

# Ohiopyle Multimodal Gateway - Pervious Pavement and Storm Water Management

## PennDOT District 12

### Problem/Challenge Addressed

The Ohiopyle Multimodal Gateway project was pursued to address mobility and access issues that were occurring in Ohiopyle Borough and Ohiopyle State Park.

While pursuing the project, both the borough and the public identified stormwater runoff and flooding concerns that were occurring in the area. Heavy runoff from the hillside above existing Sugarloaf Road routinely flowed along the former gravel parking area and roadway crossing Route 381.

Pervious pavement with below ground storage solved the limited space availability for traditional stormwater Best Management Practices (BMP).

### Method/Process/Product to Resolve Challenge

PennDOT and McCormick Taylor designed the parking lot/bike path with a pervious pavement system that stores runoff in the aggregate layers beneath the paved surface. The pervious pavement, below ground aggregate storage area, and oversized pipes will help better control stormwater and the release rate to reduce drainage issues in the area.

The pervious parking lot and bike path pavement and subbase were designed to detain, treat and manage the release of stormwater to meet National Pollutant Discharge Elimination System (NPDES) requirements.

### Results/Key Takeaways

Using pervious pavement avoided impacts to surrounding sensitive areas and maximized the usable space within the project footprint.

Care was taken to ensure construction vehicles and activity would not impact the pavement after installation.

This BMP is effective in low traffic areas that do not generate sediment like local or state roads that would clog the pervious pavement.

Coordination between PennDOT and the Pennsylvania Department of Conservation and Natural Resources (DCNR) was required during design of this parking lot to ensure that DCNR was willing to and understood the requirements for assuming maintenance responsibilities for the new pervious parking area. Additional maintenance related to sweeping of the parking lot to ensure fine materials do not clog the pervious surface will be required of DCNR.

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## Results/Key Takeaways – From Construction Team

### RESULTS:

If placing two courses of pervious asphalt during the same shift, you may have to perform the work in the evening after the sun goes down - Mat Temperature needs to be 100 degrees (versus 140 degrees for conventional asphalt) before next lift can be placed.

Laborer, with rake, needs to be on standby as the first course of pervious asphalt is placed - The reason for this is because the asphalt delivery trucks tend to rut the 57 stone as they back-up to the paver.

For continued performance of having surface water drain thru the pervious pavement, it will be critical to vacuum the lot periodically to “clean-out” the voids – An “Infiltration Test” can be performed to measure how long it takes for surface water to pass thru the pervious pavement, if desired.

By running traffic atop the pervious surface for MPT, couldn’t vacuum the surface for it to perform as intended – Consequently, we removed and replaced about 3” of this surface for the entire length of the parking lot and re-paved it.

Noticed the pervious surface was “soft” for a while after the material was first placed in May – If you were to turn your wheels while parking, we noticed the asphalt surface tended to move too – After a while, the pervious surface hardened up.



### KEY TAKEAWAYS:

Needed a detail for undercutting soft areas at the bottom elevation of the retention basin.

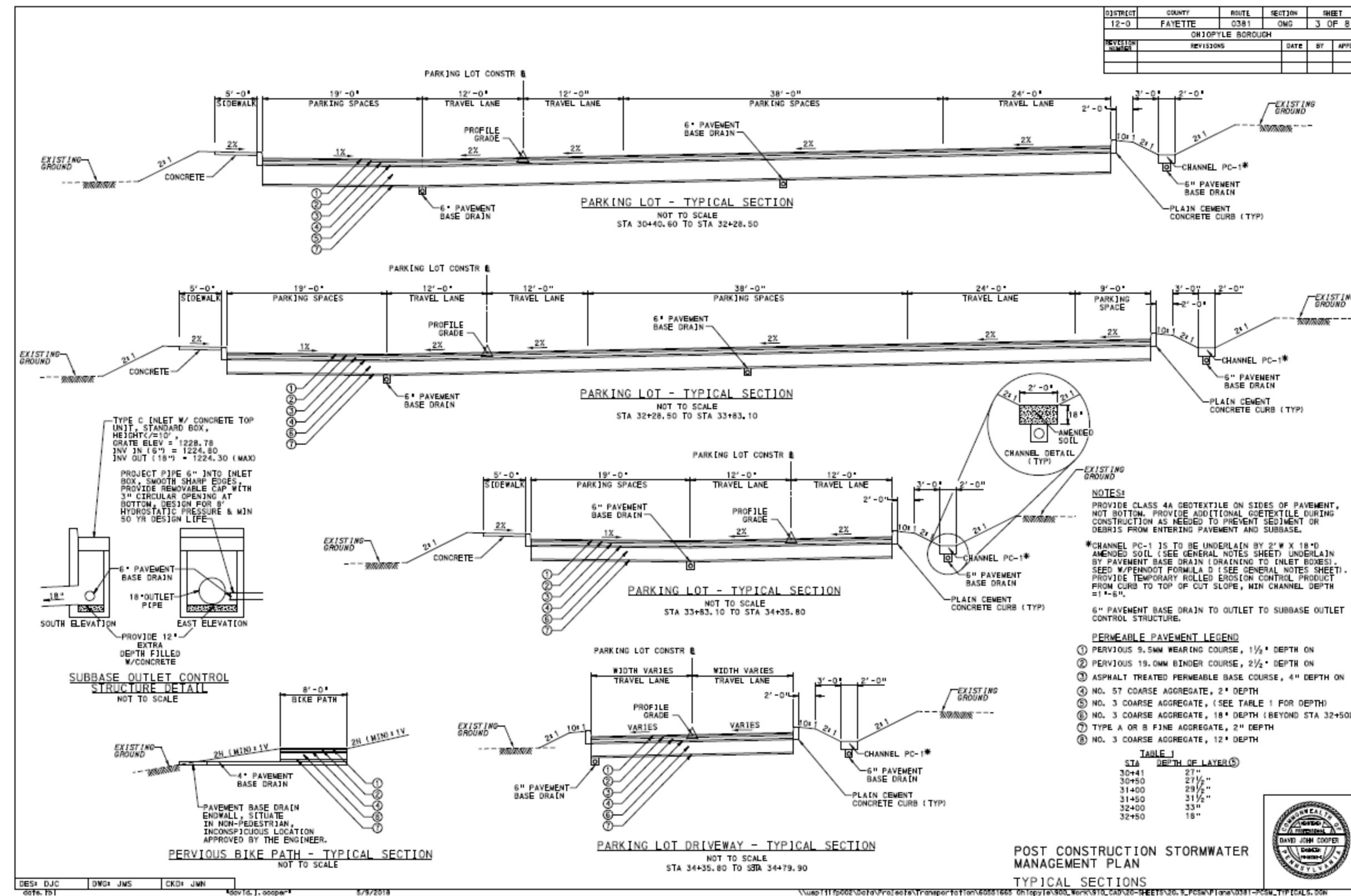
Couldn’t install the extra-deep islands for the tree-plantings for fear we’d undermine the pavement during excavation operations.

Perhaps two of the inlets could have been eliminated due to the pervious nature of the asphalt?

The pervious pavement asphalt mix seemed to be a good mix – When the “Infiltration test” was performed, it passed with no problems!

During the icy, winter months, “slip and fall” accidents have been eliminated due to pervious nature of the lot surface (no formation of ice in puddles, etc.).

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**Post Construction Stormwater Management – Parking Lot Typical Section**

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**Construction of the Green Infrastructure Parking Lot and Relocated Sugarloaf Road**

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**Green Infrastructure Parking Lot**