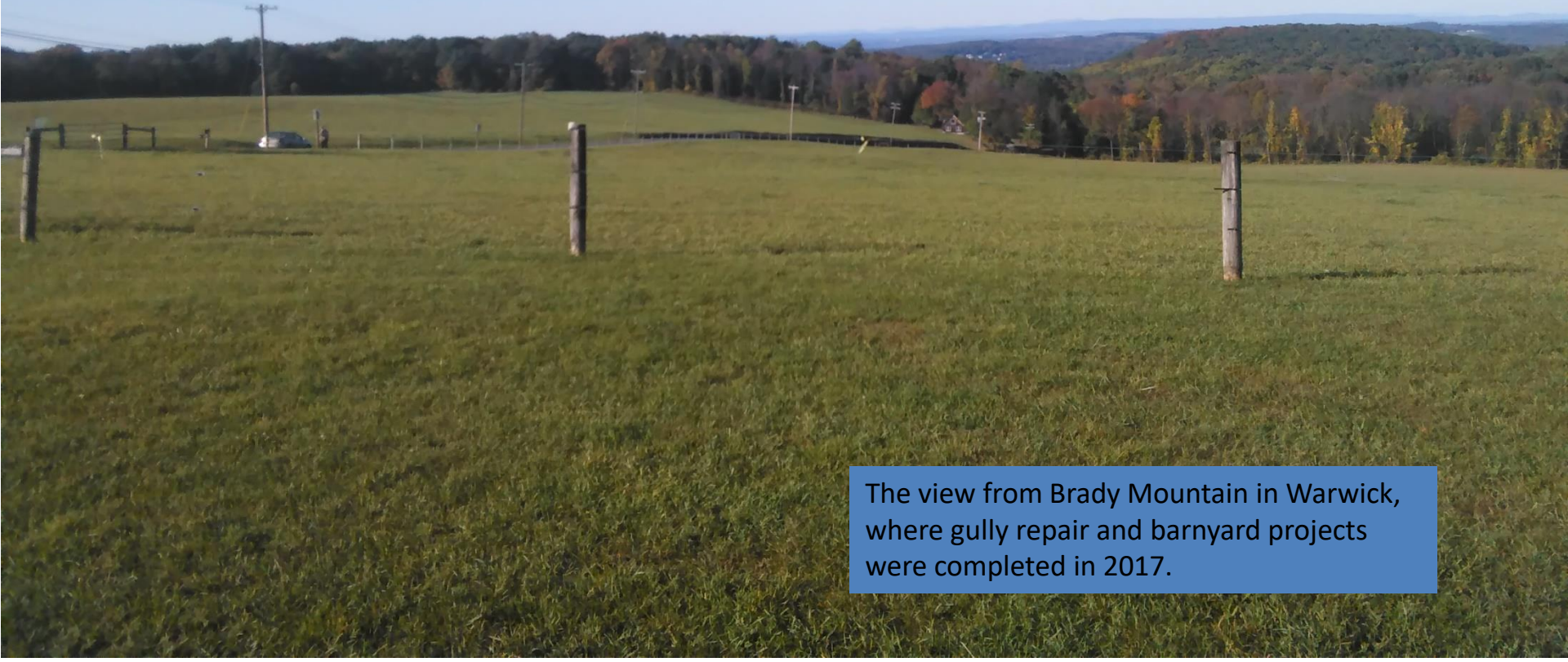


**BRADY FARM
CROPLAND
EROSION AND
BARNYARD
RUNOFF CONTROL**



The view from Brady Mountain in Warwick, where gully repair and barnyard projects were completed in 2017.

The Brady farm is a beef and hay operation. They contacted our office for assistance with addressing a gully that started forming several years ago along the edge of a hay/pasture field. They were also having issues with erosion, wetness and icy conditions in the barnyard, pictured below, resulting from excess runoff coming out of the woods.



Some more aggressive repair methods were considered, but we decided to try a softer approach of simply filling gullies and rills, shaping the disturbed area, and re-seeding with a rolled erosion control product (RECP) to provide interim protection until the seed gets well established. This was especially important since grading was done late in the construction season.



View of the gully repair from the lower end. The project helps to protect a stream just into the woods to which this area ultimately drains.



April, 2018, grass is growing in through the RECP. So far, so good.



A basic precept of barnyard runoff management (which also applies to erosion and sediment control on urban construction sites) is to keep clean water clean whenever possible. This underground outlet will carry clean barn roof water to a safe outlet, excluding it from heavy animal use areas.



A bit of fancy plumbing connects main barn roof water with shed roof water, sending the combined flows to the underground outlet.



This diversion ditch will intercept clean runoff from the woods on the right before it reaches heavy animal use areas.



An 'under-drain' in the center of the diversion ditch will collect shallow sub-surface flows that might otherwise break out in the barnyard. It will also underdrain the diversion to avoid prolonged wetness that might weaken grass growth and allow for channel erosion. This practice is similar to what many construction contractors call a 'french drain'.



The green pipe in the foreground will become a 'riser' in the diversion that will convey low flows to the same underground outlet that collects the barn roof water. The riser will take the flows collected by the diversion most of the time, with large, infrequent storm flows by-passed to a level lip that spreads the large flows into an overland sheet flow. This approach eliminates the need for an expensive, large-diameter underground outlet pipe or for a constructed waterway outlet for the diversion that would have to cross the pasture and would be a management challenge.



An RECP is used to protect the center of the completed diversion ditch.



Hey, who let the cows on the diversion? Shh...sstuff happens.



Grass is just beginning to establish in the diversion and on the upslope area. Note riser in foreground, cut off to the proper height and surrounded by $\frac{3}{4}$ inch stone.



The project included installation of a 'frost-free' waterer. This will allow the herd to water from a safe well water supply located on an easily cleanable concrete pad. It provides an alternative to the practice of watering directly from a stream.



Completed waterer. Note float balls that the cows quickly learn to press to access a cool but not frozen sip. Although this model is designed to be 'frost-free', the farmer added an electric heater to allow for tea or cappuccino.



We will need to keep after the area between the woods and the diversion, which doesn't seem particularly interested in growing grass. But the practice is functioning as intended – excluding excess runoff from animal feeding areas near the barn.

