							DOTO THE CHE	DOTO THE CHE		IO TUFFOF	IC HODITONTAL	
ACTION 1	DESCRIPTION OF ACTION	MUSIC CUE AS A RESULT FROM ACTION	LENGTH OF CUE	INSTRUMENTATION OF CUE	DESCRIPTION OF MUISCAL CHANGE / OBSERVATION	CAUSATION OF MUSICAL CHANGE	DOES THE CUE CROSSFADE TO/FROM OTHER CUES?	DOES THE CUE LAYER ONTO EXISTING CUES?	DOES THE CUE LOOP?	IS THERE VARIATION WHEN THE CUE LOOPS?	IS HORIZONTAL RESEQUENCING USED?	IS THE TRANSITION QUANTIZED?
ACTION 1 ACTION 2	Full playthrough Watch intro cinematics, observe non-interactive music cues	Cue 1	1:47	string orchestra	Long sustained minor chords, sigh-motif in upper strings.	Starting the cinematic.	no	no	по	no	Yes, leads into Cue 2 but isn't interactive.	yes
		Cue 2		drums	Lengthy drum repetition while soldiers prepare to mobilize.	Change of scene to cinematic of soldiers preparing to mobilize.	no	по	по	no	No, the music stops.	no
		Cue 3		drums and strings	Same drum pattern as Cue 3 with additional string parts.	Change of scene to cinematic of soliders mobilizing. Change of scene to cineamtic of cryo	no	no	no	no	No, the music suddenly fades to silence mid- phrase. No, the music	no
ACTION 3	Walk around first playable room (cryo room) and see if any music will begin. I found a skull and collected it.	Cue 4	0.22	tenor choir	Tenor choir chanting thematic melody.	Change of scene to cineamtic of cryo room where master chief wakes up.	no	no	no	no	stops.	no
		Drum Sequence. More observation is required to understand if the Drum Sequence is a single cue, or if it is lots of different										
		being randomly sequenced to create a			Driving drum rhythm continues for several phrases periodically							
ACTION 4	Continue playing until the first adaptive music is triggered, observe the music without progressing. Re-observing Cue S. The variation of the repetition raises many questions about how many different layers or	non-reptitive pattern. The following actions investigate.		drums and metalic percussion	concluding with a rhythmic resolution. Music fades out after 5 minutes. Further investigation required to understand how the Drum Sequence is functioning.	The cryo assistant running up to the door and exploding.						
ACTION 5	segments are being used, and if the order of them is random.	The Drum Sequence is			The variation of the Drum Sequence is somehow arranged in much smaller chunks or layers that are being randomly sequenced.							
	Re-observing Cue 5 again. It is clear from Action 5 that Cue 5 is actually a bunch of smaller segments or layers. I need to collect more recordings to see if any patterns emerge from how the music is being put together. I am transcribing the music with a shorthand notation so I can	The Drum Sequence is broken up into smaller cues which I've listed below. To understand how I've figured this out		refer to the document in the	I've conducted a thorough analysis of the Drum Sequence from multiple actions and have discovered exactly how it is created by an							
ACTION 6	see where patterns emerge. That transcription will be referenced in the thesis.	see the document referenced in the thesis.			I've conducted a thorough analysis of the Drum Sequence from many properties and the properties of the Drum Sequence from assembly of smaller segments. See the document referenced in the thesis if you want to see the analysis for figuring this out. In the document for understanding the drum sequence, Cue 5 is the	Cue 5 is always and only played as the						
		Cue 5		percussion	orignt green segment.	Sequence. Cue 6 is always and only played as the segment following Cue 7.	no no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 7		drums and metallic percussion drums and metallic percussion	In the document for understanding the drum sequence, Cue 5 is the yellow segment. In the document for understanding the drum sequence, Cue 5 is the light blue segment.	Part of the Drum Sequence. Part of the Drum Sequence.	no no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 9	0:08	drums and metallic percussion drums and metallic	In the document for understanding the drum sequence, $\mbox{\it Cue}~5$ is the teal segment.	Part of the Drum Sequence.	no	no	no	no	yes	Yes, quantized to each segment.
ACTION 7	Attempt to block the cryo-helper from reaching the exploding door to confirm that his proximity to the door is the trigger.	Cue 10	0:08		In the document for understanding the drum sequence, Cue 5 is the purple segment. I successfully blocked the cryo-helper, confirming that it is him getting to the door that causes the explosion to occur and the music to begin.	Part of the Drum Sequence.	no	no	no	no	yes	Yes, quantized to each segment.
AUTON 7	une unggen.	There were several musical changes that occured as I progressed.										
ACTION 8	Continue through the game until the next musical change occurs, then stop and observe it without continuing.	The Drum Sequence seemed to continue, there was a string stinger and additional vocal segments.			The different musical things that I identified as occurring in Action 8 are broken up into shorter segments that are horizontally resequenced. Further investigation is required to understand how they connect and how many Cues there are. The music eventually fades out after 5 minutes.	Encountering the elite enemy standing in the doorway.						
ACTION 9	Re-observation of Action 8 to investigate how the music is horizontally resequenced. This time I am waiting for the Drum Sequence to fade out so I can confirm exactly what			strings		Openning the door to see the Elite		Yes, if the Drum Sequence is still happening.	00			
	musical material is triggered here. Continue forward from Action 9 to see where the additional music that I observed in Action 8 is triggered. Continue forward and show next cinematic.	Cue 11 (stinger)	0.02		A dissonant string swell. If the music fades out before openning the door and triggering Que 11 additional music will be triggered until the player reaches the bridge and triggers the 2nd cinematic. The cinematic has 2 Cues, 12 and 13.	enemy.	no	nappening.	no	no	no	no
ACTION 10	Continue forward and show next cinematic.	Cue 12	0:52	strings and brass	12 and 13. Melodic and slow music that ramps up into more intense music when the ship takes fire.	Start of 2nd cinematic.	Yes, crossfades with Cue 13.	no	no	no	no	no
		Cue 13 This action revealed that	1:08	strings, winds, vocals	Melodic and expressive voice and wind melodies of sustained strings.	Midway through 2nd cinematic when Keyes declares he is going to go down with the ship.	Yes, crosffades with Cue 12.	no	no	no	no	no
	Re-observation of Action 8, this time without waiting for	this is a second sequence. It involves many of the same cues from the Drum Sequence. I will call this the Drum										
ACTION 11	the music to fade out like I did in Action 9. I need to get a second video to cross-reference with Action 8 to identify where each music segment begins and ends and how they relate to the Drum Sequence.	I will call this the Drum Sequence (Part 2). Below are the new cues introduced.										
		Cue 14 Cue 15		drums, metallic percussion drums, tenor choir	Matallic percussion strikes leading to the resolution phrase. Tenor choir singing a thematic melodic development over a drum loop.	Part of the Drum Sequence (Part 2). Part of the Drum Sequence (Part 2).	no no	no	no no	no no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 16	0:16	exotic sounding female voice, drums exotic sounding female	Exotic vocal melody, improvisational style of singing.	Part of the Drum Sequence (Part 2).	no	по	no	no	yes	Yes, quantized to each segment.
		Cue 17 Cue 18		voice, drums	Exotic vocal melody, improvisational style of singing. This is similar to Cue 5, but the measures are reversed. It begins with clicks in the first half and the second half is less active.	Part of the Drum Sequence (Part 2). Part of the Drum Sequence (Part 2).	no	no	no	no	yes	Yes, quantized to each segment.
ACTION 12	Moving into 2nd cinematic while Drum Sequence (Part 2) is playing to see how the music transitions into Cue 12.	Music fades out when walking onto the bridge before the 2nd cinematic begins.										
ACTION 13	Continue forward after 2nd cinematic, observe new music cues.	Cue 19	77	bass	A low drone that sustains and rearticulates. I'm not sure where the loop is, it could be every articulation, it could be a random grouping of re-articulations. After 5 minutes the loop fades out.	Ending the 2nd cinematic.	no	по	yes	no	no	no
	Continue from Action 13 after drone has faded out to see when the next music cue occurs, stop there and observe it. I also died and respawned to see if music would start. It didn't. I continued forward looking for the next music	Ominous Strings. More observation required to understand if this is another random sequencing of smaller segments or if it is a standalogue our.			Low eerie string naccanes with robble or the first	Progressing forward in						
ACTION 14	It. I also died and respawned to see if music would start. It didn't. I continued forward looking for the next music Cue.	sequencing of smaller segments or if it is a standalone cue.		strings, low winds	Low eerie string passages with subtle melodies. I noticed looping sections that seem to occur in a random order. The music fades out after 5 minutes. To uncover the different segments within the Ominous String Securiors in the best before the segments within the Ominous String.	Progressing forward just past the elite whose back is initially facing you in a narrow hallway.						
		I found the Ominous Strings are their own sequence, similar to the			To uncover the different segments within the Ominous String Sequence I took the audio from Actions 14 and 15 and put them into a DAW. I analyzed the audio, seperated each section into churiks, and checked for patterns to make sure the segments were consistent. Sometimens the individual segments have a longer tall that sustains before the next cue enters. I believe this is achieved with a nardom ² startf delaw		The entire Ominous					
ACTION 15	Re-observe the Ominous String Sequence to see if the music happens the same way twice, or if the Ominous String Sequence is split up into smaller segments and randomly sequenced.	previous sequences. Below are the cues that belong to the Ominous Strings Sequence			with a random "start" delay. To see how I split the track up, see the referenced image in the thecis		Strings Sequence crossfades with the next sequence identified in Action 17					
ACTION IS	тапостну вециение.	Cue 20	77	bass	There is a low bass pedal that sustains through the entire sequence. I believe it is being used as a loop to blend the other Ominous String cues in and out without there being a noticeable break in the sound.	Progressing forward just past the elite whose back is initially facing you in a narrow hallway.	no	Is the base layer for Cues 21, 22 and 23.	yes	no	no	no
			c.a. 0:04 c.a. 0:12	strings, low winds	A short wind passage that takes three steps down. A climactic phrase that swells up with an ascending melody, and then winds back down.	Part of the Ominous Strings Sequence. Part of the Ominous Strings Sequence.	no	Yes, layers onto Cue	no	no	yes	yes yes
	Colombia the and of the Cod december and antibus	Cue 23	c.a. 0:08	strings	then winds back down. A softer melodic phrase that is more expressive than Cue 20, and less climactic than Cue 21.	Part of the Ominous Strings Sequence. Part of the Ominous Strings Sequence.	no	Yes, layers onto Cue 20.	no	no	yes	yes
ACTION 16	Go back to the end of the 2nd cinematic and continue forward to make sure there weren't any cues that didn't trigger because I had let Cue 18 fade out before proceeding to the Ominous String Sequence.	Observation about Cue 19.			I noticed that Cue 19 cuts off in the cafeteria.							
		It seems another collection of cues were used to create the sequence. Similar to the previous sequences. Additional observations										
		Additional observations are required to confirm this and identify what is happening. I will refer to this as the Boarding										
	Continue past the Ominous String Sequence to see when the next musical change is triggered and then observe it	this as the Boarding Sequence since it happens when enemies are seen boarding the		simplified drums, synthetic	Drums began to play accompanied by synth plucks. On first listen I could identify phrases being reused but I could not identify a pattern regarding their sequence. Additional observation required.							
ACTION 17	without progressing.	I have analyzed the		plucks	regarding their sequence. Additional observation required.							
		Boarding Sequence by putting the audio from Actions 17 and 18 into a DAW and finding repeating musical phrases. I identified										
		where each phrase begins and ends and made sure that my segmentation of the music is consistent.										
ACTION 18	Re-observe the Boarding Sequence. Analyze how the segments are organized into individual cues.	Below are the Cues from the Boarding Sequence.		cimplified drums conthetic	The Boarding Sequence ends after 5 minutes with a tag, it doesn't fade to silence. The control of local majority majority ones up a fifth but birds and then walke	Part of the Boarding Sequence, always the first cue to play from the boarding	Yes, crossfades with the Ominous Strings					
		Cue 24 Cue 25		simplified drums, synthetic plucks simplified drums, synthetic plucks	The synthetic pluck melody goes up a fifth by thirds and then walks back down. A high synthetic pluck rhythm repeats twice.	sequence. Part of the Boarding Sequence.	Sequence.	no	no	no	yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 26 Cue 27		simplified drums, synthetic plucks simplified drums, synthetic plucks	A high synthetic pluck rhythm repeats three times. The synthetic pluck melody forms a cadence.	Part of the Boarding Sequence. Part of the Boarding Sequence.	no no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 28	0:08	simplified drums, synthetic plucks	A high melodic shape followed by an even higher reverberated pluck. Following the reverberated pluck a lower pluck repeats a melody 3 times.	Part of the Boarding Sequence.	no	no	no	no	yes	Yes, quantized to each segment.
		Cue 29 Cue 30		simplified drums, synthetic plucks simplified drums, synthetic plucks	The synthetic pluck plays a syncopated melody that descends as the drums become simplified. The synthetic pluck melody ascends and descends in an upper range.	Part of the Boarding Sequence. Part of the Boarding Sequence.	no no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 31			The synthetic pluck melody climbs up by step, leaps to a higher range, plays a syncopated melody, and then moves towards a rhythmic and harmonic cadence with the drums.	Part of the Boarding Sequence.	no	no	no	no	yes	Yes, quantized to each segment.
		Cue 32	0:04	simplified drums, synthetic plucks	Finale tag, it is a rhythmic and harmonic resolution.	Part of the Boarding Sequence, always and the only the last cue to play Boarding Sequence, unless it is replaced by Cue 37.	no	no	no	no	yes	Yes, quantized to each segment.
		There was no mulc until I reached the maintenance corridors. Then it seemed there was another										
ACTION 19	Let the Boarding Sequence end, then continue to see when the next cue is triggered. Observe the cue and do not progress.	sequence of eerie string segments separated by silence.			There seems to be a collection of brack seements that are lawered							
		An additional brass layer seemed to be layered			These seems to be a collection of basis segments that are layered onto to bouring seguence. I noted that specific prises are consistent with specific prises are consistent with specific cuses from the boarding segmence. The brass layers may exit as additional collection of an extension segments containing both the horns and drum/spirth patterns. If more containing both the horns and drum/spirth patterns with the containing the segments the sea, additional observation required. Furthermore, the segmence ended with a delinict recording containing the recording contai							
	Go back and continue forward while the Boarding Sequence is still playing to make sure there weren't additional music cues that rely on the Boarding	An additional brass layer seemed to be layered onto the existing Boarding Sequence, seeming to correlate with the player running through the ship			segments containing born the norts and oramysymt patterns. I in not certain how many segments there are, additional observation required. Furthermore, the sequence ended with a distinct resolution cue when I reached a certain part of the mission. Further observation required to confirm that this is a trigger to end the							
ACTION 20	Sequences to be present.	killing the boarding aliens. Below are the additional			music.							
	Same as Action 20, but race as fast as possible to the point where the music previous concluded to confirm whether or not there is a trigger to end the music. Also re-	Action 20. From the three videos I have of this section of gameplay I've concluded they are as follows. I refer to these			The Boarding Sequence (Part 2) is triggered to stop when the player reaches a dark room where they must crouch beneath the door (just after the second docked allen vessel). I also recognized that walking down the dark hallway just after the first docked allen							
ACTION 21	whether or not there is a trigger to end the music. Also re- observe the horn segments from Action 20 and identify how they are organized.	cues as Boarding Sequence (Part 2). They replace Cues 24-32.		brass, simplified dauge	vessel triggers a checkpoint, which is when the new Part 2 Cues began to play.							
		Cue 33		brass, simplified drums, synthetic plucks	Brass melody starts in its lower register and gradually ascends by adding additional brass. High synthetic plucks at start of cue, brass melody develops.	Part of the Boarding Sequence (Part 2). Part of the Boarding Sequence (Part 2).	no no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 35		brass, simplified drums, synthetic plucks brass, simplified drums, synthetic plucks	Similar melodic shape as Cue 24, another variation of brass melodic development, ends with brass taking a rest. Brass develops with a call and response between two different brass choirs. A string sustain enters as well.	Part of the Boarding Sequence (Part 2). Part of the Boarding Sequence (Part 2).	no no	no no	no	no no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
					This is a vitation of Cue 32, it is a tag with a harmonic and rhythmic	Part of the Boarding Sequence (Part 2), replaces Cue 32 if player has triggered the brass cues (33-36) to enter, always						
		Cue 37 I have gone back to the video from Action 19 and identified the music cues.	0.06	brass, simplified drums, synethetic plucks	resolution.	and only the last cue to play from the bording sequence.	no	no	no	no	yes	Yes, quantized to each segment.
		I call this sequence the Maintenance Sequence, as it is in the maintenance tunnels. Below are the			To figure out how the segments are organized I analyzed the audio in a DAW and looked for repeating phrases, then checked to make sure that they are consistent. Refer to the image referenced in the thesis if you want to see the segmentation.							
	Observation of Action 19 music.	cues. Cue 38	0:10		sure that they are consistent. Neter to the image reterenced in the thesis if you want to see the segmentation. Full string orchestra glissing natural harmonics up and down ad lib.	Part of the Maintenance Sequence.	no	no	по	no	yes	Yes, with random silence between cues.
		Cue 39 Cue 40		string orchestra string orchestra	Full string orchestra tapping string ad lib col legno. Sounds like a 2nd take of Cue 39.	Part of the Maintenance Sequence. Part of the Maintenance Sequence.	no no	no no	no no	no no	yes yes	Yes, with random silence between cues. Yes, with random silence between cues.
		Cue 41 Cue 42		violins, violas violins, violas	Sounds like the non-resolved chords from the opening of Wagner's Tristan Und Isolde. Romantic ascending counter-melody leading to upper voice suspension.	Part of the Maintenance Sequence. Part of the Maintenance Sequence.	no no	no	no no	no no	yes yes	Yes, with random silence between cues. Yes, with random silence between cues.
		Cue 43	0:11	string orchestra	Cue 39 + Cue 38 + low violin tremalo.	Part of the Maintenance Sequence.	no	no no	no	no	yes	Yes, with random silence between cues.
		Cue 45 After reaching the last		violins, cellos	High dissonant cluster with an emerging ascending melody. Development of Cue 44 with high gliss leading to entrance of ascending cello melody.	Part of the Maintenance Sequence. Part of the Maintenance Sequence.	no	no	no	no	yes yes	Yes, with random silence between cues. Yes, with random silence between cues.
	Continue beyond the maintenance tunnels after music has faded out to see when the next cue begins, then observe it	combat area a new musical sequence is triggered. I refer to this as the Final Sequence			I have analyzed the segments in my DAW and isolated each percussive phrase. I have checked to make sure they are consistent. Refer to the thesis to see the image of how I separated							
ACTION 22	without progressing.	Below are the cues.	0:10		consistent. Never to the discuss to see the image of flow i separated the audio in my DAW. Cello playing an ostinato, timpani and snare drum playing militaristic drum patterns.		no	по	no	no	yes	Yes, quantized to each segment.
		Cue 47 Cue 48		cello, drums	Similar to Cue 46. Cello playing ostinato, snare plays a syncopated rhythmic pattern.	Part of the Final Sequence.	no no	no no	no no	no no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
		Cue 49	0:08	cello, drums	Cello plays ostinato, snare plays a repetitive militaristic march-like rhythm. A single brass chord, harmonic resolution.	Part of the Final Sequence. Part of the Final Sequence, is always and	no no	no	no	no	yes	Yes, quantized to each segment. Yes, quantized to each segment.
ACTION 23	Go back and replay from maintenance tunnels. Reach the Final Sequence before the Maintenance Sequence ends to see how the music transitions.		0:04		A single brass chord, harmonic resolution. Maintenance Sequence fades out when the player is near the cryo control room that overlooks where the player started.	only the final cue to play.		.10	no	no	yes	es, quantizeu (o each segment.
		After continuing forward there seems to be a second bank of segments that replace Cues 46-50.										
ACTION 24	Continue forward from where the Final Sequence begins, observe any new musical material, do not finish level.	that replace Cues 46-50. Below are the cues. I refer to this group of Cues as the Final Sequence (Part 2).			The ends of the loops are really obvious and poorly done. I have analyzed the segments anyways in my DAW and isolated each phrase. I have checked to make sure they are consistent. Refer to the thesis to see the image of how I separated the audio in my DAW.	Entering the corner corridor						
	J. W. ING SHEEL RIVEL	Cue 51		drums, strings, brass, winds	the meast to see the image or now i separated the audio in my DAW. Low brass accents, with home sustained between two string runs. The first up, the second down. Similar to Cue 51, low brass is more syncopated, and horns are playing rhythmic pattern between string runs.	Part of the Final Sequence (Part 2).	no	no	no	no	yes	Yes, quantized to each segment.
		Cue 52	0:06	drums, strings, brass, winds	Low brass accents, strings and low winds melodic and rhythmic counterpoint.	Part of the Final Sequence (Part 2). Part of the Final Sequence (Part 2).	no	no	no	no	yes yes	Yes, quantized to each segment. Yes, quantized to each segment.
	Finish the level after the music has stopped and observe the third dinematic Cue. This is to check if Cue 50 plays a	Cue 54			Development of Cue 53, ending the phrase with downward swells and brass accents.	Part of the Final Sequence (Part 2).	no	no	no	no	yes	Yes, quantized to each segment.
ACTION 25	second time if the Final Sequence has already ended. To see how Cue 50 plays with the Final Sequence present refer to the video from Action 1.	Cue 55 Cue 50 does not play if it	1:15	drums, strings, brass, winds	Militaristic drum pattern and string passage from Cue 3. Added choral parts. Intense brass accents. Melody builds to a climax as the Master Chief crashes through the Halo's atmosphere.	Starting the 3rd cinematic,	no	по	по	no	по	Yes, quantized to start after Cue 50.
		has already played. Referencing Cue 1 (and additional unrecorded playthroughs) I recognized that Cue 50										
		recognized that Cue 50 must finish before Cue 55 can begin. Cue 50 cannot begin until its preceding cue finishes. This means										
		traffic-jam of cues, delaving Cue 55 from										
	Observation about final Cue	beginning at the start of the 3rd cinematic.										