

CASE STUDY

Nebraska State Fair Puts ARPA Grant to Work at Fonner Park Campus

Grand Island, NE

OWNER

Nebraska State Fair Board, Grand Island, NE

ENGINEER

Olsson, Grand Island, NE

CONTRACTOR

Elsbury Construction, Grand Island, NE

INSTALLATION DATE

Winter-Spring 2025

PRODUCTS

1,451 SC-310 StormTech® chambers
1,600' (487 m) of 12" (300 mm) HP Storm
5,940' (1,810 m) of 15" (375 mm) HP Storm
5,380' (1,640 m) of 18" (450 mm) HP Storm
2,180' (664 m) of 24" (600 mm) HP Storm
680' (207 m) of 30" (750 mm) HP Storm
Two S6 Barracuda® Hydrodynamic Separators
One 1k BaySeparator™
189 Nyloplast® Basins

DESCRIPTION

The Nebraska State Fair Board needed to expand and improve drainage throughout Fonner Park Campus, including a major parking lot, while not impacting Grand Island's stormwater sewer system. The board was awarded grant money for the initiative, which involved an intricate pipe network and StormTech chambers, which were used for retention, detention and infiltration.

189 Nyloplast basins were used to capture the stormwater. Stormwater was then conveyed by the HP Storm pipe into the SC-310 StormTech chambers, which were utilized because of the depth of the entire storm sewer system. The outlet pipe for the system sits high. By utilizing SC-310 chambers, water could be removed effectively without the addition of pumps.



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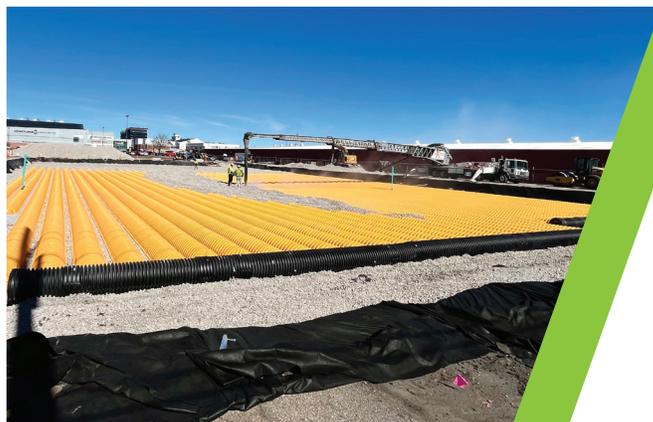
A weir structure in the outfall holds stormwater in the StormTech chambers and allows it to be released into the storm sewer at the correct volume rate. Two Barracuda hydrodynamic separators, placed upstream of the StormTech system, and an Isolator® Row were utilized to capture suspended solids and pollutants in the stormwater. Easy and regular maintenance was important to the Nebraska State Fair Board, making Barracuda a great selection.

In a completely separate area of the fairgrounds, a large drainage ditch was filled in to expand parking and the livestock area. The engineer selected a BaySeparator to treat stormwater before entering the StormTech system and eventually the city's storm sewer system. The BaySeparator was chosen to capture floatables like straw, wood chips and manure, which are prevalent in the area because of livestock. The engineer chose to use BaySeparator because of its wide range of effluent removal.

Nyloplast drain basins are custom built for each application. Nyloplast products are more durable and corrosion resistant than precast basins and combine a PVC structure with ductile iron grates. The basins can be easily adjusted in the field to meet the final grade. The structures are shipped with rubber gaskets to ensure a watertight connection.

HP Storm polypropylene pipe provides superior pipe stiffness, longer bells and spigots and a premium joint performance for a longer service life. The smooth interior wall offers additional strength and high flow capacity. HP Storm pipe meets or exceeds the standards specified in ASTM F2881 and AASHTO M330 and the extended bell and spigot meets ASTM D3212. Polypropylene is resistant to the effects of chemicals, abrasion, hot soils and effluent.

StormTech chambers are designed to save valuable land and protect water resources. The chambers provide a durable structure system and are designed in accordance with AASHTO LRFD Bridge Design Specifications for HS-20 live loads and deep burial earth loads



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