PROJECT MANUAL

KALORAMA PARK

PHASE I

October 17, 2014

Macris, Hendricks & Glascock, P.A.
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DATE: October 17, 2014

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Attention: Stephen Patt, P.E.

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SECTION 02050 - SUBSURFACE INVESTIGATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes the results of the subsurface investigations made on the Project site for the purposes of determining the subsurface conditions relative to the following:
   1. General descriptions of the subsurface soil and groundwater conditions at the site.
   2. Evaluation of previously constructed areas to assess the amount of unsuitable debris material left from previous construction activity.
   3. Comments on geotechnical aspects of the associated construction that were readily apparent at the time of the preliminary investigation.
   4. Infiltration rates and subsurface information applicable to stormwater management areas.
   5. Recommendations for earthwork requirements, excavation and construction related information for the substrate conditions encountered in the test borings.

B. Technical Memo #1, dated June 29, 2012, included in this section was prepared by David Volkert & Associates Engineering, P.C. and is available to prospective bidders and/or contractors for informational purposes only. The opinions expressed in these reports are those of the engineer and represent their interpretation of the subsurface conditions, tests and results of analyses that they performed. Should the data in these reports not be adequate for the contractor's purposes, the contractor may make his own investigations, tests and analyses prior to bidding. Contractors desiring to conduct additional subsurface explorations prior to bidding should contact the Owner for arrangements to enter the project site.

C. Technical Memo #2, dated June 6, 2012, included in this section was prepared by David Volkert & Associates Engineering, P.C. and is available to prospective bidders and/or contractors for informational purposes only. The opinions expressed in these reports are those of the engineer and represent their interpretation of the subsurface conditions, tests and results of analyses that they performed. Should the data in these reports not be adequate for the contractor's purposes, the contractor may make his own investigations, tests and analyses prior to bidding. Contractors desiring to conduct additional subsurface explorations prior to bidding should contact the Owner for arrangements to enter the project site.

D. The Geotechnical Services Report, dated August 15, 2014, included in this section was prepared by ECS Capitol Services, PLLC and is available to prospective bidders and/or contractors for informational purposes only. The report has been prepared for design purposes only and may not be sufficient to prepare an accurate bid for construction. Contractors wishing to obtain copies of this report may secure them from ECS Capitol Services, PLLC at a nominal charge with the understanding that its scope is limited solely to design considerations. The opinions expressed in these reports are those of the geotechnical engineer and represent their interpretation of the subsurface conditions, tests and results of analyses that they performed. Should the data in these reports not be adequate for the contractor's purposes, the contractor may make his own investigations,

tests and analyses prior to bidding. Contractors desiring to conduct additional subsurface explorations prior to bidding should contact the Architect for arrangements to enter the project site.

E. The Contractor, at his own expense, may conduct additional subsurface investigations, tests and analyses with the prior approval of the Owner.

F. Field logs and laboratory data sheets are available only in the office of the geotechnical engineer and will be available only at his discretion.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION 02050

DRAFT

David Volkert & Associates Engineering, P.C.

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TECHNICAL MEMO 1 - SITE INVESTIGATION NOTES

PROJECT: Kalorama Park

Volkert No. 230405.60

DATE OF INVESTIGATION: June 6, 2012

1:00 pm - 4:00 pm

LOCATION: Project Site

DATE OF REPORT: June 18, 2012

Prepared by: Oliver Boehm and Bereket Merzi, Volkert

ATTENDEES AT MEETING:

Name	Organization	Attendance
Brent Sisco	Department of Parks Recreation (DPR)	X
Bereket Merzi	Volkert, Inc.	X
Oliver Boehm	Volkert, Inc.	X

Task 1: Review of Existing Documentation: Photographs of previous construction activities provided by DPR.

Photographs of construction of timber retaining wall.

Photographs of construction debris and soil medium below lawn and planting areas.

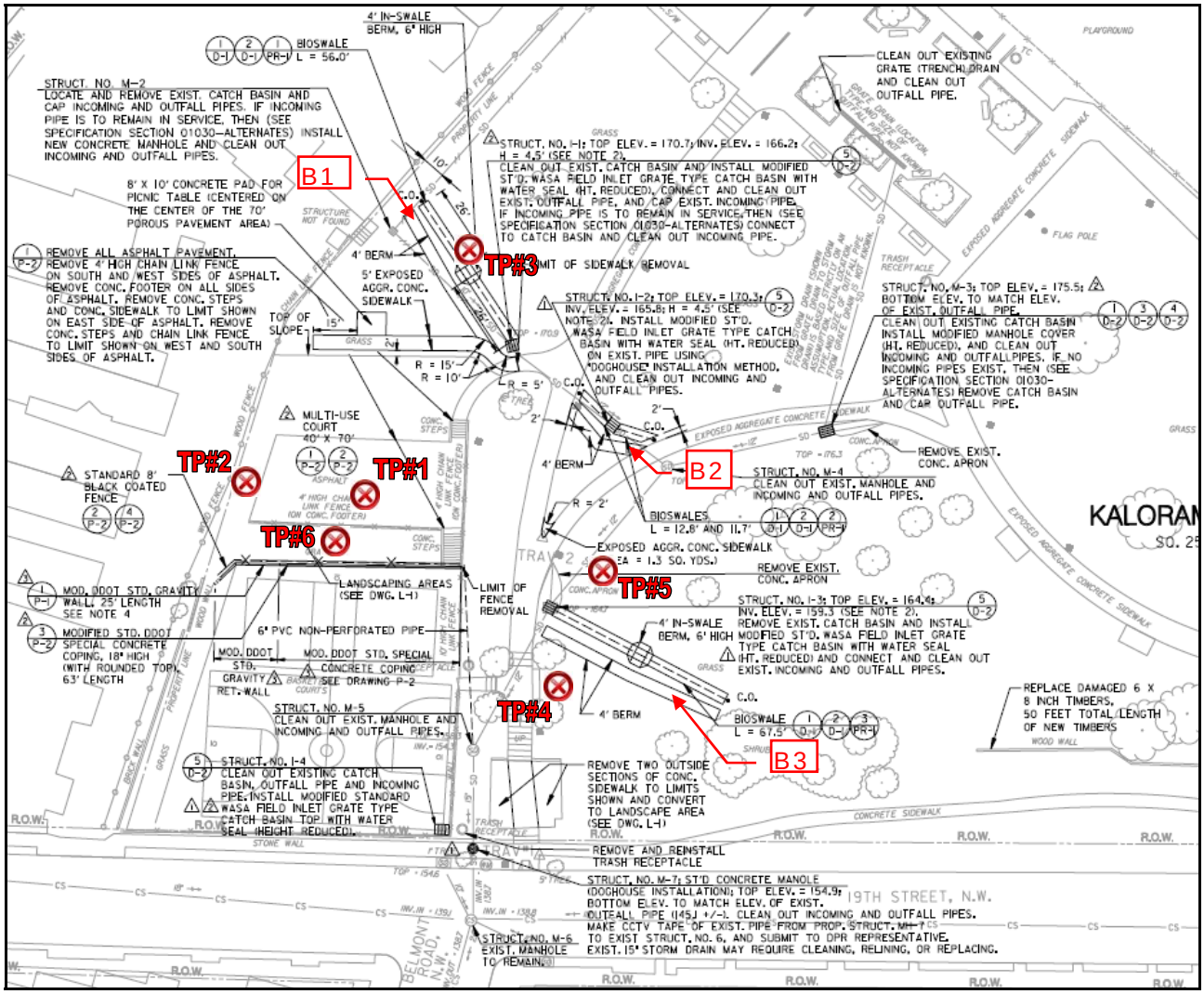
Task 2: Investigation of the Existing Conditions for Compliance

On June 6, 2012 Volkert conducted an investigation at the Kalorama Park site. The purpose of our investigation was to evaluate the conditions in the field and determine if further steps are required to complete the construction of the site.

We took samples at 6 locations throughout the site. Five of these were test pits were in lawn areas (TP#1 through TP#5) and one was a composite sample taken in the planting bed (TP#6) adjacent to the basketball court. Various excavations in this planting bed were taken to understand the condition of the entire area.

We also conducted a visual evaluation of the berms (B1, B2, and B3), planting beds, and other constructed elements. Our investigation of the site revealed that various elements of the proposed improvements were not properly constructed. The following are our findings and recommendations.

A. Site Plan



Site Plan from sheet 4 of the construction drawings, dated 11/6/2009

B. Soil Condition – Test Pits

Locations (See Site Plan, above)
The location for the test pits were determined based on observations during renovation of the park. It is believed that construction procedures used did not comply with the construction drawings, which resulted in construction debris being buried under the lawn areas.

Weather Conditions
Weather conditions were sunny and fair with low humidity. Rain fall occurred the previous day.

General Method
The pits were dug using small hand tools (pick ax, shovel, and a manual auger). The pits were dug to a depth sufficient to determine the extent of construction and nature of the soil medium.

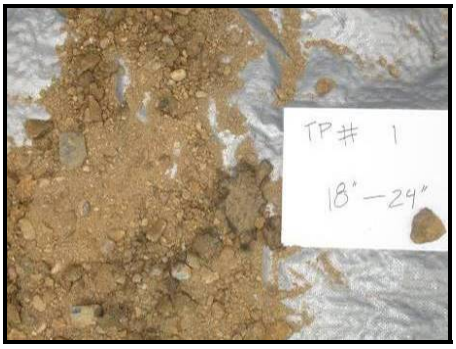
TP#1 - Test Pit No. 1:

TP#1: 0”-12”

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”

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”

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.

OBSERVATION	*INITIAL RECOMMENDATIONS*
See Above.	Remove top 12” of material and provide suitable mix.

TP#2 - Test Pit No. 2:

TP#2: 0”-12”

TP#1: 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”

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#2: 18”-24”

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#2.

OBSERVATION	*INITIAL RECOMMENDATIONS*
See Above.	a. Remove top 12” of material and provide suitable mix. b. Treat with sod or seed.

TP#3 - Test Pit No. 3:

TP#3: 0”-12”

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 to12 inches we encountered natural soil with some small rocks.

TP#3: 12”-24”

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

OBSERVATION	***INITIAL RECOMMENDATIONS***
See Above.	a. Remove top 6” of material and provide suitable mix. b. Treat with sod or seed.

TP#4 - Test Pit No. 4:

TP#4: 0”-12”

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.

OBSERVATION	*INITIAL RECOMMENDATIONS*
See Above.	a. Remove top 36” of material and provide suitable mix. b. Treat with sod or seed.

TP#5 - Test Pit No. 5:

TP#5: 0”-12”

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

OBSERVATION	*INITIAL RECOMMENDATIONS*
See Above.	a. Remove top 6” of material and provide suitable mix.

	b. Treat with sod or seed.

TP#6 - Test Pit at Planting Bed:

TP: 0”-6”

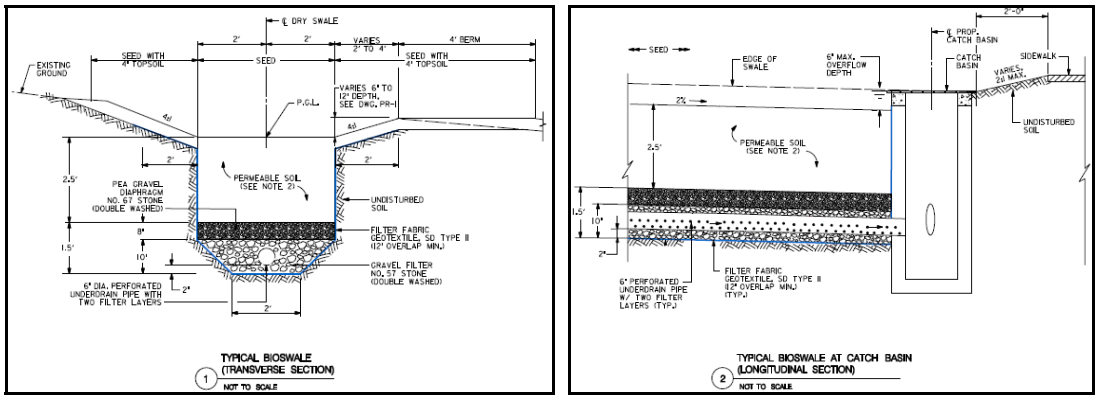
TP#6: 0”-6”
At 0 to 6 inches we encountered a layer of mulch on wet soil. The clay like medium appeared to be inadequate. However, the plants appeared healthy. Roots of shrubs have spread through the planting medium. Weeds are abundant. Roots of weeds remain on the top 1 inch of the planting soil.

TP: 6”-12”

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

OBSERVATION	***INITIAL RECOMMENDATIONS***
See Above.	Remove weeds (Also see recommendations in the Plantings section).

C. Berms (Adjacent to Bioswales) & Drainage



Bioswale details from sheet 8 of the construction drawings, dated 11/6/2009

Berm B1

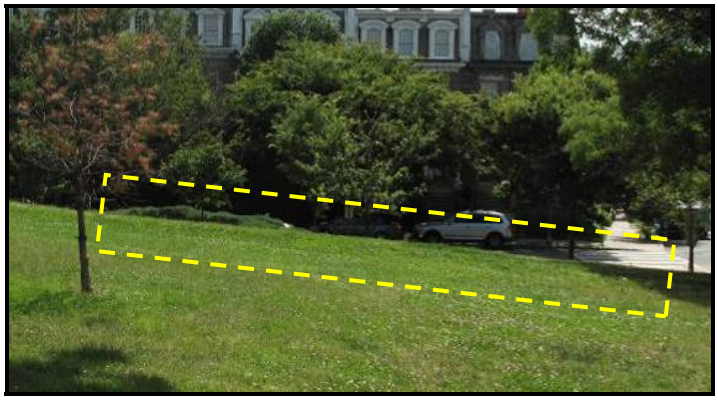
Catch Basin at Berm B1

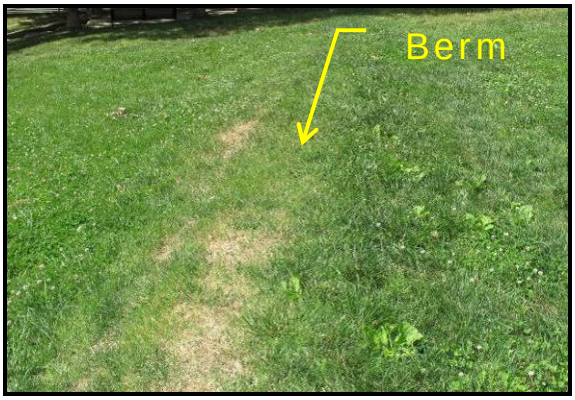
OBSERVATION	*INITIAL RECOMMENDATIONS*
• Bioswale appears to be working normally. • Berm is mostly well covered with lawn. In some area, bare patches appear. • Soil uphill of the berm appears to be adequate (See TP#3 above). • Catch basin at the end of bioswale has standing water. The outfall pipe appears to be clogged.	a. Prepare bare areas around the catch basin for new lawn. b. Treat area with seed or sod. c. Flush catch basin and cleanout pipes.

Berm B2

Catch Basin at Berm B2

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Bioswale appears to be working normally. • Berm is mostly well covered with lawn. In some area, bare patches appear. • Catch basin at the end of bioswale is dry.	a. Treat area with seed or sod. b. Flush catch basin and cleanout pipes.



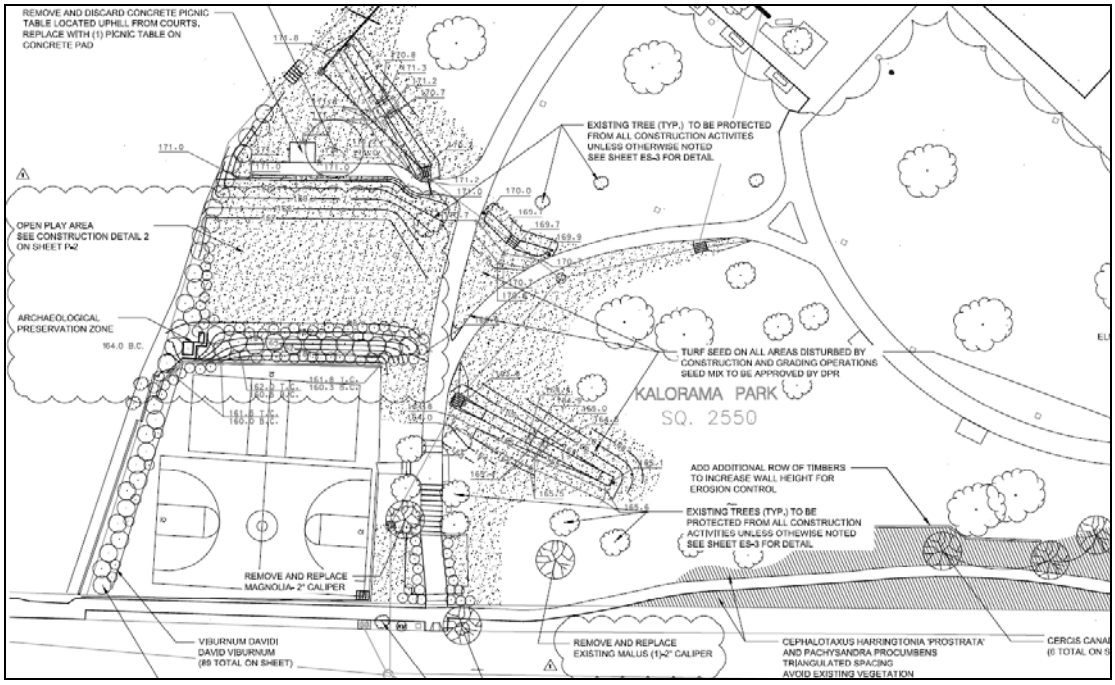


Berm B3

Catch Basin at Berm B3

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Bioswale appears to be working normally. • Berm is mostly well covered with lawn. In some area, bare patches appear. • Catch basin at the end of bioswale has miscellaneous debris.	a. Prepare bare areas around the catch basin for new lawn. b. Treat area with seed or sod. c. Remove debris in catch basin. Flush catch basin and cleanout pipes.

D. Plantings



Landscape Plan from sheet 16 of the construction drawings, dated 11/6/2009,
Note: Timber retaining wall is not shown



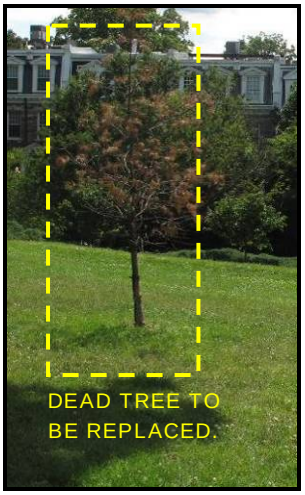



Weeds

OBSERVATION	*INITIAL RECOMMENDATIONS*
There are weeds throughout the site.	a. Remove weeds.







Pruning & Trees

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Vines and trees are hanging over planted materials and site features. • Trees at the 19th Street NW entrance into the park appear to be in poor health. Roots may have been damaged from construction activity.	a. Prune shrubs and ground cover. b. Have tree roots pruned and treated by arborist. c. Trees that are dead or dying should be replaced or treated as directed by arborist.

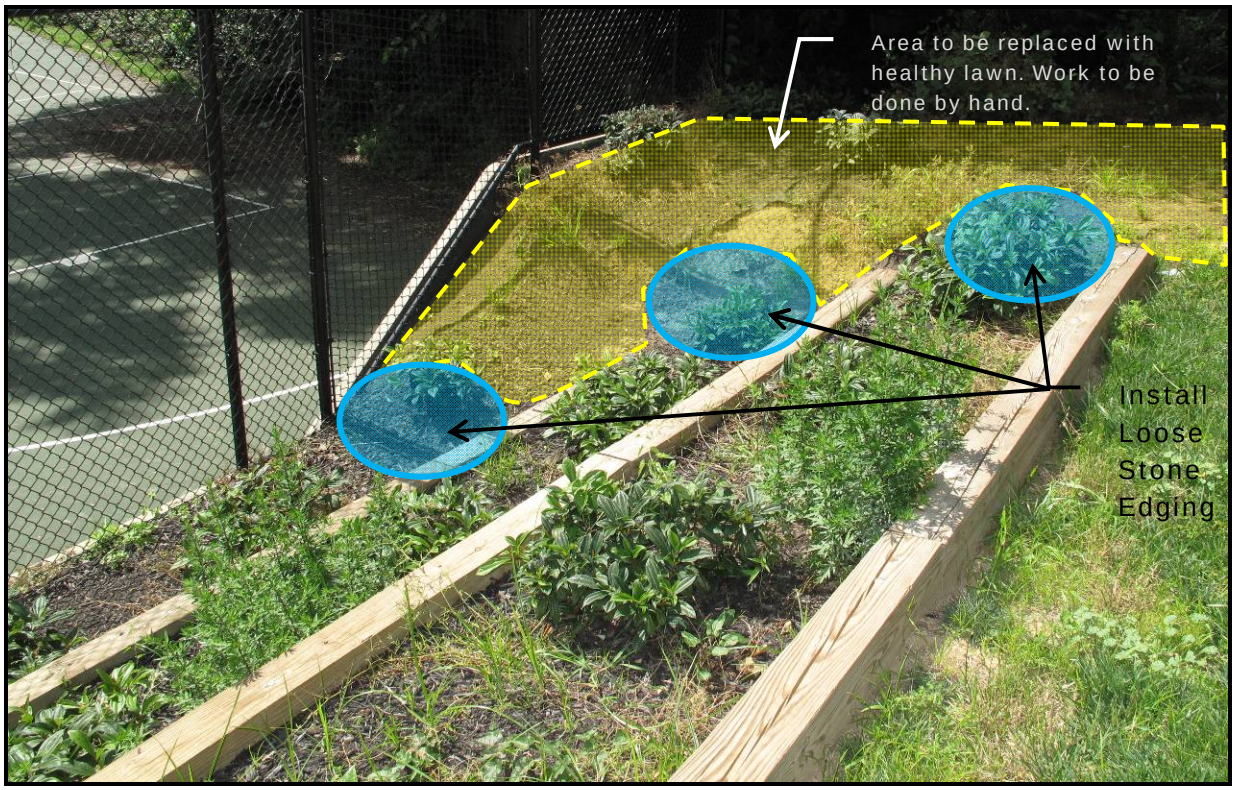

Shrubs and Groundcover at West Entrance

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Most shrubs and other plantings in the 19th 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.	a. Remove filter fabric, debris, and weeds. b. Remove top 6" of soil in planter boxes and replace with planting soil. Install heavy duty filter fabric. Cut opening in fabric to allow shrubs to grow. Install a 3" thick layer of mulch to the top of timber plank. Shrubs should stay in place, undisturbed. c. Treat area around planter boxes with sod or seed.

E. Areas Around Walls And Planters

Concrete Wall and Paving

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Pavement between basketball court and retaining wall is missing and hazardous. • Foundation of previously existing basketball court remains in place, and is an obstruction to anyone using the court.	a. Remove top 12" of old basket ball hoop concrete foundation. b. Install basketball court surface with a concrete base at gap between retaining wall and existing court. Provide a continuous expansion joint between wall and subbase.



Terraced Timber Retaining Wall and Planter

OBSERVATION	*INITIAL RECOMMENDATIONS*
• Terraced 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.	a. Remove planting and filter fabric at the north end or the terraced planter and replace with sod or seed. Provide ±18" dia. rounded loose stone edging between grass and planter to separate lawn from planting (see images above). There should be no digging past 12".

F. Fencing

OBSERVATION	*INITIAL RECOMMENDATIONS*
• New black fence and previously existing fence are poorly tied together with miscellaneous fence fabric.	a. Correctly tie new fence fabric to fence posts.

DRAFT

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TECHNICAL MEMO 2 - RECOMMENDATIONS

PROJECT: Kalorama Park (Volkert No. 230405.60)

DATE OF REPORT: June 29, 2012

Prepared by: Oliver Boehm and Bereket Merzi, Volkert

Description of Technical Memo 1 Site Investigation Notes - Task 1: Review of Existing Documentation and Task 2: Investigation of the Existing Conditions for Compliance

On June 6, 2012 Volkert conducted an investigation at the Kalorama Park site. The purpose of our investigation was to evaluate the conditions in the field and determine if further steps are required to complete the construction of the site.

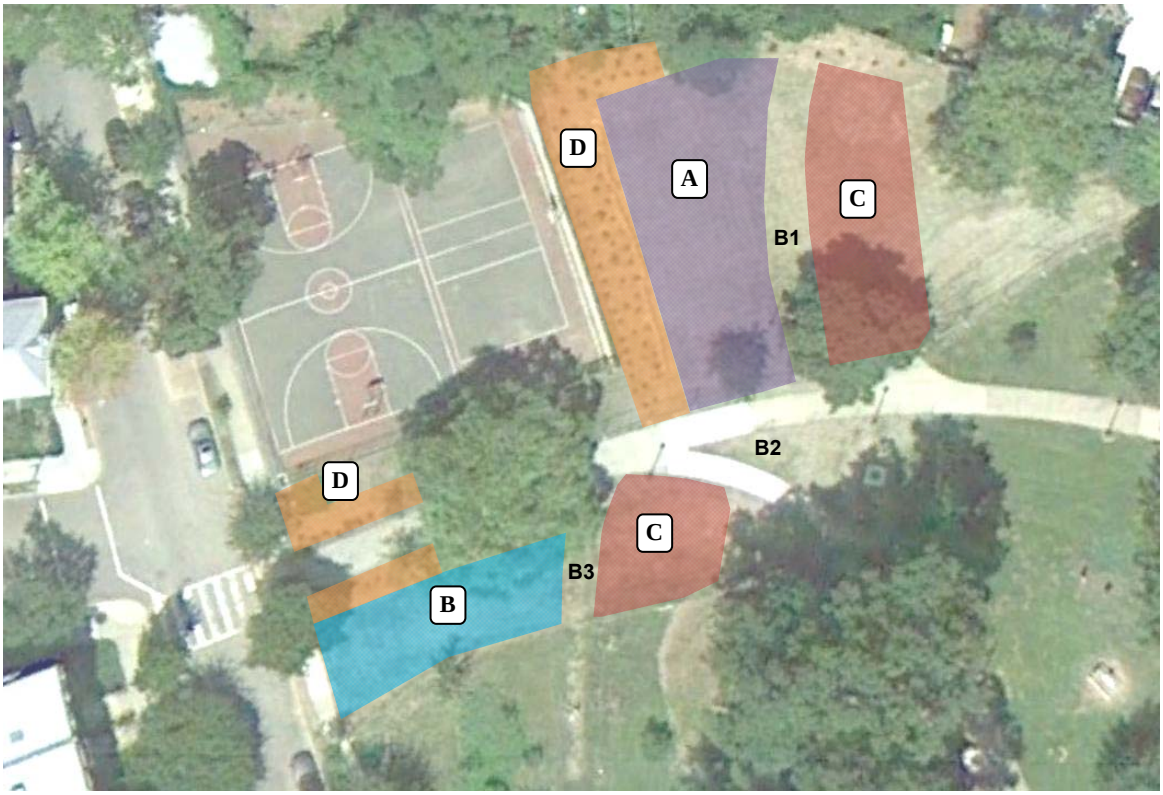
We took samples at 6 locations throughout the site. Five of these were test pits in lawn areas (TP#1 through TP#5) and one was a composite sample taken in the planting bed (TP#6) adjacent to the basketball court. The location for the test pits were determined based on observations during renovation of the park. It is believed that construction procedures during the two previous contracts did not comply with the construction drawings, which resulted in construction debris being buried under the lawn areas.

We also conducted a visual evaluation of the berms (B1, B2, and B3), planting beds, and other constructed elements. Our investigation of the site revealed that various elements of the proposed improvements were not properly constructed or have deteriorated.

A thorough report of the Site Investigation is documented in Technical Memo #1 submitted on June 18, 2012 by Volkert for review.

Task 3: Recommendations for Improvements

This plan represents the site improvement zones and berms, which are describe in this technical memo. This information will be used to develop biddable plans and specifications for improvements to Kalorama Park.



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:

Texture Class	:	% of Total Weight
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.**

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:

Texture Class	:	% of Total Weight
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.**

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 to12 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:

Texture Class	:	% of Total Weight
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.**

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 19th 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.

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

Trees at the 19th 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 19th 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 19th 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 ±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 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.**

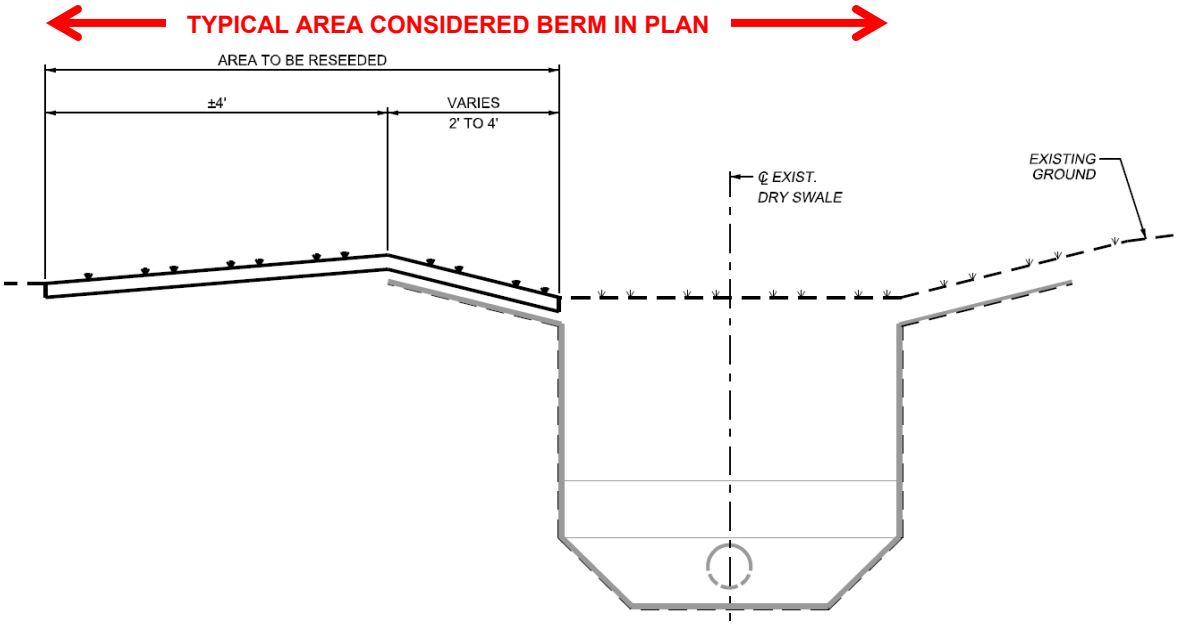
E. Berms

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 contactor 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"

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

DGS THE DEPARTMENT OF GENERAL SERVICES

DPR DC DEPARTMENT OF PARKS AND RECREATION

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

Kalorama erosion project

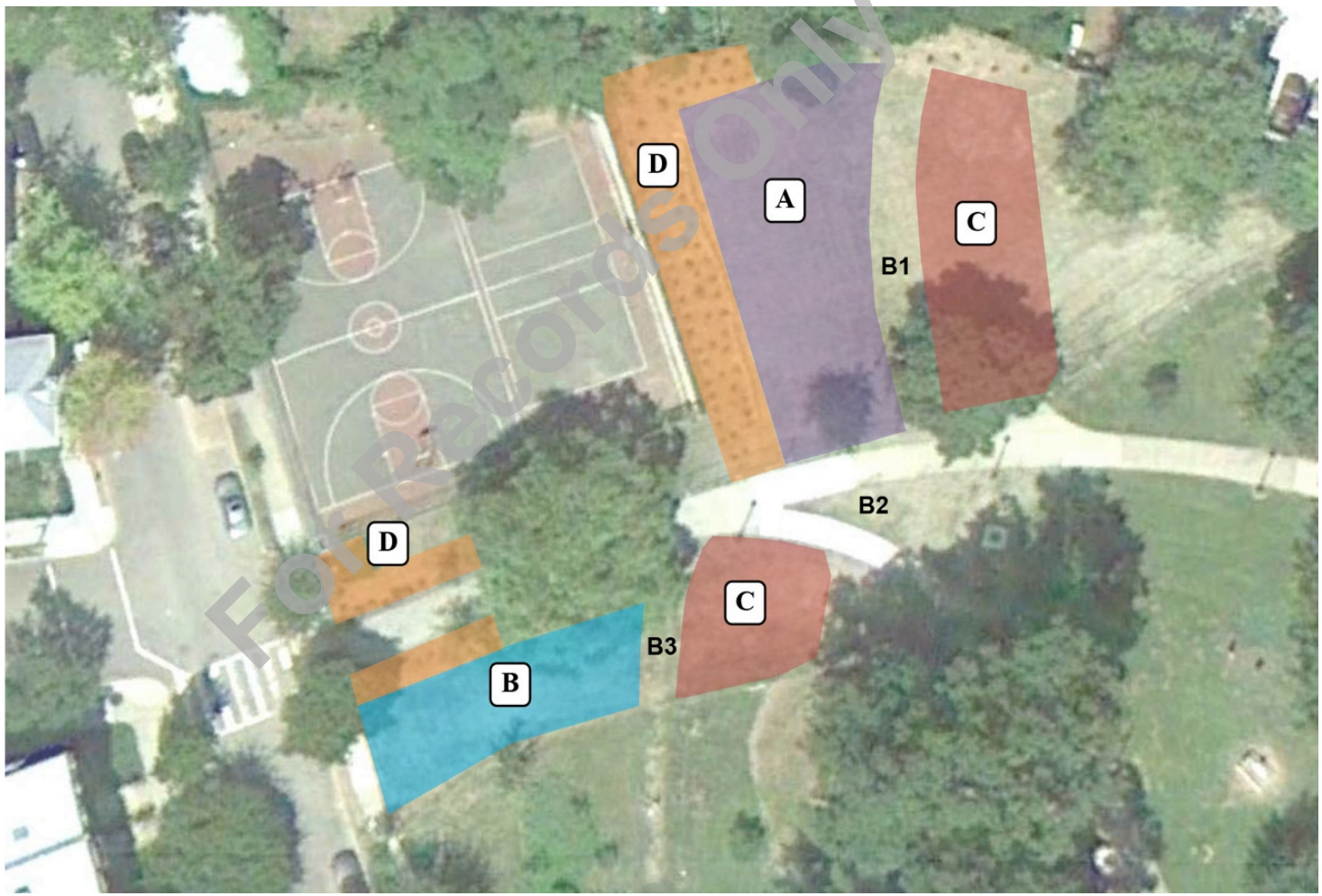
Original Work

- 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 retetention, 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.

Kalorama erosion project

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).



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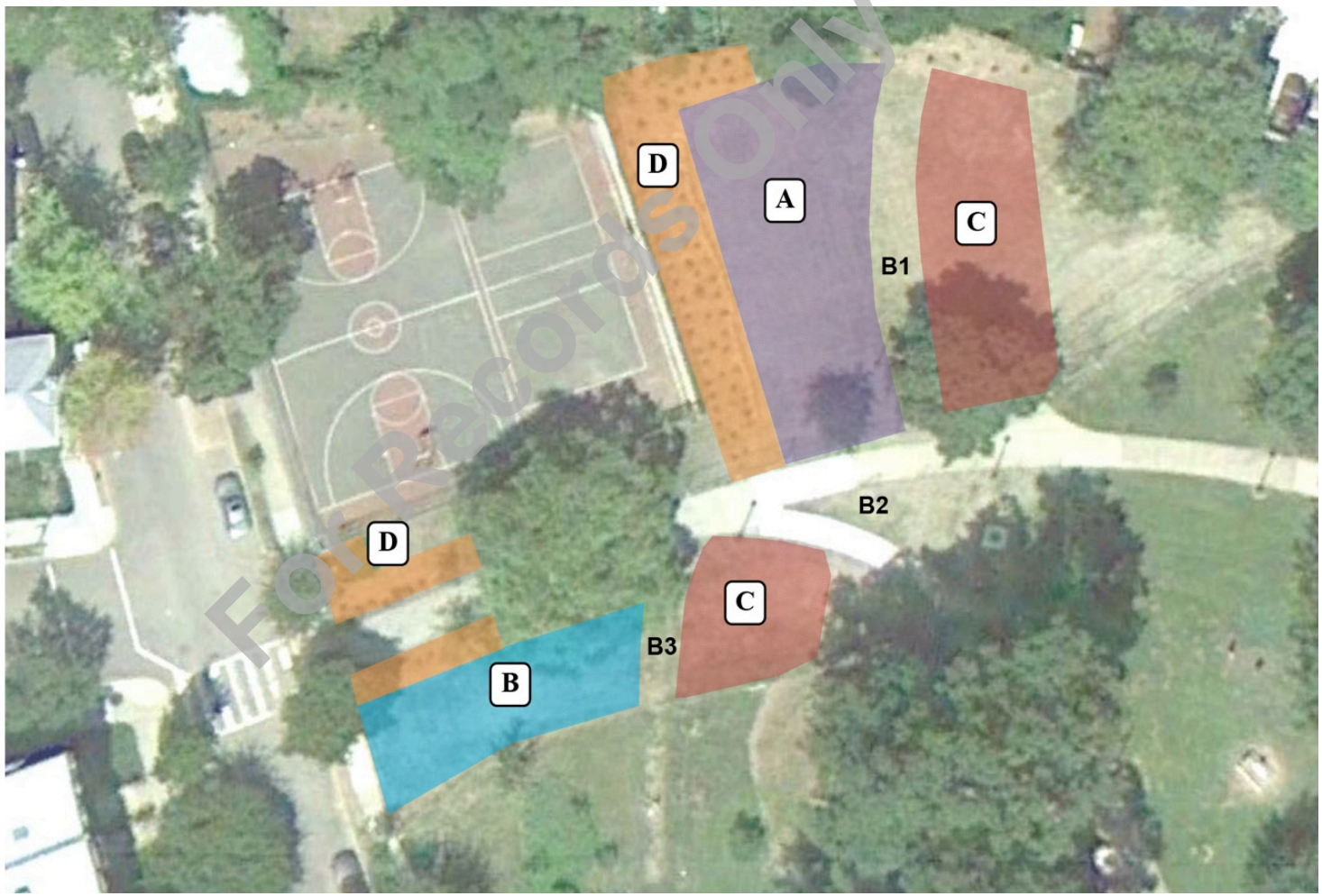
Site Recommendations– Improvement Zones

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).



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Site Recommendations– Improvement Zones

Zone D: In planting areas at 19th 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.

Kalorama erosion project

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 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

Kalorama erosion project

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 19th Street sidewalk, making it unusable for extended periods of time.

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Conditions of the Site – Existing Site Analysis