March 9, 2014

Alandren Etlantus, P.E.

Bohannan Huston Inc.

7500 Jefferson NE

Albuquerque, NM 87107

**Re: Amendment No. 2 Drainage Master Plan for the Mirehaven Master Planned Community**

**Engineer’s Stamp Date 2-26-15 (H09D017)**

Dear Ms. Etlantus,

Based upon the information provided in your submittal received 3-21-14, the above referenced report cannot be approved for Work Order until the following comments are addressed.

Comments on the Drainage Report:

1. There are numerous HEC-RAS sections that show the bank sloping downward away from the edge of the arroyo. As you are aware, we wish to not have this analyzed by FEMA as a levee. But more simply, the areas next to the channel should be higher for numerous reasons (additional freeboard, visible inspection from the maintenance road and tie grades for future development).
2. The manning’s n value for the shotcrete is specified as 0.018 in the report, yet the cross-sections show 0.015.
3. There does not appear to be 2 feet of freeboard at RS 1120.

General comments on the Construction plan sheets:

1. It is not obvious to Hydrology that the grades provided for the arroyo are matching well with the grades on either side of the arroyo.
   1. One cause may be for locations where grade control structures have been relocated or changed vertically. One example of grades not matching is at RS1220. Another one is water quality pond at station 14+00. The Del Webb grading plan shows a 28 contour near the arroyo whereas, the construction plans show a 35. The Del Webb grading plan shows the 28 contour continuous into the arroyo. Another example is approximately 500 feet west of Tierra Pintada, the Pulte grading plan proposed an 08 grade, whereas this plan set shows an 02/03.
   2. The best way to ensure arroyo grades tie to the Del Webb Subdivision and the Pulte @ Mirehaven Subdivisions is to bring the proposed grades from Del Webb and Pulte Phase grading plans into the plans including lot numbers and the street grade at the arroyo crossing. As well as the inverts from recently constructed pipe penetrations.
   3. The profile part of the plans could be reduced (e.g. if lowest grade on profile is 5302 you could stop profile at 5300.
   4. Hydrology is not in agreement with the “Grading Limits” as there appears to be some inconsistency between plan sets.
   5. Additional sheets may be necessary to show grading on the north side of the arroyo.
   6. Inverts for pipe penetrations into the southern bank of the arroyo were not provided on the as-builts. Are these surveyed points on your plans?
2. Detailed comments on the construction plans can be provided once the bigger issue of matching grades is resolved.

If you have any questions or would like to meet, you can contact me at 924-3986.

Sincerely,

Curtis Cherne, P.E.

Principal Engineer, Hydrology

Planning Dept.

C: e-mail