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N.J. STATE BOARD OF PROFESSIONAL ENGINEERS & LAND SURVEYORS
CERTIFICATE OF AUTHORIZATION NO. 24GA27985400

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Memorandum: Technical Review #1 2

To: Township of Long Hill Planning Board
Board Chairman and Members

From: Michael Lanzafama, PLS, PE, PP
Board Engineering Consultant

Re: Application No. 18-01Z
Mario Parisi
Block 13302--Lot 16.01
Delaware Avenue Subdivision
C&K Project #: 1190102-18-01Z-07

Date: ~~March 26, 2019~~ [November 11, 2020](#)

Documents Reviewed:

As part of our engineering technical review, we have received and reviewed the following documents:

1. Plans entitled "Preliminary and Final Major Subdivision Plan—Delaware Avenue--Block 13302, Lot 16.01—Tax Map Sheet 33, Long Hill Township, Morris County, New Jersey" prepared by Engineering & Land Planning Associates, Inc.; Revised February 4, 2019, consisting of 23 Sheets. [Revised June 5, 2020.](#)
2. Stormwater Management Report, Prepared by Christopher Nusser PE, last dated Jan. 31, 2019 [Revised June 5, 2020.](#)
3. Storm Water Management Maintenance Plan, Prepared by Christopher Nusser, last dated Jan. 31, 2019.
4. Project Review Letter—prepared by CP Professional Services—dated June 21, 2018.
5. Response Letter—prepared by E&LP, Applicant's Engineer—dated September 7, 2018.
6. Project Review Letter—prepared by CP Professional Services—dated October 16, 2018.
7. Response Letter—prepared by E&LP, Applicant's Engineer—dated February 4, 2019.
8. [Response Letter—prepared by E&LP, Applicants Engineer—dated June 5, 2020.](#)
9. [Scour Hole Detail & Calculations—prepared by E&LP—dated April 3, 2020.](#)
10. [Riprap Apron Calculations \(3 sheets\)—prepared by E&LP—dated April 3, 2020.](#)
11. [Soil Logs \(31 pages\)—prepared by E&LP—dated November 1 thru 4, 2016.](#)

Technical Review:

The Applicant is proposing to subdivide an existing lot that is in a residential zone (R-2) and partially in a C Zone into eight dwelling units and supporting infrastructure. The right-of-way of Delaware Avenue bisects the property, but the paved portion of the roadway terminates at both the easterly and westerly

property lines. It is the understanding of this office that the Applicant is permitted to connect two of the proposed dwellings to an existing sanitary sewer in Delaware Avenue. The remaining six lots would be on temporary septic systems until such time the sewage treatment facility has increased capacity. The proposed project has been reviewed previously and the Applicant's professionals have made a number of changes to the site plans. The following comments address the outstanding issues on this project:

1. COVER SHEET (Drawing 1)—Under the list of “Outside Agency Approvals” the Engineer should add “N.J. Department of Environmental Protection Letter-of-Interpretation.”

The coversheet has been revised to add the note requested. **Comment Satisfactorily Addressed.**

2. BOUNDARY AND TOPOGRAPHIC SURVEY (Drawing 3)—The survey must show the N.J. Department of Environmental Protection file number for the Letter-of-Interpretation. The survey drawing should indicate the datum and bench mark used for the topography and the appropriate conversion factor between the datums—N.G.V.D. 1929 and NAVD 1988.

General Note 10 and Reference Note 3 have been added to the “Boundary and Topographic Survey” as requested addressing the request for additional information. **Comment Satisfactorily Addressed.**

3. ENVIRONMENTAL CONSTRAINTS PLAN (Drawing 4)—Testimony to be provided on how “critical areas” (Section 142 of the Ordinance) affect the design of the project. Several proposed homes are within the “60-ft. Critical Slopes Buffer” –this requires an explanation to their placement and if the applicant is seeking a waiver or other relief. **Comment still applies.**
4. MAJOR SUBDIVISION PLAT (Drawing 5)—The applicant should clarify to which entity the drainage easements should be dedicated—homeowners association (H.A.)? Is Lot 9 (location of proposed Detention Basin No. 2) staying with the H.A.? All proposed lot numbers should be coordinated with the Tax Assessor.

General Note 4 and the Dedication notes have been added to the plans as requested. **Comment Satisfactorily Addressed.**

5. SITE PLAN (Drawing 6)—See specific comments on following drawings.
6. UTILITIES PLAN—Following comments:

- a. Engineer to show on plans and profiles any pipe sections that need concrete encasement. **Note has been added to sheet 7 addressing this issue. Comment Satisfactorily Addressed.**
- b. The legend contains a symbol telephone lines, but not for “TEC Service” which needs to be clarified; that is, does TEC mean telephone, electric, and cable? **Comment Satisfactorily Addressed.**
- c. For the two homes to be connected to the existing sanitary sewer show cleanouts outside of dwelling and at curb line (proposed Lots 1 and 3). **Cleanouts have been added. Comment Satisfactorily Addressed.**
- d. Water line on Road “A” passes less than 10 feet from sanitary manhole—please revise accordingly. **Appropriate separation between water and sewer lines have been provided. Comment Satisfactorily Addressed.**

7. OVERALL GRADING AND DRAINAGE PLAN (Drawing 8)//GRADING AND DRAINAGE PLAN—SECTION ‘A’ (Drawing 9)// GRADING AND DRAINAGE PLAN—SECTION ‘B’ (Drawing 10)—Following comments:
- a. The square footage of the proposed dwellings as used for drainage calculations shall be the maximum allowed for the development. **Comment Satisfactorily Addressed.**
 - b. Applicant’s Engineer has provided additional soil logs and related information (see comments in the Drainage comments below). **Comment Still Applies.**
 - c. Applicant’s Engineer to provide complete design information for the proposed septic system to the appropriate agencies. Proposed systems to be approved by the Health Department and/or other governing agencies before Certificates of Occupancy can be issued. **Applicant has indicated that septic system approvals from the Board of Health should be conditions of approval. We take no exception to this approach. Comment Satisfactorily Addressed.**
 - d. The applicant should confirm that the distance between individual septic systems and stormwater infiltration systems meet all applicable codes or redesign the site plans as necessary. **The separation distance is confirmed at 50 feet. Comment Satisfactorily Addressed.**
8. PLAN AND PROFILE DELAWARE AVE. (Drawing 11)//PLAN AND PROFILE ROAD “A” (Drawing 12)—Following Comments:
- a. For clarity use different line types for existing and proposed water, sewer, utility lines in the plan view. **Line work has been adjusted for clarity. Comment Satisfactorily Addressed.**
 - b. For clarity, where pipes come into storm structures and sanitary manholes show an oval for the entering or exiting pipe. **Comment Satisfactorily Addressed.**
 - c. A note should be added to indicate that the minimum depth to the top of water lines is four feet. **The minimum cover depth has been added to the profile sheets. Comment Satisfactorily Addressed.**
 - d. Profile drawings should include pipe size, material (and class of pipe), length, and slope. **Requested information has been added to the profile sheets. Comment Satisfactorily Addressed.**
9. CROSS SECTIONS DELAWARE AVE—STA 6+75 TO 9+75 (Drawing 13)//CROSS SECTIONS ROAD “A”—STA 0+25 TO 3+25 (Drawing 14)—Following Comments:
- a. Legend indicates that pipe sizes in the cross-sections are “as shown,” however, there are no pipe sizes designated. **Pipes sizes have been annotated on the cross sections. Comment Satisfactorily Addressed.**
 - b. Where distances between water and sanitary lines are nominal, dimensions should be added to ensure compliance with the required ten feet of horizontal separation and 18 inches of vertical separation. **Dimensions have been provided. Comment Satisfactorily Addressed.**

- c. At Station 9+25 on Drawing 13 there are several ellipsoid pipe sections not identified in the legend, the Applicant should clarify size and type of pipes. **All pipes have been identified. Comment Satisfactorily Addressed.**
 - d. On Drawing 14, at Station 2+75, the sanitary line, gas line, and an unidentified pipe are shown in close proximity. Dimensions between the pipes should be shown and if necessary additional separation provided. **Pipes have been identified and separation indicated. Comment Satisfactorily Addressed.**
10. LANDSCAPE PLAN (Drawing 15)—Overall the landscaping plan is adequate for a residential area within a residential neighborhood. The Applicant should ensure compliance with Section 153.1 of the Ordinance. Any species used not on the list in the Ordinance should be native, non-invasive species. The existing project site is heavily wooded. The proposed plan calls for extensive clearing of the site to accommodate the development and grading. The Applicant should examine the site plan to see where existing vegetation might be preserved, particularly along the property lines. Notes regarding the two-year replacement guarantee and post-development inspection and approval by the Township should be added to the plan (Sections 153.1 j and k. **Landscape notes have been revised as requested and plant list checked against list of approved species and appears to be in compliance. Comment Satisfactorily Addressed.**
11. LIGHTING PLAN (Drawing 16)—At a mounting height of 15 feet, light values beneath the light fixtures would be nearly ten times brighter than standard residential street lighting. The street lighting should be designed in accordance with the AG/32 standard of the Illuminating Engineering Society (IES) or an explanation given why those standards cannot be met. Also, it should be determined if the streetlights will be owned by the homeowners association or will be part of the municipal/local utility supplier system. As JCP&L is the local electrical supplier, their standards should be followed as they may prefer supplying the light fixtures directly, which would be compatible with those in the surrounding neighborhoods. The proposed lighting fixtures as per the Ordinance (Section 153.2 f) is to be “traditionally-styled lantern fixtures unless otherwise specified by the approving authority.” **The applicant has amended the plan per our initial comments and has indicated that the street lighting will be dedicated as part of the road improvements since the streets will be public and not private. Comment Satisfactorily Addressed.**
12. SOIL EROSION AND SEDIMENT CONTROL PLAN (Drawing 17)—This plan will be reviewed by the Morris County Soil Conservation District. Proof of Plan Certification and an Authorization to Discharge is to be submitted to the Township Engineer and the Planning Board. **Comment Still Applies.**
13. DRAINAGE AREA PLAN—(Drawing 18)—Proposed Stormwater Basin number 1 is relatively close to the property line as is its discharge scour hole. It is recommended that the basin be moved as far to the west as possible. **Detention Basin #1 has been shifted west and is now acceptable. Comment Satisfactorily Addressed.**
14. SOIL EROSION AND SEDIMENT CONTROL DETAILS (Drawing 19)—This information will be reviewed by the Morris County Soil Conservation District. **Comment Still Applies.**

15. CONSTRUCTION DETAILS (Drawings 20, 21, 22, and 23)—Comments as follows:

- a. All concrete for curbs, sidewalks, and similar structures should be noted as Class “B.”
Class “B” concrete has been noted on the details. **Comment Satisfactorily Addressed.**
- b. The sidewalk detail should note that where sidewalks cross driveways the sidewalk thickness is to be increased to six inches. **Increased thickness at driveway has been indicated on the plan. Comment Satisfactorily Addressed.**
- c. The Roof Drain Detail should include a cleanout. **Detail provided. Comment Satisfactorily Addressed.**
- d. The caps or covers of all cleanouts, valve boxes and so forth should identify whether they are for water, storm drainage, sanitary sewers, or other utilities. **Comment Satisfactorily Addressed.**
- e. The detail for the “Typical Trench Detail for HDPE Storm Pipe” should be modified to indicate the backfill is to be done in 6-inch lifts, not 8 inch. **Comment Satisfactorily Addressed.**
- f. Trench details should be provided for water mains as per the water utility requirements. **Comment Satisfactorily Addressed.**
- g. The “Post and Chain Barrier Detail” should indicate the depth of embedment of the posts and provide a detail of the “secure connection” (that is, where the chain is actually connected to the posts.) **Detail has been clarified. Comment Satisfactorily Addressed.**
- h. For any retaining walls over four feet high the Applicant’s engineer is to provide stability calculations for sliding and a factor of safety to the Township Engineer. Calculations are to be signed and sealed by a N.J. Professional Engineer. **Applicant indicates that no retaining walls are proposed that would exceed a height of 4 feet. Comment Satisfactorily Addressed.**
- i. A street name sign detail is to be provided. All intersecting streets are to be on the sign with the lettering and reflectorized coating in accordance with the latest *Manual on Uniform Traffic Control Devices* edition. **Street sign details have been provided. Comment Satisfactorily Addressed.**
- j. The “Fire Hydrant Detail” is to be modified to indicate firm bedding and/or 6 inches of dense graded aggregate under the hydrant valve. **Hydrant detail has been correctly modified. Comment Satisfactorily Addressed.**
- k. A thrust block detail and table is to be added to the details indicating the type of thrust block to be used at various points in the water main system (90° intersections, 45° bends, and so forth). **Thrust block details have been provided. Comment Satisfactorily Addressed.**
- l. The proposed water supply system, hydrants, and appurtenances are to be reviewed and approved by the New Jersey American Water company, the Fire Official, and the Township Engineer. **Comment Still Applies.**

- m. Concrete headwalls and similar structures are to be of Class “B” construction with dimensions and reinforcing conforming to the *New Jersey D.O.T. Standard Specifications for Road and Bridge Construction*. [Details now reference NJDOT Standards.](#) **Comment Satisfactorily Addressed.**
- n. Soils logs and supporting geotechnical information for the infiltration basins, septic systems, and other soils dependent structures is to be provided for review. **Comment Still Applies.**
- o. Details and calculations to be supplied for all rip-rap outlet blankets. [Riprap apron details and supporting calculations have been provided and are acceptable.](#) **Comment Satisfactorily Addressed.**
- p. Engineer to provide supporting information that the emergency spillway can withstand erosion from overflow or if riprap and/or an erosion control blanket is required. [Calculations and information requested has been provided and are acceptable.](#) **Comment Satisfactorily Addressed.**
- q. A manhole cover detail is to be provided. For manhole structures that are to be retained by the Homeowners Association, the words “Sanitary Sewer” or “Storm Sewer” as appropriate with the year of installation is to be cast into the cover. For any structures that are to be part of the municipal system, the words, “Long Hill Twp.” is also to be cast into the cover. **Comment Satisfactorily Addressed.**
- r. Concrete benching in storm and sanitary structures is to be Class “C” concrete. **Comment Satisfactorily Addressed.**
- s. The “Typical Light Fixture Pole Base Detail” does not match the proposed lighting system (see Comment 12 above). The exposed concrete base is more typical of commercial application rather than a residential area. This is to be modified and a revised detail provided based on the final determination of the street lighting system. [The light base detail has been amended as requested.](#) **Comment Satisfactorily Addressed.**

MISCELLANEOUS COMMENTS

Drainage Plan Review:

The storm water report was amended on January 31, 2019 in response to Mr. Lemanowicz’s letter of October 16, 2018. The following comments address the outstanding issues on this project;

- 16. The grading of the access road to SWM-2 should be reworked to reduce the slope to less than 10% and grass pavers employed to create a stable access road for maintenance of the basin. [The slopes have been reduced to 9.5%, however grass pavers have not been provided.](#) **Comment Partially Addressed.**
- 17. The Stormwater Maintenance Manual cover sheet should provide a place for the county recording information. Since the storm water system will be owned and maintained by the H.A., copies of the recorded document should be provided to the individual homeowners and to the Township Engineer. **Comment Still Applies.**

18. Scour hole dimensions are to be provided on the detail. [Dimensions have been provided.](#)
Comment Satisfactorily Addressed.
19. Rip-rap apron detail with dimensions is to be provided on detail sheet. [Dimensions have been provided.](#) **Comment Satisfactorily Addressed.**
20. A cut-off wall is to be provided at the end of the outlet control structure apron. [Cutoff wall has been provided.](#) **Comment Satisfactorily Addressed.**
21. Appendix E of the BMP manual requires that specific onsite soil logs and permeability testing take place within the infiltration basin area. There were no soil logs provided within basin #2. In addition construction and post-construction testing is also required to insure that the basin will function as intended. **Comment Still Applies.**

Any revised plans or other documents should be accompanied by a cover letter responding individually to each of the comments presented in this review letter. The cover letter should also outline those changes to the plans that were requested as well as those not requested or readily apparent.