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To: EDGES Group
From: Cassie Bowman
Subject: Welding Ground Plane at MRO

This memo documents how the ground plane meshes were welded and finished in March 2017 and May 2017 in order to inform the upcoming contractor quote and to advise the contractor team that comes to do the next phase of welding.

Methods

1. The meshes were dragged into place (roughly) on the ground and any rocks or unevenness were dealt with.
2. Two meshes were clamped together every 20 cm using long nose locking vice grips (see Figures 1 and 2). The meshes were clamped so that approximately 3 cm lengths of wire from each mesh were overlapping each other and touching completely. This was repeated every 20 cm until the full length of mesh was clamped together.
3. If the mesh was too close to the ground or buried in the dust/soil, we used crescent wrenches to prop up the sections (see Figure 3)
4. The first clamped section was brushed/scraped with a wire brush to remove the galvanized coating.
5. The cleaned section was welded together and the clamp released (see Figure 4).
6. This was repeated every 20 cm until the end of the mesh, then repeated with remaining meshes.
7. After the welding was complete, each weld was brushed again with a metal brush and then sealed with zinc(?) spray (see Figure 5).

Results

The result was a ground plane welded every 20 cm with a weld length of approximately 3 cm per weld.

Cautions

Care should be taken to make sure that there are no gaps that could allow the welds to weaken or break. Contractors should be aware that all clamping and welding takes place seated on the ground or on a small cart.



Figure 1. Example of long nose vice grips.



Figure 2. Welding set-up in March 2017.



Figure 3. Showing use of crescent wrenches to prop up the mesh for welding.



Figure 4. Example weld (after zinc spray).



Figure 5. Using a brush head on a power screwdriver to clean the welds before spraying with zinc sealer.