



September 26, 2018

Members of the Planning Commission  
Westtown Township  
1039 Wilmington Pike  
West Chester, PA 19382

*Conveyed via email to wethridge@westtown.org for distribution, with grateful thanks.*

Dear Friends,

Thank you for making time for Westtown School at your upcoming meeting on Wednesday, October 3. We are grateful for your attention to our Conditional Use Application and request for amendment to the Township Zoning Ordinance, and appreciate your time spent on these issues.

When we met on September 5, my colleagues and I attempted to take careful note of all of your questions. In preparation for our next meeting, we have assembled some materials which we hope will address the questions you have raised thus far, as follows:

Westtown School & Township Fact Sheet	2 - 6
Response to Brandywine Conservancy, Mr. John D. Snook	7
Response to Stubbe Consulting, LLC	8
Catalogue Cut of Proposed Luminaire	9 - 10
Illumination Summary	11
Diagram of Stopping Sight Distance at Oak Lane and Westtown Road	12

If we have missed anything, please do not hesitate to contact me before we next meet. I can be reached by email at [tori.jueds@westtown.edu](mailto:tori.jueds@westtown.edu) or by phone at 610-399-7960. I look forward to seeing you on October 3.

Sincerely yours,

Tori Jueds  
Head of School



Westtown School & Westtown Township  
Fact Sheet - Fall 2018

Financial Overview

- Westtown School is a private school, and does not receive any state, local, or federal tax dollars. With the single exception of one matching grant from the Pennsylvania Economic Development Association (PEDA) to reduce energy usage on campus in 2015, the School does not receive any public funds.

- In 2017, Westtown School paid the following in property taxes:

County	Township	WC School District	Total
\$5,021	\$3,239	\$19,687	\$27,947

- 91 Westtown School employees (full time, part time, and student employees) currently reside in Westtown Township (including three volunteer personnel in the Goshen Fire Company). In 2017, Westtown School paid the following in income taxes:

Gross Wages	State Income Tax	Local Income Tax
\$14,442,542	\$418,424	\$149,491

- Westtown School is a fiscally responsible, mission-driven, not-for-profit enterprise. Deployment of our annual capital and operating budgets and investment of endowed funds are made in the best long-term interests of the School, its Quaker values, and a population of students seeking to become “stewards and leaders of a better world” in accordance with our mission statement.
- One third of Westtown School’s annual operating budget supports financial aid for students. Approximately half of our students receive financial aid or tuition remission, including 210 students who live within 15 miles of campus. Furthermore, our published “full” tuition rates are significantly discounted from the actual cost of educating a student.
- The School relies on philanthropy to support operating and program expenses, and seeks to generate auxiliary revenue in order to support qualified students from families who might not otherwise be able to afford a private school education.

### Township Utility and Property Support

- In the 1960s, Westtown School gave Westtown Township an acre of campus property to the west of Westtown Road for the relocation of the Township's sewer plant, and permitted the Township to lay a sewer line across our campus to the north of the lake from Walnut Hill Road to Westtown Road. The School's actions allowed the community to avoid the far-ranging environmental damage of sewage discharge into Westtown Lake, as originally proposed by the developer of new properties east of Walnut Hill Road. There is no recorded easement for this sewer line; nevertheless, the School has communicated to the Township its willingness to honor that limited easement, and to memorialize it if the Township can survey the specific location of the line.
- In the 1990s, Westtown Township identified a need to expand the sewage treatment plant on Westtown Road. In support of the community's need, the School deeded an additional 1.4 acres to the Township for the expansion of the plant in 2010.
- The School has also given easements to the Township for the forced main which runs along Westtown Road from Bayard Rustin High School to the sewage plant.
- Westtown School pays sewer fees to the Township as well as extra maintenance costs for reports and testing of our remaining on-campus septic systems.
- In 2016, Westtown School undertook the reconstruction of the culvert along the east side of Westtown Road, adjacent to the lake dam, and expended approximately \$375,000 updating the provision for the stormwater flow and drainage in that area for the benefit of the community.

### Environmental Contributions

- Westtown School is engaged in ongoing projects to protect the Chester Creek Watershed, including planting increased riparian stream buffers. These efforts help to filter contaminants from entering the watershed and reduce water temperatures, thus protecting aquatic life.
- The School carefully monitors agricultural, landscape, and indoor chemical use to reduce the use of harmful chemicals. This helps protect the Chester Creek Watershed from unnecessary runoff or contamination from chemical sources, and to improve the quality of drinking water for residents in the watershed area.
- Westtown's sustainability commitment is evident in the fact that our newest building, our Science Center, is LEED certified, with state-of-the-art stormwater reduction design elements to help reduce the impact of new construction on our watershed.
- Westtown School provides a strong example to the community on how to reduce greenhouse gas emissions and mitigate the effects of climate change. These measures also directly impact air quality for Westtown Township and its residents.

- We obtain 100% of our electricity from wind, providing a model for businesses and residents to support renewable energy.
- Our major heating system has been converted from oil to natural gas, providing huge decreases in emissions and better air quality.
- Westtown’s campus features over 180 acres of mature forested land, which provides a huge source of carbon storage, actively absorbs CO2 from the atmosphere, and lowers air and surface temperatures. Retaining mature forest land is one of the best land management practices for reducing the effects of climate change.
- Our campus-wide no idling policy is in place for any vehicle on campus including cars, buses, trucks and campus vehicles. This significantly reduces harmful exhaust emissions which contributes to increased air quality for the larger community.
- The School is in the process of installing electric vehicle chargers for use by campus visitors.

Community Service

- Westtown School requires all students to participate in community service in order to graduate, through our formal community service program known as Service Network. Additionally, many students perform community service outside of Service Network, through other extra-curricular clubs and teams, or Senior Projects. Below is a breakdown of community service performed by Westtown students in 2017:

Service Network	1760 hours
Additional Service Hours	320 hours
<b>Total Hours Served in Chester County</b>	<b>2080 hours</b>

Chester County locations/organizations served by Service Network:

- Crosslands Senior Living
- Kendal at Longwood Senior Living
- Atria Senior Living
- Westtown School – Moosekids after school program
- Westtown School Mini Farm/Chester County Food Bank
- Chester County Family Academy

Additional locations where students provided service:

- Thorncroft Therapeutic Riding Center – Malvern
- Montgomery School – Chester Springs
- Habitat for Humanity – Coatesville and Exton
- Morphotek – Exton
- Phoenixville Community Center - Phoenixville
- Kinetic Physical Therapy – Chester Springs
- Applebrook Golf Club – Downingtown

- With the enthusiastic support of the School and our tenant farmer Pete Flynn, Chester County Food Bank farms a parcel of Westtown School farmland. This provides 200,000 pounds of fresh produce a year to fight hunger and promote health for country residents in need.

### Community Communications and Events

- Westtown School has been a Gold Level Sponsor of Westtown Day annually for each of the three years the event has been held. This is the highest level of sponsorship (\$500). In addition, Westtown School's Archivist, Mary Brooks, has attended the past two Westtown Days, staffing a table representing the Westtown School archives and interacting with community members for the entire day.
- The School frequently supplies authors with information for articles they are submitting to the Westtown Gazette. The Fall 2013 Gazette included an article by Mary Brooks about the School's history. Our Dean of Communications, Anne Burns, has recently reached out to the Gazette to reiterate the School's standing offer of assistance.

### Westtown Historical Commission Contributions

- Westtown School received the 2016 Preservation Stewardship Award from the Westtown Township Historic Commission "for the School's ongoing preservation of its campus historical structures, landscape and viewsheds."
- In May 2018, Westtown School Archivist Kevin Gallagher gave a personal walking tour of mill sites on campus to members of the Historical Commission. The School's Archives offered walking tours on the school's history for township residents in the fall of 2013 and 2014.
- In 2014, the Archives staff compiled a significant amount of information and photographs on pre-1901 buildings at Westtown School for a survey by the township Historical Commission. All of that information is now in their files.
- Mary Brooks and Kevin Gallagher are currently assisting the Historical Commission with their update of *From Farmland to Suburbia: Westtown Township* by Arthur E. James.

### Westtown School Events

- Westtown School maintains a page on our website that features events that are free and open to the public. Examples include:
  - Our annual Fall Fest, WinterFest, and Innovation Day events
  - Theater and Arts Events
  - A Mindfulness series
  - Community Book Club
  - Middle School Book Club and Writer Seminar (open to all kids)

- Harry Potter Wizarding Event
- “Lunch and Learn” events at the Buttery hosted by the School
- Regular Blood Drives on campus

This page is updated throughout the year to reflect upcoming events. Whenever possible, the School has also advertised events on the small letter display board on Shady Grove Way. (Note: this board has since been removed; instead, we plan to advertise future events and activities on a low-impact digital sign, for which we are currently seeking approval from the Township.)

- Westtown School’s arts schedule list is posted on the arts page of our website, and we use digital ads, social media, and some print advertisements (all paid) to invite the community to arts events. The School just ran a feature piece in *Fig* (a free, local community magazine) including our arts schedule and an open community invitation to our events. Many posts to our School’s online blog include a call to action inviting readers to events.
- The School advertises athletic games on our website and through social media, which are accessible to the greater public who may be interested in Westtown Athletics and attending our games. It is free to attend all competitions, even our boys basketball games, which draw spectators from both our internal and external community. We also post all scores to our website and through social media.
- During athletic tournaments and our two annual Robotics tournaments held on Westtown’s campus, the School partners with the Brandywine Valley Visitors Bureau to connect visiting families and spectators with local hotels and restaurants.

#### Westtown School Summer Camps and Classes

- Westtown offers eight weeks of summer camp programming for ages 4-14. Each summer, children from over 200 families attend. The camp is for all families in the area and approximately 65% of these campers do not attend Westtown School during the rest of the year.
- Older students from other schools are also given the opportunity to take part in summer academic classes to help them add to their transcripts.
- Westtown also hosts community programs such as Girls Take Charge, Ball Beyond, and the Brandywine Learning Center’s Harry Potter camp.

September 25, 2018

Mr. William Ethridge, AICP  
Westtown Township  
1039 Wilmington Pike  
West Chester, PA 19382

Re: Westtown School Requests for Zoning Amendment and Conditional Use Approval for Lighted Athletic Fields

Dear Mr. Ethridge,

Following is in response to the field lighting concerns outlined in a memorandum from Brandywine Conservancy, Mr. John D. Snook, dated August 31, 2018.

1. Mr. Snook raises concerns regarding, *“Lighting on potentially many nights, impacting neighbors’ enjoyment of their property, sleep, and elimination of “dark sky” that affords view of stars.”* With the closest neighbors being 1500 feet away and the state-of-the-art lighting technology being used, Musco lighting will meet the needs of the Institution while providing no adverse effect to the community. The Musco TLC LED Lighting System is a Full Cutoff fixture and has been evaluated by IDA (International Dark Skies Association) and deemed a good sports lighting fixture for the preservation of the night sky. Regarding Mr. Snook’s comment of *“impacting neighbors’ enjoyment of their property” and “sleep”*, I do not understand the basis or relevance of the comment as there will not be impact on the neighboring properties.

2. Mr. Snook continues; *“Light will reflect off the fields and, in this humid climate, will fill the moisture-laden air with light, resulting in a glow potentially affecting neighbors’ use of their property at night, or their sleep, despite the purported 1,500-foot distance to the nearest residence.”* The physical properties of light will cause it to reflect at the same angle at which it impacts a surface (angle of incidence equals the angle of reflection). Therefore, the minimum angle that light is apparent upon the field will not come close to affecting adjacent residents. Regarding the humid environment, the only time light is truly scattered is if there is a mist or a fog. Even then, viewing a field from the distance, the light stays relatively confined to the illuminated area and one can clearly see the cutoff lines from the fixtures. No glow or scattering of the light will reach the adjoining properties, especially considering that no candela is reaching there.

In addition, there have been concerns raised that the field itself will “glow” while lighting is in use. After studying the topography and creating several perspectives from adjacent neighbor locations, it is our belief that the playing surface of the fields will not be visible from locations off campus. If it is found that this is not the case, it will be possible to easily manage these concerns with low vegetation or landscape planting in the areas adjacent to the fields to minimize the impact of the lighting.

If there are any questions, please let me know at your convenience.

Sincerely,

*Mike Rufo*

Mike Rufo  
President

September 23, 2018

Mr. William Ethridge, AICP  
Westtown Township  
1039 Wilmington Pike  
West Chester, PA 19382

Subject: Westtown School, Oaks Lane, Proposed Soccer Field Lighting Conditional Use Application  
Review of Field Lighting Off-Site Impact

Dear Mr. Ethridge,

Following is in response to the letter from Stubbe Consulting LLC. dated September 4, 2018.

1. Off-site glare impact: Mr. Stubbe indicated that foot candles decrease by the inverse square of the distance and that to evaluate glare we need to look at candela/meter square. I had Musco run a line at 1,500 ft from the edge of the fields in all directions and there will be 0 candela per meter squared in all directions (please see attached drawing showing the candela values at 1400' from the field, they are all 0.0.) There will be no glare regardless of the season, please note: this calculation did not consider any reduction in light by foliage, structures or other objects that would block light.

Mr. Stubbe indicates that the LED light has a color temperature of 5,700 degrees Kelvin, therefore, raising concern that the blue area of the color spectrum will exacerbate the glare response. Glare is not impacted by the temperature of the light, it is from ability to see the light source. The light source will not be visible, there is 0 candela at the neighbors' properties, therefore there will be no glare.

2. Catalog cut of Proposed Luminaire: The catalog cut is here attached. Note: The Musco TLC LED Lighting System has been evaluated by IDA (International Dark Skies Association) and deemed a good sports lighting fixture for the preservation of the night sky.

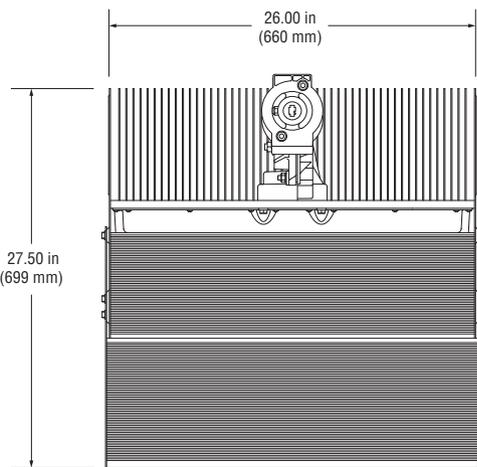
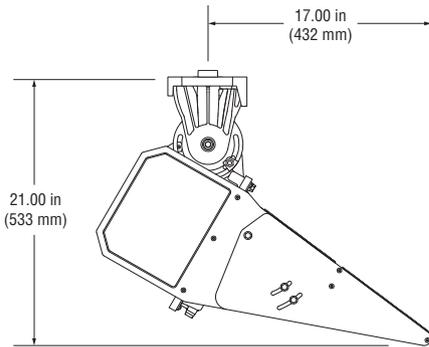
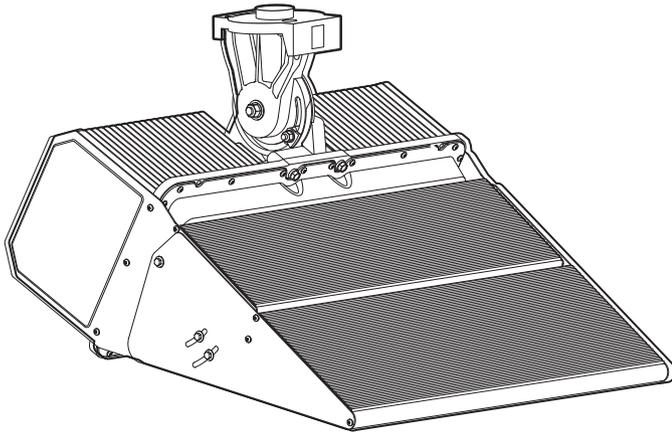
3. The frequency and nature of the lighted field use has been addressed in other correspondence.

If there are any questions, please let me know at your convenience.

Sincerely,

*Mike Rufo*

Mike Rufo  
President



**Luminaire Data**

Weight (luminaire) .....	80 lb (36 kg)
UL listing number .....	E338094
UL listed for USA / Canada .....	UL1598 CSA-C22.2 No.250.0
Ingress protection, luminaire, international .....	IP65
Ingress protection, luminaire, USA .....	IP54
Material and finish .....	Aluminum, powder-coat painted
Wind speed rating (aiming only) .....	150 mi/h (67 m/s)
UL ambient temperature rating, luminaire .....	50°C (122°F)

**Photometric Characteristics**

Projected lumen maintenance per IES TM-21-11

L90 (10.5k) .....	>63,500 h
L80 (10.5k) .....	>63,500 h
L70 (10.5k) .....	>63,500 h
CIE correlated color temperature .....	5700 K
Color Rendering Index (CRI), typical .....	75
Color Rendering Index (CRI), minimum .....	70
Lumens <sup>1</sup> .....	121,000

Footnotes:

1) Lumen values at stabilized operation in 25°C ambient temperature environment. Incorporates appropriate dirt depreciation factor for life of luminaire.

## Driver Data

### Electrical Data

Rated wattage<sup>1</sup>

Per driver..... 1,150 W

Per luminaire..... 1,150 W

Number of luminaires per driver..... 1

Starting (inrush) current..... <40 A, 256 μs

Fuse rating..... 15 A

UL, IEC ambient temperature rating,  
electrical components enclosure..... 50°C (122°F)

Ingress protection,  
electrical components enclosure..... IP54

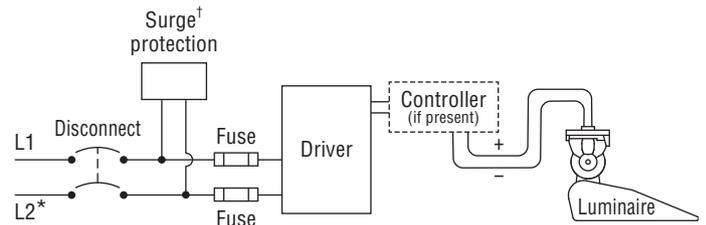
Efficiency..... 95%

Dimming mode..... optional

Range, energy consumption..... .20 – 100%

Range, light output..... .25 – 100%

### Typical Wiring



\* If L2 (com) is neutral then not switched or fused.  
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
<b>Max operating current<sup>2</sup> per luminaire</b>	7.11 A	6.83 A	6.46 A	6.18 A	5.92 A	5.13 A	4.10 A	3.74 A	3.56 A	3.43 A	2.96 A

Footnotes:

- 1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.
- 2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

### Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.



EQUIPMENT LIST FOR AREAS SHOWN									
QTY	LOCATION	Pole		MOUNTING HEIGHT	Luminaires				
		SIZE	ELEVATION		LUMINAIRE TYPE	STY/POLE	THIS GRID	OTHER GRIDS	
2	S3-S2	80'	-	80'	TLC-LED-1150	11	11	0	
2	S3-S4	80'	-	80'	TLC-LED-1150	11/11*	22	0	
2	S5-S6	80'	5'	85'	TLC-LED-1150	11	11	0	
6	TOTALS					33	33	0	

\* This structure utilizes a back-to-back mounting configuration

**Westtown School Soccer**

West Chester, PA

GRID SUMMARY	
Name:	1400R
Spacing:	30.0'
Height:	3.0' above grade

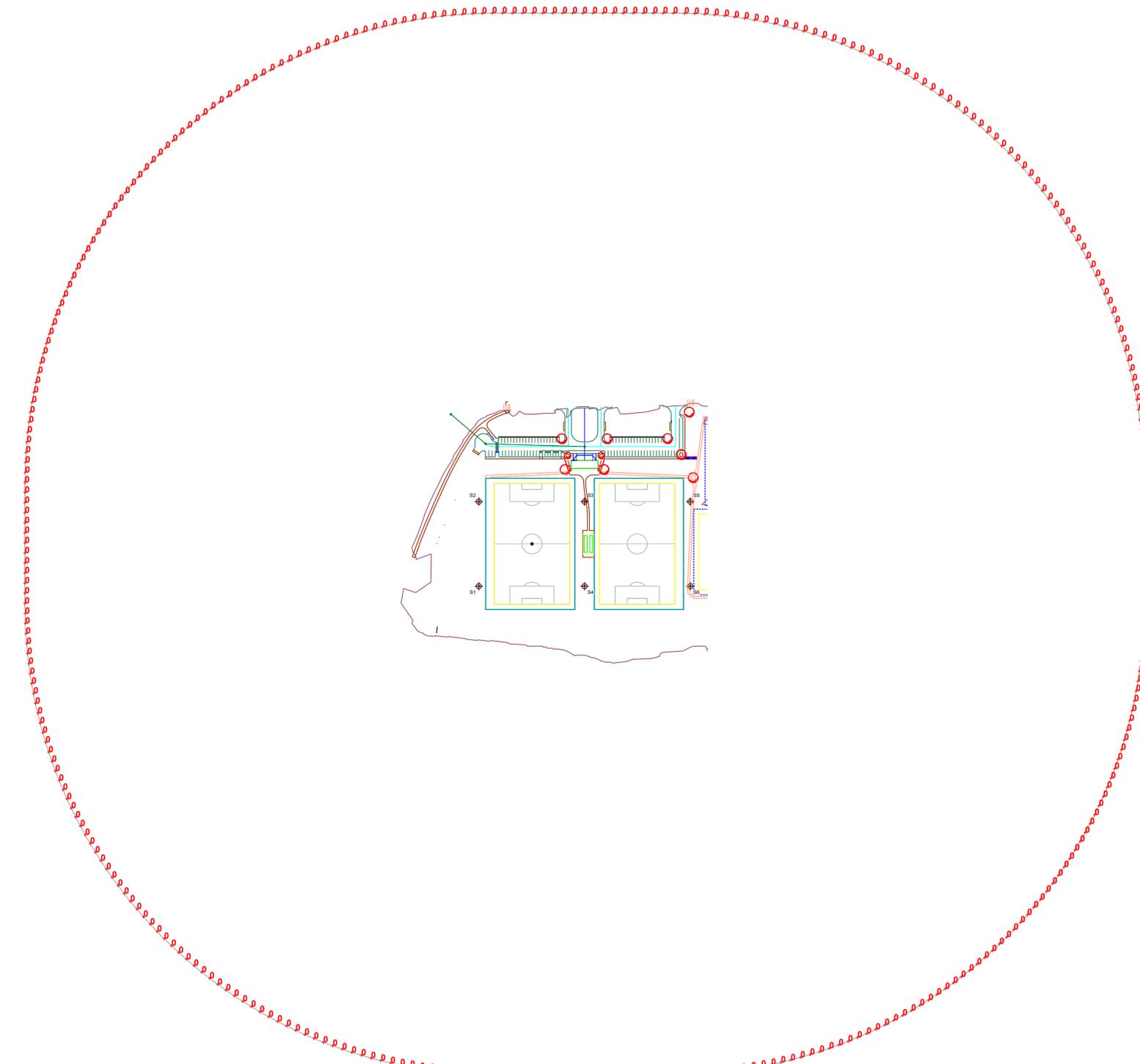
ILLUMINATION SUMMARY			
MAINTAINED CANDELA (PER FIXTURE)			
Entire Grid			
Scan Average:	0.0000		
Maximum:	0.00		
Minimum:	0.00		
No. of Points:	353		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	121,000 lumens		
No. of Luminaires:	88		
Total Load:	101.2 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>81,000	>81,000	>81,000

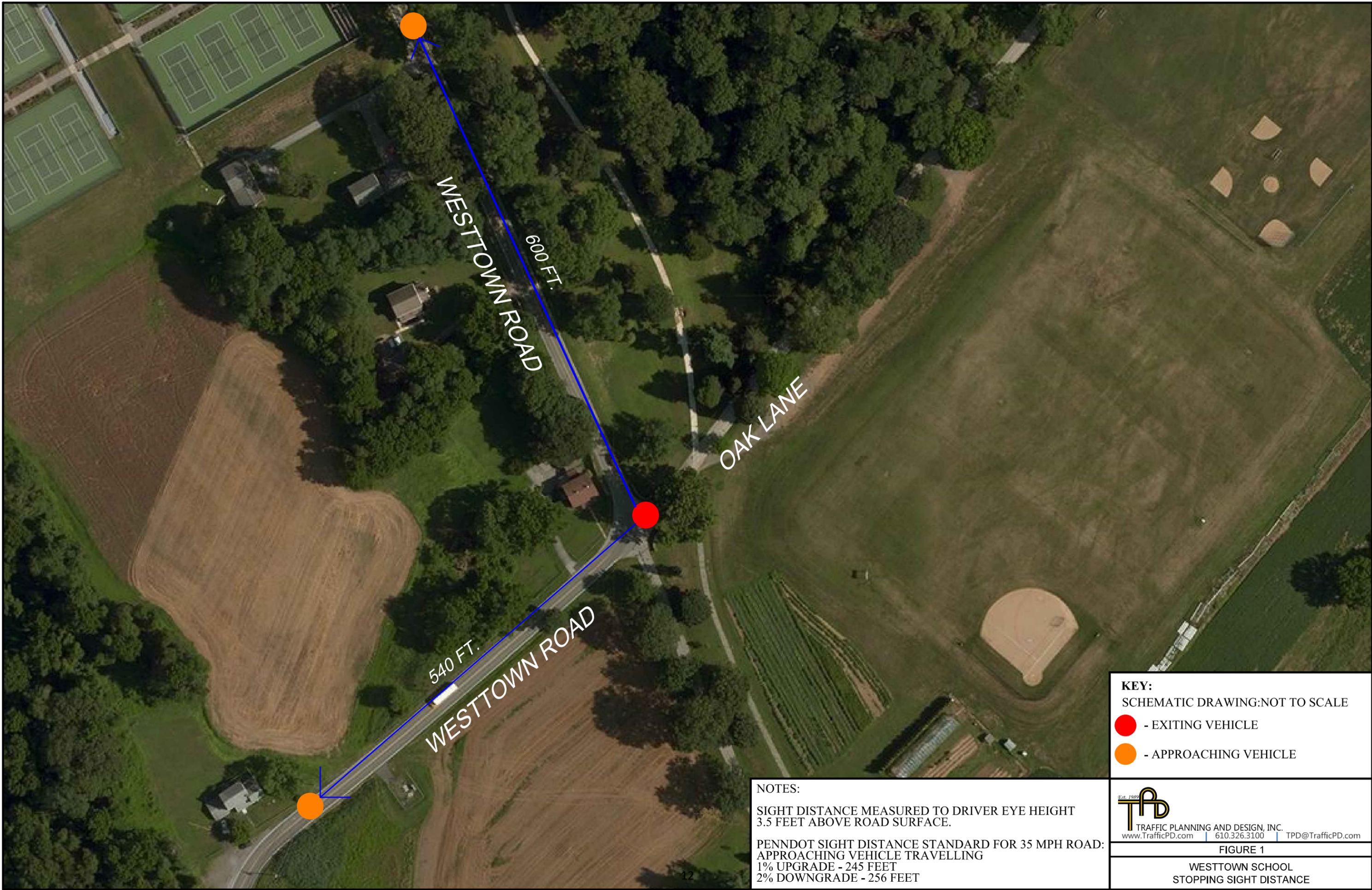
**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.





WESTTOWN ROAD  
600 FT.

OAK LANE

WESTTOWN ROAD  
540 FT.

**KEY:**  
 SCHEMATIC DRAWING: NOT TO SCALE  
 ● - EXITING VEHICLE  
 ● - APPROACHING VEHICLE

**NOTES:**  
 SIGHT DISTANCE MEASURED TO DRIVER EYE HEIGHT  
 3.5 FEET ABOVE ROAD SURFACE.  
 PENNDOT SIGHT DISTANCE STANDARD FOR 35 MPH ROAD:  
 APPROACHING VEHICLE TRAVELLING  
 1% UPGRADE - 245 FEET  
 2% DOWNGRADE - 256 FEET

**TPD**  
 TRAFFIC PLANNING AND DESIGN, INC.  
 www.TrafficPD.com | 610.326.3100 | TPD@TrafficPD.com  
**FIGURE 1**  
 WESTTOWN SCHOOL  
 STOPPING SIGHT DISTANCE