



# The Clarifier

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MARCH 2016

## Stone Hill Major Sponsor for DBIA Liberty Conference at Sands Bethlehem

Inside this issue:



Stone Hill Contracting is proud to be a major sponsor of the 4th Annual DBIA Liberty Conference, which is once again co-located with the PA AWWA Annual Conference, which this year is being held at the Sands Hotel Casino in Bethlehem, PA on May 11-12, 2016. Stone Hill Contracting, in cooperation with DBIA's Liberty Region, originated this conference four years ago, after Stone Hill's Director of Development, came up with the idea and negotiated an agreement with the PA AWWA Executive Director Don Hershey, to try co-locating the conferences in a way to help promote both the Water Industry and the Design Build

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procurement process. Over the past three years, hundreds of people have taken part in these top notch conferences, and have also been exposed to the various vendors present on the exhibit floor at the conference.

Last year, in cooperation with Blue Scope Steel (parent of Butler Manufacturing and Varco-Pruden Buildings) DBIA added a factory tour to the conference, and this year DBIA Liberty is thrilled to offer a tour of the Victaulic Factory in Forks Township (Easton), PA. Join DBIA, as they take a tour of the factory, where the leader in pipe joining manufactures their products, and witness their testing procedures where their grooved joint fittings are tested.

Special points of interest:

- DBIA Conference
- PVSC Clarifier Project Reaches Completion
- Victaulic Plant Tour

DBIA Liberty is also pleased to offer the third Annual Conference Networking event at no cost to attendees. This year, working with the PA AWWA Conference Committee, Stone Hill is excited to be sponsoring the networking event at Vision Night Club at the Sands. Live music will be provided by Water Hammer, a group of water industry professionals from the New Jersey Section of AWWA. The event will also feature food and beverages all at no cost to attendees. Wristbands are required for attendance and can be obtained by contacting Stone Hill Contracting's office, or visiting the Stone Hill or DBIA booths on the exhibit floor at the conference.

DBIA Sessions will be held throughout the day on May 12th beginning at 8:15 AM and running through 4:15 PM. Sessions include such topics as the use of BIM for projects, the importance of CPM scheduling, as well as case studies and lessons learned from Contractors and Design Professionals. There will also be a session on introduction to Design Build, as well as an informative panel discussion including a Contractor, Design Professional and Water Industry Owner. Stone Hill's Director of Development, Bob McIntyre will be taking part in one session teaming with Oleg Zonis, PE from D&B/Guarino Engineers, and Rick Lawlor and Lynn Mueller from International Waste Water Systems. The session will focus on Stone Hill's Camden County Municipal Authority Sewage to Heat Design Build Project, where they are taking raw wastewater and using it to generate heat to increase efficiency in the heat loop system at the WWTP. This project is a demonstration project to show how raw wastewater can be used for heating and cooling in commercial and other buildings in an effort to create energy efficiency.

To register for the DBIA Liberty Conference, go to [www.PAAWWA.org](http://www.PAAWWA.org) and register for the PA AWWA Conference. Registering for their conference gets you into the DBIA Liberty conference. Sessions are scheduled to permit attendees to attend sessions for both conferences and move between the two conferences, without any issues. DBIA Liberty does not collect any fees for their sessions, but rather all fees collected are utilized by PA AWWA to promote and run their conference sessions and proceedings. DBIA Liberty's only income is received through sponsorship opportunities. If you or someone you know is interested in sponsoring the DBIA portion of this conference, feel free to contact Bob McIntyre at Stone Hill's office.

# Northeast Philadelphia Project

Venture II has completed the installation of the four hose reels at road A bringing their contract to completion. Nucero Electrical Construction Co. Inc., Stone Hill's electrical subcontractor, continued with the installation of the electrical gear at the pump station. Nucero also completed two key shut downs switching the plant over to a temporary service allowing work to proceed without interruption. The much anticipated plant water pumps arrived at the end of December allowing Stone Hill Contracting to hit the ground running in the new year.

Jack Pears Inc., Stone Hill's demolition subcontractor, started off the new year with the removal of the existing plant water piping, from the west well to the east strainer clearing the way for Stone Hill forces to begin with the installation of the new 36" plant water main header and pumps #1 & #2. The installation of the 36" knife gate valve tipping the scales, at almost 5,000 lbs. provided a unique challenge due to the limited overhead access but nevertheless was installed successfully without incident.



Looking forward to Spring, Stone Hill continues with the installation of plant water pumps #3-#5, dilution water pumps #1-#3, two strainers, along with the associated piping and valves. Jack Pears will return for the removal of the last two existing pumps and piping bringing their contract to completion. Nucero Electric will also have a busy schedule as the new electrical gear is put on line in three separate phases.

## OCUA Area-Wide Clarifier Rehabilitation

The contract award for the Ocean County Utilities Authority Area-wide Clarifier Rehabilitation project was received in December, with contracts being finalized in early February 2016. A flurry of activity has taken place in the office as contracts and submittals will be completed so that fabrication can begin on the equipment which is to be installed in the fall. There will be a pause in activity over the summer until equipment fabrication is completed, and then things will get busy again as this project includes the replacement of 5 clarifiers, at two different locations.

Along with the mechanical equipment to be replaced, this project also involves extensive concrete coatings and rehabilitation, as well as the installation of manholes and yard piping. Stone Hill is excited to renew the relationship with some of our existing partners at the Ocean County Utilities Authority, as well as continue to build on the strong relationships with Envirodyne Systems (Clarifiers) and MBE Mark III (Electrical).

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## Passaic Valley Clarifier Project is Complete

The PVSC final clarifier modifications project has reached completion. The scope of the work was to remove old clarifier equipment and upgrade with new clarifier equipment. There were a total of 12 tanks and each tank housed three clarifiers for a total of 36 clarifiers. All clarifier equipment was supplied by Envirodyne Systems.

Along with the clarifier equipment, all reaming steel in the tanks was sand blasted and repainted, which was performed by Aulffo Painting. Stone Hill installed 12 new chopper pumps (Vaughn Company), 12 new scum pumps (Netzsch Pumps), 2000LF of new DIP, a new seal water system (Geiger Pumps), 32 new control panels (Essex Engineering), two new Nocardia pumps, a chopper pump (Landia), and an ABS pump (Reiner Pump Systems.) MBE Mark III Electric was the electrical subcontractor.



## Phillipsburg WWTP Pre-Engineered Metal Canopy

Stone Hill Contracting was asked to assist Bellwether Construction (supplier of pre-engineered metal buildings) in erecting a Varco Pruden Buildings canopy in Phillipsburg NJ. Their normal erection company unfortunately was unable to fulfill the schedule required.

In always trying to give support to those who support them, Stone Hill took on the small project. The canopy is a simple structure measuring 26' x 30' and roughly 15' high. The roof is held aloft by six support columns and four main header beams. The roof consists of 18' panels clipped down to the supporting Z purlins and then having the seams sealed by a seaming machine. The exterior rake and eaves are then capped off with fabricated trim, the low eave gutter and downspouts round out the project.

Stone Hill managed to get the roof completed prior to the Blizzard of 2016 but needed to return to finalize the trim work. It was an interesting change in the scope of their standard construction. The hoisting equipment was supplied by Power Pro Rents of Flemington NJ.



## Warren Township WWTP

As the submittal process draws to a close and Stone Hill moves on site, their first order of business will be to construct a cantilevered slab over the existing UV structure. Once complete, they will install the new Fiberglass Enclosure, supplied by Shelter Works, and begin installing the new UV Disinfection System, Supplied by Trojan Technologies.

The next stage of the project will be to demolish the existing Oxidation Ditch & Clarifier Equipment in Process Tanks No. 1 & No. 2 and install new equipment supplied by Envirodyne Systems. The installation will be phased, allowing one tank to remain in operation at all times. The existing access bridges will also have all new grating and handrails, supplied by Pleasant Mount Welding, installed.

Stone Hill's electrical subcontractor, MBE Mark III Electric, Inc., will perform the electrical work associated with the new equipment installation.

## Bayshore Niro Incinerator Project

Work continues at the Bayshore Regional Sewerage Authority. The concrete flood walls around the perimeter of the two incinerator buildings have been completed and Stone Hill is shifting its focus to the mechanical installations. The mechanical side of the project consists of the installation of several vessels ranging in size from 18' long to 42' long and weights as light as 3,500LBS. and up to 55,000LBS. Planning was key because each vessel was to be placed in an existing building with limited space available to maneuver and install the equipment. The next big items for Stone Hill will be to install the gas duct and structural steel and grating.

Alongside Stone Hill, their subcontractors, including IFCO, MBE Mark III, Cooper Plumbing & Mechanical, TT&T Painting, and CMU Construction help maintain a busy yet productive jobsite. Currently MBE is removing some of the existing panels and MCCs. In the next few weeks, MBE will be working to install the new MCCs, conduits, cable tray, and panels to bring the new incinerator equipment to life. TT&T Painting has been working on giving the building a face lift by painting the process areas in the Niro and Dorr Oliver incinerator buildings. They will also handle the painting of the process piping and the two control rooms in the incinerator buildings. Industrial Furnace Company is nearing completion of the restoration of the refractory in the Niro incinerator. They are looking forward to demobilizing in the next couple of weeks. Cooper Mechanical is just beginning their scope of work which is to include, gas and oil trains, emergency shower, tepid water heater, seal water units, and various piping. CMU Construction is nearing completion of their scope of work with the installation of the brick above the new flood walls. It is anticipated, the incinerator will be up and running this spring, and project completion will be in early Summer.



# Wanaque South Pump Station

Built in 1986, The Wanaque South Pump Station furnishes water from the Pompton River to supply water to the Wanaque Reservoir through six (6) 2000 HP, 50 MGD Vertical Pumps. The Pump Station also contains two (2) additional pumps that supply water to the Passaic Valley Water Commission's water treatment Plant. Stone Hill Contracting, teaming with Keystone Engineering Group, Kleinfelder Engineering and Spark Electric began the design portion of this Design Build project in late December. The work includes two (2) new variable frequency drives, as well as three (3) reduced voltage starters, modifications to the six (6) existing Ampgards, replacing the lighting in the pump station, modifications to the control system and the replacement of the six (6) 2000 HP vertical turbine pumps.

It is anticipated that onsite work will commence in June 2016 with demolition work on the pumps and electrical gear, and completion should be in May of 2017. While the pump station will be shut down during July and August as per the permit requirements, work outside of those months will be phased in an effort to assure continued water supply to the reservoir. Stone Hill is thrilled to once again be working with the staff at North Jersey District Water Supply Commission.

## Camden County Design Build Project

Can sewage be used for heating? Why not? This design build project is ground breaking and one of only a few in the country to use the heat from raw sewage to assist in producing warmth in Camden County Municipal Utilities Authorities buildings during the cold winter months and eventually cooling in warm weather months. The main equipment that will accomplish this transfer of heat from the sewage to Glycol loops was supplied by International Wastewater Systems. This equipment came in sections of skid units assembled in a shop and then shipped broken down to be assembled in the field. The equipment includes a heat pump, grinder pump and strainer, automated valve loops, control panel, and a heat exchanger.



Sherwood Logan supplied the grinder pumps that were installed in the influent channels of the plant to provide the heating system with what it needs, sewage! Stone Hill installed the equipment, pumps, and piping, while Scafco Electric took on the task of all the electrical work. At press time this system will be up and running and expected to provide good results for future installations to be sought out by many others. Special thanks to DB Guarino Engineering, Camden County Municipal Utility Authority, as well as the subcontractors who made this project possible.

## North Jersey District Water Supply Commission Lagoon Decant Tower Project

The North Jersey District Water Supply Commission (NJDWSC) owns and operates the 210 mgd Wanaque Reservoir Water Treatment Plant (WTP) which supplies water to more than 3 million people in northern New Jersey. Sludge generated during the treatment of raw water is thickened and dewatered in the Residuals Treatment Facility (RTF). However, a portion of the sludge is directed to a 10 acre lagoon via overflow from an equalization tank. The lagoon also receives thickener supernatant and filter press filtrate from the RTF, as well as stormwater runoff, and flow from the RTF building sump and storm drains. The lagoon is regularly dredged and the dredged material is pumped from the lagoon to a holding pond. Settled sludge is then pumped from the holding pond to a centrifuge for dewatering. Centrate from the centrifuge and overflow from the holding pond are both conveyed to the lagoon.

Decant from the lagoon is discharged through a decant tower to the Wanaque Reservoir via an outfall, as authorized by New Jersey Pollutant Discharge Elimination System (NJPDES) permit. A lagoon overflow structure also discharges to a tributary of the Post Brook by another outfall. The lagoon discharge to either the Wanaque Reservoir or to the tributary of Post Brook must comply with effluent limitations stipulated in the NJPDES permit.

The WET effluent limit is based on 55% survivability of the test organism Ceriodaphnia, a type of water flea. This project is a Design Build project specifically to assure compliance with this requirement both currently and into the future. Teaming with Kleinfelder and H2M Engineers, Stone Hill has begun the analysis and study portions of this project, with Kleinfelder taking the lead on studies in an effort to narrow down options for the assurance of a successful project. Once the studies are complete, H2M will take the lead for the design as Stone Hill moves forward with the construction operations. This project looks to be somewhat of a challenge, but also offers numerous options for how to successfully carry out the completion of the project.

# Industry News

## Design-Build Delivery in the Water Sector—A Trend Whose Time Has Come

Water sector interest in non-traditional construction procurement methods has grown substantially over the past decade. Aging systems, regulatory issues, and capacity demands are requiring public and private water utility owners to employ delivery methods that provide quicker delivery times and higher quality solutions and results, as well as earlier knowledge of construction costs. Owners are more often turning to alternative delivery approaches, including design-build.

Design-build is not new. History's earliest projects were designed and built by master builders. Industrialization brought about the specialization of engineering/design and separation of design from construction. But the trend in water and wastewater utility capital project execution is moving once again toward the "master builder" concept where one party is completely responsible for design and construction under a single contract. The key aspect of design-build is that the owner has a single point of responsibility for design and construction, which speeds project delivery, saves time and money, and reduces litigation and claims.

### Trending Up

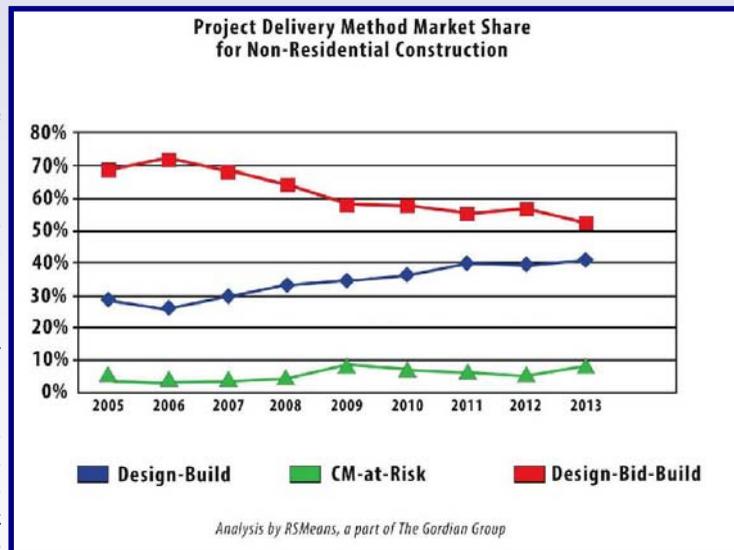
As utility owners use design-build to deliver water and wastewater projects, the Design-Build Institute of America (DBIA) is seeing an increasing demand for specific training and materials. In response, DBIA has released best practices for design-build in the water/wastewater sector (available at [dbia.org](http://dbia.org)) and is working with industry partners like the American Water Works Association (AWWA), the Water Environment Federation (WEF), and the Water Design-Build Council (WDBC) to continue the ever popular Design-Build for Water/Wastewater Conference.

Design-build has shown significant growth in the U.S. market, RSMeans, a part of The Gordian Group, recently published a report showing design-build market share has been holding steady at 40 percent since 2011. This represents an increase of 10 percent in the use of design-build since RSMeans first captured the data in 2005.

The use of design-build in the water sector is lagging behind other infrastructure sectors such as transportation. The Florida Department of Transportation District 7 worked with the Federal Highway Administration Florida Division and developed a design-build framework for using federal highway safety funds. Ultimately, the design-build framework allowed the district to reduce the time it takes to deliver simple or low-cost safety improvements from 3 to 5 years down to just 3 to 9 months.

In the water sector, progressive design-build is a delivery method that is gaining in popularity and is a trending topic today. In this delivery method, the design-builder is selected based on qualifications. The proposer's experience, expertise, resources, and understanding of the project are evaluated. Price is not considered in the initial selection of the design-builder. Once the design-builder is selected, the project proceeds in two phases. Phase one involves developing the design in collaboration with the owner and advancing it to a point where the guaranteed maximum price can be agreed upon.

During the second phase, the design is completed, buy out bids are solicited and received and construction takes place. Progressive delivery is being used more and more by water and wastewater agencies because it provides owners with more control over the design and assures that owners get what they want.



Continued on Page 6

# Design-Build in the Water Sector *(continued from page 5)*

We are seeing a shift in how the construction industry is organized. There are now large, integrated design-build firms that are aggressively pursuing projects in the U.S. and abroad. General contractors are retooling their capabilities to provide design-build services. Engineering firms are enhancing their capabilities on the construction side.

The firm delivering design-build services today focus on innovative technology and out-of-the-box thinking to generate solutions that can differentiate them. In design-build, solutions are not limited to traditional ideas. The best solution for the project at hand is always first and foremost. As ideas are generated, teams work as one to scrutinize them so owners are ensured the best design, means and methods, materials, costs, schedule, and more. With a Guaranteed Maximum Price (GMP) approach, this is all accomplished with open-book, full transparency. Owners will see more options, make better-informed decisions, and obtain better value.

## Successful Applications

An example of innovative technology application using design-build delivery is DC Water's Blue Plains Advanced Wastewater Treatment Plant biosolids reuse program. Originally, the utility pursued a design that used anaerobic digestion—a process that would have required 10 large, egg-shaped digesters, which would be an expensive, energy-intensive solution. After thorough evaluation, DC Water settled on a design-build approach to reduce the likelihood of unexpected costs. Using a thermal hydrolysis process (THP) would also reduce the size of the digesters needed by 50 percent, lowering construction costs and making the project more affordable. Obtaining a fixed price for the \$215 million project gave DC Water the certainty to move forward with the detailed design and construction. The design-build team also developed an alternate approach to design and construction of the digester building, which shaved several months from the delivery schedule. Reduced biosolids hauling and onsite power production are expected to reduce the facility's greenhouse gas emissions by 40 percent. In addition to reducing waste, generating energy, and improving air quality, the project will save taxpayers an estimated \$20 million annually—\$10 million in power savings and \$10 million in reduced sludge disposal costs.



Innovative thinking is also a design-build derivative. The effluent filter upgrade and expansion project recently completed by the Charlotte-Mecklenburg Utilities Department (CMUD) at its McAlpine Creek Wastewater Management Facility, winner of the DBIA 2015 Design-Build Project Team Award, is a good example of out-of-the-box thinking. CMUD desired to have greater control by being an involved and integral part of the design-build team through collaboration, communication, and development of technical solutions. Throughout the development of the GMP, the owner wanted to add scope to the project, thereby adding cost. Increased collaboration through the design-build process allowed the contractor to present each item in an a la carte list so CMUD could decide what was critical and what could be cut. Using the strategy of open collaboration, the project was completed under the GMP, allowing CMUD to include additional scope items. In short, all parties were partners on this project, and challenges and issues were dealt with as partners.

## Future Prospects

Certain questions arise as the popularity and use of design-build delivery continues to grow in the water space. Should design-build dominate the construction market? Will distinct design and construction companies become the exception, not the rule? As evidenced by the growing number of design firms that are creating construction holdings, there is already a consolidation of design and construction firms to provide integrated design-build services. Will state and local legislation fully support the use on design-build? Time will tell, but it appears that design-build is a sustainable trend into 2016 and beyond.

## About the Author



*John A. Giachino, DBIA, is co-chair of the Design Build Institute of America Water/Wastewater Markets Committee. He has served twice as president of the DBIA Florida Region and currently serves as Director of Business Development for PC Construction Company, a leading design-build construction firm.*

*Stone Hill thanks John for allowing them to reprint this article as part of The Clarifier newsletter.*

# PA AWWA/DBIA Annual Conference Event—Tour the Victaulic Water Plant

In conjunction with the PA AWWA Annual Conference on May 10-12, PA AWWA and the Design Build Institute of America (DBIA) have partnered with Victaulic of Easton, PA, and arranged a plant tour to go behind the scenes for an inside look at the world's innovator and leading manufacturer of mechanical pipe joining solutions. Whether you are a building owner, contractor, distributor or engineer you are encouraged to discover firsthand how Victaulic is working to provide comprehensive and innovative solutions that drive growth and impact your bottom line. Visit their world class foundry and manufacturing facilities in Easton, PA where you will see how they've implemented lean manufacturing techniques, quality control practices and a vertically integrated manufacturing model, controlling every step of the manufacturing process.

The trip, which is free to registered Conference attendees, will be held Wednesday morning, May 11th. Bus transportation and lunch will be provided. It is anticipated that attendees will return to Sands Casino (Bethlehem), in time for the afternoon sessions. Reservations for this trip will be required so that ample transportation and food can be provided.

For more information or to reserve your spot, please contact Bob McIntyre at [RKMclntyre@StoneHillContracting.com](mailto:RKMclntyre@StoneHillContracting.com) or 215-340-1840.



## Water Service Professionals, Inc. (WSP-US.com)

After nearly 25 years at Roberts Filter focusing on finding client driven solutions to the challenges faced by water treatment industry engineers and operators, Andrew Taylor has established a new water/wastewater filter optimization company called Water Service Professionals (WSP). Not a manufacturer's representative, WSP's mission is to provide clients with unbiased and independent solutions relative to the piloting, operation and maintenance of water and wastewater filters by partnering with service oriented small businesses around the country.

As President of WSP, Mr. Taylor will utilize the experience and relationships he has established during his tenure as Roberts Filter's National Sales Manager to coordinate partner company capabilities with the specific needs of water industry professionals.

WSP will be focused on filter inspections and optimization, pilot testing and infrastructure maintenance/compliance. Through their existing relationships, they will support public and private utilities, engineering firms and contractors by providing expertise and experience in niche' service areas such as filter plant audits in preparation for FPPE or CPEs, filter evaluations/inspections, filter asset management plans, pilot studies, and emergency service.



## Upcoming Water For People Events

**May 10-12, 2016—PA AWWA Conference Water For People Silent Auction.** The Sands Casino, Bethlehem, PA.

**May 25, 2016—Beer Tasting Benefitting Water For People.** Station Tap House, Doylestown, PA. 5:00-7:00 pm. For more information, please contact Jessica O'Hara at 215.340.1840.

**Summer 2016—Coach Bag Bingo.** American Legion Post, Doylestown, PA. More information to follow.

**July 21, 2016— Water For People Night at the Ball Park.** Pittsburgh Pirates vs. Milwaukee Brewers @ 7:05 PM. For more information, please contact Rachael Beam at [R.Beam@GAIConsultants.com](mailto:R.Beam@GAIConsultants.com)

**August 15, 2016— 9<sup>th</sup> Annual Water For People Charity Golf Outing.** Sandy Run Country Club, Oreland, PA. For more information, please contact Bob Corvino at 215.340.1840.

**November 2016—11<sup>th</sup> Annual Water For People Gala Hosted by Stone Hill Contracting.** William Penn Inn, Gwynedd, PA. More information to follow.

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*Address Correction Requested*



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**Established in 1981, by Samuel A. Mott, Stone Hill Contracting is proud of their heritage, and their commitment to excellence. Throughout their decades of service, the employees and management of Stone Hill Contracting have prided themselves on their reputation of meeting or exceeding the needs of their clients. Specializing in water and wastewater treatment facilities, Stone Hill has performed work throughout the Mid-Atlantic region from Virginia to Northern New Jersey.**

**Although the majority of their work over the years has focused on the treatment plant field, they have also completed bridge and water control projects. With a client base mostly in the industrial and municipal markets, Stone Hill is proud to have numerous repeat clients, who have found Stone Hill's teamwork concept of working with the Owner, Design Engineer, Suppliers and Subcontractors, to be beneficial to all involved parties. Stone Hill's management team feels it is necessary for all parties to benefit in order to have a successful project.**

**We're on the web at:  
[www.StoneHillContracting.com](http://www.StoneHillContracting.com)**

**Watch for the next issue  
of the *Clarifier* coming in  
June 2016**