



May 5, 2023

Jon Altshul, Township Manager
Westtown Township
1039 Wilmington Pike
West Chester, PA 19382

RE: Westtown School Athletic Field Lighting
Conditional Use Review
Westtown Township
0236-23-0213

Dear Mr. Altshul

As requested, Cedarville Engineering Group, LLC (CEG) has completed a Conditional Use Review of the Conditional Use Plan for Westtown School Athletic Field Lighting. The site (Parcel ID numbers 67-2-19, 67-2-24, 67-2-24.2, 67-2-25, 67-2-25.1, 67-2-25.2, 67-2-25.3 and 67-2-27) comprises of roughly 579.61 acres and is located on the south side of Oak Lane. Directly east of the intersection of Westtown Road, in the Agricultural/Cluster Residential (A/C) Zoning District of Westtown Township. The project includes: the construction of two (2) athletic fields, associated parking, lighting, and stormwater management facilities.

The following information was received by our office on April 26, 2023:

- A. Full size Plan titled "Site Plan - Conditional Use Application" consisting of Sheets 1-3 of 3, prepared by ELA Group, Inc., dated March 28, 2023 and last revised April 24, 2023.
- B. Athletic Field Lighting Plans consisting of twelve (12) sheets, prepared by Musco Lighting, dated April 21, 2023.
- C. Response letter dated April 25, 2023 and prepared by Riley Riper Hollin & Colagreco
- D. TLC-LED-1500 Luminaire and Driver product specifications
- E. PA DEP NPDES General Permit No PAC150337
- F. Robert G. Zoeller, MS experience
- G. Response letter dated April 20, 2023 and prepared by Traffic Planning and Design, Inc.
- H. Environmental Glare Impact plan

CEG has reviewed the above referenced items as it pertains to the Conditional Use Application only. This review shall not be considered a Subdivision/Land Development review.

Cedarville Engineering Group, LLC

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The referenced documents have been reviewed for compliance with Chapter 170 – Zoning Ordinance and Chapter 149 – Subdivision and Land Development Ordinance, as applicable to the Conditional Use Application.

Chapter 170 – Zoning

1. Section 170-1514.D.(1).(e) – Examples of illumination levels for typical outdoor applications, as extracted from the IESNA RP-33-99 and RP-8-00 Recommended Practices, are presented below.

Classification	Maintained Average Illumination	Uniformity Ratio
Parking (commercial/institutional, industrial/municipal use) - low activity (schools)	2/0.2 average minimum	5:1
Sidewalks and bikeways	5/0.5 average minimum	4:1

April 14, 2023 Comment: The following shall be addressed:

- Clarification shall be provided regarding if any fixtures are proposed within the parking area. At present, the Illumination Summary on the Athletic Field Lighting Plan dated March 28, 2023 and the Westtown School – Parking Lot dated December 19, 2022 both show a deficiency along the parking area below the maintained average of 2. Due to the discrepancy in parking lot layout, it is unclear if both sets of light fixtures are proposed.
- The lighting along the proposed walkway from the proposed support building to the spectator area on the Athletic Field Lighting Plan (sheet 3 of 11) shall be revised to provide an average footcandle value of 5 and a uniformity ratio of 4:1.

The Parking Lot Lighting Plan shall be incorporated into the Athletic Field Lighting Plan and a sheet provided showing the illumination levels (footcandles) with all fixtures on, and present.

Current Comment: The following shall be addressed:

- The Lighting Plan shall be revised to demonstrate compliance with the Uniformity Ratio criteria referenced above. Compliance shall be subject to the review of the Township’s Lighting Consultant.
2. Section 170-1514.D.(2).(b) – For lighting horizontal tasks such as roadways, sidewalks, entrance drives and parking areas, luminaires shall meet IESNA full-cutoff criteria (no light output emitted above 90° at any lateral angle around the fixture)



Section 170-1514.F.(c) - Description of the proposed equipment, including fixture catalog cuts, photometrics, glare reduction devices, lamps, on/off control devices, mounting heights, pole foundation details and mounting methods.

April 14, 2023 Comment: The Project Summary on the Athletic Field Lighting Plan (sheet 1 of 11) dated March 28, 2023 shall be revised to include the proposed fixture BUG rating (not to exceed B2-U0-G1), and all applicable product data including, but not limited to, color temperature and distribution type.

Current Comment: This comment may be considered satisfactorily addressed, subject to review by the Township's Lighting Consultant.

3. *Section 170-1514.D.(3).(c) - Floodlights and spotlights shall be so installed or aimed that they do not project their output into the windows of neighboring residences, adjacent properties, skyward or onto a public roadway. The use of searchlights or laser source lights for advertising or entertainment purposes is prohibited without a special permit.*

Section 170-1514.D.(5).(e).[4] - The lighting shall be accomplished only through the use of full cutoff or fully shielded fixtures that employ suitable shielding. Such lighting shall be designed, installed, aimed, and maintained so that neither lamps (bulbs) nor primary reflecting surfaces shall be visible from any window of residential properties within a radius of 1,800 feet of the boundary of lighted field. The fixtures shall not present a hazard to drivers or pedestrians by projecting glare that impairs their ability to safely traverse streets, driveways, sidewalks, pathways and trails. The fixtures shall be mounted at an appropriate height, angle, and location to comply with the above conditions.

April 14, 2023 Comment: Due to the proposed improvement layout, fill, and light mounting heights, additional information shall be provided demonstrating that the proposed lighting does not produce any illumination or glare on/into adjacent properties and roadways within 1,800 feet of the field boundaries.

Current Comment: This comment may be considered satisfactorily addressed, subject to review by the Township's Lighting Consultant.

4. *Section 170-1514.D.(3).(i) - Externally illuminated signs and billboards shall be lighted by fixtures mounted at the top of the sign and aimed downward. Such fixtures shall be automatically extinguished between the hours of 11:00 p.m. and dawn, except as specifically approved by appropriate officers or agents of the Township.*

April 14, 2023 Comment: The applicant shall address the following:

- The location of a scoreboard or any other improvements requiring illumination associated with the field shall be clearly shown on the Plan.
- If a scoreboard or other feature is to be illuminated by an additional light fixture, the luminaire shall be clearly noted on the Plan and included in all calculations determining footcandles on each sheet. If no scoreboard is proposed, a note





referencing this shall be provided on the Conditional Use and Land Development plans.

- Fixture information shall be provided on the Plan and shall be in accordance with all fixture requirements (170-1514.D.(5).(e).[4]). This includes, but is not limited to BUG rating, distribution type, and luminaire color temperature.

Current Comment: This comment has been satisfactorily addressed.

5. *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 Township.*

April 14, 2023 Comment: The credentials of the design engineer shall be provided as required by the above referenced section of the Ordinance.

Current Comment: This comment has been satisfactorily addressed.

6. *Section 170-1514.D.(5).(c) – An annual permit application shall be required to be submitted to the Township 45 days before the start of each sports and recreation year that a permanent recreational and sports lighting installation is proposed to be utilized. A permit fee schedule shall be established by resolution of the Board of Supervisors each year to cover all costs to the Township to include, but not limited to, the following: [1]–[2]*

Section 170-1514.D.(5).(e).[6] – For a recreational or athletic sporting event, such as football, soccer, field hockey, lacrosse or marching band cavalcade, utilization of the sports lighting system is subject to the following restrictions: [a]–[g]

April 14, 2023 Comment: The applicant is advised that the permanent lighted field will require an annual permit from the Township with a limited number of games per year and other restrictions as referenced by the noted Ordinance sections above. The Board of Supervisors shall establish a fee schedule as outlined by Section 170-1514.D.(5).(c) by resolution.

Current Comment: The applicant has acknowledged this comment and stated they will comply. Compliance with the referenced Ordinance section shall be included as a condition of the Conditional Use decision to be considered.

7. *Section 170-1514.D.(5).(e).[2] – The maximum mounting height as measured from the finished grade of the playing field to the top of the highest fixture of recreational and sports lighting fixtures permitted by this subsection shall be as follows: [a]–[j]*

Section 170-1514.D.(5).(e).[2][b] – Field Hockey: 70 feet.

Section 170-1514.D.(5).(e).[2][c] – Football: 70 feet.

Section 170-1514.D.(5).(e).[2][d] – Lacrosse: 70 feet.

Section 170-1514.D.(5).(e).[2][g] – Soccer: 70 feet.

April 14, 2023 Comment: The following shall be provided:

- The proposed uses of the athletic field where lighting is proposed shall be clearly noted on the plan.

The maximum lighting fixture mounting height for all sports referenced under *Section 170-1514.D.(5).(e).[2]* is seventy (70) feet. The mounting height for fixtures S3 and S4, as shown on the Athletic Field Lighting Plans, third sheet shall be decreased to a maximum 70 feet. The “Equipment List for Areas Shown” chart references a mounting height of 72.5 feet.

Current Comment: This comment has been satisfactorily addressed.

8. *Section 170-1514.D.(5).(e).[14] – As a condition for installing permanent outdoor illumination for active recreational and sports facilities accessory to public, private, and parochial schools, universities and colleges, the Board of Supervisors shall require the applying institution to take all reasonable steps, as recommended by a sound engineer hired by the Township, to mitigate noise resulting from nighttime events and its impact on the neighborhoods nearby the lighted facility. These mitigative actions must allow the applying institution to comply with § [116-1](#) and [116-2](#) of Chapter [116](#), § [170-1506](#) of this chapter and with any subsequent ordinances related to noise and good order.*

April 14, 2023 Comment: The following shall be addressed:

- The plan shall clearly indicate the proposed sound system for the field, if applicable. If no system is proposed, a note shall be added to the Plan (and subsequent Land Development Plan) indicating this. If a sound system is to be proposed, the location of the system shall be shown, along with specifications demonstrating compliance with the above referenced Ordinance sections. The acoustics letter provided with this submission indicates that a Public Address (PA) system is to be provided.
- The acoustics study letter prepared by Eberbach Acoustics Consulting Consultants shall be revised to address the following:
 - The referenced study indicates that noise measurements were based upon an assumption of a soccer practice of up to 56 players. The proposed parking lot proposes a total of 84 parking spaces required, resulting from the potential of a higher intensity use than assumed in the study. The study shall be updated, and shall be revised to be based upon full occupancy of the proposed parking space and existing spaces located to the east of the existing multipurpose fields, adjacent to the proposed fields.
 - The study recommends calibrating the degree of amplification on the Public Address (PA) so that sound level at the most sensitive adjacent

property is below the maximum noise limit of the Ordinance. The following conditions shall be considered:

- A plan shall be provided showing estimated decibel levels at adjoining property lines based upon a level of amplification that will produce no noise at the closest adjoining property line.
- The Conditional Use - Site Plans shall incorporate an enclosure and vegetation surrounding the field, to an elevation six (6) feet above the elevation of the proposed field, subject to approval of Westtown Township.

Current Comment: The following shall be addressed:

- The acoustic study letter shall address the Public Address (PA) system to be installed and it's affect on the surrounding area and adjoining properties. The following information shall be provided as part of the Conditional Use process, prior to land development application:
 - The manufacturer, model, and specifications associated with the PA System.
 - The location and height of the areas in which the PA system will produce sound.
 - The applicant has indicated that a four (4) foot fence and nearby existing mature trees will be used to dampen sounds generated through the use of the field. Based upon the grading referenced on the site plan, the proposed field will be elevated utilizing approximately 20 feet of fill along the north side of the field and approximately 10 feet to the south of the field. Supporting information/profiles shall be provided indicated that sound generated from the field use and PA system will be adequately mitigated from adjoining properties, utilizing the fence, and existing vegetation as referenced.
9. *Section 170-1514.F.(1).(a) - A site plan, complete with all structures, parking spaces, building entrances, traffic areas (both vehicular and pedestrian), vegetation that might interfere with lighting, and adjacent use that might be adversely impacted by the lighting. The plan shall contain a layout of all proposed fixtures by location and type.*

April 14, 2023 Comment: The provided conditional use plan and site lighting plans shall be revised to show a consistent layout regarding parking and walkway placement. This includes, but is not limited to the following:

- Parking configuration
- Location of ADA spaces
- Walkway locations and connections between parking and facilities.

Current Comment: The location of the walkway in the vicinity of the parking lot and field shall be revised on the Conditional Use Plan and/or Lighting Plan to coincide with one another.



10. *Section 170-1617.A - as part of an application for a flexible development or for any application for development of three or more acres of nonresidential development or for five or more residential lots, the applicant shall submit the sketches described in this Section 170-1617 and shall demonstrate to the satisfaction of the Planning Commission that the following process was followed in designing the proposed development.*

April 14, 2023 Comment: This application proposes greater than three (3) acres of non-residential development, and therefore will require the Conservation Design process be applied as referenced in Section 170-1617 and in this letter. The submitted Conditional Use application proposes development of a 3-acre parcel for non-residential development. The applicable plans and maps required for Conservation Design will be required at the time of Land Development Plan submission, however the applicant may elect to address at the Conditional Use stage. This includes, but is not limited to, demonstrating that the plan as proposed is in compliance with the applicable provisions of Section 170-402, Steep Slope Conservation District.

Current Comment: The applicant has acknowledged this comment and stated they will comply. Compliance with the referenced Ordinance section shall be required as part of the land development plan submission.

11. *Section 170-2009.B.(3).(d) - The application shall include sufficient information, e.g., preliminary site grading and road profiles, preliminary stormwater management analysis, etc., to preliminarily determine compliance with the Township natural feature, site analysis, conservation design process (if applicable) and density requirements.*

Section 170-2009.B.(6).(b) - In addition to demonstrating compliance with all standards applicable to the conditional use being requested, the site plan shall show the applicant's intentions with regard to the following: Location, approximate dimension, and arrangement of all areas devoted to ground cover, trees, screen planting, pen space, recreation, and similar purposes, as applicable.

1. *Section 170-1703.A.(1) - There shall be an adequate, safe, and convenient arrangement of pedestrian circulation facilities, roadways, driveways, off-street parking and loading space. Pedestrians moving between buildings shall not be unnecessarily exposed to vehicular traffic.*

Section 170-1703.A.(3) - Landscaped, paved, and comfortably graded pedestrian walks, appropriate also for use by wheelchairs, shall be provided along the paths of the most intense use, particularly from building entrances to parking areas and adjacent buildings. Such walks shall have a minimum width of four feet.

Section 170-1703.A.(5) - Ramps shall be provided, giving access from parking areas to the building served, for disabled persons utilizing wheelchairs.



- II. Section 170-1710.E.(2) - Commercial or other uses which do not exceed 6,000 square feet of gross leasable area, and which involve regular deliveries as part of their operation, shall be provided with a minimum of one off-street loading space.

- III. Section 170-1509.D - Any organic refuse and garbage shall be stored in tight, vermin-proof containers. On multifamily, commercial, or industrial properties, solid waste storage shall be centralized to expedite collection. Storage containers shall be enclosed on three sides with masonry walls and shall be architecturally screened.

April 14, 2023 Comment: The following shall be addressed:

- The applicant shall confirm that the pedestrian path between the proposed handicap parking spaces and the proposed spectator area will comply with the applicable criteria set forth in the latest ADA Standards for Accessible Design.
- The applicant shall clarify and demonstrate to the satisfaction of the Township that regular deliveries are not applicable for the proposed use. If regular deliveries are applicable, one off-street loading area shall be provided, exclusive of parking spaces, in accordance with the applicable criteria set forth in Section 170-1710 of the Zoning Ordinance.
- The applicant shall address the method of refuse removal proposal. If on-site dumpsters are to be used, the Conditional Use Plans shall clearly show the location and screening associated with the dumpster during the Conditional Use process or Land Development.

Current Comment: This comment has been satisfactorily addressed.

Please do not hesitate to contact me with any questions.

Best Regards,
Cedarville Engineering Group, LLC

A handwritten signature in black ink, appearing to read "R. E. Flinchbaugh".

Robert E. Flinchbaugh, P.E.
Municipal Team Lead

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