

**New York City Department of Transportation
Office of School Safety Engineering**



School Safety Engineering Project

FINAL REPORT: J.H.S. 231 (Tri-Community School), Queens



**Prepared by
The RBA Group and URBITRAN Associates Inc.**



November 10, 2006

**School Safety Engineering Project
Final Report: J.H.S. 231, Queens**

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The Department of Transportation (DOT) has developed school safety maps for 1,471 schools throughout the City. Schools currently in the program are primarily elementary and intermediate schools with an enrollment of at least 250 students. The safety plans include the designation of official school crosswalks, identified by prominent warning signs and roadway markings. DOT also designates curbside locations for school bus loading and unloading and other parking controls to improve conditions for students. In addition, nearly 600 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, accident data in the vicinity of all program schools was reviewed. As a result, schools were ranked in terms of pedestrian safety, and 135 “priority” schools were identified Citywide. At each of these priority schools, safety improvements are being recommended (e.g., new school crosswalks, new traffic signals and signal timing modifications, new speed reducers). In addition, 32 of these schools will receive further investigation to design physical improvements (e.g., raised center medians, widened sidewalks, “neckdowns” or “bulbouts” at intersections). J.H.S. 231 (Tri-Community School) in Queens is one of the 135 “priority” schools identified by the New York City Department of Transportation, Office of School Safety Engineering.

2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS



2.2 NEIGHBORHOOD DESCRIPTION

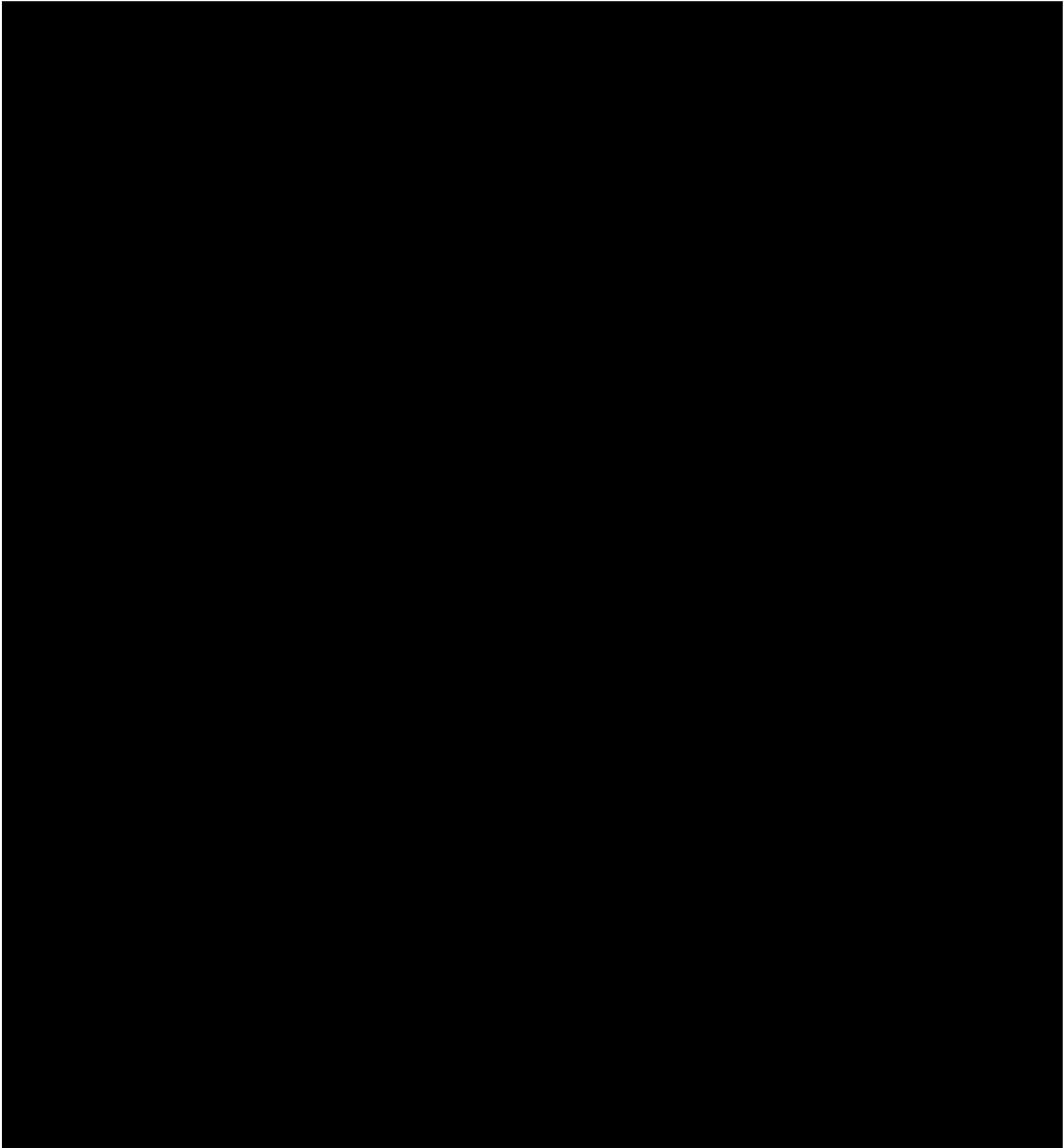
Exhibit 1 shows an aerial view of the neighborhood surrounding the school. The J.H.S. 231 campus is bounded by South Conduit Avenue to the north, 145th Road to the south, Springfield Boulevard to the east, and Arthur Street to the west. The neighborhood surrounding the school is primarily residential. Southern State Parkway is located north of the school, between South Conduit Boulevard and North Conduit Boulevard. There is a bus stop for the Q77 line located in front of the school on the northwest corner of the Springfield Boulevard and 145th Road intersection.

2.3 MEETING WITH SCHOOL REPRESENTATIVES

The consultant team was unable to arrange a meeting with school officials, but visited the school site on the morning of June 23, 2004. Therefore, the findings and recommendations in this report are based upon the site visit, the school's survey response, and information from the current Department of Education web site. According to the school's survey response, J.H.S. 231 student pedestrians face the following problems:

- Speeding vehicles on North Conduit Avenue, South Conduit Avenue, and Springfield Boulevard.
- Drivers not yielding to pedestrians at crosswalks, and ignoring stop signs and other traffic control devices. (In the survey response, school officials identified a need for a crossing guard, police officer, or other traffic control authority on North Conduit Avenue, South Conduit Avenue, and Springfield Boulevard.)
- Too much traffic on North Conduit Avenue, South Conduit Avenue and Springfield Boulevard.

- Illegal parking and double parking in front of the school.
- Children crossing Springfield Boulevard at uncontrolled mid-block locations.



2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL

The school's catchment area, as defined by the Department of Education and shown in Exhibit 2, is defined by: Rockaway Boulevard to the south; Hook creek Boulevard to the east; Brookville Boulevard, 130th Avenue, and Merrick Boulevard to the north; and Bedell Street, 140th Avenue, and North Conduit Avenue to the west.

Table 1 presents the modes of travel for J.H.S. 231 as identified by school representatives.

TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)	STUDENTS (PERCENTAGE)
Walk	35%
Driven by car	10%
School bus	5%
MTA Bus / Subway	50%
Bicycle	0%
TOTAL	100%

2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS

There is a fast-food restaurant located approximately one block to the east on South Conduit Avenue that is an attraction for J.H.S. 231 students. Excelsior Preparatory High School (Q265), George Washington Carver High School for the Sciences (Q272), and Springfield Gardens High School (Q420) are located at a single campus at 143-10 Springfield Boulevard, several blocks to the north of J.H.S. 231 in the Springfield Gardens neighborhood. In addition, P.S. 52 is located at 178-37 146th Terrace, four blocks southwest of J.H.S. 231. Finally, as stated previously, P.S. 251 shares a campus with J.H.S. 231. All of these schools generate vehicular and pedestrian traffic within the vicinity of J.H.S. 231.

2.8 CROSSING GUARD LOCATION

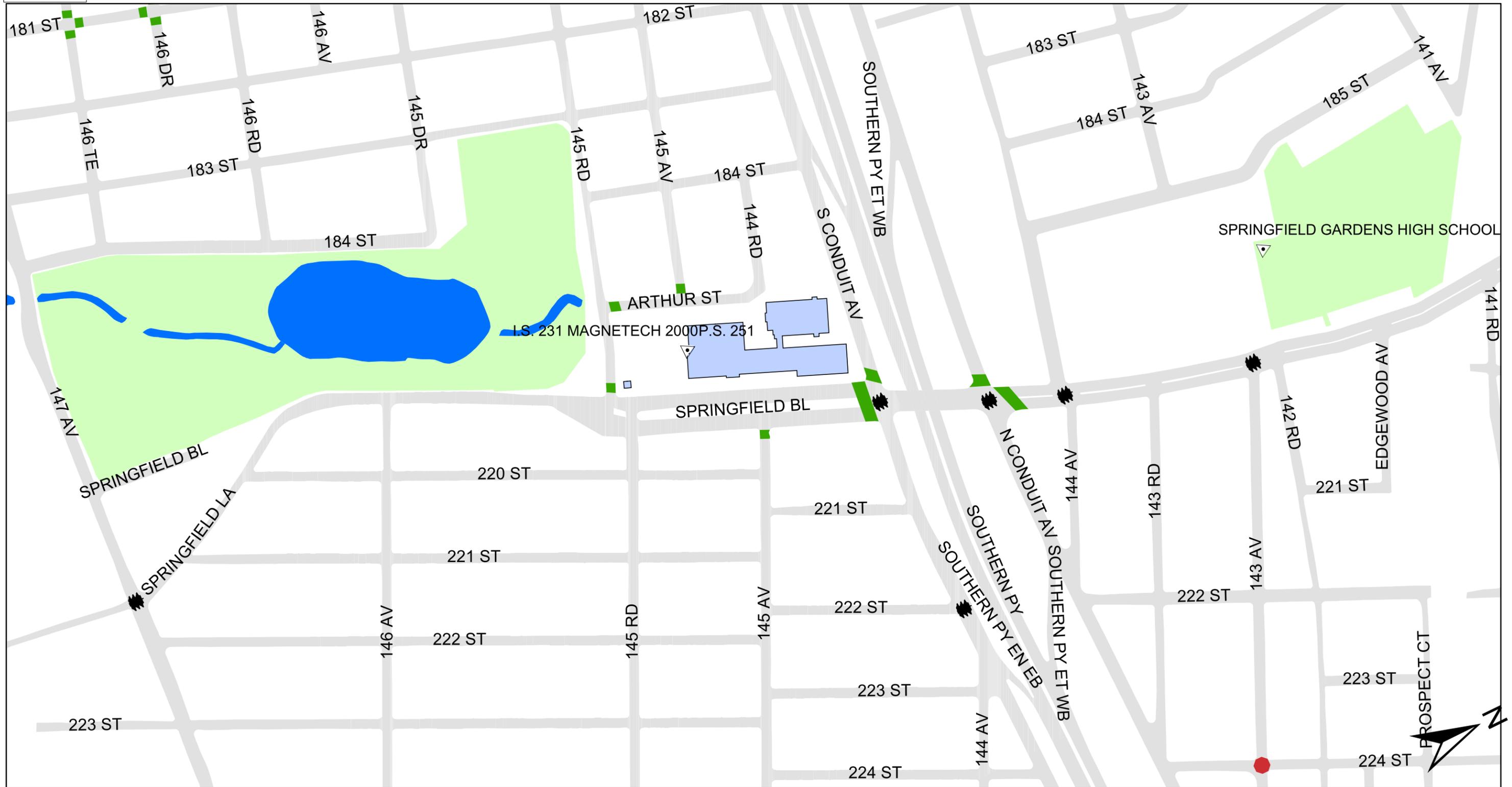
No crossing guards are currently assigned to J.H.S. 231.



EXHIBIT 1
J.H.S. 231 QUEENS
TRI - COMMUNITY SCHOOL
AERIAL PHOTOGRAPH



School Traffic Safety Map



The School Traffic Safety Map was established to help provide the maximum degree of safety for children going to and from school - by indicating the location of speed reducers, school crosswalks and some traffic control devices. (While virtually all intersections in NYC benefit from traffic control devices - such as stop signs, traffic signals, yield signs, and all way stop signs - this map shows only traffic signals and all way stop signs.) The school crosswalks that are shown are ladder striped and make the crosswalk more visible to drivers and help make the intersection safer. These crosswalks are where school children are recommended to cross.

Note: Every attempt has been made to provide complete and accurate information that is updated regularly. The City's streets are constantly changing and it is not always possible to present information without error.

LEGEND:

- SCHOOL LOCATION
- SCHOOL CROSSWALK
- TRAFFIC SIGNAL
- ALL - WAY STOP
- SPEED REDUCER

**IS 231 Queens
TRI-COMMUNITY SCHOOL**

Prepared by the NEW YORK CITY DEPARTMENT OF TRANSPORTATION, Iris Weinshall, COMMISSIONER.

Map created on 11/17/2006

EXHIBIT 3

COMM. BOARD: 413
PRECINCT: 105

3. TRAFFIC OPERATIONS

3.1 SCHOOL BUS OPERATIONS

According to the school's survey response, there are approximately 700 students who ride an MTA bus to school and approximately 70 students who ride a yellow school bus to school. The current Department of Education web site shows four yellow buses serving a total of 100 students, and four special education buses serving a total of 14 students.

All school buses stop along Springfield Boulevard in front of the school. MTA's Q77 bus also stops near the school building on Springfield Boulevard, north of the intersection with 145th Road (this stop is the southern terminal stop for the Q77 line).

3.2 PARENT DROP-OFF OPERATIONS

According to the school's survey response, ten percent of the students at J.H.S. 231 are currently being dropped off. In addition, illegal parking and double parking in front of the school were noted as concerns in the school's survey response. In general, during the site visit, no specific problems were observed with student drop offs in front of the school during the morning arrival period. However, on occasion, some students were observed being dropped off onto the raised median on Springfield Boulevard and then crossing the southbound lanes of Springfield Boulevard mid-block to reach the sidewalk in front of the school on the west side of the roadway.

3.3 PARKING REGULATIONS

Parking regulations around the school block are shown in Exhibit 4. It should be noted that Springfield Boulevard is a designated snow route. As such, during snow emergencies, special traffic regulations take effect on Springfield Boulevard (and the City's other snow routes) that prohibit standing or parking a vehicle.

3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 3 shows the existing signals and pavement markings around J.H.S. 231. It should be noted that a citywide signage program is currently underway to upgrade school signage to the current edition of the Federal Manual of Uniform Traffic Control Devices (MUTCD) standards of fluorescent yellow-green signs accompanied by downward pointing arrows. Signs scheduled to be installed under this program are shown as "existing" in Exhibit 7.

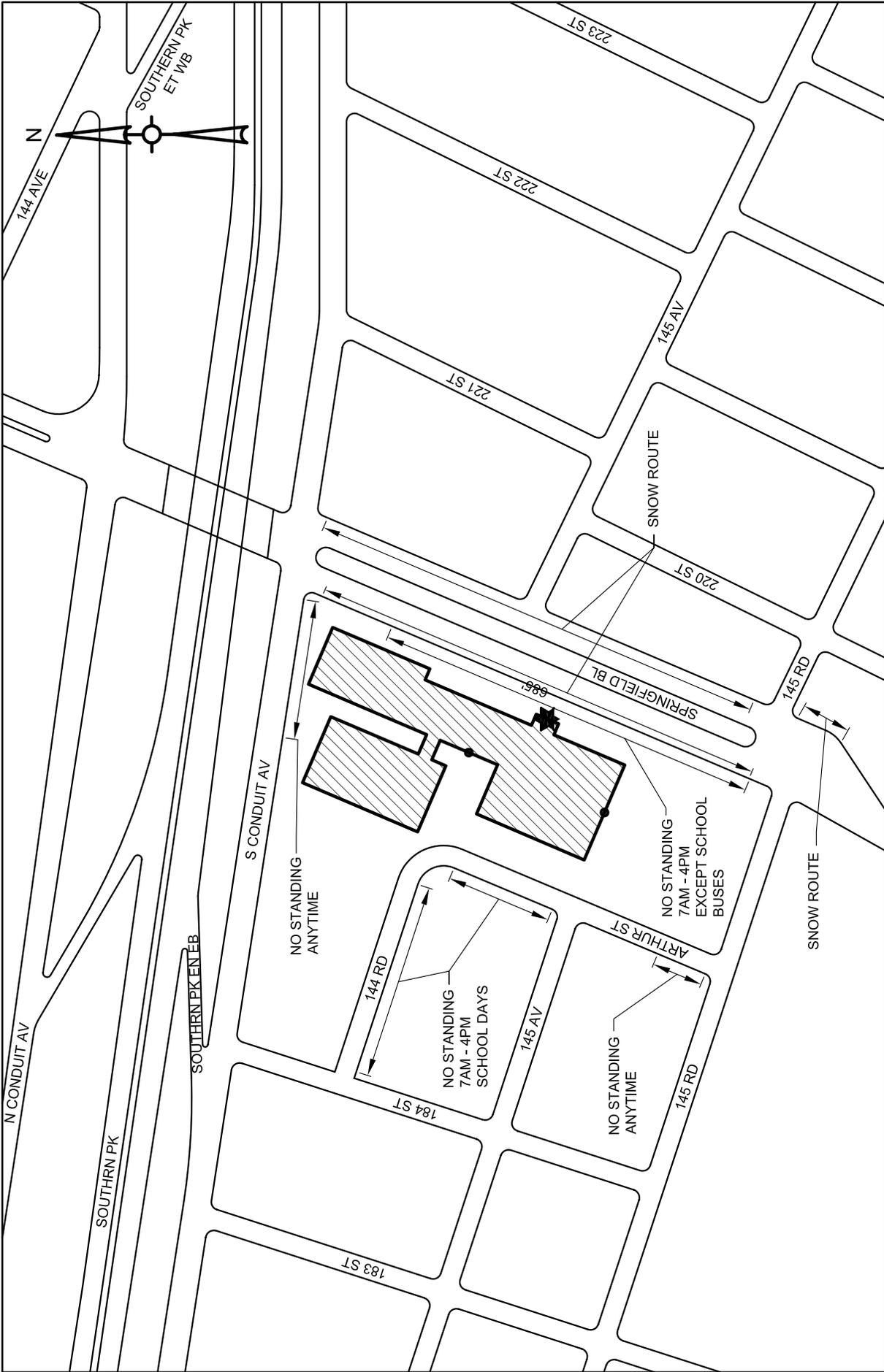
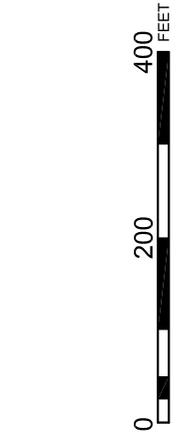


EXHIBIT 4
 J.H.S. 231 QUEENS
 TRI-COMMUNITY SCHOOL
 EXISTING PARKING REGULATIONS



- LEGEND:**
- ★ MAIN ENTRANCE
 - ENTRANCE

3.5 ACCIDENT SUMMARY

Exhibit 5 and Table 2 show a summary of accidents as obtained from the New York State Department of Motor Vehicles (DMV) in the vicinity of J.H.S. 231 for a three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances and cause of an accident. Table 3 is a summary of more recent accident data obtained from the NYC Police Department (NYPD). Though current through 2004, the NYPD data does not provide the same level of detail as the DMV data.

This report targets intersections closest to the school where the highest concentration of student pedestrians occurs. Intersections farther from the school and locations for which detailed data was not available at the time of this study will be addressed with the ongoing work of DOT's School Safety Engineering Program. DMV accident data is discussed in Section 3.6, Traffic Operations and Issues.

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Springfield Boulevard and 145 th Road	6	0	0	0
Springfield Boulevard and 145 th Avenue	6	2	0	1
Springfield Boulevard and South Conduit Avenue	88	4	0	3
Springfield Boulevard and North Conduit Avenue	118	3	0	1
TOTAL	218	9	0	4

INTERSECTION	TOTAL ACCIDENTS	PEDESTRIAN ACCIDENTS	PEDESTRIAN FATALITIES	SCHOOL-RELATED ACCIDENTS*
Springfield Boulevard and 145 th Road	10	0	0	0
Springfield Boulevard and 145 th Avenue	5	1	0	1
Springfield Boulevard and South Conduit Avenue	119	7	0	4
Springfield Boulevard and North Conduit Avenue	193	5	0	0
TOTAL	327	13	0	5

* School-related accidents are defined as accidents involving school-age pedestrians (age 4 to 14), occurring on weekdays during the school year.

3.6 TRAFFIC OPERATIONS AND ISSUES

The specific roadway-related physical conditions for each location within the school's vicinity directly affect the safety and efficiency of operations for both pedestrian and vehicular traffic. These conditions are required information when analyzing a location, and are the starting point for any revisions that may be considered to improve safety and/or efficiency.

The following sub-sections outline the physical conditions and issues concerning traffic operations and accidents at the intersections in the vicinity of J.H.S. 231.

3.6.1 Springfield Boulevard and 145th Road

This is a four-leg unsignalized intersection with no marked crosswalks. Springfield Boulevard is a two-way north-south street. North of the intersection with 145th Road, Springfield Boulevard is a divided roadway with a raised concrete median approximately 28 feet wide located in the center of the roadway separating the northbound and southbound travel lanes. Although there are no lane markings in either direction, the northbound and southbound lanes on Springfield Boulevard are wide enough to accommodate two travel lanes and on-street parking on both sides in each direction. South of the intersection with 145th Road, Springfield Boulevard tapers to an undivided two-way roadway with one travel lane in each direction. 145th Road is a two-way street with one travel lane and one on-street parking lane on each side of the roadway. The east leg of 145th Road is offset slightly to the north of the west leg at its intersection with Springfield Boulevard, and there is a small center island located on Springfield Boulevard between the east and west legs of 145th Road (see Figures 2 through 5).



Figure 2: Looking west across Springfield Boulevard at the intersection with 145th Road.



Figure 3: Looking north on Springfield Boulevard to the intersection with 145th Road.



Figure 4: Looking west on the east leg of 145th Road to the intersection with Springfield Boulevard.



Figure 5: Looking north on Springfield Boulevard to intersection with 145th Road.

There was a total of six accidents reported at this intersection between 1998 and 2000, but none of these accidents involved pedestrians.

The school's survey response indicated a speeding problem on Springfield Boulevard. Therefore, spot speed surveys were conducted on Springfield Boulevard, between South Conduit Avenue and 145th Road, for both the northbound and southbound travel lanes in order to verify the existence of a speeding problem and to determine its extent.

In the analysis of vehicle speeds, the 85th percentile speed is considered to be the representative speed for a specified street segment. By definition, this is the speed at which 85 percent of the surveyed vehicles are traveling below and 15 percent of the surveyed vehicles are traveling above. An 85th percentile speed exceeding a 30 mph threshold indicates a potential speeding problem that may require appropriate traffic calming measures.

The 85th percentile speed for northbound vehicles on Springfield Boulevard between South Conduit Avenue and 145th Road was found to be 32 mph. The 85th percentile speed for southbound vehicles on this same section of Springfield Boulevard was found to be 35 mph. These speeds exceed the 30 mph threshold, and suggest the need for speed reduction measures on this section of roadway in both directions. However, Springfield Boulevard is a local bus route (Q77 bus) and also a designated emergency snow route, both of which preclude the use of speed reducers and neckdowns in the roadway.

The detailed results of the spot speed surveys on Springfield Boulevard between South Conduit Avenue and 145th Road are shown in the Appendix at the end of this document.

3.6.2 Springfield Boulevard and 145th Avenue

This is an unsignalized “T”-intersection with a school crosswalk located across the east leg of 145th Avenue. Springfield Boulevard is a two-way north-south divided roadway with a raised concrete median approximately 28 feet wide located in the center of the roadway separating the northbound and southbound travel lanes. Although there are no lane markings in either direction, the northbound and southbound lanes on Springfield Boulevard are wide enough to accommodate two travel lanes and on-street parking on both sides in each direction. 145th Avenue is a two-way street with one travel lane and parking on each side of the roadway (see Figures 6, 7 and 8). 145th Avenue is stop-controlled at its intersection with Springfield Boulevard, and westbound turning movements from 145th Avenue are limited to right-turns due to the raised median on Springfield Boulevard. In addition, the raised median precludes southbound left-turns from Springfield Boulevard onto 145th Avenue. Therefore, only right-turns from northbound Springfield Boulevard onto 145th Avenue are allowed at this intersection.

There was a total of six accidents reported at this intersection between 1998 and 2000, including two pedestrian accidents, one of which was school-related. In the school-related accident, a 13-year old pedestrian sustained a “possible injury” at approximately 5:00 pm on Friday, January 29, 1999 while crossing the intersection. The pedestrian’s actions were reported as crossing at a location “no signal or crosswalk” which presumably means a crossing of Springfield Boulevard, because the east leg on 145th Avenue has a school crosswalk. At the time of the accident, the roadway surface was reported as dry and the weather was reported as clear. There were no fatal pedestrian accidents reported at this intersection between 1998 and 2000.

The intersection of Springfield Boulevard and 145th Avenue is adjacent to the school’s main entrance and a focal point for school-related pedestrian activity. However, there is currently no school crosswalk located across Springfield Boulevard at this intersection, and northbound and southbound vehicles movements on Springfield Boulevard are uncontrolled. To help determine the appropriate level of traffic control, vehicle turning movement counts and pedestrian crossing counts were conducted at this intersection from 7:30 to 9:00 am on Wednesday, October 12, 2005. The results of these counts during the weekday peak hour (7:30 to 8:30 am) are shown in Tables 4 and 5, and in Exhibit 6 at the end of this section.

TABLE 4: VEHICLE TURNING MOVEMENT VOLUMES (7:30 - 8:30 AM)				
INTERSECTION	Springfield Boulevard SOUTHBOUND	Springfield Boulevard NORTHBOUND		145th Avenue WESTBOUND
Springfield Boulevard and 145 th Avenue	Straight	Straight	Right	Right
	443	401	76	160
TOTAL	443	477		160

TABLE 5: PEDESTRIAN VOLUMES (7:30 - 8:30 AM)			
INTERSECTION	Crossing Springfield Boulevard NORTH -LEG	Crossing Springfield Boulevard SOUTH -LEG	Crossing 145 th Avenue EAST -LEG CROSSWALK
Springfield Boulevard and 145 th Avenue	25 (2 / 23) *	62 (13 / 49) *	71 (22 / 49) *

* Numbers in parentheses indicate (adults / students).

In addition to the pedestrian crossing volumes indicated in Table 5, pedestrians were observed crossing Springfield Boulevard at mid-block locations both north and south of the intersection with 145th Avenue, in particular between 145th Avenue and 145th Road to the south, and between 145th Avenue and South Conduit Avenue to the north. These additional pedestrian crossings included 144 adults and one student south of 145th Avenue, and 49 adults (no students) north of 145th Avenue during the 7:30 to 8:30 am peak hour bringing the total numbers of pedestrians crossing mid-block on Springfield Boulevard between 145th Road and South Conduit Avenue to 208 adults and 73 students during the 7:30 to 8:30 am peak hour. These volumes are shown in Exhibit 6.



Figure 6: Looking west on 145th Avenue to the intersection with Springfield Boulevard (J.H.S. 231 is visible on far side of Springfield Boulevard).



Figure 7: Looking north on Springfield Boulevard to the intersection with 145th Avenue.



Figure 8: Looking west across Springfield Boulevard at the intersection with 145th Avenue (the main entrance to J.H.S. 231 is visible on the far side of the intersection).

3.6.3 Springfield Boulevard and South Conduit Avenue

This is a four-leg signalized intersection with school crosswalks located across the south leg of Springfield Boulevard and the west leg of South Conduit Avenue, and a pedestrian crosswalk located across the east leg of South Conduit Avenue. West of the intersection with Springfield Boulevard, South Conduit Avenue is a one-way eastbound street with three travel lanes, and on-street parking permitted on the south side of the roadway (see Figure 9). East of the intersection, South Conduit Avenue has four travel lanes and on-street parking prohibited on either side of the roadway. South of the intersection, Springfield Boulevard is a two-way north-south divided roadway with a raised concrete median approximately 28 feet wide located in the center of the roadway separating the northbound and southbound travel lanes. Although there are no lane markings in either direction, the northbound and southbound lanes on Springfield Boulevard are wide enough to accommodate two travel lanes and on-street parking on both sides in each direction. North of the intersection, Springfield Boulevard has two travel lanes in each direction separated by a two foot wide raised concrete median. The southbound approach of Springfield Boulevard to South Conduit Avenue has one exclusive left-turn lane and one exclusive through lane (see Figure 10).

There was a total of 88 accidents reported at this intersection between 1998 and 2000, including four pedestrian accidents, three of which were school-related. There were no pedestrian fatalities reported at this intersection between 1998 and 2000.

The first school-related accident occurred at approximately 2:00 pm on Thursday, November 19, 1998, when a 12-year old pedestrian sustained a “possible injury” after being struck by a vehicle at the intersection. The pedestrian’s actions at the time of the accident were not reported. The roadway surface and weather conditions were reported as wet and clear, respectively.

The second school-related accident occurred at approximately 2:00 pm on Wednesday, January 6, 1999 when a 13-year old pedestrian sustained a “possible injury” after being struck by a vehicle while crossing with the signal at the intersection. The roadway surface and weather conditions were reported as dry and cloudy, respectively.

The third school-related accident occurred at approximately 2:00 pm on Monday, March 13, 2000 when two 12-year-old pedestrians were struck while crossing with the signal at the intersection. One of the pedestrians sustained a “possible injury” and the other pedestrian sustained an incapacitating injury. The roadway surface and weather conditions were reported as dry and clear, respectively.



Figure 9: Looking east on South Conduit Avenue to the intersection with Springfield Boulevard.



Figure 10: Looking south on Springfield Boulevard to the intersection with South Conduit Avenue.

The school's survey response indicated a speeding problem on South Conduit Avenue. Therefore, a speed survey was conducted on this roadway between 184th Street and Springfield Boulevard in order to verify the existence of a speeding problem and to determine its extent.

In the analysis of vehicle speeds, the 85th percentile speed is considered to be the representative speed for a specified street segment. By definition, this is the speed at which 85 percent of the surveyed vehicles are traveling below and 15 percent of the surveyed vehicles are traveling above. An 85th percentile speed exceeding a 30 mph threshold indicates a potential speeding problem that may require appropriate traffic calming measures.

The spot speed surveys showed 85th percentile speeds of 42 mph for eastbound vehicles on South Conduit Avenue between 184th Street and Springfield Boulevard, and 41 mph for westbound vehicles on North Conduit Avenue between 222nd Street and Springfield Boulevard. However, since both roadways have a posted speed limit of 40 mph and carry heavy truck traffic, speed reduction measures such as speed reducers (humps) would not be feasible at time.

The detailed results of the spot speed survey on South Conduit Avenue between 184th Street and Springfield Boulevard are shown in the Appendix at the end of this document.

3.6.4 Springfield Boulevard and North Conduit Avenue

This is a four-leg signalized intersection with school crosswalks located across the north leg of Springfield Boulevard and the west leg of North Conduit Avenue, and a pedestrian crosswalk located across the east leg of North Conduit Avenue. North Conduit Avenue is a one-way westbound street with four travel lanes and on-street parking prohibited on both sides of the roadway in the vicinity of the intersection. South of the intersection with North Conduit Avenue, Springfield Boulevard has two travel lanes in each direction separated by a two foot wide raised concrete median (see Figures 11 and 12). North of the intersection, Springfield Boulevard has two travel lanes in each direction separated by a raised concrete median of varying width.

There was a total of 118 accidents reported at this intersection between 1998 and 2000, including three pedestrian accidents, one of which was school-related. The school-related accident occurred at approximately 7:00 am on Monday, November 8, 1999, when a 12-year old pedestrian sustained a “possible injury” while crossing with the signal at the intersection. The roadway surface and weather conditions were reported as dry and clear, respectively, and the lighting condition was reported as “dawn.”

The school’s survey response indicated a speeding problem on North Conduit Avenue. Therefore, a spot speed survey was conducted on this roadway between 222nd Street and Springfield Boulevard in order to verify the existence of a speeding problem and to determine its extent.

In the analysis of vehicle speeds, the 85th percentile speed is considered to be the representative speed for a specified street segment. By definition, this is the speed at which 85 percent of the surveyed vehicles are traveling below and 15 percent of the surveyed vehicles are traveling above. An 85th percentile speed exceeding a 30 mph threshold indicates a potential speeding problem that may require appropriate traffic calming measures.

The spot speed surveys showed 85th percentile speeds of 42 mph for eastbound vehicles on South Conduit Avenue between 184th Street and Springfield Boulevard, and 41 mph for westbound vehicles on North Conduit Avenue between 222nd Street and Springfield Boulevard. However, since both roadways have a posted speed limit of 40 mph and carry heavy truck traffic, speed reduction measures such as speed reducers (humps) would not be feasible at time.

The detailed results of the spot speed survey on North Conduit Avenue between 222nd Street and Springfield Boulevard are shown in the Appendix at the end of this document.

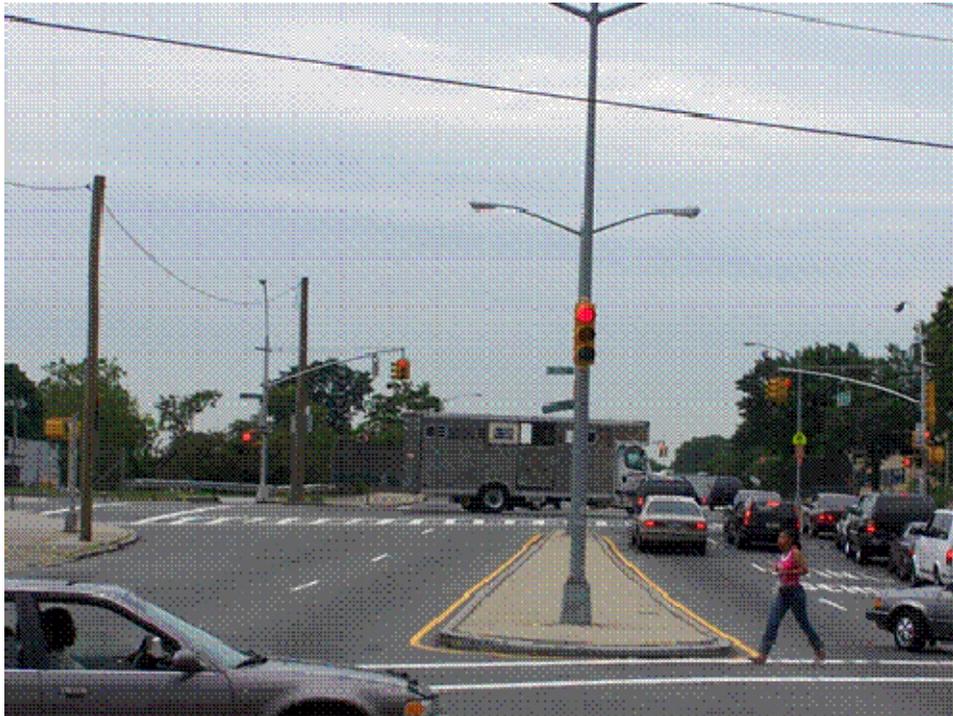


Figure 11: Looking south on Springfield Boulevard to the intersection of North Conduit Avenue (from the intersection with 144th Avenue).



Figure 12: Looking west on North Conduit Avenue to the intersection with Springfield Boulevard.

3.7 SIGNAL TIMING

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of J.H.S. 231, and were found to be adequate in all directions and approaches based upon a child pedestrian walking at a rate of three feet per second. Signal timings are shown in Table 6.

TABLE 6: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS				
INTERSECTION	CROSSWALK LENGTH (FEET)	PEDESTRIAN TIME ACTUAL (SECONDS)	PEDESTRIAN TIME REQUIRED (SECONDS)	TIMING ADJUSTMENT REQUIRED?
Springfield Boulevard and North Conduit Avenue				
crossing Springfield Boulevard	98	73	36	NO
crossing North Conduit Avenue	52	28	21	NO
Springfield Boulevard and South Conduit Avenue				
crossing Springfield Boulevard	126	73	45	NO
crossing South Conduit Avenue	55	28	22	NO

Note: A child pedestrian walking rate of 3 feet/second, plus 3 seconds reaction time, was utilized to calculate the required pedestrian crossing time.

3.8 PHYSICAL CONDITIONS

3.8.1 Roadways and Sidewalks

The roadways in the vicinity of J.H.S. 231 were observed to be in fair condition. On the school block faces, sidewalks are between 10 and 15 feet wide, and are in fair condition.

The sidewalks along North Conduit Avenue and South Conduit Avenue are not continuous and there are some obstructions that cause student pedestrians to enter onto these roadways which have 40 mph speed limits and accommodate truck traffic (see Figures 13 through 16). There is also no sidewalk provided along Springfield Boulevard, between 147th Avenue and 145th Road, connecting the school and neighborhoods to the south (see Figure 17).

3.8.2 Pedestrian Ramps

Pedestrian ramps in the vicinity of the school were observed to be standard.



Figure 13: Looking east along the sidewalk on the south side of South Conduit Avenue, from the intersection with 184th Street.



Figure 14: Looking east on the south side of South Conduit Avenue, between 184th Street and Springfield Boulevard (note unimproved pedestrian path).



Figure 15: Looking west on the north side of North Conduit Avenue to the intersection with Springfield Boulevard (note lack of sidewalk east of Springfield Boulevard).

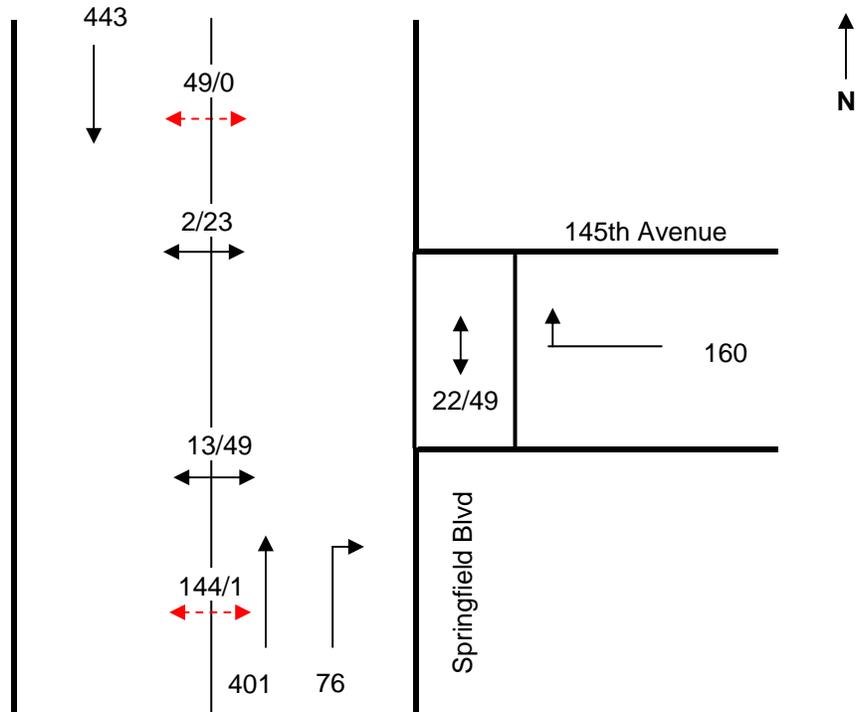


Figure 16: Looking west along the north side of North Conduit Avenue to the intersection with Springfield Boulevard (note lack of improved sidewalk).



Figure 17: Looking south on Springfield Boulevard, south of 145th Road (note lack of sidewalk on either side of the roadway).

One Hour Traffic Volumes
Wednesday October 12, 2005 7:30am - 8:30am



Intersection of 145th Avenue and Springfield Boulevard

Table of Content:

XX / XX	Adult / Child
	Pedestrian Counts
	Pedestrian Counts for midblock crossing
	Vehicle Movement

EXHIBIT 6
J.H.S 231 TRI-COMMUNITY SCHOOL QUEENS
TRAFFIC AND PEDESTRIAN COUNTS

4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around J.H.S. 231. The proposed recommendations are divided into short-term and long-term measures. Short-term measures are those that potentially can be performed in-house. Long-term measures involve capital improvements. Each of the short- and long-term measures recommended for J.H.S. 231 is discussed as follows, and is shown in more detail in Exhibit 7.

4.1 SHORT-TERM MEASURES

➤ *Install “NO STANDING 7AM - 4PM SCHOOL DAYS” signs*

There are existing “NO STANDING 7AM – 4PM EXCEPT SCHOOL BUSES” signs located along the west side of Springfield Boulevard in front of J.H.S. 231. This parking regulation extends virtually the entire block between South Conduit Avenue and 145th Road. However, signs reading: “NO STANDING 7AM – 4PM SCHOOL DAYS” should be installed for 30 feet in front of the main entrance to the school. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.). The existing parking regulation signs should be retained on the remainder of this block face.

➤ *Place stop bars ten feet in advance of school crosswalks*

The MUTCD and New York City DOT standard for placement of a stop bar is four feet in advance of a marked crosswalk. At signalized (or stop controlled) crosswalks, the vehicle stop line can be placed farther back from the crosswalk in order to maximize visibility of pedestrians and to minimize the potential for pedestrian/vehicle conflicts. Therefore, it is recommended that stop bars be placed ten feet in advance of all school crosswalks.

➤ *Designate school crosswalks*

Although the intersection of Springfield Boulevard and 145th Road is adjacent to the school block, there are no existing crosswalks across any legs of the intersection to accommodate crossings by student pedestrians. In addition, there are no designated crosswalks across Springfield Boulevard at the intersection with 145th Avenue, which is opposite the main entrance to the school. As indicated in Section 3.6.2, there are a significant number of students and other pedestrians currently crossing Springfield Boulevard at 145th Avenue and various mid-block locations between South Conduit Avenue and 145th Road. Therefore, the following actions are recommended:

- School crosswalks should be designated across the north and east legs of the Springfield Boulevard and 145th Road intersection to provide an identified crossing location for pedestrians and motorists, and reduce the

propensity for mid-block pedestrian crossings. All appropriate advance warning signs should be installed.

- A school crosswalk should be provided across the south leg of the Springfield Boulevard and 145th Avenue intersection to provide an identified crossing location for pedestrians and motorists, and reduce the propensity for mid-block pedestrian crossings. All appropriate advance warning signs should be installed.

➤ Request that NYPD assign a crossing guard to the intersection of Springfield Boulevard and North and South Conduit Avenue

There were a total of four pedestrian accidents, including three school-related accidents, at the intersection of Springfield Boulevard and South Conduit Avenue between 1998 and 2000. Therefore, it is recommended that:

- A crossing guard be requested for the intersection of Springfield Boulevard with South Conduit Avenue and North Conduit Avenue to help facilitate safer pedestrian crossings of these intersections during the morning arrival and afternoon dismissal times.

4.2 LONG-TERM MEASURES

➤ Improve and install continuous sidewalks

The existing sidewalks along both North Conduit Avenue and South Conduit Avenue are not continuous, and there are some obstructions that cause student pedestrians to enter onto these roadways, which have 40 mph speed limits and accommodate heavy truck traffic (see Figures 13 to 16). There is also no sidewalk provided along Springfield Boulevard, between 147th Avenue and 145th Road, connecting the school and neighborhoods to the south (see Figure 17).

Therefore, the following actions are recommended:

- Complete the missing sidewalk, and remove obstructions, along the south side of South Conduit Avenue between 184th Street and the school property.
- Complete the missing sidewalk, and remove obstructions, along the north side of North Conduit Avenue between 222nd Street and Springfield Boulevard.
- Construct a continuous sidewalk along the east side of Springfield Boulevard between 147th Avenue and 145th Road.

It should be noted that DOT has inspected these locations and has scheduled the following:

- Complete the missing sidewalk along the south side of South Conduit Avenue between 184th Street and the school property.

- Complete the missing sidewalk along the north side of North Conduit Avenue between 222nd Street and Springfield Boulevard.

In addition, DOT will investigate if the sidewalk along the east side of Springfield Boulevard between 147th Avenue and 145th Road will indeed be reconstructed at part of NYC EDC project HWQ792B.

- Reconstruct Springfield Boulevard as proposed by NYCEDC project HWQ792B (see Appendix).

The proposed reconstruction would expand and lengthen the center median, add includes proposed curb extensions and angled parking on the south curb of Springfield Boulevard. The planned design would reduce the effective width of the roadway, and the neckdowns would help to shorten crossing distances and slow the speeds of vehicles turning at corners.

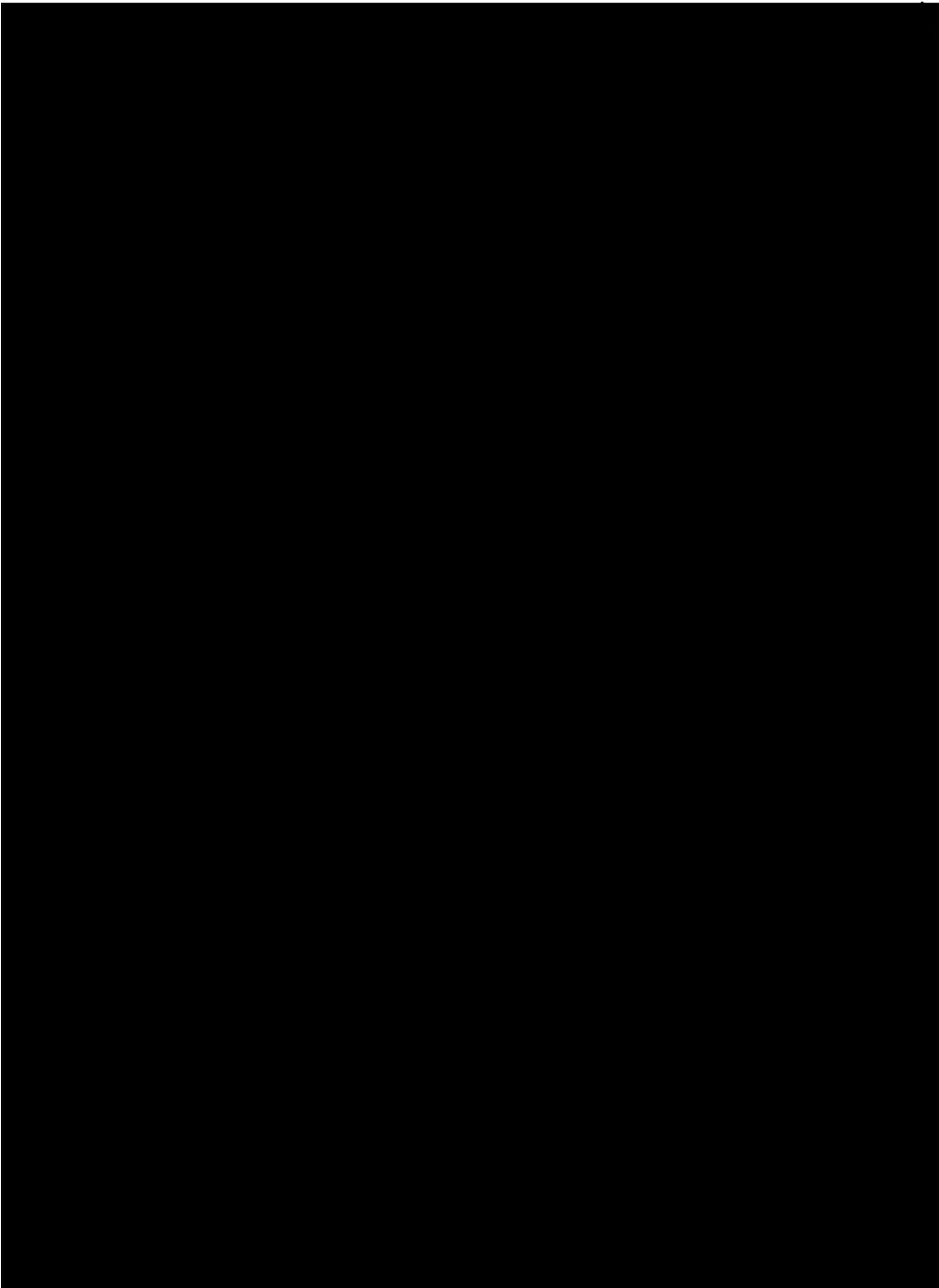
- Extend medians to provide pedestrian refuge areas as shown in Exhibit 7:

There is a raised concrete median along the center of Springfield Boulevard, separating the northbound and southbound travel lanes. In order to provide additional protection to pedestrians, it is recommended to:

- Extend the center median through the existing school crosswalk across the north leg of the Springfield Boulevard and North Conduit Avenue intersection to provide a pedestrian refuge area.
- Extend the center median through the existing school crosswalk across the south leg of the Springfield Boulevard and South Conduit Avenue intersection to provide a pedestrian refuge area.

These median extensions will provide a refuge for pedestrians who do not complete crossing during the flashing “DON’T WALK” signal indication. The proposed median should be at least five feet wide, should extend beyond the crosswalk, and should have at least a five foot at-grade cut-through section. These median extensions are not proposed where they would hinder the ability of vehicles to turn. Final details pertaining to proposed refuge islands and curb extensions will be developed during Final Design.

APPENDIX

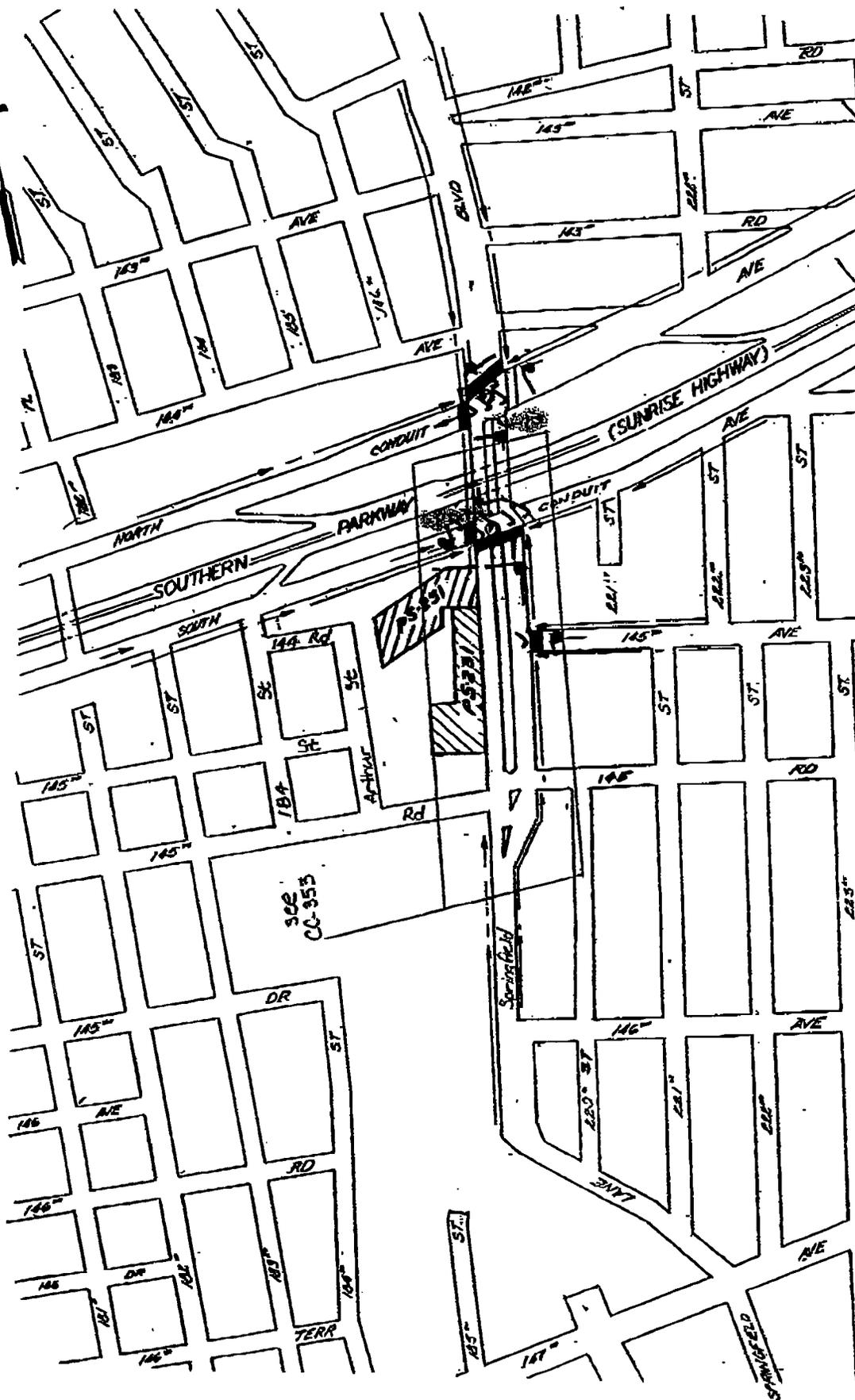


TRAFFIC SAFETY PLAN OFFICIAL ROUTES TO SCHOOL

(46)

NEW YORK CITY

DEPARTMENT OF TRAFFIC



P.S. 251 & P.S. 251 (E.C.C.)

Prepared by the NEW YORK CITY DEPARTMENT OF TRAFFIC
NEW YORK CITY COMMISSIONER, in cooperation with SCHOOL
and POLICE OFFICIALS.

DATE 3-8-77
revised 10-15-97

C81
QUEEN
105 PL

MS 5637

- SCHOOL
- CROSSWALK
- TRAFFIC SIGNAL
- SCHOOL GUARD
- POLICE OFFICER
- ROUTE TO SCHOOL
- ADVANCE WARNING SIGN

THE TRAFFIC SAFETY PLAN shown on this map was established to provide the maximum degree of safety for children going to and from school. It is required that all children follow the prescribed routes & use the designated crosswalks.

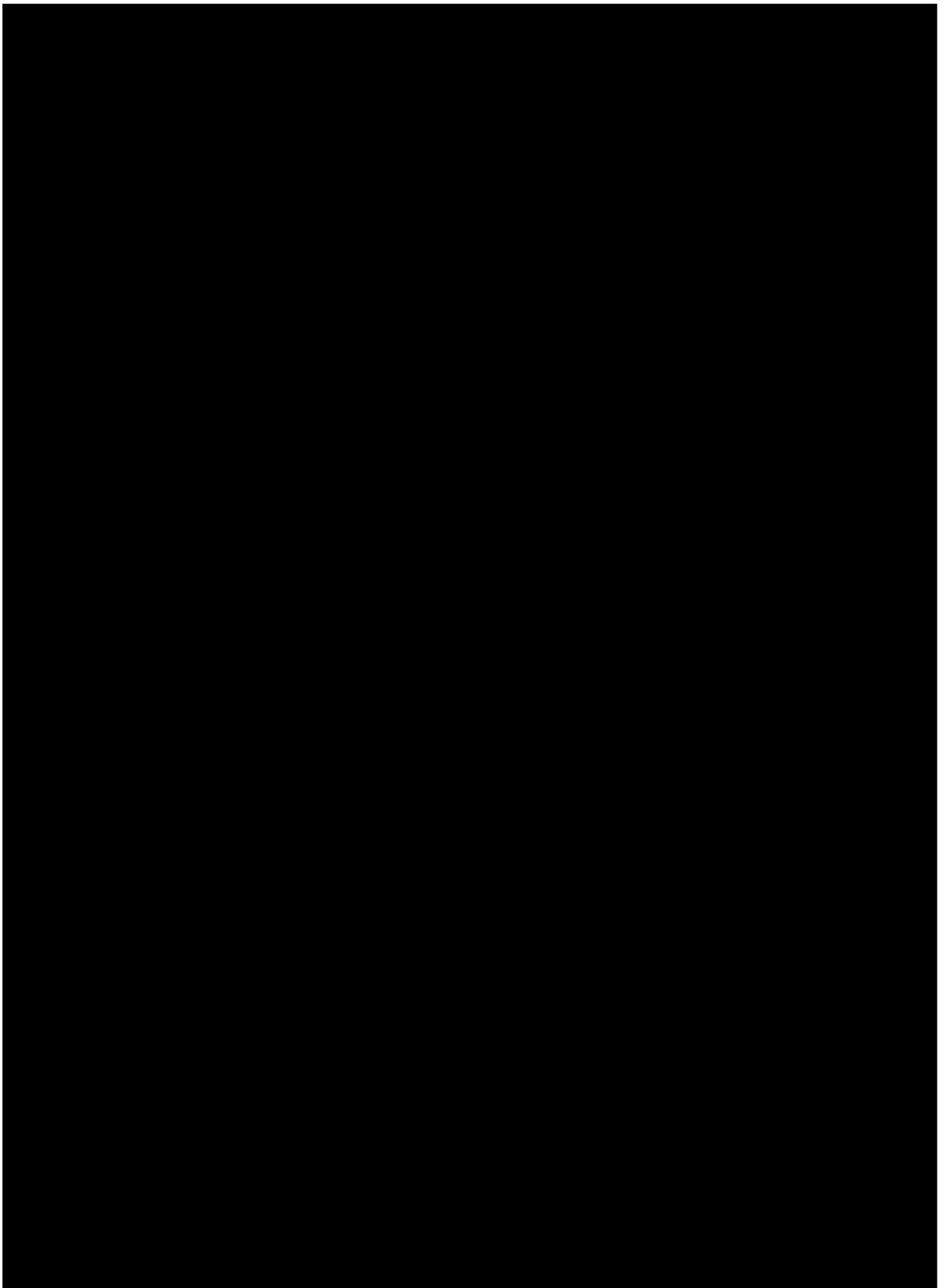
HIGH VIO. XW

CROSSWALK (KW)

STOP LINE

SCHOOL

251



SPOT SPEED STUDY

Date: **October 12, 2005** Time: **11:50 Am - 12:50 Pm**
 Location: **N. Conduit Avenue between 222 Street & Springfield Boulevard**
 Surveyor: **R. Calvache/H. Salinas**

School: **J.H.S. 231**
 Direction: **WB**
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	0	0.0%	0.0%	0	0
24	0	0.0%	0.0%	0	0
25	2	2.0%	2.0%	50	1250
26	1	1.0%	3.0%	26	676
27	0	0.0%	3.0%	0	0
28	4	4.0%	7.0%	112	3136
29	1	1.0%	8.0%	29	841
30	8	8.0%	16.0%	240	7200
31	3	3.0%	19.0%	93	2883
32	13	13.0%	32.0%	416	13312
33	6	6.0%	38.0%	198	6534
34	6	6.0%	44.0%	204	6936
35	11	11.0%	55.0%	385	13475
36	6	6.0%	61.0%	216	7776
37	7	7.0%	68.0%	259	9583
38	8	8.0%	76.0%	304	11552
39	5	5.0%	81.0%	195	7605
40	4	4.0%	85.0%	160	6400
41	0	0.0%	85.0%	0	0
42	2	2.0%	87.0%	84	3528
43	5	5.0%	92.0%	215	9245
44	4	4.0%	96.0%	176	7744
45	1	1.0%	97.0%	45	2025
46	1	1.0%	98.0%	46	2116
47	0	0.0%	98.0%	0	0
48	2	2.0%	100.0%	96	4608
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	100	100.0%		3549	128425

Mean Speed = 35.5 mph Median Speed = 35.5 mph
 Standard Deviation = 5.0 mph 15th Percentile Speed = 30.3 mph
 Margin of Error (95% Confidence) = ± 1.0 mph 85th Percentile Speed = 40.7 mph

SPOT SPEED STUDY

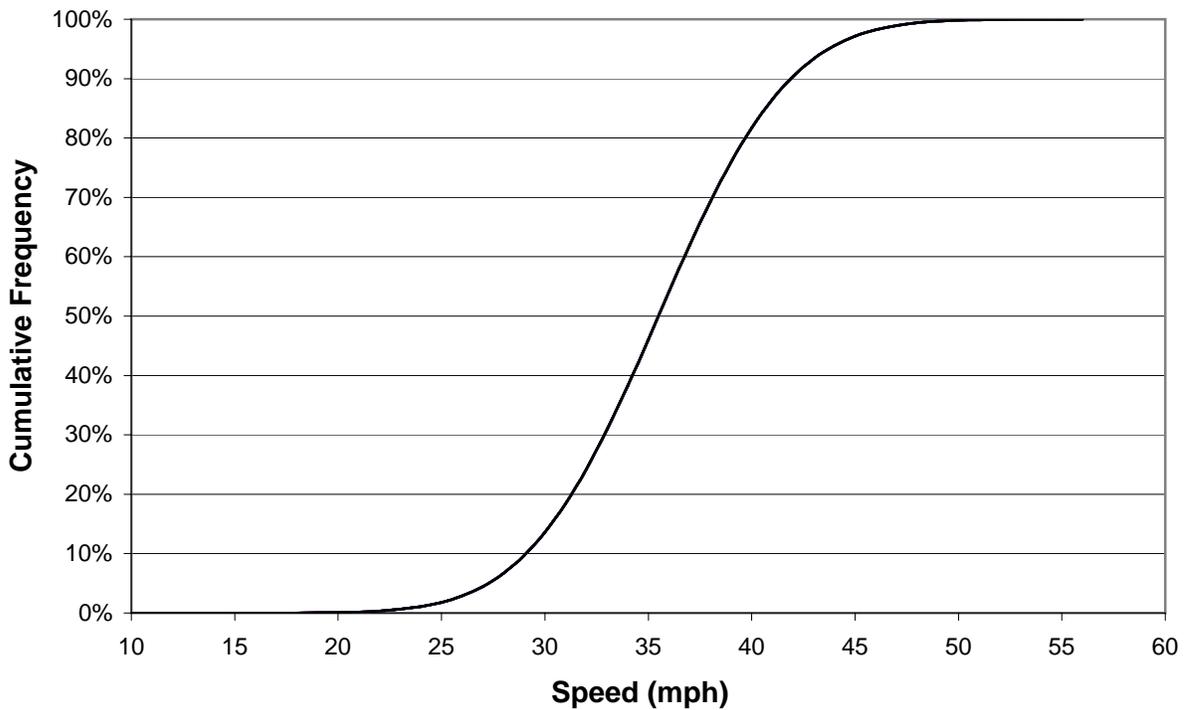
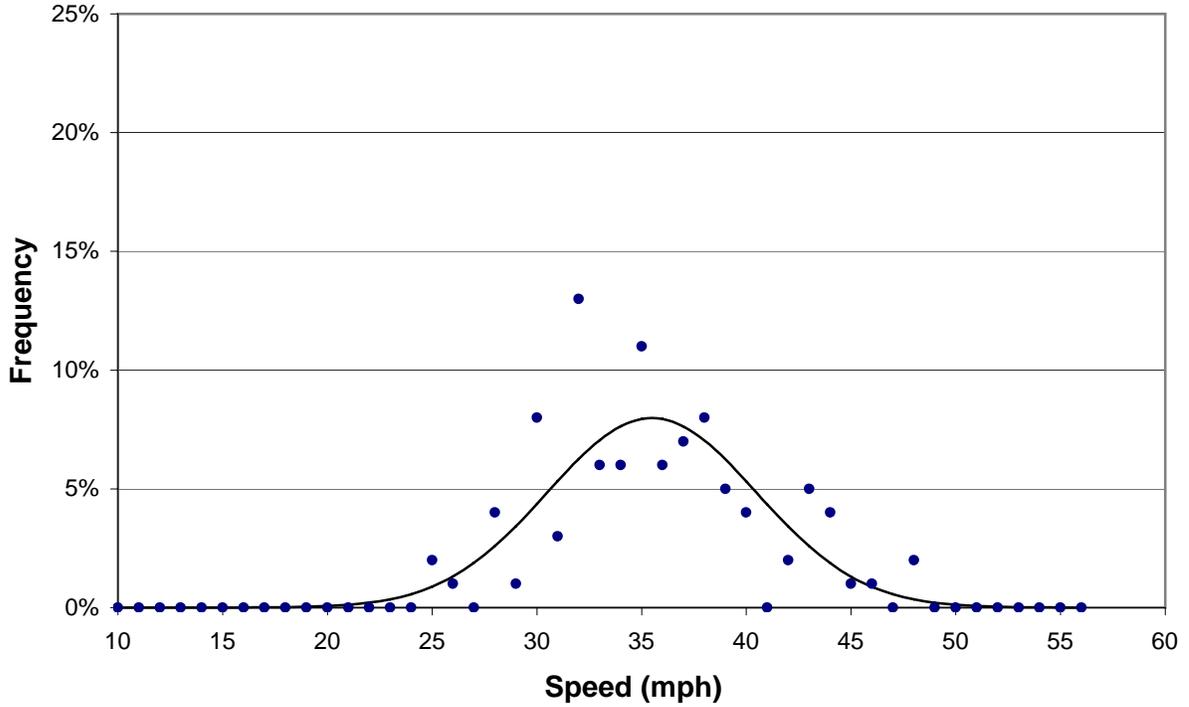
Date: **October 12, 2005**
Location: **N. Conduit Avenue between 222 Street & Springfield Boulevard**
Surveyor: **R. Calvache/H. Salinas**

Time: **11:50 Am - 12:50 Pm**

School: **J.H.S. 231**
Direction: **WB**
Comments:

Mean Speed = 35.5 mph
Standard Deviation = 5.0 mph
Margin of Error (95% Confidence) = ± 1.0 mph

Median Speed = 35.5 mph
15th Percentile Speed = 30.3 mph
85th Percentile Speed = 40.7 mph



SPOT SPEED STUDY

Date: **October 12, 2005** Time: **1 pm-2 pm**
 Location: **S. Conduit Avenue between 184 Street & Springfield Boulevard**
 Surveyor: **R. Calvache/H. Salinas**

School: **J.H.S. 231**
 Direction: **EB**
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	0	0.0%	0.0%	0	0
24	0	0.0%	0.0%	0	0
25	0	0.0%	0.0%	0	0
26	0	0.0%	0.0%	0	0
27	0	0.0%	0.0%	0	0
28	0	0.0%	0.0%	0	0
29	1	1.0%	1.0%	29	841
30	7	7.0%	8.0%	210	6300
31	0	0.0%	8.0%	0	0
32	3	3.0%	11.0%	96	3072
33	3	3.0%	14.0%	99	3267
34	4	4.0%	18.0%	136	4624
35	14	14.0%	32.0%	490	17150
36	19	19.0%	51.0%	684	24624
37	8	8.0%	59.0%	296	10952
38	12	12.0%	71.0%	456	17328
39	4	4.0%	75.0%	156	6084
40	5	5.0%	80.0%	200	8000
41	3	3.0%	83.0%	123	5043
42	2	2.0%	85.0%	84	3528
43	6	6.0%	91.0%	258	11094
44	2	2.0%	93.0%	88	3872
45	1	1.0%	94.0%	45	2025
46	1	1.0%	95.0%	46	2116
47	1	1.0%	96.0%	47	2209
48	1	1.0%	97.0%	48	2304
49	1	1.0%	98.0%	49	2401
50	1	1.0%	99.0%	50	2500
51	0	0.0%	99.0%	0	0
52	0	0.0%	99.0%	0	0
53	1	1.0%	100.0%	53	2809
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	100	100.0%		3743	142143

Mean Speed = 37.4 mph
 Standard Deviation = 4.5 mph
 Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 37.4 mph
 15th Percentile Speed = 32.7 mph
 85th Percentile Speed = 42.1 mph

SPOT SPEED STUDY

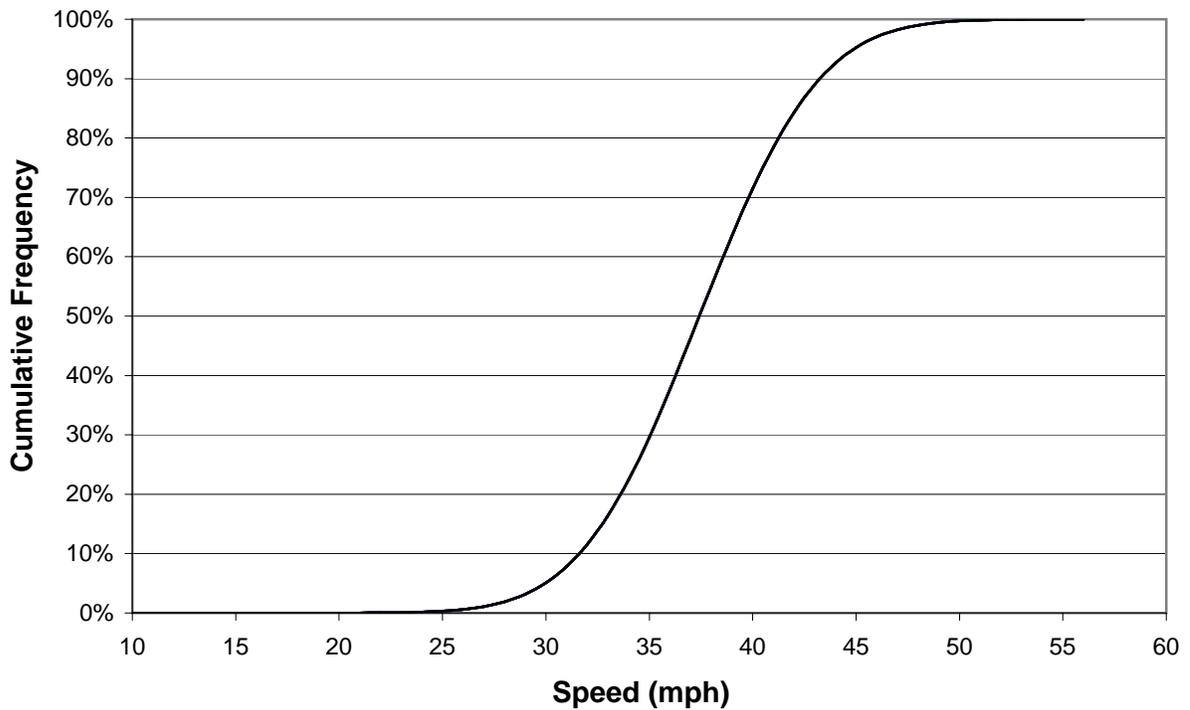
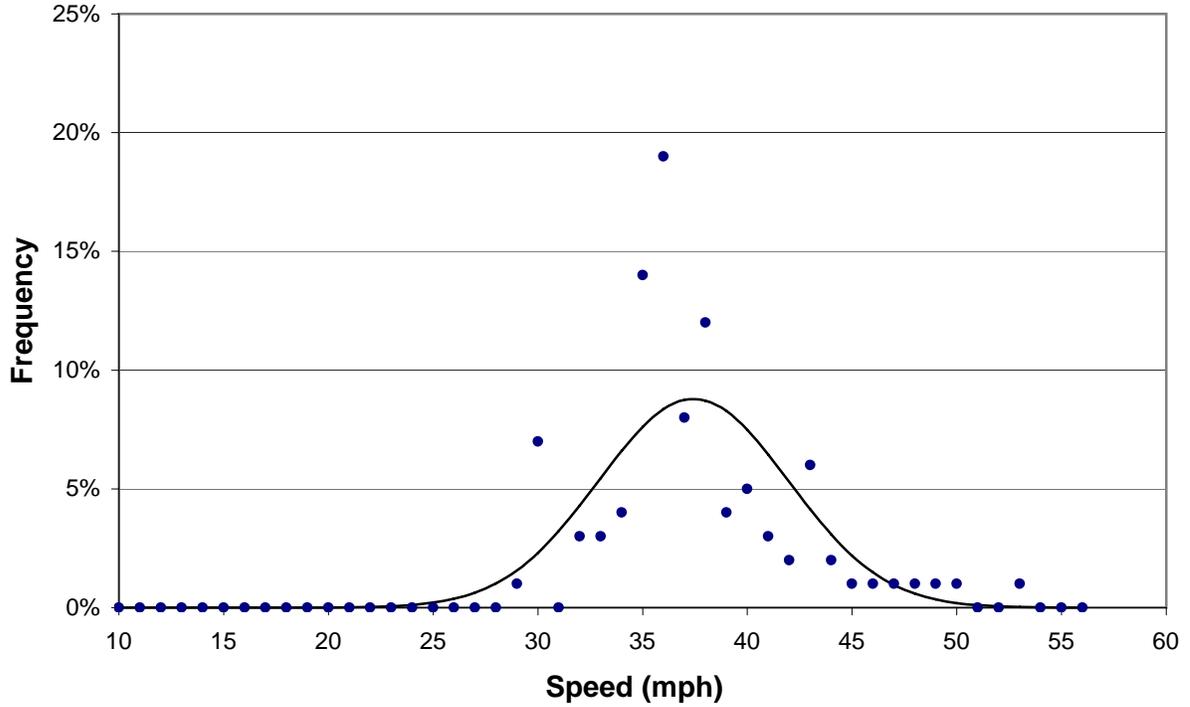
Date: **October 12, 2005**
Location: **S. Conduit Avenue between 184 Street & Springfield Boulevard**
Surveyor: **R. Calvache/H. Salinas**

Time: **1 pm-2 pm**

School: **J.H.S. 231**
Direction: **EB**
Comments:

Mean Speed = 37.4 mph
Standard Deviation = 4.5 mph
Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 37.4 mph
15th Percentile Speed = 32.7 mph
85th Percentile Speed = 42.1 mph



SPOT SPEED STUDY

Date: **October 12, 2005** Time: **9:30 am - 10:30 am**
 Location: **Springfield Boulevard between 145 Rd & S. Conduit Avenue**
 Surveyor: **R. Calvache/H. Salinas**

School: **J.H.S. 231**
 Direction: **NB**
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	2	5.6%	5.6%	46	1058
24	2	5.6%	11.1%	48	1152
25	4	11.1%	22.2%	100	2500
26	2	5.6%	27.8%	52	1352
27	2	5.6%	33.3%	54	1458
28	7	19.4%	52.8%	196	5488
29	7	19.4%	72.2%	203	5887
30	1	2.8%	75.0%	30	900
31	1	2.8%	77.8%	31	961
32	3	8.3%	86.1%	96	3072
33	1	2.8%	88.9%	33	1089
34	0	0.0%	88.9%	0	0
35	2	5.6%	94.4%	70	2450
36	2	5.6%	100.0%	72	2592
37	0	0.0%	100.0%	0	0
38	0	0.0%	100.0%	0	0
39	0	0.0%	100.0%	0	0
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	36	100.0%		1031	29959

Mean Speed = 28.6 mph
 Standard Deviation = 3.5 mph
 Margin of Error (95% Confidence) = ± 1.1 mph

Median Speed = 28.6 mph
 15th Percentile Speed = 25.0 mph
 85th Percentile Speed = 32.3 mph

SPOT SPEED STUDY

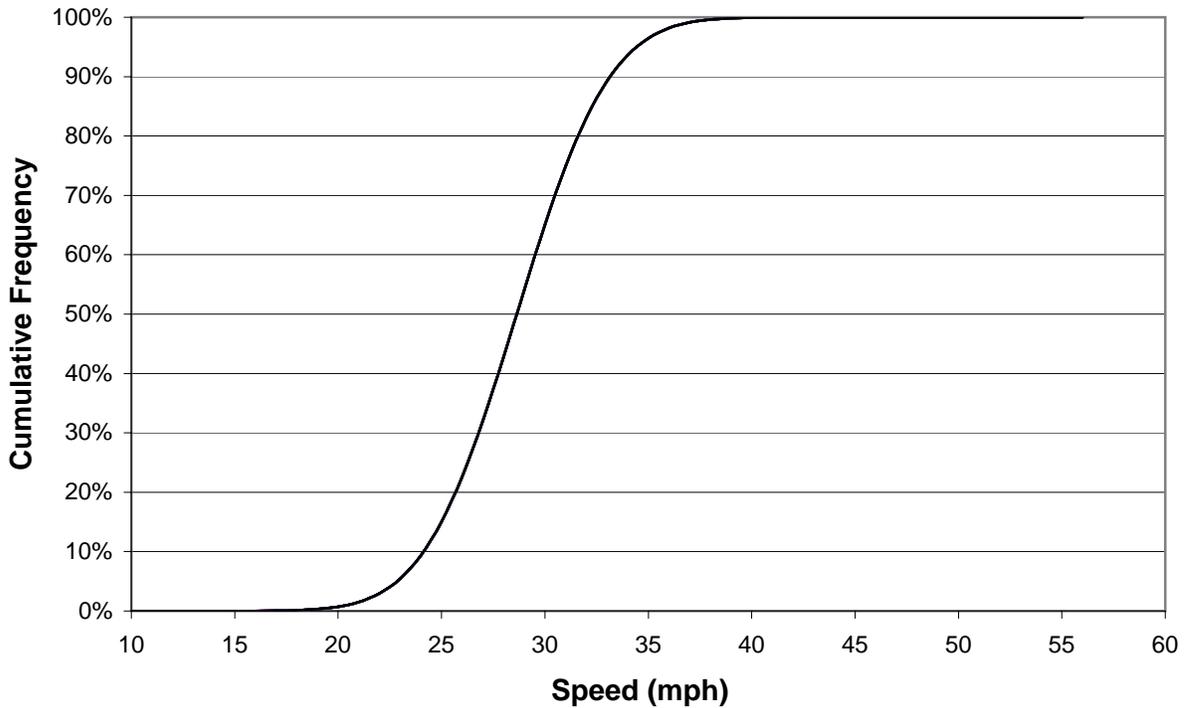
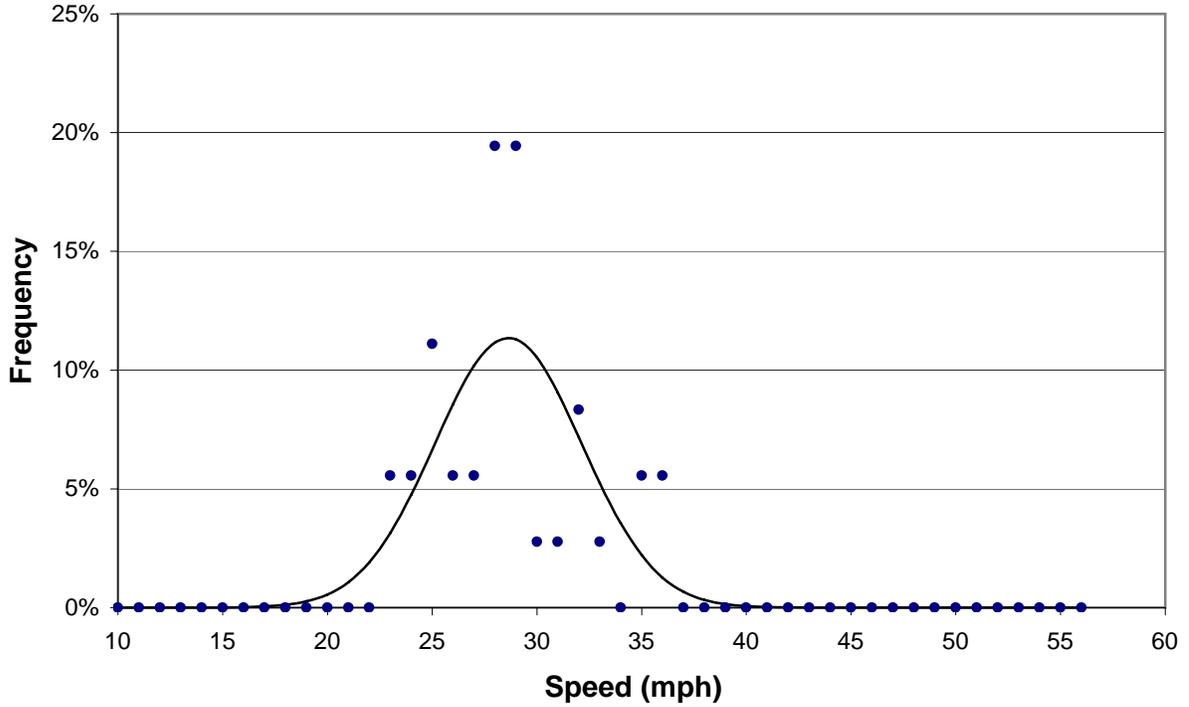
Date: **October 12, 2005**
 Location: **Springfield Boulevard between 145 Rd & S. Conduit Avenue**
 Surveyor: **R. Calvache/H. Salinas**

Time: **9:30 am - 10:30 am**

School: **J.H.S. 231**
 Direction: **NB**
 Comments:

Mean Speed = 28.6 mph
 Standard Deviation = 3.5 mph
 Margin of Error (95% Confidence) = ± 1.1 mph

Median Speed = 28.6 mph
 15th Percentile Speed = 25.0 mph
 85th Percentile Speed = 32.3 mph



SPOT SPEED STUDY

Date: **October 12, 2005** Time: **10:40 Am - 11:40 Am**
 Location: **Springfield Boulevard between 145 Rd & S. Conduit Avenue**
 Surveyor: **R. Calvache/H. Salinas**

School: **J.H.S. 231**
 Direction: **SB**
 Comments:

Speed S (mph)	No. of Vehicles in Group n	% of Vehicles in Group	% Cumulative Vehicles	nS	nS ²
8	0	0.0%	0.0%	0	0
9	0	0.0%	0.0%	0	0
10	0	0.0%	0.0%	0	0
11	0	0.0%	0.0%	0	0
12	0	0.0%	0.0%	0	0
13	0	0.0%	0.0%	0	0
14	0	0.0%	0.0%	0	0
15	0	0.0%	0.0%	0	0
16	0	0.0%	0.0%	0	0
17	0	0.0%	0.0%	0	0
18	0	0.0%	0.0%	0	0
19	0	0.0%	0.0%	0	0
20	0	0.0%	0.0%	0	0
21	0	0.0%	0.0%	0	0
22	0	0.0%	0.0%	0	0
23	1	1.8%	1.8%	23	529
24	2	3.5%	5.3%	48	1152
25	0	0.0%	5.3%	0	0
26	2	3.5%	8.8%	52	1352
27	3	5.3%	14.0%	81	2187
28	2	3.5%	17.5%	56	1568
29	3	5.3%	22.8%	87	2523
30	6	10.5%	33.3%	180	5400
31	9	15.8%	49.1%	279	8649
32	9	15.8%	64.9%	288	9216
33	6	10.5%	75.4%	198	6534
34	2	3.5%	78.9%	68	2312
35	3	5.3%	84.2%	105	3675
36	3	5.3%	89.5%	108	3888
37	5	8.8%	98.2%	185	6845
38	0	0.0%	98.2%	0	0
39	1	1.8%	100.0%	39	1521
40	0	0.0%	100.0%	0	0
41	0	0.0%	100.0%	0	0
42	0	0.0%	100.0%	0	0
43	0	0.0%	100.0%	0	0
44	0	0.0%	100.0%	0	0
45	0	0.0%	100.0%	0	0
46	0	0.0%	100.0%	0	0
47	0	0.0%	100.0%	0	0
48	0	0.0%	100.0%	0	0
49	0	0.0%	100.0%	0	0
50	0	0.0%	100.0%	0	0
51	0	0.0%	100.0%	0	0
52	0	0.0%	100.0%	0	0
53	0	0.0%	100.0%	0	0
54	0	0.0%	100.0%	0	0
55	0	0.0%	100.0%	0	0
56	0	0.0%	100.0%	0	0
	57	100.0%		1797	57351

Mean Speed = 31.5 mph Median Speed = 31.5 mph
 Standard Deviation = 3.5 mph 15th Percentile Speed = 27.9 mph
 Margin of Error (95% Confidence) = ± 0.9 mph 85th Percentile Speed = 35.2 mph

SPOT SPEED STUDY

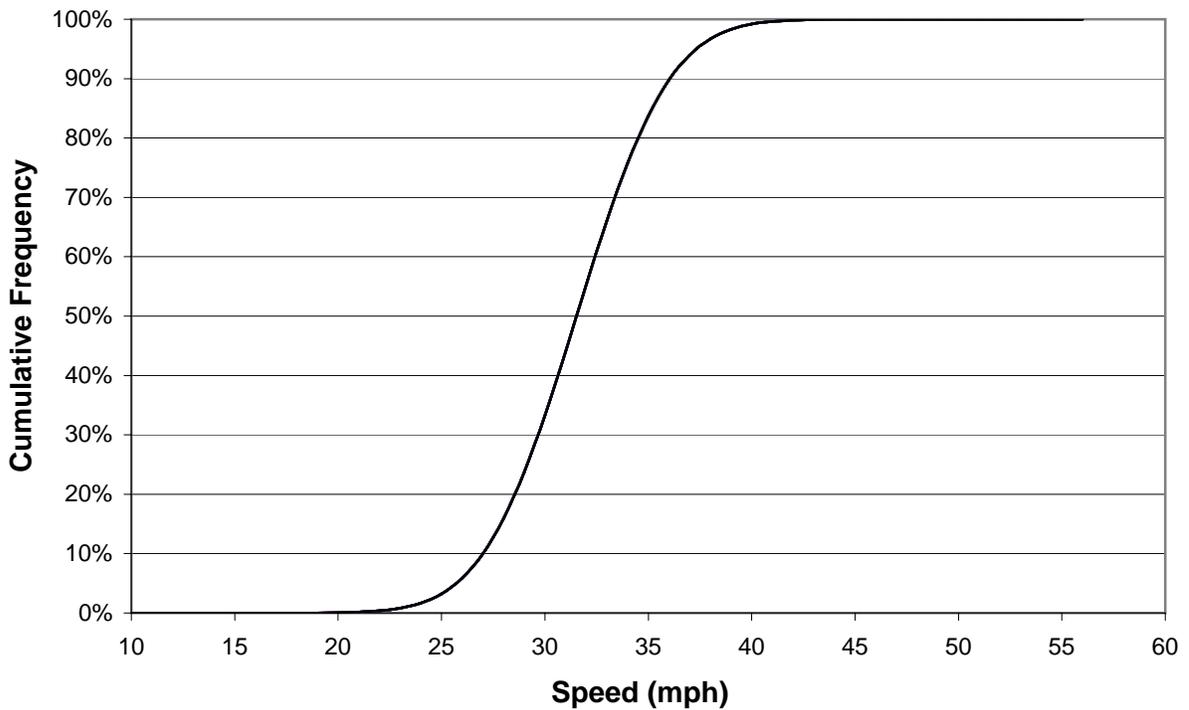
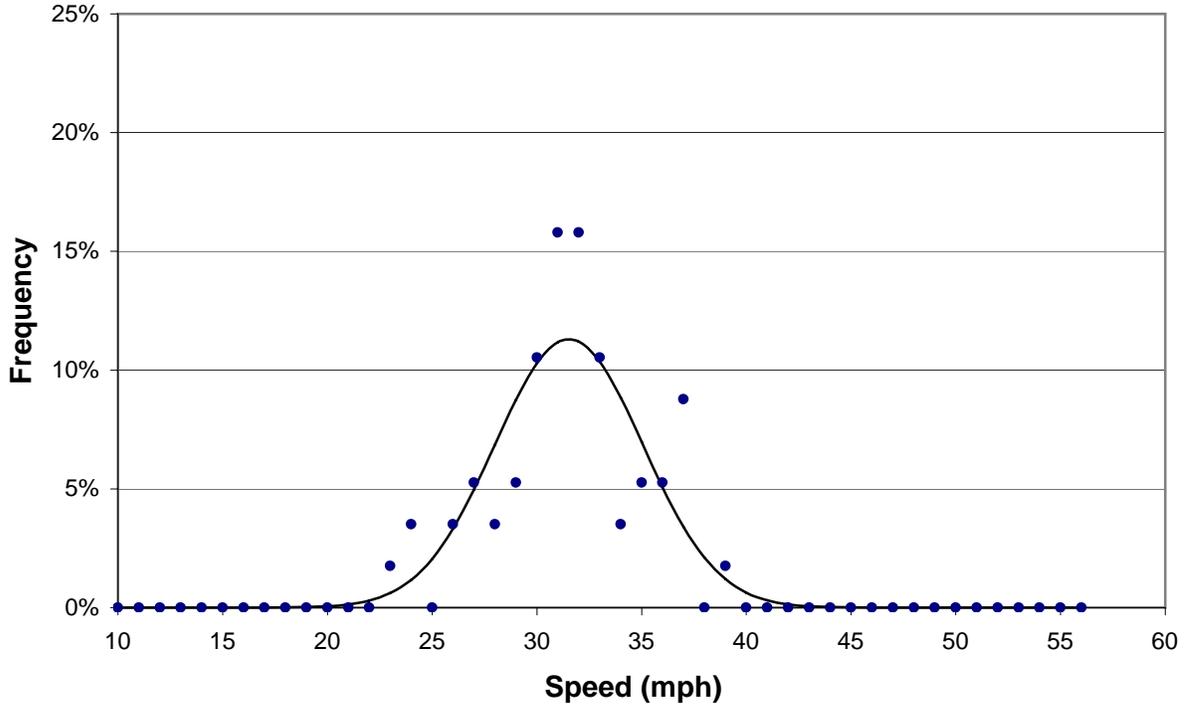
Date: **October 12, 2005**
 Location: **Springfield Boulevard between 145 Rd & S. Conduit Avenue**
 Surveyor: **R. Calvache/H. Salinas**

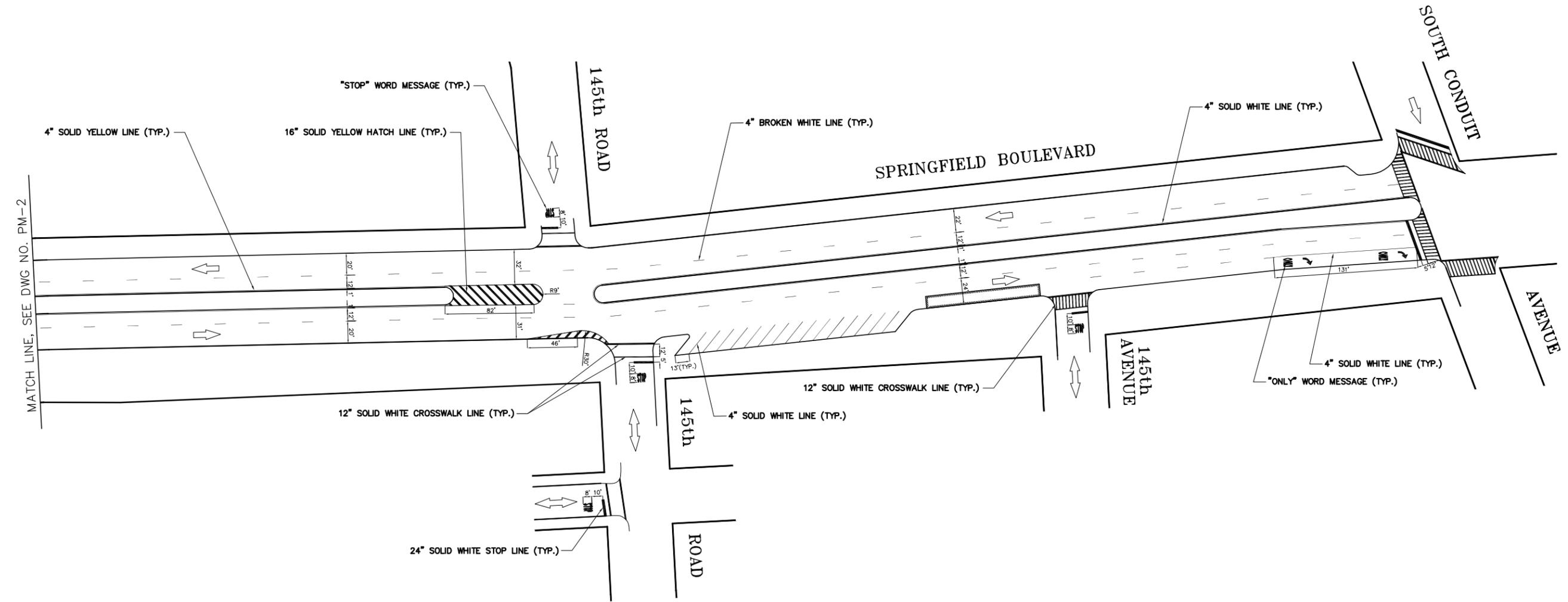
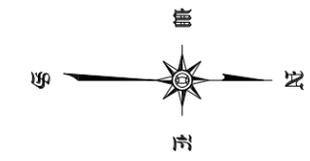
Time: **10:40 Am - 11:40 Am**

School: **J.H.S. 231**
 Direction: **SB**
 Comments:

Mean Speed = 31.5 mph
 Standard Deviation = 3.5 mph
 Margin of Error (95% Confidence) = ± 0.9 mph

Median Speed = 31.5 mph
 15th Percentile Speed = 27.9 mph
 85th Percentile Speed = 35.2 mph





REVISIONS	NO.	DESCRIPTION	DATE	BY

TOPOGRAPHIC SURVEY PREPARED BY:
CONTROL POINT ASSOCIATES, INC.
 776 MOUNTAIN BOULEVARD
 WATCHUNG, NJ 07060
 908.668.0099 - 908.668.9595 FAX

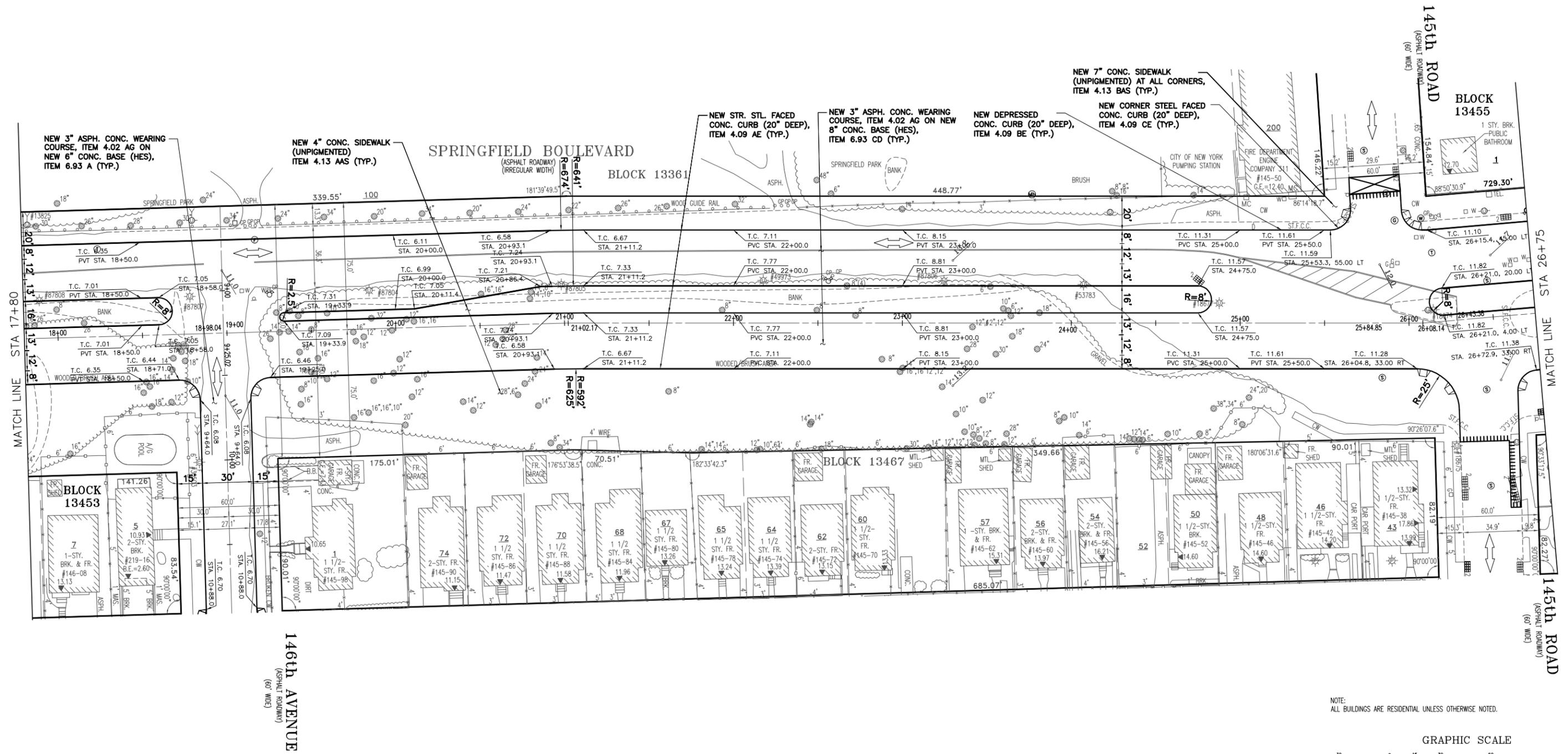
FINAL DESIGN PREPARED BY:
Dewberry
 Dewberry-Goodkind, Inc.
 15 EAST 26TH STREET
 13TH FLOOR
 NEW YORK, NY 10010
 PHONE: 212.685.0900
 FAX: 212.685.2340

New York City Economic Development Corporation

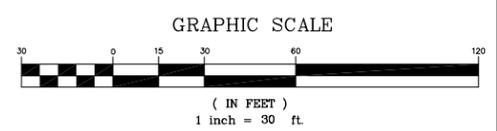
DESIGNED BY
KW
 DRAWN BY
KW
 CHECKED BY
 PROJECT ENGR
 CAD FILE
Q:\24190\CAD\PM

RECONSTRUCTION OF STREETS IN THE
 SPRINGFIELD GARDENS RESIDENTIAL AREA
 QUEENS, NEW YORK
 PAVEMENT MARKING PLAN

SCALE
1"=50'
 DATE
 DRAWING NO.
 PM-2



NOTE:
ALL BUILDINGS ARE RESIDENTIAL UNLESS OTHERWISE NOTED.



REVISIONS	NO.	DESCRIPTION	DATE	BY	TOPOGRAPHIC SURVEY PREPARED BY: CONTROL POINT ASSOCIATES, INC. <small>776 MOUNTAIN BOULEVARD WATCHUNG, NJ 07060 908.668.0099 - 908.668.9595 FAX</small>	FINAL DESIGN PREPARED BY: Dewberry <small>Dewberry-Goodkind, Inc. 15 EAST 26TH STREET 13TH FLOOR NEW YORK, NY 10010 PHONE: 212.685.0900 FAX: 212.685.2340</small>		DESIGNED BY	RECONSTRUCTION OF STREETS IN THE SPRINGFIELD GARDENS AREA - PHASE D QUEENS, NEW YORK	SCALE	REVISION
								1"=30'			
								DATE			
								DRAWING NO.			
							PROJECT ENGR	HIGHWAY CONSTRUCTION PLAN SPRINGFIELD BOULEVARD FROM STA. 17+80 TO STA. 26+75	RP-10		
							CAD FILE				
							<small>01/24/10/CAD/P/W/PP-09-10-11 SHW</small>				

