DEEP STORM WATER DRAINAGE SYSTEM SUCCEEDS DUE TO HIGH PERFORMANCE PIPE

Material Cost Savings Also Realized for Expansion of Busiest Intersection in Chandler, Arizona; HP Pipe Now Accepted Standard

CHANDLER, Ariz. - To help control costs and meet the requirements for the deep burial of a road expansion's new storm water drainage line, a highly-engineered corrugated pipe from Advanced Drainage Systems, Inc. (ADS) (NYSE: WMS) was used here. The HP pipe is designed and manufactured to handle heavy dead and AASHTO designated live loads without any additional bedding or special fill. More than 1,840 feet of the pipe was used in diameters ranging from 12 to 60 inches. In one area, the 60-inch diameter corrugated pipe is covered by 21 feet of fill. The project was originally specified to use rubber-gasketed reinforced concrete pipe (RCP),

The $4.5 million road project widened the intersection of Dobson Road and Chandler Boulevard, the main thoroughfare in the city that has a weekday daily traffic load of more than 40,000 vehicles. Standard Construction Company, Inc. (Avondale, Ariz.) was awarded the contract to reconstruct the intersection that included dual left turn lanes, a third auxiliary through lane, right turn lanes, bike lanes, bus pullouts, the storm drain, water line, new traffic signals, streetlights and landscaping. Now a total of six lanes, it was completed in January 2011 and used $2.3 million in federal stimulus funds provided by the American Recovery and Reinvestment Act.

"This was the first public right-of-way project in Arizona for the use of our HP pipe," said Tori Durliat, director of marketing for ADS.

"The independent engineering evaluation and discussion of this product was instrumental in achieving the approval for the HP pipe which can now be specified for right-of-way road work in the City of Chandler. The project was value engineered from concrete pipe to HP and represents a savings of some $20,000 for the 1,840 feet of pipe required."

Steve Sutton, president of Standard, explained, "Up until now, the city standards specified concrete pipe as the approved material. They didn't typically allow HDPE pipe or this new high performance product from ADS. The Chandler road project was originally designed with concrete pipe, but there was an interest in finding out more about the ADS pipe. We proposed it as a valued engineering product which saved them about 10 percent of the cost of the pipe portion of this project."

The selection of the ADS pipe was reviewed by Engineering and Environmental Consultants (Tucson, Ariz.) - EEC - a civil and environmental engineering firm. According to Carrie Cote, P.E. project manager at the firm, "The ADS pipe was presented by the contractor as a different product that would serve in purpose and strength and capability comparable to RCP. The contractor - Standard - presented it to the city as a viable alternative that would also save some money. The city wanted to make sure it satisfied their specifications so we got involved, reviewed it and approved that type of pipe."

A prefabricated section of ADS HP pipe is put in place for the road expansion project.

Well known for its corrugated high-density polyethylene (HDPE) pipe, ADS manufactures High Performance HP corrugated pipe from an engineered grade of polypropylene resin. Designed and manufactured to be used in installations with less than ideal conditions, 12 inch through 24 inch diameters are made with dual wall construction. Larger diameters of 36 through 60 inches have triple wall construction and are also available in dual wall. The 30-inch diameter HP pipe is available in dual-wall and triple-wall, which was used for this project.

The ADS manufacturing process provides the pipe with a smooth interior and a corrugated exterior wall, supported by a honeycomb structural core for improved stiffness and greater beam strength which minimizes deflection and enhances long-term performance.

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The ADS HP 30 - 48-inch size range pipe is available in 20- or 13-foot lengths, while the 60-inch is available in 16.3-and 20-foot lengths.

Diameters from 12 to 30 inches meet ASTM F2736 and are made with dual-wall construction to provide performance ratings that exceed many industry standards for gravity-flow sanitary sewers.

All HP sizes are watertight, exceeding the requirements of ASTM D3212 with dual gaskets and banded reinforced bell. Additional specifications, installation data and other information can be found at www.ads-pipe.com.

Burial depth for the pipe used at the Chandler Road project was specified at 18 feet for the retention basin to a minimum of three feet at collection points. At some points the bottom of the pipe was 26 feet deep. Backfill was aggregate base course (ABC) and Class II backfill of sand & rock.

According to Sutton, "The pipe had to perform in deep and shallow depths. The HP is rated to meet AASHTO H-25 load requirements and the various ASTM standards, so there was total confidence in the long-term reliability."

According to Steve Blake, operations manager for Standard, "Chandler wanted the high performance pipe because of the deep burial depths. Even though we were down so deep, we didn't have to make any special arrangements for bedding or compaction, but the engineer did want a little more bedding than the manufacturer's recommendation. We ended up going with gravel instead of slurry to

the spring line and then went gravel to a foot above.

"We were able to move the pipe sections a lot faster because of the longer lengths of pipe and the concrete is a lot heavier to move around. The ADS pipe is maneuverable because it is lighter and you can lay the pipe with smaller equipment.

"It was our first experience with the high performance pipe, but it's virtually identical to their HDPE pipe which we have used quite a bit," he continued. "The HP installs the same as the ADS corrugated black HDPE pipe. The fittings just snap together and we didn't have to do anything special with the fittings. The ADS pipe is more forgiving as far as relocating it because you could cut it and shorten the length or change the location of where you put the pipe and you don't have to use a crane. The concrete pipe requires more time, more manpower and heavy equipment and you have more sections and install it in small eight-foot increments so it's naturally a slower process."

"As for the future of the HP pipe," observed Sutton, "there is a time and a place for everything. For this application at the busiest intersection in Chandler, it worked really well and I'm sure the city will use more of it in other places also. We're looking forward to using the HP pipe again."

ADS serves the storm and waste water industry through a global network of 61 domestic and international manufacturing plants and 31 distribution centers, offering a complete line of water management products, accessories and various geotextiles.

For more information call ADS (800) 821- 6710, go to www.ads-pipe.com or contact any local ADS office.

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For the deep burial of a road expansion's new storm water drainage line, highly-engineered corrugated pipe from Advanced Drainage Systems was used. The ADS HP pipe is designed and manufactured to handle heavy dead and AASHTO designated live loads. "Nesting" the different diameters of pipe reduced shipping costs and time.

The ability to easily install the ADS HP pipe enabled the crew to fit the new storm water drainage line under existing pipes. In one area, the 60-inch diameter corrugated pipe has been covered by 21 feet of fill.