THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix A

CRI Q & A

CHESTERBROOK AFFORDABLE ASSISTED LIVING FACILITY
FACT SHEET
Prepared by the CAALF Task Force
March 15, 2002

1. **Q. What organization is proposing the assisted living project?**
   A. The Chesterbrook Affordable Assisted Living Facility (CAALF) Task Force is a volunteer group of members from Lewinsville, Immanuel, Taiwanese Chesterbrook, and Falls Church Presbyterian Churches and Temple Rodef Shalom. As described below, the Task Force operates under the authority of the National Capital Presbytery.

2. **Q. Why was the Chesterbrook site chosen?**
   A. When the Chesterbrook Presbyterian Church dissolved its congregation in January 2001, it was with three conditions: (1) the church building continue to be used as a church; (2) space be found for the Alzheimer's Family Day Center, and (3) the Lewinsville Presbyterian Church form a task force to examine the feasibility of constructing an assisted living facility on the back 5 acres of land.

3. **Q. Who owns the land?**
   A. The National Capital Presbytery owns the entire site (9 acres). The Presbytery is donating the back 5 acres to the project.

4. **Q. What is the zoning on the land?**
   A. R-1 on the front 4 acres, R-2 on the back 5. The County Comprehensive Plan Map contemplates 2-3 dwelling units per acre on the property.

5. **Q. Why build anything on the property?**
   A. Since 1955 the Chesterbrook Presbyterian Church has made its land available to the surrounding neighbors. McLean Little League played its first game on a baseball diamond laid out in the SW corner of the land. A basketball court was added later. Boy Scout Troop 868 used the land for camping and outdoor activities. The church also planted many trees for the benefit of the community. ***It is now the intention of the former congregation to make the back 5 acres available to a larger number of area residents than the immediate neighborhood for a project that is urgently needed.***

6. **Q. How many buildings are planned for the property behind the church?**
   A. Only one building is planned. The proposed density change for the County's Comprehensive Plan would allow a new 8000 square foot building for the Alzheimer's Family Day Center, but there is no plan to construct that facility at this time.

7. **Q. Why an assisted living facility?**
   A. Many members of the dissolved congregation are elderly. They realized that their own needs in their declining years, as had been the case with some of their aging parents, could not be met in McLean at prices they could afford. The mission of serving the needs of the low- and moderate-income elderly coupled with the non-profit nature of the operation will differentiate this assisted living facility from others in the area.

8. Q. What is an assisted living facility?

A. An assisted living facility is a facility that provides housing for elderly people with some disabilities, due to arthritis, Parkinson's, diabetes, or any of the many frailties that come as we age. While not in need of a nursing home, they do need some assistance with the activities of daily living and can no longer live entirely independently.

9. Q. Is there a need for such housing in McLean?

A. Yes. There is no "affordable" assisted living facility in McLean. The County estimates that there are well over 1000 people in the County who could benefit from such a facility. This count does not include spaces for the parents of County residents who might wish to relocate to this area to be near their children. The advantage of the site is that it is near older, established neighborhoods where so many people are trying to age in place. The facility would be very convenient for the residents and their families.

10. Q. What is meant by the term "affordable assisted living facility?" How many of the proposed residences would be "affordable," and how many "market price."

A. In Fairfax County, a single-person household with income below approximately $31,000 is considered in the "low- and moderate-income" range that we categorize as needing "affordable" living facilities. A very substantial proportion of elderly single-person households falls into this category. The goal of the Task Force is to have at least 50% of its residents classified as low- or moderate-income. The remainder of the residents would pay market rates. The exact percentage of the low- and moderate-income set-aside will be determined upon completion of a feasibility study. The aim is for the facility to be non-profit but self-sustaining.

11. Q. Who would be eligible to live in the assisted living facility?

A. Any person who meets the income requirements and who needs help with at least two of the "Activities of Daily Living" would be eligible for the facility.

12. Q. Who is a typical resident?

A. A single woman in her mid-eighties.

13. Q. Will there be any other form of housing on the grounds?

A. No.

14. Q. What about the children's day care center that also operates in the church?

A. The day care center will move to Lemon Road School in late 2002 or early 2003.

15. Q. How many residences are contemplated?

A. We expect the number to be approximately 100 units; the final number will be determined by the feasibility study underway.

16. Q. What will the square footage be; how many stories?

A. The preliminary plan is for a 70,000 square foot building consisting of three stories in part. Again, the feasibility study will determine the final square footage. Because of the topography of the land, the building will appear to be 2 ½ stories tall from Kirby Court. Most houses on Kirby Court will actually be higher than the assisted living facility. The footprint of the building will be less than half the size of a football field. ***In response to***

early concerns raised by the neighbors, the number of units has been reduced by 33%, and placement of the building has been moved farther away from Kirby Court.

17. Q. Isn't such a facility a commercial use?

A. No. Housing for seniors is considered an institutional use in Fairfax County and is permitted in residential areas. For a glimpse of what the future facility would be like, a visit to the Lewinsville Retirement Residence (LRR), a congregate care facility for low-income seniors would be helpful. The Lewinsville Presbyterian Church has owned and operated LRR for over 20 years. Considered a model for such facilities, LRR is nestled among town houses, churches, a telephone switching center, and the soon to be completed expensive homes on the former Evans Farm site.

18. Q. How many employees are anticipated?

A. We are advised that in a typical facility with 100 residents, there would be 30 employees during the early morning shift and 16 during the afternoon and overnight shifts. If the proposed facility should offer care to Alzheimer's patients, then the ratio might be marginally higher.

19. Q. How much traffic would the facility generate?

A. It is very rare for residents in an assisted living facility to drive. Staff, visitors and service vehicles would generate the traffic, but it would be far lighter than would be generated by single-family housing on the site. The preliminary traffic study for the facility indicates that the traffic generated by the proposed development will be less than the current pattern, because the child-care facility, which generates more traffic than would the assisted living facility, will be leaving the site. The facility will have vans to transport people to joint destinations, but for the most part this population stays within the residences, where there are many activities to keep them busy.

20. Q. What about emergency vehicles, such as ambulances?

A. In the last 2 years, there have been seven (7) ambulances called to the Alzheimer's Family Day Center. Ambulance calls would be rare events.

21. Q. Who will own the facility?

A. The facility will be owned by Chesterbrook Residences Inc., a nonprofit Virginia corporation (CRI). The CAALF Task Force faith-based institutions will appoint its board.

22. Q. Who will operate the facility?

A. CRI will hire an experienced assisted living facility management firm to operate the facility. The Board of CRI ill have the ultimate responsibility for its operation.

23. Q. What would happen if the facility went out of business?

A. The Task Force will not go forward with the facility unless it is financially feasible. Because the demand for affordable assisted living greatly exceeds the supply in Northern Virginia, the chances of this project's failing because of a lack of a market are remote. Under a worst-case scenario, the proposed facility would convert from partially low- and moderate-income residents to 100% market rate. As a market rate facility, it would have a competitive advantage because of the free land.

24. Q. What impact would the facility have on water run-off and other environmental issues?

A. The impact would be minimal. The facility would meet all the constraints imposed by the regulatory authorities. Buffering of the proposed development and substantial open space would result in the retention of much of the current tree cover. In fact, preliminary engineering of the site has indicated that the storm water management pond that would be implemented in the northeastern corner of the site as a part of this proposal may reduce storm water runoff and improve drainage conditions for surrounding properties.

25. Q. Why did CAALF request a change to the language in the Comprehensive Plan?

A. Even though assisted living facilities are permitted in residential areas without specific language in the plan, CAALF wanted to make sure that citizens were aware of the intended use for the property. Ultimately, CAALF has only requested an increase of 4,000 square feet over the square footage currently allowed for the property by the Comprehensive Plan. The assisted living facility application will be the subject of Planning Commission and Board of Supervisors public hearings, thereby affording neighbors and other citizens to comment on the proposal.

26. Q. When would the facility be built?

A. It is unlikely that construction would begin before mid-2003.

27. Q. CAALF received $50,000 from the County Department of Housing and Community Development. How will the monies be used?

A. The County awarded the money in recognition of the tremendous need for senior housing in the County. The funds will be used to help pay for the predevelopment analyses of the proposed project.

28. Q. What is CAALF's position on the park nomination for the property?

A. CAALF's sole charge from the National Capital Presbytery is to determine the feasibility of developing an assisted living facility. We are working solely toward that goal.

29. Q. What would become of the property if the project does not receive County approval?

A. The value of the 5 acres is approximately $3-4 million, too valuable an asset to remain vacant. If the land is not used for an assisted living facility, the Presbytery would consider alternative uses for it, such as selling it to a developer for 10 or 11 large single-family detached homes, or perhaps townhouses or low-income housing. The Presbytery would redeploy the proceeds of the sale in its other important missions.

For More Information, contact

The Reverend Mr. Gerald W. Hopkins
Moderator
CAALF Task Force
Lewinsville Presbyterian Church
P.O. Box 538
McLean, Virginia 22101(703)356-7200

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix B

Elements of a Market Study

Table of Contents

Section I. Introduction **1**

[redacted] 3
Site Description 3
[redacted] 8
Site Setting 11
[redacted] **Area Economy** **13**
[redacted] Development Activity 14
Regionwide Development Activity 15
Area Employment Trends 18
Unemployment 20

Section II Housing Market Factors **23**

Demographic Trends **23**
Total Population 23
Older Senior Households 26
Older Senior Households by Income 26
Other Senior Demographics 27
Summary 28
Competitive Assisted Living Facilities **28**
Characteristics of the Market 28
Vacancy Rate 36
Monthly Fees 38
Apartment Unit Sizes 40
Other Senior Services 41

Section III Conclusions **43**

Analysis of Demand **44**
Projection of Occupied AL Units 44
Proposed Al Units 45
Net Demand 45
Absorption 45
Project Evaluation **45**
Achievable Monthly Rents 46
Unit Mix 46

Appendix A: Floorplans **48**

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix C

Sample Development Consultant Agreement

DEVELOPMENT CONSULTANT AGREEMENT

This Agreement made this ___day of _____, 200, by and between the _____(hereinafter referred to as the Owner) and _____ (hereinafter referred to as the Development Consultant).

WHEREAS, the Owner has formed an organization to provide assisted living services and facilities for elderly families and persons.

WHEREAS, the Owner desires to avail itself of the services of a Development Consultant to assist and counsel the Owner in matters affecting the initiation, processing, design, equipping, operation and management of an assisted living facility.

WHEREAS, the Development Consultant agrees personally to provide the following services for or on behalf of the Owner in a manner satisfactory to the Owner, which may include guidance in the selection of other persons, firms, or organizations with the capability of performing one or more of the services required.

NOW THEREFORE, the parties mutually agree that the consultation shall be provided as follows:

Phase I – Initial Assessment:

a. Assist the Owner in making an analysis of available market studies and other pertinent data to determine the type of elderly assisted living services and facility suitable for the proposed project;

b. Provide the Owner with the estimated expense associated with the development of the project, to include but not limited to schematic design, construction, financing, legal services and closing costs. Draft a preliminary financial Performa.

c. Provide the Owner with information and documentation to support financing application. Assist in the selection of a qualified architect and in the negotiations with him for an Agreement to prepare preliminary design to support financing application.

d. Investigate regulatory requirements and identify issues to be resolved.

e. Meet with Owner to review findings of Phase I and financing application results. *Obtain decision to proceed with project.*

Phase II – Design:

a. Assist in the selection of a qualified architect (could be the same as Phase I architect) and in the negotiations with him for an Agreement

Phase II – Design (Continued):

c. Assist the Owner in negotiations with local, state and federal governmental agencies having jurisdiction over the project in order to secure all necessary approvals for project development, construction and operation.

d. Meet with Owner to review construction drawings. *Obtain decision to proceed with project.*

Phase III – Construction:

a. Assist Owner in selection of a qualified general contractor.

b. Assist the Owner in evaluation of change order requests.

c. Perform a final inspection of the project to determine conformance with plans and specifications.

Compensation and Termination:

The Owner agrees to compensate the Development Consultant as follows:

Phase	Compensation
Initial Assessment	$
Design	$
Construction	$
Total	$

Such compensation will be 50% ($) payable at the beginning of each Phase and 50% ($) payable at the completion of Phase I and II. Compensation for Phase III will be 50% ($) payable at the beginning of the Phase and 50% ($) at completion. If the project is terminated prior to completion of the current phase, full payment for current Phase will be due. *(For example, during the Initial Assessment Phase, $0.00 will be due and payable at the start of the Phase. If the decision is to terminate the project prior to the completion of the Initial Assessment Phase, $0.00 will be due and payable at time of termination. No other fees for the Design Phase or the Construction Phase would be due.)*

The fees shall include those expenses of the Development Consultant which are reasonably related to providing the services for the Owner as set forth herein. The fees shall not include those out-of-pocket expenses which are reasonably related to providing the services for the Owner as set forth herein, including such items as travel, duplication, long distance telephone, fax, and courier services.

Should the closing of the project loan occur prior to twelve (12) months in the Construction Phase, the unpaid balance of the development consulting fees shall be due and payable at the closing of the project loan. Should the closing of the project loan occur after twelve (12) months in the Construction Phase plus two (2) months for unforeseen conditions (a total of fourteen (14) months for the Construction Phase), this agreement will renew month to month at $0.00 per month until closing of the project loan.

Miscellaneous Provisions (Continued):

Consultant is notified in writing five days prior to the effective termination date. If so terminated, the Owner shall have no further liability for payments due under this agreement.

The Owner agrees to cooperate with the Development Consultant in carrying out the purposes of this Agreement. Failure to do so, or violations of any of the covenants or stipulations of this Agreement by the Owner shall give the Development Consultant the right to terminate this Agreement provided the Owner is notified in writing five (5) days prior to the effective termination date. If so terminated, the Development Consultant shall be entitled to reasonable compensation for all work done under this Agreement.

The Owner may from time to time request changes in the scope of services of the Development Consultant, which are mutually agreed upon by and between the Owner and the Development Consultant, such changes shall be incorporated in written amendments to this Agreement.

IN WITNESS WHEREOF, the Owner and the Development Consultant have executed this Agreement the date first written above.

Development Consultant

_____ By:_____

Witness President

Owner

_____ By:_____

Witness Owner

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix D

The Final Mile Campaign Materials

Realizing the Dream

for

Chesterbrook Residences, Inc.

(CRI)

An Invitation –

To join members of the sponsoring organizations in raising the necessary capital to assure ground will be broken and construction will begin February 2006 for Chesterbrook Residences, a mixed-income assisted living facility.

Chesterbrook Residences Inc.

Chesterbrook Residences, Inc

- 501(c)(3) nonprofit, nonsectarian organization open to Northern Virginia congregations and other nonprofit organizations.
- Board of Directors elected from member organizations. Individuals with special skills/talents from community at large may be selected. All serve rotating 3-year terms.
- Current members –
  - Lewinsville Presbyterian Church (3)
  - Temple Rodef Shalom (3)
  - Immanuel Presbyterian Church (2)
  - National Capital Presbytery (1)

Chesterbrook Residences Inc.

Our Mission

To build, own and operate an affordable assisted living facility for the elderly of Northern Virginia;

- To serve a mix of residents whose incomes range from very low to well above average;
- To establish an affordable facility that will enable residents to live out their retirement years secure in the knowledge they will not be displaced due to diminishing personal resources.

Chesterbrook Residences Inc.

“Assisted Living”

“Assisted living” falls between independent congregate care *(e.g., Lewinsville Retirement Residence)* and the comprehensive care of a nursing home.

Assisted living offers residential care to those needing help with “activities of daily living:”

- Bathing/dressing
- Feeding
- Personal care
- Medication supervision

Chesterbrook Residences Inc.

What is “Affordable?”

“Affordable” is a term describing subsidized or discounted rents calculated for individuals and couples at selected incomes.

For example, Section 8 government rent subsidies are reserved for those whose incomes are below 50% of the area median income; discounted rates are for those whose incomes are below 60% of the area median income. Both rates are considered “affordable” for the income level they serve.

Chesterbrook Residences Inc.

Is There a Need?

- Fairfax County has only one affordable assisted living facility (The Lincolnian); McLean has none.
- County study has identified an immediate shortfall of 1000+ assisted living beds for low income elderly.
- Shortfall projected to increase to over 1600 beds by 2010, assuming no increase in elderly, BUT, during the next decade, the number of elderly 65 and older is projected to increase 53% -- over three times rate of overall population.

Chesterbrook Residences Inc.

A Brief History - 2001

- Upon dissolution of Chesterbrook Presbyterian Church, the National Capital Presbytery asked Lewinsville Presbyterian to explore feasibility of the project.
- Volunteers created Chesterbrook Affordable Assisted Living Facility Task Force.
- Immanuel Presbyterian, Temple Rodef Shalom joined the effort.
- Financial, design and land use analyses done and redone.

Chesterbrook Residences Inc.

Three Years Later – 2004

- Board of Supervisors granted land use approval.
- CRI executed 75-year lease from National Capital Presbytery for $1 per year.
- CRI closed on $1 million pre-development loan.
- CRI submitted application for long term financing to Virginia Housing & Development Authority (VHDA).
- Architects Grimm & Parker completed 90% of construction drawings.

Chesterbrook Residences Inc.

Status — 2005-2007

2005

- January — Site/building plans submitted to County.
- February — Loan and rent subsidy applications submitted to County.
- August — State of Virginia (VHDA) committed to primary financing.

2006

- January — Site permits issued.
- February — Construction begins.
- September — Marketing begins.

2007

- April — First residents move In

Chesterbrook Residences Inc.

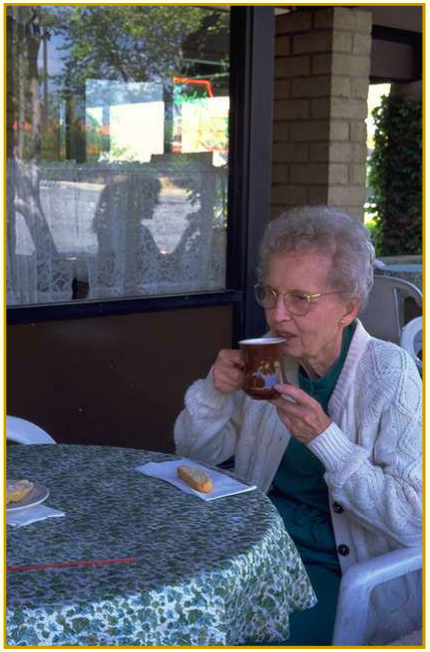
Chesterbrook Residences at a Glance

- Chesterbrook Residences will offer 97 units
  - 49 units will be Section 8 subsidized for *low income* residents, with five units set aside for *very low income* residents.
  - 6 units will be affordable one bedroom units at *below market* rates.
  - 42 units will be one and two bedroom units at *market* rates.

Note: 10 of the above are handicap units; all others are handicap accessible.

Chesterbrook Residences Inc.

To Qualify



For Section 8 units, resident income must not exceed $31,000.

For discounted affordable market units, resident income must range from $36,000-$39,000.

All other units will be offered at market rates; couples must have joint income of at least $76,000, and singles must have income of at least $50,000.*

** for one bedroom units*

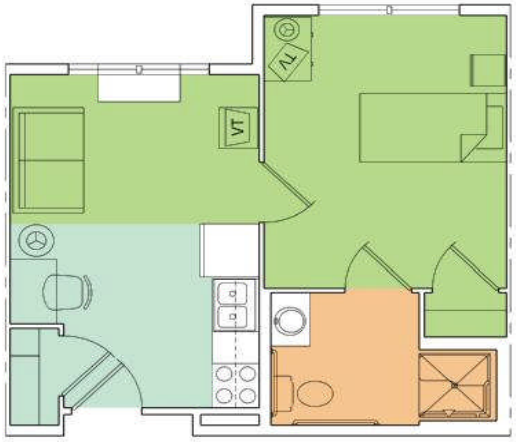
Chesterbrook Residences Inc.

Chesterbrook Residences Offers

- Private one and two bedroom units
- Three meals daily
- Recreation/crafts/entertainment
- Enclosed courtyard
- Liaison with family members
- Volunteer services program

Managed by Coordinated Services Management of Roanoke, VA

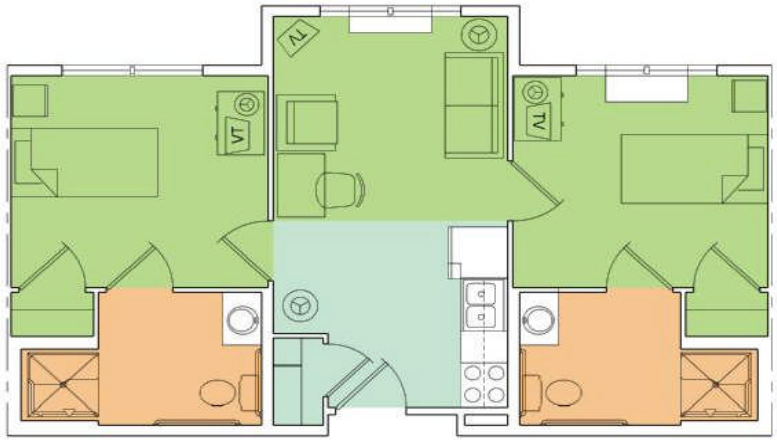
Chesterbrook Residences Inc.



LARGE ONE BEDROOM/ONE BATH

ONE BEDROOM/ONE BATH

Typical Floor Plans



TWO BEDROOM/TWO BATH

TWO BEDROOM/ONE BATH

The Road Traveled Thus Far

Grants		
Land from NCP	$3,500,000	
Fairfax County	250,000	
LPC	22,000	
Other	12,000	
Loans		
United Bank	$1,300,000	Repaid
LPC Foundation	50,000	Forgiven
Fairfax County	100,000	Repaid
Other	25,000	Repaid

Chesterbrook Residences Inc.

The Numbers

Development Costs: July 1/05 to Dec 31/07*

Construction	$9,493,315
Other Development Costs	3,505,865
Start Up	600,000
Total	**$13,599,180**

Source of Funding

Virginia (VHDA)	$11,000,000
Fairfax County	1,479,000
"Final Mile" Capital Fund	**1,120,180**
Total	**$13,599,180**

***Pre-development through construction and 80% lease up**

Chesterbrook Residences Inc.

Our “Final Mile” Goal

Raise $1 million from the sponsoring congregations prior to July 1, 2006.

Pledges: One to three-year pledge period.

We Can Do It!!

Donors will receive Naming Rights.

For example: $20,000-30,000 – residential unit

Chesterbrook Residences Inc.

As people of faith, we know…

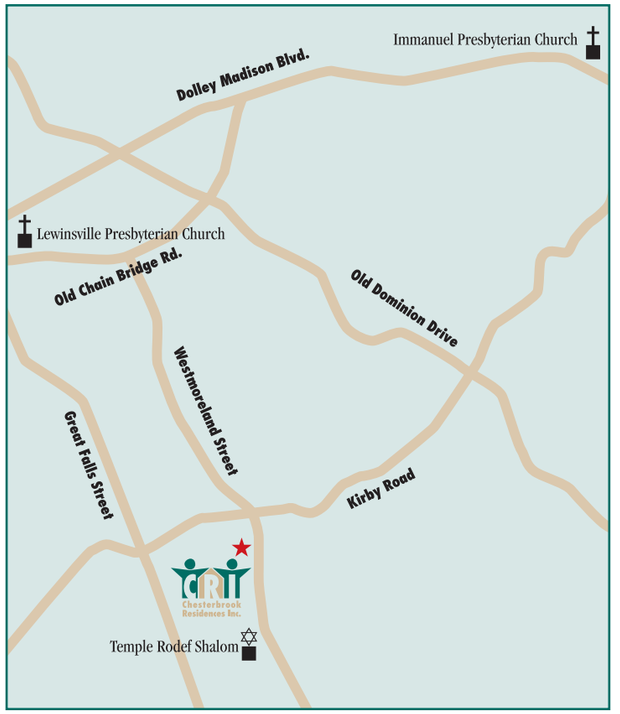
- There is ***no greater work*** we do than to give back to those who have given of their lives and fortunes to make our families and community strong;
- There is ***no greater love*** than to honor the memory of those who have walked this way before us;
- There is ***no greater call*** than to serve the elderly of our community by providing a home where they can continue their lives in dignity and grace.

Chesterbrook Residences Inc.

Please Affix
First Class
Postage

Chesterbrook Residences, Inc.
1724 Chain Bridge Rd.
McLean, VA 22101

Chesterbrook Residences Inc.
1724 Chain Bridge Rd.
McLean, VA 22101



Chesterbrook Residences will be located near the heart of McLean and its three supporting congregations--Lewinsville Presbyterian, Immanuel Presbyterian and Temple Rodef Shalom. It will be close to shops, restaurants, a library and the McLean Community Center.

Chesterbrook Residences Inc.
1724 Chain Bridge Rd.*
McLean, VA 22101
703-821-8391

** Temporary mailing Address*

Final Mile Campaign for Chesterbrook Residences

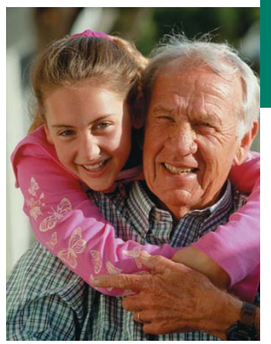
An assisted living facility near the heart of McLean – where every unit is affordable

Our Mission—To provide a home where residents will live out their years in security, dignity and grace.

Realizing The Dream

We invite you to walk the Final Mile with us to make Chesterbrook Residences a reality. Slated to break ground in July 2005, Chesterbrook Residences will be a 97-unit affordable assisted living facility serving a mix of residents whose incomes range from very low to well above average.

We believe there is no greater call than to serve the elderly of our community by providing a home where they can continue their retirement years in dignity, grace and security, close to the people and places they love.



Chesterbrook Residences will offer quality residential care and services to adults 62 years of age or older who need assistance with activities of daily living such as bathing, dressing, feeding and medication supervision, but who do not require the intensive care provided in nursing homes. The guiding principle of Chesterbrook Residences is to enhance the dignity, independence and individuality of its residents.

Chesterbrook Residences will be owned and operated by Chesterbrook Residences Inc. (CRI), a nonprofit (501)(c)(3) nonsectarian corporation whose Board of Directors is elected from its member organizations. Lewinsville Presbyterian, Immanuel Presbyterian and Temple Rodef Shalom are current members of CRI.

The guiding principle of Chesterbrook Residences is to enhance the dignity, independence and individuality of its residents.

Services and Accommodations

When Chesterbrook Residences opens its doors on Westmoreland Street in October 2006, it will become home for up to 109 residents in 85 private one-bedroom and 12 two-bedroom apartments, all with full baths and kitchens. Residents will receive three meals a day in a homelike setting. In addition to their comfortable apartments, residents will enjoy public spaces for dining, reading, exercise, meditation, games, crafts, TV, laundry and hair care. The building will be handicapped accessible throughout, and the grounds will be attractively landscaped with walking paths and an enclosed courtyard.

Teams of volunteers from CRI's member organizations will provide additional services and assistance to the residents.

A home for those we love.

The Final Mile Campaign

Chesterbrook Residences is a dream that began over four years ago. Many organizations are supporting the dream: the National Capital Presbytery with a donation of the land for the facility; Fairfax County with loans and grants; United Bank with a pre-construction loan, and the Virginia Housing Development Authority with permanent financing through tax-exempt bonds. Of the $12.8 million needed for construction and startup, Chesterbrook Residences has $11.8 million or 92%.

The finish line is in sight. It is the goal of the Final Mile Campaign to raise the remaining $1 million from members of the three supporting congregations by July 1, 2005, and we are off and running. A member of Lewinsville Presbyterian Church has pledged to match every dollar contributed to Chesterbrook Residences up to $200,000. With generosity like that, we know our goal is obtainable.

Of the $12.8 million needed for construction and startup, Chesterbrook Residences has $11.8 million or 92%.

Gifting Opportunities

Chesterbrook Residences is the first of its kind in McLean. An affordable assisted living facility in our own backyard, one that will be home to people we know. Please join us as we make the dream a reality for family and friends.

Donations can take the form of cash or marketable securities. Gifts of long-term appreciated assets can be advantageous because they generally are deductible at market value and accrued capital gains are not taxable.

Pledges can be paid over a one, two, or three-year period.

❍ $1,000 ❍ $2,500 ❍ $5,000
❍ $10,000 ❍ Other

I would like to spread my pledge over:
❍ 1 year ❍ 2 years ❍ 3 years.

My first contribution of $_____ will be paid by July 1, 2005.

Donors of $1,000 or more will be listed on the Donors Wall at Chesterbrook Residences. In addition, Naming Rights for venues within the facility are available for gifts of $20,000 or more. Please call for more information.

Name_____

Address_____

City/State/Zip_____

Phone_____

Campaign gifts and pledges should be made payable to:

Chesterbrook Residences, Inc.
1724 Chain Bridge Road
McLean, Virginia 22101

For more information contact:

Jane Edmondson
Lewinsville Presbyterian
703-821-8391
jimjaneedmondson@aol.com

Don DiLoreto
Immanuel Presbyterian
703-448-7467
DDILO@aol.com

Judy Seiff
Temple Rodef Shalom
703-532-2217 x317
jseiff@templerodefshalom.org

Please Affix
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Chesterbrook Residences Inc.
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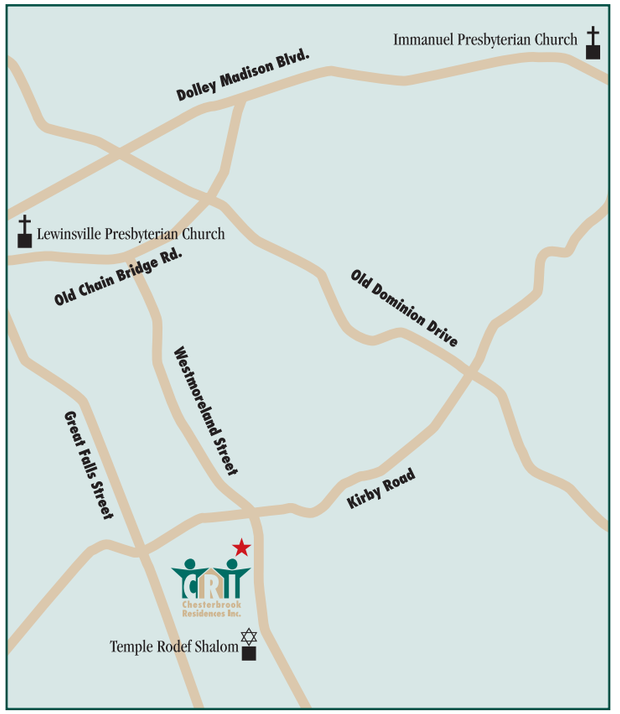
McLean, VA 22101



Chesterbrook Residences will be located near the heart of McLean and its three supporting congregations--Lewinsville Presbyterian, Immanuel Presbyterian and Temple Rodef Shalom. It will be close to shops, restaurants, a library and the McLean Community Center.

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McLean, VA 22101
703-821-8391

** Temporary mailing Address*

FINAL MILE Campaign for

Chesterbrook Residences

An assisted living facility near the heart of McLean – where every unit is affordable

Our Mission-To provide a home where residents will live their retirement years in security, dignity and grace, close to people and places they love.

Realizing The Dream for Chesterbrook Residences Inc.

We invite you to walk the Final Mile with us to make the dream of Chesterbrook Residences a reality. In May 2006, ground was broken for the 97-unit mixed-income assisted living facility located near the heart of McLean that will be home to 109 seniors ranging in income from the very low to those able to afford market rate prices.

Chesterbrook Residences will offer quality residential care and services to adults 62 years of age or older who need assistance with activities of daily living such as bathing, dressing, feeding and medication supervision, but who do not require the intensive care provided in nursing homes. The guiding principle of Chesterbrook Residences is to enhance the dignity, independence and individuality of its residents.

Chesterbrook Residences will be owned and operated by Chesterbrook Residences Inc. (CRI), a nonprofit 501(c)(3) nonsectarian corporation whose Board of Directors is elected from its member organizations. Lewinsville Presbyterian, Immanuel Presbyterian, Temple Rodef Shalom and the National Capital Presbytery are current members of CRI.

The guiding principle of Chesterbrook Residences is to enhance the dignity, independence and individuality of its residents.

Services and Accommodations

Chesterbrook Residences will contain 85 private one-bedroom and 12 two-bedroom apartments, all with full baths and kitchens. Residents will receive three meals a day in a homelike setting. In addition to their comfortable apartments, residents will enjoy public spaces for dining, reading, exercise, meditation, games, crafts, TV, laundry and hair care. The building will be handicapped accessible throughout, and the grounds will be attractively landscaped with walking paths and an enclosed courtyard.

CHESTERBROOK RESIDENCES a home where EVERYONE cares!

Teams of volunteers from CRI's member organizations will provide additional tender loving care and assistance to the residents.

The Final Mile Campaign

Chesterbrook Residences is a dream that began over five years ago. Many organizations are supporting the dream: the National Capital Presbytery with a donation of the land for the facility, Fairfax County with loans and grants, and the Virginia Housing Development Authority with permanent financing through tax-exempt bonds. Of the $13.7 million needed for construction and startup, CRI has raised $13.3 million or 97%. Members of the sponsoring organizations have contributed or pledged nearly $870,000 toward the CRI's equity requirement.

The finish line is so close! It is the goal of the Final Mile Campaign to raise the remaining $400,000 by October 1, 2007, and we are off and running.

Of the $13.7 million needed for construction and startup, CRI has raised $13.3 million or 97%.

WEST*GROUP, the major development company in Virginia, has generously agreed to match every dollar contributed to the campaign up to $80,000. With generosity like that, we know our goal is obtainable.

We believe there is no greater call than to serve the elderly of our community by providing a home where they can continue their retirement years in dignity, grace and security, close to the people and places they love.

Gifting Opportunities

Chesterbrook Residences is the first of its kind. An affordable assisted living facility in "our own backyard," one that will be home to people we know. Please join us as we make the dream a reality for family and friends.

Donations are tax deductible and can take the form of cash or marketable securities.

I would like to make the following pledge:

❍ $1,000 ❍ $5,000 ❍ $10,000
❍ $20,000 ❍ Other

I would like to spread my pledge over:

❍ 1 year ❍ 2 years

My first contribution of $_____

will be paid by _____

- Contributors of $1,000-$19,999 will be listed on the Chesterbrook Residences Donors Wall.
- Donors of $20,000 or more will be listed on the Major Donor Wall.

Naming Rights for venues within the facility are available for gifts of $20,000 or more as permitted by IRS rules.

Name_____

Address_____

City/State/Zip_____

Phone_____

Gifts should be made payable to:

Chesterbrook Residences, Inc.
1724 Chain Bridge Road
McLean, Virginia 22101

For more information contact:
Michael Crescenzo
(703) 356-0655

The financial statement of Chesterbrook Residences Inc. is available upon written request from the Virginia Office of Consumer Affairs, P.O. Box 1163, Richmond, Virginia 23218.

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix

Closing Checklist from General Contractor

Harkins Builders Inc. Closing Checklist
August 9, 2006

1. Draft/Final Contract reviewed by Kevin Kelehan, Larry K, and VP of Construction
2. General Conditions
3. Supplemental Conditions CDA or other agency
4. Supplemental Conditions Harkins
5. Supplemental Conditions Owner
6. Additional Provisions Owner?
7. Plans, Specs, Amendment List
8. Clarification and Exclusions
9. Allowances and Unit Prices
10. List of Personnel
11. G702/703 Schedule of Values
12. 212/215 or 2328 where applicable
13. Construction Schedule
14. Draw Schedule
15. Sample Bonds
16. Site Bonds
17. Insurance General Liability and Builders Risk, Soft cost rider
18. Schedule VP and Bond Agent (Brenda Patterson) for signing plans/specs
19. Agreement to Complete letters

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix F

Steps in a Negotiated Bid Process

Harkins Estimating Department:
Negotiated Process
May 30, 2006

I.) Initial meetings:

1. Up front agreement with owner. (How we will work together, owners expectations, site issues, contingency, etc.)
2. Review Harkins Kick Off Meeting Agenda.
3. Create design schedule and get input and buy-in from the architect and owner. Incorporate into meeting minutes and track schedule at progress meetings.
4. Review conceptual budget and detailed scope of work with owner and design team.
5. Update budget based on above review. This is the basis for which project design moves forward. All team members including structural, MEP should agree on scope.
6. Present engagement letter and draft contract to client in order to define terms of the deal.
7. Establish other criteria
    a. Who will do the minutes?
    b. How often will the team meet, when, where?
    c. How often will Harkins provide updated budgets – see below II)3.

II.) Subsequent meetings:

1. As soon as possible, ask for the following:
    a. Draft specification.
    b. Soils report
    c. Water flow test
    d. Grading plan for cut to fill analysis. Goal is always to balance the site. Recommend how we can come to a balanced site.
2. Review Harkins redline comments (plans and specs) with team no later than 2 weeks after receiving them. Review of code, coordination, constructability issues. Challenge the design to keep project costs under control.
3. Progress budgets:
    a. Conceptual budget including a scope of work.
    b. Design Development (30%) check GSF, skin, plumbing fixtures, etc.
    c. CD (60%) Good time to get subcontractor's input for unfamiliar trades.
    d. Bid set (95%)

4. Project Manager involvement:
    a. Construction schedule / general conditions
    b. Constructability, access to site, staging, long lead items, sub selection
    c. Formal plans review with estimating team:
        i. At 30%
            1. construction schedule based on site, type of building
            2. access to site, staging
        ii. At 60% or Permit set – tough details, Harkins desired details, construction method.
        iii. At 95% or Bid set
    d. PM is required to attend all meetings with arch/owner during final stages of design.

III.) Bid Process:

1. Sub invitations out no later than 4 weeks prior to bidding.
2. From receipt of bid package to bid budget to client – 4 to 6 weeks (depends on complexity of job)
    a. 1st week – receive bid package from architect, send to printer, subcontractors receive bid package.
    b. 2nd, 3rd Week (2 weeks) subs price job
    c. 4th to 5th Week – Review sub bids, scope out bids, establish bid budget and present it to the client.
3. If budget works:
    a. Turnover to construction team
        i. Work the bid box – 5 scoped bids per each major trade. Purpose is to have more than 1 subcontractor available and find the issues with the plans, specs and any value engineering if needed.
        ii. Provide final plan and spec comments to team for incorporation into closing set of documents.
        iii. Work on the turnover book.
4. If bid budget comes in over the working budget, value engineer stage:
    a. Go through each trade and find potential VE items using Harkins VE template.
    b. Have each design team member submit a VE list (give them a VE $ target/goal)
    c. Talk to subcontractors for VE ideas
    d. Accepted items to be incorporated into final design/contract documents.

    Time constraints must be reviewed with team to make this happen for closing.

IV.) Pre-closing checklist:

1. Bonds, insurance – collect additional information needed to finalize.
2. Contract attachments finalized.
    a. Draft contract to final
    b. Clarifications list, Addendum, Schedule, G702/703
    c. Plans list, include spec book date, addendums, etc.
    d. Alternates, unit prices

V.) Post-turnover checklist:

1. Senior estimator/Estimating Captain meets with PM biweekly for feedback and subcontracting review.
2. Senior estimator/Estimating Captain attends first 3 construction owner meetings on site.
3. Track bought numbers versus turnover budget. Track bought numbers and update Timberline cost database.
4. Attend monthly job reviews:
    a. Estimator understand field issues and incorporate into next job (avoid problem details, products, and introduce new details that worked well).
    b. Cost analysis and feedback.

Harkins Estimating Department:
Negotiated Process
7/18/07

Requested	Task Description
	I.) Initial meeting:
	1. Up front agreement with owner. (How we will work together, owner's expectations, site issues, contingency, etc.)
	2. Review Harkins Kick Off Meeting Agenda.
	3. Create design schedule & get input/buy-in from arch & owner. Incorporate into meeting minutes & track schedule at progress meetings **(Include 6 week bid period)**
	4. Review conceptual budget and detailed scope of work with owner and design team.
	5. Update budget based on above review: This is the basis for which project design moves forward. All team members, including structural and MEP should agree on scope.
	6. Present engagement letter and draft contract to client in order to define terms of the deal.
	7. Establish other criteria (minutes, team meeting frequency/location, budget update frequency, insurance requirements, owner's scope)
	a. Who will do the minutes?
	b. How often will the team meet, when, where?
	c. How often will Harkins provide updated budgets – see below II) 3.
	d. What insurance does owner want Harkins to include? Soft cost coverage? Get Franey & Parr Quote
	e. What items will owner provide? ie security, CATV, furnishings
	f. MBE requirements, Davis Bacon Wage Scale, Sales tax???
	II.) Subsequent meetings:
	1. As soon as possible, ask for the following:
	a. Draft specification.
	b. Soils report
	c. Water flow test
	d. Grading plan for cut to fill analysis. Goal is always to balance the site. Recommend how we can come to a balanced site.
	e. Environmental studies
	2.Progress Set Review
	a. Design Development (30%)
	i. Generate redline comments for 60% set (plans and specs)
	ii. Review comments w/team no later than 2 weeks after receiving: (code, coordination and constructability issues). **Challenge the team to keep project costs under control.**
	b. Permit set (60%)
	i. Good time to get subcontractor's input for unfamiliar trades.
	ii. Generate redline comments for 60% set (plans and specs)
	ii. Review comments w/team no later than 2 weeks after receiving: (code, coordination and constructability issues). **Challenge the team to keep project costs under control.**
	3. Progress budgets:
	a. Conceptual budget including a scope of work. Scope included with Budget.
	b. Design Development (30%) check GSF, skin, plumbing fixtures, etc.
	c. Permit set (60%) get subs input
	4. Project Manager Involvement (including upfront agreement)
	a. Construction schedule / general conditions — Bid Set (Should be complete before giving price to Owner)
	b. PM has Formal plans review meeting with estimating team — 30%
	c. Constructability, access to site, staging, long lead items, sub selection — pre-bid set
	d. Permit set (60%) – tough details, Harkins desired details, construction method.
	e. Construction schedule / general conditions — Bid Set (Should be complete before giving price to Owner)
	f. PM is required to attend all meetings with arch/owner during final stages of design.
	Pre-Bid Process: Sub invitations out no later than 4 weeks prior to bidding.
	III.) Bid Process: From receipt of bid package to bid budget to client – 6 weeks
	1. 1st week: receive bid package from architect, send to printer, subcontractors receive bid package.
	2. 2nd, 3rd Week: subs price job Major scopes are being completed and sent out/Read spec and redline Send to Arch
	BID DATE
	3. 4th, 5th Week: Review & scope out bids, establish bid budget and meet with PM to review & get feedback.
	4. 6th Week: Work bid box: Have multiple qualified bonded subcontractors available, find plans/specs issues & any VE if needed. **This requires calling non-competitive subs.**
	5. Present bid budget to client
	6. If budget works, turnover to construction team:
	a. Provide final plan and spec comments to team for incorporation into closing set of documents.
	b. Create turnover book --> Turnover Meeting
	6 (alt). If bid budget comes in over the working budget, Value Engineer:
	a. Go through each trade and find potential VE items/Talk to subcontractors for VE ideas using Harkins VE template
	b. Have each design team member submit a VE list (give them a VE $ target/goal)
	7. Send all items found above to Arch and Owner for final construction set
	8. Design team incorp all accepted VE items into final design/contract documents. **Must happen for closing!**
	9. Set received after putting out to bid.
	a. Review final set co-ordinated and to subs for pricing.
	b. Include all late items in presentation of the final price to Owner.

Requested	Task Description
	V.) Pre-closing checklist:
	1. Bonds, insurance – collect additional information needed to finalize.
	2. Contract attachments finalized.
	a. Draft contract to final
	b. Clarifications list, Addendum, Schedule, G702/703
	c. Plans list, include spec book date, addendums, etc.
	d. Alternates, unit prices
	VI.) Closing
	VII.) Post-turnover checklist:
	1. Senior estimator/Estimating Captain meets with PM biweekly for feedback and subcontracting review.
	Track bought numbers versus turnover budget. Track bought numbers and update Timberline cost database.
	PM Memo #1
	PM Memo #2
	PM Memo #3
	PM Memo #4
	PM Memo #5
	PM Memo #6
	PM Memo #7
	2. Senior estimator/Estimating Captain attends first 3 construction owner meetings on site.
	3. Attend monthly job reviews: understand field issues & incorporate into next job Cost analysis/feedback: **If you are off budget explain why.**

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix G

The Architect's Responsibilities

ARTICLE 1 ARCHITECT'S RESPONSIBILITIES

§ 1.1 ARCHITECT'S SERVICES

§ 1.1.1 The Architect's services consist of those services performed by the Architect, Architect's employees and Architect's consultants as enumerated in Articles 2 and 3 of this Agreement and any other services included in Article 12.

§ 1.1.2 The Architect's services shall be performed as expeditiously as is consistent with professional skill and care and the orderly progress of the Work. Upon request of the Owner, the Architect shall submit for the Owner's approval a schedule for the performance of the Architect's services that may be adjusted as the Project proceeds, and that shall include allowances for periods of time required for the Owner's review and for approval of submissions by authorities having jurisdiction over the Project. Time limits established by this schedule approved by the Owner shall not, except for reasonable cause, be exceeded by the Architect or Owner.

§ 1.1.3 The services covered by this Agreement are subject to the time limitations contained in Section 11.5.1.

ARTICLE 2 SCOPE OF ARCHITECT'S BASIC SERVICES

§ 2.1 DEFINITION

§ 2.1.1 The Architect's Basic Services consist of those described in Sections 2.2 through 2.6 and any other services identified in Article 12 as part of Basic Services, and include normal civil, structural, mechanical and electrical engineering services.

§ 2.2 DESIGN PHASE

§ 2.2.1 The Architect shall review the program furnished by the Owner to ascertain the requirements of the Project and shall arrive at a mutual understanding of such requirements with the Owner.

§ 2.2.2 The Architect shall provide a preliminary evaluation of the Owner's program, schedule and construction budget requirements, each in terms of the other, subject to the limitations set forth in Section 5.2.2.

§ 2.2.3 The Architect shall review with the Owner alternative approaches to design and construction of the Project.

§ 2.2.4 Based on the mutually agreed-upon program, schedule and construction budget requirements, the Architect shall prepare, for approval by the Owner, Design Documents consisting of drawings and other documents appropriate for the Project.

§ 2.3 CONSTRUCTION DOCUMENTS PHASE

§ 2.3.1 Based on the approved Design Documents and any further adjustments in the scope or quality of the Project or in the construction budget authorized by the Owner, the Architect shall prepare, for approval by the Owner, Construction Documents consisting of Drawings and Specifications setting forth in detail the requirements for construction of the Project.

§ 2.3.2 The Architect shall assist the Owner in the preparation of the necessary bidding information.

§ 2.3.3 The Architect shall assist the Owner in connection with the Owner's responsibility for filing documents required for the approval of governmental authorities having jurisdiction over the Project.

§ 2.4 BIDDING OR NEGOTIATION PHASE

This paragraph has been deleted.

§ 2.5 CONSTRUCTION PHASE ADMINISTRATION OF THE CONSTRUCTION CONTRACT

§ 2.5.1 The Architect's responsibility to provide Basic Services for the Construction Phase under this Agreement commences with the award of the Contract for Construction and terminates at the earlier of the

issuance to \the Owner of the final Certificate for Payment or 60 days after the date of Substantial Completion of the Work.

§ 2.5.2 The Architect shall provide administration of the Contract for Construction as set forth below and in the edition of AIA Document A201, General Conditions of the Contract for Construction, current as of the date of this Agreement, unless otherwise provided in this Agreement.

§ 2.5.3 Duties, responsibilities and limitations of authority of the Architect shall not be restricted, modified or extended without written agreement of the Owner and the Architect, with the consent of the Contractor; which consent shall not be unreasonably withheld.

§ 2.5.4 The Architect shall be a representative of and shall advise and consult with the Owner (1) during construction until final payment to the Contractor is due; and (2) as an Additional Service at the Owner's direction from time to time during the correction period described in the Contract for Construction. The Architect shall have authority to act on behalf of the Owner only to the extent provided in this Agreement unless otherwise modified by written instrument. Instructions to the Contractor shall be forwarded through the Architect.

§ 2.5.5 The Architect shall visit the site at intervals appropriate to the stage of construction (or as otherwise agreed by the Architect in writing) to become generally familiar with the progress and quality of the Work and to determine in general if the Work when completed will be in accordance with the Contract Documents. However, the Architect shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of on-site observations as an architect, the Architect shall keep the Owner informed of the progress and quality of the Work, and shall endeavor to guard the Owner against defects and deficiencies in the Work. (More extensive site representation may be agreed to as an Additional Service, as described in Section 3.2.)

§ 2.5.6 The Architect shall not have control over, charge of, or responsibility for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility under the Contract for Construction. The Architect shall not be responsible for the Contractor's schedules or failure to carry out the Work in accordance with the Contract Documents. The Architect shall not have control over or charge of acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons performing any of the Work.

§ 2.5.7 The Architect shall at all times have access to the Work, wherever it is in preparation or progress.

§ 2.5.8 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect shall review and certify the amounts due the Contractor.

§ 2.5.9 The Architect's certification for payment shall constitute a representation to the Owner that the Work has progressed to the point indicated, and that to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. Such certification shall be based on the Architect's observations at the site as provided in Section 2.5.5 and on the data comprising the Contractor's Application for Payment. The foregoing representations are subject to an evaluation of the Work for conformance to the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion and to any specific qualifications expressed by the Architect. The issuance of a Certificate for Payment shall further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment shall not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences or procedures; (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) ascertained how or for what purpose the Contractor has used money paid on account of the Contract Sum.

§ 2.5.10 The Architect shall have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

§ 2.5.11 The Architect shall review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's actions shall be taken with reasonable promptness so as to cause no delay in the Work or in the construction of the Owner or of separate contractors, while allowing sufficient time (in the Architect's professional judgment) to permit adequate review. The Architect's approval of a specific item shall not indicate approval of an assembly of which that item is a component.

§ 2.5.12 The Architect shall have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time.

§ 2.5.13 The Architect shall conduct inspections to determine the date of Substantial Completion and the data of final completion, and shall issue a final Certificate for Payment.

§ 2.5.14 The Architect shall interpret and decide matters concerning performance of the Owner and Contractor under the requirements of the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests shall be made with reasonable promptness and within any time limits agreed upon.

§ 2.5.15 Interpretations and decisions of the Architect shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect shall endeavor to secure faithful performance by both Owner and Contractor, shall not show partiality to either, and shall not be liable for results of interpretations or decisions rendered in good faith in such capacity.

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix H

The Decision to Build

David Haviland is professor of architecture at Rensselaer Polytechnic Institute and editor of The Architect's Handbook of Professional Practice.

David Haviland, Hon. AIA

The Decision to Build 3.21

The decision to build is a complex one involving the definition of project requirements and the assembly of many different resources.

All projects begin somewhere. They may be the product of systematic planning. They may be in response to a spur-of-the-moment opportunity. They may be somewhere in between these two extremes and may, in fact, include elements of both.

However projects come to be, the process of defining them includes some common elements:

- Scope, quality, schedule, and budget. The prospective project is defined at least well enough to understand why it is being undertaken, what facilities and amenities are required, whether existing facilities are involved, when the project is needed, and how much it is likely to cost.
- Site. The location—or at least site requirements—are set.
- Planning approvals. Communities typically require a series of regulatory approvals before projects can be constructed.
- Financing. Funds or funding commitments are secured; these may be provided by the owner, lenders, or, in some cases, investors.
- Delivery process. This includes identifying the design and construction services required to accomplish the project and decisions about how to procure and manage these services.
- Aspirations. Overriding, or perhaps underlying, the other elements are the owner's hopes for the project—how the owner pictures the project, today and in the future.

These elements are interrelated. Scope and quality influence the choice of site, and the possibilities and limitations of the site may influence what can be done there. Regulatory approvals vary from site to site and may have a significant impact on the project's cost and schedule. Financiers are usually very interested in the levels of amenity to be provided and the project's resale value—particularly if they should acquire the project in foreclosure.

Design plays a role in the definition process. How much gross area is needed to accommodate the functional program? What is involved in placing the program on the site? Can the project be phased to allow early occupancy? Will expansion be required in the future? How will the project address neighborhood, environmental, or other contextual issues? How will it be "sustainable"? For some projects, early schematic design is needed to attract the support of investors, donors, or the public at a referendum.

Likewise, some level of conceptual design may be required to secure regulatory and financing approvals. For example, zoning and planning boards require information on where facilities are sited; they may also need to see building heights and

Other practice topics in this series:
3.22 Delivery Options
3.23 Selecting the Design Team

3.22 Delivery Options explores the possibilities as well as the issues involved in selecting an appropriate delivery approach. Page 389.

PROJECT GOALS

Russell Gibson von Dohlen, Hartford, Connecticut

Here is a set of pointers one firm uses to help its clients develop project goals for office projects:

1. Performance
- Program accommodation
- Operational efficiency and productivity
- Human comfort
- Energy efficiency

2. Value
- Initial investment
- Portfolio asset
- Long-term operating and maintenance costs
- Resale/lease potential

3. Image
- To employees
- To stockholders
- To customers
- To the public

4. Flexibility
- Adaptability
- Expansion/downsizing

5. Time
- Initial go/no-go decision date
- Timeline and milestone
- Site selection
- Agency approvals
- Financing
- Facility delivery:
  Design documentation
  Construction
  Commissioning
  Move-in

massing, planting, drainage, access to highways and utilities, and a variety of other design features. Depending on the circumstances, the project's exterior, historic features, public space, and other design qualities may be subject to negotiation with financiers, regulatory agencies, or the public at large.

The Project Initiation Process

The initiation process may be straightforward or it may be fraught with uncertainties and difficulties. Large, complicated, highly visible or environmentally sensitive projects may have a particularly tough go of it. It is not uncommon for projects like these to be years in the making and involve extensive negotiation.

For many owners, a design and construction project is not an everyday occurrence. The need for new or renovated facilities may occur sporadically or even "once in a lifetime." For these owners, project initiation and definition may be a complete mystery.

For some owners, project initiation is an everyday process. They own or manage large numbers of facilities and are always in the process of upgrading and adapting them to new or changing requirements. For these owners, projects are identified and defined through ongoing facilities management; there may be systematic processes for scoping projects, finding and preparing sites, establishing delivery approaches, and securing financing and regulatory approvals. These owners, which include many commercial, institutional, and public entities, may undertake some of these activities—for example, purchasing sites, improving them, and seeking regulatory approvals—long in advance of specific projects.

Architects who understand the processes that owners follow in initiating and defining their projects are in the best position to offer assistance and, where appropriate, professional services.

Project Scope and Quality

Projects inevitably begin with a statement of what the facility is to do, that is, the project's goals, the activities to be accommodated, and any special requirements or considerations that will guide design.

Project planning and programming. This is a problem-seeking process—one that seeks to identify the problem the design process must solve. Problem seeking is rarely linear. While larger concepts (e.g., overall floor area and general level of amenity) may set frameworks for developing details (e.g., the size, relationships, and qualities of specific rooms and spaces), the details often require reevaluation of concepts and may generate new ones.

Problem seeking rarely ends with the initial programming work. Scope requirements are often considered as a starting point, one that may be refined and even modified in the cauldron of design.

☛ **3.61 Facilities Planning and Programming** provides details. Page 603.

Project planning and programming may be a highly formal process, with its own tasks and schedule, separately commissioned marketing studies or surveys of existing facilities, and detailed reports. On the other hand, it may be a very informal, brief statement, as when an owner says, "I want the third-floor renovations to follow the pattern started on the second floor." The level of detail and the extent of involvement are related to the other decisions that the owner—and likely the financing and regulatory entities—must make in order to move forward. The important thing to remember is that, formal or informal, direct or indirect, project definition is essential if the owner and architect are to understand what the project is all about.

ON THE ORIGIN OF PROJECTS

As it should, this handbook brings—even imposes—a sense of order, comprehensibility, and manageability to the conduct of projects. But this isn't the whole story. Projects are more than the sum of their parts.

Nowhere is this better seen than in the decision to build. Even the most orderly, businesslike developer or facility manager is tapping a human need, bringing focus to a desire that has value but may not yet be known. These desires and ideas exist before the project exists. They are the "gleam in the client's eye." This is the "somewhere" in which projects "begin," before they become articulated as scope, quality, schedule, budget, location, etc. All of this gives rise to, and becomes real through, the acts of project making.

GREGORY S. PALERMO, FAIA

Planning and programming may involve a wide range of people and interests, possibly including the organization's management (facilities are increasingly viewed as strategic assets), building managers, occupants at various levels, and those who operate and maintain the resulting spaces. There may be committees, task groups, quality circles, and associated information- and opinion-gathering activities. Neighbors, users, and the public at large may be invited to participate—or they may invite themselves. Managing this process and securing commitment to its results may be a project in itself.

Market research. For some projects, the program is written in the marketplace. The question is not how many housing units (or square feet of retail space or hotel beds) the owner wishes to build, but rather how many such units the marketplace can absorb and at what returns on investment. For these projects, a market study may become the basis for the program—and also an important part of the package developed to attract lender and investor support for the project.

The market study provides several important kinds of program information:

- The amount of space the market can absorb. The market researcher will look at existing and projected supply and demand for the kinds of uses the owner or developer has in mind.

- The people or organizations likely to buy or sell. The market study usually draws a statistical profile of prospective consumers, their characteristics, requirements, and ability to pay.
- Sales or rental levels. Markets are not homogeneous; the market for middle-income apartment housing is very different from that for luxury housing.
- Location. This has always been a significant contributor to the success of commercial projects, and the market's ability to absorb new projects may vary both by general location (where in the region the project is to be built) and the specific site on which it is to sit.
- Levels of amenity. To secure the sales or rental levels possible in the marketplace, it will be necessary to provide a general level of quality (or "value profile") and, quite often, specific program and design features.
- Marketing requirements. This aspect of market research establishes the need for brochures, advertising campaigns, sales offices, and other activities for marketing the project. (The architect, incidentally, may be called upon to design a brochure or even a sales office in response to this research.)

Like programming in general, a very wide spectrum exists in the level of research needed for a specific project. The market study may be quite casual, a windshield survey of what is happening in the region, or it may be extraordinarily detailed, with sophisticated projections of needs (perhaps reinforced with data from questionnaires and focus groups) as well as careful analyses of competing projects. Financing sources—lenders and investors—may dictate the level of formality and detail in the market study and, for large projects, the organization that is to do the market research.

☛ **3.62 Site Analysis** provides an overview of opportunities for professional services in this important area. Page 617.

☛ **3.71 Community Planning and Environmental Controls** explores zoning and other regulatory requirements. Page 653.

Site requirements. The owner may already have a building or site for the project. On the other hand, it may be necessary to acquire—or in the case of a large project, assemble—one. Community approvals to use the land for the intended purpose, and a variety of other planning and design approvals, may be necessary. Site options and the costs of acquiring, improving, and seeking approvals may shape the project program, schedule, and budget.

Project Scheduling and Budgeting

A timetable and a budget emerge as part of the project definition work. These may be established unilaterally by the owner, they may be set in the marketplace, or they may result from study by the architect. However schedule and budget are developed, they must be carefully coordinated with program and site decisions to ensure consistency and feasibility.

Project schedule. The schedule seeks to fix the key milestones in the life of the project. Key questions include the following:

- When must the project be occupied? Sometimes this is tied to a critical date (the start of a new school year, a holiday season, the introduction of a new product, or the expiration of a lease).
- Is it possible or desirable to occupy the project in stages?
- How long should it take to construct the project? Can site preparation or other work begin before design is complete? Can or should the entire project be fast-tracked?

- How long will preconstruction activities take? When can design work begin, and how complete will it be before construction begins? Are there other activities that, if delayed, will extend the project's schedule?
- When will the financing to do the project be available?
- What regulatory and financial reviews are required? Who will do them, what information do they need, and how long will they take?
- How long will owner approvals take? Who must be involved?
- Are there key milestone dates to be met—for example, the start of a new fiscal year that releases funds for the project?
- Are there financial penalties if the project is delayed?

Financial and regulatory approvals usually involve go/no-go decisions, so they almost always lie on the critical path. A complex project requiring many interconnected approvals—for example, a new airlines terminal building—may require a "decision timetable" as well as a design and construction schedule.

The project schedule is an important factor in establishing an appropriate level of compensation for architecture services. A very tight timetable may require overtime and other special expenses. Alternatively, a tight timetable may establish a discipline of crisp decision-making, encouraging a straightforward (and profitable) project. Fast-tracked projects may require many construction document packages as well as an additional layer of coordination meetings and activities. Projects with long review periods and lots of downtime between design phases can produce staffing problems for the architect. On the bright side, the ability to move the owner into a project three months ahead of schedule may add enormous value for the owner.

The project budget. The budget is the statement of the costs the owner will incur to accomplish the project. To provide an accurate view of costs—and the funds needed to cover them—owners are advised to develop comprehensive budgets that include all project-related costs.

The project budget is a very important statement. As the *first* statement of project cost, it is the one everyone remembers. It also represents the client's "emotional investment" in the project. Good budgets take this into consideration, including all costs and taking reasoned approaches to the many uncertainties that characterize any large-scale economic venture.

PROJECT BUDGET ELEMENTS

Facilities construction costs represent a substantial portion of a project budget, although by no means the entire budget. Project costs also typically include the following:

- Land costs, including acquisition, holding (real estate taxes and other assessments), and improvement (making it ready for construction by providing access, utilities, and other required infrastructure)
- Site evaluation and analysis, including land surveys, geotechnical exploration, environmental impact studies, remediation, and other activities
- Financial approvals, including market research, financial package preparation, origination and commitment fees, and interest paid for construction loans and other forms of interim financing
- Regulatory approvals, including application and permit fees, proposal preparation, representation at public hearings, and, for visible or sensitive projects, public relations programs
- Planning and design, including all of the information needed to secure user, financing, and regulatory approvals through facility design, bidding/negotiation, and construction contract administration
- Building furnishings, including the purchase and installation of furniture, fixtures, telecommunications, and other equipment provided by the owner
- Facilities start-up and initial operation, including training of personnel, user orientation, and systems adjustments; for rental or sales projects, this also includes marketing and other costs of attracting tenants or purchasers
- Legal, insurance, and owner project management throughout the process

DAVID HAVILAND, HON. AIA

3.73 Construction Cost Management notes that effective design cost management begins with a good budget. Page 681.

Financing and Financial Feasibility

Building projects are expensive; almost always they require more money than the owner has or is willing to commit to the project. The money must come from somewhere.

Even owners who use their own funds are investors. They could use their financial resources in other ways, and an "opportunity cost" is associated with forgoing these choices.

All sources of project financing can be thought of as investors in one way or another: they have capital; they have choices—that is, they can choose to support this project, or another project or something else entirely; and they are seeking returns on that investment, either an economic return or some other form of satisfaction. The owner must convince these sources of funds that the project is worthy of support.

Financial feasibility can be approached at many levels. It may be as informal as deciding to use your own funds or convincing a friendly philanthropist the project is exciting. At the other end of the spectrum, it may be necessary to assemble a detailed financial package to gain a lender's commitment, voter approval, or investor participation. At this writing, most of the action is at "the other end," and lenders and investors are in a very conservative frame of mind. Most owners find they must provide extensive justification for facilities projects.

Types and sources of project funds. Generally speaking, there are two types of funds involved in building projects: *debt capital* (provided by lenders seeking a return in the form of interest) and *equity capital*, supplied by the owner, developer, passive investors, or other equity participants seeking a return on their investment—a "piece of the action," if you will.

Many different kinds of people, organizations, and institutions provide capital for construction projects. Each brings something different to the project, and each expects something different from involvement in the project.

Commercial banks, savings and loan associations, and other thrift institutions originate mortgage and construction loans and are the traditional sources of debt capital. They usually seek return of the principal loaned and a price (interest) for the use of their money. The lender's rate of return (interest rate) is established up front; it may be a fixed interest rate or one that moves, within agreed limits, with the mortgage market. After these lenders write mortgage loans, they may sell them to pension funds, insurance companies, and institutions seeking long-term uses for their investment capital.

These institutions owe duties to their owners, shareholders, and depositors and are subject to varying levels of federal and state regulation. They are not inclined to accept undue risks. Most expect careful documentation of project expenses, and they require evidence of a revenue stream sufficient to repay the loan. This revenue stream may be from the owner's own operations—a householder's employment

A GLOSSARY OF LENDING TERMS

Lenders seek on-time repayment of the *principal* (the amount borrowed) and full payment of interest (the price of the loan) over the term of the loan. Popular images aside, lenders are not in the real estate business and do not relish *default* (failure to repay the loan) and *foreclosure* (reclaiming the property by exercising the lien that is granted to the lender under the terms of the mortgage loan agreement).

The usual borrowing instrument is the *mortgage* loan, a loan secured by real estate. Most mortgage loans are *self-amortizing* in that the borrower makes a series of payments, slowly repaying the loan. Some loans also include a *balloon*, a single, large repayment. The periodic payment of principal and interest charges is commonly referred to as the *debt service*. Usually the lender provides an *amortization schedule* listing each payment, when it is due, and how much will be considered as repayment of principal and how much represents payment of interest charges.

Typically, the lender will not provide all of the project funds needed, for this would require them to shoulder all of the risk associated with the project while gaining only a fixed return. The amount lent, as a percentage of what is needed, is referred to as the *mortgage ratio* or *loan-to-value ratio*. At this point, the owner has two ways to complete the financing of the project: to seek *junior mortgages* (second or even third mortgages, all secured by the same real estate and thus of greater risk and with higher interest rates) or to seek *equity capital*.

One more note about mortgage loans: Since they require improved real estate as collateral, it is impossible to obtain one for an unbuilt project. To resolve this catch-22, the owner typically seeks a *permanent mortgage commitment* from a long-term lender and then uses this commitment to secure *interim financing* (usually a *construction loan*) from a short-term lender. Construction loans are inherently risky, since they finance something that's being built and not yet ready to be rented or sold. Thus, their interest rates often range 3–5 percent higher than those for mortgage loans.

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In 1991 savings institutions were responsible for nearly 30 percent of the nation's $3 trillion in outstanding mortgage debt:

Savings institutions	*29%*
Mortgage pools	*26*
Commercial banks	*21*
Life insurance cos.	*7*
Public agencies	*6*
Individual & other	*11*

or a software company's revenue from the sales of its product—or from the sale, rental, or operation of the facility itself.

Lenders are not inclined to provide 100 percent of the capital needed to build or renovate. To ensure the risks are shared, the owner is normally expected to contribute some equity funds of its own. Most owners are very careful about this decision, making sure that (A) they have the necessary funds for the project and (B) they are not tying up all of their available capital in an asset with as little liquidity as a building project.

Owners may approach others for equity capital. They may propose that the lender "take a piece of the action" by participating in the project's cash return. They may approach other project participants—the owner of the land, the architect, builder, or key suppliers—to contribute goods or services to the project in expectation of return. They may sell shares in the project to passive investors who have no interest in developing or operating the project but who desire a high annual cash flow, appreciation at the time of sale, or tax benefits from their investment. Institutions and public agencies may sell bonds—with attendant marketing and underwriting requirements—to raise equity funds for their projects. All investors are seeking economic return and demonstration of financial feasibility is essential.

The financing decision. Projects of any size or complexity, especially projects seeking passive investors, generally require a "financial package"—a well-documented case demonstrating the project's feasibility. The form of this package depends on the requirements of prospective lenders or investors and, in the case of syndications, applicable regulations. Most likely it will include

- A statement of project objectives, with reference to any market studies done
- A physical description of the project, including site, conceptual designs, outline specifications, and sketches or renderings
- An economic description, usually presented as a *pro forma* operating statement
- The business and financial qualifications of the owner or developer

☛ **The Project Pro Forma** examines the "sheet of numbers" that holds the key to financial feasibility—and often to the design as well. Page 386.

The architect as equity participant. The architect may play one or more of these roles in financing and financial feasibility:

- Evaluator of the financial package and the design decisions embedded within it
- Provider of some of the services needed to develop the financial package, including site analysis, conceptual design, zoning assistance, and construction and operating cost estimates
- Equity participant with a financial stake in the project

The last role, of course, is very different from the others, for here the architect crosses the line from being a provider of services to assuming the rewards—and the risks—of investing in real estate. Some architects take the full plunge, acting as developers as well as equity investors. In this role, the architect initiates projects for economic return, acquiring the land (or the right to buy it), commissioning market studies, assembling the financing, building the project, and then overseeing its sale, rental, or use for economic return.

MAKING GOOD CLIENTS: GETTING STARTED

It's said that good architecture requires good clients. To help your client become a better client, you may want to offer some advice and guidance on how to get started. Here are some words and thoughts—written for owners—you may want to work with.

As owner, you bring a great deal to your project: knowledge, experience, needs, desires, and aspirations, as well as biases. You also bring the resources to realize your expectations.

Every owner, however, starts in a different place. Some have had vast experience with design and construction; they know what they want and how to go about getting it. Many owners have much less experience.

Whatever your situation, it makes sense to begin with some self-examination to access what you already know about your project and what you will establish with your architect's help. The questions outlined here can be used as a guide.

You don't need firm or complete answers to these questions at the outset. Indeed, your architect will help you think them through. A general understanding of where you are, however, will help you select the architect for the project.

- What activities do you expect to house in the project? Are you ready to translate these activities into specific spaces and square-footage areas, or will the program emerge in working with the architect?
- Has a site been established, or is this decision, too, a subject for investigation with the architect?
- Have you, or perhaps others, fixed a construction schedule or budget?
- What are your design aspirations? What thought have you given to the design quality or amenity you are seeking in this project?
- What are your overall expectations from this project? What are your basic motivations as a client, and what role does this project play in achieving your overall aims?
- How do you make decisions? Will a single person sign off on recommendations? Are committees necessary?
- How much information do you need to make decisions? Do you require a lot of detail?
- How bold do you expect to be? Do you wish to push design and technology to the limit? Is the project experimental?
- Do you have the resources to do this project? Where will they come from, and what strings may be attached?
- How much experience do you have in design and building? Have you done this before? If so, where have you been successful, and where were you disappointed?

ADAPTED FROM *YOU AND YOUR ARCHITECT* (AIA, 1987)

The *Handbook* offers more words and thoughts that might help you "make" good clients.
See *"Selecting Architects,"* page 420; *"Identifying Services,"* page 471; *"Compensating the Architect,"* page 473; *"Negotiating the Agreement,"* page 503; and *"Keeping the Project on Track,"* page 551.

It is important to recognize that equity participation represents a shift in the architect's position, one with legal, insurance, and ethical dimensions. AIA ethical rules require full disclosure of the architect's equity role. The registration and conduct laws of some jurisdictions may also require such disclosure. Moreover, equity interest and operational management control may lead to a different standard of care for the architect's performance.

Where the architect has a direct financial stake in the success of the project, professional liability insurance coverage should be evaluated. In the AIA-commended program offered by CNA Insurance Companies and underwritten by Victor O. Schinnerer & Company, an architect can assume up to a 15 percent equity interest in a project and retain its errors and omissions insurance as long as the firm has no operational or management control over the project. An endorsement is available up to a 50 percent equity interest. Other carriers' terms and conditions will vary.

Opportunities for Professional Services

For some projects, scope, site, schedule, budget, financing, and the delivery process are carefully worked out before the architect comes on board. In these instances, it is the architect's task to evaluate these decisions thoughtfully: Are they clear, are they appropriate to the situation, are they in balance with one another?

For other projects, a considerable amount of definition—what may be termed *predesign,* even though it usually includes some level of design—is necessary to bring

the project to the point where it is clearly defined and its quality, cost, and time limitations requirements are known, understood, and agreed upon.

Facilities planning, scheduling, existing facilities and market surveys, budgeting, site analysis, financing and financial feasibility studies provide architects with opportunities to work with the client in the most crucial stage of a project—at the beginning, when scope, quality, time, and cost parameters are set. It is no surprise that so many firms are developing the special expertise needed to provide these predesign services. Given the uncertainties involved in carrying out these services, many owners and architects find hourly compensation to be appropriate.

Not all projects survive the definition and predesign process. Some are proven to be infeasible, inappropriate, or untimely. It is understandable that an owner may wish to place an architect providing professional services during this phase in the same risk position it is assuming: if there is no project, the architect earns a reduced fee. In these situations, owners and architects will want to work out a reasonable approach to sharing the risks and the rewards. For their part, architects will want to be sure they can provide the necessary services within the compensation offered.

FOR MORE INFORMATION

Texts on real estate and community development often provide comprehensive descriptions of the project initiation process, including land development, valuation and appraisal, market research, finance and taxation, financial feasibility, marketing and brokerage, legal, and public policy issues. Examples include Charles H. Wurtzebach and Mike E. Miles, *Modern Real Estate* (John Wiley & Sons, 4th edition, 1991) and the Urban Land Institute's book on the subject by Mike E. Miles, Emil E. Malizia, Marc A. Weiss, Gayle L. Berens, and Ginger Travis, *Real Estate Development: Principles and Process* (ULI, 1991).

The Urban Land Institute offers a wide variety of resources on land use trends, issues, and finances. These include a Community Development Handbook Series (e.g., downtown development, business and industrial parks, mixed use, office, recreational, residential, and shopping centers), market profiles, case studies (Project Reference Files), and resources for education and training. Call (800) 321-5011 for information.

In a similar vein, the National Association of Home Builders publishes books and manuals on residential development, financing, design, and construction. Call (800) 223-2665 for a copy of the NAHB Bookstore catalog.

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix I

Comments from CAALF/CRI Members

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MEMORANDUM

To: **CRI Board**

From: **Michael Crescenzo, Consultant**

Date: **May 10, 2008**

Subject: **CRI Interviews**

As part of the case study I am helping CRI prepare for VHDA I conducted interviews with many members of the development team and others who were involved with the project. The interviews produced so much information and insights that the CRI members, Jerry Hopkins, Jane and Jim Edmondson, involved in compiling the case study decided to seek interview insights from selective CRI Board members and CAALF volunteers. These are the responses we received from those that responded.

Each CRI person was asked to answer the following questions:

When did you get involved in the CRI project and how were you recruited?

When you joined the volunteer effort did you clearly understand the goals of the group?

Do you think you were asked to be involved early enough in the process to give CAALF/CRI the benefit of your experience/expertise in relevant subject matters?

What did you think about the overall decision making process during the time you were involved?

From your perspective did you see any “red flag” issues/problems that should/could have been addressed, and what would you say to other church groups about avoiding those pitfalls?

If the project were just beginning now, and using the hindsight we all now have, what would you recommend be done differently?

Dick Curry, IPC:

I got involved after Don DiLoreto stood up at a visioning meeting at IPC (a dialogue about the direction(s)/missions where IPC ought to move) and said we need to address the needs of our aging members and provide an alternative to moving out of their "home territory" in order to get assistance with daily living. Gay Lee Einstein, an associate pastor, mentioned the Lewinsville (LPC) initiative. I attended a meeting and continued to represent IPC and talk it up with fellow Session members at IPC.

The goals of the LPC group were clear from the beginning. I did not bring any particular expertise to the project except the experience of having dealt with our own aging parents.

Decision making was an open process with LPC clearly taking the lead. The project seemed to be the hallmark outreach initiative for LPC as the "I Have a Dream" Program had been for IPC.

The main "red flag" issues from my perspective involved the Chesterbrook Taiwanese Presbyterian Church along with the abutting neighbors.

In retrospect given the "red flag" issues I saw I think that we all need to be extra careful and sensitive when we are engaged in projects that seem to be fulfilling an outreach mission of our respective congregations. As one who is involved in the development of wind power I struggle with the same general issue. We are all engaged in an obviously worthwhile experience driven by the best of motives and we assume that we will be welcomed with open arms. Our dedication to mission can be perceived as arrogance. When we remembered who we were working for we tended to recover our sense of balance.

Gene Blanchard, LPC:

I got involved in the CRI project about three months after it was initiated. Pastor Gary Pinder of LPC recruited me.

The briefings of Gary Pinder and Jerry Hopkins made it very clear to me what the goals of the group were.

I was recruited because the leaders of CAALF were all employed and I was retired. Somebody was needed who could devote more time to the project during working hours than the leaders could. Although In had some experience in the nursing home business about 35 years earlier, that was not a factor in my recruitment. I was there to work with each committee and coordinate their activities. I was not there to give any professional opinions or advice. Although I was not there at the very beginning the three month delay before coming on board was not a handicap.

I thought that the decision making process was excellent. The committees were thorough in their work so when recommendations came before the full CAALF, they were usually accepted as presented. Early on we recognized we needed truly expert advice from some one who had "been there, done that". This led to the retention of Bill Harris as a consultant.

The only "red flag" issue that I can think of is one unique to CRI and that had to do with the access route. When NCP brought the Taiwanese congregation to the site it should have tied Parcel B to Parcel C, rather then to the church site, Parcel A. This might have eliminated the conflict between CRI and the Taiwanese.

Churches should also be warned about NIMBY neighbors but I don't think they can really be avoided. Churches should also be sensitive to the political ramifications so they should try to get as many politicians educated as to the issues as early on as possible. Perhaps a common thread through all of this is the early establishment of the Need for the facility. Need can not be assumed. It must be professionally established and documented. (Even the neighbors and Taiwanese did not dispute the need they just wanted it elsewhere or using a different access.) A well documented need is also key to getting politicians aboard.

CRI spent much time exploring the financial alternatives available for the project. Other churches should do likewise. After the feasibility of the project has been determined, the project cost estimated and many of the road blocks removed, a different professional is needed to manage the project to fruition. Some favored a developer. CRI favored a consultant, and MJC Consulting was hired. This was all done after I left the area but the results speak for themselves.

I am sure some things should have been done differently, but none stand out that were so major that they bear listing them. The CRI project seemed to take forever, but that's just the nature of these things, and a church embarking on a similar project should be prepared to spend the time. Similarly they should be prepared to spend the money for the professionals who are needed. Among the things that CRI did right was the management of the architect. Often, architects tend to take control of such projects, and the structures are larger and more ornate than they need to be. This did not happen at CRI because the architects were managed properly and we had good architects. Much of this proper management can first be attributed to Jim Edmondson and later to Mike Crescenzo.

Incidentally, CRI was very fortunate to have Jim Edmondson on its Board because of his development experience. Any church group should try to find a similar person for its inner circle. And I can't mention Jim without mentioning Jane Edmondson. Any group embarking on such a project should have a person filling the role that I first filled and which Jane then assumed. It wasn't that Jane ran the project it was just that Jane saw that everyone else did the jobs and was on the same song sheet. She also made sure that the left hand knew what the right hand was doing. You need a coordinator and Jane filled that role brilliantly. This brings up one other thought. A project such as CRI is managed with an "inner circle". Jerry Hopkins, Jim and Jane Edmondson and the consultants were really the prime movers in that they were there all the time. Others were brought into the inner circle as needed, and then the full CAALF organization was kept informed of the activities. Actually, the CAALF organization was more than that, but my point is that the inner circle ran the show and that is necessary.

My last thought regards the Final Mile Campaign. While it was successful in reaching the goal it set for itself, I thought that CRI should have engaged a professional fundraising organization. McLean is a very affluent community and I believe that raising $3,000,000 was not out of the question, and that a professional firm might have been able to do that.

Roland McElroy, LPC:

I was called by Jane Edmondson in early 2005 to create the Final Mile Campaign. When Jane calls few have been recorded as refusing her request so I responded with enthusiasm. The Final Mile Campaign was an ambitious effort to raise $1,000,000 from the sponsoring religious entities and friends in the community. The funds were to be used to defray all remaining construction costs and assist the CRI Board in covering expenses through the initial lease-up. It took three years for the campaign but the goal was reached and even oversubscribed by a little bit.

When I became involved the goals of the group were very velar LPC had founded Lewinsville Retirement Residences (LRR) on land adjacent to the church property in the late 1970's (doors opened in September 1980) and having been a part of that start-up I was familiar with the need in the community for retirement residences and assisted living facilities.

I was not involved early enough in the CRI project to give CAALF/CRI the benefit of my experience.

While I can not speak to any decisions made with respect to the development of the project, during the Final Mile Campaign decisions were made easily with the assistance of a small committee established to oversee the fundraising process. The decision to vest a small but representative group with the power to design the effort and make decisions independent of the governing board certainly helped expedite the campaign.

Based on my experience with two projects, one built with HUD funding and a second built primarily with VHDA funding, I believe it is most important that the project have one person in charge, a person fully committed, who is able to devote full time to the project during the period of development and lease-up. Every project of this nature embraces a unique set of challenges, most of which can not be predicted. Therefore, it is imperative that the "rail driver" be one who possesses an endless supply of energy ranging from proper placement of sewer lines to regulations regarding eligibility for assisted living residences. Above all the person must possess a 24/7 commitment to see the project through to successful completion. Chesterbrook was blessed with a number of individuals who worked diligently to bring the project to fruition but it would have moved forward more expeditiously if there had been one dedicated individual "on it" every day. Every project needs that person. Seven years is a long time for a project to be in development, and while not unprecedented, the lengthy time required had an obvious and adverse impact on total cost. That was regrettable in my view.

Judy Seiff, Temple Rodef Shalom:

TRF was contacted by members of the CAALF group early on to see if we wanted to participate. Rabbi Berkowits and I met with CAALF at TRS early on and indicated that we were very interested. We suggested some TRS members who might serve. At that point I was extremely involved with the construction at TRS. I did not join the Task Force effort since I simply had no additional time. I kept abreast of the developments and immediately after my retirement in June 2004, I joined what was then transitioning into the CRI Board.

It took several meetings for me to really catch up and see where I might fit in. A tremendous amount of work had been done up to that time by Jerry Hopkins, Jim and Jane Edmondson and others. Michael Crescenzo, the development consultant, had recently come on board. I became more and more comfortable as I became familiar with the terminology (VHDA…. Etc.), the documents handed out at Board meetings and so forth. I realized that I was not going to understand or know all about every aspect and tried to determine where I might be most helpful.

I believe I got involved early enough to give CAALF/CRI the benefit of my experience and expertise. The fact that I had just finished dealing with many of the same issues with Fairfax County (inspections, permits, drainage issues, delays caused by the County etc.) was helpful. We had also just completed a major fundraising campaign and I understood the dynamics and mechanics as they related to TRS and I think that proved helpful with the Final Mile Campaign.

I found (and continue to feel) that decisions were made in a thoughtful and fair manner. Under Jerry Hopkins' leadership the Board has been one in which opinions are shared and respect shown for one another even when parties disagree. A number of touchy issues with the County, the engineering firm and the Taiwanese church have been handled with care and concern.

After the fact we realized that we probably needed to do more education about the need for an affordable assisted living facility in the neighborhood. When this project first started few people realized how great the need for such a facility would be in the coming decade. As folks heard more about this issue in the media more people accepted the idea. We also had to work against the prejudice against building or expanding religious facilities in our County. The NIMBY factor affects almost every new project that comes up here. Once people move into the neighborhood they want no change at all! Since we were "faith based" and since other facilities for "old people" are not terrifically popular, we had a big selling job1 I believe that other groups trying to do what we did will have a lot fewer problems since the word is out that we have to prepare for the growing number of seniors in our County.

Any construction in Fairfax County takes longer than expected and will cost more than planned. We probably should have built that into our plans and especially into our financial projections. Unless and until the County streamlines its inspection routines, its planning approval processes etc. a project such as ours needs to factor in those delays better. The cost overruns were mainly due to County demands and the tardiness of the project was almost entirely because of County issues. Since we (or the next group) are unlikely to solve those problems we need to plan around them a bit better. Perhaps in making plans we need to come up with the "reasonable scenario" and then the one based upon past experiences in Fairfax County. Maybe when both are presented someone in the County hierarchy will start getting the message.

Additional Comments from Judy:

I truly feel that Chesterbrook Residences is a critical piece in making the community in which I live and have worked almost four decades complete. Now residents can live, educate their children, retie and continue to feel that they will have a space in the community when they need additional help and support.

It has been a privilege to work with the CRI Board. Thus far my experience has been rewarding and I feel that we have excellent leadership, reasonable discussion on difficult issues, and have carefully made the necessary decisions. I am amazed at the knowledge and expertise of some of the people who have served. Their "political" connections (in the best sense of the word) have been terrifically important.

In some respects the transition period from the dream to the fully functioning facility has been the most difficult for me. The timetable for moving in and actually starting to function was rushed (due to delays getting occupancy permits etc.) and the transition from CRI to CSM as the entity "in charge" on a daily basis has not always moved as smoothly. We are getting there, but there have been bumps in the road.

The coming period with changes on the Board and eventually new leadership will be interesting. Will we be able to engender the same passion for this project in new people who serve on the Board? What will the future dynamics be between CRI and CSM? How will we orient new leaders? There is still a great deal to think about for the future of CRI.

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix J

Sample Documents from the Site Plan Process

Uniform Pro Rata Share Program Assessment Rates
July 1, 2007 - December 31, 2007*

Watershed	Pro Rata Rate ($/Increase in Imperv. Acre)	Pro Rata Rate ($/Increase in Imperv. Hectare	Fund 316 Subsidiary No.
Accotink Creek	3,487	8,616	310000
Belle Haven	10,885	26,897	630000
Bull Run	17,241	42,604	820000
Bullneck Run	5,869	14,502	440000
Cameron Run	6,297	15,562	210000
Cub Run	6,254	15,454	810000
Dead Run	6,907	17,067	430000
Difficult Run	12,471	30,816	510000
Dogue Creek	8,060	19,918	610000
Four Mile Run	5,601	13,840	220000
High Point	4,799	11,860	980000
Horsepen Creek	5,985	14,790	710000
Johnny Moore Creek	1,802	4,453	920000
Kane Creek	0	0	
Little Hunting Creek	16,143	39,890	620000
Little Rocky Run	22,377	55,295	910000
Mill Branch	3,592	8,876	970000
Nichol Run	6,747	16,672	730000
Occoquan	0	0	
Old Mill Branch	2,887	7,135	940000
Pimmit Run	5,914	14,614	410000
Pohick Creek	5,382	13,300	110000
Pond Branch	7,311	18,065	740000
Popes Head Creek	12,862	31,782	930000
Ryans Dam	0	0	
Sandy Run	2,731	6,748	960000
Scott Run	2,545	6,289	420000
Sugarland Run	8,297	20,503	720000
Turkey Run	4,046	9,999	450000
Wolf Run	4,142	10,234	950000

* Rates are subject to change upon periodic review and update by DPWES

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ENGINEERS & SURVEYORS INSTITUTE
Peer Review Checklist
FAIRFAX COUNTY

SITE PLAN
First Submission [*] = Plan non acceptable if any * box is marked w/o explanation on plan or alternate solution noted

Plan Name _____ Plan #_____ District_____
Submitting Firm _____ Project Coordinator _____
Designated Plans Examiner #_____ Name _____ Phone #_____
Review Date_____ ESI Reviewer _____ Reviewer's Firm _____

CODE SECTION	REQUIREMENT	SHEET Optional	OK	NO	N/A	LINE
OSDS ltr 03-12	COVER SHEET: 7/7/03 edition of cover sheet used			*		1
112-2-302,3&4	Concurrent processing approval documented					2
PFM 9-0202.2.c	Fire Marshal notes, data filled in					3
PFM 9-0202.2C(6)	Available fire flow shown					4
OSDS ltr # 03-12	Source of fire flow information					5
PFM 10-0301.1	Solid waste statement filled in and is accurate (peer review to confirm)					6
OSDS ltr 03-12	Site tabulations filled in			*		7
OSDS ltr 03-12	Zoning requirements completed, verify zoning and if proffered by an * after rezoning number on zoning map book			*		8
OSDS ltr 03-12	Plan approval information completed (identification numbers and sheet numbers)					9
107-1-2(a)	Does plan approval information note that a soil report is required if construction is proposed in an "A" soil or a dam is proposed requiring a report per PFM Plate #64-6?					10
OSDS ltr 03-12	Review fee computation filled in					11
PFM 8 Table8.4	Vicinity map shows walk/trail maintenance responsibilities (DEM ltr 16-87)					12
OSDS ltr 03-12	Soil map shown			*		13
OSDS ltr 03-12	Soil data chart filled in			*		14
OSDS ltr 03-12	Lot tabulation by soil type (for townhouse projects only)			*		15
OSDS ltr 03-12	Tax map reference number(s) filled in correct (peer review confirm)					16
OSDS ltr 03-12	Watershed identified					17
OSDS ltr 03-12	Disturbed area within watershed filled in					18
112-2-806	Number of affordable dwelling units provided on this plan (if entire project contains 50 units or more)			*		19
112-17-106.6	Engineer's or surveyor's certificate completed with seal and date, original signature and seal on at least on 1 cover sheet (ESI Tech bul V5 # 3)			*		20
OSDS ltr 03-12	Geotechnical engineer's /other professional seal/signature / date (original signature and date on at least on 1 cover sheet)			*		21
PFM 2-0212.19	Owner/developer wetlands certification signed			*		22
OSDS ltr # 03-12	District shown and is correct			*		23
	PLANNING AND ZONING					24
112-3,4,5&6. 02	Zoning district allows by right use			*		25
112-2-303,304	If the use is not "By Right", Had a SE or SP has been approved			*		26
OSDS ltr # 03-12	Rezoning number with date & page number on plan approval information					27
DEM ltr # 9-90	Plan includes clerk BOS rezoning approval letter to applicant			*		28

CODE SECTION	REQUIREMENT	SHEET Optional	OK	NO	N/A	LINE
	including any waivers approved by BOS					
DEM ltr # 9-90	Plan includes BOS rezoning resolution			*		29
112-17-106.25	Proffers included on plan if applicable			*		30
112-17-106.25	GDP/FDP included on plan if applicable			*		31
112-17-106.25	Special Permit/Exception or Variance included if required			*		32
DEM ltr # 9-90	Clerk to BOS/BZA approval letter to applicant included for SE or SP			*		33
112-17-106.25	Special Permit/Special Exception plat included in plan with approved conditions			*		34
112-17-106.25	Valid Special Permit or Special Exception (not expired)			*		35
112-17-106.25	Proffer/development condition narrative included			*		36
112-17-201.12	Compliance with proffers, SP, SE, variance conditions			*		37
112-17-201.12	Compliance with GDP, FDP, SP, SE, variance plan layout			*		38
101-2-3(d)(4)	Valid preliminary plat, if subdividing and no development plan or re-approval has been requested			*		39
112-17-106.12	Building height shown					40
112-17-106.12	Building yard requirements (setbacks shown)					41
112-17-106.12	Site and building proposed uses indicated			*		42
112-17-106.12	Number of units (if townhouses or multifamily)			*		43
112-17-106.12	Type of units (if townhouses or multifamily or condo)			*		44
112-17-106.14	Parking schedule, number spaces tabulated for each use. Minimum number required vs. number provided			*		45
112-17-106.12	Number of floors (check in Fire Marshal's notes on cover sheet)					46
112-2-806	Location of affordable housing units indicated if entire project contains 50 dwelling units or more			*		47
	PUBLIC STREET REQUIREMENTS					48
112-17-106.11	Route number shown for existing state maintained streets					49
112-17-106.11	Street widths, pavement and right-of-way shown for existing and proposed plus distance from property line to centerline					50
112-17-201.3.A.	Construction of dedicated service drive on primary highway			*		51
PFM 7-0201.1.C.	Existing right-of-way dedicated if VDOT frontage not present (deed book page number shown)					52
PFM 7-0405.2	Intersection and entrance sight distance (horizontal and profile) for all existing and proposed entrances			*		53
PFM 7-0404.6	Profile shown for all new streets including widening and turning lane for existing roads			*		54
VDOT entrance manual table 6	At existing street intersection, posted speed shown for existing road and traffic volume and category shown for proposed roads			*		55
PFM 7-0101.2	Street category shown for each new street			*		56
PFM 7-0101.2	Curve data shown for new streets to conform with street category					57
PFM 7-0107.5.A.	Stop or yield signs at all intersections					58
PFM7-0401.1A&B	Handicapped ramps at all curb returns					59
	PRIVATE STREETS					60
112-11-302.2	Private residential street not exceed 600' (182.88 m) without waiver					61
112-17-106.20	Private street maintenance note on plan and plat (agency)					62
PFM B7-8,TS-5A	Private street/parking surface/pavement design shown					63
112-17-106.14	Parking/loading spaces, delineated with dimensions					64
PFM 7-0802.4	Handicapped spaces identified and ramps available					65
	DRAINAGE					66
PFM 6-0202.13	Overland relief provided for sump conditions and to clear					67

CODE SECTION	REQUIREMENT	SHEET Optional	OK	NO	N/A	LINE
	buildings					
PFM 2-0203.1.C	Limit of clearing and grading shown					68
OSDS ltr. 03-01	Priority Rating Form for E&S Control					69
OSDS ltr. 03-11	Completed Certified E&S Control Checklist					70
PFM 11-0104.1	2 phase plans provided for erosion and sedimentation control					71
PFM 11-0104.1	1st stage phase 1 limit of clearing only to install perimeter controls					72
DEM ltr #30-88	Erosion & sedimentation controls identified and trap computations shown					73
DEM ltr #30-88	Calculations provided to insure adequacy of sediment basins					74
PFM 2-0212.12	Clearing limit matches between grading, E&S and GDP sheets					75
PFM 6-0202.5	No concentrated surface water discharged offsite without easements					76
PFM6-0905&1008	Design computations provided for closed and open systems					77
PFM 6-0203.1.B	Outfall narrative description with adequacy conclusion			*		78
PFM 6-0201.2	If open channel, is it an existing natural incised channel					79
PFM 6-0203.1	Cross-section, water surface elevation and computations shown for existing natural incised channels			*		80
PFM 6-0203.1	If incised channel, show both horizontal and vertical scale			*		81
PFM 6-0203.3	If into existing system, include its capacity computations and confirm adequacy			*		82
PFM 6-0301.3	SWM facility provided on-site with required calculations			*		83
PFM 6-0301.3	SWM provided off-site with plan number and approval date shown			*		84
DEM ltr 7-87	Waiver to be requested to use off-site project stormwater management			*		85
OSDS ltr # 03-12	Waiver request on plan approval information, ID number shown					86
PFM 6-0401.2	BMP facility provided on-site with required calculations			*		87
PFM 6-0402.8(f)	Computations of BMP phosphorus removal			*		88
PFM 6-0401.2.3	BMP provided off-site/plan number and approval date shown			*		89
PFM 6-0401.3	BMP water quality waiver requested if facility not shown or referenced			*		90
OSDS ltr # 03-12	BMP waiver request on plan approval information with ID number					91
PFM 6-0402.8(A)	BMP narrative summary includes how water quality provided					92
112-17-106.32	RPA boundary shown if it is within the site			*		93
PFM 6-0303.3.	SWM and BMP not in RPA without approved exception					94
PFM 6-0402.8(g)	BMP maintenance responsibility statement (agency)					95
PFM 6-0402.8(c)	BMP open space credit note "water quality management area..."					96
	DAM STANDARDS					97
PFM 6-1604.2	Emergency spillway placed in undisturbed ground and shown with dam profile					98
PFM 6-1604.6	Justification provided if a combined spillway is proposed					99
PFM 6-1602.6	Easement provided to carry maximum emergency spillway flow and extends to adequate drainage system					100
PFM 6-1603.4	Dam breach analysis performed for drainage area = > 28 ha. (69 Ac.)					101
PFM 6-1605.5A.2	Spillway outfall conduit RCP 18" (450 mm) or greater					102
PFM 6-1605.3A	Dam clearing limits extend at least 10' (3 m) beyond toe					103
PFM 6-1605.1b	Dam category determined per plate 64-6					104
PFM 6-1607.1B(2)	Concrete cradle on upper 2/3 length of conduit (plate 64-6)					105

CODE SECTION	REQUIREMENT	SHEET Optional	OK	NO	N/A	LINE
PFM 6-1605.5B(1)	Filter blanket around lower 1/3 of conduit					106
PFM 6-1607-1B (4)(a)	Plan specifies principal spillway pipe to meet AWWA spec. C300 or C301, wet pond.					107
PFM 6-1607.1B (4)(b)	Plan specifies principal spillway pipe to meet ASTM spec C361, Dry Pond.					108
PFM 6-1605.6a2	Top width of dam minimum of 12' (3.7 m)					109
PFM 6-1604.10	Low-level water release required within principal spillway / wet ponds					110
PFM 6-1606.2G	20' (6.1 m) cleared access easement required along down stream dam toe if necessary to access off-site outfall structure					111
PFM 6-1606.2G	Access road has a standard entrance at the street with a gate					112
PFM6-1606.1C&D	Benches provided for dams 15' (4.5 m) high or greater and in wet ponds					113
PFM 6-1305.4	No trees and landscaping on earth dams					114
PFM 6-1305.5	Dam restrictive planting easement and notes provided					115
PFM 6-1306.3D	Separate maintenance access easement provided for ponds to be publicly maintained if crossing another parcel					116
PFM 6-1306.3F	12' (3.7 m) wide all weather surface for access road to SWM facility per Plates 49-6, 50-6, 56-6 or 57-6					117
PFM 6-1306.3J	Removable trash rack detail provided, if underground, access shall be immediately above rack					118
PFM6-1604.8B&C	Trash rack provided for low flow orifice					119
	LANDSCAPING & TREE COVER					120
PFM 12-0403.8.C	Tree cover computations shown with landscape plan and plant schedule			*		121
112-13-301.1	Transition yards provided according to matrix			*		122
112-13-301.1	Transition yard barrier shown unless waiver included			*		123
112-13-202.1&2	Parking lot peripheral landscaping, right-of-way and all sides of parking lot					124
112-13-201.1	Parking lot interior landscaping islands and computations shown if > 20 spaces					125
112-4-108,208,308,...	Required landscape open space provided (commercial, industrial zoned districts only)					126
	MISCELLANEOUS					127
112-17-106.2	Plan is drawn to a scale of not less than 1:500					128
112-17-106.5	North arrow and reference to State Grid System (VCS 83)					129
ESI Tec Bul 5-3	All sheets have engineer and/or surveyors seal and signature			*		130
ESI Tec Bul 5-3	At least one set of plans has original signature and date on seal on cover sheet from each professional. APELSLA Board R&R 12.8.B.			*		131
12-17-106.2	Match lines shown where sheets join					132
112-17-106.5	Bearings and distances provided around site boundary					133
112-17-106.9	Existing topography drawn at 2' (0.5 m) intervals					134
PFM 10-0104.2.C	Bearings, distances and centerlines of sanitary sewer					135
PFM 10-0104.2.A.	Sanitary sewer profiles on same sheet as plan					136
PFM 10-0102.5.C.	Sanitary sewer setback 15' (4.6 m) from all buildings					137
112-17-106-16	Location of solid waste storage containers shown					138
112-17-106.11	Proposed easements shown and identified as "proposed" if not, deed book and page number shown					139
112-17-201.1	Sidewalks provided along the site's road frontage					140
112-17-201.2	Trails provided in accordance with Comprehensive Trails Plan					141
112-16-403	Trails and walks as shown on GDP,FDP,SE,SP					142

CODE SECTION	REQUIREMENT	SHEET Optional	OK	NO	N/A	LINE
112-17-106.15	Profiles shown for all trails >8% grade					143
PFM 2-0101.1	Approved or requested waiver/modification letter on plan					144
PFM 2-0101.1	All waivers and variances are still valid and not expired					145
PFM 2-0101.1	All conditions of waivers complied with on plan					146
PFM 2-0404.2	Vertical and horizontal location of certain existing transmission line shown					147
PRINTS	Prints legible, not too light or too dark to microfilm					148
MUST	Existing topography not screened excessively so as not legible					149
MICROFILM	Insufficient elevation numbers on existing contour lines					150
	FIRE AND RESCUE DEPARTMENT ISSUES					151
Per F.M.request	All building entrances shown and main entrance identified					152
PFM 9-0202.1K	Maximum of 100' (30 m) from hydrant to siamese connection if shown					153
PFM 9-0202.2.J(1)	Emergency vehicle access shown to within 100' (30m) of main entrance					154
Per F.M.request	Fire lanes location marked on separate plan sheet					155
PFM 9-0202.2J(5)	Fire lanes a minimum of 18' (5.5 m) wide					156
	FAIRFAX COUNTY WATER AUTHORITY ISSUES					157
PFM 9-0102.6A	Proposed tie-ins to existing water system shown			*		158
PFM 9-0102.3A	Sizes of proposed water mains and locations indicated			*		159
PFM 9-0102.7A	Existing easements with Deed Book and Page Number provided					160
PFM 9-0102.6C	Profile all proposed public water mains included			*		161
Per FCWA request	Provide water main stationing on the profile			*		162
PFM 9-0102.3D & .6D	Show utility crossings on the profiles			*		163
PFM 9-0102.6H	Test holes results for all crossings with less than 1' (0.3 m) vertical clearance					164

PEER REVIEWER : COMPLETE NEXT PAGE -- FOR PLAN CONTROL EARLY ROUTING INFORMATION.

Note to Peer Reviewer: The Peer Review Team has been requested to assist Plan Control in identifying the necessary distribution of plans to agencies that are not involved in the normal review function. This will allow the plan to be distributed to those agencies in a more timely fashion.

Site/Subdivision Plan Routing Slip

FROM: ESI PEER REVIEW

TO: PLAN CONTROL

Plan Name: _____ Plan Number: _____ Date:_____

This plan should be routed to the Agencies indicated
(Peer Reviewer; Circle Reasons for additional reviews needed and reference proffer #)

AGENCY	YES	PROFFER/CONDITION #	N/A
Urban Forestry Any plan which has a rezoning, special exception, special user permit or variance			
Park Authority (Proffer to get Park Authority review/Work on Park Land/Dedication To Park/ Site is Adjacent To Park/BOS Directed Park Review			
Heritage Resources (Proffer/Condition/Directed Review by BOS or Historic Overlay District)			
Planning Commission (BOS Directed PC Review)			
Board of Supervisors (BOS Directed BOS review)			
Health Department (Septic/Well/Pool)			
NVSWCD (Co Project/Pohick Watershed/within 3 miles of Potomac river)			
Other			

When peer review has been completed and both the plan and the checklist have been reviewed by ESI staff reviewer, remove this sheet from the checklist and wrap it around the plan and put the plan in the pigeon hole for "ESI peer review plans OK to log in".

FINAL SUBDIVISION PLAT CHECKLIST

Project Name: _____ **Plan No.:** _____

Submitting Engineer/ Surveyor (Firm Name): _____ **Date:** _____

Submitting Engineers Use	County Use	(County Code Reference: 101-2-5)
☐	☐	Sheet Size, Lettering Size, Tic Marks, Match Lines
☐	☐	Name of Subdivision, District, County, State
☐	☐	Owner's Certificate
☐	☐	North Arrow (2 Coordinates if State Grid)
☐	☐	Scale, Date of Drawing, Number of Sheets
☐	☐	Blank Space 4″ x 6″ for approval stamps
☐	☐	Vicinity map
☐	☐	Boundary survey
☐	☐	Surveyor's Certificate
☐	☐	Curve Data
☐	☐	Bearings (to nearest 10 seconds), Distances (to 1/100 of a foot)
☐	☐	Bearings and Distance, all lot lines, street lines, street row centerline, easement centerlines and widths
☐	☐	Existing and Proposed Utility Easements
☐	☐	Owners or Lot and Subdivision Name and Property Lines within and adjoining subdivision
☐	☐	Soils note (101-2-2(16)(G))
☐	☐	Plat Matches Approved Subdivision Plan and Preliminary Plat
☐	☐	Preliminary Still Valid (if applicable)
☐	☐	SE, Special Permits, Waivers, Variance, etc. still valid (if applicable)
☐	☐	Notices Submitted
☐	☐	Wetlands Statement signed by owner/agent (101-2-5(c)(10))
☐	☐	Addresses shown on all residential lots
☐	☐	Affordable Dwelling Units noted (if applicable) and ADU Affidavit submitted (101-2-5(c)(11))
☐	☐	Pipestem Note (PFM 2-0103.6)
☐	☐	Flood Plain (PFM 6-1405.1)
☐	☐	Engineer's/ Surveyor's Seal, signature & date (no sticky backs)
☐	☐	Resource Protection Area (RPA) boundary (101-2-5(c)(12))
☐	☐	RPA notes (101-2-5(c)(12) (i) (ii) & (iii))
☐	☐	On-site sewage disposal system note (101-2-5(c)(12)(iv))

DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES, COUNTY OF FAIRFAX
OFFICE OF SITE DEVELOPMENT SERVICES
ENVIRONMENTAL AND FACILITIES REVIEW DIVISION

EROSION AND SEDIMENT CONTROL CHECKLIST

Project Name :
Tax Map # :
Design Engineer :

Project # :
District :
Plan Reviewer :
Date :

Abbreviations
PFM: Fairfax County Public Facilities Manual
VESCH: Virginia Erosion and Sediment Control Handbook
CC: Fairfax County Code
MS: Minimum State Standard
Industry Ltr. : Fairfax County Letter to Industry

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
1		***NARRATIVE***				
	PFM 11-0405.8.B	All plans must have Erosion and Sediment Control Narrative. The narrative should be site specific and include the following items:				
1.1	VESCH 7A-2	Project Description- Briefly describe the purpose and nature of land disturbing activity, and the area to be disturbed.				
1.2	VESCH 7A-2	Existing Site Condition - Description of existing topography, vegetation and drainage				
1.3	VESCH 7A-2	Adjacent Areas - a Brief description of neighboring areas such as streams, lakes, ponds, floodplain, Resources Protection Area (RPA), Environmental Quality Corridor (EQC) or residential areas which might be affected by this project.				
1.4	VESCH 7A-2	Off-site areas - Describe any off-site land-disturbing activities that will occur including borrow sites, waste or surplus areas.				
1.5	VESCH 7A-2	Critical Areas - A description of areas on the site which have potential serious erosion problem (e.g., steep slopes, channels, wet weather/underground springs)				
1.6	VESCH 7A-2	Soils - A description of areas on the site giving such information as soil name, mapping unit, erodibility, permeability, depth, texture and soil structure.				
1.7	VESCH 7A-2	Erosion and Sediment Control Measures - a brief description of methods to control erosion and sedimentation on the site.				
1.8	VESCH 7A-2	Permanent Stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
2		*GENERAL*				
2.1	PFM 11-0202.1	Provision for E&S control shall be shown on all grading plans.				
2.2	Industry ltr. 3.01	Provide Priority Rating Form for E&S control				
2.3	Industry ltr. 1.04	Provide Responsible Land Disturbance Certificate				
2.4	PFM 11-0102.2	Provide Soil Map using Fairfax County Soil Classification, not less than 1"=500'				
2.5	PFM 11-0405.8B1	Written summary of measures to be used and Sequence of construction should be specified on the submitted plans				
2.6	PFM 11-0407.6N	Adequate maintenance including daily inspections for E&S Control should be included in the plans				
2.7	PFM 11-0406	General land conservation notes 1 through 8 should be addressed on the submitted plans				
2.8	PFM 11-0405.8A(1)	Limits of clearing and grading should be identified and should conforms with the limit of clearing shown on the GDP/FDP				
2.9	PFM 11-0302.2	Sediment ponds shall not be placed on Fairfax County Parking Authority Land (FCPA) unless required in conjunction with construction by the FCPA on its own land				
2.10	PFM 11-0202.4	The owner/developer shall certify in a statement on the plan that all wetlands permits required by law will be obtained prior to commencing land disturbing activities				
2.12	PFM 12-0803.1B	Show the drip line of trees near the property boundary				
2.13	PFM 11-0407.6A	The existing and proposed drainage pattern shall be examined. The drainage area and the 2-yr storm runoff quantities shall be reviewed to determine the existing and proposed direction of stormwater runoff				
2.14	PFM 11-0407.6B	The acreage to be disturbed should be identified				
2.15	PFM 11-0407.6C	The exit swales and slopes to the off-site properties, parklands, major streams and lakes or ponds should be examined				
2.16	PFM 11-0407.6D	A determination shall be made as to what property would be impacted by sediment if controls are not provided				
2.17	PFM 11-0407.6E	Tree preservation and other areas that remain undisturbed, shall be determined and depicted on the plan.				
2.18	PFM 11-0407.6F	Possible problem areas shall be identified and addressed				
2.19	PFM 11-0407.6G(2)	Check velocities of sheet flows, swale or pipe discharges on slopes, or unprotected soil surfaces				
2.20	PFM 11-0407.6G(3)	Check use of diversions, seeding and mulching when slope exceeds 4:1 and length exceeds 20 ft. check adequate outlets are provided for diversion				
2.21	PFM 11-0407.6G(4)	Look for interceptor ditch at top of cut slopes, for berm (dike) at base of fill slopes and see outlet with adequate capacity is provided				
2.22	PFM 11-0110.3A CC 104-1-8.a (1)	Straw Bales are to be used only for sheet flow application, they are not to be used for channel flow or site development perimeter control.				
2.23	PFM 11-0110.3B	Brush Barrier is not to be used without the specific authorization by the Director				
2.24	PFM 11-0407.6M	The adequacy of diversions to handle the design storm runoff without excessive velocities or overtopping and dimensions of all storage areas shall be checked.				
2.25	PFM 11-0407.6I	The location and suitability of all E&S control devices should be checked and verified (This should include temporary diversion dikes, ditches, sediment barrier, straw bales, gravel weir, and silt fence)				
2.26	PFM 11-0407.6K	The instructions to the contractor shall be reviewed for clarity				
2.27	PFM 11-0407.6L	The proposed timing of construction shall be reviewed for suitability of planting and mulching provisions. The time span for establishment of permanent cover shall be checked.				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
2		*CONTINUE*				
2.28	PFM 11-0104.1	The E&S control plans shall address two phases of control. The ultimate tree save area shall be depicted on the phase I plan . Phase I plan will address the control needed with minimum clearing and grading and Phase II shall address the control needed after the utilities and curb gutter are installed and the roads roughed in.				
2.29	Practical Consideration	Show floodplain limits and easements, RPA's & EQC delineation's				
2.30	CC 118-8-3	The limits of Clearing and Grading shown near and/or within the limits of the RPA must be strictly observed and enforced. Any encroachment into, and/or disturbance of the RPA not shown on this plan is considered a violation of the Chesapeake Bay Preservation Ordinance (CBPO) and is is subject to the penalties of CBPO Article 8 (Violation and Penalties), per Amendment 10-02-118 adopted by the Fairfax County Board of Supervisors on February 25, 2002.				
3	4VAC50-30-40	*MINIMUM STANDARDS*				
3.1	MS-1	Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 30 days.				
3.2	MS-2	During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures.				
3.3	MS-3	A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized.				
3.4	MS-4	Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.				
3.5	MS-5	Stabilization measures shall be applied to earthen structures such as dams, dikes and diversion immediately after installation.				
3.6	MS-6	Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin				
3.7	MS-7	Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Additional slope stabilization measures should be provided to provide excessive erosion on slopes				
3.8	MS-8	Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.				
3.9	MS-9	Adequate drainage protection shall be made whenever water seeps from a slope face				
3.10	MS-10	All storm sewer inlets that are made operable during construction shall be protected				
3.11	MS-11	Adequate outlet protection and temporary or permanent lining shall be installed in both conveyance channel and receiving channel before made operational				
3.12	MS-12	Minimize encroachment, control sediment transport and stabilize the area when working in a live watercourse.				
3.13	MS-13	Temporary vehicular stream crossing shall be provided when a live watercourse must be crossed				
3.14	MS-14	All applicable federal, state and local regulation to working in crossing watercourse shall be met				
3.15	MS-15	The bed and banks of a watercourse shall be stabilized immediately after work is completed				
3.16	MS-16	Underground utility lines shall be installed in accordance with the standards and criteria shown Chapter 8 of VESCH - page 22. Provide and/or address notes (a) through (f) on the submitted plans.				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
3		*CONTINUE*				
3.17	MS-17	Provision shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface area, where construction vehicle access routes intersect public or paved roads				
3.18	MS-18	All temporary erosion sediment control measures shall be removed within 30 days after final site stabilization after the permission of the inspector.				
3.19	MS-19	Adequacy of outfall channels and pipes shall be verified in following manners: (a) Analysis shall be made to a point having drainage area equal to 100 times contributing site area (b) natural channel shall be analyzed using two year storm for overtopping and erosive velocity (c) Provide a detailed site-specific outfall narrative. (d) Provide outfall location(s) map and all detailed outfall analysis computations (e) At least 3 to 5 cross-sections, slected at critical locations shall be utilized to verify the adequacy of outfall. Cross-sectional data must be based on field survey data or 2 ft contour intervals. (f) Cross-sections must have same vertical and horizontal scale to give clear picture of bed & banks (g) Outfall velocities shall be compared with erosive velocities of existing channel. (h) The use of 1-yr extended detention is recommended to remedy existing downstream channel erosion problems				
4		*DETAILS & PLAN CONSISTENCY*				
4.1	VESCH 7A-2 PFM 11-0110.3	Provide all detailed calculations necessary to meet the minimum state and PFM standards.				
4.2	PFM 11-0102.1	Provide detailed drawings of control devices on the submitted plans				
4.3	VESCH 3.35 PFM 11-0110.3I	Provide details of seeding and mulching specifications				
5		*STORMWATER RUNOFF CONSIDERATION*				
5.1	PFM 6-0101.3A VESCH Page VI-13	Describe the strategy to control the stormwater runoff, and provide calculations for the pre- and post-development runoff.				
5.2	PFM 6-0202.14	Minimum C factor to be used for disturbed areas during construction must be 0.6				
5.3	PFM 6-0202.14	The 10-year peak discharge from silt traps discharging overland in residential areas must be < 0.5 cfs.				
6		*CONSTRUCTION ENTRANCE*				
6.1	PFM 11-0110.3H	Minimum length for construction entrance shall be 75 ft				
6.2	PFM 11-0110.3H	Provide wooden filter fabric underlain				
6.3	PFM 11-0110.3H	Provide wash rack with appropriate water source				
7	VESCH 3.05	*SILT FENCE & SUPER SILT FENCE*				
7.1	CC 104-1-(8)-(10)	Silt fence material shall be made to meet the required physically properties for synthetic filter fabric with the construction specifications in Chapter 3- section 5 of the VESCH				
7.2	VESCH 3.05	Silt fence should be used for size of drainage area of no more than one quarter acre per 100 feet of silt fence length; the maximum slope length behind the barrier is 100 feet; and the maximum gradient behind the barrier is 2:1. Silt fence is best used when the slope above the fence, either cut or fill, is not steeper than 3:1				
7.3	VESCH 3.05	Silt fence can be provided in minor swales or ditch lines where the maximum contributing area is no greater than 1 acres and flow is no greater than 1 cfs.				
7.4	VESCH 3.05	The height of silt fence shall be a minimum of 16 inches above the original ground surface and shall not exceed 34 inches.				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
7	VESCH 3.05	*CONTINUE*				
7.5	Practical Consideration	When using silt fence below a slope, allow 15 ft or more between silt fence and slope, so that the piece of equipment working the slope need space to leave the slope.				
7.6	Practical Consideration	Provide supersilt fence adjacent to environmental sensitive areas of RPA's, EQC and floodplains				
7.7	PFM 11-01110.3J	Super silt fence should be used on slopes 3:1 or steeper with a maximum concentrated flow rate 5 cfs. Supersilt fence must follow the design criteria in PFM 11-0110.3J				
8	VESCH 3.07 & 3.08	*STORM DRAIN INLET AND CULVERT INLET PROTECTION*				
8.1	VESCH 3.07	Specify the type of inlet protection to be used with justification				
8.2	PFM 11-0110.3C CC 104-1-(8)-(3)	Any storm drain inlet protection which completely block the drain throat should not be used.				
8.3	VESCH 3.07	The drainage area for storm drain inlet protection shall not be greater than 1 acre.				
8.4	VESCH 3.07	Provide a detail for the inlet protection. Provide a note to ensure that flow will enter the inlet during the time the site is in alternate paving and when the gutter pans are at an elevation higher than the temporary road surface				
8.5	VESCH 3.07	Inlet protection devices which utilize stone as a filter media, VDOT # 3, #5, or # 357 coarse aggregate should be used.				
8.6	VESCH 3.08	The maximum area draining to culvert inlet sediment trap should not exceed 3 acres				
9	VESCH 3.09	*TEMPORARY DIVERSION DIKE*				
9.1	VESCH 3.09	The maximum allowable drainage area for temporary diversion dike is 5 acres				
9.2	VESCH Plate 3.09-1	Minimum height of temporary diversion dike is 18 ft, minimum width is 4.5 ft. and side slopes of 1.5:1 or flatter.				
9.3	VESCH 3.09	Temporary diversion dike should be stabilized immediately after installation and a note should be added on the plan.				
10	VESCH 3.13	*TEMPORARY SEDIMENT TRAPS*				
10.1	CC 104-1-8-4	Sediment traps in RPAs must have storage volume of 202 cubic yards per acre of disturbed area.				
10.2	PFM 11-0110.3D	Maximum drainage area for temporary sediment trap is one acre				
10.3	VESCH 3.13	The storage capacity for the temporary sediment traps should at least be 134 cubic yards; 67 cubic yards of dry storage and 67 cubic yards of wet storage.				
10.4	VESCH 3.13	For the sediment trap, provide Storage area which has a minimum 2:1 length to width ratio. Length is measured from where the water enters to the outlet weir.				
10.5	VESCH Plate 3.13-1	The maximum height of the sediment trap embankment shall be 5 ft as measured from the base of the stone outlet. Side slope shall be 2:1 or flatter. Minimum length of the outlet shall be 6 feet times the number of acres draining to the trap.				
10.6	VESC Plate 3.13-2	Weir for the sediment trap should be made from class I rip-rap and a face stone of VDOT # 3 or #357 or #5 coarse aggregate. Weirs should have filter fabric underlain. The outlet for sediment trap shall be configured as shown in Plate 3.13-2				
10.7	VESCH 3.13	The earthen embankment shall be seeded with temporary or permanent vegetation immediately after installation				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
11		*TEMPORARY PIPE OUTLET SEDIMENT TRAP*				
11.1	PFM 11-0110.3D CC 104-1-8-4	Pipe outlet sediment traps shall be required for drainage areas of one (1) to three (3) acres. For land areas designated as RPA, pipe outlet sediment traps may also be required for areas less than 1 acre where topographical and drainage conditions are favorable.				
11.2	CC 104-1-8.4	The riser should be buried or provide buoyancy computations to verify that weight of rise is able to counter buoyancy. The desired drawdown times are minimum of 4 hrs and a maximum of 40 hrs.				
12		*TEMPORARY SEDIMENT BASIN*				
12.1	CC 104-1-8.5 PFM 11-0110.3E	Standard Specification # 3.14 Temporary Sediment Basin - For land areas designated as RPAs, the storage volume shall be two hundred two (202) cubic yard per acre of disturbed area.				
12.2	VESCH 3.14	Temporary sediment basin should be used for drainage areas that are greater than or equal to 3 acres and less than 100 acres.				
12.3	VESCH 3.14 VESCH Plate 3.14-1 PFM 11-0407.6M	The design capacity of the basin should be at least 134 cubic yards per acre of total contributing drainage area . One half of the design volume shall be in the form of a permanent pool, and the remaining half as drawdown volume. Sediment basin dimensions shall be shown on the plan.				
12.4	VESCH Plate 3.14-6 Appendix 3.14a	The length of the basin should be twice the width, otherwise baffles should be used.				
12.5	VESCH Plate 3.14-10	Anti-vortex device and trash rack shall be attached to the top of the principal spillway to improve the flow characteristics.				
12.6	VESCH 3.14	The crest of the principal spillway shall be set at the elevation corresponding to a total storage of 134 cubic yards per acre.				
12.7	VESCH Plate 3.14-2	A minimum of 1 ft freeboard should be provided between the 25-years WSE storm event and the top of embankment if an emergency spillway is used in conjunction with the principal spillway.				
12.8	VESCH Plate 3.14-2	The crest of principal spillway shall be a minimum of 3 ft below the top of the embankment if no emergency spillway is provided. The minimum freeboard shall be two feet between the 25-year storm WSE and the top of embankment.				
12.9	VESCH 3.14 VESCH Apdx. 3.14-a	Provision should be made to dewater the sediment basin down to the permanent pool elevation. It is necessary to provide at least 6-hour drawdown time in the dry storage area to achieve up to 60% removal of sediments.				
12.10	VESCH 3.14	The base of the principal spillway must be firmly anchored to prevent floatation. If the riser height is greater than 10 ft. provide computations and verify a minimum factor of safety of 1.25 is made against floatation.				
12.11	VESCH 3.14 VESCH App. 3.14-a	The barrel for the combined spillway shall be designed to safely pass the 25-years storm event, and the outlet of the barrel must be protected to prevent erosion or scour of downstream area.				
12.12	VESCH 3.14 VESCH App. 3.14-a	Anti-seep collars shall be used on the barrel of the principal spillway if the settled height of the embankment exceeds 10 ft or when the embankment has a low silt content. The anti-seep collars shall be installed within the saturated zone. Collars shall not be closer than 2 ft to a pipe joint and the maximum spacing between collars shall be 14 times the projection of the collars above the barrel.				
12.13	VESCH 3.14 VESCH App. 3.14-a	When a separate emergency spillway is used the capacity of both principal and emergency spillway should be able to carry the 25-years storm.				
12.14	VESCH 3.14	Emergency spillway should not be constructed in fill areas. Avoid sharp turns or bends when locating the spillway channel.				
12.15	VESCH 3.17	Check for maximum allowable velocity of spillway channel using Table 3.17-A				
12.16	VESCH 3.14	Embankment should receive temporary or permanent seeding immediately after installation.				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
13	VESCH 3.18	***OUTLET PROTECTION & RIPRAP***				
13.1	VESCH 3.18	Specify the type of outlet protection to be used with justification				
13.2	VESCH 3.18 VESCH Plat 3.18-1	Outlet protection shall be designed according to the criteria specified in Section 3.18 of VESCH				
13.3	PFM 6-1604.7 VESCH 3.18	The energy dissipater at the outfall of the principal spillway must be designed using HEC-14 and relevant computations				
13.4	PFM 6-1604.3	Depth of rip-rap scour protection provided in emergency spillway shall be adequate.				
13.5	PFM 6-1604.3	Provide correct class of rip-rap per VESCH plate 3.19-3 and detailed on Appendix 3.19-A				
13.6	PFM 6-1107.3 PFM 6-1604.3	Riprap used for erosion control shall conform to the current version of the VDOT road and bridge specifications				
14	VESCH 3.20	***ROCK CHECK DAM***				
14.1	VESCH 3.20 Plate 3.20-1	The drainage area of the protected swale or ditch shall not exceed 2 acres when VDOT # 1 coarse aggregate is used alone and shall not exceed 10 acres when a combination of Class I Riprap and VDOT # 1 course aggregate is used.				
14.2	VESCH Plate 3.20-1 VESCH 3.20	The maximum height of check dam shall be 3 ft and the center of the dam must at least be 6 inches lower than the outer edges.				
14.3	VESCH Plate 3.20-2	The maximum spacing between the dams should be such that the toe of the upstream dam is at as the same elevation as the top of the downstream dam.				
14.4	VESCH Plate 3.20-1	Stones should be placed according to the configuration shown in Plate 3.20-1				
15	VESCH 3.22	***VEGETATIVE STREAM PROTECTION***				
15.1	VESCH 3.22	Vegetative streambank stabilization shall only be applied when bankfull flow velocity does not exceed 5 fps and soils are erosion resistance. Above 5 fps structural measures are required.				
15.2	VESCH 3.22	Ensure that the channel bottom are stable before stabilizing channel banks. Keep velocities at a non-erosive rate. Meet the design criteria established in Table 3.22-A for vegetative stabilization.				
15.3	VESCH 3.22	Ensure that the plants used are deemed or considered to be acceptable per VESCH 3.22				
	VSCH 3.22	Follow the seed mixture noted in Table 3.22-B of VESCH for appropriate plantings				
16	VESCH 3.23	***STRUCTURAL STREAMBANK STABILIZATION***				
16.1	VESCH 3.23	Structural measures should be designed using the 10-year storm				
16.2	VESCH 3.23	Riprap shall be designed and installed according to standard and specifications 3.19 of VESCH				
16.3	VESCH Plate 3.23-1	Gabions should be designed and installed in accordance with manufacturer's standards and specifications (see plate 3.23-1). The design water velocity for channels utilizing gabions should not exceed 6 fps for gabion thickness of 1/2 ft, 11 fps for thickness of 3/4 ft and 14 fps for thickness of 1 ft				
16.4	VESCH Plate 3.23-2	The design and installation of deflectors should follow the specifications shown on Plate 3.23-2				
16.5	VESCH 3.23	Reinforced concrete channel lining should follow the standard and specification 3.17 of VESCH				
16.6	VESCH Plate 3.23-4	The design and installation of grid pavers should follow the specifications shown on Plate 3.23-4				
17	VESCH 3.24	***TEMPORARY STREAM CROSSING***				
17.1	VESCH 3.24	Applicable to flowing streams with drainage areas less than one (1) square mile				
17.2	VESCH 3.24 VESCH Plate 3.24-1	Materials used to construct the bridge must be able to withstand the anticipated loading of the construction traffic.				
17.3	VESCH 3.24	Temporary waterway crossing shall be made at right angles				
17.4	VESCH 3.24	A diverting structure such as dike or swale shall be constructed 50 ft on either side of the crossing				
17.5	VESCH 3.24	All crossing shall have one traffic lane with minimum width of 12 ft and a maximum of 20 ft.				
17.6	VESCH 3.24	Appropriate perimeter control such as silt fence or supersilt fence must be employed				

Item #	Code Section	Requirement	Shown on Plan Sheet #	OK	NO	N/A
17	VESCH 3.24	*CONTINUE*				
17.7	VESCH 3.24	Where culverts are installed, VDOT #1 Coarse Aggregate or larger shall be used to form the crossing				
17.8	VESCH 3.24	The depth of stone cover over the culvert shall be a minimum of one half the culvert diameter or 12 inch, whichever is greater.				
17.9	VESCH 3.24	Culvert sizing using 2-year event if remain for 14 days and 10-year if remain up to 1-year				
17.10	VESCH 3.24	Temporary bridge crossing shall be in accordance with specification shown on Plate 3.24-1				
18	VESCH 3.25	*UTILITY STREAM CROSSING*				
18.1	VESCH 3.25	Applicable to flowing streams with drainage areas less than one (1) square mile				
18.2	VESCH 3.25	All filter cloth used in the construction of the utility crossing must conform to physical requirements noted in standards and specifications 3.19.				
18.3	VESCH 3.25	Water diverting structures should be used at all trenching and/or construction roads				
18.4	VESCH 3.25	For diversion channel crossing minimum width of bottom shall be six feet or equal to the bottom width of the existing streambed, whichever is less. Maximum side slope shall be 2:1				
18.5	VESCH 3.25	Channel lining should be based upon velocity of bankfull flow and per Table 3.25-A of VESCH				
18.6	VESCH 3.25	The materials used Flume Pipe Crossing must meet Standard and Specification 3.24 of VESCH				
19	VESCH 3.31	*TEMPORARY SEEDING*				
19.1	VESCH 3.31	Selection of plants should be based on the specific site and season and per VESCH Tables 3.31-B&C				
19.2	VESCH 3.31	Liming requirements sould be based on Table 3.31-A of VESCH				
19.3	VESCH 3.31	Fertilizers shall be applied as 600 lbs per acre. Fertilizer shall be incorporated into top 2 -4" of soil				
19.4	VESCH 3.31	Seed shall be evenly applied and small grains shall be planted no more than 11/2 inches deep				
19.5	VESCH 3.31	Seeding made in fall for winter cover and during hot summer months shall be mulched				
20	VESCH 3.32	*PERMANENT SEEDING*				
20.1	VESCH 3.32	Permanent vegetation cover must meet the requirements of minimum standards # 3 (MS # 3)				
20.2	VESCH 3.32	Provide a note which describe the procedure followed in selecting plant material . The selection should be based on Tables 3.32-A & B depending on climate, topography, soils and site conditions				
20.3	VESCH 3.32	The planting soil must have enough fine grained soil, sufficient pore space, sufficient depth and free from toxic or excessive quantities of roots and shall be applied in accordance with std. 3.30				
21	VESCH 3.33	*SODDING*				
21.1	VESCH 3.33	Sodded areas shall be brought to final grade in accordance with the approved plans				
21.2	VESCH 3.33	Soil tests should be made to determine the exact requirements for lime and fertilizer				
21.3	VESCH 3.33	Prior to laying sod, soil surface shall be clear of trash, debris and large objects				
21.4	VESCH 3.33	Quality of sod shall be state certified and ensure genetic purity and high quality				
21.5	VESCH 3.33	Sod shall not be laid in excessively wet or dry weather and be delivered and installed with 36 hrs				
21.6	VESCH 3.33	Sod should not be laid on frozen soil surface and shall be installed per Plate 3.33-1 of VESCH				
22	VESCH 3.39	*DUST CONTROL*				
22.1	VESCH 3.39	Provision for dust control shall be made in accordance with STD. And SPEC. 3.39 of VESCH				

Plan Name

Plan Number

CONSERVATION AGREEMENT

THIS AGREEMENT, made this _____ **day of** _____, _____, **by and between** _____, a _____ **hereinafter called "Developer", and the Board of Supervisors of Fairfax County, Virginia, hereinafter called "County":**

WITNESSETH:

WHEREAS, Developer desires approval of its conservation plan, consisting of overlot grading plans (which are part of the approved subdivision or site plans), individual lot grading plans, erosion and sediment control plans, and/or landscaping plans, (hereinafter collectively referred to as "conservation plan"), for a project ("the project") known as _____, Plan # _____.

This conservation plan also includes all provisions for conservation measures as required by the Code of Virginia, the Fairfax County Public Facilities Manual, the Subdivision or Zoning Ordinances, and/or Chapter 104 of The Code of the County of Fairfax, Virginia; and

WHEREAS, the Developer intends to complete and obtain final acceptance by approving authorities for all of the development work contained on the approved subdivision or site plans, including but not limited to roads, sidewalks, trails, sewer systems, water systems, stormwater drainage systems, tree protection, and excavations for structures, at the project, which intention is set forth in a separate Agreement, and is separately secured; and

WHEREAS, pursuant to Va. Code § 10.1-565, and its subsequent codifications, and other statutory authority, the County desires to ensure the installation, maintenance and adequate performance of such conservation plan during the development process.

NOW, THEREFORE, for and in consideration of the foregoing premises and the following terms and conditions, and further in consideration of the approval of the aforesaid conservation plan by the County and the issuance of permits for the work proposed to be done hereunder, the parties hereto agree as follows:

1. Developer has deposited with the County, and the County by this execution hereof acknowledges that it holds, the sum of _____ dollars ($_____) under and subject to the terms of this Agreement. The sum deposited under this Agreement may be placed in an interest-bearing account and the interest thereon may accrue and may be used by the County for the purposes set forth in this Agreement.

2. In the event that measures for conservation as provided for in the conservation plan referred to herein, or on any approved revision hereof, are not constructed, installed, maintained, or otherwise implemented, as determined by the Director of the Department of Public Works and Environmental Services and or his designee or successor ("Director"), the County may give the Developer notice of violation and an opportunity to comply, and upon failure of the Developer to comply within the time period allowed by the County in its notice, the County, or its designee or agent, shall have the right, but not the obligation, to enter upon Developer's property and shall construct such measures or do such other work as may be necessary, according to the conservation plan.

3. In the event that immediate construction, installation, maintenance, and/or any implementation of conservation measures is required, as determined by the Director, during the development process to prevent adverse sedimentation or erosion or to protect the public health, safety or welfare, the County may give the Developer notice of violation and an opportunity to comply, and upon failure of the Developer to comply within the time period allowed by the County in its notice, the County, or its designee or agent, shall have the right but not the obligation to enter upon Developer's property and construct such measures or do such other work as may be necessary.

4. In the event the conservation plan has been installed or constructed according to design, but fails, or inadequately effectuates the conservation measures required by County standards, or inadequately controls sediment or erosion as determined by the Director, upon notice to the Developer by the County, the Developer agrees to submit a revision to the conservation plan and institute measures to effectuate such measures or control. In the event Developer fails to do so within the time period allowed by the County in its notice, the County may revise the conservation plan and may but is not obligated to enter upon Developer's property to construct the necessary measures, all at the expense of the Developer.

5. In the event sedimentation and/or erosion from the property adversely affects down-stream drainage, any adjacent or down-stream property owner, or any street, road, highway or other public easement, the County may give the Developer notice of violation and an opportunity to comply, and upon failure of the Developer to comply within the time period allowed by the County in its notice, the County shall have the right but not the obligation to enter upon Developer's property to take such steps as may be necessary to prevent future off-site or on-site sedimentation or erosion, repair or clean-up any off-site or on-site damage, or install any appropriate conservation measures, all at the expense of the Developer.

6. In the event tree protection or other conservation measures are not installed, damaged trees are not repaired, dead, dying or hazardous trees or branches within and contiguous to the development area are not removed, or trees or other conservation measures required by the conservation plan, or required revision, are not installed as specified on the conservation plan, or required revision, the County may give the Developer notice of violation and an opportunity to comply, and upon failure of the Developer to comply within the time period allowed by the County in its notice, the County shall have the right but not the obligation to enter upon the Developer's property to perform such work, all at the expense of the Developer.

7. In the event County performs work of any nature, including labor, use of equipment, and materials under the provisions of Paragraphs 2, 3, 4, 5 and 6 above, either by use of public forces or by private contract, it shall use the sum deposited herewith and any accrued interest to pay for such work. The Developer shall be sent notice when such sums are used. In addition, the Developer shall reimburse the County for all costs the County incurs to perform such work in excess of the amount of the sum deposited with this agreement.

8. In the event any sums deposited herewith or interest accrued on such deposit is used by the County pursuant to this Agreement, Developer agrees to deposit within ten (10) days of such use an amount sufficient to restore the deposit to its original balance, or to an amount determined by the Director necessary to secure all of the obligations set forth in the conservation plan, whichever is greater.

9. It is expressly agreed by all parties hereto that the Developer shall take all actions deemed by the Director to be necessary to ensure the construction, installation, maintenance, and performance of the conservation measures provided by the conservation plan or revisions thereto, and clean-up or repair all damages onsite and offsite resulting from inadequate conservation measures in the approved plan, failed conservation measures, lack of conservation measures, or erosion and/or sedimentation. This Agreement shall not impose any liability on the County for damages resulting from inadequate conservation measures in the approved plan, failed conservation measures, lack of conservation measures, or from erosion and/or sedimentation.

10. The County shall hold the amount deposited with this Agreement until the Director is satisfied that no further land-disturbing activity will be or is necessary to be taken on site, all required conservation measures have been placed or installed, and the Director is satisfied that any required clean-up or repairs have been made. When these conditions are met, and in the event the deposit is not used by the County as part of the cost of completion of development improvements (including required fees), or to restore the balance of any other Conservation Agreement deposit between this Developer and the County to its required level, all funds remaining after disbursement, if any, shall be released in writing by the County, through its agent, the Director of the Department of Public Works and Environmental Services.

11. All notices to be given with respect to this Agreement shall be in writing. Each notice shall be sent by registered or certified mail postage prepaid and return receipt requested, to the party to be notified at the address set forth herein or at such other address as either party may from time to time designate in writing, or by delivery at the site of the permitted activities to the agent or employee of the permittee supervising such activities. Every notice shall be deemed to have been given at the time it shall be deposited in the United States mails in the manner prescribed herein. Nothing contained herein shall be construed to preclude personal service of any notice in the manner prescribed for personal service of a summons or other legal process.

12. In the event Developer fails to comply with any provision of this Agreement and the County initiates legal proceedings to enforce its provisions, the County shall be entitled to receive all foreseeable damages, including, but not limited to, costs of engineering, design, construction, administration, and reasonable attorneys' fees.

13. In the event this Agreement is breached by the Developer, in addition to the remedies provided herein, any such violation may be deemed a violation under Fairfax County Code §104-1-2 or 104-1-5, which is a Class I misdemeanor as defined in Va. Code Ann. § 18.2-11 (LNMB Supp. 2003), or its subsequent modifications.

14. In the event the Developer is notified by the County of a violation for failure to comply with the provisions of the applicable erosion and sediment control law and/or the provisions of this Agreement, and fails to comply within the time specified in the notice, the Developer shall be subject to the revocation of its permit.

15. In conjunction with or subsequent to a notice to comply, the County may issue an order requiring that all or part of the land disturbing activities permitted on the site be stopped until the specified corrective measures have been taken. Where the alleged non-compliance is causing or is in imminent danger of causing harmful erosion of lands or sediment deposition in waters within the Commonwealth, such an order may be issued without regard to whether the Developer has been issued a notice to comply. Otherwise, such an order may be issued only after the permittee has failed to comply with such a notice to comply. The order shall be served in the same manner as a notice to comply and shall remain in effect for a period of seven (7) days from the date of service pending application by the County or the permit holder for appropriate relief to the Circuit Court. The order shall be lifted immediately following completion of the corrective action. Nothing in this paragraph shall prevent the County from taking any other action specified by law or this Agreement.

IN WITNESS of all of which, the parties hereto have caused this Agreement to be executed under seal on their behalf.

_____ _____

Developer Developer

By:_____ _____

Signature Signature

_____ _____

Type or print name and title Type or print name and title

Address: _____

IRS ID# _____ Telephone No. (_____) _____

STATE OF _____:

COUNTY/CITY OF _____:

I, _____, Notary Public in and for the State and County/City aforesaid, do hereby certify that _____ whose name(s) is (are) signed to the foregoing instrument, this day personally appeared before me in my State and County/City aforesaid and acknowledged the same.

Given under my hand this _____ day of _____, _____

My commission expires _____ _____

NOTARY PUBLIC

IN WITNESS of which, the Board has caused this Agreement to be executed on its behalf:

BOARD OF SUPERVISORS OF FAIRFAX COUNTY, VIRGINIA

BY:_____

Director, Department of Public Works and Environmental Services, or designee.

COMMONWEALTH OF VIRGINIA

COUNTY OF FAIRFAX:

This _____ day of _____, _____, appeared before me in my State and County aforesaid,

_____, Director, Department of Public Works and Environmental Services, and acknowledged signature.

My commission expires: _____ _____

NOTARY PUBLIC

Approved As To Form: Director of Finance DE#_____

_____ _____ Date:_____

County Attorney Director/Deputy Director

Revised 05/25/04

COUNTY OF FAIRFAX
SURETY VALUE ESTIMATE

A. ESTIMATE TO: (Check One) Establish New Surety: [ ] New Unit Prices: [ ]

Other: Reduce Surety on File: [ ]

Lines 1- 8 TO BE COMPLETED BY ENGINEER OR LAND SURVEYOR

Plan #

1. Plan Name:
2. Map Reference:
3. Location:
4. Zoning Category: District:
5. C.L. Lin. Ft., Street: Acres: Lots/DU's:
6. Type of Project: Months/Time Limit:
7. Engineer or Surveyor (Firm):
   Address:
   Telephone:
8. Prepared by:
   Date:

B. DEVELOPER APPLICATION FOR REDUCTION OF SURETY AMOUNT

Lines 9 - 14 to be completed by Developer to request reduction of surety

9. Prior to filing this application with the Environmental and Facilities Inspections Division for confirmation by the site inspector, **PLEASE COMPLETE the information on lines 11 -14 below.**
10. Failure to furnish all requested information will result in delays in submission of this application and further delays in the processing of the reduction of the securities for the project.
11. [ ] An estimate, prepared by a professional engineer/surveyor is attached.
12. [ ] A fee in the correct amount is enclosed.
13. The agreement for this project expires on: ____/____/____ (Date)
14. The undersigned developer/subdivider represents and certifies that to the best of their knowledge, information, and belief, all work for which this request for partial security reduction is submitted has been completed in full, in accordance with the approved plans and the conditions and terms of the Agreement and Security specified herein.

Firm Name Signature Date

Street Address City State Zip Code Telephone

C. ENVIRONMENTAL AND FACILITIES INSPECTIONS DIVISION - Reserved for County Use

An inspection was performed on the site ____/____/____ (Date) and I concur with [ ] percent (%) presented or [ ] percent (%) as corrected or attached:

Inspector's Signature:

Area Supervisor's Signature:

D. BONDS, AGREEMENTS AND ADMINISTRATION - Reserved for County Use

Lines 15 - 18 to be completed by Bonds, Agreements and Administration

15. Date Plan Received: Plan Submission No.:
16. Date Bond Package Completed: Date Estimate Checked:
17. Date Permit Package Completed: Estimate Checked by:
18. Comments:

Plan #	Plan Name:

E. PUBLIC IMPROVEMENTS - PUBLIC MAINTENANCE

FOR REDUCTION ESTIMATE ONLY

For County Use Only

1. MOBILIZATION	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

For County Use Only

2. STORM DRAINAGE	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

For County Use Only

STORMWATER MANAGEMENT FACILITIES	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
PUBLIC MAINTENANCE								
PRIVATE MAINTENANCE								
				$	Subtotal			

Plan #	Plan Name:

3. STREET CONSTRUCTION

DEDICATED RIGHT-OF-WAY	Qty.	Unit	Unit Cost	Total	% Comp	FOR REDUCTION ESTIMATE ONLY For County Use Only % Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

4. PRIVATE STREETS/VEHICULAR INGRESS - EGRESS - PRIVATE MAINTENANCE

ITEM	Qty.	Unit	Unit Cost	Total	% Comp	For County Use Only % Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

Plan #	Plan Name:

						FOR REDUCTION ESTIMATE ONLY		
						For County Use Only		
5. UTILITIES	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

6. CRITICAL SLOPE STABILIZATION MEASURES						For County Use Only		
ITEM	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

7. PROFFER- DEVELOPMENT PLAN FACILITIES						For County Use Only		
ITEM	Qty.	Unit	Unit Cost	Total	% Comp	% Confirmed	$ Amount To Date	Unfinished Work
				$	Subtotal			

8. CALCULATION OF SURETY AMOUNT			For County Use Only
8a.	Subtotal	$	
Plus 25% for Administration for first $1,000,000.00		$	
	Subtotal	$	
Plus 10% for Supervision and Administration for subtotal amount greater than $1,000,000.00		$	
8b.	TOTAL	$	

Plan #	Plan Name:

Note: Section 9 below is to be used by the submitting engineer or surveyor to calculate the amount of the conservation deposit only. This amount is separate from the bond amount determined in Section 8 and is not to be included in total surety amount.

9. CONSERVATION DEPOSIT

ITEM	Qty.	Unit	Unit Cost	Total		For County Use Only: % Confirmed	$ Amount To Date	Unfinished Work

				For County Use Only
	SUBTOTAL	$		
	Plus 15% Supervision, Administration and Inflation	$		
	SUBTOTAL	$		
	Minus 10% (For Two-Phase E&S Control Plan	$		
	TOTAL	$		

10. SIGNATURE AND SEAL OF SUBMITTING ENGINEER OR SURVEYOR

11. SPACE BELOW TO BE COMPLETED FOR REDUCTIONS ONLY

AFFIDAVIT:

I, _____, a Registered Professional Engineer or Licensed Land Surveyor in the Commonwealth of Virginia, do hereby certify that I have personally examined the work in place and have personally supervised the measurement thereof, and that the percentages of the items of work completed as expressed herein represent an accurate measure of the work completed to date on this project.

_____ _____

Signature of Engineer/Surveyor Date

STATE OF:_____

COUNTY/CITY OF_____

The foregoing instrument was acknowledged before me this _____ day of _____, _____

by _____

Type (Print) Name and Title of Engineer/Surveyor

My commission expires:_____ _____

NOTARY PUBLIC

CATEGORIES OF WORK TYPICALLY REPORTED ON SURETY VALUE ESTIMATES	• Single Family Residential Detached • Townhouses - Fee Simple • Condominiums • Multi-Family Rental			• Institutional Use on Residential Property • Industrial Parks with Land Divisions • Commercial/Industrial Sites on Existing Parcels		
ITEMS FOR THE IMPROVEMENT OF:	RESIDENTIAL			COMMERCIAL/INDUSTRIAL		
	SUBDIVISION	NO DIVISION	PROFFER	SUBDIVISION	NO DIVISION	PROFFER
1. Public Roads (Dedicated Right-of-Way)	Yes	Yes	Yes	Yes	Yes	Yes
2. Sanitary Sewer Maintained by a Public Agency	Yes	Yes	Yes	Yes	Yes	Yes
3. Sanitary Sewer - Private Lateral Connection	No	No	Yes	No	No	Yes
4. Storm Drainage Maintained by a Public Agency	Yes	Yes	Yes	Yes	Yes	Yes
5. Storm Drainage - Private Onsite Maintenance	No	No	Yes	No	No	Yes
6. Water Supply Maintained by a Public Authority	Yes	Yes	Yes	Yes	Yes	Yes
7. Water Supply - Private Onsite Service Connection	No	No	Yes	No	No	Yes
8. Sidewalk and Trails on a Countywide Trail Plan	Yes	Yes	Yes	Yes	Yes	Yes
9. Sidewalks, Leadwalks - Privately Maintained	No	No	Yes	No	No	Yes
10. Street Name Signs	Yes	No	Yes	Yes	No	Yes
11. Traffic Control Signs	No	No	Yes	No	No	Yes
12. Private Streets Maintained by a Property Owner's Association	Yes	No	Yes	No	No	Yes
13. Parking Lots Maintained by a Property Owner's Association	No	No	Yes	No	No	Yes
14. Stormwater Management Facilities Maintained by Property Owners	Yes	Yes	Yes	Yes	Yes	Yes
15. Stormwater Management Facilities Maintained by Public Agency	Yes	Yes	Yes	Yes	Yes	Yes
16. Street Lights Maintained by Public Agency	Yes	Yes	Yes	Yes	Yes	Yes
17. Fire Lanes Necessary for Emergency Ingress and Egress	Yes	Yes	Yes	Yes	Yes	Yes
18. Slope and Soil Stabilization, Retaining Walls (Public & private maintenance)	Yes	Yes	Yes	Yes	Yes	Yes
19. Trails, Bike Paths - Privately Maintained	No	No	Yes	No	No	Yes
20. Right-of-Way Markers	Yes	No	Yes	Yes	No	Yes
21. Parking Lot Landscaping and Peripheral Planting	No	No	Yes	No	No	Yes
22. Overlot Grading on Private Lots/Parcels	No	No	Yes	No	No	Yes
23. Required Transitional Yard Planting between Commercial and Residential Lots	No	No	Yes	No	No	Yes
24. Architectural Amenities (Piers, Docks, Project Entrance Features)	No	No	Yes	No	No	Yes
25. Recreational Facilities (Tot Lots, Pools, Tennis Courts, etc.)	No	No	Yes	No	No	Yes
26. Driveway Aprons Within Right-of-Way	Yes	Yes	Yes	Yes	Yes	Yes
27. Pipestem Driveways	Yes	No	Yes	No	No	No
28. Sedimentation & Erosion Control	Yes	Yes	Yes	Yes	Yes	Yes
29. Other Proffer Features, Acoustical Treatment, Public Transportation Weather Shelters, Architectural Treatment, etc.	Yes	Yes	Yes	Yes	Yes	Yes
30. Parking Structures	No	No	Yes	No	No	Yes

Attachment I

THE LONG AND WINDING ROAD

A Case Study

Chesterbrook Residences, Inc.

Appendix K

Comments from WSSI on Development near Streams and Adequate Outfall

Subj: **RE: Case Study**
Date: 1/23/2008 1:38:25 P.M. Eastern Standard Time
From: fgraziano@wetlandstudies.com
To: MJC2443@aol.com

Michael,

Please see below...hope it helps, but feel free to call with questions!

Frank

From: MJC2443@aol.com [mailto:MJC2443@aol.com]
Sent: Monday, January 14, 2008 3:43 PM
To: Frank Graziano
Subject: Case Study

Frank, it was good to speak to you today. Thanks for agreeing to answer some questions and give some advice for other non-profits who might venture into the assisted living development field. If these questions don't cover all the pertinent areas just feel free to add your own thoughts.

1. If an issue with adequate outfall or SWM is identified at what point should a WSSI be brought in?

Ideally, the site civil should determine if the site has adequate outfall issues as early on in the process as possible. The reason is that providing adequate outfall in such situations could impact the proposed site layout as more developable land may be required to provide additional stormwater management. Even if the solution does not involve increased levels of SWM, it could require significant amounts of time and money that would best be learned about early on in the process. And the site civils should handle it - we became involved when it switched to more of a stream restoration project.

2. Is there a value to an early consultation if there is some question about how to address SWM during the Planning Commission stage?

Definitely - see response above. The re-zoning process does require much more design information as to how stormwater management is going to be handled than in days past - so figuring this out early is the way to go. I would guess that most site civils are aware of this at this point and are ideally the ones that can and should handle it as it is integral to the site design and layout.

3. Do you feel that WSSI was brought into the CRI project early enough?

As it turned out, I would say probably not. Even if the Park Authority had agreed to the riprap, a permit form the COE and DEQ still would have been required. So having a firm that deals with streams, wetlands, RPA's, historic resources, etc. involved early on can really help make people aware of such issues and can save the time and effort of exploring an option that may not be viable. Again, the site civils should handle adequate outfall requirements.

4. What are some red flags that a non-profit should look for if it has a site near a stream or other body of water?

Items not necessarily related to adequate outfall, the site should be assessed for the presence of wetlands and other Water of the United States (WOUS), historic resources (which are often found adjacent to streams), floodplains, RPA's, etc - all can be issues that may impact development plans. As far as adequate outfall, if the receiving stream looks to be in bad shape (steep, eroding banks, undercut trees, etc), there is a good chance it would not be considered adequate. Also keep in mind that even if the proposed site discharge is into existing storm sewer, the existing pipes are also supposed to be checked for adequacy (capacity).

5. If a Reviewer does what Camilyn Lewis did, do you have any advice for recourse short of what CRI had to go through to satisfy her and her bosses?

Based on the adequate outfall rules, Camlyn was correct in noting the channel as being "inadequate" (although based on experience, it may not have been flagged by another reviewer, as we've discussed). What was interesting was that the County's proposed solution (200 ft of a riprap channel) was not a good idea for several reasons. 1) following their requirements, 200 ft was not nearly long enough - clearly the stream below the bridge was not adequate. 2) Getting riprap approved by the COE and DEQ can be difficult when other options exist. 3) The property owner (FCPA) did not want it. So even though the County accepted that solution as being adequate, it really wasn't. That's why if you go back and read all the correspondence (which was interesting all over again!), we clearly stated our position that we were not certifying anything as being "adequate", only that our softer solution could replicate what was being provided by the riprap (which again the County approved as "adequate"). Had we done a study from scratch, the length of stabilization would likely have been much longer, according to the rules.

The adequate outfall rules are not perfect - even the new options adopted by the County apparently have some technical issues. I've heard they are going to be re-visited at some point, based on problems people are having trying to apply them.

6. Is there a "quick and dirty" way to determine if a project might have an adequate outfall issue?

Really just take a look at the receiving channel - if it looks inadequate (steep, eroding banks, falling trees, etc), it probably is. It can also depend on the project (which shouldn't be the case, but often is)...if it's controversial or opposed, chances are good someone downstream will know enough about the issue to raise it. That's one reason we recommend addressing it up front rather than wait until it's raised by someone else at the eleventh hour.

7. Do you know of any funding sources available to non-profit developers to help pay for the costs of steam remediation work?

Not really - we routinely provide mitigation for these type of projects.

Again, thanks and I hope you enjoy/enjoyed the class.

Michael

Start the year off right. Easy ways to stay in shape in the new year.