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Civil/Environmental/Municipal Engineers/Land Surveyors

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SESI Office—Lebanon, PA

FROM THE DRAFTING TABLE

Steckbeck Engineering & Surveying, Inc. (SESI) presents the second edition of our quarterly newsletter, titled “From The Drafting Table.” The purpose of the newsletter is to share services that we can provide and to convey relevant information which may affect our clients as they consider and begin new projects. This can include anything from changing regulations and new design concepts, to our experiences and lessons learned. It is our goal at SESI to provide our clients with the best service and up-to-date engineering practices that are cost effective solutions for your needs.

CAN YOUR NEIGHBOR VETO YOUR PROJECT?

Imagine finding that perfect piece of land; an investment property that is just too good to be true. Local zoning supports the planned use and configuration; market research suggests your development concept is in high demand; public utilities are readily available at the site; financing is secured; local government favors the project; and best of all, the price is right. All you need is subdivision and land development plan approval and your project will be well on its way to reality.

After months of design, planning, and public meetings your project is close to approval. Then all of a sudden your engineer calls and explains that the Pennsylvania Department of Environmental Protection (Pa DEP) is withholding the requisite National Pollutant Discharge Elimination System (NPDES) Permit (i.e. storm water permit) until you can secure a drainage easement from your neighbor. He explains that concentrated runoff from your property drains across your neighbor’s property, and even though runoff has always drained this way and the project was designed with state-of-the-art storm water management facilities to control the expected increase in runoff from your project, Pa DEP refuses to issue a permit unless you can secure an easement.

Needing this easement to keep your project moving forward, your lawyer attempts to negotiate an agreement with your neighbor that would grant you the easement. Imagine your dismay when your lawyer explains the neighbor has no interest in granting a drainage easement unless you agree to pay a price many times the value of the land that would be encumbered by the easement. In this hypothetical scenario, your neighbor has effectively vetoed your project unless you pay what amounts to a ransom. By paying this ransom you would essentially be securing the right to do something that is already permitted and occurring naturally (i.e. discharge storm water from the high ground to low ground).

Believe it or not, Pa DEP has now imposed a requirement that requires downstream drainage easements, such as the one described above, in conjunction with all General and Individual NPDES permits. They are enforcing this requirement despite the fact there is no specific, enforceable rule, regulation, or ordinance that requires such easements.

Pa DEP’s recent stance on this issue runs afoul of the long-established “**common law or common-enemy rule**” involving the disposition of surface water. The common enemy rule asserts that upland property owners have a right to discharge storm water onto and across lowland property. An owner of higher land is under no liability for damages to an owner of lower land caused by water which naturally flows from one level to the other, and he can, at least in the development of urban property, improve his land by regrading it or erecting buildings thereon without legal responsibility for any consequent diversion of surface waters from his property to that of adjoining or downstream owners, it being recognized that the changes or alterations in the surface of his land may be essential to the enjoyment of his property.

**Civil and Municipal Engineering * Water and Wastewater Engineering * Subdivision and Land Development Planning
Geographic Information Systems (GIS) * Construction Administration and Inspection * Land Surveying**



Mountain Stream Village—Bethel Twp.



Greystone Crossing—N. Cornwall Twp.



Flanagan Road Bridge—Jackson Twp.

Courts have upheld this “common law” for decades. More recently, courts throughout the nation have adopted the “**reasonable use rule**” as a basis for court decisions involving surface water disputes. The reasonable use rule presents an alternative to the common enemy doctrine. It allows a landowner to make “reasonable” alteration to the drainage pattern of his parcel, with liability only occurring when such alteration causes “unreasonable” harm toward neighboring parcels.

Pa DEP’s recent mandate, which requires upstream property owners to acquire drainage easements from downstream property owners as part of the NPDES permit authorization process, challenges both the common enemy and reasonable use rules in that it removes the upstream property owner’s inherent right to discharge storm water onto and across lowland property. The upstream property owner’s right to discharge storm water across lowland property is commonly referred to as “**prescriptive easement.**” A prescriptive easement is established by adverse, open, notorious, continuous, and uninterrupted use of land for a period of at least 21 years (Gehres v. Falls Township, 948 A.2d 249 (PA Commonwealth Court, 2008)). The fact that the upstream property owner chooses to improve his land by erecting buildings, roads, and the like is irrelevant and does not negate an established prescriptive easement so long as the land is improved in accordance with local rules and regulations.

There is no doubt that Pa DEP’s position on this issue will be challenged. We believe such a challenge would ultimately be upheld by the courts. In the meantime, you should be ready to defend your rights as a landowner and developer.

Erosion and Sediment Control Best Management Practices Manual

The current Erosion and Sedimentation Pollution Control Manual was last published in April 2000 and is 171 pages in length. This document provides guidance for designers when developing an erosion and sedimentation pollution control plan for a project involving earthmoving activities.

The Pennsylvania Department of Environmental Protection recently issued a draft of the revised Manual for review and comment by the public. The draft Manual is 568 pages in length and can be viewed at the following link:

http://www.dep.state.pa.us/TechnicalGuidance/Draft_technical_guidance.asp

The purpose of this guidance document is to tell those engaged in earth disturbance activities and in the preparation of erosion and sediment control plans (E&S Plans) how to comply with rules and regulations in 25 Pa. Code Chapter 102.

Please contact our office should you have any questions as to how this may affect your future projects.



Project Profile: Water Distribution System SCADA Borough of Cornwall Municipal Authority

WORK INCLUDED: Existing System Study, Needs Analysis, SCADA System Configuration, Project Manual Preparation, Bid Phase Services, Contract Administration and Construction Inspection
TOTAL PROJECT COST: \$166,410 **COMPLETION DATE:** January 2010



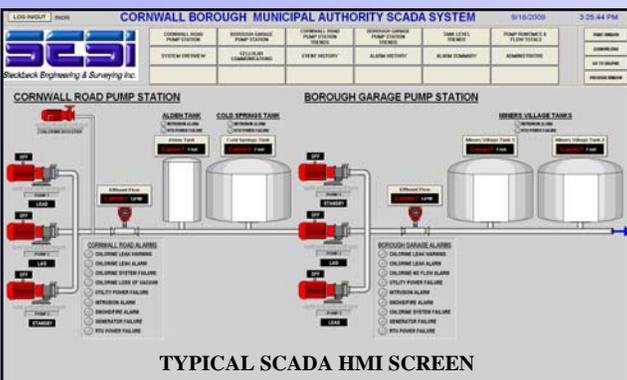
COLD SPRINGS WATER STORAGE TANK

This project, located in the Borough of Cornwall, Lebanon County, PA, involved the replacement of an outdated telemetry system which controlled Authority’s water distribution system. The Authority operates two pump stations and four water storage tanks located at five distinct sites within the Borough. The old telemetry system used leased copper phone lines and obsolete telemetry equipment which was subject to frequent failure during thunderstorms. The next failure would result in the operators having to provide round-the-clock monitoring and manual control of the system until a new control system could be installed. The Authority desired to eliminate the high monthly line lease costs and install state-of-the-art electronics to control their water distribution system.

SESI provided start to finish services to the Authority including preparing a combination of performance and material specifications tailored to meet the Authority’s specific needs, advertising and bidding the project, and providing construction administration services. Due to the unique nature of SCADA related projects, they in some ways resemble design build projects since no one vendor’s products are identical. In order to achieve the desired end product, clear and concise communications are needed amongst client, contractor and engineer. SESSI facilitated these necessary communications during the construction, installation and certification phases of the project.

The results of a radio survey showed that the hilly terrain and locations of the five sites did not support the use of a spread spectrum radio system so five cellular radio based Remote Terminal Units (RTUs) were installed. Two of the RTUs were installed in the pump stations and included 8 inch color touch screen Operator Interface Terminals (OITs), PC Based Human Machine Interface Workstations (HMIs) with high level Graphical User Interfaces, Uninterruptible Power Supplies (UPS), backup hard disk drives and related hardware and software. Both pump stations received intrusion alert and smoke alarms for enhanced safety and security. A new chlorine leak detector was also installed in one of the pump stations to replace an older unit and match the existing unit in the other pump station. Three of the RTUs were installed at the storage tank sites and included digital level indicators and related hardware and software. Intrusion alarms for added security and new pressure transducers to monitor the water levels were also installed at the tank sites.

The SCADA system now allows the operators to monitor the entire system from either pump station, including many system parameters that they were previously not able to monitor such as pump phase currents and run times. All system parameters are stored and informative trend screens can be viewed to watch for changes in the system which might indicate



worn pumps, etc. System operation setpoints can be easily adjusted from either location through the user friendly HMI screens. The Authority also added reporting software which automatically records data into pre-configured spreadsheets for the monthly water consumption reports. The operators do not have to perform the mundane task of manually taking and recording readings every day at the same time and can concentrate on other responsibilities.

If you’re considering implementing a SCADA system or desire to learn more about it’s benefits and capabilities, please contact Paul Lutzkanin, P.E.. Paul will be more than happy to assist you.