

# FDOT Transportation Innovation Initiative: FRP – Design Innovation



## Fast Facts:

Concrete Filled  
Glass Fiber  
Reinforced  
Polymer Tubes

Carbon Fiber  
Composite  
Cable



**Project Location:** Skyplex Boulevard  
Southwest Florida International Airport  
Fort Myers, Florida

**Agency:** Lee County Port Authority

**URL:** <http://www.fdot.gov/structures/innovation/FRP.shtm>

**Project Name:** Skyplex Boulevard  
Bridge No. 124142  
FPID: N/A

**Project Description:** New Bridge Construction

**Project Purpose & Need:** Skyplex Boulevard is a half mile of new road connecting Daniels Parkway to Chamberlain Parkway allowing better access to a technological business hub.

**Overall Budget/Cost Estimate:** \$14 Million (Project Cost)  
\$303,000 (Composite Arch Contract)

**What was unique about this project?**



This project is the first installation of AIT Bridges' Composite Arch Bridge System in Florida. This project features our widest structure to date with an out to out width of 109 feet. The lower half of superstructure is submerged in final conditions. Fixed Fixed condition achieved with Carbon Fiber Composite Cable end cages installed at both ends of each arch.

**Describe Traditional Approach:** Traditional approach would include a cast in place or precast arch structure with extensive water proofing techniques.

**Describe New Approach:** AIT Bridges' Composite Arch Bridge System utilizes advanced composite materials to provide lightweight, high strength, durable bridge solutions. The system consists of Concrete Filled FRP Tubes, FRP Decking and Headwall supported by Precast or Cast in Place Footings.

**Top Innovations Employed:** Utilization of Concrete Filled FRP tubular elements with an FRP Decking and Carbon Fiber Composites Cable

**Primary Benefits Realized/Expected:** Longer Service life of the bridge without major maintenance

**Project Start Date/Substantial Completion Date:** 7/1/2018 - 12/15/2019

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| <b>Affiliations:</b> | PE Designer:                         | Highspans Engineering      |
|                      | PE Consultant:                       | AIT Bridges                |
|                      | Construction Contractor:             | Thomas Marine Construction |
|                      | Construction Engineering Inspection: | Wright Construction Group  |

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