



Civil Design Narrative

General

The proposed project is located at the Marine Corps Air Station in Beaufort, SC. The design and construction shall consist of five (5) vertical landing (VL) pads, two (2) high speed taxiways, and a relocated perimeter road around VL pad #1. This project will also include the demolition of existing pavements around the runway.

Demolition

Demolish existing airfield pavements as needed to support compliance with Low Impact Development. This project will require over 600,000 SF of existing airfield pavement to be demolished to achieve storm water design requirements. Areas proposed for demolition can be found on sheet CS101. All airfield pavements should be assumed to be a minimum of 11" of PCC over 12" of crushed aggregate base course. The CALA pads are 11" PCC over 6" of crushed aggregate base course. All perimeter roads should be assumed to be a minimum of 2" ACC over 12" of reclaimed base course.

Demolished concrete pavement shall be crushed to base course aggregate size (1 ½" -2") and be stockpiled on MCAS Beaufort for future use by the Government. The stockpile area for demolished concrete is the Pine Grove I area. Demolished asphalt shall be crushed and screened, and stockpiled on MCAS Beaufort for future use by the Government. The stockpile area for demolished asphalt is the Pine Grove I area. All demolished base course shall be hauled off-site and off station by the Contractor. All materials suitable for recycling shall be recycled.

Pavement Design

All aircraft pavements shall be designed for safe and Foreign Object Damage (FOD) free surfaces. Vertical Landing Pads shall be designed in accordance with the RFP for minimum standards. The following are pavement design options set forth in the RFP.

RFP provides an option for the material used for the paved safety zone concrete. For this project, the paved safety zone concrete shall be constructed of HTC. As a deductive option, the paved safety zone to be constructed of standard PCC.



RFP provides an option for the concrete connecting taxiways to be constructed of hot mix asphalt (HMA) or PCC with exceptions. For this project, the new connecting taxiways shall be constructed of conventional PCC. The contractor shall have the option to provide connecting taxiways of HTC for contractor convenience or economic reasons. As a deductive option, the connecting taxiways to be constructed of HMA.

RFP provides an option for the Vertical Landing Pad paved shoulders to be constructed of PCC or HTC. For this project the new VLP paved shoulders shall be constructed of HTC. As a deductive option, the paved shoulders to be constructed of PCC.

RFP provides an option for the Vertical Landing Pad connecting taxiway shoulders to be constructed of HMA, PCC or HTC. For this project, the new connecting taxiway shoulders shall be constructed of conventional PCC. The contractor shall have the option to provide taxiway shoulders of HTC for contractor convenience or economic reasons. As a deductive option, the taxiway shoulders to be constructed of HMA.

High speed taxiways shall be constructed of conventional PCC with taxiway shoulders of HMA.

Site Grading and Drainage

Finished elevations for new airfield pavements shall be a minimum of 1 foot above the 100 year flood elevation. Finished elevations for the new perimeter road may be below the 100 year flood elevation, but shall be constructed at the highest achievable elevation based on the site. All finished slopes on the site shall not exceed 4:1 for maintainability with large mowers. All areas disturbed by construction are to be stabilized. The existing storm sewer system serving the project site is owned, operated, and maintained by the federal government. Provide the new storm sewer system and connections to the existing storm sewer system in accordance with UFC 3-200-10N, *Civil Engineering*; UFC 3-210-10, *Low Impact Development*; UFC 3-230-06A, *Subsurface Drainage, With Changes 1-2*; UFC 3-260-01, *Airfield and Heliport Planning and Design*; the utility provider's requirements; and the South Carolina DHEC storm water management laws and regulations; whichever is more stringent. Generally the existing storm drainage in the project areas is conveyed through surface drainage ditches and sheet flow. However, no drainage ditches will be allowed within the 900 foot square clear zone for each VL Pad. Existing drainage ditches shall be converted to underground systems. All proposed storm sewer piping shall be a minimum of 15" diameter and be reinforced concrete pipe (RCP). All stormwater design and construction shall comply with UFC 3-210-



10, Low Impact Development. The use of Low Impact Development (LID) is required for the project to achieve design objectives stated in DoD Policy on Implementing Section 438 of the Energy and Independence and Security Act (EISA), dated 19 January, 2010 and Department of Navy Low Impact Development (LID) Policy for Storm Water Management, dated 16 November, 2007. Storm water design must be compatible with airfield operations and not generate standing surface water.