

035-3-03-A1  
**THOMPSON CREST H.O.A.**  
 DB 13342 PG 967  
 ZONE: R-10 USE: RESIDENTIAL

035-3-01-A2  
**WILLIAM R. & BEVERLY J. WEEKLEY**  
 DB 4620 PG 419  
 ZONE: R-1 USE: SFG

**APPROVED FOR GRADING**  
 BY ASH ONLY  
 DATE 7/12/05

035-4-03-1-4  
**PAUL B. BARTON, JR.**  
**MARTHA A. BARTON**  
 DB 4228 PG 0404  
 ZONE: R-1 USE: RESIDENTIAL

- NOTES:**
- FLOODPLAIN LIMITS HAVE BEEN ESTABLISHED PER FLOODPLAIN STUDY CO. # 8920-RP-02. APPROVED 8/30/03. FLOODPLAIN AND STORM DRAINAGE EASEMENT HAVE BEEN PROVIDED.
  - LOCATIONS OF EXISTING INFORMATION IN OAK HILL RESERVE, CO. #348-3D-01 (APPROVED 11/20/03) ARE APPROXIMATE. PER PLAN PROVIDED BY DALTON & KENDALL, DATED JUNE, 2001.
  - THE RPA LIMITS SHOWN FOR THIS SITE ARE PER DELINEATION PLAN CO. #8920-RPA-01.
  - PARCELS A, B, C, D, AND OUTLOT E SHALL BE HOMEOWNERS ASSOCIATION (HOA) OWNED AND MAINTAINED.
  - WET PONDS TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
  - PARCEL A IS A CONSERVATION AREA USED FOR BMP CREDIT, AND IS SUBJECT TO THE FOLLOWING NOTE:  
 "WATER QUALITY MANAGEMENT AREA. BMP CREDIT ALLOWED FOR OPEN SPACE. NO USE OR DISTURBANCE OF THIS AREA IS PERMITTED WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE DIRECTOR OF DRW & EA."
  - FOR FLOODPLAIN EASEMENTS:  
 "NO USE SHALL BE MADE OF NOR SHALL ANY IMPROVEMENTS BE MADE IN THE FLOODPLAIN EASEMENT WITHOUT SPECIFIC AUTHORIZATION FROM FAIRFAX COUNTY."
  - ANY ENCROACHMENTS INTO THE RPA NOT SHOWN ON THIS PLAN SHALL BE A VIOLATION OF CHAPTER 118 OF THE CODE OF FAIRFAX COUNTY. ALL VIOLATIONS ARE SUBJECT TO PROVISIONS THEREIN.
  - SEE SHEET 3 FOR 80% LOT TABULATIONS AND WETLAND CERTIFICATE.
  - SEE SHEET 24 FOR W.O.I.A. APPROVAL LETTER

**THE SANITARY LATERALS ON LOTS 4, 8, 12, 18, 21, 22, 23, 28, AND 31 ARE SET TO MINIMUM 1.04% SLOPE.**

MATCHLINE SEE SHEET 1  
**For Lots 22+  
 25-31 ONLY**

**EROSION & SEDIMENT CONTROL LEGEND**

- (P) PUMP FOUNDATION DRAIN
- (G) GRAVITY FOUNDATION DRAIN
- (CE) TEMPORARY CONSTRUCTION ENTRANCE WITH WASH RACK (SPEC. 3.02) MIN. LENGTH=75'
- (SF) SILT FENCE (SPEC. 3.05)
- (LC) LIMITS OF CLEARING AND GRADING
- (TP) TREE PROTECTION (SPEC. 3.36)
- (SFF) SUPER SILT FENCE

EX. TREES (circle with dot) PROP. TREES (circle with cross)  
 EX. TREE LINE (dashed line) PROP. TREE LINE (solid line)

SPECIFICATIONS PER VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK (1992).

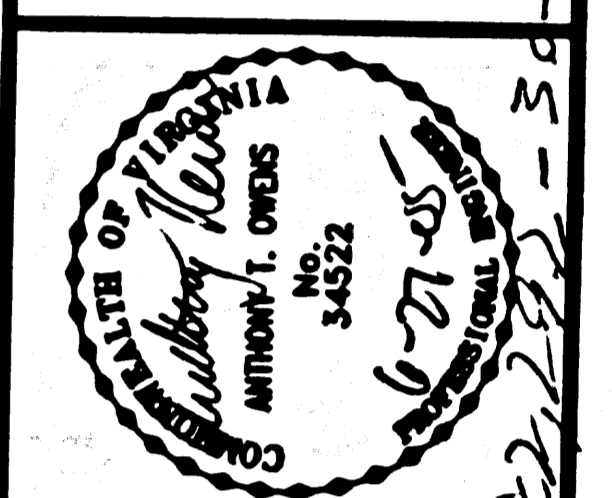
**CHESAPEAKE BAY ORDINANCE NOTE**  
 THIS PLAN COMPLIES FULLY WITH THE AMENDMENT OF CHAPTER 118 (CHESAPEAKE BAY PRESERVATION ORDINANCE) OF THE CODE OF THE COUNTY OF FAIRFAX AND THE APPROVED RPA PLAN (COUNTY #8920-RPA-01).

DATE	DESCRIPTION	APPROVED	DATE
6/21/05	REV. HOUSE TYPE ON LOTS 22, 25-26, 27		
6/8/05	REV. HOUSE TYPE ON LOT 23		

REVISIONS APPROVED BY DIVISION OF DESIGN REVIEW

**ALL EASEMENTS SHOWN HEREON AS PROPOSED HAVE SINCE BEEN RECORDED WITH THE FINAL SUBDIVISION PLAT, DB 16679 PG 1676**

**BC Consultants**  
 Planners • Engineers • Surveyors • Landscape Architects  
 12800 Fair Lakes Circle, Suite 100, Fairfax, VA 22033  
 (703)449-8100 (703)449-8108 (Fax)  
 www.bccom.com



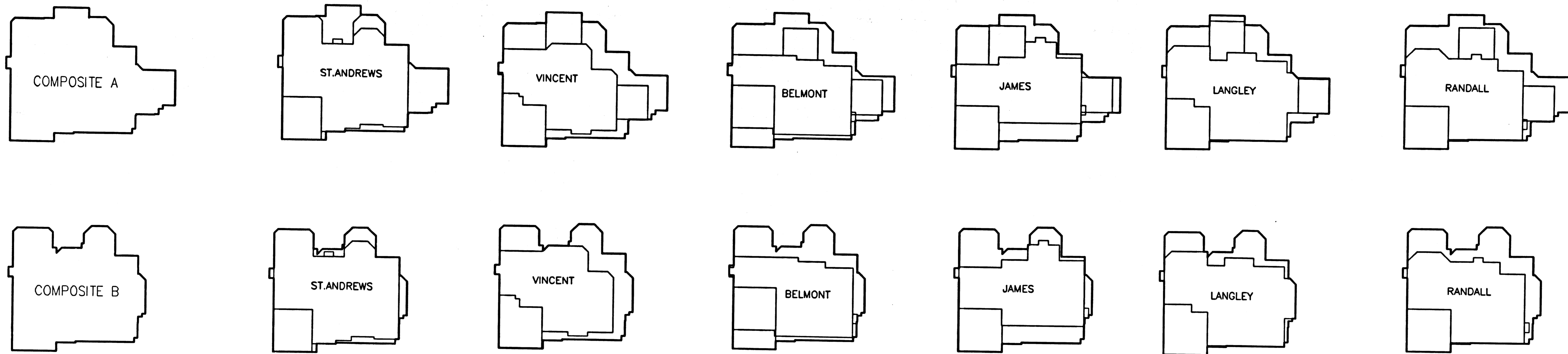
**HOUSE GRADING PLAN**  
 EXHIBIT (State)  
**THOMPSON ROAD PROPERTY**  
 SULLY DISTRICT  
 FAIRFAX COUNTY, VIRGINIA  
 9820-SDQP-002-000023-2, 002-000023-7 thru - 002-000031-2

BC REVISIONS

DESIGNED BY: ATO
DRAFTED BY: CAD
CHECKED BY: MRT
DATE: APRIL, 2004
SCALE: HOR. 1" = 50' VERT.
SHEET 2
CO. NO. 9820-SD-02
CAD NAME: 7060.DWG
LAYOUT: CRD2
FILE NO. 97060-40

OWNER  
 6905 ROCKLEDGE DRIVE  
 SUITE 800  
 BETHESDA, MD 20817

REC'D  
6/29/2005  
PPX CO



LOT NUMBER	SOIL ID NUMBER
1	62, 67
2	14, 62, 75
3	14, 62
4	14, 67
5	14, 67
6	67, 73
7	67, 73
8	12, 14, 67, 73
9	12, 14, 73
10	12, 73
11	12, 73
12	12, 73
13	73, 75
14	73, 75
15	73, 75
16	14, 73, 75
17	14, 75
18	75
19	12, 73, 75
20	73, 75
21	12, 73, 75
22	41, 76, 80
23	14, 41
24	12, 41
25	12, 14, 41, 72, 73
26	12, 14, 41, 72, 73
27	12, 14, 41, 72, 73
28	12, 41
29	12, 41
30	12, 41, 80
31	41, 76, 80

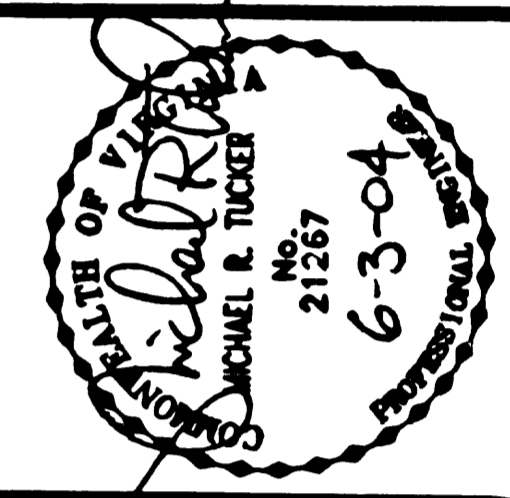
I HEREBY CERTIFY THAT ALL WETLANDS PERMITS REQUIRED BY LAW WILL BE OBTAINED PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES.

Signature: *[Handwritten Signature]*

Owner/Developer: CHRISTOPHER D. COLLIER      VIC. PRESIDENT, WINDYBROOK HOMES, INC.

Name: \_\_\_\_\_ Title: \_\_\_\_\_

**BC Consultants**  
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12600 Fair Lakes Circle, Suite 100, Fairfax, VA 22033  
(703)449-8100 (703)449-8108 (Fax)  
www.bcco.com



COMPOSITE PLAN

**THOMPSON ROAD PROPERTY**

SULLY DISTRICT  
FAIRFAX COUNTY, VIRGINIA

DESIGNED BY: ATO  
DRAFTED BY: CAD  
CHECKED BY: MRT  
DATE: APRIL, 2004  
SCALE: HOR. 1"=30'  
VERT.

SHEET 3 OF 4

CD. NO. 9820-SD-02  
CAD NAME: 7060UNITS.DWG  
LAYOUT: LAYOUT  
FILE NO. 97060-40

DATE: 7/26/04

4.0 GEOTECHNICAL EVALUATION AND RECOMMENDATIONS

The following information is based in part on the results of our geotechnical study and a review of the site grading plan entitled, "Thompson Road Property" prepared by BC Consultants and dated July 7, 2003.

It is our considered opinion that the subject property is adaptable to the proposed residential development. The following sections provide general construction guidelines for site grading and earthwork activities which include the suitability of on-site borrow material, the control of groundwater, and the placement of compacted fill for building pads and pavements. Geotechnical recommendations are also provided for the design and construction of the foundations and below-grade walls of the proposed houses, and the SWM facilities.

4.1 Existing Structures

The site grading plan indicates that all of the existing buildings on the project site will be removed except for the house located on Parcel D-2. All other existing structures including building materials, foundations (slabs and footings), buried utilities (septic fields), and existing fill located within the offset setback of the proposed house pads, roadways, and utility easements shall be removed in their entirety. The Geotechnical Engineer or his assigned representative shall inspect the subsurface to verify that all unsuitable material has been undercut to a natural firm substrate.

4.2 Suitability of On-site Materials

The low plasticity natural soils and weathered rock of Strata I and II are generally suitable for use as structural fill for building pads, pavement areas, and backfill over site utilities. However, highly elastic SILT (MH) soils were encountered in locations across the property. Where high plasticity or clayey soils with liquid limits greater than 40 and plasticity indices greater than 15 are encountered during the construction phase of the project, these soils are not suitable for use as structural fill or the direct subgrade support for building foundations or paved roadways. These soils, if encountered within the offset setback of buildings and roadways, shall be undercut and replaced with approved borrow fill to provide a minimum buffer of 4 feet below footings and 2 feet below grade slabs and pavement substrates. Furthermore, high plasticity or clayey soils are not suitable for use as backfill material against foundation walls.

We anticipate that the natural soil moisture of the on-site material will generally be near optimum moisture conditions. However, if earthwork is performed during wet seasons of the year or after periods of heavy precipitation, the material may have to be scarified and aerated to be properly compacted for use as structural fill.

4.3 Excavation of On-site Soils

We anticipate that conventional earth-moving equipment will be suitable for the excavation of the residual soils of Stratum I. However, heavier excavation equipment, pneumatic hammers and/or controlled blasting may be necessary to excavate dense weathered rock of Stratum II to achieve proposed grades for building foundations, utility inverts, SWM facility grades and general cut areas.

We anticipate that perched groundwater may be encountered during general earthwork activities. Groundwater seepage may be encountered in low-lying areas of the site from the side slopes of utility trenches, basement excavations or proposed cut areas greater than 2 feet below existing grade. Temporary dewatering methods, i.e. sump pits and continuous pumping, may be necessary during these construction activities, especially if work is planned during the wet period of the year.

Temporary excavations greater than 4 feet shall be properly shored or sloped away from the excavation with a minimum grade of 1.5 H to 1.0 V. If sloping of temporary trenches and pits is not desired, then trench boxes should be utilized. All excavations shall be performed in accordance with OSHA and VOSHIA regulations.

4.4 General Site Grading

4.4.1 Stripping of Topsoil

All areas proposed for cut or fill shall be cleared, grubbed and stripped of all topsoil and root mat layer to the proposed limits of construction as shown on the approved plans for this project. The depth of the topsoil encountered at the site locations varied between 3 and 4 inches; therefore, we recommend that the depth of stripping be determined in the field. For preliminary purposes, we estimate stripping depths of 6 to 12 inches to remove topsoil and soil, near surface soils. Deeper stripping depths may be necessary in low-lying areas of the site. Topsoil may be stockpiled for later use in cut areas or as the final 8 to 12 inches of over site grading around buildings.

4.4.2 Proofrolling

All areas delineated and surveyed in the field to receive structural fill shall be proofrolled with a fully-loaded rubber-tired dump truck to identify all soft or unstable areas to be undercut. The geotechnical engineer or his assigned representative shall decide on the depth of undercut in order to avoid the removal of suitable or otherwise firm soils.

4.4.3 Borrow Material

All borrow material, whether on-site or imported from an off-site source, should be tested for suitability and quality prior to its use as fill or backfill. We recommend that the material be tested to determine particle gradation, plasticity, maximum dry density, and CBR. The following standard tests should be performed to determine the above properties of all imported fill material:

- Particle Gradation ASTM D422
Plasticity ASTM D4318
Standard Proctor VTM-1, ASTM D698
CBR VTM-4

Structural fill material shall consist of quality, low plasticity, non-organic soils that classify as GW, GP, GM, GC, SW, SP, SC or SM in accordance with ASTM D2487 and shall have a maximum of 30% retained on a U.S. standard #10 sieve. Structural fill may consist of soils that classify as ML and CL, provided that the material has a liquid limit and plasticity index less than or equal to 40 and 15, respectively, and a maximum of 70% passing a U.S. Standard No. 200 sieve. All fill material shall be free of ice, snow, construction debris, expansive soils, and organic or other deleterious material. Structural fill shall not contain rock sizes greater than 3 inches in diameter.

4.4.4 Fill Placement and Tamping

Fill material placed in paved areas shall be placed in no greater than 8 inch loose lifts and compacted to at least 95% of the maximum dry density as determined per VTM-1 method. However, the final foot shall be compacted to 100% of the maximum dry density as determined per VTM-1 method. The controlled fill shall extend a minimum of 2 feet laterally outside the curb line plus 1 foot for every 1 foot of fill above the subgrade. All VDOT roadways and drainage improvements shall be constructed in accordance with VDOT Road and Bridge Specifications.

Fill materials for the building pads shall be placed in no greater than 8 inch loose lifts and compacted to at least 95% of the maximum dry density as determined in accordance with specifications set forth in ASTM D698 (Standard Proctor). The controlled fill for the building pads shall extend a minimum of 5 feet laterally outside the building pad plus 1 foot for every 1 foot of fill above the subgrade.

To ensure proper compaction efforts, field density determinations shall be performed in accordance with specifications set forth in ASTM D2922 (Mudstone method) or D1556 (sand cone method). Compaction tests shall be performed on every lift of fill placed. The moisture content of the fill being placed shall be within 2 percentage points of the optimum moisture content of the material. These tests shall be performed at a minimum frequency of testing as outlined in the Assessment of Inspections provided by the Geotechnical Engineer of Record for the project.

4.4.5 Site Utilities

Utility excavations may encounter the dense weathered rock of Stratum II or underlying sandstone rock. Therefore, controlled blasting or pneumatic rammers may be required to excavate to the invert elevation of site utilities. Temporary excavations greater than 4 feet for site utilities shall be properly shored or sloped away from the excavation with a minimum grade of 1.5H:1V. If sloping of temporary trenches is not desired, then trench boxes should be utilized. All excavations shall be performed in accordance with the OSHA and VOSHIA regulations. Groundwater seepage may be encountered during the excavation of deep utility trenches. Therefore, dewatering measures consisting of sump pits with continuous pumping may be necessary.

When hand-held tampers are used to compact the backfill materials, lift thickness shall be reduced to not more than 6 inches to ensure achieving compacted wedge between the pipe and the bedding layer. Backfill materials for use in utility trenches shall meet the material requirements of Section 4.4.2 of this report.

4.5 Foundation Support

The single-family detached homes can be supported on conventional shallow foundations such as continuous wall or column spread footings bearing on natural low-plasticity soils or properly-compact structural fill. Elastic SILT (MH) soils were encountered in the footings and test pits at some areas of the site. These soils are prone to high shrink-swell behavior when exposed to variations in soil moisture and are not suitable for direct footing support. Highly plastic or clayey soils (CH/MH), if encountered at the footing subgrade, shall be undercut to a minimum of 4 feet below the footing bottom and replaced with properly compacted structural fill.

Footings supported on approved natural soils of Strata I or II or properly-compact structural fill may be designed for an allowable soil bearing pressure of 2,500 psf. Footing lines to be located along a transition zone from natural soils to new structural fill or soil/rock transitions shall be reinforced with two (2) #5 bars which extend at least 5 feet horizontally in each direction from the transition plane.

As a minimum, wall footings shall not be less than 16 inches in width and column footings shall not be less than 30 inches in size. Adequate frost cover protection for all exterior footings shall be provided at 24 inches below exterior grade along the footing line. Interior footings, however, that are located within permanently heated areas may be located at nominal depth below the floor slab elevation.

The use of the above specified uniform allowable bearing capacity will minimize the total settlement to 1 inch or less with differential settlements of less than 1/4 inch or less in accordance with standard engineering practices.

All footings and slabs shall be inspected for quality of the subgrade material, concrete formwork and placement of reinforcing steel. The inspection shall be performed by a qualified soil inspector under the direction of a Virginia-registered geotechnical engineer. The inspection shall consist of probing or performing hand auger borings in any of the footing trenches. If visual inspection of the subgrade material and/or hand auger recovery material reveals the presence of fine-grained soils or silty soils, i.e., clayey silt or silty clay, we recommend that a sample of the subgrade soil to be tested to ensure that high plasticity material having liquid limit greater than 40 and a plasticity index greater than 15 is not present at the footing subgrade level. Dynamic cone penetration tests should also be performed to verify the available soil bearing pressure. Footing subgrades should be protected from precipitation, seepage, surface run-off and frost. We recommend that the footings be cast the same day of excavation.

4.6 Ground-supported Slabs

Single-family dwellings can be designed to have typical ground-supported concrete slabs bearing on approved natural low-plasticity soils of Strata I or II or on properly-compact structural fill. However, moderate to high plasticity fine-grained soils with liquid limits greater than 40 and plasticity indices greater than 15 may be encountered at shallow depths below existing grades. These soils are prone to high shrink-swell behavior when exposed to variations in soil moisture and are not suitable for the direct support of foundation slabs.

Highly plastic or clayey soils, if encountered at the slab subgrade, shall be undercut to at least 2 feet below the bottom of the slab subgrade and replaced with properly compacted structural fill.

We recommend that all grade slabs be allowed to float, i.e. be discontinuous at walls and corners. The slab shall rest upon a minimum of 4 inches of free draining granular base. A polyethylene liner or similar vapor barrier should be provided between the underside of the slab and the granular base to limit moisture migration. The slab subgrade should be protected from inclement weather by the diversion of on-site surface runoff away from the slab area and to maintain the construction until the construction is complete. Such precautions will prevent costly undercutting of soft and low bearing soils.

4.7 Foundations Walls, Backfill and Drainage

The site grading plan indicates that single-family homes will be constructed with below-grade foundation walls. Below-grade foundation walls shall be designed for an equivalent fluid pressure of 60 psf per foot of wall depth. The equivalent fluid pressure is recommended based on the assumption that the backfill material may consist of on-site soils that classify as silty SAND (SM) type soils. Silty SILT (ML) soils may be used for foundation wall backfill provided that the material contains a maximum of 65% fines passing the No. 200 sieve. Soils having liquid limit and plasticity index greater than 40 and 15, respectively, shall not be used for backfill against the foundation walls. Backfill material shall not contain rock sizes greater than 3 inches in diameter.

The lateral pressures recommended above also assume that adequate drainage behind the wall will be provided to prevent accumulation of free water. The recommendations do not include the effects of surcharge loading which shall be included in the wall design as additional lateral pressure acting uniformly against the wall.

Interior and exterior foundation drains are required for dwellings with below-grade foundations. The exterior drain shall consist of a 4-inch perforated flexible tube embedded in 12 inches of VDOT No. 57 stone or washed bank run gravel. The stone shall be wrapped with filter fabric to avoid clogging with fines. The interior drain shall be installed under the slab and should tie into the exterior drain via weep holes through the footing. The weep holes, 1.5 inch diameter PVC pipes, shall be spaced at no more than 8 feet on center. The interior drain shall also consist of 12 inch layer of VDOT No. 57 stone wrapped with filter fabric. Alternatively, a perforated drainage system such as J-Drain may be installed per the manufacturer's guidelines. See Figure 2, "Foundation Drainage Detail" at the end of this report.

Where drainage by gravity is not permitted, the invert of the exterior drain shall be located above the invert of the interior drain and the interior drain pipe shall be extended to the sump pump. However, if drainage by gravity can be achieved through extending the outlet pipe of the exterior drain to a safe daylight point, then the invert of interior drain should be higher than the exterior drain to allow the flow of groundwater through the weep holes and safely discharge away from the house. The outlet pipe from the exterior drain or the sump pump shall discharge to a point of daylight as directed by the Civil Engineer.

4.8 Pavement Subgrade Preparation

The subgrade for paved areas within the right-of-way of roadways and the proposed pedestrian trail shall consist of natural low plasticity soils of Stratum I or II or properly-compact and compacted structural fill.

If fine-grained soils having liquid limit and plasticity index values greater than 40 and 15, respectively, are encountered at proposed subgrade elevations, these materials shall be undercut to a minimum depth of 2 feet below pavement subgrade and replaced with properly compacted structural fill.

Prior to placement of subbase stone, the subgrade shall be proof-rolled with a loaded dump truck to detect any soft, yielding or high plasticity soils. Unsuitable areas shall be undercut and replaced with compacted-structural fill. The fill shall be compacted per requirements outlined in Section 4.4, "General Site Grading".

As the engineering characteristics of the on site soils vary throughout the site, CBR tests shall be performed within the proposed pavement areas at

the time of construction in order to permit proper pavement design. However, for preliminary design purposes, a CBR value ranging between 4 and 8 may be anticipated for subgrade soils consisting of on-site soils. All pavement materials and construction methods shall comply with the current VDOT specifications.

4.9 Geotechnical Requirements for the SWM Facilities

4.9.1 Foundation Support of Embankment and Auxiliary Structures

The grading plans indicate that the project will include the construction of two SWM facilities (wet ponds) at the northwestern portion of the site. The site grading plans indicate that each pond will be excavated below existing grades with cuts up to 20 feet at Pond #1 and 15 feet at Pond #2. Blasting will be necessary for each of the SWM facilities to reach proposed grades. The dam embankments are expected to consist of on-site natural materials with the exception of backfill over later and outlet pipes, and possibly backfill required for areas which are over-blasted as part of the expected rock excavation. All soil, yielding subgrade soils, or highly fractured rock areas below the 10-year WSE, shall be undercut to a bearing stratum approved by the geotechnical engineer or his assigned representative.

Settlement in the SWM facility areas is not anticipated based on the subsurface conditions. Based on a review of the lowest elevation shown on the site plans, we anticipate that the principal outlet pipes and stems will bear on dense rock. The subgrade shall be inspected and approved by the geotechnical engineer or his assigned representative to ensure adequate support and to check for variations in the subsurface conditions. A lean concrete mat may be placed to provide a level subgrade surface.

4.9.2 Concrete Curb and Drainage Blanket

The principal outlet pipe through the embankment of Pond #1 will consist of a single 36-inch diameter reinforced concrete pipe (RCP) and a single 18-inch RCP for Pond #2. The outlet pipes will be extended from the riser structures to rip-rap lined aprons located at the downstream side of the embankment. The outlet pipes shall be supported on concrete abutments and to culminate at a distance of two-thirds (2/3) of the overall length of the pipe. The remaining one-third (1/3) of the overall pipe length on the downstream side shall be bedded in a minimum of 6 inches of No. 78 stone. To minimize the infiltration of seepage, the stone bedding shall be wrapped in an approved non-woven geotextile having an apparent opening size of greater than or equal to 70; i.e. Amoco 4555. A 4-inch diameter splayed PVC pipe shall be installed as a relief drain near the bottom of the stone on each side of the drainage blanket. The PVC pipe shall be positively sloped and extended to daylight at the rip-rap lined apron. Additionally, all pipe joints shall be fitted with O-ring rubber gaskets.

A construction detail showing the concrete curb and stone bedding for the SWM facilities are shown on Figure 3 presented at the end of this report. Should any changes to the design or layout of the proposed SWM facilities occur, GC&T requests the opportunity to review the revisions and provide an amendment to the geotechnical recommendations.

4.9.3 Impervious Pond Liners

We anticipate that competent SANDSTONE rock will be exposed across the entire embankment slopes and pond basins. To maintain proposed water levels and limit piping along the principal outlet, an impervious liner shall be installed across each pond basin extending to the 10 year WSE. The impervious liners shall consist of an 18-inch thick clay (CL/CH) or elastic SILT (MH) liner which is properly compacted. Material suitable for the liner is expected from other areas of the site.

If clay-type soils with a minimum of 70% passing the #200 U.S. standard sieve are not available, the use of a synthetic liner, i.e., Claymat or Voldacy, may be more feasible and cost effective.

4.9.4 General Construction Guidelines

The following construction guidelines shall be used during the subgrade preparation for the embankment fill and associated structures.

- Perched groundwater seepage may be encountered during the excavation of the pond basin below existing grade. Sump pits and continuous pumping may be necessary to achieve a dry working area.

- Prior to the placement of fill in the SWM areas, all vegetation, root mat, topsoil, and any other soft or deleterious material shall be stripped.

- The following requirements shall apply to all fill material used to construct the dam embankments and backfill around the outlet pipes:

Classification (ASTM D2487) SC, CL, ML
Flowing No. 200 (%) 45-70
Liquid Limit 20-50
Plastic Index 10-25
Max. Dry Density (min.) 105 pcf

Rock sizes greater than four inches in diameter will not be permitted for use as structural fill for the embankments.

- Any fill used to construct the embankments shall be properly wetted into natural in-situ soils and shall be placed and compacted at a moisture content of 2 to 3 percentage points above the optimum moisture content to ensure proper compaction.

- Backfill material over the outlet pipes shall be placed in 4 to 6 inch lifts and compacted to a minimum density of 95% of the materials maximum dry density obtained in accordance with ASTM D698. Compacted fill layers which become smooth due to compaction equipment or construction traffic shall be scarified to a depth of 2 inches to allow for adequate bonding between layers. We recommend utilizing wall-behind vibratory sheep-foot rollers to compact the fill against the pipes. Hand-held tampers are not recommended because this type of equipment may not ensure proper compaction against the conduit.

- The pond embankment slopes shall be stabilized with permanent seeding immediately following the final grading for erosion control purposes.

FAIRFAX COUNTY INSPECTION REQUIREMENTS

- All construction involving problem soil must be performed under the full-time inspection of the geotechnical engineer.
The Geotechnical Engineer shall furnish a written opinion to the County as to whether or not the work has been performed in accordance with the approved plans prior to the issuance of the residential use permit.
Review and approval of plans, specifications and reports by the County, with or without recommendations by the Geotechnical Review Board, shall in no way relieve the Developer of the responsibility for the design, construction and performance of the structures, pavement and slopes on the project and damage to the surrounding properties.

We, Geotechnical Consulting & Testing, Inc. (GC&T) have reviewed the site grading plan, entitled Thompson Road Property (Plan Number 9820-SR-02-1) and find that the plan has been prepared in general accordance with the recommendations provided in GC&T's Geotechnical Report (Project No. 23D-2042-1, dated December 11, 2003), and subject to the conditions outlined in Fairfax County's approval letter, dated February 24, 2004.

Abdallah A. Adas, P.E.
Date: 3-17-04
Professional Engineer



DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES
Geotechnical and Planning Review Section
12000 Greenway Drive, Suite 200
Dulles, VA 22026
(703)448-4700 Fax: (703)448-8800

February 4, 2004

Abdallah A. Adas, P.E.
GC & T, Inc.
21505 Greenbelt Way
Dulles, Virginia 20116

Reference: Geotechnical Report for Thompson Road Property, Project #9820-SR-02-1, Plan #9820-SR-02 and 03-4-25, Dully District, Tyner Residential/RTWP

Dear Mr. Adas:

The referenced geotechnical report prepared on behalf of Winchester Homes, Inc., dated December 11, 2003, with your Project Number 23D-2042-1, has been reviewed and is generally acceptable.

The recommendations in the approved geotechnical report shall be shown as requirements on the construction plans (Paving, Grading, Public Facilities, etc.), Section 4-8001. The geotechnical engineer shall review the grading and construction plans and state his opinion as to whether or not the plans have been prepared in accordance with the approved recommendations.

The following requirements of the FPM and the Code of the County of Fairfax, Virginia, shall be shown on the plans prior to approval:

- All construction involving problem soil must be performed under the full-time inspection of the geotechnical engineer.
The geotechnical engineer shall furnish a written opinion to the County as to whether or not the work has been performed in accordance with the approved plans prior to the issuance of any residential use permit.
Review and approval of plans, specifications and reports by the County, with or without recommendations by the Geotechnical Review Board, shall in no way relieve the Developer of the responsibility for the design, construction and performance of the structures, pavement and slopes on the project and damage to the surrounding properties.
During construction, the developer shall employ an engineer licensed in the State of Virginia to

Abdallah A. Adas, P.E.
Project #9820-SR-02-1
Page 2

inspect the construction of the dam and site the inspection report(s) with the County not more than 60 days following the completion of the dam. (FPM 4-1607.2A; 6-16-72B).

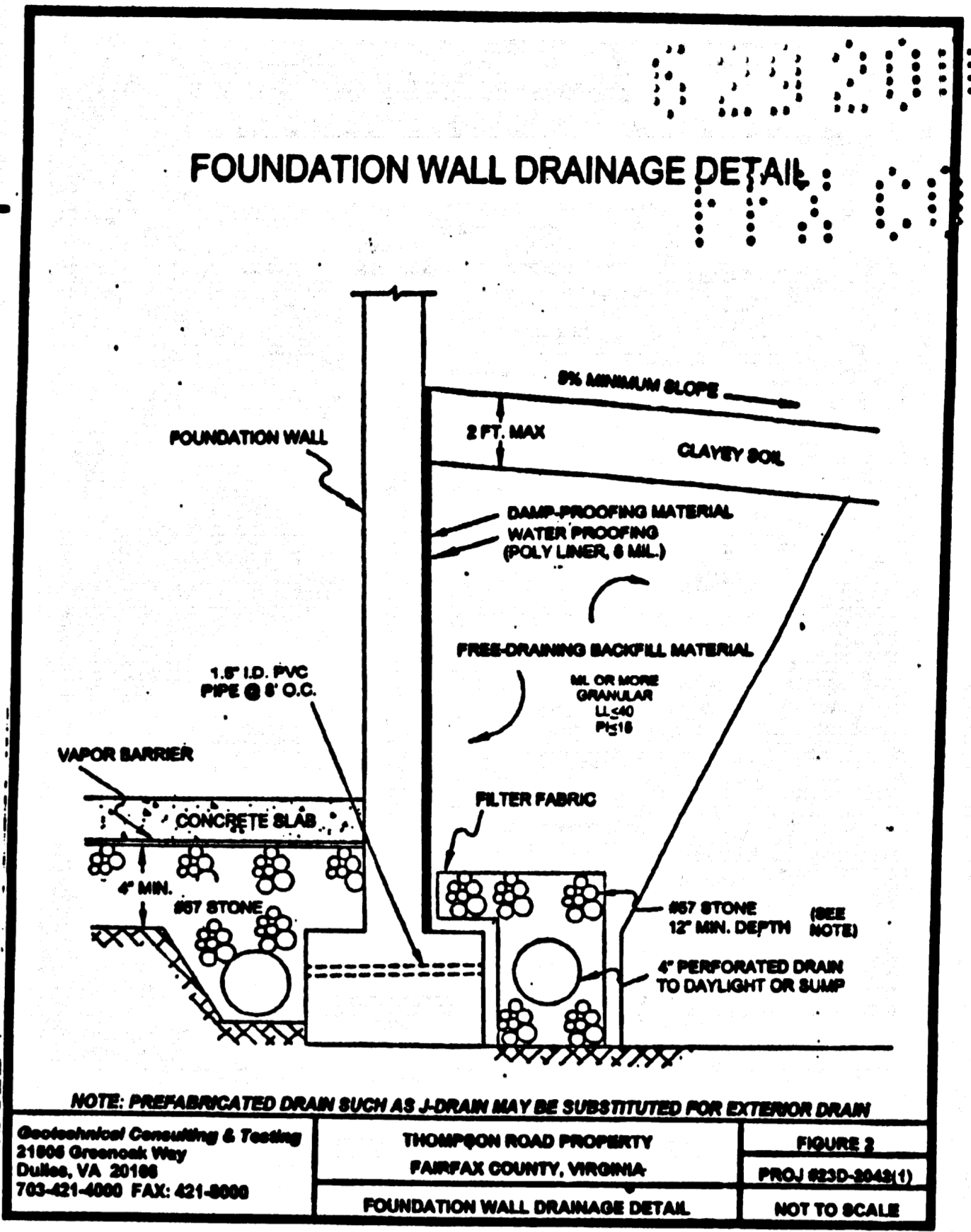
5. As-built plans shall be submitted as required. (FPM 6-1607.3).

If you have any questions, please contact me at 703-324-1700.

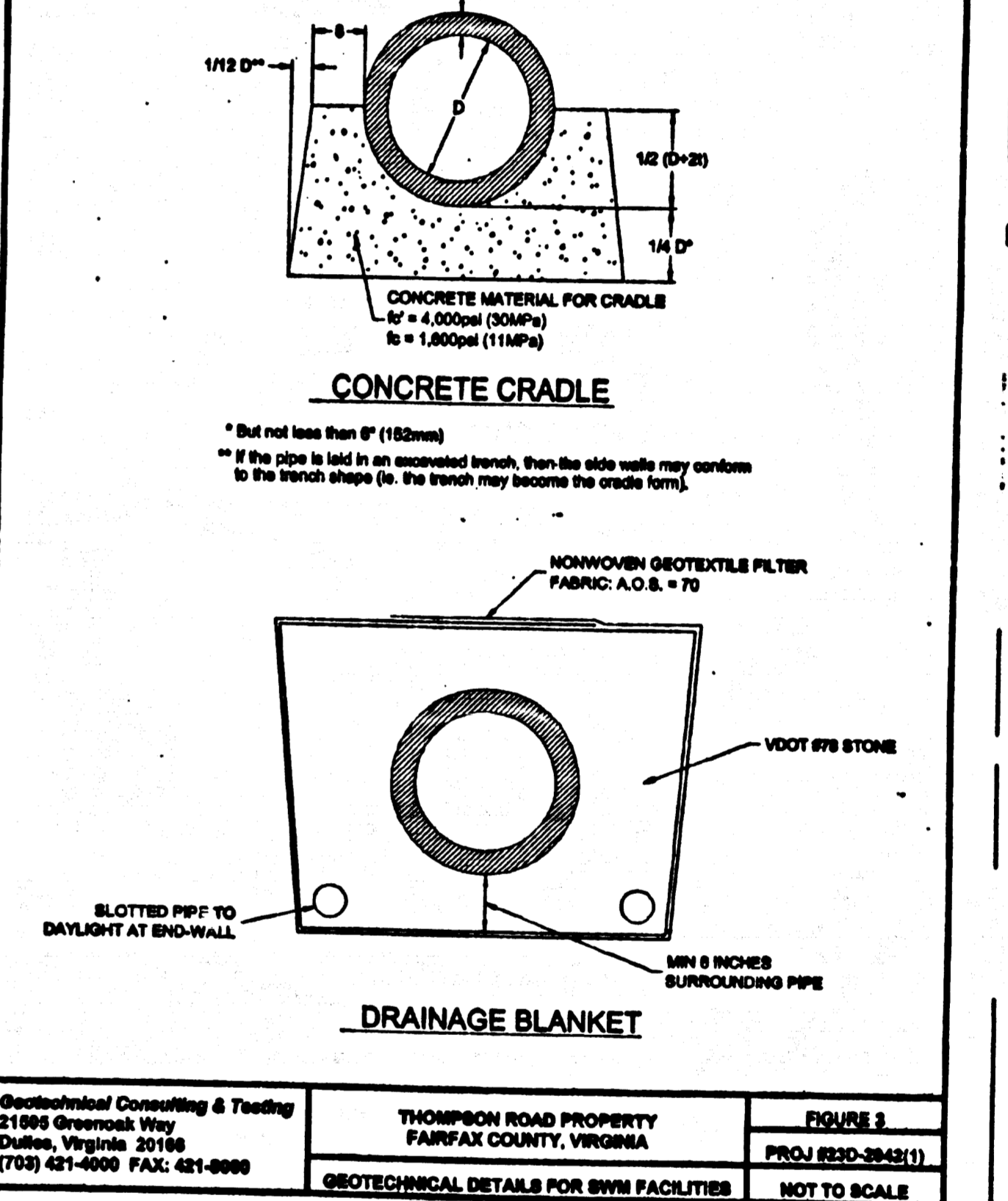
Sincerely,
Rich Hittner
Chief Geotechnical Engineer.

R/H/ra

cc: Sybil Karpis, Winchester Homes, Inc.
Anthony Owen, The B.C. Company
Cheryl Ableson, Chief Site Resident Engineer, RFPED, DPW/PS
Geotechnical File



FOUNDATION WALL DRAINAGE DETAIL
NOT TO SCALE



CONCRETE CRADLE
DRAINAGE BLANKET
NOT TO SCALE

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GEOTECHNICAL REQUIREMENTS
THOMPSON ROAD PROPERTY
SULLY DISTRICT
FAIRFAX COUNTY, VIRGINIA

Table with columns for BC REVISIONS, Z/A/D/E, REMISE, PER, LB, SUBM, COMMENTS. Includes fields for DESIGNED BY, DRAFTED BY, CHECKED BY, DATE, SCALE, SHEET, CO. NO., CAD NAME, LAYOUT, FILE NO.

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