

## Focus Of This Issue:

## Storm Water, Sanitary Sewer, Septic Systems & Structures

### Unusual Challenges Meet the Usual Products

Like a well known national brand name store that proclaims "Yeah, we got that!", A & R Concrete Products of New Windsor, NY has what's needed to supply precast concrete structures when project requirements are routine, or when conditions are unusual or especially demanding. A recent job in Kingston, NY had to be constructed in soil that was unstable and unsuitable due to a high water table.

Using a two pour sequence, A & R cast oversize bases, and then added the 48" riser portion, shown at the rear of the truck above. The projecting base provided additional stability necessitated by the poor soil, by increasing the base bearing area while simultaneously engaging additional soil volume to resist uplift or tilting. Further differentiating this work from other area storm proj-



Storm Manholes, Sewer Manholes, Catch Basins ready to ship to Kingston Armory

ects, the owner (Federal Department of Military & Naval Affairs) called for flexible, watertight connection boots at pipe entries and exits, and a full exterior and interior plant applied coating to further enhance the products' watertightness.

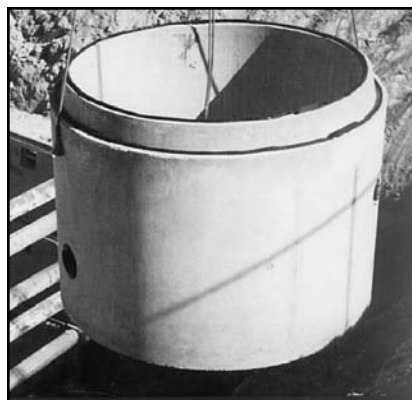
Also visible near the truck middle are eccentric cone sections. The 48" bottom sits on top of the 48" round base unit, and then tapers to 36" at the top. Near the truck front can be seen the more typical (uncoated) rectangular units used as catch basins, to collect surface and street runoff. Pipe openings supplied are normally 8" to 12" for sewers, 18" to 24" for storm piping, and even 24" to 30" in many storm manholes. The contractor for this project was Arris Contracting, Poughkeepsie, NY, with Chris Hanaburgh contributing to the article.

### Environmentally friendly precast manholes

(Reprinted from August 2004 PCANY Newsletter)

Next to water, concrete is the most frequently used and environmentally friendly material on earth according to a recent NPCA Tech Brief in the Summer 2004 issue of Precast Solutions.

Round precast manholes can be core drilled on demand from stock for precise invert locations. They are watertight when installed with proper sealants and gaskets. They have low susceptibility to damage during backfill and they resist buoyant forces better than any other material.



from NPCA Sanitary & Stormwater Release

### Earth Tech Inc. and Stantec Inc. again listed in ENR's Top 200

Professional Member Vollmer Associates advises they have become part of Stantec. Now we can congratulate both Earth Tech and Stantec, each appearing in the 7-2/9 & 7/23-07 Engineering News Record, listing the top International Design Firms and Environmental Firms. Well done!

## Mega Products For Meadowland Project

In the highly popular and ever growing Meadowlands region of Rutherford, NJ, a joint venture of J. Fletcher Creamer & Sons, Joseph Sanzari Construction, and Railroad Road Construction, all New Jersey Contractors, recently completed major roadway, parking lots, and railroad improvements. The mega-size of the site required some super-size special drainage structures in order to efficiently yet practically handle increased storm water flows.

The average weight of the drainage units for this project was 21 tons. Typical inside dimensions were 6 foot by 12 foot by 6'-6", with 12 inch thick walls, base, and roof. To accommodate many opening variations and unique structural requirements, some units were cast with a separate base slab and a monolithic roof slab. Too small to read in the below photos, stenciled on the units is "A & R Concrete Products NPCA Certified Plant". You too should be specifying some form of producer prequalification.



Meadowlands drainage structures, average weight 21 tons, with openings



Meadowlands drainage structures, with diagonal corners to strengthen large openings

Photos by A & R Concrete Products

## Small plants and decentralized onsite treatment of wastewater:

views by the editor

(Reprinted from August 2004 PCANY Newsletter)

The National Onsite Wastewater Recycling Association (NOWRA) reports on their website that 25 - 30% of the residential population and 40% of all new home construction in the US now use some form of onsite waste water (septic) treatment. And here in New York State, officials report 1.3 million households also use septic tank systems.

Septic technology has improved significantly over the past few years and the quality of treated waste water can now surpass the quality of its municipal equivalent. Fortunately the Environmental Protection Agency (EPA) recognizes onsite decentralized waste treatment systems as a permanent and essential element in the nations infrastructure. They are

focusing on the wastewater industry and are encouraging a variety of local, state and private initiatives to do the same.

Ed Pennypacker, who publishes an industry newsletter in Royersford, PA, noted recently that the current system is broken and there is no repair crew available to go out and fix it. It is not like a storm damaged power grid with a mobilized crew waiting to go to work.

Modern onsite systems call for treatment tanks, septic tanks, pump tanks, recharge chambers and other underground structures that don't crack, crush, or break when they get pumped and watertight systems that don't leak in or out. This means not

leaking at cold joints, honeycombs, seals, risers, inspection ports, joints, or anywhere. High quality precast concrete products from certified producers can meet all of these demands.

PCANY has developed a thorough and dependable Certification Program for Septic Tank Producers to establish a high level of quality for listed producers to work to, which includes plant testing for water-tightness. All government agencies including the state, counties, towns, lake associations, watershed protective groups, etc. should incorporate this standard in their specifications to upgrade our wastewater infrastructure. Remember, we're all in this together.

## Box Culverts Tame Storm Water Flows on Many Sites

Precast concrete box culverts and three sided culverts have become standard for small span highway structures, but they are equally widely used for other site developments. A new student housing project for the Dominican College in Orangetown, NY required development over an

existing stream to best utilize the site. A & R Concrete Products supplied two sizes of box culverts to help ELQ Industries, New Rochelle, NY control the stream. These were 10 foot span with a 2 foot rise and 9 foot span with a 3 foot rise.



Box culvert 10' span with 2' rise



Box culvert 9' span with 3' rise

Photos provided by A & R Concrete Products

On a commercial development in Bedminster, NJ for the Crisdell Group, Inc of South Plainfield, NJ, three sided culvert sections were used for similar reasons: very fast installation and concrete of the highest quality, helping insure long lived structures. Units supplied for this project had a 5' span and a 2' 10" vertical leg. Thanks to Joe Amoia, A & R Concrete Products, for all the project photos, and to Ed Segali, Amcrete Products, for project details.



Plant fabricated three sided structures ready to ship to meet project needs

## Essentials for proper working septic tanks

(Reprinted from August 2004 *PCANY Newsletter*)

A recent NPCA Tech Brief in the Summer 2004 issue of Precast Solutions entitled "Built to Last" notes four essentials for proper working septic tanks. They are:

- **Require good quality, watertight and structurally sound tanks.**
- **Specify and enforce appropriate standards for these tanks.**
- **Ensure the tanks are installed correctly.**
- **Provide end users with guidelines for operation and maintenance.**

They note that a majority of producers are capable of producing a quality tank and are quality conscious, but must compete with a minority that are not. Precast septic tanks can be designed by engineering calculations or by performance testing of a final product. Regulators

and tank specifiers should ensure this information is received from the producer, and the tanks meet their stated requirements.

Standards currently exist that require tanks to perform correctly and remain serviceable for the expected lifetime of the residence or commercial project they support. The performance of a tank is heavily dependent on proper installation and operation. Instructions should be provided for the installer and end user. Installation instructions should include handling, bedding and setting requirements and an outline of conditions for which the tank was designed including depth of burial and vehicular loading.

Recommended "Septic Tank Installation Guidelines" for the installer was published by PCANY in

March 2004. Visit our website at [www.pcanyn.org](http://www.pcanyn.org) for details.



From NPCA Water & Wastewater Release

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## NYSDOT/PCANY Fall Joint Meeting

Save Tuesday, October 9th for our annual conference with our DOT friends from Materials and Structures. This year we will try to use the same approach we have been using in the fall, that is, a joint meeting with all interested and involved in the same room at the same time. This should save some duplication and time for all. Tentatively, we are looking at 12:30 to 4:00 pm; in addition, we will have a short PCANY meeting in the morning. Locations, details, agendas, etc. will follow, and will be listed on our website, [www.pcany.org](http://www.pcany.org).

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