

SITE DATA
 LOCATION: TAX MAP 43, PARCEL 407
 DEED REFERENCE: 448/527
 6TH ELECTION DISTRICT
 EXISTING ZONING: RSC
 DENSITY: 4 UNITS/AC (2.62895 AC x 4 = 10 UNITS)
 GROSS AREA OF PARCEL: 114,510 SF (2.62895 AC.)
 TOTAL AREA OF ROADWAY INCLUDING WIDENING STRIPS: 608 SF (0.01397 AC.)
 AREA OF FLOODPLAIN: NONE
 AREA OF STEEP SLOPES: NONE
 NET AREA OF PROJECT: 2.62895 AC.
 NUMBER OF PROPOSED RESIDENTIAL LOTS: 10
 AREA OF PROPOSED RESIDENTIAL LOTS: 83,858 SF (1.925 AC)
 AREA OF SMALLEST BUILDABLE LOT PROPOSED: 6,381 SF (LOT 9)
 NUMBER OF PROPOSED OPEN SPACE LOTS: 1 (LOT 11)
 AREA OF OPEN SPACE REQUIRED: (0.53 AC.) 22,902.00 S.F. (20% x 114,510 SF)
 CREDITED OPEN SPACE: 27,941.00 S.F. (0.64 AC.)
 NON-CREDITED OPEN SPACE: 2,089 SF (0.04795 AC.)
 TOTAL AREA OF OPEN SPACE PROPOSED: 30044 S.F. (0.68974 AC.)
 DPZ FILE REFERENCES: S-02-004, P-07-006.

FINAL ROAD CONSTRUCTION PLAN

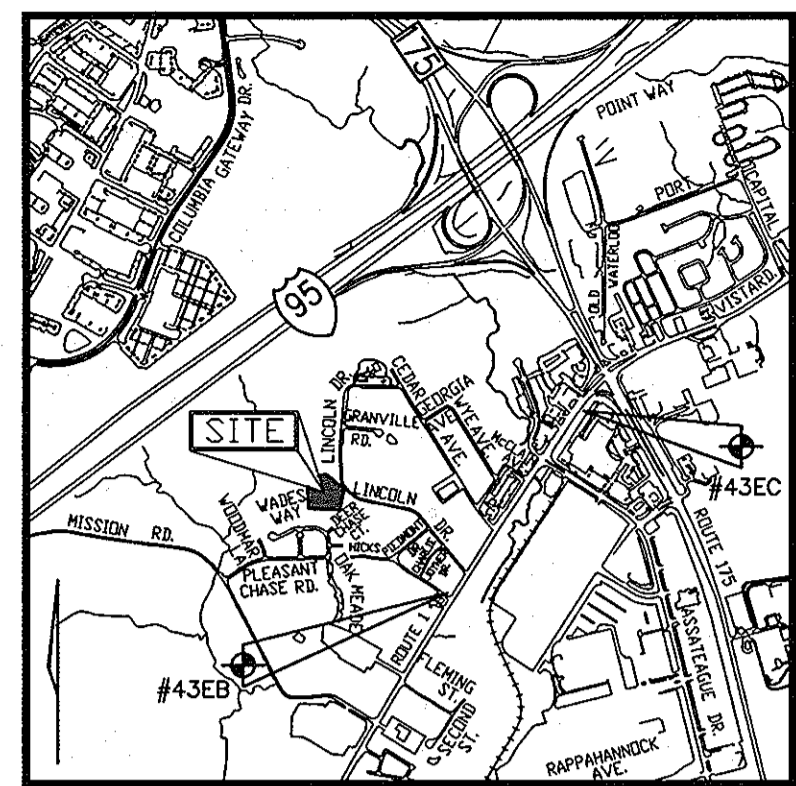
LINCOLN GLEN

LOTS 1-10 & OPEN SPACE LOT 11

HOWARD COUNTY, MARYLAND

BENCHMARK NO. 1:
 COUNTY CONTROL #43EC
 N 547821.276 E 1372882.447
 ELEV. = 220.369

BENCHMARK NO. 2:
 COUNTY CONTROL #43EB
 N 545963.658 E 1371573.830
 ELEV. = 216.991

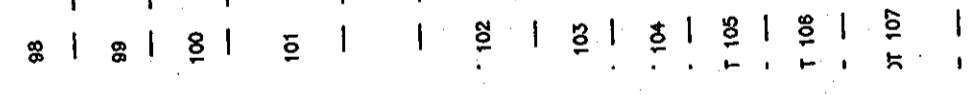
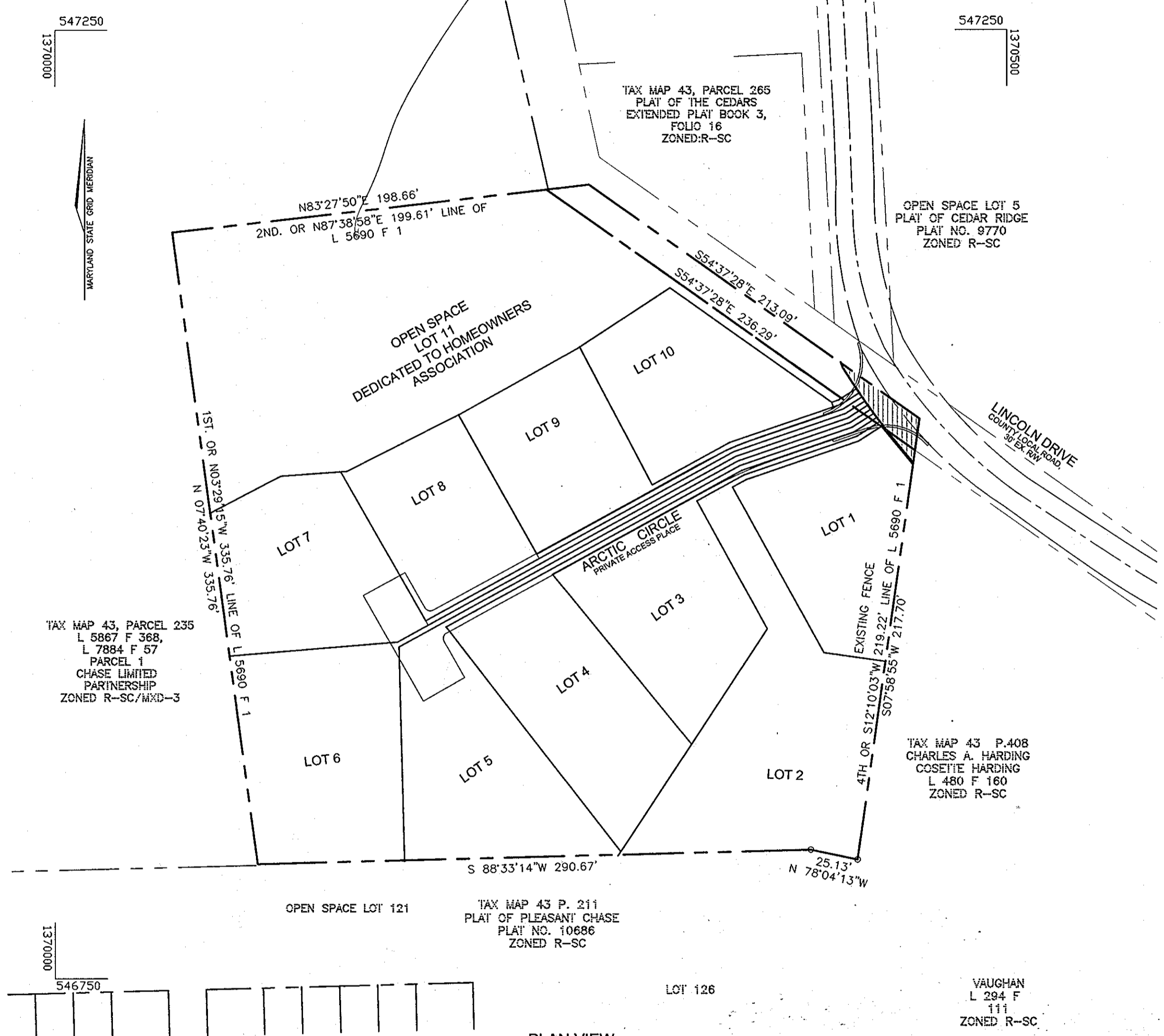


VICINITY MAP
 SCALE: 1"=2,000'

ADC COORDINATES:
 N 486,300
 E 856,000
 MAP:20, GRID:G-1

GENERAL NOTES

- THIS SUBDIVISION COMPLIES WITH THE 4TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS AMENDED BY COUNCIL BILL 45-2003 AND THIS SUBJECT PROPERTY IS ZONED R-SC PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 07/28/06.
- THE PROJECT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY BY FREDERICK WARD ASSOCIATES, DATED MAY 09, 2001.
- THE TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN TOPOGRAPHIC SURVEY WITH TWO FEET CONTOUR INTERVALS PERFORMED BY FREDERICK WARD ASSOCIATES, DATED APRIL, 2001.
- WATER & SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 18.12.2.B OF THE HOWARD COUNTY CODE.
- STORMWATER MANAGEMENT TO BE PROVIDED FOR THE DEVELOPMENT BY ONE POCKET POND LOCATED ON OPEN SPACE LOT 11 AND RAIN GARDEN FOR PART OF LOT 1. THE FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA. LOCATION AND DESIGN DETAIL OF RAINGARDEN FOR LOT 1 WILL BE PROVIDED ON SITE DEVELOPMENT PLAN.
- THERE ARE NO WETLANDS, WETLAND BUFFERS, STREAM AND STREAM BUFFERS LOCATED ON-SITE.
- THERE ARE NO FLOODPLAINS ON SITE (SLOPES GREATER THAN 25%).
- FOREST STAND DELINEATION PLAN PREPARED BY EXPLORATION RESEARCH INC. DATED JANUARY, 2007.
- AFPO TRAFFIC STUDY PREPARED BY THE TRAFFIC GROUP DATED JUNE, 2001, AND REVISED ON DECEMBER 14, 2001 WAS APPROVED JANUARY 2002.
- THERE ARE NO STEEP SLOPES GREATER THAN 25% LOCATED WITHIN SUBJECT PROPERTY.
- STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(a)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$20,190.00 TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 29 STREET TREES (PRIVATE), 37 SHADE TREES, 20 EVERGREEN TREES AND 8 SHRUBS AROUND TRASH PAD.
- STREET LIGHTING WILL BE PROVIDED IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REQUIREMENTS. THE LIGHT INTENSITY AT THE PROPERTY LINE SHALL NOT EXCEED 0.1 FOOT CANDLES.
- THE POCKET POND IS HAZARD CLASS 'A'.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL/CEMETERY LOCATIONS ON SITE.
- OPEN SPACE LOT 11 WILL BE OWNED BY THE HOMEOWNERS ASSOCIATION.
- TRASH COLLECTION RECYCLING AND SNOW REMOVAL WILL BE PROVIDED TO THE JUNCTION OF THE FLAG, PIPESTEM OR PRIVATE ACCESS PLACE. EASEMENT AND THE ROAD RIGHT-OF-WAY LINE ONLY.
- GEOTECHNICAL STUDY PREPARED MARCH 2002 BY HERBST BENSON ASSOCIATES.
- REFERENCE S-02-04, P-07-006 APPROVED SEPTEMBER 5, 2007.
- RECHARGE VOLUME IS PROVIDED BY GRASS CHANNEL CREDIT.
- FOREST CONSERVATION OBLIGATION TO BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU OF \$12,741.30 (16988.40 SQ. FT. X \$0.75 = 12,741.30) FOR 0.39 AC OF REQUIRED REFORESTATION.
- THE COORDINATES SHOWN HERE ON ARE BASED UPON THE HOWARD COUNTY GEOMETRIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLACE COORDINATE SYSTEM, HOWARD COUNTY MONUMENTS NOS 43EL AND 43 EB.
- EXISTING UTILITIES ARE BASED ON AVAILABLE RECORD DRAWINGS AND FIELD LOCATED EVIDENCE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- ALL EXISTING HOUSES, SHEDS, DRIVEWAYS, FENCES, AND MISC. STRUCTURES LOCATED ON SITE ARE TO BE REMOVED.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PAVEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (1 1/2" 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.
- NO CLEARING, GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURE SHALL BE PERMITTED WITHIN THE LIMIT OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- PROTECTIVE COVENANTS INCLUDING COVENANTS GOVERNING THE MAINTENANCE OF COMMUNITY OWNED OPEN SPACE AND THE MAINTENANCE OF THE PRIVATE ACCESS PLACE, THE MAINTENANCE OF THE STREET TREES AND ANY RESERVATIONS OF HOME OWNER'S ASSOCIATION TO BE RECORDED.
- THE ARTICLES OF INCORPORATION OF LINCOLN GLEN HOMEOWNERS' ASSOCIATION, INC. WERE ACCEPTED AND APPROVED BY THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION ON JANUARY 31, 2008.
- THE MAINTENANCE AGREEMENT FOR THE PRIVATE ACCESS PLACE TO BE RECORDED SIMULTANEOUSLY WITH THE PLAT IN THE LAND RECORDS OF HOWARD COUNTY.
- THE TRASH PAD, STREET TREES AND BUS PAD SHOWN HEREON TO BE PRIVATELY MAINTAINED BY THE LINCOLN GLEN HOMEOWNERS ASSOCIATION, INC.
- A WAIVER PETITION HAS BEEN SUBMITTED AND APPROVED, DATED DECEMBER 21, 2007 TO WAIVE SECTION 5.2.6.1.C. OF DESIGN MANUAL VOLUME I, WHICH REQUIRES THAT A 12' LEVEL AREA BE PROVIDED AROUND THE ENTIRE FACILITY (INCLUDING THE TOP OF DAM) FOR MAINTENANCE ACCESS TO ALLOW A 10' TOP OF DAM AND SECTION 5.2.7.A.4, WHICH REQUIRES THAT ALL WET PONDS HAVE A POND DRAIN CAPABLE OF DRAINING THE PERMANENT POOL WITHIN 24 HOURS TO ALL NO POND DRAIN. APPROVAL WAS BASED PRINCIPALLY ON THE FACT THAT THE STORM WATER MANAGEMENT FACILITY SHOULD BE PRIVATELY OWNED AND MAINTAINED. IF THE PERMANENT POOL NEEDS TO BE DRAINED FOR MAINTENANCE A SMALL PRIVATE PUMP CAN BE UTILIZE AND THERE IS NO ADVERSE IMPACT TO COUNTY INFRASTRUCTURE.
- A WAIVER PETITION WAS SUBMITTED AND APPROVED DATED JANUARY 16, 2007 TO WAIVE DESIGN MANUAL, VOLUME SECTION 5.2.6.D.1, WHICH REQUIRES THE TOP OF DAM TO BE 12' IN WIDTH, TO REDUCE THE TOP OF DAM TO BE 10' WIDE. THE APPROVAL WAS BASED ON PRINCIPALLY ON THE FACT THAT THE POND SHOULD BE PRIVATELY OWNED AND MAINTAINED AND THAT THERE IS NO ADVERSE IMPACT TO COUNTY INFRASTRUCTURE.



COORDINATE LIST

POINT	NORTH	EAST
3108	546810.50494	1370106.39579
3110	54743.26281	1370061.56374
3200	546817.84090	1370386.96970
3203	546812.84628	1370421.55684
3311	547165.87643	1370258.93708
3312	547165.03134	1370259.12197
3313	547028.23522	1370451.78650

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 8
ROAD CONSTRUCTION PLAN, PROFILE & DETAILS	2 OF 8
GRADING AND SEDIMENT & EROSION CONTROL PLAN	3 OF 8
SEDIMENT & EROSION CONTROL DETAILS	4 OF 8
STORM DRAIN DRAINAGE AREA MAP FOR CULVERT & DETAILS	5 OF 8
STORMWATER MANAGEMENT DETAILS	6 OF 8
STORMWATER MANAGEMENT DETAILS	7 OF 8
LANDSCAPE AND FOREST CONSERVATION PLAN & DETAILS	8 OF 8

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
 COVER SHEET
 LINCOLN GLEN
 LOTS 1-10 AND OPENSACE LOT 11

TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.481.8961

DESIGN BY: RHV/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: APRIL 2008
 SCALE: AS SHOWN
 W.O. NO.: 06-35.00

1 SHEET OF 8

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development Date 6/4/08
 Chief, Development Engineering Division Date 6/2/08

STORMWATER MANAGEMENT REQUIREMENTS - AREA 'B'

AREA 0.40 AC.	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQv)	0.0059 AC. FT.	0	0.0059 AC. FT.	RAIN GARDEN FOR LOT 1, 1/2 ROOF
2	RECHARGE VOLUME (REV)	0.0008 AC. FT.	0.171 AC.	0.0008 AC.-FT.	RAIN GARDEN FOR LOT 1, 1/2 ROOF
3	CHANNEL PROTECTION VOLUME (CPv)	N/A .01<2.0 CFS	N/A	0.0073 AC. N/A	Q1=0.47 CFS
4	OVERHEAD FLOOD PROTECTION (Qv)	N/A	N/A	N/A	N/A
5	EXTREME FLOOD VOLUME (Qv)	N/A	N/A	N/A	N/A

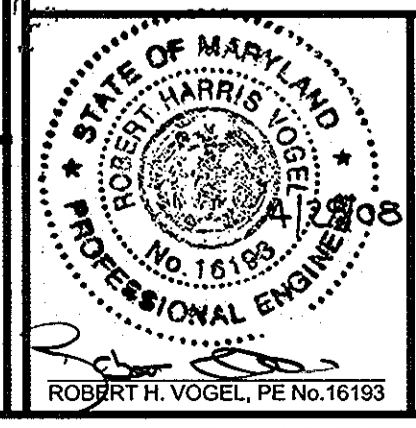
STORMWATER MANAGEMENT REQUIREMENTS - AREA 'A'

AREA 2.52 AC.	REQUIREMENT	VOLUME REQUIREMENT WITHOUT CREDITS	CREDITS	VOLUME REQUIREMENT WITH CREDITS	NOTES
1	WATER QUALITY VOLUME (WQv)	0.1116 AC. FT.	0	0.1116 AC. FT.	1 YEAR EXTENDED DETENTION POCKET POND(P-5)
2	RECHARGE VOLUME (REV)	0.0145 AC. FT. 0.1744 AC.	0.1744 AC.	0	0.1744 AC IMPERVIOUS TO GRASS CHANNELS IN AREA A
3	CHANNEL PROTECTION VOLUME (CPv)	0.1641 AC-FT	N/A	0.1641 AC-FT	1 YEAR EXTENDED DETENTION POCKET POND(P-5)
4	OVERHEAD FLOOD PROTECTION (Qv)	N/A	N/A	N/A	N/A
5	EXTREME FLOOD VOLUME (Qv)	N/A	N/A	N/A	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, P.E. No. 16193

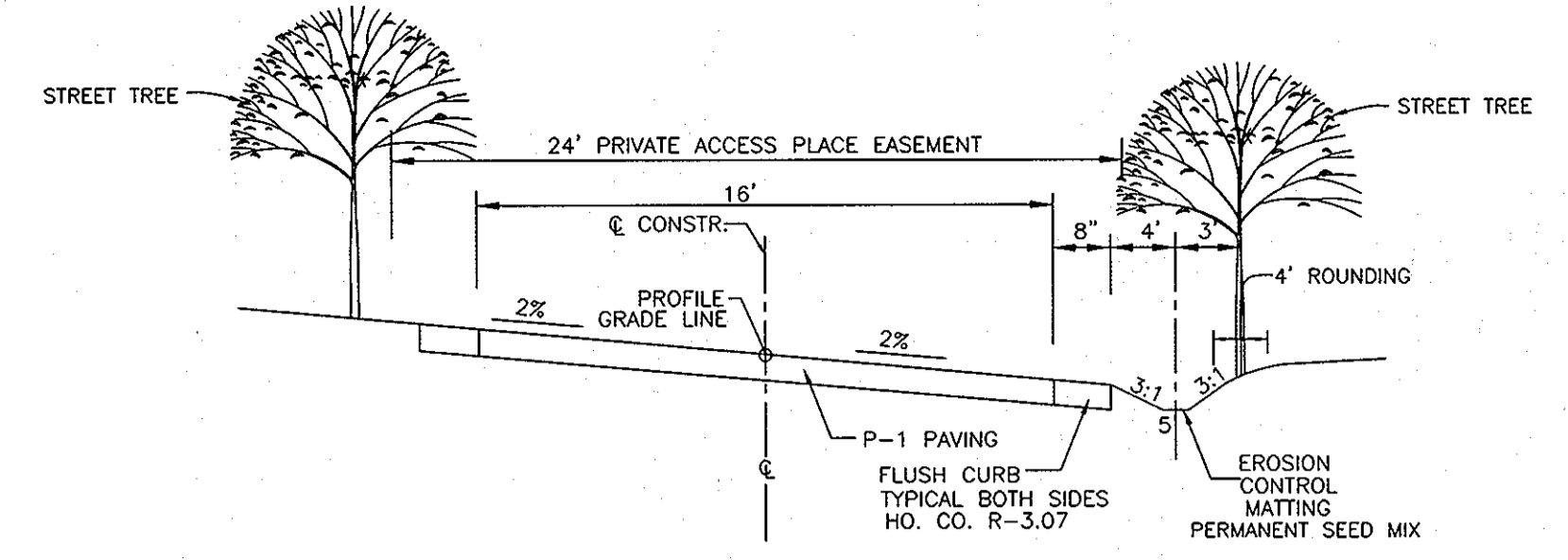
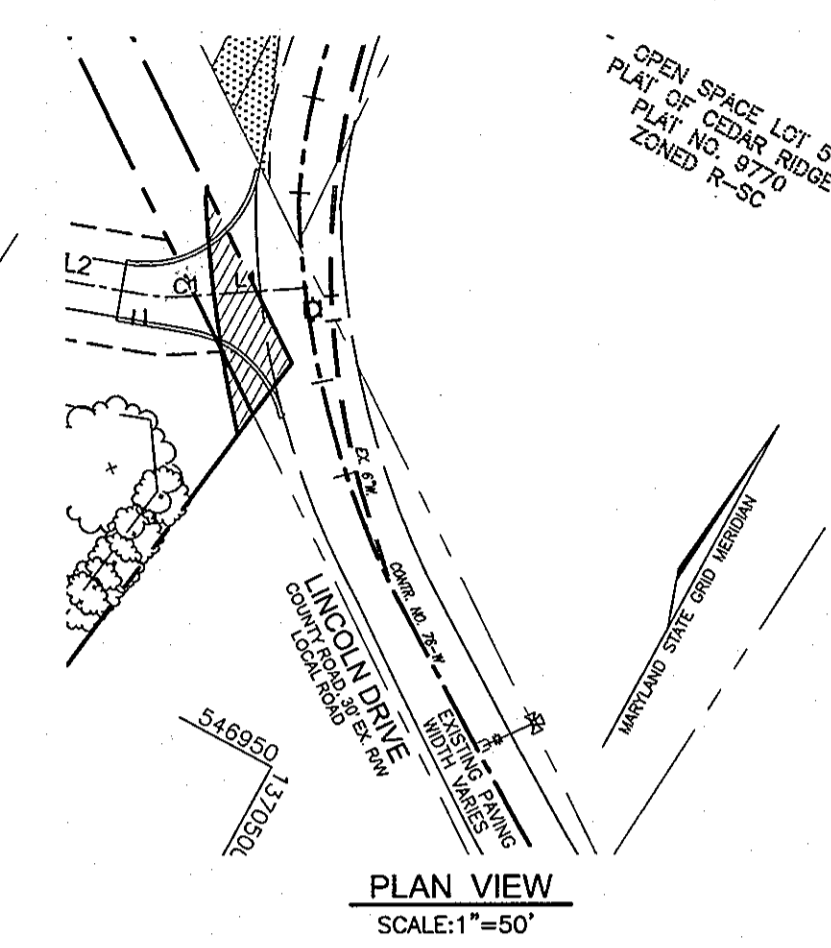
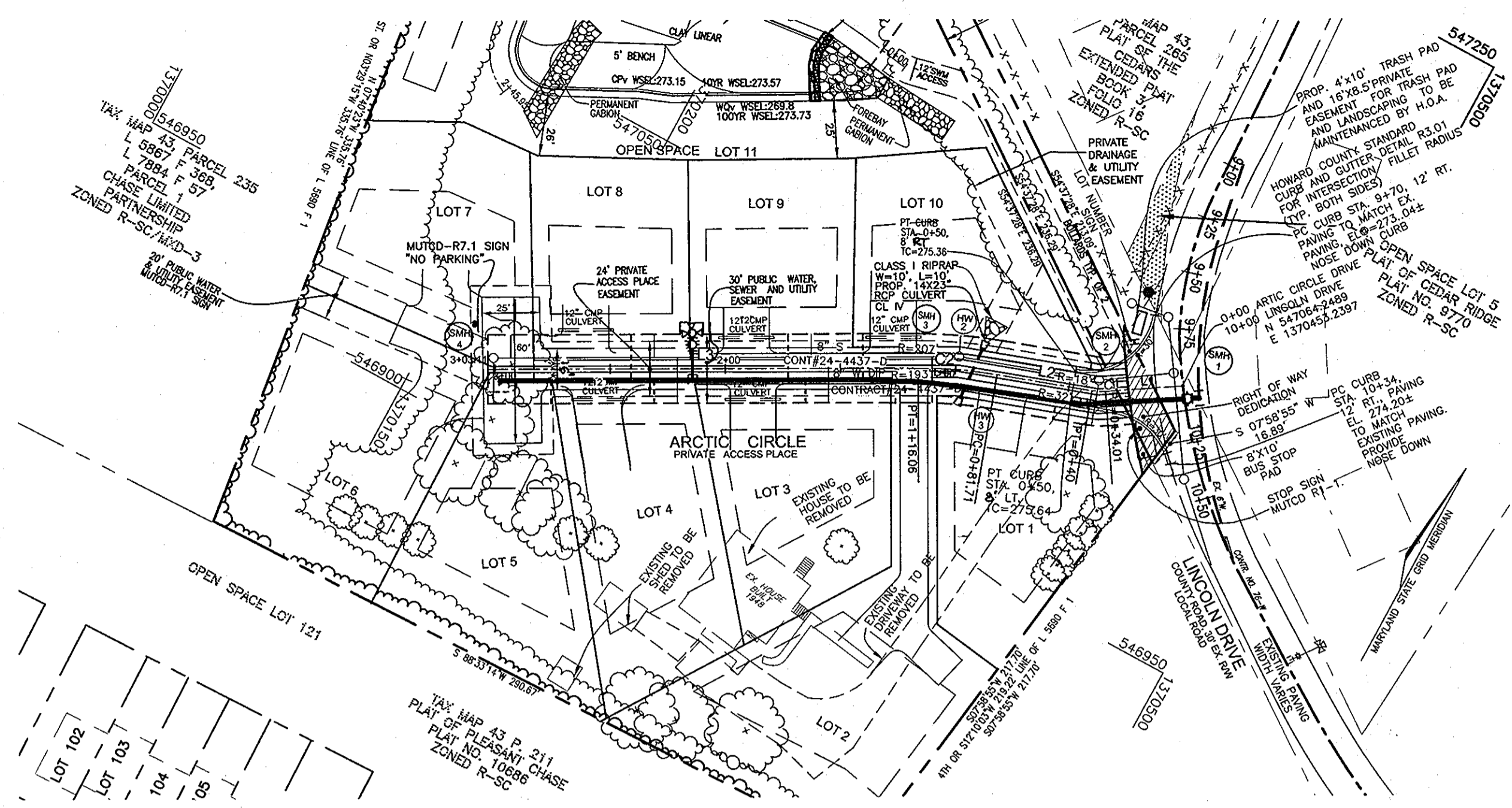
OWNER/DEVELOPER
 MICHAEL PFAU
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVE., STE. 301
 ELLICOTT CITY, MARYLAND 21043
 (410) 480-0023

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.



LINE	LENGTH	BEARING
L1	34.01	S57°20'59"W
L2	41.72	S71°03'45"W
L3	187.06	S51°13'28"W

CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	5.98	25.00	13°42'46"	3.01	N64°12'22"E	5.97
C2	34.34	200.00	9°50'19"	17.21	S66°08'36"W	34.30



STA. 0+12 TO 3+03
TYPICAL ROADWAY SECTION
ARCTIC CIRCLE DRIVE
CLASSIFICATION: PRIVATE ACCESS PLACE
 DESIGN SPEED : 15 MPH
 SECTION NOT TO SCALE

*PROVIDE HOWARD COUNTY STANDARD CURB & GUTTER TO STA. 0+50
 TRANSITION TO FLUSH CURB 0+50 TO 0+65
 FLUSH CURB 0+65 TO 3+03

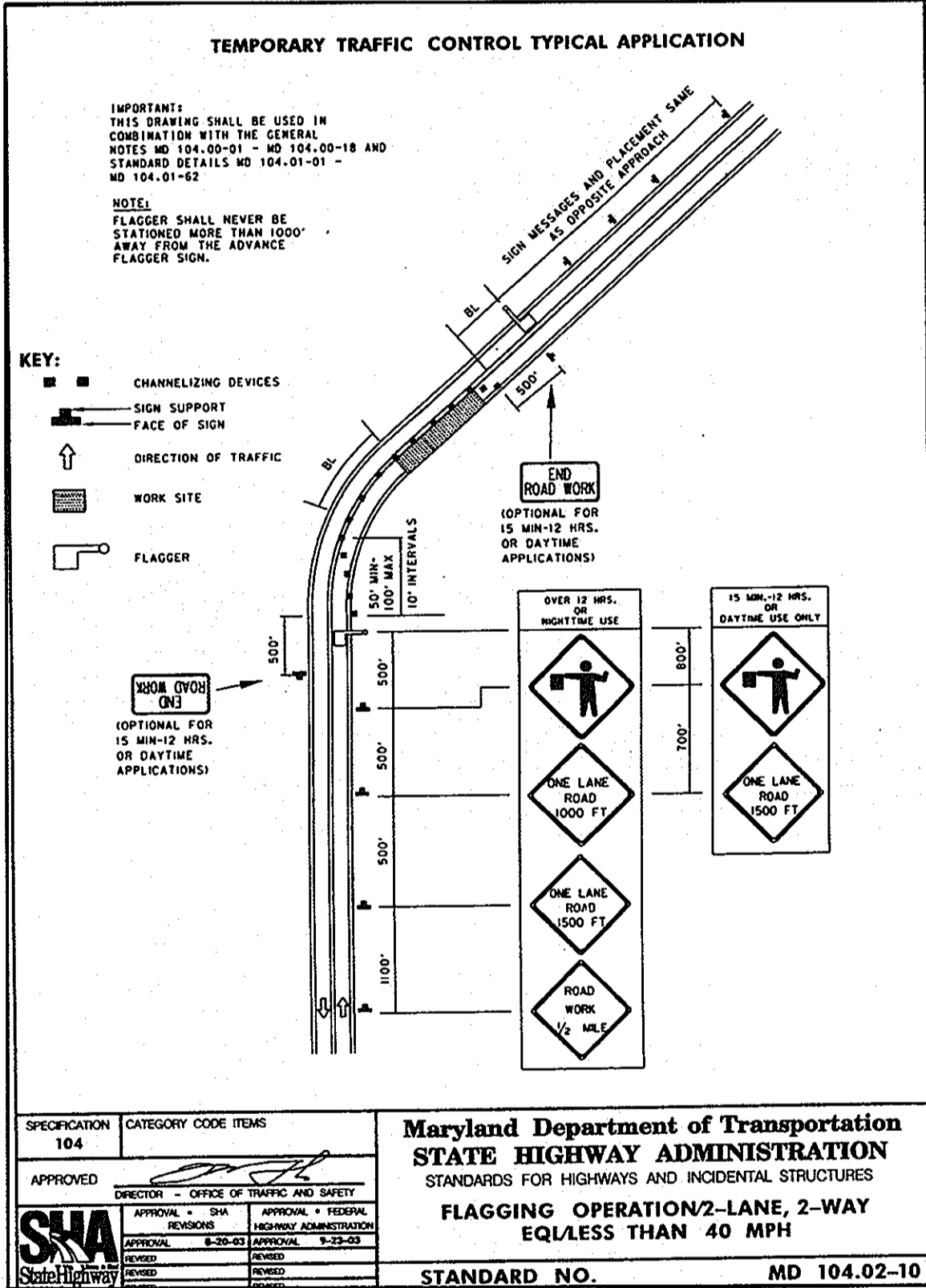
PRIVATE ACCESS PLACE STREET TREE SCHEDULE			
15	NUMBER OF STREET TREES REQUIRED		
15	NUMBER OF STREET TREES PROVIDED		
13	CORNELIAN CHERRY CORNUS MAS	2 1/2'-3' Ht.	B & B
2	OKAME CHERRY FRUNUS X OKAME (GROWTH HEIGHT=25')	4'-6' Ht.	B & B

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
ARCTIC CIRCLE DRIVE	600/40	15	15

- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT MAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH LANDSCAPE SPECIFICATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO 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.

SIGNAGE LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
ARCTIC CIRCLE	0+19.75	17.5' LT.	STOP SIGN MUTCD R1-1
ARCTIC CIRCLE	0+19.50	20.25' RT.	LOT NUMBER SIGN SEE THIS SHEET FOR DETAIL
ARCTIC CIRCLE		AS SHOWN	NO PARKING MUTCD- R7.1

STREET LIGHT LOCATION CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
ARCTIC CIRCLE	0+12.23	41.5' RIGHT	150-WATT PREMIER POST-TOP FIXTURE

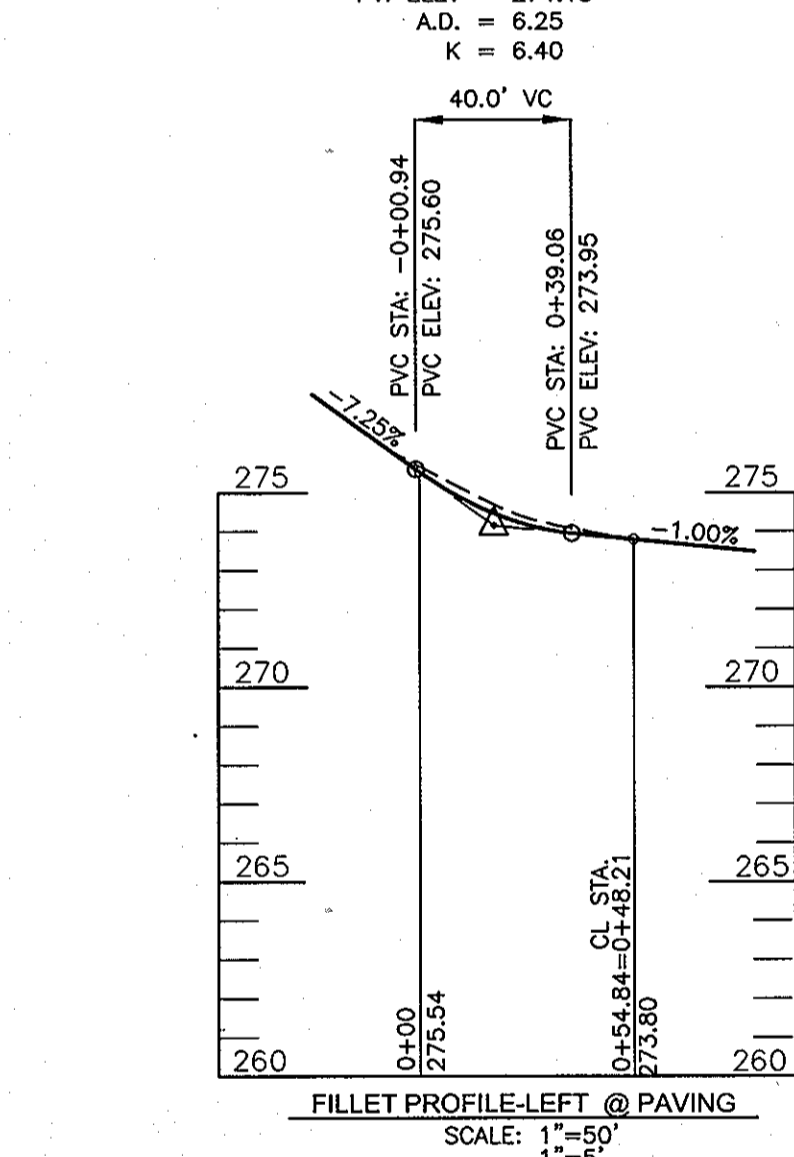
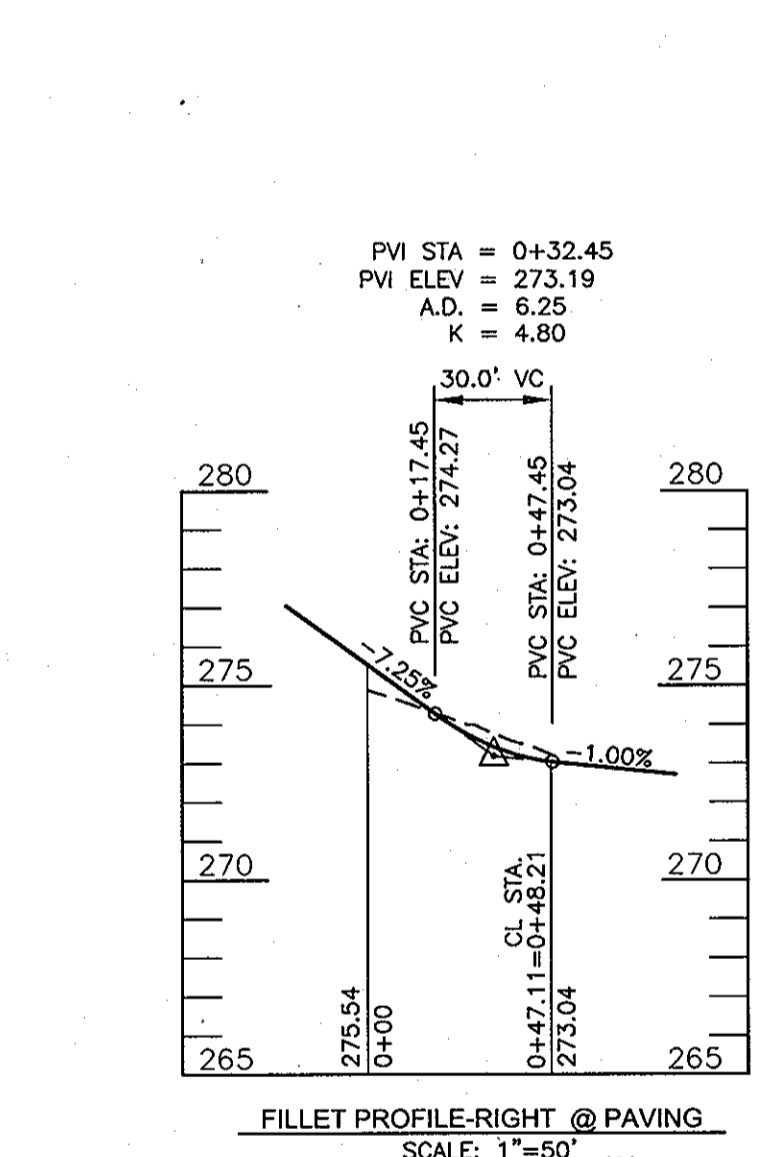
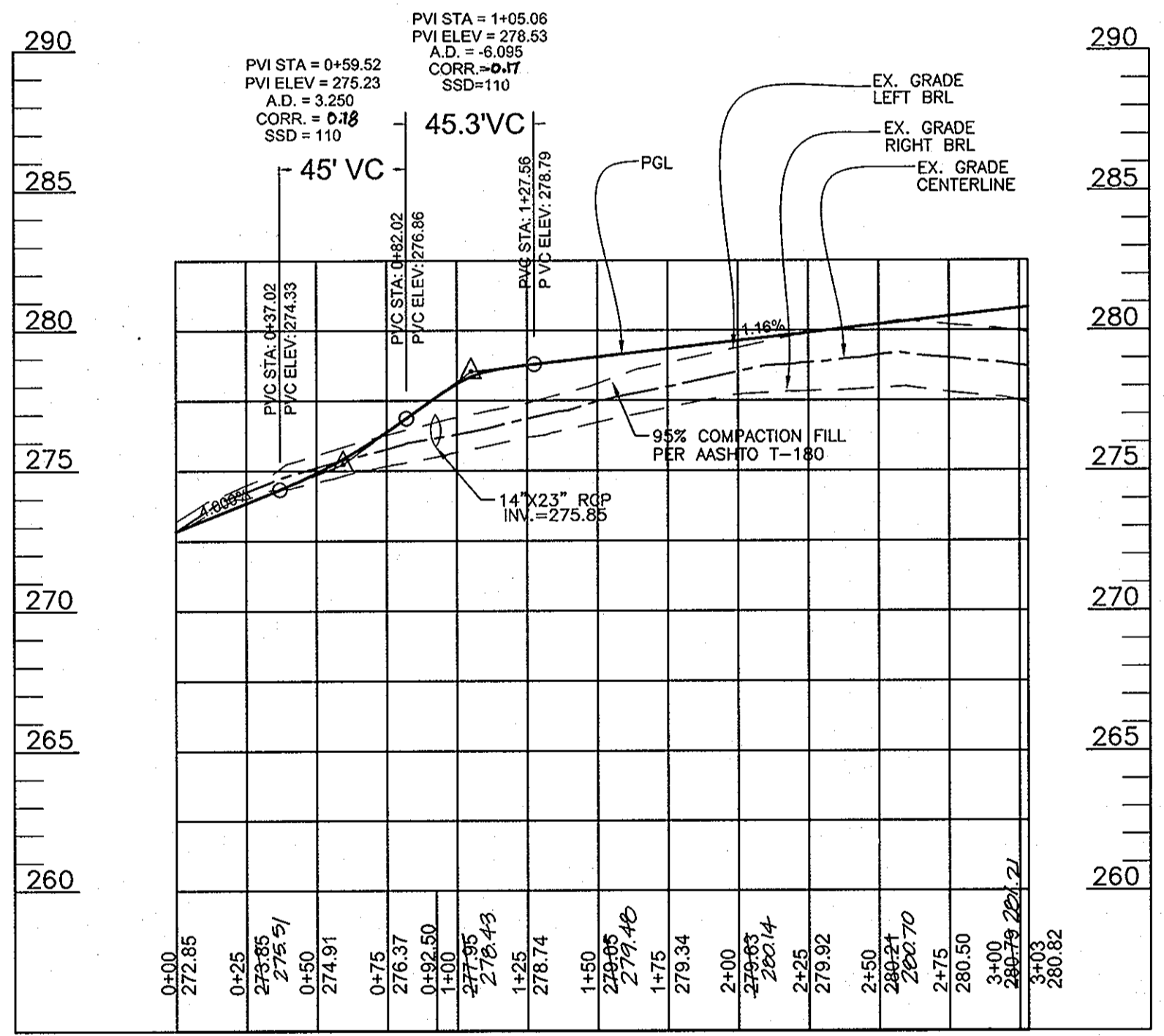


MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
 STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
FLAGGING OPERATION-2-LANE, 2-WAY
EQLAESS THAN 40 MPH
 STANDARD NO. MD 104.02-10

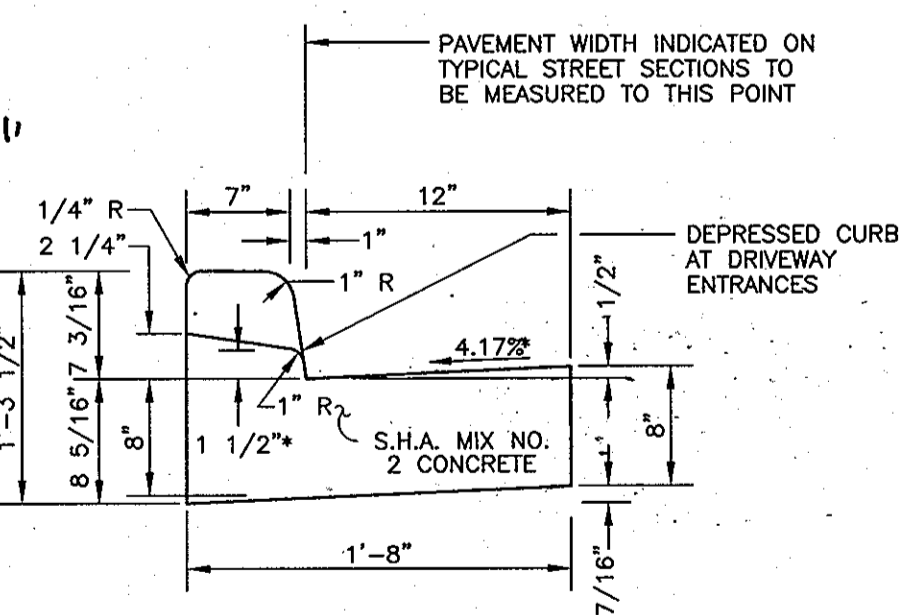
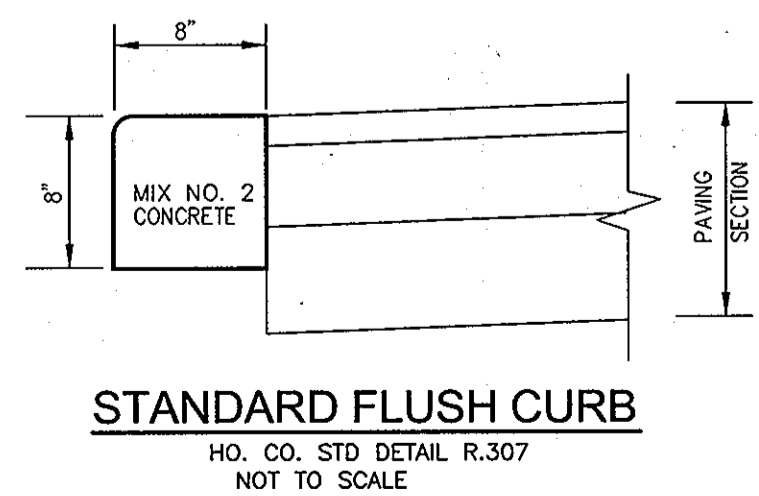
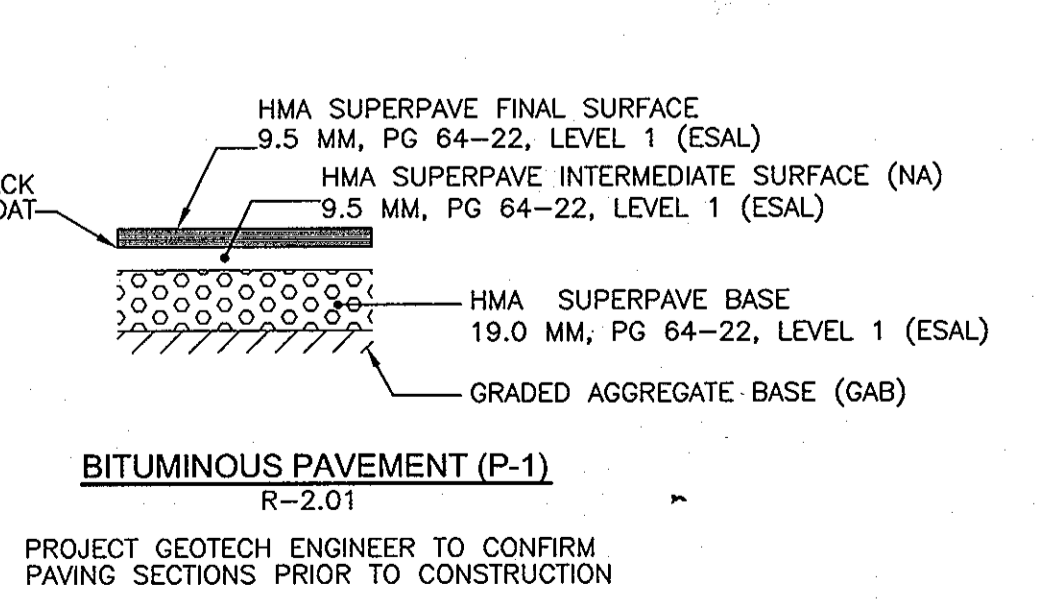
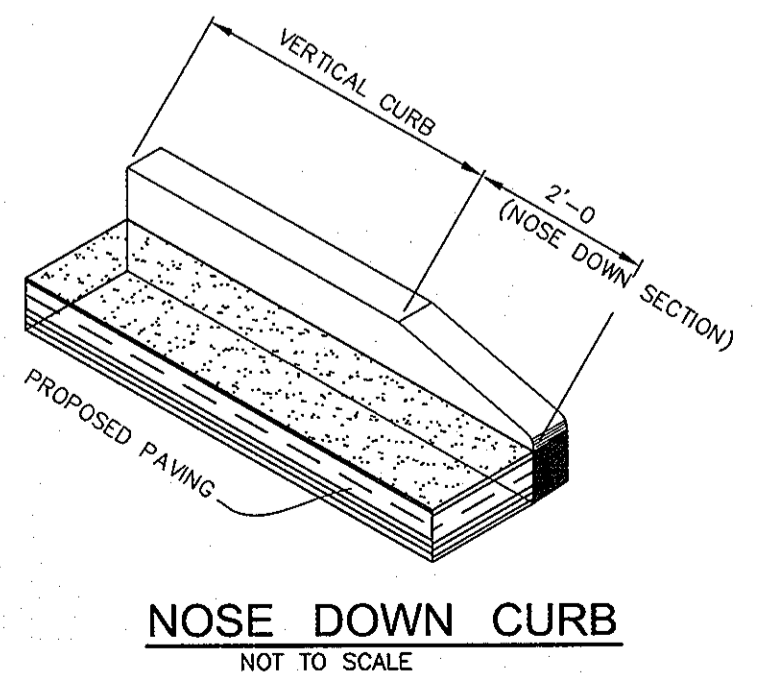
APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 6/4/10
 Chief, Division of Land Development Date

[Signature] 6/2/10
 Chief, Development Engineering Division Date



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



*NOTE: DEPRESSED CURBS IN HANDICAP ACCESSIBLE AREAS SHALL HAVE A 0.0417(1/2") RISE FROM PAVING TO TOP OF CURB.

OWNER/DEVELOPER
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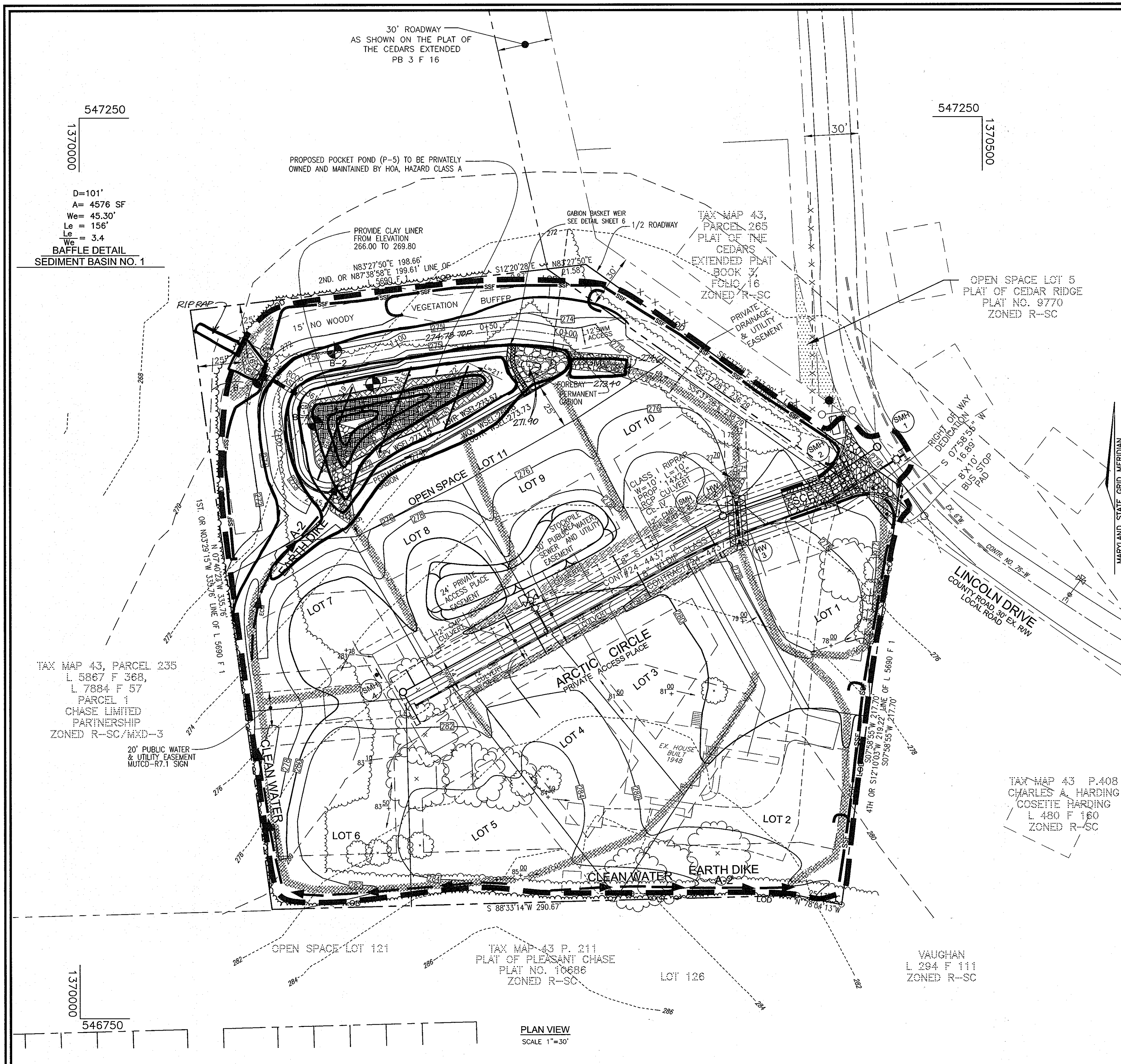
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT
 DATE

FINAL ROAD CONSTRUCTION PLAN
 ROAD CONSTRUCTION
 PLAN, PROFILE & DETAILS
LINCOLN GLEN
 LOTS 1-10 AND OPENSAPCE LOT 11

TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

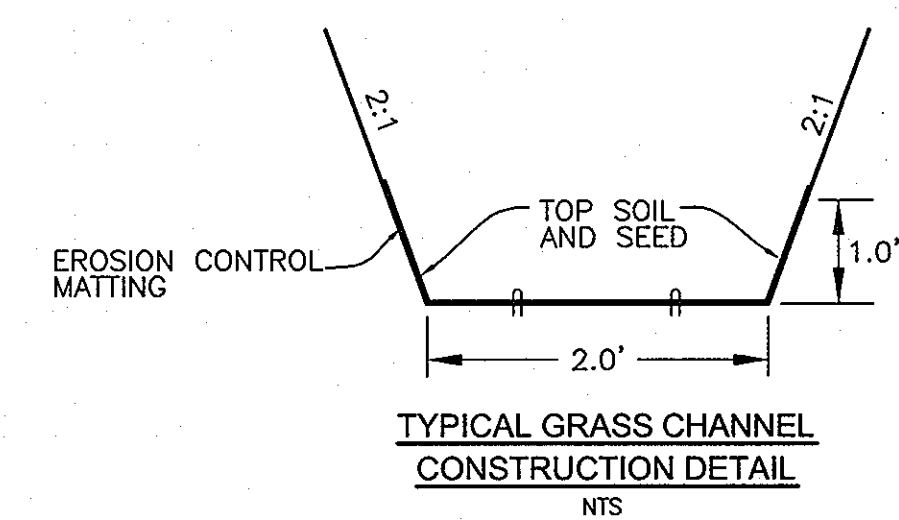
ROBERT H. VOGEL
ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8999

DESIGN BY:	RHV/RJ
DRAWN BY:	Rj
CHECKED BY:	RHV
DATE:	APRIL 2008
SCALE:	AS SHOWN
W.O. NO.:	08-35-00



SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	TYPE
S _c B	SANDY AND CLAYEY LAND, GENTLY SLOPING	C

NOTE: HOWARD SOIL SURVEY, MAP NUMBER 20



- LEGEND**
- EXISTING CONTOUR
 - PROPOSED CONTOUR
 - SPOT ELEVATION
 - DIRECTION OF FLOW
 - EXISTING TREES TO REMAIN
 - PROPOSED STREET TREE
 - SOILS
 - SUPER SILT FENCE
 - LIMIT OF DISTURBANCE
 - EARTHDIKE
 - EROSION CONTROL MATTING
 - CLAY LINER
 - 5' BENCH
 - ROW DEDICATION
 - OPEN SPACE LOT 5

LINCOLN GLEN					
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.1116 AC. FT.	0	0.1116 AC. FT.	POCKET POND (P-5)
2	RECHARGE VOLUME REV	0.0145 AC. FT. OR 0.1744 AC.	0.1744 AC.	0	ROOFTOP AND NON-ROOFTOP DISCONNECT CREDIT
3	CHANNEL PROTECTION VOLUME CPV	0.1641 AC. FT.	N/A	0.641 AC. FT.	1 YEAR EXTENDED DETENTION POCKET POND (P-5)
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	N/A
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	N/A

- NOTE: 1. 50% WqV PROVIDED IN MICROPOOL
 2. ROOFTOP AND NON-ROOFTOP CREDIT FOR POCKET POND (P-5)
 3. Cpv PROVIDED BY EXTENDED DETENTION POCKET POND (P-5)

LINCOLN GLEN					
AREA	REQUIREMENT	VOLUME REQUIREMENT W/O CREDITS	CREDITS	VOLUME REQUIREMENT AFTER CREDITS	NOTES
1	WATER QUALITY VOLUME WQV	0.0059 AC. FT.	0	0.0059 AC. FT.	RAIN GARDEN FOR LOT 1 1/2 ROOF
2	RECHARGE VOLUME REV	0.0008 AC. FT. OR 0.0073 AC.	0.0073 AC.	0.0008 AC. FT. OR 0.0073 AC.	RAIN GARDEN FOR LOT 1 1/2 ROOF
3	CHANNEL PROTECTION VOLUME CPV	N/R Q1=2.0 cfs Q1< 2.0 cfs	N/A	N/A	Q1=0.047 cfs
4	OVERHEAD FLOOD PROTECTION, Q10P	N/A	N/A	N/A	N/A
5	EXTREME FLOOD VOLUME, Q100P	N/A	N/A	N/A	N/A

- NOTE: 1. WqV & Rev FOR 1/2 ROOFTOP IN POND 'B' PROVIDED BY LOT 1 RAIN GARDEN (TO BE PROVIDED WITH SDP)
 3. Cpv NOT REQUIRED, Q1< 2.0 cfs

- POND LINERS INCLUDE:**
- 6 TO 12 INCHES OF CLAY SOIL (MIN 15% PASSING THE #200 SIEVE AND A MAX PERMEABILITY OF 1X10 CM/SEC).
 - A 30 MIL POLY-LINER
 - BENTONITE
 - USE OF CHEMICAL ADDITIVE (SEE NRCS AGRICULTURAL HANDBOOK NO.387 DATE 1971, ENGINEERING FIELD MANUAL)
 - OTHER SUITABLE MATERIALS APPROVED BY THE APPROPRIATE REVIEW AUTHORITY

TRAP TYPE: BASIN
EX. DRAINAGE AREA: 0.61 AC.
PROP. DRAINAGE AREA: 2.30 AC. BASIN + DISCONNECT CREDIT
WET STORAGE REQUIRED: 4140 CF
WET STORAGE PROVIDED: 4140 CF
DRY STORAGE PROVIDED: 4140 CF
DRY STORAGE REQUIRED: 9583 CF
TOTAL STORAGE REQUIRED: 8,280 CF
TOTAL STORAGE PROVIDED: 13,773 CF
BOTTOM ELEV: 266.00
CREST ELEVATION: 272.20
WET STORAGE ELEVATION: 266.00-269.80
DRY STORAGE ELEVATION: 269.80-272.20
TOTAL STORAGE DEPTH: 6.20'
TOP OF EMBANKMENT: 275.00
CLEANOUT ELEVATION: 268.50
SIDE SLOPES: 3:1
EMERGENCY SPILLWAY: N/A

Q1 EX=0.40 cfs
 Q10 EX=1.68 cfs
 Q1 SED=0.35 cfs
 Q10 SED=11.45 cfs

EXCLUDES CLEANWATER DIVERSION POND NO.1 (DRAINAGE AREA A)
 POCKET POND (P-5)
 HAZARD CLASS A PRIVATELY OWNED & MAINTAINED
 1 YR WSEL = 272.18
 10 YR WSEL = 272.54
 100 YR WSEL = 277.72
 WQV WSEL = 269.80

WQV=0.056 Ac. Ft.
 REOD 0.09 Ac. Ft. PROVIDED
 CPV=0.21 Ac.Ft.
 Rev=CREDIT
 Q₁ EX. = 2.20 CFS
 Q₁₀ EX. = 8.56 CFS
 Q₁₀ W/SWM = 9.76 CFS
 Q₁₀₀ EX. = 14.72 CFS
 Q₁₀₀ W/SWM = 14.89 CFS

* INCLUDES UNMANAGED AREA

APPROVED : FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

DATE



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, P.E. No. 16193

FINAL ROAD CONSTRUCTION PLAN
GRADING, SEDIMENT AND EROSION CONTROL PLAN

LINCOLN GLEN
 LOTS 1-10 AND OPENSAPCE LOT 11

TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL, INC.
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MARYLAND 21043 FAX: 410.461.8961

DESIGN BY: RHR/RJ
 DRAWN BY: RJ
 CHECKED BY: RHV
 DATE: APRIL 2008
 SCALE: AS SHOWN
 W.O. NO.: 08-35.00

3 SHEET OF 8

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development Date: 6/4/08

Chief, Development Engineering Division Date: 6/2/08

DEVELOPER'S CERTIFICATE

"I, WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AND "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Signature of Developer: Michael PfaU Date: 4/11/08

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT 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."

Signature of Engineer: Robert H. Vogel Date: 4/11/08

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

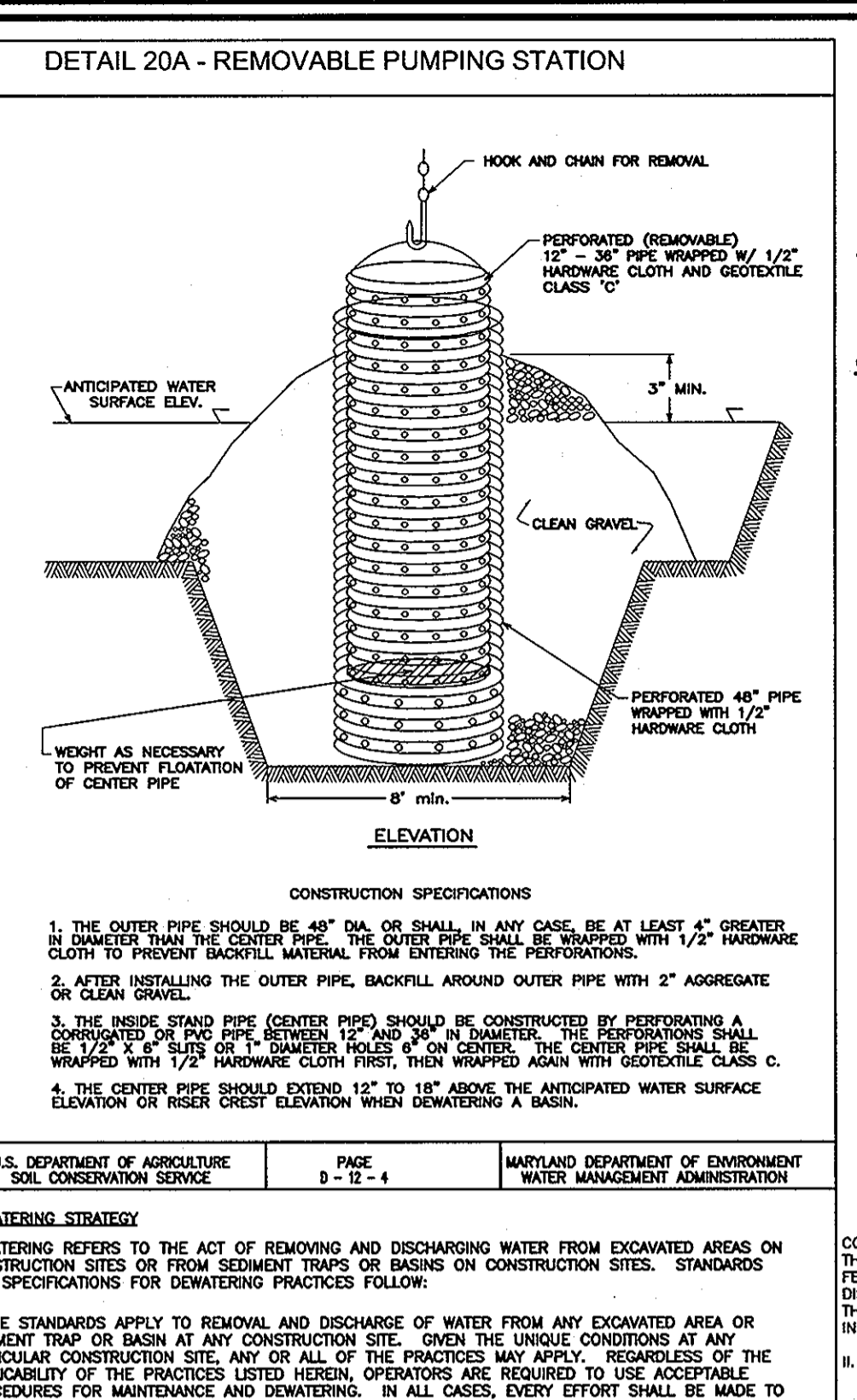
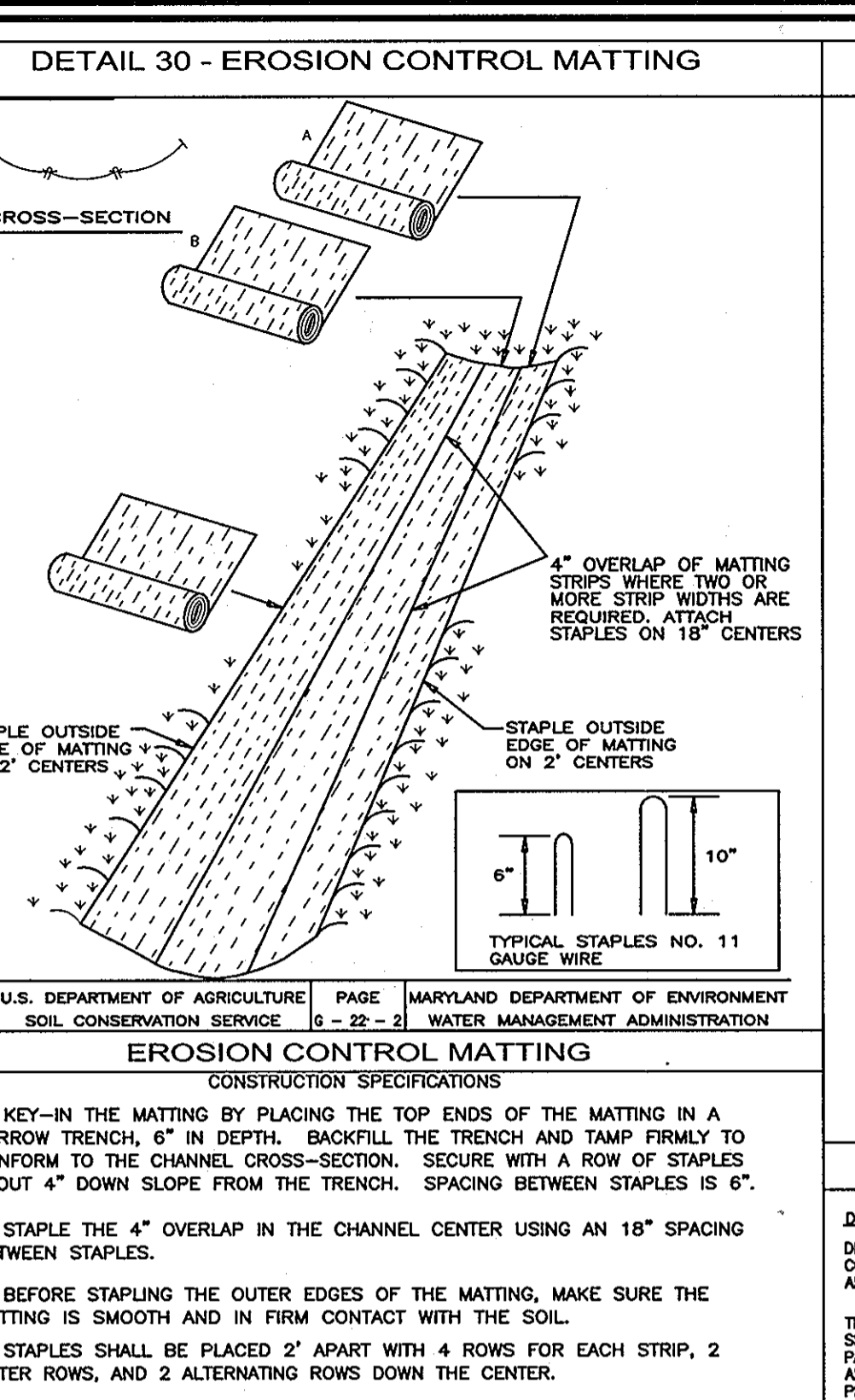
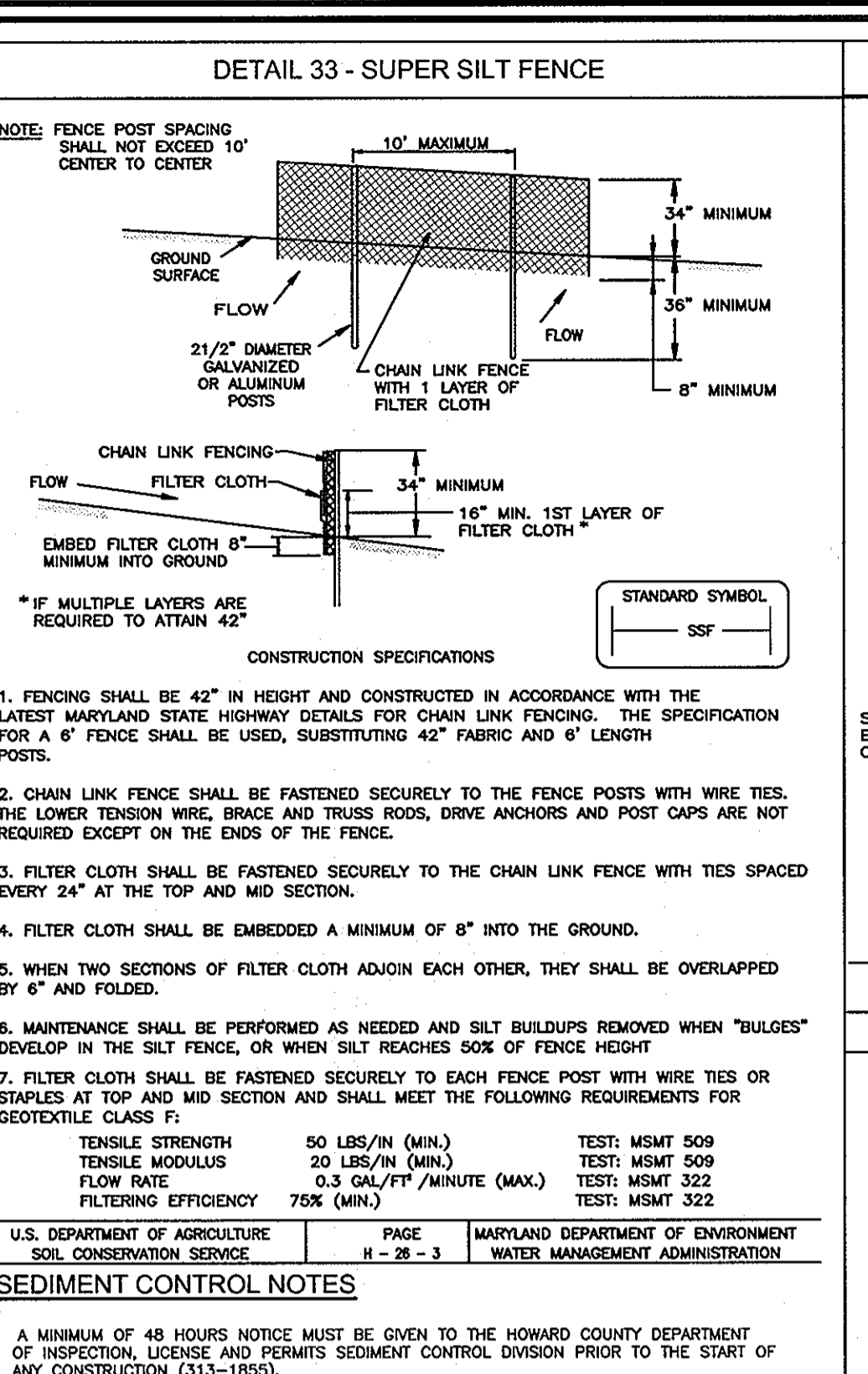
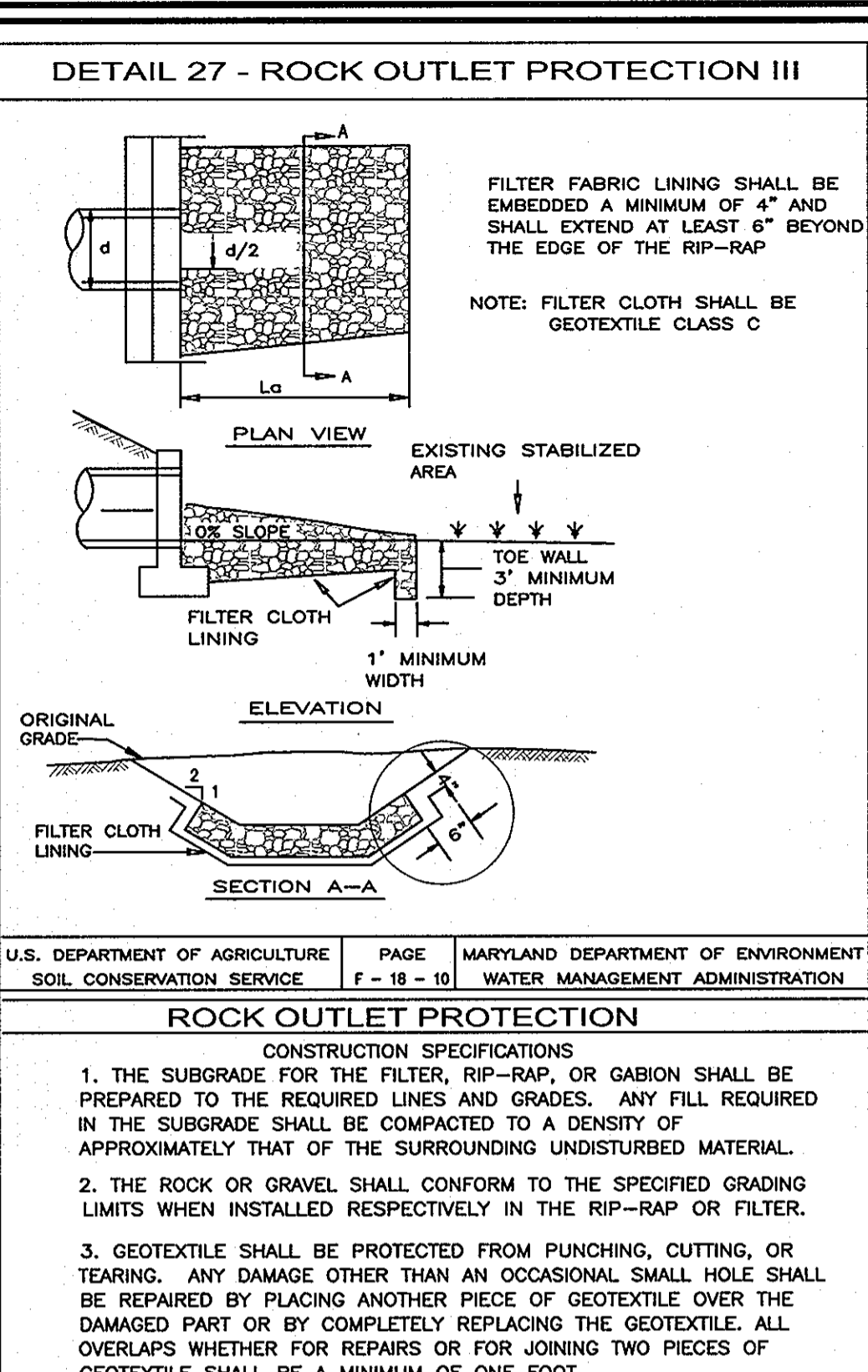
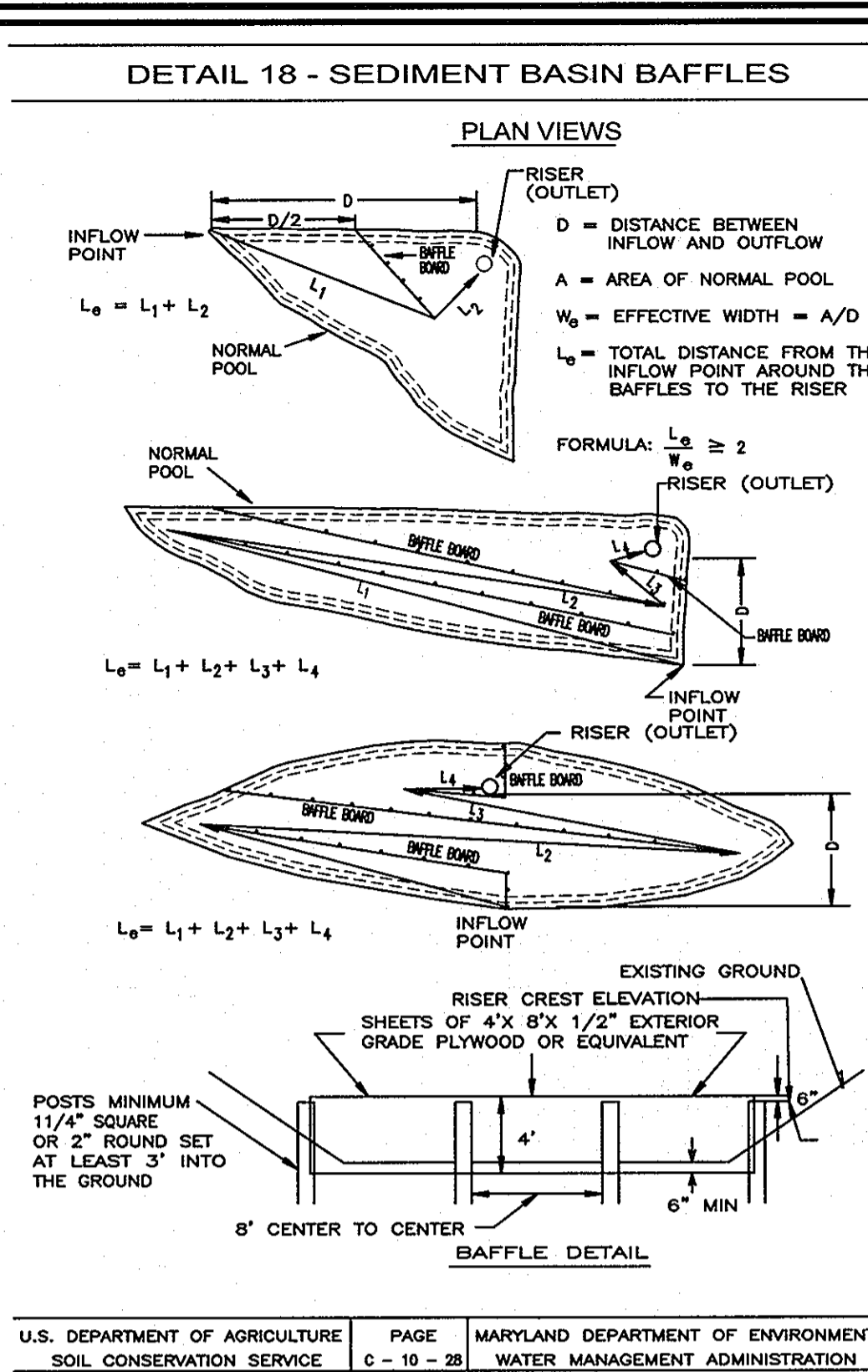
Signature of Reviewer: Howard S.C.D. Date: 5/21/08

OWNER/DEVELOPER

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008."



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. LEVELS OF LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

1. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT SUITABLE 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.
2. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR AGGREGATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION IN CONFORMANCE WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
3. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
4. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR ROOF CREST ELEVATION WHEN DRAINING A BASIN.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

1. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
2. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - A. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAM, OR OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. REGRASSING, SUBSOILING, AND DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CHODS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1" AND 1/2" IN DIAMETER.
 - B. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, GARDENGRASS, JOHNSONGRASS, NUTCRACK, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - C. 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 LB./1000 SQ.FT.) 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:
 - A. PLI FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TEST IS 6.0 OR HIGHER, 2 TONS PER ACRE (8 GA./1000 SQ.FT.) OF ENHANCED MULCH SHALL BE APPLIED TO THE SPRING, OR 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 USE SOIL.
 - B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 10 PERCENT WOODS. SOILS HAVING LESS THAN 10 PERCENT ORGANIC CONTENT SHALL NOT BE USED.
 - C. NO SOILS HAVING A HIGHLY SALINE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL BE USED.
 - D. TOPSOIL SHALL BE APPLIED TO THE PLANTING AREA AS SOON AS POSSIBLE AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (8 GA./1000 SQ.FT.) OF ENHANCED MULCH ON FLAT AREAS, ON SLOPES 5 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GA./1000 SQ.FT.) FOR ANCHORING.
3. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - A. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN SOIL VEGETATION STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 - B. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - A. ON SOIL TESTING TOPSOIL SPECIFICATIONS, ORGANIC TEST RESULTS INDICATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TEST IS 6.0 OR HIGHER, 2 TONS PER ACRE (8 GA./1000 SQ.FT.) OF ENHANCED MULCH SHALL BE APPLIED TO THE SPRING, OR 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 USE SOIL.
 - B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 10 PERCENT WOODS. SOILS HAVING LESS THAN 10 PERCENT ORGANIC CONTENT SHALL NOT BE USED.
 - C. NO SOILS HAVING A HIGHLY SALINE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL BE USED.
 - D. TOPSOIL SHALL BE APPLIED TO THE PLANTING AREA AS SOON AS POSSIBLE AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (8 GA./1000 SQ.FT.) OF ENHANCED MULCH ON FLAT AREAS, ON SLOPES 5 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GA./1000 SQ.FT.) FOR ANCHORING.
4. REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

TEMPORARY SEEDING NOTES

SEEDING FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE (5 GA./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (20 LBS./1000 SQ.FT.) OF WEDDING OVERGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR OPTION (2) USE SOIL, OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

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 BROWNE, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED, SOIL AMENDMENTS IN LIEU OF SOIL TEST RESULTS ARE REQUIRED. USE ONE OF THE FOLLOWING SCHEDULES:

1. PREPARED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

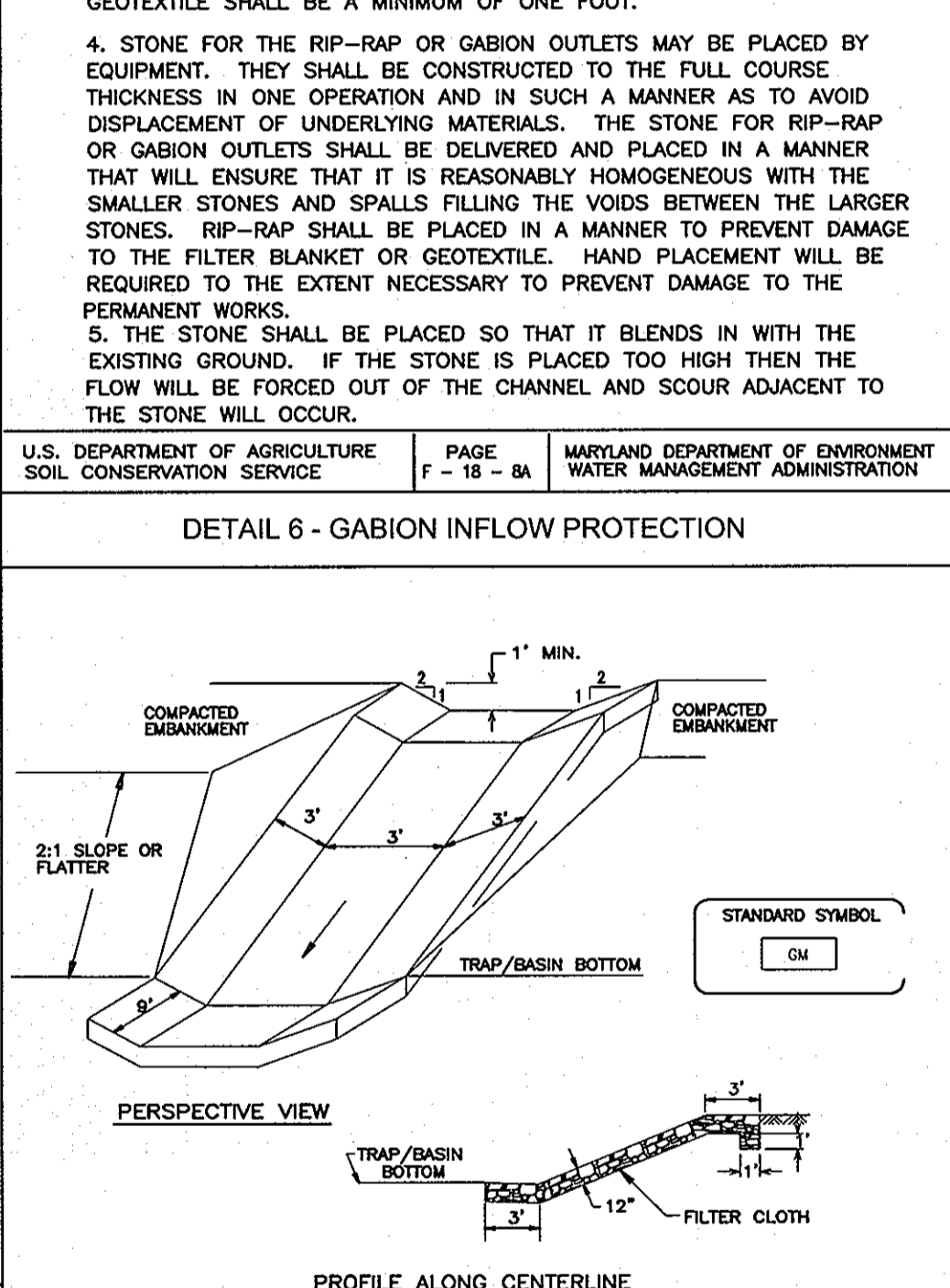
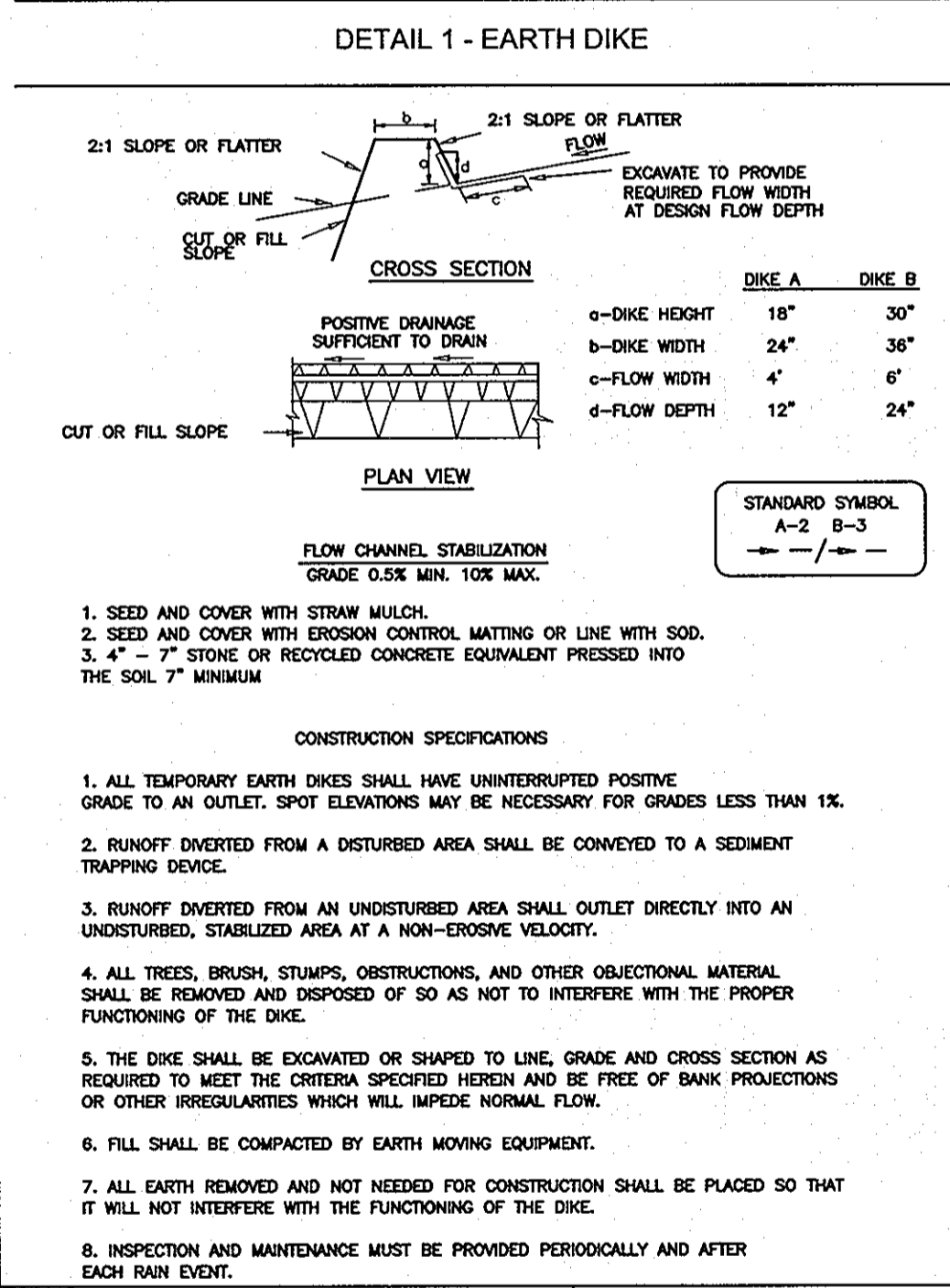
2. ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

3. SEEDING FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE (5 GA./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (20 LBS./1000 SQ.FT.) OF WEDDING OVERGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR OPTION (2) USE SOIL, OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

4. SEEDING FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE (5 GA./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEDDING OVERGRASS (27 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 USE SOIL.

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

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



SEDIMENT CONTROL NOTES

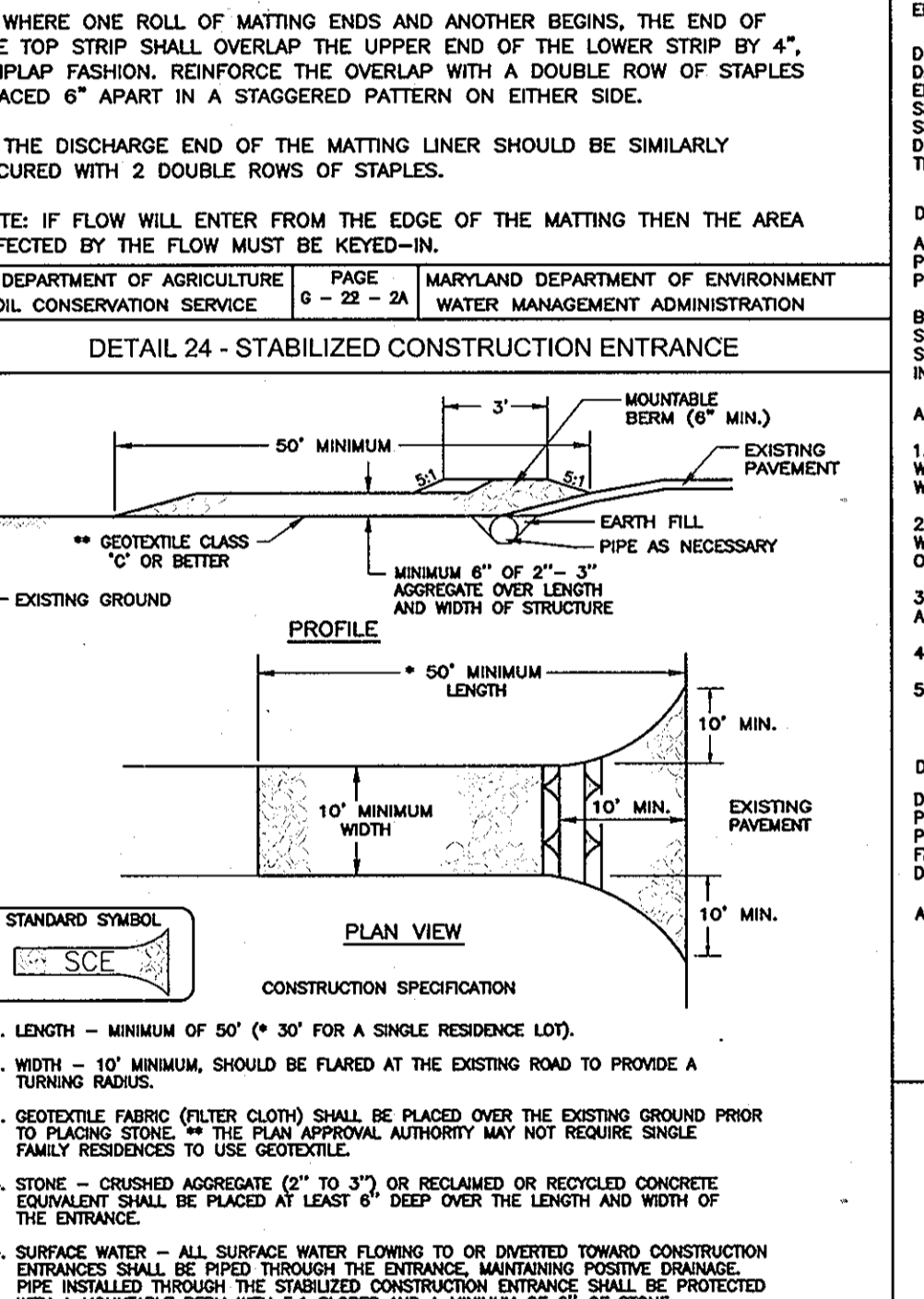
1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 2:1, (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOIL TEMPORARY SEEDING, AND MULCHING (S.C.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA	2.63 AC.
AREA DISTURBED	2.63 AC.
AREA TO BE REVEGETATED OR PAVED	0.69 AC.
AREA TO BE STABILIZED	2.03 AC.
TOTAL CUT	3,500 CY.
TOTAL FILL	3,500 CY.
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
12. TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.	
2. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK.	1 DAY
3. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.	1 DAY
4. INSTALL SILT FENCE & SUPER SILT FENCE.	2 DAYS
5. CONSTRUCT STORMWATER MANAGEMENT FACILITY (SEDIMENT BASIN).	1 WEEK
6. INSTALL EARTH DIKES AND DIVERSION DIKES, TEMP. DIVERSION PIPE W/BERM.	1 WEEK
7. AFTER OBTAINING PERMISSION FROM SEDIMENT CONTROL INSPECTOR TO PROCEED, ROUGH GRADE SITE TO LOD AND INSTALL EROSION CONTROL MATTING.	3 DAYS
8. INSTALL STORM DRAIN CULVERT, WATER AND SEWER.	2 WEEKS
9. GRADE ROAD TO SUB-BASE.	5 DAYS
10. WITH ROAD GRADED TO SUB-BASE AND BEGIN INSTALLATION OF BARRIER CURB AND FLUSH CURB AS SHOWN ON THE PLAN.	1 WEEK
11. WITH INSPECTOR APPROVAL AND FINAL ROAD PAVING COMPLETE STABILIZE ANY REMAINING DISTURBED AREAS.	3 DAYS
12. FINALIZE SITE GRADING IN CONFORMANCE WITH THIS PLAN.	2 DAYS
13. INSTALL STREET TREES AND ALL LANDSCAPING.	1 WEEK
14. WITH SEDIMENT CONTROL INSPECTORS APPROVAL CONVERT SEDIMENT BASIN TO FINAL STORMWATER MANAGEMENT FACILITY AFTER SITE STABILIZED.	1 WEEK

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



DEWATERING OF EXCAVATED AREAS

A. DESIGNERS SHALL SPECIFY ON PLANS, AND IN SEQUENCES OF CONSTRUCTION INCLUDED ON PLANS, PRACTICES FOR DEWATERING OF EXCAVATED AREAS. PLAN REVIEWERS SHALL CHECK TO SEE THAT PROCEDURES FOR DEWATERING ARE INCLUDED ON PLANS.

B. IN ALL CASES, WATER REMOVED FROM EXCAVATED AREAS SHALL BE DISCHARGED SUCH THAT IT SHALL PASS THROUGH A SEDIMENT CONTROL DEVICE PRIOR TO ENTERING RECEIVING WATERS. SEDIMENT CONTROL DEVICES INCLUDE SEDIMENT TRAPS AND BASINS, IN ADDITION TO THE PRACTICES IN THIS SECTION.

APPROVED PRACTICES FOR DEWATERING OF EXCAVATED AREAS

1. PUMPING OF WATER TO AN EXISTING SEDIMENT BASIN OR TRAP IN WHICH THE ENTIRE VOLUME OF WATER FROM THE AREA TO BE DEWATERED CAN BE CONTAINED WITHOUT DISCHARGE TO RECEIVING WATERS.
2. PUMPING OF WATER TO AN EXISTING SEDIMENT BASIN OR TRAP SUCH THAT THE ENTIRE VOLUME OF WATER FROM THE AREA TO BE DEWATERED CAN BE MANAGED WITHOUT EXCEEDING THE DESIGN OUTFLOW FROM THE SEDIMENT CONTROL STRUCTURE.
3. REMOVABLE PUMPING STATION STANDARDS AND SPECIFICATIONS FOR REMOVABLE PUMPING STATION ARE ON DETAIL 20A.
4. USE OF A SUMP PIT STANDARDS AND SPECIFICATIONS FOR A SUMP PIT ARE ON DETAIL 20B.
5. SEDIMENT TANK STANDARDS AND SPECIFICATIONS FOR A SUMP PIT ARE ON DETAIL 21.

DEWATERING OF SEDIMENT TRAPS AND BASINS

DESIGNERS SHALL SPECIFY ON PLANS, AND IN SEQUENCES OF CONSTRUCTION INCLUDED ON PLANS, THE PRACTICES FOR DEWATERING OF TRAPS AND BASINS. PLAN REVIEWERS SHALL CHECK TO SEE THAT PROCEDURES FOR DEWATERING TO BE USED ARE INCLUDED ON PLANS. IN ALL CASES, WATER REMOVED FROM TRAPS AND BASINS SHALL BE DISCHARGED SO THAT IT PASSES THROUGH A SEDIMENT CONTROL DEVICE PRIOR TO ENTERING RECEIVING WATERS.

APPROVED PRACTICES FOR DEWATERING OF TRAPS AND BASINS

1. REMOVABLE PUMPING STATION.
2. USE OF A SUMP PIT.
3. USE OF A FLOATING SUMPION HOSE TO PUMP THE CLEANER WATER FROM THE TOP OF THE POND. AS THE CLEANER WATER IS PUMPED THE SUMPION HOSE AND EVENTUALLY ENCOUNTERS SEDIMENT LADEN WATER, WHEN THIS HAPPENS THE PUMPING OPERATION WILL CEASE. PROVISIONS SHALL BE MADE TO FILTER WATER.

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT

DATE

NO.	REVISION	DATE
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development DATE 6/4/08

Chief, Development Engineering Division DATE 6/2/08

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. 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 Pfaus DATE 4/11/08

SIGNATURE OF DEVELOPER
TRINITY QUALITY HOMES, INC.

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT 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.

Robb H. Vogel DATE 4/11/08

SIGNATURE OF ENGINEER
ROBB H. VOGEL

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE 5/21/08

THESE PLANS FOR SMALL POND CONSTRUCTION MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION SERVICE DATE 5/21/08

OWNER/DEVELOPER

MICHAEL PFAU
TRINITY QUALITY HOMES, INC.
3675 PARK AVE., STE. 301
ELLIOTT CITY, MARYLAND 21043
(410) 480-0023

TAX MAP 43 GRID 8 PARCELS 407
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.

ROBERT H. VOGEL, PE No. 16193

FINAL ROAD CONSTRUCTION PLAN

SEDIMENT & EROSION CONTROL DETAILS

LINCOLN GLEN

LOTS 1-10 AND OPENSPACE LOT 11

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

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: APRIL 2008
SCALE: AS SHOWN
W.O. NO.: 08-35-00

4 SHEET OF 8

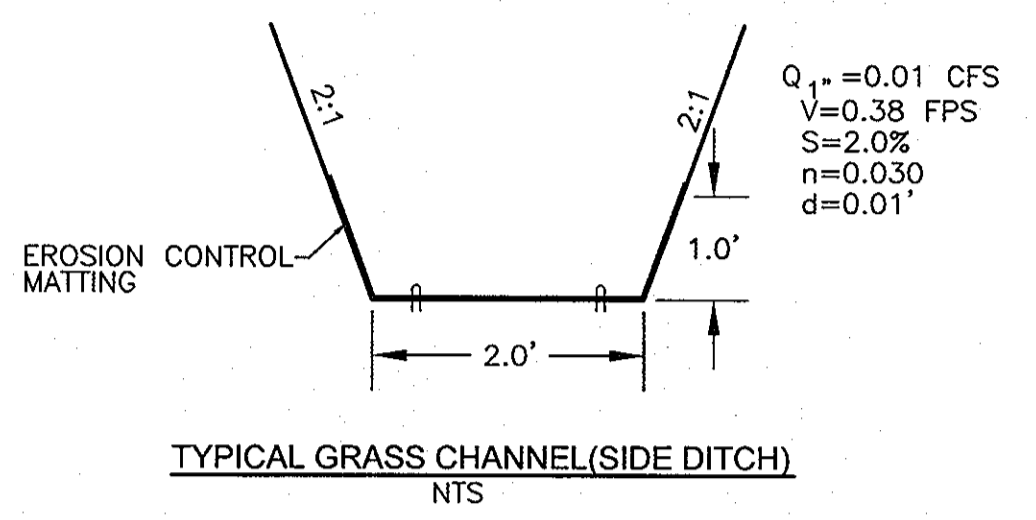
AS-BUILT 3/24/2011 F-08-041

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	TYPE
ScB	SANDY AND CLAYEY LAND, GENTLY SLOPING	C

NOTE: HOWARD SOIL SURVEY, MAP NUMBER 20

TC PATH INFORMATION

A-B SHEET FLOW 75' @ 6.7%
 B-C SHALLOW CONCENTRATED 330' @ 5.45%



547250
1370000

547250
1370500

TAX MAP 43, PARCEL 235
 L 5887 F 368,
 L 7884 F 57
 PARCEL 1
 CHASE LIMITED
 PARTNERSHIP
 ZONED R-SC/MXD-3

TAX MAP 43 P.408
 CHARLES A. HARDING
 COSETTE HARDING
 L 480 F 160
 ZONED R-SC

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS

COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

DATE

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
STORM DRAIN DRAINAGE AREA MAP FOR CULVERT & DETAILS
LINCOLN GLEN
 LOTS 1-10 AND OPENSACE LOT 11

TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.6961

DESIGN BY: RHV/RJ
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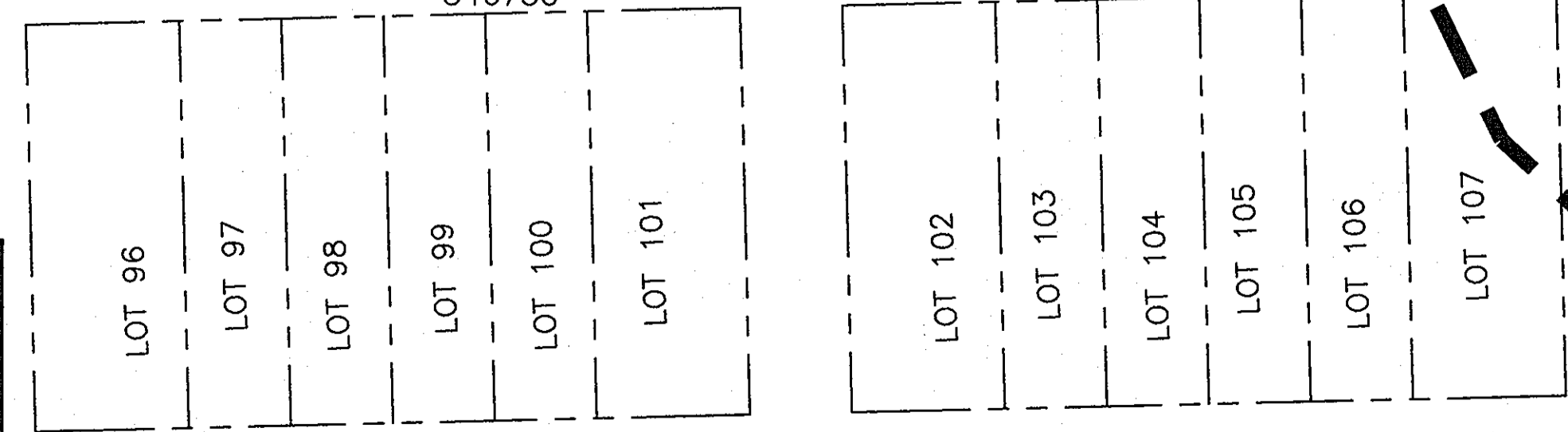
5 SHEET OF 8

PROFESSIONAL CERTIFICATION
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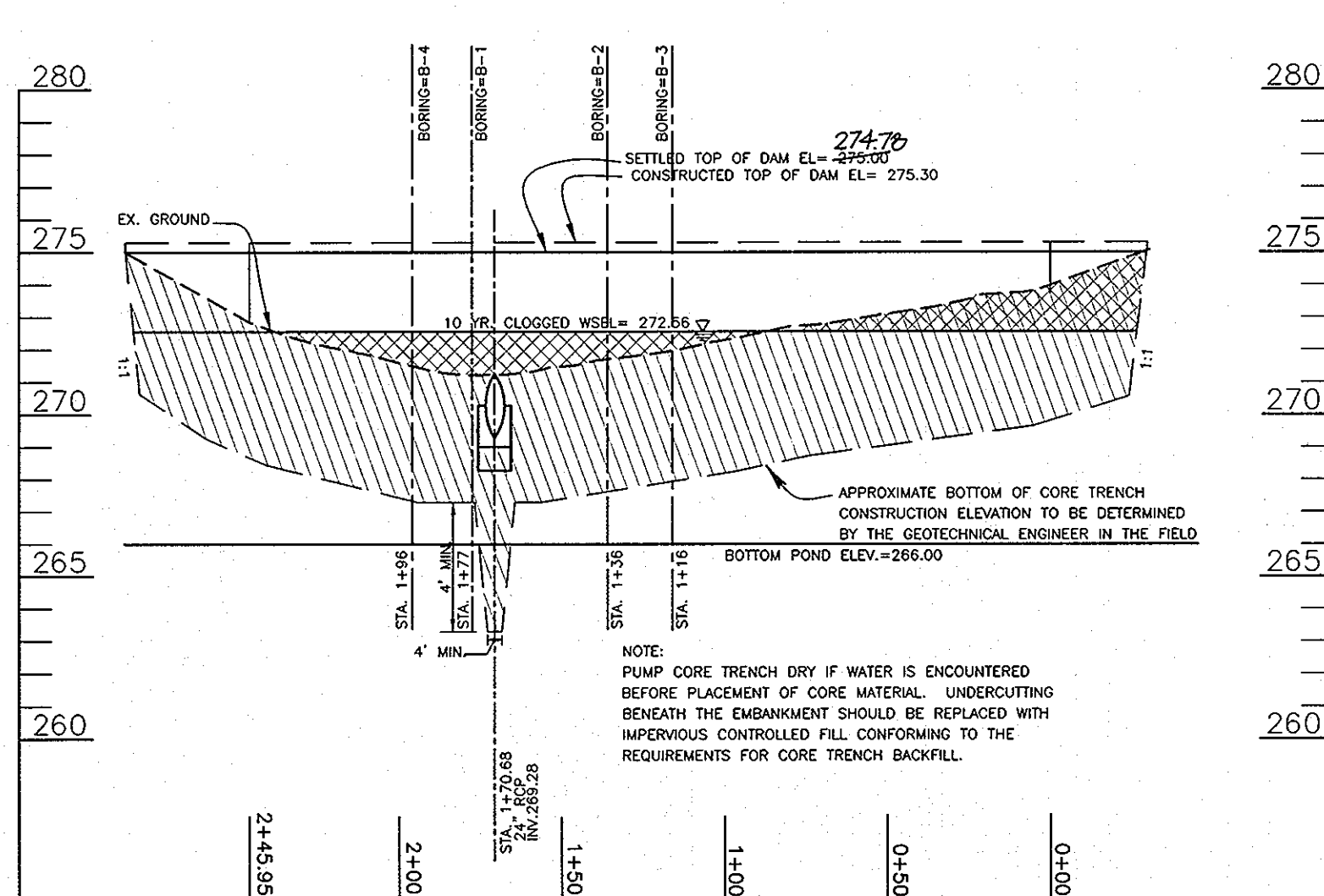
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hunter
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/1/08

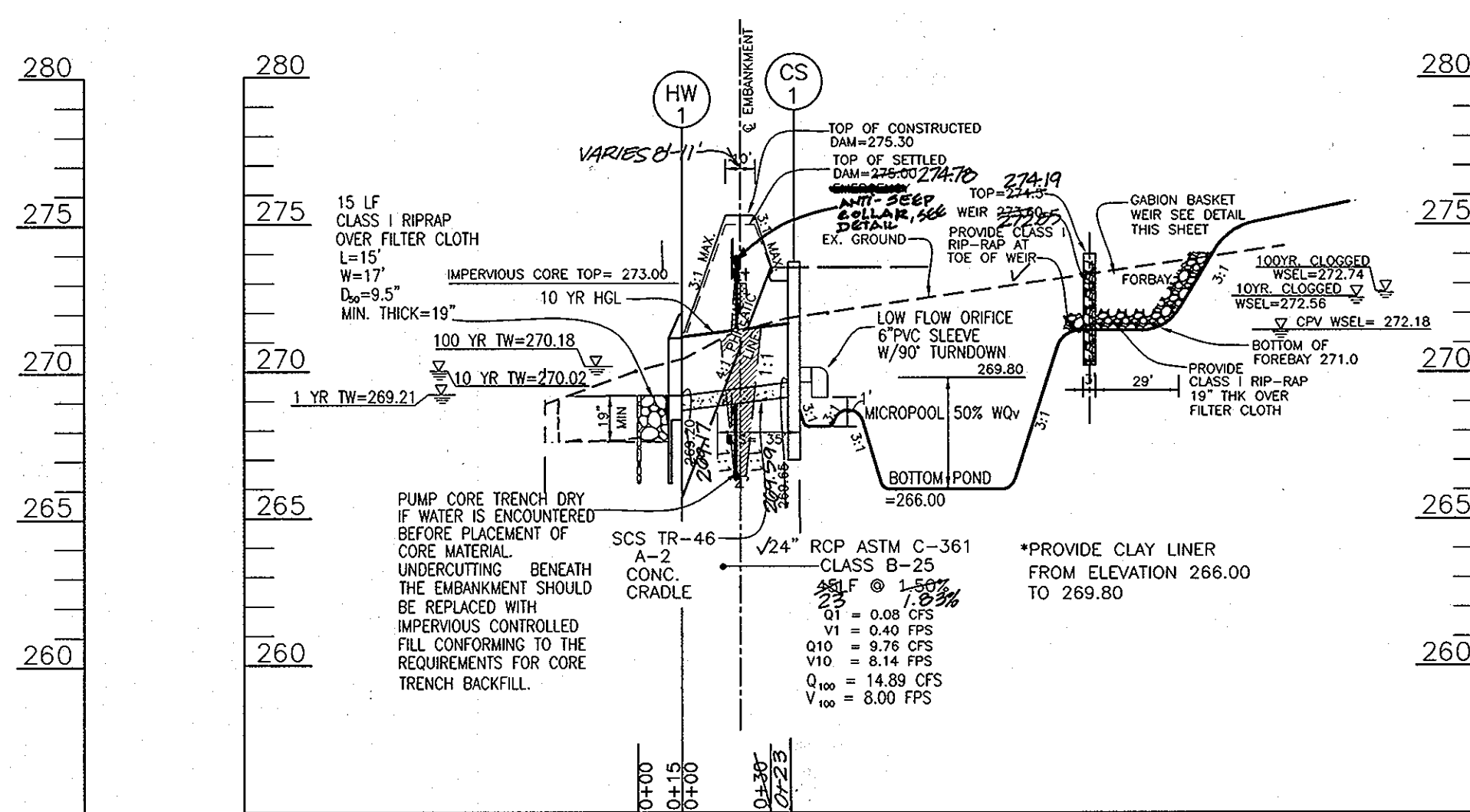
Chris Deamus
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 6/2/08



STORM DRAIN DRAINAGE AREA MAP FOR CULVERT
 SCALE: 1"=30'

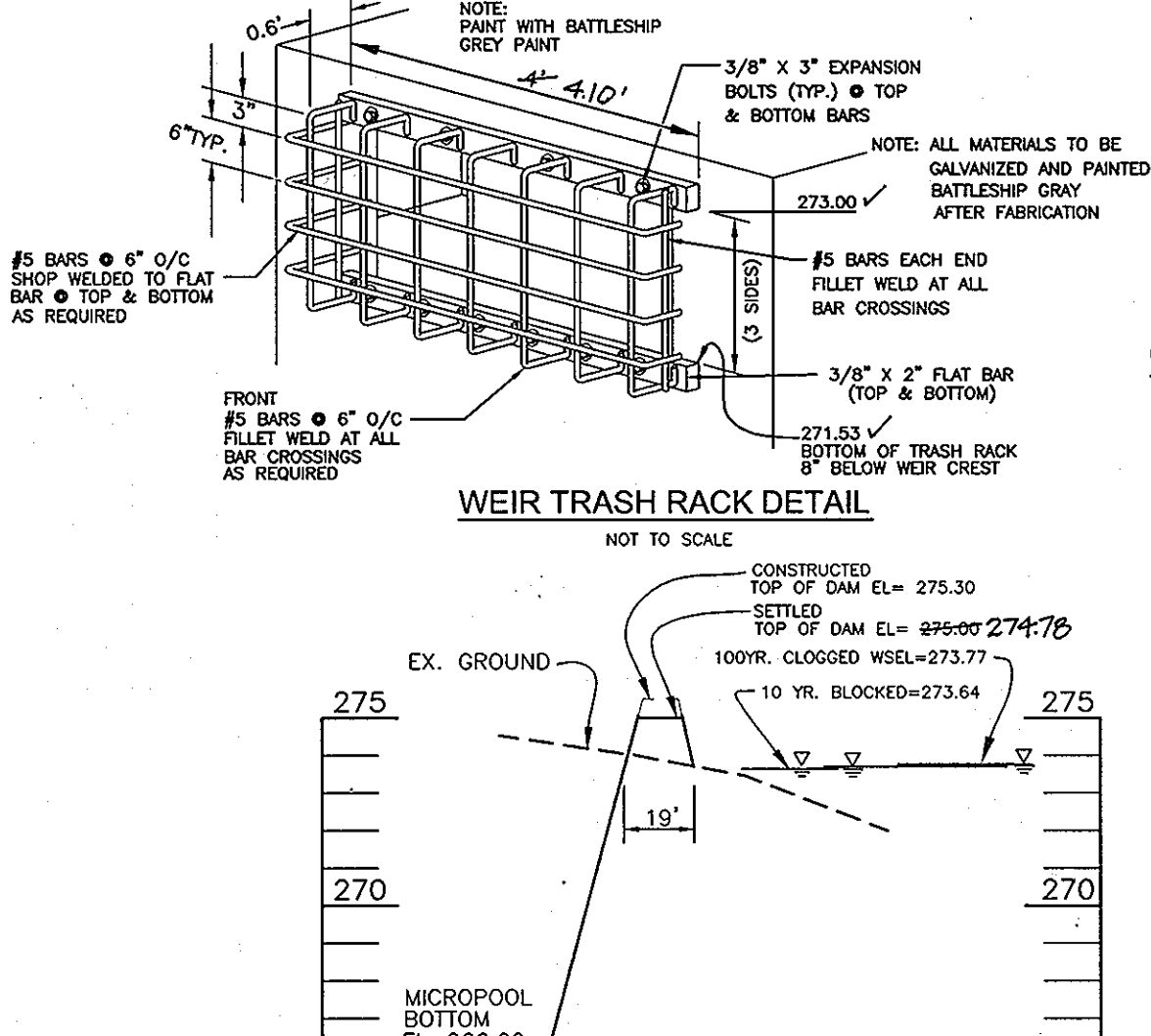


SWM FACILITY
PROFILE ALONG CENTERLINE EMBANKMENT
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'

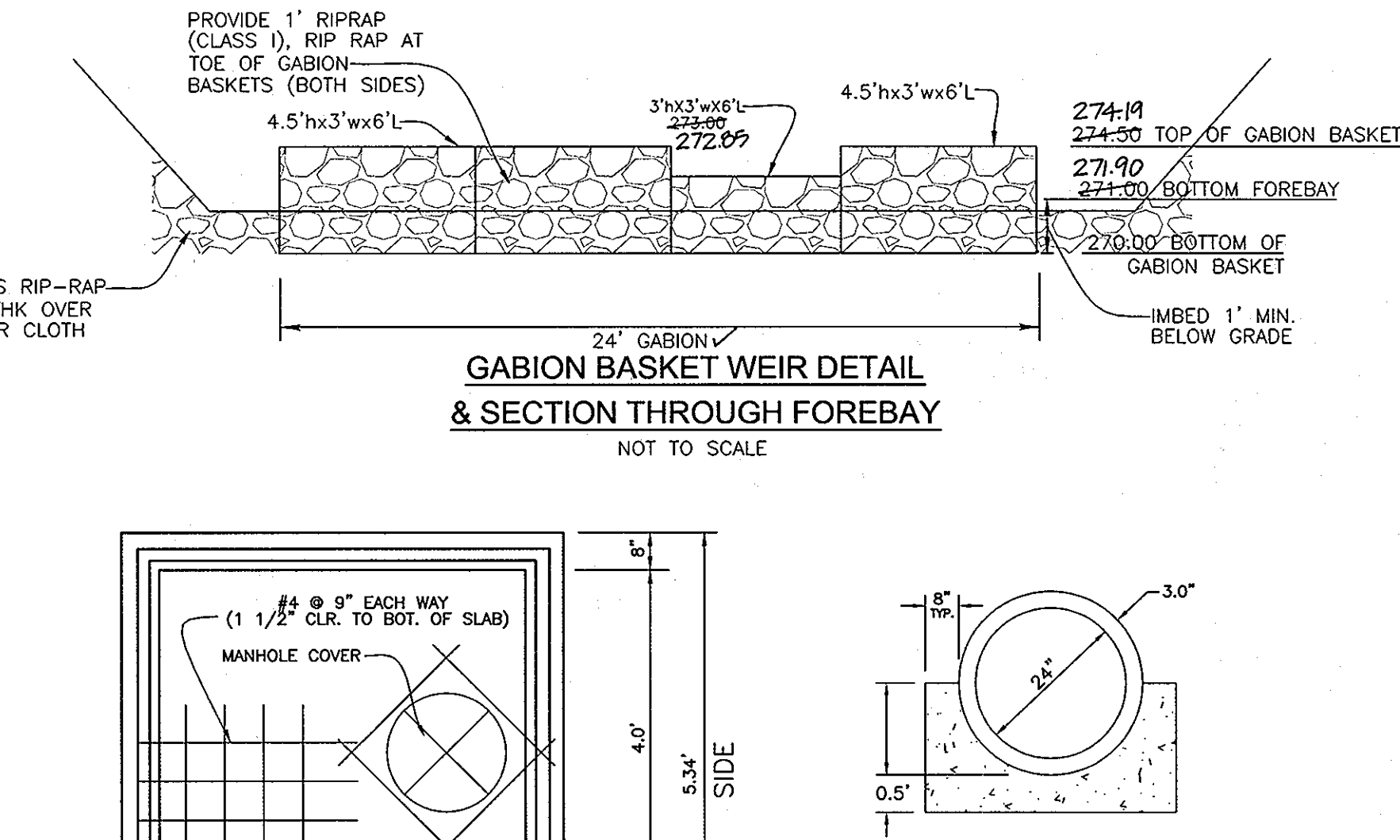


SWM FACILITY
SECTION THROUGH PRINCIPAL SPILLWAY
 SCALE: HORIZONTAL - 1"=50'
 VERTICAL - 1"=5'

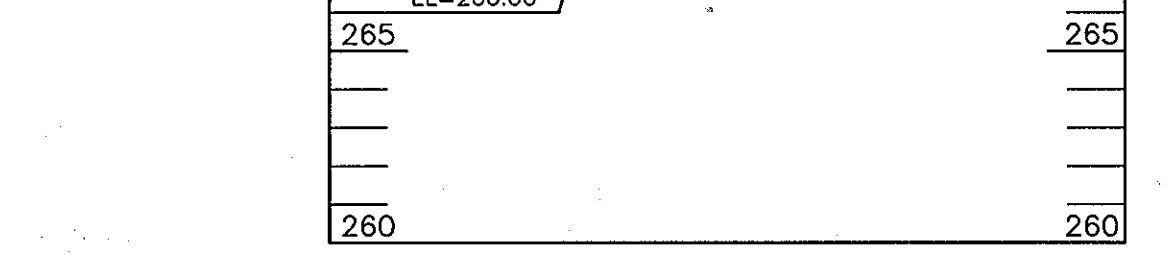
CLAY LINER: (a) 6 TO 12 INCHES OF CLAY SOIL (MINIMUM 15% PASSING) THE #200 SIEVE AND A MAXIMUM PERMEABILITY OF 1×10^{-10} cm/Sec.
 (b) 30 MIL. POLY-LINER OR
 (c) BENTONITE



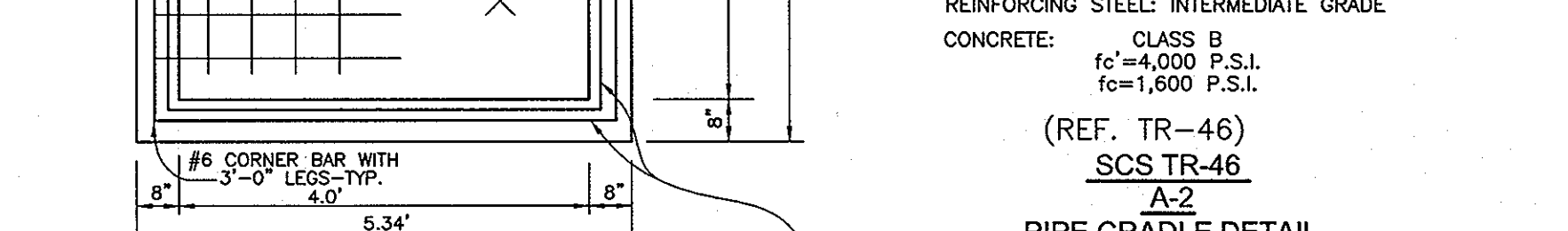
WEIR TRASH RACK DETAIL
 NOT TO SCALE



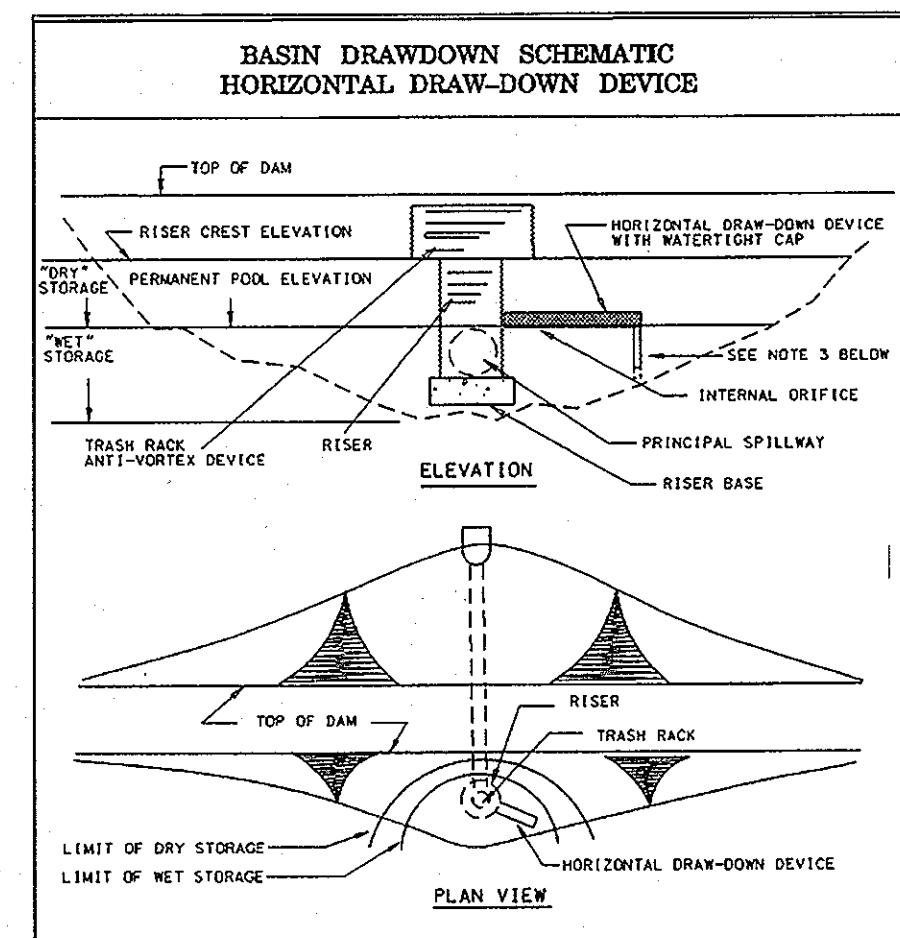
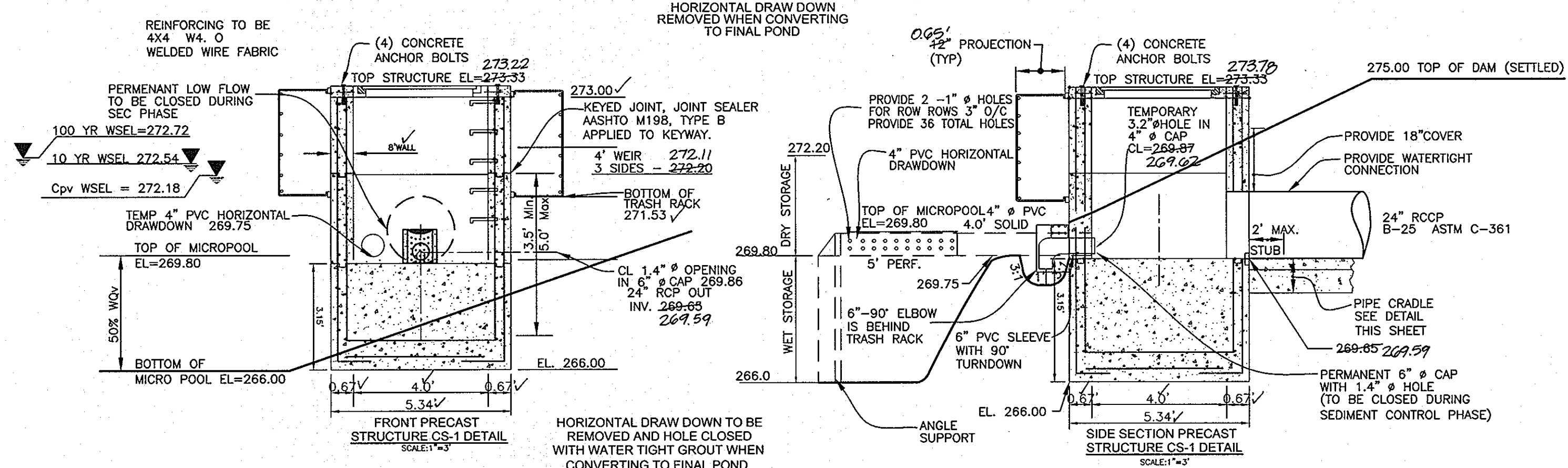
GABION BASKET WEIR DETAIL & SECTION THROUGH FOREBAY
 NOT TO SCALE



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

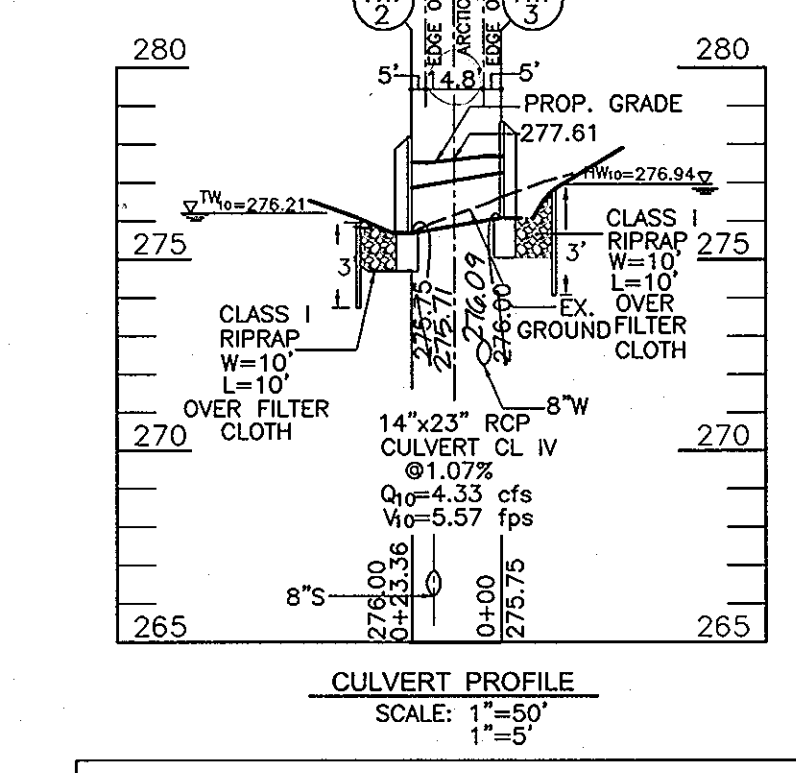


PIPE CRADLE DETAIL
 NOT TO SCALE

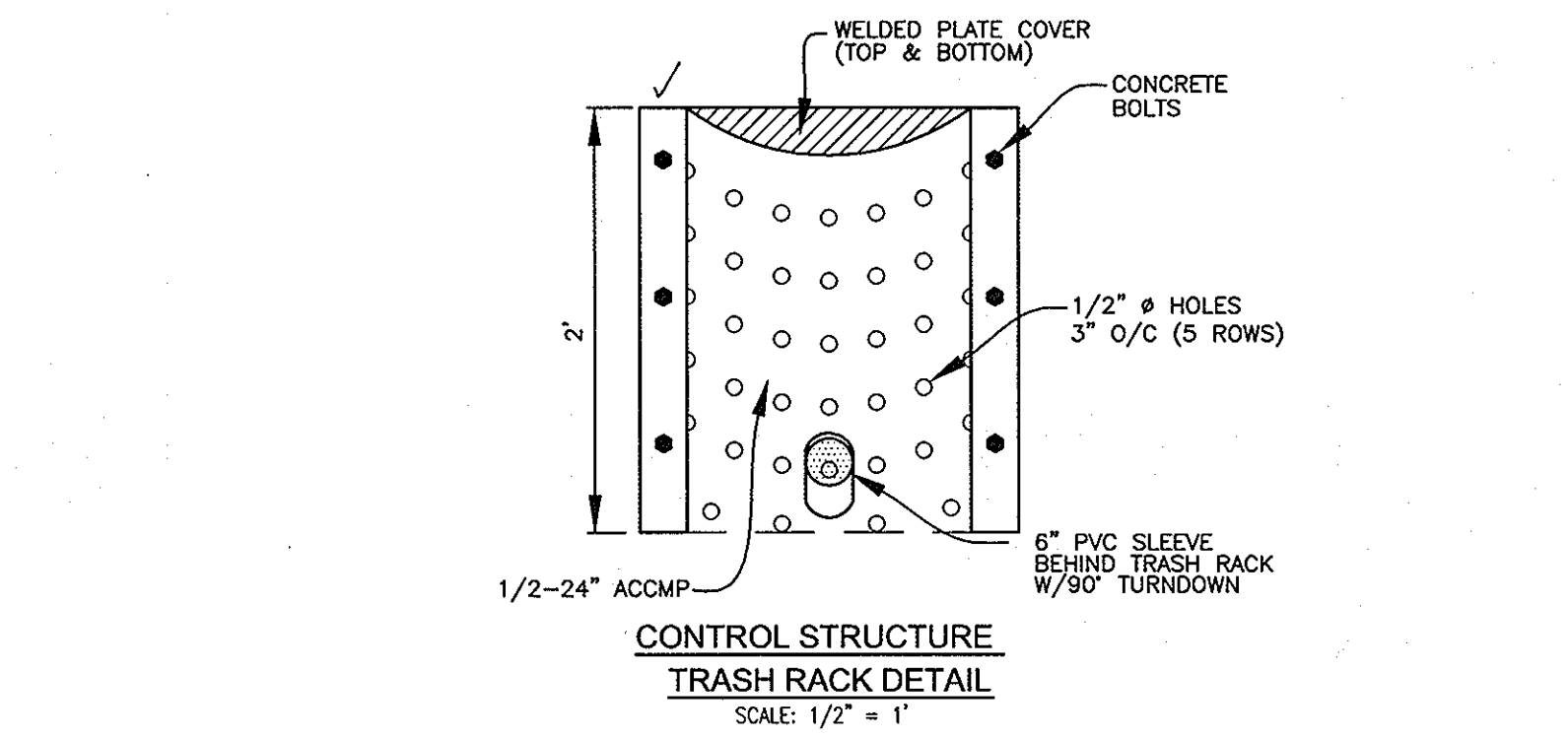


CONSTRUCTION SPECIFICATIONS

- The total area of the perforations must be greater than 2 times the area of the interior of the riser.
- The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and galvanized fabric. The galvanized fabric shall meet the specifications for Geotextile Class L.
- Provide support of draw-down device to prevent sagging and flotation. An acceptable alternative measure is to stake both sides of draw-down device with 1" steel angle, or 1" square or 2" round wooden posts set 2' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.



CULVERT PROFILE
 SCALE: 1"=50'



CONTROL STRUCTURE TRASH RACK DETAIL
 SCALE: 1/2" = 1'

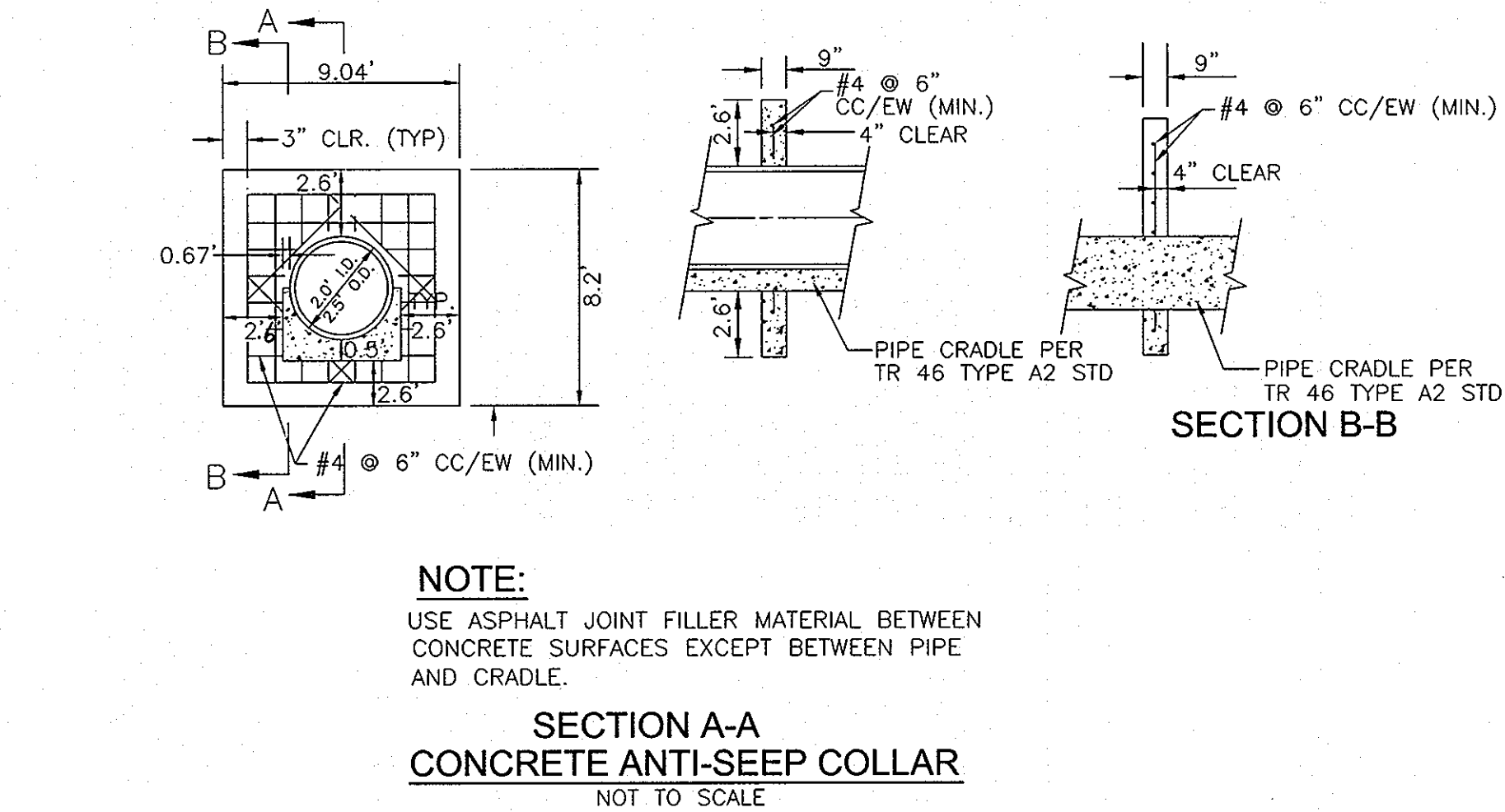
STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	TOP ELEV.	INV IN	INV OUT	HO. CO. DETAILS
HW-3	TYPE 'O' HEADWALL	N 547013.35 E 1370365.22	278.42	-	274.00 276.60	D 5.44
HW-2	TYPE 'O' HEADWALL	N 547035.96 E 1370363.64	278.17	275.71 275.75	-	D 5.44
HW-1	TYPE 'C' ENDWALL	N 547108.20 E 1370100.74	271.95	269.65	269.71 269.20	D 5.21

PIPE SCHEDULE		
PIPE SIZE	TYPE	TOTAL LENGTH
14"x23"	RCP CLASS IV	25 LF
24"	RCP ASTM C 361 CLASS B-25	45 LF

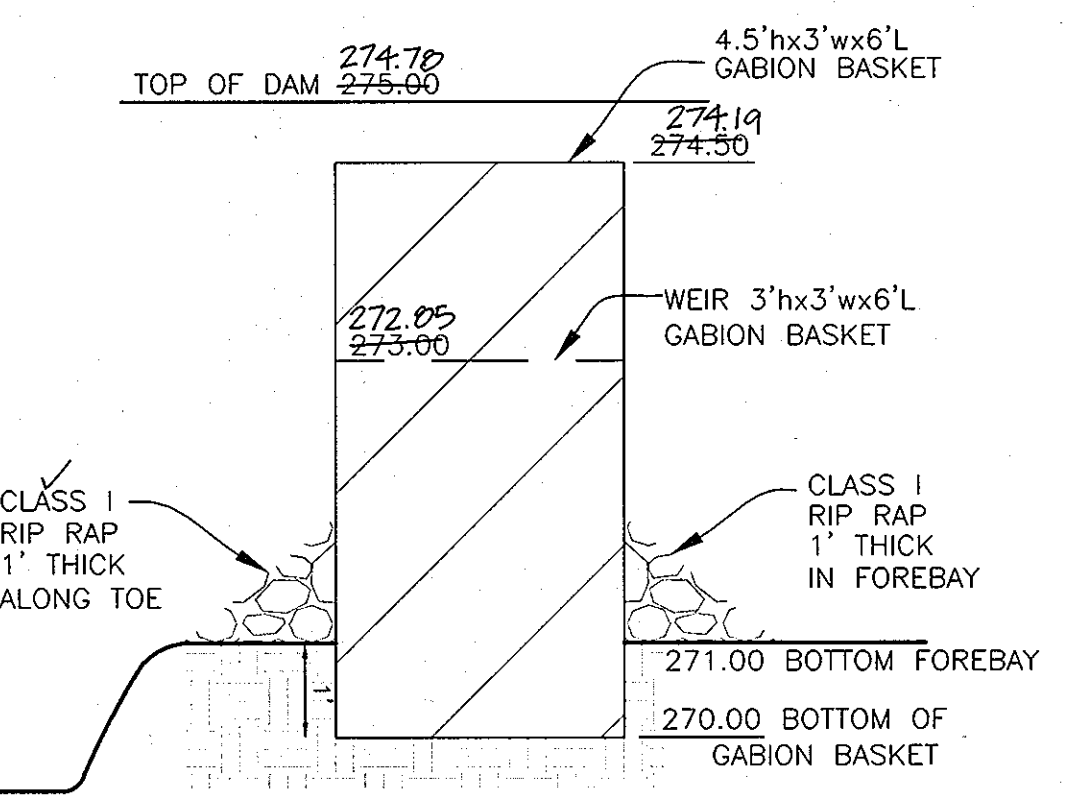


AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
 ROBERT H. VOGEL, PE. NO. 16193

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT



SECTION A-A
CONCRETE ANTI-SEEP COLLAR
 NOT TO SCALE



CROSS SECTION FOREBAY DAM

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DEVELOPER'S CERTIFICATE

"I WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. 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."

Signature: *Cindy Stunt*
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 6/1/08

Signature: *Michael Row*
 SIGNATURE OF DEVELOPER
 TRINITY QUALITY HOMES, INC.
 DATE: 4/11/08

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT 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."

Signature: *Robert H. Vogel*
 SIGNATURE OF ENGINEER
 ROBERT H. VOGEL
 DATE: 4/11/08

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE

DATE: 5/21/08

Signature: *Robert H. Vogel*
 HOWARD S.C.D.
 DATE: 5/21/08

OWNER/DEVELOPER

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

PROFESSIONAL CERTIFICATION

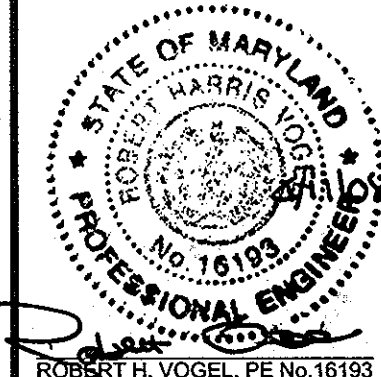
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FINAL ROAD CONSTRUCTION PLAN
STORMWATER MANAGEMENT DETAILS

LINCOLN GLEN
 LOTS 1-10 AND OPENSACE LOT 11
 TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

NO.	REVISION	DATE



DESIGN BY: RHV/RJ
 DRAWN BY: RJ
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 W.O. NO.: 06-35.00
 6 SHEET OF 8

MARYLAND 378
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS
THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND ASHTO SPECIFICATIONS APPLY 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 SHOULDER BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CHLORATED 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.

EARTH 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 #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL 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 TO PREVENT EROSION OF THE EMBANKMENT.

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 PERMISSIBLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTING THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FIVE COMPLETE PASSES OF A SHEEPSFOOT, RUBBER Tired OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DENSITY 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 IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY ASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH 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, WITH THE MINIMUM WIDTH BEING 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 CORBE CORBE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORBE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR FLOOD ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORBE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORBE SHALL BE PLACED CONCURRENTLY 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 FEET 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 PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL EQUIPMENT BE ALLOWED TO OPERATE 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
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 PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER, AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SILUMP OF THE FILL SHALL BE 7 TO 10 TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS 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 ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN 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 OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:
1. 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 ASHTO 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 ASHTO 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 BITUMINOUS COATED PER REQUIREMENTS OF ASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.
MATERIALS - (PVC PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF ASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF ASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

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.

IN ORDER TO LOWER THE INFILTRATION RATE INTO THE SANDS WITH GRAVEL, IT IS RECOMMENDED THAT THE SANDS WITH GRAVEL BE UNDERCUT AND REPLACED WITH A MINIMUM OF 12 INCHES OF SOILS CLASSIFIED AS SM PER ASTM D-2487 OR SANDY LOAM PER USDA CLASSIFICATION. THE FILL SOIL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF ITS MAXIMUM DRY DENSITY PER ASTM D-698.

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, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNERS 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 OWNERS(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

ROUTINE MAINTENANCE
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF FUNCTIONING PROPERLY.
2. 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.
3. DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. 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
1. 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.
2. 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 DEEDED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF ASHTO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF ASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.
2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.
3. CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. THE BRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATER TIGHT. SIMPLE 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 AN ADEQUATE NUMBER OF CORUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE 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 CELL CIRCULAR NEOPRENE GASKET, AND A 1/2-INCH WIDE RUBBER TYPED BAND WITH 0-600 GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNUAL CORRUGATED BAND USING A MINIMUM OF (FOUR) ROGS AND LOGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8-INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE. HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPOKY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"
6. OTHER DETAILS (ANTI-SEEP COLLARS, 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 SPOOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.
2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAD IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH STRENGTH SAND AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 8 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN TEBUCTURE BACKFILL SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.
3. LAYING PIPE - BELL AND SPOOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. THE JOINTS ARE SEALED FOR THE ENTIRE LENGTH. THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED 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.
4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE SHOWN ON THE DRAWINGS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:
1. 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" HDPE PIPE SHALL MEET THE REQUIREMENTS OF ASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF ASHTO M254 TYPE S.
2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.
3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPOKY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL"
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE SHOWN ON THE DRAWINGS.

GRASS DRAINAGE - WHEN A DRAINAGE DRAINAGE IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.
CONCRETE
CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.
ROCK RIPRAP
ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 311.

EMBANKMENT SPILLWAY, SPILL AND BORROW AREAS, AND BENCH SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.
EROSION AND SEDIMENT CONTROL
CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

OPERATION AND MAINTENANCE SCHEDULE FOR
STORMWATER MANAGEMENT
EXTENDED DETENTION FACILITY

KEY QUAN.	BOTANICAL NAME	SIZE	REMARKS
IP 95	Iris pseudacoris Yellow Water Iris	plug	1.5' oc
IV 48	Iris versicolor Blue Frog (wear gloves)	plug	1.5' oc
CE 75	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
CL 45	Carex lacustris Lake Sedge	plug	2' oc

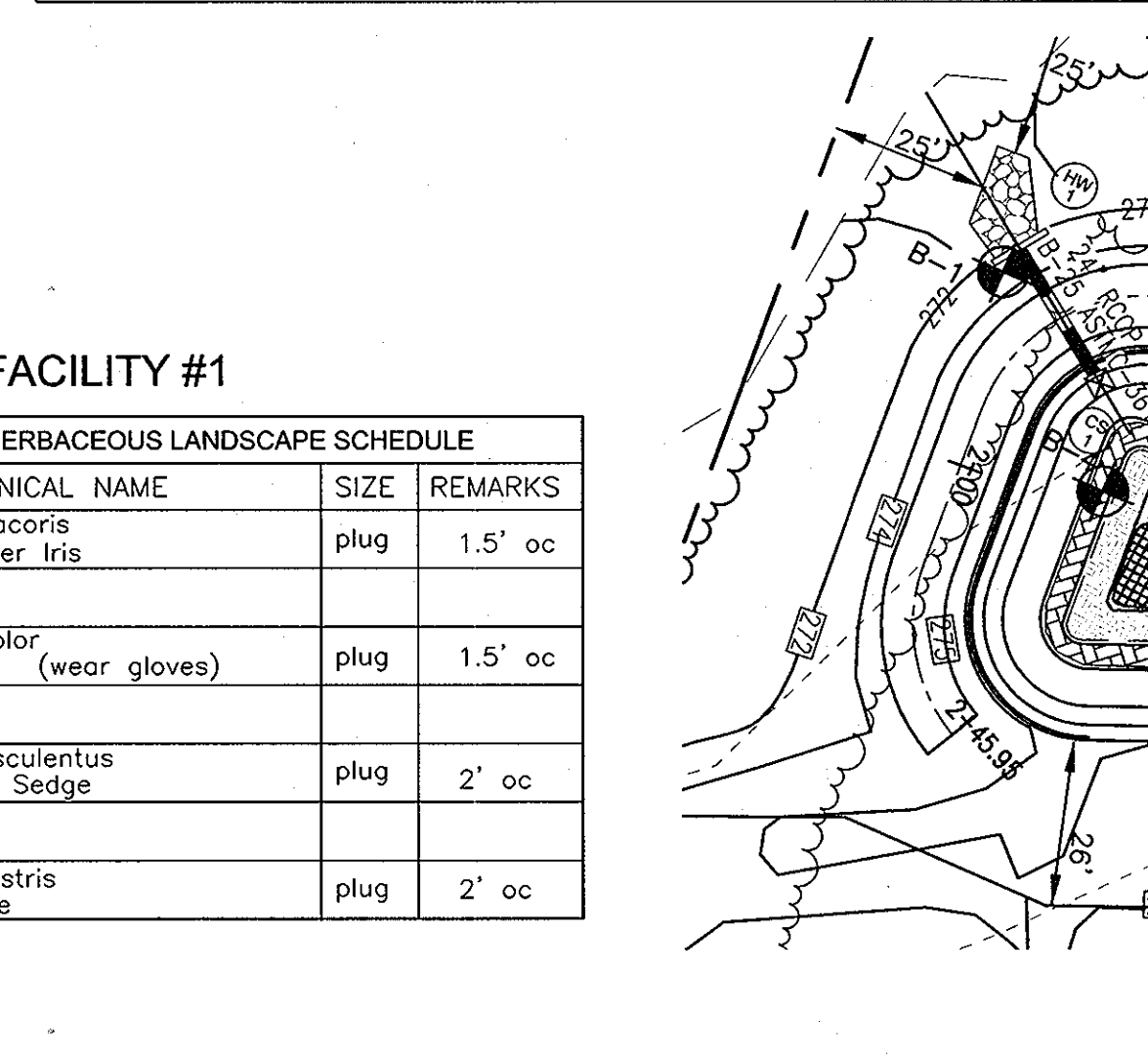
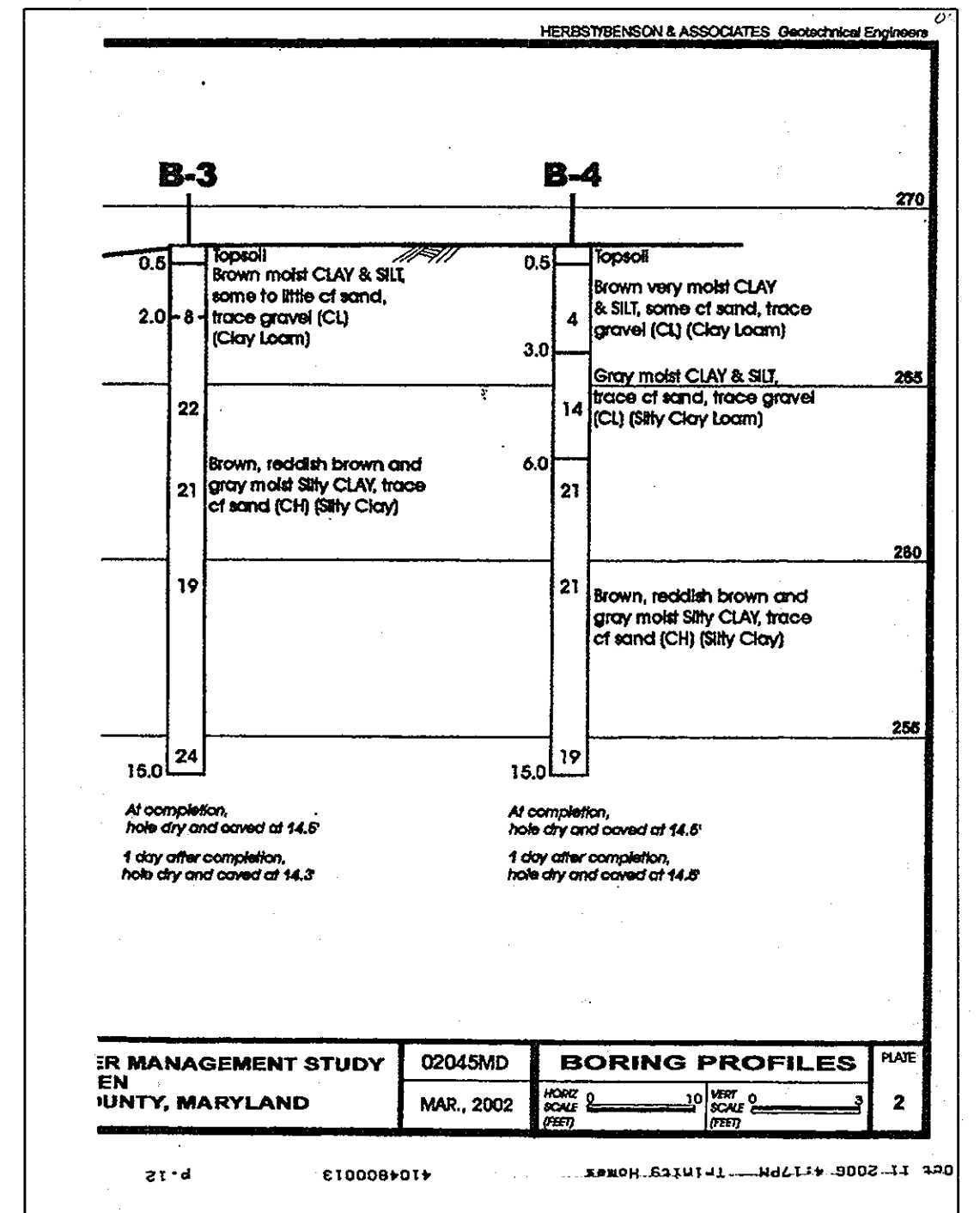
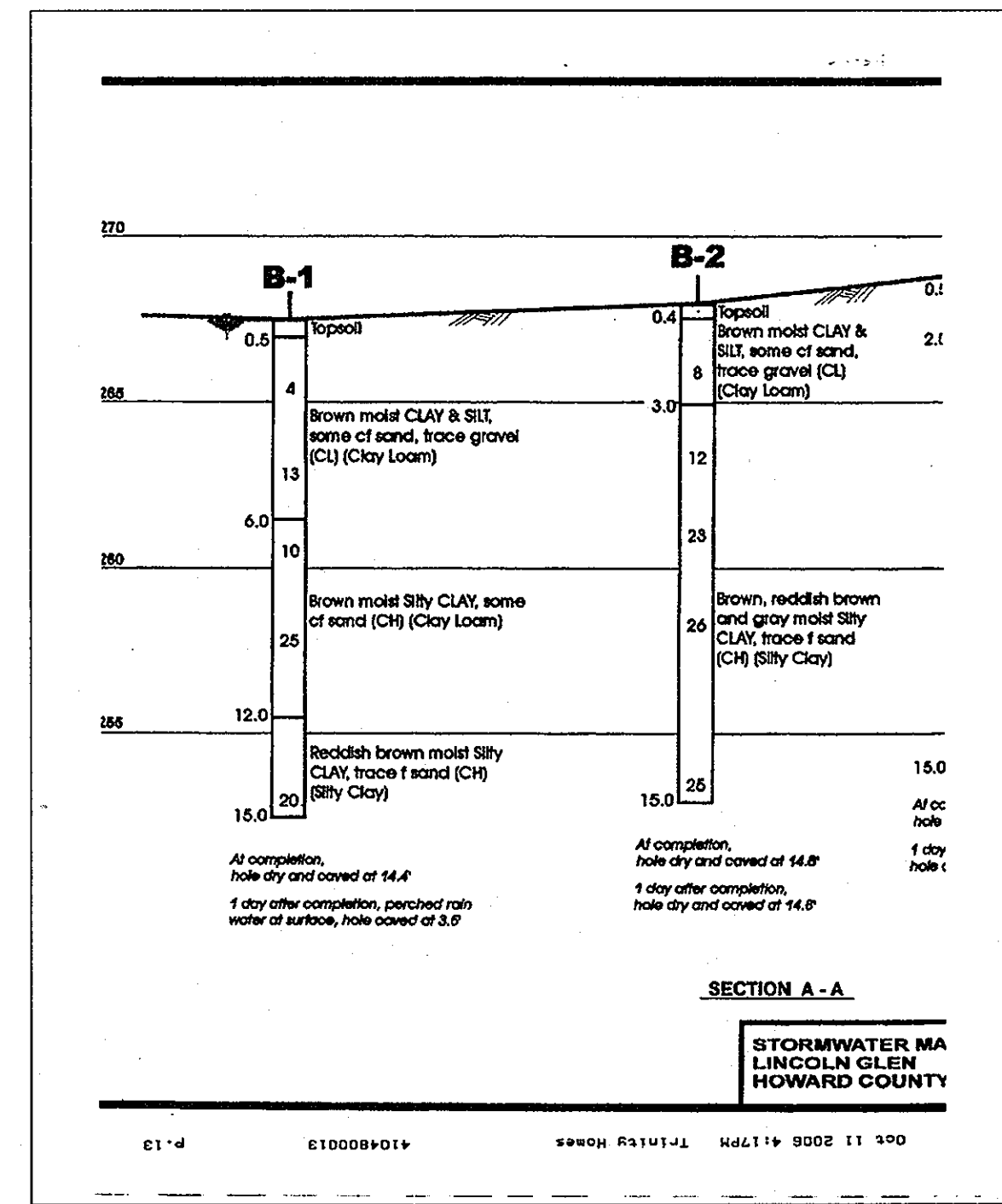
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hunt 6/14/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Michael Penn 6/21/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DEVELOPER'S CERTIFICATE
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. 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 Penn 4/11/08
SIGNATURE OF DEVELOPER DATE
TRINITY QUALITY HOMES, INC.

ENGINEER'S CERTIFICATE
"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION AND SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT 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 4/11/08
SIGNATURE OF ENGINEER DATE
ROBERT H. VOGEL

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Robert H. Vogel 5/21/08
HOWARD S.C.D. DATE

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008."
Robert H. Vogel 5/21/08
ROBERT H. VOGEL, PE No. 16193 DATE



FACILITY #1
STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE

KEY QUAN.	BOTANICAL NAME	SIZE	REMARKS
IP 95	Iris pseudacoris Yellow Water Iris	plug	1.5' oc
IV 48	Iris versicolor Blue Frog (wear gloves)	plug	1.5' oc
CE 75	Cyperus esculentus Yellow Nut Sedge	plug	2' oc
CL 45	Carex lacustris Lake Sedge	plug	2' oc

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
COUNTY HEALTH OFFICER
HOWARD COUNTY HEALTH DEPARTMENT
DATE

FINAL ROAD CONSTRUCTION PLAN
STORMWATER MANAGEMENT DETAILS
LINCOLN GLEN
LOTS 1-10 AND OPENSAPCE LOT 11
TAX MAP 43 GRID 8 PARCELS 407
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

OWNER/DEVELOPER
MICHAEL PFAU
TRINITY QUALITY HOMES, INC.
3575 PARK AVE., STE. 301
ELLCOTT CITY, MARYLAND 21043
(410) 480-0023

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8966

DESIGN BY: RHV/RJ
DRAWN BY: RJ
CHECKED BY: RHV
DATE: APRIL 2008
SCALE: AS SHOWN
W.O. NO.: 08-35.00

7 SHEET OF 8

FOREST CONSERVATION WORKSHEET

NET TRACT AREA:
 A. TOTAL TRACT AREA 2.63 AC
 B. AREA WITHIN 100 YEAR FLOODPLAIN 0.00 AC
 C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION 0.00 AC
 D. NET TRACT AREA 2.63 AC

LAND USE CATEGORY (FROM TABLE 3.2.1, PAGE 40, MANUAL)
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY.

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

E. AFFOREST THRESHOLD 15% X D = 0.39 AC
 F. CONSERVATION THRESHOLD 20% X D = 0.53 AC

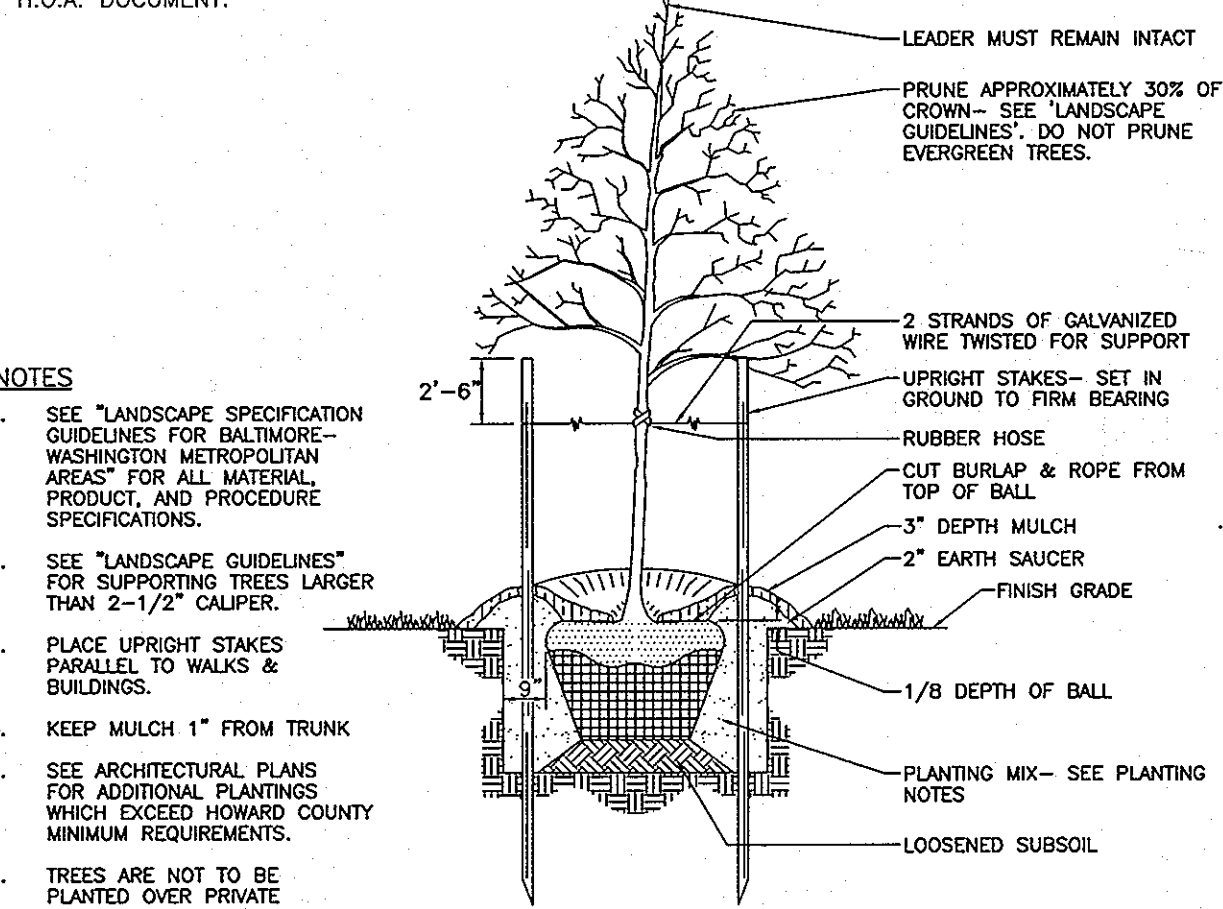
EXISTING FOREST COVER:
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) = 0.00 AC
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD = 0.00 AC
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD = 0.00 AC

BREAK EVEN POINT:
 J. FOREST RETENTION WITH NO MITIGATION REQUIRED = 0.00 AC
 K. CLEARING PERMITTED WITHOUT MITIGATION = 0.00 AC

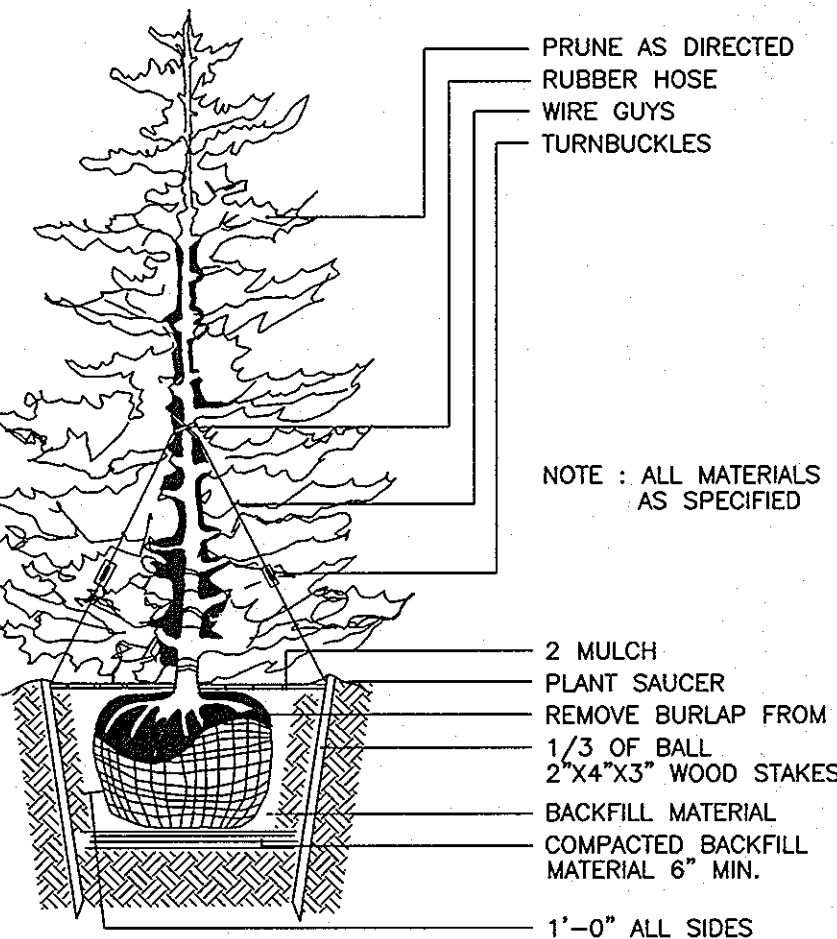
PROPOSED FOREST CLEARING:
 L. TOTAL AREA OF FOREST TO BE CLEARED = 0.00 AC
 M. TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC

PLANTING REQUIREMENTS:
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD = 0.00 AC
 P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.00 AC
 O. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD = 0.00 AC
 R. TOTAL REFORESTATION REQUIRED = 0.00 AC
 S. TOTAL AFFORESTATION REQUIRED = 0.39 AC
 T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 0.39 AC

LANDSCAPE NOTES:
 1. FINAL SURETY FOR THE STORMWATER MANAGEMENT AREA, LANDSCAPING, PERIMETER LANDSCAPING, STREET TREES (PRIVATE), AND TRASH PAD WILL BE POSTED AS LANDSCAPE PART OF THE FINAL ROAD CONSTRUCTION PLAN DEVELOPER AGREEMENT.
 2. STREET TREES ALONG THE PRIVATE ACCESS PLACE WILL BE MAINTAINED BY THE H.O.A. AND WILL BE ADDRESSED BY THE RECORDED PRIVATE ROAD MAINTENANCE AGREEMENT AND THE H.O.A. DOCUMENT.



TREE PLANTING AND STAKING LEGEND
 DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE
 EXISTING CONTOUR
 PROPOSED CONTOUR
 EXISTING TREELINE
 PROPOSED TREELINE
 SHADE TREE
 EVERGREEN TREE
 PROPOSED STREET TREE



TYPICAL EVERGREEN TREE PLANTING DETAIL
 NOT TO SCALE

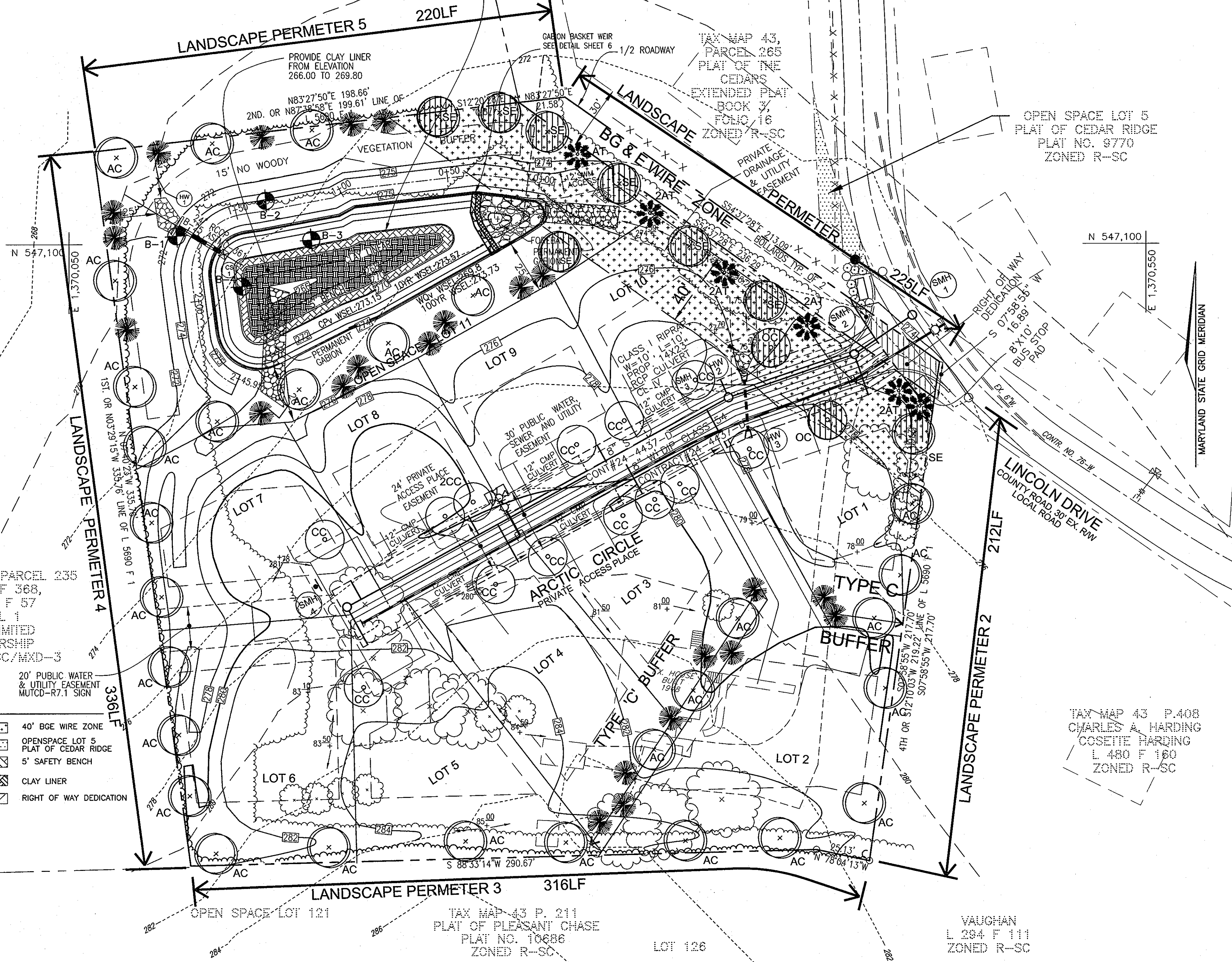
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Kent 6/4/08
 Chief, Division of Land Development Date
Michael Pflaum 6/2/08
 Chief, Development Engineering Division Date

547250

1370000

PROPOSED POCKET POND (P-5) TO BE PRIVATELY OWNED AND MAINTAINED BY HOA, HAZARD CLASS A



PLAN SCALE: 1"=30'

LANDSCAPE NOTES

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED FOR THIS SITE BE OF THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTING MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.

B & E NOTES:

- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
- 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.
- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION 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.

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 Pflaum
 DEVELOPER'S/OWNER'S NAME:
 TRINITY QUALITY HOMES

STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(c)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$20,190.00 TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 15 STREET TREES (PRIVATE), 37 SHADE TREES, 29 EVERGREEN TREES AND 8 SHRUBS AROUND TRASH PAD.

QUAN.	BOTANICAL NAME	SIZE	REM.
29	ACER RUBRUM 'AUTUMN FLAME' AUTUMN FLAME RED MAPLE (SHADE TREES) SCH.D, P.2, P.3, P.4	2 1/2"-3" Col.	B & B
08	SERVICEBERRY AMELANCHIER CANADENSIS (GROWTH HEIGHT=15') P.1, SCH.D (B)	4'-6" HT.	B & B
20	PINUS STROBUS EASTERN WHITE PINE (EVERGREEN TREES) P.1, SCH.D	6'-8" HT.	B & B
06	ARBORVITAE TECHNY THILIA OCCIDENTALIS 'TECHNY' (GROWTH HEIGHT=25')	6'-8" HT.	B & B

***PROVIDE TOTAL 13 ADDITIONAL TREES FROM 1, 3 & 4 TO LOT # 2.

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2008.

SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	TYPE
ScB	SANDY AND CLAYEY LAND, GENTLY SLOPING	C

NOTE: HOWARD SOIL SURVEY, MAP NUMBER 20

SCHEDULE A PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PERIMETER PROPERTIES		
	1	2	3	4	5
Perimeter/Frontage Designation	B	A	A	A	A
Linear Feet of Roadway	225'	212'	316'	336'	220'
Frontage/Perimeter					
Credit for Existing Vegetation (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	220' YES*
Credit for Wall, Fence or Berm (Yes, No, Linear Feet Describe below if needed)	No	No	No	No	No
Number of Plants Required					
Shade Trees	1:50	5	1:60	4	1:60
Evergreen Trees	1:40	6	1:60	6	1:60
Shrubs	-	-	-	-	-
Number of Plants Provided					
Evergreen Trees	5	6	4	6	0
Other Trees (2:1 Substitution)	6	-	-	-	21
Shrubs (10:1 Substitution)	-	-	-	-	06
Describe Plant Substitution Credits Below if needed					
* CREDIT SWM PERIMETER					

SCHEDULE D : STORMWATER MANAGEMENT	
TYPE B BUFFER	
LINEAR FEET OF PERIMETER	560 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	NO
NUMBER OF TREES REQUIRED	12 SHADE TREES 14 EVERGREEN TREES
NUMBER OF TREES PROVIDED	12 SHADE TREES 14 EVERGREEN TREES 0 TREES (0 SUBSTITUTION TREES)
* CREDIT 4 SHADE TREES PERIMETER 5	

STREET TREES (PRIVATE)			
15	NUMBER OF STREET TREES REQUIRED	300/40	
15	NUMBER OF STREET TREES PROVIDED		
13	CORNELIAN CHERRY CORNUS MAS	2 1/2'-3' HT.	B & B
2	OKAME CHERRY PRUNUS X 'OKAME' (GROWTH HEIGHT=25')	4'-6' HT.	B & B

TRASH PAD LANDSCAPING			
SYM.	QTY.	DESCRIPTION	REMARKS
⊙	8	DWARF JAPANESE YEW	2 1/2'-3' HT B&B

***LANDSCAPE SCHEDULE BETWEEN LOTS 1, 2, 3 & 4			
DESCRIPTION			
NUMBER OF STREET TREES REQUIRED	175 LF BUFFER	SHADE TREES/LINEAR FT:1:40	4
NUMBER OF STREET TREES PROVIDED	TYPE "C" BUFFER	EVERGREEN TREES/LINEAR FT: 1:20	9
		SHADE TREES	4
		EVERGREEN TREES	9

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

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
 COUNTY HEALTH OFFICER
 HOWARD COUNTY HEALTH DEPARTMENT

NO.	REVISION	DATE

FINAL ROAD CONSTRUCTION PLAN
FOREST CONSERVATION AND
LANDSCAPING PLAN & DETAILS
LINCOLN GLEN
 LOTS 1-10 AND OPENSACE LOT 11
 TAX MAP 43 GRID 8 PARCELS 407
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHV/RJ
 DRAWN BY: RHV
 CHECKED BY: RHV
 DATE: APRIL 2008
 SCALE: AS SHOWN
 W.O. NO.: 06-35-00
 8 SHEET OF 8