



February 25, 2025
AVO 37449.004

Ms. Ramie Hammonds
Development Services Director/Building Official
City of Sanger
201 Bolivar Street
P.O. Box 1729
Sanger, Texas 76266

Re: **Elada Preliminary Flood Study -Review #2**

Dear Ms. Hammonds,

Halff Associates, Inc. was requested by the City of Sanger to review the flood study in support of the preliminary plat for the Elada development along Duck Creek Tributary 2. The 2nd submittal was prepared by LJA Engineering and was received on February 14, 2025.

We have completed our review and offer the following comments. Please refer to City of Sanger Subdivision Regulations, article 10.106.

General Comments

1. Please address comments on attached markups and provide annotated responses on markups. Please note, not all comments are written on letter since some comments are easier to show and explain on the markups. Please annotate markup with responses.
1st Response: Noted. Responses to markups are attached to this letter.
2nd Review Comment: Responses to markups are attached to this letter.
2. Please note additional comments may be provided in subsequent reviews once additional data/responses are received.
1st Response: Noted.
2nd Review Comment: Additional comments may be provided in subsequent reviews once additional data/responses are received.

Hydrology and Hydraulics

1. Please provide all supporting digital data (HH models, GIS shapefiles, etc) in support for the preliminary flood study.
1st Response: Please see the GIS shapefiles provided in Appendix A, the HEC-HMS model in Appendix B, and the HEC-RAS model in Appendix C.
2nd Review Comment: Partially addressed. Storage-outfall and cross section functions missing in HMS, so model does not run. Please resubmit HMS model to confirm discharges in report.
2. Runoff computations shall be based on fully developed watershed conditions (10.106.d.2.C).
Response: All runoff computations have been revised to be based on fully developed watershed conditions.
2nd Review Comment: Addressed.

3. Detention ponds must be designed in accordance with 10.106.d.10. For preliminary plat, proposed detention must meet discharge and freeboard requirements (1-ft freeboard and 2-ft sediment storage). Please provide supporting calculations.

Response: All ponds are designed with the 1-ft freeboard requirements. All ponds will be designed to have a minimum 2-ft sediment storage in final design.

2nd Review Comment: Noted. Please note, if design changes impact drainage easement for ponds, plans will be reverted to the preliminary plat stage.

4. Analyses should be extended downstream for Tributary 6, 7, and Ranger Branch to determine impacts for proposed ponds RBT7-11 and RB-42 through the Zone of Influence.

Response: Ponds RBT7-11 and RB-42 are analyzed at the property boundary to ensure the rate of runoff leaving the property does not exceed existing. Drainage areas RBT7-11 and RB-42 are less than 200 acres in size and located at the top of smaller tributaries to Ranger Branch; therefore, no adverse impacts to the timings of the watershed should occur based on their size and positions. It is our best engineering judgement that both ponds are not at risk of increasing the peak discharges in the main channel.

2nd Review Comment: Addressed.

5. Precipitation data should use 10.106 Appendix A in ordinance.

Response: The precipitation data for Denton County from the NCTCOG iSWM Technical Manual is used in the HEC-HMS model in accordance with FEMA's requirement for Atlas 14 data to be used in NFIP studies. With the City of Sanger participating in the NFIP, Atlas 14 should be used as the rainfall for this study.

2nd Review Comment: Addressed.

If you have any questions or need additional information, please do not hesitate to call me at (214) 937-3953.

Sincerely,
HALFF
TBPELS Firm No. 312



Parker C. Moore, P.E., CFM