



May 2, 2025

Mila Carter, Township Manager
Director of Planning and Zoning
Westtown Township
1039 Wilmington Pike
West Chester, PA 19382

RE: Stokes Estate
Preliminary Land Development Review
Westtown Township
WTT-21-228

Dear Ms. Carter,

As requested, Cedarville Engineering Group, LLC (CEG) has completed a review of the Land Development Application for Stokes Estate. The site (UPI#s 67-2-23, 67-2-8, 67-2-9, and 67-2-7.1) comprised of roughly 81 acres, is located on the eastern side of Shiloh Road in the R-1 Residential Zoning District of Westtown Township. The project includes: the demolition of existing structures, and the construction of a Residential Subdivision consisting of 78 single family homes, a roadway, public sewer, drainage systems and infiltration BMPs to manage the increased impervious coverage. The applicant is proposing to develop the referenced parcel under Article IX of the Westtown Township Zoning Ordinance, Flexible Design Procedure.

The following information was received by our office on April 2, 2025:

- A. Cover Letter for Preliminary/Final Land Development Application – Fox Clearing, LLC, 1013 Shiloh Road (UPI #67-2-23) by Gregg I Adelman, Esquire from Kaplin Stewart, dated April 2, 2025.
- B. Application for Approval of Preliminary/Final Plan, prepared by Gregg I Adelman Esq., Attorney for Applicant on April 2, 2025.
- C. Westtown Township Subdivision and Land Development Information Sheet.
- D. Westtown Township Notice to all Property Owners or equitable owners planning to develop or subdivide land in Westtown Township, signed April 2, 2025.
- E. County of Chester Subdivision/Land Development Information Form.
- F. Act 247 County Referral.
- G. Full size plan tilted, “Preliminary Final Land Development Plans” consist of fifty-five (55) sheets prepared by Howell Engineering, dated March 25, 2025.
- H. Preliminary Stormwater Management Report prepared by Howell Engineering, dated March 17, 2023, last revised March 24, 2025.
- I. Revised Sewage Facilities Planning Module for The Stokes Estate prepared by Howell Engineering, dated February 12, 2025.
- J. Corresponding between GHD Services Inc. and USFWS regarding PNDI clearance on April 16, 2021.

Cedarville Engineering Group, LLC

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- K. PA F&B regarding PNDI Clearance Letter dated December 17, 2024.
- L. PNDI of Stokes Property from PA DCNR, reviewed on December 5, 2024.
- M. USFWS Services PNDI form, signed on December 18, 2024.
- N. Westtown Township Escrow Agreement, signed March 20, 2025.
- O. AQUA letter of confirmation of service dated April 28, 2021.

Settlement Agreement:

A Settlement Agreement was reached between the Owner/Applicant and Westtown Township on November 18, 2024. The settlement included:

- Permitting the Developer to design, engineer, construct, develop, and/or use the Property for seventy-eight single family lots.
- Construction of a school bus stop and car pullover area, subject to input from the West Chester Area School District, shall be included.
- Acknowledgement that at the time of preparation for the Settlement Plan, waivers from Subdivision and Land Development (SALDO) and Stormwater (SWMO) Ordinances may be required.
- Preparation of Preliminary/Final Plans in accordance with the Settlement Plan zoning area and bulk regulations, which may vary from the applicable regulations under the Zoning Ordinance, applicable provisions of SALDO and SWMO, and the terms of the Agreement.
- The development shall be serviced by public sanitary sewer. An on-site pump station and force main will be constructed to connect to the Township's public sewer system.
- Open space will be owned and maintained by a future homeowner's association.
- The Developer shall offer an additional right-of-way along Shiloh Road as delineated on the Settlement Plan.
- The Developer shall contribute fifty thousand dollars (\$50,000) to the Township for traffic calming measures in Shiloh Road.
- The roads and sidewalks within the Development shall be owned and maintained by either individual homeowners or a future homeowner's association.
- Retaining walls shall be owned and maintained by the homeowner's association.
- Trails constructed in the Development shall be owned and maintained by the homeowner's association.
- Sewer collection system shall be dedicated to and accepted by the Township.
- An NPDES permit shall be received and financial security posted prior to the start of site grading and clearing.
- The pipeline shall be disclosed to all individual new home purchasers in writing.

The following waivers have been granted:

- Section 149-904.A - On all streets there shall be minimum center-line grade of 1% and a maximum of 7%.
Modification: To allow a few sections of Roads A, C, and D to exceed 7% but be no more than 10%. Please note that subsequent subsection 149-904.B states "the centerline grade may be increased up to 10% upon the recommendation of the Township Engineer and the approval of the Board of Supervisors".
- Section 149-904.C -The center-line grade on a cul-de-sac public street shall not exceed 7%, and the grade of the diameter of the turnaround shall not exceed 4%.
Modification: To allow a stretch of Road C (a cul-de-sac street) to exceed 7% but be no more than 10%.



- Section 149-907.E - Where the grade of any street at the approach of an intersection exceeds 4%, a leveling area of at least 75 feet measured from the curblineline of the street being intersected shall be provided. The grade of this area shall not exceed 2%.
Modification: To allow leveling areas to be 4%, which exceeds the required 2%.
- Section 149-913.B - Blocks shall have a minimum length of 500 feet.
Modification: To allow blocks to be smaller than 500 feet.
- Section 144-311.B(2) - Storm sewers shall be reinforced concrete when constructed within right-of-way of streets.
Modification: To allow the use of High Density Polyethylene Pipe (HDPE) subject to Township inspection and approval of installation.
- Section 144-311.C(3) - The bottom of the basin shall have a minimum slope of 2% and any channel shall have a minimum slope of 0.5%.
Modification: To allow infiltration basins to have a flat bottom with 0% slope as required by the PA BMP Manual for infiltration BMPs.
- Section 170-1514 - Outdoor Lighting
Modification: to reduce the required amount of lighting in consultation and agreement with Township Consultants, Planning Commission and Supervisors to maintain more rural lighting levels.
- Section 170-402.D.(3).(f) - If the total of all area(s) of precautionary slopes on a lot exceed 25% of the total area of a lot, then no more than 50% of the precautionary slopes on that lot shall be disturbed, graded or modified.
Modification: To allow Lot 43 on the settlement plan to disturb more than 50% of the precautionary slopes on said lot.

The documents have been reviewed by CEG for compliance with Chapter 88 - Westtown Township Erosion, Sediment Control and Grading, Chapter 144 - Westtown Township Stormwater Management Ordinance, Chapter 149 - Westtown Township Subdivision of Land Ordinance and Chapter 170 - Westtown Township Zoning Ordinance.

We offer the following comments:

Settlement Agreement Condition Comments

The following comments are numbered in accordance with the settlement agreement dated November 18, 2024 for consistency and clarity.

4. *Proposed Development and Future Use of the Property:*

- a. *The Parties agree to permit Developer to design, engineer, construct, develop, and/or use the Property for seventy-eight (78) single family homes (“Modified Proposed Development”) substantially in accordance with the conceptual site plan entitled “Settlement Plan - Overall Site Plan” prepared by DL Howell dated February 28, 2024, last revised October 25, 2024, a copy of which is attached as Exhibit “A” (“Settlement Plan”).*

The Applicant is proposing 78 lots on the site, two with existing dwellings, and 76 new lots. The Settlement Agreement specifically references that the Developer is “permitted to design, engineer, construct, develop, and/or use the property” for a layout that supports 78 single-family homes. Confirmation shall be received from the Township

Solicitor regarding whether the plans need to show design and engineering to meet a density of 78 lots or if the 78 lots are now guaranteed.

- b. *The Modified Proposed Development proposes the construction of an additional internal street to connect to proposed Road “C” in the Modified Proposed Development.*

The additional street connection to Road C is adequately shown on the submitted plan.

- c. *The Modified Proposed Development also proposes the construction of a school bus stop together with a car pullover area. The school bus stop and car pullover area will be further designed during the land development process and is subject to input from the West Chester Area School District.*

The proposed school bus stop is shown at the terminal end of Road A, at the intersection of Road A, Hunt Drive, and Shiloh Road. The following shall be addressed:

- The school bus stop shall be clearly labeled on the Site Plan (Sheets 2 and 3).
- All documentation and correspondence regarding input from the West Chester Area School District shall be forwarded to Westtown Township.
- The proposed location of the school bus stop and associated parking area is subject to the review and approval of the Township Traffic Engineer.

- d. *At the time of this Agreement, the Modified Proposed Development has been determined to deviate from the Township’s Zoning Ordinance, Subdivision and Land Development Ordinance (“SALDO”) and Stormwater Management Ordinance (“SWMO”) as detailed in attached Exhibit “B”. Additional SALDO and SWMO waivers may be requested during review of the Land Development Application set forth below.*

Additional waivers shall be formally requested in writing. This comment is for informational purposes only.

7. *Sanitary Sewer for the Modified Proposed Development*

- a. *The Development shall be serviced by public sanitary sewer via the Township public sewer system with the treatment and disposal at the Chester Creek wastewater treatment plant.*
- b. *An on-site sewer pump station and force main will be constructed to convey wastewater generated by the Development into the Township’s public sewer system via an existing manhole at the intersection of Shiloh Road and Farm Lane.*

The layout and connection of the proposed sanitary sewer system to the Township public system is subject to the review and approval of the Township Authority. The Applicant has submitted a Sewage Planning Module to the Township on February 12, 2025 and is currently under review.

8. *Sewage Facilities Planning. The Developer shall prepare and submit a revised sewage facilities planning module for the Development for the entire property.*

The layout and connection of the proposed sanitary sewer system to the Township public system is subject to the review and approval of the Township Authority. The Applicant has

submitted a Sewage Planning Module to the Township on February 12, 2025 and is currently under review.

10. *NPDES Permit. The Developer shall obtain the required NPDES permit from DEP or Chester County Conservation District.*

The Applicant is advised that all necessary permits shall be received prior to final plan approval.

11. *Dedicated and Non-dedicated Improvements*

- a. *Open Space shall be owned and maintained by the Homeowner's association.*
- b. *The Developer shall offer additional right-of-way along Shiloh Road.*
- c. *Concurrently with the recording of final land development plans, the Developer shall contribute fifty thousand dollars to the Township to be used for traffic calming measures along Shiloh Road.*
- d. *The Developer shall retime the existing traffic signal at Route 926 and Shiloh Road to optimize levels of service.*
- e. *The roadways and sidewalks shall be owned and maintained by individual homeowners or a homeowner's association.*
- f. *The retaining walls shall be owned and maintained by the homeowner's association.*
- g. *Trails shall be owned and maintained by the homeowner's association.*
- h. *The new sewer collection system and pump station will be dedicated to the Township.*

Homeowner Association documents shall be provided to the Township and are subject to review and approval. Documents shall demonstrate sufficient information for adequate ownership and maintenance of Association's responsibilities as well as sufficient funds collection.

Chapter 80 - Westtown Township Erosion, Sediment Control and Grading

1. *Section 80-5 E - A time schedule indicating the anticipated starting and completion dates of the development sequence, the expected date of completion of construction of each of the measures referred to in Subsection D of this section and the time of exposure of each area prior to the completion of such measures.*

The following comments shall be addressed:

- A time schedule mentioned above shall be shown on Plans.
- The referenced dates under permanent seeding section for seeding shall be added to the specification.

2. *Section 80-8 G - Precautions shall be taken to prevent the unnecessary removal of trees and to assure their protection by suitable tree wells, as determined by the Township Engineer.*

Section 80-8 I - All plans and specifications accompanying applications for permits shall include provisions for both temporary and permanent erosion and sediment control.

Section 80-8.J - The design, installation and maintenance of erosion and sediment control measures shall be accomplished in accordance with standards and specifications

established by the USDA Soil Conservation Service and the Chester County Soil Conservation District, except as otherwise stipulated in this or other applicable Township Ordinances.

The following comments shall be addressed:

- The stockpile and its E&S control measures shall be shown on Plans.
- The proposed stabilized rock construction entrance(s) shall be shown on the Plans.
- The following shall be addressed regarding the proposed compost filter socks:
 - Proposed filter socks shall be revised to be placed parallel to contour lines
 - All compost filter socks shall be labeled with unique identification or identifier callouts.
 - J-hooks shall not be located upgradient of a sediment basin. If a diversion filter sock is intended to direct flow to a sediment basin, the terminal end of the diversion shall continue to direct flows, not restrict them, to facilitate operation and maintenance of the perimeter controls.
- The details of temporary sediment basins shall be shown on Plans. Standard Detail #7-12 without any supporting information (shown on Sheet 35) is insufficient.
- The duplicated “Orange Construction Fence” detail shall be removed.
- An erosion and sediment control narrative shall be provided. It shall include, but not is not limited to, the following:
 - Supporting calculations for the compost filter socks
 - Supporting calculations for the diversion socks
 - Supporting calculations for the J-hooks
 - Supporting calculations for the sediment basins
 - Supporting calculations for the riprap aprons
 - Supporting calculations for the E&S level spreaders and plunge pools (Sheet 35)
 - Stability supporting calculations for all swales and erosion control blankets
- All Inlet protections shall be shown on the Plans.
- Maintenance & Inspection of Erosion Controls Note 3 on Sheet 34 shall be revise the reference of “filter fabric fence” to “compost filter sock”.
- The following notes shall be revised to include Westtown Township, in addition to “the District”, “Chester County Conservation District”, etc.
 - BMP General Note
 - Erosion and Sediment Control General Notes
 - #2
 - #10
 - #11
 - #20
 - #22
 - #37
 - Sequence of Construction step:
 - #2
 - #5
 - #24
 - Individual On-Lot Staging Sequence step:
 - #3
 - #11

- Erosion and Sediment Control General Note 27 shall be revised to reference Westtown Township Ordinance requirements, not Section 388-31.

Chapter 144 - Westtown Township Stormwater Management Ordinance

3. *Section 144-301.H - Areas located outside of the site (i.e., areas outside of the regulated activity) that drain through a proposed site are not subject to water quality and volume control, infiltration, stream channel protection, or peak flow rate control requirements (as presented in §§ 144-305, 144-306, 144-307, and 144-308). Drainage facilities located on the site shall be designed to safely convey flows from outside of the site through the site.*

Section 144.308.E - Areas located outside of the site (i.e., areas outside of the regulated activity) that drain through a proposed site are not subject to peak flow rate control requirements. Drainage facilities located on the site shall be designed to safely convey flows from outside of the site through the site.

The following shall be addressed:

- The drainage areas for each BMP shall be clearly labeled on Plans, for example BMP1, BMP2, ... Bypass 1, Bypass 2.
- The provided drainage area plans shall be revised to include the offsite area draining through the site.

4. *Section 144-302.E - Culverts, bridges, storm sewers, or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.*

Section 144-309.H - Hydraulic computations to determine the capacity of pipes, culverts, and storm sewers shall be consistent with methods and computations contained in the Federal Highway Administration Hydraulic Design Series Number 5 (Publication No. FHWA-NHI-01-020 HDS No. 5, as amended). Hydraulic computations to determine the capacity of open channels shall be consistent with methods and computations contained in the Federal Highway Administration Hydraulic Engineering Circular Number 15 (Publication No. FHWA-NHI-05-114 HEC 15, as amended). Values for Manning's roughness coefficient (n) shall be consistent with Table C-3 in Appendix C of the chapter.

The following shall be addressed:

- A copy of an approved Chapter 105 Permit shall be received regarding the culvert installation crossing the wetlands for Road A.
- All correspondence relating to the culvert crossing between the Conservation District and Applicant shall be forwarded to Westtown Township.
- Supporting calculations demonstrating that the proposed culvert is adequately sized and can safely convey all necessary flows shall be provided for review.

5. *Section 144-304 A - First, identify and delineate all existing natural resources and natural and man-made hydrologic features listed in § 144-402C(8) that are located within the site, or receive discharge from, or may be impacted by the proposed regulated activity.*

The wetlands shall be labeled as PNDI or related corresponding on Plan. For example, showing the location of Wetland 1 referred in 2021 USFWS's letter.

6. *Section 144-304 C(3) - Maximize protection of or improvement to natural resources and special management areas.*

Section 144-402 C 8 (g) - Areas that are part of the Pennsylvania Natural Diversity Inventory (PNDI) and a list of potential impacts and clearances received (for regulated activities involving one acre or more proposed earth disturbance).

The following comments shall be addressed:

- The response for Northern, Red-bellied Cooter from PA F&B is only valid for two years. Review may be recommended if the project is not completed within two years from December 17, 2024.
- The PA F&B corresponding did not mention anything about Bold Eagle which was concerned in 2021 USFWS's letter.
- A list of potential impacts and clearances received shall be shown on the Plan.

7. *The SWM site plan shall consist of a general description of the project, including items described in § 144-304, calculations, maps, and plans. A note on the maps shall refer to the associated computations and erosion and sediment control plan by title and date. The cover sheet of the computations and erosion and sediment control plan shall refer to the associated maps by title and date. All SWM site plan materials shall be submitted to the municipality in a format that is clear, concise, legible, neat, and well organized; otherwise, the SWM site plan shall not be accepted for review and shall be returned to the applicant*

The following shall be addressed:

- The following comments from Plan C04.7 to Plan C04.8 shall be addressed prior to the acceptance of resubmission:
 - The inv. elevation of the 9" orifice EL.304 shall be higher than the ground EL.302 for Basin SCM1 - POA2.
 - Only one set of construction sequences shall be followed for Basin/bed SCM 4 - POA 2.
 - The Applicant shall ensure that the titles of the BMPs match the figure titles.
 - The Applicant shall label the BMPs with consistent numbering style. The labeling of the BMPs shall be either Basin #1 to 5 or SCM1 POA001 to SCM4POA004, not both in the Plans, Infiltration Report and Stormwater Reports.
 - The Plans and Report shall reference one another by title and date.
 - Only one inlet box details shall be needed in Infiltration Basin SCM 1 -POA 2. The inlet details of infiltration Basin SCM3-POA2 and Basin/Bed SCM4 -POA 2 shall have weirs.

8. *Section 144-305 A - The post-construction total runoff volume shall not exceed the predevelopment total runoff volume for all storms equal to or less than the two-year, twenty-four-hour duration precipitation (design storm). The water quality and runoff volume to be managed shall consist of any runoff volume generated by the proposed regulated activity over and above the predevelopment total runoff volume and shall be*

captured and permanently retained or infiltrated on the site. Permanent retention options may include, but are not limited to, reuse, evaporation, transpiration, and infiltration.

The following shall be addressed:

- The total limit of disturbance and limits of disturbance for each POA shall be clearly labeled on the Overall PCSM Plan, Sheet 19 of 55.
- The total earth disturbance noted for POA 1 and POA 2 in the Report shall be revised to indicate the area disturbed within POA 00#, consistent with the total areas noted in the 002 and Undetained rows of the spreadsheet. (Sheet 16 notes a drainage area and earth disturbance of 7.94 and 6.32 for a total of 37.93)

9. *Section 144-306 H (2) - Provide field tests such as double ring infiltrometer or other hydraulic conductivity tests (at the elevation of the proposed infiltration surface) to determine the appropriate hydraulic conductivity rate. Standard septic/sewage percolation tests are not acceptable for design purposes.*

The following comments shall be addressed:

- An elevation profile showing the elevation of the bottom of BMP relative to its infiltration test elevation/depth of the basins shall be provided to show compliance with the ordinance above.
- The elevation of SCM4POA2/UG Bed 1 w/Basin is missing on Plan.

10. *Section 144-306 I - Infiltration BMPs shall be selected based on suitability of soils and site conditions and shall be constructed on soils that have the following characteristics:*

- (1) *A minimum depth of 24 inches between the bottom of the BMP and the top of the limiting zone. Additional depth may be required in areas underlain by karst or carbonate geology. (See § 144-306M.)*
- (2) *An infiltration rate sufficient to accept the additional stormwater volume and drain completely as determined by field tests conducted by the applicant.*
- (3) *The infiltration facility shall completely drain the retention (infiltration) volume within three days (72 hours) from the end of the design storm.*

The following comments shall be addressed:

- The infiltration test information shown on the Plan shall be revised to not be covered by other plan features in Plan C04.1.
- The test pit labels and data shall be in consistent color.
- The data and information of TP 2-5-3 and TP3-9-2 on Plan C04.1 does not match the infiltration results from the Infiltration Report. The Applicant shall ensure the testing information on Plan matches the testing results in the Infiltration Report and provide sufficient information for code compliance review.
- The infiltration rate shall be consistent with the recommended rate provided by the Design Engineer in the Infiltration Report. The TP 2-5-3's infiltration rate recommended by Howell Engineering for soil laying, 0.704 in/hr, does not match its hydraulic conductivity calculation result 0.048 in/hr.
- The infiltration tests of SCM4 POA2 shall be completed as with other BMPs'. Two tests under the BMP shall be conducted and use the geometric means of the two tests' vertical permeability to represent the hydraulic conductivity of the location.

- The Applicant shall ensure the Soil Morphology Form of TP 3-22-5 is provided. There is one form for TP 3-22-1 with no description or calculation.
- The application shall ensure dewatering calculations are provided for all BMPs. The dewatering calculation of Basin 1 Lower is missing, but two Basin 1 Upper dewater calculations were found in the Stormwater Report.
- Test 2-5-3 shows redox features 1 foot above bmp bottom. Additional information shall be provided to validate that the BMP will not be located below seasonal high water table.

11. *Section 144-306 J - All infiltration practices shall:*

- (2) *Be set back at least 100 feet upgradient and 10 feet downgradient from all buildings and features with subgrade elements (e.g., basements, foundation walls, etc.), unless otherwise approved by the Municipal Engineer.*
- (3) *For any infiltration practice that collects runoff from shared or multiple features and that is located within 50 feet of a building or feature with subgrade elements (e.g., basements, foundation walls, etc.), the bottom elevation shall be set below the elevation of the subgrade element.*

The distance between the BMPs and the existing/proposed buildings shall be labeled on the Plan.

12. *Section 144-306 M - Where sediment transport in the stormwater runoff is anticipated to reach the infiltration system, appropriate permanent measures to prevent or collect sediment shall be installed prior to discharge to the infiltration system.*

Sumps shall be provided for all storm sewer lines at the final structure before entering a stormwater BMP. Provide sumps to the following structures:

- MH 105
- MH 201
- IC 703
- IM 601
- IM 503
- MH 303

13. *Section 144-306.Q - The following procedures and materials shall be required during the construction of all subsurface facilities:*

- 3) *Only clean aggregate with documented porosity, free of fines, shall be allowed.*

The above referenced note shall be added to the Construction Specifications of the underground Infiltration Basin/Bed SCM 4 - POA 2 Detail on Sheet 26.

14. *Section 144-307.A - The peak flow rate of the post-construction two-year, twenty-four-hour design storm shall be reduced to the predevelopment peak flow rate of the one-year, twenty-four-hour duration precipitation, using the SCS Type II distribution.*

Section 144-308 A - Post-construction peak flow rates from any regulated activity shall not exceed the predevelopment peak flow rates as shown for each of the design storms specified in Table 308.1.

Table 308.1 Peak Rate Control Standards		
(Peak flow rate of the post-construction design storm shall be reduced to the peak flow rate of the corresponding predevelopment design storm shown in the table.)		
Post-Construction Design Storm Frequency (24-Hour Duration)	Predevelopment Design Storm	
	New Development Regulated Activities	Redevelopment Regulated Activities
2-Year	1-Year	2-Year
5-Year	5-Year	5-Year
10-Year	10-Year	10-Year
25-Year	25-Year	25-Year
50-Year	50-Year	50-Year
100-Year	100-Year	100-Year

The following shall be addressed:

- o The provided stormwater design shall be revised to reduce the peak flow rate of the post-development 2-year storm event to less than or equal to the one-year pre-development storm event for POA1 (POA1 pre = 0.599+0.320 or 0.919 while POA1 post = 1.458).
- o The description of 2.0 Runoff Management in the Stormwater Reporting shall be revised to include the “5-year” storm event.
“...These systems are designed to provide an overall reduction in the post-developed runoff for the 2-year, 10-year, 25-year, 50-year, and 100-year, 24-hour storm event to less than 50% of the pre-development runoff rates”

15. Section 144-308.B – For modeling purposes, the predevelopment ground cover conditions shall be determined using the corresponding ground cover assumptions presented in § 144-309D of this chapter.

The following shall be addressed:

- The Applicant shall revise the CN calculations for POA1 description to “Offsite POA1” from “Offsite POA2”. Currently two CN calculations are labeled Offsite POA1.

16. Section 144-308 H – Post-development peak discharge for all design storms must be no greater than 50% of the predevelopment peak discharges.

The Applicant shall provide adequate calculation to show peak outflow rate of Post Total equal to or less that 50% of the sum of Pre Development and Offsite’s for the 2-year, 10-year, 25-year, 50-year, and 100 year, 24-hour storm events.

17. *Section 144-310.B - Any stormwater basin required or regulated by this chapter designed to store runoff and requiring a berm or earthen embankment shall be designed to provide an emergency spillway to safely convey flow up to and including the 100-year proposed conditions. The height of embankment shall provide a minimum one foot of freeboard above the maximum pool elevation computed when the facility functions for the 100-year proposed conditions inflow. Should any BMP require a dam safety permit under PA Chapter 105 regulations, the facility shall be designed in accordance with and meet the regulations of PA Chapter 105 concerning dam safety. PA Chapter 105 may require the safe conveyance of storms larger than 100-year event.*

The following shall be addressed:

- The noted “provided” length for the emergency spillway design for Infiltration Basin SCM-3 - POA 1 Detail on Sheet 25 shall be revised to “100” from “53”, consistent with the provided Stormwater Report (Page 53).

18. *Section 144-310.C - Any drainage conveyance facility and/or channel not governed by PA Chapter 105 regulations shall be designed to convey, without damage to the drainage facility or roadway, runoff from the twenty-five-year storm event. Larger storm events (fifty-year and 100-year storms) shall also be safely conveyed in the direction of natural flow without creating additional damage to any drainage facilities, nearby structures, or roadways.*

Section 144-310.D - Conveyance facilities to or exiting from stormwater management facilities (i.e., detention basins) shall be designed to convey the design flow to or from the facility.

Section 144-311 B - Storm sewer system.

(1) Storm sewer design shall meet the requirements of PennDOT Publication 408 Construction Specifications, latest edition and PennDOT Publication 72 Standards for Roadway Construction, latest edition.

(6) Calculations shall be provided to show the flow in the system, pipe size, allowable flow, actual flow and velocity.

(7) Storm sewers shall have a minimum grade of 0.5%.

(9) Storm sewers shall have a minimum cover of 24 inches, unless compliance with PennDOT and manufacturers' specifications can be demonstrated to the satisfaction of the Township Engineer.

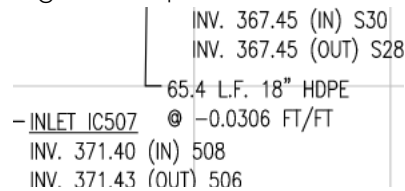
(10) A minimum one foot of freeboard between the hydraulic grade line (HGL) of the design storm and the ground elevation shall be provided throughout all proposed storm sewer conveyance systems.

(11) Velocity within the storm sewer system shall be no less than three feet per second and no greater than 11 feet per second for the design storm peak flow.

The following shall be addressed:

- The Applicant shall provide a storm sewer calculation to show compliance with PennDOT Publication 408 and 72.

- Calculations shall be provided to show the flow in the system, pipe size, allowable flow, actual flow and velocity.
- Storm sewers shall have a minimum grade of 0.5%. This includes, but is not limited to the following crosspipes at 0% and with negative slope:
 - From Inlet IC604 to Inlet IC604
 - From Inlet IC714 to Inlet IC714
 - From Inlet IC809 to Inlet IC809
 - From Inlet IC810 to Inlet IC811
 - From Inlet IC813 to Inlet IC814
 - From Inlet IC512 to Inlet IC513
 - Pipe with negative slope: from Inlet IC507 to Inlet IC506 (See screenshot below)



- The Applicant shall provide data information to show the compliance of item (9) to (11)
- “Veolocity” on Page 192 of the Stormwater Report shall be corrected.
- Conveyance calculations for the proposed swales shall be provided for review.

19. Section 144-310.G – Adequate erosion protection and energy dissipation shall be provided along all open channels and at all points of discharge. Design methods shall be consistent with the Federal Highway Administration Hydraulic Engineering Circular Number 11 (Publication No. FHWA-IP-89-016, as amended) and the PADEP Erosion and Sediment Pollution Control Program Manual (Publication No. 363-2134-008, as amended), or other design guidance acceptable to the Municipal Engineer.

The following shall be addressed:

- Supporting calculations for the proposed riprap aprons and BMP discharge points shall be provided.
- Supporting calculations for the proposed level spreaders shall be provided.

20. Section 144-311 B.(4) – Inlets shall have a minimum two-inch drop from all inlet pipe invert elevations to most shallow outlet pipe invert elevation.

The following inlets shall be revised to have a minimum two-inch drop from all inlet pipe invert elevations to most shallow outlet pipe invert elevation.

- Inlet IC604
- Inlet IC715
- Inlet IC708
- Inlet IM817
- Inlet IC814
- Inlet IC812
- Inlet IC810
- Inlet IC309
- Inlet IC 307

- Inlet IC509
- Inlet IC507
- Inlet IC512

21. *Section 144-311.C.(5) – The barrel shall be concrete pipe with antiseep collars with a minimum projection of two feet beyond the pipe. Antiseep collar design calculations shall be provided.*

The following shall be addressed:

- The Standard Construction Detail #7-16 on Sheet 24 shall be revised to be consistent with the supporting anti-seep collar calculations (Pages 193-197 of the Stormwater Report). At present, anti-seep collar information for Basin No 2, 3, and 5 have inconsistent S-values, number of collars, first collar distances, and collar spacing.
- The anti-seep collar design heading provided on BMP 6.4.2:Infiltration Basin SCM 1 – POA 2 detail on Sheet 25 shall be removed as no anti-seep information is provided on the detail.

22. *Section 144-311.B.(12) – Storm sewer profiles shall be provided for all systems and shall show all applicable design information, including, but not limited to, pipe size, material, slope, invert and grate/ground elevations, and cover.*

The following shall be addressed:

- Page 37 C06.1 Profile of the Plans is missing. The application shall provide all the necessary documents for compliance review.
- Profiles shall be provided for all storm sewer conveyances. This includes, but is not limited to, all conveyances outside of roadways and to BMPs.

23. *Section 144-311 C – Detention/retention basins. All basins shall be designed and constructed to include, but not be limited to, the following standards:*

(1) Berm constructed of earth of a clay base with no topsoil and a cutoff trench key continuous along the berm base. Construction details and sequence shall indicate that compaction tests shall be performed by the applicant and observed by the Township Engineer, or assigned representative thereof. Trench key shall be of 95% compaction or greater.

(6) Emergency spillway shall be constructed of concrete/grass pavers or riprap protection. Protection shall extend down the basin slopes at the spillway location. Calculations shall be provided to ensure adequate protection is provided.

The following comments shall be addressed:

- The construction details and sequence for berm shall not only have the compaction percentage requirement but also specify the tests shall be performed by the Applicant and observed by the Township Engineer, or assigned representative thereof.
- Two details have been provided on the Plan for emergency spillways. The spillway details shall be revised to have one consistent detail with concrete/grass pavers or riprap protection as required by the above referenced section of the Ordinance.
- Supportive calculations for riprap protection shall be provided.

24. Section 144-311 E - Subsurface retention basin/recharge systems shall be designed in accordance with the PA BMP Manual, latest edition, and the following criteria:

- (1) A sump shall be provided between the impervious area and the in-ground facility to collect and trap sediment and debris before reaching the in-ground facility.
- (2) Runoff into the facility shall be evenly distributed through a series of level, perforated PVC or HDPE pipes with Class 2 perforations.
- (3) The distribution pipe shall be encased in a bed of AASHTO No. 1 coarse aggregate completed envelope (top, sides and bottom) by PennDOT Class 1 geotextile.

The following comments shall be addressed:

- A sump shall be provided between the impervious area and the BMPs to collect and trap sediment and debris before reaching the BMPs.
- A detail of stormwater pipe shall be provided to ensure compliance with items 2 and 3 above.

25. Section 144.402 B (2) - A listing of all regulatory approvals required for the proposed project and the status of the review and approval process for each. Final approval or adequacy letters must be submitted to the municipality prior to (or as a condition of) the municipality's issuing final approval of the SWM site plan. Proof of application or documentation of required permit(s) or approvals for the programs listed below shall be part of the SWM site plan, if applicable:

- (a) NPDES permit for stormwater discharges associated with construction activities;
- (b) PADEP permits as needed:
 - [1] PADEP joint permit application.
 - [2] Chapter 105 (Dam Safety and Waterway Management).
 - [3] Chapter 106 (Floodplain Management).
- (c) PennDOT highway occupancy permit;
- (d) Erosion and sediment control plan letter of adequacy; and
- (e) Any other permit under applicable state or federal regulations.

The Applicant shall provide all the approval and permit documents mentioned above for compliance review. This includes, but is not limited to:

- NPDES Permit
- Chapter 105 Ppermit
- PennDOT HOP

26. Section 144.402 B (3) - A statement, signed by the applicant, acknowledging that any revision to the approved SWM site plan shall be submitted to and approved by the municipality, and that a revised erosion and sediment control plan shall be submitted to, and approved by, the conservation district or municipality (as applicable) for a determination of adequacy prior to construction of the revised features.

The above referenced statement shall be provided on Plan.

27. Section 144.402 B (4) - The following signature block signed and sealed by the qualified licensed professional responsible for the preparation of the SWM site plan: "I (name), on this date (date of signature), hereby certify to the best of my knowledge that the SWM site plan

meets all design standards and criteria of the Westtown Township Code, Chapter 144, Stormwater Management. [Note: include signature, name, discipline of professional license, and license stamp or seal here.]

The above referenced signature block shall be provided on Plan.

28. *Section 144.402 B (5) – The following signature block for Westtown Township: "On behalf of Westtown Township, (Municipal official or designee), on this date [Signature date], has reviewed and hereby certifies to the best of my knowledge that the SWM Site Plan meets all design standards and criteria of Westtown Township Code, Chapter 144, Stormwater Management."*

The above referenced signature block shall be provided on Plan.

29. *Section 144.402 C (16) – A grading plan, including all areas of proposed earth disturbance and the proposed regulated activity and delineating the boundary or limits of earth disturbance of the site. The total disturbed area of the site shall be noted in square feet and acres.*

The following comments shall be addressed:

- The area of limit of disturbance shall be noted on Plans in square feet and acres.
- The limit of disturbance shall be noted in the Plan Legends.

30. *Section 144.402 C 8 (f) – For the water bodies, streams and wetlands identified in § 144-402C(8)(a), label or otherwise show the following attributes, if applicable:*

- [2] Impairments listed on the PADEP "Integrated List" (as updated) and the listed source and cause of impairment;
- [3] Name, date, and target pollutant(s) for any approved total maximum daily load (TMDL); and
- [4] Drainages to water supply reservoirs.

The Applicant shall provide the required contents mentioned above.

31. *Section 144.402 C 8 (n) – Water supply wells.*

- [1] Location of existing well(s) on the project property and delineation of the(ir) recharge area(s) (if known), or a fifty-foot diameter assumed recharge area;
- [2] Location of existing well(s) within 50 feet beyond the boundary of the project property boundary (if public water supply is proposed for the regulated activity); and

All existing well(s) at site and off site shall be shown as required above.

32. *Section 144.402 C 8 (q) – Boundaries of a seventy-five-foot construction nondisturbance buffer to protect stream (intermittent and perennial), wetlands and other water bodies during construction of the proposed regulated activity.*

The Applicant shall show the distance between the proposed limit of disturbance to the existing water bodies on the E&S Plans to show compliance with the ordinance above.

33. *Section 144.402 C 18 - For each proposed BMP and conveyance included in the SWM site plan (including any to be located on any property other than the property being developed by the applicant), the following shall be included on the SWM site plan map or plan sheets:*

(c) *Easements, as per the requirements of Article VII, that shall include:*

- [1] Boundaries labeled with distances shown in feet and bearings to the nearest degree;
- [2] Notes or other documentation, as needed, to grant the municipality the right of access to all BMPs and conveyances for the purposes of inspection and enforcement of the requirements of this chapter, and any applicable O&M plans and O&M agreements;
- [3] Notes or other documentation, as needed, to grant the municipality the right of access to all roadways necessary to access all BMPs and conveyances, where roadways are not to be dedicated to the municipality;
- [4] Notes or other documentation as needed to grant the owner of any BMP or conveyance the right of access for the purpose of inspection, operation, maintenance, and repair of the BMP or conveyance that is to be owned, operated and maintained by a person other than the municipality, and other than the owner of the property on which the BMP or conveyance is located;
- [5] A minimum ten-foot-wide perimeter (or other width as determined in consultation with the Municipal Engineer) around all BMPs and conveyances;
- [6] Sufficient vehicular ingress to and egress from a public right-of-way or roadway, as determined in consultation with the Municipal Engineer; and
- [7] Accompanying notes or other documentation as needed, and in accordance with Article VII, describing the type, purpose and total area of easements, who the easement is granted to, and the rights, duties and obligations of the parties with respect to every BMP or conveyance.

Section 144-704.A.(2) - Easements shall be established in connection with any regulated activity for all permanent BMPs and conveyances that will not be dedicated to or otherwise owned by the municipality (including any to be located on any property other than the property being developed by the applicant), and shall be in general conformance with the form easement agreement which can be obtained from the Township Solicitor. This agreement shall: Include a ten-foot-wide perimeter (or other width as determined in consultation with the Municipal Engineer) surrounding the feature(s);

Section 144-704.B.(6) - For any BMP or conveyance to be owned by a person other than the municipality or the landowner owing the parcel upon which a MP or conveyance is located, an easement agreement shall be prepared and executed between the landowner and the owner of the BMP or conveyance which shall; Restrict the landowner's use of the easement area of the parcel on which the BMP or conveyance is located, consistent with the rights granted to the owner of the BMP or conveyance.

The following shall be addressed:

- Easements shall be provided for all stormwater BMPs to allow access for inspection and maintenance purposes.
- Easements shall be provided for all storm sewer conveyances and swales, through proposed lots to prevent future construction/improvements from impacting the

stormwater conveyance design and storm sewer conveyances outside of the Right-of-Way. A minimum, twenty (20) foot wide easement or ten (10) feet to a single side shall be provided for the following:

- o Conveyance swale in the rear yards of Lots 1-12, conveying flow to Basin #1.
- o Conveyance swale in the rear of Lots 17-22, conveying flow to the inlet located on the property line of Lot 22.
- o Storm sewer run from the inlet on Lot 22, 23, 24, and 25 to the right-of-way of Road A.
- o Storm sewer run along the Lot 4/5 property line.
- o Storm sewer run along the Lot 6/7 property line.
- o Storm Sewer run in Lot 8, 9, & 10 and rear of property line 11 & 12.
- o Storm Sewer run along the property line of Lot 15 and Lot 16.
- o Conveyance swale in the rear yards of Lots 32-37, conveying flow to Basin #2.
- o Conveyance Swale in the rear yards of Lots 53-58.
- o Conveyance Swale in the rear yards of Lots 50-52, conveying flow to UG Bed 1 w/ basin.
- o Storm sewer within the rear yard of Lots 27-31.
- o Storm sewer run between Lot 41 & 42.
- o Storm sewer run along the rear of Lot 40/41 property line.
- o Storm Sewer run along the property line of Lot 73 and Lot 74.
- o Storm Sewer run along the property line of Lot 75 and Lot 76.
- o Conveyance Swale in the rear yards of Lots 60-67.
- o Conveyance Swale in the rear yards of Lots 68-72.
- o Storm Sewer run along the property line of Lot 64 and Lot 65.
- o Storm Sewer run along the property line of Lot 63 and Lot 62.
- o Storm Sewer run along the property line of Lot 61 and Lot 60.
- o Storm sewer run along Lots 62 through 59.

34. *Section 144.402.G – Inspections, operation, and maintenance requirements. The following documents shall be prepared and submitted to the Township for review and approval as part of the SWM site plan, in accordance with the requirements of Article VII, for each BMP and conveyance included in the SWM site plan (including any to be located on any property other than the property being developed by the applicant):*

- (1) *An O&M Plan.*
- (2) *An O&M Agreement.*
- (3) *Any easement agreements that are needed to ensure access, inspection, maintenance, operation, repair and permanent protection of any permanent BMP(s) and conveyances associated with the regulated activity.*
- (4) *Any written deed, deed amendment or equivalent document (if needed) to be recorded against a subject property, as shown on the SWM site plan maps or plan sheets, or recorded plan sheets for the purpose of protecting and prohibiting disturbance to a BMP or conveyance; and*
- (5) *Written approval, easement agreements, or other documentation for discharges to adjacent or down-gradient properties when required to comply with § 144-301G and Article VII of this chapter.*

Section 144.701.D – General Requirements for protection, operation and maintenance of stormwater BMPs and conveyances – For any BMP or man-made conveyance (including any to be located on any property other than the property being developed by the applicant) to be owned by a person other than the Township:

An O&M agreement shall be submitted to the Township for review and approval; and The O&M plan shall be attached to, incorporated within, and recorded as a public record along with a fully executed O&M agreement, all of which shall be recorded as a restrictive covenant that runs with the land and shall be binding upon the landowner and any heirs, administrators, successors in interest or assigns of the landowner.

The following shall be addressed:

- A Stormwater Management Operation & Maintenance Agreement shall be executed and recorded for the proposed stormwater conveyance and level spreader. The O&M Agreement will be provided by Westtown Township at the time that stamped and approved Plans are issued for the project. The applicable signatures must be signed by the property owner prior to Plan recording.
- Stormwater Management Notes 2 on Sheet 24 shall be revised to include the HOA as the responsible party for all conveyance swales.
- Post Construction Stormwater Facilities Operation and Maintenance Procedures notes on Sheet 24 shall be revised to include swale maintenance and operation procedures.
- The Long-Term Operation and Maintenance note on Sheet 24 shall be revised to include Westtown Township, in addition to the Conservation District or Department.

Chapter 149 – Westtown Township Subdivision of Land Ordinance

35. Section 149-403.A – Before the final plan is signed by the Board of Supervisors, the applicant shall submit an agreement, subject to the approval of the Board of Supervisors, provided for, but not limited to , the following where applicable: In accordance with the approved final plan, the applicant will layout and construct all street and other improvements, including , but not limited to, grading, paving , curbs, gutter, sidewalks, streetlights, fire hydrants, water mains, street sings, shade trees, storm and sanitary sewers, stormwater management structures, landscaping, traffic control devices, open space areas, and erosion and sediment control measures.

Section 149-403.C – The applicant shall sign a tri-party agreement with a financial institution and the Township guaranteeing and securing completion of the improvements listed in Subsection A, except as provided for in Subsection E, within one year of the date of the approved plan.

(2) The applicant shall deposit with the Township an escrow account in an amount equal to 110% of the cost of the improvements, based on a construction cost estimate prepared by a bona fide contractor and reviewed and approved by the Township Engineer, whose decision shall be final.

(3) If the improvements are not completed within the one-year period, the Township shall have the right to withdraw the escrow funds to complete the improvements, or shall require the financial security be increased by an additional 10% for each succeeding year beyond the first posting date of the security or to an amount not exceeding 110% of the cost of completing the required improvements as reestablished.

Financial security in an amount acceptable to the Township shall be provided prior to Plan recording. A Construction Cost Estimate shall be submitted for review and approval, with the required financial security incorporated into a Developer's Agreement to be executed prior to Plan recording.

36. *Section 149-602.C.(3).(e) - All easements or rights-of-way, public or private, and any limitations on such easement or rights-of-way shall be shown and accurately identified on the plan.*

An easement shall be provided for the proposed driveway access to Lot 21 through the Open Space.

37. *Section 149-702. B.(7) - The total tract boundary lines of the property being developed, with accurate distances to hundredths of a foot and bearings to the nearest second. These boundaries shall be balanced and closed with an error closure not less than one foot in 10,000 feet; provided, however, that the boundary(ies) of adjoining additional unplatted land of the subdivider (i.e., between separately submitted plan sections) are not required to be based upon field survey, and may be calculated. Existing and proposed monuments shall be indicated, along with a statement of the total area of the property being developed. In addition, the engineer or surveyor shall certify to the accuracy of the survey and that the drawn plan is in conformance with all Township chapters.*

Existing and proposed monuments shall be indicated on the Site Plan (Sheets 2 through 6).

38. *Section 149-702.B.(12) - All existing streets, including streets of record (recorded but not constructed), on or abutting the tract, including names, right-of-way widths, cartway (pavement) widths and approximate grades.*

The right-of-way and cartway widths for Shiloh Road & Hunt Drive shall be labeled on the Plan.

39. *Section 149-702.B.(19) - Lot numbers, property addresses, gross and net area of all lots expressed in acres or square feet, the proposed building setback lines, and , where applicable, the proposed placement of each building shall be shown*

A tabulation shall be provided for all proposed lots which shall include lot numbers, address, gross and net lot areas, and lot impervious cover to provide a clear summary of improvements.

40. *Section 149-702.C.(4) - Full documentation of required existing and proposed zoning data. Where applicable, a statement listing variances, special exceptions or conditional use approvals and any qualifying conditions shall be included.*

A Zoning Table shall be added to the Plans which notes both existing and proposed zoning data as required by the above referenced section of the Ordinance.

41. *Section 149-901.E - Where a development abuts an existing public street of improper width or alignment, the Township may require the dedication of land sufficient to widen the street or correct the alignment.*

Section 149-903.A - *The right-of-way and cartway widths of all new or proposed public and/or private streets shall be determined by the Board of Supervisors and shall be classified as follows:*

- 1) *Arterial highway*
 - c. *The cartway widths will be determined by the Township after consulting with the Chester County Planning Commission and PennDOT*
- 2) *Collector street. Right-of-way shall be 60 feet and cartway width shall be 28 feet. See Note 1*
- 3) *Minor street. Right-of-way shall be 50 feet and cartway width shall be 24 feet. See Notes 1 and 2*

NOTE 1: Additional right-of-way and cartway widths may be required by Westtown Township for the purpose of promoting the public safety and convenience, or to provide for parking in commercial and industrial areas and in areas of high-density residential development.

NOTE 2: At the sole discretion of the Township Supervisors, the right-of-way of a minor street may be reduced to 40 feet and the cartway width of a minor street may be reduced to 20 feet for properties of one acre or more. Turnaround paved cartway of cul-de-sac streets shall not be reduced.

Section 149-903.(C).(1) - Where a subdivision or land development is proposed adjacent to an existing public street, the applicant shall dedicate sufficient right-of-way to result in the future right-of-way width provided for in § 170-1511 of the Zoning Chapter. If the applicant only controls land on one side of an existing street, then the applicant shall only be responsible to dedicate land to result in a width from the street cartway center line to the future right-of-way line equal to 50% of the future street right-of-way width. Therefore, for example, if a collector street has a sixty-foot-wide future right-of-way, an applicant on one side would be responsible to ensure that a thirty-foot-wide right-of-way is provided on the applicant's side of the center line.

The following shall be addressed:

- *The right-of-way width on Shiloh Road should be approximately equal to 50% of the existing Shiloh Road right-of-way and needs to be within the limit of disturbance.*
- *The right-of-way width on Shiloh Road should cover the extent of the water line tie in connection proposed.*
- *The Typical Road Cross-Section Detail shall provide pavement design dimensions and include pavement materials proposed.*

42. *Section 149-903.(C).(2) - The dedication of future right-of-way shall not be required where the applicant proves to the satisfaction of the Board of Supervisors, based upon any review by the Township Engineer and Planning Commission, that there is not a reasonable relationship between the need for the additional right-of-way and the traffic created by the proposed development.*

Section 149-903.(C).(3) - Along a state-owned street or highway, if the State Department of Transportation refuses to accept a dedication of right-of-way, then the future right-of-way shall be dedicated to the Township or be irrevocably committed and reserved for future dedication when the Board of Supervisors determines the right-of-way is needed.



The provision of additional right-of-way along Shiloh Road (SR2005) is subject to review and comment by the Township Traffic Engineer.

43. Section 149-918 - Plan requirements. All proposed water distribution systems shall be designed, connected and installed to meet the specifications and requirements of the DEP, Pennsylvania Utility Commission (PUC), CCHD and all Township ordinances. The complete design of the proposed distribution system and the following information shall be provided as a part of all preliminary and final plans.

The provided letter from AQUA PA references the need for an extension of the existing water main to service the property. All design documents shall be submitted to AQUA and an approval shall be provided to Westtown Township prior to Final Plan approval.

44. Section 149-924.D - A tree protection management plan must be submitted at the time of preliminary plan application if there are 10 or more viable trees proposed to be cut or removed from a property. Tree protection management plan shall contain the following information on a plot plan.

A Tree Protection Management Plan shall be prepared and provided which complies with all subsections of Section 149-924.D above. This includes, but is not limited to, the following:

- Each tree which is 6 inches or greater to be removed shall be clearly identified on the Plan.
- A tabulation of the proposed diameter inches being removed and the equivalent number of compensatory trees required.
- The location of all compensatory plantings shown on the Plan, determined based on compensatory ratios based on the sum total of diameter inches of trees being removed outlined in section 149-924.D.(12).

45. Section 149-925.G.(1) - Lot or perimeter yard requirements. Each yard shall be landscaped as follows:

	Landscaping Per 100 Linear Feet		
	Canopy Trees Mature Height Over 30 Feet	Ornamental	
		Flowering Trees	Shrubs
Single-family detached dwelling			
Street frontage	1.5	0.5	
All other property lines	0.5	0.5	
All other dwellings			
Street frontage(s)	1.0	0.5	4.0
All other property line	0.5	0.5	2.0
Nonresidential			
Street frontage(s)	2.0	1.5	6.0
All other property lines	1.0	1.0	3.0

The provided landscape tabulation shall be revised to include a breakdown for each yard as outlined by the above referenced section of the Ordinance.

Chapter 170 - Westtown Township Zoning

46. *Section 170-402.D.(2).(a) - Parks and outdoor recreational uses, consistent with the goals of watershed protection.*

The following shall be addressed:

- The Open Space Plan (Sheet 7) shall be revised to clearly show improvements associated with active recreation areas, a Gazebo and Tot Lot are shown on the Settlement Agreement Plan (exhibit A) and not shown on LD Plan.

47. *Section 170-402.D.(3).(c) - The Zoning Officer may require that the applicant for activity within areas of over 15% slopes submit an erosion and sedimentation control plan for review and approval by the Chester County Conservation District and/or Township Engineer, and/or submittal and approval of a stormwater management plan by the Township Engineer.*

Section 170-403.E - Where wetlands exist and disturbance permits and/or mitigation activities are required, final plan approval or granting of applicable permits from the Township shall be contingent upon the applicant receiving all necessary permits from the PADEP.

The following shall be addressed:

- All applicable permits shall be obtained prior to final plan approval.
- Upon receipt, permits and any applicable correspondence shall be forwarded to the Township.
- In the event that significant plan changes are made to address review comments of any agency, all reviewing parties shall be provided with updated plans upon resubmission.

48. *Section 170-403.E.(1) - Application procedures. Before a permit is issued for any construction or land disturbance activity on land within or affecting the Steep Slope Conservation District, the following material, in full or in pertinent parts, shall be submitted for review by the Township Engineer:*

(a) An earthmoving plan of the property which indicates existing grades with contour lines at two-foot intervals. Proposed grades within the area of any proposed activity, disturbance, or construction also shall be shown. All areas within the Steep Slope Conservation District shall be shaded accordingly.

(b) A site plan indicating existing and proposed structures, other impervious surfaces, storm drainage facilities, and retaining walls. The site plan also shall locate and identify existing vegetation and ground cover within areas of prohibitive and precautionary slopes, as well as proposed landscaping material to be installed.

(d) A statement, signed and sealed by a registered architect or engineer, explaining the building methods to be used in overcoming foundation and other structural problems created by slope conditions, preserving the natural watersheds, and preventing soil erosion and excessive surface water runoff to neighboring properties and/or streets.

(e) Plan, profile, and typical cross sections of any proposed street, emergency access, or driveway, with the seal of a registered professional engineer thereon.

(f) A statement, signed by the owner or future occupant at the time of subdivision, land development, or building permit application, that there is a full understanding of any difficulties associated with access stemming from steep slopes.

No approval or building permit shall be authorized by the Zoning Officer without the Township Engineer's review of this material and his recommendation thereon.

The following shall be addressed:

- A Site Grading/Plot Plan shall be submitted for review and approval prior to building construction for the individual lots to ensure grading and impervious cover on the lots are consistent with final approved plans.
- A statement shall be provided and signed/sealed by the Engineer explaining the building methods to be used in overcoming foundation and other structural problems created by slope conditions, preserving the natural watersheds, and preventing soil erosion and excessive surface water runoff to neighboring properties and/or streets.
- All comments regarding utility and stormwater profiles shall be addressed prior to plan approval.
- A statement shall be provided and signed by the Owner stating that they have a full understanding of any difficulties associated with access stemming from steep slopes.

49. *Section 170-404.B.(1) - All woody vegetation to be retained within 25 feet of a building site, parking area, or other proposed improvement shall be protected from equipment damage by snow fencing or other effective barriers.*

The tree protection fence shown on the Plan views, Sheet 36 of 56, shall revise the OCF linetype to TPF or a like designator to specify when tree protection fence to be consistent with the above referenced Ordinance and the tree protection fence detail on Sheet 36 of 56.

50. *Section 170-404.F - Subdivision and land development. See also the tree preservation and replacement requirements in § 149-924D of the Township Code.*

A Tree Protection Management Plan shall be provided.

51. *Section 170-407.B - On any lot, a maximum of 10% of the trees of six inches or more trunk diameter may be cut down in any calendar year without a zoning permit.*

Upon completion of the Tree Protection Management Plan, the Applicant shall verify that no more than 10% of trees 6" diameter or greater are proposed to be removed within a calendar year. In the event that the construction schedule does not allow for this, the project shall be phased according to limit tree removal to a maximum of 10% per year.

52. *Section 170-602.D - Residential development as per flexible development procedure: as required by the standards in Article IX of this chapter.*

A Settlement Agreement was executed allowing the Developer to design a layout that supports up to 78 single-family homes. The following shall be addressed:

- A zoning tabulation shall be added to the Plan noting the bulk requirements and dimensions of each lot and is subject to the review and approval of the Township Zoning Officer.

53. *Section 170-901.D - Comprehensive and detailed plans which include not only streets, utilities, lots or building sites, and the like, but also site plans, site analyses, floor plans and elevations for all buildings as intended to be located, constructed, used, and related to each other, detailed plans for other uses and improvements on the land as related to the buildings, lighting, landscaping; and*

Section 170-901.E - A program for provision, operation and maintenance of such areas, improvements, and facilities as will be for common use by some or all of the occupants of the development, but will not be provided, operated or maintained at general public expense unless acceptable to or found necessary by the Board of Supervisors.

Section 170-907.A.(2) - Within the required acreage of open space, or elsewhere on the tract, an area equivalent to at least 10% of the net tract acreage shall be suitable and available to serve the particular recreational needs of the residents of the development. The Board may require that all, or a portion of, this recreational area be suitable for active recreation, and may further require that such area be prepared and developed for such purposes.

Section 170-907.A.(3) - Where applicable or deemed appropriate or contained in the Township's Comprehensive Plan or Parks, Recreation and Open Space Plan, provision for pedestrian trails for public and/or private use shall be provided. This provision need not be in addition to the 10% requirement of Subsection A(2) above unless the Board determines that the entire 10% minimum must be designated for active recreation.

Section 170-907.A.(5).(c) - Recreation area. An area designated for a specific recreational use, including by way of example tennis, swimming, playfields, and totlots. Such areas shall be located and maintained in such manner as not to create a hazard or nuisance and shall perpetuate the proposed use.

Section 149-921.C.(2) - Within the required acreage of open space, or elsewhere on the tract, an area equivalent to at least 10% of the gross tract acreage shall be suitable and available to serve the particular recreational needs of the residents of the development (and/or the general public). The Board may require that all, or a portion of, this recreational area be suitable for active recreation, and may further require that such area be prepared and developed for such purposes.

Section 170-907.B.(2).(b).[1] - In the event that the organization established to own and maintain common open space, or any successor organization, shall at any time after establishment of the development fail to maintain the common open space in reasonable order and condition in accordance with the development plan, the Township may serve written notice upon such organization or upon the residents and owners of the development, setting forth the manner in which the organization has failed to maintain the common open space in reasonable condition, and said notice shall include a demand that such deficiencies of maintenance be cured within 30 days thereof, and shall state the date and place of a hearing thereon which shall be held within 14 days of the notice. At such hearing the Township may modify the terms of the original notice as to the deficiencies and may give an extension of time within which they shall be corrected. If the deficiencies set forth in the original notice or in the modifications thereof shall not be corrected within said



30 days or any extension thereof, the Township, in order to preserve the taxable values of the properties within the development and to prevent the common open space from becoming a public nuisance, may, in its discretion, enter upon said common open space and maintain the same for a period of one year. Said entry and maintenance shall not constitute a taking of said common open space, and shall not vest in the public any rights to use the common open space except when the same is voluntarily dedicated to the public by the residents and owners and such dedication is acceptable to the Township. Before the expiration of said year, the Township shall, upon its initiative or upon the request of the organization theretofore responsible for the maintenance of the common open space, call a public hearing upon notice to such organization, or to the residents and owners of the development, to be held by the Township, at which hearing such organization or the residents and owners of the development shall show cause why such maintenance by the Township shall not, at the election of the Township, continue for a succeeding year. If the Township shall determine that such organization is ready and able to maintain said common open space in reasonable condition, the Township shall cease to maintain said common open space at the end of said year. If the Township shall determine such organization is not ready and able to maintain said common open space in a reasonable condition, the Township may, in its discretion, continue to maintain said common open space during the next succeeding year and, subject to a similar hearing and determination, in each year thereafter. The decision of the Township in any case shall constitute a final administrative decision subject to judicial review.

The following shall be addressed:

- The different designations of open space, whether lawn, natural area, woodlands, etc., shall be clearly delineated on the Open Space Plan (Sheet 7).
- The Open Space Operations and Maintenance Agreement shall be submitted for review and approval by the Township Solicitor.
- The Open Space Plan (Sheet 7) shall be revised to clearly show improvements associated with active recreation areas, a Gazebo and Tot lot are shown in the Settlement Agreement Plan (exhibit A) and are not shown on LD Plan.

54. Section 170-902.C.(2) - The site shall be suitable for development in the manner proposed without hazards to persons or property, on or off the site, from probability of flooding, erosion, subsidence or slipping of the soil, or other dangers, annoyances, or inconveniences. Condition of soil, groundwater level, drainage and topography shall be appropriate to both kind and pattern of use intended.

The following shall be addressed:

- The proposed retaining walls should be clearly identified on the Plan and Legend.
- A Plan showing proposed grading and easements for each retaining wall shall be provided.
- The extent of geogrid coverage should be identified on the Plan. This includes, but is not limited to, the Retaining Wall behind Lots 54-58 being constructed adjacent to the Enterprise Right-of-Way.
- Proposed grading to be revised on Lot 38 to avoid grading within the Right-of-Way of the Enterprise and Buckeye/Laurel Pipeline.

55. Section 170-904.A - Permitted base density and potential bonus density.

The Applicant is proposing 78 lots on the site, two with existing dwellings, and 76 new lots. The Settlement Agreement specifically references that the Developer is “permitted to design, engineer, construct, develop, and/or use the property” for a layout that supports 78 single-family homes. Confirmation shall be received from the Township Solicitor regarding whether the plans need to show design and engineering to meet a density of 78 lots or if the 78 lots are now guaranteed.

56. *Section 170-904.A.(3).(a).[1] – All open space used toward calculation of compliance with minimum open space requirements shall comply with all applicable standards separately from any additional open space that is utilized toward calculation of bonus density.*

Section 170.907.A.(5).(e) – Areas used for subsurface infiltration or land application (irrigation) of stormwater and/or treated wastewater. Open storage or settling ponds may be included where accessory to infiltration facilities. All other stormwater and wastewater facilities may be physically located in open space areas but shall be excluded from measurement of the minimum required open space.

Section 170-907.A.(7).(a) – Not less than 75 feet in width at any point and not less than 1/2 acre of contiguous area.

Section 170-907.A.(7).(e) – Free of all structures, except those related to outdoor recreational use or as otherwise provided herein.

In accordance with Section 170.907.A.(7).(a) above, areas of qualifying open space must be both not less than 75 feet in width and not less than ½ acre of contiguous area. The Min. Required Common Open Space Area tabulation and calculations shall be revised as follows:

- To eliminate and relabel the areas shown as “Infiltrating SWM Area”. Open storage is only allowable when accessory to a subsurface facility; accessory being defined as ‘contributing to or aiding an activity or process in a minor way; subsidiary or supplementary’. As the SWM facilities are designed as primarily open storage, they do not meet the definition of accessory. If the tabulated 5.58 acres of Non-infiltrating SWM Facilities include the above ground BMPs, the labels on the Plan shall be revised accordingly.
- To eliminate the area that is less than 75 feet in width between the stormwater area and Lot 11/Lot 14 within Open Space 1.
- To eliminate the two areas that are less than 75 feet in width between the stormwater area and Parcel #67-5-20.4 within Open Space 1.
- To eliminate the two areas that are less than 75 feet in width between the SWM facility and Lots 31, 32, and 38 within Open Space 1.
- To eliminate three areas that are less than ½ acre in size between non-qualifying open space at Lots 17, 18, 21, and 22 within Open Space 2.
- To eliminate the area within Open Space 3 where the retaining wall [Section 170-907.A.(7).(3)] reduces qualifying open space width to less than 75 feet.
- To eliminate the area less than ½ acre of contiguous area behind lots 60 and 61 in Open Space 3 due to the retaining wall preventing contiguous connection of open space.

57. *Section 170-904.A.(3).(a).[2] - All open space used incrementally toward calculation of bonus density as provided in § 170-904A(2)(a) shall, in addition to full compliance with all other applicable standards herein, fully exclude from calculation of open space area any existing or proposed impervious surfaces, stormwater management facilities, wetlands, water bodies, watercourses, prohibitive slope (including created slopes exceeding 25%), and any lands subject to floodplain regulations.*

Section 170-907.A.(7).(a) - Not less than 75 feet in width at any point and not less than 1/2 acre of contiguous area.

The Bonus Open Space Area tabulation and calculations shall be revised to eliminate the area less than 75' in width between the proposed impervious area and the property line for parcel #67-2N-65.

58. *Section 170-904.B.(2).(a).[1] - Homeowners' association. The common open space may be held in common ownership by a homeowners' association. This method shall be subject to all of the provisions for homeowners' associations set forth in Subsection B(2)(b) below, and the homeowners' association agreement shall be recorded.*

Section 170-908 - Specific requirements for homeowner's association.

Homeowner's association documentation shall be provided and will be subject to the review and approval of the Township Solicitor. All items outlined in Subsection B(2)(b) and Section 170-908 as referenced above shall be required.

59. *Section 170-904.E.(4) - All housing shall be designed with regard to topography and natural features of the site in conjunction with the requirements of § 170-905A. The effects of prevailing winds, seasonal temperatures, and hours of sunlight on the physical layout and form of the proposed land use and buildings shall be taken into account.*

Section 170-904.E.(5) - To create architectural interest in the layout and character of housing fronting streets, variations in building line shall be encouraged.

Section 170-904.E.(6) - All housing should be sited so as to provide privacy and to ensure natural light in all principal rooms.

The following shall be provided to demonstrate that the proposed housing is designed with topography, natural features and lighting, as well as sufficient privacy of residents, and will be subject to the review and approval of the Board of Supervisors:

- Architectural Plans shall be submitted.
- A design narrative shall be prepared which outlines compliance with Section 170-904.E.(4) and 170-904.E.(6) above.

60. *Section 170-904.E.(10)(b) - No single-family detached dwelling or twin dwelling may be erected within 30 feet of any other structure.*

The following shall be addressed:

- The distance between the proposed dwelling on Lot 16 and the proposed pump station shall be dimensioned to demonstrate compliance with the above referenced Ordinance section.
- The Applicant shall provide supporting information to demonstrate, to the satisfaction of the Township Zoning Officer, that the referenced facilities are not to be considered structures, as defined in Section 170-201, below:

Structure - Any form or arrangement of building materials involving the necessity of providing proper support, bracing, anchorage or other protection. Such arrangement shall have a permanently fixed location in or on the ground. Structures include, but are no limited to, primary and accessory buildings, open sheds, and similar enclosures with less than four walls and/or a roof, signs, fences, or walls over six feet in height, detached aerials and antennas, decks, porches, platforms, recreation courts, swimming pools, tents, tanks, and towers. For floodplain management purposes, a structure is defined as walled and roofed building, including a gas or liquid storage tank that is principally aboveground, as well as a manufactured home.

61. *Section 170-904.E.(10)(d) - At its sole discretion, and for purposes of promoting innovative and preferred design of dwellings and structures, the Board may vary the terms of this § 170-904E(10) where deemed appropriate*

The Applicant is advised that the Board of Supervisors may alter the separation distances outlined in Section 170-904.E.(10).

62. *Section 170-904.E.(11) - Single-family detached dwellings, and uses accessory thereto, shall be a minimum of 50 feet, and all other structures shall be a minimum of 100 feet, from the property lines of the tract. Where proposed structures other than single-family detached dwellings will abut tracts containing similar uses, this distance may be reduced to 50 feet. Landscaping shall be required in these boundaries, regardless of the use being proposed. In cases where a one-hundred-foot setback from the tract boundary is required, including where twin dwellings are provided, at least 50 feet shall be a planted buffer conforming to the requirements of § 170-1508 and containing no paving*

All building setbacks shall be clearly shown on the Plan, consistent with the requirements noted in the above referenced section of the Ordinance.

63. *Section 170-905.A.(3) - Stormwater management: The applicant shall submit a proposed stormwater management plan, to be approved by the Township Engineer in accordance with Chapter 149, Subdivision and Land Development. In addition, the Board may require the submission of a study of the off-site and overall groundwater impacts of the proposed stormwater management system.*

Section 144-202 - CONVEYANCE - A natural or man-made, existing, or proposed stormwater management facility, feature or channel used for the transportation or transmission of stormwater form one place to another. For the purposes of this chapter, "conveyance" shall include pipes, drainage ditches, channels, and swales (vegetated and other), gutters, stream channels, and like facilities or features.

The following shall be addressed:

- Proposed grading in Lot 6,32, 57,61,69,74 shall be revised to deter grading away from northwest side of proposed foundation and directed towards proposed swale.
- Sumps to be provided around all yard inlets.
- Spot elevations to be provided to grading plan at corners of proposed building foundations.

64. *Section 170-905.B.(1) - Streets: Streets within a flexible development shall be related to land use and to adjacent street systems and shall be designated as secondary traffic street (arterial), collector street, or local street depending upon its function. Streets shall be designed in accordance with the terms of Chapter 149, Subdivision and Land Development; provision for the maintenance of such streets shall be an essential part of the plan for the development.*

Section 149-901.F - The length of a cul-de-sac shall be a minimum of 350 feet and a maximum of 1,500 feet. Any proposed cul-de-sac longer than 1,500 feet must be approved by the Board upon recommendation of the Township Engineer. In no case shall any cul-de-sac street serve more than 25 dwelling units. Cul-de-sac length shall be measured from the radius of the cul-de-sac turnaround to the edge of paving/curbline of the closest through street.

Section 149-201 - CUL-DE-SAC - A minor street with access at only one end and which is terminated by a vehicular turnaround.

The following shall be addressed:

- The length of the cul-de-sac shall be dimensioned to demonstrate compliance with the above referenced Ordinance requirement.
- Minimum Sight Distance for Vertical curves Calculations on the proposed profile sheets do not match the calculation sheet provided on Plan Sheet 38 (C06.2) and Sheet 40 (C06.4).
- Sheet 37 (C06.1) is missing from the Plan submission and shall be included in subsequent submissions.

65. *Section 170-1510.A - No parking lot or area for off-street parking or for the storage or movement of motor vehicles shall abut directly a public street or highway unless separated from the street or highway by a raised curb, a barrier planting strip, wall or other effective barrier against traffic, except for necessary accessways. The minimum setback from the street line to the parking area shall be equal to that specified in § 170-1701D of this chapter. Each parking lot shall have not more than two accessways to any one public street or highway for each 500 feet of frontage. Where practicable, access to parking areas shall be provided by a common service driveway or minor street in order to avoid direct access on a major street or highway. Except for flares and curb returns, no such accessway shall be more than 35 feet clear in width.*

The proposed school bus stop is shown at the terminal end of Road A, at the intersection of Road A, Hunt Drive, and Shiloh Road. The following shall be addressed:

- The school bus stop shall be clearly labeled on the Site Plan (Sheets 2 and 3).
- All documentation and correspondence regarding input from the West Chester Area School District shall be forwarded to Westtown Township.
- The proposed location of the school bus stop and associated parking area is subject to the review and approval of the Township Traffic Engineer.



66. Section 170-1514.B.(1) - Outdoor lighting shall be required for safety and personal security for uses that operate during hours of darkness where there is public assembly and traverse, including but not limited to the following uses: all residential developments, commercial, industrial, public-recreational and institutional.

Section 170-1514.B.(2) - Appropriate officers or agents of the Township may require that lighting be incorporated for other uses or locations, as they deem necessary.

Section 170-1514.D.(1).(a) - Lighting, where required by this chapter, shall have intensities and uniformity ratios in accordance with the current recommended practices of the Illuminating Engineering Society of North America (IESNA), unless deemed inappropriate or unnecessary by independent lighting consultants retained as experts by the Township. Such recommended practices are contained in the IESNA Lighting Handbook, RP-33-99 Lighting For Exterior Environments, RP-8-00 Roadway Lighting, and other IESNA Recommended Practices for specific activities such as sports lighting.

Classification	Maintained Average Illumination Levels (Lux/ Footcandles) (See Note 2)	Uniformity Ratios	
		(Average: Minimum) (Note 3)	(Maximum: Minimum)
Streets and roadways			
Local commercial	9/0.9 average minimum 12.0/1.2 average maximum	6:1	
Local residential	4/0.4 average minimum 7/0.7 average maximum	6:1	
Parking (Commercial/ institutional, industrial/municipal use)			
High activity (e.g., major athletic/civic/ cultural events; fast food, etc.)	10/1 average minimum 20/2 average maximum	5:1	20:1
Medium activity (e.g., hospitals, community shopping centers, office parks, commuter lots, etc.)	5/0.5 average minimum 10/1 average maximum	5:1	20:1
Low activity (e.g., schools, churches, neighborhood shopping, multifamily developments, etc.)	2/0.2 average minimum 5/0.5 average maximum	5:1	20:1
Sidewalks and bikeways	5/0.5 average minimum 20/2.0 average maximum	4:1	

The lighting as provided does not meet the requirements of the above referenced Ordinance. The proposed lighting layout is subject to the review and approval of the Board of Supervisors. CEG notes the following for informational purposes only:

- The provided lighting layout does not provide the Maintained Average Illumination Level of 4/0.4. The currently proposed layout shall be revised to provide the minimum illumination levels outlined above.
- A calculation for the average/minimum illumination level at the parking areas shall be provided and included in the Lighting Plan tabulations where applicable (Sheets 49 and 51).



67. Section 170-1514.D.(3).(k) - For land development applications where lighting is required (i.e., zoning hearings, conditional use hearings), the credentials of the expert in outdoor lighting shall be described in writing. If the expert testimony is provided by more than one person, the credibility of each expert may be weighed by the Townshi..

The credentials of the lighting consultant who prepared the Plan shall be provided to the Township.

68. Section 170-1514.F.(3) - When requested by appropriate officers or agents of the Township, the applicant shall also submit a visual-impact plan or sections that demonstrates appropriate steps taken to mitigate on-site and off-site glare and to retain the rural character of the Township (i.e., topographic information or burms).

Section 170-1514.F.(5) - Plan verification shall be submitted to the Township after the final installation to demonstrate compliance. The plan shall show light levels below typical poles, between poles and also horizontal and vertical illuminance at the property line in fifty-foot increments. Vertical levels shall be taken five feet above finished grade. The plan shall note the date and time measurements were taken.

To ensure the rural lighting required by the Settlement Agreement, the following shall be addressed:

- A Visual Impact Plan with section views shall be provided demonstrating all glare has been minimized.
- A Verification Plan shall be submitted following installation of the lighting fixtures to demonstrate compliance with the approved Lighting Plans and Visual Impact Plan.

69. Section 170-1702.A - The following schedule of parking space and layout standards shall apply to all but commercial/retail parking facilities, in accordance with this article.

	Angle of Parking Row to Driveway Aisle			
	30°	45°	60°	90°
Depth of parking row	17'	20'	21'	18'
Width of parking space	9.5'	9.5'	9.5'	9.5'
Width of aisle	11'	13'	18'	24'
	(1 way)	(1 way)	(1 way)	(1 or 2 way)

Section 170-1705.A.(1) - Single-family and two-family dwellings: Three parking spaces for each dwelling unit. The Board of Supervisors may require that a street include sufficient paved width to allow on-street parking along one or both sides of the street if determined to be necessary to meet parking needs.

The following shall be addressed:

- A parking tabulation shall be provided outlining the number of required and provided parking spaces. The tabulation shall include parking related to the pump station (if deemed applicable) and Open Space B1.
- Driveway dimensions shall be provided to demonstrate that the provided parking spaces for the single-family dwellings meet the minimum quantity and dimensions.



70. Section 170-1702.B - Wheel stops: The Board may approve the use of continuous curbs as wheel stops and thus measure the size of parking spaces to be two feet less in length than otherwise required. In such instances, the parking layout should allow for the vehicle to overhang the curb by two feet; such overhang area must be clear of all obstructions (signs, trees, etc.) and may not be regarded as required landscaped area or pedestrian circulation space.

Wheel stops shall be provided for the seven (7) spaces within Open Space B1.

71. Section 170-1703.B.(2) - Parking areas shall have a minimum slope of 1% in any direction to provide for drainage, and a maximum slope of 5% in any direction for safety, user convenience, and stormwater management.

The parking area within Open Space B1 shall be revised to provide a minimum slope of 1% in any direction as required by the section of the Ordinance referenced above. At present, inlets IM818 and IM817 are at elevations 396.01 and 396.13 respectively, while the contour within the parking area is 396.

72. Section 170-1704.A - In any parking area where the total number of parking spaces exceeds five, a minimum of one space for each 25 total spaces or fraction thereof shall be designed and designated for physically handicapped persons. Number of spaces: Any parking lot including four or more off-street parking spaces shall include a minimum of one handicapped space. The following number of handicapped spaces shall be provided, unless a revised regulation is officially established under the Federal Americans with Disabilities Act.

Total number of parking Spaces on Lot	Required Minimum Number/ Percent of handicapped Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of required number of spaces
1,001 or more	20, plus 1% of required number of spaces over 1,000

The parking area within Open Space B1 shall be revised to include a handicap parking space. The space shall include all necessary sizing, adjacent access aisles, slope requirements, and markings (Subsections C, D, and E).

73. Section 170-1705.A.(1) - Single-family and two-family dwellings: Three parking spaces for each dwelling unit. The Board of Supervisors may require that a street include sufficient paved width to allow on-street parking along one or both sides of the street if determined to be necessary to meet parking needs.

A parking tabulation shall be provided that outlines the number of required and provided parking spaces.

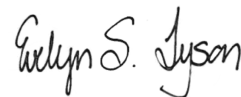
74. Section 170-1708.E - Parking areas shall have a minimum slope of 1% in any direction to provide for drainage, and a maximum slope of 5% in any direction for safety, user convenience, and stormwater management.

The following shall be addressed:

- The spot elevations shown on the Grading Plans (Sheets 14-17) where the driveways meet the sidewalk/curb shall be revised to no overlap pipe or other obscuring linework.
- Spot elevations where the driveways meet the sidewalk/curb for Lots 9, 10, 11, 14, 15, 16, 21, and 22 shall be added to the Grading & Utility Plan (Sheet 14).
- Spot elevations where the driveways meet the sidewalk/curb for Lots 38 and 39 shall be added to the Grading & Utility Plan (Sheet 15).
- Spot elevations where the driveways meet the sidewalk/curb for Lots 52, 57, and 58 shall be added to the Grading & Utility Plan (Sheet 16)
- Spot elevations for the garage and where the driveway meets the sidewalk/curb for Lot 77 shall be added to the Grading & Utility Plan (Sheet 17).
- The provided driveways shall be revised to show spot elevations at the lower driveway tie-in to ensure that a maximum driveway slope of 5% is maintained throughout the development. Based on the current location of spot elevations, the majority of driveways are at or approaching 4.7% to 4.9% and will not meet the 5% maximum slope requirement when calculated from the lowest driveway point rather than midpoint.
- The following slopes exceed the maximum 5% slope requirement when measured along the centerline of the driveways and shall be revised accordingly:
 - Lot 13 with a calculated slope of approximately 5.3%
 - Lot 23 with a calculated slope of approximately 28.45%
 - Lot 60 with a calculated slope of approximately 493.23%

Please do not hesitate to contact me with any questions.

Best Regards,
Cedarville Engineering Group, LLC



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Director of Engineering

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