

# SITE ENGINEERING CONCEPTS, LLC

Consulting Engineering and Land Development Services

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January 15, 2021

Steve Norcini, P.E.  
Township Engineer  
Radnor Township  
Iven Ave  
Wayne, PA 19087

**Re: Response to Engineering Review  
Eagle Road and Radnor Road  
Preliminary Subdivision and Land Development Plan  
Revision #2**

Dear Steve,

On behalf of the CG Wayne, LLC, SITE Engineering Concepts is pleased to submit the enclosed revision to this preliminary application. Revision #2 addresses the comments in the December 28, 2020 review memo from Roger Phillips, P.E., as follows:

## Sewage Facilities Planning

*Comment 1. Final plan approval will not be granted until Planning Approval or a Planning Exemption is received from the PA DEP. The applicant has indicated on the plans that the planning modules have been submitted to the authorities for signature and will be forwarded to the PA DEP when completed. To date, the Township has not received a copy for review.*

**Response 1. The planning module application was submitted on January 13, 2021. The application requests six additional EDU's as 14 currently exist with the houses to be removed. The applicant requests final plan approval conditioned on receiving planning module approval prior to the construction of the final six homes.**

## Zoning

*Comment 1. The proposed zoning table must be revised to show the requirements of the proposed development. Additionally, the zoning table must indicate the appropriate zoning district.*

**Response 1. The Zoning Requirements Table on Sheet 7 indicates the existing districts and proposed district.**

*Comment 2. The breakdown for how the impervious coverage was calculated for each lot must be provided.*

**Response 2. An Impervious Summary Table is added to Sheet 7.**

*Comment 3. There appears to be 2- 20 foot side yards for Lot 14 show on the plan. This must be revised to indicate on of the side yards must be a minimum of 25 feet.*

**Response 3. One of the yards is revised to be 25 feet.**

*Comment 4. Some of the numbers are different in the proposed lot table and the proposed zoning summary table. They must be verified and tables revised to be consistent. For example, on the proposed lot table, the proposed lot area for lot 15 is 21,623 SF, but on the proposed zoning table the proposed lot area for lot 15 is 21,923.*

**Response 4. The lot table and zoning table are updated to be consistent.**

*Comment 5. There appears to be part of the home lot #1 and the concrete aprons and sidewalk for Lot 1, lot 2, and lot 3 located in the steep slope areas of greater than 20%. The applicant has indicated that these steep slope areas are man-made. Verification of the steep slopes being created by an approved Land Development Plan or Grading Permit must be provided.*

**Response 5. There are no slopes along Walnut Avenue. The anomaly in the survey data is corrected.**

### Subdivision and Land Development

*Comment 1. §255-20-B(1)(n) – Existing principal buildings (and their respective uses) and driveways on the adjacent peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads and other significant man-made features within 500 feet of and within the site (this includes properties across streets) must be shown on the plans. The applicant has requested a partial waiver from this requirement.*

**Response 1. Aerial imagery is used to provide detail beyond the site boundaries where survey data cannot legally be collected (e.g.: private property). A partial waiver is request to the extent necessary to not provide those items which are not visible on aerial imagery (e.g.: sewer lines, storm drains, easements, etc.).**

*Comment 2. §255.27.C(4) – When a subdivision abuts or contains an existing street of inadequate right-of-way width, the Board of Commissioners may require the reservation or dedication of rights-of-way to conform with the required standards. Radnor Street Road is a Minor Collector. The right-of-way requirement is 60 feet. The applicant has indicated on the plans that the right-of-way is 33 feet. Walnut Road is a local Road. The right-of-way requirement is 60 feet. The applicant has indicated on the plans that the right-of-way is 50 feet. Eagle Road is a Major Collector. The right-of-way requirement is 80 feet. The applicant has indicated on the plans that the right-of-way is 40 feet.*

**Response 2. Per discussions with township staff, a 25 foot half-ROW from the existing cartway centerline is provided along Radnor Street Road. Staff confirmed the existing Eagle Road and Walnut Avenue rights-of-way are sufficient.**

*Comment 3. §255.27.H(6) – Minimum curb radii at street intersections shall be 25 feet for local streets; 30 feet for collectors; 35 feet for arterials; and 10 feet for driveways. Radnor Street Road is a minor collector so the curb radii must be 30 feet, not 25 as shown on the plans..*

**Response 3. The curb radii are updated to reflect 30' at the Radnor Street Road intersections with Beechtree Lane and Walnut Lane.**

*Comment 4. §255.37.G – Sidewalks and pedestrian paths shall be laterally pitched at a slope of not less than ¼ inch per foot to provide for adequate surface drainage.*

**Response 4. A 2% cross slope is provided for the sidewalk and is indicated on the detail on sheet 13.**

*Comment 5. §255.38B – Street trees 2 ½ inches dbh at intervals of not more than 30 feet along both sides of new streets and along one or both sides of an existing street within the proposed subdivision or land development must be shown on the plans. The plan indicates that there are 76 street trees provided. The applicant must provide the calculations that breaks down how the number of street trees were calculated.*

**Response 5. A Street Tree Calculation table is now provided on Sheet 15.**

*Comment 6. §255-40.C(2) – Access and circulation for fire-fighting and other emergency equipment, moving vans, fuel trucks, garbage collection, deliveries and snow removal shall be planned for efficient operation and convenience. The turning templates provided on sheet 13 are incomplete.*

**Response 6. The turning template on Sheet 13 is revised to show the circulation for a tower fire truck to represent all truck traffic. Snow stockpile are is shown.**

*Comment 7. §255-43.1.B(1) – For all residential subdivisions or land developments involving a total of four or more lots and/or dwelling units, a minimum of 1,440 square feet or suitable park and recreation land shall be provided per dwelling unit within such subdivision/land development, unless the developer agrees to a fee in lieu of \$3,307 per dwelling unit (existing or proposed).*

**Response 7. Acknowledged .**

*Comment 8. §255-49 – Where appropriate, the developer shall install or cause to be installed, at the developer's expense, metal or fiberglass pole streetlights serviced by underground conduit in accordance with a plan to be prepared by the developer's engineer and approved by the Board of Commissioners.*

**Response 8. Per discussions with Township staff, 3 street light locations are shown along the Beechtree Lane extension . One at the Radnor Street Road intersection, at the approximate mid point and at the end of the cul-de-sac. A shadow box fixture detail is added to sheet 13.**

*Comment 9. §255-54.B – The central water system should be designed with adequate capacity and appropriately spaced fire hydrants for fire-fighting purposes pursuant to the specification of the National Fire Protection Association. Review and approval by the Township Engineer and the Township Fire Marshall shall be required in order to ensure that adequate fire protection is provided. We note that the applicant is working with the Township Engineer and Township Fire Marshall and will incorporate their input as applicable.*

**Response 9. A fire hydrant is shown at the end of the cul-de-sac per discussion with the fire department. The water main extension plan is being prepared for review and approval by Aqua and the Township.**

### Stormwater

*Comment 1. Please revise the proposed drainage area map on Sheet 14 of the plan set to clearly indicate the separate drainage areas used in the stormwater calculations (i.e. A1, A2, etc.).*

**Response 1. The drainage area map scale is increased.**

*Comment 2. Lot #19 Infiltration Bed: Outlet pipe slope is listed as 12.20% on the plans and is listed as 12.50% in the hydrograph report. Please revise this inconsistency.*

**Response 2. The plan is revised to match the report.**

*Comment 3. Please revise the endwall at Outfalls A2, A3, and A4 to a level spreader to discharge runoff in a disperse, unconcentrated manner. Please provide a level spreader detail.*

**Response 3. A level spreader design worksheet is added to the storm report and a level spreader detail for Outfalls A1, A2, A4, A6 and A7 is added to the plan set. A riprap discharge apron is better suited for the discharge for the flows from 15 inch diameter pipes at Outfalls A3 and A5. A riprap discharge apron design worksheet is added to the storm report and detail to the plan.**

*Comment 4. It appears the infiltration test elevation does not correspond to the bed bottom elevation for Lots #1, #6, and #20. Please revise the bed bottom elevations to incorporate to the appropriate elevation and provide at least two feet above any limiting zone.*

**Response 4. The bottom elevations for the beds are within the test strata per the borehole logs in the soil report. For example the test for Lot 1A was conducted at elevation 350.0. The uniform strata containing the test elevation ranges from elevation 345.5 through 352.5. The proposed Lot 1 bed bottom elevation of 350.5 is located within the same material.**

*Comment 5. The proposed bed bottom elevation for Lot #11 has been revised to 360.5, which is only 1.9 feet above limiting zone. Please revise the bed bottom elevation to provide at least two feet above any limiting zone.*

**Response 5. The Lot 11 bed elevation is raised 0.5' to meet the limiting zone separation requirement. As discussed in Response 4 above, the bed bottom elevation is within the test strata per the borehole log.**

*Comment 6. The Basin Footprints on the Basin Volumes & Dewater Times Per Bed in the stormwater report are inconsistent with the bed footprints found on the plans for Lots #17, #18, & #20. Please revise these inconsistencies.*

**Response 6. The basin footprints are revised to match the dimensions in the storm report.**

*Comment 7. The location of storm pipe PP-11 and Outfall A5 have been relocated to avoid interference with infiltration bed PIB-1 and to provide adequate cover. Please update the Mid-Lot Storm Main Profile on Sheet 9 of the plan set to reflect the updated conditions.*

**Response 7. The profiles are revised to match the current alignments.**

*Comment 8. The pipe size of PP-R1C on PI-R2 is listed as 15" in the Radnor/Beechtree Storm Main table on Sheet 11 of the plans but is indicated as 8" in the Lot 17 & 18 Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Response 8. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 9. The invert of PO-13 on PI-R3B is listed as "REF!" in the Radnor/Beechtree Storm Main table on Sheet 11 of the plans but is indicated as 384.07 in the Beechtree Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 10. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 11. 10. The invert of PO-12 on PI-R4 is listed as "REF!" in the Radnor/Beechtree Storm Main table on Sheet 11 of the plans but is indicated as 382.48 in the Beechtree Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 12. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 13. The invert of PP-R4 on PI-R4 is listed as 380.13 in the Radnor/Beechtree Storm Main table on Sheet 11 of the plans and in the Pipe Run Table on Sheet 12 of the plans but is indicated as 380.11 in the Beechtree Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 14. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 15. The invert of PO-6 on PSTMH-3 is listed as 372.78 in the Mid-Lot Storm Main table on Sheet 11 of the plans but is indicated as 372.63 in the Mid-Lot Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 16. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 17. The invert of PP-11 on Outfall A5 is listed as 360.13 in the Pipe Run Table on Sheet 12 of the plans but is indicated as 360.3 in the Mid-Lot Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 18. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 19. The invert of PO-3 on PI-R6B is listed as 359.30 in the West Walnut Storm Main table on Sheet 11 of the plans but is indicated as 361.68 in the Walnut Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 20. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 21. The slope and length of PP-R6A are listed as 3.1% and 151.00 LF, respectively, in the Pipe Run Table on Sheet 12 of the plans but is indicated as 5.0% and 178 LF, respectively, in the Walnut Storm Main Profile on Sheet 9 of the plans. Please revise these inconsistencies.*

**Comment 22. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 23. The slope, length, and upstream invert of PP-R6B are listed as 2.4%, 131.00 LF, and 359.28, respectively, in the Pipe Run Table on Sheet 12 of the plans but is indicated as 5.5%, 134 LF, and 361.01, respectively,*

*in the Walnut Storm Main Profile on Sheet 9 of the plans. The upstream invert is listed as 359.28 in the West Walnut Storm Main table on Sheet 11 of the plans. Please revise these inconsistencies.*

**Comment 24. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 25. The invert of PO-2 on PI-R7 is listed as 355.20 in the West Walnut Storm Main table on Sheet 11 of the plans but is indicated as 355.56 in the Walnut Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 26. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 27. The slope, length, and upstream invert of PP-R7 are listed as 3.7%, 157.10 LF, and 355.18, respectively, in the Pipe Run Table on Sheet 12 of the plans but is indicated as 5.5%, 112 LF, and 355.54, respectively, in the Walnut Storm Main Profile on Sheet 9 of the plans. The upstream invert is listed as 355.18 in the West Walnut Storm Main table on Sheet 11 of the plans. Please revise these inconsistencies.*

**Comment 28. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 29. The pipe size of EX A on Outfall A7 is listed as 15" in the West Walnut Storm Main table on Sheet 11 of the plans but is indicated as 8" in the Walnut Storm Main Profile on Sheet 9 of the plans. Please revise this inconsistency.*

**Comment 30. The profile is revised to contain all pipe information and the pipe run tables are removed.**

*Comment 31. It appears that several utility crossings are missing from the Beechtree Storm Main Profile on Sheet 9 of the plans. The Utility Plan on Sheet 11 appear to show 25 utility crossings but the profile indicates 10. Please revise the profile to include all utility crossings.*

**Response 9. The utility crossings are updated to reflect the current alignment.**

*Comment 32. The Mid-Lot Storm Main Profile on Sheet 9 of the plan set indicates a sanitary lateral that interferes with storm pipe PP-10, but this sanitary lateral does not appear to cross this storm pipe, as seen on Sheet 11. Please clarify or revise the profile to reflect the conditions shown on the plans.*

**Response 10. The profiles are revised to match the current alignments.**

*Comment 33. Please revise the Radnor Storm Main Profile on Sheet 9 to show the proposed sanitary sewer crossings along storm pipes PP-R1A and PP-R1B.*

**Response 11. The sanitary sewer crossing is now reflected in the profile.**

*Comment 34. Please revise the Lot 17 & 18 Storm Main Profile on Sheet 9 to show the proposed utility crossings near PI-R2.*

**Response 12. The profiles are revised to include the crossings.**

*Comment 35. The Walnut Storm Main Profile on Sheet 9 of the plan set indicates many utility crossings that are inconsistent with the Utility Plan on Sheet 11. Please revise the profile to reflect the conditions shown on the plans.*

**Response 13. The profiles are revised to match the current alignments and crossings**

*Comment 36. Please revise the Radnor Storm Main Profile and Walnut Storm Main Profile on Sheet 9 of the plan set to display the proposed grade.*

**Response 14. The profiles are updated to reflect the proposed grade.**

*Comment 37. The Lot 17 & 18 Storm Main Profile on Sheet 9 of the plan set appears to indicate that storm pipe PP-18 does not have adequate cover. Please revise the plans to provide at least one foot of cover.*

**Response 15. The profiles are updated to insure property cover..**

*Comment 38. The Mid-Lot Storm Main Profile on Sheet 9 of the plan set appears to indicate that storm pipe PP-P9A does not have adequate cover. Please revise the plans to provide at least one foot of cover.*

**Response 16. The profiles are revised to match the current alignments and minimum cover verified.**

### Sanitary Sewer

*Comment 1. The profile provided must include the sanitary sewer run PSANH-1 to PSANH-4A.*

**Response 1. PSANH-1 to PSANH-4A are now included.**

*Comment 2. The size of the proposed 8" sanitary sewer must be shown on the profile.*

**Response 2. The sewer pipe size is added to the profile.**

*Comment 3. Sanitary sewer Laterals for Lot #1 and Lot #2 must be shown on the plans.*

**Response 3. Lot 1 and 2 laterals are labeled for clarity.**

*Comment 4. The lateral for Lot #20 appears to be tying into the existing lateral and directly into the existing sanitary sewer. The condition of the existing lateral must be verified and approved by the Township prior to connection.*

**Response 4. A note is added to the plan requiring the lateral be verified during the grading permit review and if deemed unsatisfactory to the Township be replaced.**

*Comment 5. The lateral for lot #11 does not appear to be tying into the sanitary sewer.*

**Response 5. The Lot 11 lateral is extended to the revised main alignment. A profile is added showing the water main crossing.**

*Comment 6. Laterals cannot tie directly into manholes. The lateral for Lot #12 is tying into an existing manhole. This must be revised.*

**Response 6. The Lot 12 lateral is revised to connect to the main.**

*Comment 7. Sanitary sewer branches must not tie into manholes at acute angles to the flow.*

**Response 7. Laterals are revised to eliminate acute angles.**

*Comment 8. A note must be added to the plans stating no planting will be done in the Sanitary Sewer easements.*

**Response 8. The note is added to Sheet 3 and 11.**

*Comment 9. Sheet 3 indicates that the easement between lots 13 and 14 will be a private utility easement. If the sanitary sewers will be dedicated to Radnor Township, this must be revised.*

**Response 9. The easement is meant to be private with individual laterals from Lots 17 and 18 to the Beechtree sewer main.**

*Comment 10. Additional information must be provided regarding the decommissioning of the existing sanitary sewer.*

**Response 10. Additional decommissioning information is now provided.**

*Comment 11. The invert information must be verified for the sanitary sewer in Walnut Lane.*

**Response 11. Additional survey data is being provided and will be incorporated with the grading permit applications.**

*Comment 12. All sanitary sewer lines must be located in the paved area to the maximum extent possible. The proposed sanitary sewer line in Radnor Street Road must be located in the travel lane.*

**Response 12. The proposed sewer is now located within travel lane.**

### General

*Comment 1. The applicant has indicated that all retaining walls will be under 4 feet high. Any revisions to the size or locations of the individual structures will be addressed with the grading permits.*

**Response 1. Acknowledged.**

*Comment 2. The applicant must appear before the Shade Tree Commission and gain approval prior to this plan being presented to the Board or Commissioners.*

**Response 2. The Applicant is scheduled to appear before the Shade Tree Commission on January 20, 2021.**

Steve Norcini, P.E.  
January 15, 2021  
Re: Eagle Road and Radnor Road Preliminary Subdivision & LD Plan, Revision #2  
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We trust these revisions satisfactorily address your comments. Should you have any questions and/or additional comments, please contact me at [pspellman@site-engineers.com](mailto:pspellman@site-engineers.com) or 610.523.9002.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrick Spellman". The signature is stylized with a large initial "P" and a long horizontal stroke.

Patrick Spellman, P.E.