REHABILITATION OF HIGHWAY BRIDGE DECKS USING CARBON FIBER REINFORCED POLYMER COMPOSITES
Efficient and economical bridge deck repairs become an important factor in keeping older reinforced concrete bridges serviceable. A project was initiated in which strengthening of aging bridge decks, using carbon fiber reinforced polymer composites (CFRP) was undertaken. This project has determined that the use of carbon fiber composite construction techniques can be rationally justified as a rehabilitation method for degraded concrete bridge decks. The CFRP systems applied to the slabs in this study allowed the slabs to sustain up to three times the load of the unreinforced slabs. However, the addition of the CFRP system may decrease the deflection of the slabs at ultimate, before failure and may lead to over-reinforced slabs. The study has verified that replacement of aging RC decks can be delayed and scheduled when financial resources are available.