

# VILLAGE OF BARRINGTON HILLS

## Roads & Bridges Committee

### NOTICE OF MEETING



Monday, July 20, 2015 ~ 3:00 pm  
112 Algonquin Road

#### AGENDA

1. Organizational
  - 1.1 Call to Order
  - 1.2 Roll Call
2. [Vote] Minutes June 16, 2015
3. Public Comments
4. Discussion Items
  - 4.1 Cuba Road Bridge Update
  - 4.2 Lakeview Lane Drainage Update
  - 4.3 Village of Algonquin – Highland/Spring Creek IGA Status Update
  - 4.4 Cuba Township Services
  - 4.5 Village Hall Parking Lot Striping Quotes
  - 4.6 Solar Mobile Speed Sign Discussion
  - 4.7 Roadside Mowing – Status Update
  - 4.8 Cook County Roads & Resurfacing Update
    - 4.8.1 Bateman Road
    - 4.8.2 Brinker Road
    - 4.8.3 Donlea Road
    - 4.8.4 Old Sutton
    - 4.8.5 Otis Road
    - 4.8.6 Palatine Road
    - 4.8.7 Penny Road
5. Adjournment

Chairman: Brian Cecola

#### NOTICE AS POSTED

112 Algonquin Road ~ Barrington Hills, IL 60010-5199 ~ 847.551.3000

**VILLAGE OF BARRINGTON HILLS**  
**Roads & Bridges Committee**  
**Meeting Minutes**  
**June 16, 2015**



Committee Members Present: Trustee Brian Cecola, Chair  
Robert Kosin, Director of Administration  
Dan Strahan, Village Engineer

Others Present: Daniel Sheldon, Resident  
Richard Frankiewicz, Resident  
Linda Cools, Resident  
Gordon G. Gillen, Resident  
Bryan Croll, Trustee  
Wendy Fern, Resident

**1. ORGANIZATIONAL:** The meeting of the Village of Barrington Hills Roads & Bridges Committee was called to order at 3:05 p.m. by Chairman Cecola.

**2.1 APPROVAL OF MINUTES:** The minutes of the Roads & Bridges Committee Meeting of May 21, 2015 were approved as written.

**3. PUBLIC COMMENTS:** Gordon Gillen thanked the committee for consideration of opposition to Longmeadow Parkway.

Linda Cools commented on the minutes from May 21<sup>st</sup>, noting that Mr. Fagan had talked about securing bonds for the Longmeadow Parkway project. She also noted that the Village should notify Governor Rauner's office of the Village's opposition and also questioned the environmental and noise considerations of the project. Ms. Cools noted that the cost submitted for the Village Hall striping seemed high and the Village should consider other options for the striping. Ms. Cools noted that the Village should consider input from the Heritage & Environs Committee regarding tree removal that will occur as part of the Longmeadow Parkway project and noted her opposition to the project.

Dan Sheldon thanked the committee for preparation of the draft resolution opposing Longmeadow Parkway, expressing concerns about the safety along IL Rte. 62. Mr. Sheldon noted that the highest margin of victory for the new Village trustees in the last election came from Kane County voters. He also suggested that the Village coordinate with other BACOG communities to organize further input into the project.

**4.1 CUBA ROAD BRIDGE UPDATE:** Mr. Strahan noted that the Village had received email notification that the Local Agency agreements had been approved. Utility coordination is in progress. It was noted that the target for the letting date remains July 31<sup>st</sup>, but right-of-way agreements would need to be finalized soon.

**4.2 2015 DRAINAGE PROGRAM UPDATE:** Mr. Strahan noted that the Merri Oaks Road project was complete and that after grant reimbursement is received from Lake County SMC it was anticipated that approximately \$50,000 would be remaining within the Drainage Management line item. He summarized several other projects that the Village could consider to utilize those funds, including ditching on Steeplechase, potential improvements on Lakeview Lane, minor ditching improvements on Dundee Lane, and a potential repair to the Old Hart Road bridge.

Mr. Kosin noted that an updated had been requested regarding flood elevations along the Fox River due to the current wet weather patterns. Mr. Strahan reviewed an exhibit listing various flood stages along the portion of Barrington Hills adjoining the Fox River in comparison to the regulatory floodplain elevations and discussed various drainage issues in this area along River Road.

**4.3 LONGMEADOW PARKWAY UPDATE:** Mr. Strahan summarized his review of the pre-final plans for the Longmeadow Parkway plans, noting that several comments submitted by the Village had been addressed and were reflected in the plans.

Mr. Kosin reviewed the Village's efforts regarding the Longmeadow project, which included correspondence to Lake County SMC, correspondence to Kane County DOT regarding the 4(f) review of the project, and correspondence to the Governor's office. Mr. Kosin then reviewed a draft resolution that had been prepared to state the Village's opposition to the project.

**4.4 VILLAGE OF ALGONQUIN – HIGHLAND/SPRING CREEK IGA PROPOSAL:** Mr. Strahan reviewed the draft IGA provided by the Village of Algonquin, noting that the project costs should be discussed and defined in Exhibit B. Mr. Kosin agreed that the terms should be defined based on the amount of the contribution involved.

**4.5 McHENRY COUNTY DOT 2015-2019 TRANSPORTATION PROGRAM:** Mr. Strahan reviewed the 2015-2019 plan released by McHenry County on June 2, 2015. It was noted that there was no mention of funding for the Longmeadow Parkway project. Mr. Strahan also stated that the North Algonquin Fox River Crossing, listed as a "medium priority" project in the McHenry County 2040 Transportation Plan, was not mentioned in the five-year plan. Mr. Kosin noted that the cost and scope of the transportation projects in McHenry County continue to grow.

**4.6 COAL TAR:** Mr. Strahan reviewed the packet materials pertaining to the topic of coal tar sealants. It was suggested that a blurb be included in the next Village newsletter to better inform residents of this topic.

**4.7 VILLAGE HALL PARKING LOT STRIPING QUOTE :** Mr. Strahan noted that a quote of approximately \$6400 had been received from PPM, Inc. to restripe the Village Hall property. Mr. Kosin noted the urgency of maintaining the five ADA accessible spaces around the property. Trustee Cecola noted that the cost seemed high

based on his knowledge of the industry. After discussion it was determined that additional quotes would be requested for comparison.

**4.8 ROADSIDE MOWING :** Mr. Strahan reviewed the Village's roadside mowing program, which involves mowing on approximately 22 miles of Village roads. It was noted that the work was currently in progress.

**4.9 HEALY ROAD CUL-DE-SAC SIGNAGE :** Trustee Cecola noted issues regarding truck traffic using Healy Road south of Penny Road in an effort to access the IAA site in East Dundee. Mr. Kosin noted his observation of a truck turning down Healy and reviewed the existing signage. Mr. Kosin also noted other signage options meeting MUTCD standards that could better notify drivers that Healy Road is not a thru road.

**5 SOLAR MOBILE SPEED SIGN PROGRAM UPDATE :** Mr. Strahan reviewed the history regarding the Village's solar mobile speed sign trailer and its use on Village roadways. While the Village still owns the sign it was not utilized during the previous summer. Mr. Kosin noted that the technology is approximately 15 years old and could be a target for vandalism, so suggested consideration be given to other technologies that could be utilized.

**6. ADJOURNMENT:** The meeting was adjourned at 4:32 PM.

## MEMORANDUM

To: Robert Kosin, VBH Director of Administration  
Brian Cecola, VBH Chairman Roads & Bridges

From: Dan Strahan, P.E., CFM  
Gewalt Hamilton Associates (GHA)

Date: July 17, 2015

Re: Cuba Road Bridge Replacement Project  
Status Update

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The following is a summary of the current status of the Cuba Road Bridge project.

### Land Acquisition & Schedule

As noted at the June Board of Trustees meeting, we received notification from IDOT that the project has been delayed to the September 19<sup>th</sup> letting as the ROW acquisition had not been finalized before the deadline. Based on feedback from Mathewson Right of Way Company it is anticipated that the documentation of the parcel acquisition will be completed by the week of July 20<sup>th</sup>. They are waiting on partial releases for the properties which they will not have prior to the August 5<sup>th</sup> deadline but they anticipate IDOT will certify the ROW pending clearance of the title, which would allow the project to proceed to the letting.

Cuba Township approved and signed the plat of dedication for the portion of Cuba Road on their parcel that is affected by construction. The plat was recorded on July 6, 2015 and is attached.

The later letting date will result in winter construction for the structural items, while some of the roadway and grading work items will be delayed until spring. Below is an outline of the anticipated schedule based on the September letting date:

- Letting Date/Bid Opening September 18, 2015
- Approximate Construction Start Date November 15, 2015
- Work on Structural Items November-February as weather allows
- Projected Bridge Opening Date May 13, 2016\*

\*15 working days will be permitted after May 13, 2016 to complete roadway and landscaping items.

### Utility Relocation

Nicor, ComEd, Comcast, and AT&T have been notified to proceed with the required relocation of existing utilities as needed to accommodate the new bridge improvements. We do not yet have confirmation of anticipated schedules but there should be plenty of time to complete the work before bridge construction begins.

Owner's Certificate

State of Illinois) S.S.  
County of Lake)

This is to certify that the Township of Cuba is the legal owner of record of the property described on the annexed plat, that no other person has any title in said land, and that it hereby dedicates said property to the Cuba Township Road District as indicated for the uses and purposes therein set forth.

Dated this 11 day of JUNE A.D. 2015.

By: David F Nelson Title: SUPERVISOR CUBA TWP

Printed Name: DAVID F NELSON

Address: 2800 W. CUBA ROAD  
BARRINGTON, IL 60010

Notary Certificate

State of Illinois) S.S.  
County of Lake)

I, PRISCILLA H ROSE, a Notary Public in and for the County and State aforesaid, do hereby certify

that DAVID F NELSON is personally known to me to be the SUPERVISOR of the Township of Cuba, whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed and delivered the annexed plat as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal, this 11 day of JUNE A.D. 2015.

Notary Public: Priscilla H Rose

My Commission Expires: 3/22/17



County Plat Certificate

State of Illinois) S.S.  
County of Lake)

Approved as being in compliance with the Unified Development Ordinance

this \_\_\_ day of \_\_\_\_\_, A.D. 2015.

Planning, Building and Development Director

Attest: \_\_\_\_\_ Date: \_\_\_\_\_

Township Highway Certificate

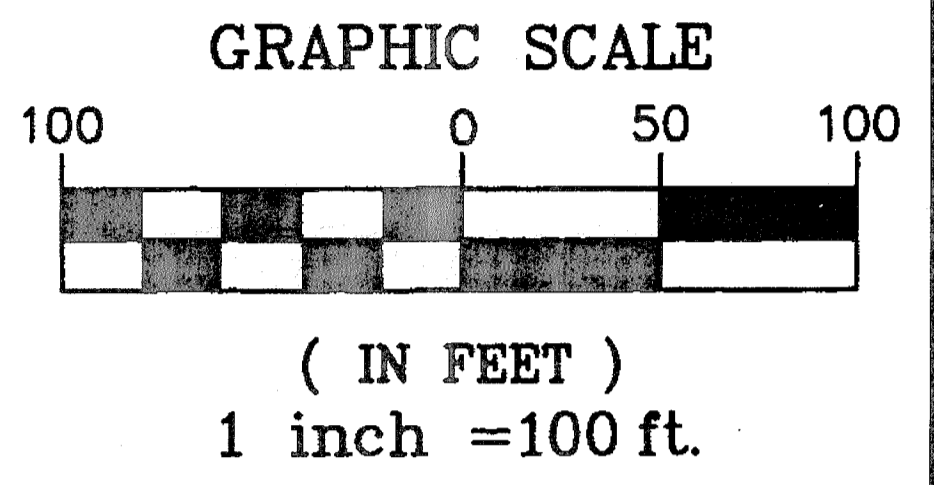
State of Illinois) S.S.  
County of Lake)

This dedication hereby accepted for public road purposes this 11 day of JUNE A.D. 2015.

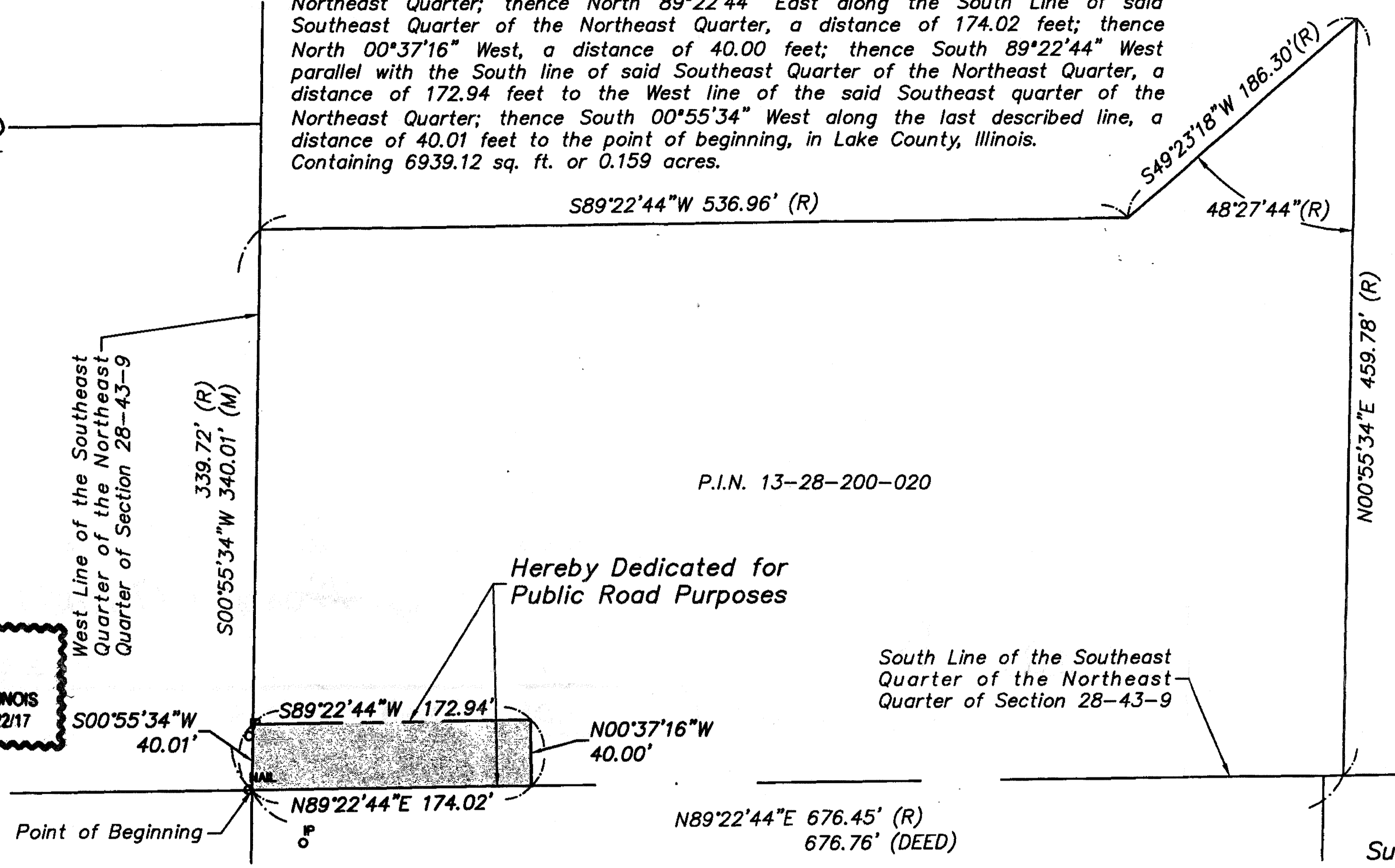
David F Nelson  
Highway Commissioner

# Plat of Dedication

7209183  
7/6/2015



That part of the Southeast quarter of the Northeast quarter of Section 28, Township 43 North, Range 9, East of the Third Principal Meridian, described as follows: Beginning at the Southwest corner of said Southeast Quarter of the Northeast Quarter; thence North 89°22'44" East along the South Line of said Southeast Quarter of the Northeast Quarter, a distance of 174.02 feet; thence North 00°37'16" West, a distance of 40.00 feet; thence South 89°22'44" West parallel with the South line of said Southeast Quarter of the Northeast Quarter, a distance of 172.94 feet to the West line of the said Southeast quarter of the Northeast Quarter; thence South 00°55'34" West along the last described line, a distance of 40.01 feet to the point of beginning, in Lake County, Illinois. Containing 6939.12 sq. ft. or 0.159 acres.



P.I.N. 13-28-200-020

Hereby Dedicated for  
Public Road Purposes

South Line of the Southeast  
Quarter of the Northeast  
Quarter of Section 28-43-9

Taxes Billed To:  
The Township of Cuba  
28000 W Cuba Rd  
Barrington, IL 60010-2766

County Clerk's Certificate

State of Illinois) S.S.  
County of Lake)

I, Carla N. Wyckoff, County Clerk of Lake County, Illinois, do hereby certify that there are no delinquent general taxes, unpaid current general taxes, delinquent special assessments or unpaid current special assessments against any of the land included in the described property. I further certify that I have received all statutory fees in connection with the plat.

Given under my hand and seal of the County Clerk of Lake County, Illinois.

Dated this 2nd day of July, A.D. 2015.

Carla N. Wyckoff  
Lake County Clerk

State of Illinois) S.S.  
County of Lake)

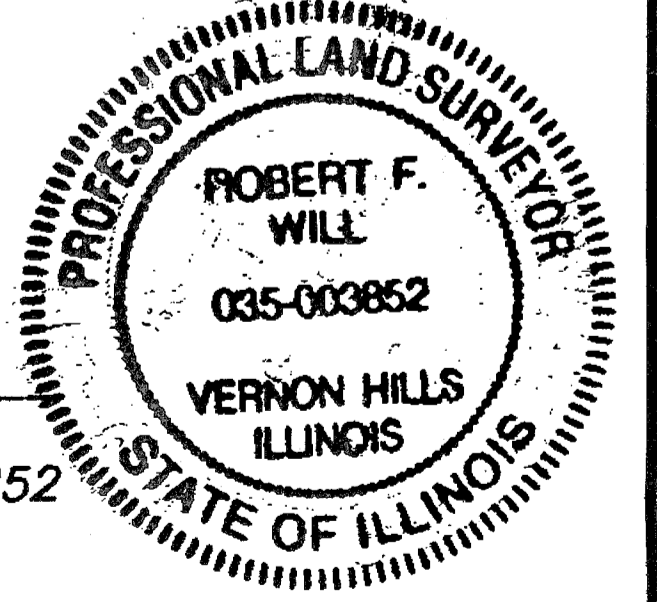
Gewalt Hamilton & Associates Inc. hereby certifies that we have surveyed the above described property and that the plat shown hereon is a correct representation of said survey.

Dated this 9th day of JUNE A.D. 2015.

Gewalt Hamilton Associates, Inc.  
Professional Design Firm License No. 184-000922

Robert F. Will  
Robert F. Will

Illinois Professional Land Surveyor No. 3852  
My License Expires November 30, 2016



All distances shown hereon are in feet and decimal parts thereof.

**GHA GEWALT HAMILTON ASSOCIATES, INC.**  
625 Forest Edge Drive ■ Vernon Hills, IL. 60061  
Tel.: 847.478.9700 ■ Fax.: 847.478.9701

**Plat of Dedication**  
28160 W Cuba Rd  
Barrington, IL 60010

Image# 054116120002 Type: PLD  
Recorded: 07/06/2015 at 08:33:12 AM  
Receipt#: 2015-00039788  
Page 1 of 2  
Fees: \$39.00  
IL Rental Housing Fund: \$9.00  
Lake County IL Recorder  
Mary Ellen Vanderventer Recorder  
File **7209183**

FILE: 9355.123-Dedication.dwg	GHA PROJECT #
DRAWN BY: RFW	9355.123
DATE: 3/3/15	SCALE: 1"=100'
CHECKED BY: JFP	

## MEMORANDUM

To: Brian Cecola, VBH Chairman Roads & Bridges  
Robert Kosin, VBH Director of Administration

From: Dan Strahan, P.E., CFM  
Gewalt Hamilton Associates (GHA)

Date: July 15, 2015

Re: Lakeview Lane Drainage – Status Update

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Over the past few meetings the Roads & Bridges Committee has discussed potential drainage improvements to alleviate frequent standing water in the ditches and front yards along Lakeview Lane. A conceptual drainage plan has been prepared that would require an easement through private property to direct runoff from Lakeview Lane east to Heather Lake. The details are as follows:

- **Sizing:** As noted previously the 10-year critical duration storm is typically used for the design of minor stormwater systems. Given the area tributary to Lakeview Lane, a 21" minimum pipe size would be required to accommodate the 10-year design flow under gravity conditions. A smaller pipe can be considered though it is noted that ponding should be expected during and after heavy storm events. We do not recommend sizing the storm sewer any less than 12", which is the minimum size permitted by the Lake County WDO for a storm sewer serving more than one property.
- **Storm Sewer Alignment:** The proposed storm sewer would be within the right-of-way of Lakeview Lane and along the property line separating 47 and 55 Lakeview Lane. Depending upon the final alignment of the storm sewer an easement would be needed from one or both property owners.
- **Conceptual EOPC:** Assuming a 12" PVC storm sewer is constructed generally along the alignment indicated, the construction costs are anticipated to be approximately \$115k-\$145k. The cost will vary depending upon final storm sewer alignment and construction methods (open cut vs. directional drill) among other variables.

Further refinement of the anticipated costs would require preliminary engineering to be completed (i.e. completion of a topographic survey and preliminary design). This will identify the number and size of trees along the proposed storm sewer route and whether there is value in directionally drilling the pipe to minimize tree impacts.

If it is the recommendation of the Roads & Bridges Committee to proceed with the project, we would recommend as an initial step the Village secure a drainage easement as noted above. A topographic survey could then be completed and preliminary engineering would proceed. If approved we would anticipate the project would be completed in 2016.

**Legend**

- Parcel Boundaries
- Catchbasin
- Discharge Point
- Storm Sewer

**Elevation Contours**

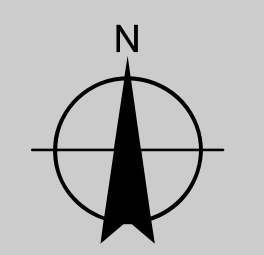
- Index Contours
- Index Depression Contours
- Intermediate Contours
- Intermediate Depression Contours



Source: ESRI World Imagery, Cook County GIS

File: G:\1993\9355\3355\055\Mapping\9355\_055\_1\F\_Topo\_Sewer.mxd

Drawn By: gnewton



1 inch = 50 Feet

**Storm Sewer Map**  
Barrington Hills, IL



## MEMORANDUM

To: Brian Cecola, VBH Chairman Roads & Bridges  
Robert Kosin, VBH Director of Administration

From: Dan Strahan, P.E., CFM  
Gewalt Hamilton Associates (GHA)

Date: July 17, 2015

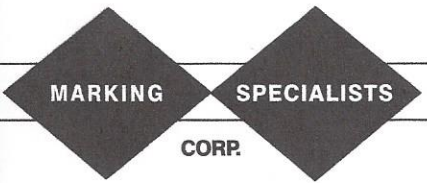
Re: Parking Lot Restriping

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As discussed at the June Roads & Bridges Committee Meeting, Chief Semelsberger has inquired if the north row of the police parking lot could be restriped from its current 13 stalls to 11 stalls. Officers frequently load gear into these cars and thus a wider stall would help prevent dings as the cars are loaded. Upon review by Village staff it was determined that striping within each of the lots should be refreshed.

At the June meeting a quote from Precision Pavement Markings, Inc., was reviewed in the amount of \$6,483.50. After discussion it was determined that additional quotes should be requested. Our office requested quotes from two companies for the work in question. Marking Specialists Corp. of Cary, IL submitted a quotation of \$4,600. A quote was requested from Mark-It Corporation out of Romeoville but no response has been received to date. The two quotes received are attached for reference.

As the lowest quote provided exceeds \$4,000 the Village Code requires that the work is subject to competitive bidding unless approved by a two-thirds majority of the board. In the last three years the Village has gone out to bid twice for significantly larger pavement marking projects and did not receive any bids from companies other than the three from whom quotes have been received.



Voice: 847-462-0799  
Fax: 847-462-0929  
Email: judy@markingspecialists.net

Marking Specialists Corporation  
214 Crystal Street, Suite C  
Cary, IL 60013

**Quote No.:** Q22927  
**Quote Date:** 07/01/2015  
**Item No.:**  
**Contract No.:** Barr. Hills  
**Bid Date:** 07/02/2015  
**Complete By:** 11/01/2015

## Quotation

**County:** COOK (E)

**Section:**

**Description:** BARRINGTON HILLS VILLAGE HALL - RECONFIGURE AND WIDEN THE EXISTING POLICE PARKING STALLS (11 INSTEAD OF 13) AND RESTRIPE REMAINING STALLS AND HANDICAP SYMBOLS WITHIN THE VILLAGE HALL AND FIRE STATION PARKING LOTS  
APPROX. QTYS.: PAINT L&S 18.4 / SF, PAINT 4" 2000 / FT AND PAVEMENT MARKING REMOVAL 78 / SF (GRINDING METHOD ONLY)

Gentlemen:

We propose to furnish all necessary labor, material, tools and equipment to complete the following work according to plans and specifications:

Item No.	Description	UM	Quantity	Price/Unit	Total
PPMPP	PAINT PVT MK PER PLAN - w/PM REMOVAL	LS	1.00	4600.0000	\$4,600.00
<b>BidTotal:</b>					<b>\$4,600.00</b>

These prices are firm for a period of sixty (60) days from the date of the contract award. Other materials, if required, will be priced separately. Permanent pavement marking is expected to be completed with one mobilization. Additional mobilizations will cost \$2,000.00 each. Lane closures, if required, are the responsibility of the prime contractor. Unless stated otherwise, prices do not include costs for bonds, special insurance or permits.

We thank you for the opportunity to quote on this work and hope we will be favored with your order.

Very Truly Yours,

Judith M. Peszek, Chief Estimator  
Marking Specialists Corporation

I.D.O.T. Certified DBE

C.D.O.T. Certified DBE & MBE

Cook County Certified MBE

METRA Certified DBE

City of Rockford MBE

An Equal Opportunity Employer

**Additional Notes:**

WORK TO BE PERFORMED IN ONE (1) MOBILIZATION.



"The Road Striping Experts"

JUNE 8, 2015

Attn: Daniel Strahan

Below please find our bid for the following:

**VILLAGE OF BARRINGTON HILLS – VILLAGE HALL AND FIRE STATION PARKING LOT**

IDOT Subcontractor Number 14256

PAYITEM	DESCRIPTION	UNIT	PLAN QUANTITY	UNIT PRICE	TOTALS
*****	PAINT PAVEMENT MARKINGS – REMOVE AND REPLACE	L.S.	*****	*****	*****
				<b>TOTAL</b>	<b>6483.50</b>

**Pavement Markings Removal to be done only in the final phase in tandem with pavement markings. Pavement Marking Removal will be done with pavement grinders, no waterblasting/hydroblasting is included with this bid. Prices may be subject to rise due to increases in material, labor, fuel costs etc., to lock in at bid proposal price please accept bid proposal/sign contract within 30 days.**

**PRECISION PAVEMENT MARKINGS RESERVES THE DISCRETION AND RIGHT TO SEEK AN ADDITIONAL MINIMUM MOBILIZATION COST OF \$ 2500 IF ESTIMATE QUANTITIES ARE DELETED OR LOWERED OR PROJECT IS RESCHEDULED OR POSTPONED.**

Additional Terms and Conditions:

1. For scheduling purposes a minimum 3 day advance notice is needed.
2. This proposal is based on our current insurance coverage. Any additional or special insurance requirements are the responsibility of the General Contractor or PPM, INC should be additionally compensated.
3. Any required permit fees are extra, they have not been included in this bid.
4. Pavement marking materials have temperature, humidity and moisture constraints and limitations .If a project is delayed and owner insists on permanent pavement markings then PPM, Inc. will have to defer to manufacturer's recommendations, a warranty may not be provided in such situations. PPM, Inc. will be willing to work with General Contractor and Owner and provide temporary markings for the winter season at reasonable prices.
5. This proposal shall be included in the SUBCONTRACT AGREEMENT.

Submitted By: Fred Salazar Jr  
 V.P Operations & Logistics  
 Precision Pavement Markings, Inc.

To accept this Proposal, please sign and return

\_\_\_\_\_  
 Authorized Signature & Company Name

**MEMORANDUM**

625 Forest Edge Drive, Vernon Hills, IL 60061

TEL 847.478.9700 ■ FAX 847.478.9701

www.gha-engineers.com

To: Brian Cecola, VBH Chairman Roads & Bridges  
Robert Kosin, VBH Director of Administration

From: Dan Strahan, P.E., CFM  
Michael Garner  
Gewalt Hamilton Associates (GHA)

Date: July 15, 2015

Re: Solar Mobile Speed Sign- Status Update

At the June meeting the Roads & Bridges Committee discussed the Village’s solar mobile speed sign. After consistent deployment from 2000 to 2012, use of the solar mobile speed sign has been inconsistent over the last two seasons. The Committee requested that GHA research the value of a mobile speed sign or similar technologies going forward.

**Radar Speed Sign Research**

There have been a number of studies to show the effectiveness of these radar speed signs. Below are conclusions made and data collected by a few of these studies.

- Figure 1 below is a graph from radarsign.com that shows speed percentiles with or without the radar speed sign up. The speeds shown on the graph are their peak speeds. As shown on the graph, cars with peak speeds greater than 29 MPH are always more common when the sign is off, then when it’s on. The data was collected in a 25 MPH neighborhood in Marietta, GA.

**Shift of Peak Speeds to Lower Speeds**  
Six months of operation of a radar speed sign on a neighborhood cut through street demonstrates the effectiveness of the sign in lowering peak speeds to lower speeds.

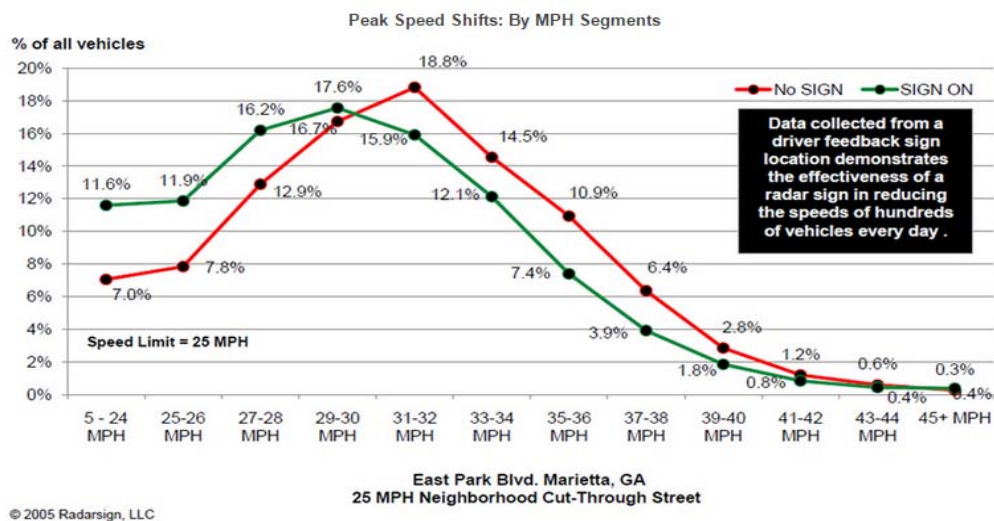


Figure 1

- The Texas Department of Transportation conducted a study in 2004 to see the effectiveness of permanent speed radar signs. They found that these permanent signs are most effective in school zones, reducing average speed in one school zone by 9 MPH. In other areas, the average speed of vehicles did drop, but only by 1-4 MPH. The study also concluded that vehicles traveling well above the speed limit slowed down more when approaching the sign. This data showed that after 4 months, cars were still slowing down in front of the speed radar sign, just not as significantly as when it was first installed.<sup>1</sup>
- Figure 2 is data taken from the Federal Highway Administration’s website (<http://safety.fhwa.dot.gov/>) that shows research taken on how motorists’ driving behaviors change after a radar speed sign is in place.

Road Environment	Year	Sample Size (Number of Sites)	Average Daily Volume (Number of Vehicles)	85th Percentile Speeds Before Sign (MPH)	85th Percentile Speeds After Sign (MPH)	Change in 85th Percentile Speeds (MPH)	Change in 85th Percentile Speeds (%)
Main Road	2008	1	-	37	30	-7	-19
Collector Street/Residential Cross Street	2007	6	-	37	33	-4	-11
School Zone	2003	2	8000-9200	30	28	-2	-7
School Zone	2003	2	11800-29200	43	34	-9	-22

Based on this research and anecdotal feedback from residence, it does seem that radar speed signs have been effective at reducing travel speeds. Slower speeds typically result in decreases in accident risk and severity. The reduction in speed is relatively low but is measureable and noticeable, especially in residential areas. It is also noted from the data that not all drivers change their behavior even when the sign is present. Continued use of a radar speed sign in one form or another is a viable way to reduce travelled speeds on Village Roads.

It is noted that radar speed signs cannot be utilized directly to automate enforcement efforts. In Illinois the use of automated speed limit enforcement is limited to construction zones and tollways.

### Radar Speed Sign Options

The primary drawbacks of the Village’s current solar mobile speed sign trailer include (1) the size of the trailer, and (2) the lack of data collection ability. A vehicle with a trailer hitch is required to move the trailer and many Village roads do not have ideal roadside shoulder locations where the trailer can be visible but still out of the traveled way. While the sign provides instantaneous feedback to the driver regarding travel speed, this data is not collected and stored.

Current technology for radar speed signs would address both of these drawbacks. Signs can be either permanent (post mounted) or portable and generally are similar in size to a typical speed limit sign.

<sup>1</sup>Ullman, Gerald L., Rose, Elizabeth R. (2004). “Effectiveness of Dynamic Speed Display Signals (DSDS) in Permanent Applications.” *Texas Transportation Institute, Texas A&M University, Project Summary Report 0-4475-S*

Detailed information is attached for two such products from radarsign.com; the information summarized below:

- **Power** - Both options are battery powered. The portable sign has rechargeable battery packs that last two weeks at a time; the permanent sign requires the battery pack to be changed every 3-6 years. There are also options for solar powered units.
- **Data Collection** – Either model can collect daily vehicle counts, 50<sup>th</sup> and 85<sup>th</sup> percentile speed, percentage of speed violations, and a variety of other traffic data. This information can be downloaded wirelessly to a nearby laptop. There is an optional feature that would allow control of the speed sign settings from an Android app.
- **Cost** – Costs can vary widely from around \$1,000 to \$5,000, depending upon the specific features desired. Operating costs for a portable unit would be significantly less than the costs to move the existing speed sign trailer.

Based on the operational advantages offered by newer available technologies, we would recommend the Village consider replacing the existing solar mobile speed sign with a TC-400 Radar Speed Sign or similar technology. This will allow the Village to replace the functions currently provided by the speed trailer with more versatile equipment that can also provide traffic data collection functionality.

## TC-400 Radar Speed Sign

*Portable ... Lightweight ... Affordable*

The TC-400 is a battery powered radar speed sign offering the ultimate in portable traffic calming. Using a modular design and built with the legendary quality standards that Radarsign is known for, the TC-400 is lightweight, easy to install, extremely durable and affordably priced.



TC-400 with 11" LED display

**Modular Design:** The modular design of the TC-400 and the mounting technology of Radarsign's universal GoBracket make mounting and un-mounting the sign a quick, easy process. One person can easily install or relocate the TC-400 in about a minute.

**Durable:** Thick aluminum shield to protect sign components from abuse or vandalism.

**Lightweight:** Radar speed sign weighs only 20 lbs.

**Exceptional visibility:** 11" LED display with directional beam technology focus light toward the road; automatically adjusts to ambient light conditions, providing the highest quality viewable display with minimum energy usage. Easily readable up to 400 feet.

**Faceplate:** 24"W x 21"H YOUR SPEED faceplate with 3" high lettering; Available in white, fluorescent yellow, or safety orange.

**Design Standards:** Meets MUTCD design guidelines. 1/4" Makrolon<sup>®</sup> polycarbonate cover provides maximum UV protection and is abrasion, shatter, and graffiti resistant.

**Field exchangeable battery packs:** Runs for +/- 2 weeks on two fully charged battery packs. The modular design allows the battery packs to be easily swapped in the field for the extended use of the sign in a location.

**Radar:** Detects vehicles up to 1200 feet away.

**Value:** The TC-400 is a portable system that allows a single radar speed sign to be used in multiple locations making it a valuable investment for any community, police department, school, or business. At half the price of a speed trailer, you can get two TC-400 radar speed signs resulting in twice the coverage.

**Flexibility:** A TC-400 radar speed sign can be used in many places a speed trailer simply will not fit or would be unsafe, and can be securely mounted to any existing pole. Use temporarily for back to school, seasonal tourist activity, special events, holiday shopping - anywhere a short term use is desired.

**Bluetooth<sup>®</sup> Wireless:** Allows secure wireless operation of radar speed sign and data collection directly to laptop from the comfort of a nearby vehicle.

**Ideal for:** 5-35 mph speed limit roads

**Warranty:** Two year warranty on parts and labor; One year on battery packs. Does not cover malicious abuse, theft, or damage due to unauthorized modification.

### Optional Features:

**Streetsmart Traffic Data Reporting:** Records traffic data that can be used to confirm date, time, and severity of speeding problem.

**Android App:** Allows you to set up your radar speed sign using an Android smartphone or tablet.



Quick Mount GoBracket



Easy Carry Handle for Ultimate Portability



Install in Minutes



# TC-400 Radar Speed Sign Specifications

## Power Options/Battery Specifications

- TC-400 (Battery Powered): Dual 12-volt, 18 A/H Ni-MH battery packs; includes battery charger
- Power Consumption: < 2.5 amps (24w) at maximum intensity; Idle mode < 1/2 watt; Circuit Breaker: Multi-circuit, 5 amp fuses
- Field exchangeable battery packs
- Runs for +/- 2 weeks on two fully charged battery packs.
- Modular design allows the battery packs to be easily swapped in the field for the extended use of the sign in a location.

## Housing Specifications

### Radar Speed Sign Housing

- Dimensions: 16.25"H x 22.75"W x 2.375"D
- Thick aluminum with silver powder coat finish
- NEMA 3R level compliant
- Humidity Maximum: 100%
- Provides maximum protection from the elements and vandalism

### Bashplate™ with LED Cones

- Internal thick aluminum shield to protect sign components from abuse or vandalism.
- Individual holes for each LED focus and reflect light toward the road, providing the highest quality viewable display with minimum energy usage .

### LEDs

- 2 digits, 11" high super bright amber LEDs (life up to 100,000 hours) with directional beam technology
- Easily readable up to 400 feet
- Automatic intensity adjustment to ambient light conditions for maximum visibility
- Provides directed viewing or display to oncoming traffic

### Makrolon® Polycarbonate Display Cover

- .25" thick protective cover
- Abrasion, graffiti and shatter resistant
- UV protection

### Battery Housing

- 12.5"H x 17"W x 2.75"D
- .1875" thick powder-coated aluminum
- Holds up to two 12 volt, Ni-MH battery packs (field exchangeable)

### Stainless Steel Universal GoBracket

- 12.75"H x 4.5"W x 2.9"D
- Universal design allows strapping, banding, pipe clamps, or bolting to almost any size/style of pole.
- GoBracket allows for easy mounting of battery housing and radar speed sign in about a minute.

## Weight and Operating Temperatures

### Weight

- Radar speed sign: 20 lbs.

### Operating Temperatures

- -40° F to +138° F

## Display and Radar Specifications

### YOUR SPEED Faceplate

- 24"W x 21"H YOUR SPEED faceplate with 3" high lettering
- Manufactured with highest grade reflectivity backing
- Ideal for 5-35 mph speed limit roads or lower
- Available in white, fluorescent yellow or safety orange

### Speed Alert

- 2 speeds of flashing LEDs to notify drivers that are exceeding the speed limit.
- Delay option to alert speeders above posted speed limit.

### Radar

- Type: K Band, single direction Doppler radar, FCC part 15 compliant
- Sensor Range: Detects vehicles up to 1200 feet
- Beam Width: 12 degrees, +/- 2 degrees
- Operating Frequency: 24.125 GHz, +/- 50 MHz
- Accuracy: +/- 1.0 mph
- Speed Detection Range: 5 - 127 mph

## Standard Programming / Bluetooth® / Android App

- On/Off Timer Options: 4 timers per day, also by day of week. Settings allow lower speed limits for school zone times and for late night display shutoff.
- Display On/Off: Allows traffic data collection to continue even when display is off.
- Display Brightness Control: Auto adjusts to light conditions, up to 100 levels.
- Setup Functions: Easy to follow menu – software managed, no mechanical switches to operate.
- Maximum Speed Cutoff: Prevents unwanted high speed displays; up to 99 mph; discourages "racing" of sign. Choice of flashing matrix, or LED display cutoff.
- Date/Time Control: Battery backed real-time clock auto-adjusts for daylight savings time.

### Bluetooth® Wireless

- Allows secure wireless operation of radar speed sign & data collection directly to laptop from the comfort of a nearby vehicle.

### Radarsign Android App (optional)

- Allows you set up your radar speed signs using an Android smartphone or tablet.

## Traffic Reporting

### StreetSmart (optional)

- StreetSmart traffic data reporting software to report, organize, and analyze speed and traffic data.
- The information collected by the radar sign is loaded into Excel™ ready .csv files, and can generate 30 charts and graphs.

### Mini SD Memory Card

- System Storage Capacity: stores data on up to 5 million vehicles; Retains data for retrieval for 12 months.

## Warranty

- 2 year warranty on parts and labor; 1 year on battery packs.
- Exceptions: Does not cover malicious abuse, theft, or damage due to unauthorized modification.



## TC-500 Radar Speed Sign

*Built for Safety, Built to Last*



TC-500 with 12" LED display



Heavy duty aircraft aluminum housing



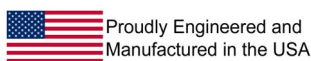
3/8" Bashplate protects LEDs



1/4" polycarbonate cover



Directional Beam Technology



**Durable Design:** Radarsign's built for purpose design is the most vandal resistant radar speed sign on the market today.

- Heavy-duty aircraft aluminum housing with an armored 3/8" thick Bashplate™ and 1/4" Makrolon® polycarbonate cover provide superior protection to the internal components of the radar speed sign from external force and weather.
- Beveled design of the 3/8" Bashplate™ protects LEDs and internal components from damage by dissipating force inflicted on the sign.

**Exceptional visibility:** 12" LED display with directional beam technology delivers a superior quality display for drivers, even in bright sunlight. Radarsign's proprietary design serves as a cone, magnifying the intensity of the light, and pinpoints it directly to the view of approaching drivers. Easily readable up to 500 feet.

**Speed Alert:** The driver speed will flash within the programmed speed range.

- Display on-off feature allows traffic data collection to continue even when the display is off (stealth mode).
- Delay option to alert speeders above posted speed limit.

**Faceplate:** 24"W x 26"H YOUR SPEED faceplate with 4" high lettering; Available in white, fluorescent yellow, or safety orange.

**Design Standards:** NEMA 4R level compliant; meets or exceeds MUTCD design guidelines; Makrolon® polycarbonate cover provides maximum UV protection and is abrasion, shatter, and graffiti resistant.

**Batteries:** Batteries are designed to slide into housing slots without any danger of movement; Maintenance is limited to battery changes every three to six years.

**Radar:** Detects vehicles up to 1200 feet away.

**Bluetooth® Wireless:** Allows secure wireless operation of radar speed sign and data collection directly to laptop from the comfort of a nearby vehicle.

**Power Options:** Available in AC powered and solar powered models.

**Ideal for:** 5-40 mph speed limit roads or lower

**Warranty:** Two year warranty on parts and labor, including batteries; Does not cover malicious abuse, theft, or damage due to unauthorized modification.



### Optional Features:

**Streetsmart Traffic Data Reporting:** Records traffic data that can be used to confirm date, time, and severity of speeding problem.

**Android App:** Allows you to set up your radar speed sign using an Android smartphone or tablet.

**EZ Comm:** Allows a secure, cellular-based, remote management of your radar speed signs.

**External Device Relay Switch:** Triggers external devices from the radar speed sign based on time and/or speed, or temperature.

**Poles:** Aluminum or black decorative poles with FHWA safety compliant breakaway bases

# TC-500 Radar Speed Sign Specifications

## Power Options/Battery Specifications

### TC-500S (Solar Powered)

- Solar Panel Output: 40 watt ; Optional upgrade: 65 watt
- Power Supply: Two 12-volt, 18 amp/hour AGM batteries (UL recognized); provides up to 14 days of operation.
- Solar Charge Controller: Manages the flow of solar energy input (up to 85w) from solar panel to battery
- Pole Mount: Side pole mount with 45° angle bracket for effective solar charging
- Software Control: SmartCharge® software prevents overcharging and intelligent shutdown when battery falls below acceptable voltage; auto restart when sufficiently recharged
- Battery Status: Via Bluetooth®, can check battery charge levels and solar amperage
- Power Consumption: < 2.5 amps (24w) in active mode; Idle mode < 1/2 watt; Circuit Breaker: Multi-circuit, 5 amp fuses

### TC-500A (AC Powered)

- Power Supply: Hard wire to 100V-240V power supply
- Power Consumption: < 2.5 amps (24w) in active mode; Idle mode < 1/2 watt; Circuit Breaker: Multi-circuit, 5 amp fuses

## Housing Specifications

### Radar Speed Sign Housing

- Dimensions: 15.8"H x 22.2"W x 5.25"D
- Thickness: .1875" to .25" thick aluminum with white powder coat finish
- NEMA 4R level compliant
- Humidity Maximum: 100%
- Non-sealed and ventilated
- Provides maximum protection from the elements and vandalism

### Bashplate™ with LED Cones

- Internal .375" aluminum shield to protect sign components from abuse or vandalism.
- Beveled design protects LEDs and internal components by dissipating any force inflicted on the sign.
- Conical holes for each LED focus and reflect light toward the road, providing the highest quality viewable display with minimum energy usage .

### LEDs

- 2 digits, 12" high super bright amber LEDs (life up to 100,000 hours) with directional beam technology
- Easily readable up to 500 feet
- Automatic intensity adjustment to ambient light conditions for maximum visibility
- Provides directed viewing or display to oncoming traffic

### Makrolon® Polycarbonate Display Cover

- .25" thick protective cover
- Abrasion, graffiti and shatter resistant
- UV protection

## Weight and Operating Temperatures

### Weight

- TC-500S (Solar Powered): 58 lbs. includes 2 batteries
- TC-500A (AC Powered): 34 lbs.

### Operating Temperatures

- -40° F to +138° F

## Display and Radar Specifications

### YOUR SPEED Faceplate

- 24"W x 26"H YOUR SPEED faceplate with 4" high lettering
- MUTCD compliant colors and reflectivity
- Ideal for 5-40 mph speed limit roads or lower
- Available in white, fluorescent yellow or safety orange

### Speed Alert

- 2 speeds of flashing LEDs to notify drivers that are exceeding the speed limit
- Delay option to alert speeders above posted speed limit

### Radar

- Type: K Band, single direction Doppler radar, FCC part 15 compliant
- Sensor Range: Detects vehicles up to 1200 feet
- Beam Width: 12 degrees, +/- 2 degrees
- Operating Frequency: 24.125 GHz, +/- 50 MHz
- Accuracy: +/- 1.0 mph
- Speed Detection Range: 5 - 127 mph

## Standard Programming / Bluetooth® / Android App

- On/Off Timer Options: 4 timers per day, also by day of week. Settings allow lower speed limits for school zone times and for late night display shutdown.
- Display On/Off: Allows traffic data collection to continue even when display is off.
- Display Brightness Control: Auto adjusts to light conditions, up to 100 levels.
- Setup Functions: Easy to follow menu – software managed, no mechanical switches to operate
- Maximum Speed Cutoff: Prevents unwanted high speed displays; up to 99 mph; discourages "racing" of sign. Choice of flashing matrix, or LED display cutoff.
- Date/Time Control: Battery backed real-time clock auto-adjusts for daylight savings time.

### Bluetooth® Wireless

- Allows secure wireless operation of radar speed sign and data collection directly to your laptop from the comfort of a nearby vehicle.

### Radarsign Android App (optional)

- Allows you set up your radar speed signs using an Android smartphone or tablet.

## Traffic Data Reporting

### StreetSmart (optional)

- StreetSmart traffic data reporting software to report, organize, and analyze speed and traffic data.
- The information collected by the radar sign is loaded into Excel™ ready .csv files, and can generate 30 charts and graphs.

### Mini SD Memory Card

- System Storage Capacity: stores data on up to 5 million vehicles; Retains data for retrieval for 12 months.

## Warranty

- 2 year warranty on parts and labor, including batteries. Exceptions: Does not cover malicious abuse, theft, or damage due to unauthorized modification. Optional third year warranty extension available.



# COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS

**JOHN YONAN, P.E.**

**SUPERINTENDENT**

Fiscal Responsibility Innovative Leadership Transparency & Accountability Improved Services

The Department of Transportation and Highways plans, designs, constructs, maintains and operates sustainable highways that provide safe, efficient, comfortable and economical movement of people and goods. It also works to create a system of roads and highways that supports the development of the regional economy and the region's residents.

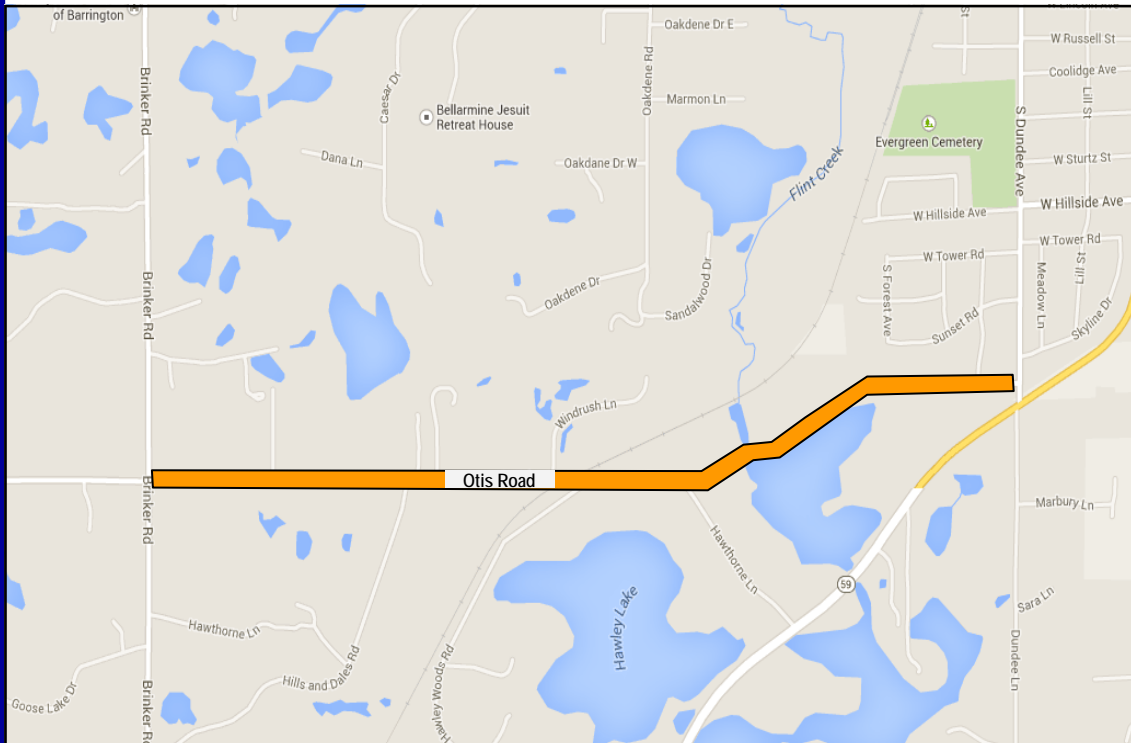


PAVEMENT RESURFACING AND REHABILITATION

**OTIS ROAD**

**BRINKER ROAD TO DUNDEE ROAD**

IN THE VILLAGE OF BARRINGTON HILLS



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**COMING SOON**