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CONSTRUCTION SERVICES

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Memorandum

To: Lesly Tribelhorn, P.E.
Highways Engineer

From: Paul Jagoda, PE
Construction Engineering Services Engineer

Date: January 18, 2018

Subject: Proprietary Product Certificate: Projects 1027, 4060, 7449, 4071 & 9038
WipFrag (Riprap Gradation Evaluation Technology) Pilot Projects

The Montana Department of Transportation certifies that in accordance with the requirements of 23 CFR 635.411 and FHWA Montana Division's Standard Operating Procedures for Public Interest Findings Office Approval Procedures, WipFrag is a unique and innovative product for which there is no equally suitable alternative for evaluating riprap gradation for contract requirement acceptance.

WipFrag will be used on the following Pilot projects:

WipFrag Pilot Projects:

NH 1-1(52)45F *Swamp Creek East* *CN 1027*	*STPP 14-6(8)207* *Rosebud County Line East* *CN 4060*	*STPP 58-1(37)14* *North of Kiowa North* *CN 7449*
5 Miles N of Roscoe N *STPP 78-2(33)25* *CN 4071*	*Varney Bridge 8 M Ennis* *STPB 249-1(10)8* *CN 9038*	

Backup Projects: (will only apply if there is a need to replace a project from above)
IM 94-4(93)152
I-94 Slide-East of Miles City
CN 9352

Justification

Our research has shown WipFrag is a unique and innovative product for which there is no equally suitable alternative for evaluating riprap gradation for contract acceptance. Following is a description of the WipFrag product and the unique benefits.

- WipFrag is an optical granulometry software that can determine the gradation of material captured in a photograph. WipFrag analyzes images by detecting the edges of rock fragments in individual photographs. WipFrag then uses this information to create gradation charts and other information that can be viewed on accessible documents. Since WipFrag provides means of seamlessly documenting testing results, this technology allows for a faster, more automated, and a more efficient QA/QC process.
- WipFrag will be able to help inspectors evaluate the classification of riprap material and make acceptance based on both an objective evaluation and a repeatable technology based testing procedure.
- WipFrag can provide an accurate, repeatable, and innovative gradation testing method for riprap. This technology will provide a means of testing riprap while in the contractor's stockpile and in-place. This is a cost-

effective way to provide quality assurance and to ensure that MDT is obtaining the correct riprap classification required by the specifications.

- Inspectors will be able to avoid being physically on the material when performing the inspection therefore, using WipFrag will also allow a safer means of inspecting riprap.
- Verifying that the correct classification of riprap is being used on projects is essential when riprap is to be used on high risk locations where riprap failure could be detrimental to the traveling public. This tool will provide a repeatable means of evaluation to ensure riprap classification.

We will not extend the proprietary status of these items to subsequent projects without a separate evaluation.

Approved by: _____ Date: 2/20/2018

Lesly Tribelhorn
Highways Engineer

Cc: Dwane Kailey, PE
Dustin Rouse, PE
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Chris Riley, FHWA, PE
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Contract Plans Bureau