CONCEPTUAL/FINAL DEVELOPMENT PLAN
FAIRFIELD MANOR

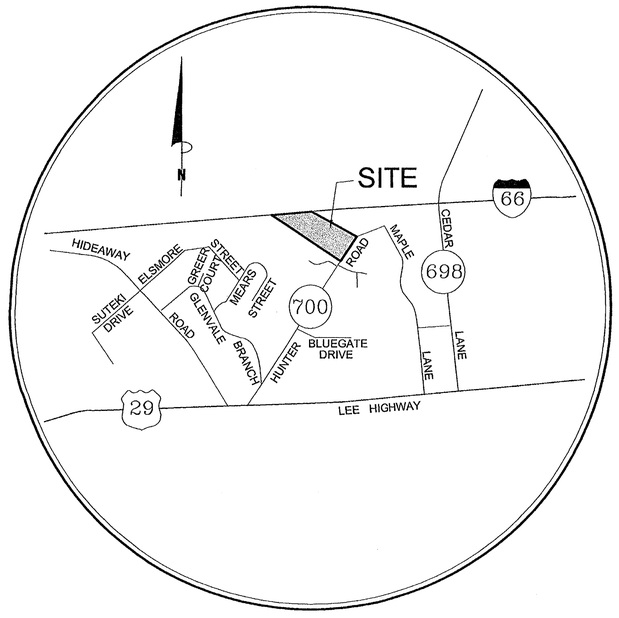
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA
RZ/FDP 2004-PR-008

NOTES

1. THE PROPERTY DELINEATED BY THIS PLAN IS CURRENTLY ZONED R-1 AND IS LOCATED AS FOLLOWS:

Tax Map Number	Deed Book	Page	Property Owner
048-2-((1))-0003	6811	0302	ROBERT E. HARGROVE

2. THE APPLICANT/CONTRACT PURCHASER IS:
   EDGEMOORE LAND L.L.C.
   3919 OLD LEE HIGHWAY, SUITE 82A
   FAIRFAX, VIRGINIA 22030
   (703) 934-1205
3. TOTAL SITE AREA IS 210,832 S.F. OR 4.84004 AC. THE CURRENT ZONING IS R-1. THE APPLICANT IS PROPOSING TO REZONE THE SUBJECT PROPERTY TO PDH-2.
4. TOPOGRAPHY (2' CONTOUR INTERVAL) SHOWN IS FROM A FIELD SURVEY.
5. NO GRAVE OR BURIAL SITE IS KNOWN TO EXIST ON THIS PROPERTY.
6. THE PROPERTY SHOWN ON THIS CDP/FDP IS IN THE PROVIDENCE DISTRICT, THE LOWER POTOMAC SANITARY SEWER DISTRICT, AND THE ACCOTINK CREEK WATERSHED. PUBLIC WATER AND SEWER SHALL BE PROVIDED THROUGH EXISTING AVAILABLE FACILITIES.
7. STORMWATER DETENTION AND BEST MANAGEMENT PRACTICES WILL BE PROVIDED OR WAIVED PER THE PFM. IF A WAIVER IS APPROVED A STORMWATER MANAGEMENT PLAN IS PROPOSED UTILIZING SEVERAL LOW IMPACT DEVELOPMENT TECHNIQUES. IF A WAIVER IS NOT APPROVED AN ALTERNATIVE DESIGN IS INCLUDED UTILIZING A CONVENTIONAL EXTENDED DRY DETENTION FACILITY. STORMWATER OUTFALL HAS BEEN SHOWN IN ACCORDANCE WITH PFM SECTION, 6-0200 AND 6-0700, ET SEQ.
8. FLOODPLAIN, RESOURCE PROTECTION AREAS (R.P.A.), OR ENVIRONMENTAL QUALITY CORRIDOR (E.Q.C.) AREAS, AS DEFINED IN THE ADOPTED COMPREHENSIVE PLAN, ARE LOCATED ON THE SUBJECT PROPERTY AS SHOWN. A WETLANDS DELINEATION WAS PERFORMED ON 9/15/04 BY BOWMAN CONSULTING GROUP BASED ON THE CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987). THE WETLANDS DELINEATION IS PENDING APPROVAL BY THE CORPS OF ENGINEERS.
9. THERE ARE NO KNOWN HAZARDOUS WASTE MATERIALS, TOXIC SUBSTANCES, EXISTING STORAGE TANKS, OR CONTAINERS ON-SITE.
10. THE PROPOSED DEVELOPMENT CONFORMS TO THE PROVISIONS OF ALL APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS. HOWEVER, THE APPLICANT WILL REQUEST APPROPRIATE MODIFICATIONS TO ALLOW FOR THE IMPLEMENTATION OF LOW IMPACT DEVELOPMENT TECHNIQUES AS APPROVED BY DPWES.
11. EXISTING WATER MAINS, EXISTING SANITARY SEWERS, AND EXISTING STORM DRAINS ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY PER AVAILABLE RECORDS. FURTHERMORE, THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UNDERGROUND UTILITIES, AND THOSE SHOWN ARE APPROXIMATE.
12. ALL NECESSARY PUBLIC UTILITIES ARE READILY ACCESSIBLE TO THE SITE OR WILL BE EXTENDED OR IMPROVED BY THE APPLICANT OR UTILITY COMPANY AS MAY BE APPROPRIATE.
13. AT TIME OF FINAL ENGINEERING, THE PROPOSED LIMITS OF CLEARING AND GRADING WILL BE IN SUBSTANTIAL CONFORMANCE WITH THAT DEPICTED ON THE CDP/FDP. NECESSARY UTILITIES SHALL BE INSTALLED IN THE LEAST DISRUPTIVE MANNER AS POSSIBLE.
14. THE PROPOSED DEVELOPMENT CONFORMS TO THE RECOMMENDATIONS SET FORTH IN THE ADOPTED COMPREHENSIVE PLAN FOR THE LEE COMMUNITY PLANNING SECTOR.
15. THE PROPOSED DEVELOPMENT SHOWN ON THIS PLAN IS NOT CONTAINED WITHIN AN AIRPORT NOISE IMPACT ZONE ACCORDING TO THE FAIRFAX COUNTY OFFICE OF COMPREHENSIVE PLANNING.
16. DEVELOPMENT SCHEDULE OF THIS PROJECT IS CONTINGENT UPON PLAN APPROVAL.
17. NO TRAILS ARE REQUIRED ALONG HUNTER ROAD.
18. THE FOOTPRINTS, SIZES AND LOCATIONS OF ALL STRUCTURES AND LOTS REPRESENTED HEREON ARE APPROXIMATE AND MAY CHANGE WITH FINAL ENGINEERING, BUT WILL BE IN SUBSTANTIAL CONFORMANCE WITH THAT DEPICTED ON THE CDP/FDP. BUILDING FEATURES ARE SUBJECT TO FINAL ARCHITECTURAL PLANS AND PROFFER COMMITMENTS.
19. A SINGLE-FAMILY DWELLING AND ACCESSORY STRUCTURES LOCATED ON THE SUBJECT PROPERTY WILL BE DEMOLISHED.
20. A SOUND BARRIER WILL BE ERECTED, SUBJECT TO APPROVAL BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION. A NOISE STUDY SHALL BE COMPLETED TO DETERMINE THE DESIGN OF THE SOUND BARRIER, INCLUDING HEIGHT.



VICINITY MAP
1"=500'

APPLICANT:

EDGEMOORE LAND, L.L.C.
3919 OLD LEE HIGHWAY, SUITE 82A
FAIRFAX, VIRGINIA 22030
703•934•1205

PREPARED BY:

BOWMAN CONSULTING GROUP, LTD.
14020 THUNDERBOLT PLACE, SUITE 300
CHANTILLY, VIRGINIA 20151
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RZ/FDP
Application No 2004-PR-008 Staff LAS
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 4-25-05 / Conds 3-22-05
Date of (BOS) (PC) approval 4-25-05
Sheet 1 of 7

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3A. SWM / BMP FACILITY DESIGN NOTES
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5. EXISTING VEGETATION MAP/CONDITIONS PLAN
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7. ELEVATIONS & ARCHITECTURALS

COMMONWEALTH OF VIRGINIA
JIRI F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

RECEIVED
Department of Planning & Zoning
MAR 23 2005
Zoning Evaluation Division

3/11/05	RESUBMIT TO CO.
3/22/05	ADDRESSED COMMENTS

Bowman CONSULTING

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COVER SHEET
FAIRFIELD MANOR
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

RZ/FDP 2004-PR-008
COUNTY PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No. 000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

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SG	RM	MGB
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SCALE	H: N/A V:	
JOB No.	2817-01-001	
DATE :	FEB, 2004	
FILE No.	2817-D-ZP-01	
SHEET	1 OF	7

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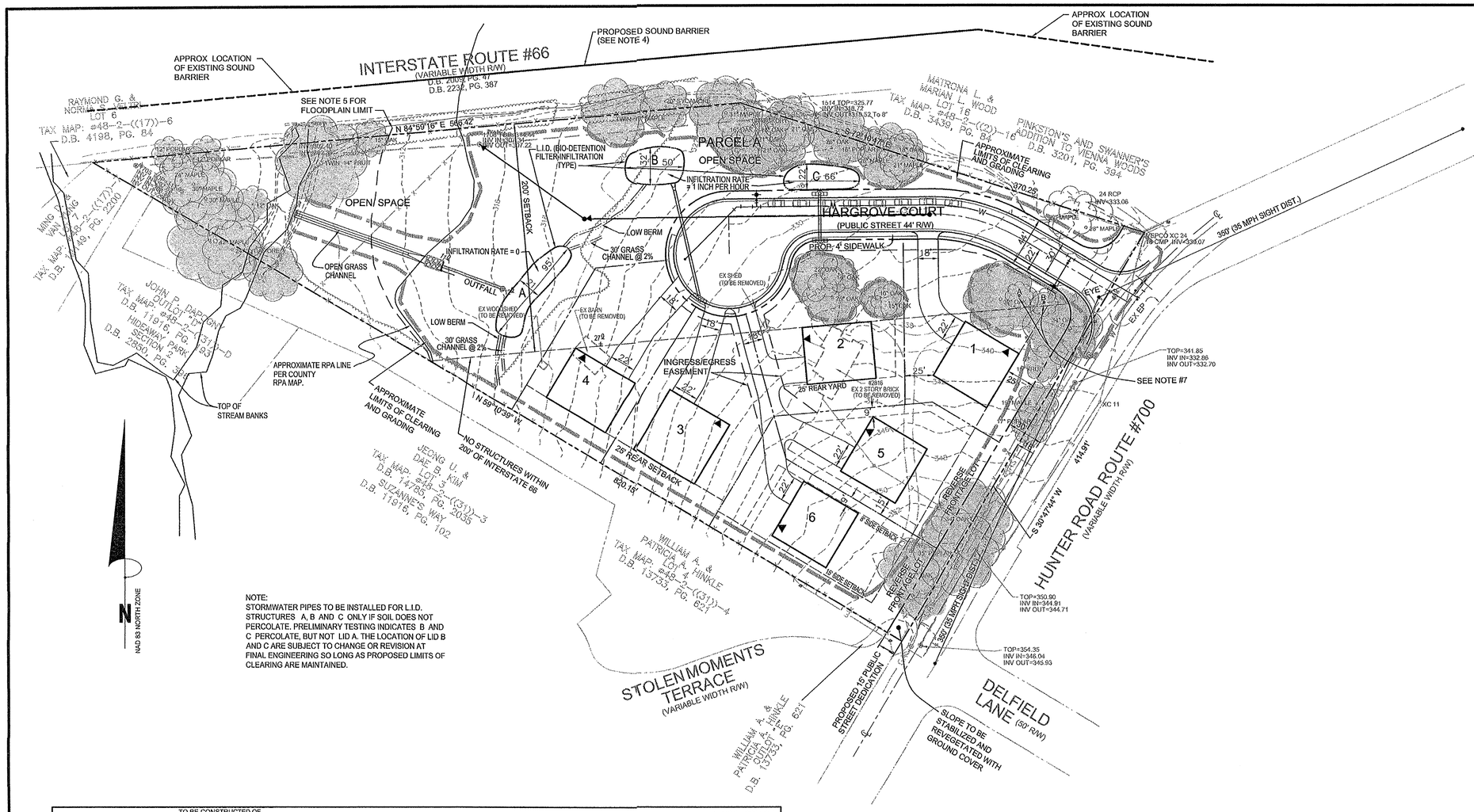
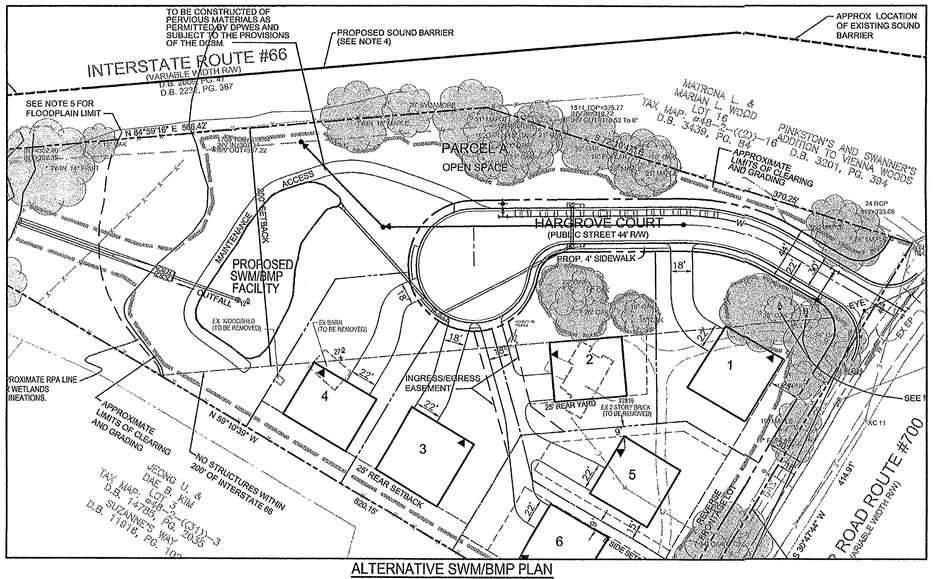
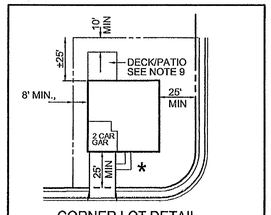


NOTE:
STORMWATER PIPES TO BE INSTALLED FOR L.I.D. STRUCTURES A, B AND C ONLY IF SOIL DOES NOT PERCOLATE. PRELIMINARY TESTING INDICATES B AND C PERCOLATE, BUT NOT LID A. THE LOCATION OF LID B AND C ARE SUBJECT TO CHANGE OR REVISION AT FINAL ENGINEERING SO LONG AS PROPOSED LIMITS OF CLEARING ARE MAINTAINED.

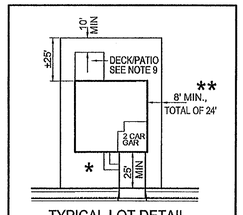


ALTERNATIVE SWM/BMP PLAN
SCALE : 1"=60'
NOTE: SHOULD L.I.D. NOT BE APPROVED BY THE APPROPRIATE AGENCIES THEN ALTERNATIVE SWM/BMP PLAN WILL BE SUBMITTED.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



CORNER LOT DETAIL
(NTS)
* FOR LOTS 1 THROUGH 4 NO STRUCTURES ALLOWED WITHIN THE 200' SETBACK OF INTERSTATE 66.



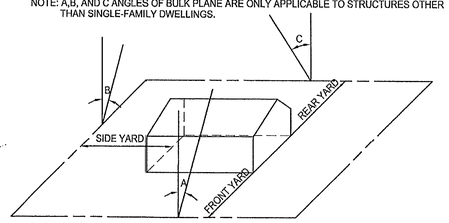
TYPICAL LOT DETAIL
(NTS)
* FOR LOTS 1 THROUGH 4 NO STRUCTURES ALLOWED WITHIN THE 200' SETBACK OF INTERSTATE 66.
** SIDE YARDS ARE REQUIRED TO BE A MINIMUM OF 8' WITH THE TOTAL OF BOTH SIDE YARDS BEING NO LESS THAN 24'.

LEGEND

40	EXISTING CONTOUR
	PROPOSED CLEARING LIMITS
R/W	RIGHT-OF-WAY
W	EXISTING WATERLINE
W	PROPOSED WATERLINE
	EXISTING STORM STRUCTURE
	PROPOSED STORM STRUCTURE
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
OUW	OVERHEAD UTILITY
G	GAS LINE
UGT	UNDERGROUND UTILITY
EP	EDGE OF PAVEMENT
℄	CENTERLINE OF RIGHT-OF-WAY
	PROP. FIRE HYDRANT
	TREE TO BE PRESERVED (SEE NOTE #7)
▲	HOUSE FRONT

ANGLE OF BULK PLANE DETAIL
(APPLIES TO PERIPHERAL BOUNDARIES ONLY)

NOTE: A,B, AND C ANGLES OF BULK PLANE ARE ONLY APPLICABLE TO STRUCTURES OTHER THAN SINGLE-FAMILY DWELLINGS.



A=45° NOT LESS THAN 35'
B=40° NOT LESS THAN 15'
C=40° NOT LESS THAN 25'

NOTES

1) MAXIMUM BUILDING HEIGHT:
   SINGLE FAMILY DWELLINGS 35'
   PROPOSED BUILDING HEIGHTS:
   SINGLE FAMILY DWELLING 35'
2) LOTS 1-6 SHALL HAVE DRIVEWAY ACCESS ONLY TO HARGROVE COURT.
3) THE FOOTPRINTS, SIZES AND LOCATIONS OF ALL STRUCTURES AND LOTS REPRESENTED HEREON ARE APPROXIMATE AND MAY CHANGE WITH FINAL ENGINEERING, BUT WILL BE IN SUBSTANTIAL CONFORMANCE WITH THAT DEPICTED ON THE CDP/FDP. BUILDING FEATURES, SUCH AS THE TYPE AND COLOR OF BUILDING MATERIALS AND THE INTERIOR LAYOUT OF THE HOUSES, ARE SUBJECT TO FINAL ARCHITECTURAL PLANS BUT WILL BE IN GENERAL CONFORMANCE WITH THE ELEVATIONS SHOWN ON SHEET 7.
4) PROPOSED SOUND BARRIER TO BE OF MATERIAL AND HEIGHT DESIGNATED IN NOISE STUDY AND ACCEPTABLE TO VDOT.
5) FLOOD PLAIN IS EXTENDED FROM INFORMATION DERIVED FROM STATION 11+00 (WSE=310.70) ON FLOOD PLAIN STUDY FOR BEAR BRANCH (FFX CO. # FP 2800-OCT1996) FLOOD PLAIN LINE TO BE VERIFIED PRIOR TO FINAL SUBDIVISION PLAN APPROVAL. APPROPRIATE EASEMENTS SHALL BE DEDICATED PRIOR TO FINAL SUBDIVISION PLAN APPROVAL. ALL DWELLINGS SHALL BE LOCATED A MINIMUM OF 15' FROM THE 100-YEAR FLOODPLAIN AND ELEVATED SO THAT THE LOWEST FLOOR IS AT LEAST 18" ABOVE THE 100-YEAR FLOOD LEVEL, PER ZONING ORDINANCE SECTION 2-415 AND PFM SECTION 6-0700.
6) THE ALTERNATIVE SWM/BMP PLAN SHOWS THE ESTIMATED SIZE OF AN EXTENDED DRY DETENTION FACILITY IS AS SHOWN ON THE PLAN. STORMWATER OUTFALL HAS BEEN SHOWN IN ACCORDANCE AND AS ALLOWED BY PFM SECTION 6-0700, ET. SEQ.
7) TREE A= SAUCER MAGNOLIA, 15' TALL/ 15' DIAMETER
   TREE B= JAPANESE MAPLE, 25' TALL/ 30' DIAMETER
   SIZE AND LOCATION ARE APPROXIMATES BASED ON FIELD VISIT WITH UFMB. SEE SHEET 4 FOR LIST OF OTHER TREES TO BE PRESERVED.
8) HARGROVE COURT IS CURRENTLY DESIGNED PER PFM PLATE NO. 7-7 (STD. NO. TU-1) WHICH REQUIRES A MINIMUM RADIUS OF 45' TO THE EDGE OF PAVEMENT.
9) FOR LOTS 3 AND 4 DECKS SHALL NOT BE LOCATED WITHIN 15 FEET OF REAR PROPERTY LINE. THIS SHALL NOT PRECLUDE THE CONSTRUCTION OF PATIOS/AT-GRADE DECKS AS PERMITTED BY THE ZONING ORDINANCE.
10) A WATER QUALITY IMPACT ASSESSMENT (WQIA) IS REQUIRED TO CONSTRUCT THE OUTFALL CHANNEL WITHIN THE RPA AND MUST BE APPROVED PRIOR TO FINAL PLAN APPROVAL.

SITE TABULATIONS:

TOTAL SITE AREA	210,832 SF. / 4.84004 AC.
CURRENT ZONING	R-1
PROPOSED ZONING	PDH-2
APPROXIMATE R/W DEDICATION	29,126 SF. / 0.67 AC.
ADJUSTED SITE AREA:	181,706 SF. / 4.17 AC.
REQUIRED OPEN SPACE (20%)	36,341 SF. / 0.83 AC. (4.17 AC x 20%)
PROVIDED OPEN SPACE (±40%)	±73,000 SF. / 1.67 AC.
DENSITY CALCULATION:	
SITE 4.8 AC x 2.0 D.U. /AC =	9.70 UNITS
ALLOWABLE NUMBIER OF DWELLING UNITS	9 UNITS
PROPOSED NUMBER OF DWELLING UNITS	6 UNITS
PROPOSED OVERALL DENSITY	1.24 D.U./AC.
AVERAGE LOT SIZE	±16,210 SF. / 0.37 AC.

PARKING TABULATION:

REQUIRED PARKING:	
6 SINGLE FAMILY DETACHED (2 SP/D.U.) =	12 SPACES
PROVIDED PARKING:	
6 SINGLE FAMILY DETACHED (4 SP/DU) =	24 SPACES
ON-STREET PARKIING	8 SPACES
	32 SPACES

THE RIGHT IS RESERVED TO PROVIDE A GREATER NUMBER OF SPACES THAN THE MINIMUM REQUIREMENT.

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(DP) (GDP) (CDP) (FDP) conds 3-23-05
SEE PROFFERS DATED 4-25-05
Date of (BOS) (PC) approval 4-25-05
Sheet 2 of 7

COMMONWEALTH OF VIRGINIA
JIRI F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

3/11/05	RESUBMIT TO CO.
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SCALE H: 1"=50' V: CI-2'
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FILE No. 2817-D-ZP-01
SHEET 2 OF 7

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OUTFALL & STORMWATER MANAGEMENT NARRATIVE

EXISTING CONDITIONS

THE PROJECT SITE IS LOCATED WITHIN THE BEAR BRANCH WATERSHED OF FAIRFAX COUNTY AND CONTAINS APPROXIMATELY 4.8 ACRES. THE PROJECT SITE IS PRESENTLY USED AS A RESIDENTIAL LOT AND CONTAINS ONE SINGLE FAMILY DWELLING UNIT. THE SITE DRAINS IN A NORTHERLY DIRECTION TOWARDS BEAR BRANCH. THE NORTHERN PART OF THE SITE SLOPES STEEPLY TOWARDS BEAR BRANCH WITH THE REMAINDER OF THE SITE ON A ROLLING TERRAIN. AN EXISTING CULVERT UNDER I-66 IS LOCATED IMMEDIATELY NORTH AND ADJACENT TO THE PROJECT SITE. BEAR BRANCH DRAINS IN A SOUTHERLY DIRECTION FOR APPROXIMATELY 1 2/3RD MILE WHERE IT MEETS ACCOTINK CREEK. THE FLOOD PLAIN OF BEAR BRANCH IS PARTIALLY LOCATED ON THE PROJECT SITE.

PRESENTLY, THERE IS NO STORM SEWER, CHANNEL OR OTHER CONVEYANCE. RUNOFF DRAINS AS A SHEET FLOW INTO THE FLOOD PLAIN OF BEAR BRANCH.

THE DRAINAGE OUTFALL FOR THE PROJECT SITE IS THE FLOOD PLAIN OF BEAR BRANCH AS IDENTIFIED BY FAIRFAX COUNTY #FP 2800-OCT1996.

PROPOSED CONDITIONS

THE APPLICANT PROPOSES TO DEVELOP THE PROJECT SITE FOR RESIDENTIAL USE AND PROPOSES TO BUILD 6 SINGLE FAMILY DETACHED DWELLING UNITS. THE PROPOSED DEVELOPMENT ALSO INCLUDES A PUBLIC STREET WITH WATER LINE AND SANITARY SEWER SERVING THE PROPOSED DWELLING UNITS. THE FLOOD PLAIN AREA AND ADJACENT STEEP SLOPE IS PROPOSED TO REMAIN AS OPEN SPACE.

THE APPLICANT PROPOSES TO INSTALL STORM SEWER WITHIN THE PROPOSED STREET. THE STORM SEWER WILL CONVEY THE DRAINAGE INTO SEVERAL STORMWATER MANAGEWMENT DEVICES. THE APPLICANT PROPOSES TO USE BIO-RETENTION BASINS AND BIO-RETENTION FILTERS (RAIN GARDENS) TO PROVIDE THE STORMWATER MANAGEMENT FOR THE PROJECT SITE.

PERCOLATION TESTS WERE CONDUCTED ON THE PROJECT SITE AT LOCATIONS WHERE THE BIO-RETENTION BASINS (RAIN GARDENS) ARE PROPOSED. THE FINAL RESULTS INDICATE THAT INFILTRATION TYPE BIO-RETENTION BASINS MAY BE USED EAST OF AND ADJACENT TO THE PROPOSED ONSITE PUBLIC STREET ONLY. THE OTHER LOCATIONS DID NOT HAVE ACCEPTABLE INFILTRATION RATES. THEREFORE, THE APPLICANT PROPOSES TO USE A FLOW-THROUGH TYPE BIO-RETENTION FILTERS WHERE INFILTRATION CANNOT BE ACHIEVED.

PROPOSED STORMWATER MANAGEMENT

BOTH WATER QUALITY MEASURES (BMP) AND PEAK FLOW REDUCTION (DETENTION) WILL BE PROVIDED BY THE REFERENCED RAIN GARDENS. THE RUNOFF FROM THE SITE WILL DRAIN INTO THREE RAIN GARDEN TYPE STORMWATER MANAGEMENT FACILITIES LOCATED ADJACENT TO OR AT THE END OF THE PROPOSED PUBLIC STREET. THE OUTFLOW FROM THE NON-INFILTRATION TYPE SWM/BMP FACILITIES WILL BE CONVEYED IN A STORM SEWER PIPE AND CHANNEL TO THE FLOOD PLAIN OF BEAR BRANCH. THE DISCHARGE POINT WILL BE PROTECTED WITH OUTLET PROTECTION TO PREVENT EROSION.

DRAINAGE OUTFALL

THE FLOOD PLAIN OF BEAR BRANCH ACTS AS A DRAINAGE OUTFALL FOR THE PROJECT SITE. THE SITE DRAINAGE WILL BE CONVEYED TO THE FLOOD PLAIN IN A STORM SEWER AND AS AN OVERLAND SHEET FLOW. THE DRAINAGE AREA CONTRIBUTING TO THE SHEET FLOW IS PROPOSED TO BE REDUCED SIGNIFICANTLY DUE TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AND INSTALLATION OF THE STORM SEWER THUS IMPROVING THE EXISTING CONDITIONS WITH RESPECT TO THE SHEET FLOW OVER THE SLOPED AREA.

THE STORM SEWER WILL BE DISCHARGED INTO THE FLOOD PLAIN AT THE BOTTOM OF THE SLOPE. THE STORM SEWER OUTLET WILL BE PROTECTED WITH A STILLING BASIN TYPE ENERGY DISSIPATOR TO PREVENT EROSION DUE TO HIGH OUTLET VELOCITY.

THE CONTRIBUTING DRAINAGE AREA TO BEAR BRANCH FLOOD PLAIN IS APPROXIMATELY 1,039 ACRES AT THE DOWNSTREAM POINT OF THE PROJECT SITE. THE MAIN CHANNEL OF BEAR BRANCH IS AN INCISED BROAD CHANNEL. THE CHANNEL IS LINED WITH NATURALLY OCCURING STONES, PEBBLES AND GRAVEL. THE OVERBANK AREAS ON BOTH SIDES OF THE CHANNEL ARE VEGETATED WITH LARGE AND SMALL TREES AND UNDERGROWTH. BASED ON THE FIELD INSPECTION OF THE MAIN CHANNEL AND THE OVERBANK AREAS AT THE SITE AND IMMEDIATELY DOWNSTREAM, NO SIGNS OF EROSION WERE FOUND IN THE OVERBANK AREA OF THE FLOOD PLAIN. THE EXISTING CULVERT UNDER I-66 HAS NO EROSION AT THE OUTLET.

CONSIDERING THE TOTAL CONTRIBUTING DRAINAGE AREA AND THE PROPOSED STORMWATER MANAGEMENT FACILITIES, THE DEVELOPMENT OF THE SITE WILL HAVE A NEGLIGIBLE EFFECT ON THE FLOOD PLAIN AND THE EXISTING CHANNEL, IF ANY AT ALL.

HYDROLOGIC DATA FOR THE SITE AND THE FLOOD PLAIN ARE SUMMARIZED BELOW.

IN THE OPINION OF THE ENGINEER, THE DRAINAGE OUTFALL FOR THE PROJECT SITE IS ADEQUATE FOR THE PROPOSED DEVELOPMENT OF THE PROJECT SITE.

DATA

FLOOD PLAIN

DRAINAGE AREA	1,039 ACRES
USE	RESIDENTIAL, ¼ ACRE LOTS
HYDRAULIC LENGTH	1900 FT.
HYDRAULIC DROP	173 FT.
TIME OF CONCENTRATION	Tc = 40 MIN. (KIRPICH)
APPROXIMATE FLOW	1,403 CFS

SITE
PREDEVELOPMENT CONDITIONS

SITE AREA	4.8 ACRES
USE	RESIDENTIAL - 1 LOT
RUNOFF COEFFICIENT	0.35
TIME OF CONCENTRATION	5 MIN.
2 YEAR STORM RUNOFF	9.16 CFS
10 YEAR STORM RUNOFF	12.21 CFS

PROPOSED CONDITIONS

SITE AREA	4.8 ACRES
USE	RESIDENTIAL - 6 LOT
RUNOFF COEFFICIENT	0.45
TIME OF CONCENTRATION	5 MIN.
2 YEAR STORM RUNOFF	11.77 CFS
10 YEAR STORM RUNOFF	15.70 CFS

INCREASE IN RUNOFF

2 YEAR STORM	2.61 CFS
10 YEAR STORM	3.48 CFS

THE INCREASED RUNOFF WILL BE DETAINED IN THE PROPOSED SWM FACILITIES SO THAT THE DEVELOPMENT OF THE SITE WILL PRODUCE NO NET INCREASE IN RUNOFF.

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SWM / BMP FACILITY DESIGN NOTES
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SHEET 3 OF 7

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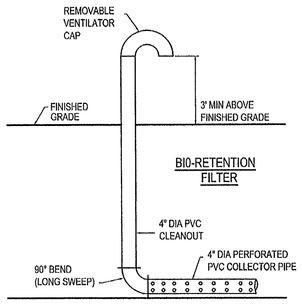
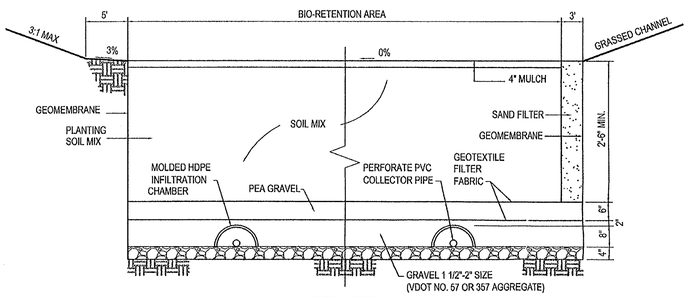


TYPICAL SECTION

CLEAN-OUT WITH VENTILATOR

NO SCALE

NOTE: FOR USE IN ALL L.I.D. LOCATIONS

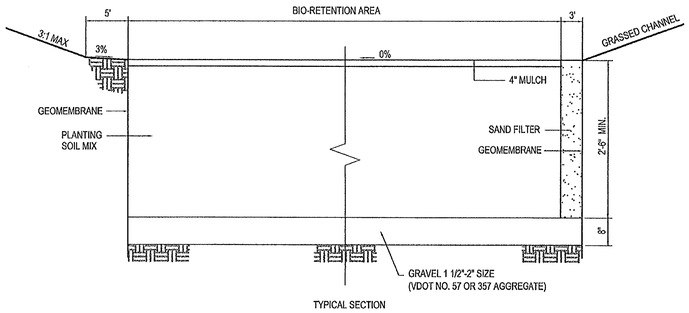


TYPICAL SECTION

BIO-RETENTION FILTER / RAIN GARDEN

NO SCALE

NOTE: FOR USE IN ALL L.I.D. LOCATIONS THAT DO NOT PERCOLATE



TYPICAL SECTION

BIO-RETENTION FILTER / RAIN GARDEN

NO SCALE

NOTE: FOR USE IN ALL L.I.D. LOCATIONS THAT PERCOLATE

BMP FACILITY DESIGN

NARRATIVE DESCRIPTION
BMP FOR THIS PROJECT IS PROVIDED IN THREE RAIN GARDENS / BIO-RETENTION FILTERS. THREE SEPARATE FACILITIES ARE PROVIDED TO REDUCE THE DRAINAGE AREA CONTRIBUTING TO EACH FILTER TO UNDER 3 ACRES AND IMPERVIOUS AREA TO LESS THAN 1 ACRE, AS RECOMMENDED IN VIRGINIA STOMWATER MANAGEMENT HANDBOOK (VSWMH).

ALL 3 FACILITIES ARE DESIGNED TO CAPTURE AND TREAT VOLUME EQUAL TO 1.0 INCH OF RUNOFF FROM THE IMPERVIOUS AREA WITH A POLLUTANT REMOVAL EFFICIENCY OF 65%. THE FACILITY AREA IS EQUAL TO APPROXIMATELY 5% OF THE IMPERVIOUS AREA OF THE DRAINAGE SHED. THE RUNOFF IS COLLECTED BY AN UNDERDRAIN SYSTEM AND CONVEYED TO A CLEARWELL , ONE FOR EACH FACILITY. THE COLLECTED RUNOFF IS THEN CONVEYED BY A STORM SEWER PIPE AND DISCARGED INTO AN ADEQUATE OUTFALL.

EACH FACILITY HAS A PRETREATMENT GRASS CHANNEL DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE VSWMH.

PRETREATMENT DESIGN

PRETREATMENT IS PROVIDED FOR EACH FACILITY IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 3.11 OF VSWMH. PRETREATMENT OF RUNOFF TO REMOVE DEBRIS AND SEDIMENTS PRIOR TO ENTERING THE FACILITIES IS PROVIDED BY A GRASS CHANNEL AND A SAND FILTER.

SAND FILTER
EACH FACILITY HAS A 3.0 FT. WIDE SAND FILTER ALONG THE PERIMETER OF THE FACILITY WHERE MOST OF THE RUNOFF ENTERS THE FACILITY.

GRASSED CHANNEL
EACH FACILITY HAS AN APPROACH GRASSED CHANNEL SERVING AS A PRETREATMENT OF THE RUNOFF. THE MINIMUM LENGTH OF THE GRASSED CHANNEL HAS BEEN DETERMINED FROM TABLE 3.11-3 OF VSWMH. THE TABLE PROVIDES DESIGN GUIDELINES FOR THE LENGTH OF PRETREATMENT GRASSED CHANNEL FOR DRAINAGE AREA OF 1.0 ACRE ASSUMING A 2.0 FT. BOTTOM WIDTH OF THE CHANNEL. THE CHANNELS USED IN THE DESIGN FOR THIS PROJECT HAVE A MINIMUM BOTTOM WIDTHS OF 10 FT. THEREFORE IT FOLLOWS THAT THE PROPOSED CHANNELS HAVE FIVE TIMES GREATER PRETREATMENT CAPACITY. THE GREATER BOTTOM WIDTHS ARE PROVIDED TO ACCOUNT FOR DRAINAGE AREAS GREATER THAN 1.0 ACRE.

RAIN GARDEN / FILTER A	
SLOPE OF GRASSED CHANNEL	4%
MINIMUM BOTTOM WIDTH	10 FT.
PERCENT IMPERVIOUSNESS	30%
MINIMUM LENGTH REQUIRED	40 FT.
LENGTH PROVIDED	50 FT.
RAIN GARDEN / FILTER B	
SLOPE OF GRASSED CHANNEL	4%
MINIMUM BOTTOM WIDTH	10 FT.
PERCENT IMPERVIOUSNESS	25%
MINIMUM LENGTH REQUIRED	40 FT.
LENGTH PROVIDED	50 FT.
RAIN GARDEN / FILTER C	
SLOPE OF GRASSED CHANNEL	2%
MINIMUM BOTTOM WIDTH	10 FT.
PERCENT IMPERVIOUSNESS	24%
MINIMUM LENGTH REQUIRED	25 FT.
LENGTH PROVIDED	30 FT.

IMPERVIOUSNESS CALCULATIONS

TOTAL DRAINAGE DIVIDE TO BMP FACILITY

A	0.93 ACRES
B	1.34 ACRES
C	1.35 ACRES
TOTAL DRAINAGE AREA	3.62 ACRES

IMPERVIOUS AREA COMPUTATIONS

A	
DRAINAGE AREA	0.93 ACRES OR 40,510 SF
HOUSES	7,350 SF
DECKS	1,250 SF
DRIVEWAYS	2,400 SF
TOTAL IMPERVIOUS AREA TO A	11,000 SF
PERCENT IMPERVIOUSNESS	27%
B	
DRAINAGE AREA	1.34 ACRES OR 58,370 SF
HOUSES	3,000 SF
DRIVEWAY & STREET	15,000 SF
DECKS	1,000 SF
TOTAL IMPERVIOUS AREA TO B	19,000 SF
PERCENT IMPERVIOUSNESS	33%
C	
DRAINAGE AREA	1.35 ACRES OR 58,800 SF
HOUSES	6,000 SF
DRIVEWAY AND PARKING	9,125 SF
DECKS	500 SF
TOTAL IMPERVIOUS AREA TO C	15,625 SF
PERCENT IMPERVIOUSNESS	27%
TOTAL PROJECT IMPERVIOUS AREA	45,625 SF OR 1.05 ACRES

FACILITY SIZING

THE DESIGN PROVIDES FOR CAPTURE AND TREATMENT OF THE FIRST 1.0 INCH OF RUNOFF FOR AN EFFICIENCY OF 65%. THE SIZE HAS BEEN DETERMINED BY APPLYING THE REQUIREMENTS OF SECTION 3.11 OF VSWMH. THE MINIMUM REQUIRED BIO-RETENTION FLOOR AREA IS 5% OF THE IMPERVIOUS AREA OF THE CONTRIBUTING WATERSHED.

RAIN GARDEN / FILTER A	
IMPERVIOUS AREA	11,000 SF
MINIMUM REQUIRED FILTER AREA (5%)	550 SF
AREA PROVIDED	750 SF
RAIN GARDEN / FILTER B	
IMPERVIOUS AREA	19,000 SF
MINIMUM REQUIRED FILTER AREA (5%)	950 SF
AREA PROVIDED	1,000 SF
RAIN GARDEN / FILTER C	
IMPERVIOUS AREA	15,625 SF
MINIMUM REQUIRED FILTER AREA (5%)	781 SF
FILTER AREA PROVIDED	800 SF

EMERGENCY SPILLWAY AND EXIT CHANNEL

THE EMERGENCY SPILLWAY IS DESIGNED TO PASS 100 YEAR DESIGN STORM. THE CURRENT EDITION OF THE VIRGINIA EROSION AND SEDIMENT HANDBOOK HAS BEEN USED FOR THE EMERGENCY SPILLWAY DESIGN.

SPILLWAY TYPE	VEGETATED
100 YEAR DESIGN STORM RUNOFF	27 CFS
WIDTH OF CONTROL SECTION	12 FT.
LENGTH OF CONTROL SECTION	20 FT.
CREST ELEVATION	229.50
STAGE	1.0 FT.
FREEBOARD	1.0 FT.
TOP OF BERM	231.50
EXIT CHANNEL WIDTH	12 FT.
EXIT CHANNEL SIDE SLOPES	3 : 1
EXIT CHANNEL SLOPE	3.0%
EXIT CHANNEL LENGTH	51 FT.
EXIT CHANNEL VELOCITY	4.0 FPS

PLANTING

THE NUMBER OF PLANTS PER RAIN GARDEN / FILTER WAS DETERMINED USING THE RECOMMENDATIONS IN MINIMUM STANDARD 3.11 OF THE VSWMH. THE RECOMMENDED DENSITY OF 10 TREES AND SHRUBS PER 1,000 SQUARE FEET OF THE FILTER AREA HAS BEEN USED. THE RECOMMENDED RATIO OF SHRUBS TO TREES OF 2:1 TO 3:1 WAS USED.

FACILITY A AREA	750 SF
NUMBER OF PLANTS	8
FACILITY B AREA	1,000 SF
NUMBER OF PLANTS	10
FACILITY C AREA	800 SF
NUMBER OF PLANTS	8

SPECIFICATIONS

SUMMARY TABLE

Component	Specification	Dimension/Size	Reference Notes
Underdrain Pipe	Rigid PVC Schedule 40	4" Diameter	Slope 0.5%
Underdrain Perforations		½", 6" o.c., top and sides only	
Underdrain Gravel Bed	AASHTO M-43	1 ½"	Washed VDOT Aggregate #57
Pea Gravel	ASTM D 448	¼" – ½" Diameter	
Soil Medium			
- Sand	ASTM C-33	50%	Less than 5% clay
- Top Soil	Sandy Loam	20%	
- Leaf Compost	Fully Composted	30%	
Impervious Geomembrane		30 mil. Minimum	Ultraviolent resistant
Geotextile Fabric		Non-woven U.S. Standard Sieve 80	Filtration Rate 0.08 in/sec minimum
Mulch Material	Shredded Raw Hardwood		
Plant Material	See Plant Schedule		
Observation Well Cleanout Pipe	Rigid PVS Schedule 40	4" Diameter	Attached to underdrain pipe with standard elbow or Tee connection. Open at top (see detail)
Soil Medium Compaction	Minimal	12" Lifts Maximum	

SOIL PLANTING MIX
SOIL MIX SHALL BE COMPOSED OF 50% SAND, 20% LEAF COMPOST AND 30% TOPSOIL. ALL SOIL MIX COMPONENT MATERIALS SHALL CONFORM TO THE SPECIFICATIONS CONTAINED IN THE SUMMARY TABLE ABOVE.

SOIL TEXTURE AND STRUCTURE
TOPSOIL FOR BIO-RETENTION SHALL HAVE A SANDY LOAM, LOAMY SAND, OR LOAM TEXTURE PER USDA TEXTURAL TRIANGLE. MAXIMUM CLAY CONTENT SHALL BE LESS STHAN 5%. THE SOIL SHALL BE OF UNIFORM MIX FREE OF STONES, STUMPS, ROOTS, OR OTHER DELETERIOUS MATTER. THE TOPSOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, TEARTHUB, OR OTHER NOXIOUS WEEDS.

SOIL TESTING
PLANTING SOIL SHALL BE TESTED FOR pH AND ORGANIC MATTER PRIOR TO INSTALLATION.

PH RANGE	5.5 – 6.5
ORGANIC MATTER	GREATER THAN 1.5
MAGNESIUM	100+ UNITS
PHOSPHORUS	150+ UNITS
POTASSIUM	120+ UNITS
SOLUBLE SALTS	NOT TO EXCEED 900 PPM/0.9 MMHOS/CM (SOIL) NOT TO EXCEED 3,000 PPM/2.5 MMHOS/CM (ORGANIC MATTER)

ONE SOIL TEST SHALL BE PERFORMED FOR EVERY 500 CUBIC YARDS OF SOIL MATERIAL WITH A MINIMUM OF ONE TEST PER BIO-RETENTION FILTER.

LEAF COMPOST
LEAF COMPOST SHALL BE COMPOSED OF WELL AGED LEAF MULCH .

MULCH
MULCH SHALL BE SHREDDED HARDWOOD ONLY. MULCH SHALL BE AGED 12 MONTHS OR LONGER, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL.

SAND
SAND USED FOR PLANTING MIX SHALL BE CLEAN CONCRETE SAND FREE FROM DELETERIOUS MATERIALS. SAND SHALL MEET ASTM c-33 WITH GRAIN SIZE OF 0.02 TO 0.04 INCHES.

SOIL MIX PLACEMENT
SOIL SHALL BE PLACED IN LIFTS OF 12 INCHES OR LESS. SOIL SHALL BE MINIMALLY COMPACTED USING A HAND LANDSCAPER'S ROLLER OR HAND TAMPING.

GRAVEL
UNDERDRAIN GRAVEL BLANKET SHALL BE DOUBLE WASHED VDOT #57 AGGREGATE, 1 1/2" IN SIZE.

PEA GRAVEL SHALL BE WASHED, RIVER-RUN, ROUND DIAMETER, ¼" – ½ " IN SIZE.

FILTER FABRIC
GEOTEXTILE FILTER FABRIC SHALL MEET ASTM D-751 (PUNCTURE STRENGTH – 125 LBS), ASTM D-1117 (MULLEN BURST STRENGTH – 400 LBS), AND ASTM D-1682 (TENSILE STRENGTH – 300 LBS)

FABRIC SHALL HAVE 0.08" THICK E.O.S. OF #80 SIEVE, AND MAINTAIN 125 GPM PER SQUARE FOOT FLOW RATE.

SEQUENCE OF CONSTRUCTION
THE SEQUENCE OF VARIOUS PHASES OF BIO-RETENTION FILTER CONSTRUCTION SHALL BE COORDINATED WITH THE OVERALL PROJECT CONSTRUCTION. EXCAVATION FOR THE FILTERS MAY BE PERFORMED TOGETHER WITH MASS GRADING OF THE SITE TO ALLOW THE EXCAVATED MATERIAL TO BE USED ELSEWHERE ON SITE. DURING THE FILTER INSTALLATION THE RUNOFF FORM HIGHER GROUND SHALL NOT BE ALLOWED TO DRAIN THROUGH THE BIO-RETENTION AREA. BIO-RETENTION FILTERS SHALL NOT BE PLACED INTO SERVICE UNTIL AFTER THE ENTIRE SITE CONTRIBUTING DRAINAGE TO THE FILTERS HAS BEEN STABILIZED. THE BIO-RETENTION AREA SHALL NOT BE USED FOR EROSION AND SEDIMENT CONTROL DURINNG CONSTRUCTION. THE SEQUENCE OF CONSTRUCTION SHALL BE AS FOLLOWS:

1. INSTALL EROSION AND SEDIMENT CONTROLS.
2. MASS GRADE THE SITE TO ELEVATIONS SHOWN ON DRAWINGS. INITIALLY, THE FILTERS MAY BE EXCAVATED TO WITHIN ONE FOOT OF THE FINISHED ELEVATION. FINAL EXCAVATION SHALL BE DEFERRED UNTIL ALL DISTURBED AREAS WITHIN THE WATERSHED HAVE BEEN STABILIZED.
3. STORM SEWER SERVING THE BIO-RETENTION FILTERS SHALL BE CONSTRUCTED DURING THE MASS GRADING OF THE SITE OR UPON COMPLETION OF MASS GRADING OPERATIONS AT CONTRACTORS OPTION. STORM SEWER SHALL BE INSTALLED PRIOR TO COMMENCING THE FILTER CONSTRUCTION.
4. COMPLETE ALL CONSTRUCTION IN THE WATERSHED CONTRIBUTING TO THE BIO-RETENTION FILTERS AND STABILIZE THE AREA. IN CASE IT IS DESIRABLE TO START THE FILTER CONSTRUCTION PRIOR TO THE WATERSHED BEING STABILIZED, RUNOFF SHALL BE DIVERTED AROUND THE BIO-RETENTION FILTER AREA TO PREVENT DRAINAGE THROUGH THE BIO-RETENTION AREA.
5. GRADE AND SHAPE THE FILTERS TO THE ELEVATIONS AND DIMENSIONS INDICATED ON DRAWINGS.
6. DO NOT COMPACT THE FILTER BOTTOM.
7. TILL THE FILTER FLOOR WITH ROTARY TILLER TO PROVIDE WELL AERATED, HIGHLY POROUS SURFACE TEXTURE.
8. INSTALL GRAVEL BLANKET, INFILTRATION CHAMBERS, PIPING, MANIFOLDS, DRAINS, AND VENTS. MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES FOR INFILTRATION CHAMBERS SHALL BE STRICTLY FOLLOWED.
9. CONNECT THE MANIFOLD OUTFALL INTO THE CLEARWELL.
10. INSTALL PEA GRAVEL TO SPECIFIED DEPTH.
11. INSTALL GEOTEXTILE FABRIC OVER THE PEA GRAVEL.
12. FILL BIO-RETENTION FILTER WITH SOIL MIX MATERIAL AND SAND FILTER IN LIFTS NOT TO EXCEED 12 INCHES.. DO NOT COMPACT SOIL MIX. LIGHTLY ROLL EACH SOIL MIX LIFT WITH A HAND ROLLER OR USE HAND TAMPING.
13. INSTALL PLANTS. THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW 1/8 OF THE OVERALL DIMENSION OF THE ROOT BALL TO BE ABOVE THE FINISHED GRADE. LOOSE SOIL AT THE BOTTOM OF THE PLANTING PIT SHALL BE TAMPED BY HAND.
14. INSTALL MULCH TO SPECIFIED DEPTH.
15. PLACE SOD IN THE GRASS PRETREATMENT CHANNEL.
16. INSPECT THE INSTALLATION AND CORRECT ANY PROBLEMS.
17. ENSURE THAT ALL AREAS IN THE WATERSHED CONTRIBUTING TO THE BIO-RETENTION FILTERS ARE STABILIZED.
18. REMOVE DIVERSION AND STABILIZE WITH PERMANENT VEGETATION.
19. ALLOW DRAINAGE TO ENTER THE BIO-RETENTION FILTER AREA.
20. INSPECT COMPLETED BIO-RETENTION FILTERS.

RZ/FDP
Application No 2004-PR-008 Staff LAS
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 4-25-05 / 3-28-05 Conds
Date of (BOS) (PC) approval 4-25-05
Sheet 3A of 7

COMMONWEALTH OF VIRGINIA
JIRI F. KOVATS
No. 19406
PROFESSIONAL ENGINEER
3-22-05

3/11/05	RESUBMIT TO CO.
3/22/05	ADDRESSED COMMENTS

Bowman CONSULTING

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SWM / BMP FACILITY DESIGN NOTES
FAIRFIELD MANOR
PROVIDENCE DISTRICT
FAIRFAX COUNTY, VIRGINIA

RZ/FDP 2004-PR-008
COUNTY PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No. 000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

PLAN STATUS	
2/9/04	ISSUED TO CLIENT
3/11/04	RESUBMIT TO CO.
6/23/04	COUNTY COMMENTS
9/16/04	COUNTY COMMENTS
10/11/04	COUNTY COMMENTS
11/1/04	COUNTY COMMENTS
1/7/05	RESUBMIT TO CO.
1/24/05	RESUBMIT TO CO.
2/25/05	RESUBMIT TO CO.
3/8/05	RESUBMIT TO CO.
DATE	DESCRIPTION

SG	RM	MGB
DESIGN	DRAWN	CHKD

SCALE H: N/A V:
JOB No. 2817-01-001
DATE: FEB, 2004
FILE No. 2817-D-ZP-01
SHEET 3A OF 7

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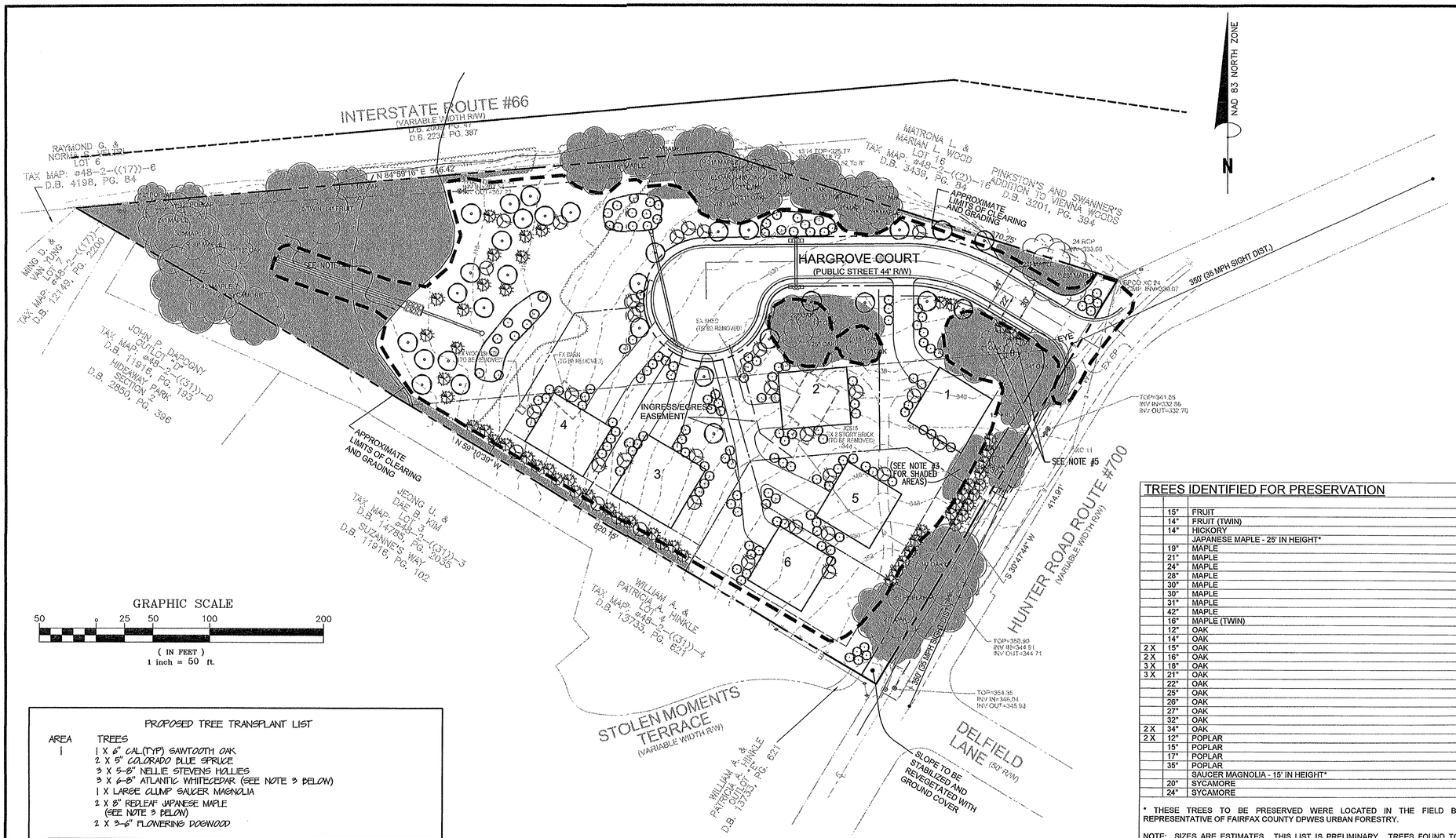


GRAPHIC SCALE

50 25 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

TREE COVER CALCULATION

ZONING:	PDH-2
GROSS SITE AREA:	± 210,892 SF/4.8400 AC
DEDUCTABLE AREAS:	
RIGHT-OF-WAY DEDICATION (HUNTER ROAD):	± 29,186 SF/0.67 AC
ADJUSTED SITE AREA:	± 181,706 SF/4.17 AC
REQUIRED TREE COVER (20%)	± 36,341 SF
PROPOSED TREE COVER (21%)	± 38,350 SF
TREE PRESERVATION (EXISTING TREES IN FLOODPLAIN, 13,000 SF X 1.25):	± 16,250 SF
REFORESTATION WITHIN FLOODPLAIN (16,500 SF X 1.0):	± 16,500 SF
PROPOSED NEW PLANTING OR TRANSPLANTING TREES WITHIN SITE:	± 3,600 SF

PLANT LIST

TREES TO CONSIST OF BUT NOT LIMITED TO THE FOLLOWING:

DECIDUOUS SHADE TREES

ACER RUBRUM
CARPINUS CAROLINIANA
GLEDITSIA TRIACANTHOS VAR. INERMIS "SKYLINE"
QUERCUS ALBA
QUERCUS COCCINEA
QUERCUS PHELLOS
QUERCUS RUBRA
PLATANUS OCCIDENTALIS
ULMUS PARVIFOLIA
ZELKOVA SERRATA

EVERGREEN TREES

CUPRESSOCYPARIS LEYLANDII
ILEX ATTENUATA FOSTERI
PINUS RIGIDA
PINUS TAEDA

ORNAMENTAL TREES

BETULA NIGRA
CERCIS CANADENSIS
CORNUS KOUSA
MAGNOLIA SOULANGIANA
PRUNUS VIRGINIANA

SHRUBS

BUXUS MICROPHYLLA
ILEX VAR.
JUNIPERUS VAR.
PRUNUS LAUROCERASUS
RHODODENDRON VAR. (AZALEA)

NOTES:

1. LANDSCAPE PLANS ARE CONCEPTUAL AND ARE SUBJECT TO MODIFICATION DUE TO SITE CONDITIONS, PLANT AVAILABILITY, FINAL ARCHITECTURE AND UTILITY LOCATIONS. FINAL LANDSCAPING PLANS WILL BE IN SUBSTANTIAL CONFORMANCE TO THAT WHICH IS SHOWN.
2. PROPOSED STREET TREES SHALL CONSIST OF MEDIUM TO LARGE DECIDUOUS TREES. ALL TREES SHOULD BE SELECTED FROM, BUT NOT LIMITED TO, THE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL (SECTION 12-0707) AND IN COORDINATION WITH THE URBAN FORESTY DIVISION. TREE LOCATION WILL BE SUBJECT TO DRIVEWAY LOCATIONS, STREETLIGHTS, AND PLACEMENT OF UTILITIES.
3. SHADED AREAS ARE DESIGNATED FOR EITHER TREE PRESERVATION OF EXISTING VEGETATION OR RESERVED FOR TRANSPLANTING TREES WITHIN SITE TO THESE LOCATIONS.
4. THIS PORTION OF RPA IS RESERVED FOR TRANSPLANTING OF TREES FROM WITHIN THE SITE, AND/OR REFORESTATION WITH NEW VEGETATION TO BE DETERMINED AT FINAL ENGINEERING. IF TREES WITHIN SITE ARE DEEMED INAPPROPRIATE FOR THE TRANSPLANTING AREA, OR ARE TOO FEW, THEN THE AREA WILL BE PLANTED WITH COMPARABLE AND AVAILABLE NURSERY STOCK. IF SUCH TREES ARE NOT AVAILABLE THEN NEW TREES WILL BE PLANTED (2" TO 2.5" CALIPER).
5. THE FOLLOWING TREES, IN ADDITION TO THE OTHER SHADED TREES, WERE IDENTIFIED BY FAIRFAX COUNTY URBAN FORESTER FOR PRESERVATION:
   A. JAPANESE MAPLE (APPROX. 25' IN HEIGHT)
   B. SAUCER MAGNOLIA (APPROX. 20' IN HEIGHT)

TREES IDENTIFIED FOR PRESERVATION

	15"	FRUIT
	14"	FRUIT (TWIN)
	14"	HICKORY
		JAPANESE MAPLE - 25' IN HEIGHT*
	19"	MAPLE
	21"	MAPLE
	24"	MAPLE
	28"	MAPLE
	30"	MAPLE
	30"	MAPLE
	31"	MAPLE
	42"	MAPLE
	16"	MAPLE (TWIN)
	12"	OAK
	14"	OAK
2 X	15"	OAK
2 X	16"	OAK
3 X	18"	OAK
3 X	21"	OAK
	22"	OAK
	25"	OAK
	26"	OAK
	27"	OAK
	32"	OAK
2 X	34"	OAK
2 X	12"	POPLAR
	15"	POPLAR
	17"	POPLAR
	35"	POPLAR
		SAUCER MAGNOLIA - 15' IN HEIGHT*
	20"	SYCAMORE
	24"	SYCAMORE

* THESE TREES TO BE PRESERVED WERE LOCATED IN THE FIELD BY A REPRESENTATIVE OF FAIRFAX COUNTY DPWES URBAN FORESTRY.

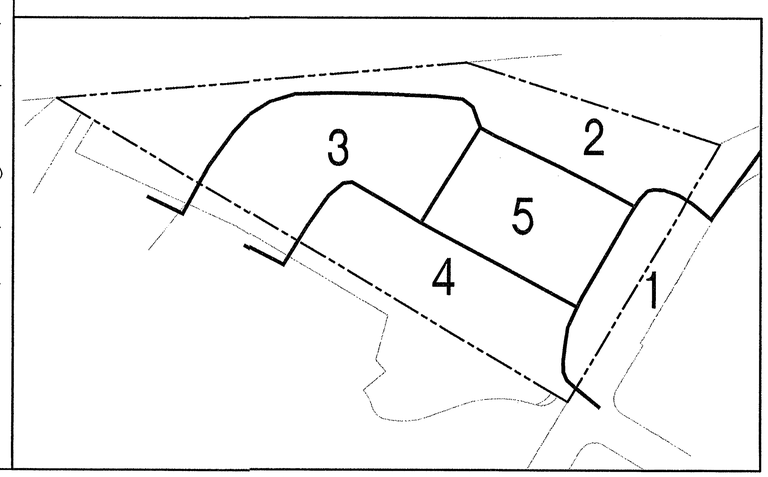
NOTE: SIZES ARE ESTIMATES. THIS LIST IS PRELIMINARY. TREES FOUND TO BE DISEASED OR OTHERWISE UNSUITABLE FOR PRESERVATION MAY REQUIRE REMOVAL AND WILL BE REPLACED AS SPECIFIED IN THE PROFFERS AND PER THE PFM.

PROPOSED TREE TRANSPLANT LIST

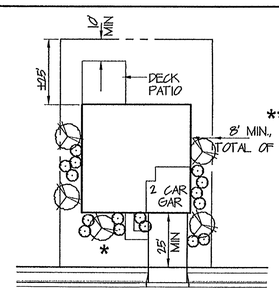
AREA	TREES
1	1 X 6" CAL.(TYP) SAWTOOTH OAK 2 X 5" COLORADO BLUE SPRUCE 3 X 5-8" NELLIE STEVENS HOLLIES 3 X 6-8" ATLANTIC WHITECEDAR (SEE NOTE 3 BELOW) 1 X LARGE CLUMP SAUCER MAGNOLIA 2 X 8" REDLEAF JAPANESE MAPLE (SEE NOTE 3 BELOW) 2 X 3-6" FLOWERING DOGWOOD
2	2 X <6" WHITE PINE (DO NOT ATTEMPT TRANSPLANTS AT >6") 1 X 8" ELM (SEE NOTE 3 BELOW)
3	1 X 8" MOCKERNUT HICKORY (SEE NOTE 3 BELOW) 1 X 5" PIGNUT HICKORY
4	1 X 6" TULIP POPLAR (MARGINAL TO MOVE (HEIGHT OF 40-50')) RESERVED FOR WITHIN RPA (SEE NOTE 3 BELOW) 1 X 8" SOUTHERN MAGNOLIA (MARGINAL TO MOVE (HEIGHT OF 35-40'/WIDTH OF 20')) (SEE NOTE 3 BELOW) 1 X 10" SHAGBARK HICKORY (MARGINAL TO MOVE (HEIGHT OF 40-45')) (SEE NOTE 3 BELOW)
5	NONE

NOTES:

1. TRANSPLANTING PLAN SUBJECT TO APPROVAL BY UFMD.
2. THE ABOVE IDENTIFIED TREES WILL BE CHOSEN, PLACED, AND TRANSPLANTED BASED ON CONDITION, SIZE, AND SUITABILITY FOR THE AREAS IDENTIFIED IN THE SHADED AREAS ABOVE BY A CERTIFIED ARBORIST/ARBORIST COMPANY.
3. THERE IS A MULTIPLE STEM REDLEAF JAPANESE MAPLE ALONG THE FRONTAGE OF HUNTER ROAD IN A 30' x 30' CLUMP.
4. IT IS FEASIBLE TO MOVE THESE TREES, BUT IT WILL REQUIRE A LARGE TREE SPADE AND SHOULD BE MOVED BY ONLY THOSE TREE COMPANIES WITH THE EXPERTISE TO DO SO TO ENSURE FUTURE VIABILITY.



TRANSPLANTED TREES ORIGINATION AREAS



TYPICAL HOUSE LANDSCAPING
(NTS)

*FOR LOTS 1 THROUGH 4 NO STRUCTURES ALLOWED WITHIN THE 200' SETBACK OF INTERSTATE 66.

** SIDE YARDS ARE REQUIRED TO BE A MINIMUM OF 8' WITH THE TOTAL OF BOTH SIDE YARDS BEING NO LESS THAN 24'.

LEGEND

- EXISTING TREELINE
- LARGE SHADE TREE (2-2½" CALIPER)
- SMALL EVERGREEN TREE (6-8' HEIGHT)
- ORNAMENTAL TREE (1"-1½" CALIPER)
- SHRUB
- TREE TO BE PRESERVED
- EXISTING CONTOUR
- PROPOSED CLEARING LIMITS
- R/W — RIGHT-OF-WAY
- EXISTING WATERLINE
- PROPOSED WATERLINE
- EXISTING STORM STRUCTURE
- PROPOSED STORM STRUCTURE
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- OVERHEAD UTILITY
- GAS LINE
- UNDERGROUND UTILITY
- EP — EDGE OF PAVEMENT
- ℄ — CENTERLINE OF RIGHT-OF-WAY
- PROP. FIRE HYDRANT

RZ/FDP
Application No. 2004-PR-008 Staff LAS
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED ~~4-25-05~~ / cords 3-23-05
Date of (BOS) (PC) approval 4-25-05
Sheet 4 of 7

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No. 000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

COMMONWEALTH OF VIRGINIA
JOHN F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

3/11/05	RESUBMIT TO CO.
3/22/05	ADDRESSED COMMENTS

Bowman CONSULTING

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ILLUSTRATIVE LANDSCAPE PLAN
FAIRFIELD MANOR

FAIRFAX COUNTY, VIRGINIA

PROVIDENCE DISTRICT

RZ/FDP 2004-PR-008
COUNTY PROJECT NUMBER

PLAN STATUS	
2/9/04	ISSUED TO CLIENT
3/11/04	RESUBMIT TO CO.
6/23/04	COUNTY COMMENTS
9/16/04	COUNTY COMMENTS
10/11/04	COUNTY COMMENTS
11/1/04	COUNTY COMMENTS
1/7/05	RESUBMIT TO CO.
1/24/05	RESUBMIT TO CO.
2/25/05	RESUBMIT TO CO.
3/8/05	RESUBMIT TO CO.
DATE	DESCRIPTION

SG	RM	MGB
DESIGN	DRAWN	CHKD
SCALE	H: AS SHOWN V: CI=2'	
JOB No.	2817-01-001	
DATE:	FEB, 2004	
FILE No.	2817-D-ZP-01	
SHEET	4 OF 7	

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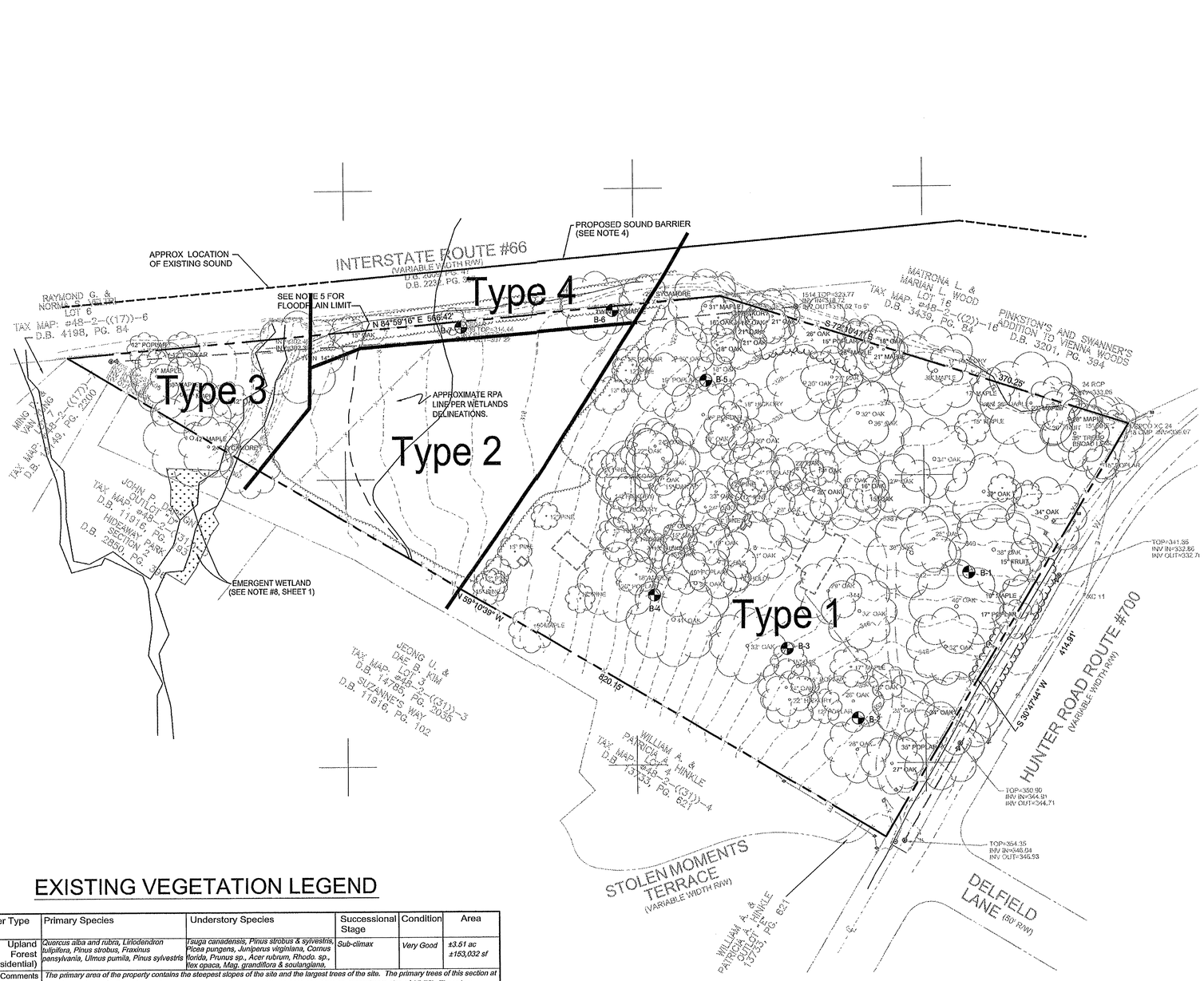

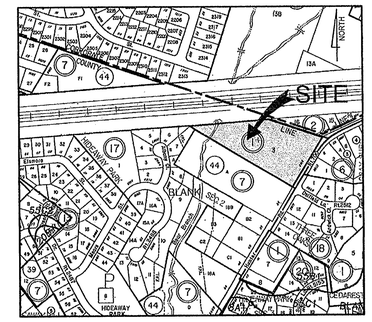

SOILS

1"=500'

The following soil conditions were found pursuant to a geotechnical report completed by GeoConcepts Engineering, Inc., dated December 4, 2003

Boring Number	Material Description
1	Topsoil for the first 2 inches then Sandy Silt (ML), micaceous, moist, orange-brown to a depth of 2.5 feet then Silty Sand (SM), with rock fragments, micaceous, moist, light brown to bottom boring depth of 25.0 feet
2	Topsoil for the first 2 inches then Sandy Silt (ML), micaceous, moist, orange-brown to a depth of 2.5 feet then Silty Sand (SM), micaceous, moist, light brown then Sandy Silt (ML), micaceous, moist, brown to bottom boring depth of 25.0 feet, with rock fragments below 13.5 feet
3	Topsoil for the first 2 inches then Sandy Silt (ML), micaceous, moist, orange-brown, changing to light brown below 5 feet down to the bottom of boring depth of 20 feet
4	Topsoil for the first 2 inches then Sandy Silt (ML), micaceous, moist, brown until depth of 2.5 feet when orange-brown until depth of 8.5 feet then light brown until bottom boring depth of 16.0 feet
5	Topsoil for first 2 inches then Elastic Silt (MH), with sand, moist, brown to a depth of 2.5 feet then Sandy Silt (ML), micaceous, moist, orange-brown to a depth of 5 feet then with rock fragments until 13.5 feet when color went from black to orange-brown until bottom depth of 15.0 feet
6	Topsoil for first 3 inches then Sandy Silt (Probable Fill), moist, brown until a depth of 2.5 feet then Sandy Silt (ML), micaceous, moist, light brown to a depth of 5 feet then Silty Sand (SM), micaceous, moist, gray-brown to a depth of 8.5 feet then Sandy Silt (ML), micaceous, moist, brown to the bottom boring depth of 10 feet
7	Topsoil for the first 3 inches then Elastic Silt (MH), moist, orange-brown to a depth of 1.5 feet then Silty Sand (SM), micaceous, moist, orange-brown with rock fragments below 2.5 feet and brown below 5 feet to the bottom of the boring depth at 10.0 feet.

EXISTING VEGETATION LEGEND

Cover Type	Primary Species	Understory Species	Successional Stage	Condition	Area
1 Upland Forest (+ Residential)	*Quercus alba and rubra, Liriodendron tulipifera, Pinus strobus, Fraxinus pensylvania, Ulmus pumila, Pinus sylvestris*	*Tsuga canadensis, Pinus strobus & sylvestris, Picea pungens, Juniperus virginiana, Cornus florida, Prunus sp., Acer rubrum, Rhodo. sp., Ilex opaca, Mag. grandiflora & soulangiana,*	*Sub-climax*	*Very Good*	*±3.51 ac ±153,032 sf*
Comments	*The primary area of the property contains the steepest slopes of the site and the largest trees of the site. The primary trees of this section at an advanced age are the oaks and tulip poplars. As a group, they average 24"+ and have an approximate size of 65-75'. The ashes, pines, and spruce are the middle species (and seem more residential in size) at 10-18" caliper and 45-55' in height. The remaining mentioned understory species average 4-10" in caliper and 15-30' in height. There are many mature rhododendron and azalea throughout the site to fill in immediately around the existing house and out-buildings. The slope averages 8-10% with some areas greater and less.*				
2 Maintained Grasslands	*Grassed area devoid of natural vegetation.*	*Grassed area devoid of natural vegetation.*	*N/A*	*N/A*	*±0.93 ac ±40,420 sf*
Comments	*Topography is relatively flat at 2-4%. There is no vegetative cover.*				
3 Old Field	*Liquidambar styraciflua, Acer rubrum, Quercus alba and palustris, Liriodendron tulipifera, Platanus occidentalis, Prunus sp.*	*Liquidambar styraciflua, Prunus sp., Liriodendron tulipifera, Acer rubrum, and Juniperus virginiana*	*Sub-climax*	*Good*	*±0.29 ac ±12,580 sf*
Comments	*This section constitutes the lowland area of the site. Bear Creek actually separates a remote corner of the site and is directed through an 8' concrete culvert under Interstate 66. The slope, like the grasslands area, is 2-4%. The primary species are in a native state, and the understory is overgrown with different 'bramble' species. Despite the overgrown understory, the primary and understory trees are in good condition for a native stand. The average DBH/ height is 10-15"/ 40-50'.*				
4 Early successional old field buffer area	*Acer rubrum, Juniperus virginiana, Betula populifolia & alleghaniensis,*	*Acer rubrum and Juniperus virginiana*	*Sub-climax*	*Fair*	*±0.11 ac ±4,800 sf*
Comments	*Topography is relatively flat at 2-4%. Vegetative cover is primarily immature with early successional growth evidently from the construction of Interstate 66.*				
				TOTAL =	*±4.84004 ac ±210,832 sf*

LEGEND

- 40 — EXISTING CONTOUR
- EXISTING VEGETATION
- TYPE 4 — EX. TREE COVER TYPE
- APPROXIMATE BORING LOCATION

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50ft.

RZ/FDP
Application No. 2004-PR-008 Staff LAS
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(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 4-25-05 / conds 3-23-05
Date of BOS (PC) approval 4-25-05
Sheet 5 of 7

COMMONWEALTH OF VIRGINIA
SIRI F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

3/11/05	RESUBMIT TO CO.
3/22/05	ADDRESSED COMMENTS

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EXISTING VEGETATION / CONDITIONS PLAN
FAIRFIELD MANOR

PROVIDENCE DISTRICT

FAIRFAX COUNTY, VIRGINIA

RZ/FDP 2004-PR-008
COUNTY PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No. 000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

PLAN STATUS	
2/9/04	ISSUED TO CLIENT
3/11/04	RESUBMIT TO CO.
6/23/04	COUNTY COMMENTS
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11/1/04	COUNTY COMMENTS
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2/25/05	RESUBMIT TO CO.
3/8/05	RESUBMIT TO CO.
DATE	DESCRIPTION

SG	RM	MGB
DESIGN	DRAWN	CHKD

SCALE H: 1"=50' V: CI=2'

JOB No. 2817-01-001

DATE : FEB, 2004

FILE No. 2817-D-ZP-01

SHEET 5 OF 7

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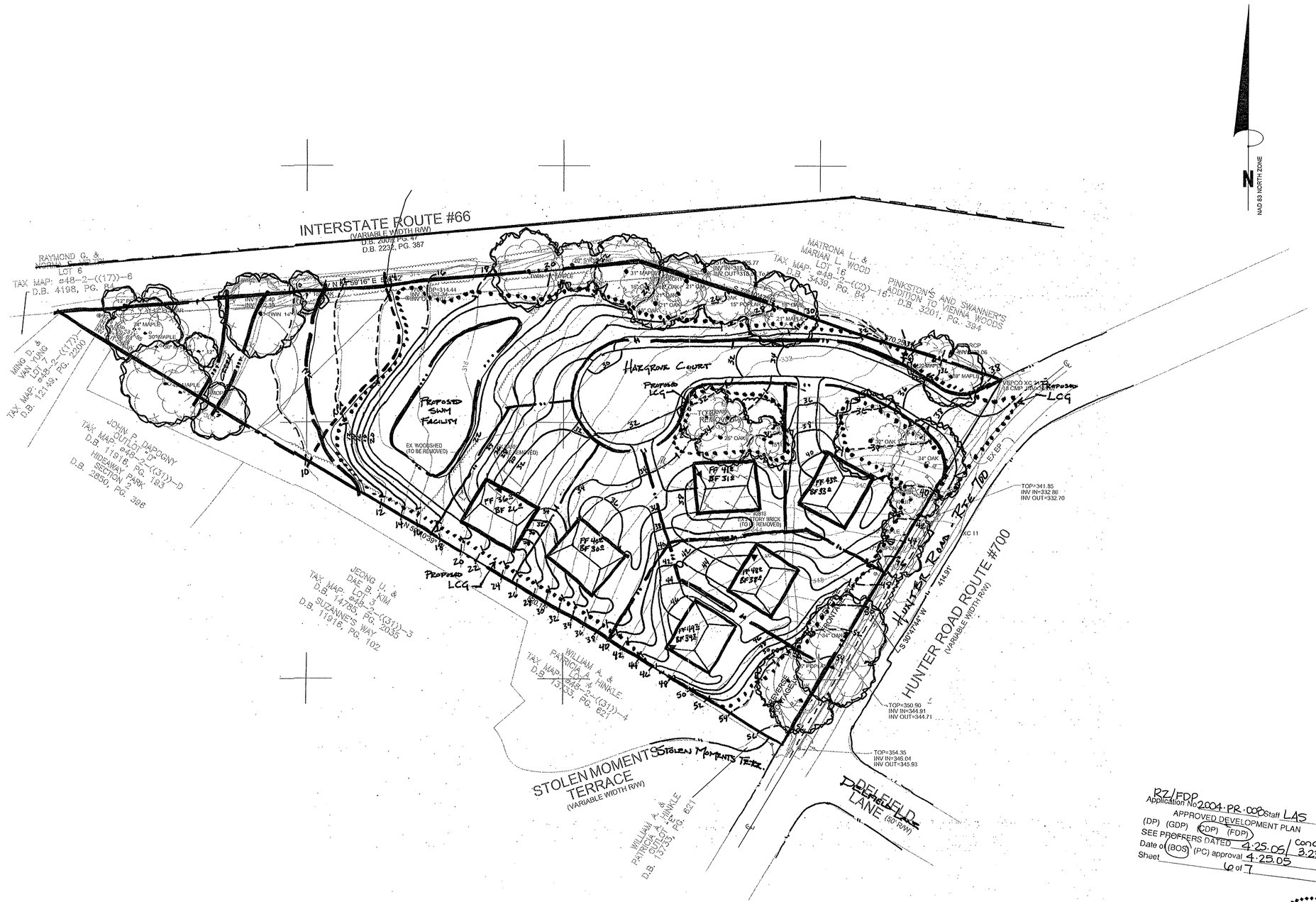

NOTES

THIS PRELIMINARY GRADING PLAN IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS SUBJECT TO CHANGE DURING FINAL ENGINEERING.

RZ/FDP
Application No. 2004-PR-008 Staff LAS
APPROVED DEVELOPMENT PLAN
(DP) (GDP) (CDP) (FDP)
SEE PROFFERS DATED 4.25.05 / Conds 3.23.05
Date of (BOS) (PC) approval 4.25.05
Sheet 6 of 7

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No. 000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

COMMONWEALTH OF VIRGINIA
GIRI F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

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3/22/05	ADDRESSED COMMENTS

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PRELIMINARY GRADING PLAN
FAIRFIELD MANOR
FAIRFAX COUNTY, VIRGINIA
PROVIDENCE DISTRICT

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FILE No. 2817-D-ZP-01
SHEET 6 OF 7

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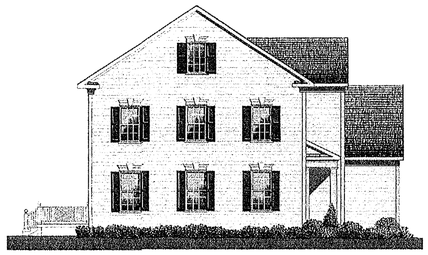
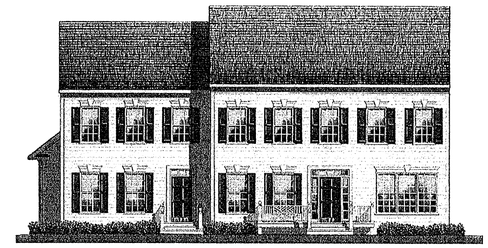


LEFT ELEVATION

RIGHT ELEVATION



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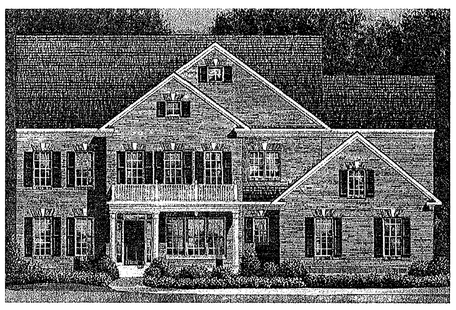

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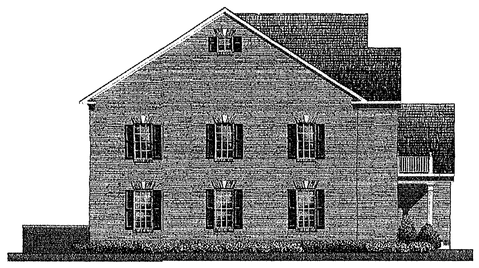
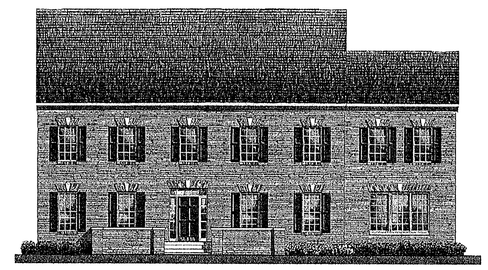


LEFT ELEVATION

RIGHT ELEVATION



REAR ELEVATION

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SEE PROFFERS DATED 4-25-05/3-22-05 conds
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Sheet 7 of 7

COMMONWEALTH OF VIRGINIA
JIRI F. KOVATS
No. 19406
3-22-05
PROFESSIONAL ENGINEER

NOTES

PROPOSED HOUSE ELEVATIONS ARE TYPICAL OF THE QUALITY AND TYPE OF THE PROPOSED FUTURE CONSTRUCTION; HOWEVER, THE FACADES, MATERIALS AND OTHER ARCHITECTURAL DETAILS REPRESENTED ON THIS SHEET ARE SUBJECT TO MODIFICATIONS WITH FINAL DESIGN OF THE PROJECT. REGARDLESS, FACADES, MATERIALS AND OTHER ARCHITECTURAL DETAILS WILL BE IN SUBSTANTIAL CONFORMANCE WITH PROFFER COMMITMENTS, AND WILL BE CONSISTENT WITH THE QUALITY AND GENERAL TYPE OF STRUCTURE AS DEPICTED ON THIS SHEET.

3/11/05	RESUBMIT TO CO.
3/22/05	ADDRESSED COMMENTS

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ELEVATIONS & ARCHITECTURALS
FAIRFIELD MANOR
FAIRFAX COUNTY, VIRGINIA
PROVIDENCE DISTRICT

RZ/FDP 2004-PR-008
COUNTY PROJECT NUMBER

COMMONWEALTH OF VIRGINIA
MARK W. BAKER
No.000506
3/22/05
CERTIFIED LANDSCAPE ARCHITECT

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SCALE H: N/A V:

JOB No. 2817-01-001

DATE : FEB, 2004

FILE No. 2817-D-ZP-01

SHEET 7 OF 7

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