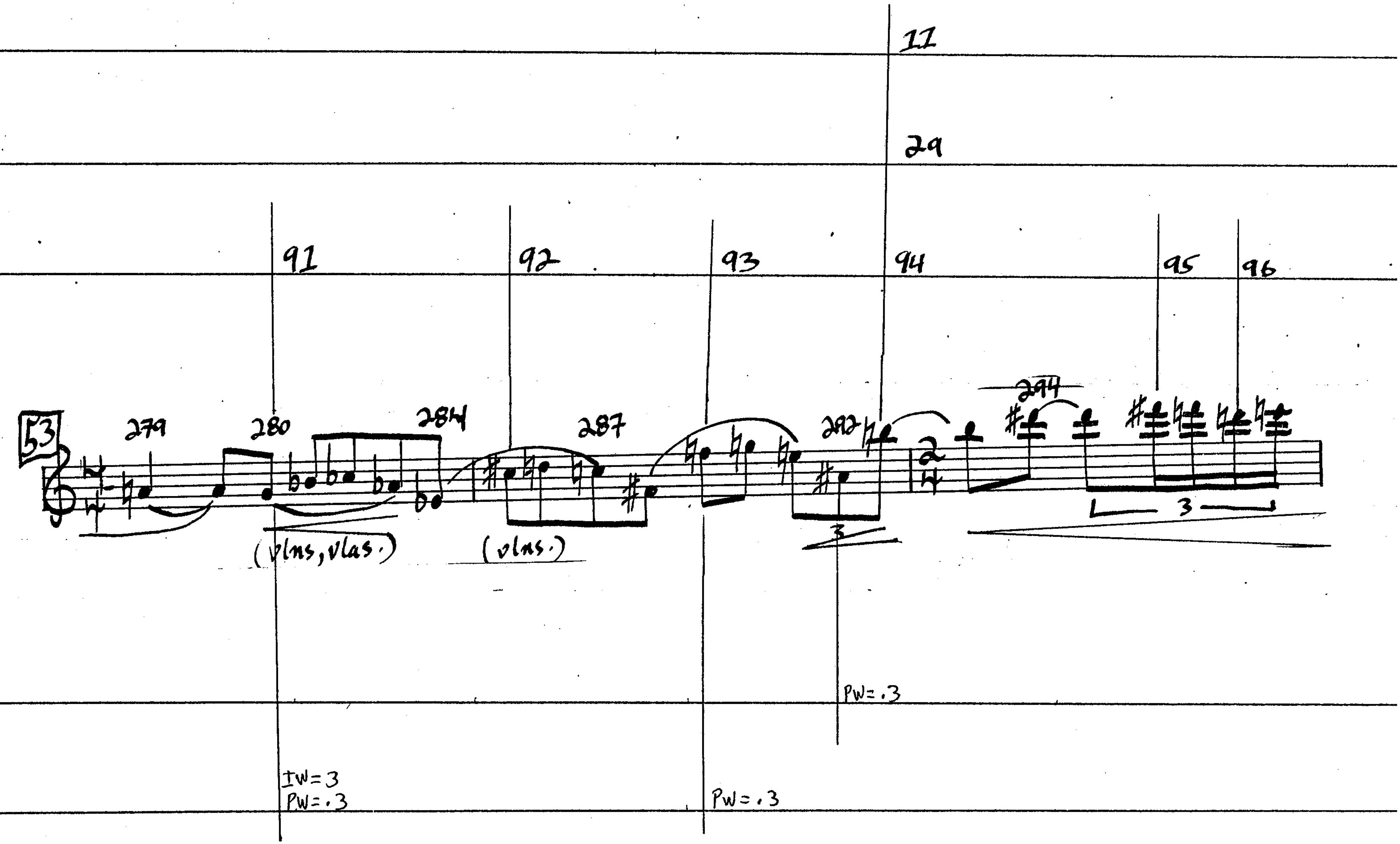
PW=.3
IW=3

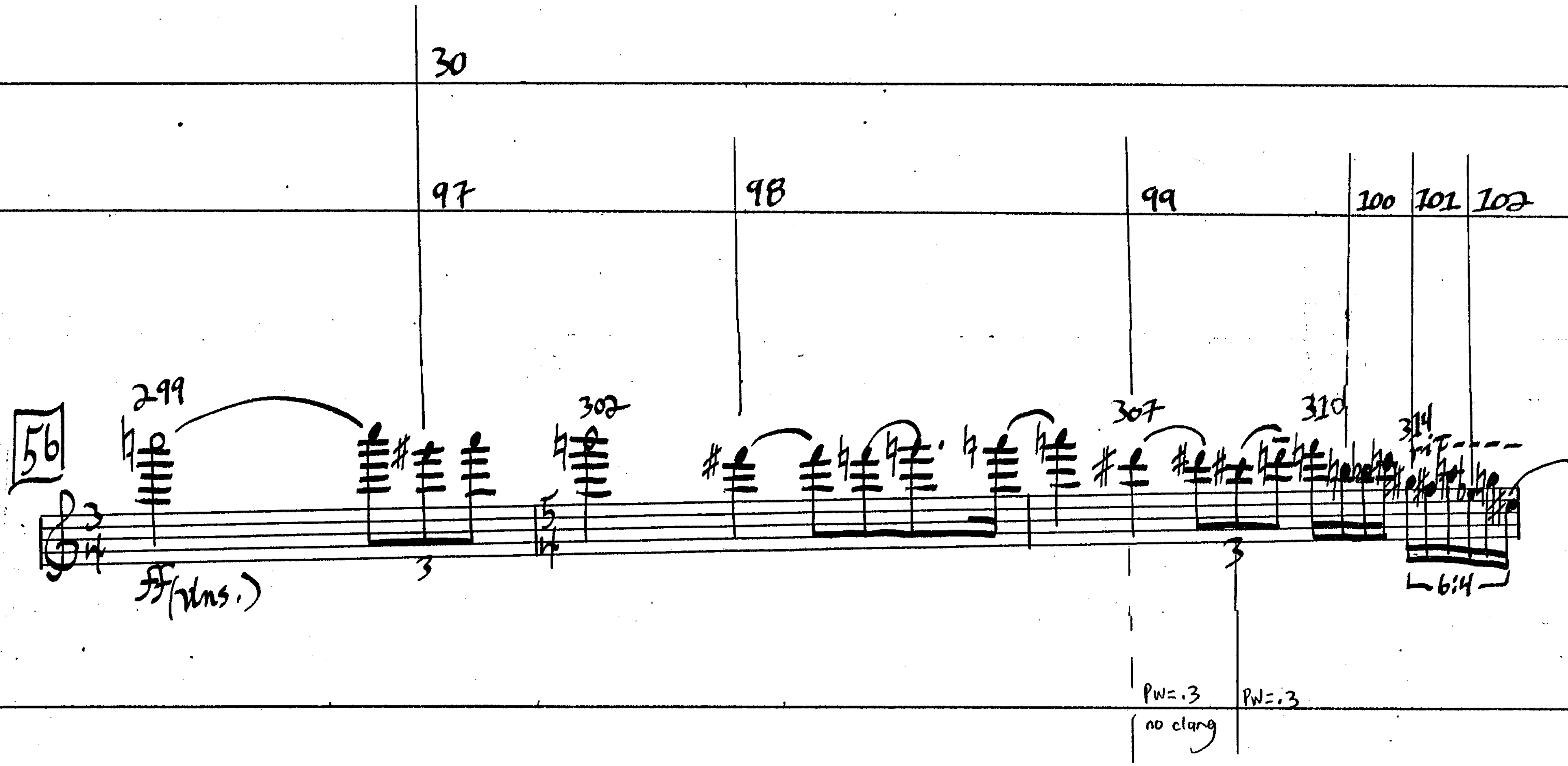
PW=.3, no clang

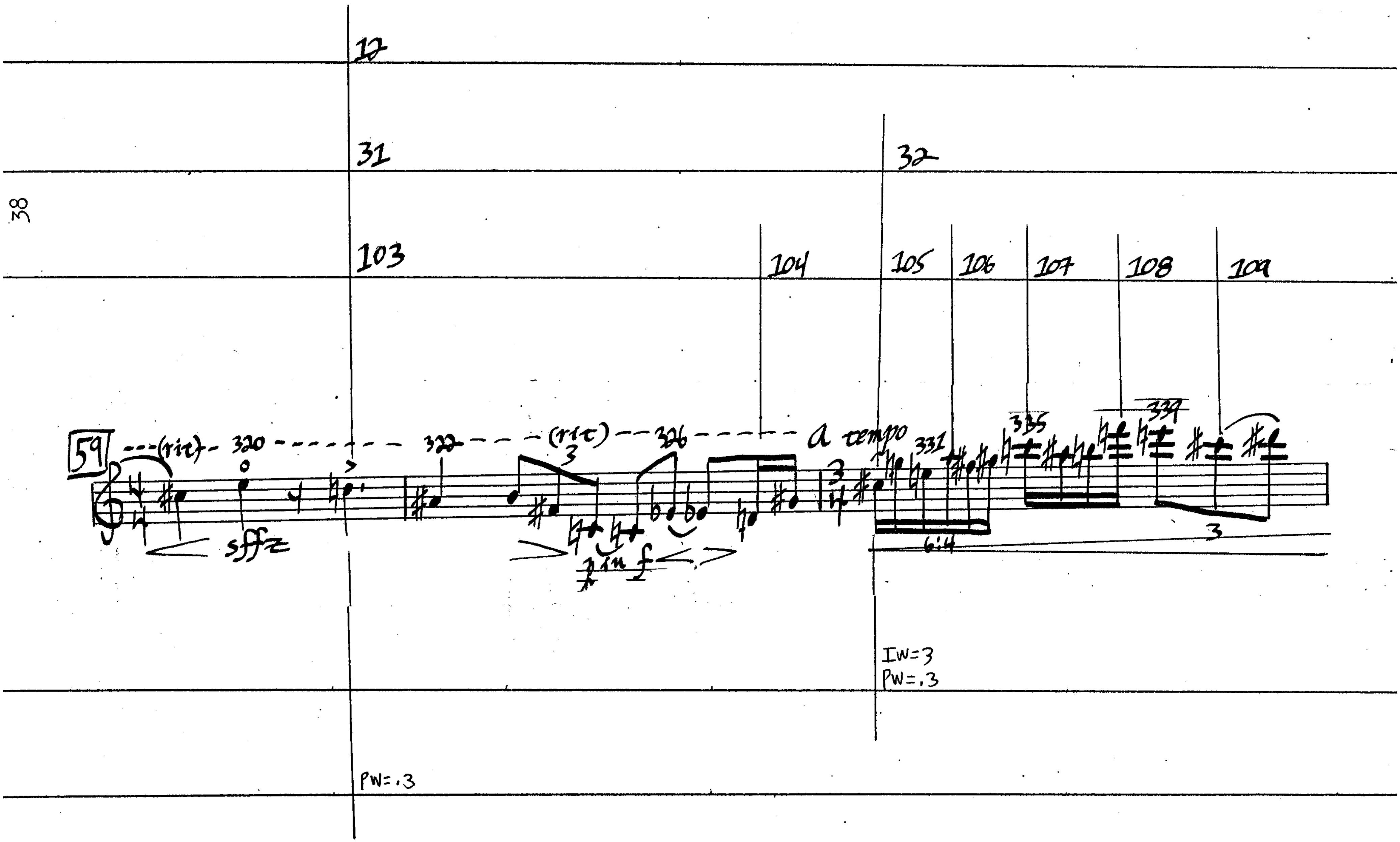
PW=.6, no clang

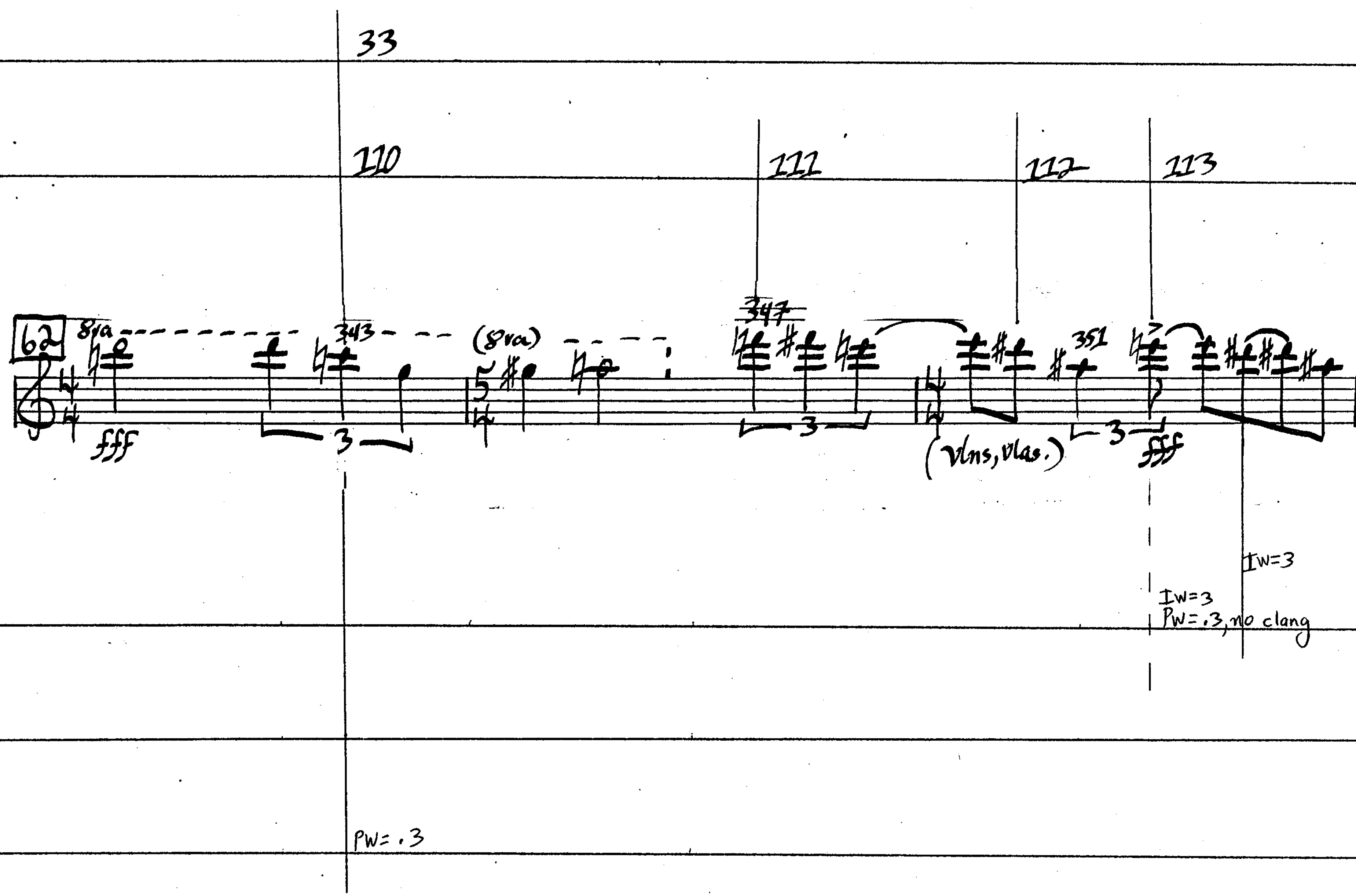
PW=.6

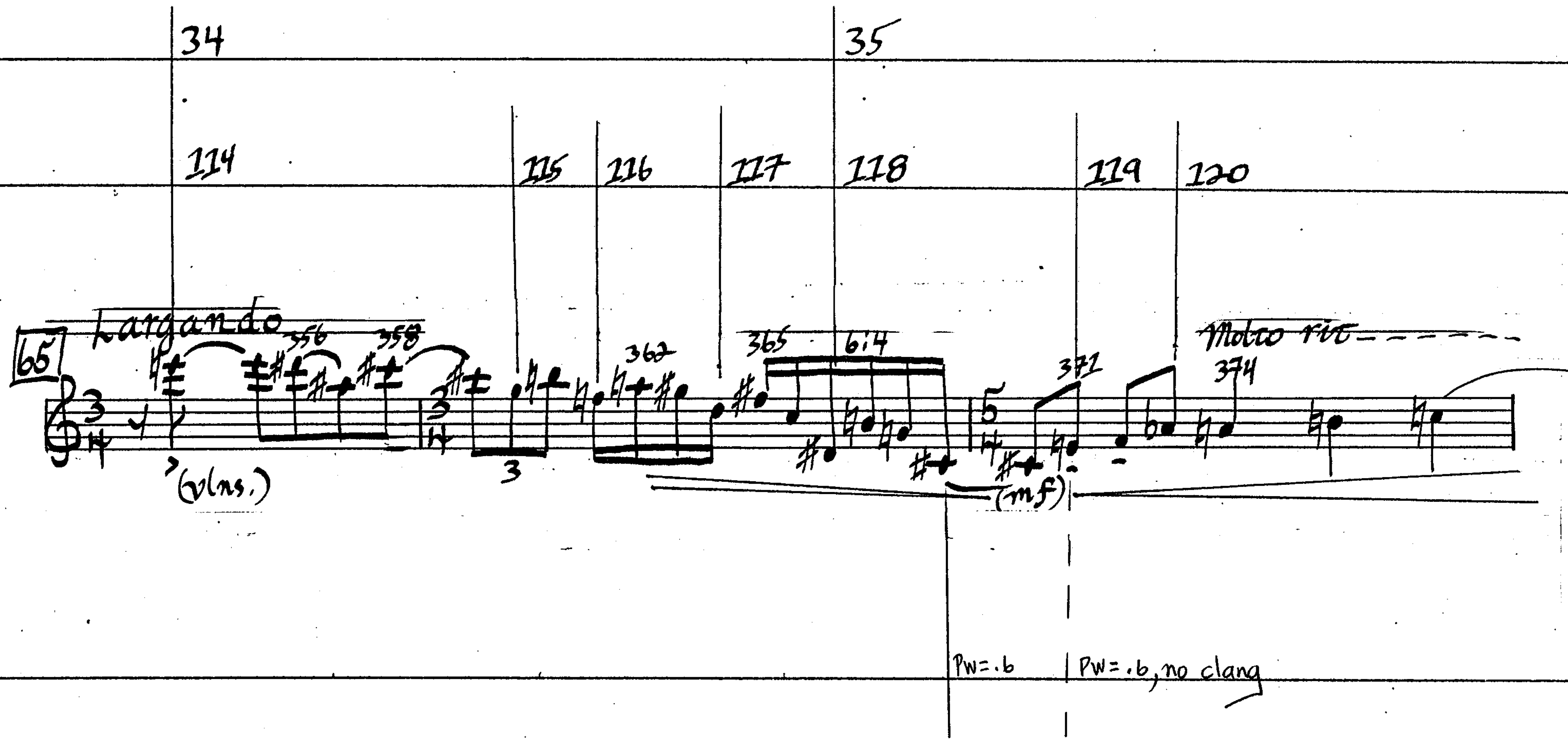
IW=3
PW=.3

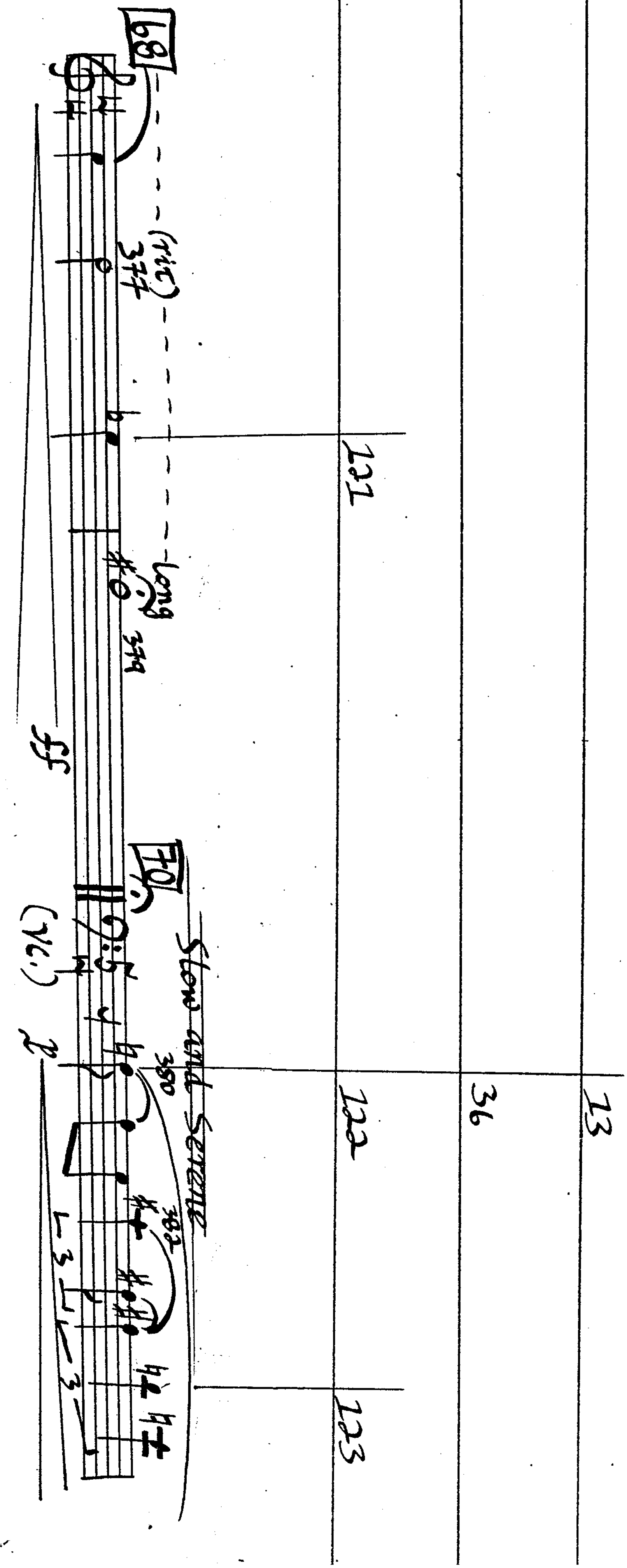

53
279
280
284
287
292
294
(vlns, vlas.)
(vlns.)
91
92
93
94
95
96
29
11
IW=3
PW=.3
PW=.3
PW=.3

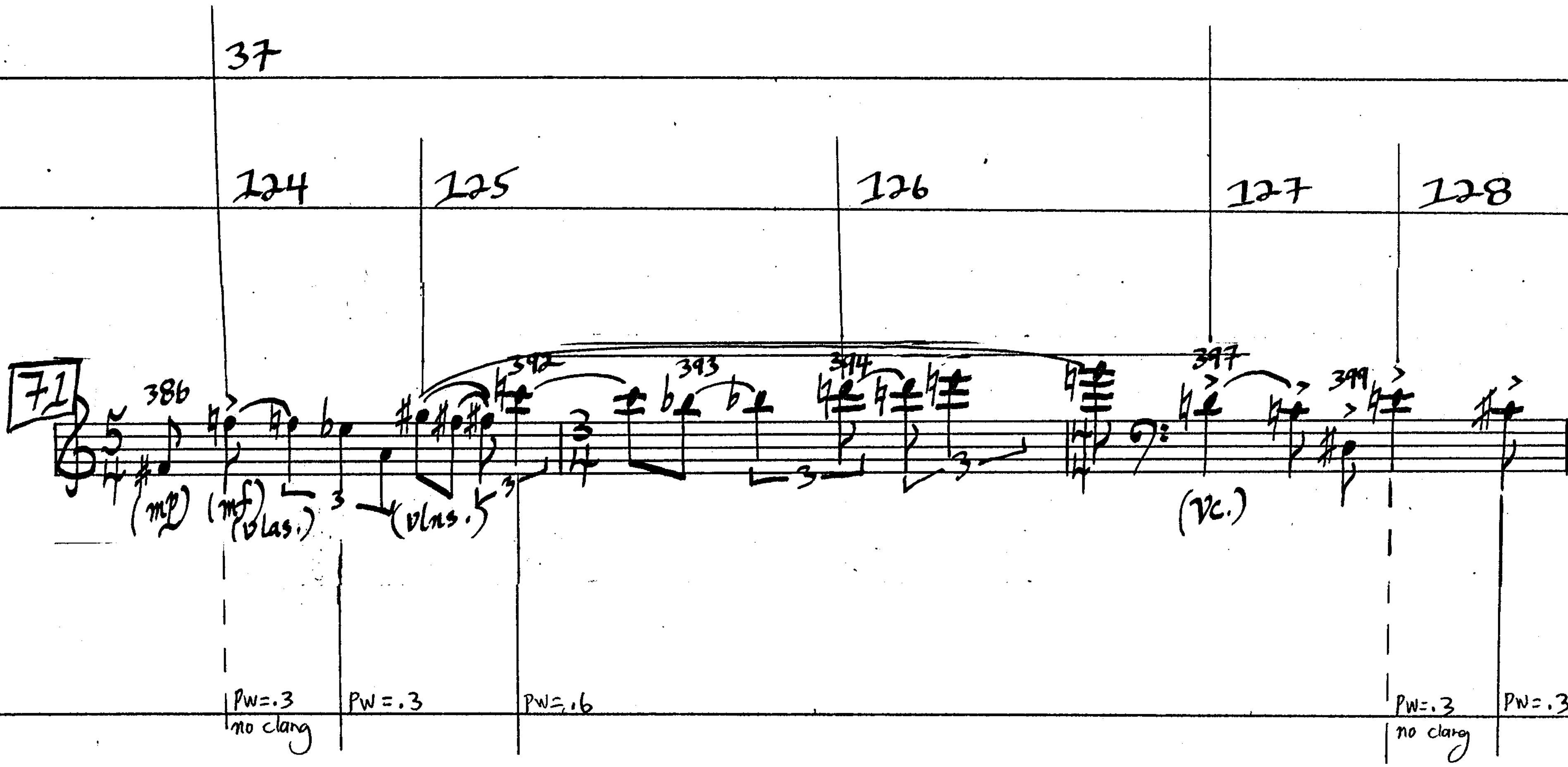

56
299
ff (vlns.)
3
302
307
310
314
6:4
30
97
98
99
100
101
102
PW=.3
no clang
PW=.3


12
31
32
103
104
105
106
107
108
109
59
(rit)
320
322
(rit)
326
a tempo
331
335
339
sffz
f
6:4
3
IW=3
PW=.3
PW=.3

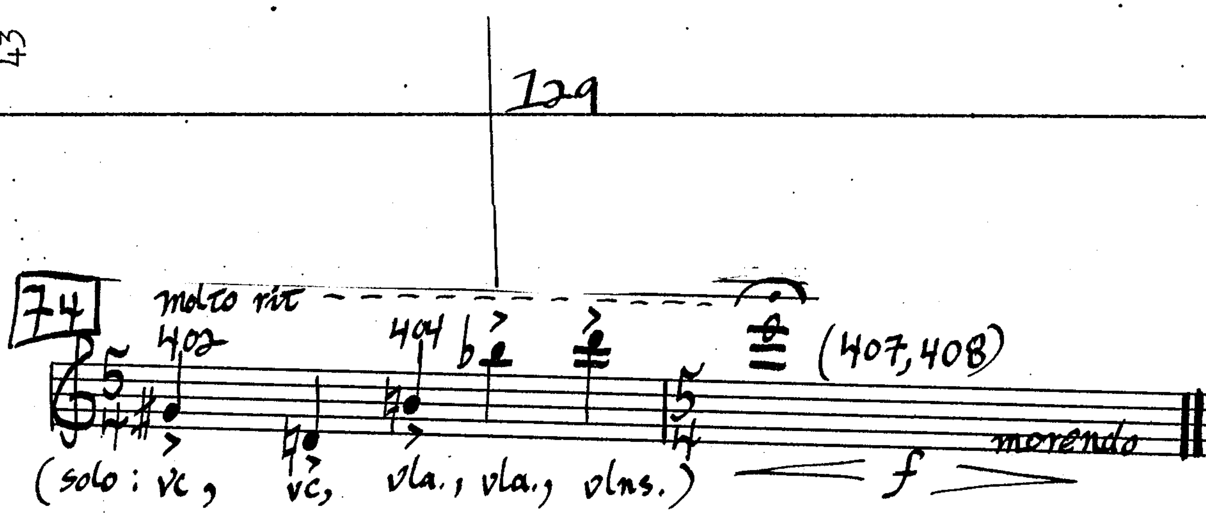

33
110
111
112
113
62
8va
343
(8va)
347
351
fff
(vlns, vlas.)
fff
IW=3
IW=3
PW=.3, no clang
PW=.3


34
35
114
115
116
117
118
119
120
65
Largando
356
358
362
365
6:4
371
374
Molto rit
(vlns.)
3
(mf)
PW=.6
PW=.6, no clang


68
(rit.)
377
long
379
ff
70
Slow and serene
(Vc.)
p
380
382
121
122
123
36
13



71
37
124
125
126
127
128
386
392
393
394
397
399
(mp)
(mf)
(vlas.)
(vlns.)
(vc.)
PW=.3
no clang
PW=.3
PW=.6
PW=.3
no clang
PW=.3


129
74
molto rit
402
404
(407,408)
(solo : vc, vc, vla., vla., vlns.)
f
morendo

NOTES

(In all cases, TG's are 'located' by the element number at which they are initiated. Note that higher-level TG numbers refer to those segmentations produced by the optimal weights:

PROXIMITY = 1.0

PITCH = .5

INTENSITY = 1.0

TEMPORAL DENSITY = 1.0

TIMBRE = .2

Because different sets of weights produce different segmentations, the numbering of TG's differs from one set to another. For this reason, most references will be made to element numbers, which are of course invariant. Higher-level TG numbers are not given in the graphic analysis for the variant weights.

Weightings are referred to by that parameter in which they differ from the optimal weights. The three variant weightings considered are: PITCH (PW) = .3; PW = .6; INTENSITY (IW) = 3.)

SECTION I (Elements 1-57; MS. 1-12)

Segment 2 (el. # 25):

This segment is initiated by the theme in the viola (which reappears at ms. 43). Mean-intervals on the sequence level do not create much effect here, as parametric peaks do not even appear in pitch and temporal density, although sizeable peaks appear in amplitude and timbre (note the large change in this latter parameter). However, boundary intervals make this segment break quite strong, especially in proximity, where the eighth-note rest produces a sizeable boundary-interval at the element level.

Clangs 12 and 13 (els. # 37 and 39):

Although at first glance, both of these clangs seem to be initiated at unusual places, the reasons become clear on further analysis and listening. At element # 37, proximity (the duration of element # 36) is quite strong and tends to override peaks in pitch and temporal density which appear at element # 38. However, raising pitch-weight (PW) to even .6 makes the larger pitch-interval at element # 38 a strong enough factor in the metric to override the effect of proximity at element # 37.

Similarly, at element # 39, there is a certain trade-off between effects of pitch-interval and proximity.

INTERVAL	#37	#38	#39	#40
Proximity	.88	.29	2.04	.29
Pitch	9	13	9	4
TD	1.59	2.81	2.81	0
Intensity	.2	.2	.25	0
Timbre	.5	.5	.5	0

(Rest and intensity boundary-interval are all zero).

Here, the peaks in proximity, intensity-interval and the near peak in temporal density-interval establish the clang initiation much more strongly, so that even raising PW (at least to .6) does not override the peak at # 39.

Segment 3 (el. # 46):

Initiated by sequence 5, segment 3 shows clear parametric peaks in timbre and pitch, but little change in other parameters. More important perhaps, is the boundary-distance arising from sizeable parametric intervals on the element level in all parameters (Prox. = 1.94; Rst. = .78; Pitch = 16; TD = 1.33; Int. = 1; Int. BI = 1; Tim. = 2.3. For a good idea of the relative size of these intervals, compare them with the mean parametric intervals for the entire piece given in Appendix II).

At this point one sees an interesting example of how morphological factors may enhance a statistical effect. Note that although clangs 14 and 15 are quite similar metrically, it is the repetition itself that seems to give aural strength to the higher-level initiation at element # 46. This effect seems to be characteristic of Portals, and of Ruggles' style in general- that immediate morphological repetition is often accompanied by large statistical distinction.

SECTION II (el. # 58-128; ms. 13-25)

Although it is apparent that this section, like all of the four sections into which the 'optimal' weights divide the piece, begins with a restatement of the 'theme', it must be remembered that thematic information of this kind is not within the scope of the programme at present. Thus, these section breaks are made solely on the basis of the statistics of segments, and on the mean-intervals for all lower-levels at the point of section initiation (boundary-distance). That statistical information is so well correlated with morphological is not so surprising in a composer like Ruggles, but that it should be so clearly evidenced with such a relatively simple algorithm is.

Segment mean-intervals at section II show small parametric peaks in pitch and TD, but no peaks in intensity or timbre. However, parametric intervals for element # 58 are: Prox. = 2.25; Pitch = 21; Rst. = .83; TD = 2.17; Int. = 1.3; Int. BI = 1.5; Tim. = 1.2;

-all very large, especially when compared to the means of parametric intervals on the element level for the entire piece (Prox. = .95; Pitch = 4.54; Rst. = .03; TD = .71; Int. = .1). Consequently, the boundary-distance for section II is quite large. Disjunction-measures for lower-level TG's at this point are: Element #58 = 5.1; Clang #20 = 3.55; Sequence #7 = 2.9 - compared to mean disjunction-measures of .99,1.16, 1.71 for the element, clang, and sequence levels respectively. Clearly, these statistics correspond musically to the significant change in tempo, dynamics, melodic register, orchestration, etc. at this point in the piece.

Segment 5 (el. # 90):

At elment #90, not only are boundary-intervals quite substantial, but sequence mean-intervals help to significantly effect the segment initiation. Note that although sequence 10 (el. #90-94) is of radically different timbre and overall temporal density than the sequence preceeding it, sequence 11, where violins rejoin the texture and where there are some shorter duration values, is <u>less different</u>. That is, on the sequence level, Ruggles follows a radical change by a smaller one.The aural effect should be obvious, and it is reflected by the algorithm's segmentation.

Clang 32 (el. #93):

The partitioning of sequence 10 is quite sensitive to changes in weightings, being solely dependant upon the peak in pitch-interval at element #93. When PW is lowered to .3, this clang is removed, as the peak in TD-interval at element #94 overrides the lessened pitch-interval peak. A look at the disjunction measures for this point under two weights shows this great sensitivity:

Weight	DM(#93)	DM(#94)
PW = .3	.78	.79
PW = .5	.84	.91

Sequence 11 (el. # 95):

Again, boundary-intervals, especially in proximity (note the length of element #94), rest, and pitch produce a sequence break here which is relatively strong (DM of clang initiator: 2.79) and fairly invariant under differnt weights.

<u>Section</u> <u>III</u> (el. # 129-261; ms. 26-49):

This section break, though clearly a major structural point in the music, is highly sensitive to changes in weightings. Segment mean-intervals at this point show a peak only in pitch, and if PW is lowered, larger intervals in the other parameters at surrounding segments override it. Boundary-distance, mostly caused by large pitch, proximity, and rest intervals at the element level, is quite strong. However, this is not sufficient to insure this section break when PW is lowered significantly. That this point should be so tenuous statistically is surprising, for the literal repetition of the theme seems to be quite a strong indication of Ruggles' formal intentions. It is clear that the incorporation of morphological factors into the programme, particularly with regard to motivic repetition, would make this section break less ambiguous.

Clang 42 (el. # 132):

Proximity (duration of element #131) is quite strong here, and overrides the effect of a pitch-interval peak at element #133.

Clang 44(el. #137):

Although there is a small peak in the proximity values at element #138, peaks in pitch, TD, and timbre intervals at element 137 tend to override it.

Clang 46 (el. # 144):

Repeated pitches are quite unusual in any of Ruggles' music, and the effect statistically is to tend to place a TG initiation at the first of these pitches, since the second will have pitch interval of zero. This is the case at this point, and it overrides the negating effects of a proximity peak at 145 itself.

Sequence 17 (el. # 162):

Note the sizeable boundary-interval in proximity (2.25 seconds, one of the longest durations in the piece), which makes the element level disjunction quite strong.

Clang 53 (el. # 164):

The clang break here is an example of one that is impossible to alter through weighting changes. All parametric intervals are zero for elements #163-165, except for pitch and timbre which have peaks at 164.

This is also the case at clang 58 (el. #178) where there is a very slight pitch-peak, and all other surrounding parametric intervals are zero.

Element # 183:
That no clang break occurs here is explained by the relation of proximity values for elements #184 and 183, which is two to one. Although a peak in pitch interval occurs at 183, PW would have to be enormous to produce a clang break there and would undoubtably have disagreeable effect elsewhere.

Segment 7 (el. #189):
In this case, clear mean-interval peaks appear at the sequence level in pitch, intensity and timbre, but the higher-level break, as evidenced by the other weightings (PW = .3; IW = 3) is quite sensitive.

Where PW = .3, no clang even appears at this spot. Investigating the element intervals at this point:

INTERVAL	188	189	190
Proximity	.25	.25	1.0
Pitch	6	5	2
TD	0	2	0
Intensity	0	1.25	.5
Int. BI	0	1	0
Timbre	1	0	0

-we find relatively small peaks in TD, intensity, and intensity boundary-interval, but no peaks in pitch, proximity or timbre. Where pitch is concerned, under the optimal weights, the interval at #189, though not a peak, is still large, and does not inhibit the clang formation as much as when its effect is lessened (PW = .3). Disjunction-measures under the optimal weights as compared to when PW = .3 show the extreme sensitivity of even the clang break:

WEIGHTS	#188	#189	#190	(Disjunctions)
PW = .5	.64	1.02	.95	
PW = .3	.47	.89	.90	

Thus, in the optimal weights even clang and sequence peaks are relatively small (where clang 61 and sequence 19 initiate the segment) as the disjunction-measures show:

CLANGS-	60(.78)	61(1.02)	62(.92)
SEQUENCES-	18(.80)	19(1.10)	20(.72)

-making the segment break at element # 189 quite tenuous.

Segment 8 (el. # 208):
Initiated by sequence 21, this break is sensitive to changes in PW, as the segmentation of the music shows. The boundary effect of the rest at element # 207 is quite important, as is the high value for pitch-interval at the element level. However, a large mean-interval for pitch at sequence 23:

Seq. 21 (2.31) Seq. 22 (1.56) Seq. 23 (3.78)

-tends to produce the segment break at element #215 if PW is even raised to .6. The peak in the sequence disjunction-measures under the optimal weights at sequence 21 is also quite small (.72; 1.25: 1.08; - for sequences 20,21,22).

Element # 224:

Raising PW here produces a clang break, for obvious reasons:

INTERVAL	#223	#224	#225
Proximity	.33	.67	1.33
Pitch	2	4	1
TD	0	1	1

-but note that there exists a sensitive relationship between the effects of pitch and proximity.

Clang 73 (el. # 226):

The effect of raising intensity-weight to 3 is to negate the very slight proximity peak at element # 226, thus removing the clang break. This seems to be musically, a better solution, and one more in keeping with Ruggles' attempts to achieve the continuous line.

Sequence 23 (el. # 229):

This point appears to be one of the most anomalous aspects of the optimal weights. Whereas at element # 25, a segment was produced, here only a sequence is initiated. Clearly, the introduction of the role of motivic recognition into the programme would be important here.

One cause of the lower-levelled break here is that element # 229 is preceeded by both a ritardando and a decrescendo, diminishing significantly the effect (both aurally and in terms of the programme) of its relative change.

On the sequence level, sequence 23 only shows a peak in temporal density. However, boundary-intervals (though not in pitch!) are fairly strong, and even with the optimal weights it is extremely close to producing a segment initiation here:

Disjunction-measures: Seq. 22 (1.08); Seq. 23 (1.08); Seq. 24 (.85)

-so that any increase in the temporal density weight at all would produce a peak (note that the algorithm requires a peak to be strictly greater than its adjacent values). Such a relative increase can be effected by diminishing PW as well, as seen in the example of PW = .3.

Clang 78 (el. # 241):

Parametric intervals at this point are:

INTERVAL	#240	#241	#242
Proximity	.29	.88	.29
Pitch	4	9	13
TD	1.59	1.59	2.81
Timbre	0	.5	.5

The effect of the weightings is clear: raising PW, even slightly, removes the clang (as would raising the TD-weight).

Segment 9 (el. # 250):

Both a large sequence mean-interval peak in pitch and timbre, and large boundary-intervals in all parameters combine to produce this segment break, which is quite strong, and seems to remain so under several different weightings.

SECTION IV (el. # 262-408; ms. 50-75):

Again, disjunction-measures for lower-level TG's are quite large at this point (Element # 262 - 3.47; Clang 86 - 3.01; Sequence 27 - 2.96) and these are clearly a larger factor in the segmentation than the segment level mean-intervals, in which only a peak in TD appears at segment 10. However, as in Sections I-III (beginning at els. # 1;58;129) the clear restatement of the theme supports the statistical segmentation, though of course the programme has no 'knowledge' of it.

Clang 89 (el. # 270):

When PW is raised to .6, the clang is 'shifted' to element # 269, as the pitch-interval/proximity relationship is very sensitive at this point (note the greater proximity of # 270 as compared to the greater pitch-interval of # 269). The clang break at # 270, for reasons of musical phrasing, seems to more accurately reflect my own musical perception of this point. Note that an intensity-weighting of 3 goes even farther, and places a sequence break at # 270, which also seems perceptually valid, in that it makes elements # 266-269 one sequence, instead of two when PW= .6.

Segment 11 (el. # 293):

Clearly, boundary-interval for pitch is strong, but so is mean pitch-interval for the sequence level, so strong that even a diminsihed PW still produces a segment here. In the optimal weights, disjunction-measures on lower-levels are large (1.31 on the element level, 2.5 for the clang level), but significantly, disjunction-measures for the initiating sequences are 1.5 for the optimal weights, and .84 when PW is reduced to .3.

Clang 99 (el. # 307):
Here, pitch-interval is undoubtably the strongest factor in the initiation. When PW = .3, the clang is initiated instead on # 308.

INTERVAL	#306	#307	#308	#309
Proximity	.75	1.25	1.33	.33
Pitch	2	6	2	1
TD	.74	.1	2	0

Again, one sees a very clear trade-off between pitch-interval and proximity (and temporal density) peaks. Disjunction-measures for the two weights at this point are:

WEIGHT	#306	#307	#308	#309
PW = .5	.75	1.36	1.27	.32
PW = .3	.7	1.2	1.22	.29

Segment 12 (el. # 321):
Although there are no peaks in any of the parametric mean-intervals, boundary-intervals, especially in proximity and rest, are quite strong. Even so, this segment is not a strong break - the disjunction-measure of the initiating sequence being 1.66 as compared to 1.49 of the following

sequence. It's musical validity is also in some doubt,as another strong candidate for a segment break would be at element # 329. Indeed, a lower PW (.3) helps negate the importance of pitch-interval on the clang level, and removes the segment break there.

Clang 108 (el. # 338):

Pitch-interval is the main factor in this clang initiation; overriding the negative effects of larger intervalic values for intensity, proximity, and temporal density at element # 339. However, this clang is quite weak (DM = .64) and even weaker when PW = .3 (DM = .47). It is slightly stronger, of course, when PW = .6 (DM = .72).

Clang 113 (el. # 352):

Note the 'shift' when intensity-weight = 3, possibly producing a more reasonable clang break.

Sequence 34 (el. # 355):

The fact that a segment is not initiated here by sequence 34 may be clearly understood by looking at sequence level parametric mean-intervals at this point:

INTERVAL	33	34	35	(sequences)
Pitch	.97	6.26	9.65	
Intensity	.76	.5	1.33	
TD	1.05	.95	.99	
Timbre	1.08	1.08	1.21	

Boundary-intervals are also not strong enough to override the greater parametric-interval values of sequence 35.

Clang 119 (el. # 371):

When PW = .6, this clang is shifted back to element # 370, once more a sensitive balance is evidenced between pitch-interval and proximity effects, reflecting the perceptual ambiguity at this and other points.

Clang 120 (el. # 373):

That elements # 373-377 form only one clang seems somewhat indicative of Ruggles' quest for a line which seems to continually propel itself forward, where no change is perceptibly larger than its neighbors.

Sequence 37 (el. # 387):

Where PW = .3, no sequence occurs here, for boundary-interval for pitch (on the element level) is significantly lessened in importance. The proximity value for element # 388 is quite strong, and if PW is lessened, proximity will override the effect of pitch-interval at # 387 to produce a higher-level (sequence) initiation. However, the effect of pitch-interval at the element level on this sequence break seems to be of some musical significance.

Element # 392:

With PW = .6, a clang is produced here, which seems to be more consistent than the absence of such at this point, since this coda consists essentially of variations on the descending major second, itself taken from the main theme.

INTERVAL	#391	#392	#393
Proximity	.75	1.25	1.75
Pitch	2	4	2
TD	.74	.47	0

GENERAL COMMENTS

The larger hierarchical segmentation resulting from the optimal weights is as follows:

		EL. #	MEASURES
SECTION I	SEGMENT 1	1-24	1-6
	SEGMENT 2	25-46	6-9
	SEGMENT 3	46-57	10-13
SECTION II	SEGMENT 4	58-89	13-19
	SEGMENT 5	90-128	19-25
SECTION III	SEGMENT 6	129-188	26-35
	SEGMENT 7	189-207	36-38
	SEGMENT 8	208-249	39-46
	SEGMENT 9	250-261	47-50
SECTION IV	SEGMENT 10	262-292	50-54
	SEGMENT 11	293-320	54-59
	SEGMENT 12	321-379	59-69
	SEGMENT 13	380-408	70-75

Thomas Peterson, in The Music of Carl Ruggles, states that Portals has "... a certain semblance to rondo form, since the principle idea recurs (albeit in freely varied fashion) four times during the course of the work, as well as providing the material for the coda. A plausible attempt at conventional analysis might be made as follows:

A	1-6	B	43-50	
B	6-13	D	50-62	
A'	13-19	A^3	62-70	
C	19-26	CODA	70-75	(based on A)"[1]
A^2	26-43			

---

[1] Peterson, T.E; <u>The Music of Carl Ruggles</u>; pages 57-58.

There are some clear similarities, and some interesting differences as well, between Peterson's more traditionally motivated analysis and the computer version. Clearly, our SECTION I corresponds to his A and B, although B is further broken into segments 2 and 3 by the machine. Peterson's A' and C also correspond nicely to our SECTION II, wherein the computer even matches segments with his divisions (A' and C). However, the middle section of the work raises some significant differences between the two segmentations. Where Peterson sees measures 26-62 (A^2,B,D) as a major section of the 'rondo', the programme does not correspond except in measure 50, in which the restatement of the theme occurs. Here the programme finds the initiation of the fourth major section, whereas Peterson sees it as a secondary rondo theme. Nicely enough, Peterson's coda corresponds nicely to Segment 13, whose disjunction is quite strong and probably only lacks sectional status for the sole reason that it would be a one-segment section, which is not allowed by the algorithm.

That Peterson's segmentation is made under different criteria is clear, for it uses both motivic information and a more traditional idea of musical structure. In one case, his segmentation (B at measure 43) seems more reasonable than that of the computer, although I believe that there probably exists a weighting which would 'fix' this spot in the programme's segmentation. However, both analyses serve useful purposes, as does their comparison: to raise structural questions about this highly complex piece of music. One of the advantages of the computer analysis is that its reasons for decisions are always clear, and may be accepted or discounted on the basis of such. In disputing a segmentation made by the computer, one can discern numerically the reasons for its decision, and can often find a similar justification for one's own decision. The various points which appear to be sensitive to changes of weights are also quite instructive about musical effect, in that they point clearly to certain ambiguities which are often aurally obvious, but whose underlying structures are less clear.

APPENDIX I: SOME ASPECTS OF MORPHOLOGY

Whereas the parametric states of two TG's containing the same components are equal, irregardless of the temporal ordering of these components, the parametric profiles, or shapes, are not. In fact, the shape of a TG can be defined as the relations of its component parametric values (states) through time.

Since profiles are sets of ordered relations, comparisons between profiles must be point-by-point comparisons of these relations, or some reduction of that information. In this sense, two pitch profiles in which one is the exact transposition of the other might well be considered to be 'equal', or at least equivalent. The search for invariants of this type and a measure of similarity (and, even further, of disjunction) between parametric profiles, and eventually one integrated profile, is essential to the proper understanding of the types of musical and perceptual processes with which the programme deals. That these morphological factors significantly affect gestalt organization in composition and perceptual processes is certain. In fact, it is somewhat surprising that statistical information by itself should yield such a reasonable segmentation, when traditional ideas of musical form deal so much more directly with morphological factors : melodic shape, thematic and motivic development, tri-partite and variation forms, and even the 'axioms' of invariance (inversion, transposition, retrograde motion) of serial music. That certain operations upon an ordered parametric set, like pitch inversion and transposition, duration augmentation and dimunition, and equivalent processes in other parameters have become invariants, or at least equivalences to our ears is evidence that there must exist certain fundamental principles governing the perception of shape. The quest for these rules, is, in a sense, the study of morphology.

One possibility is that the idea of a metric might be applied to the realm of shape. Such a metric would seek to preserve traditional notions of motivic similarity, as well as illuminating more subtle aspects of shape transformation and similarity. The concept of distances between shapes is not well-defined at present however, and many fundamental problems arise at even the simplest formulation of such a metric function. For example, if we reasonably assume that the distance between a pitch profile and its exact transposition is zero (and it can be argued that without this assumption any concept of shape with regard to invariance is virtually meaningless), and that the distance between that same profile and one in which only one value is slightly altered is some small arbitrary value: what then is the distance between a transposition of that alteration (to the same degree as the original transposition) and the original profile. Perceptually it would seem that the transposed alteration is 'further' from the original than the un-transposed alteration. But this is clearly paradoxical, or at least inconsistent as the following equalities show:

By assumption,

$D(P,T_p) = 0$ (prime and tranposition).

Let,

$D(P,P') = \epsilon$ (prime and alteration)

$D(T_p,T_p') = \epsilon$ (transposition and altered transposition)

- where ϵ is some arbitrary small value.

Since, by the metric axioms, $D(P,T_p) = 0$ implies $P = T_p$, we reach the conclusion that:

$$D(P,T_p') = D(P,P') = \epsilon\,!$$

Even this extremely simple example raises numerous questions about the feasibility of such a metric on shape, in which single values are assigned to distances between a set of objects whose relations are quite complex. The general structure of the set of distances between shape does not appear to be simple, and one in which a 'well-ordering', necessary for a simple metric, is possible, for many of the distances seem to involve differences in 'kind', not easily expressed as simple numerical quantities. This becomes even clearer when we consider the role of directional change (inversion), and types of permutation (of which retrograde is the most important specific example). In the case of inversion, one needs to decide whether to consider both negative and positive parametric intervals or, as is the case with state, to consider only absolute values. If the latter, then a prime is of course equal to its inversion, and problems like the one with transposition (only worse!) arise quickly.

In the case of retrograde, it is dificult to produce a metric which recognizes any similarity in shape between a prime and its retrograde (although many of their parametric states are of course the same).

Even with the idea of a metric, many questions about the role of shape in gestalt organization remain unanswered. In what ways does the repetition of morphological information tend to initiate new TG's, and in what ways does it tend towards cohesion? What role does recognition of lower-level shapes play in the formation of higher-level TG's? Can shapes of higher-level TG's be treated in the same fashion as those on the element-level, with which we are so accustomed to dealing?

Although these questions (and many others) remain unclear at the present, it is suggested that statistical information is a necessary beginning to a consideration of morphological information. This is obvious in the case of higher levels, for the states of TG's, and thus temporal-successions of their states, can not be known until lower-level segmentations have been made and statistics computed. Thus, a dependancy of shape upon state is developed which in turn raises further questions. To what extent do segregative tendencies in shape and state counteract, and in what ways to they support each other? Are statistical segmentations to be made a priori, so that the necessary boundaries are drawn in which shapes in turn might be considered? And, most important perhaps: is there a mechanism for integrating the two types of information into one method for the analysis of gestalt organization?

SELECTED PROFILES IN PORTALS

In the following pages of charts, made by the statistical segmentation of the optimal weights, some of the morphological structures in Portals are illustrated, A detailed analysis of this information is beyond the scope of this paper, and is perhaps better left to the interested reader. For this reason, no conclusions (other than the graphs themselves!) are drawn regarding the shape-structure of the piece. Investigations of correlations between parametric profiles, general tendencies of shape (periodicity, rise and fall, etc.) and comparisons of these shapes to others both in Ruggles' own music and to those in other music can all be done visually without dificulty, and with interesting results. My intention in presenting this information is to allow the reader to form his own opinions about larger questions of form and aesthetics in Portals.

Actual parametric values may be obtained from the programme output, as well as profiles for the piece other than those charted. Note also that shifts in weightings produce corresponding shifts in higher-level profiles (see charts XII-XIV).

Charts I-IV present various parametric profiles for all levels of the piece, each chart a different parameter and section. Chart V shows the disjunction-measure profile for SECTION I, in all levels. Charts VI-IX show the parametric profiles of the entire piece at the segment level, and it is these charts which perhaps most closely reflect a 'traditional' notion of form. Chart X shows the disjunctions for these segments, and although the significance of this chart is not as immediately obvious as # VI-IX, it also gives important illustrations of the formal structure of the piece, though with regard to change in parameters rather than the actual parametric values. Chart XI shows the parametric profiles for sections of the entire piece in three parameters, and its relative smoothness is not surprising for statistical information at this level.

Charts XII-XIV show dijunction-measure profiles for all levels for the first section for each of the three varying weights. These may be compared to chart V to help visualize the shifts effected by changes in weights.

Pitch Profiles: all levels
(section I)

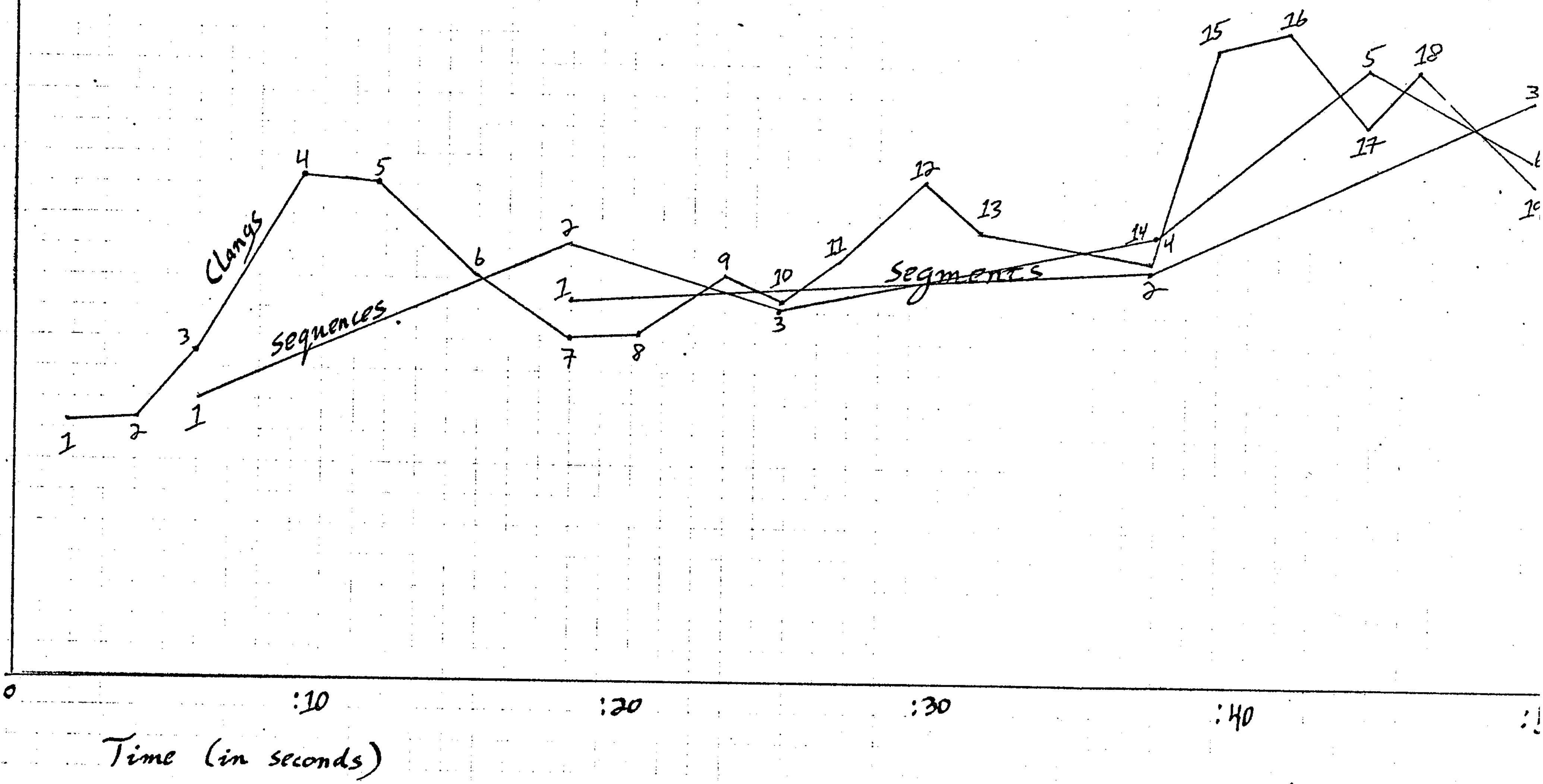
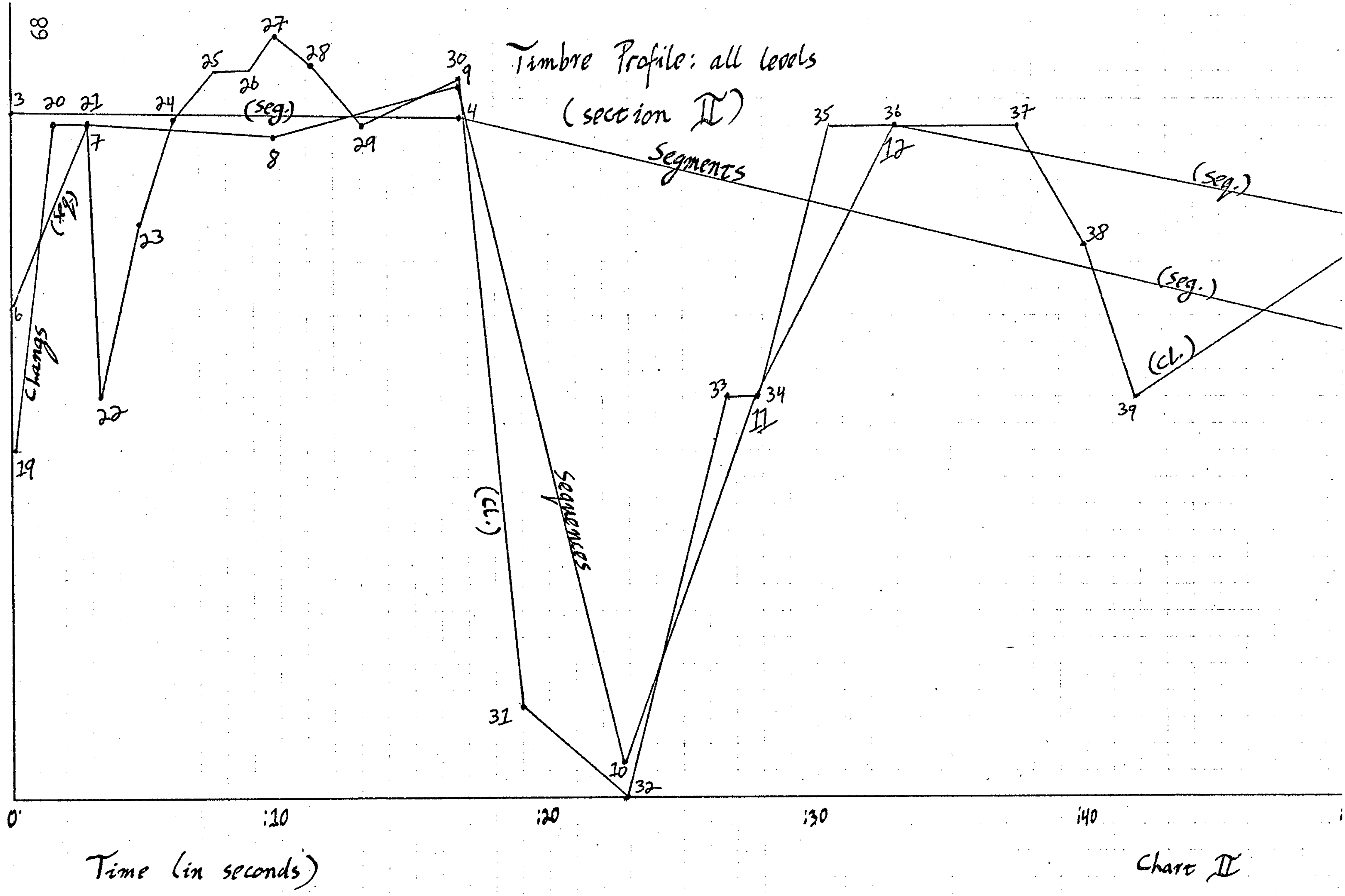


Chart I


Timbre Profile: all levels
(section II)
3
20
21
24
25
26
27
28
29
30
9
4
6
7
8
19
22
23
31
10
32
33
34
11
35
36
12
37
38
39
Changs
(seg.)
Segments
Sequences
(cl.)
(seg.)
(seg.)
(cl.)
0'
:10
:20
:30
:40
Time (in seconds)
Chart II

Intensity Profile (all levels)
(section III)

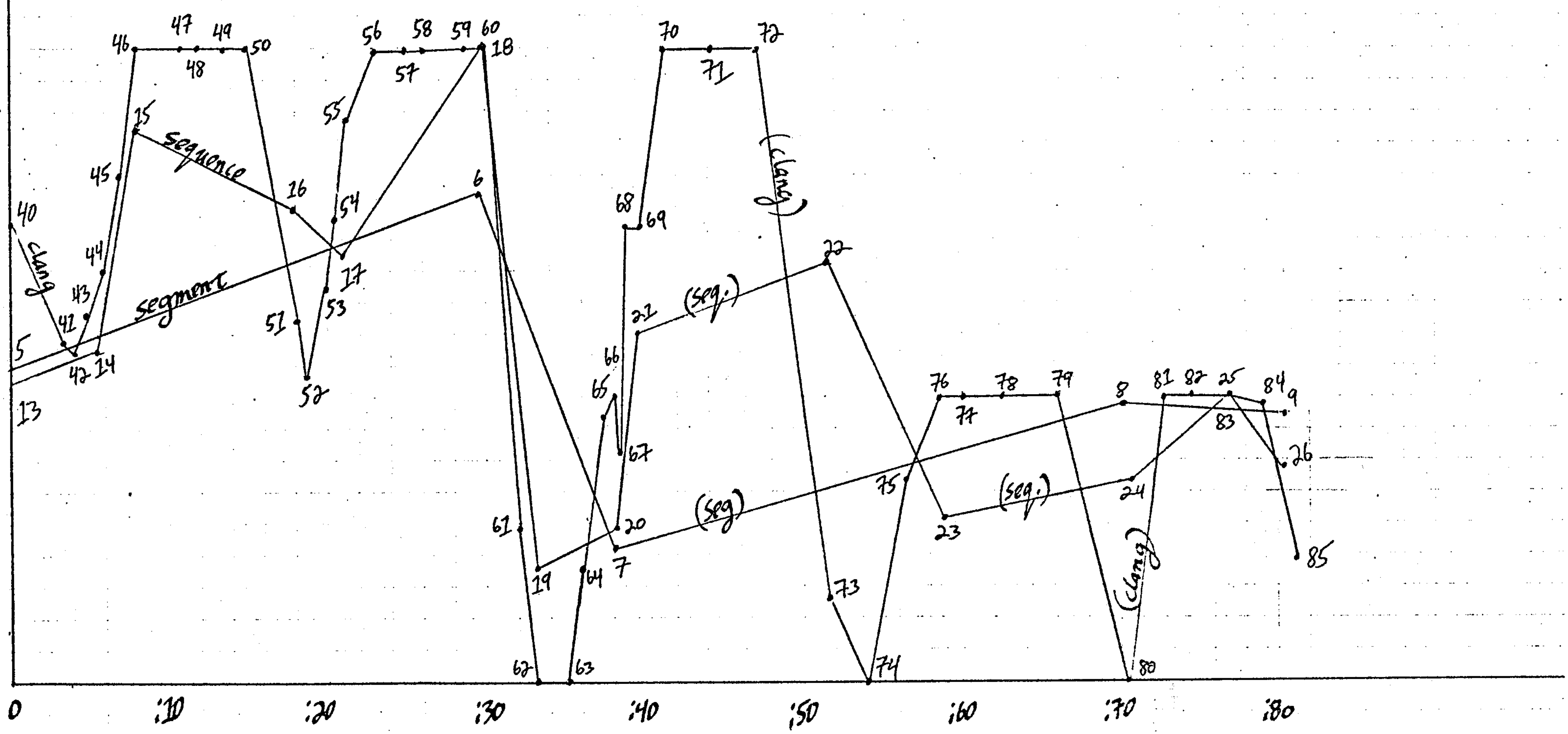


Chart III

Temporal Density Profiles: all levels
(section IV)

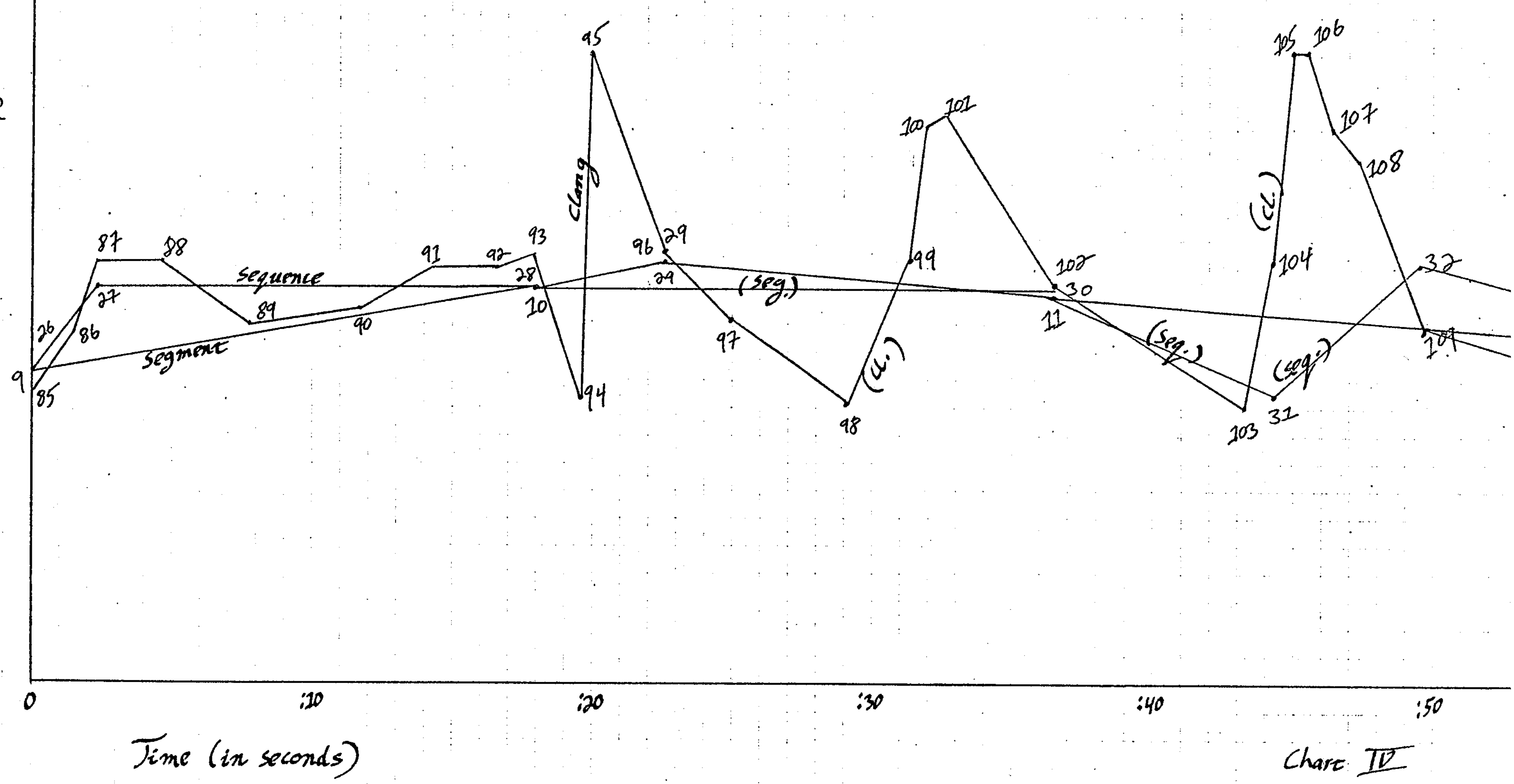


Chart IV

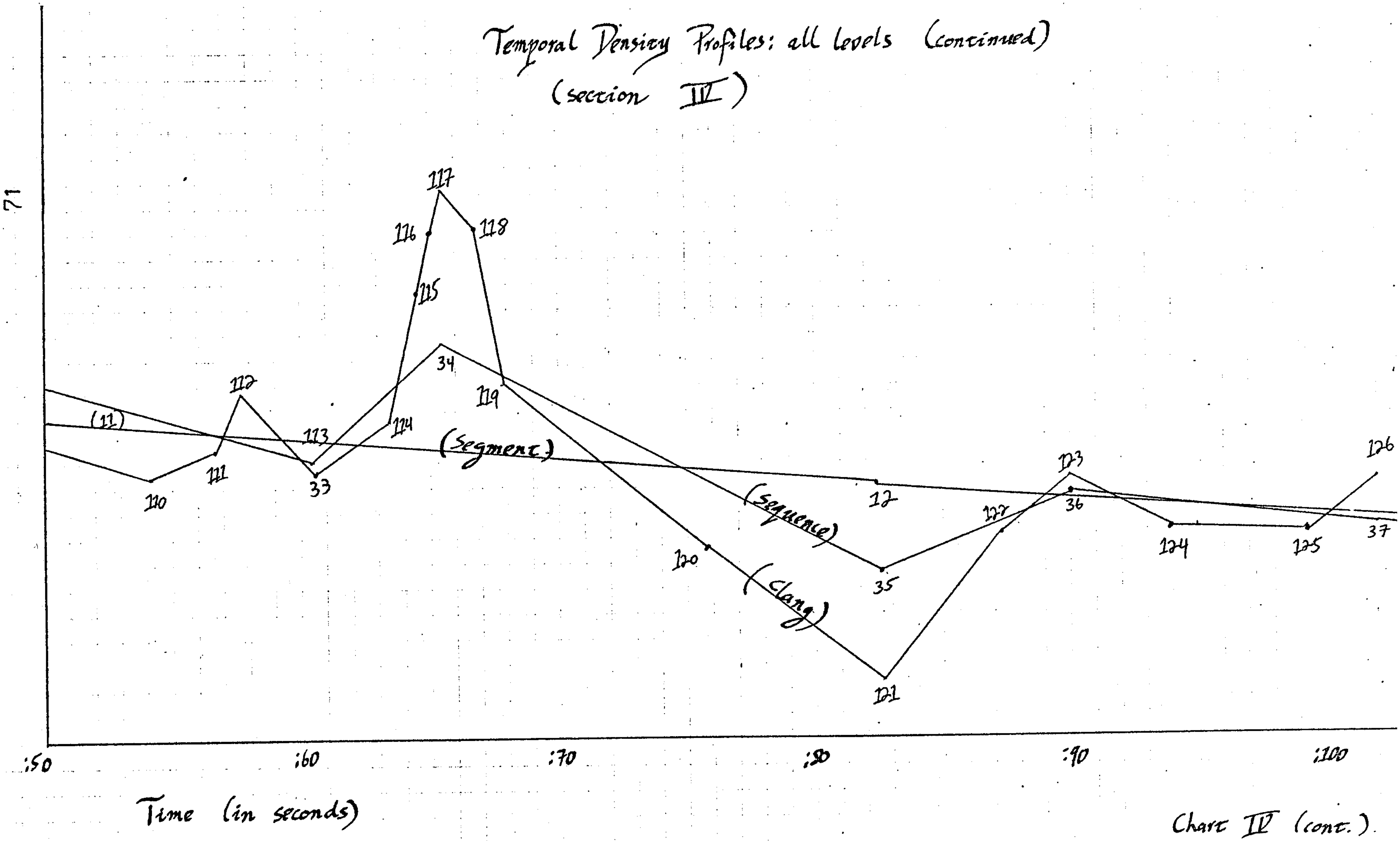
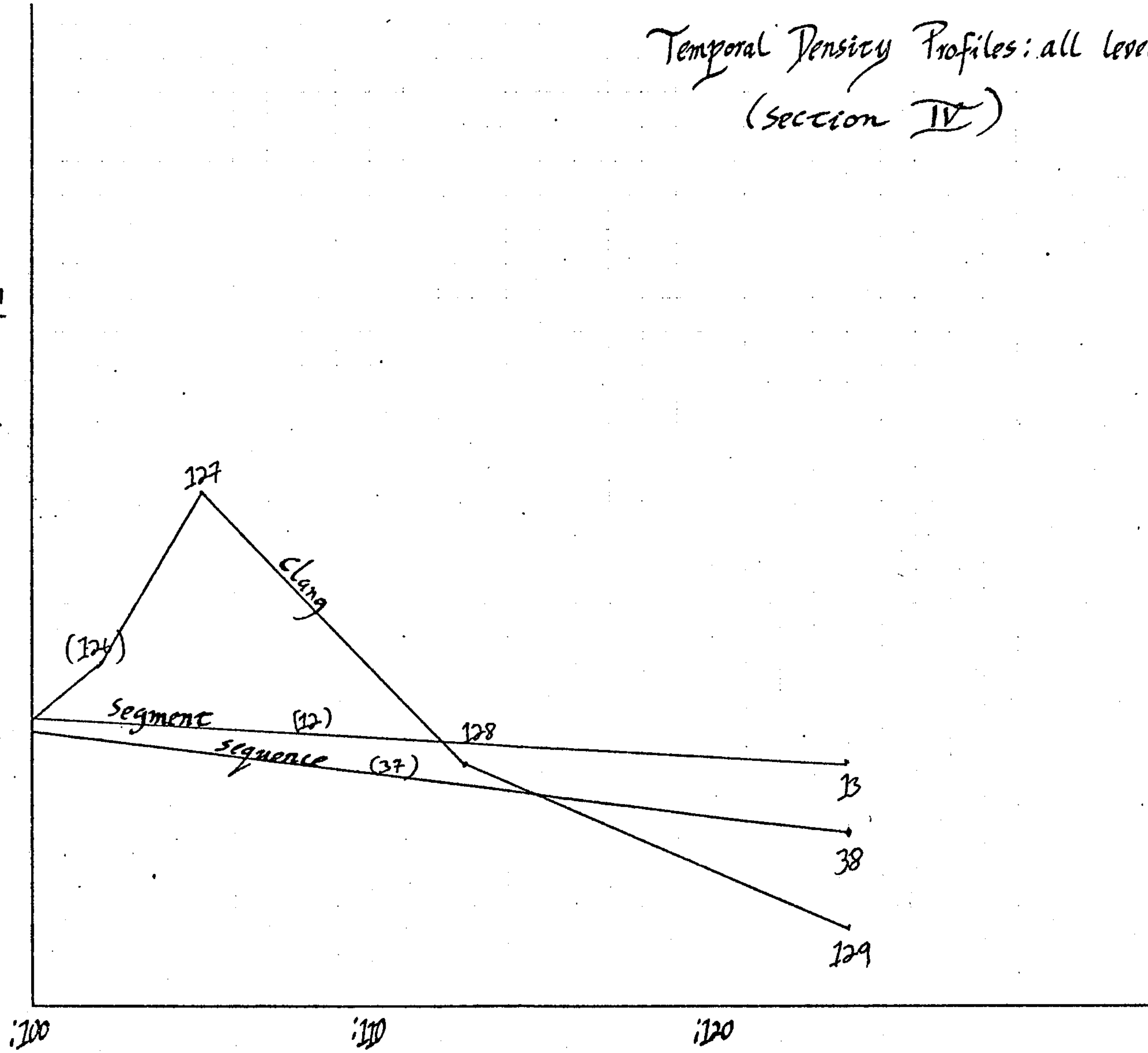


Chart IV (cont.)

Temporal Density Profiles: all levels (continued)
(section IV)



Time (in seconds)

Chart IV (cont.)

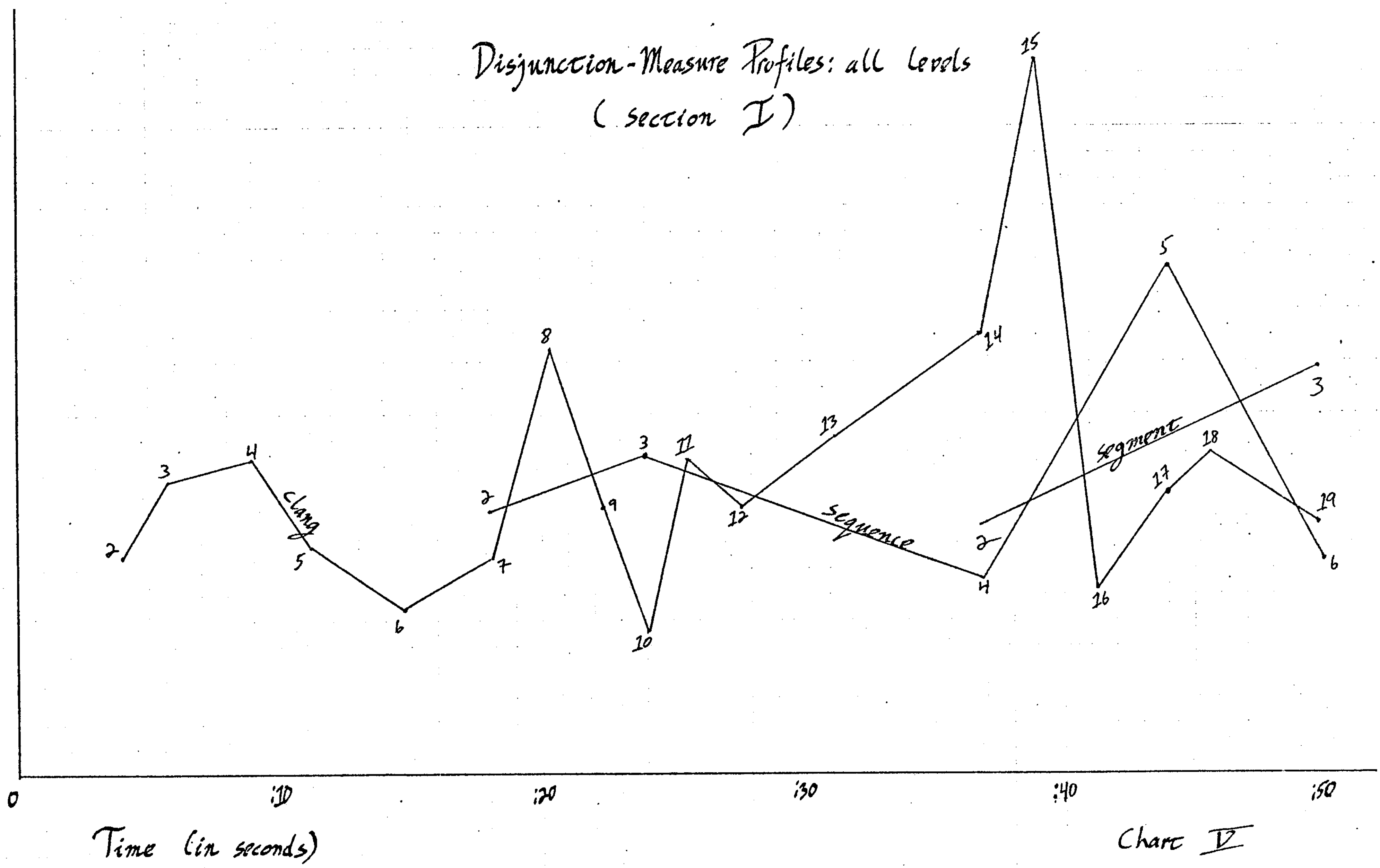

Disjunction-Measure Profiles: all Levels
(section I)
clang
sequence
segment
0
:10
:20
:30
:40
:50
Time (in seconds)

Chart V

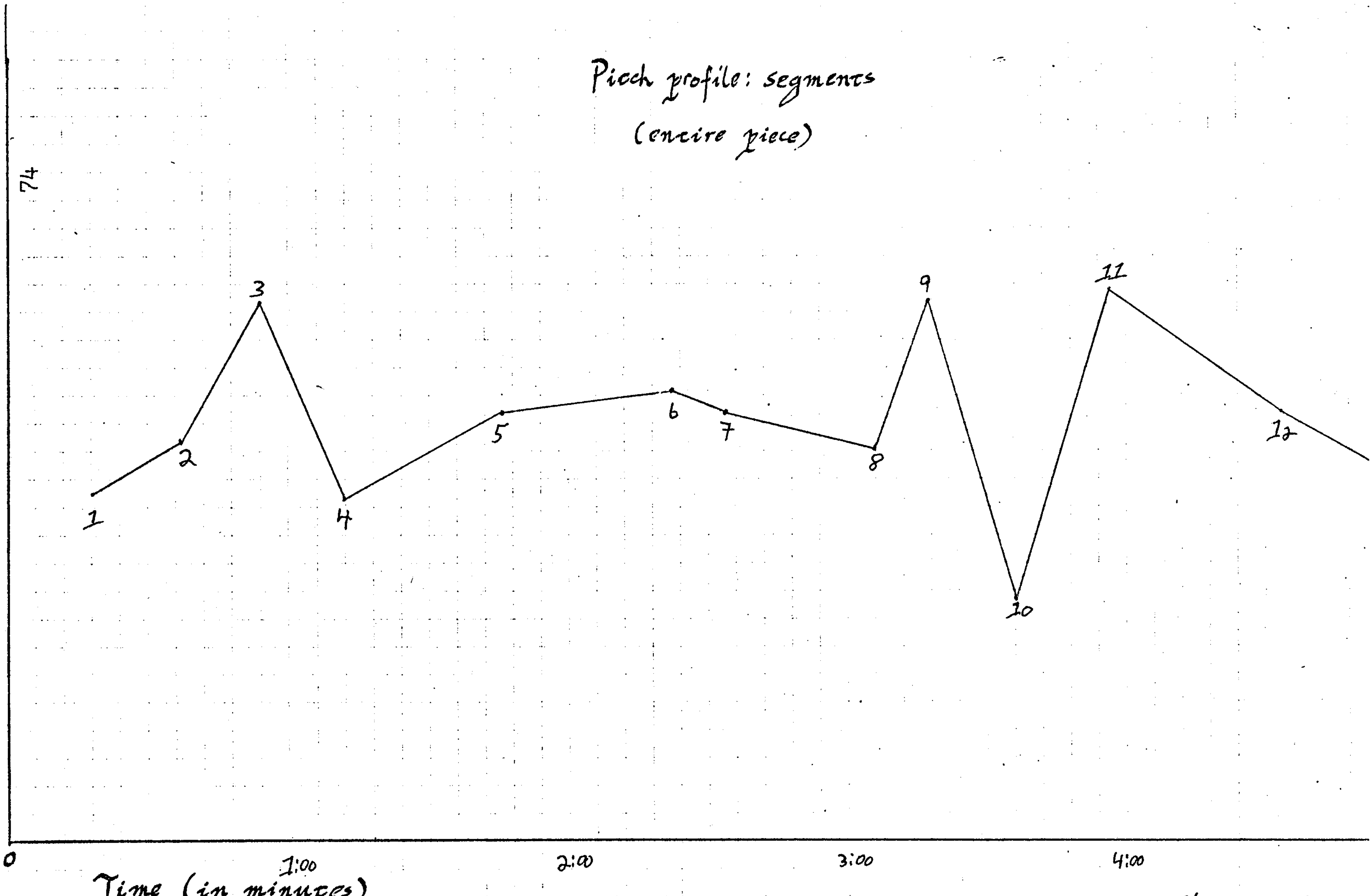
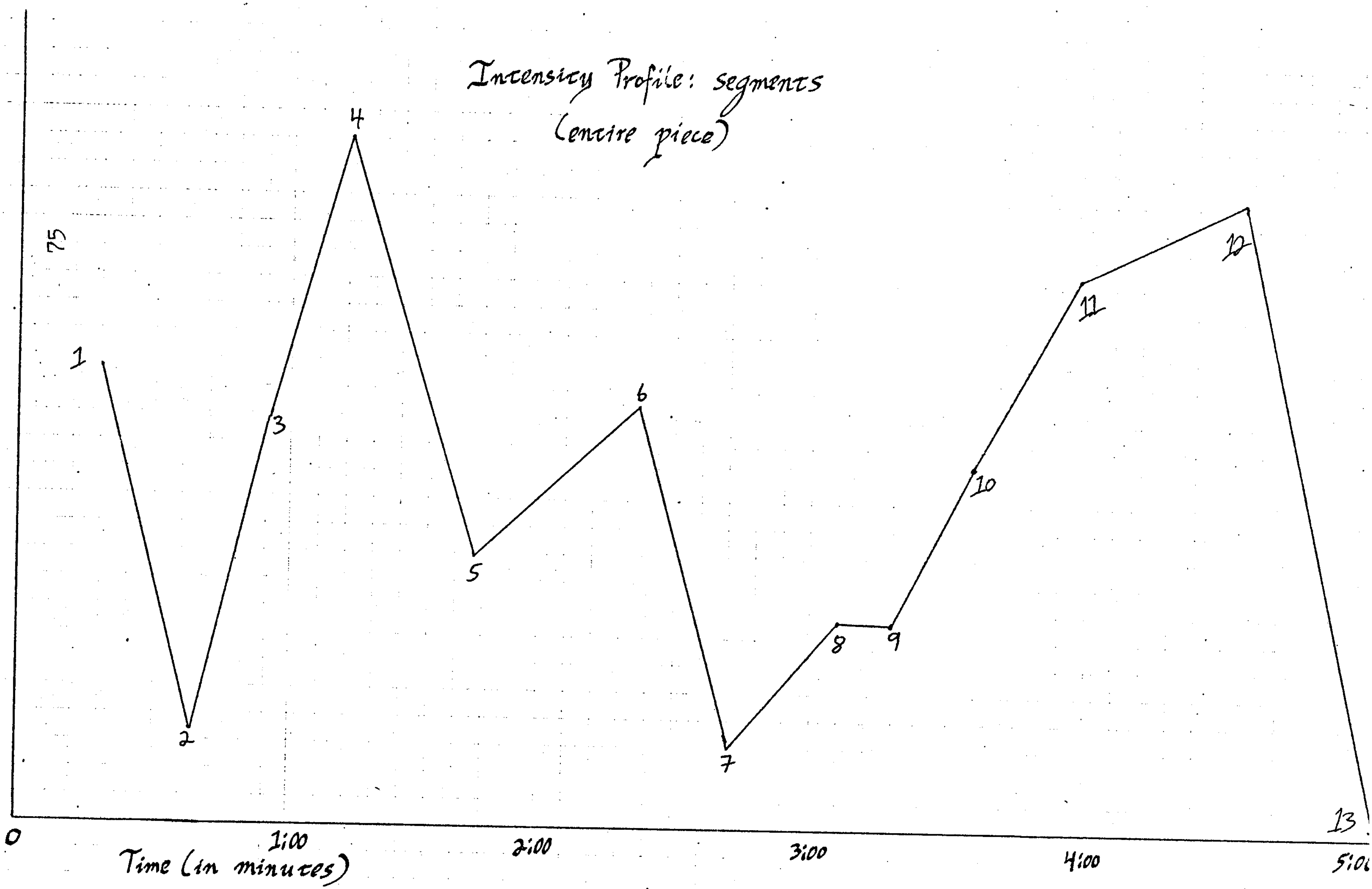

Pitch profile: segments
(entire piece)
1
2
3
4
5
6
7
8
9
10
11
12
0
1:00
2:00
3:00
4:00
Time (in minutes)

Chart VI



Intensity Profile: segments
(entire piece)
1
2
3
4
5
6
7
8
9
10
11
12
13
0
1:00
2:00
3:00
4:00
5:00
Time (in minutes)

Chart VII

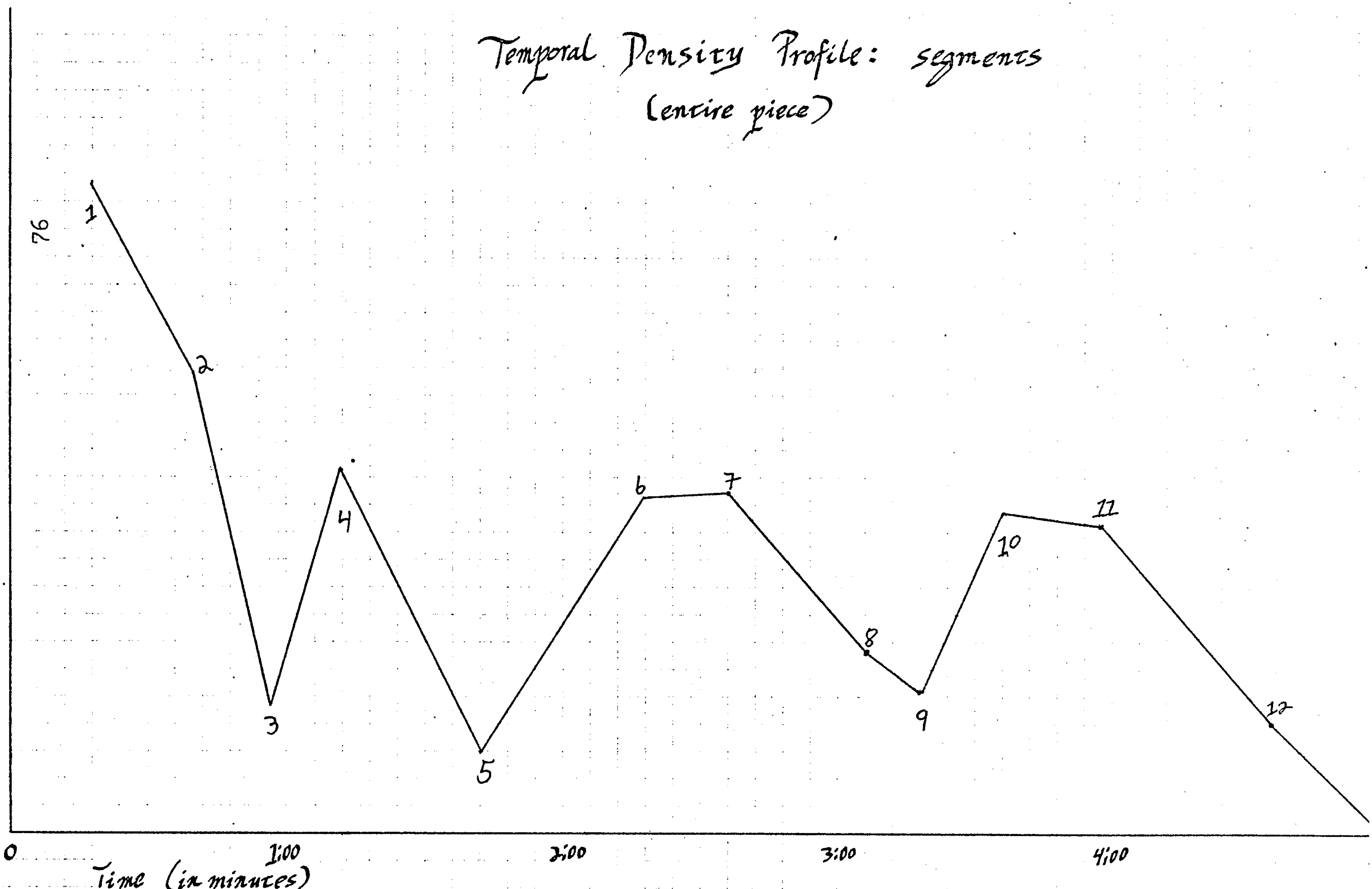

Temporal Density Profile: segments
(entire piece)
1
2
3
4
5
6
7
8
9
10
11
12
0
1:00
2:00
3:00
4:00
Time (in minutes)

Chart VIII

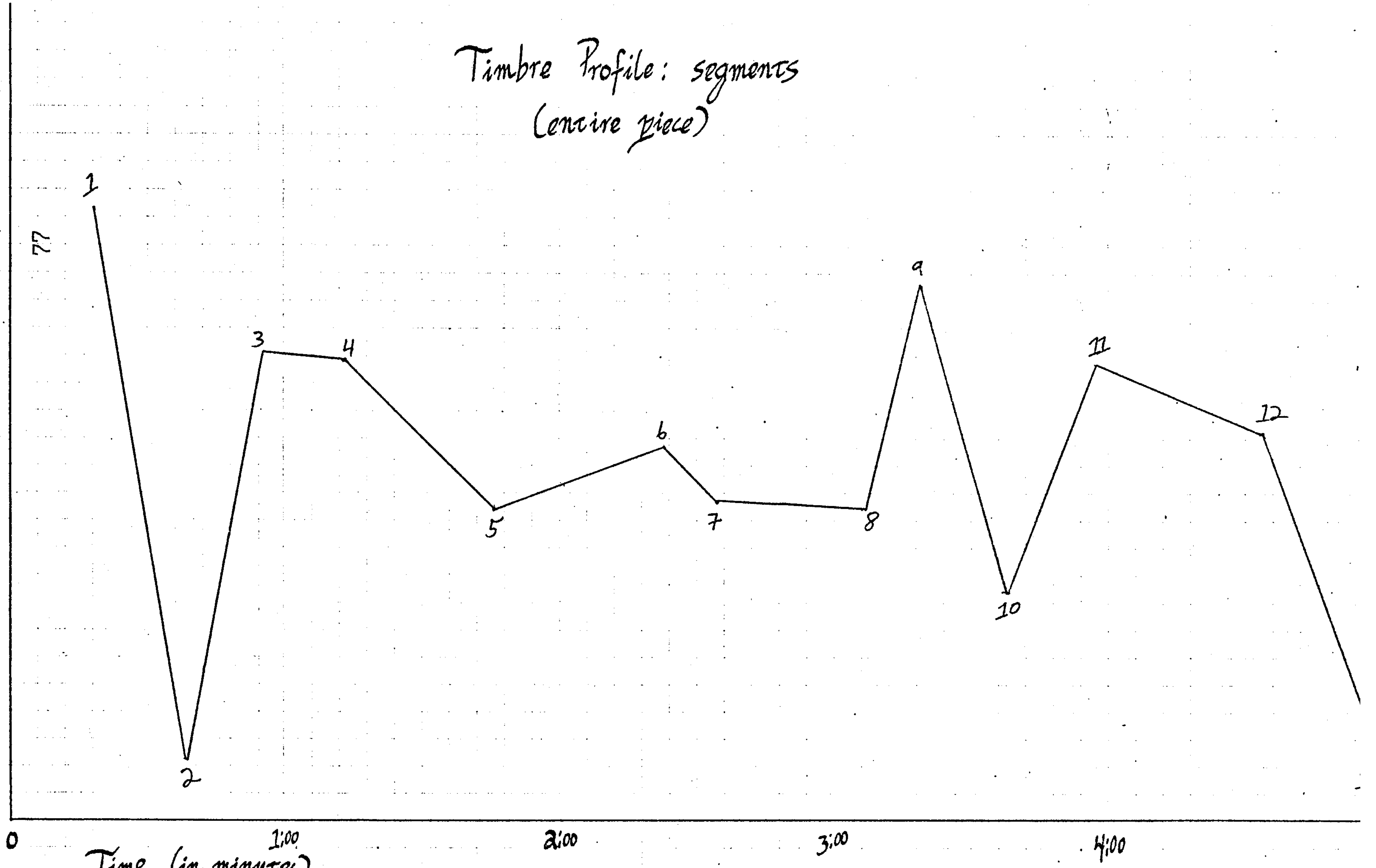

Timbre Profile: segments
(entire piece)
1
2
3
4
5
6
7
8
9
10
11
12
0
1:00
2:00
3:00
4:00
Time (in minutes)

Chart IX

Disjunction-measure Profile: segments
(entire piece)

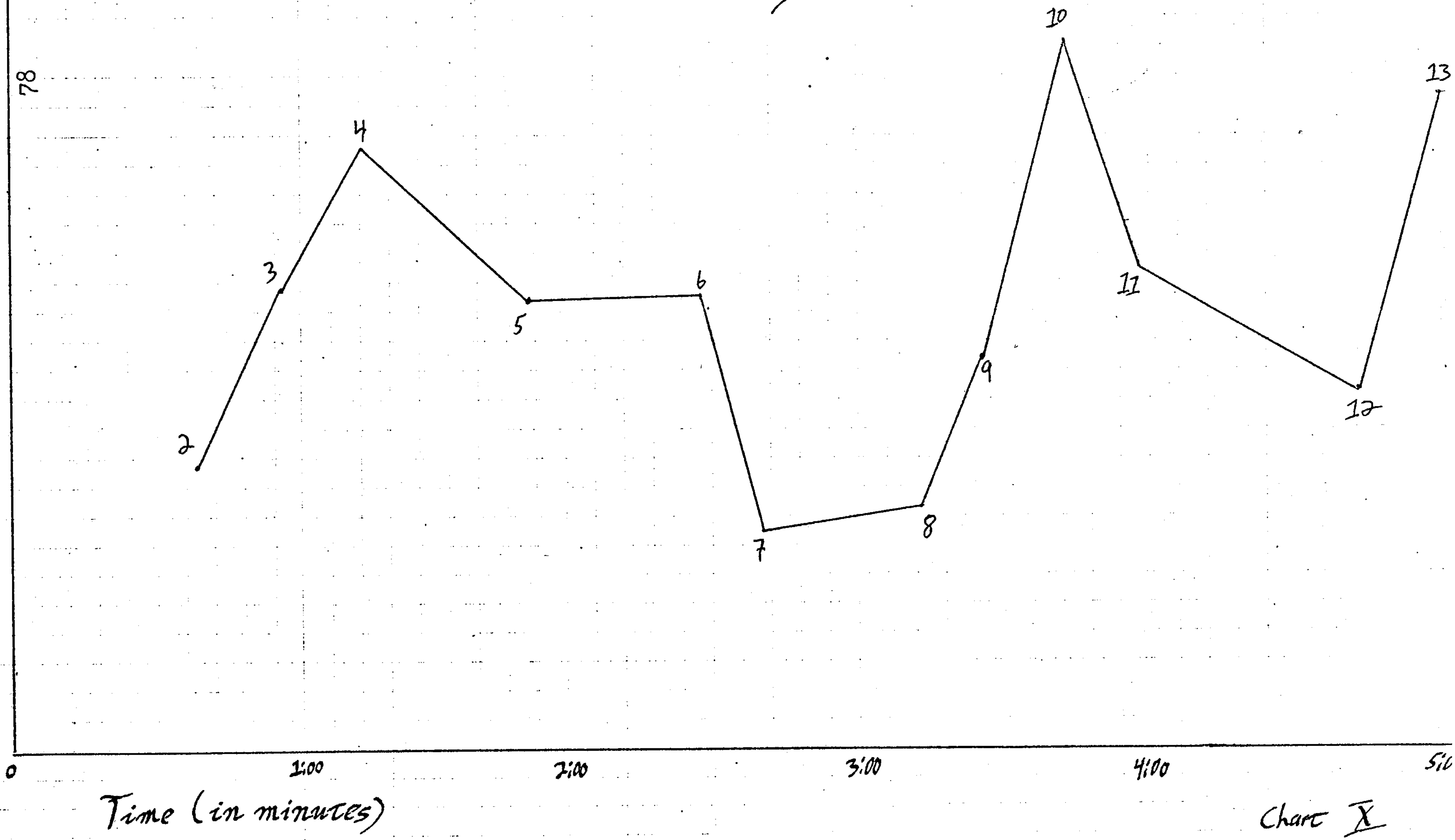


Chart X

Section Profiles: Pitch, Intensity, Temporal Density
(entire piece)

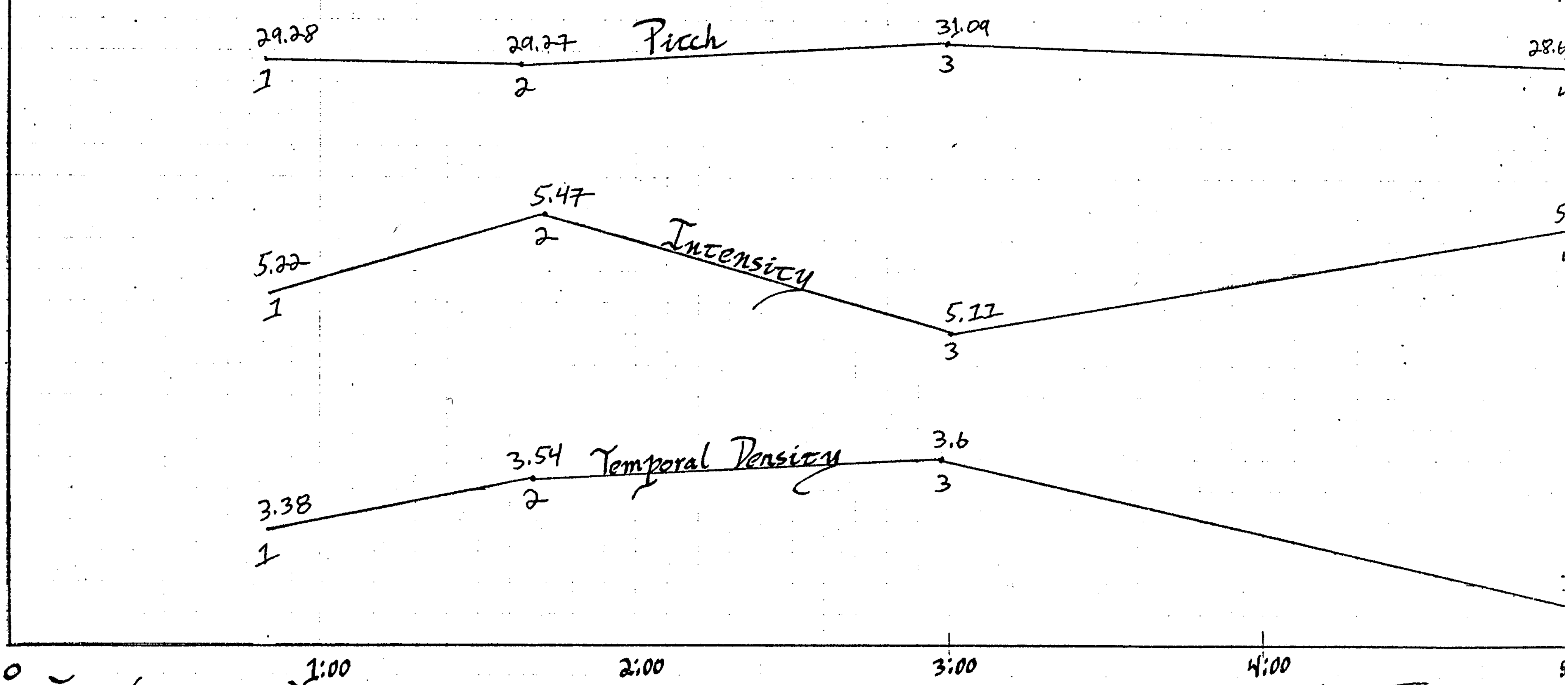


Chart XI

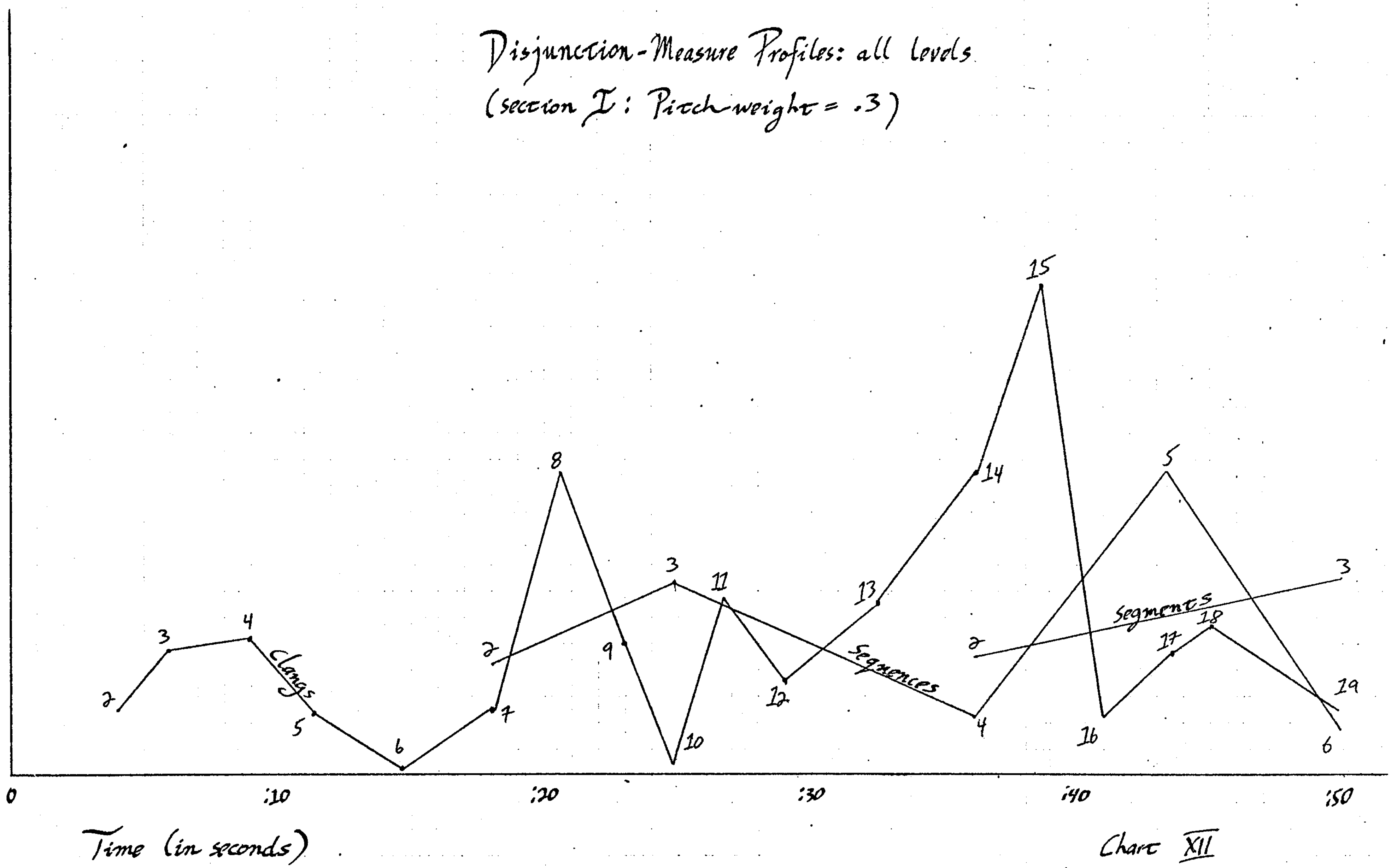

Disjunction-Measure Profiles: all levels
(section I: Pitch-weight = .3)
2
3
4
Clangs
5
6
7
2
8
9
3
10
11
12
13
Sequences
4
14
15
2
16
17
18
Segments
5
3
19
6
0
:10
:20
:30
:40
:50
Time (in seconds)

Chart XII

Disjunction-Measure Profiles: all levels
(section I: Pitch-weight = .6)

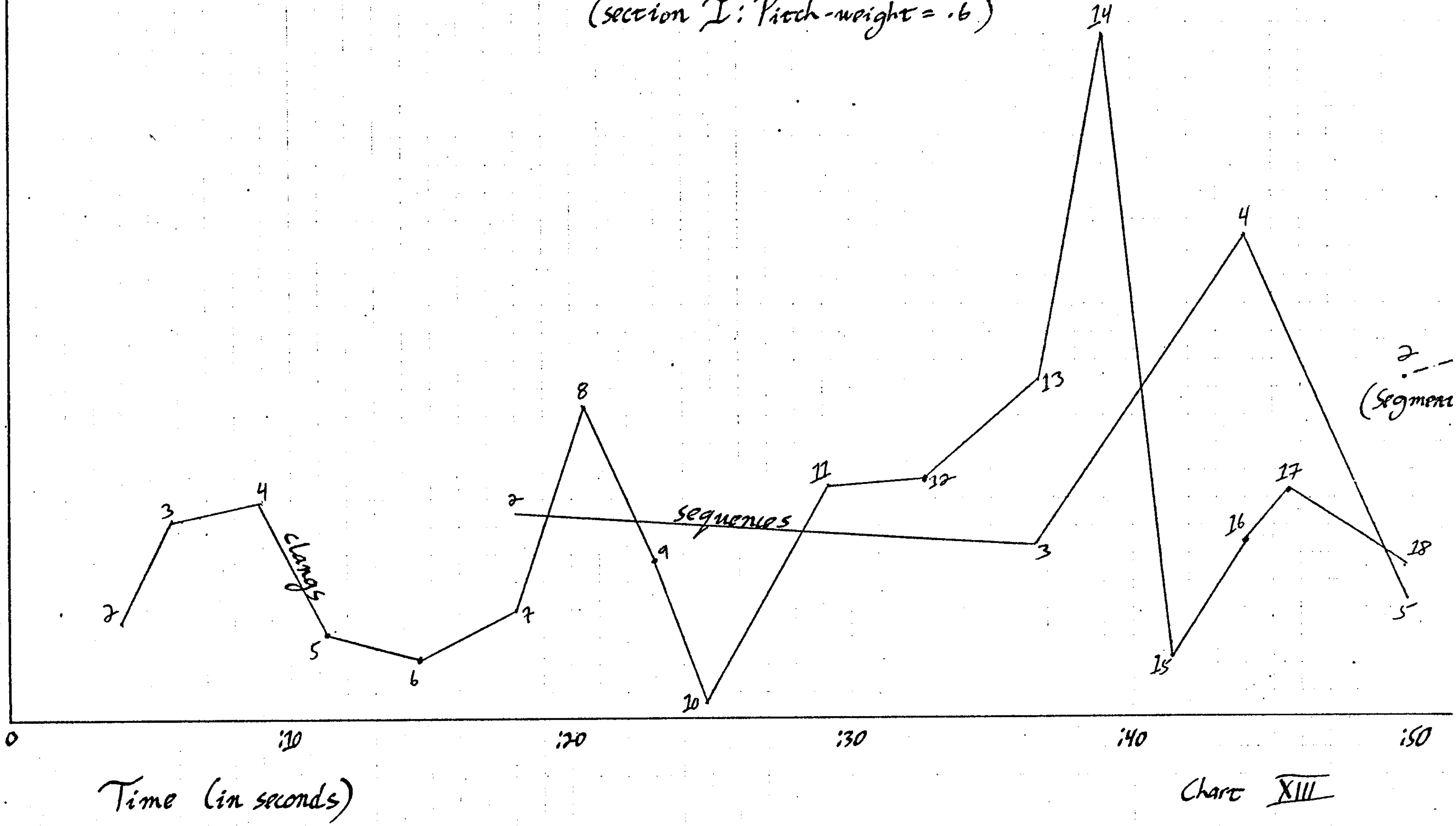


Chart XIII

Disjunction-Measure Profiles: all levels
(section I: Intensity-weight = 3)

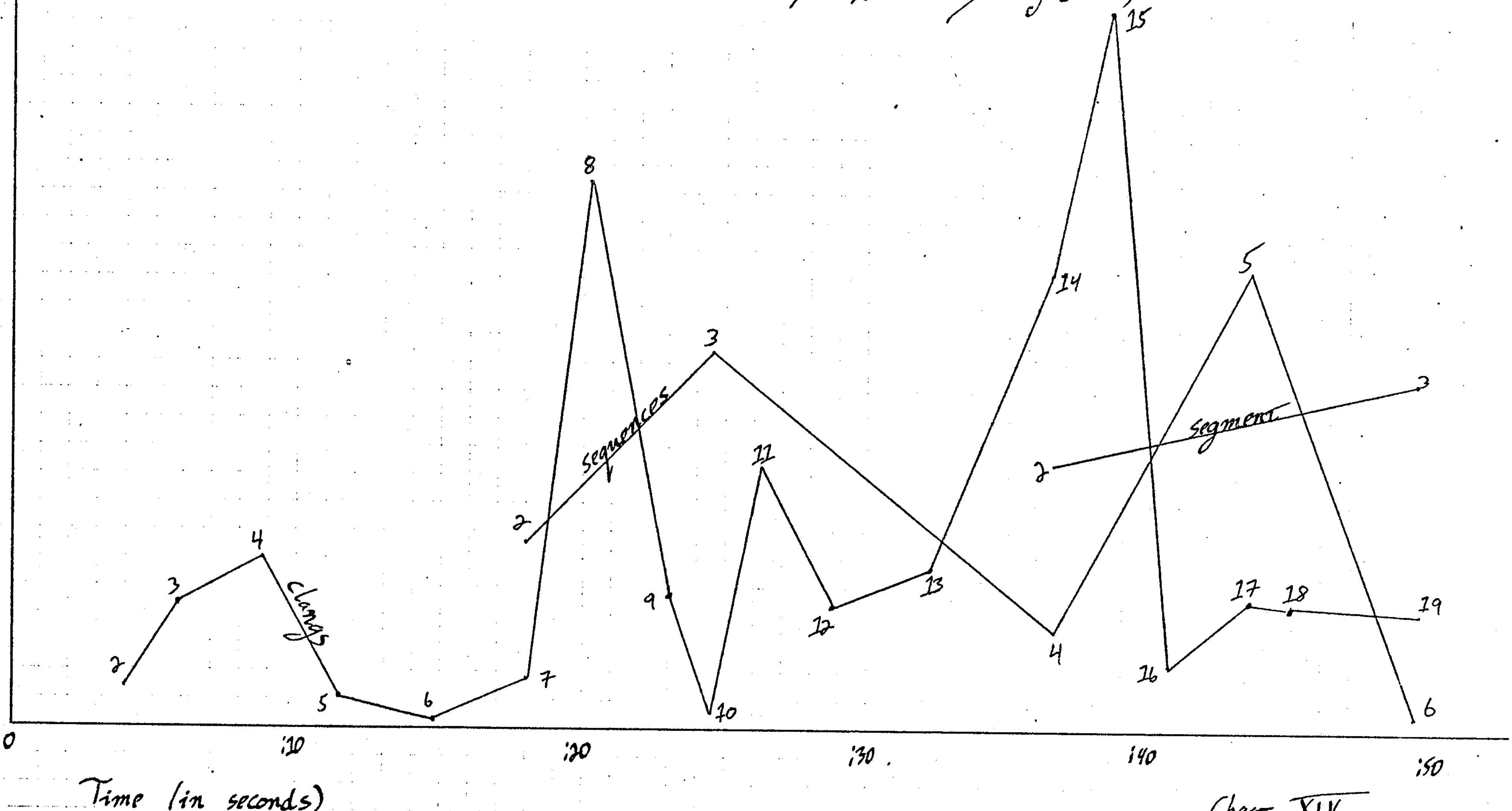


Chart XIV

APPENDIX II: SELECTED GLOBAL STATISTICS OF PORTALS

1) Means of element level parametric values.

Duration	.75
Pitch	29.56
Intensity	5.30
Rest Duration	.03
Temporal Density	3.84

-where intensity values are themselves means of initial and final element intensities. Note that in pitch and intensity, means are weighted by the durations of elements.

2) Ranges of element level parametric values.

	Minimum	Maximum	Range
Duration	.17	5.75	5.58
Pitch	-2.00	50.00	52.00
Intensity	3.00	7.50	4.50
Rest	0.0	1.08	1.08
TD	.48	5.58	1.18

3) Mean deviation of parametric values.

Mean deviation for intensity and pitch is given by the equation:

$$MD_p = \frac{\sum_{i=1}^{N} \left| (DUR_i * V_i) - M_p \right|}{\sum_{i=1}^{N} DUR_i}$$

-where DUR_i is the duration of element i; V_i is the parametric value of element i; M_p is the parametric mean; and N is the # of elements.

In the case of duration, rest, and temporal density:

$$MD_p = \frac{\sum_{i=1}^{N} V_p - M_p}{N}$$

Duration	.46
Pitch	7.89
Intensity	.82
Rest	.05
TD	.895

4) Means of element level parametric intervals.

Proximity	.75
Pitch	4.54
Intensity	3.10
TD	.71

5)Maximum element level parametric intervals (minimums are all zero).

Proximity	5.75
Pitch	29.00
Intensity	3.00
TD	4.33

6) Mean deviations of element level parametric intervals.

These are computed as the sum of the absolute values of differences between element level intervals and the mean parametric interval, divided by the number of intervals.

Proximity	.46
Pitch	3.04
Intensity	.15
Rest	.05
TD	.70

7) Element level disjunction-measures.

Mean: .9969 Maximum: 7.31 Minimum: .19 Range: 7.12

8) Means of parametric intervals for higher-levels.

	CLANGS	SEQUENCES	SEGMENTS	SECTIONS
Pitch	6.42	10.41	7.62	1.62
Intensity	.335	.741	.846	.25
TD	.469	.576	.430	.237
Timbre	.353	.800	1.095	.193

9) Ranges of parametric intervals of higher-levels.

	CLANGS	SEQUENCES	SEGMENTS	SECTIONS
Pitch Max.	21.35	32.53	21.74	2.75
Pitch Min.	.07	.97	.71	.01
Pitch Range	21.28	31.56	21.03	2.74
Intensity Max.	2.91	2.89	2.26	.36
Intensity Min.	0.0	.09	.02	.12
Int. Range	2.91	2.8	2.24	.24
TD Max.	2.39	1.83	1.01	.49
TD Min.	0.0	0.0	.03	.06
TD Range	2.39	1.83	.98	.43
Timbre Max.	2.88	3.18	3.10	.55
Timbre Min.	0.0	0.0	.01	.01
Timbre Range	2.88	3.18	3.09	.54

10) Disjunction-measures of higher-levels.

	(Elements)	Clangs	Sequences	Segments	Sections
Mean	(.996)	1.165	1.717	1.508	1.12
Max.	(7.31)	4.9	3.33	2.40	1.38
Min.	(.19)	.24	.72	.76	.91
Range	(7.12)	4.76	2.61	1.64	.47

APPENDIX III: PROGRAMME LISTING

```
$JOB     WATFIV   YFAFA018MUS,LINES=60,PAGES=175,T=180
           REAL P(1000),DUR(1000),RST(1000),AMP(1000),
     1     TIM(1000),TD(1000)
           REAL LOLEV,HILEV
           REAL TITLE(15)
           REAL A1(1000),A2(1000),P1(1000),P2(1000),TD1(1000)
     1,TD2(1000)
         REAL DM(1000),DMST(1000),DMD1(1000),DMD2(1000)
           REAL DMIN
         INTEGER ISTART(1000),IEND(1000)
         INTEGER NEXT(10),COUNT(10),NUMBER(10)
         INTEGER HICNT,FLAG,TEMPO1

                INITIALIZE AND READ IN SCORE
         TLOG(A)=ALOG(A)/ALOG(2.0)
         READ(5,39)TITLE
39       FORMAT(15A4)
         READ(5,40)NUMBER(1),CMIN,TEMPO1
40       FORMAT(I5,F5.2,I4)
           TEMPO=FLOAT(TEMPO1)/50.0
           ROUNDS OFF CMIN TO PREVENT FORTRAN ACCURACY ERRORS.
           CMIN=CMIN+.001
         WRITE(6,41)TITLE
41       FORMAT(1H1,15A4)

           WRITE(6,55)TEMPO1
55         FORMAT(1H0,'TEMPO (MM) =',I8)
           WRITE(6,38)CMIN
38         FORMAT(1H0,'CMIN=    ',F5.2)

         EPS1=0.0001
         N=NUMBER(1)
         DO 67 I=1,N
         READ(5,60)P(I),DUR(I),A1(I),A2(I),TIM(I),RST(I)
60         FORMAT(5X,6F5.0)
57       CONTINUE

           DO 9725 I=1,N
                   P1(I)=P(I)
                   DUR(I)=DUR(I)/TEMPO
                           TD(I)=3.0-TLOG(DUR(I))
                           TD1(I)=TD(I)
                   RST(I)=RST(I)/TEMPO
                   AMP(I)=(A1(I)+A2(I))/2.0
9725               P2(I)=P(I)
                   CMIN=CMIN/TEMPO
           READ(5,70)NPASS
70         FORMAT(I4)
           DO 9600 ILOOP=1,NPASS
                           N=NUMBER(1)
         READ(5,72)DW,PW,AW,TDW,TW
72         FORMAT(5F6.2)
         WRITE(6,74)DW,PW,AW,TDW,TW
74       FORMAT(1H0,'WEIGHTINGS: PROXIMITY=',
     1   F5.2,' PITCH=',F5.2,' INTENSITY=',F5.2,' TEMPORAL DENSITY=',
     2   F5.2,' TIMBRE=',F5.2)
           WSUM=PW+DW+TDW+AW+TW
           PW=PW/WSUM
           DW=DW/WSUM
```

```
      AW=AW/WSUM
      TW=TW/WSUM
      DO 76 K=1,10
76             COUNT(K)=0
      DO 78 K=1,1000
          DM(K)=0.0
      DMD1(K)=0
      DMD2(K)=0
               IEND(K)=0
78             ISTART(K)=0

                       DW=DW*10.0
                       AW=AW*2.0

               INTIALIZES BOUNDARIES ON FIRST LEVEL
    DO 1777 I=2,N
               PI=PW*(P1(I)-P2(I-1))
               TDI=0.0
               DI=DW*(RST(I-1))
               IF (RST(I-1).EQ.0.)ALAST=A2(I-1)
               IF(RST(I-1).GT.0.)ALAST=0.
               AI=AW*(A1(I)-ALAST)
               DM(I)=(ABS(DI)+ABS(PI)+ABS(TDI)+ABS(AI))
      DM(I)=DM(I)*2.0

1777  CONTINUE
      DO 80 I=501,1000
               P(I)=0
               DUR(I)=0
               AMP(I)=0
               TD(I)=0
               TIM(I)=0
               RST(I)=0
      CONTINUE

      LEVEL=0


               MAIN PROGRAM


      SETS NEW LEVEL,CLEARS COUNTER(CHECK), AND INITIALIZES
      FLAG, WHICH TELLS YOU IF YOU'VE FINISHED ON A LEVEL.
      CHECK IS A VARIABLE WHICH SEES IF THERE ARE ENOUGH
      TG'S CURRENTLY TO COMPUTE FOR INITIATION.

100   CHECK=0
      ET=0.
      FLAG=0
      LEVEL=LEVEL+1


               SETS ARRAY INDICES.
      LOLEV= (2.0**(LEVEL-1))
      HILEV= (2.0**(LEVEL))
      K1=1000.0-((1.0/LOLEV)*1000.0)
      K2=1000.0-((1.0/HILEV)*1000.0)
      WRITE(6,9375)
```

```
C     TO TRY AND MAKE DISTINCTIONS. SO PROGRAM TERMINATES.
      IF (NUMBER(LEVEL).LT.4) GO TO 9000
      HICNT=1
      ISTART(K2+1)=K1+1
C
C            SPECIFIC PLANAR COMPUTATION
500   COUNT(LEVEL)=COUNT(LEVEL)+1
      TCOUNT=CCUNT(LEVEL)
      CHECK=CHECK+1
      IF(TCOUNT.LF.NUMBER(LEVEL))GO TO 550
      FLAG=1
      GO TC 700
C
C
C     KEEPS TRACK OF ELAPSED TIME IN TG.
550   ET=ET+DUR(TCCUNT+K1)
C
C     CHECKS FCR 'ONE ELEMENT CLANGS'.
      IF(CHECK.LT.2)GO TO 500
C
C            COMPUTE INTERVAL (DISJUNCTION MEASURE)
      IND=(TCCLNT+K1)
C
C            MEAN INTERVALS
      PI=PW*(P(IND)-P(IND-1))
      DI=DW*DUR(IND-1)
      IF (LEVEL.GT.1)DI=0
      TDI=TDW*(TD(IND)-TD(IND-1))
      AI=AW*(AMP(IND)-AMP(IND-1))
      TI=TW*(TIM(IND)-TIM(IND-1))
C            SUMS MEAN INTERVALS.
      ABSUM=ABS(PI)+ABS(TDI)+ABS(AI)+ABS(TI)+DI
C
C
C            "CITY-BLCCK" METRIC.
      DM(IND)=.5*DM(IND)+ABSUM
C
      IF(TCOUNT.LT.4)GO TO 650
C
C     COMPUTES DIFFERENCE OF PEAK WITH SURROUNDING DM'S TO GIVE
C     ROUGH IDEA OF STRENGTH OF INITIATOR.
      DMD1(IND-1)=1.0-(DM(IND-2)/DM(IND-1))
      DMD2(IND-1)=1.0-(DM(IND)/DM(IND-1))
C
650   IF (CHECK.LT.4) GO TO 500
C
C     CHECKS MINIMUM TG LENGTH.
      ETCHK=ET-(DUR(IND-1)+DUR(IND))
      IF(ETCHK.LE.CMIN)GO TC 500
C
C            TESTS FOR PEAK.
      IF ((DMD1(IND-1).LT.EPS1).OR.(DMD2(IND-1).LT.EPS1))
     1GO TO 500
C
C     IF DMST POSITIVE, THEN PEAK. IF ZERO, THEN NOT PEAK.
C            COMPUTE PEAK STRENGTH.
      DMST(IND-1)=(DMD1(IND-1)+DMD2(IND-1))/2.
C
C            IF PEAK, VALUES ARE STORED FOR NEXT LEVEL STATES.
700   PITSUM=0
```

```
      TIMSUM=0
      AMPSUM=0
      DURSUM=0
      TDSUM=0
      JEND=TCOUNT+K1-2
      IF(FLAG.EQ.1)JEND=TCOUNT+K1-1
      HYIND=HICNT+K2
      JBEGIN=ISTART(HYIND)


      DO 800 I=JBEGIN,JEND
              DURSUM=DURSUM+DUR(I)
              TIMSUM=TIMSUM+(DUR(I)*TIM(I))
              AMPSUM=AMPSUM+(DUR(I)*AMP(I))
              PITSUM=PITSUM+(DUR(I)*P(I))
              IF(LEVEL.EQ.1)TDSUM=TDSUM+TD(I)
              IF (LEVEL.NE.1)TDSUM=TDSUM+(DUR(I)*TD(I))
800   CONTINUE

      ADJUSTS ELAPSED TIME W.R.T NEW TG JUST COMPUTED.

      ET=ET-DURSUM

              STORE  VALUES AS NEXT LEVEL STATES.

      DUR(HYIND)=DURSUM
      P(HYIND)=PITSUM/DURSUM
      AMP(HYIND)=AMPSUM/DURSUM
      TIM(HYIND)=TIMSUM/DURSUM
      IF (LEVEL.EQ.1)TD(HYIND)=TDSUM/(JEND-JBEGIN+1)
      IF (LEVEL.NE.1)TD(HYIND)=TDSUM/DURSUM
      P1(HYIND)=P(JBEGIN)
      P2(HYIND)=P(JEND)
      RST(HYIND)=DUR(JEND)
      A1(HYIND)=AMP(JBEGIN)
      A2(HYIND)=AMP(JEND)
      TD1(HYIND)=TD(JBEGIN)
      TD2(HYIND)=TD(JEND)
      DM(HYIND)=DM(JBEGIN)

      RESETS COUNTERS FOR NEW TG, REMAINING ON CURRENT LEVEL.

      NUMBER(LEVEL+1)=HICNT
      IEND(HYIND)=TCOUNT+K1-2
      IF (FLAG.EQ.1)IEND(HYIND)=TCOUNT+K1-1
      IF (FLAG.EQ.1) GO TO 100
      HICNT=HICNT+1
      CHECK=2
      HYIND=HICNT+K2
      ISTART(HYIND)=TCOUNT+K1-1
      GO TO 500
C
C
C             PRINTING SUBROUTINE.
9000  K1=LEVEL
      J=NUMBER(1)
              DO 9010 K=1,10
9010                  NEXT(K)=1
```

```
C
      DO 9500  I=1,J
               WRITE(6,9050)I,DUR(I),RST(I),P(I),TD(I),
     1         A1(I),A2(I),TIM(I),DM(I),DMST(I),DMD1(I),DMD2(I)
 9050          FORMAT(1H ,I4,9F6.2,5X,2F6.2)
C
      IREF=I
C
      DO 9400  M=2,K1
      N=NEXT(M)
      W5=INT(2.0**(M-1))
      K6=1000-((1/W5)*1000)
      INDX=N+K6
      INDX=1000-((1/W5)*1000)+N
      IF (IEND(INDX).NE.IREF)GO TO 9500
    GO TO (9500,9100,9150,9200,9250,9300),M
C
C
C     CLANGS
 9100 WRITE(6,9125)
     1 NEXT(M),DUR(INDX),RST(INDX),P1(INDX),P2(INDX),
     2 P(INDX),TD1(INDX),TD2(INDX),TD(INDX),
     3 A1(INDX),A2(INDX),AMP(INDX),TIM(INDX),
     4 DM(INDX),DMST(INDX),DMD1(INDX),DMD2(INDX)
 9125 FORMAT(1H0,8X,I4,14F6.2,4X,2F6.2)
      IREF=NEXT(M)+K6
      NEXT(M)=NEXT(M)+1
      WRITE(6,9375)
      GO TO 9400
C
C     SEQUENCES
 9150  WRITE(6,9175)
     1 NEXT(M),DUR(INDX),RST(INDX),P1(INDX),P2(INDX),
     2 P(INDX),TD1(INDX),TD2(INDX),TD(INDX),
     3 A1(INDX),A2(INDX),AMP(INDX),TIM(INDX),
     4 DM(INDX),DMST(INDX),DMD1(INDX),DMD2(INDX)
 9175 FORMAT(1H0,16X,I4,14F6.2,4X,2F6.2)
      IREF=NEXT(M)+K6
      NEXT(M)=NEXT(M)+1
      WRITE(6,9375)
      GO TO 9400
C
C     SEGMENTS.
 9200 WRITE(6,9225)
     1 NEXT(M),DUR(INDX),RST(INDX),P1(INDX),P2(INDX),
     2 P(INDX),TD1(INDX),TD2(INDX),TD(INDX),
     3 A1(INDX),A2(INDX),AMP(INDX),TIM(INDX),
     4 DM(INDX),DMST(INDX),DMD1(INDX),DMD2(INDX)
 9225 FORMAT(1H0,24X,I4,14F6.2,4X,2F6.2)
      IREF=NEXT(M)+K6
      NEXT(M)=NEXT(M)+1
      WRITE(6,9375)
      GO TO 9400
C
C     SECTIONS.
```

```
)250    WRITE(6,9275)
   1    NEXT(M),DUR(INDX),RST(INDX),P1(INDX),P2(INDX),
   2    P(INDX),TD1(INDX),TD2(INDX),TD(INDX),
   3    A1(INDX),A2(INDX),AMP(INDX),TIM(INDX),
   4   DM(INDX),DMST(INDX)
 75     FORMAT(1H0,I5,14F6.2)
        IREF=NEXT(M)+K6
        NEXT(M)=NEXT(M)+1
        WRITE(6,9375)
        GO TO 9400

 00     WRITE(6,9325)
   1    NEXT(M),DUR(INDX),RST(INDX),P1(INDX),P2(INDX),
   2    P(INDX),TD1(INDX),TD2(INDX),TD(INDX),
   3    A1(INDX),A2(INDX),AMP(INDX),TIM(INDX),
   4   DM(INDX),DMST(INDX)
325     FORMAT(1H0,I5,14F6.2)
        IREF=NEXT(M)+K6
        NEXT(M)=NEXT(M)+1
        WRITE(6,9375)
        GO TO 9400

 75     FORMAT(' ')
400     CONTINUE
500     CONTINUE
 00     CONTINUE
080     STOP
        END

ENTRY
```

APPENDIX IV: I-O FOR PORTALS

1) Output: In the output data, the hierarchical segmentation and the states and disjunctions of TG's are shown. TG's are printed <u>after</u> their lower-level components, and the indentation shows the hierarchical level. The <u>rest duration</u> of a higher-level TG is the duration of its final next-lower-level component. DMST is a relative measure of peak strength, which is non-zero only when there is a peak. DMD1 and DMD2 are also relative measures of disjunction strength, which, when both positive, indicate a peak. See the programme itself for details on these values, which are not integral to the programme's operation.

For clang level and higher, P1,P2,TD1,TD2,I1,I2 - are the initial and final parametric values of the next-lower-level components in pitch, TD, and intensity.

EL#	DUR.	RST. DUR	PITCH	TD	I1	I2	TIM.	DM	DMST	DMD1	DMD2
1	0.50	0.00	17.00	4.00	5.00	5.00	3.50	0.00	0.00	0.00	0.00
2	1.33	0.00	16.00	2.58	5.00	5.00	3.50	0.54	0.00	0.00	0.00

CLANG: #	DUR	RST	P1	P2	Pitch	TD1	TD2	TD	I1	I2	Int.	Tim.	DM	DMST	DMD1	DMD2
1	1.83	1.33	17.00	16.00	16.27	4.00	2.58	3.29	5.00	5.00	5.00	3.50	0.00	0.00	0.00	0.00

3	0.33	0.00	10.00	4.58	5.00	5.00	3.50	1.56	0.72	0.65	0.80
4	0.33	0.00	9.00	4.58	5.00	5.00	3.50	0.32	0.00	-3.92	-2.81
5	1.50	0.00	20.00	2.42	5.00	5.00	3.50	1.20	0.00	0.74	-0.50

2	2.17	1.50	10.00	20.00	16.77	4.58	2.42	3.86	5.00	5.00	5.00	3.50	0.84	0.00	0.00	0.00

6	0.25	0.00	13.00	5.00	5.00	5.10	3.50	1.80	0.49	0.33	0.65
7	0.25	0.00	19.00	5.00	5.10	5.20	3.50	0.64	0.00	-1.84	-0.19
8	1.33	0.00	24.00	2.58	5.20	5.50	3.50	0.75	0.00	0.16	-0.82

3	1.83	1.33	13.00	24.00	21.82	5.00	2.58	4.19	5.05	5.35	5.28	3.50	1.15	0.00	0.27	-0.05

SEQUENCE: #	DUR.	RST.	P1	P2	Pitch	TD1	TD2	TD	I1	I2	INT.	TIM.	DM	DMST	DMD1	DMD2
1	5.83	1.83	16.27	21.82	18.20	3.29	4.19	3.79	5.00	5.28	5.09	3.50	0.00	0.00	0.00	0.00

9	0.33	0.00	27.00	4.58	5.50	5.65	3.50	1.37	0.50	0.45	0.54
10	0.33	0.00	22.00	4.58	5.65	5.80	3.50	0.63	0.00	-1.18	-0.54
11.	1.00	0.00	30.00	3.00	5.80	6.00	3.50	0.97	0.00	0.35	-0.42

```
12  1.50   0.00 38.00  2.42   6.00   6.00   3.50   1.37   0.00          0.29 -0.10

         4   3.17   1.50 27.00 38.00 32.63   4.58   2.42   3.65   5.57   6.00   5.89   3.50   1.21   0.20        0.05   0.35

13  0.50   0.00 34.00  4.00   6.00   6.00   3.50   1.50   0.37          0.09  0.66
14  0.50   0.00 32.00  4.00   6.00   6.00   3.50   0.51   0.00         -1.94  0.14
15  0.50   0.00 31.00  4.00   6.00   6.00   3.50   0.44   0.00         -0.17 -0.26
16  0.75   0.00 33.00  3.42   6.00   6.00   3.50   0.55   0.00          0.21 -0.56

         5   2.25   0.75 34.00 33.00 32.56   4.00   3.42   3.85   6.00   6.00   6.00   3.50   0.78   0.00       -0.54   0.16

17  0.58   0.00 29.00  3.78   6.00   6.00   3.50   0.87   0.20          0.36  0.04
18  0.33   0.00 25.00  4.58   6.00   6.00   0.00   0.83   0.00         -0.05  0.47
19  0.33   0.00 23.00  4.58   6.00   6.00   3.50   0.44   0.00         -0.88 -0.41
20  0.67   0.00 27.00  3.58   6.00   6.20   3.50   0.62   0.00          0.29 -0.07
21  1.33   0.00 28.00  2.58   6.20   6.50   3.50   0.67   0.00          0.07 -0.74

         6   3.25   1.33 29.00 28.00 27.15   3.78   2.58   3.82   6.00   6.35   6.16   3.14   0.66   0.00       -0.19 -0.29

22  1.00   0.00 26.00  3.00   6.50   6.40   3.50   1.16   0.26          0.43  0.10
23  1.00   0.00 22.00  3.00   6.40   6.20   3.50   1.04   0.00         -0.12  0.09
24  1.50   0.50 20.00  2.42   6.20   6.00   3.50   0.95   0.00         -0.10 -1.70

         7   3.50   1.50 26.00 20.00 22.29   3.00   2.42   2.81   6.45   6.10   6.26   3.50   0.85   0.00        0.22 -0.94

              2 12.17   3.50 32.63 22.29 28.18   3.65   2.81   3.49   5.89   6.26   6.09   3.40   1.14   0.00        0.00   0.00

           SEGMENT:  1 18.00 12.17 18.20 28.18 24.94   3.79   3.49   3.59   5.09   6.09   5.77   3.44   0.00   0.00        0.00   0.00

25  0.58   0.00 21.00  3.78   4.00   4.00   1.00   2.56   0.67          0.63  0.72
26  1.75   0.00 23.00  2.19   4.00   4.30   0.50   0.72   0.00         -2.57 -1.12

         8   2.33   1.75 21.00 23.00 22.50   3.78   2.19   2.99   4.00   4.15   4.11   0.62   1.66   0.42        0.48   0.36

27  0.58   0.00 24.00  3.78   4.30   4.60   0.00   1.52   0.54          0.53  0.55
28  0.58   0.00 27.00  3.78   4.60   4.80   0.00   0.68   0.00         -1.23  0.23
29  0.58   0.00 26.00  3.78   4.80   5.00   0.00   0.53   0.00         -0.29 -0.33
30  0.88   0.00 29.00  3.19   5.00   4.60   0.00   0.70   0.00          0.25 -0.24

         9   2.62   0.88 24.00 29.00 26.78   3.78   3.19   3.63   4.45   4.80   4.72   0.00   1.06   0.00       -0.56   0.48

31  0.29   0.00 28.00  4.78   4.60   4.40   0.00   0.87   0.23          0.19  0.26
32  1.46   0.29 25.00  2.46   4.40   4.00   0.00   0.65   0.00         -0.35 -2.29

        10   1.75   1.46 28.00 25.00 25.50   4.78   2.46   3.62   4.50   4.20   4.25   0.00   0.55   0.00       -0.92 -1.19

              3  6.71   1.75 22.50 25.50 24.96   2.99   3.62   3.40   4.11   4.25   4.39   0.22   1.25   0.23        0.09   0.37

33  0.29   0.00 24.00  4.78   4.00   4.10   0.00   2.13   0.74          0.70  0.79
34  0.29   0.00 27.00  4.78   4.10   4.20   0.00   0.45   0.00         -3.76  0.33
35  0.29   0.00 26.00  4.78   4.20   4.30   0.00   0.30   0.00         -0.49 -1.16
36  0.88   0.00 30.00  3.19   4.30   4.60   0.00   0.65   0.00          0.54 -1.23

        11   1.75   0.88 24.00 30.00 27.83   4.78   3.19   4.38   4.05   4.45   4.30   0.00   1.21   0.34        0.54   0.14

37  0.29   0.00 21.00  4.78   4.60   4.70   0.50   1.45   0.29          0.55  0.03
38  [illegible]                                                         [illegible] -0.70
```

12	2.33	2.04	21.00	34.00	32.38	4.78	1.97	3.37	4.65	4.85	4.82	0.06	1.04	0.00	-0.16	-0.27
39	0.29	0.00	25.00	4.78	5.00	5.00	0.50	2.38	0.57	0.41	0.72					
40	1.17	0.00	29.00	2.78	5.00	5.00	0.00	0.66	0.00	-2.62	-0.60					
41	1.94	0.78	31.00	2.04	5.00	5.00	0.00	1.05	0.00	0.37	-1.76					
13	3.40	1.94	25.00	31.00	29.80	4.78	2.04	3.20	5.00	5.00	5.00	0.04	1.32	0.00	0.21	-0.28
42	0.78	0.00	30.00	3.37	4.00	4.00	1.00	2.90	0.70	0.64	0.75					
43	0.78	0.00	28.00	3.37	4.00	4.00	1.00	0.71	0.00	-3.07	0.14					
44	1.17	0.00	28.00	2.78	4.00	4.00	1.00	0.61	0.00	-0.17	-0.61					
45	1.94	0.78	27.00	2.04	4.00	4.00	1.00	0.98	0.00	0.38	-3.25					
14	4.66	1.94	30.00	27.00	27.92	3.37	2.04	2.89	4.00	4.00	4.00	1.00	1.70	0.00	0.22	-0.63
4	12.14	4.66	27.83	27.92	29.29	4.38	2.89	3.28	4.30	4.00	4.48	0.41	0.79	0.00	-0.58	-1.52
2	18.85	12.14	24.96	29.29	27.75	3.40	3.28	3.33	4.39	4.48	4.45	0.34	0.98	0.00	0.00	0.00
46	0.78	0.00	43.00	3.37	5.00	5.00	3.30	4.16	0.79	0.76	0.81					
47	1.36	0.00	41.00	2.56	5.00	5.20	3.30	0.79	0.00	-4.29	-0.52					
15	2.13	1.36	43.00	41.00	41.73	3.37	2.56	2.96	5.00	5.10	5.06	3.30	2.78	0.56	0.39	0.74
48	0.58	0.00	40.00	3.78	5.20	5.50	3.30	1.19	0.30	0.34	0.26					
49	1.56	0.00	44.00	2.36	5.50	6.00	3.30	0.88	0.00	-0.35	-0.76					
16	2.14	1.56	40.00	44.00	42.91	3.78	2.36	3.07	5.35	5.75	5.64	3.30	0.73	0.00	-2.80	-0.50
50	0.39	0.00	47.00	4.35	6.00	6.00	2.50	1.55	0.60	0.43	0.77					
51	0.39	0.00	46.00	4.35	6.00	6.00	2.50	0.36	0.00	-3.32	-2.93					
52	2.04	0.00	33.00	1.97	6.00	6.00	2.70	1.41	0.00	0.75	-0.54					
17	2.82	2.04	47.00	33.00	36.74	4.35	1.97	3.56	6.00	6.00	6.00	2.64	1.10	0.00	0.33	-0.13
5	7.10	2.82	41.73	36.74	40.10	2.96	3.56	3.23	5.06	6.00	5.61	3.04	1.99	0.59	0.60	0.58
53	0.88	0.00	41.00	3.19	6.00	6.00	3.30	2.17	0.50	0.35	0.65					
54	0.58	0.00	40.00	3.78	6.00	6.00	3.30	0.75	0.00	-1.88	-0.42					
18	1.46	0.58	41.00	40.00	40.60	3.19	3.78	3.49	6.00	6.00	6.00	3.30	1.24	0.17	0.12	0.22
55	0.67	0.00	32.00	3.58	6.00	5.70	1.30	1.07	0.36	0.30	0.43					
56	0.75	0.00	31.00	3.42	5.70	5.40	1.30	0.62	0.00	-0.75	-0.52					
57	2.25	0.83	34.00	1.83	5.40	5.00	1.30	0.93	0.00	0.34	-4.46					
19	3.67	2.25	32.00	34.00	33.02	3.58	1.83	2.94	5.85	5.20	5.39	1.30	0.97	0.00	-0.28	-2.65
6	5.12	3.67	40.60	33.02	35.13	3.49	2.94	3.10	6.00	5.39	5.56	1.87	0.83	0.00	-1.39	-2.48
3	12.22	5.12	40.10	35.18	38.04	3.23	3.10	3.18	5.61	5.56	5.59	2.55	1.58	0.00	0.38	-0.30
1	49.07	12.22	24.94	38.04	29.28	3.59	3.18	3.38	5.77	5.59	5.22	2.03	0.00	0.00		

0.00	0.00															
58	0.50	0.00	13.00	4.00	6.50	6.50	2.50	5.10	0.85	0.82	0.89					
59	1.00	0.00	11.00	3.00	6.50	6.50	2.50	0.58	0.00	-7.73	-1.20					
20	1.50	1.00	13.00	11.00	11.67	4.00	3.00	3.50	6.50	6.50	6.50	2.50	3.55	0.72	0.73	0.72
60	0.33	0.00	7.00	4.58	6.00	6.00	2.50	1.28	0.62	0.55	0.70					
61	0.33	0.00	9.00	4.58	6.00	6.00	2.50	0.39	0.00	-2.30	-0.90					
62	0.58	0.00	3.00	3.78	6.00	6.00	2.50	0.74	0.00	0.47	-1.19					
21	1.25	0.58	7.00	3.00	5.67	4.58	3.78	4.32	6.00	6.00	6.00	2.50	0.99	0.00	-2.57	-0.26
7	2.75	1.25	11.67	5.67	8.94	3.50	4.32	3.87	6.50	6.00	6.27	2.50	2.90	0.62	0.71	0.53
63	0.25	0.00	16.00	5.00	6.50	6.50	1.50	1.62	0.63	0.54	0.71					
64	0.25	0.00	12.00	5.00	6.50	6.50	1.50	0.47	0.00	-2.42	-1.23					
22	0.50	0.25	16.00	12.00	14.00	5.00	5.00	5.00	6.50	6.50	6.50	1.50	1.25	0.18	0.21	0.14
65	0.50	0.00	23.00	4.00	6.50	6.50	1.50	1.06	0.42	0.55	0.30					
66	1.00	0.00	27.00	3.00	6.50	6.50	2.50	0.74	0.00	-0.42	-0.27					
23	1.50	1.00	23.00	27.00	25.67	4.00	3.00	3.50	6.50	6.50	6.50	2.17	1.07	0.00	-0.17	0.40
67	0.25	0.00	26.00	5.00	6.50	6.50	2.50	0.95	0.28	0.22	0.35					
68	1.00	0.00	30.00	3.00	6.50	6.50	2.50	0.62	0.00	-0.53	-0.42					
24	1.25	1.00	26.00	30.00	29.20	5.00	3.00	4.00	6.50	6.50	6.50	2.50	0.64	0.00	-0.67	0.18
69	0.50	0.00	29.00	4.00	6.50	6.50	2.70	0.88	0.31	0.29	0.34					
70	0.25	0.00	31.00	5.00	6.50	6.50	2.70	0.58	0.00	-0.50	0.56					
71	0.25	0.00	32.00	5.00	6.50	6.50	2.70	0.26	0.00	-1.29	-0.86					
72	0.25	0.00	28.00	5.00	6.50	6.50	2.70	0.47	0.00	0.46	-0.31					
73	0.25	0.00	22.00	5.00	6.50	6.50	2.70	0.62	0.00	0.24	-0.40					
25	1.50	0.25	29.00	22.00	28.50	4.00	5.00	4.80	6.50	6.50	6.50	2.70	0.53	0.00	-0.23	0.03
74	0.67	0.00	30.00	3.58	6.50	6.50	2.70	0.87	0.28	0.29	0.27					
75	0.33	0.00	29.00	4.58	6.50	6.50	2.70	0.63	0.00	-0.37	0.30					
76	0.20	0.00	31.00	5.32	6.50	6.50	2.70	0.44	0.00	-0.43	0.34					
77	0.20	0.00	33.00	5.32	6.50	6.50	2.70	0.29	0.00	-0.52	-0.75					
26	1.40	0.20	30.00	33.00	30.33	3.58	5.32	4.70	6.50	6.50	6.50	2.70	0.51	0.00	-0.03	0.12
78	0.20	0.00	28.00	5.32	6.50	6.50	2.70	0.51	0.35	0.43	0.28					
79	0.20	0.00	25.00	5.32	6.50	6.50	2.90	0.37	0.00	-0.39	0.40					
80	0.20	0.00	26.00	5.32	6.50	6.50	2.90	0.22	0.00	-0.68	-3.64					
27	0.60	0.20	28.00	26.00	26.33	5.32	5.32	5.32	6.50	6.50	6.50	2.83	0.45	0.00	-0.13	-1.17
8	6.75	0.60	14.00	26.33	27.11	5.00	5.32	4.40	6.50	6.50	6.50	2.47	1.36	0.00	-1.13	0.45
81	0.75	0.00	36.00	3.42	6.50	6.50	2.90	1.02	0.57	0.78	0.36					
82	0.58	0.00	35.00	3.78	6.50	6.50	2.50	0.65	0.00	-0.56	-0.66					
28	1.33	0.58	36.00	35.00	35.56	3.42	3.78	3.60	6.50	6.50	6.50	2.72	0.97	0.37	0.54	0.20

```
 83  0.33   0.00 27.00  4.58  6.50  6.30  2.50  1.08  0.54        0.40  0.67
 84  0.33   0.00 26.00  4.58  6.30  6.00  2.50  0.35  0.00       -2.07 -1.80
 85  1.25   0.00 34.00  2.68  6.00  6.00  2.50  0.99  0.00        0.64 -0.33

        29  1.92  1.25 27.00 34.00 31.39  4.58  2.68  3.95  6.40  6.00  6.10  2.50  0.78  0.00      -0.24 -0.10

 86  0.25   0.00 31.00  5.00  6.00  5.80  2.50  1.32  0.44        0.25  0.64
 87  0.42   0.00 28.00  4.26  5.80  5.70  2.50  0.48  0.00       -1.76 -0.81
 88  0.58   0.00 21.00  3.78  5.70  5.60  2.50  0.87  0.00        0.45 -0.47
 89  2.92   0.83 30.00  1.46  5.60  5.50  2.70  1.27  0.00        0.32 -2.68

        30  4.17  2.92 31.00 30.00 28.60  5.00  1.46  3.62  5.90  5.55  5.60  2.64  0.86  0.00       0.09 -2.56

                9  7.42  4.17 35.56 28.60 30.57  3.60  3.62  3.70  6.50  5.60  5.89  2.62  0.75  0.00      -0.81 -1.93

                    4 16.92  7.42  8.94 30.57 25.68  3.87  3.70  4.01  6.27  5.89  6.20  2.54  2.05  0.24       0.23  0.26

 90  0.75   0.00 17.00  3.42  3.00  3.00  0.50  4.67  0.77        0.73  0.80
 91  0.75   0.00 22.00  3.42  3.00  3.00  0.50  0.91  0.00       -4.12  0.31
 92  0.75   0.00 23.00  3.42  3.00  3.00  0.00  0.63  0.00       -0.45 -0.45

        31  2.25  0.75 17.00 23.00 20.67  3.42  3.42  3.42  3.00  3.00  3.00  0.33  3.05  0.72       0.72  0.72

 93  0.75   0.00 28.00  3.42  3.00  3.00  0.00  0.91  0.20        0.31  0.08
 94  3.00   0.75 30.00  1.42  3.00  3.00  0.00  0.84  0.00       -0.09 -4.46

        32  3.75  3.00 28.00 30.00 29.60  3.42  1.42  2.42  3.00  3.00  3.00  0.00  0.86  0.00      -2.55 -2.24

               10  6.00  3.75 20.67 29.60 26.25  3.42  2.42  2.79  3.00  3.00  3.00  0.12  2.21  0.43       0.66  0.21

 95  0.75   0.00 17.00  3.42  4.00  4.00  1.50  4.58  0.81        0.82  0.80
 96  0.75   0.00 22.00  3.42  4.00  4.20  1.50  0.93  0.00       -3.94  0.25
 97  0.50   0.00 23.00  4.00  4.20  4.40  1.50  0.69  0.00       -0.34  0.12
 98  0.50   0.00 26.00  4.00  4.40  4.55  1.50  0.61  0.00       -0.14 -0.34
 99  1.25   0.00 30.00  2.68  4.65  5.00  1.50  0.82  0.00        0.26 -0.49

        33  3.75  1.25 17.00 30.00 24.33  3.42  2.68  3.50  4.00  4.82  4.40  1.50  2.79  0.69       0.69  0.68

100  0.38   0.00 28.00  4.42  5.00  5.10  1.50  1.22  0.52        0.33  0.70
101  0.38   0.00 27.00  4.42  5.10  5.20  1.50  0.36  0.00       -2.37 -1.95

        34  0.75  0.38 28.00 27.00 27.50  4.42  4.42  4.42  5.05  5.15  5.10  1.50  0.89  0.00      -2.12 -0.01

               11  4.50  0.75 24.33 27.50 24.86  3.50  4.42  3.65  4.40  5.10  4.52  1.50  1.75  0.00      -0.26  0.33

102  0.50   0.00 37.00  4.00  5.20  5.33  2.50  1.07  0.62        0.66  0.57
103  0.50   0.00 36.00  4.00  5.33  5.46  2.50  0.46  0.00       -1.33 -0.32
104  0.50   0.00 33.00  4.00  5.46  5.60  2.50  0.60  0.00        0.24 -1.01

        35  1.50  0.50 37.00 33.00 35.33  4.00  4.00  4.00  5.26  5.53  5.40  2.50  0.91  0.03       0.01  0.05

105  0.38   0.00 44.00  4.42  5.60  5.70  2.50  1.22  0.60        0.50  0.70
106  0.38   0.00 43.00  4.42  5.70  5.80  2.50  0.36  0.00       -2.36 -0.08
107  0.38   0.00 42.00  4.42  5.90  6.00  2.50  0.39  0.00        0.07 -2.15
108  0.38   0.00 29.00  4.42  6.00  6.00  2.50  1.23  0.00        0.68 -0.03
109  [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]   [illegible] [illegible]
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        36  3.75  2.25 44.00 40.00 39.80  4.42  1.83  3.90  5.65  6.00  5.93  2.50  0.86  0.00      -0.06 -0.55

             12  5.25  3.75 35.33 39.80 38.52  4.00  3.90  3.93  5.40  5.93  5.78  2.50  1.17  0.00      -0.49  0.18

110  0.75  C.00 36.00  3.42  6.00  6.00  2.50  2.05  0.33       0.38  0.27
111  0.75  C.00 23.00  3.42  6.00  6.00  2.50  1.50  0.00      -0.37  0.06
112  1.25  0.00 34.00  2.68  6.00  6.00  2.50  1.40  0.00      -0.07  0.13
113  0.50  C.00 37.00  4.00  6.00  6.00  2.50  1.23  0.00      -0.14  0.42
114  0.88  C.00 33.00  3.19  6.00  6.00  2.50  0.72  0.00      -0.72 -0.12
115  0.38  C.00 32.00  4.42  6.00  6.00  2.50  0.80  0.00       0.11 -0.57

        37  4.50  0.38 36.00 32.00 32.47  3.42  4.42  3.52  6.00  6.00  6.00  2.50  1.33  0.33       0.36  0.31

116  0.38  0.00 19.00  4.42  6.00  6.00  0.00  1.26  0.32       0.36  0.28
117  0.88  C.00 26.00  3.19  6.00  6.00  2.50  0.91  0.00      -0.38  0.15
118  0.50  C.00 27.00  4.00  6.00  6.00  2.50  0.77  0.00      -0.18  0.43
119  0.50  C.00 28.00  4.00  6.00  6.00  2.50  0.44  0.00      -0.76 -1.72

        38  2.25  0.50 19.00 28.00 25.50  4.42  4.00  3.90  6.00  6.00  6.00  2.08  0.92  0.00      -0.45  0.11

120  0.54  C.00 17.00  3.88  6.00  6.00  1.50  1.19  0.62       0.63  0.60
121  0.56  C.00 18.00  3.84  6.00  6.00  1.50  0.47  0.00      -1.53 -0.80
122  0.58  C.00 24.00  3.80  6.00  6.00  1.50  0.85  0.00       0.44 -0.44

        39  1.67  0.58 17.00 24.00 19.74  3.88  3.80  3.84  6.00  6.00  6.00  1.50  0.82  0.00      -0.12 -0.65

123  0.59  C.00 13.00  3.76  6.00  6.00  1.50  1.23  0.30       0.31  0.29
124  0.61  0.00 19.00  3.72  6.00  6.00  1.50  0.87  0.00      -0.40 -0.10
125  0.63  0.00 26.00  3.68  6.00  6.00  1.50  0.96  0.00       0.09 -0.10
126  1.92  C.00 32.00  2.06  6.00  5.67  2.50  1.05  0.00       0.09 -0.88
127  2.08  0.00 39.00  1.94  5.67  5.33  2.30  1.97  0.00       0.47 -0.05
128  3.33  1.08 45.00  1.26  5.33  5.00  2.00  2.06  0.00       0.04 -2.04

        40  9.16  3.33 13.00 45.00 35.82  3.76  1.26  2.74  6.00  5.16  5.55  2.07  1.35  0.00       0.40 -1.98

             13 17.58  9.16 32.47 35.82 32.11  3.52  2.74  3.19  6.00  5.55  5.76  2.13  0.96  0.00      -0.22 -1.89

                  5 33.33 17.58 26.25 32.11 31.09  2.79  3.19  3.30  3.00  5.76  5.10  1.74  1.53  0.00      -0.34 -0.02

                      2 50.25 33.33 25.68 31.09 29.27  4.01  3.30  3.54  6.20  5.10  5.47  2.01  1.07  0.00
0.00  0.00

129  1.00  C.00 17.00  3.00  5.50  5.50  2.70  6.26  0.75       0.67  0.84
130  0.50  C.00 16.00  4.00  5.00  5.00  2.70  1.02  0.00      -5.12  0.10
131  1.50  C.00 10.00  2.42  5.00  5.00  2.30  0.92  0.00      -0.11 -0.40

        41  3.00  1.50 17.00 10.00 13.33  3.00  2.42  3.14  5.50  5.00  5.17  2.50  4.04  0.73       0.66  0.79

132  0.50  C.00 11.00  4.00  5.00  5.00  1.50  1.30  0.22       0.29  0.15
133  0.25  C.00 20.00  5.00  5.00  5.08  1.20  1.11  0.00      -0.17  0.76
134  0.25  C.00 19.00  5.00  5.08  5.16  1.00  0.27  0.00      -3.09 -1.35

        42  1.00  0.25 11.00 19.00 15.25  4.00  5.00  4.67  5.00  5.12  5.04  1.30  0.87  0.00      -3.67  0.49
135 [illegible]
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136	0.25	0.00	14.00	5.00	5.24	5.33	1.00	0.27	0.00	-1.35	-1.75						
43	0.50	0.25	13.00	14.00	13.50	5.00	5.00	5.00	5.20	5.28	5.24	1.10	0.44	0.00	-0.97	-0.87	
137	0.33	0.00	21.00	4.58	5.33	5.40	1.70	0.75	0.35	0.64	0.07						
138	0.33	0.00	27.00	4.58	5.40	5.48	1.70	0.69	0.00	-0.08	-0.11						
44	0.67	0.33	21.00	27.00	24.00	4.58	4.58	4.58	5.36	5.44	5.40	1.70	0.82	0.00	0.46	-0.26	
14	5.17	0.67	13.33	24.00	15.10	3.14	4.58	3.80	5.17	5.40	5.18	2.03	2.77	0.51	0.65	0.38	
139	0.33	0.00	34.00	4.58	5.48	5.60	1.70	0.77	0.09	0.10	0.08						
140	0.33	0.00	40.00	4.58	5.60	5.73	2.30	0.71	0.00	-0.09	0.22						
141	0.17	0.00	43.00	5.58	5.73	5.80	2.30	0.55	0.00	-0.29	0.63						
142	0.17	0.00	42.00	5.58	5.80	5.86	2.30	0.20	0.00	-1.69	0.00						
143	0.17	0.00	41.00	5.58	5.86	5.93	2.30	0.20	0.00	-0.00	-2.15						
45	1.17	0.17	34.00	41.00	39.14	4.58	5.58	5.18	5.54	5.89	5.70	2.13	1.03	0.23	0.21	0.26	
144	0.17	0.00	48.00	5.58	5.93	6.00	2.30	0.64	0.58	0.68	0.47						
145	1.25	0.00	48.00	2.68	6.00	6.00	2.30	0.34	0.00	-0.90	-2.41						
46	1.42	1.25	48.00	48.00	48.00	5.58	2.68	4.13	5.97	6.00	6.00	2.30	0.77	0.00	-0.34	-0.10	
15	2.58	1.42	39.14	48.00	44.00	5.18	4.13	4.61	5.70	6.00	5.86	2.22	1.73	0.00	-0.60	0.44	
146	0.25	0.00	49.00	5.00	6.00	6.00	2.30	1.15	0.60	0.71	0.49						
147	0.75	0.00	45.00	3.42	6.00	6.00	2.30	0.59	0.00	-0.96	-0.37						
148	0.25	0.00	43.00	5.00	6.00	6.00	2.30	0.81	0.00	0.27	-0.19						
149	0.83	0.00	34.00	3.26	6.00	6.00	2.30	0.97	0.00	0.16	-0.11						
47	2.08	0.83	49.00	34.00	40.84	5.00	3.26	4.17	6.00	6.00	6.00	2.30	0.84	0.16	0.09	0.23	
150	0.33	0.00	39.00	4.58	6.00	6.00	2.30	1.07	0.40	0.10	0.70						
151	0.33	0.00	38.00	4.58	6.00	6.00	2.30	0.32	0.00	-2.38	-0.33						
152	0.25	0.00	40.00	5.00	6.00	6.00	2.30	0.42	0.00	0.25	-0.83						
48	0.92	0.25	39.00	40.00	38.91	4.58	5.00	4.72	6.00	6.00	6.00	2.30	0.65	0.00	-0.30	-0.10	
153	0.25	0.00	32.00	5.00	6.00	6.00	2.30	0.77	0.46	0.45	0.48						
154	0.25	0.00	29.00	5.00	6.00	6.00	2.30	0.40	0.00	-0.91	0.14						
155	0.58	0.00	30.00	3.78	6.00	6.00	2.30	0.34	0.00	-0.16	-2.77						
49	1.08	0.58	32.00	30.00	30.23	5.00	3.78	4.59	6.00	6.00	6.00	2.30	0.71	0.00	0.09	-0.38	
156	0.33	0.00	19.00	4.58	6.00	6.00	1.50	1.30	0.63	0.73	0.53						
157	0.33	0.00	24.00	4.58	6.00	6.00	1.50	0.61	0.00	-1.14	-1.20						
50	0.67	0.33	19.00	24.00	21.50	4.58	4.58	4.58	6.00	6.00	6.00	1.50	0.98	0.00	0.28	-0.23	
158	1.00	0.00	37.00	3.00	6.00	5.67	1.10	1.34	0.43	0.55	0.31						
159	1.00	0.00	35.00	3.00	5.67	5.33	1.10	0.92	0.00	-0.45	-0.00						
160	1.00	0.00	33.00	3.00	5.33	5.00	1.10	0.92	0.00	-0.00	-0.79						
161	2.25	0.00	22.00	1.83	5.00	4.80	1.30	1.66	0.00	0.44	-0.60						
51	5.25	2.25	37.00	22.00	29.43	3.00	1.83	2.71	5.84	4.90	5.24	1.19	1.21	0.00	0.19	-0.29	

16	10.00	5.25	40.84	29.43	32.23	4.17	2.71	3.53	6.00	5.24	5.60	1.66	0.98	0.00	-0.77	0.00
162	0.25	0.00	32.00	5.00	5.00	5.08	1.70	2.66	0.61	0.38	0.84					
163	0.25	0.00	29.00	5.00	5.08	5.16	1.70	0.41	0.00	-5.44	-1.09					
52	0.50	0.25	32.00	29.00	30.50	5.00	5.00	5.00	5.04	5.12	5.08	1.70	1.57	0.37	0.23	0.52
164	0.25	0.00	38.00	5.00	5.16	5.25	2.50	0.86	0.61	0.52	0.69					
165	0.25	0.00	39.00	5.00	5.25	5.32	2.50	0.27	0.00	-2.23	-0.36					
166	0.25	0.00	37.00	5.00	5.40	5.50	2.50	0.36	0.00	0.27	-0.14					
53	0.75	0.25	38.00	37.00	38.00	5.00	5.00	5.00	5.20	5.45	5.31	2.50	0.75	0.00	-1.09	0.50
167	0.25	0.00	34.00	5.00	5.50	5.58	2.50	0.41	0.24	0.12	0.36					
168	0.25	0.00	35.00	5.00	5.58	5.66	2.50	0.27	0.00	-0.55	-1.64					
54	0.50	0.25	34.00	35.00	34.50	5.00	5.00	5.00	5.54	5.62	5.58	2.50	0.37	0.00	-1.01	-0.40
169	0.25	0.00	28.00	5.00	5.66	5.75	2.50	0.71	0.52	0.62	0.41					
170	0.25	0.00	31.00	5.00	5.75	5.83	2.50	0.41	0.00	-0.71	0.18					
171	0.25	0.00	33.00	5.00	5.83	5.92	2.50	0.34	0.00	-0.21	-1.28					
55	0.75	0.25	28.00	33.00	30.67	5.00	5.00	5.00	5.70	5.88	5.79	2.50	0.52	0.00	0.29	-0.88
17	2.50	0.75	30.50	30.67	33.60	5.00	5.00	5.00	5.08	5.79	5.46	2.34	0.97	0.00	-0.00	0.18
172	0.25	0.00	41.00	5.00	5.92	6.00	2.50	0.78	0.40	0.56	0.23					
173	1.50	0.00	44.00	2.42	6.00	6.00	2.50	0.60	0.00	-0.31	-1.28					
56	1.75	1.50	41.00	44.00	43.57	5.00	2.42	3.71	5.96	6.00	5.99	2.50	0.98	0.30	0.47	0.13
174	0.50	0.00	42.00	4.00	6.00	6.00	2.50	1.36	0.51	0.56	0.46					
175	0.50	0.00	37.00	4.00	6.00	6.00	2.50	0.73	0.00	-0.86	0.20					
176	0.50	0.00	40.00	4.00	6.00	6.00	2.50	0.58	0.00	-0.25	0.13					
177	0.50	0.00	38.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.14	-0.14					
57	2.00	0.50	42.00	38.00	39.25	4.00	4.00	4.00	6.00	6.00	6.00	2.50	0.86	0.00	-0.15	0.63
178	0.50	0.00	41.00	4.00	6.00	6.00	2.50	0.58	0.13	0.13	0.13					
179	0.50	0.00	39.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.14	-0.29					
58	1.00	0.50	41.00	39.00	40.00	4.00	4.00	4.00	6.00	6.00	6.00	2.50	0.32	0.00	-1.69	-0.79
180	0.50	0.00	35.00	4.00	6.00	6.00	2.50	0.66	0.22	0.22	0.22					
181	0.50	0.00	33.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.29	-0.00					
182	0.50	0.00	31.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.00	-0.57					
183	1.00	0.00	36.00	3.00	6.00	6.00	2.50	0.80	0.00	0.36	-0.09					
184	1.00	0.00	34.00	3.00	6.00	6.00	2.50	0.88	0.00	0.08	-0.50					
59	3.50	1.00	35.00	34.00	34.14	4.00	3.00	3.60	6.00	6.00	6.00	2.50	0.57	0.00	0.44	-0.36
185	0.25	0.00	40.00	5.00	6.00	6.00	2.50	1.31	0.51	0.33	0.69					
186	0.25	0.00	37.00	5.00	6.00	6.00	2.50	0.40	0.00	-2.27	-0.36					
187	0.25	0.00	32.00	5.00	6.00	6.00	2.50	0.55	0.00	0.27	-0.16					
188	0.25	0.00	26.00	5.00	6.00	6.00	1.50	0.64	0.00	0.14	-0.61					
60	1.30	0.25	40.00	26.00	33.75	5.00	5.00	5.00	6.00	6.00	6.00	2.25	0.78	0.00	0.26	-0.32

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                18   9.25  1.00 43.57 33.75 37.62  3.71  5.00  3.90  5.99  6.00  6.00  2.47  0.80  0.00      -0.22 -0.37

                       6 29.50  9.25 15.10 37.62 32.07  3.80  3.90  3.91  5.18  6.00  5.66  2.09  1.55  0.26      0.02  0.51

189  1.00  0.00 31.00  3.00  5.00  4.50  1.50  1.02  0.22       0.38  0.07
190  1.00  0.00 29.00  3.00  4.50  4.00  1.50  0.95  0.00      -0.08 -0.27

         61  2.00  1.00 31.00 29.00 30.00  3.00  3.00  3.00  4.75  4.25  4.50  1.50  1.02  0.17      0.24  0.10

191  0.25  0.00 33.00  5.00  4.00  4.00  1.50  1.20  0.35       0.21  0.48
192  0.25  0.00 27.00  5.00  4.00  4.00  1.50  0.62  0.00      -0.94  0.59
193  0.25  0.00 26.00  5.00  4.00  4.00  1.50  0.26  0.00      -1.43 -0.57
194  0.25  0.00 23.00  5.00  4.00  4.00  1.50  0.40  0.00       0.36 -2.18

         62  1.00  0.25 33.00 23.00 27.25  5.00  5.00  5.00  4.00  4.00  4.00  1.50  0.92  0.00     -0.11 -0.16

                19   3.00  1.00 30.00 27.25 29.08  3.00  5.00  3.67  4.50  4.00  4.33  1.50  1.10  0.31      0.27  0.34

195  1.00  0.00 36.00  3.00  4.00  4.00  1.50  1.28  0.50       0.69  0.31
196  1.00  0.00 34.00  3.00  4.00  4.00  1.50  0.88  0.00      -0.46 -0.25

         63  2.00  1.00 36.00 34.00 35.00  3.00  3.00  3.00  4.00  4.00  4.00  1.50  1.07  0.16      0.14  0.19

197  0.25  0.00 37.00  5.00  4.00  4.00  1.50  1.09  0.34       0.20  0.48
198  0.25  0.00 32.00  5.00  4.00  4.33  1.50  0.57  0.00      -0.92  0.47
199  0.25  0.00 31.00  5.00  4.33  4.67  1.50  0.30  0.00      -0.88 -0.72
200  0.25  0.00 27.00  5.00  4.67  5.00  1.50  0.52  0.00       0.42 -1.57

         64  1.00  0.25 37.00 27.00 31.75  5.00  5.00  5.00  4.00  4.84  4.37  1.50  0.87  0.00     -0.23 -0.31

201  0.67  0.00 41.00  3.58  5.00  5.00  2.50  1.35  0.52       0.61  0.42
202  0.33  0.00 39.00  4.58  5.00  4.00  2.50  0.78  0.00      -0.73 -1.09

         65  1.00  0.33 41.00 39.00 40.33  3.58  4.58  4.08  5.00  4.50  4.83  2.50  1.13  0.00      0.24 -0.33

203  0.33  0.00 23.00  4.58  5.00  5.00  2.50  1.63  0.60       0.52  0.67
204  0.17  0.00 26.00  5.58  5.00  5.00  2.50  0.54  0.00      -2.05  0.64
205  0.17  0.00 25.00  5.58  5.00  5.00  2.50  0.19  0.00      -1.75 -0.75
206  0.17  0.00 22.00  5.58  5.00  5.00  2.50  0.34  0.00       0.43 -0.13
207  0.50  0.33 24.00  4.00  5.00  5.00  2.50  0.38  0.00       0.11 -5.84

         66  1.33  0.50 23.00 24.00 23.87  4.58  4.00  5.07  5.00  5.00  5.00  2.50  1.51  0.00      0.25 -0.30

                20   5.33  1.33 35.00 23.87 32.61  3.00  5.07  4.10  4.00  5.00  4.48  1.94  0.72  0.00      -0.52 -0.74

                       7  8.33  5.33 29.08 32.61 31.34  3.67  4.10  3.94  4.33  4.48  4.42  1.78  0.76  0.00     -1.04 -0.11

208  0.33  0.00 41.00  4.58  5.00  5.00  2.50  2.62  0.84       0.85  0.82
209  0.33  0.00 39.00  4.58  5.00  4.00  2.50  0.46  0.00      -4.67 -2.84

         67  0.67  0.33 41.00 39.00 40.00  4.58  4.58  4.58  5.00  4.50  4.75  2.50  1.97  0.21      0.23  0.18

210  0.33  0.00 23.00  4.58  5.50  5.50  2.50  1.78  0.72       0.74  0.70
211  0.17  0.00 26.00  5.58  5.50  5.50  2.50  0.54  0.00      -2.32  0.64
212  0.17  0.00 25.00  5.58  5.50  5.50  2.50  0.19  0.00      -1.75 -0.75
```

68	0.67	0.17	23.00	25.00	24.25	4.58	5.58	5.25	5.50	5.50	5.50	2.50	1.62	0.00	-0.22	0.85
213	0.17	0.00	22.00	5.58	5.50	5.50	2.50	0.34	0.32	0.43	0.21					
214	0.17	0.00	24.00	5.58	5.50	5.50	2.50	0.27	0.00	-0.27	-5.45					
69	0.33	0.17	22.00	24.00	23.00	5.58	5.58	5.58	5.50	5.50	5.50	2.50	0.24	0.00	-5.75	-6.27
21	1.67	0.33	40.00	23.00	30.30	4.58	5.58	5.05	4.75	5.50	5.20	2.50	1.25	0.28	0.42	0.14
215	0.67	0.00	42.00	3.58	6.00	6.00	2.50	1.73	0.73	0.85	0.62					
216	0.83	0.00	40.00	3.26	6.00	6.00	2.50	0.66	0.00	-1.63	-0.45					
70	1.50	0.83	42.00	40.00	40.89	3.58	3.26	3.42	6.00	6.00	6.00	2.50	1.75	0.71	0.86	0.55
217	0.50	0.00	36.00	4.00	6.00	6.00	2.50	0.95	0.39	0.31	0.46					
218	0.50	0.00	34.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.87	-0.00					
219	0.50	0.00	32.00	4.00	6.00	6.00	2.50	0.51	0.00	-0.00	-0.14					
220	0.50	0.00	35.00	4.00	6.00	6.00	2.50	0.58	0.00	0.13	-0.22					
221	0.83	0.00	31.00	3.26	6.00	6.00	2.50	0.71	0.00	0.18	-0.40					
71	2.83	0.83	36.00	31.00	33.29	4.00	3.26	3.85	6.00	6.00	6.00	2.50	0.79	0.00	-1.22	0.15
222	0.33	0.00	27.00	4.58	6.00	6.00	2.50	1.00	0.45	0.29	0.61					
223	0.33	0.00	25.00	4.58	6.00	6.00	2.50	0.39	0.00	-1.56	-0.56					
224	0.67	0.00	29.00	3.58	6.00	6.00	2.50	0.61	0.00	0.36	-0.04					
225	1.33	0.00	30.00	2.58	6.00	6.00	2.50	0.63	0.00	0.04	-1.14					
72	2.67	1.33	27.00	30.00	28.75	4.58	2.58	3.83	6.00	6.00	6.00	2.50	0.67	0.00	-0.18	-0.91
226	1.17	0.00	26.00	2.78	6.00	5.00	2.50	1.35	0.28	0.53	0.04					
227	1.33	0.00	22.00	2.58	5.00	4.00	2.50	1.30	0.00	-0.04	-0.01					
228	2.17	0.67	20.00	1.88	4.00	3.00	2.50	1.32	0.00	0.01	-1.25					
73	4.67	2.17	26.00	20.00	22.07	2.78	1.88	2.42	5.50	3.50	4.29	2.50	1.27	0.00	0.48	-0.25
22	11.67	4.67	40.89	22.07	28.74	3.42	2.42	3.22	6.00	4.29	5.31	2.50	1.08	0.00	-0.16	0.00
229	0.58	0.00	21.00	3.73	4.00	4.00	1.00	2.96	0.66	0.56	0.77					
230	1.75	0.00	23.00	2.19	4.00	4.00	1.50	0.69	0.00	-3.26	-1.14					
74	2.33	1.75	21.00	23.00	22.50	3.78	2.19	2.99	4.00	4.00	4.00	1.38	1.59	0.27	0.20	0.34
231	0.58	0.00	24.00	3.78	4.00	4.33	1.50	1.49	0.53	0.53	0.53					
232	0.58	0.00	27.00	3.78	4.33	4.67	1.50	0.69	0.00	-1.15	0.21					
233	0.58	0.00	26.00	3.78	4.67	5.00	1.50	0.55	0.00	-0.27	-0.30					
234	0.88	0.00	29.00	3.19	5.00	5.00	1.50	0.71	0.00	0.23	-0.16					
75	2.62	0.88	24.00	29.00	26.78	3.78	3.19	3.63	4.16	5.00	4.67	1.50	1.05	0.00	-0.52	0.51
235	0.29	0.00	28.00	4.78	5.00	5.00	1.50	0.83	0.21	0.14	0.27					
236	1.46	0.29	25.00	2.46	5.00	5.00	1.50	0.60	0.00	-0.38	-2.74					
76	1.75	1.46	28.00	25.00	25.50	4.78	2.46	3.62	5.00	5.00	5.00	1.50	0.51	0.00	-1.05	-1.48
23	6.71	1.75	22.50	25.50	24.96	2.99	3.62	3.40	4.00	5.00	4.52	1.46	1.08	0.00	-0.00	0.24
237	[illegible]															

```
238  0.29  0.00 27.00  4.78  5.00  5.00  1.50  0.43  0.00      -4.21  0.34
239  0.29  0.00 26.00  4.78  5.00  5.00  1.50  0.29  0.00      -0.51 -1.17
240  0.88  0.00 30.00  3.19  5.00  5.00  1.50  0.62  0.00       0.54 -1.29

        77  1.75  0.88 24.00 30.00 27.83  4.78  3.19  4.38  5.00  5.00  5.00  1.50  1.27  0.42      0.60  0.24

241  0.29  0.00 21.00  4.78  5.00  5.00  1.00  1.42  0.30       0.56  0.03
242  2.04  0.00 34.00  1.97  5.00  5.00  0.50  1.37  0.00      -0.03 -0.72

        78  2.33  2.04 21.00 34.00 32.38  4.78  1.97  3.37  5.00  5.00  5.00  0.56  0.96  0.00     -0.32 -0.34

243  0.29  0.00 25.00  4.79  5.00  5.00  1.00  2.36  0.57       0.42  0.72
244  1.17  0.00 29.00  2.78  5.00  5.00  0.50  0.66  0.00      -2.58 -0.60
245  1.97  0.81 31.00  2.02  5.00  5.00  0.50  1.05  0.00       0.37 -1.79

        79  3.43  1.97 25.00 31.00 29.81  4.78  2.02  3.19  5.00  5.00  5.00  0.54  1.29  0.00      0.25 -0.33

246  0.81  0.00 30.00  3.31  4.00  4.00  1.20  2.94  0.70       0.64  0.75
247  0.81  0.00 28.00  3.31  4.00  4.00  1.20  0.74  0.00      -2.99  0.15
248  1.17  0.00 28.00  2.78  4.00  4.00  1.20  0.63  0.00      -0.17 -0.56
249  1.97  0.81 27.00  2.02  4.00  4.00  1.00  0.98  0.00       0.36 -3.28

        80  4.76  1.97 30.00 27.00 27.92  3.31  2.02  2.85  4.00  4.00  4.00  1.12  1.72  0.00      0.25 -0.63

            24 12.27  4.76 27.83 27.92 29.29  4.38  2.85  3.26  5.00  4.00  4.61  0.91  0.82  0.00     -0.31 -1.29

                 8 32.32 12.27 30.30 29.29 28.24  5.05  3.26  3.37  5.20  4.61  4.88  1.68  0.85  0.00      0.10 -0.58

250  0.81  0.00 43.00  3.31  5.00  5.00  3.50  4.21  0.79       0.77  0.81
251  1.39  0.00 41.00  2.52  5.00  5.00  3.50  0.79  0.00      -4.30 -0.49

        81  2.20  1.39 43.00 41.00 41.73  3.31  2.52  2.92  5.00  5.00  5.00  3.50  2.79  0.58      0.38  0.77

252  0.58  0.00 40.00  3.78  5.00  5.00  3.50  1.18  0.32       0.33  0.30
253  1.56  0.00 44.00  2.36  5.00  5.00  3.50  0.82  0.00      -0.44 -0.85

        82  2.14  1.56 40.00 44.00 42.91  3.78  2.36  3.07  5.00  5.00  5.00  3.50  0.64  0.00     -3.33 -0.60

254  0.39  0.00 47.00  4.35  5.00  5.00  2.50  1.52  0.61       0.46  0.76
255  0.39  0.00 46.00  4.35  5.00  5.00  2.50  0.36  0.00      -3.23 -2.93
256  2.04  0.00 33.00  1.97  5.00  5.00  2.50  1.41  0.00       0.75 -0.54

        83  2.82  2.04 47.00 33.00 36.74  4.35  1.97  3.56  5.00  5.00  5.00  2.50  1.03  0.00      0.38 -0.20

            25  7.17  2.82 41.73 36.74 40.12  2.92  3.56  3.21  5.00  5.00  5.00  3.11  1.88  0.55      0.56  0.55

257  0.88  0.00 41.00  3.19  5.00  5.00  2.50  2.16  0.50       0.35  0.65
258  0.67  0.00 40.00  3.58  5.00  4.80  2.50  0.75  0.00      -1.87 -0.47

        84  1.54  0.67 41.00 40.00 40.57  3.19  3.58  3.39  5.00  4.90  4.96  2.50  1.24  0.20      0.17  0.24

259  0.75  0.00 32.00  3.42  4.80  4.60  2.50  1.11  0.36       0.32  0.41
260  0.83  0.00 31.00  3.26  4.60  4.40  2.50  0.66  0.00      -0.68 -0.36
261  1.08  0.00 34.00  2.88  4.40  4.00  2.50  0.90  0.00       0.26 -2.86

        85  2.67  1.08 32.00 34.00 32.50  3.42  2.88  3.19  4.70  4.20  4.43  2.50  0.94  0.00     -0.32 -2.19
```

```
                26   4.21   2.67 40.57 32.50 35.46   3.39   3.19   3.26   4.96   4.43   4.63   2.50   0.86   0.00      -1.20 -2.46

                         9 11.37   4.21 40.12 35.46 38.39   3.21   3.26   3.23   5.00   4.63   4.86   2.88   1.34   0.00       0.37 -0.78

                                    3 81.52 11.37 32.07 38.39 31.36  3.91   3.23   3.60   5.66   4.86   5.11   2.00   0.91   0.00
-0.18 -0.52

262  0.67  0.00  6.00  3.58  6.00  6.00  0.50  3.47  0.79       0.74  0.84
263  0.67  0.00  5.00  3.58  6.00  6.00  0.50  0.56  0.00      -5.20 -0.54

      86  1.33  0.67  6.00  5.00  5.50  3.58  3.58  3.58  6.00  6.00  6.00  0.50  3.01  0.73       0.69  0.77

264  0.75  0.00  0.00  3.42  6.00  6.00  0.50  0.86  0.21       0.35  0.06
265  0.25  0.00 -2.00  5.00  6.00  6.00  0.50  0.81  0.00      -0.07 -0.44

      87  1.00  0.25  0.00 -2.00 -0.50  3.42  5.00  4.21  6.00  6.00  6.00  0.50  0.70  0.00      -3.32 -0.57

              27  2.33  1.00  5.50 -0.50  2.93  3.58  4.21  3.85  6.00  6.00  6.00  0.50  2.96  0.64       0.71  0.57

266  0.33  0.00 11.00  4.58  6.00  6.00  0.50  1.16  0.48       0.30  0.66
267  0.33  0.00  9.00  4.58  6.00  6.00  1.20  0.40  0.00      -1.91 -0.71
268  0.33  0.00  3.00  4.58  6.00  6.00  1.20  0.68  0.00       0.41 -0.90
269  1.50  0.00 14.00  2.42  6.00  5.00  2.20  1.29  0.00       0.47 -0.06

      88  2.50  1.50 11.00 14.00 11.47  4.58  2.42  4.04  6.00  5.50  5.70  1.71  1.09  0.18       0.36  0.00

270  0.50  0.00 13.00  4.00  5.00  5.00  1.20  1.37  0.21       0.06  0.36
271  0.50  0.00 20.00  4.00  5.00  5.00  1.20  0.88  0.00      -0.57  0.33
272  0.50  0.00 17.00  4.00  5.00  5.00  1.20  0.58  0.00      -0.50 -0.34
273  1.50  0.00 21.00  2.42  5.00  5.16  1.20  0.78  0.00       0.26 -0.77

      89  3.00  1.50 13.00 21.00 18.83  4.00  2.42  3.60  5.00  5.08  5.04  1.20  1.09  0.00      -0.00  0.30

274  0.50  0.00 19.00  4.00  5.00  5.04  1.20  1.39  0.50       0.44  0.57
275  0.50  0.00 22.00  4.00  5.04  5.09  1.20  0.59  0.00      -1.35  0.24
276  0.50  0.00 23.00  4.00  5.09  5.15  1.20  0.45  0.00      -0.32 -0.32
277  0.50  0.00 20.00  4.00  5.15  5.15  1.20  0.59  0.00       0.24 -0.24
278  0.50  0.00 15.00  4.00  5.15  5.15  1.20  0.73  0.00       0.19 -0.26
279  1.50  0.00 21.00  2.42  5.15  5.15  1.20  0.92  0.00       0.21 -0.49

      90  4.00  1.50 19.00 21.00 20.25  4.00  2.42  3.74  5.02  5.15  5.12  1.20  0.77  0.00      -0.42  0.01

280  0.50  0.00 19.00  4.00  5.15  5.27  1.50  1.37  0.45       0.33  0.56
281  0.50  0.00 22.00  4.00  5.23  5.30  1.50  0.60  0.00      -1.29  0.25
282  0.50  0.00 23.00  4.00  5.30  5.35  1.50  0.45  0.00      -0.34 -0.32
283  0.50  0.00 20.00  4.00  5.35  5.40  1.50  0.59  0.00       0.24 -0.29
284  0.50  0.00 15.00  4.00  5.50  5.50  1.60  0.76  0.00       0.23 -0.43

      91  2.50  0.50 19.00 15.00 19.80  4.00  4.00  4.00  5.21  5.50  5.33  1.52  0.76  0.00      -0.01  0.08

285  0.50  0.00 25.00  4.00  5.50  5.50  1.50  1.10  0.45       0.30  0.60
286  0.50  0.00 26.00  4.00  5.50  5.50  1.50  0.44  0.00      -1.50 -0.17
287  0.50  0.00 24.00  4.00  5.50  5.50  1.50  0.51  0.00       0.14 -0.58
288  0.50  0.00 18.00  4.00  5.50  5.52  1.70  0.81  0.00       0.37 -0.45
```

289	0.50	0.00	29.00	4.00	5.52	5.55	1.70	1.17	0.43	0.31	0.55						
290	0.50	0.00	31.00	4.00	5.55	5.58	1.20	0.52	0.00	-1.24	-0.21						
291	0.33	0.00	28.00	4.58	5.58	5.61	1.20	0.63	0.00	0.17	-0.09						
292	0.33	0.00	22.00	4.58	5.61	5.63	1.20	0.68	0.00	0.08	-0.92						
93	1.67	0.33	29.00	22.00	28.00	4.00	4.58	4.29	5.53	5.62	5.57	1.35	0.79	0.00	0.12	-0.38	
28	15.67	1.67	11.47	28.00	19.71	4.04	4.29	3.89	5.70	5.57	5.33	1.39	1.27	0.00	-1.33	-0.18	
10	18.00	15.67	2.93	19.71	17.54	3.85	3.89	3.89	6.00	5.33	5.42	1.28	2.40	0.37	0.44	0.31	
293	0.83	0.00	35.00	3.26	5.63	5.70	2.50	1.31	0.39	0.48	0.31						
294	0.83	0.00	39.00	3.26	5.70	5.75	2.50	0.91	0.00	-0.45	-0.11						
94	1.67	0.83	35.00	39.00	37.00	3.26	3.26	3.26	5.66	5.72	5.70	2.50	1.10	0.25	0.28	0.22	
295	0.17	0.00	42.00	5.58	5.75	5.81	2.50	1.00	0.45	0.10	0.80						
296	0.17	0.00	41.00	5.58	5.81	5.87	2.50	0.20	0.00	-3.94	-0.72						
95	0.33	0.17	42.00	41.00	41.50	5.58	5.58	5.58	5.78	5.84	5.81	2.50	0.85	0.00	-0.28	0.43	
297	0.17	0.00	38.00	5.58	5.87	5.93	2.50	0.35	0.31	0.42	0.21						
298	0.17	0.00	40.00	5.58	5.93	6.00	2.50	0.28	0.00	-0.26	-2.57						
299	2.33	0.00	48.00	1.78	6.00	6.00	2.50	0.99	0.00	0.72	-1.23						
96	2.67	2.33	38.00	48.00	46.87	5.58	1.78	4.32	5.90	6.00	5.99	2.50	0.49	0.00	-0.74	-1.37	
29	4.67	2.67	37.00	46.87	42.96	3.26	4.32	4.03	5.70	5.99	5.87	2.50	1.50	0.31	0.15	0.46	
300	0.33	0.00	44.00	4.59	6.00	6.00	2.50	2.20	0.70	0.55	0.86						
301	0.33	0.00	45.00	4.59	6.00	6.00	2.50	0.32	0.00	-5.96	-0.83						
302	2.00	0.00	47.00	2.00	6.00	6.00	2.50	0.58	0.00	0.45	-2.21						
97	2.67	2.00	44.00	47.00	46.38	4.58	2.00	3.72	6.00	6.00	6.00	2.50	1.16	0.32	0.58	0.06	
303	1.50	0.00	42.00	2.42	6.00	6.00	2.50	1.86	0.50	0.69	0.31						
304	0.50	0.00	41.00	4.00	6.00	6.00	2.50	1.28	0.00	-0.45	0.57						
305	0.75	0.00	43.00	3.42	6.00	6.00	2.50	0.55	0.00	-1.32	-0.35						
306	1.25	0.00	45.00	2.68	6.00	6.00	2.50	0.75	0.00	0.26	-0.82						
98	4.00	1.25	42.00	45.00	43.00	2.42	2.68	3.13	6.00	6.00	6.00	2.50	1.09	0.00	-0.06	0.17	
307	1.33	0.00	39.00	2.58	6.00	6.00	2.50	1.36	0.26	0.45	0.07						
308	0.33	0.00	37.00	4.58	6.00	6.00	2.50	1.27	0.00	-0.07	0.75						
309	0.33	0.00	38.00	4.58	6.00	6.00	2.50	0.32	0.00	-3.00	-0.56						
310	0.25	0.00	41.00	5.00	6.00	6.00	2.50	0.49	0.00	0.36	-0.26						
99	2.25	0.25	39.00	41.00	38.78	2.59	5.00	4.19	6.00	6.00	6.00	2.50	0.91	0.00	-0.20	0.44	
311	0.25	0.00	35.00	5.00	6.00	6.00	2.50	0.62	0.40	0.21	0.59						
312	0.25	0.00	34.00	5.00	6.00	6.00	2.50	0.26	0.00	-1.43	-0.29						
313	0.25	0.00	36.00	5.00	6.00	6.00	2.50	0.33	0.00	0.22	-0.56						
100	0.75	0.25	35.00	36.00	35.00	5.00	5.00	5.00	6.00	6.00	6.00	2.50	0.51	0.00	-0.79	0.19	
[illegible]14	[illegible]	[illegible]	32.0[illegible]	[illegible].51	[illegible]00	[illegible]	2[illegible]	0.5[illegible]	[illegible].41	[illegible]	0.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

315	0.18	C.00	30.00	5.45	6.00	6.00	2.50	0.28	0.00	-0.84	-0.28					
316	0.19	0.00	33.00	5.38	6.00	6.00	2.50	0.36	0.00	0.22	-0.63					
101	0.55	0.19	32.00	33.00	31.68	5.51	5.38	5.45	6.00	6.00	6.00	2.50	0.41	0.00	-0.24	-0.54
317	0.20	C.00	27.00	5.32	6.00	6.00	2.50	0.58	0.31	0.39	0.24					
318	0.21	C.00	31.00	5.26	6.00	6.00	2.50	0.44	0.00	-0.32	-0.86					
319	1.30	C.00	25.00	2.62	6.00	6.50	2.70	0.82	0.00	0.46	-0.50					
320	1.75	C.63	28.00	2.19	6.50	6.50	2.70	1.24	0.00	0.33	-1.31					
102	3.46	1.75	27.00	28.00	27.00	5.32	2.19	3.85	6.00	6.50	6.35	2.68	0.63	0.00	0.35	-1.87
30	13.67	3.46	46.38	27.00	38.02	3.72	3.85	3.30	6.00	6.35	6.09	2.54	0.81	0.00	-0.85	-1.05
11	18.34	13.67	42.96	38.02	39.28	4.03	3.80	3.86	5.87	6.09	6.03	2.53	1.66	0.00	-0.45	0.26
321	1.88	C.00	26.00	2.09	6.50	6.30	2.70	2.85	0.48	0.57	0.39					
322	1.33	C.00	22.00	2.58	6.30	6.10	2.50	1.73	0.00	-0.65	0.31					
323	0.46	0.00	23.00	4.13	6.10	5.90	2.50	1.19	0.00	-0.46	0.37					
324	0.48	C.00	18.0C	4.07	5.90	5.70	1.50	0.75	0.00	-0.59	-0.22					
325	1.17	C.00	12.00	2.78	5.70	5.50	1.50	0.91	0.00	0.18	-0.20					
326	1.42	0.00	15.00	2.50	5.50	5.70	1.50	1.09	0.00	0.17	-0.13					
103	6.72	1.42	26.00	15.00	19.69	2.09	2.50	3.03	6.40	5.60	5.98	2.10	1.81	0.59	0.65	0.53
327	0.42	0.00	14.00	4.26	5.70	5.50	1.50	1.24	0.24	0.12	0.37					
328	0.50	C.00	20.00	4.00	5.50	5.50	1.50	0.78	0.00	-0.59	-0.10					
104	0.92	0.50	14.00	20.00	17.27	4.26	4.00	4.13	5.60	5.50	5.55	1.50	0.86	0.00	-1.11	-0.10
31	7.64	0.92	19.69	17.27	19.40	3.03	4.13	3.16	5.98	5.55	5.93	2.03	1.66	0.31	0.51	0.10
329	0.17	0.00	25.0C	5.58	5.50	5.59	1.50	0.85	0.20	0.09	0.31					
330	0.17	C.00	31.00	5.58	5.59	5.68	2.50	0.59	0.00	-0.45	0.40					
331	0.17	C.00	28.00	5.58	5.68	5.77	2.50	0.35	0.00	-0.66	-0.41					
105	0.50	0.17	25.00	28.00	28.00	5.58	5.58	5.58	5.55	5.73	5.63	2.17	0.95	0.32	0.09	0.55
332	0.17	0.00	33.0C	5.58	5.77	5.86	2.50	0.50	0.29	0.29	0.29					
333	0.17	C.00	30.00	5.58	5.86	5.95	2.50	0.35	0.00	-0.41	0.21					
334	0.17	0.00	32.00	5.58	5.95	6.00	2.50	0.28	0.00	-0.27	-0.69					
1C6	0.50	0.17	33.00	32.00	31.67	5.58	5.58	5.58	5.81	5.97	5.90	2.50	0.43	0.00	-1.22	-0.03
335	0.25	C.00	36.0C	5.00	6.00	6.12	2.50	0.47	0.33	0.41	0.26					
336	0.25	C.00	34.00	5.00	6.12	6.24	2.50	0.35	0.00	-0.35	0.21					
337	0.25	0.00	35.00	5.00	6.24	6.36	2.50	0.27	0.00	-0.27	-1.34					
107	0.75	0.25	36.00	35.00	35.00	5.00	5.00	5.00	6.06	6.30	6.18	2.50	0.44	0.00	0.03	-0.32
338	0.25	C.00	41.0C	5.00	6.36	6.50	2.50	0.64	0.55	0.57	0.52					
339	0.33	0.00	40.00	4.58	6.50	6.66	2.50	0.31	0.00	-1.08	-0.58					
108	0.58	0.33	41.00	40.00	40.43	5.00	4.58	4.79	6.43	6.58	6.52	2.50	0.58	0.00	0.24	-0.15
340	0.33	0.00	37.0C	4.58	6.66	6.84	2.50	0.49	0.26	0.37	0.15					
41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					

342	2.67	0.00	57.00	1.58	7.00	7.00	3.20	1.29	0.00	0.68	-0.74					
109	3.33	2.67	37.00	50.00	47.60	4.58	1.58	3.58	6.75	7.00	6.97	3.06	0.67	0.00	0.13	-0.98
32	5.67	3.33	28.00	47.60	42.06	5.58	3.58	4.25	5.63	6.97	6.60	2.80	1.49	0.00	-0.12	0.41
343	0.67	0.00	48.00	3.58	7.00	7.00	3.20	2.24	0.51	0.43	0.60					
344	0.67	0.00	43.00	3.58	7.00	7.50	3.20	0.89	0.00	-1.52	0.28					
345	1.00	0.00	44.00	3.00	7.50	7.50	3.20	0.64	0.00	-0.39	-0.37					
346	2.00	0.00	45.00	2.00	7.50	7.50	3.20	0.88	0.00	0.27	-1.14					
110	4.33	2.00	48.00	45.00	44.92	3.58	2.00	3.04	7.00	7.50	7.38	3.20	1.32	0.32	0.49	0.14
347	0.67	0.00	41.00	3.58	7.50	7.50	2.50	1.88	0.62	0.53	0.70					
348	0.67	0.00	42.00	3.58	7.50	7.50	2.50	0.56	0.00	-2.36	-0.24					
349	1.17	0.00	40.00	2.78	7.50	7.50	2.50	0.69	0.00	0.19	-0.47					
111	2.50	1.17	41.00	40.00	40.80	3.58	2.78	3.32	7.50	7.50	7.50	2.50	1.14	0.00	-0.16	0.37
350	0.50	0.00	39.00	4.00	7.50	7.50	2.50	1.01	0.28	0.32	0.25					
351	0.67	0.00	34.00	3.58	7.50	7.50	2.50	0.76	0.00	-0.33	-0.25					
112	1.17	0.67	39.00	34.00	36.14	4.00	3.58	3.79	7.50	7.50	7.50	2.50	0.71	0.00	-0.60	0.12
352	0.83	0.00	40.00	3.26	7.50	7.50	2.50	0.95	0.15	0.20	0.11					
353	1.00	0.00	39.00	3.00	7.00	7.00	2.50	0.85	0.00	-0.12	-0.29					
354	1.00	0.50	34.00	3.00	7.00	7.00	2.50	1.09	0.00	0.23	-1.47					
113	2.83	1.00	40.00	34.00	37.53	3.26	3.00	3.09	7.50	7.00	7.15	2.50	0.63	0.00	-0.13	-1.23
33	10.83	2.83	44.92	37.53	41.09	3.04	3.09	3.20	7.38	7.15	7.36	2.78	0.88	0.00	-0.69	-0.22
355	1.00	0.00	40.00	3.00	7.50	7.50	2.50	2.70	0.61	0.59	0.62					
356	0.50	0.00	39.00	4.00	7.00	7.00	2.50	1.02	0.00	-1.64	0.29					
357	0.50	0.00	34.00	4.00	7.00	7.00	2.50	0.73	0.00	-0.40	0.13					
358	0.83	0.00	37.00	3.26	7.00	7.00	2.50	0.64	0.00	-0.14	-0.79					
114	2.83	0.83	40.00	37.00	37.88	3.00	3.26	3.57	7.50	7.00	7.18	2.50	1.40	0.47	0.55	0.39
359	0.33	0.00	31.00	4.58	7.00	7.00	2.50	1.14	0.49	0.44	0.53					
360	0.33	0.00	35.00	4.58	7.00	7.00	2.50	0.54	0.00	-1.13	-0.33					
115	0.67	0.33	31.00	35.00	33.00	4.58	4.58	4.58	7.00	7.00	7.00	2.50	0.85	0.00	-0.65	0.42
361	0.25	0.00	29.00	5.00	7.00	7.00	2.50	0.71	0.26	0.25	0.28					
362	0.25	0.00	33.00	5.00	7.00	6.50	2.50	0.51	0.00	-0.39	0.36					
363	0.25	0.00	32.00	5.00	6.50	6.00	2.50	0.33	0.00	-0.56	-1.11					
116	0.75	0.25	29.00	32.00	31.33	5.00	5.00	5.00	7.00	6.25	6.67	2.50	0.50	0.00	-0.71	-0.47
364	0.25	0.00	26.00	5.00	6.00	5.50	2.50	0.69	0.35	0.53	0.17					
365	0.17	0.00	30.00	5.58	5.50	5.20	2.50	0.58	0.00	-0.20	-0.05					
366	0.17	0.00	24.00	5.58	5.20	4.90	2.50	0.60	0.00	0.05	-0.38					
117	0.58	0.17	26.00	24.00	26.57	5.00	5.58	5.39	5.75	5.05	5.44	2.50	0.73	0.00	0.32	-0.42

367	0.17	0.00	15.00	5.58	4.90	4.60	1.70	0.83	0.19	0.28	0.10					
368	0.17	0.00	23.00	5.58	4.60	4.30	1.70	0.75	0.00	-0.11	0.39					
369	0.17	0.00	19.00	5.58	4.30	4.00	1.70	0.46	0.00	-0.64	-0.59					
370	0.67	0.00	13.00	3.58	4.00	4.00	1.70	0.73	0.00	0.37	-0.05					
118	1.17	0.67	15.00	13.00	15.57	5.58	3.58	5.08	4.75	4.00	4.19	1.70	1.03	0.40	0.30	0.50
371	0.50	0.00	16.00	4.00	4.00	4.30	1.30	0.76	0.21	0.05	0.37					
372	0.50	0.00	17.00	4.00	4.30	4.60	1.30	0.48	0.00	-0.59	-0.30					
119	1.00	0.50	16.00	17.00	16.50	4.00	4.00	4.00	4.15	4.45	4.30	1.30	0.52	0.00	-1.00	-0.66
373	0.50	0.00	20.00	4.00	4.60	4.90	1.30	0.63	0.17	0.23	0.10					
374	1.08	0.00	21.00	2.88	4.90	5.20	1.30	0.56	0.00	-0.11	-0.77					
375	1.25	0.00	23.00	2.68	5.20	5.50	1.30	1.00	0.00	0.43	-0.09					
376	2.33	0.00	24.00	1.78	5.50	5.60	1.40	1.08	0.00	0.08	-0.75					
377	2.67	0.00	26.00	1.58	5.60	5.90	1.40	1.89	0.00	0.43	-0.12					
120	7.83	2.67	20.00	26.00	23.85	4.00	1.58	2.59	4.75	5.75	5.47	1.36	0.86	0.00	0.40	-0.65
378	1.42	0.00	27.00	2.50	5.90	6.00	1.40	2.12	0.22	0.11	0.33					
379	5.75	0.75	30.00	0.48	6.00	6.00	1.40	1.41	0.00	-0.50	-4.19					
121	7.17	5.75	27.00	30.00	29.41	2.50	0.48	1.49	5.95	6.00	5.99	1.40	1.42	0.00	0.40	-2.46
35	17.17	7.17	15.57	29.41	25.18	5.08	1.49	2.38	4.19	5.99	5.53	1.40	1.21	0.00	0.11	-1.75
12	46.14	17.17	19.40	25.18	31.04	3.16	2.38	3.12	5.93	5.53	6.30	2.11	1.23	0.00	-0.34	-0.83
380	1.50	0.00	9.00	2.42	3.00	3.00	0.50	7.31	0.81	0.81	0.82					
381	0.75	0.00	7.00	3.42	3.00	3.06	0.50	1.32	0.00	-4.54	0.22					
382	1.00	0.00	13.00	3.00	3.06	3.13	0.50	1.03	0.00	-0.29	0.02					
383	1.50	0.00	10.00	2.42	3.13	3.24	0.50	1.00	0.00	-0.02	-0.44					
122	4.75	1.50	9.00	10.00	9.84	2.42	2.42	2.81	3.00	3.18	3.08	0.50	4.90	0.75	0.71	0.80
384	1.00	0.00	14.00	3.00	3.24	3.32	0.50	1.44	0.34	0.30	0.39					
385	1.00	0.00	16.00	3.00	3.32	3.40	0.50	0.89	0.00	-0.63	-0.04					
386	0.75	0.00	18.00	3.42	3.40	3.50	0.50	0.92	0.00	0.03	-0.85					
123	2.75	0.75	14.00	18.00	15.82	3.00	3.42	3.14	3.28	3.45	3.36	0.50	1.00	0.00	-3.89	-0.37
36	7.50	2.75	9.84	15.82	12.03	2.81	3.14	2.93	3.08	3.36	3.18	0.50	3.33	0.58	0.64	0.52
387	1.75	0.00	29.00	2.19	4.50	4.00	0.50	1.70	0.28	0.46	0.11					
388	1.00	0.00	27.00	3.00	4.00	4.00	0.50	1.52	0.00	-0.12	0.23					
389	1.00	0.00	21.00	3.00	4.00	4.00	0.50	1.17	0.00	-0.30	-0.34					
124	3.75	1.00	29.00	21.00	26.33	2.19	3.00	2.73	4.25	4.00	4.12	0.50	1.38	0.24	0.27	0.22
390	0.75	0.00	32.00	3.42	4.00	4.00	0.00	1.57	0.39	0.26	0.52					
391	1.25	0.00	30.00	2.68	4.00	4.00	0.00	0.75	0.00	-1.10	-0.85					
392	1.75	0.00	36.00	2.19	4.00	4.00	0.00	1.39	0.00	0.46	-0.03					
393	1.75	0.00	34.00	2.19	4.00	4.00	0.00	1.42	0.00	0.03	-0.14					
125	[illegible]	[illegible]	32.[illegible]	34.00	[illegible]	[illegible]	[illegible]	2.[illegible]	4.00	[illegible]	[illegible]	[illegible]	1.[illegible]	0.0[illegible]	-0.[illegible]	-0.[illegible]

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394  1.00  0.00 38.00  3.00  4.00  4.00  0.00  1.63  0.29       0.13  0.46
395  1.00  0.00 40.00  3.00  4.00  4.00  0.00  0.88  0.00      -0.86 -0.12
396  0.75  0.00 43.00  3.42  4.00  4.00  0.00  0.98  0.00       0.11 -1.80

     126  2.75  0.75 38.00 43.00 40.09  3.00  3.42  3.14  4.00  4.00  4.00  0.00  1.09  0.00      0.02 -1.24

            37 12.00  2.75 25.33 40.09 32.75  2.73  3.14  2.77  4.12  4.00  4.04  0.16  1.59  0.00     -1.10  0.03

397  1.50  0.00 14.00  2.42  4.00  4.00  0.50  2.74  0.58       0.64  0.52
398  0.75  0.00 12.00  3.42  4.00  4.00  0.50  1.31  0.00      -1.09  0.08
399  0.75  0.00  3.00  3.42  4.00  4.00  0.50  1.20  0.00      -0.09 -0.30

     127  3.00  0.75 14.00  3.00 10.75  2.42  3.42  3.08  4.00  4.00  4.00  0.50  2.45  0.55      0.55  0.55

400  1.50  0.00 16.00  2.42  4.00  4.00  0.50  1.57  0.17       0.23  0.12
401  0.75  0.00 13.00  3.42  4.00  4.00  0.50  1.39  0.00      -0.13  0.18
402  1.67  0.00 20.00  2.26  4.00  4.00  0.50  1.14  0.00      -0.21 -0.46
403  1.83  0.00 14.00  2.13  4.00  4.00  0.50  1.66  0.00       0.31 -0.20
404  2.00  0.00 23.00  2.00  4.00  4.00  0.50  2.00  0.00       0.17 -0.13

     128  7.75  2.00 16.00 23.00 17.90  2.42  2.00  2.44  4.00  4.00  4.00  0.50  1.09  0.00     -1.25 -0.86

405  2.17  0.00 34.00  1.88  4.00  4.00  0.50  2.27  0.14       0.12  0.17
406  2.33  0.00 38.00  1.78  4.00  4.00  0.50  1.88  0.00      -0.21 -0.12
407  3.33  0.00 39.00  1.26  5.00  5.00  0.00  2.11  0.00       0.11 -0.20
408  3.33  0.00 39.00  1.26  5.50  5.00  0.00  2.54  0.00       0.00  0.00

     129 11.17  3.33 34.00 39.00 37.82  1.88  1.26  1.55  4.00  5.25  4.67  0.20  2.03  0.00      0.00  0.00

            38 21.92 11.17 10.75 37.82 27.07  3.08  1.55  2.07  4.00  4.67  4.34  0.35  1.53  0.00      0.00  0.00

                  13 41.42 21.92 12.03 27.07 25.99  2.93  2.07  2.43  3.18  4.34  4.04  0.32  2.25  0.00      0.00  0.00

                        4123.90 41.42 17.54 25.99 28.61  3.89  2.43  3.11  5.42  4.04  5.38  1.45  1.38  0.00
0.00  0.00

  1304.75123.90 29.28 28.61 29.56  3.38  3.11  3.36  5.22  5.38  5.30  1.79  0.00  0.00
0.00  0.00
```

2) Input data for Portals (order: el. #; pitch; dur.; int 1; int 2; tim; rst.;)

RUGGLES: |PORTALS|

TEMPO= 1.20

CMIN= 0.00

1	17.00	0.60	5.00	5.00	3.50	0.00
2	16.00	1.60	5.00	5.00	3.50	0.00
3	10.00	0.40	5.00	5.00	3.50	0.00
4	9.00	0.40	5.00	5.00	3.50	0.00
5	20.00	1.80	5.00	5.00	3.50	0.00
6	13.00	0.30	5.00	5.10	3.50	0.00
7	19.00	0.30	5.10	5.20	3.50	0.00
8	24.00	1.60	5.20	5.50	3.50	0.00
9	27.00	0.40	5.50	5.65	3.50	0.00
10	22.00	0.40	5.65	5.80	3.50	0.00
11	30.00	1.20	5.80	6.00	3.50	0.00
12	38.00	1.80	6.00	6.00	3.50	0.00
13	34.00	0.60	6.00	6.00	3.50	0.00
14	32.00	0.60	6.00	6.00	3.50	0.00
15	31.00	0.60	6.00	6.00	3.50	0.00
16	33.00	0.90	6.00	6.00	3.50	0.00
17	29.00	0.70	6.00	6.00	3.50	0.00
18	25.00	0.40	6.00	6.00	0.00	0.00
19	23.00	0.40	6.00	6.00	3.50	0.00
20	27.00	0.80	6.00	6.20	3.50	0.00
21	28.00	1.60	6.20	6.50	3.50	0.00
22	26.00	1.20	6.50	6.40	3.50	0.00
23	22.00	1.20	6.40	6.20	3.50	0.00
24	20.00	1.80	6.20	6.00	3.50	0.60
25	21.00	0.70	4.00	4.00	1.00	0.00
26	23.00	2.10	4.00	4.30	0.50	0.00
27	24.00	0.70	4.30	4.60	0.00	0.00
28	27.00	0.70	4.60	4.80	0.00	0.00
29	26.00	0.70	4.80	5.00	0.00	0.00
30	29.00	1.05	5.00	4.60	0.00	0.00
31	28.00	0.35	4.60	4.40	0.00	0.00
32	25.00	1.75	4.40	4.00	0.00	0.35
33	24.00	0.35	4.00	4.10	0.00	0.00
34	27.00	0.35	4.10	4.20	0.00	0.00
35	26.00	0.35	4.20	4.30	0.00	0.00
36	30.00	1.05	4.30	4.60	0.00	0.00
37	21.00	0.35	4.60	4.70	0.50	0.00
38	34.00	2.45	4.70	5.00	0.00	0.00
39	25.00	0.35	5.00	5.00	0.50	0.00
40	29.00	1.40	5.00	5.00	0.00	0.00
41	31.00	2.33	5.00	5.00	0.00	0.93
42	30.00	0.93	4.00	4.00	1.00	0.00
43	28.00	0.93	4.00	4.00	1.00	0.00
44	28.00	1.40	4.00	4.00	1.00	0.00
45	27.00	2.33	4.00	4.00	1.00	0.93
46	43.00	0.93	5.00	5.00	3.30	0.00
47	41.00	1.63	5.00	5.20	3.30	0.00
48	40.00	0.70	5.20	5.50	3.30	0.00
49	44.00	1.87	5.50	6.00	3.30	0.00
50	47.00	0.47	6.00	6.00	2.50	0.00
51	46.00	0.47	6.00	6.00	2.50	0.00
52	33.00	2.45	6.00	6.00	2.70	0.00
53	41.00	1.05	6.00	6.00	3.30	0.00
54	40.00	0.70	6.00	6.00	3.30	0.00
55	32.00	0.80	6.00	5.70	1.30	0.00
56	31.00	0.90	5.70	5.40	1.30	0.00
57	34.00	2.70	5.40	5.00	1.30	1.00
58	13.00	0.60	6.50	6.50	2.50	0.00
59	11.00	1.20	6.50	6.50	2.50	0.00
60	7.00	0.40	6.00	6.00	2.50	0.00
61	9.00	0.40	6.00	6.00	2.50	0.00
62	3.00	0.70	6.00	6.00	2.50	0.00
63	16.00	0.30	6.50	6.50	1.50	0.00
64	12.00	0.30	6.50	6.50	1.50	0.00
65	23.00	0.60	6.50	6.50	1.50	0.00
66	27.00	1.20	6.50	6.50	2.50	0.00
67	26.00	0.30	6.50	6.50	2.50	0.00
68	30.00	1.20	6.50	6.50	2.50	0.00
69	29.00	0.60	6.50	6.50	2.70	0.00
70	31.00	0.30	6.50	6.50	2.70	0.00
71	32.00	0.30	6.50	6.50	2.70	0.00
72	28.00	0.30	6.50	6.50	2.70	0.00
73	22.00	0.30	6.50	6.50	2.70	0.00
74	30.00	0.80	6.50	6.50	2.70	0.00
75	29.00	0.40	6.50	6.50	2.70	0.00
76	31.00	0.24	6.50	6.50	2.70	0.00
77	33.00	0.24	6.50	6.50	2.70	0.00
78	28.00	0.24	6.50	6.50	2.70	0.00
79	25.00	0.24	6.50	6.50	2.90	0.00
80	26.00	0.24	6.50	6.50	2.90	0.00
81	36.00	0.90	6.50	6.50	2.90	0.00
82	35.00	0.70	6.50	6.50	2.50	0.00
83	27.00	0.40	6.50	6.30	2.50	0.00
84	26.00	0.40	6.30	6.00	2.50	0.00
85	34.00	1.50	6.00	6.00	2.50	0.00
86	31.00	0.30	6.00	5.80	2.50	0.00
87	28.00	0.50	5.80	5.70	2.50	0.00
88	21.00	0.70	5.70	5.60	2.50	0.00
89	30.00	3.50	5.60	5.50	2.70	1.00
90	17.00	0.90	3.00	3.00	0.50	0.00
91	22.00	0.90	3.00	3.00	0.50	0.00
92	23.00	0.90	3.00	3.00	0.00	0.00
93	28.00	0.90	3.00	3.00	0.00	0.00
94	30.00	3.60	3.00	3.00	0.00	0.90
95	17.00	0.90	4.00	4.00	1.50	0.00
96	22.00	0.90	4.00	4.20	1.50	0.00
97	23.00	0.60	4.20	4.40	1.50	0.00
98	25.00	0.60	4.40	4.55	1.50	0.00
99	30.00	1.50	4.65	5.00	1.50	0.00
100	28.00	0.45	5.00	5.10	1.50	0.00
101	27.00	0.45	5.10	5.20	1.50	0.00
102	37.00	0.60	5.20	5.33	2.50	0.00
103	36.00	0.60	5.33	5.46	2.50	0.00
104	33.00	0.60	5.46	5.60	2.50	0.00
105	44.00	0.45	5.60	5.70	2.50	0.00
106	43.00	0.45	5.70	5.80	2.50	0.00
107	42.00	0.45	5.90	6.00	2.50	0.00
108	29.00	0.45	6.00	6.00	2.50	0.00
109	40.00	2.70	6.00	6.00	2.50	0.00
110	36.00	0.90	6.00	6.00	2.50	0.00
111	23.00	0.90	6.00	6.00	2.50	0.00
112	34.00	1.50	6.00	6.00	2.50	0.00
113	37.00	0.60	6.00	6.00	2.50	0.00
114	33.00	1.05	6.00	6.00	2.50	0.00
115	32.00	0.45	6.00	6.00	2.50	0.00

116 19.00	0.45	6.00	6.00	0.00	0.00
117 26.00	1.05	6.00	6.00	2.50	0.00
118 27.00	0.60	6.00	6.00	2.50	0.00
119 28.00	0.60	6.00	6.00	2.50	0.00
120 17.00	0.65	6.00	6.00	1.50	0.00
121 18.00	0.67	6.00	6.00	1.50	0.00
122 24.00	0.69	6.00	6.00	1.50	0.00
123 13.00	0.71	6.00	6.00	1.50	0.00
124 19.00	0.73	6.00	6.00	1.50	0.00
125 26.00	0.75	6.00	6.00	1.50	0.00
126 32.00	2.30	6.00	5.67	2.50	0.00
127 39.00	2.50	5.67	5.33	2.30	0.00
128 45.00	4.00	5.33	5.00	2.00	1.30
129 17.00	1.20	5.50	5.50	2.70	0.00
130 16.00	0.60	5.00	5.00	2.70	0.00
131 10.00	1.80	5.00	5.00	2.30	0.00
132 11.00	0.60	5.00	5.00	1.50	0.00
133 20.00	0.30	5.00	5.08	1.20	0.00
134 19.00	0.30	5.08	5.16	1.00	0.00
135 13.00	0.30	5.16	5.24	1.20	0.00
136 14.00	0.30	5.24	5.33	1.00	0.00
137 21.00	0.40	5.33	5.40	1.70	0.00
138 27.00	0.40	5.40	5.48	1.70	0.00
139 34.00	0.40	5.48	5.60	1.70	0.00
140 40.00	0.40	5.60	5.73	2.30	0.00
141 43.00	0.20	5.73	5.80	2.30	0.00
142 42.00	0.20	5.80	5.86	2.30	0.00
143 41.00	0.20	5.86	5.93	2.30	0.00
144 48.00	0.20	5.93	6.00	2.30	0.00
145 48.00	1.50	6.00	6.00	2.30	0.00
146 49.00	0.30	6.00	6.00	2.30	0.00
147 45.00	0.90	6.00	6.00	2.30	0.00
148 43.00	0.30	6.00	6.00	2.30	0.00
149 34.00	1.00	6.00	6.00	2.30	0.00
150 39.00	0.40	6.00	6.00	2.30	0.00
151 38.00	0.40	6.00	6.00	2.30	0.00
152 40.00	0.30	6.00	6.00	2.30	0.00
153 32.00	0.30	6.00	6.00	2.30	0.00
154 29.00	0.30	6.00	6.00	2.30	0.00
155 30.00	0.70	6.00	6.00	2.30	0.00
156 19.00	0.40	6.00	6.00	1.50	0.00
157 24.00	0.40	6.00	6.00	1.50	0.00
158 37.00	1.20	6.00	5.67	1.10	0.00
159 35.00	1.20	5.67	5.33	1.10	0.00
160 33.00	1.20	5.33	5.00	1.10	0.00
161 22.00	2.70	5.00	4.80	1.30	0.00
162 32.00	0.30	5.00	5.08	1.70	0.00
163 29.00	0.30	5.08	5.16	1.70	0.00
164 38.00	0.30	5.16	5.25	2.50	0.00
165 39.00	0.30	5.25	5.32	2.50	0.00
166 37.00	0.30	5.40	5.50	2.50	0.00
167 34.00	0.30	5.50	5.58	2.50	0.00
168 35.00	0.30	5.58	5.66	2.50	0.00
169 28.00	0.30	5.66	5.75	2.50	0.00
170 31.00	0.30	5.75	5.83	2.50	0.00
171 33.00	0.30	5.83	5.92	2.50	0.00
172 41.00	0.30	5.92	6.00	2.50	0.00
173 44.00	1.80	6.00	6.00	2.50	0.00
174 42.00	0.60	6.00	6.00	2.50	0.00
17[illegible].00	[illegible]	[illegible]	6[illegible]	2.5[illegible]	[illegible].00
176 40.00	0.60	6.00	6.00	2.50	0.00
177 38.00	0.60	6.00	6.00	2.50	0.00
178 41.00	0.60	6.00	6.00	2.50	0.00
179 39.00	0.60	6.00	6.00	2.50	0.00
180 35.00	0.60	6.00	6.00	2.50	0.00
181 33.00	0.60	6.00	6.00	2.50	0.00
182 31.00	0.60	6.00	6.00	2.50	0.00
183 36.00	1.20	6.00	6.00	2.50	0.00
184 34.00	1.20	6.00	6.00	2.50	0.00
185 40.00	0.30	6.00	6.00	2.50	0.00
186 37.00	0.30	6.00	6.00	2.50	0.00
187 32.00	0.30	6.00	6.00	2.50	0.00
188 26.00	0.30	6.00	6.00	1.50	0.00
189 31.00	1.20	5.00	4.50	1.50	0.00
190 29.00	1.20	4.50	4.00	1.50	0.00
191 33.00	0.30	4.00	4.00	1.50	0.00
192 27.00	0.30	4.00	4.00	1.50	0.00
193 26.00	0.30	4.00	4.00	1.50	0.00
194 23.00	0.30	4.00	4.00	1.50	0.00
195 36.00	1.20	4.00	4.00	1.50	0.00
196 34.00	1.20	4.00	4.00	1.50	0.00
197 37.00	0.30	4.00	4.00	1.50	0.00
198 32.00	0.30	4.00	4.33	1.50	0.00
199 31.00	0.30	4.33	4.67	1.50	0.00
200 27.00	0.30	4.67	5.00	1.50	0.00
201 41.00	0.80	5.00	5.00	2.50	0.00
202 39.00	0.40	5.00	4.00	2.50	0.00
203 23.00	0.40	5.00	5.00	2.50	0.00
204 26.00	0.20	5.00	5.00	2.50	0.00
205 25.00	0.20	5.00	5.00	2.50	0.00
206 22.00	0.20	5.00	5.00	2.50	0.00
207 24.00	0.60	5.00	5.00	2.50	0.40
208 41.00	0.40	5.00	5.00	2.50	0.00
209 39.00	0.40	5.00	4.00	2.50	0.00
210 23.00	0.40	5.50	5.50	2.50	0.00
211 26.00	0.20	5.50	5.50	2.50	0.00
212 25.00	0.20	5.50	5.50	2.50	0.00
213 22.00	0.20	5.50	5.50	2.50	0.00
214 24.00	0.20	5.50	5.50	2.50	0.00
215 42.00	0.80	6.00	6.00	2.50	0.00
216 40.00	1.00	6.00	6.00	2.50	0.00
217 36.00	0.60	6.00	6.00	2.50	0.00
218 34.00	0.60	6.00	6.00	2.50	0.00
219 32.00	0.60	6.00	6.00	2.50	0.00
220 35.00	0.60	6.00	6.00	2.50	0.00
221 31.00	1.00	6.00	6.00	2.50	0.00
222 27.00	0.40	6.00	6.00	2.50	0.00
223 25.00	0.40	6.00	6.00	2.50	0.00
224 29.00	0.80	6.00	6.00	2.50	0.00
225 30.00	1.60	6.00	6.00	2.50	0.00
226 26.00	1.40	6.00	5.00	2.50	0.00
227 22.00	1.60	5.00	4.00	2.50	0.00
228 20.00	2.60	4.00	3.00	2.50	0.80
229 21.00	0.70	4.00	4.00	1.00	0.00
230 23.00	2.10	4.00	4.00	1.50	0.00
231 24.00	0.70	4.00	4.33	1.50	0.00
232 27.00	0.70	4.33	4.67	1.50	0.00
233 26.00	0.70	4.67	5.00	1.50	0.00
234 29.00	1.05	5.00	5.00	1.50	0.00
[illegible]35 [illegible]	0[illegible]	5.[illegible]	[illegible].00	[illegible]50	[illegible]

236	25.00	1.75	5.00	5.00	1.50	0.35
237	24.00	0.35	5.00	5.00	1.50	0.00
238	27.00	0.35	5.00	5.00	1.50	0.00
239	26.00	0.35	5.00	5.00	1.50	0.00
240	30.00	1.05	5.00	5.00	1.50	0.00
241	21.00	0.35	5.00	5.00	1.00	0.00
242	34.00	2.45	5.00	5.00	0.50	0.00
243	25.00	0.35	5.00	5.00	1.00	0.00
244	29.00	1.40	5.00	5.00	0.50	0.00
245	31.00	2.37	5.00	5.00	0.50	0.97
246	30.00	0.97	4.00	4.00	1.20	0.00
247	28.00	0.97	4.00	4.00	1.20	0.00
248	28.00	1.40	4.00	4.00	1.20	0.00
249	27.00	2.37	4.00	4.00	1.00	0.97
250	43.00	0.97	5.00	5.00	3.50	0.00
251	41.00	1.67	5.00	5.00	3.50	0.00
252	40.00	0.70	5.00	5.00	3.50	0.00
253	44.00	1.87	5.00	5.00	3.50	0.00
254	47.00	0.47	5.00	5.00	2.50	0.00
255	46.00	0.47	5.00	5.00	2.50	0.00
256	33.00	2.45	5.00	5.00	2.50	0.00
257	41.00	1.05	5.00	5.00	2.50	0.00
258	40.00	0.80	5.00	4.80	2.50	0.00
259	32.00	0.90	4.80	4.60	2.50	0.00
260	31.00	1.00	4.60	4.40	2.50	0.00
261	34.00	1.30	4.40	4.00	2.50	0.00
262	6.00	0.80	6.00	6.00	0.50	0.00
263	5.00	0.80	6.00	6.00	0.50	0.00
264	0.00	0.90	6.00	6.00	0.50	0.00
265	-2.00	0.30	6.00	6.00	0.50	0.00
266	11.00	0.40	6.00	6.00	0.50	0.00
267	9.00	0.40	6.00	6.00	1.20	0.00
268	3.00	0.40	6.00	6.00	1.20	0.00
269	14.00	1.80	6.00	5.00	2.20	0.00
270	13.00	0.60	5.00	5.00	1.20	0.00
271	20.00	0.60	5.00	5.00	1.20	0.00
272	17.00	0.60	5.00	5.00	1.20	0.00
273	21.00	1.80	5.00	5.16	1.20	0.00
274	19.00	0.60	5.00	5.04	1.20	0.00
275	22.00	0.60	5.04	5.09	1.20	0.00
276	23.00	0.60	5.09	5.15	1.20	0.00
277	20.00	0.60	5.15	5.15	1.20	0.00
278	15.00	0.60	5.15	5.15	1.20	0.00
279	21.00	1.80	5.15	5.15	1.20	0.00
280	19.00	0.60	5.15	5.27	1.50	0.00
281	22.00	0.60	5.23	5.30	1.50	0.00
282	23.00	0.60	5.30	5.35	1.50	0.00
283	20.00	0.60	5.35	5.40	1.50	0.00
284	15.00	0.60	5.50	5.50	1.60	0.00
285	25.00	0.60	5.50	5.50	1.50	0.00
286	26.00	0.60	5.50	5.50	1.50	0.00
287	24.00	0.60	5.50	5.50	1.50	0.00
288	18.00	0.60	5.50	5.52	1.70	0.00
289	29.00	0.60	5.52	5.55	1.70	0.00
290	31.00	0.60	5.55	5.58	1.20	0.00
291	28.00	0.40	5.58	5.61	1.20	0.00
292	22.00	0.40	5.61	5.63	1.20	0.00
293	35.00	1.00	5.63	5.70	2.50	0.00
294	39.00	1.00	5.70	5.75	2.50	0.00
295	42.00	0.20	5.75	5.81	2.50	0.00
296	41.00	0.20	5.81	5.87	2.50	0.00
297	38.00	0.20	5.87	5.93	2.50	0.00
298	40.00	0.20	5.93	6.00	2.50	0.00
299	48.00	2.80	6.00	6.00	2.50	0.00
300	44.00	0.40	6.00	6.00	2.50	0.00
301	45.00	0.40	6.00	6.00	2.50	0.00
302	47.00	2.40	6.00	6.00	2.50	0.00
303	42.00	1.80	6.00	6.00	2.50	0.00
304	41.00	0.60	6.00	6.00	2.50	0.00
305	43.00	0.90	6.00	6.00	2.50	0.00
306	45.00	1.50	6.00	6.00	2.50	0.00
307	39.00	1.60	6.00	6.00	2.50	0.00
308	37.00	0.40	6.00	6.00	2.50	0.00
309	38.00	0.40	6.00	6.00	2.50	0.00
310	41.00	0.30	6.00	6.00	2.50	0.00
311	35.00	0.30	6.00	6.00	2.50	0.00
312	34.00	0.30	6.00	6.00	2.50	0.00
313	36.00	0.30	6.00	6.00	2.50	0.00
314	32.00	0.21	6.00	6.00	2.50	0.00
315	30.00	0.22	6.00	6.00	2.50	0.00
316	33.00	0.23	6.00	6.00	2.50	0.00
317	27.00	0.24	6.00	6.00	2.50	0.00
318	31.00	0.25	6.00	6.00	2.50	0.00
319	25.00	1.56	6.00	6.50	2.70	0.00
320	28.00	2.10	6.50	6.50	2.70	0.75
321	26.00	2.25	6.50	6.30	2.70	0.00
322	22.00	1.60	6.30	6.10	2.50	0.00
323	23.00	0.55	6.10	5.90	2.50	0.00
324	18.00	0.57	5.90	5.70	1.50	0.00
325	12.00	1.40	5.70	5.50	1.50	0.00
326	15.00	1.70	5.50	5.70	1.50	0.00
327	14.00	0.50	5.70	5.50	1.50	0.00
328	20.00	0.60	5.50	5.50	1.50	0.00
329	25.00	0.20	5.50	5.59	1.50	0.00
330	31.00	0.20	5.59	5.68	2.50	0.00
331	28.00	0.20	5.68	5.77	2.50	0.00
332	33.00	0.20	5.77	5.86	2.50	0.00
333	30.00	0.20	5.86	5.95	2.50	0.00
334	32.00	0.20	5.95	6.00	2.50	0.00
335	36.00	0.30	6.00	6.12	2.50	0.00
336	34.00	0.30	6.12	6.24	2.50	0.00
337	35.00	0.30	6.24	6.36	2.50	0.00
338	41.00	0.30	6.36	6.50	2.50	0.00
339	40.00	0.40	6.50	6.66	2.50	0.00
340	37.00	0.40	6.66	6.84	2.50	0.00
341	39.00	0.40	6.84	7.00	2.50	0.00
342	50.00	3.20	7.00	7.00	3.20	0.00
343	48.00	0.80	7.00	7.00	3.20	0.00
344	43.00	0.80	7.00	7.50	3.20	0.00
345	44.00	1.20	7.50	7.50	3.20	0.00
346	45.00	2.40	7.50	7.50	3.20	0.00
347	41.00	0.80	7.50	7.50	2.50	0.00
348	42.00	0.80	7.50	7.50	2.50	0.00
349	40.00	1.40	7.50	7.50	2.50	0.00
350	39.00	0.60	7.50	7.50	2.50	0.00
351	34.00	0.80	7.50	7.50	2.50	0.00
352	40.00	1.00	7.50	7.50	2.50	0.00
353	39.00	1.20	7.00	7.00	2.50	0.00
354	34.00	1.20	7.00	7.00	2.50	0.60
355	40.00	1.20	7.50	7.50	2.50	0.00

356	39.00	0.60	7.00	7.00	2.50	0.00
357	34.00	0.60	7.00	7.00	2.50	0.00
358	37.00	1.00	7.00	7.00	2.50	0.00
359	31.00	0.40	7.00	7.00	2.50	0.00
360	35.00	0.40	7.00	7.00	2.50	0.00
361	29.00	0.30	7.00	7.00	2.50	0.00
362	33.00	0.30	7.00	6.50	2.50	0.00
363	32.00	0.30	6.50	6.00	2.50	0.00
364	26.00	0.30	6.00	5.50	2.50	0.00
365	30.00	0.20	5.50	5.20	2.50	0.00
366	24.00	0.20	5.20	4.90	2.50	0.00
367	15.00	0.20	4.90	4.60	1.70	0.00
368	23.00	0.20	4.60	4.30	1.70	0.00
369	19.00	0.20	4.30	4.00	1.70	0.00
370	13.00	0.80	4.00	4.00	1.70	0.00
371	16.00	0.60	4.00	4.30	1.30	0.00
372	17.00	0.60	4.30	4.60	1.30	0.00
373	20.00	0.60	4.60	4.90	1.30	0.00
374	21.00	1.30	4.90	5.20	1.30	0.00
375	23.00	1.50	5.20	5.50	1.30	0.00
376	24.00	2.80	5.50	5.60	1.40	0.00
377	26.00	3.20	5.60	5.90	1.40	0.00
378	27.00	1.70	5.90	6.00	1.40	0.00
379	30.00	6.90	6.00	6.00	1.40	0.90
380	9.00	1.80	3.00	3.00	0.50	0.00
381	7.00	0.90	3.00	3.06	0.50	0.00
382	13.00	1.20	3.06	3.13	0.50	0.00
383	10.00	1.80	3.13	3.24	0.50	0.00
384	14.00	1.20	3.24	3.32	0.50	0.00
385	16.00	1.20	3.32	3.40	0.50	0.00
386	18.00	0.90	3.40	3.50	0.50	0.00
387	29.00	2.10	4.50	4.00	0.50	0.00
388	27.00	1.20	4.00	4.00	0.50	0.00
389	21.00	1.20	4.00	4.00	0.50	0.00
390	32.00	0.90	4.00	4.00	0.00	0.00
391	30.00	1.50	4.00	4.00	0.00	0.00
392	36.00	2.10	4.00	4.00	0.00	0.00
393	34.00	2.10	4.00	4.00	0.00	0.00
394	38.00	1.20	4.00	4.00	0.00	0.00
395	40.00	1.20	4.00	4.00	0.00	0.00
396	43.00	0.90	4.00	4.00	0.00	0.00
397	14.00	1.80	4.00	4.00	0.50	0.00
398	12.00	0.90	4.00	4.00	0.50	0.00
399	3.00	0.90	4.00	4.00	0.50	0.00
400	16.00	1.80	4.00	4.00	0.50	0.00
401	13.00	0.90	4.00	4.00	0.50	0.00
402	20.00	2.00	4.00	4.00	0.50	0.00
403	14.00	2.20	4.00	4.00	0.50	0.00
404	23.00	2.40	4.00	4.00	0.50	0.00
405	34.00	2.60	4.00	4.00	0.50	0.00
406	38.00	2.80	4.00	4.00	0.50	0.00
407	39.00	4.00	5.00	5.00	0.00	0.00
408	39.00	4.00	5.50	5.00	0.00	0.00

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