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Latin America, LLC

June 10, 2015

Mr. Curtis Cherne, P.E., CFM
Local Floodplain Administrator
Principal Engineer, Stormwater Quality
Planning Department
City of Albuquerque
P.O. Box 3610
Albuquerque, NM, 87015

RE: Boca Negra Dam
Letter of Map Revision
AMAFCA

Dear Mr. Cherne,

Wilson & Company has reviewed the comments provided in a letter dated May 28, 2015 by the City of Albuquerque on the Boca Negra Dam LOMR. Below is a response to the comments:

1. The LOMR is not stamped or sealed.

   The final document for submittal to FEMA will include signatures and seals.

2. "Submitted by" should be AMAFCA, not the City of Albuquerque.

   This has been revised.

3. The annotated FIRMS are to be labeled "Annotated FIRM"

   This has been revised.

4. Why isn't the floodplain confined to the recently graded channel upstream of the 4-60" storm drains? Is this area shown in section 11? This has appeared to increase the floodplain on lots 1 through 5 Volcano Cliffs Unit 5.

   This area is shown in section 13. The section was generated based on a combination of field survey cross section data and LiDAR data. The increase in the floodplain is due to the fact that the culvert crossing at Scenic Blvd. were sized for the future conditions, while the HEC-RAS analysis is based on existing conditions. The flow is decreased in the future conditions due to an upstream dam at the North Geologic Window.

5. The HGL on Sheet 29 of the SAD 228 plans shows the HGL below the soffit. The LOMR states the water surface elevation is over the road. How did this occur? The same storm was used in the LOMR and the SAD 228 plans. Provide calculations and assumptions for the capacity of the culverts under Scenic Blvd.

   The SAD 228 culverts were sized for the future conditions, which is a lower flow than existing conditions. Calculations and assumptions are attached.

6. Why did you use the 24 hour storm rather than the 6-hour? FIRMS are based on the 6-hour storm.

FEMA guidelines do not specify the storm required. We typically use and they have previously accepted the 24 hour storm, particularly when a detention facility is included in the analysis. We confirmed with AMAFCA that this is the event to be utilized for this submittal.

7. The HEC-RAS section "Scenic Culverts" shows a dip in Scenic Blvd. I visited the site today, and could not see the dip; the street lookds more straight-graded. Provide as-builts for Scenic Blvd.

   As-builts for Scenic Blvd. are located in Appendix 5, Sheet 15 of 29 (first sheet in appendix). The as-built clearly shows a dip in the roadway profile.

8. Remove the flood zones for Trails ponds J and K.

   Per AMAFCA's direction, the flood zones for the Trails ponds J and K have not been removed.

9. In the Appendix 5 table of contents, the SAD 227 sheets are referenced as sheets 83 and 83A, and should be 63 and 63A.

   This has been revised.

10. Provide as-builts or field measurements of box culverts under San Idelfonso Rd and Tesuque Dr.

    Field measurements and certified field survey cross section data is included in Appendix 5.

11. It appears there is a levee section on the north side of Mojave street. The flood zone should probably extend north of the channel bank in this area to avoid this being a levee.

    The HGL in this area (Sections 0.5 to 0.53) is below the toe of the berm, so it is not a FEMA levee.

12. Why have flows nearly tripled from "current" to "effective" for cross-sections C, B, A1 and A, which are downstream of the dam? One would think the dam would decrease flows.

    The "effective" model reflects the FEMA FIRM, while the "current" model reflects the post-construction conditions. Therefore, the "current" model shows a decreased flow compared to the "effective" model due to the Dam. Below is a summary table comparing the "current" model flowrate to the "effective" model flowrate.

Section	*Current Model Q (cfs)*	*Effective Model Q (cfs)*
C	***695***	***1,298***
B	***695***	***1,298***
A1	***695***	***1,298***
A	***695***	***1,298***

13. Provide stage-discharge curves/tables for the dam for initial design and as-built condition and how were they calculated (orifice equation)?

    The dam rating curve table has been provided in Appendix 3 on the Dam Cover Sheet, Sheet 1R of 62. A pdf of the rating curves for design and as-built conditions is attached.

14. What sheets shows the as-built principal spillway riser details?

    Riser as-built details have been added to Appendix 3.

15. On what sheet of the AHYMO run can I find the HGL of the dam?

    The water surface of the dam can be found on page 99 of the AHYMO output file in Appendix 1. The complete AHYMO output file is now included in Appendix 1 and was also emailed on 6/9/15.

16. Proof (construction plan of core) of filled-cells is required for retaining walls to be counted as flood walls.

    Letters have been prepared and sent to the 2 property owners with retaining walls in order to request construction plans for the retaining walls. At this time, the flood zone has been revised to encroach these properties based on the assumption that these are not flood walls.

17. The Work Map and Annotated FIRM should reflect LOMR 09-06-2899P 3-25-10. The Flood Zone on Vista Vieja has been revised for 5 years.

    The maps have been updated to indicate the area affected by this LOMR.

18. The grade near section 13 appears to be 2 feet higher on the west side of the arroyo. Was this area surveyed?

    Section 13 was generated using the best data available (LiDAR) to incorporate into the model. It was not field surveyed.

19. The Maintenance Plan does not mention the channel downstream of the dam.

    We have requested the City of Albuquerque maintenance schedule and have included it in Appendix 4.

20. The City has concerns with the revised floodplain(s) encroaching further onto private property than the effective FIRM.

    The revised floodplain has been generated based on more recent LiDAR data than the effective FEMA model.

21. This was not a final review. The above listed items are to be satisfactorily addressed, before continuing the review.

    Noted.

Please feel free to contact me at 505-400-6970, should you have any questions or need further clarification regarding the Boca Negra Dam LOMR.

Sincerely,

WILSON & COMPANY, Inc.

Daniel Aguirre, P.E.
Senior Vice President