



## Transportation

### Client:

USACE, Far East District

### Location:

Osan Air Base, South Korea

## New Parallel Runway, Osan Air Base

CH2M HILL provided design services for a new second parallel Runway 9L-27R to support the 51st Fighter Wing's mission at Osan Air Base, South Korea. The new parallel runway was a Combined Defense Improvement Program-funded project. It included a new 9,004-foot-long by 150-foot-wide parallel concrete runway (700-foot separation from existing Runway 9-27) with associated bituminous overruns. Also included were three new connector taxiways to connect the new runway with the existing runway and airfield facilities.

The design included all site work, paving, lighting, signing, and marking, along with associated NAVAIDS to accommodate a Class B non-precision approach on both ends, including shortened Approach Lighting Systems on each approach. The design also included a NAVAIDS study by the Ohio University Avionics Engineering Center to determine the impacts of the infield grading and box culvert construction of the connector taxiways on the existing glide slope signal. Ohio University determined that the proposed grading did not impact the glide slope signal; however, box culvert construction activities required the glide slope system to be temporarily shut down.

CH2M HILL designed the new runway pavement section using PCASE to analyze the sensitivity of the pavement section to two different frost design methods: reduced sub-grade strength; and limited sub-grade frost protection. The use of PCASE allowed CH2M HILL to optimize the pavement section originally provided by the USACE Far East District Geotechnical and Environmental Engineering Branch, ultimately providing savings to the government. The project airfield design also included a new two-lane perimeter roadway to serve as access to the new Runway 9L-27R arresting gear, ALSF-1 lights and existing Runway 9-27 ILS equipment, as well as access to the north acquisition area where the VORTAC and other government facilities are

The runway embankment was designed to serve as levee/flood protection for Osan AB from the 100 year Chin Wi River flood event to the north of the installation. The runway design also included new textile brake arrestor systems on both ends. The project required design coordination with the following stakeholders: Osan Air Base, USACE Far East District, Transportation Systems Center-USACE Omaha District, Pacific Air Forces, Republic of Korea Ministry of National Defense, and Ministry of Construction and Transportation. The project was designed in accordance with applicable UFC, Air Force criteria, and FAA Advisory Circulars.

### About CH2M HILL

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