IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

STATE OF TENNESSEE,	)	
Respondent,	)	
	)	**No. M2020-01156-SC-DPE-DD**
v.	)	**Knox County Case No. 58183A**
	)	**Special Master W. Mark Ward**
CHRISTA GAIL PIKE	)	
Movant.	)	

SPECIAL MASTER'S FINDINGS OF FACT AND CONCLUSIONS OF LAW

On July 10, 2026, the Tennessee Supreme Court appointed a Special Master to address five issues in this matter:

> (1) Given Ms. Pike's diagnosis of thrombocytosis, whether achieving peripheral IV access pursuant to the current lethal injection protocol would make it "*sure or very likely*" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see Baze v. Rees*, 553 U.S. 35, 50 (2008) (plurality opinion) (quoting *Helling v. McKinney*, 509 U.S. 25, 33 (1993));
>
> (2) Given Ms. Pike's cited history of sexual assault and asserted diagnosis of Post Traumatic Stress Disorder ("PTSD"), whether the movement of Ms. Pike to Riverbend Maximum Security Prison before the execution, where she would be observed by male prison officials for two weeks prior to the execution, would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see id.*;
>
> (3) Given Ms. Pike's allegedly small and compromised veins, whether achieving peripheral IV access pursuant to the current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see id.*;
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> (4) Whether Ms. Pike's proposed alternative methods of execution would "significantly reduce a substantial risk of severe pain," *id.* at 52.
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> (5) Whether TDOC is required to permit or would be willing to permit Ms. Pike to have a clergy member or spiritual advisor in the execution chamber during her execution.

The Court conducted an evidentiary hearing August 11-13, 2026.

Findings of Fact

The Court heard from eleven witnesses. The following summarizes the testimony of each witness.

Linda R. Thomas

Linda R. Thomas is the Tennessee Department of Correction Assistant Commissioner of Prison Operations. Ms. Thomas plans and directs pre-execution and execution activities. She checks the qualifications of the IV team and noted that the members of the IV team have decades of experience in providing IV access.

Ms. Thomas will oversee the transfer of Ms. Pike from the Debra K. Johnson Rehabilitation Center (DKJRC) to the Riverbend Maximum Security Institution (RMSI) and the observation of Ms. Pike at DKJRC and RMSI. The Tennessee Department of Correction (TDOC) has made provisions to ensure that female corrections officers will transport and observe Ms. Pike. Ms. Pike will be transferred to RMSI no earlier than 24 hours before her scheduled execution, which is set for 10:00 a.m. on September 30, 2026. Ms. Pike will be the only inmate in the Capital Punishment Unit (CPU) during the entire time Ms. Pike is housed at RMSI. A privacy screen will be available to Ms. Pike to provide her a degree of privacy when using the restroom or taking a shower.

Warden Kenneth Nelson

Kenneth Nelson is the warden at RMSI. He supervises the executions at RMSI. While at RMSI, Ms. Pike will be observed by four officers at a time, each working twelve-hour shifts. Two officers will be positioned outside of Ms. Pike's cell at RMSI conducting continuous observations while documenting their observations. A third officer will be in the control room, and a fourth officer will be the supervisor in charge. There will be no other inmates in the CPU. The agency's goal is to put all female staff in the CPU.

Maria DeLiberato

Maria DeLiberato is a capital defense lawyer with the ACLU. She represents Tony Carruthers and observed the attempted execution of Mr. Carruthers on May 21, 2026. She noted her observations regarding the cell used on the CPU and provided an offer of proof regarding the extraction process, IV access, and attempted central line placement regarding Mr. Carruthers.

Bethany Brand, Ph.D.

Dr. Bethany Brand is an expert in the field of clinical psychology. She opined that Ms. Pike suffers from post-traumatic stress disorder and bipolar disorder. She believes that it will be very "psychologically harmful" and "likely trigger her past traumas" for Ms. Pike to be observed while she's washing, toileting, and/or changing her clothes, regardless of the gender of the observer. Moving Ms. Pike to RMSI, even for less than 24 hours, will be "traumatizing" and make her feel out of control and will be highly triggering to her. However, she did testify if Ms. Pike was moved to Riverbend "immediately" that "that element would no longer be severe."

Testifying beyond the scope of this particular question, Dr. Brand also testified that other aspects of the Lethal Injection Protocol like her forcible extraction from her cell, restraints, and movement to the execution chamber, and strapping her to a gurney will also be highly triggering due to her history of being abused. Inserting an IV near her chest or groin would cause issues for Ms. Pike due to her past.

Dr. Brand believes Ms. Pike would still suffer severe punishment even if she was not moved from her current prison setting. In fact, there does not appear to be any scenario by which Ms. Brand believes Ms. Pike would avoid suffering, absent no execution at all. Dr. Brand believes the current execution protocol, even with the accommodations made for Ms. Pike, will surely or very likely cause terror and pain to Ms. Pike due to her post-traumatic stress disorder.

The Court notes that Dr. Brand has not spoken to Ms. Pike since 2023. In her report written in 2023, Dr. Brand noted, "Christa has matured and learned to process her trauma, and she is truly a different person than she was at the time of the murder. Christa will always carry that history of trauma with her, but she now has the tools to control her emotions and deal with life's stressors." However, that does not mean she doesn't suffer from the diagnosed disorders.

Gail A. Van Norman, M.D.

Dr. Van Norman is an expert in the field of anesthesiology. She defined peripheral IV access as basically access to the veins in the limbs (arms and legs). Central line access is generally access to the veins located in the pelvis, belly, heart, chest, and/or neck. Gaining peripheral IV access may be difficult with obese patients, with veins that are less than three millimeters in diameter, when the veins cannot be felt, or when the veins cannot be seen.

Phlebotomy and starting an IV are two different procedures. Phlebotomy involves drawing blood, which requires simply getting the blood drawing needle into a vein, a needle which can be quite small. Further, the needle needs to go just a millimeter or so into the vein.

IV insertion involves threading a needle with a sheath over it (resulting in a diameter larger than a small needle alone) quite a way into the vein. The further one has to thread a needle into the vein, the more likely one may rupture the vein or cause the vein to blow up. An 18-gauge needle is the average sized needle used in IV insertion. A 20-gauge IV needle is used with obese patients.[1] Dr. Van Norman gave opinions regarding potential complications if too large of a needle is used or if too small of a needle is used. If pentobarbital[2] gets into the flesh around the vein, it may cause a deep chemical burn that is very severe. It destroys tissue on contact.

[1] According to Linda Thomas, there are four different gauges of needles in the execution room: 18, 20, 22, and 24.
[2] Dr. Van Norman notes that pentobarbital and its sister thiopental, which is identical in characteristics to pentobarbital, are extremely caustic chemicals.

A central line is a central IV placement in veins inside the body cavity using a longer catheter because the veins are deeper. These veins are usually much larger, and they are not difficult veins to access. Ultrasound is a standard of care when doing a central line IV placement. Central line placements can also result in complications. Improper IV placement in a peripheral vein will usually not put the person's life in danger, but improper placement of a central line may cause such an issue.

Dr. Van Norman reviewed some of Ms. Pike's medical records. She noted from the records that when drawing blood from Ms. Pike, a 23-gauge butterfly needle was used. This needle is an extremely small needle that is not normally used when administering anesthesia to adults. She also noticed that blood was generally drawn from Ms. Pike through her hands. Generally, blood would be drawn from the hands when a person cannot see or feel a vein in the arm. Although hand veins are easier to see, blood draws from the hands are particularly painful.

Dr. Van Norman opined that Ms. Pike was obese, given her 30.76 BMI. She also noted that Ms. Pike has essential thrombocytosis, a condition associated with increased clotting and paradoxically with increased bleeding. Dr. Van Norman opined to a reasonable degree of medical certainty that Ms. Pike is at a high risk for failing to gain peripheral vein access due to her essential thrombocytosis, her obesity, and the prior use of tiny needles to draw her blood.

With that said, from a review of the medical records, Dr. Van Norman noted it appears that Ms. Pike did not have any trouble having her blood drawn. There is no mention in the records of Ms. Pike having small veins, non-palpable veins, or non-visible veins. Notably, Dr. Van Norman has not examined Ms. Pike.

Dr. Joel Zivot, M.D.

Dr. Joel Zivot is also an expert in the field of anesthesiology. He testified that thrombocytosis is "defined has having a platelet count more than 450,000." He reviewed Ms. Pike's medical records and found one relevant medical condition: thrombocytosis. He testified that the normal platelet count number is between 150,000 to 450,000. He further testified that most people are in the two to 300,000 range and that it's not so common to see platelet counts even above 400,000." At the time Ms. Pike was diagnosed she had a platelet count around 1,000,000, which he considered to be "very high.". He described the condition as a genetic defect and uncurable. He further testified that after her initial diagnosis her platelet count number had been "waxing and waning," but when he looked at the number "it's been in the high 400 range, but it generally at least over 500---500,000 at all times that I've seen it measured." Dr. Zivot testified that thrombocytosis is a condition that increases both the chance of clotting, but also the chances of bleeding. He opined that:

> So thrombocytosis is a condition that makes the chances of clotting – and when I say clotting, I really mean abnormal clotting, so clotting when it shouldn't clot. But also paradoxically with thrombocytosis, people can also have some increased tendency to bleed.

With regard to the increased chance of bleeding, he explained that platelets can consume another blood clotting component, the Von Willebrand's factor, giving rise to an increased risk of bleeding.

With regard to the possible clotting, Dr. Zivot testified on direct that "once an intravenous is in place" …the body kind of regards the catheter as a bit of an invader and will kind of try to clot itself around the catheter under normal circumstances." "So this catheter that, you know, that is placed could just clot. And so it just won't work."

Dr. Zivot also offered testimony in his direct examination on the effects of injecting pentobarbital in Ms. Pike pursuant to the lethal injection protocol. Among other things, he testified that pentobarbital is caustic to tissue and can cause very serious burns. He also indicated that it causes pulmonary edema in 65% - 70 % of people killed by pentobarbital. He described an injection of pentobarbital as causing an "extremely uncomfortable feeling" and as being a "terrifying experience." He further opined that pulmonary edema "happens very rapidly." "That the time it would take for pentobarbital to travel from the arm to the lungs is really only a matter of moments. And so almost instantly, there's some – likely some pulmonary edema that's occurring. And we, you know, can surmise this by observing people who have been executed with pentobarbital and some of the movements that they make or coughing or even complaints that people have made before they've died." He also opined that pulmonary edema cannot happen after death and requires the heart to beat. He opined further that he was "certain" that pentobarbital causes pulmonary edema. Finally, he opined that:

> So although pulmonary edema can happen, you know, happens commonly, you know, in anyone that's executed, in the case of Ms. Pike [her increased tendency to bleed], it will be an even more –even worse, if it's possible to imagine, potentially worse example of pulmonary edema that she may face in this case.

On cross-examination, counsel questioned Dr. Zivot about Ms. Pike's most recent platelet count of 452,000 on May 8, 2026, and her next most recent platelet count of 433,000 on November 21, 2025, and asked him "would you agree that her thrombocytosis is not so extreme as it was in 2017 when I believe her platelet counts were one million?" Dr. Zivot responded:

> A. Yeah. Well, I mean, I think you'd just have to draw it again. Just draw it today and see what it is today. You know, I don't know what it is today.

Upon further cross-examination, Dr. Zivot testified that his opinions about the risks posed to Ms. Pike due to her thrombocytosis would not change even if her current platelet levels matched her most recent levels. He opined that even 433,000 was a high platelet count.

On the subject of "achieving peripheral IV access," Dr. Zivot was asked the following question and gave the following answer:

> Q. If someone is diagnosed with thrombocytosis, just the diagnosis in general and a high platelet count, in your opinion would that prevent intravenous access?
> A. No. Intravenous may be started, it just may not last long or it also may be difficult to find a vein, you know, that's patent and able to accommodate an intravenous catheter. (emphasis added)

On the subject of pulmonary edema Dr. Zivot was asked the following question and gave the following answer:

> Q. And it's your opinion that the person experiencing pulmonary edema would actually be sensate to pain at the time?
>
> A. That's my opinion.

Dr. Zivot also expressed that he was against all forms of lethal injection, and he believes all forms of lethal injection are cruel.

On redirect, Dr. Zivot explained that although aspirin is used to treat thrombocytosis, it does not affect the platelet counts, it merely affects the process of clotting.

After the parties completed their examinations, the Court asked Dr. Zivot a few questions. Dr. Zivot indicated that he held a Master of Laws degree, had been involved as an expert witness in the case that resulted in *Bucklew v. Precythe*, 587 U.S. 119 (2019), which also involved Dr. Antognini, and that he was well aware that the United States Supreme Court had indicated in that opinion that the most relevant Eighth Amendment question is how long the inmate will be capable of feeling pain. Dr. Zivot also testified that he did not know if he had read Dr. Antognini report

but would not be surprised if he had said the longest the person would be capable of feeling pain after injection with pentobarbital would be 20-30 seconds. Thereafter the following occurred:

THE COURT: If it's the most important thing that the Eighth Amendment has for the Court to consider, why is there no mention of that in your report?

THE WITNESS: It wasn't – It wasn't asked of me, you know, it wasn't – I mean, to comment on how long the pain would be present.

THE COURT: So even though you know it's the most important consideration for the Court, you don't give me a time frame that a person is going to be capable of feeling pain?

THE WITNESS: Well, I can answer you now, if you want.

THE COURT: Wouldn't that be outside your report?

THE WITNESS: You know—

THE COURT: Since you didn't put it in your report, nobody has a chance to test your methodology for coming up with that.

THE WITNESS: You know, I don't know how to answer you. Like, I mean, I can—

THE COURT: Well, why would you avoid—

THE WITNESS: Yeah.

THE COURT: --the most important thing the Court needs to know?

Thereafter, in an attempt to relieve Dr. Zivot from explaining his avoidance of the topic in his report, counsel for Ms. Pike sought permission to refresh Dr. Zivot's memory with a single sentence in his report, which read: "Death from pentobarbital injection is not instantaneous." The Court pointed out the obvious that the question was not the time to "death" but the time the person could feel pain. Thereafter, the following occurred:

THE COURT: You've talked about the time of death and you've talked about the person feeling pain, but you've given me no duration.

THE WITNESS: Well—

THE COURT: Are you telling me you don't know the duration?

THE WITNESS: No one knows the duration. It's not knowable. I can surmise it, but it's not knowable.

THE COURT: So when you say a person is drowning, you don't know if they're feeling that for one second or two seconds?

THE WITNESS: Well, I don't think it's one—

THE COURT: Or ten seconds.

THE WITNESS: I think it's longer than that. That's my professional opinion about this.

THE COURT: But you are not going to give me a time frame or a methodology for how you're doing that?

THE WITNESS: Well, it's based upon the way the drug works. What I've seen in thousands of cases of anesthesia and thousands of cases of pulmonary edema and my opinion – and my understanding of the pentobarbital or drugs of that class work, I think it could be minutes. Or a minute.

THE COURT: So you said pulmonary edema is excruciatingly painful?

THE WITNESS: Yes.

THE COURT: But if you don't feel it, it can't be painful.

THE WITNESS: It happens at the beginning. It starts at the beginning. So the beginning is when you're going to have the highest chance of feeling it. As time progresses, then you may feel – you know, then your capacity to feel it will be less.

The colloquy extends longer, but ends with the following:

THE WITNESS: I'm just trying to – the –this question about how long is obviously critical and I think it's been debated, you know, between the experts. And so – and so my contention, you know, is that the amount of time that will be there will be enough that it could be experienced as cruel and painful. That's my – that's my medical opinion. My opinion is to how long –

THE COURT: No matter how short it is, it's going to be enough severity –

THE WITNESS: Yes.

THE COURT: -- to be –

THE WITNESS: Yes.

THE COURT: Okay, All right. So why didn't you discuss that in either one of your reports?

THE WITNESS: I don't have an answer for you.

Dr. Joseph Antognini, M.D., M.B.A.

Dr. Antognini is an expert in the fields of general medicine and anesthesiology. He has personally administered pentobarbital and thiopental, both of which have similar effects. When administered pentobarbital, a person will generally become unconscious within 20 to 30 seconds. That person would typically have EEG silence in about one minute. Approximately ten percent of people will feel burning, but not severe pain. He opined that someone who is unconscious cannot have the experience of pain. Dr. Antognini opined that if pulmonary edema occurs, it will not occur during the period of consciousness. The Court notes that Dr. Antognini has extensive clinical experience. The Court also notes that Dr. Antognini had a very good grasp of the articles he cited to support his opinions and did not avoid the critical question as to how long a person would be sensate after having been given the required dose of pentobarbital.

Dr. Richard Mansour

Dr. Richard Mansour is an expert in the fields of hematology, medical oncology, and internal medicine. Thrombocytosis is a medical condition in which a person has an elevated platelet count, which can cause issues with clotting and, paradoxically, with bleeding in some circumstances. Ms. Pike suffers from essential thrombocytosis. Treatment for the condition varies, depending on whether the patient is low risk or high risk. Patients under 60 who do not have any known vascular disease with levels around 600,000, 700,000, may not be treated at all. On the other hand, if they have some kind of risk like high blood pressure or high cholesterol, they may be given baby aspirin once or twice a day. For patients over 60 with platelet counts that are very high, like 800,000, there are known drugs that can be prescribed. Dr. Mansour opines that Ms. Pike has low risk essential thrombocytosis. He first based this opinion on a platelet count of 660,000, but subsequently became aware of platelet counts of 433,000 and 452,000. She is low risk for having a stroke in her brain, her heart, her eye, or some rare stroke. He testified:

> It's just low risk. I wouldn't expect any particular effect from any other person who's in the normal range with these platelet counts. I'd expect the platelets to behave the same as what I described what platelets do when there is disruption of the blood vessel.

However, she does not appear to be at risk for excessive bleeding as her von Willebrand protein and function are normal. Interference with the Willebrand protein and function is a rare syndrome that usually takes place when platelet counts reach 1,500,000 to 2,000,000. He does not think that her elevated platelet count would interfere with the insertion of an IV line. Part of the basis for this opinion comes from his review of Ms. Pike's medical records wherein they showed that in approximately thirteen blood draws from Ms. Pike, the blood draws took only one stick in twelve

of the draws and two sticks in one draw. There also appeared to be no problems when the IV was removed. This indicates to him that veins are accessible.

Elizabeth Campbell

Elizabeth Campbell is an expert in the fields of general nursing and vascular access. She described the process for obtaining IV access. She opined that "small veins" is not a medical diagnosis and usually comes from a patient's self-identifying. DIVA stands for Difficult IV Access. When noted, it can assist future practitioners by providing notice that the patient may have conditions that cause difficulty in obtaining IV access. She did not see anything in Ms. Pike's medical records that indicated that Ms. Pike's veins would be difficult to access. She did notice that all but one of Ms. Pike's phlebotomy procedures were successful on the first attempt. The one other procedure took two sticks. The blood was drawn from the hand, the forearm, and the bend in the elbow. She also noted that a 23-gauge needle, which has been used with Ms. Pike, is standard in phlebotomy.

Scott Goldstein, D.O.

Dr. Scott Goldstein is an expert in the field of emergency medicine. Ms. Pike also tendered him as an expert in "hanging." Although Pike's counsel conceded: "[J]ust to be clear, experts in judicial hanging in this country would be rare at this point since there aren't currently any states practicing that." Goldstein testified he authored an article on hanging and strangulation. However, upon further questioning, he admitted that he really didn't discuss judicial hangings in the article, other than to distinguish them from suicide attempts. He further testified that he had never reviewed the hanging protocol of any state. He opines that hanging leads to death in one of two ways: instantaneous transection of the spinal cord or strangulation.

Dr. Goldstein testified that if the drop does not result in transection of the spinal cord, death will occur by strangulation in which "consciousness *could* be lost in approximately 10-20 seconds" with death in "approximately a minute." Dr. Goldstein submitted a letter as a medical report which was marked as Ex. 26. At one place in the report he says unconsciousness will occur "in about 30 seconds." At another place in the report he says that unconsciousness will occur *within* 10-20 seconds. Dr. Goldstein affirmed that he cited two articles for that later proposition in his report which was marked as Exhibit 26. He confirmed that those articles were noted as footnotes 6 and 7 in his report. On cross-examination Dr. Goldstein was asked where in his cited articles it said "*within* 10 to 20 seconds." The Court took a recess to allow him to read the articles cited and find where he obtained his information. After the recess Dr. Goldstein admitted that he could not find the information in either article. He said: "There must have been a mistake in where I read it and where I did my bibliography part, but I still believe my fact." The Court asked: "So you're saying now that information is somewhere else in one of the bibliography things? A. Yes." The Court took another recess to allow him to find where he got his information. After the recess, when asked if he was able to find the article, he testified that one of the articles pertaining to suicide had the following statement: "Particularly as loss of consciousness has been reported to occur *as early as* 15 seconds after suspension." Based on this testimony from Dr. Goldstein, the Master concludes that Dr. Goldstein misrepresented and/or embellished his report by citing two articles supporting his statement that unconsciousness occurs *within* 10-20 seconds. Whether the embellishment was intentional, was an artificial intelligence hallucination, or was from negligence, his credibility was severely damaged, and his opinions are entitled to little, if any, weight.

As mentioned, Dr. Goldstein was not familiar with the hanging protocol of any state, but he did attempt to describe a hanging in the most general of terms. However, he could not cite to

anything in his bibliography that provided that description. He testified further that there are "numerous examples and types of formulas and tables to figure out height, weight, drop length, to figure out the best way for this to occur." When questioned further, he acknowledged that he did not know "what every state or location uses for calculations." He put in his report that "usually twice the height is sufficient," but testified that sometimes a drop of twice the height would lead to strangulation.

Dr. Goldstein also opined that once pentobarbital is given intravenously, it can take upwards of one minute to produce unresponsiveness. He admitted that he has not used pentobarbital and that this opinion was not based upon his personal knowledge.

Dr. Goldstein believes that Ms. Pike has difficult IV access based upon the use of 23-gauge butterfly needles for blood draws. However, when reading her medical records, he did not find any evidence that there were difficulties with performing blood draws, that multiple attempts were needed to get blood draws, that there was any trouble getting a blood draw with larger needles, or that an IV line could not be established.

In his report, Dr. Goldstein says: "Hanging as a form of execution, *if done properly*, causes instantaneous death." Dr. Goldstein opined that both hanging and lethal injection are suitable options for capital punishment. "They both carry risks of unintended complications that may result in prolonged dying and potential suffering, *if done incorrectly*." In his report, Dr. Goldstein said: "Hanging involves substantial variability in outcome depending on the mechanics of the procedure. The variability is based on body habitus, weight, drop length and technique. Any variation of these can lead to strangulation instead of hanging. *If done correctly*, the person immediately dies with no pain and/or suffering due to transection of the spinal cord. If there is variation in how the person is hung, it can lead to strangulation, which there is a period of time

where there is decreased blood and air flow, leading to anxiety, thrashing and possible seizures. There is potential for conscious suffering if the patient becomes strangulated, instead of hanged lasting anywhere from 10-30 seconds."

Dr. Goldstein testified that gallows can be built with wood, hardware nails, and rope.

Dr. Goldstein discussed the "botch" rates of different forms of execution. He indicated that the botch rate for judicial hangings was greater than the botch rate for lethal injection. His source for his statistics was a book written by a political scientist, Austin Sarat, "Gruesome Spectacles: Botched Executions and America's Death Penalty." When asked if he had reviewed the specific executions that the author used when counting botched executions to see what happened in those executions, he responded at first by saying that he did not look at *every one*. This led the Court and everyone else to believe that he had looked at some of the specific executions. However, the next question asked of him was whether he had looked at *any* of them, to which he responded, "No." Upon questioning by the Court he indicated that he was not sure what the word "botched" meant, knew nothing about the author, the number of executions looked at, the dates of those executions or anything about the methodology used to come up with the statistic. As mentioned, the Court does not find Dr. Goldstein to be a credible witness.

Karen Kelly, M.D.

Karen Kelly is an expert in the field of forensic pathology and the mechanics of death by hanging. In suicidal hanging, the person generally dies from asphyxia (oxygen exclusion), and the person usually experiences unconsciousness in less than one minute. From reviewing two hangings in Washington state in the 90's, Dr. Kelly found that one died from vertebral lacerations and the other died from a complete transection of the spinal cord. Both suffered very quick, if not instantaneous, death. She opined that if a hanging did not result in damage to the spinal cord or the

vertebral arteries, the prisoner would undergo strangulation, which would be a significantly painful and anxious way to die.

Dr. Kelly also testified that a judicial hanging "*if it's done correctly*" can cause instantaneous death. She reviewed the history of hanging and indicated that various hanging tables had been in existence since the 1800's. She further testified that the last judicial hanging in the United States occurred in 1996. She also indicated that hangings ended in Britian in the 1960's. In her declaration which was marked as Ex. 28, Dr. Kelly cites archeological studies of the remains of persons judicially hanged with the long drop method, one of which involved an examination of 34 executed prisoners remains which indicated that ten of the prisoners had died partially or wholly by strangulation or asphyxia, and two of them entirely due to strangulation or asphyxia. The authors of that study believed this called into question the universal description of death as "almost instantaneous." She concludes her report: From the studies above, even in the setting of these requirements, the results and outcomes are variable and may lead to pain and suffering by strangulation/asphyxia. The authors of the biomechanics paper (reference 3) states: 'The only conclusion that can be made is that the outcome in any individual hanging must be uncertain, with decapitation, tearing of the neck structures, fracture and/or dislocation with immediate unconsciousness and prolonged apparent consciousness occurring at similar drop energies.'"

Conclusions of Law

(1) Given Ms. Pike's diagnosis of thrombocytosis, whether achieving peripheral IV access pursuant to the current lethal injection protocol would make it "*sure or very likely*" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see Baze v. Rees*, 553 U.S. 35, 50 (2008) (plurality opinion) (quoting *Helling v. McKinney*, 509 U.S. 25, 33 (1993));

The Master finds that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that given her diagnosis of thrombocytosis, achieving peripheral IV access

pursuant to the current lethal injection protocol would make it "*sure or very likely*" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering." The Court further finds that Ms. Pike's thrombocytosis and elevated platelet counts do not make it "sure or very likely" that she will experience abnormal clotting or excessive bleeding during IV access. *see Baze v. Rees*, 553 U.S. 35, 50 (2008) (plurality opinion) (quoting *Helling v. McKinney*, 509 U.S. 25, 33 (1993)). The evidence contradicts any indication that her von Willebrand Factor has been depleted and the "[m]ere possibilit[y]" that she may experience clotting due to her slightly elevated platelet count is "not sufficient to satisfy [her] burden to establish a substantial risk of severe pain." *West v. Schofield*, 519 S.W.3d 550, 563 (Tenn. 2017) (citing *Baze*, 553 U.S. at 62). In sum, Ms. Pike has failed to establish that her diagnosis of thrombocytosis creates a "substantial risk" that achieving peripheral IV access will cause "an objectively intolerable risk of harm." West, 519 S.W.3d at 563 (cleaned up) (quoting *Glossip v. Gross*, 576 U.S. 863, 877 (2015)). Therefore, the Court finds that given Ms. Pike's diagnosis of thrombocytosis, achieving peripheral IV access pursuant to the current lethal injection protocol would not make it "sure or very likely" that the challenged protocol will "cause [her] serious illness and needless suffering." see *Baze*, 553 U.S. at 50 (quoting *Helling*, 509 U.S. at 33).

Ms. Pike presented Dr. Van Norman, who opined that Ms. Pike was obese, given her 30.76 BMI, and that Ms. Pike suffers from essential thrombocytosis, a condition associated with increased clotting and paradoxically with increased bleeding. Dr. Van Norman opined to a reasonable degree of medical certainty that Ms. Pike is at a high risk for failing to gain peripheral vein access due to her essential thrombocytosis, her obesity, and the prior use of tiny needles to draw her blood. However, from a review of some of Ms. Pike's medical records, Dr. Van Norman noted that it appears that Ms. Pike did not have any trouble having her blood drawn. There is no

mention in the records of Ms. Pike having small veins, non-palpable veins, or non-visible veins. Notably, Dr. Van Norman has not examined Ms. Pike.

Ms. Pike also presented Dr. Joel Zivot. Based upon a record's review, Dr. Zivot also found that Ms. Pike suffers from essential thrombocytosis. He believes she is at an increased risk due to her condition, but primarily with regard to post-IV insertion and concludes the risk is the same no matter how low Ms. Pike's platelet counts come down.

The State presented Dr. Richard Mansour, an expert in the field of hematology. He noted that thrombocytosis is a medical condition in which a person has an elevated platelet count, which can cause issues with clotting and, paradoxically, with bleeding in some circumstances. He found that Ms. Pike suffers from essential thrombocytosis. Dr. Mansour has extensive experience as a hematologist and appeared to the Court to be extremely knowledgeable and credible. He opined that Ms. Pike has low risk essential thrombocytosis, which means she is generally a low risk for having a stroke in her brain, her heart, her eye, or some rare stroke. However, she does not appear to be at risk for excessive bleeding as her von Willebrand protein and function are normal. His opinion is based, in part, on the fact that Ms. Pike does not have extremely high platelet counts, but is on the low end of the abnormal spectrum. Dr. Mansour does not think that her elevated platelet count would interfere with the insertion of an IV line. Part of the basis for this opinion comes from his review of Ms. Pike's medical records wherein they showed that in approximately thirteen blood draws from Ms. Pike, the blood draws took only one stick in twelve of the draws and two sticks in one draw. There also appeared to be no problems when the IV was removed. This indicates to him that veins are accessible.

Further, neither Ms. Pike nor any other witness testified that she had ever actually had any difficulty or serious pain with vein access.

The Court concludes that even with Ms. Pike's diagnosis of essential thrombocytosis, Ms. Pike has failed to show by a preponderance of the evidence that achieving peripheral IV access pursuant to the current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering." The Special Master finds that Dr. Mansour was the most qualified and credible expert to give opinions regarding Ms. Pike's thrombocytosis and the potential issues that condition could have as it relates to IV access of Ms. Pike. The Master gives great weight to his opinions and accepts them fully over any conflicting opinions. Further, his opinions support the Master's conclusions.

Ms. Pike contends that the question posed to the Special Master inferred consideration of what happens after peripheral IV access is achieved, including the administration of the lethal dose of pentobarbital. The Special Master disagreed, but heard evidence pertaining to the same as it relates to the comparative analysis required in answering Question 4 referred by the Supreme Court. The Special Master gives great weight to the testimony of Dr. Antognini that unconsciousness will occur within 20-30 seconds and that no severe pain will be experienced before unconsciousness. The Master assigns little weight to the testimony of Dr. Zivot. He was evasive in his opinion about the length of time a person would remain conscious when administered pentobarbital. Although he knew it was an important consideration he skillfully avoided any clear discussion of the same in his direct testimony. Dr. Zivot eventually said he did not know but testified it was not immediately and could be up until the time of death. The Special Master finds that Dr. Antognini's testimony is entitled to greater weight than Dr. Zivot's. .Even if the question was interpreted broadly to include the effects of pentobarbital, Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that given her diagnosis of thrombocytosis, achieving peripheral IV access *and administering pentobarbital* pursuant to the

current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering." Ms. Pike relies on "mere possibilities" which are insufficient to stablish a substantial risk of pain.

> **(2) Given Ms. Pike's cited history of sexual assault and asserted diagnosis of Post Traumatic Stress Disorder ("PTSD"), whether the movement of Ms. Pike to Riverbend Maximum Security Prison before the execution, where she would be observed by male prison officials for two weeks prior to the execution, would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see id.*;**

The Master finds that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that, given Ms. Pike's cited history of sexual assault and asserted diagnosis of Post Traumatic Stress Disorder ("PTSD"), the movement of Ms. Pike to Riverbend Maximum Security Prison before the execution, where she would be observed by male prison officials for two weeks prior to the execution, would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering."

The Court first wants to note the accommodations that have been made by the Tennessee Department of Correction for Ms. Pike's scheduled execution, as those accommodations somewhat alter this question. TDOC has made provisions to ensure that female corrections officers will transport and observe Ms. Pike. Ms. Pike will be transferred to RMSI no earlier than 24 hours before her scheduled execution, which is set for 10:00 a.m. on September 30, 2026. Ms. Pike will be the only inmate in the Capital Punishment Unit (CPU) during the entire time Ms. Pike is housed at RMSI. While at RMSI, Ms. Pike will be observed by four officers at a time, each working twelve-hour shifts. Two officers will be positioned outside of Ms. Pike's cell at RMSI conducting continuous observations while documenting their observations. A third officer will be in the control room, and a fourth officer will be the supervisor in charge. The agency's goal is to put all female staff in the CPU. A privacy screen will be available to Ms. Pike to provide her a degree of

privacy when using the restroom or taking a shower. The Court finds that Ms. Pike will not be observed by male guards at RMSI for two weeks prior to the scheduled execution. Instead, she will be observed by female guards for less than 24 hours. Thus, the Special Master finds that the factual predicates assumed in the issue referred by the Supreme Court—that Ms. Pike will be transported to RMSI two weeks before her execution and that she will be observed by male guards during that time—are not present.

Dr. Bethany Brand opined that Ms. Pike suffers from post-traumatic stress disorder and bipolar disorder. She believes that it will be very psychologically harmful for Ms. Pike to be observed while she's washing, toileting, and/or changing her clothes, regardless of the gender of the observer. The Court finds that TDOC's goal is to put all female staff in the CPU and that Ms. Pike will be provided with a privacy screen to provide her a degree of privacy when using the restroom or taking a shower, thereby minimizing, if not alleviating, any psychological harm.

Dr. Brand also believes that moving Ms. Pike to RMSI, even for less than 24 hours, will make her feel out of control and will be highly triggering to her. She believes that strapping Ms. Pike to a gurney will also be highly triggering due to her history of being abused. Inserting an IV near her chest or groin would also cause issues to Ms. Pike due to her past.

The Court does find that Ms. Pike suffers from post-traumatic stress disorder and bipolar disorder. However, the Court also finds that the accommodations made by TDOC regarding Ms. Pike's scheduled execution have minimized the potential for Ms. Pike experiencing significant triggering and/or anxiety. Despite these accommodations, Dr. Brand believes Ms. Pike will still suffer severe punishment even if she was not moved from her current prison setting. In fact, there does not appear to be any scenario by which Dr. Brand believes Ms. Pike would avoid mental suffering, absent no execution at all. Dr. Brand believes the current execution protocol, even with

the accommodations made for Ms. Pike, will surely or very likely cause terror and pain to Ms. Pike due to her post-traumatic stress disorder.

What is also significant to the Court is that Dr. Brand has not spoken to Ms. Pike since 2023. As such, Dr. Brand does not know Ms. Pike's current psychological condition. It is further important for the Court to note that in her report written in 2023, Dr. Brand noted, "Christa has matured and learned to process her trauma, and she is truly a different person than she was at the time of the murder. Christa will always carry that history of trauma with her, but she now has the tools to control her emotions and deal with life's stressors." The Court has considered Dr. Brand's testimony and, despite her wording, whether Ms. Pike will be psychologically harmed beyond that which would accompany any execution and the extent and severity of that additional psychological harm remains speculative. Furthermore, "mental suffering" alone "is not material to the Eighth Amendment inquiry under *Baze* and *Glossip*" "[u]nless accompanied by serious physical pain." *In re Ohio Execution Protocol Litig.*, 881 F.3d 447, 450 (6th Cir. 2018) (internal quotations and citations omitted).

Based upon the foregoing, the Court concludes that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that given her cited history of sexual assault and asserted diagnosis of Post Traumatic Stress Disorder ("PTSD"), the movement of Ms. Pike to Riverbend Maximum Security Prison for less than 24 hours before the execution, where she will be observed by female prison officials prior to the execution, would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering."

> **(3) Given Ms. Pike's allegedly small and compromised veins, whether achieving peripheral IV access pursuant to the current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering," *see id.*;**

The Court finds that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that given Ms. Pike's allegedly small and compromised veins, achieving peripheral IV access pursuant to the current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering."

The Court first notes that there was no proof presented that Ms. Pike has small and compromised veins. Ms. Pike did not present testimony from any medical professional who examined her veins. Likewise, Ms. Pike did not testify that she had ever been advised that she had small veins, nor did she or any other medical professional testify that Ms. Pike had experienced any pain and/or problems with vein access.

Ms. Pike attempted to satisfy her burden of proof solely by a review of her medical records. In fact, from a review of the medical records, Dr. Van Norman noted it appears that Ms. Pike did not have any trouble having her blood drawn. There is no mention in the records of Ms. Pike having small veins, non-palpable veins, or non-visible veins. Dr. Van Norman did note that a 23 gauge butterfly needle was used to draw blood from Ms. Pike and that access was gained through her hand. From these facts alone, Ms. Pike asks this Master to speculate that she has small veins.

Dr. Mansour noted from his review of Ms. Pike's medical records that in approximately thirteen blood draws from Ms. Pike, the blood draws took only one stick in twelve of the draws and two sticks in one draw. There appeared to be no problems when the IV was removed. This indicates to him that veins are accessible.

Nurse Elizabeth Campbell did not see anything in Ms. Pike's medical records that indicated that Ms. Pike's veins would be difficult to access. She did notice that all but one of Ms. Pike's phlebotomy procedures were successful on the first attempt. The one other procedure took two

sticks. The blood was drawn from the hand, the forearm, and the bend in the elbow. She testified that use of a 23 gauge needle to draw blood is common.

Based on this evidence, the Court finds that Ms. Pike has failed to show by a preponderance of the evidence that given Ms. Pike's allegedly small and compromised veins, achieving peripheral IV access pursuant to the current lethal injection protocol would make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering." In fact, she has not even shown that she has small veins. At most, Ms. Pike has shown that she could experience some unknown amount of pain from peripheral IV access, but no more than any other person would. As Ms. Pike's own expert Dr. Van Norman testified, tens of thousands of people receive IV lines every day in the United States, and a portion of those people require more than one attempt to achieve IV access. There is no evidence in the record that achieving such access in Pike's case would cause any pain beyond the ordinary annoyance of a needle stick. The evidence Ms. Pike has produced amounts to speculation about potential problems with peripheral IV access. But such speculation is not sufficient as a matter of law to establish an Eighth Amendment violation. See *Cooey v. Strickland*, 589 F.3d 210, 224 (6th Cir. 2009) ("Speculations, or even proof, of medical negligence in the past or in the future are not sufficient to render a facially constitutionally sound protocol unconstitutional."). Put another way, the evidence before the Court has only alluded to "mere possibilities or hypotheticals" about IV problems, which "are not sufficient to establish a substantial risk of severe pain." *State v. Hines*, No. M2025-00221-SC-DPE-DD, at 5 (Tenn. Aug. 6, 2026) (Order). As such, the Court concludes that achieving peripheral IV access pursuant to the current lethal injection protocol would not make it "sure or very likely" that the challenged protocol will "cause [Ms. Pike] serious illness and needless suffering."

(4) Whether Ms. Pike's proposed alternative methods of execution would "significantly reduce a substantial risk of severe pain," *id.* at 52.

The Court finds that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that a proposed alternative method of execution would "significantly reduce a substantial risk of severe pain." The Court first notes that Ms. Pike has withdrawn her alternative of using a 23-gauge needle. Her remaining two alternative methods of execution are the placement of a central line and hanging.

When a prisoner asserts that the State's chosen method of execution cruelly superadds pain to the death sentence, a prisoner must show a feasible and readily implemented alternative method of execution that would significantly reduce a substantial risk of severe pain and that the State has refused to adopt without a legitimate penological reason. *Glossip v. Gross*, 576 U.S. 863, at 877, 135 S.Ct. 2726, 2732–2738 (2015); *Baze v. Rees*, 553 U.S. 35, at 52, 128 S.Ct. 1520, at 1532 (2008); *Bucklew v. Precythe*, 587 U.S. 119, 134, 139 S. Ct. 1112, 1125, 203 L. Ed. 2d 521 (2019). As mentioned, an inmate must show that his proposed alternative method is not just theoretically " 'feasible' " but also " 'readily implemented.' " *Glossip*, 576 U.S., at ——— – ———, 135 S.Ct., at 2737–2738. This means the inmate's proposal must be sufficiently detailed to permit a finding that the State could carry it out "relatively easily and reasonably quickly." *Bucklew v. Precythe*, 587 U.S. 119, 141 2019). The proposed alternative need not be one "presently authorized by" state law. *Bucklew*, 139 S.Ct. at 1128. Thus, the inmate "may point to a well-established protocol in another State as a potentially viable option." *Id.* But it is not enough to argue for "a slightly or marginally safer alternative." *Glossip*, 576 U.S. at 877 (quoting *Baze*, 553 U.S. at 51). The "difference [in risk] must be clear and considerable." *Bucklew*, 139 S.Ct. at 1130.

Central Line

Central line access is generally access to the veins located in the pelvis, belly, heart, chest, and/or neck. A central line is a central IV placement in veins inside the body cavity using a longer catheter because the veins are deeper. These veins are usually much larger, and they are not difficult veins to access. Central line placements can also result in complications. Improper IV placement in a peripheral vein will usually not put the person's life in danger, but improper placement of a central line may cause such an issue. The Court concludes that Ms. Pike has failed to carry her burden by a preponderance of the evidence to show that a dispensing with peripheral IV access and making central line placement the only method of lethal injection would "significantly reduce a substantial risk of severe pain."

In addition, hanging is the only properly-raised alternative method of execution before this Court. Under United States Supreme Court precedent, a "method of execution" is a distinct way to cause death. Tennessee's legislature has approved two: lethal injection and electrocution. Tenn. Code Ann. § 40-23-114. Likewise, federal and state precedent equates a method of execution with a distinct way to cause death, such as nitrogen hypoxia (*Bucklew,* 587 U.S. at 141–42), firing squad (*Nichols v. Skrmetti*, No. 3:25-CV-442, 2025 WL 3299727, at *21–23 (M.D. Tenn. Nov. 26, 2025)), a single bullet to the back of the head (id.), or lethal injection with a different chemical or combination of chemicals (*Abdur'Rahman II*, 558 S.W.3d at 623–25); see also *Bucklew*, 587 U.S. at 134 (listing "hanging, the firing squad, electrocution, and lethal injection" as "traditionally accepted methods of execution"). Neither the Tennessee Supreme Court or the United States Supreme Court has ever held that a plaintiff can plead an alternative in a method-of-execution challenge by asking for the challenged method to be carried out with slightly different equipment or procedures. To do so would contravene binding precedent, which requires an inmate to plead

something more than a "slightly or marginally safer alternative." *Glossip*, 576 U.S. at 877 (2015) (quoting *Baze*, 553 U.S. at 51). Thus, hanging, which is a distinct method of causing death that has been held to be constitutional, is the only alternative method of execution Ms. Pike has pleaded.

Hanging

Comparing hanging to the present Tennessee lethal injection protocol "is a necessarily comparative exercise. To decide whether the State has cruelly 'superadded' pain to the punishment of death isn't something that can be accomplished by examining the State's proposed method in a vacuum, but only by 'comparing' that method with a viable alternative." *Bucklew v. Precythe*, 587 U.S. 119, 136, 139 S. Ct. 1112, 1126, 203 L. Ed. 2d 521 (2019). The Special Master notes that any comparison in the present case is limited as Ms. Pike did not offer any detailed evidence of any judicial hanging protocol from any other state or nation as a part of her proposed alternative. Instead of making a detailed proposal, Ms. Pike couched her proposed alternative of hanging in general, non-specific terms.

Justice Blackmun, in his dissent in *Campbell v. Wood*, 511 U.S. 1119, 114 S. Ct. 2125, 2127, 128 L. Ed. 2d 682 (1994), made the following observations about hanging:

> Under the most "ideal" of circumstances, hanging kills by breaking the spine. "When the victim is dropped from a sufficient height his vertebrae are dislocated and his spinal cord crushed; unconsciousness is immediate and death follows a short time later." App. to Pet. for Cert. A-49 (Reinhardt, J., dissenting), quoting Gardner, Executions and Indignities-An Eighth Amendment Assessment of Methods of Inflicting Capital Punishment, 39 Ohio St.L.J. 96, 120 (1978). Hanging, however, is a crude and imprecise practice, which always includes a risk that the inmate will slowly strangulate or asphyxiate, if the rope is too elastic or too short, or will be decapitated, if the rope is too taut or too long. A veteran prison warden has described a typical hanging:

> "When the trap springs he dangles at the end of the rope. There are times when the neck has not been broken and the prisoner strangles to death. His eyes pop almost out of his head, his tongue swells and protrudes from his mouth, his neck may be broken, and the rope many times takes large portions of skin and flesh from the side of the face that the noose is on. He urinates, he defecates, and droppings fall to the floor while witnesses look on." App. to Pet. for Cert. A-57 (Reinhardt, J., dissenting), quoting Gardner, 39 Ohio St.L.J., at 121.
>
> A person who slowly asphyxiates or strangulates while twisting at the end of a rope unquestionably experiences the most torturous and "wanton infliction of pain," *Gregg v. Georgia*, 428 U.S., at 173, 96 S.Ct., at 2925 (joint opinion of Stewart, Powell, and STEVENS, JJ.), while partial or complete decapitation of the person, as blood sprays uncontrollably, obviously violates human dignity.

Campbell v. Wood, 511 U.S. 1119, 114 S. Ct. 2125, 2127, 128 L. Ed. 2d 682 (1994) (Justice Blackmun, dissenting).

In his report, Dr. Goldstein says: "Hanging as a form of execution, *if done properly*, causes instantaneous death." Dr. Goldstein opined that both hanging and lethal injection are suitable options for capital punishment. "They both carry risks of unintended complications that may result in prolonged dying and potential suffering, *if done incorrectly*." In his report, Dr. Goldstein said: "Hanging involves substantial variability in outcome depending on the mechanics of the procedure. The variability is based on body habitus, weight, drop length and technique. Any variation of these can lead to strangulation instead of hanging. *If done correctly*, the person immediately dies with no pain and/or suffering due to transection of the spinal cord. If there is variation in how the person is hung, it can lead to strangulation, which there is a period of time where there is decreased blood and air flow, leading to anxiety, thrashing and possible seizures. There is potential for conscious suffering if the patient becomes strangulated, instead of hanged lasting anywhere from 10-30 seconds."

Against this background, the Court was interested in hearing proof regarding the comparison of the time to unconsciousness of lethal injection to the time to unconsciousness in hangings. The Court credits Dr. Antognini's opinion that when administered pentobarbital, a person will generally become unconscious within 20 to 30 seconds. The Court also credits his opinion that the person may experience mild pain at the injection cite but will be unconscious before any pulmonary edema causes pain. He has personally administered pentobarbital and thiopental, both of which have similar effects, and has seen the effects of both. The Court also notes that Dr. Antognini has extensive clinical experience.

Dr. Zivot was evasive in his opinion about the length of time a person would remain conscious when administered pentobarbital. Dr. Zivot eventually said he did not know but testified it was not immediately and could be up until the time of death. Dr. Goldstein also opined that once pentobarbital is given intravenously, it can take upwards of one minute to produce unresponsiveness. He admitted that he has not used pentobarbital and that this opinion was not based upon his personal knowledge. As noted below, this Court does not find Dr. Goldstein to be credible and affords his opinion on the length of time to unconsciousness with pentobarbital, no weight.

Regarding the length of time a person may remain conscious when spinal cord transection is not achieved, the opinion provided to the Court was given by Dr. Goldstein. He opined that strangulation may result in a loss of consciousness in approximately 10 to 20 seconds and that death would occur in approximately one minute. He later said 30 seconds. The Court finds Dr. Goldstein not credible. The true time to unconsciousness may be far greater than 30 seconds. In addition, whatever period of time that a person dangles on the end of a rope would be a period in which the person suffers severe pain and terror. The severity of that terror is far greater than any

provided by lethal injection. Furthermore, even assuming a time to unconsciousness of 10-20 seconds during which the person would be in terror and severe pain, Pike cannot show that hanging is clearly a safer alternative than lethal injection under the current Tennessee protocol.

The Court finds Dr. Goldstein not to be a credible witness. First, his expertise is in emergency medicine, not judicial hangings. Second, in his report he cited two articles for the proposition that strangulation may result in a loss of consciousness in approximately 10 to 20 seconds and that death would occur in approximately one minute. When given the opportunity (during a recess) to locate in the articles where it said "approximately 10 to 20 seconds", Dr. Goldstein could not find that notation in either article. He explained that there must have been a mistake in where he read it and when he did his bibliography for his article. Upon being given an opportunity to find such a reference in a different article, he referenced an article that stated a loss of consciousness has been reported *as early as* 15 seconds after suspension, but apparently did not notate an upper limit. Third, when testifying about the "botch" rates of different forms of execution, he merely used statistics from an article he had read, written by a political scientist about whom Dr. Goldstein knew nothing. Finally, when asked if he had reviewed the specific executions that the author used when counting botched execution to see what happened in those executions, he responded by saying that he did not look at every one. This led the Court and everyone else to believe that he had looked at *some* of the specific executions. However, the next question asked of him was whether he had looked at *any* of them, to which he responded, "No." Dr. Goldstein has no credibility with this Court.

There was also proof presented regarding the possibility of pulmonary edema occurring with lethal injection. Dr. Zivot opined, based upon his review of a number of autopsy reports prepared following lethal injections, that pulmonary edema occurs in 65-70% of the lethal injection

executions. Pulmonary edema is generally a combination of blood and other kinds of fluid that accumulate within the lungs. He believes that lethal injection by pentobarbital can cause pulmonary edema, and that the pulmonary edema sets in very rapidly. Dr. Zivot believes that if this condition occurred during the lethal injection process, the individual would experience pain.

Dr. Antognini opined that if pulmonary edema occurs, it will not occur during the period of consciousness, which is the period most relevant to the Court when addressing this issue. He opined that someone who is unconscious cannot have the experience of pain. He has personally administered pentobarbital and thiopental, both of which have similar effects, and has seen the effects of both. The Court credits Dr. Antognini's opinions regarding this issue.

Since Ms. Pike did not offer a specific hanging protocol for comparison, it is extremely difficult to compare any psychological stress placed on Ms. Pike from the lethal injection protocol with that on a hypothetical hanging protocol. The Special Master assumes that under any hanging protocol it would be necessary to forcibly remove Ms. Pike from her cell, restrain her, force her to the execution chamber, force her up to the gallows, and restrain her movement. Under these circumstances, it would appear that any hanging protocol would be equally, if not more stressful.

Finally, Dr. Goldstein repeatedly referred to a hanging done *correctly* or *incorrectly.* However, neither "expert" on hanging provided any testimony that leads this Special Master to believe that at the time hanging ended in this country or as it existed or exists in any other country, the practice of hanging had been perfected to ensure spinal dissection and eliminate the risk of strangulation. Neither "expert" offered any evidence concerning the details of any other hanging protocol. Dr. Goldstein testified he had never even read the hanging protocol of any other state. As Justice Blackmun noted: "Hanging, however, is a crude and imprecise practice, which always includes a risk that the inmate will slowly strangulate or asphyxiate, if the rope is too elastic or too

short, or will be decapitated, if the rope is too taut or too long." *Campbell v. Wood*, 511 U.S. 1119, 114 S. Ct. 2125, 2127, 128 L. Ed. 2d 682 (1994) (Justice Blackmun, dissenting). Nothing presented to this Special Master by either hanging "expert" indicates that there is or was any hanging protocol that could eliminate the risks associated with judicial hanging. If anything, the archeological studies referred to by Dr. Kelly support a finding that despite all the attempts at perfecting judicial hanging, death by strangulation remained a significant possibility, when it was abandoned in this country.

The Court concludes that there was no credible proof presented that hanging, as an alternative method of execution, would "significantly reduce a substantial risk of severe pain."

Even if the Court had meaningful information regarding the alternative of hanging, the Court finds that hanging is not "a feasible and readily implemented alternative method of execution." Linda R. Thomas noted that TDOC does not have anyone on staff with experience in carrying out judicial hangings. TDOC does not have the equipment to carry out a judicial hanging. Warden Kenneth Nelson indicated that a hanging could not be carried out at RMSI because TDOC does not have the equipment, does not employ anyone who has expertise in execution by hanging, and it is not approved by Tennessee law.

The Court finds that Ms. Pike has failed to present a proposed alternative method of execution that "significantly reduces a substantial risk of severe pain" and that is feasible and can be readily implemented.

(5) Whether TDOC is required to permit or would be willing to permit Ms. Pike to have a clergy member or spiritual advisor in the execution chamber during her execution.

On August 7, 2026, the parties filed a *Stipulation of Dismissal of Issue #5*. The parties stipulated and agreed to the accommodations provided in Exhibit A attached to the stipulation.

The parties also agreed and stipulated that Issue (5) referred to the Special Master should be dismissed. This Court approves the filed stipulation and does not need to further address this issue.

Entered this 20th day of August, 2026.

W. Mark Ward, Senior Judge
Special Master