

Pervious Asphalt in Capistrano Bay Community Services District

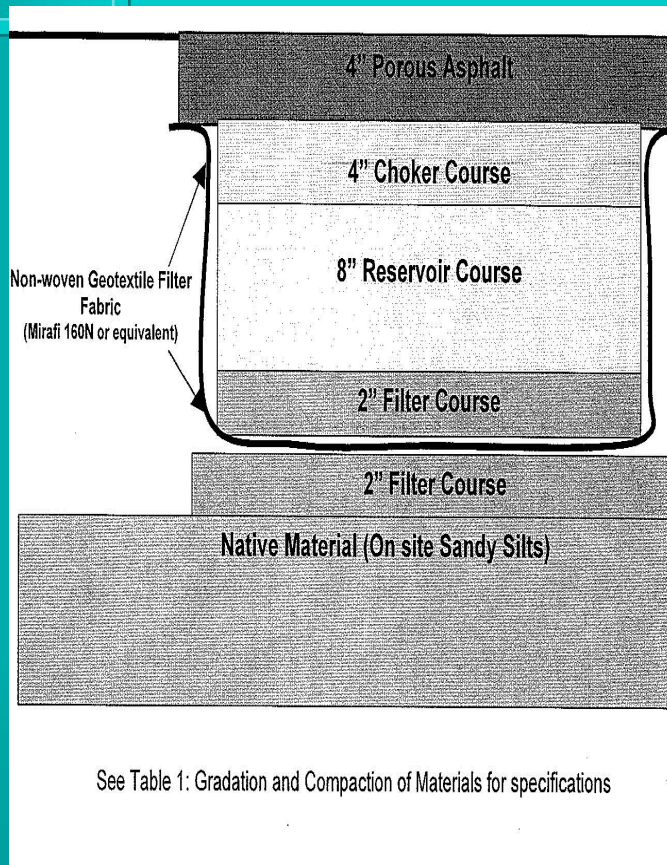
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May 4 BMP Workshop

Why Pervious Asphalt?

- Project site right next to ESA (Pacific Ocean)
- Helped to address Priority Project Criteria – by decreasing amount of additional impervious surface
- Site constraints made most traditional treatment BMPs infeasible (existing drainage system, etc.)
- Cost of other treatment made project economically infeasible
- Asphalt was the least expensive of pervious pavement options

Design



- 8" reservoir course over-designed to provide for retention
- Conservative design to accommodate an unanticipated run-on
- Site percolation rate: 35 to 6 gallons per square foot per day

Design Professional Considerations

- Helpful to get design engineer with experience
- In this and other projects, we were working with designers who do not have water quality design experience
- City was driving force in providing options for this project

Construction Considerations

- Contractor experience
 - may be difficult with the “low-bid” paradigm commonly used
- Should be last in project phasing
- Asphalt mix was oily, trucks dripped oil, need to protect, contain and staining could be an issue

Costs

- Traditional Asphalt:

- 3” of AC Paving over 6”-9” of CMB (compacted road base) from \$2.10 to \$2.30 per sq. ft.

- 10,000 sq. ft. x \$2.10 = **\$21,000**

- Pervious Asphalt:

- 4” of open grade “porous” asphalt \$2.50/sq. ft

- Sub base design materials:

- Filter -4” 3/8 crushed rock = \$7,400

- Filter fabric = \$1,300

- Reservoir course – 8” of 2” crushed rock = \$16,500

- Choker course = 4” of 3/4” = \$7,000

- 10,000 sq. ft. = **\$57,200**

Saved \$30,000 going with asphalt versus concrete – good decision?

Performance

- Provides excellent infiltration
- Installed only in parking area and we still witness significant wear and tear – asphalt pits
 - Bonding inadequate
- Vacuum suggested cleaning 2-3 times/year, due to coming apart, blown on a regular basis

Video of Infiltration

Lessons Learned

- Consider pervious concrete or other options- may wear better
- Procure a design engineer with experience
- Install last in construction phasing to avoid construction vehicle traffic and construction materials
- Ensure contractor has experience with installation

\$10,000 Question – Would Capo Bay Recommend this Product?

NOPE!

In fact, they have started to budget for another pervious pavement application, knowing that the asphalt will not last.

But there is some light at the end of the tunnel.....

But There is some Good News

- The base courses, which are the bulk of the costs and labor will remain.
- There could be advancements in binding technology of pervious asphalt, which would make this lower cost pervious pavement more attractive in the future.
- With greater demand for these types of option, people and products will improve and advance.
- You don't know until you try it – need to test BMPs in field or we will never know if they function
- Helps set a foundation/demand for improvement.

Questions?

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