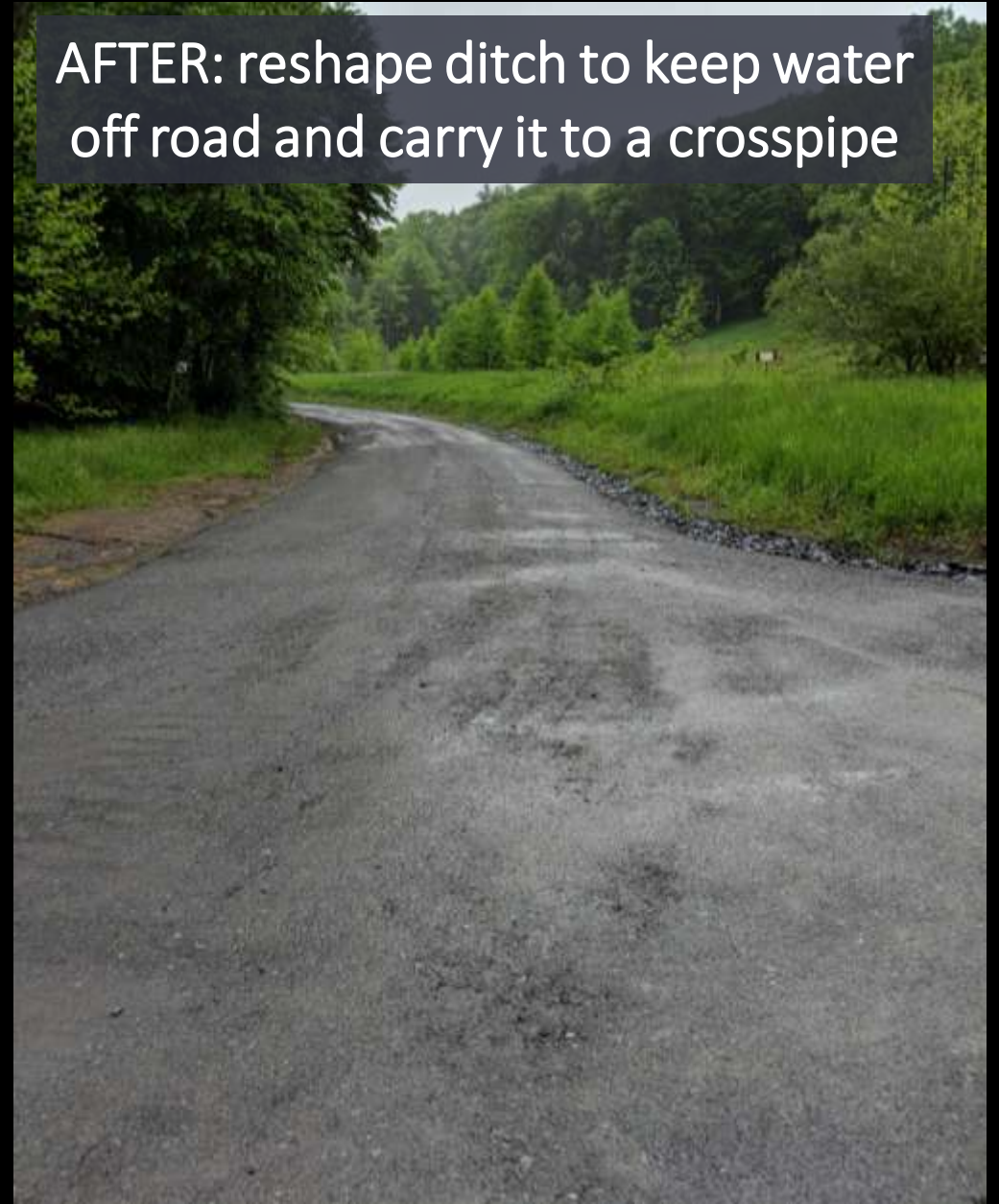


Completed Projects: Before and After photos

BEFORE: Water lays on road edge



AFTER: reshape ditch to keep water off road and carry it to a crosspipe



Completed Projects: Before and After photos

BEFORE: Water flows across the road

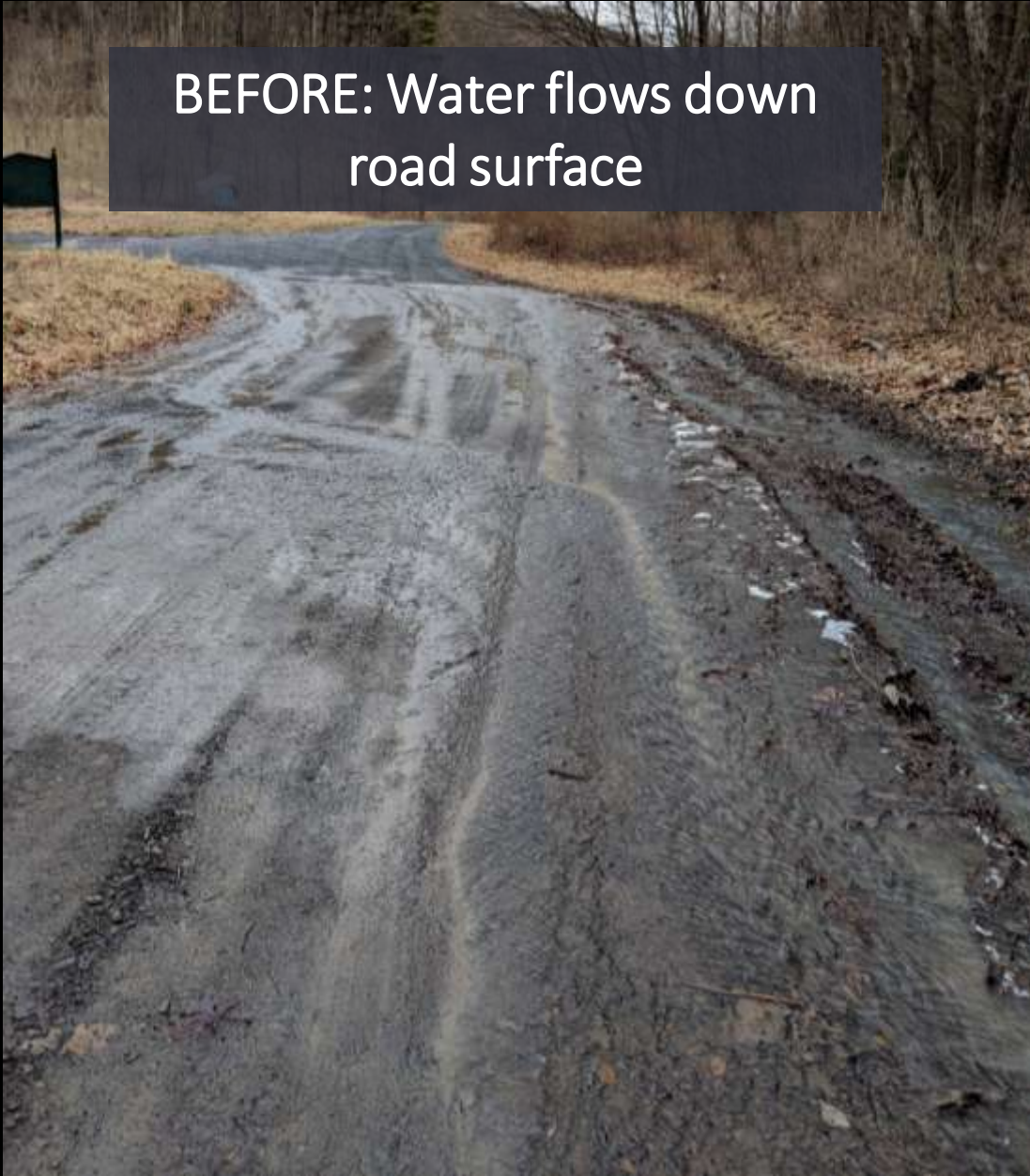


AFTER: new cross pipe



Completed Projects: Before and After photos

BEFORE: Water flows down
road surface



AFTER: build up road base,
reshape road crown, top
with DSA

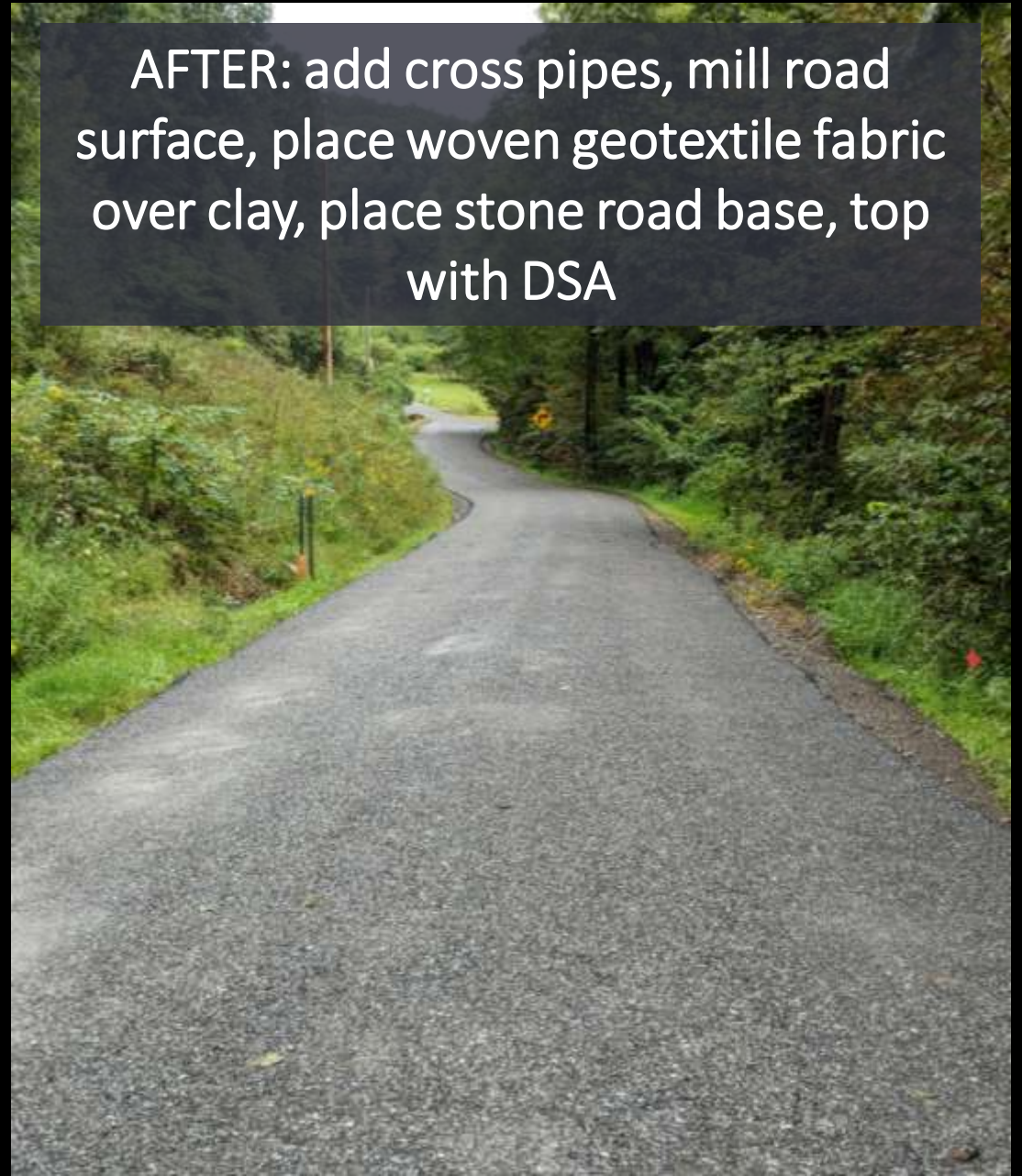


Completed Projects: Before and After photos

BEFORE: clay in road base led to uneven road surface; water washed out ditches

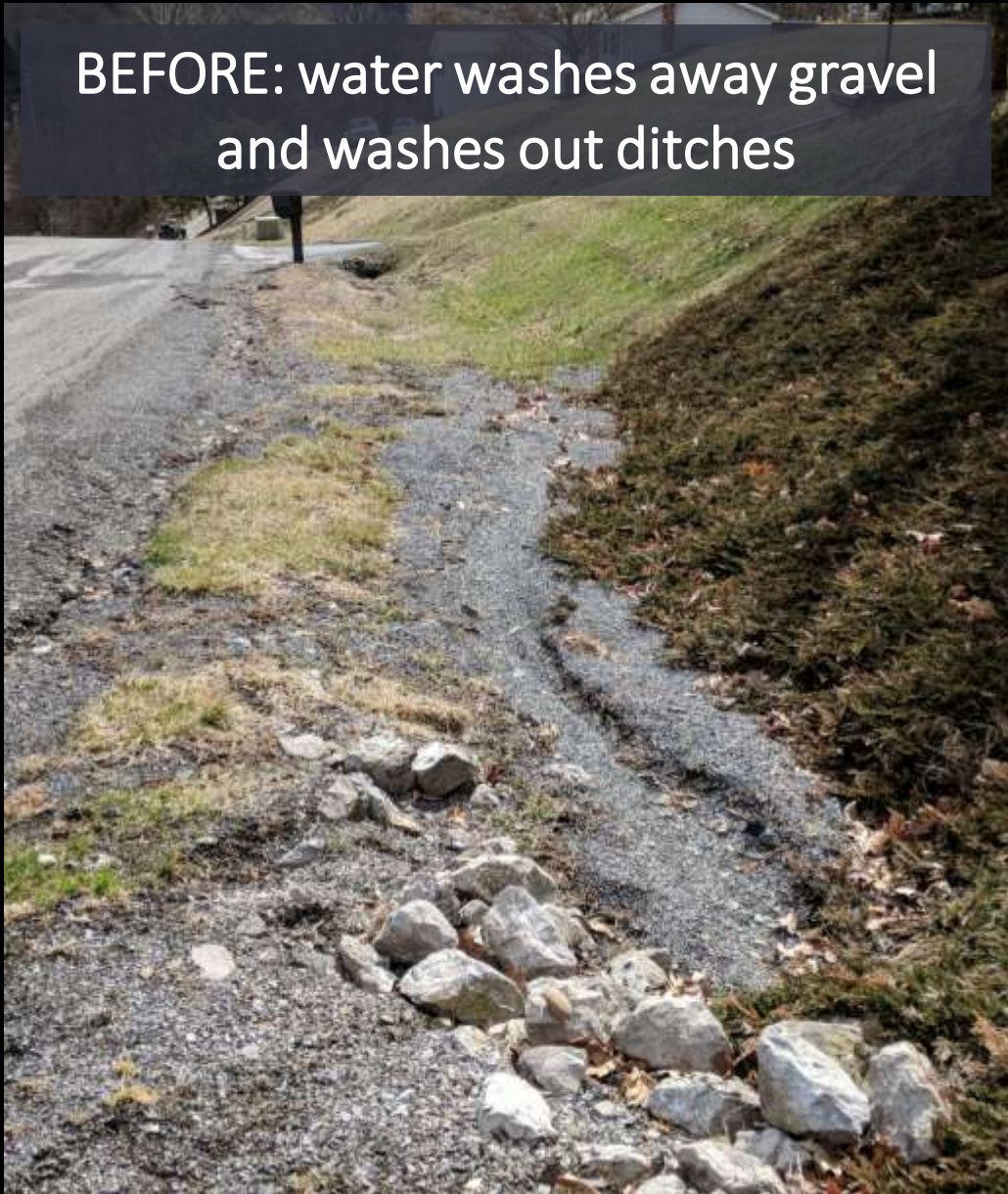


AFTER: add cross pipes, mill road surface, place woven geotextile fabric over clay, place stone road base, top with DSA



Completed Projects: Before and After photos

BEFORE: water washes away gravel
and washes out ditches



AFTER: reshape and rock-line ditch



Completed Projects: Before and After photos

BEFORE: water washes out ditches



AFTER: install storm sewer system
and rock-line ditches



Completed Projects: Before and After photos

BEFORE

multiple springs

WATER FLOW

AFTER

Install French mattress, new cross pipe,
build up road base and place DSA

Completed Projects: Before and After photos

BEFORE

Springs in middle of road,
water runs down road surface



AFTER

New pipe & French
Mattress, build up road
base and top with DSA



Building a French Mattress



1. Excavate

Building a French Mattress



2. Place non-woven geotextile fabric

Building a French Mattress



3. Fill with AASHTO #1 or other clean stone.
Then, place another layer of non-woven geotextile fabric (not pictured)

Building a French Mattress



4. Once mattress is complete, top with 12" of stone. Shale is pictured here.

Building a French Mattress



5. Crown road base with 2A gravel

Building a French Mattress



6. Finish with DSA

Completed Projects: Before and After photos

BEFORE: spring water and storm water wash out ditch



AFTER: pipe all water under stable, grassed road edge



Completed Projects: Before and After photos

BEFORE: water lays on road



AFTER: build up road base, crown road base, top with DSA

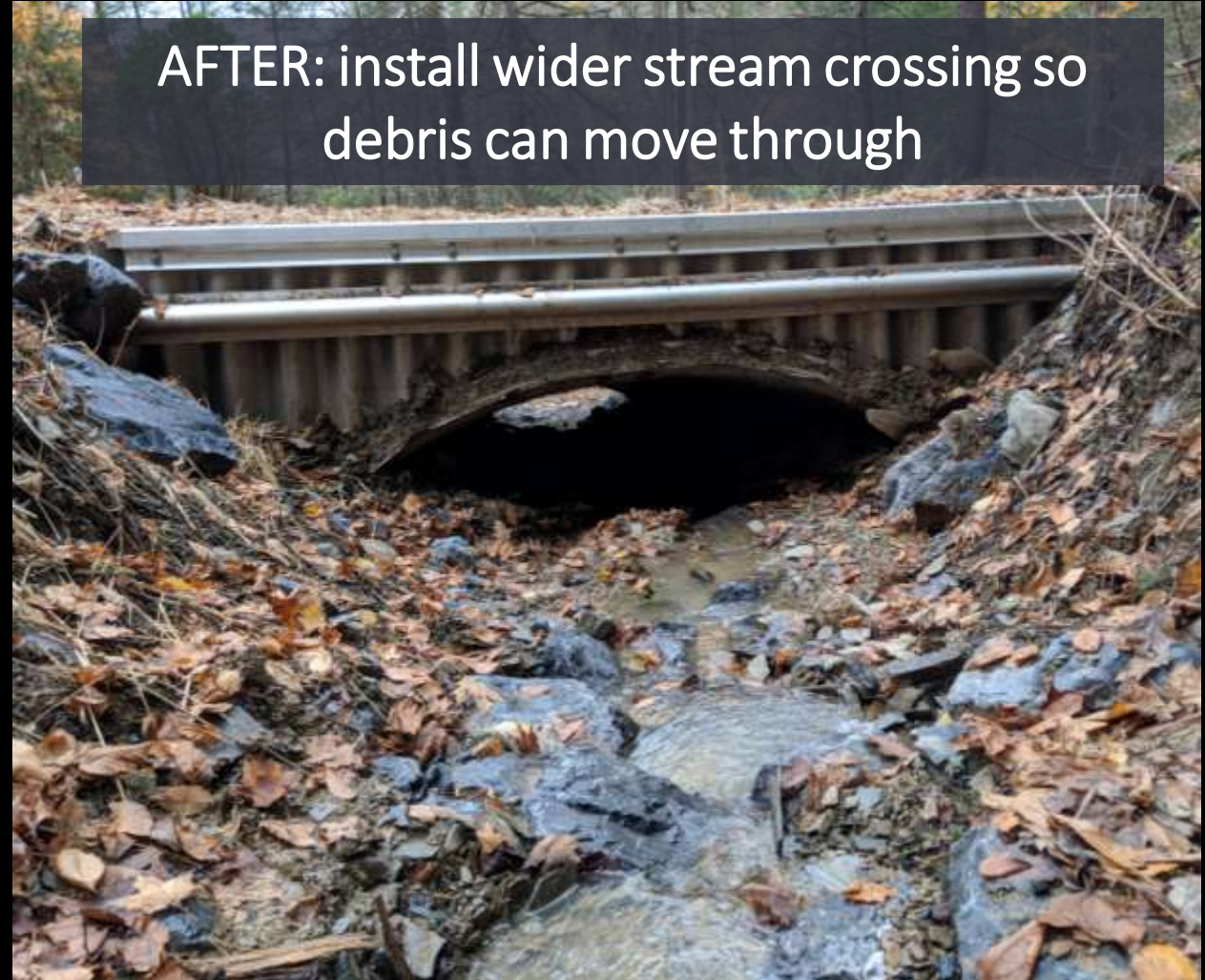


Completed Projects: Before and After photos

BEFORE: undersized stream pipe clogs regularly



AFTER: install wider stream crossing so debris can move through



Completed Projects: Before and After photos

BEFORE: water shoots out of undersized stream pipe, washing away road banks



AFTER: install wider stream crossing so water moves through at regular speed; stabilize banks with rock and grass



Completed Projects: Before and After photos

BEFORE: undersized driveway pipe,
ditch washes out



AFTER: larger driveway pipe and
reshape ditch (bedrock or grass
stabilizes ditch)



Completed Projects: Before and After photos

BEFORE: water runs down road surface and washes away gravel



AFTER: build up road base, crown road, place DSA



Completed Projects: Before and After photos

BEFORE: water washes out ditches and ponds at the bottom of the hill; poor road base makes surface uneven



AFTER: build up road base 2 ft, crown road, install new pipes, stabilize ditches, place DSA



Completed Projects: Before and After photos

BEFORE: water ponds at the bottom of the hill and floods road during storms



AFTER: install a new cross pipe to outlet water



Completed Projects: Before and After photos



Completed Projects: Before and After photos

BEFORE: spring water from yard saturates road edge; old inlet box on verge of collapse



AFTER: install a new inlet box and create swale so water flows to box instead of road



Completed Projects: Before and After photos

BEFORE: water lays on road edge



AFTER: grade road edge so water can flow off

