IN THE SUPREME COURT STATE OF SOUTH DAKOTA

Appeal No. 29901

AUSTIN MCGEE,

Appellee,

v.

SPENCER QUARRIES, INC., a South Dakota corporation,

Defendant,

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation,

Appellants.

Petition from the Circuit Court, First Judicial Circuit Brule County, South Dakota

THE HONORABLE BRUCE V. ANDERSON Circuit Court Judge

APPELLANTS' BRIEF

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Order Granting Petition for Allowance of Appeal from Intermediate Order filed on March 17, 2022

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Jurisdictional Statement

The South Dakota Department of Transportation (DOT), Kent Gates, and Kris Royalty appeal from the circuit court's Memorandum Decision dated January 23, 2022 (App. at 01–18; SR R2 at 613), which incorporated the court's Memorandum Decision of July 31, 2020 (App. at 21–42; SR R1 at 1507), and the court's subsequent order of January 25, 2022 (App. at 19–20; SR R2 at 631), denying their motion for summary judgment. On February 9, 2022, the DOT, Gates, and Royalty filed a petition for discretionary appeal under SDCL §§ 15-26A-13 and -14, which this Court granted by order of March 17, 2022. (SR R2 at 675.)

Statement of Legal Issues

1. This Court has long held that a public entity's duty to maintain a highway is defined by statute, not the common law, but neither McGee nor the circuit court identified a statute creating an applicable duty in this case. Instead, the circuit court held that the DOT owed a duty of care based on three documents (a Standard Specification, the Hot Mix Handbook, and the Manual on Uniform Traffic Control Design), two of which were incorporated into the contract between DOT and Spencer Quarries. Do these documents create a duty of care owed by DOT on which McGee, a non-party to the contract between Spencer Quarries and the DOT, can premise a negligence claim?

Hohm v. City of Rapid City, 2008 S.D. 65, 753 N.W.2d 895

Dohrman v. Lawrence County, 143 N.W.2d 865 (S.D. 1966)

Sisney v. State, 2008 S.D. 71,754 N.W.2d 639

2. A ministerial act envisions direct adherence to a government rule or standard with a compulsory result, and is performed in a prescribed manner without the exercise of judgment or discretion. Are the acts of estimating the amount of tack to apply during a road-construction project, allowing traffic to drive on broken tack, and not placing warning signs, reduced-speed signs, or sand on broken tack ministerial or discretionary?

Truman v. Griese, 2009 S.D. 8, 762 N.W.2d 75

Wulf v. Senst, 2003 S.D. 105, 669 N.W.2d 135

Statement of the Case

On June 30, 2018, while driving on a segment of Highway 45 that was being resurfaced north of Platte, South Dakota, Austin McGee lost control and rolled his vehicle. McGee suffered serious injuries including permanent paraplegia. On October 2, 2018, McGee filed a negligence claim against the resurfacing contractor, Spencer Quarries Inc., alleging that the contractor negligently left exposed tack coat on the highway without posting proper warnings. (SR R1 at 2.) On January 27, 2020, after discovery, McGee filed an amended complaint adding the South Dakota Department of Transportation (DOT) and its employees Jay Peppel, Kent Gates, and Kris Royalty as additional defendants and alleging that the DOT was negligent in failing to identify and correct Spencer Quarries's negligence. (App. at 68, 80–81; SR R1 at 297, 309–10.)

The DOT and its employees filed a joint answer on February 11, 2020, in which they denied liability and asserted sovereign immunity. (SR R1 at 317.) The DOT filed a motion to dismiss on May 5, 2020. (*Id.* at 541.) The circuit court, the Honorable Bruce V. Anderson, entered a memorandum decision on July 31, 2020, (*id.* at 1507) and a revised decision on September 29, 2020 (App. at 21–42; SR R1 at 1591). The court granted the motion as to Peppel; denied the motion as to the DOT, Gates, and Royalty; but preserved the DOT's right to renew its arguments in a later motion for summary judgment. (App. at 40; SR R1 at 1526.)²

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¹ For ease of reading, references in this brief to "the DOT" include the DOT's employees unless indicated otherwise.

² The circuit court's initial memorandum decision mistakenly granted the motion to dismiss as to Gates instead of Peppel. (SR R1 at 1507.) The revised opinion corrected the error. (App. at 21–42; SR R1 at 1591.)

Following further discovery, the DOT filed a motion for summary judgment on December 29, 2020, renewing its arguments that it was not liable for, and had immunity from, McGee's claim. (SR R1 at 2012.) The circuit court granted McGee more time under SDCL § 15-6-56(f) to conduct additional discovery before responding to the motion. (SR R2 at 213.) After a hearing and supplemental briefing, the court entered a memorandum decision on January 23, 2022, which incorporated by reference its July 31, 2020 memorandum decision and denied the DOT's motion for summary judgment. (App. at 01–18; SR R2 at 613.)

On January 25, 2022, the DOT petitioned this Court under SDCL §§ 15-26A-13 and -14 for permission to file an intermediate appeal, which the Court granted on March 17, 2022. (SR R2 at 675.)

Statement of the Facts

In October of 2017, the DOT entered into a contract with Spencer Quarries for the resurfacing of a segment of Highway 45 in Brule and Charles Mix Counties. (SR R1 at 2044.) The contract incorporated by reference the DOT's Standard Specifications for Roads and Bridges. (*Id.* at 2052.) The Standard Specifications, in turn, incorporated by reference portions of the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD). (*Id.* at 2141.)

The DOT assigned area engineer Jay Peppel to oversee the contract. (App. at 03; SR R2 at 615.) Peppel assigned DOT employee Kent Gates to supervise the project and ensure its compliance with the contract specifications. (*Id.*) Assisting Gates were a lab technician (who is not a party in this action) and a road technician, Kris Royalty, who inspected Spencer Quarries' work daily. (*Id.*) Gates had over 30 years of experience

with the DOT (SR R1 at 4015–16), and Royalty nearly 20 years (*id.* at 4029), but neither have held engineering degrees. (App. at 03; SR R2 at 615.)

At issue is only one part of the process of resurfacing a highway—application of the "tack coat." (App. at 04; SR R2 at 616.) Tack is an emulsified oil that acts as an adhesive when applied between layers of asphalt. (*Id.*) As an emulsion, tack is wet when applied but eventually will "break" when the solvents and water in the oil evaporate, leaving a hard, dehydrated surface on which vehicles can be driven. (*Id.*) The tack coat sprayed on Highway 45 did not contain sand or aggregate. (*Id.*) After the tack breaks, a layer of hot-mix asphalt is applied. (*Id.*)

Typically, the DOT and a contractor work together to estimate the amount of asphalt that will be paved on a given day. (SR R1 at 4031.) After estimating, the contractor will spray one-half to one mile of tack at a time. (*Id.*) After the tack breaks, a layer of asphalt is applied, and the process is repeated, frequently several times each day. (*Id.*) Standard Specifications § 330.3(E) restricts the amount of tack a contractor can apply ahead of paving without permission:

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

(App. at 54; SR R1 at 2313.)

During daily operations, Spencer Quarries would close the lane under construction. (App. at 06; SR R2 at 614.) Flaggers and pilot cars would guide traffic around the construction zone. (*Id.*) But when the work day ended, flaggers were dismissed and the road opened, permitting the public to drive on any broken tack that had

not been paved over. (*Id.*) The DOT allows traffic to drive on broken tack. (*See* SR R1 at 4013.)

On June 29, 2018, Spencer Quarries concluded its operations for the day with about 1,400 feet of exposed, broken tack remaining. (App. at 02; SR R2 at 614.) The next morning, around 9:00 a.m., McGee and his brother were traveling in a 2005 Ford F-250 on Highway 45, north of Platte, South Dakota, when McGee lost control of his truck. (*Id.*) McGee alleged that he was not intoxicated or distracted but that the road was wet from light precipitation. (App. at 74; SR R1 at 303.) The vehicle rolled, and McGee suffered serious injuries, including permanent paraplegia. (*Id.*)

The Complaint

On October 2, 2018, McGee filed a negligence claim against Spencer Quarries, alleging that the contractor left exposed tack without posting proper warnings. (SR R1 at 2.) On January 27, 2020, McGee amended his complaint, adding the DOT, Peppel, Gates, and Royalty as additional defendants. (App. at 68–83; SR R1 at 297.) McGee alleged that the DOT was negligent in failing to identify and correct Spencer Quarries's negligence. (App. at 71–72; SR R1 at 309–10.) McGee did not allege that the DOT owed him a statutory duty of care. Instead, McGee premised his negligence claim on the provisions of the Standard Specifications incorporated into the DOT's contract with Spencer Quarries. (App. at 62–63; SR R1 at 301–02.)

McGee first cited Standard Specifications § 4.5, which requires "[t]he Contractor [to] keep the portion of the project used by public traffic in a condition that will adequately and safely accommodate traffic." (App. at 57–58; SR R1 at 2165–66.)

According to McGee, broken tack is slippery. (App. at 63; SR R1 at 302.) McGee

argued that Spencer Quarries violated § 4.5 by "over spray[ing] tack coat" and by permitting the public to travel on the broken tack without "remediating the slippery condition, erecting signs warning of the slippery condition, or seeking and/or posting a lower speed limit through the tack-coated area." (*Id.*)

McGee's claim against the DOT was premised on Standard Specifications § 5.15, which states:

If the Contractor does not comply with the provisions of Section 4.5 or 5.14, the Engineer will notify the Contractor of such noncompliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of notice, the Engineer will proceed to maintain the project, and will deduct the entire cost of this maintenance from monies due or to become due the Contractor.

(App. at 60–61; SR R1 at 2176–77.) McGee also relied on Standard Specifications § 5.9, which gives the area engineer "immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer has the authority to reject defective work, and to suspend work being improperly performed." (App. at 59; SR R1 at 2174.) In essence, McGee argued that Spencer Quarries was negligent and that the DOT was negligent by not stopping Spencer Quarries from being negligent.

Motion to Dismiss

The DOT filed a motion to dismiss on May 5, 2020. (SR R1 at 541.) The DOT argued that McGee failed to cite any statute creating a legal duty owed to McGee. (*Id.* at 550.) The DOT also argued that sovereign immunity barred McGee's claims because the acts he complained of related to the design or engineering of a highway or were otherwise discretionary rather than ministerial acts. (*Id.* at 545–53.) The DOT pointed out that even though McGee failed to identify a statutory duty on which to premise his

claim against the DOT, the most applicable statutory duties, SDCL §§ 31-5-1³ and -28-6,⁴ have both been held by this Court to create discretionary—rather than ministerial—duties. (SR R1 at 550.)

In his response, McGee openly admitted that he "did not allege a general statute created a ministerial duty that [the DOT] breached." (App. at 96; SR R1 at 739.)

Instead, he purported to "allege[] specific DOT specifications that created ministerial duties for the [DOT]." (*Id.*) McGee restated his reliance on Standard Specifications § 5.15. He also argued that the MUTCD required Spencer Quarries to place a "Fresh Oil" sign next to the dried, hardened tack that had been sprayed the previous day. (*Id.*)

The DOT replied that under this Court's decisions, McGee cannot premise a negligence claim on the terms of the DOT's contract with Spencer Quarries. (SR R1 at 748–49.) The DOT further argued that McGee could not rely on the DOT's contract with Spencer Quarries to seek damages as a third-party beneficiary. (*Id.* at 749.) And finally, the DOT reiterated the body of law supporting the conclusion that the DOT did not breach a ministerial duty owed to McGee. (*Id.* at 750.)

The circuit court entered a memorandum decision on July 31, 2020, (*id.* at 1507) and a revised decision on September 29, 2020, denying the DOT's motion to dismiss.

(App. at 21–42; SR R1 at 1591.) The court examined *Truman v. Griese*, 2009 S.D. 8,

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³ SDCL § 31-5-1 states: "The Department of Transportation shall maintain, and keep in repair, all highways or portions of highways, including the bridges and culverts, on the state trunk highway system."

⁴ SDCL § 31-28-6 states, in relevant part: "The public board or officer whose duty it is to repair or maintain any public highway shall erect and maintain at points in conformity with standard uniform traffic control practices on each side of any sharp turn, blind crossing, or other point of danger on such highway, except railway crossings marked as required in § 31-28-7, a substantial and conspicuous warning sign."

762 N.W.2d 75; King v. Landguth, 2007 S.D. 2, 726 N.W.2d 603; Wulf v. Senst, 2003 S.D. 105, 669 N.W.2d 135; and Hansen v. South Dakota Department of Transportation, 1998 S.D. 109, 584 N.W.2d 881. (App. at 26–36; SR R1 at 1597–1606.) Applying King to each defendant, the court concluded that Peppel's duties were discretionary, but that Gates's and Royalty's were ministerial. (App. at 37; SR R1 at 1610.)⁵ The court therefore dismissed the claim against Peppel. (Id.) For the remaining defendants, the court denied the motion "without prejudice to its renewal after further development of the record." (Id.) The court did not address the DOT's arguments that McGee failed to cite statutory authority for the existence of a duty, that McGee could not premise a negligence claim on DOT's contract with Spencer Quarries, or that McGee could not seek damages as a third-party beneficiary of that contract.

Motion for Summary Judgment

After initial discovery, the DOT filed a motion for summary judgment on December 29, 2020. (SR R1 at 2012.) The DOT renewed its argument that McGee cannot premise a negligence claim on the DOT's contract with Spencer Quarries. (*Id.* at 2024–25.) Likewise, the DOT again argued that McGee cannot seek damages as a third-party beneficiary of the contract. (*Id.* at 2025–26.) The DOT additionally argued that under the Standard Specifications, liability for negligent repairs to a highway stays

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⁵ In a nutshell, the court applied the factors stated in *King* to determine whether a state employee's actions are discretionary or ministerial, and found first that Peppel was a supervisor with discretionary authority over implementation of the contract, whereas Gates and Royalty were more "hands on." (App. at 37; SR R1 at 1607.) While the court found that application of the factors to Gates and Royalty produced mixed results, including that some of the factors may be inapplicable after SDCL § 3-22-7 was enacted, the court concluded that Gates and Royalty were "focused on the implementation of those safety precautions" included in the contract specifications, which it characterized as "primarily ministerial." (App. at 39; SR R1 at 1609.)

with the contractor even when the DOT fails to identify and correct the negligence. (*Id.* at 2026–29.) And finally, the DOT maintained that any duties the DOT owed to McGee were discretionary rather than ministerial. (*Id.* at 2019–25.)

In his response, McGee focused almost entirely on arguing that the Standard Specifications and MUTCD created ministerial duties that required the DOT to ensure that Spencer Quarries did not spray too much tack. (*Id.* at 2977–80.) In addition to Standard Specifications §§ 4.5 and 5.15, McGee cited § 330.3(E), which states:

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

(App. at 54; SR R1 at 2313.) McGee also cited MUTCD § 6F.34, which states: "The FRESH OIL (TAR) (W21-2) sign . . . should be used to warn road users of the surface treatment." (App. at 66–67.)⁶ Responding to the DOT's arguments that McGee cannot premise a negligence claim on the DOT's contract with Spencer Quarries, McGee in one breath insisted that he "has not asserted a right to contractual benefits or posited himself as a third-party beneficiary" of the contract, and in the very next breath, acknowledged that his claim is "based on standards or policies *incorporated in the* . . . *contract*." (SR R1 at 2982 (emphasis added).)

The DOT replied by citing McGee's repeated, explicit reliance on the terms of DOT's contract with Spencer Quarries. (*Id.* at 3490–91.) The DOT also reiterated that sovereign immunity applies because the PEPL Participation Agreement specifically

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⁶ Although this section of the MUTCD was cited by McGee's experts and relied on by the circuit court, the State has been unable to locate a copy in the settled record.

excludes from coverage damages "[a]rising from or contributed to in any manner by acts, errors, or omissions in the engineering or design of any public roadway or public transportation project." (*Id.* at 3487.) And the DOT also highlighted deposition testimony from McGee's experts acknowledging that the decisions made by Gates and Royalty were discretionary. (*Id.* at 3487–90.)

Before deciding the summary-judgment motion, the circuit court granted McGee a continuance to conduct additional discovery. (SR R2 at 213.) McGee took eleven more depositions of DOT employees, after which the court had the parties rebrief the summary-judgment motion. (*Id.* at 614.) Although the DOT had filed the summary-judgment motion, McGee filed the initial brief (SR R1 at 3862) and reply brief (*id.* at 4714), with the DOT submitting only a response brief (*id.* at 4268). Of the eleven additional depositions, McGee referenced only two—Peppel and Gates, both of whom McGee had deposed before. (*Id.* at 4269.) The arguments raised in the second round of briefs were not substantively different than those in the first round of summary-judgment briefing (or those in the briefs for the motion to dismiss).

The circuit court entered a memorandum decision on January 23, 2022. (App. at 01–18; SR R2 at 613.) The decision was substantially similar to, and incorporated by reference, the decision dated July 31, 2020. (*Id.*) The court again summarized *Truman*, *King*, *Wulf*, and *Hansen* (App. at 11–13; SR R2 at 623–25) and conducted another analysis of the *King* factors regarding Gates and Royalty (App. at 15–16; SR R2 at 627–28). The court concluded that the DOT and Spencer Quarries "ignored the specifications requiring them to avoid leaving exposed tack coat to the driving public, and that when they could not avoid it, they failed to take precautionary measures to reduce speed or

warn the public of the hazard in the area of exposed tack coat." (App. at 17; SR R2 at 629.) The court based its ruling on the Standard Specifications, the MUTCD, and the Hot Mix Handbook (App. at 62–63), an industry guide that has not been incorporated into the plan documents.

Argument

The circuit court should have granted the DOT's motion for summary judgment. Contrary to the court's view, the DOT's duty regarding the maintenance of a highway is defined by statute, and McGee's self-acknowledged failure to identify a statute creating a legal duty owed by the DOT to McGee should have been singularly sufficient to warrant summary judgment for the DOT on the merits of McGee's claim. Even if McGee could premise a negligence claim on the terms of DOT's contract with Spencer Quarries, the provisions on which McGee relies address discretionary acts, not ministerial ones, and therefore fall outside PEPL fund coverage. Consequently, sovereign immunity has not been waived in this case.

1. Legal Standards.

Summary judgment "shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." SDCL § 15-6-56(c). The Court "view[s] the evidence most favorably to the nonmoving party and resolve[s] reasonable doubts against the moving party." *Burgi v. E. Winds Ct., Inc.*, 2022 S.D. 6, ¶ 15, 969 N.W.2d 919, 923.

Because the facts relevant to this appeal derive entirely from documentary or deposition evidence, however, the circuit court's factual determinations are not entitled to deference and are fully reviewable. *See Hughes v. Dakota Mill & Grain, Inc.*, 2021 S.D.

31, ¶ 12, 959 N.W.2d 903, 907 ("[D]eterminations based on documentary evidence, such as depositions and medical records, [are reviewed] de novo."); *In re Est. of Pringle*, 2008 S.D. 38, ¶ 18, 751 N.W.2d 277, 284 ("We review any documentary or deposition evidence under a de novo standard of review.").

Moreover, this appeal involves concepts of duty and sovereign immunity, which are legal issues. "[T]he existence of a legal duty as a necessary element of a plaintiff's negligence claim is . . . a question of law that is reviewed de novo." *Burgi*, 2022 S.D. 6, ¶ 16, 969 N.W.2d at 923. Likewise, whether a public entity or its employees are immune from a tort claim, and whether an act is ministerial or discretionary, are questions of law reviewed de novo. *Truman*, 2009 S.D. 8, ¶ 10, 762 N.W.2d at 80.

2. McGee did not plead an actionable duty.

The circuit court concluded that McGee's pleadings should be viewed as a tort claim alleging negligence. But under a long line of decisions including *Hohm v. City of Rapid City*, 2008 S.D. 65, 753 N.W.2d 895, and *Dohrman v. Lawrence County*, 143 N.W.2d 865 (S.D. 1966), a public entity's duty regarding the maintenance of a highway is defined by statute, and neither the court nor McGee identified an applicable statutory duty on which to premise a negligence claim. As pleaded, McGee seeks damages as a third-party beneficiary for the alleged breach of DOT's contract with Spencer Quarries. And under controlling authority like *Sisney v. State*, 2008 S.D. 71, 754 N.W.2d 639, McGee does not qualify as a third-party beneficiary.

a. Neither the circuit court nor McGee identified an applicable statutory duty.

McGee ostensibly alleged the common-law tort of negligence. "[T]he existence of a duty owed by the defendant to the plaintiff . . . is elemental to a negligence action."

Zerfas v. AMCO Ins. Co., 2015 S.D. 99, ¶ 10, 873 N.W.2d 65, 69 (quoting Erickson v. Lavielle, 368 N.W.2d 624, 626 (S.D. 1985)). The circuit court held that an actionable duty "can arise in various different forms . . . includ[ing] industrial customs and practices, state regulations or policies on point, or the common law." (App. at 18; SR R2 at 630.) While this statement may be true for negligence actions generally, see Zerfas, 2015 S.D. 99, ¶ 10, 873 N.W.2d at 69 ("A duty can arise out of common law or statute."), it does not apply to a public entity's duty of care regarding the maintenance of a highway.

This Court has held that a public entity's duty to maintain a highway is defined by statute. In *Dohrman v. Lawrence County*, 143 N.W.2d 865 (S.D. 1966), the Court considered a fatal accident west of Lead. A motorist "at a sharp curve on a steep hill . . . drove off the road and was killed[,]" and his estate sued the county, alleging it was "negligent in failing to keep and maintain [the] road in a reasonably safe condition and in not posting it with warning signs[.]" *Id.* at 866. This Court noted that "[a]t common law no right of action existed against a county for recovery of damages resulting from a defective highway or bridge and the source of liability in this state for damages of this character is statutory." *Id.* However, the Legislature had enacted what is now SDCL § 31-32-10, which imposes on a governing body a duty to give notice of road damage and to erect guards around the damage until repaired. This Court said:

This statute prescribes the nature and extent of the duty imposed upon the county to protect the public from injury occasioned by defective highways and bridges and consequently the standard of care cannot be predicated on principles of common law negligence. The county's liability must be determined from the standard of conduct imposed by the statute and not the standard of a reasonably prudent person.

Dohrman, 143 N.W.2d at 867 (emphasis added).⁷

Notably, the Court in *Dohrman* recognized that the Legislature had previously abrogated a general duty to keep highways safe.

Before the 1939 revision the statutory duty imposed by legislative enactment... included the broad duty to render highways "safe, passable and free from danger of accident or injury to persons or property while in the lawful use thereof." The legislature saw fit in its adoption of the 1939 revision to curtail such duty and it is now established law in this state that the county's obligation is confined to "the specific duty to guard and repair a damaged or destroyed highway."

Id. at 867.

The Court more recently applied *Dohrman* in *Hohm v. City of Rapid City*, 2008 S.D. 65, 753 N.W.2d 895. Instead of an action against a county under the predecessor of SDCL § 31-32-10, *Hohm* involved an action against a municipality under SDCL § 31-28-6, which imposes on the governing board or officer of a highway a duty to post warning signs at points of danger. The Court noted that unlike counties, "municipalities were liable at common law for injuries resulting from defects in highways[.]" *Hohm*, 2008 S.D. 65, ¶ 5, 753 N.W.2d at 898. As it did in *Dohrman*, the Court held that through the enactment of statutes like SDCL §§ 31-28-6 and -32-10, the Legislature had abrogated "cities" common-law duties respecting streets[.]" *Hohm*, 2008 S.D. 65, ¶ 20, 753 N.W.2d at 905. The Court broadly concluded that the Legislature intended "to design a complete scheme of responsibility and liability for highway maintenance such that its requirements should be the *only* ones that were obligatory." *Id.* ¶ 17, 753 N.W.2d at 904 (emphasis added).

⁷ The statute at the time referred only to a county, but the current version of SDCL § 31-32-10 applies broadly to any "governing body" responsible for the highway.

The requirement that a negligence claim against the DOT can be premised only on a statutory duty is demonstrated by the cases on which the circuit court primarily relied: Truman, King, Wulf, and Hansen. In Truman, the plaintiff premised his negligence claim against the DOT on SDCL § 31-28-6. 2009 S.D. 8, ¶ 11, 762 N.W.2d at 78. In Wulf, the plaintiff premised his negligence claim on SDCL § 31-5-8.3. 2003 S.D. 105, ¶ 12, 669 N.W.2d at 139. And in *Hansen*, the plaintiff premised her negligence claim against the DOT on SDCL §§ 31-5-1, -28-6, and -32-10. 1998 S.D. 109, ¶ 21, 584 N.W.2d at 885. Only in King did a plaintiff attempt to premise a negligence claim on a DOT policy without reference to a statutory duty. 2007 S.D. 2, ¶ 20 n.7, 726 N.W.2d at 610 n.7 ("The present case does not involve the 'duty to repair' road statute. Instead, King bases her claim solely on her interpretation of the DOT's object marking policies."). But in King, the Court was confronted only with the question whether the actions at issue were discretionary or ministerial. *Id.* \P 6, 11–14, 726 N.W.2d at 606–08. The court was not required to consider the propriety of premising a negligence claim on a DOT policy without reference to a statutory duty.⁸

So contrary to the circuit court's reasoning and decision, as to liability for the condition of a public highway or the placement of signs, DOT's duty to McGee "must be determined from the standard of conduct imposed by . . . statute and not the standard of a reasonably prudent person." *Dohrman*, 143 N.W.2d at 867. McGee's claim "cannot be predicated on principles of common law negligence." *Id.* Nor can a duty be implied by simply concluding that the challenged action is ministerial. *See Truman*, 2009 S.D. 8,

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⁸ In any event, *King* predates *Hohm*, where the Court held that a public entity's duty to maintain a highway is defined by statute. *Hohm*, 2008 S.D. 65, \P ¶ 17–20, 753 N.W.2d at 904–05.

¶ 16, 762 N.W.2d at 79–80 ("[A] statutory waiver of sovereign immunity . . . alone does not *create* a duty where none would otherwise exist.").

McGee admitted to the circuit court that he does not rely on a statutory basis for the duty he claims the DOT owed him. (App. at 96; SR R1 at 739.) The circuit court likewise failed to identify an applicable statutory duty in either of its decisions. "Because [McGee] has the burden of proof as to each element of his stated cause[] of action," his failure to identify a statutory duty "means summary judgment was appropriate as to that claim." *Beals v. AutoTrac, Inc.*, 2017 S.D. 80, ¶ 12, 904 N.W.2d 765, 769.

b. McGee cannot seek damages as a third-party beneficiary for DOT's alleged breach of its contract with Spencer Quarries.

The DOT's entitlement to summary judgment is even more apparent if McGee's claim is viewed objectively based on his pleadings, not his own characterization of the complaint. McGee alleged in his complaint: "The Project's plan documents . . . and the DOT's Standard Specifications for Roads and Bridges (2015) . . . controlled Spencer Quarries' execution of the construction on the Project and the DOT's monitoring and inspecting of Spencer Quarries' work." (App. at 71; SR R1 at 300.) According to McGee, Spencer Quarries breached Standard Specifications §§ 4.5 and 5.14 by over spraying tack, and MUTCD § 6F.34 by not posting "Fresh Oil" signs (App. at 72–73; SR R1 at 301–02); and the DOT breached Standard Specifications § 5.15 by not correcting Spencer Quarries's alleged breaches (App. at 73; SR R1 at 302). Again, the DOT's contract with Spencer Quarries incorporates by reference the Standard Specifications, which in turn incorporates by reference portions of the MUTCD.

McGee cannot, however, premise a negligence claim on the DOT's alleged breach of its contract with Spencer Quarries. When a public government entity and a

private party enter into a contract, "private citizens are presumed not to be third-party beneficiaries." *Sisney v. State*, 2008 S.D. 71, ¶ 11, 754 N.W.2d 639, 644. Moreover, "tort liability requires a breach of a legal duty *independent of contract* that arises from extraneous circumstances, *not constituting elements of the contract.*" *Knecht v. Evridge*, 2020 S.D. 9, ¶ 60, 940 N.W.2d 318, 335 (emphasis added). Consequently, "negligence that consists merely in the breach of a contract will not afford grounds for a tort action by third parties and is limited under a breach of contract cause of action to the party to the contract or for whose benefit the contract was made." *Kreisers Inc. v. First Dakota Title Ltd. P'ship*, 2014 S.D. 56, ¶ 22, 852 N.W.2d 413, 419 (quoting *Fisher Sand & Gravel Co.*, 1997 S.D. 8, ¶ 15, 558 N.W.2d 864, 868).

Rather than examining the content of McGee's pleadings, the circuit court accepted McGee's characterization of the complaint. In the court's view, "McGee's action is not to claim he is entitled to benefits of a state SDDOT contract with Spencer [Quarries]. His claim is to recover for injuries sustained by the breach of a ministerial duty created by [the] Standard Specifications." (App. at 18; SR R2 at 630.) This analysis misapprehends the issue, which is not what relief McGee seeks, but the source of the duty he claims was breached. This analysis also overlooks the vicarious nature of McGee's claim as pleaded against the DOT. As explained above, McGee's claim against the DOT is essentially that the DOT was negligent by not preventing Spencer Quarries' alleged negligence. And McGee premises his negligence claim against Spencer Quarries on its alleged violation of the Standard Specifications. But the only reason the Standard Specifications are applicable to Spencer Quarries is because of its contract with the DOT. If not for that contract, then, the complaint would not state a negligence claim against

Spencer Quarries or by extension, the DOT. Thus, McGee has simply alleged breach of "elements of the contract[,]" not "breach of a legal duty independent of contract[.]" *Knecht*, 2020 S.D. 9, ¶ 60, 940 N.W.2d at 335.

To the extent that McGee disavows the duty as alleged in the complaint and relies instead on Standard Specifications § 330.3(E) as creating a duty owed directly to him by the DOT, the analysis is no different. The Standard Specifications apply only because they were incorporated into the contract between Spencer Quarries and the DOT. The Standard Specifications cannot independently establish the standard of care of a reasonably prudent person in these circumstances because "the standard of care [owed by a governmental entity to maintain a highway] cannot be predicated on principles of common law negligence." *Dohrman*, 143 N.W.2d at 867. The circuit court's decision directly contradicts this authority: it held that the duty owed by DOT may arise from "industrial customs and practices, state regulations or policies on point, or the common law." (App. at 18; SR R2 at 630.)

The circuit court and McGee failed to identify an applicable statutory duty on which to premise McGee's claim. The court relied solely on a duty created by the Standard Specifications incorporated into the contract between the DOT and Spencer Quarries. (*Id.*) When viewed objectively, McGee's claim is simply one seeking "damages for breach of contract as a third-party beneficiary." *Sisney*, 2008 S.D. 71, ¶ 1, 754 N.W.2d at 641. Because he is presumed *not* to be a third-party beneficiary, *id.* ¶ 11, 754 N.W.2d at 644, and because McGee failed to allege an actionable statutory duty, McGee's claim against the DOT fails as a matter of law. This is a sufficient basis on which to reverse and direct that the circuit court enter judgment in favor of the DOT.

3. Even if McGee had pleaded an actionable duty, the acts at issue were discretionary and therefore protected by sovereign immunity.

Even if McGee had pleaded an actionable duty, public entities and their employees are immune from suit for tort claims unless their immunity is waived by constitutional or statutory authority. *Truman*, 2009 S.D. 8, ¶ 9, 762 N.W.2d at 78. The Legislature has waived immunity for state employees when they perform ministerial functions, but not when they perform discretionary ones. *Id.* ¶ 20, 762 N.W.2d at 80. This Court's earliest opinions "defined a ministerial duty as a narrow one. It is where a governmental employee 'disregarded a plain provision of the law.'" *Id.* ¶ 19, 762 N.W.2d at 80 (quoting *State v. Ruth*, 68 N.W. 189, 191 (S.D. 1896)). Since that time, the Court's definition of *ministerial act* has only become more restrictive:

A ministerial act is defined as absolute, certain, and imperative, involving merely the execution of a specific duty arising from fixed designated facts or the execution of a set task imposed by law prescribing and defining the time, mode and occasion of its performance with such certainty that nothing remains for judgment or discretion, being a simple, definite duty arising under and because of stated conditions and imposed by law. A ministerial act envisions direct adherence to a governing rule or standard with a compulsory result. It is performed in a prescribed manner without the exercise of judgment or discretion as to the propriety of the action.

Id. ¶ 21,762 N.W.2d at 80–81 (quoting *Hansen*, 1998 S.D. 109, ¶ 23, 584 N.W.2d at 886). In other words, a ministerial duty is marked by a specific if—then statement: if a specific triggering event occurs, then a specific response is required.

The circuit court concluded that deciding how much tack to spray, whether to permit the public to travel on dried tack, and whether to post signs were ministerial acts.

According to the court:

Employees of Spencer [Quarries] and [the DOT] ignored the specifications requiring them to avoid leaving exposed tack coat to the driving public, and that when they could not avoid it they failed to take precautionary measures to reduce speed or warn the public of the hazard in the area of exposed tack

coat. This Court determines that Royalty and Gates['s] duties in this regard were binding upon them as the [Standard Specifications] were to be followed and they were prohibited from waiving them or giving contrary instructions. The Court finds that their duties were ministerial.

(App. at 17; SR R2 at 629.) In reaching this conclusion, the court referenced the Standard Specifications, the MUTCD, and the Hot Mix Handbook.

The Standard Specifications, the MUTCD, and the Hot Mix Handbook easily fail this Court's oldest and simplest definition of a ministerial act or duty because they are not "plain provision[s] of the law[.]" *Ruth*, 68 N.W. at 191. As discussed above, neither the circuit court nor McGee ever identified a statutory basis for imposing a duty on the DOT based on the Standard Specifications, the MUTCD, or the Hot Mix Handbook. In fact, McGee specifically disclaimed reliance on any statute. (App. at 96; SR R2 at 739.) And as explained more fully below, there are other problems with the court's reliance on each of these sources.

The circuit court's decision relied first on the Standard Specifications, but its understanding of Standard Specifications § 330.3(E) is incorrect, and the error shows why the standard cannot create a ministerial duty. The circuit court explained that the Standard Specifications required the DOT to "avoid leaving exposed tack coat to the driving public[.]" (App. at 17; SR R2 at 629.) This is incorrect based on the plain language of the standard. Again, Standard Specifications § 330.3(E), states:

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount *estimated* for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

(App. at 54; SR R1 at 2313 (emphasis added).) For tack coat to be exposed, the amount of tack applied must exceed the amount of the *actual* mat laydown (if the amount of tack was equal to or less than the mat laydown, then the tack would be entirely covered). But by its plain terms, § 330.3(E) does not require that the tack applied not exceed the *actual* mat laydown; rather, it requires only that the amount of tack applied not exceed the *estimated* mat laydown. If a contractor applies tack equal to the estimated mat laydown but the actual mat laydown ends up being less than the estimate, then the contractor will have complied with § 330.3(E)—even though the result at the end of the day is exposed tack. And in any event, § 330.3(E) explicitly gives the engineer discretion to allow *any* amount of exposed tack. So contrary to the court's conclusion, the standard does not proscribe exposed tack. Thus, exposed tack is not a specific triggering event under § 330.3(E).

Even if the circuit court were correct that § 330.3(E) requires the DOT to avoid leaving exposed tack, that provision does not prescribe a compulsory result. Contrary to the court's view, § 330.3(E) simply does not say, for example: "if there is exposed tack, then the DOT must reroute traffic"; or "if there is exposed tack, then the DOT must post a warning"; or "if there is exposed tack, then the DOT must post a warning"; or "if there is exposed tack, then the DOT must post a warning"; or "if there is exposed tack, then the DOT must apply sand." In other words, § 330.3(E) does not provide "a governing rule or standard with a compulsory result." Truman, 2009 S.D. 8, ¶ 21,762 N.W.2d at 81 (quoting Hansen, 1998 S.D. 109, ¶ 23, 584 N.W.2d at 886) (emphasis added and removed).

The circuit court's statement that "[t]he MUTCD requires 'fresh oil' signs to warn the public of the existence of *any* roadway surface treatment" is similarly erroneous.

(App. at 14; SR R2 at 626 (emphasis added).) Contrary to the court's claim, § 6F.34 of the MUTCD states: "The FRESH OIL (TAR) (W21-2) sign . . . should be used to warn road users of *the* surface treatment." (App. at 66 (emphasis added).) Because this section refers to exactly one surface treatment—"fresh oil"—there is no reason to interpret the word *the* as referring to any other surface treatment. The court cited no provision defining *fresh oil*, but at the very least, broken tack is by definition not *fresh*. And the parties' dispute over the necessity of these signs only reinforces the conclusion that this provision is subject to interpretation and not a clear governing rule or standard. The presence of exposed, dried tack is simply not an event identified in § 6F.34 that triggers that section's compulsory result of posting a sign.

It is even more apparent that the circuit court's reliance on the Hot Mix Handbook is misplaced. According to the court: "The Handbook *discourages* driving on tack and *suggests* that if it cannot be avoided that the contractor *should* significantly reduce speed in the area, place proper warning signs, and cover the tack with sand." (App. at 14; SR R2 at 626 (emphasis added).) The court's own choice of words is telling—the court did not conclude that "[t]he Handbook [prohibits] driving on tack and [requires] that if it cannot be avoided that the contractor [must] significantly reduce speed in the area, place proper warning signs, and cover the tack with sand." Words like *discourages*, *suggests*, and *should* do not denote specific triggering events with specific compulsory results; therefore, they do not describe *ministerial* acts or duties. *See, e.g., Truman*, 2009 S.D. 8,

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⁹ DOT employees explained that the DOT does not allow the public to drive on unbroken tack. (SR R1 at 1460 (Gates), 3051 (Peppel).) Like fresh oil or tar, unbroken tack would make a mess on cars. (*Id.* at 1324 (Royalty), 1460 (Gates), 3051 (Peppel).) But no evidence in the record suggests that a "fresh oil" sign is a safety measure.

¶ 21,762 N.W.2d at 80–81. And even if they did, the Hot Mix Handbook was not incorporated into the DOT's contract with Spencer Quarries and is therefore not mandatory.

The actual text of the Hot Mix Handbook confirms the conclusion that it does not establish ministerial duties.

[I]f traffic must travel over the tack coat before the overlay is placed, a light layer of sand *can* be spread on top of the tack coat to prevent its pickup by traffic. . . .

... Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface *may* be greatly reduced by the presence of the tack coat material. The excess tack will also be thrown on vehicles, creating a major public relations problem. In addition to lowering the posted speed limits, it *may* be advisable to apply sand to the tacked surface as discussed above.

. . .

Tack coat *should* not be left exposed to traffic. If doing so is necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface, *should* be taken.

(App. at 62–63 (emphasis added).) Saying that sand *can* rather than *must* be spread on top of tack, or that precautions *should* rather than *must* be taken are not "compulsory results." *Truman*, 2009 S.D. 8, ¶21, 762 N.W.2d at 80–81. And saying that friction *may* be reduced, and that applying sand *may* be advisable, does not provide a "governing rule or standard" for determining when sanding or reducing speed is actually required. *Id.* Without such a governing rule or standard, the decisions whether and how much to sand or reduce traffic speed will necessarily be left to the DOT's employees' "exercise of judgment or discretion[,]" which by definition is a discretionary act. *Id.*

The conclusion that the provisions of the Standard Specifications, the MUTCD, and the Hot Mix Handbook cited by the circuit court do not establish ministerial duties is

supported by this Court's consistent application of the definition of *ministerial act* discussed above. The Court's decision in *Wulf*, which the circuit court thought was the case most applicable to the present case (App. at 13; SR R2 at 625), is particularly useful. The statutory duty at issue in *Wulf* was SDCL § 31-5-8.3, which "requires DOT establish a winter safe highway maintenance plan for snow removal, sanding and deicing in order to provide safe highways during cold weather months." *Wulf*, 2003 S.D. 105, ¶ 12, 669 N.W.2d at 139. To fulfill its statutory duty under SDCL § 31-5-8.3, the DOT adopted Policy 2531, which "impose[d] a requirement to use specified sand/salt/chemical mixtures and to continue sanding operations from 5:00 a.m. (in the morning) until 7:00 p.m. (in the evening) unless 1) the traffic is moving safely or 2) conditions become too hazardous for continued operations." *Id.* ¶ 31, 669 N.W.2d at 146. The plaintiff alleged that a contractor hired by the DOT failed to properly manage the removal of snow and ice, resulting in a fatal accident. *Id.* ¶ 14, 669 N.W.2d at 140-41. The circuit court granted summary judgment based on sovereign immunity. *Id.* ¶ 16, 669 N.W.2d at 141.

On appeal, this Court reversed. The Court noted that while the statutory duty itself offered "no clear standards as to when or how often [the DOT's maintenance supervisor] was to inspect" the highway at issue, Policy 2531—adopted pursuant to SDCL § 31-5-8.3—imposed specific obligations on the DOT. *Id.* ¶¶ 30–31, 669 N.W.2d at 146. If the highways were covered with packed snow or ice (the specific triggering event), then the contractor was required to conduct continuous sanding operations

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The current version of the statute states: "The State Transportation Commission shall each year establish a winter safe highway maintenance plan. The plan shall provide for the snow removal, sanding, and deicing of the state trunk highway system to provide safe highways during cold weather months." SDCL § 31-5-8.3.

between 5:00 a.m. and 7:00 p.m., until either the highways were safe or they became too unsafe to continue (the specific compulsory response). *Id.* ¶ 12 n.2, 669 N.W.2d at 140 n.2. The contractor did not commence sanding "until 8:00 a.m., one-half hour after the deadly accident." *Id.* ¶ 32, 669 N.W.2d at 146.

The circuit court correctly identified Wulf as important to resolving the current dispute, but for the wrong reason. In the court's view, because this Court recognized Policy 2531 as creating ministerial duties in Wulf, the Standard Specifications, the MUTCD, and the Hot Mix Handbook must also create ministerial duties in the present case. (See App. at 13; SR R2 at 625.) But this thinking overlooks that Policy 2531 was adopted pursuant to the statutory duty created by SDCL § 31-5-8.3; as discussed previously, in the present case, neither the court nor McGee ever identified the statutory basis for imposing a duty on the DOT. The circuit court's rationale also overlooks the substantive differences between Policy 2531 and the provisions of the Standard Specifications, the MUTCD, and the Hot Mix Handbook on which the court relied. Policy 2531 contains a clear if—then statement: if the highways are covered with packed snow or ice, then the DOT must sand following a specific sequence, using a specific material mixture, in a specific amount, within a specific time period, and according to a specific road priority. Wulf, 2003 S.D. 105, ¶ 12 n.2, 669 N.W.2d at 139 n.2. In contrast, under Standard Specifications § 330.3(E), exposed tack is not a specific triggering event, and that section contains no specific compulsory response. Under the MUTCD § 6F.34, exposed tack is not a specific triggering event for placing a "Fresh Oil" sign. And the Hot Mix Handbook provides no governing rule or standard for determining when to sand, nor does it require specific action.

To use another of this Court's explanations, a ministerial duty is one that "an ordinary citizen [plucked] off the street" could be expected to "successfully execute." *Hansen*, 1998 S.D. 109, ¶ 29, 584 N.W.2d at 887–88. An ordinary citizen could be expected to successfully execute Policy 2531 because the only knowledge necessary to identify the triggering event is not specialized—it is simply the ability to recognize the presence of packed snow or ice. And that policy clearly explains the compulsory result. But in this case, the provisions of the Standard Specifications, the MUTCD, and the Hot Mix Handbook at issue would not equip an ordinary citizen plucked off the street to successfully oversee the reconstruction of Highway 45.

The circuit court did not apply the definition of *ministerial act* used by this Court for over a century, since its decision in *Ruth* in 1896. The court did not consider whether the Standard Specifications, the MUTCD, or the Hot Mix Handbook are "plain provision[s] of the law[,]" *Ruth*, 68 N.W. at 191, or whether they constitute "governing rule[s] or standard[s] with . . . compulsory result[s,]" *Truman*, 2009 S.D. 8, ¶ 21, 762 N.W.2d at 81. Instead, the court focused on seven factors mentioned in *King* (App. at 15–16; SR R2 at 627–29):

This Court uses several factors when determining if a state employee's actions are a discretionary rather than ministerial function. They are:

- (1) The nature and importance of the function the officer is performing;
- (2) The extent to which passing judgment on the exercise of discretion by the officer will amount necessarily to passing judgment by the court on the conduct of a coordinate branch of government;
- (3) The extent to which the imposition of liability would impair the free exercise of his discretion by the officer;
- (4) The extent to which the ultimate financial responsibility will fall on the officer;
- (5) The likelihood that harm will result to members of the public if the action is taken;

- (6) The nature and seriousness of the type of harm that may be produced;
- (7) The availability to the injured party of other remedies and other forms of relief.

King, 2007 S.D. 2, ¶ 11, 726 N.W.2d at 607 (quoting *Wulf*, 2003 S.D. 105, ¶ 20, 669 N.W.2d at 143).

The circuit court's reliance on the King factors is misplaced because there is no indication this Court ever intended those factors to be the central focus of the ministerial discretionary question. These factors derive from commentary in the Restatement (Second) of Torts and were first introduced in this Court's opinions in the early 1980s. See King, 2007 S.D. 2, ¶ 11, 726 N.W.2d at 607 (quoting Wulf, 2003 S.D. 105, ¶ 20, 669 N.W.2d at 143 (quoting Kyllo v. Panzer, 535 N.W.2d 896, 902 (S.D. 1995) (quoting Nat'l Bank of S.D. v. Leir, 325 N.W.2d 845, 848 (S.D. 1982) (citing Restatement (Second) of Torts § 895D cmt. f (Am. Law Inst. 1979)))). The Court has not cited these factors since it decided *King* in 2007. More recent decisions simply apply some variation of the same basic definition of ministerial act or duty discussed above, which the Court has applied since its decision in Ruth. See, e.g., Adrian v. Vonk, 2011 S.D. 84, ¶ 14, 807 N.W.2d 119, 124 ("In sum, there are no 'hard and fast' rules guiding the State's actions for managing the prairie dog population."); Truman, 2009 S.D. 8, ¶ 22, 762 N.W.2d at 81 ("In order to find a duty 'ministerial,' we must find a 'governing rule or standard' so clear and specific that it directs the government actor without calling upon the actor to ascertain how and when to implement that rule or standard."). And even between 1982 and 2007, not all sovereign-immunity cases cited those factors, see Hansen, 1998 S.D. 109, 584 N.W.2d 881, and those that did tended not to apply them, see Wulf, 2003 S.D. 105, ¶ 20, 26, 669 N.W.2d at 142–43, 145 (mentioning but not

applying the *King* factors and instead using the governing-rule-or-standard-with-a-compulsory-result definition). Not even *King* itself applied the seven factors as the true test of whether an act or duty is ministerial. *See King*, 2007 S.D. 2, \P 12, 726 N.W.2d at 607.¹¹

Even if the *King* factors were the controlling standard, they only support the conclusion that the acts at issue were discretionary rather than ministerial. First, overseeing the repair and maintenance of the thousands of miles of highway in South Dakota is an important task. Second, the decisions whether to permit the public to travel on dried tack, and whether to post signs or reduce speed, are decisions that require technical expertise that a reviewing court does not possess. Third and fourth, while ultimate financial responsibility would not fall on the DOT employees in this case, if liability is imposed on the DOT, then the DOT would be required to impair the free exercise of its employees' discretion in similar circumstances or face further liability. Fifth, the likelihood that harm will result to the public is low. Obviously, McGee suffered serious injuries in this case. But there is no evidence in the record of other accidents like McGee's—let alone evidence that such accidents are common. Sixth, again, while McGee suffered serious injuries, there is no evidence in the record that McGee's situation is typical of the type or seriousness of harm that can occur. And

In *King*, the Court cited the seven factors as background information but immediately followed the factors by stating: "In essence, in order for an action to be ministerial the act must be 'absolute, certain, and imperative.' An employee must be 'directly adhering to a governing rule or standard with a compulsory result." *King*, 2007 S.D. 2, ¶ 12, 726 N.W.2d at 607 (quoting *Casazza v. State*, 2000 S.D. 120, ¶ 13, 616 N.W.2d 872, 875–76). The Court then concluded—without any further discussion of the factors—that "the DOT employees' actions were not ministerial because at the time of the accident there was not a 'readily ascertainable standard." *Id.* ¶ 21, 726 N.W.2d at 610.

seventh, McGee has other, presumably substantial remedies available in this case because he already reached a settlement with Spencer Quarries and its insurer. So even under the *King* factors, the acts or duties at issue were discretionary rather than ministerial.

Conclusion

The circuit court erred by denying the DOT's motion for summary judgment. The DOT's duty regarding the maintenance of a highway is defined solely by statute, but the court failed to identify a statutory duty on which to premise McGee's claim. As pleaded, McGee's claim is simply an attempt to recover damages from the DOT's alleged breach of contract even though McGee is presumptively not a third-party beneficiary. And even if the court had identified an actionable duty to sustain McGee's claim, the court's conclusion that the Standard Specifications, the MUTCD, and the Hot Mix Handbook create ministerial duties is incorrect. The provisions at issue are not "governing rule[s] or standard[s] with . . . compulsory result[s]" that could be "successfully execute[d]" by an "ordinary citizen [plucked] off the street[.]" *Truman*, 2009 S.D. 8, ¶¶ 21–22, 762 N.W.2d at 81. Rather, these provisions are industry guides that cannot be applied without "special discretion, judgment or skill." *Hansen*, 1998 S.D. 109, ¶ 33, 584 N.W.2d at 889 (quoting *Kyllo*, 535 N.W.2d at 901–02 n.9). Consequently, these

¹² So far, McGee and Spencer Quarries have refused to disclose the amount or other

terms of the settlement. After learning of the settlement, the DOT filed a cross-claim against Spencer Quarries for indemnification or alternatively, contribution as joint tortfeasors. (SR R2 at 464.) The DOT also asked the circuit court to order McGee and Spencer Quarries to disclose the settlement terms. (*Id.* at 599.) Despite the DOT's invitation to learn more about the remedy made available to McGee by the settlement, the court declined to rule on the motion to disclose. (*Id.* at 612.) In its summary-judgment

memorandum decision, the court noted that "[a]s to the [seventh *King*] factor, after further discovery has been submitted, this Court has been provided no information showing that the plaintiff has any other remedies available to compensate him for his injuries" (*id.* at 648).

provisions do not establish ministerial duties, and the DOT was entitled to sovereign immunity.

The DOT asks this Court to reverse the circuit court's order denying summary judgment and to direct the court to enter summary judgment in the DOT's favor because there is no actionable duty on which to premise McGee's negligence claim and because sovereign immunity has not been waived.

Dated this 17th day of May, 2022.

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In accordance with SDCL § 15-26A-66(b)(4), I certify that this brief complies with the requirements set forth in the South Dakota Codified Laws. This brief was prepared using Microsoft Word 2010, Times New Roman (12 point) and contains 9,232 words, excluding the table of contents, table of authorities, jurisdictional statement, statement of legal issues and certificate of counsel. I have relied on the word and character count of the word-processing program to prepare this certificate.

Dated this 17th day of May, 2022.

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Re: Austin McGee v. Spencer Quarries and South Dakota DOT Employees, Brule County, South Dakota, 07CIV18-54

Dear Counsel:

This matter came before the Court on the motion of the State of South Dakota employees (SDDOT) for summary judgment. This motion was initially set for hearing and then continued at

the request of the plaintiff, (McGee), requesting further discovery pursuant to their motion to compel discovery. A hearing was held on February 2, 2021, at which time the plaintiff, Austin McGee, (McGee) appeared through counsel, Mike Marlow; Spencer Quarries (Spencer) appeared through their counsel, Steve Oberg; and Gary Thimsen appeared on behalf of the SDDOT defendants. The Court took the matter under advisement. Later, McGee moved the Court for a continuance under SDCL 15-6-56(f) to allow the plaintiff further discovery and rebriefing before the Court decided the summary judgment issue. The Court granted the motion, and the matter was continued for further discovery. Thereafter, additional discovery took place, including numerous depositions and the parties rebriefed the summary judgment motion based upon the new discovery. The final brief in the matter was filed September 22nd, 2021.

SDDOT has moved for summary judgment based upon sovereign immunity. This Court has previously ruled upon the identical issue raised in SDDOTs' motion to dismiss on a Rule 12 basis by a Memorandum Decision dated July 31, 2020. That ruling denied the motion to dismiss on a Rule 12 basis. To the extent that it may be applicable to the resolution of the present motion for summary judgment, the July 31, 2020 Memorandum Decision is incorporated herein. Specific reference will be made to the July 2020 Memorandum Decision when necessary.

FACTS

McGee was seriously injured in an automobile accident that occurred on June 30, 2018, while he was traveling north on South Dakota Highway 45 north of Platte, South Dakota. At that time Spencer Quarries (Spencer) was performing a paving contract on Highway 45 for SDDOT. The contract called for the removal and replacement of the asphalt mat on the highway.

The evidence submitted in the record establishes that on June 29, 2018, Spencer had laid down new asphalt in the area of the accident, but Spencer had stopped working late that afternoon. At the time they stopped paving and work for the day, prior to a long holiday weekend, Spencer left approximately 1,400 feet of exposed tack coat on the roadway. It had rained overnight and into the morning of June 30th, 2020, the day of the accident. McGee claims that when his pickup encountered the exposed tack coat, his vehicle lost traction causing him to lose control of his vehicle and to leave the roadway, rolling in the ditch. McGee suffered permanent paraplegia from the accident.

In October of 2017, SDDOT accepted Spencer's bid through the bid letting process for the repaving of South Dakota Highway 45 from Platte to Interstate 90. The "bid package" on the project included the contract plans and Standard Specifications For Roads and Bridges (2015). As far as this court understands from the discovery provided, these Standard Specifications are developed and implemented by SDDOT and are incorporated into all highway paving contracts with the State of South Dakota.

After letting the contract to Spencer, SDDOT assigned the contract to the area engineer, Jay Peppel, of Mitchell. Peppel was to implement and oversee performance of the contract. Peppel assigned Kent Gates, also a SDDOT employee, as the engineering supervisor on the project. Gates was responsible for overseeing the entire operation of the contract and was charged with insuring the project was completed in accordance with the contract's plans and specifications. Gates had two project technicians assigned to him: a lab technician and a road technician. The lab technician worked primary in the hot-mix batching plant and is not a party to these proceedings. The road technician, Kris Royalty, was present on the project every day inspecting the work done by Spencer on the roadway. Royalty and Gates are not engineers as they have no formal education or training in engineering other than on the job training and experience working for SDDOT.

As part of the standard specifications in all similar projects, the SDDOT mandates certain guidelines and rules to be followed, some to ensure proper performance of the contract for compensation of the contractor for work completed, and some to protect the traveling public through the project area. The Standard Specifications are adopted by SDDOT and there is a separate "spec engineer" who works on them initially (Rowen 8/19 Depo, p. 19) and they are then sent to a specifications committee who considers the input of industry leaders and others before adopting or amending the specifications. Rowen 8/19 Depo, p.27. The Standard Specifications themselves provide that the SDDOT inspectors (Gates and Royalty) are to inspect all work done on any part of the contract and may not alter or waive any part of the contract, nor shall they issue instructions contrary to the contract terms. Standard Specifications §5.10. The inspectors can reject work until any issues can be resolved by the engineer. Id. The Standard Specifications themselves are a material part of the contract. As part of the standard specifications, if the contractor does not comply with the provisions of standard specification 4.5 or 4.14, the SDDOT notifies the contractor of such noncompliance and the contractor has 24 hours to remedy the noncompliance. If the

¹ Jay Peppel was dismissed from this action in the court's ruling on the motion to dismiss in July of 2020.

contractor does not do so, the engineer will proceed to maintain the project and the cost of such maintenance is deducted from any money due to the contractor. Section 4.5 of the standard specifications provides that the contractor will keep the portion of the project used by the public in a condition that will adequately and safely accommodate traffic. Section 5.14 of the standard specifications provides that the contractor will maintain "the entire project ... including temporary traffic control".

Tack coat is an emulsified oil that is laid down on the roadway between asphalt lifts. This tacky oil causes bonding between the various asphalt lifts so that they adhere to each other. Tack coat is sprayed on the existing lift by a truck to a thickness as specified in the contract documents. Initially this substance is wet, becomes tacky, and eventually "breaks". Tack breaks when the solvents and water in the oil have evaporated and the ingredients have dehydrated to the point where it can be walked and driven upon. The tack that is the subject of this case, used between asphalt lifts, has no sand or aggregate mixed with it. Other forms of tack called fog seal or flush seal do have sand or aggregate and are used on the final finish of the road or on the shoulders.

After the tack coat has broken, the contractor can position his paving machinery over the tack coat and trucks hauling hot asphalt back up to the paving equipment and unload asphalt that the paver levels onto the roadway. Pure tack coat has no sand, grit or aggregate for purposes of traction. This is because it is a binding agent and will be overlaid by asphalt hot-mix.

SDDOT employees who work on similar projects as well as contractors and the employees of such contractors who are awarded asphalt paving contracts are required to take a course put on by SDDOT for training in asphalt application. As part of the training SDDOT gives State employees and employees of contractors their own copy of the Hot-Mix Handbook. The Hot-Mix Handbook is a nationally recognized authoritative resource and industrial guide used in similar trainings. The Hot Mix Handbook provides that if, "due to plant or paver breakdowns", the contractor is prohibited from paving over and covering exposed tack coat before traffic must use the lane of traffic, the posted speed limits on that portion of the project should be "significantly reduced" until overlay operations can take place. The Hot Mix Handbook goes on to state that "Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface may be greatly reduced by the presence of the tack coat material". (emphasis added). The Handbook also suggests that exposed tack be sanded when traffic will be traveling on it.

The Standard Specifications provide that as to tack coat:

"tack application ahead of mat lay down shall be limited by job condition, and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the engineer. Tack areas which become unsatisfactory as a result of traffic, weather, or conditions, shall be retacked. Required retacking, which is not the fault of the contractor, will be paid for at the contract unit price for tack asphalt." SDDOT Standard Specifications For Roads and Bridges, 2015, §330 E. (Emphasis added)

McGee's expert in this case, who is a well-credentialed expert in the field, opines that numerous states and the federal government do not allow traffic to drive on tack coat because of the absence of friction, and that tack coat is to be covered for safety reasons.

There is a dispute between McGee and SDDOT as to whether or not it is dangerous or unsafe to drive on exposed tack coat that has broken. McGee and his expert cite various authorities which are laid out in the materials submitted on the motion which prohibit or strongly discourage driving on tack coat for safety reasons.

The Standard Specifications also required certain signs to warn the public while traveling through the construction zone as may be required by the Manual of Uniform Traffic Control Devices (MUTCD). As part of the signs specs in the contract, a list of required signs was included. The signs for the Highway 45 project included "fresh oil signs". The parties dispute the application of these fresh oil signs in their briefs. The State claims that fresh oil signs are not necessary for broke tack coat. Some SDDOT employees and other witnesses claim that these fresh oil signs were for shoulder work at the end of the contract, and not for exposed tack coat that was left on the roadway. The MUTCD requires signs to alert the public to road surface treatments.

The evidence establishes that SDDOT inspectors were provided checklists for their daily work. One of the items on the checklist was the amount of exposed tack coat left at the end of the day. The record establishes that on this project those inspection sheets were marked "NA". The evidence also establishes that on this project SDDOT employees paid virtually no attention to the amount of exposed tack coat left at the end of each day's paving. Testimony in the various depositions is conflicting as to how a decision was made each day as to the amount of tack coat to be applied. Some witnesses indicate this was a decision made by SDDOT employees, some

testimony provides that it was a decision made entirely by the tack coat truck driver for Spencer, and some testimony provides that it was a joint decision made between SDDOT employees and Spencer employees.

Mr. Darren Feistner, the Spencer employee in charge of operating the tack truck, testified that based upon his experience, he could match the tack coat lay down to the asphalt mat lay down each day to within 20 feet. Despite this, the testimony and evidence in the record establishes that the amount of tack coat applied, when compared to the Standard Specification, § 330. 3E were virtually ignored, and no attention was paid to the amount of exposed tack coat at the end of each day. There is no evidence showing any attempt by SDDOT or Spencer Quarries to match the amount of tack coat applied to asphalt mat lay down for that particular day. The evidence shows that on the day of the accident there was over 1,400 feet of exposed tack coat and that during the week preceding the accident there was a cumulative total of over 7,000 feet of exposed tack coat on the roadway exposed to the traveling public.

During daily paving operations, Spencer and SDDOT would close the lane which they were working on. While Spencer Quarries was applying tack coat and asphalt hot-mix lifts they were using flaggers and pilot cars would guide public traffic through the construction zone in the opposite lane. At the end of the day's paving operations, the flaggers were relieved of their duties and no flaggers were left on site. Traffic was allowed to drive on the exposed tack coat. On the day in question, the only warning sign in the area was a bump sign south of the accident scene. There were no "fresh oil", "slippery when wet", or reduced speed signs warning traffic of the potential hazard of the exposed tack coat. The evidence also establishes that the tack coat was not sanded.

The State of South Dakota is insured under the Public Entity Pool for Liability (PEPL) fund putsuant to a participation agreement between PEPL and the State of South Dakota. In June of 2018, the participation agreement, § I.E.10 of appendix A specifically excluded from coverage, any torts "arising from or contributed to in any manner by acts, errors, or omissions in the engineering or design of any public roadway or public transportation project". Furthermore, putsuant to §1.E.16 of appendix A of the participation agreement, coverage is specifically excluded for any damages that are a result of a discretionary act or task. Jay Peppel, the area engineer on this project, provided an affidavit to this Court in support of the State's motion for summary judgment. In his affidavit he explains that "engineering" and "maintenance" fall under two completely separate divisions of the SDDOT. His affidavit provides that "engineering" involves the design and creating a contract for a

project, the bid letting process, and the administration of the contract. Conversely, "maintenance" involves fixing potholes, snowplowing, and mowing grass. Unlike the engineering division, the maintenance division does not "let" these contracts in the bid letting process. Further, any maintenance that must be done on the roadway that is under construction is the responsibility of the contractor in accordance with the standard specifications. (See §5.14 of Standard Specifications For Roads and Bridges). In other words, Peppel and SDDOT claim that the State is not responsible for maintenance of the roadways during a construction project.

In its supplemental answer to plaintiff's interrogatories SDDOT agreed that sanding and reducing speed are appropriate measures to take for vehicles traveling on exposed tack coat but condition their responses as being in accordance with the Hot-Mix Handbook.

ANALYSIS AND DECISION

I. THE LAW OF THE CASE DOCTRINE BASED UPON THIS COURT'S MOTION TO DISMISS (RULE 12 RULING) DOES NOT APPLY OR BIND THIS COURT ON THIS SUMMARY JUDGEMENT MOTION

In its Memorandum Decision in July of 2020 resolving the motion to dismiss, the Court found that, based on a Rule 12 footing, the complaint alleged sufficient ministerial duties that may have been breached by SDDOT to warrant denial of the motion to dismiss as to SDDOT employees Royalty and Gates. Mr. Peppel was dismissed as the Court determined he was exercising discretionary engineering functions. McGee now contends that this court's ruling on the motion to dismiss is the law of the case and has preclusive effect on SDDOT's motion for summary judgment.

In this Court's decision denying the motion to dismiss it stated: "In this case, the motion was not able to be presented with sufficient specificity for this court to determine the issues precisely in any further detail. Consequently, the motion is denied without prejudice to its renewal after further development of the record". For this reason alone, this argument fails. In addition, for all the reasons argued in the SDDOT responsive briefs, McGee's argument that this Court's decision on the motion to dismiss is the law of the case are denied.

II. THE PARTICIPATION AGREEMENT BETWEEN THE PEPL FUND AND THE STATE OF SOUTH DAKOTA DOES NOT EXCLUDE COVERAGE FOR THE ACTS OF NEGLIGENCE ALLEGED IN THE AMENDED COMPLAINT SOLEY BECAUSE SDDOT EMPLOYEES WERE WORKING IN THE ENGINEERING DIVISION.

In their primary argument SDDOT contends that the claims against them should be dismissed as they are entitled to sovereign immunity because they were engaged in the engineering or design of a highway or working on a highway construction or transportation project as employees of the State of South Dakota at the time of the action giving rise to McGee's injuries. In this Court's Memorandum Decision of July, 31, 2020 this court adopted the argument of McGee that he was not claiming there was a defect in the design or the engineering of the roadway, but rather that the project to resurface the road was more of a maintenance and repair function and that the SDDOT employees failed to fulfill ministerial duties imposed by the Standard Specifications with respect to exposed tack. The participation agreement between PEPL and the State in effect at the time of the accident provides that PEPL coverage does not extend to liability "arising from or contributed to in any manner by the acts, errors, or omissions in the engineering or design of any public roadway or public transportation project", (See, Participation Agreement §I.E. 10 of Appendix A). They further support this argument by relying upon SDCL 3-22-1 which provides that the engineering and design of a roadway is excluded from coverage provided by PEPL. In reliance upon this argument the SDDOT Rule 30 designee, Jay Peppel, submitted an affidavit which pointed out that SDDOT has two divisions, engineering and maintenance. His affidavit provides that the engineering division is responsible for the design, bid letting and administration or implementation of highway paving and resurfacing contracts and involves engineering, not maintenance. He further testifies that the maintenance division is responsible for filling pot holes, mowing and other similar duties. Based upon this affidavit SDDOT contends that since the SDDOT employees were working on behalf of the engineering division, their function involved the engineering and design of a roadway and were thus not covered by the Participation Agreement leaving them immune from liability.

McGee contends that simply by labeling the duties of Gates and Royalty as coming under the engineering division of SDDOT to provide them immunity violates the holding in Kyllo v Panzer, 535 NW2d 896 (SD 1995) and disregards the requirement that this Court consider a factored analysis to determine if the duties are ministerial or discretionary and that such a ruling runs contrary to the requirement that the Court focus on "the nature of the particular duty, and not the character of the office" to determine whether or not a duty is ministerial or discretionary. State v. Ruth, 9 S.D. 84, 68 N.W. 189 (1896); Sisney v. Reisch, 2008 SD 72, ¶ 12, 754 N.W.2d 813, 818–19; Truman v Griese, 762 N.W.2d 75 (SD 2009) at ¶10.2

² In Kruger v Wilson, 325 N.W.2d 852 (SD1982) the Supreme Court stated: "Whether immunity extends

In this Court's decision of July 31, 2020 the Court adopted the contention of McGee that the function of SDDOT employees on this project were more in the line of maintenance and repair as opposed to engineering and design of the roadway. The Court also determined that the legislature was well aware of the difference in the language when it passed the statutes granting a limited waiver of sovereign immunity and that by failing to include the language for repair and maintenance of roadways the legislature intended that such functions be subject to suit and not protected by sovereign immunity. In High-Grade Oil Co. v. Sommer, 295 N.W.2d 736 (S.D.1980) the plaintiff sued the State for the defective design of a S curve on a highway. The Court found that the engineering of the particular S curve was a governmental function protected by sovereign immunity and that the granting of such immunity was not unconstitutional. Later, in Kyllo v Panzer, 535 NW2d 896 (SD 1995) the Court found that granting sovereign immunity to State employees engaged in ministerial acts violated open courts provision of South Dakota Constitution. Const. Art. 6, § 20. In doing so the Court pointed out that discretionary acts of state officials participate in in the state's sovereign policy-making power. Kyllo at 902.

In the present action the Court must determine if Royalty and Gates, as SDDOT employees working on a highway re-paving contract, are automatically cloaked with immunity because they were employed by the engineering division of the local DOT office, despite the fact that they were performing either ministerial or discretionary functions. One thing is clear, neither Gates or Royalty "engineered" or "designed" the roadway resurfacing plans. They had no involvement in any of the engineering or design of the roadway or the resurfacing plans. Neither Gates or Royalty have a degree in engineering or anything similar for highway design and are not engineers nor are they

to an employee sued in an individual capacity depends on the function performed by the employee High-Grade Oil, supra; Sioux Falls Const. Co., supra. In Sioux Falls Construction, argued and considered at the same time as High-Grade Oil, this court stated that the factors listed at Restatement (Second) of Torts, § 895D, comment f (1979), will be considered to determine whether an employee's function is discretionary and thus immune from suit. These factors include:

⁽¹⁾ The nature and importance of the function that the officer is performing....

⁽²⁾ The extent to which passing judgment on the exercise of discretion by the officer will amount necessarily to passing judgment by the court on the conduct of a coordinate branch of government....

⁽³⁾ The extent to which the imposition of liability would impair the free exercise of his discretion by the officer....

⁽⁴⁾ The extent to which the ultimate financial responsibility will fall on the officer....

⁽⁵⁾ The likelihood that harm will result to members of the public if the action is taken....

⁽⁶⁾ The nature and seriousness of the type of harm that may be produced....

⁽⁷⁾ The availability to the injured party of other remedies and other forms of relief.

licensed or certified as engineers. They have no input into the Standards and Specifications adopted by SDDOT which are made a part of all such resurfacing contracts. Royalty and Gates are inspectors for SDDOT and it is their job to make sure the contract is performed and implemented in accordance with the contract terms. The Standard Specifications specifically state that they may not alter or waive any part of the contract, nor shall they issue instructions contrary to the contract terms. The Standard Specifications adopted by SDDOT engineered precautionary and safety measures into the contract for protection of the traveling public. These measures were to be followed by the contractor and if they were not being followed, Gates and Royalty were required to take action to make sure they were followed.

In order to determine if Gates and Royalty are protected by sovereign immunity this court is required to focus on the functions they performed for the State under a factored analysis, not their titles or which division of SDDOT they currently work for. Labeling them as employees of the engineering division of the local office and thus not covered by the participation agreement of the PEPL fund runs contrary to the holding and careful analysis laid out in *Kyllo*.

In Truman v Griese, 762 N.W.2d 75 (SD 2009) the Court was presented with a similar argument. In Truman, a fatal accident occurred at a non-typical intersection. The plaintiff sued claiming that the SDDOT was negligent in the manner in which they erected traffic control signs at the intersection and they claim this was the cause of the accident. The Court acknowledged two distinct timeframes that were relevant, the time where there may have been an "omission of signs that occurred during the initial engineering and design of the intersection" and that timeframe after "changes have occurred in the nature of the intersection since its construction, which requires the erection of new warning signs". The Court quickly determined that SDDOT had immunity for the first timeframe. As to the second timeframe, the court analyzed the issue using its longstanding ministerial vs discretionary function test³. The Court found that since it was a non-typical intersection where the MUTCD did not have clear guidance, Griese, the SDDOT employee, was required to use discretion in the placement of the signs. Truman's analysis shows that, even in the area of "engineering and design" of roadways, that the court is to focus on the function and nature of the particular duty and not the character of the office. The same holds true here. Furthermore, a

³ The Court in *Truman* stated: "Therefore, for Truman's claims to survive summary judgment on the basis of sovereign immunity, Truman must prove that Griese owed Truman a ministerial duty as a matter of law." Truman, ¶ 16

very similar argument was made in Wulf v. Senst, 2003 S.D. 105, 669 N.W.2d 135, pp143-148, claiming that since the SDDOT employees were engaged in highway maintenance and repair that their duties involved engineering judgment and discretion. The similar argument was denied by the Court in Wulf. Consequently, the SDDOT motion for summary judgment on this basis is denied.

III.SDDOT EMPLOYEES ROYALTY AND GATES WERE PERFORMING MINISTERIAL FUNCTIONS AND ARE NOT ENTITLED TO SOVEREIGN IMMUNITY.

This Court's July 31, 2020 decision found, on a Rule 12 footing based upon the allegations in the amended complaint, that SDDOT employees Gates and Royalty were performing ministerial functions. After substantial discovery SDDOT now claims that they are entitled to summary judgment as there are no genuine issues of material fact in dispute because they were performing discretionary functions and that they are entitled to judgment as a matter of law. McGee argues that the record shows the opposite; that there are not genuine issues of fact in dispute indicating Gates and Royalty were performing ministerial functions, or at a minimum any disputed facts entitles them to a jury trial on the issue.

In Truman v Griese, 762 N.W.2d 75 (SD 2009) the plaintiff argued that a jury question was presented whether the employee's duties were ministerial or discretionary. The Truman Court stated:

"We have consistently held that a determination of sovereign immunity and whether the governmental duty was discretionary is a question of law for the courts. See supra¶ 10. To place such an issue in the hands of the jury is a de facto judicial repeal of sovereign immunity and relegates the matter to a jury question of negligence. Instead of a single standard concerning the application of sovereign immunity, as is cited in the cases above from Ruth in 1896 onward, such a repeal would lead to each of our State's 66 counties having its own standard for sovereign immunity, set not by the Legislature, but by a local county jury.

Even if Truman's evidence did raise what he argues are factual issues, this evidence would not create a question for the jury. The existence of a duty in a negligence action is a question of law...". Truman, at ¶34.

Based upon Truman, this Court must determine the question presented as a matter of law, and McGee's suggestion that the matter can be presented to the juzy for resolution is denied.

In this Court's decision of July 31, 2020 it carefully analyzed four main South Dakota cases dealing with the ministerial vs discretionary function issue including *Truman*, *Hansen*, *King and Wulf*. (See July 31, 2020 decision, pages 7-16). This Court will give a brief summary of the holdings as to

ministerial vs discretionary function from each of those cases*.

In Truman, the Court found that the SDDOT employee was performing a ministerial function because the intersection was not a typical intersection covered by the MUTCD. Since there was no clear directive from state policy or statute and the intersection was not clearly covered by the MUTCD Griese, as a SDDOT employee, was required to use engineering judgment and discretion in designing the sign plan. Summary judgment was granted as he was protected by sovereign immunity.

In King the plaintiff hit a cement box culvert in the ditch on the opposite side of the road he was driving. He alleged SDDOT officials were negligent in not putting up box culvert reflective signs on each side of the culvert, one for each direction of traffic, and claimed that failure to do so violated the MUTCD and AASHTO guidelines. Summary judgment was upheld because a SDDOT policy letter provided that only one sign was needed on the side of approaching traffic. Thus, the standards which were applicable were either vague and thus requiring discretion or were in opposition to what the plaintiff claimed was required for signs.

In Hanson the plaintiff hit an open hole in a bridge on the interstate created in the area of a road construction project which was not marked. Hanson sued SDDOT, its Secretary and all commissioners of the South Dakota Transportation Commission. This action was doomed from the beginning as Hanson sued the policy makers and not the SDDOT employees on the ground who were directly involved in the implementation of the roadway construction project. The Defendants in Hanson were found to have almost exclusively discretionary roles applicable to roads statewide and were granted immunity.

In Walf the injuries occurred on an icy snowy morning when an oncoming car lost traction causing Wulf to take evasive action and a serious accident occurred. Wulf sued Melvin Bultje as the Sioux Falls Area DOT maintenance supervisor. He was responsible for supervising and directing the work activities of highway maintenance crews on over 300 miles of roads in the Sioux Falls area. Jeff Senst was SDDOT Sioux Falls area engineer and Bultje's immediate supervisor. Senst reports to Tom Weeks, the DOT regional engineer. In Walf the Plaintiff claimed that a SDDOT policy #2531 imposed a ministerial duty and was violated by Bultje and Senst. That policy provided:

⁴ The more detailed analysis of all four cases found in this Courts July 31, 2020 decision is incorporated herein.

"During the period between 5:00 a.m. and 7:00 p.m., continue sanding operations until either the highways are in a condition such that traffic is moving safely or conditions become too hazardous for continued operation.

Sanding operations between the hours of 7:00 p.m. and 5:00 a.m. will be at the discretion of the maintenance supervisor. When highway and traffic conditions warrant, progress can be made and staffing is available, sanding operations may be continued after 7:00 p.m."

The evidence in Wulf showed that the crews worked the night before to control and remove snow and ice from the roadway and applied sand and chemical mixture. However, they discontinued their efforts and did not re-start sanding and snow/ice removal operations until 8:00 AM the next morning. The accident occurred at 7:30 AM, two and a half hours after the policy required them to recommence sanding and ice removal efforts.

The Wulf Court found that SDDOT policy 2531 imposed a ministerial duty on Bultje and Senst which was violated, depriving them of sovereign immunity. In so ruling the court stated that "While Senst and Bultje have discretion to determine such things as how many workers to call in for a storm, how many snowplows to put on the road, and where to place them, they do not have discretion to ignore the standards or policies established by DOT."

When applied to the facts of the present case Wulf is the most applicable of the four primary cases at play. In Wulf the policy required roadway sanding efforts to commence at 5:00 AM. The policy did allow some discretion in the implementation as the court noted. In this case Standard Specification §330 E provided that tack application ahead of mat lay down shall be limited by job condition and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the engineer. Both standards set a certain and definite duty and both allow some leeway or discretion in implantation.

The evidence in the present case establishes that tack, whether broke or unbroke, is a hazard to the traveling public. It contains no sand, grit or aggregate materials to cause friction. It can be extremely slippery when it is wet. Numerous industry authorities and governmental agencies either strongly suggest or prohibit the public from driving upon it. Many states do not allow traffic to drive on exposed tack.

SDDOT makes the compelling argument that the decision on how much tack can be sprayed on the roadway prior to paving requires and estimation, and that this estimation requires the application of engineering judgment. They further argue that once this estimate is made many factors, beyond their control such as weather conditions, equipment and plant breakdowns, can impact if the tack will be covered by the

end of the days paving operations. SDDOT argues that because Royalty and Gates were involved in this estimation process which requires engineering judgment their function was discretionary.

McGee counters by noting that Standard Specification §330 E was virtually ignored by both SDDOT employees and Spencer. At the end of the day on Friday June 29th there was approximetly 1400 feet of tack left exposed. For the week there was over 7,000 feet (over a mile) of exposed tack left exposed. This averaged almost 1300 feet a day. In addition, various witnesses have testified that estimating the amount of tack to spray before paving is a relatively easy calculation and is not a singular event as tack is re-sprayed before the paver several times a day. Spencer employee Feinster testified that, if desired, he could estimate tack spray so as to not exceed 20 feet at the end of the day. There was further evidence provided that the overspray of tack coat was done intentionally so save time so there was broken tack available to start paving the next morning. The court finds this to be substantial and credible evidence after reading all of the numerous depositions submitted in favor of and in response to the motion.

McGee also argues that the Hot Mix Handbook, a reference provided to SDDOT employees and contractors employees who complete the mandatory training course put on by SDDOT is the bible for guidance on roadway asphalt projects. The Handbook discourages driving on tack and suggests that if it cannot be avoided that the contractor should significantly reduce speed in the area, place proper warning signs, and cover the tack with sand. The MUTCD requires "fresh oil" signs to warn the public of the existence of any roadway surface treatment. Tack is a roadway surface treatment. Despite the defendants claiming in their testimony that tack has enough friction to drive upon safely, there is substantial credible evidence in the record to the contrary.

Whether a state employee's acts are discretionary or ministerial must be determined by the particular facts of each case. Hanson, 1998 SD 109, ¶23, 584 NW2d at 886. The view has also been expressed that the distinction between discretionary and ministerial acts is often one of degree, since any official act that is ministerial will still require the actor to use some discretion in its performance. And, under particular circumstances, even a task or function usually considered ministerial-for example ... highway repair may actually involve the exercise of discretion. Id. It has also been provided that

"[A] ministerial act is defined as absolute, certain, and imperative, involving merely the execution of a specific duty arising from fixed designated facts or the execution of a set task imposed by a law prescribing and defining the time, mode, and occasion of its performance with such certainty that nothing remains for judgment or discretion, being a simple, definite duty arising under and because of stated conditions and imposed by law. A ministerial act envisions direct adherence to a governing rule or standard with a compulsory result. It is

performed in a prescribed manner without the exercise of judgment or discretion as to the propriety of the action. In short, once it is determined that the act should be performed, subsequent duties may be considered ministerial. If there is a readily ascertainable standard by which the action of the government servant may be measured, whether that standard is written or the product of experience, it is not within the discretionary function exception." Hanson v SDDOT, 584 NW2d 881, 886 (SD 1998)

The analysis in determining whether an act or omission is ministerial or discretionary requires a balancing of interests and is not subject to a fixed, invariable rule, but instead requires a discerning inquiry into whether the contributions of immunity to effective government in the particular context outweigh the perhaps recurring harm to individual citizens. Id, *Hanson* at 886.

In this case SDDOT's argument that estimating the amount of tack is a engineering discretionary function misses the mark. Even assuming that such estimation requires engineering judgment, the overall purpose of the standard Specification at issue is to reduce the public's exposure to exposed tack that can become extremely slippery when wet. The duty is much broader than making an initial estimate. Spencer's employee has testified he can match tack to the asphalt mat to within 20 feet. Despite this, excessive exposed tack was left on the roadway on a regular basis and the specification was ignored. When it was regularly ignored, other precautionary measures as suggested by the Hot Mix Handbook were not followed. Consequently, even if the estimate of the amount of tack calls for engineering discretion, the evidence shows that discretion was tarely, if ever, exercised by Gates or Royalty.

In the Memorandum Decision of July of 2020 this Court found that, based on a Rule 12 footing, the complaint alleged sufficient ministerial duties that may have been breached by SDDOT to warrant denial of the motion to dismiss. In that decision, this Court carefully went through the various factors to determine whether an act is ministerial as opposed to discretionary as laid out in King, 2007 S.D. 2, ¶ 11, 726 N.W.2d at 607. Those factors were applied on a Rule 12 footing to the allegations in the complaint in the motion to dismiss. Now that more evidence has been presented with the current motion as presented on summary judgment, the Court has again considered all seven factors laid out in King. No evidence presented changes this Court's prior analysis with respect to those factors in any material way.

As to the first factor, SDDOT employees who are on the site of these types of construction contracts have an important duty to make sure the contractor is properly following the safety measures laid out in the Standard Specifications and the contract. This is a very important duty owed to the traveling public.

With regard to the second factor, some portions of these contract specifications, particularly those that are developed and implemented to protect the traveling public, must be strictly adhered to for the safety of the public. Many of these standard specifications are imposed in some manner by federal funding requirements and have been in existence for many years. The judgment of the State of South Dakota's coordinate branches of government and the SDDOT have been specifically engineered into the contract documents to ensure the public's safety. Following these precautionary measures make it much less likely that holding someone responsible for failing to enforce them would amount to passing judgment on the discretion of the coordinate branch of government. This factor favors McGee.

The third and fourth factors remain inapplicable because the legislature has amended the law to which they apply. See July 30, 2020, Memorandum Decision, p. 18.

The fifth factor weighs in favor of McGee. According to the evidence in the case, leaving exposed tack coat on a roadway creates a hazardous condition to the traveling public. This is because particular tack being used between asphalt lifts contains no sand, aggregate or other material to create friction. Although this surface may have some friction where tires can obtain some grip, that can easily change when moisture is deposited on the road during inclement weather, such as happened in this case. The risk of rain falling on the exposed tack coat over a long weekend where no paving would take place was completely foreseeable. Various other states and federal authorities prohibit the traveling public from driving on exposed tack coat. Under these circumstances, the likelihood of harm to the public is high.

The sixth factor also continues to weigh in favor of McGee, as the type of harm that can be caused under these circumstances is high, especially when there are no signs warning the public of the slippery road conditions or requiring them to reduce speed in that area.

As to the last factor, after further discovery has been submitted, this Court has been provided no information showing that the plaintiff has any other remedies available to compensate him for his injuries.

An important observation was made in the final analysis of Kruger v Wilson, 325 NW2d 851 (SD 1982). There, the court gave a summary analysis of the above factors as follows:

"The case is built on Wilson's responsibility to those she individually contacts. It neither arises from an important discretionary function, such as designing a highway, nor would imposing liability impair Wilson's job discretion. The likelihood of harm to the public depends on

Wilson, not on departmental authorization of her trip. Presumably, an adverse decision would cause Wilson to be more careful of her driving habit in the future, but would not impact the employer." Kruger, ¶ 6.

Much like in *Kruger*, in this case Gates and Royalty's responsibility neither arises from an important discretionary function nor would imposing liability upon them impair their discretion in ensuring compliance with the Standard Specifications. The likelihood of harm to the public depends on them upholding their ministerial duties and litigation arising from their failure to act will cause them to be more careful in the future.

This Court finds that the evidence produced by McGee is credible and compelling. Employees of Spencer and SDDOT ignored the specifications requiring them to avoid leaving exposed tack coat to the driving public, and that when they could not avoid it they failed to take precautionary measures to reduce speed or warn the public of the hazard in the area of exposed tack coat. This Court determines that Royalty and Gates duties in this regard were binding upon them as the Standard Specifications were to be followed and they were prohibited from waiving them or giving contrary instructions. The Court finds that their duties were ministerial. The Motion for Summary Judgment based upon sovereign immunity is denied.

IV. THE SDDOT MOTION FOR SUMMARY JUDGMENT BASED UPON THIRD PARTY BENIFICIARY CONTRACT LAW IS DENIED.

SDDOT contends that McGee cannot recover here as he is not the intended beneficiary of the contract with Spencer. SDDOT relies primarily upon A-E-G Corp. v State, 2006 SD 66, 719 NW2d 780 and Sisney v. State, 2008 SD 71, ¶11, 754 NW2d 639 for the proposition that when a public contract is involved, private citizens are presumed not to be third-party beneficiaries. In A-E-G an inspector, similar to Gates and Royalty, approved a portion of a highway contract as to the initial compaction and layers of asphalt. This approval allowed the contractor to continue working, laying additional layers of asphalt. Later it was determined that the work was defective and not in compliance with the contract specifications. A-E-G was required to remove and replace the defective portions of the roadway. The Court found that A-E-G could not recover for the extra work caused by the verbal approval by the inspector because \$5.10 of the Standard Specifications did not allow the contractor to alter or waive any provision of the contract. SDDOT's argument here is that McGee cannot now claim that Gates and Royalty's duties and daily approval of the amount of tack to be sprayed or the leaving of exposed cannot be based upon the contract between them and Spencer.

McGee argues that the authorities relied upon by SDDOT are inapplicable to his claims. McGee notes that his claim is based upon negligence and sound in tort, not contract law. Further, he argues that, at a minimum, he was an incidental beneficiary under the Restatement (second) Contracts §315.

The law is clear in South Dakota that an injured party may recover from the State if there is negligent breach of a ministerial duty. (See various authorities herein). McGee has filed a tort claim based upon negligence. The duties breached can arise in various different forms. Those forms may include industrial customs and practices, state regulations or policies on point, or the common law. The Standard Specifications at play here are initially drafted by a spec engineer working for SDDOT and then are submitted to a spec committee before being included into final binding form. They are later adopted by the state agency (SDDOT) and for many years these specifications have been material component parts or all state highway resurfacing contracts. They are mandatory and cannot be waived or altered by highway inspectors. They create duties, some to protect the safety of the traveling public. McGee's action is not to claim he is entitled to benefits of a state SDDOT contract with Spencer. His claim is to recover for injuries sustained by the breach of a ministerial duty created by those Standard Specifications. The holdings in A-E-G and Simey are not applicable to this case. Summary judgment on this basis is denied.

BY THE COURT:

Hon. Bruce V. Anderson Circuit Court Judge

cc: Brule County Clerk of Court

STATE OF SOUTH DAKOTA) IN CIRCUIT COURT :§

COUNTY OF BRULE) FIRST JUDICIAL CIRCUIT

AUSTIN MCGEE,

07CIV18-000054

Plaintiff,

VS.

SPENCER QUARRIES, INC., a South
Dakota Corporation; SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION;
KENT GATES, as an employee of the South
Dakota Department of Transportation; and
KRIS ROYALTY, as an employee of the
South Dakota Department of Transportation

ORDER DENYING DEFENDANTS'
SOUTH DAKOTA DEPARTMENT OF
TRANSPORTATION, KENT GATES
AND KRIS ROYALTY MOTION FOR
SUMMARY JUDGMENT

Defendants.

On December 29, 2020, Defendants South Dakota Department of Transportation, Kent Gates and Kris Royalty filed a Motion for Summary Judgment. On February 2, 2021, counsel for Plaintiff, Michael Marlow; counsel for Defendant Spencer Quarries, Inc., Steve Oberg; and counsel for Defendants South Dakota Department of Transportation, Kent Gates and Kris Royalty, Gary Thimsen, appeared before the Court on Defendants' Motion for Summary Judgment. The court heard oral arguments on the motion and subsequently granted Plaintiff McGee's Motion for Continuance to obtain additional discovery. Additional discovery was completed, and the parties submitted additional briefing. The matter was finally submitted to the court on September 22, 2021.

After considering the written briefs and pleadings, as well as the oral arguments of counsel, the Court issued its Memorandum Decision denying Defendant's Motion for Summary Judgment on January 23, 2022. That Memorandum Decision is incorporated by reference and attached as Exhibit 1. As a result, it is

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ORDERED that Defendants' Motion for Summary Judgment is DENIED in all respects.

Attest:

Mellott, Charleen Clerk/Deputy

BY THE COURT: 1/25/2022 4:00:46 PM

Honorable Bruce Anderson

Circuit Court Judge

FILED

SEP 29 2020

CLERK OF COURTS
BRULE & BUFFALO COUNTIES
FIRST JUDICIAL CIRCUIT COURT OF SD



First Judicial Circuit Court

Bruce V. Anderson Circuit Court Judge P.O. Box 36 Armour, SD Phone: 605-724-2145 Fax: 605-724-2508

Melissa A. Odens Official Court Reporter P.O. Box 36 Armour, SD Phone: 605-724-2145 Fax: 605-724-2508 Presiding Judge Cheryle W. Gering Circuit Judges Bruce V. Anderson Patrick T. Smith Tami Bern Chris Giles

Magistrate Judges
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Circuit Administrator
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REVISED OPINION

Re: Austin McGee v Spencer Quarries et. al., Brule County, South Dakota, 07CIV18-54

Procedural History

This matter came before the Court by way of the State Defendants' Motion to Dismiss under

SDCL § 15-6-12(b). Plaintiff, Austin McGee, is represented by Michael F. Marlow and Christopher

N. Leon. State Defendants, South Dakota Department of Transportation ("SDDOT") and Jay Peppel, Kent Gates, and Kris Royalty in their official capacities as employees of the SDDOT, are represented by Gary P. Thimsen and Alexis A. Watner. Defendant Spencer Quarries is represented by Steven Oberg. Both Plaintiff and State Defendants submitted briefs on the issues and a hearing was held on June 11, 2020. The Court now issues this memorandum decision.

This revised decision is entered to correct errors made in the hearing record where counsel provided the Court a hierarchy of the chain of command and duties of the state employee defendants. The initial opinion adopted the statements on the record from counsel which were later determined to be incorrect. This opinion is entered with the consent of both parties as to the proper hierarchy of the state parties and to dismiss the proper state employee defendant. Other minor changes to the opinion are in italics.

Facts

Austin McGee ("McGee") was driving his truck north of Platte, South Dakota on Highway 45 on the morning of Saturday, June 30, 2018. Highway 45 is a part of the state highway trunk system and was under construction for a re-paving maintenance contract at that time. Defendant Spencer Quarries, Inc. ("Spencer Quarries"), was the general contractor under contract with the South Dakota Department of Transportation ("SDDOT") on the repaving project. The day prior was a Friday and Spencer Quarries had stopped their paving operation at approximately 7:45 p.m. the evening prior. A tack coat had been laid on the highway and was left uncovered as Spencer Quarries had laid out more tack coat than could be covered with asphalt the prior day. The exposed tack coat reduced the friction on the road surface especially if it was wet due to rain. At the time McGee was traveling north on Highway 45 it was raining or had just rained. McGee lost control of his truck while driving over the tack coat, causing an accident that left McGee a paraplegic.

Spencer Quarries' contract with SDDOT required adherence to specifications, some of which were for the safety of the public through the construction site. One requirement was to follow industry standards and Plaintiff alleges that such standards require that due to its potential hazard that tack coat be covered and not left exposed at the end of each workday or work stoppage and that vehicles not be permitted to drive on tack coat. Plaintiff alleges that another requirement was to place warning signs where necessary to protect the safety of the public. Defendants' Royalty, Peppel, and Gates were assigned compliance management duties on the contract with Spencer Quarries. Royalty was the SDDOT employee who was to work on site. Peppel was the area engineer in Mitchell, South Dakota and oversaw both Gates and Royalty, both of whom reported to Peppel.

In the complaint, McGee alleges the state officials were negligent in failing to comply with ministerial duties which are summarized from paragraphs 21-28 & 61-78 of the complaint. McGee alleges defendants failed to follow DOT Standard Specifications which required Spencer Quarries to keep a portion of the project in a condition that would safely accommodate traffic, failed to erect warning signs of the uncovered tack coat, and a failure on the part of the DOT engineers to notify Spencer Quarries of their noncompliance with such standard and remedy the defect.

McGee gave notice to the State of South Dakota of the potential claim as required by statute on September 12, 2018. The State was not initially named as a party in this case. Prior to adding the state Defendants the state retained counsel who noticed appearance here and employees cooperated in providing discovery under his representation. After further discovery, McGee filed an amended complaint to include the state defendants. That complaint was filed January 27, 2020, and the state defendants were served between January 31 & February 3, 2020. The State was served after more than one year, but less than two years, after the accident. Prior to the amended complaint, the State Defendants had been deposed and were accompanied by present counsel during those depositions.

Analysis

According to the South Dakota Supreme Court, a motion to dismiss under SDCL 15-6-12(b):

[T]ests the legal sufficiency of the pleading, not the facts which support it. For purposes of the pleading, the court must treat as true all facts properly pled in the complaint and resolve all doubts in favor of the pleader... Pleadings should not be dismissed merely because the court entertains doubts as to whether the pleader will prevail in the action.'

Guthmiller v. Deloitte & Touche, LLP, 2005 S.D. 77, ¶ 4, 699 N.W.2d 493, 496 (quoting Thompson v. Summers, 1997 S.D. 103, ¶ 5, 567 N.W.2d 387, 390).

- Whether the suit against the State Defendants is barred by the doctrine of sovereign immunity.
 - A. Exclusion for Engineering or Design under the PEPL

Generally, the State of South Dakota is immune from suit or liability under the doctrine of sovereign immunity unless the state has waived such immunity. SDCL 21-32A-2 provides that the state has waived sovereign immunity to the extent the state has purchased liability insurance or participated in a risk sharing pool and to the extent of the coverage document. SDCL § 3-22-1 established a Public Entity Pool for Liability ("PEPL"), providing liability coverage stating:

There is hereby established the South Dakota public entity pool for liability effective March 1, 1987. PEPL shall provide defense and liability coverage for any state entity or employee as provided for within the coverage document issued by PEPL. Nothing in this chapter may be construed to require payment of a particular claim or class of claims, to create any cause of action, nor to waive or limit any immunity or legal defense otherwise available to any covered claim. Punitive damages may not be recovered pursuant to this chapter. . .

In the Memorandum of Liability Coverage to the Employees of the State of South Dakota under the PEPL fund, excluded from coverage is any liability "[a]rising from or contributed to in any manner by acts, errors or omissions in the engineering or design of any public roadway or public transportation project." Memorandum of Liability Coverage,

Exclusions pg. 8, ¶ 10. Effectively, this means a claim for liability against the state or its employees arising from the engineering or design of the roadway would be barred by the doctrine of sovereign immunity. The SDDOT and its employees argue McGee's claim is barred for this very reason since the State was in the process of re-surfacing Highway 45 under a contract with Spencer Quarries at the time and location of the accident in question. The Plaintiff argues that the complaint specifically alleges that the project specifications required tack coat to be covered each day unless ordered or allowed to remain exposed by DOT employees and that their failure to require Spencer Quarries to cover the exposed tack coat or to put up appropriate warning signs was a ministerial function required on a contract to maintain and repair but not engineer or design the roadway. Plaintiff points out that the complaint is focused on these ministerial duties arising under the contract specifications and that they have not raised any claim that the DOT was negligent in the engineering or design of the road.

As opposed to engineering or design, the Court finds McGee's claim arises from the maintenance or repair of the roadway and that the complaint alleges the named employees were negligent in not following requirements of the contract specifications as opposed to alleging the defendants were negligent in the design or engineering of the road. According to the South Dakota Supreme Court, "The existence of the rights and obligations of the parties to an insurance contract are determined by the language of the contract, which must be construed according to the plain meaning of its terms." W. Nat'l Mut. Ins. Co. v. TSP, Inc., 2017 SD 72, ¶ 11, 904 N.W.2d 52, 57.

In Wilson v Hogan, 472 NW2d 493 (SD1991) and High Grade Oil v Sommer, 295 NW2d 736 (SD1980) the Supreme Court used the words "design, engineering, construction and maintenance of its roadways" in ruling the State had immunity for claims arising under those circumstances. Both of

In drafting the memorandum of coverage, the State and the PEPL fund left out the words "construction and maintenance" in adopting the PEPL fund coverage memorandum applicable here. In interpreting the contract language this court is not allowed to add words or other language. The Court assumes that those who settled on the language used in the coverage memorandum were well aware of the language used in Wilson and High Grade Oil and deliberately choose to leave them out knowing the significant difference they had on the overall meaning of the contract. The plain meaning of the language of the PEPL contract excludes liability only on the basis of engineering or design of the roadway. If the State wanted to exclude liability coverage for the repair, construction or maintenance of the roadway they could have included such language in the PEPL coverage contract. They did not do so. Consequently, The State is not protected by sovereign immunity based upon the language of the PEPL fund memorandum of coverage in the present action based upon the language used in the Amended complaint. A Rule 12(b) motion tests the legal sufficiency of the pleading, not the facts which support it. The State's motion is denied on this basis.

B. Ministerial Act v. Discretionary Act

In 1986, the state legislature enacted SDCL §§ 21-32A-1, -2, and -3, "establishing the procedure for bringing claims against public entities and their employees, other than the state, and waiving sovereign immunity to the extent of participation in a risk-sharing pool or the purchase of liability insurance." Hansen v. South Dakota Dept. of Transp., 1998 SD 109, ¶ 10, 584 N.W.2d 881, 883. However, in 1991, the legislature amended § 21-32A-2 to include the state and its employees, officers, and agents in the waiver of sovereign immunity:

Except insofar as a public entity, including the state, participates in a risk sharing pool or insurance is purchased pursuant to § 21–32A–1, any employee, officer or agent of the public entity, including the state, while acting within the scope of his employment or agency, whether such acts are ministerial or discretionary, is immune from suit or liability for damages brought against him in either his individual or official capacity. The immunity recognized herein may be raised by way of affirmative defense.

S.D. Codified Laws § 21-32A-2. Because the Court has determined that the PEPL fund memorandum of coverage does not exclude coverage based on the repair, maintenance or construction of the roadway, the court must determine if the State remains protected by sovereign immunity since that waiver of immunity does not equally apply to both ministerial and discretionary acts of state employees.

State employees are not cloaked in sovereign immunity in all situations, "but it does apply when state employees perform discretionary functions." King v. Landguth, 2007 SD 2, ¶ 10, 726 N.W.2d 603, 607. Sovereign Immunity "is inapplicable when state employees perform ministerial functions." Id. "State employees are cloaked in sovereign immunity when performing discretionary acts because 'such discretionary acts participate in the state's sovereign policy-making power." Id. (quoting Kyllo v. Panzer, 535 N.W.2d 896, 902 (S.D. 1995) (citations omitted)). As opposed to discretionary acts, "a ministerial act is the simple carrying out of a policy already established so that permitting state employees to be held liable for negligence in the performance of merely ministerial duties within the scope of their authority does not compromise the sovereignty of the state." King, 2007 SD 2, ¶ 11, 726 N.W.2d at 607 (quoting Wulf v. Senst, 2003 SD 105, ¶ 20, 669 N.W.2d 135, 143). For a court to find a duty ministerial, the court "must find a 'governing rule or standard' so clear and specific that it directs the governmental actor without calling upon the actor to ascertain how and when to implement that rule or standard." Truman v. Grieve, 2009 SD 8, ¶ 22, 762 N.W.2d 75, 82.

The Supreme Court has determined the answer to this question in four main cases. The State Defendants argue the case at bar is similar to the Supreme Court's decisions in *Truman*, *Hansen v. South Dakota Dept. of Transp.*, 584 N.W.2d 881 (S.D. 1998), and *King.* McGee argues that *Wulf* is the case most applicable to this situation.

In Wulf, the plaintiff was traveling east on Highway 42 between Brandon and Sioux Falls at approximately 7:30 a.m. on January 21, 2000 when she encountered another vehicle that lost traction on due to ice causing Wulf to lose control and cross the centerline and collide with an oncoming vehicle. Wulf, 2003 SD 105, ¶ 2, 669 N.W.2d at 137. Two days prior on January 19, 2000, a winter storm struck the area, dropping heavy snow. Id. ¶ 5, 669 N.W.2d at 138. The morning traffic on January 19 had packed down the snow on all the highway in the area, requiring additional contractors to be called out with scrapers. Id. ¶ 5, 669 N.W.2d at 138. The next day, January 20, temperatures were near zero. The state put much further effort into snow and ice removal that day, including increased crew.

The State of South Dakota, through SDDOT, had contract with Preheim to provide winter maintenance over this portion of Highway 42. *Id.* ¶ 4, 669 N.W.2d at 138. Bultje was the Sioux Falls Area DOT maintenance supervisor, responsible for supervising and directing the work activities of the highway maintenance crews in the Sioux Falls area. *Id.* Senst was the DOT Sioux Falls regional engineer and Bultje's immediate supervisor. *Id.* Senst would report to Weeks, the DOT regional engineer. *Id.*

At about 8:00 p.m. on the evening prior to the accident Preheim and Bultje decided to stop the sanding and deicing efforts on Highway 42 and to restart again at 8:00 a.m. the following morning. Id. ¶ 7, 669 N.W.2d at 138. Bultje told the maintenance crews, including Preheim's crew, to stop working for the day and not return until 8:00 a.m. the following day. Id.

SDCL 31-5-8.3 required the SDDOT to establish "a winter safe highway maintenance plan for snow removal, sanding and deicing in order to provide safe highways during cold weather months." *Id.* ¶ 12, 669 N.W.2d at 139. In response, SDDOT established DOT Policy 2531 which required:

During the period between 5:00 a.m. and 7:00 p.m., continue sanding operations until either the highways are in a condition such that traffic is moving safely or conditions become too hazardous for continued operation.

DOT Policy 2531. Plaintiff's asserted the failure of the DOT employees and Preheim to sand the highways from 5:00 a.m. to 7:00 p.m. was a breach of a ministerial duty. Wulf, 2003 SD 105, ¶ 26, 669 N.W.2d at 145. The trial court granted summary judgment in favor of the defendants on the basis that their duties were discretionary because the decision not to continue sanding was a "judgment call on the part of Senst and Bultje," and thus sovereign immunity applied. Id. ¶¶ 16, 31, 669 N.W.2d at 141, 146.

The Court pointed out that under DOT Policy 2531, crews were required "to use specified sand/salt/chemical mixtures and to continue sanding operations from 5:00 a.m. (in the morning) until 7:00 p.m. (in the evening) unless 1) the traffic is moving safely or 2) conditions become too hazardous for continued operations." Id. ¶ 31, 669 N.W.2d at 146. However, while the trial court granted the motion for summary judgment, the Court found the record did not support that the sanding efforts were ineffective. Id. Both Senst and Bultje "were obligated to follow DOT Policy 2531 unless one of the exceptions was present." Id. ¶ 32, 669 N.W.2d at 146. "[O]nce it is determined that the act should be performed, subsequent duties may be considered ministerial." Id. (quoting Hansen, 1998 SD 109, ¶ 23, 584 N.W.2d at 886).

The Court determined there were genuine issues of material fact remaining as to whether any exception from DOT Policy 2531 applied to the situation. Id. ¶ 32, 669 N.W.2d at 148. However, the Court further stated, "While Senst and Bultje have discretion to determine such things as how many workers to call in for a storm, how many snowplows to have on the road, and where to place them, they do not have discretion to ignore the standards or policies established by DOT." Id. The granting of summary judgment was reversed.

In Truman, the plaintiff was traveling westbound on U.S. 14/S.D. 34, approaching the intersection known as "Four Corners." Truman, 2009 SD 8, ¶¶ 2, 4, 762 N.W.2d at 77. This intersection resembled a "T" with various points of divergence between U.S. 14, S.D. 34, and S.D. 63. Id. ¶¶ 2-3, 762 N.W.2d at 77. The plaintiff collided with another vehicle at the intersection nearly head on, resulting in devastating injuries to the plaintiff and death to another passenger. Id. ¶ 6, 762 N.W.2d at 77. The plaintiff brought claims against Griese, a traffic engineer for the SDDOT, for negligence, wrongful death, and loss of consortium. Id. ¶ 7, 762 N.W.2d at 78. Specifically, plaintiff alleged Griese violated duties imposed by SDCL § 31-28-6 by failing to post additional traffic control signs at the intersection. Id.

The Supreme Court considered the nature of the duties under SDCL § 31-28-6, which provides:

The public board or officer whose duty it is to repair or maintain any public highway shall erect and maintain at points in conformity with standard uniform traffic control practices on each side of any sharp turn, blind crossing, or other point of danger on such highway, except railway crossings marked as required in § 31–28–7, a substantial and conspicuous warning sign, which sign shall be on the right-hand side of the highway approaching such point of danger. A violation of this section is a Class 1 misdemeanor.

Id. ¶ 23, 762 N.W.2d at 81 (quoting S.D. Codified Laws § 31-28-6). The plaintiff alleged the failure to install warning signs at Four Corners was a violation of a ministerial duty under SDCL § 31-28-6. Truman, 2009 SD 8, ¶ 23, 762 N.W.2d at 81. Looking to the language of § 31-28-6, the Court found "any ministerial duties pertaining to the placement of traffic control signs under this statute must be required by standard uniform traffic control practices." Id. ¶ 24, 762 N.W.2d at 81. "The placement of signs in situations that have neither standard nor uniform practices must necessarily be outside any ministerial requirements of SDCL 31-28-6." Id. ¶ 25, 762 N.W.2d at 81. Therefore, for this statute to have established a ministerial duty, standard uniform traffic control practices must have existed and state which points at this type of intersection warning signs must be placed. Id.

The Court found the duty to be discretionary under § 31-28-6. Id. ¶ 32, 762 N.W.2d at 84. The plaintiff "failed to provide specific governing provisions from the MUTCD [a standard uniform traffic control manual] or any other standard uniform traffic practice for intersections like Four Corners." Id. ¶ 26, 762 N.W.2d at 82. As the Court stated, "If the Legislature or other policy maker has not demanded performance, the decision to act or not is discretionary." Id. ¶ 29, 762 N.W.2d at 83-84.

This court notes the uniqueness of *Truman* in two ways that distinguish it from the present action. First, the intersection was not a typical intersection covered under standard MUTCD guidelines. Consequently, since it did not fit within easily applied standards in the MUTCD traffic sign manual the actual traffic control signs for the intersection needed to be "engineered" or "designed" by someone with knowledge and discretion to complete the task. Griese, a traffic safety engineer, did so as a discretionary function. Secondly, there is a difference in the engineering and design as compared to the implementation of the intersection signage control plan. There was no evidence offered in Truman to show the signs Griese required were not erected or were otherwise misplaced by highway workers who actually performed the work of installing the signs as he designed them.

In Hansen, the plaintiff was traveling southbound on I-29, driving to work. Hansen, 1998 SD 109, ¶ 2, 584 N.W.2d at 882. As the plaintiff crossed a bridge near Elk Point, South Dakota, her right front tire dropped into a hole in the bridge. Id. A construction crew had removed a section of the bridge, creating a hole to remove concrete and rebar, and only the rebar had been replaced. Id. ¶ 3, 584 N.W.2d at 882. The resulting accident caused Plaintiff serious injuries. Id. ¶ 2, 584 N.W.2d at 882. The plaintiff brought suit against the SDDOT, Howard, in his official capacity as Director of Highways, and the Transportation Commission, alleging the defendants had failed to erect signs and guards to warn of a defect in the road. Id. ¶ 4, 584 N.W.2d at 882-83. The SDDOT was dismissed

from the suit by the trial court because the PEPL did not cover public entities, only their employees, and the trial court dismissed claims against Hansen and the Commission as their duties were discretionary, not ministerial. *Id.* ¶ 5, 584 N.W.2d at 883.

The plaintiff alleged, as Director of Highway and Secretary of Transportation, Howard had "a statutory duty to inspect, maintain, and repair the interstate bridges to protect the traveling public from injury." *Id.* ¶ 21, 584 N.W.2d at 885. Three statutes were the subject of the Court's analysis as to whether they conferred and ministerial or discretionary duty upon Howard: SDCL §§ 31-32-10; 31-5-1; and 31-28-6. *Id.*

SDCL § 31-32-10 stated:

If any highway, culvert, or bridge is damaged by flood, fire or other cause, to the extent that it endangers the safety of public travel, the governing body responsible for the maintenance of such highway, culvert, or bridge, shall within forty-eight hours of receiving notice of such danger, erect guards over such defect or across such highway of sufficient height, width, and strength to guard the public from accident or injury and shall repair the damage or provide an alternative means of crossing within a reasonable time after receiving notice of the danger. The governing body shall etect a similar guard across any abandoned public highway, culvert, or bridge. Any officer who violates any of the provisions of this section commits a petty offense.

S.D. Codified Laws § 31-32-10. The Court first noted § 31-32-10 requires a guard over "damage" caused by "flood, fire, or other cause." *Hansen*, 1998 SD 109, ¶ 27, 584 N.W.2d at 887. The bridge in *Hansen* had not been damaged by some other cause but was in the process of being repaired by workers. *Id.* However, as the Court pointed out, "most importantly, SDCL 31-32-10 does not establish a 'hard and fast rule as to course of conduct that Howard must take with regard to the facts of this case." *Id.* ¶ 28, 584 N.W.2d at 887 (quoting *Kyllo*, 535 N.W.2d at 901-02). Therefore, Howard's duty under § 31-32-10 was discretionary.

SDCL § 31-5-1 stated:

The department of transportation shall maintain, and keep in tepair all highways or portions of highways, including the bridges and culverts thereon, which highways have been constructed or improved by the department and are on the state trunk highway system.

S.D. Codified Laws § 31-5-1. The Court found several reasons why this statute did not confer a ministerial duty upon Howard. *Hansen*, 1998 SD 109, ¶¶ 29-30, 584 N.W.2d at 887-88. First, the Court "fail[ed] to see how this statute provides a 'readily ascertainable standard by which the action of [Howard] may be measured." *Id.* ¶ 29, 584 N.W.2d at 887. The Court reasoned, "when applied to a position that supervises hundreds of employees and thousands of miles of highways, it certainly calls for discretion, judgment or skill." *Hansen*, 1998 SD 109, ¶ 29, 584 N.W.2d at 887. Second, the Court questioned what would happen if § 31-5-1 imposed a ministerial duty upon Hansen. *Id.* ¶ 30, 584 N.W.2d at 888. If so, it would be possible that Howard would be "liable for every defect arising on the state highway system no matter what the degree and what the cause[.]" *Id.* Third, the Court pointed out the duties under § 31-5-1 "are placed upon the DOT and not specifically upon Howard as its Secretary." *Id.* Thus, Howard's duty under § 31-5-1 was discretionary.

SDCL 31-28-6 provided in part, "The public board or officer whose duty it is to repair or maintain any public highway shall erect and maintain at points in conformity with standard uniform traffic control practices on ... [a] point of danger ..., a substantial and conspicuous warning sign..."

S.D. Codified Laws § 31-28-6. However, the Court found the plaintiff had failed to point to "a specific governing provision from MUTCD in support of the specific duty it purports to lay upon Howard." Hansen, 1998 SD 109, ¶ 31, 584 N.W.2d at 888. The Court quoted another jurisdiction in support of its conclusion, stating:

In order to discharge his duties effectively, a public servant must be free to exercise his judgment unhampered by the fear of unpredictable liability. Where the nature of the servant's decision or action in question is such that it may not be measured against a predictable standard of care, the possibility of litigation may tend to discourage the making of clear choices. It is in the public interest to avoid such a chilling effect upon the servant's performance of his duties. Where, on the other hand, a standard of care may be defined and applied with relative ease, the public servant is not similarly deterred and the public interest in the protection of the official weakens. Also relevant to the strength of the public interest is the potential impact of the challenged decision or action upon the public as a whole or upon a large segment of it. The greater or

more pervasive this impact, the stronger becomes the public interest in insuring unfettered decisionmaking.

Id. ¶ 31, 584 N.W.2d at 888 (quoting DuBree v. Commonwealth, 393 A.2d 293, 295 (Pa. 1978)). The Court stated, "If Howard is to be held liable under the facts of this case, all other public servants including cabinet officers, exercising similar executive powers will also be liable." Hansen, 1998 SD 109, ¶ 32, 584 N.W.2d at 889. Howard's duties related to the case were not acts "which involve obedience to instructions, but demand no special discretion, judgment or skill." Id. ¶ 33, 584 N.W.2d at 889 (quoting Kyllo, 535 N.W.2d at 901-02). Therefore, Howard's duties were discretionary and sovereign immunity applied. Hansen, 1998 SD 109, ¶ 33, 584 N.W.2d at 889.

Additionally, the Court in *Hansen* found that the Commission was not charged with ministerial duties. *Id.* ¶ 35, 584 N.W.2d at 889. The Court characterized the Commission's duty as "discretionary, policy-making functions and duties, for which there can be no tort liability." *Id.* Thus, both Hansen and the Commission were protected by sovereign immunity in performing their discretionary duties. *Id.*

In King, the two plaintiffs were passengers in a car traveling west from Sioux Falls to Platte on Highway 44. King, 2007 SD 2, ¶ 2, 726 N.W.2d at 605. The car crossed the center line, entered the eastbound lane, and went into the southern ditch. Id. The driver of the car had fallen asleep at the wheel and was awoken after he had entered the eastbound lane. Id. He swerved into the ditch to avoid an oncoming car where his car hit a cement box culvert. Id. ¶ 3, 726 N.W.2d at 605-06. The box culvert was located about 320 feet from where the car entered the ditch. Id. The driver claimed had he seen the culvert he could have avoided it. Id. The plaintiffs brought suit against the State of South Dakota, the SDDOT, and several DOT employees. Id. ¶ 4, 726 N.W.2d at 606. The plaintiffs alleged the employees were negligent in marking the culvert and maintaining the signs. Id. The trial court dismissed the claims against all defendants on the basis of sovereign immunity. Id. ¶ 5, 726 N.W.2d at 606.

The plaintiffs raised one issue on appeal, that being whether the trial court erred in deciding their claims were barred on the basis that the duties imposed on the employees were discretionary. Id. ¶ 6, 726 N.W.2d at 606. Supporting their claim, plaintiffs hired an expert traffic engineer, Dr. Berg, who testified that SDDOT had adopted the MUTCD and the American Association of State Highway Traffic Organizations ("AASHTO"). Id. ¶ 15, 726 N.W.2d at 608. In Dr. Berg's opinion, those standards required there to be four markers, one on each corner of a box culvert like this. Id.

In support of their defense, the SDDOT employees cited the same policies as the plaintiffs but claimed the policy adopted by the SDDOT only required only two markers at the culvert on the approaching traffic side. *Id.* ¶ 16, 726 N.W.2d at 608. The relevant policy stated:

If box culvert, pipe culvert or cattle pass ends are outside the shoulder area, but within the "clear zone" recovery area specified in the AASHTO Roadside Design Guide, install a Type 2 object marker at the opening on the side nearest to approaching traffic.

South Dakota DOT Policy Letter OT-1999-02, effective March 9, 1999. The Court stated the plain language of the policy could not "be interpreted to require marker on both sides." King, 2007 SD 2, ¶ 16, 726 N.W.2d at 609.

The plaintiffs urged the Court to find the case similar to its decision in Wulf where the DOT had "a clear policy in effect that required sanding and scraping of icy roads between 5:00 a.m. and 7:00 p.m. unless the conditions were too hazardous." Id. ¶ 18, 726 N.W.2d at 609 (citing Wulf, 2003 SD 105, ¶ 32, 669 N.W.2d at 146-47). The Court found the facts materially distinguishable from the facts of Wulf because unlike Wulf, it could not "be said that this case involves a clear, 'readily ascertainable standard by which the government servant may be measured." King, 2007 SD 2, ¶ 19, 726 N.W.2d at 609 (quoting Wulf, 2003 SD 105, ¶ 26, 669 N.W.2d at 145). Instead, the Court stated that the facts before it were more similar to the facts from Hansen, where the Court affirmed the trial court's dismissal "because 'other cause' language in the statute did not provide a 'readily ascertainable standard." King, 2007 SD 2, ¶ 20, 726 N.W.2d at 610 (quoting Hansen, 1998 SD 109, ¶¶ ascertainable standard." King, 2007 SD 2, ¶ 20, 726 N.W.2d at 610 (quoting Hansen, 1998 SD 109, ¶¶

29, 35, 584 N.W.2d at 887, 889). Thus, the Court found that, "Any decision regarding the installation of additional markers at this culvert was a discretionary function." King, 2007 SD 2, ¶ 21, 726 N.W.2d at 610.

In King the Supreme Court has laid out several factors in determining whether a state employee's actions are discretionary or ministerial. They are:

- (1) The nature and importance of the function the officer is performing;
- (2) The extent to which passing judgment on the exercise of discretion by the officer will amount necessarily to passing judgment by the court on the conduct of a coordinate branch of government;
- (3) The extent to which the imposition of liability would impair the free exercise of his discretion by the officer;
- (4) The extent to which the ultimate financial responsibility will fall on the officer;
- (5) The likelihood that harm will result to members of the public if the action is taken;
- (6) The nature and seriousness of the type of harm that may be produced;
- (7) The availability to the injured party of other remedies and other forms of relief.

King, 2007 SD 2, ¶ 11, 726 N.W.2d at 607.

These factors must be applied separately to each of the state employees named in this action as they each play a different role and have different duties. With respect to this case and as alleged in the Amended Complaint, Royalty was the Project Inspector on site making sure the contractor complied with the requirements of the contract specifications. Royalty reported to his supervisor Peppel who was the Area Engineer in charge of the project and was stationed in Mitchell. Peppel oversaw both Royalty and Gates as the Area Engineer of this project. Consequently, the chain of command was, bottom to top, Royalty, Gates and Peppel. Based upon the long line of authorities addressing the issue on ministerial versus discretionary duties it is a common theme that the higher up the chain of command the higher the degree of discretion the employee holds, but with the understanding that even those at the highest level may still have ministerial obligations depending on the statute, regulation or policy allegedly violated.

Applying the factors to Peppel, he was the Area Engineer and supervisor who worked in Mitchell who had broad discretion in dealing with the implementation of the contract and guided/supervised Gates and Royalty who were more hands on with the project. The Complaint alleges all three state employees had a ministerial duty to keep the project in a "condition that will adequately and safely accommodate traffic" and that they breached this duty by allowing Spencer Quarries to leave exposed tack coat on the roadway, failed to require Spencer Quarries to put up "fresh oil" or similar warning signs, and failed to implement corrective action or stop work when they knew Spencer Quarries was leaving exposed tack coat on the roadway, an extremely dangerous condition due to its lack of friction. The complaint does not allege Peppel had any knowledge of the activities of Spence Quarries in leaving exposed tack coat. Peppel's primary obligation would initially lie in drafting safety precautions into the contract specifications and ensuring compliance if issues were presented to him by Gates. Overall, the factors laid out in King balance in favor of Peppel. The complaint does not allege he had actual knowledge of the alleged hazard and violation of the contract specifications and failed to act. The language pleaded in the Complaint requiring Peppel to "inspect" allows Peppel to delegate that duty to Gates.

As to Gates and Royalty, the complaint alleges they knew or should have known that exposed tack coat created a dangerous and hazardous condition and constituted defective work according to the specifications and that they had authority to make Spencer Quarties take corrective action and to suspend work for noncompliance. Plaintiff alleges that Gates and Royalty allowed Spencer Quarties to do this repeatedly and without requiring Spencer Quarties to put up signs to reduce speed or otherwise warn the traveling public of the danger of the slick road surface. These contracts have certain safety precautions engineered into the contract specifications. Those

specifications are safety measures specifically implemented for the safety of the traveling public through the construction area. Ensuring they are followed is crucial for the safety of the traveling public.

The first factor in King weighs in favor of the Plaintiff. The state engineers on site have a duty to make sure the contractor is properly following the safety measures on the contract and this is a very important duty.

The second factor is mixed. Certain violations of contract specifications and standards probably happen in all highway constructions projects, some more significant than others. The engineers on the scene have some discretion in how they handle certain situations depending on how serious or minor they may be. Some things are so important for the traveling public that they must be strictly adhered to for safety. Moreover, the judgment of the coordinate branch of government has engineered the safety precautions into the contract documents making it less likely that holding someone responsible for failing to enforce them would amount to passing judgment on the discretion of the coordinate branch of government. Overall this factor slightly favors the Plaintiff.

The third and fourth factors may now be inapplicable. In 2010 the legislature amended SDCL 3-22-7 which provides:

PEPL may pay a covered claim established by judgment or negotiated settlement as provided in the coverage document and which is not barred or avoidable through sovereign immunity or other substantive law. No employee is subject to personal liability for any covered claim in excess of the coverage provided by PEPL. The PEPL shall be fully subrogated to any right of recovery a state entity or employee may be entitled to, associated with any claim paid pursuant to this section.

Because neither Gates nor Royalty may be held personally liable, imposing liability is much less likely to impair the free exercise of discretion in performing their duties. As state employees, after passage of the amendments to the statute above, they are no longer in danger of being personally responsible

for paying damages above PEPL fund coverage. The court finds these factors are now mostly inapplicable and are neutral in the court's analysis.

The fifth factor weighs in favor of the Plaintiff. According to the general allegations in the complaint the leaving of exposed tack coat creates a hazardous condition. This is especially the case if it rains and the tack coat emulsifies according to the Plaintiff. Plaintiff claims this fact is well known as per highway construction industrial standards. In this case the contractor stopped work Friday evening for the weekend. Flaggers and other workers were not present due to the work stoppage and plaintiff alleges that the Defendants failed to install proper signs as per the contract specifications to warn the traveling public of fresh oil or slippery conditions. The likelihood of harm to the public was high.

The sixth factor also weighs in favor of Plaintiff as the type of harm that can be caused to the public is high when they encounter slippery conditions on the roadway especially when traveling at highway speed. The nature and seriousness of the harm can cause death or serious lifelong debilitating injuries.

The last factor is an unknown. In a Rule 12(b) posture this court has no information and the complaint does not allege whether the Plaintiff has any other remedies available.

On Rule 12 footing, this Court is limited to the language used in the complaint. The Court is not bound by the plaintiff's unilateral characterization of a duty as ministerial. The situation in Wulf, where snow and ice on the highway was the hazard, is similar to the tack coat on the highway in this case. That similarity alone does not make Gates and Royalty's obligations ministerial. Safety provisions engineered into the contract specifications required them to inspect and stop work if Spencer Quarries was leaving exposed tack coat creating a dangerous condition to the traveling public. Their duties and obligations are focused on the implementation of those safety precautions which were primarily ministerial. A sign would make drivers aware of the hazard so they could take

precautions. Dangerous conditions which arise during projects are reduced when the contract terms are followed. Their duties in this regard were not "participating in the state's sovereign policymaking power." Kyllo v. Panzer, 535 N.W.2d 896, 902 (S.D. 1995). The safety precautions and performance standards were engineered into the contract terms by the policy makers at the time of making the contract. The obligation of the state to make sure the traveling public is not subject to increase risk of harm by requiring the contractor to cover tack coat before stopping work for the day or weekend or requiring the contractor to erect signs to warn the public is a ministerial function, especially when those requirements are a material part of the contract with the SDDOT.

This Court grants the motion as to Peppel as his duties were discretionary. The Court denies the motion as to Gates and Royalty as their duties were ministerial. In this case, the motion was not able to be presented with sufficient specificity for this court to determine the issues precisely in any further detail. Consequently, the motion is denied without prejudice to its renewal after further development of the record. The issue is best left for further resolution on a motion for summary judgment after the record is more fully developed.

II. Statute of Limitations

The State Defendants argue that McGee's claims against them are time barred under SDCL § 21-32-2. That statute provides, "Action on any claim on contract or tort against the state shall be commenced within one year after the same has arisen." S.D. Codified Laws § 21-32-2.

The State cooperated with plaintiff's counsel and DOT employees were deposed prior to the State Defendants being named as defendants. There is disagreement between the parties as to whether there was an understanding that the State Defendants would not be sued if they assisted in discovery. The accident occurred on June 30, 2018, with the amended complaint naming the State Defendants as parties to the lawsuit being filed January 27, 2020, over a year after the accident.

However, even if § 21-32-2 applies in this case, the amended complaint relates back. SDCL § 15-6-15(c) states:

Whenever the claim or defense asserted in the amended pleading arose out of the conduct, transaction, or occurrence set forth or attempted to be set forth in the original pleading, the amendment relates back to the date of the original pleading. An amendment changing the party against whom a claim is asserted relates back if the foregoing provision is satisfied and, within the period provided by law for commencing the action against him, the party to be brought in by amendment:

- (1) Has received such notice of the institution of the action that he will not be prejudiced in maintaining his defense on the merits; and
- (2) Knew or should have known that, but for a mistake concerning the identity of the proper party, the action would have been brought against him.

S.D. Codified Laws § 15-6-15(c). The Supreme Court has stated underlying the relation back rule "is the view that 'a party who has been notified of litigation concerning a particular occurrence has been given all the notice the statutes of limitations were intended to provide." Waterman v. Morningside Manor, 2013 SD 78, ¶ 18, 839 N.W.2d 567, 572 (quoting Maegdlin v. Int'l Ass'n of Machinists & Aerospace Workers, 309 F.3d 1051, 1052 (8th Cir. 2002)). "Thus, when the opposing party, standing in the place of a reasonably prudent person, should have been able to anticipate or should have expected the original claim to be altered or expected that aspects of the occurrence set forth in the original pleading would be called into question, that party should not have the protection of the statute of limitations." Waterman, 2013 SD 78, ¶ 18, 839 N.W.2d at 572 (citing Senger v. Soo Line R.R. Co., 493 F.Supp 143, 145 (D. Minn. 1980); Baldwin Cnty. Welcome Ctr. V. Brown, 466 U.S. 147, 149 n. 3 (1984); United States v. Johnson, 288 F.2d 40, 42 (5th Cir. 1961)).

The Defendants in this case were given proper notice of the lawsuit, participated in depositions with plaintiff, and were represented by present counsel during those depositions. The

amended complaint naming the State Defendants relates back to the original complaint. Thus,
plaintiff's claims against the State are not time barred by § 21-32-2.
Honorable Bruce V. Anderson Circuit Court Judge
ATTEST:
Clerk of Courts / Deputy

STATE OF SOUTH DAKOTA) IN CIRCUIT COURT

:\{\bar{\text{COUNTY OF BRULE}}\) FIRST JUDICIAL CIRCUIT

AUSTIN MCGEE,

Plaintiff.

VS.

SPENCER QUARRIES, INC., a South Dakota Corporation; SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; JAY PEPPEL, as an employee of the South Dakota Department of Transportation; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation

ORDER REGARDING STATE
DEFENDANTS' MOTION TO DISMISS

07CIV18-000054

Defendants.

The Court, having considered the Parties' briefs and arguments, and in accordance with its revised opinion, enters the following order:

- 1. Findings of fact and conclusion of law are unnecessary pursuant to SDCL § 15-6-52(a).
- 2. The State Defendants' Motion to Dismiss is granted in part and denied in part without prejudice. The motion is granted as to Jay Peppel; it is denied as to all other State Defendants without prejudice.
- 3. The State Defendants' Motion to Stay Discovery is hereby denied as moot.
- 4. The remaining State Defendants shall respond to Plaintiff's outstanding discovery requests within thirty days of this order.

Attest:

Miller, Charlene Clerk/Deputy

Filed on: 10/2/2020

BRULE

Signed: 10/2/2020 1:21:56 PM

Honorable Bruce Anderson

Circuit Court Judge

BY THE COURT:

STATE OF SOUTH DAKOTA

) IN CIRCUIT COURT
:SS

COUNTY OF BRULE

) FIRST JUDICIAL CIRCUIT

AUSTIN MCGEE, : 07CIV18-000054

Plaintiff, :

v. :

SPENCER QUARRIES, INC., a South Dakota:
Corporation; SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION;
KENT GATES, as an employee of the South
Dakota Department of Transportation; and
KRIS ROYALTY, as an employee of the South
Dakota Department of Transportation,

DEFENDANTS' SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, KENT GATES, AND KRIS ROYALTY STATEMENT OF UNDISPUTED MATERIAL FACTS

Defendants. :

Defendants, South Dakota Department of Transportation, Kent Gates, and Kris Royalty, collectively "State Defendants," for their statement of undisputed material facts in support of their Motion for Summary Judgment, state as follows:

1. In October of 2017, the South Dakota Department of Transportation ("SDDOT") began soliciting contract offers through a bid-letting process for construction of portions of South Dakota Highway 45 between Platte, South Dakota, and Interstate 90 ("the Highway 45 project"). The "bid package" on the Highway 45 project included the contract plans and Standard Specifications for Roads and Bridges (2015). (Affidavit of Jay Peppel ¶ 3.)

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- 2. Spencer Quarries, Inc. ("Spencer Quarries") submitted the lowest bid and was awarded the contract on the Highway 45 project on October 12, 2017. (*Id.* ¶ 4, **Exh. A**, Contract; **Exh. B**, Standard Specifications for Roads and Bridges (2015).)
- 3. After the contract was awarded to Spencer Quarries, the Transportation Commission assigned the contract to Area Engineer Jay Peppel ("Peppel"). (Id. ¶ 5.)
- 4. As Area Engineer on the Highway 45 project (and any project), Peppel was responsible for overseeing and managing the Engineering and Maintenance staff. Peppel was also responsible for approving Construction Change Orders ("CCOs") on the contract up to \$75,000. The Highway 45 project included three (3) CCOs. (*Id.* ¶ 6, Exh. C, CCOs.)
- 5. "Engineering" and "Maintenance" fall under two completely separate divisions in the SDDOT. Engineering involves designing and creating a contract for a project, the bid-letting process, and the administration of the contract. Conversely, Maintenance involves fixing pot holes, snow plowing, and mowing grass. Unlike the Engineering division, the Maintenance division does not "let" these contracts in a bid-letting process. Further, any maintenance that must be done on the roadway that is under construction/contract is the responsibility of the contractor. In other words, the SDDOT is not responsible for maintenance of the roadways during the construction/contract. (*Id.* ¶ 7.)

MAINTENANCE DURING CONSTRUCTION - The Contractor will maintain the work during construction and until the Area Engineer issues the Acceptance of Field Work. The Contractor's obligation to maintain the work will consist of continuous and effective work, prosecuted daily with adequate equipment and forces, to keep the roadway and structures in satisfactory condition.

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¹ Section 5.14 of Standard Specifications for Roads and Bridges (2015):

- 6. The Highway 45 project fell under the Engineering division. (*Id.* $\P 8$.)
- 7. As Area Engineer on the Highway 45 project, Peppel assigned an Engineering Supervisor to the project. The Engineering Supervisor then assigned a Project Engineer. Kent Gates ("Gates") was the Project Engineer for the Highway 45 project. (Id. ¶9.)
- 8. As Project Engineer, Gates was responsible for overseeing the entire operation of the project. In other words, Gates was responsible for ensuring that the project was completed in accordance with the contract documents and that payment was made. Gates was also responsible for the Project Technicians that were assigned to the project. (Id. ¶ 10.)

Unless otherwise specified in the Contract, the Contractor's responsibility for project maintenance will be as follows:

When the work begins on the roadbed or pavement structure, the Contractor will maintain the entire project including, but not limited to, all surface maintenance, drainage, weed control, and temporary traffic control. This responsibility will continue until the Area Engineer issues the Acceptance of Field Work, except for those periods when the project is suspended. Maintenance during periods of project suspension will be in accordance with Section 4.5 B.

When work begins and is limited to construction of a box culvert or structure, including berm construction, as part of a larger project, the Contractor will only be required to maintain the portion of the project disturbed by the box culvert or structure work including portions of the project used for temporary traffic control.

Mobilization of equipment, material stockpiling, clearing, topsoil stockpiling, and fencing will not constitute work on the roadbed or pavement structure.

In the case of a contract involving the placement of material on, or the utilization of a previously constructed subgrade, base course, pavement, or structure, the Contractor will maintain the previously constructed work during construction operations.

Cost of maintenance work during construction and before the Area Engineer issues the Acceptance of Field Work will be incidental to the contract unit prices for the various pay items and the Contractor will not be paid an additional amount for such work.

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- 9. The Highway 45 project had two Project Technicians, a lab technician and a road technician. The road technician was Kris Royalty ("Royalty"). Royalty's main responsibilities were testing materials and inspections. (*Id.* ¶ 11.)
- Spencer Quarries began construction on the Highway 45 project in May of 2018.(Id. ¶ 12.)
- 11. In the early morning hours of June 30, 2018, Plaintiff Austin McGee ("McGee") and his brother were traveling north of Platte, South Dakota, through the Highway 45 project when McGee lost control of his Ford pickup. (First Amended Complaint ¶¶ 43, 45, 51.)
- 12. McGee suffered extensive injuries that resulted in his permanent paraplegia. (Id. ¶ 53.)
- 13. In June of 2018, the Participation Agreement Between the Public Entity Pool for Liability and the State of South Dakota ("the Participation Agreement") was in effect. (Affidavit of Craig Ambach ¶¶ 3-4, Exh. A, the Participation Agreement.)
- 14. Pursuant to Section I.E.10 of Appendix A of the Participation Agreement, coverage is specifically excluded from torts "[a]rising from or contributed to in any manner by acts, errors, or omissions in the engineering or design of any public roadway or public transportation project." (Id. ¶ 5.)
- 15. Pursuant to Section I.E.16 of Appendix A of the Participation Agreement, coverage is specifically excluded for damages that are a result of a discretionary act or task. (*Id.* ¶ 6.)

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- 16. On October 2, 2018, McGee brought a negligence action against Spencer Quarries. (Complaint ¶¶ 31-37.)
- 17. On January 27, 2020, McGee filed his First Amended Complaint naming the SDDOT, Peppel, Gates, and Royalty ("State Defendants") as additional defendants in the case. (First Amended Complaint ¶¶ 3-6, 61-86.)
- 18. Peppel was subsequently dismissed from the action on State Defendants' Motion to Dismiss.

Dated this 29th day of December, 2020.

WOODS, FULLER, SHULTZ & SMITH P.C.

By /s/ Gary P. Thimsen

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CERTIFICATE OF SERVICE

I hereby certify that on the 29th day of December, 2020, a true and correct copy of the foregoing Defendants' Department of Transportation, Kent Gates, and Kris Royalty Statement of Undisputed Material Facts was filed and served via Odyssey File and Serve which will automatically send email notification of such service to the following:

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APP. 049

Filed: 12/29/2020 10:22 AM CST Brule County, South Dakota 07CIV18-000054

STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES



2015

SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

330.1 DESCRIPTION

This work consists of preparing and treating a prepared surface with asphalt material and sand as required.

330.2 MATERIALS

Materials shall conform to the following Sections:

A. Asphalt: Section 890.

B. Blotting Sand for Prime: Section 879.

C. Sand for Flush Seal: Section 879.

D. Sand for Fog Seal: Section 879.

330.3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Requirements:

Application shall be made only during daylight hours, when the wind does not adversely affect the spraying operation and when the following conditions are met:

- 1. Asphalt for Prime: The application of asphalt for prime will be permitted only:
 - a. When the ambient air and surface temperatures on the project are both at least 60°F in the shade.
 - **b.** When conditions are dry.

When plans call for prime on interim surfacing, the prime application shall closely follow the base finishing operation and at no time shall the prime operation be more than 3 miles from the base finishing operation. The cure time for the processed base, prime, and blotting sand application will be determined by the Engineer.

Surfaces primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being overlaid with asphalt concrete.

- 2. Asphalt for Tack: The application of asphalt for tack will be permitted only:
 - a. When the ambient air and surface temperature on the project are both at least 35°F in the shade.
 - b. When conditions are dry, except emulsified asphalt may be applied when the surface is slightly damp.

- 3. Asphalt for Fog Seal: The application of asphalt for fog seal will be permitted only:
 - a. When the ambient air and surface temperature on the project are both at least 60°F in the shade.
 - **b.** When conditions are dry.
- 4. Asphalt for Flush Seal: The application of asphalt for flush seal will be permitted only:
 - a. Between May 1 and November 1, inclusive.
 - **b.** When ambient air and surface temperatures on the project are both at least 50°F in the shade.
 - c. When the surface is dry or slightly damp.
- B. Dilution of Tack, Fog Seal, and Flush Seal: Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.05 gallons per square yard or less may be diluted. The rate of dilution shall be at a ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum) by volume, unless otherwise approved by the Engineer. The emulsion shall be uniformly mixed by adding potable water and if necessary, agitating the mixture. The amount of emulsion and any added water shall be included on the ticket delivered to the project. If the emulsion is diluted, the emulsified asphalt supplier shall perform the dilution. Dilution of asphalt emulsion in the field will not be allowed unless approved by the Engineer. Field dilution of the emulsified asphalt will only be allowed when the rate of dilution is accurately controlled. The final rate of dilution shall not be less than the minimum ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum). Diluted emulsified asphalt for tack, fog seal, and flush seal shall be applied at an adjusted rate proportional to the dilution ratio resulting in application of the specified rate of emulsion. Emulsified asphalt for tack, fog seal, or flush seal with a specified rate exceeding 0.05 gallons per square yard may not be diluted.

C. Equipment:

The following minimum equipment shall be furnished by the Contractor.

1. Brooms:

- a. Pickup Broom: In curb and gutter sections or in rural sections where a finished and maintained lawn extends to the edge of the shoulder, the Contractor must use a pickup broom with an integral self-contained storage. The pickup broom must be a minimum of 6 feet wide and must have working gutter brooms.
- b. Rotary Power Broom: A rotary power broom may be used in all other areas.

- 2. Heating Equipment: Equipment for heating the asphalt material in or at the tank car, transport truck, or distributor shall be designed and constructed to heat the material without burning, scorching, or overheating, and with positive control of the heat. The introduction of steam directly into the material will not be permitted.
- 3. Distributors: Distributors used to apply the asphalt material shall be self-propelled, equipped with pressure type mechanical circulating pumps and valves, a heating system and insulated tank, which will provide the uniform required temperature throughout the entire contents of the distributor tank. The distributor shall have a capacity of at least 800 gallons. Detachable distributor units separate from the tank will not be allowed.

The distributor shall uniformly apply the heated asphalt material to the road surface in accurately measured quantities, and maintain the specified rate of application during the distribution of the entire tank-load, regardless of change in gradient, superelevation, direction, or content level in the tank. Calibration runs for verification shall be made at the start of the work.

The spray nozzles shall be designed, sized, and arranged to ensure uniform distribution of heated asphalt material at the designated rate, in an overlapping fan shaped spray without surge, streaks, ridges, or bare spots. A strainer shall be provided in the discharge line to prevent nozzles from clogging. The output of each and every nozzle on the bar shall be the same and a test shall be made, in advance of use to determine compliance with this requirement. Different sizes, heights, pressures, and settings of nozzles for different designated rates shall be provided.

The distributor shall be equipped with a tachometer, clearly visible to the operator, which accurately shows the speed in feet per minute.

Pressure metering distributors shall be furnished with an accurate pressure gauge showing the distribution pressure. Volume metering distributors shall be furnished with a pump tachometer or meter showing the volume furnished. The distributor shall include an accurate, mercury actuated thermometer showing the temperature of the material in the tank and a contents gauge showing the number of gallons in the tank at any content level.

The distributor shall be equipped with adjustable spray bars arranged so the application width will be available in 2 foot intervals.

The distributor spray bars shall be capable of operating at a constant controlled height and shall be of the full circulating type. Each nozzle of the distributor bar shall be equipped with a cutoff valve, which immediately stops the flow without dripping. Compliance with these requirements must be proven before the distributor can be used.

D. Surface Preparation: The surface shall be thoroughly swept and cleaned of all foreign material. Appurtenances immediately adjacent to the surface to be treated shall be protected from the splatter of asphalt. Manhole covers, water shut valves, and other. utility access points shall be covered to ensure liquid asphalt is not applied to them, as directed by the Engineer. Surfaces to receive a prime coat shall be satisfactorily compacted and cured.

E. Application of Asphalt: During application the temperature of the asphalt shall be maintained within the temperature range furnished by the asphalt supplier. Asphalt shall be applied by a pressure distributor in a uniform and continuous manner. Coverage shall be made to the satisfaction of the Engineer.

Unauthorized increases in rate of application will not be eligible for payment.

The angle of the spray nozzles and the height of the spray bar shall be set to obtain uniform distribution. The distributor shall travel at the established speed when the spray bar is opened. Areas inaccessible to the distributor shall be covered by hand spray methods. When the distributor is not in operation, it shall be parked off the roadbed or drip pans shall be placed under the spray bar.

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

F. Application of Sand: Blotting of prime shall be accomplished by broom sweeping or spreading sand on the primed surface with a mechanical spreader. Hand spreading will be permitted on odd shaped or inaccessible areas. Application of sand will not be permitted until the prime has set for at least 24 hours, unless otherwise directed by the Engineer.

The fresh application of asphalt for flush seal shall be covered with a uniform spread of sand immediately behind the distributor. The sand shall be placed by a self-powered aggregate spreader with positive controls or other equipment acceptable to the Engineer. The sand shall be placed uniformly on the asphalt application. Rolling will not be required. The finished surface shall be smooth riding without transverse or longitudinal ridges and shall present a uniform satisfactory appearance. Bleeding areas shall be resanded. Rough and nonuniform areas shall be corrected.

When applying fog seal coats, a light application of sand may be ordered by the Engineer to prevent material pick up. If ordered, the sand shall be placed by a self-powered aggregate spreader with positive controls or other equipment acceptable to the Engineer. The sand shall be placed uniformly on the asphalt application. Rolling will not be required. The finished surface shall be smooth riding without transverse or longitudinal ridges and shall present a uniform satisfactory appearance. Bleeding areas shall be resanded. Rough and nonuniform areas shall be corrected.

The loose sand material remaining on the surface shall be lightly broomed off after a waiting period of twenty-four hours from the time of application or as otherwise directed

by the Engineer. Excess material in curb and gutter sections shall be broomed towards the gutter and shall be picked up and disposed of by the Contractor.

Unauthorized increases in rate of application will not be eligible for payment.

G. Temporary Traffic Control: The Contractor shall provide flaggers, signs, and barriers to warn, direct, and prevent traffic from traveling on the freshly applied asphalt until it has penetrated, and does not track or pickup on the tires of traveling vehicles or the surface has been blotted with sand. Temporary traffic control shall conform to Section 634.

330.4 METHOD OF MEASUREMENT

- A. Asphalt: Asphalt will be measured to the nearest 0.1 ton.
- **B. Blotting Sand for Prime:** Blotting sand for prime will be measured to the nearest 0.1 ton.
- C. Sand for Flush Seal: Sand for flush seal will be measured to the nearest 0.1 ton.
- D. Sand for Fog Seal: Sand for fog seal will be measured to the nearest 0.1 ton.

330.5 BASIS OF PAYMENT

- A. Asphalt: Asphalt will be paid for at the contract unit price per ton complete in place. Separate payment will not be made for water for dilution of emulsified asphalt.
- **B. Blotting Sand for Prime:** Blotting sand for prime will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.
- C. Sand for Flush Seal: Sand for flush seal will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.
- D. Sand for Fog Seal: Sand for fog seal will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.

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- A. When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
- **B.** When a major item of work, as defined in Section 1.5, is increased in excess of 125% or decreased below 75% of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125% of original contract item quantity, or in case of a decrease below 75%, to the actual amount of work performed.

When an adjustment to the unit price is made due to a decrease in the contract quantity to below 75% of the original contract quantity, the total payment made will not exceed the amount which would have been paid for 75% of the original contract quantity.

If the Contractor believes an alteration in the work is a significant change that necessitates a contract revision, the Contractor must request a contract revision for the significant change in work in writing to the Engineer.

The Department will pay the Contractor for work occasioned by alterations in plans in accordance with the provisions set forth under Section 9.4. If the altered work is of sufficient magnitude that additional time to complete the project is warranted, the Department will make time adjustments in accordance with the provisions of Section 8.7.

Items and prices set forth in the Special Provision for Price Schedule for Miscellaneous Items and the bidding package are predetermined by the Department and will not be subject to negotiation due to alterations in the plans or quantity changes.

- 4.4 EXTRA WORK The Contractor will perform authorized work for which there is no price included in the contract whenever necessary or desirable in order to complete the work as contemplated. The Contractor will perform this extra work in accordance with the specifications and as directed, and be paid for as provided under Section 9.5.
- 4.5 MAINTENANCE OF TRAFFIC Unless otherwise provided, the Contractor will keep the road open to traffic in accordance with the traffic control plans. The Contractor will keep the portion of the project used by public traffic in a condition that will adequately and safely accommodate traffic. Accommodation of traffic will include, but not be limited to, providing a roadway in a passable condition, providing flaggers in areas where the operation of construction equipment interferes with the movement of traffic, sweeping, and providing and maintaining in a safe condition pedestrian routes, temporary approaches or crossings, and intersections with trails, roads, streets, businesses, parking lots, residences, garages, and farms.

While sweeping in curb and gutter sections or in rural sections where a finished and maintained lawn extends to the edge of the shoulder, the Contractor will use a pickup broom having an integral self-contained storage. The pickup broom must be a minimum of 6 feet wide. While sweeping in curb and gutter sections the pickup must have working gutter brooms. The Contractor will not be required to provide snow removal.

The Contractor will bear the expense of maintaining traffic over the project undergoing improvement and constructing and maintaining approaches, crossings, intersections, and

other features as may be necessary, without direct compensation, except as provided below:

A. Traffic Diversions - Traffic diversions will be designated in the Contract. Right-of-way for traffic diversions will be furnished by the Department.

Construction, maintenance, and removal of traffic diversions will be as directed by the Engineer.

Materials, other than temporary drainage structures, required to construct and maintain traffic diversions will be paid for at their respective contract unit prices.

The cost of labor, equipment, and incidentals required to satisfactorily maintain traffic diversions and provide temporary drainage structures will be incidental to the contract lump sum price for maintenance of traffic diversions.

The cost of labor, equipment, and incidentals necessary to satisfactorily remove traffic diversions and dispose of materials will be incidental to the contract lump sum price for remove traffic diversion(s).

B. Maintenance of Traffic During Suspension of Work:

- 1. Prior to written suspension due to unfavorable weather or conditions not the fault of the Contractor, the Contractor will prepare the project as directed by the Engineer to provide for the accommodation of traffic during the anticipated period of suspension. During the suspension and until an order for resumption of construction operations is issued, the maintenance of the project for traffic, to the extent specified in writing by the Engineer, will be by and at the expense of the Department. When the order for the resumption of work is issued, the Contractor will be responsible for the maintenance of traffic and will replace or repair work or materials lost or damaged during the period of suspension, remove any work or materials for maintenance, and complete the project in every respect as though the project's prosecution had been continuous and without interference. The Department will pay for additional work made necessary by such suspensions, for reasons beyond the control of the Contractor, at contract prices or by extra work.
- 2. The Contractor will maintain, replace, or repair any work or material lost or damaged, without cost to the Department, during periods not covered by a written suspension order and when the work is suspended for the Contractor's failure to comply with the provisions of the Contract.
- 4.6 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK The Engineer may authorize the Contractor's use of materials found in the excavation that are suitable for completing bid items other than excavation. The Department will pay the Contractor for the excavation of such materials at the corresponding contract unit price and for the pay item for which the excavated material is used. The Contractor will replace all excavation material removed with acceptable material, at the Contractor's expense. Charge for the materials so used will not be made against the Contractor. The Contractor will not excavate or remove

The Contractor will determine the meaning of all stakes, measurements, and marks before commencing work.

The Contractor will preserve stakes and marks. If the Contractor destroys or disturbs any construction stakes or marks, the Department will charge the cost of replacing these stakes and marks to the Contractor.

Structure Staking:

- A. Bridges: For bridges, the Department will provide stakes to establish elevation, location, and alignment for each abutment. The Engineer will stake and reference the centerline of each abutment in the longitudinal direction and in each direction transversely.
- B. Box Culverts: For box culverts, the Department will provide stakes to establish elevation, location, and alignment of both ends of the box culvert. The Engineer will stake and reference the centerline of each box culvert in the longitudinal direction and in each direction transversely.

The Contractor will provide all other stakes required to successfully complete construction of the structure, unless additional staking due to difficult site conditions is requested by the Contractor and agreed to by the Engineer. The Contractor will verify the accuracy of all stakes.

- 5.9 AUTHORITY AND DUTIES OF AREA ENGINEER As the representative of the Director of Operations, the Area Engineer has immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer has the authority to reject defective work, and to suspend work being improperly performed.
- 5.10 DUTIES OF THE INSPECTOR Department inspectors will inspect all work done and materials furnished. This inspection may extend to any part of the work, preparation, fabrication, or manufacture of the materials to be used. The inspector will not alter or waive the provisions of the contract. The inspector will not issue instructions contrary to the contract, or act as a foreman for the Contractor. The inspector may reject work or materials until any issues can be referred to and decided by the Engineer. Neither the Department's authority to inspect all work nor any actual inspections performed by the Department during the course of construction will constitute an acceptance of work performed, or operate to relieve the Contractor of the Contractor's obligation to construct the project in compliance with the plans and specifications.
- 5.11 INSPECTION OF WORK Materials and details of the work will be subject to inspection by the Department. The Contractor will allow the Engineer access to the work and will furnish the Engineer with information and assistance necessary to make a complete and detailed inspection.

The Contractor will notify the Engineer 24 hours in advance of any change in construction activity requiring inspection staff changes.

material that will be removed and will not make up a portion of the final pavement structure.

The Contractor may submit a written request to the Engineer to cross bridges, box culverts or the courses making up the pavement structure with equipment or loads that exceed the weight limitations. This written request will include the following information: the loaded vehicle weight, empty vehicle weight, equipment make and model, tire size, axle spacing, and axle loading of the equipment proposed for use. The Engineer and the Office of Bridge Design will review this information and determine whether to grant approval.

Nothing set forth in the foregoing will relieve the Contractor of liability for damage resulting from the operation and movement of construction equipment.

5.14 MAINTENANCE DURING CONSTRUCTION - The Contractor will maintain the work during construction and until the Area Engineer issues the Acceptance of Field Work. The Contractor's obligation to maintain the work will consist of continuous and effective work, prosecuted daily with adequate equipment and forces, to keep the roadway and structures in satisfactory condition.

Unless otherwise specified in the Contract, the Contractor's responsibility for project maintenance will be as follows:

When the work begins on the roadbed or pavement structure, the Contractor will maintain the entire project including, but not limited to, all surface maintenance, drainage, weed control, and temporary traffic control. This responsibility will continue until the Area Engineer issues the Acceptance of Field Work, except for those periods when the project is suspended. Maintenance during periods of project suspension will be in accordance with Section 4.5 B.

When work begins and is limited to construction of a box culvert or structure, including berm construction, as part of a larger project, the Contractor will only be required to maintain the portion of the project disturbed by the box culvert or structure work including portions of the project used for temporary traffic control.

Mobilization of equipment, material stockpiling, clearing, topsoil stockpiling, and fencing will not constitute work on the roadbed or pavement structure.

In the case of a contract involving the placement of material on, or the utilization of a previously constructed subgrade, base course, pavement, or structure, the Contractor will maintain the previously constructed work during construction operations.

Cost of maintenance work during construction and before the Area Engineer issues the Acceptance of Field Work will be incidental to the contract unit prices for the various pay items and the Contractor will not be paid an additional amount for such work.

5.15 FAILURE TO MAINTAIN ROADWAY OR STRUCTURE - If the Contractor does not comply with the provisions of Section 4.5 or 5.14, the Engineer will notify the Contractor of such noncompliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of notice, the Engineer will proceed to maintain the project, and will

deduct the entire cost of this maintenance from monies due or to become due the Contractor.

- 5.16 ACCEPTANCE OF FIELD WORK When the contract work, including authorized modifications and final cleanup has been completed, the Area Engineer or designee will, within 14 calendar days, make a final inspection of the work. When provided in the contract, the Area Engineer or designee may make inspections following completion of portions of the contract. If the work is found to conform to the requirements of the contract, the Area Engineer or designee will issue written notification to the Contractor of Acceptance of Field Work. Such notice is not to be construed as an acceptance by the Area Engineer or designee of previously noted defective or unauthorized work, or of unauthorized work subsequently determined during the final computations of field measurements. Should the work fail to conform with the requirements of the contract, the Engineer will provide the Contractor with a written statement of the features to be remedied. Final Acceptance in accordance with Section 9.9 will not be made until the Contractor notifies the Engineer that corrections have been made and the Engineer determines the requirements have been met.
- 5.17 CLAIMS FOR ADJUSTMENT AND DISPUTES - If the Contractor contends additional compensation is warranted for assessments made to the contract, work or material not covered by the contract, or adjustments made pursuant to Section 5.3, the Contractor will give the Area Engineer written notice of the claim for additional compensation. If the Contractor contends additional compensation is warranted for work or materials not covered in the contract, the Contractor will give the Area Engineer written notice of the claim for additional compensation before beginning or continuing construction on the affected work. If the basis for claim does not become apparent until after proceeding with the work, or it is not feasible to stop the work, the Contractor will immediately notify the Area Engineer that the work is continuing and the Contractor will submit written notification of the intent to file a claim within 10 calendar days. The Contractor's failure to give the required notification or to provide the Area Engineer proper facilities and assistance in keeping strict account of actual costs will constitute a waiver of the claim for additional compensation in connection with the work already performed. If the Engineer has kept account of the costs involved, the act of keeping account will not be construed as proving or substantiating the validity of the claim.

After completion of the work on which the claim is based, the Contractor will complete and submit to the Area Engineer a Contract Claim Form (DOT-248), furnished by the Department. The Contractor must complete and submit this Contract Claim Form within 90 calendar days after the Acceptance of Field Work. The Engineer may grant a written extension to this 90 calendar day period if circumstances warrant. Interest due to the Contractor in accordance with Section 9.9 will not apply to the extended 90 calendar day period if the 90 calendar day period is extended beyond 120 calendar days after the date of the Region Engineer's Letter of Final Acceptance.

The Contractor must describe in detail in the Contract Claim Form all claim items being submitted for review. The Contract Claim Form must contain adequate information for the Engineer to make a determination as to the validity of the claim. At a minimum, the Contractor will submit the following:

set and a significant amount of haul truck traffic runs over the unset material, much of the tack coat may be picked up by the truck tires and tracked down the roadway. Thus either the tack coat should be allowed to set before haul truck traffic is permitted to run over it, or the amount of truck traffic should be minimized.

If asphalt cement is used as the tack coat material, it will cool to ambient temperature very quickly. Further, because there is no carrier material (water) to evaporate, paving may immediately follow the asphalt cement tack coat application.

If the overlay is to be constructed under traffic, the tack coat is normally placed only a short distance in front of the paver-within the lane closure and far enough ahead for the tack to set properly before the HMA is laid on top of it. Traffic is kept off of the tack coat at all times. If the roadway being paved is closed to traffic, the tack coat can be placed as much as 24 hours ahead of the laydown operation. Doing so will ensure that the tack coat is completely set before the mix is placed on top of it. Under unusual circumstances, if traffic must travel over the tack coat before the overlay is placed, a light layer of sand can be spread on top of the tack coat to prevent its pickup by traffic. The application rate of the sand should be in the range of 2.2 to 4.4 kg/m² (4 to 8 lb/yd²), depending on the application rate of the tack coat material and the gradation of the sand. Excess sand should be broomed from the pavement surface before the overlay is placed to ensure a proper bond between the overlay and the existing surface.

If equipment problems (plant or paver breakdowns) prevent tack coat material that has been applied from the distributor from being paved over before traffic must use the roadway, it is suggested that posted speed limits on that section of roadway be significantly reduced until the overlay operation can take place. It is not good practice to place the tack coat one day, permit traffic to run over the tack coat for a period of time, and then place the overlay at a later date. Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface may be greatly reduced by the presence of the tack coat material. The excess tack will also be thrown on vehicles, creating a major public relations problem. In addition to lowering the posted speed limits, it may be advisable to apply sand to the tacked surface as discussed above.

The application of tack coat material is essential when an overlay is being constructed on an old existing pavement surface-either HMA, PCC, or surface treatment. A tack coat often is not needed, however, when a layer of new mix is being placed over another layer of asphalt pavement that has been laid within a few days, as long as the underlying new layer has not become dirty under traffic or from windblown dust. If a tack coat is used on a recently placed HMA layer, the residual asphalt content should be minimal—in the range of 0.09 1/m² (0.02 gal/yd²), or half of what is needed for most old, tight, existing surfaces. Thus the application rate for an undiluted SS-1 emulsion should be only approximately 0.14 l/m² (0.03 gal/yd²). Additional tack coat material is not necessary since the material will not be absorbed into the new underlying pavement surface.

SUMMARY

The following key factors should be considered when monitoring surface preparation operations:

- A prime coat is generally not needed on subgrade soil. There is a difference of opinion on the benefits of using a prime coat on a granular base course, but in many cases a prime coat can be eliminated without detrimental effect on the performance of the pavement structure.
- Before paving an existing surface, any failures in the surface must be removed and replaced or repaired by patching unless a very thick overlay is constructed.
- If there are cracks in an existing asphalt pavement surface, they generally should be sealed individually, or some type of surface treatment should be applied to the whole roadway area. Joints in PCC pavement that are poorly sealed should be routed out and sealed. Rocking PCC slabs should be stabilized.
- A rough, uneven asphalt surface should be leveled with asphalt mix (using a paver to place the mix) to fill in the low spots in the surface or should be cold milled with a milling machine to remove the high spots.
- Once the needed repairs have been completed, the pavement surface should be cleaned of all dust, dirt, and other debris. This should be accomplished using multiple passes of a mechanical broom. If brooming does not remove all accumulated dirt, flushing with air or water may be required.
- The application of a tack coat must be accomplished before an overlay is constructed on an existing asphalt or PCC surface. The distributor used should be checked to ensure that all the nozzles are open and set at the correct angle and that the spray bar is at the proper height above the pavement surface.
- The application rate for the tack coat should be based on the desired residual amount of asphalt cement on the road surface, which should be between 0.18 and 0.27 1/m² (0.04 and 0.06 gal/yd²) for normal surfaces.

The application rate should also be based on the actual amount of asphalt cement in the emulsion—whether the emulsion is diluted or not before it is applied. An undiluted SS-1 emulsion should be applied from the distributor at a rate of 0.27 1/m² (0.06 gal/yd²) to obtain 0.18 1/m² (0.04 gal/yd²) of residual asphalt on the pavement surface.

- Milled pavements may need a greater amount of residual tack coat. Too little tack coat will not provide the needed bond between the old and new layers. On the other hand, too much tack coat may promote slippage of the new overlay on the old pavement or bleeding of the tack material through a thin overlay.
- MMA usually can be placed on top of an emulsion tack coat before it has completely set, and even before it has broken—changed color from brown to black. The tack coat should not be picked up and tracked by the haul trucks, however.
- mathread Tack coat should not be left exposed to traffic. If doing so is necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface, should be taken.
- A tack coat is normally not needed between layers of new HMA. If used, the amount of residual asphalt on the roadway surface should be approximately half that appropriate for an old, tight, existing pavement surface.

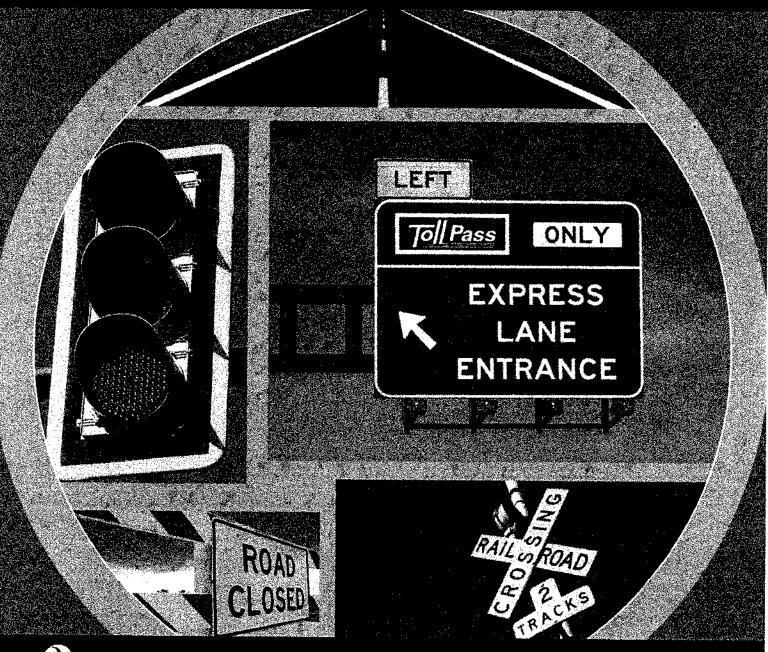


Manual on Uniform Traffic Control Devices

for Streets and Highways

2009 Edition

Including Revision 1 dated May 2012 and Revision 2 dated May 2012





APP. 064

CHAPTER 6A. GENERAL

Section 6A.01 General

Support:

Whenever the acronym "TTC" is used in Part 6, it refers to "temporary traffic control."

Standard:

The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on private roads open to public travel (see definition in Section 1A.I3), including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.

Support:

- When the normal function of the roadway, or a private road open to public travel, is suspended, TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage); transit operations; and access (and accessibility) to property and utilities.
- The primary function of TTC is to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment.
- Of equal importance to the public traveling through the TTC zone is the safety of workers performing the many varied tasks within the work space. TTC zones present constantly changing conditions that are unexpected by the road user. This creates an even higher degree of vulnerability for the workers and incident management responders on or near the roadway (see Section 6D.03). At the same time, the TTC zone provides for the efficient completion of whatever activity interrupted the normal use of the roadway.
- Consideration for road user safety, worker and responder safety, and the efficiency of road user flow is an integral element of every TTC zone, from planning through completion. A concurrent objective of the TTC is the efficient construction and maintenance of the highway and the efficient resolution of traffic incidents.
- No one set of TTC devices can satisfy all conditions for a given project or incident. At the same time, defining details that would be adequate to cover all applications is not practical. Instead, Part 6 displays typical applications that depict common applications of TTC devices. The TTC selected for each situation depends on type of highway, road user conditions, duration of operation, physical constraints, and the nearness of the work space or incident management activity to road users.
- Improved road user performance might be realized through a well-prepared public relations effort that covers the nature of the work, the time and duration of its execution, the anticipated effects upon road users, and possible alternate routes and modes of travel. Such programs have been found to result in a significant reduction in the number of road users traveling through the TTC zone, which reduces the possible number of conflicts.
- Operational improvements might be realized by using intelligent transportation systems (ITS) in work zones. The use in work zones of ITS technology, such as portable camera systems, highway advisory radio, variable speed limits, ramp metering, traveler information, merge guidance, and queue detection information, is aimed at increasing safety for both workers and road users and helping to ensure a more efficient traffic flow. The use in work zones of ITS technologies has been found to be effective in providing traffic monitoring and management, data collection, and traveler information.

Standard:

- TTC plans and devices shall be the responsibility of the authority of a public body or official having jurisdiction for guiding road users. There shall be adequate statutory authority for the implementation and enforcement of needed road user regulations, parking controls, speed zoning, and the management of traffic incidents. Such statutes shall provide sufficient flexibility in the application of TTC to meet the needs of changing conditions in the TTC zone.
 - Support:
- Temporary facilities, including pedestrian routes around worksites, are also covered by the accessibility requirements of the Americans with Disabilities Act of 1990 (ADA) (Public Law 101-336, 104 Stat. 327, July 26, 1990. 42 U.S.C. 12101-12213 (as amended)).

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Section 6F.29 EXIT ONLY Sign (E5-3)

Option:

An EXIT ONLY (E5-3) sign (see Figure 6F-5) may be used to supplement other warning signs where work is being conducted in the vicinity of an exit ramp and where the exit maneuver for vehicular traffic using the ramp is different from the normal condition.

Section 6F.30 NEW TRAFFIC PATTERN AHEAD Sign (W23-2)

Option:

A NEW TRAFFIC PATTERN AHEAD (W23-2) sign (see Figure 6F-4) may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage, roadway geometry, or signal phasing.

Guidance:

To retain its effectiveness, the W23-2 sign should be displayed for up to 2 weeks, and then it should be covered or removed until it is needed again.

Section 6F.31 Flagger Signs (W20-7, W20-7a)

Guidance:

The Flagger (W20-7) symbol sign (see Figure 6F-4) should be used in advance of any point where a flagger is stationed to control road users.

Option

- A distance legend may be displayed on a supplemental plaque below the Flagger sign. The sign may be used with appropriate legends or in conjunction with other warning signs, such as the BE PREPARED TO STOP (W3-4) sign (see Figure 6F-4).
- The FLAGGER (W20-7a) word message sign with distance legends may be substituted for the Flagger (W20-7) symbol sign.

Section 6F.32 Two-Way Traffic Sign (W6-3)

Guidance:

When one roadway of a normally divided highway is closed, with two-way vehicular traffic maintained on the other roadway, the Two-Way Traffic (W6-3) sign (see Figure 6F-4) should be used at the beginning of the two-way vehicular traffic section and at intervals to remind road users of opposing vehicular traffic.

Section 6F.33 Workers Signs (W21-1, W21-1a)

Option:

A Workers (W21-1) symbol sign (see Figure 6F-4) may be used to alert road users of workers in or near the roadway.

Guidance:

102 In the absence of other warning devices, a Workers symbol sign should be used when workers are in the roadway.

Option:

The WORKERS (W21-la) word message sign may be used as an alternate to the Workers (W21-l) symbol sign.

Section 6F.34 FRESH OIL (TAR) Sign (W21-2)

Guidance:

The FRESH OIL (TAR) (W21-2) sign (see Figure 6F-4) should be used to warn road users of the surface treatment.

Section 6F.35 ROAD MACHINERY AHEAD Sign (W21-3)

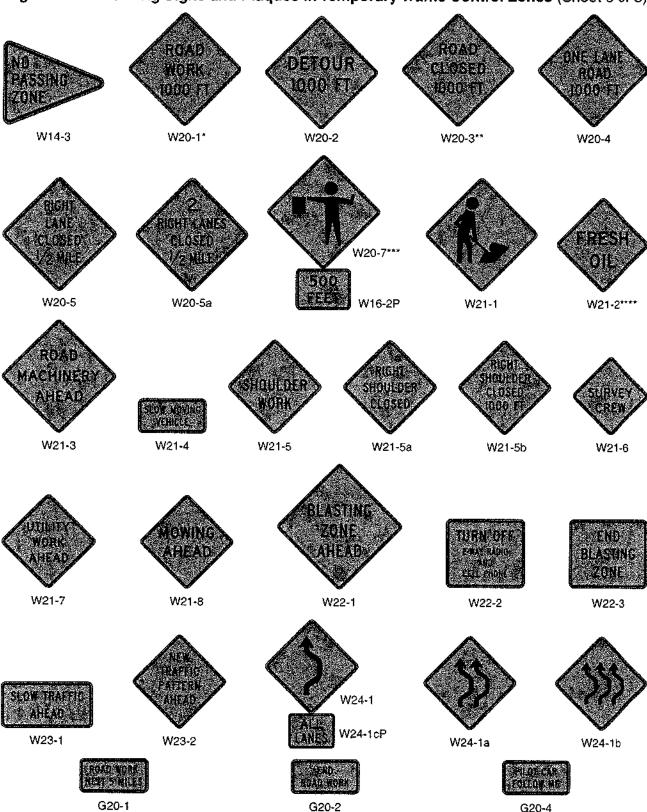
Option:

The ROAD MACHINERY AHEAD (W21-3) sign (see Figure 6F-4) may be used to warn of machinery operating in or adjacent to the roadway.

December 2009 APP. 066 Sect. 6F.29 to 6F.35



Figure 6F-4. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 3 of 3)



^{*} An optional STREET WORK word message sign is shown in the "Standard Highway Signs and Markings" book.

^{**} An optional STREET CLOSED word message sign is shown in the "Standard Highway Signs and Markings" book.

^{***} An optional FLAGGER (W20-7a) word message sign is shown in the "Standard Highway Signs and Markings" book.

^{****} An optional FRESH TAR word message sign is show in the "Standard Highway Signs and Markings" book.

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IN CIRCUIT COURT

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COUNTY OF BRULE

FIRST JUDICIAL CIRCUIT

AUSTIN MCGEE,

07CIV18-000054

Plaintiff,

FIRST AMENDED COMPLAINT

VS.

SPENCER QUARRIES, INC.,
a South Dakota Corporation; SOUTH
DAKOTA DEPARTMENT OF
TRANSPORTATION; JAY PEPPEL, as
an employee of the South Dakota
Department of Transportation; KENT
GATES, as an employee of the South
Dakota Department of Transportation;
and KRIS ROYALTY, as an employee of
the South Dakota Department of
Transportation

Defendants.

Plaintiff, Austin McGee, by and through his attorneys of record, states and alleges as follows:

- 1. Plaintiff Austin McGee ("Austin") is a resident of Gregory County, South Dakota.
- Defendant Spencer Quarries, Incorporated ("Spencer Quarries") is a South Dakota corporation; its address and principal place of business is 25341 430th Avenue, Spencer, South Dakota, 57374. Spencer Quarries conducts its hot mix asphalt operations through its subsidiary Commercial Asphalt.
- 3. Defendant Jay Peppel is a resident of Davison County, South Dakota and at all material times was an employee of the DOT whose job function was Area Engineer for the Mitchell Area and the Project described herein.

- 4. Defendant Kent Gates is a resident of Davison County, South Dakota and at all material times was an employee of the DOT whose job function was Project Engineer for the Project described herein.
- Defendant Kris Royalty is a resident of Davison County, South Dakota and at all material times was an employee of the DOT whose job function was Project Inspector for the Project described herein.
- 6. Defendant South Dakota Department of Transportation ("DOT") is a governmental entity of the State of South Dakota. Its address and principal place of business is 700 E. Broadway Ave., Pierre, South Dakota 57501. DOT and its agents are amenable to suit and have waived immunity pursuant to SDCL §§ 3-22-17; 21-32A-2; 21-32A-3.
- 7. The incident described below occurred in Brule County, South Dakota on June 30, 2018.
- 8. Venue is proper in Brule County pursuant to SDCL§§ 15-5-8, because Brule County is where the damages were inflicted in this cause of action.
- 9. Brule County Courts have jurisdiction over the parties in this matter pursuant to SDCL §§ 15-7-1 and 15-7-2(1), (2), (14).

FACTS

- 10. Spencer Quarries contracted in 2018 with the DOT to resurface certain portions of South Dakota Highway 45 between Platte, South Dakota and Interstate 90 (the "Project").
- 11. Spencer Quarries, its subsidiaries, or subcontractors milled the old road surface and subsequently applied new asphalt layers or lifts to the underlying surface.
- 12. Spencer Quarries applied a liquid asphalt emulsion known as tack coat between the layers of new asphalt.

- 13. On June 29, 2018, Spencer Quarries applied tack coat on a section of Highway 45 near the intersection of Highway 45 and 263rd Street, about 13 miles north of Platte, SD (the crash scene) and left the tack coat exposed until July 9, 2018. Tack coat was commonly left exposed on the Project, and exposed tack coat of up to 3,650 feet was left each day from June 25, 2018 through June 29, 2018.
- 14. The DOT and its agents and employees did not knowingly order or allow Spencer Quarries to leave exposed tack coat at the crash scene.
- 15. The tack coat at the crash scene was not uniformly and evenly applied to the northbound lane of travel.
- 16. Trucks hauling asphalt also left tack coat deposits at the crash scene in the northbound lane, which indicates the trucks were inappropriately driving on tack coat in the construction zone in violation of Standard Specifications 320.3(H) and (l).
- 17. Spencer Quarries did not place sand, gravel, or other traction aid on top of the exposed, tack-coated portion of Highway 45 at the crash scene.
- 18. For safety reasons, traffic should generally not be permitted to drive on tack-coated asphalt road surfaces before the new asphalt layer or lift is applied.
- 19. A tack-coated surface should not be left exposed to traffic, and if doing so is necessary, then proper precautions such as reducing the posted speed limit on the roadway and/or sanding the surface should be taken.
- 20. When a tack-coated asphalt road surface is left exposed to traffic, the potential exists for reduced skid resistance, especially during wet weather.
- 21. Spencer Quarries, its subcontractors, or subsidiaries, the DOT, Jay Peppel, Kent Gates, and Kris Royalty, knew or should have known the exposed tack coat on the asphalt road surface

- at the crash scene on the morning of June 30, 2018 reduced friction available to vehicles traveling on the surface.
- 22. Spencer Quarries, its subcontractors, or subsidiaries, the DOT, Jay Peppel, Kent Gates, and Kris Royalty, knew or should have known industry standards dictate that vehicle traffic should not be allowed on the exposed tack-coated surface that existed at the crash scene on the morning of June 30, 2018.
- 23. Spencer Quarries, its subcontractors, or subsidiaries, the DOT, Jay Peppel, Kent Gates, and Kris Royalty, failed to provide any warning of the slick condition created by the exposed, tack-coated surface that existed at the crash scene on the morning of June 30, 2018.
- 24. Spencer Quarries, its subcontractors, or subsidiaries, the DOT, Jay Peppel, Kent Gates, and Kris Royalty, failed to reduce the speed limit for vehicles traveling on the exposed, tackcoated surface that existed at the crash scene on the morning of June 30, 2018.
- 25. At all material times, the DOT, through Area Engineer Jay Peppel, Project Engineer Kent Gates, and Project Inspector Kris Royalty, oversaw and inspected Spencer Quarries' execution of the Project.
- 26. The Project's plan documents ("Plan Documents") and the DOT's Standard Specifications for Roads and Bridges (2015) ("Standard Specifications") controlled Spencer Quarties' execution of the construction on the Project and the DOT's monitoring and inspecting of Spencer Quarties' work.
- 27. The Plan Documents, Standard Specifications, and other pertinent resources state, define, and delineate the DOT's duties regarding the Project.
- 28. Both Spencer Quarries and the DOT (and its employees) were required to follow the Plan Documents, the Standard Specifications, and industry custom and practice on the Project.

- 29. Section 4.5 of the Standard Specifications required Spencer Quarries to "keep the portion of the [P]roject used by public traffic in a condition that will adequately and safely accommodate traffic."
- 30. Spencer Quarries did not adequately and safely accommodate traffic and breached the DOT's Standard Specification Section 4.5 when, on June 29, 2018, it over sprayed tack coat; additionally, Spencer Quarries breached Section 4.5 when it left a tack-coated portion of Highway 45 open to the traveling public without remediating the slippery condition, erecting signs warning of the slippery condition, or seeking and/or posting a lower speed limit through the tack-coated area.
- 31. Section 5.15 of the Standard Specifications required the DOT, through the Project Engineer, Kent Gates, to inspect and ensure Spencer Quarries "adequately and safely accommodate[d] traffic" as required by Section 4.5 and to notify Spencer Quarries of its noncompliance with Section 4.5. If Spencer Quarries did not remedy the unsatisfactory condition within 24 hours after receiving such notice, then Section 5.15 obligated Kent Gates to maintain the Project for the safety of the traveling public.
- 32. Section 5.9 of the Standard Specifications delegated the authority to reject defective work and suspend work being improperly performed to the Area Engineer, Jay Peppel.
- 33. The DOT, Jay Peppel, Kent Gates, and Kris Royalty, knew or should have known on June 29, 2018 that Spencer Quarries violated the Standard Specifications when it left a tack-coated portion of Highway 45 open to the traveling public without remediating the condition in any manner.
- 34. On June 29, 2018, the DOT, Jay Peppel, Kent Gates, and Kris Royalty knew or should have known that exposed, cured tack coat, especially when wet, decreased friction available to

- the traveling public, created a hazardous condition, and constituted defective work and/or work improperly performed under the Standard Specifications.
- 35. None of the DOT's agents, Jay Peppel, Kent Gates, or Kris Royalty, inspected, ensured, or inquired as to Spencer Quarries' plan to safely and adequately accommodate traffic that would travel over the exposed tack coat on Highway 45 from June 29, 2018 onward.
- 36. No one from the DOT ensured Spencer Quarries followed Specification 4.5 on June 29, 2018 regarding the presence of exposed tack coat.
- 37. The Project's Plan Documents required Spencer Quarries to display "Fresh Oil" signs during tack coat operations.
- 38. Spencer Quarries started a tack coat operation on June 29, 2018, which was not completed until it paved over the tack-coated roadway at some later date.
- 39. The Plan Documents and the Standard Specifications required Spencer Quarries to display a "Fresh Oil" sign at the crash scene at the time of the crash.
- 40. From the end of the day on June 29, 2018 until after the crash, Spencer Quarries did not display a "Fresh Oil" sign at the crash scene.
- 41. Spencer Quarries breached Standard Specification 5.14 by failing to maintain the traffic control items called for in the Plan Documents, i.e. a "Fresh Oil" sign at the crash scene.
- 42. The DOT, Jay Peppel, Kent Gates, and Kris Royalty breached Standard Specification 5.15 by failing to notify Spencer Quarries of its failure to erect the traffic control signs called for in the Plan Documents.
- 43. On June 30, 2018, at approximately 9:00 a.m., Austin was operating a 2005 Ford F-250, and travelling north on Highway 45.

- 44. At the time of the crash, the speed limit in the immediate area of the crash scene was 65 mph.
- 45. Austin's brother, Brent McGee, was seated in the front passenger seat in the Ford F-250.
- 46. Austin was not under the influence of any alcohol or controlled substances while he was driving on June 30, 2018.
- 47. Austin was not driving while distracted on June 30, 2018.
- 48. On the morning of June 30, 2018 at approximately 9:00 a.m., there was light precipitation in the area, and the portion of Highway 45 on which Austin and Brent were traveling was wet.
- 49. As Austin and Brent approached the crash scene, the Ford F-250 encountered the exposed, tack-coated portion of Highway 45.
- 50. The wet, exposed tack coat created a dangerously slick condition that caused Austin's pickup to lose traction with the road surface.
- 51. Despite Austin's best efforts, he lost control of his pickup.
- 52. The pickup left the road, went into the west-side ditch, and rolled.
- 53. As a result of the rollover crash, Austin seriously injured his spine, which resulted in permanent paraplegia.

FIRST CAUSE OF ACTION: NEGLIGENCE, SPENCER QUARRIES

- 54. Austin repeats and incorporates all prior allegations as if fully set forth herein.
- 55. Defendant Spencer Quarries' duties to Austin included, but are not limited to:
 - a. Performing the construction in a reasonably safe manner, which required the appropriate application of the tack coat to road surfaces;

- Making the construction area reasonably safe, which required redirecting traffic around exposed tack-coated surfaces where possible;
- c. Making the construction area reasonably safe, which required placing sand, gravel, or other traction aid on top of the exposed tack-coated surface if traffic is permitted on that surface;
- d. Making the construction area reasonably safe, which required adequately warning motorists, including Austin, of any dangerous conditions, including exposed tackcoated surfaces, by placing appropriate signage at the proper distances in the area of the dangerous conditions;
- e. Making the construction area reasonably safe, which required reduced traffic speeds, if traffic was allowed on exposed tack-coated surfaces; and
- f. Following all applicable Plan Documents and Standard Specifications.
- 56. Defendant Spencer Quarries' breaches of its duties include, but are not limited to:
 - a. Failing to appropriately apply tack coat to the northbound lane of travel in the area of the crash scene;
 - Leaving an exposed tack-coated surface in the area of the crash scene open to vehicular traffic travelling at highway speeds;
 - c. Allowing trucks hauling asphalt to run over, pickup, and deposit uncured tack coat in the northbound lane at the crash scene in violation of Standard Specifications 320.3(H) and (I).
 - d. Failing to redirect traffic around the tack-coated surface in the area of the crash scene;

- e. Failing to place sand, gravel, or other traction aid on top of the exposed tack-coated surface in the area of the crash scene;
- f. Failing to post "Fresh Oil" or other signs warning drivers of the dangerous condition created by the exposed tack-coated surface in the area of the crash scene and thereby failing to maintain required temporary traffic control;
- g. Failing to require reduced speeds for vehicles travelling on the exposed tack-coated surface in the area of the crash scene; and
- h. Failing to adequately and safely accommodate traffic on June 30, 2018 as required.
- 57. Spencer Quarries' breaches of its duties proximately caused Austin's severe, permanent injuries and impairments of bodily functions, which include:
 - a. A severe injury to his spine resulting in paraplegia.
- 58. Spencer Quarries' breaches of its duties proximately caused Austin permanent disability and impairment; severe and permanent pain, suffering, weakness, and inconvenience; a loss of earnings and earning capacity; and the loss of the normal pleasures of life that he formerly enjoyed.
- 59. As a direct and proximate cause of Spencer Quarries' negligence, Austin, has incurred past healthcare expenses in excess of \$780,000.00; will incur future healthcare and other remedial expenses in an amount to be determined at trial; and has suffered lost past and future wages and reduced earning capacity.
- 60. As a direct and proximate result of Spencer Quarries' negligence, Austin has incurred general damages in an amount to be determined at trial.

SECOND CAUSE OF ACTION: NEGLIGENCE—JAY PEPPEL

- 61. Austin repeats and incorporates all prior allegations as if fully set forth herein.
- 62. Jay Peppel, as the DOT's Area Engineer, owed Plaintiff ministerial duties, including but not limited to, maintaining Highway 45 in a reasonably safe condition at all material times, including a duty to intervene and suspend work improperly performed by Spencer Quarries, suspend work for Spencer Quarries' failure to correct conditions dangerous to the traveling public, and suspend work for Spencer Quarries' failure to carry out provisions of the Standard Specifications and Plan Documents.
- 63. Jay Peppel, as the DOT's Area Engineer, breached his duties owed to Plaintiff by:
 - a. Failing to suspend work being improperly performed by Spencer Quarries;
 - b. Failing to suspend work and remediate Spencer Quarries' failures to correct conditions unsafe for the traveling public; and
 - c. Failing to reject Spencer Quarries' defective work on the Project.
- 64. Jay Peppel's breach of his ministerial duties proximately caused Austin permanent disability and impairment; severe and permanent pain, suffering, weakness, and inconvenience; a loss of earnings and earning capacity; and the loss of the normal pleasures of life that he formerly enjoyed.
- 65. As a direct and proximate cause of Jay Peppel's negligence, Austin has incurred past healthcare expenses in excess of \$780,000.00; will incur future healthcare and other remedial expenses in an amount to be determined at trial; and has suffered lost past and future wages and reduced earning capacity.
- 66. As a direct and proximate result of Jay Peppel's negligence, Austin has incurred general damages in an amount to be determined at trial.

THIRD CAUSE OF ACTION: NEGLIGENCE—KENT GATES

- 67. Austin repeats and incorporates all prior allegations as if fully set forth herein.
- 68. Kent Gates, as the DOT's Project Engineer, owed Plaintiff ministerial duties, including but not limited to, Section 5.15 of the Standard Specifications, which required Kent Gates, to notify Spencer Quarries of its noncompliance with Section 4.5. If Spencer Quarries did not remedy the unsatisfactory condition within 24 hours after receiving such notice, then Section 5.15 obligated Kent Gates to maintain the Project for the safety of the traveling public. Section 5.15 required Kent Gates to inspect and ensure Spencer Quarries "adequately and safely accommodate[d] traffic" as required by Section 4.5.
- 69. Kent Gates, as the DOT's Project Engineer, breached his ministerial duties by failing to:
 - a. Notify Spencer Quarries of its noncompliance with Section 4.5 of the Standard Specifications, the Plan Documents, and the Project's Contract;
 - Maintain the Project for the safety of Plaintiff and the traveling public pursuant to Section 5.15 and Section 320.3;
 - Ensure Spencer Quarries adequately and safely accommodated the traveling public;
 and
 - d. Obtain work that fulfilled the Project's contract and conformed to the Plan Documents.
- 70. Kent Gates' breaches of his ministerial duties proximately caused Austin permanent disability and impairment; severe and permanent pain, suffering, weakness, and inconvenience; a loss of earnings and earning capacity; and the loss of the normal pleasures of life that he formerly enjoyed.

- 71. As a direct and proximate cause of Kent Gates' negligence, Austin has incurred past healthcare expenses in excess of \$780,000.00; will incur future healthcare and other remedial expenses in an amount to be determined at trial; and has suffered lost past and future wages and reduced earning capacity.
- 72. As a direct and proximate result of Kent Gates' negligence, Austin has incurred general damages in an amount to be determined at trial.

FOURTH CAUSE OF ACTION: NEGLIGENCE—KRIS ROYALTY

- 73. Austin repeats and incorporates all prior allegations as if fully set forth herein.
- 74. Kris Royalty, as the DOT's Project Inspector, owed Plaintiff ministerial duties, including but not limited to, a duty to inspect Spencer Quarries' work to ensure it complied with the Standard Specifications and Plan Documents; to reject Spencer Quarries' work that did not comply with the Standard Specifications or Plan Documents; and to refer the issue to Kent Gates or Jay Peppel.
- 75. Kris Royalty, as the DOT's Project Inspector, breached his ministerial duties by:
 - Failing to inspect and recognize Spencer Quarries' work that did not comply with the Standard Specifications and Plan Documents; and
 - Failing to reject Spencer Quarries' non-compliant work and refer the issues to Kent Gates or Jay Peppel.
- 76. Kris Royalty's breaches of his ministerial duties proximately caused Austin permanent disability and impairment; severe and permanent pain, suffering, weakness, and inconvenience; a loss of earnings and earning capacity; and the loss of the normal pleasures of life that he formerly enjoyed.

- 77. As a direct and proximate cause of Kris Royalty's negligence, Austin has incurred past healthcare expenses in excess of \$780,000.00; will incur future healthcare and other remedial expenses in an amount to be determined at trial; and has suffered lost past and future wages and reduced earning capacity.
- 78. As a direct and proximate result of Kris Royalty's negligence, Austin has incurred general damages in an amount to be determined at trial.

FIFTH CAUSE OF ACTION: VICARIOUS LIABILITY—THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

- 79. Austin repeats and incorporates all prior allegations as if fully set forth herein.
- 80. At all material times, DOT employed Jay Peppel, Kent Gates, and Kris Royalty, and they were under DOT's supervision, employ, and control when they breached their respective ministerial duties as described herein. Jay Peppel, Kent Gates, and Kris Royalty breached their respective ministerial duties while acting in the course and scope of their employment with DOT.
- 81. The DOT, through its agents, owed Plaintiff duties to ensure Spencer Quarries followed the Plan Documents, the Standard Specifications, and industry custom and practice regarding safety of the traveling public.
- 82. The DOT, through its agents, owed Plaintiff ministerial duties as described herein, including but not limited to, a duty to inspect, identify, and remedy Spencer Quarries' breaches of Section 4.5 and the Plan Documents and any conditions hazardous to the traveling public.
- 83. The DOT, through its agents, breached its duties by failing to:

- a. Draft specifications that set forth measures to safely accommodate the traveling public in construction zones with exposed, tack-coated surfaces;
- Inspect and identify Spencer Quarries' breaches of the Plan Documents, the Standard Specifications, and industry custom and practice regarding safety of the traveling public;
- c. Ensure that Spencer Quarries followed the Plan Documents, the Standard Specifications, and industry custom and practice regarding safety of the traveling public;
- d. Notify Spencer Quarries of its breaches of the Plan Documents, the Standard Specifications, and industry custom and practice regarding safety of the traveling public;
- e. Warn of or remedy the hazardous conditions that Spencer Quarries created when it left untreated tack coat open to the traveling public; and
- f. Warn of or remedy the hazardous conditions that Spencer Quarries created by allowing its trucks to pick up and deposit tack coat in Plaintiff's lane of travel at the crash site in violation of Standard Specifications 320.3(H), (I).
- 84. The DOT's breaches of its duties proximately caused Austin permanent disability and impairment; severe and permanent pain, suffering, weakness, and inconvenience; a loss of earnings and earning capacity; and the loss of the normal pleasures of life that he formerly enjoyed.
- 85. As a direct and proximate cause of the DOT's negligence, Austin has incurred past healthcare expenses in excess of \$780,000.00; will incur future healthcare and other

remedial expenses in an amount to be determined at trial; and has suffered lost past and

future wages and reduced earning capacity.

86. As a direct and proximate result of the DOT's negligence, Austin has incurred general

damages in an amount to be determined at trial.

WHEREFORE, Austin prays for judgment against Spencer Quarries and DOT as follows:

A. Special damages for Austin's past healthcare expenses in excess of \$780,000, future

healthcare expenses in an amount to be determined, past and future lost earnings

and earning capacity, past and future loss due to required modifications to dwellings

and vehicles, past and future loss for specialized beds and other remedial equipment

to assist him in his activities of daily living, and other special damages to be

determined at trial:

B. General damages suffered by Austin in an amount to be determined at trial;

C. Pre-judgment and post-judgment interest as allowed by law:

D. Plaintiff's costs and disbursements: and

E. Such other relief as the court deems just and proper.

Dated this 27th day of January, 2020.

/s/ Michael F. Marlow

Michael F. Marlow

Christopher N. Leon

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Attorneys for Plaintiff

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APP. 082

CERTIFICATE OF SERVICE

This is to certify that on the 27th day of January, 2020, a true and correct copy of the foregoing *First Amended Complaint* was served via Odyssey on the following individual:

Steve Oberg
Lynn, Jackson, Shultz & Lebrun, P.C.
110 N. Minnesota Avenue
Suite 400
Sioux Falls, SD 57104
Soberg@lynnjackson.com

/s/ Michael F. Marlow
Michael F. Marlow

STATE OF SOUTH DAKOTA	4
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IN CIRCUIT COURT

:§

COUNTY OF BRULE

FIRST JUDICIAL CIRCUIT

AUSTIN MCGEE,

Plaintiff,

07CIV18-000054

VS.

SPENCER QUARRIES, INC., a South Dakota Corporation; SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; JAY PEPPEL, as an employee of the South Dakota Department of Transportation; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation

PLAINTIFF'S BRIEF IN RESPONSE TO DEFENDANTS' MOTION TO DISMISS

Defendants.

Plaintiff, by and through his attorneys of record, hereby submits the following Brief in Response to Defendants' South Dakota Department of Transportation, Jay Peppel, Kent Gates, and Kris Royalty Motion to Dismiss.

Background

This case arises from a one-vehicle crash that occurred on June 30, 2018. In 2018, the DOT contracted with Spencer Quarries to resurface South Dakota Highway 45 between Platte, South Dakota and Interstate 90 ("Project"). First Am. Compl., ¶ 10. Defendants, Jay Peppel, Kent Gates, and Kris Royalty were DOT's employees, who inspected and oversaw Defendant Spencer Quarries' work on the Project. See Id. at ¶¶ 3-5.

During construction on June 29, 2018, Spencer Quarries applied an asphalt emulsion, tack coat, to the roadway. See Id. at ¶ 13. Spencer Quarries did not pave over the tack coat and left it exposed for multiple days. Id. Specifications controlling the construction process required the tack

coat to be covered the same day absent DOT allowance or order. DOT and its employees did not knowingly order or allow Spencer Quarries to leave the tack coat exposed and did not require Spencer Quarries to address dangers presented by the exposed tack coat. *Id.* at ¶¶ 14, 35-36.

The following morning, Austin McGee and his brother, Brent, were driving north on Highway 45 and encountered the exposed tack coat. See Id. at ¶¶43—49. Austin's truck lost traction on the tack coat, left the road to the west, and rolled. Id. at ¶¶ 50-53. Austin suffered severe injuries, including permanent paraplegia. Id.

Austin sent the required 180-day notice of claim to the State of South Dakota on September 12, 2018 and filed a complaint against Spencer Quarries alleging negligence on October 2, 2018. See Pl.'s Compl. After conducting discovery, Austin filed his First Amended Complaint, adding claims against DOT and its employees based on breaches of DOT's specifications and policies. See First Am. Compl. Contemporaneously with his First Amended Complaint, Austin served discovery requests on the state Defendants. State Defendants filed an answer, a motion to dismiss, and a motion to stay discovery pending this motion's outcome.

Standard of Review

A motion to dismiss under SDCL 15-6-12(b) should rarely be granted. "A motion to dismiss under SDCL 15-6-12(b) tests the legal sufficiency of the pleading, not the facts which support it." N. Am. Truck & Trailer, Inc. v. M.C.I. Commc'n Servs., Inc., 2008 S.D. 45, ¶ 6, 751 N.W.2d 710, 712. The Court must "accept the material allegations as true and construe them in a light most favorable to the pleader to determine whether the allegations allow relief." Total Auctions & Real Estate, LLC v. S. Dakota Dep't of Revenue & Regulation, 2016 S.D. 95, ¶ 8, 888 N.W.2d 577, 580. Because such motions deprive a plaintiff of trial, "The motions are viewed with disfavor and seldom prevail." N. Am. Truck & Trailer, Inc., 2008 S.D. 45, ¶ 6, 751 N.W.2d at 712

(quoting Nygaard v. Sioux Valley Hosp. & Health Sys., 2007 S.D. 34, ¶ 9, 731 N.W.2d 184, 190) (citation omitted). "[D]ismissal under Rule 12(b)(5) is appropriate" only "where the allegations show on the face of the complaint there is some insuperable bar to relief." Total Auctions & Real Estate, LLC, 2016 S.D. 95, ¶ 8, 888 N.W.2d at 580-81 (quoting Sisney v. State, 2008 S.D. 71, ¶ 8, 754 N.W.2d 639, 643.).

Argument

The Court should deny Defendant's motion to dismiss for three reasons. First, the PEPL coverage document does not exclude Austin's claims. Second, Austin's First Amended Complaint sufficiently alleges that the Defendant state employees breached ministerial duties. Therefore, they are not entitled to sovereign immunity. And third, Austin's First Amended Complaint alleging tort claims against the state's employees is not barred by SDCL 21-32-2. That statute applies to the administrative process in SDCL 21-32 for claims against the state—not its employees—for which the state has not appropriated funds. The legislature has waived sovereign immunity and appropriated funds for tort claims against its employees; thus, SDCL 21-32 and its one-year statute is inapplicable. The applicable statute of limitations is three years. See SDCL § 15-2-14(3).

I. Austin's First Amended Complaint alleges the DOT's employees were performing ministerial tasks, which the PEPL coverage document does not exclude. Therefore, the Defendant employees are not entitled to sovereign immunity.

The Defendant employees had ministerial duties based on specific DOT policies; thus, they are not entitled to sovereign immunity. "Whether a state employee who is sued in an individual capacity is entitled to immunity depends on the function performed by the employee. State employees are immune from suit when they perform discretionary functions, but not when they perform ministerial functions." Wulf v. Senst, 2003 S.D. 105, ¶ 20, 669 N.W.2d 135,142 (citing Casazza v. State, 2000 S.D. 120, ¶11, 616 N.W.2d 872, 875; and Kruger v. Wilson, 325 N.W.2d

851 (S.D. 1982)). Defendants rely on *Hansen* and *Truman* and conclude their duties were discretionary. Defendants ignored *Wulf v. Senst*, however, where the South Dakota Supreme Court found specific DOT policies established ministerial duties for the DOT's employees. Our case is like *Wulf*, and it applies here. In his First Amended Complaint, Austin alleged Defendant employees breached specific DOT policies that, like the policy in *Wulf*, formed ministerial duties. Moreover, the PEPL coverage documents do not exclude a state employee's negligence while performing ministerial acts as alleged in Austin's First Amended Complaint.

A. The Legislature incorporated a statutory schema waiving state sovereign immunity for ministerial duties.

The state enjoys sovereign immunity, but the Legislature may waive it. The Legislature waived the state's sovereign immunity for tort claims that 1) arise from a state actor's ministerial acts and 2) are covered by the PEPL coverage document. "Sovereign immunity is the right of public entities to be free from liability of tort claims unless waived by legislative enactments." *Maher v. City of Box Elder,* 2019 S.D. 15, ¶8, 925 N.W.2d 482, 484-85 (citations omitted). The South Dakota Constitution states, "The Legislature shall direct by law in what manner and in what courts suits may be brought against the state." S.D. Const. art. III, § 27. Specifically, "The State may... waive sovereign immunity by legislative enactment identifying the conditions under which lawsuits of a specific type would be permitted." *Halberg v. S. Dakota Bd. of Regents*, 2019 S.D. 67, ¶12, 937 N.W.2d 568, 573 (*quoting Wilson v. Hogan*, 473 N.W.2d 492, 494 (S.D. 1991)).

Acting under its constitutional authority, the Legislature waived sovereign immunity for public entities and their employees to the extent they participate in a risk sharing pool or purchase insurance. See SDCL § 21-32A. The waiver states,

Except insofar as a public entity, including the state, participates in a risk sharing pool or insurance is purchased pursuant to § 21-32A-

1, any employee, officer, or agent of the public entity, including the state, while acting within the scope of his employment or agency, whether such acts are ministerial or discretionary, is immune from suit or liability for damages brought against him in either his individual or official capacity.

SDCL § 21-32A-2. SDCL 21-32A-1 states in part, "The waiver contained in . . . § 21-32A-2 and 21-32A-3 is subject to the provisions of § 3-22-17." And SDCL 3-22-17 states,

Pursuant to S.D. Const., Art. III, § 27, suits against the state are authorized only for a covered claim to the extent coverage is provided in the coverage document. Nothing in this chapter may be construed to otherwise waive or abrogate any immunity or defense available to any state entity or employee.

A covered claim is "a claim or civil action arising in tort from the operation of a motor vehicle, a ministerial act, or another act for which coverage is provided under the PEPL coverage document." SDCL § 3-22-2(3). Thus, under this scheme, the Legislature waived sovereign immunity for tort claims that 1) arise from a state employee's ministerial acts and 2) are covered by the PEPL coverage document. The PEPL document cover state employees for negligence in performing ministerial duties. See Defs.' Brief at p. 21 (Exhibit A, Coverage Description.).

Defendants incorrectly claim the PEPL documents exclude Austin's claims. Defendant cites to the PEPL documents, which exclude liability "[a]rising from or contributed to in any manner by acts, errors, or omissions in the engineering or design of any public roadway or public transportation project." *Id.* at p.22 (Section E., Exclusions, ¶ 10). Defendants cite the First Amended Complaint and state, "The DOT and its employees have not waived sovereign immunity with regards to the design, engineering, construction, and maintenance of its highways" *Id.* at p.5. The words "construction and maintenance" do not appear in the PEPL documents. Instead, they appear in two cases Defendants cited, *Wilson v. Hogan*, 473 N.W.2d 492 (S.D. 1991) and *High-Grade Oil Co. v. Sommer*, 295 N.W.2d 736 (S.D. 1980). Neither case, however, discussed

PEPL's exclusions or coverage. In fact, *High-Grade Oil Co.* was decided before the Legislature passed PEPL (SDCL 3-22) and the waiver of immunity at SDCL 21-32A. Similarly, *Wilson* did not discuss either statute. Despite Defendants assertion, PEPL's coverage document does not exclude "construction or maintenance" and covers liabilities for state employees' negligence arising from ministerial tasks. *See* Defs.' Brief at p.22 (Section E., Exclusions, ¶ 10) and p.21 (Memorandum of Liability Coverage).

The PEPL's exclusion language does not preclude Austin's claims. Austin does not allege DOT or its employees negligently designed or engineered the crash site. He alleges DOT's employees failed to follow DOT's specifications and execute ministerial duties, including duties to inspect, notify the contractor, and maintain the project after discovering safety issues. For example, the First Amended Complaint states, "Kent Gates, as the DOT's Project Engineer, owed Plaintiff ministerial duties, including but not limited to Section 5.15 of the Standard Specifications, which required Kent Gates to notify Spencer Quarties of its noncompliance with Section 4.5." Pl.'s First Am. Comp., ¶ 68. DOT specifications required state employees to inspect signage to confirm compliance with the Plans and Specification; required signs were not placed at the crash site. *Id.* at ¶¶ 39-42.

Austin alleged state employees owed ministerial duties based on specific, identifiable policies. PEPL covers a state employee's negligence in performing ministerial tasks. See e.g. Defs.' Brief at p.23 (PEPL coverage document excluding coverage "For damages that are a result of a discretionary act or task. This exclusion does not apply if the damages are the result of a ministerial act or task." (emphasis added)). Thus, the exclusion Defendant cites is inapplicable.

B. DOT's Employees were performing ministerial tasks and, therefore, are not entitled to sovereign immunity.

Here, DOT's employees were performing ministerial tasks. DOT promulgated specifications and policies that directed its employees' conduct and created ministerial duties. As Defendant noted, whether a state employee's actions are discretionary or ministerial depends on a factor-based analysis. The South Dakota Supreme Court has stated,

[A] ministerial act is defined as absolute, certain, and imperative, involving merely the execution of a specific duty arising from fixed designated facts or the execution of a set task imposed by law prescribing and defining the time, mode and occasion of its performance with such certainty that nothing remains for judgment or discretion, being a simple, definite duty arising under and because of stated conditions and imposed by law. A ministerial act envisions direct adherence to a governing rule or standard with a compulsory result. It is performed in a prescribed manner without the exercise of judgment or discretion as to the propriety of the action.

Truman v. Griese, 2009 S.D. 8, ¶ 21, 762 N.W.2d 75, 80–81 (quoting Hansen v. South Dakota Dept. of Transp., 1998 S.D. 109, ¶ 23, 584 N.W.2d 881, 886) (emphasis in original). Pertinently, "In order to find a duty 'ministerial,' one must find a 'governing rule or standard' so clear and specific that it directs the government actor without calling upon the actor to ascertain how and when to implement that rule or standard." Truman, 2009 S.D. 8, ¶ 22, 762 N.W.2d at 81.

Defendant relies on *Hansen v. SDDOT* and *Truman v. Griese* but ignores *Wulf v. Senst*, which is most applicable and controlling here.

In Hansen v. SDDOT, the South Dakota Supreme Court affirmed the lower court's dismissal based on sovereign immunity. There, plaintiff was driving south on I-29 when she hit a pothole and was injured. Hansen, 1998 S.D. 109, ¶ 2, 584 N.W.2d at 882. "[A] construction crew created the hole by cutting completely through the bridge to remove concrete and rebar. Only the rebar was replaced[,] and the hole was left unmarked and unguarded." Id., 1998 S.D. 109, ¶ 3.

Almost three years later, Hansen sued DOT, "Howard [Secretary of DOT], and [the Transportation] Commission" and "alleged the defendants breached a statutory duty to protect motorists from accident and injury by failing to erect signs and guards to warn of the defect in the road." *Id.*, 1998 S.D. 109, ¶ 4, 584 N.W.2d at 882-83. Notably, Hansen did not sue state employees who had ministerial duties regarding safety warning. Defendants moved to dismiss, and the trial court granted dismissal finding "that all of [defendants'] duties are discretionary and therefore protected by sovereign immunity." *Id.*, 1998 S.D. 109, ¶ 5.

The Supreme Court affirmed because the defendants' duties were discretionary. Hansen alleged defendants owed her ministerial duties based on SDCL 31-32-10, 31-5-1, and 31-28-6. See Id., 1998 S.D. 109, ¶ 2, 584 N.W.2d at 885. SDCL 3-32-10 requires the "governing body responsible for the maintenance of such highway, culvert, or bridge" to "erect guards" over "defects" arising from "flood, fire, or other cause" that endanger the "safety of public travel" within 48 hours of receiving notice. SDCL 31-32-10. The Supreme Court concluded the statute was not specific enough; it stated, "SDCL 31-32-10 does not establish a 'hard and fast rule as to course of conduct that' Howard must take with regard to the facts of this case." Id., 1998 S.D. 109, ¶ 28, 584 N.W.2d at 887. And, "Other cause' hardly defines a 'set task imposed by a law prescribing and defining the time, mode, and occasion of its performance with such certainty that nothing remains for judgment or discretion." Id., 1998 S.D. 109, ¶ 27, 584 N.W.2d at 887 (quoting 57 Am. Jur. 2d Municipal, County, School & State Tort Liability § 120, at 132). The statute did not mandate certain conduct; thus, it created a discretionary duty.

The Supreme Court held SDCL 31-5-1 also created a discretionary duty. SDCL 31-5-1 states in part, "The department of transportation shall maintain, and keep in repair all highways or portions of highway, including the bridges and culverts thereon" Analyzing this statute, the

Court said, "We fail to see how this statute provides a readily ascertainable standard by which the action of [Howard] may be measured" Id., 1998 S.D. 109, ¶ 29 (emphasis in original). "When applied to a position that supervises hundreds of employees and thousands of miles of highways, it certainly calls for discretion, judgment, or skill." Id. Again, the statute was not specific enough to create a ministerial duty.

Finally, the Court considered SDCL 31-28-6 and determined it also created a discretionary duty. The statute requires state authorities to erect signs in conformity with "standard uniform traffic control practices." SDCL 31-28-6. The Court noted, "(a) traffic control device is not 'discretionary' if it is mandated by the MUTCD." *Id.*, 1998 S.D. 109, ¶ 31, 584 N.W.2d at 888 (quoting Patton v. City of Cleveland, 95 Ohio App.3d 21, 641 N.E.2d 1126, 1130 (Ohio Ct. App. 1994)). Plaintiff, however, "fail[ed] to point to a specific governing provision from MUTCD in support of the specific duty it purports to lay upon Howard." *Id.* Thus, Hansen did not establish a ministerial duty on behalf of the employee charged with performance of that duty.

Likewise, in *Truman*, the South Dakota Supreme Court affirmed summary judgment for the state defendants based on sovereign immunity. There, the plaintiffs crashed into another auto at a unique highway intersection. *See Truman*, 2009 S.D. 8, ¶¶ 2-6, 762 N.W.2d at 77. The plaintiff sued DOT's Pierre Region Traffic Engineer, Darren Griese, and other state employees "alleg[ing] Griese violated duties imposed by SDCL 31-28-6 by failing to post additional traffic control signs at [the intersection]." *Id.*, 2009 S.D. 8, ¶ 7, 762 N.W.2d at 78. The trial court granted Griese's

¹ SDCL 31-28-6 states, "The public board or officer whose duty it is to repair or maintain any public highway shall erect and maintain at points in conformity with standard uniform traffic control practices on each side of any sharp turn, blind crossing, or other point of danger on such highway, except railway crossings marked as required in § 31-28-7, a substantial and conspicuous warning sign, which sign shall be on the right-hand side of the highway approaching such point of danger. A violation of this section is a Class 1 misdemeanor."

motion for summary judgment based on sovereign immunity, and plaintiff appealed. See Id., 2009 S.D. 8, ¶ 8.

The Supreme Court affirmed and concluded that SDCL 31-28-6 imposed discretionary duties. Interpreting the statute, the Court stated, "[A]ny ministerial duties pertaining to the placement of traffic control signs under this statute must be required by standard uniform traffic control practices." *Id.*, 2009 S.D. 8, ¶ 25, 762 N.W.2d at 81. The intersection, however, was a "non-standard design." *Id.*, 2009 S.D. 8, ¶ 30, 762 N.W.2d at 83. Thus, plaintiff was "unable to establish standard uniform traffic control practices regarding the placement of warning signs," and "[w]ithout standard uniform traffic control practices, the placement or omission of signs by government actors is discretionary under SDCL 31-28-6." *Id.* Without a definite, "governing rule or standard with a compulsory result," the state's duty to erect signs under SDCL 31-28-6 was discretionary. *Id.*, 2009 S.D. 8, ¶ 21, 762 N.W.2d at 80-81 (quoting Hansen, 1998 S.D. 109, ¶ 23, 584 N.W.2d at 886).

Both cases reached similar holdings. *Hansen*'s holding is that the statutes, SDCL 31-32-10, 31-5-1, and 31-28-6 created discretionary duties because they did not "defin[e] the time, mode and occasion of its performance with such certainty that nothing remains for judgment or discretion" *Hansen*, 1998 S.D. 109, ¶23, 584 N.W.2d at 886 (*quoting* 57 Am. Jur.2d *Municipal, County, School & State Tort Liability* § 120, at 132-33 (1988)). *Truman* held there was no standard uniform traffic control practice dictating how the state employees should have signed the non-standard intersection; thus, the duty to sign it (under SDCL 31-28-6) was discretionary.

In contrast, in *Wulf v. Senst*, the Supreme Court reversed summary judgment for the DOT's employees and held they breached ministerial duties based on specific DOT policies, not general statutes. The appeal involved two underlying cases. The Wulf plaintiffs lost control on an icy state

highway, crossed the center line, and hit the Westohal plaintiffs' vehicle. See Wulf v. Senst, 2003 S.D. 105, ¶ 2, 669 N.W.2d 135, 137-38. DOT, which was responsible for maintaining the road, contracted with a landscaping company to maintain the highway. DOT's employees, a maintenance supervisor and the area engineer, "were responsible for insuring [sic] that Highway 42... was safe for travel." Id., 2003 S.D. 105, ¶4, 669 N.W.2d at 138.

Two days before the crash, a winter storm struck the area near Highway 42. "The storm began in the early morning hours with rain that changed to snow as the temperature dropped nearly 30 degrees within four hours." *Id.*, 2003 S.D. 105, ¶5, 669 N.W.2d at 138. DOT and the contractor treated the road. However, "[t]he next day, January 20, temperatures were near zero," and "the sand/salt mixtures and truck scrapers . . . had limited effect." *Id.*, 2003 S.D. 105, ¶6, 669 N.W.2d at 138. Accordingly, "At approximately 8:00 p.m. on January 20, [defendants] decided to stop sanding and deicing efforts on Highway 42 and start again at 8:00 a.m. on January 21." *Id.*, 2003 S.D. ¶7, 669 N.W.2d at 138. The crash occurred at 7:30 am "one-half hour prior to the scheduled 8:00 a.m. start time." *Id.*, 2003 S.D. 105, ¶13, 669 N.W.2d at 140.

When defendants decided to start sanding at 8:00 am, they breached a specific DOT policy. DOT's Policy 2531 required its employees begin sanding at 5:00 a.m. "It [was] this DOT policy which establish[ed] [defendants'] responsibilities" *Id.*, 2003 S.D. 105, ¶12, 669 N.W.2d at 139. After plaintiffs filed suit, the lower court granted the DOT employees' motions for summary judgment and held they were immune because their duties were discretionary.

On appeal, the South Dakota Supreme Court reversed finding DOT's Policy 2531 established a ministerial duty. The court stated, "[A] ministerial act is the simple carrying out of a policy already established . . . so that permitting state employees to be held liable for negligence in the performance of merely ministerial duties within the scope of their authority does not

Ritter v Johnson, 465 N.W.2d 196, 198 (S.D. 1991)). The Court examined Hansen, noting that case "held that highway repair is generally considered to be ministerial in nature" Wulf, 2003 S.D. 105, ¶23, 669 N.W.2d at 144 (citing Hansen, 1998 S.D. 109, ¶23, 584 N.W.2d at 886). The Court stated, "DOT Policy 2531 imposes a requirement to use specified sand/salt/chemical mixtures and to continue sanding operations from 5:00 am until 7:00 pm unless 1) the traffic is moving safely or 2) conditions become too hazardous to continue operations." Wulf, 2003 S.D. 105, ¶31, 669 N.W.2d at 146. The Court stated, "[DOT's employees] were obligated to follow DOT Policy 2531 unless one of the exceptions was present." Id., 2003 S.D. 105, ¶32, 669 N.W.2d at 146. The Court concluded, "While [DOT's employees] had discretion to determine such things as how many workers to call in for a storm, how many snowplows to put on the road, ... they do not have discretion to ignore the standards or policies established by DOT." Id. (emphasis added). The state defendants were not entitled to sovereign immunity because DOT's Policy specified conduct and created a ministerial duty.

Our case is like Wulf, and Hansen and Truman are distinguishable. Both Hansen and Truman found general state statutes did not create mandatory duties; thus, sovereign immunity barred the claims against state employees based on those statutes. The statutes created duties, but the execution of those duties was up to the state actor's discretion. Wulf, on the other hand, found that a specific DOT policy created a mandatory duty because it specified how to execute the duty. See Wulf, 2003 S.D. 105, ¶31, 669 N.W.2d at 146. (the Policy specified "sand/salt/chemical mixtures and to continue sanding operations from 5:00 am until 7:00 pm unless 1) the traffic is moving safely or 2) conditions become too hazardous to continue operations.").

Here, unlike *Hansen* and *Truman*, Austin did not allege a general statute created a ministerial duty that Defendants breached. *See* First Am. Compl. Rather, just like *Wulf*, Austin alleged specific DOT specifications that created ministerial duties for the Defendants. *See e.g. Id.* at ¶¶ 31, 42. For example, DOT's Standard Specification 4.5 required Spencer Quarries to "keep the portion of the project used by public traffic in a condition that will adequately and safely accommodate traffic." *See Id.* at ¶ 29. Standard Specification 5.15 required DOT employees to inspect and ensure Spencer Quarries followed Specification 4.5, and if Spencer Quarries did not follow the Specification, then DOT employees were obligated to remedy the hazard. *Id.* at ¶31. Spencer Quarries left tack coat exposed, which breached Specification 4.5. As a result, Kent Gates was obligated to notify Spencer Quarries of its noncompliance and remediate it. *Id.*

Other specification created additional, specific ministerial duties. Both the project's plans and the MUTCD, incorporated by the Standard Specifications, required Spencer Quarries to place a Fresh Oil sign at the crash site. See First Am. Compl. at ¶¶ 37–41. Spencer Quarries did not post the required Fresh Oil sign warning drivers of the exposed tack coat and thereby breached Standard Specification 5.14. Id. DOT's employees had ministerial duties under Standard Specification 5.15 to inspect and remediate Spencer Quarries' nonconformance. Id. at ¶ 42.

Spencer Quarries improperly performed work by over spraying tack coat, driving over the tack coat, and redepositing it on the road, which violated the Standard Specifications *Id.* at ¶¶ 16, 30, and 56. Spencer Quarries applied more tack than they could pave over and improperly performed the work. *See* First Am. Compl. at ¶¶ 30, 38. The state employees had the ministerial duty to inspect the tack coat application for compliance with the specifications and ensure Spencer Quarries followed the traffic control plan. *Id.* at ¶¶ 29-42.

In sum, Austin sufficiently alleged DOT specifications that created ministerial duties on behalf of Defendant employees, just as in *Wulf*. Thus, "accept[ing] the material allegations as true and constru[ing] them in a light most favorable to the pleader," dismissal is inappropriate. *Total Auctions & Real Estate, LLC v. S. Dakota Dep't of Revenue & Regulation*, 2016 S.D. 95, ¶ 8, 888 N.W.2d 577, 580.

II. The statute of limitations that Defendant cited is inapplicable, and the threeyear statute of limitations applies.

Defendants cite to SDCL 21-32-2, which states, "Action on any claim on contract or tort against the state shall be commenced within one year after same has arisen." Then, Defendants conclude Austin's action against the state employees was untimely. The statute Defendants cited, however, is part of an administrative process for claims against the state for which the state did not appropriate funds. Austin's claims are not subject to this statutory process because the state waived immunity for tort claims arising from its employees' ministerial acts, appropriated funds for such claims, and consented to suit on such claims. As the Supreme Court noted, "When sovereign immunity is waived, . . . the public entity may be sued in the same manner as a private individual for injuries caused by the public entity's negligence to the extent the public entity participates in a risk sharing pool or purchases liability insurance." Maher v. City of Box Elder, 2019 S.D. 15, ¶ 8, 925 N.W.2d 482, 485 (emphasis added). SDCL Chapter 21-32 is inapplicable, and the three-year statute of limitations for personal injury claims applies.

SDCL Chapter 21-32 is a statutory scheme that predates the PEPL fund and addresses claims against the state for which the Legislature has not appropriated funds. Interpreting this chapter, the South Dakota Supreme Court stated, "Chapter 21-32 sets up an administrative procedure for consideration of claims against the state in cases where no appropriation exists for such claims. SDCL 21-32-3." Arcon Const. Co. v. S. Dakota Cement Plant, 349 N.W.2d 407, 412

(S.D. 1984). Furthermore, "If an administrative commission finds the claim to be meritorious, then the legislature can appropriate funds to settle the claim, as long as the claim was brought within one year." *Id.* (citing SDCL 21-32-7; 21-32-2.).

Claims outside the administrative process in SDCL Chapter 21-32 are not subject to its procedural requirements. For example, in *Arcon Const. Co. v. S. Dakota Cement Plant*, the South Dakota Supreme Court held that the four-year statute of limitations, not the one-year statute in SDCL 21-32-2, applied to a contract claim against a state entity. There, Arcon contracted with the state cement plant for cement for two projects. *Arcon Const. Co.*, 349 N.W.2d at 409. "Both contracts called for the delivery of cement during construction year 1978." *Id.* The cement plant failed to deliver, however, and "Arcon was not able to work on the projects" *Id.* Arcon sued the cement plant "on April 17, 1980," approximately two years after the breach. *Id.* The cement plant counterclaimed; the parties tried the case; and the jury awarded Arcon "\$1,175,974." *Id.*

The parties appealed, and one issue was whether the statute of limitations barred Arcon's suit. Cement plant argued SDCL 21-32-2's one-year statute applied. The South Dakota Supreme Court rejected this argument. The Court stated, "[W]hen the legislature enacted the UCC it expressly waived sovereign immunity for the cement plant whenever the cement plant enters into contracts for the sale of goods." *Id.*, 349 N.W.2d at 410. Arcon's claims were not subject to SDCL 21-32 because the cement plant waived its immunity and operated under the UCC. The Court stated, "[T]his case involves the sale of goods, a subject dealt with under the provisions of the UCC. Therefore, one must look to the UCC to find an appropriate statute of limitations." *Id.*

Similarly, in our case, Austin's claims are not subject to SDCL 21-32 because the state waived its immunity and appropriated funds for claims like his by funding the PEPL. Austin's claim is a tort claim against state employees based on breaches of ministerial duties. The state

waived immunity for such claims to the extent of its participation in a risk sharing pool. SDCL 21-32A-2 states

Except insofar as a public entity, including the state, participates in a risk sharing pool or insurance is purchased pursuant to § 21-32A-1, any employee, officer, or agent of the public entity, including the state, while acting within the scope of his employment or agency, whether such acts are ministerial or discretionary, is immune from suit or liability for damages brought against him in either his individual or official capacity.

SDCL § 21-32A-2. SDCL § 21-32A-1 states, "The waiver contained in . . . § § 21-32A-2 . . . is subject to the provisions of § 3-22-17." SDCL § 3-22-17 states, "[S]uits against the state are authorized only for a covered claim to the extent coverage is provided in the coverage document." Covered claims are defined as "a claim or civil action arising in tort from the operation of a motor vehicle, a ministerial act, or another act for which coverage is provided under the PEPL coverage document." SDCL § 3-22-2. PEPL provides \$1,000,000 in coverage for tort claims arising from state employees' breaches of ministerial duties. See Def.'s Brief at p.20 (Appendix A, Declarations page).

In sum, Austin's case is outside the administrative process in Chapter 21-32; thus, its statute of limitations is inapplicable. Chapter 21-32 applies only to claims against the state for which the state has not appropriated funds. Here, the state waived immunity for suits against its employees based on ministerial duties to the extent of its participation in PEPL; it appropriated funds to PEPL to pay "covered claims," including those against state employees "arising in tort form . . . a ministerial act" SDCL § 3-22-1; 3-22-2; 3-22-12 (establishing PEPL). And it consented to suit on such claims under SDCL 3-22-17. Therefore, SDCL 21-32's administrative process is inapplicable. Just as in *Arcon Const. Co.*, where the cement plant waived its immunity and consented to the UCC and its statute of limitations, here the state consented to suit as if it were

a private individual. See Maher, 2019 S.D. 15, ¶ 8, 925 N.W.2d at 485. The applicable statute of limitations is three years, and Austin's claims against the state's employees are timely. See SDCL § 15-2-14(3).

Historically, this interpretation makes sense. SDCL 21-32-1; 21-32-2; and 21-32-3 were passed in 1947. Since 1947, the legislature waived immunity for certain tort claims against state employees. Thus, it passed the sovereign immunity waiver at SDCL 21-32A-2 in 1986 and established the PEPL fund in 1987. See SDCL 3-22-1. Before the state passed the waiver at SDCL 21-32A-2, it enjoyed sovereign immunity, and the only way to bring claims was through the administrative process in Chapter 21-32 and within its one-year time limit. After the legislature waived immunity for certain claims (as discussed above) and insured its new-found liability with the PEPL fund, it consented to suit in the same manner as a private individual. Maher v, 2019 S.D. 15, ¶ 8, 925 N.W.2d at 485 ("When sovereign immunity is waived, . . . the public entity may be sued in the same manner as a private individual for injuries caused by the public entity's negligence to the extent the public entity participates in a risk sharing pool or purchases liability insurance.") (emphasis added). In Arcon, the state waived the cement plant's immunity, and it was, therefore, subject to the UCC's statue of limitations. Similarly, here, the legislature waived immunity for claims like Austin's—i.e. a state employee's negligence based on a ministerial act. Thus, the three-year statue applies.

Finally, by its own language, SDCL 21-32 applies only to claims against the "state" for which no appropriation exists and not claims against the state's employees. The Legislature could have included claims against state employees in SDCL ch. 21-32 but did not. Instead, the Legislature provided a remedy for claims against such employees as specified at SDCL ch. 21-32A and SDCL ch. 3-22 (establishing PEPL). SDCL 3-22-2 separately defines "employee" and

"state entity." The definition of "State Entity" does not include employees, which suggests an intent to preserve claims against individuals. Thus, even if the court determines SDCL 21-32-2 applies to this PEPL fund claim, the one-year statue applies only to the state, not its employees.

Conclusion

The Court should deny Defendants' Motion to Dismiss for three reasons. First, the PEPL exclusion Defendants cite to is inapplicable. Second, Austin sufficiently alleged that Defendants' employees breached ministerial duties based on specific DOT specifications. Austin did not allege duties based on general statutes, like in *Hansen* and *Truman*. Instead, Austin cited specific DOT specifications, just like the plaintiffs in *Wulf*. Thus, Defendants are not entitled to sovereign immunity.

Third, the one-year statute of limitations in SDCL 21-32-2 is inapplicable. It applies to an administrative process for claims against the state for which the state has not appropriated funds. Here, the state waived immunity for tort claims against state employees arising from ministerial acts, appropriated funds for such claims, and authorized suits on such claims. Moreover, SDCL 21-32 predates the legislature's waiver and establishment of PEPL and applies to unfunded claims against the state, not its employees. Thus, the applicable statute of limitations is three years, and Austin's claims against the state's employees are timely. See SDCL § 15-2-14(3).

Defendants have not shown "an insuperable bar to relief" that would entitle them to dismissal; thus, this Court should deny their motion. *Hernandez*, 2016 S.D. 68, ¶ 15, 886 N.W.2d at 345.

Dated this 4th day of June 2020.

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CERTIFICATE OF SERVICE

This is to certify that on the 4th day of June 2020, a true and correct copy of the foregoing *Plaintiff's Brief in Response to Defendants' Motion to Dismiss* was served via email upon the following named attorneys:

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OF THE STATE OF SOUTH DAKOTA

APPEAL NO. 29901

AUSTIN McGEE,

Plaintiff and Appellee,

VS.

SPENCER QUARRIES, INC., a South Dakota corporation,

Defendant,

and

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation,

Defendants and Appellants.

APPEAL FROM THE FIRST JUDICIAL CIRCUIT BRULE COUNTY, SOUTH DAKOTA

THE HONORABLE BRUCE V. ANDERSON CIRCUIT COURT JUDGE

BRIEF OF APPELLEE AUSTIN McGEE

granted on March 17, 2022

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PRELIMINARY STATEMENT

There are two separately paginated records in this single case. The first includes pages 1 through 5413 of the chronological index. Citations to these pages are designated in this brief with "R." and the page number. Beginning with the next chronological filing, the page numbers reset and the final 679 pages of the record are numbered 1 through 679. Citations to these pages are designated with "R2." and the page number. Citations to the Appendix to this brief are designated as "App." and the page number. The transcripts of the summary judgment hearing and other proceedings held before the circuit court are included and paginated within the record and are cited as "R." or "R2." and the page number.

JURISDICTIONAL STATEMENT

Appellee agrees that this Court has jurisdiction over this discretionary appeal under SDCL 15-26A-3(6). (R2. 675-76).

REQUEST FOR ORAL ARGUMENT

Appellee respectfully requests the privilege of appearing for oral argument before this Honorable Court.

STATEMENT OF THE ISSUES

I. Do state employees, including SDDOT employees, owe common law and statutory duties of care that may subject them to individual liability for negligently performed ministerial acts?

The lower court held they do.

- Kyllo v. Panzer, 535 N.W.2d 896 (S.D. 1995)
- Smith v. Greek, 328 N.W.2d 261 (S.D. 1982)
- State v. Ruth, 68 N.W. 189, 190 (S.D. 1896)
- II. Does third-party beneficiary law bar McGee's negligence claims for violation of ministerial duties?

The lower held it does not.

- Sisney v. State, 2008 S.D. 71, 754 N.W.2d 639
- Knecht v. Evridge, 2020 S.D. 9, 940 N.W.2d 318
- SDCL 53-2-6
- III. For purposes of the asserted defense of sovereign immunity, did the mandatory policies adopted by the SDDOT in its Standard Specifications, as well as the MUTCD and other industry standards, establish ministerial or discretionary duties under the particular facts of this case?

Applying this Court's case law, including the traditional Restatement factors, the lower court held the duties in question were ministerial in nature and therefore not protected by sovereign immunity.

- Wulf v. Senst, 2003 S.D. 105, 669 N.W.2d 135
- King v. Landguth, 2007 S.D. 2, 726 N.W.2d 603
- Truman v. Griese, 2009 S.D. 8, 762 N.W.2d 75
- Sioux Falls Const. Co. v. City of Sioux Falls, 297 N.W.2d 454 (S.D. 1980)

STATEMENT OF THE CASE

Saturday morning, June 30, 2018, while driving north on Highway 45, Austin McGee suddenly and unknowingly came upon a long section of slippery tack coat that had been left on the road exposed to the traveling public. He lost control of his pickup and suffered serious injuries including permanent paraplegia. McGee's injuries were caused by the failure of South Dakota Department of Transportation employees to follow their ministerial duties when they "ignore[d] the standards or policies established by DOT." Wulf v. Senst, 2003 S.D. 105, ¶ 32, 669 N.W.2d 135, 147.

On October 2, 2018, McGee filed his original complaint in Brule County Circuit Court, First Judicial Circuit, bringing a negligence claim against Spencer Quarries, Inc., the contractor hired by the State for this highway resurfacing project. (R. 2). In its answer, Spencer Quarries averred that it "followed, conformed to, and complied with the design, specifications and requirements of the State Department of Transportation in regard to the application of tack coat, as observed, inspected, and approved by Department engineers and inspectors." (R. 13). Spencer Quarries admitted that "no specific warning of any allegedly slick condition was given" and "that no reduced speed sign existed[.]" (R. 13).

¹ McGee settled his claims against Spencer Quarries. (R2. 606). SDDOT objected to the stipulation of dismissal and moved to file a crossclaim against Spencer Quarries for indemnification of any judgment. (R2. 461-67, 608).

On January 27, 2020, McGee filed his first amended complaint, alleging negligence claims against the SDDOT and three individual employees, including Kent Gates and Kris Royalty. (R. 297). Their answer asserted the affirmative defense of sovereign immunity. (R. 318).

Motion to Dismiss

On May 5, 2020, defendants brought a motion to dismiss. (R. 541). SDDOT contended that it was protected by sovereign immunity because its employees "were performing discretionary functions in their work on the project." (R, 547). SDDOT invoked this Court's seven-factor test for distinguishing ministerial from discretionary duties from the Restatement (Second) of Torts applied in cases such as *King v. Landguth*, 2007 S.D. 2, 726 N.W.2d 603. (R. 548-49).

McGee responded that the employees had ministerial duties based on specific Standard Specifications formally adopted by SDDOT, specific signage requirements set out in the project plans, nationwide standards (the MUTCD) incorporated in the Standard Specifications, mandatory training required of state employees, and industry standards (including the Hot-Mix Asphalt Paving Handbook). Thus, McGee contended Gates and Royalty were not cloaked with sovereign immunity when violating those duties. (R. 729-30). A hearing was held before the Honorable Bruce V. Anderson, Circuit Court Judge, on June 11, 2020. (R. 1530).

On July 31, 2000, the court issued its decision denying the motion. A revised version corrected an error that interchanged Defendants Gates and Peppel. (R. 1591). The court held that Defendants Gates and Royalty were performing ministerial duties. (R. 1607-10). Denial of the motion was without prejudice to its arguments being renewed. (R. 1610). On October 2, 2020, the court entered its order. (R. 1613). This Court declined to grant SDDOT's petition for discretionary appeal. (R. 1820).

Motion for Summary Judgment

On December 29, 2020, defendants filed a motion for summary judgment. (R. 2012). First, they reasserted an argument regarding the PEPL Memorandum rejected at the dismissal stage. (R. 2019-20). Next, they renewed their argument that the duties owed by Gates and Royalty were discretionary. (R. 2021-25). Once again, defendants emphasized this Court's use of the Restatement factors "to determine if a state employee's actions are a discretionary, rather than ministerial, function[.]" (R. 2022-23, citing King, 2007 S.D. 2, ¶11, 726 N.W.2d at 697). Finally, they asserted a new argument that "McGee's claims against State Defendants' [sic] are foreclosed under third-party beneficiary law and A-G-E Corp. v. State, 2006 SD 66, 719 N.W.2d 780." (R. 2025-29).

A hearing was held on March 11, 2021. (R2. 49). After a continuance to complete discovery, the court denied the motion on January 24, 2022. (R2. 613-14). First, the court again rejected the State's argument based on the

PEPL Memorandum. (R2. 622). Next, it held that Gates and Royalty were performing ministerial functions and not entitled to sovereign immunity:

When applied to the facts of the present case *Wulf* is the most applicable of the four primary cases at play. In *Wulf* the policy required roadway sanding efforts to commence at 5:00 AM. The policy did allow some discretion in the implementation as the court noted. In this case Standard Specification §330 E provided that tack application ahead of mat lay down shall be limited by job condition and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the engineer. Both standards set a certain and definite duty and both allow some leeway or discretion in implementation.

The evidence in the present cases establishes that tack, whether broken or unbroke, is a hazard to the traveling public. It contains no sand, grit or aggregate materials to cause friction. It can be extremely slippery when it is wet. Numerous industry authorities and governmental agencies either strongly suggest or prohibit the public from driving upon it. Many states do not allow traffic to drive on exposed tack.

SDDOT makes the compelling argument that the decision on how much tack can be sprayed on the roadway prior to paving requires [an] estimation, and that this estimation requires the application of engineering judgment. They further argue that once this estimate is made many factors, beyond their control such as weather conditions, equipment and plant breakdowns, can impact if the tack will be covered by the end of the day[']s paving operations. SDDOT argues that because Royalty and Gates were involved in this estimation process which requires engineering judgment their function was discretionary.

McGee counters by noting that Standard Specification §330 E was virtually ignored by both SDDOT employees and Spencer. At the end of the day on Friday June 29th there was approximately 1400 feet of tack left exposed. For the week there was over 7,000 feet (over a mile) of exposed tack left exposed. This averaged almost 1300 feet a day.

In addition, various witnesses have testified that estimating the amount of tack to spray before paving is a relatively easy calculation and is not a singular event as tack is resprayed before the paver several times a day. Spencer employee Feinster testified that, if desired, he could estimate tack spray so as not to exceed 20 feet at the end of the day. There was further evidence provided that overspray of tack coat was done intentionally [t]o save time so there was broke tack available to start paving the next morning. The court finds this to be substantial and credible evidence after reading all of the numerous depositions submitted in favor of and in response to the motion.

McGee also argues that the Hot Mix Handbook, a reference provided to SDDOT employees and contractors['] employees who complete the mandatory training course put on by SDDOT is the bible for guidance on roadway asphalt projects. The Handbook discourages driving on tack and suggests that if it cannot be avoided that the contractor should significantly reduce speed in the area, place proper warning signs, and cover the tack with sand.

The MUTCD requires "fresh oil" signs to warn the public of the existence of any roadway surface treatment. Tack is a roadway surface treatment. Despite the defendants claiming in their testimony that tack has enough friction to drive upon safely, there is substantial credible evidence in the record to the contrary.

(R2. 625-26). The court continued:

Even assuming that such estimation requires engineering judgment, the overall purpose of the standard Specification at issue is to reduce the public's exposure to exposed tack that can become extremely slippery when wet. The duty is much broader than making an initial estimate. Spencer's employee has testified he can match tack to the asphalt mat to within 20 feet.

Despite this, excessive exposed tack was left on the roadway on a regular basis and the specification was ignored. When it was regularly ignored, other precautionary measures as suggested by the Hot Mix Handbook were not followed. Consequently, even if the estimate of the amount of tack calls for engineering discretion, the evidence shows that discretion was rarely, if ever, exercised by Gates or Royalty.

(R2. 627). After carefully applying each of this Court's seven prescribed Restatement factors, the court concluded:

This Court finds that the evidence produced by McGee is credible and compelling. Employees of Spencer and SDDOT ignored the specification requiring them to avoid leaving exposed tack coat to the driving public, and that when they could not avoid it they failed to take precautionary measures to reduce speed or warn the public of the hazard in the area of exposed tack coat. This Court determines that Royalty and Gates['s] duties in this regard were binding upon them as the Standard Specification were to be followed and they were prohibited from waiving them or giving contrary instructions. The Court funds that their duties were ministerial.

(R2. 629). Finally, the court rejected the argument based on third-party beneficiary law:

The law is clear in South Dakota that an injured party may recover from the State if there is a negligent breach of a ministerial duty. ... McGee has filed a tort claim based upon negligence. The duties breached can arise in various different forms. Those forms may include industrial customs and practices, state regulations or policies on point, or the common law. The Standard Specifications at play here are initially drafted by a spec engineer working for SDDOT and then are submitted to a spec committee before being included into final binding form. They are later adopted by the state agency (SDDOT) and for many years these specifications have been material component parts [of] all state highway resurfacing contracts. They are mandatory and cannot be waived or altered by highway inspectors. They create duties, some to protect the safety of the traveling public.

McGee's action is not to claim he is entitled to benefits of a state SDDOT contract with Spencer. His claim is to recover for injuries sustained by the breach of a ministerial duty created by those Standard Specifications. The holdings in *A*-[*G-E*] and *Sisney* are not applicable to this case.

(R2. 630). On January 25, 2022, the lower court entered its order denying summary judgment. (R2. 631).

This appeal followed.

STATEMENT OF THE FACTS

In October 2017, the SDDOT began soliciting bids to resurface parts of Highway 45 between Platte and Interstate 90. (R. 2031, 2040). The bid package included the contract plans and SDDOT Standard Specifications for Roads and Bridges (2015) and later amendments ("Standard Specifications") incorporated into every such contract. (R. 2031, 2040). SDDOT awarded the project to Spencer Quarries. (R, 2032, 2040). It assigned SDDOT employees Kent Gates as Project Engineer and Kris Royalty as road technician responsible for inspections. (R. 2033-34, 2041). Spencer Quarries began the resurfacing in May 2018. (R. 2034, 2041).

Public Safety Basis for Ministerial Duties

Tack coat, also known as liquid asphalt or fresh oil, is a mixture of water and asphalt binder used in highway resurfacing to adhere layers of hot mix asphalt (HMA) together. (R. 374, 2992, 4911, 1581 – "A tack coat is an emulsion of water and an asphaltic tar-like material. It is used to bond successive layers or 'lifts' of asphalt pavement"). This material is sprayed as a surface treatment and then, after it is set or cured, the hot mix asphalt or

² The complete Standard Specifications and relevant amendments may be found at R. 4730-5365, 5397-98, 354-55.

actual pavement surface of the highway is placed on top. (R. 374, 4912-13).

Most states do not allow highway traffic on exposed tack coat before HMA is placed. (R. 351, 376-77, 467-68). This is because scientific studies confirm exposed tack coat significantly—and dangerously—reduces friction and tack coat is sprayed with the intention that public traffic will not drive on it. (R. 350-51, 376, 483-84, 1581, 2992-93, 3673 p.32-33, 3848, 3853-59).

The SDDOT clearly was aware of this extreme hazard. SDDOT personnel reported in a national study on this problem that tack coat is "extremely slippery when rained on." (R. 351, 376-77, 467, 483-84, 3848).

Industry standards set by the Hot-Mix Handbook, an authoritative manual akin to the MUTCD and also issued by the Federal Highway Administration (FHA),³ provide that:

If the overlay is to be constructed under traffic, the tack coat is normally placed only a short distance in front of the paver—within the lane closure and far enough ahead for the tack to set properly before the HMA is laid on top of it. Traffic is kept off the tack coat at all times.

. . .

If equipment problems (plant or paver breakdowns) prevent tack coat material that has been applied from the distributor from being paved over before traffic must use the roadway, it is suggested that posted speed limits on that section of roadway be significantly reduced until the overlay operation can take place. It is not good practice to place the tack coat one day, permit traffic to run over the tack coat for a period of time, and then

³ The Hot-Mix Asphalt Paving Handbook is issued collectively by the American Ass'n of State Highway and Transportation Officials, Federal Aviation Administration, Federal Highway Administration, National Asphalt Pavement Ass'n, U.S. Army Corps of Engineers, American Public Works Ass'n, and National Ass'n of County Engineers. (R. 464, 3847).

place the overlay at a later date.

Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface may be greatly reduced by the presence of the tack coat material.

(R. 351-52, 376, 464-66, 3847). The Hot-Mix Handbook concludes:

Tack coat should not be left exposed to traffic. If doing so is necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface, should be taken.

(R. 351-52, 376). Here, it is undisputed that when highway traffic was driving on the exposed tack coat the speed limit remained at 65 mph. (R. 13).

The specific tack coating procedures in the Hot-Mix Handbook "were cited in the hot mix asphalt certification training required by the SD Department of Transportation." (R. 3847). The Handbook also was provided to each person receiving the mandatory certification training, including Gates and Royalty. (R. 3847).

Additional FHA publications and industry manuals agree traffic should be kept off exposed tack at all times and warn: "No more tack coat should be applied on an area than can be covered by the same day's operations." (R. 352, 377-78, 466-69, 484 – "tack coat surfaces should be paved over on the same day and an exposed tack coated surface should not be re-opened to traffic at the end of the workday").

Tack coat is sprayed in increments throughout the day as work progresses. (R. 3971 p.27). Estimating how much tack to spray so that HMA

can be overlaid that day is a matter of simple math and observation. (R. 3848). As the Spencer Quarries employee who sprayed the tack on this project testified:

- A: I just try and determine that myself. I got it down to where I can stop within about 20 feet, less than that. The last truck is pulling out there, I watch them throughout the day, I know roughly about how many feet a truck goes. If you got one truck coming yet, okay, I can I can spray half a block, shut it down and almost end up right there at that on that spot at the end of the night.
- Q: So you're saying you can you can spray within 20 feet of where the pavement is going to end?
- A: Yep, or we're going to stop for the night.

(R. 3813 p.12-13). As Defendant Royalty admitted: "It's easy to figure out." (R. 3764 p.65).

In addition, tack coat that is not set (uncured) is sticky, will pick up on the tires of construction vehicles, and be deposited on the road surface, further reducing texture depth and friction. (R. 350, 374-75, 377-78). Thus, "[a]fter spraying the tack coat, enough time must be allowed for complete breaking to occur before the overlay is placed. Traffic should be kept off the tacked area. If that is not possible, the vehicle speeds should be kept below 20 mph." (R. 352).

Ministerial Duties of SDDOT Employees

To meet its responsibilities to the public on highways undergoing resurfacing or repairs, SDDOT has developed and formally adopted mandatory requirements in its Standard Specifications for Roads and Bridges

(2015) (as amended) that are incorporated into every contract it bids. (R. 353-54, 357, 361-62, 379, 469-70, 477-83). Standard Specifications 4.5, 5.9, 5.10, 5.11, 5.14 and 5.15 mandated that it was the specific responsibility of SDDOT employees Gates and Royalty, as engineer and inspector, to ensure compliance with each of its requirements, including the incorporated MUTCD provisions. (R. 353-56, 361-62, 492-93, 2990-92, 3053 p.84, 4008-09 p.17-19, 4765, 4774-77).

1. Duties for Tack and Asphalt Resurfacing

As amended by supplemental specifications in June 2016, and April 2018, Section 320 of the Standard Specifications imposes the following for spraying tack coat:

320.3 CONSTRUCTION REQUIREMENTS

• • •

G. Tacking, Spreading, and Compacting: The surface, including all vertical contact faces, on which the asphalt concrete is to be placed, shall be tacked in accordance with Section 330. The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement.

(R. 4872, 353-55, 379, 480) (emphasis supplied). Section 330, entitled "Prime, Tack, Fog Seal, and Flush Seal," specifically mandates the following:

330.3 Construction Requirements

• • •

E. Application of Asphalt:

• •

Tack application ahead of mat laydown shall be limited by job

conditions <u>and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer</u>.

(R. 4913, 354, 379, 481-82, 3848) (emphasis supplied). This express policy limits tack coat to the amount that can be covered by asphalt that same day. (R. 4913). SDDOT admitted it has *never* intentionally ordered or allowed any tack coat overspray on any project. (R. 4247-48, Answers 63, 64, 65).

Again, it was the responsibility of Gates and Royalty, as SDDOT's project engineer and technician/inspector, to ensure compliance with its mandatory specifications. (R. 355-56, 361-62, 492-93, 3053 p.84). Unfortunately, they simply ignored or did not pay any attention to this requirement, and their inattention routinely resulted in hundreds, and sometimes thousands, more feet of tack sprayed each day than could possibly be covered. (R. 2993-95, 3759 p.43, 3813 p.12, 3969 p.20, 4008 p.14, 4013 p.36). As Gates admitted: "It's not something I – to be honest, I don't keep that close of a watch on it." (R. 3676 p.43-44).

Additionally, Standard Specifications Section 320.3 G (as amended in 2018) required that the "[t]he tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement." This cure period prevents the tack coat from being picked up by the tires of construction equipment and then deposited on the road surface. (R. 4872, 354). Whether tack coat is set or cured so that construction trucks may drive on it is a simple matter of

viewing or touching it; however, Gates and Royalty also failed to ensure compliance with this mandatory specification. (R. 353-54, 379, 480, 3947 p.34-36).

Spencer Quarries personnel testified globs or splotches of tack coat were picked up and deposited by construction trucks on the roadway in the immediate vicinity of the crash. (R. 4126 p.60-61, 4178-79 p. 137-39). Photos taken the day after the crash documented many such globs. (R. 359). According to Engineer Harold Paul, an expert in HMA and tack coat, the procedures resulting in the tack coat globs violated the Standard Specifications, Hot Mix Handbook, and industry standards. (R. 362).

2. Duties regarding warning signs

In addition, Section Seven entitled "Legal Relations and Responsibility to the Public" of the Standard Specifications mandates adherence to the MUTCD for warning signs:

7.10 BARRICADES AND WARNING SIGNS – The

Contractor will provide, erect, and maintain necessary barricades, suitable and sufficient lights, danger signals, signs, and traffic control devices and take all necessary precautions to protect the work and safety of the public. The Contractor will provide barricades on highways closed to traffic, will illuminate obstructions during hours of darkness, and will provide warning signs to control and direct traffic.

. . .

Barricades, <u>warning signs</u>, lights, temporary signals, and other protective devices <u>must conform to the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD)</u> at the time of letting, and the details shown in the plans.

(R. 4787-88, 353, 469-70, 477-80) (emphasis supplied). Section 330, entitled

"Prime, Tack, Fog Seal, and Flush Seal," requires the following regarding temporary signage:

330.3 CONSTRUCTION REQUIREMENTS

...

G. Temporary Traffic Control: ... Temporary Traffic Control shall conform to Section 634.

(R. 4914, 354, 478). Thus, "[t]he provisions in *Section 634* were applicable to the repaving project in progress on South Dakota Highway 45 at the time of the traffic crash." (R. 478). Section 634 (Temporary Traffic Control) provides:

634.1 DESCRIPTION

This work consists of furnishing, installing, and maintaining required temporary traffic control devices <u>in accordance with the current edition of the Federal Manual on Uniform Traffic</u> Control Devices (MUTCD).

. . .

634.3 CONSTRUCTION REQUIREMENTS

A. General: The Contractor shall furnish, install, and maintain required traffic control devices and pavement marking material.

. . .

H. Traffic Control Signs: Traffic control signs shall conform to Part 6 of the MUTCD and as specified in the plans.

(R. 5182-83, 5186, 471-72, 479-80) (emphasis supplied).

Regarding the signage requirements in Sections 330G and 643.3 of the SDDOT Standard Specifications, SDDOT Plate No. 634.23 incorporated into the Highway 45 project plans required that:

For tack and/or flush seal operations, when flaggers are not

being used, the FRESH OIL sign (W21-2) <u>shall be displayed in advance of the liquid asphalt areas</u>.

(R. 1220, 356-57, 2996; App. 122) (emphasis supplied). "The code, W21-2, comes from the Manual of Uniform Traffic Control Devices (MUTCD)." (R. 357). Thus, "[t]he project's plan sheet 30 called for Fresh Oil signs during the tack coat operations," (R. 356), and SDDOT Standard Specifications mandated that signage conform both to the plans and MUTCD. (R. 5186). MUTCD W21-2 Fresh Oil signs were available at the job site but not used where Austin encountered the exposed tack on Highway 45. (R. 360, 491-92).

This mandatory requirement in the project plans corresponds to Section 6F.34 FRESH OIL (TAR) Sign (W21-2), located on page 593 of the MUTCD,⁴ which states:

The FRESH OIL (TAR) (W21-2) sign (see Figure 6F-4) should be used to warn road users of the surface treatment.

(R. 357, 476, 3150 p.24-25; App. 130-32). Where McGee lost control, there was both exposed tack coat surface treatment and globs of tack coat picked up by construction vehicles and deposited on the road surface. (R. 361-62).

June 29-30, 2018 Violations of ministerial duties and resulting injuries

On June 29, 2018, at least 1,400 feet of sprayed tack coating was left exposed on Highway 45 when work ceased for the day. This was done even

⁴ See also pages 580 and 590 of the MUTCD depicting the FRESH OIL (TAR) (W21-2) sign. The complete MUTCD 2009 Edition with 2012 revisions is found at: https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/mutcd2009r1r2edition.pdf

though SDDOT knew the tack coat was not going to be covered with hot mix asphalt until several days later, after the Independence Day holiday. (R. 357). That clearly violated SDDOT Standard Specifications, the Highway 45 project plans, the MUTCD, the Hot-Mix Handbook, and industry standards and practices. (R. 360, 3111 p.26-27, 3116 p.46, 3676 p.44).

As the inspector, Royalty was supposed to determine whether the contractor was following the specifications regarding application of tack coat. (R. 3752 p.14). The contractor on this project, however, routinely sprayed tack coat far beyond what could be covered for the day. (R. 3115 p.43-44, 3759, 3676 p.43-44, 4008 p.14). As summarized by one of the experts:

[T]here was no reason for the SDDOT to order or allow any tack coat application beyond what could be covered that day. The spray of tack coat beyond what could be covered that day was simply for the contractor's convenience and contrary to the specifications. Even if it was permissible under the SDDOT's specifications, in this case, it was totally unnecessary, as the paving was being moved to the northern end of the project.

There is also no evidence the SDDOT ordered the overspray. The SDDOT specifications required it to inspect and identify this hazard. Once identified, SDDOT personnel were required to notify the contractor or remediate the hazard.

(R. 360). Unfortunately, Gates and Royalty just did not pay attention to the mandatory specifications. (R. 2993-95, 3676 p.43-44, 3759 p.43, 3813 p.12, 3969 p.20, 4008 p.14). As Gates testified:

- Q: If I understand correctly from your prior testimony, you never paid attention to how much tack coat was left at the end of the day; is that correct? That's page 20.
- A: That's usually because I'm not on the project usually at

the end of the day. I guess, it never really was an issue so-

Q: And that's the same thing with Mr. Gates or Mr. Royalty, he didn't pay attention because it was never an issue, as far as you know?

A: As far as I know, yes.

(R. 4013 p.36, 3753 p.18-20).

There is additional evidence Gates ignored the mandatory specifications regarding tack coat application. SDDOT has a standard "QC/QA Project Inspection Report" listing the specifications to be monitored by SDDOT. The third designated item is "amount of tack ahead of paver." (R. 4007 p.10, 4266). For a contemporaneous resurfacing project with Spencer Quarries on Highway 44, Gates chose not to monitor or discuss tack coat with Spencer Quarries and simply marked it "N/A" or not applicable. (R. 4007 p.10-11, 4266; App. 123). For the Highway 45 project at issue, SDDOT did not have the meeting with Spencer Quarries or complete the report for the project where the crash occurred. (R. 4007 p.10-12).

In addition, the SDDOT Standard Specifications, MUTCD, and project plans all required Fresh Oil signs warning road users of the exposed tack coat until the tack coat operation on that stretch of highway was completed. (R. 357, 360). The tack coat operation was not complete until July 9, 2018 when it finally was covered. (R. 357). The required MUTCD W21-2 signs, however, were never put up. (R. 360, 491-92).

After work ended on Friday, June 29, 2018, as forecasted, the rain

began to come. (R. 360, 379).

At about 9:30 a.m. the next morning, June 30, 2018, Austin McGee was driving with his brother north of Platte on Highway 45. (R. 458-59, 2034). The road was wet and it was drizzling. He suddenly came upon a 1,400-foot section of exposed tack coat. (R. 458-64, 493-95). There was no sign warning of the fresh oil and no way of recognizing the hazard on the wet road surface. As detailed by an expert who studied the traction and friction of tack coat:

The result of these studies shows that McGee, who easily traversed non coated pavement on the morning of June 30, 2018, suddenly and unexpectedly encountered coated pavement. The surface instantly changed from a normal roadway surface to a surface with the traction of packed snow, with a coefficient friction of about 0.11 to 0.13.

(R. 1582). As he encountered the tack coating, McGee lost control of his Ford F-250, which left the road and rolled. (R. 458-59, 2034).

McGee has introduced substantial evidence tending to prove that the violation of these ministerial duties by SDDOT employees resulted in the dangerous conditions that caused the crash. (R. 353-62, 380-81, 469-70, 477-83, 488, 1586). As one of the experts summarized the evidence:

The SDDOT personnel on the project were responsible to inspect and make sure the contractor proceeded according to the specifications and plans. SDDOT was also responsible for ensuring this contractor followed specifications, plans, and industry customs and practice.

SDDOT's Specification Section 320.3 states that the tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement. This apparently was not followed as demonstrated by the "Splotches" longitudinally and transversely on the tacked section. This excess material should

have been removed by the contractor or required to be removed by the SDDOT.

There was no need to spray more tack coat tha[n] could be covered with hot mix on a Friday afternoon, especially 1400 feet, knowing that the paving operation would not return to this area for several days. This clearly violates the specifications and should have been addressed by SDDOT. There is no evidence that SDDOT ordered or gave permission for this action. By section 643.3, E, the contractor was responsible for all signing on the project. SDDOT personnel were responsible to hold the contractor to this specification.

Since the tack coat operation was not complete at the time of the crash, a Fresh Oil sign was required in advance of the tack coated surface.

Based on the materials reviewed and evaluated, there was a loss of friction due to the application of tack coat material which presented a slippery condition, exacerbated by rain. This condition was not mitigated by known methods within the industry and specifications and plans applicable to this project, that were required to be followed by both the contractor and the SDDOT personnel.

(R. 361-62).

Although it denied making any changes in the use of Fresh Oil signs after Austin's crash, it was discovered recently that SDDOT authorized or required at least two different contractors on identical highway resurfacing projects to use the MUTCD W21-2 "Fresh Oil" signs to warn the public when uncovered tack coat is present. (R. 3848, 4705-06, 5369; App. 92-93).

ARGUMENT

- I. THE ORDER DENYING SUMMARY JUDGMENT SHOULD BE AFFIRMED.
 - A. State employees, including SDDOT employees, owe a common law duty of care, codified by SDCL 20-9-1 and 21-

1-1, and may be subject to individual tort liability where not protected by sovereign immunity, as when they violate ministerial duties.

Defendants first argue that summary judgment should have been granted because "a public entity's duty regarding the maintenance of a highway is defined by statute, and neither the court nor McGee identified an applicable statutory duty on which to premise a negligence claim." (Brief at 11-15). This is a new argument made for the first time on appeal that is usually waived under this Court's procedural rules. See Paweltski v. Paweltski, 2021 S.D. 52, ¶40, 964 N.W.2d 756, 768. Although based on Hohm v. City of Rapid City, 2008 S.D. 65, 753 N.W.2d 895 and Dohrman v. Lawrence County, 143 N.W.2d 865 (S.D. 1966), defendants did not make this claim or cite to either decision in their summary judgment briefing or oral argument below. Even so, the argument misapprehends the issues in this case and should be rejected.

In *Hohm*, 2008 S.D. 65, ¶¶19-20, 753 N.W.2d at 905, this Court issued a prospective ruling that the duties of municipalities regarding construction and maintenance of streets are governed solely by statute.⁵ *Hohm* was drawn in large part from *Dohrman*, 143 N.W.2d at 866, which held that "[a]t common law no right of action existed against a county for recovery of damages resulting from a defective highway or bridge and the source of

⁵ This principle set forth in *Hohm* is no longer prospective. *See Godbe v. City of Rapid City*, 2022 S.D. 1, ¶22, 969 N.W.2d 208, 213 ("There is no common law right of action against the City with regard to streets or highways").

liability in this state for damages of this character is statutory," and that the Legislature "impliedly eliminated common law negligence in keeping and maintaining county roads as the bas[is] for a cause of action against Lawrence County." Id. at 868 (emphasis supplied). As a result, this Court held "[t]he county's liability must be determined from the standard of conduct imposed by the statute and not the standard of a reasonably prudent person." Id. at 867 (emphasis supplied).

In *Dohrman*, however, this Court also recognized the traditional distinction between the scope of liability of a governmental *entity* and the individual liability of government *employees*:

The highway superintendent of Lawrence County is a public officer appointed by the board of county commissioners. ... The complaint does not attempt to allege facts tending to show individual or personal negligence on his part. He is made a defendant only in his official capacity as county highway superintendent. His liability, therefore, is subject to the same statutory limitation as that of Lawrence County.

Id. (emphasis supplied). This case presents the opposite scenario. Similar to cases such as Smith v. Greek, Kyllo v. Panzer, and Wulf v. Senst—all involving negligence claims against individual SDDOT employees—McGee's complaint does expressly allege facts showing individual negligence on the part of SDDOT employees Gates and Royalty and alleges they personally violated ministerial duties imposed by SDDOT Standard Specifications and the MUTCD that caused his injuries. (R. 307-11).

Moreover, cases such as *Hohm*, *Dohrman*, and *Godbe*, all the way back

to *Bailey v. Lawrence County*, 59 N.W. 219, 220 (S.D. 1894), dealt with statutory liability of a public entity for injuries resulting from *damaged* or *defective* roads and highways. In contrast, the present case involves negligent acts and omissions committed by specific individuals in violation of their ministerial duties in the course of an operational *activity*, limited in duration, that of resurfacing a highway. The situations are not the same and, under this Court's precedent, not governed by the same standards. The latter is akin to cases involving ministerial duties of employees tracing back to *State v. Ruth*, 68 N.W. 189, 190 (S.D. 1896).

Under the law of negligence, "the 'duty owed by the defendant to the plaintiff ... requires the defendant to conform to a certain standard of conduct in order to protect the plaintiff against unreasonable risks[.]" Sheard v. Hattum, 2021 S.D. 55, ¶25, 965 N.W.2d 134, 142. As this Court has recognized, the principle that public employees owe the same duties of care for which they may be answerable in courts predates the South Dakota Constitution and our nation itself. See Kyllo v. Panzer, 535 N.W.2d 896, 898 & n.2-3 (S.D. 1995); R.2d of Torts, § 895D cmt. a. Thus, "[a]n injured person's right to sue the negligent employee of an immune public entity derives from the common law, and we will not lightly infer a legislative abrogation of that right absent a clear expression of intent." Kyllo, 535 N.W.2d at 898 (quoting Kristensen v. Jones, 575 P.2d 854, 855 (Colo. 1978)).

This Court further has recognized that "[t]he right to sue and recover

for others' negligence existed at the time of the adoption of the South Dakota Constitution." *Kyllo*, 535 N.W.2d at 899, 903. SDCL 20-9-1, enacted as part of the 1877 Dakota Territorial Code, provides that "Every person is responsible for injury to the person, property, or rights or another caused by his willful acts or caused by his want of ordinary care or skill, subject in the latter cases to the defense of contributory negligence." *Id.* at 899. SDCL 21-1-1, also enacted in 1877, further provides that "Every person who suffers detriment from the unlawful act or omission of another may recover from the person in fault a compensation therefor in money, which is called damages. Detriment is a loss or harm suffered in person or property." *Id.* "This rule of law that public employee is liable for negligently performed ministerial acts was first recognized in *State v. Ruth*, seven years after the adoption of the South Dakota Constitution." *Id.* (citing *Ruth*, 68 N.W. at 190).

Over more than a century of ensuing jurisprudence, this Court has affirmed that public employees have the same common law duties regarding negligence as other persons and, further, that the affirmative defense of sovereign immunity does not protect state or public employees from tort liability for their negligent violation of ministerial duties. This is "the rule of Gasper, Bego, Leir, Kruger, Sioux Falls Constr. Co. and Ruth that sovereign immunity cannot constitutionally shield state employees performing ministerial acts from liability for negligence[.]" Ritter v. Johnson, 465 N.W.2d 196, 198 n.3 (S.D. 1991) (emphasis supplied). See also Sioux Falls Const. Co.

v. City of Sioux Falls, 297 N.W.2d 454, 458-59 (S.D. 1980); National Bank of South Dakota v. Leir, 325 N.W.2d 845, 848 (S.D. 1982); Kruger v. Wilson, 325 N.W.2d 851, 854 (S.D. 1982); Bego v. Gordon, 407 N.W.2d 801, 806 (S.D. 1987); Ritter, 465 N.W.2d at 198; Gasper v. Freidel, 450 N.W.2d 226, 234 n.1 (S.D. 1990); Wilson v. Hogan, 473 N.W.2d 492, 495 (S.D. 1991); Kyllo, 535 N.W.2d at 903; King v. Landguth, 2007 S.D. 2, ¶14, 726 N.W.2d 603, 608; Sisney v. Reisch, 2008 S.D. 72, ¶12, 754 N.W.2d 813, 819; Truman v. Griese, 2009 S.D. 8, ¶20, 762 N.W.2d 75, 82; Adrian v. Vonk, 2011 S.D. 84, ¶12, 807 N.W.2d 119, 123 ("A waiver is not necessary, however, if the aggrieved party can establish that the acts complained of are ministerial rather than discretionary").

In Kyllo, this Court recognized that SDDOT employee James Bland could be subject to individual tort liability for injuries caused by his operation of a SDDOT snowplow "contrary to State Department of Transportation policy." Id. at 897. In two cases consolidated for appeal, the lower courts independently held that SDCL 21-32-17 and 21-32A-2, purporting to broaden sovereign immunity to all state employees even when performing ministerial functions, violated the South Dakota Constitution. This Court agreed and unanimously affirmed denial of the SDDOT employees' motion for summary judgment. See id. at 899-900.6 Although Judge Anderson's decision centered

⁶ One of the circuit judges whose decision was affirmed was the Honorable Steven L. Zinter.

on Kyllo, SDDOT's opening brief declines to address that seminal case.

In *Smith v. Greek*, 328 N.W.2d 261, 262 (S.D. 1982), similarly, Justice Wollman, writing for this Court, reviewed a grant of summary judgment in favor of SDDOT employees Henry Greek, Norman Konechne, and Earl Glodt assigned to a resurfacing project in Sully County undertaken by a private contractor, Reynolds Construction. In addition to a negligence claim for his injuries against private parties,

Plaintiff alleged that defendants Greek, Konechne and Glodt, who were at the time, respectively, the district engineer, resident engineer, and project engineer, for the South Dakota Department of Transportation, Division of Highways, were negligent in that they did not properly instruct and supervise Reynolds Construction Company regarding proper safety measures and precautions, including the erection and maintenance of adequate warning signs and other danger signals, maintenance of adequate flagmen and other traffic control devices, and restrictions on two-way traffic on the project in question.

Plaintiff also alleges negligence regarding the failure of the engineers to insure the proper safety precautions were taken to protect plaintiff and the traveling public, including the alleged failure of these defendants to require Reynolds Construction Company to comply with the safety provisions of the contraction contract and with the South Dakota Department of Highways Manual on Uniform Traffic Control Devices for Streets and Highways.

Id. This Court reversed summary judgment granted in favor of the SDDOT employees on Smith's negligence claims for reconsideration in light of cases holding that "whether immunity extends to a state employee sued in an individual capacity depends on the function performed by that employee—discretionary or ministerial." Id. at 263. Although the facts are strikingly

similar—just substitute "Gates and Royalty" as the SDDOT employees and "Spencer Quarries" for the contractor in the passage above—*Smith v. Greek* also makes no appearance in SDDOT's opening brief.

In any event, there is no merit to the contention that the defendants owed no legal duty to Austin. The circuit court correctly held that one whose injuries are caused by a state employee's breach—either by ignorance or inattention—of a ministerial duty may recover against the employee. Should this Court elect to carve out some sort of blanket "highway construction and maintenance" exception to this long and well-established line of jurisprudence, however, McGee respectfully suggests any such fundamental change in the liability of state employees performing ministerial duties be prospective only, for the same reasons expressed by this Court in *Hohm*, 2008 S.D. 65, ¶¶21-23, 753 N.W.2d at 906-07, and not applied to eliminate his claims in this case.

B. SDDOT and the individual defendants owed statutory duties under SDCL 31-28-6 and 11.

Even if one were to accept defendants' new and incorrect argument that only a highway statute can impose any legal duty on SDDOT or its individual employees, SDCL 31-28-6 imposes that legal duty:

The public board or officer whose duty it is to repair or maintain any public highway shall erect and maintain at points in conformity with standard uniform traffic control practices on each side of any sharp turn, blind crossing, or other point of danger on such highway, ... a substantial and conspicuous warning sign. The sign shall be on the right-hand side of the highway approaching such point of danger. Failure to comply

with the provisions of this section is a Class 1 misdemeanor.

SDCL 31-28-6. "Standard uniform control practices," of course, refers to the MUTCD. See Stensland v. Harding Cty, 2015 S.D. 91, ¶¶4-7, 872 N.W.2d 92, 94; Truman, 2009 S.D. 8, ¶¶25-26, 762 N.W.2d at 82; Bickner v. Raymond Township, 2008 S.D. 27, ¶¶6-14, 747 N.W.2d 668, 670-72; Fritz v. Howard Township, 1997 S.D. 122, ¶¶13-17, 570 N.W.2d 240, 243-44.

Further, SDCL 31-28-11 provides: "On any street or road constructed with federal aid, the location, form, character or informational regulatory warning signs, curb and pavement, or other markings and traffic signals, shall conform to uniform national signing standards." The project here involved a federal aid highway contract. (R. 2088-2106).

Although McGee's amended complaint does not cite to SDCL 31-28-6 or 11, those statutes clearly are encompassed by its allegations that SDDOT, Gates, and Royalty owed a duty to ensure use of "Fresh Oil" temporary traffic control warning signs required by the specifications, plans, and standards to warn the public of the dangers of traveling on the exposed liquid asphalt surface treatment. (R. 297-311, ¶¶ 23-42, 61-69, 74-75, 80-83).

McGee argued and introduced evidence below that the W21-2 Fresh
Oil signs were prescribed by MUTCD Section 6F.34 FRESH OIL (TAR) Sign
(W21-2), which states:

The FRESH OIL (TAR) (W21-2) sign (see Figure 6F-4) should be used to warn road users of the surface treatment.

(MUTCD pp.580, 590, 593; R. 357, 361-62, 476, 3150 p.24-25). The project

plans required use of Fresh Oil signs and they now actually are used on resurfacing projects to warn of exposed tack coat. (R. 3848, 4705-06, 5369).

Those allegations and the evidence supporting them distinguish the present circumstances from cases like *Truman* because, unlike the plaintiffs there, McGee *has* identified specific MUTCD provisions, combined with the specifications and plan sheets, which required the W21-2 Fresh Oil signs, rendering the duty to comply ministerial in nature. *See Truman*, 2009 S.D. 8, ¶14, 762 N.W.2d at 84; *Bickner*, 2008 S.D. 27, ¶14, 747 N.W.2d at 672 ("Bickner cites no provision in the MUTCD that specifically requires a township to erect a warning sign in these circumstances").

In addition to the common law duties, then, the defendants, including SDDOT, owed a ministerial duty under SDCL 31-28-6 and 11 to erect and maintain the MUTCD W21-2 Fresh Oil warning signs where tack coat surface treatment was over-sprayed and left exposed to the traveling public.

C. McGee is not seeking damages as a "third-party beneficiary" of the SDDOT's contract with Spencer Quarries.

The defendants also argue they should have been granted summary judgment on the basis of third-party beneficiary law. The right to enforce a contract as a third-party beneficiary is governed by SDCL 53-2-6. In making this argument below, defendants primarily relied on *A-G-E- Corp. v. State*, 2006 S.D. 66, 719 N.W.2d 780, a decision not cited in their opening brief.

On appeal, they continue to rely on Sisney v. State, 2008 S.D. 71, 754

N.W.2d 639, in which held that a prisoner was not a third-party beneficiary of a contract to provide prison food services and thus lacked standing to enforce the contract. "Because Sisney did not have standing to sue under this public contract, and because all of Sisney's claims are dependent on upon his right to sue for breach of contract, we need not discuss the issue of immunity." *Id.* ¶15. As the lower court recognized, however, *Sisney* is inapplicable because McGee is not suing for breach of contract or seeking to enforce any contract.

Essentially, this argument has morphed on appeal into misplaced reliance on the "independent tort doctrine," the general principle "which contemplates concurrent, or nearly concurrent, tort and contractual liability, but only in limited instances where a tort duty exists independent of the parties' contractual obligations." *Knecht v. Evridge*, 2020 S.D. 9, ¶60, 940 N.W.2d 318, 335; *Kreisers Inc. v. First Dakota Title Ltd. P'ship*, 2014 S.D. 56, ¶22, 852 N.W.2d 413, 419. The independent tort doctrine stands for the proposition that one party to a contract usually cannot sue the other in tort when what they really have is a breach of contract claim.

This line of cases also has no application here. McGee does not have any breach of contract claim against Gates, Royalty, or the SDDOT. He has negligence claims based on SDCL 20-9-1 and 21-1-1, and the common law, for their breach of ministerial duties owed as the result of requirements imposed by statute, mandatory policies formally adopted by SDDOT in Standard

Specifications independent of any particular contract, and the MUTCD. As evident from this Court's line of decisions in *Truman*, *Hansen*, *King*, *Wulf*, *Kyllo*, and *Smith*, that some of these requirements are incorporated into the SDDOT's contract with Spencer Quarries does not alter the nature of McGee's claims or extinguish them. This argument provides no basis for reversal.

D. The mandatory policies adopted by SDDOT in Standard Specifications, as well as the MUTCD and industry standards, established ministerial duties under the facts of this case.

Although defendants here owed a duty of care for which they may be held liable in tort, they nonetheless may be protected by the affirmative defense of sovereign immunity where that liability does not arise from the violation of a ministerial duty.

As this Court has helpfully summarized, "a ministerial act is the simple carrying out of a policy already established ... so that permitting state employees to be held liable for negligence in the performance of merely ministerial duties within the scope of their authority does not compromise the sovereignty of the state." *King*, 2007 S.D. 2, ¶11, 726 N.W.2d at 607. Importantly, "once it is determined that the act should be performed, subsequent duties may be considered ministerial." *Hansen v. S.D. Dept. of Transp.*, 1998 S.D. 109, ¶23, 584 N.W.2d 881, 886.

In contrast, "[s]tate employees are cloaked in sovereign immunity when performing discretionary acts because 'such discretionary acts

participate in the state's sovereign policy-making power." *King*, 2007 S.D. 2, ¶11, 726 N.W.2d at 607. Whether a duty is ministerial or discretionary is a question of law. *See Hansen*, 1998 S.D. 109, ¶18, 584 N.W.2d at 885.

Recognizing the "difficulties inherent" in "the ministerial/discretionary dichotomy," this Court has admonished that "[p]roper analysis must avoid a mechanistic approach to the question," *Id.* ¶23, and "requires an individualized inquiry." *King*, 2007 S.D. 2, ¶13, 726 N.W.2d at 608. Whether an official has acted in a discretionary capacity "is not subject to a fixed, invariable rule, but instead requires a discerning inquiry into whether the contributions of immunity to effective government in the particular context outweigh the perhaps recurring harm to individual citizens[.]" *Wulf*, 2003 S.D. 135, ¶21, 669 N.W.2d at 143.

This Court has instructed the lower courts to carefully weigh seven factors set forth in the Restatement (Second) of Torts, § 895D, cmt. f:

- (1) The nature and importance of the function that the officer is performing;
- (2) The extent to which passing judgment on the exercise of discretion by the officer will amount necessarily to passing judgment by the court on the conduct of the coordinate branch of government;
- (3) The extent to which the imposition of liability would impair the free exercise of her discretion by the officer;
- (4) The extent to which the ultimate financial responsibility would fall on the officer;
- (5) The likelihood that harm will result to members of the public if the action is taken;

- (6) The nature and seriousness of the type of harm that may be produced; and
- (7) The availability of the injured party of other remedies and other forms of relief.

King, 2007 S.D. 2, ¶11, 726 N.W.2d at 607; Wulf, 2003 S.D. 105, ¶20, 669 N.W.2d at 142; Casazza v. State, 2000 S.D. 120, ¶12, 616 N.W.2d 872, 875; Kyllo, 535 N.W.2d at 898, 902 & n.9; Gasper, 450 N.W.2d at 230-32; Bego, 407 N.W.2d at 807 & n.8; Schaub by Schaub v. Moerke, 338 N.W.2d 109, 111 (S.D. 1983); Kringen v. Shea, 333 N.W.2d 445, 446 (S.D. 1983); Smith, 328 N.W.2d at 263; Kruger, 325 N.W.2d at 853; Leir, 325 N.W.2d at 848; Sioux Falls Const., 297 N.W.2d at 459.

As part of this analysis, this Court has made clear that lower courts "must weigh the consequence immunity has on effective government with the potential to harm individuals." *King*, 2007 S.D. 2, ¶13, 726 N.W.2d at 608. Courts further must examine "the nature of the official's duties, the extent to which the acts involve policy making or the exercise of professional expertise and judgment, and the likely consequences of withholding immunity." *Wulf*, 2003 S.D. 105, ¶21, 669 N.W.2d at 143.

This Court also has held that "[i]n order to find a duty 'ministerial,' we must find a 'governing rule or standard' so clear or specific that it directs the government actor without calling upon the actor to ascertain how and when to implement that rule or standard." *Truman*, 2009 S.D. 8, ¶¶21-22, 762 N.W.2d at 80-81.

For example, an SDDOT employee making original determinations about designing highways and deciding where to place permanent signs at non-standard intersections is performing a discretionary duty that participates in the state's policymaking authority, *unless*—and this is the key—those decisions are contrary to an existing policy, rule, or standard. *See Truman*, 2009 S.D. 8, ¶¶ 23-32, 762 N.W.2d at 81-84.

In contrast, an SDDOT employee who disregards existing policies, rules, or standards regarding sanding in performing highway maintenance is not protected by sovereign immunity. As this Court held in *Wulf*, and reaffirmed in *Truman*, a SDDOT policy "regarding the times and methods for sanding in a snowstorm, amounted to a virtual check-list with no discretion as to *whether* to do sanding, *when* to do it, or *how* to do it." "Thus, the duties of the defendant DOT supervisors 'may be defined and applied with relative ease,' and were ministerial." *Id.* ¶31 (quoting *Wulf*, 2003 S.D. 105, ¶32, 669 N.W.2d at 147).

Here, as the circuit court held, the governing standards adopted in SDDOT's Standard Specifications and then incorporated into every project;

⁷ 2009 S.D. 8, ¶31, 762 N.W.2d at 84. The DOT policy recognized as imposing a ministerial duty in *Wulf* clearly involved some operational judgment, as it imposed "a requirement to use specified sand/salt/chemical mixtures and to continue sanding operations from 5:00 a.m. (in the morning) until 7:00 p.m. (in the evening) *unless* 1) the traffic is moving safely or 2) conditions become too hazardous for continued operations" and provided that "[t]he kind of material mixture to be used shall be determined by the Maintenance Supervisor to handle present and/or expected conditions." 2003 S.D. 105, 669 N.W.2d at 146 & n.2 (emphasis supplied).

the MUTCD incorporated both by statute and Specifications; the project plan documents; and universal industry standards reflected in the Hot-Mix Handbook used in SDDOT certification training, clearly required that tack coating should be sprayed only in an amount that could be covered that same day. That determination was "easy to figure out," made by simple math or visual observation while sitting in a truck. (R. 3764 p.65). Testimony from the tack coat truck driver proved the distance could be estimated within twenty feet. (R. 3813 p.12-13).

If, however, some unforeseen event occurred (such as equipment breakdown), safety measures were required including the mandatory posting of MUTCD W21-2 "Fresh Oil" signs and lowering the speed limit. The same standards required Gates and Royalty to prevent construction equipment from tacking uncured tack coat onto the road surface that ultimately was opened for public travel.

These standards governed the conduct of the ministerial actors, the enforcement of which does not infringe upon the state's policymaking authority in the slightest, and which may be applied with relative ease. Gates and Royalty had the specific, individual responsibility to ensure that these requirements were followed. And when they are ignored, as happened here, it is no surprise that catastrophic consequences to the driving public may follow, as happened to Austin McGee on that fateful June morning more than four years ago. Just as in *Wulf*, Gates and Royalty were required to

follow SDDOT policy and "they do not have discretion to ignore the standards or policies established by DOT." 2003 S.D. 105, ¶32, 669 N.W.2d at 146-47.

In applying this Court's seven-factor test and its decisions addressing this area, it becomes clear that the duties here were ministerial in the truest sense, in that they flowed from the disregard of "a policy already established ... so that permitting state employees to be held liable for negligence in the performance of merely ministerial duties within the scope of their authority does not compromise the sovereignty of the state." *King*, 2007 S.D. 2, ¶11, 726 N.W.2d at 607. As this Court held in one of its seminal cases:

Hash's duty was to either protect contractor's equipment by diverting the water, or to warn it that he was not doing so. Can this duty be denominated a discretionary function? We do not think so. Under the various factors enumerated in the comments, too numerous to detail here, we do not find any that suggest that the decision to ignore the request to act in one manner or another to protect contractor's property, or to permit it to do so itself, was in any manner an exercise of a discretionary function. We therefore reverse the decision of the trial court.

Sioux Falls Const., 297 N.W.2d at 459. The circuit court correctly concluded that the same result should apply here, where the individual defendants had the duty to either ensure only as much tack coat was sprayed as could be covered that day or, failing that, to warn of the danger using the MUTCD W21-1 Fresh Oil signs.

Interestingly, *State v. Ruth*, 68 N.W. at 190, our original "ministerial duties" case, also involved a ministerial duty that required an estimation. As in the present case—where the standard specifications prohibited spraying

more tack coat than could be covered the same day and where an MUTCD W21-2 Fresh Oil sign was required where the surface treatment was left exposed—the public employee in *Ruth* "had no alternative but to act," even though the operational aspects of performing that duty obviously required the exercise of judgment and discretion:

In making the estimate, he was, of course, required to exercise judgment and discretion; but the law did not permit him to decide whether or not any estimate should be made within the time specified by the statute. We think that, in failing to act at all, he disregarded a plain provision of the law, and failed to perform a merely ministerial duty. It is the nature of the particular duty, and not the character of the office, which determines whether or not a duty is ministerial.

Id. at 190-91; King, 2007 S.D. 2, ¶18, 726 N.W.2d at 609 ("once it is determined that the act should be performed, subsequent duties may be considered ministerial").

In another earlier decision, this Court held that a public entity "acts judicially when it selects a plan for some public improvement, but as soon as it begins to carry out the plan, it acts ministerially and is bound to see that the work is done in a safe manner." Walters v. City of Carthage, 153 N.W. 881, 882 (S.D. 1915); Leir, 325 N.W.2d at 850 (explaining that carrying out or administration of "preestablished standards is a routine, ministerial function"). As set forth in one treatise:

Conduct of governmental entities which amounts to an implementation of policy decisions concerning the construction and maintenance of highways typically is not discretionary.

• • •

Other conduct of a ministerial or operational nature in constructing and maintaining highways includes—

- resurfacing a highway once a decision to undertake such maintenance is made.
- a decision not to place a sign warning of a road hazard.

1 Civ. Actions Against State & Loc. Gov't § 2.13 (emphasis supplied); see Snyder v. Curran Township, 657 N.E.2d 988, 993 (Ill. 1995); Mississippi Transp. Comm'n v. Adams, 197 So.3d 406, 412-13 (Miss. 2016) (holding for purposes of sovereign immunity that generally discretionary function with respect to placement of traffic control devices was rendered ministerial by MTC's adoption of Red Book standard for road and bridge construction, which imposed ministerial, mandatory duty on MDOT to replace white edge lines that had been covered or removed during operations with temporary stripe before work was discontinued for day).

Simple requirements to inspect and ensure that no more tack coating is sprayed than is to be covered that same day and—if for some reason that duty is violated—to warn of the slick surface treatment using the required W21-2 Fresh Oil signs provide "readily ascertainable standards." It is also a simple matter for SDDOT to keep the contractor's own trucks off the tack coat until it has set or "cured" as the Standard Specifications required.

The duty to ensure those requirements were followed was one to enforce policy, not make it. It involved obedience to simple instructions and demanded no special judgment, discretion, or skill. "Thus, the duties of the defendant DOT supervisors 'may be defined and applied with relative ease,' and were ministerial." *Truman*, 2009 S.D. 8, ¶31, 762 N.W.2d at 84.

Because the circuit court correctly applied this Court's governing precedent in holding the duties owed by defendants were ministerial in nature and involved carrying out pre-established policies, specifications, and standards, they are not covered by sovereign immunity. Whether these defendants should be held liable for the injuries, damage, and detriment caused to Austin McGee by ignoring or negligently violating those ministerial duties is a matter for the jury.

CONCLUSION

WHEREFORE, Appellee Austin McGee respectfully requests that this

Honorable Court affirm the order denying the motion for summary judgment.

Respectfully submitted this 18th day of July, 2022.

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$Austin\ McGee$

CERTIFICATE OF COMPLIANCE

In accordance with SDCL 15-26A-66(b)(4), I certify that this brief complies with the requirements set forth in the South Dakota Codified Laws. This brief was prepared using Microsoft Word and contains 9,847 words, excluding the table of contents, table of cases, jurisdictional statement, and certificates of counsel. I have relied on the word and character count of the word-processing program to prepare this certificate.

<u>/s/ Ronald A. Parsons, Jr.</u> Ronald A. Parsons, Jr.

CERTIFICATE OF SERVICE

The undersigned hereby certify that a true and correct copy of the foregoing BRIEF OF APPELLEE and the APPENDIX TO APPELLEE BRIEF were served via email upon the following counsel of record:

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on this 18th day of July, 2022.

/s/ Ronald A. Parsons, Jr.
Ronald A. Parsons, Jr.

IN THE SUPREME COURT OF THE STATE OF SOUTH DAKOTA

APPEAL NO. 29901

AUSTIN McGEE,

Plaintiff and Appellee,

VS.

SPENCER QUARRIES, INC., a South Dakota corporation,

Defendant,

and

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation,

Defendants and Appellants.

APPEAL FROM THE FIRST JUDICIAL CIRCUIT BRULE COUNTY, SOUTH DAKOTA

THE HONORABLE BRUCE V. ANDERSON CIRCUIT COURT JUDGE

APPENDIX OF APPELLEE AUSTIN McGEE

Petition for Allowance of Appeal from Intermediate Order granted on March 17, 2022

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April 11, 2020

AUSTIN MCGEE vs.

SPENCER QUARRIES, INC., a South Dakota Corporation;
SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION:

JAY PEPPEL, as an employee of the South Dakota Department of Transportation; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation

Mr. Michael F. Marlow
Marlow, Woodward & Huff
200 West 3rd Street
Yankton, South Dakota 57078

Dear Mr. Marlow:

This report is provided with respect to the captioned lawsuit, in the Circuit Court of Brule County, South Dakota. The case number is 07CIV18-000054. It concerns a vehicle crash that occurred at 9:30 AM on Saturday morning, June 30, 2018. That crash happened on SD Highway 45 at mile maker 040 + .339. Two individuals were involved in the single vehicle crash: Austin McGee and Brent McGee.

The purpose of this report is to provide an opinion as to whether or not Spencer Quarries properly applied the tack coat material to the road surface and, if not, whether the condition of the road surface at the location of the crash was hazardous to the traveling public and, whether or not the South Dakota Department of Transportation personnel failed to properly perform tasks required for the project and permitted the contractor to present unsafe conditions contrary to SDDOT's specifications, plan sheets, and industry custom and practice.

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INFORMATION REVIEWED:

- 1. Crash Report, 6/30/18.
- 2. The deposition testimony of the following individuals:
 - a. Ramiro Mora, Jr, Spencer Quarries, April 22, 2019.
 - b. Brad James, Spencer Quarries, April 22, 2019.
 - c. Neil Waldera, Spencer Quarries, April 22, 2019.
 - d. Todd Waldera, Spencer Quarries, April 23, 2019.
 - e. Ken Baldwin, Spencer Quarries, April 23, 2019.
 - f. Ralph Wallace, III, Spencer Quarries, April 23, 2019.
 - g. Timothy Harmelink, Spencer Quarries, April 23, 2019.
 - h. Jesse Helma, Spencer Quarries, April 23, 2019.
 - i. Darren Feistner, Spencer Quarries, April 23, 2019.
 - j. Richard Sweetman, Spencer Quarries, May 28, 2019.
 - k. Esequiel Haro, Construction Signing Corporation, May 31, 2019.
 - I. Shane Ihnen, Construction Signing Corporation, May 31, 2019.
 - m. Gene Kreutzfeldt, Spencer Quarries, June 26, 2019.
 - n. Kendall Swedeen, Dakota Asphalt Pavement Association, June 26, 2019.
 - o. John Koenig, Brule County Sheriff's Office, June 26, 2019.
 - p. Mick McGee, Father, July 9, 2019.
 - q. Becky McGee, Mother, July 9, 2019.
 - r. Brent McGee, Brother, July 9, 2019.
 - s. Austin McGee, Driver, July 9, 2019.
 - t. Jay Peppel, South Dakota Department of Transportation, August 27, 2019.
 - u. Richard Rowen, South Dakota Department of Transportation, August 27, 2019.
 - v. Steven Weisz, South Dakota Department of Transportation, August 27, 2019.
 - w. Kent Gates, South Dakota Department of Transportation, August 28, 2019.
 - x. Kris Royalty, South Dakota Department of Transportation, August 28, 2019.
 - y. Thomas Grannes, South Dakota Department of Transportation, August 28, 2019.

- 3. South Dakota Department of Specifications, 2015; Supplemental Specifications dated June 1, 2016, April 4, 2018 and April 18, 2018.
- 4. Pavement Preservation Guidelines, South Dakota Department of Transportation, Feb 2010.
- 5. SDDOT Construction Manual, Revised May 2018.
- 6. Plans for Project P 0045(54)27.
- 7. Pictures of pavement at the crash location, dated July 1, 2018 and July 5 2018.
- 8. Technical papers on tack coat usage:
 - a. Friction Testing of Tack Coat Surfaces, Transportation Research Record 1616, 1998.
 - b. Optimization of Tack Coat for HMA Placement, NCHRP Report 712, 2012
 - c. Worldwide State of Practice on the Use of Tack Coats, Association of Asphalt Paving Technologists, Volume 77, 2008.
 - d. Hot Mix Asphalt Paving Handbook, Transportation Research Board, 2000.
 - e. Hot Mix Asphalt Materials Mix Design and Construction, National Center for Asphalt Technology (NCAT), 3rd edition, 2009.
 - f. A Basic Asphalt Emulsion Handbook, MS-19, 2nd Edition.
 - g. Tack Coat Guidelines, California Department of Transportation, Division of Construction, April 2009.
 - h. *Proper Tack Coat Application*, Technical Bulletin, Flexible Pavements of Ohio, September 19, 2012.
 - i. *Guidelines for Using Prime and Tack Coat*, Publication No. FHWA-CFL-04-001, April 2004.

Friction of Tack Coat Surfaces

According to the Hot Mix Asphalt Materials Mix Design and Construction textbook, developed by the National Center for Asphalt Technology Center which was initially established by contractor organizations "The friction of a pavement is a function of the surface texture which is divided into two components, microtexture and macrotexture. The microtexture provides a gritty surface to penetrate thin water films and produce friction through good friction between the tire and pavement surface. The macrotexture provides drainage channels for water expulsion between the tire and the roadway which allows better tire contact with the pavement to improve friction and prevent hydroplaning. The microtexture contributes to frictional resistance at all speeds, but it is the dominating influence at speeds under 30 mph. In contrast, the macrotexture is less important at low speeds but is essential at high speeds in wet conditions."

Contractors, government DOT engineers and other industry professionals commonly know that when a hot mix asphalt mixture, composed of aggregates and asphalt cement (the liquid component) is first placed, the asphalt cement film thickness on the aggregate remains on the surface aggregates for anywhere from one to several months until traffic wears the asphalt film thickness from the aggregates exposed to the surface and the aggregate can utilize its full friction potential. Additionally, tack coat, fog seals or flush seals exacerbate this situation because they provide additional film thickness and reduce the macrotexture and available texture depth.

When a tack coat has lost all its water, the tack is said to be 'set' or 'cured'. At this point, it can become very slippery, especially when wet. The combination of a newly placed hot mix that has not yet lost the asphalt film thickness covered with a tack coat significantly reduces the texture depth, the surface macrotexture and therefore friction. IT IS SLIPPERY.

Adding to the problem of reduced friction due to the new hot mix surface covered with 'set' tack coat was the existence of excess tack coat material that had been picked up by construction haul trucks and deposited on the 1400 feet of pavement that was left uncovered. This happened because construction haul trucks were permitted to traffic either the 'unbroken' or 'broken but not set' tack coat. Tack coat that is either unbroken or broken but not yet set can be sticky, will pick up on tires, to be later deposited on the pavement surface. This violates South Dakota Specification Section 320.3, "The tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement." The splotches or globs of tack coat material further reduced texture depth and macrotexture enhancing the opportunity for the crash to happen.

The coarse aggregate in the mixture which creates the macrotexture provides the friction. Different aggregates provide different levels of friction depending on hardness, crushed faces and ability to resist polishing. "Considerable research has been devoted to the measurement of friction and the development of devices for making measurements" (NCAT Textbook). The important factor about macrotexture is the texture depth which can be determined with standard testing procedures. The less texture depth, the less friction especially in wet conditions. When tack coat is placed on a hot mix surface the texture depth is further reduced.

The Louisiana experiment presented in Transportation Research Record 1616 was conducted in response to a multiple-fatality crash that occurred on a construction overlay project that consisted of two lifts of hot mix asphalt. The contractor was in the process of placing the top lift and had placed the tack coat in advance of the paver when a heavy rainstorm forced the cessation of paving operations.

A field trial was conducted to determine the frictional characteristics of tack-coated surfaces on new hot mix asphalt. A project like the crash site by the same contractor was chosen. The tack coat was slow-set SS-1 emulsion. The tack coat was shot at three different residual application rates 0.01, 0.02, and 0.04 gallons per square yard (one-half the specification rate, the specification rate, and double the specification rate). Separate test sections were created to test when the tack had broken but not set and two other sections where the tack had broken and was in some stage of set. All sections were tested for friction prior to the tack coat

application. The test sections that were 'set' were tested for friction at 4 hours, 7 hours and 24 hours. The 24-hour test had to be postponed due to rain, and the final test was run after 5 days.

The results of this experiment demonstrate that "set" tacked surfaces provided reduced friction capability. These results clearly show that the additional film thickness provided by the tack coat significantly reduced the friction available to the traveling public and that speed should be reduced to provide a safe condition.

As part of this study, a survey regarding tack coat practices was sent to all states. Forty-two states and the District of Columbia responded.—In general, most states used the same materials and application rates as South Dakota and Louisiana. When asked if any accidents had occurred while traveling on tack coat, South Dakota responded that tack was "extremely slippery when wet."

A more extensive survey of the state of the practice of tack coats was conducted by the National Cooperative Highway Research Program as reported in NCHRP 712 published by the Transportation Research Board of the National Academy of Sciences, Engineering and Medicine. A summary of the survey results is provided in the Journal of the Association of Asphalt Paving Technologists, 2008. Forty-six states, seven Canadian provinces, Washington DC, Denmark, Finland, the Netherlands and South Africa responded. Like the Louisiana survey, most of the respondents indicated the same range of residual asphalt application rates and the use of the same emulsion materials. The paper found, "Most agencies do not allow traffic on a tack coat prior to hot mix asphalt placement." And, pertinently, "The majority of respondents — 78% — stated that highway traffic is not allowed on tack coat materials prior to HMA placement."

Other Professional Publications

The Hot Mix Asphalt Paving Handbook is a well-recognized and universally accepted source for HMA contractors, state and federal DOTs, and other HMA professionals. In fact, both SDDOT and the Dakota Asphalt Paving Association used the Handbook as instruction or reference materials for asphalt certification courses. Certification is required by both contractor and SDDOT personnel. They are required to be re-certified periodically. This publication by the National Academy of Sciences, Engineering and Medicine's Transportation Research Board is supported by every major government agency and contractor organization including AASHTO, FHWA, FAA. NAPA USACE, APWA and NACE. All state engineers, inspectors and contractor personnel including those certified in South Dakota should be cognizant of its contents.

With respect to the application of tack coat the *Handbook* states, "The emulsion must break (change color from brown to black) and the water must evaporate from the emulsion before the new mix can be placed over the tack coat."

It further states, "If the overlay is to be constructed under traffic, the tack coat is normally only placed a short distance in front of the paver; within the lane closure and far enough ahead for the tack to cure properly before the mix is laid on top of it. Traffic is kept off the tack coat at all

times. ... Under unusual circumstances, if traffic must travel over the tack coat before the overlay is placed, a light layer of sand can be spread on top of the tack coat to prevent the pickup of the tack coat material by traffic.... Excess sand should be broomed from the pavement surface before the overlay is placed to assure the proper bond between the overlay and the existing pavement." Like the required flush seal, the sand must be placed on the emulsion prior to set or cure.

The Asphalt Institute publication MS-19, A Basic Asphalt Emulsion Manual states "No more tack coat should be applied on an area than can be covered by the same day's operations." It goes on to say "After spraying the tack coat, enough time must be allowed for complete breaking to occur before the overlay is placed. Traffic should be kept off the tacked area. If that is not possible, the vehicle speeds should be kept below 20 mph."

The CALTRANS publication on *Tack Coat Guidelines*, reiterates industry practices in the *Hot Mix Paving Handbook*. Specifically, "tack coat must be limited to the area that can be covered with hot mix the same day." "Close areas receiving tack coat to traffic." "Ensuring that the tack coat has broken before paving or, if the contractor chooses to pave before the tack coat has broken, that tracking is minimized." "When tracking tack coat materials by vehicle tires occurs, clean the affected areas and reapply the tack coat before resuming paving operations. "For safety reasons, traffic should be kept off tack coat surface." "If traffic must use the surface where tack coat has been applied, apply sand cover and take other appropriate precautions to provide adequate skid resistance." "Tack coat may become slick if it rains on newly placed tack. It is prudent to have a sand source available or lane closures should remain in place during inclement weather."

The contractor association, Flexible Pavements of Ohio in their Technical Bulletin, *Proper Tack Coat Application* states that for safety reasons, traffic should be kept off tack at all times. There is potential for reduced skid resistance especially in wet weather. It is prudent to use sand cover if the tack coat must be opened to traffic. Whenever possible, traffic should be kept off tack until set has occurred.

The FHWA in its *Guidelines for Using Prime and Tack Coats* provides guidance that "If possible, all traffic should be kept off tacked surfaces." The publication reviewed various industry handbooks and stated that "The handbooks were in general agreement that traffic, both construction and otherwise, should be kept off uncured tack coat, as well as cured tack coat, if at all possible." Further, "The Hot-Mix Asphalt paving Handbook 2000 reported that tack coat should not be left exposed to traffic and if doing so was necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface should be taken.". In their conclusions they state that if possible, "all traffic should be kept off tacked surfaces."

South Dakota DOT Plans, Specifications, Construction Manual and Preventive Maintenance Manual

The following Sections of the 2015 South Dakota Department of Transportation Specifications pertain to this opinion:

App. 0006

- 5.9 Authority and Duties of Area Engineer "As the representative of the Director of Operations, the Area Engineer has immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer has the authority to reject work, and to suspend work being improperly performed."
- 5.10 Duties of the Inspector "Department inspectors will inspect all work done and materials furnished. This inspection may extend to any part of the work, preparation, fabrication, or manufacture of the materials to be used. The inspector-will not alter or waive the provisions of the contract."
- 5.11 Inspection of Work "Materials and details of the work will be subject to inspection by the Department. The Contractor will allow the Engineer access to the work and will furnish the Engineer with information and assistance necessary to make a complete and detailed inspection.
- 5.14 Maintenance During Construction "The Contractor will maintain the work during construction and until the Area Engineer issues the Acceptance of Field Work. The Contractor's obligation to maintain the work will consist of continuous and effective work, prosecuted daily with adequate equipment and forces, to keep the roadway and structures in satisfactory condition."
- "Unless otherwise specified in the Contract, the Contractor's responsibility for project maintenance will be as follows: When the work begins on the roadbed or pavement structure, the Contractor will maintain the entire project including but not limited to, all surface maintenance, drainage, weed control and temporary traffic control. This responsibility will continue until the Area Engineer issues the Acceptance of Field Work."
- 5.15 Failure to Maintain Roadway or Structure "If the Contractor does not comply with the provisions of Section 4.5 or 5.14, the Engineer will notify the Contractor of such non-compliance."
- 7.7 Public Convenience and Safety "The Contractor will provide for the safety and convenience of the general public and the residents along the highway and the protection of persons and property as specified under section 4.5."
- 7.10 Barricades and Warning Signs "The Contractor will provide, erect, and maintain necessary barricades, suitable and sufficient lights, danger signals, signs, and traffic control devices and take all necessary precautions to protect the work and safety of the public."
- 7.17 Contractor's Responsibility for Work "The Contractor is responsible for the work until the Acceptance of Field Work is made by the Area Office, except as set forth in Section 4.5 B.1."
- 320.3 Construction Requirements, G. Tacking, Spreading and Compacting "The surface, including all vertical contact faces, on which the asphalt concrete is to be placed, shall be

324.3 Construction Requirements, C. Asphalt – "Asphalt for tack SS-1h or CSS-1h shall be applied prior to each lift of asphalt concrete. Asphalt shall be applied at the rate of 0.10 gallons per square yard on existing pavement or milled asphalt concrete surface and at a rate of 0.05 gallons per square yard on new asphalt concrete pavement."

"Asphalt for flush seal SS-1h or CS-1h and sand for flush seal shall be applied to the final lift of asphalt concrete in accordance with Section 330. Asphalt for flush seal shall be applied at a rate of 0.05 gallons per square yard and sand for flush seal shall be applied at a rate of 8 pounds per square yard."

330 Construction Requirements, B. Dilution of Tack, Fog Seal and Flush Seal — "Emulsified Asphalt for tack, fog seal or flush seal with a specified rate exceeding 0.05 gallons per square yard may not be diluted."

The plan-specified rate for the tack coat on this project applied to the leveling lift (in preparation for paving the top lift) on this project was 0.06 gallons per square yard.

330 Construction Requirements, E. Application of Asphalt -- "Tack application ahead of the mat shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the engineer."

330 Construction Requirements, G. Temporary Traffic Control – "Temporary traffic control shall conform to Section 634."

634.3 Construction Requirements, A. General, "The Contractor shall furnish, install, and maintain required traffic control devices and pavement marking material.

1. All traffic control devices shall be kept in proper position, clean, and legible at all times. Damaged devices shall be replaced within 24 hours, or as directed by the Engineer.

E. Traffic Control Miscellaneous, 5. Inspection – "The Contractor shall constantly monitor and maintain all traffic control items. The Contractor is responsible for adjustments of traffic control items when traffic conditions change."

Supplemental Specifications dated June 1, 2016:

320.3 G - Delete the last sentence of the 1st paragraph and replace with the following:

"The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement."

330.3 B - Delete the 1st sentence and replace with the following:

"Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.07 gallons per square yard or less may be diluted."

330.3 B – Delete the last sentence and replace with the following:

"Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate exceeding 0.07 gallons per square yard shall not be diluted."

330.3 E - Add the following sentence to the beginning of the last paragraph of this Section:

"The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, ahead of mat laydown."

Supplemental Specifications dated April 4, 2018 and April 14, 2018:

320.3 G - Delete the last sentence of the 1st paragraph and replace with the following:

"The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement."

330.3 B – Delete and replace with the following:

B. Dilution of Tack, Fog Seal, and Flush Seal: "Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.07 gallons per square yard or less may be diluted. The rate of dilution for tack shall be at a ratio of at least 1-part emulsion to no more than 1 part added water (1:1 ratio minimum) by volume, unless otherwise approved by the Engineer. The rate of dilution for fog seal and flush seal shall be at a ratio of not more than 3 parts emulsion to 1 part added water (3:1 ratio maximum) by volume to not less than 1 part emulsion to 1 part added water (1:1 ratio) by volume, unless otherwise approved by the Engineer. The emulsion shall be uniformly mixed by adding potable water and if necessary, agitating the mixture. The amount of emulsion and any added water shall be included on the ticket delivered to the project. If the emulsion is diluted, the emulsified asphalt supplier shall perform the dilution. Dilution of asphalt emulsion in the field will not be allowed unless approved by the Engineer. Field dilution of the emulsified asphalt will only be allowed when the rate of dilution is accurately controlled. The final rate of dilution shall not be less than the minimum ratio of at least 1-part emulsion to no more than 1 part added water (1:1 ratio minimum). Diluted emulsified asphalt for tack, fog seal, and flush seal shall be applied at an adjusted rate proportional to the dilution ratio resulting in application of the specified rate of emulsion. Emulsified asphalt for tack, fog seal, or flush seal with a specified rate exceeding 0.07 gallons per square yard shall not be diluted."

330.3 E - Add the following sentence to the beginning of the last paragraph of this Section:

"The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, ahead of mat laydown."

The SDDOT Construction Manual addresses specific responsibilities for the Area Engineer, Project Engineer and Project Inspector. The Project Management Section of this manual states that this section is for informational purposes only. However, it mimics the duties and responsibilities provided in the SDDOT Specifications.

According to the Construction Manual, the Area Engineer had the "authority to reject defective work" and the authority to suspend the contractor "for work being improperly performed, for the Contractor's failure to correct conditions unsafe for the project personnel or general public,

for the Contractor's failure to carry out the provisions of the contract, or for the contractor's failure to carry out the orders of the engineer."

Likewise, The Construction Manual states that "In general, the authority of the Project Engineer in relation to the contract extends to the field administration of the contract, enforcement of the terms of the contract, and the determination of the amount of work performed and material furnished."...The Project Engineer is responsible for and has the delegated authority for obtaining work that fulfills the requirements of the contract."

Regarding the Project Inspector, the SDDOT's Construction Manual states "It is the duty of the inspector to determine that the work is performed in accordance with the specified requirements.

The South Dakota DOT Pavement Preservation Guidelines do not address tack coat directly. However, it discusses fog seals and flush seals. Fog seal, flush seal and tack coat use the same material – SS-1h or CSS-1h. The only difference is the application rate for each: typically, tack coat is applied at higher rates than fog seal or flush seal. The manual states, "fog seals can have a negative impact on friction and stripping in susceptible HMA pavements. (See Fig 1-4D)." It follows that a tack coat, which is the same as a fog seal or flush seal, if left exposed to traffic, will negatively affect friction. Moreover, tack coat, which is applied at higher rates would result in reduced friction compared to fog seal or flush seal. Figure 1-4D, Step 3 is captioned "Sand Blotter and Sweeping (if necessary). Sand blotters can help address a problem with delayed curing, as well as early opening to traffic. Sweeping may be required to remove excess sand." SDDOT proposes sanding is a solution to reduced friction caused by fog seal. If SDDOT personnel were cognizant of this manual, they should have been aware that an exposed tack reduces friction and poses a hazard and that sanding could remediate the hazard.

The Highway 45 Plans were reviewed. Several points are relevant to this case. Traffic was required to be returned to normal traffic at the end of the day. Also, bump and uneven lane signs were to be provided as necessary. A pilot car and flagger were required during construction. Finally, the list of signs allowed for payment included: 2 fresh oil signs, 4 advisory speed placards, 10 bump signs and 8 uneven lane signs. The Plans require that Fresh Oil signs be used when no flaggers are present during tack coat operations.

The available signage to both the contractor and the SDDOT personnel could have been used to warn the traveling public of a hazardous condition. The hazardous condition was created when the contractor sprayed tack coat material 1400 feet beyond the hot mix asphalt that he could place that day. There was no intention to cover that tack coat as the contractor was moving to the north end of project on his next workday. It would not have affected his next day production. Knowing that this 1400 feet would be exposed to traffic for a period of time, the contractor should have also applied sand to the tack coat at the time of tack coat placement as he would do when he places the flush seal on the final lift of hot mix. This unsafe condition was allowed by both the contractor and SDDOT personnel.

The project's plans sheet 30 called for Fresh Oil signs during the tack coat operations. The Plans state, "For tack and /or flush seal operations, when flaggers are not being used, the FRESH OIL

sign (W21-2) shall be displayed in advance of liquid asphalt areas." The code, W21-2, comes from the Manual of Uniform Traffic Control Devices (MUTCD). Section 6F.34 in the MUTCD, regarding the Fresh Oil sign, says "The Fresh Oil (Tar) (W21-2) sign should be used to warn road users of the surface treatment." SDDOT's Specification 7.10 states, "Barricades, warning signs, lights, temporary signals, and other protective devices must conform to the current edition of the Federal manual on Uniform Traffic Control Devices (MUTCD) at the time of letting and the details shown on the plans." Furthermore, Specification 634.2 states, "Traffic and traffic control devices shall conform to and be maintained in accordance with the requirements of Section 984 and Part 6 of the MUTCD." Both Spencer Quarries employees and SDDOT's personnel testified the tack coat operation started on June 29, 2018 was not complete until the tack coat was paved over on July 9, 2018. Then plans required Spencer Quarries and SDDOT to place Fresh Oil signs warning road users of the exposed tack coat until July 9, 2018 when the tack coat operation on that stretch of highway was completed.

Spencer Quarries Depositions

Eleven depositions of Spencer Quarries employees were reviewed along with two employees from Construction Signing Corporation. Even though most of these employees had taken several iterations of the DAPA certification courses and received certification at least once or multiple times, there was very little knowledge displayed of tack coat. Almost all knowledge appeared to come from on-the-job training or information passed from one employee to another. There was no appreciation for outside knowledge, studies or publications either from government agencies, contractor organizations or other professional transportation information. To a man, they only cited a need to know South Dakota Specifications and plans. Many of them stated that the SDDOT personnel were responsible on the project and one stated that he only did what SDDOT told him to do. Several Spencer Quarries personnel indicated that they had not read the specifications.

As a collective, they all stated that once the tack coat broke, they could pave. There was little knowledge of when a tack coat would be considered set or cured. Many indicated that traffic driving on tack coat material that has broken is ok, that it is not slippery and that it is not slippery when wet. There was discussion that haul trucks were driving on uncured tack, however. This was done as a convenience to achieve more production. This was standard practice that was permitted by both contractor and SDDOT personnel.

As mentioned previously, haul vehicles driving on broken tack coat that is neither set nor cured can be tracked and picked up by tires. When haul trucks travel on either unbroken or broken but not yet cured or set material they can and will pick up tack coat material. The material falls off the tires, hits the roadway and creates splotches or globs of asphalt material. As splotches or globs of asphalt from haul truck tires additionally reduce surface friction, they create a hazard. They should be removed or should have been prevented from occurring.

There were conflicting accounts of who was responsible for the project while under construction and especially of who determines the amount of allowable tack coat material left

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open to traffic at the end of the day. Some stated that it was a joint decision between the contractor and SDDOT while others said it was up to the SDDOT. The reason provided for spraying what could not be covered the same day was so that they could get started earlier the next day. In other words, this was done for the convenience and efficiency of the contractor, not considering the safety of the traveling public. Again, this was a standard practice of the contractor to happen on other occasions during the week leading up to the crash for his convenience. In fact, on one occasion, 3,650 feet was left uncovered, and a total of 7,150 feet was left uncovered at various points in the week preceding the crash. One said, however, that they normally would not leave exposed tack coat with a weekend coming up, because it would have to be cleaned and/or re-sprayed with weekend traffic or possibly rain. Others said it was practice to overspray up to 0.25 mile. The distributor operator stated that usually it was his decision where to stop and that he could spray to within 20 feet of the day's last hot mix truck and that usually, he was not ordered by the SDDOT engineer to spray material beyond what could be covered with hot mix asphalt. That 1400 feet of uncovered, slippery tack coat was left exposed over the weekend and longer created an unsafe condition.

With respect to signage, again, there were conflicting statements of responsibility. The roadway foreman stated that he only puts out bump signs and uneven lane signs. Sometimes there would be a speed placard on the bump sign. The division manager stated that they can't put out speed signs without the permission of SDDOT. The Spencer Quarries employee who places the signs on the project stated that about 90% of bump signs have speed placards on them. He believes that the bump sign on this project was posted as 30 mph. He also stated that fresh oil signs were placed on flush seals, but they are not required once the material has broken. While fresh oil signs were available, this employee said they are not required once the tack is cured. The other Construction Signing Corp employee stated fresh oil signs are put up if the tack is left overnight and until the tack coat operation is completed, which the project's plans and the MUTCD required.

South Dakota Department of Transportation Depositions

There were six depositions of SDDOT personnel reviewed.

Similar to Spencer Quarries, SDDOT personnel had conflicting testimony concerning tack coat. Several had taken the certification courses and were certified. Several were unaware of the SDDOT specification that requires tack to only be sprayed on what can be covered that day. Most thought it was due to cost and not a safety factor. Only one suggested that he allows spray of tack coat 500-600 ft beyond what can be covered at the end of the day, but that it could be greater. Most indicated it was the contractor's job to determine how much tack coat they would place and that they did not require or direct tack coat to be sprayed beyond what could be covered with hot mix asphalt. This was contrary to what the contractor said. Again, any spraying beyond what could be covered the same day was for the convenience of the contractor. The contractor stated that it was their normal practice. Specifications require that it be held to what could be covered that day and could only be extended if ordered or allowed

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by SDDOT. The project engineer does not recall telling the contractor on this project to extend the tack coat placement. The inspector claims he did not require extra tack.

Several respondents did not recognize tack as being slippery. One indicated that he had never seen tack coat deposited on roadway by haul trucks and bond on the road. The bituminous engineer stated that tack coat can be picked up by traffic which is why the SDDOT doesn't want to place too much in front of paving. He doesn't know if tack reduces friction but knows that the reduction of friction is why sand is placed on flush seal.

The project engineer suggested that additional signs could be requested by the contractor or the engineer.

Assessment

It is apparent from the information reviewed and presented above that at the time of the crash on June 30, 2018 the exposed tack coat and wet conditions substantially decreased the traction on the roadway. The combination of newly placed hot mix covered with tack coat material left exposed to traffic significantly reduced the surface macrotexture. The macro texture is essential at high speeds in wet weather to provide friction resistance. This exposed tack reduced the ability of the underlying hot mix asphalt to provide adequate friction resistance. This condition was exacerbated by rain that fell the morning of the crash, further reducing the surface's friction and making it more slippery. Based on existing engineering knowledge from both governmental agencies and industry sectors, both the contractor and SDDOT were required to alleviate this situation. The specifications and plans used to construct this project required SDDOT and the contractor to use this knowledge to produce a safe riding surface for the traveling public. Based on the above information the following observations are drawn.

The asphalt film thickness covering the fresh asphalt mat's coarse aggregate reduced the microtexture and macrotexture of the existing riding surface. The tack coat placed on this mat, approximately 1400 feet beyond what was covered by the final hot mix asphalt lift, reduced the macrotexture and texture depth, thereby further reducing the ability of the surface to provide friction. Additionally, photographs taken the day after the crash by the driver's father showed "splotches" of asphalt both longitudinally and transversely on the tack coated area that had been deposited by haul trucks. This extra tack coat material additionally reduces friction and adds to a slippery condition. Permitting the haul trucks to transit on either unbroken or broken but not set tack coat violates specifications and should have been stopped by either the contractor's superintendent or roadway foreman or the SDDOT project engineer or inspector.

Testimony indicated that, given the upcoming weekend and the specifications limiting tack coat placement to that which can be adequately covered by hot mix asphalt, there was no need to spray the tack coat beyond what could be covered. In fact, the distributor operator stated that he could stop the tack within 20 feet of hot mix laydown. It is also noted that there was apparently no intent to continue with hot mix laydown in this lane till sometime later, as the paving operation was moved to the northern end of the project and then returning back south to this section. Given that both contractor and SDDOT personnel agree that this tack would

have to be re-sprayed upon return, there was no reason for the SDDOT to order or allow any tack coat application beyond what could be covered that day. The spray of tack coat material 1400 feet beyond what could be covered that day was simply for the contractor's convenience and contrary to the specifications. Even if it was permissible under the SDDOT's specifications, in this case, it was totally unnecessary, as the paving was being moved to the northern end of the project. There also is no indication the SDDOT ordered the overspray. The SDDOT specifications required it to inspect and identify this hazard. Once identified, SDDOT personnel were required to notify the contractor or remediate the hazard.

Once placed, however, there was no attempt to mitigate this condition such as posting the required fresh oil signs or posting reduced speed signs. A review of the specifications reveals that the contractor is required to maintain safety on the roadway while under construction from the time of the Notice to Proceed until the final acceptance by the SDDOT. Further, SDDOT engineers and inspectors are required to see that the specifications are enforced. There was signage available to reduce the speed on this section of roadway with the reduced friction capability. Indeed, one witness said that there was a speed placard bolted onto the bump sign with a believed posting of 30 mph. Photographs taken by police could not confirm the speed placard. Another photograph taken on July 5, 2018 shows no speed placard on the bump sign. Regardless, a speed placard on the bump sign did not address the hazardous condition presented by the slippery tack coat. The bump warning sign cited another hazard that was beyond the point where Mr. McGee departed the roadway. There were speed placards available that either the contractor or SDDOT personnel could have deployed to address the hazard created by the tack coat Specifically, the Plans state, "For tack and /or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of liquid asphalt areas." The code, W21-2, comes from the Manual of Uniform Traffic Control Devices (MUTCD). Section 6F.34 in the MUTCD, regarding the Fresh Oil sign, says "The Fresh Oil (Tar) (W21-2) sign should be used to warn road users of the surface treatment." SDDOT's Specification 7.10 states, "Barricades, warning signs, lights, temporary signals, and other protective devices must conform to the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD) at the time of letting and the details shown on the plans." Furthermore, Specification 634.2 states, "Traffic and traffic control devices shall conform to and be maintained in accordance with the requirements of Section 984 and Part 6 of the MUTCD." Alternately, the contractor could have requested approval to place a reduced speed to mitigate the unsafe condition, or the SDDOT engineers could have required a reduced speed sign.

Additionally, there were fresh oil signs available on site that should have been employed when the 1400 feet of tack coat was left uncovered. In this case there was also excess tack from the "splotches" and rain was in the forecast. The signs should certainly have been deployed and the road was unsafe without taking precautions for the travelling public. Also, the excess material from the haul trucks should have been scraped off the roadway. In addition to all other factors mentioned above, the knowledge that construction would not continue for a number of days on this section, made it more important to place the fresh oil signage for the safety of the traveling public. It was recognized in the testimony that the fresh oil signs were employed on the exposed flushed seal placed on the final lift of hot mix until broken and sanded. They should have also been employed because of the exposed tack coat material.

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Again, the emulsions and rates of application for tack coat and flush seal are the same and the rates of application are similar.

An additional step that could have been employed by the contractor would have been to apply a light coating of sand on the exposed tack coat before it had set or cured. This sand coat would have to be placed on the tack coat at the time of application. The sand coat is required on a flush seal specifically to increase friction. The emulsion used for tack coat and flush seal is identical, and the application rates are identical. Knowing that the tack on this section would be exposed for about ten days should have prompted contractor personnel to request such an application or for the SDDOT personnel to require such an application prior to set. The SDDOT's Pavement Preservation Manual requires such an application on flush seal because of the known safety issue due to significant reduction in friction. Essentially, SDDOT allowed the contractor to open a heavily applied, un-sanded flush seal to the travelling public.

SDDOT Standard Specification Section 5.9 - Authority and Duties of Area Engineer states, "As the representative of the Director of Operations, the Area Engineer has immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer has the authority to reject work, and to suspend work being improperly performed." The contractor left tack coat uncovered without mitigation, which was unsafe for the general public; thus, the Area Engineer had an obligation to act. Spencer Quarries did not place Fresh Oil signs contravening the plans; thus, they were performing work improperly, and the Area Engineer had a duty to correct Spencer Quarries.

Regarding the Project Engineer, SDDOT Standard Specifications state, "If the contractor does not comply with the provisions of Section 4.5 or 5.14, the Engineer will notify the Contractor of such non-compliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of notice, the Engineer will proceed to maintain the project and will deduct the entire cost of this maintenance from monies due or become due to the contractor."

Standard Specification 4.5 states" The Contractor will keep the portion of the project used by the public traffic in a condition that will adequately and safely accommodate traffic."

The Project Inspector is required by the SDDOT Standard Specification Section 5.10 to "inspect all work done and materials furnished. This inspection may extend to any part of the work, preparation, fabrication, or manufacture of the materials to be used. The inspector will not alter or waive the provisions of the contract." The uncovered tack coat material and lack of signing on the project should have been captured in the project diary and reported to the Project Engineer.

In summary, the contractor was responsible to maintain and execute this project from the time of Notice to Proceed until it was accepted by the SDDOT – section 7.17. Per SDDOT Standard Specification Sections 4.5 and 7.7, the contractor is responsible for the safety of the public. The additional tack coat applied for 1400 feet was not needed, was strictly for the convenience of the contractor, and was not permissible by the 2015 SDDOT Specifications. The SDDOT personnel on the project were responsible to inspect and make sure the contractor proceeded according to the specification and plans. SDDOT was also responsible for ensuring this contractor followed specifications, plans, and industry customs and practice.

SDDOT's Specification Section 320.3 states that the tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement. This apparently was not followed as demonstrated by the "splotches" longitudinally and transversely on the tacked section. This excess material should have been removed by the contractor or required to be removed by the SDDOT.

There was no need to spray more tack coat that could be covered with hot mix on a Friday afternoon, especially 1400 feet, knowing that the paving operation would not return to this area for several days. This clearly violates the specifications and should have been addressed by SDDOT. There is no evidence that SDDOT ordered or gave permission for this action.

By section 643.3, E. the contractor was responsible for all signing on the project. SDDOT personnel were responsible to hold the contractor to this specification. Since the tack coat operation was not complete at the time of the crash, a Fresh Oil sign was required in advance of the tack coated surface.

Based on the materials reviewed and evaluated, there was a loss of friction due to the application of tack coat material which presented a slippery condition, exacerbated by rain. This condition was not mitigated by methods known within the industry and specifications and plans applicable to this project, that were required to be followed by both the contractor and the SDDOT personnel.

The assessment of the existing body of knowledge presented here is based on forty-three years of professional experience in asphalt concrete research, asphalt construction, materials, mix design, pavements, pavement surface characteristics, pavement maintenance and preservation, and specification development along with research program management and administration. It is also based on actual research and testing under substantially similar conditions to those Mr. McGee encountered just before his crash. Having actively served on many local, regional and national professional committees and organizations in these technical areas, I have a vast perspective of practical experience in the area of asphalt technology.

I am available to review additional information that may come forward and would be willing to supplement my opinions accordingly.

Harold R. Paul, P.E.

LA License 19248

JAMES A. SCHEROCMAN, P. E. CONSULTING ENGINEER

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Mr. Michael F. Marlow Marlow, Woodward & Huff 200 West 3rd Street Yankton, South Dakota 57078

Dear Mr. Marlow:

This report is in regard to the lawsuit of Austin McGee vs Spencer Quarries, Inc., in the Circuit Court of Brule County, South Dakota. The case number is 07CIV18-000054. It concerns a vehicle crash that occurred at 9:30 AM on Saturday morning, June 30, 2018. That accident happened on SD Highway 45 at mile maker 040 +.339. Two individuals were involved in the single vehicle crash: Austin McGee and Brent McGee.

The purpose of this report is to provide an opinion as to whether or not Spencer Quarries properly applied the tack coat material to the road surface and, if not, whether the condition of the road surface at the location of the crash was hazardous to the traveling public.

INFORMATION REVIEWED:

- 1. Accident Report, 6/30/18.
- 2. The deposition testimony of the following individuals:
 - a. Ramiro Mora, Jr, Spencer Quarries, April 22, 2019.
 - b. Brad James, Spencer Quarries, April 22, 2019.
 - c. Neil Waldera, Spencer Quarries, April 22, 2019.
 - d. Todd Waldera, Spencer Quarries, April 23, 2019.
 - e. Ken Baldwin, Spencer Quarries, April 23, 2019.
 - f. Ralph Wallace, III, Spencer Quarries, April 23, 2019.
 - g. Timothy Harmelink, Spencer Quarries, April 23, 2019.
 - h. Jesse Helma, Spencer Quarries, April 23, 2019.
 - i. Darren Feistner, Spencer Quarries, April 23, 2019.
- 3. South Dakota Department of Specifications: Various dates.
- 4. Plans for Project P 0045(54)27.
- 5. Weather data for June 29 and 30, 2018.
- 6. Pictures of pavement at the accident location.
- 7. Technical papers on tack coat usage:
 - a. Worldwide State of Practice on the Use of Tack Coats, Association of Asphalt Paving Technologists, Volume 77, 2008.
 - b. Hot Mix Asphalt Paving Handbook, Transportation Research Board, 2000.
 - c. Friction Testing of Tack Coat Surfaces, Transportation Research Record 1616, 1998.
 - d. Proper Tack Coat Application, Flexible Pavements of Ohio, May 21, 2001.

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e. Tack Coat Guidelines, California Department of Transportation, April 2009.

f. Best Practices for Emulsion Tack Coats, National Asphalt Pavement Association, October 2013.

g. Guidelines for Using Prime and Tack Coats, Federal Highway Administration, July 2004.

h. Standard Specifications for Highway and Bridge Construction, Iowa Department of Transportation, Series 2012.

PAVEMENT DESIGN:

Pavement Layers:

A review was made of the pavement design specifications for Project P 0045(54)27, for State Highway 45 in Charles Mix and Brule Counties. For the various sections, two cross section designs were provided. The first was for a typical cold milling section and the second was for a typical resurfacing section.

For the cold milling section, in the area of the McGee accident, the design specifications indicated that the milling was to be completed to a depth of 0.5 inches. In addition, there were two new layers of asphalt concrete mixture to be placed: a first layer of Class Q2 mix at a thickness of 1 inch, and a second layer of Class Q2 mix (surface course) at a thickness of 1-1/2 inches.

Tack Coat Application Rates:

Information was provided in the specifications concerning the rate at which the tack coat material was to be applied. On top of the milled surface, the tack coat application rate was to be 0.09 gallons per square yard. On top of the first (bottom) layer of asphalt concrete mix, the tack coat application rate was shown to be 0.06 gallons per square yard. The type of tack coat material was to be an asphalt emulsion, either type SS-1h or CSS-1h. According to the information reviewed, the tack coat material was supplied by Jebro, Inc. That material was a CSS-1h material.

The amount of residual asphalt cement binder in a tack coat material, that is not diluted with additional water, is typically in the range of 55% to 70%. For calculation purposes, a residual asphalt content for the asphalt binder is normally selected to be 67%. This value means that the tack coat material would contain approximately 2/3 asphalt binder and 1/3 water.

It is noted, however, that the tack coat material supplied by Jebro was a diluted material. The bill of lading for the tack coat indicated that the emulsion was two parts emulsion and one part additional water. This would make the asphalt binder in the emulsion only approximately 44% instead of 67%.

For the tack coat material applied to the top of the first new layer of asphalt concrete mix (the 1 inch thick layer), the application rate, according to the project requirements, would be 0.06 gallons per square yard. For an emulsion that is approximately 2/3 asphalt binder, that would mean that the residual application rate, the amount of asphalt binder remaining after the water evaporated and the emulsion set, would be 0.04 gallons per square yard. If however, the tack coat material was diluted with water, the total amount of asphalt binder remaining after the water evaporated and the emulsion set would be only approximately 0.026 gallons per square yard.

For a project such as the one on South Dakota Highway 45, the selection of the type of tack coat, CSS-1h material, is normal. In addition, the specified application rates for the tack coat material on top of the milled surface and the first layer of asphalt concrete mix are normal. The amount of the residual

asphalt binder material remaining after the water in the emulsion has evaporated is also normal. Thus, this writer did not find anything unusual in the SDDOT specification requirements for this project.

It is not known, however, if the application rate was increased in order to compensate for the dilution of the tack coat material by Jebro. Typically, the application rate would need to be increased so that the same residual asphalt binder rate was achieved once the water evaporated. The additional water would be added to the tack coat simply to make the material easier to spread uniformly across the pavement surface. Regardless of whether the tack coat was diluted on more than a 2/3 asphalt binder-1/3 water basis, any tack coat remaining on the pavement surface, without being covered with the new asphalt concrete pavement layer, would have a greatly reduced level of skid resistance.

TACK COAT TERMINOLOGY:

Tack Coat Break and Set:

Tack coat materials have been used in the United States for many, many years. The terminology applicable to these materials has been standardized across the county. Organizations such as the Federal Highway Administration, the American Association of State Highway and Transportation Officials, the Asphalt Institute, the National Asphalt Pavement Association, and the Transportation Research Board all employ the same terminology for tack coat materials.

When a tack coat is manufactured by an asphalt supply company, it contains about 2/3 asphalt binder and 1/3 water, if it is not diluted. That is the proportion of the asphalt binder and water that makes up the tack coat material when that material is placed in the tack truck used to apply the tack coat to the surface of the pavement that is going to be paved. The water is added to the asphalt binder in order to make the tack coat material more fluid and so that it only has to be heated up in the truck to a temperature in the range of 130° - 170°F in order to be spray applied, instead of a temperature in the range of 280° to 320°F if the tack coat material was composed of 100% asphalt binder.

When a tack coat is applied (sprayed) on the existing pavement surface, as discussed above, the tack coat material contains water. The tack coat is in an emulsion form and is typically brown in color. After a short period of time, the ambient air temperature and the temperature of the pavement surface on which the tack coat is applied cause the tack coat to "break". In the asphalt paving industry, that typically means that the color of the tack coat changes from brown to black and that the water in the tack coat begins to evaporate. The rate at which the water evaporates depends on the type of tack coat material (slow set or rapid set), the tack coat application rate, the type of surface on which the tack coat is applied, the ambient air temperature, and the temperature of the pavement surface on which the tack coat is placed. When all the water in the tack coat material evaporated, it is said in the industry that the tack coat material has "set". It is noted that in the 2016 SDDOT specifications, the word "cure" is used instead of "set".

Paving Over Tack Coat:

As mentioned above, when a tack coat is applied, it has not broken and has not set. It is well known in the asphalt paving industry that a tack coat that has not set will be very susceptible to pickup on the tires of the haul trucks that are delivering asphalt concrete mix to an asphalt paver. In general, the tack coat material will break in a few minutes, depending on the factors discussed above. Unless the tack coat is completely set or cured (completely free of water and the water has completely evaporated), however, the tack coat will be extremely susceptible to being picked up by vehicle tires.

Under certain environmental conditions, high tack coat application rates, and the selection of the type of tack coat material, it might easily take up to 30 or more minutes for the water to evaporate and the tack coat material to "set" or "cure". In addition, the type of tack coat material required for use by the SDDOT, while a commonly used material in the country, is a "slow setting" material. This means that it would take much longer for all of the water to evaporate compared to a tack coat that was labeled as a "quick setting" material or a "rapid setting" material.

If a contractor attempts to pave over a tack coat material that has been applied in front of the paver which has broken, but has not set or cured, it can be expected that some of the tack coat material will adhere to the tires of the trucks that are delivering the asphalt concrete mix to the asphalt paver. This is evidently what happened on the SD Highway 45 project at the location of the McGee accident.

Tack coat which has broken, but not yet set or cured, is extremely sticky. Pickup of the tack coat on the tires of the haul trucks is NOT something new. It is a common problem which occurs when a contractor does not provide enough time for the tack coat material to not only break, but also to completely set or cure. Paving over the tack coat before it has set allows the material to pick up on the tires of the haul trucks and then drop off of the tires a short time later.

Terminology Differences:

Based on the deposition testimony of various Spencer Quarries personnel, it is obvious that the terminology used by the industry countrywide is not necessarily the same as the terminology used by the contractor personnel involved in the SD Highway 45 project. In many cases, as discussed in detail later, it was stated by the contractor personnel that it was OK to pave over a tack coat material that was broken. In most cases, the terminology relating to the tack coat material being "set" was not used.

As discussed above, it is noted that in the 2016 SDDOT specifications that the tack coat material must be allowed to cure prior to asphalt concrete placement. It is well known in the asphalt paving industry that when the tack coat is set or cured, it will not be susceptible to pickup on the tires of the haul vehicles and carried down the roadway. The tack coat material which is not completely set or cured, which is picked up, and dropped off of, the tires of the haul vehicles will significantly reduce level of friction available to vehicles traveling over the tack coated surface.

From the deposition testimony, it appears that the contractor personnel for Spencer Quarries use the term "breaking" for the tack coat to undergo a change in color from brown to black, which is correct. This, however, does not mean that the tack coat material is OK to pave on and that the tack coat will not pick up on the vehicle tires. From the viewpoint of pick up of the tack coat material on the vehicle tires, there is a major difference in allowing vehicles to travel over a tack coat that is only broken versus allowing vehicles to travel over a tack coat that is set or cured.

USE OF TACK COAT MATERIALS ON U.S. HIGHWAYS:

There is a multitude of technical papers that have been published that deal with the use of tack coat materials to provide a bond between two layers of pavement. A list of seventy of those papers that have been read and reviewed by this writer is available for review. Given below is a synopsis of only eight of those papers which deal directly with keeping traffic off of exposed tack coat materials, the effect of tack coat on the level of friction available to traffic traveling over the tack coat, and the further reduction in skid resistance of the pavement surface which is covered with the tack coat when the pavement surface is wet.

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Survey of Tack Coat Practices:

A survey was completed in 2008 of the use of tack coats in 46 U.S. States, Washington DC, and 7 Canadian Provinces. The survey was divided up into three main sections: tack coat materials, tack coat application methods, and characterization of tack coat applications. It was found from the survey, as expected, that the application of the tack coat can improve the bond between two different layers of pavement. The materials used by the South Dakota Department of Transportation were comparable to the materials and application rates used by most state highway departments.

Hot Mix Asphalt Paving Handbook:

Section 14 of the 2000 edition of the Hot Mix Asphalt Paving Handbook is titled Surface Preparation. A portion of the section deals with the application and use of tack coat materials. It is stated that "If the tack coat material is not set and a significant amount of haul truck traffic runs over the unset material, much of the tack coat may be picked up by the truck tires and tracked down the roadway. Thus either the tack coat should be allowed to set before haul truck traffic is permitted to run over it, or the amount of traffic should be minimized." Further, it is stated that "If the overlay is to be constructed under traffic, the tack coat is normally placed only a short distance in front of the paver--within the lane closure and far enough ahead for the tack to set properly before the HMA is laid on top of it. Traffic is kept off of the tack coat at all times."

Two other important comments are contained in the <u>Handbook</u>. It states that "if traffic must travel over the tack coat before the overlay is placed, a light layer of sand can be spread on top of the tack coat to prevent its pick up by traffic." Information is provided on the application rate for the sand, which is dependent on the application rate of the tack coat material. Further, it is suggested that if the tack coat has been applied and traffic is using the roadway "that the posted speed limits on that section of roadway be significantly reduced until the overlay operation can take place. It is not a good practice to place the tack coat one day, permit traffic to run over the tack coat for a period of time, and then place the overlay at a later date."

Finally, the wording in the <u>Handbook</u> comments on the level of friction of the surface of the tack coat. It is stated that "Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface may be greatly reduced by the presence of the tack coat material." It is noted that there was exposed tack coat and an excessive amount of tack coat material present and exposed to traffic on the pavement surface at the location of the McGee accident.

Friction Testing of Tack Coat Surfaces:

A research project was conducted in 1998 by the Louisiana Transportation Research Center for the Transportation Research Board. A portion of that project included a survey of the state highway departments in the U.S. to determine the state of the practice with respect to tack coat usage. Some 42 states and the District of Columbia responded to the survey, including the South Dakota Department of Transportation. Questions asked included the type of materials used for tack coat, the percent dilution allowed, the application rate, the residual application rate, the time between the tack coat application and the placement of the asphalt concrete overlay, whether traffic was permitted to travel on the tack coat, and whether or not accidents had occurred while traffic was traveling over the tack coat material.

It is noted that the SDDOT commented in their response to the survey that tack coat was "extremely slippery when rained on". It is also noted that there were significant differences in the

responses between the different highway departments. Most of the states, however, did not permit travel on the tack coat by traffic.

The second part of the research project was related to the construction of nine tack coat test sections on a Louisiana state highway to measure the level of friction provided by a tack coat placed on top of an asphalt pavement layer. Three different tack coat application (residual) rates were used. Further, the amount of time between the placement of the tack coat material and the measurement of the friction level varied, from 4 hours to 8 hours to 24 hours. The level of friction was determined using ASTM E-274. It was determined that "using typical residual asphalt rates reported by states provide reduced friction capability for up to 7 hours after application." It is noted that most of the friction tests showed the level of friction to be very, very low, well below the level of friction of the original pavement surface without the tack coat application.

It must be mentioned that the friction tests that are conducted to measure the skid resistance of a pavement surface are normally conducted at a speed of 40 miles per hour. It is noted that the friction levels measured as part of this research project were very, very low-well below the level of friction expected to provide a safe surface for traffic to travel over.

It is well known that the level of friction available to a vehicle tire is reduced as the speed of the vehicle traveling over the pavement increases. It is the understanding of this writer that there were no reduced speed limit signs posted on the SD Highway 45 construction project at the location of the crash.

Proper Tack Coat Application:

Flexible Pavements of Ohio is an asphalt paving contractor organization similar to the Dakota Asphalt Pavement Association. One section of the report is titled "Tracking". It states that the amount of tracking that occurs depends in part on "whether sufficient time has been allotted to allow emulsified asphalt tack coat materials to set prior to haul vehicles having access". The report also states that "For safety reasons, traffic should be kept off the tacked road surface at all times. When a tacked road surface is exposed to traffic, the potential exists for reduced skid resistance, especially during wet weather."

Tack Coat Guidelines:

The California Department of Transportation published a report titled <u>Tack Coat Guidelines</u>. Two items in guidelines are particularly applicable to the SD Highway 45 project. The first of those two items states: "For safety reasons, keep traffic off a tack coat surface. If traffic must use the surface where the tack coat has been applied, apply a sand cover and take other appropriate action to provide adequate skid resistance."

The second applicable comment states "The tack coat may become slick if it rains on a newly placed tack coat. It is prudent to have a source of sand available for these situations, or lane closures must remain in place during inclement weather."

Best Practices for Emulsion Tack Coats:

The National Asphalt Pavement Association prepared a report in October, 2013, Quality Improvement Publication 128, titled "Best Practices for Emulsion Tack Coats". Section 5 deals with the Application of Tack Coat. Several comments made in this publication are related to the crash that occurred on this Spencer Quarries job. First, information is provided on normal break and set times for an asphalt emulsion tack coat material. It is stated that emulsions with normally break in 10 to 20

minutes. Complete setting of the emulsion might take 30 minutes to more than 2 hours, depending on the conditions on the roadway.

The NAPA report also states that "Unless the tack coat is set, there will be a tendency for the tack coat to be picked up on the tires of the construction equipment, especially the tires of the trucks delivering the asphalt mix to the material transfer vehicle or the paver." Several figures or pictures within the publication illustrate pick up of the tack coat material on the haul truck tires.

Further information in the NAPA report states that "much of the tack coat picked up on the haul truck tires will be deposited on the adjacent pavement surface. Such an occurrence, referred to as tracking, creates an unsightly mess on adjacent surfaces. Depending upon how much tack coat emulsion is deposited on the adjacent pavement or intersection, a reduction in pavement skid resistance may occur, possibly creating a safety hazard."

Guidelines for Using Prime and Tack Coats:

The Federal Highway Administration published a report, <u>FHWA-CFL-04-001</u>, in July 2004, titled "Guidelines for Using Prime and Tack Coats". In part, the publication is a literature search to determine the applicability and benefits of prime and tack coats. In Chapter 3, a summary of a review of handbooks from various agencies on the use of tack coats is provided.

In the subsection on Traffic, it is stated that "traffic, both construction and otherwise, should be kept off uncured tack coat, as well as cured tack coat, if at all possible." The comment is then made that "The Asphalt Institute reports that a tack coat surface is slick, and that freshly tacked pavement is generally too slick for safe driving, particularly before the asphalt emulsion has broken". The publication further states "that the magnitude of tack coat tracking by traffic is dependent on the type of tack coat used and whether the emulsion has set". One of the conclusions for tack coat is "If possible, all traffic should be kept off tacked surfaces."

Standard Specifications for Highway and Bridge Construction, Iowa Department of Transportation, Series 2012.

A review was made of the Standard Specifications of the Iowa DOT, Series 2012. In the section on HMA Construction, it is stated that the tack coat should be allowed to adequately cure prior to placement of HMA. Further, the specs say that "a light application of sand cover may also be required, but this is anticipated only for excessive application rates, breakdowns, and short sections remaining at the end of a day's run". An additional comment is made: "Plan applications so they will be covered with hot mixtures when the work area is opened to traffic at the end of the day's work".

Summary Comments:

It appears that many organizations have voiced concerns about tack coat application and about the tracking of the tack coat under the action of applied traffic, particularly the contractor's haul trucks. In addition, it is well known that tack coat is slippery, whether unbroken, broken, or set. The safest way to protect traffic is to keep the traffic off of the tack coat material before the new asphalt concrete is placed. This can be done by eliminating the amount of extra or overspray of the tack coat beyond what can be covered with the new asphalt concrete layer at the end of the paving day. If that is not possible, safety can be significantly increased by posting the appropriate signs to warn traffic and also to reduce the speed limit.

SOUTH DAKOTA DOT SPECIFICATIONS:

Section 320, Asphalt Construction:

In the SDDOT Specifications, the use of tack coat is discussed in 2015 Standard Specifications for Roads and Bridges. In Section 320.3, Part G, first paragraph, it states that the pavement surface "shall be tacked in accordance with Section 330".

Section 330, Prime, Tack, Fog Seal, and Flush Seal:

In Section 330.3, Part E, Application of Asphalt, fourth paragraph, it states that "Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer".

Supplemental Specifications, Dated June 1, 2016:

In the June 1, 2016 Supplemental Specifications, there is a new sentence added to Section 330.3E, as follows: The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, ahead of mat laydown."

WEATHER FORCASTS:

A review of the weather forecasts for the area of the SD Highway 45 project for the date of Saturday, June 30, indicated that the possibility of rain was significant. That weather forecast would have been available to Spencer Quarries personnel prior to the start of paving on Friday morning, June 29, 2018. Indeed, the possibility of rain was also forecast for Friday.

The data reviewed indicated that the chance for thunderstorms on Friday night was 50 percent. There was also a 50 percent chance for thunderstorms for Saturday.

It is certainly very well known in the highway construction business that water on a pavement, any pavement, reduces the level of friction available to the tires on a vehicle. The reduction in the level of friction on a wet road is greatly increased when uncovered tack coat is present on that pavement surface. Instead of the tires coming in contact with the pavement surface when the pavement is wet and the tack coat material is present, the tires come in contact with the water on top of the tack coat.

SPENCER QUARRIES DEPOSITIONS:

Nine different deposition transcripts of Spencer Quarries / Commercial Asphalt Company employees were reviewed. Two things stand out from those reviews. First, there is very limited knowledge of the proper use of tack coat materials. Second, the Spencer Quarries employees claim that anything and everything that might have gone wrong was the fault of the SDDOT personnel since they approved all of the contractor's operations.

There was a significant lack of knowledge displayed in regard to the common terminology used in regard to tack coat materials and the difference between the breaking and setting (or curing) of the emulsion in a tack coat. In addition, there was a strong belief that it was OK to pave over an emulsion

tack coat that had not yet set. Further there was a strong belief that it was OK to allow traffic to travel at highway speeds over the tack coat material, even in rainy weather.

There was also a significant lack of knowledge in regard to the lack of friction available for traffic that would travel over a tack coat surface. The Spencer Quarries personnel evidently did not believe that a tack coat would be slippery, even when wet.

When asked questions, the Spencer Quarries personnel continually mentioned that everything that they did was approved by the State of South Dakota personnel on the project. The project personnel for the contractor took essentially no responsibility for what happened on the job. It seemed that their only requirement was how many tons they could place every day. They needed to get the tack coat placed far enough ahead of the paving operation so they could pave over it without being delayed, waiting for the tack coat to break.

THE PICTURES OF THE PAVEMENT SURFACE:

The pictures of the pavement surface in the northbound direction of the SD Highway 45 project provide the information needed as to the cause of the McGee accident on the Spencer Quarries job. The difference in the amount of friction available to the tires of a vehicle in various longitudinal and transverse locations where the final asphalt concrete pavement surface was not yet in place contributes to the cause of the crash.

The pictures that were evidently taken on July 1, 2018 by members of the McGee family show that the surface of the pavement of the first course of the new pavement structure is covered with "splotches" of tack coat material. Those splotches, or spots, have been deposited on the pavement surface after falling off of the tires on the contractor's haul trucks which have traveled over the unset or uncured tack coat material in front of the paver during the paving operations.

The locations of the splotches or spots are highly variable down the length of the northbound pavement lane and also across the width of the lane. The spots provide an increase in the thickness of the tack coat material which reduces the amount of friction available to a vehicle tire. In addition, the highly variable location of the splotches causes a major change in the level of friction available to a vehicle tire in different locations when traveling over the tack coat on the pavement surface. The decrease in friction available to a vehicle tire due to the splotches is in addition to the decrease in friction which would occur just from the exposed, cured tack coat alone. Combined, the two situations would significantly reduce the level of friction available to any vehicle tire.

It is very important to realize, however, that the tack coat surface that was exposed to travel by highway speed traffic, would have provided a surface that would have a very low level of friction, regardless of whether or not the splotches were present.

CAUSE OF THE CRASH:

Based on the information reviewed, the cause of the crash of the McGee vehicle appears to be related to several things. First, it is the presence at the crash location, of tack coat which had been placed by the contractor and not covered up with asphalt concrete mix. As discussed above, exposed tack coat, whether broken or set, provides a reduced level of friction for traffic.

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Second, it is the presence of the tack coat splotches which increase the thickness of the tack coat in some locations, thus further reducing the level of friction available. Areas without splotches adjacent to areas with splotches will provide highway variable levels of friction to the vehicle tires.

Third, it was the effect of the rain water on the pavement surface which would further reduce the level of friction available since rain on the tack coat surface would further reduce the contact between the vehicle tires and the top of the pavement, thus reducing the level of friction of the roadway even more.

Fourth, it would be related to the fact that there was no warning or reduction in the posted speed limit for the Highway 45 crash site even though it was well known by Spencer Quarries personnel that there would be tack coat left exposed to traffic for a few days.

The above opinions and the reasons for those opinions are based on the review of the information provided to me to date. They are also based on many years of experience in the asphalt pavement construction industry. They are believed, based on a reasonable degree of engineering certainty, to be accurate.

If any additional information regarding this project becomes available, I reserve the right to supplement these opinions based on that additional information

Signed: James A. Scherocman, P.E. James A. Scherocman, P.E. Ohio, Indiana, and Arizona Registration



TATE OF SOUTH DAKOTA)		IN CIRCUIT COUR'		
COUNTY OF BRULE	:§)	FIRST JUDICIAL C	IRCUIT	
AUSTIN MCGEE,		07CIV18-000054		
Plaintiff,				
vs.				
SPENCER QUARRIES, INC., a South Dakota Corporation; SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation		AFFIDAVIT OF JAMES A. SCHEROCMAN		
Defendants.			S	
	1			
	A A			
STATE OF OHIO) :§	3		

- I, James A. Scherocman, hereby swear and state as follows:
- Attached as Exhibit 1 is a true and correct copy of my resume. I am a self-employed consulting engineer. I have a Master of Civil Engineering (MCE), Ohio State University, Columbus, Ohio, September 1967, with major in materials engineering and minor in geotechnical engineering; and a Bachelor of Civil Engineering (BCE), Ohio State University, Columbus, Ohio, August 1965, with major in materials and minor in transportation engineering.
- 2. I am the primary author of the Hot Mix Asphalt Handbook which is widely used to train personnel from state DOTs and contractors who work in the industry. The tack coating procedures set forth in my Handbook were cited in the hot mix asphalt certification training required by the SD Department of Transportation. Copies of the Handbook were also included in at least some of the training materials provided to participants.

- 3. I was directly involved in testing done to determine the friction numbers for tack coated road surfaces like the one encountered by Austin McGee in this case. That testing resulted in a technical paper titled Friction Testing of Tack Coated Surfaces published in the Transportation Research Record. A copy of that paper is attached as Exhibit 2. The coauthor and I also gave a related presentation to the national meeting of the Transportation Research Board.
- 4. Exhibit 2 also involved a nationwide survey of state DOTs, including South Dakota. When the SD DOT was asked if any accidents occurred while traffic was traveling on tack coat, the response was: "extremely slippery when rained on." Friction Testing of Tack Coated Surfaces at page 7.
- I have been retained as an engineer and hot mix asphalt pavement construction expert on this case.
- I have reviewed many depositions including those from various employees of Spencer Quarries and the South Dakota Department of Transportation.
- 7. I am very familiar with the process of tack coating and the dangers associated with allowing the public to travel at highway speeds on exposed, cured tack coat, especially when the surface is wet.
- The South Dakota Standard Specifications applicable to this case prohibit the application
 of tack coat beyond what is estimated to be covered on that day unless ordered or allowed
 by the SD DOT.
- 9. The process of estimating how much hot mix asphalt can be applied in any particular day does not involve engineering. The process is a simple mathematical calculation based on the mix production rate at the asphalt plant and the dimensions of the asphalt mat being placed on the roadway. The amount of tack coat necessary can also be determined simply by keeping track of the distance covered by each truckload of hot mix asphalt.
- 10. On July 27, 2021, I traveled to SD Highway 45 north of Gann Valley, SD to view an active asphalt paving job being done by Commercial Asphalt. I observed warning signs, including Fresh Oil signs. Photos of the scene are attached as Exhibits A and B. The only fresh oil in the vicinity of the Fresh Oil signs was cured tack coat. The tack coated surface was being used by the traveling public when I was present.

Dated this 10th day of August, 2021.

James A. Scherocman

Subscribed and sworn to before me, the undersigned, this <u>fo</u> day of August, 2021.

(SEAL)

Notary Public

My Commission Expires:

aug 15 2021

NATALIA HORECHYY Notary Public, State of Ohio My Comm. Expires Aug. 15, 2021 Paper No. 98-1092

TRANSPORTATION RESEARCH RECORD 1616

Friction Testing of Tack Coat Surfaces

HAROLD R. PAUL AND JAMES A. SCHEROCMAN

In response to litigation because of an accident case involving tack coat on a construction project, a field trial was evaluated to determine frictional characteristics of tack-coated surfaces. When a literature search on this topic returned little information, state Department of Transportation materials engineers were surveyed to determine the state of the practice with respect to tack coat operations. On the basis of the survey responses and the existing litigation, a field trial was conducted to evaluate friction numbers on tack coat materials. Variables included residual asphalt content (three levels); test time (three levels); combinations of wet, dry, and flushed surface conditions (seven levels); and replicate testing. It was found that at typical residual asphalt rates reported by states and specified in Louisiana, reduced friction capability existed for up to 7 h after application. With the friction numbers obtained, traffic should be maintained only at controlled low speeds if at all. However, the residual asphalt content appeared heavier than in typical practice. At residual application rates that were typical of practice, friction properties were produced that would allow traffic at moderate speeds. After several days, friction numbers returned to the original condition because of traffic or weather abrasion.

As part of litigation resulting from an accident case where several fatalities and permanent injuries were sustained, the Louisiana Transportation Research Center was requested to provide assistance to determine the potential for friction problems on tack coat materials left exposed to traffic. At the time of the accident, a construction memorandum dictated that undiluted asphalt emulsion tack coat rates should vary from 0.09 to 0.32 L/m² depending on the type of surface to be tacked. The rates were higher for old, oxidized, or milled surfaces and lower for new surfaces such as between lifts on multiple-lift construction. The rate established for application on newly placed asphalt concrete surfaces was 0.14 L/m². Typical residual asphalt contents for SS-1 emulsions were 62 to 64 percent, which indicates that the desired specification residual asphalt content should be 0.09 L/m² for a newly placed lift.

In this case, the contractor had placed a binder course and was in the process of paving, wearing course mix before leaving the roadway because of equipment breakdown. Even though the minimum specification application rate was in terms of gallons of emulsion per square yard, the specifications also permitted dilution of the tack coat material. It was reported in the project engineer's notebook that the distributor shot rate was 0.22 L/m². Conversation with the distributor operator indicated that the emulsion was diluted 3 parts emulsion to 5 parts water. The residual asphalt content placed before the accident was 0.05 L/m² (0.22 L/m² × 0.375 emulsion/water ratio × 62 percent residual asphalt).

Specification language indicated that the tack coat should cause the least inconvenience to traffic and that it could be applied up to 1 day in advance of paving operations. However, there were stipulations that called for retacking should traffic damage or pick up the tack coat. Tack coat materials exposed for more than 24 h were required to be retacked. The prevalent concern was the impact of traffic damaging the tack coat and rendering it nonfunctional or of having to clean cars splattered by tack material.

As a general rule in day-to-day paving operations, all or most tack coat material is covered because the contractor does not want the liability of cleaning cars or of having to retack the surface. There are exceptional circumstances such as in the case of this accident when substantial areas of tack coat may be left exposed because of weather or breakdown or both.

In 1984, the department initiated a fog seal program on opengraded friction courses in an effort to extend the service life. Generally, these mixes had become closed with time and in many cases were raveling because of oxidized asphalt cement. The fog seal was intended to reduce the raveling. Engineers had expressed concern about potential friction problems.

Tests were conducted on two open-graded friction course surfaces using ASTM E-274. A CSS-1 asphalt emulsion was diluted with 4 parts water and applied at 0.45 L/m², producing a residual asphalt content of 0.06 (0.45 L/m² × 0.2 emulsion/water ratio × 62 percent residual asphalt). The first test, on a surface with a friction number FN 59 indicated that 4 h after the fog seal was applied the friction number was FN 39; after 26 h a value of FN 46 was obtained. A second roadway had a value of FN 59 before fog seal and FN 54 after breaking. No further safety concerns were expressed for open-graded friction courses.

A similar friction test was conducted on a gravel surface treatment that was losing aggregate. The friction number was FN 36.5 before application. After 6 days, a value of FN 35.4 was attained. No tests had previously been conducted on dense-graded asphalt concrete surfaces.

RESEARCH APPROACH

Survey of States

Before the field evaluation, a questionnaire was distributed to all state Department of Transportation materials engineers about tack coat and fog seal practice. In general, the questions included what type of material is used for tack coat; are tack coat materials diluted; what is the application rate; are there different rates used depending on the surface to be treated; is travel permitted on the tack coat; and had any problems or accidents been reported relating to traffic on the tack coat. A copy of specifications was also requested. Similar questions were posed for fog seals.

Forty-two states and the District of Columbia responded. Table 1 summarizes the responses for the tack coat. The residual application rate was calculated based on the dilution indicated, the maximum application rate of emulsion, and the minimum specification residual SS-1 asphalt rate of 57 percent (typically the residual asphalt content of SS-1 emulsions ranges from 62 to 64 percent). In two instances,

EXHIBIT

App. 0030

H. R. Paul, Louisiana Transportation Research Center, 4101 Gourrier Avenue, Baton Rouge, LA 70808. J. A. Scherocman, Consulting Engineer, 11205 Brookbridge Drive, Cincinnati, OH 45249-2267.

State	Materials used for tack coat	Normal % dilution of SS	Tack cost application rate using SS type material (L/m ¹)	Residual application rate * (L/m²)	Time between tack coat application, and placement of HMA layer	Is travel on the tack coat permitted?	Have any accidents occurred while traffic is traveling on tack coat?
Alabama	CSS-1 CSS-1h AC	по	a.) Normal range- 0.45 b.) Range on existing- evaluated c.) Range on overlay- none	0.26	Min. time - after emulsion has cured	yes - if SS is broken but not fully covered	по
Alaska	STE-1 CSS-1	STE-1 none CSS-1 50%	a.) Normal range- 0.32 b.) Range on existing- 0.32 c.) Range on overlay- none	0.09	Min. time - 15 min Max, time - 2 hrs	no	no
Arizona	SS-1 diluted 1:1 w/ water and AC	1;1 with water	a.) Normal range- 0.27-0.54 b.) Range on existing- same c.) Range on overlay- 0.18-036	0.15	Min. time - when emulsion breaks Max. time - no more tack than covered up in shift	по	unknown
Arkansas	SS-I	по	a.) Normal range- 0.23 b.) Range on existing- 0.14-0.23 c.) Range on overlay- same	0.13	Min, time - after AC breaks Max, time - 72 hrs	yes //	no
California	RS-1 SS-1	0.14% Asphalt to water	a.) Normal range 0.09 to 0.45 b.) Range on existing-0.09 to 0.45 c.) Range on overlay-0.09 to 0.23	0,26	Min, time-depends on climate conditions Max, time- No definite standard	. 118	no reply
Connecticut	Asphalt Emulsion	50%	a.) Normal range- 0,14 to 0.45 b.) Range on existing-same c.) Range on overlay-same	0,13	Not Specified	no	no
Florida	RS-1 RS-2	по	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	Not specified	NA	yes
Georgia	AC-20 AC-30	NA	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	NA	NA	NA
Hawaii	Emulsified Asphalt	l to l by vol. with water	a.) Normal range-0.23-0.05 b.) Range on existing-same c.) Range on overlay-same	0.13	Min. time-None, but after the surface cured. Max, time- 4 hours	yes, when SS is cured	no
Illinois	Emulsified Asphalt	50%	a.) Normal range-0.41 b.) Range on existing-same c.) Range on overlay-0.10 RC- 70	0.12	Min. time-after the emulsion breaks; Max. time-if traffic allowed on scal coat, it's covered with fine aggregate	по	NA
Indiana	Asphalt Emulsion AE-T	NA	s.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	Min. time- Emulsion break Max. time- NA	NA	no .
lowa	CSS-1h	no	a.) Normal range-0.09-0.23 b.) Range on existing-same c.) Range on overlay-same	0.13	Min, time- subject to engineers approval Max, time- Not specified	yes	по
Kansas	SS-Ih CSS-Ih	80%	a.) Normal range-0.14-0.23 residual b.) Range on existing-0.14-0.23 residual c.) Range on overlay-0.14-0.23 residual	0,14-0,23	Broken (about 1 hr.) 5-6 hrs		
Louisiana	SS-1h CSS-1h	50%	a.) Normal range-0.09-0.36 b.) Range on existing-0.32 c.) Range on overlay-0.14	0,18	Min. time-Broken Max. time-none	yes	по
Maine	HFMS-1	NA	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	NA	NA	NA
Maryland	AE-4	As is from refinery	a.) Normal range-0.05-0.14 b.) Range on existing-0.05 min c.) Range on overlay-0.05 min	0.08	Min. time- 15 min. Max, time- NA	оп	Spray and pickup from tires
Michigan	SS-1h	Cannot exceed orig. vol.	a.) Normal range-specified by engineer b.) Range on existing-0.45 c.) Range on overlay-0.23	0.13	Min. time- when the bond coat has cured Max. time-NA	NA	no

(continued on next page)

TABLE 1 (Continued)

State	Materials used for tack coat	Normal % dilution of SS	Tack coat application rate using SS type material (L/m²)	Residual application rate * (L/m¹)	Time between tack coat application, and placement of HMA layer	Is travel on the tack coat permitted?	Have any accidents occurred white traffic is traveling on tack coat?
Mississippi	SS-1	Contractor is not to dilute	a.) Normal range-0.23-0.45 b.) Range on existing-same c.) Range on overlay-same	0,26	Min. time- sufficient time to allow emulsion to break Max. time-None	yes	na
Missouri	Emulsified Asphalt	As much as 50%	a.) Normal range-0.09-0.45 b.) Range on existing-up to engineer c.) Range on overlay-uniform coverage	0.13	Min. time-when the tack has cured Max. time-NA	NA	no
Montana	SS-1	50%	a.) Normal range-0.14-0.23 b.) Range on existing-same c.) Range on overlay-0.23	0.06	Min. time-until the emulsion breaks; Max. time- must be maintained intact	no	paint damage to vehicles and rare windshield damage
Nevada	SS-I SS-Ih	60% to 40%	a.) Normal range-0.23-0.45 b.) Range on existing-0.23-0.32 c.) Range on overlay-0.23	0.15	Min. time- after emulsion breaks Max, time- none	yes	no
New Jersey	CSS-III	50%	a.) Normal range-0.18-0.68 b.) Range on existing-0.18-0.68 c.) Range on overlay-0.18-0.45	0.19	Min. time-cure to a condition which is tacky to the touch Max. time-same day	no	Problems with tracking of tack and tack on vehicles
New Mexico	SS-1 /	50%	a.) Normal range-0.36 - 0.54 b.) Range on existing-+ or - 0.54 c.) Range on overlay-+ or -0.36	0.15	Min, time- Emulsion break, 15 minutes to 1 hour Max, time-NA	NA	NA
New York	HFMS-2h SS-1h CSS-1h	50%	a.) Normal range-0.14-0.32 b.) Range on existing-same c.) Range on overlay-same	0.09	Min. time-as soon as ernulsion breaks; Max. time-placement of HMA layer	no	Only when wet
North Carolina	CRS-1 CRS-2	NA	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA.	Min, time-immediately after tack coat application Max, time-same day as tact coat	no	Traffic not allowed on roads with tack coat
North Dakota	Emulsified asphalt	50%	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	not specified	NA	NA
Ohio	SS-1h	NA	a.) Normal range-0.32-0.45 b.) Range on existing-same c.) Range on overlay-none	0,26	Idin, time-several minutes Max. time-limited by traffic zone	по	по
Oklahoma	SS-I	50%	a.) Normal range-up to 0.45 b.) Range on existing-same c.) Range on overlay-same	0,13	Min. time-emulsion must break Max. time-tame day	yes	Splash on vehicles
Oregon	CSS-1	NA//	a.) Normal range-0.23-0.91 b.) Range on existing same c.) Range on overlay-same	0.52			
Pennsylvania	CSS-1h	50%	a.) Normal range-0.09-0.32 b.) Range on existing-engineers jud c.) Range on overlay-same as (b.)	0,32	Min. time- until cured Max. time-not specified	NA	no
Rhode Island	SS-1	40%	a.) Normal range-0.23-0.09 b.) Range on existing-same c.) Range on overlay-none	0.08	none	no	по
South Carolina	CRS-2		a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	Min. time-allow enulsion to break; Max. time-on ambient air temperature, humidity and mat temperature	NA	no
South Dakota	SS-1h CSS-1h	1 to 1	a.) Normal range-0.23 b.) Range on existing-same c.) Range on overlay-same	0.13	Min, time-emulsion must be broken; Max, time- not specified	NA	extremely slippery when rained on

(continued on next page)

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TARIFI	(Continued)
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State	Materials used for tack coat	Normal % ditation of SS	Tack coat application rate using SS type material (L/m²)	Residual application rate * (L/m²)	Time between tack coat application, and placement of HMA layer	Is travel on the tack cost permitted?	Have any accidents occurred while traffic is traveling on tack coat?
Tennessee	Emulsified asphalt	30%	a.) Normal range-0.23 b.) Range on existing-same c.) Range on overlay-0.09	0.23	Min. time-until properly cured Max. time-contractor protects tack coat until next course is applied	no	No traffic allowed on tacked areas
Texas	SS-1 MS-2	l to l	a.) Normal range-0.05-0.23 b.) Range on existing-NA c.) Range on overlay-NA	0.06	Min, time-30 minutes Max, time-45 minutes	no	no
Vermont	RS-1	NA	a.) Normal range-NA b.) Range on existing-NA c.) Range on overlay-NA	NA	NA	NA	NA
Virginia	CSS-1h	50%	a.) Normal range-0.23-0.45 b.) Range on existing-same c.) Range on overlay-0.45	0,13	Min. time-asphalt must have broke Max. time-none		по
Washington State	CSS-1	50%	a.) Normal range-0.45 b.) Range on existing-same c.) Range on overlay-same	0.13	Min. time-30 minutes Max time-NA	yes	Do not allow traffic on tack
Washington D.C.	SS-1h	3 to 1	a.) Normal range-0.09-0.23 b.) Range on existing- c.) Range on overlay-	0.10	Min, time- after it becomes tacky Max. time-regulated by the engineer	NA	10
West Virginia	SS-1h	50%	a.) Normal range-0.9-1.4 b.) Range on existing-same c.) Range on overlay-not used	0.51	Min. time-cured Max. time-none	no	Tracking and asphalt on cars
Wisconsin	Asphalt Emulsion CSS-1	50%	a.) Normal range-0.11 b.) Range on existing-same c.) Range on overlay-same	0.03	Min. time-after it breaks Max. time-NA	по	Cinly traffic allowed is construction traffic
Wyoming	CSS-I	50%	a.) Normal range-0.14 b.) Range on existing-0.14 c.) Range on overlay-0.14	0.05	Broken	yes	none usually overnight
Utah	SS-1 SS-1h CSS-1 CSS-1h	50%	a.) Normal range-0.36-0.45 residual b.) Normal range-0.36-0.45 residual c.) Normal range-0.36-0.45 residual	0.36-0,45	Min, time 20 min. Max. time-NA	no e normal % dilu	usually construction only

Note: HMA = hot-mix asphalt.

the application rates provided were in terms of residual asphalt.

Almost all the states used slow-set emulsions with typical residual application rates between 0.06 and 0.26 L/m². The responses indicated that different application rates may be used depending on the type of surface for application. The time between tack coat application and paving was typically after the emulsion had broken. Three states had a maximum time that a tack could be left before placement of the asphalt concrete and four states indicated that paving was required the same day the tack coat was applied. Nine states indicated that travel was permitted on the tack coat and the remaining states either replied that no travel was permitted (18 states) or provided no response (15 states). Most significantly, only I state indicated that accidents had occurred while people were traveling on tack coat. One state responded that the tack became slippery when it rained and 5 states reported problems with tack coat materials splashing on vehicles.

In the fog seal survey, 5 states indicated regular use, 10 states occasional use, and 8 states seldom use. Twelve states responded that fog seal was never used and 8 states provided no response. The

application rates were generally higher than tack coat rates. One state reported skid problems after rain and another indicated that the pavement could be slippery for several days after application. Two other states were concerned with splash on vehicles. After these surveys were reviewed, potential safety problems associated with traffic on tack coat materials appeared minimal. The concern of the states appeared concentrated on the effectiveness of the tack coat after traffic had soiled or damaged it and on the liability of cleaning vehicles.

Field Project Selection

To replicate the accident site conditions, a search was undertaken for a roadway under construction in the same area of the state with approximately the same traffic conditions. The same contractor had recently placed a binder course using gravel as the coarse aggregate and siliceous sands, similar to the mix placed at the accident site. He was preparing to place the wearing course approximately 10 weeks

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after the binder course, which replicated the circumstances of the accident site. This project was located on LA-16 from Holton to the Washington Parish line in southeastern Louisiana with similar average daily traffic.

Experimental Design

Residual asphalt content, test time, pavement surface condition, and replicate sections were variables selected for the evaluation. Three residual application rates were chosen to reflect the residual asphalt placed on the accident site (0.05 L/m^2) , the specified residual rate (0.09 L/m^2) , and twice the specification residual rate (0.18 L/m^2) .

Three time periods for friction testing were established at 4, 8, and 24 h after application. It was assumed that the emulsion would be broken and at some stage of setting within these time periods. Additionally, it was decided to test the tack coat less than 1 h after application, which would be during or shortly after the emulsion had broken and before it had set.

Each section was to be tested in dry (without water delivery according to ASTM E-274) and wet (using the water delivery according to ASTM E-274) conditions. Also, each section was tested after a water truck had flushed the tack with water. After flushing, this test was conducted wet with the equipment water delivery system.

Three test sections were identified, each with three subsections to represent the residual application rates. Because it was believed that the tests on the section where the emulsion had recently broken (less than 1 h) would possibly destroy that section for the 4-, 8-, and 24-h tests, only one section was designated for broken but not yet set. The remaining two sections provided replicates for each application rate. Each subsection was 107 m in length with a 15-m transition zone between subsections. Sections A and B were separated by approximately 152 m and Section C was separated from Section B by 305 m.

FIELD TRIAL

Calibration of Distributor

The paving contractor's distributor was not computer controlled, which was believed necessary to achieve the accuracy needed for this type of experiment. Another contractor in the state was located

who had an Etnyre computer-controlled distributor. This distributor was rented to the project along with an experienced operator. Calibration was conducted according to ASTM D2995 in the contractor's plant, located several miles from the construction project.

For calibration purposes, strips of aluminum sheeting were cut into lengths of $3.66 \text{ m} \times 22.9 \text{ cm}$ for transverse measurements and $1.83 \text{ m} \times 22.9 \text{ cm}$ for longitudinal measurements. Gauze pads measuring $22.9 \times 12.7 \text{ cm}$ were numbered and taped to the aluminum strips. Twenty-eight pads were attached to the transverse strips and 14 pads were attached to the longitudinal strips.

One set of transverse and longitudinal strips was placed for each application rate on an old asphalt pavement in the contractor's yard. Several strips were wasted in attempts to achieve proper distribution of the emulsion. After what appeared to be proper application, the strips were collected, and the pads were carefully removed and individually weighed to the nearest 0.1 g.

Field Application

Cones were placed to delineate the sections for the distributor operator and the friction testing operator. One transverse strip and one longitudinal strip containing pads were placed in each subsection approximately 300 ft into the subsection for ASTM D2995 testing. Only two longitudinal strips were placed in Section C, with one in each of the first two subsections. Law enforcement officers were hired to provide traffic control—specifically, to keep traffic off the tack coat material until after the 4-h test. The computer was set to apply the rates determined during calibration.

Sections A and B were placed without incident. However, the application rates visually appeared to be heavier than anticipated. The application appeared to approach that of chip seal rates and not the speckled texture or drill patterns typically associated with tack coats placed in Louisiana. The distributor operator also indicated that the rates appeared greater than he usually applied. It was decided to reduce the application rates for Section C. The computer was adjusted to place residual asphalt at 0.03, 0.01, and 0.05 L/m². Also, because of the lower rates in Section C, it was decided to use Section A for the less than 1-h tests, which left no replicate sections. It was noted that the 0.03 and 0.01 L/m² applications approached the speckled texture typical of tack coats placed in Louisiana, but that there was no visual difference between the subsections. The field residual application rates for each subsection are presented in Figure 1.

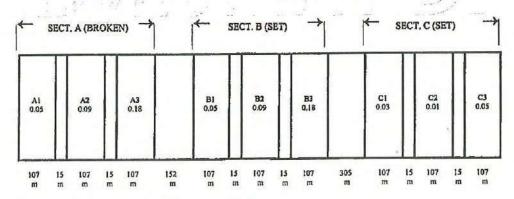


FIGURE 1 Field trial residual application rates (L/m²).

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TABLE 2 Field Residual Application Rates (L/m²)

Subsection/Residual Rate	Transverse	Longitudinal
A1 / 0.05	0.05	0.04
A2 / 0.09	0.09	0.10
A3 / 0.18	0.21	0.20
B1/0.05	0.05	0.05
B2 / 0,09	0,09	0.09
B3 / 0.18	0,21	0.27
C1/0.03	N/A	0.03
C2/0,01	N/A	0,03
C3 / 0.05	N/A	N/A

After application, the strips were removed for drying and weighing to a project engineer's office located on the project site. The strips were left in the sun to dry and were weighed late in the afternoon. Table 2 indicates that the initial calibration settings were correct and that the applied rates were accurate. Subsections C1 and C2, placed at the lower rates, were found to have the same quantity of residual asphalt.

Friction Test Results

All three sections and each subsection was tested for friction by using ASTM E-274 immediately before the SS-1 asphalt emulsion was applied. Section A was used for testing less than 1 h after application. With the assistance of law enforcement officials, traffic was kept off the tack coat for 4 h. It was assumed that most paving operations would have placed new mix on the tack coat by this time. At 4 h, Sections B and C were tested by using normal ASTM E-274 procedures placing a thin film of water in front of the tire.

Additionally, a water truck was used to flush the surface of Sections B and C to simulate rainfall. The sections were then retested wet with the thin film of water distributed in front of the tire. Each test for each section was repeated. After the 4-h test, the roadway was posted for reduced speed and opened to traffic to simulate the wearing off of the tack coat under traffic. Sections B and C were again tested at 7 h (to complete testing before dark, the planned 8-h test was cut short). In addition to the normal test and the flushed test, friction tests were conducted on the flushed surface but without the thin film of water (dry test).

At this point, because of the low friction numbers recorded, the 24-h test was canceled and the tacked sections were lightly sanded. Rain occurred that night and periodically for several days after the tests. The friction was again tested at the next opportune time, which was 5 days after placement.

Table 3 presents the averaged friction test data. All sections returned to original surface condition (FN values of 35 to 40) after 5 days of traffic. The operator reported that the tack coat was no longer visible. As expected, Section A, which was tested in a broken but not set state, demonstrated very low friction resistance. The FN values ranged from 8.8 to 11.5. There was very little differentiation between the subsections. Flushing the surface increased the friction only slightly in these subsections (FN values of 10.7 to 14.3). Section B represents the set state with Subsection

B2 having a residual asphalt content of 0.09 L/m², similar to that specified by the construction memorandum. Subsections B1 and B3 represent one-half and twice this required rate. Generally, Subsection B3 had the lowest friction numbers, but all subsections indicated low friction at 4 h (FN values of 9.6 to 14.4) with little difference after the surface was flushed (9.4 to 15.2). With traffic, the friction numbers increased (13.5 to 19.8) as the asphalt was abraded between 4 and 7 h.

The friction numbers for Subsections C1 and C2 are similar for all tests at all time periods. There was little difference between 4 h (FN values of 19.3 and 22.5) and 7 h (21.4 and 23.3) for standard ASTM E-274 tests. The flushed FN values at both 4 and 7 h (23.1 and 26.5) were higher than the standard tests. These subsections demonstrated much higher friction numbers than the heavier application rates in Sections A and B. After 7 h (3 h of traffic abrasion) and a flushed condition these numbers are similar to old gravel wearing surfaces in Louisiana.

The friction numbers found during this field trial demonstrate that, at the specified application rates, the tack coat surface could be considered potentially hazardous depending on speed and weather conditions. Because tack coat is not a pay item in Louisiana and is considered an incidental item, the acceptance of the tack coat is visually approved by the roadway inspector. Dilution rates are generally unknown and actual residual rates are not determined. There is certainly a conservative error to the light side because of a desire to not create a slip plane with too much tack coat material.

At the lower rates distributed in Subsections C1 and C2, which appeared to be similar to practice but lower than the specified rate, the friction capability of the tack coat appears to be adequate. If, however, the specified rates are indeed being placed in the field, the specifications should be revised to not allow tack coat operations the previous day, and all tacked areas should be required to be sanded if they cannot be covered with mix because of weather or breakdown. This position appears applicable to most states responding to the survey as their residual application rates are similar to those used in this field trial.

CONCLUSIONS

 Tacked surfaces using typical residual asphalt rates reported by states provide reduced friction capability for up to 7 h after application. At these rates, vehicles should not be permitted to traffic the

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TRANSPORTATION RESEARCH RECORD 1616

TABLE 3 Friction Tests

Test Condition	Section / Residual Asphalt				
	A1/0.05	A2 / 0.09	A3 / 0.21		
Original Surface	35.2	34.9	36.5		
1 Hour / Normal	11,5	8.8	10.5		
1 Hour / Flushed	14.3	10.7	11.7		
5 Days / Normal	34.2	38,4	39.0		
	B1/0.05	B2 / 0.09	B3 / 0.21		
Original Surface	37.3	30.3	37.3		
4 Hours / Normal	14.4	10.7	9,6		
4 Hours / Flushed	15.2	13.5	9.4		
7 Hours / Normal	17.1	19.8	13,5		
7 Hours / Flushed	17.5	20.3	14.1		
7 Hours/Flushed, Dry	18.4	***	16.1		
5 Days / Normal	33.2	36.4	37.9		
1	C1/0.03	C2/0.03	C3 /		
Original Surface	40,4	38.9	39.3		
4 Hours / Normal	19.3	22.5	14.7		
4 Hours / Flushed	23,1	-	15.6		
7 Hours / Normal	21.4	23.3	19.6		
7 Hours / Flushed	26,5	- !	-		
7 Hours/Flushed, Dry	26,4	29.5	23.8		
5 Days / Normal	38.0	39,5	35.9		

tacked areas at other than controlled speeds. Provisions should be made to sand all tacked areas if the contractor must cease operations because of breakdown or weather.

The residual asphalt rates, which appeared similar to common practice in Louisiana, produced friction properties that could allow traffic at moderate speeds.

Within several days after application, the tack coat material is abraded by traffic or weather and original friction properties are restored.

Publication of this paper sponsored by Committee on Flexible Pavement Construction and Rehabilitation.



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June 12, 2019

Michael F. Marlow, Esq. Marlow, Woodward & Huff, PLLC 200 West Third Street Yankton, SD 57078

RE: Summary of Findings
McGee v. Spencer Quarries, Inc.
State Highway 45 North of Milepost 40
Brule County, South Dakota
PEC Project Number: 080218-2

Dear Mr. Marlow:

As per your request, I have developed the following summary report discussing my findings concerning the above referenced case. This case relates to a traffic crash involving one passenger vehicle; the State of South Dakota Investigator's Motor Vehicle Traffic Accident Report 142394-163 more particularly describes the crash. According to this report, the crash occurred in Brule County, South Dakota on Saturday, June 30, 2018 at approximately 9:30 AM. At that time, Mr. Austin L. McGee was operating a red 2005 Ford F-250 (Vehicle 1) northbound on State Highway 45. At the time of the crash, Mr. Brent McGee was a passenger occupant in Vehicle 1. The State of South Dakota Investigator's Motor Vehicle Traffic Accident Report indicates that this crash occurred during daytime hours on a two-lane roadway with wet pavement conditions and a speed limit of 65 miles per hour.

During my assessment of this case, a close examination of the available evidence related to this crash was conducted. This examination included a review of the *State of South Dakota Investigator's Motor Vehicle Traffic Accident Report*, crash scene and post-crash vehicle photographs, and a scene diagram prepared by the South Dakota Highway Patrol along with an inspection of Vehicle 1. Evidence was also collected and reviewed from an inspection of the crash site and corresponding roadway conducted on August 23, 2018. This site inspection

EXHIBIT

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included the location of the crash and the roadway's characteristics leading up to and extending beyond the area of impact. During this site inspection, items examined included, but may not be limited to, the operating speed of traffic, traffic volume, available sight distance, pavement surface condition, roadway geometrics, grade of the roadway, and pavement cross-slope.

SUMMARY OF INVESTIGATING OFFICER'S REPORT

As noted, the State of South Dakota Investigator's Motor Vehicle Traffic Accident Report 142394-163 documents the crash information gathered by the investigating officer. A summary of the information contained in this report follows:

Investigating Officer

Trooper Justin Schmiedt

Crash Location, Date, Time & Weather

- South Dakota State Highway 45
- Brule County, South Dakota
- Coordinates: Latitude 43.575737; Longitude -98.850616
- 0.3386 miles north of MRM 40.00 (Mile Marker 40.339)
- May 30, 2018; 9:30 am
- Daylight; rain

Roadway/Area Description

- Two-way roadway; not divided
- Asphalt (blacktop); wet; straight; level
- Heavy rain in the area of the crash
- Crash occurred within work zone; roadway being repaved; no workers present at the time
- No construction vehicles or equipment in the roadway at the time
- There were work zone warning signs (unspecified) "along both northbound and southbound lanes" at the time
- Rural, agricultural land use

Vehicle 1 Information

- 2005 Ford F250
- Light truck; 2 axles; 4 tires
- VIN: 1FTSW21P25EA07430
- No speed estimate reported
- Vehicle was northbound

Driver 1 Information

- Austin Lynn McGee (driver & owner of Vehicle 1)
- Resident of Burke, SD

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Vehicle 1 Passenger

- Brent Lee McGee
- Resident of Burke, SD

Other Information

- No known witnesses
- Trooper arrived 4 minutes after notification.

FINDINGS OF THIS INVESTIGATION

During the course of this evaluation, an assessment of the evidence related to this crash, as well as the corresponding roadway and vehicle, was conducted. Results of this assessment include, but may not be limited to, the following roadway and vehicular characteristics as they pertain to this particular case:

Roadway Characteristics

- 1. This crash occurred in the northbound lane of State Highway 45, north of the intersection with 263rd Street at an approximate latitude/longitude of 43.575737°N, 98.850616°W (See Illustration 1 and Photograph 1 in the Appendix).
- 2. At the time of my site inspection, the resurfacing of the roadway had been completed since the time of the crash.
- 3. Wet roadway and wet weather conditions were reported at the time of the crash, which occurred during daytime conditions.
- 4. This section of State Highway 45 has a posted speed limit of 65 miles per hour.
- 5. This section of State Highway 45 is classified by the South Dakota Department of Transportation (SDDOT) as a Minor Arterial roadway.
- 6. This section of State Highway 45 has an asphalt-paved surface that was found to be in a "new" condition at the time of the site inspection for this evaluation. At the time of the crash, the roadway was being resurfaced. The northbound lane was covered with tack coat material on the approach to and in the area of the crash.
- 7. The current alignment of this section of State Highway 45 was constructed using construction plans dated in the year 2000, over a distance of 18.0 miles. This section of roadway connects Platte, SD with Interstate 90. This section of State Highway 45 is a two-lane roadway that is oriented generally north and south. A broken yellow line separates the opposing traffic lanes, and each lane is approximately 12.0 feet in width from an exterior white "fog" line to the broken yellow center line.

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¹ SD DOT Functional Classification Map,



- On this section of State Highway 45, there are paved/stabilized shoulders in both directions of travel. The shoulders are approximately 6.0 feet in width.
- 9. This section of northbound State Highway 45 has a straight horizontal alignment that transitions to a horizontal curve to the left. The horizontal curve has a Delta angle (directional change in alignment) of approximately 21.3 degrees, a radius of approximately 5,730 feet, and an overall length of approximately 2,134 feet. This horizontal curve begins at approximately station 705+81 (See Diagram 1 and Diagram 2 in the Appendix).
- 10. Traveling northbound (Vehicle 1's direction of travel) along this section of State Highway 45, the grade of the roadway is approximately + 0.2 percent (uphill).
- 11. The northbound travel lane has a downward cross-slope (for drainage) of -1.7 to -2.0 percent. Approaching the horizontal curve, the cross-slope of the northbound lane transitions to a positive superelevation (banking) cross-slope of approximately 3.0 percent². Based on the construction plans (2000), this superelevation transition occurs over a distance of approximately 99 meters (325 feet) between approximate stations 703+22 and 706+47.

Incident Specific Evidence

- 12. The investigating trooper took photographs preserving some of the physical details of this crash. These photographs were used to locate crash specific evidence during the site inspection and survey. Diagram 1 and Diagram 2 in the Appendix were developed from the site survey data, along with other information reviewed during this crash evaluation. Additionally, Diagram 3 and Diagram 4 in the Appendix were developed from the site survey data and show the topographic contours of the roadway surface along this subject section of State Highway 45.
- 13. Photograph 2 through Photograph 6 in the Appendix were taken by the State Trooper at the crash scene. These photographs show the relative location of Vehicle 1 at final rest and were used in re-establishing the final rest position during the site inspection process.
- 14. Photograph 3, Photograph 4 and Photograph 5 show Vehicle 1's exterior lighting as being illuminated at its final rest position.
- 15. In the background of Photograph 3, the pavement surface appears to be uneven between the northbound and southbound travel lanes with the northbound lane being elevated above the southbound lane.
- 16. In the background of Photograph 4, the pavement surface appears to be even between the northbound and southbound travel lanes. In this photograph, the photographer has moved

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² SD DOT State Highway 45's Construction Plans, 2000, Sheet B4



- in a clockwise manner around Vehicle 1; therefore, the roadway shown in the background of Photograph 4 (beyond the front of Vehicle 1) is further south than in Photograph 3.
- 17. Photograph 6 in the Appendix shows the furrow path from Vehicle 1's final rest area toward the area where Vehicle 1 departed the roadway. In the background of Photograph 6, two diamond-shaped signs are present.
- 18. Photograph 7 in the Appendix is an enlargement of the same photograph shown in Photograph 6. This enlargement allows the diamond-shaped signs to be better viewed.
- 19. The images in Photograph 8 were reported to have been taken on July 1, 2018 by Austin and Brent McGee's father, Mick McGee. These images in Photograph 8 provide evidence of the roadway's surface condition on the day after the crash. The images show the condition of the tack coat application on the first lift of asphalt in the northbound lane where Vehicle 1 lost control. These images show the area where Vehicle 1 departed the roadway.
- 20. Photograph 9 in the Appendix contains another image that was reported to have been taken on July 1, 2018 by Austin and Brent McGee's father, Mick McGee. The top of this image was cropped in order to be better able to show the pavement condition in the crash area and the presence of the pavement header where the 2nd lift of pavement had been installed. Note in the Photograph the presence of uneven tack coat material (excessive in some locations) in the northbound lane, especially in the right wheel path of this lane. This is evidence of poor paving procedures and/or poor tack coat protection (from vehicular traffic) by the contractor.
- 21. Photograph 10 in the Appendix was taken on July 5, 2018 looking northbound along the approach to the crash area. Photograph 10 shows the frontside of an orange diamond-shaped advance warning construction sign with the word BUMP displayed. This sign is located south of the field entrances where the paved shoulders are narrow.
- 22. Photograph 11 in the Appendix was taken on July 5, 2018 looking southbound along the approach to the crash area. Photograph 11 shows the backside of a diamond-shaped construction sign with the letters "CSC" painted on the back side of the sign. Photograph 11 is the backside of the sign shown in Photograph 10. Photograph 11 provides a good view south toward 263rd Street and beyond. In addition to the diamond-shaped (low mounted) BUMP advance warning construction sign, the backside of a non-construction-related CURVE AHEAD sign is shown in the photograph.
- 23. Photograph 12 in the Appendix is an enlarged portion of the image shown in Photograph 11, which taken on July 5, 2018. The image displayed in Photograph 12 has been enlarged to show detail in the area between the diamond-shaped BUMP construction sign



- and southward to 263rd Street and beyond. There is no evidence of any signs being displayed in this area.
- 24. Furrow marks were present at the site of the roadway departure adjacent to the southbound lane of State Highway 45 (See Photograph 13 in the Appendix). These furrow marks are consistent with Vehicle 1's travel path prior to rollover.
- 25. Divot marks were present along the post departure path adjacent to the southbound lane of State Highway 45 (See Photograph 14 in the Appendix). These divot marks are consistent with Vehicle 1's interaction-with the ground during its rollover.
- 26. Vehicle 1 came to a final rest adjacent to the southbound lane of State Highway 45 after its rollover (See Photograph 15 in the Appendix).
- 27. Photograph 16 in the Appendix is an aerial view of the area were Vehicle 1 departed the roadway and came to its final rest position. This image was taken during the site inspection process.

Vehicular Characteristics

- 28. Vehicle 1 was a 2005 Ford F-250 XLT Super Duty 4-door, crew-cab 4-wheel drive pickup truck. Vehicle 1 was powered with a 6.0L V8 OHV 32V Turbo Diesel engine. Vehicle 1 was equipped with Ironman All County M/T 35x12.5 R20 LT 121Q M+S tires. All of Vehicle 1's tires had a tread depth greater that 2/32 inch.
- 29. The damage to Vehicle 1 is consistent with a rollover crash, with the majority of damage being located on Vehicle 1's left (driver's) side and roof area. (See Photograph 17 and Photograph 18 in the Appendix). Based on photographs taken of the vehicle after the crash, the roof of Vehicle 1 "collapsed" as a result of ground contact when the vehicle rolled over. There was significant intrusion of the roof into the occupant compartment in the area of the vehicle's A-post. At the time of my vehicle inspection, however, some of this roof crush damage appears to have been altered (i.e., the collapsed roof had been dislodged (at least partially) from the occupant compartment.
- 30. Located in Vehicle 1's Airbag Control Module (ACM) is an Event Data Recorder (EDR), which may record information such as speed, engine RPMs, and brake application, regardless of air bag deployment in a crash event. However, because each collision varies along with the availability of information for the device to record, there is not always a definitive set of data that is recorded or that may be recoverable. The data recorded by Vehicle 1's EDR in relation to this crash event included, but may not limited to, the following data:



- a. The EDR for Vehicle 1 recorded a non-deployment event. At the time of this non-deployment event, there were no active diagnostic codes and the passenger airbag switch was activated.
- b. The EDR for Vehicle 1 recorded Crash Pulse data related to the non-deployment event in the form of Longitudinal Acceleration (Gs) and Longitudinal Cumulative Delta V (MPH).
- The EDR for Vehicle 1 did not record any pre-impact data related to the nondeployment event.

DOCUMENTED STATEMENTS

The Deposition testimonies of several Spencer Quarries, Inc. employees have been reviewed and considered as part of the evaluation/assessment of the crash and in the development of this report, including the testimony of the following individuals (Note: The reported job title(s)/duties and known DAPA affiliation for each individual are documented in the listing):

- 1. Brad James Road Crew Supervisor, DAPA Member
- 2. Neil Waldera Management, DAPA Member
- 3. Ramiro Mora Foreman
- 4. Darren Feistner Tack Truck Distributor Operation
- 5. Jesse Helma Road Crew Mechanic
- 6. Ken Baldwin Management (Accounting and Job Costing), DAPA Member
- Ralph Wallace, III Superintendent (in Training), Director on DAPA Board of Directors
- 8. Timothy Harmelink Laborer (Signs, Flagging, Equipment Prep)
- 9. Todd Waldera Foreman / Superintendent DAPA Member, and former Director on DAPA Board of Directors

It should be noted that the Discovery process for the civil litigation related to the traffic crash is still in progress, and additional pertinent Deposition testimonies may be available in the future. If so, the findings and opinions presented is this report may be updated/altered as warranted by any new information obtained.



RESEARCH OF PERTINENT TREATISES, PUBLICATIONS & STANDARDS

Maintenance of Traffic in Resurfacing Work Zones

The traffic crash occurred within the limits of a roadway resurfacing project. Although the project was "inactive" at the time of the crash (i.e., no workers or equipment in the roadway), there were significant "work zone conditions" present. The "work zone conditions" in the area of the crash included: incomplete roadway re-surfacing with recent and uneven, exposed tack coat application in the northbound lane; uneven lanes; milled shoulder surfaces, a significant transverse elevation change (i.e., bump) in the northbound lane; temporary centerline markings, and no edge line markings.

The recommended practices and guidance contained in the current edition of the Hot-Mix Asphalt Paving Handbook (2000 Edition)³ are particularly applicable to this crash assessment for a number of reasons. First and foremost, the Handbook is a nationally recognized reference document. Quoting from the Handbook's Preface, "Since its appearance, the Hot-Mix Asphalt Paving Handbook has been widely accepted as a standard training aid throughout the major segments of the paving industry." Second, the scope of the Handbook is comprehensive, covering "the state of the art of asphalt paving, including plant operations, transportation of materials, surface preparation, laydown, compaction, and quality control processes." Third, the Handbook is "aimed at the field personnel who are responsible for these operations — both contractor personnel who do the work and agency personnel who oversee and inspect the work."

The Hot-Mix Asphalt Paving Handbook was prepared by the Transportation Research Board of the National Academies of Sciences, Engineering and Medicine with funding from multiple entities – including: AASHTO, FHWA, FAA, the National Asphalt Pavement Association and the U.S. Army Corps of Engineers. The Handbook was developed with broad industry/agency input and support. The Oversight Committee for the Handbook was chaired by the Director of the National Center for Asphalt Technology, and this Oversight Committee included representatives of State DOTs, local government agencies, asphalt paving contractors, asphalt paving material suppliers, and the academic community involved in asphalt paving research.

The Hot-Mix Asphalt Paving Handbook (see Page 3) describes asphalt paving requirements "from a practical point of view." and the Handbook was specifically written "for those actively involved in the construction of asphalt pavements." In describing its intended audience, the Handbook (see Page 3) states this audience includes: "contractor employees, including those who hold titles as project superintendent, plant or paving superintendent and plant or paving foreman." Furthermore, the recommendations and guidance contained in the

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³ Hot-Mix Asphalt Paving Handbook. Transportation Research Board. Washington, D.C., 2000.



Handbook (see page 3) were developed to "focus on field practices." The various sections of the Hot-Mix Asphalt Paving Handbook cover each phase of asphalt pavement production and placement — with each section ending with "a summary of key operating factors" that should be monitored in that phase of production or placement. (See page 1 of Section 1: Introduction: Purpose and Organization of Handbook.)

The following passages from the *Hot-Mix Asphalt Paving Handbook*⁴ are particularly pertinent to the assessment of the crash:

"If the overlay is to be constructed under traffic, the tack coat is normally placed only a short distance in front of the paver—within the lane closure and far enough ahead for the tack to set properly before the HMA is laid on top of it. Traffic is kept off of the tack coat at all times. If the roadway being paved is closed to traffic, the tack coat can be placed as much as 24 hours ahead of the laydown operation. Doing so will ensure that the tack coat is completely set before the mix is placed on top of it. Under unusual circumstances, if traffic must travel over the tack coat before the overlay is placed, a light layer of sand can be spread on top of the tack coat to prevent its pickup by traffic. The application rate of the sand should be in the range of 2.2 to 4.4 kg/m² (4 to 8 lb/yd²), depending on the application rate of the tack coat material and the gradation of the sand."

"If equipment problems (plant or paver breakdowns) prevent tack coat material that has been applied from the distributor from being paved over before traffic must use the roadway, it is suggested that posted speed limits on that section of roadway be significantly reduced until the overlay operation can take place."

"Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface may be greatly reduced by the presence of the tack coat material . . . In addition to lowering the posted speed limits, it may be advisable to apply sand to the tacked surface as discussed above."

"It is not good practice to place the tack coat one day, permit traffic to run over the tack coat for a period of time, and then place the overlay at a later date."

In addition to these pertinent passages, the "key factors" summary section at the of Part III, Section 14, Surface Preparation, states: *Tack coat should not be left exposed to traffic. If*

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⁴Hot-Mix Asphalt Paving Handbook. Part III: Hot-Mix Asphalt Laydown and Compaction. Transportation Research Board. Washington, D.C., 2000.



doing so is necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface, should be taken."5

In deposition testimony, the Spencer Quarries, Inc. employees on the State Highway 45 resurfacing project indicated that they were unaware of the importance to cover tack coat by the end of the workday, and the need to keep traffic off of exposed tack coat material. However, the deposition testimonies indicated that Spencer Quarries, Inc. employees had been trained and certified using the *Hot-Mix Asphalt Paving Handbook*, which specifically addresses these issues.

It is further noted that Spencer Quarries, Inc. was/is listed as a Supporting Associate Member of the Dakota Asphalt Pavement Association (DAPA), and a senior manager (Dick Waldera) is named in the organization's 2010-2011 Membership Directory. The Hot-Mix Asphalt Paving Handbook is used in DAPA/South Dakota DOT training and is referenced in DAPA/South Dakota DOT training materials. Spencer Quarries, Inc. employees have participated in this DAPA/South Dakota DOT training. This training should have made them aware of the Handbook and the fundamental recommendations and guidance provided in this key reference/training document.

In his deposition (Page 49), Todd Waldera stated the following about his involvement as a Board Member of Dakota Asphalt Paving Association (DAPA):

- "20 A I was on the board here a couple years ago, but I
- 21 never attended a meeting and they didn't have anybody to hop
- 22 on the board so I was basically forced on. I just -- I never
- 23 attended any of the meetings, but I was a board member."

Additionally, in the Dakota Asphalt Paving Association's 2018-2019 Membership Directory & Resource Guide, Mr. Ralph Wallace, III is listed on page 6 as Director for the 2018 DAPA Board of Directors. Also, on page 10 of the DAPA 2018-2019 Membership Directory & Resource Guide, Commercial Asphalt has listed as Producer/Contractor Associate Members contact information for Neil Waldera, as well as contact information for three other individuals who appear to be Ralph Wallace, III, Ken Baldwin, and Brad James. All of these individuals are/were Spencer Quarries, Inc. employees.

In a 2004 publication entitled Guidelines for Using Prime and Tack Coats. 6 the Federal Highway Administration (FHWA) recommends: "If possible, all traffic should be kept off tacked surfaces." This recommendation was based on a comprehensive assessment of existing

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⁵ Hot-Mix Asphalt Paving Handbook. Transportation Research Board. Washington, D.C., 2000., Page 129

⁶ Stephen A. Cross and Prament Prasad Shrestha. Guidelines for Using Prime and Tack Coats. FHWA-CFL-04-001. Federal Highway Administration. United States Department of Transportation. July 2004.



references and accepted practices, as summarized in the following excerpt from the 2004 FHWA Guidelines publication:

"The handbooks were in general agreement that traffic, both construction and otherwise, should be kept off uncured tack coat, as well as cured tack coat, if at all possible (4,5,21). The Asphalt Institute reports that a tack coat surface is slick (2,6,7) and that freshly tacked pavement is generally too slick for safe driving, particularly before the asphalt emulsion has broken (6,7,21). They go on to recommend that traffic should be kept off the tack coat until no hazardous conditions exist and that drivers be warned of the probability of the asphalt emulsion spattering when traffic is permitted on a tack coat (2). The Hot-Mix Asphalt Paving Handbook 2000 (5) reported that tack coat should not be left exposed to traffic and if doing so was necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface should be taken. Recommended sand application rates were 2.2 to 4.4 kg/m2 (4 to 8 lb/yd2). Excess sand should be broomed from the surface before the overlay is placed to ensure a proper bond."

In 1998, the Louisiana Transportation Research Center conducted a national survey of state DOTs (and the District of Columbia) to assess state practices and experience with the use of tack coats in surfacing/resurfacing projects. A total of 42 state DOTs (including the South Dakota DOT), plus the District of Columbia, responded to all or part of this national survey. Included in the survey was an inquiry concerning whether travel was permitted on tack coated surfaces. At that time (1998), approximately 2/3 of the responding state DOTs – 18 of 29 respondents (62.1%) – reported that traffic was not allowed on tack coated surfaces. Interestingly, the South Dakota DOT did not provide a response to this question in the survey.

In the 1998 national survey, the states were also asked if traffic crashes had occurred "while traffic is traveling on tack coat?". One State DOT (Florida) reported such crash occurrence, and a second State DOT (New York) responded: "only when wet." However, the most pertinent response to this inquiry was provided by the South Dakota DOT. The South Dakota DOT response to this survey question was reported in the cited reference to be: "extremely slippery when rained on."

A very similar – but more recent – tack coat state-of-the-practice survey also queried a large sample of agencies which included State DOTs on whether they allowed travel on tack coated surfaces. The results of this survey are documented in NCHRP Report 712⁸, published in

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⁷ Harold R. Paul and James A. Scherocman, "Friction Testing of Tack Coat Surfaces." Paper No. 98-1092. Transportation Research Record 1616. Transportation Research Board. Washington, D.C., 1998.

⁸ Louay N. Mohammad, et al. Optimization of Tack Coat for HMA Placement. NCHRP Report 712. The National Academies of Sciences, Engineering, and Medicine. Washington, D.C., 2012



2012. In this survey, over 3/4 of the respondents (78%) reported that "highway traffic is not allowed on tack coat materials prior to HMA placement."

In fact, an overwhelming number of treatises, standards and specifications recommend that travel not be allowed on surfaces that have been treated with a tack coat, and if travel is allowed for some reason, proactive safety precautions should be taken. A Technical Bulletin9 published in 2012 by the Flexible Pavement of Ohio organization, entitled Proper Tack Coat Application, is one such reference. The Technical Bulletin recommends:

"Ensuring the driving public is provided a safe driving surface is a primary consideration. For safety reasons, traffic should be kept off the tacked road surface at all times. When a tacked road surface is exposed to traffic, the potential exists for reduced skid resistance, especially during wet weather. To address this, good practice is to tack just far enough in front of the paving operation to provide reasonable access to the paver by haul vehicles and sufficient time for the tack coat material to set. It is prudent to use a sand cover to provide friction and prevent pick-up when the paving operation requires that the tacked road surface be open to traffic. A typical rate for applying sand cover aggregate is 4 to 8 lbs/sy".

In its summary of recommended practice, the Technical Bulletin further states: "Maintenance of traffic should ensure that any road surface that has been tacked is covered prior to access by traffic, either by a Hot Mix Asphalt overlay or a cover aggregate."

The current edition of the Texas Department of Transportation (TXDOT) Pavement Manual¹⁰ contains very similar language to the Flexible Pavement of Ohio Technical Bulletin and in fact, references the Technical Bulletin. The TXDOT Pavement Manual recommends:

"... generally, traffic should not be allowed on tack coats. When a tacked road surface is exposed to traffic, the potential exists for reduced skid resistance, especially during wet weather . . . When tack coat surfaces must be opened to traffic, they should be covered with sand to provide friction and prevent pick-up. A typical rate for applying a sand cover is 4 to 8 Ib./SY."

A 2009 Caltrans publication¹¹ presents guidelines for minimizing safety risks to the traveling public associated with tack coat use on highway surfacing/resurfacing projects. This Caltrans publication includes the following recommendations: "Close areas receiving tack coat to traffic" and additionally: "For safety reasons, keep traffic off a tack coat surface. If traffic

11 Tack Coat Guidelines State of California Department of Transportation. Division of Construction. April 2009.

⁹ Proper Tack Coat Application Technical Bulletin. Flexible Pavements of Ohio. Dublin, Ohio. September 2012. 10 Pavement Manual. Texas Department of Transportation. Available On-line at the following website:

http://onlinemanuals.txdot.gOY/txdotmanuals/pdm/manuai_notice.htm. July 2018.



must use the surface where tack coat has been applied, apply a sand cover and take other appropriate action to provide adequate skid resistance." This Caltrans publication also addresses the particular safety hazard associated with rainfall on a tack coat surface, as follows: "The tack coat may become slick if it rains on a newly placed tack coat. It is prudent to have a source of sand available for these situations, or lane closures must remain in place during inclement weather."

Section 2303.03.C.2b.4 of the Iowa Department of Transportation Standard Specifications¹² addresses maintenance of traffic when tack coats are used in the preparation of existing surfaces for hot-mix asphalt paving. This Iowa DOT Standard Specification instructs contractors to do the following:

"On highways being constructed under traffic, use procedures that provide safety and convenience to the public (without soiling their vehicles) as controlling factors. Limit tack coat application lengths to minimize inconvenience to the public. Keep applications within the hot mixture placing work area that is controlled by flaggers at each end. Plan applications so they will be covered with hot mixture when the work area is opened to traffic at the end of the day's work."

Various Federal agency operational standards also address the need to prohibit travel on pavement surfaces treated with a tack coat. The Unified Facilities Guide Specification 13 UFGS-32 12 13, adopted by the United States Department of Defense, is one example. Section 3.4.3 of this Specification specifies the following: "Following the application of bituminous material [tack coat], allow the surface to cure without being disturbed for period of time necessary to permit setting of the tack coat. Apply the bituminous tack coat only as far in advance of the placing of the overlying layer as required for that day's operation. Maintain and protect the treated surface from damage until the succeeding course of pavement is placed." In addition, Section 3.8 of this Specification addresses traffic control requirements for tack coat applications, as follows: "Keep traffic off surfaces freshly treated with bituminous material. Provide sufficient warning signs and barricades so that traffic will not travel over freshly treated surfaces."

Applicable MUTCD Standards

As per the 2015 South Dakota DOT Standard Specifications for Roads and Bridges, as well as the Project Plans and Contract, the Contractor (i.e., Spencer Quarries, Inc.) was responsible for temporary traffic control on South Dakota Highway 45 in the area of the crash. Furthermore, this temporary traffic control had to comply fully with the 2009 Edition of the

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¹² Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2012.
Iowa Department of Transportation. Ames, IA. 2012.

¹³ Bituminous Tack and Prime Coats, Unified Facilities Guide Specifications UFGS-32 12 13. United States Department of Defense. May 2017.



MUTCD.¹⁴ Part 6 of the MUTCD contains standards and guidelines for Temporary Traffic Control, applicable to the South Dakota State Highway 45 resurfacing work zone at the time of the crash. Selected provisions from Part 1, Part 2 and Part 6 of the MUTCD are presented/summarized in the following paragraphs. (Note: The selected provisions include several of the more pertinent MUTCD standards/guidelines to this crash evaluation/assessment but is not necessarily an all-inclusive listing.)

"Section 1A.02 Principles of Traffic Control Devices Support:

01 This Manual contains the basic principles that govern the design and use of traffic control devices for all streets, highways, bikeways, and private roads open to public travel (see definition in Section 1A.13) regardless of type or class or the public agency, official, or owner having jurisdiction. This Manual's text specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

- 02 To be effective, a traffic control device should meet five basic requirements:
 - A. Fulfill a need;
 - B. Command attention;
 - C. Convey a clear, simple meaning;
 - D. Command respect from road users; and
 - E. Give adequate time for proper response.
- 03 Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to meet the five requirements listed in the previous paragraph. Vehicle speed should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

Support:

04 The definition of the word "speed" varies depending on its use. The definitions of specific speed terms are contained in Section 1A.13.

Guidance

05 The actions required of road users to obey regulatory devices should be specified by State statute, or in cases not covered by State statute, by local ordinance or resolution. Such statutes, ordinances, and resolutions should be consistent with the "Uniform Vehicle Code" (see Section 1A.11).

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¹⁴ Manual on Uniform Traffic Control Devices for Streets and Highways. United States Department of Transportation. Federal Highway Administration. Washington, D.C., 2009.



06 The proper use of traffic control devices should provide the reasonable and prudent road user with the information necessary to efficiently and lawfully use the streets, highways, pedestrian facilities, and bikeways.

Support:

07 Uniformity of the meaning of traffic control devices is vital to their effectiveness. The meanings ascribed to devices in this Manual are in general accord with the publications mentioned in Section 1A.11."

"Surface Condition Signs (W8-5, W8-7, W8-8, W8-11, W8-13, and W8-14) Option:

- 01 The Slippery When Wet (W8-5) sign (see Figure 2C-6) may be used to warn of unexpected slippery conditions. Supplemental plaques with legends such as ICE, WHEN WET, STEEL DECK, or EXCESS OIL may be used with the W8-5 sign to indicate the reason that the slippery conditions might be present.
- 02 The LOOSE GRAVEL (W8-7) sign (see Figure 2C-6) may be used to warn of loose gravel on the roadway surface.
- 03 The ROUGH ROAD (W8-8) sign (see Figure 2C-6) may be used to warn of a rough roadway surface.
- 04 An UNEVEN LANES (W8-11) sign (see Figure 2C-6) may be used to warn of a difference in elevation between travel lanes.
- 05 The BRIDGE ICES BEFORE ROAD (W8-13) sign (see Figure 2C-6) may be used in advance of bridges to advise bridge users of winter weather conditions. The BRIDGE ICES BEFORE ROAD sign may be removed or covered during seasons of the year when its message is not relevant.
- 06 The FALLEN ROCKS (W8-14) sign (see Figure 2C-6) may be used in advance of an area that is adjacent to a hillside, mountain, or cliff where rocks frequently fall onto the roadway.

07 When used, Surface Condition signs should be placed in advance of the beginning of the affected section (see Table 2C-4), and additional signs should be placed at appropriate intervals along the road where the condition exists."

Section 6A.01 defines "TTC" as "temporary traffic control." It includes the following Standard: "The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on private roads open to public . . . through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents." Section 6A.01 further states that: "The primary function of TTC is to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment."

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Section 6A.01 also states that: "Consideration for road user safety, worker and responder safety, and the efficiency of road user flow is an integral element of every TTC zone, from planning through completion."

Section 6B.01 acknowledges that construction and maintenance work zones can result in "unexpected or unusual situations" for road users. It also states that "it is appropriate for road users to exercise caution in work zones," but adds, "Even though road users are assumed to be using caution, special care is still needed in applying TTC techniques."

Section 6B.01 also identifies and discusses a number of "Fundamental Principles of Temporary Traffic Control." These fundamental principles would have been applicable to the temporary traffic control needed for the re-surfacing project in progress at the crash site. Several of the most pertinent TTC fundamental principles to this crash evaluation/assessment are cited as follows:

"General plans or guidelines should be developed to provide safety for motorists, bicyclists, pedestrians, workers, enforcement/emergency officials, and equipment..."

"The basic safety principles governing the design of permanent roadways and roadsides should also govern the design of TTC zones. The goal should be to route road users through such zones using roadway geometrics, roadside features, and TTC devices as nearly as possible comparable to those for normal highway situations.".

"A TTC plan, in detail appropriate to the complexity of the work project or incident, should be prepared and understood by all responsible parties before the site is occupied".

"TTC at work and incident sites should be designed on the assumption that drivers will only reduce their speeds if they clearly perceive a need to do so".

"Work should be scheduled in a manner that minimizes the need for lane closures or alternate routes, while still getting the work completed quickly and the lanes or roadway open to traffic as soon as possible".

"Motorists, bicyclists, and pedestrians should be guided in a clear and positive manner while approaching and traversing TTC zones and incident sites."

"Adequate warning, delineation, and channelization should be provided to assist in guiding road users in advance of and through the TTC zone or incident site by using



proper pavement marking, signing, or other devices that are effective under varying conditions. Providing information that is in usable formats by pedestrians with visual disabilities should also be considered."

"To provide acceptable levels of operations, routine day and night inspections of TTC elements should be performed as follows:

A. Individuals who are knowledgeable (for example, trained and/or certified) in the principles of proper TTC should be assigned responsibility for safety in TTC zones. The most important duty of these individuals should be to check that all TTC devices of the project are consistent with the TTC plan and are effective for motorists, bicyclists, pedestrians, and workers.

B. As the work progresses, temporary traffic controls and/or working conditions should be modified, if appropriate, in order to provide mobility and positive guidance to the road user and to provide worker safety. The individual responsible for TTC should have the authority to halt work until applicable or remedial safety measures are taken.

C. TTC zones should be carefully monitored under varying conditions of road user volumes, light, and weather to check that applicable TTC devices are effective, clearly visible, clean, and in compliance with the TTC plan.

D. When warranted, an engineering study should be made (in cooperation with law enforcement officials) of reported crashes occurring within the TTC zone. Crash records in TTC zones should be monitored to identify the need for changes in the TTC zone."

"Each person whose actions affect TTC zone safety, from the upper-level management through the field workers, should receive training appropriate to the job decisions each individual is required to make. Only those individuals who are trained in proper TTC practices and have a basic understanding of the principles (established by applicable standards and guidelines, including those of this Manual) should supervise the selection, placement, and maintenance of TTC devices used for TTC zones and for incident management."

Section 6C.01 identifies the need for a "Plan" for temporary traffic control (i.e., a TTC plan) for every work zone. Section 6C.01 states: "A TTC plan describes TTC measures to be used for facilitating road users through a work zone or an incident area. TTC plans play a vital role in providing continuity of effective road user flow when a work zone, incident, or other event



temporarily disrupts normal road user flow. Important auxiliary provisions that cannot conveniently be specified on project plans can easily be incorporated into Special Provisions within the TTC plan."

Section 6C.01 further states that: "TTC plans range in scope from being very detailed to simply referencing typical drawings contained in this Manual, standard approved highway agency drawings and manuals, or specific drawings contained in the contract documents. The degree of detail in the TTC plan depends entirely on the nature and complexity of the situation."

Section 6C.01 provides guidance for TTC plan development, as follows: "TTC plans should be prepared by persons knowledgeable (for example, trained and/or certified) about the fundamental principles of TTC and work activities to be performed. The design, selection, and placement of TTC devices for a TTC plan should be based on engineering judgment." Furthermore, "Traffic control planning should be completed for all highway construction, utility work, maintenance operations, and incident management including minor maintenance and utility projects prior to occupying the TTC zone."

Section 6C.01 recognizes that TTC plans should be flexible and adaptive. It states: "Modifications of TTC plans may be necessary because of changed conditions or a determination of better methods of safely and efficiently handling road users.

Section 6C.01 provides guidance on work zone speed control. It states that "Reduced speed limits should be used only in the specific portion of the TTC zone where conditions or restrictive features are present. However, frequent changes in the speed limit should be avoided. A TTC plan should be designed so that vehicles can travel through the TTC zone with a speed limit reduction of no more than 10 mph." Furthermore, Section 6C.01 recommends that: "A reduction of more than 10 mph in the speed limit should be used only when required by restrictive features in the TTC zone. Where restrictive features justify a speed reduction of more than 10 mph, additional driver notification should be provided. The speed limit should be stepped down in advance of the location requiring the lowest speed, and additional TTC warning devices should be used."

Section 6C.02 defines a "TTC zone" as "an area of a highway where road user conditions are changed because of a work zone, an incident zone, or a planned special event through the use of TTC devices, uniformed law enforcement officers, or other authorized personnel." It defines a "work zone" as "an area of a highway with construction, maintenance, or utility work activities. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles."



Section 6C.03 identifies the four components (or areas) of a TTC zone, as follows: "the advance warning area, the transition area, the activity area, and the termination area."

Regarding the advance warning area, Section 6C.04 advises: "Since rural highways are normally characterized by higher speeds, the effective placement of the first warning sign in feet should be substantially longer—from 8 to 12 times the speed limit in mph. Since two or more advance warning signs are normally used for these conditions, the advance warning area should extend 1,500 feet or more for open highway conditions (see Table 6C-1). Referring to this table [see below], Section 6C.04 recommends: "The distances contained in Table 6C-1 are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted for field conditions, if necessary, by increasing or decreasing the recommended distances."

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

_/	Distance Between Signs**				
Road Type	A	В	С		
Urban (low speed)*	100 feet	100 feet	100 feet		
Urban (high speed)*	350 feet	350 feet	350 feet		
Rural	500 feet	500 feet	500 feet		
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet		

Speed category to be determined by the highway agency

Section 6F.16 includes standards and guidance on the function, design and application of warning signs used for temporary traffic control in work zones. It states that "TTC zone warning signs . . . notify road users of specific situations or conditions on or adjacent to a roadway that might not otherwise be apparent." Section 6:17 gives information on the placement of these warning signs, as follows: "Where highway conditions permit, warning signs should be placed in advance of the TTC zone at varying distances depending on roadway type, condition, and posted speed. Table 6C-1 contains information regarding the spacing of advance warning signs. Where a series of two or more advance warning signs is used, the closest sign to the TTC zone should be placed approximately 100 feet for low-speed urban streets to 1,000 feet or more for freeways and expressways . . . Where multiple advance warning signs are needed on the approach to a TTC zone, the ROAD WORK AHEAD (W20-1) sign should be the first advance warning sign encountered by road users.

^{**} The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)



Table 6F-1 identifies temporary traffic control signs that may be applicable for work zones to warn the traveling public of unexpected or unusual roadway and traffic conditions, when such conditions are present. The SLIPPERY WHEN WET sign ((W8-5) is included. Table 6F-1 also identifies the FRESH OIL (TAR) sign (W21-2) as another sign option for work zones. Section 6F.34 provides additional guidance on the applications of the FRESH OIL (TAR) sign, stating: "The FRESH OIL (TAR) (W21-2) sign . . . should be used to warn road users of the surface treatment."

In addition to the warning signs in Table 6F-1, Section 6F.50 states that: "Besides the warning signs specifically related to TTC zones, several other warning signs in Part 2 [of the MUTCD] may apply in TTC zones." When used: "Except as provided in Section 6F.02, these other warning signs . . . shall have black-legends and borders on an orange background."

Part 6 of the MUTCD provides a number of "typical application" drawings for various work zone and roadway types. These "typical applications" provide guidance on appropriate levels of temporary traffic control depending on work zone conditions. Regarding these "typical applications", Section 6G.01 advises: "Each TTC zone is different. Many variables, such as location of work, highway type, geometrics, vertical and horizontal alignment, intersections, interchanges, road user volumes, road vehicle mix (buses, trucks, and cars), and road user speeds affect the needs of each zone. The goal of TTC in work zones is safety with minimum disruption to road users. The key factor in promoting TTC zone safety is proper judgment." It also states that: "Typical applications should be altered, when necessary, to fit the conditions of a particular TTC zone... Other devices may be added to supplement the devices shown in the typical applications, while others may be deleted. The sign spacings and taper lengths may be increased to provide additional time or space for driver response."

Section 6G.02 discusses the importance of "Work Duration" in selecting the appropriate temporary traffic control for a work zone. It states: "Work duration is a major factor in determining the number and types of devices used in TTC zones. The duration of a TTC zone is defined relative to the length of time a work operation occupies a spot location." There are five categories of work duration. The "overall" re-surfacing project would meet the definition of a "long-term stationary" work zone, according to the following definition: "Long-term stationary is work that occupies a location more than 3 days." The work zone conditions at the crash location at the time of the crash would be defined as an "intermediate-term stationary" work zone within the long-term stationary work zone, according to the following definition: "Intermediate-term stationary is work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour."

Section 6G.03 identifies the different categories of work zones based on the "Location of Work." The deteriorated surface conditions within the travel lanes at the site of the crash would

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qualify as work within the traveled way. According to Section 6G.03, "When the workspace is within the traveled way, except for short-duration and mobile operations, advance warning shall provide a general message that work is taking place and shall supply information about highway conditions. TTC devices shall indicate how vehicular traffic can move through the TTC zone."

Section 6G.04 discusses the need to alter the level of temporary traffic control at a work zone based on special needs/conditions. It states: "When conditions are more complex, typical applications should be modified by giving particular attention to the provisions set forth in Chapter 6B and by incorporating appropriate devices and practices..." The recommended list of devices and practices includes additional signs, a longer advance warning area, more delineation and portable changeable message signs.

Plate Number 634.23 of the Project Construction Plans (i.e., Sheet 29) presents "Guides for Traffic Control Devices: Lane Closure with Flagger Provided" to be used on the State Highway 45 resurfacing project. Plate Number 634.23 contains the statement: "For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas." On the day before the crash, the Contractor sprayed tack onto the northbound lane at the eventual crash site. At the end of the day (i.e., on Friday evening before the Saturday crash), the Contractor opened this lane (which was still covered with exposed tack material) to traffic, without providing a flagger and without providing any warnings of the hazardous condition. This is contrary to the safety intentions of Plate Number 634.23 requiring a warning sign (i.e., FRESH OIL sign or other appropriate warning sign) to be used.

South Dakota DOT Standard Specifications for Temporary Traffic Control

As per Section 7.10 of the 2015 South Dakota DOT Standard Specifications for Roads and Bridges 15, the contractor (Spencer Quarries, Inc.) was required to "provide, erect, and maintain necessary barricades, suitable and sufficient lights, danger signals, signs, and traffic control devices and take all necessary precautions to protect the work and safety of the public." Furthermore, Section 4.5 of the Standard Specifications states that the contractor must "keep the portion of the project used by public traffic in a condition that will adequately and safely accommodate traffic."

Section 7.10 of the 2015 South Dakota DOT Standard Specifications for Roads and Bridges also requires that: "Barricades, warning signs, lights, temporary signals, and other protective devices must conform to the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD) at the time of letting, and the details shown in the plans." Standards and

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South Dakota Standard Specifications for Roads and Bridges. South Dakota Department of Transportation. 2015



guidelines for work zone temporary traffic control applicable to the State Dakota Highway 45 resurfacing project are presented in the 2009 Edition of the Manual on Traffic Control Devices (MUTCD)¹⁶. The 2009 MUTCD, along with the South Dakota DOT Standard Specifications for Roads and Bridges and the Project Construction Plans, collectively dictate the temporary traffic control procedures and devices to be used by the contractor to protect the safety of highway users, under the prevailing work zone conditions.

The South Dakota DOT Standard Specifications for Roads and Bridges specify that the contractor (in this case, Spencer Quarries, Inc.) is responsible for roadway maintenance within the limits of a surfacing/resurfacing project for the duration of the project. Sub-section 5.14 of the Standard Specifications states:

"The Contractor will maintain the work during construction and until the Area Engineer issues the Acceptance of Field Work. The Contractor's obligation to maintain the work will consist of continuous and effective work, prosecuted daily with adequate equipment and forces, to keep the roadway and structures in satisfactory condition.

Unless otherwise specified in the Contract, the Contractor's responsibility for project maintenance will be as follows:

When the work begins on the roadbed or pavement structure, the Contractor will maintain the entire project including, but not limited to, all surface maintenance, drainage, weed control, and temporary traffic control. This responsibility will continue until the Area Engineer issues the Acceptance of Field Work, except for those periods when the project is suspended. Maintenance during periods of project suspension will be in accordance with Section 4.5 B . . .

In the case of a contract involving the placement of material on, or the utilization of a previously constructed subgrade, base course, payement, or structure, the contractor will maintain the previously constructed work during construction operations."

Section 634—Temporary Traffic Control of the South Dakota DOT Standard
Specifications for Roads and Bridges addresses temporary traffic control requirements at
construction/maintenance work zones on state highways in the state of South Dakota. The
provisions in Section 634 were applicable to the repaving project in progress on South Dakota
Highway 45 at the time of the traffic crash.

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¹⁶ Manual on Uniform Traffic Control Devices. Federal Highway Administration. United States Department of Transportation. Washington, D.C. 2009.



Sub-section 634.1 of this Standard Specification requires that all temporary traffic control devices must be furnished, installed and maintained: "in accordance with the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD)." As noted previously, the MUTCD Edition applicable to the State Highway 45 resurfacing project was the 2009 Edition.

Several other sub-sections of Section 634 contain provisions/requirements that are relevant or may be relevant to the traffic crash evaluation/assessment include (but may not limited to) the following:

Sub-section 634.3 establishes the Prime Contractor's responsibility for temporary traffic control needed on a highway construction/maintenance project, as follows: "The Contractor shall furnish, install, and maintain required traffic control devices and pavement marking material."

Sub-section 634.3 A.2 states that: "Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity."

Sub-section 634.3 E.5 establishes the Contractor's responsibility to routinely inspect, monitor, and alter as necessary work zone traffic control, as follows:

"The Contractor shall constantly monitor and maintain all traffic control items. The Contractor is responsible for adjustments of traffic control items when traffic conditions change.

The Contractor shall make weekly inspections after dark to verify the overall traffic control system is adequate and all devices are legible at night. This includes detour route signing. The weekly inspections shall begin when the first traffic control sign or device is put into operation and end when the last traffic control sign or device is removed from operation.

The Contractor shall designate an employee whose primary responsibility is the maintenance of traffic and traffic control devices, 24 hours a day, 7 days a week. The person so designated must have training and experience in the field of construction traffic control and be knowledgeable about the MUTCD. The employee selected must be approved by the Engineer. The name, phone number, and location of the person(s) shall be provided to the Department, SD Highway Patrol, county sheriff's office, and the local city police department.

The person so designated shall submit a written report weekly to the Engineer. The reports shall document the daytime and weekly nighttime inspections."



Regarding temporary traffic control signage for work zones, Sub-section 634.3.H requires that: "Traffic control signs shall conform to Part 6 of the MUTCD and as specified in the plans." As noted, the 2009 Edition of the National MUTCD is the applicable version of the MUTCD in this case.

South Dakota Standard Specifications for Asphalt Concrete Paving

As per the Project Plans and Contract, the contractor was required to perform the asphalt concrete re-surfacing and tack coat applications in accordance with the 2015 South Dakota DOT Standard Specifications for Roads and Bridges¹⁷. The following sections summarize some of the more pertinent provisions contained in the Standard Specifications related to asphalt paving.

Section 320 of the Standard Specifications for Roads and Bridges contains specifications/provisions related to paving with asphalt concrete on surfacing/resurfacing projects. Sub-section 320.3 A addresses weather conditions that may affect the placement of asphaltic concrete pavement. This sub-section states: "Asphalt concrete shall not be placed when the underlying surface is wet or frozen. Asphalt concrete shall not be placed when weather conditions prevent proper handling, compaction, or finishing."

Sub-section 320.3 G contains a general statement on curing time requirements for tack coats used on surfacing/resurfacing projects. This sub-section states: "The surface, including all vertical contact faces, on which the asphalt concrete is to be placed, shall be tacked in accordance with Section 330. The tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement." It is also noted that a Supplemental Specification, issued on June 1, 2016, altered the language of Sub-section 320.3 G, as follows:

"Delete the last sentence of the 1st paragraph and replace with the following:

The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement."

Section 324 contains specifications/provisions related to Asphalt Pavement Composite on surfacing/resurfacing projects and includes construction requirements for tack coat applications. Sub-section 324.3 C requires the following:

"Asphalt for tack SS-1h or CSS-1h shall be applied prior to each lift of asphalt concrete. Asphalt for tack shall be applied at a rate of 0.10 gallons per square yard on existing pavement or milled asphalt concrete surface and at a rate of 0.05 gallons per square yard on new asphalt concrete pavement.

¹⁷ South Dakota Standard Specifications for Roads and Bridges. South Dakota Department of Transportation. 2015



Asphalt for flush seal SS-1h or CSS-1h and sand for flush seal shall be applied to the final lift of asphalt concrete in accordance with Section 330. Asphalt for flush seal shall be applied at a rate of 0.05 gallons per square yard and sand for flush seal shall be applied at a rate of 8 pounds per square yard."

South Dakota Standard Specifications for Tack Coat Applications

As per the Project Plans and Contract, the contractor was required to perform the asphalt concrete re-surfacing and tack coat applications in accordance with the 2015 South Dakota DOT Standard Specifications for Roads and Bridges¹⁸. The following sections summarize some of the more pertinent provisions contained in the Standard Specifications related to tack coat applications.

Section 330 of the Standard Specifications for Roads and Bridges contains specifications/provisions for Prime, Tack, Fog Seal and Flush Seal applications on surfacing/resurfacing projects. Since the traffic crash occurred in an area of the resurfacing project where there was exposed tack coat material on the roadway surface, numerous subsections of Section 330 are especially pertinent to this crash evaluation/assessment, including but not necessarily limited to the following.

Sub-section 330.3 A.2 contains specifications/provisions related to weather and surface condition requirements for tack coat applications. This sub-section includes the following provision: "The application of asphalt for tack will be permitted only: (a) When the ambient air and surface temperature on the project are both at least 35°F in the shade. (b) When conditions are dry, except emulsified asphalt-may be applied when the surface is slightly damp."

Sub-section 330.3 B addresses the dilution of tack coat emulsions with additional water. This sub-section contains the following provision:

"Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.05 gallons per square yard or less may be diluted. The rate of dilution shall be at a ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum) by volume, unless otherwise approved by the Engineer. The emulsion shall be uniformly mixed by adding potable water and if necessary, agitating the mixture. The amount of emulsion and any added water shall be included on the ticket delivered to the project. If the emulsion is diluted, the emulsified asphalt supplier shall perform the dilution. Dilution of asphalt emulsion in the field will not be allowed unless approved by the Engineer. Field dilution of the emulsified asphalt will only be allowed when the rate of dilution is accurately controlled. The final rate of dilution shall not be less than the

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¹⁸ South Dakota Standard Specifications for Roads and Bridges. South Dakota Department of Transportation. 2015



minimum ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum). Diluted emulsified asphalt for tack, fog seal, and flush seal shall be applied at an adjusted rate proportional to the dilution ratio resulting in application of the specified rate of emulsion. Emulsified asphalt for tack, fog seal, or flush seal with a specified rate exceeding 0.05 gallons per square yard may not be diluted."

It is noted that Supplemental Specifications, issued on June 1, 2016 and April 18, 2018, altered the language of Sub-section 330.3 B, as follows:

"Section 330.3 B - Page 172 - Delete the 1st sentence and replace with the following: Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.07 gallons per square yard or less may be diluted."

Section 330.3 B—Page 172 — Delete the last sentence and replace with the following: Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate exceeding 0.07 gallons per square yard shall not be diluted."

Sub-section 330.3 C.3 includes the following provision requiring the uniform application of the tack coat material with appropriate equipment (i.e., distributor). This sub-section states: "The distributor shall uniformly apply the heated asphalt material to the road surface in accurately measured quantities, and maintain the specified rate of application during the distribution of the entire tank-load, regardless of change in gradient, superelevation, direction, or content level in the tank. Calibration runs for verification shall be made at the start of the work."

Sub-section 330.3.E contains language intended to limit the application of tack material too far in advance of the subsequent pavement overlay operation. The sub-section requires that: "Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt." It is noted that Supplemental Specifications, issued on June 1, 2016 and April 18, 2018, altered the language of Sub-section 330.3.B, as follows:

"Section 330.3 E – Page 174 – Add the following sentence to the beginning of the last paragraph of this Section:

The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, ahead of mat laydown."



Sub-section 330.3 G addresses temporary traffic control requirements associated with tack coat applications on state highway surfacing/resurfacing projects. This sub-section requires the following:

"The Contractor shall provide flaggers, signs, and barriers to warn, direct, and prevent traffic from traveling on the freshly applied asphalt until it has penetrated, and does not track or pickup on the tires of traveling vehicles or the surface has been blotted with sand. Temporary traffic control shall conform to Section 634."

Tack Coat Surface Friction

An important consideration in evaluating probable causal/contributing factors in the traffic crash is the available pavement friction on the tack coated roadway surface at the time of the crash. Several references (identified previously) in fact reported that tack coated surfaces could be slippery or slick, especially when wet. A Louisiana research study of the effects of tack coat application on pavement friction are particularly pertinent to this crash evaluation.

The Louisiana research study was conduction by the Louisiana Transportation Research Center¹⁹ to assess the effects of common tack coat application on roadway surface friction. The study was prompted by a serious traffic crash that occurred on a tack coated roadway surface on a Louisiana state highway. The controlled field tests considered variable asphalt emulsion tack coat application rates, as well as the effects of time, traffic exposure, and dry/wet surface conditions, on friction performance.

The study results revealed that tack coat application significantly reduces surface friction before the tack coat has broken/set, and for a lengthy period of time after the tack coat has set, for both dry and wet surface conditions. The study did find that the friction of a roadway surface treated with a tack coat will eventually improve to near the original surface friction level, but only over time and with significant traffic/weather exposure – as the hardened tack material wears/weathers away.

In the Louisiana study, the reduction in surface friction resulting from tack coat application was substantial. Of particular note are the observed friction values (i.e., Friction Numbers) measured 7 hours after tack coat application and with a "film of water" on the surfaces. Under these conditions, the measured Friction Numbers were low, ranging from only 14.1 to 26.5. These friction values were 33.0 to 62.2 percent less than the original surface friction values before tack coat application. In fact, the tack coat surface friction values were so low that the research team deemed the surfaces to be unsafe for traffic without sanding.

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¹⁹ Harold R. Paul and James A. Scherocman. "Friction Testing of Tack Coat Surfaces." Paper No. 98-1092. Transportation Research Record 1616. Transportation Research Board. Washington, D.C., 1998.



After sanding, the tack coated roadway test sections were opened to traffic. After 5 days of traffic exposure and weather exposure (i.e., several rainy days), surface friction measurements on the sanded tack coat test surfaces revealed that Friction Number values were restored to near the original Friction Numbers (before tack coat application). Based on these study findings, the researchers concluded: "[Louisiana DOTD] specifications should be revised to not allow tack coat operations the previous day." In other words, tack coated surfaces should be paved over on the same day and an exposed tack coated surface should not be re-opened to traffic at the end of the workday. The researchers also recommended "all tacked areas should be required to be sanded if they cannot be covered with mix because of weather or breakdown."

Human Factors Issues/Driver Expectancy in Work Zone Environments

The traffic crash occurred within the limits of a very lengthy (i.e., 24-mile) re-surfacing project, in an area where significant work zone conditions were first encountered by the driver after traveling several miles beyond the project advance warning sign. In identifying possible causal/contributing factors in the crash, it is important to consider the "human factors" issues associated with the particular driving environment experienced by the driver of Vehicle 1.

According to the Traffic Engineering Handbook, 5th Edition²⁰, "the driving task depends on drivers receiving and using information correctly. In high-speed driving environments (such as South Dakota State Highway 45 in the area of the crash), information transfer and processing can be challenging. Again, quoting from the Traffic Engineering Handbook, 5th Edition: "Driving is a dynamic process because the roadway scene and the information from it are continually changing as one proceeds along the highway. Under high speed, information about the road environment must be processed-very quickly…"

Highway work zones generally are characterized by driving conditions which are more complex, yet unexpected by unfamiliar motorists. In a work zone environment, information transfer and processing are even more challenging. Addressing the work zone driving environment specifically, the Traffic Engineering Handbook, 5th Edition states: "Drivers may have difficulty and depend more on traffic control devices at these locations, as work zones have changing and unexpected traffic conditions... The driver's information needs must be carefully considered, and traffic control devices designed and placed to attract driver attention." Also referring specifically to work zone driving environments, the Traffic Engineering Handbook, 6th Edition²¹ states: Driver errors may be induced by contradictory or misleading information, messages with incorrect distances, non-standard devices, incorrect signs, and transitions that are too short or curved too sharply; and lack of advance warning."

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²⁰ Traffic Engineering Handbook, 5th Edition. Institute of Transportation Engineers. Washington, D.C., 1999.

²¹ Traffic Engineering Handbook, 5th Edition. Institute of Transportation Engineers. Washington, D.C., 2009.



To best meet the driver's information needs, the information system (i.e., traffic control devices) should be matched to the characteristics of the location and the attributes (i.e., capabilities) of the driver – this process is referred to as "positive guidance." The selection and placement of traffic control devices, including work zone traffic control devices, should be dictated by the following principles of "positive guidance"²²:

- Primacy: Traffic control devices should be placed according to the importance of their information . . . to avoid presenting the driver with information when and where it is not essential.
- Spreading: Traffic control devices should be appropriately "spread out" over space so as to reduce the information load on the driver.
- Coding: Traffic control devices which are appropriately "uniform" with respect to color, shape, size, message, etc. should be used.
- Redundancy: Vital information should be displayed/presented multiple time/places and/or in multiple ways.

Another important human factors concept affecting driver behavior and performance is the concept of "driver expectancy". Referring to the expectancy concept, the AASHTO Greenbook²³ states:

"Expectancy relates to the likelihood that a driver will respond to common situations in predictable ways that the driver had found successful in the past. Expectancy affects how drivers perceive and handle information and modify the speed and nature of their response. Reinforced expectancies help drivers respond rapidly and correctly. Unusual, unique or uncommon situations that violate driver expectancies may cause longer response times, inappropriate responses, or errors."

According to the Federal Highway Administration's A User's Guide to Positive Guidance, 3rd Edition²⁴, "Expectancy relates to a driver's readiness to respond to situations, events, and information, in predictable and successful ways. It influences the speed and accuracy of driver information processing and is a major factor in design, operation, and traffic control."

²² F.J. Alexander and H. Lunenfeld. Positive Guidance in Traffic Control. Federal Highway Administration. United States Department of Transportation. Washington, D.C. 1975.

²³ A Policy on the Geometric Design of Highways and Streets. 6th Edition (AASHTO Greenbook). American Association of State Highway and Transportation Officials. Washington, D.C. 2011.

²⁴ T.J. Post, G.J. Alexander and H. Lunenfeld. A User's Guide to Positive Guidance. 3nd Edition. Federal Highway Administration. United States Department of Transportation. Washington, D.C., 1990.



The Traffic Engineering Handbook, 5th Edition²⁵ recognizes the importance of driver expectancies in affecting driver behavior and performance, as follows: "Drivers operate with a set of expectancies. ... If these expectancies are violated, driver perception-reaction time increases and so does the potential for an accident. The information from traffic control devices, the roadway environment, and other design cues must be provided when and where it is expected. Advance warning signs are intended to create in the driver the expectancy of a potential hazard."

"Driver expectancy" and "positive guidance" are important factors affecting the traveling public's driving behavior and performance in work zones. At the work zone for the State Highway 45 resurfacing project, these critical safety concepts would be addressed by adherence to and proper application of the pertinent MUTCD standards and guidelines.

Relating these safety concepts to the particular crash, the driver of Vehicle 1 would have passed a sign indicating ROAD WORK NEXT 24 MILES at the beginning of the project. This sign was a general information sign and did not warn of any specific hazards. The driver also may have passed a sign(s) warning of a pavement "bump" at one or two bridge structures as he drove northbound on State Highway 45. The driver then continued for several miles before reaching the crash site. In fact, he successfully traveled northbound on State Highway 45 for approximately 13 miles apparently without experiencing any significant issues with the roadway surface conditions. When the driver of Vehicle 1 encountered the section of tack coated roadway, there had been no advanced warning signs notifying him of the exposed and slippery tack material on the roadway surface. This hazardous wet tack coat-covered section of roadway was different, yet not obvious, and its presence violated his expectancy. Given the hazardous nature of the exposed tack coated surface, the driver should have been provided "positive guidance" on the approach to and through the hazardous area – in the form of proper advance warnings of the specific hazard and appropriate speed reduction advisories.

ANALYSIS & ASSESSMENT RESULTS

Standardized forms of scientific and engineering analyses/assessments were conducted to evaluate the crash and key factors/issues related to the events that led to the occurrence of the crash. The results of these analyses/assessments include, but may not be limited to the items listed below:

Vehicle 1 Speed Analysis

An analysis was conducted to determine the initial speed of Vehicle 1. This analysis considered roadway rotation/sliding, as well as the kinetic energy dissipated during Vehicle 1's

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²⁵ Traffic Engineering Handbook, 5th Edition. Institute of Transportation Engineers. Washington, D.C., 1999



furrowing and rollover on the shoulder. The results of this analysis indicate that Vehicle 1 was initially traveling in the range of 58 to 72 miles per hour, when the crash sequence began.

Roadway Design Elements

An assessment of the roadway's cross-slope, superelevation ("banking"), and superelevation transition values in the area of the crash was performed as part of the crash analysis. Table 1 is a summary of the measured cross-slope and superelevation values in the area of the crash. Results of this assessment indicate the following:

- 1. In the area of the crash, the northbound lane has a downward (negative) cross-slope approaching the horizontal curve. This downward slope indicates the center of the roadway is higher than the edge of the northbound lane. This is typical of straight sections of roadway. The relative amount of negative (downward) slope is graphically illustrated by the red "bars" in Table 1.
- 2. The northbound lane has an upward (positive) cross-slope in the horizontal curve. This upward slope indicates the center of the roadway is lower that the edge of the northbound lane. This is typical of sections of roadway where the roadway curves to the left. The relative amount of positive (upward) slope is graphically illustrated by the blue "bars" in Table 1.
- 3. The cross-slope of the northbound lane transitions from a downward (negative) cross-slope to an upward (positive) cross-slope in the area where the horizontal curve begins. This cross-slope transition at a horizontal curve is typical in highway design. There is an area within this transition area where the lane is level or near level meaning the center of the roadway is the same elevation or near the same elevation as the edge of the northbound lane. This transition is graphically illustrated in Table 1 where the red "bars" are becoming shorter and the blue "bars" are becoming longer.

Roadway Surface Condition Analysis

1. An assessment of the roadway surface conditions at the crash site was conducted as part of the overall crash investigation/analysis. The results of this assessment are summarized in Illustration 7 and Illustration 8 in the Appendix. In Illustration 7 and Illustration 8, stopping and slowing distances are calculated using the speed limit of 65, for a wet tack-coated roadway surface. These braking distances are compared to stopping and slowing distances on other surface types, including: new wet asphalt pavement; traveled asphalt pavement, loose snow, packed snow, and AASHTO's distance using the 11.2 fps² deceleration rate. The analysis results summarized in Illustration 7 and Illustration 8 support the following findings:



	Location Station	Northbound Lane Cross Slope, %	
-	707+50	2.09	
	707+12	2.68	DECEMBER 1
	706+72	2.66	
	706+31	3.03	
	705+49	1.49	
	704+69	1.43	11 24
	704+29	0.77	
	703+89	0.51	
	703+49	0.11	20 27 1983
1	703+08		-0.56
	702+79	133	-0.91
	702+38		-1.11
	702+14	MAN 25	-1.48
	701+17		-1.60
	700+52	(1)	-1,18
	699+76		-1:59
	698+77		-1.57
	697+96	Para	-1.83
	697+16	15-3-14 M	/-2.00

Table 1: Summary of Northbound Lane Cross-Slopes in the Area of the Crash

- a. The wet, tack coat surface present at the crash site limited Driver 1's ability to appropriately and safely navigate to the unexpected and hazardous pavement surface conditions at the crash site.
- b. Braking distances on wet tack coated roadway surface are estimated to be 2.75 to 3.25 times greater than braking distances on a wet new asphalt pavement surface. Additionally, braking distance on wet tack coated roadway surface were approximately 2.5 times greater than on wet traveled asphalt surface.
- c. Braking distances on the wet tack coat would be even greater than braking distances on both wet loose and packed snow.
- d. Given the deteriorated braking/slowing/pavement conditions at the crash site, the traveling public would <u>not</u> be able to decelerate at a typical deceleration rate (i.e., 11.2 fps²) without the high potential for loss of control (i.e., possible "spin-out".)



- e. Illustration 7 in the Appendix shows the results of the braking distance analysis for a vehicle braking from an initial speed of 65 miles per hour to a speed of 30 miles per hour. Likewise, Illustration 8 in the Appendix shows the results of the braking distance analysis for a vehicle braking from an initial speed of 65 miles per hour to a stopped speed of 0 miles per hour. The results of these analyses indicate that a typical vehicle traveling on wet tack coat would not have the necessary amount of friction available to have decelerated at the typical AASHTO deceleration rate of -11.2 fps².
- 2. A painted location mark was found during the site inspection at Station 691+90. Based on that station location and data collected during the site inspection process, it was determined that the centerline of 263rd Street was located at Station 690+37.
- 3. It was determined that the northbound header was located at approximately Station 706+50.
- 4. The tack coat began in the northbound lane at approximately station 692+0026. This is approximately 163 feet north of 263rd Street's centerline. Therefore, there was approximately 1,450 feet of exposed tack coat in the northbound lane.
- 5. Distance from beginning of tack coat to where Vehicle 1's departure arc began was determined to be approximately 1,155 feet.
- 6. A 1,320-foot distance, from 263rd Street to the location of the header in the northbound lane, is shown on a sketch in Brad James's Exhibit 15. Adding this 1,320-foot dimension to 263rd Street's Station 690+37 would indicate the northbound header was located at Station 703+57.

Weather Conditions

As part of this crash assessment, Records of Climatological Observations from numerous weather reporting stations, including stations in Brule and Charles Mix Counties and in the cities of Mitchell and Alexandria, were obtained and reviewed. Illustration 4 in the Appendix is a location map of these weather data station. These historical Records are compiled by the National Oceanic and Atmospheric Administration (NOAA) and document daily weather data for the reporting stations. The Records provide useful information about temperature and precipitation in the geographic area of the crash before and at the time of the crash.

In addition to the Records of Climatological Observations, NOAA weather radar data were obtained and assessed to determine if precipitation (in the form of rainfall) was probable at the crash site before, at the time of, and after the crash. Illustration 2 and Illustration 3 in the

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²⁶ ITEM 1 04WY DOT-67 DISTRIBUTOR Shot Record CSS1-h.pdf



Appendix are radar images that include the crash area. These radar images confirm, that more probably than not, it likely rained at the crash site before the 9:30 am crash, and that it was most likely raining at the time of the crash. It also continued to rain for some time after the crash, a fact supported by the trooper's post-crash photographs of the crash scene.

It should also be noted that the findings and conclusions of the Plaintiff's weather expert, Matthew Bunkers, Ph.D., CCM, were obtained and reviewed as part of this crash investigation. Regarding the rainfall at the crash location before and around the time of the crash, the findings and conclusions reported by Dr. Bunkers are consistent with and support the results of the independent weather assessment discussed in the preceding paragraphs.

Work Activity Progress

The Contractor's work activities on the day before the crash (i.e., Friday, June 29, 2019) are documented in the South Dakota DOT Construction Diary prepared by Kris L. Royalty. Paving work began at 7:30 am and was stopped at 7:45 pm, with no work delays experienced. The weather was described as hot: the temperature ranged from 70° to 94°, and wind speeds ranged from 5-15 mph. The primary work activity was the paving (top lift) of the northbound lane in Section 5 starting at Station 986+25 and ending at Station 755+93. There was also paving in northbound lane of Section 6 from Station 755+93 to Station 706+00. The width of the paving was 14 feet with a 1-foot sluff, and the pavement depth was 1½ inches. Also, temporary striping was installed over a distance of 6.3 miles starting at Station 1022+00 and ending at Station 692+00.

Based on the Construction Diary data summarized in the preceding paragraph, the contractor placed 28,025 feet, or approximately 5.308 miles, of asphalt pavement in the northbound lane on the day before the crash. This amount was paving work was accomplished in a 12-hour, 15-minute workday (i.e., 12.25 hours). Therefore, the rate or speed of paving was approximately 0.433 miles of paving per hour, and correspondingly, it required approximately 2.31 hours to pave one (1) lane mile of roadway. At this rate/speed of paving progress, the contractor could have paved over the remaining approximate 1,450-foot section of exposed tack coat in approximately 0.63 hours — which is approximately 38 minutes.

Priority of Safety Treatments

Highway safety professionals have long recognized that roadway hazards are not eliminated merely by installing warning signs in advance of the hazards. For example, referring to roadside hazards, the *Roadside Design Guide*²⁷ identifies a preferred "hierarchy" of safety treatments to eliminate/minimize such hazards, as follows:

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²⁷ Roadside Design Guide. 4th Edition. American Association of State Highway and Transportation Professionals. Washington, D.C., 2011.



- 1. The most preferred safety treatment is to remove the hazard, or to "re-design" the hazardous object or condition so that it is no longer a hazard.
- 2. The second most preferred treatment is to relocate the hazardous object/condition such that it is far from traffic exposure.
- 3. The third is to make the object "yielding" or "break-away" such that it will not result in injury or significant vehicle damage even if struck.
- 4. The fourth is to "shield" the object with a barrier or crash cushion.
- 5. The fifth and least desirable safety treatment is leave the hazard in place, untreated, and to merely delineate the hazard and provide advance warnings of the hazardous condition.

This preferred safety hierarchy can be applied to hazardous conditions in work zones. Relating this basic highway safety concept to the resurfacing work zone on State Highway 45 results in the following preferred "hierarchy" of safety treatments for protecting the traveling public:

- The most preferred safety treatment would be to remove the hazardous slick roadway surface – either by <u>not</u> spraying the tack material too far in advance of the paving operation, or by surfacing over the exposed tack coat material by the end of the workday.
- The next preferred treatment would be to sand the exposed tack coat surface to increase the friction, install advance warnings of the specific hazard, and/or post speed advisories appropriate for the driving conditions.
- 3. An even less desirable approach would be to leave the hazard in place, and untreated, and merely "sign" for the hazardous condition.
- 4. The absolute worst safety treatment would be to leave the exposed tack in place, fail to sand the surface, and provide no advance warning for the specific condition and no appropriate reduced speed advisory. This "non-treatment" approach was used by Spencer Quarries at the crash site.

Existing Work Zone Temporary Traffic Control

In the Defendant's Supplemental Answers to Plaintiff's Interrogatories and Requests for Production of Documents, the paving contractor (Spencer Quarries, Inc.) reported that: "warning

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signs warning of the "Uneven Lanes" and the "Bump Ahead" were placed beginning 1000' south of the asphalt "header," south of the accident site. Austin McGee had passed these signs just before he reached the accident site. The "Bump Ahead" sign also had a reduced speed advisory placard on it that warned and advised him to slow down."

The analysis of the crash revealed that, even if these signs were present as claimed by the contractor, they failed to address safety needs at the crash site for the following reasons:

- 1. Neither sign warned of the specific hazardous condition (i.e., dangerously slick roadway surface) that caused this crash.
- The locations of the advance warning construction signs were not appropriate/adequate to
 provide warning to the traveling public (including Austin McGee) at an appropriate
 distance in advance of the hazardous roadway surface condition.
- 3. The advised speed (i.e., 30 mph) on the speed advisory plaque (if present) was unreasonably low, in violation of MUTCD standards, and was not appropriately located relative to the beginning of the hazardous roadway surface condition.

Contractor's Responsibilities

The prime contractor on a construction project is responsible for performing the actual construction work, and for controlling the method and means of the construction. The work responsibilities of Spencer Quarries, Inc. on the State Highway 45 resurfacing project, were specified in the South Dakota Department of Transportation Standard Specifications for Road and Bridges. Section 7.17 of the Standard Specifications states: "The Contractor is responsible for the work until the Acceptance of Field Work is made by the Area Office . . ." Furthermore, the contractor must supervise its own work as per Section 5.5 of the Standard Specifications which states: "The Contractor will have on the project at all times, as the Contractor's agent, a competent superintendent capable of reading and understanding the plans and specifications and experienced in and capable of accomplishing the type of work being performed. The Contractor will have this superintendent on the project at all times regardless of the amount of work subcontracted."

On the other hand, the <u>State of South Dakota DOT</u> employees at a project site are responsible for "administering" the contract and for "inspecting" the contractor's work – and not for performing the work or for supervising the contract work. This applies to both the project engineer and to project inspectors. Section 5.9 of the <u>Standard Specifications</u> states: "As the representative of the Director of Operations, the Area Engineer has immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer

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has the authority to reject defective work, and to suspend work being improperly performed." Section 5.10 of the Standard Specifications states:

"Department inspectors will inspect all work done and materials furnished. This inspection may extend to any part of the work, preparation, fabrication, or manufacture of the materials to be used. The inspector will not alter or waive the provisions of the contract. The inspector will not issue instructions contrary to the contract, or act as a foreman for the Contractor. The inspector may reject work or materials until any issues can be referred to and decided by the Engineer. Neither the Department's authority to inspect all work nor any actual inspections performed by the Department during the course of construction will constitute an acceptance of work performed, or operate to relieve the Contractor of the Contractor's obligation to construct the project in compliance with the plans and specifications."

SUMMARY AND OPINIONS

In conclusion, I have developed my professional opinions and conclusions regarding the major causative factor that led to the occurrence of this crash. These opinions and conclusions are within a reasonable degree of engineering certainty. After careful review and assessment of the aforementioned data sources, the following determination was made: The major causative factor leading to this crash was the combination of: (a) the presence of the exposed tack coated surface; (b) the slippery nature of this surface, especially when wet; (c) allowing the traveling public to drive on the hazardous roadway surface; and (d) the lack of appropriate advanced warnings/safety measures for the exposed tack coated roadway surface.

- 1. At the time of the crash, there was an approximate 1,450-foot section of exposed and unevenly applied tack coat material in the northbound travel lane. The crash sequence began within this tack-coated roadway section.
- 2. A reconstruction of the crash supports the following findings and conclusions:
 - a. The initial speed of Vehicle 1 at the onset of the crash event was in the range of 58 to 72 mph. This initial speed range is consistent with a Brule County Sheriff's Deputy John Koenig speed estimate for Vehicle 1.
 - b. The type and condition of the tires on Vehicle 1 were not a causal or contributing factor in the crash. Furthermore, the tread depths of Vehicle 1's tires' were in the range of 5/32 to 9/32 inch, which is greater than the minimum of 2/32 inch. These M/T type tires are highway rated and their use is not uncommon on pick-up trucks traveling on South Dakota public highways.

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- c. Along Vehicle 1's roadway departure path on the west side of State Highway 45, the ground's slope changed from a -4.4 percent (downhill) slope to a +2.9 percent (uphill) slope for a net slope change of 7.3 percent. This slope change and the bottom of the roadway embankment was the primary causal factor that initiated the rollover of Vehicle 1.
- 3. As the prime contractor on the State Highway 45 re-surfacing project, Spencer Quarries, Inc. was responsible for providing a reasonably safe driving environment for the traveling public traveling within the limits of the project, which included the installation of appropriate traffic control to warn the traveling public of any hazardous conditions.
- 4. The exposed and unevenly applied tack coat material present on the roadway surface in the northbound lane at the crash site was a hazard created by the contractor that jeopardized the safety of the traveling public. Furthermore, there were inadequate advanced warnings and/or inadequate traffic control measures in place, given the hazardous surface condition that was present. As a result of the roadway surface deficiency (i.e., exposed slick tack coat material) and the lack of appropriate and required traffic control and/or reduced speed advisories, State Highway 45 at the crash location was not reasonably safe for public travel.
- 5. Compounding the hazardous driving conditions at the crash site (see Items 1 and 4) was the lack of appropriate traffic control measures, including the following, all of which were in violation of MUTCD standards:
 - a. No advanced warning of the exposed and uneven tack surfaces, which were especially slippery when wet.
 - b. Inappropriate advisory speed posting, in violation of MUTCD requirements.

It is also noted that the hazardous driving conditions were the result of the resurfacing work performed by the prime contractor on the resurfacing project (i.e., Spencer Quarries, Inc.), and that this contractor was responsible for providing the appropriate/required traffic control measures to provide a reasonable level of safety for the traveling public, which it failed to do.

- 6. In particular, the reconstruction of crash and comprehensive evaluation of the crash circumstances strongly support the conclusion that the following related factors directly caused or contributed to the crash:
 - a. The presence of the exposed tack coated roadway surface;



- b. The slippery nature of this roadway surface, especially when wet; and
- c. The lack of appropriate warnings and other safety measures, given the presence of the exposed tack coated roadway surface.
- 7. By opening the unprotected and untreated exposed tack coated roadway surface to the traveling public, the contractor violated standard industry practice and the procedures adopted in multiple States which require that such surfaces should generally not be opened to traffic, especially without sanding, appropriate warning signs, and/or appropriate reduced speed advisories. It is standard practice that tack coated roadway surfaces be covered with pavement, on the same day as the tack is applied, before reopening the affected travel lane to traffic.
- 8. In the northbound lane of State Highway 45 where this crash occurred, the contractor:
 - a. Failed to appropriately schedule, sequence and monitor the progress of its repaving work on the day before the crash, resulting in the exposure of an approximate 1,450-foot section of exposed tack coated roadway surface in the northbound travel lane. Given the average speed of paving on the day before the crash, it would have only taken approximately 38 more minutes of work time to cover the remaining approximate 1,450 feet of exposed tack material with new asphalt pavement
 - b. Inappropriately opened the approximate 1,450-foot tack coated roadway surface to traffic, without providing appropriate warnings and speed advisories to the traveling public.
 - c. Failed to apply sand to the exposed tack coat before opening the affected section to traffic, as per standard industry practice.
 - d. Failed to continuously monitor roadway surface and traffic condition in the work zone, and failed to alter/enhance traffic control measures to provide a reasonable level of safety for the traveling public.
- 9. Related to its responsibility for the temporary traffic control (TTC) at the resurfacing project work zone:
 - a. Spencer Quarries, Inc. failed to assign adequately trained/certified individuals knowledgeable in the principles of proper temporary traffic control (TTC) to be responsible for the safety of the traveling public within its resurfacing project, as required by the MUTCD.



- b. Spencer Quarries, Inc. failed to check that all TTC devices on the project were consistent with the TTC plan and were effective for the traveling public, as required in the MUTCD.
- c. Spencer Quarries, Inc. failed to assign an adequately trained individual, with knowledge of proper TTC practices and a basic understanding of MUTCD principles, standards and guidelines, to supervise the selection, placement and maintenance of the TTC devices used in its resurfacing work zone.
- d. Spencer Quarries, Inc. failed to properly monitor the safety needs and performance of the work zone, and appropriately modify the traffic control plan according to the current roadway conditions. This included failing to install the needed temporary traffic control devices to properly warn the traveling public of the hazardous surface condition resulting from the resurfacing project at the location of crash.
- e. The Spencer Quarries, Inc. employee responsible for temporary traffic control on the resurfacing project failed to require "remedial safety measures" be taken to ensure the safety of the traveling public, as required in Section 6B.01 of the MUTCD.
- 10. Spencer Quarries, Inc. employees responsible for maintenance of traffic within the State Highway re-surfacing project lacked appropriate training, knowledge and an appreciation of the recommendation that tack-coated surfaces should not be opened to traffic, but if they are, they should be sanded prior to opening and/or that appropriate warning signs and/or reduced speed advisories must be installed. Specific examples of training/knowledge deficiencies include: (1) a lack of understanding of the meaning of "breaking" versus "setting" of tack coat material; and (2) a lack of knowledge of the Hot-Mix Asphalt Paving Handbook provisions.
- 11. Spencer Quarries, Inc. failed to have a procedure in place to monitor crash records for its temporary traffic control work zone, and it failed to monitor such crash records as recommended in the MUTCD.
- 12. Independent research results indicate that tack coat surfaces like the surface at the crash site have very low coefficients of friction, when wet or dry, before and for a significant period of time after the tack breaks and sets. Such surfaces are especially "slippery" when wet. This same research concluded that such surfaces are unsafe for travel without sanding, and/or the use of proper warning signs, and/or posting appropriate reduced speed advisories.
- 13. Weather data indicate that there was rainfall before and at the time of the crash. The roadway surface was reportedly wet at the time of the crash.



14. Advanced weather forecasts issued on the day the tack coat was applied indicated a reasonably high probability of rain to occur within the 24-hour time period after the end of the workday. This information was available to the contractor; however, despite this weather forecast for rain, the contractor failed to respond in an appropriate manner. The contractor was responsible for maintaining a reasonably safe roadway surface; hence, through training, the contractor should have known that the rain in combination with the exposed tack coat material would result in a very slippery and hazardous roadway driving surface for the traveling public. The appropriate action, given this weather forecast, should have been to pave over the exposed tack coat material before the end of the workday on the day the tack coat was applied. At the very least, the contractor should have sanded the tack coated roadway driving surface, and/or provided appropriate advanced warning signs for the specific hazard, and/or post reduced speed advisories.

This statement is a summary of the conclusions and professional opinions I have developed while evaluating the available material, as it relates to this particular case. These conclusions and professional opinions are based upon the information and data that were available to me at the time this statement was released. These conclusions and professional opinions may be revised if additional information, evidence, or issues arise and become available, or if witnesses provide information that conflicts with or expands upon the current understanding of the case. These conclusions and opinions are intended for use in actual or potential litigation and are not to be used for other purposes.

If I may be of further assistance, please do not hesitate to contact me. With kindest regards, I remain,

Sincerely yours,

PARHAM ENGINEERING CONSULTANTS, INC.

Alan Parham, P.E.

Professional Engineer (AL, AZ, GA, KY, NC, TN, SC, VA)

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McGee Crash Engineer's Report September 23, 2020



Introduction

On June 30, 2018, Austin McGee was driving his 2005 Ford F250 northbound on South Dakota Highway 45 just north of 263rd Street in Brule County. Highway 45 is a 2 lane asphalt highway predominately running north and south.

Highway 45 was being resurfaced with asphalt pavement but at the time of the crash there was no construction taking place.—McGee-encountered a section of road coated with a layer of a tack coat, a material used to bond two layers of asphalt.

Once McGee encountered the tack coat his truck became unstable and spun out, veering to the left off the pavement where the tires dug into the soil causing the truck to roll over. McGee was paralyzed in the crash.

The purpose of this investigation is to analyze the road conditions and tire properties that lead to the crash.

Available Materials

- State of South Dakota Investigators Motor Vehicle Traffic Accident Report ID: 142394-163, Sequence 1807040026.
- 68 photos taken by the police of the scene, McGee's truck in a storage lot, and a few Google Maps images.
- 3. Answer to Amended Complaint (Spencer Quarries).
- 4. Answer to Amended Complaint (State Defendants).
- First Amended Complaint.
- 6. 13 photos taken July 1 2008 by McGee's father.
- 7. Deposition transcripts of John Koenig, Austin McGee, Brent McGee.
- 8. Alan Parham's Summary of Findings.
- 9. Defense expert report by Paul Dorothy.
- 10. Rainfall analysis Dr. Matthew Bunkers.
- 11. Defense reconstructionist report by Nicolas Prescott.
- 12. My inspection of the 4 removed tires from McGee's truck.

Highway Patrol Report

The police report stated the crash occurred at 9:30 am. The road conditions were stated as asphalt pavement, straight and level, speed limit 65 mph, daylight and rain.

The report narrative states:

Unit 1 was northbound on SD 45. Unit 1 driver lost control and spun approximately 120 degrees in the roadway. Unit 1 crossed the center line

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and left the roadway to the west. Unit 1 rolled and came to rest on the passenger side, facing south. Both occupants were ejected. No seatbelts were used. Heavy rain was present in the area of the crash location. Brent was interviewed at the crash location. Brent said Austin was driving at the time of the crash. He said Austin lost control and tried to steer out of the spin but was unable to. He said both of them were ejected. He said neither was wearing their seatbelts. He said they were in a hurry, trying to get to Sioux falls to pick up a vehicle part. Brent said Austin had been at a party and drinking the night prior. Brent said he never lost consciousness. He said he was ejected just a few feet from the pickup. No other motorists or first responders had any difficulty staying on the roadway on SD 45 during the same time frame. The phone number I was given for Austin was invalid. I attempted to make contact with Austin and his family On three separate occasions in the evening Time at 517 Washington St. in Burke. On two of those occasions at least one vehicle was in the driveway. No contact was made. The crash occurred within a work zone. SD 45 was being repayed with new asphalt. No workers were present or actively working at the time of the crash or near the crash location. There was no construction equipment or vehicles in the roadway or on the road edge near the crash location. Warning signs of the ongoing construction were posted along both northbound and southbound lanes, warning motorists of the work zone.

Testimony of Austin McGee

McGee testified he purchased the truck used and it came with the Ironman tires already fitted. He had fitted new tires on the back during his ownership and move the back tires to the front. He was driving with his brother Brent to Sioux Falls to pick up a truck bed and a dirt bike. He left Burke, SD that morning, drove east to Platte, then north on Highway 45. He intended to pick up I-90 and travel east to Sioux Falls. They encountered light rain as they headed to Platte. Traffic was very light, he saw only a few vehicles on the road. As he approached the crash site, he noticed warning signs for uneven lanes and bump. He was driving along normally, nice and smooth, when the truck "just busted sideways". It first went west, then he caught it, then it went east and spun around. He was in 2 wheel drive and he was driving about 70 mph. He was driving at a steady rate and did not try to accelerate when his truck became unstable. He did not apply his brakes.

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Testimony of Brent McGee

Brent McGee testified he and his brother were on their way to Sioux Falls to get a box for a pickup. The roads were wet, not raining, but misting. They encountered the mist just north of Platte. He remembers the truck sliding west, then it got straight, then it slid 180 degrees, hit the ditch and rolled. He took pictures of the site the next day with his dad. Brent testified that Austin knew the tall tires changed the speedometer.

Testimony of John Koenig

John Koenig worked for the South Dakota Highway Patrol for 30 years. He responded to the McGee crash along with Trooper Schmiedt who wrote the police report.

He responded to the crash from Chamberlain, SD driving southbound onHwy45 towards the crash scene. He encountered heavy rain along the way. He testified the truck was northbound then veered left into the ditch and rolled over. The road was wet and there were no tire marks. The asphalt was new and there were no painted lines. He saw some orange warning signs. He took measurements of the path off the road and calculated the truck was traveling 48 mph when it began to roll. He does not know the speed on the highway. He did not inspect the truck nor did he measure the drag factor of the highway. He noted the truck could have hydroplaned.

Tire Inspection

Both visual and tactile inspection of tires is a standard methodology used by all tire experts. It was the standard technique used by engineers at The BFGoodrich company when I worked there as a tire engineer. It is also described in various tire investigation books. 1,2

The tires on McGee's truck were a matched set of four Ironman All Country M/T, size 35x12.50R20 LT. They had a 10 ply rating, load range E. According to an Ironman spec sheet, the original molded tread depth for the tires was 20.5/32 inch.

The tread pattern is a large block style arranged in 4 circumferential rows. The tread was fairly evenly worn, with more wear in the center and less on the shoulders. Tire pictures in the Ironman spec sheet show that when new, the tread blocks were lightly siped. That is they had a small amount of thin kerfs or slits in the tread blocks.

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¹ Baker, Fricke, The Traffic-Accident Investigation Manual, Northwestern University Traffic Institute, 1986, Topic 825.

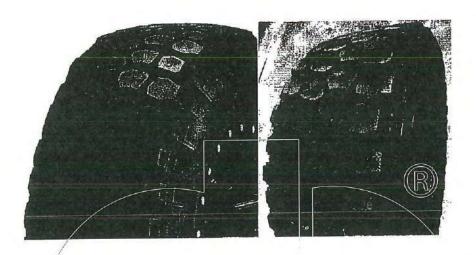
² Giapponi, Tire Forensic Investigation, SAE International, 2008, Chapter 10.

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The new tire sipe pattern can be seen on the catalog picture on the left. On the right is the actual right rear tire. The sipe pattern is very light, and only some of the sipes go to the edge of the blocks. Those that do, the sipe is shallow.

The two front tires had a later date code than the rear tires, but the rear tires had deeper tread.

All four tires had a DOT code that began with OOK XW6 ANL. The last 4 digits which are the date code, are listed in the chart below. The date code describes the week and year the tire was manufactured. The right rear, for example was manufactured during the 36th week of 2016 and its tread depth measured 7/32 to 9/32 inch in the center, and 9/32 to 10/32 in the shoulder.

Position	Date Code (week and year - when	Center Tread Depth (inch)	Shoulder Tread Depth (inch)	
left front	manufactured) 2317	5/32 to 6/32	7/32-to 9/32	
right front	2317	4/32 to 5/32	7/32 to 9/32	
left rear	5016	6/32	7.5/32 to 9/32	
right rear	3616	7/32 to 9/32	9/32 to 10/32	

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Tire Traction

There are two aspects of tire traction in wet conditions. At lower speeds and shallow water depth, wet traction is primarily a function of the surface roughness of the pavement and the tread rubber compound. Some tread grooves can be useful, but even a slick tire has good traction on a coarse surface with shallow water at low speeds.³

When the water is deep, it must be pushed out of the footprint, either to the sides of the tire or through the tire footprint via circumferential and lateral tread grooves.⁴

The surface of the pavement has two primary roughness characteristics, macrotexture and microtexture. Macrotexture is a measure of the asperities in the surface, the pebbly bumpiness one feels when touching pavement. Microtexture is the roughness of the surface, like sandpaper.

When evaluating tire traction on pavement, an important consideration therefore is establishing whether the water depth is considered shallow or deep. Shallow water traction depends mostly on the texture of the road surface. Deep water traction is dominated by hydroplaning and depends on water depth, speed, tread pattern, and tire inflation.⁶

Water Depth

When a tire rolls into standing water, the water in the area of the rubber tread blocks is displaced into the grooves that surround the blocks. Even if no water is pushed outside the footprint, the water level in the grooves would be higher than it was before the tire displaced the water. When the water depth is shallow, all the water displaced by the tread can be absorbed by the tread grooves without flooding them. When the water is deep, the displaced water completely fills the tread grooves.

Bunkers and Parham analyzed the rainfall rate using Doppler radar data. Parham surveyed the road surface contour in the area where McGee lost control of his vehicle. These two data can be used to calculate the water film depth on the highway.

The rainfall rate was 0.05 inches per hour. This is very light rain. The slope of the roadway in the area was 1.8 inches in 12 ft which is 1 in 80, or 1.25%. I used two

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³ Sinnamon, James F and Tiekling, John T., Hydroplaning and Tread Pattern Hydrodynamics, Highway Safety Research Institute/University of Michigan, October 1974

⁴ Ibid

⁵ USDOT, Federal Highway Administration, Technical Advisory T 5040.36 Surface Texture for Asphalt and Concrete Pavements, June 17, 2005

⁶ Ibid, Sinnamon

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methods to calculate the water depth. The first is an analytical method known as PAVDRN. The second method was a formula determined empirically. 8

Using the PAVDRN calculation, the water depth was 0.009 inches. Using the Texas empirical study, the water depth was 0.010 inches. These two methods result in a nearly identical result. This is a very thin depth of water and generally less than the surface texture of a roadway.

Tire Tread Depth.

It is well known that the rear tires on a 4 wheeled vehicle are more important for stability than the front tires. This is why when 2 tires are purchased, they should always be fitted to the rear. It is always important to have deeper tread on the rear positions, this keeps the vehicle stable in the event of driving in deep water that might cause hydroplaning. The deeper rear tread means the front tires will hydroplane first. This is a stable condition and the vehicle will continue straight. When rear tires hydroplane, or lose traction from any condition such as hydroplaning, traction loss, or a tire disablement, stability is lost. Small steering corrections drivers normally make while driving can send a vehicle spinning out of control. Studies of vehicles with disabled rear tires show that a vehicle is prone to unstable oversteer when the traction or grip of rear tires is compromised.

McGee's truck had deeper tread tires on the rear, which is the proper fitment. To be conservative, I will consider the rear tire tread depth to be 6/32 inch, which in decimal is 0.188 inches.

Vehicle Stability

When McGee lost traction with his rear tires, his truck instantly transformed into a vehicle with completely different and unpredictable handling characteristics than he knew. Studies performed by the NHTSA show that a steering input of up to a quarter turn will not result in loss of control of a normal vehicle. A vehicle with a disabled rear tire will go out of control with a steering input as little as 8 degrees. A quarter turn of

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⁷ Anderson, et al, Improved Surface Drainage of Pavements, Final Report, The Pennsylvania Transportation Institute, PTI 9825, June 1998

⁸ Texas Transportation Institute, Texas Highway Dept., The Effects of Rainfall Intensity, Pavement Cross Slope, Surface Texture, and Drainage Length on Pavement Water Depths, Research Report 138-5, Study 2-8-69-138

⁹ Investigation of Driver Reactions to Tread Separation Scenarios in the National Advanced Driving Simulator, NHTSA DOT HS 809 523, January 2003

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the wheel moves the rim about 12 inches. Eight degrees is moving the steering wheel about 1 inch at the rim.

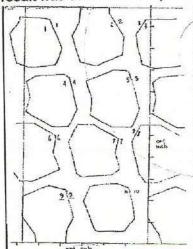
A rear end skid or yaw like this is outside the normal experience of drivers and is very difficult to control. When a vehicle's rear tires skid, the vehicle oversteers, or turns more than intended by the driver. Oversteering conditions have been studied by the NHTSA and found to be uncontrollable by most drivers 10.

Other papers such as those written by Gilbert and Arndt confirm this condition. If traction is lost at the rear tires, the vehicle becomes unstable and cannot stay in its lane. The car will yaw, spin, and crash. 11,12.

Tire Tread Groove Capacity

I took a tire footprint impression of the Ironman tires and measured the tread void. The result was that in the footprint, 60% of the area is made up of the rubber tread blocks,

and 40% of the area is made up of the tread grooves.



When the tire footprint is set on a film of water 0.010 inches deep, the water in the area of the tread blocks will be pushed to the grooves so that the water depth in the grooves will rise. The grooves have 40% of the total footprint, so 100% of the water under the footprint has to be accepted by 40% of the area. This causes the 0.010 inch deep water to rise to 0.025 inches deep in the grooves.

The thinnest groove in the rear tires is 0.188 inches deep, more than 7.5 times deeper than required to absorb the water even if no water is displaced to the sides or through the back of the footprint.

In these conditions, with a very shallow water depth and relatively large volume available in the tread grooves,

hydroplaning does not occur. 13 Before hydroplaning can occur, the water depth has to be "deep" that is such a depth that the tread grooves become flooded and the flow of

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Gilbert et al, The Effect of Tread-Separation on Vehicle Controllability

¹² Arndt, The Influence of a Rear Tire Tread Separation on a Vehicle's Stability and Control

¹³ Ibid, Sinnamon

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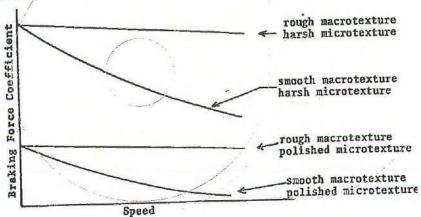
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water away from the footprint is choked. 14 Therefore hydroplaning can be ruled out as a cause of instability of McGee's truck and his loss of control.

Wet Traction

In conditions of shallow water where the tread groove capacity is larger than required to hold all the water from the footprint, and in this case, the grooves were barely taxed having more than 7.5 times the needed capacity, tire traction, particularly wet traction, is primarily driven by the surface texture. 15, 16

The macrotexture and the microtexture provide means for the tire rubber to penetrate through the water film and contact the roadway to provide traction. Many studies show the benefits of road texture and it is known that a safe roadway requires a minimum level of texture. 17,18



The chart above, taken from the Sinnamon and Tielkling paper shows the relative effects of microtexture and macrotexture on skid resistance and traction. The importance of both is evident. This picture shows why it is important for all roadways to be maintained in a manner to always have sufficient surface texture. Any roadway that

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¹⁴ Ibid, Sinnamon

¹⁵ Concrete Pavement Texturing, FHWA-HIF-17-011, May 2019

¹⁶ Kowalski, McDaniel, Joint Transportation Research Program, Project No. C-36-56K, File No. 2-13-11, SPR-2413, IHRB Project TR-450, Purdue University, October 2010

¹⁷ Ibid, USDOT T 5040.36

¹⁸ Sinnamon, James F and Tielking, John T., Hydroplaning and Tread Pattern Hydrodynamics, Highway Safety Research Institute/University of Michigan, October 1974, p 59

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is without texture, such as a section coated with a tack coat, can become slippery, especially when wet.

When a roadway is being paved with asphalt, it is generally laid down in layers, about 2 inches thick. A layer of tack coat is placed between the asphalt layers so they stick together.

A tack coat is an emulsion of water and an asphaltic tar-like material. It is used to bond successive layers or "lifts" of asphalt pavement. It is also used as a "fog seal" to preserve and extend the life of asphalt pavement. There are many studies on the use of applied of fog-seal and tack coat materials that include evaluating its effect on traction. These studies show that the coatings reduce traction, particularly wet traction. This reduction is often permanent until the coating wears away.

Some of these studies are listed in the footnotes, but I will list them here for the convenience of the reader. This is a small subset of the total studies available on this subject:

- King, Spray Applied Emulsion Preventive Maintenance Treatments: FWHA Research Study, 1st Sprayed Sealing Conference, Adelaide Australia, 2008.
- Johnson, Nontraditional Fog Seals for Asphalt Pavement: Performance on Shoulder Sections in Minnesota, Report 2018-18, May 2018.
- Paul and Scherocman, Friction Testing of Tack Coated Surfaces, Paper No. 98-1092, Transportation Research Record 1616.
- Robertson, ADOT Roadway Friction Studies, Pavement Management Section, Arizona Department of Transportation 11/17/2016.
- Hall et. al., Guide for Pavement Friction, NCHRP Web Document 108, Project 01-43, February 2009.
- Li, S., S. Noureldin, Y. Jiang, and Y. Sun. Evaluation of Pavement Surface Friction Treatments, Publication FHWA/IN/JTRP-2012/04, Joint Transportation Research Program, Indiana, Department of Transportation and Purdue University, West Lafayette, Indiana, 2012. doi: 10.5703/1288284314663.
- Kowalski, K. J., R. S. McDaniel, and J. Olek. Identification of Laboratory Technique to Optimize Superpave HMA Surface Friction Characteristics.
 Publication FHWA/IN/JTRP-2010/06. Joint Transportation Research Program, Indiana Department of Transportation and Purdue University, West Lafayette, Indiana, 2010. doi: 10.5703/1288284314265

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¹⁹ Robertson, Kevin, ADOT Roadway Friction Studies, 11/17/2016

²⁰ Hall, et al, Guide for Pavement Friction, NCHRP Project 01-43, February 2009

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In every study, an application of a tack coat or fog seal, a water asphaltic emulsion, reduced the friction of the pavement whether the pavement was dry or wet. Wet coated pavement can become dangerously slippery. The papers also describe how surface texture, both microtexture and macrotexture are critical for tire traction. Other papers such as A Tech Brief published by the Federal Highway Administration (May 2019, FWHA-HIF-17-011 go into more detail regarding microtexture and macrotexture of roadway surfaces.

The study by Paul and Scherocman²¹ shows that the skid number of a tack coated roadway dropped to the low teens, 0.11 to 0.13, after a layer of tack coat was applied.

The result of these studies shows that McGee, who easily traversed non coated pavement on the morning of June 30, 2018, suddenly and unexpectedly encountered coated pavement. The surface instantly changed from a normal roadway surface to a surface with the traction of packed snow, with a coefficient of friction of about 0.11 to 0.13.

The roadway was black, and the tack coated section was also black. Warning signs for bump and uneven pavement were displayed, but no warning for a slippery surface was provided.

McGee's Truck

Austin McGee's truck is a 2005 Ford F250, standard bed, crew cab, powered by a 6.0 liter turbo diesel engine rated for 325 hp at 3300 rpm. According to spec sheets, its axle curb weights are 4395 lb front, and 2771 lb rear. The door placard lists the gross vehicle weight at 10,000 lb and the gross axle weights at 5600 for the front and 6100 for the rear.

The transfer case is electrically switched between 2WD, 4WD high, and 4WD low. The owner's manual²² instructs that 4WD modes are only intended for consistently slippery or loose surfaces. It was proper for McGee to drive in 2WD on paved highways.

The curb weight of McGee's truck is distributed with 62% on the front tires, and 38% on the rear tires. As noted, the rear weight was listed as 2771. Even if an allowance is made for passengers and payload, the rear tire load would have been less than 3000 lb at the time of the crash.

McGee's truck is tall, wide, and boxy. I would estimate the drag coefficient to be about 0.6 and the frontal area to be about 48.5 square feet. The aero drag of the truck would

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²¹ Paul, Scherocman, Friction Testing of Tack Coat Surfaces, Paper No. 98-1092, Transportation Research Record 1616

²² 2005 F250/350/450/550 Owner's Guide, p 202

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be about 357 lb at 70 mph. The tire drag would be about 1% of the weight or an additional 75 lbs. The total force required to push the truck at 70 mph would be 432 lb.

The power required to push the truck at 70 mph is about 81 hp. With the rear tires loaded to 3000 lb, pushing 432 lb requires a minimum coefficient of friction with the road of 0.144.

The Paul and Scherocman study showed that the coefficient of friction of wet pavement coated with tack coat to have a coefficient of friction in the range of 0.11 to 0.13. This means, that driving at a steady speed, the sudden and unexpected drop in friction caused by the tack coat can cause the back tires of McGee's truck to break traction and cause the truck to become unstable. It was foreseeable that McGee would lose control when confronted with such a sudden encounter with a dangerously slippery road surface.

Report of Nicolas Prescott

Prescott claims McGee's tires were dangerously worn out. His analysis ignores the fact that the rear axle was were properly fitted with the deeper tread tires. The picture in his report was of the more worn left front tire. When a vehicle loses rear traction, the rear tire tread depth is the important fact.

The legal minimum tread depth for a tire is 2/32 inch. Conservative recommendations suggest that tires be replaced when they reach 4/32 inch tread. The thinnest tire tread on McGee's truck, the right front, had 4/32 inch tread at the thinnest point in the center of the tire. The shoulders of that tire had 7 to 9/32 inch of tread. Prescott calls these tires "balding". Some tires are originally manufactured with less than 9/32 tread. Clearly, 4/32 tread depth at the thinnest point and an average tread depth greater than 6/32 inch is well within the acceptable range for tire tread depth.

There is no duty whatsoever to remove tires when the tread sipes have worn off. Many tires are made without sipes at all, even some racing rain tires.

Prescott goes on to claim that the rib width on McGee's Ironman tires was too wide to provide good wet traction. He bases this claim and the claim for sipes, on a research paper by Sinnamon and Tielkling.

In the paper Prescott cites, one which I have also cited, the testing of tread rib width was made as a part of a test of smooth and straight rib tires on a polished concrete surface with a water depth of 0.035 inches. 3.5 times deeper than the conditions that existed for McGee and on a polished concrete surface, a surface that should never exist on a public highway.

McGee's tires had a block tread design and were driven on a water film of at most 0.010 inches. Clearly Prescott's reference does not apply to McGee.

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Prescott's other claim has to do with the effectiveness of sipes in a tire tread. He claims the Sinnamon and Tielkling paper concludes that sipes act as squeegees, provide points of high contract pressure, and provide additional drainage. In reality, the paper speculated on these attributes of sipes. The paper made no conclusion that sipes benefit hydroplaning or traction. The authors admitted they had insufficient data to form a conclusion. This was detailed on page 62 and reads as follows:²³

There is insufficient data in the published literature to permit the influence of the above variables on sipe effectiveness to be evaluated. A tire test program necessary for such an evaluation would be a major undertaking.

Obviously Mr. Prescott is not a tire engineer and is not qualified to discuss these issues.

Prescott claims McGee testified he was driving at 70 mph, then goes on to calculate with his speedometer error was actually driving 77.5 mph. In reality, there was some confusion in McGee's testimony on speed around page 62. McGee was clear he understood the tall tires would change the speedometer reading. On page 97 he clearly states "I know I wasn't traveling 70 miles an hour".

Prescott claims that the Bully Dog tune on McGee's truck contributed to his tires breaking free. A "tune" on an engine involves reprogramming the engine computer to allow a higher level of turbocharger boost than the factory setting. This increases engine torque and power. McGee's truck was powered by a 6.0 liter turbo diesel engine known as the Powerstroke and is rated to produce 325 hp.

McGee testified he was driving straight and steady at the time of the crash. I've already calculated the power required to push the truck at 70 rnph to be about 81 hp. To deliver this power, the engine would have been limited to produce only the required 81 hp. This is about one quarter of the engine's 325 hp rating. If the Bully Dog tune increased power from 325, to 350 or even 400 horsepower, it would have made no difference when driving along as a steady speed with the driver requesting only 81 hp from the engine.

Prescott claims that the South Dakota Driver's Manual says that hydroplaning can occur at speeds of 50 mph or less if the tires are worn. This can be true under conditions of deep water that causes a tire's tread to completely flood. But as we know in this case, the water film was far too thin to support a theory of hydroplaning as a cause of this crash.

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²³ Sinnamon, James F and Tiekling, John T., Hydroplaning and Tread Pattern Hydrodynamics, Highway Safety Research Institute/University of Michigan, October 1974, p62

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Prescott made no attempt to understand the water film thickness on the roadway. He took Deputy Koenig's testimony that is was raining heavily and he was able to safely drive to the crash scene. He then jumped to the incorrect conclusion, without analyzing the conditions, that McGee's tires were worn and hydroplaned on deep water. Deputy Koenig approached the crash from the north, where radar showed heavier rain than at the crash site, and Koenig did not drive over tack coated pavement. The southbound roadway had no exposed tack coat.

Actual radar reports interpreted by Bunkers and Parham plus my own inspection of Doppler RADAR history along with the testimony of Austin and Brett McGee indicate very light rain or mist falling at a rate of about 0.05 inches per hour. This is too light a rainfall to create a risk of hydroplaning where McGee lost control.

Report of Paul Dorothy

Like Prescott, Dorothy cites the South Dakota Driver License Manual section on rain and hydroplaning. Also like Prescott, Dorothy made no attempt to understand the actual road conditions at the crash site.

We know the water film on the road was too thin to cause hydroplaning.

Dorothy's opinions of the road surface can be summarized by saying cured tack coat is safe. Yet, the documents I've cited show that tack coat or fog seal, makes a roadway more slippery. It does this by filling in both the microtexture and macrotexture of the pavement. As shown in these studies, roadway texture is very important to maintain tire traction and vehicle safety. Dorothy does not consider the roadway texture or the water depth on the roadway in his analysis.

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Findings

To a reasonable degree of engineering certainty, and subject to change if additional information becomes available, it is my professional opinion that:

- Spencer Quarries left an exposed length of tack coated pavement during a paving operation.
- McGee suddenly and unexpectedly encountered a slippery surface of tack coat wetted by light rain.
- The rainfall rate and road slope resulted in a very thin film of water, about 0.010 inch thick which is insufficient to cause hydroplaning of McGee's tires. Therefore hydroplaning can be eliminated as a cause for this crash.
- 4. The friction coefficient of the wetted tack coat was substantially lower than the fresh pavement he was used to. Even though McGee drove straight with no accelration or braking, the rear tires of his truck lost traction causing it to become unstable due to the tack coat.
- The unstable truck was uncontrollable. It spun counterclockwise and veered left off the pavement sideways with the right side leading. The tires dug into the earth and caused the truck to roll over.

Gary A. Derian, P.E.

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STATE OF SOUTH DAKOTA)	IN CIRCUIT COURT
	:§	
COUNTY OF BRULE)	FIRST JUDICIAL CIRCUIT
AUSTIN MCGEE,		
		07CIV18-000054
Plaintiff,		

VS.

SPENCER QUARRIES, INC.,
a South Dakota Corporation; SOUTH
DAKOTA DEPARTMENT OF
TRANSPORTATION; KENT GATES, as
an employee of the South Dakota
Department of Transportation; and KRIS

ROYALTY, as an employee of the South Dakota Department of Transportation AFFIDAVIT OF JON HARRIS

Defendants.

I, Jon Harris, being first duly sworn, state as follows:

- I am an owner/private investigator of All Star Investigations in Sioux Falls, South Dakota.
 Attached as Exhibit 1 is a true and correct copy of my resume.
- 2. On Saturday, August 7, 2021 I spoke on the phone with Mike Marlow. He asked me to travel to SD Highway 48 between Interstate 29 and the Iowa state line to view and document construction signage. I arrived later that day and observed Fresh Oil signs present on two stretches of roadway that were under construction. Asphalt layers were being laid on the surface of SD Highway 48. There were no construction workers present. I photographed and videotaped the construction signs and the surface of the road. The surface of the road in the area behind the Fresh Oil signs was dry and smooth. There was no asphalt in liquid form on the road surface. Exhibits 2-5 show the two Fresh Oil signs and the surface of the road at each location.
- 3. On Monday, August 9, 2021 I returned to the site and interviewed Jose Mendez. Mr. Mendez was working for Knife River Construction at the west end of the construction area. Knife River was the paving contractor on the job. I asked Mr. Mendez about the use of the Fresh Oil signs. He stated that the state of SD required them to put them up and the person

to speak with would be Alex, Knife River's superintendent for this project. I then interviewed Alex Bargas on the west end of the construction area. Mr. Bargas identified himself as the person in charge from Knife River. Mr. Bargas stated that the State of SD required Knife River to put up the Fresh Oil signs at the end of the day when there was exposed oil/tack that was open for public travel. He said that the SD DOT tells them when and where to put the signs. Mr. Bargas also said the SD DOT regulates the oil or tack usage. Mr. Bargas identified Brian and Paul as the SD DOT supervisors for this site.

Dated this 22 day of September, 2021.

Jon Harris

Subscribed and sworn to before me, the undersigned, this 22 day of September,

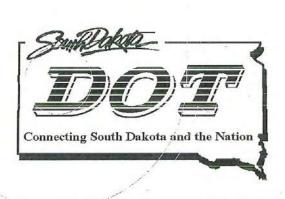
2021.

Notary Public

My commission expires

-21-2022

STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES



2015

SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

EXHIBIT 5 App

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DEFINITIONS AND TERMS

ends of openings for multiple boxes and pipes where the clear distance between openings is less than half of the smaller contiguous opening.

Bridge Length - The greater dimension of a structure measured along the center of the roadway between backs of abutment, backwalls, or between ends of bridge floor.

Bridge Roadway Width - The clear width of structure measured at right angles to the center of the roadway between the bottom of curbs or, if curbs are not used, between the inner faces of parapet or railing.

BUSINESS DAY - See day.

1

CALENDAR DAY - See day.

CHANGE ORDER - A written order issued by the Engineer to the Contractor, covering changes in the plans, specifications, or quantities within the scope of the contract and establishing the basis of payment and time adjustments for the work affected by the changes.

COMMISSION - The Transportation Commission as constituted under the laws of South Dakota.

CONTRACT - The written agreement between the Department and the Contractor setting forth the obligations of the parties for the performance of the prescribed work.

The contract includes the following:

addenda, bidding package, bid proposal, bid proposal guaranty, bid schedule, contract form, change orders, contract items (pay items), contract performance bond, contract time, contract unit prices, notice to contractors, notice to proceed, plans (general and detailed), project question and answer (Q&A) form, proposal forms, standard specifications, supplemental specifications, special provisions, working drawings, written orders, and agreements required to complete construction of the work, including authorized extensions of time, all of which constitute one instrument.

CONTRACT ITEM (Pay Item) - A specific unit of work for which a price is provided in the contract.

Major Contract Item - A contract item having a contract value greater than 10.0% of the original contract amount.

Minor Contract Item - A contract item that is not a major contract item. A minor contract item becomes a major contract item when the total cost of the contract item increases to more than 10.0% of the original contract amount.

DEFINITIONS AND TERMS

SHOULDER - The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of base and surface courses.

SIDEWALK - That portion of the roadway primarily constructed for use by pedestrians.

SPECIAL PROVISIONS - See specifications.

SPECIFICATIONS - A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

Special Provisions - Additions and revisions to the standard and supplemental specifications applicable to an individual project.

Standard Specifications - A book of specifications approved for general applications and repetitive use.

Supplemental Specifications - Approved additions and revisions to the standard specifications.

STANDARD SPECIFICATIONS - See specifications.

STATE - The State of South Dakota acting through its authorized representative.

STREET - A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

STRUCTURES - Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation drains, and other features which may be encountered in the work and not otherwise classified.

SUBBASE - The layer or layers of specified or selected material of designated thickness placed on a subgrade to support a base course or a surface course.

SUBCONTRACTOR - See Contractor.

SUBGRADE - The top surface of a roadbed upon which the pavement structure and shoulders, including curbs, are constructed.

SUBSTRUCTURE - That part of a structure below the bearings of simple and continuous spans, skewback of arches, and top of the footings of rigid frames; including backwalls, wingwalls, and wing protection railings. For reinforced concrete slab bridges, that portion below the deck slab.

SUPERINTENDENT - See Contractor.

SUPERSTRUCTURE - The entire structure except the substructure.

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SCOPE OF WORK

- A. When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
- **B.** When a major item of work, as defined in Section 1.5, is increased in excess of 125% or decreased below 75% of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125% of original contract item quantity, or in case of a decrease below 75%, to the actual amount of work performed.

When an adjustment to the unit price is made due to a decrease in the contract quantity to below 75% of the original contract quantity, the total payment made will not exceed the amount which would have been paid for 75% of the original contract quantity.

If the Contractor believes an alteration in the work is a significant change that necessitates a contract revision, the Contractor must request a contract revision for the significant change in work in writing to the Engineer.

The Department will pay the Contractor for work occasioned by alterations in plans in accordance with the provisions set forth under Section 9.4. If the altered work is of sufficient magnitude that additional time to complete the project is warranted, the Department will make time adjustments in accordance with the provisions of Section 8.7.

Items and prices set forth in the Special Provision for Price Schedule for Miscellaneous Items and the bidding package are predetermined by the Department and will not be subject to negotiation due to alterations in the plans or quantity changes.

- 4.4 EXTRA WORK The Contractor will perform authorized work for which there is no price included in the contract whenever necessary or desirable in order to complete the work as contemplated. The Contractor will perform this extra work in accordance with the specifications and as directed, and be paid for as provided under Section 9.5.
- 4.5 MAINTENANCE OF TRAFFIC Unless otherwise provided, the Contractor will keep the road open to traffic in accordance with the traffic control plans. The Contractor will keep the portion of the project used by public traffic in a condition that will adequately and safely accommodate traffic. Accommodation of traffic will include, but not be limited to; providing a roadway in a passable condition, providing flaggers in areas where the operation of construction equipment interferes with the movement of traffic, sweeping, and providing and maintaining in a safe condition pedestrian routes, temporary approaches or crossings, and intersections with trails, roads, streets, businesses, parking lots, residences, garages, and farms.

While sweeping in curb and gutter sections or in rural sections where a finished and maintained lawn extends to the edge of the shoulder, the Contractor will use a pickup broom having an integral self-contained storage. The pickup broom must be a minimum of 6 feet wide. While sweeping in curb and gutter sections the pickup must have working gutter brooms. The Contractor will not be required to provide snow removal.

The Contractor will bear the expense of maintaining traffic over the project undergoing improvement and constructing and maintaining approaches, crossings, intersections, and

SCOPE OF WORK

other features as may be necessary, without direct compensation, except as provided below:

A. Traffic Diversions - Traffic diversions will be designated in the Contract. Right-of-way for traffic diversions will be furnished by the Department.

Construction, maintenance, and removal of traffic diversions will be as directed by the Engineer.

Materials, other than temporary drainage structures, required to construct and maintain traffic diversions will be paid for at their respective contract unit prices.

The cost of labor, equipment, and incidentals required to satisfactorily maintain traffic diversions and provide temporary drainage structures will be incidental to the contract lump sum price for maintenance of traffic diversions.

The cost of labor, equipment, and incidentals necessary to satisfactorily remove traffic diversions and dispose of materials will be incidental to the contract lump sum price for remove traffic diversion(s).

B. Maintenance of Traffic During Suspension of Work:

- 1. Prior to written suspension due to unfavorable weather or conditions not the fault of the Contractor, the Contractor will prepare the project as directed by the Engineer to provide for the accommodation of traffic during the anticipated period of suspension. During the suspension and until an order for resumption of construction operations is issued, the maintenance of the project for traffic, to the extent specified in writing by the Engineer, will be by and at the expense of the Department. When the order for the resumption of work is issued, the Contractor will be responsible for the maintenance of traffic and will replace or repair work or materials lost or damaged during the period of suspension, remove any work or materials for maintenance, and complete the project in every respect as though the project's prosecution had been continuous and without interference. The Department will pay for additional work made necessary by such suspensions, for reasons beyond the control of the Contractor, at contract prices or by extra work.
- The Contractor will maintain, replace, or repair any work or material lost or damaged, without cost to the Department, during periods not covered by a written suspension order and when the work is suspended for the Contractor's failure to comply with the provisions of the Contract.
- 4.6 RIGHTS IN AND USE OF MATERIALS FOUND ON THE WORK The Engineer may authorize the Contractor's use of materials found in the excavation that are suitable for completing bid items other than excavation. The Department will pay the Contractor for the excavation of such materials at the corresponding contract unit price and for the pay item for which the excavated material is used. The Contractor will replace all excavation material removed with acceptable material, at the Contractor's expense. Charge for the materials so used will not be made against the Contractor. The Contractor will not excavate or remove

The Contractor will determine the meaning of all stakes, measurements, and marks before commencing work.

The Contractor will preserve stakes and marks. If the Contractor destroys or disturbs any construction stakes or marks, the Department will charge the cost of replacing these stakes and marks to the Contractor.

Structure Staking:

- A. Bridges: For bridges, the Department will provide stakes to establish elevation, location, and alignment for each abutment. The Engineer will stake and reference the centerline of each abutment in the longitudinal direction and in each direction transversely.
- B. Box Culverts: For box culverts, the Department will provide stakes to establish elevation, location, and alignment of both ends of the box culvert. The Engineer will stake and reference the centerline of each box culvert in the longitudinal direction and in each direction transversely.

The Contractor will provide all other stakes required to successfully complete construction of the structure, unless additional staking due to difficult site conditions is requested by the Contractor and agreed to by the Engineer. The Contractor will verify the accuracy of all stakes.

- 5.9 AUTHORITY AND DUTIES OF AREA ENGINEER As the representative of the Director of Operations, the Area Engineer has immediate and responsible charge of engineering details and administration of the construction project. The Area Engineer has the authority to reject defective work, and to suspend work being improperly performed.
- 5.10 DUTIES OF THE INSPECTOR Department inspectors will inspect all work done and materials furnished. This inspection may extend to any part of the work, preparation, fabrication, or manufacture of the materials to be used. The inspector will not alter or waive the provisions of the contract. The inspector will not issue instructions contrary to the contract, or act as a foreman for the Contractor. The inspector may reject work or materials until any issues can be referred to and decided by the Engineer. Neither the Department's authority to inspect all work nor any actual inspections performed by the Department during the course of construction will constitute an acceptance of work performed, or operate to relieve the Contractor of the Contractor's obligation to construct the project in compliance with the plans and specifications.
- 5.11 INSPECTION OF WORK Materials and details of the work will be subject to inspection by the Department. The Contractor will allow the Engineer access to the work and will furnish the Engineer with information and assistance necessary to make a complete and detailed inspection.

The Contractor will notify the Engineer 24 hours in advance of any change in construction activity requiring inspection staff changes.

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The Department may order work done or materials used without inspection by the Engineer to be removed and replaced.

The Contractor, prior to final acceptance of the work, will remove or uncover portions of the finished work as directed by the Engineer. After examination, the Contractor will restore the work to the standard required by the contract. If the Engineer determines the work is acceptable, the Department will pay the Contractor for uncovering, removing, and replacing of the work removed as extra work. If the Engineer determines the work is unacceptable, the uncovering, removing, and the replacing of the work removed, will be at the Contractor's expense.

When a unit of government, political subdivision, utility, or railroad corporation is to accept or pay a portion of the cost of the work covered by the contract, a representative of the respective unit of government, political subdivision, utility, or railroad corporation will have the right to inspect the work. This inspection will not make the unit of government, political subdivision, utility, or railroad corporation a party to the contract and will not interfere with the rights of either party under the contract.

5.12 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK - The Department will consider unacceptable any work which does not conform to the requirements of the contract, and will accept or reject non-conforming work under the provisions of Section 5.3. The Contractor will immediately remove and replace, in an acceptable manner at the Contractor's expense, work rejected for any cause.

The Contractor will finish all work to the lines and grades established by the Engineer. The Department will not pay for work done contrary to the Engineer's instructions, work done without authorization beyond the lines shown on the plans, or extra work done without authorization. The Engineer may order the Contractor to remove or replace, at the Contractor's expense, any work done contrary to the Engineer's instructions, work done without authorization beyond the lines shown on the plans, or extra work done without authorization within the lines shown on the plans.

If the Contractor does not comply with the Engineer's orders made under the provisions of this section, the Engineer may order unacceptable work remedied or removed and replaced and unauthorized work removed. The Engineer may deduct the cost of correcting unauthorized or unacceptable work from any monies due or to become due the Contractor.

South Dakota Codified Laws 32-22-16 and 32-22-21 on roads and highways outside the limits of the project. Within the project limits the Contractor will comply with the above referenced weight limitations and with special weight limitations imposed by the contract for the hauling of material and the movement of equipment over bridges and box culverts and the courses making up the pavement structure. When hauling materials or moving equipment on gravel cushion, the Contractor will be allowed the above referenced weight limitations plus an additional 10% of the above referenced weight limitations. Weight restrictions will not be imposed for the hauling of materials or movement of equipment on an earth subgrade, select subgrade topping, select granular backfill, or temporary granular

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material that will be removed and will not make up a portion of the final pavement structure.

The Contractor may submit a written request to the Engineer to cross bridges, box culverts or the courses making up the pavement structure with equipment or loads that exceed the weight limitations. This written request will include the following information: the loaded vehicle weight, empty vehicle weight, equipment make and model, tire size, axle spacing, and axle loading of the equipment proposed for use. The Engineer and the Office of Bridge Design will review this information and determine whether to grant approval.

Nothing set forth in the foregoing will relieve the Contractor of liability for damage resulting from the operation and movement of construction equipment.

5.14 MAINTENANCE DURING CONSTRUCTION - The Contractor will maintain the work during construction and until the Area Engineer issues the Acceptance of Field Work. The Contractor's obligation to maintain the work will consist of continuous and effective work, prosecuted daily with adequate equipment and forces, to keep the roadway and structures in satisfactory condition.

Unless otherwise specified in the Contract, the Contractor's responsibility for project maintenance will be as follows:

When the work begins on the roadbed or pavement structure, the Contractor will maintain the entire project including, but not limited to, all surface maintenance, drainage, weed control, and temporary traffic control. This responsibility will continue until the Area Engineer issues the Acceptance of Field Work, except for those periods when the project is suspended. Maintenance during periods of project suspension will be in accordance with Section 4.5 B.

When work begins and is limited to construction of a box culvert or structure, including berm construction, as part of a larger project, the Contractor will only be required to maintain the portion of the project disturbed by the box culvert or structure work including portions of the project used for temporary traffic control.

Mobilization of equipment, material stockpiling, clearing, topsoil stockpiling, and fencing will not constitute work on the roadbed or pavement structure.

In the case of a contract involving the placement of material on, or the utilization of a previously constructed subgrade, base course, pavement, or structure, the Contractor will maintain the previously constructed work during construction operations.

Cost of maintenance work during construction and before the Area Engineer issues the Acceptance of Field Work will be incidental to the contract unit prices for the various pay items and the Contractor will not be paid an additional amount for such work.

5.15 FAILURE TO MAINTAIN ROADWAY OR STRUCTURE - If the Contractor does not comply with the provisions of Section 4.5 or 5.14, the Engineer will notify the Contractor of such noncompliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of notice, the Engineer will proceed to maintain the project, and will

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deduct the entire cost of this maintenance from monies due or to become due the Contractor.

- modifications and final cleanup has been completed, the Area Engineer or designee will, within 14 calendar days, make a final inspection of the work. When provided in the contract, the Area Engineer or designee may make inspections following completion of portions of the contract. If the work is found to conform to the requirements of the contract, the Area Engineer or designee will issue written notification to the Contractor of Acceptance of Field Work. Such notice is not to be construed as an acceptance by the Area Engineer or designee of previously noted defective or unauthorized work, or of unauthorized work subsequently determined during the final computations of field measurements. Should the work fail to conform with the requirements of the contract, the Engineer will provide the Contractor with a written statement of the features to be remedied. Final Acceptance in accordance with Section 9.9 will not be made until the Contractor notifies the Engineer that corrections have been made and the Engineer determines the requirements have been met.
- 5.17 CLAIMS FOR ADJUSTMENT AND DISPUTES If the Contractor contends additional compensation is warranted for assessments made to the contract, work or material not covered by the contract, or adjustments made pursuant to Section 5.3, the Contractor will give the Area Engineer written notice of the claim for additional compensation. If the Contractor contends additional compensation is warranted for work or materials not covered in the contract, the Contractor will give the Area Engineer written notice of the claim for additional compensation before beginning or continuing construction on the affected work. If the basis for claim does not become apparent until after proceeding with the work, or it is not feasible to stop the work, the Contractor will immediately notify the Area Engineer that the work is continuing and the Contractor will submit written notification of the intent to file a claim within 10 calendar days. The Contractor's failure to give the required notification or to provide the Area Engineer proper facilities and assistance in keeping strict account of actual costs will constitute a waiver of the claim for additional compensation in connection with the work already performed. If the Engineer has kept account of the costs involved, the act of keeping account will not be construed as proving or substantiating the validity of the claim.

After completion of the work on which the claim is based, the Contractor will complete and submit to the Area Engineer a Contract Claim Form (DOT-248), furnished by the Department. The Contractor must complete and submit this Contract Claim Form within 90 calendar days after the Acceptance of Field Work. The Engineer may grant a written extension to this 90 calendar day period if circumstances warrant. Interest due to the Contractor in accordance with Section 9.9 will not apply to the extended 90 calendar day period if the 90 calendar day period is extended beyond 120 calendar days after the date of the Region Engineer's Letter of Final Acceptance.

The Contractor must describe in detail in the Contract Claim Form all claim items being submitted for review. The Contract Claim Form must contain adequate information for the Engineer to make a determination as to the validity of the claim. At a minimum, the Contractor will submit the following:

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

7.6 SANITARY HEALTH AND SAFETY PROVISIONS - The Contractor will provide and maintain in a neat, sanitary condition accommodations for the use of employees as necessary to comply with the requirements of the State and local Boards of Health, or of other bodies or tribunals having jurisdiction. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards.

All workers within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area will wear high-visibility safety apparel intended to provide conspicuity during both daytime and nighttime usage, and meeting the Performance Class 2 or 3 requirements of the ANSI/ISEA 107 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear" or equivalent revisions.

7.7 PUBLIC CONVENIENCE AND SAFETY - The Contractor will conduct the work to minimize obstruction to traffic. The Contractor will provide for the safety and convenience of the general public and the residents along the highway and the protection of persons and property as specified under Section 4.5.

The Contractor will eliminate dust which causes a hazard or nuisance, by the application of water or other acceptable measure in the amounts and at a frequency directed by the Engineer. When the item does not appear in the estimate of quantities in the bidding package, the item will be paid for at the rate specified in the Special Provision for Price Schedule for Miscellaneous Items. When the item appears in the estimate of quantities in the bidding package, the item so used will be paid for at the contract unit price.

The Department will reimburse the Contractor for 100% of the actual quantities for furnishing and installing dust control on approved haul roads under Section 601.

7.8 RAILWAY-HIGHWAY PROVISIONS - When the Contractor is required or elects to haul materials across the tracks of any railway, the Contractor will make arrangements with the railway company for new private crossings required or for the use of existing private crossings. If the Railway Company requires it, all costs for Railroad Protective Insurance will be borne by the Contractor unless a bid item for Railroad Protective Insurance is established in the plans.

The Contractor will perform all work on the railroad right-of-way without unnecessary interference with the movement of trains or traffic upon the Railway Company's track.

- 7.9 CONSTRUCTION OVER OR ADJACENT TO NAVIGABLE WATERS The Contractor will perform all work over, on, or adjacent to navigable waters without interfering with the navigation of the waterways and in a manner that no existing navigable depths will be impaired, except as allowed by permit issued by the U.S. Coast Guard or the U.S. Army Corps of Engineers.
- 7.10 BARRICADES AND WARNING SIGNS The Contractor will provide, erect, and maintain necessary barricades, suitable and sufficient lights, danger signals, signs, and traffic control devices and take all necessary precautions to protect the work and safety of the public. The

LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Contractor will provide barricades on highways closed to traffic, will illuminate obstructions during hours of darkness, and will provide warning signs to control and direct traffic.

The Contractor will erect warning signs at locations where operations may interfere with the use of the road by traffic, and at intermediate points where the new work crosses or coincides with an existing road.

Barricades, warning signs, lights, temporary signals, and other protective devices must conform to the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD) at the time of letting, and the details shown in the plans.

7.11 USE OF EXPLOSIVES - When the use of explosives is necessary for the prosecution of the work, the Contractor will not endanger life, property, or the new work. The Contractor will be responsible for all damage resulting from the use of explosives.

The Contractor will comply with all laws and ordinances as well as 23 CFR 635.108, 29 CFR 1910, 29 CFR 1926, and FHWA Form 1273 Part VII, whichever is the most restrictive; in the use, handling, loading, transportation, and storage of explosives and blasting agents.

The Contractor will notify property owners and public utility companies having structures or facilities in proximity to the site of the work of the intention to use explosives. Such notice will be given sufficiently in advance to enable these potentially affected parties to protect their property from injury.

7.12 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE - The Contractor will be responsible for the preservation of public and private property and will not disturb, damage, or move land monuments and property marks until the Engineer has witnessed or referenced the location of the affected property.

The Contractor will be responsible for all damage or injury to property, resulting from an act, omission, neglect, or misconduct in the manner or method of executing the work, or due to defective work or materials. The Contractor's responsibility will not be released until completion of the project and Final Acceptance is made, as noted by the date shown on the Region Engineer's Letter of Final Acceptance.

The Contractor will be responsible for any direct or indirect damage or injury to public or private property resulting from or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution of the work. The Contractor will restore the property to a condition similar or equal to that existing before such damage or injury occurred by repairing, rebuilding, or restoring and making good such damage or injury as directed by the Engineer and at the Contractor's expense.

The Contractor will take all necessary precautions to prevent fires during construction. The Contractor will obtain all necessary permits and will provide adequate fire protection while performing burning, blasting, welding, and cutting.

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PART C ASPHALT CONSTRUCTION

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ASPHALT CONCRETE, GENERAL

320.1 DESCRIPTION

These requirements are applicable to all types of hot mixed asphalt pavements irrespective of class, type, asphalt material, or pavement use. Exceptions to the general requirements are in the specified requirements for each class.

The work consists of one or more courses of asphalt concrete mixture constructed on a prepared foundation.

320.2 MATERIALS

A. Composition of Mixtures: The asphalt concrete shall be composed of a mixture of aggregate, asphalt binder, additives, and approved modifiers. Unless otherwise specified in the plans, no RAP is allowed in the asphalt concrete. Aggregate fractions shall be combined in proportions resulting in a mixture meeting the specified requirements.

The operation of the plant shall not commence until the Department's Bituminous Engineer has established or verified a job mix formula, in writing, meeting the aggregate and mix design specification requirements for the class and type of asphalt concrete specified. The job mix formula established or verified by the Department's Bituminous Engineer shall fix a single percentage of aggregate passing each required sieve size, a single percentage of asphalt binder to be added to the aggregate, a single asphalt binder application temperature at the mixer, a single temperature at which the mixture is to be delivered to the road. The following table sets forth the tolerances for the job mix formula:

Gradation, percent passing, sieve sizes	+7
3/8 inch & larger#4 thru #40	±5
#4 thru #40#200	±2.0
Description of the second of t	
n thudgeted lime content	±0.10
T	
Temperature of mixture on delivery to the road	20°F & +30°F
Asphalt binder application temperature	±20°F
Percent RAP content (if used)	±5

Job mix formula tolerances for Class Q asphalt concrete shall conform to Section 322.

The mixture shall conform within the range of tolerances established by the job mix formula for that class of asphalt concrete. Should a change in sources of materials be proposed or when unsatisfactory results are obtained, a new job mix formula shall be established.

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ASPHALT CONCRETE, GENERAL

Blade laid asphalt concrete mixture shall consist of the fine aggregate components of the asphalt concrete class specified on the project. The job mix formula established or verified by the Department's Bituminous Engineer shall set the fines components at approximately the same proportions as the asphalt concrete class specified on the project and shall fix a single percentage of asphalt binder to be added to the aggregate, a single asphalt binder application temperature at the mixer, a single temperature at which the mixture is to be discharged from the mixer, and a single temperature at which the mixture is to be delivered to the road. The blade laid asphalt concrete mixture may contain a small amount of coarse aggregate (+#4 sieve). The Department will not perform quality testing on any of the coarse aggregate (+#4 sieve) in the blade laid asphalt concrete mix.

- B. Aggregates: Aggregates shall conform to Section 880.
- C. Asphalt Binder: Asphalt binder shall conform to Section 890.
- D. Shoulder Joint Sealant: Joint sealant shall conform to Section 870.
- **E.** Additives: An additive is any material added to a bituminous mixture or material, such as mineral filler, asphalt additives, and similar products without a specific pay item. Additives shall not be incorporated into the mixture without approval of the Department's Bituminous Engineer.
- F. Hydrated Lime: Hydrated lime shall conform to Section 760.

320.3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Limitations: Asphalt concrete shall not be placed when the underlying surface is wet or frozen. Asphalt concrete shall not be placed when weather conditions prevent proper handling, compaction, or finishing. The temperature and seasonal limitations are as follows:

MINIMUM AIR TEMPERATURES & SEASONAL LIMITATIONS

Compacted	Surface Course		Subsurface Course & Shoulder Course		
Thickness	Minimum Temperature*1	Seasonal Limits	Minimum Temperature*1	Seasonal Limits	
1 inch or less	45°F	May 1 to Oct. 15 (inclusive)	45°F	none	
over 1 inch	40°F	May 1 to Oct. 15 (inclusive)	40°F	none	

^{*1} Minimum air and surface temperature in the shade.

B. Equipment:

 Requirements for All Plants: The central plant for mixing the aggregate and asphalt binder may be a batch or drum mix type mixing plant.

ASPHALT CONCRETE, GENERAL

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thereafter will be rejected. The Contractor shall make appropriate adjustments in the production of mixtures to ensure the mixture is completely coated at the time of discharge from the plant.

When hot mix storage bins are used, storage of the mix shall be limited to a maximum of 15 hours. The point of temperature measurement will be the discharge end of the mixer.

E. Transportation and Delivery of the Mixture: The mixture shall be transported from the plant to the point of use in pneumatic tired vehicles. The vehicle boxes shall be tight, clean, and smooth. Boxes shall be cleaned only with lime water, soap, a detergent solution, or an approved commercial product specifically intended for this use. Oil, diesel fuel, or other petroleum solvents shall not be used. No material shall be used which could adversely affect the asphalt concrete. Excess solution in the box shall be disposed of before the vehicle is loaded.

Loads shall be tarped in inclement weather conditions and when ordered by the Engineer.

F. Blade Laid Asphalt Concrete: Prior to placing the blade laid asphalt concrete mix, the Contractor shall thoroughly sweep the surface to remove all loose existing joint material and loose asphalt concrete from cracks, joints, and spall areas. In curb and gutter sections or in rural sections where a finished and maintained lawn extends to the edge of the shoulder, the Contractor shall use a pickup broom with an integral self-contained storage. The pickup broom must be a minimum of 6 feet wide. While sweeping in curb and gutter sections, the pickup broom must have working gutter brooms. A rotary power broom may be used in all other locations.

The blade laid asphalt concrete mix shall be compacted by at least two complete coverages with self-propelled pneumatic tired rollers.

G. Tacking, Spreading, and Compacting: The surface, including all vertical contact faces, on which the asphalt concrete is to be placed, shall be tacked in accordance with Section 330. The tack coat shall be allowed a cure period, as determined by the Engineer, prior to asphalt concrete placement.

Surfaces which have been primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being overlaid with asphalt concrete.

Asphalt concrete shall be placed by self-propelled pavers. Handwork is permissible in inaccessible or odd shaped areas. In lieu of a self-propelled paver, asphalt concrete may be placed by a shouldering machine on shoulders less than 6 feet in width.

Spot leveling and repair of the existing surface with asphalt concrete shall be required prior to the paver laid courses at locations designated. Potholes and areas of localized disintegration shall be cleaned of loose material, squared, tacked, leveled with asphalt concrete, and satisfactorily compacted. Spot leveling may be blade laid in lifts not exceeding 3 inches of uncompacted depth. Compaction shall be by the specified roller

PRIME, TACK, FOG SEAL, AND FLUSH SEAL

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330.1 DESCRIPTION

This work consists of preparing and treating a prepared surface with asphalt material and sand as required.

330.2 MATERIALS

Materials shall conform to the following Sections:

- A. Asphalt: Section 890.
- B. Blotting Sand for Prime: Section 879.
- C. Sand for Flush Seal: Section 879.
- D. Sand for Fog Seal: Section 879.

330,3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Requirements:

Application shall be made only during daylight hours, when the wind does not adversely affect the spraying operation and when the following conditions are met:

- 1. Asphalt for Prime: The application of asphalt for prime will be permitted only:
 - a. When the ambient air and surface temperatures on the project are both at least 60°F in the shade.
 - b. When conditions are dry.

When plans call for prime on interim surfacing, the prime application shall closely follow the base finishing operation and at no time shall the prime operation be more than 3 miles from the base finishing operation. The cure time for the processed base, prime, and blotting sand application will be determined by the Engineer.

Surfaces primed with cutback asphalt shall be allowed to cure for a minimum of 72 hours prior to being overlaid with asphalt concrete.

- Asphalt for Tack: The application of asphalt for tack will be permitted only:
 - a. When the ambient air and surface temperature on the project are both at least 35°F in the shade.
 - b. When conditions are dry, except emulsified asphalt may be applied when the surface is slightly damp.

PRIME, TACK, FOG SEAL, AND FLUSH SEAL

utility access points shall be covered to ensure liquid asphalt is not applied to them, as directed by the Engineer. Surfaces to receive a prime coat shall be satisfactorily compacted and cured.

E. Application of Asphalt: During application the temperature of the asphalt shall be maintained within the temperature range furnished by the asphalt supplier. Asphalt shall be applied by a pressure distributor in a uniform and continuous manner. Coverage shall be made to the satisfaction of the Engineer.

Unauthorized increases in rate of application will not be eligible for payment.

The angle of the spray nozzles and the height of the spray bar shall be set to obtain uniform distribution. The distributor shall travel at the established speed when the spray bar is opened. Areas inaccessible to the distributor shall be covered by hand spray methods. When the distributor is not in operation, it shall be parked off the roadbed or drip pans shall be placed under the spray bar.

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount estimated for the current day's operation unless ordered or allowed by the Engineer. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

F. Application of Sand: Blotting of prime shall be accomplished by broom sweeping or spreading sand on the primed surface with a mechanical spreader. Hand spreading will be permitted on odd shaped or inaccessible areas. Application of sand will not be permitted until the prime has set for at least 24 hours, unless otherwise directed by the Engineer.

The fresh application of asphalt for flush seal shall be covered with a uniform spread of sand immediately behind the distributor. The sand shall be placed by a self-powered aggregate spreader with positive controls or other equipment acceptable to the Engineer. The sand shall be placed uniformly on the asphalt application. Rolling will not be required. The finished surface shall be smooth riding without transverse or longitudinal ridges and shall present a uniform satisfactory appearance. Bleeding areas shall be resanded. Rough and nonuniform areas shall be corrected.

When applying fog seal coats, a light application of sand may be ordered by the Engineer to prevent material pick up. If ordered, the sand shall be placed by a self-powered aggregate spreader with positive controls or other equipment acceptable to the Engineer. The sand shall be placed uniformly on the asphalt application. Rolling will not be required. The finished surface shall be smooth riding without transverse or longitudinal ridges and shall present a uniform satisfactory appearance. Bleeding areas shall be resanded. Rough and nonuniform areas shall be corrected.

The loose sand material remaining on the surface shall be lightly broomed off after a waiting period of twenty-four hours from the time of application or as otherwise directed

PRIME, TACK, FOG SEAL, AND FLUSH SEAL

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by the Engineer. Excess material in curb and gutter sections shall be broomed towards the gutter and shall be picked up and disposed of by the Contractor.

Unauthorized increases in rate of application will not be eligible for payment.

G. Temporary Traffic Control: The Contractor shall provide flaggers, signs, and barriers to warn, direct, and prevent traffic from traveling on the freshly applied asphalt until it has penetrated, and does not track or pickup on the tires of traveling vehicles or the surface has been blotted with sand. Temporary traffic control shall conform to Section 634.

330.4 METHOD OF MEASUREMENT

- A. Asphalt: Asphalt will be measured to the nearest 0.1 ton.
- B. Blotting Sand for Prime: Blotting sand for prime will be measured to the nearest 0.1 ton.
- C. Sand for Flush Seal: Sand for flush seal will be measured to the nearest 0.1 ton.
- D. Sand for Fog Seal: Sand for fog seal will be measured to the nearest 0.1 ton.

330.5 BASIS OF PAYMENT

- A. Asphalt: Asphalt will be paid for at the contract unit price per ton complete in place. Separate payment will not be made for water for dilution of emulsified asphalt.
- B. Blotting Sand for Prime: Blotting sand for prime will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.
- C. Sand for Flush Seal: Sand for flush seal will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.
- D. Sand for Fog Seal: Sand for fog seal will be paid for at the contract unit price per ton complete in place. Payment will be full compensation for furnishing, installing, and all incidentals required to complete the work.

TEMPORARY TRAFFIC CONTROL

634

634.1 DESCRIPTION

This work consists of furnishing, installing, and maintaining required temporary traffic control devices in accordance with the current edition of the Federal Manual on Uniform Traffic Control Devices (MUTCD).

634.2 MATERIALS

Traffic and traffic control devices shall conform to and be maintained in accordance with the requirements of Section 984 and Part 6 of the MUTCD.

Traffic control devices are categorized by their intended use and certification requirements.

- Category I traffic control devices are lightweight devices which may be self-certified by the manufacturer including, but not limited to; cones, drums, and delineators.
- Category II traffic control devices are other lightweight devices which must be certified by individual crash testing including, but not limited to; portable signs and barricades.
- Category III traffic control devices are fixed or other massive devices which must be certified by individual crash testing including, but not limited to; breakaway sign supports, concrete barriers, concrete barrier end protection, crash cushions, truck mounted attenuators, and longitudinal barriers.
- Category IV traffic control devices are trailer mounted devices which are not required
 to be individually crash tested including, but not limited to; portable changeable
 message signs, arrow boards, portable temporary traffic signals, and work area
 lighting.

Category I, II, and III traffic control devices shall meet the crashworthy requirements of test level 3 of National Cooperative Highway Research Program (NCHRP) Report 350 or AASHTO Manual for Assessing Safety Hardware (MASH). Category IV traffic control devices shall be delineated with retroreflective traffic control devices.

Prior to use, the Contractor shall provide documentation for all traffic control devices used. The documentation shall show the traffic control devices used meet the applicable NCHRP 350 or MASH requirements.

Retroreflective sheeting material used on traffic control devices shall conform to Section 984.

Paint used for temporary pavement marking shall meet the same specification for permanent pavement marking in Section 980.

Glass beads shall be used to reflectorize the temporary traffic paint. The glass beads shall conform to the requirements of Section 981.

Pilot Cars shall conform to Section 984.

Temporary pavement marking tape shall conform to Section 984.

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App. 0117

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TEMPORARY TRAFFIC CONTROL

Signal heads shall meet the requirements of Section 985.

Warning lights shall meet the requirements of Section 984.

634.3 CONSTRUCTION REQUIREMENTS

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- A. General: The Contractor shall furnish, install, and maintain required traffic control devices and pavement marking material.
 - 1. All traffic control devices shall be kept in proper position, clean, and legible at all times. Damaged devices shall be replaced within 24 hours, or as directed by the Engineer.
 - Non-applicable traffic control devices shall be completely covered or removed during periods of inactivity.
 - 3. Traffic control devices shall be immediately removed or covered when the need for such devices no longer exists. When devices are no longer needed, they should be stored off the project or as close to the right-of-way line as possible.
 - 4. Vehicles and equipment shall be stored outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work site in a minimum number of vehicles necessary to perform the work.
 - 5. Traffic approaching the project from intersecting roadways, streets, and approaches must be adequately accommodated. Major intersections and large commercial entrances may require additional signing, flaggers, and channelizing devices on a temporary basis until work activities pass these areas.
 - 6. Unless otherwise stated, hours of darkness are defined as 1/2 hour after sunset until 1/2 hour before sunrise.
- B. Apparel: All workers within the right of way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel intended to provide conspicuity during both daytime and nighttime usage, and meeting the Performance Class 2 or 3 requirements of the ANSI/ISEA 107 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear" or equivalent revisions.

Workers shall wear a vest, shirt, or jacket as an outer garment with a background color of fluorescent yellow-green, fluorescent orange-red, or fluorescent red. The retroreflectorized portion of the material shall be orange, yellow, white, yellow-green, or silver.

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- H. Traffic Control Signs: Traffic control signs shall conform to Part 6 of the MUTCD and as specified in the plans.
- I. Temporary Traffic Control Signal: Temporary traffic control signals shall generally consist of all necessary materials and appurtenances needed to control road user movements at an intersection, bridge, or other site.
 - 1. General: The Contractor shall furnish, operate, and maintain the temporary traffic control signal. The temporary traffic control signal shall reliably and continuously control traffic for all approaches at the specified location. The temporary traffic control signal system shall meet the requirements of the MUTCD, national and local electrical codes, and these specifications.

Existing signal equipment at the site may be salvaged for use in the temporary traffic control signal. Existing traffic signal equipment used on the project shall be salvaged or returned to original use as indicated in the plans. All materials furnished by the Contractor shall remain the property of the Contractor upon completion of the project.

The temporary traffic control signal shall display pedestrian indications if the pedestrian indications previously existed, or if it is anticipated pedestrians will utilize the temporary traffic control signalized intersection.

In the event of system failure, the Contractor shall furnish necessary flaggers to safely control traffic until the temporary traffic control signal is operable. The cost of flaggers, signing, and lighting shall be incidental to the contract price for temporary traffic control signal.

The Contractor shall have a qualified individual responsible for setup and maintenance of the temporary traffic control signal. This person shall have received training on installation, setup, and maintenance of the system.

Traffic signal operation or maintenance work is required to be performed by the Contractor when project conditions dictate, lane closures change, traffic flow is impeded, a potential risk to the public exists, or when equipment breaks down or malfunctions. Equipment break downs or malfunctions require a high priority response and are to be reacted to within one hour of notification of the event.

- 2. Temporary Traffic Control Signal Equipment:
 - a. Short Term Temporary Traffic Control Signal: The short term temporary traffic control signal system shall consist of signal heads mounted on span wire supports.
 - b. Portable Temporary Traffic Control Signal: The portable temporary traffic control signal system shall consist of signal heads, controller, and power supply, all mounted on a heavy duty trailer.

STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATIONS TO 2015 STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES

APRIL 18, 2018

All items included in this Supplemental Specification will govern over the Supplemental Specifications for Errata.

MAKE THE FOLLOWING CHANGES TO THE INDICATED SECTIONS:

Section 1.5 - Page 3 - Add the following to page 7:

Inspection - The Department's act of examining the work.

Section 1.5 - Page 3 - Add the following to page 7:

Ledge Rock - A solid, continuous, homogenous rock mass found in its original state; distinguished from boulders or rocks that have been transported from their deposited or formed location.

Section 1.5 - Page 3 - Add the following to page 11:

Testing - A form of inspection based upon criteria and procedure.

Section 5.17 - Page 38 - Delete the 1st sentence and replace with the following:

If the Contractor contends additional compensation is warranted for assessments made by the Department to the contract, work or material not covered by the contract, or adjustments made pursuant to Section 5.3, the Contractor will give the Area Engineer written notice of the claim for additional compensation.

Section 7.12 - Page 49 - Add the following paragraph after the 3rd paragraph of this Section:

The Contractor will not indiscriminately drive or park vehicles within the right-of-way. The Contractor will restore the property to a condition similar or equal to that existing before such damage or injury occurred by repairing, rebuilding, or restoring and making good such damage or injury as directed by the Engineer and at the Contractor's expense.

Section 8.1 - Page 57 - Delete the 5th paragraph and replace with the following:

Any item designated in the contract as a "specialty item" may be performed by subcontract, and the cost of any designated specialty item performed by subcontract will be deducted from the total amount of the original contract before computing the percentage of work performed by the Contractor's own organization.

Page 1 of 24

EXH1BIT8

4-18-2018

Section 325.3 B - Page 167 - Delete the 1st sentence of the 2nd paragraph and replace with the following:

There shall be at least three steel faced tandem rollers for each paver in use.

Section 325.3 C - Page 167 - Delete the 2nd sentence of the 2nd paragraph and replace with the following:

Breakdown rolling, consisting of a minimum of two complete coverages with at least two self-propelled tandem smooth steel rollers, shall proceed on the mat as soon as laydown is completed.

Section 325.3 C - Page 167 - Delete the 4th sentence of the 2nd paragraph and replace with the following:

Final or finish rolling shall consist of a minimum of one complete coverage with at least one self-propelled tandem smooth steel roller.

Section 330.3 A.3 - Page 172 - Add the following to this section:

c. Fog seal application shall begin after the asphalt surface treatment is cured and shall not begin prior to completing final brooming. Fog seal application shall be completed no later than 7 calendar days following asphalt surface treatment application.

Section 330.3 B - Page 172 - Delete and replace with the following:

B. Dilution of Tack, Fog Seal, and Flush Seal: Emulsified asphalt for tack, fog seal, and flush seal with a specified application rate of 0.07 gallons per square yard or less may be diluted. The rate of dilution for tack shall be at a ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum) by volume, unless otherwise approved by the Engineer. The rate of dilution for fog seal and flush seal shall be at a ratio of not more than 3 parts emulsion to 1 part added water (3:1 ratio maximum) by volume to not less than 1 part emulsion to 1 part added water (1:1 ratio) by volume, unless otherwise approved by the Engineer. The emulsion shall be uniformly mixed by adding potable water and if necessary, agitating the mixture. The amount of emulsion and any added water shall be included on the ticket delivered to the project. If the emulsion is diluted, the emulsified asphalt supplier shall perform the dilution. Dilution of asphalt emulsion in the field will not be allowed unless approved by the Engineer. Field dilution of the emulsified asphalt will only be allowed when the rate of dilution is accurately controlled. The final rate of dilution shall not be less than the minimum ratio of at least 1 part emulsion to no more than 1 part added water (1:1 ratio minimum). Diluted emulsified asphalt for tack, fog seal, and flush seal shall be applied at an adjusted rate proportional to the dilution ratio resulting in application of the specified rate of emulsion. Emulsified asphalt for tack, fog seal, or flush seal with a specified rate exceeding 0.07 gallons per square yard shall not be diluted.

Section 330.3 E - Page 174 - Add the following sentence to the beginning of the last paragraph of this Section:

The tack coat shall be allowed to break (turn from brown to black) and shall be allowed a cure period, as determined by the Engineer, ahead of mat laydown.

Page 4 of 24

4-18-2018

PROJECT SHEET TOTAL P 0045(54)27 29 72

Plotting Data: 06/19/2017

STATE OF SOUTH

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Worning Signs (Feet) (A)	Specific of Channelizing Devices (Feet) (G)	
0 - 30	500	25	
35 - 40	350	75	
45	500	25	
50	500	50	
55	750	50	-
ED - 65	1000	50	

Warning sign sequence—— In opposite direction same as below.

Flagger

E Channelizing Davice :

For low-volume traffic situations with short work zones on stroight roodways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations () hour or less).

For tack and/or flush seal operations, then flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid aspholtdreds.

Flashing warning lights and/or flags. may be used to call attention to the advance worning signs.

The channelizing devices shall be drums or 42° cones_

Channellzing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escarting traffic through the work

ROAD RORK ENO

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic toper is placed before a harizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

SD

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Published Date: 2nd Otr. 2017

GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED PLATE NUMBER 634.23

7

Sheet I of I

INOX. One Lone Traffic XXX FEET HOAD RDAD June 3. 2016

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Brule County, South Dakota

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App. (\$\frac{1}{2}22\$

	QC/QA Project Inspection	ı Report	11-16
Road site location	*	Road Foreman	
Plan Typical Sections		Number miles to road from plant	
Road Site	Comments	. Additional Remark	(8
type of surface asphalt being placed on?	Milled		
shape of surface being paved on?	Good		
amount of tack ahead of paver	NA		
distributor type and rate of shot	Undilluted	West States	-
dlluted emulsion ratio? Rate shot? Cured?	2:1	, 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
vertical faces tacked	4		
width of pavement being placed	18	A THE STATE OF THE	
type and length of bevel, payfactor mix?	2		
paving toward plant on top lift or approval to differ?	7		
temperature of mix at paver is documented	NA	V 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
temperature of mix in windrow?	NA	Annual Inc.	
temperature variability in truck load delivered?	NA		-
samples taken from windrow, or witnessed(QC)?	70		
Is pickup machine being used, brand & size ?	wheeler		
is the pickup machine picking up all material?	NA		
contractor or state checker, name, title?			
Are the trucks tarped? Length of haul?	34, te		
type of release agent being used at paver	Relow 600		
	Ci trol		
type and model of paver being used	Moss Sugar	2000 /	13 S Warve
auto grade and slope controls working?	7		
Is vibrating screed being used?	A.		
material height at auger location	NA		
augers within foot of paver edge. extensions?	13-14"		
type of traveling stringline and length type & brand of sensor and number used	NA	· ·	
type & brand of sensor and number used	NA		
samples taken (precon) 007 with?			
temperature Immediately behind paver?	NA	7 · · · · · · · · · · · · · · · · · · ·	
temperature variability across mat behind paver?	NA		
number of breakdown rollers and type	2 /		
frequency of vibratory rollers and speed?	NA 2640		
amplitude of vibratory rollers and speed?			
number of intermediate rollers and type	NR 3 07 9		
compaction rolling completed by 175 F	I frisenct!	<u> </u>	
number of finish rollers and type	T		
s bevel being rolled?	——————————————————————————————————————		
s correct plans typical section being obtained?	7	<u> </u>	20 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -
Vas test strip used? Discussed at precon meeting?	- X		1
oller pattern established and documented?	N	2 2 2 4 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2	
oller pattern established and documented?	<u> </u>		
roller pattern checked by geo or nuclear gauge?	N		1 2
segregation present?	7		
	NA		
corrective action taken to correct segregation	IVA		
surface texture? Tearing, checking, marks?	NA		
loints are matching after rolling?	7		
loints at centerline on top lift? Offsetbottom?	b" Bottom		
iny other irregularities?	NA		
ores taken at random locations next day?	7.	The state of the s	******
vitnessed by QA?		The second secon	
ore holes filled properly? when?	Y Gameror	17.4 1.1	
de spec.(notify Shea Lemmel of compl. date)	1	1002 05	*************************************
A Level roadway certified field inspector's name	Royalty	draw	
CC Level roadway certified field inspector's name	Soyalit		
lumber of staff on roadway at Inspection time	July-or		
lary contains? Hours paved, equip., location,			
ridth, crown, tons, weather, mix del, temps, etc.	4		EXHIBIT 8
raffic control?			The second secon
laggers? Multicolored vest? Long shaft paddle?	14	Land Control of the C	WIT:
evels at end of days paving? How long?	2,		DATE:
avails at and or days paving r now long r		N. N	STACY WIEBESIEK

SECTION 2

State of Practice

A review of the existing state of practice was conducted to identify factors related to the use of tack coats for both new HMA pavements and overlays on new, old, milled HMA and for PCC pavements. This review involved an extensive search of all published materials and ongoing research projects to obtain the latest information on the research of the bonding mechanisms of tack coat in pavement structure. A worldwide survey on current tack coat practices was conducted to better understand the current state of tack coat practices and assist in designing an ensuing research experiment. Results of the survey provided the basis for the experimental factorial design that was used in Phase II of the NCHRP Project 9-40 research project.

2.1 Tack Coat Materials

According to ASTM D8, Standard Terminology Relating to Materials for Roads and Pavements, "Tack coat (bond coat) is an application of bituminous material to an existing relatively non absorptive surface to provide a thorough bond between old and new surfacing" (1). Generally, hot paving asphalt cement, cutback asphalt, and emulsified asphalt have all been used as tack coat materials, but cutback asphalts (asphalts dissolved in solvents such as kerosene or diesel) are not typically used for tack coat applications today due to environmental concerns. The most widely used tack coat material in the world is emulsified asphalt. Emulsified asphalt, or asphalt emulsion, is a nonflammable liquid substance that is produced by combining asphalt and water with an emulsifying agent such as soap, dust, or certain colloidal clays (2). The most common types of emulsions used for tack coats include slow-setting grades of emulsion such as SS-1, SS-1h, CSS-1, and CSS-1h and the rapid-setting grades of emulsion such as RS-1, RS-2, CRS-1, CRS-2, CRS-2P (polymer-modified), and CRS-2L (latex-modified). According to the Construction Procedure Bulletin (CPB) of the California DOT, several basic terms used in an asphalt emulsion tack coat application are as follows (3):

- Original emulsion—an emulsion of paving-grade asphalt and water that contains a small amount of emulsifying agent. Original slow-setting grade emulsions contain up to 43% water, and original rapid-setting grade emulsions contain up to 35% water.
- Diluted emulsion—an original emulsion that has been diluted by adding an amount of water equal to or less than the total volume of original emulsion.
- Residual asphalt content—the amount of paving asphalt remaining on a tacked pavement surface after the emulsion has broken and set (i.e., after all water has evaporated).
- Tack coat break—water separates from the emulsion and the color of the tack coat changes from brown to black.

A worldwide survey on tack coat application was conducted by the International Bitumen Emulsion Federation (IBEF) (4, 5). Seven countries—Spain, France, Italy, Japan, the Netherlands, the United Kingdom, and the United States responded through their professional associations. The survey results indicated that the most frequently used tack coat material is cationic emulsion. Paul and Scherocman (6) conducted a survey of tack coat practices in the United States. This survey received responses from 42 state DOTs and the District of Columbia. They found that almost all the state DOTs use slow-setting emulsions for tack coats. The emulsions mostly used are SS-1, SS-1h, CSS-1, and CSS-1h. Only one responding state (Georgia) routinely used hot asphalts (AC-20 and AC-30) as tack coats. A recent phone survey conducted by Cross and Shrestha (7) in 13 mid-western and western U.S. states indicated that slow-setting emulsions are the primary materials for tack coat, except for California, where the AR-4000 was the most common tack coat material followed by either SS-1 or CSS-1. The Kansas DOT was the only agency that reported occasionally using cutback asphalts as tack coat. New Mexico DOT and Texas DOT reported that performance-grade (PG) binders (asphalt cement) were occasionally used as tack coat materials.

8

According to the Unified Facilities Guide Specification (UFGS) 02744N (8), the advantage of the slow-setting grades over the rapid-setting grades is that they can be diluted. Diluted emulsions are reported to give better results because (1) diluted emulsion provides the additional volume needed for the distributor to function at normal speed when lower application rates are used and (2) diluted emulsion flows easily from the distributor at ambient temperatures allowing for a more uniform application (9, 10). On the other hand, diluted slow-setting emulsions may take several hours to break or even several days to completely set. In addition, an overlay tacked with slow-setting emulsion may be vulnerable to slippage during its early life (8). Such an overlay exposed to heavy traffic immediately after construction could experience excessive slippage in a short period of time.

2.2 Tack Coat Application Rate

A proper bond between pavement layers is essential in order to provide a monolithic pavement structure. Selection of an optimum tack coat material and application rate is crucial in the development of this bond. Pavement surfaces with different conditions (e.g., new, old, or milled) require different tack application rates to achieve a proper interface bond. Excessive tack coats may promote shear slippage at the interface. Most importantly, it is the residual amount of asphalt cement, not the application rate of diluted asphalt emulsion, that should be specified.

From their survey, Paul and Scherocman (6) found that the residual application rates of the emulsions varied between 0.01 and 0.06 gal/yd², depending on the type of surface for application. The IBEF survey (4) indicated that the residual asphalt content ranged from 0.02 to 0.09 gal/yd² for tack coats applied on conventional asphalt surfaces. The Asphalt Institute (AI) specifications on tack coats reported that the application rates ranged from 0.05 to 0.15 gal/yd² for an emulsion diluted with one part water to one part emulsion (11), which is equivalent to residual application rates between 0.02 to 0.05 gal/yd². The lower application rates are recommended for new or subsequent layers, while the intermediate range is for normal surface conditions on an exist-

ing relatively smooth pavement. The upper limit is for old, oxidized, cracked, pocked, or milled asphalt pavement and PCC pavements. The residual asphalt contents, as specified in the Hot-Mix Asphalt Paving Handbook 2000 (12), should range from 0.04 to 0.06 gal/yd2. Open-textured surfaces require more tack coat than surfaces that are tight or dense. Dry, aged surfaces require more tack coat than surfaces that are "fat" or flushed. A milled surface would require even more residual asphalt because of the increased specific surface area, as much as 0.08 gal/yd2. Only half as much residual asphalt is typically required for new HMA layers, 0.02 gal/yd2 (7, 12). Recently, Ohio published typical tack coat application rates for various pavement types using slow-setting asphalt emulsions (SS1, SS1-h) (13). As shown in Table 2, the overall residual rates vary from 0.03 to 0.08 gal/yd2 for different pavement types.

2.3 Tack Coat Breaking and Setting Time

Before asphalt emulsion breaks, it is brown in color because it contains both asphalt cement and water. After broken, the water separates from the emulsion and the color of the emulsion changes from brown to black. Once all water is evaporated, the emulsion is said to have "set." Under most circumstances, an emulsion will set in 1 to 2 hours (12), but the literature generally lacks complete agreement concerning how long a tack coat should remain uncovered before placing the subsequent asphalt layer. The IBEF survey indicated that the lapse of time required between the application of the tack coat and the application of the next asphalt layer ranges from 20 minutes for a broken or cold binder to several hours for a "dry" binder (after all water has evaporated or set) (4). Paul and Scherocman (6) found that many state DOTs specified a minimum time between tack coat application and placement of HMA to provide adequate curing time for the emulsion to break and set. Three state DOTs had a maximum time that a tack coat could be left before placement of the asphalt concrete: Alaska DOT specified a maximum setting period of 2 hours for CSS-1; Arkansas DOT specified a maximum setting period of 72 hours for SS-1; and Texas DOT specified

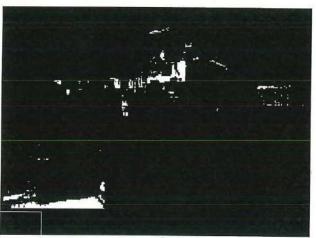
Table 2. Typical tack coat application rates (13).

Description Condition	Application Rate (gal/yd²)			
Pavement Condition	Residual	Undiluted	Diluted (1:1)	
New HMA	0.03 ~ 0.04	0.05 ~ 0.07	0.10 ~ 0.13	
Oxidized HMA	0.04 ~ 0.06	0.07 ~ 0.10	0.13 ~ 0.20	
Milled Surface (HMA)	0.06~0.08	0.10 ~ 0.13	0.20 ~ 0.27	
Milled Surface (PCC)	0.06~0.08	0.10 ~ 0.13	0.20 ~ 0.27	
Portland Cement Concrete	0.04 ~0.06	0.07 ~ 0.10	0.13 ~ 0.20	



(a) Tack coat distributor truck

Figure 1. Application equipment of tack coat.



(b) Paver with tack coat tank and spray bar

a maximum setting period of 45 minutes for SS-1 or MS-2. Four states indicated that paving was required the same day the tack coat was applied.

It is generally recognized that an emulsion should be completely set before new mix is placed on top of the tack coat material. Laboratory studies (14, 15) agreed with this assumption showing that greater interface shear strengths are achieved with longer curing times for the tack coat prior to testing. This was true for both laboratory-fabricated samples (14) and field cores (15). However, experience has also shown that new HMA can usually be placed on top of unset tack coat and even over an unbroken tack coat emulsion with no detrimental effect on pavement performance (12). Indeed, in Europe, emulsified tack coat is often applied to the pavement surface underneath the paver just before the HMA in front of the paver screed. Some European firms have used this tacking process with conventional dense-graded HMA mixtures and normal emulsified asphalt tack rates without negative consequences, but there may be concerns with water vapor passing through a dense-graded mat. In the United States, this emulsion spray method is used in the Novachip™ construction process, as reported by Estakhri and Button (16, 17).

2.4 Tack Coat Application Methods

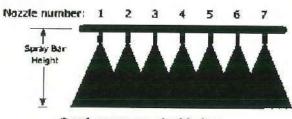
2.4.1 Equipment

Two types of tack coat application methods are shown in Figure 1: (a) a conventional tack coat distribution truck and (b) a special paver with tack coat tank and spray bar.

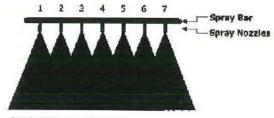
Generally, the best tack coat application results from a "double lap" or "triple lap" coverage. As shown in Figure 2, good "double/triple lap" means that the nozzle spray patterns overlap one another such that every portion of the pavement surface receives spray from two or three nozzles.

Several vehicle-related adjustments and settings are crucial to achieving uniform tack coat placement. Essentially, the nozzle patterns, spray bar height, and distribution pressure must work together to produce uniform tack coat application (14, 19). Specific guidance is summarized as follows:

Nozzle spray patterns should be identical to one another
along a distributor spray bar. To prevent the spray of liquid asphalt from interfering with adjacent spray nozzles,
all nozzles should be set at the same angle (about 30°) to the
axis of the spray bar (see Figure 3). Lack of a uniform angle



Good coverage - double lap



Good coverage - triple lap

Figure 2. Uniform tack coat application with double and triple overlapping (18).

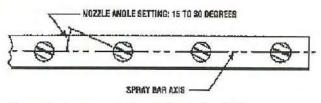


Figure 3. Proper nozzle angle setting (14).

will result in some areas of the pavement having thicker or thinner coverage and possible interference between nozzles. Differing coverage will result in streaks and gaps in the tack coat (see Figure 4).

- The size of the nozzles needed to apply an asphalt emulsion material for a surface treatment, chip seal, or seal coat is significantly larger than the size of the nozzles needed to apply a tack coat. Using a nozzle that is too small with too much pressure results in a surface that has a spider web coating of tack coat material (see Figure 5).
- Spray bar height should remain constant. As tack coat is applied, the vehicle will become lighter, causing the spray bar to rise. The tack coat application vehicle should be able to compensate for this. Excessively low spray bars result in streaks (see Figure 4), while excessively high spray bars cause non-uniform transverse coverage.
- Pressure within the distributor must be capable of forcing the tack coat material out of the spray nozzles at a constant rate. Inconsistent pressure will result in non-uniform application rates.
- Tack distributors must be capable of maintaining temperature of the asphalt cement material to ensure the material will adequately flow. For slow-setting asphalt emulsions such as SS-1, the spraying temperature within the distributor should be maintained between about 24°C

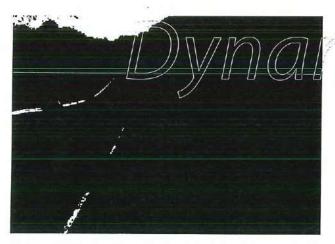


Figure 4. Non-uniform tack coat: streaks.

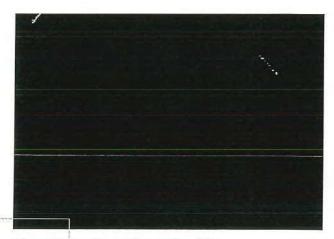


Figure 5. Small nozzle opening (19).

and 54°C. Excessive heating may cause the emulsion to break while still in the distributor.

2.4.2 Proper Tack Coat Application

Proper application of tack coat is a key component in high-quality asphalt pavement rehabilitation. Proper tack coat application begins with properly calibrated application equipment. If the distributor has not been used for some period of time, the operator should place a trial tack coat application over some convenient, unused area to ensure that all of the nozzles are open and operating properly. In addition, the distributor application rate needs to be calibrated, both in the transverse direction and in the longitudinal direction, using the procedure described in ASTM Method D 2995 (19). Spray bar height depends on truck speed, nozzle configuration, and application pressure. Operators should adjust the spray bar height throughout the day depending on the amount of emulsion in the tank. As a summary, the literature suggests the fundamental aspects of achieving tack coat success are

- · Having a thoroughly clean roadway surface,
- Ensuring all the equipment functions properly and is set up correctly,
- Choosing the proper application rate for the tack material used and the existing surface conditions,
- · Applying the materials uniformly, and
- Allowing the tack to set prior to paving to ensure the best possible bond between layers.

One perpetual problem often associated with tack coat application using distributor trucks is that haul trucks normally drive on the applied tack coat, thus tracking the tack coat material and removing it from the pavement, as

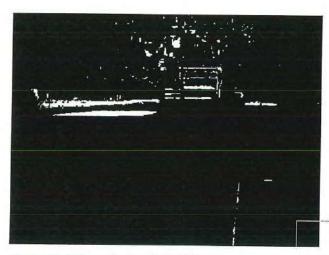


Figure 6. Pick-up by haul truck tires.

shown in Figure 6. Currently, there are many methods for addressing the haul truck pickup problem. One method is to apply the tack coat to the pavement surface underneath the paver just ahead of the screed. This can be done by using a special paver fitted with a tack coat spray bar, as shown in Figure 1(b). A material transfer vehicle (MTV) may also be used to address the haul truck pickup problem. A third solution is to use modified tack coat materials without the stickiness or pick-up problem. An example of such a tack coat material is a patented procedure called COLNET, developed by Colas in France (20). The COLNET procedure was reported to allow immediate trafficking after the spraying by employing a clean-bond cationic asphalt emulsion—called Colacid R 70 C—with very fast, controlled breaking agents (see Figure 7).

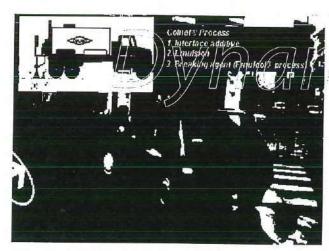


Figure 7. COLNET application in Paris.

2.5 Characterization of Tack Coat Application

2.5.1 Laboratory Characterization of Tack Coats

As illustrated in Figure 8 and under traffic loading, pavement interface failure can be attributed to both shear and tension distress modes. In general, two test modes—shear and tension—are often used in laboratory testing to characterize the interface bond strengths of tack coats. Many studies have reported using different performance-related test tools to assess the bonding characteristics of tack coats (14, 15, and 21–29).

Sangiorgi et al. (21) conducted a laboratory assessment of bond conditions using the Leutner shear test with specimens cored from laboratory-compacted slabs. Two surfacing materials [0.4-in stone mastic asphalt (SMA) and 1.2-in hot rolled asphalt (HRA)], one binder course (0.8-in dense bitumen macadams), and one asphalt-stabilized base material (0.8-in dense bitumen macadams) were used to simulate surfacing over binder and binder over base interfaces. Three different interface treatments were considered to simulate actual conditions: (1) with tack coat emulsion, (2) contaminated by dirt and without tack coat emulsion, and (3) with tack coat emulsion and a thin film of dirt. Results indicated that the best bond strength was achieved with an interface treatment prepared using an emulsified tack coat, while the poorest bond conditions were observed from binder course/base interfaces. SMA and HRA surfacings showed similar results.

Uzan et al. (22) studied the interface adhesion properties of asphalt layers based on a laboratory shear test. Test specimens were prepared using a 0.512-in Marshall mixture. A 60-70 penetration binder was used both in the mixture design and for the tack coat application. Tests were conducted on two asphalt binders at two different test temperatures, five tack coat application rates, and five vertical pressures. They concluded that (1) shear resistance of the interface increased significantly with increasing vertical pressure and decreased with increasing temperature and (2) shear resistance peaked at an optimum tack coat application rate that is

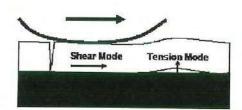


Figure 8. Distress modes at pavement interface under service conditions (30).

Manual on Uniform Traffic Control Devices

for Streets and Highways

2009 Edition

Including Revision 1 dated May 2012 and Revision 2 dated May 2012

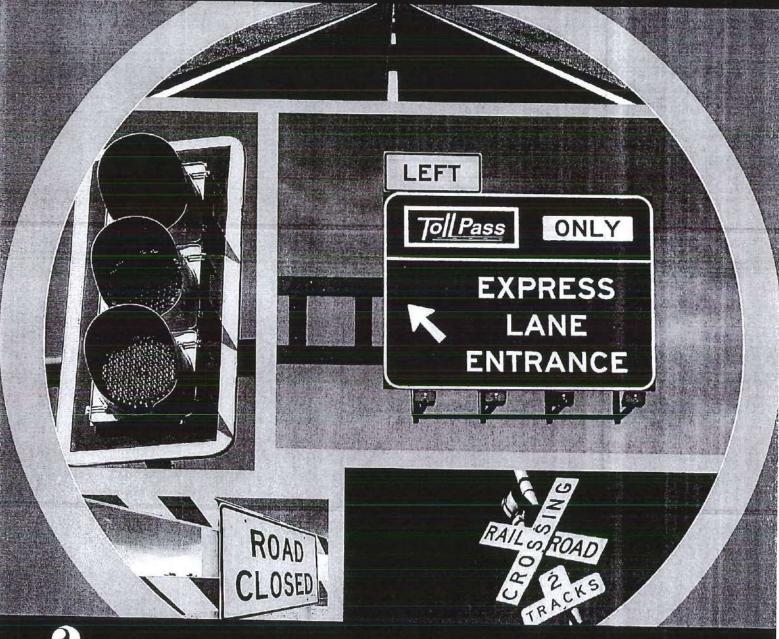


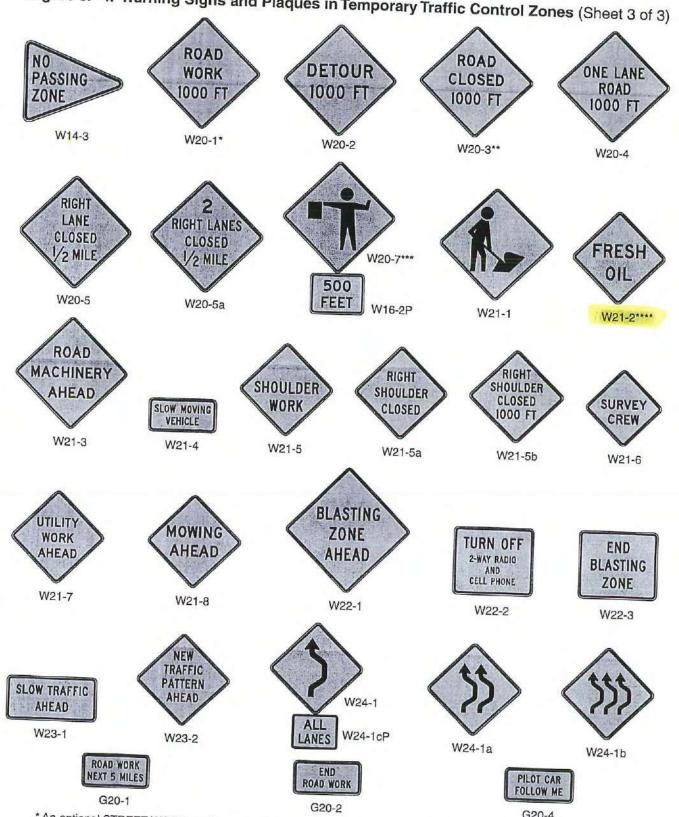
Table 6F-1. Temporary Traffic Control Zone Sign and Plaque Sizes (Sheet 3 of 3)

Sign or Plaque	Sign Designation	Section	Conventional Road	Freeway or Expressway	Minimum
Detour (with distance)	W20-2	6F.19	36 x 36	48 x 48	30 x 30
Road (Street) Closed (with distance)	W20-3	6F.20	36 x 36	48 x 48	30 x 30
One Lane Road (with distance)	W20-4	6F.21	36 x 36	48 x 48	30 x 30
Lane(s) Closed (with distance)	W20-5,5a	6F.22	36 x 36	48 x 48	30 x 30
Flagger (symbol)	W20-7	6F.31	36 x 36	48 x 48	30 x 30
Flagger	W20-7a	6F.31	36 x 36	48 x 48	30 x 30
Slow (on Stop/Slow Paddle)	W20-8	6E.03	18 x 18	27.63 V T = 0.861	00 X 30
Workers	W21-1,1a	6F.33	36 x 36	48 x 48	30 x 30
Fresh Oll (Tar)	W21-2	6F.34	36 x 36	48 x 48	30 x 30
Road Machinery Ahead	W21-3	6F.35	36 x 36	48 x 48	
Slow Moving Vehicle	W21-4	6G.06	36 x 18	40 X 40	30 x 30
Shoulder Work	W21-5	6F.37	36 x 36	48 x 48	20 4 20
Shoulder Closed	W21-5a	6F.37	36 x 36	48 x 48	30 x 30
Shoulder Closed (with distance)	W21-5b	6F.37	36 x 36	48 x 48	30 x 30
Survey Crew	W21-6	6F.38	36 x 36	48 x 48	30 x 30
Utility Work Ahead	W21-7	6F.39	36 x 36	48 x 48	30 x 30
Mowing Ahead	W21-8	6G.06	36 x 36	48 x 48	30 x 30
Blasting Zone Ahead	W22-1	6F.41	36 x 36	48 x 48	30 x 30
Turn Off 2-Way Radio and Cell Phone	W22-2	6F.42	42 x 36	42 x 36	30 x 30
End Blasting Zone	W22-3	6F.43	42 x 36	42 x 36	36 x 30
Slow Traffic Ahead	W23-1	6F.27	48 x 24	48 x 24	30 X 30
New Traffic Pattern Ahead	W23-2	6F.30	36 x 36	48 x 48	30 x 30
Double Reverse Curve (1 lane)	W24-1	6F.49	36 x 36	48 x 48	30 x 30
Double Reverse Curve (2 lanes)	W24-1a	6F.49	36 x 36	48 x 48	30 x 30
Double Reverse Curve (3 lanes)	W24-1b	6F.49	36 x 36	48 x 48	30 x 30
All Lanes	W24-1cP	6F.49	24 x 24	30 x 30	
Road Work Next XX Miles	G20-1	6F.56	36 x 18	48 x 24	The Layer
End Road Work	G20-2	6F.57	36 x 18	48 x 24	3. 14.2. 3.3.1.0.
Pilot Car Follow Me	G20-4	6F.58	36 x 18	TO TE THIS IS	2060014
Vork Zone (plaque)	G20-5aP	6F.12	24 x 18	36 x 24	
Exit Open	E5-2	6F.28	48 x 36	48 x 36	
Exit Closed	E5-2a	6F.28	48 x 36	48 x 36	_
xit Only	E5-3	6F.29	48 x 36	48 x 36	
Detour	M4-8	6F.59	24 x 12	30 x 15	- Common La
nd Detour	M4-8a	6F.59	24 x 18	24 x 18	
ind	M4-8b	6F.59	24 x 12	24 x 12	to a serve line a serve
etour	M4-9	6F.59	30 x 24	48 x 36	11182278
ike/Pedestrian Detour	M4-9a	6F.59	30 x 24		
edestrian Detour	M4-9b	6F.59	30 x 24	Sale of the Control o	Partie Lea
ike Detour	M4-9c	6F.59	30 x 24		Danie CHL.
etour	M4-10	6F.59	48 x 18	CN 152500 SEE 182	

^{*} See Table 2B-1 for minimum size required for signs facing traffic on multi-lane conventional roads

Notes: 1. Larger signs may be used wherever necessary for greater legibility or emphasis 2. Dimensions are shown in Inches and are shown as width ${\sf x}$ height

Figure 6F-4. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 3 of 3)



* An optional STREET WORK word message sign is shown in the "Standard Highway Signs and Markings" book.

**An optional STREET CLOSED word message sign is shown in the "Standard Highway Signs and Markings" book.

An optional FLAGGER (W20-7a) word message sign is shown in the "Standard Highway Signs and Markings" book. ** An optional FRESH TAR word message sign is show in the "Standard Highway Signs and Markings" book.

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Section 6F.29 EXIT ONLY Sign (E5-3)

Option:

An EXIT ONLY (E5-3) sign (see Figure 6F-5) may be used to supplement other warning signs where work is being conducted in the vicinity of an exit ramp and where the exit maneuver for vehicular traffic using the ramp is different from the normal condition.

Section 6F.30 NEW TRAFFIC PATTERN AHEAD Sign (W23-2)

Option:

- A NEW TRAFFIC PATTERN AHEAD (W23-2) sign (see Figure 6F-4) may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage, roadway geometry, or signal phasing. Guidance:
- To retain its effectiveness, the W23-2 sign should be displayed for up to 2 weeks, and then it should be covered or removed until it is needed again.

Section 6F.31 Flagger Signs (W20-7, W20-7a)

Guidance:

- The Flagger (W20-7) symbol sign (see Figure 6F-4) should be used in advance of any point where a flagger is stationed to control road users. Option:
- A distance legend may be displayed on a supplemental plaque below the Flagger sign. The sign may be used with appropriate legends or in conjunction with other warning signs, such as the BE PREPARED TO STOP (W3-4) sign (see Figure 6F-4).
- The FLAGGER (W20-7a) word message sign with distance legends may be substituted for the Flagger (W20-7) symbol sign.

Section 6F.32 Two-Way Traffic Sign (W6-3)

Guidance:

When one roadway of a normally divided highway is closed, with two-way vehicular traffic maintained on the other roadway, the Two-Way Traffic (W6-3) sign (see Figure 6F-4) should be used at the beginning of the two-way vehicular traffic section and at intervals to remind road users of opposing vehicular traffic.

Section 6F.33 Workers Signs (W21-1, W21-1a)

A Workers (W21-1) symbol sign (see Figure 6F-4) may be used to alert road users of workers in or near the roadway. Guidance:

In the absence of other warning devices, a Workers symbol sign should be used when workers are in the roadway.

Option:

The WORKERS (W21-1a) word message sign may be used as an alternate to the Workers (W21-1) symbol sign.

Section 6F.34 FRESH OIL (TAR) Sign (W21-2)

Guidance:

The FRESH OIL (TAR) (W21-2) sign (see Figure 6F-4) should be used to warn road users of the surface treatment.

Section 6F.35 ROAD MACHINERY AHEAD Sign (W21-3)

Option:

The ROAD MACHINERY AHEAD (W21-3) sign (see Figure 6F-4) may be used to warn of machinery operating in or adjacent to the roadway.

IN THE SUPREME COURT STATE OF SOUTH DAKOTA

Appeal No. 29901

AUSTIN MCGEE,

Appellee,

v.

SPENCER QUARRIES, INC., a South Dakota corporation,

Defendant,

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION; KENT GATES, as an employee of the South Dakota Department of Transportation; and KRIS ROYALTY, as an employee of the South Dakota Department of Transportation,

Appellants.

Petition from the Circuit Court, First Judicial Circuit Brule County, South Dakota

THE HONORABLE BRUCE V. ANDERSON Circuit Court Judge

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Order Granting Petition for Allowance of Appeal from Intermediate Order filed on March 17, 2022

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Argument

Appellants South Dakota Department of Transportation ("DOT"), Kent Gates, and Kris Royalty asked this Court to reverse the circuit court's denial of their motion for summary judgment. DOT argued that summary judgment was appropriate on the merits because its duty to maintain highways is defined by statute, and neither McGee nor the circuit court identified an applicable statutory duty. (Appellants' Br. at 11–15.) DOT further explained that McGee cannot premise a negligence claim on the alleged breach of DOT's contract with Spencer Quarries. (*Id.* at 15–17.) DOT also argued that summary judgment was appropriate based on sovereign immunity because the provisions on which McGee relies—DOT's Standard Specifications § 330.3(E), the Federal Highway Administration's Manual on Uniform Traffic Control Devices ("MUTCD") § 6F.34, and the Hot Mix Handbook pages 128–29 (collectively, "disputed provisions")—address discretionary acts, not ministerial ones. (*Id.* at 18–28.) DOT examined the text of each of these disputed provisions and demonstrated that none of them require compulsory results triggered by fixed, designated facts.

McGee responds that DOT did not raise its duty argument below. (Appellee's Br. at 21–22.) He also argues—for the first time—that the common law provides the standard of care for his claims against Gates and Royalty. (*Id.* at 22–28.) He also cites statutes for the first time, claiming DOT owed him a duty under SDCL §§ 31-28-6 and -11. (*Id.* at 28–30.) McGee denies seeking damages as a third-party beneficiary. (*Id.* at 30–31.) And finally—without examining the text of the disputed provisions—McGee argues that they establish ministerial acts. (*Id.* at 32–40.)

¹ References in this brief to "DOT" include its employees unless indicated otherwise.

As discussed below, there are several problems with McGee's response. Most importantly, McGee cites this Court's definition of *ministerial act* discussed in *Truman v. Griese*, 2009 S.D. 8, 762 N.W.2d 75, as well as commentary from the Restatement (Second) of Torts § 895D cmt. f (Am. Law Inst. 1979) discussed in *King v. Landguth*, 2007 S.D. 2, 726 N.W.2d 603, but does not apply either to the disputed provisions. McGee fails even to mention—let alone respond to—DOT's arguments that the definition of *ministerial act* discussed in *Truman* controls or that under either approach, the disputed provisions do not establish ministerial acts. Regarding duty, McGee's claim that DOT failed to raise its statutory-duty argument below is not supported by the record. Instead, McGee is precluded from now relying on statutory or common-law duties when he failed to plead them below; in fact, McGee disclaimed them. Regardless, McGee cannot premise a negligence claim against Gates and Royalty on the common law. And the statutes McGee now cites do not establish ministerial duties.

1. The disputed provisions do not establish ministerial acts.

The most significant omission from McGee's brief is any analysis of or attention to the actual text of Standard Specifications § 330.3(E), MUTCD § 6F.34, or Hot Mix Handbook pages 128–29, which McGee cited below and on which the circuit court based its opinion. McGee never cites these provisions—let alone quotes them—in the eight pages he dedicates to this issue. (Appellee's Br. at 32–40.) Instead, McGee makes the conclusory assertions that "the standard specifications prohibited spraying more tack coat than could be covered the same day," that a "Fresh Oil sign was required where the surface treatment was left exposed," and that "safety measures" required "lowering the speed limit." (*Id.* at 35–37.)

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These documents simply do not say what McGee claims, and they do not establish ministerial acts under either this Court's definition discussed in *Truman* or under the seven factors taken from Restatement (Second) of Torts and discussed in *King*.

a. McGee does not apply *Truman's* definition of *ministerial act* to the actual text of the disputed provisions.

As previously argued, this Court has long "defined a ministerial duty as a narrow one." *Truman*, 2009 S.D. 8, ¶ 19, 762 N.W.2d at 80. An act or duty is ministerial if and only if it clearly defines a "compulsory response" triggered by "fixed designated facts." *Id.* ¶ 21, 762 N.W.2d at 80–81. The actual text of the disputed provisions—rather than McGee's loose and inaccurate paraphrasing—does not meet this definition.

McGee's claim that "the standard specifications prohibited spraying more tack coat than could be covered the same day" (Appellee's Br. at 35) contradicts the language of the specifications. This claim derives from Standard Specifications § 330.3(E), which states:

Tack application ahead of mat laydown shall be limited by job conditions and shall not exceed the amount *estimated* for the current day's operation *unless ordered or allowed by the Engineer*. Tacked areas, which become unsatisfactory as a result of traffic, weather, or other conditions, shall be retacked. Required retacking which is not the fault of the Contractor will be paid for at the contract unit price for tack asphalt.

(Appellants' Br. App. at 54; SR R1 at 2313 (emphasis added).) By its plain terms, § 330.3(E) limits application of tack coat to the *estimated*—not the *actual*—mat laydown for the day, which implies that some exposed tack is permissible. More importantly, it explicitly gives DOT discretion to permit the contractor to exceed even the *estimated* mat laydown. And § 330.3(E)'s requirement that "[t]acked areas, which become

unsatisfactory *as a result of traffic* ..., shall be retacked" (emphasis added) clearly contemplates traffic on exposed tack.

Moreover, § 330.3(E) contains no "compulsory result" beyond the contractor's obligation to retack. It does not say, for example: "if there is exposed tack, then DOT must reduce the speed limit"; or "if there is exposed tack, then DOT must post a warning"; or "if there is exposed tack, then DOT must apply sand." In short, § 330.3(E) is not a safety provision; it is an economic provision that attempts to limit the amount of wasted tack and allocates the expense of retacking between DOT and a contractor. So § 330.3(E) does not say what McGee wants it to say—it neither prohibits a contractor or DOT from permitting traffic on exposed tack, nor does it require *any* safety measures when tack is left exposed. It contains neither the compulsory result nor the specific trigger that McGee claims.

McGee's claim that a "Fresh Oil sign was required where the surface treatment was left exposed" (Appellee's Br. at 37) is also unsupported. This claim derives from MUTCD § 6F.34, which states:

The FRESH OIL (TAR) (W21-2) sign ... should be used to warn road users of the surface treatment.

(Appellants' Br. App. at 66.) This section plainly refers to *fresh* oil. McGee, like the circuit court, has not identified any provision defining this term, nor has he offered any argument or authority suggesting the word *fresh* should be understood in any way other than its ordinary meaning of "new" or "recent." As explained in DOT's brief, tack is an emulsified oil that is wet when freshly applied but "breaks" when the solvents and water in the oil evaporate, leaving a hard, dehydrated surface. (Appellants' Br. at 3.) Dried, day-old tack is by definition *not* fresh oil. There is no dispute the tack applied by

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Spencer Quarries on June 29, 2018, cured long before McGee encountered it the next day. Because the tack was not "fresh," the circumstances do not fall within the "fixed designated facts" described in § 6F.34, and that section's "compulsory result" of erecting a "fresh oil" sign was not triggered. Neither McGee nor the circuit court identified any document in the record that links the provision to driving on broken tack.

Finally, McGee's claim that "safety measures" required "lowering the speed limit" (Appellee's Br. at 36) is baseless. This claim derives from the Hot Mix Handbook—which is *not* incorporated into DOT's contract with Spencer Quarries. The Hot Mix Handbook states, in part:

[I]f traffic must travel over the tack coat before the overlay is placed, a light layer of sand *can* be spread on top of the tack coat to prevent its pickup by traffic....

... Depending on the amount of residual asphalt cement on the pavement surface and environmental conditions, the level of friction available for traffic at the pavement surface *may* be greatly reduced by the presence of the tack coat material. The excess tack will also be thrown on vehicles, creating a major public relations problem. In addition to lowering the posted speed limits, it *may* be advisable to apply sand to the tacked surface as discussed above.

. . .

Tack coat *should* not be left exposed to traffic. If doing so is necessary, proper precautions, such as reducing the posted speed limit on the roadway and sanding the surface, *should* be taken.

(Appellants' Br. App. at 62–63 (emphasis added).) Because it is impossible for dried, hardened tack to "be thrown on vehicles," this portion of the Hot Mix Handbook (like the "fresh oil" sign discussed above) could refer only to wet, freshly applied tack and not to dried, hardened tack. And while sanding wet, freshly applied tack "may" dry it out and increase friction, as this excerpt suggests, applying sand to a dried, hardened surface would have the opposite effect. (SR R1 at 3905.) So even if the Hot Mix Handbook had

been incorporated into DOT's contract with Spencer Quarries, the tack McGee encountered was not "fresh," and so the circumstances do not fall within the triggering facts described in the Hot Mix Handbook either.

Moreover, this excerpt from the Hot Mix Handbook contains no compulsory result. Words like *can*, *may*, or even *should* indicate permissive or advisory action but not mandatory action. As the circuit court's own language makes clear, the Hot Mix Handbook merely "discourages" driving on tack and "suggests" possible responses. (Appellants' Br. App. at 14; SR R2 at 626 (emphasis added).) It does not *prohibit* driving on tack or *require* reduced speed, erected signs, or sanding. Like Standard Specification § 330.3(E), the Hot Mix Handbook does not say what McGee wants it to say. Because it neither prohibits driving on dried, hardened tack nor requires safety measures when such tack is left exposed, it contains neither a compulsory result nor the fixed, designated facts that would trigger such result.

The disputed provisions, which McGee cited below and on which the circuit court based its opinion, do not describe ministerial acts because none of them clearly defines a compulsory result triggered by fixed, designated facts. McGee did not respond to these arguments.

b. McGee does not apply the Restatement factors to the disputed provisions.

As previously argued, the circuit court did not analyze whether the disputed provisions establish compulsory responses triggered by fixed, designated facts. Instead, the court focused on seven factors that originated in the Restatement (Second) of Torts § 895D cmt. f and were discussed in *King*:

(1) The nature and importance of the function the officer is performing;

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- (2) The extent to which passing judgment on the exercise of discretion by the officer will amount necessarily to passing judgment by the court on the conduct of a coordinate branch of government;
- (3) The extent to which the imposition of liability would impair the free exercise of his discretion by the officer;
- (4) The extent to which the ultimate financial responsibility will fall on the officer;
- (5) The likelihood that harm will result to members of the public if the action is taken;
- (6) The nature and seriousness of the type of harm that may be produced;
- (7) The availability to the injured party of other remedies and other forms of relief.

King, 2007 S.D. 2, ¶ 11, 726 N.W.2d at 607 (quoting Wulf v. Senst, 2003 S.D. 105, ¶ 20, 669 N.W.2d 135, 143). McGee cites these seven factors but does not apply them.²

DOT explained that the foregoing factors only support the conclusion that the acts at issue were discretionary rather than ministerial. (Appellants' Br. at 27–28 & n.12.) First, overseeing the repair and maintenance of South Dakota's highways is an important task. Second, the decisions whether to permit the public to travel on dried tack and whether to post signs or reduce speed are decisions that require technical expertise that a reviewing court does not possess. Third and fourth, ultimate financial responsibility

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² DOT explained that these seven factors are not the controlling standard for determining whether an act is ministerial. (Appellants' Br. at 26–27 & n.11.) They appeared as background information in some of this Court's sovereign-immunity cases between 1982 and 2007. *See King*, 2007 S.D. 2, ¶ 11, 726 N.W.2d at 607 (last mention); *Hansen v. S.D. Dep't of Transp.*, 1998 S.D. 109, 584 N.W.2d 881 (no mention); *Nat'l Bank of S.D. v. Leir*, 325 N.W.2d 845, 848 (S.D. 1982) (first mention). The cases that mentioned the factors tended not to apply them. *See Wulf*, 2003 S.D. 105 ¶¶ 20, 26, 669 N.W.2d at 142–43. Not even *King* applied these factors. *King*, 2007 S.D. 2, ¶¶ 12–21, 726 N.W.2d at 607–10. Since 2007, the Court's cases simply apply the traditional definition of *ministerial act* discussed in *Truman* (i.e., whether there is a compulsory result triggered by fixed, designated facts), *see*, *e.g.*, *Adrian v. Vonk*, 2011 S.D. 84, ¶ 14, 807 N.W.2d 119, 124; *Truman*, 2009 S.D. 8, ¶ 22, 762 N.W.2d at 81. McGee did not respond to these arguments.

would fall on DOT, which would necessarily have to impair the free exercise of its employees' discretion in similar circumstances or face further liability. Fifth and sixth, although McGee suffered serious injuries, there is no evidence in the record that accidents like McGee's are common or that his injuries are typical. And seventh, McGee has other, presumably substantial remedies because he already settled with Spencer Quarries and its insurer—a fact the circuit court refused to consider, and which McGee continues to ignore. McGee did not respond to these arguments.

McGee does not apply *Truman's* definition of *ministerial act* to the text of the disputed provisions; he does not even apply *King's* seven factors; and he does not respond to any of DOT's arguments on these issues. This is a sufficient basis for reversal.

2. McGee did not plead an actionable duty.

McGee's complaint is premised entirely on the alleged breach of DOT's contract with Spencer Quarries. The complaint does not allege a duty based in the common law or statute. Even so, McGee now argues that the common law provides the standard of care for his negligence claim against Gates and Royalty. He now argues that SDCL §§ 31-28-6 and -11 imposed a statutory duty on DOT to place "fresh oil" signs. He also now argues that DOT has waived its arguments based on duty. (Appellee's Br. at 21-22.)

DOT is not precluded from arguing that McGee failed to plead an actionable duty; rather, it is McGee who is precluded from now relying on common-law and statutory duties. But even if he is permitted to raise these arguments now, neither the common law nor the cited statutes establish a duty here.

a. DOT is not precluded from arguing that its duty to maintain highways can be defined only by statute.

DOT argued that its duty to maintain highways can be defined only by statute and that neither the circuit court nor McGee identified an applicable statutory duty on which to premise a negligence claim. McGee claims this "is a new argument made for the first time on appeal[.]" (Appellee's Br. at 22.)

McGee overlooks that DOT's argument is a direct response to the circuit court's erroneous, sua sponte holding that DOT's duty with respect to highway maintenance can be defined by the common law. McGee never pleaded a common-law duty and instead maintained it was "DOT specifications that *created* ministerial duties for the [DOT]." (Appellants' Br. App. at 96; SR R1 at 739 (emphasis added).) Nor did McGee subsequently argue to the court that the common law provided the applicable duty. Even so, when DOT argued that McGee is not a beneficiary of its contract with Spencer Quarries, the court avoided the issue by arguing on McGee's behalf that he can premise a negligence claim on the common law or industry standards. This appeal is DOT's chance to respond to the court's reasoning. Regardless, DOT did point out McGee's failure to cite statutory authority as early as its initial motion to dismiss. (SR R1 at 550 ("Plaintiff's First Amended Complaint ... omits citations to any laws under which he alleges that State Defendants violated duties.").) The issue is not waived.

b. McGee is precluded from relying on statutory or common law.

On appeal, and for the first time in this litigation, McGee cites statutory and common-law duties. McGee concedes that his "amended complaint does not cite to SDCL 31-28-6 or 11[.]" (Appellee's Br. at 29.) But he maintains that "those statutes clearly are encompassed by [the complaint's] allegations that SDDOT, Gates, and

Royalty owed a duty to ensure use of 'Fresh Oil' temporary traffic control warning signs ... to warn the public of the dangers of traveling on the exposed liquid asphalt surface treatment." (*Id.*)

McGee's pleadings undermine his revisionist view of the complaint, which never mentions the common law or cites any statutory duty. Instead, the complaint clearly identifies *the provisions of DOT's contract* with Spencer Quarries as the sole source of the duties on which McGee premised his negligence claim. McGee confirmed this view in subsequent pleadings by explicitly denying that he relied on any statute and by claiming it was "DOT specifications that *created* ministerial duties for the [DOT]." (Appellants' Br. App. at 96; SR R1 at 739 (emphasis added).). McGee maintained his theory through summary-judgment briefing—never claiming that the duty on which he premised his negligence claim derived from a statute or the common law.

As McGee acknowledges, a party cannot raise an argument for the first time on appeal. *Paweltski v. Paweltski*, 2021 S.D. 52, ¶ 40, 964 N.W.2d 756, 768–69. This rule should apply with extra force when that party not only fails to raise the argument before the circuit court but also explicitly disclaims it.

c. Even if McGee were not precluded from citing the common law, it does not provide the standard of care for McGee's claims against Gates and Royalty.

McGee argues that even if the Legislature abrogated a public entity's common-law duty of care, as explained in *Hohm v. City of Rapid City*, 2008 S.D. 65, 753 N.W.2d 895, and *Dohrman v. Lawrence County*, 143 N.W.2d 865 (S.D. 1966), SDCL Title 31 does not apply to his claims against Gates and Royalty individually. (Appellee's Br. at 23.) He also argues that Title 31 applies only to damaged or defective roads and not to

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maintenance. (*Id.*) Finally, relying primarily on *Kyllo v. Panzer*, 535 N.W.2d 896 (S.D. 1995), McGee argues that "this Court has affirmed that public employees have the same common law duties regarding negligence as other persons and ... that the affirmative defense of sovereign immunity does not protect state or public employees from tort liability for their negligent violation of ministerial duties." (Appellee's Br. at 25.)

Importantly, McGee does not dispute that in an action against DOT itself—as opposed to Gates and Royalty—"the standard of care cannot be predicated on principles of common law negligence." *Dohrman*, 143 N.W.2d at 867.

Title 31 applies to McGee's claim, which is really against DOT and not Gates or Royalty. The complaint states that Gates and Royalty are each sued "as an employee of the South Dakota Department of Transportation"—not individually. (Appellants' Br. App. at 68; SR R1 at 297.) The allegations against DOT incorporate the allegations against Gates and Royalty. (*Id.* at 80; SR R1 at 309.) McGee alleged that "*DOT*, through its agents, owed Plaintiff" a duty and that "*DOT*, through its agents, breached" that duty. (*Id.* (emphasis added).) And SDCL §§ 31-28-6 and -11, the only statutes McGee relies on, explicitly apply to DOT's officers. Moreover, it is absurd to suggest the duty in a negligence claim against DOT's employees would be defined by the common law but the duty in a negligence claim against DOT itself—based on the same conduct of its employees—would be defined by Title 31. This is especially true considering the State has *not* waived sovereign immunity for itself.³ If McGee were correct, it would mean that Title 31 defines DOT's duty only in cases that are barred by sovereign immunity.

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 $^{^{3}\,}$ The PEPL fund coverage document covers only public employees, not the State.

McGee's argument that the statutory duties found in Title 31 apply only to damaged or defective roads is misguided. In 1915, the Legislature "design[ed] a *complete* scheme of responsibility and liability for highway maintenance such that its requirements should be the *only* ones that were obligatory." *Hohm*, 2008 S.D. 65, ¶ 17, 753 N.W.2d at 904. That statutory scheme included a duty to render highways "safe, passable and free from danger[.]" *Id.* ¶ 10, 753 N.W.2d at 901. But in 1939, the Legislature "removed the broad duty ... to keep public highways safe and free from danger, retaining only the limited duty to guard and repair highways that were destroyed or out of repair." *Id.* ¶ 12, 753 N.W.2d at 902. This change did not restore common-law negligence principles to highway maintenance; rather, it further "narrowed the scope of [a public entity's] liability for negligence in highway maintenance." *Id.* In other words, the common law does not supply the standard of care for highway maintenance like resurfacing a worn highway—not even if McGee refers to it as an "operational activity." (Appellee's Br. at 23.)

The conclusion that McGee cannot rely on the common law to supply the standard of care for his negligence claim is not changed by the litany of cases McGee cites for the general proposition that "sovereign immunity cannot constitutionally shield state employees performing ministerial acts from liability for *negligence*[.]" (Appellee's Br. at 25 (quoting *Ritter v. Johnson*, 465 N.W.2d 196, 198 n.3 (S.D. 1991).) This claim is unobjectionable but inapposite. Different actions have different standards of care, and the fact that the common law provides the standard of care for a public employee's operating a motor vehicle, *see Kyllo*, 535 N.W.2d at 903; *Smith v. Greek*, 328 N.W.2d 261, 262–63 (S.D. 1982), does not imply that the common law also provides the standard

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of care for a public employee's maintenance of a highway—especially considering this Court's conclusions to the contrary. *E.g.*, *Hohm*, 2008 S.D. 65, ¶ 17, 753 N.W.2d at 904, *Dohrman*, 143 N.W.2d at 867. DOT does not argue that its employees are immune from all negligence claims; it argues that its duty to maintain highways is defined solely—if at all—by statute.⁴ And as discussed above, McGee's claim is indeed one against DOT—not Gates and Royalty individually. Therefore, "the standard of care cannot be predicated on principles of common law negligence." *Dohrman*, 143 N.W.2d at 867.⁵

d. Even if McGee were not precluded from citing statutory authority, SDCL §§ 31-28-6 and -11 do not create ministerial duties.

McGee argues that SDCL §§ 31-28-6 and -11 create ministerial duties. The former imposes a duty on the entity charged with repairing a public highway to "erect and maintain at points in conformity with standard uniform traffic control practices on each side of any . . . point of danger on such highway . . . a substantial and conspicuous

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⁴ McGee argues that "[s]hould this Court elect to carve out some sort of blanket 'highway construction and maintenance' exception . . . any such fundamental change in the liability of state employees . . . [should] be prospective only[.]" (Appellee's Br. at 28.) Such exception is neither requested nor necessary; the Court need only acknowledge that *Hohm* unequivocally recognized that the Legislature statutorily defined a public entity's duty to maintain highways over a century ago. 2008 S.D. 65, ¶ 17, 753 N.W.2d at 904.

McGee faults DOT for not addressing *Kyllo* and *Smith* on the issue of duty. (Appellee's Br. at 26–27.) This criticism is puzzling because neither *Kyllo* nor *Smith* involve a public entity's duty to maintain highways. *Kyllo* held that driving a motor vehicle is a ministerial act and that a public employee owes "the same duty of care *to drive safely* as any other driver not so employed." 535 N.W.2d at 903 (emphasis added). And *Smith*—a three-vote, four-*paragraph* opinion—also involved a simple traffic accident. 328 N.W.2d at 262. That opinion does not mention the word *duty*. The Court reversed and remanded solely because the court below did not consider whether the act at issue was discretionary or ministerial. *Id.* at 263. Neither case holds that a public entity's duty to maintain highways is defined by the common law rather than statute.

warning sign." SDCL § 31-28-6. This Court has held that "the only ministerial duties that arise under SDCL § 31-28-6 ... are found in 'standard uniform traffic control practices." *Truman*, 2009 S.D. 8, ¶ 28 n.10, 762 N.W.2d at 83 n.10. Similarly, SDCL § 31-28-11 requires that any "informational regulatory warning sign" installed on a road constructed with federal aid "conform to uniform national signing standards." If a plaintiff fails to identify a standard that meets the definition of *ministerial act*, qualified immunity applies. *See Truman*, 2009 S.D. 8, ¶ 40, 762 N.W.2d at 87.

McGee has failed to identify an applicable standard. He claims that he "has identified specific MUTCD provisions, combined with the specifications and plan sheets, which required the W21-2 Fresh Oil signs, rendering the duty to comply ministerial in nature." (Appellee's Br. at 29–30 (emphasis removed).) But the only provision he cites is MUTCD § 6F.34. So even if McGee is permitted to cite statutory authority for the first time on appeal, his argument still depends on his non sequitur that if MUTCD § 6F.34 requires a sign for oil that is fresh, it also requires a sign for oil that is *not* fresh. This argument fails for the reasons explained above.

e. McGee cannot premise his negligence claim on the alleged breach of DOT's contract with Spencer Quarries.

DOT has argued from the beginning that McGee's attempt to premise a "negligence" claim on DOT's alleged failure to perform duties arising from its contract with Spencer Quarries is simply an attempt to seek "damages for breach of contract as a third-party beneficiary." *Sisney v. State*, 2008 S.D. 71, ¶ 1, 754 N.W.2d 639, 641. DOT recounted the content of McGee's complaint and explained that McGee alleged a breach of elements of DOT's contract with Spencer Quarries but not a breach of a legal duty independent of that contract. (Appellants' Br. at 15–17.) According to McGee's

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complaint, DOT was negligent by not stopping Spencer Quarries's negligence, and McGee measures Spencer Quarries's negligence by the disputed provisions, which only applied to Spencer Quarries because of its contract with DOT. So McGee's claim against DOT relies on DOT's contract with Spencer Quarries. McGee did not respond to these arguments.

On appeal, McGee acknowledges that he "does not have any breach of contract claim against Gates, Royalty, or the SDDOT." (Appellee's Br. at 31.) But he insists that

[h]e has negligence claims based on SDCL 20-9-1 and 21-1-1, and the common law, for their breach of ministerial duties owed as the result of requirements imposed by statute, mandatory policies formally adopted by SDDOT in Standard Specifications independent of any particular contract, and the MUTCD.

(*Id.*) This may be McGee's theory on appeal, but it is not what was argued below. Regardless, these claims fail for the reasons discussed above. McGee actually disclaimed any statutory duty. McGee has not explained how the disputed provisions are applicable independent of the contract. And he has not demonstrated that the disputed provisions establish *ministerial* acts—he simply assumes that they do. Thus, McGee has alleged breach of "elements of the contract[,]" not "breach of a legal duty independent of contract[.]" *Knecht v. Evridge*, 2020 S.D. 9, ¶ 60, 940 N.W.2d 318, 335.

Conclusion

McGee's brief does nothing to rehabilitate the circuit court's decision. The disputed provisions do not establish ministerial acts under *Truman* because none of them have compulsory results triggered by fixed, designated facts. Like the circuit court, McGee did not examine the actual text of the disputed provisions, nor did he respond to DOT's analysis of those provisions. McGee did not even apply the Restatement factors,

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which also indicate that the acts complained of were not ministerial. Because the disputed provisions do not establish ministerial acts, sovereign immunity has not been waived, and summary judgment is appropriate.

Alternatively, summary judgment is also appropriate on the merits because DOT's duty to maintain highways can be defined only by statute, and neither the circuit court nor McGee identified an applicable statutory duty below. The court erred in holding that the common law and industry standards can supply the duty for McGee's "negligence" claim. McGee never argued that below, and he is precluded from doing so now on appeal to support the court's sua sponte holding. Regardless, McGee's claim is solely against DOT, not its employees individually, and McGee acknowledges that DOT's duty to maintain highways cannot be premised on the common law. The statutes that McGee now cites—after disclaiming reliance on statutory authority below—do not establish *ministerial* duties. In the end, McGee's claim is either the tort of negligence without an actionable duty, or breach of contract as a third-party beneficiary. Either way, his claim fails, and summary judgment is also appropriate on the merits.

DOT asks this Court to reverse the circuit court's order denying summary judgment and to direct the court to enter summary judgment in DOT's favor.

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Dated this 17th day of August, 2022.

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Certificate of Compliance

In accordance with SDCL § 15-26A-66(b)(4), I certify that this brief complies with the requirements set forth in the South Dakota Codified Laws. This brief was prepared using Microsoft Word 2010, Times New Roman (12 point) and contains 4,970 words, excluding the table of contents, table of authorities, jurisdictional statement, statement of legal issues and certificate of counsel. I have relied on the word and character count of the word-processing program to prepare this certificate.

Dated this 17th day of August, 2022.

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Certificate of Service

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