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FILE NO: 66266.000002

March 29, 2005

RECEIVED
D.C. OFFICE OF ZONING
2005 MAR 30 AM 11:46

By Hand Delivery

Geoffrey Griffis, Chairman
Board of Zoning Adjustment
Room 210 South
441 4th Street, N.W.
Washington, D.C. 20001

Re: BZA Appeal No. 17285
Appeal of Patrick Carome
(4825 Dexter Terrace, N.W.)

Dear Chairman Griffis and Board Members:

Enclosed for filing in this case and for purposes of the April 5, 2005 hearing (continue date), on behalf of the property owners in opposition to the appeal, I attach the following:

1. Hard copy pictures of our power point presentation on April 5, 2005, as part of the record, some of which were filed with our opposition brief on February 25, 2005.

2. Response in opposition to the statement of the Department of Interior, NPS, filed on March 14, 2005, which statement supports Mr. Carome's appeal.

3. Response in opposition to the March 14, 2005 filing of Mr. Carome regarding the rulemaking history of 11 DCMR § 2503.

Sincerely,

Richard L. Aguglia

Richard L. Aguglia

Enclosures

cc: By Hand Delivery
Patrick Carome, Esq., appellant
Lisa Bell, Esq., DCRA counsel

BZA
Case No. 17285
Exhibit No. 55

Board of Zoning Adjustment
District of Columbia
CASE NO. 17285
EXHIBIT NO. 55

Toye Bello, Zoning Administrator

By Mail
ANC 3D
c/o Alma Gates, Chair
Jeffrey Bernstein, Esq.
Counsel for Department of Interior
(representing David Murphy, NPS)

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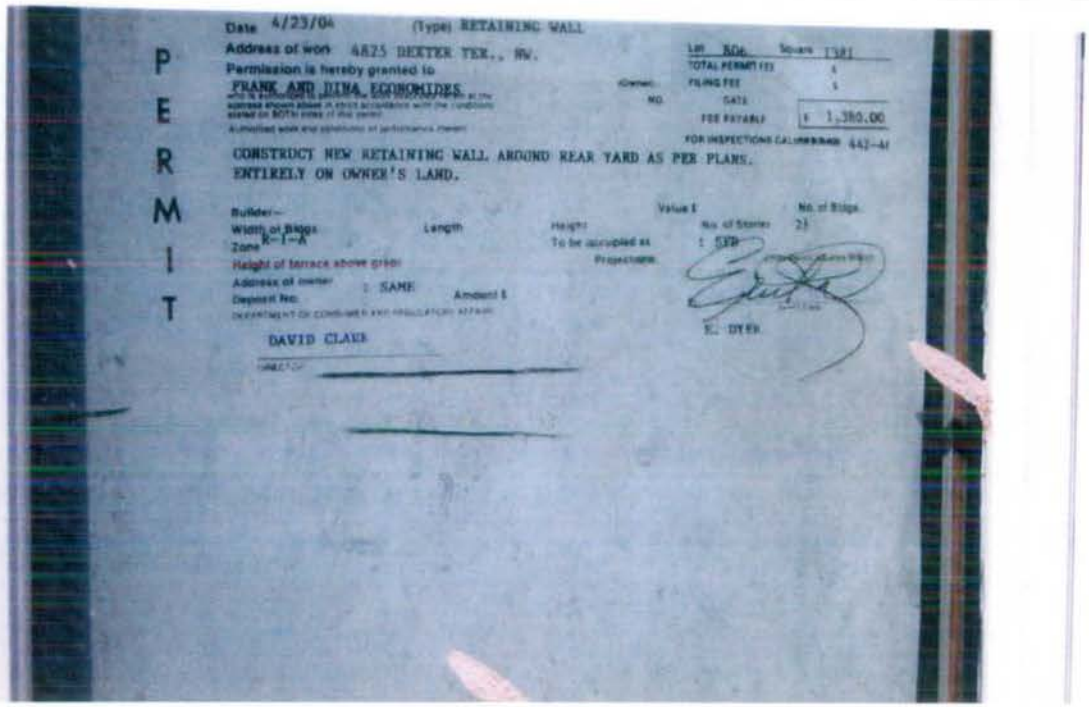
D.C. OFFICE OF ZONING
2005 MAR 30 AM 11:46


PERMIT

Date 4/23/04 (Type) RETAINING WALL

Address of work 4825 DEXTER TER., NW.

Permission is hereby granted to

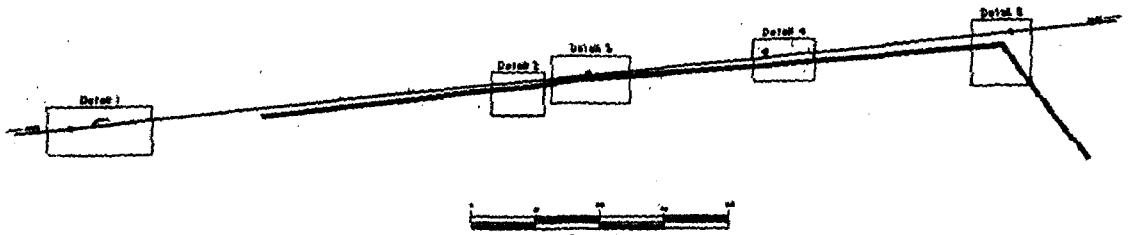
FRANK AND DINA ECONOMIDES

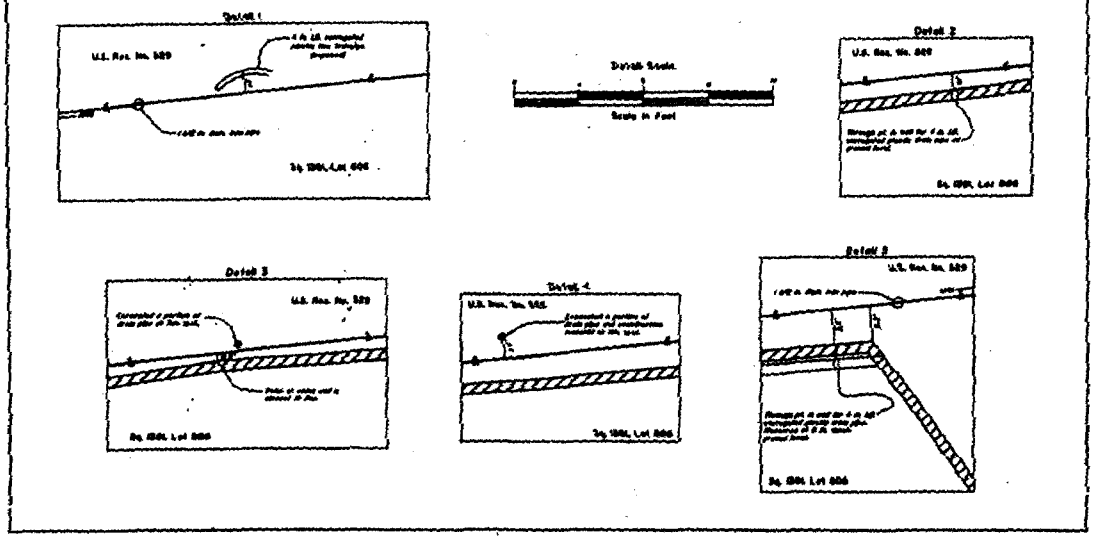
CONSTRUCT NEW RETAINING WALL AROUND REAR YARD AS PER PLANS. ENTIRELY ON OWNER'S LAND.

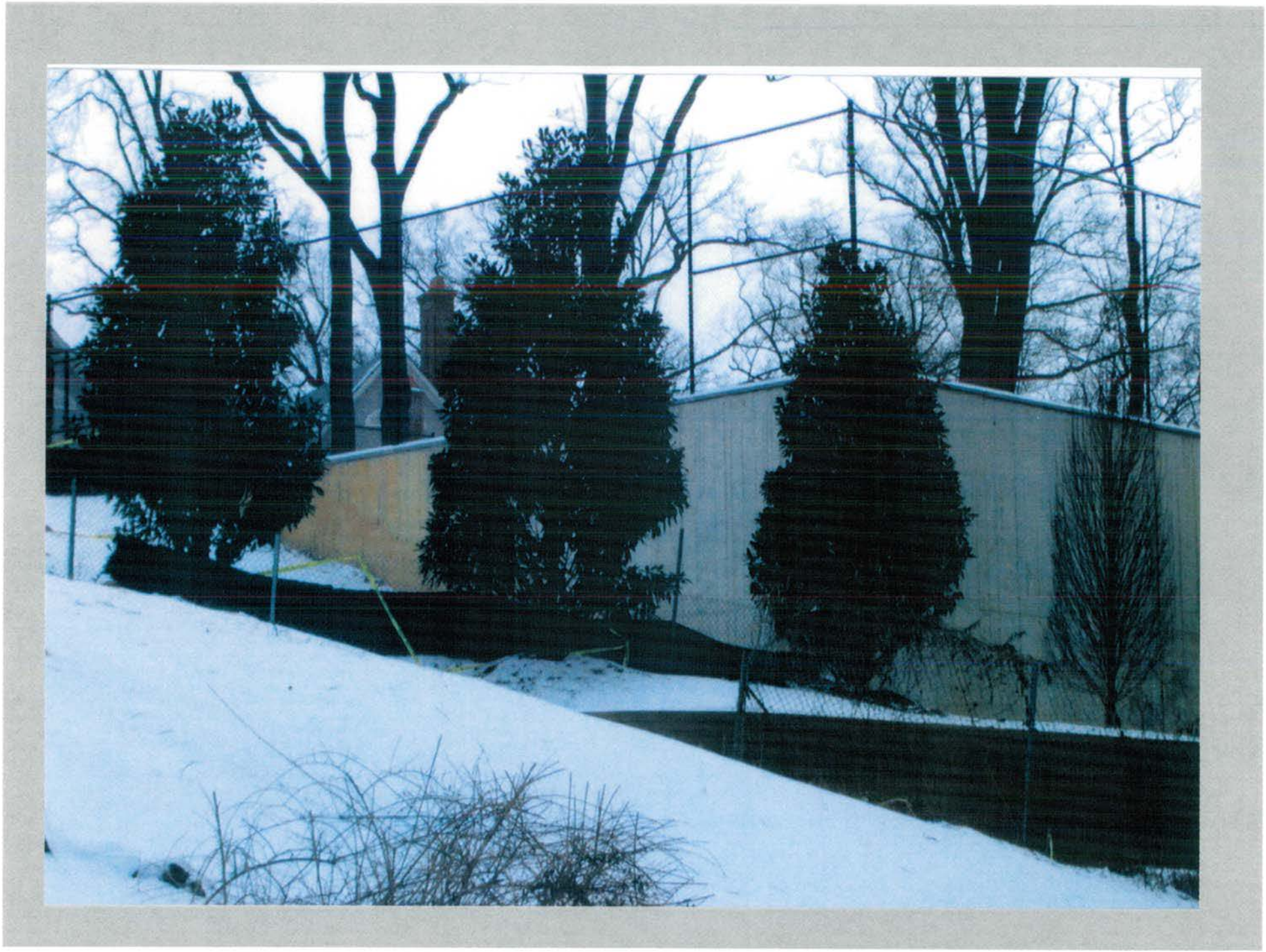
DAVID CLAUS

KEEP OUT

U.S. RESERVATION NO. 529, ROCK CREEK PARK, WASHINGTON, DISTRICT OF COLUMBIA







3005

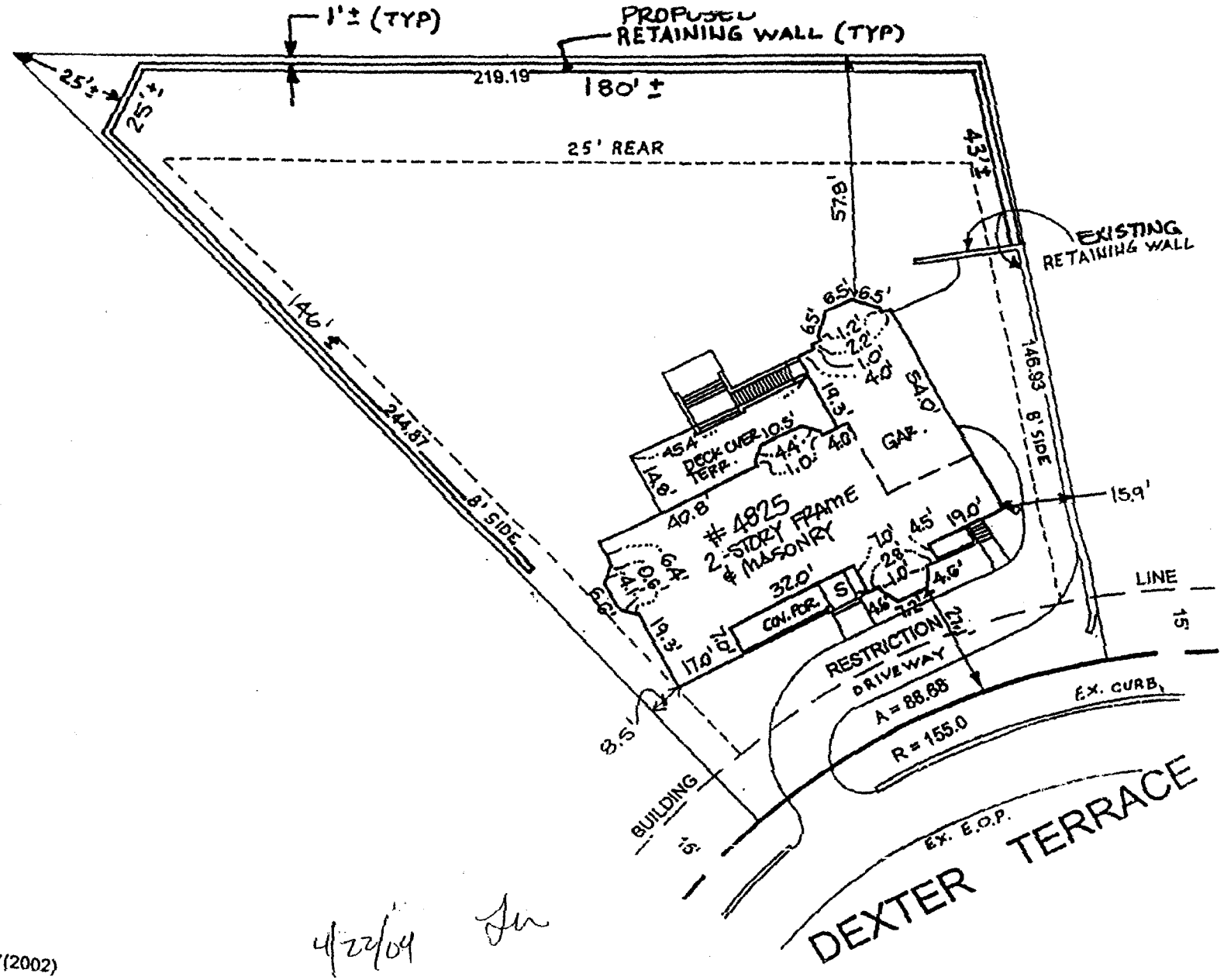
DUMBARTON OAKS
PARK
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
CLOSED AT DARK

THIS IS A NATIONAL PARK AREA

Help protect this land. All plants, animals, and other
and historic features are protected by park regulations
removal, destruction, and injury.

- **No collecting of natural or historic**
- **Leash all pets everywhere, includi on trails**
- **No dumping or littering permitted**
- **Bicycles and motor vehicles are not allowed on horse or foot trails (ie: unpaved surfaces).**

Help the National Park Service enforce these regulations
Report offenses immediately to Park Police or Rangers.
assistance call the United States Park Police at (202) 619



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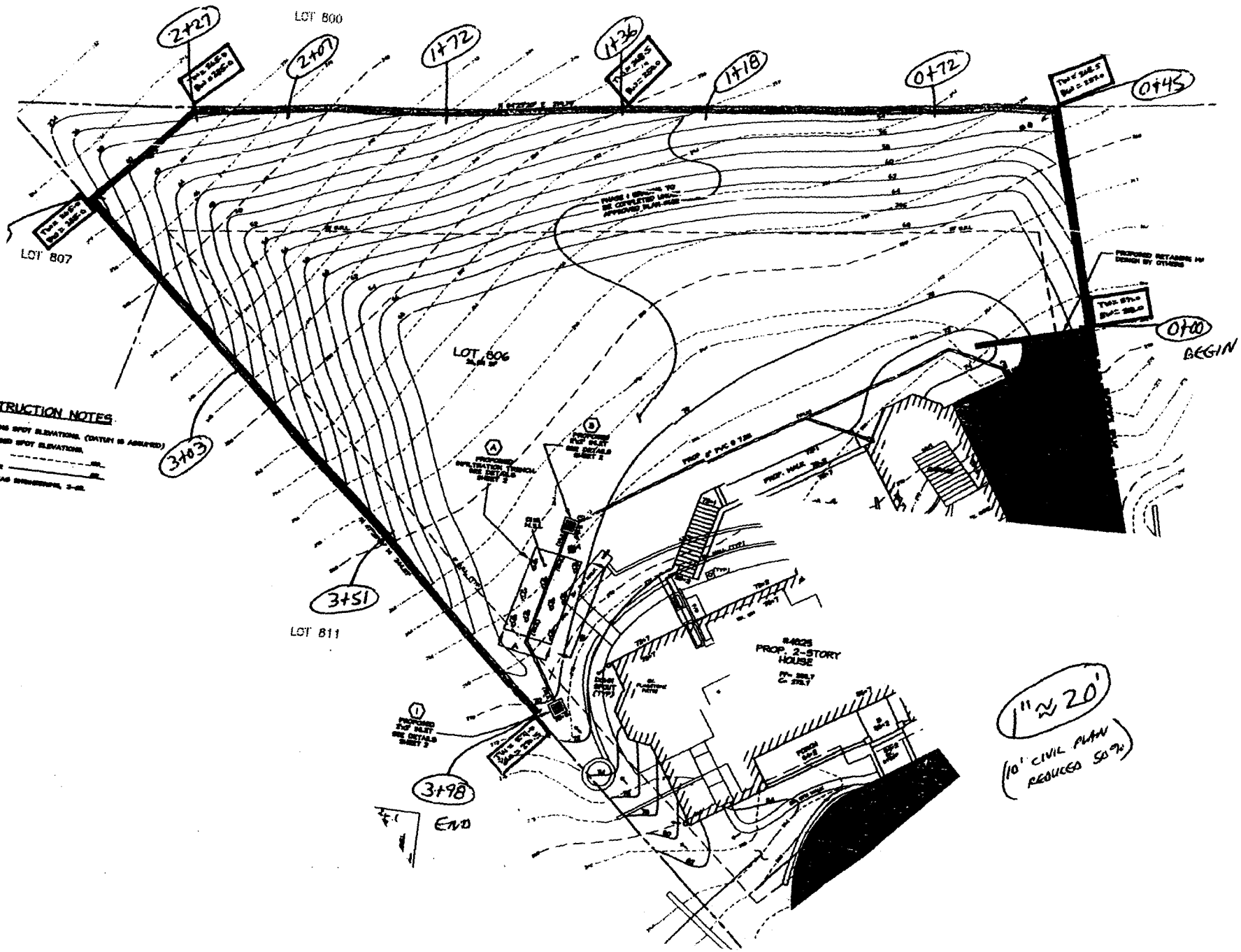

LOT 800
LOT 807
LOT 806
LOT 811
2+27
2+01
1+72
1+36
1+18
0+72
0+45
0+00
BEGIN
3+03
3+51
3+98
END
PROP. 2-STORY HOUSE
1" ≈ 20'
(10' CIVIL PLAN REDUCED 50%)

MESA SITE RETAINING WALL

FINAL DESIGNS FOR:

ECONOMIDES RESIDENCE

NW, Washington DC

REVIEWED BY

NO. [illegible]
REGISTERED
PROFESSIONAL ENGINEER

01/27/04

301-370-[illegible]65

BLOCK PRODUCER: York Building Products

PREPARED BY: Doug Stahl of Ryan & Associates

P.A. PROJECT #: PA291303

Response To Statement Of U.S. Department Of Interior,
NPS Filed In This Case On March 14, 2005

The statement of DOI/NPS in support of Appeal No. 17285 has multiple deficiencies. First, it was submitted under the cover letter of Sara Blumenthal, Regional Director, National Capital Region. However, the NPS representative, David Murphy, indicated to the Board at the last hearing in this case that the actual statement was not prepared by her but by unnamed NPS staff. Accordingly, we have a statement with no author. Second, the statement makes several factual allegations, but attaches no data in support of those allegations.

Finally, assuming arguendo (but not conceding) that there is some ambiguous encroachment onto federal property by the retaining wall, DOI/NPS resort is to the proper court for an action of alleged trespass. We note that NPS has dug numerous holes of some size on the owner's (Economides') property, to ascertain whether any of the footers encroach on federal property.[1]

OVERVIEW

An NPS boundary line specialist, Joseph Kish, monitored the construction of the wall from its inception in late June of 2004 to late October of 2004, perhaps on a weekly basis. With the exception of a discarded piece of piping, since removed, Mr. Kish found no encroachment onto federal property by the wall. Mr. Kish even admitted to the

[1] The comment contained in DOI/NPS letter at 2, footnote 3, regarding the statement of the stone mason, Hugo Ardon, for the property owners is incorrect. Mr. Ardon stated that he could not approve of NPS digging holes next to the wall on the owner's property without the approval of the design engineer. We are unaware of any holes being dug on the parkland.

property owners, their counsel, and NPS personnel at a meeting on site on February 23, 2005, that the original park survey markers were incorrectly placed and misleading. A visit by NPS personnel after the wall was constructed resulted in a request that the wall be "draped" with Virginia creepers to absorb water and blend with the park setting.

Nevertheless, NPS files a statement and request to intervene at the 11th hour in support of the appellant. We again submit that the intervention should be dismissed for laches and timeliness.

DISCUSSION

There is no support given for the statement on page 2 of the DOI/NPS statement that the structure ranges from "approximately 4 inches and 2.5 feet from the Park Boundary." The NPS boundary specialist, Joseph Kish, prepared a survey, attached hereto as Exhibit C, which indicated that, with the exception of a discarded piece of corrugated piping (which has since been removed), there was no encroachment onto federal property. DOI/NPS in footnote 2 on page 2 of its statement now attempts to discredit Mr. Kish, its own boundary specialist, without proof. However, as indicated by the affidavit of Doug Statler, general manager for the wall's design engineer (attached hereto), the below grade blocks are no more than 1.25 inches to 2.81 inches (at the wall's highest point of 30 feet) from the wall towards parkland. As set forth in Hugo Ardon's affidavit (Exhibit I, as amended, paragraph 5), the gravel leveling pads (footers) extend at most 3 to 6 inches towards the parkland, at its highest point. Further, the blue gravel leveling pads beneath the blocks are similar to the blue gravel that the NPS uses for its paths in Dumbarton Park, as will be shown in our power point presentation, and as attached to this filing.

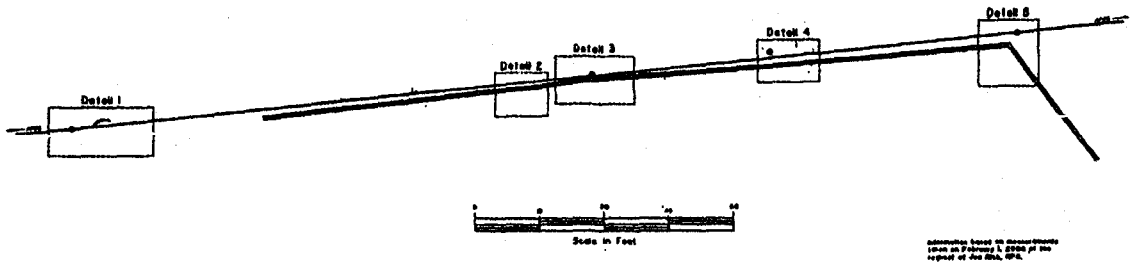
Those pictures also indicate that no bike riding is allowed on "dirt" or "gravel" paths in at least one federal parkland, casting doubt on NPS' assertion that it could someday build a bike path next to the retaining wall, which would involve the destruction of literally hundreds of trees off the existing path through the park.

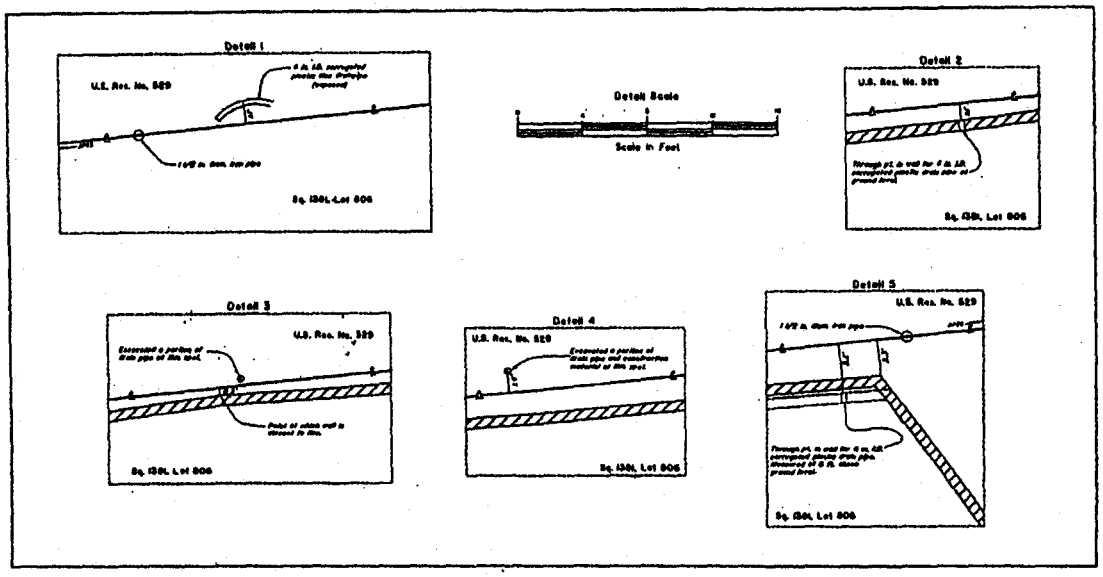
It should be noted that 12 DCMR § 3110.3.3 (attached for convenience) pertains to height restrictions for fences and not retaining walls. This is the same incorrect argument made in Mr. Carome's brief which NPS should have discovered by its own independent review. In fact, NPS concedes that there is no height requirement for the wall in the D.C. Building Code. NPS Statement, Page 4 at Section V.

Finally, NPS asserts that there can be no heavy equipment within ten (10) feet of the wall as evidenced by the Design Plans for the wall. This is also incorrect. That note (at 3.13A, not on page 8) relates to heavy paving or grading equipment on the property owner's side not being operated within 10 feet of the face of the retaining wall "during construction" adjacent to the wall. The statement in 3.13A has no bearing on post construction by heaving equipment on federal parkland. See attached affidavit of Doug Statler.

Exh C

U.S. RESERVATION NO. 529, ROCK CREEK PARK, WASHINGTON, DISTRICT OF COLUMBIA





AFFIDAVIT OF DOUG STATLER

Affiant, being first duly sworn under oath, deposes and says as follows:

1. My name is Douglas K. Statler. I am an adult citizen of the United States of America of sound mind and body.

2. I am a General Manager working for the engineering firm of Ryan and Associates. William K. Ryan is a registered engineer in the District of Columbia, No. 10946. I have worked at this position for five and a half years.

3. I was responsible for compiling the Final Design for a Mesa site retaining wall for the Economides residence at 4825 Dexter Terrace, N.W., Washington, D.C., identified as Exhibit No. 24 to Patrick Carome's appeal in BZA case number 17285.

4. In response to the statement of the National Park Service (NPS), which has intervened in that case on the side of Mr. Carome, I have the following information:

A. NPS Statement (March 14, 2005 letter to BZA) at 3.

> "However, it appears that a portion of parkland ranging from at least 7.4 feet to 9.6 feet wide and paralleling the face of the wall may be subject to this illegal constructive easement.
>
> This estimate is based on the engineering specification's prohibition on operation of equipment with wheel loads in excess of 150 pounds per square foot within 10 feet of the face of the wall. Specifications for Segmental Retaining Wall System at 8."

Response

The correct citation to this information is found at Section 3.13A of the Final Design Plans and refers only to "heavy paving or grading equipment . . . not being operated within 10 feet of the face of the retaining wall during construction adjacent to the wall." (Emphasis supplied). This section means that there was to be no heavy equipment in the rear yard of the

Economides house next to the wall (above/behind it) while it was being constructed and has no reference to the other side of the wall (face side- below the wall) fronting on federal parkland and does not mean that the retaining wall needs "support" from the parkland for construction purposes.

Statement of NPS (March 14, 2005 letter to BZA) at 2

"The DCRA was obligated to read the engineering specification, to recognize that the walled structure was supported by parkland, and to conclude therefore that the footer extended well into NPS property. Ultimately, the DCRA should have reached the conclusion that it could not permit the structure.

A footer is a foundation supporting a structure. The footer supporting the massive structure at issue is comprised of two components, 1) a gravel base that extends in front of the wall, and 2) United States Park property that the wall relies on for structural support. The following examines the size of the encroachment onto federal property by the footer[2].

The outer-wall of the structure ranges from between approximately 4 inches and 2.5 feet from the Park boundary. The blocks of the wall extend below ground "a minimum of 1 inch buried for every one foot of wall exposed." Specifications for Segmental Retaining Wall System at 5; Carome Brief Exhibit 24. Thus, at the tallest point of the wall there are at least 32 inches of block buried below ground. The blocks stack-slope toward parkland. Id. The greater the slope the closer the blocks below ground are to Park property. Id. Additionally, the specifications for the wall indicate that the gravel component of the footer extends approximately 6 inches from the last buried block toward Park property. Since at least some portions of the wall are within inches of the boundary, it is clear that at least some of the gravel component of the footer is on Park property.

The second component of the footer is the earth down slope of the wall that is largely within the Park. The specifications for the wall provide that:

> The owner or owner's representative is responsible for ensuring that construction adjacent to the wall by others does not disturb the wall or place temporary construction loads on the wall that exceed design loads, including loads such as water pressure, temporary grades, or equipment loading. . . .

Specifications for Segmental Retaining Wall System at 8; Carome Brief Exhibit 24. Thus, the wall clearly relies on NPS property for its stability.[3]"

Response

The Mesa wall is a structure comprised of blocks, geogrid, gravel and compacted soils. It is a "unified mass" exerting pressure downward onto the Economides property. The 1 inch

buried per 1 foot of exposed wall height relates to vertical depth into the soil beneath the wall and not horizontal protrusion toward the Park. The embedment (below grade blocks) on this wall varies from 1.33' (two courses) to 3.00' (four and a half courses). Therefore, with a batter (setback) of 5/8" (.625") per course the forward extension on this wall should range from 1.25" (.104') to 2.81" (.234').

Further affiant sayeth not.

Douglas K. Statler

Subscribed to and sworn before me this 29 day of March, 2005.

Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
CLARE R. ELDER, Notary Public
Boro of Chambersburg, Franklin County
My Commission Expires Jan. 9, 2009

My commission expires:

3110.2.1 Fence materials. A party fence shall be a wood, woven wire, or iron fence of open pattern unless otherwise agreed upon by the adjoining owners.

3110.2.2 Height agreements. Where owners propose to erect a party fence over 7 feet (2134 mm) in height in Residential Districts or 10 feet (3048 mm) in S-P, C, C-M, or M Districts, written agreement to the height by the owners of the properties on which the fence is to be located shall be filed with the code official before issuance of a permit.

3110.3 Other fences. Fences other than party fences shall comply with Sections 3110.3.1 through 3110.3.5.

3110.3.1 Fences abutting streets. Fences abutting a street shall not exceed 7 feet (2134 mm) in height in Residential Districts nor 10 feet (3048 mm) in height in S-P, C, C-M, or M Districts.

Exception. Wing walls attached to a building or forming part of the fences may exceed the above heights for that portion removed from party lines the distance of a side yard for a building, as required by the current Zoning Regulations.

3110.3.2 Fences abutting alleys. Fences abutting alleys shall not exceed 7 feet (2134 mm) in height in Residential Districts nor 10 feet (3048 mm) in S-P, C, C-M, or M Districts.

Exception. The code official is authorized to approve a greater height where the alley is 15 feet (4572 mm) wide or more.

3110.3.3 Fences near party lines. Fences within a strip 10 feet (3048 mm) wide and parallel to the party line shall not exceed 7 feet (2134 mm) in height in Residential Districts nor 10 feet (3048 mm) in S-P, C, C-M, or M Districts. Fences shall not obstruct light or ventilation for any required window.

Exception: Where the written consent of the adjoining owners is filed, the code official may approve a greater height.

3110.3.4 Fences distant from party line. Fences more than 10 feet (3048 mm) from a party line, alley, building or building restriction line shall not be limited as to height, provided such fences do not encroach on a required yard or court, nor obstruct the light or ventilation for any required window.

3110.3.5 Gate height. Gates shall not exceed the height of the fence.

3110.4 Barbed wire and similar fences. No barbed wire or similar fence, barrier, or obstruction, made thus in whole or in part, shall be erected, constructed, or maintained, along thebuilding restriction line, or in or upon any street, alley, road, or other public walk, driveway, or public or private parking in the District of Columbia.

Brief Response to Filing of Appellant
on March 14, 2005 Regarding 11 DCMR § 2503

As a matter of statutory construction, there is no need to review legislative/rulemaking history unless there is ambiguity in the legislation or rule - here text amendment passed.[1] This is called the plain meaning rule. The plain meaning of 11 DCMR § 2503 is that "a fence or retaining wall constructed in accordance with the D.C. Building Code may occupy any yard" and this is an exception to the general rule set forth in Section 2503.1, which reads "Except for the structures and exceptions specified in this section, ever part of a yard required under this title shall be open and unobstructed to the sky from the ground up."

Accordingly, there is no need to review the history of this rule. Nevertheless, the rulemaking history submitted by Mr. Carome simply reinforces that a retaining wall may occupy any part of a yard as an exception:

- See Jan. 13, 1977 letter at paragraph numbered 3.

- Proposed Zoning Regulation Amendment, dated Dec. 9, 1976, at § 7602.2 and § 7602.22.

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[1] *See*, for example, *1618 Twenty-First St. Tenants' Ass'n v. Phillips Collection,* 829 A.2d 201 (D.C. 2003). (When the plain meaning of the statutory language is unambiguous, the intent of the legislature is clear, and judicial inquiry need go no further).

- Nov. 17, 1976 memo from Planning Office to Zoning Commission at paragraph number 3.

- Sept. 1, 1976 memo from Planning Office to Zoning Commission at page 3 indicating that a fence or retaining wall up to the heights established by the Building Code may be located in a side or rear yard as a matter of right.

Note that the current version of the D.C. Building Code (2000 International Code) including the D.C. Supplement found at 12 DCMR has no height requirement for a retaining wall. See Exh. A attached hereto.

In addition, the attached affidavit of the design engineer for the retaining wall indicates that the structure is indeed a retaining wall that meets the D.C. Building Code. See Exh. B.

For these reasons, appellant's filing on this issue supports the property owners.

1609.6.4.1 Overhang loads. The pressures to be used for the effects of roof overhangs on MWFRS shall be taken from Table 1609.6.2.1(1) and includes the effect of the wind on both the bottom and top surfaces.

1609.6.5 Components and cladding. Pressure for wind-loading actions on components and cladding shall be determined from Table 1609.6.2.1(2) for enclosed portions of the building and Table 1609.6.2.1(3) for overhangs, based on the effective area for the element under consideration. The pressures in Table 1609.6.2.1(3) include internal pressure. The pressure shall be applied in accordance with the loading diagrams in Figure 1609.6(2).

1609.7 Roof systems.

1609.7.1 Roof deck. The roof deck shall be designed to withstand the wind pressures determined under either the provisions of Section 1609.6 for buildings with a mean roof height not exceeding 60 feet (18 288 mm) or Section 1609.1.1 for buildings of any height.

1609.7.2 Roof coverings. Roof coverings shall comply with Section 1609.7.1.

Exception: Rigid tile roof coverings that are air-permeable and installed over a roof deck complying with Section 1609.7.1 are permitted to be designed in accordance with Section 1609.7.3.

1609.7.3 Rigid tile. Wind loads on rigid tile roof coverings shall be determined in accordance with the following equation:

$$M_a = q_h C_L b L L_a [1.0 - G c_p] \qquad \textbf{(Equation 16-14)}$$

$$\text{For SI: } M_a = \frac{q_h C_L b L L_a \left[1.0 - G c_p\right]}{1000}$$

where:

b = Exposed width feet (mm) of the roof tile.

C_L = Lift coefficient. The lift coefficient for concrete and clay tile shall be 0.2 or shall be determined by test in accordance with Section 1715.2.

GC_p = Roof pressure coefficient for each applicable roof zone determined from Section 6 of ASCE 7. Roof coefficients shall not be adjusted for internal pressure.

L = Length feet (mm) of the roof tile.

L_a = Moment arm feet (mm) from the axis of rotation to the point of uplift on the roof tile. The point of uplift shall be taken at $0.76L$ from the head of the tile and the middle of the exposed width. For roof tiles with nails or screws (with or without a tail clip), the axis of rotation shall be taken as the head of the tile for direct deck application or as the top edge of the batten for battened applications. For roof tiles fastened only by a nail or screw along the side of the tile, the axis of rotation shall be determined by testing. For roof tiles installed with battens and fastened only by a clip near the tail of the tile, the moment arm shall be determined about the top edge of the batten with consideration given for the point of rotation of the tiles based on straight bond or broken bond and the tile profile.

M_a = Aerodynamic uplift moment feet-pounds (N-mm) acting to raise the tail of the tile.

q_h = Wind velocity pressure psf (kN/m²) determined from Section 6.5.10 of ASCE 7.

Concrete and clay roof tiles complying with the following limitations shall be designed to withstand the aerodynamic uplift moment as determined by this section.

1. The roof tiles shall be either loose laid on battens, mechanically fastened, mortar set or adhesive set.
2. The roof tiles shall be installed on solid sheathing which has been designed as components and cladding.
3. An underlayment shall be installed in accordance with Chapter 15.
4. The tile shall be single lapped interlocking with a minimum head lap of not less than 2 inches (51 mm).
5. The length of the tile shall be between 1.0 and 1.75 feet (305 mm and 533 mm).
6. The exposed width of the tile shall be between 0.67 and 1.25 feet (204 mm and 381 mm).
7. The maximum thickness of the tail of the tile shall not exceed 1.3 inches (33 mm).
8. Roof tiles using mortar set or adhesive set systems shall have at least two-thirds of the tile's area free of mortar or adhesive contact.

SECTION 1610
SOIL LATERAL LOAD

1610.1 General. Basement and retaining walls shall be designed to resist lateral soil loads. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless specified otherwise in a soil investigation report approved by the building official. Design lateral pressure from surcharge loads shall be added to the lateral earth pressure load. Design lateral pressure shall be increased if soils with expansion potential are present at the site.

1610.2 Retaining walls. Retaining walls shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

SECTION 1611
RAIN LOADS

1611.1 Design rain loads. Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus

TABLE 1610.1
SOIL LATERAL LOAD

DESCRIPTION OF BACKFILL MATERIAL[a]	UNIFIED SOIL CLASSIFICATION	DESIGN LATERAL SOIL LOAD[a] (pound per square foot per foot of depth)
...ded, clean gravels; gravel-sand mixes	GW	30[c]
...ded clean gravels; gravel-sand mixes	GP	30[c]
...ls, poorly graded gravel-sand mixes	GM	40[c]
...gravels, poorly graded gravel-and-clay mixes	GC	45[c]
...ded, clean sands; gravelly sand mixes	SW	30[c]
...ded clean sands; sand-gravel mixes	SP	30[c]
...nds, poorly graded sand-silt mixes	SM	45[c]
...ay mix with plastic fines	SM-SC	45[d]
...nds, poorly graded sand-clay mixes	SC	60[d]
...lts and clayey silts	ML	45[d]
...of inorganic silt and clay	ML-CL	60[d]
...clays of low to medium plasticity	CL	60[d]
...lts and silt clays, low plasticity	OL	Note b
...clayey silts, elastic silts	MH	Note b
...clays of high plasticity	CH	Note b
...lays and silty clays	OH	Note b

...1 pound per square foot per foot of depth = 0.157 kPa/m, 1 foot = 304.8 mm.
...lateral soil loads are given for moist conditions for the specified soils at their optimum densities. Actual field conditions shall govern. Submerged or saturated soil pressures shall include the weight of the buoyant soil plus the hydrostatic loads.
...suitable as backfill material.
...entirely rigid walls, as when braced by floors, the design lateral soil load shall be increased for sand and gravel type soils to 60 pounds per square foot per foot of depth. Basement walls extending not more than 8 feet below grade and supporting flexible floor systems are not considered as being relatively rigid walls.
...entirely rigid walls, as when braced by floors, the design lateral load shall be increased for silt and clay type soils to 100 pounds per square foot per foot of depth. Basement walls extending not more than 8 feet below grade and supporting flexible floor systems are not considered as being relatively rigid walls.
...identification and classification of soil materials shall be in accordance with ASTM D 2487.

...uniform load caused by water that rises above the inlet of ...secondary drainage system at its design flow.

$$...(d_s + d_h) \qquad \textbf{(Equation 16-15)}$$

$$R = 0.0098\,(d_s + d_h)$$

...

d_s = Additional depth of water on the undeflected roof above the inlet of secondary drainage system at its design flow (i.e., the hydraulic head), in inches (mm).

d_h = Depth of water on the undeflected roof up to the inlet of secondary drainage system when the primary drainage system is blocked (i.e., the static head), in inches (mm).

R = Rain load on the undeflected roof, in pounds per square foot (kN/m²). When the phrase "undeflected roof" is used, deflections from loads (including dead loads) shall not be considered when determining the amount of rain on the roof.

...Ponding instability. Ponding refers to the retention of ...due solely to the deflection of relatively flat roofs. Roofs ... slope less than one-fourth unit vertical in 12 units horizontal (2 percent slope) shall be investigated by structural analysis to ensure that they possess adequate stiffness to preclude progressive deflection (i.e., instability) as rain falls on them or meltwater is created from snow on them. The larger of snow load or rain load shall be used in this analysis. The primary drainage system within an area subjected to ponding shall be considered to be blocked in this analysis.

1611.3 Controlled drainage. Roofs equipped with hardware to control the rate of drainage shall be equipped with a secondary drainage system at a higher elevation that limits accumulation of water on the roof above that elevation. Such roofs shall be designed to sustain the load of rainwater that will accumulate on them to the elevation of the secondary drainage system plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow determined from Section 1611.1. Such roofs shall also be checked for ponding instability in accordance with Section 1611.2.

SECTION 1612
FLOOD LOADS

1612.1 General. Within flood hazard areas as established in Section 1612.3, all new construction of buildings, structures and portions of buildings and structures, including substantial improvements and restoration of substantial damage to build-

Exh B

AFFIDAVIT OF WILLIAM K. RYAN

Affiant, being first duly sworn under oath, deposes and says as follows:

1. My name is William K. Ryan. I am an adult citizen of the United States of America of sound mind and body.

2. I am a civil, geotechnical and structural engineer with the following academic degrees:

Masters of Civil Engineering (M.S.) from Villanova in 1993.

Bachelors of Civil (Geotechnical & Structural) Engineering from University of Colorado in 1986.

3. I am certified as a professional engineer in 17 jurisdictions including the District of Columbia (#10946) and I am the principal of the firm of Ryan & Associates.

4. I have been a professional engineer since 1994 and I have reviewed and approved approximately 50 to 60 final design plans for Mesa block retaining walls similar to that designed by my company for the Economides residence in the District of Columbia.

5. The retaining wall is indeed a true retaining wall, contrary to the allegations by Patrick Carome in BZA Appeal No. 17285 that it is a fence or fence wall or part of a warehouse, platform or terrace.

6. All Mesa block retaining walls rely on a geogrid system (grids, properly compacted soil and gravel) for support.

7. All properly constructed retaining walls whether or not Mesa blocks, rely on some in ground reinforcing system for support, such as geosynthetic grid, steel straps, steel reinforced concrete or wood "deadmen".

8. I reviewed and approved the final design for a Mesa site retaining wall as consistent with the D.C. Building Code for the Economides residence at 4825 Dexter Terrace, N.W., Washington, D.C. compiled by Doug Statler of my Pennsylvania office.

9. Zoning Counsel for the Economides, Richard Aguglia, has brought to my attention that Patrick Carome, a neighbor of the Economides, in BZA Appeal No. 17285, has questioned the authenticity of my seal of approval in those final design plans.

10. I hereby confirm that my seal of approval on those plans – 4 in all – (See Exhibit A attached hereto) is indeed authentic and valid and has not been forged.

Further affiant sayeth not.

William K. Ryan

Subscribed to and sworn before me this 29 day of March, 2005.

ANGELA LYNN STEIDL
NOTARY PUBLIC
FREDERICK COUNTY
MARYLAND
MY COMMISSION EXPIRES MAY 7, 2008

Notary Public

My commission expires: May 7, 2008

PAGE 3/3 * RCVD AT 3/29/2005 11:04:54 AM [Eastern Standard Time] * SVR:RIRIGHTFAX/7 * DNIS:23605 * CSID:3013609574 * DURATION (mm-ss):03-32

Exh A to Ryan Affidavit

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68 W. King St. P. O. Box 6
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Fax (717) 477-8410

Ryan & Associates *A Division of WKR Consulting, Inc.*

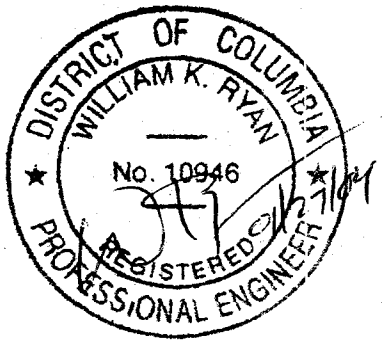
MESA SITE RETAINING WALL

FINAL DESIGNS FOR:

ECONOMIDES RESIDENCE

NW, Washington, DC

REVIEWED BY:



BLOCK PRODUCER: York Building Products

PREPARED BY: Doug Statler of Ryan & Associates

RA PROJECT #: PA231304

Consulting & Design Engineers

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Ryan & Associates *A Division of WKR Consulting, Inc.*

January 27, 2004 RA PROJECT # PA231304

PROJECT: Economides residence

LOCATION: 4825 Dexter Terrace, NW, DC

BLOCK PRODUCER: York Building Products

PREPARED BY: Doug Statler of Ryan & Associates

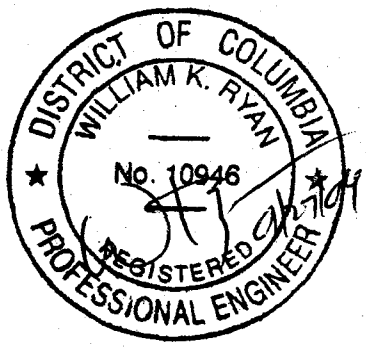
CALCULATIONS FOR THE ATTACHED CROSS SECTIONS HAVE BEEN REVIEWED FOR THE MESA RETAINING WALL ON THIS PROJECT:

Section #1 (15.33' total height: 14.00' exposed & 1.33' buried)

Section #2 (18.67' total height: 16.67' exposed & 2.00' buried)

Section #3 (28.00' total height: 25.33' exposed & 2.67' buried)

Section #4 (33.33' total height: 30.67' exposed & 2.67' buried)



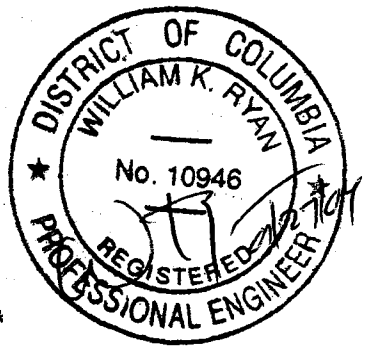
SEE THE GENERAL NOTES FOR IMPORTANT JOB SPECIFIC INFORMATION ABOUT THE WALL ON THIS PROJECT.

NOTE: PLEASE DIRECT ALL QUESTIONS REGARDING THIS DESIGN TO THE PENNSYLVANIA OFFICE (717)-477-8400.

Consulting & Design Engineers

RYAN & ASSOCIATES

A Division of WKR Consulting, Inc.



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PROJECT NAME:	Economides residence	PROJECT#:	PA231304
LOCATION:	NW, DC	BLOCK TYPE:	Mesa

GENERAL NOTES

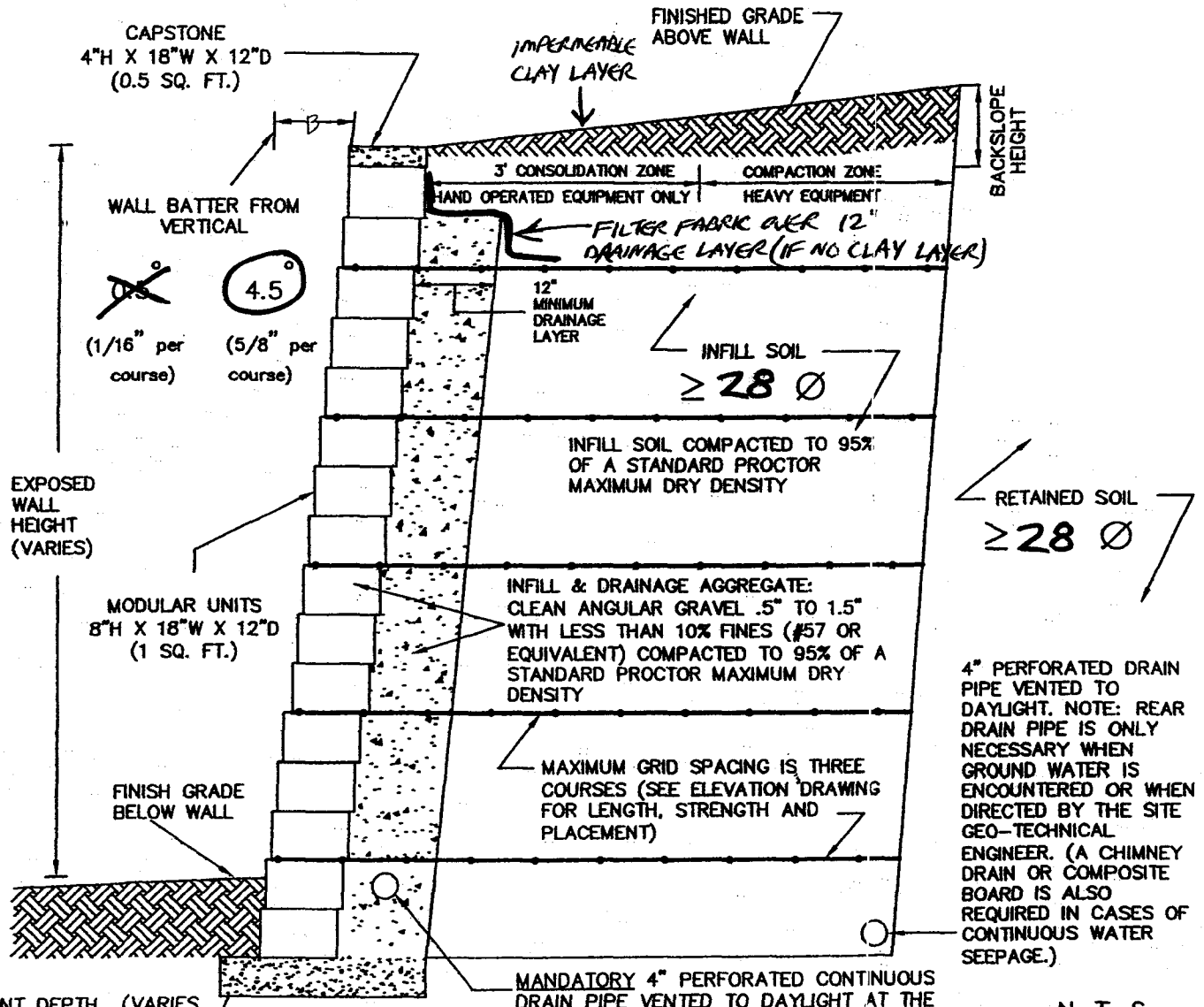
1. **SOIL PARAMETERS:** Based on the "Infiltration Rate Study Stormwater Management Facilities" for this project dated 10/09/2002 prepared by Specialized Engineering, the in-situ site soils are SM (silty sand). Therefore an internal angle of friction of **30°** was used for the **foundation soil** (the wall's sub-grade) in this design. If during excavation it is discovered that there are fine-grained soils present it the wall's foundation area, Ryan & Associates (RA) must be notified so that the design sections can be rerun with the actual field conditions. The infill and retained soils (within and behind the wall's reinforced geogrid zone) will be imported fill. An internal angle of friction of **28°** was used for the **infill and retained soils** in this design. This is for a worst case ML (silt) soil type. CH (fat clay), CL (lean clay), MH (elastic silt) and OH/ OL/ PT (organic) soils are not acceptable for wall construction. If these unsuitable soils are encountered they must be removed and replaced with soils that meet or exceed the design friction angle of 28°. Assumed unit weights (maximum wet densities less 5% for 95% compaction) of 130 PCF for the 30° foundation soil and 125 PCF for the 28° infill and retained soils were used. The site geotechnical engineer will need to run proctor tests on the proposed fill (or review the tests provided by the borrow source). Fluctuations of 5 PCF higher or lower will not affect this design, however if the unit weight varies by more than 5 PCF RA must be notified so that the cross sections can be rerun to verify that all factors of safety are still met. The soil must be within 2% of optimum moisture so that 95% compaction can be achieved. No cohesion was used in any of the calculations.

2. **BEARING CAPACITY:** The sub-grade (the soils under the wall's gravel leveling pad and the soils under the wall's reinforced geogrid zone) must be tested prior to wall construction and have a minimum allowable bearing capacity of 5,000 PSF in order for a standard 6" X 24" leveling pad to be used for the entire wall. If the minimum allowable bearing capacity is only 4,000 PSF then a 1' X 4' geogrid reinforced leveling pad will be required for the area of the wall referenced by Sections 3 & 4 (if it is only 3,000 PSF then a 1.5' X 6' geogrid reinforced leveling pad will be required). See attached detail for a geogrid reinforced leveling pad. The sub-grade must be virgin (natural undisturbed soil with blow counts ≥12) or suitable fill (≥30°) compacted to 95% of a standard proctor maximum dry density. Any areas of the sub-grade that do not meet a 3,000 PSF allowable bearing capacity will require undercutting until it is obtained.

3. **SLOPES & SURCHARGES:** A short 5:1 slope was applied to the wall. A 120 PSF live load surcharge was also applied in the event there are future patios, pool decks, sidewalks, etc.

MESA

TYPICAL WALL SECTION



N. T. S.

DISTRICT OF COLUMBIA
WILLIAM K. RYAN
No. 10946
REGISTERED
PROFESSIONAL ENGINEER

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