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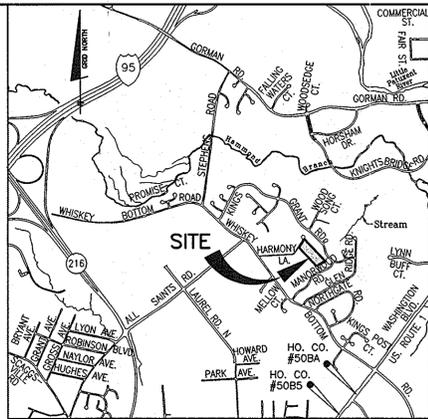
# SITE DEVELOPMENT PLAN

# MORGANS LANDING

## LOT 3 AND OPEN SPACE LOT 4

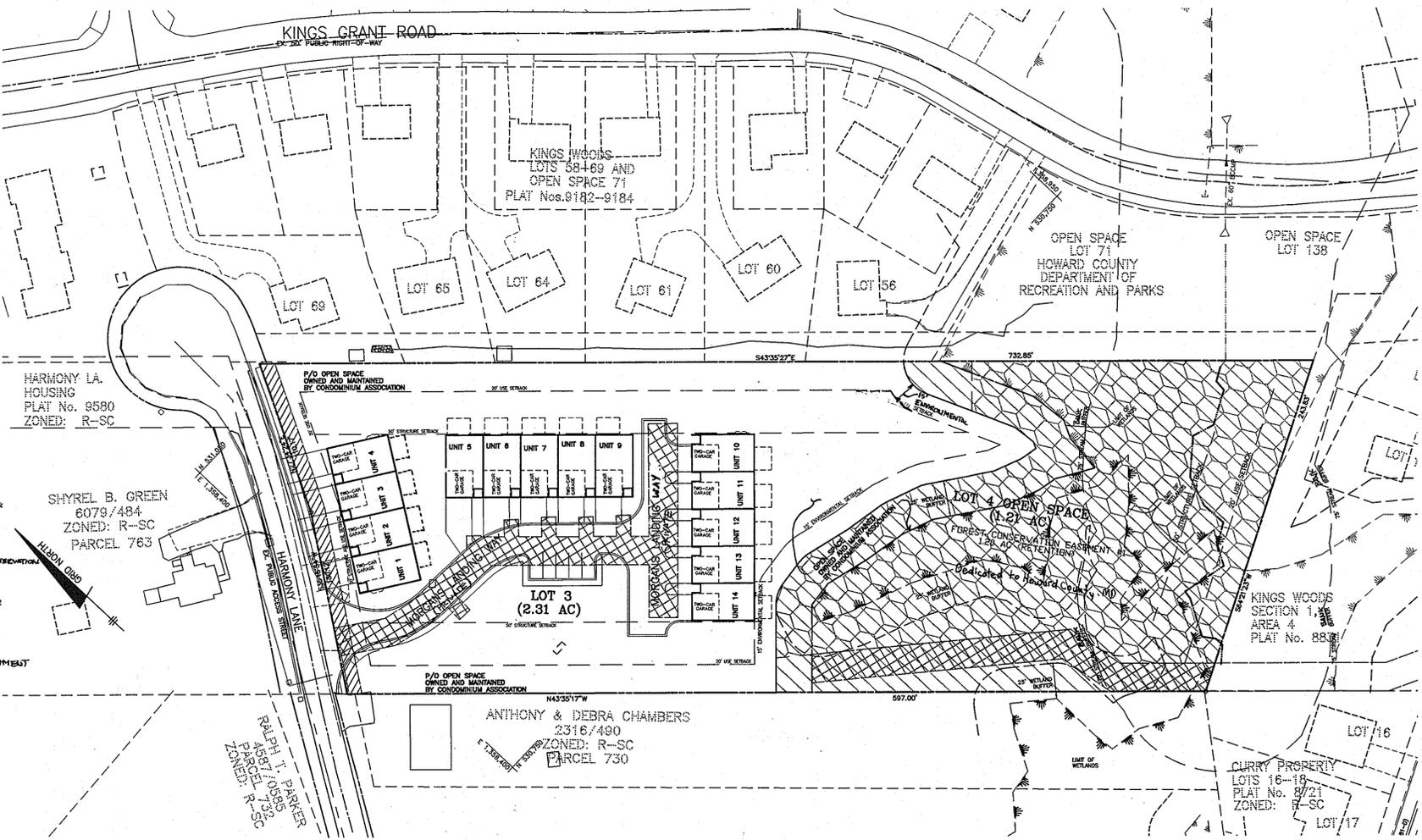
## CONDOMINIUM UNITS 1-14 AND OPEN SPACE

BENCH MARKS	
HO. CO. #508A (NAD '83)	ELEV. N/A
STANDARD DISC ON CONCRETE MONUMENT BEING 39.7' SOUTHWEST OF THE CORNER OF A STONE PLANTER, 11.8' NORTHWEST OF THE CONC. CURB OF U.S. ROUTE 1 AND 42.9' NORTH OF THE INTERIOR CORNER OF THE CURB. N 527561.6702' E 1359772.5936'	
HO. CO. #5085 (NAD '83)	ELEV. 178.242'
STANDARD DISC ON CONCRETE MONUMENT BEING 73.9' NORTHEAST OF THE FRONT RIGHT CORNER OF #10100 U.S. ROUTE 1, 50.2' SOUTH OF A FIRE HYDRANT AND 2.9' WEST OF THE CURB OF U.S. ROUTE 1.	
N 524999.3640'	E 1357925.6751'



### GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-SC PER THE 02-02-04 COMPREHENSIVE ZONING PLAN.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS 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.
- EXISTING TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM THE FIELD RUN TOPO BY BENCHMARK ENGINEERING, INC., DATED FEBRUARY 2005.
- HORIZONTAL AND VERTICAL DATUM ARE NAD '83 - MONUMENTS 508A AND 5085.
- EXISTING UTILITIES SHOWN HAVE BEEN TAKEN FROM CONTRACT DRAWINGS #24-1226, #24-3959-D, #24-1881-D. IF NECESSARY, CONTRACTOR SHALL ADJUST ANY OR ALL STRUCTURE TOP ELEVATIONS TO MATCH SDP GRADES.
- STORMWATER MANAGEMENT SHALL BE PROVIDED BY A BAY FILTER SYSTEM OR EQUIVALENT (WQ#), AN UNDERGROUND STORAGE FACILITY (Q) AND NON-STRUCTURAL PRACTICES. THE NON-STRUCTURAL PRACTICES IS A GRASSED SWALE (REV). ALL FACILITIES SHALL BE THE RESPONSIBILITY OF THE CONDOMINIUM ASSOCIATION TO MAINTAIN. THE FACILITY IS TO BE A CLASS 'A' STRUCTURE.
- WETLAND DELINEATION PROVIDED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH, 2005.
- IN ACCORDANCE WITH SECTION 126 OF THE HOWARD COUNTY ZONING REGULATIONS; BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 18 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS; PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK (INCLUDING THE 16' CONCRETE BALCONY).
- PREVIOUS HOWARD COUNTY CONTRACT #s 24-4041-D, 24-4126-D, 24-4127-D, F-05-143, F-06-223, WP-05-105.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDERS EXPENSE.
- BRL INDICATES BUILDING RESTRICTION LINE.
- FOR DRIVEWAY ENTRANCE DETAIL SEE HOWARD COUNTY STANDARD DETAILS R-6.03 & R-6.05.
- HOUSES/GARAGES WILL BE SITED ON LOTS SO THAT A SECOND CAR, IF PARKED IN THE DRIVEWAY, WILL NOT OVERHANG INTO THE PRIVATE ACCESS PLACE DRIVEWAY (16' MINIMUM CLEARANCE).
- THIS PLAN CONFORMS WITH THE 5th AMENDED EDITION OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. THE DEVELOPER SHALL APPLY FOR BUILDING PERMITS FOR ALL LOTS AS SHOWN ON THIS SITE DEVELOPMENT PLAN WITHIN TWO YEARS OF SIGNATURE APPROVAL OF THIS PLAN.
- PERMETER LANDSCAPING AND PRIVATE ROAD STREET TREES IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SHALL BE PROVIDED AS SHOWN ON THE LANDSCAPE PLAN FOR THIS PROJECT. SURETY IN THE AMOUNT OF \$16,350 FOR 44 SHADE TREES AND 21 EVERGREENS SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SITE DEVELOPMENT PLAN.
- THERE ARE NO STEEP SLOPES (25% OR GREATER) WITHIN THIS SITE.
- THERE IS NO FLOODPLAIN ON SITE. THE DRAINAGE AREA TO THE NORTHEAST PROPERTY LINE IS 23 AC±.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO REMEDIATION LOCATIONS ON-SITE.
- FOURTEEN SINGLE FAMILY ATTACHED DWELLINGS OF 1,040 SQUARE FOOT (28'X40') ARE PROPOSED FOR THIS 3.52 ACRE DEVELOPMENT. NO PUBLIC ROAD DEDICATION IS PROPOSED. THE OPEN SPACE EQUALS 3.18 AC±.
- THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
- TRAFFIC STUDY PREPARED BY MARS GROUP, INC. DATED SEPTEMBER, 2002.
- FOREST STAND DELINEATION PROVIDED BY ECO-SCIENCES PROFESSIONALS, INC. DATED SEPTEMBER, 2002.
- NO DISTURBANCE SHALL OCCUR IN THE WETLANDS, 25' WETLAND BUFFER OR 75' STREAM BANK BUFFER OR FOREST CONSERVATION EASEMENT.
- A DESIGN MANUAL W/AVER REQUEST TO DMV I, CHAPTER 5, SECTION 5.2.6.F TO ALLOW FOR MEASURED ON-SITE IMPROVED AND PERMEABLE AREA TO BE UTILIZED WHEN COMPUTING RCV AND SUBSEQUENT HYDROLOGIC COMPUTATIONS & REQUIREMENTS WAS APPROVED ON JUNE 13, 2006.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL SHALL BE FULFILLED BY THE RETENTION OF 1.20 ACRES OF EXISTING FOREST AND THE PAYMENT OF \$45.60 TO THE FOREST CONSERVATION FUND FOR 0.08 ACRES OF REQUIRED REFORESTATION. SURETY FOR 1.20 ACRES OF RETENTION IN THE AMOUNT OF \$10,454.40 (0.20X52,272 SQ. FT.) HAS BEEN POSTED WITH THE DEVELOPER'S AGREEMENT FOR #06-233. THE RETENTION AND RE-PLANTING PROVIDED WITH THE FOREST CONSERVATION AGREEMENT FOR #06-233 AND THE FOREST EASEMENT DATE: 5/26/06 (224), 5/26/06 (224), 0.5 LOT 150 (2,515 sq ft).
- THE GARAGE AREA OF EACH TOWNHOUSE MAY NOT BE CONVERTED INTO STORAGE OR LIVING SPACE PER SECTION 134 OF THE ZONING REGULATIONS WHICH REQUIRES TWO OFF-STREET PARKING SPACES PER UNIT.
- A DESIGN MANUAL W/AVER REQUEST TO DMV I, CHAPTER 5, SECTION 5.2.7.B.2 TO ALLOW FOR THE USE OF 1-8" DIAMETER LOW FLOW ORIFICE IN LIEU OF THE 1-2" DIAMETER MINIMUM WAS APPROVED ON OCTOBER 4, 2006.
- ADDITIONAL STORMWATER MANAGEMENT WILL BE REQUIRED FOR ANY INCREASE IN IMPERVIOUS AREA.
- TRASH PICK-UP AND RECYCLING COLLECTIONS FOR UNITS 5 THROUGH 14 WILL BE GROUPED TOGETHER AT HARMONY LANE WITHIN 5' OF THE COUNTY ROADWAY FOR COLLECTION.
- CONDOMINIUM ASSOCIATION DOCUMENTS SHALL BE RECORDED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO THE START OF CONSTRUCTION ON THIS SITE.



SWM Facility Summary					
Drainage Area	Facility	Type	Storage Volume/Elevations		
			Pre-treatment	WQv	Cpv
Drainage Area I (A&B)	WQv# 1	Bay Filter System or Equivalent	Req.	1,052 cf	4,207 cf
			Prov.	3,159 cf	5,000 cf
Drainage Area I (A&B)	SWM #1	Underground Storage Facility (Cpv)	Req.	N/A	0.1102 AC-FT
			Prov.	N/A	0.1116 AC-FT / @ 256.53'

Note: The channel protection and water quality control are address fully with the SWM Facility #1 and Bay filter system or equivalent (WQ#1).

Groundwater Recharge is being provided by a grassed swale along the northeastern property boundary. This swale provides groundwater recharge for 0.23 acres of impervious (65% of 0.36 acres) which is greater than the required 0.19 acres. Only areas that sheet flow into the swale have been considered. Please note a method of level spreading will be required at all down spouts located at the back of units 1-9.

Drainage Area I Site Discharge and Storage Facility Water Surface Elevations			
SWM #1	Water Surface Elevation in Facility	Pre-developed (cfs)	Post-developed (cfs)
1 - Year Storm	255.52'	1.11	0.76
10 - Year Storm	256.24'	9.37	4.04
100 - Year Storm	256.61'	18.61	22.18

Note: The stormwater management for this site has been designed to maintain the 1 year storm. As indicated above the post-developed discharge from the site is less than the existing for the 1 year storm.

### Summary of General Storage Requirement Drainage Area #1 A & B

Step	Requirement	Volume Required (Ac-ft)	Notes
1.	Water Quality Volume (WQv)	0.0966 (or 4,207 cf)	Provided within a Bay Filter system or equivalent
2.	Recharge Volume (Rev)	0.0167 (or 0.190 acres)	Provided within Grassed Swales
3.	Channel Protection Volume (Cpv)	0.110 ac ft (or 4,802 cf)	Provided within an Underground Storage Facility
4.	Overbank Flood Protection Volume (Op)	N/A	Not required
5.	Extreme Flood Volume (QD)	N/A	Not required

### Summary of General Storage Requirement Drainage Area #2

Step	Requirement	Volume Required (Ac-ft)	Notes
1.	Water Quality Volume (WQv)	0.0	No New Impervious Cover
2.	Recharge Volume (Rev)	0.0	No New Impervious Cover
3.	Channel Protection Volume (Cpv)	0.0	No disturbance except utility construction
4.	Overbank Flood Protection Volume (Op)	N/A	Not required
5.	Extreme Flood Volume (QD)	N/A	Not required

### SITE DATA TABULATION

- GENERAL SITE DATA
  - PRESENT ZONING: R-SC
  - DEED REF.: PARCEL 960 - 1148/255
  - PROPOSED USE OF SITE: SINGLE FAMILY ATTACHED DWELLINGS
  - PROPOSED WATER AND SEWER SYSTEMS: PUBLIC
- AREA TABULATION
  - TOTAL AREA OF SITE: 3.52 AC±
  - AREA OF 100 YEAR FLOODPLAIN (APPROX.): 0 AC±
  - AREA OF STEEP SLOPES (25% OR GREATER): 0 AC±
  - NET AREA OF SITE: 3.52 AC±
  - AREA OF THIS PLAN SUBMISSION: 3.52 AC±
  - AREA OF PROPOSED UNITS: 0.34 AC±
  - AREA OF PROPOSED OPEN SPACE LOTS: 1.21 AC±
  - AREA OF PROPOSED PUBLIC ROAD R/W: N/A
- LOT TABULATION
  - ALLOWABLE RESIDENTIAL LOT YIELD: 14
  - TOTAL NUMBER OF RESIDENTIAL UNITS: 14
  - TOTAL NUMBER OF OPEN SPACE LOTS: 1
- OPEN SPACE DATA
  - MINIMUM RESIDENTIAL LOT SIZE: N/A
  - OPEN SPACE REQUIRED (25%): 0.88 AC.
  - TOTAL AREA OF PROPOSED OPEN SPACE LOTS: 1.21 AC±
  - AREA OF RECREATION OPEN SPACE REQUIRED: 5,600 SF  
14 UNITS X 400 SQFT = 5,600 SF
  - AREA OF RECREATION OPEN SPACE PROVIDED: 5,906 SF
  - PARKING
    - PARKING REQUIREMENT = 2/0U X 14 = 28 + 0.3/0U(OVERFLOW) X 14 = 33
    - PARKING PROVIDED = 2/0U X 14 + + 5 = 33

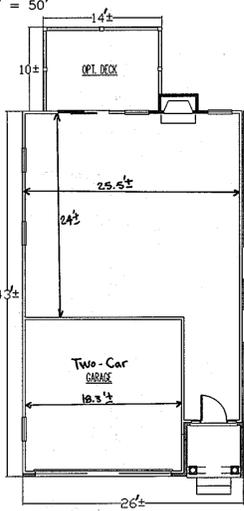


MORGAN PROPERTY ADDRESS CHART			
UNIT	STREET ADDRESS	UNIT	STREET ADDRESS
1	9877 HARMONY LANE	8	9391 MORGANS LANDING WAY
2	9875 HARMONY LANE	9	9323 MORGANS LANDING WAY
3	9873 HARMONY LANE	10	9351 MORGANS LANDING WAY
4	9871 HARMONY LANE	11	9325 MORGANS LANDING WAY
5	9315 MORGANS LANDING WAY	12	9355 MORGANS LANDING WAY
6	9317 MORGANS LANDING WAY	13	9397 MORGANS LANDING WAY
7	9319 MORGANS LANDING WAY	14	9391 MORGANS LANDING WAY

PLAN SCALE: 1" = 10'

### PLAN

SCALE: 1" = 50'



SHC TABLE		
UNIT NO.	MIN. CELLAR	SHC INV.
1	275.67	270.10
2	275.67	270.10
3	274.27	265.12
4	274.27	265.12
5	267.97	264.33
6	266.67	263.45
7	265.37	262.30
8	263.97	260.42
9	262.67	260.12
10	259.37	259.37
11	259.37	259.46
12	259.97	259.06
13	259.37	258.76
14	259.37	258.53

CONTRACTOR TO CHECK SEWER HOUSE CONNECTION ELEVATION AT PROPERTY/EASEMENT LINE PRIOR TO CONSTRUCTION OF HOUSE TO ENSURE PROPER SHC SLOPES CAN BE MAINTAINED.

NOTE: WATER METERS ARE INTENDED TO BE PRIVATE AND LOCATED ON THE OUTSIDE OF THE UNITS.

PERMIT INFORMATION CHART					
SUBDIVISION NAME:		SECTION/AREA:		LOT/PARCEL #	
MORGANS LANDING		CONDOMINIUM UNITS 1-14 AND OPEN SPACE		LOT 3 & 4 PARCEL 960	
PLAT No.	GRID No.	ZONE	TAX MAP	ELECTION DISTRICT	CENSUS TRACT
19300, 17904	15	R-SC	47	SIXTH	6069.03
WATER CODE 24-4407-D		SEWER CODE 24-4407-D			

NO.	DATE	REVISION
1	12-29-09	ADD BAY FILTER SYSTEM (WQ#) & ADJUST PLANS ACCORDINGLY

**BENCHMARK ENGINEERING, INC.**

ENGINEERS LAND SURVEYORS PLANNERS

8480 BALTIMORE NATIONAL PIKE SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-8105 FAX: 410-465-6644  
www.bel-engineering.com

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. 28559, Expiration Date: 7-22-2009.

OWNER/DEVELOPER: **BRIAN BOY MORGANS LANDING, LLC.**  
11807 WOLLINGFORD COURT CLARKSVILLE, MD 21029  
410-792-2565

PROJECT: **MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE**

LOCATION: TAX MAP No. 47, GRID No. 15  
PARCEL No. 763  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: **SITE DEVELOPMENT PLAN TITLE SHEET**

DATE: MAY, 2006  
NOVEMBER, 2007

PROJECT NO. 1572

SCALE: AS SHOWN DRAWING 1 OF 10

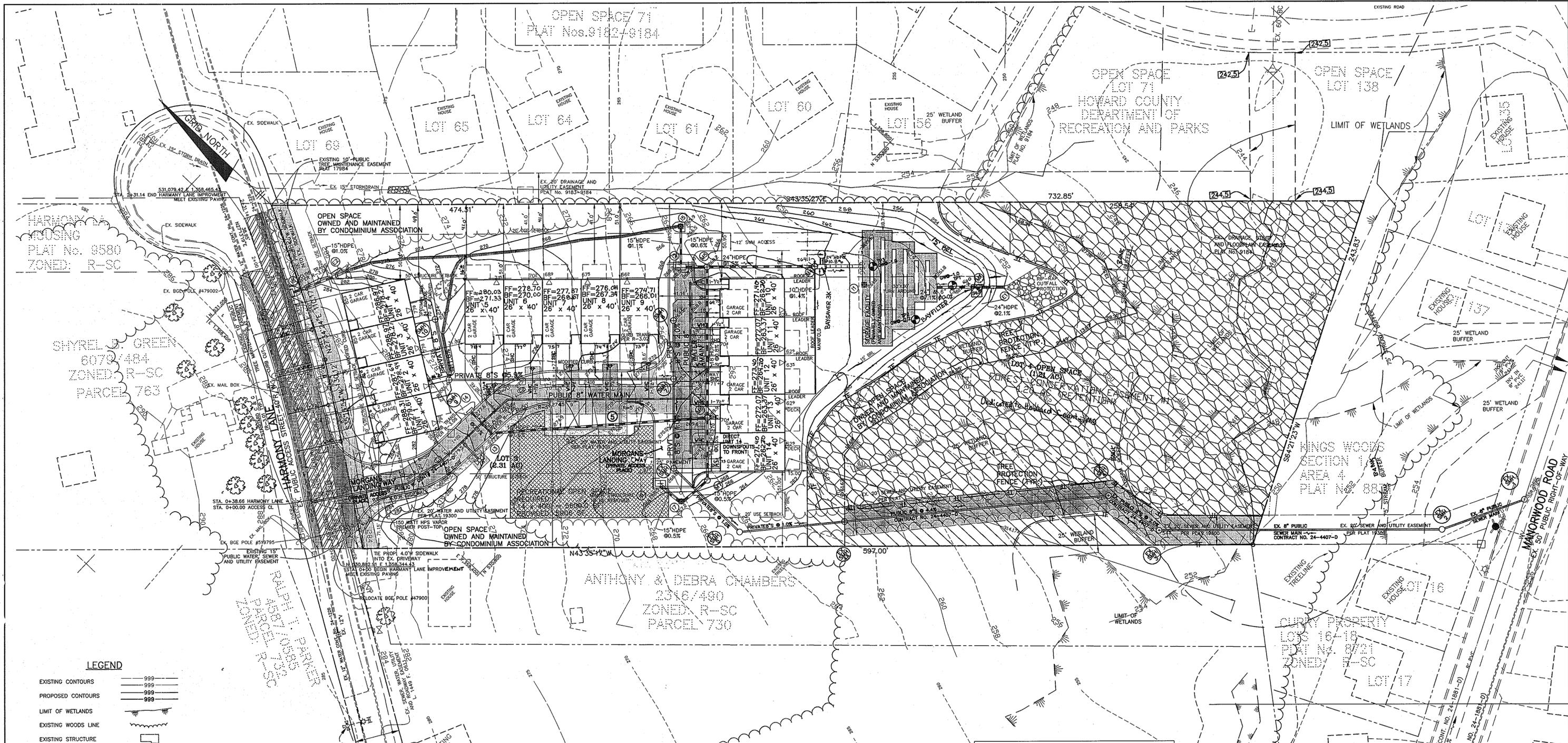
Design: BFC Draft: BFC Check: DAM

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*W. J. ...* 12/17/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Clayton ...* 12/18/07  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Marshall S. ...* 12/21/07  
DIRECTOR



**LEGEND**

- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMIT OF WETLANDS
- EXISTING WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- FOREST CONSERVATION EASEMENT
- NATURAL CONSERVATION AREA
- PUBLIC SEWER, WATER AND UTILITY EASEMENT
- RIP-RAP
- EROSION CONTROL MATTING
- FULL DEPTH P-2 PAVING HARMONY LANE IMPROVEMENT (APPROX. 1,972 S.F.)
- 2" MILL AND OVERLAY (APPROX. 3,173 S.F.)
- RECREATIONAL OPEN SPACE (5,600 SF)

**ACCESS CURVE TABLE**

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	60.00'	34.11'	17.53'	33.65'	S70°31'17"E	32°34'47"
C2	60.00'	45.26'	23.76'	44.19'	S65°11'59"E	43°13'23"

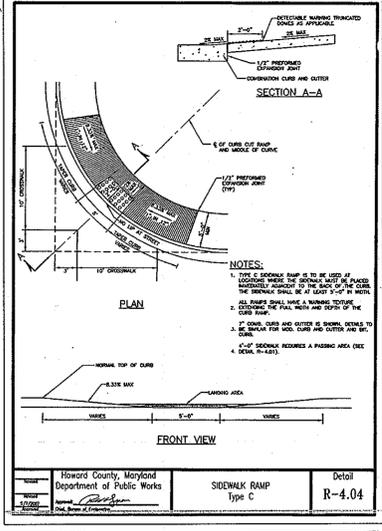
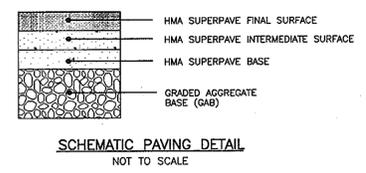
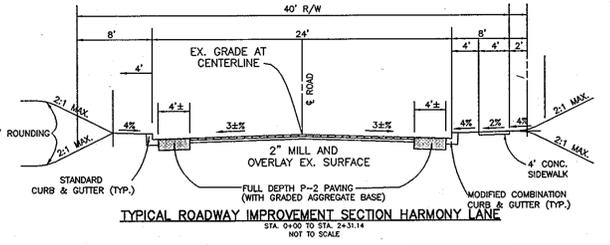
**PAVING SPECIFICATIONS (HO.CO. STD R-2.01)**

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIAL (INCHES)	3 TO 4.5 TO 4.7	4.5 TO 5 TO 4.7	5 TO 6 TO 4.7
P-2	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 12 HEAVY TRUCKS PER DAY LOCAL ACCESS PLACE, ACCESS STREET	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0
P-3	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 12 HEAVY TRUCKS PER DAY LOCAL ACCESS PLACE, ACCESS STREET	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0

**GENERAL NOTES:**  
 IMPROVEMENT TO BE APPLIED TO ENTIRE WIDTH OF STREET FROM STATION 0+00 TO 1+95.55. APPLY ONLY TO RIGHT LAKE FROM STATION 1+95.55 TO 2+331.14.  
 CURB NOTE: UNLESS STATED OTHERWISE ON THE PLAN ALL CURBS SHALL BE STANDARD CURB AND GUTTER (R-3.01)  
 \*DECK - DECK MAY NOT PROJECT MORE THAN 10' INTO THE REQUIRED 15' ENVIRONMENTAL SETBACK

**CENTERLINE CONTROL DATA**

STREET NAME	STATION	NORTH	EAST
MORGANS LANDING WAY	INT. STA. 0+00	530914.54	1358366.65
	PC STA.0+56.32	530881.62	1358412.35
	PT STA.0+94.44	530870.40	1358444.09
	PC STA.1+32.46	530868.06	1358486.04
	END STA. 2+69.21	530873.26	1358589.24



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Chief, Division of Land Development  
 Chief, Development Engineering Division  
 Director

NO.	DATE	REVISION
1	12-29-09	REV. WQ. FACILITY, SD, GRADING, FF, BF ELEV. ADD DECKS TO UNITS 1-4 + DIM DECKS TO UNITS 4-9

**BENCHMARK ENGINEERING, INC.**  
 8480 BALTIMORE NATIONAL PIKE SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644  
 E-Mail: benchmark@cois.com

**OWNER/DEVELOPER:** MORGANS LANDING, LLC. 11807 WOLLINGFORD COURT CLARKVILLE, MD 21029 410-792-2565

**PROJECT:** MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE

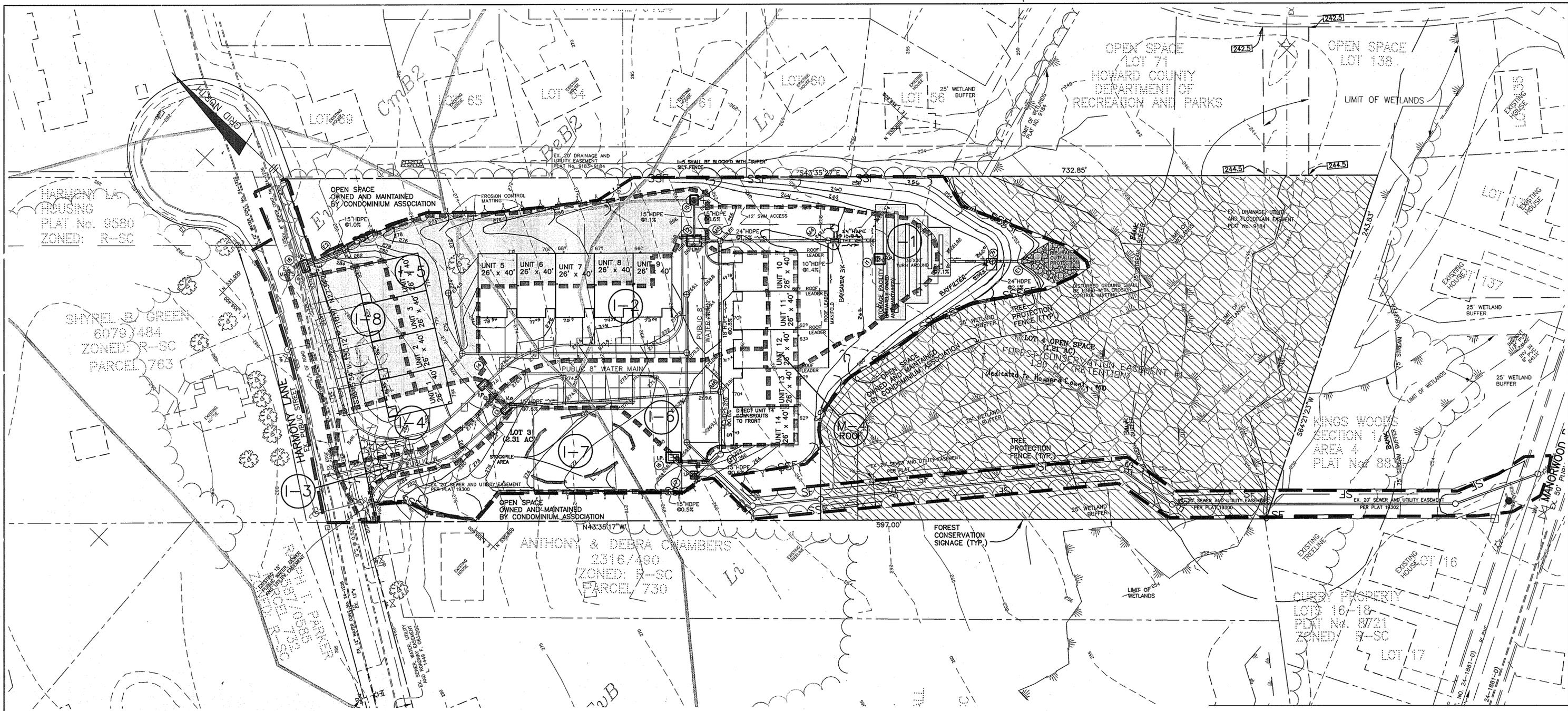
**LOCATION:** TAX MAP No. 47, GRID No. 15 PARCEL No. 763 8th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**TITLE:** SITE DEVELOPMENT AND GRADING PLAN

**DATE:** MAY, 2006 PROJECT No. 1572  
 NOVEMBER, 2007 DRAWING 2 OF 10

**SCALE:** AS SHOWN

Design: BFC Draft: BFC Check: DAM



PLAN  
SCALE: 1" = 30'

LEGEND

SOILS CLASSIFICATION	AbC1
SOILS DELINEATION	---
EXISTING CONTOURS	999
PROPOSED CONTOURS	999
EXISTING WOODS LINE	~~~~~
PROPOSED WOODS LINE	~~~~~
EXISTING STRUCTURE	[ ]
PROPOSED STRUCTURE	[ ]
LIMIT OF DISTURBANCE	---
STABILIZED CONSTRUCTION ENTRANCE	[ ]
SUPER SILT FENCE	SSF
INLET PROTECTION	[ ] I.P.
EROSION CONTROL MATTING	[ ]
DRAINAGE AREAS	[ ]

I-1	AREA = 0.20 AC C* FACTOR = 0.36	I-1	ZONING = R-SC IMPERVIOUS = 65%
I-2	AREA = 0.13 AC C* FACTOR = 0.32	I-2	ZONING = R-SC IMPERVIOUS = 65%
I-3	AREA = 0.05 AC C* FACTOR = 0.45	I-3	ZONING = R-SC IMPERVIOUS = 74%
I-4	AREA = 0.09 AC C* FACTOR = 0.37	I-4	ZONING = R-SC IMPERVIOUS = 70%
I-5	AREA = 0.48 AC C* FACTOR = 0.38	I-5	ZONING = R-SC IMPERVIOUS = 69%
I-6	AREA = 0.20 AC C* FACTOR = 0.35	I-6	ZONING = R-SC IMPERVIOUS = 65%
I-7	AREA = 0.19 AC C* FACTOR = 0.30	I-7	ZONING = R-SC IMPERVIOUS = 65%
I-8	AREA = 0.05 AC C* FACTOR = 0.36	I-8	ZONING = R-SC IMPERVIOUS = 65%
M-4	AREA = 0.05 AC C* FACTOR = 0.86	M-4	ZONING = R-SC IMPERVIOUS = 100%

MAP SYMBOL	SOIL GROUP	SOIL TYPE
**BbB2	C	BELTSVILLE SILT LOAM, 1% TO 5% MODERATELY ERODED
EvB	A	EVESBORO LOAMY SAND, 1% TO 5% SLOPES
EvC	A	EVESBORO LOAMY SAND, 5% TO 10% SLOPES
* LI	D	LEONARDTOWN SILT LOAM

\* INDICATES HYDRIC SOILS  
\*\* INDICATES HYDRIC SOIL INCLUSIONS  
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NOS. 33 AND 34

**ENGINEER'S CERTIFICATE**  
I CERTIFY THAT THIS PLAN FOR 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.

ENGINEER - BRIAN F. CLEARY P.E. # 28559  
DATE: 11/20/07

**DEVELOPER'S CERTIFICATE**  
I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN 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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Brian Boy  
DATE: 11/26/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development  
DATE: 12/18/07

Chief, Development Engineering Division  
DATE: 12/17/07

Director  
DATE: 12/20/07

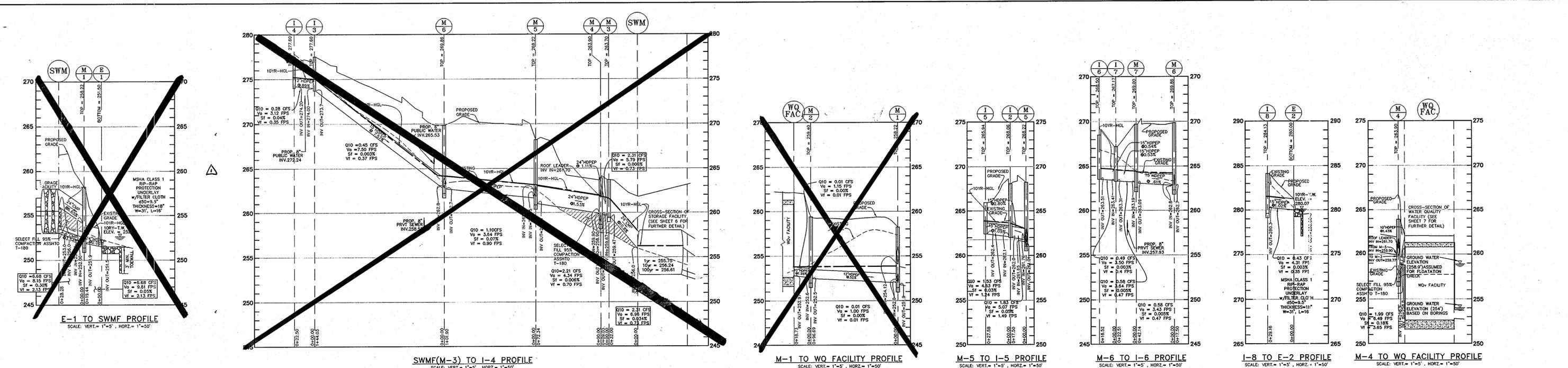
NO.	DATE	REV. WQ FACILITY, SD & GRADING	REVISION
I	12-29-09		

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELLCOTT CITY, MARYLAND 21043  
PHONE: 410-465-8165 FAX: 410-465-6644  
E-MAIL: benchmark@coia.com

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. 28559, Expiration Date: 7-22-2009.

OWNER/DEVELOPER:	PROJECT: MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE
MORGANS LANDING, LLC. 11807 WOLLINGFORD COURT CLARKSVILLE, MD 21029 410-792-2565	LOCATION: TAX MAP No. 47, GRID No. 15 PARCEL No. 763 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: SEDIMENT AND EROSION CONTROL AND STORM DRAIN AREA MAP	DATE: MAY, 2006 NOVEMBER, 2007
DESIGN: BFC	DRAFT: BFC
CHECK: DAM	SCALE: AS SHOWN
DRAWING 3 OF 10	





### STRUCTURE SCHEDULE

#### STORM MANHOLES

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
M-1	4'-0" MANHOLE	N 530689.23, E 1358769.92	253.90	254.99	259.50	SAVITZER STREET #2 SEE SHEET 7
M-4	4'-0" MANHOLE	N 530779.06, E 1358704.25	269.90	259.57	263.90	SAVITZER STREET #1 SEE SHEET 7
M-5	4'-0" MANHOLE	N 530831.45, E 1358654.37	261.76/261.65	261.01	268.22	G - 5.12
M-6	4'-0" MANHOLE	N 530761.20, E 1358580.56	262.80/262.80	262.70	269.86	G - 5.12
M-7	4'-0" MANHOLE	N 530732.11, E 1358550.08	263.20	263.10	269.00	G - 5.12

#### SEWER MANHOLES

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
SMH-5	4'-0" MANHOLE	N 530692.38, E 1358539.60	257.52	257.42	264.37	G - 5.12
SMH-6	4'-0" MANHOLE	N 530753.97, E 1358540.34	258.23	258.13	268.80	G - 5.12
SMH-7	4'-0" MANHOLE	N 530795.76, E 1358584.24	258.87	258.87	270.30	G - 5.12
SMH-8	4'-0" MANHOLE	N 530822.92, E 1358612.77	259.37	259.27	269.10	G - 5.12
SMH-9	4'-0" MANHOLE	N 530904.93, E 1358480.32	265.12	265.02	276.38	G - 5.12
SMH-10	4'-0" MANHOLE	N 530939.81, E 1358503.60	270.10	270.00	274.52	G - 5.12

### END SECTIONS

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	STANDARD
E-1	METAL END SECTION	N 530675.14, E 1358783.22	-	251.50	-	MD-370.01
E-2	METAL END SECTION	N 531008.39, E 1358478.75	-	280.00	-	MD-370.01

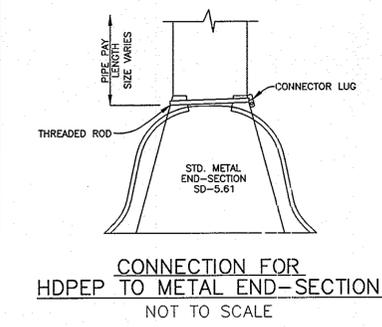
- STRUCTURE ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
- STRUCTURE ELEVATION AND LOCATION FOR CURB INLETS IS AT THE TOP OF CURB AT MIDPOINT OF THE INLET AT THE FACE.
- STRUCTURE ELEVATION AND LOCATION FOR TYPE "D" AND "WR" INLETS IS AT THE TOP OF SLAB/GRATE AT CENTER OF THE INLET.
- PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.
- ALL STORM DRAINS SHALL BE REINFORCED CONCRETE PIPE (CLASS N) UNLESS OTHERWISE NOTED.
- STRUCTURE ELEVATION AND LOCATION FOR END SECTION IS AT MID POINT AT THE END OF THE END SECTION

### STRUCTURE SCHEDULE

#### STORM INLETS

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.
I-1	GRATED MANHOLE	N 530746.36, E 1358718.11	-	-	261.00	*
I-2	S-COMB	N 530844.13, E 1358642.31	262.10	262.00	268.06	D-4.32
I-3	A-5	N 530858.74, E 1358473.53	274.00	273.70	277.60	D-4.02
I-4	A-5	N 530878.71, E 1358474.64	-	274.20	277.60	D-4.02
I-5	YARD	N 530863.14, E 1358662.28	-	262.40	265.94	D-4.14
I-6	S-COMB	N 530753.60, E 1358526.89	-	263.51	268.50	D-4.32
I-7	YARD	N 530735.10, E 1358527.77	263.41	263.31	267.17	D-4.14
I-8	A-5	N 531022.58, E 1358449.42	-	280.30	284.13	D-4.02

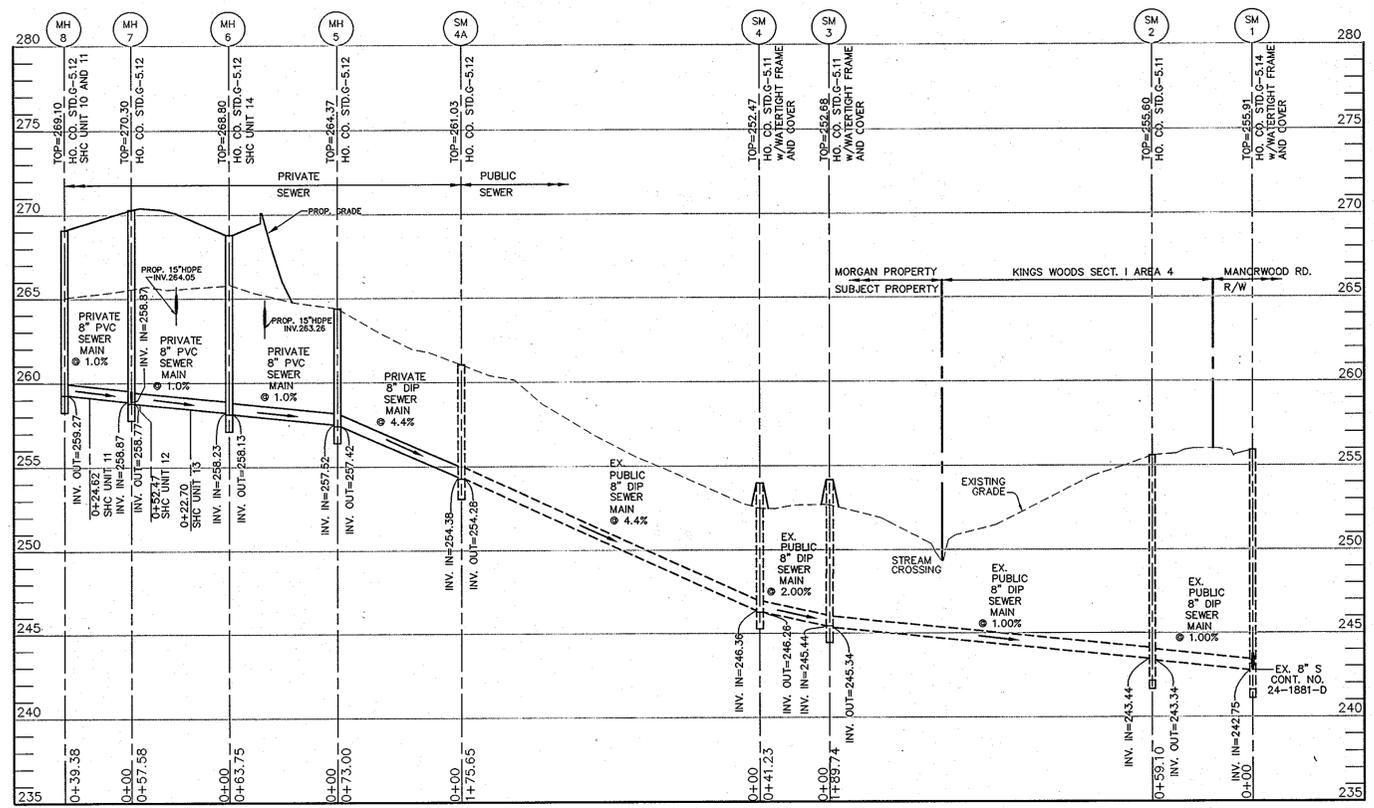
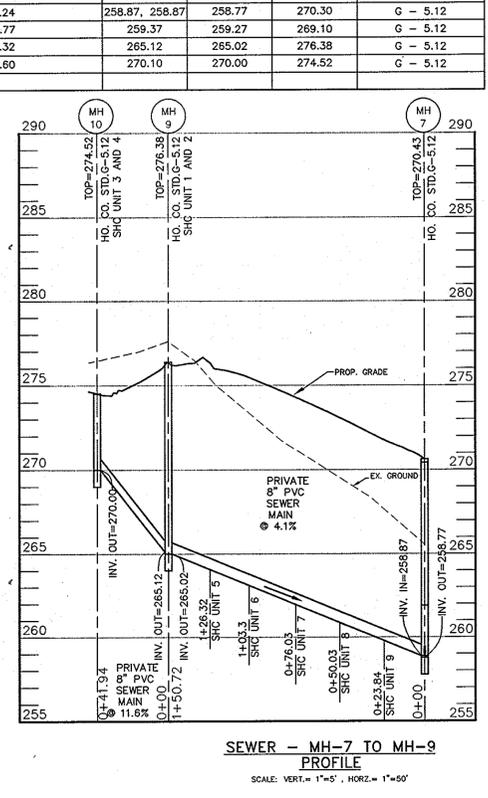
\* I-1 SHALL BE A NEENAH CATCH BASIN FRAME AND GRATE FOR 30" PIPE, CATALOG NO. R-2565-J (OR EQUIVALENT). PLEASE REFER TO SHEET 6 FOR TYPICAL CSP RISER AND MANHOLE SLEEVE DETAIL FOR RISER.



### PIPE SCHEDULE

TYPE & CLASS	SIZE	LENGTH
HDPE HI-Q	10"	8'
HDPE HI-Q	12"	116'
HDPE HI-Q	15"	325'
HDPE HI-Q	18"	102'
HDPE HI-Q	24"	99'
CMP	60"	330'
CMP	6"	29'
CMP	24"	64'

HDPE = SMOOTH BORE HIGH DENSITY POLYVINYL CHLORIDE PIPE  
CMP = CORRUGATED METAL PIPE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 12/17/07

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 12/10/07

DIRECTOR  
 DATE: 12/20/07

NO.	DATE	REVISION
1	12-29-09	REV. SD PROFILE SEE SHEET #7 & REV. STRUCTURE SCHEDULE TABLE

**BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS, INC.**  
 8450 BALTIMORE NATIONAL PIKE & SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644

11/20/07

OWNER/DEVELOPER: MORGANS LANDING, LLC  
 11807 WOLLINGFORD COURT  
 CLARKSVILLE, MD 21029  
 410-792-2565

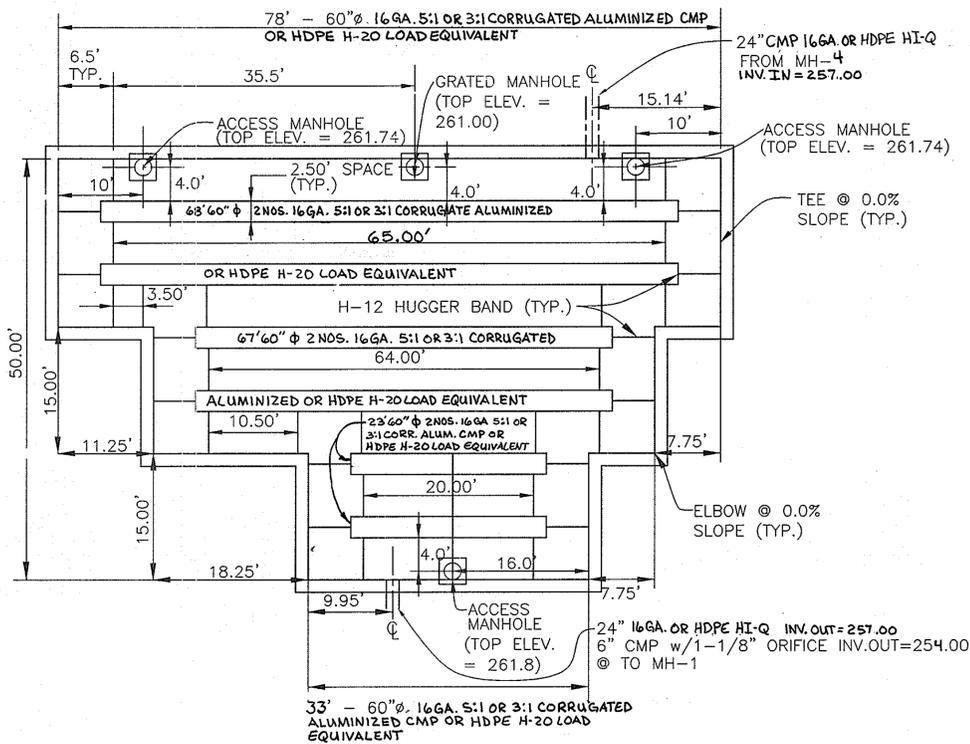
PROJECT: MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE

LOCATION: TAX MAP: 47, GRID: 15  
 PART OF PARCEL: 763  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

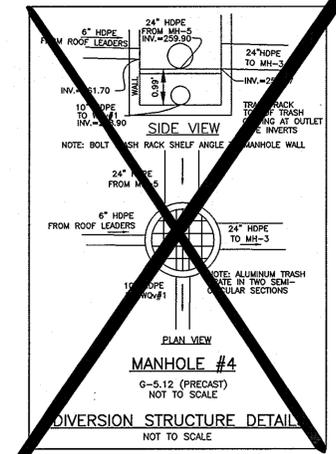
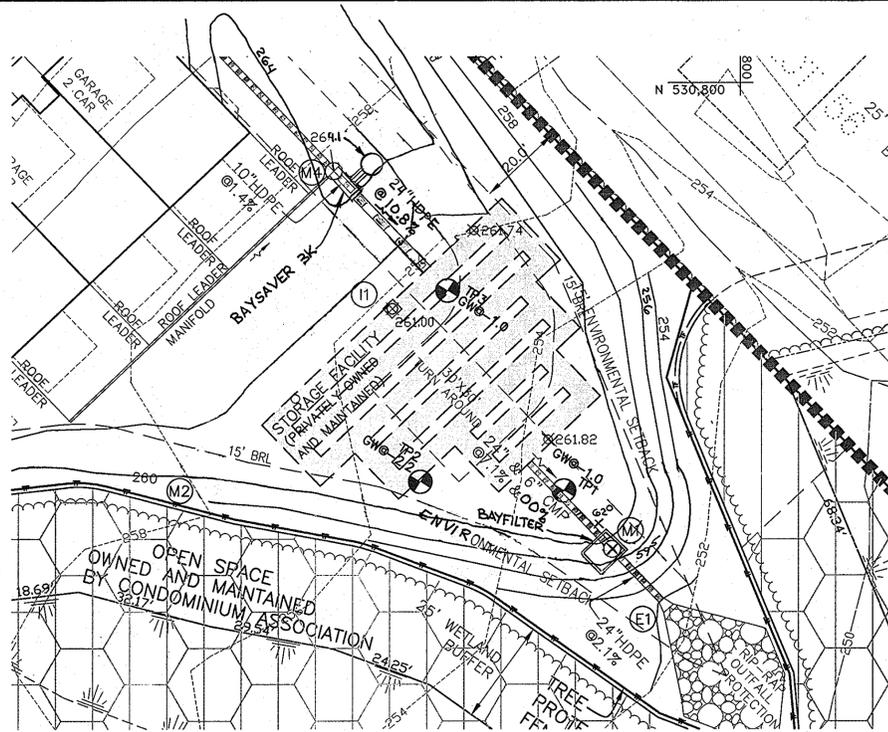
TITLE: STORM DRAIN AND SEWER PROFILES DETAILS AND PIPE SCHEDULES

DATE: MAY 2006 PROJECT NO. 1572  
 NOVEMBER 2007

DESIGN: BFC DRAFT: BFC CHECK: DAM SCALE: AS SHOWN SHEET 5 OF 10



**UNDERGROUND SWM FACILITY**  
SCALE: 1" = 10'



- OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND SWM FACILITIES**
1. THE UNDERGROUND STORM WATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.
  2. THE UNDERGROUND STORM WATER MANAGEMENT FACILITY SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.
  3. WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.
  4. THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES NOTIFYING THEM OF THE SPILL AND CLEAN-UP OPERATION.
  5. THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORM WATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.
  6. THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.
- CONSTRUCTION SPECIFICATIONS**
- 1. BEDDING**  
THE BED SHALL BE PLACED TO UNIFORM GRADE AND LINE TO ENSURE GOOD VERTICAL ALIGNMENT AND TO AVOID EXCESSIVE STRESSES AT PIPE JOINTS. THE BEDDING SHALL BE FREE OF ROCK FORMATIONS, PROTRUDING STONES, FROZEN LUMPS, ROOTS, AND FOREIGN MATERIAL. THE BEDDING FOUNDATION MUST BE A STABLE, WELL GRADED GRANULAR MATERIAL. ANY MATERIAL THAT HAS INADEQUATE BEARING CAPACITY MUST BE REMOVED AND REPLACED WITH A COMPACTED SELECT FILL APPROVED BY THE GEOTECHNICAL ENGINEER.
  - 2. BACKFILL**  
THE FILL MATERIAL SHALL BE FREE OF ROCKS, FROZEN LUMPS, AND FOREIGN MATTER THAT COULD CAUSE HARD SPOTS IN BACKFILL OR THAT COULD DISCOMPOSE AND CREATE VOIDS.  
BACKFILL MATERIAL SHALL BE A WELL GRADED GRANULAR MATERIAL.  
HIGHLY PLASTIC SILTS, HIGHLY PLASTIC CLAYS, ORGANIC SILTS, ORGANIC CLAYS AND PEATS SHALL NOT BE USED AS BACKFILL MATERIAL.  
BACKFILL SHALL BE PLACED SYMMETRICALLY ON EACH SIDE OF THE STRUCTURE IN SIX-INCH TO EIGHT-INCH LOOSE LAYERS TO ONE FOOT ABOVE THE TOP OF THE PIPE. EACH LAYER IS TO BE COMPACTED TO THE SPECIFIED DENSITY (MINIMUM 90%) BEFORE PLACING THE NEXT LAYER. REFERENCE ASTM A798.
  - 3. PIPE**  
THE PIPE FABRICATOR SHALL PROVIDE SPECIFICATIONS OF ALL MATERIALS.  
SHOP DRAWINGS ARE TO BE PROVIDED BY FABRICATOR. APPROVAL BY ENGINEER IS REQUIRED PRIOR TO CONSTRUCTION.  
CONTRACTOR IS REQUIRED TO COORDINATE APPROVAL OF SHOP DRAWINGS AND SPECIFICATIONS AND SHALL BE OBLIGATED FOR ANY COST THEREOF.
  - 4. GENERAL**  
DEBRIS IS TO BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.

**SWM SUMMARY TABLE - D.A. = 1.53 AC.±**

STORM FREQUENCY (YRS.)	DEVELOPED RUNOFF AND DISCHARGE (cfs)	WESEL (FT.)	STORAGE (AC.-FT.)
1	0.76	255.75'	0.1227
10	10.46	256.24'	0.1498
100	25.31	256.61'	0.1678

**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.

PE NO. \_\_\_\_\_  
DATE \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

**BY THE DEVELOPER:**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING 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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*B. D. B.* 11/26/07  
DEVELOPER Brian Boy DATE

**BY THE ENGINEER:**  
I/WE 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 NOTICED 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.

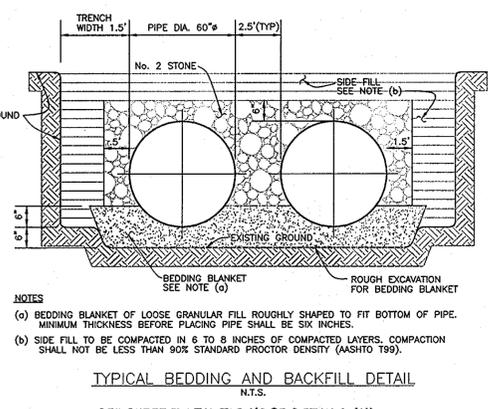
*[Signature]* 11/20/07  
ENGINEER - Brian F. Cleary, P.E. # 28559 DATE

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

HOWARD SOIL CONSERVATION DISTRICT

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John K. Roberts* 12/16/07  
HOWARD SOIL CONSERVATION DISTRICT DATE



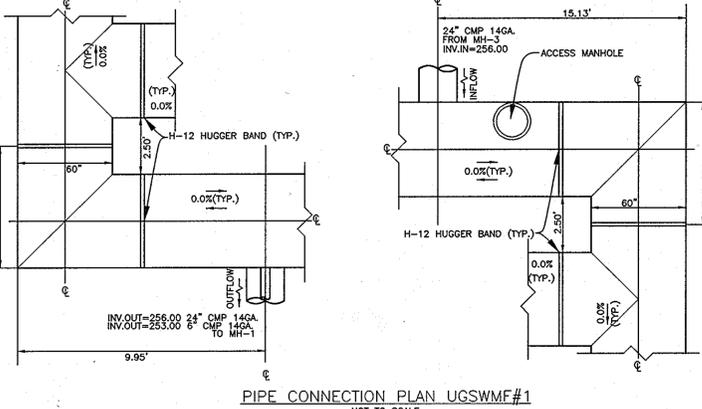
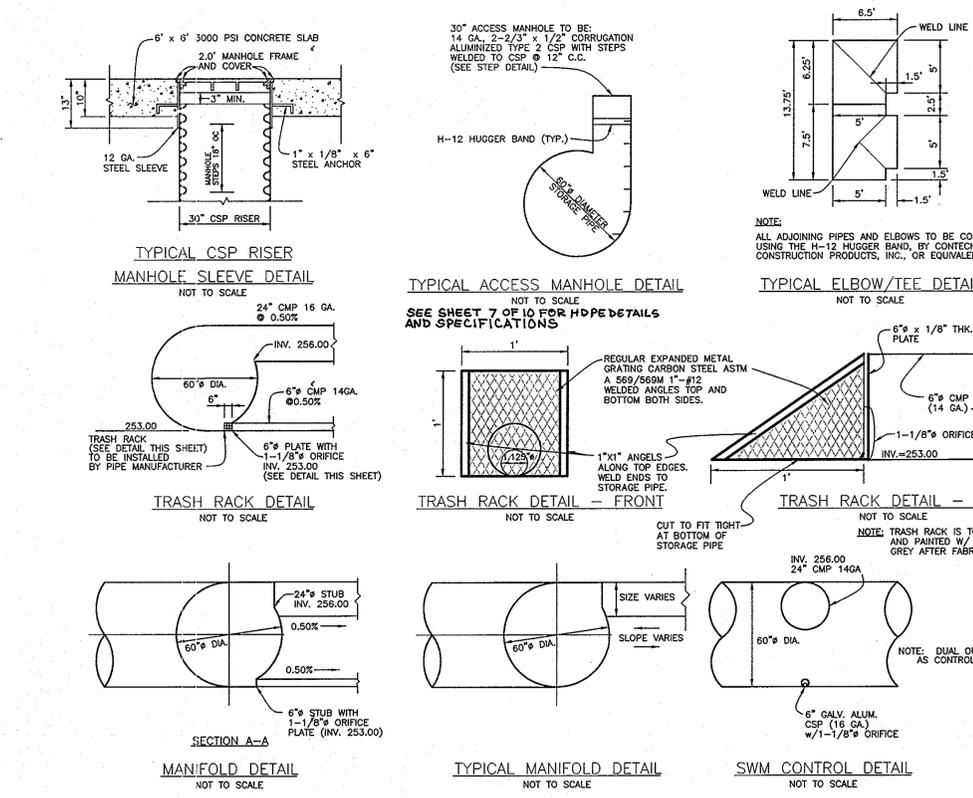
NOTE: ALUMINIZE CORRUGATED METAL PIPE IN ACCORDANCE WITH AASHTO.

FOR HDPE PLEASE REFERENCE TYPICAL RET/DET CROSS SECTION DETAIL SHEET #7 FOR FACILITY LAYOUT AND CONSTRUCTION SPECIFICATIONS.

NOTE: PRIOR TO CONSTRUCTION OF SAND FILTER, STEEL REINFORCEMENT DESIGN SHALL BE PROVIDED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND.

NOTE: THE INCOMING PIPE TO THE FACILITIES SHALL BE CAPPED OFF UNTIL THE CONTRIBUTING AREAS HAVE BEEN STABILIZED

ALL DEBRIS SHALL BE KEPT OUT OF THE FACILITY DURING AND AFTER CONSTRUCTION.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Andy Hamant* 12/16/07  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Dunnington* 12/17/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Frank P. Loyce* 12/20/07  
DIRECTOR

NO.	DATE	REVISION
1	12-29-09	REV. UGS FACILITY, SD AND GRADING, ADD NOTES AND REV. TO ALLOW FOR USE OF HDPE FOR UGSWMS

**BENCHMARK ENGINEERING, INC.**  
ENGINEERS • LAND SURVEYORS • PLANNERS  
8480 BALTIMORE NATIONAL PIKE • SUITE 418  
ELICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
E-MAIL: benchmark@coia.com

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. 28559, Expiration Date: 7-22-2009

OWNER/DEVELOPER: MORGANS LANDING, LLC, 11807 WOLLINGFORD COURT CLARKSVILLE, MD 21029 410-792-2565

PROJECT: MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE

LOCATION: TAX MAP No. 47, GRID No. 15  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: UNDERGROUND STORMWATER MANAGEMENT STORAGE FACILITY

DATE: MAY, 2006  
NOVEMBER, 2007

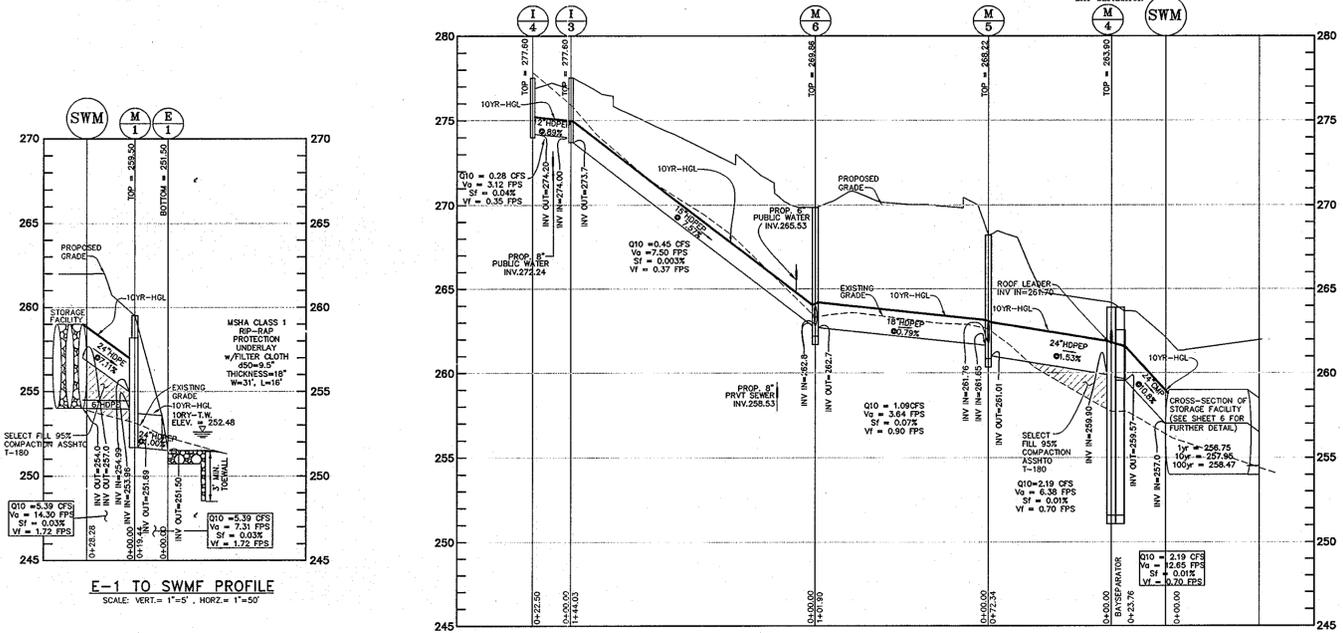
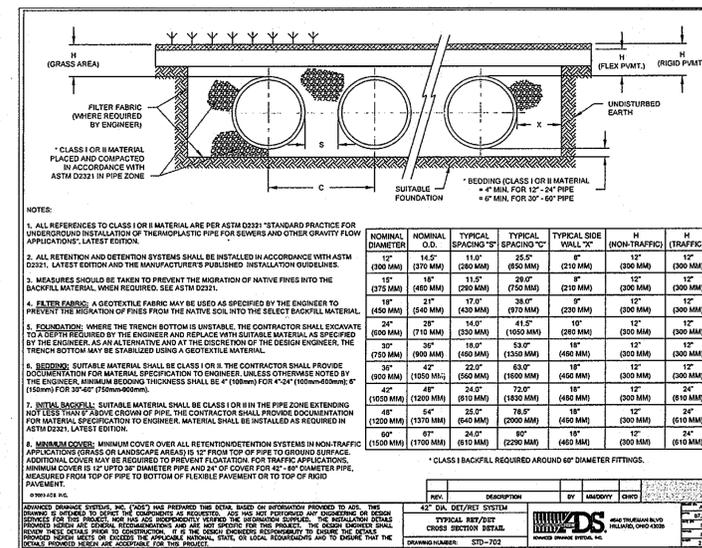
PROJECT NO. 1572

SCALE: AS SHOWN DRAWING 6 OF 10

Design: BFC Draft: BFC Check: DAM

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED UNDERGROUND STORMWATER FILTRATION SYSTEMS (WQv#1)

- The BaySaver water quality structure shall be periodically inspected and cleaned to maintain operation and function. The owner shall inspect the BaySaver unit yearly at a minimum, utilizing the BaySaver Inspection/Monitoring Form. Inspections shall be done by using a Grade Stick or similar device. When the sediment depths exceed 2 feet, the unit must be cleaned.
- The BaySaver water quality structure shall be checked and cleaned immediately after petroleum spills. The owner shall contact the appropriate regulatory agencies.
- The maintenance of the BaySaver unit shall be done using a vacuum truck which will remove the water, sediment, debris, floating hydrocarbons and other materials in the unit. Proper cleaning and disposal of the removed materials and liquid must be followed by the owner.
- The inlet and outlet pipes shall be checked for any obstructions at least once every six months. If obstructions are found the owner shall have them removed. Structural parts of the BaySaver unit shall be repaired as needed.
- The owner shall retain and make the BaySaver Inspection/Monitoring Forms available to the Howard County officials upon their request.



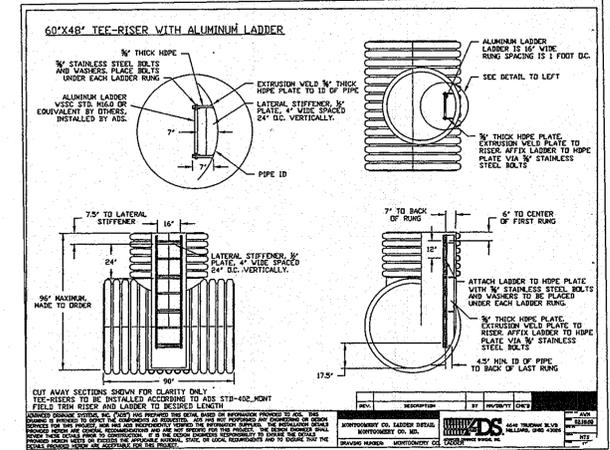
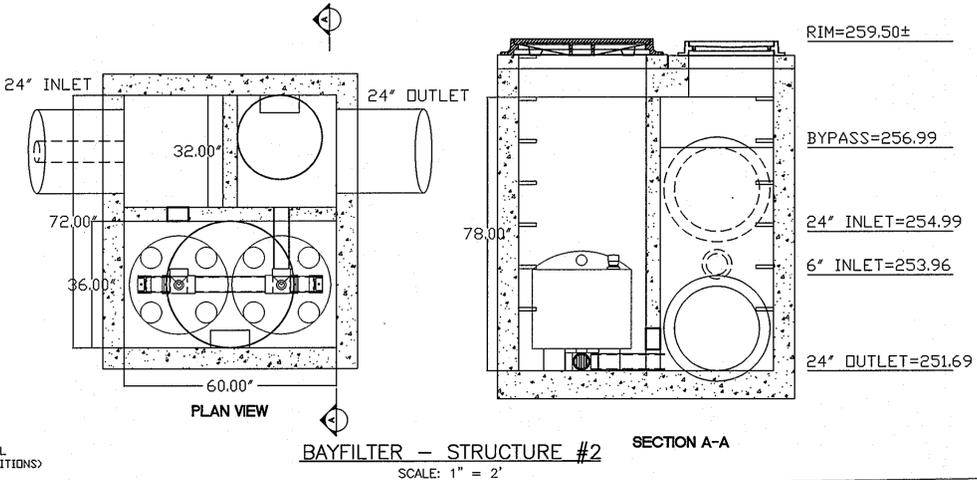
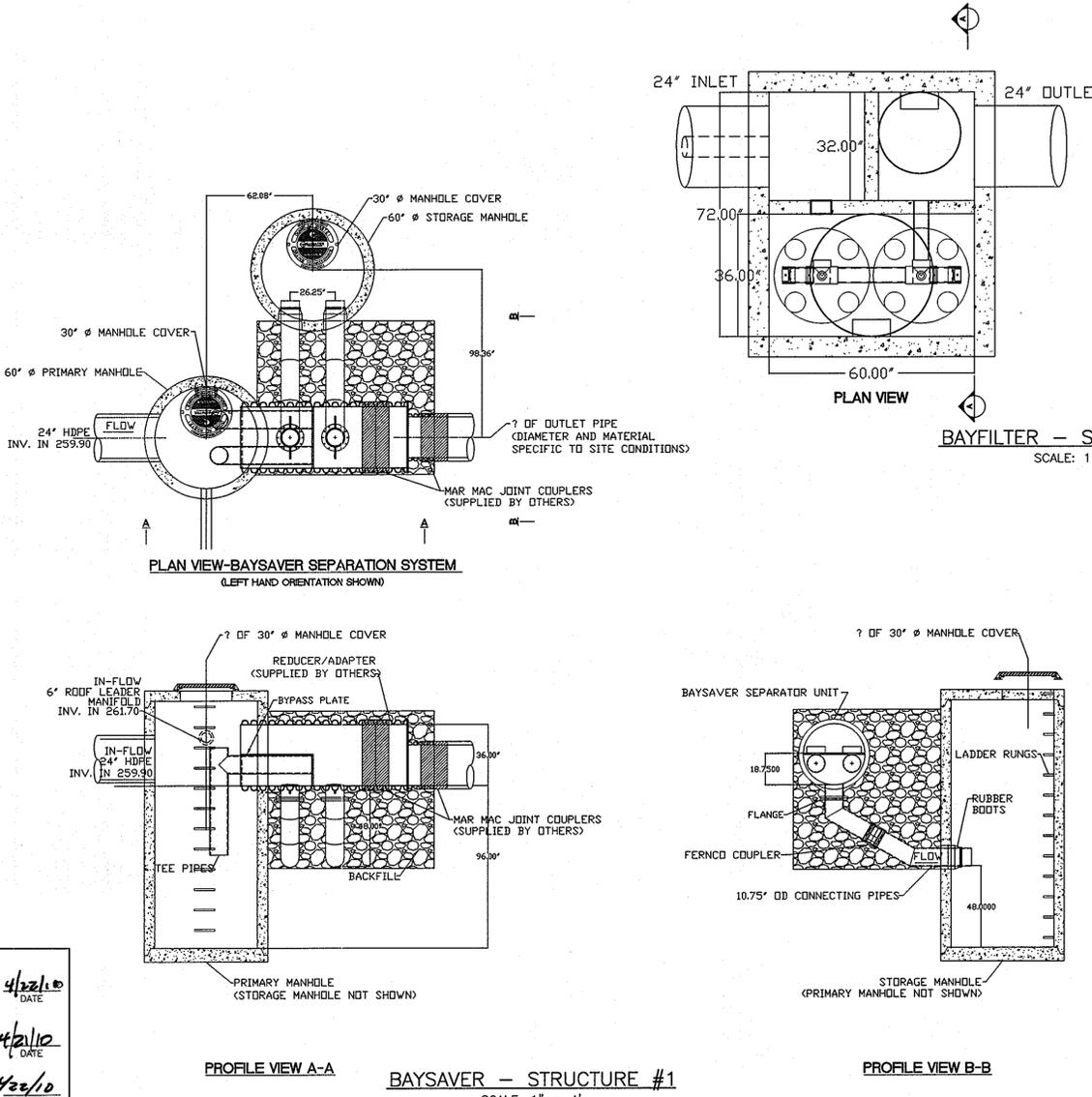
NOTE: ALL SWM PIPE MATERIAL SHALL BE 16 GA. 5:1 OR 3:1 CORRUGATION ALUMINIZED CMP OR HDPE H-20 LOAD EQUIVALENT UNLESS NOTED OTHERWISE

NOTE: THE INCOMING PIPE TO THE FACILITY SHALL BE CAPPED OFF UNTIL THE CONTRIBUTING AREAS HAVE BEEN STABILIZED

GENERAL NOTES FOR WATER QUALITY SYSTEMS:

- ALL WATER QUALITY SYSTEM DETAILS PROVIDED BY ADS AND BAYSAYER TECHNOLOGIES. SYSTEMS WITH EQUAL OR GREATER PERFORMANCE AND STORAGE VOLUME MAY BE USED.
- WQv REQUIREMENTS FOR THE FACILITIES ARE AS FOLLOWS:  
WQ#1 = 4207 CF (MIN)
- ALL UNDERGROUND FACILITIES AND ACCESS TO THOSE FACILITIES SHALL BE DESIGNED OR APPROVED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF MARYLAND TO HANDLE HS25 LOADING.
- ASSEMBLY SHALL BE IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.
- ACCESS TO THE WATER QUALITY STORAGE FACILITIES SHALL BE PROVIDED.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 4/22/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 4/21/10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 4/22/10  
 DIRECTOR



THE PURPOSE OF THIS REVISION IS TO REVISE THE UNDERGROUND WATER QUALITY SAND FILTER WITH THE BAY FILTER SYSTEM. THIS SHEET SHALL REPLACE THE PREVIOUS SHEET 7 OF 10 IN FULL.

**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.

PE NO. \_\_\_\_\_  
DATE \_\_\_\_\_

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:  
 [Signature] 1/6/10  
 DEVELOPER

BY THE ENGINEER:  
 [Signature] 1/5/2010  
 ENGINEER BRIAN J. CLARY, P.E. #10359

NO.	DATE	REVISION
1	5/20/09	ADD BAYFILTER SYSTEM (WQv) & ADJUST PLANS ACCORDINGLY

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS • LAND SURVEYORS • PLANNERS  
 8480 BALTIMORE NATIONAL PIKE • SUITE 418  
 ELLICOTT CITY, MARYLAND 21043  
 PHONE: 410-465-6105 FAX: 410-465-6644  
 www.bei-civilengineering.com

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. 28559, Expiration Date: 7-22-2011.

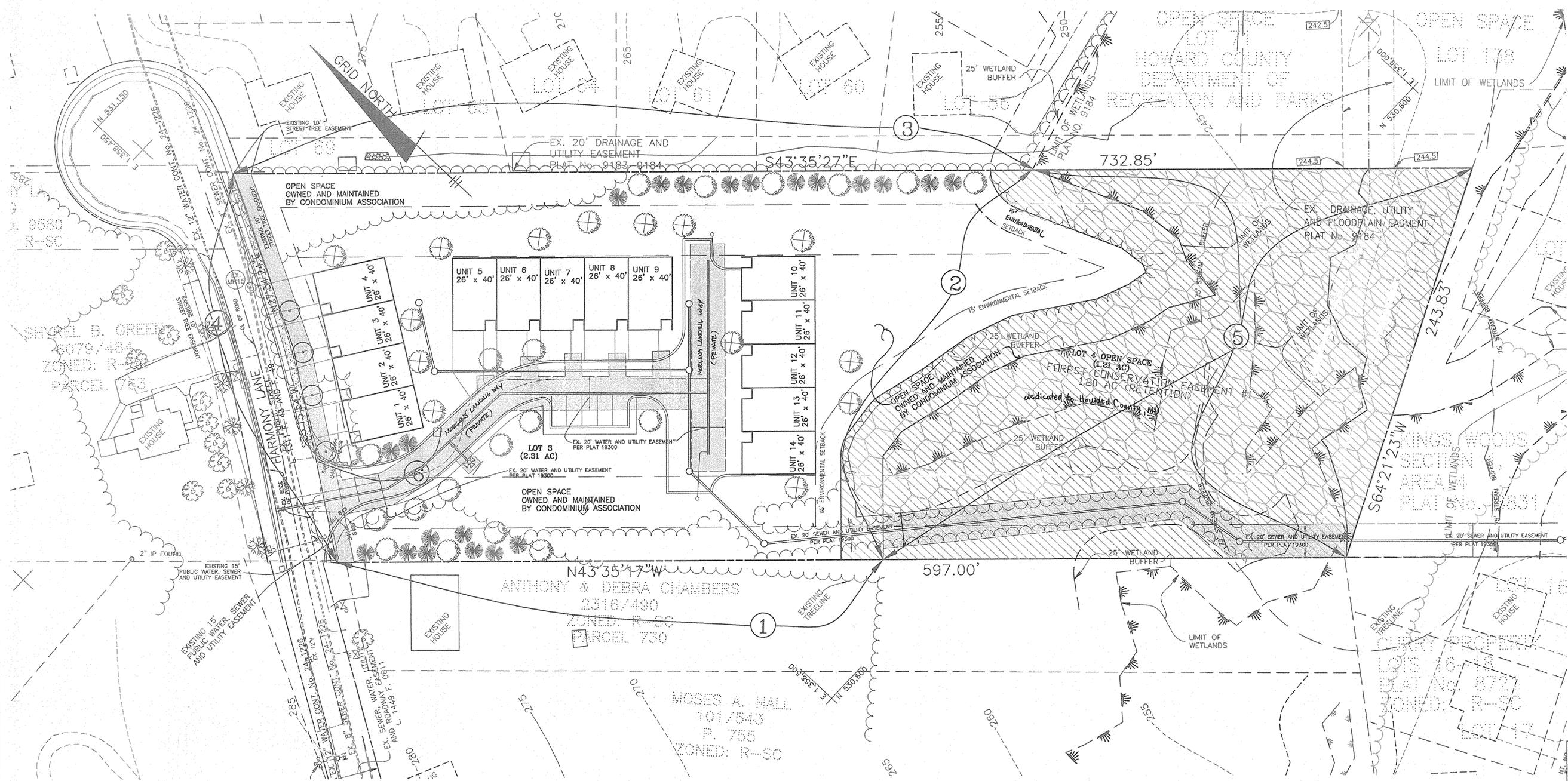
OWNER/DEVELOPER: MORGANS LANDING, LLC.  
 11807 WOLLINGFORD COURT  
 CLARKSVILLE, MD 21029  
 410-792-2565

PROJECT: MORGANS LANDING LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE  
 LOCATION: TAX MAP No. 47, GRID No. 15 PARCEL No. 763 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 TITLE: REVISED SITE DEVELOPMENT PLAN WQ STRUCTURE DETAILS, PROFILES, NOTES AND DETAILS  
 DATE: OCTOBER 30, 2009 PROJECT NO. 1572  
 JANUARY, 2010  
 SCALE: AS SHOWN DRAWING 7 OF 10

Design: BFC Draft: MCR Check: BFC  
 SCALE: AS SHOWN DRAWING 7 OF 10  
 SDP-06-146

**LEGEND**

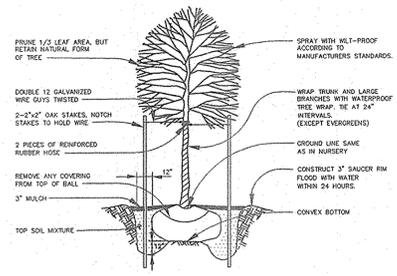
SOILS CLASSIFICATION	abc1
SOILS DELINEATION	---
EXISTING CONTOURS	999 999
LIMIT OF WETLANDS	~
EXISTING WOODS LINE	~
EXISTING STRUCTURE	[ ]
PROPOSED STRUCTURE	[ ]



**PLAN VIEW**  
SCALE: 1" = 30'

**LANDSCAPE NOTES:**

- TREES SHOULD BE PLANTED A MINIMUM OF 4 FEET FROM CURB OR SIDEWALK AND 10 FEET FROM A DRIVEWAY.
- A MINIMUM DISTANCE OF 20 FEET MUST BE MAINTAINED BETWEEN ANY TREES LOCATED ALONG THE CURB LINE AND ANY STREET LIGHT.
- PERIMETER LANDSCAPING AND PRIVATE ROAD STREET TREES PER SEC. 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SHALL BE PROVIDED AS SHOWN ON THIS SITE PLAN. SURETY IN THE AMOUNT OF \$16,350 FOR 44 SHADE TREES AND 21 EVERGREENS SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT UNDER THIS SITE PLAN.
- ALL PLANTINGS ARE THE RESPONSIBILITY OF THE DEVELOPER.
- MATURE TREE HEIGHTS OF PLANTED TREES SHALL NOT EXCEED THE EQUIVALENT DISTANCE AS MEASURED FROM THE BASE OF THE TREE TO THE CENTERLINE OF ANY STEEL TOWER STRUCTURE.
- TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE EDGE OF PAVING 10' FROM A DRIVEWAY AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN



SYMBOL	QUANTITY	NAME	REMARKS
[Symbol]	32*	PLANTANUS ACERIFOLIA 'BLOODGOOD' (Bloodgood London Plane)	2 1/2" - 3" CAL. 8-9' FULL HEAD
[Symbol]	19	PINUS STROBUS (Eastern White Pine)	5'-6" ht. UNSHEARED

\* - INCLUDES 8 PRIVATE STREET TREES

SYMBOL	QUANTITY	NAME	REMARKS
[Symbol]	4	PRUNUS SEROTINATA 'KAWAZAN' (KAWAZAN CHERRY)	8'-10" HT
[Symbol]	6	PAPERBARK MAPLE	1- 1/2" CAL.

SYMBOL	QUANTITY	NAME	REMARKS
[Symbol]	8	PLANTANUS ACERIFOLIA 'BLOODGOOD' (Bloodgood London Plane)	2 1/2" - 3" CAL. 8-9' FULL HEAD

CATEGORY	LOT 3 ADJACENT TO PERIMETER PROPERTY		PERIMETER ADJACENT TO ROADS		LOT 4 ADJACENT TO PERIMETER PROPERTY		TOTAL
	1	2	3	4	5	6	
LANDSCAPE TYPE	C	C	C	FRONT NONE	C	B	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	323'	420'	474'	240'	1197'	74'	74'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 170'	YES 420'	YES 258'	NO	YES 1197'	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	153*	216*	216*	240'	0'	74'	74'
SHADE TREES	4	NA	6	NA	NA	2	12
EVERGREEN TREES	8	NA	11	NA	NA	2	21
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-
SHRUBS	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	4	NA	6	NA	NA	2	12
SHADE TREES	4	NA	6	NA	NA	2	12
EVERGREEN TREES	8	NA	11	NA	NA	2	21
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTE)	-	-	-	-	-	-	-

(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)

14 UNITS X 1 SHADE TREE = 14 SHADE TREES TO BE PROVIDED ALONG THE REAR AND SIDE OF UNITS.

1 TREE PER UNIT
14 UNITS = 14 TREES
14 TREES PROVIDED

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXCISED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
DEVELOPER - CORNERSTONE HOLDINGS: Brian Bay DATE 11/22/07

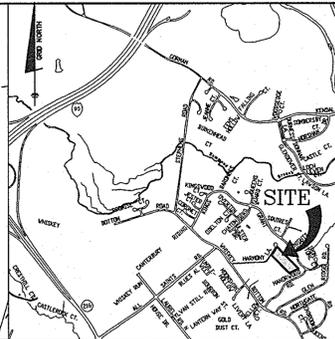
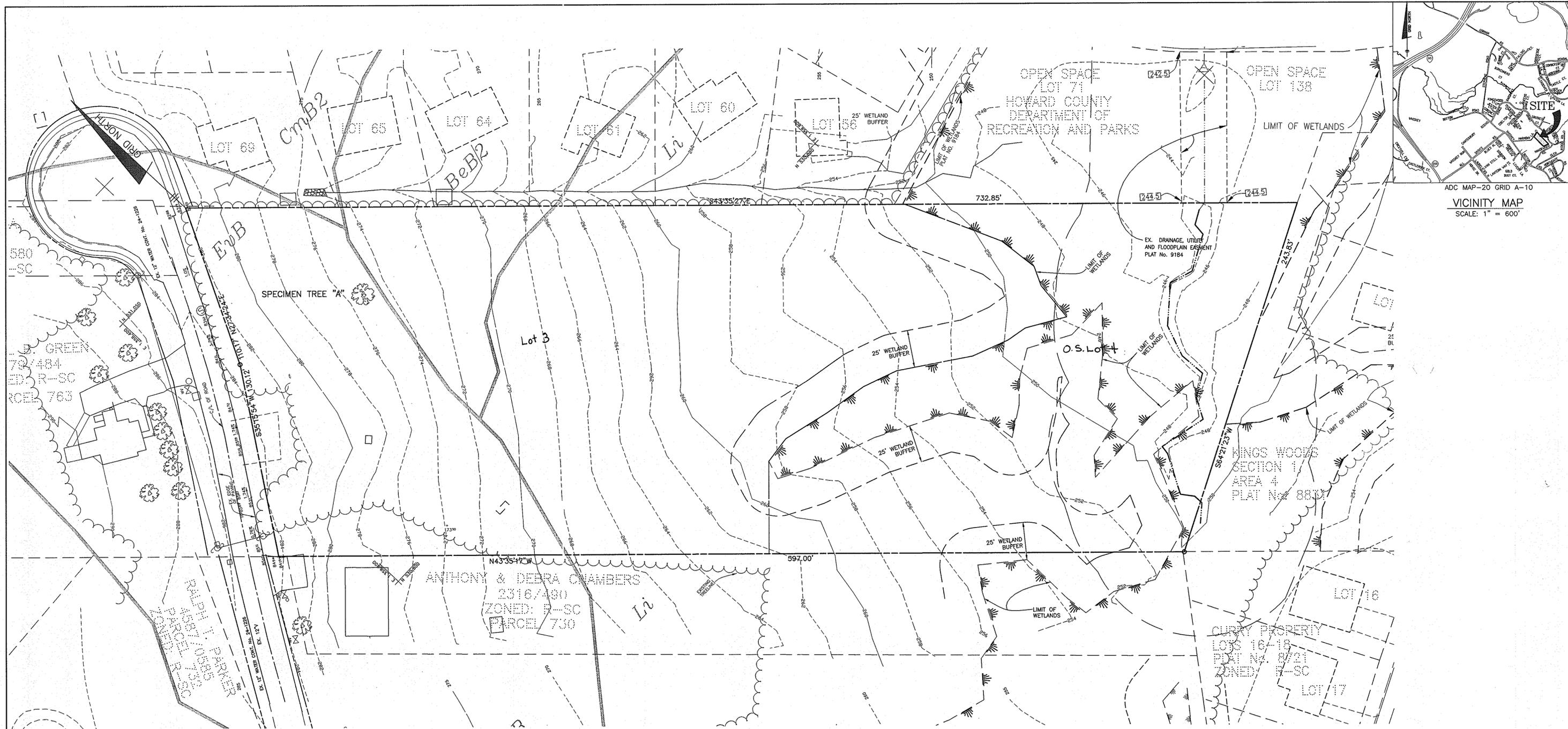
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 12/17/07  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 [Signature] 12/19/07  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 1/22/08  
 DIRECTOR

STREET TREES REQUIRED FOR 300 LF OF RIGHT-OF-WAY, 240 / 30 = 8
8 TREES PROVIDED

STREET TREES REQUIRED FOR 400 LF OF RIGHT-OF-WAY, 400 / 40 = 10
10 TREES PROVIDED

NO. DATE		REVISION	
<b>BENCHMARK</b> ENGINEERS LAND SURVEYORS PLANNERS 8480 BALTIMORE NATIONAL PIKE SUITE 418 ELICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644 www.bei-engineering.com			
OWNER/DEVELOPER:		PROJECT:	
MORGAN'S LANDING, LLC. 11807 WOLLINGFORD COURT CLARKSVILLE, MD 21029 410-792-2565		MORGAN PROPERTY LOT 3 AND OPEN SPACE LOT 4 CONDOMINIUM UNITS 1-14 AND OPEN SPACE	
LOCATION:		TITLE:	
TAX MAP No. 47, GRID No. 15 PARCEL No. 763 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		LANDSCAPE PLAN	
DATE:		PROJECT NO. 1572	
APRIL, 2006 NOVEMBER, 2007		SCALE: AS SHOWN	
Design: BFC Draft: BFC Check: DAM		DRAWING 8 OF 10	



ADC MAP-20 GRID A-10  
VICINITY MAP  
SCALE: 1" = 600'

PLAN VIEW  
SCALE: 1" = 30'

**LEGEND**

- SOILS CLASSIFICATION *AbC1*
- SOILS DELINEATION
- EXISTING CONTOURS
- LIMIT OF WETLANDS
- EXISTING WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE

SPECIMEN TREE TABULATION		
DESIGNATION	SPECIES	DBH CONDITION
"A"	POPLAR	34" - "0000"

**SITE DATA TABULATION**

- 1) GENERAL SITE DATA
  - a. PRESENT ZONING: R-SC
  - b. APPLICABLE DPZ FILE REFERENCES:
  - c. DEED REF. PARCEL 960 - 1148/255
  - d. PROPOSED USE OF SITE: SINGLE FAMILY ATTACHED DWELLINGS
  - e. PROPOSED WATER AND SEWER SYSTEMS: PUBLIC
- 2) AREA TABULATION
  - a. TOTAL AREA OF SITE..... 3.52 AC.±
  - b. AREA OF 100 YEAR FLOODPLAIN (APPROX.)..... 0 AC.±
  - c. AREA OF STEEP SLOPES (25% OR GREATER)..... 0 AC.±
  - d. NET AREA OF SITE..... 3.52 AC.±
  - e. AREA OF THIS PLAN SUBMISSION..... 3.52 AC.±
  - f. AREA OF PROPOSED UNITS..... 0.33 AC.±
  - g. AREA OF PROPOSED OPEN SPACE LOTS..... 3.19 AC.±
  - h. AREA OF PROPOSED PUBLIC ROAD R/W..... 0 AC.±

**Forest Stand Data**

Key	Community Type	Acreage	Dominant Vegetation	General Condition	Priority Acreage
F1	Mixed oak	3.42 (NTA)	Liriodendron tulipifera, Quercus alba, Quercus rubra, Quercus velutina, Red maple, Liquidambar styraciflua	Good	1.2 +/- buffers

**NOTES:**

1. No rare, threatened or endangered species were observed on the property.
2. Surrounding land use is primarily high density residential development.

**Wetland System A**

**Wetland Data**

WETLAND SYSTEM	COWARDIN CLASSIFICATION	DOMINANT VEGETATION	ACREAGE
A	PFO1A	Acer rubrum, Quercus palustris, Quercus phellos, Liquidambar styraciflua, Impatiens capensis, Magnolia virginiana, Viburnum dentatum	1.20 +/-

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*John DeMunn* 12/15/07  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cindy Haman* 10/15/07  
CHIEF, DIVISION OF LAND DEVELOPMENT

*David de Vigne* 12/20/07  
DIRECTOR

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE SUITE 418  
ELLICOTT CITY, MARYLAND 21043  
PHONE: 410-465-6105 FAX: 410-465-6644  
www.bei-engineering.com

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. 28559, Expiration Date: 7-22-2009.

OWNER/DEVELOPER: MORGANS LANDING, LLC.  
11807 WOLLINGFORD COURT  
CLARKSVILLE, MD 21029  
410-792-2565

PROJECT: MORGANS LANDING  
LOT 3 AND OPEN SPACE LOT 4  
CONDOMINIUM UNITS 1-14 AND OPEN SPACE

LOCATION: TAX MAP No. 47, GRID No. 15  
PARCEL No. 763  
6th ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: FOREST STAND AND WETLAND DELINEATION PLAN

DATE: MAY 2006  
NOVEMBER, 2007

PROJECT NO. 1572  
DRAWING 9 OF 10

Design: BFC Draft: BFC Check: DAM SCALE: AS SHOWN

**Eco-Science Professionals, Inc.**  
CONSULTING ECOLOGISTS

MD DNR Qualified Professional  
USACE Wetland Delineator  
Certification # 07203MD06100402

P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

