

RIVER FOREST TENNIS CLUB

ESTABLISHED 1905

RIVER FOREST TENNIS CLUB

Proposed Tennis Court Lighting

Village Meeting



Proposed Tennis Court Lighting



- **Agenda**

- Project Goal and Reasoning
- Project Considerations
- Due Diligence: Vendors, Pole Placement and Height
- Financial Considerations
- Logistics
- Traffic Study
- RFTC Property
- Site Plan
- Elevation View
- Photometric and Illumination Analysis with Visualizations
- Additional Light Blocking Measures
- Perimeter Foliage & Shade
- Pole Height – Existing Flag Pole
- Lighting Product
- Adjacent Light Sources
- Existing Light Conditions of Surrounding Area
- Letters of Support and of No Concern
- Neighbor Meeting
- Legal Opinion Letter
- Adjustments to Project Based on Neighbor and Village Recommendations
- Appendix

Proposed Tennis Court Lighting



- **Project Goal**

- Pursue opportunity to responsibly and collaboratively add lights to our tennis courts
 - Fiscally responsible
 - Collaborative with the neighbors, the village, and the members

- **Project Reasoning**

- Maximize the time our families can use the club with their children

Proposed Tennis Court Lighting



■ Project Considerations

- Maintain RFTC's positive impact on the community
 - Both in River Forest and the surrounding towns
 - For members and non-members
- Minimize, if not eliminate, light spillage outside of tennis courts
 - Including planting 36 new evergreen trees on the Jackson Ave side (*)
 - Open to upgrading the wind screen (thicker and less transparent) for sound and light blockage (*)
- Ensure lights are used on an individual-court basis and only when courts are being played
- Minimize visual aesthetic disruptions (shorter and few light poles)
- Maintain existing levels of traffic and noise
- Maintain existing ~7 month season from April 1st to October 31st (*)
- Adhere to the professional standards of the: (*)
 - USTA (United States Tennis Association)
 - IES (Illuminating Engineering Society)

Proposed Tennis Court Lighting



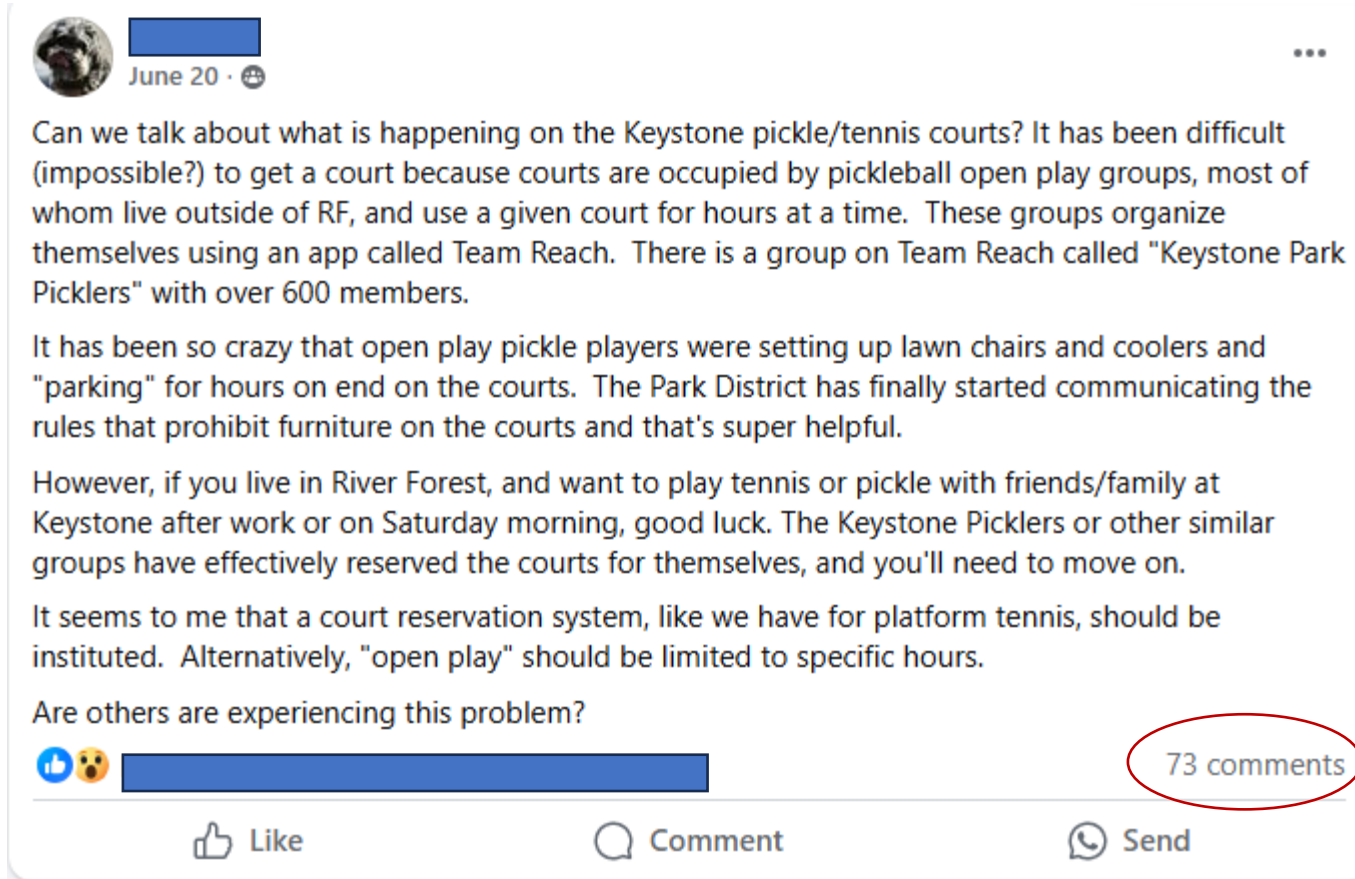
- **Project Considerations (Detail)**

- Value to the neighbors and to the larger community
 - RFTC is the community. We are the neighborhood.
 - We represent nearly 400 families across at least 4 towns (RF, Oak Park, Elmwood Park, and Forest Park)
 - ~ 85% RF, 5% OP, 5% surrounding suburbs, 5% outside the state (*)
 - We host swim lessons and tennis lessons for non-members
 - Decompress Keystone court usage
 - At night, RFTC members play at Keystone under the lights

Proposed Tennis Court Lighting



■ Project Considerations (Detail)



A screenshot of a Facebook post from a user with a blue profile picture, dated June 20. The post text discusses the difficulty of finding tennis courts at Keystone Park due to pickleball groups occupying them. It mentions a group called 'Keystone Park Picklers' with over 600 members. The post also mentions that the Park District has started communicating rules about furniture on courts. The post ends with a question: 'Are others are experiencing this problem?'. At the bottom, there are icons for 'Like', 'Comment', and 'Send', and a blue bar indicating '73 comments' which is circled in red.

June 20 · 🌐

Can we talk about what is happening on the Keystone pickle/tennis courts? It has been difficult (impossible?) to get a court because courts are occupied by pickleball open play groups, most of whom live outside of RF, and use a given court for hours at a time. These groups organize themselves using an app called Team Reach. There is a group on Team Reach called "Keystone Park Picklers" with over 600 members.

It has been so crazy that open play pickle players were setting up lawn chairs and coolers and "parking" for hours on end on the courts. The Park District has finally started communicating the rules that prohibit furniture on the courts and that's super helpful.

However, if you live in River Forest, and want to play tennis or pickle with friends/family at Keystone after work or on Saturday morning, good luck. The Keystone Picklers or other similar groups have effectively reserved the courts for themselves, and you'll need to move on.

It seems to me that a court reservation system, like we have for platform tennis, should be instituted. Alternatively, "open play" should be limited to specific hours.

Are others are experiencing this problem?

👍👎 73 comments

Like Comment Send

- Example Facebook Post
 - One of numerous
- Timing
 - Posted on June 20th
 - 73 comments by July 22nd
- Topic:
 - Playing at Keystone is impossible due to pickle, tennis, park district, other entities reserving the courts
- ** Names were removed, but this was posted on "60305 Families"*

Proposed Tennis Court Lighting



■ Project Considerations (Detail)

- About the RFTC
 - We are a family club that stresses the importance of the family as the key element of our community and society.
 - We are open to anyone interested in joining
 - Anyone from anywhere is encouraged and welcome to apply
 - We are a working club
 - Every member volunteers their time to make the club function
 - We have very minimal staff, mostly for groundskeeping
 - We have contributed to the community consistently for many years.
 - We promote a healthy and active lifestyle

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**
 - World's Healthiest Sport (according to the US Open)



Proposed Tennis Court Lighting



■ Project Considerations (Detail)

- Light Spillage of Proposed Lights
 - 2025 light technology is vastly superior to past
 - LED lighting is now anti-glare, asymmetric indirect light design with full cut off
 - Minimal spillage for the neighbors
 - Lights now require shorter and fewer poles
 - Spillage is at 0.0 on Lathrop and 0.078 on Jackson
 - This does not account for existing foliage and windscreens (which would reduce spillage further)
 - The windscreen was recently installed
- Light Spillage of Existing Street Lights and Lights of Nearby Buildings (School, Library, Church) (*)
 - All higher than proposed lighting
 - Existing light spillage on Jackson Ave is 8.6 fc vs Proposed lights average of 0.078 fc; 110x or <1% (0.91%)
 - Existing max light spillage on Jackson Ave is 75.0 fc vs Proposed lights average of 0.078 fc; 960x or 0.10%
 - 75.0 fc is brighter than the brightest proposed light
 - Older style lighting with no shields (360° light exposure)

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Adjacent neighbors' property value will not diminish
 - Light spillage of existing street lights and nearby buildings is brighter than proposed tennis court lighting
- Recently, there have been lights installed at both Keystone Park and Concordia.
 - Neither project adversely affected property values in their vicinity.
 - Average home appreciation in River Forest from January 2024 to January 2025 was 4.4% (per Zillow)
 - Spot checked a number of properties; their appreciation was higher than 4.4%
- Property value by tennis and golf clubs are 15-30% higher (per National Recreation and Parks Association)
 - This project will only enhance the value of the tennis club

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- No anticipated net changes to noise or traffic
 - Currently, RFTC is only open ~7 months per year. No anticipated changes.
 - Our pool is already open until 9pm daily. That creates more noise and traffic than tennis courts.
 - Lights, Music, Entire families
 - Tennis courts will add 2 to 4 adults per court during the evening time
 - Many members walk or bike to the club; therefore, not affecting traffic.
 - We anticipate more will continue to bike, which is why we recently upgraded and expanded our bike racks.
 - Allows for adults to play later, which reduces congestion around Roosevelt Middle School during the busy after school hours

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Courts In Use
 - Courts will be lit only if in use and on an individual basis
 - We will ask members to book the courts closest to the center of the property first (*)
 - Farthest from residential streets of Lathrop Ave and Jackson Ave
- Pole height
 - At 30 feet, we are in line with our existing flagpole, and allows us to minimize the number of poles
- Year Round Property Maintenance
 - Leaf clean up, Snow shoveling, Clay runoff

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Safety and Security

- Keep property secure at night and at daily closing
 - A staff member will remain on site to lock the building and gates
 - Additional security cameras will be installed, including on the courts
 - Ensure only members can play on courts at night
 - A pin will be provided to turn on the lights, and updated monthly
 - Security cameras will also assist
 - All existing RFTC policies will apply to tennis under the lights
 - No liquor anywhere on the property, unless a formal club event, but never on the courts
 - Security cameras will also assist

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Adhere to the professional standards of the USTA (United States Tennis Association) and the IES (Illuminating Engineering Society)
 - Illumination
 - Wattage
 - Light Loss Factor
 - Correlated Color Temperature
 - Pole Height
- Adhere to Dark Sky Compliance and Design
 - Minimize light pollution
 - Prevent skyglow
 - Protect night environments (residential zone, wildlife habitats, astronomical observatories)

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Per the USTA (United States Tennis Association) and the IES (Illuminating Engineering Society):

Category	Standard	RFTC Proposal	Comparison
■ Illumination	50 Footcandles	30 and 24 fc	Lower
■ Wattage	1000W to 1500W	400W and 800W	Lower
■ Light Loss Factor	0.70	0.97 & 0.90	Higher
■ Correlated Color Temperature	5000K to 6000K	5000K	Yes, In line
■ Pole Height	20-40 ft	30 ft	Yes, In line

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Per the USTA (United States Tennis Association) and the IES (Illuminating Engineering Society):

- **Illumination**

- Class I: Professional level: min. 125 foot candles
 - Class II: College and semi-pro level: min. 75 foot candles
 - **Class III: High school and private clubs: min. 50 foot candles * 0 courts**
 - Class IV: Parks and Recreational: min. 30 foot candles * 8 courts

- Our proposal

- **Fails** to meet Class III standard on any court
 - Only 8 of the 10 courts meet the lower Class IV standard
 - 2 of the 10 do not meet even the lower Class IV standard

Proposed Tennis Court Lighting



- **Project Considerations (Detail)**

- Per the USTA (United States Tennis Association) and the IES (Illuminating Engineering Society):

- **Light Loss Factor**

- A multiplier used in lighting design to account for the reduction in light output over time
- It predicts future illumination levels by comparing initial light output to the maintained level

<u>Metric</u>	<u>Initial</u>	<u>Industry (70%)</u>	<u>RFTC (97%)</u>
Illumination	100 fc	70 fc	97 fc

**** We are overestimating light spillage ****

Proposed Tennis Court Lighting



- **Due Diligence: Vendors**
 - Outreach to 13 vendors
 - Received bids from 10 of 13
 - Only 2 vendors also install the lighting product
 - Researched solar powered lighting options; however, not powerful enough

Proposed Tennis Court Lighting



- **Due Diligence: Pole Placement and Height**

- Fewer poles but they are very tall (50 foot)
 - **Con:** Visually/Aesthetically not in line with RFTC or neighborhood
- Shorter poles (25 foot) but more poles required
 - **Con:** More poles required
 - **Con:** Poles between the nets not ideal for safety
- Short poles (30 foot) and kept on the perimeter
 - **Pro:** Poles only on exterior perimeter
 - **Pro:** Fewer poles required
 - **Pro:** Height in line with existing flagpole

<u>Surrounding Heights</u>	
Pool lights	15 ft
Flagpole	30 ft
Power lines	50 ft
Trees	55 ft

Proposed Tennis Court Lighting



- **Financial Considerations**

- Upfront: Installation and Product (*Largest Spend*)
 - 10 courts: \$266K or \$26K per court
- Upfront: Other
 - Permit and fees not included.
 - Does not include repairs to unmarked private utilities (i.e. wires, sprinklers, sewer, etc.).
- Recurring
 - Annual cost of maintenance is expected to be minimal
 - There is a 10-year warranty
 - Annual cost of usage (electricity) is expected to be minimal
 - Due to LED energy efficient bulbs and minimal usage per day
- Funding Source
 - Goal is to have this funded by existing RFTC budget or bank loan

Proposed Tennis Court Lighting



- **Logistics**

- Installation

- One phase
 - 3 weeks to install
 - Before/After season

- Hours

- Only from April 1st to October 31st (*)
 - Available from 6am to 9:30pm (* Decreased from 10pm)
 - Anticipated highest use:
 - Early and late season (not mid Summer)
 - Starting at 8pm
 - Local Lighting Comparables
 - RFTC Pool 9pm
 - Keystone Tennis 10pm
 - Keystone Paddle 11pm
 - Automatic and remote shut off options (master schedule and by individual court)

Proposed Tennis Court Lighting



- **Logistics**

- End Time of 9:30pm

- Neighbor's asked for 9:30pm instead of 10pm
 - In line with the RFTC Pool lights which stay on until 9pm
 - Only adds **80 minutes** of additional play in the months of May to August (currently highest used months)
 - Mid-month sunset from May to August 2025 was 8:10pm

Month	Apr	May	Jun	Jul	Aug	Sep	Oct
Sunset on 15th	7:33 PM	8:04 PM	8:25 PM	8:20 PM	7:47 PM	6:58 PM	6:09 PM
Additional Time	1h 57m	1h 25 m	1h 5m	1h 10m	1h 43m	2h 31m	3h 21m

Proposed Tennis Court Lighting



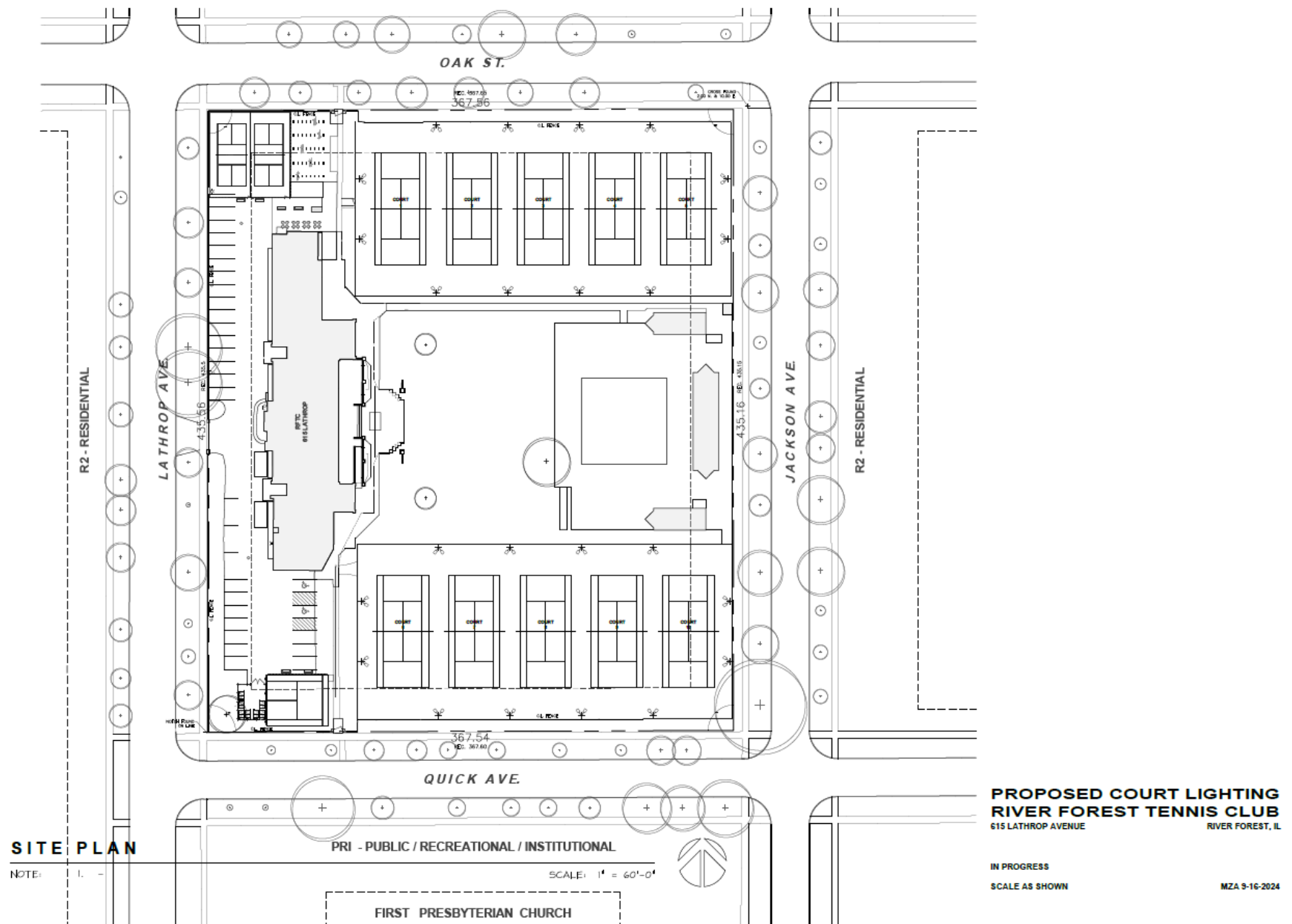
■ Traffic Study

- Completed by the engineering firm Kenig, Lindgren, O'Hara, Aboona, Inc.
- Findings
 - Full report is in the application
 - Evaluation of the Existing Roadway System
 - **The existing roadway system has sufficient reserve capacity to accommodate the additional traffic, if any**
 - Trip Generation Estimates
 - Will not extend the current hours of the RFTC
 - Will not extend the season of the RFTC.
 - However, the RFTC does anticipate more use of the tennis courts between 8:00 P.M. to 10:00 P.M.
 - Assumptions
 - Doubles play on all ten tennis courts
 - Given the number of members that walk or ride their bikes to and from the RFTC
 - An auto occupancy of 2.0 people per vehicle
 - It is estimated that the tennis courts will generate a maximum of 25 additional two-way trips between 7:30 P.M. and 10:30 P.M.
 - However, the impact of the traffic will likely be lower given the following:
 - Worst-case scenario that doubles play is occurring on all ten tennis courts
 - Any additional traffic generated by the installation of the tennis court lights will only occur for a few months in the late spring/early summer and a few months in the late summer/early fall.
 - A portion of the additional traffic generated by the installation of the lights is currently generated by the RFTC as the tennis courts are currently used past 8:00 P.M.

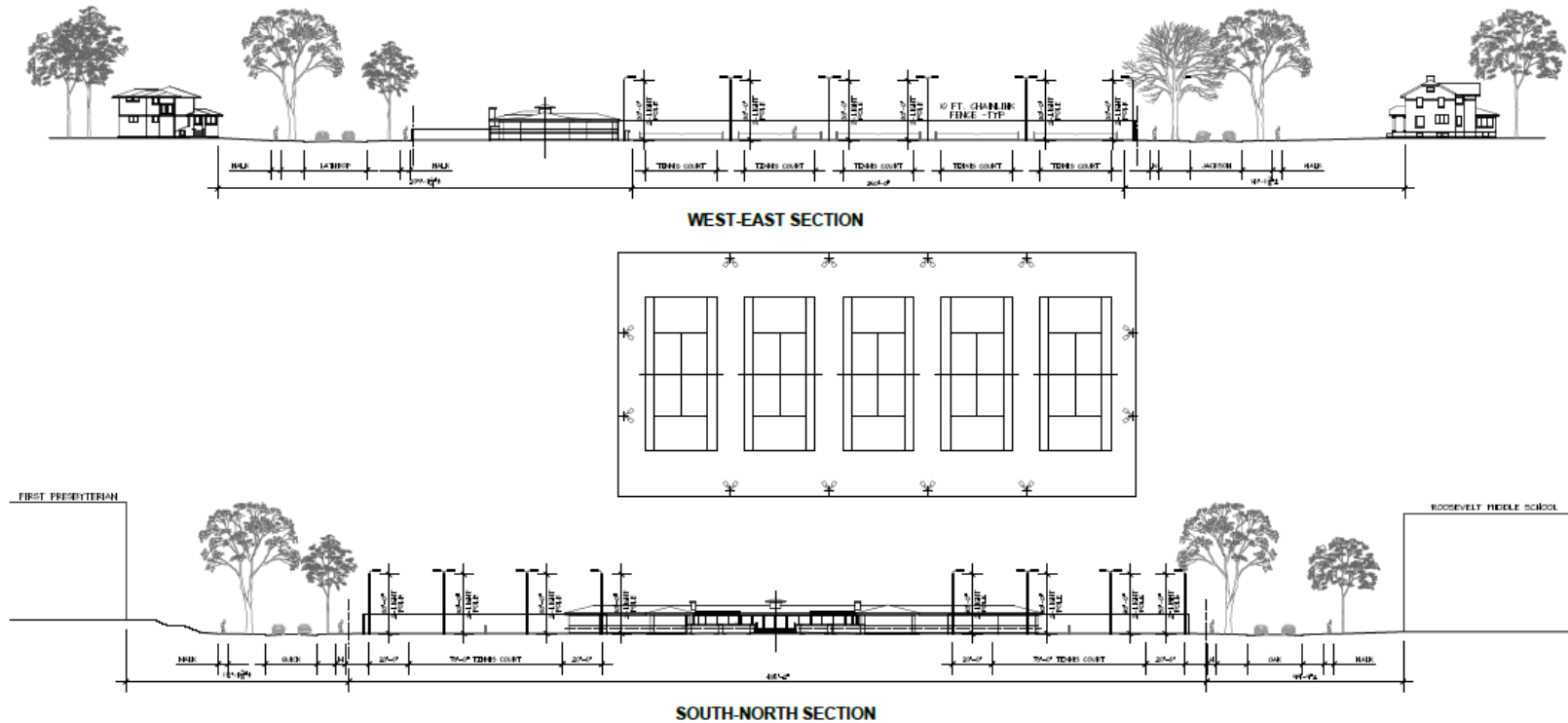
RFTC Property



Site Plan



Elevation: 12 of the 30' Poles with 2 Light Fixtures Each



SECTIONS

NOTE: 1. -

SCALE: 1" = 60'-0"

PROPOSED COURT LIGHTING
RIVER FOREST TENNIS CLUB
615 LATHROP AVENUE
RIVER FOREST, IL

IN PROGRESS
SCALE AS SHOWN

MZA 9-16-2024

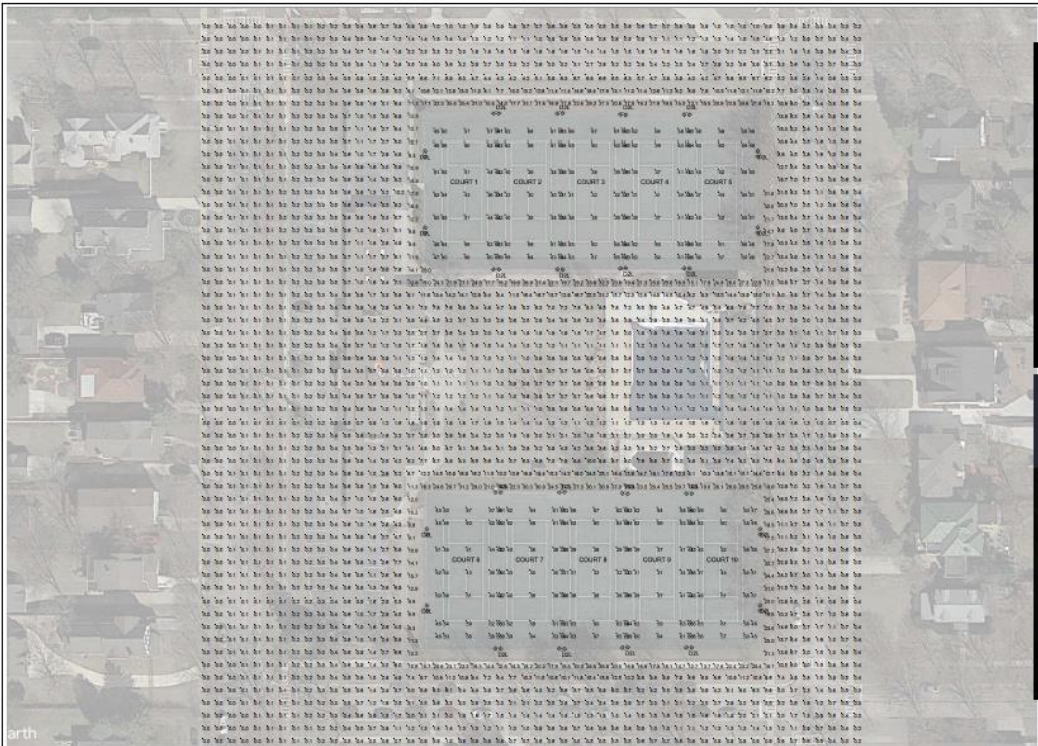
Light Pole Placement



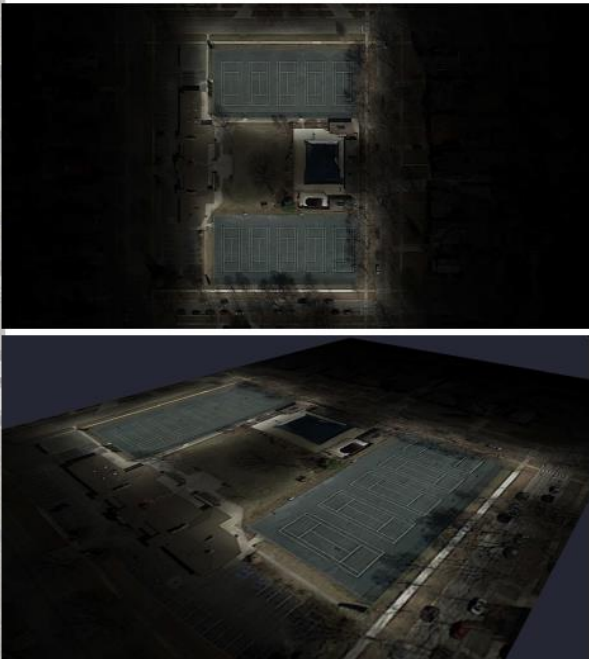
- **10 Court, 30 Foot Pole Height Option**
 - 24 total poles (12 on each bank)
 - 48 total LED fixtures (2 on each pole)
 - Exterior Perimeter Only Poles



Lighting Study Overview **at 800W**



Scale: 1 inch= 40 Ft.



3D RENDERINGS

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Description	LLF	Lum Watts	Mtg Height
2	24	D2L	2 @ 90 degrees	ST-LHM800N-WIDE-NICHIA	0.970	797,129	30

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Court 01	Illuminance	Fc	52.00	64	35	1.49	1.83
Court 02	Illuminance	Fc	50.80	64	30	1.69	2.13
Court 03	Illuminance	Fc	51.74	67	31	1.67	2.16
Court 04	Illuminance	Fc	51.31	65	31	1.66	2.10
Court 05	Illuminance	Fc	52.23	65	35	1.49	1.86
Court 06	Illuminance	Fc	51.94	64	35	1.48	1.83
Court 07	Illuminance	Fc	50.80	64	30	1.69	2.13
Court 08	Illuminance	Fc	51.80	67	31	1.67	2.16
Court 09	Illuminance	Fc	51.31	65	31	1.66	2.10
Court 10	Illuminance	Fc	52.26	65	35	1.49	1.86
Spill Light	Illuminance	Fc	4.44	36.8	0.2	22.20	184.00

Luminaire Location Summary							
Lumho	Label	X	Y	Z	Orient	Tilt	
2	D2L	43	-34	30	276	15	
3	D2L	193	101	30	276	15	
4	D2L	93	-23	30	276	15	
5	D2L	93	-23	30	276	15	
6	D2L	143	-23	30	276	15	
7	D2L	93	102	30	276	15	
8	D2L	143	101	30	276	15	
9	D2L	44.6	-326.3	30	276	15	
10	D2L	44.6	-326.3	30	276	15	
11	D2L	194.6	-195.3	30	276	15	
12	D2L	194.6	-319.3	30	276	15	
13	D2L	194.6	-326.3	30	276	15	
14	D2L	144.6	-319.3	30	276	15	
15	D2L	144.6	-195.3	30	276	15	
16	D2L	144.6	-195.3	30	276	15	
17	D2L	-13.4	-287.3	30	0	15	
18	D2L	292.6	-287.3	30	180	15	
19	D2L	-13.4	-227.3	30	0	15	
20	D2L	292.6	-227.3	30	180	15	
21	D2L	15	69	30	0	15	
22	D2L	291	69	30	180	15	
23	D2L	-15	9	30	0	15	
24	D2L	291	9	30	180	15	

Mounting Height=30ft
Tilt=0
Calculation Grids Are 3ft Above Grade
Light Loss Factor=0.9 (Maintained Footcandles)

THIS ANALYSIS IS BASED ON COMPUTER DATA. SHINETO LIGHTING HAS CONDUCTED VISUAL VERIFICATION OF THE ANALYSIS. SHINETO LIGHTING HAS CONDUCTED VISUAL VERIFICATION OF THE ANALYSIS. SHINETO LIGHTING HAS CONDUCTED VISUAL VERIFICATION OF THE ANALYSIS.

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Date Comments

Revisions

Drawn By: BW

Checked By:

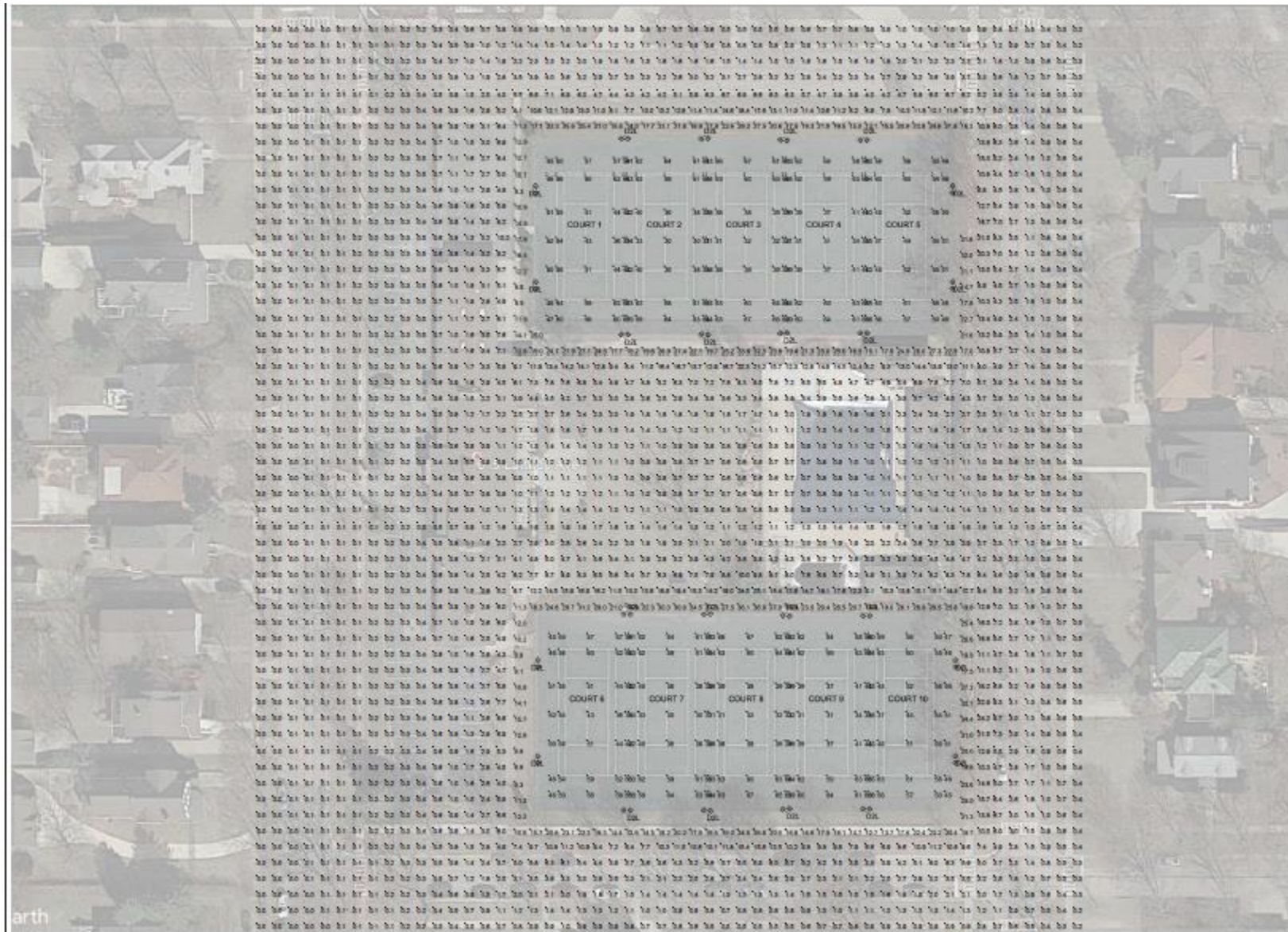
Date: 6/25/2024

Scale: 1"=15' (at 24"x36" Print Size)

RIVER FOREST TENNIS
CLUB 10-COURTS

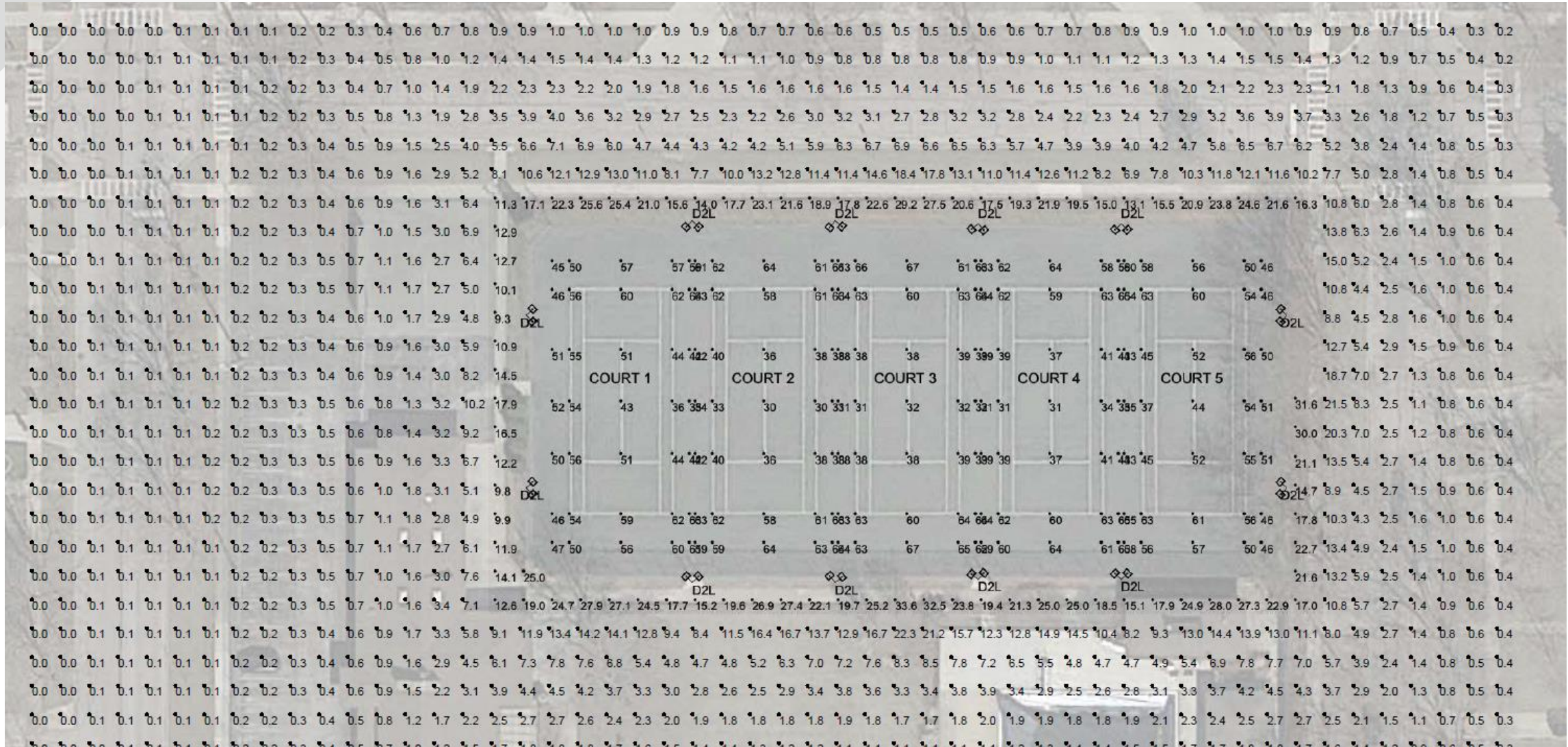
ST-HML800N-WIDE-NICHIA

Photometrics and Illumination **at 800W**



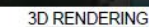


Photometrics and Illumination **at 800W** (Court Illumination and Light Spillage)





Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	A2	93	39	26	0	0
2	A2	143	39	26	0	0
3	A2	143	39	26	180	0
4	A2	193	39	26	180	0
5	B	-15	39	26	0	0
6	B	-15	77	26	0	0
7	B	-15	1	26	0	0
8	B	251	39	26	180	0
9	B	251	77	26	180	0
10	B	251	1	26	180	0
11	B2L	43	-24	26	90	0
12	B2L	93	-24	26	90	0
13	B2L	93	102	26	270	0
14	B2L	93	102	26	270	0
15	B2L	143	-23	26	90	0
16	B2L	143	101	26	270	0
17	B2L	193	-23	26	90	0
18	B2L	193	101	26	270	0

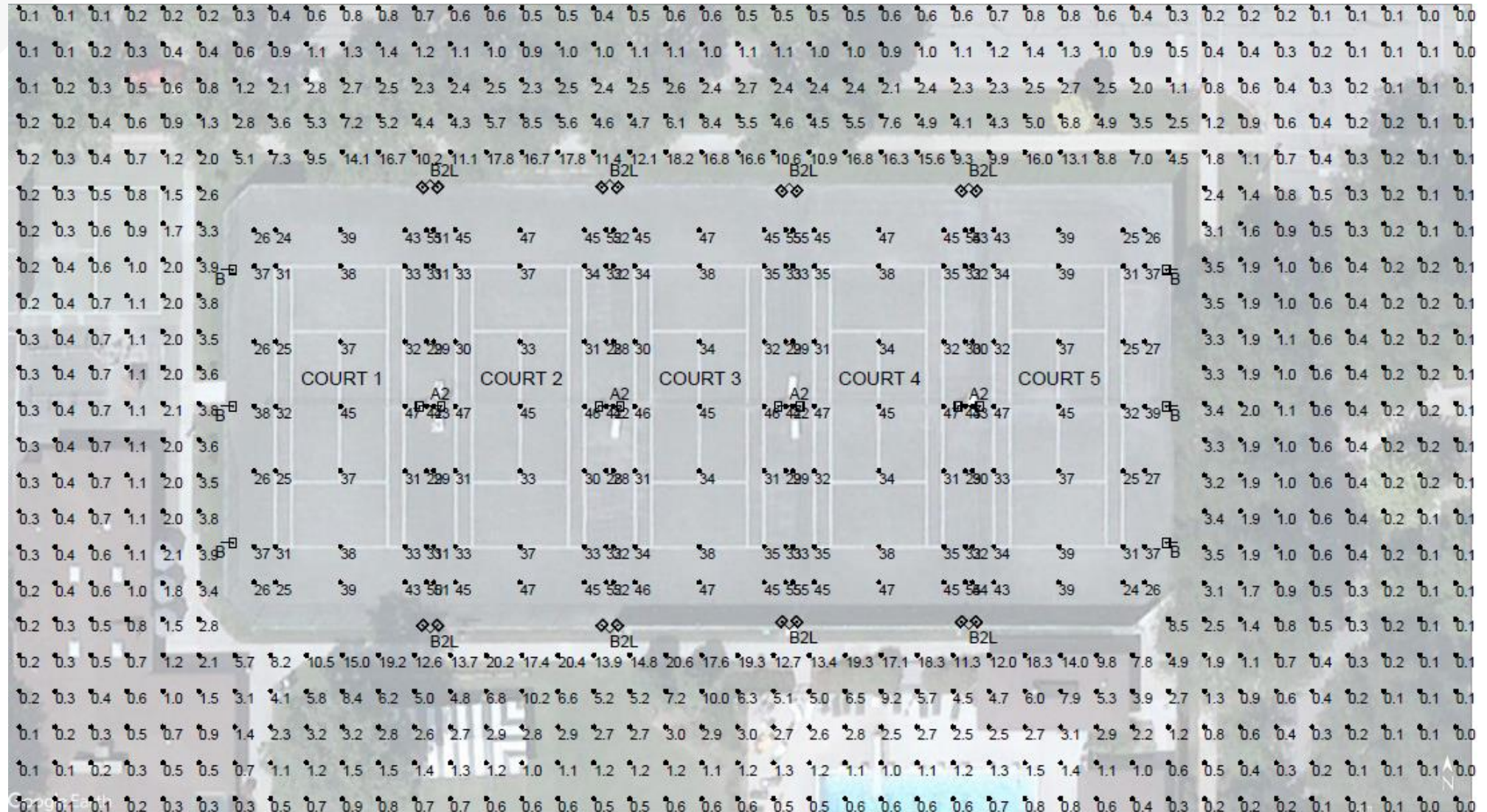


THE ANALYSIS IS BASED ON COMPUTER DATA DERIVED FROM
 TESTS PERFORMED BY AN INDEPENDENT TESTING LABORATORY
 IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY
 APPROVED METHODS & UNDER CONTROLLED CONDITIONS.
 ON-SITE OBSTRUCTIONS, LIKE TREES, VEHICLES, ETC., ARE NOT
 INCLUDED IN THE CALCULATIONS. ACTUAL MEASUREMENTS
 MAY VARY FROM THEORETICAL RESULTS.

RIVER FOREST TENNIS
CLUB 5-COURTS



Photometrics and Illumination **at 400W** (Court Illumination and Light Spillage)



Proposed Tennis Court Lighting



■ Photometrics Summary (Light Spillage in footcandles)

■ Residential Sides

■ Lathrop Ave (West)

- Min: 0.0
- Max: 0.0
- Avg: 0.0

■ Jackson Ave (East)

- Min: 0.0 (from 0.2) (*)
- Max: 0.1 (from 0.5) (*)
- Avg: 0.078* (from 0.4) (*)

■ Non-Residential Sides

■ Oak Ave – School (North)

- Min: 0.0
- Max: 1.0
- Avg: 0.59*

■ Quick Ave – Church (South)

- Min: 0.0
- Max: 1.0
- Avg: 0.55*

* Minimal true light affect

* Doesn't take into consideration existing foliage and windscreen

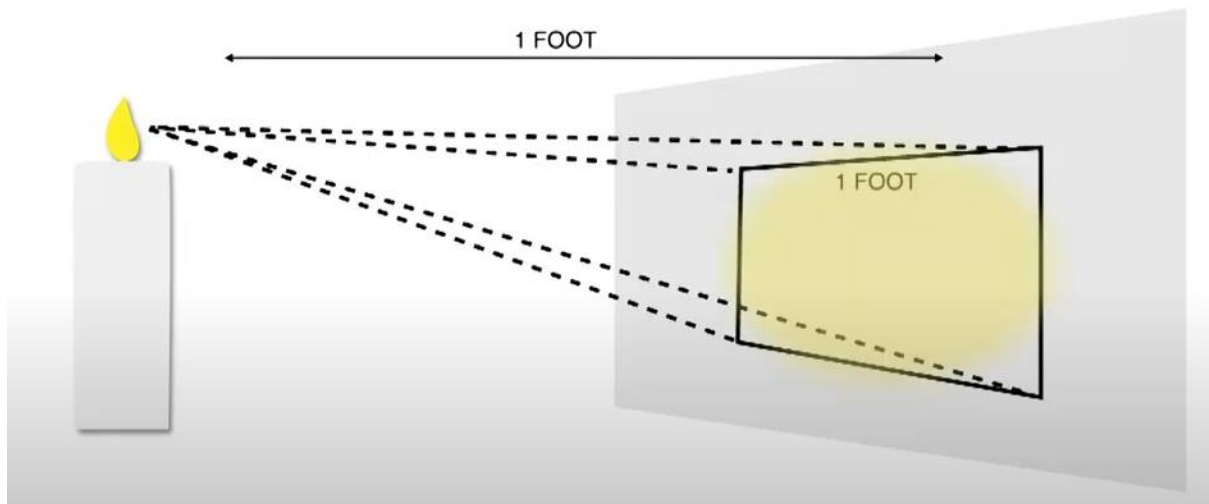
* Doesn't take into consideration new arborvitaes and/or new thicker and opaque windscreen

Proposed Tennis Court Lighting



■ Footcandles

- Measurement of light intensity or amount of visible light given off by a source
- 1 footcandle = 1 Lumen
 - Set a candle 1 foot away from a wall. The amount of light filling up the square equals 1 Lumen.



Perspective

Gym	100 fc
Office	50 fc
Auto Showroom	50 fc
Factory Floor	30 fc
Hallway	10 fc
Parking Garage	10 fc

Existing Lights **8.6 fc** **(110x)**

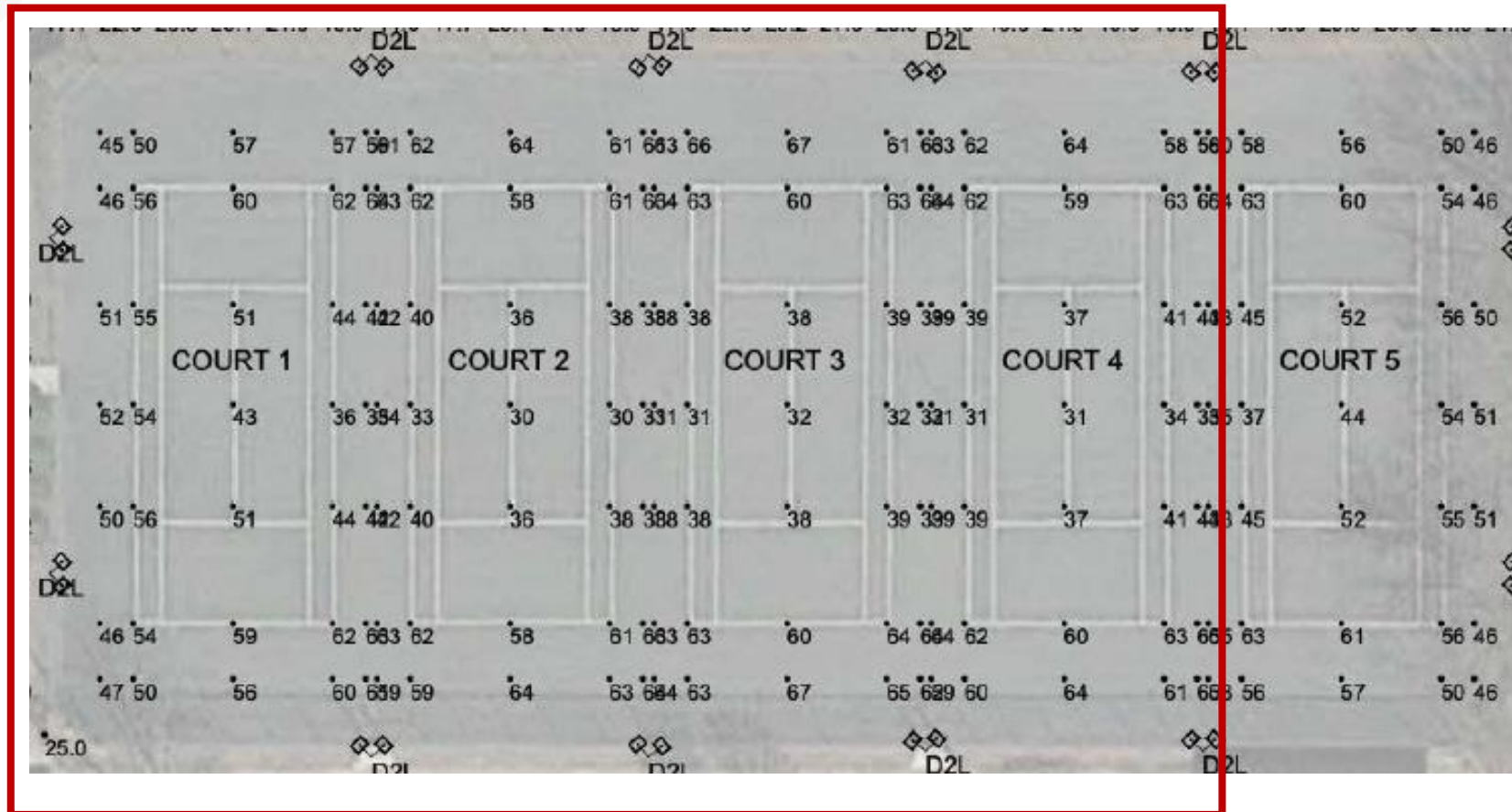
Jackson Ave Max **75.0 fc** **(960x)**

Proposed Lights **0.078 fc**

Proposed Tennis Court Lighting



■ Photometrics Summary (Court Illumination) at 800W



- 8 Courts (30 ft poles)
 - Min: 30 fc
 - Max: 67 fc
 - Average: 51 fc

Proposed Tennis Court Lighting



■ Photometrics Summary (Illumination) at 800W

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Description	LLF	Lum Watts	Mtg Height
§	24	D2L	2 @ 90 degrees	ST-LHM800N-WIDE-NICHIA	0.970	797.129	30

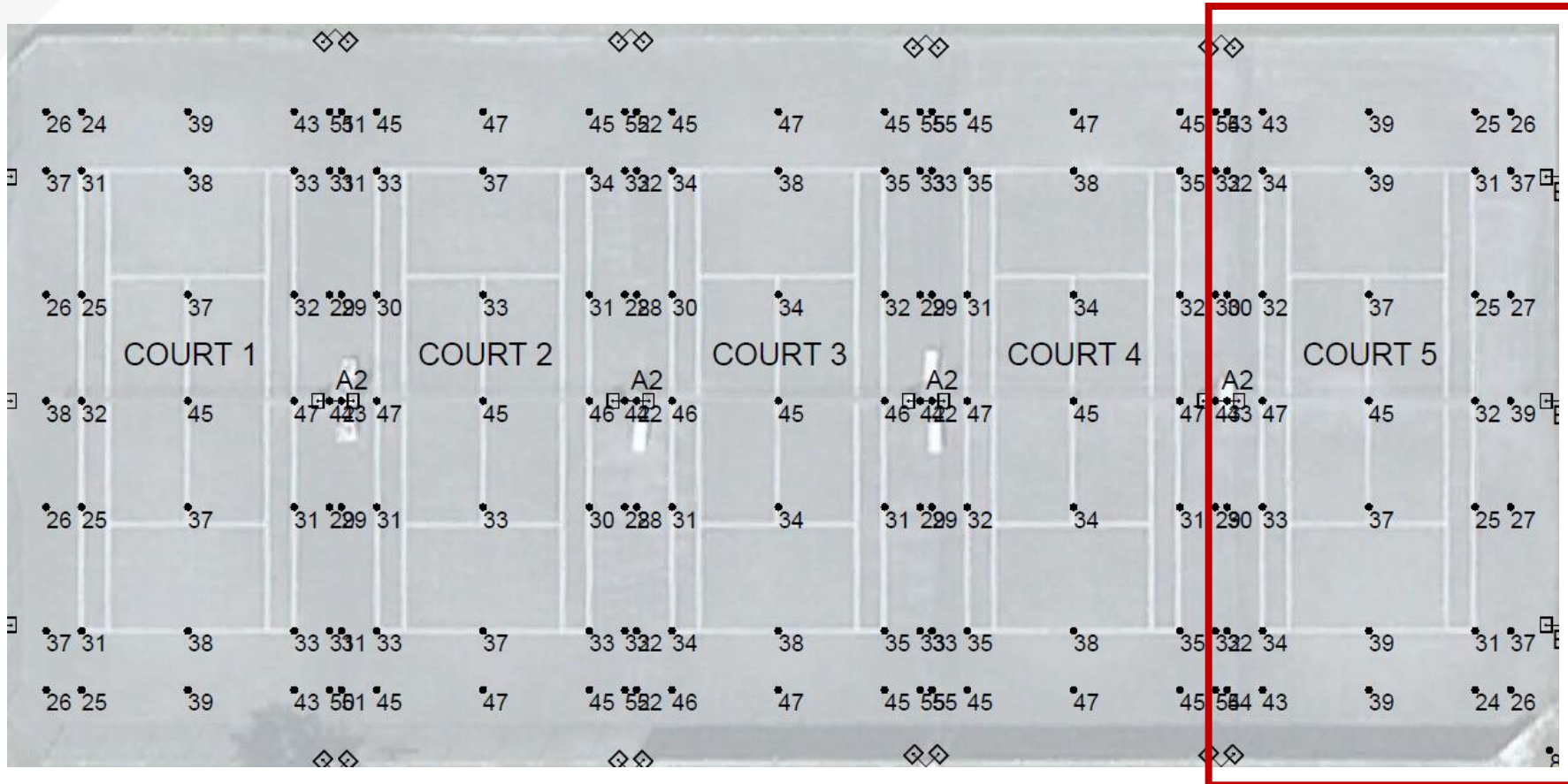
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LumNo	Label	X	Y	Z	Orient	Tilt
1	D2L	43	-24	30	90	15
2	D2L	43	102	30	270	15
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5	D2L	93	-24	30	85	15
6	D2L	143	-23	30	95	15
7	D2L	93	102	30	275	15
8	D2L	143	101	30	265	15
9	D2L	44.6	-320.3	30	90	15
10	D2L	44.6	-194.3	30	270	15
11	D2L	194.6	-195.3	30	270	15
12	D2L	194.6	-319.3	30	90	15
13	D2L	94.6	-320.3	30	85	15
14	D2L	144.6	-319.3	30	95	15
15	D2L	94.6	-194.3	30	275	15
16	D2L	144.6	-195.3	30	265	15
17	D2L	-13.4	-287.3	30	0	15
18	D2L	252.6	-287.3	30	180	15
19	D2L	-13.4	-227.3	30	0	15
20	D2L	252.6	-227.3	30	180	15
21	D2L	-15	69	30	0	15
22	D2L	251	69	30	180	15
23	D2L	-15	9	30	0	15
24	D2L	251	9	30	180	15

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Court 01	Illuminance	Fc	52.00	64	35	1.49	1.83
Court 02	Illuminance	Fc	50.80	64	30	1.69	2.13
Court 03	Illuminance	Fc	51.74	67	31	1.67	2.16
Court 04	Illuminance	Fc	51.31	65	31	1.66	2.10
Court 05	Illuminance	Fc	52.23	65	35	1.49	1.86
Court 06	Illuminance	Fc	51.94	64	35	1.48	1.83
Court 07	Illuminance	Fc	50.80	64	30	1.69	2.13
Court 08	Illuminance	Fc	51.80	67	31	1.67	2.16
Court 09	Illuminance	Fc	51.31	65	31	1.66	2.10
Court 10	Illuminance	Fc	52.26	65	35	1.49	1.86
Spill Light	Illuminance	Fc	4.44	36.8	0.2	22.20	184.00

Proposed Tennis Court Lighting



■ Photometrics Summary (Court Illumination) at 400W



- 2 Courts (30 ft poles)
 - Min: 24 fc
 - Max 54 fc
 - Average 35 fc

Proposed Tennis Court Lighting



■ Photometrics Summary (Illumination) at 400W

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Description	LLF	Lum Watts	Mtg Height
	4	A2	Back-Back	ST-HML400N-WIDE	0.900	405.2	26
	6	B	Single	ST-HML400N-NARROW	0.900	399.2	26
	8	B2L	2 @ 90 degrees	ST-HML400N-NARROW	0.900	399.2	26

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Court 1	Illuminance	Fc	34.49	51	24	1.44	2.13
Court 2	Illuminance	Fc	38.23	52	28	1.37	1.86
Court 3	Illuminance	Fc	38.86	55	28	1.39	1.96
Court 4	Illuminance	Fc	35.23	55	25	1.35	1.96
Court 5	Illuminance	Fc	35.06	54	24	1.46	2.25
Spill Light	Illuminance	Fc	2.55	20.6	0.0	N.A.	N.A.

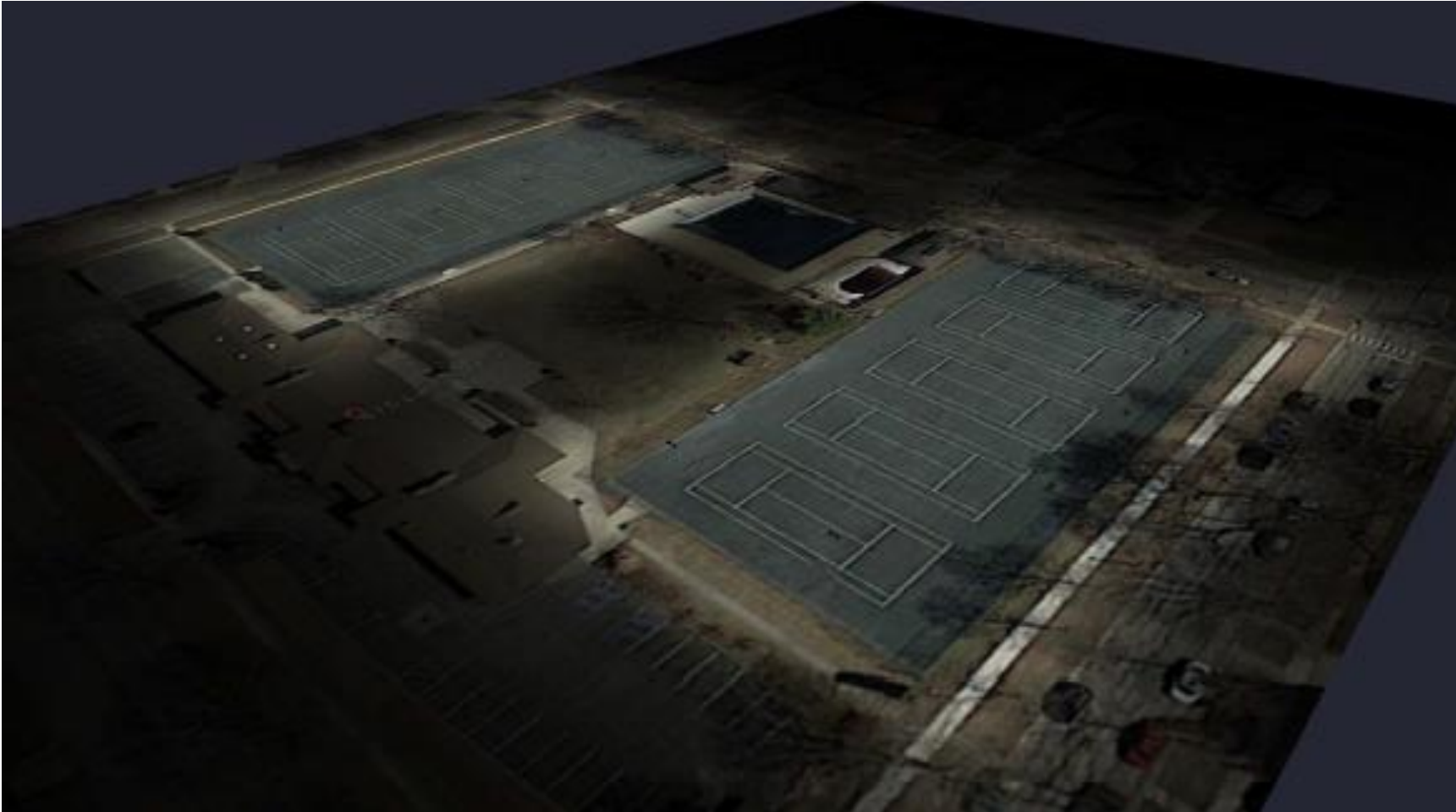
Mounting Height=26ft
Tilt =0
Calculation Grids Are 3ft Above Grade
Light Loss Factor=0.9 (Maintained Footcandles)

Luminaire Location Summary						
LumNo	Label	X	Y	Z	Orient	Tilt
1	A2	93	39	26	0	0
2	A2	43	39	26	0	0
3	A2	143	39	26	180	0
4	A2	193	39	26	180	0
5	B	-15	39	26	0	0
6	B	-15	77	26	0	0
7	B	-15	1	26	0	0
8	B	251	39	26	180	0
9	B	251	77	26	180	0
10	B	251	1	26	180	0
11	B2L	43	-24	26	90	0
12	B2L	93	-24	26	90	0
13	B2L	43	102	26	270	0
14	B2L	93	102	26	270	0
15	B2L	143	-23	26	90	0
16	B2L	143	101	26	270	0
17	B2L	193	-23	26	90	0
18	B2L	193	101	26	270	0

Photometrics Visualizations **at 800W**



Photometrics Visualizations at 800W



Additional Light Blocking Measures

■ Option 1: Planting of Arborvitae on Jackson Ave (*)

- Total: 36 arborvitae
- Initial Height: 5' to 6'
- Annual Growth: 1' to 2' each year

Key	Qty	Botanical Name	Common Name
Shrubs			
ED1	36	Thuja x 'Green Giant'	GREEN GIANT ARBORVITAE



Additional Light Blocking Measures



Additional Light Blocking Measures

- **Option 2: More Opaque Windscreen on Jackson Ave (*)**
 - Not preferred by neighbors



Perimeter Foliage & Shade – Non-Residential (Quick Ave)

- South Side: Quick Ave
- Adjacent to: First Presbyterian Church
- Note: Tree coverage on both sides and windscreen



Perimeter Foliage & Shade – Non-Residential (Quick Ave)



- South Side: Quick Ave
- Adjacent to: First Presbyterian Church



Perimeter Foliage & Shade – Non-Residential (Oak Ave)



- North Side: Oak Ave
- Adjacent to: Roosevelt Middle School
- Note: Tree coverage on both sides and windscreen



Perimeter Foliage & Shade – Residential (Lathrop Ave)

- West Side: Lathrop Ave
- Note: Tree coverage on both sides, windscreen, and parking lot buffer

North Facing



South Facing



Parking Lot



Perimeter Foliage & Shade – Residential (Jackson Ave)

- East Side: Jackson Ave
- Note: Tree coverage on both sides, windscreen, and large bushes



Perimeter Foliage & Shade – Residential (Jackson Ave)

- East Side: Jackson Ave (South East side)
- Note: Shade on the court provided by the trees, bushes, and windscreen



Perimeter Foliage & Shade – Residential (Jackson Ave)

- East Side: Jackson Ave (South East side)
- Note: Shade on the court provided by the trees, bushes, and windscreen



Perimeter Foliage & Shade – Residential (Jackson Ave)

- East Side: Jackson Ave (North East side)
- Note: Shade on the court provided by the trees, bushes, and windscreen



Perimeter Foliage & Shade – Residential (Jackson Ave)

- East Side: Jackson Ave (North East side)
- Note: Shade on the court provided by the trees, bushes, and windscreen



Pole Height – Existing Flag Pole

- Lighting pole heights will be in line with existing flag pole, which is ~30 feet.
- Flag pole is dwarfed by large trees currently on property



Lighting Product

- Light Type: G1-S3 LED Tennis Lights
- Vendor: Shinetoo Tennis and Pickleball Court Lighting



G1-S3 LED
High Mast Lights
500W 600W 800W



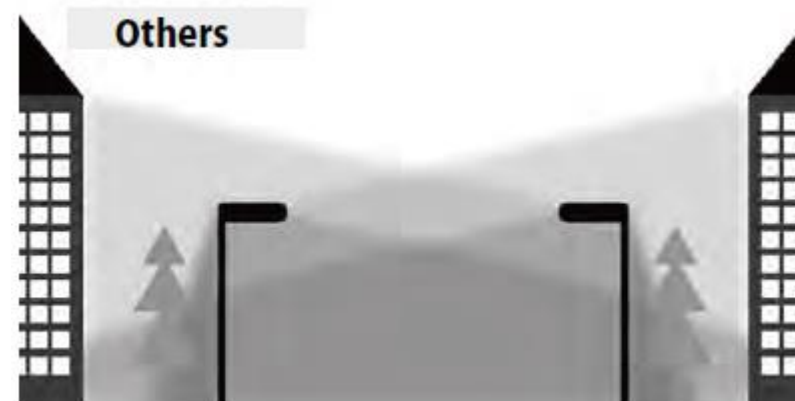
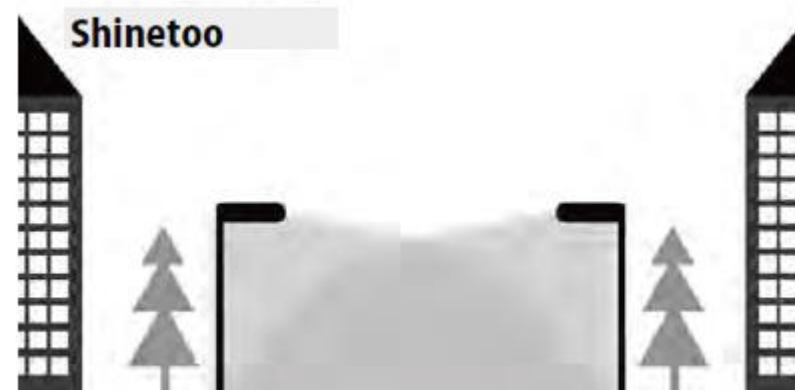
- Anti-Glare
- Asymmetric Indirect Light Design
- Full Cut-off



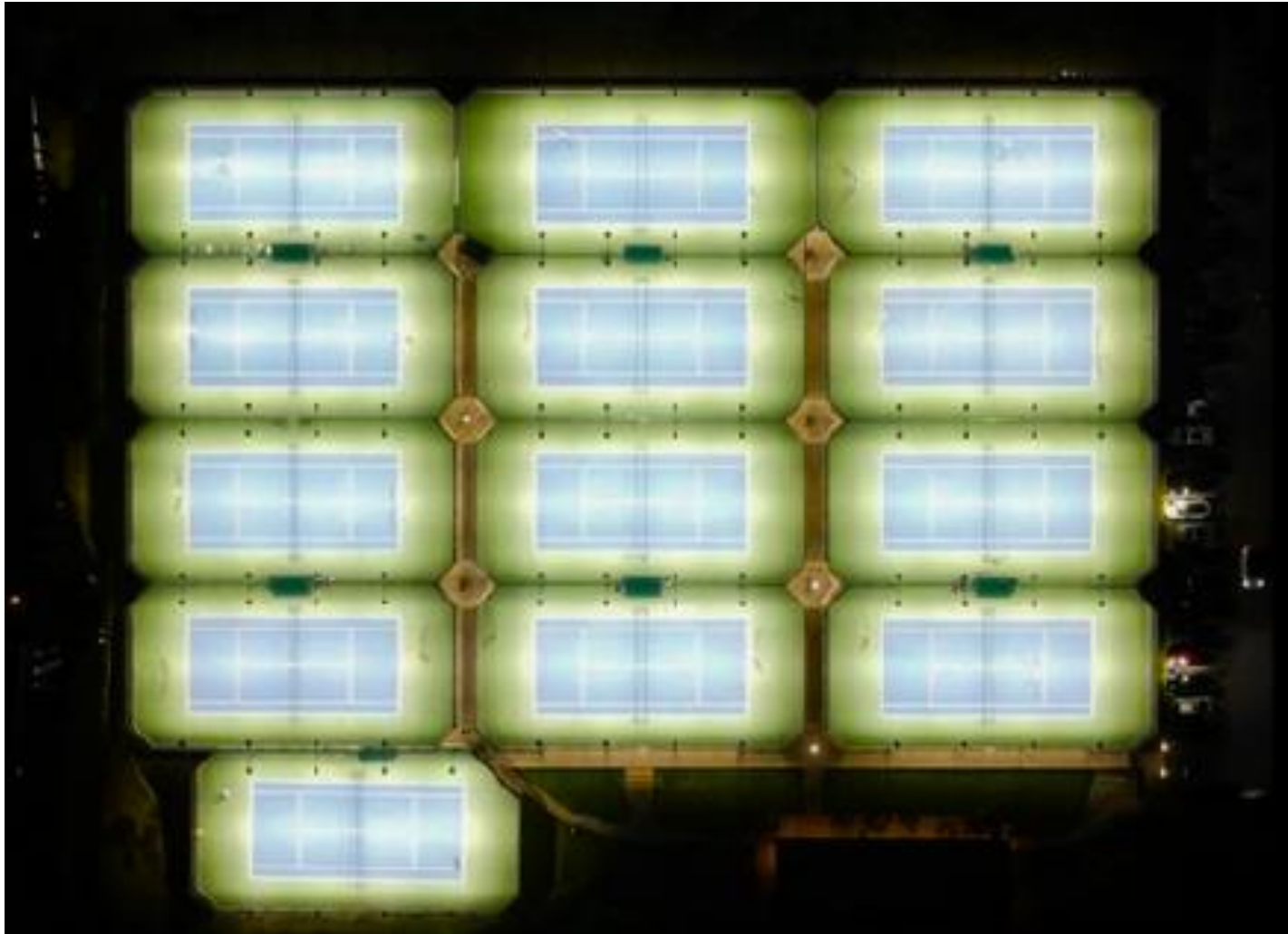
Spill Light Control

Spill light refers to the light falling outside the object to be illuminated, it is a kind of light pollution.

When using outdoor tennis court lighting, the court area needs to be bright enough, not pilling back off of the court. Shinetoo's tennis court lights have a spill-proof light control nction, which helps to illuminate the playing surfaces correctly.



Dark Sky Compliance and Design



Dark Sky Compliance and Design

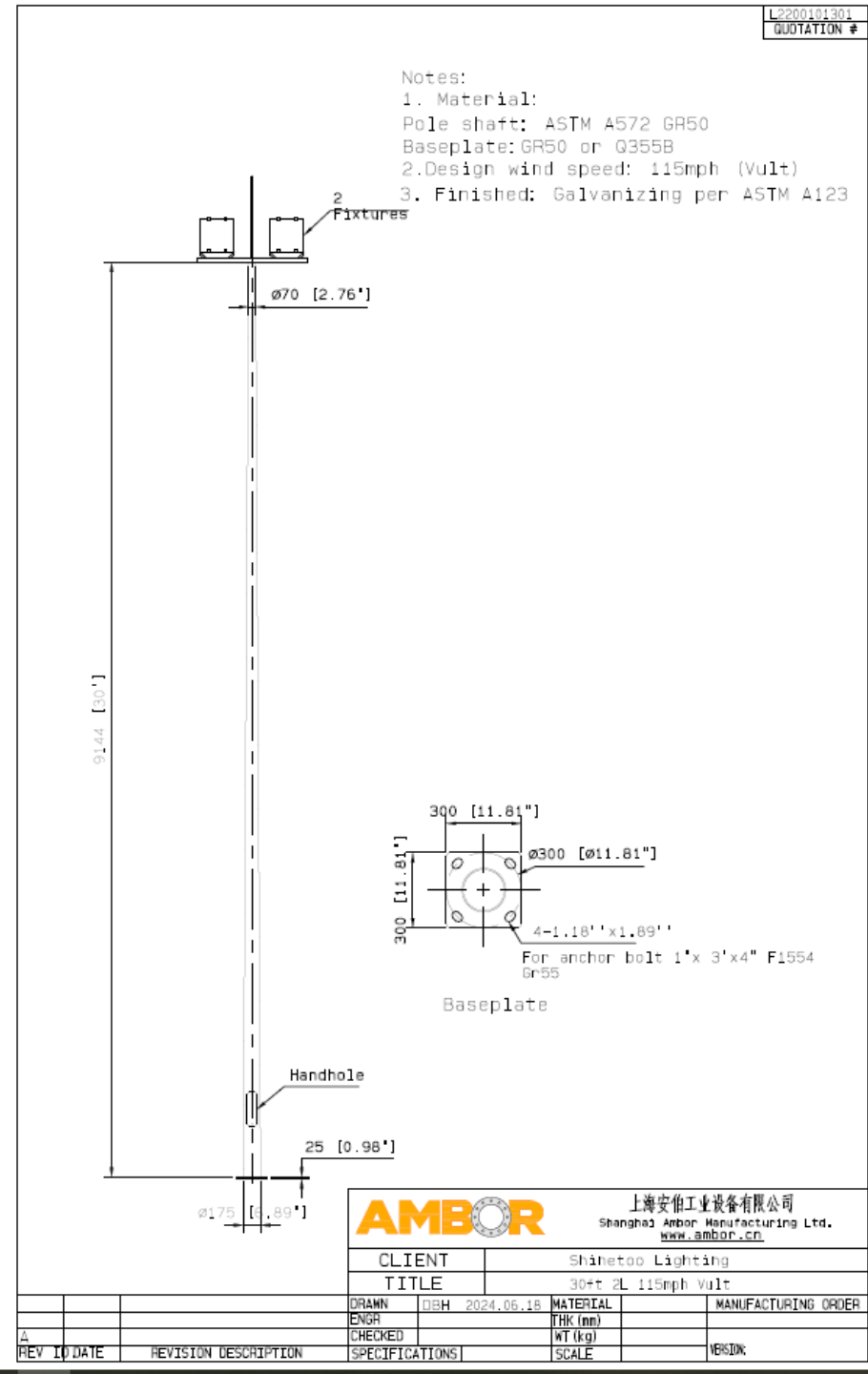


- **Refers to lighting practices and standards that:**
 - Minimize light pollution
 - Prevent skyglow
 - Protect night environments (residential zone, wildlife habitats, astronomical observatories)

- **Key Principles for Dark Sky Compliance**
 - Zero Uplight (U0 Rating)
 - Avoids illuminating the night sky (indirect asymmetric fixture)
 - Directional Fixtures
 - Minimizes light spillage
 - Color Temperature Limitations
 - Minimizes sky glow and ecological disruption
 - Smart Lighting Controls
 - Allows for scheduling so only in-use courts are lit
 - Photometrics Planning
 - Strategic fixture placements eliminates upward light waste

Lighting Product – Pole Detail

- Pole width: 2.76"
- Pole base width: 6.89"



Lighting Product



Proposed Tennis Court Lighting



- **Adjacent Light Sources (*)**
 - Three immediately adjacent buildings currently emit light
 - Roosevelt Middle School (to the North)
 - First Presbyterian Church (to the South)
 - River Forest Public Library (to the North)
 - Following pictures were taken around 10pm on October 29, 2024
 - Two important items to note:
 - Most of the lights are **open light bulbs without any shields**, resulting in:
 - More light spillage
 - 360° light exposure – Can see the light when looking at it from any direction
 - There is **visible light spillage on the neighbor's sidewalk**
 - This is the opposite of the proposed tennis lights

Adjacent Light Sources – Roosevelt Middle School



Adjacent Light Sources – Roosevelt Middle School



Adjacent Light Sources – Roosevelt Middle School



Adjacent Light Sources – Roosevelt Middle School



Adjacent Light Sources – Roosevelt Middle School



(75 fc)

Brighter than the brightest light at RFTC

Adjacent Light Sources – Library and Parking Lot



Adjacent Light Sources – Library and Parking Lot



Adjacent Light Sources – First Presbyterian Church



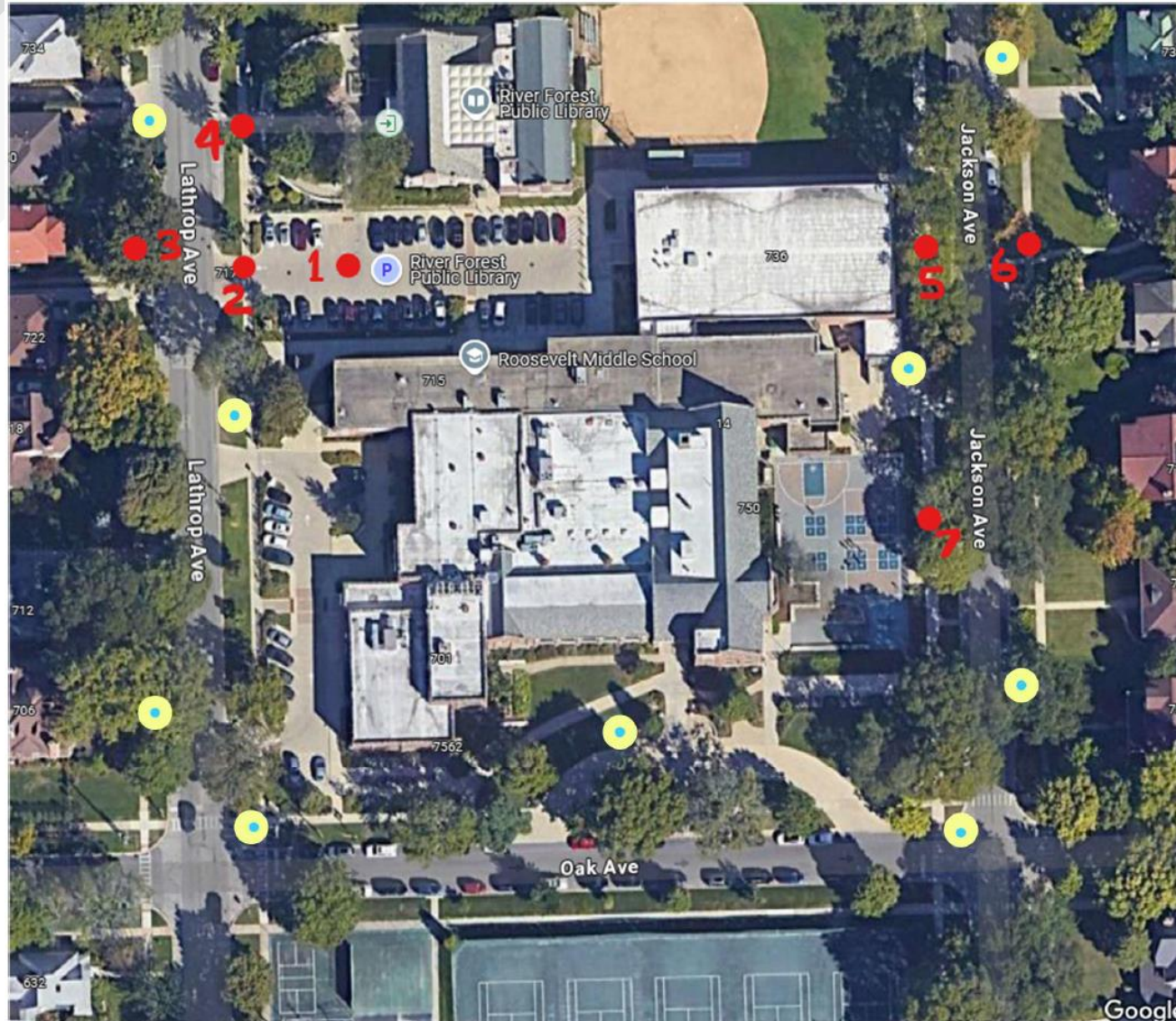
Adjacent Light Sources – First Presbyterian Church



Adjacent Light Sources – First Presbyterian Church



Existing Light Conditions of Surrounding Area



■ Light Readings in Foot Candles

■ Red Dots

- 1 4.7 fc
- 2 2.0 fc
- 3 0.4 fc
- 4 0.5 fc
- 5 75.0 fc
- 6 1.9 fc
- 7 9.2 fc

■ Yellow Dots

- All 8.6 fc

- All readings taken from sidewalks except #1 which was taken from center of parking lot

Existing Light Conditions of Surrounding Area



- Light Readings in Foot Candles
 - Red Dots
 - 8 0.9 fc
 - 9 1.0 fc
 - Yellow Dots
 - All 8.6 fc
- All readings taken from sidewalks except #1 which was taken from center of parking lot

Proposed Tennis Court Lighting



■ Photometrics Summary (Light Spillage in footcandles)

■ Residential Sides

■ Lathrop Ave (West)

- Min: 0.0
- Max: 0.0
- Avg: 0.0

■ Jackson Ave (East)

- Min: 0.0 (from 0.2)
- Max: 0.1 (from 0.5)
- Avg: 0.078* (from 0.38)

■ Non-Residential Sides

■ Oak Ave – School (North)

- Min: 0.0
- Max: 1.0
- Avg: 0.59*

■ Quick Ave – Church (South)

- Min: 0.0
- Max: 1.0
- Avg: 0.55*

Perspective

Gym	100 fc
Office	50 fc
Auto Showroom	50 fc
Factory Floor	30 fc
Hallway	10 fc
Parking Garage	10 fc

Existing Lights 8.6 fc (110x)

Jackson Ave Max 75.0 fc (960x)

Proposed Lights 0.078 fc

* Minimal true light affect

* Doesn't take into consideration existing foliage and windscreen

* Doesn't take into consideration new arborvitaes and/or new thicker and opaque windscreen

Proposed Tennis Court Lighting



- **Letters of Support and of No Concern**

- District 90 (Roosevelt Middle School)
 - Neighbor to the North
 - “District 90 does not believe that your proposed project introduces any negative operational implications for Roosevelt Middle School. As an institutional neighbor to the River Forest Tennis Club on Oak Avenue, the District has no areas of concern or opposition to register regarding the proposed lighting project.”
- First Presbyterian Church
 - Neighbor to the South
 - “First Presbyterian Church does not envision any negative operational impacts from the proposed lighting project. We have no concerns or opposition to register regarding the project.”

Proposed Tennis Court Lighting



- **Letters of Support and of No Concern**

- RFTC Members

- On April 7, 2024, the River Forest Tennis Club asked its members if they were interested in the possibility of adding lights to our tennis courts. The members voted overwhelming in favor of adding the lights.
 - ~80%: Of the ~400 active families, 316 families responded
 - ~90%: Of the 316 families that responded, 283 voted in favor of the lights

- As mentioned in our presentation, RFTC represents nearly 400 families across at least 4 towns (River Forest, Oak Park, Elmwood Park, and Forest Park)
 - 85% live in River Forest
 - 5% live in Oak Park
 - 5% live in the surrounding suburbs
 - 5% live outside the state

- *Every entry was unique (There were no duplicate entries), however, a small, statically insignificant, number of votes came from two members of the same family (e.g. husband and wife each voted)*

Proposed Tennis Court Lighting



■ Neighbor Meeting

- Date & Time: Wednesday, March 12, 2025 at 7:00 p.m.
- Location: Room 200 in Christopher Center at Concordia University, 7400 Augusta St
- Invitees: RF residents within a 1,000 ft radius (expanded from 500 ft) (*)
- Attendance: ~50 residents (~50% non-RFTC)
- Summary:
 - Meeting notes are attached
 - Emails sent to applicant and/or village are attached

Proposed Tennis Court Lighting



- **Legal Opinion Letter**

- Completed by the law firm Elrod Friedman LLP

- Findings

- **RFTC has fulfilled its obligations and requirements to ensure a complete and holistic application and is within its rights to install the proposed tennis court lighting**
 - Confirmed the assumptions in this deck
 - Without lights, the hours of operation are extremely limited (**restriction of use**)
 - Ensure that its members can enjoy the Facility for limited evening hours in the same manner that residents can use the lit courts in the parks, schools and other facilities, including at Keystone Park and Concordia.
 - The proposal will have **no material negative impact** on the surrounding properties
 - RFTC revised the plans to **eliminate light spillage** on Lathrop Avenue and eliminate any material light spillage on Jackson Avenue
 - The operational plans for the Facility will ensure that no neighboring properties are adversely impacted
 - RFTC is committed to being a partner in the community and undertook **extensive due diligence**
 - The proposed improvements represent a modest but critically important request
 - Lighting at tennis courts is a **standard practice** which is exemplified by the fact that many outdoor tennis courts in the Village already have lights, including nearby Keystone Park.
 - The Proposed Improvements satisfy all of the **standards of review** set forth in that subsection

Proposed Tennis Court Lighting



■ Adjustments to Project Based on Neighbor and Village Recommendations

- Light
 - Eliminated light spillage on Lathrop Ave
 - Nearly eliminated light spillage on Jackson Ave to avg of 0.078 FC by decreasing to 400W LEDs from 800W
 - Eliminated in some spots down to 0.0 FC from 0.2 FC
 - Planting 36 arborvitae trees on Jackson Ave to block more sound and light
 - Conducted an additional photometric study on surrounding/adjacent buildings
 - Data show light spillage from School, Library, and Church are 110x brighter than proposed tennis lights
 - 960x brighter at the brightest point on Jackson Ave
 - Adhered to USTA and IES professional standards (Lower in many cases, in neighbors' favor)
 - All 10 courts are underlit for our Class III rating, and 2 courts are even underlit at the lower Class IV rating
 - Used a much more aggressive Light Loss Factor (97% vs 70%), which in turn overestimates light spillage
 - Adhered to Dark Sky Compliance and Design
 - Decreased end time to 9:30pm from 10pm, resulting in only 80 minutes of additional play from May to August
 - Open to replacing/upgrading the windscreens to block more sound and light
- Sound
 - Planting 36 arborvitae trees on Jackson Ave to block more sound and light
 - Open to replacing/upgrading the windscreens to block more sound and light

Proposed Tennis Court Lighting



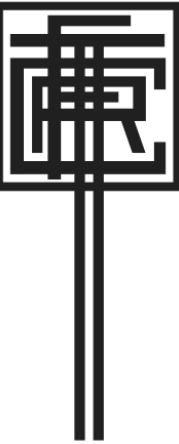
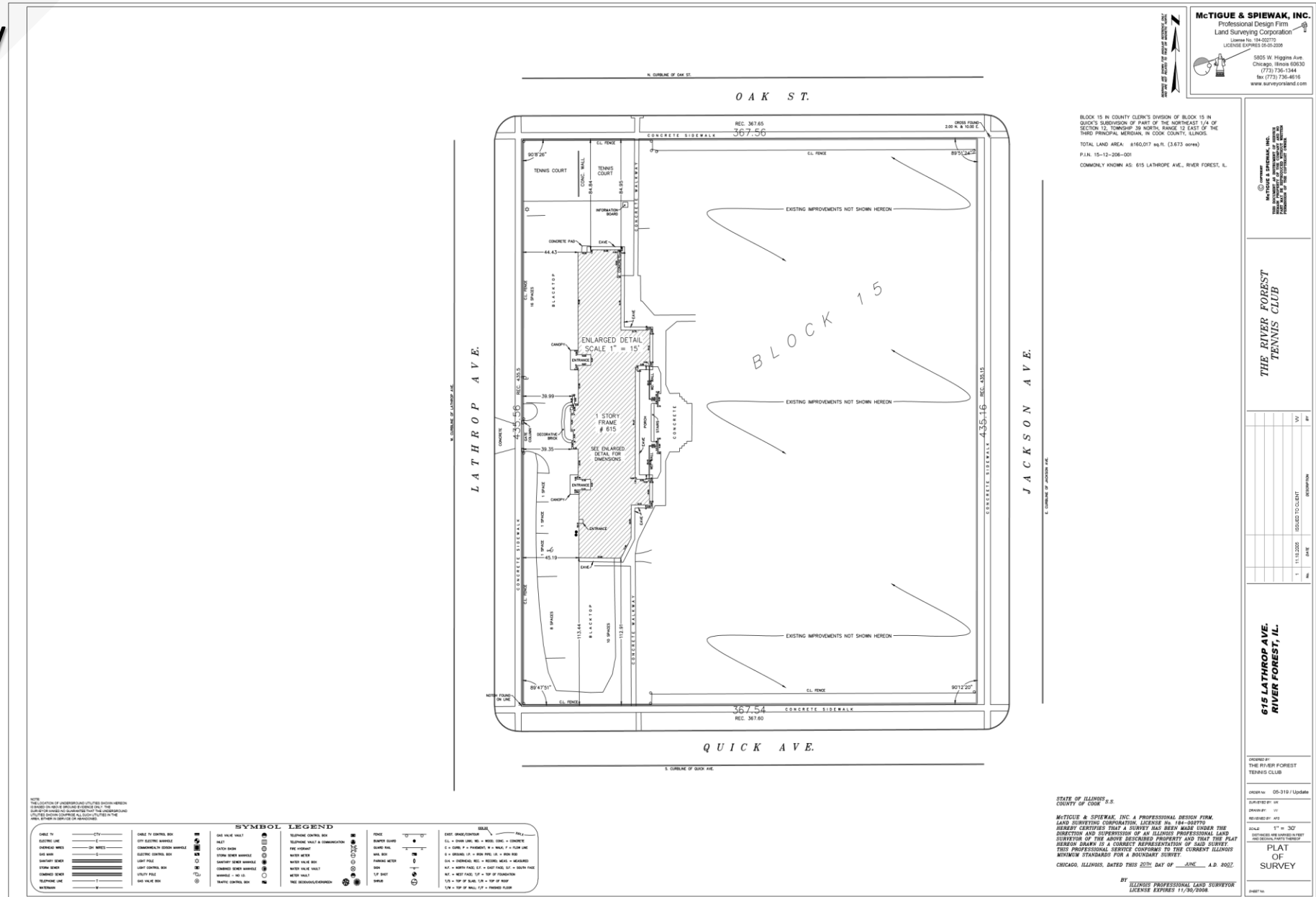
■ Adjustments to Project Based on Neighbor and Village Recommendations

- Additional Detail
 - Doubled the notification zone for the neighbor meeting from 500 ft to 1,000 ft
 - Also, posted on Facebook
 - Only allow lights from April 1st to October 31st
 - Members to book the courts closest to the center of the property first
 - Farthest from residential streets of Lathrop Ave and Jackson Ave
 - Courts lighted on an individual basis and only when being used
 - Provided further detail on resident makeup
 - Delayed the neighbor meeting until after the holidays
 - Delayed the DRB meeting until summer was over
- Unrelated to tennis court lights
 - Pool Lights
 - Recently upgraded them to directional LEDs
 - Will be further tilting them down to decrease light spillage
 - Pickleball
 - We will not be asking for the pickleball courts to be lit
 - No pickleball until 8am



APPENDIX

Plat of Survey



Proposed Tennis Court Lighting



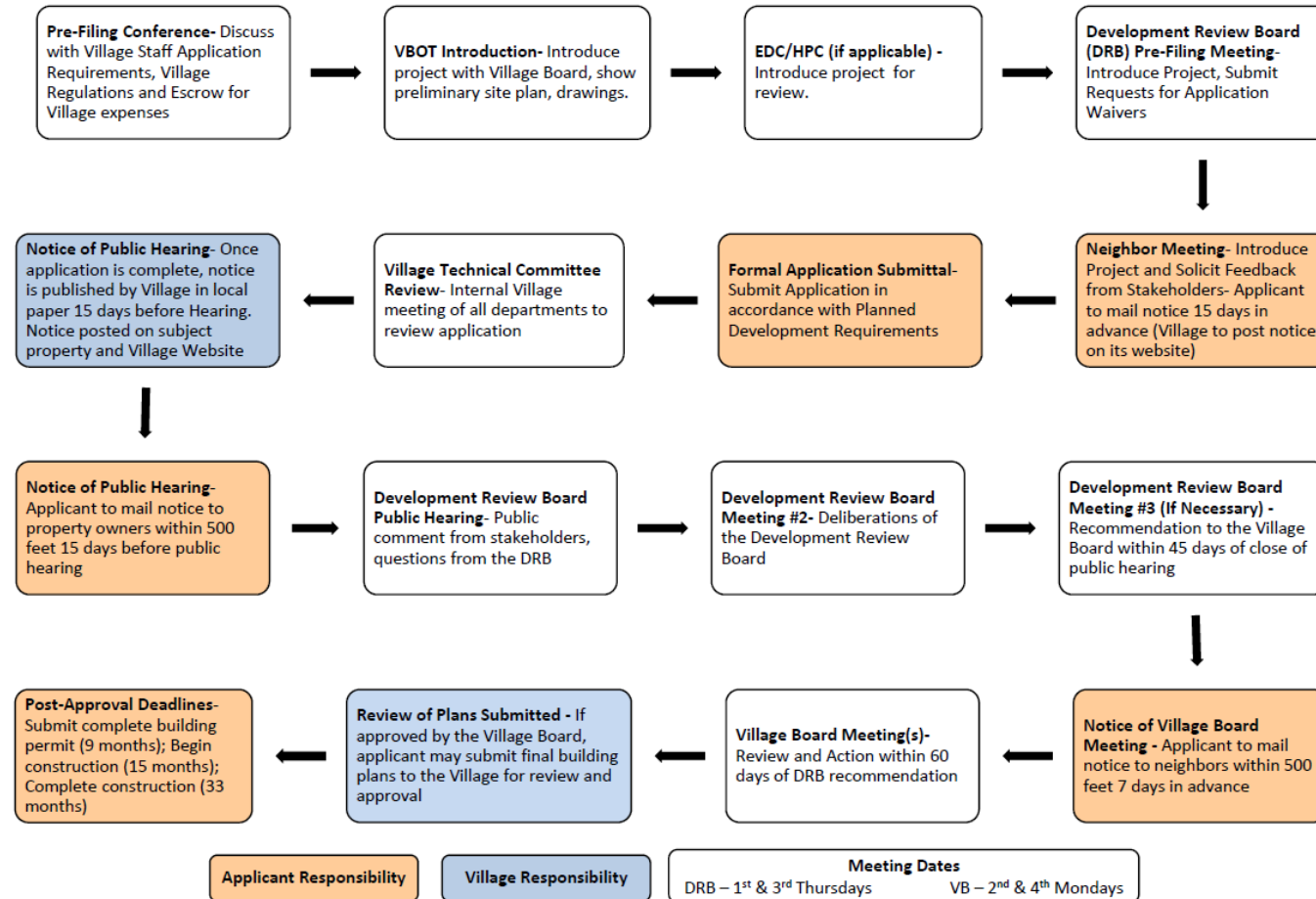
- **Current Project Status**

- Application phase
- We met with the:
 - Village Staff (Pre-Filing Conference)
 - Village Board of Trustees (Introduction)
 - Development Review Board (Pre-Filing Meeting)
 - Neighbor Meeting
 - Technical Review Meeting

Proposed Tennis Court Lighting



Village of River Forest Planned Development Process



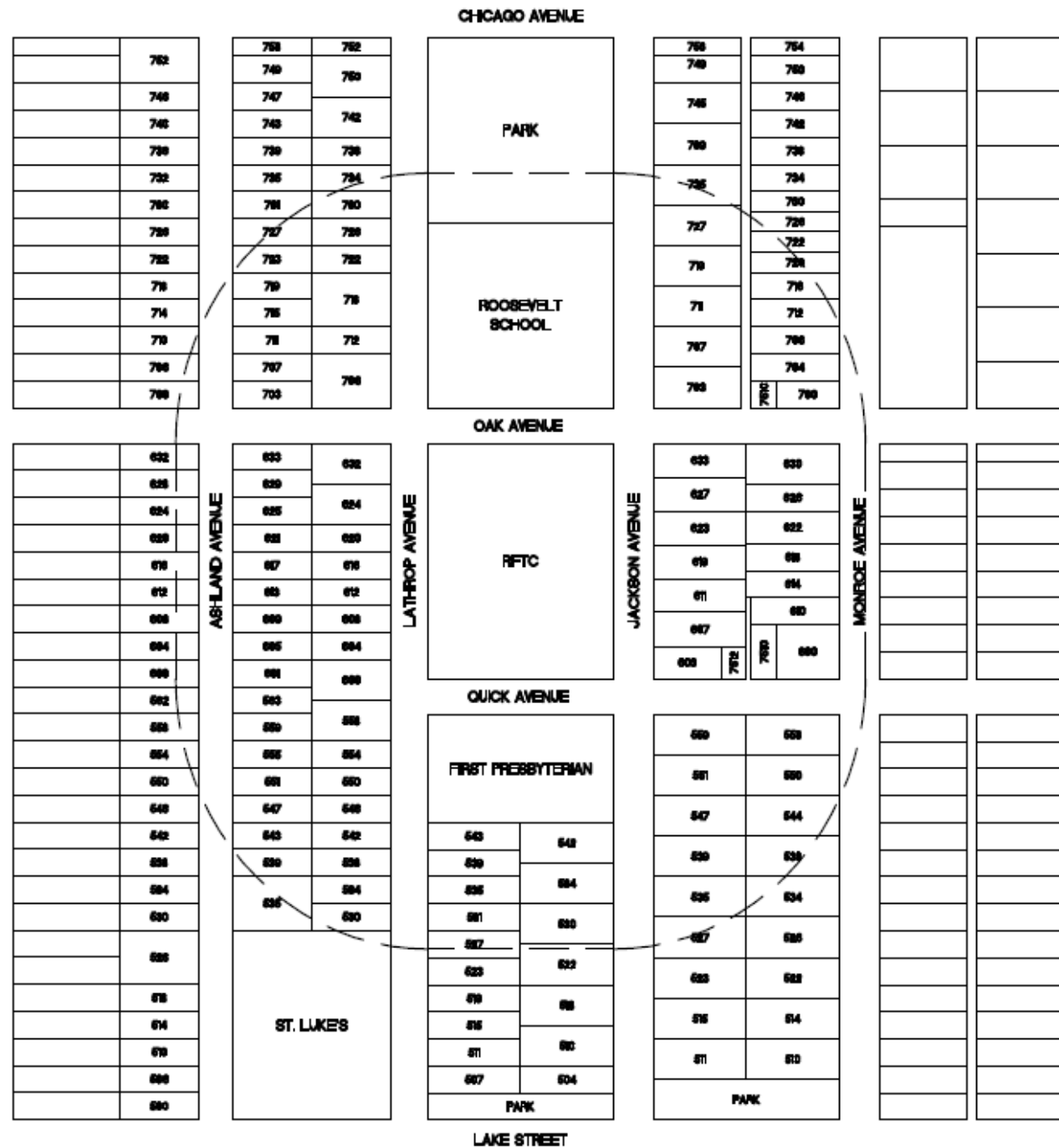
Proposed Tennis Court Lighting



- **Proposed Vendor**

- Shinetoo Lighting USA, LLC
 - 708 Armstrong Dr, Buffalo Grove, IL 60089
 - Website: <https://www.shine2sportslighting.com/>
- Recent similar projects
 - River Forest Park District with Shinetoo Sports fixtures
 - Keystone Park – East Field at 401 Thatcher Ave, River Forest, IL 60305
 - Multi-Purpose (3 Fields: Soccer/Baseball/Baseball)
 - Currently working with River Forest Park District for Volleyball/Ice Rink with Shinetoo G1-Series fixtures
 - Skokie Park Tennis Center with Shinetoo G1-Series fixtures
 - 8330 Niles Center Rd, Skokie, IL 60077
 - <https://shine2sportslighting.com/project-details/court-lighting-at-skokie-park-district-tennis-center>
 - Pole height is 40'.
 - Platform Tennis Courts with Shinetoo G1-Series fixtures
 - Wilmette - West Park: 3555 West Park Dr, Wilmette, IL 60091
 - River Trails Park District – Aquatic Center with Shinetoo G1-Series fixtures
 - Woodland Trails Pools: 1500 E Euclid Ave, Mt Prospect, IL 60056

Surrounding Area Plan 500 feet



RIVER FOREST TENNIS CLUB

ESTABLISHED 1905



CONTACT INFORMATION

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