

Vertical Landing Pads for F-35B
MCAS, Beaufort, SC
Electrical Narrative
13 January 2012

The new taxiway and pad lighting to be provided for the Vertical Landing (VL) Pads shall consist of new lighting circuits from existing lighting vaults, buildings 740, 404, and 1103. Controls shall be compatible with SPAWAR provided and installed wireless controls system. Existing airfield lighting circuits shall be modified as required to incorporate the VL pads while maintaining original airfield operations, e.g. Combat Arms Loading Area (CALA) pad and taxiway circuit operation.

Each VL pad shall be fed from two circuits. Each circuit powered by a new air-cooled, ferroresonant 5 step regulator rated at 4 kW and 6.6 Amps. One circuit/regulator for the VL pad taxiway and one circuit/regulator for the VL pad. Regulators shall be fed from existing panels within their respective vaults. VL pads 1, 2, and 5 shall be fed from building 740 via panel MDP using new and existing spare breakers as necessary. VL pad 3 shall be fed from building 404 via panel MDP using new and existing spare breakers as necessary. The existing pole mounted 50kVA service transformers for building 404 shall be replaced with three new 100kVA pole mounted transformers in support of the additional loads. VL pad 4 shall be fed from building 1103 via panel H using new and existing spare breakers as necessary. All equipment not in use located in each aforementioned building shall be removed and turned over to Public Works. Controls for each pad shall allow for independent operation of VL pad taxiway, VL pad landing and pad warning lights. A dedicated circuit and receptacle shall be located within each lighting vault for support of SPAWAR wireless controls.

Typical lighting circuits shall consist of L-824, 5 kV, #8 copper airfield cables. Each circuit shall have two 2 inch schedule 40 polyvinyl chloride (PVC) conduits, one as a spare and one for the #8 conductor. The exterior conduit will be direct buried PVC with concrete encasement until it reaches the ramp area and at the taxiway crossings. Directional bored conduit shall consist of 12 inch conduit with four 4 inch innerducts to extend three feet on either side of the paved surface. L-867 lighting bases (with solid lids) will be installed at 300 foot intervals where the circuit is not supplying fixtures.

A new #4 bare copper counterpoise shall be installed along the route of all new duct/conduit. New ground rods will be installed periodically for the counterpoise (counterpoise and grounding conductor not interconnected).

At each VL pad shall have 17 quartz-incandescent semi-flush fixtures (L852-E) with yellow filters shall be required and shall include the L-868 base, cover, and isolation

transformer. The 868 base will be encased within a 24 inch deep by 12 inch diameter concrete base reinforced with #4 bars at 8 inches on center. New semi-flush runway lights (L850C) will be required to replace existing elevated fixtures at the new taxiway intersection with the runway. These installations will require new L868 bases and isolation transformers. Existing elevated runway lights on each side of the new taxiway will require new L867 bases with an additional threaded conduit connection for primary loops to the new signage. The new runway light fixtures will require the installation of a new concrete encased 2 inch conduit to the new fixture bases. It is recommended that a second 2 inch conduit be added to this duct run for the taxiway circuit. This crossing will provide a single cable loop for the taxiway circuit and eliminate the need to double back a loop on each side of the taxiway.

Where conduit/circuits are run underneath new pavements, conduits shall be concrete encased. Where conduit/circuits are run adjacent to existing pavements, conduits shall be direct buried. Where conduit/circuits are directional bored underneath existing pavements, conduit/circuits shall be within four 4 inch conduits within a 12 inch conduit.

At existing CALA pad 2, all existing lighting and telephone circuits shall be rerouted and continuity shall be preserved.

All work will be in accordance with UFC 3-501-01, UFC 3-550-01, ETL 10-4, UFC 3-535-01 and UFC 3-535-02.