

DAVIS PRODUCTIVITY AWARDS 2010
ROAD WIDENING RETAINING WALL REDESIGN TEAM
Reduced Cost and Improved Constructability of Retaining Walls
FLORIDA DEPARTMENT OF TRANSPORTATION, OCOEE DOT-32

Turnpike Team Members:

Louis Reis (TPK Design Engineer), Ken Morgan (TPK Materials), Craig Bostic (TPK Project Management), Russ Snyder (TPK Structures Engineer), Brandon Bobo (Asst TPK Structures Engineer), Ron Bell (TPK Construction), Eric Rush (TPK Construction), Wing Heung (TPK Geotechnical Engineer).



Pictured above: Craig Bostic, FTE Project Manager; Ken Morgan, FTE Materials, Wing Heung, FTE Geotechnical Engineer and Russ Snyder, FTE Structures Engineer

Design Consultant:

Tom Farnan (Kimley Horn), Jim Sumislaski (Kimley-Horn), Gin Ng (Kimley-Horn), Raj Krishnasamy (Tierra South Florida), Manoharan Natarajan (Tierra South Florida)

Project:

Lake Worth Road Interchange Improvements @ Mainline Milepost 93
FPID 406144-4-52-01

Description of the Project and Savings:

A new lane is needed for the southbound off ramp at the Lake Worth Interchange. New retaining walls were to be constructed as close as six feet in front of existing MSE walls. The challenge was to identify the most cost effective retaining wall system. An MSE wall extension system which anchors new reinforcement straps to the existing wall facing emerged to be the best solution in the end. It is an improvement from conventional alternatives previously considered, including permanent anchored sheet pile walls and replacing existing MSE walls. The selected alternative avoid temporary earthwork for pre-stressed soil anchor installation, minimizes retaining wall backfill quantities, and minimizes traffic impact in construction zone. This is the first time Turnpike utilizes the system and emerged during a discussion involving multiple disciplines. The savings generated from this new approach was **\$3.86 million dollars.**

Lessons Learned:

Selecting the best permanent and temporary retaining wall systems for a project can reduce construction cost and enhance constructability. To identify the best system, especially in untypical situations, involvement of various technical disciplines are necessary. This project underscores the benefit and importance of identifying potential improvements and exploring non-standard solutions; a true success story of team work.