Hochschule für Musik, Theater und Medien Hannover

Bachelorarbeit im Rahmen des Bachelorstudiengangs
JazzRockPop (B.Mus.)

Creating an interactive virtual musical experience using interdisciplinary teamwork and modern technology

Nutzung interdisziplinärer Zusammenarbeit und moderner Technologie um ein interaktiven virtuellen musikalischen Erlebnis zu kreieren.

Erstgutachter: Prof. Dr. Raphael D. Thöne

Zweitgutachter: Prof. Tino Derado

Vorgelegt von:
Anthony Williams
Matrikel: 42984
Tieckstraße 24
30625 Hannover

Hannover, den 09.06.2020

Table of Contents

Introduction

The musician's role in society is changing fast. With the rise of the internet and the rapid development of cheap equipment in all sectors, more and more musicians can quickly create professional-grade audio and video. Musicians can produce creative content, develop large fanbases, and collaborate remotely with others without going through a record label or professional studio. But this also means a flooding of the market; with over 50 million songs on Spotify ("Spotify Company Info, 2020") available at the click of a button, it's easy to get the feeling that everything has been done before. Where could the next big innovation in music come? I can imagine new forms of music emerging, both online and in concerts, where the audience plays a more active role in the music. This artistic bachelor thesis aims to create one of these forms by merging audio, video, web design and programming to develop an interactive, playful musical experience.

Traditionally, the roles of musician and audience have been clearly defined. While a rock or pop concert may include singing along, dancing, or clapping, there is a clear separation between what happens on stage and what happens in the crowd. Thus, enjoying music has been limited to passive observation, enjoying from a distance the show dreamed up by the musicians.

I believe that, over the next few decades, many of these constraints will, and should, be broken by technological advances. As any musician will readily tell you, there is a big difference between playing music and listening to music. There's the creative energy, the interaction between the players, and the feeling of contributing a small part to a greater whole. Unfortunately, most of these unique experiences are inaccessible to most of the population because playing music at a high level requires hundreds of hours of practice (at least) and more free time than most people have. The music world in

2020 should look for ways to use the modern world to bring audiences closer to the experiences that musicians know, and many are already doing this.

One trend, going on for more than a decade, is the interactive music video. In some form, this allows the user to have an influence on the resulting video. Major Lazer's song "Know No Better" ("Dream vs. Reality, 2017") allows the user to jump between a child's dream world and his reality throughout his day. In Carly Rae Jepsen's "Run Away With Me" ("Carly Rae Jepsen, 2015"), the user selects between different Emojis in a 'create your own adventure' style video. "Do Not Touch" ("Do Not Touch, 2013"), a music video for the song "Kilo" by the band Light Light, uses crowdsourcing, tracking the user's mouse and displaying all previous movements on top of the video.

A second trend is the loop-based music app, aiming to make the process of electronic beat making accessible to a wider audience. Two examples of these are GroovePad ("Groovepad, 2020") and Figure ("Figure, 2019"). Both allow the user many choices in instrumentation, style, and timbre, and have options to save and export and interact with other users. Figure, in particular, offers a lot of artistic freedom, with the option to create long loops and play with various effects.

Creations like Figure show the power of modern technology combined with creative musical minds. Using a simple interface and a lot of musical knowledge, the app developers made a fun and interactive platform where music making becomes instantly accessible, even to those with no prior musical experience.

My goal for the project was to combine these two trends. While there are countless creative variations on the interactive music video, none that I could find allow the user to make significant changes to the song. This leaves fantastic options on the table; any music fan would love to have control over what their idols play, discovering new facets of the music. Having found my niche, I went to work.

Project Description

The final product of this project is an online interface in which the user can arrange and produce his/her own version of a pop song. The user is able to individually choose between two variations of five different instruments (drums, bass, Fender Rhodes, guitar, horns), as well as which instruments play at which time. This gives the user hundreds of variations with which to experiment.

The music is supported visually by GIFs showing each musician playing his instrument. When the user switches between versions, the GIFs change color and the musician's movements change, adding a visual element.

Composition and Arranging

For the project, I selected an unreleased song by the singer/songwriter John Winston Berta called "Siehst du die Sterne Kreisen". The song follows a basic pop structure, with multiple verses, a chorus, a bridge, and an instrumental outro.

Before our recording session, I made two separate arrangements of the song based on a demo, where John sang and played guitar (*audio sample 0*[1]). The main challenge was to create parts that sound both interesting and very different from one another, yet still work together musically.

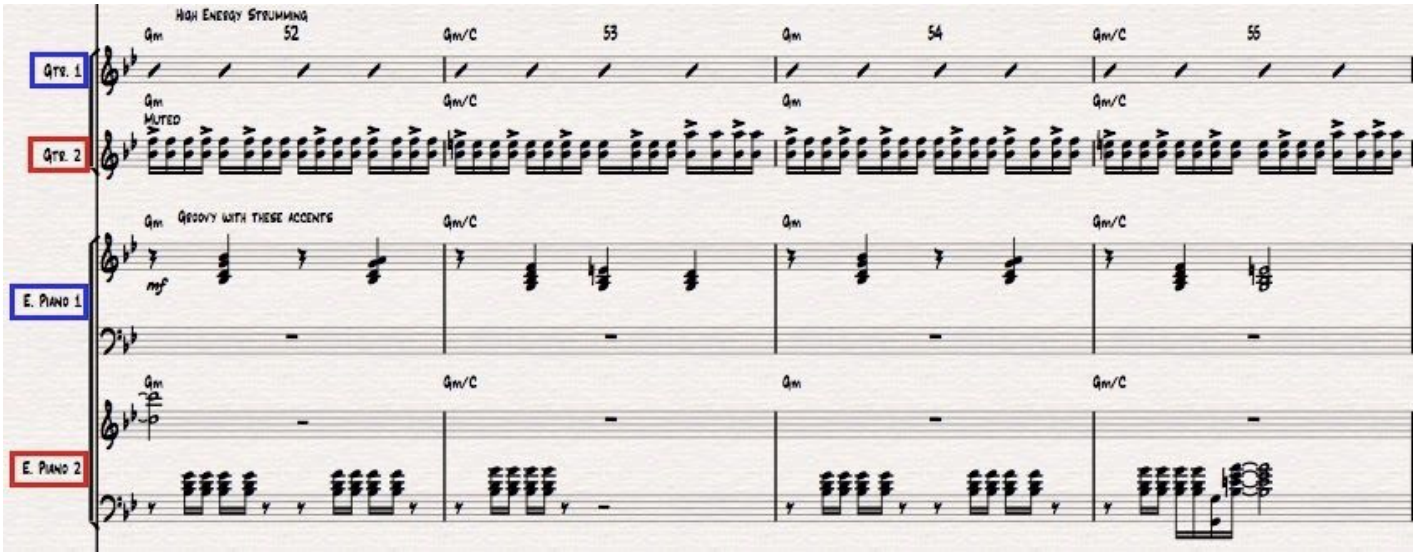
In order to achieve this, I used a variety of compositional methods. I used the music notation software Sibelius, creating two of each instrument in

[1] Throughout this bachelor's thesis there will be QR codes, which can be scanned using the camera with a smartphone and take the reader directly to the audio mentioned in the text. Direct links to the audios used can be found in the 'additional materials' section.

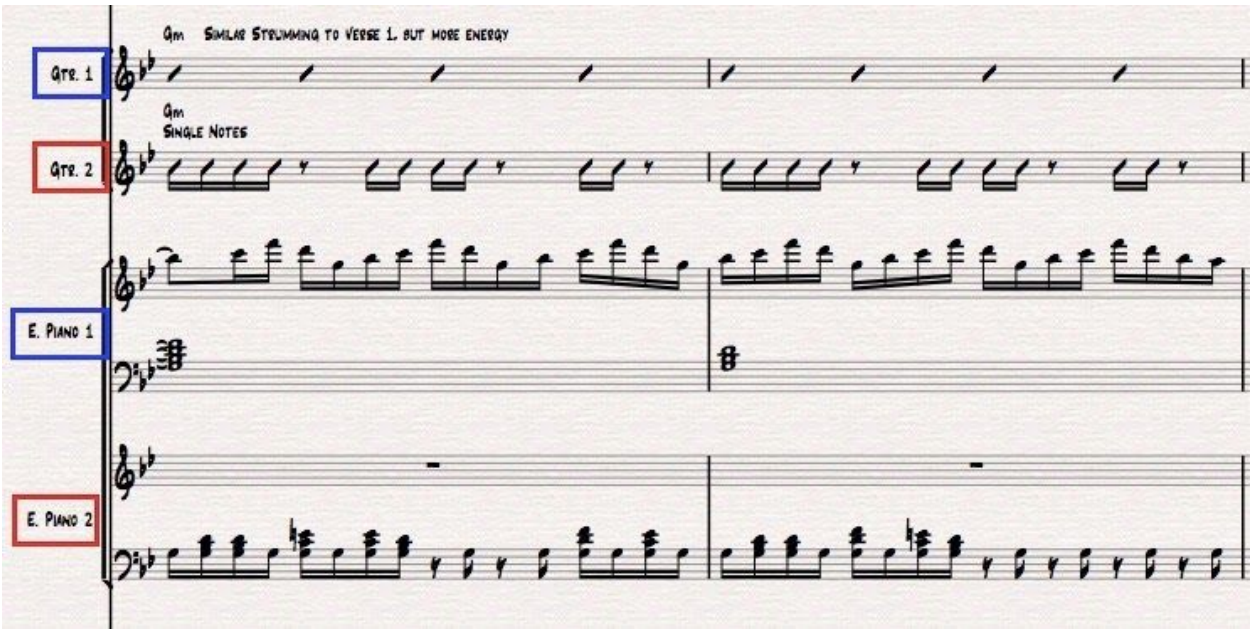
a full score. In this way, I was able to mute instruments during playback and check whether the different versions would sound good together.

To get the parts to work together harmonically, I made sure to choose a harmonically simple song which stays in one key (G minor), limiting the possibilities of harmonic tension between the instrumental parts. To add variation, I changed the roles of the different instruments; sometimes the Rhodes plays percussively and sometimes it plays long notes, with the guitar often switching between strumming and single notes. By choosing between the different versions (or none at all), the user has the freedom to make the groove and harmony as dry or as dense as they would like.

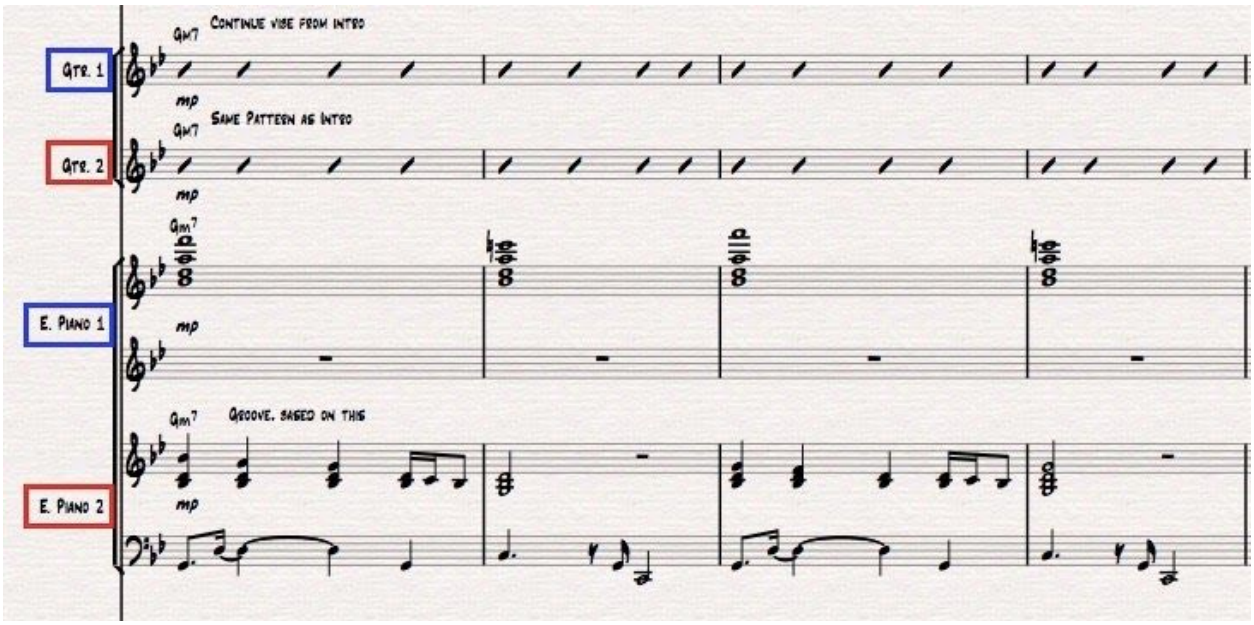
The result of this can be heard in Chorus 2. There, the Rhodes plays two different rhythmic patterns, one quarter note based and one sixteenth note based. The guitar plays an energetic strumming pattern in Version 1, and Version 2 has a 16th note pattern with accents. Below, I've included sheet music for all four different variations, with short notes on how they differ. The audio example cycles through various possibilities while the rest of the band plays Version 1 (*audio sample 1*).



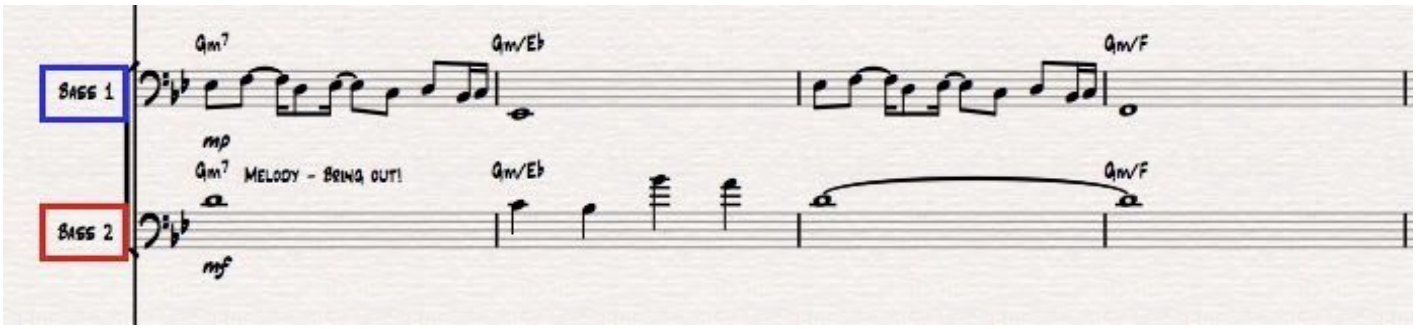
The verses also nicely illustrate the different sonic possibilities of changing the Rhodes and guitar patterns. In Verse 3, the guitar can either play a strumming pattern or percussive single notes, while the rhodes can either play a groove in the low-middle register or take up more space with long chords and a smooth arpeggiated 16th note line. The differences here are striking (*audio sample 1b*). With just 2 instruments, the user has the power to completely change the feeling of this passage, ranging from a mellow, flowing pop feeling (Version 1, Version 1) to a percussive, funky interpretation (Version 2, Version 2).



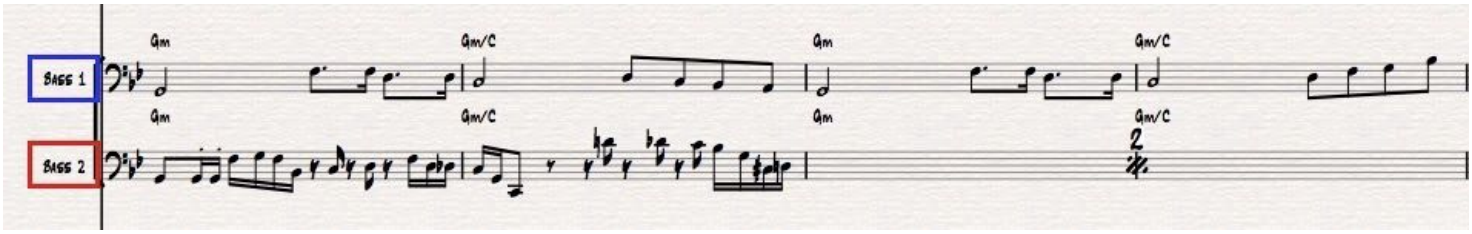
A similar principle applies in Verse 1, but at a lower energy level. There, the user can choose which instrument, if either, to feature as the primary accompaniment to the vocals. The Rhodes plays either sparse chords in the upper register or a deep, rich chord accompaniment. The guitar takes up similar roles, playing either the sparse chords or a rich chord accompaniment (*audio sample 1c*).



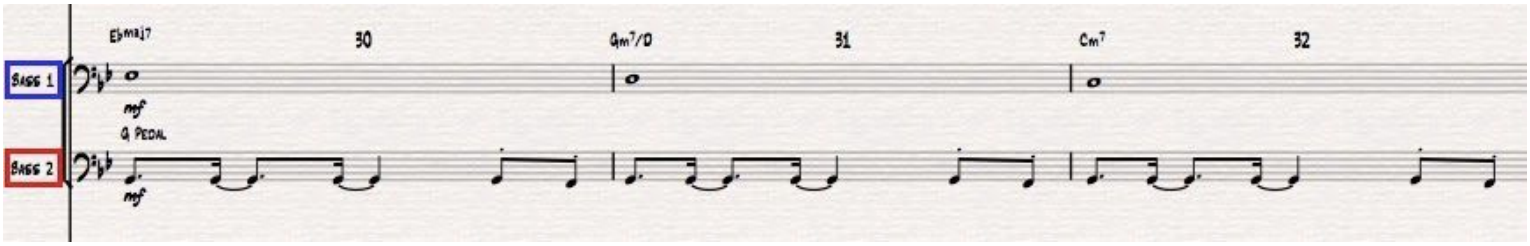
I also gave the bass very different roles throughout the song. In the Outro, the bass either plays a melody in the upper octave or a low bassline (*audio sample 2, sheet music below*).



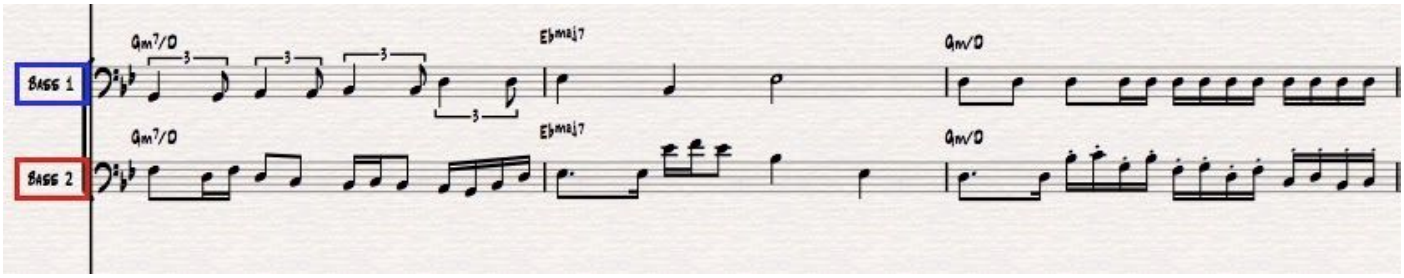
In Chorus 2, Version 1 of the bass is simple but shows a clear direction and buildup toward the end. In Version 2 the bass plays a busy, 16th based line and adds a rhythmic element to the groove. This radically alters the whole feeling of the band, as shown in the audio. Here, the rest of the band plays Version 1 (*audio sample 3*).



In addition, the bass sometimes plays alternate root notes. For example, in bars 30-33, Bass V1 plays the same chords as the other instruments, while the other plays a pedal point on a G. This allows the user to dramatically change the sound of the band with a single click (*audio sample 4*).



Lastly, the bass is often tasked with filling the space left by other instruments. I also used this role to create variation. For example, in bars 49 and 51 (shown below), the bass plays fills leading into the next bar. Version 1 plays a triplet rhythm moving upward in bar 49, while Version 2 plays 8th and 16th notes moving downward. Version 1 stays on one note in 51 to build tension; Version 2 creates a similar effect, but with a 16th note lick (*audio sample 5*).



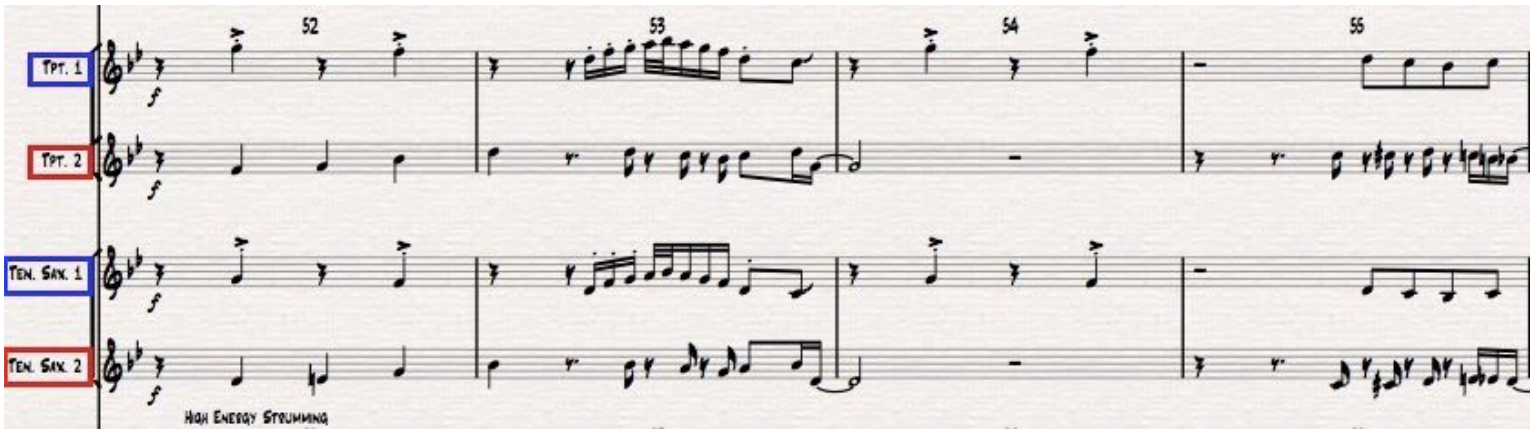
For the drum part, I made a lead sheet with different ideas of how the drummer, John Winston Berta, could interpret the song. Because John wrote the song, I felt that we would get better results if he drummed in his own style, with different variations for the different takes. For the final takes, I listened to all his improvised drum takes and took the most coherent and cohesive parts of each and cut them together to make two different takes.

Version 1 of the drums is very simple and has a strong backbeat, with a heavy snare on 2 and 4. Version 2 tends to have more ghost notes on the snare and offers a subtler, more complex approach to the song. This is shown in the two audio samples below, in Verse 2 and Chorus 2, respectively (*audio sample 6, audio sample 7*).

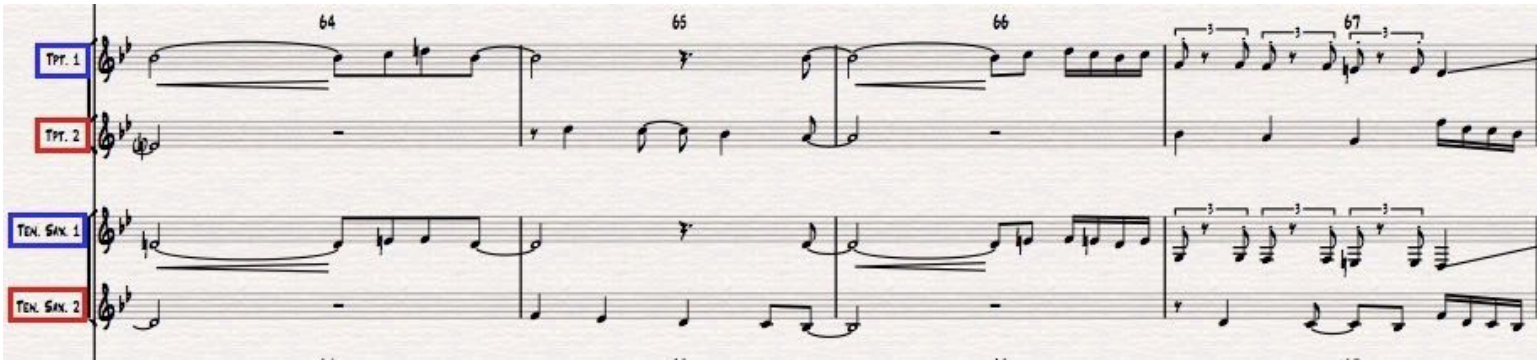
In addition, I asked John to record a few percussion takes using his guitar, which I used for Verse 1. The difference between the two takes is subtle, but each adds a different flavor and gives the user another choice of instrumentation (*audio sample 8*).

The two horn parts were the easiest to write because their parts are typically separate from the groove and do not need to interlock with the other instruments. The horns tend to play a similar role across the song, but

add very different textures in the two versions. For example, in Chorus 2 the horns have very different functions. In Version 1, the horns play kicks with a lot of attack, giving more of a funky feeling. In Version 2, they play a legato phrase moving upward behind the vocals. Both versions complement the vocals nicely, but the decision as to which fits better is made by the user *(audio sample 9*).

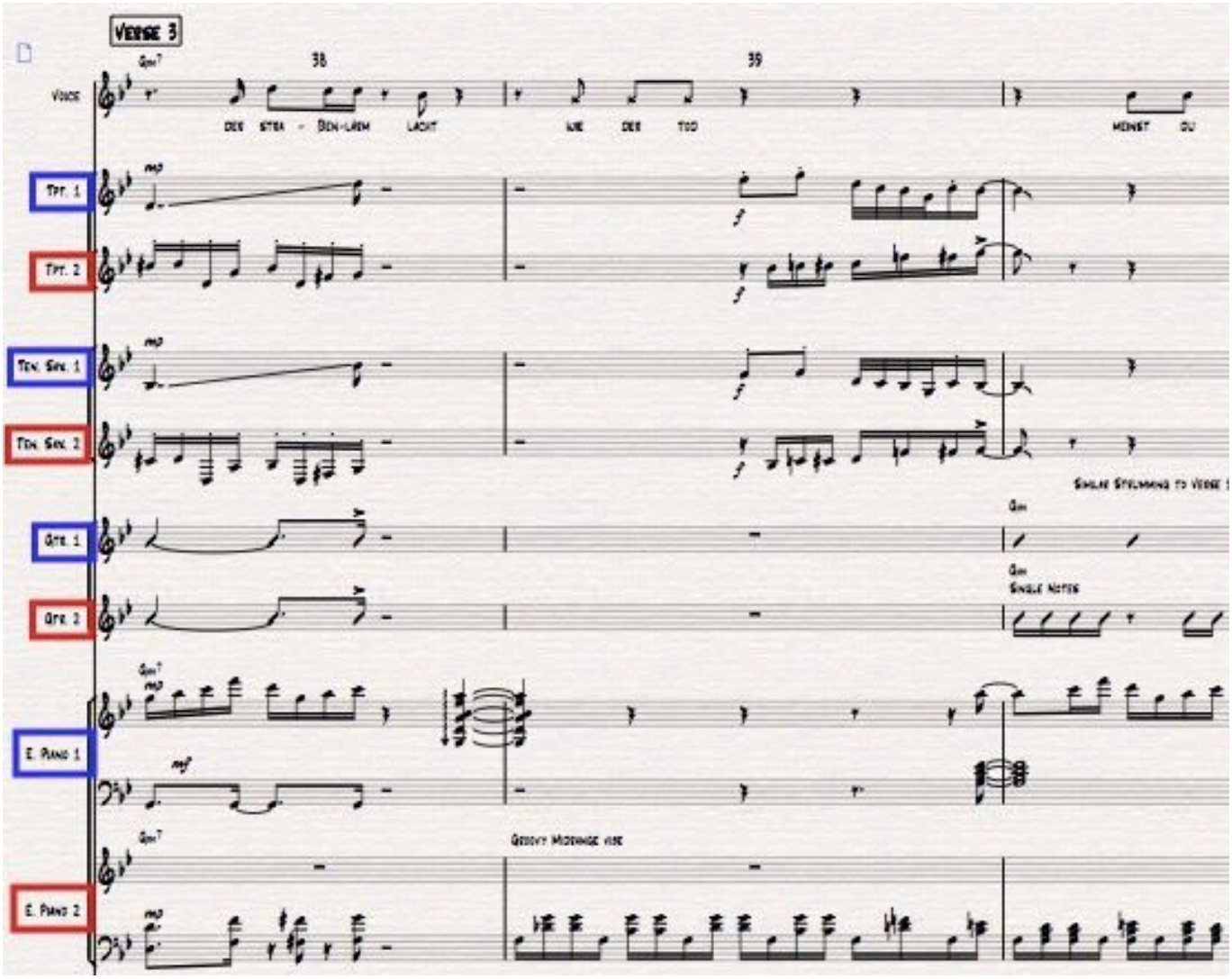


In the Bridge the two horns also play different roles. In Version 1, they play the same rhythm in 4-bar phrases, laying down the chords with little rhythmization. In Version 2, the trumpet and saxophone trade roles, sometimes playing onbeats and sometimes playing offbeats, to create a response to the vocal phrases. The ultimate goal was to create a playground for the user to explore *(audio sample 10*)



Another goal of mine was to get away from the loop-based, band-in-a-box sound that one usually finds with interactive music apps. I wanted a tight product that sounded like a real band playing an original song, no matter which take the user decides to use. To achieve this, I wrote in some breaks and hits which are present in every version. This keeps the piece exciting and engaging and gives it the feeling of a live performance.

The best example of this is in measure 38, the beginning of Verse 3. The horns can play the break and fill in two different ways. So can the Rhodes, and the guitar part varies greatly across versions as well. However, every instrument is in agreement; there is a break on the anticipated ‘3’ of bar 38, some sort of fill in 39, and the groove continues in 40. This gives a lot of variety, with the band sound remaining tight and the arrangement working in any scenario (*audio sample 11*).



Recording

To record the song I booked a studio at the School of Audio Engineering Institute (SAE) in Hannover with Okan Uysal, a student there. With the help of Okan and another audio engineering student, Akif Çolak, I set up the room to record bass, drums, and a keyboard scratch track (the Fender Rhodes used for the final take was in a different studio). A list of microphones used can be found in the “Additional Materials” section at the end of this paper.

We recorded to a click track at tempo 90 BPM.

Because the idea of recording two versions of the same song was new for me, I put emphasis on collecting a wide variety of musical styles, planning to edit later and pick out what I wanted. The drummer, John Winston Berta, is a strong improviser, so I asked him to play several entire versions on drums, adding my own thoughts and impulses between.

Once bass and drums were recorded, I asked John to play a few improvised guitar takes through the song. Though I had already written two guitar versions, I wanted a wider range of possibilities to choose from, so I gathered as much material as possible and planned to edit later. We also recorded vocals in the SAE.

Rhodes and horns were recorded separately in the band’s rehearsal room. In addition, we recorded John playing some improvised percussion on the guitar, which I edited for later use.

Audio Editing

The emphasis I had put on quantity and variety of material during the recording sessions meant that the raw audio needed to be heavily edited before mixing. After the parts were recorded, I listened through every instrumental take and marked the parts which matched my vision of the song. I then cut between takes, looping bars when necessary, to create the final parts for each instrument. Many parts did not sound the way that I liked, so I ended up cutting and pasting many instrumental parts across different parts of the song until the final tracks all fit to each other.

Similar to the process I used in Sibelius, I then listened to the finished parts in as many variations as I could think of to make sure that everything worked well together. I continued the editing process well into the project, fine tuning whenever possible.

Mixing and Mastering

My main goal for the mix was to make each instrument very clearly audible to the user, to create maximum impact when switching between versions. In the initial mixing stage, I panned different instruments left and right and made each instrument the correct volume in every part of the song, in order to focus exclusively on sound design during the final mixing stage.

I then met multiple times with sound engineer Akif Colak to fine-tune the mix. To make the mix sound like a unified whole no matter which versions were chosen, we gave versions 1 and 2 of each instrument the same effects and sound design.

To make each instrument stand out and find its own place in the mix, we used equalizers, compressors, and stereo spread. Applying different equalizers was helpful in

accentuating the important frequencies of that instrument, and allowing for each instrument to be easily audible without having to be turned louder.

In terms of stereo spread, the bass sounds very tight in the middle of the mix, while the Rhodes is mixed a bit wider (but still central). The guitar was panned slightly to the left, the trumpet wide right and the saxophone wide left. This helps the user to easily distinguish each instrument in the mix.

Finally, all instruments were sent through a mix bus, which involved various compressors and tape plug-ins, and a mastering on the main channel, to give the whole mix a unified band sound.

Video Concept

I wanted the video to illustrate and enhance the audio. In order to do this, I told each instrumentalist to perform a variety of different movements with their instrument, ideally with a touch of humor, so that switching between takes could simultaneously have a visual and an auditory effect. To enhance the effect of switching between takes, I used a greenscreen to create a solid color background for each instrumentalist, then changed the shade of the background at the same time as the audio changes.

Filming and Editing

Our filming session also took place at the SAE, this time in the greenscreen room. The camera used was a Canon EOS 750d. For lighting we borrowed three TecPro LED panels, positioning them in order to light the greenscreen and the subjects fully and evenly, without shadows in the background. Then each subject was individually filmed performing a range of short, repetitive motions with their instrument.

I edited the videos using the DaVinci Resolve. First, I cut the videos to be 1-3 seconds long. I then made the short video segments loopable, often playing the clip in reverse to create a 'boomerang' effect. Next I used the Delta Keyer tool to remove the green color from the background. I created solid color backgrounds for each of the video clips and then exported them as videos. I then listened to each audio track and picked the video clip that fit best to the mood of that particular audio.

After some experimentation with file sizes and video formats, I decided to reformat the videos as Graphic Interchangeable Format (GIFs), which could run on repeat on the final server. GIFs are much smaller and require less computational power than MP4s, making the final product run quicker. To look smooth when repeated, I ensured that each GIF ended with the musician in the exact same position in which he started.

Online Interface

For the online interface I worked with programmer Julian Korten. Julian programmed using the language HTML, and we hosted the interface on a server owned by my band Hagelslag.

The website consists of a table split into six parts, one for each instrument (drums, bass, keyboard, guitar, horns, and vocals). To enable Julian to program the interface, I created a database of video and audio files. For each section of the song (Verse, Chorus 1, etc.), there are 11 audio files (2 for each instrument and one for vocals). Each audio file is paired with a GIF.

When the user selects a section of the song, the computer plays all selected audio files from that section. The user can then make changes to the different

instruments while the instruments continue playing, and the computer saves those changes.

In the coming months, we plan to work on layout and design for the interface and publish on the website hagelslag.band. We will also add another functionality that allows the user to download and publish their own version as a complete music video.

Conclusion

In total, I consider the project a success. The interface, video and music turned out a lot like I imagined, and though it took a long time and a lot of effort, I was surprised at how smoothly the process went and how closely the final product resembled what I had envisioned coming into the process.

The bulk of this project was spent in the audio and video editing stage. I collected and sifted through so much raw material that the editing took longer than recording and post-production combined. This was mainly due to inexperience and due to the way I designed the project. I did not come in with an exact idea of either the video or audio, and this trial-and-error approach cost me time and energy later. However, this approach also gave me many more insights into the process and into what works and what does not than a tightly planned project might have.

If I had more time and a budget to spend on this project, I would work on professionalizing the interface, its functionality and its layout. The website works nicely and does not have major problems, but there are still slight gaps in the audio when switching between takes. With a larger budget I could hire somebody to fix these small imperfections. The interface currently feels like a prototype, not something that is market-ready.

To streamline the process for further similar projects, I would spend more time planning the project and thoroughly charting everything out in terms of music and video before beginning. I would also schedule a rehearsal with the band beforehand, practice the two versions, and record all instruments at the same time in a professional studio. This would save time in both the recording and editing phases by doing as many steps as possible simultaneously.

There are a few possible applications and extensions for this project. As entertainment, the interface could allow bands to invite their fans to be a part of the creative process. For example, a popular band could stage a contest in which they release this type of interface and encourage fans to create and publish their own versions. Fans would then upload their videos and a voting could take place, with the best version of the song ending up on the next album.

Another possibility is to use a similar interface as a music appreciation tool, allowing users to gain insight into the job of an arranger or producer without requiring extensive training or knowledge. The interface could allow users to explore the roles of instruments in different genres and more deeply appreciate the building blocks of music.

With minor changes, music teachers could design lessons based on the interface, in which each student creates and publishes an ‘arrangement’ of the song. This could be very powerful in highlighting the flexible and creative ways in which music can be structured, especially if this type of interface were created for classics of music history (how might it sound if “Let it Be” by the Beatles were written with a different piano pattern?). Technologies like this could help students form good habits and learn valuable listening skills. Students are asked to listen critically to individual instruments, understand underlying musical structures, and make their own aesthetic judgements about the music being played, subconsciously forming good habits for the future.

This project could also serve as a basis for several possible continuations or extensions. As a music education tool, a software like this could be built to help students interactively learn about different music genres by building arrangements themselves and learning the role of each instrument in that specific genre. With more coding, the software could also allow users to move parts of the song around and change the structure, like having the instrumental play before Chorus 2 instead of at the end. The concept could even be combined with virtual reality technology to bring the user into the rehearsal space and put them in the middle of the creative process.

As a professional musician, I have had the luxury of spending multiple years just practicing music and honing my craft. I now feel an obligation to use the knowledge and skills that I have acquired over several years to help bring music closer to those who haven't had this opportunity. Each new development in the digital world gives artists new possibilities to bring their audiences closer to the core of what music means to them.

Ultimately, despite its imperfections, this project illustrates the power of combining modern technology with teamwork and musical knowledge. The result brings the user a more intensive experience than a typical music video, while maintaining a sense of playfulness and fun. The user is asked to listen critically, delve deeply into the music, and make aesthetic decisions. If we musicians continue to give audiences the chance to interact, create, live and breathe in our music, we may just create a world that is more willing to listen.

Sources

Spotify Company Info. (2020). Retrieved from https://newsroom.spotify.com/company-info/ on 01.06.2020

“Dream vs. Reality - The Know No Better Experience.” 2017. Song by Major Lazer, *Eko*, eko.com/v/major-lazer?autoplay=true. Accessed on 01.06.2020

“Carly Rae Jepsen - Run Away With Me.” 2015. Song by Carly Rae Jepsen, *Eko*, eko.com/v/carly-rae-jepsen-run-away-with-me?autoplay=true. Accessed on 01.06.2020

“Do Not Touch.” 2013. Song by Light Light, donottouch.org. Accessed on 28.05.2020

Groovepad. (2020). Easybrain Ltd (Version 1.6.0) [Mobile application software]. Retrieved from http://itunes.apple.com on 15.05.2020.

Figure. (2019). Propellerhead Software AB (Version 3.1) [Mobile application software]. Retrieved from http://itunes.apple.com on 15.05.2020.

Link to Website with Interface: http://hagelslag.band/Tony_BA/layout.php[2]

[2] Recommended use with Mozilla Firefox; there are still significant lag issues in Chrome and Safari.

Additional Materials: Song Lyrics, Microphones and Score

Original	English Translation
Wie verrückt ist diese Welt? Wie sie sich noch zusammenhält? Ja, es steht viel auf dem Spiel Kein anderer Ort, wo liegt das Ziel? Wer uns retten kann Wir sind hier, wir sind laut Unsere Zukunft schon verbaut All die Orte, unerreicht Mir fehlen die Worte Wer uns retten kann So wie wir sind, nur wir uns selbst So wie wir sind Nur wir uns selbst, so wie wir sind, Nur wir uns selbst Der Straßenlärm lacht wie der Tod Meinst du wir schaffen es Bis zum Mond? Alle Raketen sind startbereit Das Feuerwerk geht gleich los Wer uns retten kann So wie wir sind, nur wir uns selbst So wie wir sind Nur wir uns selbst, so wie wir sind, Nur wir uns selbst Würdest du es glauben? Die Wellen stauen sich Würdest du es glauben? In der Ferne, Land in sicht Würdest du es glauben? Die Wolken, sie stauen sich Ich glaub dir nicht Ich glaub dir nicht Siehst du die Sterne kreisen?	How crazy is this world? How does it hold itself together? With so much riding on this game, There's nowhere else; what is our goal? Who can save us? We are here, we are loud We're blocked from our future All the places we've never reacht I'm speechless Who can save us? Just as we are, only us, Just as we are Only us, just as we are, Only us The noisy traffic laughs, like death Do you think we will make it to the moon? All the rockets, ready for launch The fireworks are about to start Who can save us? Just as we are, only us, Just as we are Only us, just as we are, Only us Would you believe it? The waves are building up Would you believe it? In the distance, land in sight Would you believe it? The clouds are building up I don't believe you I don't believe you Do you see the circling stars?

Table 1 - Instruments and Microphones

Instrument	**Microphone**
Bass Drum inside	Electrovoice RE20
Bass Drum outside	Neumann U87
Snare Drum	SM7b
Overhead (L+R)	Rode NT 55
Stand Tom	Sennheiser MD 421
Bass	Direct Input
Fender Rhodes	Direct Input
Acoustic Guitar	Neumann U87 + Neumann KM184
Lead Vocals	Shure SM57
Trumpet	Sennheiser MD 421
Tenor Saxophone	Sennheiser MD 421

Siehst du die Sterne Kreisen

John Winston Berta
Arr. Tony Williams

Intro

♩ = 90

Gm

2

3

4

Voice

Trumpet V1

Trumpet V2

Sax V1

Sax V2

Gm7 High, sparse notes

Guitar V1

p

Gm7 Strumming, arpeggiate Chords

Guitar V2

mp

Gm7

Rhodes V1

mp

Gm7

Rhodes V2

mp

Gm7

Bass V1

mp

Gm7

Bass V2

mp

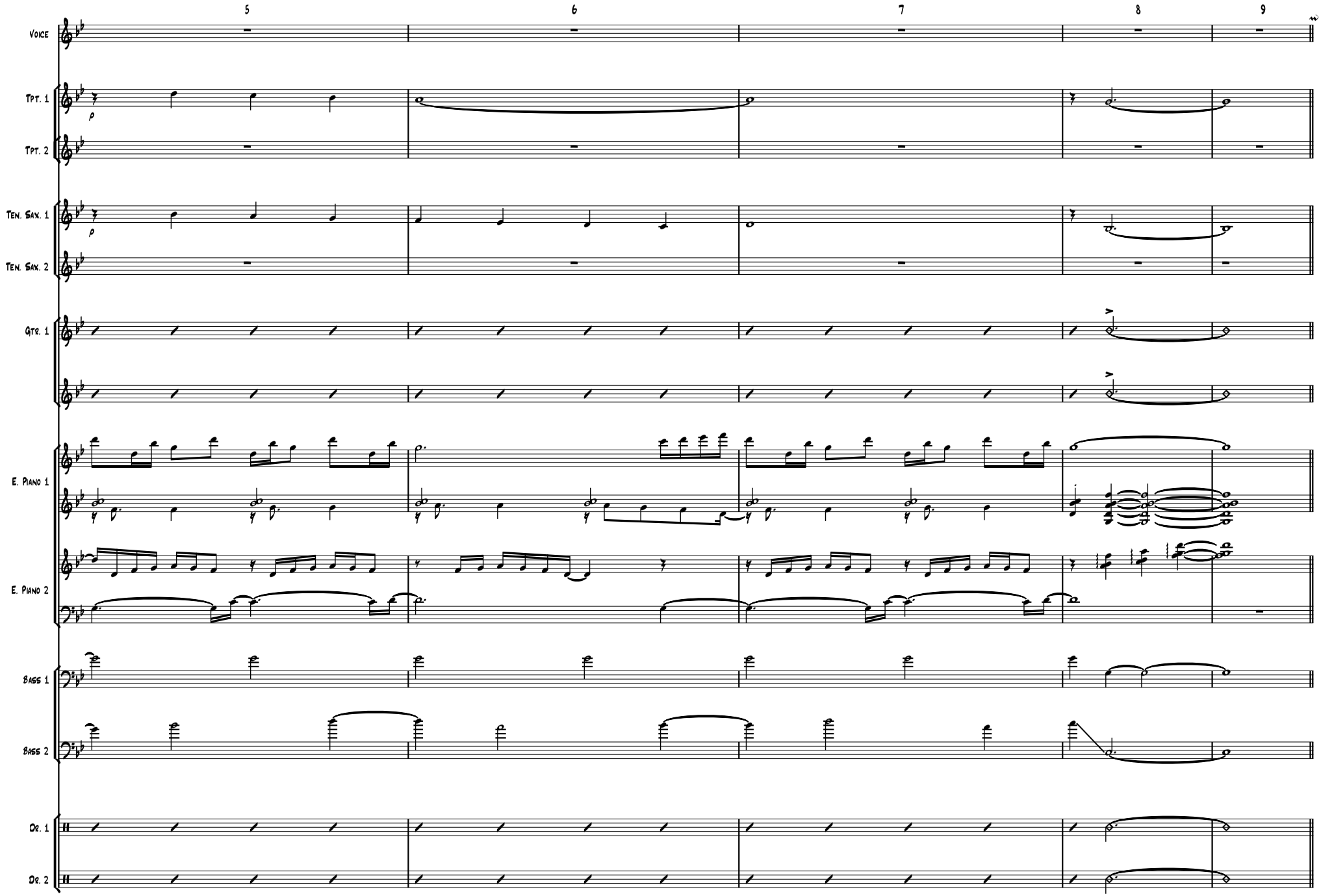
Very light cymbal stiff

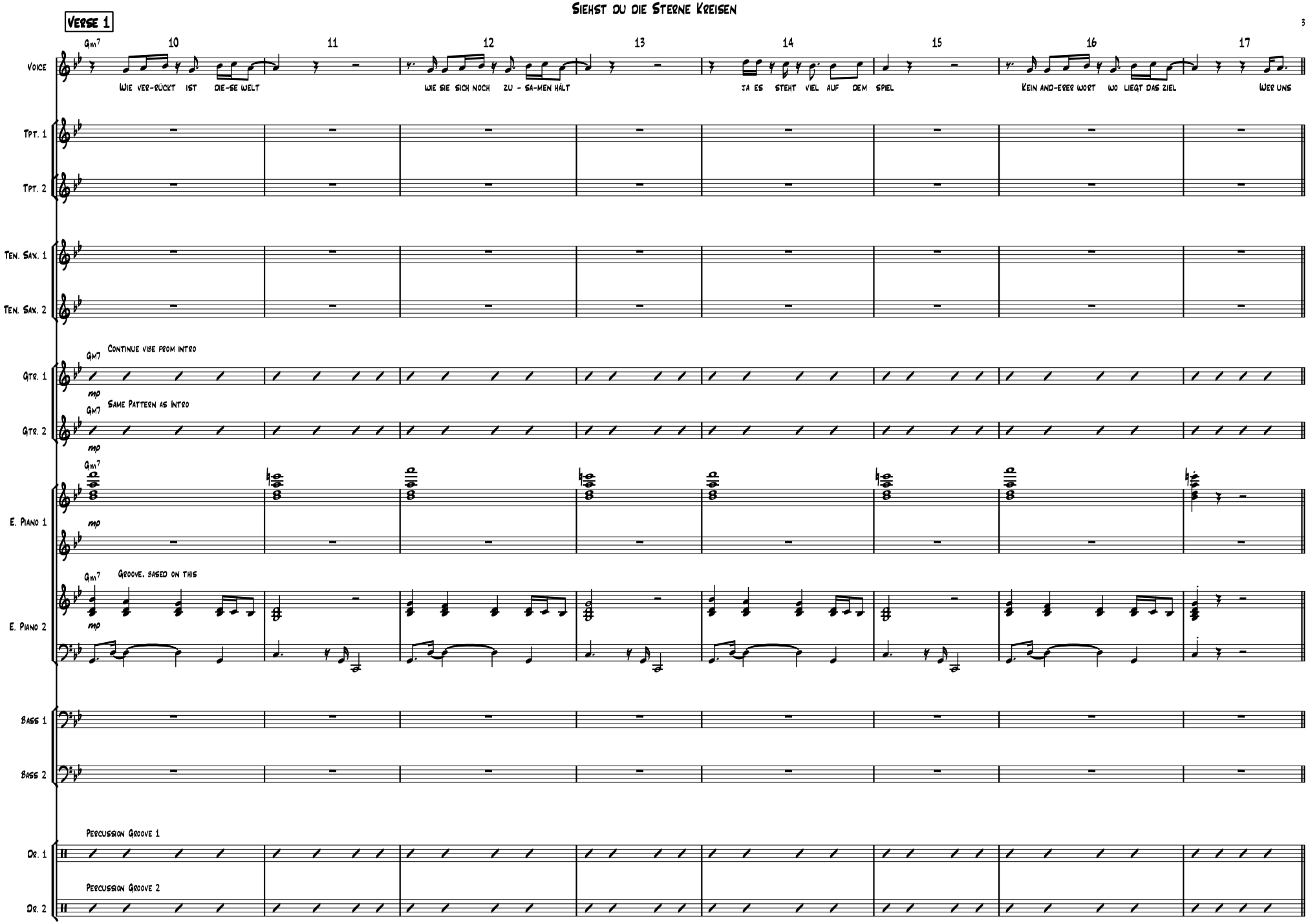
Drums V1

Very light cymbal stuff

Drums V2

Siehst du die Sterne Kreisen




Verse 1
Gm7
10
11
12
13
14
15
16
17
Voice
Wie ver-rückt ist die-se welt
wie sie sich noch zu - sa-men hält
ja es steht viel auf dem spiel
Kein and-erer wort wo liegt das ziel
wer uns
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Gtr. 1
Gm7
Continue vibe from intro
mp
Gtr. 2
Gm7
Same Pattern as Intro
mp
E. Piano 1
Gm7
mp
E. Piano 2
Gm7
Groove, based on this
mp
Bass 1
Bass 2
Dr. 1
Percussion Groove 1
Dr. 2
Percussion Groove 2

Siehst du die Sterne Kreisen

Verse 2

Voice: re-tten kann | Wer uns_ re-tten kann | Wir sind hier | Wir sind laut | Uns - ere zu - kunft schon ver-saut

Tpt. 1: mp

Tpt. 2: mp

Ten. Sax. 1: mp

Ten. Sax. 2: mp — Light Licks between vox

Gtr. 1: Ebmaj7 Arpeggiate Chords | Gm7 Dry, percussive 16ths - single notes

Gtr. 2: Ebmaj7 Medium Energy Strumming | Gm7 Like Intro, but more dry

E. Piano 1: Light, Sexy licks - example below | Gm7 Like this but heavier groove

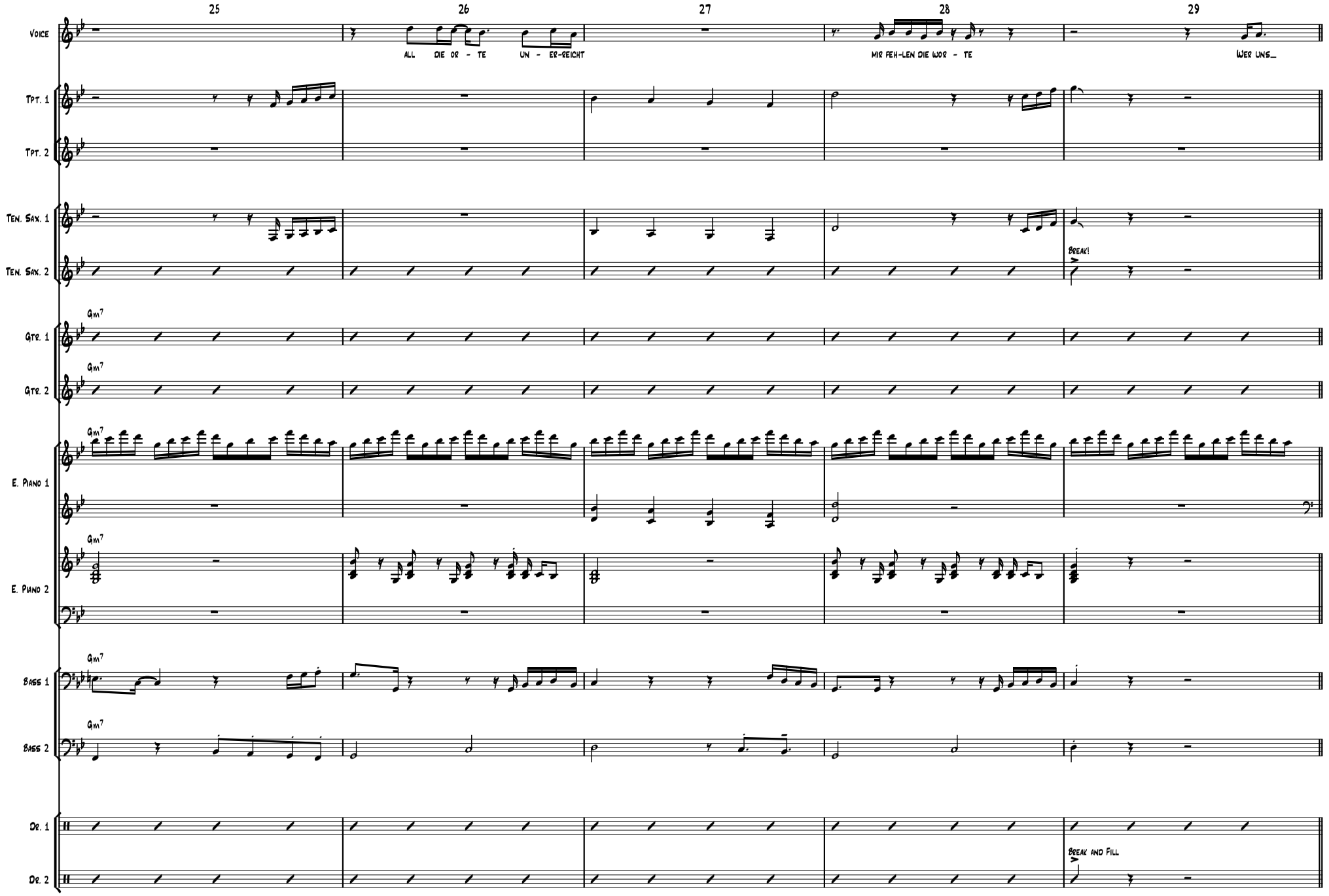
E. Piano 2

Bass 1: mp

Bass 2: G Pedal | Gm7 Soft Subby Sound, vary minimal

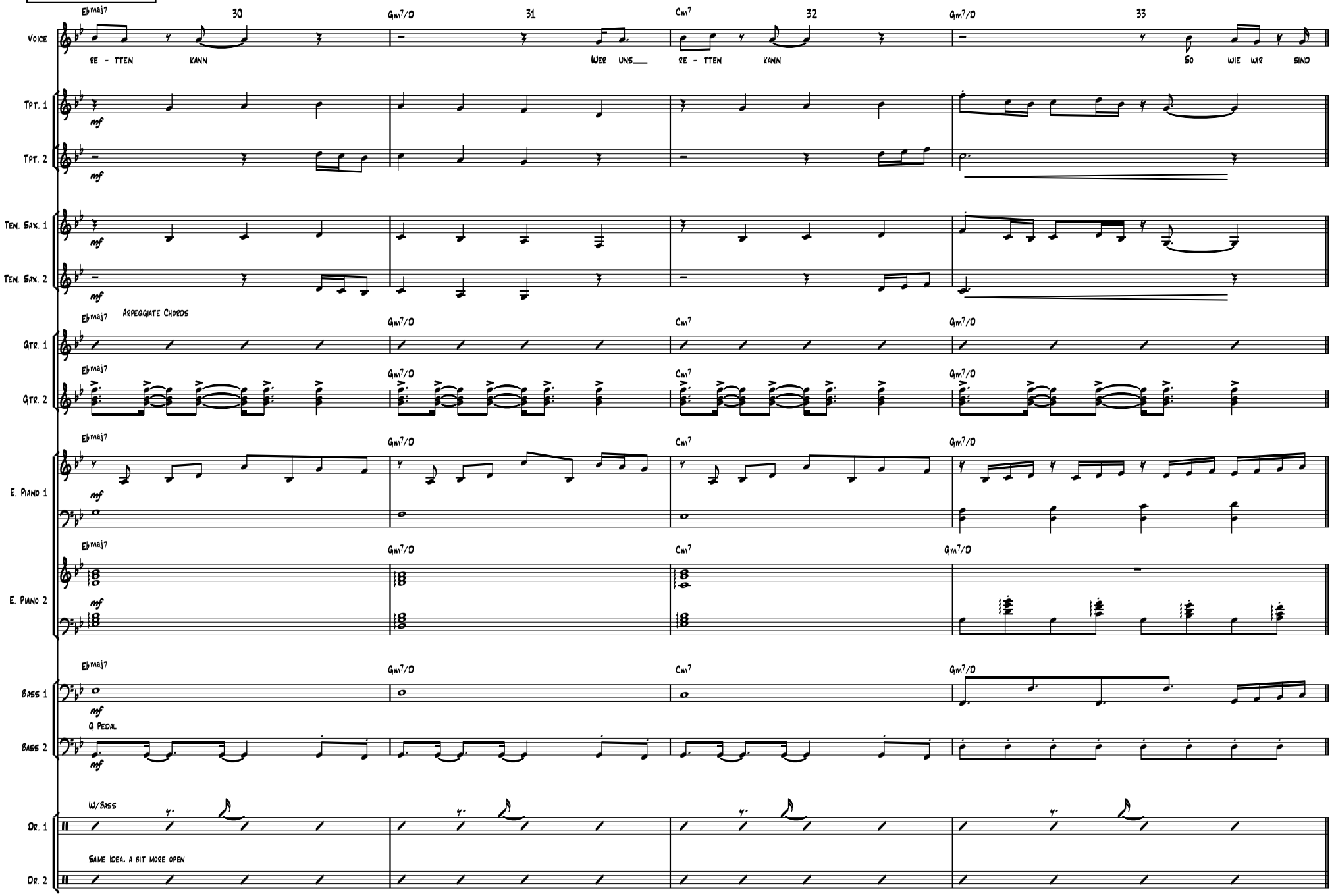
Dr. 1: Very minimal, straight 4/4 | Same Groove

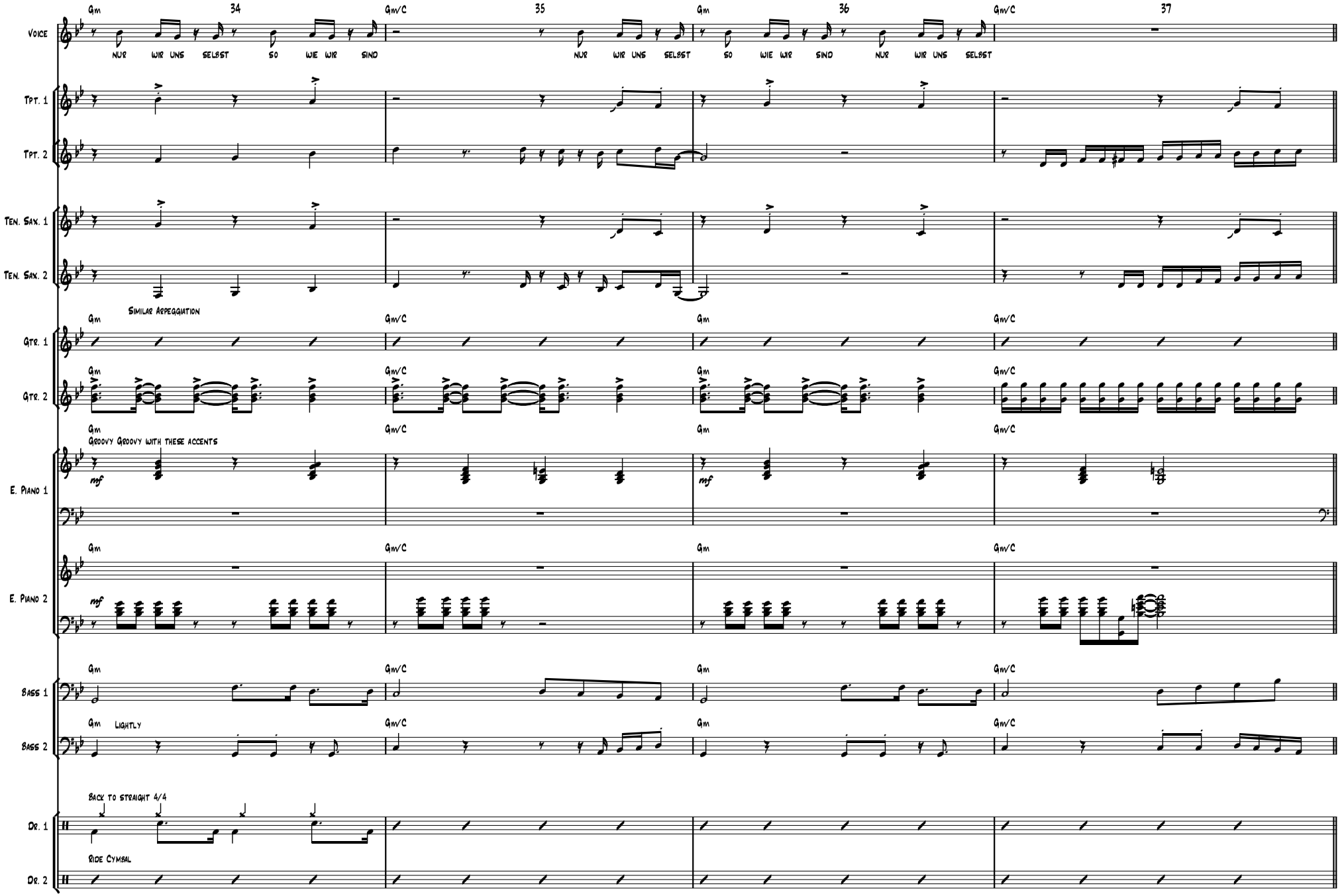
Dr. 2: Funky 16ths, with snare accents | Same Type of Groove


25
26
27
28
29
Voice
All die or - te un - er-reicht
mir feh-len die wor - te
wer uns_
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Break!
Gtr. 1
Gtr. 2
Gm7
E. Piano 1
E. Piano 2
Bass 1
Bass 2
Dr. 1
Dr. 2
Break and Fill

Siehst du die Sterne Kreisen

Prechorus / Chorus 1




Gm
34
Gm/C
35
Gm
36
Gm/C
37
Voice
NUR WIR UNS SELBST SO WIE WIR SIND
NUR WIR UNS SELBST
SO WIE WIR SIND
NUR WIR UNS SELBST
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Similar Arpeggiation
Gtr. 1
Gtr. 2
Groovy Groovy with these accents
mf
E. Piano 1
E. Piano 2
Bass 1
Bass 2
Lightly
Back to straight 4/4
Ride Cymbal
Dr. 1
Dr. 2

Siehst du die Sterne Kreisen

Verse 3

Gm7 38 39 40 41

Voice: der stra - ßen-lärm lacht wie der tod meinst du wir scha-ffen's noch bis zum mond

Tpt. 1 — mp — f

Tpt. 2 — f

Ten. Sax. 1 — mp — f

Ten. Sax. 2 — f

Similar Strumming to Verse 1. but more energy

Gtr. 1 — Gm

Gtr. 2 — Gm — Single Notes

E. Piano 1 — Gm7 — mp — mf

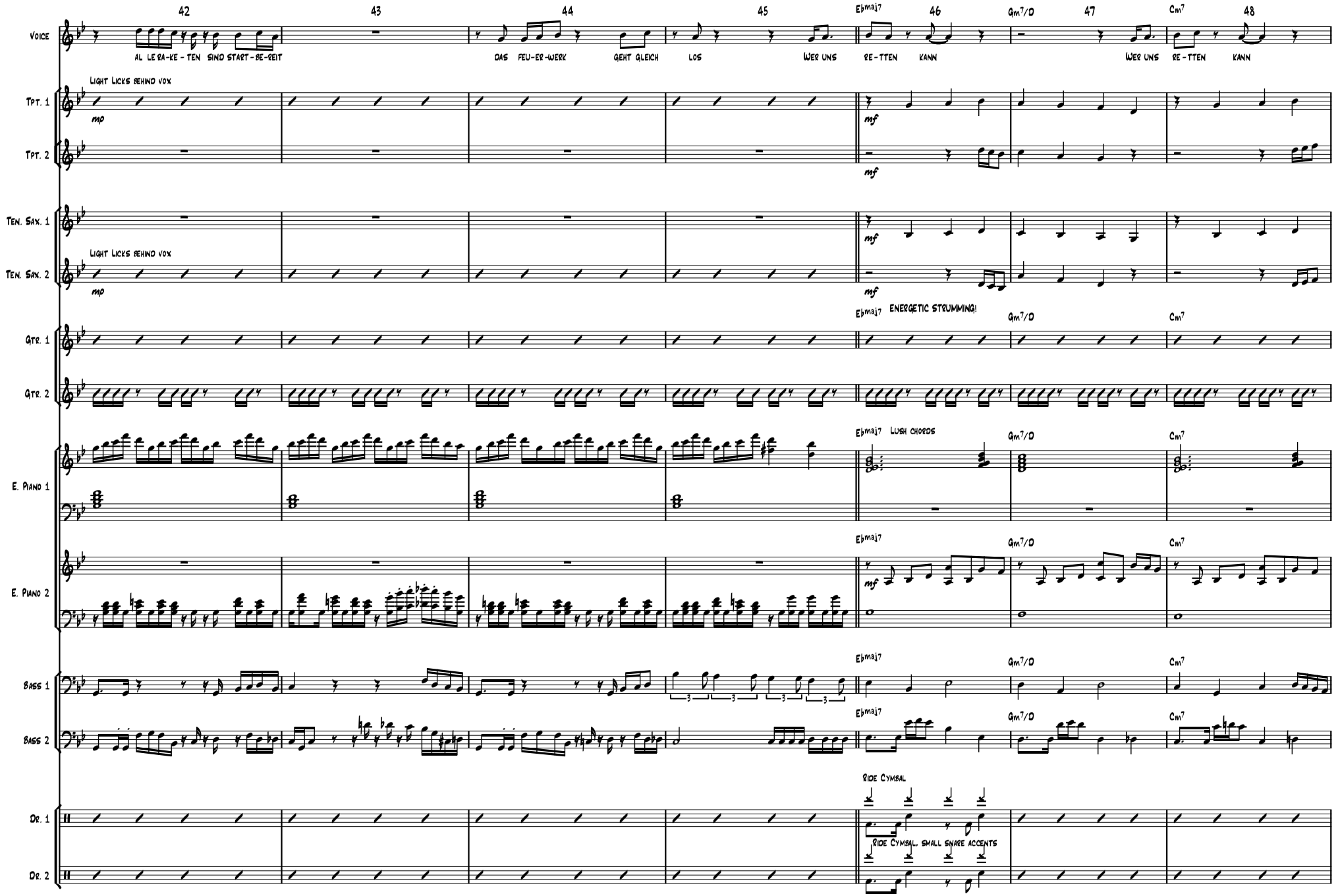
E. Piano 2 — Gm7 — mp — Groovy Moderange vibe

Bass 1 — Gm7

Bass 2 — Gm7

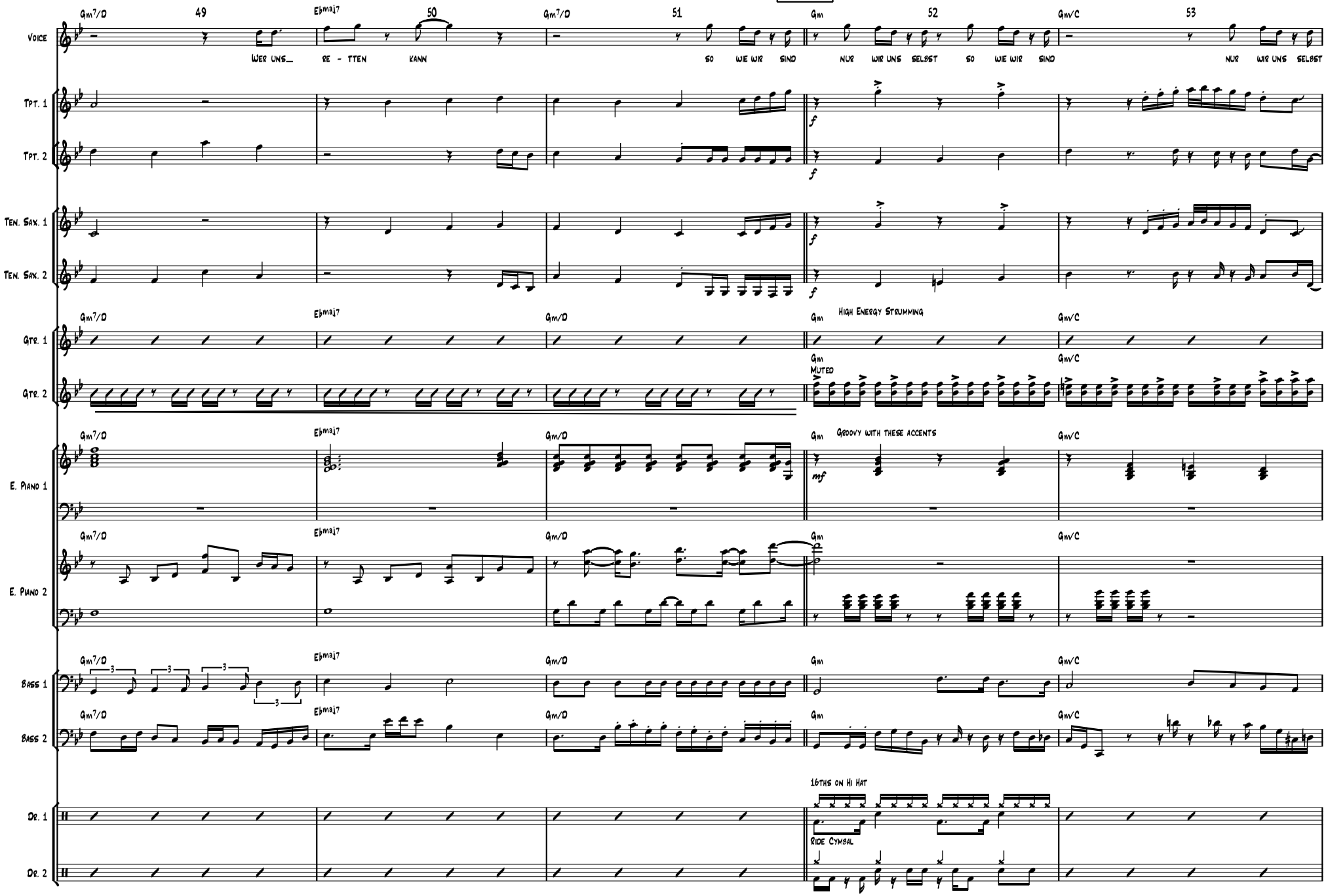
Dr. 1 — Snare

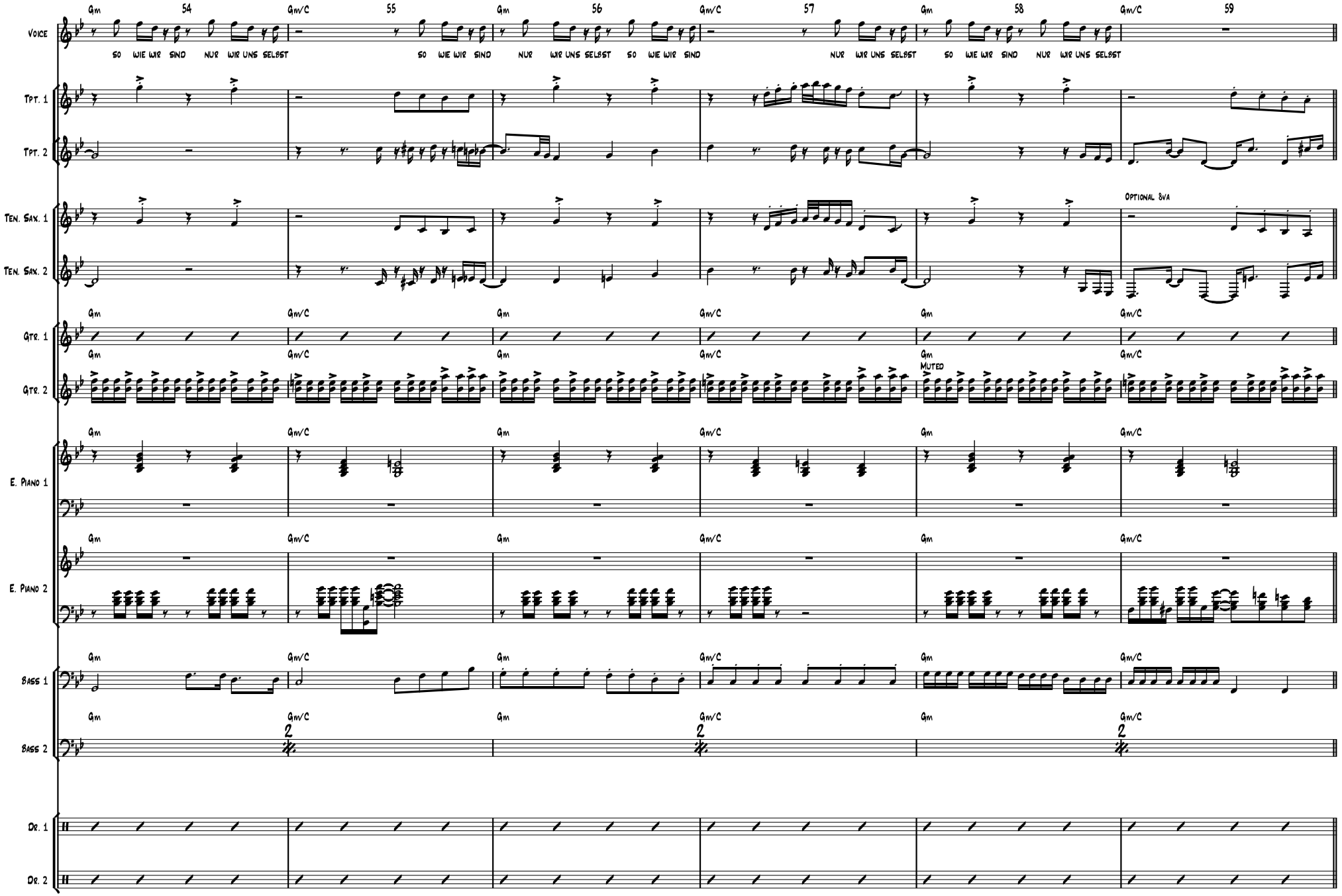
Dr. 2 — Small Fill — Groove like Verse 1 - Funky Snare Accents


42
43
44
45
Ebmaj7
46
Gm7/D
47
Cm7
48
Voice
AL LE GA-KE - TEN SIND START-BE-REIT
DAS FEU-ER-WERK GEHT GLEICH LOS
WER UNS RE-TTEN KANN
WER UNS RE-TTEN KANN
Tpt. 1
Light Licks behind vox
mp
mf
Tpt. 2
mf
Ten. Sax. 1
mf
Ten. Sax. 2
Light Licks behind vox
mp
mf
Gtr. 1
Ebmaj7 ENERGETIC STRUMMING!
Gtr. 2
E. Piano 1
Ebmaj7 Lush chords
E. Piano 2
Ebmaj7
mf
Bass 1
Ebmaj7
Bass 2
Ebmaj7
Dr. 1
Ride Cymbal
Ride Cymbal, small snare accents
Dr. 2

Siehst du die Sterne Kreisen

Chorus 2




Gm
54
Gm/C
55
Gm
56
Gm/C
57
Gm
58
Gm/C
59
Voice
so wie wir sind nur wir uns selbst
so wie wir sind nur wir uns selbst
so wie wir sind nur wir uns selbst
so wie wir sind nur wir uns selbst
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Optional 8va
Gtr. 1
Gtr. 2
Muted
E. Piano 1
E. Piano 2
Bass 1
Bass 2
Dr. 1
Dr. 2

Siehst du die Sterne Kreisen

Bridge

Em7(♭5) 60 Ebmaj7 61 Em7(♭5) 62 Ebmaj7 63

Voice: WÜR - DEST DU ES GLAU - BEN DIE WOL - KEN SIE STAU - EN SICH

Tpt. 1 *f*

Tpt. 2 *f*

Ten. Sax. 1 *f*

Ten. Sax. 2 *f*

Gtr. 1: ONTINUE HIGH ENERGY STRUMMING

Gtr. 2

E. Piano 1: BUILD ENERGY OVER THE WHOLE 16 BARS *f*

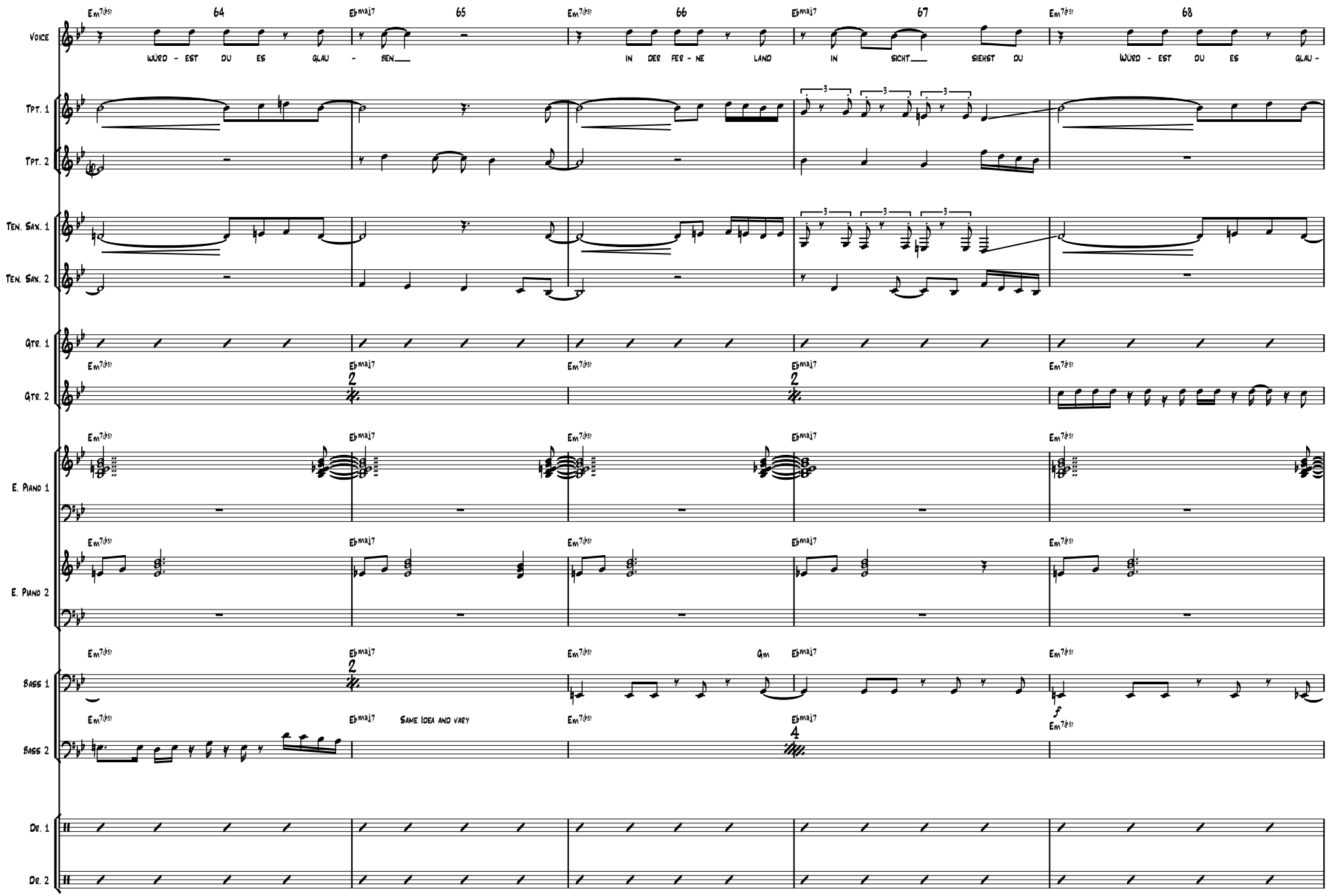
E. Piano 2: BUILD ENERGY OVER THE WOLE 16 BARS *f*

Bass 1: BUILD ENERGY OVER THE WHOLE 16 BARS *f*

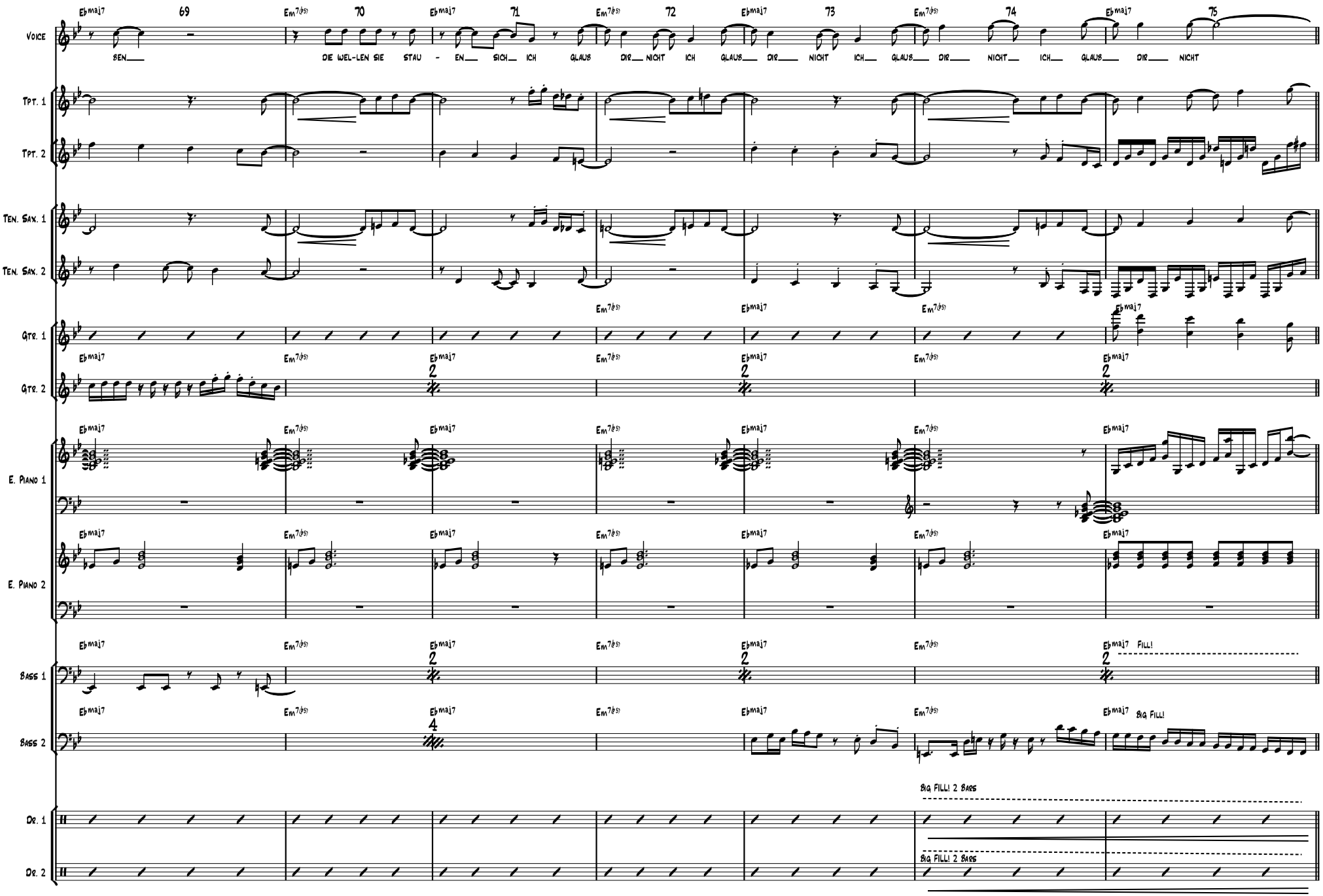
Bass 2: BUILD ENERGY OVER THE WHOLE 16 BARS *f*

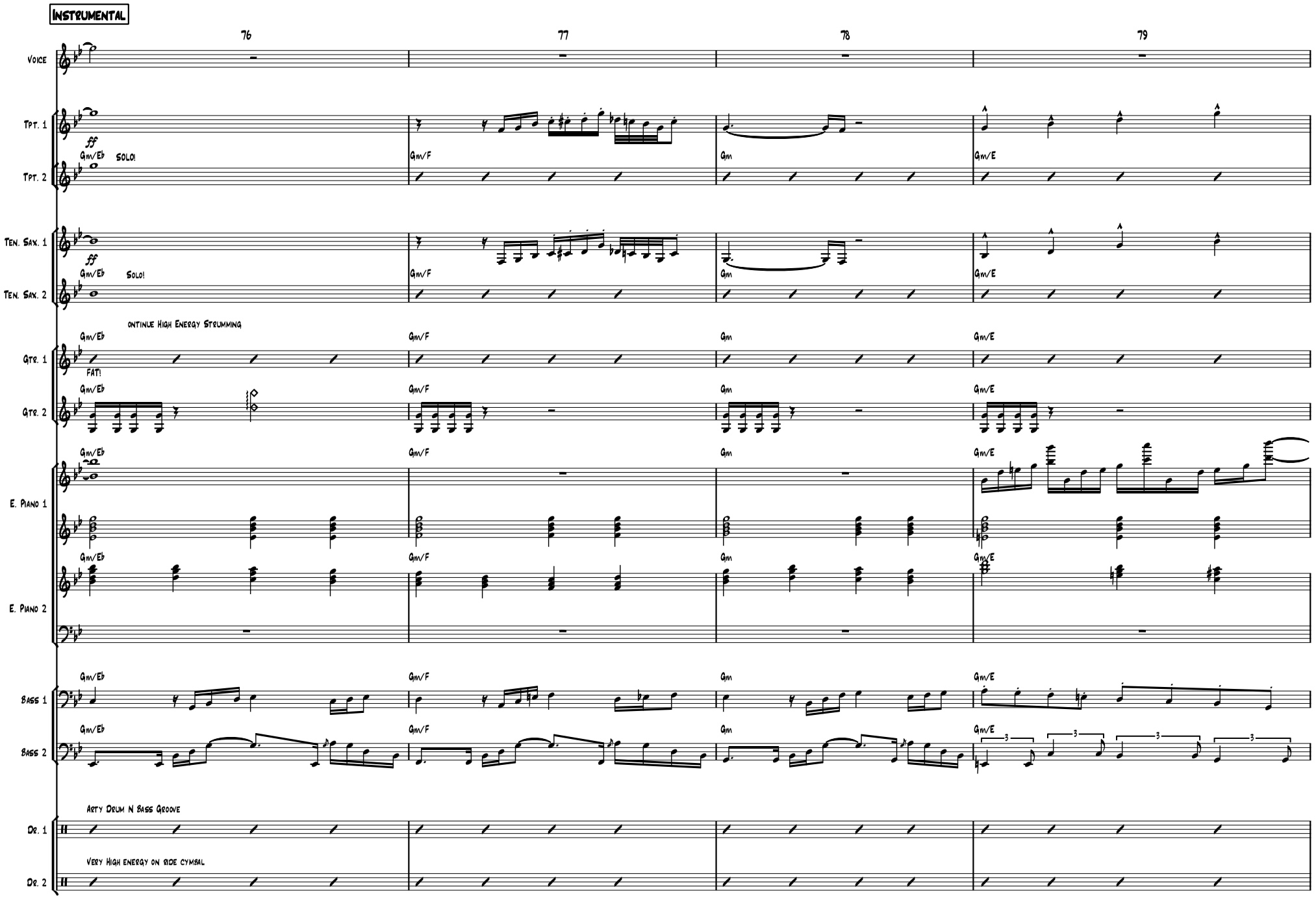
Dr. 1: INTENSE, OPEN HI HAT GROOVE

Dr. 2: LIKE VERSION 1. BUT MORE FILLS

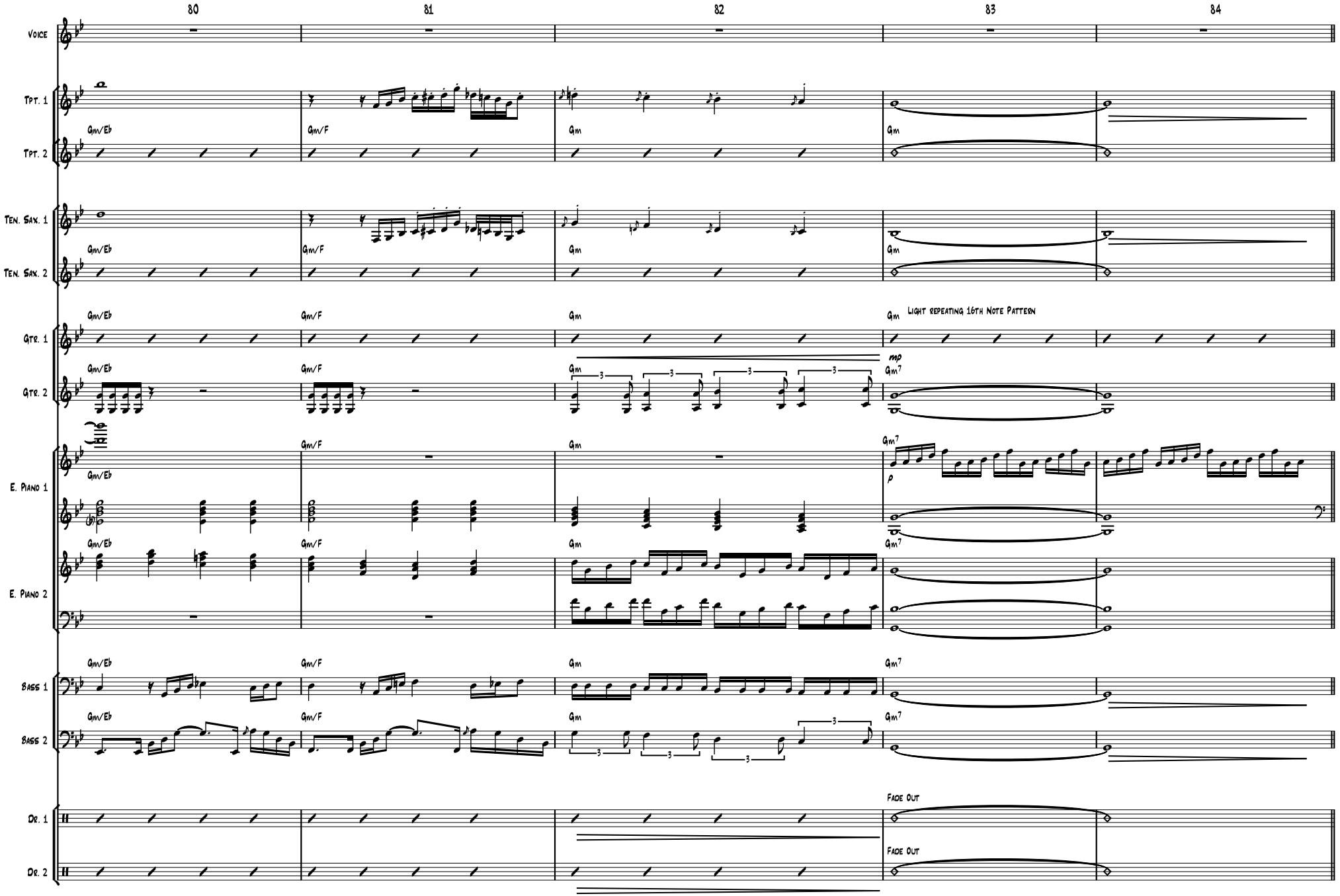

Em7(♭5)
64
Ebmaj7
65
Em7(♭5)
66
Ebmaj7
67
Em7(♭5)
68
Voice
WÜRD - EST DU ES GLAU - BEN
IN DER FER - NE LAND
IN SICHT
SIEHST DU
WÜRD - EST DU ES GLAU -
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Gtr. 1
Gtr. 2
E. Piano 1
E. Piano 2
Bass 1
Bass 2
Gm
SAME IDEA AND VARY
Dr. 1
Dr. 2

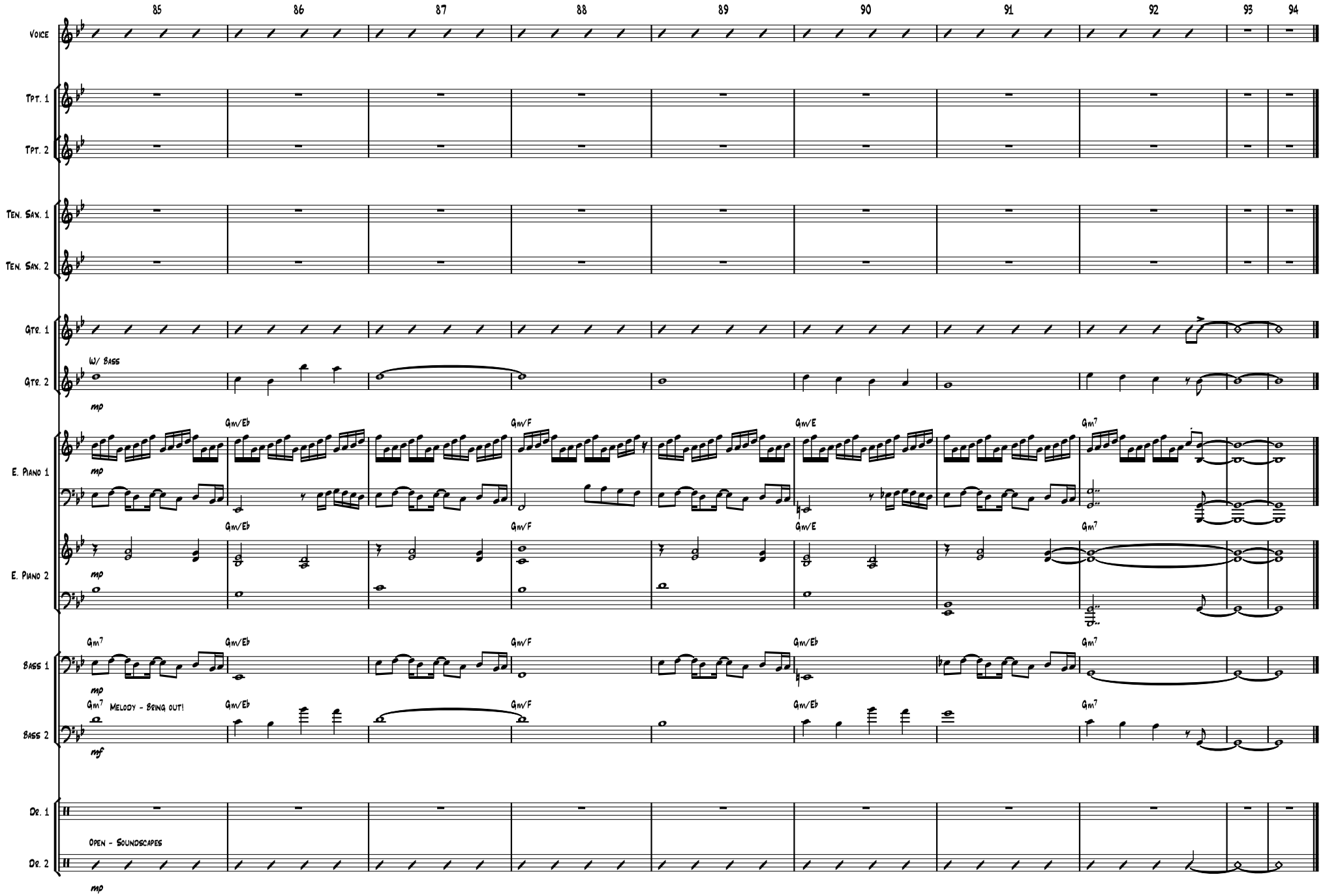
Siehst du die Sterne Kreisen




INSTRUMENTAL
76
77
78
79
Voice
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Gtr. 1
Gtr. 2
E. Piano 1
E. Piano 2
Bass 1
Bass 2
Dr. 1
Dr. 2
ff
Gm/Eb
Gm/F
Gm
Gm/E
SOLO!
Solo!
ontinue High Energy Strumming
FAT!
Arty Drum N Bass Groove
Very High energy on ride cymbal

Siehst du die Sterne Kreisen




Outro
Improvise - "Siehst du die sterne Kreisen"
85
86
87
88
89
90
91
92
93
94
Voice
Tpt. 1
Tpt. 2
Ten. Sax. 1
Ten. Sax. 2
Gtr. 1
Gtr. 2
W/ Bass
mp
E. Piano 1
E. Piano 2
Gm/Eb
Gm/F
Gm/E
Gm7
Bass 1
Bass 2
Melody - Bring out!
mf
Dr. 1
Dr. 2
Open - Soundscapes

Williams, Anthony
Name, Vorname

42984
Matrikelnummer

Eidesstattliche Versicherung

Ich versichere, dass ich die vorliegende Arbeit selbständig verfasst, andere als die angegebenen Quellen und Hilfsmittel nicht benutzt und alle sinngemäß oder wortwörtlich aus anderen Quellen übernommenen Stellen kenntlich gemacht habe, und die Arbeit in gleicher oder ähnlicher Form noch keiner Prüfungsbehörde vorgelegen hat.

Hannover,
..Ort, Datum

Unterschrift