B. SOILS, TOPOGRAPHY AND GEOLOGY

1. Existing Conditions

a. Topography Of Site

The subject site is currently occupied by several one-story and two-story retail buildings, one eight-story office building, and multiple asphalt-paved roadways and parking areas. The majority of the subject site is relatively flat with localized low areas (Figure IV.B-1). The existing surface grades primarily range between elevation +150 and elevation +163. The surface grades in the northeastern portion of the site increase to the east, to a maximum ground surface elevation of +195.

b. Existing Soil Types And Subsurface Conditions Based Upon Soil Survey Information And Soil Boring Logs

1) Soil Survey

a) Soil Types

Soil types on the site have been mapped per the "Soil Survey of Putnam and Westchester Counties, New York" prepared by the Soil Conservation Service/U.S. Department of Agriculture, issued September 1994.

As depicted on Figure IV.B-2, the soil present at the site is as follows:

SYM.	DESCRIPTION
Uf	Urban land

Please note that a site specific survey was conducted and is discussed later

within this section of the DEIS.

b) Soil Characteristics

The soil type noted above is described in the "Soil Survey of Putnam and Westchester Counties, New York" as follows:

Uf Urban Land

This unit consists of areas where at least 60 percent of the land surface is covered with buildings or other structures. The areas include parking lots, shopping centers, industrial parks, and industrial sites. Much of the Urban land is in the business centers of villages and cities.

2) Subsurface Conditions

To determine the subsurface soil and groundwater conditions at the site, Carlin-Simpson & Associates, the Geotechnical Engineers, advanced 28 test borings at the locations shown on the Boring Location Plan within Appendix II.C. Detailed boring logs have been prepared and are included in Appendix II.C.

a) Soil Conditions

The soil descriptions shown on the boring logs in Appendix II.C are based on the Burmister Classification System. In this system, the soil is divided into three components: Sand (S), Silt ($), and Gravel (G). The major component is indicated in all capital letters, the lesser in lower case letters. The quantity of each lesser component is indicated by the following modifiers:

The subsurface soil conditions encountered in the borings may be summarized as follows:

Table III.B-1
Typical Subsurface Soil Conditions

Stratum I Asphalt & Gravel	The surface layer in each of the borings is asphalt pavement with gravel subbase that is approximately 3 inches to 6 inches in total thickness. Immediately below the asphalt in boring B-9A is approximately 15 inches of concrete.
Stratum 2 Fill	Beneath the asphalt in each of the boring locations is existing fill that consists of loose to dense brown, gray brown, or black coarse to fine Sand, little (to and) Silt, trace (to and) coarse to fine Gravel. Varying amounts of asphalt, concrete, brick, coal, ash, cinders, glass, wood, cobbles, boulders, and rock fragments were also encountered within the fill matrix in several boring locations. The fill thickness varies from approximately 2'6" (B-101) to 37'0" (B-111C).
Stratum 3 Organic Silt or Peat	Underlying the fill in several boring locations (B-1, B-3, B-4 through B-7, B-105 through B-110, B-20l through B-203, and B-205) is dark brown, gray brown, or black Organic SILT or PEAT that was encountered at depths ranging from 7'6" (B-6) to 29'0" (B-107) beneath the existing ground surface. The thickness of the Organic SILT or PEAT layer ranges from 1'6" to 22'6" at these boring locations.
Stratum 4 Silty Sand, Gravelly Sand or Sandy Silt	Below the fill and organic silt or peat layers in many of the boring locations is a medium dense to dense brown, gray brown, or gray coarse to fine SAND, with varying amounts of Silt (trace to and), and varying amounts of coarse to fine Gravel (trace to and) or a medium dense gray brown SILT, little (to and) coarse to fine Sand. Weathered rock fragments and cobbles were encountered within this layer in a few locations. The silty sand, gravelly sand, or sandy silt extended to depths ranging from 16'0" to 53'0" beneath the existing ground surface.
Stratum 5 Gneiss Bedrock	Beneath the organic silt or peat and below the silty sand, gravelly sand, or sandy silt is Gneiss bedrock. Gneiss bedrock or probable bedrock was encountered in 23 of the test borings at depths ranging from 16'0" to 53'0" beneath the existing ground surface. At several boring locations, the bedrock was cored. The core recovery ranged from 55% to 100% and the Rock Quality Designation (RQD) of the core samples ranged from 25% to 100%. Based on the rock core recoveries and RQD values, the classification of the Gneiss ranges from poor quality in a shattered, very blocky and seamy condition to excellent quality or intact rock. The shallow bedrock at the site can generally be classified as fair to good quality in a blocky and seamy or moderately jointed condition.

Modifier	Quantity
trace (t)	0-10%
little (l)	10%-20%
some (s)	20%-35%
and (a)	35%-50%

The subsurface soil conditions encountered in the borings may be summarized as follows:

Table III.B-2
Summary of Boring Data

Boring No.	Approximated Ground Surface Elevation	Depth to Bottom of Existing Fill (Elevation)	Depth to Bottom of Organic Silt or Peat Layer (Elevation)	Thickness of Organic Silt or Peat Layer	Depth to Groundwater (Elevation)	Depth to Bedrock (Elevation)
B-1	--	10'6"	12'6"	2'0"	13'6"	26'6"
B-2	--	10'6"	NE	--	12'6"	29'0"
B-3	+157.0	17'6"(+139.5)	25'0"(+132.0)	7'6"	11'9"(+145.2)	45'6"(+111.5)
B-4	+161.0	15'6"(+145.5)	17'0"(+144.0)	1'6"	13'0"(+148.0)	27'6"(+133.5)
B-5	+160.0	27'0"(+133.5)	35'0"(+125.0)	8'0"	14'0"(+146.0)	NE to 48'0"
B-6	+151.5	7'6"(+144.0)	14'6"(+137.0)	7'0"	14'0"(+137.5)	19'6"(+132.0)
B-7	+154.5	16'6"(+138.0)	26'6"(+128.0)	9'0"	11'6"(+143.0)	28'0"(+126.5)
B-8	+154.5	--	NE	--	12'6"(+142.0)	NE to 22'0"
B-8A	+154.0	33'0"(+121.0)	NE	--	Not Measured	43'6"(+110.5)
B-9	+153.0	--	NE	--	NE to 7'0"	NE to 7'0"
B-9A	+152.5	12'0"(+140.5)	NE	--	9'0"(+143.5)	25'0"(+127.5)
B-10	+159.0	+6'6"(+152.5)	NE	--	NE to 6'6"	NE to 6'6"
B-10A	+158.8	18'0"(+140.8)	NE	--	Not Measured	24'0"(+134.8)
B-101	+159.0	2'6"(+156.5)	NE	--	7'6"(+151.5)	16'0"(+143.0)
B-102	+153.5	14'0"(+139.5)	NE	--	14'0"(+139.5)	43'0"(+110.5)
B-103	+159.5	13'0"(+146.5)	NE	--	Not Measured	27'0"(+132.5)
B-104	+151.5	12'6"(+139.0)	NE	--	12'0"(+139.5)	18'0"(+133.5)
B-105	+152.5	12'6"(+140.0)	19'0"(+133.5)	6'6"	10'0"(+142.5)	24'6"(+128.0)
B-106	+154.0	17'0"(+137.0)	20'0"(+134.0)	3'0"	9'0"(+145.0)	30'6"(+123.5)
B-107	+154.0	29'0"(+125.0)	45'0"(+109.0)	16'0"	10'0"(+144.0)	53'0"(+101.0)
B-108	+157.0	16'6"(+140.5)	21'5"(+135.6)	4'11"	12'0"(+145.0)	25'6"(+131.5)
B-109	+160.0	16'6"(+143.5)	20'6"(+139.5)	4'0"	Not Measured	33'6"(+126.5)
B-110	+156.5	27'11"(+128.6)	33'0"(+123.0)	5'11"	10'11"(+145.6)	48'0"(+108.5)
B-111	+158.5	--	NE	--	NE to 7'6"	NE to 7'6"
B-111B	+158.5	--	NE	--	7'6"(+151.0)	NE to 17'6"
B-111C	+158.5	37'0"(+121.5)	NE	--	9'10"(+148.7)	37'0"(+121.5)
B-112	+160.5	+15'6"(>+145.0)	NE	--	Not Measured	NE to 15'6"
B-112A	+160.5	--	NE	--	NE to 8'0"	NE to 8'0"
B-112B	+160.0	--	NE	--	NE to 8'0"	NE to 8'0"
B-201	+158.5	19'6"(+139.0)	24'0"(+134.5)	4'6"	16'6"(+142.0)	NE to 38'0"
B-202	+153.0	18'0"(+135.0)	27'0"(+126.0)	9'0"	13'6"(+139.5)	NE to 40'3"
B-203	+156.5	19'6"(+137.0)	27'0"(+129.5)	7'6"	15'0"(+141.5)	NE to 34'0"
B-204	+159.5	--	NE	--	NE to 8'0"	NE to 8'0"
B-204A	+159.5	--	NE	--	NE to 6'0"	NE to 6'0"
B-204B	+159.5	17'0"(+142.5)	NE	--	Not Measured	17'0"(+142.5)
B-205	+153.5	14'6"(+139.0)	37'0"(+116.5)	22'6"	10'0" (+143.5)	47'0"(+106.5)
B-206	+157.5	31'0"(+126.5)	NE	--	16'0" (+141.5)	31'0"(+126.5)

c. Previous Site Work, Excavation And Blasting

In 2002, a 75,519 square foot multi-use commercial building was converted to a state-of-the-art Stop & Shop supermarket along with related parking, landscaping and utilities. The supermarket was located on an 8.4-acre parcel which was part of the Cross County Shopping Center.

The building which was to house the supermarket was constructed on a site that under post-excavation conditions, was approximately 30 feet below the grade of Kimball Avenue and an average of 15 feet below the grade of Vredenburgh Avenue. On three sides of the site was a rock ledge wall extending along a line that is parallel to the frontage along Vredenburgh Avenue to a line that is parallel to, and 275 feet from, Kimball Avenue. The wall continued along the back of the site to a point adjacent to the rear access road and approximately 450 feet from Xavier Drive. To insure stability of the site, three retaining walls were provided.

Internal improvements that were provided included the installation of new curbing, sidewalks, landscaping, signing and pavement markings along the entire length of South Drive as wall as along West Drive from South Drive to northerly Sterns Driveway. The modifications were intended to provide an improved circulation road by better defining the roadway and augmenting and improving the existing landscaping, signing and pavement markings. Along Xavier Drive, new pavement markings, crosswalks, and landscaping were provided. The connecting road from Xavier Drive to Kimball Avenue was redefined and restriped.

The project site originally consisted of paved parking rising more than 30 feet in a northeasterly direction from Xavier Drive. The top parking field along the eastern side of the site was at a grade of approximately 200 feet and was level with Kimball Avenue. The middle parking area was at a grade of about 190 feet generally at the same elevation as the balance of the Shopping Center. Also located on the site was a 3,000 square foot maintenance building, which was

demolished and relocated.

On or about April 2000, Stop & Shop removed the paved surface and reshaped the contours of the site. In order to construct a building which could be integrated with the existing Shopping Center, and to provide sufficient buffering and screening from the adjacent residential properties, the average grade of the site was lowered. Because the majority of the site was composed of bedrock at or near the surface, rock removal was required. Approximately 150,000 cubic yards of rock was excavated from the site. The rock removal was accomplished by blasting.

2. Potential Impacts

a. Site Topography And Any Additional Required Blasting

The majority of the site is relatively flat with localized low-lying areas. The existing surface grades primarily range between elevations +150 and +163. The existing surface grades in the northeastern portion of the site increase to the east (heading toward the Kimball Avenue entrance and exit), to a maximum ground surface elevation of +195. This grade increase returns to elevation +175 upon merging into Kimball Avenue (Figure IV.B-3). The proposed finished floor elevations throughout the parking structures and under retail parking areas will range from elevation +150 to +162. The finished floor elevations of the proposed retail buildings will range from elevation +160.5 to +163.3 (Figure IV.B-3). These elevations have been established to help minimize the extent of cutting, filling, exporting and importing of material to and from the site.

In order to establish the proposed site grades, there are three (3) specific areas located both on and offsite where the removal of rock is anticipated. Areas which may be affected by blasting as a form of this rock removal are: Cross County Parkway westbound exit ramp to Midland and Kimball Avenues; Site Drive 'C' at Kimball Avenue and at the existing slope adjacent to the Sears Building closest to

the new Stop & Shop (Figure IV.B-4). Each location poses its own set of unique concerns when evaluating a blasting program.

Due to the visible condition of the weathered/fractured rock at the existing rock face along Midland Avenue, and the close proximity of the apartment building, blasting at this rock face is not a recommended option. The major blasting concern for this area is the condition of the existing fractured rock and whether this condition exists from the existing rock face to the apartment building basement and foundation systems. Blasting within this area would require an extensive amount of additional bore holes, excessive matting, the use of specifically designed shielded charges, and numerous other safety and protective measures above and beyond the amount required to satisfy the blasting requirements for stable areas.

At this specific location, we propose utilizing a track mounted drill rig which would be stationed above the rock face, on the apartment building property, and used to line drill numerous boreholes to establish the new rock face fracture limit line. Excavators with large chipping hammers will be utilized from the road side of the rock face to break and pull down the sections of the drilled, fractured rock.

Due to the volume of rock requiring removal at the other two (2) specific areas, controlled blasting operations would be employed. Should the rock need to be removed within a confined area, the rock will be adequately line drilled to protect any area not planned for removal. This process will ensure an effective and safe removal of the material due to the ability to appropriately locate the blasting charges. All blasting operations will be undertaken by New York State Licensed Powder Men and Licensed Blasting contractors. To assure the work is performed in strict accordance with project blasting specifications, a licensed professional Geotechnical Engineer and Blasting Consultant will supervise all operations throughout the duration of the blasting process. The blasting program is subject to City of Yonkers review and approval.

The rock, where applicable, can be cut at nearly a vertical face. Depending on the condition of the exposed rock face, localized areas of the new face may require stabilization. Appropriate stabilization methods include the use of rock bolting, with or without the use of steel mesh, and/or the application of shotcrete. The type and extent of stabilization at any particular location will be determined at the time that the new rock face is exposed. Cut slopes in rock that are at publicly accessible areas may require additional examination with regard to stabilization upon rock removal. Areas that require additional protective and supportive measures will be addressed immediately to maximize site and public safety.

With respect to the use of explosives, the issue of safety will always be a top priority. The on-site overnight storage of explosives will be strictly prohibited and only the amount of explosive material needed that day will be delivered to the site. According to all applicable guidelines, rules and regulations, the transportation of explosive material will be made by a New York State Licensed Blasting Contractor.

To ensure the implementation of a successful and effective blasting program, communication between the project team and the surrounding community is essential. A program to inform the surrounding neighborhoods about proposed blasting operations will be undertaken at the beginning of the project, prior to any blasting activities, to assure the community of the care with which blasting operations will be performed and the extent of oversight involved by the City, State and other regulatory agencies. The distribution of literature explaining the blasting processes and the potential impacts of the blasting operations will be an essential part of these programs. Additionally, informational meetings can be held with the surrounding neighborhoods to further inform them of the proposed blasting activities and the measures which will be undertaken to protect their community. These meetings will provide an opportunity to address any resident concerns with the project team and to build a working relationship of communication.

Prior to the commencement of blasting, an independent blasting consultant will conduct a pre-blast survey. All adjacent structures and buildings within close proximity of the blast area will be surveyed to form a baseline of existing conditions. Local authorities will be given the survey results should claims for effects on such structures arise in the future.

To help alert and protect the surrounding communities, an adequate warning system will be implemented in accordance with regulatory standards as part of the blasting program. To assure that no pedestrians are present, the blasting contractor will post personnel in various locations around the perimeter of the blast area prior to triggering any blast. Warning systems at the site will be audible to the surrounding neighbors. In accordance with local requirements, audible signals will be sounded at intervals prior to and after the shot to indicate the status of the blast. All of this information will be part of the literature provided to the surrounding neighborhoods upon approval of the blasting program.

b. Provide Estimate of Rock Quantity To Be Removed And Describe Any On-Site Crushing, If Proposed

It is anticipated that approximately 12,000 cubic yards of rock will be removed during the grading and excavation operations at the three (3) areas of rock removal mentioned above (Figure IV.B-4). All of this rock material will be crushed and utilized on-site. This quantity corresponds to approximately 330 - 350 truck trips in order to relocate the excavated rock to the rock-crushing location (Figure IV.B-4A). Approximately 90% of this rock transportation occurs totally within the project site (approximately 10,800 cubic yards), from the on-site rock excavation Area A and Area B rock removal locations. Rock from the off-site Area C, corresponding to approximately 1,200 cubic yards, will require truck transport from Area C along Kimball Avenue to driveway C and into the site, and thence to the on-site rock crushing location. This corresponds to only about 30 – 50 truck trips needing to utilize public roadways for excavated rock transportation off-site to on-

site. The duration and timing of these proposed rock chipping, blasting, and crushing operations is depicted on Figure I.A-7D.

The blasted rock (once processed) can be utilized as base course, drainage stone and sub-base material under new structures and roads, along with bedding material for utilities located within trenches. With the utilization of an on-site rock processing operation, truck traffic will be reduced by not having to cart the blasted rock off-site, and then truck crushed stone into the site for future use. The parking field located to the north of the Sears building was initially considered for the rock crushing activities. However, due to the close proximity of this area to residential neighborhoods, it was decided that the crushing activities and associated stockpiles should instead be established within the recessed area remaining following the demolition of the abandoned Stop & Shop supermarket located in the southwest corner of the site (Figure IV.B-4A). This area is considerably set back from residential neighborhoods with the closest one being Mildred Avenue approximately 900 feet away. However, even the closest neighborhoods are shielded by the intervening Mall at Cross County, the multiplex cinemas and the retail buildings of the Cross County Shopping Center. In conjunction with the rock crushing activities which will occur below grade and the additional screening provided by the retail buildings, adjacent residential neighborhoods are not anticipated to be significantly impacted. However, should it be determined to be necessary, rock crushing and processing equipment can be provided with suitable noise reducing screens to help reduce the equipment's operational noise.

c. <u>Required Stabilization Measures</u>

Temporary construction excavations will be conducted in accordance with the most recent OSHA guidelines or applicable federal, state or local codes. In the opinion of the Geotechnical Engineer, the existing fill material would be considered a Type "C" soil as defined by OSHA regulations. Temporary support (i.e. sheeting and shoring) should be used for any excavation that cannot be sloped in accordance with the applicable regulations.

The existing fill and organic soils encountered in the borings are not acceptable bearing materials for the proposed building foundations and floor slabs. The consistency and density of the fill material is not predictable. Certain areas may contain clean dense soils while other areas may contain loose material and/or debris. In addition, the underlying Organic Silt or Peat is soft and compressible. The weight of new fill, the new floor slabs, and the new structures will cause the Organic Silt or Peat to consolidate. The magnitude of this settlement depends upon the thickness of the organic layer, the magnitude of the new loads, and the proximity of the new footings to the organic layer. Based on the boring data, the thickness of the organic soil varies throughout the proposed building areas. This will result in different magnitudes of settlement.

The existing fill and organic soils create the possibility of intolerable differential settlements under loading. To eliminate the potential for differential settlements, the building loads must be transferred to the virgin Silty Gravelly Sand (Stratum 4) or Gneiss bedrock (Stratum 5) below the existing fill and organic soil layers. The most effective way to achieve this is to use a pile foundation.

Based to the nature of the existing fill material, obstructions will likely be encountered during pile installation. Therefore, timber piles will not be suitable for the subject site. The pile foundation types that are appropriate for this project include the following: 1) concrete-filled steel pipe pile with a conical tip; and 2) steel H pile. The steel piles will have capacities ranging from 35 tons to 100 tons depending upon the pile selected. The selection of the pile type should be based on building loads as well as other economic factors.

The piles must be driven through the existing fill and Organic Silt or Peat and develop their load carrying capacity from the virgin medium dense to dense Silty Gravelly Sand (Stratum 4) or Gneiss bedrock (Stratum 5) below. Expected depths of the piles will be about 40 to 55 feet below the existing ground surface.

Piles are to support the new building foundations and the floor slabs. The number of piles required and their locations are to be determined by the Structural Engineer. A pile load test will be required for piles that exceed a capacity of 40 tons.

For the utilities that will encounter rock and boulder fill, additional steps will be required to ensure that the existing fill is capable of supporting the planned utilities. In this case, there is a potential for void spaces within the existing rock and boulder fill. The void spaces could collapse causing potential damage to the overlying utility pipe.

In these areas, the utility trench excavation will be extended to approximately one foot below the required subgrade elevation. The excavation will then be compacted by several passes of a small vibratory drum roller or "jumping jack" stye tamper. Carlin-Simpson & Associates, the Geotechnical Engineer, must evaluate the existing fill for the presence of unsuitable material within the fill matrix. Portions of this fill may have to be removed and replaced with new compacted fill. This will be determined by the on-site representative from Carlin-Simpson & Associates during construction. It is expected that a total of one to two feet of over-excavation will be required in the rock and boulder fill areas. Once the subgrade has been approved by Carlin-Simpson & Associates, a geotextile fabric (Mirafi 500X or equivalent) is to be placed at the bottom of the trench excavation. Suitable soil fill or crushed stone will then be placed on the geotextile fabric to provide a firm base for support of the pipe.

For the new utilities bearing in Organic Silt, Peat, or existing fill that is underlain by layers of Organic Silt and/or Peat, the subgrade will require improvement in order to support the new utility pipe.

In these areas, the utility trench excavation will be extended approximately one to two feet below the required subgrade elevation. A geogrid material (Tensar BX1100 or equivalent) is to then be placed at the bottom of the trench excavation.

The excavation will then be backfilled to the pipe invert elevation with suitable on-site soil, crushed stone, or imported sand and gravel fill containing less than 20% by weight passing a No. 200 sieve. For areas where deep organic layers are encountered, a second layer of geogrid and/or a larger trench excavation may be required. This will be determined by the on-site representative from Carlin-Simpson & Associates during construction.

After the utilities are in place, they can be partially backfilled with either the suitable on-site material or imported sand and gravel fill containing less than 20% by weight passing a No. 200 sieve. The on-site material or sand and gravel fill should be used to backfill the utility excavation to approximately two to four feet beneath the planned finished grade. The remaining two to four feet of the excavation is to then be backfilled with light-weight fill. Backfill material is to be placed in one foot layers and each layer is to be compacted to at least 92% of its Maximum Modified Dry Density.

d. <u>Determine Depth To Groundwater And Potential Impacts</u>

Groundwater was encountered in most of the boring locations at depths ranging from 7.5 feet to 16.5 feet below the existing ground surface. These depths correspond to a groundwater level ranging between elevation +137.5 and elevation +151.5.

The borings that were performed on the south side of the existing mall encountered groundwater at elevations ranging between elevation +141.5 and elevation +151.5. The borings on the north side of the mall encountered groundwater at elevations ranging between +137.5 and elevation +146.0.

As part of the subsurface investigation, three groundwater observation wells were installed at the subject site. On 28 December 2004, the three observation wells were gauged to determine the groundwater depth at these three locations. The results of the groundwater gauging are summarized in the following Table IV.B-3.

Table IV.B-3
Approximate Groundwater Elevation

Well No.	Approximate Ground Surface Elevation	Depth to Groundwater	Approximate Groundwater Elevation
OW-201	+158.5	10' 5"	+148.1
OW-203	+156.5	16' 3"	+140.2
OW-206	+157.5	9' 1"	+148.4

For proposed utility installations, in the event that water is encountered in the utility trench excavation, the excavation should be extended six inches below the bottom of the pipe and a six inch layer of ¾-inch crushed stone is to be placed. The new pipe can then be supported by the stone.

Groundwater is not anticipated to impact the construction. If perched water is encountered during installation of the piles, the geotechnical engineer on the site will make the determination if the water should be pumped if any impact to the piles is anticipated.

e. Prepare A Site-Wide Cut And Fill Analysis With Description Of Impacts

The site civil grading design is intended to balance the site excavation to minimize the necessity to import or export material. The total estimated earth and rock cut quantities should range between 150,000 and 160,000 cubic yards. Of this total, approximately 12,000 cubic yards of rock will be generated by the removal at Areas A, B and C as indicated on Figure IV.B-4 Anticipated Rock Removal Location Plan. Based on the current soil borings which indicate that the current Center is located within a peat bog, additional rock removal throughout the site is not anticipated. Rock is only anticipated to be encountered on the extreme eastern end of the center running from Stop & Shop to Site Drive C at Kimball Avenue. The total estimated fill quantity required to meet the proposed grading plan should range between 25,000 and 30,000 cubic yards. Please see Figure IV.B-5 for the Site Cut and Fill Plan. The minimal amount of fill required to achieve the final site grades will be reduced through the proposed on-site rock processing operation and through the potential use of asphalt millings produced from the resurfacing of the

existing roads and parking lots. The overall goal of the site design is to minimize the amount of material being exported and imported to the site to help reduce the amount of construction traffic required to perform the reconstruction work.

The equipment and operations scheduled to be employed to regrade the project site will, through the course of their operation, create noise and minor quantities of dust and spoils. The processes of asphalt milling and rock drilling for the placement of explosives will on average generate noise and dust levels above those of normal earth moving activities. These types of activities will however be limited in nature as the extent of rock and asphalt removal are limited in comparison to the overall earth and overburden removal operations. Dust control measures will be employed to strictly limit the amount of dust and spoils generated throughout the site and subsequently transported offsite. Noise levels can be monitored and with the enforcement of daily work hours, strict equipment operation times will be established and maintained to minimize public distraction.

f. Prepare A Grading Plan

A Preliminary Grading Plan has been provided in the set of plans submitted as part of this DEIS, and is also provided as Figure IV.B-3.

3. Mitigation Measures

a. Erosion And Sediment Control Plan and Construction Phasing

At the start of each construction phase, regardless of year, the establishment of the limits of disturbance associated with the year's project activities will be identified. The initial scope of work to be undertaken will be the installation of approved erosion control measures. Typically through the use of silt fences, designation of wheel wash down areas at any tracking pads, providing temporary seeding of disturbed landscape areas, installing temporary sediment traps, controlling dust and covering any stockpiled materials, erosion and sediment can be controlled within

and around the areas under construction (Figure IV.B-6). By installing the appropriate measures in accordance with the guidelines established by the New York State Department of Environmental Conservation, work areas can be compartmentalized and erosion and sediment can be controlled with limited potential to impact any watershed areas and/or the existing site storm water management system.

During the Year 1 Construction Activities, three (3) confined areas of the existing site will be disturbed. During this phase, two (2) existing structures are scheduled to be demolished. The existing vacant Stop & Shop supermarket, located in the southwest corner of the site, will be demolished and the remaining recessed area will be used for temporary rock crushing operations and stockpile storage. Building 13, located in the northeast corner of the site, will be demolished and replaced with a new two-story retail building. The existing structures will be demolished in a systematic fashion, one building at a time, to limit the areas of disturbance. Areas can be contained through the use of silt fences, hay bales, and other approved measures as required. The work scheduled for Site Drive 'C', which is also located in the northeast corner, will be contained within the same area as Building 13. Site Drive 'C' is scheduled to be regraded and lowered to create a safer drive aisle into and out of the site. This area will be closed to vehicular traffic, cordoned off through the use of silt fences and hay bales, existing storm drains will be protected and/or rerouted as required, and all exposed slopes potentially subject to erosion can be protected and stabilized through the use of geotechnical fabrics, tarps and seeding as required. The third area impacted by this phase of work is the new Retail Building G location. Retail Building G will be located in the center of the site and will be constructed in an area currently occupied by a parking field. The existing lot will be excavated and regraded to prepare the site for the new building foundations. Immediately following the installation of the foundation systems, the building shell will be constructed.

During the Year 2 Construction Activities, three (3) areas of the existing site will be disturbed. This phase will disturb the largest overall site area, but will be phased

accordingly to limit the area of disturbance into manageable allotments. During this phase, Building 2, which is located in the center of the site, will be demolished and a new retail building will be constructed within its existing footprint area. This phase will involve the excavation and regrading of the north parking fields and the parking fields located to the north, west and south of the existing Sears building. Excavation and regrading will occur in a systematic fashion, working from west (Macy's) to east (Sears). By phasing the excavation in this fashion, immediately following bulk excavation and grading, foundation systems can begin. Directly following foundation systems, all building shells will be constructed and the site will be paved and/ or brought to final elevations to pitch all stormwater to the appropriate management systems. During this phase, the South Drive entrance and exit from Central Park Avenue will be regraded and reconfigured. As with the Year 1 activities, all areas can be contained through the use of silt fences, hay bales, and other approved measures as required.

The Year 3 Construction Activities will focus on three (3) specific areas of the site. The majority of the work during this phase will occur in the southwest quadrant of the site and along the east/west and north/south mall walks and Xavier Drive. During this phase, Retail Building A will be constructed along with the new five (5) Level Parking Garage, both structures being located in the southwest corner of the site adjacent to the Central Park Avenue entrance and exit. Both areas will require excavation and grading but will be appropriately contained to control any potential for erosion. In conjunction with the grading occurring to prepare the areas to receive Retail Building A and the five (5) Level Parking Garage, the parking field to the south of the existing Macy's building will be regraded and paved to provide new pedestrian access to the center. During this sitework phase, the existing network of underground stormwater management structures and piping will be rerouted, resized and reconfigured to adequately protect and support the existing center and all expansion activities. Also occurring during this construction phase will be the hardscape and landscape improvements to the center and along Xavier Drive. These improvements will consist of new sidewalks, curbs, plantings, regrading, etc., and will be performed in a systematic fashion to distribute the work

into manageable allotments. By phasing the work, only small portions of the existing landscaping will be affected at one time thus limiting the potential for erosion to occur. All work areas can be contained through the use of silt fences, hay bales, and other approved measures as required.

b. Mitigation For Blasting

Figure IV.B-4 depicts the two areas of potential blasting. Prior to the commencement of any blasting activities, an approved blasting control and monitoring plan will be established and implemented. A pre-blast survey will be undertaken for all homes within 500 feet of proposed blasting activities. Advanced notice of the pre-blast surveys will be posted and will be scheduled accordingly dependent on the property owners' availability. Should the property owner choose to participate in the pre-blast survey, the Blasting Consultant will fill out a questionnaire regarding the state of each home. The interior and exterior conditions of the property will be noted and videotaped. The property owner will then have the opportunity to confirm the findings of the survey prior to the commencement of blasting activities.

Seismographs and air pressure sensors will be placed at predetermined locations around the blast area, both on and off site. These devices will be used to measure and monitor vibrations at structures located within 500 feet of the blasting activities. In order to minimize the amount of explosives used during the blasting activities, test charges will be detonated and the measurements from the above listed devices will be recorded. With these readings, the Blasting Consultant and the Geotechnical Engineer will be able to accurately tailor the blasting requirements for the charges as required by the Federal, State and Locals laws.

Area specific mitigation measures are discussed in more detail in Section IV.L – Construction, Subsection 2 – Anticipated Impacts, of this DEIS.