

TOWN OF ORFORD

Board of Selectmen

Meeting Minutes

March 7, 2024

MEMBERS PRESENT: John Adams, Kevin Follensbee, Chase Kling

ROAD ADVISORY COMMITTEE MEMBERS: Charles Smith Jr., Mike Wright

OTHERS PRESENT: Erin Darrow, Right Angle Engineering, Bonnie McCouch, JoAnne Fratus

10:00 AM. Called meeting to order at top of hill section Phase 1 on Archertown Road.

Darrow confirmed the status of the project "Phase 1" was substantially complete, per design drawings, as of the end of 2023. She reported that the term "substantially complete" when used by engineers means all still to be done per that project are landscaping and clean up that could not be done last fall because of the onset of winter weather conditions.

A walk down the hill commenced to verify "as-built" conditions, previously determined problem areas, and potential areas that could be improved.

The "as-built" roadway pavement width was measured to be 19 feet wide with shoulders 12"-24". The drawing plan called for 22-foot-wide pavement with 24" shoulders. Adams commented that there were no change-orders or Selectboard discussions on these dimensions. Kling and Darrow stated the "as-built" width was a result of prior discussions early in the project to keep the build width within the same pavement location and have it be the same width as the original pavement.

The pavement in several locations shows surface defects of poor aggregate bonding known as "unraveling", most likely the result of cold temperatures when the pavement was laid. Darrow reported this observation was called to the attention of the paving company, R&D Paving, a certified NHDOT paving company, and they would remove and replace the "substandard" asphalt as necessary at no cost to the Town. Some surface irregularities may be corrected using a shim coat prior to applying a topcoat.

Several photos previously sent to the Selectboard by the Highway Advisory Committee were displayed showing pavement cracking. The cracking was thought to be a result of frost heaves. The location of the photos was determined and the sites examined. On this day frost was out of the ground, so the cracks were non-existent or very narrow. Darrow explained the process to ensure the quality of materials used in the base below the paving specified that gravels had to meet the NHDOT specification 304.3, then sample and independently test them. Samples were taken at the pit the material came from and from some of the delivered loads. Samples were tested by S.W. Cole Engineering Inc. a certified testing lab. Darrow reported that the samples met the NHDOT specification.

Though not a certified civil engineer, Smith reported he had an engineering technician career at the Civil Engineering Research division of the U.S. Army Cold Regions Research and Engineering Laboratory (CREEL) where he co-authored authoritative papers on frost depth penetration and heave in frost susceptible soils. He also stated he participated in the

development of American Society of Tests and Measurements International (ASTM International) protocol D 5918-96 for “Standard Test Methods for Frost Heave and Thaw Weakening Susceptibility of Soils”. He was concerned that the NHDOT 304.3 specification was too broad for this particularly wet project because it allowed too many fines and “rounded aggregate”. In very wet conditions the aggregate should be limited to “angular aggregate” thus allowing rigid interlocking of particles and a stabilized base. This more narrow specification should apply because of the amount of water and moisture present at this location. It was his opinion that sections of the hill would continue to fail because of frost heaves unless the moving water was separated from the road base. Darrow defended her specifications for gravel.

The placement of the guard rail on the downhill side of the curve section was reviewed and determined to be placed correctly at the edge of the payment. Standard engineering designs call for placing it near the edge of the pavement, so tires do not leave the travel pavement of the road surface. But it was observed in the pattern of debris on the road surface that in some areas drivers were up to two feet from the guard rail as a regular travel area. This pattern demonstrates a driver concern for not hitting the guard rail. Drivers seem to be regularly shying away from the guard rail and crossing the center of the roadway.

On the uphill side, drivers were also cutting the corner and driving on the shoulder. If the ditch is perceived to be very deep, then they shied away from the ditch again crossing the center line. Darrow stated that the standard engineering depth for ditches is 18 inches. On the hill in many sections, the “as-built” depth was 2, 3, or 4 feet to allow for drainage. The depth of the ditches were approved by Darrow.

To keep drivers separated and correctly on the road surface several rework or corrective solutions were discussed. These solutions include:

- painting a center line on the hill curve section so drivers are reassured about where the center of the road actually is located.
- moving the guard rails back from the pavement edge.
- widening the paved driving lane on the inside of the curve so drivers stay on the pavement.
- increasing the shoulder width at the inside of the curve.
- filling in some ditches with rip-rap with the understanding that overtime they will fill in with fines and have to be dug out in 10-30 years.
- adding guard rail sections at the deepest ditches, which would, however, provide no space for snow to be plowed.

Because the project is considered complete, all additional work would have to come out of annual operating budgets or future warrant articles. These potential solutions will be discussed, and decisions made at a future Selectboard meeting.

Consolidated runoff from the Archertown Road hill area that collects on the uphill side of Highbridge Road was also reviewed. McCouch offered an easement to allow the collected water to cross from the uphill ditch to Jacob’s Brook across her property. It was determined the Road Agent would review the current ditch and the proposed drainage path with her, then provide comments to the Selectboard at a future meeting.

A concern about vehicle access at the mailboxes just west of Highbridge Road was determined to be justified. The mailboxes are within the construction zone of the new pavement, so a final

grade and approach has yet to be established. The access issue is considered landscaping and will be addressed when the project moves from substantial completion to final completion.

11:29 AM: Adjourned. Motion Adams, Second Follensbee. All in favor.

Respectfully submitted:

John Adams