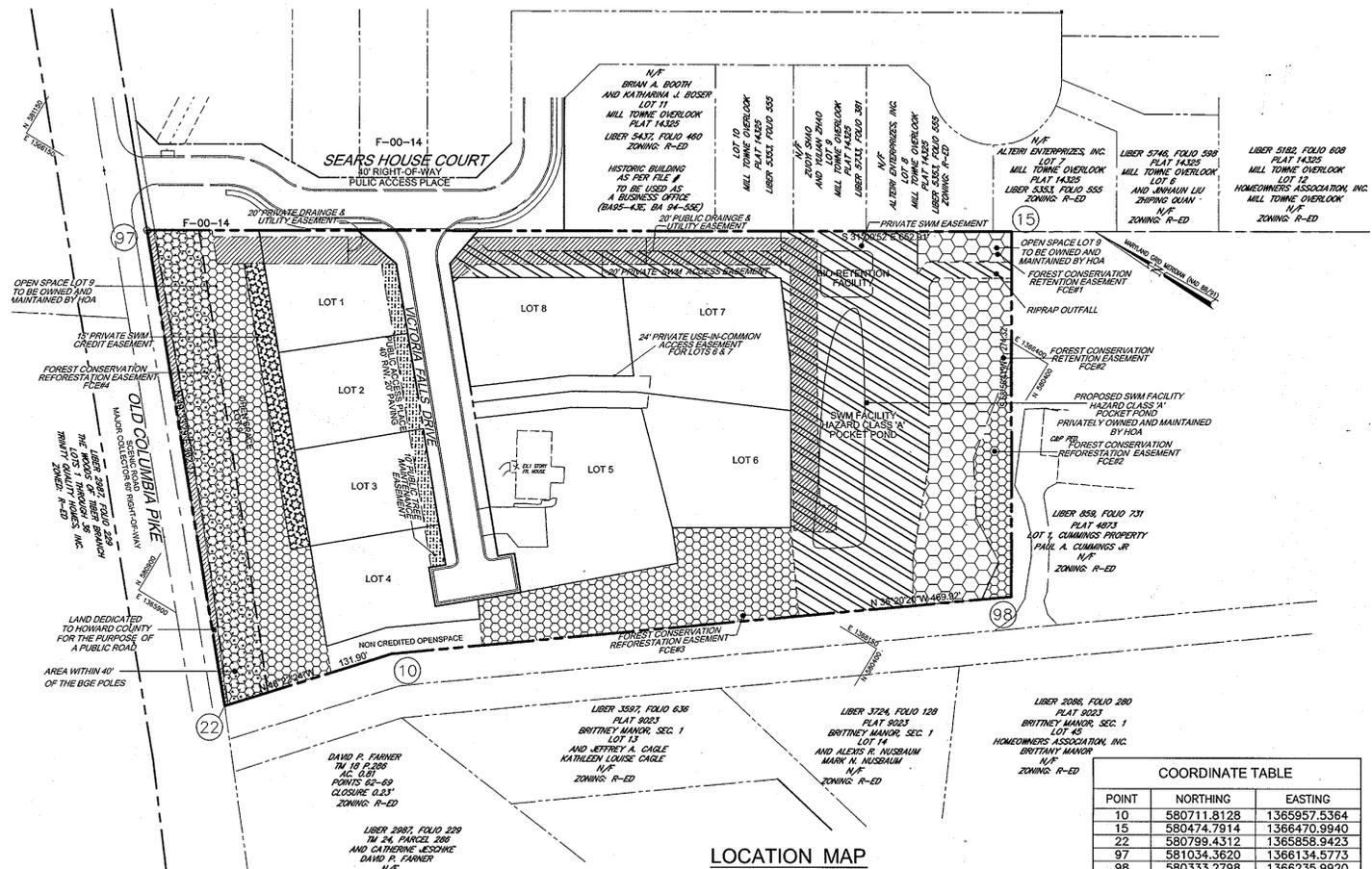


SITE DATA

LOCATION: TAX MAP 24, GRID 18, PARCEL '289'
 2ND ELECTION DISTRICT
 EXISTING ZONING: R-ED
 DPZ REFERENCE: SP-04-02, PB-367, W&S CONT.14-4329-D
 GROSS AREA OF PROJECT: 191,626 SF. (4.39 AC.)
 AREA OF 100-YEAR FLOODPLAIN: 0 AC.
 AREA OF 25% OR GREATER STEEP SLOPES: 0 AC.
 NET AREA OF PROJECT: 191,626 SF. (4.39 AC.)
 AREA OF PROPOSED BUILDABLE LOTS: 80,830 (1.855 AC.)
 AREA OF OPEN SPACE REQUIRED: 50% OF GROSS AREA OF PARCEL (2.19 AC.)
 AREA OF CREDITED OPEN SPACE PROVIDED: 95,759 (2.198 AC.)
 AREA OF NON-CREDITED OPEN SPACE PROVIDED: 2,348 SF (0.054 AC.)
 AREA ON RECREATIONAL OPEN SPACE: N/A
 AREA OF PROPOSED RIGHT-OF-WAY: 12,587 SF (0.28 AC.)
 NUMBER OF BUILDABLE LOTS ALLOWED: 8 LOTS (2 PER NET ACRE)
 NUMBER OF BUILDABLE LOTS PROPOSED: 8 LOTS
 NUMBER OF OPEN SPACE LOTS: 1 LOT
 TOTAL APPROXIMATE LIMIT OF DISTURBANCE: 162,767 SF (3.74 AC.)

GENERAL NOTES

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS.
- DEED REFERENCE: 257/95
- THE PROJECT BOUNDARY IS BASED ON A SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES, DATED DECEMBER 2002.
- THE TOPOGRAPHY SHOWN HEREON IS BASED FIELD RUN TOPOGRAPHIC SURVEY BY FREDERICK WARD ASSOCIATES, DATED DECEMBER 2002.
- COORDINATE DATUM IS BASED ON THE MARYLAND COORDINATE SYSTEM (NAD '83) AS PROJECTED BY THE FOLLOWING HO. CO. GEODETIC CONTROLS STATIONS: 24FB, 24IB.
- WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC WATER & SEWER, CONT.#24-4329-D. WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.122 B OF THE HO. CO. CODE.
- THE LIMITS OF PUBLIC STORM DRAIN OWNERSHIP AND MAINTENANCE ENDS AT PUBLIC RIGHT-OF-WAY.
- STORM WATER MANAGEMENT FOR THIS SUBDIVISION IS PROVIDED BY A DRY EXTENDED DETENTION POND FACILITY TO PROVIDE 60 AND 10-YEAR MANAGEMENT AND THE FACILITY IS HAZARDOUS CLASS 'A'. THE FACILITY IS LOCATED ON OPEN SPACE LOT 9 AND MAINTAINED BY THE HOA. MAINTENANCE IS PROVIDED BY GRASS CHANNEL AND BIO RETENTION FACILITY. Rev IS PROVIDED BY GRASS CHANNEL CREDIT.
- NO STEEP SLOPES ARE LOCATED ON SITE.
- THE SUBJECT PROPERTY IS ZONED R-ED PER THE 2/02/04 COMPREHENSIVE ZONING PLAN.
- FOREST STAND DELINEATION PLAN PREPARED BY FREDERICK WARD ASSOCIATES, DATED FEBRUARY, 2003. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. TOTAL FOREST CONSERVATION OBLIGATION IS 1.21 ACRES. AREA OF RETENTION EASEMENTS WILL BE 0.29 ACRES (12,580.88 SF X 0.20) = \$2,512.14.
 ON-SITE REFORESTATION WILL BE 0.89 ACRES (38,708.72 SF X 0.50) \$19,354.36.
 BOND FOR THE 1.18 ACRES HAS BEEN PAID IN THE AMOUNT OF \$ 21,866.50.
 COST OF FEE-IN-LIEU FOR THE REMAINING 0.03 AC. WILL BE \$653.40 (1,306.80 SF X 0.50).
- APFO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP, DATED APRIL 1, 2003.
- THERE ARE NO WETLANDS, STREAMS OR BUFFERS ON SITE BASED ON A FIELD INVESTIGATION PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN MAY 2003.
- ALL LANDSCAPING IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN INCLUDED W/ THE ROAD CONSTRUCTION PLAN SET IN ACCORDANCE W/SECTION 16.124 OF HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED TOTAL 36 SHADE TREES AND 28 EVERGREEN TREES HAS BEEN PAID AS A PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 14,000.00. FINANCIAL SURETY FOR THE REQUIRED TOTAL 14 STREET TREES HAS BEEN PAID AS A PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 4,200.00.
- STREET LIGHTING IS PROVIDED FOR THIS SITE IN ACCORDANCE WITH SECTION 16.135 OF THE SUBDIVISION LAND DEVELOPMENT REGULATIONS. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN STREET LIGHTS AND TREES.
- OPEN SPACE LOTS 9 SHOWN HEREON IS HEREBY DEDICATED TO A HOME OWNERS ASSOCIATION FOR THE BENEFIT OF THE SUBDIVISION AND RECORDING REFERENCE OF THE ARTICLES OF INCORPORATION AND RESTRICTIONS ARE SHOWN HEREON TO BE PRIVATELY OWNED AND MAINTAINED BY THE JUNEAU HILL OWNERS ASSOCIATION.
- SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- THIS PROPERTY IS WITHIN THE METROPOLITAN WATER AND SEWER DISTRICT.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- EXISTING HOUSE ON LOT 5 IS TO REMAIN AND SHALL BE CONNECTED TO PUBLIC SEWER AND PUBLIC WATER. NO ADDITIONS OR EXPANSIONS ARE ALLOWED UNLESS IN COMPLIANCE WITH THE APPLICABLE ZONING REGULATIONS.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
- NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS.
- LOTS 6 AND 7 WILL UTILIZE A USE-IN-COMMON DRIVEWAY. HOWARD COUNTY STANDARD DETAIL NO. R-6.03 WILL BE UTILIZED FOR THE ENTRANCE AT THE INTERSECTION OF THE PUBLIC ROAD.
- TREE PROTECTION FENCING WILL BE PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS ADJACENT TO FOREST CONSERVATION RETENTION AREAS.
- THIS SUBDIVISION IS SUBJECT TO THE REQUIREMENTS OF THE FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS AMENDED BY COUNCIL BILL 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003 AND BASED ON THE 02-02-2004 COMPREHENSIVE ZONING PLAN.
- FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE TO BE PROVIDED AT THE JUNCTION OF FLAG OR PIPE STEM AND THE ROAD R/W AND NOT ON THE FLAG OR PIPE STEM DRIVEWAY.
- PARKING IS PROHIBITED ON THE 60' X 25' TEE TURNAROUND.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 A. WIDTH - 12 (14' FOR SERVING MORE THAN ONE RESIDENCE).
 B. SURFACE - OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATINGS (1-1/2" MIN).
 C. GEOMETRY - MAX 15% GRADE CHANGE, AND MIN 45' TURNING RADIUS.
 D. STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 E. DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT OF DEPTH OVER DRIVEWAY SURFACE.
 F. MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.



LOCATION MAP
SCALE: 1"=60'

COORDINATE TABLE

POINT	NORTHING	EASTING
10	580711.8128	1365957.5364
15	580474.7914	1366470.9940
22	580799.4312	1365858.8423
97	581034.3620	1366134.5773
98	580333.2798	1366235.9920

STORMWATER MANAGEMENT REQUIREMENTS

AREA DA 'B' 3.03 AC.	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQV)	0.0707 AC. FT.	0.96 AC.	0.0483 AC. FT.	BIO RETENTION + GRASS CHANNEL CREDIT
2	RECHARGE VOLUME (REV)	PERCENT AREA 0.16 AC.	PERCENT AREA 0.16 AC.	0	GRASS CHANNEL CREDIT
3	CHANNEL PROTECTION VOLUME (CPV)	0.11 AC. FT.	---	0.11 AC. FT.	POCKET POND
4	OVERBANKFLOOD PROTECTION (O _{BP})	0.19 AC. FT.	---	0.19 AC. FT.	TOTAL STORAGE AT 10 YR STORM
5	EXTREME FLOOD VOLUME (E _{100P})	NA	---	---	---

STORMWATER MANAGEMENT REQUIREMENTS

AREA DA 'A' 0.36 AC.	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQV)	0.0118 AC. FT.	0.0118 AC.	0	LANDSCAPE BERM UNDEVELOPED
2	RECHARGE VOLUME (REV)	0.0025 AC. FT.	0.0025 AC. FT.	0	LANDSCAPE BERM UNDEVELOPED
3	CHANNEL PROTECTION VOLUME (CPV)	N/A	---	---	01=0.17 CFS
4	OVERBANKFLOOD PROTECTION	N/A	---	---	---
5	EXTREME FLOOD VOLUME	N/A	---	---	---

STORMWATER MANAGEMENT REQUIREMENTS

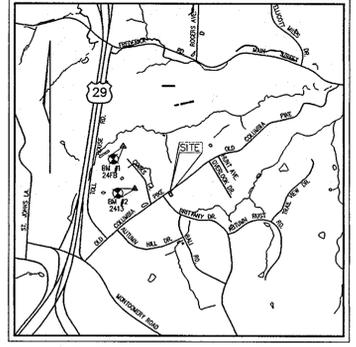
AREA DA 'C' 1.03 AC.	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQV)	0.0336 AC. FT.	0.0336 AC.	0	NATURAL CONSERVATION AREA UNDEVELOPED
2	RECHARGE VOLUME (REV)	0.0077 AC. FT.	0.0077 AC. FT.	0	NATURAL CONSERVATION AREA UNDEVELOPED
3	CHANNEL PROTECTION VOLUME (CPV)	N/A	---	---	01=0.30 CFS
4	OVERBANKFLOOD PROTECTION (O _{BP})	N/A	---	---	---
5	EXTREME FLOOD VOLUME (E _{100P})	N/A	---	---	---

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 ROBERT H. VOGEL, PE #16193

OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

BENCHMARK
 HOWARD COUNTY CONTROL STATION 24FB
 NORTH 592,652.103'
 EAST 1,364,255.930'
 ELEVATION 423.282' (NAVD 1988)

HOWARD COUNTY CONTROL STATION 2413
 NORTH 580,648.904'
 EAST 1,364,974.471'
 ELEVATION 404.481' (NAVD 1988)



VICINITY MAP
SCALE 1"=2000'

SHEET INDEX

SHEET NO.	TITLE
1 OF 10	COVER SHEET
2 OF 10	ROAD CONSTRUCTION PLAN & PROFILE
3 OF 10	GRADING AND SEDIMENT & EROSION CONTROL PLAN
4 OF 10	GRADING AND SEDIMENT & EROSION CONTROL DETAILS
5 OF 10	STORM DRAIN DRAINAGE AREA MAP
6 OF 10	STORM DRAIN PROFILES
7 OF 10	STORMWATER MANAGEMENT DETAILS-POND #1
8 OF 10	STORMWATER MANAGEMENT DETAILS
9 OF 10	LANDSCAPE PLAN & DETAILS
10 OF 10	FOREST CONSERVATION PLAN & DETAILS

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE	NET LOT SIZE
6	11,149 SF	1522 SF	6,000 SF	9626 SF
7	12,541 SF	1484 SF	6,000 SF	11057 SF

- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENT LOCATED IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLE WITHHOLD PERMISSION.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED FOR THIS PROJECT SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE)- 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

ROAD, STORM DRAIN & STORMWATER MANAGEMENT AS-BUILT

NO.	REVISION	DATE
1		12-17-06

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
 LOTS 1-8 AND OPENSACE LOTS 9
COVER SHEET

TAX MAP #24 GRID 18 PARCEL 289
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RJR/HV
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 06-26-2006
 SCALE: AS SHOWN
 W.O. NO.: 2034013.00

1 SHEET OF 10

STREET LIGHT LOCATION CHART				
DWG. NO.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
2 OF 10	VICTORIA FALLS DRIVE	0+22	32' RT.	100 WATT HPS VAPOR PREMIERS POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
2 OF 10	VICTORIA FALLS DRIVE	2+63	13' RT.	

PUBLIC ROAD STREET TREE SCHEDULE				
KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
⊙	12	TILIA CORDATA LITTLELEAF LINDEN	2 1/2"-3" CAL.	B & B
⊙	2	AMUR MAPLE ACER GINNALA (GROWTH HEIGHT=20')	2 1/2"-3" CAL.	B & B

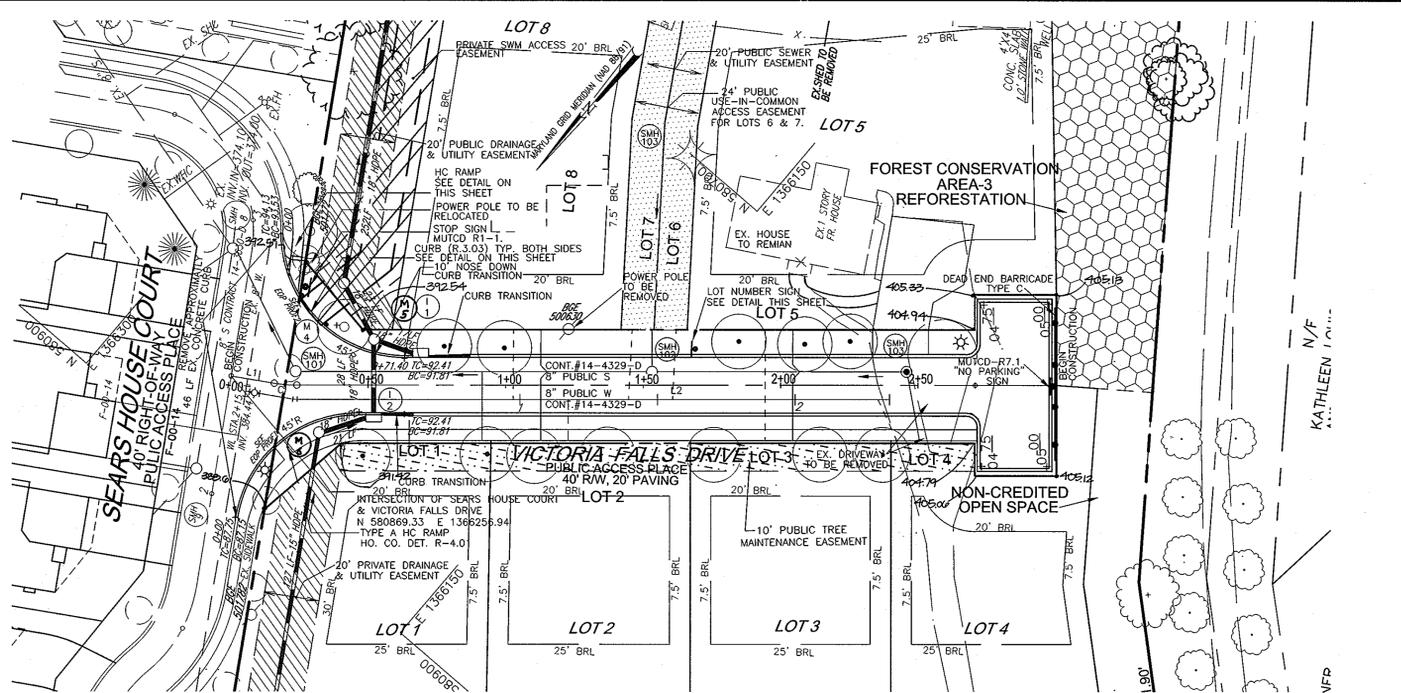
NOTE: A MINIMUM OF 20' IS REQUIRED BETWEEN ANY STREET LIGHT AND ANY TREE

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET NO. REQUIRED	NO. PROVIDED	
VICTORIA FALLS DRIVE	566/40	14	14

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AND SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LCMW PLANTING SPECIFICATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

DEVELOPER'S AGREEMENT
FINANCIAL SURETY FOR THE REQUIRED LANDSCAPE TREES ON VICTORIA FALLS DRIVE- PUBLIC ACCESS PLACE, TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT \$7800.00 FOR 14 SHADE TREES.

SIGNAGE LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
VICTORIA FALLS DRIVE	0+27	35' LT.	STOP SIGN MUTCD R1-1
VICTORIA FALLS DRIVE	1+70	29' LT.	LOT NUMBER SIGN SEE THIS SHEET FOR DETAIL
VICTORIA FALLS DRIVE	AS SHOWN		NO PARKING MUTCD-R7.1



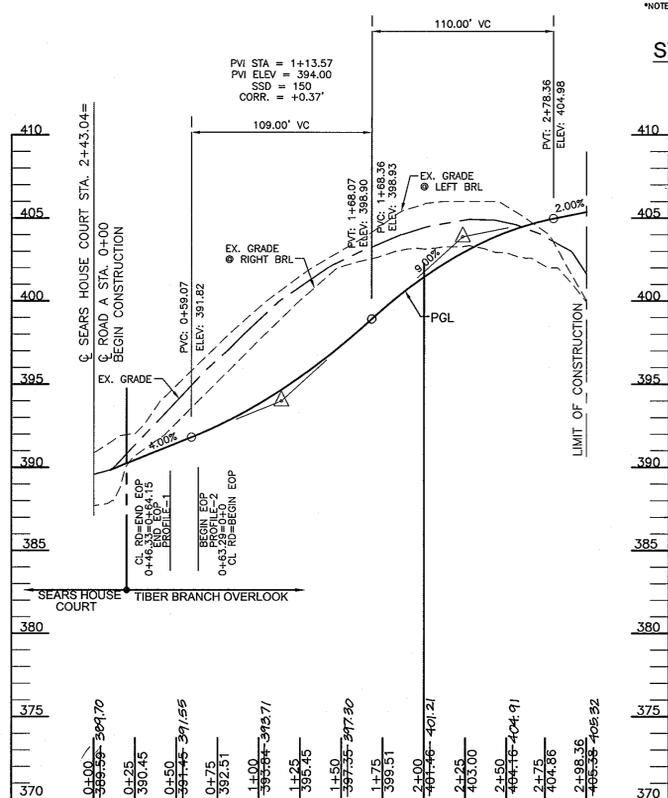
ROAD PLAN VICTORIA FALLS DRIVE
PUBLIC ACCESS PLACE
DESIGN SPEED : 15 MPH
SCALE: 1"=30'

NOTE: FOR STORM DRAIN SIZE, TYPE AND LENGTH AND STORM DRAIN PROFILES SHEETS SEE GRADING AND SEDIMENT CONTROL PLANS

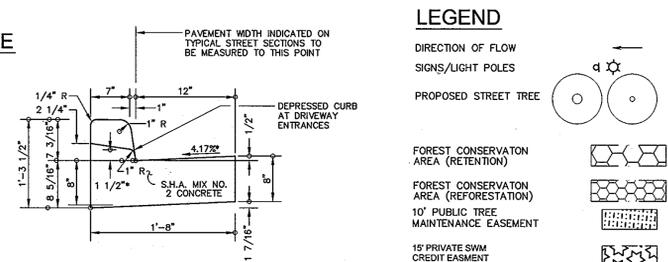
LINE	LENGTH	BEARING
L1	15.88	S58°59'08"W
L2	276.20	S49°33'29"W

CURVE	LENGTH	RADIUS	DELTA ANGLE	CHORD DIRECTION	TANGENT	CHORD LENGTH
C1	8.23	50.00	92°55'38"	S54°16'19"W	4.12	8.22

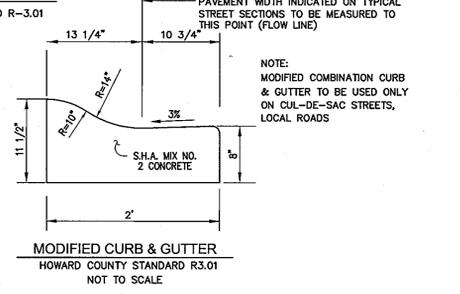
PVI STA = 2+23.36
PVI ELEV = 403.88
SSD = 150
CORR. = -0.51'



ROAD PROFILE VICTORIA FALLS DRIVE
PUBLIC ACCESS PLACE
DESIGN SPEED : 15 MPH
SCALE: 1"=5' VERT., 1"=50' HORIZ.



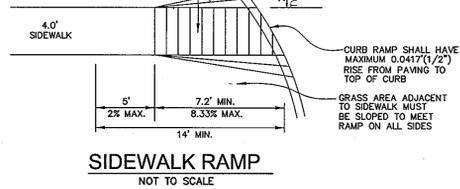
STANDARD COMBINATION CURB AND GUTTER
HOWARD COUNTY STANDARD R-3.01
NOT TO SCALE



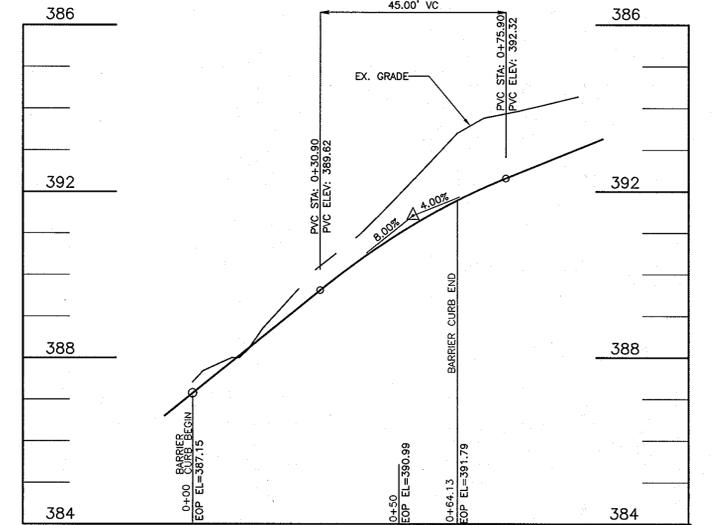
MODIFIED CURB & GUTTER
HOWARD COUNTY STANDARD R3.01
NOT TO SCALE



TYPICAL ROADWAY SECTION
CLASSIFICATION : PUBLIC ACCESS PLACE
DESIGN SPEED 15 MPH
VICTORIA FALLS DRIVE
NOT TO SCALE

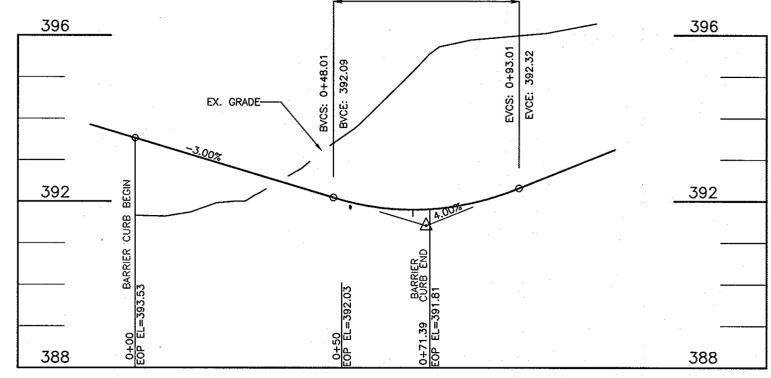


SIDEWALK RAMP
NOT TO SCALE

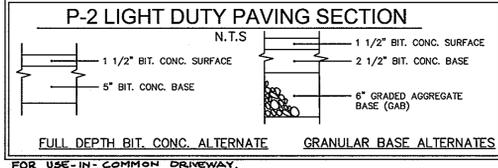


EDGE OF PAVING PROFILE#1
SCALE: 1"=20' HORIZ., 1"=2' VERT.

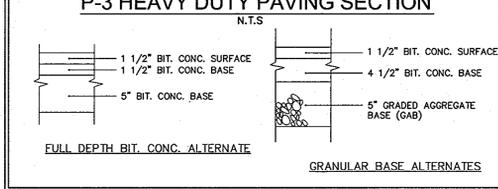
LOW POINT ELEV = 391.80
LOW POINT STA = 0+67.30
PVI STA = 0+70.51
PVI ELEV = 391.42
A.D. = 7.00
K = 6.43
45.00' VC



EDGE OF PAVING PROFILE#2
SCALE: 1"=20' HORIZ., 1"=2' VERT.



P-2 LIGHT DUTY PAVING SECTION
FOR USE IN COMMON DRIVEWAY.



P-3 HEAVY DUTY PAVING SECTION
FOR VICTORIA FALLS DRIVE.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
ROBERT H. VOGEL, PE No. 16193

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Anderson 7-17-06
Chief, Bureau of Highways
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hunter 9/19/06
Chief, Division of Land Development
Robert H. Vogel 9/19/06
Chief, Development Engineering Division

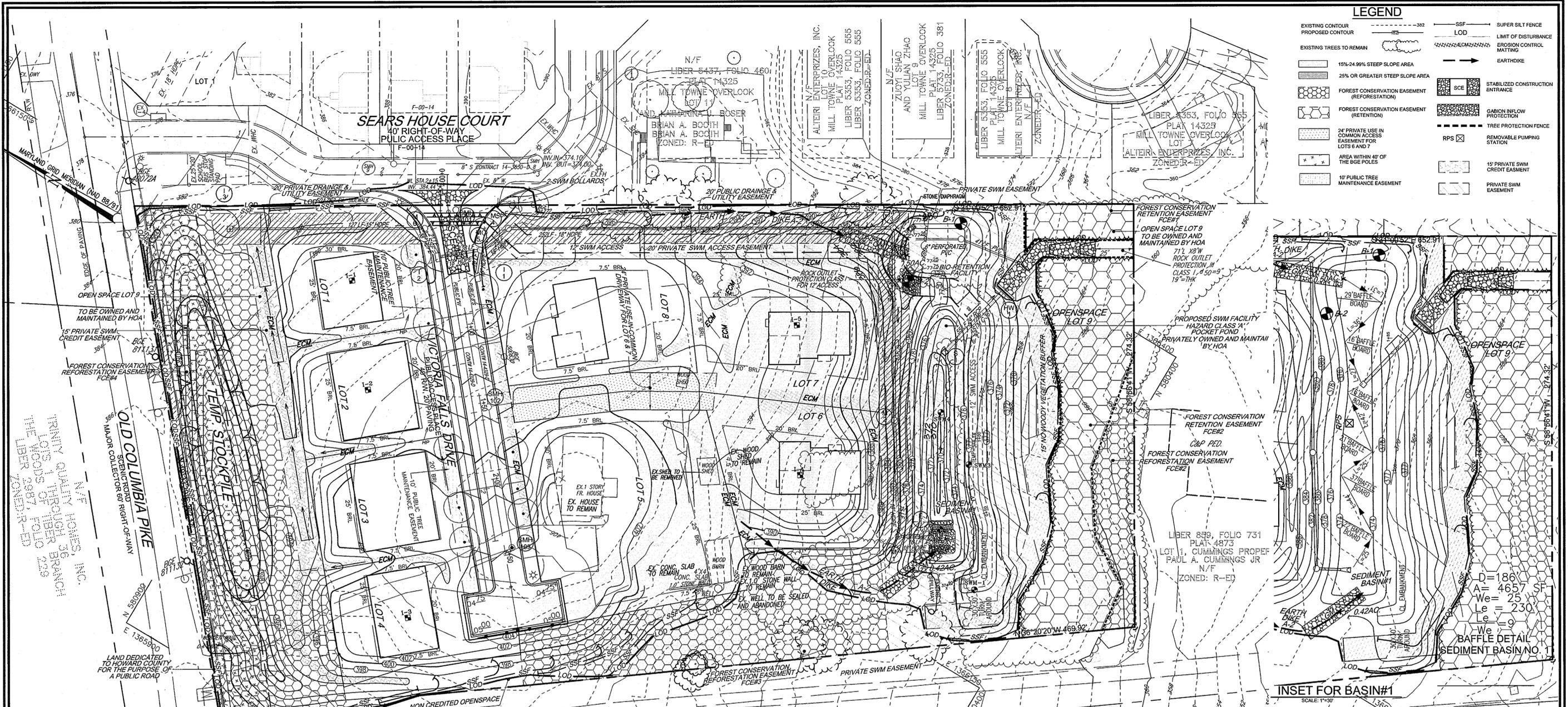
ROAD STORM DRAIN AND STORM WATER MANAGEMENT AS-BUILT		
NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
LOTS 1-8 AND OPENSACE LOTS 9
ROAD PROFILE

TAX MAP #24 GRID 18 PARCEL 289
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

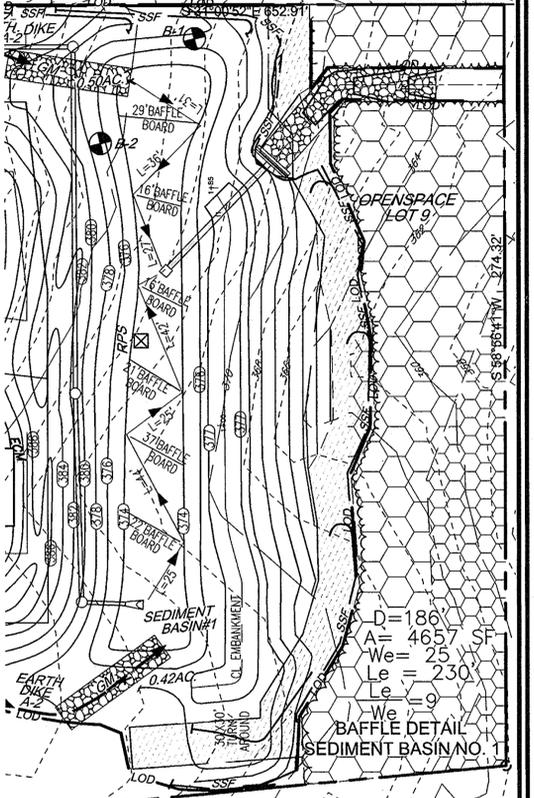
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RJR/HV
DRAWN BY: RJ
CHECKED BY: RHM
DATE: 06-28-2006
SCALE: AS SHOWN
W.O. NO.: 2034013.00
2 SHEET OF 10



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREES TO REMAIN
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- FOREST CONSERVATION EASEMENT (REFORESTATION)
- FOREST CONSERVATION EASEMENT (RETENTION)
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 6 AND 7
- AREA WITHIN 40' OF THE BGE POLES
- 10' PUBLIC TREE MAINTENANCE EASEMENT
- SSF
- LOD
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- EROSION CONTROL MATTING
- EARTHDIKE
- SCE
- GABION INFLOW PROTECTION
- TREE PROTECTION FENCE
- REMOVABLE PUMPING STATION
- 15' PRIVATE SWM CREDIT EASEMENT
- PRIVATE SWM EASEMENT



D=186'
A=4657 SF
We=25
Le=230'
We=9
BAFFLE DETAIL
SEDIMENT BASIN NO. 1

INSET FOR BASIN#1
SCALE: 1"=30'

BASIN NO.1
TRAP TYPE:
EX. DRAINAGE AREA: 2.38 AC.
PROP. DRAINAGE AREA: 3.03 AC.
TOTAL STORAGE REQUIRED: 10908 Cf
TOTAL STORAGE PROVIDED: 10908 Cf
BOTTOM ELEV: 370.40
CREST ELEVATION: 375.20*
TEMPORARILY BLOCKED

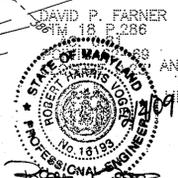
WET STORAGE ELEVATION: 370.40-373.60
DRY STORAGE ELEVATION: 373.60-375.20
TOTAL STORAGE DEPTH: 4.8'
TOP OF EMBANKMENT: 377.00
CLEANOUT ELEVATION: 372.00
SIDE SLOPES: 3:1
EMERGENCY SPILLWAY: N/A
Q1 (EX.): 1.58 CFS
Q1 (TSWM): 1.31 CFS

PLAN
SCALE: 1"=30'

ALL EARTH DIKES ARE TO BE PLACED IN WORKING ORDER AT THE END OF EACH WORKING DAY.
IMBRICATE SF/SSF IN 25' SEGMENTS AND CURL ENDS UP HILL BY 2" IN ELEVATION AS REQUIRED.

POND NO.1
POCKET POND
HAZARD CLASS A
PRIVATELY OWNED & MAINTAINED
1 YR WSE = 373.85
10 YR WSE = 374.58
100 YR WSE = 374.91
WQV=0.0483 Ac. Ft.(BIO-RETENTION)
CPV=0.11Ac.Ft.
Q1 EX. = 1.31CFS
Q1 W/SWM = 0.05 CFS

TYPICAL GRASS CHANNEL
NTS



AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT DRAWINGS AND METS THE APPROVED ROBERT H. VOGEL, P.E. NO. 18193 PLANS AND SPECIFICATIONS.

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Mahan 7-17-06
Chief, Bureau of Highways
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Conrad K... 9/19/06
Chief, Division of Land Development
John... 9/19/06
Chief, Development Engineering Division

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
Jim Meyer 7/12/06
USDA-NATURAL RESOURCES CONSERVATION SERVICE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Robert H. Vogel 7/12/06
HOWARD SOIL CONSERVATION DISTRICT

ENGINEERS CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
Robert H. Vogel 8/26/06
SIGNATURE OF ENGINEER
ROBERT H. VOGEL

DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
Michael... 8/26/06
SIGNATURE OF DEVELOPER

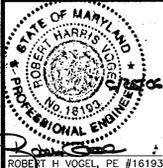
OWNER/DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELICOTT CITY, MARYLAND 21043
(410) 480-0023

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
LOTS 1-8 AND OPENSACE LOTS 9
GRADING AND SEDIMENT CONTROL PLAN

TAX MAP #24 GRID 18 PARCEL 289
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

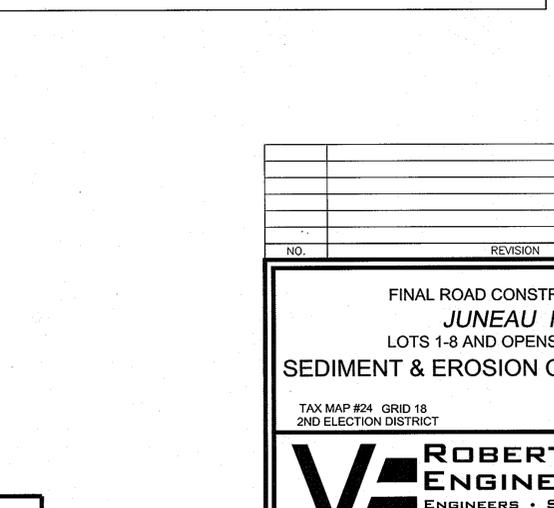
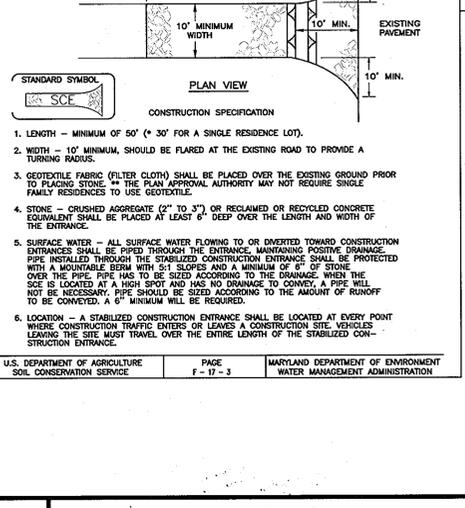
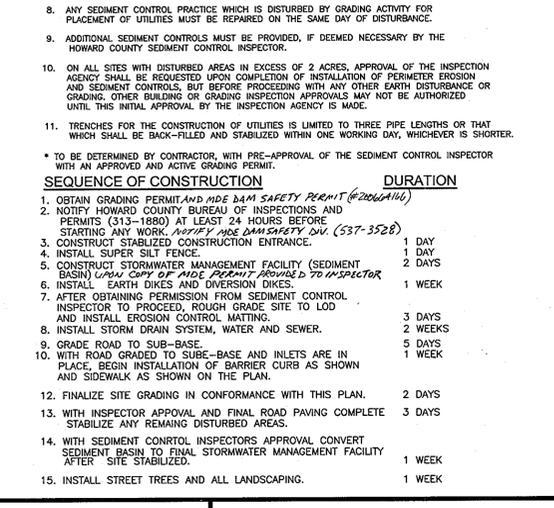
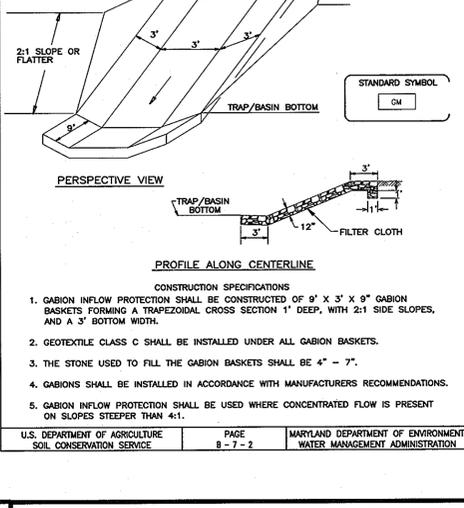
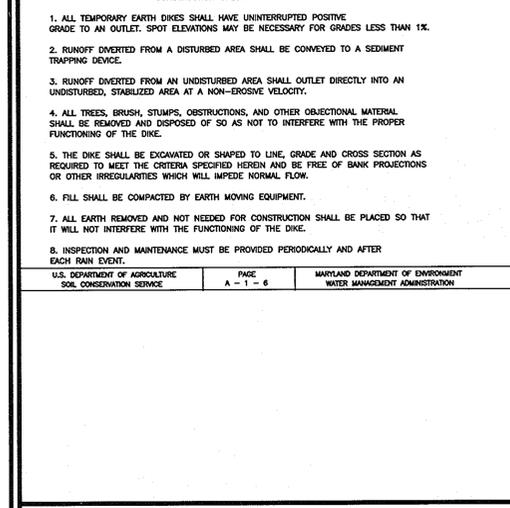
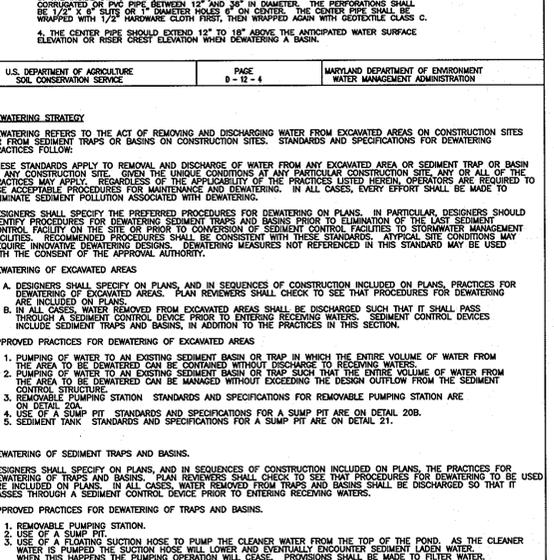
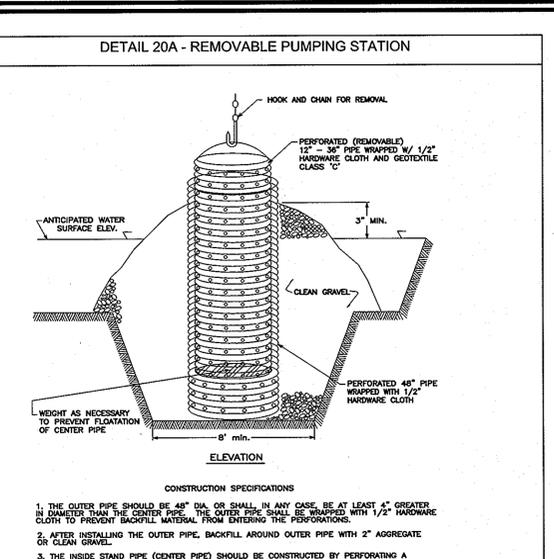
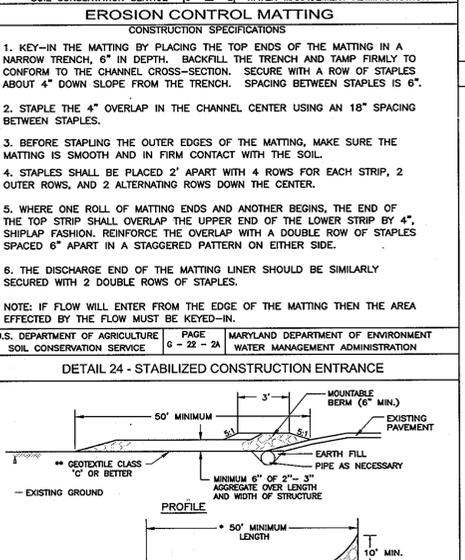
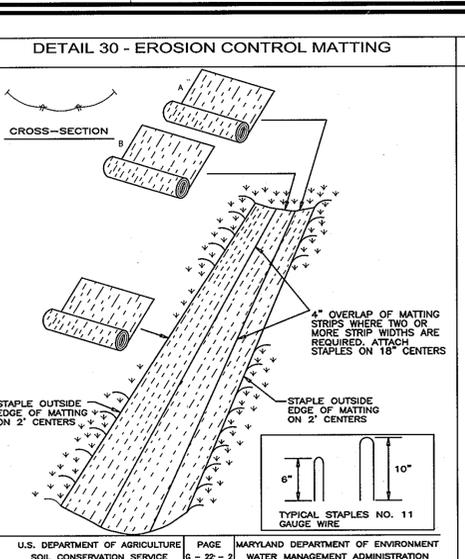
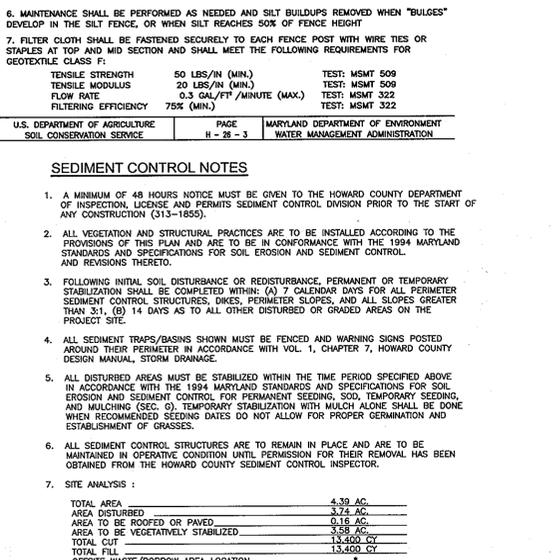
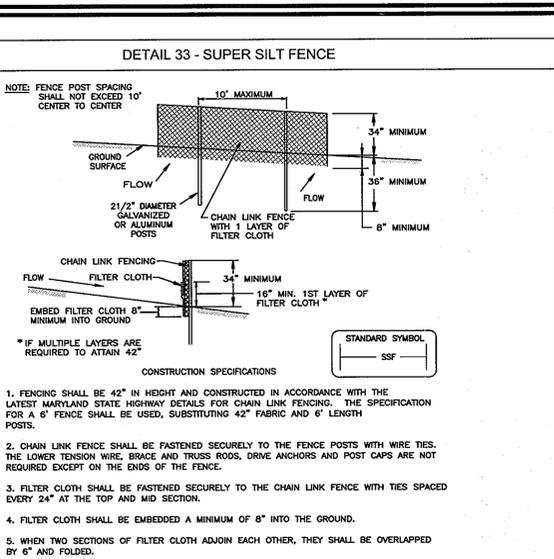
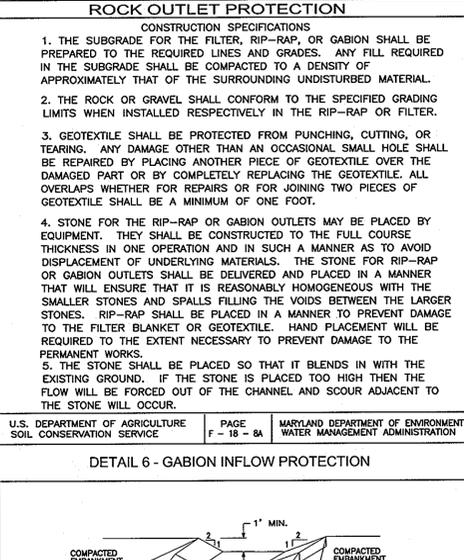
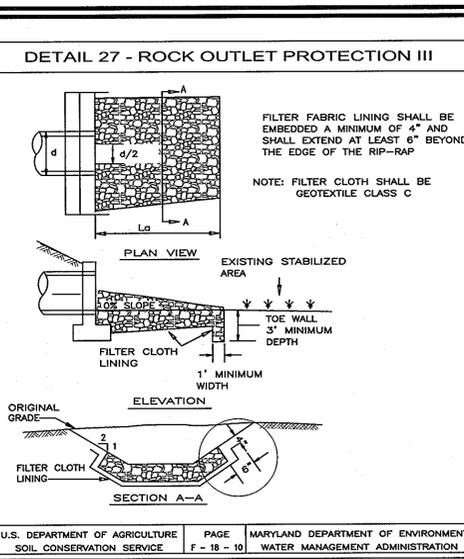
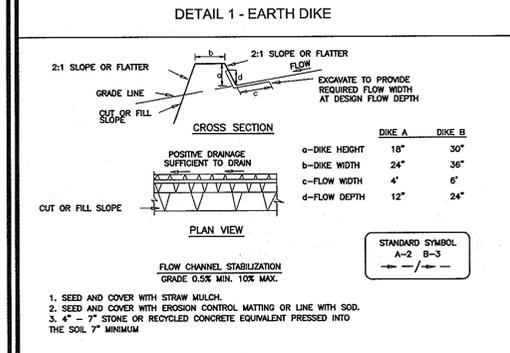
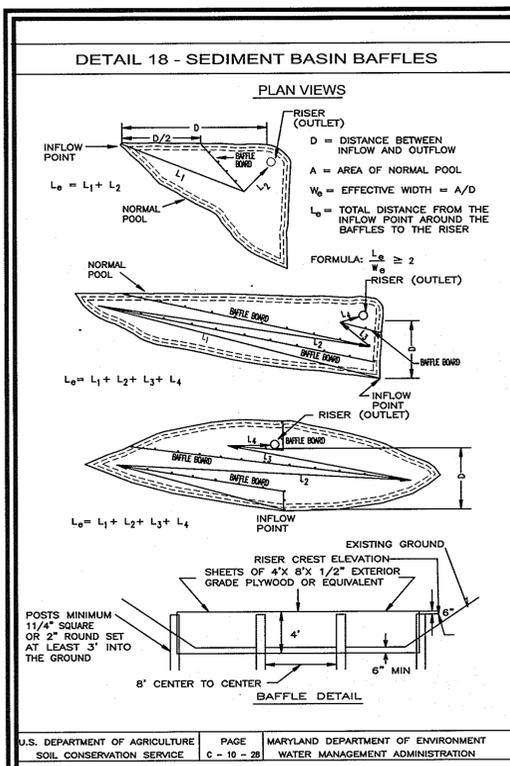
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELICOTT CITY, MD 21043
TEL: 410.461.7666 FAX: 410.461.8961



DESIGN BY: RJ/RHV
DRAWN BY: RJV
CHECKED BY: RHV
DATE: 06-26-2006
SCALE: AS SHOWN
W.O. NO.: 2034013.00
1"=50'

3 SHEET OF 10

AS-BUILT 2/4/2009



APPROVED: DEPARTMENT OF PUBLIC WORKS

W. John F. Mahan 7-17-06
Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Charles H. Hester 9/19/06
Chief, Division of Land Development

John J. ... 9/19/06
Chief, Development Engineering Division

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA-NATURAL RESOURCES CONSERVATION SERVICE

Jim Myers 7/12/06
DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

Yon... 7/12/06
DATE

HOWARD SOIL CONSERVATION DISTRICT

ENGINEERS CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Robert H. Vogel 8/22/09
SIGNATURE OF ENGINEER
ROBERT H. VOGEL

DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Michael Hester 6/26/06
SIGNATURE OF DEVELOPER

DATE

OWNER/DEVELOPER

TRINITY QUALITY HOMES, INC.
3875 PARK AVE., STE. 301
ELICOTT CITY, MARYLAND 21043
(410) 480-0023

DESIGN BY: RJRHV
DRAWN BY: RJ
CHECKED BY: RHY
DATE: 06-28-2006
SCALE: AS SHOWN
W.O. NO.: 2034013.00

4 SHEET OF 10

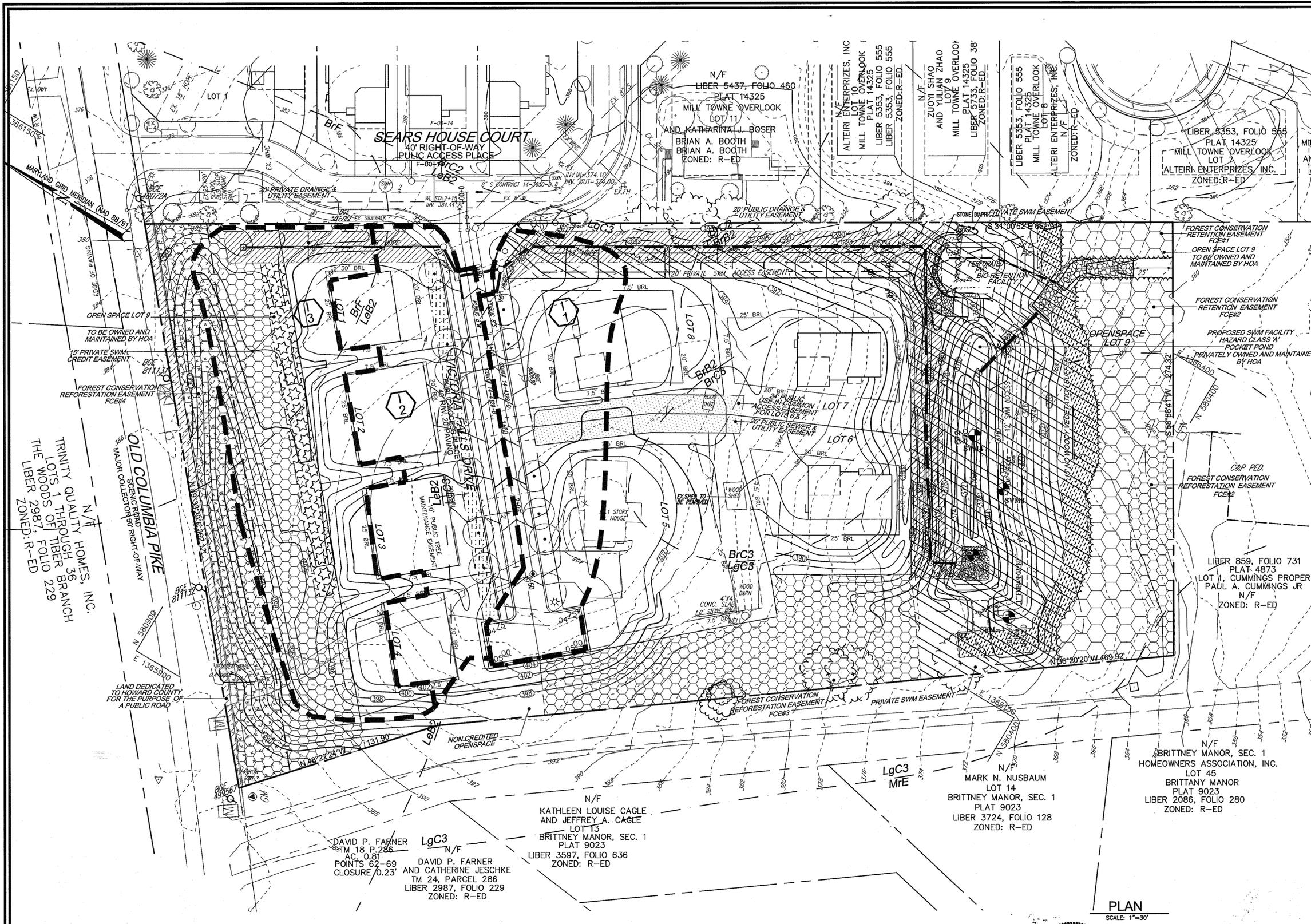
FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
LOTS 1-8 AND OPENSACE LOTS 9
SEDIMENT & EROSION CONTROL DETAILS

TAX MAP #24 GRID 18 2ND ELECTION DISTRICT PARCEL 289 HOWARD COUNTY, MARYLAND

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ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

ROBERT H. VOGEL, PE #16193

AS-BUILT 2/4/2009



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREES TO REMAIN
- 15%-24.99% STEEP SLOPE AREA
- 25% OR GREATER STEEP SLOPE AREA
- FOREST CONSERVATION EASEMENT (REFORESTATION)
- FOREST CONSERVATION EASEMENT (RETENTION)
- DRAINAGE DIVIDE
- SOIL TYPE
- 24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 6 AND 7
- AREA WITHIN 40' OF THE BOE POLES
- 10' PUBLIC TREE MAINTENANCE EASEMENT
- 15' PRIVATE SWM CREDIT EASEMENT
- PRIVATE SWM EASEMENT
- NO WOODY VEGETATION BUFFER
- 20' PUBLIC DRAINAGE & UTILITY EASEMENT

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
BrC3	Bandywine loam, 8 to 15 percent slopes, severely eroded	C
BrF	Bandywine loam, 25 to 60 percent slopes, severely eroded	C
LeB2	Legore Silt Loam, 3 to 8 percent slopes, moderately eroded	B
LgC3	Legore Silty Clay Loam, 8 to 15 percent slopes, moderately eroded	B
LgC3	Legore Silty Clay Loam, 8 to 15 percent slopes, moderately eroded	B

DRAINAGE AREA TABULATIONS

No.	Area	'C'	% Imp.	Soil Types	Zone
I-1	14810.40 (0.34 AC.)	0.47	44	B	R-ED
I-2	16552.80 (0.38 AC.)	0.36	25	C & B	R-ED
I-3	27878.40 (0.64 AC.)	0.42	42	C & B	R-ED

PLAN
SCALE: 1"=30'

STATE OF MARYLAND
ROBERT H. VOGEL, P.E. No. 16193
AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND SPECIFICATIONS.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 7-17-06
 Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/19/06
 Chief, Division of Land Development

[Signature] 9/19/06
 Chief, Development Engineering Division

NO. _____ REVISION _____ DATE _____

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
 LOTS 1-8 AND OPENSACE LOTS 9
STORM DRAIN - DRAINAGE AREA MAP

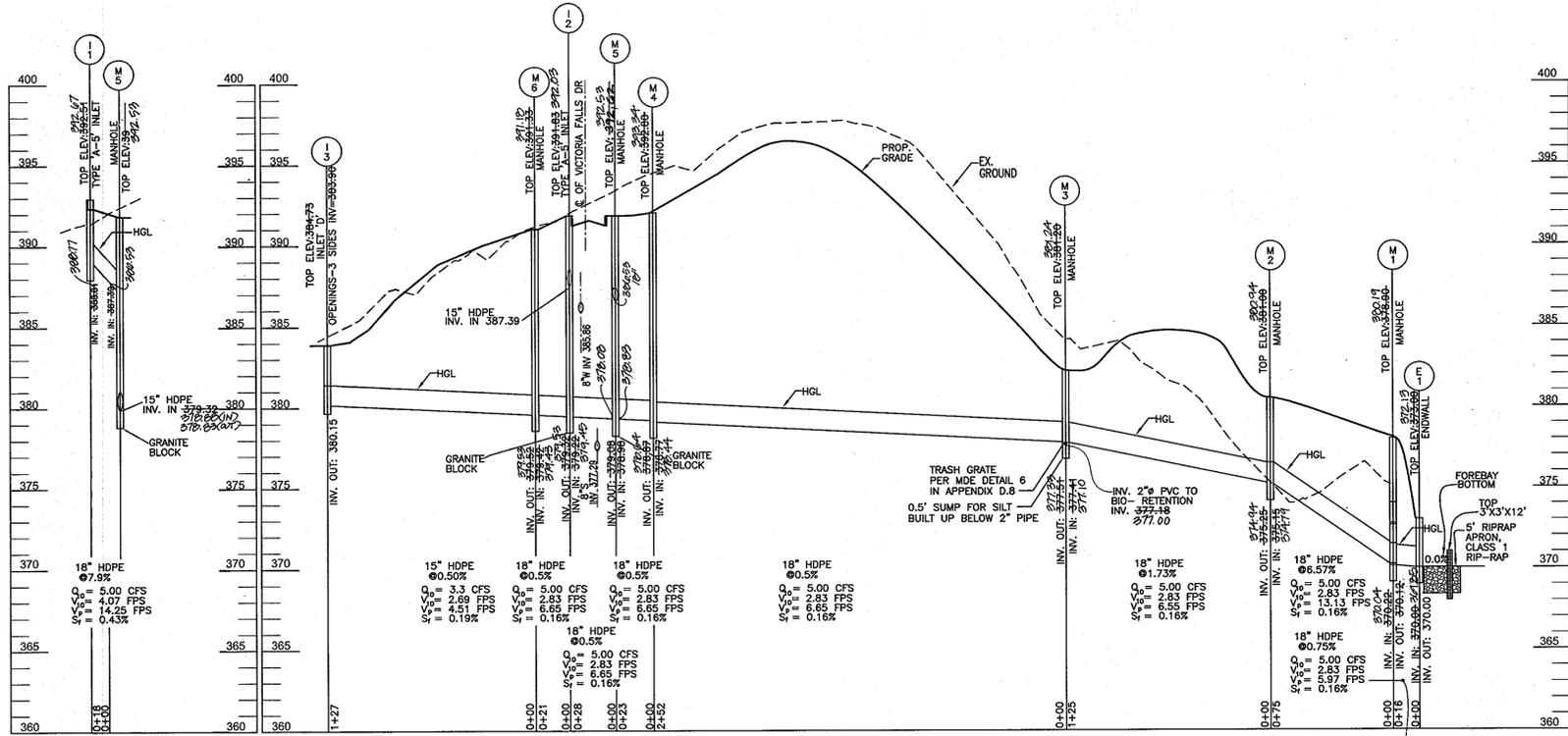
TAX MAP #24 GRID 18 PARCEL 289
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: R/JRH
 DRAWN BY: RJ
 CHECKED BY: RHW
 DATE: SEPTEMBER 23, 2006
 SCALE: AS SHOWN
 W.O. NO.: 2034013.00

5 SHEET OF 10

AS-BUILT 2/4/2009
 F06-066



STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ.
1"=5' VERT.

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES
I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS
I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
L. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRASS, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.
M. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
N. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
O. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
L. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCHING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./100 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT THE TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UNIFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND APPLY 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. PER ACRE (1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES
SEEDING PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCHING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.).

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR SOD.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

NOTES

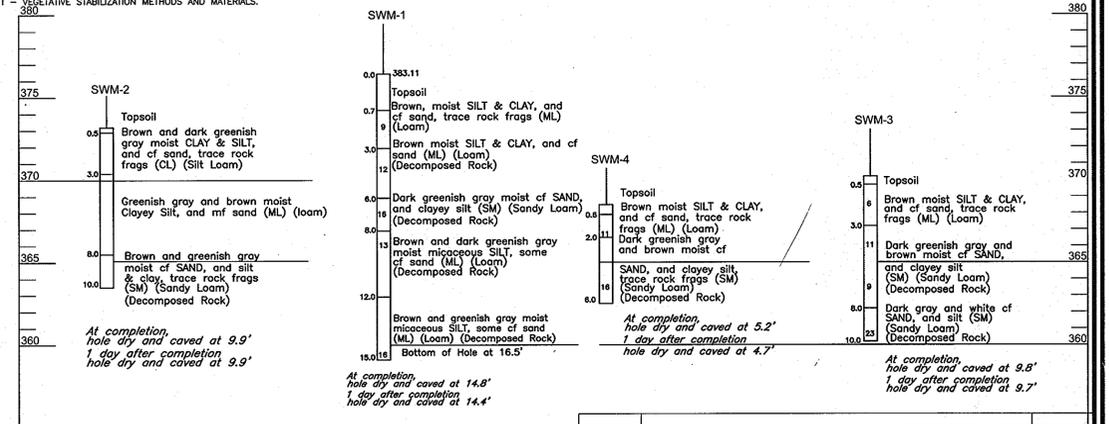
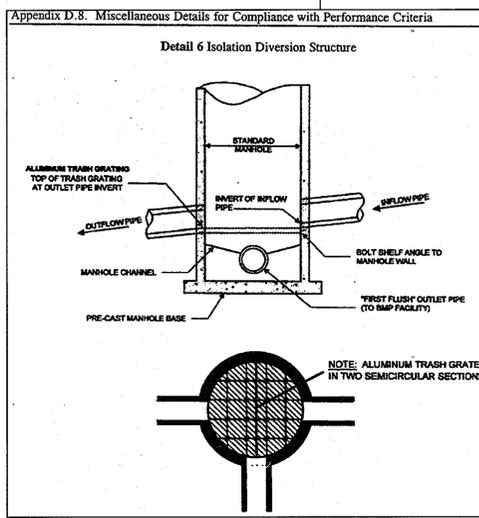
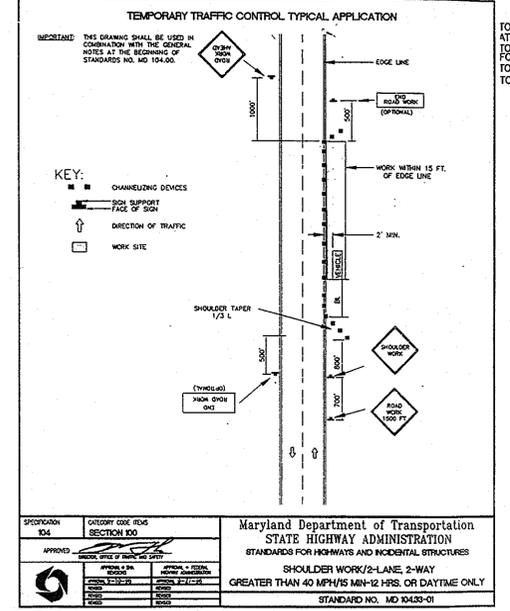
DURING GRADING AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL MEASURES SHOWN HEREON.

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLIED WITH:
A. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
B. 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.

HILLS-CARNES ENGINEERING ASSOCIATES, INC.				HILLS-CARNES ENGINEERING ASSOCIATES, INC.			
RECORD OF SOIL EXPLORATION				RECORD OF SOIL EXPLORATION			
Project Name	Location	Living Well	Job #	Project Name	Location	Living Well	Job #
Garage Property SWM	Howard County, MD	B-1	05150A	Garage Property SWM	Howard County, MD	B-2	05150A
Client	Garage Property SWM	Inspector	J. Hest	Client	Garage Property SWM	Inspector	J. Hest
Date	12/20/05	Date	12/20/05	Date	12/20/05	Date	12/20/05
Drill Bit	2 1/2" Dia	Drill Bit	2 1/2" Dia	Drill Bit	2 1/2" Dia	Drill Bit	2 1/2" Dia
Depth	10'-0"	Depth	10'-0"	Depth	10'-0"	Depth	10'-0"
Soil Description	...	Soil Description	...	Soil Description	...	Soil Description	...

NO.	TYPE	LOCATION	TOP ELEV.	INV.	INV. OUT	REMARKS
E-1	18" CONCRETE TYPE 'C' ENDWALL	N 580482.13 E 1366214.67	372.10	370.00	370.00	SD-5.21
M-1	STANDARD 4" MANHOLE	N 580496.02 E 1366207.12	379.90	370.20	370.20	G-5.12
M-2	STANDARD 4" MANHOLE	N 580536.60 E 1366270.30	381.90	376.25	376.25	G-5.12
M-3	STANDARD 4" MANHOLE	N 580601.47 E 1366377.07	381.20	377.10	377.10	G-5.12
M-4	STANDARD 4" MANHOLE	N 580817.24 E 1366247.50	382.10	378.90	378.90	G-5.12
M-5	STANDARD 4" MANHOLE	CL STA. 0+69.18, 10.0' LT.	382.50	378.70	378.70	G-5.12
I-1	TYPE 'A'-5" INLET	CL STA. 0+49.18, 10.0' RT.	382.50	379.20	379.20	SD-4.01
I-2	TYPE 'A'-5" INLET	CL STA. 0+452, 10.0' RT.	381.30	379.20	379.20	SD-4.01
M-6	STANDARD 4" MANHOLE	CL STA. 0+432, 17.0' RT.	391.30	379.50	379.50	G-5.12
I-3	TYPE 'D' INLET	N 580973.08 E 1366153.92	384.70	380.15	380.15	SD-4.13
HW-1	24" CONCRETE TYPE 'A' HEADWALL	N 580518.89 E 1366377.62	373.30	369.80	369.80	SD-5.11

SIZE	TYPE	LENGTH
15" HDPE		127
18" HDPE		538
6" PVC		16



APPROVED: DEPARTMENT OF PUBLIC WORKS
 With J. White J. 7-17-06
 Chief, Bureau of Highways
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Cindy Harris 9/19/06
 Chief, Division of Land Development
 Aldo DeLuca 9/18/06
 Chief, Development Engineering Division

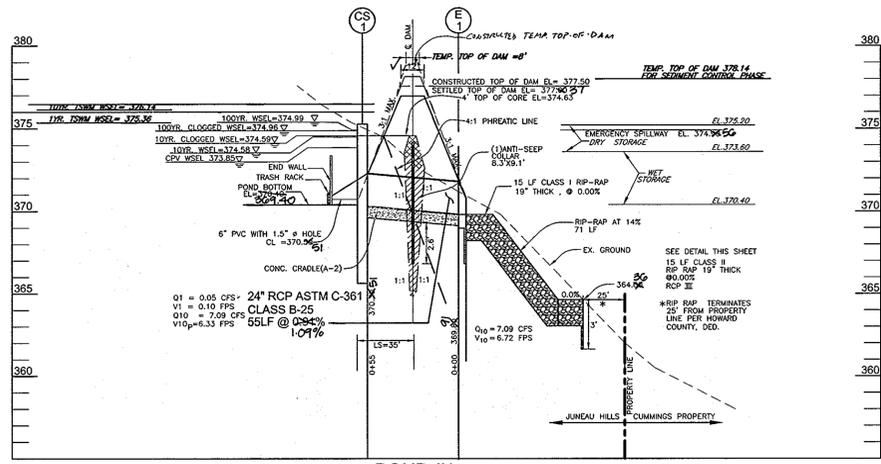
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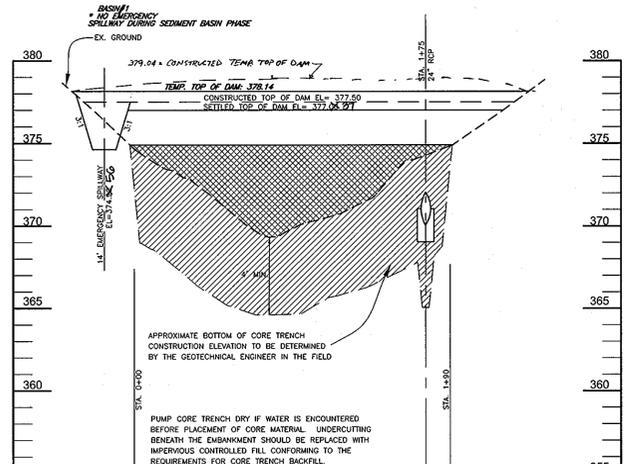
DESIGN BY: RJR/HV
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 05-10-2008
 SCALE: AS SHOWN
 W.O. NO.: 2034013.00

6 SHEET OF 10

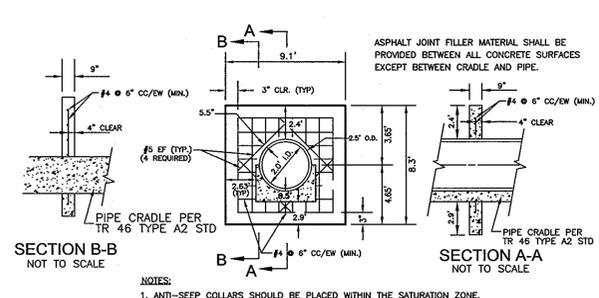
AS-BUILT 2/4/2009 F-06-066



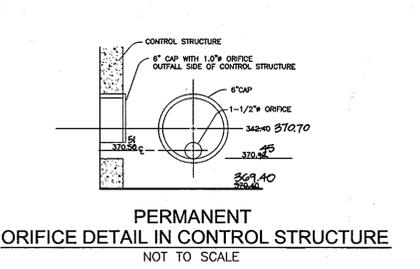
SECTION THROUGH PRINCIPAL SPILLWAY
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



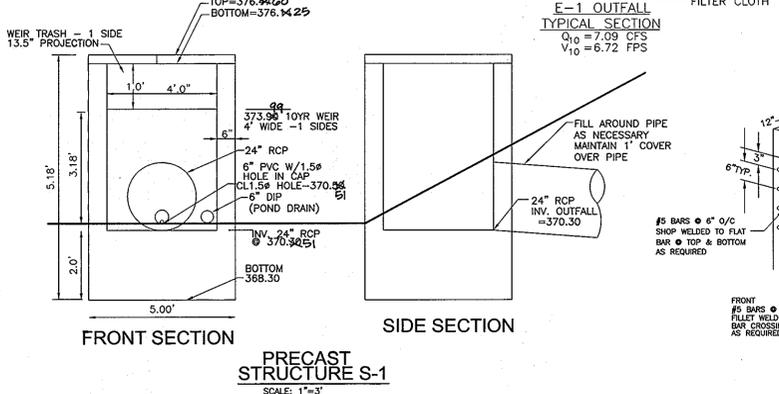
PROFILE ALONG CENTERLINE EMBANKMENT
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



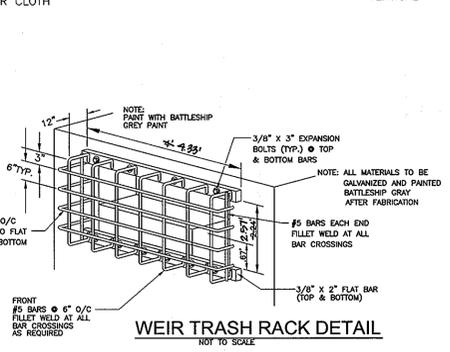
CONCRETE ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



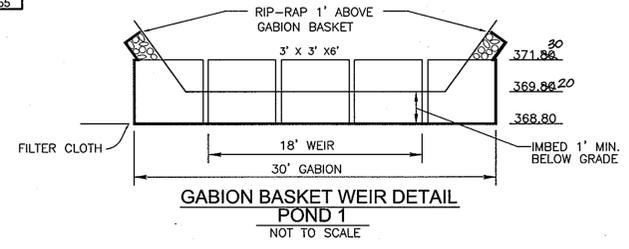
PERMANENT ORIFICE DETAIL IN CONTROL STRUCTURE
NOT TO SCALE



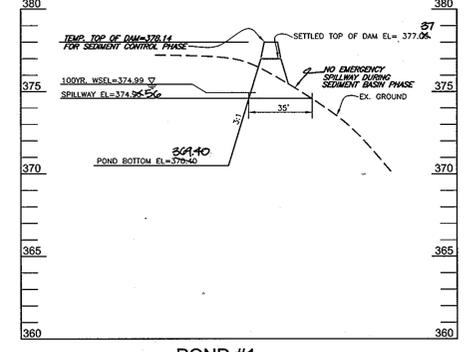
PRECAST STRUCTURE S-1
SCALE: 1"=3'



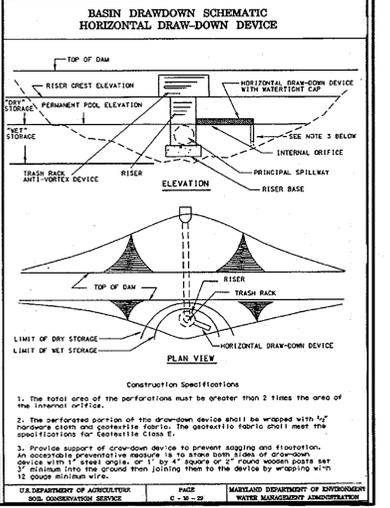
WEIR TRASH RACK DETAIL
NOT TO SCALE



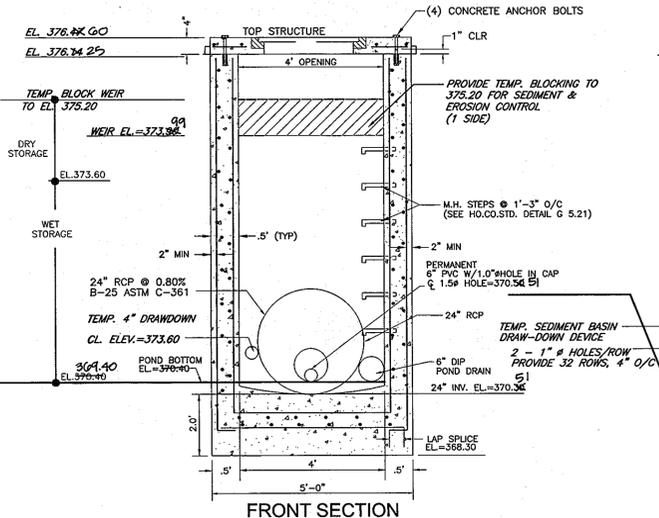
GABION BASKET WEIR DETAIL
POND #1
NOT TO SCALE



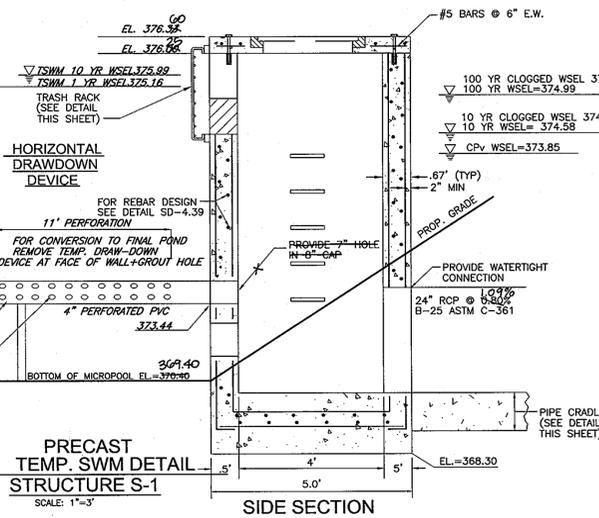
SECTION THROUGH EMERGENCY SPILLWAY
SCALE: HORIZONTAL - 1"=50'
VERTICAL - 1"=5'



BASIN DRAWDOWN SCHEMATIC
HORIZONTAL DRAW-DOWN DEVICE



FRONT SECTION



SIDE SECTION

PRECAST TEMP. SWM DETAIL
STRUCTURE S-1
SCALE: 1"=3'

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND METS ALL APPROVED PLANS AND SPECIFICATIONS.
ROBERT H. VOGEL, RE. No. 16193
PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. ... 7-17-06
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chris ... 9/19/06
APPROVED: DEPARTMENT OF ...
... 9/19/06

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
USDA-NATURAL RESOURCES CONSERVATION SERVICE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
HOWARD SOIL CONSERVATION DISTRICT

ENGINEERS CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

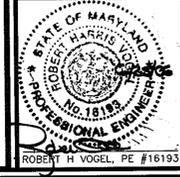
DEVELOPER'S CERTIFICATE
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

OWNER/DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELLCOTT CITY, MARYLAND 21043
(410) 480-0023

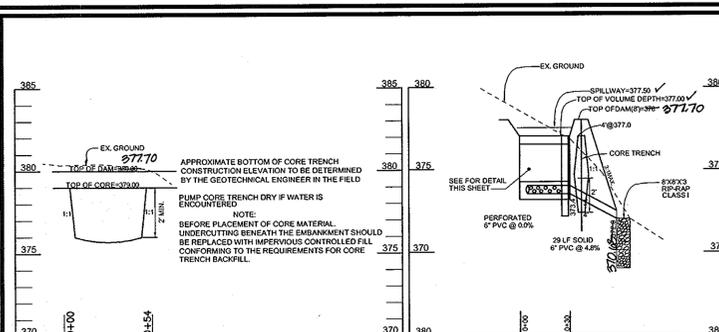
NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
LOTS 1-8 AND OPENSAPCE LOTS 9
SWM FACILITY #1
TAX MAP #24 GRID 18 PARCEL 289
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

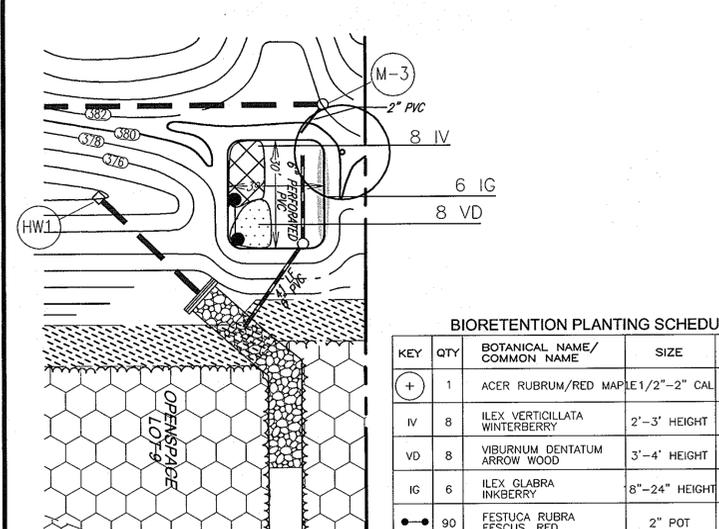
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8951



DESIGN BY: RJR/HV
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 05-10-2006
SCALE: AS SHOWN
W.O. NO.: 2034013.00
7 SHEET OF 10



BIORETENTION AREA PROFILE ALONG EMBANKMENT
SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



BIORETENTION PLANTING SCHEDULE

KEY	QTY	BOTANICAL NAME/COMMON NAME	SIZE	ROOT
+	1	ACER RUBRUM/RED MAPLE	1 1/2" - 2" CAL	B & B
IV	8	ILEX VERTICILLATA WINTERBERRY	2" - 3" HEIGHT	B & B OR CONT
VD	8	VIBURNUM DENTATUM ARROW WOOD	3" - 4" HEIGHT	B & B OR CONT
IG	6	ILEX GLABRA INKBERY	8" - 24" HEIGHT	B & B OR CONT
90		FESTUCA RUBRA FESCUS, RED	2" POT	18" O/C

BIORETENTION PLANTING DETAIL
SCALE: 1"=30"-0"

MATERIALS SPECIFICATIONS FOR BIO-RETENTION

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SPECIFICATION	N/A	PLANTINGS ARE SITE-SPECIFIC
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35-60% SILT 30-50% CLAY 10-25%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN	PEA GRAVEL ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL NO. 6 STONE: 2" TO 1"	
GEOTEXTILE	CLASS "C"-APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4532), PUNCTURE RESISTANCE (ASTM-D-4533)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	MSGT M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OOR 40 PVC OR SURSIS	4" TO 6" RIGID SCHEDULE 40 PVC OR SURSIS	3/8" RIPS @ 4" OC, 4 HOLES PER ROW. MIN. OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES
POURED IN PLACE CONCRETE (IF REQUIRED)	MSH MIN NO. 3; f _c 3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE MEETING ACI CODE 308/89; VERTICAL LOADING (F+10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING
SAND (1' DEEP)	MSGT-M-6 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DUNGE AND GRANSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND

BIORETENTION AREA SOIL SPECIFICATIONS

A. PLANTING SOIL
THE BIORETENTION AREAS SHALL CONSIST OF A PLANTING SOIL HAVING A COMPOSITION OF AT LEAST 10 TO 25 PERCENT CLAY AND SHALL BE OF A SANDY LOAM OR LOAMY SAND TEXTURE. LOAMY SOILS MAY BE UTILIZED FOR THE PLANTING SOIL BUT MUST CONSIST OF 35% SAND. IN ADDITION, THE FURNISHED PLANTING SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDERANCE TO PLANTING OR MAINTENANCE OPERATIONS.

THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE OR OTHERS AS SPECIFIED.

IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH. THE PLANTING SOIL SHALL MEET THE FOLLOWING CRITERIA:

PH RANGE	5.5 - 6.5
ORGANIC MATTER	1.5 - 3.0%
MAGNESIUM	35 lbs / ACRE
PHOSPHORUS - P205	300 lbs / ACRE
POTASSIUM - K2O	85 lbs / ACRE
SOLUBLE SALTS	NOT TO EXCEED 500 ppm

B. MULCH LAYER SPECIFICATIONS (3" THICK)
A MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. AN ACCEPTABLE MULCH SHALL INCLUDE SHREDDED HARDWOOD OR SHREDDED WOOD CHIPS OR OTHER SIMILAR PRODUCT.
ALL MULCH PRODUCTS MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL, WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS.

C. SAND SPECIFICATIONS (1' MIN.)
THE SAND SHALL BE FREE OF DELETERIOUS MATERIAL AND ROCKS GREATER THAN 1 INCH IN DIAMETER.

D. COMPACTION
SOIL SHALL BE PLACED IN LIFTS LESS THAN 18 INCHES AND LIGHTLY COMPACTED (MINIMAL COMPACTIVE EFFORT) BY TAMPING WITH A BUCKET FROM A DOZER OR A BACKHOE.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY

- ROUTINE MAINTENANCE BY HOA
- FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS.
- THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE TO DETERMINE IF IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
- DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE BY HOA

- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

POND 1

2' DEEP STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
VA	200	Vallisneria americana Wild Celery	plug	2' oc
IP	58	Iris pseudocaris Yellow Water Iris	plug	1.5' oc
IV	32	Iris versicolor Blue Flag (wear gloves)	plug	1.5' oc
SL	150	Sagittaria latifolia Duck Potato (do not plant tubers)	plug	4' oc
CE	115	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
NL	250	Nuphar luteum Spatterdock	plug	1.5' oc
CL	145	Carex lacustris Lake Sedge	plug	2' oc

REMOVE Baffle boards PRIOR TO INSTALLATION OF PLANT MATERIALS. ADD THREE INCHES OF TOPSOIL TO PLANTING AREA. STABILIZE WITH 40 POUNDS PER ACRE OF A HYDROSEED MIX (WET MIX AND MEADOW MIX) FROM SYLVA NATIVE NURSERY OR EQUAL.

POND 1
SCALE: 1"=50'

EVALUATIONS

BASED ON THE STATE OF MARYLAND'S "2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, INFILTRATION BASINS AND TRENCHES ARE NOT ACCEPTABLE PRACTICES WHEN INFILTRATION RATES OF LESS THAN 0.52 INCHES PER HOUR ARE OBTAINED. ALSO, THE BOTTOMS OF THE FACILITIES SHOULD BE LOCATED A MINIMUM OF 4 FT. ABOVE THE SEASONALLY HIGH WATER TABLE AND/OR BEDROCK.

BASED ON THE GROUNDWATER CONDITIONS ENCOUNTERED, THE PRESENCE OF DENSE AND DECOMPOSED ROCK MATERIALS, THE ABOVE-OUTLINED CRITERIA, AND EXPERIENCE WITH INFILTRATION STRUCTURES IN THE PROJECT AREA, IT IS OUR OPINION THAT INFILTRATION METHODS OF STORMWATER MANAGEMENT WILL NOT BE FEASIBLE AT THE PROPOSED SWM POND LOCATIONS.

EMBANKMENT AND CUT-OFF CONSTRUCTION
THE AREAS OF THE PROPOSED SWM PONDS SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OF HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACK FILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SPECIFICATIONS 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE-GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. EXPLORATION WITH TEST PITS AND LABORATORY TESTING CAN BE CONDUCTED PRIOR TO CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

BASEIN AND SPILLWAY EXCAVATION
BASED ON THE REVEAL DEPTHS ENCOUNTERED IN POND 2, IT IS RECOMMENDED THAT TEST PITS BE PERFORMED WITH AN EXCAVATOR PRIOR TO CONSTRUCTION TO DETERMINE IF ROCK WITHIN THE BASIN AREA AS WELL AS ALONG THE PRINCIPAL SPILLWAY WILL REQUIRE BLASTING. SHOULD IT BE DETERMINED THAT THE ROCK WITHIN THE BASIN AREAS WILL REQUIRE BLASTING, IT IS RECOMMENDED THAT THESE OPERATIONS WITHIN 75 FT. OF THE RISER AND PRINCIPAL SPILLWAY STRUCTURE BE PERFORMED PRIOR TO CONSTRUCTION OF THE PRINCIPAL SPILLWAY AND RISER STRUCTURE.

REMARKS
THE EVALUATIONS CONTAINED IN THIS REPORT ARE BASED ON OUR UNDERSTANDING OF THE PROPOSED CONSTRUCTION. THE DATA OBTAINED FROM OUR FIELD EXPLORATIONS, AND OUR EXPERIENCE WITH THE SOILS AND SUBSURFACE CONDITIONS IN THIS AREA, IF THERE ARE ANY CHANGES TO THE PROJECT CHARACTERISTICS, THIS OFFICE SHOULD BE ADVISED SO THAT THE EVALUATIONS MADE IN THIS REPORT MAY BE RE-EVALUATED.

THE READER IS REFERRED TO THE RECORDS OF SOIL EXPLORATION IN THE APPENDIX FOR DETAILS RELATED TO THE SUBSURFACE CONDITIONS ENCOUNTERED IN THE SOIL BORINGS. IT SHOULD BE NOTED THAT STRATIFICATION LINES SHOWN ON THE RECORDS OF SOIL EXPLORATION REPRESENT APPROXIMATE TRANSITIONS BETWEEN MATERIAL TYPES. SITU, STRATA CHANGES COULD OCCUR GRADUALLY OR AT SLIGHTLY DIFFERENT LEVELS. ALSO, IT SHOULD BE NOTED THAT THE SOIL BORINGS PARTICULAR CONDITIONS AT THE PARTICULAR LOCATIONS AND AT THE PARTICULAR TIMES INDICATED. SOME CONDITIONS, DEPENDING GROUNDWATER CONDITIONS, COULD CHANGE WITH TIME.

IT IS CONSIDERED ESSENTIAL THAT AN HCEA REPRESENTATIVE BE ON-SITE TO MONITOR, INSPECT, AND TEST ALL FACTS OF THE CONSTRUCTION OF THE SWM FACILITY IN ORDER TO VERIFY THAT OPERATIONS ARE PERFORMED CONSISTENT TO THE PROPOSED PLANS PROVIDED BY THE CIVIL ENGINEER AND RECOMMENDATIONS MADE BY HCEA.

POND SUMMARY

	1 YEAR	10 YEAR	100 YEAR
FLOW INTO POND	2.67 CFS	10.26 CFS	17.45 CFS
FLOW OUT OF POND	0.05 CFS	7.09 CFS	18.58 CFS
W.S. ELEVATION	373.85	374.58	374.91
STORAGE VOLUME	0.1225 AC-FT	0.221 AC-FT	0.13 AC-FT

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER MANAGEMENT DETENTION FACILITY

- ROUTINE MAINTENANCE BY HOA
- FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS.
- THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE TO DETERMINE IF IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
- DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE BY HOA

- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

MARYLAND 378 STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

These specifications are applicable to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and MSHTD specifications are to the most recent version.

Site Preparation
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp rocks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Fill
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a professional engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required for a general site plan.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed consecutively with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the surface of each lift shall be lowered by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within +/-2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and it to be certified by the Engineer at the time of construction. All compaction is to be determined by MSHTD Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation of the trench. The height shall extend up to at least four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least four feet above the elevation of the core as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed curvilinearly with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the structure. The backfilling operation shall be completed closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi 28 day unconfined compressive strength. The flowable fill shall have a minimum unit weight of 120 pcf and a minimum consistency of 2000 blm/cm. Material shall be placed such that minimum of 1" (measured perpendicular to the outside of the pipe) of flowable fill shall be over (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. The material shall be placed in layers (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be titanium coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids between all pipe and fill zone. At no time during the backfilling operation shall direct equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill (flowable fill) shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coating shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of MSHTD Specifications M-245 & M-246 with water tight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of MSHTD Specification M-274 with water tight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully titanium coated per requirements of MSHTD Specification M-100 Type 5. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied titanium coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

POND BOTTOM SOIL CONDITIONS

If broken rock fragments are encountered at finished pond bottom, under cut a minimum of 12" below basin grade and to a horizontal distance of at least 18" beyond each edge of the broken rock and backfill with fine-grained ML or CL soils compacted to a firm condition. This procedure should be performed under the supervision of the project geotechnical engineer.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THIS PROJECT WAS CONSTRUCTED IN ACCORDANCE WITH THE "AS-BUILT" PLANS AND MEETS THE APPROVED SPECIFICATIONS.

ROBERT H. VOGEL, PE, No 16193

PROVIDE CLASS I RIPRAP
PROP GRADE
VARIES - SEE PLAN
4" CLEANOUT
WSEL 377.50
PONDING DEPTH 1'
3" MULCH LAYER
GRASS FILTER SECTION
STONE DIAPHRAGM
EL 377.50
2" PVC SCH 40 PERFORATED PIPE (5" OF PIPE INTO BIORETENTION AREA TO BE SOLID) @ 0.00% SLOPE.
PERFORATIONS TO BE PER MANUFACTURER'S SPECIFICATIONS.
EL 374.00
EL 373.75
EL 373.00
EL 371.75
NOTE: FILTER FABRIC IS REQUIRED FOR SIDES OF POND LAYER. SEAMS SHOULD NOT ALLOW MATERIAL TO WASH THROUGH.
NOTE: UPON FURTHER INVESTIGATION NO GROUND WATER WAS ENCOUNTERED.
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELICOTT CITY, MARYLAND 21043
(410) 480-0023

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of MSHTD Specification M-274 with water tight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully titanium coated per requirements of MSHTD Specification M-100 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

Coupling bands, anti-seep coulers, and sections, etc. must be composed of the same material and coatings as the pipe. Metals must not include dissimilar materials with use of rubber or plastic insulating materials at those 24 mils in thickness.

Connections - All connections with pipes must be completely water tight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are made of steel. Anti-seep coulers shall be connected to the pipe in such a manner as to be completely water tight. Dimple bands are not considered to be water tight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled on adequate number of corrugations to accommodate the bandwidth. The following pipe connections are acceptable for pipes less than 24 inches diameter: flanges on both ends of the pipe with a circular 3/8 inch thick closed coil anti-seep neoprene gasket; and a 12-inch wide hanger tie band with anti-seep gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long corrugated band using a minimum of 4 (four) rods and lugs, 2" on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed coil circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8-inch closed coil gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock flanges with internal caulking or a neoprene bead.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

Backfilling shall conform to MSHTD Specification M-274.
Other details (anti-seep coulers, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed the requirements of MSHTD M-301.
- Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/craete for their entire length. This bedding/craete shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete craete is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Craete bedding is not permitted.

Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Craete shall be excavated to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

Backfilling shall conform to MSHTD Specification M-274.
Other details (anti-seep coulers, valves, etc.) shall be as shown on the drawings.

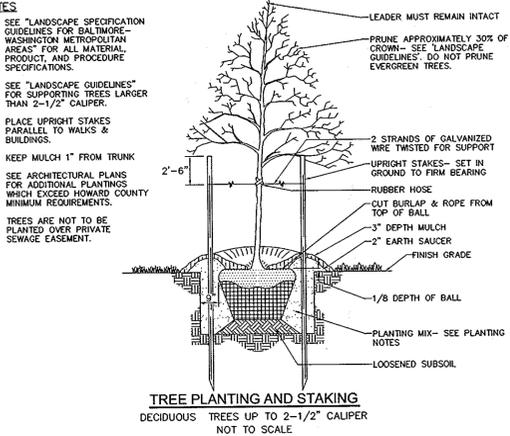
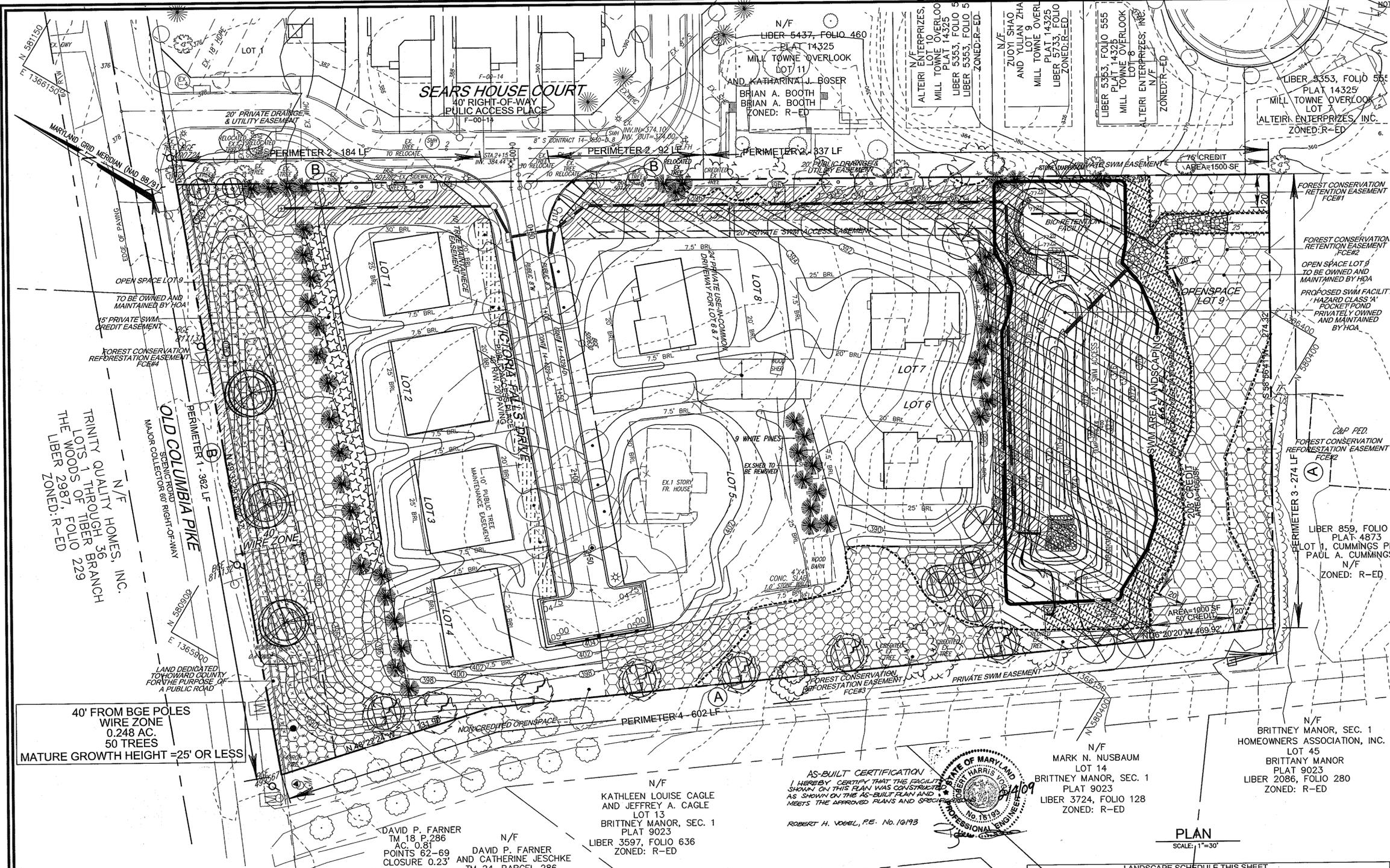
Plastic Pipe - The following criteria shall apply for plastic pipe:

- Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: "4" - 10" inch pipe shall meet the requirements of MSHTD M252 Type 5, and 12" through 24" inch shall meet the requirements of MSHTD M24 Type 5.
- Joints and connections to anti-seep coulers shall be completely water tight.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

Backfilling shall conform to MSHTD Specification M-274.
Other details (anti-seep coulers, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.



SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES	
	1	2	3	4
PERIMETER/FRONTAGE DESIGNATION	B	B	A	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	362'	276'	337'	274'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	YES* 274'	YES* 274' & 2 EX TREES
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED (IF REMAINING)	362'	276'	362'	0
SHADE TREES	1:50 8	1:50 6	1:60 4	1:60 0
EVERGREEN TREES	1:40 9	1:40 7	1:40 7	1:60 9
NUMBER OF PLANTS PROVIDED	3	6	3	0
SHADE TREES	9	7	-	-
EVERGREEN TREES	10*	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED	-	-	-	-

* EXISTING WOODS OR TREE TO REMAIN
** ONE SHADE TREE : TWO EVERGREEN TREE SUBSTITUTION FOR SCENIC ROAD

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING SWM FACILITY #1

LANDSCAPE TYPE	TYPE B
LINEAR FEET OF PERIMETER	665 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	YES 203 LF & 1 EX. TREE
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO
NUMBER OF TREES REQUIRED	462 LF
SHADE TREES (1:50)	9 SHADE TREES
EVERGREEN TREES (1:40)	12 EVERGREEN TREES
NUMBER OF TREES PROVIDED	8 SHADE TREES
SHADE TREES (1:50)	12 EVERGREEN TREES
EVERGREEN TREES (1:40)	0 TREES
OTHER TREES (2:1 SUBSTITUTION)	(0 SUBSTITUTION TREES)

- NOTE:**
- THE LANDSCAPING IN WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS, AS SHOWN ON THIS PLAN.
 - BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
 - FINANCIAL SURETY FOR THE REQUIRED TOTAL 36 SHADE TREES AND 28 EVERGREEN TREES HAS BEEN PAID AS A PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$14,850.00.
 - FINANCIAL SURETY FOR THE REQUIRED TOTAL 14 STREET TREES HAS BEEN PAID AS A PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$4,200.00.
 - THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENTS LOCATED IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OF A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
LOTS 1-8 AND OPENSAPCE LOTS 9
LANDSCAPING PLAN

TAX MAP #24 GRID 18 PARCEL 289
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

DESIGN BY: RJR/HV
DRAWN BY: RJ
CHECKED BY: RHV
DATE: 06-26-2006
SCALE: AS SHOWN
W.O. NO.: 2034013.00

9 OF 10

40' FROM BGE POLES
WIRE ZONE
0.248 AC.
50 TREES
MATURE GROWTH HEIGHT = 25' OR LESS

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	SOIL GROUP
B/C3	Bandywine loam, 8 to 15 percent slopes, severely eroded	C
B/F	Bandywine loam, 25 to 60 percent slopes, severely eroded	C
LbB2	Legare Silt Loam, 3 to 8 percent slopes, moderately eroded	B
LcC3	Legare Silty Clay Loam, 8 to 15 percent slopes, moderately eroded	B
LdC3	Legare Silty Clay Loam, 8 to 15 percent slopes, moderately eroded	B

DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE

I/WE CERTIFY THAT LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF THE PROJECT, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Michael Pfla
DEVELOPER'S/OWNER'S NAME

OWNER/DEVELOPER CERTIFICATE

I CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN AND SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. I FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Michael Pfla
OWNER/DEVELOPER

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR	AREA WITHIN 40' OF THE BGE POLES
EXISTING TREES TO REMAIN	15%-24.99% STEEP SLOPE AREA	10' PUBLIC TREE MAINTENANCE EASEMENT
25% OR GREATER STEEP SLOPE AREA	FOREST CONSERVATION EASEMENT (RETENTION)	15' PRIVATE SWM CREDIT EASEMENT
FOREST CONSERVATION EASEMENT (REFORESTATION)	PRIVATE SWM EASEMENT	24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 6 AND 7
SOIL BORING	TREE PROTECTION FENCE	CREDITED TO FOREST CONSERVATION PLANTING

APPROVED: DEPARTMENT OF PUBLIC WORKS
W. John J. ... 7-17-06
Chief, Bureau of Highways

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Sarah ... 9/19/06
Chief, Division of Land Development

John ... 9/18/06
Chief, Development Engineering Division

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THIS AS-BUILT PLAN AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

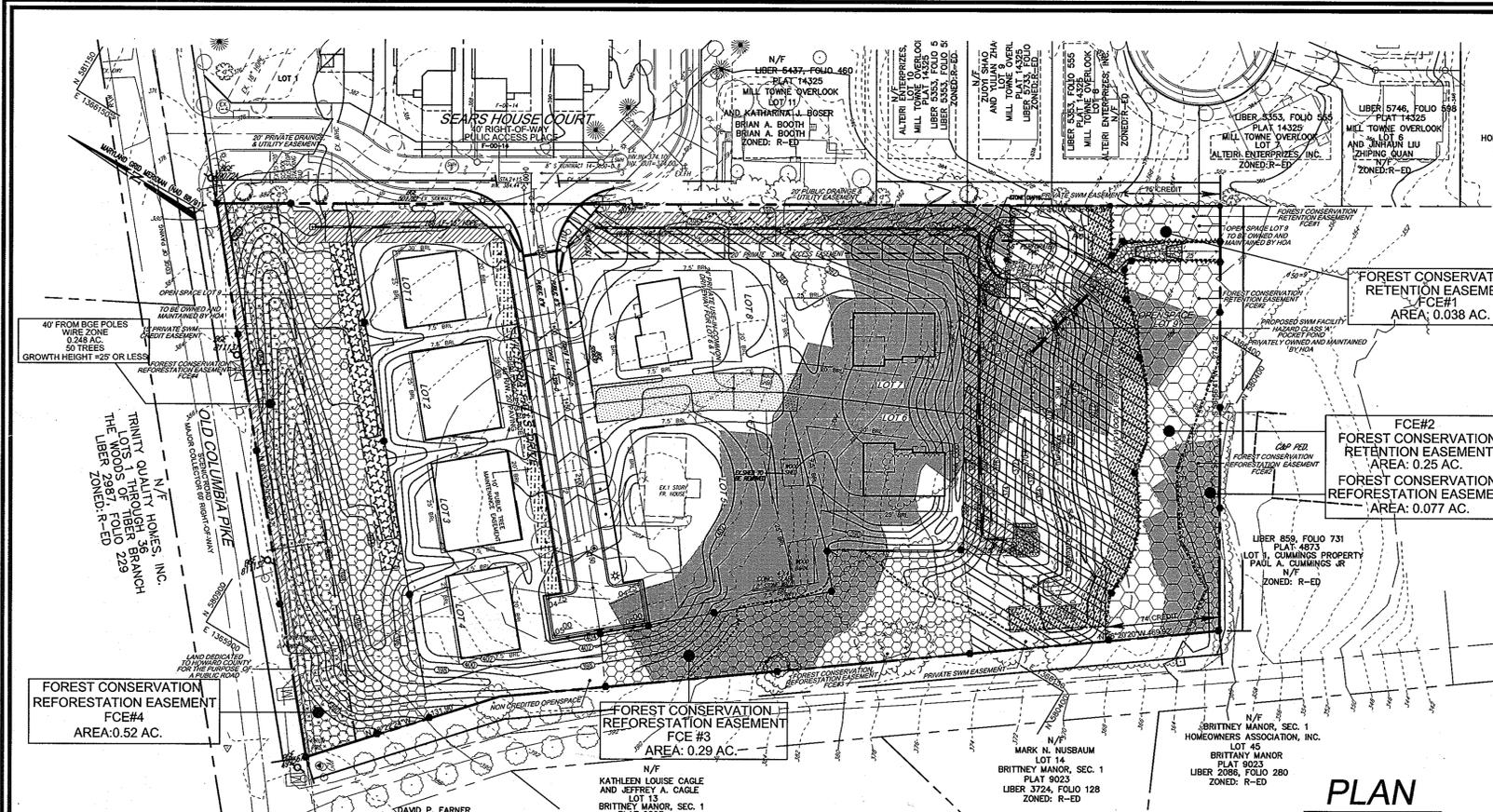
ROBERT H. VOGEL, P.E. No. 101913

STATE OF MARYLAND
PROFESSIONAL ENGINEER
No. 15193

LANDSCAPE SCHEDULE THIS SHEET

SYMBOL	QUAN.	BOTANICAL NAME	SIZE	REM.
	3	Cornelian Cherry Cornus mas (Shade trees—Growth Height=25') P-1-(3)	2"-3" Col.	B & B
	7	Acer rubrum 'Red Sunset' Red Sunset Maple (Shade trees) P-4-(7)	2"-3" Col.	B & B
	9	Amur Maple Acer ginnala (Shade trees—Growth Height=20') P-2-(9)	2"-3" Col.	B & B
	8	Acer rubrum 'October Glory' October glory red maple (Shade trees) SWM AREA LANDSCAPING (8)	2"-3" Col.	B & B
	46	Pinus strobus Eastern white Pine (Evergreen trees) P-2-(7), (9), FOR THE HOME OWNER P-1-(19), SWM AREA LANDSCAPING (11)	6'-8' Ht.	B & B

OWNER/DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELLICOTT CITY, MARYLAND 21043
(410) 480-0023



REFORESTATION PLANTING NOTES

1. AFFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR, BUT PLANTING WILL GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITION.
2. SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSES FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND pH. IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE SOLUBLE 18-8-16 ANALYSE DESIGNED TO LAST 5-8 YEARS CONTAINED IN POLYMERIZED PEGGED BAGS SUCH AS MANUFACTURED BY AGRO WORKS, P.O. BOX 310 HOLLIS, N.Y. 11423 OR APPROVED EQUAL.
3. PLANT MATERIALS SHALL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND PLANT SCHEDULE.
4. PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, WOOD, OR ROOTS OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICCATION, INSECT OR DISEASE MUST BE REPLACED.
5. PLANTING STOCK MUST BE PROTECTED FROM DESICCATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL, SHADED AREAS UNTIL READY FOR PLANTING.
6. NEWLY PLANTED TREES MAY REQUIRE WATERING AS LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIAL.
7. MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDED HARDWOOD BARK MULCH, FREE OF WOOD ALONG.
8. ALL NURSERY STOCK TO BE SPRAYED WITH DEER REPELLENT CONTAINING BIRTEX, SUCH AS REPELLEX. ALL NURSERY STOCK TO BE GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM, SUCH AS REPELLEX TABLETS.

REFORESTATION AREA MONITORING NOTES

1. MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL, OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
2. THE MINIMUM SURVIVAL RATE SHALL BE 70% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO ONE TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
3. SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
4. EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REFORESTATION PLANTINGS IF REQUIRED AT THAT TIME.

FOREST RETENTION AREAS AND NOTES

1. FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
2. NO BARE BREASTED OR ENGINEERED SPACES WERE OBSERVED ON THIS SITE.
3. FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY MAINTAINED.
4. THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
5. CHANGES IN GROUND AND WINDWAY WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES, RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
6. FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE, DPZ AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.38 AC.
7. THE FOREST CONSERVATION EASEMENT FOR SECTION 16.1200 OF THE HOWARD COUNTY CODE, DPZ AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.38 AC.

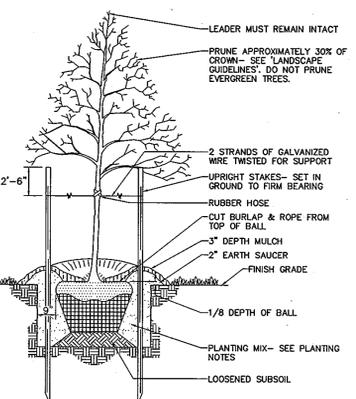
FOREST PROTECTION NOTES

- PRE-CONSTRUCTION ACTIVITIES**
1. FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 2. FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 3. A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE**
1. NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
 2. NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 3. IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION ACTIVITIES**
1. AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 2. FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 3. DO NOT REMOVE SIGNS.

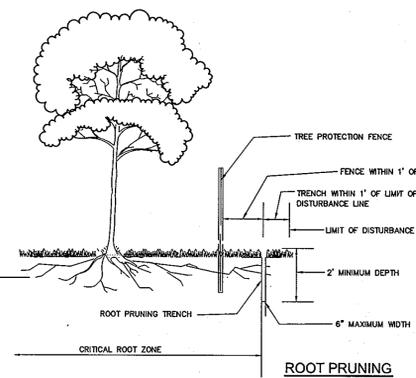
- COST ESTIMATE: (For bonding purposes, only)**
- RETENTION - 0.29 acres (12,560.68 SF X 0.20) = \$2,512.14
 ON-SITE REFORESTATION - 0.89 acres (38,708.72 SF X 0.50) = \$19,354.36
- SURETY NOTE**
- FINANCIAL SURETY IN THE AMOUNT OF \$19,354.36 HAS BEEN PAID WITH THE FC MAINTENANCE AGREEMENT.
- SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**
1. PRECONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
 2. STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
 3. INSTALL TREE PROTECTION FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE HOWARD COUNTY PLANNING AND ZONING DEPARTMENT.
 4. PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED EROSION CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING DEPARTMENT.
 5. TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

NOTES

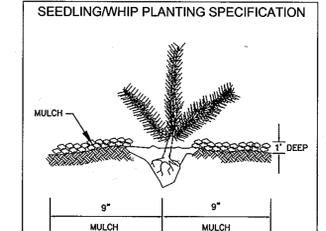
1. SEE "LANDSCAPE SPECIFICATION" GUIDELINES FOR BALTIMORE WASHINGTON METROPOLITAN AREA'S TREE MAINTENANCE PRODUCT, AND PROCEDURE SPECIFICATIONS.
2. SEE "LANDSCAPE SPECIFICATION" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIBER.
3. PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
4. KEEP MULCH 1" FROM TRUNK.
5. SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
6. TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



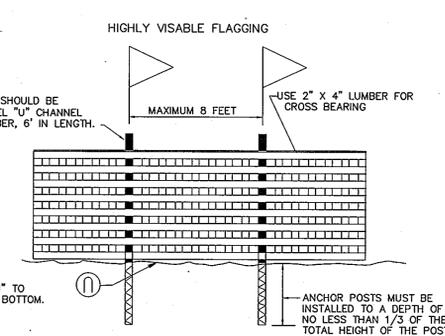
TREE PLANTING AND STAKING
 DECIDUOUS TREES UP TO 2-1/2" CALIBER
 NOT TO SCALE



- NOTES:**
1. PLANT MIX TO BE 1/3 PIONEER & 2/3 MID TO LATE SUCCESSIONAL SPECIES.
 2. PLANT LARGER STOCK AND EVERGREENS AROUND PERIMETER TO PROTECT INTERIOR SMALLER STOCK.
 3. WHEN SHRUBS ARE SPECIFIED, PLANT THEM IN CLUSTERS.
 4. DO NOT PLANT TREES IN A GRID PATTERN.



- SEEDLING/WHIP PLANTING SPECIFICATION**
- NOTE:
1. PLANT MIX TO BE 1/3 PIONEER & 2/3 MID TO LATE SUCCESSIONAL SPECIES.
 2. PLANT LARGER STOCK AND EVERGREENS AROUND PERIMETER TO PROTECT INTERIOR SMALLER STOCK.
 3. WHEN SHRUBS ARE SPECIFIED, PLANT THEM IN CLUSTERS.
 4. DO NOT PLANT TREES IN A GRID PATTERN.



- NOTES:**
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOF DAMAGE SHOULD BE AVOIDED.
 5. PROTECTION SIGNAGE SHOULD BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

BLAZE ORANGE PLASTIC MESH
 TYPICAL TREE PROTECTION FENCE DETAIL
 NTS

OWNER/DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

ZONED R-ED
 NET TRACT AREA: 4.40 AC
 A. TOTAL TRACT AREA: 4.40 AC
 B. AREA WITHIN 100 YEAR FLOODPLAIN: 0.00 AC
 C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION: 0.00 AC
 D. NET TRACT AREA: 4.40 AC

LAND USE CATEGORY

INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-ED

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

BREAK EVEN POINT:
 (2 X I) + F = BREAK EVEN POINT (0 AC)

J. FOREST RETENTION WITH NO MITIGATION: 0.75 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION: 0.00 AC

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED: 0.46 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED: 0.29 AC

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25): 0.00 AC
 P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD: 0.92 AC
 Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F): 0.00 AC
 R. TOTAL REFORESTATION REQUIRED (N+P-Q): 0.92 AC
 S. TOTAL AFFORESTATION REQUIRED: 0.00 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED: 0.92 AC

THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. TOTAL FOREST CONSERVATION OBLIGATION IS 1.21 AC. AREA OF RETENTION EASEMENT WILL BE 0.29 AC, AND 0.89 ACRES WILL BE PLANTED IN REFORESTATION EASEMENTS.

RETENTION - 0.29 ACRES (12,560.68 SF X 0.20) = \$2,512.14
 ON-SITE REFORESTATION - 0.89 ACRES (38,708.72 SF X 0.50) = \$19,354.36

BOND FOR THE 1.18 ACRES HAS BEEN PAID IN THE AMOUNT OF \$21,866.50
 COST OF FEE-IN-LIEU FOR THE REMAINING 0.03 AC. WILL BE \$653.40 (1306.80 SF X 0.50)

FEE-IN-LIEU FOR THE REMAINING 0.03 AC. HAS BEEN PAID IN THE AMOUNT OF \$ 653.40

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 7-17-06

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Date: 9/19/06

Chief, Development Engineering Division
 Date: 9/19/06

- NOTES**
1. THE PROPERTY OUTLINE IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES, INC. IN APRIL, 2002.
 2. THE EXISTING FEATURES AND CONTOURS SHOWN HEREON ARE BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FREDERICK WARD ASSOCIATES, INC. IN APRIL, 2002, FIELD LOCATION OF SPECIMEN TREES AND HOWARD COUNTY PHOTOGRAMMETRIC.
 3. THE PLANTING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS, AS SHOWN ON THIS PLAN.
 4. BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
 5. THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION WITHIN THE FOREST CONSERVATION EASEMENTS LOCATED IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT. IF BGE INTENDS TO TRIM OR REMOVE TREES WITHIN A FOREST CONSERVATION EASEMENT, A LETTER SPECIFYING THE LOCATION AND SCOPE OF WORK NEEDS TO BE SENT TO DPZ AT LEAST 30 DAYS IN ADVANCE OF UNDERTAKING THE WORK. DPZ UNDERSTANDS CONSTELLATION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

REFORESTATION PLANT SCHEDULE
 REFORESTATION AREA A=0.89 AC.

13 LANDSCAPING SIZE TREES=5,200SF (0.12 AC.) SPACING 20'X20'

PLANTING DENSITY: 0.522 AC. OF 1" CAL. TREES @ 200 PER ACRE =104 TREES
 PLANTING FOR WIRE ZONE : 0.248 AC. OF 1" CAL. TREES @ 200 PER ACRE =50 TREES
 TOTAL =167 TREES

CREDITED	QTY	BOTANICAL NAME	SIZE	SPACING
-	14	QUERCUS PALUSTRIS PIN OAK	1" CAL.	15' x 15'
-	50	KOUSSA DOGWOOD CORNUS KOUSSA (GROWTH HEIGHT=30")	1" CAL.	15' x 15'
*3	13	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	1" CAL.	15' x 15'
-	14	PRUNUS SEROTINA BLACK CHERRY	1" CAL.	15' x 15'
*5	13	ACER RUBRUM 'RED SUNSET' RED SUNSET MAPLE	1" CAL.	15' x 15'
*3	25	CORNELIAN CHERRY CORNUS MAS (GROWTH HEIGHT=25")	1" CAL.	15' x 15'
*2	25	AMUR MAPLE ACER GINNALA (GROWTH HEIGHT=20")	1" CAL.	15' x 15'

13 TREES ARE PERIMETER LANDSCAPING ON FCE EASEMENT, 2"-3" CAL., 20'X20'. THESE TREES ARE CREDITED TOWARDS FCE PLANTING.

OWNER/DEVELOPER CERTIFICATE

I CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN AND SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. I FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING

OWNER/DEVELOPER: [Signature] DATE: 6/6/06

LEGEND

EXISTING CONTOUR
 PROPOSED CONTOUR

EXISTING TREES TO REMAIN

NO-WOODY VEGETATION BUFFER

15%-24.99% STEEP SLOPE AREA

25% OR GREATER STEEP SLOPE AREA

FOREST CONSERVATION EASEMENT (RETENTION)

FOREST CONSERVATION EASEMENT (REFORESTATION)

SOIL BORING

TREE PROTECTION FENCE

10' PUBLIC TREE MAINTENANCE EASEMENT

AREA WITHIN 40' OF THE BGE POLES

15' PRIVATE SWM CREDIT EASEMENT

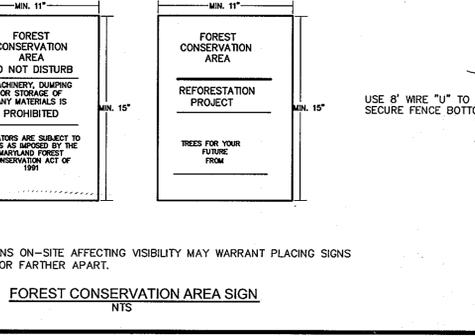
24' PRIVATE USE IN COMMON ACCESS EASEMENT FOR LOTS 6 AND 7

PRIVATE SWM EASEMENT

FOREST CONSERVATION EASEMENT TABLE

FOREST CONSERVATION EASEMENTS

RETENTION-FCE#1 0.038 AC.
 RETENTION-FCE#2 0.25 AC.
 REFORESTATION-FCE#3 0.077 AC.
 REFORESTATION-FCE#4 0.29 AC.
 REFORESTATION-FCE#5 0.52 AC.



NO. REVISION DATE

FOREST STAND DELINEATION, FOREST CONSERVATION & FINAL ROAD CONSTRUCTION PLAN
JUNEAU HILLS
 LOTS 1-8 AND OPENSACE LOTS 9

FOREST CONSERVATION PLAN & DETAILS

TAX MAP #24 GRID 18
 2ND ELECTION DISTRICT

PARCEL 289
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7566
 FAX: 410.461.8961

DESIGN BY: RJR/HV
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: 06-28-2006
 SCALE: AS SHOWN
 1"=50'
 S.W. NO.: 2034013.00

10 SHEET OF 10

AS-BUILT 2/4/2009 F-06-066