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Memorandum

To: Distribution

From: Paul Ferry, P.E.
Highways Engineer

Revised 2/2/23 MC

Date: September 23, 2010

Subject: PTW Surfacing/Subgrade Treatment

In an effort to utilize the existing roadbeds and to reduce impacts, a significant number of reconstruction projects are closely following the existing horizontal and vertical alignments. Many of the reconstruction projects result in the removal of the existing plant mix surface. The exposed subgrade, and even the old base course material is often very wet and incapable of supporting construction equipment without the implementation of some corrective measures. This situation needs to be recognized in the design phase and corrective measures need to be included in the plans package. When these situations are not addressed in the plans, the treatment often results in delays, costly change orders and claims.

These issues were addressed in a memo from Gary Gilmore dated September 12, 2000. The following is a reiteration with some modifications of the recommended actions that should be performed when the existing plant mix surface may be removed.

1) Consider raising the grade to eliminate the removal of the existing plant mix surface. A cost analysis should be performed to compare the cost of subsurface treatment (subexcavation, special borrow, geosynthetic) with raising the grade. The impacts to R/W, the environment and utilities resulting from a grade raise must also be considered in the comparison.

2) Request additional subsurface investigation to delineate the extent of the poor material and to determine the required treatment.

3) Ensure that the areas that need treatment are identified in the plans and that adequate quantities of subexcavation, special borrow and geosynthetic are provided in the plans to address the areas in question.

When a new alignment crosses the existing alignment, verify whether the existing plant mix will be removed. If it will, the same issues with the subgrade may be encountered, and the same type of treatment may be necessary to address poor subgrade conditions (subexcavation, special borrow, etc.).

The following items should also be considered when addressing the removal of the existing plant mix surface.

- Address these sites as early in the project development process as possible.

- In urban areas it may be more practical to estimate the quantities needed for treatment, because drilling in these areas can be difficult, due to impacts to buried utilities and disruption to traffic.

- In rural areas, if time and resources are limited, estimate the quantities for treatment. Recognize that 2 feet of removal of poor material and replacement with special borrow may not be adequate. Consultation with the Geotechnical Section may provide a somewhat more accurate assessment of the treatment needed.

- Consider using some material of lesser quality than an A-1-a material for the special borrow. The decision should be based on the availability of material and the Geotechnical Section's recommendations.

- Consider using some type of subgrade stabilization such as chemical stabilization. This type of treatment will require extensive involvement with the Geotechnical Section.

- Increase the quantity of traffic gravel, especially if it is decided that no additional treatment of the subgrade will be provided where the existing plant mix is removed.

- Consider the estimated construction time and potential letting schedule to determine if minimizing grading operations during the wetter spring season is feasible.

- If it is determined that no subgrade treatment is necessary, document the decision in the project milestone reports.

If you have questions concerning this, please contact the Highways

Engineer. ~~me at 444-6244.~~ Pf.

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