RAKU FOR PERCUSSION

by Dan Senn

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RAKU FOR PERCUSSION...

...is a composition by Daniel A. Senn written in August-September 1977 at Urbana, Illinois.

...is an attempt at producing a sonic artifact that is the result of conditions that are analogous in spirit and process to those that are in effect throughout the forming, glazing, and firing of Raku (clay) artifacts. This procedure incorporates a mix of high control and low control (aleatory) components and thus, places it midway along a continuum between highly determinate and indeterminate compositions.

...is a sixteen level piece scored for sixteen players thatis performed on a large orchestra of percussion instruments. Because of the required number of percussion players is high, non-percussion specialists may be enlisted to perform any of the parts except 1-1, 3-2, 1-3, 1-4, 2-4, 3-4, and 4-4. Likewise, because of the large percussion battery called for, substitutions of instruments requiring similar performing technique (mallet instruments... this excludes the use of all wind chime instruments) and of similar timbral quality may be made except for those given for A4, A3, A2, and A1. A3 (player 4-4) does not necessarily call for a keyboard specialist.

...may be performed in the traditional front-stage auditorium or in-the-round.

...requires a conducter and a lighting technician.

...has a duration of approximately 17 minutes.

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INSTRUMENTATION

The instruments given below are grouped to the right of the Area number (example A1, A2, etc.) which corresponds to the areas diagrammed in PERFORMANCE LAYOUT within which they will be arranged.

A1 Glockenspiele, song bells, chimes, tuned bottles (diatonic)

A2 Xylophone, marimba, vibraphone, autoharp

A3 Harpsichord, celeste, piano harp

A4 Dance drums

A5 Anvil, artillery shell, bell plate, foot bell, cow bell, triangle, hand bell

A6 Stainless bowls, chamber bowls, saw blade bells, Chinese tree bells, Pakistan tree bells, Japanese tree bells

A7 Temple cup bells, dinner chimes, clock chimes, water chimes, thunder sheet, slapstick

A8 Pop gun, water gourd, spoons, temple blocks, tap shoes, wood block, crotales, bulb horn, ratchet, claves

A9 Timbales, bongos, Conga drum Indian tomtom, water gourd

A10 Tabor, tomtom, timpani (maraca sticks)

A11 Bass drum, field drum, concert snare, march snare, piccolo snare, jawbone

A12 Gourd drum, tamborine, metal cabasa, reco reco, maracas, guiro

A13 Chinese cymbols, S. cymbols cymbol tree, piatti cymbols

A14 Sheet metal cymbols, tamtam, saw blade gongs, boiing gongs, sled gongs, starter's pistol.

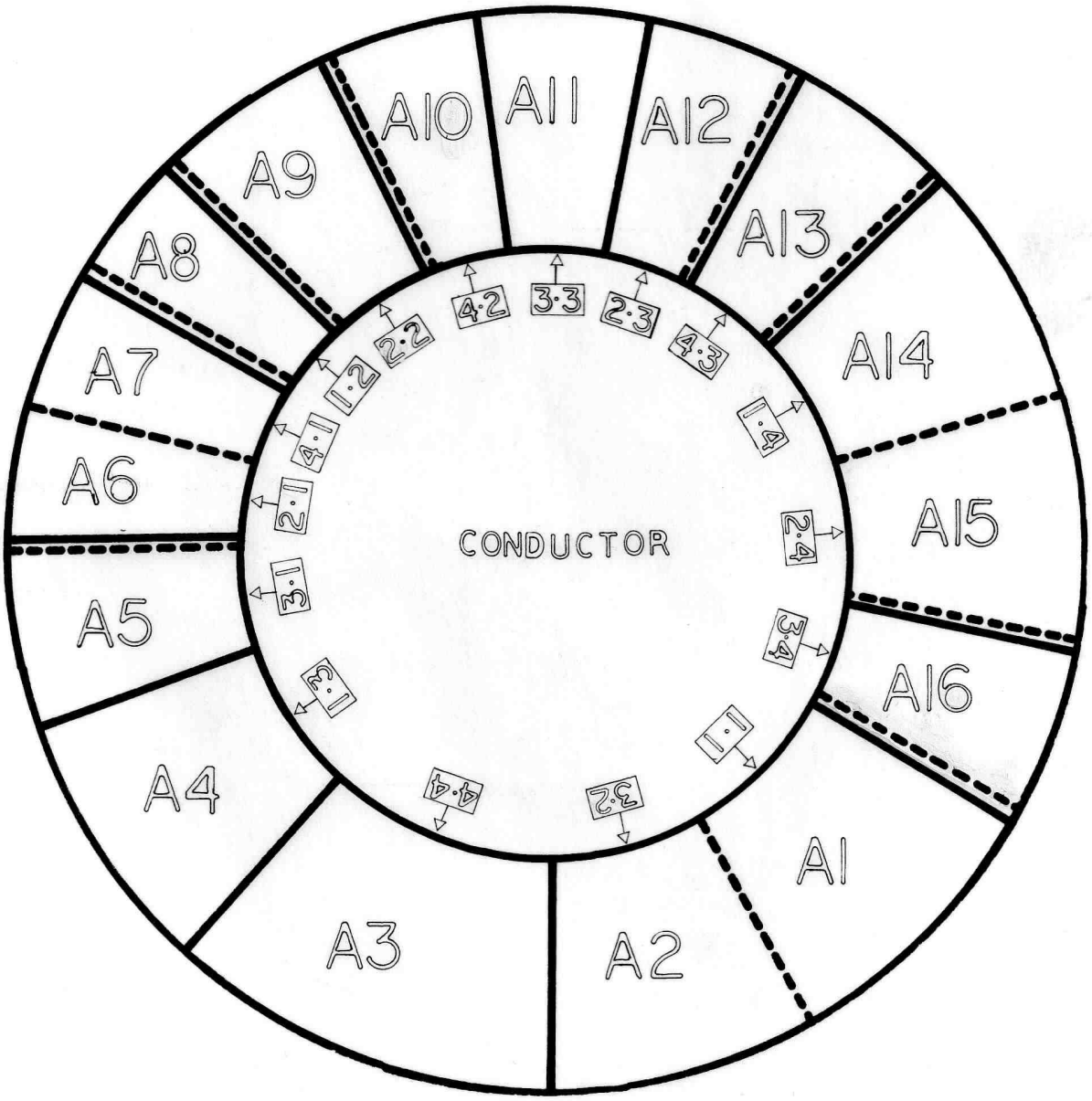
A15 Thai gongs, Korean gongs, Javenese gongs, Tibetan gongs

A16 Chromatic steel drum, diatonic steel drum

NOTE: EXCEPT FOR PERFORMERS IN A3 AND A4, ALL PERFORMERS WILL BE OUTFITTED WITH FOUR SETS OF MALLETS. THESE SHOULD REPRESENT A CONTINUUM MOVING FROM A HARD TO SOFT SUBSTANCE.

Performance Layout

This diagram illustrates the instrument placement areas, score positions (arrows from scores designate the area in which its assigned player will originate), and the boundary conditions enclosing the instrument areas. (There are three such conditions diagrammed here: a solid line representing an impenetrable boundary; a broken line representing a penetrable boundary; and a solid-broken (coupling) line representing a boundary allowing biased penetration.)



Front Center Stage

BOUNDARY CONDITIONS (REFERENCE PAGE 3)

Three boundary conditions:

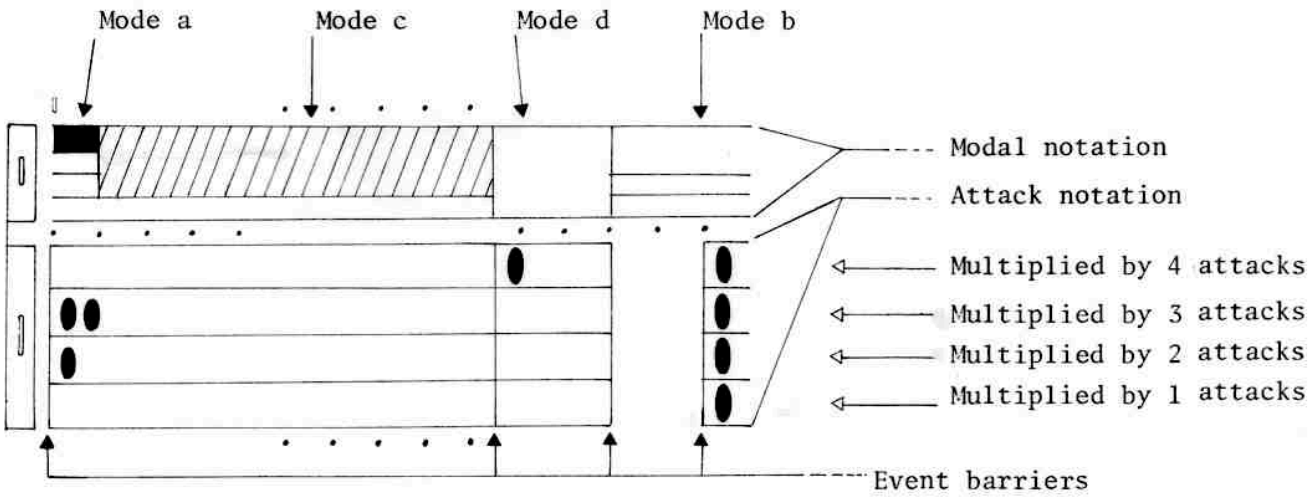
1) Solid line: A player enclosed by a solid line is restricted to performing those instruments within that area. Similarly, the enclosed area cannot be entered by other players. (ex. A11, A3, A4)

2) Broken line: A player enclosed by a broken line may move freely through the penetratable boundaries and may perform on any instrument that is accessible. Areas enclosed by a broken line may be freely entered by any player in accordance with the boundary conditions.

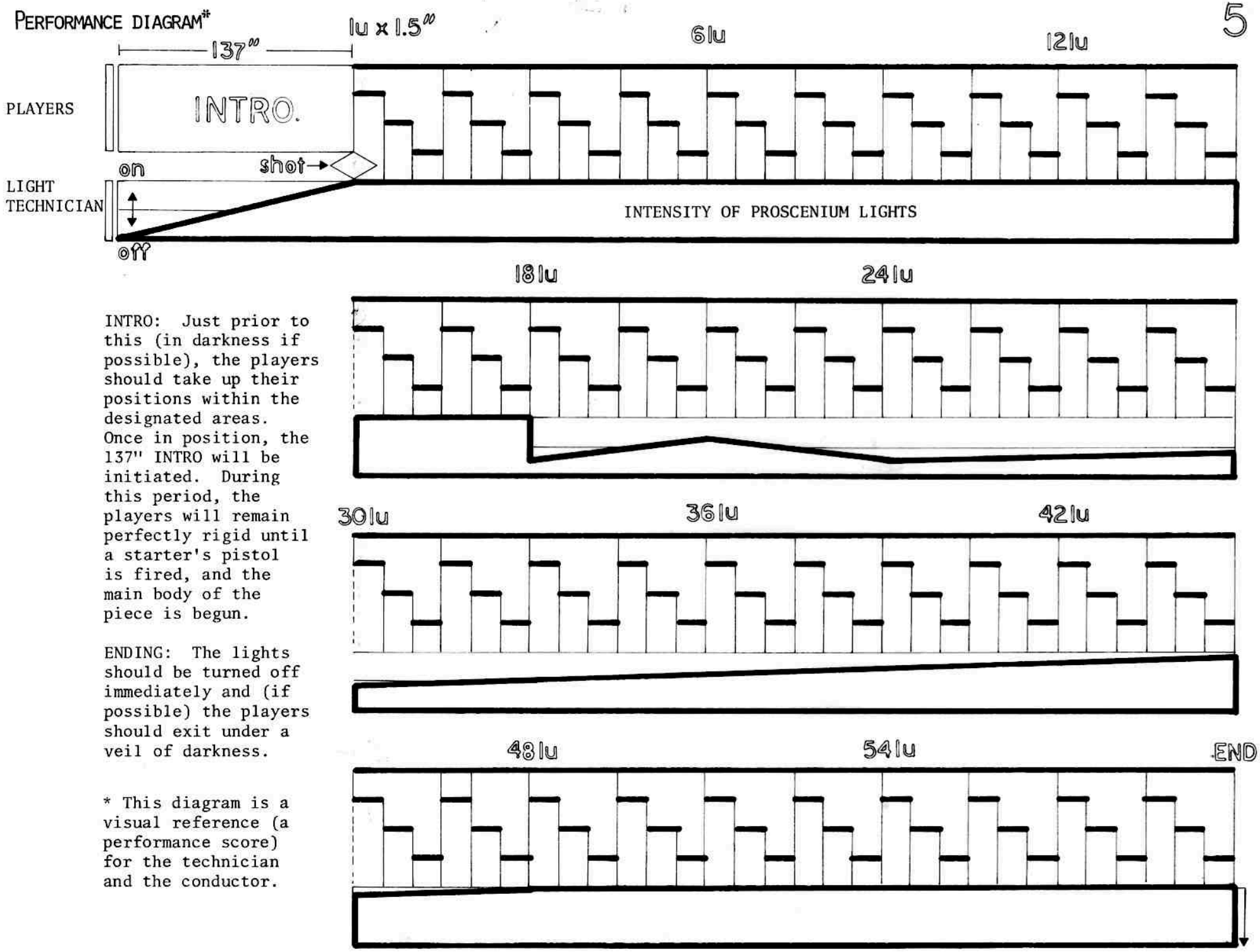
3) Broken-solid line: Areas enclosed by a broken-solid line may be entered by players who originate from the broken line side. Those players originating on the solid line side will be unable to penetrate such a boundary.

IMPORTANT: These boundary conditions are subject to the following:
ONCE A PLAYER HAS BEEN ASSIGNED TO A "HOME" TERRITORY AND ITS ACCOMPANYING SCORE, HE OR SHE MUST READ FROM THE INITIALLY ASSIGNED SCORE ONLY THROUGHOUT THE PERFORMANCE. (A performance by players who have memorized their assigned scores will differ substantially from a performance by players who have not.)

SCORE EXAMPLE



PERFORMANCE DIAGRAM*



INTRO: Just prior to this (in darkness if possible), the players should take up their positions within the designated areas. Once in position, the 137" INTRO will be initiated. During this period, the players will remain perfectly rigid until a starter's pistol is fired, and the main body of the piece is begun.

ENDING: The lights should be turned off immediately and (if possible) the players should exit under a veil of darkness.

* This diagram is a visual reference (a performance score) for the technician and the conductor.

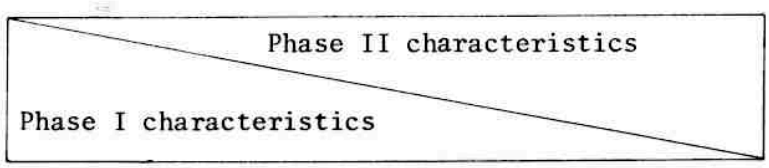
SCORE INTERPRETATION

There are sixteen 8-1/2" x 11" individual scores that are distinguished by combining the upper and lower numbers placed in the vertical rectangles just left of each system (reference page 4). A page contains four systems that are evenly measured into 15 pulse segments. (A pulse equals 1.5 seconds.) Each system is further divided into "modal" notation (top sub-system) and "attack" notation (lower sub-system). The attack notation will always occur in one of four general contexts. These four modal-contexts are signified by as many symbols occurring on the horizontal just above the "attack" elipses. These attack elipses always appear to the right of the vertical event barriers, and may occur in any amount at any of the four levels. An elipse placed in the upper level (level 4) will signal four attacks, in the third level will signal three attacks, in the second level will signal two attacks, and in the first level will signal one attack. An elipse at each of these levels will signal a ten attack event that will be executed in at lease one of four modal contexts.

PHASE MODULATION WITHIN THE FOUR MODAL CONDITIONS

A mode does not represent static conditions governing the manner of attack execution but rather four unique phase modulations each with differing characteristics moving in and out of phase over the maximum durations given in Chart 2 on page 11.

EXAMPLE:



The duration of these modes differs for each player and for each of the four modes permuting throughout a player's part.

INITIATION OF MODAL CONDITIONS

The appearance in time of a new mode will always trigger the beginning of its phase modulation. If such an appearance were limited to five pulses of a mode with modulatory characteristics extending over ten pulses, only the first half of the entire modal envelope would "possibly" be in effect. Frequently a performer is offered several modal contexts within which the attack events may "possibly" occur. Though the effect of these contexts are revealed only when a percussive event occurs (when it is externalized) the modal conditions will remain continuously in motion and in effect on an internal level (within the minds of each performer).

PERCUSSIVE EVENT CONSTRUCTION AND EMERGENCE

A percussive event or gesture is constructed from the attack notation (previously described) and must occur between the vertical event barriers as affected by the four modal conditions. The organization of attacks within the confines of the durational, contextual and physical (see the PERFORMANCE LAYOUT) conditions, must appear as a single and cohesive statement. An attack gesture should not be so fragmented as to appear as separate statements. (This simply takes into account the function of short-term-memory as utilized in the perception of such compositions.) Such a statement is a subset of a larger statement which occurs over the maximum duration of the modal envelopes. Specific information as to the content of these envelopes of activity may be obtained and organized by mapping the relative components from CHARTS 1, 2, and 3.

CONDITIONAL THIRD PHASE

This phase is operative when the time given to execute an event is insufficient. When this happens, as many attack units as possible should be performed before the allotted time expires. The completion of attack units within the vertical time barriers is given the highest priority.

ABSENCE OF PERCUSSIVE NOTATION

Though the contextual modes are continuously in effect, occasionally, the attack notation is absent. When this occurs, a performer should immediately become rigid and remain so until the notation reoccurs.

OPTIONAL SCORE INTERPRETATIONS (Reference Score Example)

A performer has the option of extending the previous phase characteristics (The modal condition that is present when the previous mode is terminated would be extended until the performer wishes to revert back to the visual score.) or of allowing the next mode to take immediate effect. In the score example, if this eleven attack event was initiated immediately, the characteristics present at this point within the phase of Mode "a", may control the context of the percussive gesture throughout. However, only the earliest phase characteristics of Mode "a" would be statically represented.

INDIVIDUAL PREPARATION

1) Read all of the enclosed material and either choose or be assigned a part.

2) Construct on paper four envelopes of activity. These envelopes will be prepared as though attack elements were in effect throughout.

3) Begin private rehearsals on instruments from "home" area. Work on one envelope at a time. (Drawings in score form and scale (step #2) would be useful here.) Once the modulating characteristics of each envelope have been developed begin permuting the four modes a random until there is no hesitation in transition from one to another. (Work with a clock. A close approximation of the phase modulations in time is necessary.)

4) Still playing the "home" area instruments, begin executing the envelopes of activity within the durational confines of the score.

5) After all players have achieved step #4, full-rehearsals may begin.

GROUP REHEARSAL: TWO RECOMMENDATIONS

1) Before group rehearsal may begin, those steps outlines in the INDIVIDUAL PREPARATION should be completed.

2) Using masking tape, map out the broken and solid lines that are diagrammed in the PERFORMANCE LAYOUT and place instruments within each area.

CHART 1 GENERAL COMPONENTS OF THE ENVELOPES OF ACTIVITY

		• 5	• 4	• 3	• 2	• 1 •
D	Duration	shortest	short	short-long	long	longest
F	Frequency	highest	high	high-low	low	lowest
A	Amplitude	loudest	loud	soft-loud	soft	softest
R	Rhythmic Density	high-irreg.	low-irreg.	low-regular	high-reg.	constant
C	Instrument Change	highest	high	low	lowest	none

INTERPRETATION: The elements given in the two columns furthest to the left (the first column is the second's symbolic equivalent) are for the most part, basic components of sound. The adjectives to the right of these (in the numbered columns) refer to extremes within each of these parameters as determined by each player relative to the performed instrument. Examples and further explanations are given below.

1) Duration: This parameter deals with the duration of independent attack events. A "short" duration on the tympani may be a single undampened attack and a "shortest" duration may be the same attack dampened. Events of longer duration would be rolled.

2) Frequency: This component refers to a pitch continuum determined primarily by the available instrument(s). Within each "home" territory, this may be very specific. But as a performer moves from his/her original position, it will naturally become obscured. NOTE: FOR PERFORMERS IN A3, A2, AND A1, MORE SPECIFIC CONTINUUM CONSIDERATIONS ARE GIVEN IN CHART 4.

3) Amplitude: The "loudest" to the "softest" dynamic continuum is determined by the strength and finesse of each player.

4) Rhythmic density: Essentially this continuum is broken into constant, irregular (steady pulse characteristics are obscured) and regular attack dispersions. A high density irregular gesture will differ from a low density irregular gesture when the time allotment is sufficient (the same is true with "regular" gestures) to reveal the particulars of the two densities. NOTE: PHASE I, MODE d, HAS MORE SPECIFIC CONTINUUM CONSIDERATIONS WHICH CONCERNS ALL PLAYERS (see page 12). "Constant" refers to events which emerge and depart without sharp attack and decay peaks.

5) Instrument change: Within this continuum, the propensity for change (or utilization of more than one instrument during a single gesture) is organized. A high change tendency may call for a maximum use of all available instruments for an event.

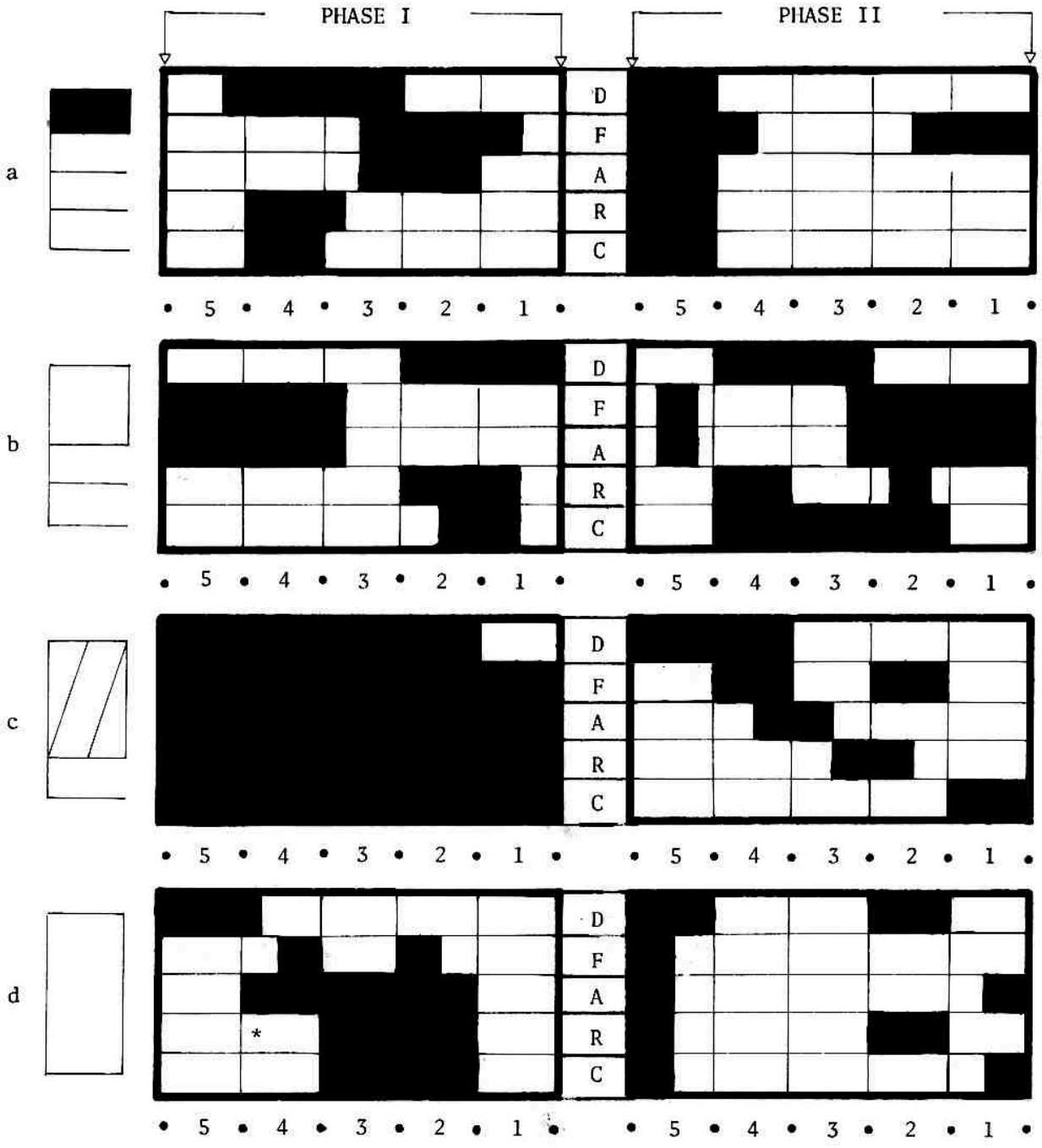
COMMENT: Minute specificity is not a dominant priority within these parameters. Rather, general continuums of activity that are statistically positioned and proportioned by the composer, function as the base manipulative unit and are given highest priority.

CHART 2

PLAYER	MODE	ENVELOPE DURATION
1-1	a	30x1.5"
	b	25
	c	35
	d	30
2-1	a	20
	b	25
	c	30
	d	60
3-1	a	20
	b	30
	c	30
	d	30
4-1	a	30
	b	25
	c	20
	d	30
1-2	a	15
	b	15
	c	25
	d	20
2-2	a	25
	b	15
	c	25
	d	25
3-2	a	25
	b	35
	c	45
	d	30
4-2	a	15
	b	50
	c	30
	d	25

PLAYER	MODE	ENVELOPE DURATION
1-3	a	25
	b	25
	c	20
	d	35
2-3	a	35
	b	20
	c	20
	d	35
3-3	a	15
	b	25
	c	20
	d	35
4-3	a	20
	b	20
	c	20
	d	20
1-4	a	30
	b	10
	c	25
	d	30
2-4	a	45
	b	30
	c	30
	d	20
3-4	a	35
	b	15
	c	25
	d	20
4-4	a	20
	b	30
	c	35
	d	20

CHART 3



Players 1-1, 3-2, and 4-4 are to disregard the frequency (F) specification in the chart given above. Refer to CHART #4 for further frequency information.

* (RHYTHM) The first phase of this mode will exhibit certain specific rhythmic proportions. These are discussed on the following page under MODE "d", PHASE I, RHYTHMIC CONDITION.

CHART 4 FREQUENCY ENVELOPES FOR PLAYERS 1-3, 4-4, 3-2, 1-1, 3-4

MODE	PHASE I	PHASE II
a	M7, TT, m3, m2, M2, m6 intervals 2 or 3 note motives = 1 attack 2 simultaneous notes = 1 attack	Half-note clusters simultaneous clusters = 1 attack
b	Chromatic sequences, up or down, an unbroken glissandos of any length = 1 attack	Major, minor, diminished, augmented chord relations chords may include 6ths & 7ths in any position. Both simultaneous & broken chords = 1 attack
c	Pentatonic sequences 3-5 note motives = 1 attack	Non-modal, serialize(like), atonal sequences 3-5 note motive = 1 attack 3-5 simultaneties = 1 attack
d	Interval relations of P4, P5, P8, M3, M6 2 note motives = 1 attack	NO CONDITIONS

MODE "d", PHASE I, RHYTHMIC CONDITION

Once a rate has been established, the attacks should exhibit a strict subdivision of the beat.

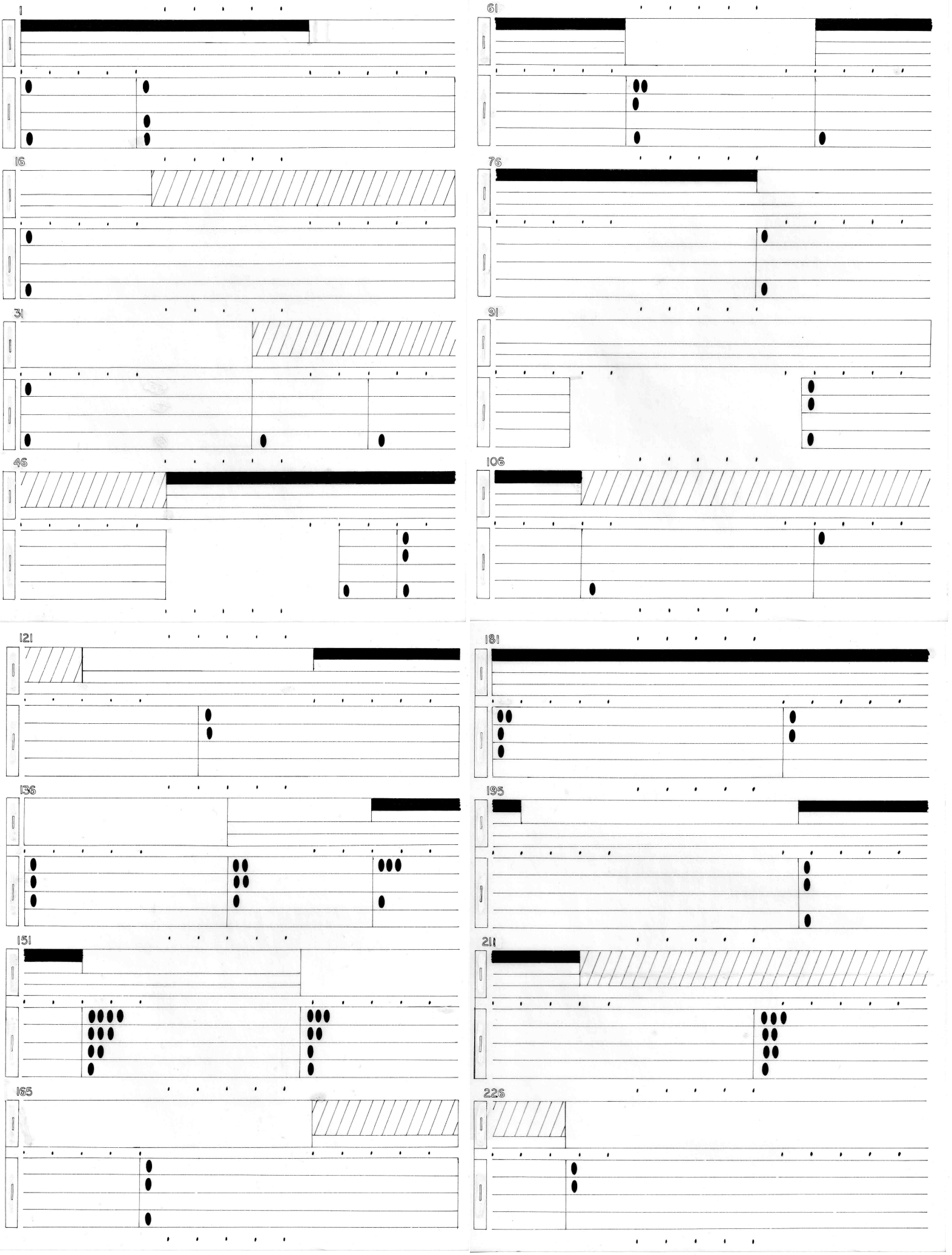
EXAMPLE:

A 4 attack elipse will be performed:

A 3 attack elipse will be performed:

A 2 attack elipse will be performed:

A 1 attack elipse will be performed: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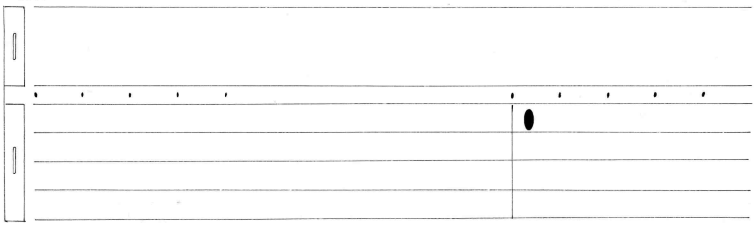

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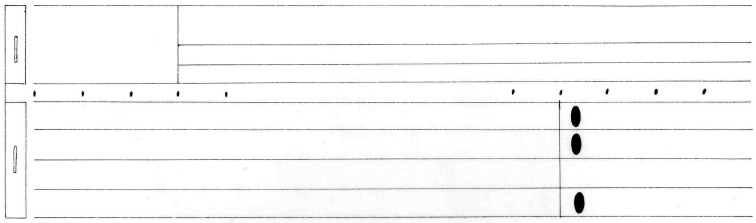

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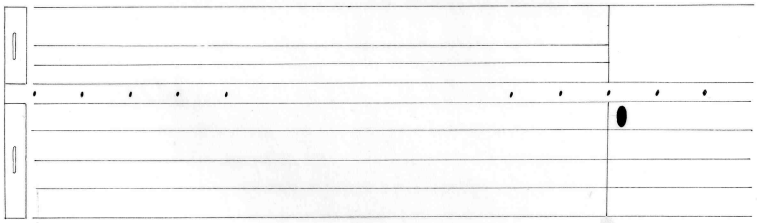

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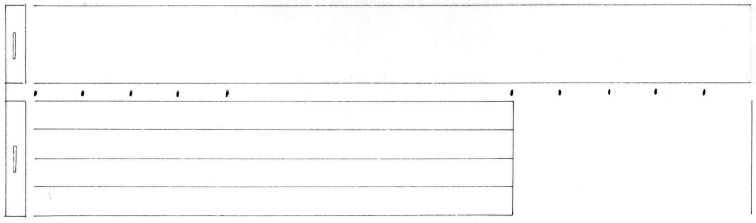

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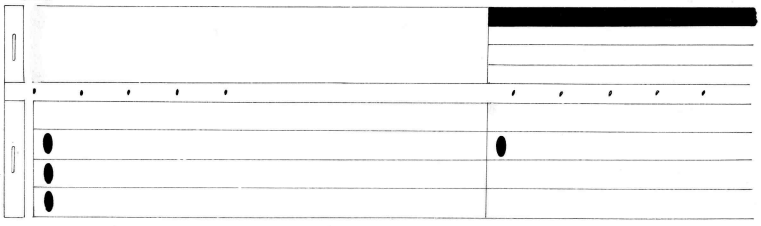

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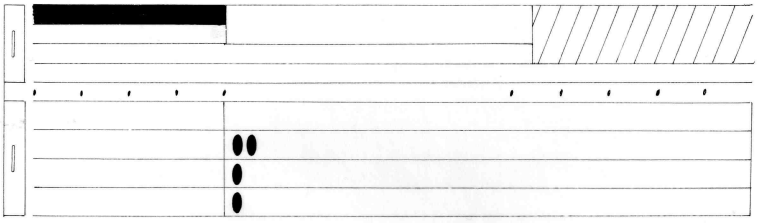

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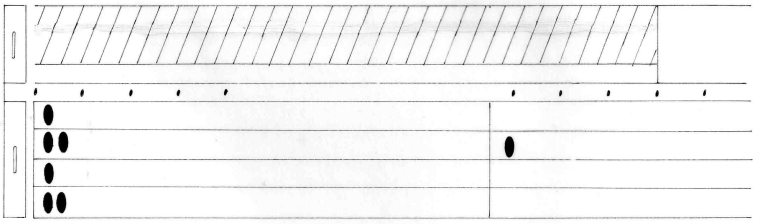

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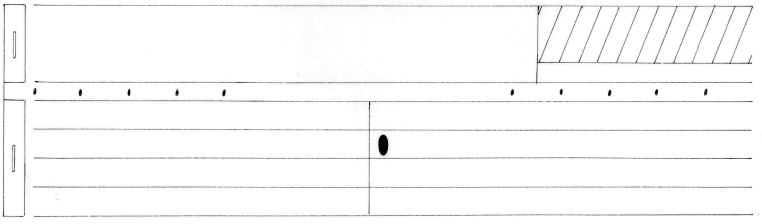

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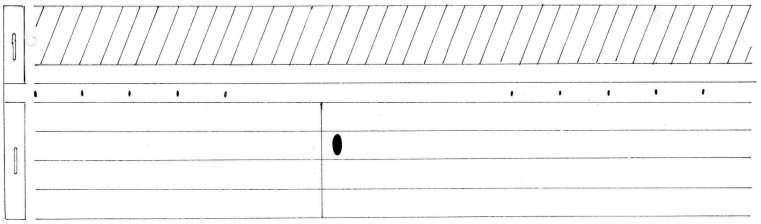

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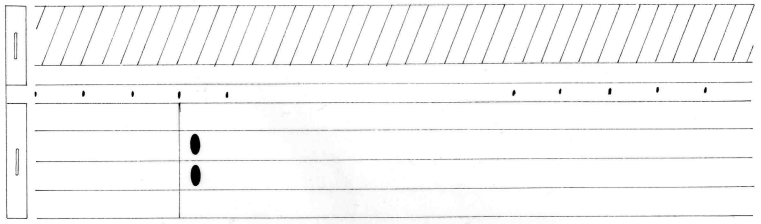

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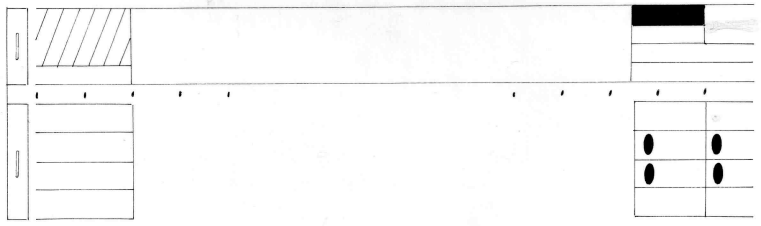

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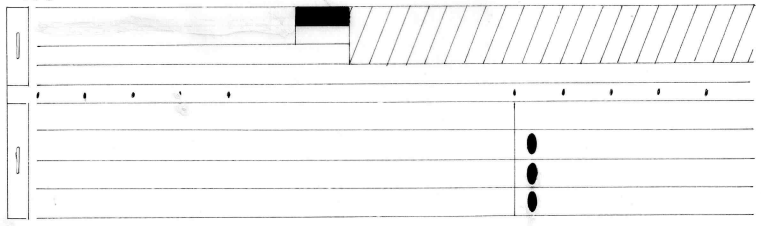

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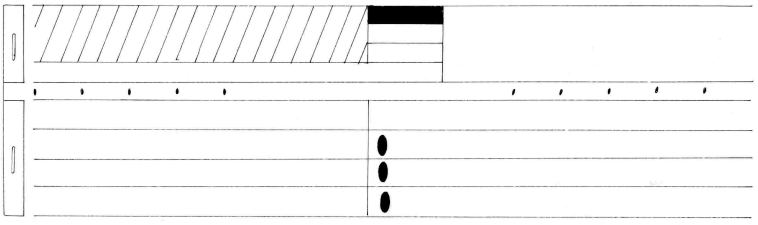

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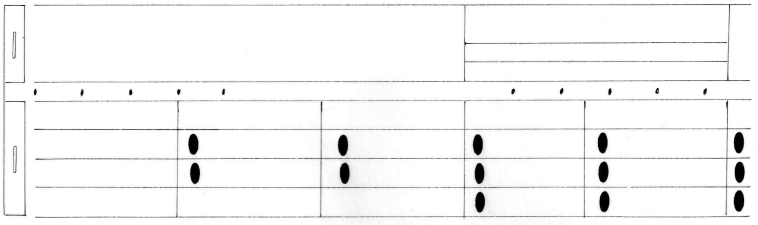

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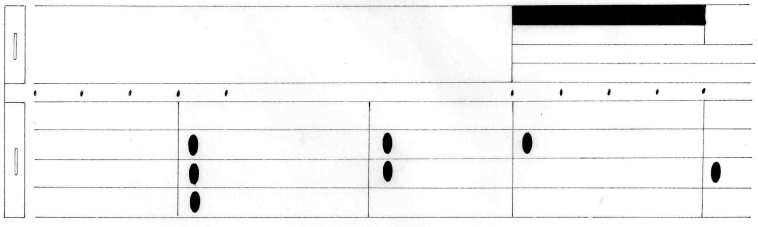

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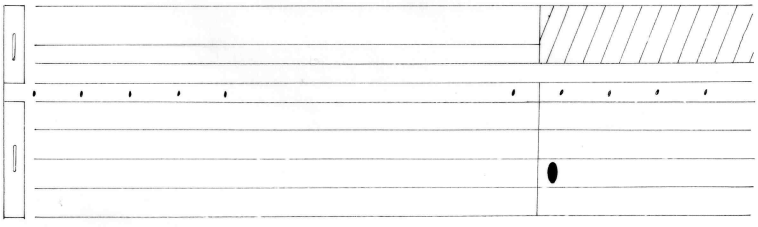

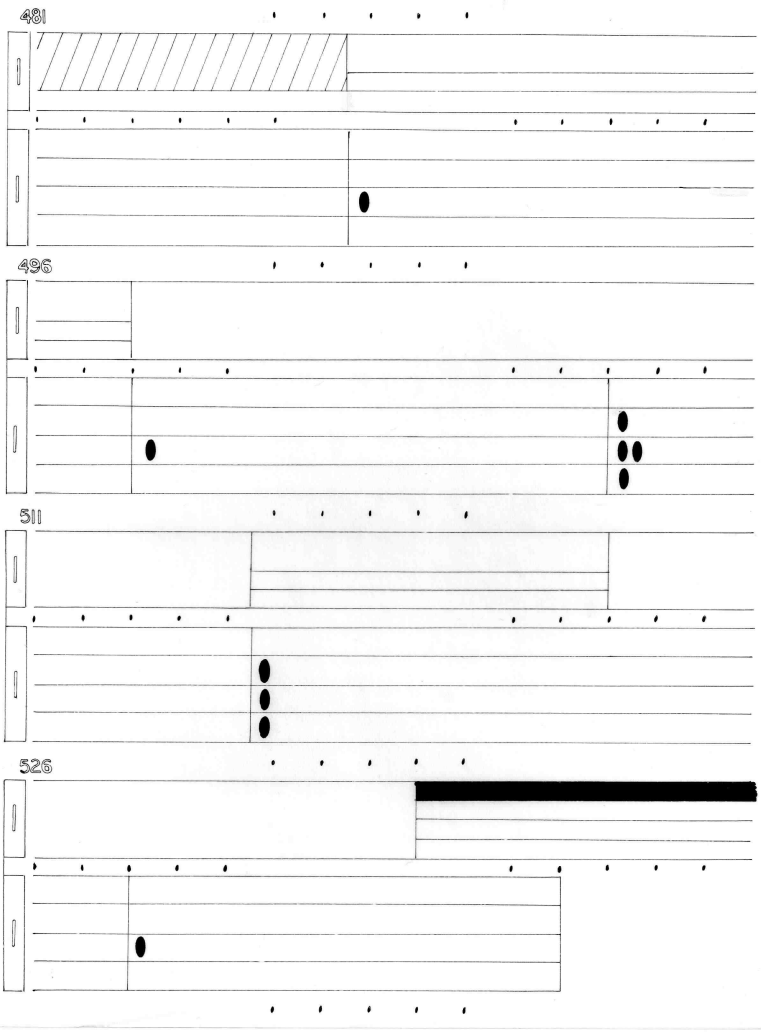
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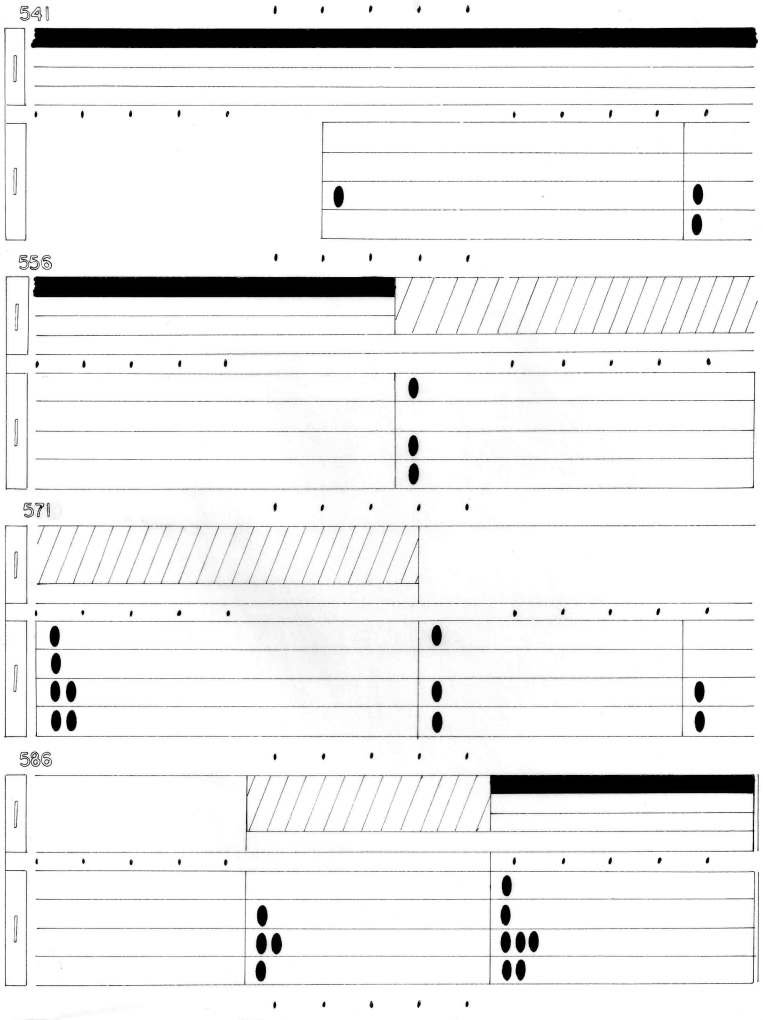
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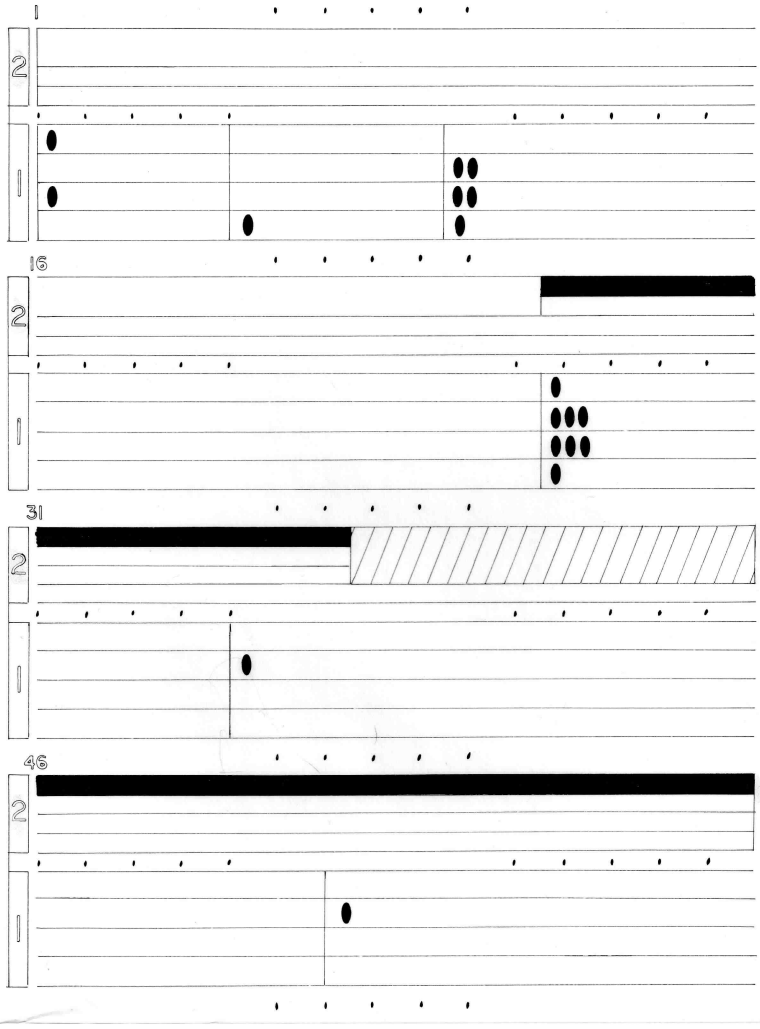
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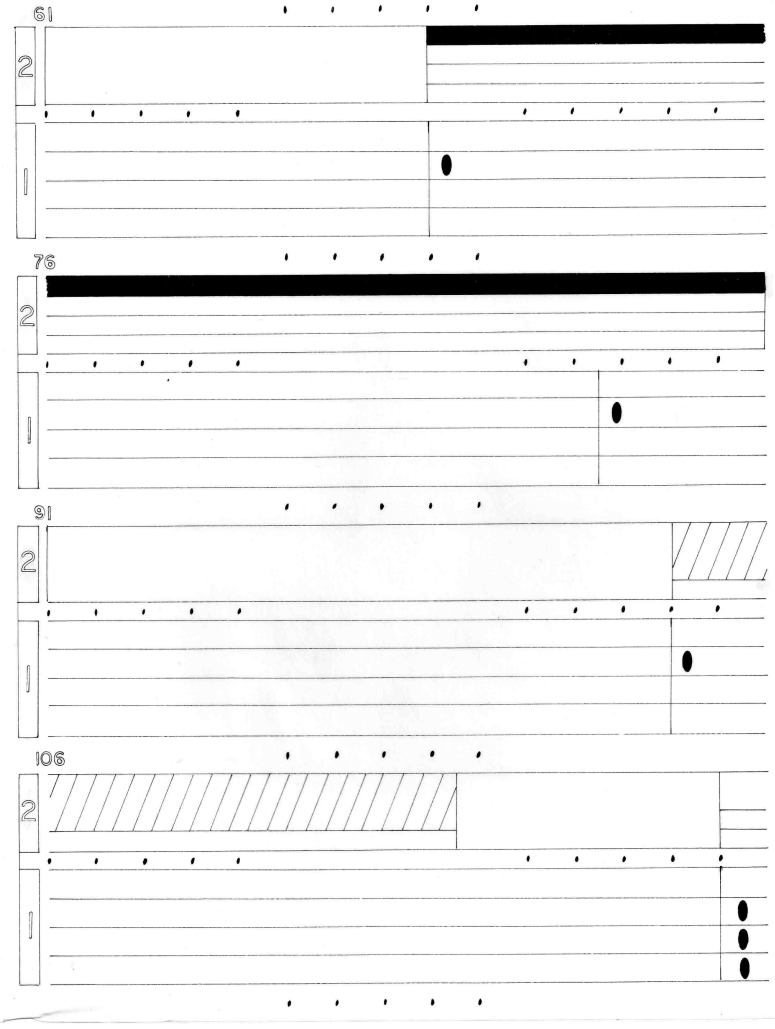
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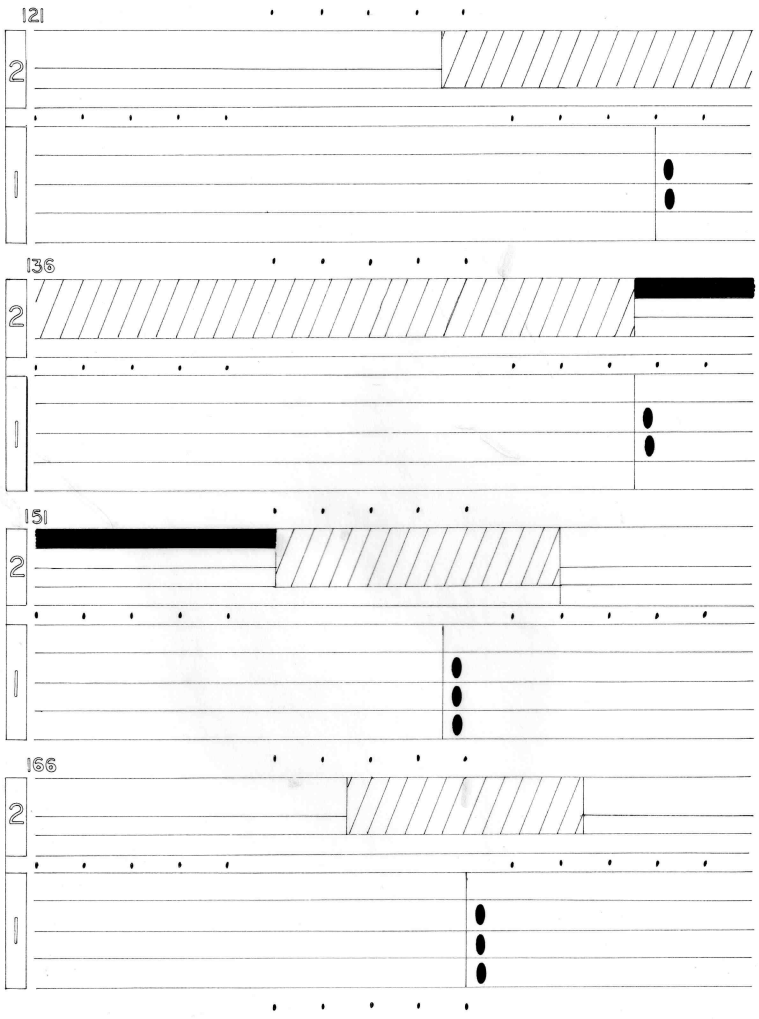
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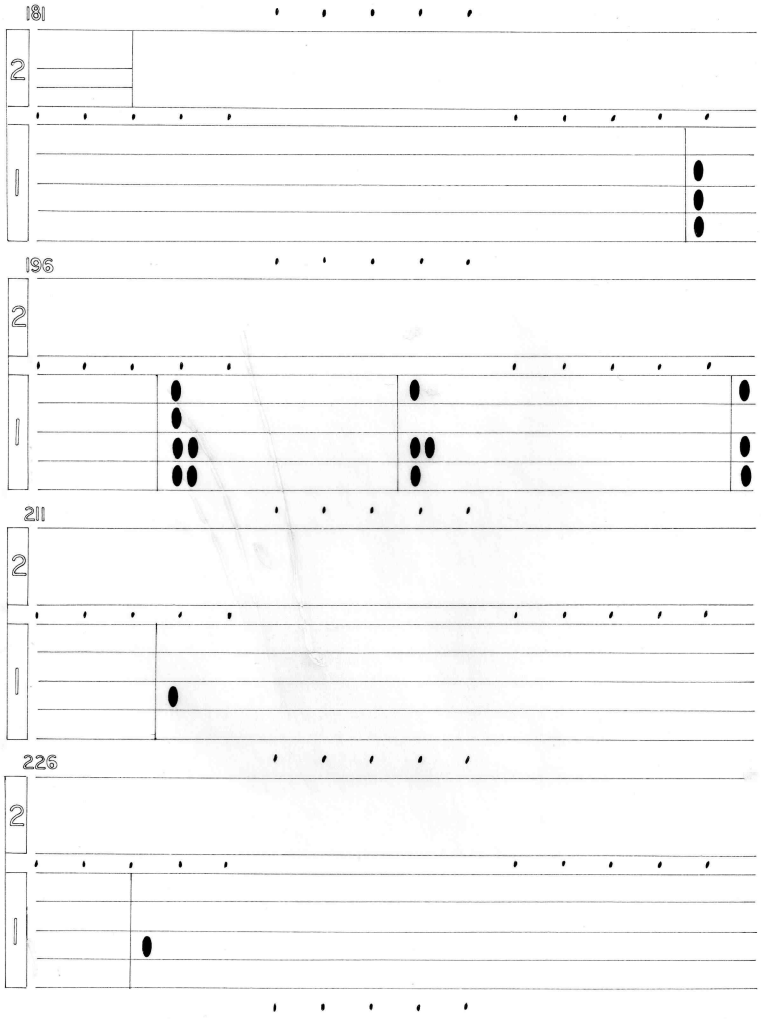
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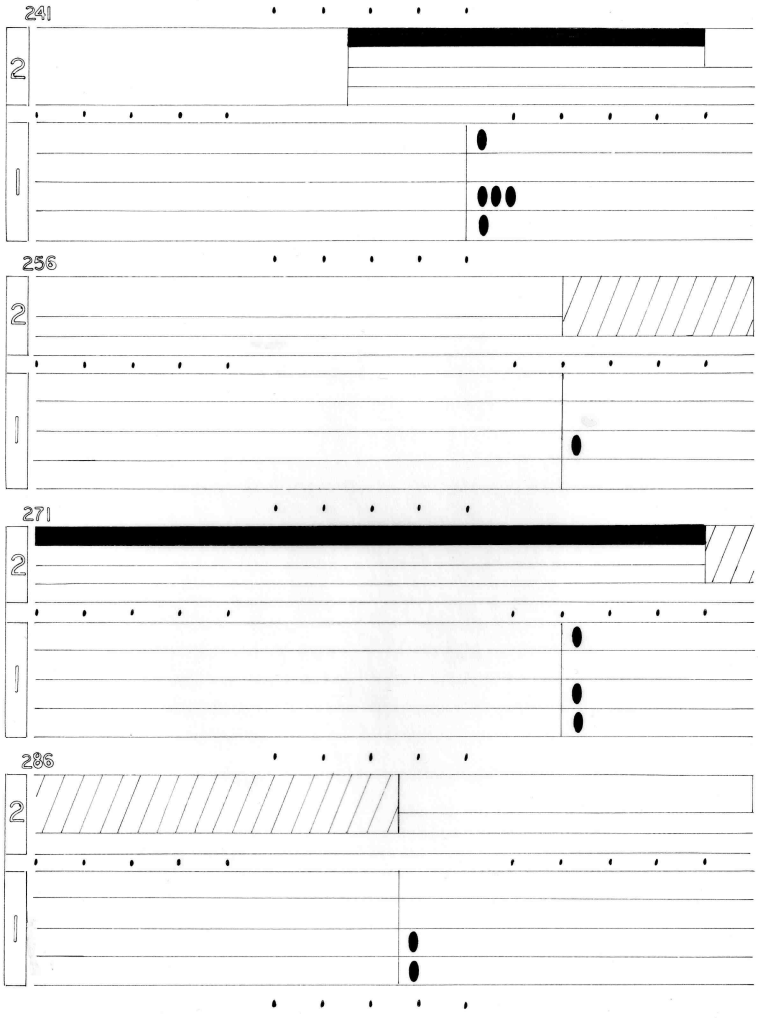
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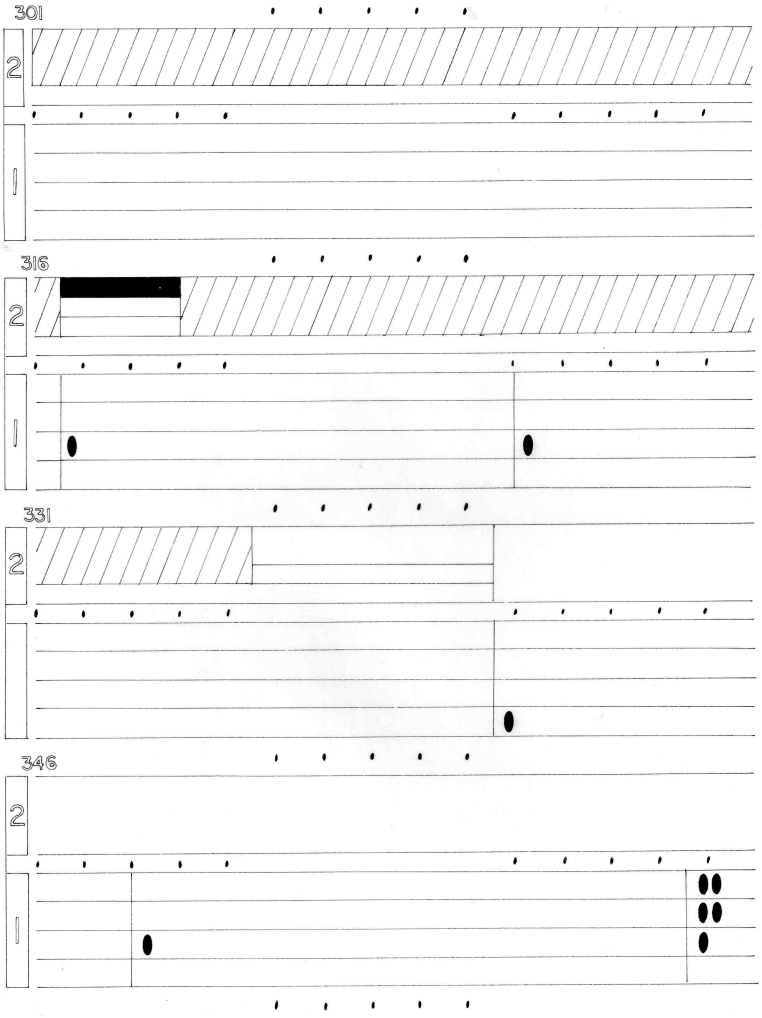
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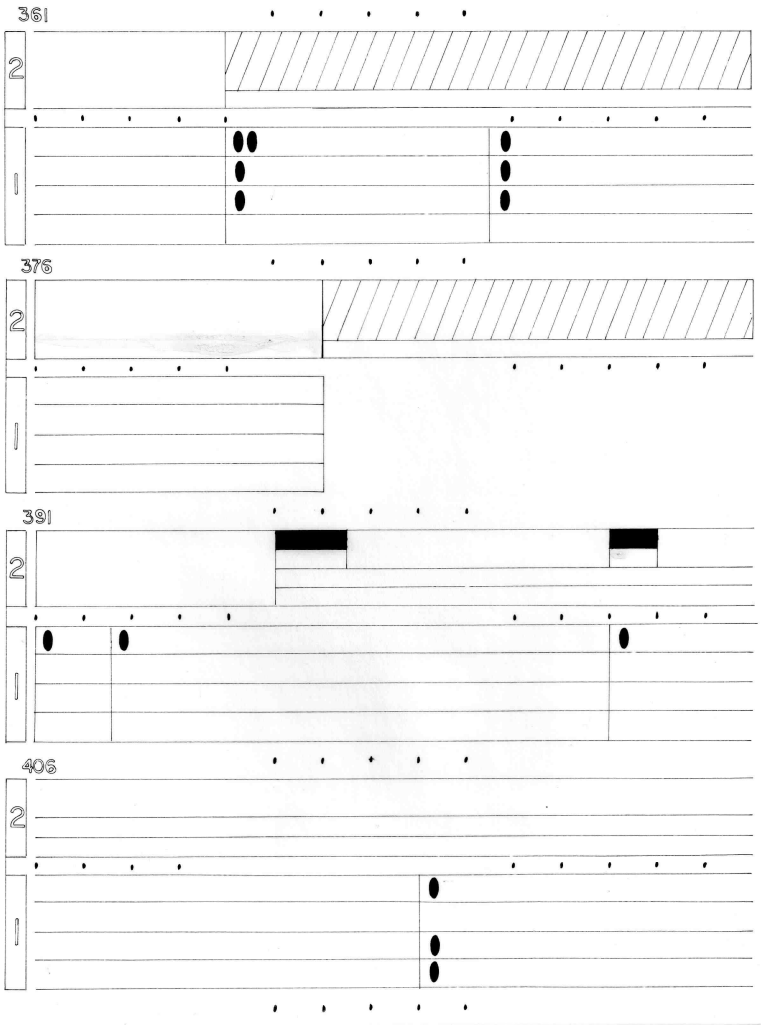
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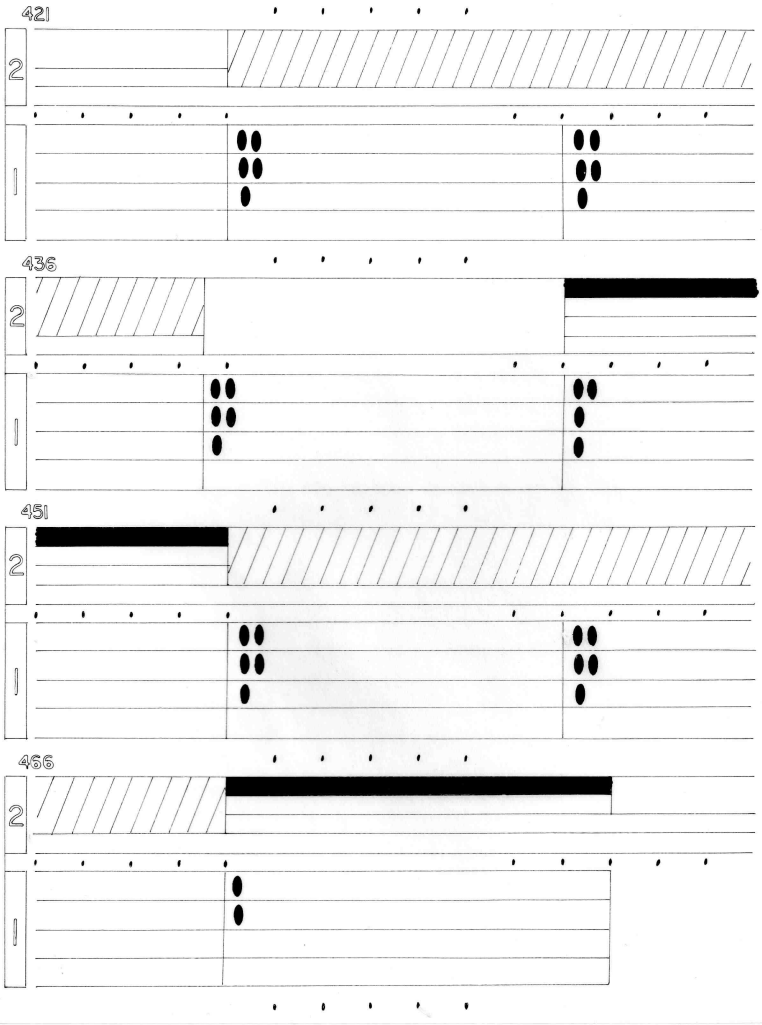
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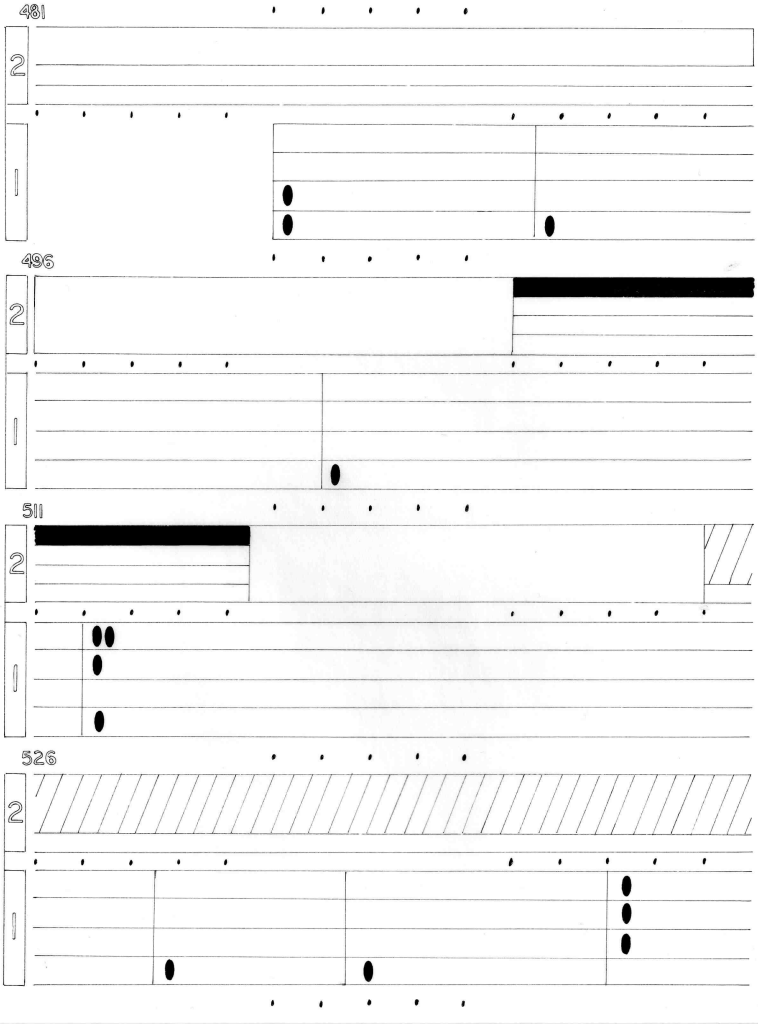
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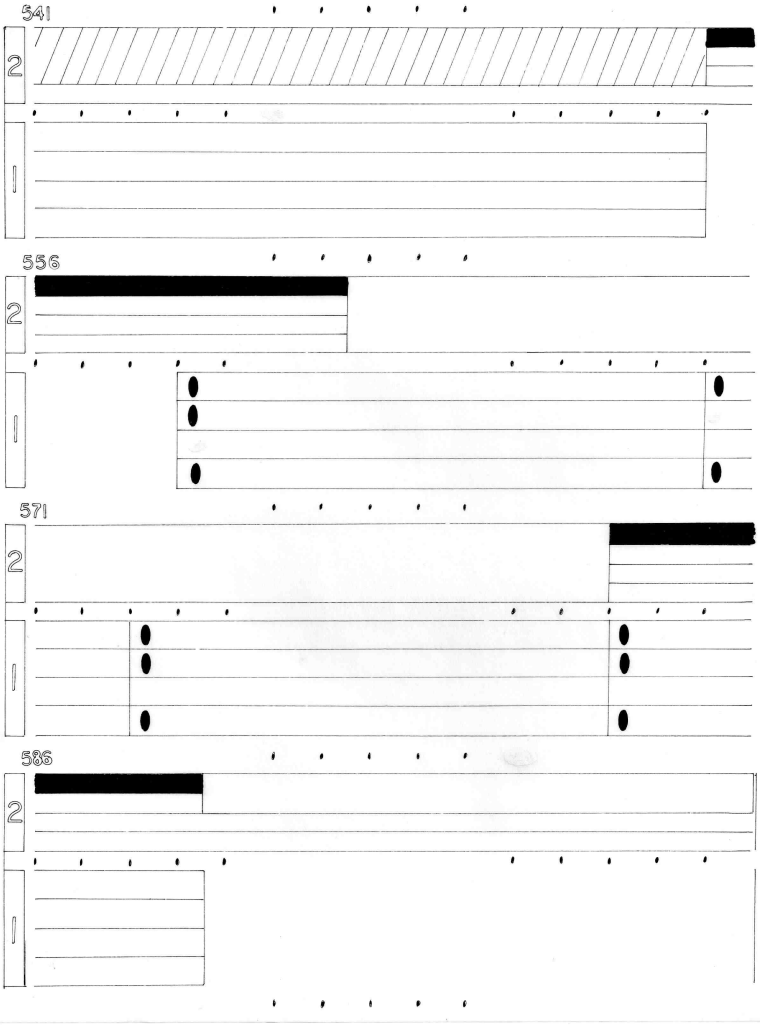
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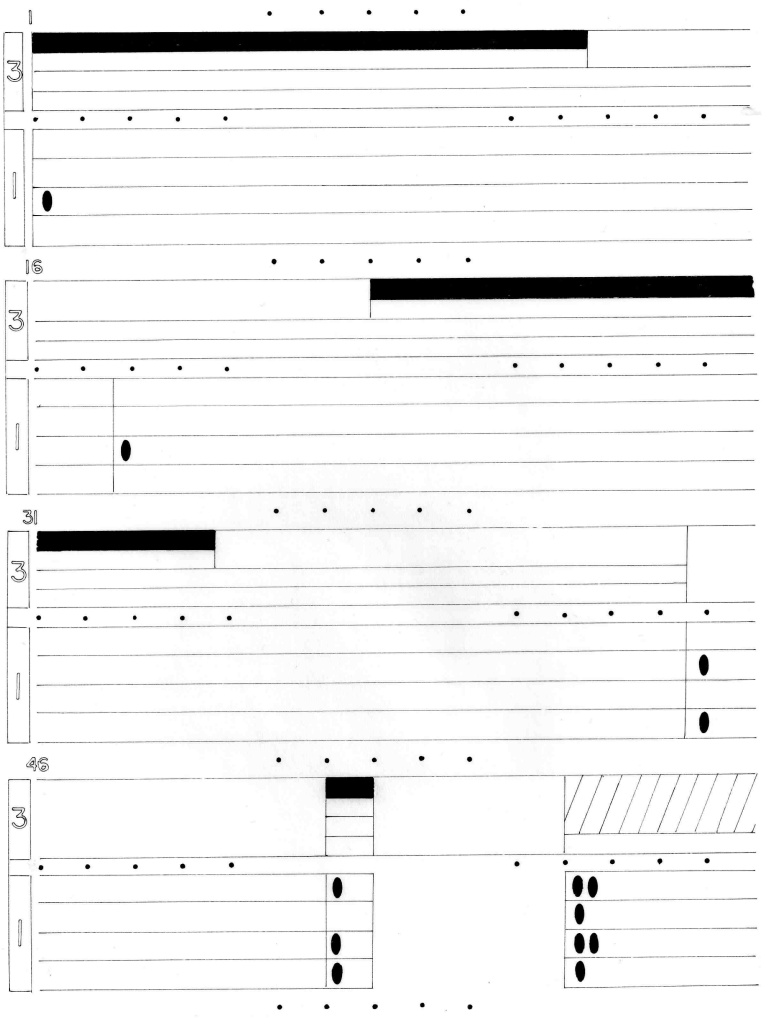
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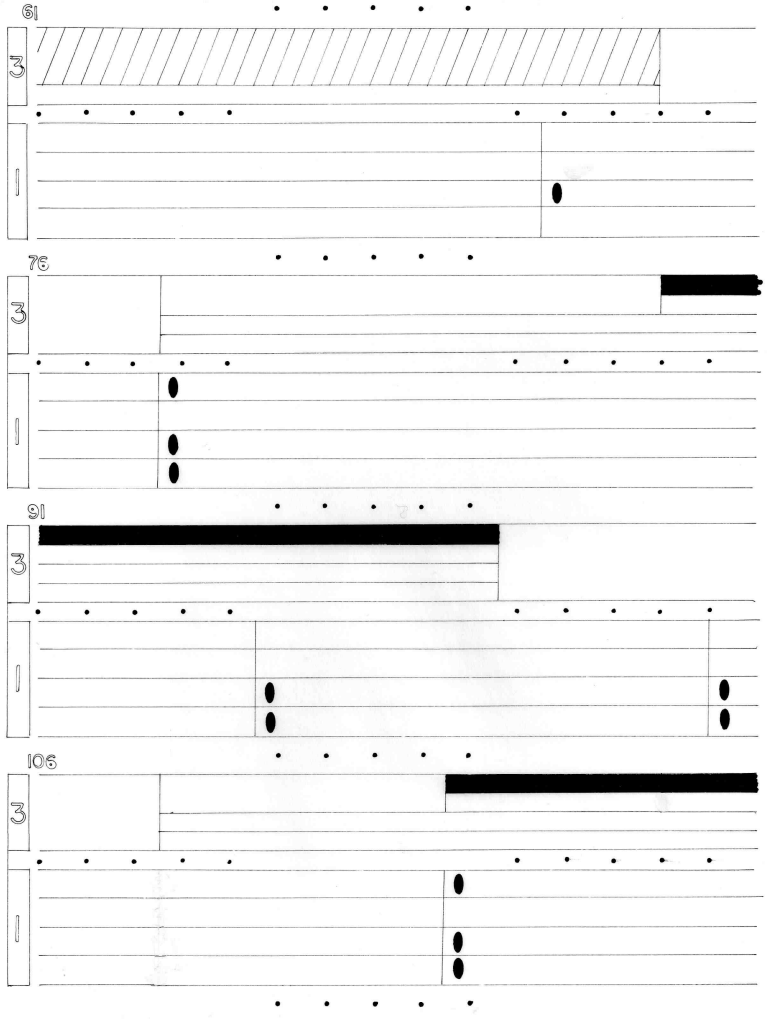
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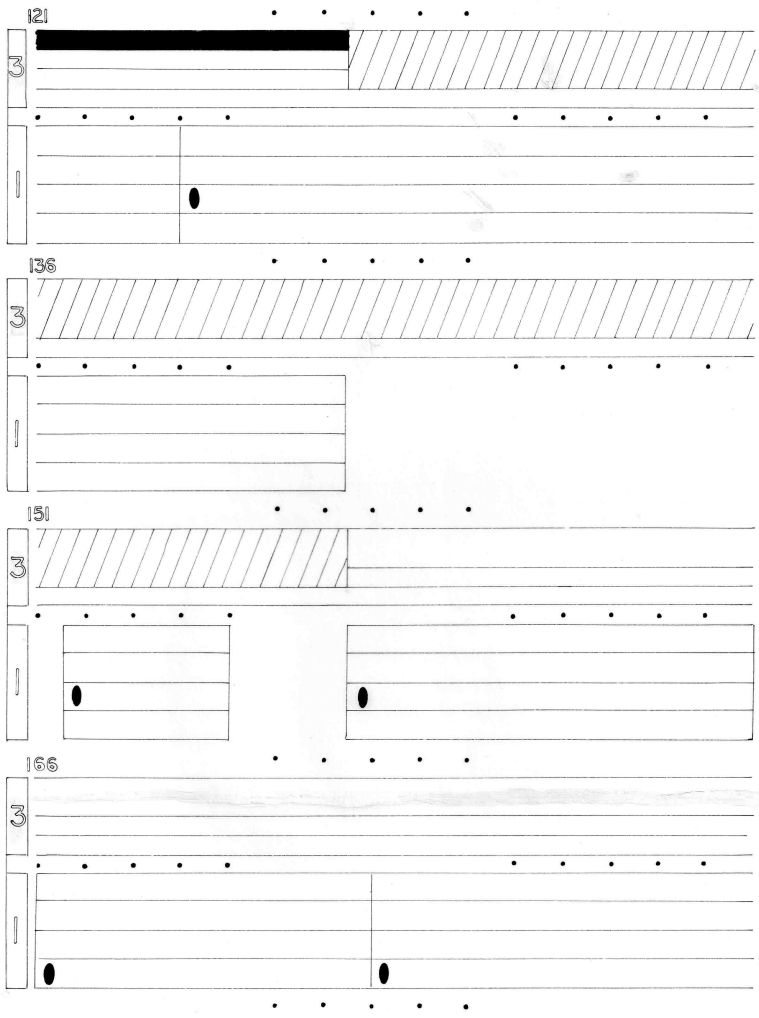
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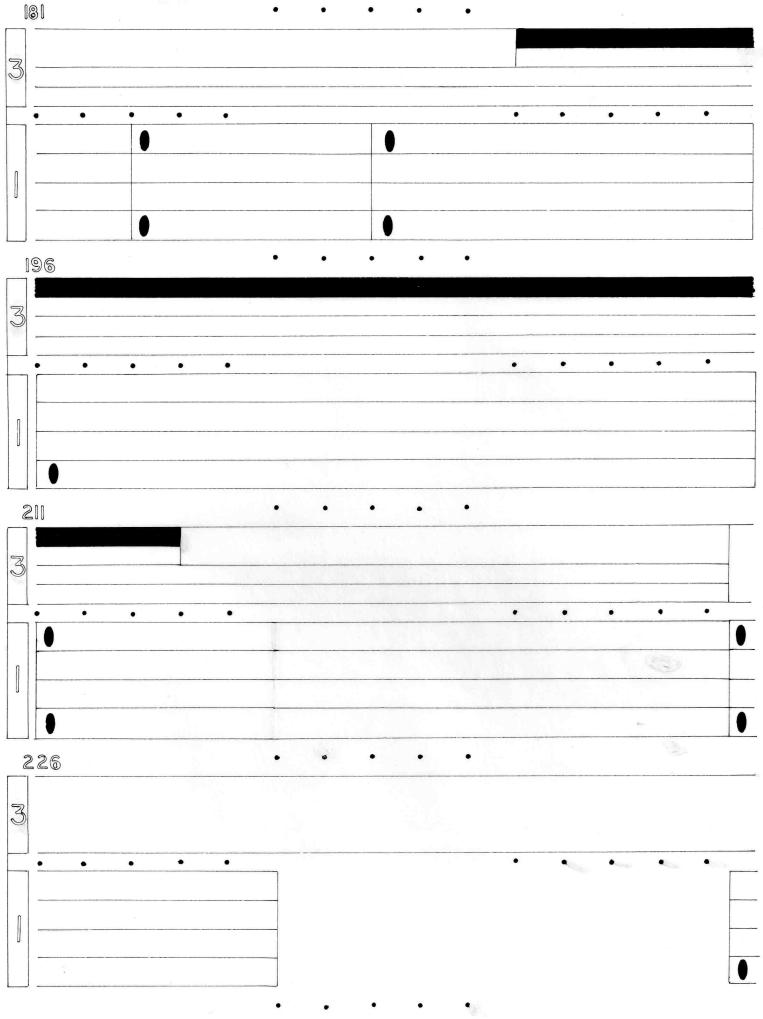
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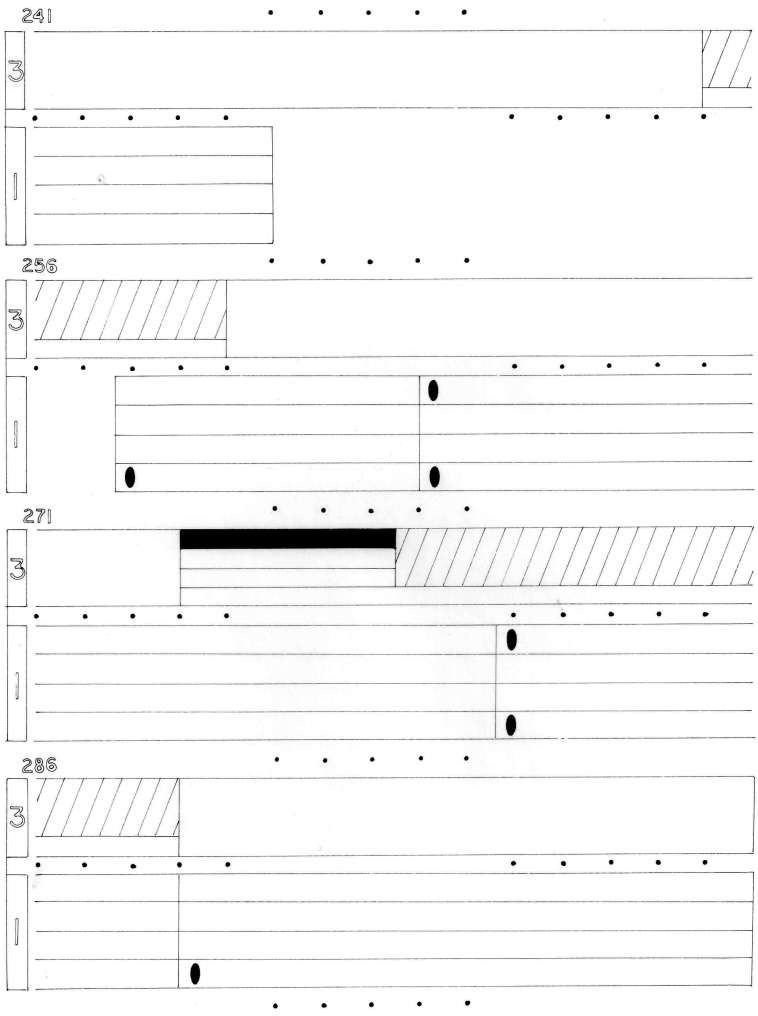
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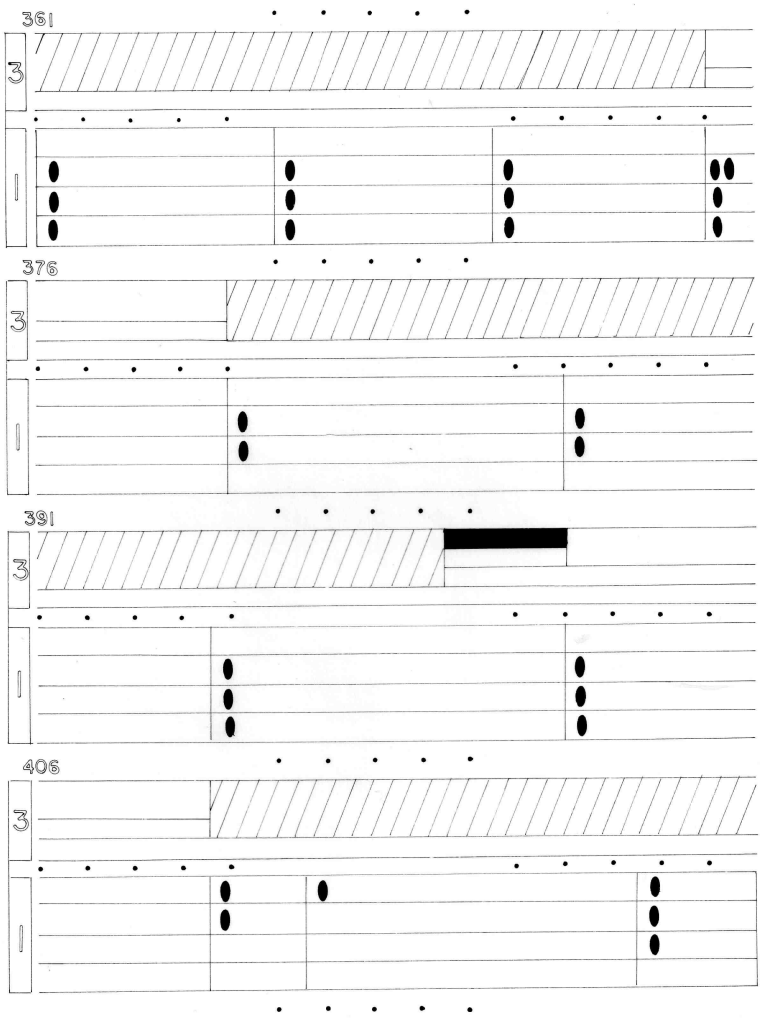
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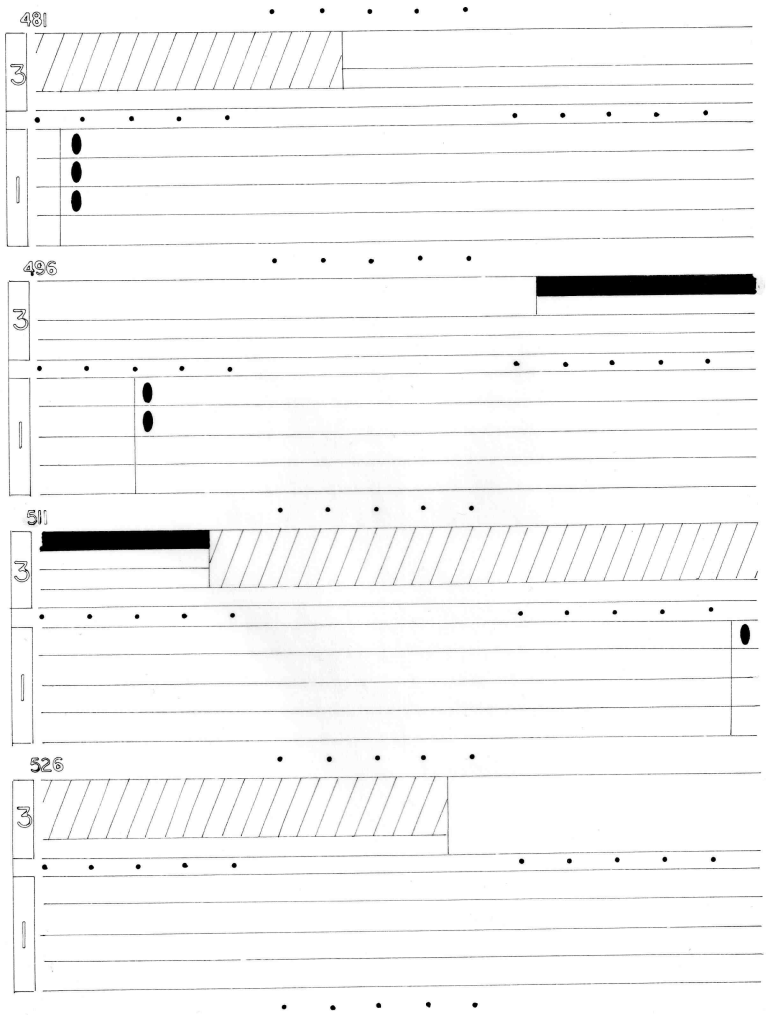
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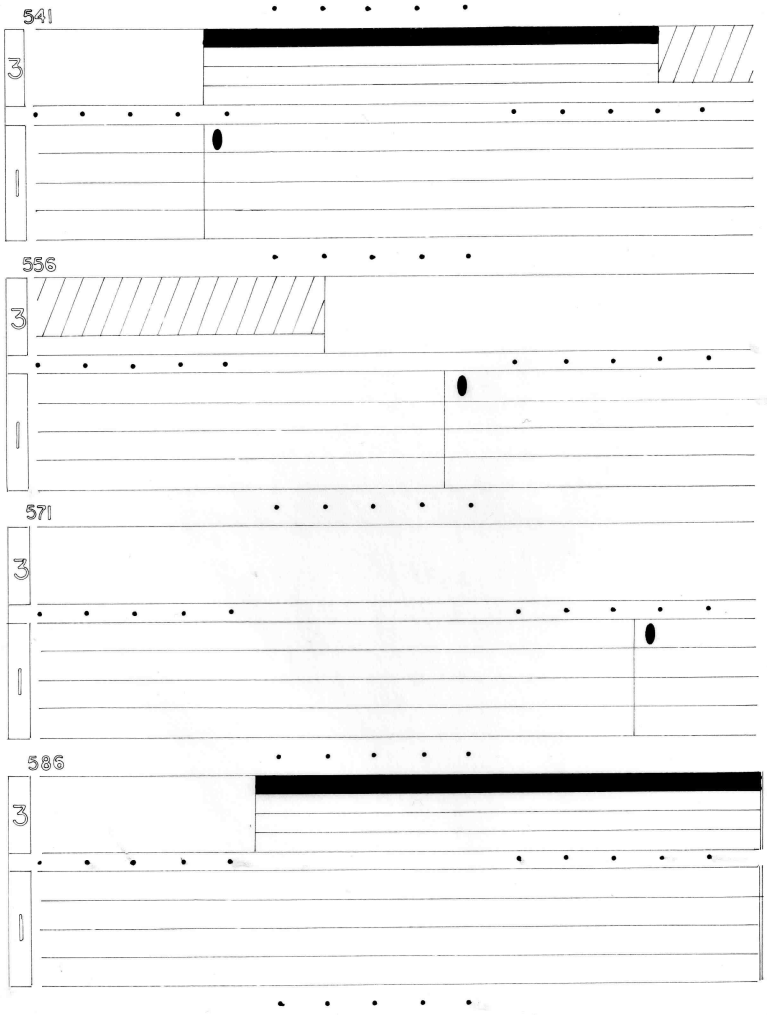
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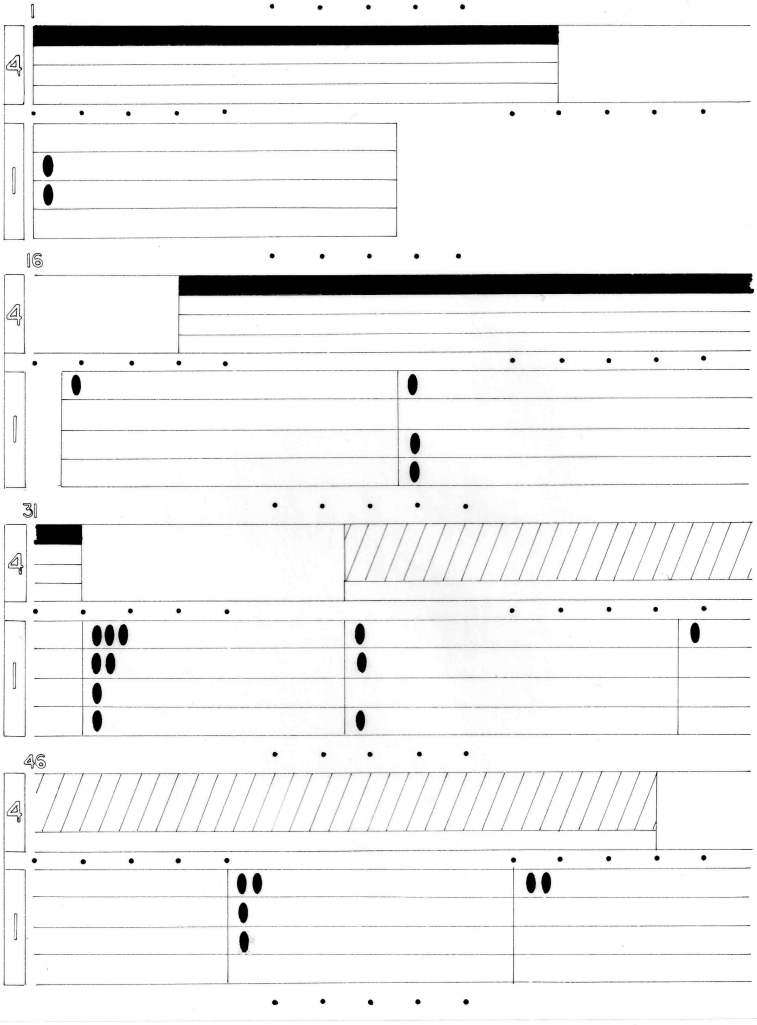
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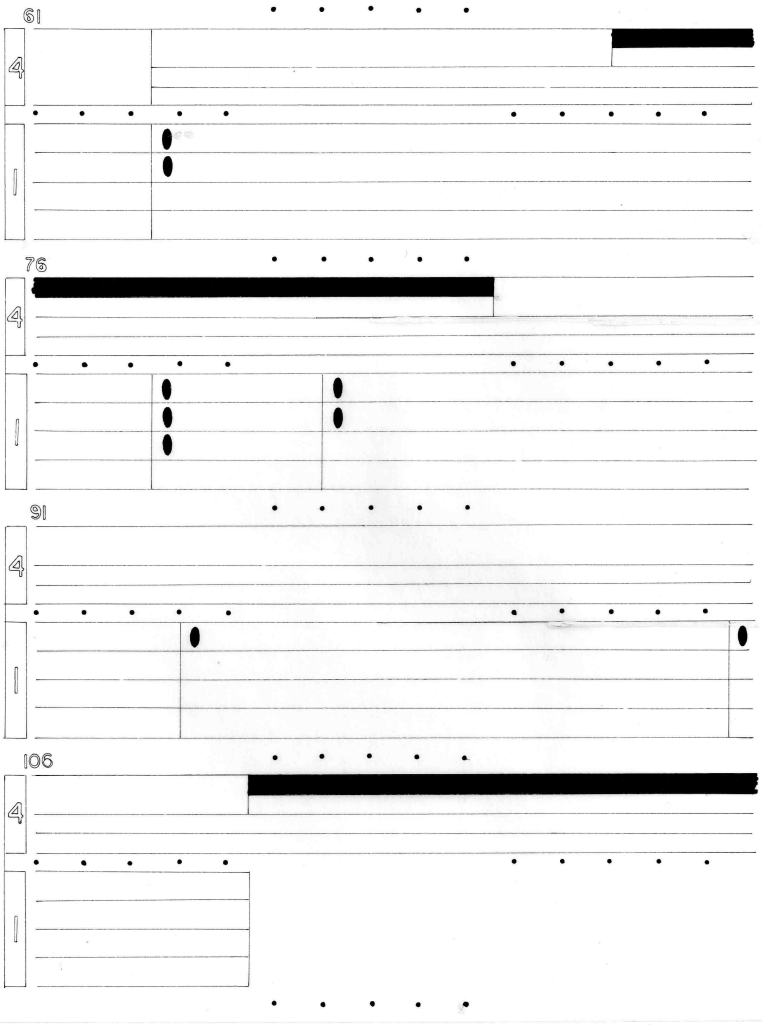
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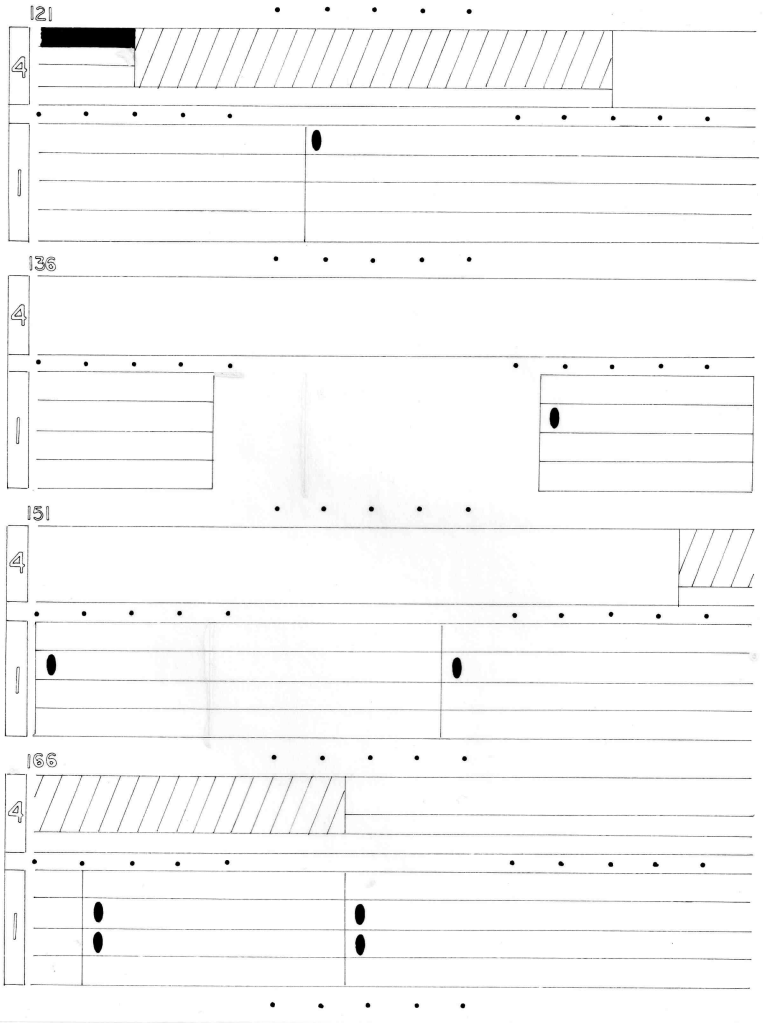
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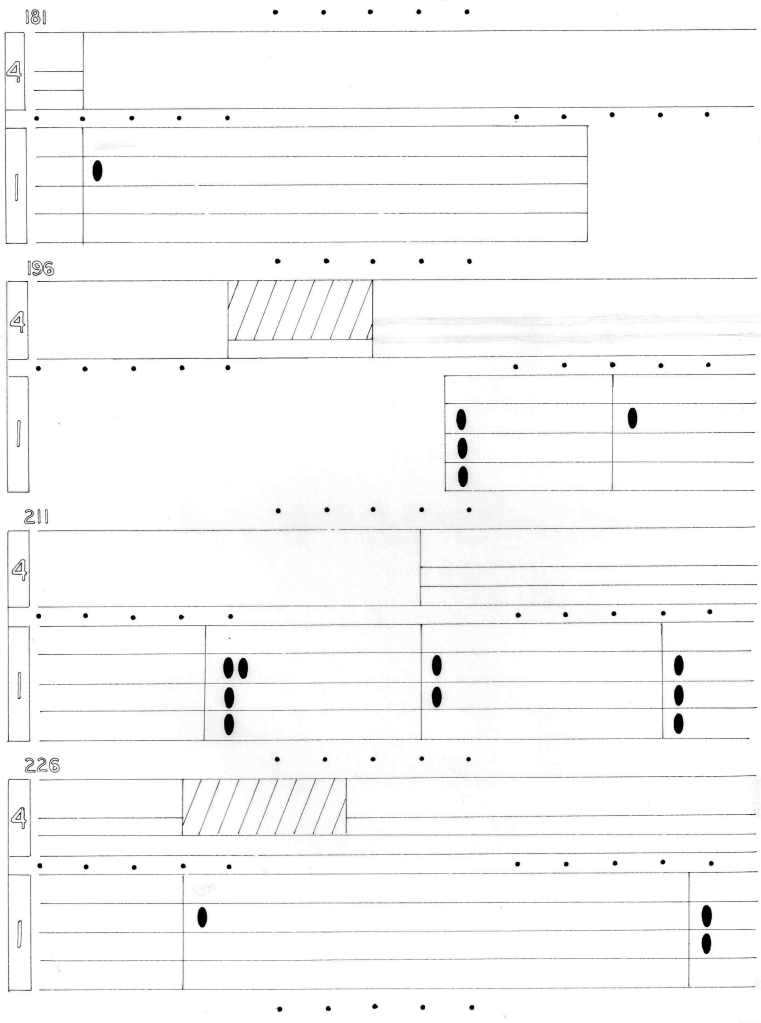
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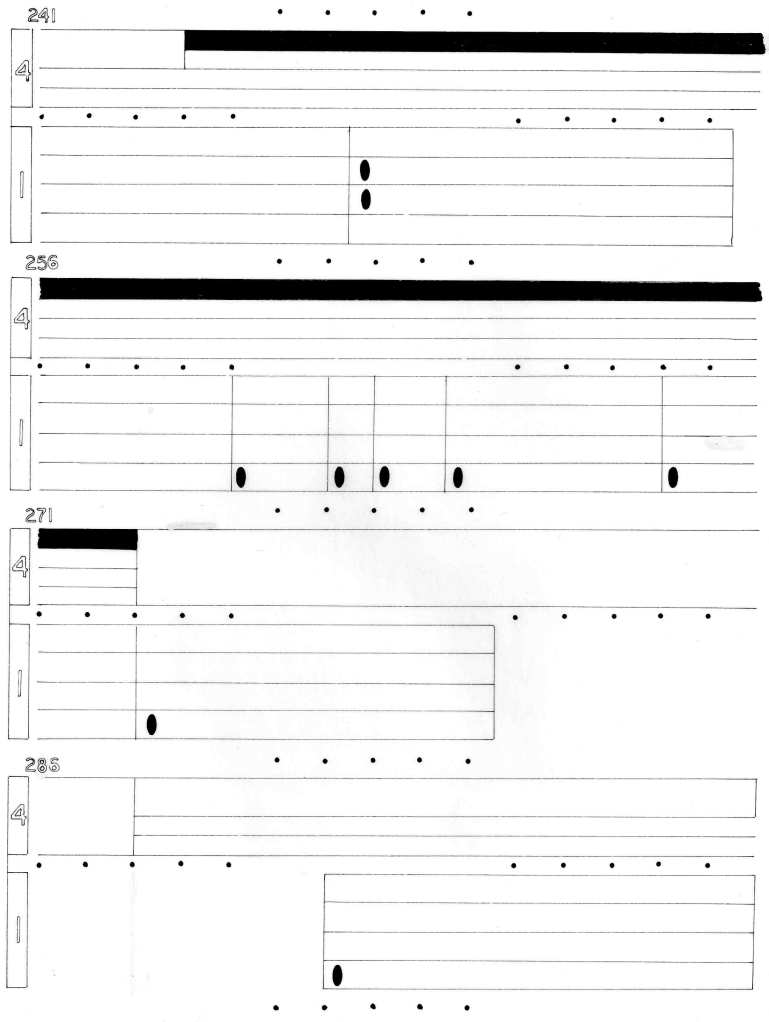
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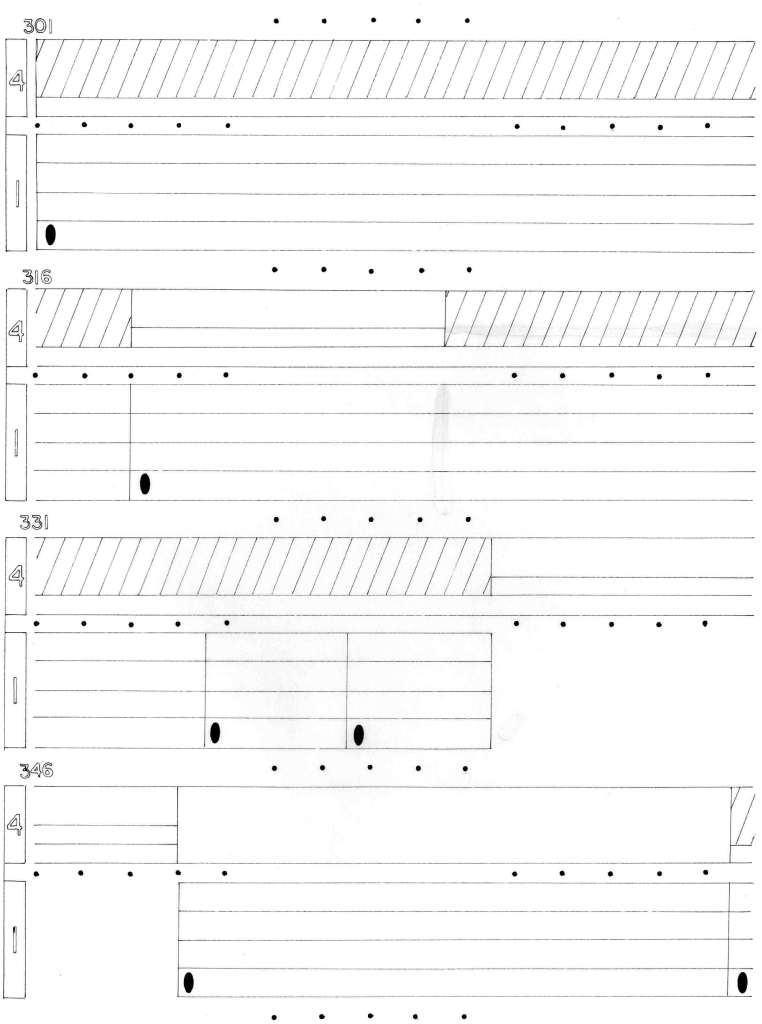
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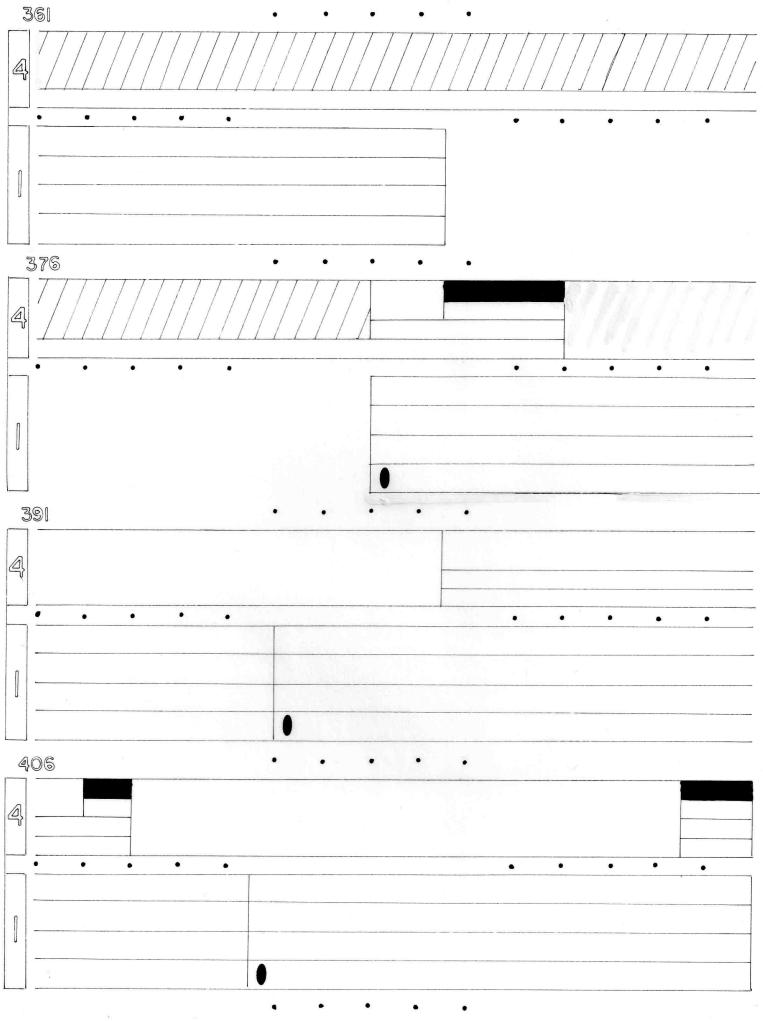
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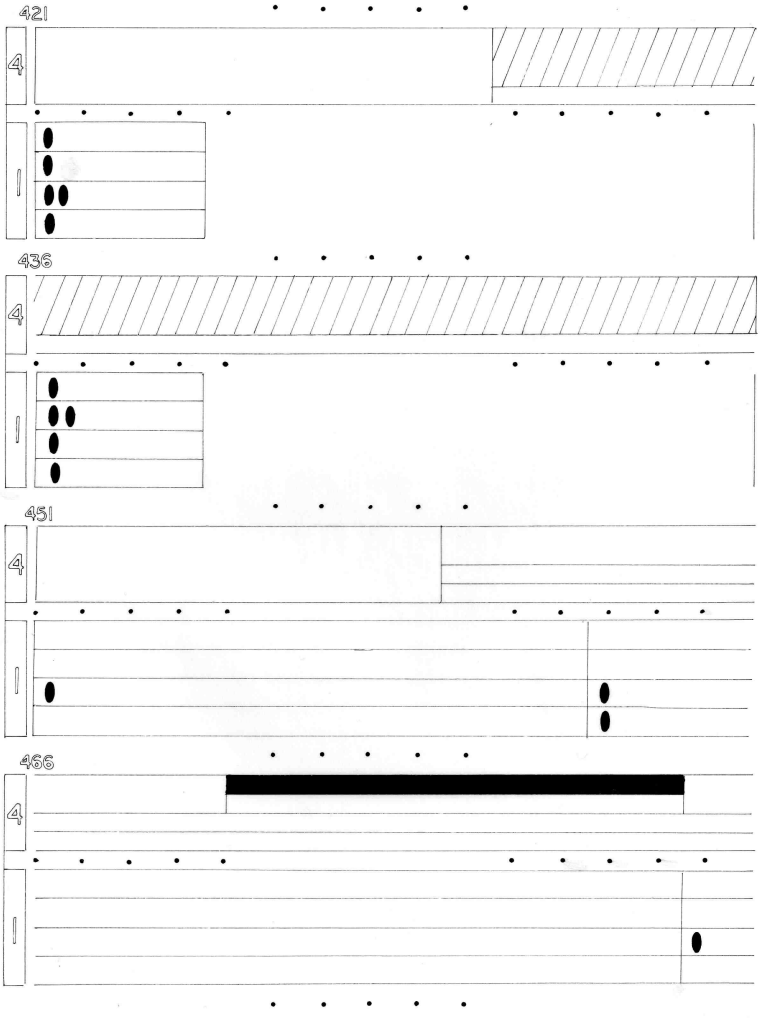
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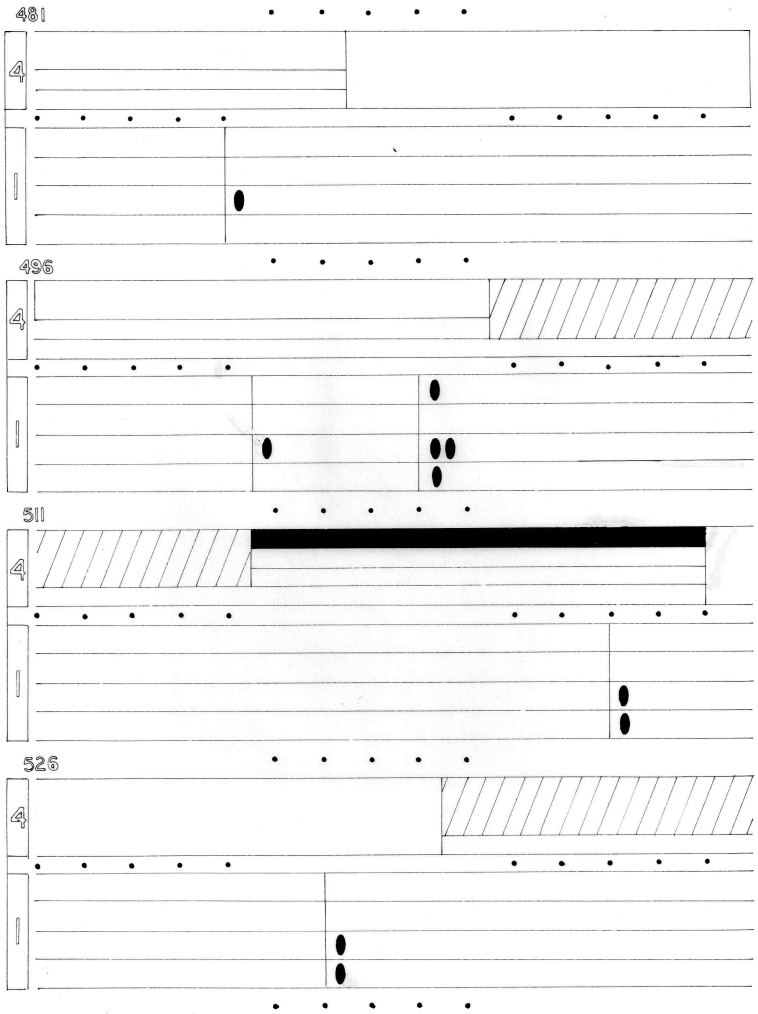
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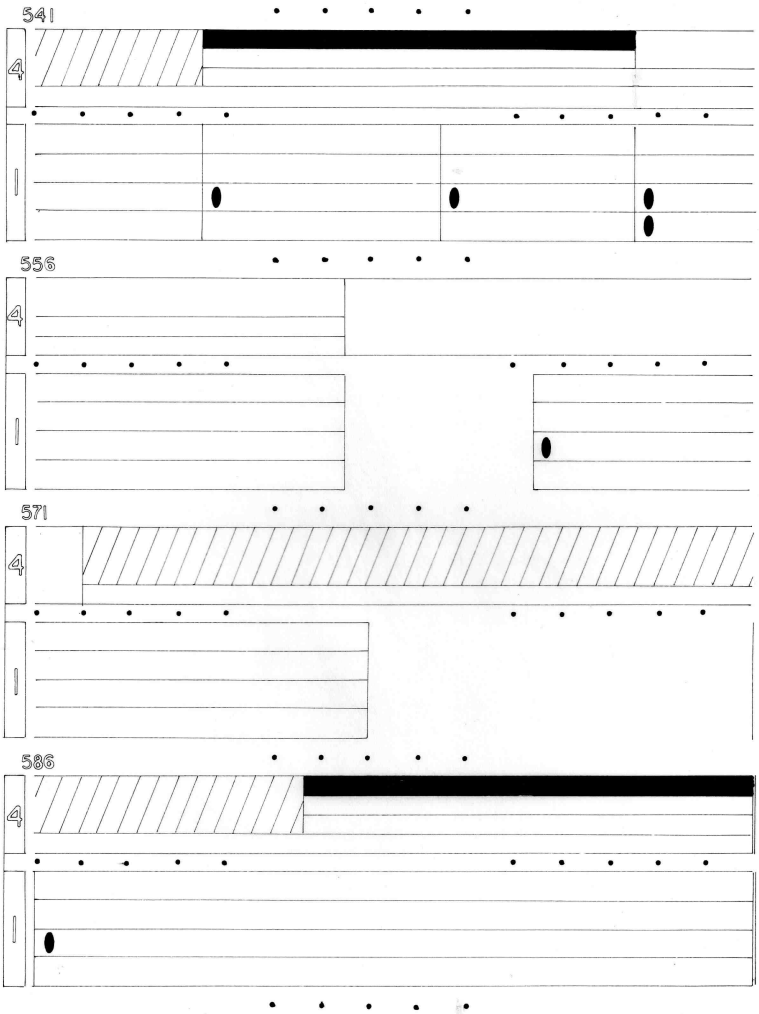
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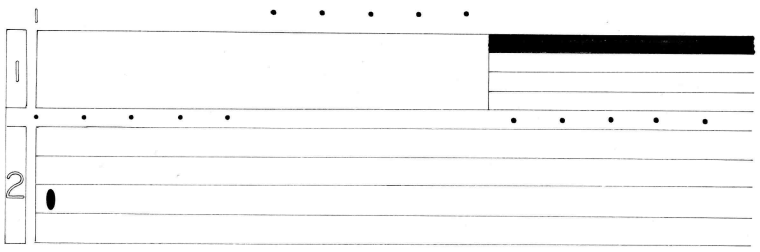
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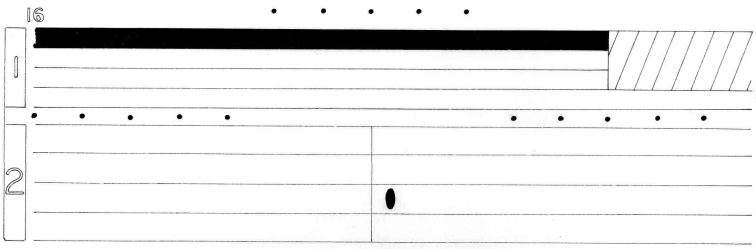
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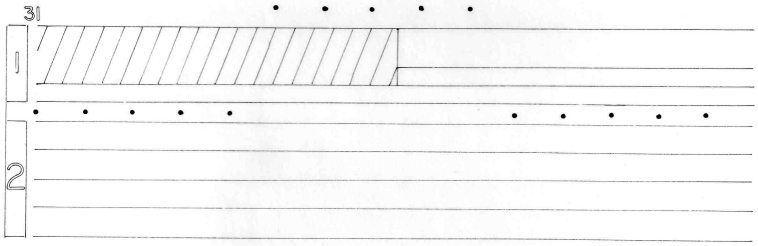
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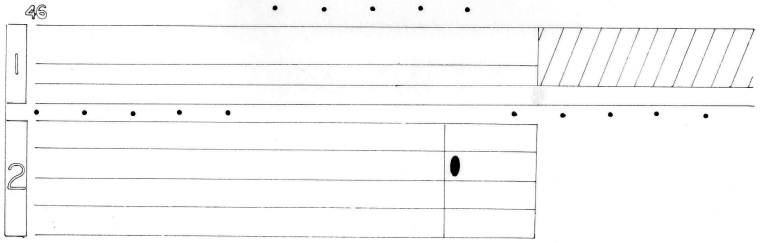
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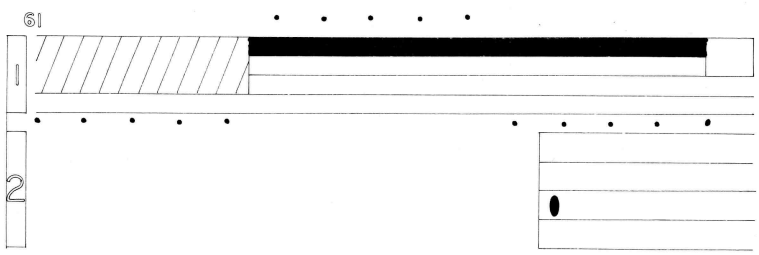
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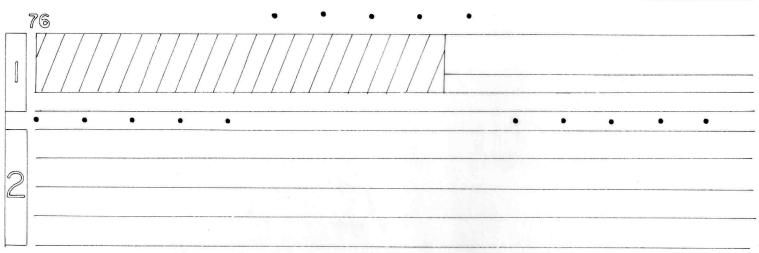
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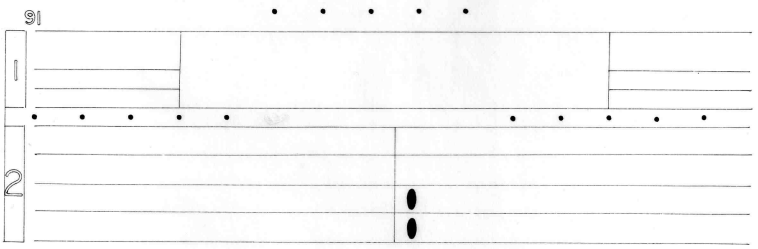
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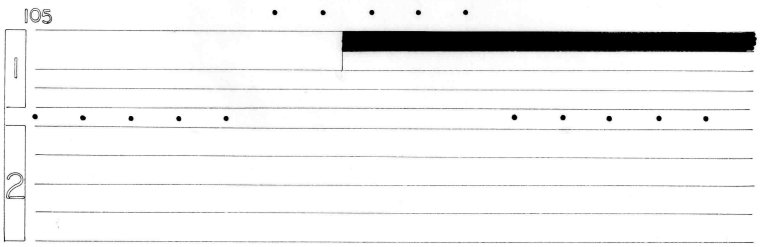
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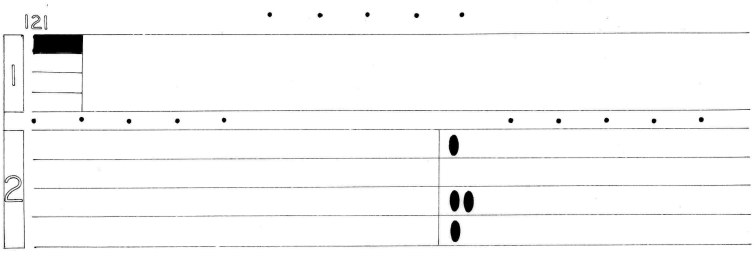
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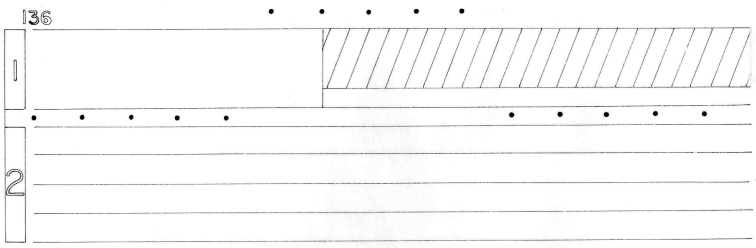
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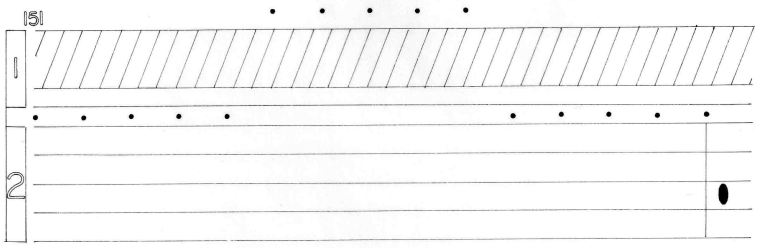
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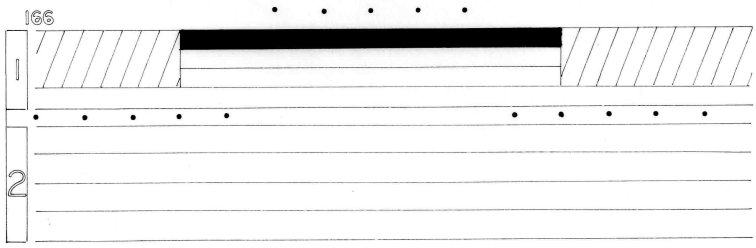
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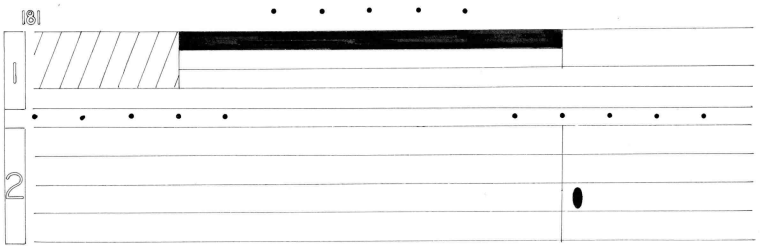
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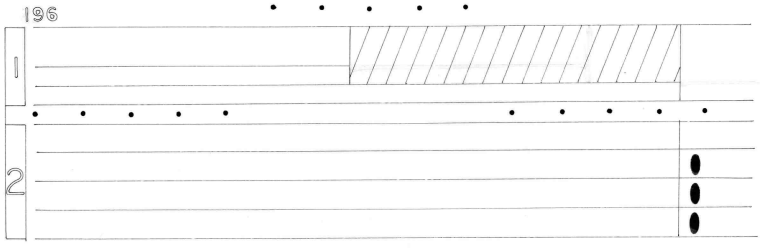
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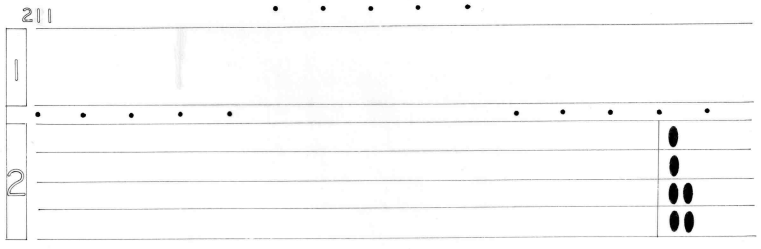
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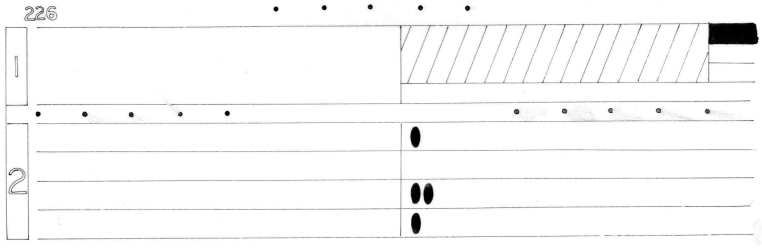
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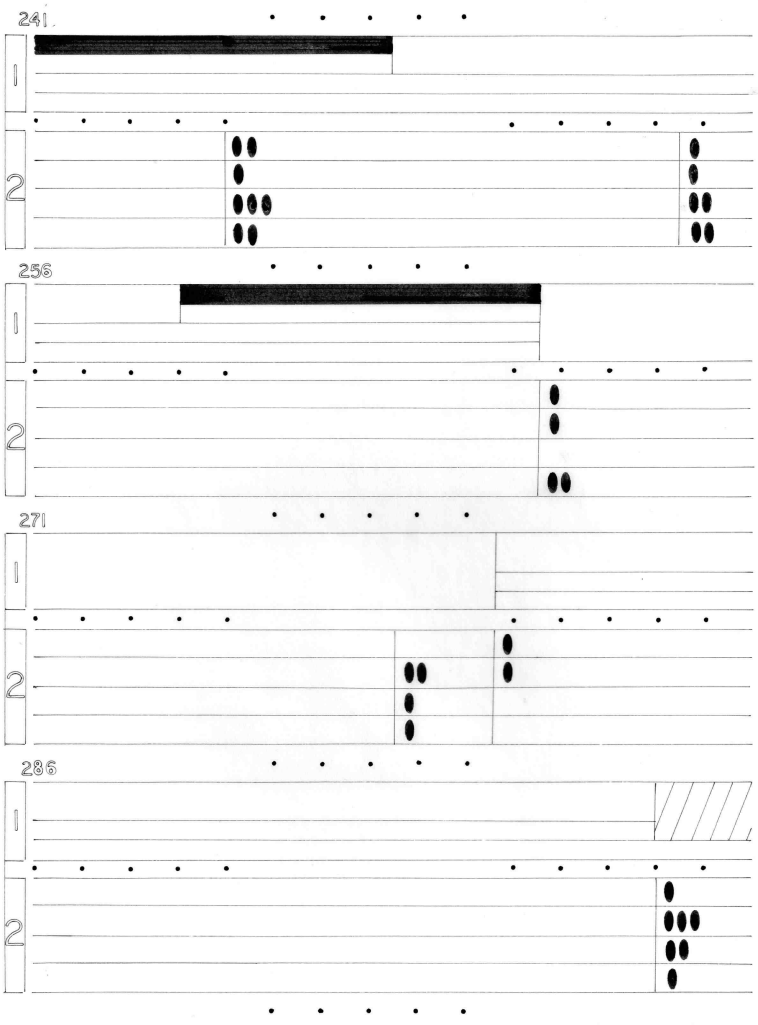
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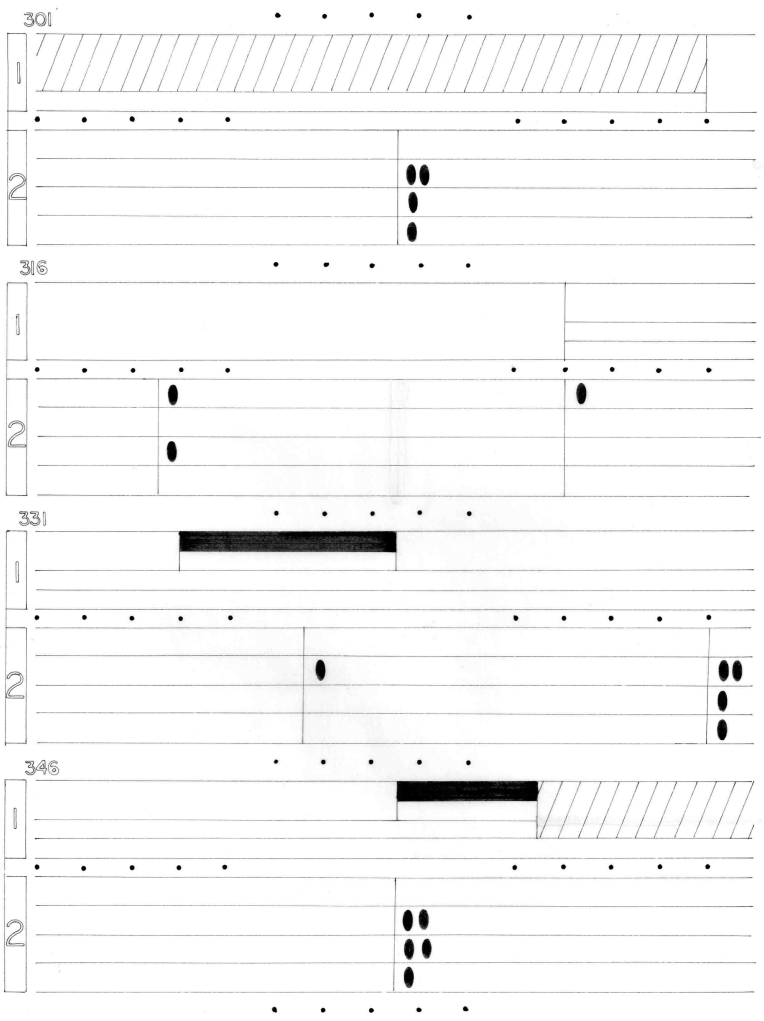
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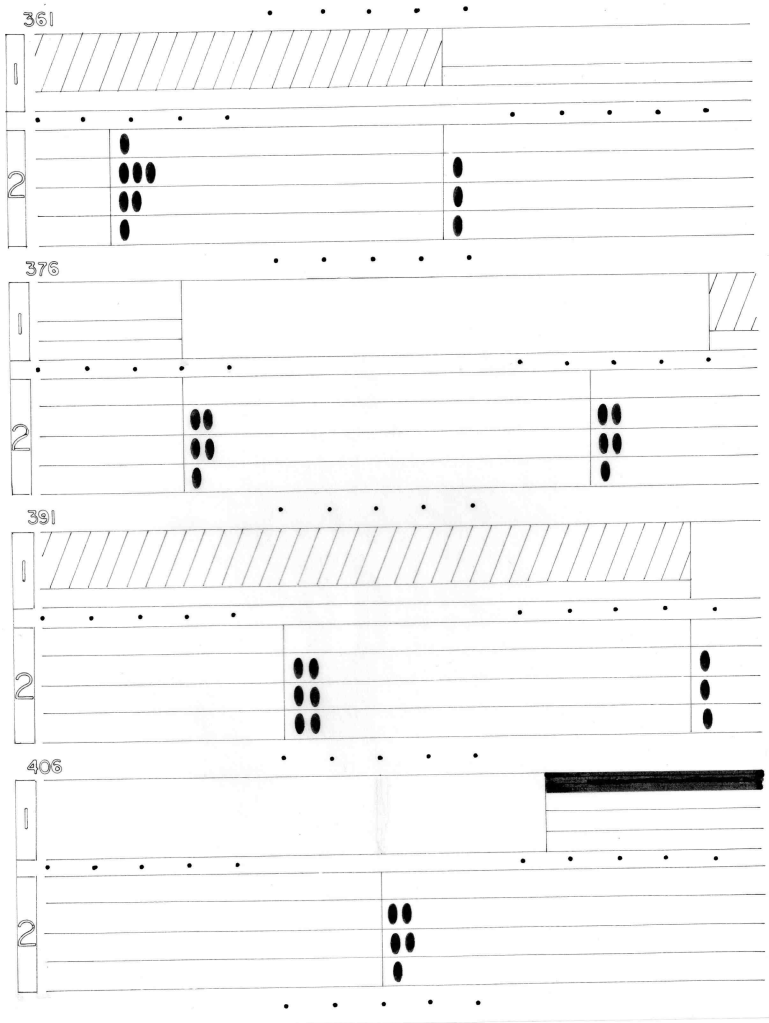
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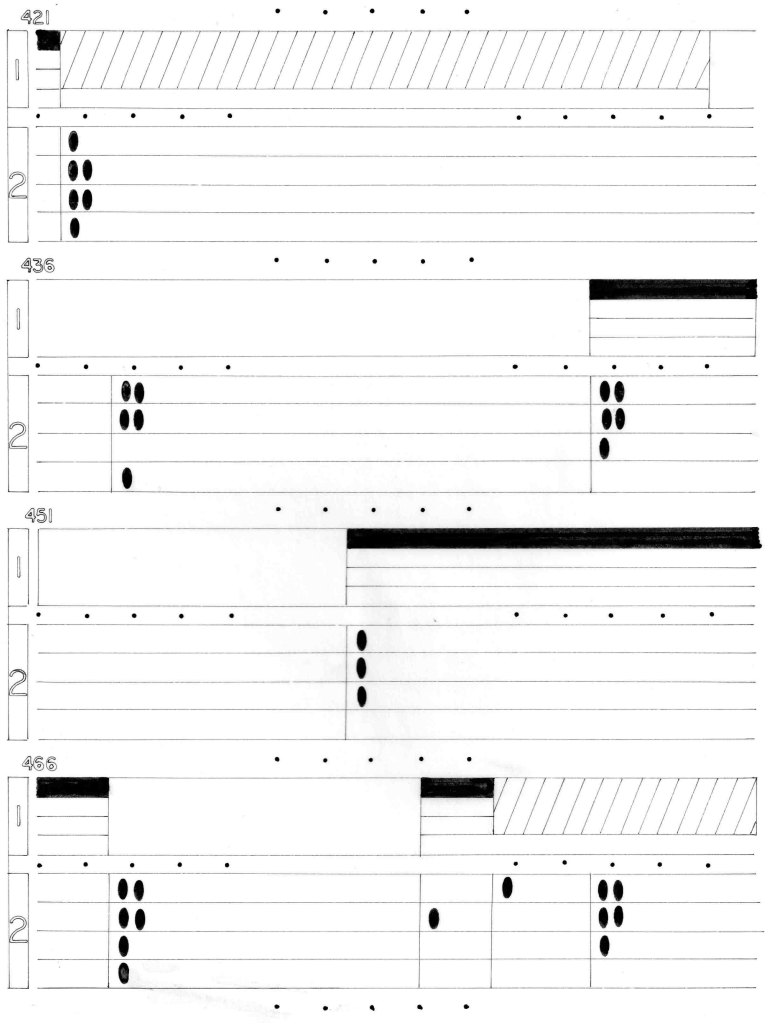
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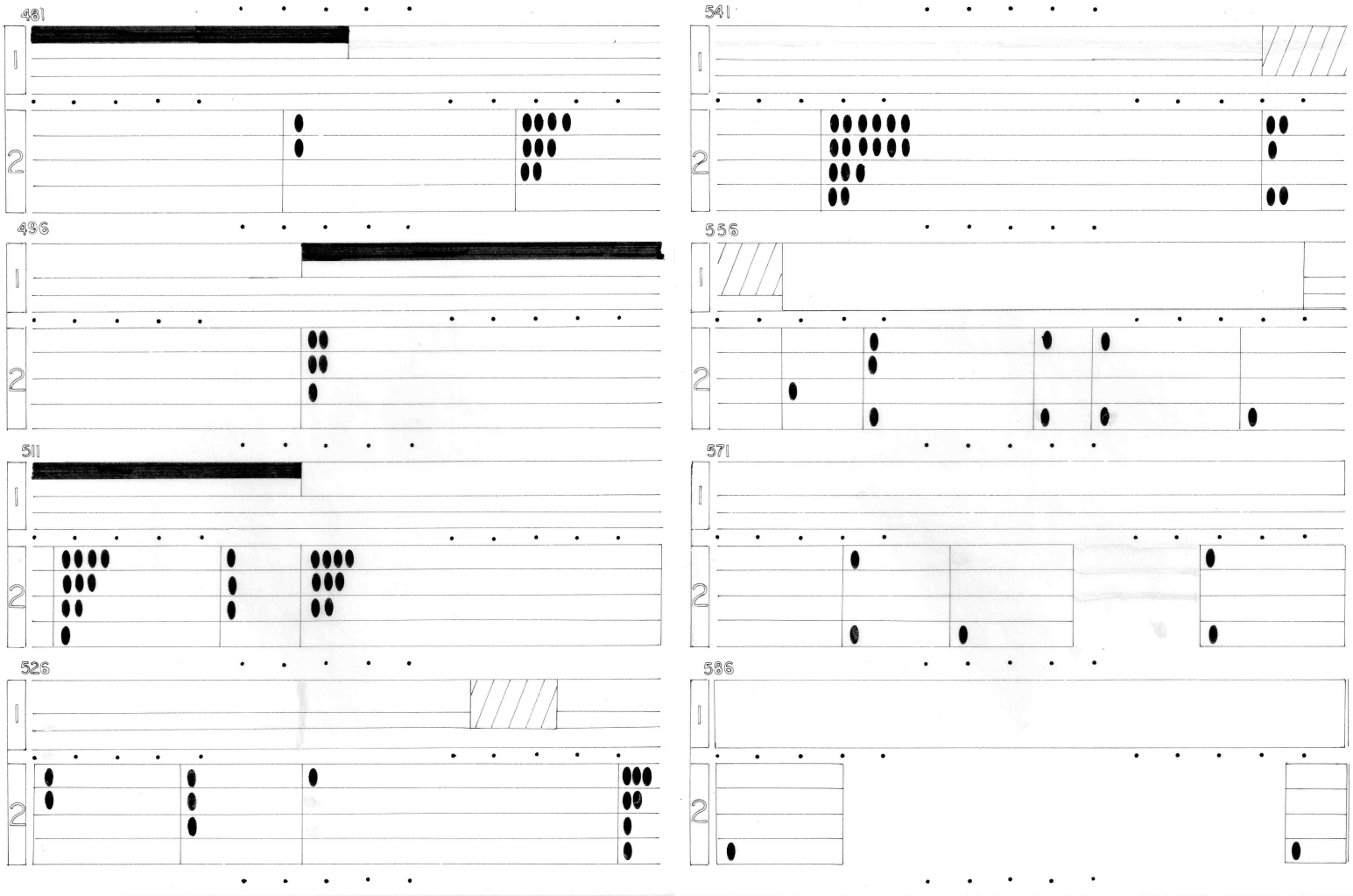
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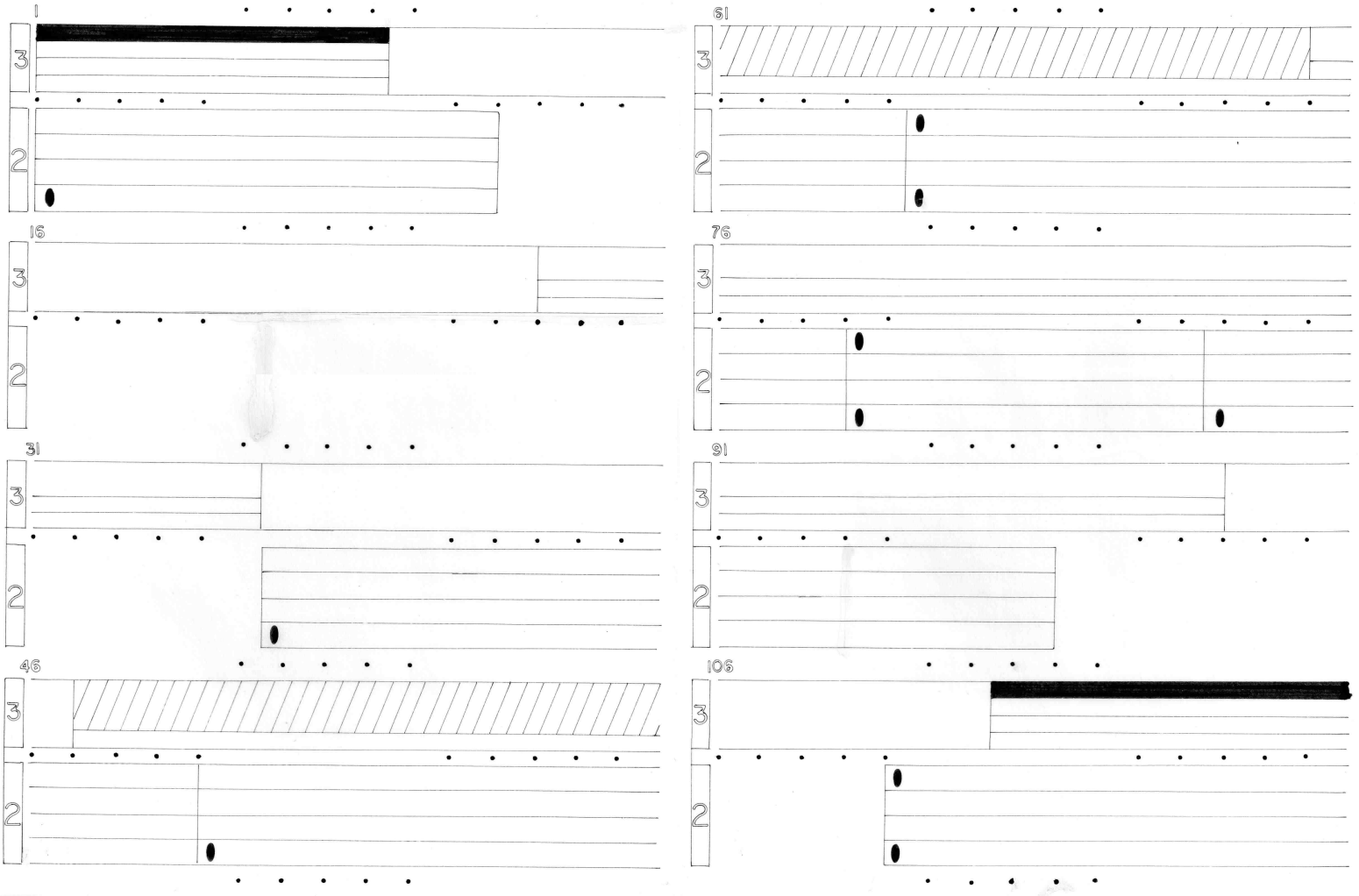
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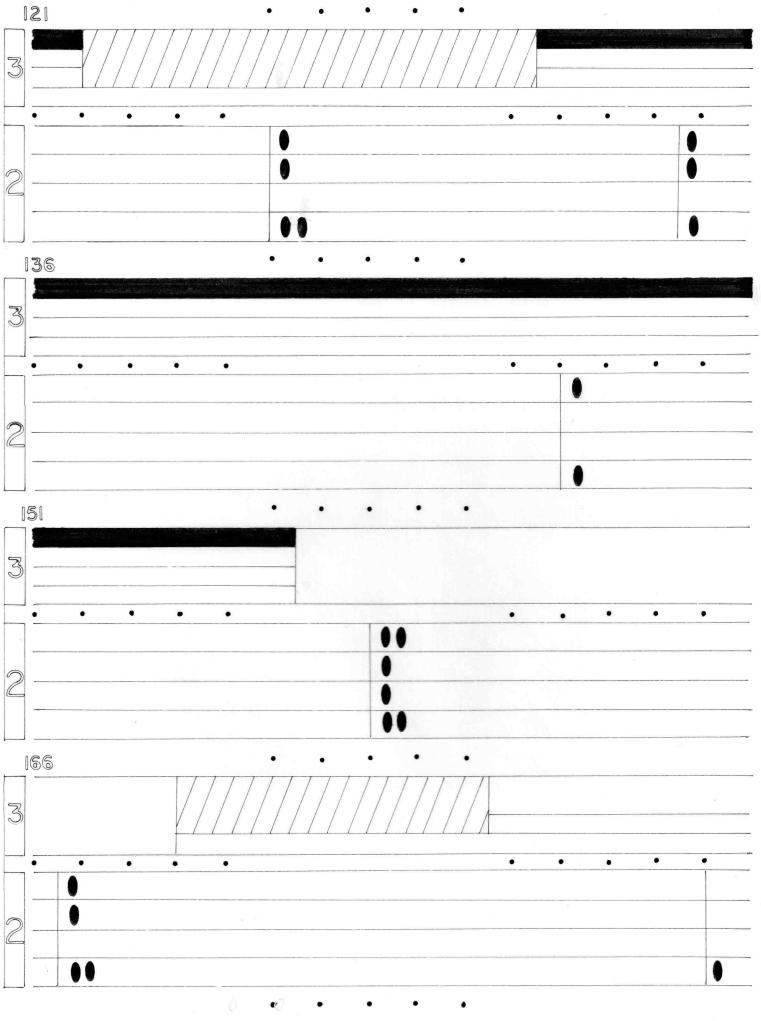
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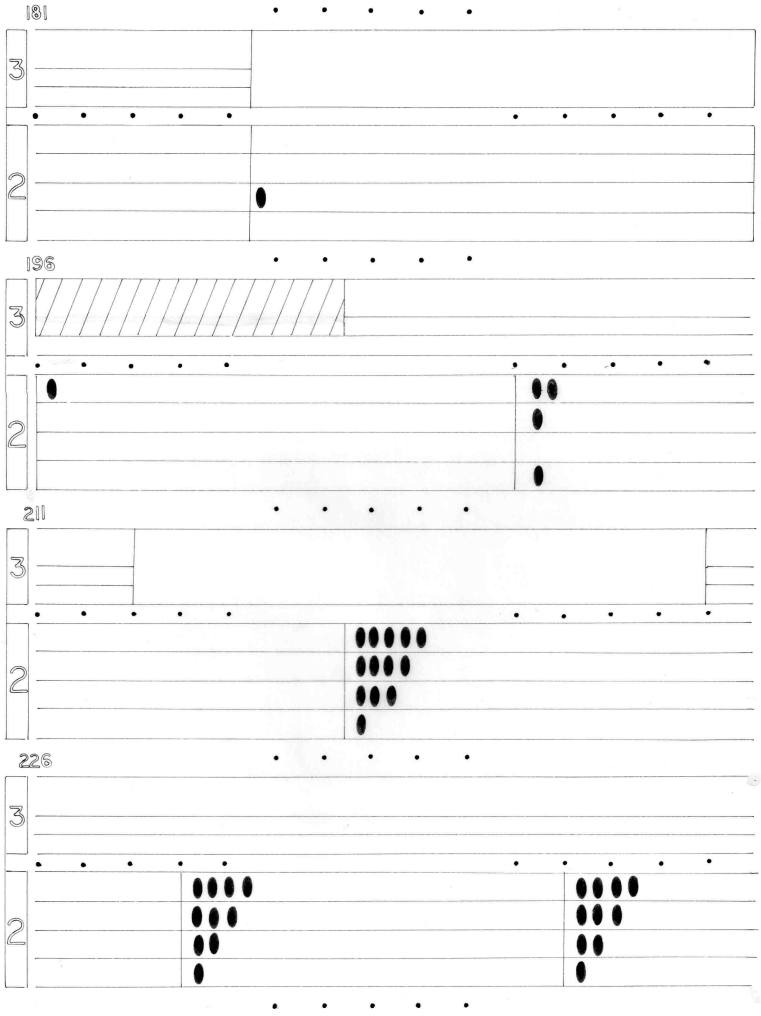
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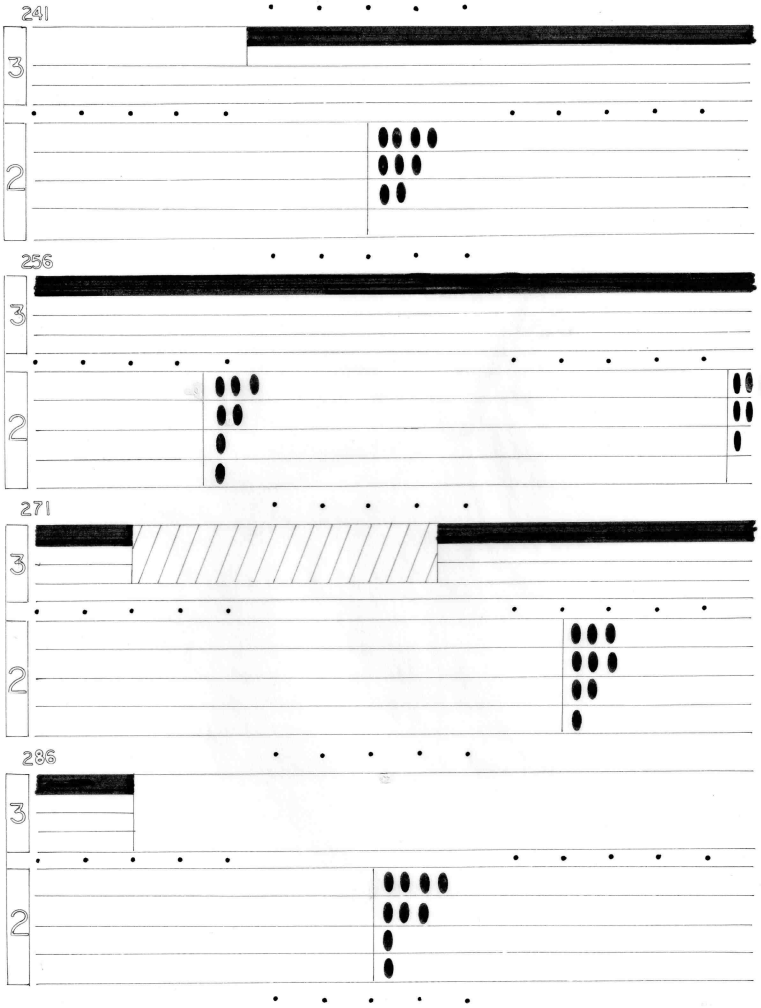
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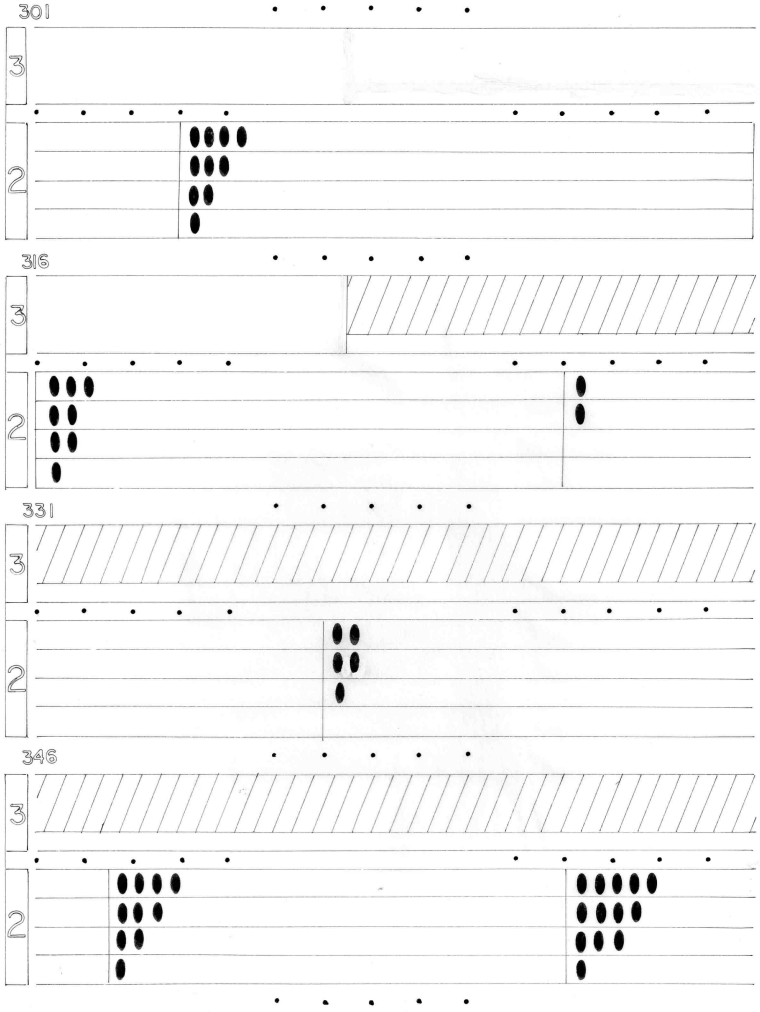
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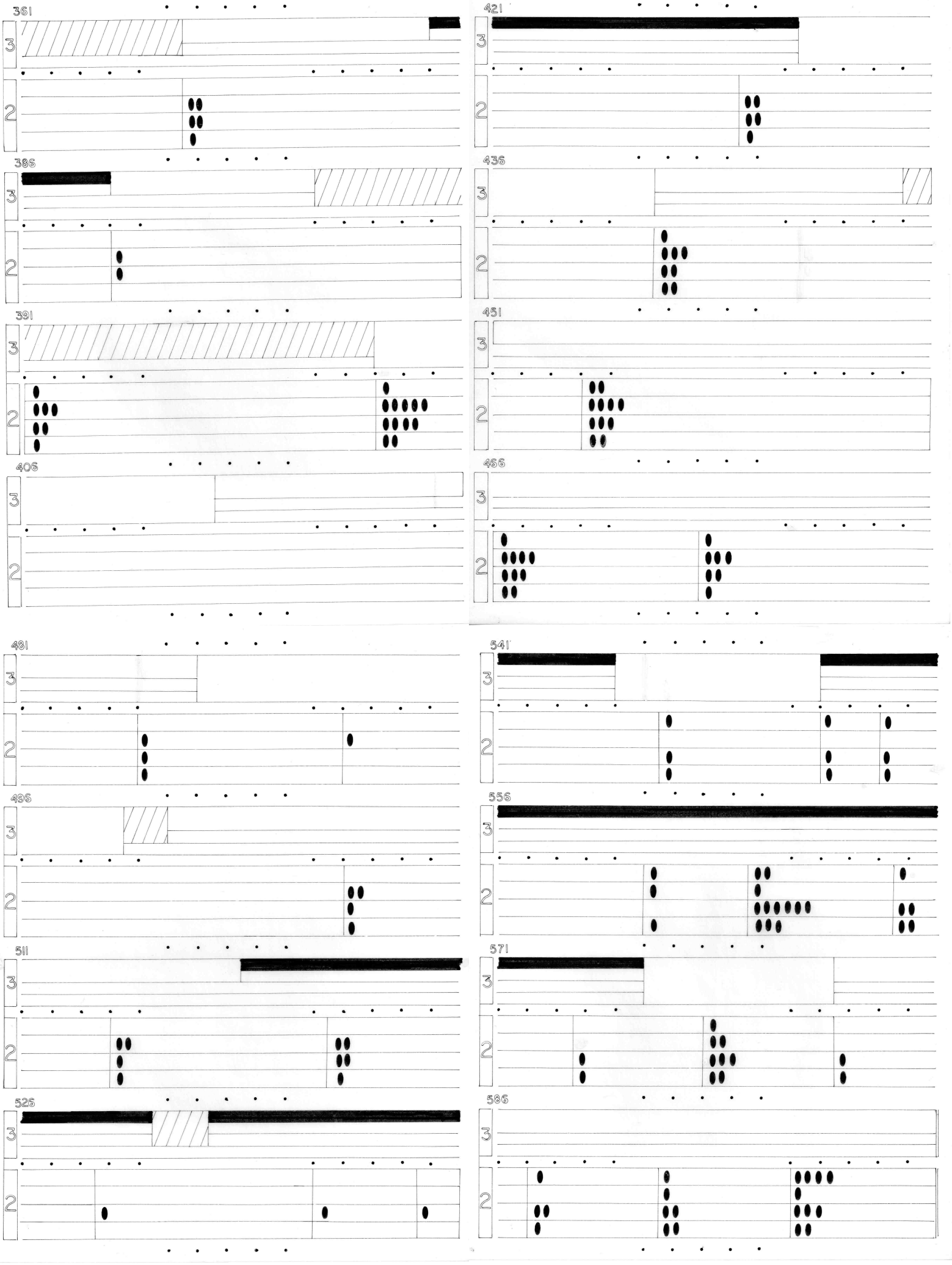
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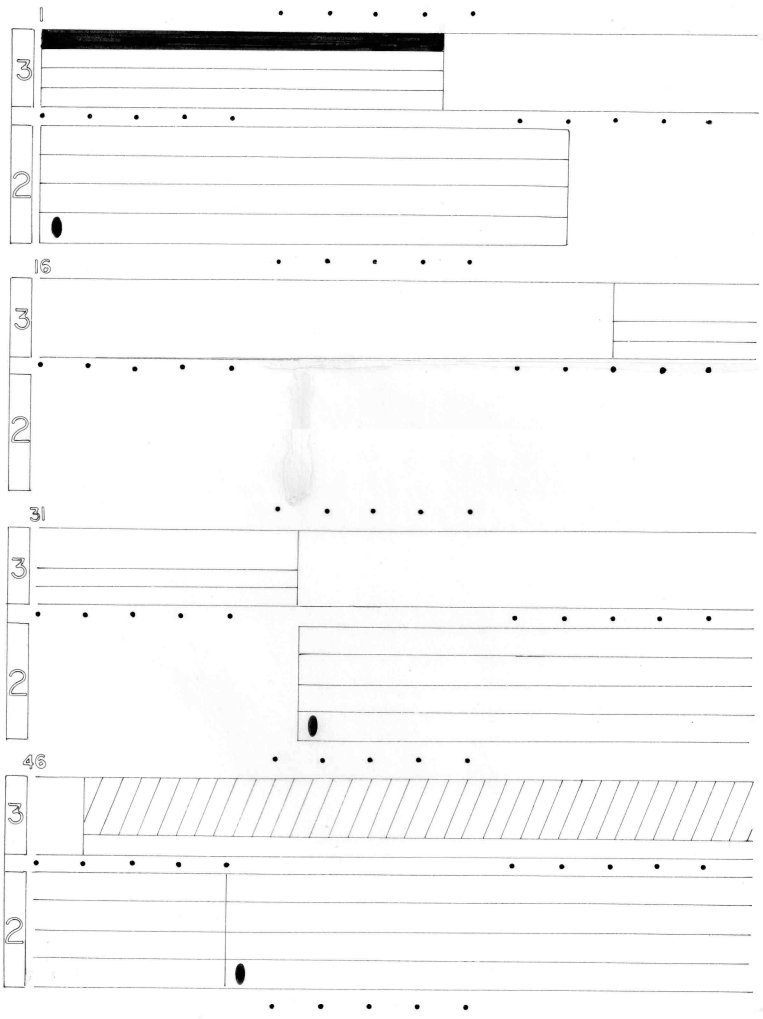
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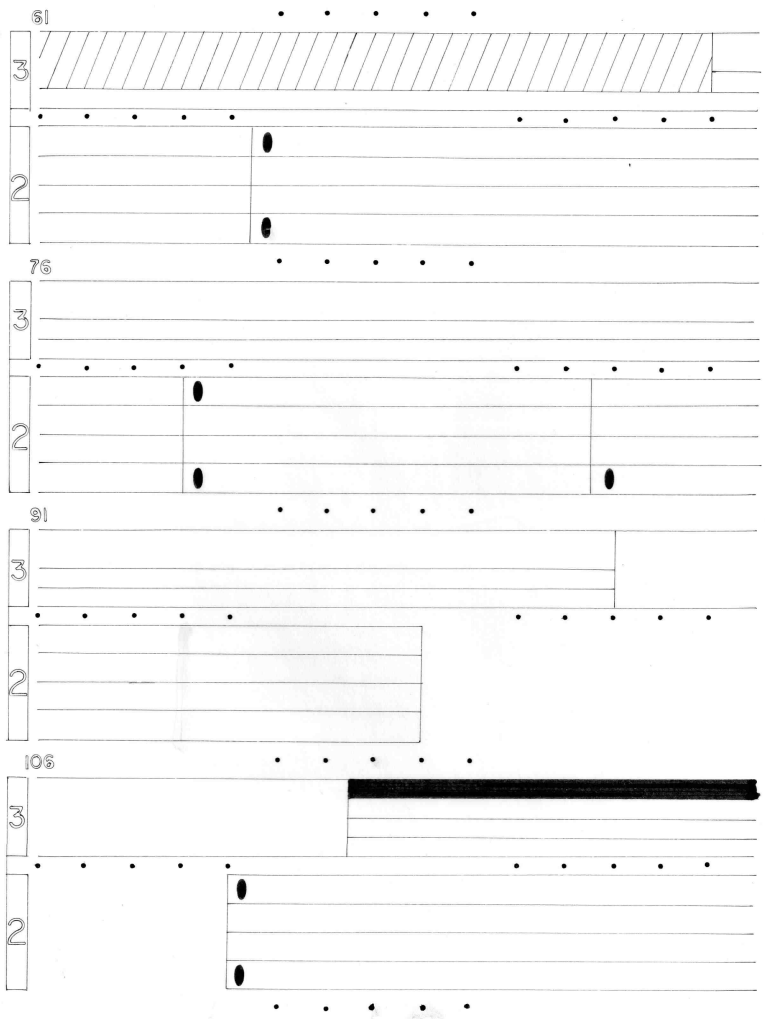
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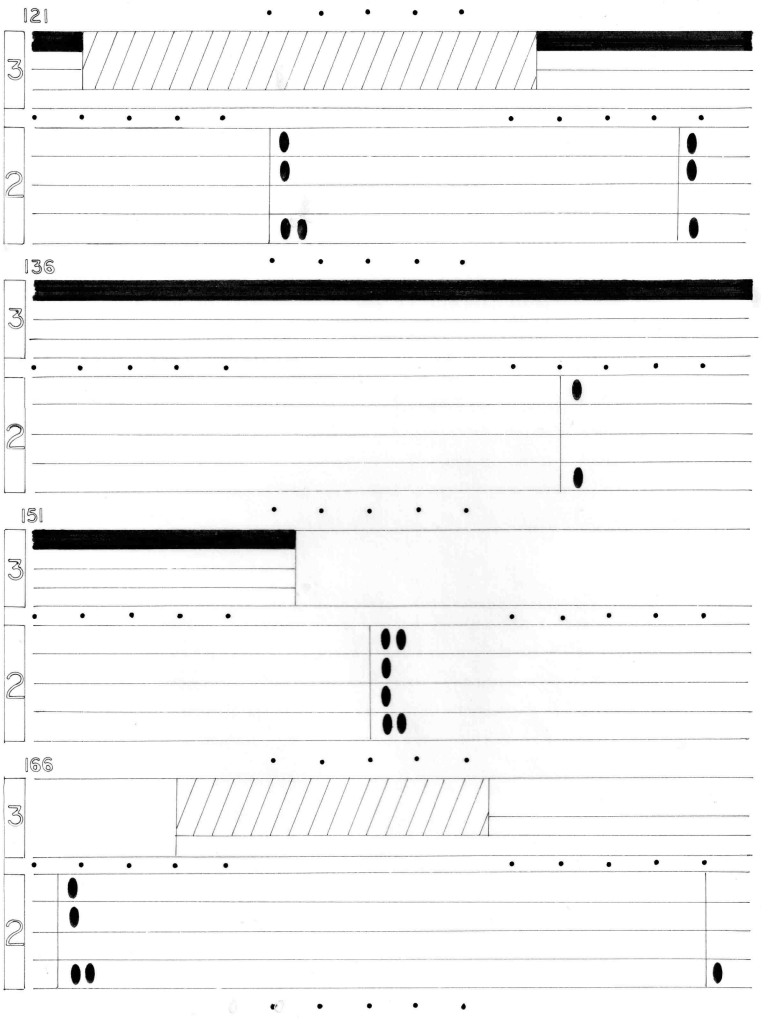
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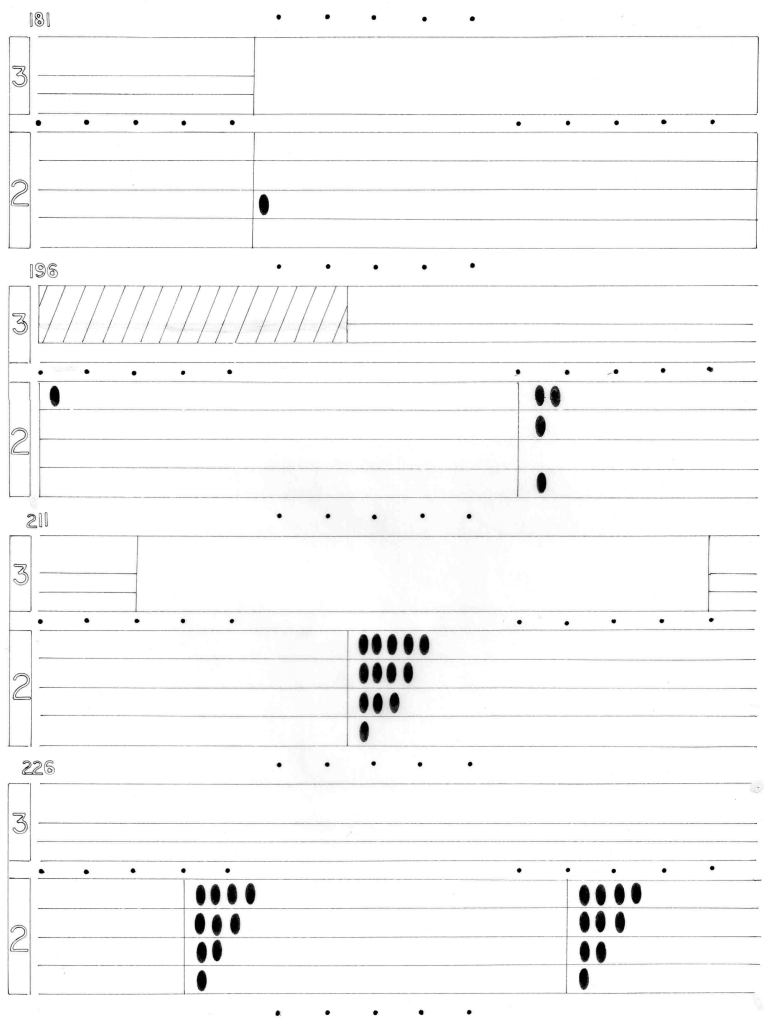
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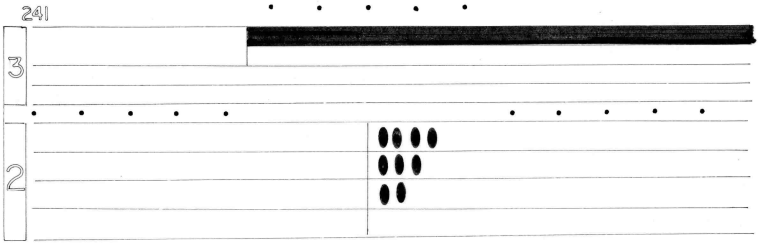

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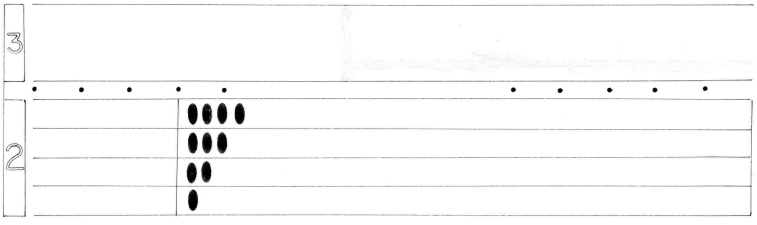

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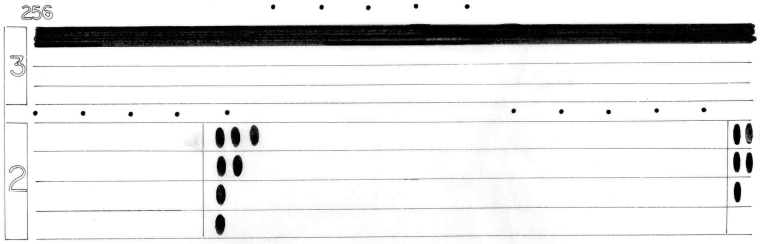

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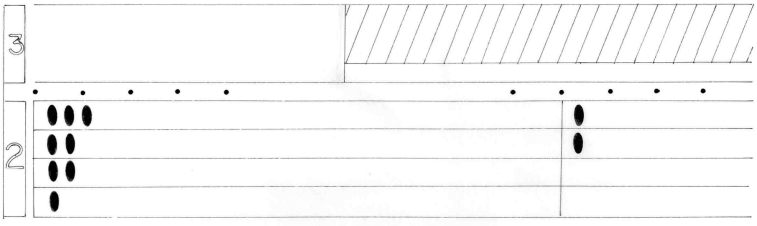

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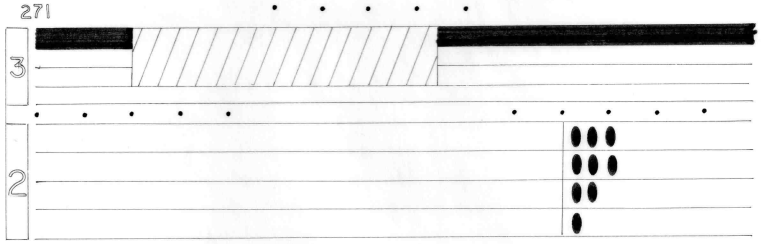

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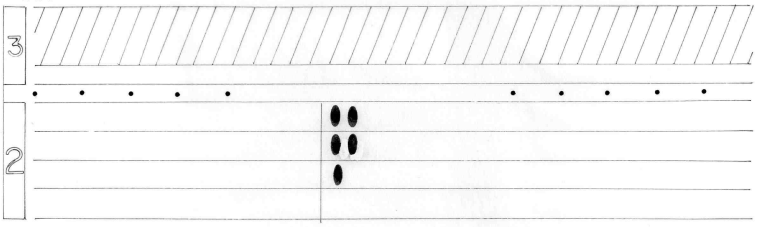

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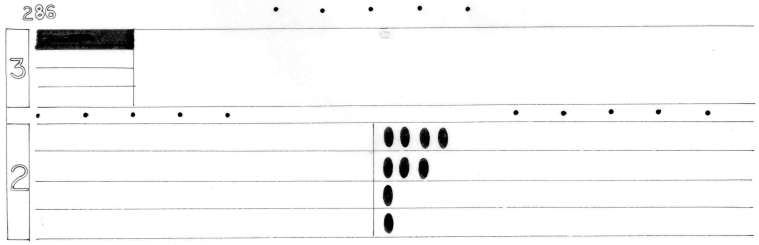

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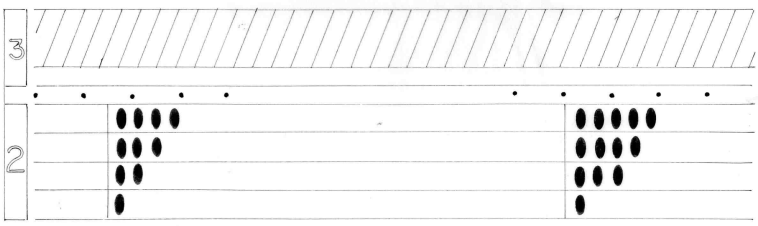

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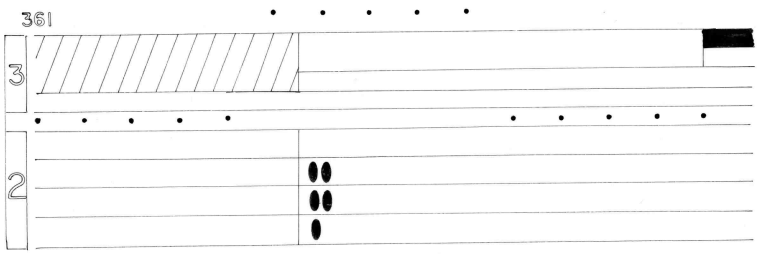

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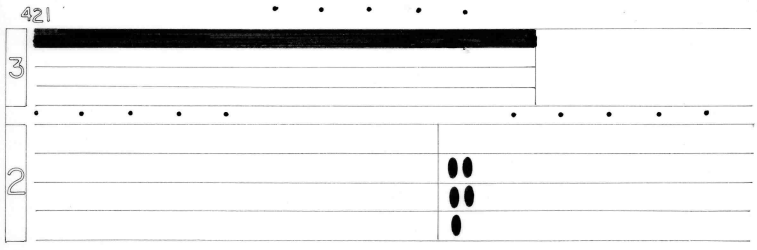

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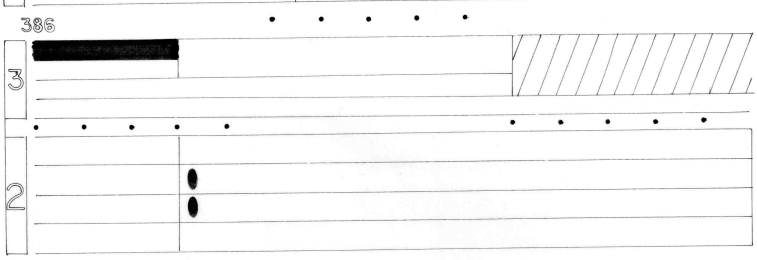

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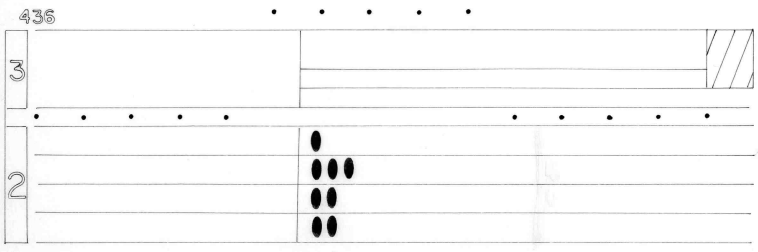

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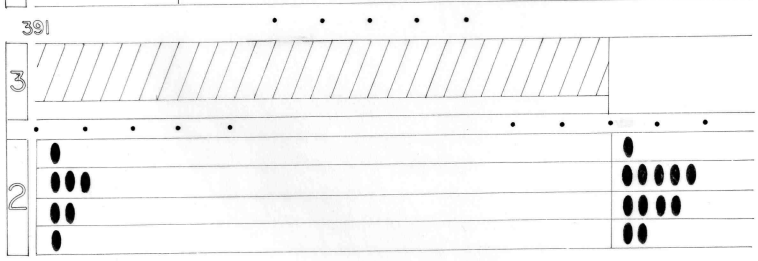

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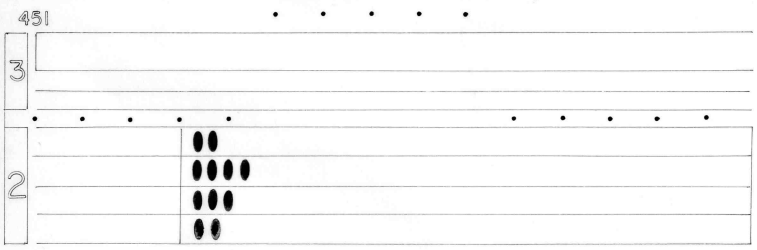

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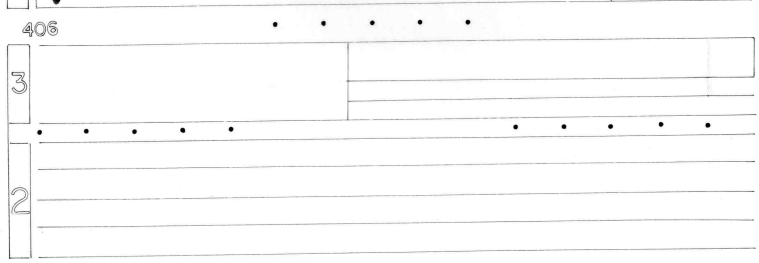

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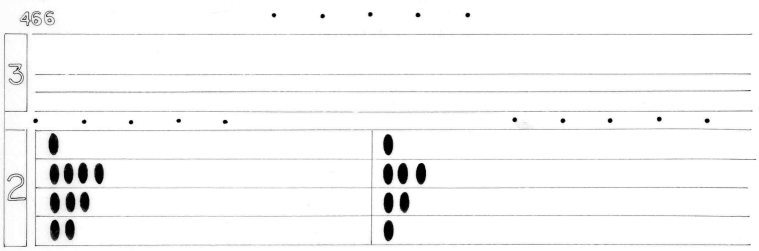

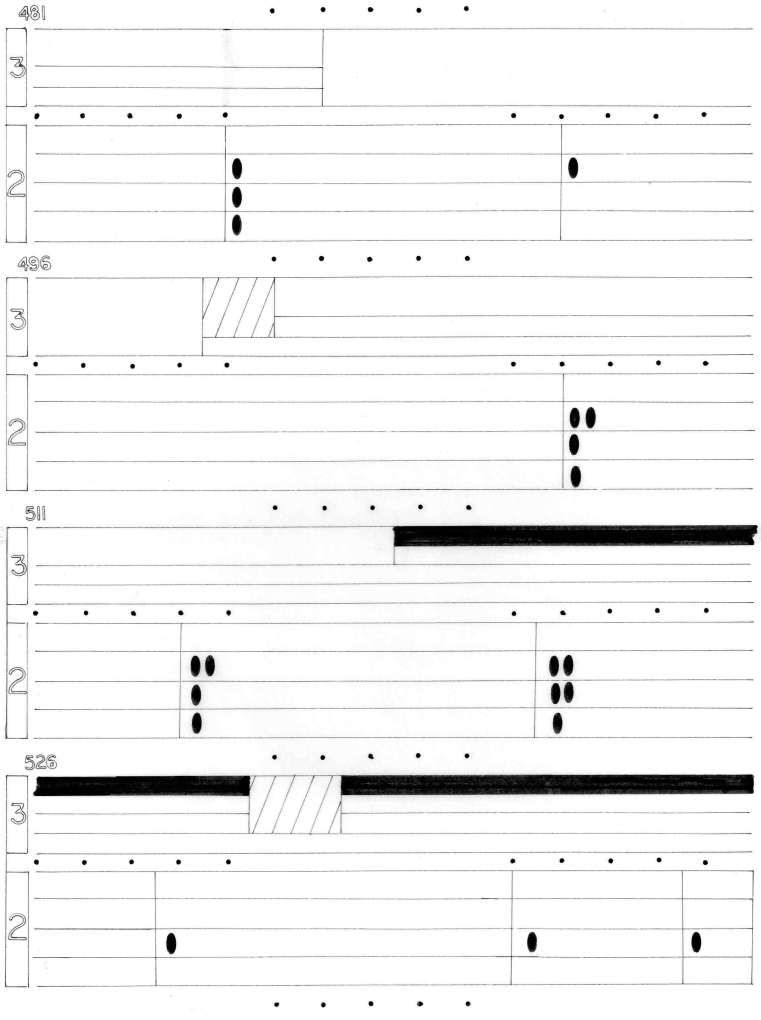
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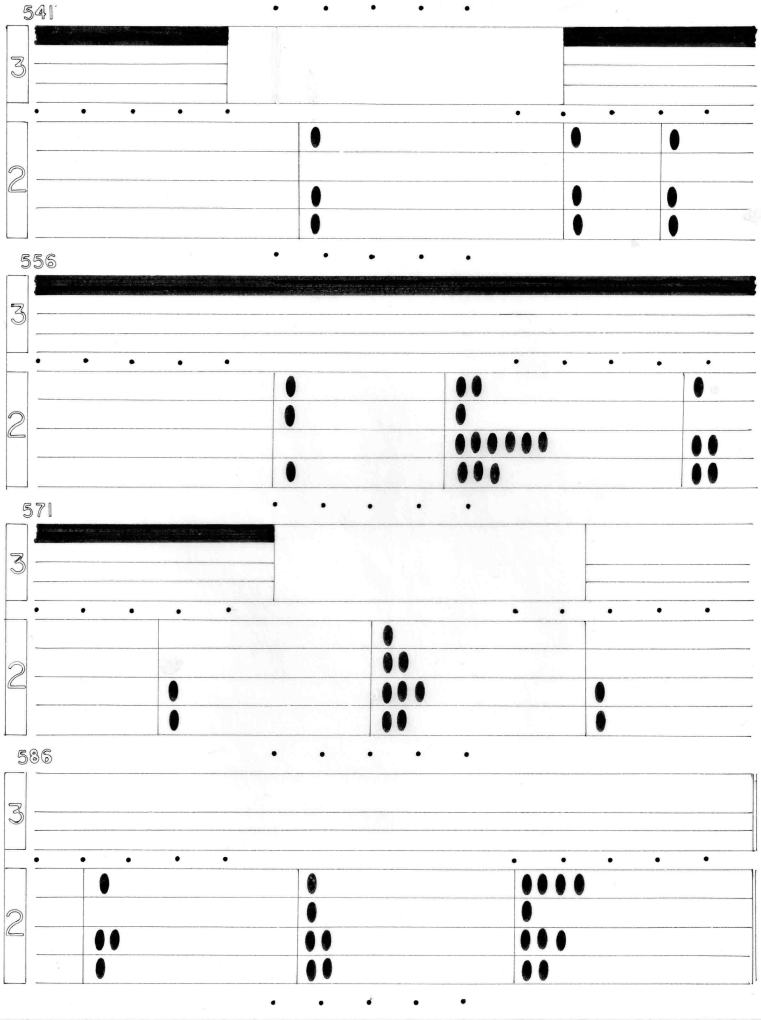
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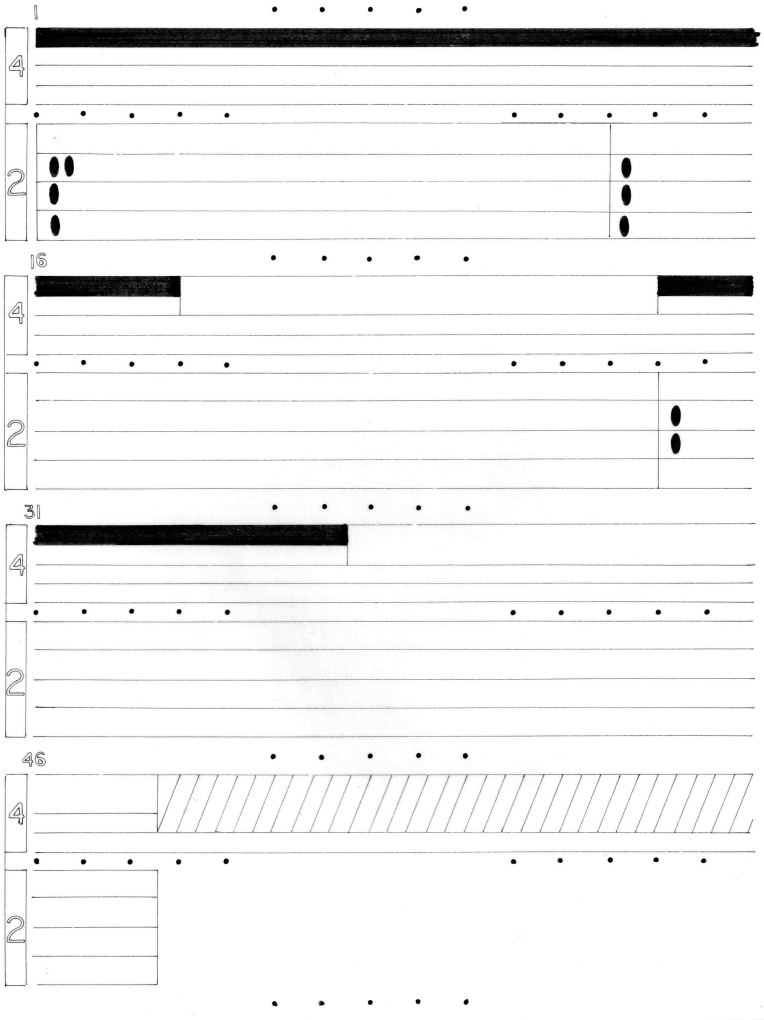
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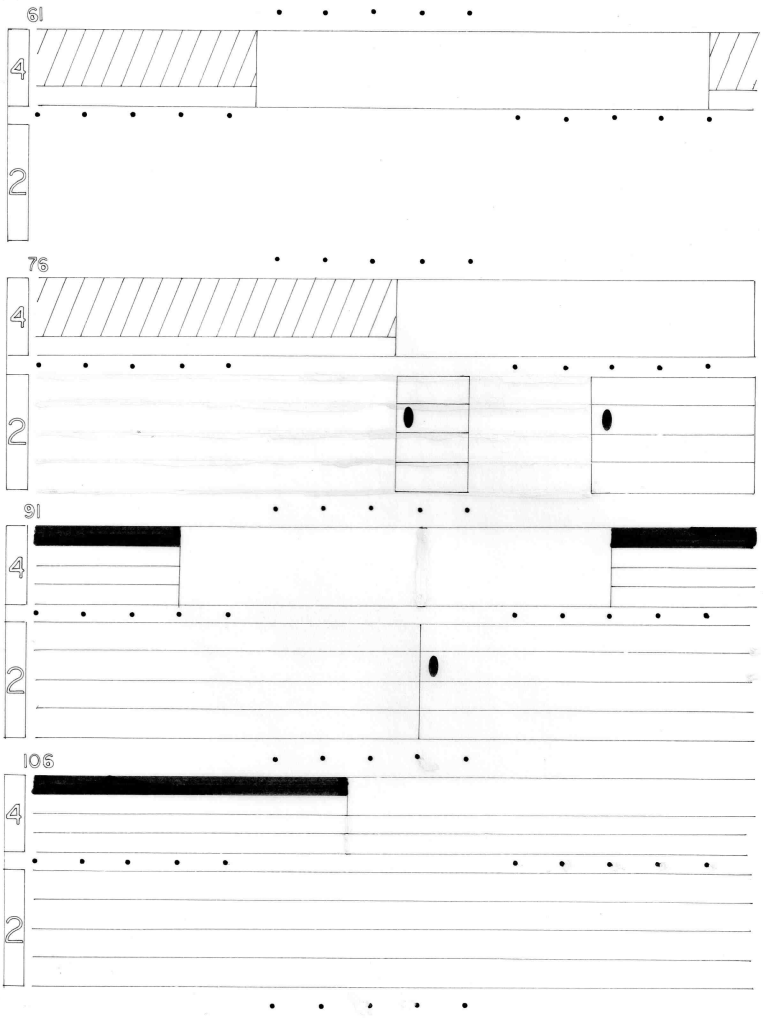
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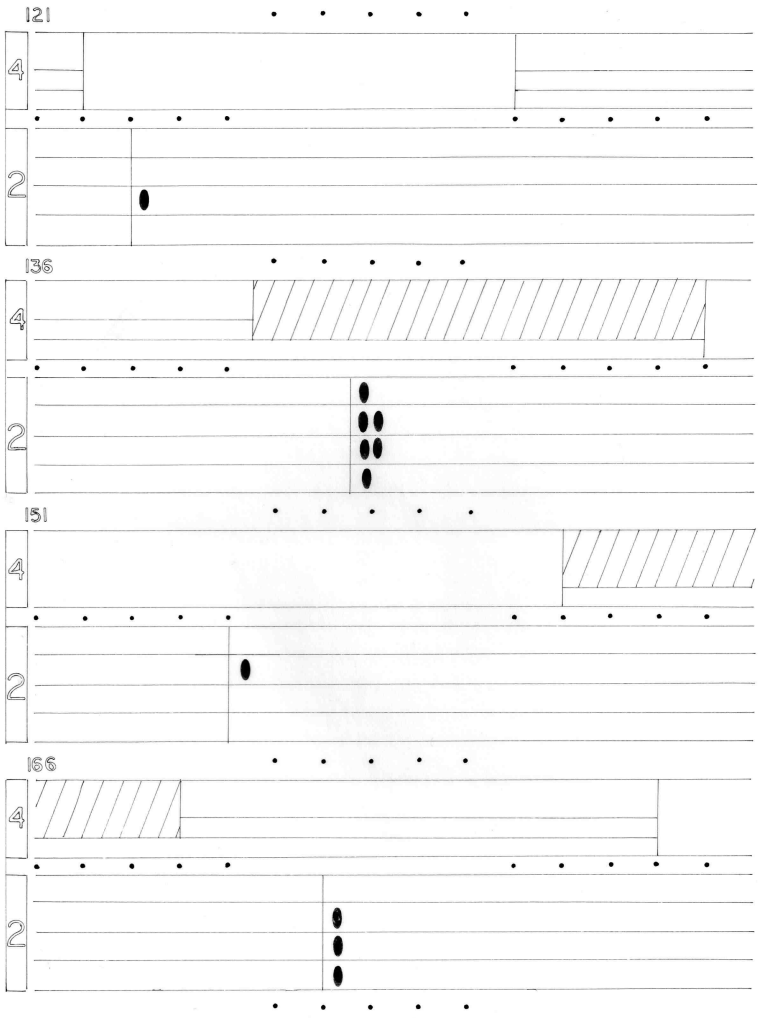
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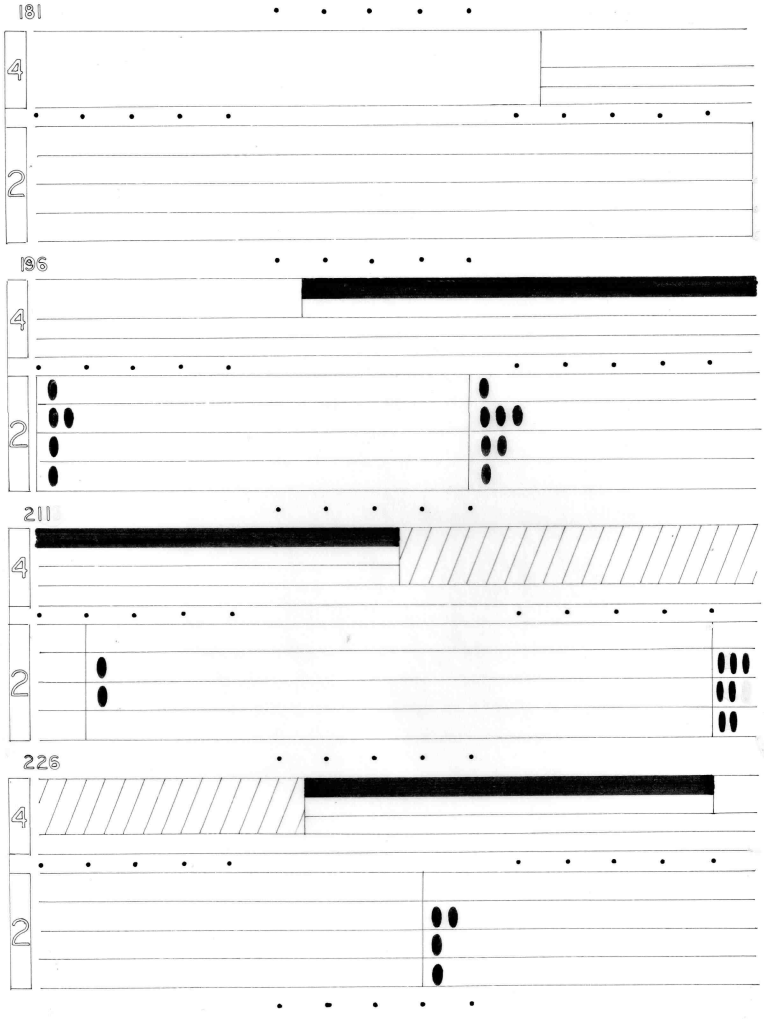
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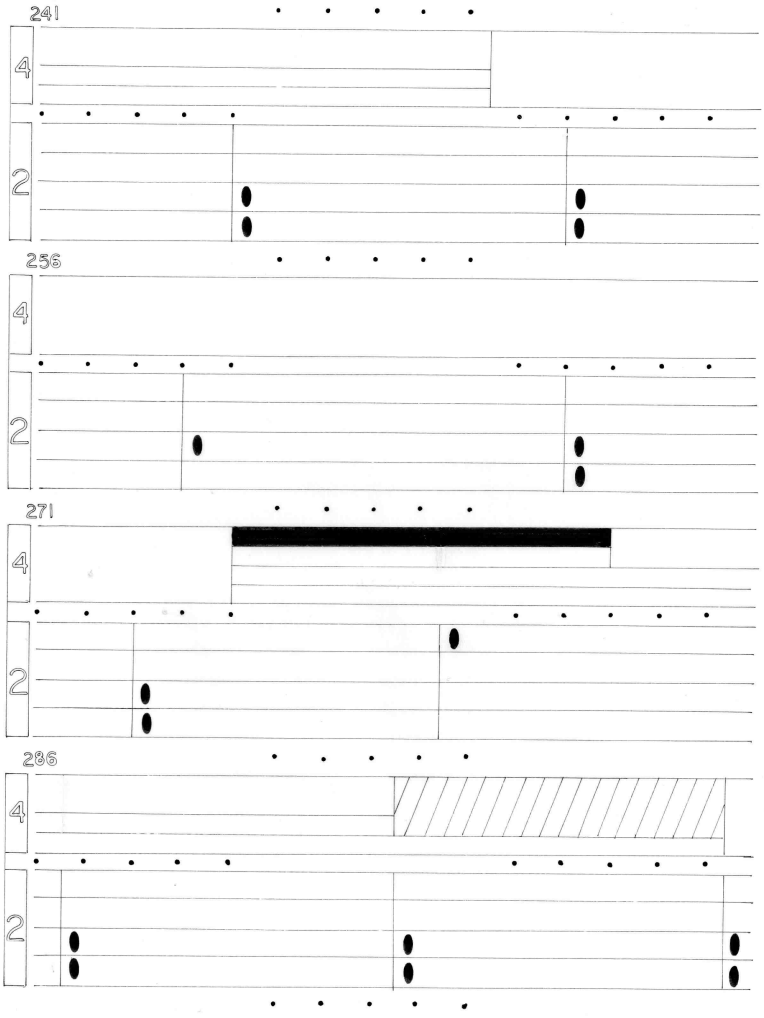
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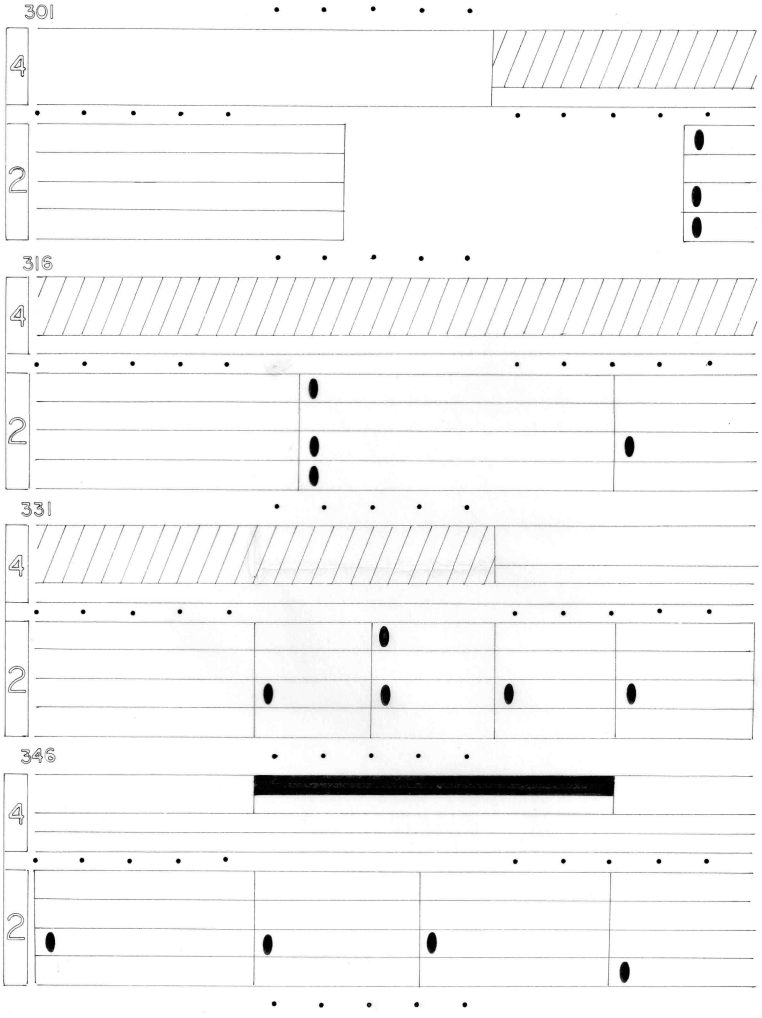
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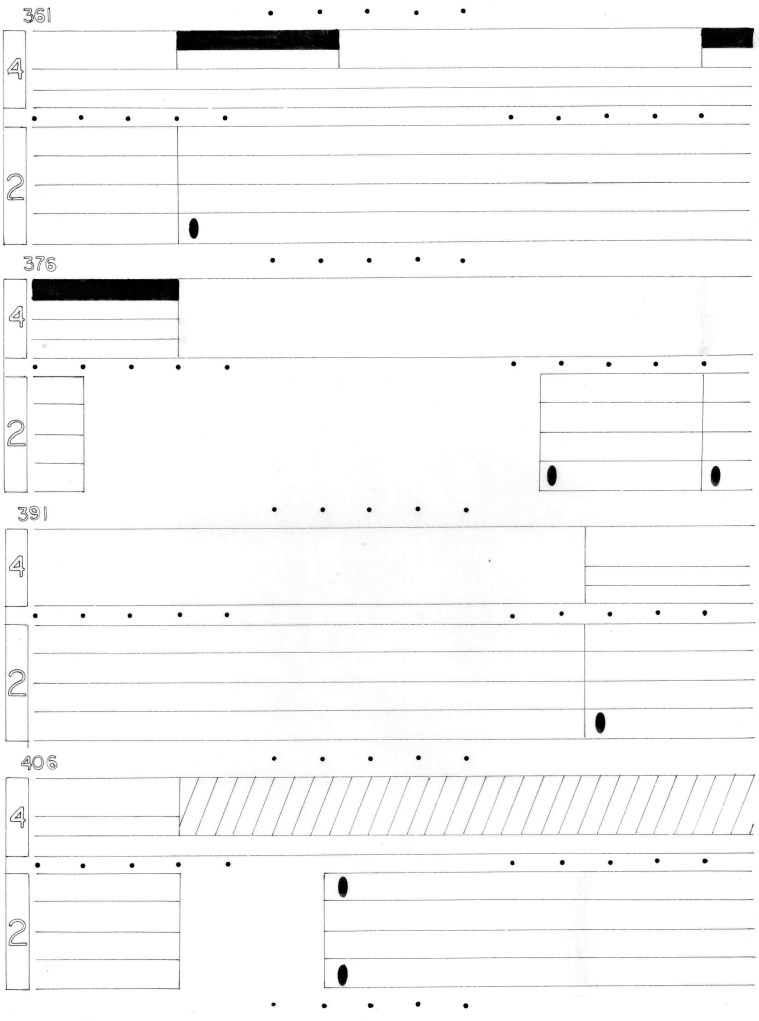
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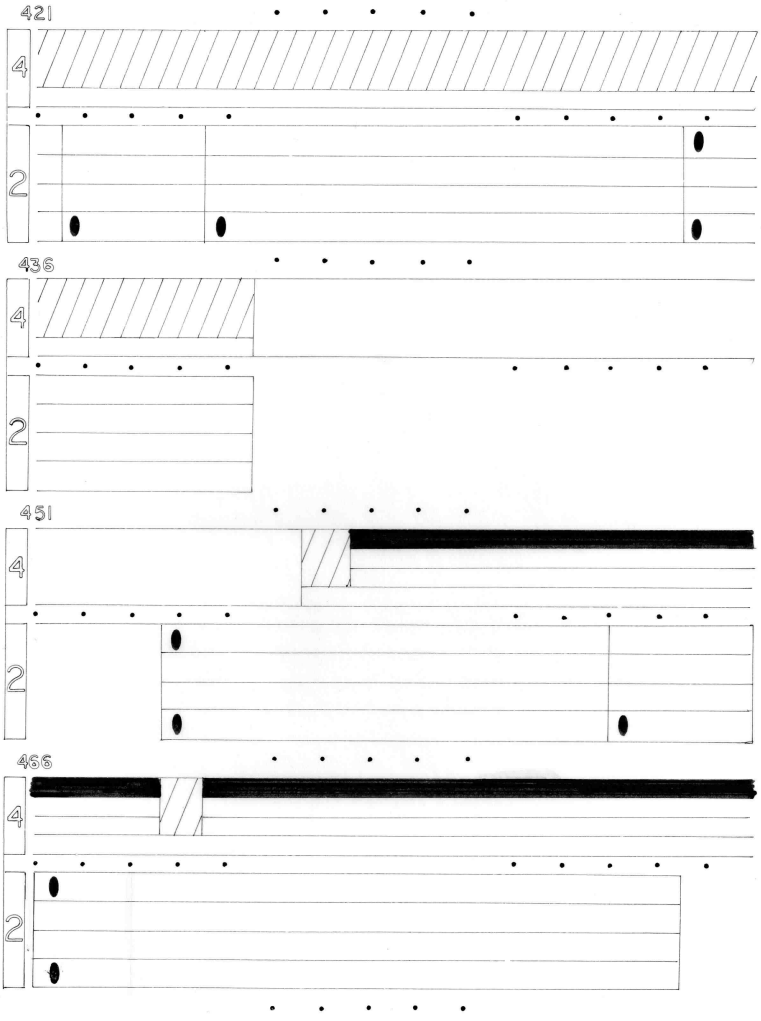
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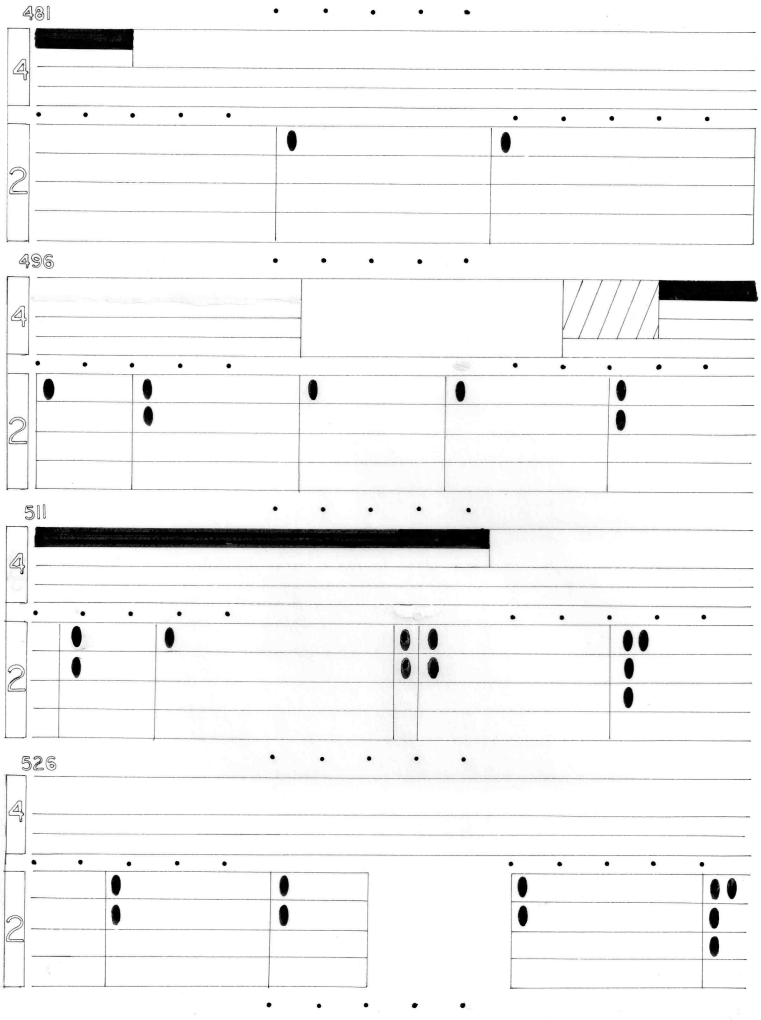
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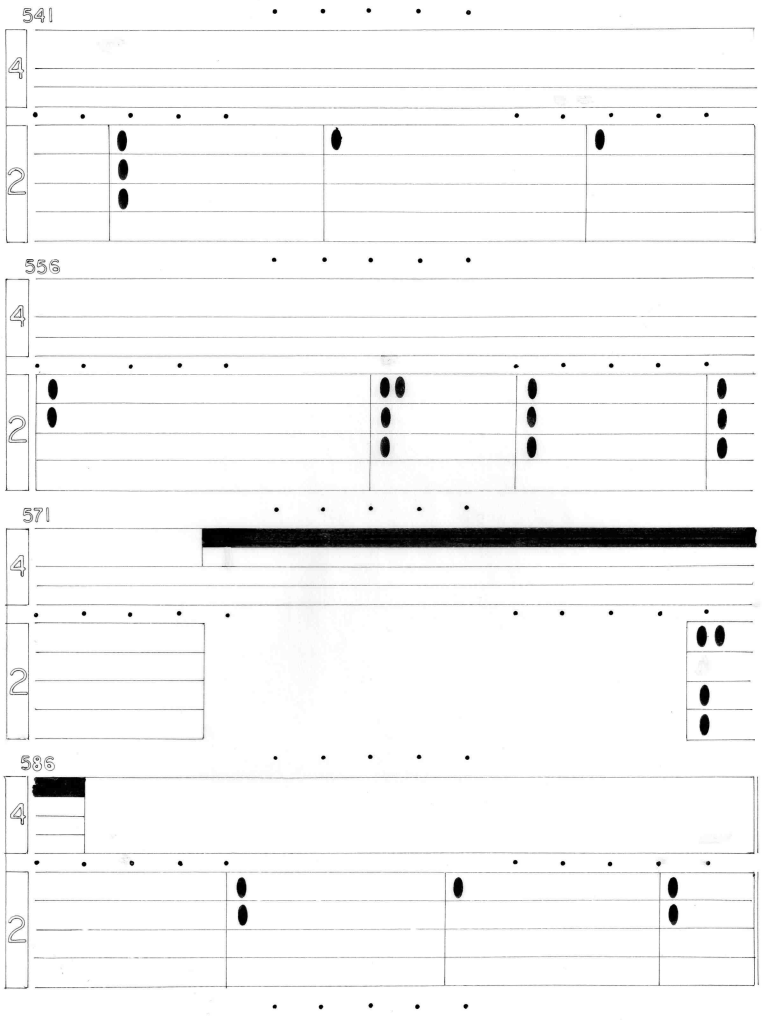
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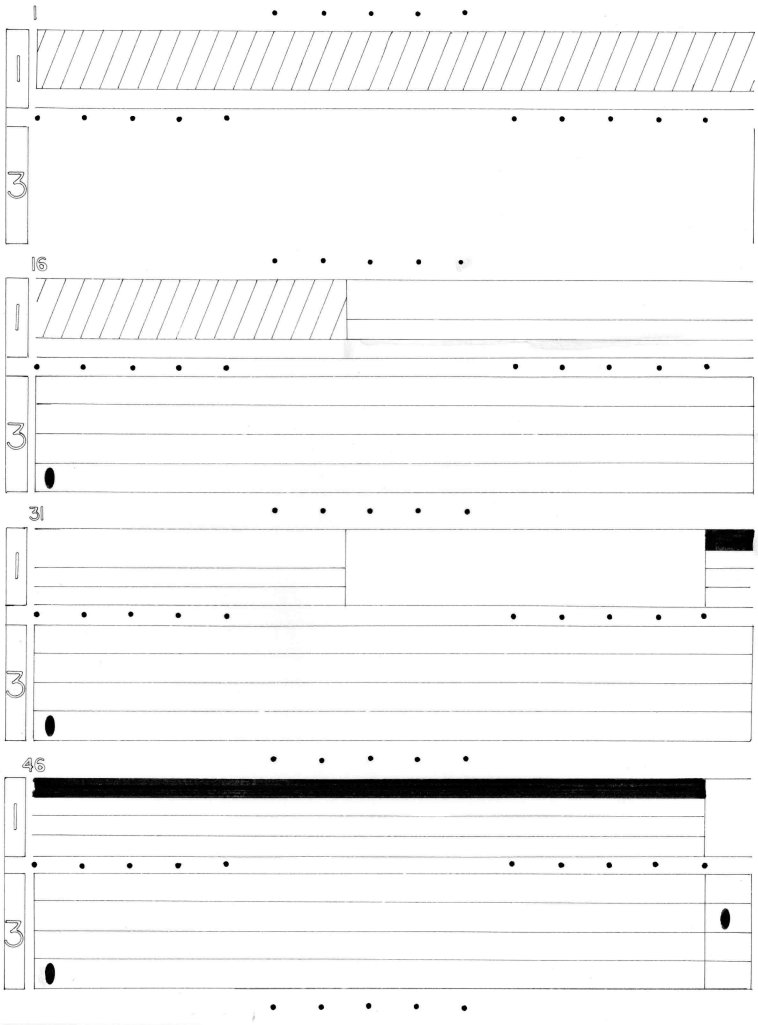
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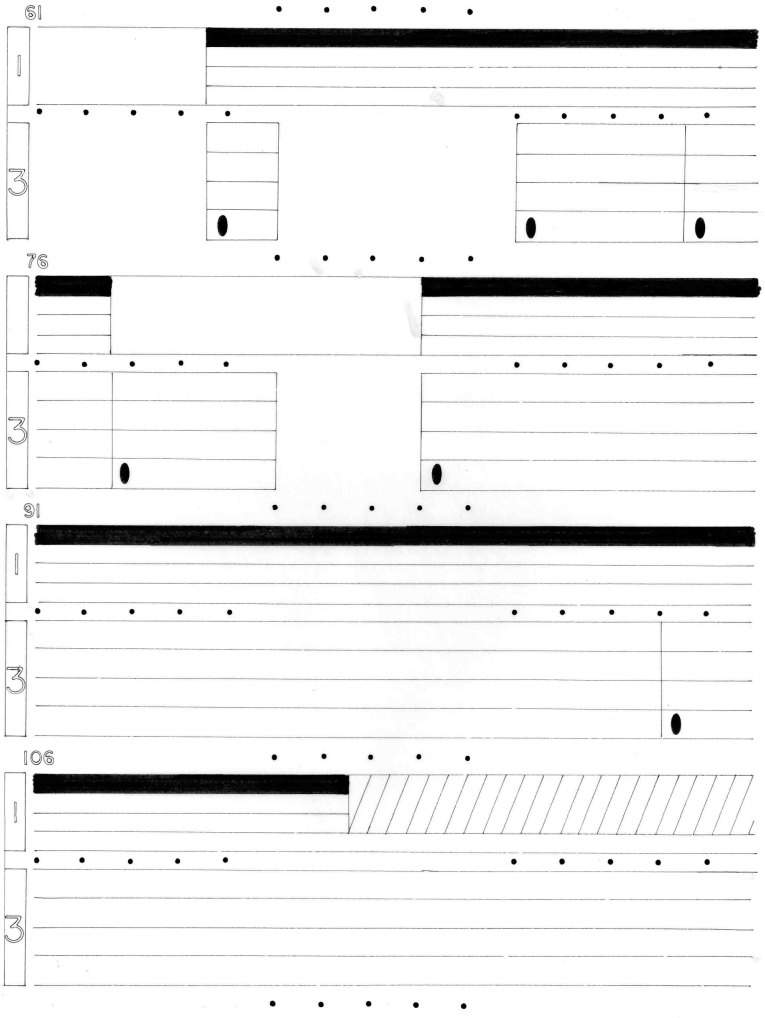
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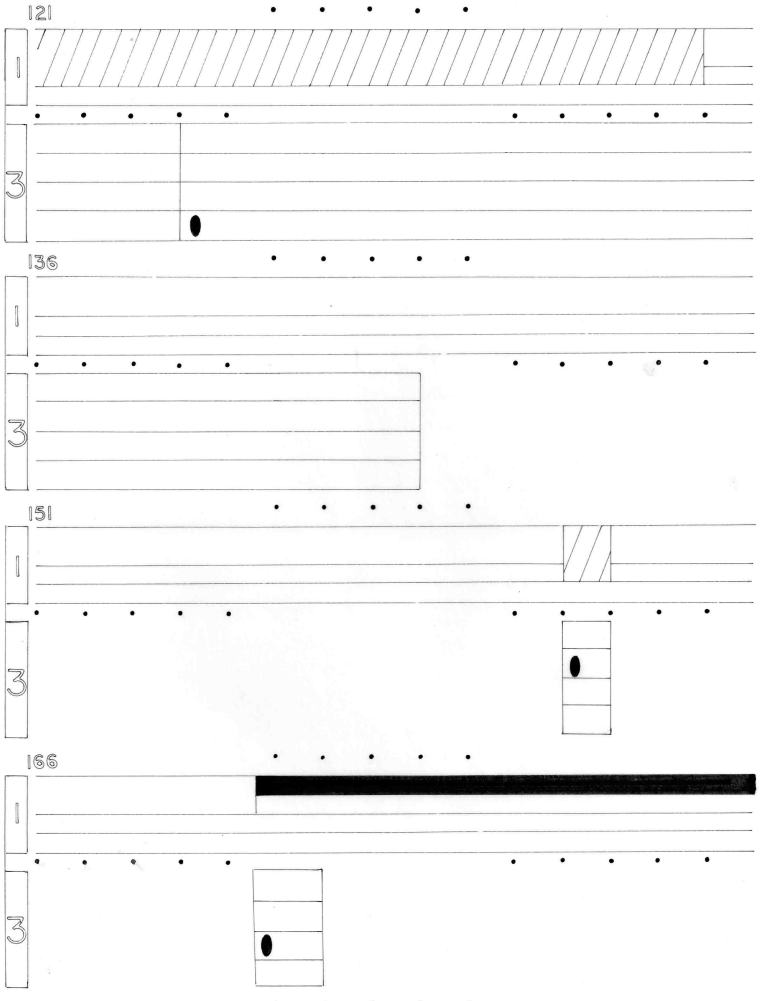
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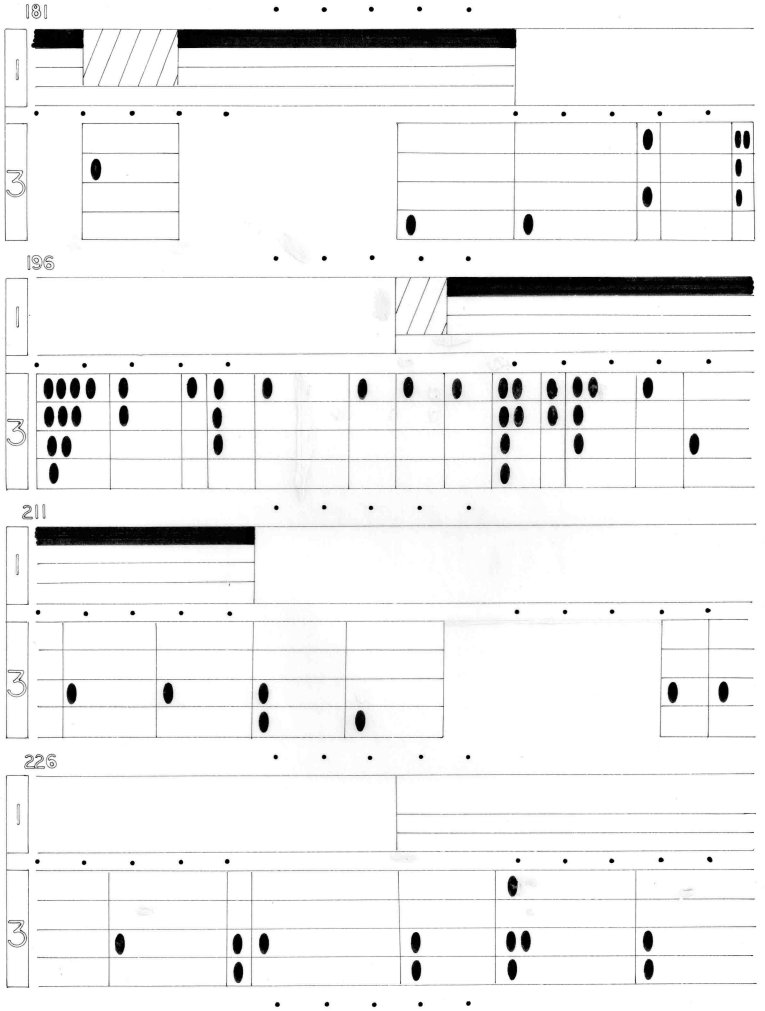
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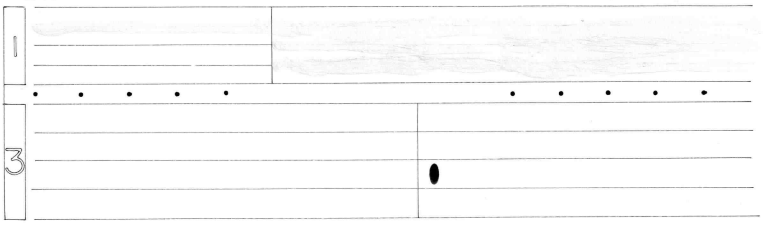

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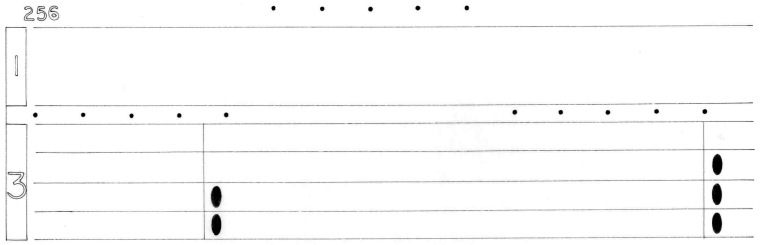

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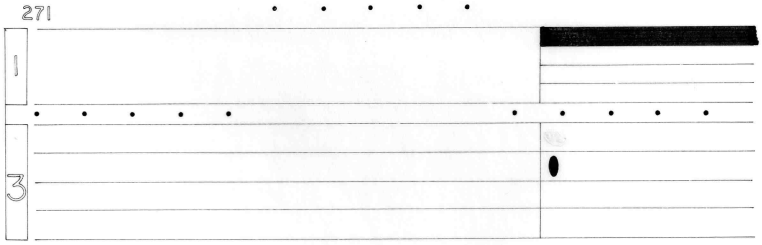

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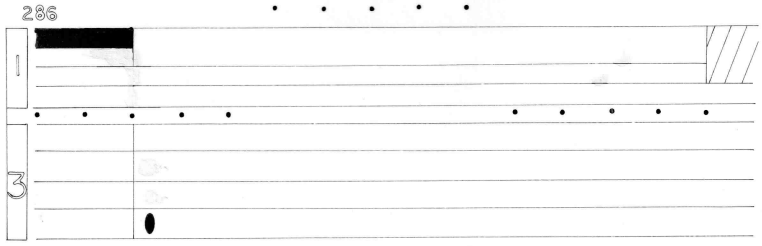

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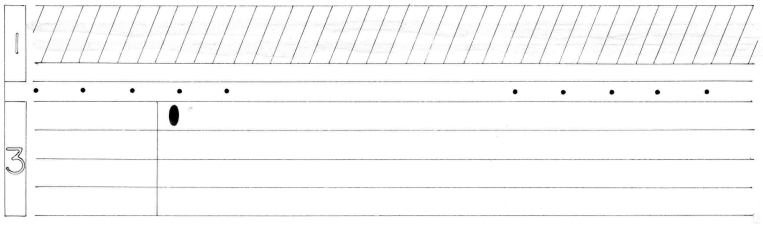

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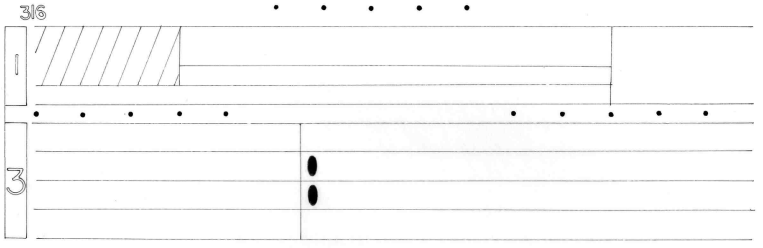

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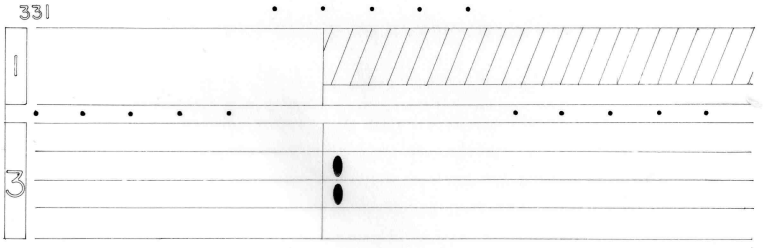

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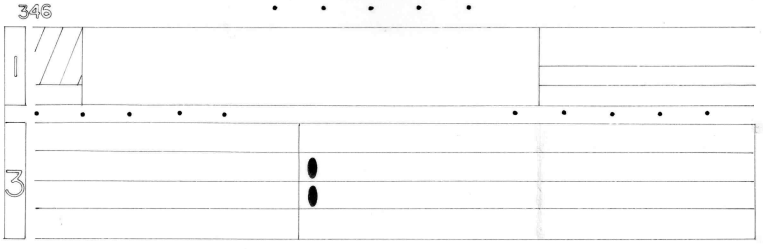

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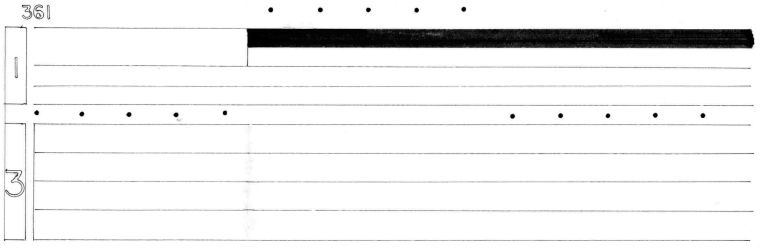

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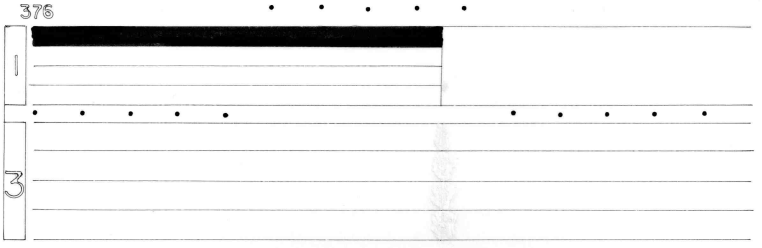

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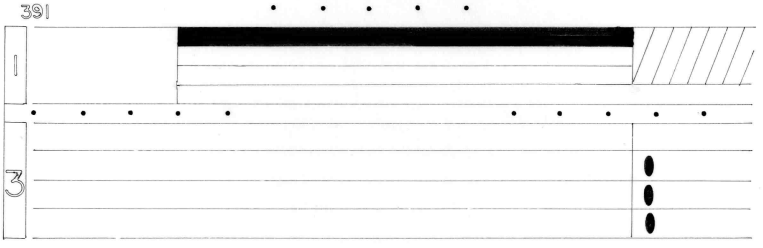

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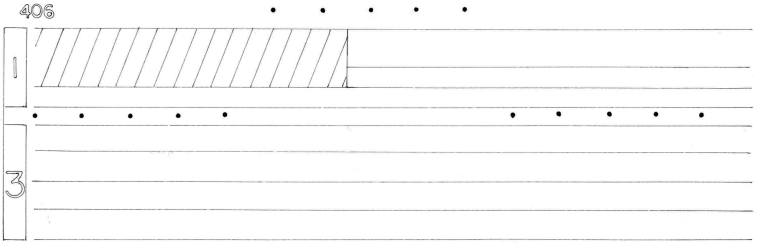

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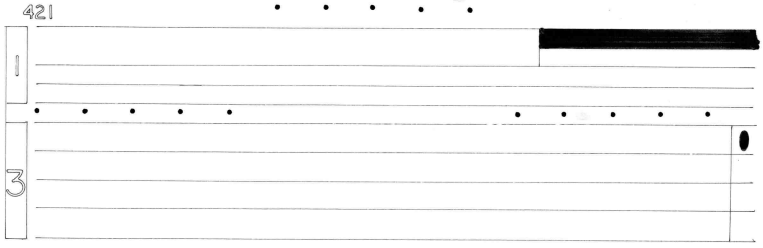

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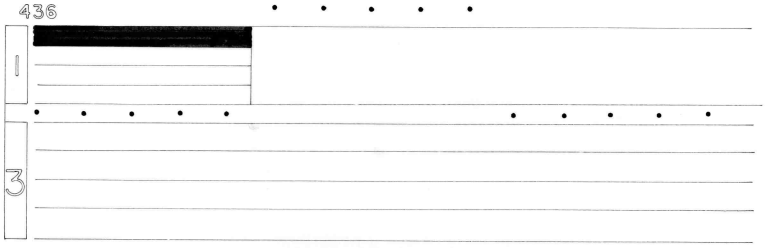

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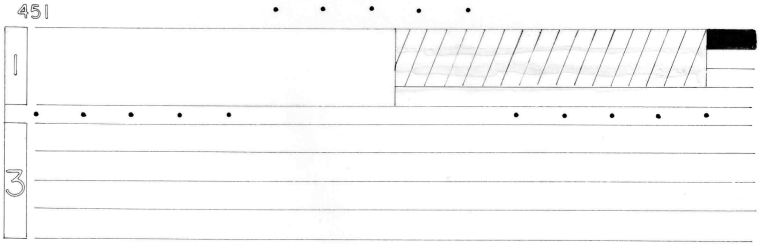

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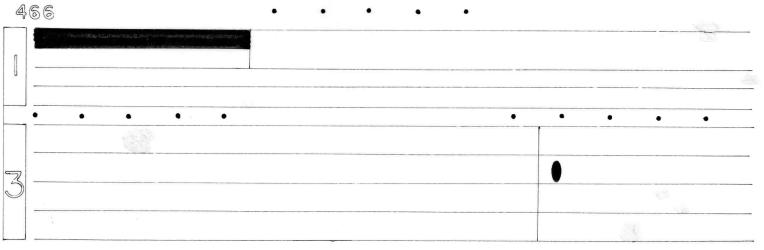

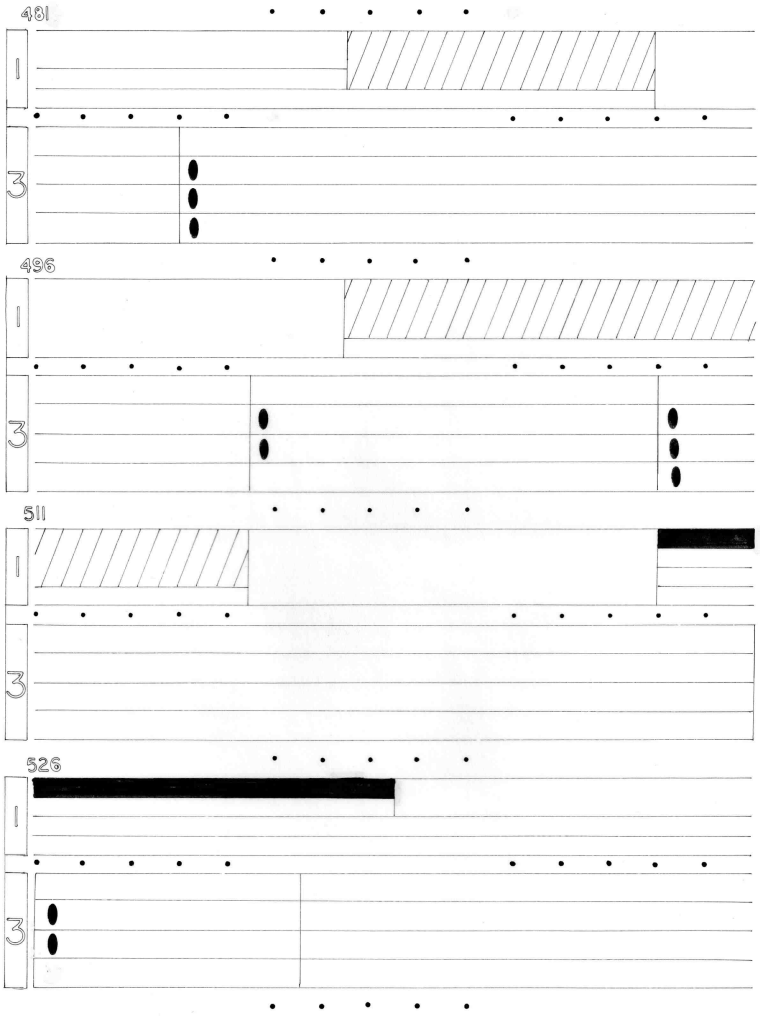
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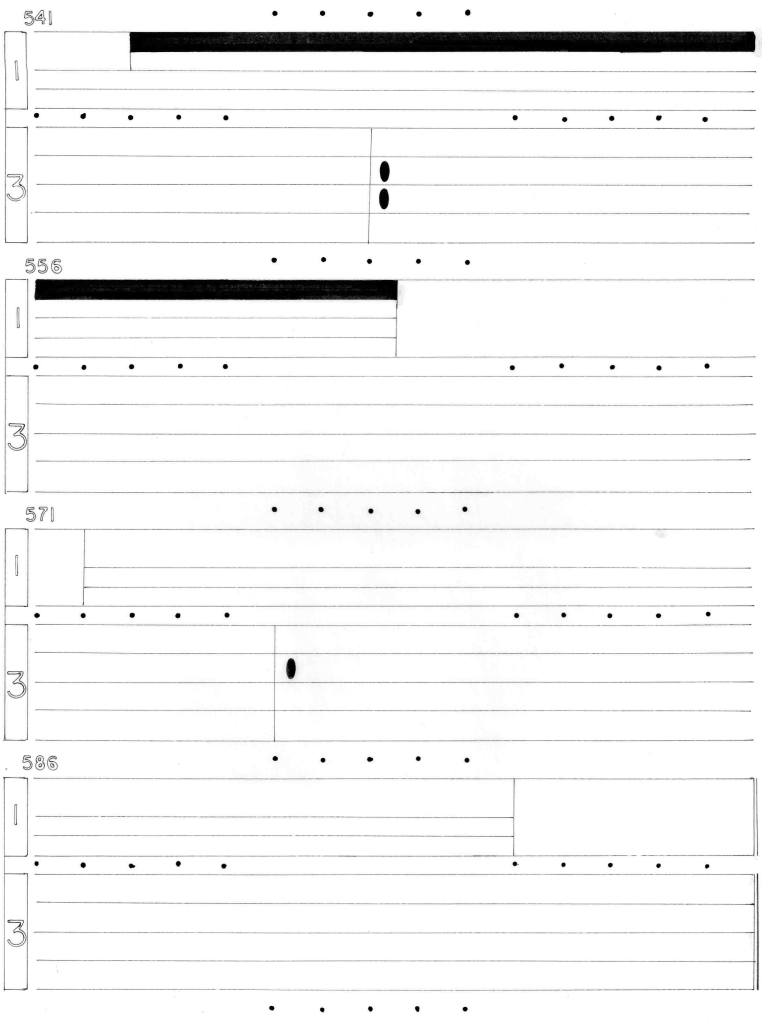
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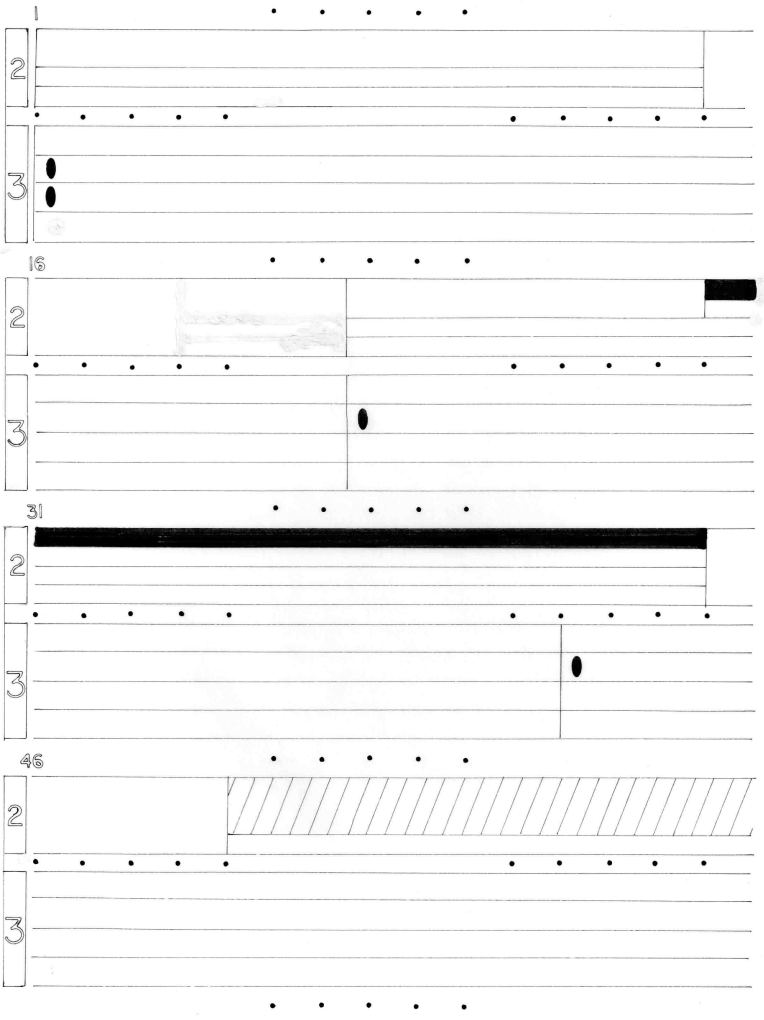
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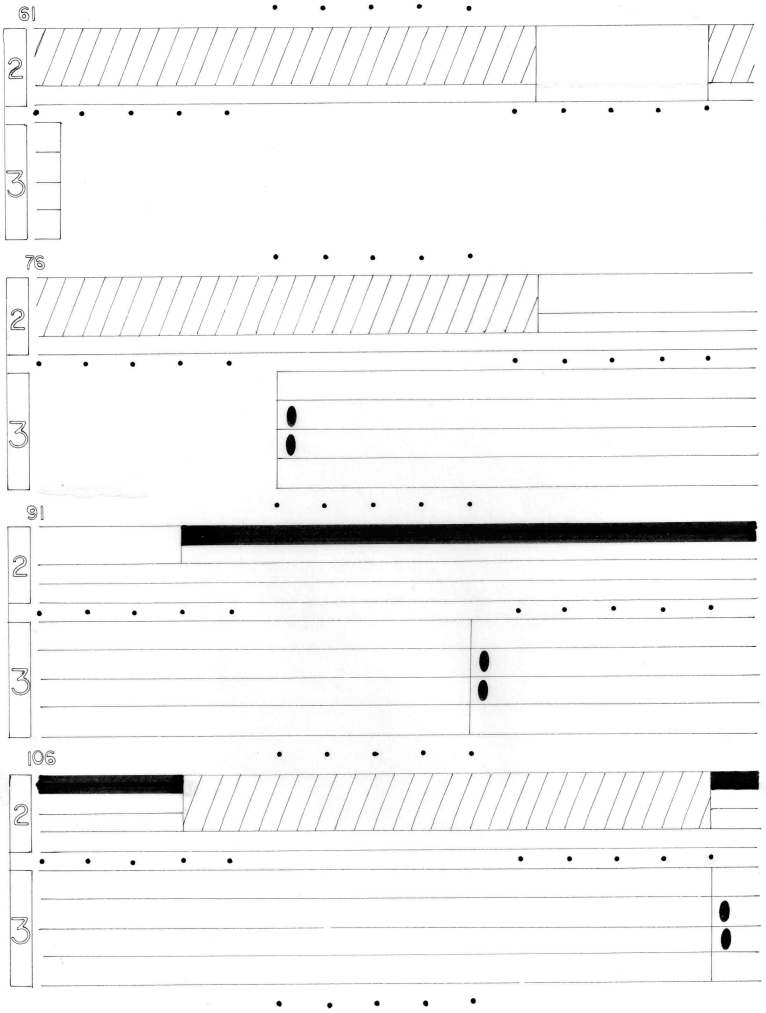
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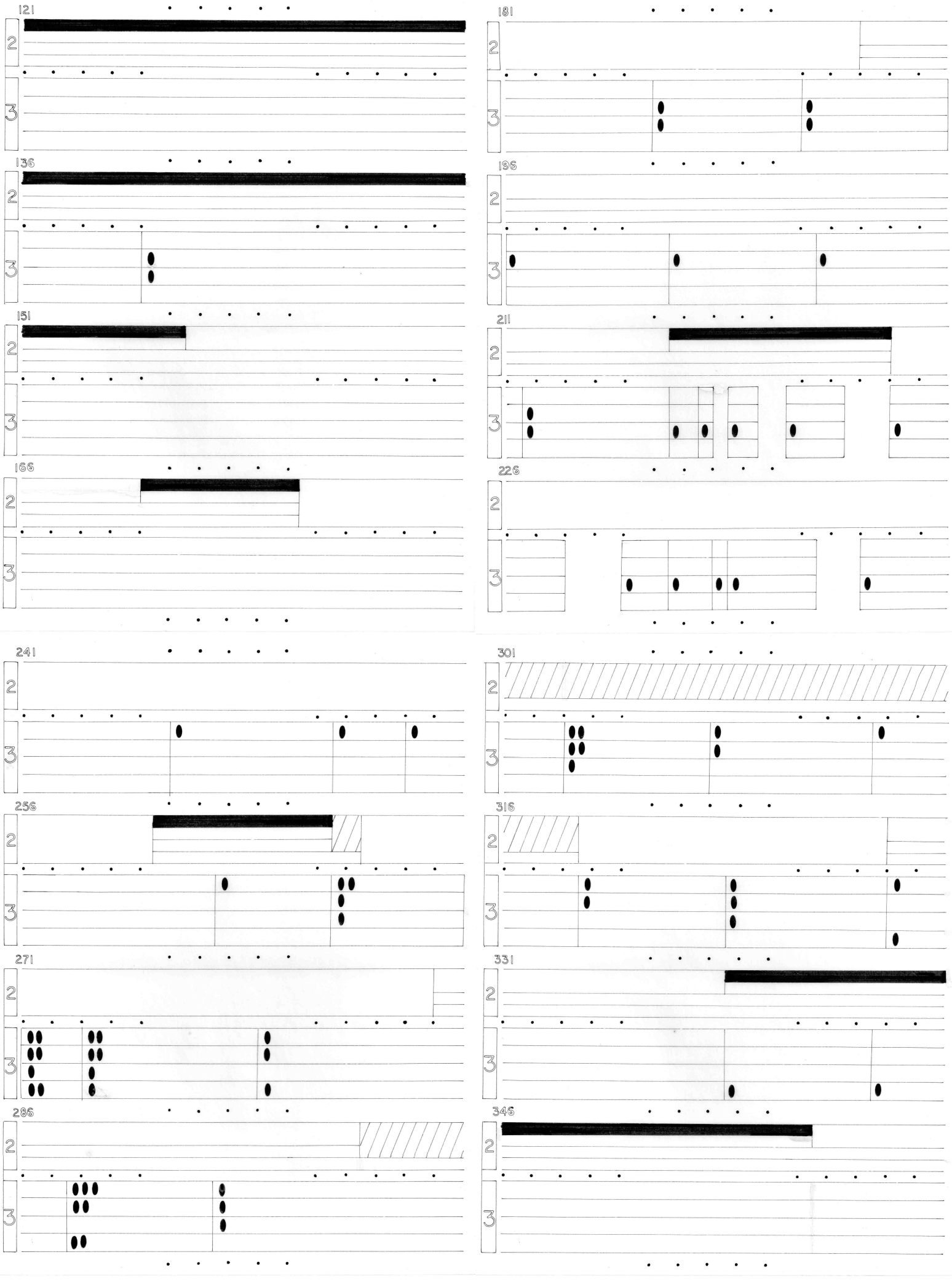
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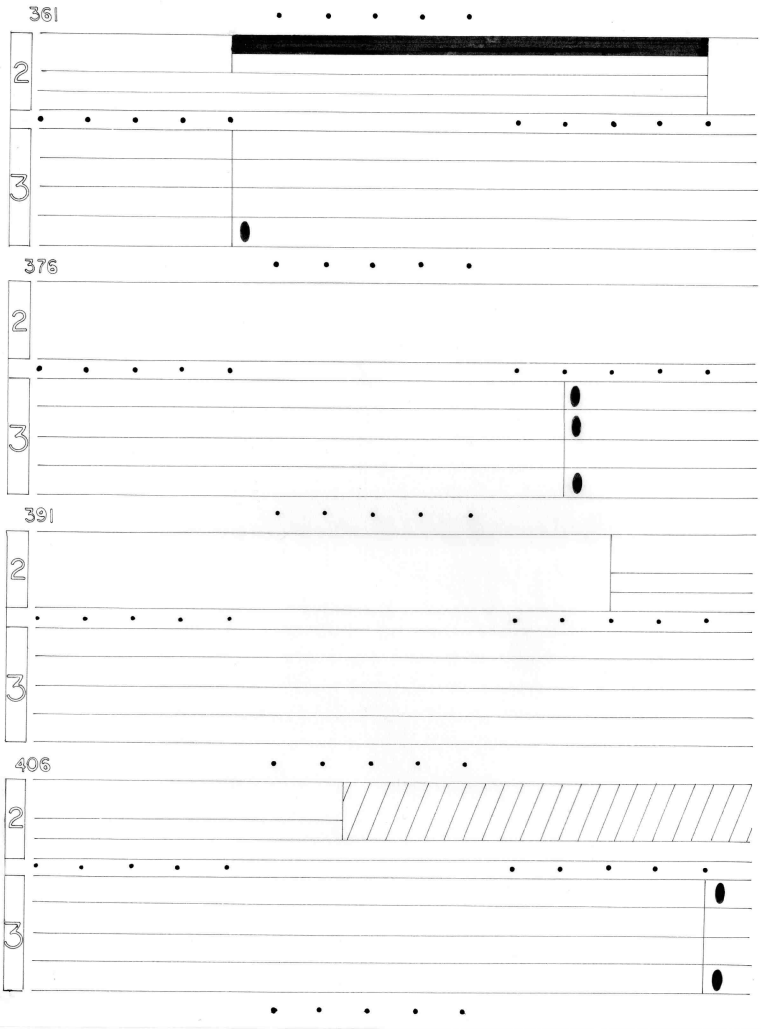
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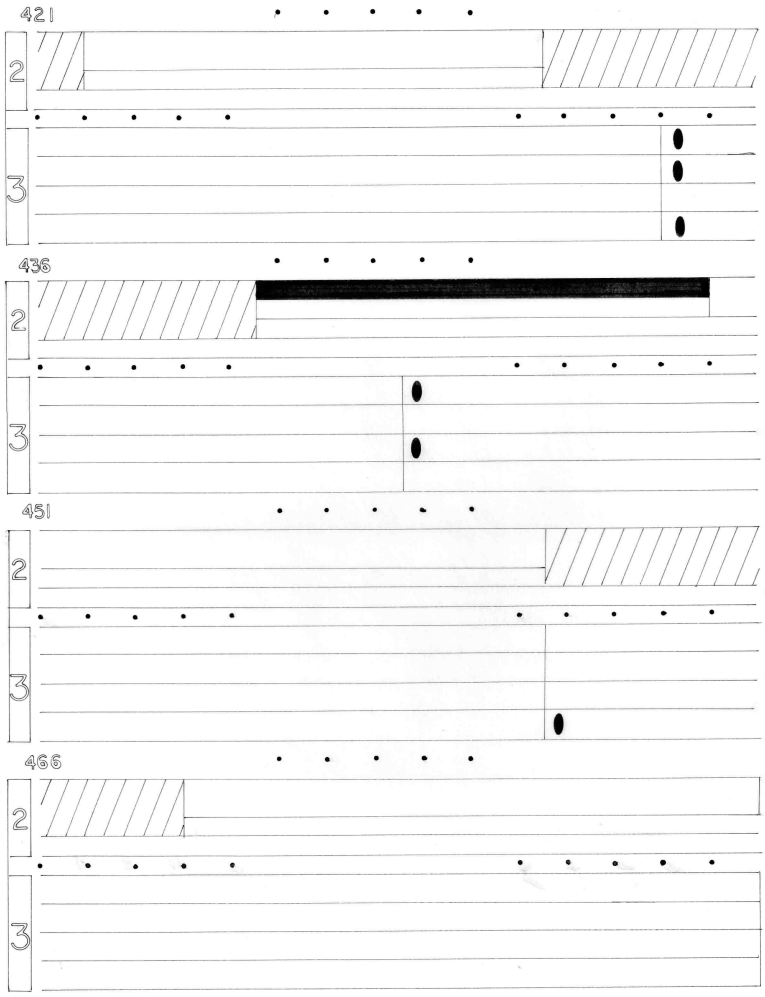
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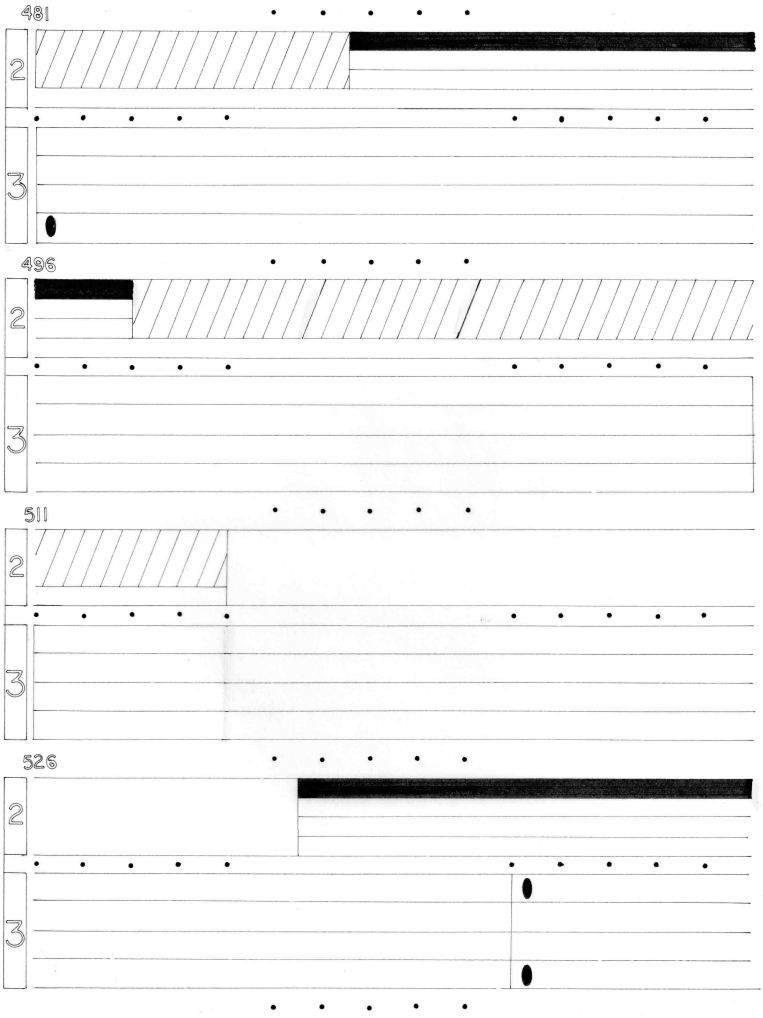
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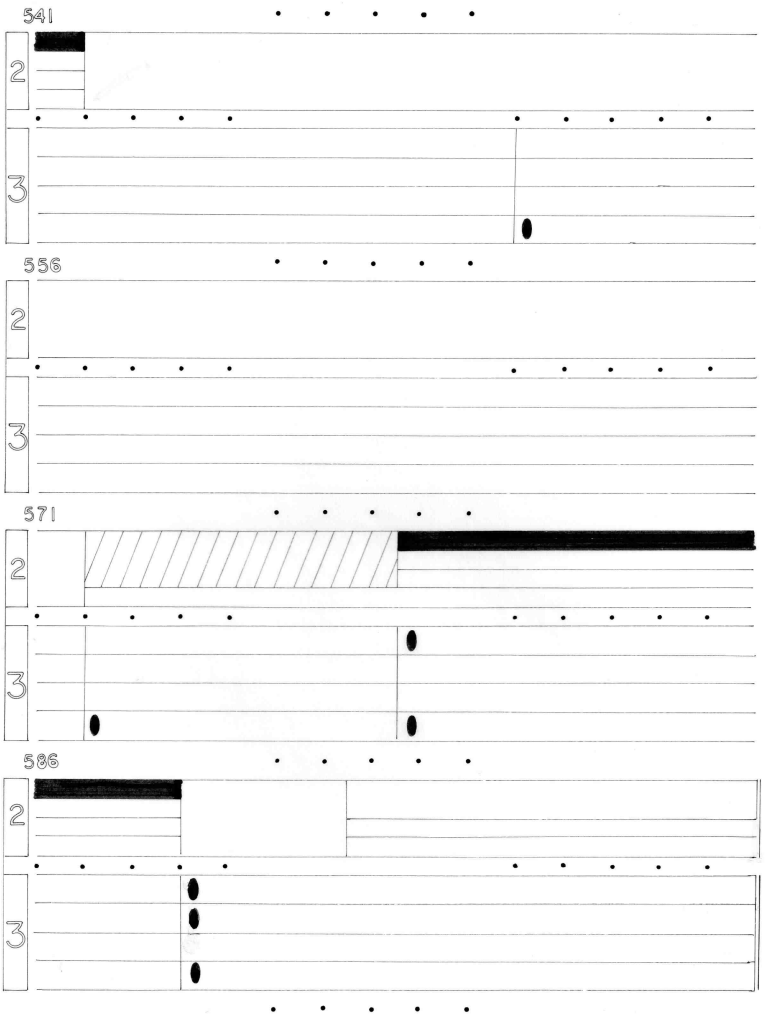
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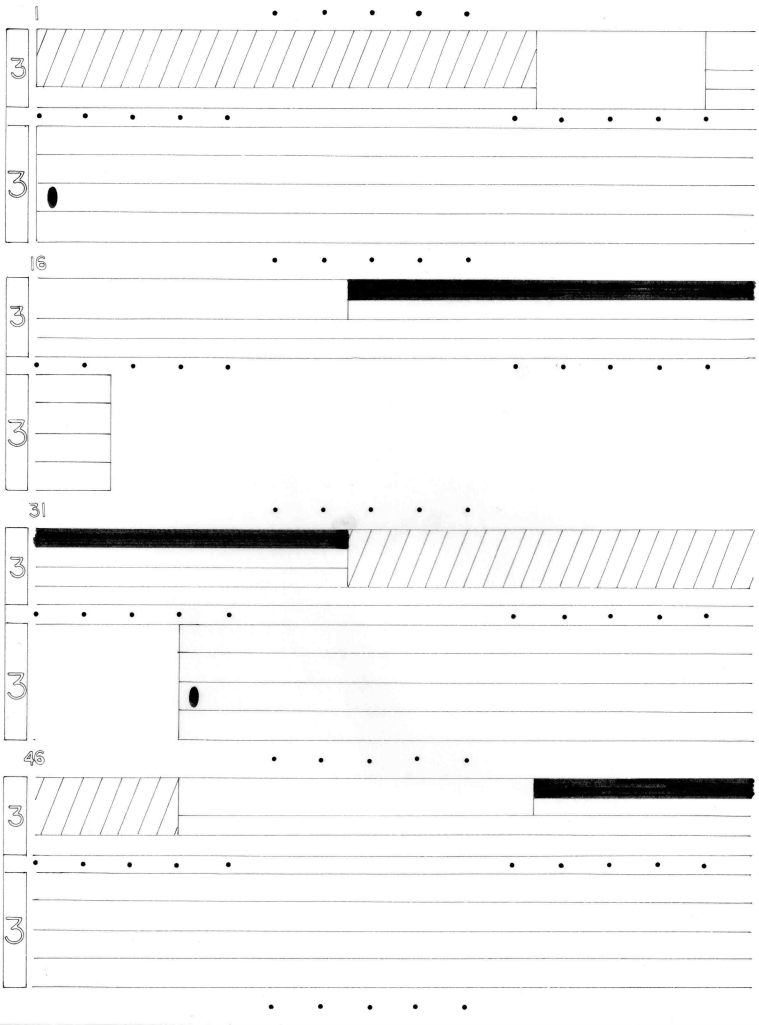
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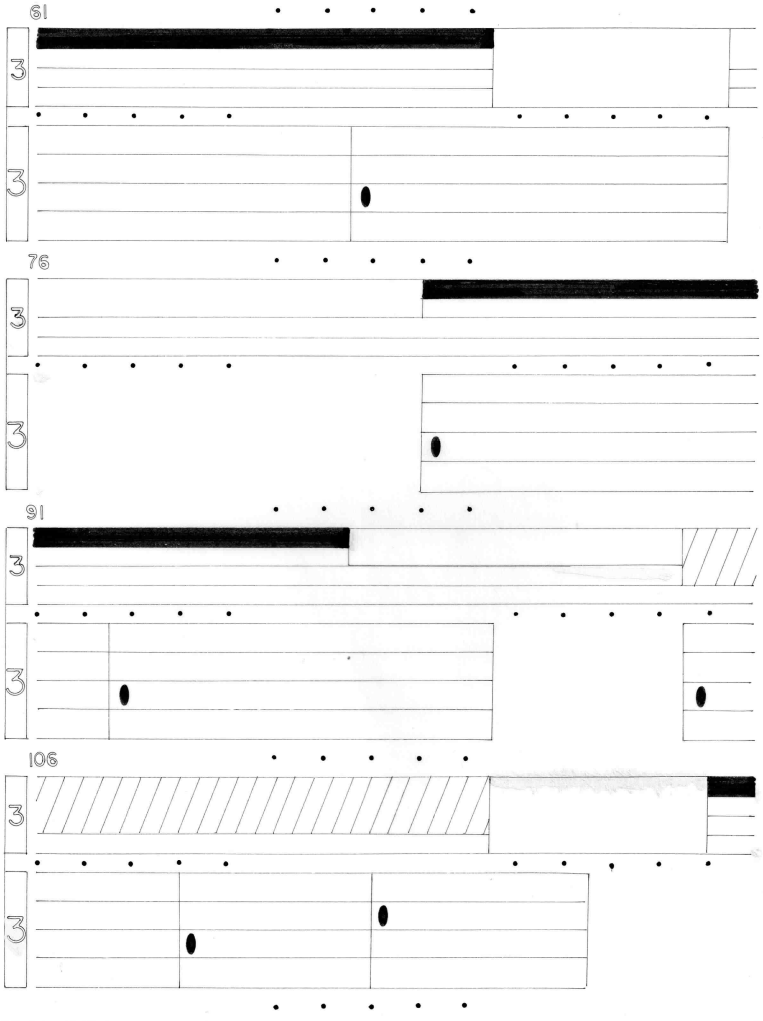
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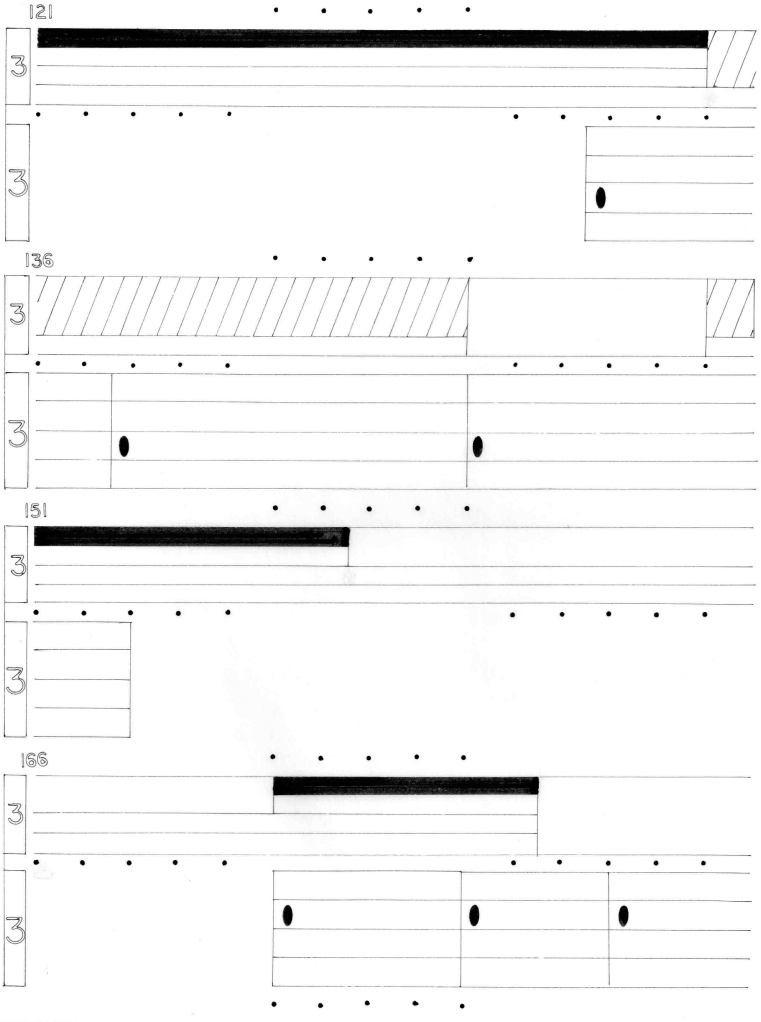
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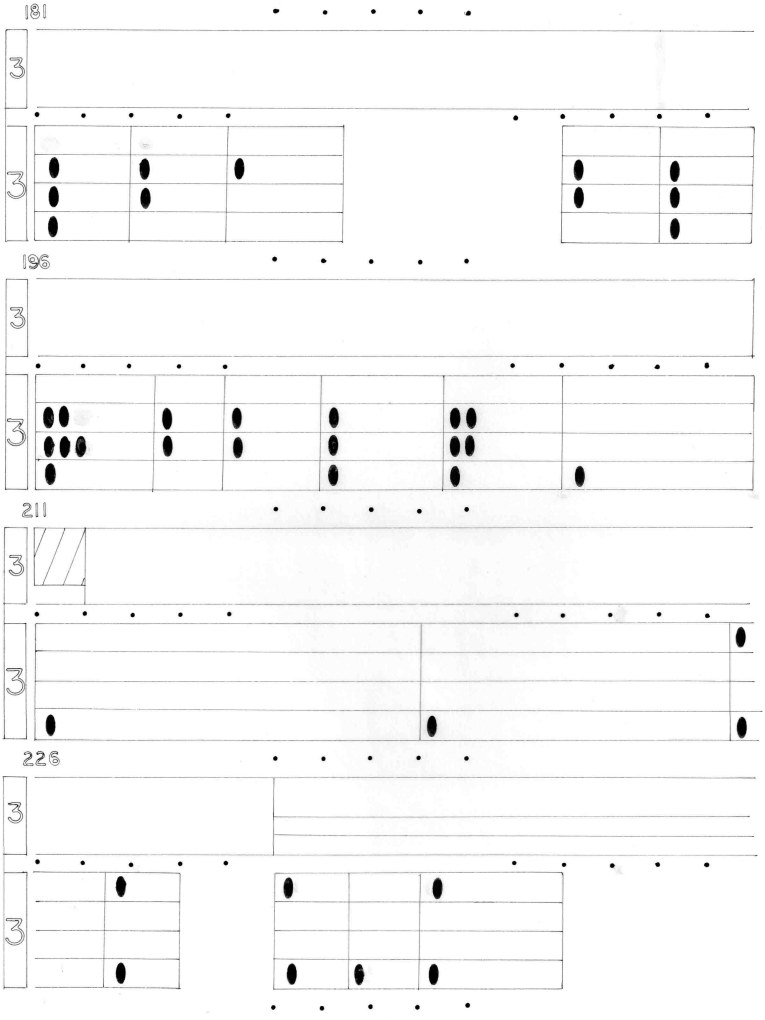
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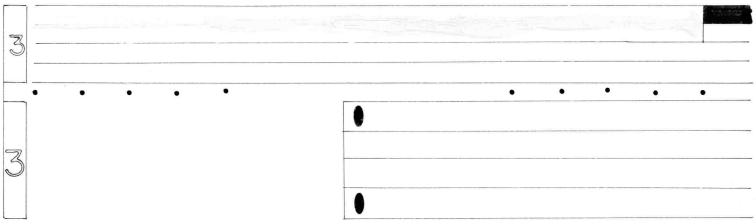

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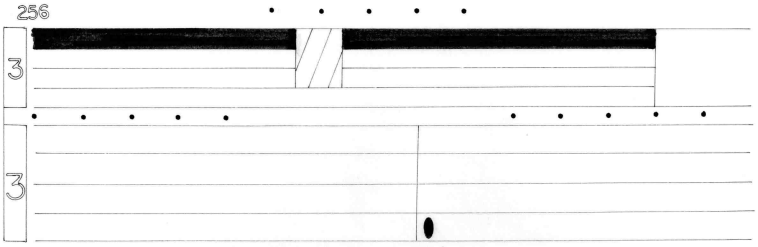

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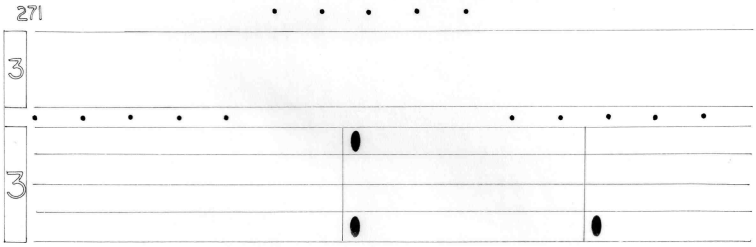

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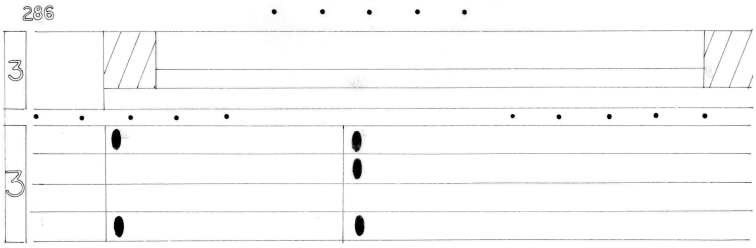

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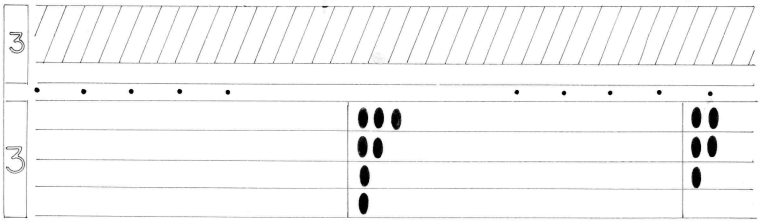

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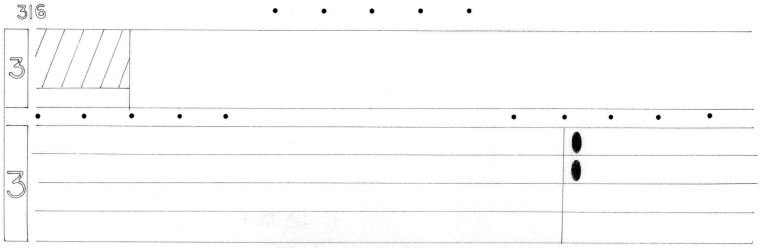

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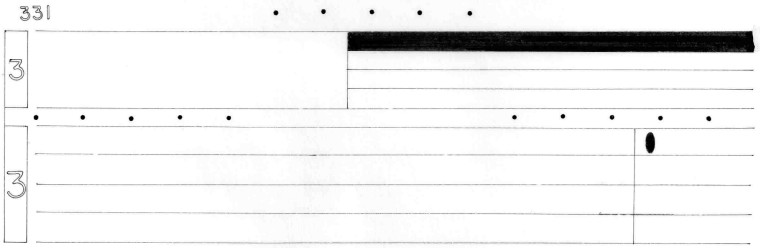

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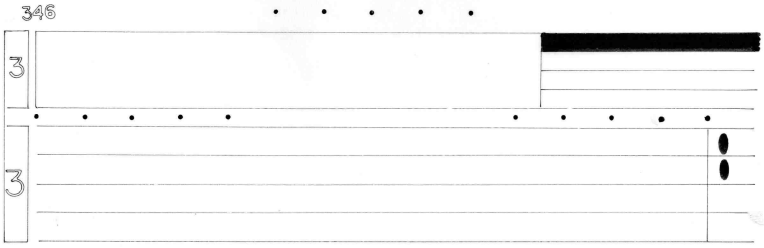

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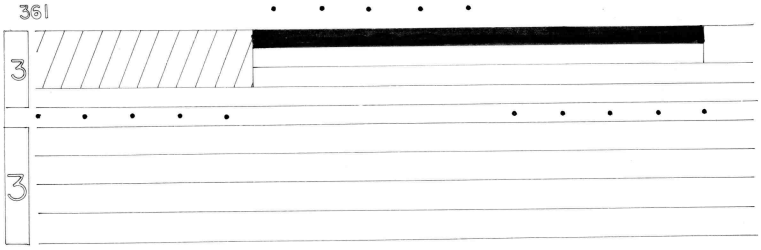

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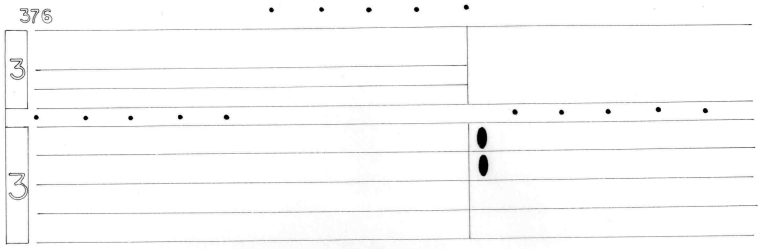

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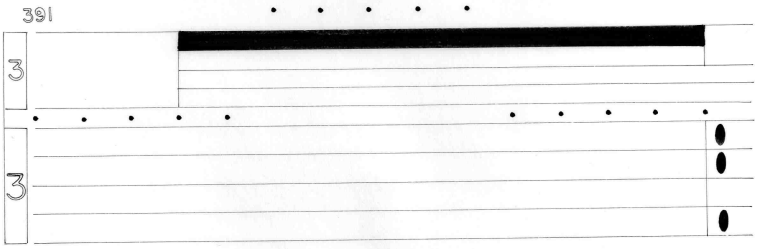

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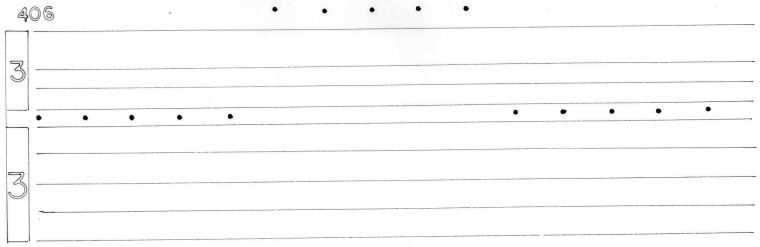

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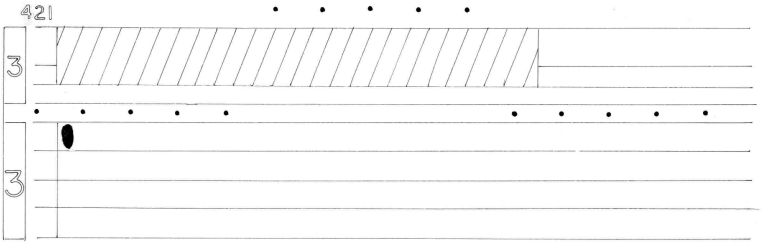

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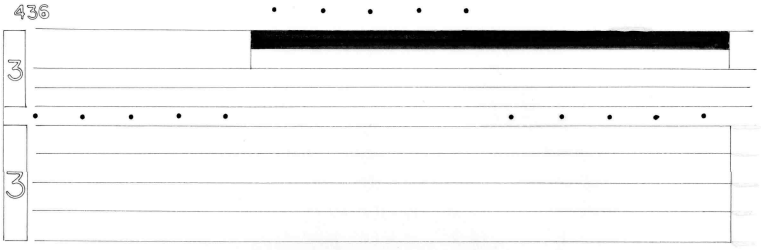

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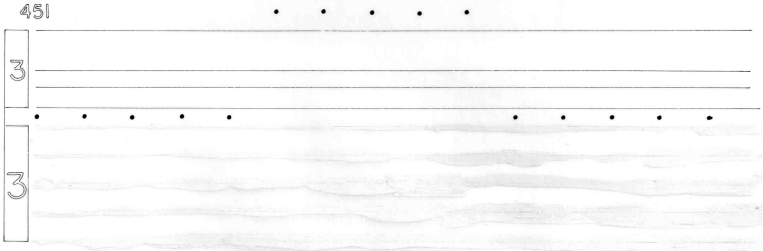

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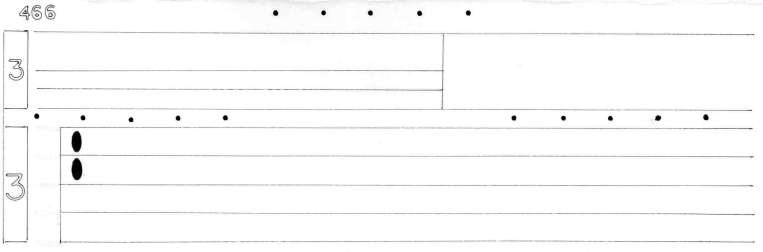

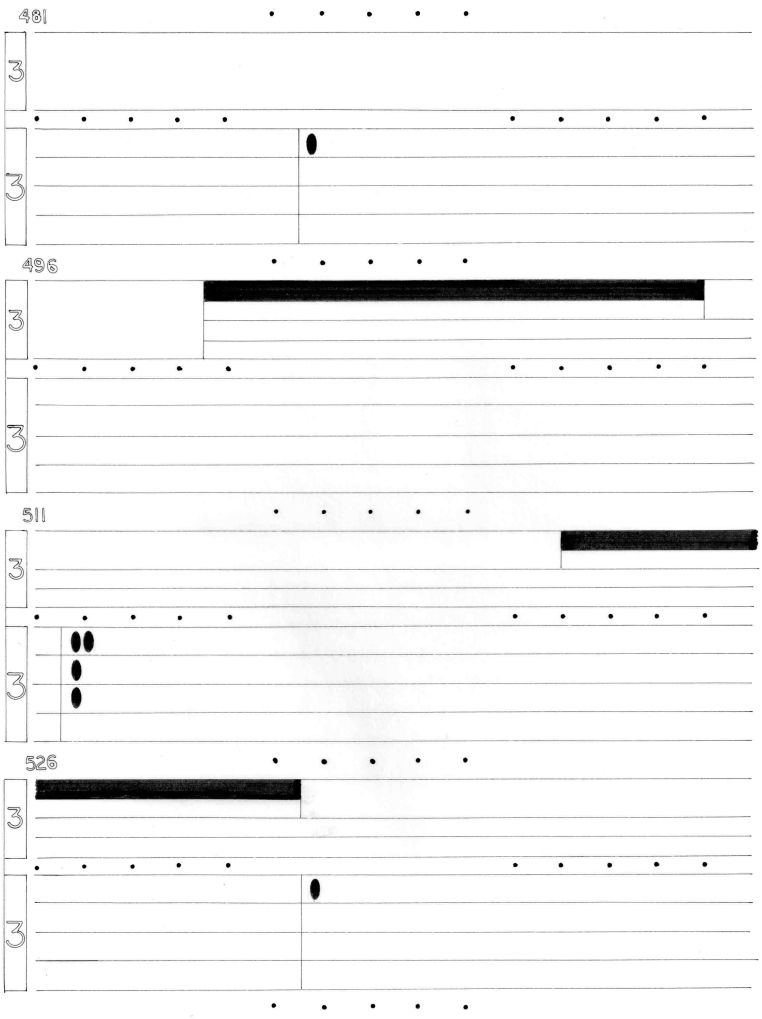
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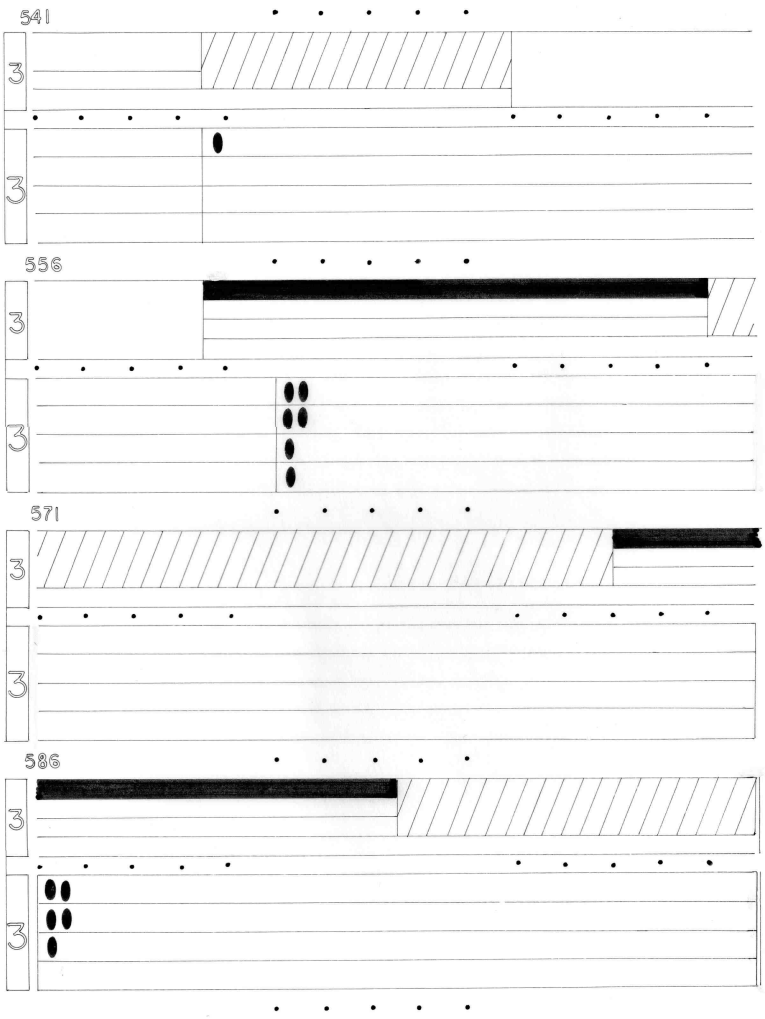
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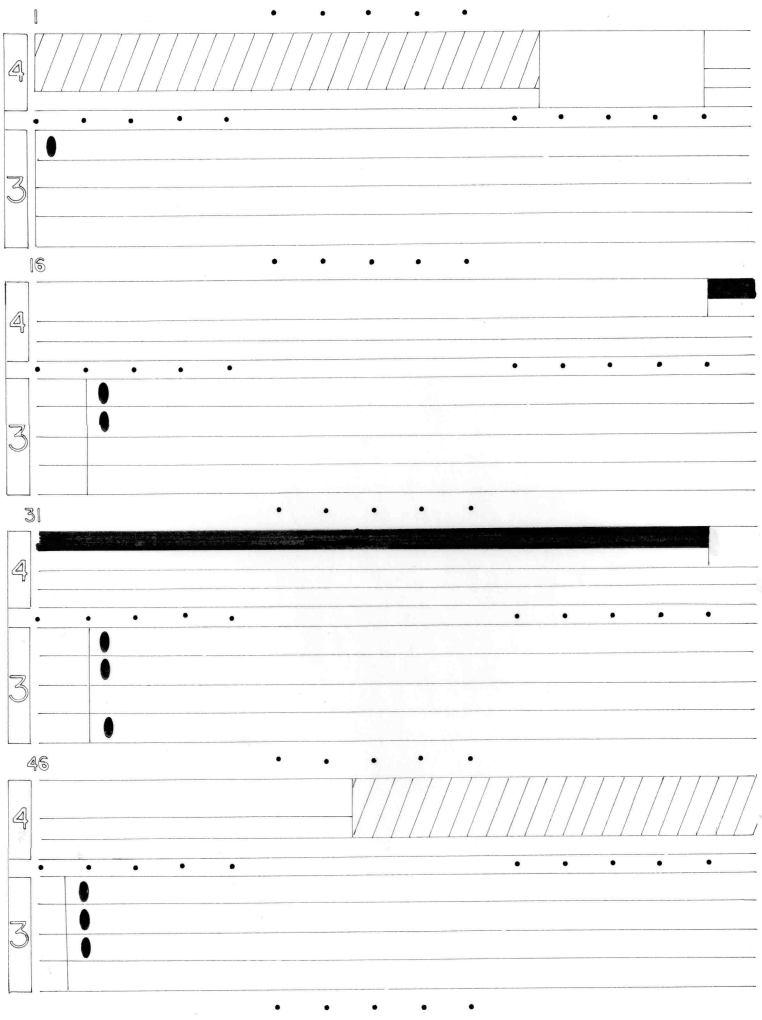
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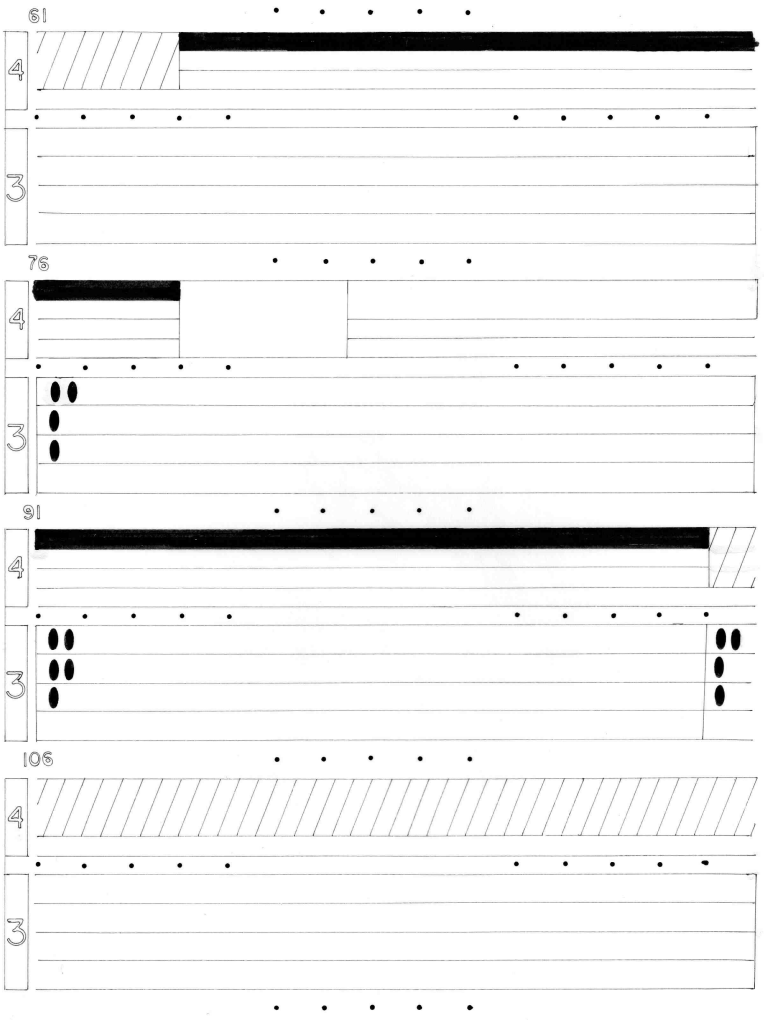
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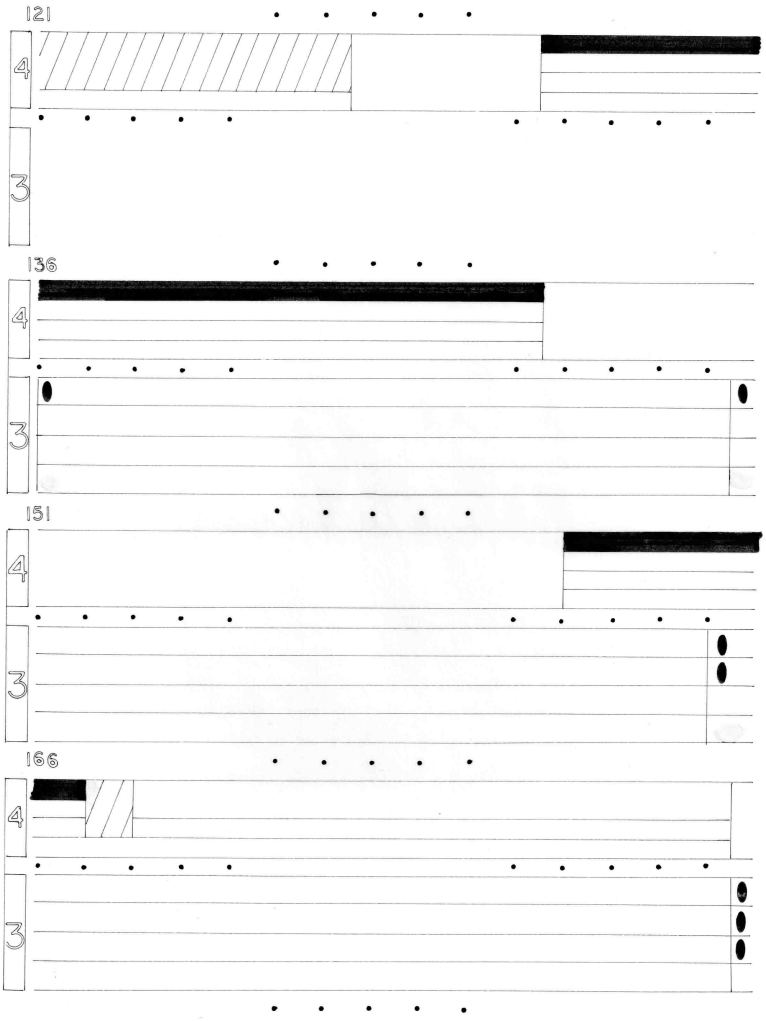
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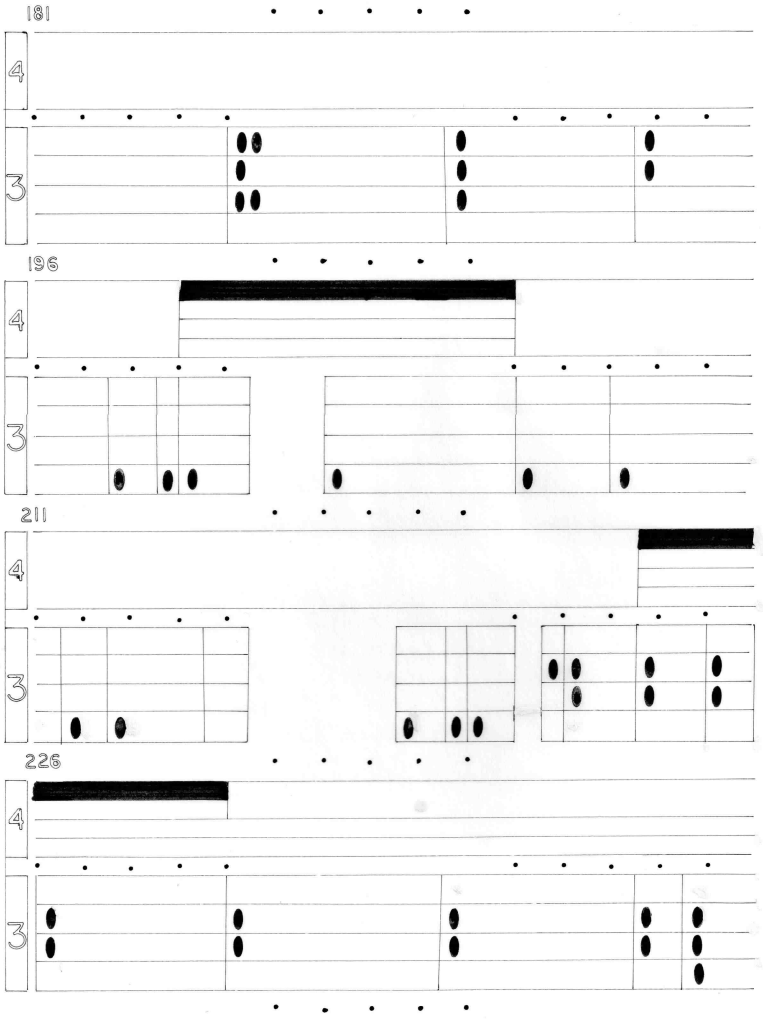
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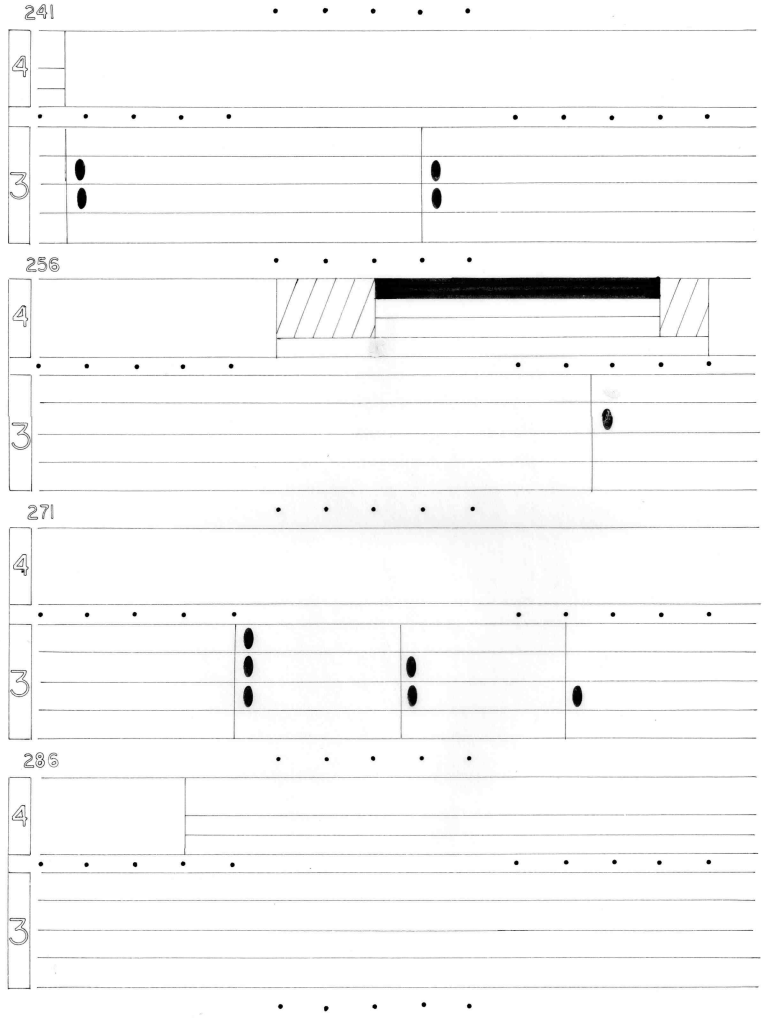
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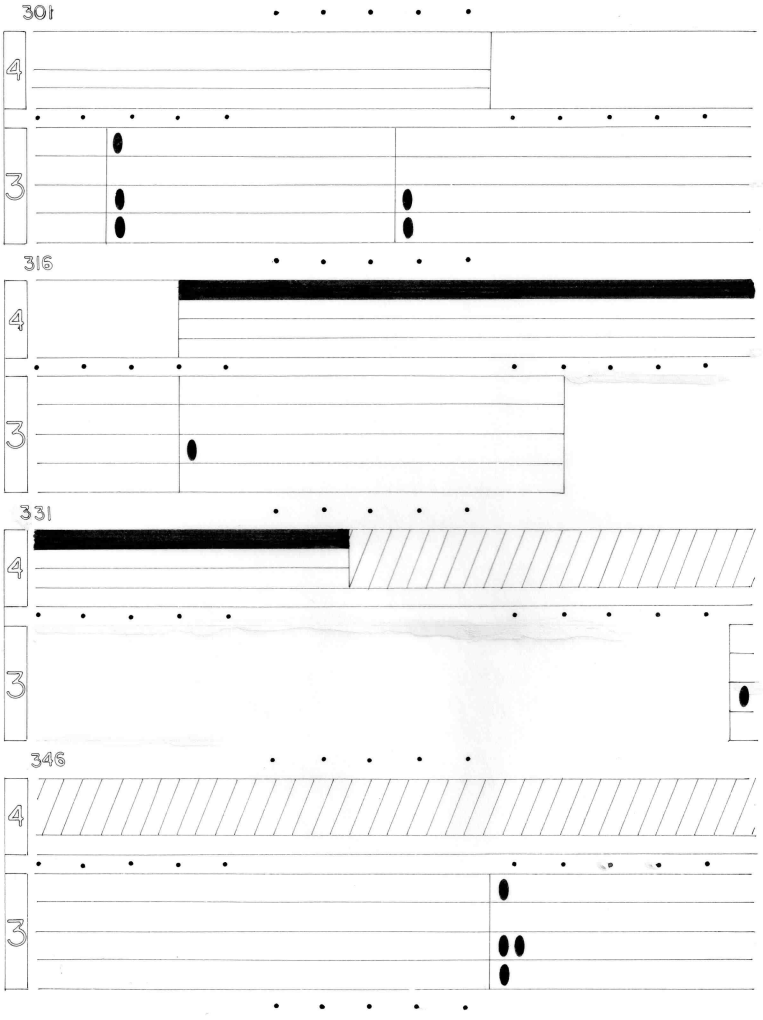
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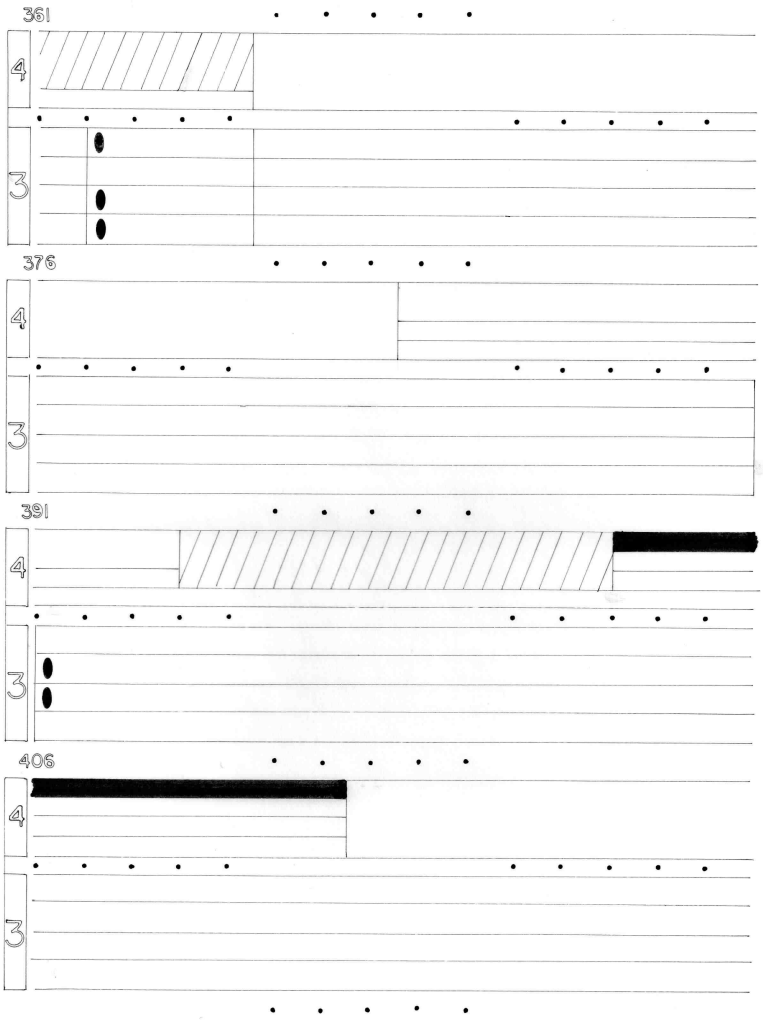
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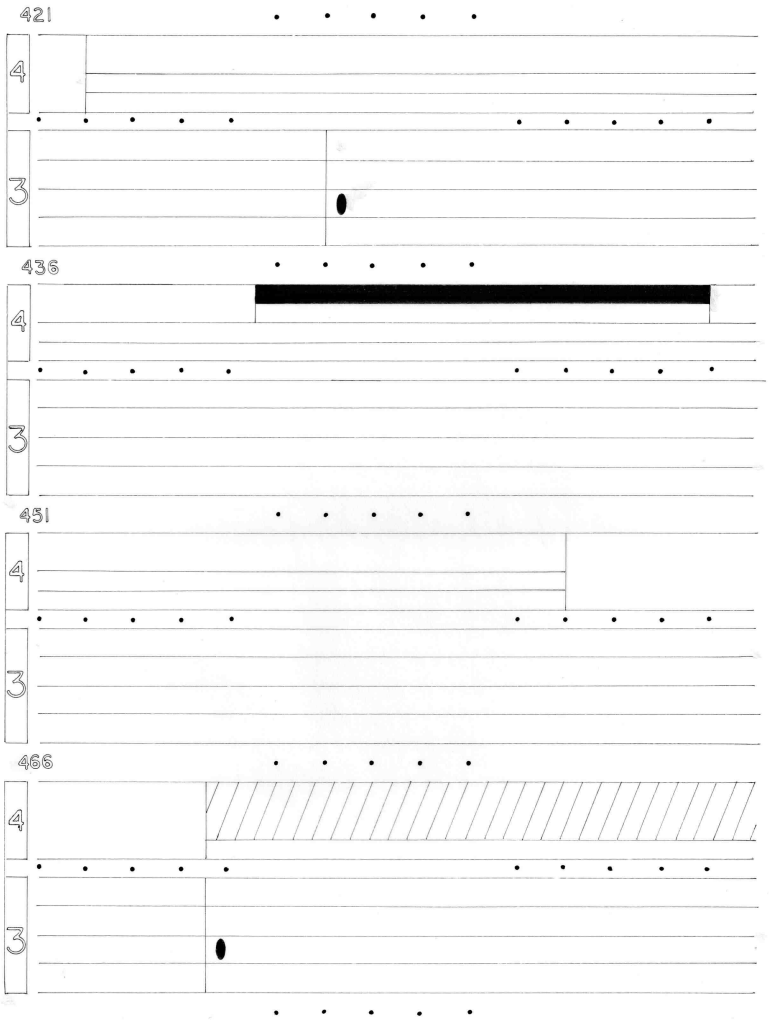
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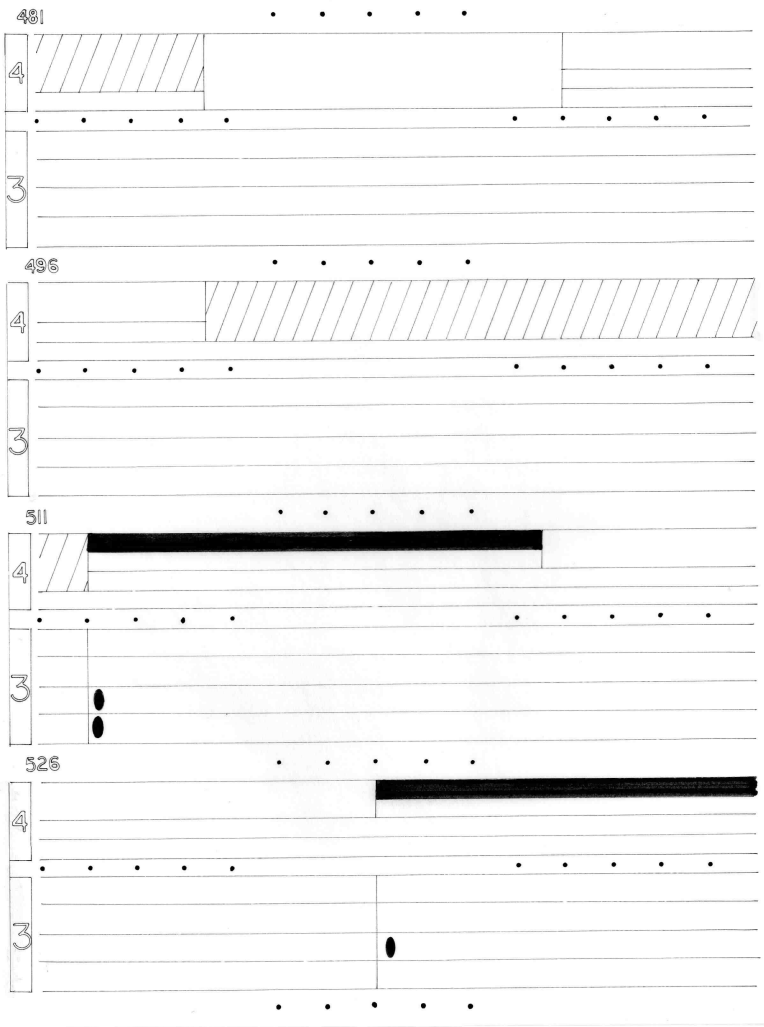
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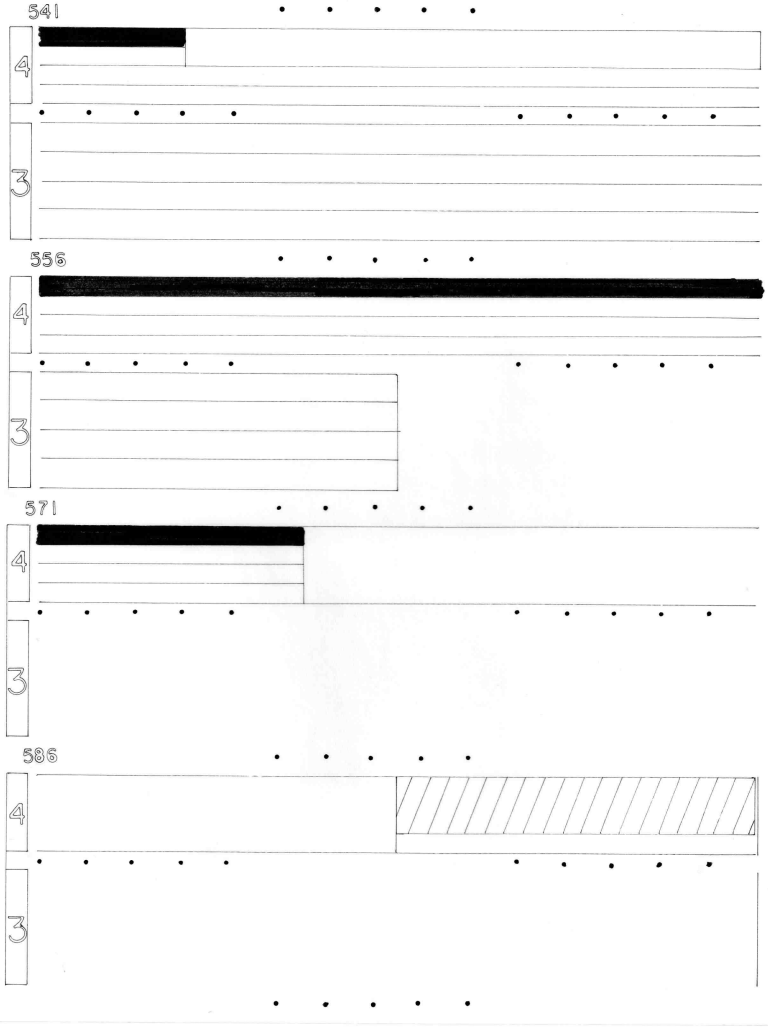
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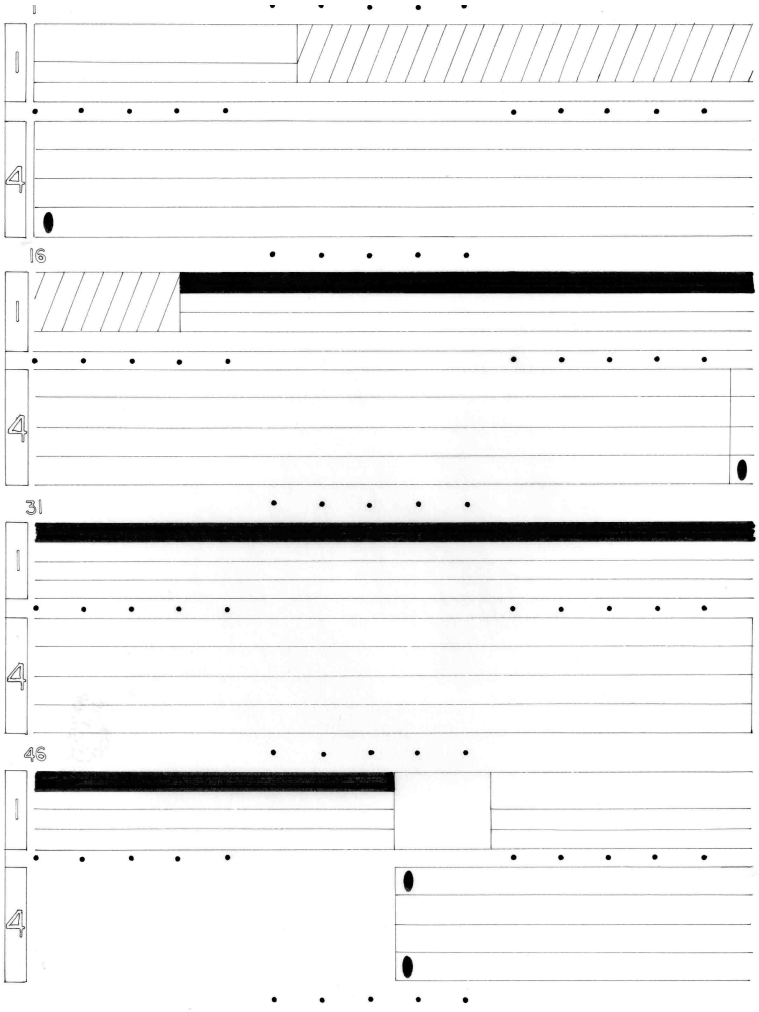
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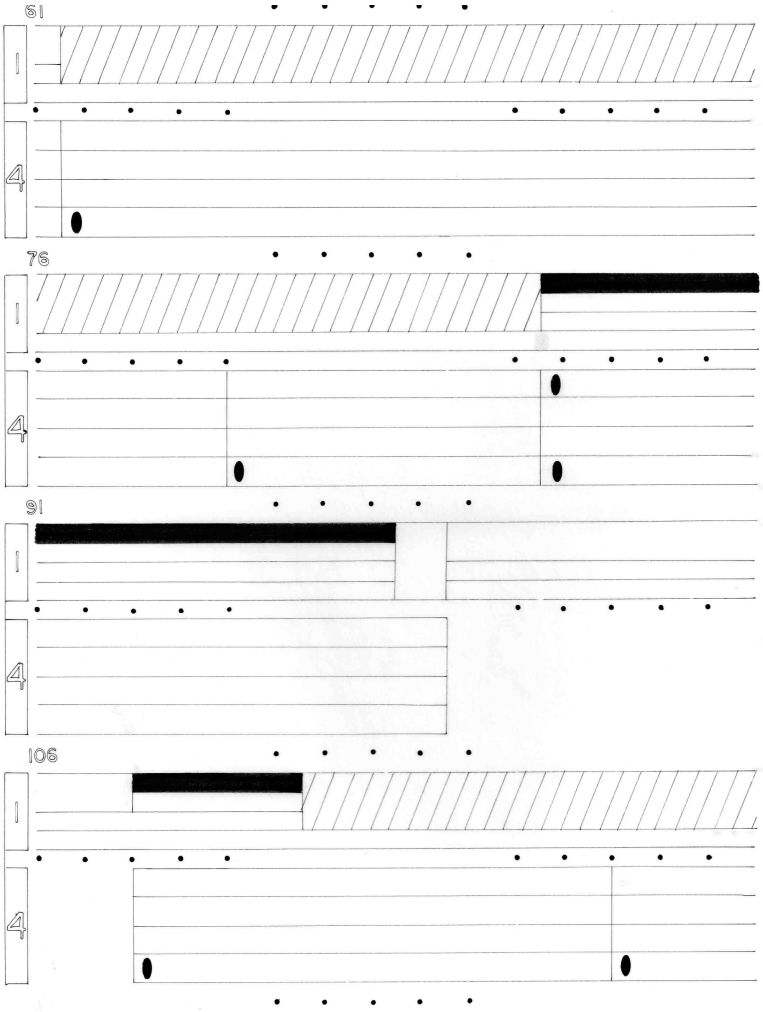
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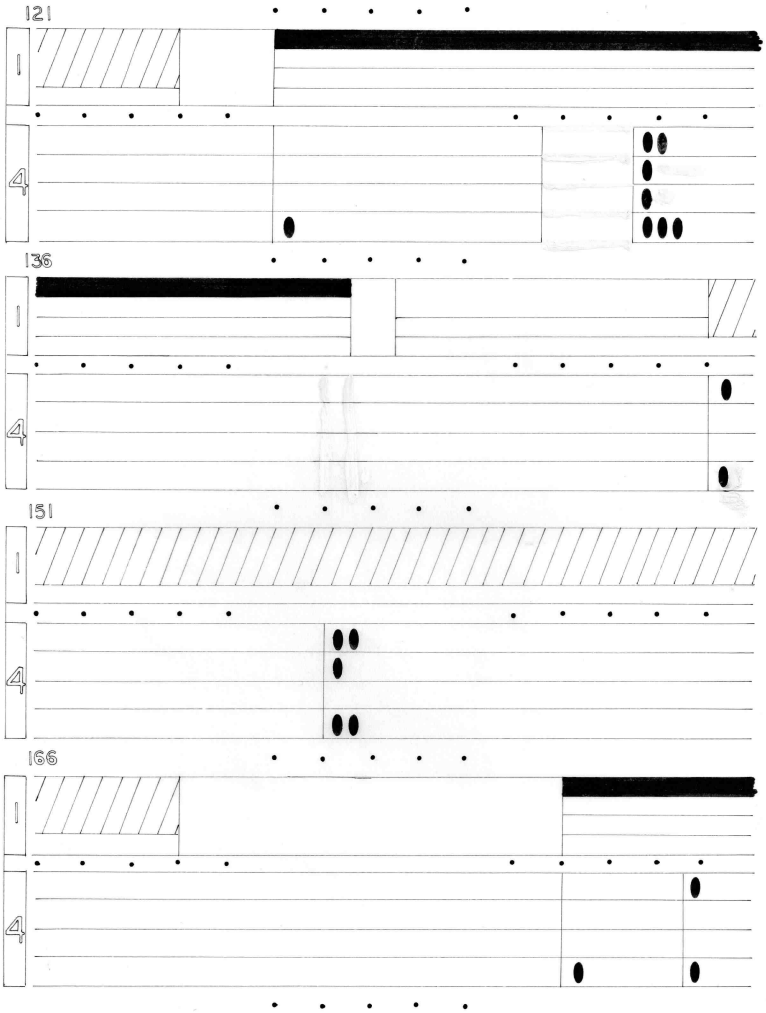
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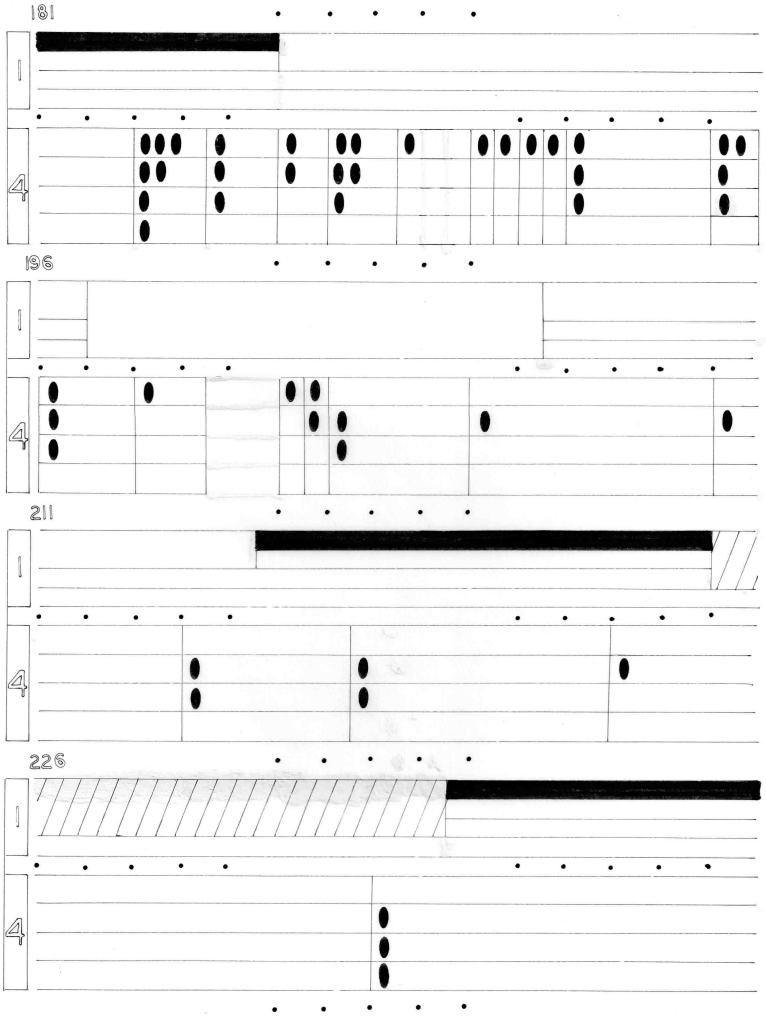
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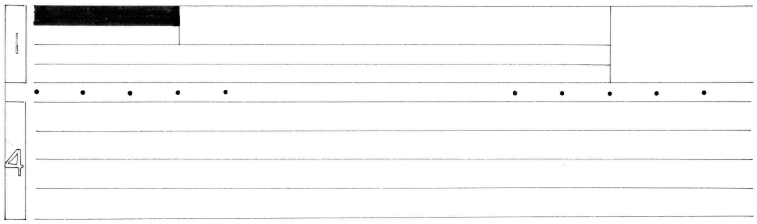

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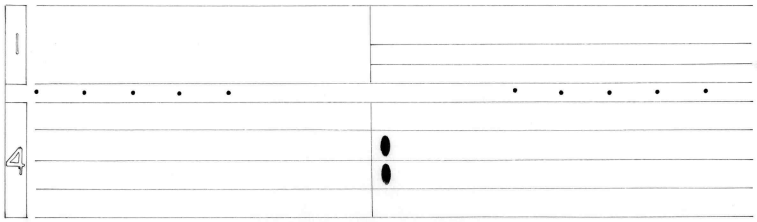

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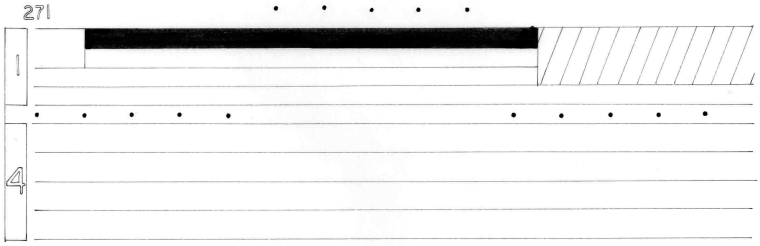

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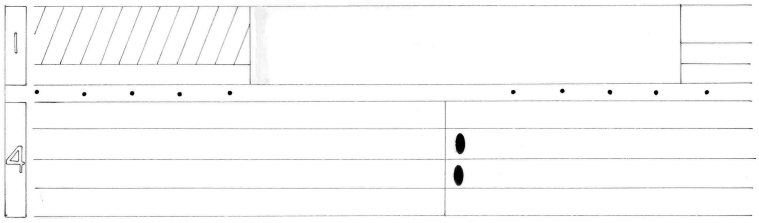

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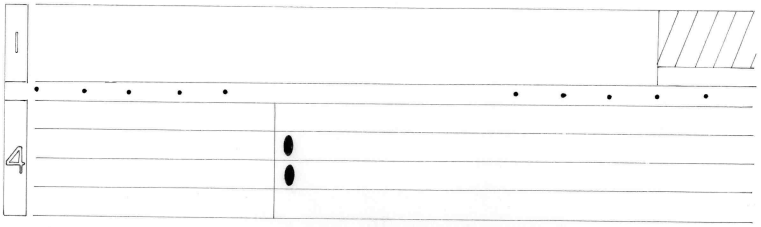

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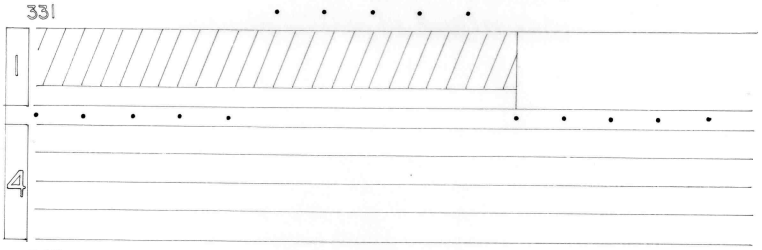

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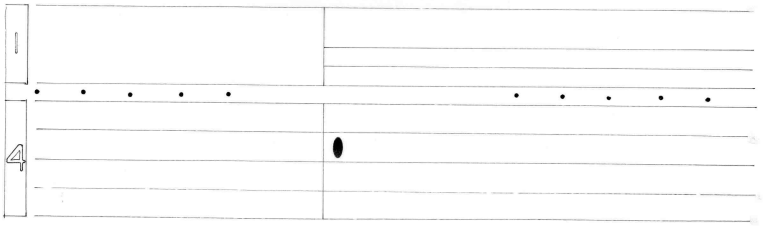

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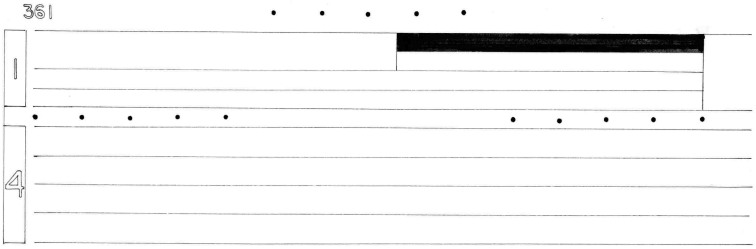

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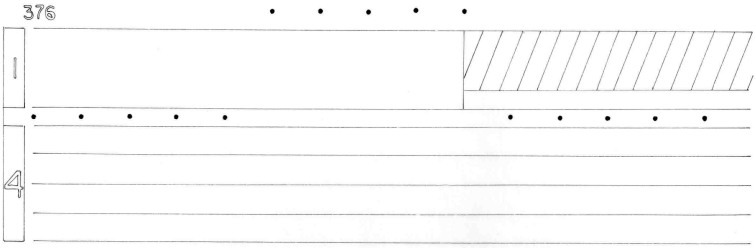

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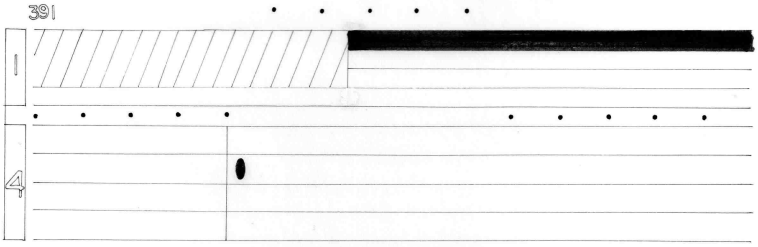

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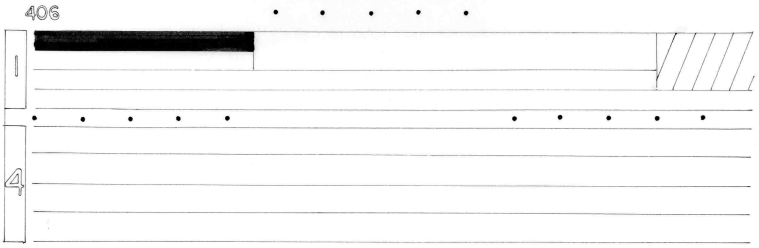

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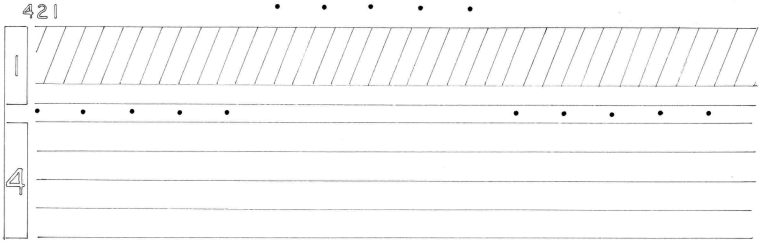

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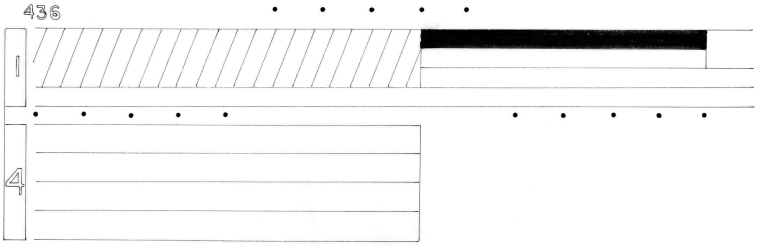

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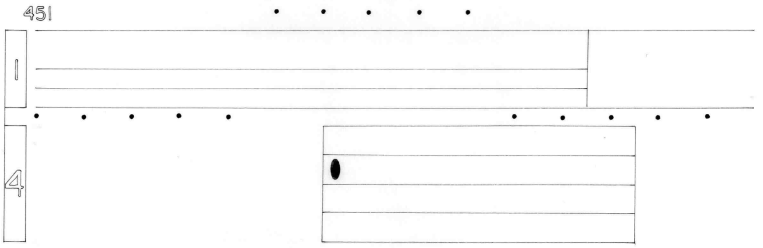

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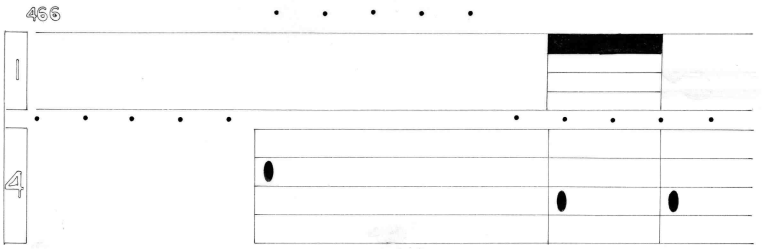

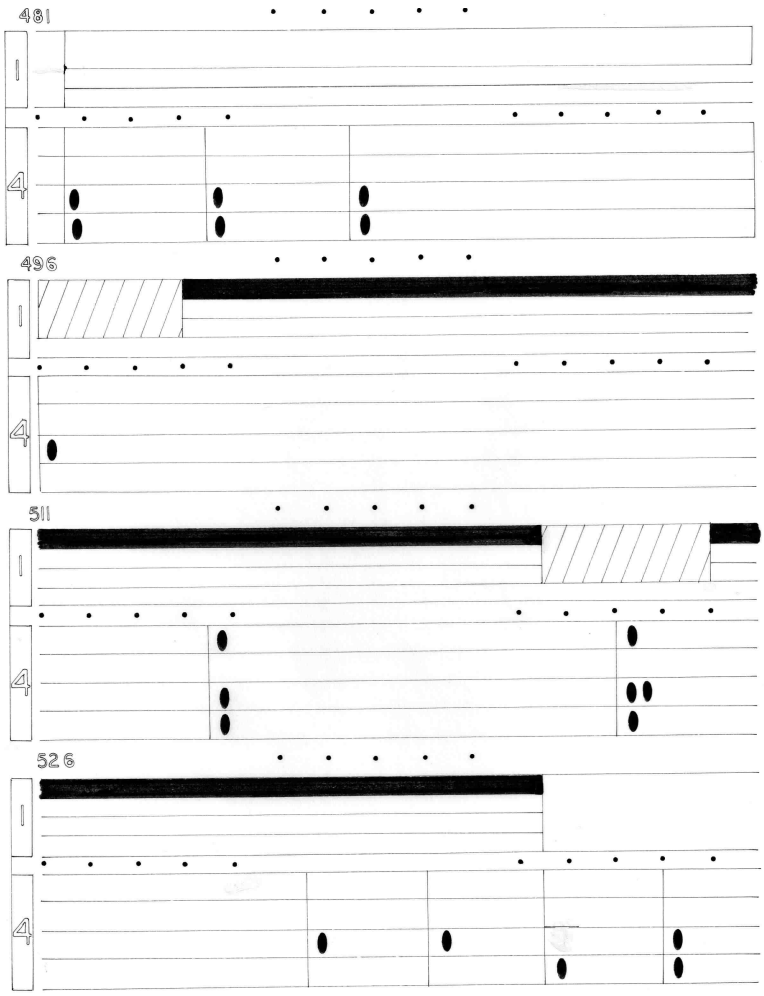
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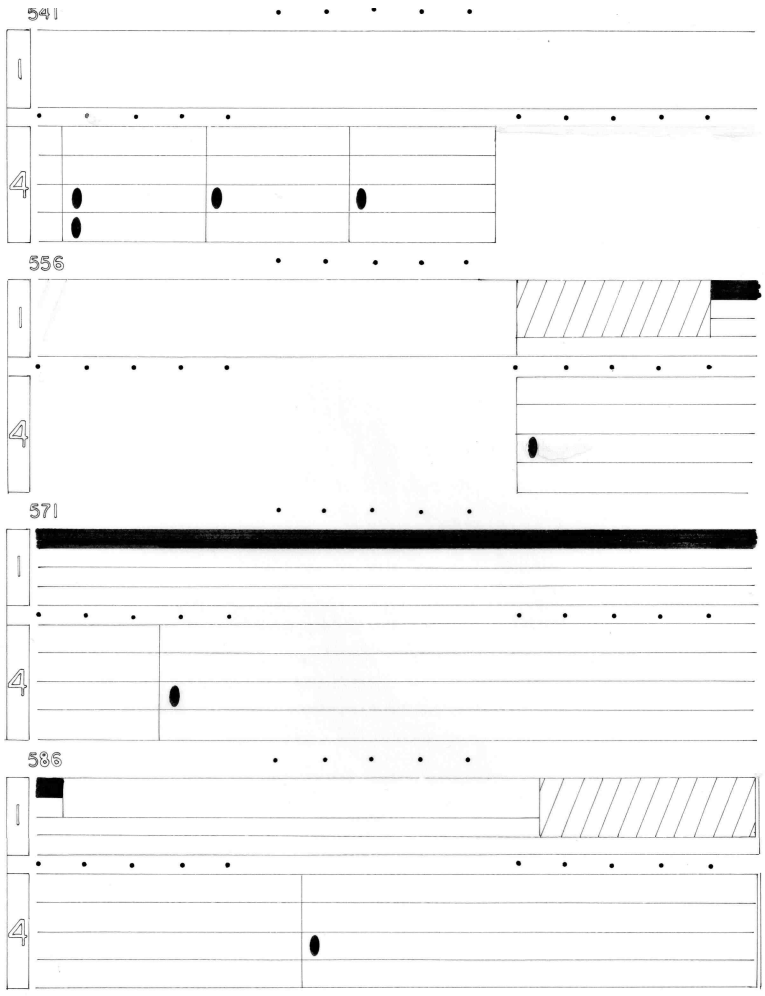
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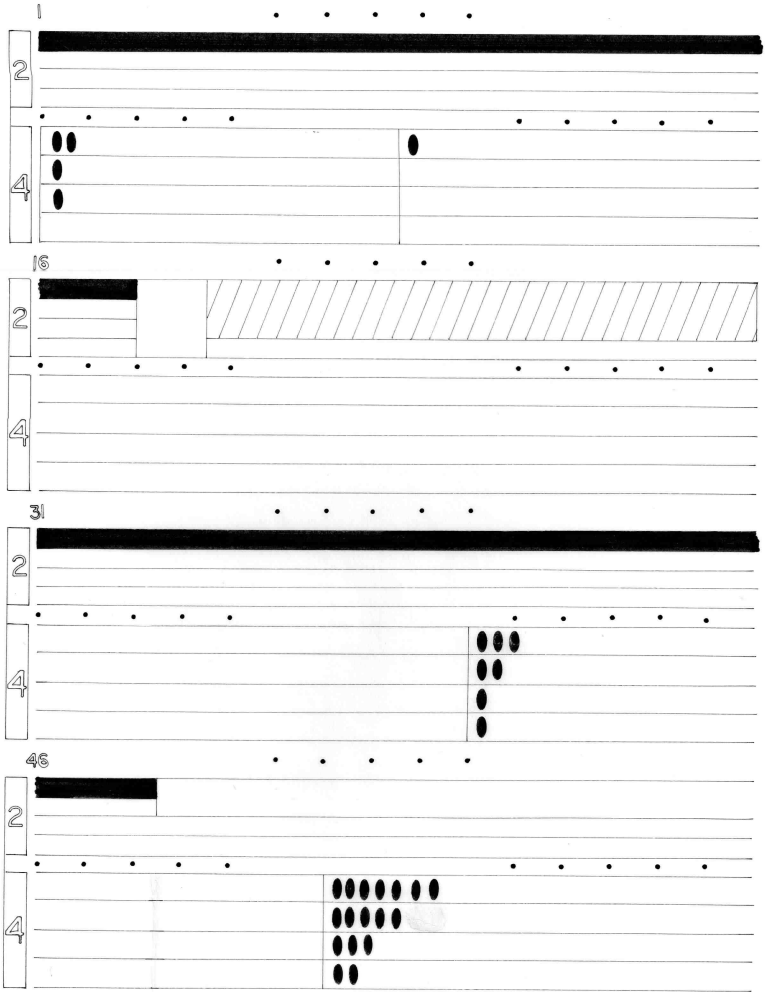
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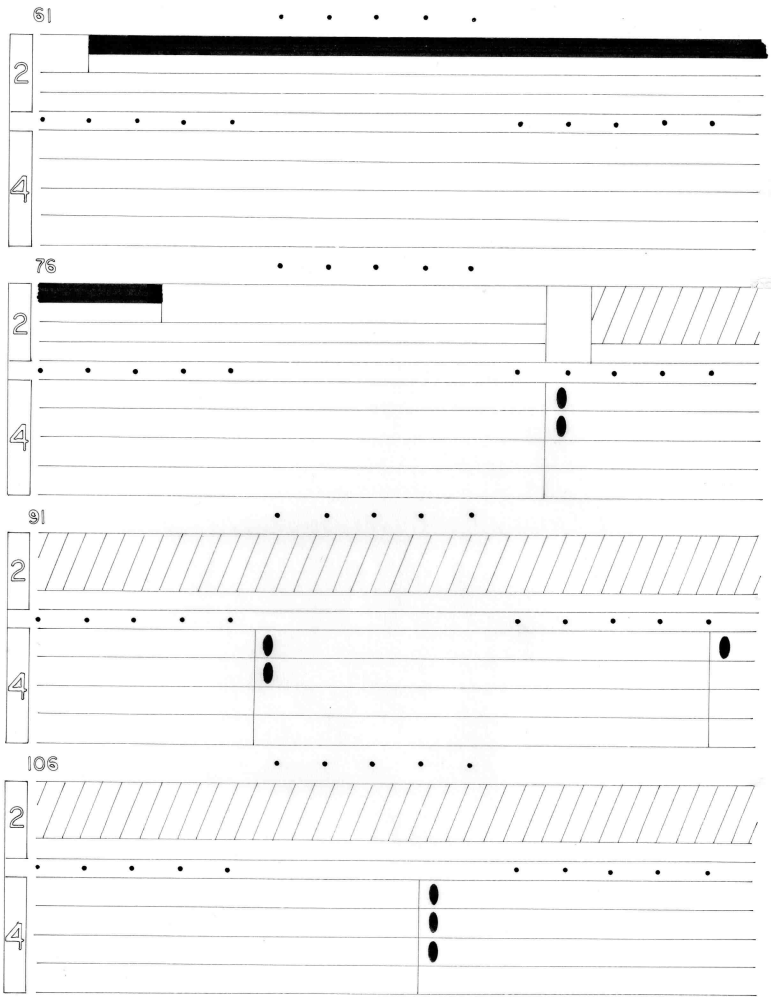
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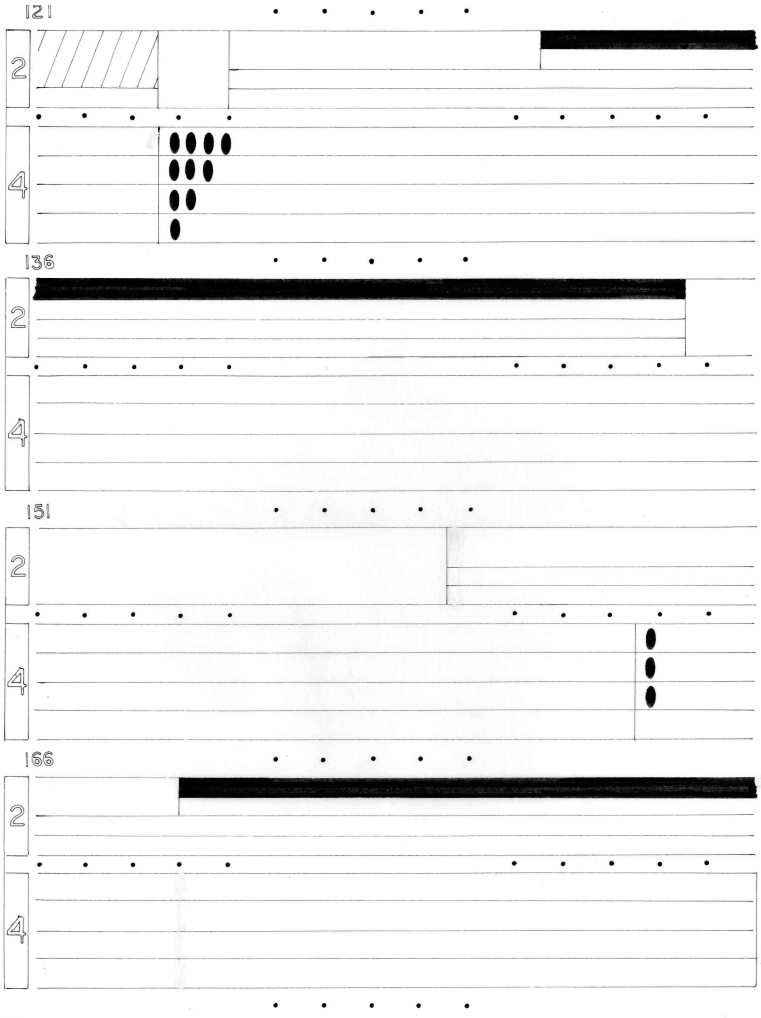
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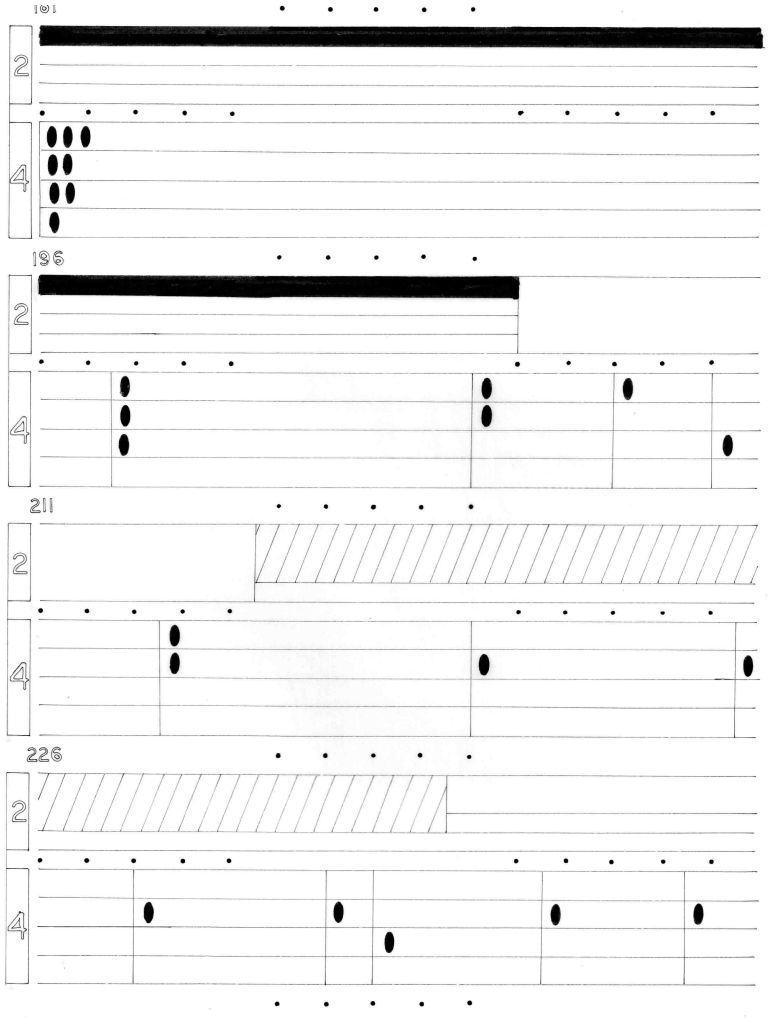
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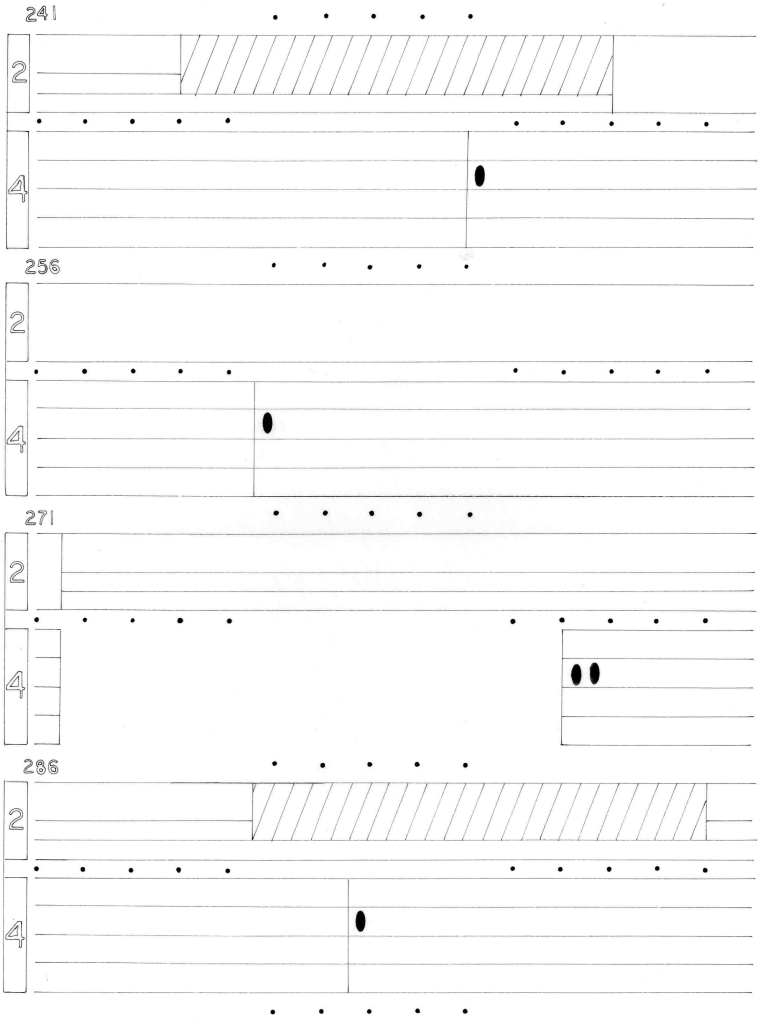
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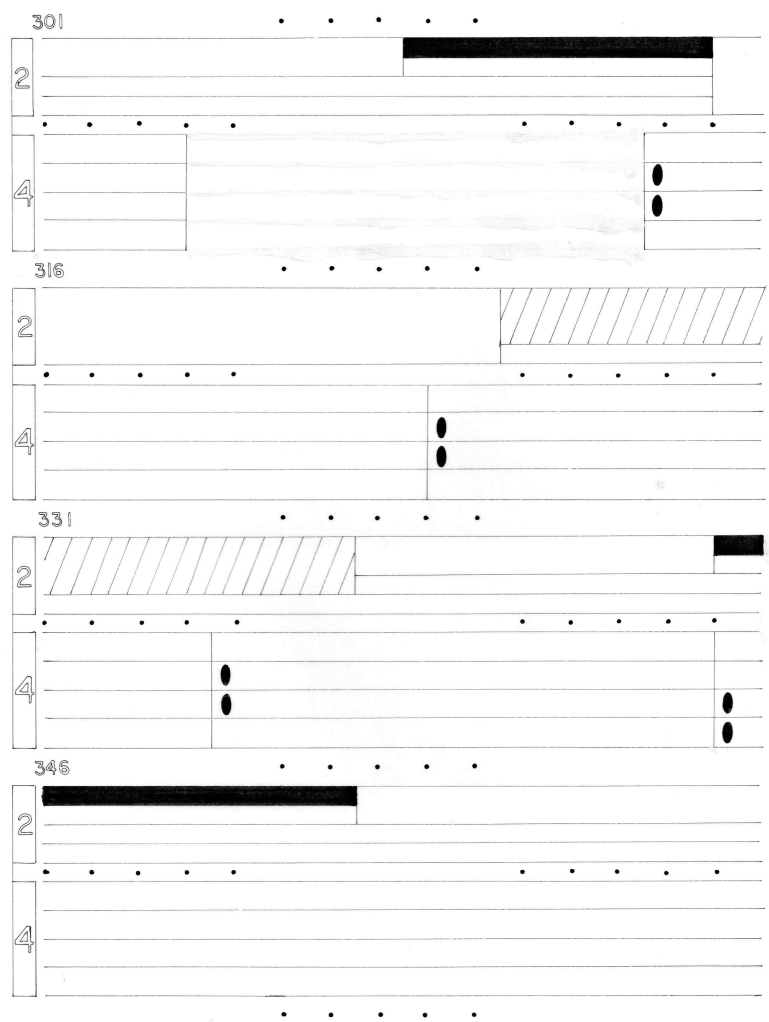
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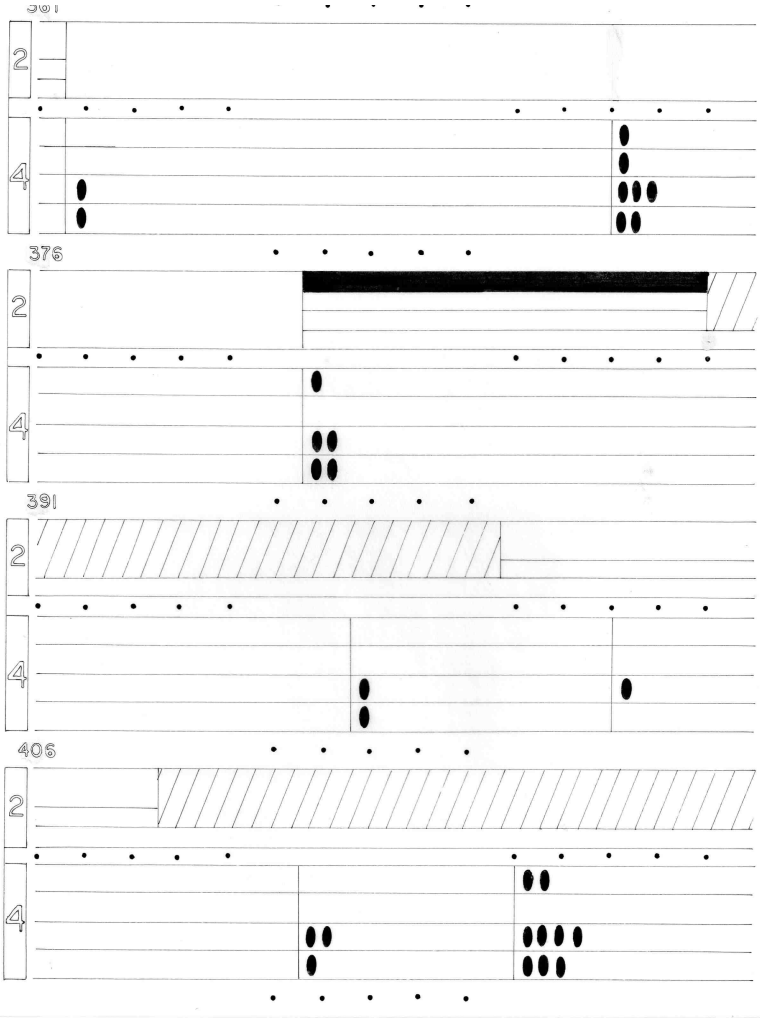
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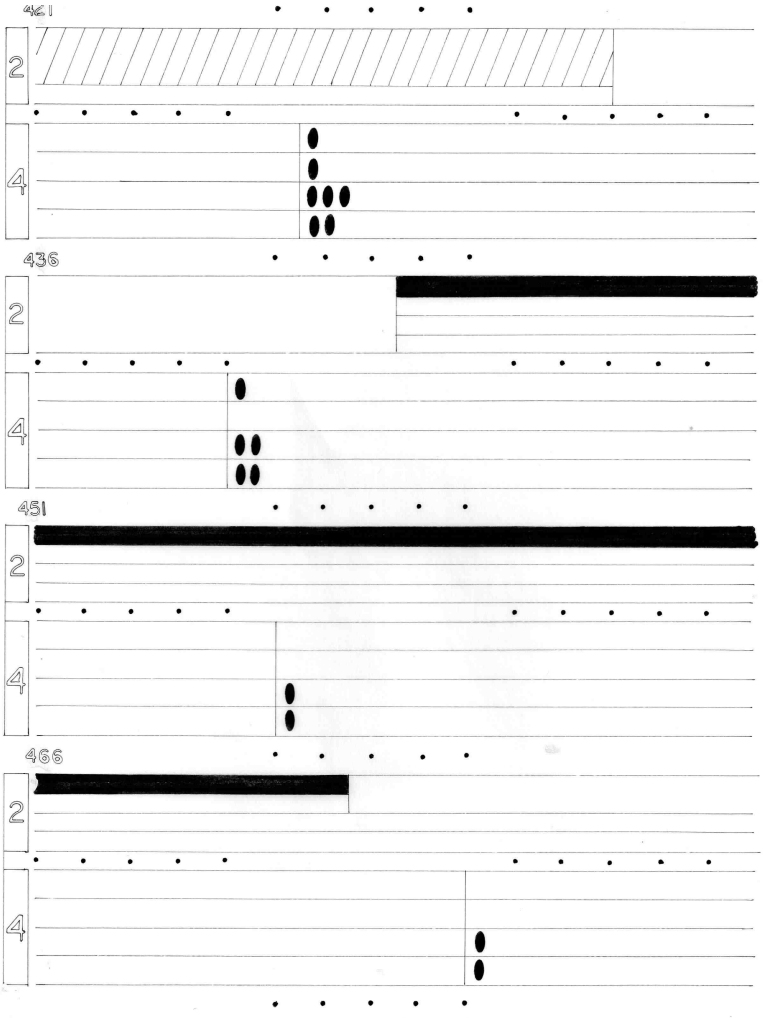
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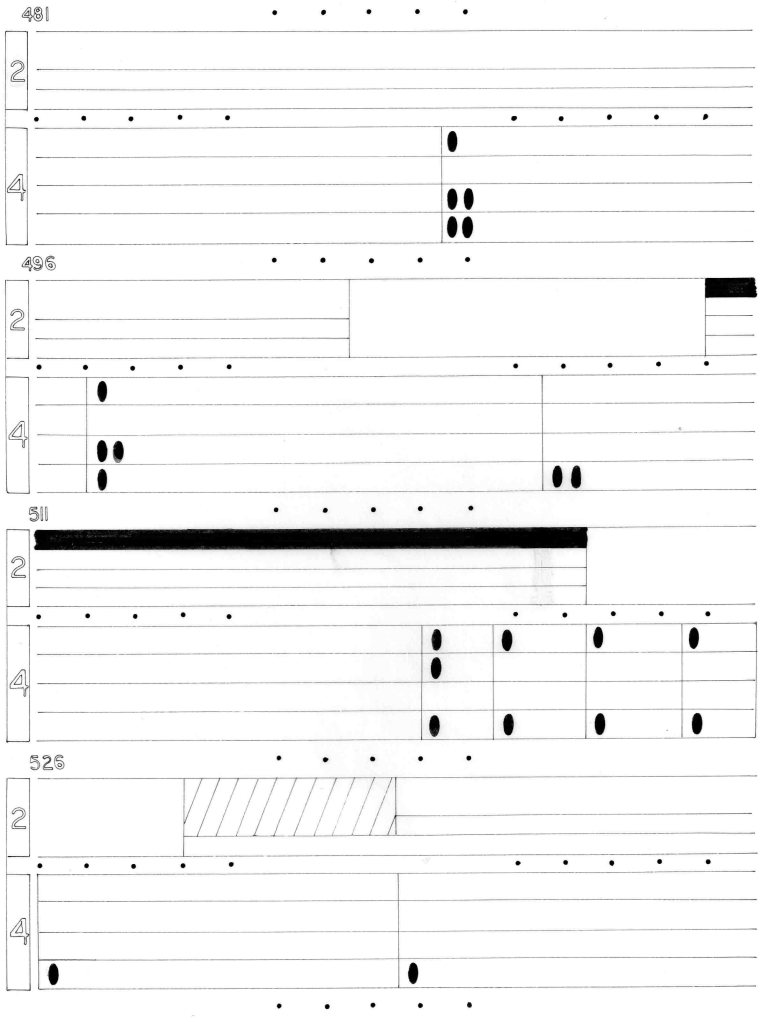
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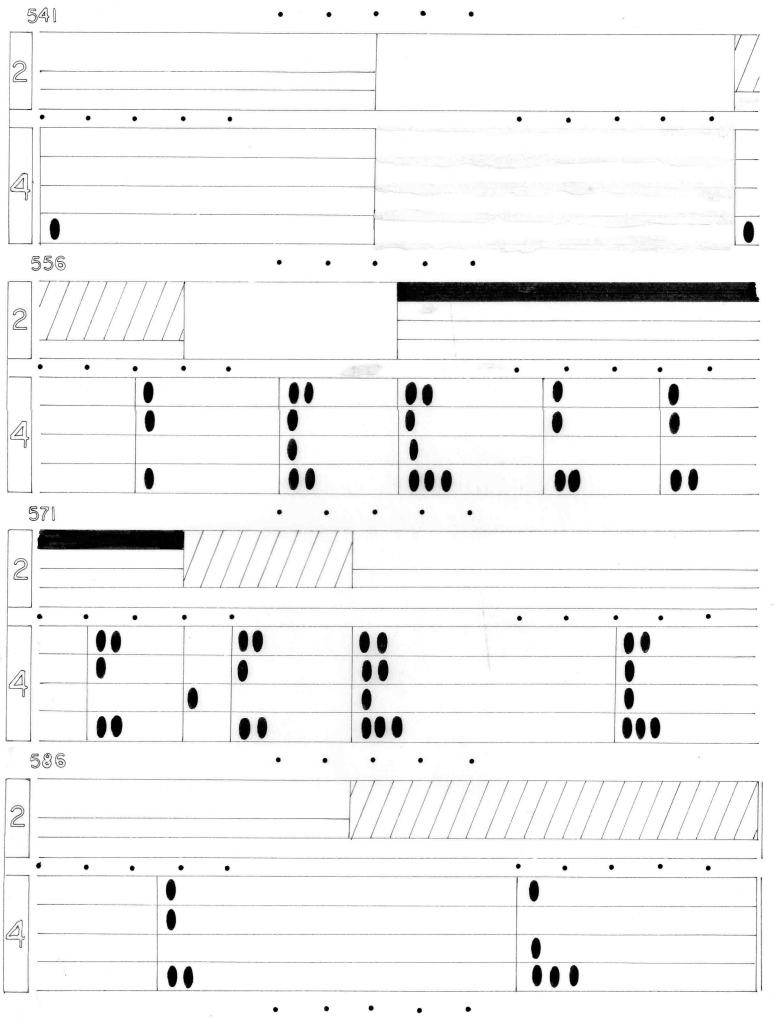
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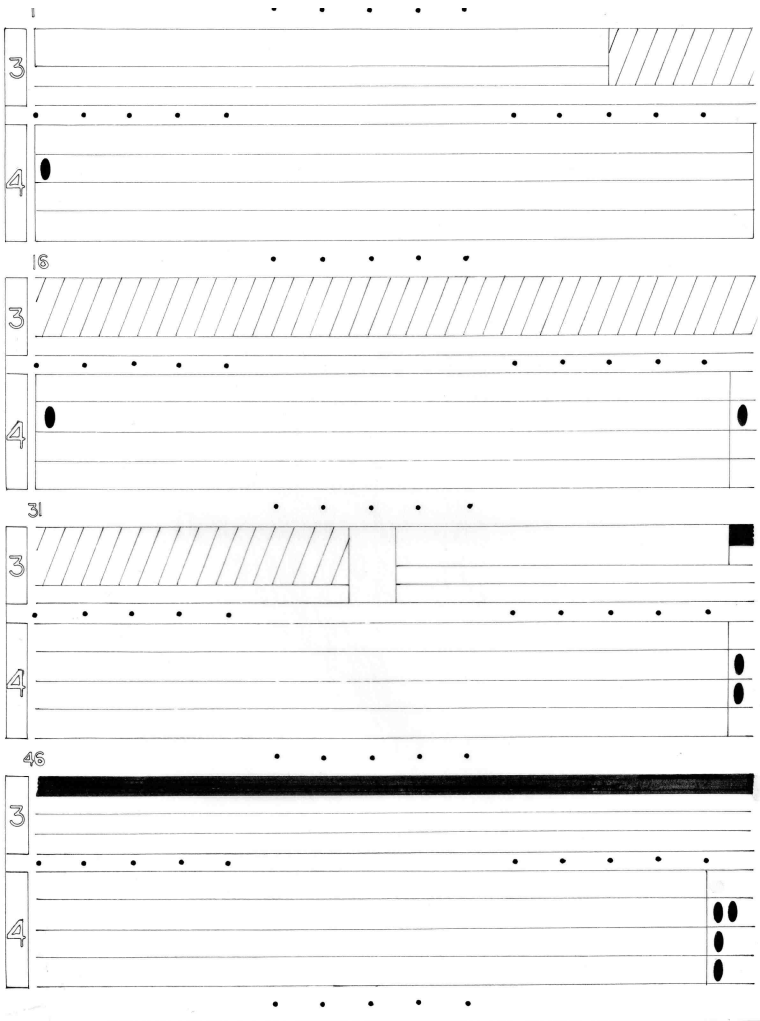
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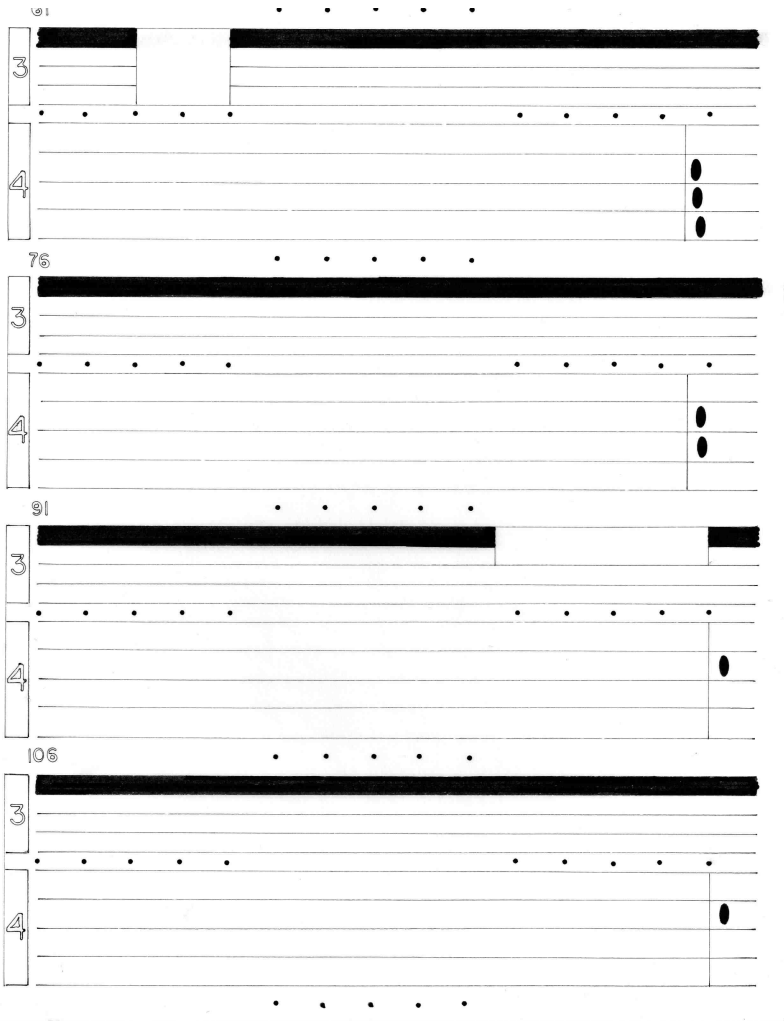
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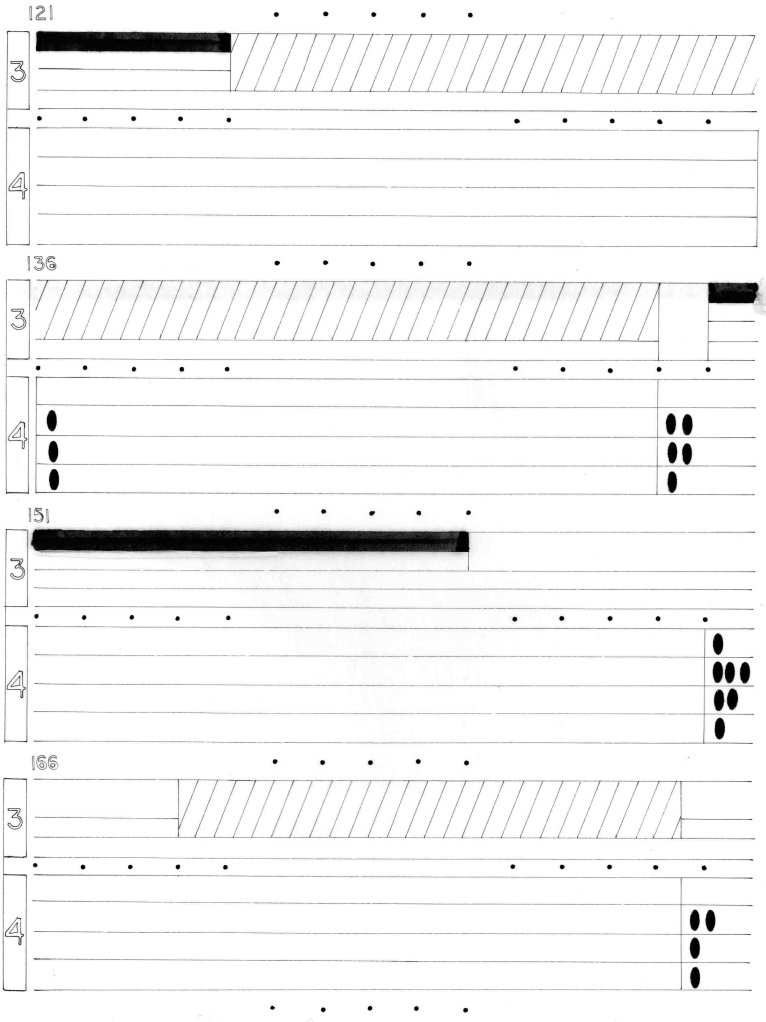
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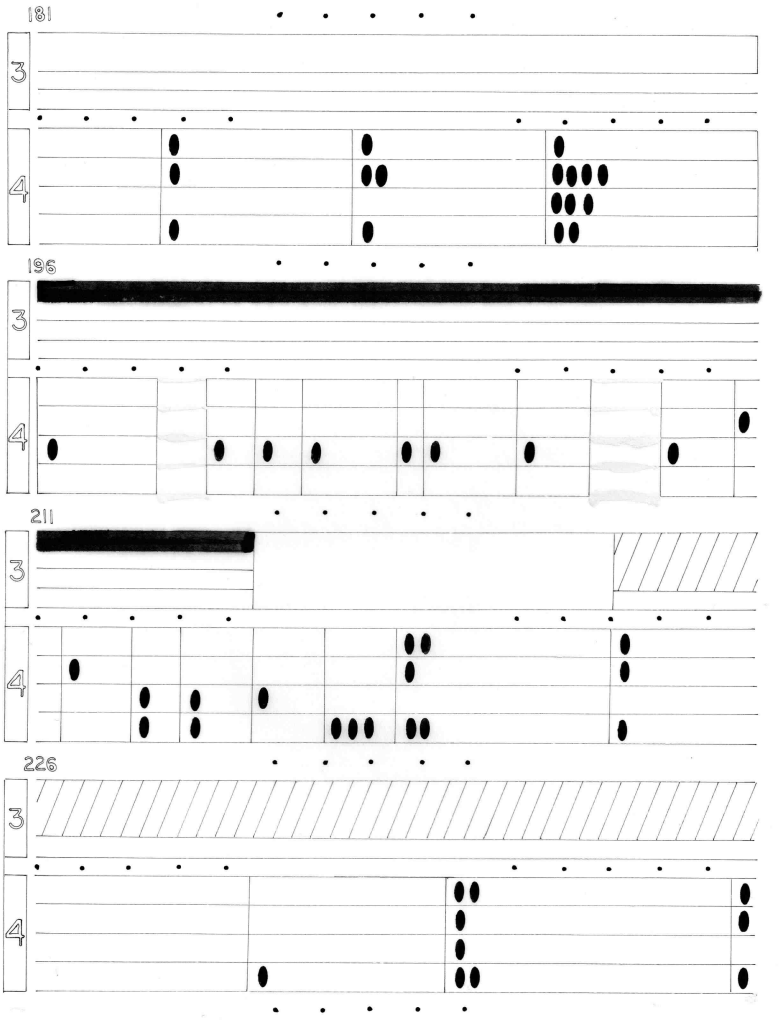
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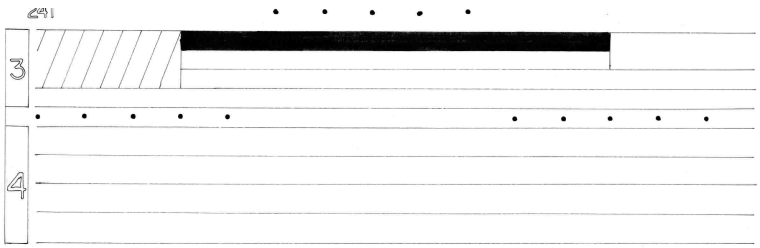
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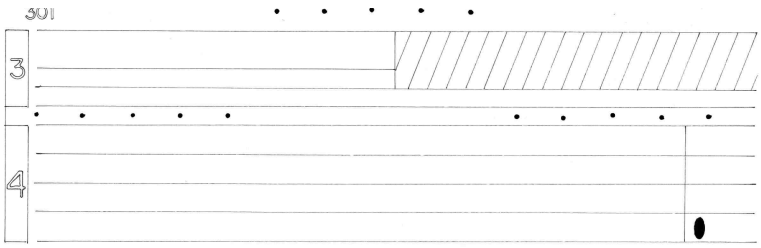
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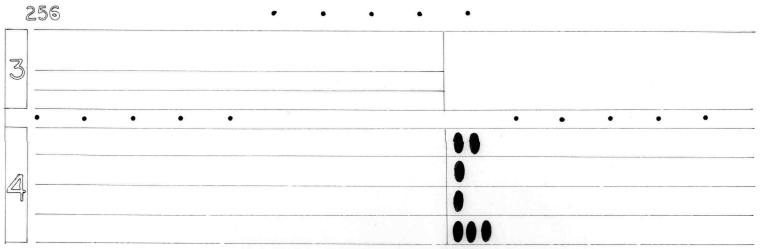
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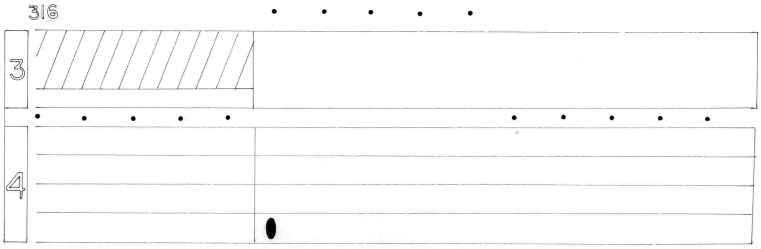
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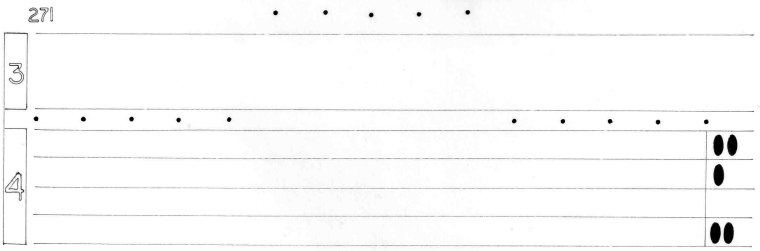
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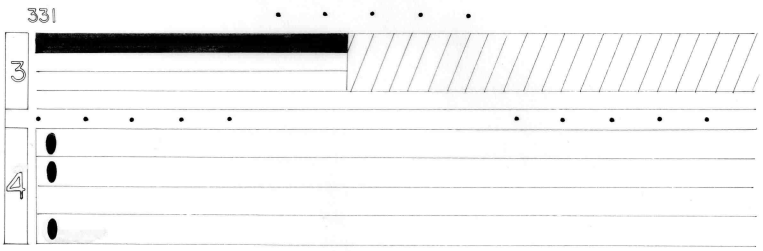
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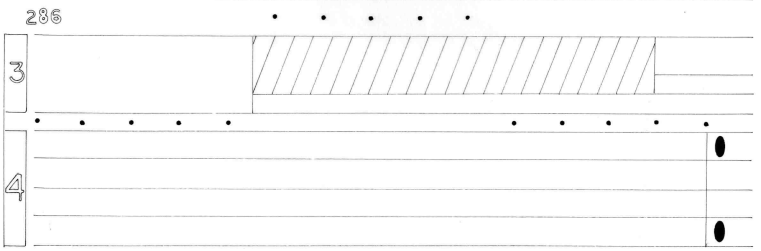
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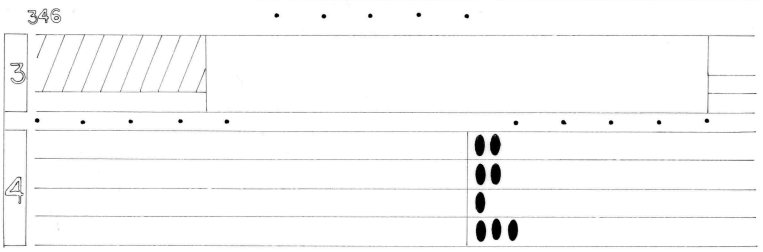
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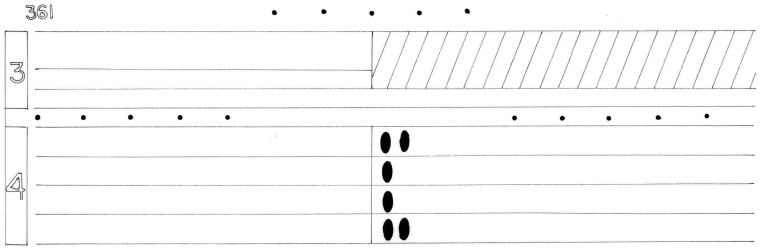
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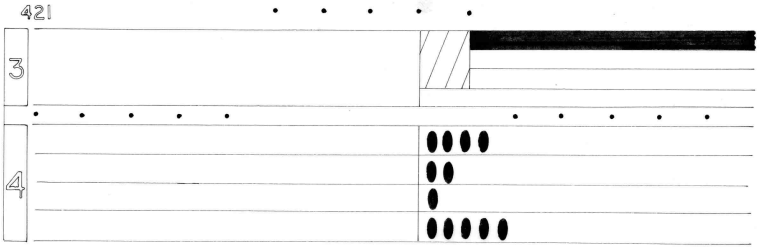
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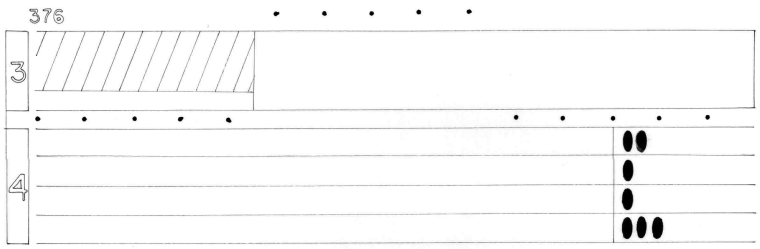
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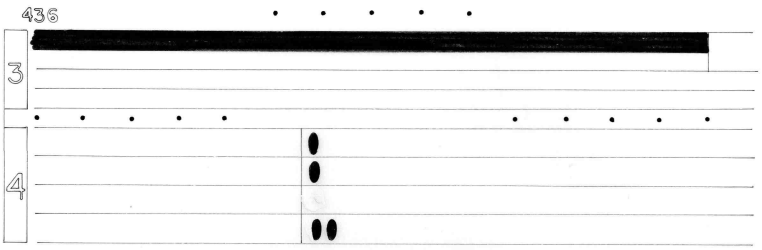
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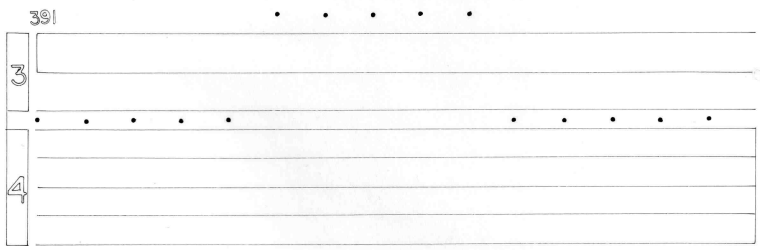
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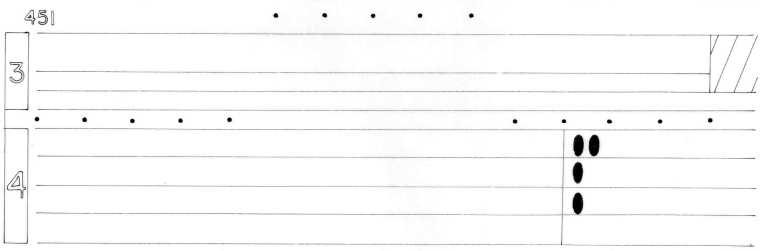
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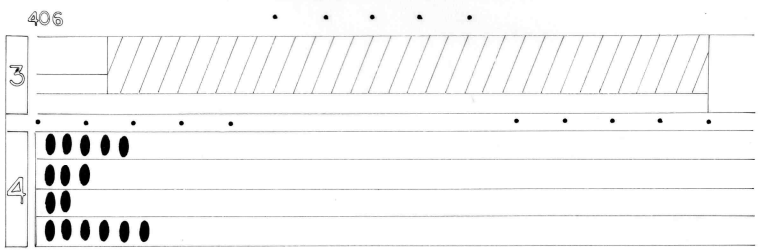
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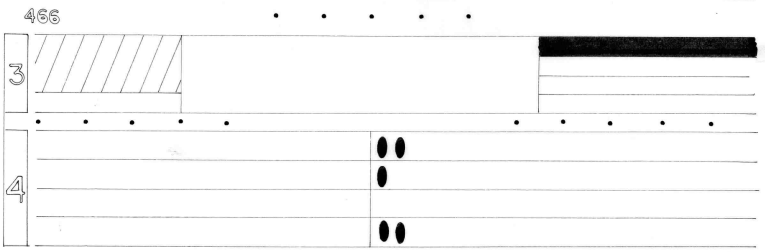
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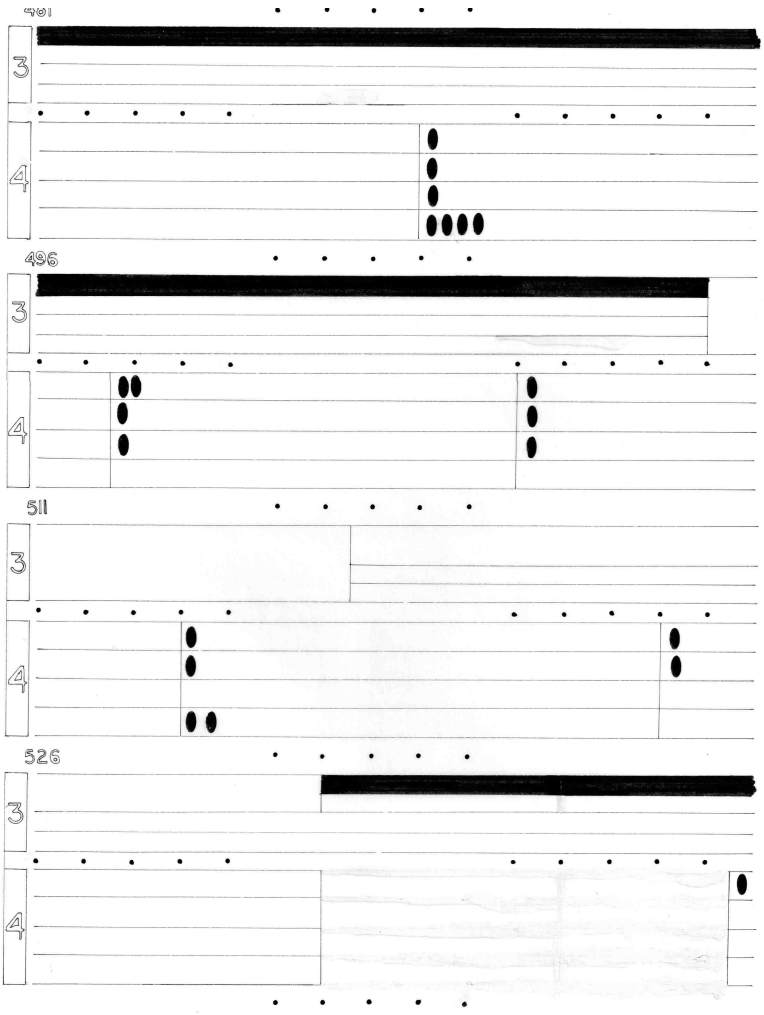
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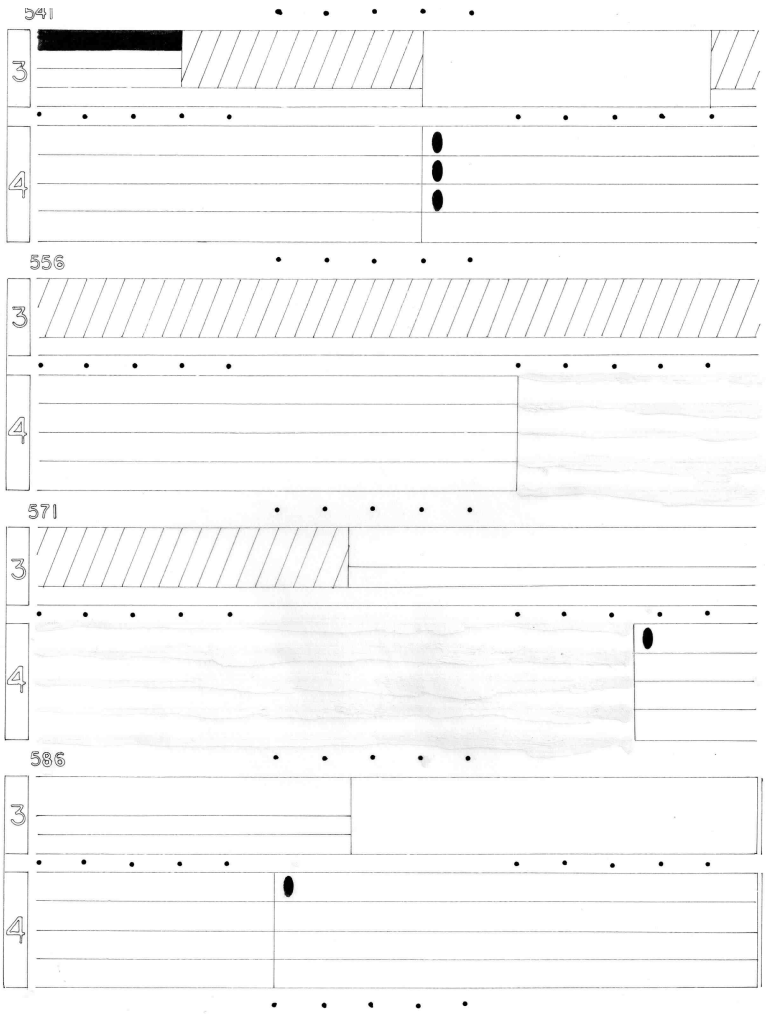
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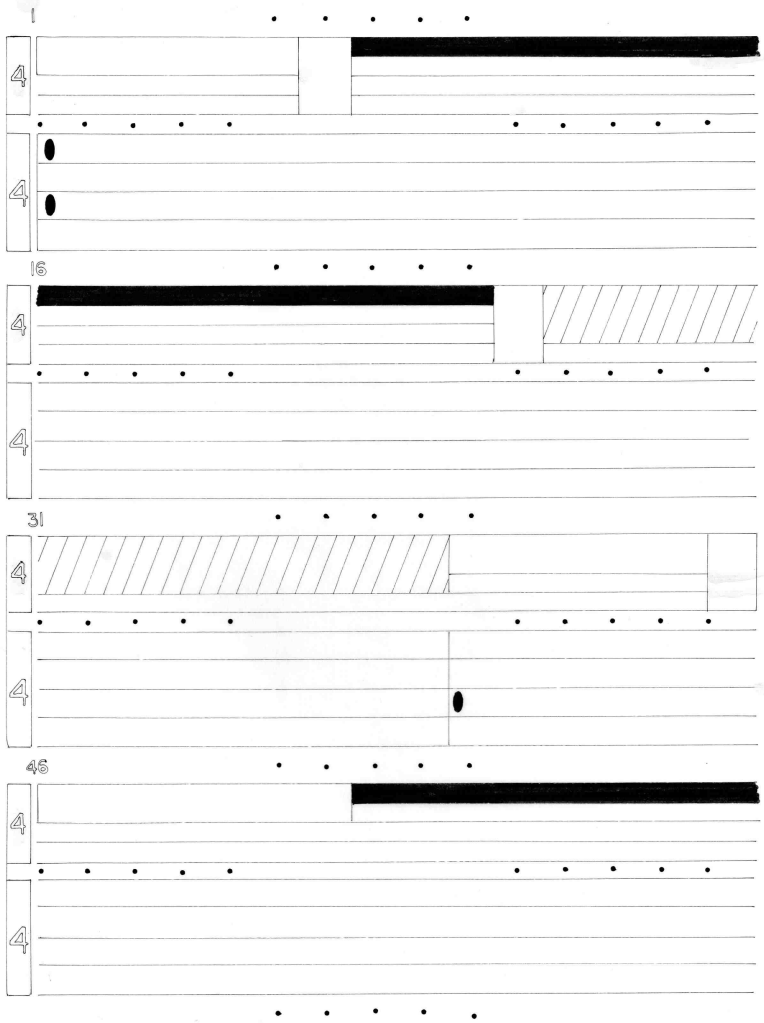
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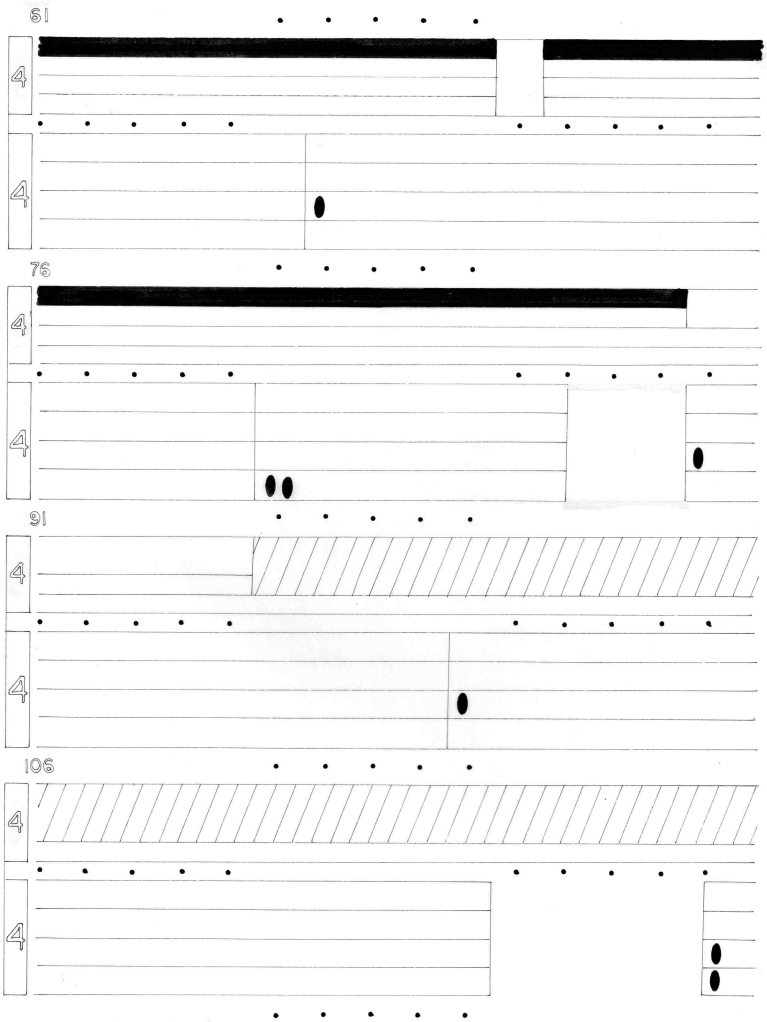
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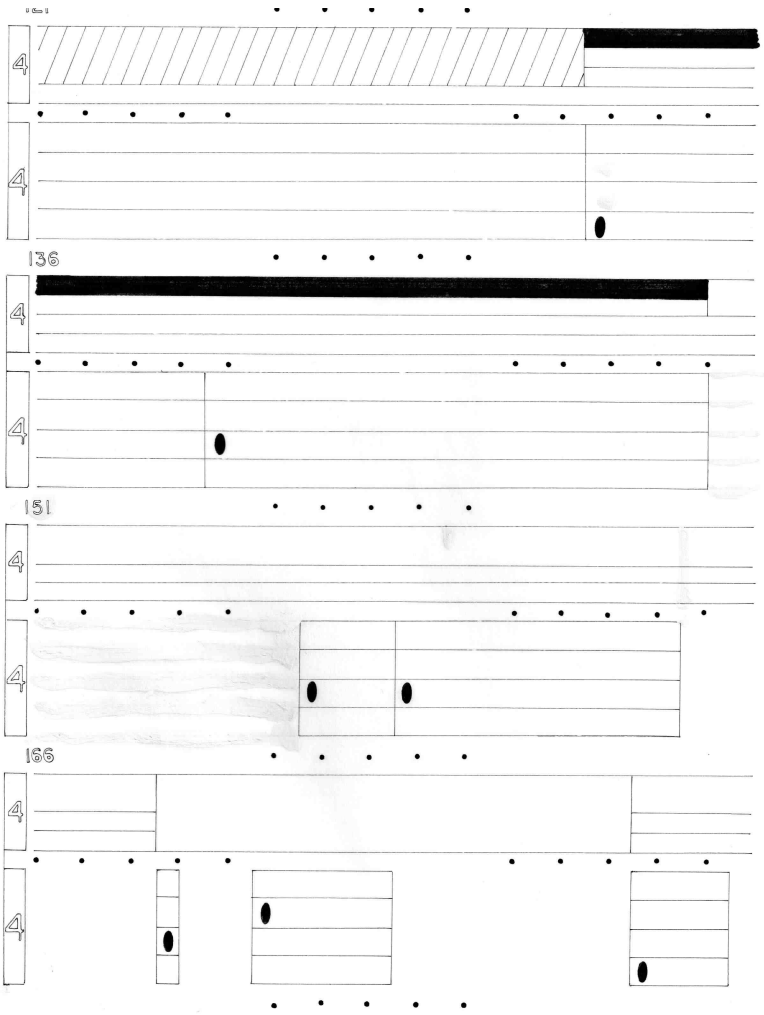
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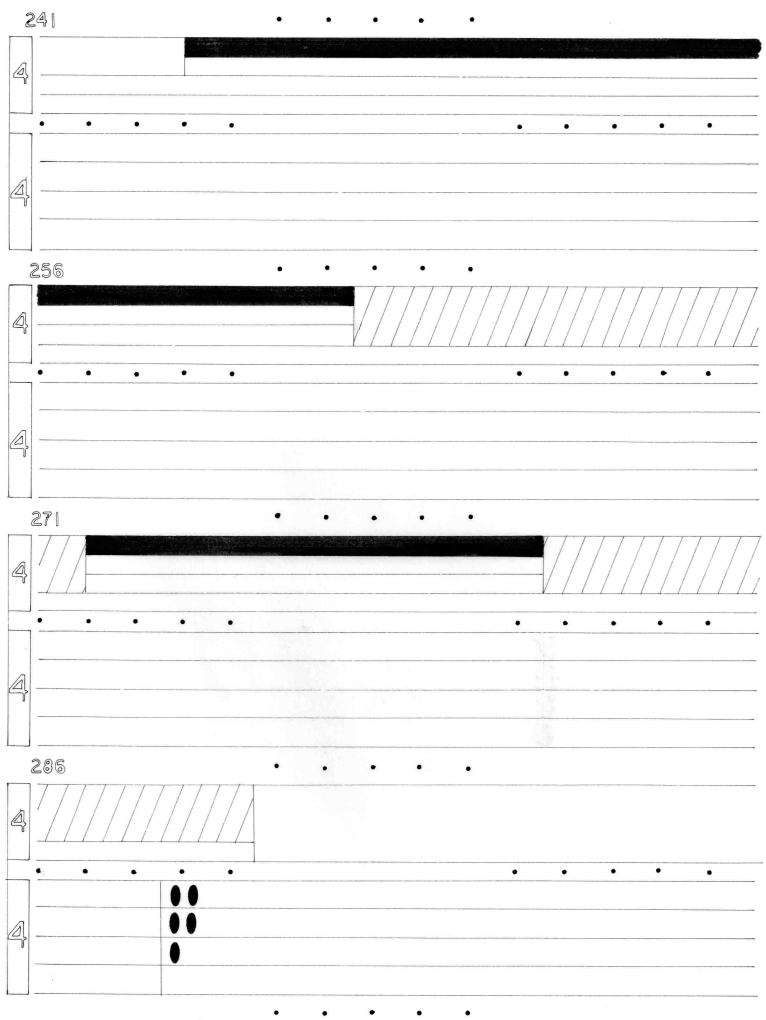
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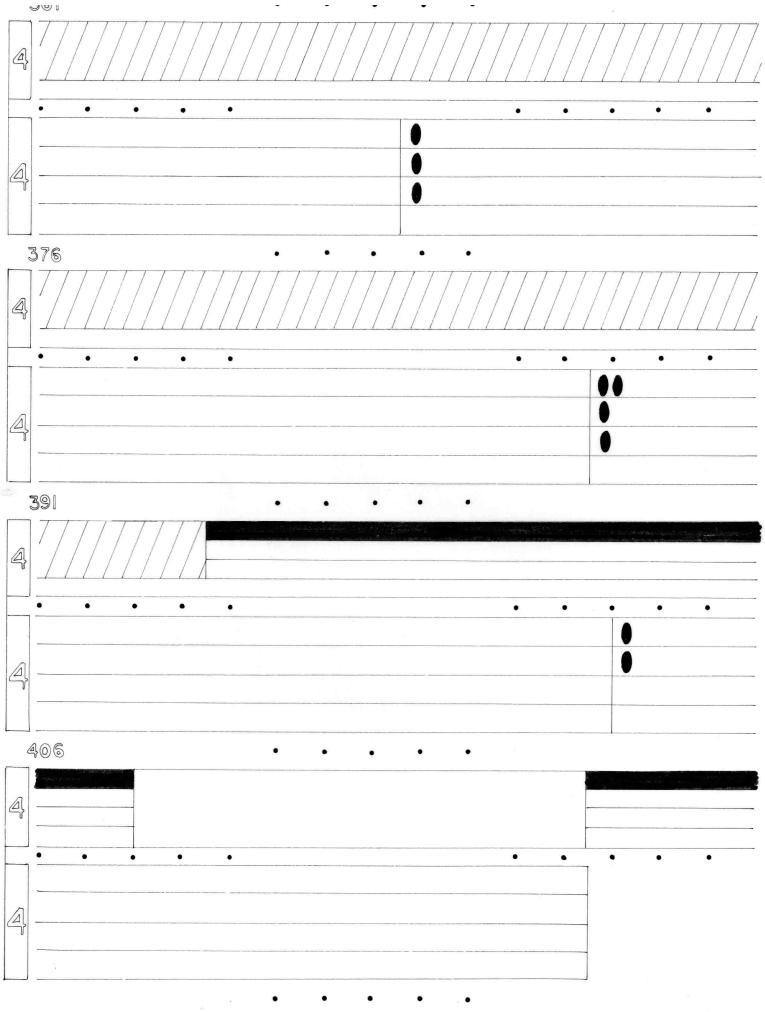
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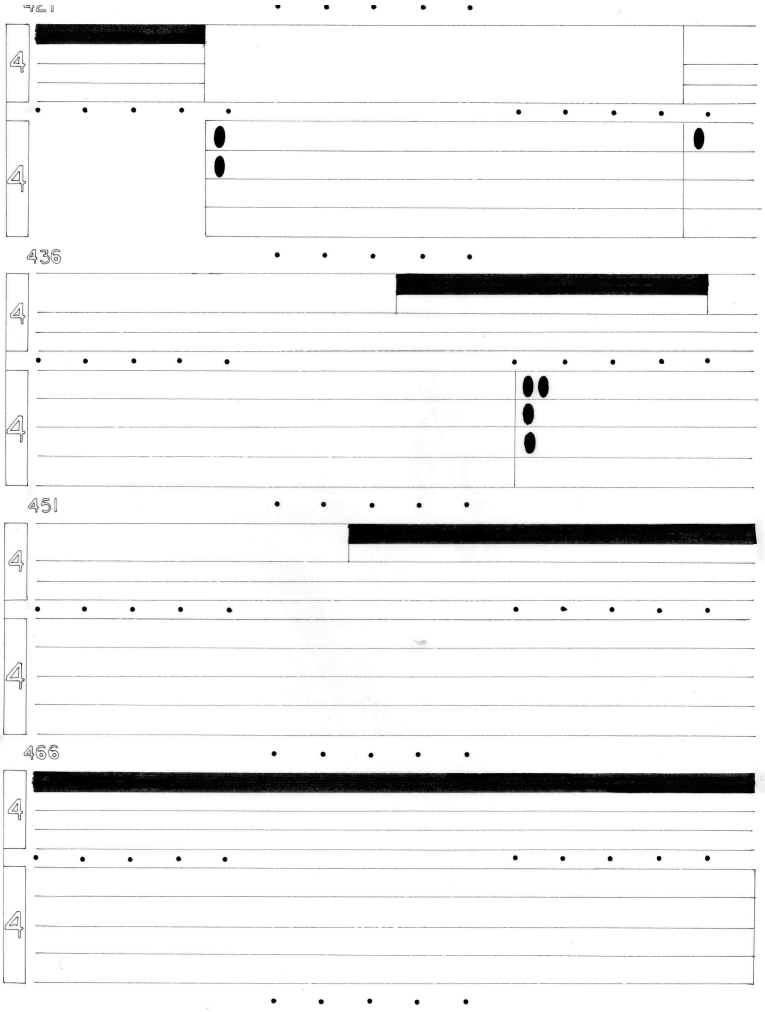
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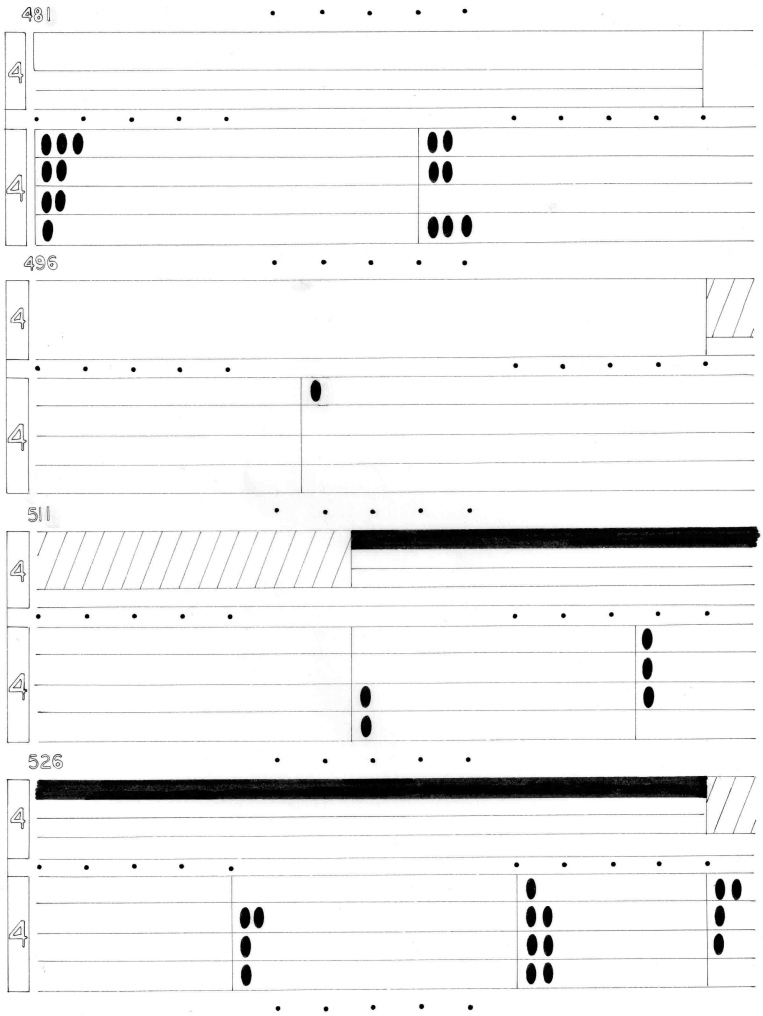
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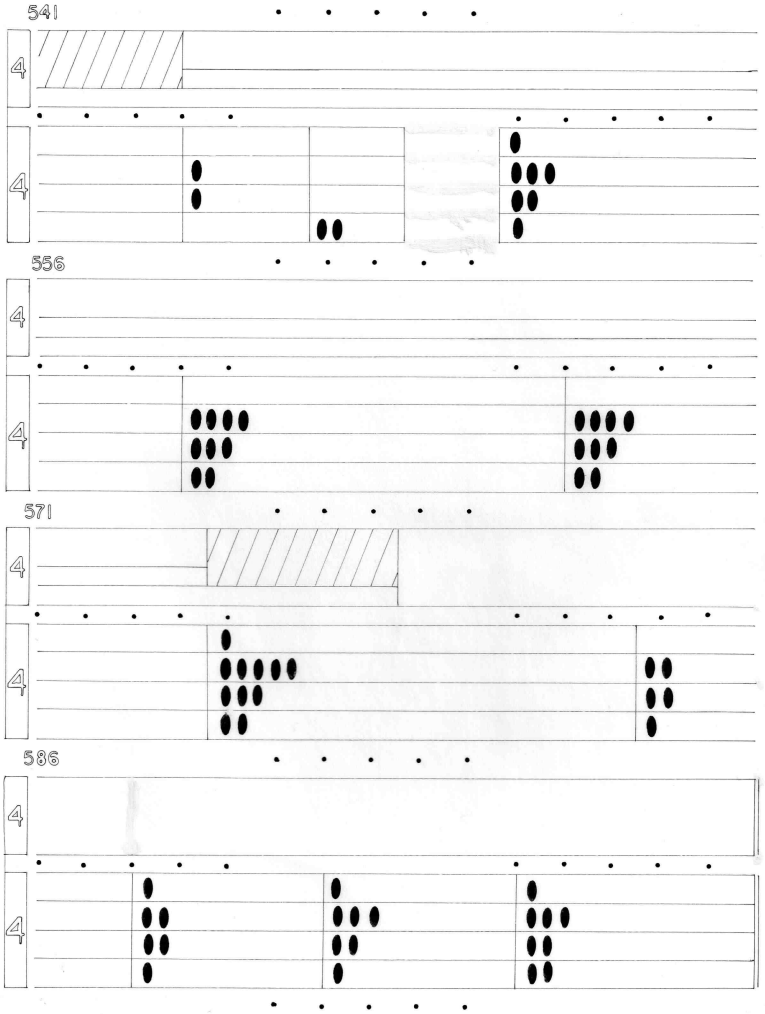
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