cityofnovi.org

CITY of NOVI CITY COUNCIL

Agenda Item G August 9, 2010

SUBJECT: Approval of Traffic Control Orders 10-31 through 10-35 to establish traffic control at the intersections of Silvery Lane with the following streets: Aspen Drive, Borchart Drive, and Sycamore Drive, within Orchard Hills Subdivision.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division Bic

1-74

CITY MANAGER APPROVAL

BACKGROUND INFORMATION:

Three intersections along Silvery Lane in Orchard Hills Subdivision were studied by our traffic consultant at the request for the Homeowners' Association (June 17, 2010 letter, attached). The Association requested traffic control at the three intersections where none was currently installed. The traffic patterns at the three intersection was changed with the build out of the adjacent Orchard Hills West subdivision. The City's traffic consultant, Birchler Arroyo, recommends the installation of the following traffic control devices in the attached July 1, 2010 report:

TCO No.	Description
10-31	Westbound Sycamore to YIELD at Silvery Ln
10-32	Eastbound Sycamore to YIELD at Silvery Ln
10-33	Westbound Borchart to STOP at Silvery Ln (creating 4-way stop)
10-34	Eastbound Borchart to STOP at Silvery Ln (creating 4-way stop)
70-3	Northbound Silvery to STOP at Borchart (existing TCO, no sign installed)
70-3	Southbound Silvery to STOP at Borchart (existing TCO, no sign installed)
10-35	Northbound Silvery Ln to YIELD at Aspen

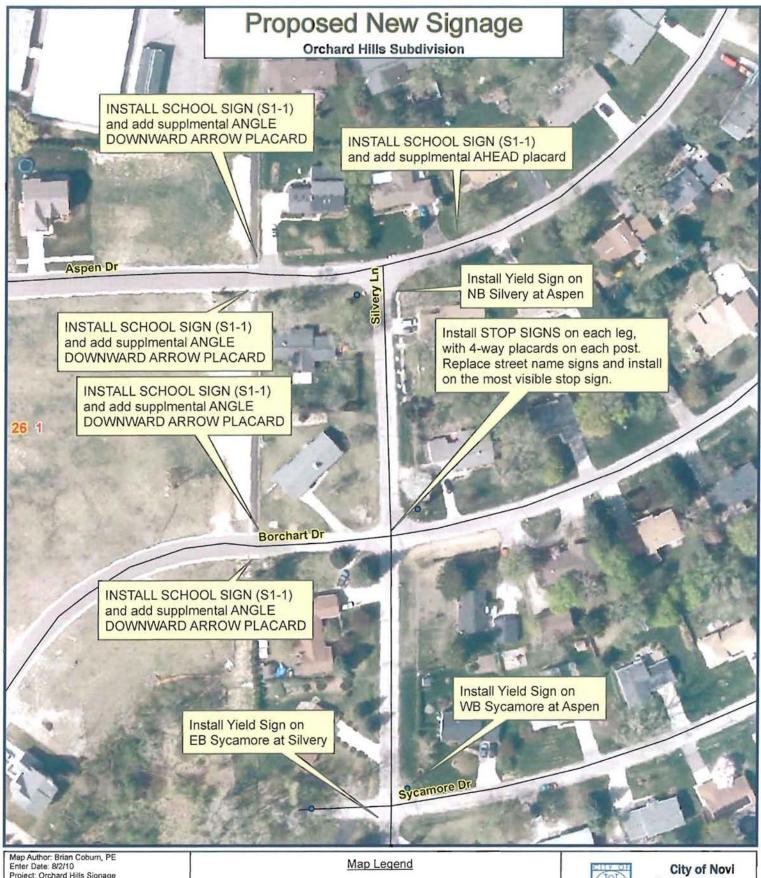
The report also suggests additional signage for the sidewalk crossing at Aspen and Borchart for Orchard Hills Elementary School. The attached location map provides a graphical representation of the recommendations.

The implementation of the report recommendations would be completed as part of the initial phase of the sign replacement project that was approved in the 2010-11 Capital Improvement Program. The sign replacement project includes the replacement of traffic control signs to meet new federal requirements for traffic control sign retroreflectivity. Among the new federal requirements are that 1) all road agencies must establish and implement a plan for compliance by January 2012; 2) agencies must meet the minimum retroreflectivity requirements on regulatory signs (such as stop, yield, speed, and no parking signs), warning signs and 3) guide signs by January 2010; and agencies must meet minimum retroreflectivity requirements for street name signs by January 2018. Retroflectivity is the ability of a surface to return light back from its source (i.e., signs and pavement markings reflecting light from the headlights back to the driver's eye).

RECOMMENDED ACTION: Approval of Traffic Control Orders 10-31 through 10-35 to establish traffic control at the intersections of Silvery Lane with the following streets: Aspen Drive, Borchart Drive, and Sycamore Drive, within Orchard Hills Subdivision.

	1	2	Υ	N
Mayor Landry				
Mayor Pro Tem Gatt				
Council Member Crawford				
Council Member Fischer				

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Council Member Margolis				
Council Member Mutch				
Council Member Staudt				



Project: Orchard Hills Signage Version #, 2.0

MAP INTERPRETATION NOTICE

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet. National Map Accuracy Standards and use the most recent, occurate sources swallable to the people of the City of Novi. Boundary measurements and area cisculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 12 of 1970 as amended. Pleased contact the City GIS Manager 10 ocnfirm source and accuracy information related to this map.



Engineering Division Department of Public Services 45175 W Ten Mile Rd Novi, MI 48375 cityofnovi.org

Feet



1 inch = 104 feet

Orchard Hills HOMEOWNERS ASSOCIATION

NOVI, MICHIGAN

6-17-2010

Dear Sirs;

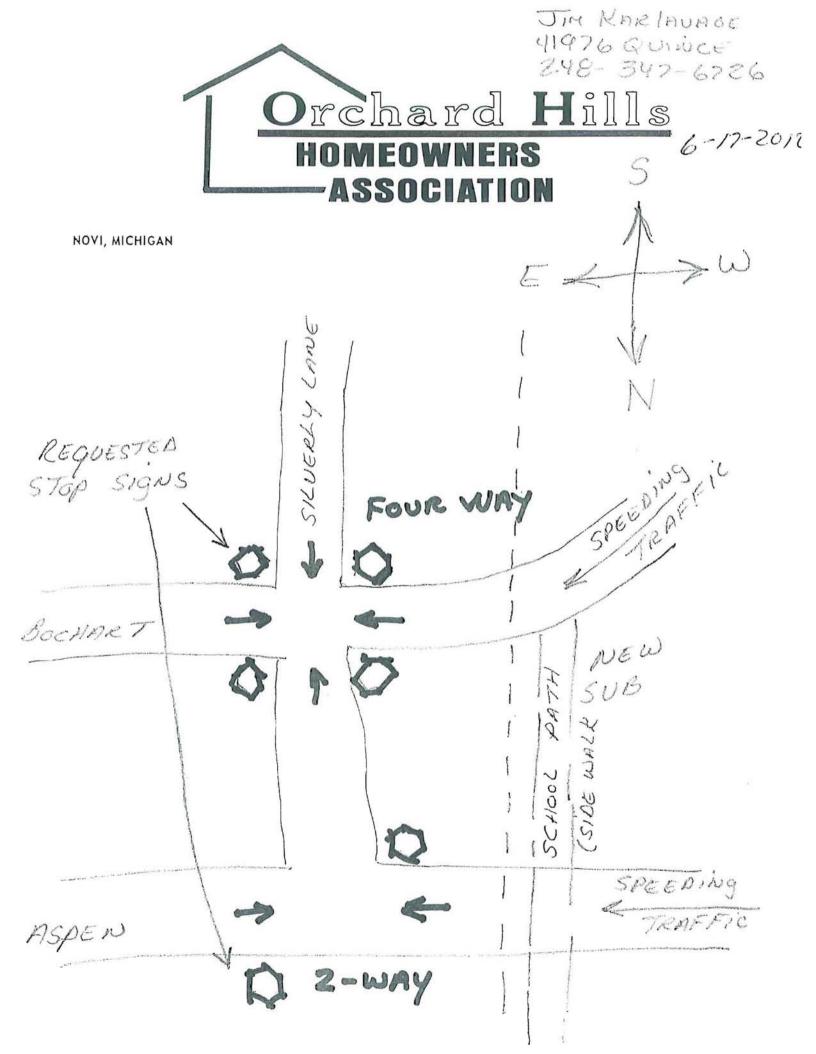
We are having serious, traffic concerns in our neighborhood!

Over -since the build out of out of orchard-hills west, I've been orchard-hills west, I've been receiving numerous complaints of mear-nesses (ACCIDENTS) both vechecle of pedestrian! Please install stop signs as requested in our sub-before some-one gets killed! If your whant to know times; states, and who! let me know!

James Larlaroge 41976 QUINCE 248-347-6726 PRES. O.H. - H.O.A.

DRAWING ATTACHED.

P.S. Copies OF LETER & DAAWING DIST. TO PEOPLE IN VOLUED



MEMORANDUM

DATE:

July 1, 2010

TO:

Brian T. Coburn, P.E., Senior Civil Engineer

Dept. of Public Services-Engineering Div., City of Novi

FROM:

Rodney L. Arroyo, AICP, Vice President

William A. Stimpson, P.E., Director of Traffic Engineering

SUBJECT:

Silvery Lane Right-of-Way Control Signs (Orchard Hills Subdivision)

As requested, we have evaluated three currently uncontrolled intersections along Silvery Lane for the appropriate type of right-of-way control signage (i.e., YIELD or STOP sign). The three intersecting streets in question are Aspen, Borchart, and Sycamore Drives (Figure 1 and MAPS 1-2).

Recommendations

- 1. The City should install four-way STOP signs at the Silvery / Borchart intersection. Per the Michigan Manual of Uniform Traffic Control Devices, each of the four STOP (R1-1) signs must be accompanied by an ALL WAY plate (R1-4). The street name signs, now on a rusting post obscured by an arbor vitae tree on the northeast corner, should be relocated to the top of a more visibly located STOP sign post to be placed on that corner.
- YIELD (R1-2) signs should be installed on northbound Silvery at Aspen, and on eastand westbound Sycamore at Silvery.
- To enhance pedestrian safety and potentially slow east-west vehicular traffic, east- and west-facing School Crosswalk Warning Assemblies¹ should be placed on both Aspen and Borchart at the school safety path one lot west of Silvery (MAP 1).
- All new and existing STOP and YIELD signs should be supported by Council-approved Traffic Control Orders.

General Background

The 2005 *Michigan Manual of Uniform Traffic Control Devices (MMUTCD)* establishes guidelines and standards applicable (by law) to all public roads and streets in the State. Section 2B.05 of the *MMUTCD* provides the following guidance relative to STOP sign applications:

¹ An S1-1 sign (five-sided black-on-yellow sign showing two walking children in silhouette), with a W16-7p below (a rectangular black-on-yellow plate with an arrow pointing downward and to the left).



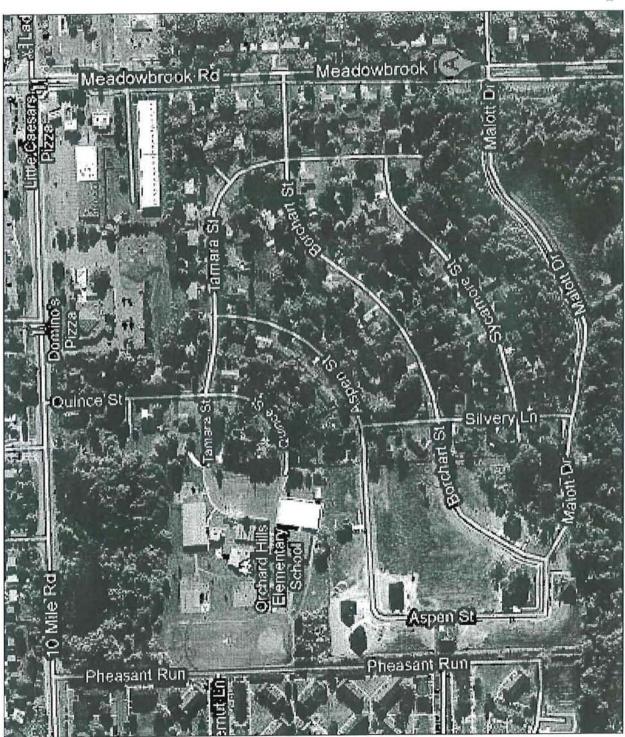
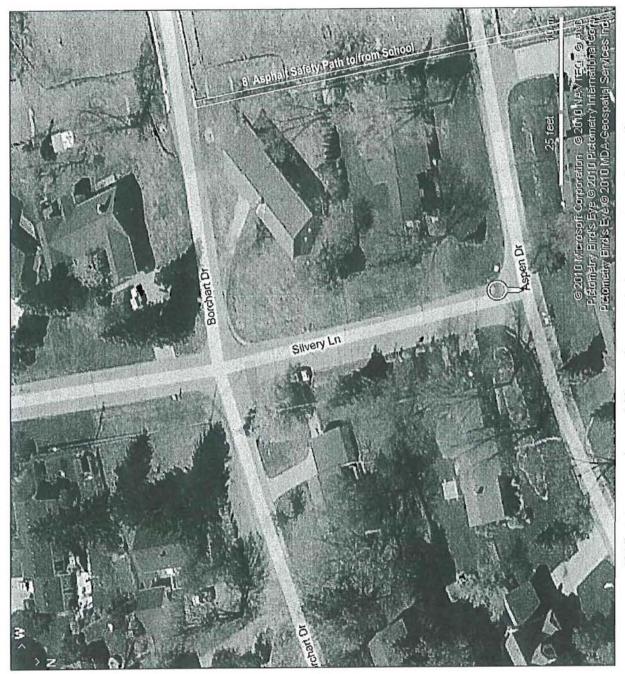


Figure 1. Orchard Hills Subdivision



MAP 1: Intersections of Silvery Lane with Aspen and Borchart Drives



MAP 2 - Intersections of Silvery Lane with Sycamore and Malott Drives

"STOP signs should be used if engineering judgment indicates that one or more of the following conditions exist:

- A. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;
- Street entering a through highway or street;
- C. Unsignalized intersection in a signalized area; and/or
- D. High speeds, restricted view, or crash records indicate a need for control by a STOP sign."

The MMUTCD also states that "STOP signs shall not be used for speed control" (emphasis added here), and "STOP signs should be installed in a manner than minimizes the numbers of vehicles having to stop. At intersections where a full stop is not necessary at all times, consideration should be given to using less restrictive measures, such as YIELD signs."

National experience has found that drivers tend to disregard clearly unwarranted STOP signs and roll through them as if they were YIELD signs. Mid-block speeds have been found to actually increase with STOP sign installation, as drivers attempt to "make up for lost time." Unwarranted STOP signs have also been found to provide pedestrians (especially children) a false sense of security, in that they assume drivers will stop for a STOP sign when, in fact, they often do not.

Supporting Analyses and Discussion

Relative to condition D above, the City of Novi has long applied the Road Commission for Oakland County's recommended procedure for evaluating the issue of "restricted view." Measurements to corner sight obstructions are made, and a nomograph is applied to determine the Critical Approach Speed on the minor approach (typically, the "stem" of a tee intersection). A STOP sign is required for Critical Speeds below 10 mph and often considered for Critical Speeds in the range of 10-15 mph. Ordinarily, a YIELD sign is more appropriate for Critical Speeds above 15 mph.

The Critical Approach Speeds determined for three subject intersections are summarized below:

М	Internation	Con-	Critical	Warranted Signs		gns	Cight Doctrickion	
A p	Intersection	trolling Corner	Speed (mph)	None	Yield	Stop	Sight Restriction	
7	Silvery & Aspen	SE	20		Х		Shrub closest to Aspen	
ļ	Silvery & Borchart	SW	7			Χ	Large spruce w/undergrowth	
2	Silvery & Sycamore	NE	24		Х		Large bush closest to Silvery	

Table 1. Summary of Findings

Silvery & Aspen – Corner sight obstructions require no more than a YIELD sign on the northbound Silvery approach to Aspen. The three-way STOP signs requested by the Homeowners Association, for the express purpose of slowing "speeding traffic," are not permitted by the *Michigan Manual of Uniform Traffic Control Devices*. The propensity of drivers to roll through clearly unwarranted STOP signs could be especially hazardous at a location such as this, where school children walking to or from the nearby safety path may wrongly assume that all Aspen drivers will actually stop for those signs. In lieu of STOP signs to address the speeding concern, we are recommending school crossing warning signs at the safety path.

Silvery & Borchart – On the northwest corner, there is a very large spruce tree, with low limbs and undergrowth, that limits the Critical Approach Speeds on the eastbound and northbound approaches to only 7 mph. STOP sign control is therefore warranted on one or both streets. We are recommending that both streets be required to stop, consistent with the *MMUTCD* optional criterion (in Section 2B.07) permitting multi-way stop control at "locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop."

A short distance west of the aforementioned spruce tree is a cluster of fir trees near the road edge, with low branches extending several feet over the road. These not only further restrict corner sight distance, they reduce the clear width of the two-way driving surface to only 17 ft. We recommend that the City take immediate steps to have these trees pruned back to or behind the road edge.

Silvery & Sycamore – A large bush and nearby hedge on the northeast corner result in a Critical Approach Speed on westbound Sycamore of 24 mph, thus warranting a YIELD sign. The street name signs already on that corner should remounted atop the same sign post as the YIELD sign. Although the opposing (west) leg serves only a single driveway, a YIELD sign should also be installed on the eastbound approach in order to provide a complete and balanced treatment.

SPEED	DATE OF ORDER:	July 2
PARKING _X_OTHER	CONTROL NUMBER:	<u>10-31</u>

PURSUANT TO CHAPTER NO. 33 OF THE CODE OF ORDINANCES OF THE CITY OF NOVI, MICHIGAN, SAME BEING THE UNIFORM TRAFFIC CODE FOR CITIES, TOWNSHIPS AND VILLAGES OF MICHIGAN AND IN THE INTEREST OF PUBLIC SAFETY AND CONVENIENCE THE FOLLOWING TRAFFIC CONTROL ORDER IS HEREBY ISSUED BY BRIAN COBURN, SENIOR CIVIL ENGINEER, DULY AUTHORIZED AS TRAFFIC ENGINEER, BY SEC. 33.141 OF THE AFORESAID CHAPTER.

ISSUANCE OF THIS TRAFFIC CONTROL ORDER WAS PRECEDED BY STUDY AND INVESTIGATION OF TRAFFIC CONDITIONS ON THE FOLLOWING PUBLIC ROAD OR ROADS IN THE CITY OF NOVI, MICHIGAN.

SYCAMORE DRIVE

AND AFTER SAID INVESTIGATION, IT IS HEREBY ORDERED AND DIRECTED THAT THE DEPARTMENT OF PUBLIC SERVICES ERECT AND MAINTAIN THE <u>YIELD</u> SIGN (S) IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS REQUIRED BY SEC. 33.217 OF THE AFORESAID CHAPTER, SAID SIGNS TO GIVE NOTICE OF THE FOLLOWING DETERMINATION:

WEST BOUND SYCAMORE DRIVE TO YIELD AT SILVERY LANE

TRAFFIC ENGINEER-BRIAN COBURN

July 22, 2010

DATED: <u>07/22/2010</u>

APPROVED BY CITY COUNCIL

TRAFFIC CONTROL ORDER NUMBER 10-31 HAVING BEEN PRESENTED TO THE COUNCIL OF THE CITY OF NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HEREBY APPROVED AND IT IS HEREBY ORDERED AND DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OF THE CITY CLERK AND A COPY THEREOF IN THE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.

IT IS FURTHER ORDERED AND DIRECTED THAT THIS ORDER SHALL BECOME EFECTIVE UPON BEING FILED WITH THE CLERK AND UPON ERECTION OF ADEQUATE SIGNS GIVING NOTICE OF THE EXISTENCE OF AFORESAID,

WEST BOUND SYCAMORE DRIVE TO YIELD AT SILVERY LANE

ADOPTED AT THE REGULAR MEETING	BY:		
OF COUNCIL ON	Mayor - David L	andry	
	Ву:	9	
	City Clerk - Man	anne Cornelius	

	SPEED PARKING	DATE OF ORDER:	July 22, 2010
X	OTHER	CONTROL NUMBER:	10-32
BE INT ISS	RSUANT TO CHAPTER NO. 33 OF THE CODE OF OR ING THE UNIFORM TRAFFIC CODE FOR CITIES, TON TEREST OF PUBLIC SAFETY AND CONVENIENCE THE SUED BY BRIAN COBURN, SENIOR CIVIL ENGINEER, IN 141 OF THE AFORESAID CHAPTER.	WNSHIPS AND VILLACE FOLLOWING TRAFFICE	GES OF MICHIGAN AND IN THE C CONTROL ORDER IS HEREBY
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		TRAFFIC ENGINEER-	BRIAN COBURN
		DATED: 07/22/2010	
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By: City Clerk - Maryanne Cornelius

SPEED PARKING	DATE OF ORDER:	<u>July 22, 2010</u>
X OTHER	CONTROL NUMBER:	10-33
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WEST BOUND BORCHART DRIVE TO STOP AT SILVER	Y LANE (CREATING 4-WA	Y STOP)
	TRAFFIC ENGINEER-E	BRIAN COBURN
	DATED: <u>07/22/2010</u>	
APPROVED BY CITY COUNCIL		
TRAFFIC CONTROL ORDER NUMBER 10-33 HAVING BE NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HERE DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.	BY APPROVED AND IT IS	HEREBY ORDERED AND
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WEST BOUND BORCHART DRIVE TO STOP AT SILVERY	Y LANE (CREATING 4-WA	Y STOP)
ADOPTED AT THE REGULAR MEETING OF COUNCIL ON	BY: Mayor - Davi	d Landry

By: City Clerk - Maryanne Cornelius

SPEED PARKING X OTHER	DATE OF ORDER: CONTROL NUMBER:	July 22, 2010 10-34
PURSUANT TO CHAPTER NO. 33 OF THE CODE OF OF BEING THE UNIFORM TRAFFIC CODE FOR CITIES, TO INTEREST OF PUBLIC SAFETY AND CONVENIENCE THE ISSUED BY BRIAN COBURN, SENIOR CIVIL ENGINEER, 33.141 OF THE AFORESAID CHAPTER.	WNSHIPS AND VILLAGE FOLLOWING TRAFFICE	ES OF MICHIGAN AND IN THE CONTROL ORDER IS HEREBY
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BORCHART DRIVE		
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EAST BOUND BORCHART DRIVE TO STOP AT SILVERY L	ANE (CREATING 4-WA	Y STOP)
	TRAFFIC ENGINEER-E	BRIAN COBURN
	DATED: <u>07/22/2010</u>	
APPROVED BY CITY COUNCIL		
TRAFFIC CONTROL ORDER NUMBER 10-34 HAVING BEEN NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HEREBY DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.	Y APPROVED AND IT IS	HEREBY ORDERED AND
IT IS FURTHER ORDERED AND DIRECTED THAT THIS OR WITH THE CLERK AND UPON ERECTION OF ADEQUATE S AFORESAID,		
EAST BOUND BORCHART DRIVE TO STOP AT SILVERY L	ANE (CREATING 4-WA)	(STOP)
ADOPTED AT THE REGULAR MEETING OF COUNCIL ON	BY: Mayor - Davi	d Landry

By: City Clerk - Maryanne Cornelius

SPEED PARKING	DATE OF ORDER:	July 22, 2010
X_OTHER	CONTROL NUMBER:	<u>10-35</u>
PURSUANT TO CHAPTER NO. 33 OF THE CODE OF OBEING THE UNIFORM TRAFFIC CODE FOR CITIES, TO INTEREST OF PUBLIC SAFETY AND CONVENIENCE TH ISSUED BY BRIAN COBURN, SENIOR CIVIL ENGINEER, 33.141 OF THE AFORESAID CHAPTER.	DWNSHIPS AND VILLAGE FOLLOWING TRAFFIC	ES OF MICHIGAN AND IN THE CONTROL ORDER IS HEREBY
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NORTH BOUND SILVERY LANE TO YIELD AT ASPEN DR	<u>IVE</u>	
	TRAFFIC ENGINEER-E	BRIAN COBURN
	DATED: <u>07/22/2010</u>	
APPROVED BY CITY COUNCIL		
TRAFFIC CONTROL ORDER NUMBER 10-35 HAVING BEE NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HEREB DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.	BY APPROVED AND IT IS	HEREBY ORDERED AND
IT IS FURTHER ORDERED AND DIRECTED THAT THIS OF WITH THE CLERK AND UPON ERECTION OF ADEQUATE AFORESAID,		
NORTH BOUND SILVERY LANE TO YIELD AT ASPEN DRI	<u>VE</u>	
ADOPTED AT THE REGULAR MEETING OF COUNCIL ON	BY: Mayor - Davi	d Landry
	By: City Clerk - M	Maryanne Cornelius