

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



**School Safety Engineering Project**

**FINAL REPORT: St. Simon Stock, Bronx**



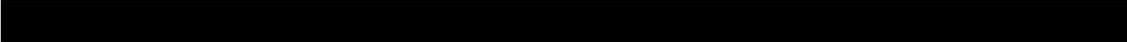
**Prepared by  
The RBA Group and URBITRAN Associates Inc.**



**August 1, 2006**

**School Safety Engineering Project  
Final Report: St. Simon Stock School, Bronx**

**TABLE OF CONTENTS**

<b>1. INTRODUCTION .....</b>	<b>3</b>
1.1 PROJECT DESCRIPTION .....	3
<b>2. BACKGROUND—EXISTING CONDITIONS AND ANALYSIS .....</b>	<b>4</b>
	
2.2 NEIGHBORHOOD DESCRIPTION .....	4
2.3 MEETING WITH SCHOOL REPRESENTATIVES .....	4
	
2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL .....	6
2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS .....	6
2.8 CROSSING GUARD LOCATION .....	7
<b>3. TRAFFIC OPERATIONS .....</b>	<b>11</b>
3.1 SCHOOL BUS OPERATIONS .....	11
3.2 PARENT DROP-OFF OPERATIONS .....	11
3.3 PARKING REGULATIONS .....	11
3.4 EXISTING SCHOOL SIGNS AND MARKINGS .....	11
3.5 ACCIDENT SUMMARY .....	13
3.6 TRAFFIC OPERATIONS AND ISSUES .....	15
3.6.1 <i>Grand Concourse and East 182<sup>nd</sup> Street</i> .....	15
3.6.2 <i>East 182<sup>nd</sup> Street and Ryer Avenue</i> .....	16
3.6.3 <i>East 182<sup>nd</sup> Street and Valentine Avenue</i> .....	17
3.6.4 <i>East 181<sup>st</sup> Street and Valentine Avenue</i> .....	19
3.6.5 <i>East 181<sup>st</sup> Street and Ryer Avenue</i> .....	20
3.6.6 <i>East 181<sup>st</sup> Street and Anthony Avenue</i> .....	20
3.6.7 <i>East 183rd Street and Valentine Avenue</i> .....	21
3.6.8 <i>East 183rd Street and Ryer Avenue</i> .....	21
3.6.9 <i>East 183rd Street and Tiebout Avenue</i> .....	22
3.7 SIGNAL TIMING .....	22

3.8 PHYSICAL CONDITIONS ..... 23

    3.8.1 Roadways and Sidewalks ..... 23

    3.8.2 Pedestrian Ramps ..... 23

**4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY. 24**

    4.1 SHORT-TERM MEASURES ..... 24

    4.2 LONG-TERM MEASURES ..... 25

    4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF SAINT SIMON STOCK SCHOOL..... 27

        4.3.1 Recommendations for P.S. 9 (Ryer Avenue Elementary School): ..... 27

**EXHIBITS**

EXHIBIT 1 - AERIAL PHOTOGRAPH ..... 8

EXHIBIT 2 - SCHOOL TRAFFIC SAFETY MAP ..... 9

EXHIBIT 3 - SCHOOL CROSSING GUARD LOCATIONS ..... 10

EXHIBIT 4 - EXISTING PARKING REGULATIONS..... 12

EXHIBIT 5 - ACCIDENT SUMMARY (1998-2000) ..... 14

EXHIBIT 6 - PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY ..... 29

**TABLES**

TABLE 1: MODES OF TRAVEL..... 6

TABLE 2: ACCIDENT SUMMARY OF NYS DMV DATA (1998-2000)..... 13

TABLE 3: ACCIDENT SUMMARY OF NYPD DATA (2001-2004)..... 13

TABLE 4: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS ..... 23

**APPENDIX**



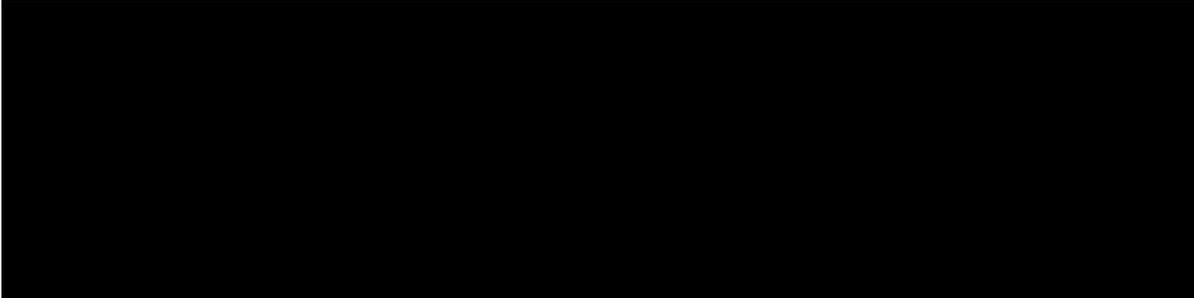
## **1. INTRODUCTION**

### **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 350 speed reducers (humps) have been installed in the immediate vicinity of schools.

Under this consultant study, the School Safety Engineering Project, crash 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). St. Simon Stock School in the Bronx 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**

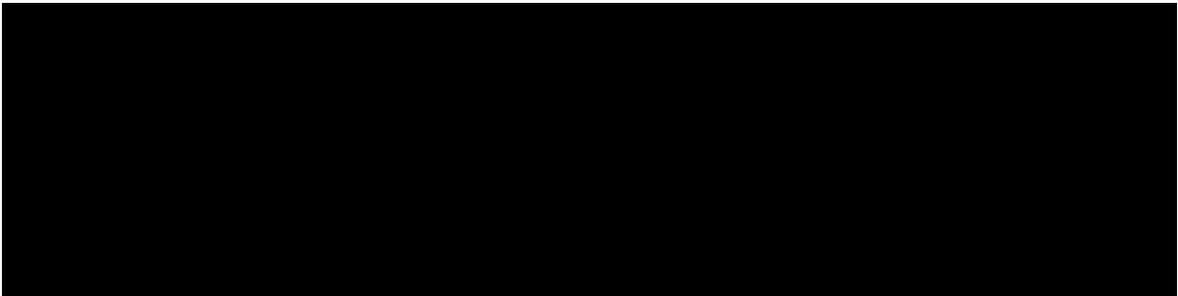


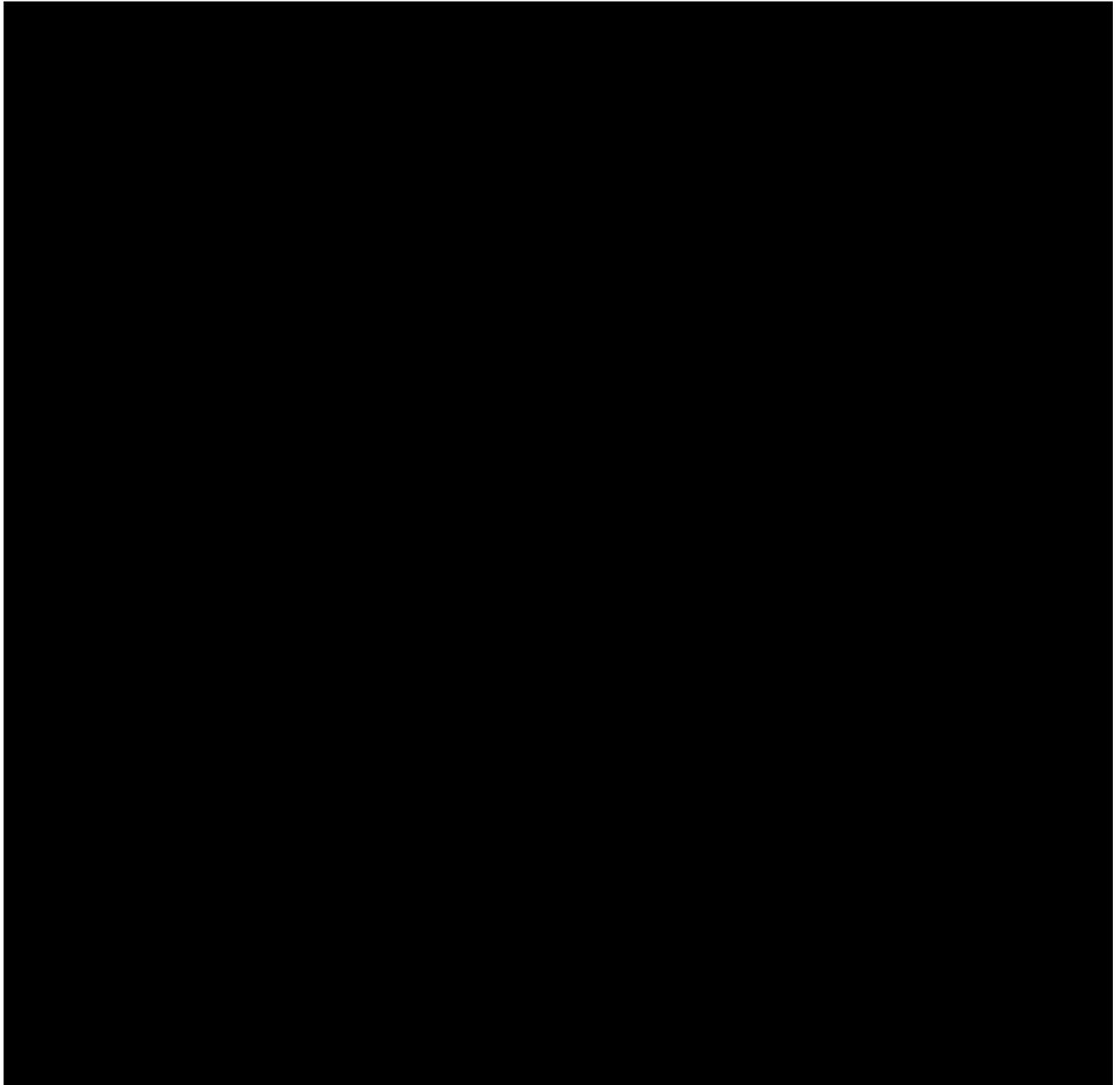
### **2.2 NEIGHBORHOOD DESCRIPTION**

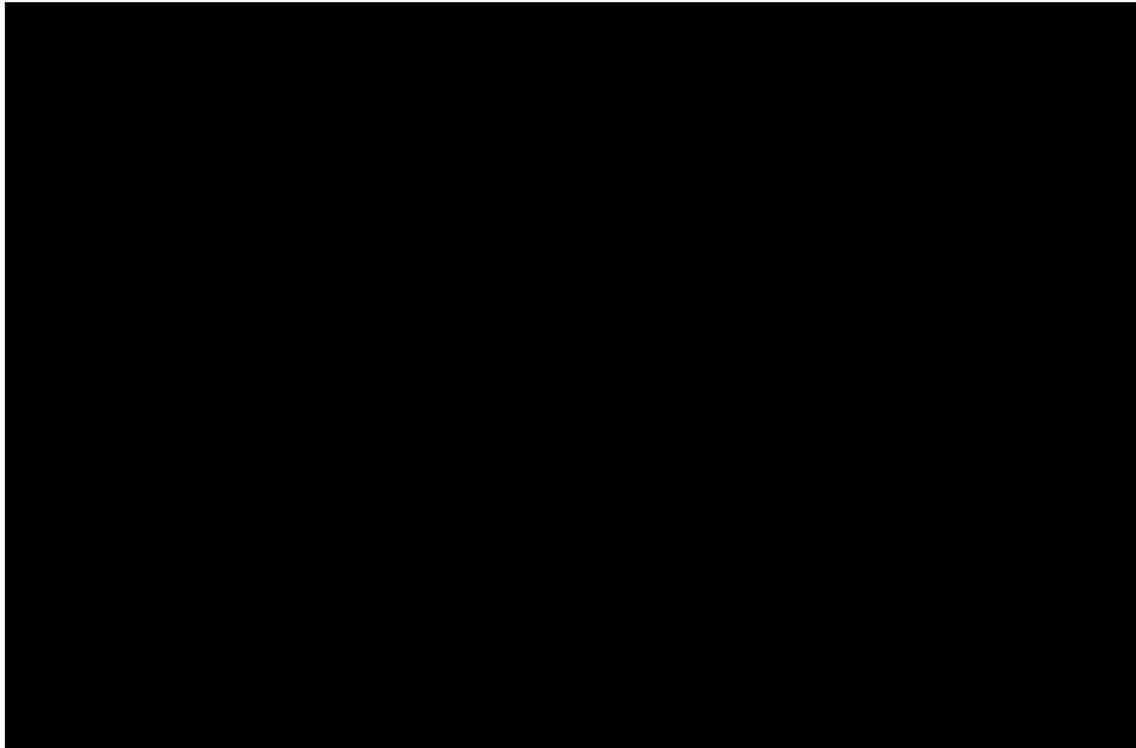
Exhibit 1 shows an aerial view of the neighborhood surrounding the school. St. Simon Stock School is bounded by East 182<sup>nd</sup> Street to the north, East 181<sup>st</sup> Street to the south, Valentine Avenue to the east, and Ryer Avenue to the west. The area surrounding the school is generally residential in character with primarily high-density, multi-story, apartment buildings. Webster Avenue, two short blocks to the east and the Grand Concourse, two short blocks to the west, are major commercial corridors with significant vehicular and pedestrian traffic.

### **2.3 MEETING WITH SCHOOL REPRESENTATIVES**

Consultant staff and the principal of St. Simon Stock met at the school on the morning of Monday, May 10, 2004. According to the school principal there are no special or unique problems faced by students and staff of St. Simon Stock School.







**2.6 PRIMARY MODES OF TRANSPORT TO AND FROM SCHOOL**

The school’s catchment area is typically defined by the Department of Education and normally shown in an Exhibit at the end of this section. Since St. Simon Stock is a private parochial school, the actual “catchment area” is dependent upon other factors, determined by the school administrators. No actual catchment area is therefore available for St. Simon Stock School.

Table 1 presents the modes of travel for St. Simon Stock School as estimated by school representatives.

<b>TABLE 1: MODES OF TRAVEL (AS ESTIMATED BY SCHOOL OFFICIALS)</b>	<b>STUDENTS (Percentage)</b>
Walk	65%
Driven By Car	10%
School Bus	5%
MTA Bus/Subway	20%
Bicycle	0%
<b>TOTAL</b>	<b>100%</b>

**2.7 ADDITIONAL STUDENT PEDESTRIAN TRAFFIC GENERATORS**

St. Simon Stock is situated two short blocks away from the Grand Concourse to the west and Webster Avenue to the east. Both of these are commercial corridors with many stores, delis, and restaurants, which are attractions for student pedestrians. There are, in addition, two delis and a pizzeria on or near the northwest, northeast, and southeast corners of Valentine Avenue and East 181<sup>st</sup> Street, one block south of the school.

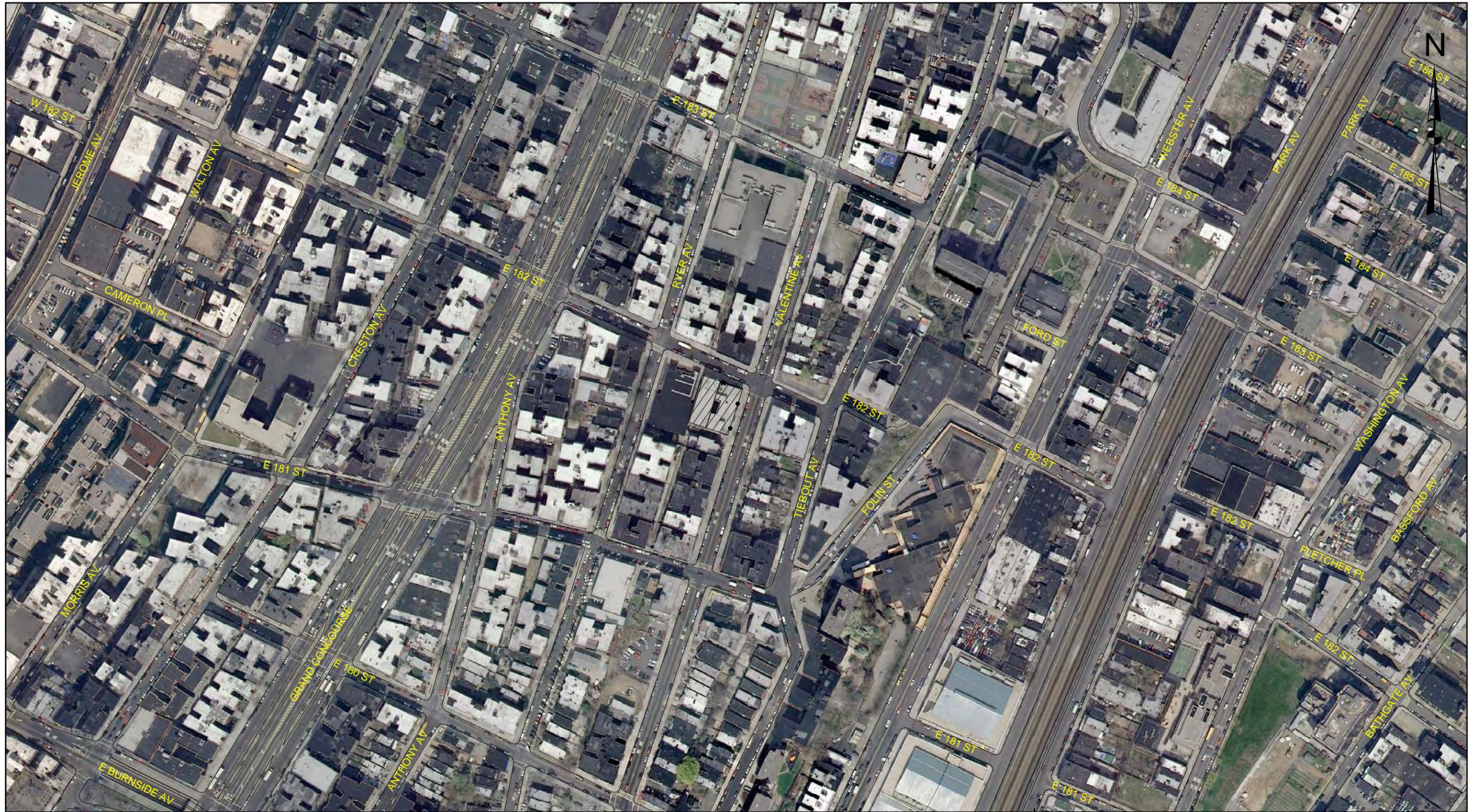
## 2.8 CROSSING GUARD LOCATION

According to the school principal, one school crossing guard is assigned to the intersection of Valentine Avenue and East 182<sup>nd</sup> Street.

The crossing guard location is shown in Exhibit 3.



*Figure 3: Crossing guard at the intersection of Valentine Avenue and East 182<sup>nd</sup> Street at arrival time*

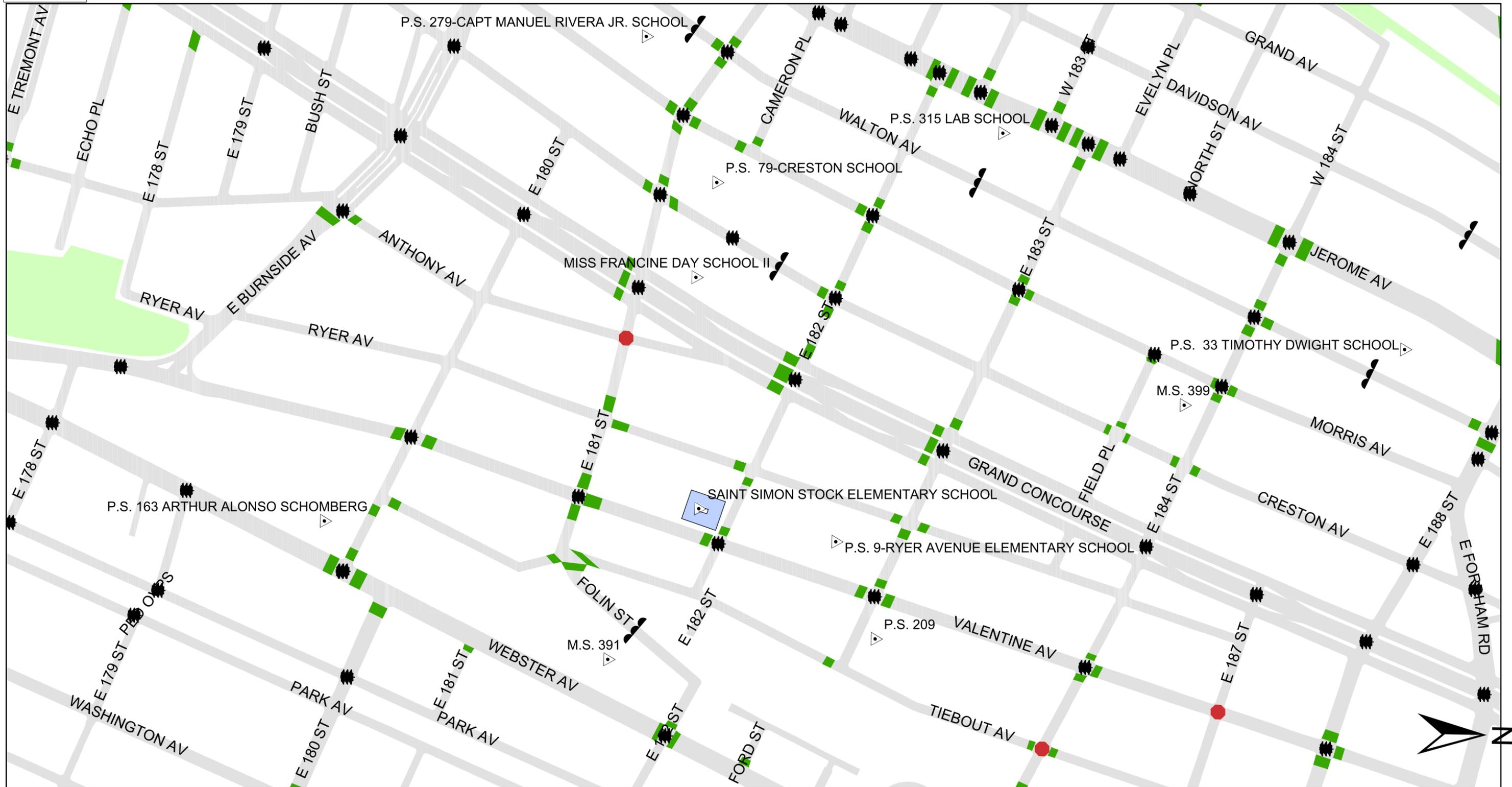


**EXHIBIT 1**  
**ST. SIMON STOCK SCHOOL BRONX**  
**AERIAL PHOTOGRAPH**





# 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		TRAFFIC SIGNAL	
SCHOOL CROSSWALK		ALL - WAY STOP	
		SPEED REDUCER	

**Bronx**  
**SAINT SIMON STOCK ELEMENTARY SCHOOL**

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

Map created on 11/16/2006

**EXHIBIT 2**

1.5.1

COMM. BOARD:	205
PRECINCT:	46

9



### 3. TRAFFIC OPERATIONS

#### 3.1 SCHOOL BUS OPERATIONS

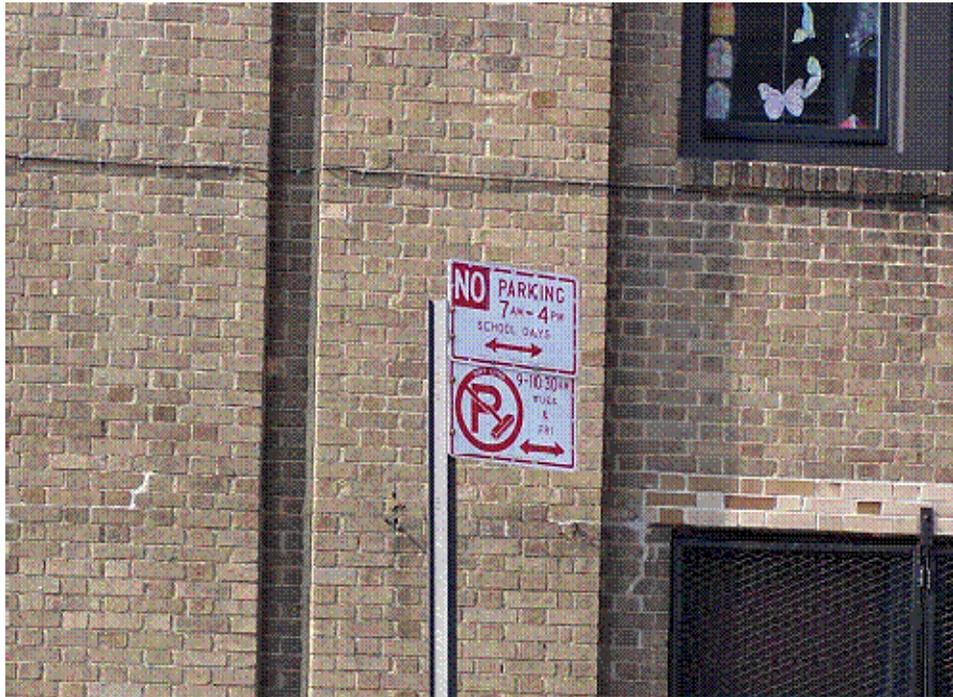
St. Simon Stock School did not provide school bus transportation as of June 3, 2004, the date the school was visited. According to the school's principal, approximately 20% of the students take public transportation (city bus and the subway) to and from the school.

#### 3.2 PARENT DROP-OFF OPERATIONS

According to school's principal, approximately ten percent of the students are being dropped off in the morning. Many parents drop the students off at either end of the closed section of East 182<sup>nd</sup> Street, at the Valentine Avenue and Ryer Avenue intersections.

#### 3.3 PARKING REGULATIONS

Parking regulations around the school block-faces are shown in Exhibit 4.



*Figure 4: Typical parking regulations adjacent to the school*

#### 3.4 EXISTING SCHOOL SIGNS AND MARKINGS

Exhibit 2 shows the existing school signals and pavement markings around the St. Simon Stock School. 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 6.)



### 3.5 ACCIDENT SUMMARY

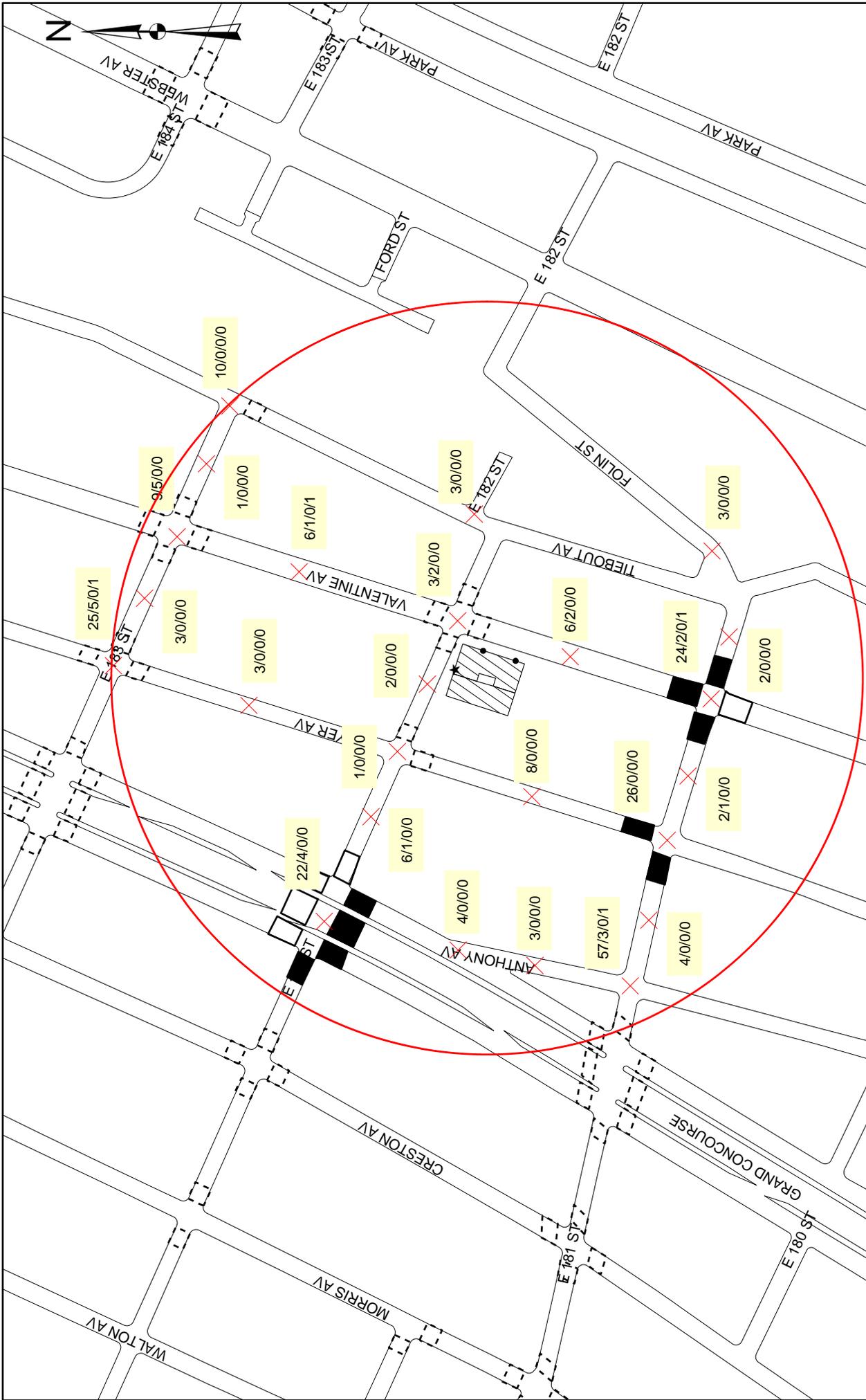
Exhibit 5 and Table 2 show a summary of accidents, as obtained from the New York State Department of Motor Vehicles (DMV), in the vicinity of St. Simon Stock School for a three-year period from January 1, 1998 through December 31, 2000. The DMV data provides some detail relating to the circumstances 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.

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
Grand Concourse and E. 182 <sup>nd</sup> St.	22	4	0	0
East 183 <sup>rd</sup> St. and Ryer Ave.	25	5	0	1
East 183 <sup>rd</sup> St. and Valentine Ave.	9	5	0	0
East 183 <sup>rd</sup> St. and Tiebout Ave.	10	0	0	0
East 182 <sup>nd</sup> St. and Ryer Ave.	1	0	0	0
East 182 <sup>nd</sup> St. and Valentine Ave.	3	2	0	0
East 181 <sup>st</sup> St. and Anthony Ave.	57	3	0	1
East 181 <sup>st</sup> St. and Ryer Ave.	26	0	0	0
East 181 <sup>st</sup> St. and Valentine Ave.	24	2	0	1
<b>TOTAL</b>	<b>177</b>	<b>21</b>	<b>0</b>	<b>3</b>

<b>INTERSECTION</b>	<b>TOTAL ACCIDENTS</b>	<b>PEDESTRIAN ACCIDENTS</b>	<b>PEDESTRIAN FATALITIES</b>	<b>SCHOOL-RELATED ACCIDENTS*</b>
Grand Concourse and E. 182 <sup>nd</sup> St.	49	10	1	2
East 183 <sup>rd</sup> St. and Ryer Ave.	31	7	0	2
East 183 <sup>rd</sup> St. and Valentine Ave.	35	8	0	2
East 183 <sup>rd</sup> St. and Tiebout Ave.	14	5	0	1
East 182 <sup>nd</sup> St. and Ryer Ave.	19	3	0	1
East 182 <sup>nd</sup> St. and Valentine Ave.	16	3	0	1
East 181 <sup>st</sup> St. and Anthony Ave.	17	3	0	0
East 181 <sup>st</sup> St. and Ryer Ave.	47	5	0	0
East 181 <sup>st</sup> St. and Valentine Ave.	27	5	0	1
<b>TOTAL</b>	<b>255</b>	<b>49</b>	<b>1</b>	<b>10</b>

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



**LEGEND:**

- ACCIDENT LOCATION
- SCHOOL CROSSWALK
- SCHOOL CROSSWALK ASSIGNED TO ANOTHER SCHOOL
- BORDER OF 700 FEET
- X/0/X/0
- TOTAL ACCD / PED ACCD / PED FATAL / SCHOOL\_PED ACCD

**EXHIBIT 5**

**ST. SIMON STOCK SCHOOL BRONX**

**ACCIDENT SUMMARY (1998-2000)**

0 250 500 1,000 Feet

### **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 St. Simon Stock School.

#### ***3.6.1 Grand Concourse and East 182<sup>nd</sup> Street***

This is a non-typical four-leg signalized intersection with school crosswalks located across the south leg of Grand Concourse mainline and service roads and pedestrian crosswalks across the north leg. There is a school crosswalk across the west leg of East 182<sup>nd</sup> Street and a pedestrian crosswalk located across the east leg.

Grand Concourse is a major north-south corridor in the Bronx, extending from East 138<sup>th</sup> Street/Madison Avenue Bridge/Major Deegan Expressway at its southern terminus to Mosholu Parkway at its northern terminus. In the vicinity of St. Simon Stock, the inner (mainline) roadways of the Grand Concourse consist of two travel lanes with no parking in each direction. A painted striped median, approximately ten feet (10') wide, separates the northbound and southbound mainline roadways. The outer (service) roadways consist of two travel lanes with a parking lane along the right side of the roadway in each direction. Separating each mainline and service roadway is an eight- to eleven-foot wide raised concrete median with occasional slip ramps connecting the two roadways that permit vehicles on one roadway to transition to the other roadway. East 182<sup>nd</sup> Street is a one-way eastbound street with one travel lane and parking on both sides of the roadway. The intersection of Grand Concourse and East 182<sup>nd</sup> Street is within the "Special Grand Concourse Preservation District" designated by the Department of City Planning (DCP).

East 182<sup>nd</sup> Street does not cross the Grand Concourse roadway, as in a typical four-leg intersection. There is no gap in the raised concrete median to allow vehicles to cross the Grand Concourse mainline roadways at this intersection. East 182<sup>nd</sup> Street actually forms two T-intersections with the service roads, so all eastbound 182<sup>nd</sup> Street traffic must turn right to head southbound on the Grand Concourse, and no vehicles can turn to head eastbound on East 182<sup>nd</sup> Street from the Grand Concourse mainline roadway or the southbound service roadway.

There were 22 accidents reported at this intersection between 1998 and 2000 (Table 2); four of which were pedestrian accidents. None of the pedestrian accidents were school-related. There were no pedestrian fatalities reported at this intersection during the same three-year period.

### 3.6.2 East 182<sup>nd</sup> Street and Ryer Avenue

This is a four-leg unsignalized intersection with school crosswalks located across the south leg of Ryer Avenue and the east leg of East 182<sup>nd</sup> Street. East 182<sup>nd</sup> Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway. Ryer Avenue is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway. The southbound approach of Ryer Avenue is controlled by a stop sign.

There was one accident reported at this intersection between 1998 and 2000 (Table 2). It did not involve a pedestrian. There were no pedestrian fatalities reported at this intersection.



*Figure 5: Looking west on East 182<sup>nd</sup> Street from Ryer Avenue intersection*



*Figure 6: Looking east on East 182<sup>nd</sup> Street across Ryer Avenue intersection*

### 3.6.3 East 182<sup>nd</sup> Street and Valentine Avenue

This is a four-leg signalized intersection with school crosswalks located across the south leg of Valentine Avenue and the west leg of East 182<sup>nd</sup> Street (these school crosswalks are not assigned to St. Simon Stock School). There is a pedestrian crosswalk located across the north leg of Valentine Avenue. East 182<sup>nd</sup> Street is a one-way eastbound street with one travel lane and on-street parking permitted on both sides of the roadway. Valentine Avenue is a two-way north-south street with one travel lane and a parking lane on both sides of the roadway.

There were three accidents reported at this intersection between 1998 and 2000 (Table 2); two were pedestrian accidents. None of the pedestrian accidents were school-related. There were no pedestrian fatalities reported at this intersection.



*Figure 7: Looking south on Valentine Avenue across East 182<sup>nd</sup> Street*



*Figure 8: Looking north along Valentine Avenue across East 182<sup>nd</sup> Street*

### 3.6.4 East 181<sup>st</sup> Street and Valentine Avenue

This is a four-leg signalized intersection with school crosswalks located across the north leg of Valentine Avenue and the east and west legs of East 181<sup>st</sup> Street, and a pedestrian crosswalk located across the south leg of Valentine Avenue.

East 181<sup>st</sup> Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. Valentine Avenue is a two-way roadway with one travel lane and a parking lane on each side of the roadway. East 181<sup>st</sup> Street has angle-parking along the south side of the roadway between Valentine Avenue and Ryer Avenue.

There were 24 accidents reported at this intersection between 1998 and 2000 (Table 2). There were two pedestrian accidents reported during the same three-year period; one of the pedestrian accidents was school-related. In the school-related accident, a 12-year-old pedestrian suffered an incapacitating injury while crossing against the signal. The accident occurred on Thursday, June 11, 1998 at 2:00 pm. The road surface was dry and the weather was cloudy. There were no pedestrian fatalities reported at this intersection.



*Figure 9: Looking west on East 181<sup>st</sup> Street across Valentine Avenue*



*Figure 10: Looking east at East 181<sup>st</sup> Street across Valentine Avenue*

### 3.6.5 East 181<sup>st</sup> Street and Ryer Avenue

This is a four-leg unsignalized intersection with school crosswalks located across the north leg of Ryer Avenue and the west leg of East 181<sup>st</sup> Street.

East 181<sup>st</sup> Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. Ryer Avenue is a one-way southbound street with one travel lane and parking on both sides of the roadway. East 181<sup>st</sup> Street has angle-parking along the south side of the roadway between Valentine Avenue and Ryer Avenue, and Ryer Avenue has angle-parking along the east side of the roadway between East 181<sup>st</sup> Street and East 180<sup>th</sup> Street. The 46<sup>th</sup> Precinct is headquartered at 2120 Ryer Avenue, south of East 181<sup>st</sup> Street. The southbound approach of Ryer Avenue is controlled by a stop sign.

There were 26 accidents reported at this intersection between 1998 and 2000 (Table 2). There were no pedestrian accidents reported during the same three-year period. There were no pedestrian fatalities reported at this intersection.

### 3.6.6 East 181<sup>st</sup> Street and Anthony Avenue

This is a four-leg, all-way stop-controlled intersection with no school or pedestrian crosswalks across any legs. East 181<sup>st</sup> Street is a one-way westbound street with one travel lane and parking on both sides of the roadway. Anthony Avenue is a one-way northbound street with one travel lane and parking on both sides of the roadway. Anthony Avenue terminates one block north at the Grand Concourse.

There were 57 accidents reported at this intersection between 1998 and 2000 (Table 2). There were three pedestrian accidents reported during the same three-year period including one school-related accident. The school-related accident occurred on Tuesday,

September 15, 1998 at 6:00 pm. The accident involved a seven-year-old pedestrian who was reported playing in the street. The extent of the injury was not reported. The accident occurred on a straight and level roadway under daylight conditions. The road surface was dry and the weather was cloudy. There were no pedestrian fatalities reported at this intersection.

### 3.6.7 East 183<sup>rd</sup> Street and Valentine Avenue

This is a four-leg signalized intersection with school crosswalks located across the north and south legs of Valentine Avenue, and west leg of East 183<sup>rd</sup> Street. East 183<sup>rd</sup> Street is a two-way east-west street with one travel lane and an on-street parking lane on each side of the roadway. Valentine Avenue is a two-way north-south street with one travel lane and an on-street parking lane on each side of the roadway.

There were nine accidents reported at this intersection between 1998 and 2000 (Table 2). There were five pedestrian accidents reported during the same three-year period; none of the accidents were school-related. There were no pedestrian fatalities reported at this intersection.

There were six mid-block accidents reported on Valentine Avenue between East 182<sup>nd</sup> Street and East 183<sup>rd</sup> Street during the same three-year period. There was one pedestrian accident which was also a school-related accident. The school-related accident occurred around 4:00 pm on Wednesday, May 12, 1999. The accident involved an 11-year-old pedestrian who was reported struck by a vehicle as he/she was crossing the street at no signal or crosswalk location. The extent of injuries was reported as “non-incapacitating injury”. The accident occurred on a straight and level segment, and the roadway and weather conditions were dry and clear, respectively.

### 3.6.8 East 183<sup>rd</sup> Street and Ryer Avenue

This is a four-leg unsignalized intersection with school crosswalks located across the north and south legs of Ryer Avenue and the east leg of East 183<sup>rd</sup> Street. East 183<sup>rd</sup> Street is a two-way east-west street with one travel lane and an on-street parking lane on each side of the roadway. Ryer Avenue is a one-way, southbound, street with one travel lane and on-street parking is permitted on both sides of the roadway. The southbound approach of Ryer Avenue is controlled by a stop sign.

There were 25 accidents reported at this intersection between 1998 and 2000 (Table 2). Five accidents involved pedestrians, of which one was school-related. The school-related accident occurred at the intersection around 3:00 pm on Wednesday, March 11, 1998. The accident involved an eight-year-old pedestrian who was reported struck by a vehicle as he/she was crossing the street within a marked crosswalk at this unsignalized intersection. The crosswalk location was not reported. The extent of injuries was reported as “possible injury”. The accident occurred on a straight and level segment, and the roadway and weather conditions were reported dry and clear, respectively. There were no pedestrian fatalities reported at this intersection.

### 3.6.9 East 183<sup>rd</sup> Street and Tiebout Avenue

This is an unsignalized T-intersection with school crosswalks located across the south leg of Tiebout Avenue. East 183<sup>rd</sup> Street is a two-way east-west street with one travel lane and an on-street parking lane on each side of the roadway. Tiebout Avenue is a one-way southbound street with one travel lane and on-street parking permitted on both sides of the roadway.

There were ten accidents reported at this intersection between 1998 and 2000 (Table 2); none were pedestrian accidents. There were no pedestrian fatalities reported at this intersection.

## **3.7 SIGNAL TIMING**

Pedestrian crossing times were field-verified for crosswalks at signalized intersections in the vicinity of St. Simon Stock School and were found to be adequate based upon a child pedestrian walking at the rate of three feet per second. Signal timings are shown in Table 4.

As shown in Table 4, the pedestrian crossing times are sufficient at the intersections associated with St. Simon Stock School. However, a child pedestrian at the intersection of Grand Concourse and East 182<sup>nd</sup> Street does not have sufficient time to completely cross the Grand Concourse in one pedestrian phase during either the morning or afternoon peak periods, based on the existing crossing times shown in the Table 4. However, the existing crossing time for a child pedestrian is sufficient to cross the Grand Concourse to the far service road median in one pedestrian phase during both the morning and afternoon time periods. An additional three seconds in the morning and one second in the afternoon would be needed. It is common practice to utilize relatively wide concrete medians as a pedestrian refuge for multi-roadway crossings. The raised concrete buffers between the mainline and service roads provide refuge areas between pedestrian phases. (As discussed in Section 3.6.1, the north and south roadways of the Grand Concourse mainline are also separated by a painted striped median, approximately ten feet wide.) The existing crossing time for a child pedestrian is sufficient to cross to the Grand Concourse far service road median in one pedestrian phase during both the morning and afternoon time periods.

<b>TABLE 4: PEDESTRIAN CROSSING TIMES AT SIGNALIZED INTERSECTIONS</b>				
<b>INTERSECTION</b>	<b>CROSSWALK LENGTH (FEET)</b>	<b>PEDESTRIAN TIME ACTUAL (SECONDS)</b>	<b>PEDESTRIAN TIME REQUIRED <sup>(1)</sup> (SECONDS)</b>	<b>TIMING ADJUSTMENT REQUIRED?</b>
<b>Valentine Avenue and East 182<sup>nd</sup> Street</b>				
crossing Valentine Avenue	42	23	17	NO
crossing East 182 <sup>nd</sup> Street	30	35	13	NO
<b>Valentine Avenue and East 181<sup>st</sup> Street</b>				
crossing Valentine Avenue	42	23	17	NO
crossing East 181 <sup>st</sup> Street	34	35	15	NO
<b>Grand Concourse and East 182<sup>nd</sup> Street</b>				
crossing Grand Concourse	140	47-AM/49-PM <sup>(2)</sup>	50	NO
crossing Grand Concourse East-West, curb to Service Road median	94	47-AM/49-PM	35	NO
crossing Grand Concourse West-East, curb to Service Road median	93	47-AM/49-PM	34	NO
crossing East 182 <sup>nd</sup> Street	30	73-AM/71-PM	13	NO

1. A rate of 3 ft/sec plus 3 seconds reaction time was utilized as the child pedestrian walking rate.
2. The am timing is Monday – Friday from 6:00 am – 10:30 am  
The pm timing is Monday - Friday from 10:30 am – 3:30 pm and 7:30 pm – 6:00 am

### **3.8 PHYSICAL CONDITIONS**

#### 3.8.1 Roadways and Sidewalks

The roadways in the vicinity of St. Simon Stock School were observed to be in generally fair condition. Sidewalks are about 15- to 20-foot wide on the school block-faces. They are generally in fair condition.

#### 3.8.2 Pedestrian Ramps

Overall, the pedestrian ramps in the vicinity of St. Simon Stock School were observed to be standard with the exception of the southwest corner of Valentine Avenue and East 181<sup>st</sup> Street, where the ramp for the crosswalk located across the south leg of Valentine Avenue is missing.

## 4. PROPOSED MEASURES TO IMPROVE SCHOOL PEDESTRIAN SAFETY

This section describes the proposed measures to improve school pedestrian safety around St. Simon Stock. 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 St. Simon Stock is discussed as follows, and is shown in more detail in Exhibit 6 at the end of this section. See section 4.3 for additional recommendations for this area from the report on P.S. 9, a nearby priority school.

### 4.1 SHORT-TERM MEASURES

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

Install “NO STANDING 7AM-4PM SCHOOL DAYS” signs for thirty feet (30’) in front of the school at the main entrance of the school. (This is a typical requirement for all NYC schools in order to provide for emergency access to and from the school.)

➤ *Place advance stop bars before 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 intersections and mid-block crossings, the vehicle stop line can be moved farther back from the pedestrian crosswalk.

For school crosswalks with significant potential for vehicular/pedestrian conflicts, it is recommended that the advance stop bar be placed ten feet in advance of the crosswalk to maximize the safety benefit for school-aged pedestrians. (This would improve visibility of pedestrians to motorists, and allow pedestrians to proceed in a crosswalk before motor vehicles turn.)

Ten foot advance stop bars before school crosswalks are recommended on the following approaches of signalized intersections surrounding St. Simon Stock School:

- Northbound approach of Grand Concourse mainline and service roadways at its intersection with East 182<sup>nd</sup> Street.
- Eastbound approach of East 182<sup>nd</sup> Street intersection at its intersection with the Grand Concourse.
- Northbound and southbound approaches of Valentine Avenue and westbound approach of East 181<sup>st</sup> Street at the intersection of East 181<sup>st</sup> Street and Valentine Avenue.
- Northbound approach of Valentine Avenue and eastbound approach of East 182<sup>nd</sup> Street at the intersection of East 182<sup>nd</sup> Street and Valentine Avenue.
- Northbound approach of Anthony Avenue at its intersection with East 181<sup>st</sup> Street.
- Southbound approach of Ryer Avenue at its intersection with East 181<sup>st</sup> Street.

➤ Crosswalks at the intersection of East 181<sup>st</sup> Street and Anthony Avenue

This is a four-leg all-way stop-controlled intersection. This intersection experienced a school-related accident between 1998 and 2000. However, there are no pedestrian or school crosswalks across any legs of the intersection. Therefore, it is recommended to:

- Provide a school crosswalk across the south leg of the intersection.
- Provide a pedestrian crosswalk across the east and north legs of the intersection.

#### 4.2 LONG-TERM MEASURES

➤ Place advance stop bars before 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 intersections and mid-block crossings, the vehicle stop line can be moved farther back from the pedestrian crosswalk.

For school crosswalks with significant potential for vehicular/pedestrian conflicts, it is recommended that the advance stop bar be placed ten feet in advance of the crosswalk to maximize the safety benefit for school-aged pedestrians. (This would improve visibility of pedestrians to motorists, and allow pedestrians to proceed in a crosswalk before motor vehicles turn.)

Ten foot advance stop bars before school are recommended on the following approaches of signalized intersections surrounding P.S. 9:

- Northbound mainline and service road approaches of the Grand Concourse at intersection with East 183<sup>rd</sup> Street
- Eastbound approach of East 183<sup>rd</sup> Street at the Grand Concourse
- Eastbound approach of East 183<sup>rd</sup> Street and northbound and southbound approaches of Valentine Avenue at their intersection.
- Westbound approach of East 183<sup>rd</sup> Street and southbound approach of Ryer Avenue at their intersection.
- Eastbound approach of East 182<sup>nd</sup> Street and northbound approach of Valentine Avenue at their intersection.

➤ Consider refuge islands at the intersection of Grand Concourse and East 182<sup>nd</sup> Street

There were two school-related accidents and one pedestrian fatality reported at this intersection between January 1, 2001 and December 31, 2004. A ten-foot wide painted striped median separates the northbound and southbound mainline of the Grand Concourse. It is therefore recommended to:

- Provide a pedestrian refuge island at the north and south legs of the Grand Concourse with at least a five-foot at-grade cut through section.

The refuge islands with extended medians will provide a refuge for pedestrians who do not complete the crossing during the flashing “Don’t Walk” indication. The proposed extended median should extend beyond the crosswalk, and should have at least 5-foot at-grade cut through section. These medians are not proposed where they would hinder the ability of vehicles to turn. Final details pertaining to proposed extended medians will be developed during Final Design.

➤ Consider curb extensions at the following intersections:

- Northeast and southeast corners of the Grand Concourse northbound service road at East 182<sup>nd</sup> Street
- Northwest and southwest corners of the Grand Concourse southbound service road at East 182<sup>nd</sup> Street
- All four corners of East 181<sup>st</sup> Street and Anthony Avenue intersection
- Northeast, southeast and southwest corners of East 181<sup>st</sup> Street and Ryer Avenue intersection
- Northwest, southwest and southeast corners of East 181<sup>st</sup> Street and Valentine Avenue intersection
- Northeast and southeast corners of the East 182<sup>nd</sup> Street and Ryer Avenue intersection
- Northwest and southwest corners of the East 182<sup>nd</sup> Street and Valentine Avenue intersection

Curb extensions should be installed at the corners as shown in Exhibit 8. The purpose of a curb extension is to shorten the crossing distance for pedestrians, and to reduce the speed of vehicles approaching and turning on school crosswalks. A curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.

➤ Construct Pedestrian Ramp

The ramp for the crosswalk located across the south leg of Valentine Avenue is missing at the southwest corner of Valentine Avenue and East 181st Street.

The following is therefore recommended:

- Construct a pedestrian ramp at the southwest corner of the Valentine Avenue and East 181st Street intersection, for the crosswalk located across the south leg of Valentine Avenue.

### **4.3 ADDITIONAL RECOMMENDATIONS FROM PRIORITY SCHOOLS IN THE VICINITY OF ST. SIMON STOCK SCHOOL**

#### *4.3.1 Recommendations for P.S. 9 (Ryer Avenue Elementary School):*

The following recommendations are proposed as part of the proposed measures to improve school pedestrian safety around P.S. 9, which is also a priority school.

➤ *Traffic signal at the intersection East 183<sup>rd</sup> Street and Ryer Avenue*

The unsignalized intersection of East 183<sup>rd</sup> Street and Ryer Avenue has three school crosswalks located across the north, south and east, legs. There was one school-related accident reported at this intersection between 1998 and 2000. In addition, the principal indicated during the school visit that speeding is a problem on East 183<sup>rd</sup> Street in front of the school (refer to Section 2.3 - Meeting with School Representatives). Based on a gap study performed, a signal is not warranted at the intersection of East 183<sup>rd</sup> Street and Ryer Avenue. It is therefore recommended to:

- Monitor the intersection for future need of a signal.

➤ *Pedestrian crosswalk at the intersection of East 183<sup>rd</sup> Street and Tiebout Avenue*

This is a three-leg unsignalized intersection with a stop sign located at the eastbound approach of East 183<sup>rd</sup> Street. This intersection experienced a school-related accident between 1998 and 2000. There is a school crosswalk located across the uncontrolled south leg of Tiebout Avenue, but there is no crosswalk across the stop-controlled leg of East 183<sup>rd</sup> Street. It is therefore recommended to:

- Provide pedestrian crosswalks across the west leg of East 183<sup>rd</sup> Street at Tiebout Avenue.

➤ *Consider curb extensions at the following intersections:*

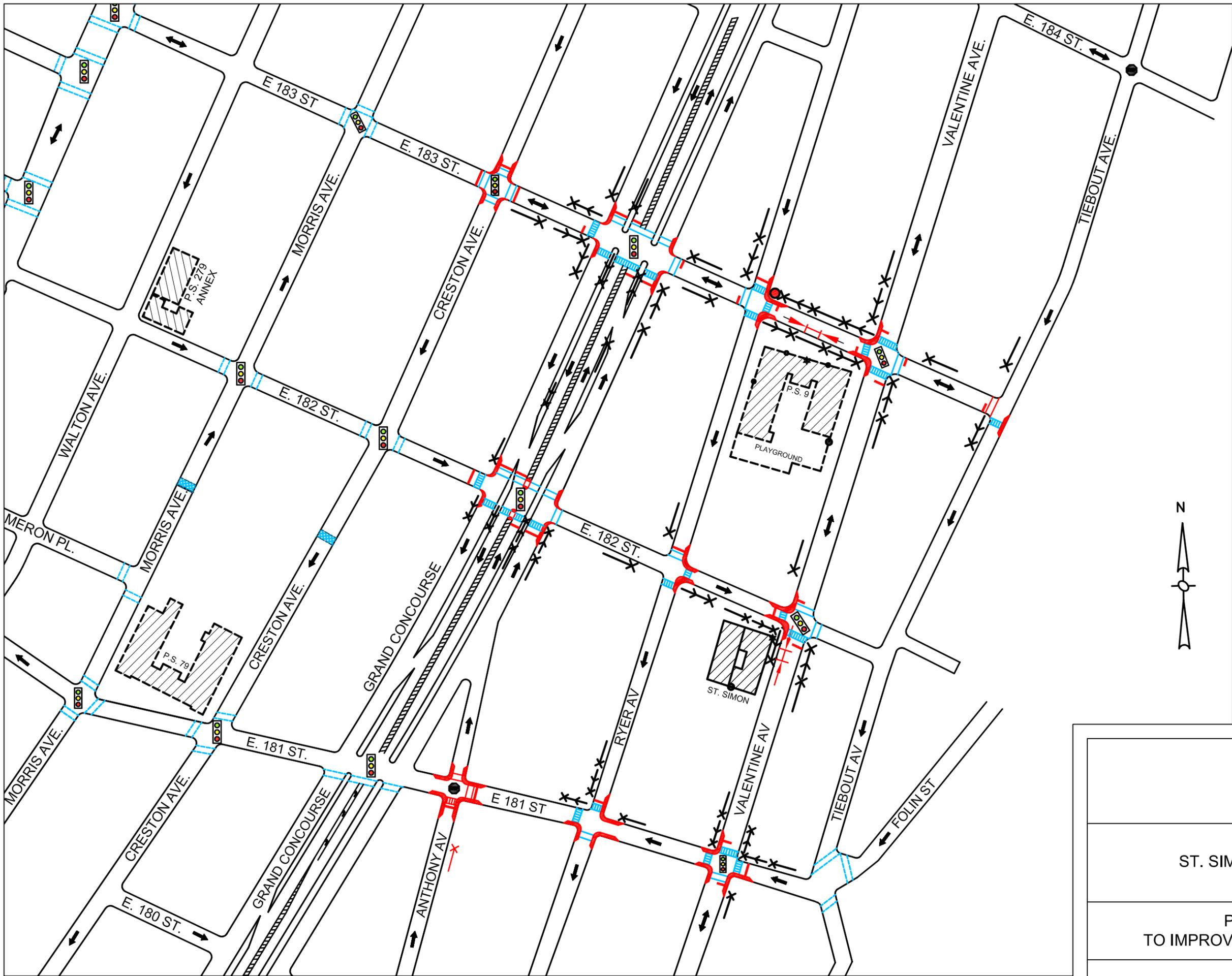
- Northeast and southeast corners of the East 182<sup>nd</sup> Street and Ryer Avenue intersection
- Northwest and southwest corners of the East 182<sup>nd</sup> Street and Valentine Avenue intersection
- All four corners of the Creston Avenue and East 183<sup>rd</sup> Street intersection
- Northeast and southeast corners of the Grand Concourse northbound service road at East 183<sup>rd</sup> Street
- Northwest and southwest corners of the Grand Concourse southbound service road at East 183<sup>rd</sup> Street
- Northeast and southeast corners of the East 183<sup>rd</sup> Street and Ryer Avenue intersection
- Northwest and southwest corners of the East 183<sup>rd</sup> Street and Valentine Avenue intersection

- Extend the east sidewalk by six feet in order to reduce the crossing distance at the school crosswalk located across the south leg of Tiebout Avenue

Curb extensions (neckdowns) should be installed at the corners as shown in Exhibit 6. The purpose of the curb extension is to provide additional refuge space for pedestrians, to shorten overall crossing distance for pedestrians, thereby enabling pedestrians to cross the entire roadway in one signal cycle, and to reduce the speed of vehicles approaching and turning on school crosswalks. The curb extension will not eliminate or reduce the width of any travel lanes. Curb extensions are not proposed where they would hinder the ability of a vehicle to turn.

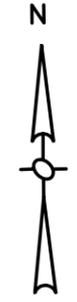
➤ *Install and/or redesign pedestrian ramps at the following locations*

- Install missing pedestrian ramps on the northeast and southeast corners of the east leg of East 183<sup>rd</sup> Street at its intersection with Grand Concourse.
- Redesign the pedestrian ramp at the northeast corner of the East 183<sup>rd</sup> Street and Ryer Avenue intersection where a utility pole is obstructing the pedestrian path.



**LEGEND**

-  MAIN ENTRANCE
-  OTHER ENTRANCES
-  EXISTING TRAVEL DIRECTION
-  EXISTING ADVANCE WARNING SIGN OR SCHEDULED TO BE INSTALLED
-  EXISTING SCHOOL CROSSWALK WARNING ASSEMBLY OR SCHEDULED TO BE INSTALLED
-  EXISTING SIGNALIZED LOCATION
-  EXISTING ALL WAY STOP LOCATION
-  EXISTING SCHOOL CROSSWALK
-  EXISTING PEDESTRIAN CROSSWALK
-  EXISTING SCHOOL CROSSWALK TO BE ASSIGNED TO ANOTHER SCHOOL
-  EXISTING SPEED REDUCER (HUMP)
-  PROPOSED ADVANCE WARNING SIGN
-  PROPOSED SCHOOL CROSSWALK WARNING ASSEMBLY
-  PROPOSED PEDESTRIAN CROSSWALK
-  PROPOSED SCHOOL CROSSWALK
-  PROPOSED STOP LINE IN ADVANCE OF SCHOOL CROSSWALK
-  PROPOSED "NO STANDING 7:00AM - 4:00PM SCHOOL DAYS"
-  POLE TO BE RELOCATED
-  PROPOSED CURB EXTENSION (NECKDOWN)
-  PROPOSED CONCRETE REFUGE ISLAND



1" = 200'

EXHIBIT 6

ST. SIMON STOCK SCHOOL BRONX

PROPOSED MEASURES  
TO IMPROVE SCHOOL PEDESTRIAN SAFETY

# APPENDIX

