CASE STUDY

Massive Separated Bridge Links Tampa & St. Petersburg

Tampa, FL

OWNER
Florida Department of Transportation, Tallahassee, FL

ENGINEERS
BCC Engineering, Altamonte Springs, FL

CONTRACTORS
Archer Western, Tampa, FL

INSTALLATION DATE
2020-2024

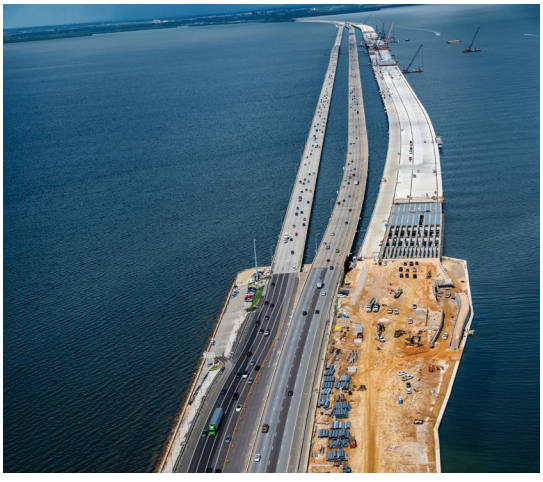
PRODUCTS
4,800′ (1,463 m) of 18″ (450 mm) HP Storm
3,360′ (1,024 m) of 24″ (600 mm) HP Storm
700′ (213 m) of 30″ (750 mm) HP Storm
180′ (55 m) of 36″ (900 mm) HP Storm
840′ (256 m) of 42″ (1050 mm) HP Storm
717′ (219 m) of 12″ (300 mm) Duraslot®

DESCRIPTION

The Howard Frankland Bridge is a massive structure with more than 2.6 million square feet of bridge deck area. The bridge, which links Tampa and St. Petersburg, is two separate roadways with each having four general traffic lanes, two express lanes and a path for pedestrians and bicyclists. The bridge replaces a four-lane span on I-275 that had many safety issues due to traffic congestion, which caused many accidents and delays.

One of the biggest challenges in the design was a stormwater drainage system for the bridge's causeways. The area was flat and grades needed to be changed for all drainage.

HP Storm pipe, which is manufactured from polypropylene, was the perfect choice for the project as it met all requirements and would save the Florida Department of Transportation (FDOT) money. HP Storm provided the strength and stiffness required after fill material was added



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to Tampa Bay to create a wider causeway. The pipe is an inert material that can handle the aggressive, saltwater environment found in Florida and provide long service life and resiliency.

The pipe's strength and premium joints were also critical as the differences in elevation meant that variable height barriers were required by the FDOT. The pipe was installed close to the wall, so they had to minimize the chance of leaks, which could cause erosion and affect the walls' stability.

In addition, 717' (219 m) of Duraslot slotted drain pipe was utilized between the express and general use traffic lanes to handle stormwater runoff, which in turn mitigates hydroplaning. Duraslot is made from N-12 pipe, manufactured from high-density polyethylene (HDPE), with an aluminum slot mounted on top.

The ADS pipe was key in the ambitious, design-build project as it proved cost effective, provided the specified flow rates, had superior structural integrity and met the 100-year design life. By delivering the pipe as needed it saved the contractor time, reduced labor, minimized heavy equipment usage and created a favorable impression with FDOT for future projects.

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.

Duraslot captures sheet flow across flat or mildly sloped drainage areas. Duraslot can be installed in shallow applications and is ideally suited for heavy load rated applications on roads, airports and warehouse projects. The pipe is light weight, easy to field cut and is installed in 10' (3 m) sections.

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