

Dutchman's Lane Sidewalks

Project Overview and Presentation to the Town of Easton,
MD

Talk



t 14-14



AUGUST 2014



LIMIT OF WORK
CONTR. NO. XX-XX
DUTCHMAN'S LANE
ROADWAY IMPROVEMENTS
STA. 101 + 75

LIMIT OF WORK
CONTR. NO. XX-XX
DUTCHMAN'S LANE
ROADWAY IMPROVEMENTS
STA. 131 + 24

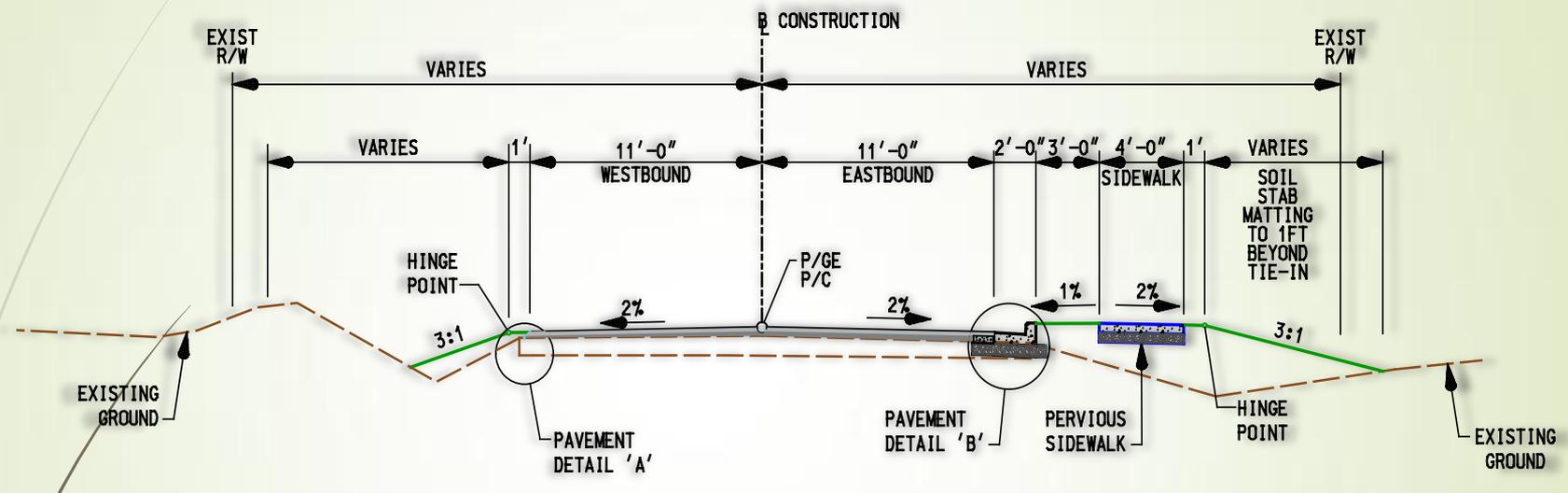
Copyright ADC The Map People - Permitted Use Number 20502110 ADC TALBOT COUNTY MAP NO.14

LOCATION MAP

SCALE: 1"=2000 FEET
PROJECT LENGTH = 0.54 MILES



Dutchman's Lane Sidewalks
Project Overview for County Project 14-14

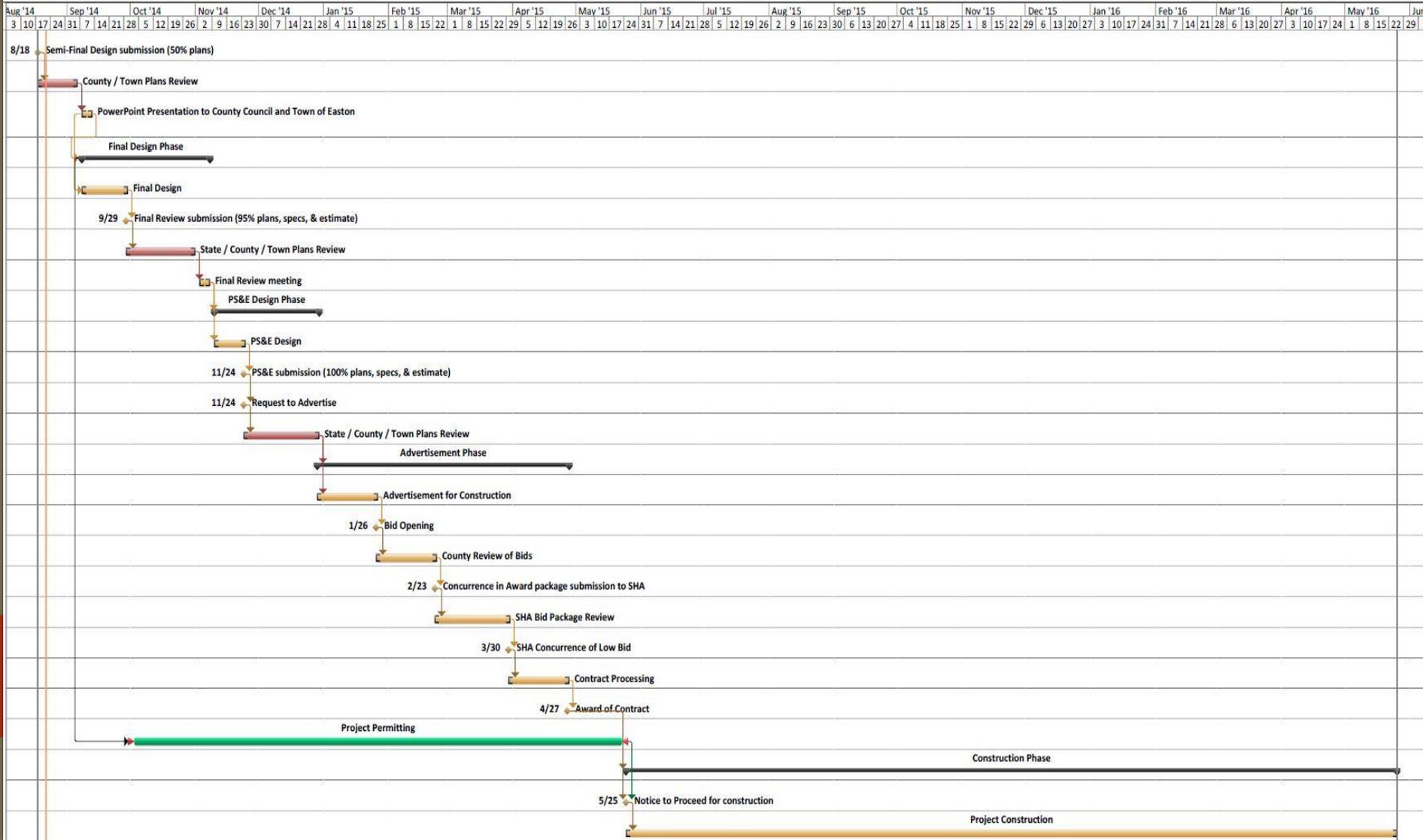


OVERLAY AND SIDEWALK CONSTRUCTION
DUTCHMAN'S LANE - TYPICAL SECTION

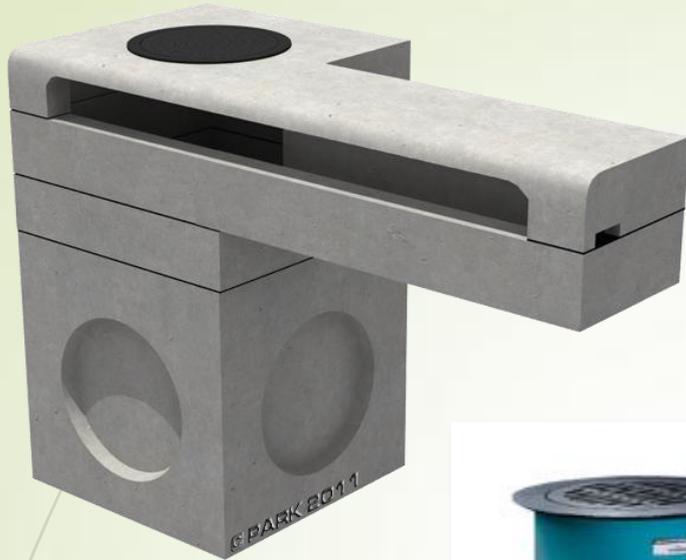
NOT TO SCALE
STA. 102+55 TO STA. 131+12



Project Schedule



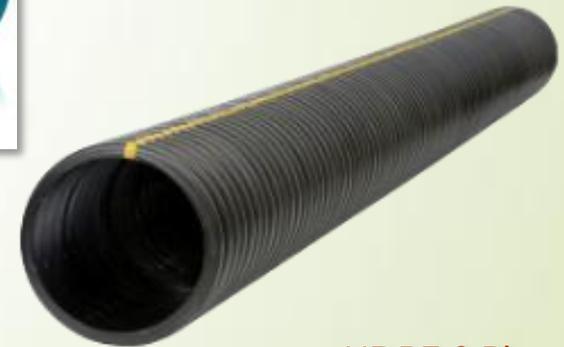
Dutchman's Lane Sidewalks Project Overview for County Project 14-14



Standard Curb Inlets



Nyloplast Yard Inlets



HDPE-S Pipes



SWM Selection Process

The following types of BMPs were considered when developing the SWM concept design:

Wet-Pond

A wet pond was originally proposed for this project; however, a wet pond does not meet ESD criteria and has a prohibitive Construction Cost.

Bio-Swale/Grass Swale

A bio-swale and/or a grass swale was also considered along the north side of Dutchman's Lane; however, due to limited right-of-way in this area, it was determined that a bio-swale and/or a grass swale was not feasible.

Micro-Bioretenention

A micro-bioretenention facility located on the Town of Easton property was investigated; however, the 1.3 acre drainage area exceeds the limits for a micro-bioretenention facility.

Submerged Gravel Wetland

This Chapter 5 practice from the Maryland Stormwater Design Manual can accommodate the larger drainage area; however, submerged gravel wetlands are recommended within areas of C-Soils and D-Soils only. Based on the proposed footprint of the BMP on the Town of Easton property, the majority of the BMP is located within B-Soils. Therefore, a submerged gravel wetland is not a preferred practice for this site. Additionally, the relatively high construction cost associated with this type of facility excluded it from ultimate consideration.

Pervious Pavement

The use of pervious sidewalks treats both water quality and water quantity and is recommended for projects with limited opportunities for ESD stormwater practices.

Pervious pavement is proposed for the proposed sidewalks within areas of B-Soils and C-Soils. Discussion of this practice is shown on subsequent slides.

Filterra Units / Ultra Urban Filters

The addition of a proposed curb and a closed storm drain system made the integration of Filterra units on this project feasible; however, they do not provide quantity management, and additional BMP's are required to treat water quality.

The County will use Ultra Urban Filters as a "Pilot" program to evaluate their effectiveness for use on future County/Town projects. Discussion of this practice is shown on subsequent slides.

Bioretenention

A bioretenention facility was considered after all options to use a Chapter 5 practice from the Maryland Stormwater Design Manual were exhausted. This type of facility is able to treat the larger drainage area of this project and treats both water quality and water quantity.

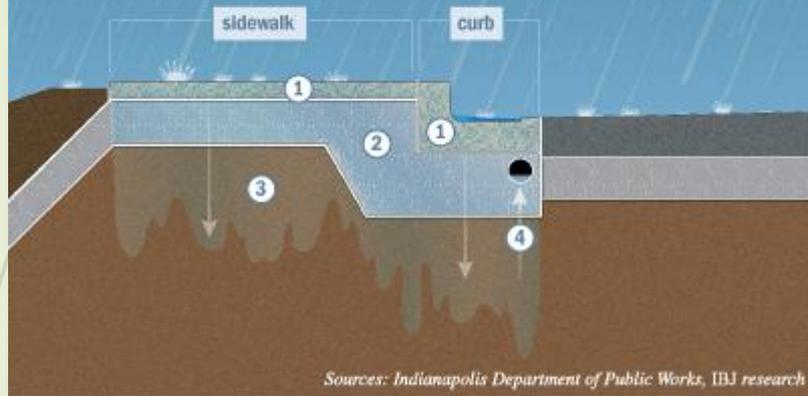
A bioretenention facility is proposed within the property owned by the Town of Easton.



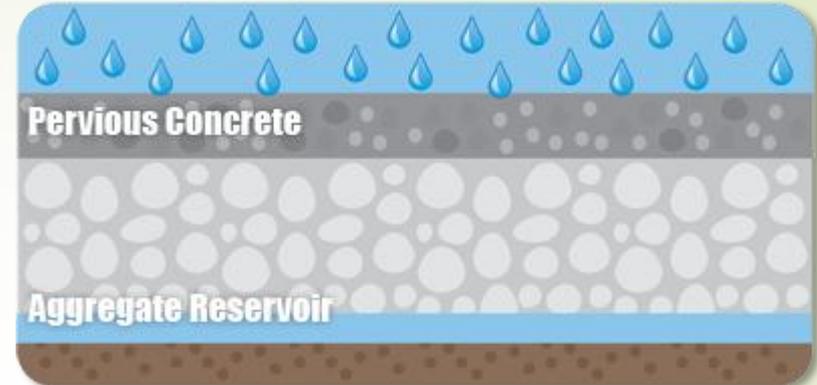
Porous paving

Pervious concrete allows rain to percolate through small gaps into underlying soil rather than running into overloaded storm sewers.

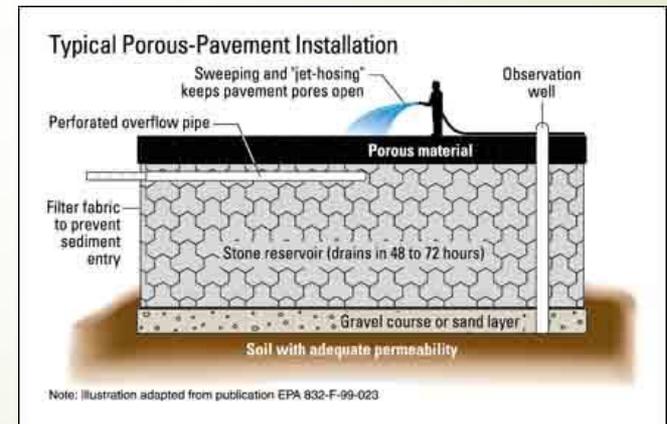
- 1 Rain soaks into a special type of concrete made with more aggregate and less sand - creating more voids.
- 2 Water from concrete filters through gravel.
- 3 Underlying soil, chosen for its moisture-absorbing capacity, allows transfer into water table.
- 4 Slotted pipe is designed to carry water to nearby storm drains only when underlying gravel and soil become saturated.



Pervious Concrete Sidewalk



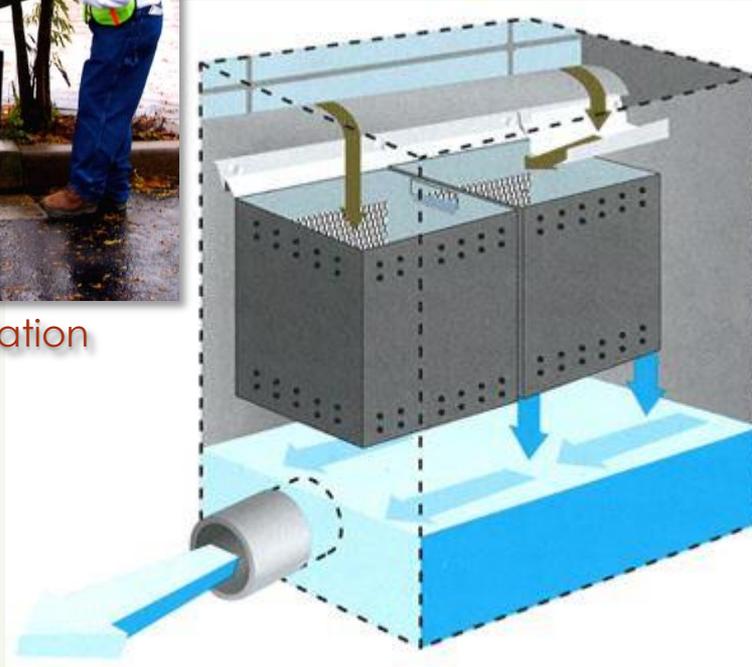
Typical Pervious Section Details



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Ease of Installation



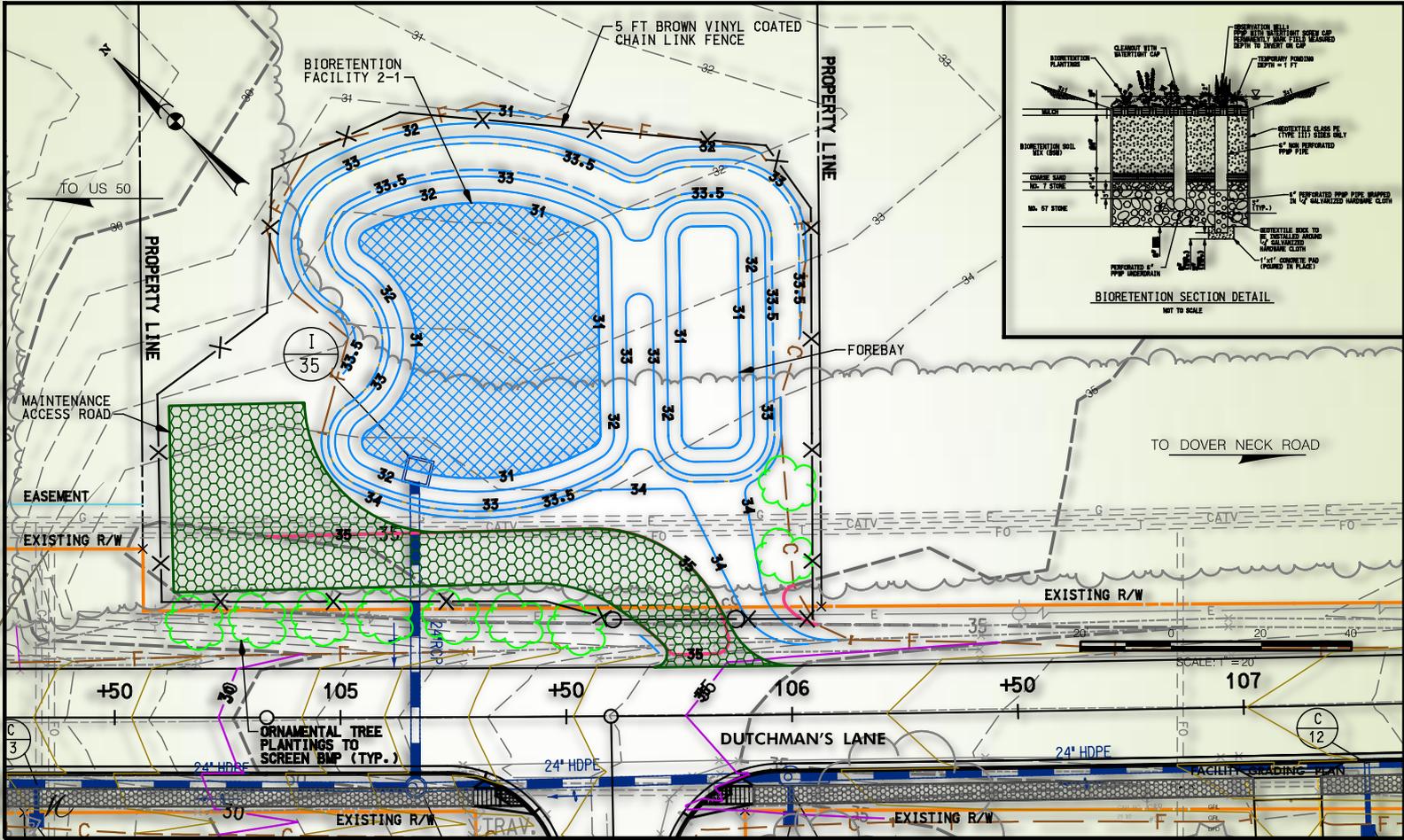
Ultra Urban Filter Unit for Curb Openings

- Modular Design
- Retro-fit Existing Structures
- Cost-Effective 3yr Life Cycle
- Easy Cleanout and Disposal of Units
- Recyclable
- Currently Used by Choptank Riverkeeper



Modular Design

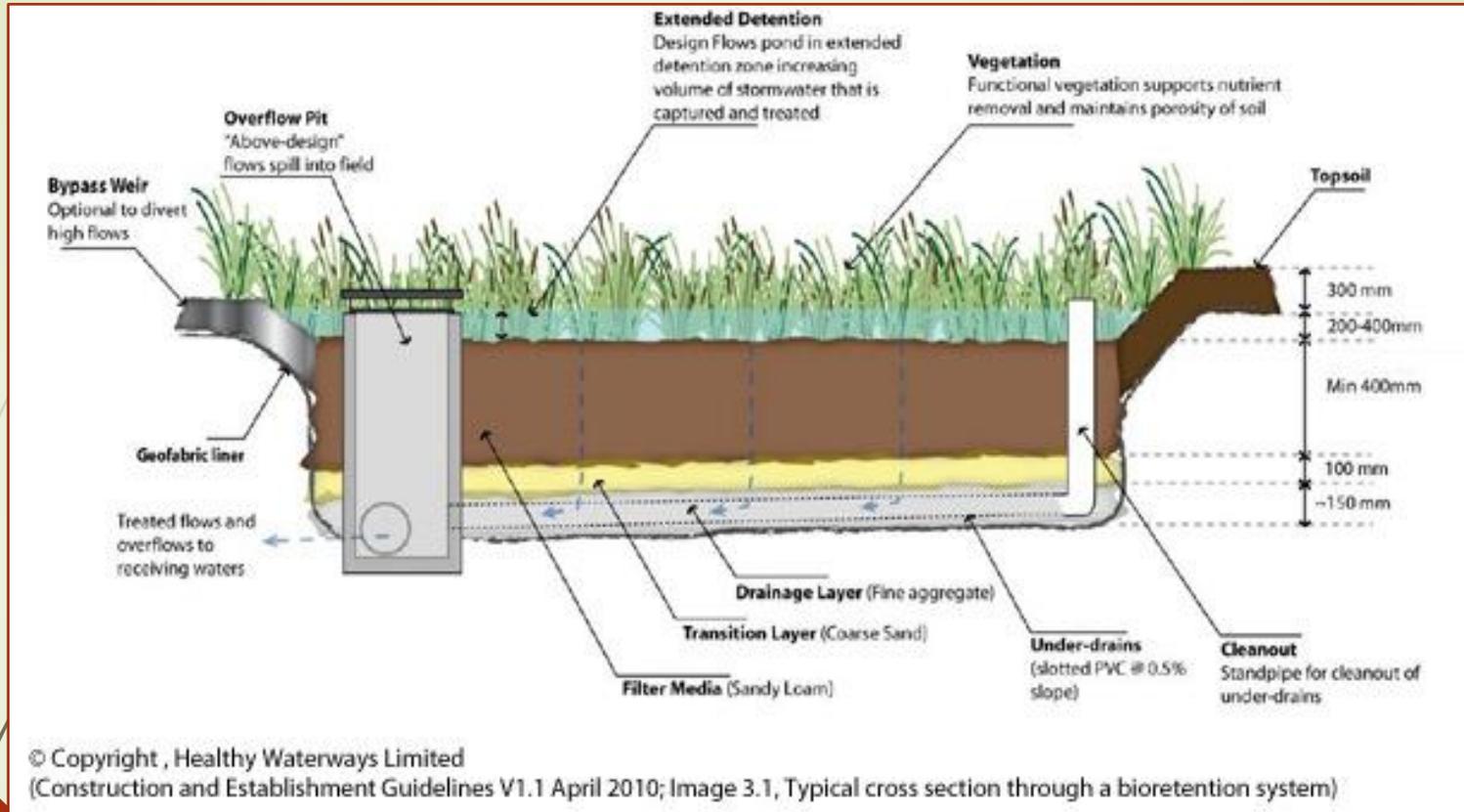




Proposed Bioretention Facility on Town of Easton Property



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Typical Section of a Bioretention Facility



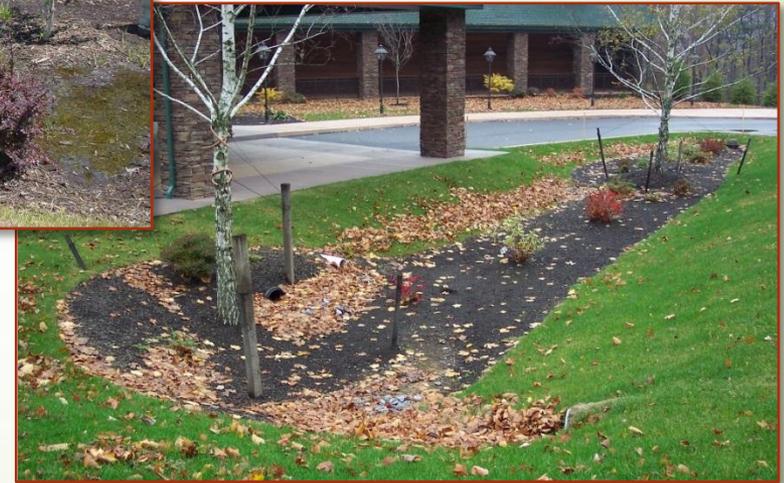
Ponding and drainage of a Bio-retention facility



During Rain Event

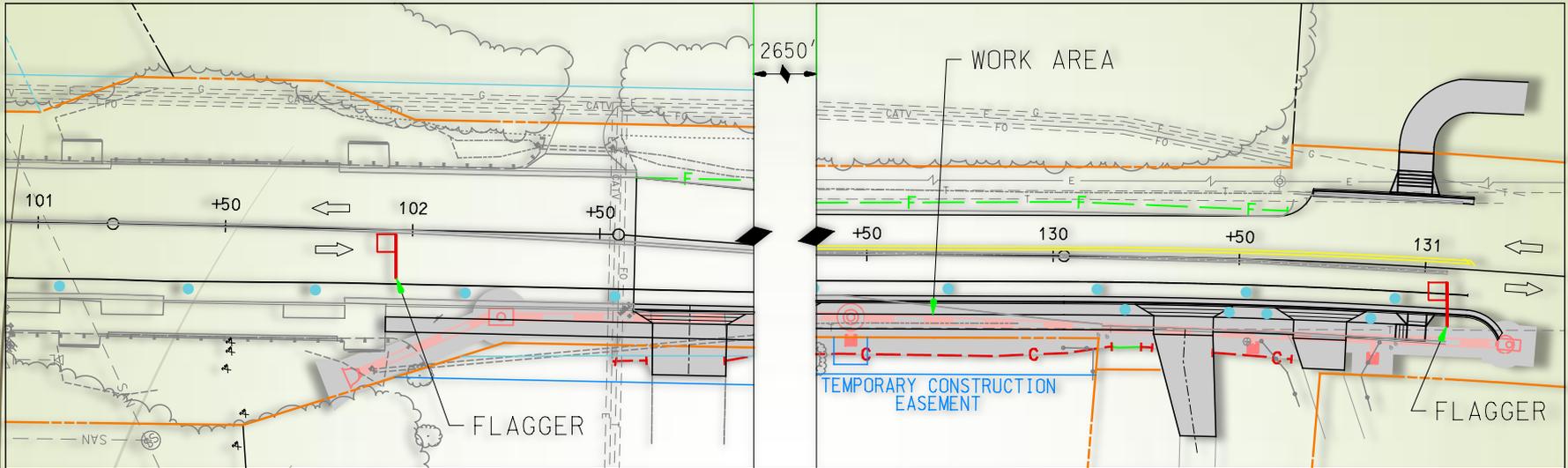


24hrs After Rain Event



48 Hrs After Rain Event

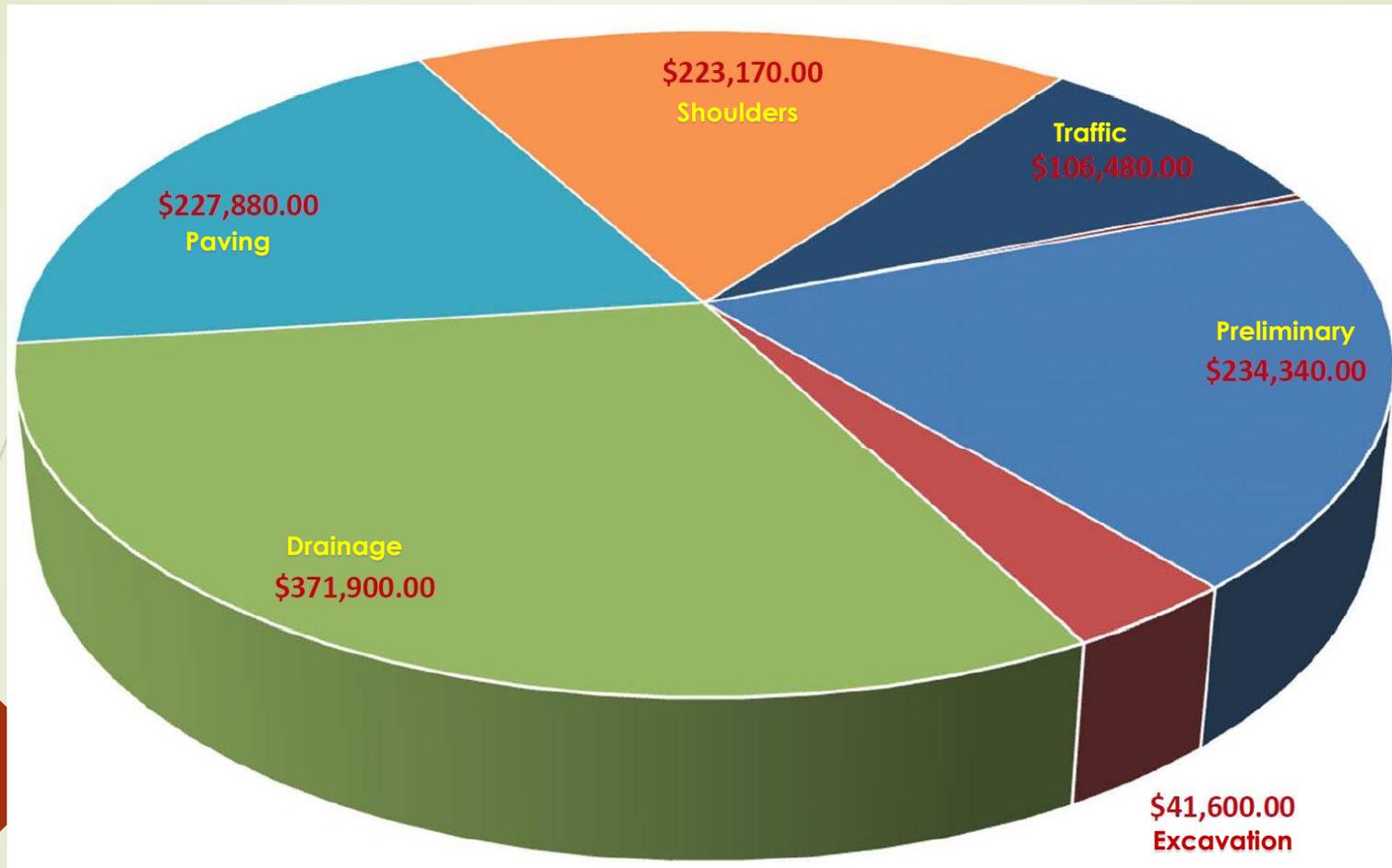




Typical Work Zone During Construction

- Maintains Two Travels Lanes During Construction
- Daily Lane Closures with Flagging Operations
- Coordination with EMS and School Board
- Variable Message Boards for Information
- "Reverse 911" Calls to Inform Residents of Closures





\$1,400,000 Overall Construction Cost

