

Slipforming the coping, a 2-foot by 2-foot block of concrete (.6 by .6m) on the bridge, was a big deal for state DOT officials and the general contractor. This was going to make or break the job, says Brant Anderson of Triple B Concrete of Cedar City, UT

# A Need for High Production Creates 5700-B Opportunity

A Power Curber 5700-B is slipforming "coping" applications atop Mechanically Stabilized Earth (MSE) walls that are used in bridge construction.

The machine, owned by Triple B Concrete of Cedar City, UT, was recently used on an Interstate 15 interchange in Washington, UT, in the southern part of the state, to cap the top of the retaining wall.

Utah Department of Transportation officials, the bridge contractor, Adams & Smith Inc. of Lindon, UT; and Triple B understand that the unusual application is a first-time event for their area.

Triple B worked as a subcontractor for Adams & Smith Inc., who builds bridges throughout the western United States and as far east as Louisiana.

Brant Anderson of Triple B said that the slipform application was a big step for the company, since Triple B had not previously done barrier work.

"Adams & Smith couldn't have met the deadline hand forming it," he said. "There was just a ton of it on this job. It would have taken more than 35 working days to complete all of the coping. This would have put them way behind."

The coping application is actually a cap that is 32 inches high (81 cm) and 2 feet wide (6m), creating a block of concrete on top of the 5- to 40-foot high wall (1.5 to 12.2m) that is installed in sections. Because of varying heights, the cap gives the top of the wall a smooth, finished look, instead of the zig-zag effect created by the





panels.

Travis Farr, project manager for Adams & Smith, said that the company usually hand forms the coping but couldn't do it with this bridge because of the tight schedule.

"This was definitely a lot faster," he said. "If we had a really good day hand forming with a big crew (6 or 7 men), we could do 100 feet (305m)," he said. "With the machine, we poured 1,000 feet (305m) in one day." Triple B finished the 4,000 feet (1,220m) in 4 days. The machine poured really well and the end result "looks a hundred times better than hand forming," he said.

Garn McNeil, project superintendent with Adams & Smith, described the time savings as the difference between 40 man hours to do 100 feet (30.5m) by hand, compared to 60 man hours to do 1,000 feet (305m). He emphasized that the project was a group effort involving his company, Triple B, and the Utah DOT to make sure that the new system would meet specs.

"What we have now is a pretty slick system," said Garn. "We're definitely on to something."

MSE walls have been on the construction scene for about 10 years, he said, and are becoming more and more popular. All of them require coping.

A Salt Lake City coping project poured by hand has cracked and is not as straight or flat, he said.

"With the machine, you can do a big sweeping curve, both

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Photo shows the coping application (right) atop the Mechanically Stabilized Earth (MSE) wall and the constant-slope parapet (center). Both applications were slipformed with the 5700-B

42-inch (106.6 cm) constant-slope parapet on the interchange bridge



Photo by Mike Kelley, Regional Sales/Service Manager

The three "Bs" in Triple B Concrete are Bill Blake, center, operating the machine; and his two sons-in-law, Brant Anderson, left, and Shawn Barnson. The guys operate the machine themselves.

Triple B Con.

Photos by Triple B Concrete, Cedar City,



Power Curbers, Inc. PO Box 1639 Salisbury, NC USA 28145-1639 704-636-5871- www.powercurbers.com



The 8700 passes over the rebar reinforcement being inserted into the upstream face of the dam

The five-year project to construct the Dan Dam in Thailand has passed the half-way mark, with 55 m (180 feet) of risers slipformed by early fall of 2002. The project began in November of 1999 and is scheduled for completion in late fall, 2004.

Four Power Curber 8700 multi-purpose machines are being used to slipform the risers. At this stage in the project, the 8700 that is slipforming the risers for the upstream face has to pass over the rebar reinforcement, located between the mold and the machine. In order to accomplish this, the mold has been offset 85 cm (33.5 inches) from the machine crawler. A basket has been attached to the mold for the finisher working on the outside of the riser.

The downstream risers create steps that finishers stand on to work on the outside of the riser.

A walk-through gallery is being constructed between the upstream and downstream faces. This will allow for early detection of any leakage and control deflection of the wall.

The dam is located in Nakorn Nayok Province, about 120 km (74.5 miles) north of Bangkok.

The dam was initiated by His Majesty the King of Thailand and is owned by the Royal Irrigation Department, Ministry of Agriculture and Cooperation.

The dam will supply water to 296 square kilometers (114 square miles) of an agricultural area in the province.

The dam will be 2,720 m long (8,921.6 feet) with a maximum height of 93 m (305 feet).

The four Power Curber 8700s are slipforming 530,000 m (1,738,400 feet) of concrete. The contractor, CCVK Joint Venture, is using 8 molds for construction of the dam's faces. The interlocking passes vary in width from .3 m (.98 feet) to .7 m (2.29 feet) and in height from .6 m (1.9 feet) to .9 m (2.9 feet). The dam is being built in sections between hills in the rugged terrain.



## **Upstream Face**



(Power Curbers, Inc.'s dealer in Thailand is Italthai Industrial C. Ltd., Samutsakhon, 66.34.834.577-89, or e-mail itihed@ksc.th.com).



This photo shows a portion of the walk-through gallery being constructed between the upstream and downstream faces. When complete, the dam will rise to the crest of the hill shown in the background





The downstream face (top photo) is stepped. The interlocking passes vary in width from .3 m (.98 feet) to .7 m (2.29 feet) and in height from .6 m (1.9 feet) to .9 m (2.9 feet). Finishers (lower photo) stand on the steps to work on the outside of the wall

The upstream face features a graduated change in the slope (top photo). As the dam moves toward its planned height of 93 m (305 feet), the upstream face becomes vertical. The dam was 55 m (180 feet) in the air when these photos were taken. Finishers (lower photo) work from a basket suspended over the side of the wall and attached to the mold





A key to the high production was the ability to pour out these two concrete trucks at the same time. Brant Anderson of Triple B is convinced that the compact size of the 5700-B, combined with the auger, made this possible

# **Machine Size, Auger Speed Production**

#### (Continued from Page 1)

vertical and horizontal at the same time," said Mike Kelley, sales/service manager for Power Curbers in Utah. "The contractor said that he couldn't accomplish this nice, smooth look by hand."

The mold for the coping is attached to a barrier mounting kit. It is poured over steel, and as it is completed, finishers are lifted to the outside wall in a boom to do their work. Once the coping is completed, the area is back filled and asphalt is placed. Then, Triple B slipformed 42-inch tall (106.6cm) constant-slope barrier along these walls, pouring 375 yards (342.7m) of concrete (2,150 linear feet) (655.7m) in a 7-hour period.

"I knew I wanted to pour two trucks (at the same time) to make this work," said Brant. "With the size of the molds and the stiff concrete not coming out (of the truck) fast, the only way to do it was with two trucks. One truck couldn't feed the machine fast enough.

"There's no doubt in my mind that the 5700-B was the best for this job because of the large hopper, and the machine is small enough, even with stringline under the machine, that you have enough room to pour out two trucks," said Brant. "The auger has the ability to keep up with that volume of mud. That's one thing Power Curbers has over any of the competition.

"It would have cut production in half if we couldn't have poured the two trucks," he said. "All in all, we were successful because we could pour two trucks. The speed - and everything came together on that job.'

'I wanted the project bad because it was high profile. I wanted to be the first in southern Utah to do this type of job.'

#### - Brant Anderson, **Triple B Concrete**

The three "B's" who make up Triple B Concrete are Brant, his brother-in-law, Shawn Barnson, and their father-in-law, Bill Blake.

Bill has been slipforming for 30 years, and Brant and Shawn have 11 and 14 years of experience, respectively. Bill and Shawn generally run the machine. They formed Triple B in 1996, and in the last three years have seen revenues more than quadruple.

The company specializes in

curb, gutter and sidewalk work and bought a 5700-B in 2002 after working with a competitor's machine.

'The reason we went with Power Curbers is because of the service end of it," said Brant. "It was because of Mike Kelley. We figured that he would take care of us. I like the service manager type set-up. Mike was definitely an asset in getting this project done. There was a lot to do to get the coping and barrier molds built and plan the set-up to do the job right.

# **Regional Managers In Place In United States**

Power Curbers, Inc. has worked for the past five years to put together a team of regional sales/service managers who are located throughout the United States and who deal exclusively with slipform machinery.

These experts are factory trained and travel in fully equipped service vehicles. Power Curbers, Inc., as part of its long-range business plan, is committed to keeping service and parts close to its customers and believes that in order to achieve that, its representatives must work exclusively in the slipform industry.

Here is a list of this management team:

### Florida, Georgia, Alabama, and eastern Tennessee:

Brian Larson, sales, and Phil Myers and Gary Shiflet, service. Telephone: 813-610-5303.

E-mail:

blarson@powercurbers.com, gshiflet@powercurbers.com, pmyers@powercurbers.com

### Pennsylvania, Maryland,

Delaware, New Jersey, and northern Virginia: Jay McNally, sales, and Terry Duncan and Steve Carlton, service: Telephone: 301-633-1200. E-mail: jmcnally@powercurbers.com, tduncan@powercurbers.com,

scarlton@powercurbers.com

#### Arkansas, Oklahoma, northern Mississippi, and western Tennessee: Sam Howard,

sales/service. Telephone: 501-351-1801. E-mail: showard@powercurbers.com

### Indiana, Ohio, West Virginia,

Kentucky, and Michigan: Tim Meyer, sales; John Manning, sales/service; and Pete Myers, service. Telephone: 513-226-5598 or 517-927-5630. E-mail: tmeyer@powercurbers.com, jmanning@powercurbers.com

pmyers@powercurbers.com





Phil Myers

Sam Howard

Pete Myers

Randy Wadsworth

Bert Gibson



Jav McNally Terry Duncan

Brian Larson



Tim Mever John Manning





Jeff Davis

Colorado, Idaho and Utah: Mike Kelley, sales/service. Telephone: 801-560-1012. E-mail: mkelley@powercurbers.com

> Southern California, Nevada, and Arizona: Justin Wakeham, sales/service. Telephone: 909-315-3910. E-mail: jwakeham@powercurbers.com

Texas: Randy Wadsworth, sales, and Chris Manire, service. Telephone: 210-410-0996. E-mail: rwadsworth@powercurbers.com

Oregon, Washington, northern California, and British Columbia: Jeff Davis, sales/service Telephone: 206-910-6605. E-mail: jdavis@powercurbers.com

Justin Wakeham



Chris Manire

Illinois, Wisconsin, and eastern Iowa: Bert Gibson, sales/service. Telephone: 815-483-3264. E-mail: bgibson@powercurbers.com.

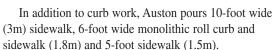
# 'User Friendly' 5700-B Wins Out in Arizona

Curb work is a growing part of the business for Auston Structural Concrete of Phoenix, AZ, since the company bought a Power Curber 5700-B two years ago.

Mike Vogel, who is in charge of the curb machine and machine operator, recommended the Power Curber to the owner, Tom Auston, because of its versatility and the fact that it is user friendly, he says.

He had previously worked on a Power Curber and had watched a competitive machine run.

### See New Machine at World of Concrete



"My boss has complimented us on how well the machine works," says Mike, who has now trained another operator.

Auston specializes in structural concrete and also does flat work, in addition to its slipform work.



'Power Curbers is on top of the competitors, taking care of customers," said Brant. "That's where they're beating the competition. The Power Curbers' sales/service idea is a step in the right direction."

Brant said that Triple B "wants to be out on these big projects. We realized that it had barrier, and nobody within 180 miles (289.6km) of this town had slipped 42-inch (106.6cm) constant slope barrier.

"I wanted the project bad," said Brant. "I wanted to be the first in southern Utah to do this type of work."

After getting the constant slope barrier job, Triple B was called by Adams & Smith about the coping. "They said that they were running into scheduling problems," said Brant. "The whole scheduling was centered around the incentive money. There was no way to make the dates if they poured the coping by hand. They asked, 'Is it possible?' and 'Can you do it?' I said, 'If it can be done, we can do it.'

'Mike and I looked into it. It took three months, putting this together, with Mike, Power Curbers, the U DOT, Adams & Smith and myself. Our reputation was on the line on this one," he said.

"It was a big deal with the state. They had never approved anyone doing this, and this was going to make or break the job. They were either going to make money or lose money."

With that kind of pressure, on the day that Triple B put the 5700-B to work on the coping, inspectors turned out in droves. Brant reported seven DOT officials and the owners of Adams & Smith.

As Mike says: "It went off without a hitch."

Brant calls the slipformed coping a better product, without joints. "The mud is more consolidated," he said. "I looked at a lot that had been poured by hand, and there is no comparison in quality."



The 2700 by Power Pavers, Inc. is a job-proven slipform machine that paves widths up to 32 feet (9.7m), with extensions. It's the machine you need for primary and secondary road construction, residential and inner city paving, parking lots, highway ramps and lane additions.





Photos by Triple B Concrete, Cedar City, Utah