

## DRAFT

### A. Soil Test Pit Areas 1 and 2 are combined to make up Site Improvements Zone A

#### Test Pit Area #1 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

**TP#1: 0"-12":** The top layer of test pit #1 consists of clay like medium that appears to be bonded together. Grass has not established to a satisfactory condition and appears in only small patches. At 6" we encountered a slightly loamy sand mix.

**TP#1: 12"-18":** At 12 to 18 inches, we encountered layers of sand and construction debris, such as filter fabric. The filter fabric layer was found at 18" between two layers of sand. The sand layers were 2"-3" thick each.

**TP#1: 18"-24":** At 18 to 24 inches, we encountered sandy soil and construction debris. The construction debris consisted of pieces of concrete, asphalt, brick, and filter fabric.

**TP#1: 24" and deeper:** As the boring process continued it was clear the layer of sand mixed with construction debris extended throughout the area around TP#1.

#### Test Pit Area #2 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

**TP#2: 0"-12":** The top layer of test pit #2 consists of clay like medium that appears to be bonded together. Grass has not established to a satisfactory condition and appears in only small patches. At 6" we encountered a slightly loamy sand mix.

**TP#2: 12"-18":** At 12 to 18 inches, we encountered layers of sand and construction debris, such as filter fabric. The filter fabric layer was found at 18" between two layers of sand. The sand layers were 2"-3" thick each.

**TP#2: 18"-24":** At 18 to 24 inches we encountered sandy soil and construction debris. The construction debris consisted of pieces of concrete, asphalt, brick, and filter fabric.

**TP#2: 24" and deeper:** As the boring process continued it was clear the layer of sand mixed with construction debris extended throughout the area around TP#2.

## FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS ZONE A

1. The contractor shall remove all soil in the area to a depth of three feet. Soil shall be hauled from site and disposed. Additional depth may be required if conditions below three feet warrant soil removal. The approximate area of the soil removal is 7,860 Square Feet - which equals 97 Cubic Yards.

2. The contractor shall bring in new landscape quality soil to reach current grades. Soil shall be placed in 12 inch lifts and lightly compacted at each lift. It is recommended that the following soil mix be used: "Sandy Loam" determined by mechanical analysis and based on the "USDA Classification System". The introduced soil shall meet the following mechanical analysis:

<u>Texture Class</u>	<u>:</u>	<u>% of Total Weight</u>
Clay	:	10 - 15
Silt	:	30 - 40
Sand	:	50 - 70
Organic Matter	:	3 - 4
pH level	:	5 - 7

3. The contractor shall provide and established lawn with sod. It is recommended that the following grass mix be used:

Proportioned by weight as follows:

- 20 percent Tall Fescue- "Inferno".
- 20 percent Tall Fescue- "Second Millennium"
- 20 percent Tall Fescue- "Magellan"
- 20 percent Tall Fescue- "Avenger"
- 20 percent Kentucky Bluegrass- "Liberator"

Sod of grass species shall have not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed.

4. The contractor shall maintain the lawn area for a 90 day period. At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn should established, free of weeds, open joints, bare areas,

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and surface irregularities. Maintenance shall include:

- a. Watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable lawn.
- b. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth lawn.
- c. Water lawn with gentle spray, unless rainfall precipitation is adequate.
- d. Mow lawn as soon as top growth is tall enough to cut.
- e. Apply fertilizer after initial mowing and when grass is dry.

**B. Soil Test Pit Area 4 is Site Improvements Zone B (See Site Plan on page 1)**

**Test Pit Area #4 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)**

**TP#4: 0"-12"**: At 0 to 12 inches we encountered soil mixed with sand, clay and construction entrance debris. Soil excavation was hindered by numerous stones and hard soil.

**GENERAL:** Review of the construction drawings indicates that this area was a construction entrance during the construction of the site improvements. The stones and the hard subsurface encountered may be the result of improper removal of the construction entrance material.

### **FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS ZONE B**

1. The contractor shall remove all soil in the area to a depth of three feet. Soil shall be hauled from site and disposed. Additional depth may be required if conditions below three feet warrant soil removal. The approximate area of the soil removal is 1,630 Square Feet - which equals 181 Cubic Yards.
2. The contractor shall bring in new landscape quality soil to reach current grades. Soil shall be placed in 12 inch lifts and lightly compacted at each lift. It is recommended that the following soil mix be used: "Sandy Loam" determined by mechanical analysis and based on the "USDA Classification System". The introduced soil shall meet the following mechanical analysis:

<u>Texture Class</u>	<u>:</u>	<u>% of Total Weight</u>
Clay	:	10 - 15
Silt	:	30 - 40
Sand	:	50 - 70
Organic Matter	:	3 - 4
pH level	:	5 - 7

3. The contractor shall provide and established lawn with sod. It is recommended that the following grass mix be used:

Proportioned by weight as follows:

- 20 percent Tall Fescue- "Inferno".
- 20 percent Tall Fescue- "Second Millennium"
- 20 percent Tall Fescue- "Magellan"
- 20 percent Tall Fescue- "Avenger"
- 20 percent Kentucky Bluegrass- "Liberator"

Sod of grass species shall have not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed.

4. The contractor shall maintain the lawn area for a 90 day period. At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn should established, free of weeds, open joints, bare areas, and surface irregularities. Maintenance shall include:
  - a. Watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable lawn.
  - b. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth lawn.
  - c. Water lawn with gentle spray, unless rainfall precipitation is adequate.
  - d. Mow lawn as soon as top growth is tall enough to cut.
  - e. Apply fertilizer after initial mowing and when grass is dry.

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### C. Soil Test Pit Areas 3 and 5 are Site Improvements Zone C (See Site Plan on page 1) Test Pit Area #3 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

**TP#3: 0"-12"**: At the top layer of test pit #3 the grass seemed to have taking normally. However, the grass mix appeared to contain weeds. At 2 to 12 inches we encountered natural soil with some small rocks.

**TP#3: 12"-24"**: At 18 to 24 inches we encountered a slightly sandy medium with some small rocks. The soil moisture appeared suitable.

### Test Pit Area #5 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

**TP#5: 0"-12"**: At 0 to 12 inches we encountered natural soil. Soil appeared to be slightly dryer than expected, but otherwise acceptable.

## **FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS ZONE C**

1. The contractor shall remove top 3 inches of soil and turf. Soil and turf shall be hauled from site and disposed. The approximate area of the soil removal is 5,380 Square Feet - which equals 200 Cubic Yards.
2. The contractor shall bring in new landscape quality soil to reach current grades. It is recommended that the following soil mix be used:  
    "Sandy Loam" determined by mechanical analysis and based on the "USDA Classification System". The introduced soil shall meet the following mechanical analysis:

<u>Texture Class</u>	:	<u>% of Total Weight</u>
Clay	:	10 - 15
Silt	:	30 - 40
Sand	:	50 - 70
Organic Matter	:	3 - 4
pH level	:	5 - 7
3. The contractor shall provide and established lawn with sod. It is recommended that the following grass mix be used:  
    Proportioned by weight as follows:  
    20 percent Tall Fescue- "Inferno".  
    20 percent Tall Fescue- "Second Millennium"  
    20 percent Tall Fescue- "Magellan"  
    20 percent Tall Fescue- "Avenger"  
    20 percent Kentucky Bluegrass- "Liberator"  
  
    Sod of grass species shall have not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed.
4. The contractor shall maintain the lawn area for a 90 day period. At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn should established, free of weeds, open joints, bare areas, and surface irregularities. Maintenance shall include:
  - a. Watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable lawn.
  - b. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth lawn.
  - c. Water lawn with gentle spray, unless rainfall precipitation is adequate.
  - d. Mow lawn as soon as top growth is tall enough to cut.
  - e. Apply fertilizer after initial mowing and when grass is dry.

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- D. Soil Test Pit Area 6, the eroded area north of the terraced timber retaining wall, and the planting areas at the entrance into the park from 19<sup>th</sup> Street NW are combined in Site Improvements Zone D (See Site Plan on page 1)

### Test Pit Area #6 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

**TP#6: 0"-6":** At 0 to 6 inches we encountered a layer of mulch on wet soil. The clay like medium appeared to be inadequate. However, the plants appeared healthy. Roots of shrubs have spread through the planting medium. Weeds are abundant. Roots of weeds remain on the top 1 inch of the planting soil.

**TP#6: 6"-12":** At 6 to 12 inches the soil medium was continuously moist with minor construction debris.

### Terraced Timber Wall North End (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

Terraced timber wall was installed by second contractor without plans. Layout was coordinated with DPR. Terraced planting bed at the north ends is eroding and existing filter fabric is falling apart.

### 19<sup>th</sup> Street Entrance (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

Trees at the 19<sup>th</sup> Street NW entrance into the park appear to be in poor health. Roots may have been damaged from construction activity.

Most shrubs and other plantings in the 19<sup>th</sup> Street entrance planters are in poor condition. Soil condition seems to be a loamy clay. Unlike the condition in Soil Test Pit Area 6, the plants in this area do not seem to have access to the moisture and are in decay. Planting beds at the west entrance of the park are full of weeds and grass. Grass adjacent to planters is in poor condition. Filter fabric and debris is exposed around planters.

## FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS ZONE D

1. In lawn areas, the contractor shall remove top 3 inches of soil and turf. Soil and turf shall be hauled from site and properly disposed.
2. In planting areas at the 19<sup>th</sup> Street entrance, the contractor shall remove 6 inches of soil, mulch, and plants. The contractor shall bring in 6 inches of new soil, mulch, filter fabric, and plants.
3. In the terraced timber wall area, the contractor shall remove mulch and weeds. Place filter fabric over the existing soil. Cut out opening for shrubs and wrap around base of shrub. Place a layer of mulch (3" min.) over filter fabric.
4. At the north end of the terraced timber wall area, the contractor shall remove plants outside the planter and install sod. Install  $\pm 18"$  dia. rounded loose stone edging between grass and terraced timber wall to separate new lawn from planter.
5. The contractor shall bring in new landscape quality soil to reach current grades. It is recommended that the following soil mix be used:

"Sandy Loam" determined by mechanical analysis and based on the "USDA Classification System". The introduced soil shall meet the following mechanical analysis:

Texture Class	:	% of Total Weight
Clay	:	10 - 15
Silt	:	30 - 40
Sand	:	50 - 70
Organic Matter	:	3 - 4
pH level	:	5 - 7

6. The contractor shall maintain new plants for a 90 day period. At end of maintenance period, healthy, well-rooted, even-colored, viable plants should be established, free of weeds. Maintenance shall include:
  - a. Watering, fertilizing, weeding, trimming, replanting, and performing other operations as required to establish healthy plants.
  - b. Water plants with gentle spray, unless rainfall precipitation is adequate.
  - c. Fertilize as recommended by plant supplier.



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### E. Berms

**Berms B1, B2, and B3 (See Technical Memo #1, Site Investigation Notes, For Detailed Information)**

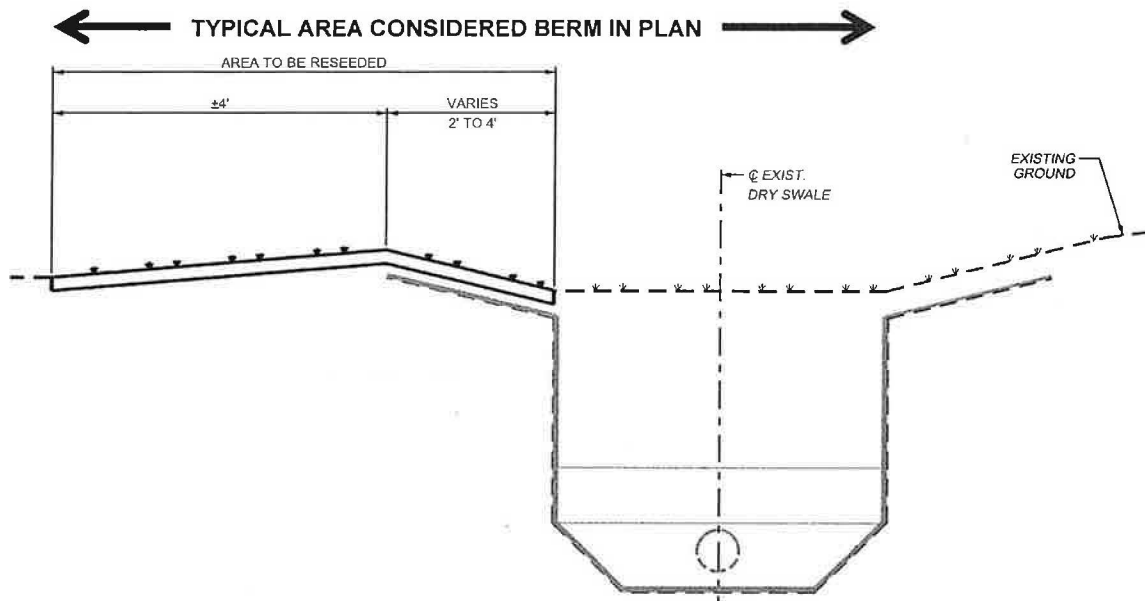
**Berm B1:** Berm was mostly well covered with lawn. In some area, bare patches appear. Soil uphill of the berm appeared to be adequate (See TP#3 above).

**Berm B2:** Bioswale appeared to be working normally. Berm was mostly well covered with lawn. In some area, bare patches appear.

**Berm B3:** Bioswale appeared to be working normally. Berm was mostly well covered with lawn. In some area, bare patches appear.

## FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS

**IMPORTANT:** The area described as berm, includes the adjacent bioswale which is designed to retain storm water. The composition of the bioswale is different from the surrounding lawn areas. The contractor shall make sure that this area is not damaged during construction activities.



1. The contractor shall prepare surface to receive new seeding:
  - Remove existing grass, vegetation, and turf. Do not mix into surface soil.
  - Loosen surface soil. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top of soil.
  - Remove stones larger than 2 inches in any dimension and sticks, roots, trash, and other extraneous matter.
  - Legally dispose of waste material, including grass, vegetation, and turf, off site.
  - Restore existing grade with suitable soil mix before seeding.
2. The contractor shall provide and established lawn with seed using a mix or temporary and permanent seeding. It is recommended that the following grass mix be used:

Proportioned by weight as follows:

- 20 percent Tall Fescue- "Inferno".
- 20 percent Tall Fescue- "Second Millennium"
- 20 percent Tall Fescue- "Magellan"
- 20 percent Tall Fescue- "Avenger"
- 20 percent Kentucky Bluegrass- "Liberator"

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### F. Drainage

#### Catch Basins (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

Catch basin at berm B1 had standing water. The outfall pipe connected to catch basin at berm B2 appeared to be clogged.

Catch basin at berm B2 was dry.

Catch basin at berm B3 was filled with miscellaneous debris.

#### ***FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS***

1. Clean out catch basins and drainage pipes
  - a. Remove and clean inlet grates.
  - b. Remove debris in catch basin and legally dispose.
  - c. Flush catch basin and cleanout pipes.

### G. Weeds

#### Weeding (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

There are weeds throughout planting areas and lawn areas.

#### ***FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS***

1. Remove weeds by removing the entire plant including roots. This means that the removal of the weeds will include clumps of soil or layers of soil. Dispose of weeds off-site.

### H. Pavement

#### Pavement (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

Pavement between basketball court and retaining wall is missing and presents a hazardous condition.

Foundation of previously existing basketball court remains in place, and is an obstruction to anyone using the court.

#### ***FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS***

1. Remove top 12" from the top of old basket ball hoop concrete foundation.
2. Install basketball court surface and a concrete base along the gap between retaining wall and existing court. Provide a continuous expansion joint between wall and subbase.

### I. Fences

#### Fencing (See Technical Memo #1, Site Investigation Notes, For Detailed Information)

New black fence and previously existing fence are poorly tied together with miscellaneous fence fabric.

#### ***FINAL RECOMMENDATIONS FOR SITE IMPROVEMENTS***

1. Correctly tie new fence fabric to fence posts.

July 8, 2013

# Kalorama erosion project



## Why are we here?

- Goals of Meeting: Focus on making things right
- Agenda:
  - Introduction and Original Work
  - Overview of Site Investigations
  - Overview of Recommendations
  - Current Conditions
  - Looking forward:
    - DPR/DGS Ideas
    - DDOE Input
    - Community Input
  - Next Steps, Progress Updates and Timeline
  - Project Contact Information

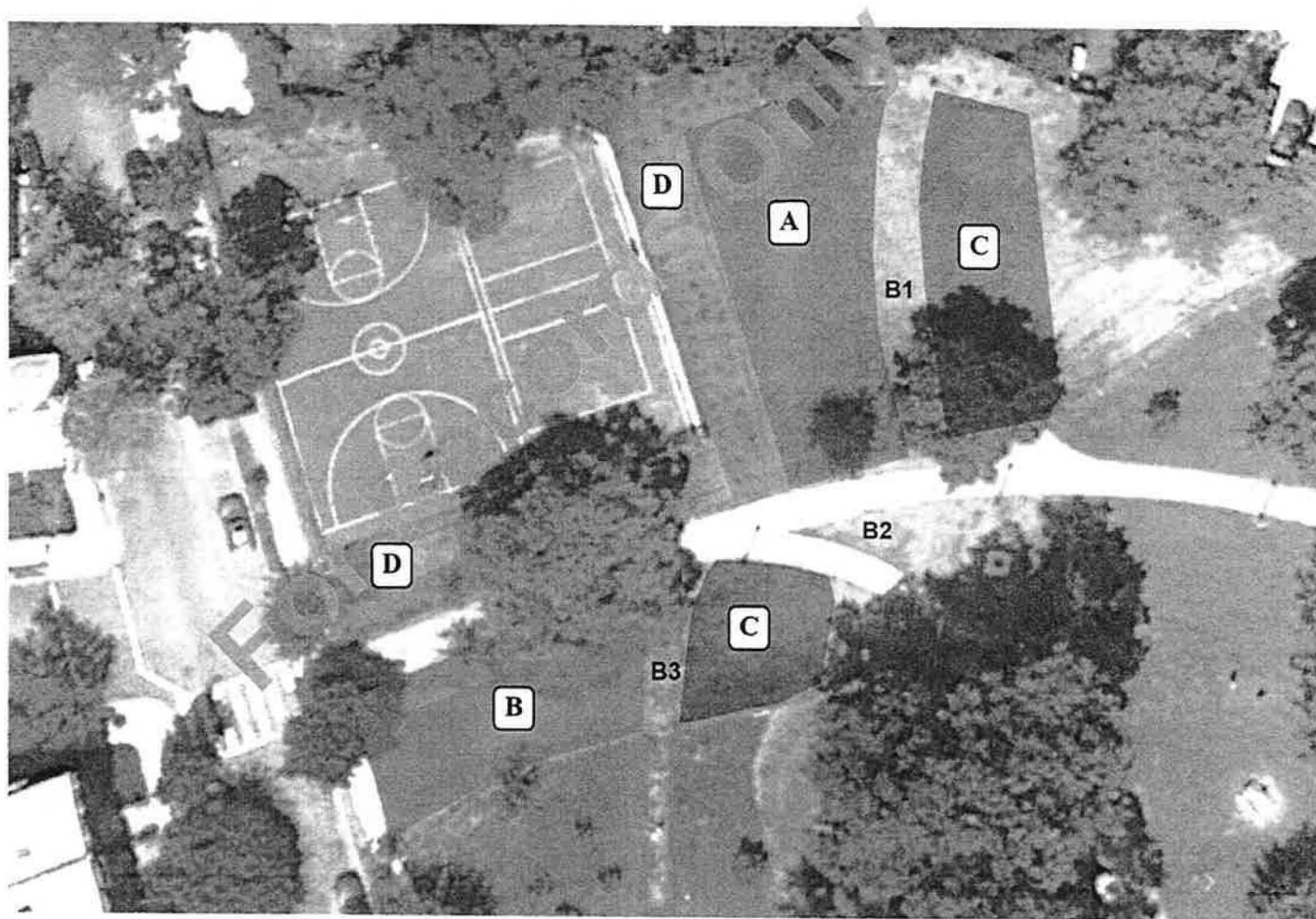
## Original Work

- Project was initiated in response to community concerns over the erosion problems caused by stormwater during times of heavy rainfall.
- A civil engineering firm (Volkert) was hired to produce construction documents that focused on low impact methods of stormwater reduction and retention, such as landform changes and planting.
- Soil tests confirmed that grassy areas were very compacted, causing water to sheet flow from NE to SW corner of park.
- Berms were installed to stop the sheet flow, give the water a chance to percolate into the soil. Any excess water flows into overflow drains. Soil directly behind berms were remediated to facilitate better drainage into the soil.
- Original contract was eventually completed, but not at the satisfaction of DPR or the community.
- DPR hired Volkert to conduct site analysis and to make recommendations on remediating previous work.



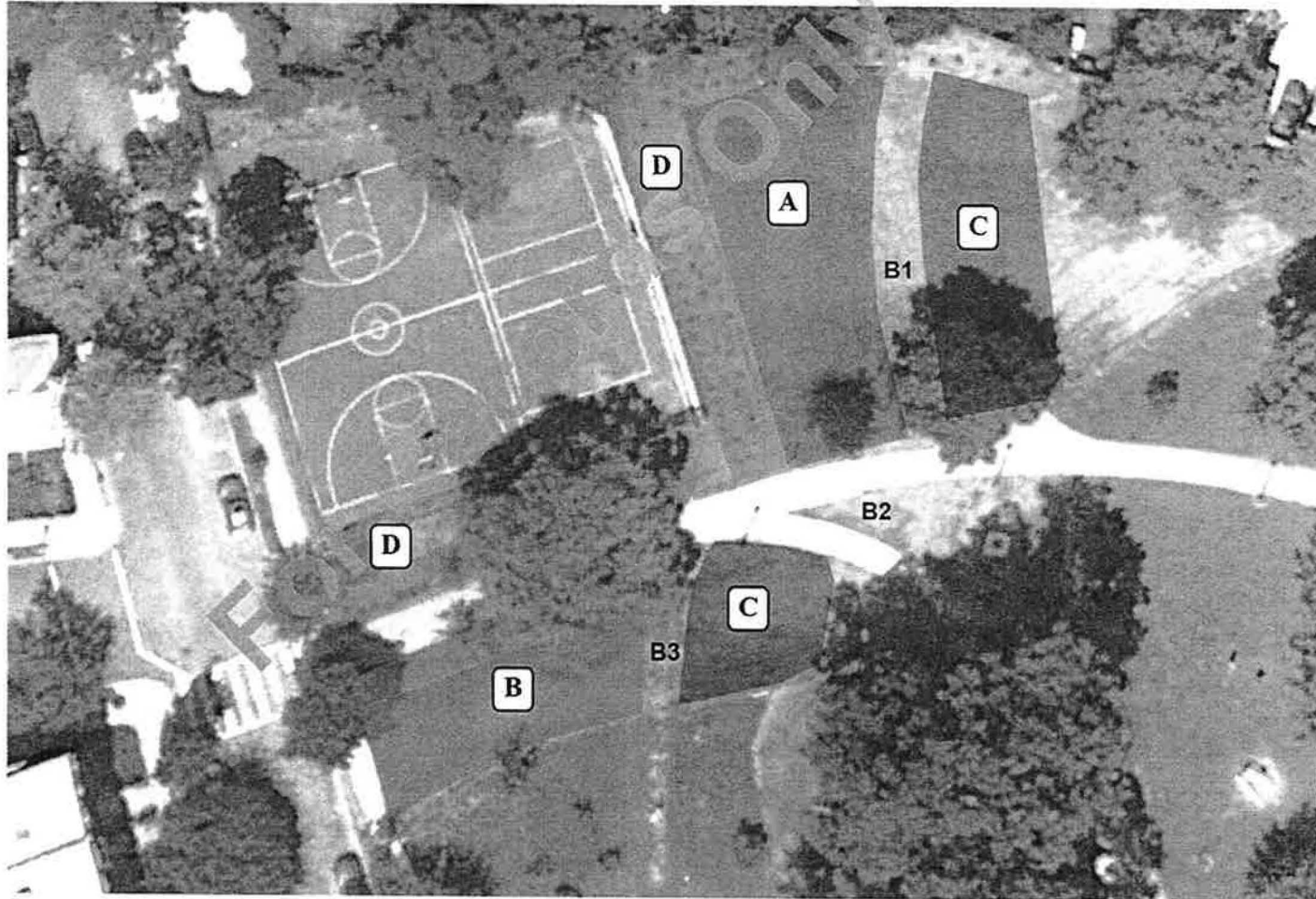
## Site Recommendations– Improvement Zones

**Zones A & B:** Replace 36" of existing soil. Install sod & provide 90 days worth of maintenance (watering, fertilizing, mowing, replanting, watering and other operations as required to establish healthy, viable lawn).



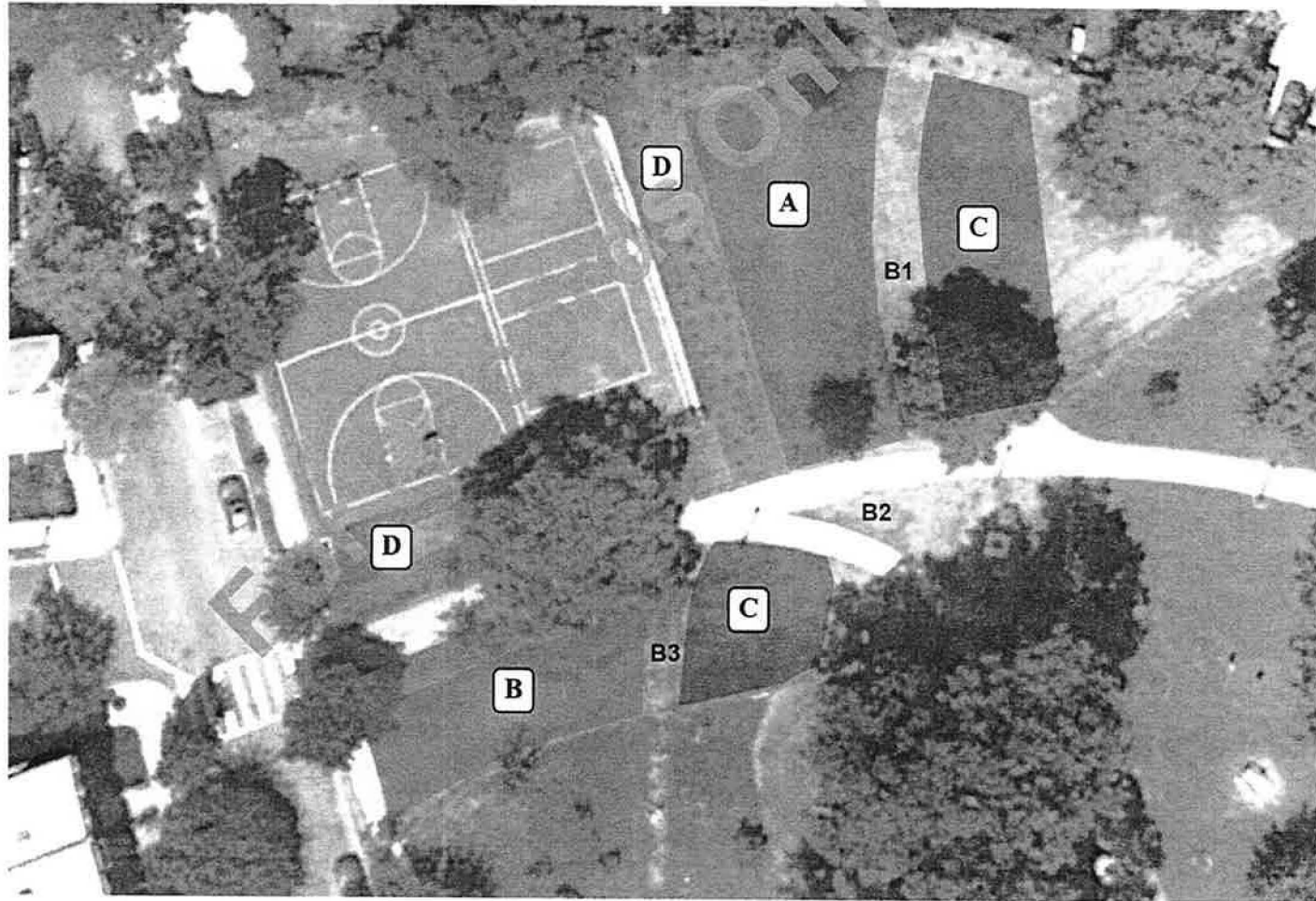
## Site Recommendations– Improvement Zones

**Zones C & D:** Replace 3" of existing soil. Install sod & provide 90 days worth of maintenance (watering, fertilizing, mowing, replanting, watering and other operations as required to establish healthy, viable lawn).



## Site Recommendations– Improvement Zones

**Zone D:** In planting areas at 19<sup>th</sup> Street entrance, replace 6" of soil. In terraced area, remove mulch/weeds, place filter fabric over existing soil, cut opening for shrubs and wrap around base of shrubs. Add new mulch. At north end of terrace, remove plants outside planter and replace with sod. Install 18" of rounded loose stone edging between grass & terraced timber wall to separate new lawn from planter.



## Site Recommendations– Other

### Berms

- ① Remove existing grass from berms
- ② Loosen surface soil, apply soil amendments and mix
- ③ Remove stones larger than 2" and any other extraneous matter
- ④ Legally dispose of waste material (grass, vegetation, etc.)
- ⑤ Restore existing grade with suitable soil mix before seeding

### Drainage

- ① Clean out catch basins and all drainage pipes
- ② Remove and clean all inlet grates
- ③ Remove debris in catch basin and legally dispose
- ④ Flush catch basin and cleanout pipes



### Weeds

- ① Remove weeds by removing entire plant, including roots
- ② Dispose of weeds off site

### Pavement

- ① Remove top 12" from the top of old basketball concrete foundation
- ② Install new surfacing and concrete base along gap of retaining wall and existing court
- ③ Provide a continuous expansion joint between wall and subbase



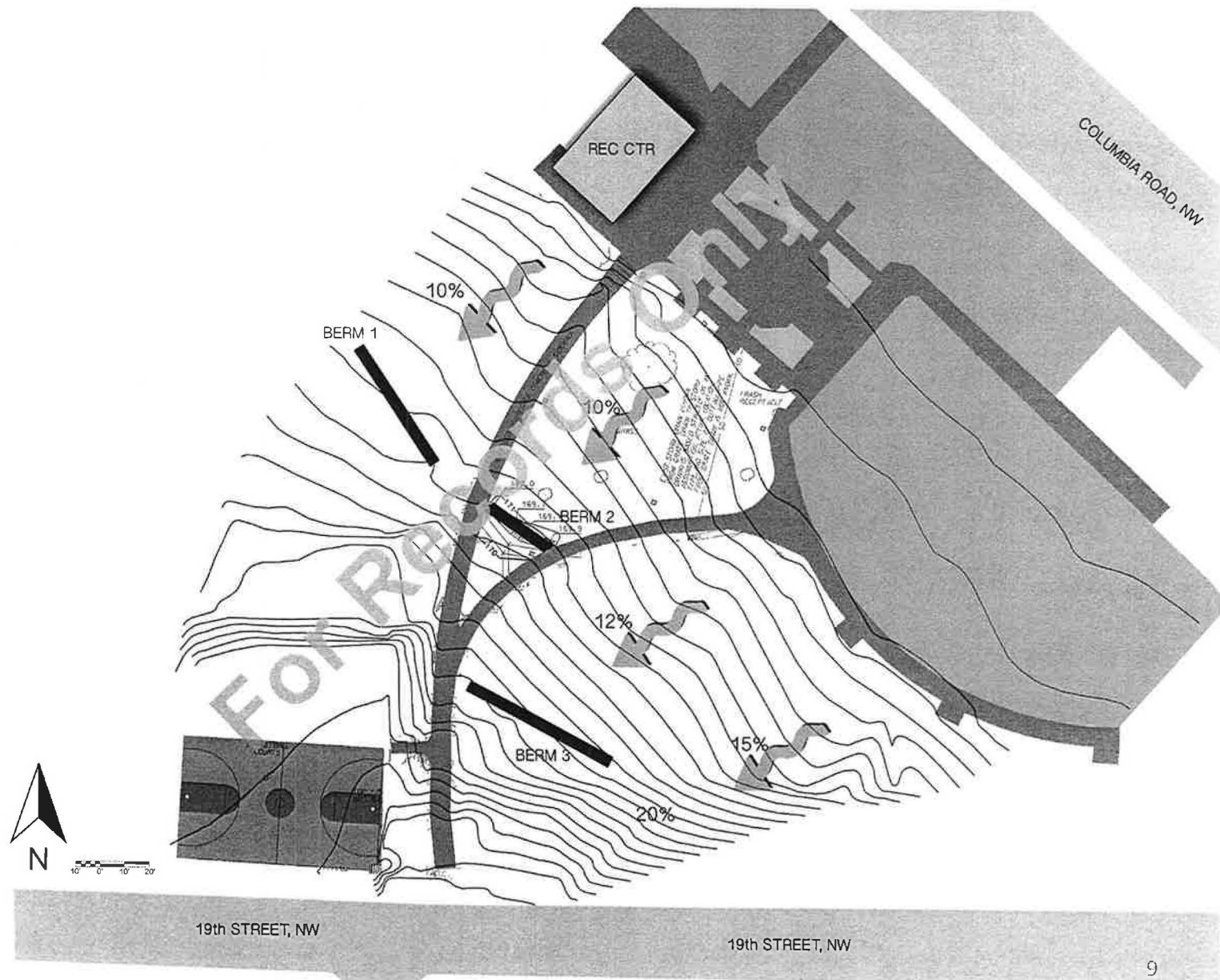
## Today / Current Conditions

- Erosion issues remain.
- Water runoff primarily originates from the Recreation Center area.
- Two of the four downspouts empty onto large concrete surfaces in front of the recreation center.
- Main drainpipe in existing trench drain is damaged.
- Runoff creates the following problems:
  1. Significant erosion of existing topography in key areas
  2. Runoff contributes to the city's storm water management problems
  3. Water forms dangerous ice in winter, making it unusable for extended periods of time
  4. Water puddles on 19<sup>th</sup> Street sidewalk, making it unusable for extended periods of time.



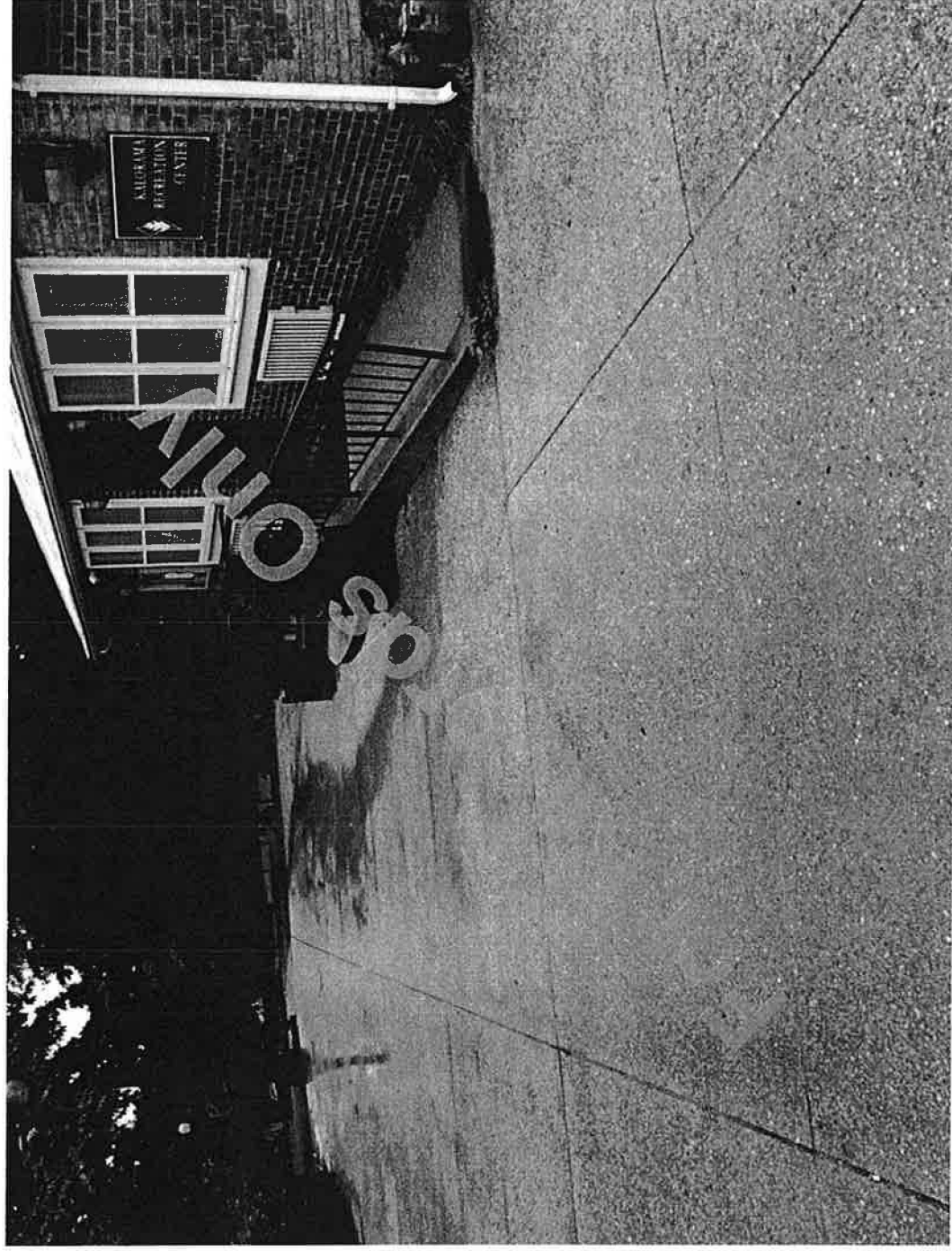
# Kalorama erosion project

## Conditions of the Site – Existing Site Analysis



# Kalorama erosion project

## Conditions of the Site



# Kalorama erosion project

## Conditions of the Site



## Looking Forward

### *Holistic and Comprehensive Remediation*

#### SHORT TERM

- Clean gutters and add downspouts, possibly add rain barrels in short term.
- Repair trench drain
- Fix existing grates and trench drains
- Aerate and amend soil

#### LONG TERM

- Development of an RFP for design services, including:
- Park-wide arborist services (pruning, insect & disease mgt, soil management, growth injections, etc.)
- Widespread soil percolation tests and Geotechnical reports
- Landscaping where needed
- Permeable pavers at plaza and potentially walkway
- Long term solution for capturing roof runoff (buried catchment area/underground cistern?)
- New crowned park walkway (perhaps permeable?)

#### COMMUNITY IDEAS/INPUT

## Next Steps

- After gathering all comments, DGS will put together an RFP for design services
- DPR/DGS will come back to community with 50% set to discuss with community to ensure we're on the right track.
- DPR/DGS will come back at 100% and inform community of upcoming construction.
- DPR/DGS will provide periodic updates to the community during the construction process.

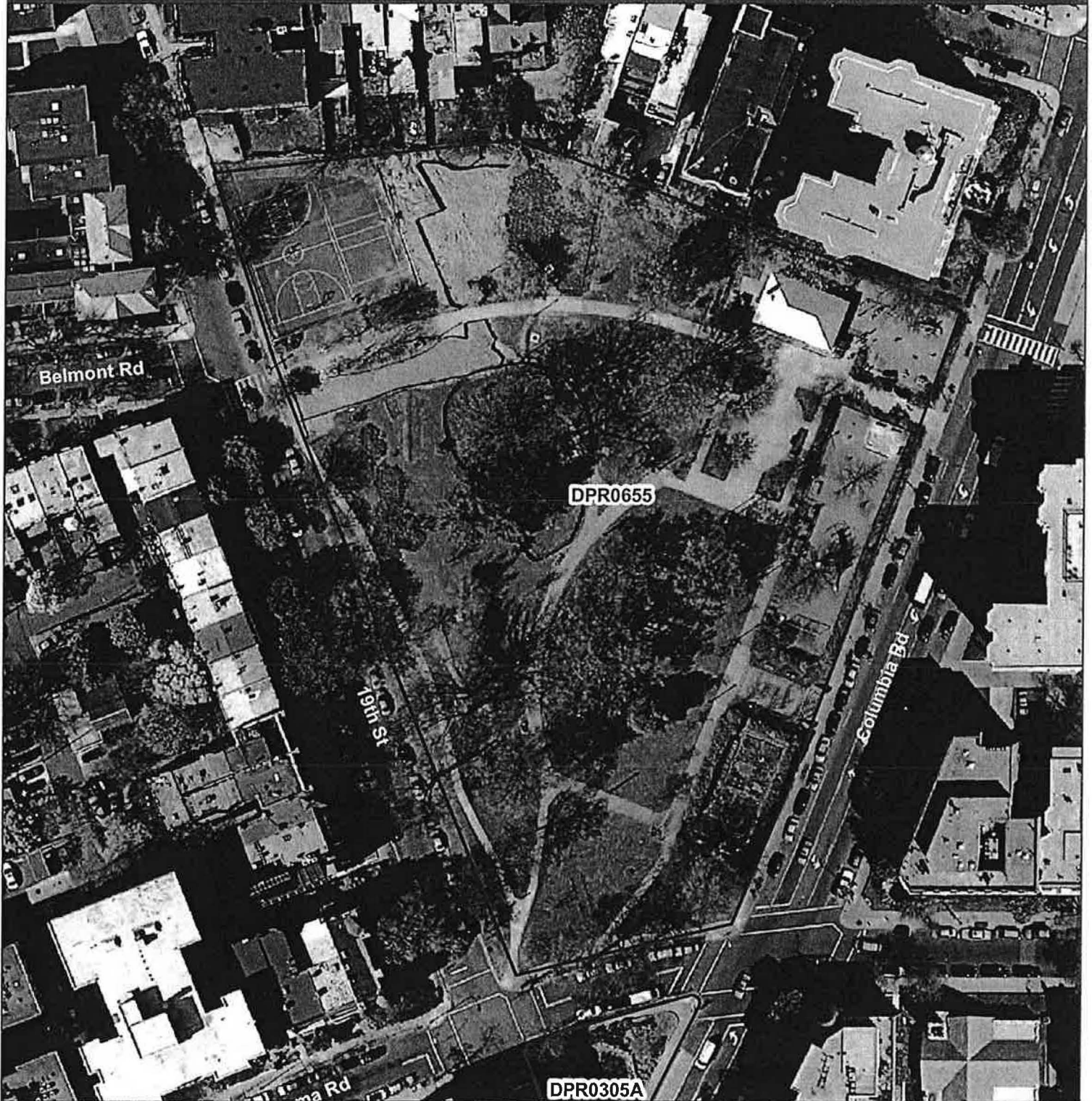


# Aerial Map



## Kalorama Recreation Center

1875 Columbia Rd., NW

Ward 1



0 37.5 75 150 Feet

-  Public Schools
-  DC Parks

Map: ORTHO DPR 0655  
Date: Jan 26, 2011  
Data Source: OCTO GIS DPR  
Photo Imagery: 2010 Orthophoto  
Coordinate System: NAD 1983 StatePlane MD  
Prepared by: DC Dept of Parks and Recreation

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