



**HEINRICH & KLEIN  
ASSOCIATES, INC.**

TRAFFIC ENGINEERING & PLANNING  
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March 18, 2016

Jason M. Bobst, Manager  
West Norriton Township  
1630 W. Marshall Street  
Jeffersonville, PA 19403

Re: Preliminary Land Development  
Markley Farm Property – Doris Y. & Ronald W. Markley Revocable Trust  
Oakland Drive – Chestnut Avenue  
West Norriton Township, Montgomery County, PA

Dear Mr. Bobst:

As requested, I have completed a Traffic Engineering Review of the revised Preliminary Land Development Plans submitted for the proposed development of the Markley Farm Property situated along Oakland Drive and along Chestnut Avenue in West Norriton Township, Montgomery County, Pennsylvania. It is proposed to develop the site for a total of 79 single family detached houses. Access for 40 dwelling units is proposed to be provided via Chestnut Avenue and access for 39 dwelling units is proposed to be provided via Oakland Drive. The Preliminary Land Development Plans, last revised 2/16/16, and correspondence describing responses to my comment letter dated January 8, 2016, were prepared by Woodrow & Associates, Inc. Please note that the requested Traffic Impact Study (TIS) has yet to be submitted. Comments 1 through 6 are, therefore, simply repeated from my previous comment letter. My comments are as follows:

1. Based on the trip generation equations publishing by the Institute of Transportation Engineers in the 9<sup>th</sup> Edition of the Trip Generation Manual (ITE Land Use Code 220), it is estimated that the proposed development could generate about 850 trips per day (total inbound and outbound), about 65 trips per hour during the weekday AM peak hour (16 inbound and 49 outbound), and about 85 trips per hour during the weekday PM peak hour (54 inbound and 31 outbound).
2. A Traffic Impact Study (TIS) should be prepared and submitted to the Township for review. Based on the size of the development, the potential trip generation described above, site access locations, and the potential distribution/assignment of new trip generation from the proposed development, the TIS should include the intersections listed below:
  - Trooper Road & Oakland Drive
  - Oakland Drive & Harvest Circle
  - Oakland Drive & Splitrail Circle
  - Burnside Avenue & Oakland Drive

- Burnside Avenue & Chestnut Avenue
  - Chestnut Avenue & Galbraith Avenue
  - Chestnut Avenue & Potts Avenue
  - Trooper Road & Chestnut Avenue
3. The TIS should include a Traffic Signal Warrant Analysis for the intersections with Trooper Road and with Burnside Avenue. The traffic signal warrant evaluation should, at a minimum, examine Four-Hour Volume Warrants.
  4. A turn lane warrant analysis should be included for site access.
  5. Spot speed studies may be required to determine the 85<sup>th</sup>% vehicle operating speeds as part of the Traffic Signal Warrant Analyses, and/or for determination of site access requirements along Oakland Drive and along Chestnut Avenue.
  6. The TIS should address traffic calming strategies that will, at a minimum, reduce travel speeds and desirably reduce short-cut traffic along Oakland Drive and along Chestnut Avenue. For example, consider construction of a roundabout for access at the intersection of Oakland Drive and Paddock Circle.
  7. All access roadways should be evaluated through the use of truck turning templates for the appropriate design vehicle (i.e., moving van, emergency response vehicle, trash collection vehicle, etc.). The internal circulation roads should be evaluated for emergency response vehicles. This comment has been acknowledged, but the plan has yet to be provided.
  8. Based on the trip generation calculations described previously, 79 single family detached houses can be expected to generate 85 trips during the PM peak hour. The resultant Traffic Impact Fee calculation would be \$62,427.40 (i.e., 85 PM peak hour trips X \$734.44 per PM peak hour trip = \$62,427.40). Contribution of a Traffic Impact Fee in accordance with the West Norriton Township Transportation Capital Improvements Plan has been acknowledged.
  9. Satisfied. Based on the discussions at the staff meeting on January 20, 2016 and subsequent e-mail messages it is agreed that the internal street widths will be narrowed to 27 feet curb-to-curb.
  10. The response acknowledges that ADA compliant curb ramps will be provided and standard curb ramp details are included in the plan set. Unless a separate detail is provided for an individual curb ramp, the plans should reference the curb ramp type for each curb ramp. As indicated previously, *“Diagonal curb ramps should be avoided and curb ramps should be properly angled for the direction of the crossing. Where two crosswalks intersect at one corner, separate curb ramps should be provided for each crosswalk.”* For example, since Road “C” will have sidewalk along both sides of the street, the extension of these two sidewalks across intersection streets must be provided with curb ramps and crosswalks. Accordingly, the two intersections of Road “C” and Road “D” must have crosswalks across all three legs of the intersection. As also indicated previously, *“Crosswalks and curb ramps, with advance warning signage, should be provided across Chestnut Avenue and across Oakland Drive at the site access intersections. Crosswalks, curb ramps and signage should be provided for the extension of trails at mid-block locations (including the trail intersection with Chestnut Avenue), or signage must be*

*provided to direct pedestrians to the nearest intersection crosswalk location.”* Additional crosswalks and curb ramps are required at the site access intersections with Oakland Drive and with Chestnut Avenue, and for the trail intersection with Chestnut Avenue.

11. As indicated previously, *“Provide details for the terminus of the proposed trail along the north side of Markley’s Pond as it intersects Chestnut Avenue. Since there are no pedestrian facilities along the west side of Chestnut Avenue, ADA complaint landing areas/ curb ramps and a crosswalk may be required on both sides of Chestnut Avenue, or No Pedestrian Crossing signs may be required.”* Although the proposed trail may have been relocated, it is still shown to intersect Chestnut Avenue and, therefore, pedestrian accessibility must be addressed and the location shown to be ADA complaint. Further, the trail should be re-aligned so as not to intersect Chestnut Avenue directly in front of a utility pole.
12. As indicated previously, *“A horizontal curve should be introduced into the alignment of the end of the emergency access connection so as to intersect Chestnut Avenue at a 90° angle.”* The purpose of this comment was to provide an area for the emergency vehicle to be perpendicular, not parallel, to Chestnut Avenue.
13. Please add a note to the plans that all Stop bars shall be positioned a minimum of four feet back of the crosswalk.
14. As indicated previously, *“Available and required sight distances, based on PennDOT guidelines, should be noted for each access location (including emergency access) along Oakland Drive and along Chestnut Avenue.”* It appears the noted sight distances are available sight distances, not the required or Safe Stopping Sight Distances (SSSD) as noted on the plans. While the available sight distances all appear to be acceptable, the plans should properly note both the available sight distances as well as the desirable sight distances (based on the posted speed limit) or SSSD (based on the measured 85<sup>th</sup>% vehicle operating speed) for each access location.
15. As indicated previously, *“Where trails intersect internal roads mid-block (i.e., Roads A, B and D), proper accommodation for pedestrian access must be provided with ADA compliant curb ramps, detectable warning surfaces (DWS), crosswalks, and advance warning signage. All effort should be made to position curb ramps directly opposite each other to provide the crosswalk at a 90° angle to the traveled way.”* Satisfied, subject to receipt of the additional ADA ramp details to be provided.
16. As indicated previously, *“It is proposed to widen Chestnut Avenue along the property frontage extending the existing cross-section from south of Galbraith Avenue to the out-parcel at Potts Avenue. The Township should determine if there is a future need to extend the widening along the remainder of the property frontage north of Potts Avenue, including the frontage of the out-parcel. In the event the frontage of the out-parcel is not widened, proper signage and pavement markings shall be installed along northbound Chestnut Avenue to warn motorists of the abrupt narrowing of the road.”* This comment remains an open item.
17. As indicated previously, *“The Applicant should study the possible requirement for guiderail at the Chestnut Avenue stream crossing, and install as may be*

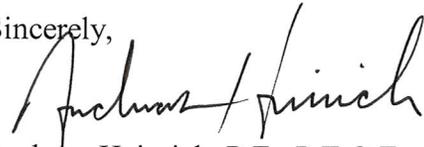
Jason M. Bobst, Manager  
West Norriton Township  
March 18, 2016  
Page 4

*necessary.*” The Applicant’s response is *“This area of Chestnut Avenue is not proposed for any improvements with this project. No development is proposed in this location to warrant road improvement.”* I note that this location is along the frontage of the development property, the existing curb and railing at this stream crossing may be considered an obstruction adjacent to the road, and protection adjacent to the stream corridor may be lacking.

18. Satisfied.

If you should have any questions, or wish to discuss these issues in greater detail, please call me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andreas Heinrich', written in a cursive style.

Andreas Heinrich, P.E., P.T.O.E.  
Principal

AH:rh

cc: Christen G. Pionzio, Esq.  
Michael J. Valyo, Code Enforcement Officer  
Joseph M. Estock, P.E., P.L.S.  
E. Van Rieker, AICP  
Timothy P. Woodrow, P.E.