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JAN 10 2011
BY: Denise McCee

MEMORANDUM

TO: **Township Park & Recreation Committee, Della Penna Engineering**

CC: **Coatesville Area School District, Gilbert Architects, East Fallowfield Township**

FROM: **Karen Giffin**

DATE: **January 5, 2011**

RE: **Summary for East Fallowfield Park & Recreation Committee**

K&W Project No: **2041.004.001**

As a follow up to the January 4, 2011 meeting with the East Fallowfield Township Park Board, we are summarizing the stormwater flow conditions at the required easement location. Upon review of this information you will see that the improvements shown within the proposed easement actually improve the existing runoff conditions by a significant reduction in peak flow at that location as well as creating a more controlled condition with the installation of both a permanent concrete endwall and energy dissipater (rip-rap) apron.

We have analyzed this condition under two design storm events, the 10-year and 50-year storms. The 10-year storm is what is required by PennDOT and the 50-year storm is what is required by Township regulations.

In summary, the pre-developed versus post-developed peak runoff to the easement location is as follows:

Design Storm	Pre-developed Flow to Ex. 15" Pipe (CFS)	Post-developed Flow to Ex. 15" Pipe (CFS)	Reduction in Flow to 15" Pipe (CFS)	Pre-developed Flow to Ex. 18" Pipe (CFS)	Post-developed Flow to Ex. 18" Pipe (CFS)	Reduction in Flow to 18" Pipe (CFS)
10-Year	28.13	15.72	12.41 (44%)	10.35	0.03	10.32 (99%)
50-Year	54.19	30.26	23.93 (44%)	10.35	0.04	10.31 (99%)

In addition to the reduction in peak flow, we are proposing to install an energy dissipater (rip-rap) apron that is designed per Pennsylvania DEP requirements to reduce the velocity of the stormwater as it leaves the pipe, thereby reducing the potential for erosion. Since there is no such condition today, and much of the runoff overtops the road creating a high potential for erosion, this improvement alone makes for a substantially improved condition and will increase the longevity of the entire drainage system in this location. The design velocity of the apron is 9 feet per second (FPS) and the proposed design velocity from the new pipe is 5.6 FPS (37% over-designed).

We trust that this satisfies the concerns of the Park Board and look forward to your support for these improvements to the park land.

Comprehend. Simplify. Consult. Implement.

KEG/DJP
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