IN THE SUPREME COURT OF TENNESSEE
AT NASHVILLE

State of Tennessee	)
	) **Supreme Court Case No. M2020-01156-SC-DPE-DD**
v.	) **Knox County Case No. 58183A**
	) **CAPITAL CASE (Execution Date: Sept. 30, 2026)**
Christa Gail Pike	)

Prehearing Brief of Christa Gail Pike

On June 12, 2026, Ms. Pike filed a Motion and Request to Appoint a Special Master Pursuant to Tenn. Sup. Ct. R. 12(4)(E). *State v. Pike*, No. M2020-01156-SC-DPE-DD (Tenn. June 12, 2026), (Rule 12 Mot.). On July 10, 2026, the Tennessee Supreme Court appointed the Honorable Mark Ward, Senior Judge, as Special Master pursuant to Rule 12(4)(E) and Tennessee Rule of Civil Procedure 53 to receive evidence, fix the time and place for hearings, and transmit to the Court the record of proceedings and a report of findings of fact and conclusions of law no later than August 21, 2026. (July 10 Order at 1–2).

The Court referred five specific issues to the Special Master:

> (1) whether Ms. Pike's diagnosis of thrombocytosis makes it "sure or very likely" that achieving peripheral IV access under the current protocol will cause her serious illness and needless suffering;
>
> (2) whether Ms. Pike's history of sexual assault and diagnosis of PTSD make it "sure or very likely" that her movement to a men's facility and observation by male prison officials will cause her serious illness and needless suffering;
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> (3) whether Ms. Pike's small and compromised veins make it "sure or very likely" that achieving peripheral IV access will cause her serious illness and needless suffering;

(4) whether Ms. Pike's proposed alternative methods of execution would significantly reduce a substantial risk of severe pain; and

(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.

(*Id.* at 2–3). Issues not specifically referred to the Special Master were held in abeyance pending completion of the Special Master's report. *Id.* at 3. On August 7, 2026, the parties filed a stipulation of dismissal of Issue (5) pursuant to an agreement by the parties.

FACTUAL BACKGROUND

A. Sentence and Incarceration

In 1996 at age eighteen, Ms. Pike became the youngest woman sentenced to death in the modern era of the death penalty for her role in the murder of Colleen Slemmer. She is currently one of only 45 women on death row in the United States. *See* Death Penalty Information Center, Women, https://deathpenaltyinfo.org/death-row/women (last accessed August 5, 2026). If her execution proceeds as scheduled on September 30, 2026, she would be the first woman executed by the State of Tennessee in more than 200 years.[1]

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[1] *See* Executions in the U.S. 1608–2002, Espy File, available at https://deathpenaltyinfo.org/executions/executions-overview/executions-in-the-u-s-1608-2002-the-espy-file (last visited August 5, 2026). Historical research identifies only three women executed in the State of Tennessee, ever. All three were executed between 1807–1819. The Espy database identifies four executions of women: 1) March 20, 1807, hanging of Molly Holcomb, a Black female; 2) 1808 hanging of an unnamed Black female; 3) 1819 hanging of an unnamed Black female, and 4) 1820 hanging of Eve Martin, race unknown, for accessory to murder. However, Eve Martin was incorrectly included—she was the victim of a homicide, not an accessory. *See* David

Ms. Pike has been incarcerated at the Debra K. Johnson Rehabilitation Center (DJRC) since her 1996 conviction. For nearly 30 years, she was held in a seven-by-twelve-foot cell for twenty-two to twenty-four hours a day with little to no human contact, before a 2024 settlement with the State ended that isolation and extended her the same behavior-dependent privileges afforded to men on Tennessee's death row. Expert evaluations document that this prolonged isolation had devastating effects on Ms. Pike's mental health. Bethany Brand, Ph.D., a licensed clinical psychologist and trauma expert who evaluated Ms. Pike in 2023, confirmed that solitary confinement exacerbated her pre-existing psychiatric vulnerabilities. (Report of Dr. Bethany Brand, July 29, 2023, at 31).

B. Developmental and Trauma History

Ms. Pike was born in 1976 in Beckley, West Virginia into a family marked by generations of severe emotional and psychiatric instability, alcoholism, and interpersonal violence on both sides. (Brand Report at 3). Her mother was a chronic alcoholic who suffered from depression and attempted suicide when Ms. Pike was three years old; her father played little consistent role in her upbringing, and neither parent provided stable care. (Opp'n to Execution Date Mot. at 8, June 7, 2021) (citing PC Tr. Vol. VII at 175–76); (Brand Report at 10).

Ms. Pike's father physically abused her throughout her childhood, at times striking her five or six times in a single day with a belt folded over to increase the

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V. Baker, Women and Capital Punishment in the United States: An Analytical History, 132 (McFarland, 2015).

pain. Her mother's boyfriends separately subjected her to physical abuse, including one who beat her with a belt hard enough to be criminally charged and another who beat Ms. Pike and her sister regularly with a leather strap with a wood handle. (Opp'n to Execution Date Mot. at 9–10) (citing Jan. 2007 Ex. 1-A, Social History at 14, 28).

Beginning at approximately age two, Ms. Pike was sexually abused by her paternal grandmother's boyfriend, and she exhibited behavioral indicators of early sexual abuse as young as kindergarten and first grade, like drawing male genitalia. (Human Rights Pet'n App'x, Ex. 8, Post-Conviction Test. of Carrie Ross, at 190–93).

When she was eleven, Ms. Pike was raped by a neighbor who restrained her and inserted objects into her body. (Opp'n to Execution Date Mot. at 11) (citing PC Tr. Vol. VIII at 257–58; Jan. 2007 Ex. 1-A, Social History at 44). The assailant was charged, though the charge was later reduced. (*Id.*).

At age seventeen, Ms. Pike was raped again, this time by a stranger who dragged her off the street at night, struck her head against a rock, and covered her mouth as she screamed before fleeing when a passing car's headlights interrupted the attack. (Opp'n to Execution Date Mot. at 12) (citing Jan. 2007 Ex. 1-A, Social History at 44; Jan. 2007 Ex. 6, Hospital Records at 18–30); Clinical Interview with Christa Pike (Oct. 5, 1995). Contemporaneous hospital records confirmed the assault. (*Id.*).

C. Documented Psychological/Psychiatric Conditions

A post-conviction psychiatric evaluation diagnosed Ms. Pike with bipolar II disorder, dissociation, and post-traumatic stress disorder, concluding that each

condition flowed from complex trauma in childhood. (Opp'n to Execution Date Mot. at 12–13) (citing PC Tr. Vols. XXIX–XXX; PC Ex. 42, Dr. Kenner PowerPoint); (Brand Report at 61, Decl. of Bethany Brand, Ph.D. ¶¶ 16–17). A subsequent trauma-focused review of her records concluded that, measured against more than 30 years of the reviewing expert's clinical practice, the severity of Ms. Pike's early abuse and neglect was extreme and consistent with a diagnostic profile of PTSD and dissociation.

As would be expected from her history, TDOC medical records document a consistent psychiatric diagnosis across more than a decade of incarceration: treatment plans and progress notes from 2010 forward identify Ms. Pike's Axis I diagnosis as Bipolar I Disorder, depression, and, beginning by at least 2017, her providers have consistently documented a dual diagnosis of Bipolar I Disorder and Post-Traumatic Stress Disorder, moderate. (TDOC Mental Health Treatment Plan (Feb. 11, 2011)); (TDOC Mental Health Treatment Plan Review (Oct. 28, 2020)).

TDOC's treating psychiatric providers have prescribed Ms. Pike a range of psychotropic medications over the years to manage these conditions, including Topamax, Wellbutrin, Vistaril, Lamictal, Abilify, and, at times, Lithium and Prazosin (commonly used to treat trauma-related nightmares), with her treatment plans identifying mood instability and overreaction to hostility as the target symptoms of care. TDOC Medication Admin. Rec. (2017–18); Meharry Med. Coll. Hematology/Oncology Consultation (Mar. 22, 2019).

D. Documented Physical/Medical Conditions

Medical records document persistently elevated platelet count in Ms. Pike's blood work (any value over 450k is considered elevated). Ms. Pike was formally referred to hematology in 2017 after lab work revealed a platelet count of approximately one million and was subsequently diagnosed with CALR-mutated essential thrombocytosis, a myeloproliferative blood disorder, confirmed by genetic testing showing a CALR mutation with JAK2 negativity. (MNGH Dr Robert Hardy Cancer and Infusion Center, Clinic Notes, Zivot-000078). She has since been maintained on daily low-dose aspirin therapy and monitored through periodic hematology/oncology telemedicine consultations and repeat blood work. (Hematology Oncology Telemedicine Clinic Note, Zivot-000425).

Ms. Pike also has a documented history of small and compromised veins and difficulty with blood draws. TDOC medical staff consistently use a 23-gauge butterfly needle—a needle gauge typically reserved for infants and small children because of their comparably small, difficult-to-access veins—to draw her blood. Additionally, Ms. Pike's regular blood draws—required every several months to monitor platelet counts and electrolytes related to her thrombocytosis—cause cumulative trauma to her veins: every venipuncture causes minor trauma, local clotting, and microscopic fibrosis, progressively making frequently accessed veins more difficult to access over time. (Van Norman Report at 20). The cumulative effect of years of repeated blood draws through these already-tiny veins has further degraded their integrity. (*Id.*).

E. The Tennessee Lethal Injection Protocol

Tennessee's current lethal injection execution protocol calls for a single drug pentobarbital administered through the intravenous injection of four syringes in consecutive series: a 50 mL saline flush, followed by two 50 mL syringes each containing 2,500 mg of pentobarbital (for a total dose of 5 grams), followed by a final 50 mL saline flush. Protocol at 19–20. If the prisoner is not executed after the first dose, a second set of syringes with identical contents will be administered.

The Protocol requires the establishment of at least two functioning intravenous lines before execution can proceed, Protocol § E.2; however, it does not identify the size of the IV catheter to be used. The "IV Team" responsible for establishing venous access may consist of "physicians, physician assistants, nurses, emergency medical technicians ('EMTs'), paramedics, military corpsman with relevant medical training, or other certified or licensed personnel." Protocol at 8. The Protocol does not specify what training or qualifications are required beyond these broad categories, nor does it detail the experience level necessary for IV Team members. If peripheral IV access cannot be achieved, the Protocol provides that "the Physician will insert a central line." Protocol at 20.

For female inmates, the Protocol requires transfer from the DJRC to Riverbend Maximum Security Institution (RMSI), a men's facility, forty-eight hours before the scheduled execution.[2] Protocol at 12–13. During this period, the inmate is held in a

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[2] Both Ms. Pike and the State of Tennessee endorse this reading of the protocol, and Ms. Pike pled the same. The Tennessee Supreme Court mistakenly suggests that Ms. Pike will be transferred to RMSI two weeks prior to her execution.

death watch cell under constant observation by corrections officers. The Protocol makes no provision for female corrections officers to observe female inmates during the death watch period. Protocol at 12–15. In the twelve hours before execution, the Protocol prohibits any contact with family or friends.

LEGAL STANDARD

I. The Eighth Amendment Prohibits Punishments That Create an Objectively Intolerable Risk of Serious Harm.

To succeed on the merits of an Eighth Amendment claim involving an anticipated execution, a plaintiff typically must make two showings. First, the plaintiff must demonstrate that the challenged course of action poses an "objectively intolerable risk of harm" or a "substantial risk of serious harm. " *Baze v. Rees*, 553 U.S. 35, 50 (2008) (quoting *Farmer v. Brennan*, 511 U.S. 825, 842, 846 (1994)). This future harm can constitute cruel and unusual punishment where the plaintiff shows that the risk is "sure or very likely to cause serious illness and needless suffering" and gives rise to "sufficiently imminent dangers." *Id.* (quoting *Helling v. McKinney*, 509 U.S. 25, 33–35 (1993)).

Although Eighth Amendment cases routinely discuss such harm using the shorthand of pain, it is well established that the Eighth Amendment encompasses more than what modern medicine would classify as physical pain. Rather, the Eighth Amendment considers all forms of sufficiently severe "needless suffering." *Glossip v. Gross*, 576 U.S. 863, 877 (2015) (quoting *Baze*, 553 U.S. at 50). This includes where the State's chose method poses a "superadd[ition]" to a death sentence in the form of "terror, pain, or disgrace." *Bucklew v. Precythe*, 587 U.S. 119, 133 (2019). Indeed,

courts have found that psychological terror or pain can independently support an Eighth Amendment claim. *See Grayson v. Comm'r, Ala. Dep't of Corr.*, 121 F.4th 894, 900 n.3 (11th Cir. 2024) (recognizing that there "may exist a form of execution that induced psychological terror or pain that is severe enough to support an Eighth Amendment claim").

Second, and in addition to plaintiff's demonstration that the State's protocol creates a demonstrated risk of needless suffering, the plaintiff must also show that the risk is substantial "when compared to the known and available alternatives." *Glossip*, 576 U.S. at 878; *see also Baze*, 553 U.S. at 61. When an individual challenges some aspect of her proposed execution, "the Eighth Amendment requires [her] to plead and prove a known and available alternative." *Glossip*, 576 U.S. at 880. The alternative pled by Plaintiff must establish that the alternative is "feasible, readily implemented, and in fact significantly reduce[s] a substantial risk of severe pain." *Baze*, 553 U.S. at 52; *see also Abdur'Rahman v. Parker*, 558 S.W.3d 606, 616 (Tenn. 2018) ("[U]nder the federal or state constitution, a death-sentenced inmate must establish . . . that the risk is substantial compared to the known and available alternatives."). Moreover, the proposed alternative must be available and detailed to permit a finding that the state could carry it out "relatively easily and reasonably quickly." *Bucklew*, 587 U.S. at 141. However, the alternative method of execution need not be one that is presently authorized by state law. *Id.* at 139-40. Rather, as long as that plausible alternative course of action is "known and available," then the

plaintiff's challenge does not allege, either explicitly or by implication, that "the death penalty is categorically unconstitutional." *Glossip*, 576 U.S. at 880.

II. Article I, Sections 13, 16, and 32 of the Tennessee Constitution Provides Analogous, if Not Potentially Broader, Protection Against Cruel and Unusual Punishment.

The Tennessee Supreme Court has held that the two-prong test established in *Baze* and *Glossip* applies equally to a challenge under Article I, Section 16 of the Tennessee Constitution. *West v. Schofield*, 519 S.W.3d 550, 563–64, 567–68 (Tenn. 2017). Moreover, the Tennessee Supreme Court may not construe the Eighth Amendment in a way contrary to the United States Supreme Court's construction. *Id.* at 566. In the method-of-execution context, the Tennessee Supreme Court has reasoned that there is "no difference in language between the [Eighth Amendment] and [Article I, Section 16] which would warrant application of a different standard under the Tennessee Constitution." *Abdur'Rahman*, 558 S.W.3d at 616–18.

Notwithstanding this general alignment, Tennessee courts have expressly recognized that they are "always free to expand the minimum level of protection mandated by the federal constitution." *Doe v. Norris*, 751 S.W.2d 834, 838 (Tenn. 1988). Other state courts have exercised precisely this type of freedom in analogous contexts. In one such instance, the Montana Supreme Court read the dignity provision of the Montana Constitution together with its cruel-and-unusual-punishment clause "to provide Montana citizens with greater protections from cruel and unusual punishment than does the federal constitution." *Walker v. State*, 68 P.3d 872, 883 (Mont. 2003); *see also Armstrong v. State*, 989 P.2d 364, 388–89 (Mont. 1999)

(holding that the state constitution is not a "cook book of disconnected and discrete rules" but rather a "compact of overlapping and redundant rights and guarantees").

Under this reasoning, multiple state constitutional provisions may be read together to provide cumulative protections that exceed the floor established by any single federal analog. Tennessee's Constitution contains additional textual hooks that may support broader protections than the Eighth Amendment alone. Article I, Section 13 of the Tennessee Constitution prohibits "unnecessary rigor" in arrest and confinement, which Pike's method of execution is sure to independently violate because it is an abuse that "cannot be justified by necessity". *See State v. Todd*, 2017 WL 1205945, at *5 (Tenn. Ct. App. Mar. 31, 2017) (quoting *Sterling v. Cupp*, 290 Or. 611, 620, 625 P.2d 123, 130 (Or. 1981).

Finally, Article I, Section 32 of the Tennessee Constitution guarantees "humane treatment"—a provision the Tennessee Supreme Court has addressed, though not in the specific method-of-execution context. *See State v. Brimmer*, 876 S.W.2d 75, 88 (Tenn. 1994) (addressing Article I, Section 32 in the context of a general challenge to the death penalty).

Tennessee courts have not foreclosed these provisions from being read to provide protection beyond the Eighth Amendment's floor. Indeed, in a circumstance such as this, where the current protocol is needlessly harsh, degrading, and dehumanizing and cannot be justified by necessity when less degrading, dehumanizing and less harsh alternatives exist, the provisions should be read together to provide more than the floor.

III. Deference and Its Limit

Although the Constitution affords a "measure of deference to a State's choice of execution procedures," *Bucklew*, 587 U.S. at 120, a state's refusal to adopt a feasible and readily implemented alternative that will significantly reduce a substantial risk of severe pain, without a "legitimate penological justification" can be viewed as "cruel and unusual" under the Eighth Amendment, *Baze*, 553 U.S. at 51-52. It is thus the State's burden to articulate such a justification not to adopt a preferred method of execution. *Bucklew*, 587 U.S. at 134-35; *see, e.g.*, *Glossip*, 576 U.S. at 877-79 (state's failure to procure drugs despite good-faith effort to obtain them justified refusal); *Baze*, 553 U.S. at 57 (state had legitimate interest in selecting method it regarded as "preserving the dignity of the procedure").

ANALYSIS

ISSUE 1: Under the Current Lethal Injection Protocol, Ms. Pike's Thrombocytosis Will Cause Serious Illness and Needless Suffering.

Given Ms. Pike's diagnosis of thrombocytosis, achieving peripheral IV access and use of pentobarbital pursuant to the current lethal injection protocol makes it sure or very likely that the challenged protocol will cause her serious illness and needless suffering. *Baze v. Rees*, 553 U.S. 35, 50 (2008).

A. Ms. Pike's Thrombocytosis Is a Documented, Chronic, and Progressive Condition

Ms. Pike's thrombocytosis, attributable to a rare myeloproliferative blood cancer, creates a substantial risk that clotting will impede delivery of pentobarbital while simultaneously depleting a critical clotting protein, thereby predisposing her

to IV failure or a uniquely severe hemorrhagic form of the pulmonary edema already documented in Tennessee's recent pentobarbital executions.

Ms. Pike was formally referred to hematology in 2017 after lab work revealed a platelet count of approximately one million and was subsequently diagnosed with CALR-mutated essential thrombocytosis, a myeloproliferative blood disorder, confirmed by genetic testing showing a CALR mutation with JAK2 negativity. (MNGH Dr Robert Hardy Cancer and Infusion Center, Clinic Notes, Zivot-000078). At approximately 1,000,000 per microliter of blood, Ms. Pike's platelet count was more than twice the upper limit of normal. (Report of Dr. Joel Zivot, January 6, 2026, ¶ 9). She has since been maintained on daily low-dose aspirin therapy and monitored through periodic hematology/oncology telemedicine consultations and repeat blood work. (Hematology Oncology Telemedicine Clinic Note, Zivot-000425). This condition has persisted for years, with her platelet count continuing to fluctuate. For example, platelet counts in 2025 and 2026, while lower with aspirin, consistently measure on the high-end of normal or the high-end range.

Additionally, Ms. Pike's regular blood draws—required every several months to monitor platelet counts and electrolytes—cause cumulative trauma to her veins. (Report of Dr. Gail Van Norman, August 5, 2026, at 20). Every time blood is drawn, minor trauma occurs in the vein that leads to local clotting and microscopic fibrosis, or scarring. (*Id.*). The more frequent the blood draws, the more likely that frequently accessed veins will become increasingly difficult to access over time.

B. The Medical Mechanism of Thrombocytosis: Clotting and Bleeding Risks

Depending on her platelet count at the time of execution, Ms. Pike's thrombocytosis creates a dual, paradoxical risk: an increased risk of clotting at the IV site—which can occlude the catheter and prevent drug delivery—or an increased risk of catastrophic bleeding. These mechanisms, operating simultaneously, expose Ms. Pike to uniquely severe complications during lethal injection.

Dr. Joel Zivot, a board-certified anesthesiologist and critical care physician at Emory University with thirty-one years of clinical practice, who has examined death row prisoners in eight states including Tennessee, will testify that Ms. Pike's thrombocytosis is likely caused by a myeloproliferative disorder, a clonal stem-cell disease in which the bone marrow overproduces blood cells—in this case, platelets. (Zivot Report at ¶ 8). Ms. Pike's thrombocytosis exposes her to an increased risk of clotting and/or an increased risk of catastrophic bleeding.

Dr. Gail A. Van Norman, a board-certified anesthesiologist and professor emeritus at the University of Washington with over thirty-five years of clinical experience, opines that essential thrombocytosis is associated with microvascular inflammation—inflammation of the small blood vessels—which can make veins more fragile and subject to rupture, and venous access more difficult. (Van Norman Report at 20). The longer a patient has thrombocytosis, the greater the risk, with over half of patients experiencing complications after twenty years. (*Id.*). These effects compound the already-elevated risks posed by Ms. Pike's small, scarred veins.

Platelets are critical to blood clot formation. (Zivot Report at ¶ 8). Due to her thrombocytosis, Ms. Pike's elevated platelet count creates a substantial risk that blood clots will form at and around the site of any intravenous catheter insertion. (*Id.* at 8-10). Clot formation at the IV site can occlude the catheter, preventing delivery of the lethal chemical into the bloodstream, and may necessitate repeated, painful attempts at venous access or placement of a central line.

In addition, a very high platelet count can *also* lead to dangerous, uncontrolled bleeding when excess circulating platelets consume von Willebrand Factor ("vWF"), a critical blood-clotting protein that acts as a bridge between platelets and the vessel wall at sites of injury. (Zivot Report at ¶ 8). As a result, Ms. Pike faces a compounding risk of clotting at the IV site that may prevent drug delivery and/or hemorrhage—particularly in the lungs, where pentobarbital's known toxicity is already expected to damage capillary endothelium.

C. Ms. Pike's Thrombocytosis Creates a Cascade of Foreseeable Harms During Lethal Injection

Ms. Pike's thrombocytosis creates a cascade of foreseeable harms during the administration of pentobarbital. This includes three sequential risks: (1) increased clotting at the IV site that may occlude the catheter and prevent drug delivery; (2) the near-certainty of pulmonary edema based on autopsy evidence from recent Tennessee executions; and (3) the transformation of that pulmonary edema into a uniquely severe hemorrhagic event due to Ms. Pike's depleted von Willebrand Factor. Each risk compounds the others, producing what Dr. Zivot describes as "death by drowning in one's own blood."

Increased risk of clotting and rupture at the IV site. Ms. Pike's elevated platelet count creates a substantial risk that blood clots will form at and around the site of any intravenous catheter insertion. (Van Norman Report at 20). Thrombocytosis can increase inflammation and clotting in small veins that makes these veins more fragile and subject to rupture, and venous access more difficult. (*Id.*). The resulting complications, such as repeat attempts to establish peripheral or central venous access, line infiltration and/or inadvertent intra-arterial injection of pentobarbital, could prevent delivery of the lethal chemical into the bloodstream, preventing or slowing onset of effects, causing a lingering and extremely painful death from suffocation. (Van Norman Report at 7-9). If these complications arise, pentobarbital may not reach the central circulation, meaning it cannot produce the rapid unconsciousness intended by the protocol. The result is a substantial risk that Ms. Pike will remain conscious—and aware of pain—for a prolonged period while execution personnel attempt to reestablish venous access or while a compromised IV line delivers the drug erratically. (*Id.* at 13).

Pulmonary edema. Even assuming successful IV access, the evidence establishes that pentobarbital-induced pulmonary edema is a near-certainty. Dr. Zivot reviewed the autopsy findings of two Tennessee inmates recently executed by pentobarbital under the same protocol: Byron Black (executed August 5, 2025) and Harold Nichols (executed December 11, 2025). (Addendum Report of Joel B. Zivot, M.D. (Apr. 8, 2026) at 2-4). Both showed pulmonary edema at autopsy—a condition that could not have pre-existed and requires a beating heart to develop, confirming

that it occurred *during* the execution process while the heart was still pumping. (*Id.* at 3). This is consistent with the published medical literature: a study of 43 lethal injection autopsies across eight states found pulmonary edema in 79% of all cases and 66.7% of pentobarbital-only executions. Zivot, Edgar & Lubarsky, *Execution by Lethal Injection: Autopsy Findings of Pulmonary Edema*, medRxiv (Aug. 17, 2022) at 6-8.

Dr. Zivot will explain that pentobarbital's highly alkaline pH (9.8 to 11) is "extremely noxious to human tissue"—akin to a severe chemical burn—and that the massive quantities injected under the Protocol (5 grams in 100 mL of solution) are directly toxic to the delicate pulmonary capillary endothelial cells, causing edema fluid to escape into the lungs. (Zivot Addendum at 5; Zivot, *et al.* Study at 9-11). Similarly, Dr. Van Norman opines that barbiturates like pentobarbital are "strongly alkaline and very caustic," causing immediate tissue destruction on contact—damage that patients liken to "being set on fire." (Van Norman Report at 7). Dr. Zivot characterizes the resulting pulmonary edema as "an excruciatingly painful condition characterized by the sensation of drowning and a burning in the lungs as they fill with blood." (Zivot Addendum at 6.) Critically, pentobarbital provides sedation but *no pain relief at any dose*—it is not an analgesic. (Zivot Report at 19; Zivot Adden. at 6). Dr. Zivot therefore opines that it is a "virtual certainty" that Ms. Pike would experience this excruciating pain before death. (Zivot Addendum at 8).

Ms. Pike's thrombocytosis would produce an even more severe, hemorrhagic form of pulmonary edema. Ms. Pike's predisposition to abnormal clotting "would very likely produce an even more severe pattern of bloody froth in the

lungs" than what is observed in inmates without her condition. (Zivot Report at 10). Where ordinary inmates experience pulmonary edema that is excruciatingly painful, Ms. Pike's execution would produce what Dr. Zivot describes as "death by drowning in one's own blood"—a hemorrhagic pulmonary edema of uniquely catastrophic severity. (*Id.*). Dr. Zivot concludes that a substantial risk exists that executing Ms. Pike under this Protocol will result in "an even more exaggerated, cruel death caused by drowning in one's own blood," combined with emotional terror and trauma in anticipation of that death. (*Id.* at 22).

D. Conclusion

Ms. Pike's thrombocytosis, a documented and chronic myeloproliferative blood disorder, creates a cascading series of foreseeable medical complications during lethal injection. First, her elevated platelet count and repeated blood draws create a substantial risk of clot formation, IV failure, or rupture at the IV catheter site, impeding delivery of pentobarbital. Second, the excess platelets may simultaneously deplete von Willebrand Factor, predisposing her to uncontrolled hemorrhage. Third, pentobarbital-induced pulmonary edema—a near-certainty based on autopsy evidence from recent Tennessee executions—will be transformed into a catastrophic hemorrhagic event as Ms. Pike's compromised clotting ability causes her lungs to fill with blood.

This evidence more than satisfies the *Baze* standard. The protocol, as applied to Ms. Pike, presents a risk that is "sure or very likely to cause serious illness and needless suffering" and constitutes an "objectively intolerable risk of harm." *Baze*,

553 U.S. at 50. The risk is grounded in Ms. Pike's specific, documented medical condition, confirmed by her medical records, and attested to by qualified experts who hold their opinions to a reasonable degree of medical certainty. For all of these reasons, it is sure or very likely that achieving peripheral IV access pursuant to the current lethal injection protocol and administering pentobarbital to Ms. Pike will cause her serious illness and needless suffering, in violation of the Eighth Amendment.

ISSUE 2: The Transfer of Ms. Pike to a Men's Facility, Her Observation by Male Officials, and the Manner of Her Execution Are Sure or Very Likely to Cause Serious Illness and Needless Suffering.

The protocol will cause Ms. Pike serious illness and needless suffering as it relates to her mental health on four grounds, independently, and in combination. First, Ms. Pike's clinically validated complex PTSD—arising from documented, repeated sexual assault by multiple male perpetrators—means that the Protocol's use of an all-male restraint team will not merely remind her of her past assaults, but it will cause her to neurobiologically relive them in real time. Second, any difficulties in achieving venous access will compound and intensify this re-traumatization at the precise moment of her death. Third, the cumulative conditions of the protocol, including forced transfer to a men's facility, constant observation by male officers, and near-total isolation from supportive contacts, create a substantial and unaddressed risk that Ms. Pike will psychologically decompensate before the execution can even be carried out. Fourth, additional execution contingencies—including invasive close monitoring during the pre-execution period, the possibility of

femoral venous access if peripheral IV access fails, and the risk of a prolonged or failed execution attempt—each independently constitute recognized trauma triggers that would cause Ms. Pike to experience severe psychological re-traumatization.

A. Contemporaneous Records Document Repeated Sexual Victimization by Multiple Perpetrators

Ms. Pike suffered extreme, chronic sexual abuse from preschool age through age seventeen—a history that Dr. Brand, with over thirty years in trauma practice, characterized as more extreme than almost any case she has encountered. (Brand Forensic Report, July 29, 2023, at 2). Ms. Pike reported sexual abuse by at least five different perpetrators across her childhood and adolescence, a pattern reflecting the systematic failure of every adult caretaker to protect her—facts squarely relevant to how she will experience being placed, unprotected, in the custody of unfamiliar men during her final days.

The abuse began when Ms. Pike was a preschooler. Her paternal grandmother's boyfriend, Ernest Johnson, orally raped her over a period of years—from preschool through kindergarten. He locked her in a dark chicken coop infested with spiders—an experience that produced both a lifelong phobia and the earliest traumatic imprint of male sexual violence, powerlessness, and confinement. (Brand Forensic Report, July 29, 2023, at 9–10). When she was eleven, a neighbor named Claude Davis raped Ms. Pike, causing a genital infection severe enough to require medical attention—for which Davis was prosecuted. (Brand Forensic Report, July 29, 2023, at 12).

Ms. Pike's mother's boyfriend, Steve Kyaw, sexually molested her through repeated groping and twisting of her nipples, accompanied by verbal degradation, calling her a "slut" and "whore." In addition to physical and sexual abuse, Kyaw exposed Ms. Pike to graphic sexual information and behavior at a young age. (Brand Forensic Report, July 29, 2023, at 13).

At the age of seventeen, Ms. Pike was raped again. Contemporaneous records corroborate this assault in detail. On January 14, 1994, while walking to a store in Carrboro, North Carolina, a man grabbed Ms. Pike, threw her to the ground, and raped her. (Carrboro, NC Police Department Sexual Assault Incident Report, Jan. 14, 1994.) She screamed, struck her attacker, and the assailant fled when an automobile approached. (*Id.*).

Medical records from the University of North Carolina at Chapel Hill document that the seventeen-year-old Ms. Pike presented crying, "tearful, very upset while telling the story," with abrasions on her breast and leg and bruising on her inner thigh near her genitals and knee. (UNC Chapel Hill Medical Records, Jan. 14, 1994.) The police interview records document that Ms. Pike was so distraught and sobbing that she could not be understood at times during her statement. (Carrboro NC Police Interview, Jan. 14, 1994).

B. Ms. Pike's Complex PTSD Arising From Repeated Sexual Assault Is Clinically Validated, Corroborated by Decades of Independent Evaluation, and Unrebutted

Ms. Pike's PTSD and bipolar disorder diagnoses are supported by clinical records spanning more than three decades, confirmed by multiple independent

evaluators using distinct methodologies, and validated by Dr. Brand's own gold-standard diagnostic testing.

Dr. Brand's evaluation in January 2023 confirmed and expanded upon Ms. Pike's prior diagnoses. Using the CAPS-5—the gold-standard clinician-administered interview for PTSD diagnosis under DSM-5—Dr. Brand determined that Ms. Pike meets full diagnostic criteria for PTSD with severely disruptive symptoms across all four symptom clusters. (Brand Forensic Report, July 29, 2023, at 14–18). Dr. Brand further identified eight co-occurring disorders: Complex Posttraumatic Stress Disorder, Bipolar I Disorder, Dissociative Amnesia, Depersonalization/Derealization Disorder, Panic Disorder, Obsessive-Compulsive Disorder, Hoarding Disorder, and Specific Phobia (spiders). (Brand Forensic Report, July 29, 2023, at 33–35).

Ms. Pike's PTSD symptoms manifest in specific, ongoing ways. Most relevant here, she experiences ***intrusive symptoms***, or strong physical reactions when reminded of her trauma—including gagging, shuddering, and chills when reminded of the oral rape—demonstrating that her body continues to respond to trauma cues as though the events are occurring in the present. (Brand Forensic Report, July 29, 2023, at 23-24). In addition, she experiences ***marked alterations in arousal and reactivity***, meaning she lives in a state of constant hypervigilance. She is easily startled by loud noises and by people walking past her. She has severe difficulty concentrating and experiences chronic insomnia—typically requiring three to four

hours to fall asleep, with frequent awakenings throughout the night. (Brand Forensic Report, July 29, 2023, at 24).[3]

At bottom, Ms. Pike suffers from complex and multi-faceted psychiatric disorders that are the result of severe trauma. Ms. Pike's trauma has become structurally embedded in her neurobiological responses, such that its cues involuntarily activate the full sensory and affective apparatus of the original victimization events. As will be described in further detail below, Ms. Pike's diagnoses reflect a documented, severe clinical profile that directly predicts how Ms. Pike will respond to the protocol's specific conditions.

C. The Neurobiology of Trauma Establishes That the Protocol Will Cause Ms. Pike to Relive Her Assaults in Real Time—Not Merely Recall Them

The certified question asks whether the protocol's conditions "would make it 'sure or very likely'" that Ms. Pike will suffer serious illness and needless suffering. The answer turns on a scientific principle central to Dr. Brand's opinion: traumatic memory is qualitatively different from ordinary autobiographical memory, and that difference has direct, predictable, and severe consequences for how Ms. Pike will experience the protocol's restraint procedures.

Consistent with established trauma science, ordinary autobiographical memories are stored as coherent verbal narratives that the individual can

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[3] To manage these conditions, Ms. Pike was being treated with Bupropion (Wellbutrin), Aripiprazole (Abilify), and Propranolol, confirming ongoing active psychiatric management of her conditions. (Brand Forensic Report, July 29, 2023, at 36.)

deliberately retrieve and recount while remaining aware that the events occurred in the past. Traumatic memories, by contrast, are not stored this way. They are encoded as fragmented, involuntary sensory and physical fragments that are not deliberately recalled but are involuntarily relived when triggered by sensory or physical stimuli that mirror the original trauma. (Brand Addendum, June 1, 2026, at 5).

This distinction is not metaphorical. When a traumatic memory is triggered, the individual does not "remember" the event in the colloquial sense. Instead, the brain reactivates the original sensory, affective, and motor experience as though the traumatic event "is even currently happening (as in a flashback)." (Brand Forensic Report, July 29, 2023, at n1). Dr. Brand observed this phenomenon directly during her evaluation: while narrating a childhood memory of an abuser throwing her into a pool, Ms. Pike shifted from past tense to present tense—a verbal marker that Dr. Brand identifies as indicating that the individual has "temporarily lost full awareness that this awful experience is over and occurred in the past." (*Id.* at 11).

Several aspects of the lethal injection protocol as applied to Ms. Pike will trigger superadded trauma. First, Ms. Pike will be moved from DJRC, where she has lived for decades, to a men's facility forty-eight hours before her execution. During this period, Ms. Pike will be held in a death watch cell, constantly observed by male corrections officers, with no provision under the current protocol for female corrections officers to observe female inmates during the death watch period.[4] Dr.

[4] The parties conferred on this issue, but TDOC could not guarantee that Ms. Pike would be overserved solely by female guards.

Brand characterizes this transfer not as "mere administrative procedure" but as "added and severe punishment" for a woman with Ms. Pike's history. (Brand Addendum, June 1, 2026, at 5). Dr. Brand opines that this isolation "replicat[es], with harsh precision, the abandonment she has known her entire life." (Brand Addendum, June 1, 2026, at 5; Brand Forensic Report, July 29, 2023, at 30).

Next, she will be physically extracted from her cell and restrained by a group of men, rendered immobile and unable to move, which "will return her, in full sensory and neurobiological force, to every violation she ever survived." (Brand Addendum, June 1, 2026, at 5). Ms. Pike was repeatedly held down by men and raped throughout her childhood and adolescence. The Protocol's own design—an all-male restraint team physically immobilizing Ms. Pike—is therefore not merely likely to trigger this response; it is a near-perfect replication of the precise sensory conditions of her original assaults.

The combination of forced transfer to a men's facility, constant male observation, total isolation from supportive contacts, anticipation of physical restraint by men, and knowledge of impending death creates a compounding cascade of trauma triggers that, in Dr. Brand's clinical opinion, creates a substantial risk that Ms. Pike will decompensate—that she will be "returned, in her final hours, to the terror that defined her life." (*Id.* at 6). Dr. Zivot reached the same conclusion: "It is conceivable that in anticipation of an execution, Ms. Pike's mental health would deteriorate to the point of a loss of agency and be unable to undergo an execution on that basis." (Zivot Report, Jan. 6, 2026, ¶ 20).

Dr. Brand's August 4, 2026 addendum further addresses the impact of close monitoring at DJRC during the pre-execution isolation period. Even at the women's facility, if Ms. Pike is observed during private moments such as using the restroom, bathing, or dressing, Dr. Brand opines that this would constitute re-traumatization. Being watched by staff during these private times "would replicate the loss of bodily autonomy and privacy that characterized her original victimizations." (Brand Second Addendum, Aug. 4, 2026, at 1–2). Dr. Brand explains that the traumatic trigger here is "the loss of privacy and control over her own body," which "would be highly likely to evoke the same feelings of exposure, helplessness, and powerlessness she experienced during the rapes." (Id. at 2).

For Ms. Pike, the convergence of her complex PTSD with the physiological realities of lethal injection compels only one conclusion: at the moment of execution, she will simultaneously experience the neurobiological reliving of her sexual assaults—triggered by physical restraint at the hands of multiple men—and the physiological sensations of drowning, choking, and air hunger as her lungs fill with fluid and blood. This compounded sensory profile will produce suffering far exceeding what any inmate without Ms. Pike's particular trauma history would experience and far exceeding what any legitimate penological purpose requires.

Dr. Brand opines that a failed or prolonged execution attempt would cause additional severe psychological harm. When an execution does not go smoothly—such as when executioners require an extended period to set IV lines, or when the lethal injection does not kill the inmate—"the prisoner is highly likely to experience a near-

death event of the type known to cause long-term and grave psychological consequences." (Brand Second Addendum, Aug. 4, 2026, at 2–3). Citing peer-reviewed literature, Dr. Brand explicitly compares repeated or extended execution attempts to "mock executions, a recognized form of psychological torture." (*Id.* at 3). The psychological mechanism is the same: "the trauma associated with mock execution stems from the prisoner's subjective experience of imminent death, prolonged uncertainty, and helplessness, not from whether the threat of death is genuine. Those conditions are precisely what a repeated or extended execution attempt produces." (*Id.*). Dr. Brand further notes that when a traumatized person is in an extremely heightened state of terror, "they may lose control of their bladder and/or bowels, or vomit, due to the extreme hyperarousal produced by facing death while highly triggered by trauma reminders." (*Id.*).

Dr. Brand's August 4, 2026 addendum identifies additional execution contingencies that would independently cause severe re-traumatization, including any attempt to place central or femoral venous access, which involves exposure of and needle insertion in the groin region and "directly re-trigger the terror, as well as the sensory and situational memories, of being raped." (Brand Second Addendum, Aug. 4, 2026, at 2). For Ms. Pike, "procedures requiring genital or groin-area exposure, as well as being touched in those private areas by unfamiliar personnel, particularly male personnel, and particularly under conditions of physical restraint, would directly re-trigger the terror, as well as the sensory and situational memories, of being raped." (*Id.*).

Critically, Dr. Brand emphasizes that Ms. Pike's pre-existing PTSD does not protect against further traumatic harm—it heightens her vulnerability to it. "A nervous system already sensitized by repeated trauma exposure requires less provocation to trigger a full physiological and psychological trauma response, and that response is typically more severe, more prolonged, and more difficult to regulate than it would be in someone without a trauma history." (Brand Second Addendum, Aug. 4, 2026, at 4–5). Any of the contingencies described above "would constitute what is described in the literature as retraumatization," which "occurs when a current situation reactivates the physiological and psychological response associated with a prior trauma." (*Id.* at 4).

D. Conclusion

Ms. Pike's complex PTSD, arising from documented sexual assault by multiple male perpetrators, means the Protocol's forced transfer to a men's facility, constant male observation, and near-total isolation create a substantial risk of psychological torture and decompensation. The protocol's all-male restraint team will not merely remind her of her past assaults but will cause her to neurobiologically relive them in real time. That retraumatization will be compounded at the moment of death by the drowning and suffocation sensations of pulmonary edema—a near-certainty under Tennessee's Protocol and one likely exacerbated by Ms. Pike's thrombocytosis. That is, it will produce needless and superadded suffering.

The Protocol was designed for men without regard to Ms. Pike's particular vulnerabilities—vulnerabilities that make the specific mechanisms of this Protocol

uniquely and predictably torturous for her. In other words, the Protocol "will, for this woman with this particular history, constitute a form of suffering that goes far beyond what any sentence requires.... What awaits her is not only death. It is, for Christa, a form of dying that is uniquely and needlessly cruel." (Brand Addendum, June 1, 2026, at 6).

This evidence satisfies the *Baze* standard: the protocol, as applied to Ms. Pike, presents a risk that is "sure or very likely to cause serious illness and needless suffering." *Baze*, 553 U.S. at 50. *See Grayson v. Comm'r, Ala. Dep't of Corr.*, 121 F.4th 894, 900 n.3 (11th Cir. 2024) (recognizing that there "may exist a form of execution that induced psychological terror or pain that is severe enough to support an Eighth Amendment claim").

ISSUE 3: Ms. Pike's Small and Compromised Veins Are Incompatible with Reliable Peripheral IV Access

Ms. Pike's extremely small peripheral veins, generally accessible only by 23-gauge butterfly needles typically reserved for infants, are fundamentally incompatible with the reliable delivery of pentobarbital under the TDOC lethal injection protocol. The catheter required for her veins: (1) is not designed for sustained drug injection, (2) creates dangerous pressure differentials, (3) carries an unacceptably high risk of infiltration and vein rupture, and (4) mandates injection speeds so slow that the short-acting pentobarbital will redistribute before reaching the brain in adequate concentrations. Compounding these physical realities, the TDOC IV Team lacks the qualifications necessary either to achieve venous or central

line access in a patient with Ms. Pike's anatomy or to address the cascade of complications that will inevitably follow.

A. Ms. Pike's Medical History Documents Small, Compromised, and Difficult-to-Access Veins

Ms. Pike's medical records establish that she has extremely small veins that are virtually inaccessible by standard IV techniques. Her routine blood draws, conducted every several months to monitor platelet counts and renal function, require the use of a 23-gauge butterfly needle placed in the veins of her hand rather than the standard antecubital veins at the elbow. (Van Norman Report at 19; Goldstein Report at 5). These hand veins are themselves a "default" option, used only when larger veins are inaccessible. (Van Norman Report at 20). That TDOC's own personnel cannot access Ms. Pike's veins with anything larger than this tiny gauge, ordinarily reserved for neonatal patients and brief blood draws, is itself powerful evidence of the severity of her venous access limitations.

Additionally, her regular blood draws themselves compound the problem. Every venipuncture causes minor trauma, local clotting, and microscopic scarring, progressively making frequently accessed veins more difficult to access over time. (Van Norman Rep. at 20). The cumulative effect of years of repeated blood draws through these already-tiny veins has further degraded their integrity.

Validated clinical scoring systems identify Ms. Pike as possessing all four of the most significant predictors of difficult IV access: prior difficult IV access, nonpalpable veins, nonvisible veins, and veins less than 3 mm in diameter. (Van Norman Report at 19). Research demonstrates that each of these factors

independently increases the risk of failed IV access by up to 4.4-fold, with nonpalpable and nonvisible veins increasing risk by up to 8.1-fold and 10-fold, respectively. (*Id.*). The confluence of all four risk factors in a single patient "virtually assur[es] a difficult IV start, or failure to secure a peripheral IV access." (*Id.*).

B. Ms. Pike's Veins Are Incompatible with Reliable Pentobarbital Delivery Under the Current Protocol

Even assuming TDOC could establish peripheral IV access, the small-gauge catheter required for her anatomy is fundamentally incompatible with the reliable delivery of pentobarbital.

The Small-Gauge Catheter Is Not Designed for Sustained Drug Injection. TDOC will need to use a small-gauge catheter to access Ms. Pike's veins, but such a catheter is not designed for and is fundamentally unsuited for the sustained injection of lethal volumes of pentobarbital. The success of small-gauge needles for brief blood draws is not an indication that an IV can be placed. (Van Norman Report at 19). The reality is that larger catheters will blow Ms. Pike's small veins, but smaller catheters present the technical challenges described below—creating a situation in which central line placement would be indicated in most clinical cases. (Van Norman Report at 6). That TDOC's own personnel cannot access Ms. Pike's veins with anything larger than a tiny gauge is itself powerful evidence of the severity of her venous access limitations—and of the unsuitability of the current protocol for her anatomy. (*Id.*).[5]

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[5] These problems are not solved by the usage of a 22-gauge catheter. Flow through a 22-gauge catheter is approximately one-third that of a standard 18-gauge needle used

The Small-Gauge Catheter Creates Dangerous and Unmanageable Pressure Differentials. The pressure required to inject a given volume of fluid through a small-gauge catheter is roughly double the amount needed through a 20-gauge catheter and triple the pressure needed through a standard 18-gauge adult catheter. (Van Norman Report at 21). As Dr. Van Norman will explain, this is analogous to placing one's thumb over the end of a garden hose, increasing the pressure and velocity of the jet of water. (*Id.* at 22). The same principle applies when pentobarbital is forced through a tiny small-gauge opening: the "jet" of fluid exiting the catheter subjects the vein wall to dramatically increased pressure, magnifying the risk of rupture and extravasation—particularly in veins that are already small and fragile from thrombocytosis and repeated venipuncture. (*Id.*).[6]

Further compounding this problem, the Protocol calls for 50 ml syringes, which are physically unable to generate the high pressures needed for rapid injection through a small-gauge catheter. (Van Norman Report at 22). Studies show that 60 ml syringes generate only 19 psi, compared to 20 ml syringes at 32 psi or 10 ml syringes at 53 psi. (*Id.*). The combination of a tiny catheter with a large, low-pressure syringe means that achieving adequate delivery speed is physically impossible without rupturing the vein.

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for drug infusions. (Van Norman Report at 20). Even applying very high pressures (300 mmHg), it is physically impossible to match the highest flow of even a 20-gauge catheter using a 22-gauge. (*Id.* at 21). A 24-gauge catheter performs worse still.

[6] "Extravasation" describes incidents in which the IV drug or fluid is inadvertently injected into tissues outside of the vein, or when IV fluid flows through a misplaced catheter and ends up in surrounding tissues. (Van Norman Report at 7 n.4).

The Small-Gauge Catheter Carries an Unacceptably High Risk of Infiltration and Vein Rupture. When infiltration or extravasation occurs—as it will given the foregoing pressure dynamics—the consequences for Ms. Pike will be catastrophic. Pentobarbital is strongly alkaline and extremely caustic; its pH is comparable to drain cleaner. (Van Norman Report at 7; Zivot Adden. at 5). Infiltration of even small amounts of a barbiturate into subcutaneous tissue causes instant, excruciating pain that patients liken to being set on fire, and requires emergency intervention to reduce extensive tissue damage, including deep burns and sloughing of the skin. (Van Norman Report at 7).

Critically, pentobarbital has never been widely used as an anesthetic in humans due to its adverse cardiovascular effects, and there is no clinical tolerance data for subcutaneous exposure. (*Id.* at 8). There is simply no basis to predict that any amount of subcutaneous pentobarbital exposure is survivable without extreme suffering.

Slow Injection Speeds Will Cause Pentobarbital to Redistribute Before Reaching the Brain. The pressure differential inherent in the use of a small-gauge catheter creates an impossible dilemma. If the operator pushes the pentobarbital at normal injection speeds, the massive pressure will rupture Ms. Pike's fragile veins, causing extravasation of a highly caustic drug into surrounding tissues. But if the operator slows the injection to protect the veins, the pharmacological consequences are equally devastating.

Pentobarbital is a short-acting barbiturate that rapidly redistributes from the brain to other tissues. Slower injection reduces necessary pressure, but leads to reduced peak blood levels of pentobarbital because of its rapid clearance from the bloodstream, lowering levels in the brain and reducing the intended sedative effects of the drug. (Van Norman Report at 23). In practical terms, this means the drug will begin redistributing away from its site of action before the full dose has been delivered—leaving Ms. Pike in a state of inadequate (or non-existent) anesthesia while she experiences the excruciating effects of pentobarbital-induced pulmonary edema. (Zivot Adden. at ¶¶ 6–8).

C. TDOC Personnel Are Insufficiently Qualified to Achieve Venous Access or Address Complications

The foregoing medical and pharmacological challenges would be difficult for any execution team to manage. But the evidence establishes that TDOC's personnel are particularly ill-equipped to address them. The TDOC Protocol permits the IV Team to consist of "physicians, physician assistants, nurses, emergency medical technicians ('EMTs'), paramedics, military corpsman with relevant medical training, or other certified or licensed personnel." (TDOC Protocol at 8). This broad and nonspecific list reveals TDOC's failure to appreciate the specialized skill set required to access Ms. Pike's veins. However, under Tennessee's own ALS/BLS protocols, EMTs cannot place IVs. (Goldstein Report at 5). Yet TDOC lists EMTs as eligible IV Team members. This internal inconsistency reveals a fundamental lack of understanding about the scope of practice of the very personnel TDOC proposes to use. The fact that the Protocol does not even detail the specific training or

qualifications required for IV Team members further underscores TDOC's indifference to the skill level necessary for Ms. Pike's execution. (*Id.*).

Dr. Goldstein will testify that Ms. Pike's case "would require someone who has a particular skill set of obtaining difficult IV's and even then, there is no guarantee that the IV will be able to be maintained or a suitable vein found." (*Id.*). The Protocol requires not one but two properly functioning IV lines. (TDOC Protocol at 19). Obtaining two adequate peripheral IV sites in a patient whose medical records document that even a single 23-gauge butterfly needle in the hand is difficult is, to use Dr. Goldstein's assessment, "highly unlikely." (Goldstein Report at 5).

When peripheral access fails—as it almost certainly will—the Protocol provides that "the Physician will insert a central line." (TDOC Protocol at 20). But the evidence from the May 21, 2026 attempted execution of Tony Carruthers demonstrates that the execution physician[7] utilized by TDOC and likely to perform this procedure for Ms. Pike is dangerously unqualified.

The execution physician admitted in a deposition that he had not placed a central line in over 12 years prior to the Carruthers execution and has only placed approximately a dozen central lines in his entire career. (Van Norman Report at 15). By comparison, most credentialing bodies require physicians to perform at least 10 lines at each site—a minimum of 30 total—before being considered competent. (*Id.*). ACGME minimums for anesthesiology residents require at least 20 cardiac

[7] This brief omits the use of the physician's name and relies on publicly available reporting pursuant to the protective order.

anesthesia cases (all requiring central lines), and the average emergency room resident performs approximately 17 central lines per year during training alone. The execution physician's lifetime total is less than a single year of a typical resident's experience. (*Id.*).

During the Carruthers execution—a person with no prior reported history of difficult blood draws—the execution physician demonstrated numerous lapses of the standard of care: he failed to use ultrasound guidance (now standard of care), failed to place the patient in Trendelenberg position, inadequately anesthetized the insertion site causing the prisoner to moan and groan in pain audible to media witnesses, and ultimately failed to achieve central line access after nearly an hour of attempts. (Van Norman Rep. at 16–18 (citing DeLiberato Decl., July 20, 2026)). Moreover, the execution physician has a documented history of serious injury during central line placement, including placement of a guidewire into the carotid artery—an extremely serious injury that can cause stroke and death. (*Id.* at 16).

In short, the execution physician "does not have sufficient training or continuing experience to be considered competent in central line placement by most medical specialty credentialling bodies" and that his actions during the Carruthers execution are "consistent with attempted placement of a subclavian vein central line by a physician who has not had recent training or adequate ongoing experience with central line placement, and is not qualified to be placing central venous catheters for any purpose." (Van Norman Rep. at 6, 18).

D. Conclusion

The convergence of these factors—Ms. Pike's documented tiny and compromised veins, the dangerous pressure physics of the small-gauge catheter, the pharmacological failure mode of slow injection, the caustic nature of pentobarbital, and the demonstrated incompetence of TDOC's execution personnel—establishes that the challenged protocol, as applied to Ms. Pike, makes it "sure or very likely" that she will suffer serious illness and needless suffering. The Protocol offers no mechanism to evaluate or address these risks. It provides no specification of the skill level required for its IV Team, no realistic fallback when peripheral access fails, and an execution physician whose incompetence has already been demonstrated under far more favorable circumstances. The evidence establishes the near-certainty of a prolonged, excruciating, and botched execution.

This evidence satisfies the *Baze* standard: the protocol, as applied to Ms. Pike, presents a risk that is "sure or very likely to cause serious illness and needless suffering." *Baze*, 553 U.S. at 50.

ISSUE 4: Proposed Alternative Methods of Execution

Under *Glossip*, a person challenging the constitutionality of a method of execution must identify a "known and available alternative method of execution that entails a lesser risk of pain." 576 U.S. at 878. The alternative must be "feasible, readily implemented, and in fact significantly reduce a substantial risk of severe pain." *Id.* Ms. Pike satisfies this standard through two proposed alternatives, each supported by expert medical testimony: (1) central line placement by a qualified,

currently-practicing physician, which would eliminate the risks created by reliance on peripheral IV access and an incompetent physician; and (2) execution by hanging, which would eliminate the entirety of the IV access crisis, avoid the excruciating pulmonary edema and psychological torture that accompanies lethal injection, and produce either instantaneous death or unconsciousness within seconds.

A. Proposed Alternative 1: Central Line Placement by Qualified, Currently-Practicing Medical Personnel

Ms. Pike's first proposed alternative addresses the substantial risk of severe pain arising from the peripheral IV access component of Tennessee's lethal injection protocol. Rather than relying on an underqualified physician with no recent central line experience, Ms. Pike proposes that TDOC retain a qualified, trained, currently-practicing physician to place a central line using ultrasound guidance and proper sterile technique.

Qualified Physicians Are Readily Available to Place Central Lines. Qualified emergency medicine or critical care physicians who place central lines on a daily basis are readily available in the medical community. Dr. Goldstein explains that central line placement requires "a physician that places and utilizes central lines on a regular basis" and that "[m]ost of the central lines are placed by critical care and/or Emergency Medicine physicians, as this is something they manage and use on a daily basis." (Goldstein Report at 4). For example, to be considered "adequate" for central line placement, an Emergency Medicine physician in training needs at least 20 supervised placements, and competency requires continued practice thereafter. (Goldstein Report at 4).

Dr. Van Norman confirms that healthcare systems "now generally require proof that a practitioner has appropriate training and also has continued proficiency (meaning they have actually placed central lines in patients recently)." (Van Norman Report at 11–12). Practitioners must also demonstrate placement of up to 10 central lines in the preceding two-year privileging period, and professional guidelines now require the use of ultrasound. (Van Norman Report at 12). These standards exist precisely because competent, currently-practicing physicians are available—and can be retained—to perform this procedure safely.

Central Line Placement Would Eliminate the Risks of Peripheral IV Access and Incompetent Personnel. The current protocol creates a substantial risk of failed IV access and resulting pain. For example, the TDOC protocol requires the IV Team to establish at least two functioning IV lines, (TDOC Protocol § E.2), which "seems highly unlikely in Ms. Pike's case," (Goldstein Report at 5). Dr. Van Norman confirms that Ms. Pike "has significantly elevated risk of suffering an already common complication[] of peripheral lines in lethal injection executions" and that it is "extremely likely that she will require central vein access during her execution." (Van Norman Report at 6).

Additionally, peripheral IV access, even with a small-gauge needle, cannot safely deliver lethal injection drugs. As explained above, the pressure physics of a small-gauge catheter create an unacceptable risk of extravasation, and pentobarbital's caustic, alkaline nature causes instant, excruciating pain—likened to "being set on fire"—when it contacts subcutaneous tissue. (Van Norman Report at 7,

20–21; Goldstein Report at 5). Because peripheral IV access is likely not a viable path for Ms. Pike's execution, central venous access by a qualified physician is the only means of significantly reducing the risk of severe pain from the IV access component of the protocol. TDOC's current physician is unqualified to place a central line.

A Qualified Physician Would Directly Address All Risks Associated with IV Access. As an alternative, retaining a qualified, currently-practicing emergency medicine or critical care physician—one who meets credentialing standards, uses ultrasound guidance, and employs proper sterile technique—would directly address each source of risk identified above. Unlike peripheral IV access through a small-gauge catheter, a properly placed central line provides "more stable" vascular access once obtained delivering medication directly into the central circulation without the elevated infiltration and extravasation risks associated with small peripheral veins. (Goldstein Report at 4). The use of ultrasound increases "the chance of successful cannulation," (*id.*), and is now "standard of care" for central line placement, (Van Norman Report at 12). These are standard medical practices that would eliminate the protracted, agonizing IV attempts that Ms. Pike faces.

B. Proposed Alternative 2: Execution by Hanging

Ms. Pike's second proposed alternative method is execution by hanging, a method historically authorized and practiced in Tennessee. *See* Tenn. Code Ann. § 10-7-504(h). Unlike lethal injection, hanging requires no specialized pharmaceutical supply chain, no IV access, no venous patency, and no physician participation. (Goldstein Report at 5). It eliminates entirely the "limiting step" in Ms. Pike's case—

the inability to obtain and maintain adequate IV access. (Goldstein Report at 5). It also likely reduces the psychological terror of lethal injection. Hanging is feasible and readily implemented, and would significantly reduce the risk of severe pain by producing either instantaneous death through cervical fracture or unconsciousness within seconds through cerebral hypoxia—a fraction of the prolonged, conscious suffering caused by pentobarbital-induced pulmonary edema.

The expert medical evidence establishes that hanging would significantly reduce the risk of severe pain compared to lethal injection. Dr. Goldstein explains that hanging as a form of execution, "if done properly, causes instantaneous death." (Goldstein Report at 2). This is accomplished by placing the ligature at the optimal position on the neck at Cervical vertebrae #2, accounting for the person's weight to generate sufficient force from an immediate drop. (Goldstein Report at 2). The result is an atlanto-occipital dislocation—"essentially an internal decapitation, causing the spinal cord to separate from the brain enough to stop all bodily functions"—or bilateral pedicle fractures of C2 ("Hangman's fracture") due to severe hyperextension, "leading to spinal transection and death." (Goldstein Report at 2).

Even in the event that calculations are imprecise and strangulation occurs rather than cervical fracture, unconsciousness results "within 10-20 seconds" due to venous occlusion and cerebral hypoxia. (Goldstein Report at 2–3). After this period, "the patient is unconscious and unresponsive, as the brain is starved of oxygen and unable to get rid of waste, which leads to death within minutes." (Goldstein Report

at 3). The potential period of conscious suffering from strangulation is "anywhere from 10-30 seconds." (Goldstein Report at 4).

Hanging will substantially lessen the risks noted above. Lethal injection involves "substantial variability depending on the type of drug or drugs selected, dosing, intravenous access, administration, route and time." (Goldstein Report at 4). The ability to obtain adequate IV access "can be the limiting step and in itself is not painless." (Goldstein Report at 4). Even if a suitable vein is obtained, "there is always the possibility of the vein extravasating the medication into the surrounding tissue," leading to "tissue break down, erratic absorption, and partial treatment" which "can lead to pulmonary edema, seizures and incomplete anesthesia and therefore awareness." (Goldstein Report at 4). Hanging, by contrast, eliminates all IV-related risks. There is "no need for IV access and venous patency, which seems to be the limiting step in Ms. Pike's case, no medication and even if it doesn't cause immediate death the time of discomfort is less than for lethal injection." (Goldstein Report at 5).

The overall "botched" rate for capital punishment is 3.15%. Lethal injection carries the highest botched rate at 7.2%, while hanging is consistent with the average at 3.12%. (Goldstein Report at 6). "These statistics, along with Ms. Pike's unique anatomy strengthens my opinion that hanging be a viable alternative. . . ." (Goldstein Report at 6). Hanging eliminates the risks of lethal injection entirely. Death occurs either instantaneously through cervical fracture or within seconds through loss of consciousness from cerebral hypoxia—a fraction of the time in which lethal injection produces ongoing, conscious suffering. (Goldstein Report at 4–5).

C. Conclusion

Ms. Pike has identified two known and available alternative methods of execution—each of which is feasible, readily implemented, and would significantly reduce the substantial risk of severe pain posed by Tennessee's current lethal injection protocol as applied to her. The expert medical evidence demonstrates that either alternative would significantly reduce the substantial risk of severe pain that Ms. Pike faces under the current protocol. Ms. Pike satisfies the *Glossip* standard through two proposed alternatives, each supported by expert medical testimony.

CONCLUSION

Tennessee's lethal injection protocol as applied to Ms. Pike's severe mental and physical conditions creates an "objectively intolerable risk of harm" or a "substantial risk of serious harm." *Baze*, 553 U.S. at 50. That risk of harm is "sure or very likely to cause serious illness and needless suffering" and gives rise to "sufficiently imminent dangers." *Id.* Tennessee cannot show otherwise and Ms. Pike is entitled to relief.

Respectfully submitted,

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