

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	HALL SHOP ROAD PLAN AND PROFILE
3	HALL SHOP ROAD CROSS SECTIONS
4	STRIPING PLAN & TEMPORARY TRAFFIC CONTROL PLANS
5	HIGHGROVE ROAD PLAN AND PROFILE
6	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
7	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
8	STORM DRAIN DRAINAGE AREA MAP
9	STORM DRAIN PROFILES
10	LANDSCAPE PLAN
11	LANDSCAPE PLAN
12	SOIL BORINGS
13	SOIL BORINGS
14	SEDIMENT AND EROSION CONTROL NOTES
15	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
16	STORMWATER MANAGEMENT PLAN AND PROFILES - B.M.P. No. 1
17	STORMWATER MANAGEMENT PLAN AND PROFILES - B.M.P. No. 2
18	STORMWATER MANAGEMENT PLAN AND PROFILES - B.M.P. No. 3
19	STORMWATER MANAGEMENT SPECIFICATIONS AND DETAILS
20-21	FOREST CONSERVATION PLAN

# FINAL ROAD CONSTRUCTION, GRADING & SEDIMENT CONTROL PLANS SCHOOLEY MILL FARM

## BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

### ZONING: RR-DEO

### TAX MAP No. 40, GRID Nos. 10 & 11

### PARCEL Nos. 115 & 149

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William P. Adams, Jr.* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cathy J. Smith* 6/14/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

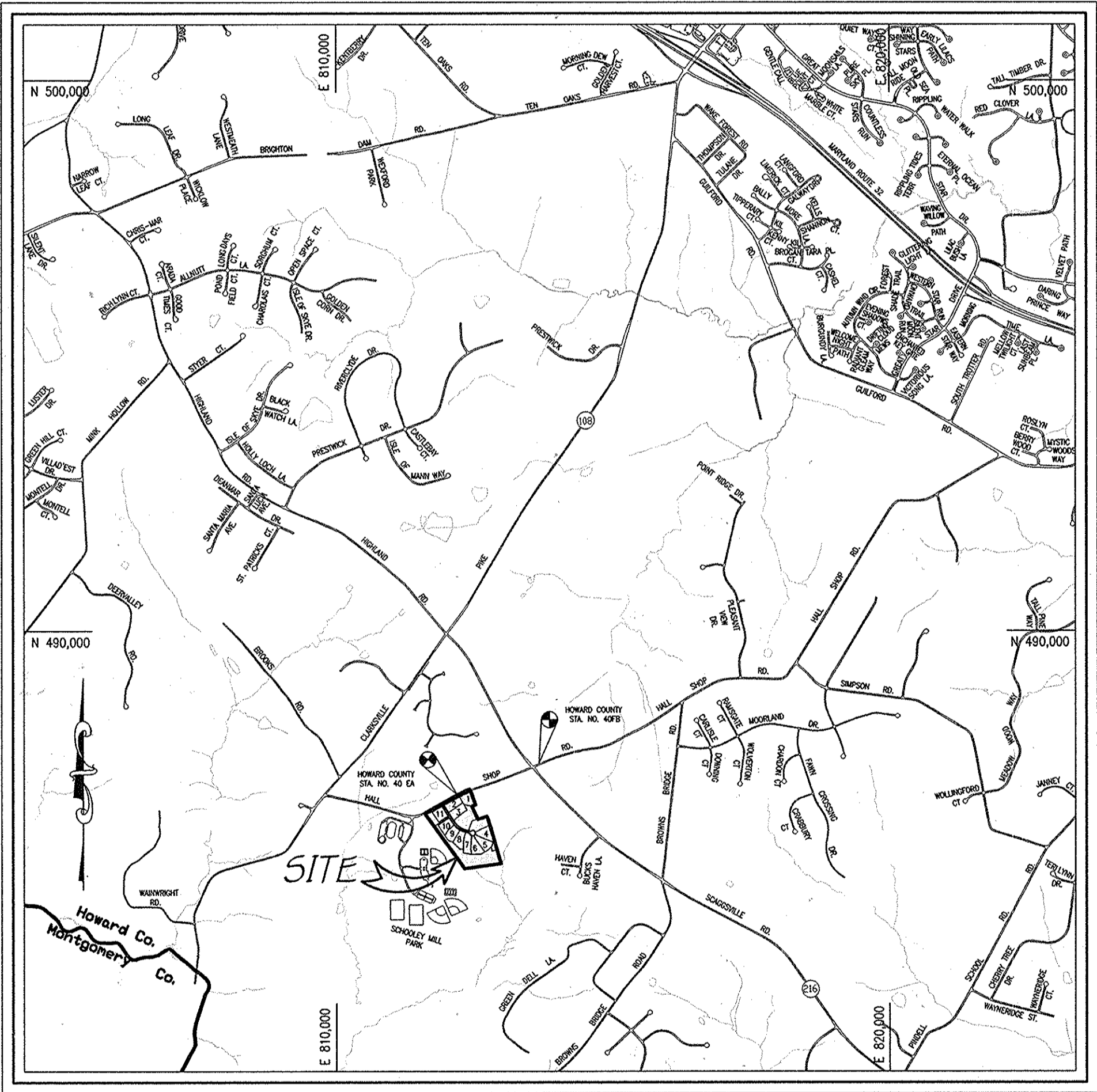
*John Dammann* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

#### GENERAL NOTES

- 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 WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 400-318-1800 AT LEAST 10 WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "M&S 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).
- THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 2004 ZONING REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003 AND THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE 7/28/06. DEVELOPMENT OR CONSTRUCTION OF THESE LOTS OR PARCELS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
- COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS  
 NO. 40A AND NO. 40B  
 HOWARD COUNTY MONUMENT NO. 40E: N 54791.331' E 132450.091'  
 HOWARD COUNTY MONUMENT NO. 40F: N 548470.359' E 1326000.805'
- BACKGROUND INFORMATION:  
 a. SUBDIVISION NAME: SCHOOLEY MILL FARM  
 b. TAX MAP NO. 40  
 c. PARCELS NOS. 115 AND 149  
 d. ZONING: RR-DEO  
 e. ELECTION DISTRICT: FIFTH  
 f. GROSS AREA OF TRACT = 24,398 ACRES  
 g. NUMBER OF BUILDABLE LOTS: 12 (028 ACRES)  
 h. NUMBER OF BUILDABLE PRESERVATION PARCELS: 1  
 i. NUMBER OF NON-BUILDABLE PRESERVATION PARCELS: 3  
 j. AREA OF BUILDABLE LOTS: 12 (028 ACRES)  
 k. AREA OF BUILDABLE PRESERVATION PARCELS: 2,340 AC.  
 l. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 8,818 AC.  
 m. AREA OF ROADWAY TO BE DEDICATED: 1,652 ACRES  
 n. PREVIOUS FILE NUMBERS: SP-07-04, WP-08-04, WP-08-049  
 o. AREA OF FLOODPLAIN = 9 ACRES  
 p. AREA OF 25% OR GREATER SLOPES = 0.00 ACRES  
 q. NET AREA OF TRACT = 24,398 AC.
- THE EXISTING DWELLINGS LOCATED ON PROPOSED LOT 1 & LOT 7 ARE TO REMAIN.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
- THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PRIVATE.
- SOILS INFORMATION TAKEN FROM SOIL SURVEY MAP OF HOWARD COUNTY, MARYLAND.
- ANY EXISTING STRUCTURES (BUILDINGS, WELLS AND SEPTIC SYSTEMS) WHICH ARE TO BE REMOVED, SHALL BE REMOVED PRIOR TO FINAL PLAT SIGNATURE.
- BOUNDARY INFORMATION SHOWN HEREON IS BASED ON DEED RESEARCH AND FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED MARCH 2005.
- TOPOGRAPHIC INFORMATION ESTABLISHED AT TWO FOOT INTERVALS BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED DECEMBER 2006 AND SUPPLEMENTED WITH HOWARD COUNTY AERIAL TOPOGRAPHY DATED 2004.
- THERE ARE NO AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 15.15(B).
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. GROUNDWATER RECHARGE VOLUME (G<sub>W</sub>) WILL BE PROVIDED VIA PERCENT AREA METHOD BY THE GRASS CHANNEL ALONG THE PROPOSED CUL-DE-SAC. WATER QUALITY AND QUANTITY MANAGEMENT WILL BE PROVIDED VIA A MICRO-POND EXTENDED DETENTION POND FACILITY LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'D' AND A POCKET POND LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'C'. THESE FACILITIES WILL BE PRIVATELY OWNED BY H.O.A. AND JOINTLY MAINTAINED BY THE HOMEOWNERS ASSOCIATION AND HOWARD COUNTY. IN ADDITION, TWO BIO-RETENTION FACILITIES ARE PROPOSED TO PROVIDE WATER QUALITY FOR THE REMAINDER OF THE SITE.
- THIS AREA RESIGNATES A PRIVATE EASEMENT OF 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED SEWERAGE EASEMENT SHALL NOT BE NECESSARY.
- EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100 FEET OF THE PROPOSED LOTS HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION.
- ALL HOUSE SITES SHOWN COMPLY WITH MINIMUM BUILDING RESTRICTION REGULATIONS.
- ALL WELLS SHALL BE DRILLED PRIOR TO FINAL PLAT RECORDATION. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING LOGS UPON THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
- THERE IS NO 100-YEAR FLOODPLAIN OR STREAM ON THIS PROPERTY. THERE IS A WETLAND LOCATED ON SITE. NO GRADING, REMOVAL OF VEGETATIVE COVERS AND TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN WETLANDS, STREAMS OR REQUIRED BUFFERS.
- A TRAFFIC IMPACT ANALYSIS WAS PREPARED BY M&S GROUP DATED NOVEMBER 2005. AN APPD STUDY WAS PREPARED BY M&S GROUP DATED MAY 2007.
- THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.12(2) OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY RETENTION OF 214 ACRES OF FOREST AND AFFORESTATION OF 2,299 ACRES. THE FOREST CONSERVATION SURVEY IN THE AMOUNT OF 481,588.00 (214 ACRES x 43,560 SQ.FT./ACRE + 9,3218 SQ.FT. + 40,20/50.FT. + 418,644.00 AND 2,89 ACRES x 43,560 SQ.FT./ACRE = 125,888 SQ.FT. OF AFFORESTATION + 0.50/50.FT. = 462,944 FOR A TOTAL OF 481,588).
- No Clearing, Grading or Construction is Permitted Within the Forest Conservation Easement. However, Forest Management Practices As Defined in the Deed of Forest Conservation Easement Are Allowed.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC. DATED JANUARY 2007.
- THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. DATED DECEMBER 2006 AND WAS APPROVED UNDER SP-07-04.
- GROUND WATER APPROPRIATION PERMIT SHALL BE OBTAINED PRIOR TO SUBMISSION OF WELL PERMITS.
- NO CEMETERIES, GRAVESITES OR HISTORIC STRUCTURES EXIST WITHIN THIS SUBDIVISION.
- THE LANDSCAPE SURVEY IN THE AMOUNT OF 436,750.00 FOR PERIMETER LANDSCAPE REQUIREMENTS (90 SHADED TREES AND 65 EVERGREEN TREES) OF SECTION 16.24 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SHALL BE POSTED WITH THE FINAL PLAT DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION. A STREET TREE SURETY IN THE AMOUNT OF 421,300.00 FOR THE REQUIRED 71 STREET TREES SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT.
- AS PER SECTION 10A.7.45 OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS DESIGNED SOLELY FOR SWM FACILITIES OR COMMUNITY SEWERAGE SYSTEMS.  
 A. BUILDABLE PRESERVATION PARCEL 'A'  
 OWNED PRIVATELY  
 EASEMENT HOLDER: H.O.A. & HOWARD COUNTY, MARYLAND  
 USE: A SINGLE HOME SITE  
 B. NON-BUILDABLE PRESERVATION PARCEL 'B'  
 OWNED H.O.A.  
 EASEMENT HOLDER: HOWARD COUNTY, MARYLAND  
 USE: S.W.M.  
 C. NON-BUILDABLE PRESERVATION PARCEL 'C'  
 OWNED PRIVATELY  
 EASEMENT HOLDER: HOWARD COUNTY, MARYLAND & H.O.A.  
 USE: ENVIRONMENTAL PROTECTION (FOREST CONSERVATION)  
 D. NON-BUILDABLE PRESERVATION PARCEL 'D'  
 OWNED H.O.A.  
 EASEMENT HOLDER: HOWARD COUNTY, MARYLAND  
 USE: S.W.M.
- SIGN POSTS - ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (18 GAUGE) - 3" LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:  
 a. WIDTH - 12 FEET (6 FEET SERVING MORE THAN ONE RESIDENCE)  
 b. SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.  
 c. GEOMETRY - MAXIMUM 1% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 TURNING RADIUS.  
 d. STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (45 TONS LOADING).  
 e. DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.  
 f. STRUCTURE CLEARANCES - MINIMUM 12 FEET.  
 g. MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- THIS PLAN IS SUBJECT TO WAIVER PETITION WP-08-049 WHICH WAS APPROVED ON JANUARY 3, 2008 TO WAIVE SECTIONS 16.19(a)(1) AND 16.12(b)(4)(v) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. SECTION 16.19(a)(1) REQUIRES THAT PUBLIC STREETS SHALL EXTEND TO THE BOUNDARY LINES OF THE PROPOSED SUBDIVISION SO THAT CONNECTION CAN BE MADE TO ADJACENT PROPERTIES AND SECTION 16.12(b)(4)(v) REQUIRES THAT RESIDENTIAL LOTS SHALL BE DESIGNED TO BE USABLE BY NOT BEING ENCLUMBERED BY ACCESS EASEMENTS FOR SWM OR OPEN SPACE, EXCEPT IN ACCORDANCE WITH SECTION 16.12(b) SUBJECT TO THE FOLLOWING CONDITIONS:  
 a. The proposed use-in-common access easement benefiting Parcel 93 and serving the proposed BHP No. 3 must be a minimum of 24-feet wide and must be capable of accommodating a future 16-foot wide driveway that does not exceed maximum slope requirements.  
 b. Stormwater management for this easement and associated driveway must be provided as part of the Schooley Mill Farm subdivision plan. Stormwater management measures must address the impervious runoff for the future 16-foot wide driveway extending from the proposed cul-de-sac to the property line of Parcel 93.  
 c. At no point shall the use-in-common access easement overlap an approved septic area.  
 d. Documents creating this easement and outlining its maintenance and potential usage must be recorded with the final plat for the Schooley Mill Farm subdivision. The plat must include explanatory notes and labels.  
 e. At no point shall this proposed use-in-common access easement serve more than six dwellings for the maximum permitted by fire Design Manual which is in effect at time of subdivision.  
 f. The environmental features on Parcel 93 must be fully delineated up to the stream on the preliminary equivalent sketch plan in order to illustrate total possible building area abutting the subject site.  
 g. THIS PLAN IS SUBJECT TO WAIVER PETITION WP-08-049 WHICH WAS APPROVED ON OCTOBER 12, 2007 TO WAIVE SECTION 16.12(a)(2)(i) OF THE SUBDIVISION AND LAND REGULATIONS, WHICH PROHIBITS RESIDENTIAL LOTS FROM DERIVING DIRECT ACCESS FROM ARTERIAL HIGHWAYS OR MAJOR COLLECTOR ROADS SUBJECT TO THE FOLLOWING CONDITION:  
 a. All sight distance requirements must be met as they have been approved by DED through the review and approval of the intersection sight distance plan and profile submitted with this waiver.

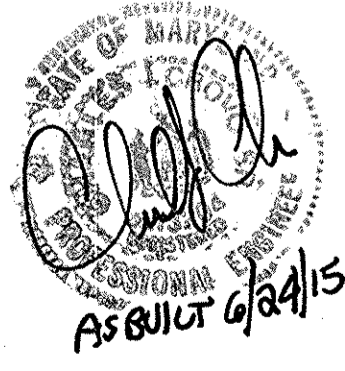
ROADWAY INFORMATION CHART				
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH	
HIGHGROVE ROAD	PUBLIC ACCESS PLACE	25 M.P.H.	50'	

TRAFFIC CONTROL SIGNS				
ROAD NAME	Q STA.	OFFSET	POSTED SIGN	SIGN CODE
HIGHGROVE ROAD	0+40	14'L	STOP	R1-1
HIGHGROVE ROAD	1+00	14'R	SPEED LIMIT 25	R2-1



VICINITY MAP  
 SCALE: 1" = 2000'

## FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 17275 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 861-2855

ALDO M. [Signature]  
 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. 20748, Expiration Date: February 22, 2011.

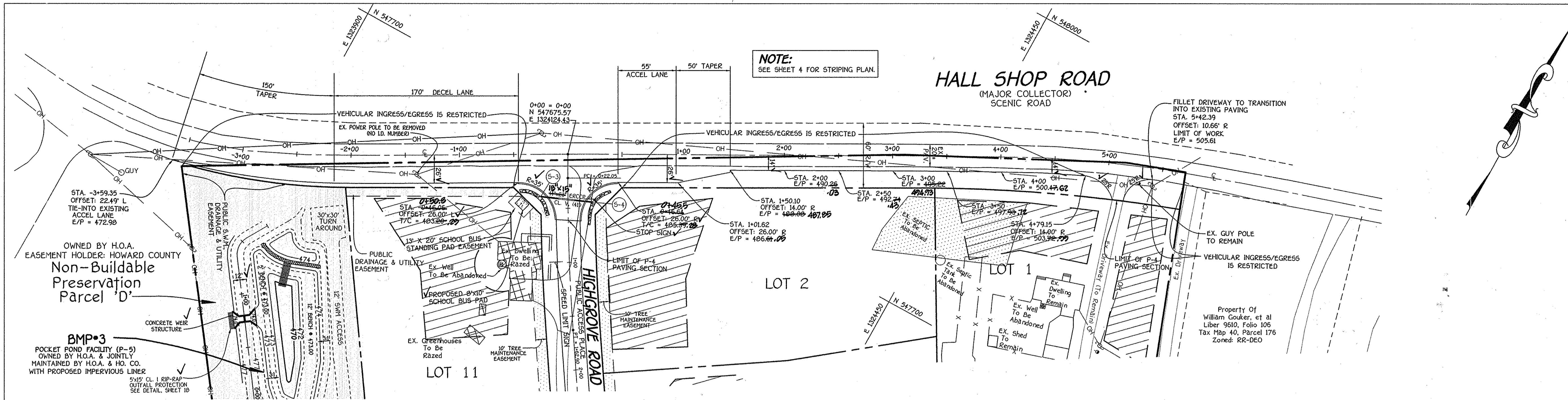
5-12-09  
 DATE

OWNER  
 M. CHARLOTTE POWEL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

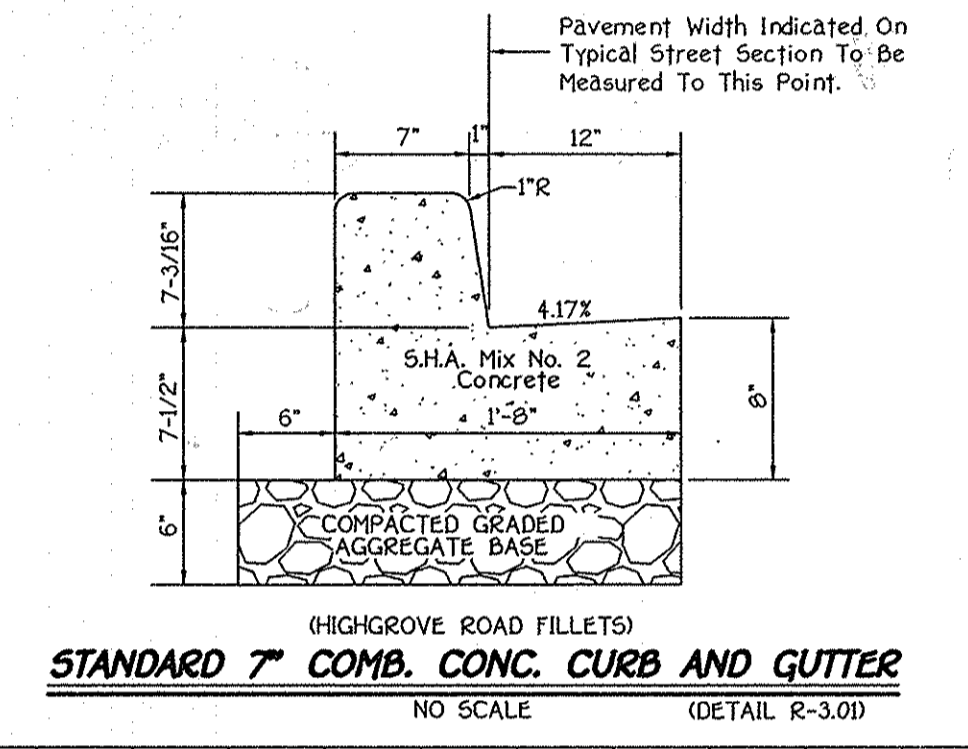
DEVELOPER  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

SCHOOLEY MILL FARM  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONING: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 1 OF 21

F-09-043  
 AS-BUILT

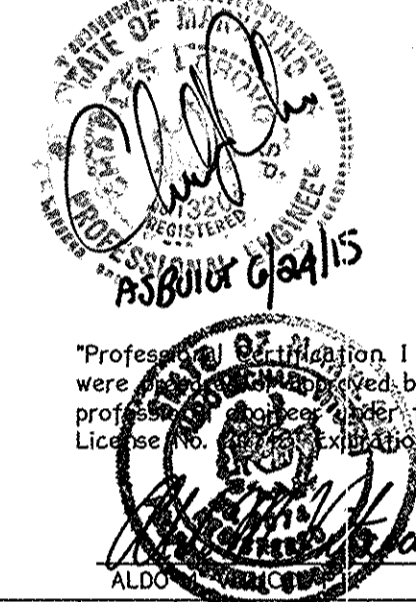


NO.	DESCRIPTION	DATE
REVISIONS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>Candy Hammett</i> CHIEF, DIVISION OF LAND DEVELOPMENT	6/14/09
	<i>William J. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	6/2/09
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>William J. ...</i> CHIEF, BUREAU OF HIGHWAYS	5-26-09



**PLAN**  
SCALE: 1" = 50'

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO 4.5				5 TO 7			
			MIN	HMA WITH GAB	HMA WITH CONSTANT GAB	MIN	HMA WITH GAB	HMA WITH CONSTANT GAB		
P-4	MINOR COLLECTORS: NON-RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0		
	MAJOR COLLECTORS:	HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0		
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0		
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0		



**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11,  
BUILDABLE PRESERVATION PARCEL 'A'  
& NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

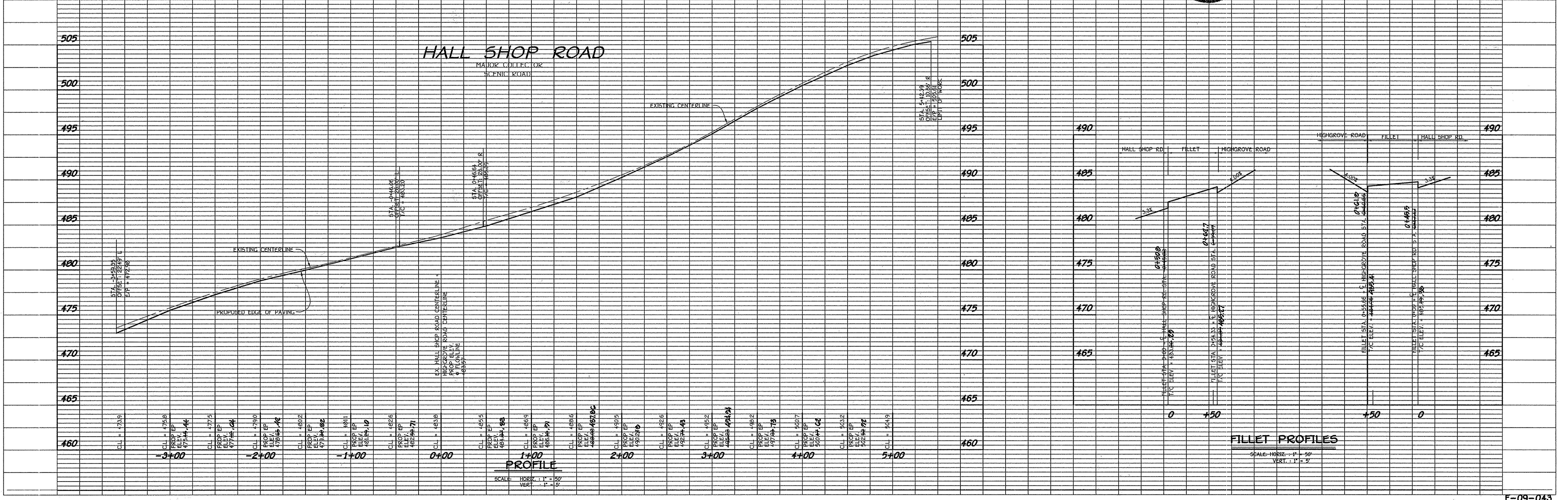
ZONED: RR-DEO  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**HALL SHOP ROAD**  
PLAN AND PROFILE

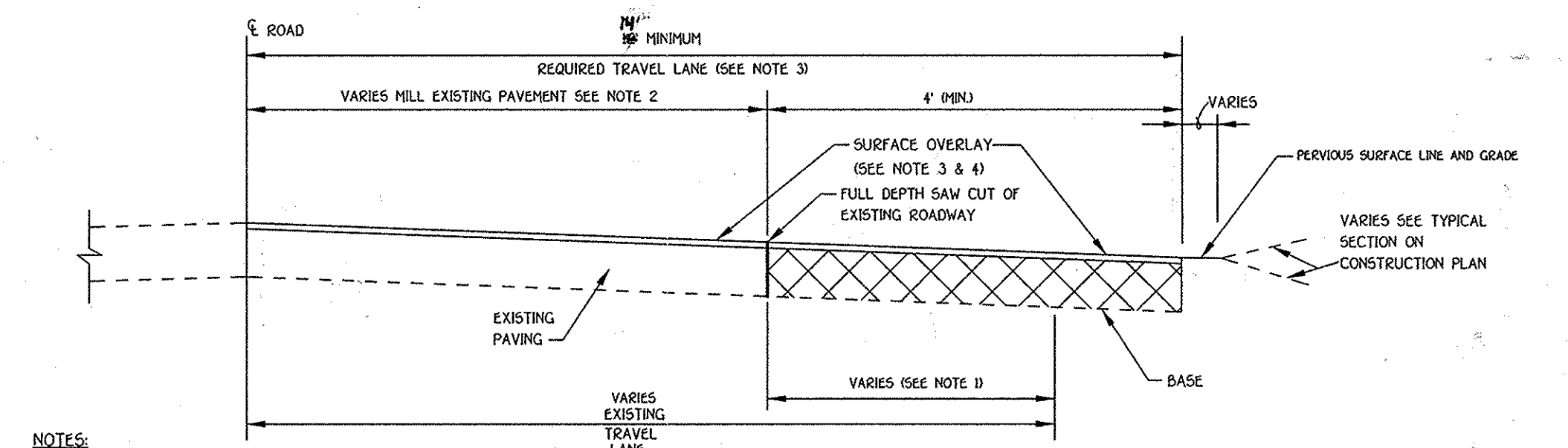
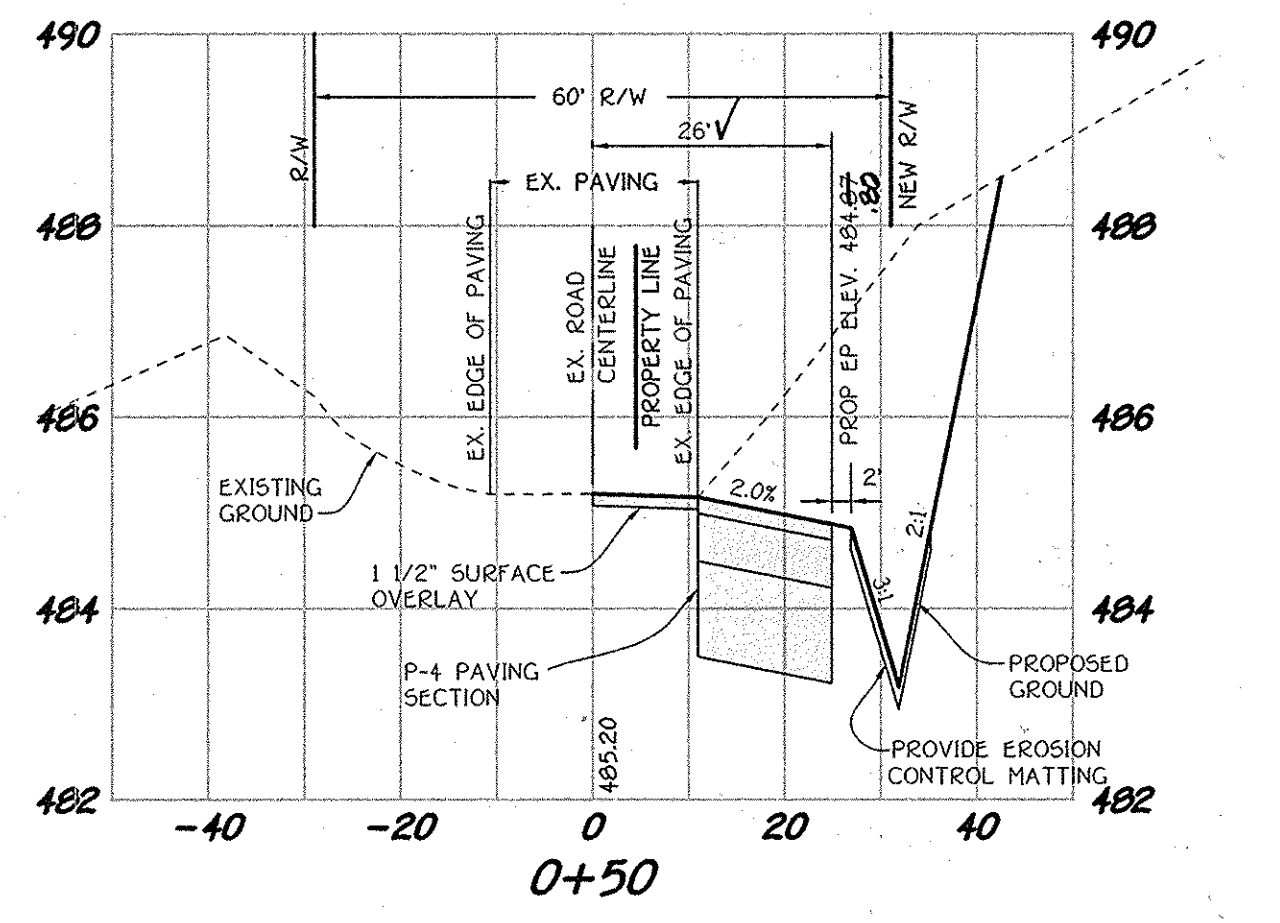
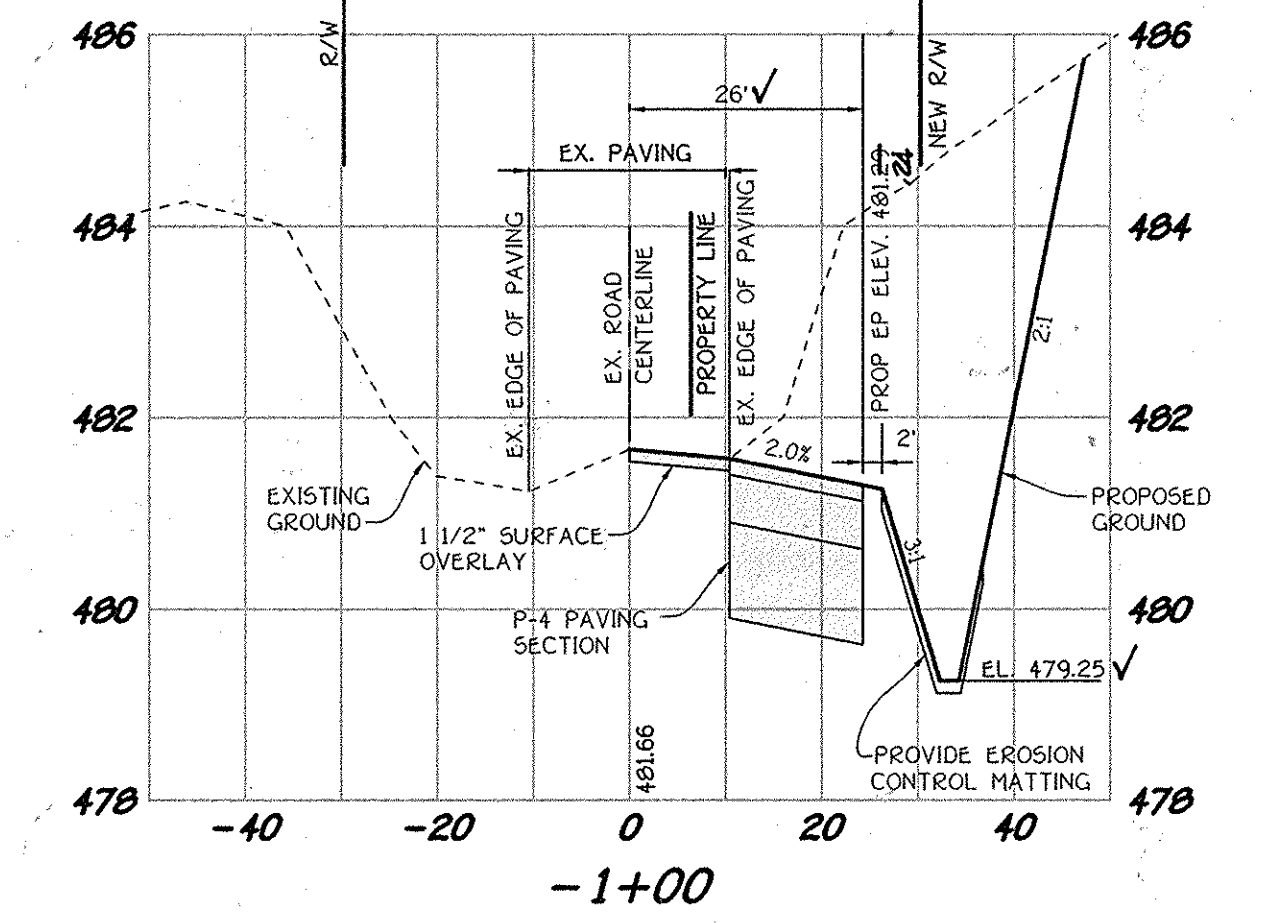
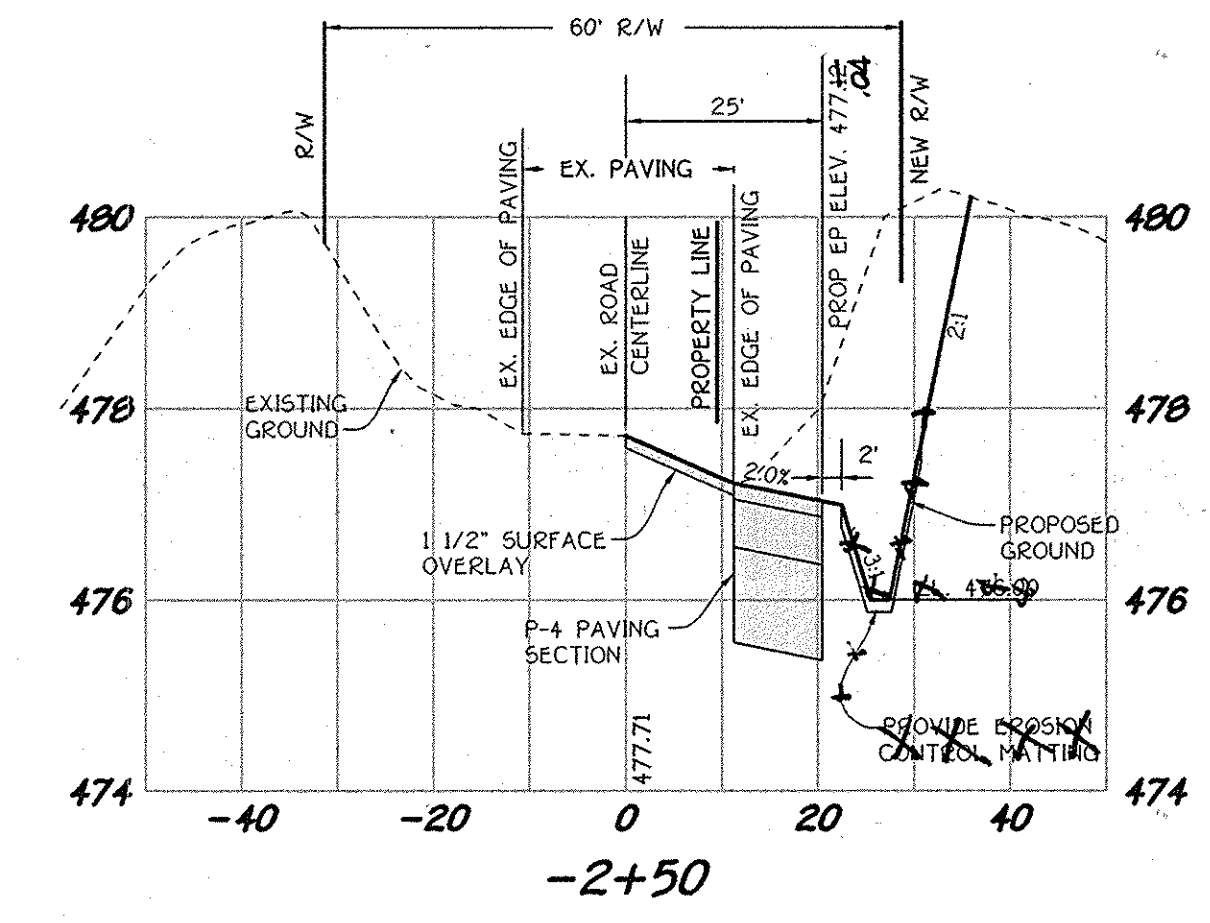
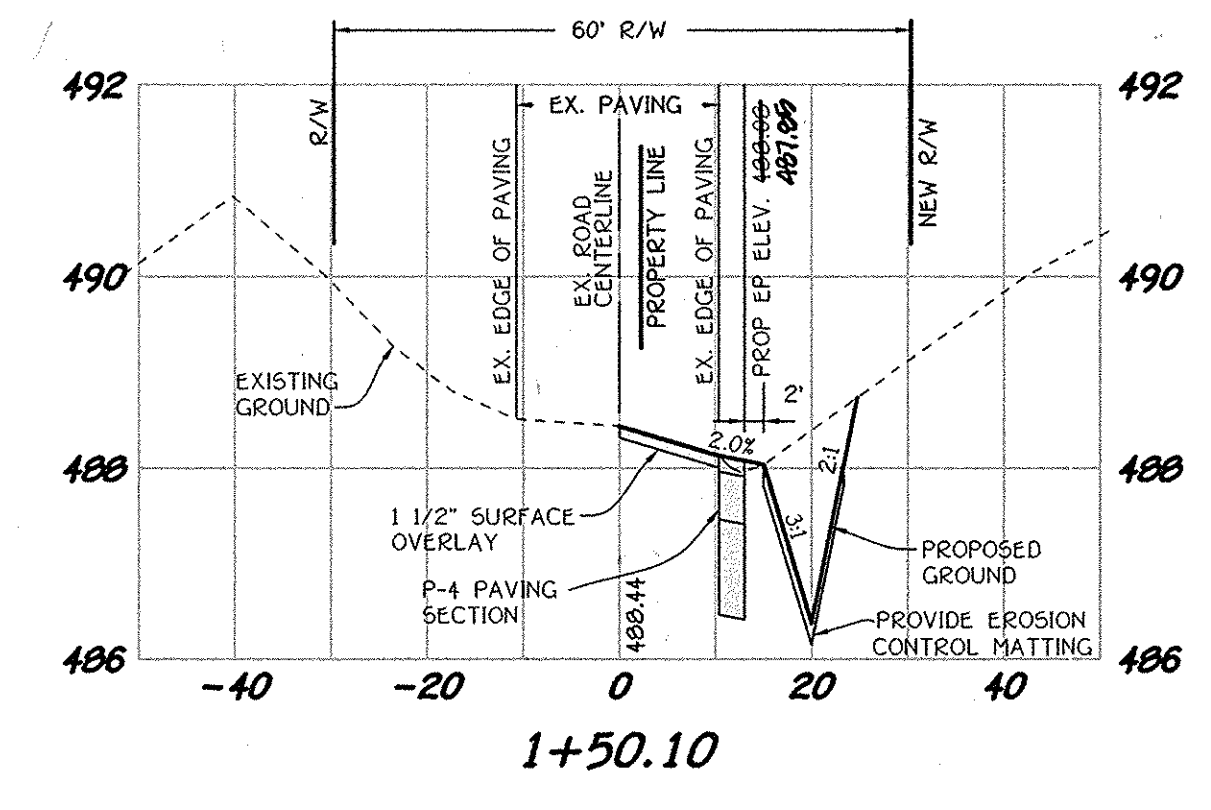
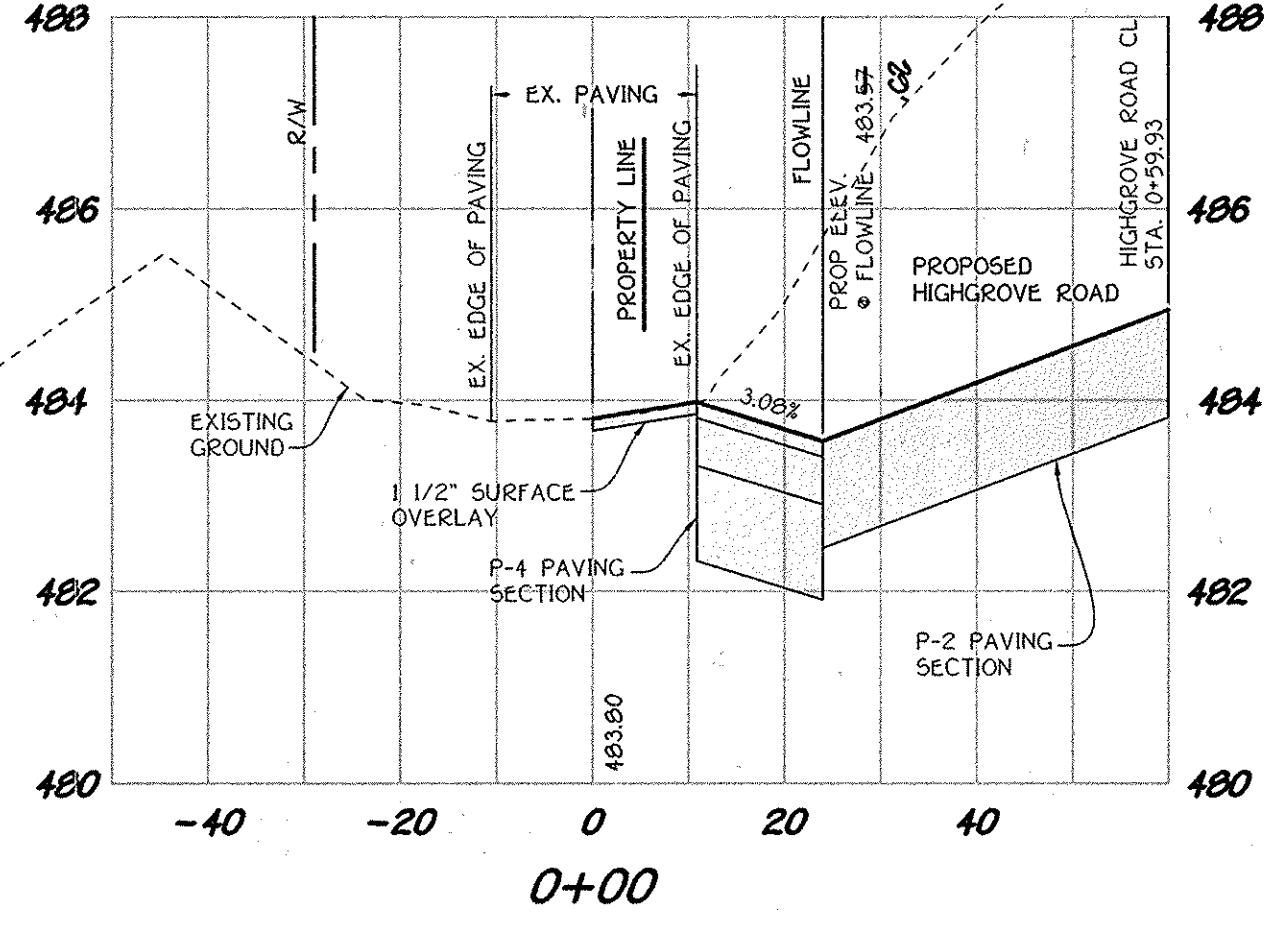
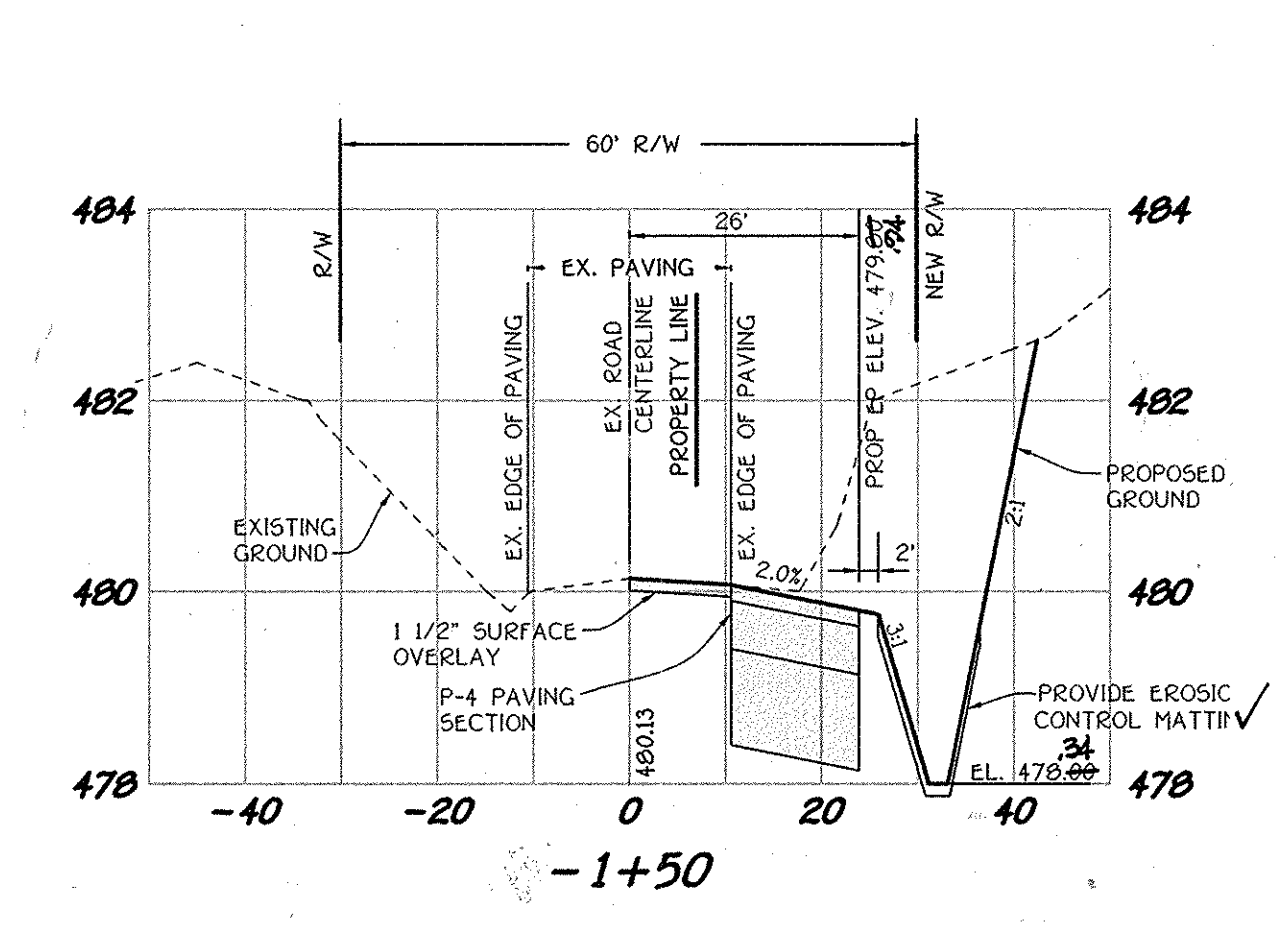
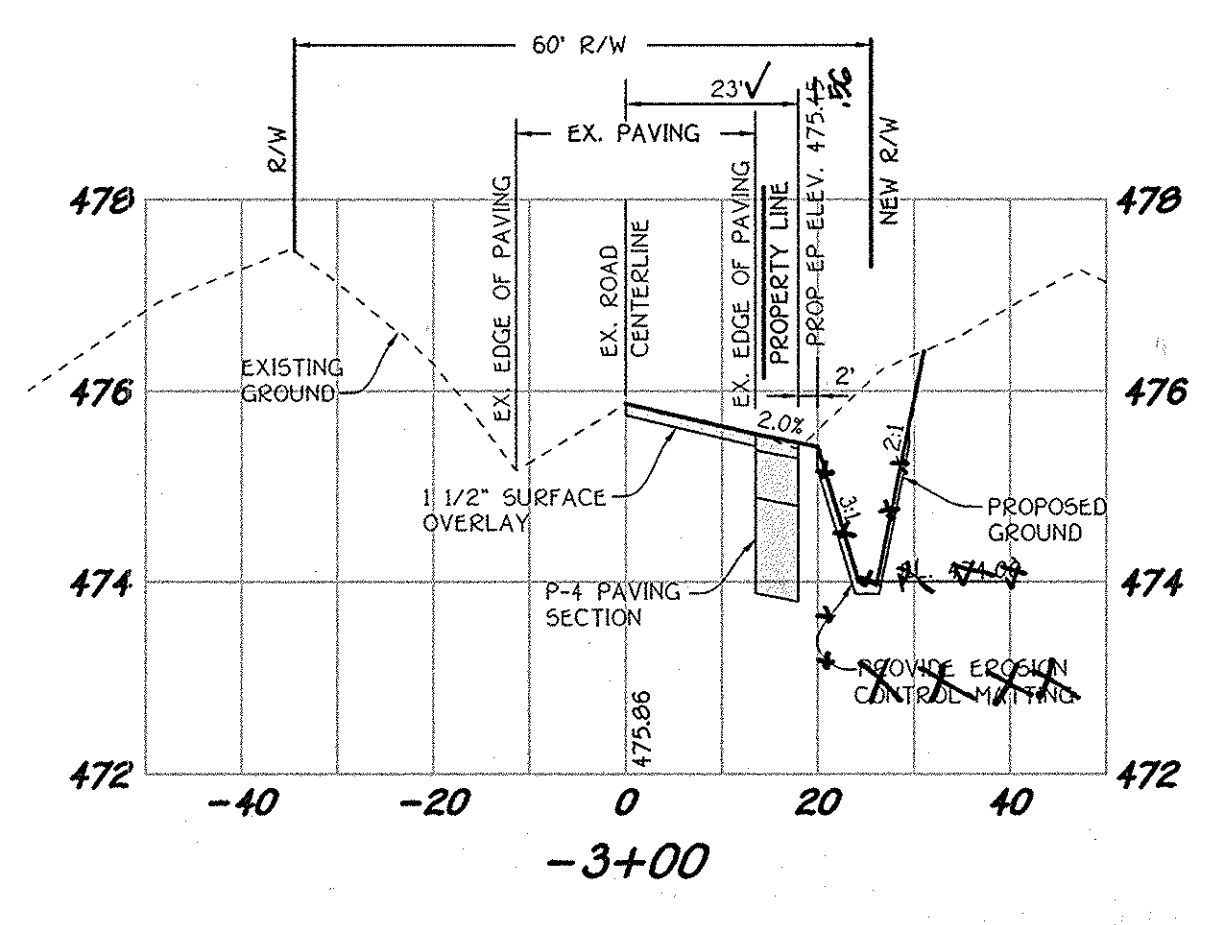
**OWNER:** MICHAEL N. SOLESPRIS, JR. - TRUSTEE  
**DEVELOPER:** MID ATLANTIC DEVELOPMENT COMPANY

SCALE: AS SHOWN DATE: MAY 11, 2009 DWG. NO. 2 OF 21  
DES. R.A.L. DRN. J.C.L. CHK. A.M.V.

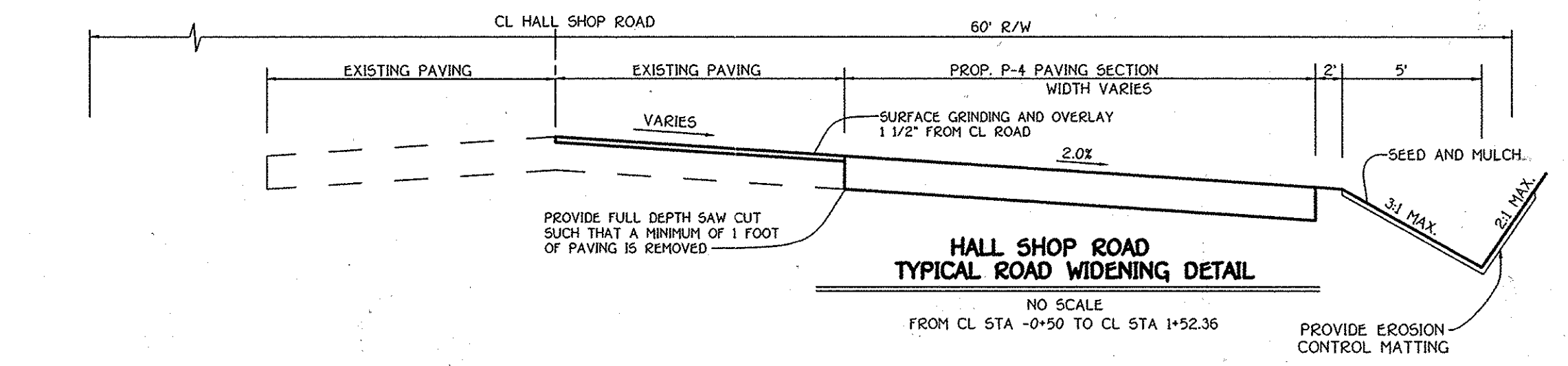
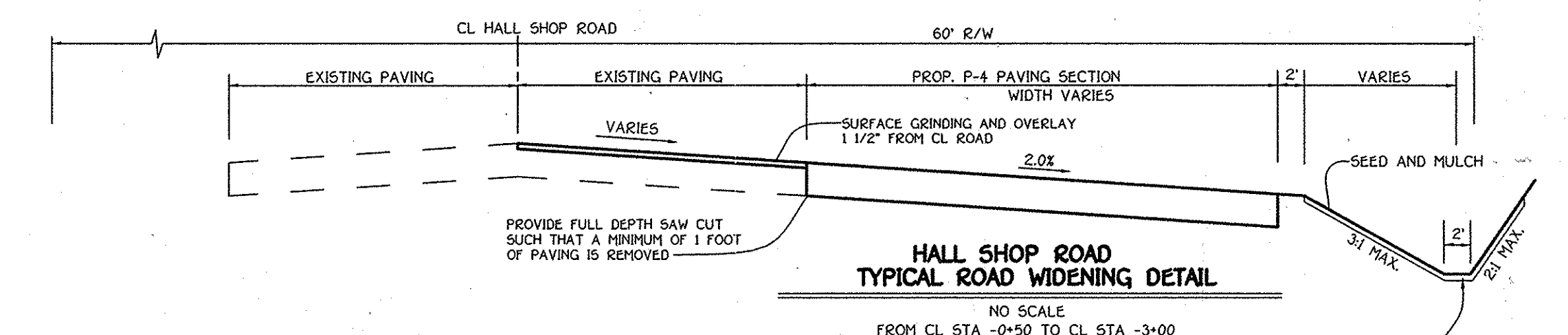
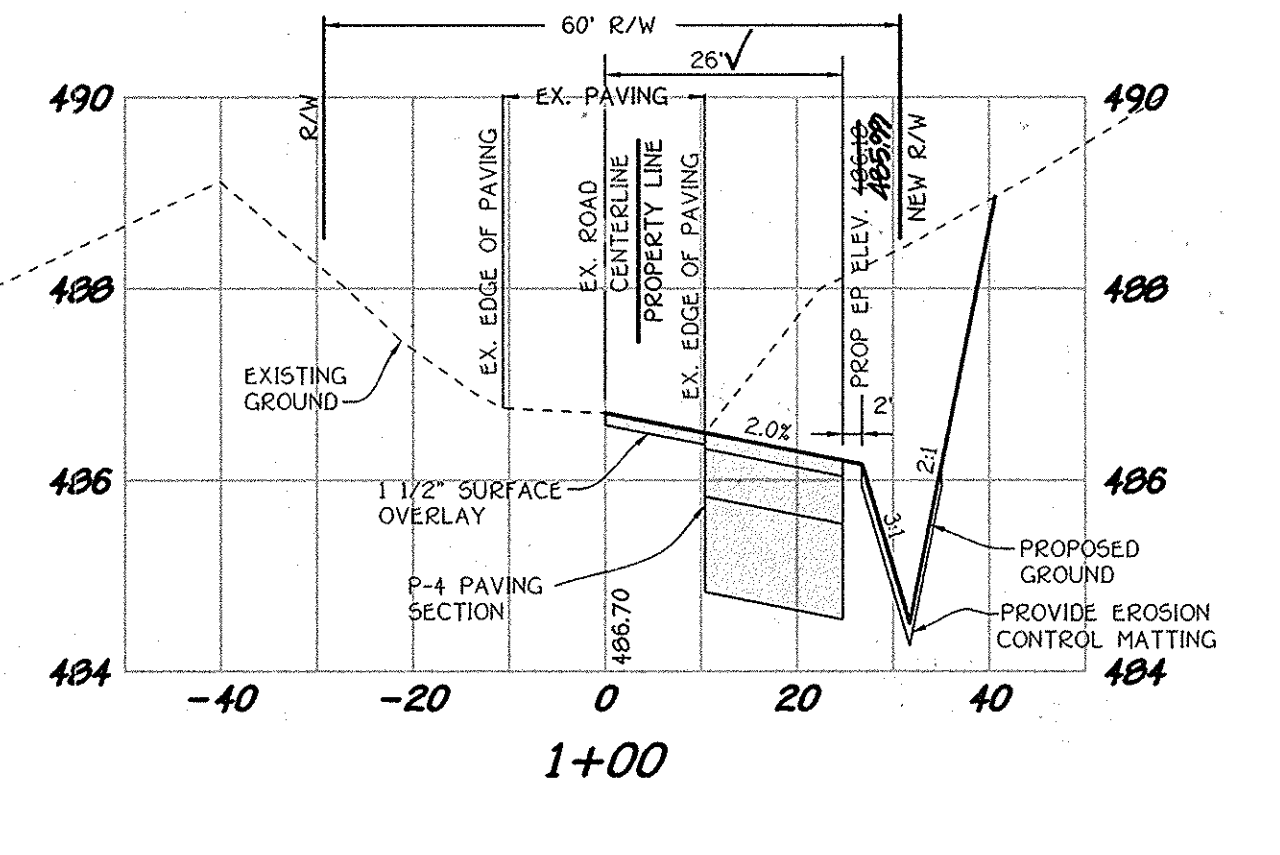
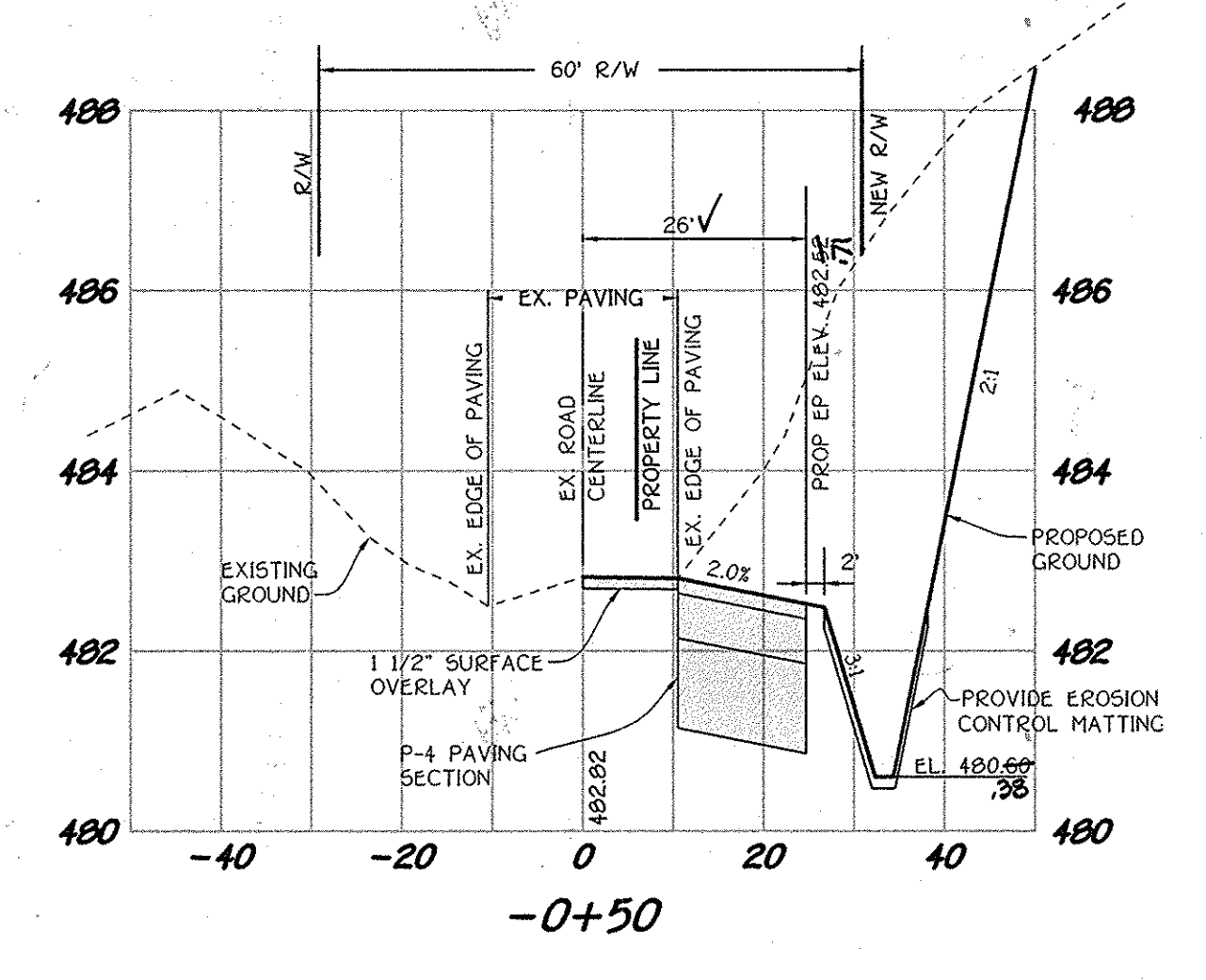
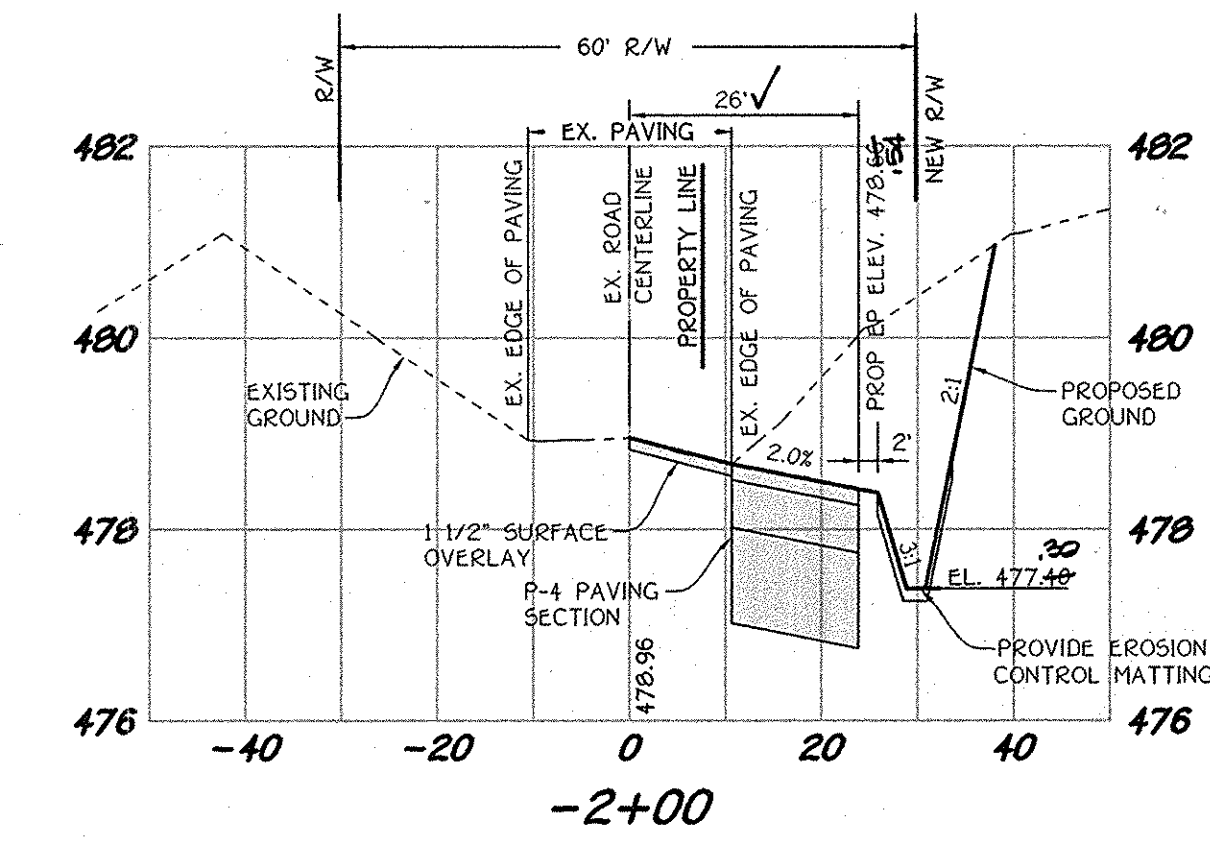
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter R. Hall* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Harsh* 6/1/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*John Dorman* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

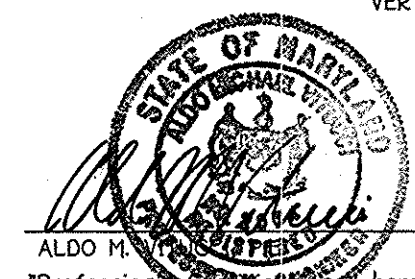


- NOTES:  
 1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY.  
 2. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4" OF WIDENING FROM FACE OF GUTTER PAN.  
 3. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" MINIMUM.  
 4. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.  
 5. RESURFACING TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

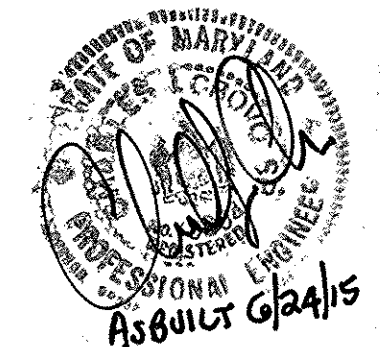


CROSS SECTIONS

SCALE: HORIZ. 1" = 20'  
 VERT. 1" = 2'



ALDO M. ... 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. 20748, Expiration Date: February 22, 2011.



OWNER  
 M. CHARLOTTE POWELL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
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HALL SHOP ROAD CROSS SECTIONS  
 SCHOOLEY MILL FARM  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 3 OF 21

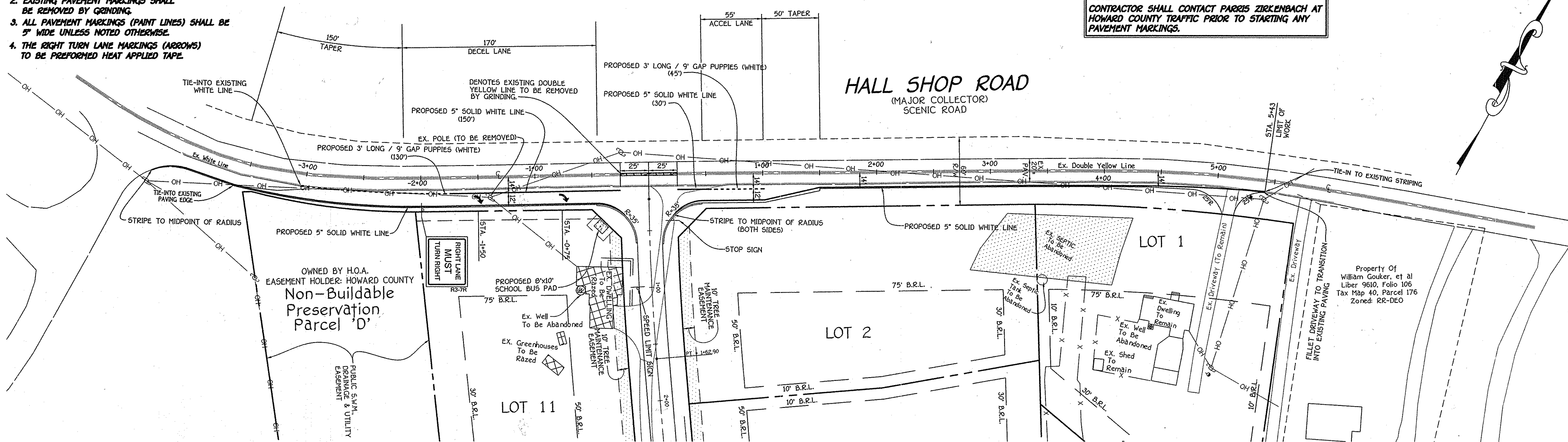
FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 1872 SALTSTONE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2955

F-09-043  
 AS-BUILT

- NOTES:
1. ALL LANE DESIGNATION TO BE PAINT LINE STRIPING.
  2. EXISTING PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING.
  3. ALL PAVEMENT MARKINGS (PAINT LINES) SHALL BE 5" WIDE UNLESS NOTED OTHERWISE.
  4. THE RIGHT TURN LANE MARKINGS (ARROWS) TO BE PERFORMED HEAT APPLIED TAPE.

NOTE:  
CONTRACTOR SHALL CONTACT PARRIS ZIRKENBACH AT HOWARD COUNTY TRAFFIC PRIOR TO STARTING ANY PAVEMENT MARKINGS.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 with *W. Z. Marshall* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*W. H. Hamer* 6/4/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris J. Jaraman* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**STRIPING PLAN**  
SCALE: 1" = 50'

**IMPORTANT:**  
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES MD 104.00-01-HD 104.00-10 AND STANDARD DETAILS MD 104.01-01-HD 104.01-02.

**NOTE:**  
FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

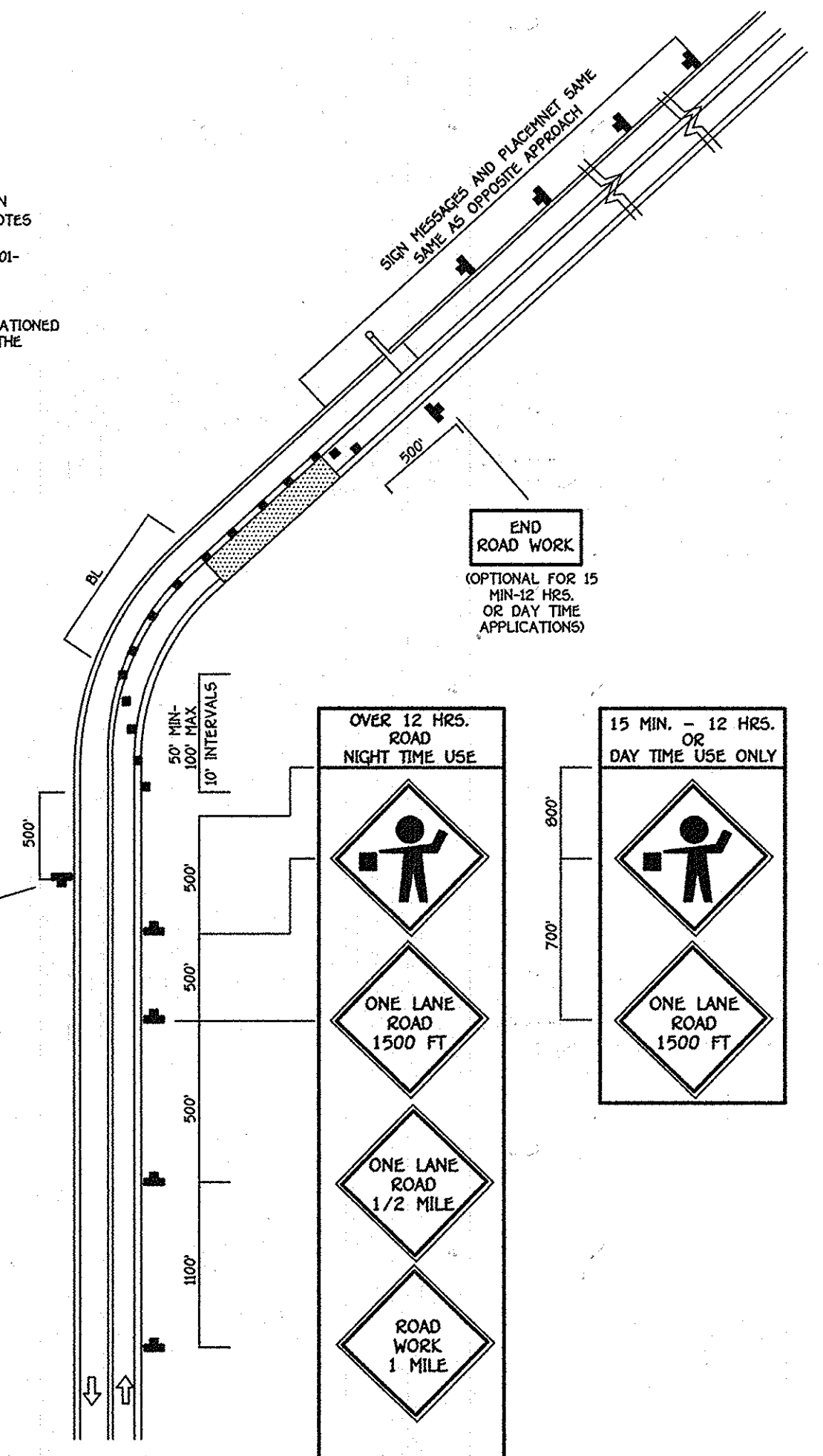
**IMPORTANT:**  
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES MD 104.00-01-HD 104.00-10 AND STANDARD DETAILS MD 104.01-01-HD 104.01-02.

**NOTES:**  
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14.

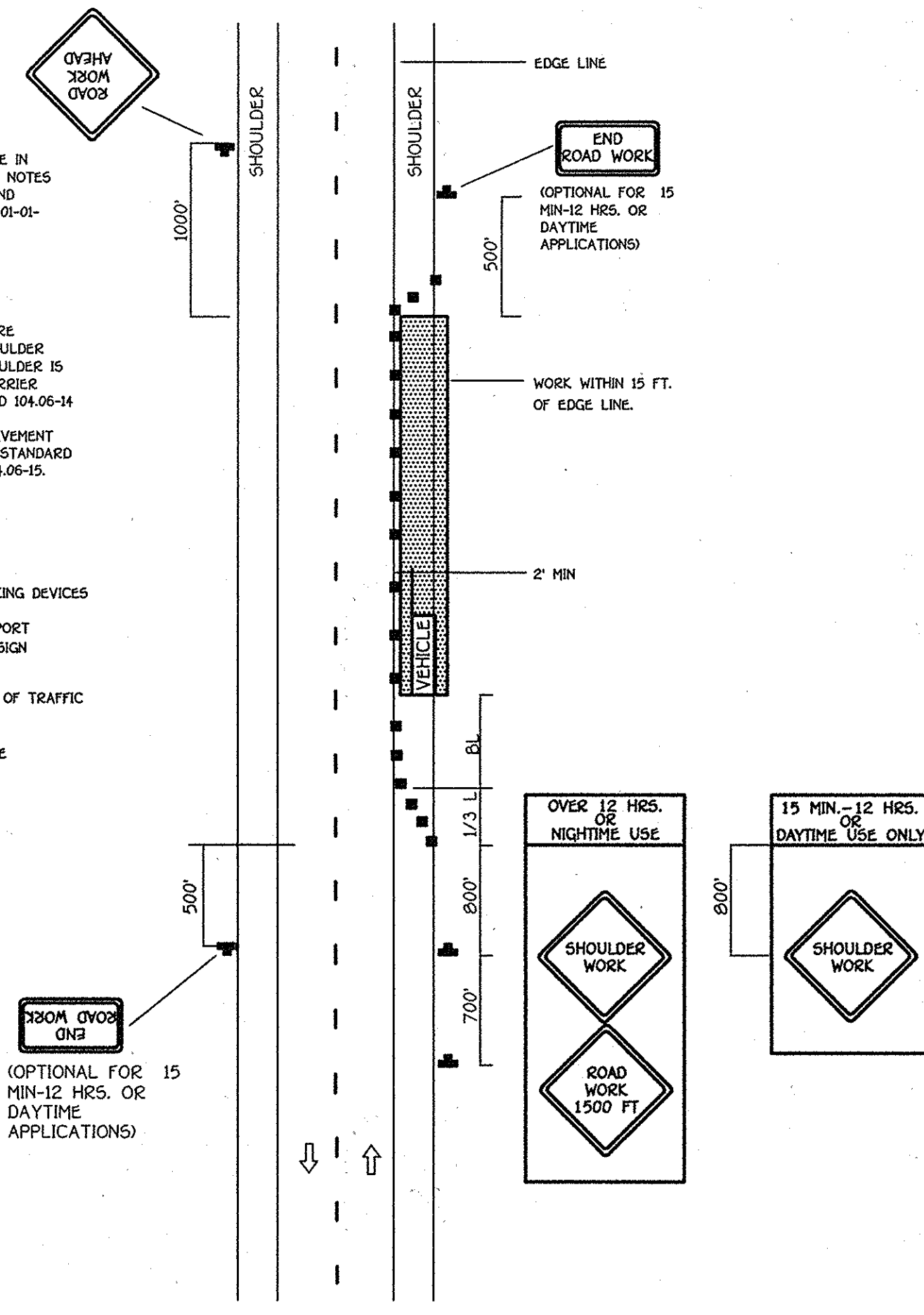
WHEN WORK INVOLVES A PAVEMENT EDGE DROPOFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

- KEY:**
- CHANNELIZING DEVICES
  - SIGN SUPPORT FACE OF SIGN
  - DIRECTION OF TRAFFIC
  - WORK SITE
  - FLAGGER

- KEY:**
- CHANNELIZING DEVICES
  - SIGN SUPPORT FACE OF SIGN
  - DIRECTION OF TRAFFIC
  - WORK SITE



**FLAGGING OPERATION /-LANE, 2-WAY EQUAL/LESS THAN 40 MPH**  
NO SCALE



**SHOULDER WORK /2-LANE, 2-WAY EQL/LESS THAN 40 MPH**  
NO SCALE

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21036  
4100 461 - 2255

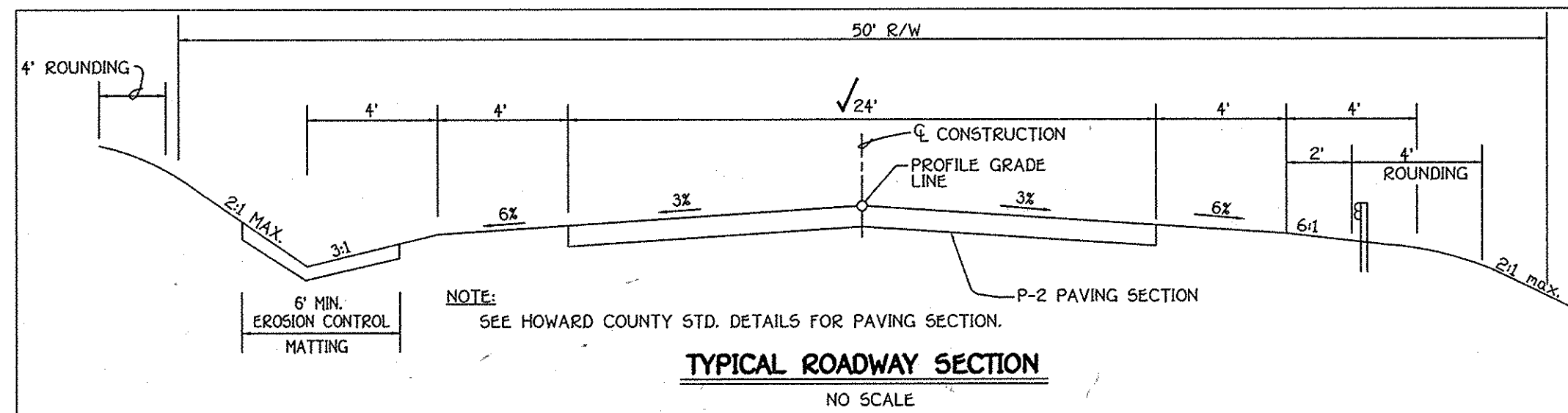
*ALDO H. VITTORELLI*  
ALDO H. VITTORELLI, P.E.  
DATE: 5/20/09  
Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20740, Expiration Date: February 22, 2011.

**OWNER**  
M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
c/o MR. JAMES GREENFIELD  
LAND HOLDINGS HALL SHOP ROAD, LLC  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

**DEVELOPER**  
MID ATLANTIC DEVELOPMENT COMPANY  
c/o MR. JAMES GREENFIELD  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

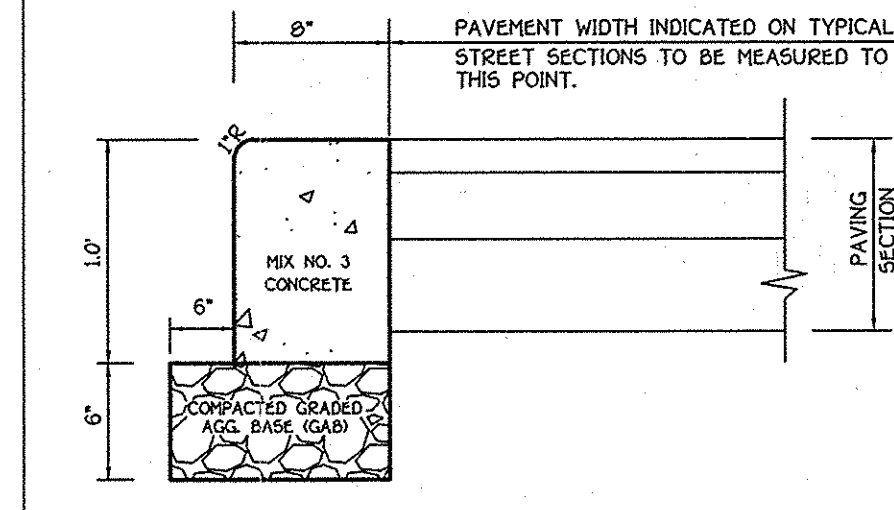
**HALL SHOP ROAD STRIPING PLAN & TEMPORARY TRAFFIC CONTROL PLAN**  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
ZONED: RR-DEO  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MAY 11, 2009  
SHEET 4 OF 21

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-09-043



**ROADWAY INFORMATION CHART**

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
HIGHGROVE ROAD	PUBLIC ACCESS PLACE	25 M.P.H.	RR-DEO	0+00 TO 8+15.67V	P-2



**REVISIONS**

NO.	DESCRIPTION	DATE
1	REMOVE FIRE TANK & ADD COMMUNITY MAIL BOX	6/20/14

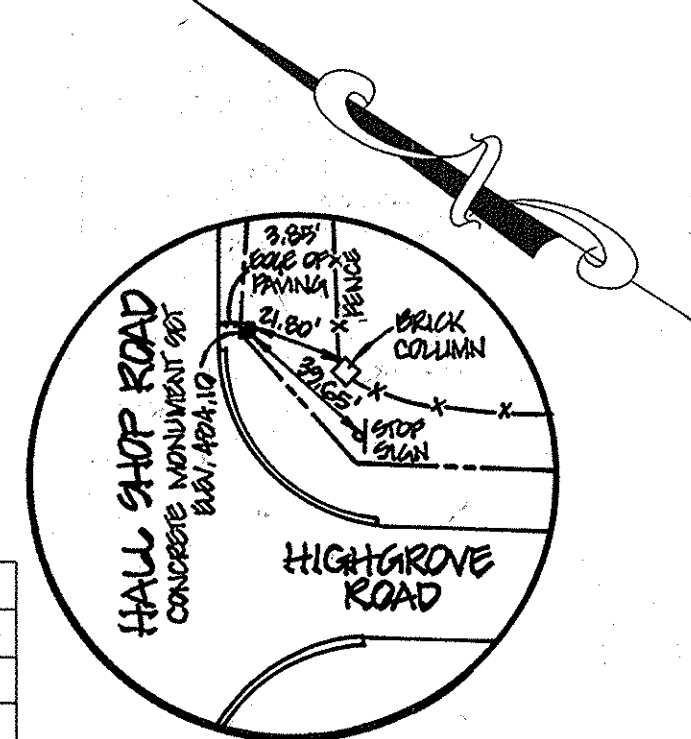
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Cindy Hamstra* 6/1/09  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Chris Dorman* 6/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

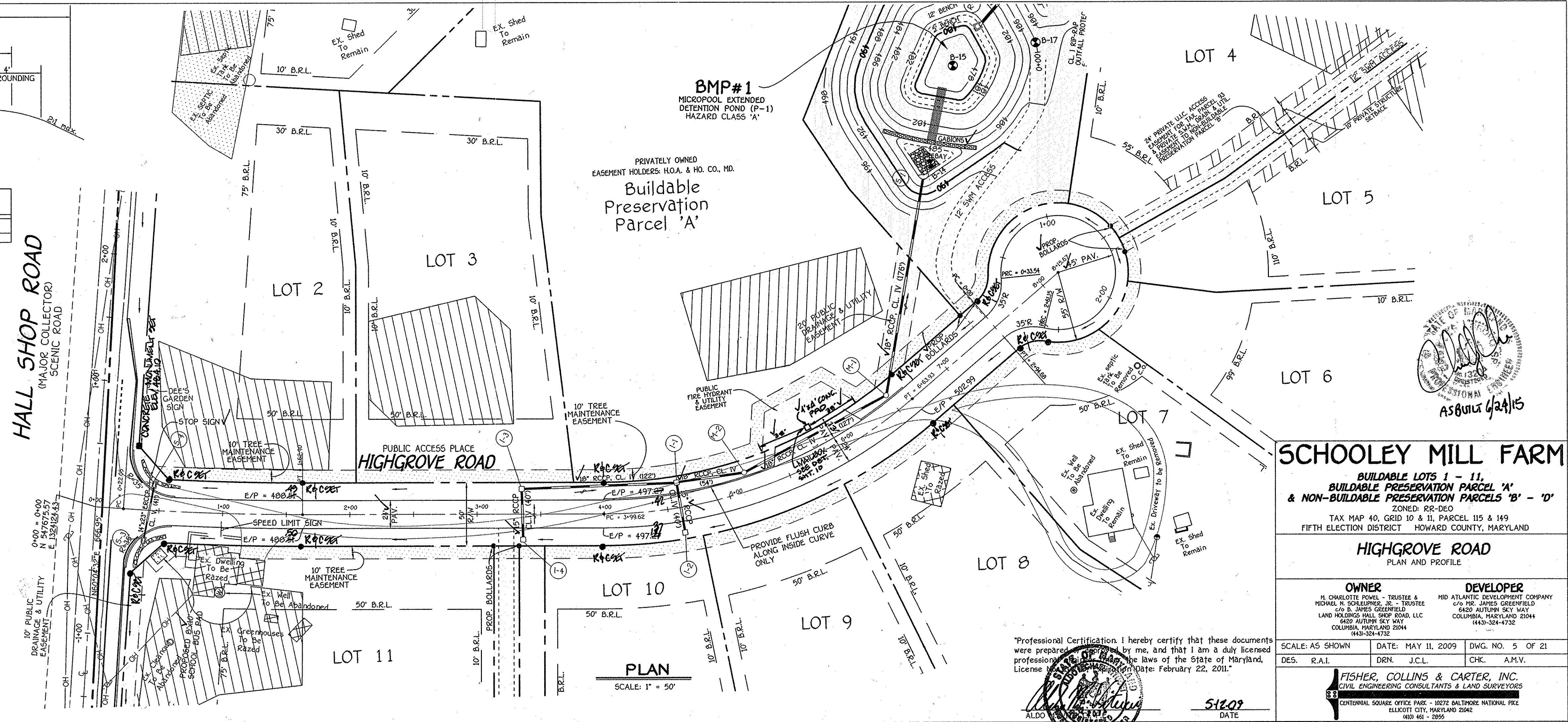
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*William J. McCall* 5-26-09  
CHIEF, BUREAU OF HIGHWAYS



**Curve Data**  
HIGHGROVE ROAD  
STA. 0+22.05 TO STA. 1+62.90  
RADIUS = 2000.00'  
LENGTH = 140.85'  
 $\Delta = 04^{\circ}22'05''$   
TAN = 70.45'  
CHORD = 5 30'50"48" E 140.82'

**Curve Data**  
HIGHGROVE ROAD  
STA. 3+93.62 TO STA. 6+63.93  
RADIUS = 370.00'  
LENGTH = 284.31'  
 $\Delta = 40^{\circ}59'43''$   
TAN = 138.08'  
CHORD = 5 53'27"43" E 258.72'



**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11,  
BUILDABLE PRESERVATION PARCEL 'A'  
& NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
ZONED: RR-DEO  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

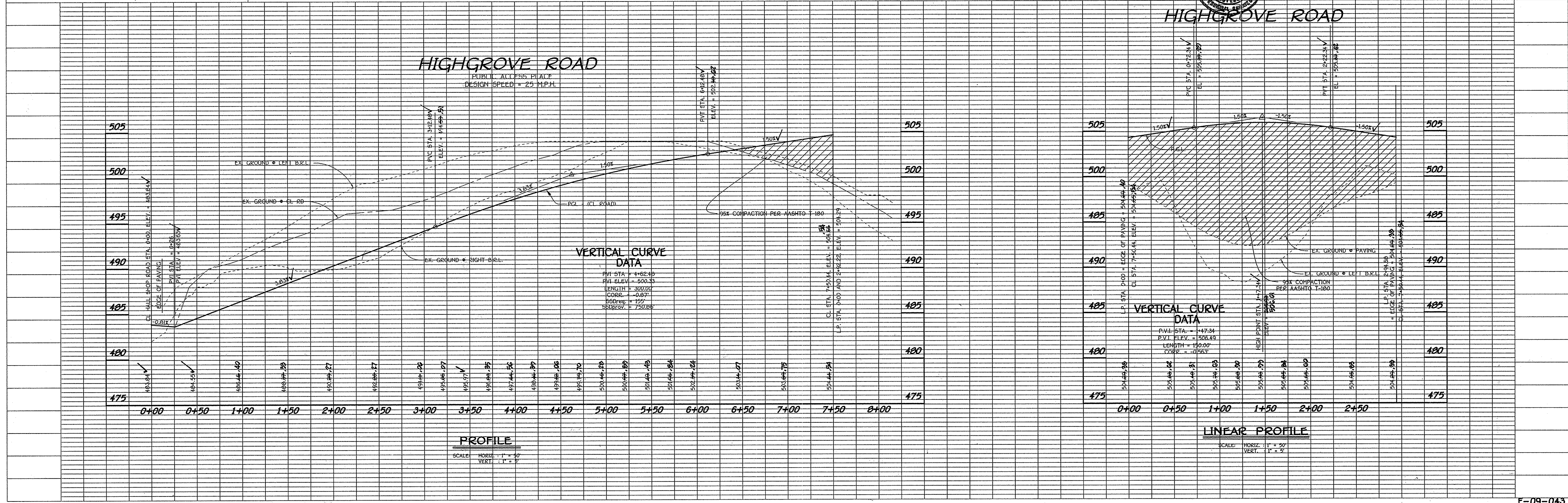
**HIGHGROVE ROAD**  
PLAN AND PROFILE

**OWNER**  
THE CHARLOTTE POWELL - TRUSTEE &  
MICHAEL H. SCHEIDT, JR. - TRUSTEE  
LAND HOLDINGS HALL SHOP ROAD, LLC  
8420 AULTRY SEY WAY  
COLUMBIA, MARYLAND 21044  
(410) 324-4732

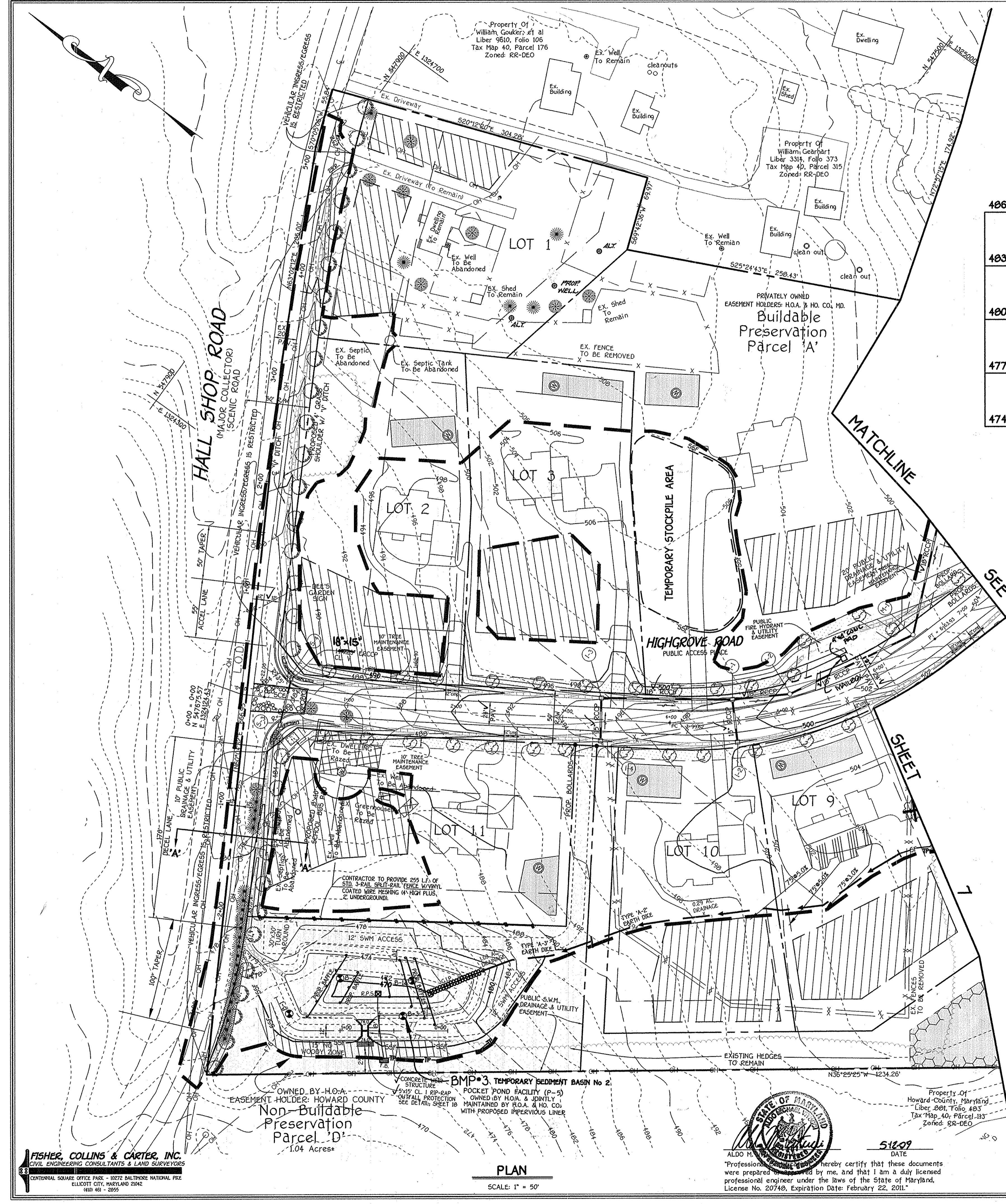
**DEVELOPER**  
MID ATLANTIC DEVELOPMENT COMPANY  
C/O MR. JAMES GREENFIELD  
6420 AULTRY SEY WAY  
COLUMBIA, MARYLAND 21044  
(410) 324-4732

SCALE: AS SHOWN DATE: MAY 11, 2009 DWG. NO. 5 OF 21  
DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK 10232 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21422  
410 461-2855

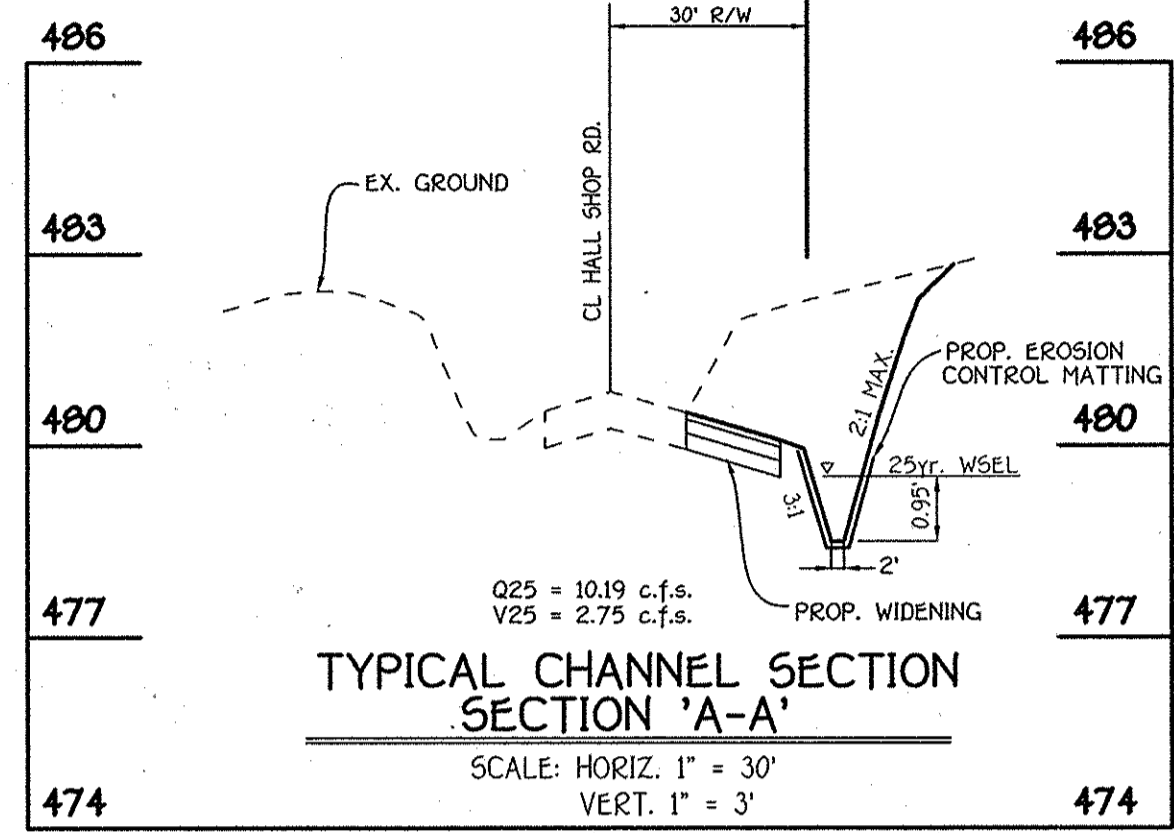


11:2009/05/07 (dwg) FINAL/05037 (SHEET 5) HIGHGROVE RD PLAN & PROFILE.dwg, 5/11/2009 2:33:06 PM, jamest



STREET TREE SCHEDULE			
QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
01567' x 2 / 40 = 41 TREES REQ'D.	QUERCUS RUBRA NORTHERN RED OAK	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W HIGHGROVE ROAD
90174' / 30 = 30 TREES REQ'D.	APUR MAPLE, PAPERBACK MAPLE, TRIDENT MAPLE, TRUNCATUM MAPLE - NORWEGIAN SUNSET OR PACIFIC SUNSET, JAPANESE RED MAPLE - BLOODGOOD OR BURKLANDY LACE	2 1/2"-3" CAL.	30' APART ON PUBLIC R/W HALL SHOP ROAD

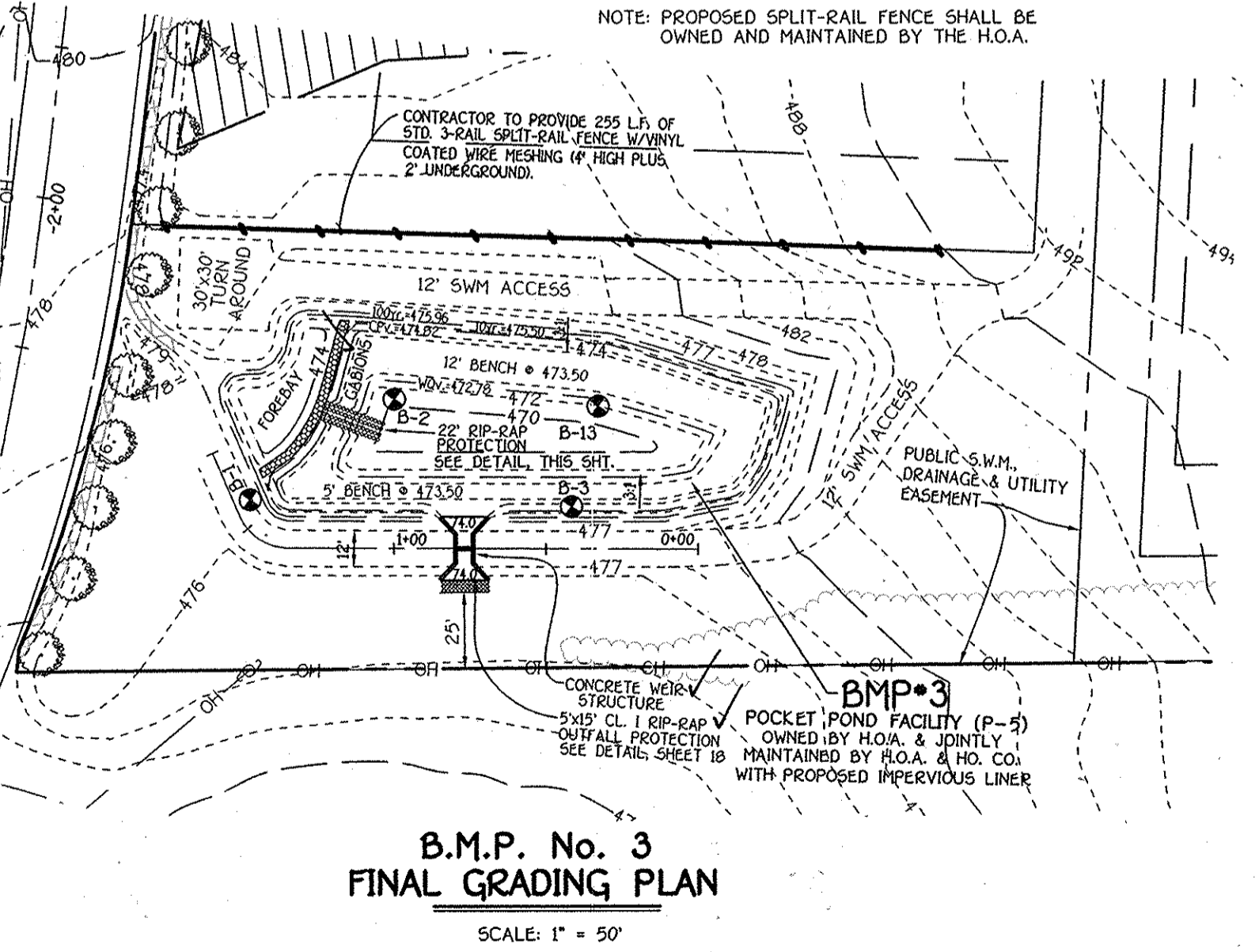
NOTE: FINANCIAL SURETY FOR THE 71 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$21,300.00.  
NOTE: THE PROPOSED TREE TYPES FOR HALL SHOP ROAD COMPLIES WITH THE 'GREEN ZONE' PLANTING STANDARDS PROVIDED BY D.G.S.E.



- ### LEGEND
- EXISTING 10' CONTOUR
  - EXISTING 2' CONTOUR
  - PROPOSED STORY DRAIN
  - FOREST CONSERVATION EASEMENT
  - EXISTING TREELINE
  - EXISTING TREE LAWN (NOT WOODS)
  - PROPOSED TREELINE
  - PROPOSED WELL
  - EXISTING WELL
  - LOT LINE
  - BOUNDARY LINE
  - SPECIMEN TREE
  - EVERGREEN
  - SHADE
  - SOIL BORING
  - NOTES: DENOTES ROOFTOP DISCONNECTION, DENOTES DRIVEWAY DISCONNECTION, SUPER-SILT FENCE, SILT FENCE, TREE PROTECTION FENCE, STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKE, DENOTES L.O.D., LIMITS OF DISTURBANCE, DENOTES EROSION CONTROL MATTING, GABION INFLOW PROTECTION.

### TEMPORARY SEDIMENT BASIN No. 2-BMP#3

INITIAL D.A. = 3.02 AC.  
FINAL D.A. = 6.49 AC.  
STORAGE REQUIRED  
WET = 1800 x 6.49 = 11,682 CU FT.  
DRY = 1800 x 6.49 = 11,682 CU FT.  
STORAGE PROVIDED  
WET = 11,682 CU FT. @ ELEV. 473.80  
DRY = 11,682 CU FT. @ ELEV. 475.28  
BOTTOM ELEV. = 470.00  
STORAGE DEPTH = 3.80 WET, 5.28 DRY  
TOP OF SETTLED ENHANCEMENT = 477.00  
CLEAN OUT ELEV. = 472.85  
WEIR CREST ELEV. = 475.28 TEMP.  
WEIR LENGTH = 5.0'  
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.27 AC FT. OR 11.61 CU FT. @ 475.28  
CU FT. STORAGE (DRY) PROVIDED = 475.28 = 23,522 CU FT.  
Q1 exist. = 0.63 c.f.s.  
Q1 prop. = N/A (STORE ENTIRE 1hr. STORM)



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. ...* 5-26-09  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Candy ...* 6/18/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris ...* 6/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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. James Greenfield* 5/12/09  
Signature Of Developer  
**B. JAMES GREENFIELD**  
Printed Name Of Developer

By The Engineer:  
I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That 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.

*...* 5/12/09  
Signature Of Engineer  
**...**  
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

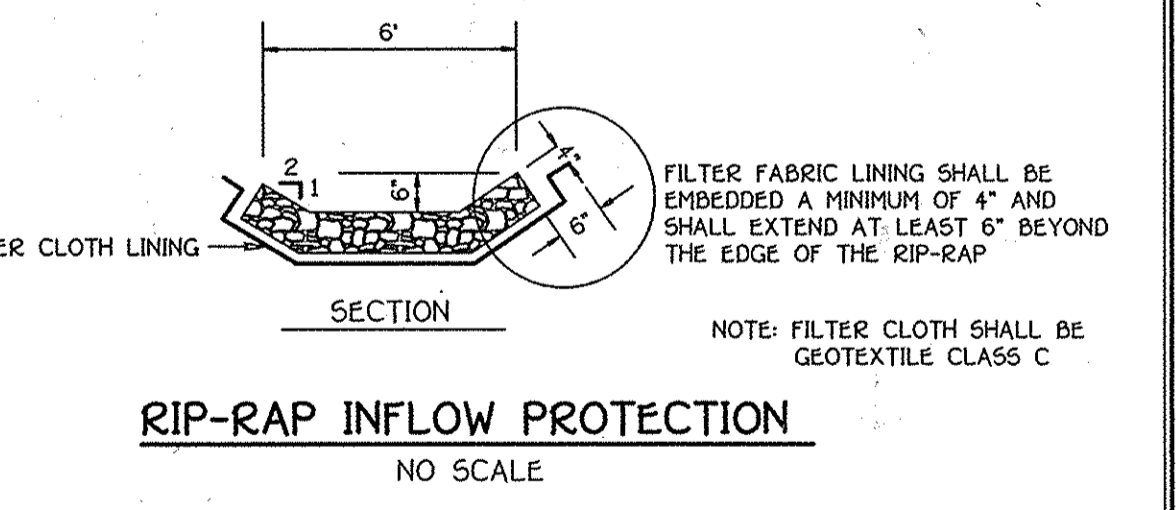
*...* 5/21/09  
Signature Of Engineer  
**...**  
Printed Name Of Engineer

AS-BUILT CERTIFICATION  
I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

*...* 13204  
Signature  
6/24/16  
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 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.

LOT NO.	PIPE SIZE	ROAD STA. & GRADE	ROAD NAME	REMARKS
1	N/A	EX. DRIVEWAY	HALL SHOP ROAD	
2	12"	1+00 @ 1.00%	HIGHGROVE COURT	Q10 = 7.20 c.f.s.
3	N/A	Driveway next to lot	HIGHGROVE COURT	
Pres. Par. A	N/A	Driveway next to lot	HIGHGROVE COURT	
4	N/A	Driveway at High Point	HIGHGROVE COURT	
5	N/A	Driveway at High Point	HIGHGROVE COURT	
6	8"	LP 2+00 @ 1.50%	HIGHGROVE COURT	Q10 = 1.50 c.f.s.
7	10"	6+48 @ 1.58%	HIGHGROVE COURT	Q10 = 2.70 c.f.s. SHARED
8	8"	6+75 @ 1.58%	HIGHGROVE COURT	Q10 = 2.70 c.f.s. CHULVERT
9	12"	6+76 @ 1.60%	HIGHGROVE COURT	Q10 = 4.80 c.f.s.
10	N/A	Driveway next to lot	HIGHGROVE COURT	
11	12"	2+50 @ 4.00%	HIGHGROVE COURT	Q10 = 7.20 c.f.s.
BMP#1	10"	7+44 @ 1.58%	HIGHGROVE COURT	Q10 = 2.70 c.f.s.
BMP#2	N/A	Driveway at High Point	HIGHGROVE COURT	
BMP#3	N/A	Driveway next to lot	HIGHGROVE COURT	



NO.	REVISION	DATE
1	REMOVE FIRE TANK & ADD COMMUNITY MAIL BOX	6/22/14
2	REVISION	DATE

**STREET TREE, GRADING & SEDIMENT CONTROL PLAN**  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

OWNER: M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
DEVELOPER: MID ATLANTIC DEVELOPMENT COMPANY c/o MR. JAMES GREENFIELD

TAX MAP 40, GRID 10 & 11, PARCEL 115 & 119  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 50' DATE: MAY 11, 2009  
SHEET 6 OF 21

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10722 BALDROCK NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
4100 461 - 2855

STATE OF MARYLAND  
Professional Engineer  
ALDO H. ...  
I hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20746, Expiration Date February 22, 2011.

F-09-043  
AS-BUILT

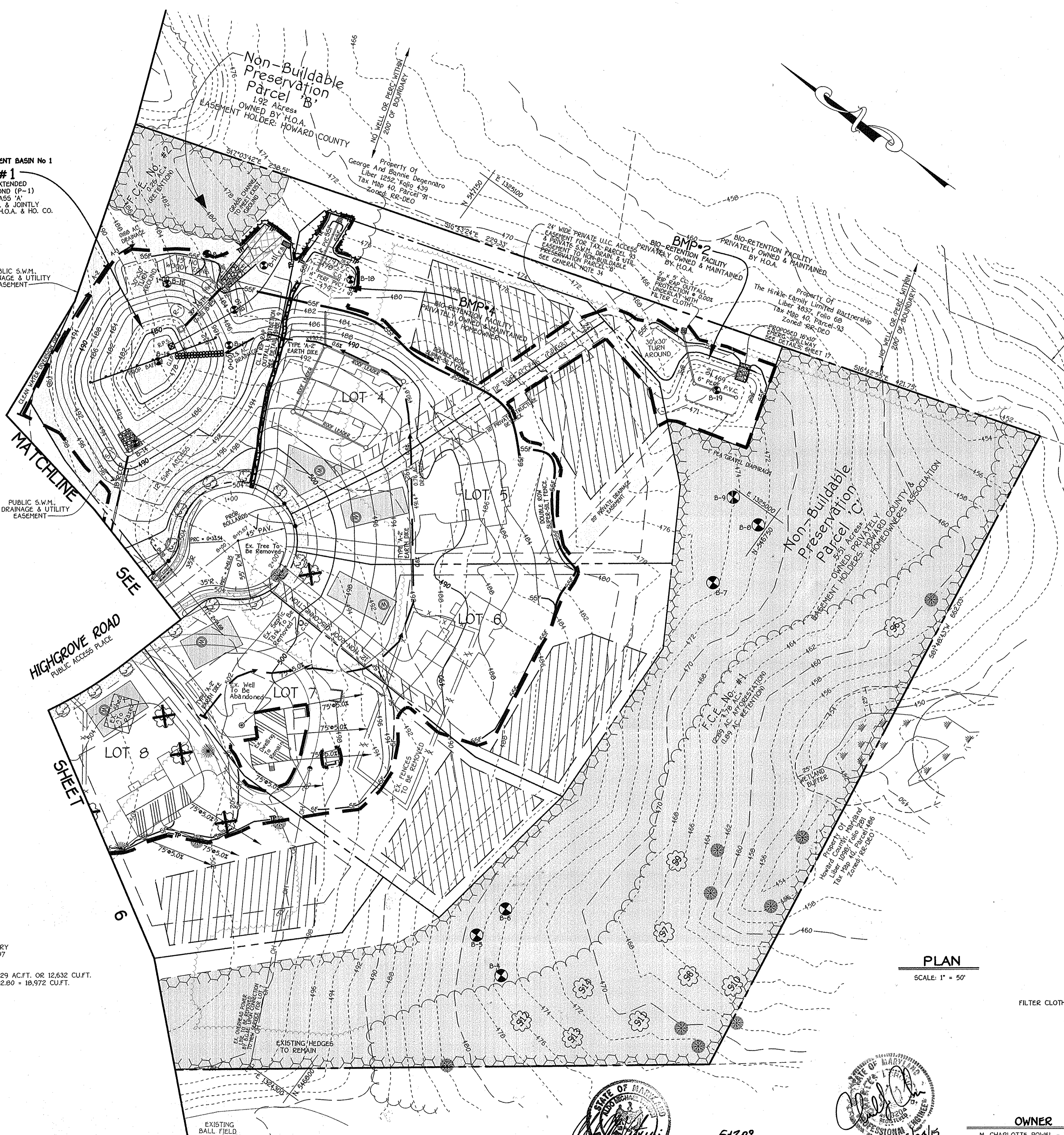
TEMPORARY SEDIMENT BASIN No 1  
**BMP#1**  
 MICROPOOL EXTENDED  
 DETENTION POND (P-1)  
 HAZARD CLASS 'A'  
 OWNED BY H.O.A. & JOINTLY  
 MAINTAINED BY H.O.A. & HO. CO.

PUBLIC S.W.M.  
 DRAINAGE & UTILITY  
 EASEMENT

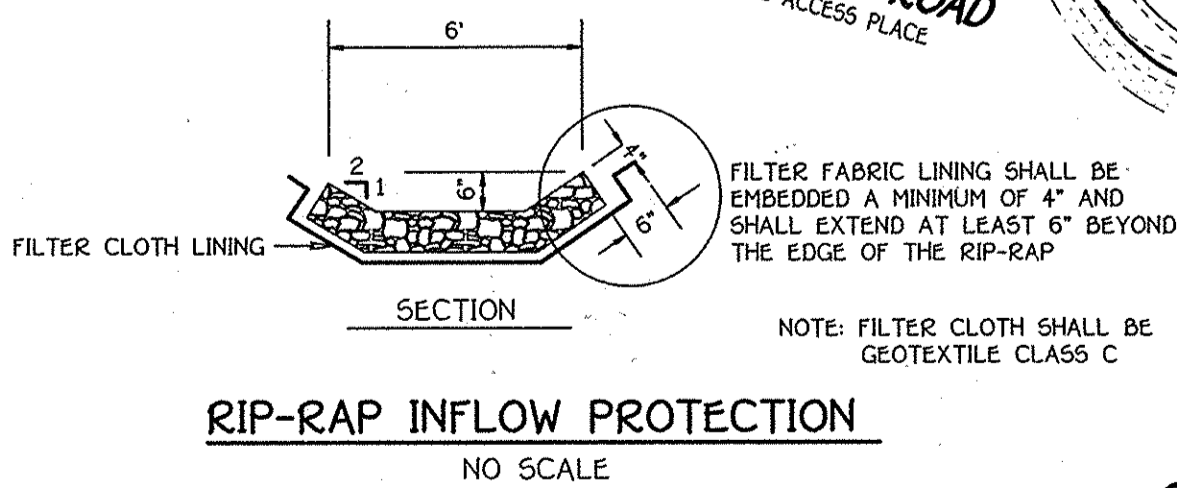
PUBLIC S.W.M.  
 DRAINAGE & UTILITY  
 EASEMENT

**TEMPORARY SEDIMENT  
 BASIN No. 1-BMP#1**  
 INITIAL D.A. = 2.45 Ac.  
 FINAL D.A. = 5.27 Ac.  
 STORAGE REQUIRED  
 WET = 1800 x 5.27 = 9,496 Cuf.  
 DRY = 1800 x 5.27 = 9,496 Cuf.  
 STORAGE PROVIDED  
 WET = 9,496 Cuf. • ELEV. 481.52  
 DRY = 9,496 Cuf. • ELEV. 482.20  
 BOTTOM ELEV. = 478.00  
 STORAGE DEPTH = 3.52 WET, 4.80 DRY  
 TOP OF SETTLED EMBANKMENT = 485.07  
 CLEAN OUT ELEV. = 480.20  
 RISE & CREST ELEV. = 483.25 TEMP.  
 FOR 1 YR. TEMP. STORAGE REQ'D = 0.29 ACFT. OR 12,632 CUFT.  
 CUFT. STORAGE (DRY) PROVIDED = 482.80 • 18,972 CUFT.  
 Q1 exist. = 0.32 c.f.s. • 483.27  
 Q1 prop. = 0.30 c.f.s. • 483.27

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 1672 BALTIMORE NATIONAL PKWY.  
 ELICOTT CITY, MARYLAND 21044  
 4100 481 - 2895



**PLAN**  
 SCALE: 1" = 50'



**B.M.P. No. 1  
 FINAL GRADING PLAN**  
 SCALE: 1" = 50'

**STREET TREE, GRADING & SEDIMENT CONTROL PLAN**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 119  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 50' DATE: MAY 11, 2009  
 SHEET 7 OF 21

**LEGEND**

	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	PROPOSED STORM DRAIN
	FOREST CONSERVATION EASEMENT
	EXISTING TREELINE
	EXISTING TREE LAWN (NOT WOODS)
	PROPOSED TREELINE
	PROPOSED WELL
	EXISTING WELL
	LOT LINE
	BOUNDARY LINE
	SPECIMEN TREE
	EVERGREEN
	SHADE
	SOIL BORING
	NOTES ROOFTOP DISCONNECTION
	NOTES DRIVEWAY DISCONNECTION
	SUPER-SILT FENCE
	SILT FENCE
	TREE PROTECTION FENCE
	STABILIZED CONSTRUCTION ENTRANCE
	EARTH DIKE
	LIMITS OF DISTURBANCE
	EROSION CONTROL MATTING
	GABION INFLOW PROTECTION
	NOTES ROOFTOP DISCONNECTION CREDIT

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 With R. Lubell 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Cindy Kamm 6/4/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Damman 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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. James Greenfield 5/12/09  
 Signature Of Developer DATE  
B. James Greenfield  
 Printed Name Of Developer

By The Engineer:  
 "I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer Of My Requirements And 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] 5/12/09  
 Signature DATE  
[Signature]  
 Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.  
[Signature] 5/21/09  
 Howard Soil Conservation District DATE

A5-BUILT CERTIFICATION  
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.  
[Signature] 13204  
 Signature P.A. No. 61415  
 Date

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate 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.

**STATE OF MARYLAND**  
 PROFESSIONAL ENGINEER  
[Signature]  
 ALDO M. [Signature]  
 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. 20749, Expiration Date: February 22, 2011.  
 DATE: 5/22/09

**STATE OF MARYLAND**  
 PROFESSIONAL ENGINEER  
[Signature]  
 AS BUILT 6/24/09

**OWNER**  
 M. CHARLOTTE POWELL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

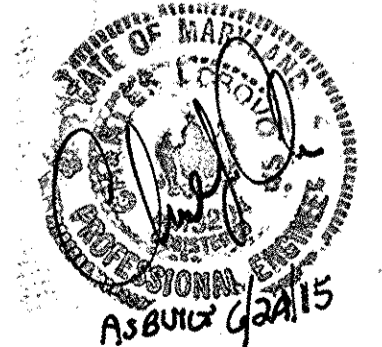
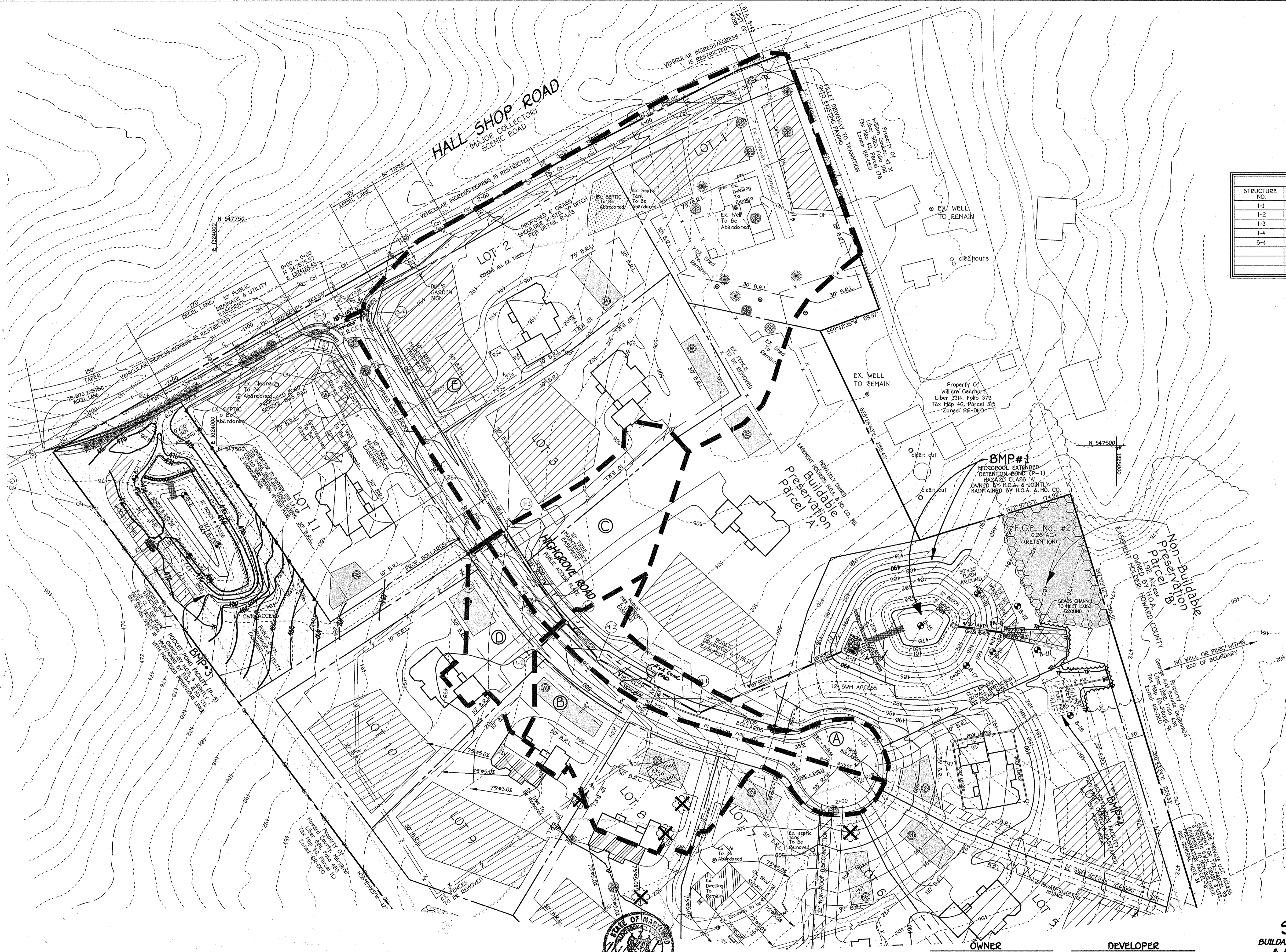
**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William R. Caldwell* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cathy Standa* 6/4/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Drummer* 6-2-09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	C	ZONED	% IMP.
I-1	A	0.44 AC.	0.59	RC-DEO	38%
I-2	B	0.89 AC.	0.55	RC-DEO	33%
I-3	C	0.59 AC.	0.36	RC-DEO	11%
I-4	D	0.31 AC.	0.44	RC-DEO	21%
S-4	E	3.91 AC.	0.34	RC-DEO	12%



**STORM DRAIN DRAINAGE AREA MAP**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

**OWNER**  
 M. CHARLOTTE POWELL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (410)-321-4732

**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (410)-321-4732



**PLAN**  
 DATE: 5/12/09  
 SCALE: 1" = 50'

I hereby certify that these documents were prepared, approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL FREE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 481-2855

NO.	REVISION	DATE
1	REVISED FIRE TANK & ADD COMMUNITY MAIL BOX	6/22/09
2	REVISION	DATE

ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 8 OF 21

F-09-043  
 AS-BUILT



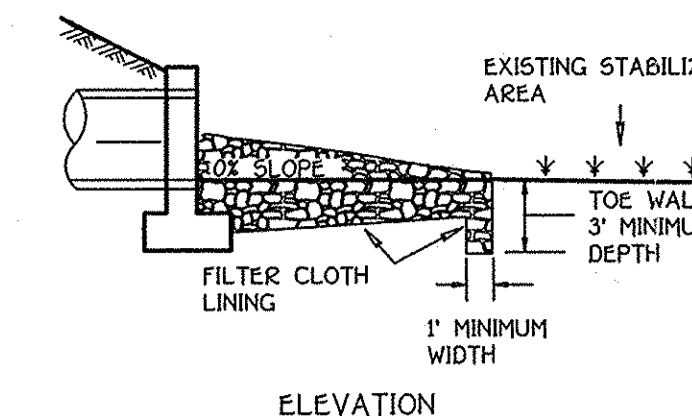
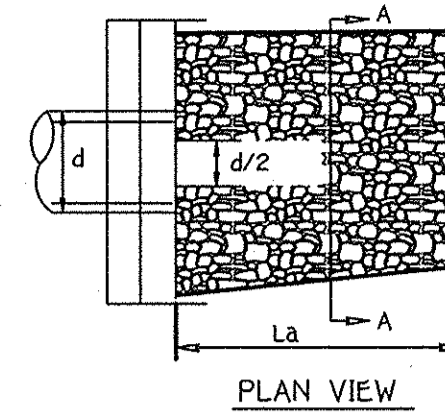
**STRUCTURE SCHEDULE**

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	497.45.55	493.88.48	487.98.48	HIGHGROVE ROAD	4+50	20L	K. INLET	D - 4.12
I-2	497.45.50	493.88.45	487.98.45	HIGHGROVE ROAD	4+50	20R	K. INLET	D - 4.12
I-3	493.88.40	489.88.40	483.98.40	HIGHGROVE ROAD	3+35	20L	K. INLET	D - 4.12
I-4	493.88.70	489.88.70	483.98.70	HIGHGROVE ROAD	3+35	20R	K. INLET	D - 4.12
M-1	502.66	486.48.36	486.47.20	HIGHGROVE ROAD	6+50	14L	4' STD. MANHOLE	G - 5.12
M-2	500.89.36	487.44.36	487.44.20	HIGHGROVE ROAD	5+16	14L	4' STD. MANHOLE	G - 5.12
S-1	486.64.40	484.81.40	-----	N 547270.49V E 1324696.22V	-----	---	CONC. END SECTION	D - 5.51
HW-1	481.48.84	477.44.80	-----	N 547291.84V E 1324875.83V	-----	---	TYPE 'C' ENDWALL	D - 5.21
S-3	483.88.08	-----	480.88.08	HIGHGROVE ROAD	2+27	22.0R	TYPE 'O' HEADWALL	D - 5.43
S-4	481.48.08	481.44.08	-----	HIGHGROVE ROAD	2+43	18.3L	TYPE 'O' HEADWALL	D - 5.43
R-1	485.88.60	471.84.60	471.84.60	N 547299.48V E 1324818.97V	-----	---	CONCRETE RISER	SEE SHEET 16

\* - DENOTES THROAT ELEVATION

**PIPE SCHEDULE**

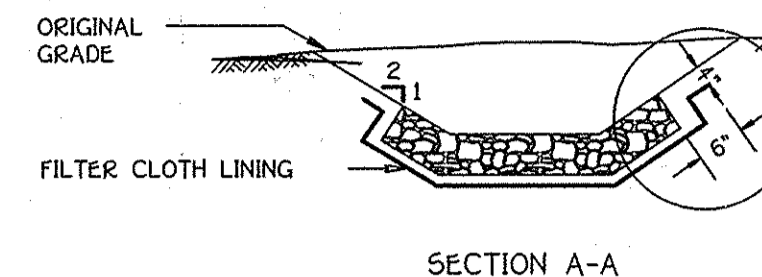
SIZE	CLASS	LENGTH
15"	R.C.C.P. CL. IV	80 L.F.
18"	R.C.C.P. CL. IV	479 L.F.
14" x 23"	E.R.C.C.P. CL. V	41 L.F.



APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS**

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



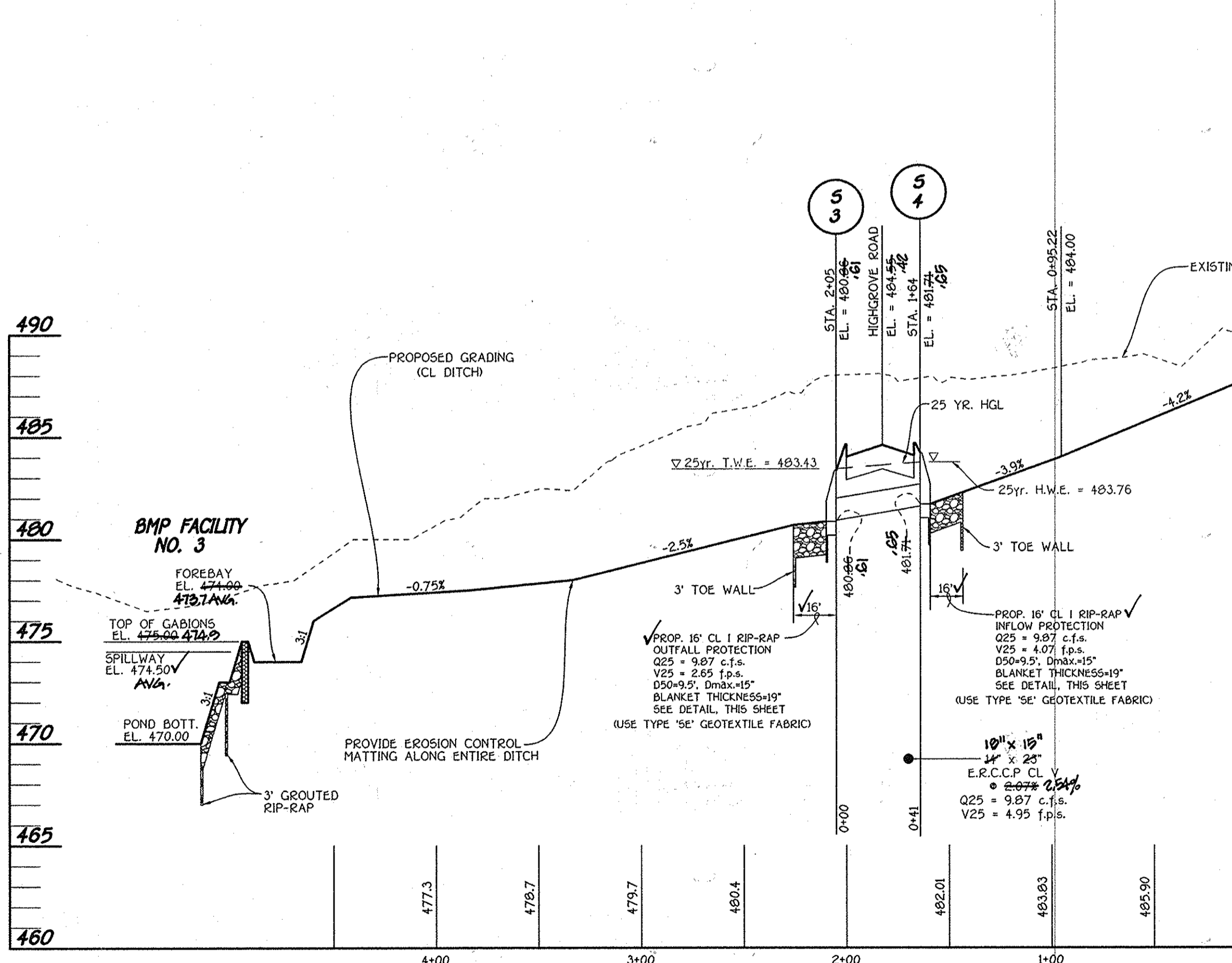
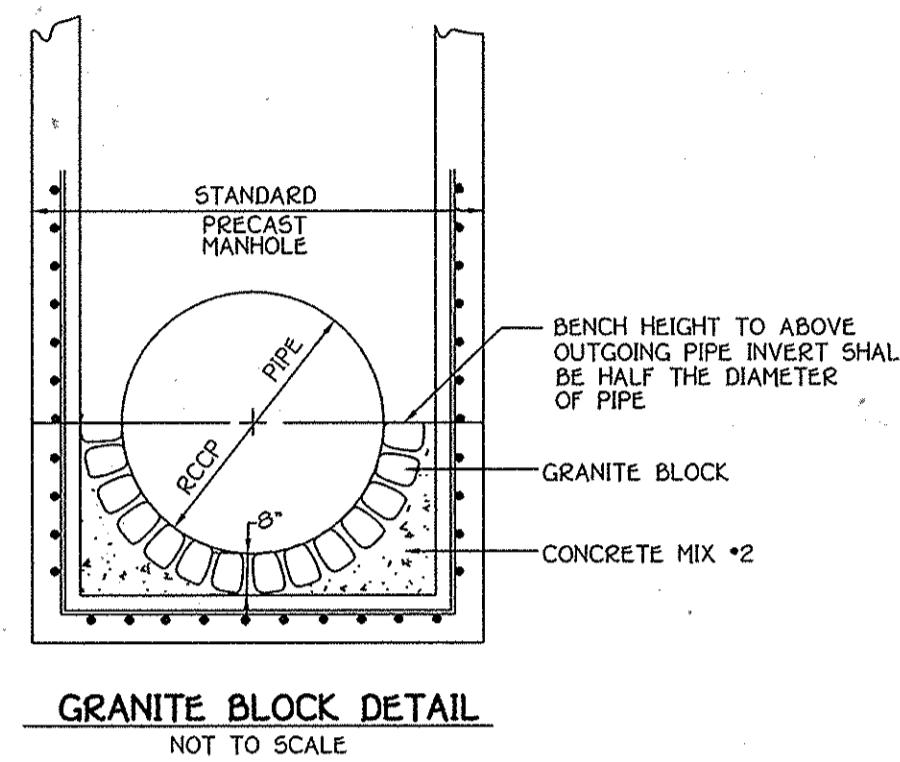
FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF THE RIP-RAP

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

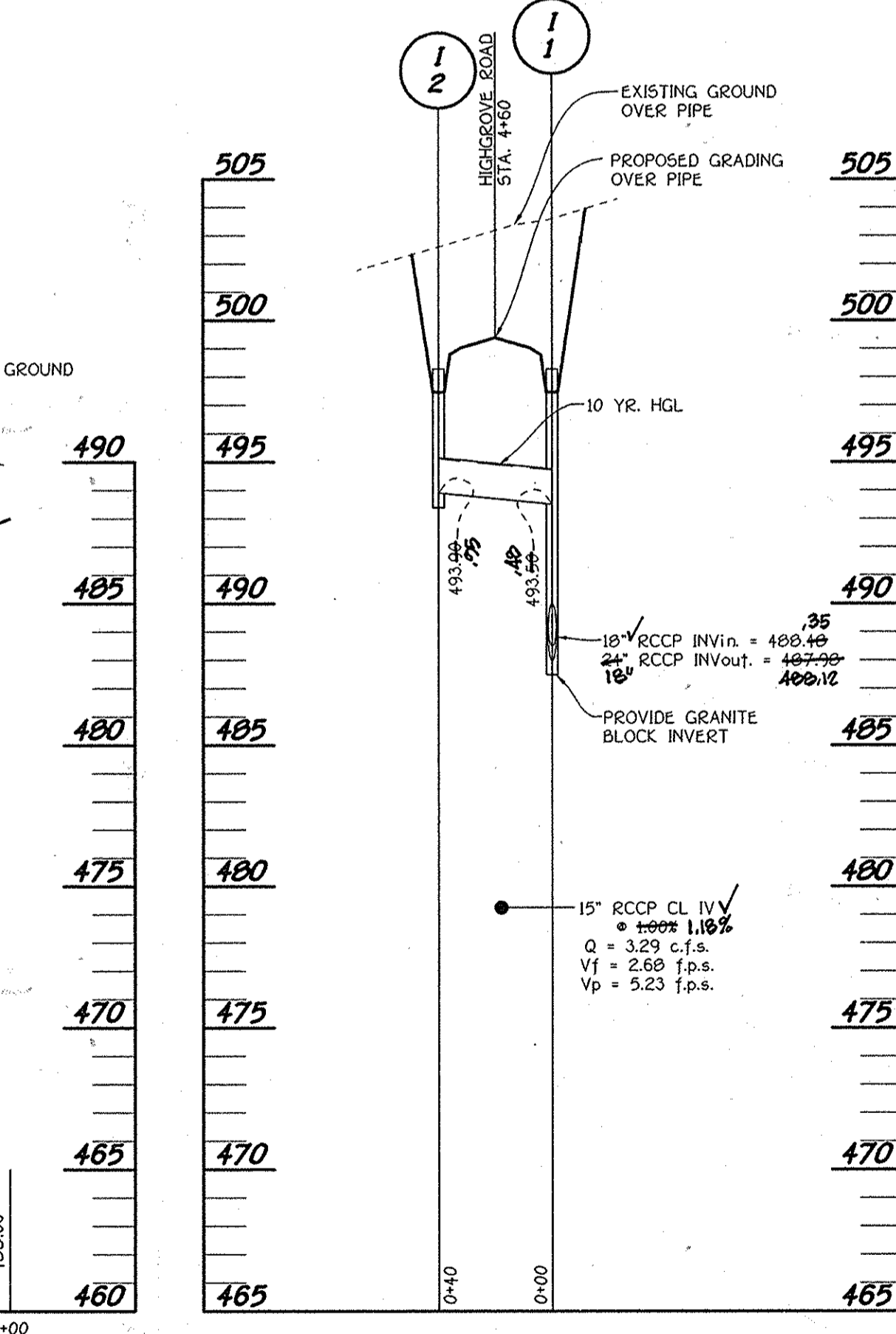
**RIP-RAP CHANNEL DESIGN DATA**

STRUCTURE	AREA SQ.FT.	WETTED PERIMETER	R	R <sup>2/3</sup>	S	S <sup>1/2</sup>	W	d	N	V	Q	BLANKET THICKNESS
S-1	3.82	8.41'	0.4542	0.5893	0.0500	0.0707	6'	0.54'	0.04	1.55	5.57	9.5" 15'
HW-1	9.19	9.94'	0.9245	0.9488	0.0500	0.0707	3.5'	1.44'	0.04	2.49	22.9'	9.5" 15'
S-3	3.73	6.61'	0.5643	0.6816	0.0109	0.1044	3'	0.81'	0.04	2.65	9.87	9.5" 15'
S-4	2.44	5.62'	0.4342	0.5718	0.0364	0.1908	3'	0.59'	0.04	4.07	9.87	9.5" 15'

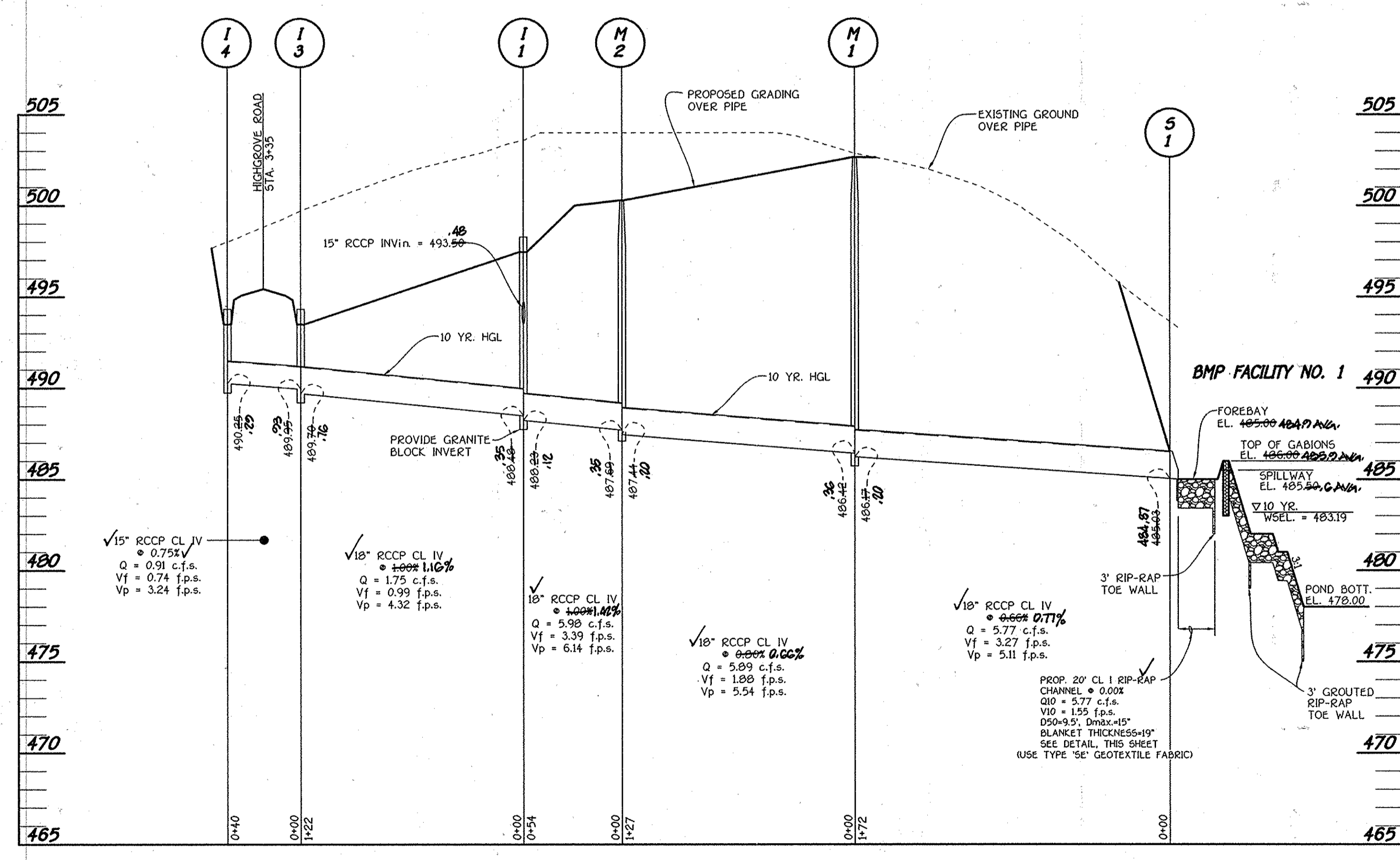
\* - DENOTES 100 YR. DESIGN Q



**CULVERT PROFILE**  
 SCALE: HORIZ. : 1" = 50'  
 VERT. : 1" = 5'



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



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

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - BELTZ BALTIMORE NATIONAL FREE  
 ELLIOTT CITY, MARYLAND 20626  
 (410) 461-2855

STATE OF MARYLAND  
 I, *[Signature]*, hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.  
 DATE: 5-12-09

STATE OF MARYLAND  
 I, *[Signature]*, hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.  
 DATE: 5-12-09

**OWNER**  
 M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL, SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

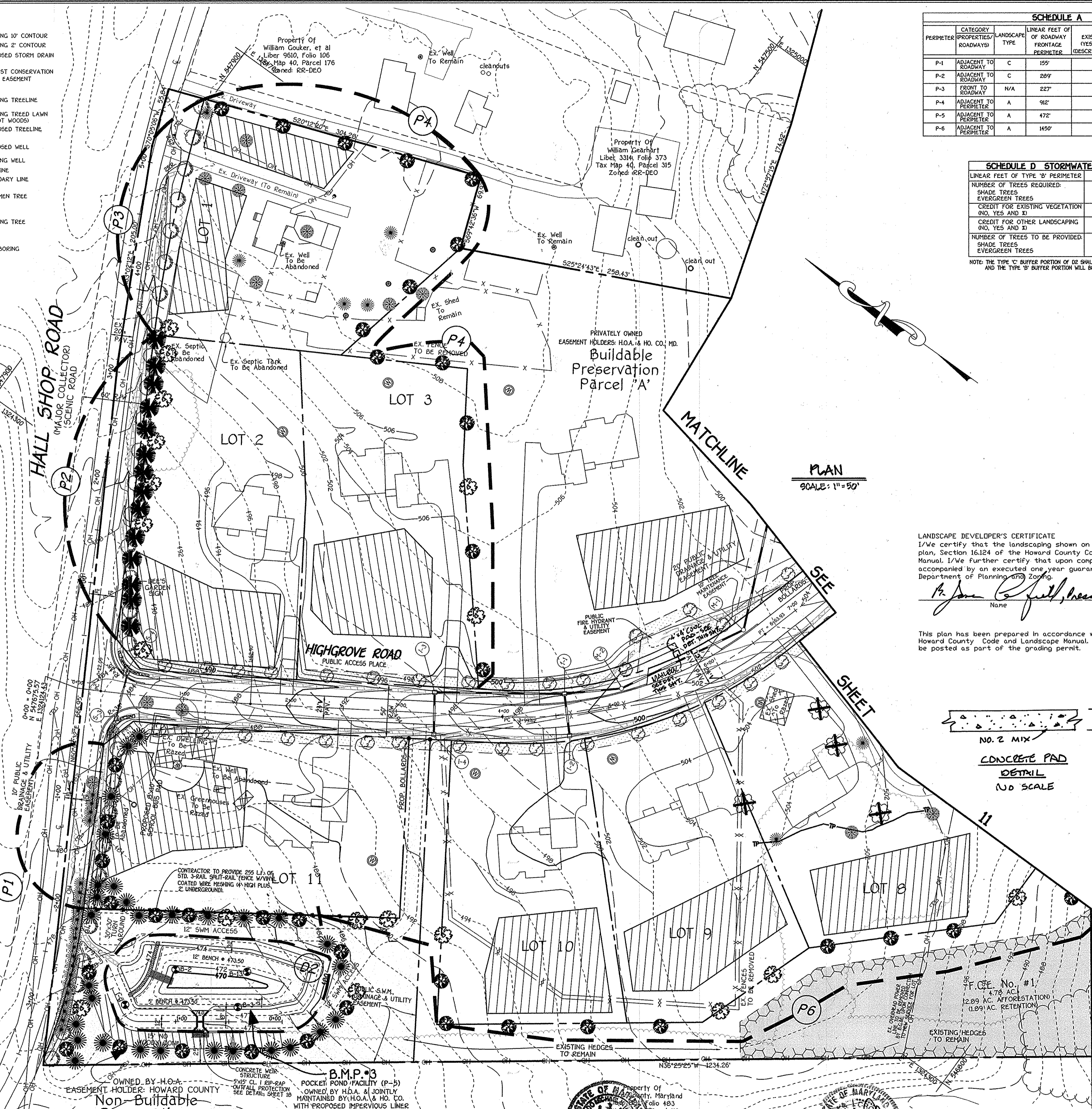
**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**STORM DRAIN PROFILES**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 9 OF 21

F-09-043  
 AS-BUILT

**LEGEND**

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED STORM DRAIN
- FOREST CONSERVATION EASEMENT
- EXISTING TREELINE
- EXISTING TREED LAWN (NOT WOODS)
- PROPOSED TREELINE
- PROPOSED WELL
- EXISTING WELL
- LOT LINE
- BOUNDARY LINE
- SPECIMEN TREE
- EXISTING TREE
- SOIL BORING



SCHEDULE A PERIMETER LANDSCAPE EDGE						
PERIMETER	CATEGORY	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BARRIER (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED AND PROVIDED
						SHADE TREES
P-1	ADJACENT TO ROADWAY	C	155'	NO	NO	4
P-2	ADJACENT TO ROADWAY	C	289'	NO	NO	7
P-3	FRONT TO ROADWAY	N/A	227'	NO	NO	14
P-4	ADJACENT TO PERIMETER	A	92'	NO	NO	15
P-5	ADJACENT TO PERIMETER	A	472'	NO	NO	8
P-6	ADJACENT TO PERIMETER	A	1450'	NO	NO	24

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William R. M... 5-26-09*  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Andy Hannah 6/4/09*  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris... 6/2/09*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING					
LINEAR FEET OF TYPE 'B' PERIMETER	DI 500'	DI TYPE 'C' = 549'	DI TYPE 'C' = 155'	DI 250'	
NUMBER OF TREES REQUIRED:		TYPE 'C'	TYPE 'B'		
SHADE TREES	12	4	14	5	
EVERGREEN TREES	15	11	14	6	
CREDIT FOR EXISTING VEGETATION (NO, YES AND #)	NO	NO	NO	NO	
CREDIT FOR OTHER LANDSCAPING (NO, YES AND #)	NO	NO	NO	NO	
NUMBER OF TREES TO BE PROVIDED:		TYPE 'C'	TYPE 'B'		
SHADE TREES	12	4	14	5	
EVERGREEN TREES	15	11	14	6	

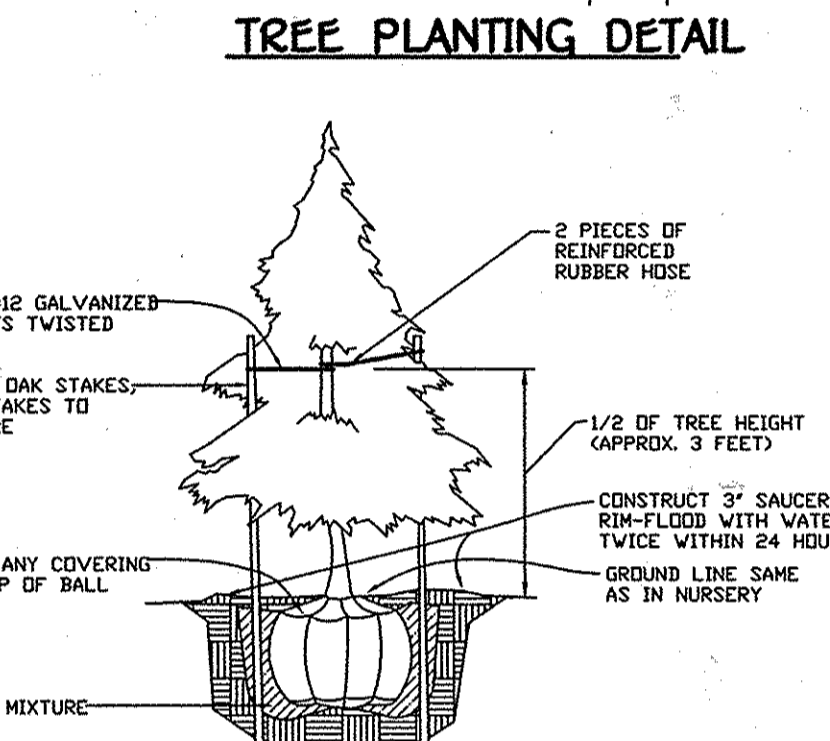
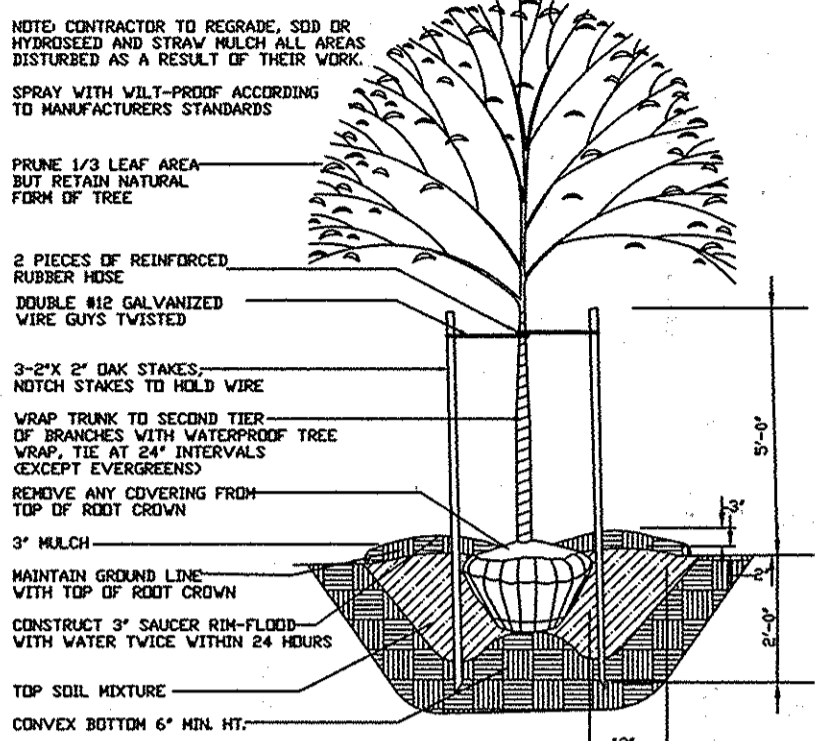
NOTE: THE TYPE 'C' BUFFER PORTION OF DI SHALL BE PLANTED ALONG HALL SHOP ROAD AND THE TYPE 'B' BUFFER PORTION WILL BE EVENLY DISTRIBUTED AROUND THE REMAINING SIDES.

PLANT LIST			
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
○	62	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2'-3" CAL.
○	28	QUERCUS ALUTISSIMA SAWTOOTH OAK	2 1/2'-3" CAL.
○	51	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.
○	14	LLEX OPACA AMERICAN HOLLY	5' - 6' HT.

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 90 SHADE & 65 EVERGREEN TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$36,750.00.

LANDSCAPE 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 executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.  
*John... 5/12/09*  
 Name Date

This plan has been prepared in accordance with the provision of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required landscaping will be posted as part of the grading permit.



**PLANTING SPECIFICATIONS**

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, larvae and all forms of insect infestations or objectionable infestations. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug or heeled-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", hereinafter "Landscape Guidelines" approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all amendments.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

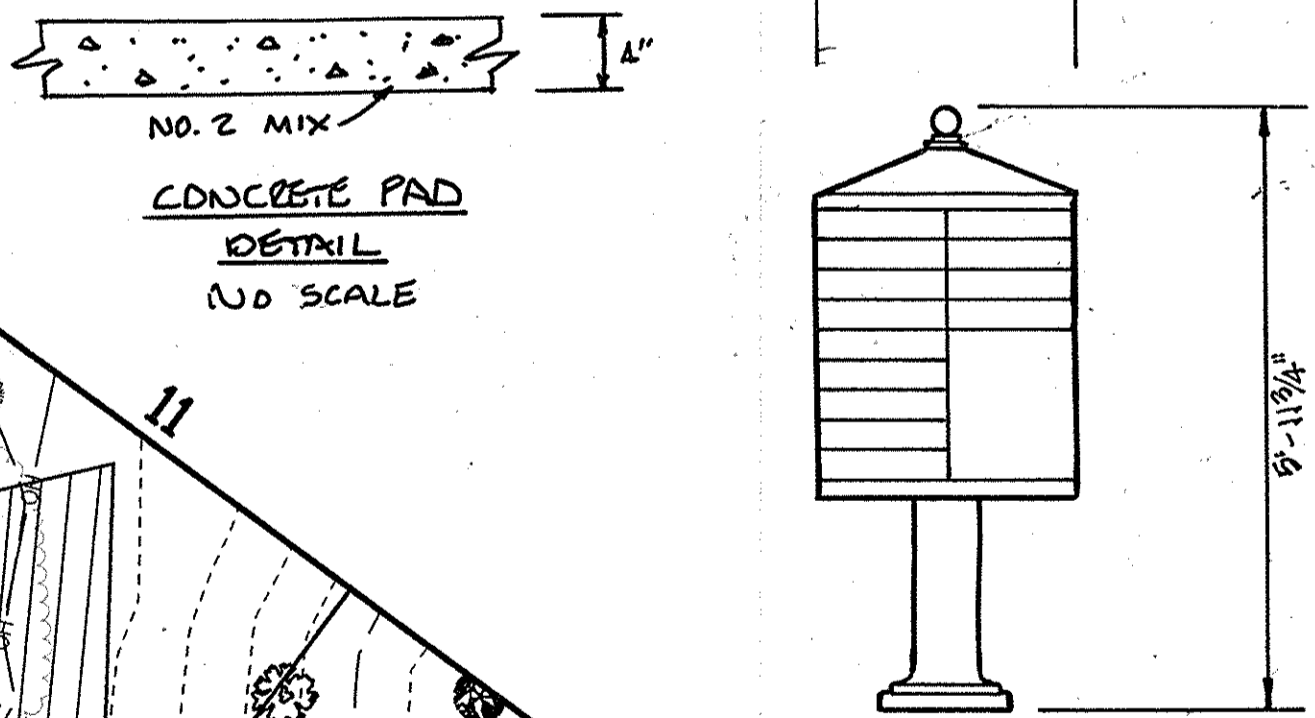
Positive drainage shall be maintained in planting beds 2 percent slope.

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure, add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

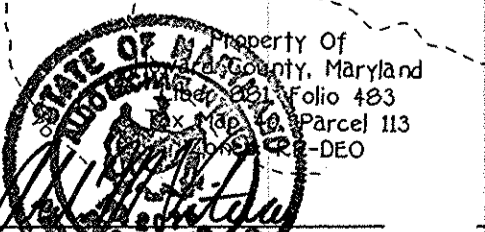
All areas within contract limits disturbed during or prior to construction not designated to receive plants and which shall be fine graded and seeded.

This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.



SALESBURY REVENUE DEPARTMENTAL MAIL BOX DETAIL NOT TO SCALE

1	REMOVE FIRE TANK, ADD COMMUNITY MAIL BOX & ADD MAILBOX DETAIL	6/29/09
2	REVISION	DATE



Professional Engineer. I hereby certify that these documents were prepared, approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20748, Expiration Date: February 22, 2011.

**OWNER**  
 M. CHARLOTTE POWELL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
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**DEVELOPER**  
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 (410) 324-4732

**LANDSCAPE PLAN**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 50'  
 DATE: MAY 11, 2009  
 SHEET 10 OF 21

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 18275 BALTIMORE NATIONAL FREE  
 ELICOTT CITY, MARYLAND 21042  
 (800) 488-2899

TEMPORARY SEDIMENT BASIN No 1  
**B.M.P.#1**  
 MICROPOOL EXTENDED  
 DETENTION POND (P-1)  
 HAZARD CLASS 'A'  
 OWNED BY H.O.A. & JOINTLY  
 MAINTAINED BY H.O.A. & HO. CO.

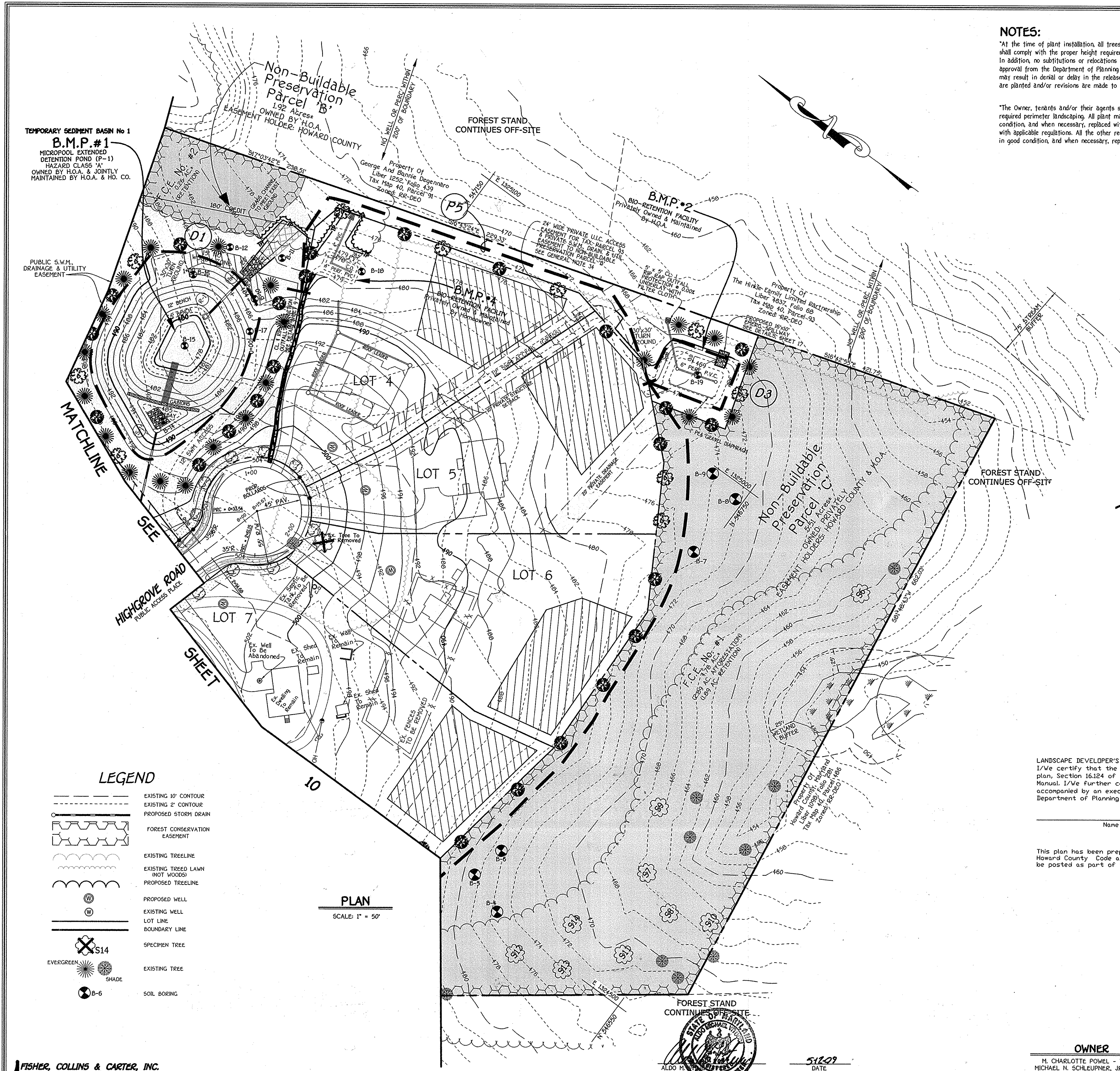
PUBLIC S.W.M.  
 DRAINAGE & UTILITY  
 EASEMENT

MATCHLINE  
 SEE  
 HIGHGROVE ROAD  
 PUBLIC ACCESS PLACE  
 SHEET

**LEGEND**

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED STORM DRAIN
- FOREST CONSERVATION EASEMENT
- EXISTING TREELINE
- EXISTING TREET LAWN (NOT MOVED)
- PROPOSED TREELINE
- PROPOSED WELL
- EXISTING WELL
- LOT LINE
- BOUNDARY LINE
- SPECIMEN TREE
- EVERGREEN
- SHADE
- SOIL BORING

**PLAN**  
 SCALE: 1" = 50'



**NOTES:**

"At the time of plant installation, all trees listed and approved on the landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations 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 road drawing plans."

"The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. 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."

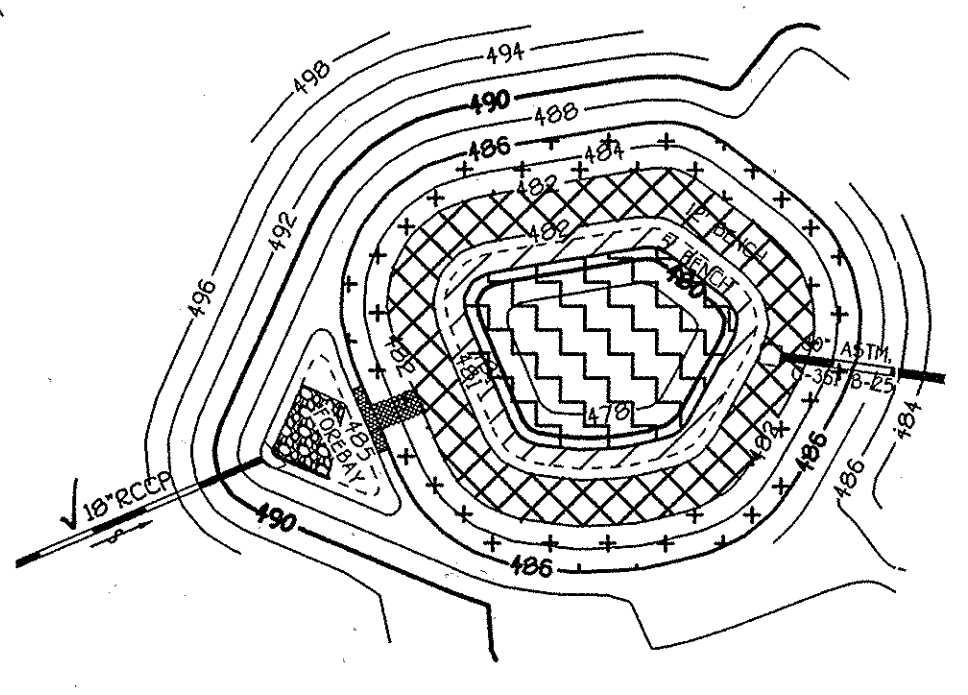
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William F. McMillan* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy L. Smith* 6/4/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris Dammann* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PLANT LIST			
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	61	ACER RUBRUM "OCTOBER GLOOM" RED MAPLE	2 1/2 - 3" CAL.
	28	QUERCUS ACUTISSIMA SAWTOOTH OAK	2 1/2 - 3" CAL.
	51	PINUS STROBUS EASTERN WHITE PINE	6' - 8" HT.
	14	LLEX OPACA AMERICAN HOLLY	5' - 6" HT.

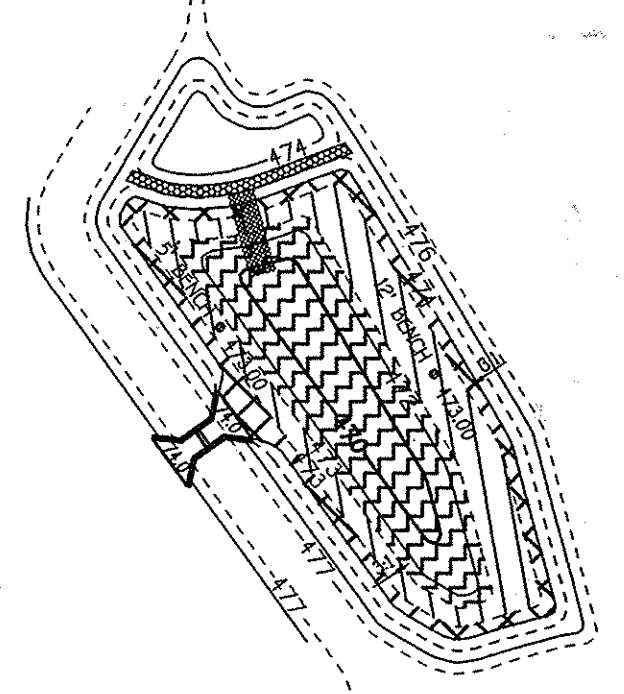
"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 89 SHADE & 65 EVERGREEN TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$36,450.00.

**INTERNAL POND PLANT LIST**

- ZONE 4**  
 REPAIR FRINGE  
 1' - 4' ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT AREA w/ CONEFLOWERS, VIOLETS, PEPPERS, MILKWORT, HANDBERRY, LILIES, FLATSEDGE, HOLLIES OR LOWGRASS QUANTITY - N/A SPACING - N/A
- ZONE 3**  
 SHORELINE FRINGE  
 0' - 12" ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT BENCH AREA w/ THE FOLLOWING INVENTORY: VITICORAZEL & WINTERBERY QUANTITY - 35 EACH SPACING - 12" MAX.
- ZONE 2**  
 SHALLOW WATER BENCH  
 0' - 12" ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ ARROW ARUM, DUCK POTATO OR BUSHY BEARDGRASS QUANTITY - N/A SPACING - N/A
- ZONE 1**  
 DEEPWATER POOL  
 1' - 3' ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ LOTUS, WILD CELERY OR REDHEAD GRASS QUANTITY - N/A SPACING - N/A



**BMP No. 1 INTERNAL LANDSCAPING**  
 SCALE: 1" = 50'



**BMP No. 3 INTERNAL LANDSCAPING**  
 SCALE: 1" = 50'

LANDSCAPE 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 executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

None Date

This plan has been prepared in accordance with the provision of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required landscaping will be posted as part of the grading permit.

**NOTE:**  
 SEE SHEET 17 FOR INTERNAL LANDSCAPING OF B.M.P. Nos. 2 & 4

**LANDSCAPE PLAN**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 50' DATE: MAY 11, 2009  
 SHEET 11 OF 21

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALDORNE NATIONAL FEE  
 ELKLOTT CITY, MARYLAND 21042  
 (410) 461-2000

**STATE OF MARYLAND**  
 ALDO M. ...  
 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. 20748, Expiration Date: February 22, 2011.

**OWNER**  
 M. CHARLOTTE POWEL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter R. Marshall* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cathy Hanna* 6/1/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*William J. Jamerson* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**LOG OF BORING NO. B-01** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 7.0 6.7

GROUND SURFACE ELEVATION: 476.3  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	10	4-4	8	476.3	0	SM		Dark brown, moist, loose, Silty SAND, trace Organics.	Water Not Encountered During Drilling.
					474.3		CL		Brownish Red, moist, very stiff, Sandy Lean CLAY with trace Gravel.	
2	2.5	13	6-13	21	474.3				AASHTO: A-5	
3	5.0	16	10-13-14	27	471.5	6	SM		Brownish Red, moist, medium dense, Silty SAND.	
					471.5				AASHTO: A-2-4	
4	8.5	16	7-14-15	29	468.3	10			Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-02** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 8.5

GROUND SURFACE ELEVATION: 477.0  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	17	3-4.5	9	477.0	0	SM		Brown, moist, loose, Silty SAND, trace Organics.	Water Not Encountered During Drilling.
					475.0		CL		Brown, moist, stiff, Sandy Lean CLAY.	
2	2.5	10	2-8	11	475.0				AASHTO: A-6	
3	5.0	16	4-9	18	472.5	5	SM		Brown with reddish brown and gold mottles, moist to very moist, medium dense, micaceous Silty SAND.	
					472.5				AASHTO: A-2-4	
4	8.5	16	8-10	18	467.0	10			Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-03** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 7.5 7.3

GROUND SURFACE ELEVATION: 476.3  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	12	4-3.5	8	476.3	0	ML		Reddish brown, moist, loose, Sandy SILT, trace Organics.	Water Not Encountered During Drilling.
					474.3		SM		Dark brown, moist, loose, Silty SAND, occasional Root Fiber.	
2	2.5	15	4-3	6	474.3				AASHTO: A-2-4	
3	5.0	0	7-8	16	470.3	5	SM		Dark brown with gold mottles, medium dense, micaceous Silty SAND.	
					470.3				AASHTO: A-2-4	
4	8.5	16	10-12-12	24	469.3	10			Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-04** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 7.0 7.2

GROUND SURFACE ELEVATION: 475.0  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	11	2-3	7	475.0	0	SM		Dark Brown, moist, loose, Silty SAND, trace Organics.	Water Not Encountered During Drilling.
					473.0		SM		Brown with gold mottles, moist, medium dense, micaceous Silty SAND.	
2	2.5	12	3-4	14	473.0				AASHTO: A-2-4	
3	5.0	14	5-10-11	21	470.5	5	SM		Dark brown with gold mottles, medium dense, micaceous Silty SAND.	
					470.5				AASHTO: A-2-4	
4	8.5	15	3-8	14	468.0	10			Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-05** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 12.0 12.5

GROUND SURFACE ELEVATION: 475.0  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	10	2-4	6	475.0	0	SM		Dark brown, moist, loose, Silty SAND, trace Organics, trace Rock Fragments.	Water Not Encountered During Drilling.
					476.0		SM		Reddish brown with gold mottles, moist, medium dense, micaceous, Silty SAND, some Organics.	
2	2.5	14	3-6	14	476.0				AASHTO: A-2-4	
3	5.0	13	3-5	11	473.5	5	SM		Dark brown with gold and black mottles, moist, medium dense, micaceous, Silty SAND, occasional Root Fiber.	
					473.5				AASHTO: A-2-4	
4	8.5	16	6-10	18	468.0	10			Bottom of Hole at 10.0 Feet.	
5	13.5	17	4-11	17	463.0	15			Bottom of Hole at 15.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-06** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 081916  
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL:  Dry  Dry    
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 9.0

GROUND SURFACE ELEVATION: 474.9  
 DATUM: Survey  
 EQUIPMENT: SIMCO 2800  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikkis

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOW/6 INCHES	N (blows/ft)	ELEVATION (ft)	DEPTH (ft)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
1	0.0	6	2-3	6	474.9	0	SM		Dark brown, moist, loose, Silty SAND, trace Organics and Rock Fragments.	Water Not Encountered During Drilling.
					472.0		SM		Dark brown with black and gold mottles, moist, medium dense to loose, micaceous Silty SAND.	
2	2.5	0	6-11	16	472.0				AASHTO: A-2-4	
3	5.0	2	6-7	15	470.0	5			Bottom of Hole at 10.0 Feet.	
4	8.5	14	3-4	7	464.9	10			Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10732 BALTIMORE NATIONAL PkE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2899

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 M. VRIKKIS  
 I hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20740, Expiration Date: February 22, 2011.  
 DATE: 5/20/09

**OWNER**  
 M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**SOIL BORINGS**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

ZONED: RR-DEO  
 TAX MAP: 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 12 OF 21

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-09-043

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter Z. Unkoff* 5-26-09  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cathy Hamant* 6/4/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris Dammann* 6/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**LOG OF BORING NO. B-07** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 7.0 7.5

GROUND SURFACE ELEVATION: 474.8  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	8	3-5.3	5	474.8	SM	Dark brown, moist, loose, Silty SAND, trace Organics and Rock Fragments.	Water Not Encountered During Drilling.
					472.5		AASHTO: A-2-4	
2	2.5	13	4-7	13		SM	Light brown, tan and dark yellow, moist, medium dense, Silty SAND.	
							AASHTO: A-2-4	
3	5.0	15	3-7	15		SM	Brownish red, moist, medium dense, Silty SAND.	
					467.8		AASHTO: A-2-4	
4	8.5	17	3-10	18	464.8	SM	Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-08** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 7.7

GROUND SURFACE ELEVATION: 472.5  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	8	3-4	7	472.5	SM	Dark brown, moist, loose, Silty SAND, trace Organics and Rock Fragments.	Water Not Encountered During Drilling.
					471.0	CL	AASHTO: A-2-4 Reddish brown, moist, stiff, Sandy Lean CLAY, occasional Root Fiber.	
2	2.5	14	3-6	10		SM	AASHTO: A-6 Brown and tan, moist, medium dense, Silty SAND.	
3	5.0	15	3-7	13		SM	AASHTO: A-2-4 Tan, light pink and white, moist, medium dense, Silty SAND.	
4	8.5	13	5-6	11		SM	AASHTO: A-2-4 Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-09** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 7.0 7.8

GROUND SURFACE ELEVATION: 474.7  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	11	3-4	7	474.7	SM	Dark brown, moist, loose, Silty SAND, trace Organics, trace Rock Fragments.	Water Not Encountered During Drilling.
					472.7		AASHTO: A-2-4	
2	2.5	14	3-8	14		SM	Brownish red, moist, medium dense, Silty SAND.	
					470.2		AASHTO: A-2-4	
3	5.0	12	3-7	11		SM	Brownish gray with light pink and tan mottles, moist, medium dense, Silty SAND.	
					464.7		AASHTO: A-2-4	
4	8.5	14	3-8	12		SM	Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-10** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 7.3

GROUND SURFACE ELEVATION: 481.7  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	9	5-7	13	481.7	SM	Dark brown, moist, medium dense, Silty SAND, some Organics.	Water Not Encountered During Drilling.
					479.7	ML	AASHTO: A-2-4 Dark brown, moist, very stiff, Sandy SILT. A few thin Rocks and occasional Rock Fragments.	
2	2.5	13	5-8	9		SM	AASHTO: A-4 Dark brown with gold mottles, moist, loose, micaceous Silty SAND.	
3	5.0	3	7-9	17		SM	AASHTO: A-2-4 Dark brown with black and gold mottles, moist, medium dense, micaceous, Silty SAND.	
4	8.5	18	7-8	15		SM	AASHTO: A-2-4 Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-11** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 7.2

GROUND SURFACE ELEVATION: 480.4  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	15	3-6	9	480.4	CL	Brown, moist, medium stiff, Sandy Lean CLAY.	Water Not Encountered During Drilling.
					478.4	SM	AASHTO: A-6 Dark brown, moist, loose, Silty SAND.	
2	2.5	12	6-4	7		SM	AASHTO: A-2-4 Brown, moist, stiff, Sandy SILT occasional Rock Fragments.	
3	5.0	15	10-7	11		ML	AASHTO: A-4 Brown, light pink and tan, moist, medium dense, Silty SAND.	
4	8.5	18	7-8	15		SM	AASHTO: A-2-4 Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

**LOG OF BORING NO. B-12** Sheet 1 of 1

PROJECT: Hall Shop Road - SWM  
 PROJECT NO: 061516  
 PROJECT LOCATION: Howard County, Maryland

WATER LEVEL:  Dry  Dry   
 DATE: 12/21/06 12/22/06  
 CAVED (ft): 8.0 9.4

GROUND SURFACE ELEVATION: 481.5  
 DATE STARTED: December 21, 2006  
 DATE COMPLETED: December 21, 2006  
 DRILLING CONTRACTOR: Earth Matters  
 DRILLER: Bruce/Paul  
 LOGGED BY: Bruce/Paul  
 CHECKED BY: M. Vrikids

EQUIPMENT: SIMCO 2800  
 SAMPLING METHOD: Split Spoon

SAMPLE NUMBER	SAMPLE DEPTH (ft)	SAMPLE RECOVERY (%)	SAMPLE BLOWER INCHES	N (blow/ft)	ELEVATION (ft)	USCS	DESCRIPTION	REMARKS
1	0.0	18	8-8	11	481.5	SC	Brown, moist, medium dense, Clayey SAND.	Water Not Encountered During Drilling.
					479.5	SC	AASHTO: A-2-6 Brown, moist, medium dense, Clayey SAND, occasional Rock Fragments.	
2	2.5	12	7-12	28		SM	AASHTO: A-2-6 Black and gold, moist, medium dense, micaceous Sandy SILT.	
3	5.0	10	32-14	19		ML	AASHTO: A-4 Brown, tan and black, moist, medium dense, Silty SAND.	
4	8.5	18	14-11-18	23		SM	AASHTO: A-2-4 Bottom of Hole at 10.0 Feet.	

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive, Suite A  
 Laurel, MD 20707

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 10772 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 4109 401 - 3999

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 M. VRIKIDS  
 512-09  
 I hereby certify that these documents were prepared, checked, and sealed by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20745, Expiration Date: February 22, 2011.

**OWNER**  
 M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**SOIL BORINGS**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-800  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 13 OF 21

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-09-043

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- 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 adequate to produce vegetative growth. b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients. c. The original soil to be vegetated contains material toxic to plant growth. d. The soil is so acidic that treatment with limestone is not feasible.

- II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.

- II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter. ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified. iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

- II. For sites having disturbed areas over 5 acres:

- i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- III. For sites having disturbed areas over 5 acres:

- i. On soil meeting Topsoil specifications, obtain test results dictating 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 tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher. b. Organic content of topsoil shall be not less than 1.5 percent by weight. c. Topsoil having soluble salt content greater than 500 parts per million shall not be used. d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days minimum) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- V. Topsoil Application

- i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins. ii. Grades on the areas to be top soiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation. iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06. b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use. c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet. iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

Reference: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

VEGETATIVE STABILIZATION DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff. Infiltration, evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during seeding, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. Site Preparation

- i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins. ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding. iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

- B. Soil Amendments (Fertilizer and Lime Specifications)

- i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses. ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warranty of the producer. iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve. iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- C. Seedbed Preparation

- i. Temporary Seeding a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (grades steeper than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope. b. Apply fertilizer and lime as prescribed on the plans. c. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means. ii. Permanent Seeding a. Minimum soil conditions required for permanent vegetative establishment: 1. Soil pH shall be between 6.0 and 7.0. 2. Soluble salts shall be less than 500 parts per million (ppm). 3. The soil shall contain less than 40% cbr, but enough fine grained material (<30% silt plus clay) to provide adequate moisture. An exception is if leucoparia or sercia lespedeza is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable. 4. Soil shall contain 15% minimum organic matter by weight. 5. Soil must contain sufficient pore space to permit adequate root penetration. 6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil. b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope. c. Apply soil amendments as per soil test or as included on the plans. d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-2" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

- D. Seed Specifications

- i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed shall be tested within the 6 months immediately preceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used. ii. Inoculant - The inoculant for treating the seed in the seed or a culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. The inoculant should be directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

- E. Methods of Seeding

- i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cutpacker seeder. a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen, maximum of 100 lbs. per acre total of soluble nitrogen; 200 phosphorous; 200 lbs/acre; 120 potassium; 200 lbs/acre. b. Lime - use only ground agricultural limestone. Up to 2 tons per acre may be applied by hydroseeding. Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding. c. Seed and fertilizer shall be mixed on site and done immediately and without interruption. ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders. a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 25 or 26. The seeded area shall then be rolled with a modified roller or other suitable good seed to soil contact. b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction. iii. Drill or Cutpacker Seeding: Mechanized seeders that apply and cover seed with soil. a. Cutpacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting. b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

- F. Mulch Specifications (In order of preference)

- i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law. ii. Wood Cellulose Fiber Mulch (WCFM) a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state. b. WCFM shall be dried green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. c. WCFM including dye shall contain no germination or growth inhibiting factors. d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with water, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings. e. WCFM material shall contain no elements or compounds of concern to plants that will be phytotoxic. f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm, diameter approximately 1 mm, pH range of 4.0 to 8.5, ash content of 10% maximum and water holding capacity of 90% minimum. iii. Note: Only sterile straw mulch should be used in areas where one species of grass is desired. iv. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding. i. If grading is completed outside of the seeding season returns and seeding can be performed in accordance with these specifications. ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2-3 tons/acre.

- iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

- iv. Secure Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard: a. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor the mulch into the soil surface a minimum of two (2) inches. This practice is most applicable to flatter slopes where equipment can operate safely. b. This practice should be used on the contour if possible.

- ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

- iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crests of dikes. The remainder of area should be applied uniformly after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroseal, Terra Tack II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

- iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300' to 3,000 feet long.

- I. Incremental Stabilization - Cut Slopes

- i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

- ii. Construction sequence (Refer to Figure 3 below): a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation. b. Perform Phase 1 excavation, dress and stabilize. c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary. d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

- iii. Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.

- J. Incremental Stabilization of Embankments - Fill Slopes

- i. Embankments shall be constructed in lifts as prescribed on the plans. ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15' or when the grading operation ceases as prescribed in the plans.

- iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

- iv. Construction sequence (Refer to Figure 4 below): a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area. b. Place Phase 1 embankment, dress and stabilize. c. Place Phase 2 embankment, dress and stabilize. d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

- v. Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.

- SECTION 2 - TEMPORARY SEEDING

- Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

- A. Seed mixtures - Temporary Seeding

- i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 2) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans. ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Table with 7 columns: Seed Mixture (Hardiness Zone), Application Rate (lb/acre), Seeding Dates, Seeding Depth, Fertilizer Rate (lb/acre), Lime Rate, and Notes.

SECTION 3 - PERMANENT SEEDING

- Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.

- A. Seed mixtures - Permanent Seeding

- i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 2) and enter them in the Permanent Seeding Summary below, along with application rates, seeding dates, seeding depths and seeding depths. If this summary is not put on the plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide, Section 362 - Critical Area Planting. For special lawn maintenance areas, see Sections IV and V of this plan. ii. For sites having disturbed area over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

- iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (50 lbs/acre), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Table with 7 columns: Seed Mixture (Hardiness Zone), Application Rate (lb/acre), Seeding Dates, Seeding Depth, Fertilizer Rate (lb/acre), Lime Rate, and Notes.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN A GRADING PERMIT. (1 DAY)
2. NOTIFY 'MISS UTILITY' AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE STARTING WORK. (3 DAYS)
3. CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE & TREE PROTECTION FENCE. (1 WEEK)
4. INSTALL REMAINING SEDIMENT CONTROL MEASURES, BASIN Nos. 1 & 2, EARTH DIKES AND SILT FENCE AS INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE PROPOSED POND, WHERE NECESSARY, RIPPING AND JACK HAMMING SHOULD BE UTILIZED IN THE EXCAVATION OF EACH FACILITY. (2 WEEKS)
5. OBTAIN PERMISSION OF THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEED. (1 DAY)
6. GRADE SITE TO PROPOSED SUBGRADE AND INSTALL REMAINING STORM SYSTEM, STABILIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF GRADING AS SHOWN ON THESE PLANS. (4 WEEKS)
7. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENTS FROM ALL BASINS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF AN APPROVED SEDIMENT TRAPPING DEVICE. (1 WEEK)
8. INSTALL BASE COURSE FOR THE PROPOSED ROADS. (1 WEEK)
9. ESTABLISH ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTORS TO PROCEED.
10. APPLY TACK COAT TO SUB-BASE AND LAY SURFACE COURSE. (1 WEEK)
11. INSTALL DRIVEWAY APRONS. (2 WEEKS)
12. INSTALL LANDSCAPING. (2 WEEKS)
13. UPON COMPLETION, CONTRACTOR SHALL CONVERT SEDIMENT BASINS Nos. 1 & 2 TO PERMANENT STORMWATER MANAGEMENT FACILITY. (2 WEEKS)
(a) FLUSH STORM DRAIN SYSTEM.
(b) REMOVE SEDIMENT THROUGH THE USE OF A REMOVABLE PUMPING STATION AND FILTER BAG.
(c) INSTALL FOREBAY AND BIO-RETENTION FACILITIES.
(d) CONVERT CONTROL STRUCTURES TO PERMANENT: REMOVE TEMPORARY DEWATERING DEVICES, ORIFICE PLATES, ETC.
(e) STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)
14. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE WETLANDS, BUFFERS AND NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT. (2 DAYS)
15. PROVIDE AS-BUILT OF S.W.M. PONDS BMP No. 1 & 2 BMP No. 3. (1 WEEK)

APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: [Signature], DATE: 5-26-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature: [Signature], DATE: 6/4/09

Signature: [Signature], DATE: 6/2/09

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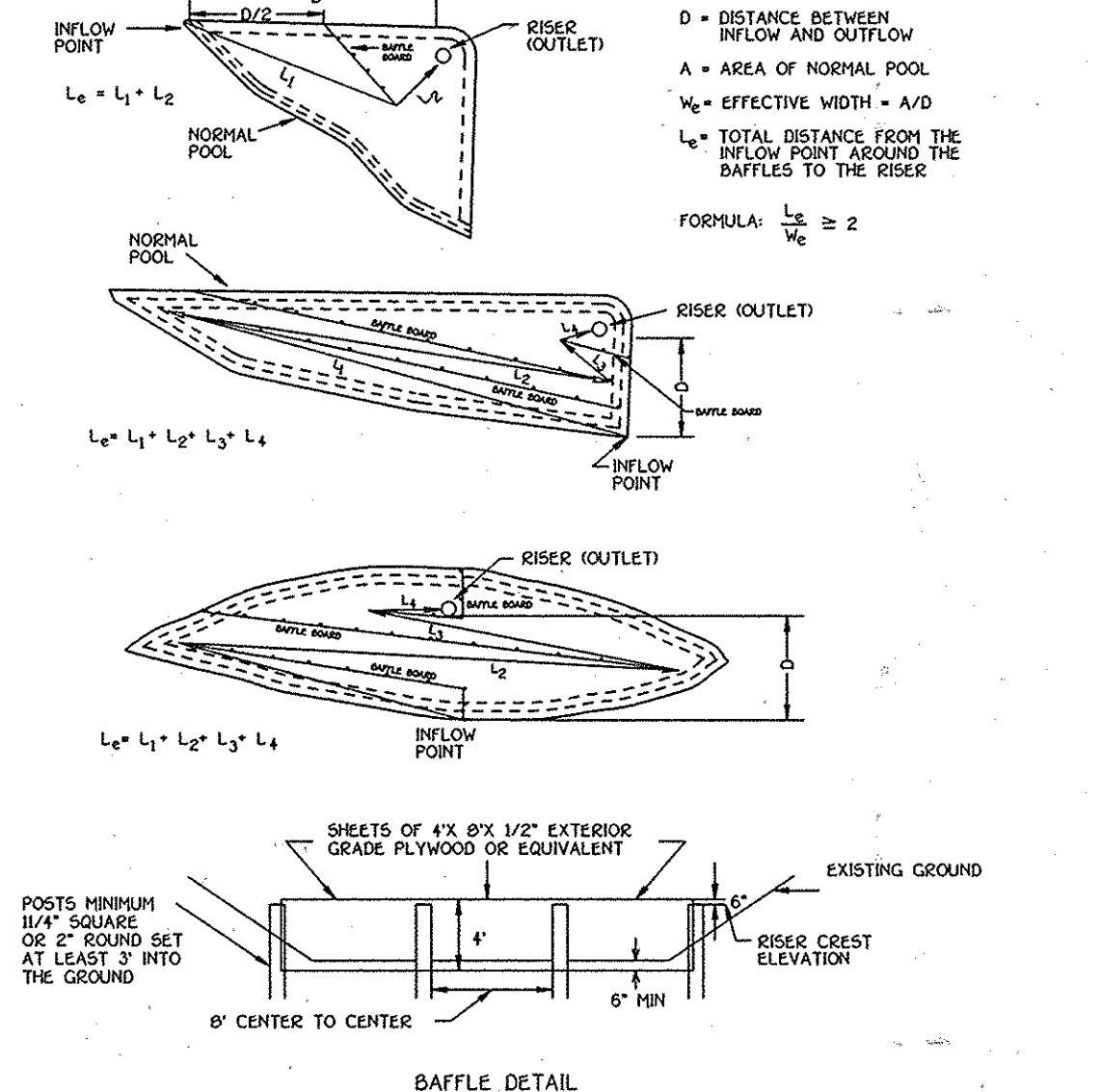
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SEDIMENT BASIN BAFFLES



SEDIMENT CONTROL NOTES

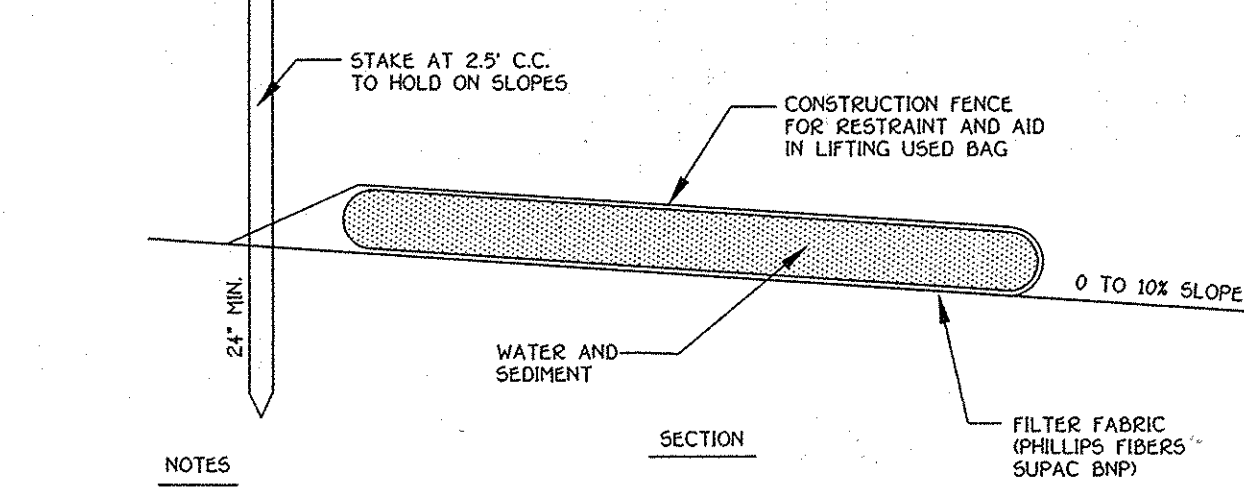
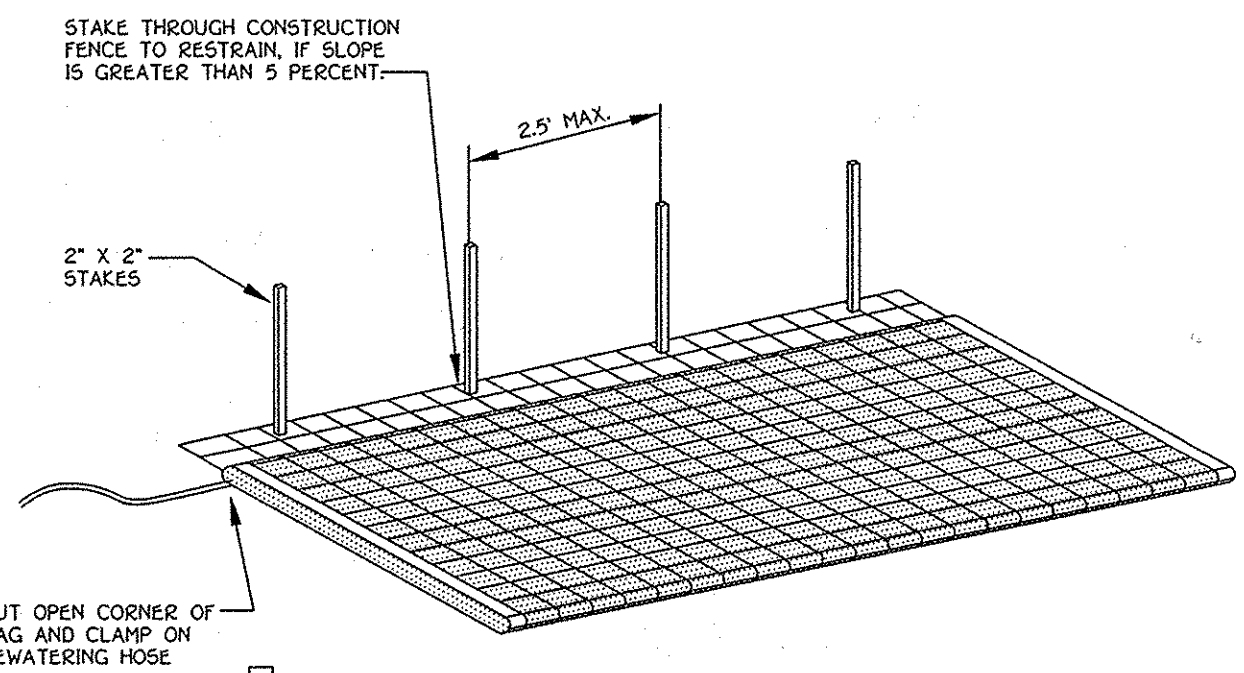
- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERMITS, SEDIMENT CONTROL STRUCTURES, AND ALL DISTURBED AREAS AND ALL SLOPES STEEPER THAN 3:1, BY 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 12 OF THE 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 (SEC. 50), 500 SEC. 54, TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY 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 PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
TOTAL AREA OF SITE: 24,398 ACRES
AREA DISTURBED: 1,921 ACRES
AREA TO BE ROOFED OR PAVED: 2,08 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 11,21 ACRES
TOTAL CULDS: 19,000 CULDS.
TOTAL FULL OFFSITE WASTE/BORROW AREA LOCATION: 19,000 CULDS.
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DETERMINED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMANENT 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 THE 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.

SEDIMENT AND EROSION CONTROL NOTES SCHOOLEY MILL FARM BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

ZONED: RR-20
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: MAY 11, 2009
SHEET 14 OF 21

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

Professional Engineer Seal: [Signature]



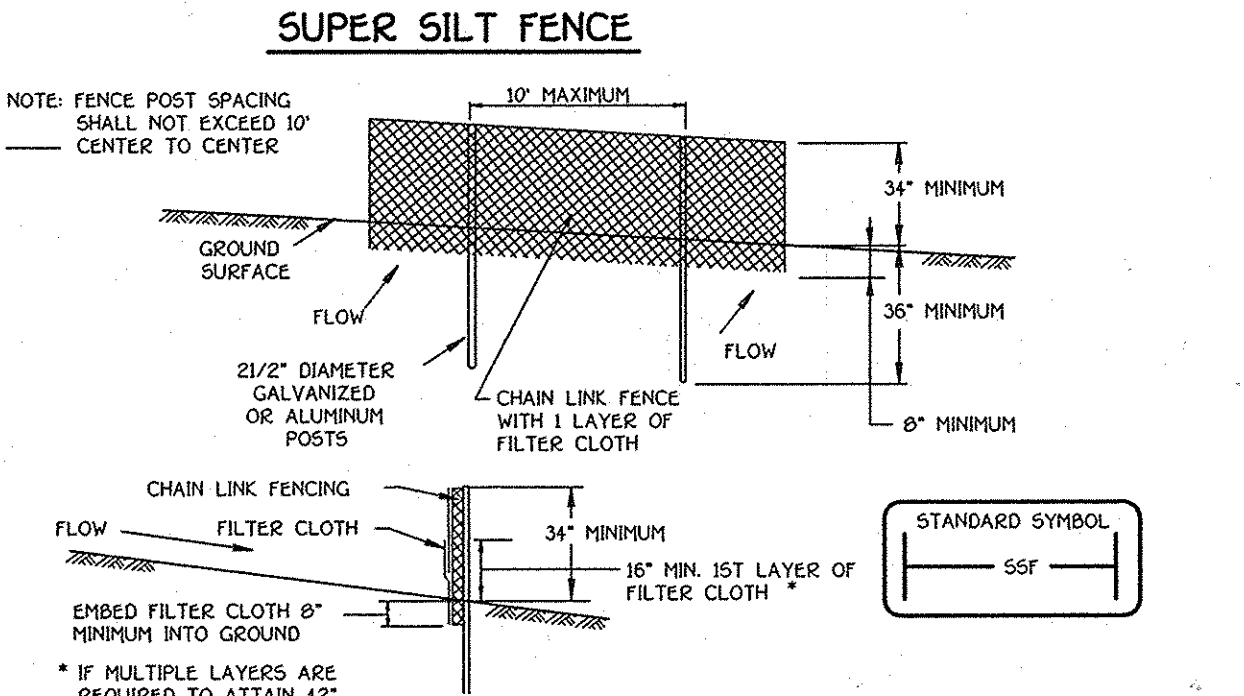
- NOTES
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
  2. WIDTH AND LENGTH SHALL BE AS SHOWN IN THE TABLE.
  3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
  4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
  5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT.
  6. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC. P.O. BOX 810 JOHNSON CITY, NEW YORK 13790 (800) 659-5111	OR	A.C.F. ENVIRONMENTAL 1801-A WILLIS ROAD RICHMOND, VIRGINIA 23237 TOLL FREE 1-800-448-3636	OR	PRICE AND COMPANY, INC. 425 36TH STREET WYOMING, WY 83406 (616) 530-8230
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**FILTER BAG DETAIL**

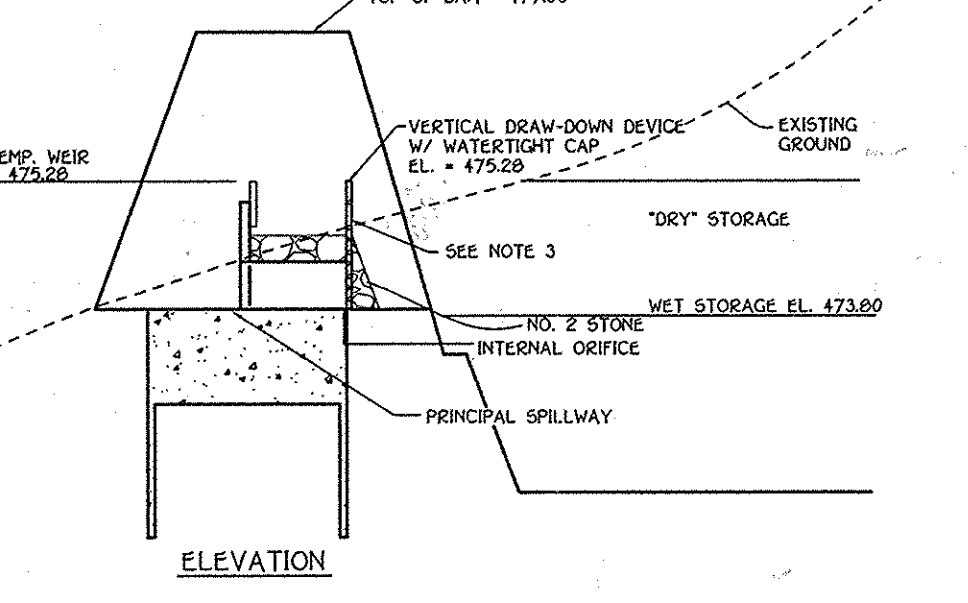
NOT TO SCALE



- Construction Specifications
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
  2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
  3. Filter cloth shall be fastened to the chain link fence with ties spaced every 24" at the top and mid section.
  4. Filter cloth shall be embedded a minimum of 8" into the ground.
  5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
  6. Maintenance shall be performed as needed and silt bulges removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
  7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

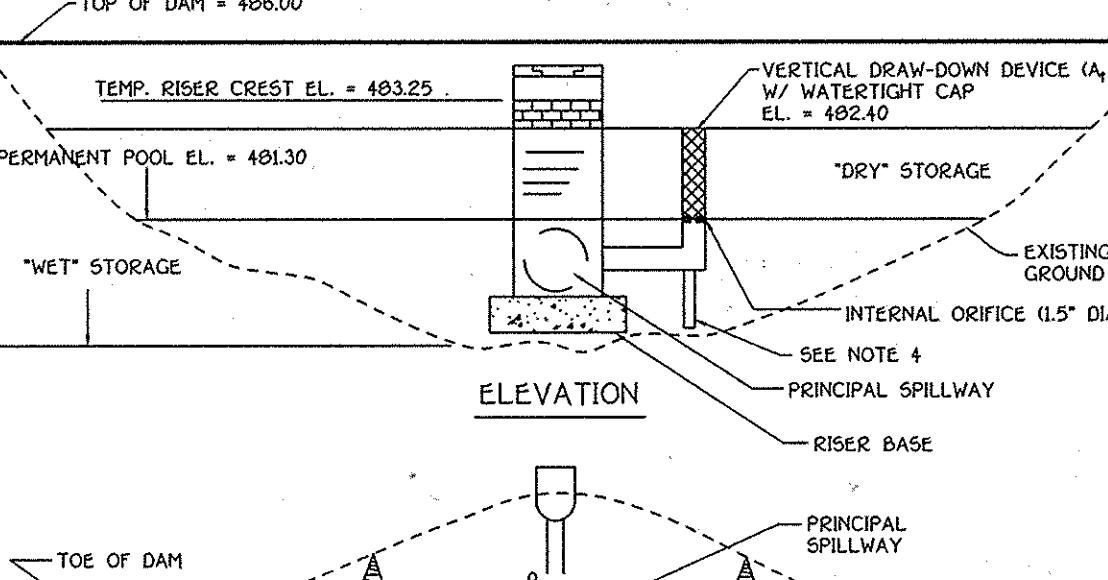
Tensile Strength	50 lbs/in (min)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max)	Test: MSMT 322
Filtering Efficiency	75% (min)	Test: MSMT 322

**MODIFIED MDE STD. DETAIL C-10-30 VERTICAL DRAW-DOWN DEVICE**



- CONSTRUCTION SPECIFICATIONS
1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
  2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
  3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.

**VERTICAL DRAW-DOWN DEVICE**



- CONSTRUCTION SPECIFICATIONS
1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
  2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
  3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
  4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10722 SALTWATER NATIONAL FEE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2995



ALDO M. ...  
Professional Engineer I hereby certify that these documents were prepared and reviewed by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.

51269  
DATE

**OWNER**  
M. CHARLOTTE POWELL - TRUSTEE &  
MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
C/O MR. JAMES GREENFIELD  
LAND HOLDINGS HALL SHOP ROAD, LLC  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

**DEVELOPER**  
MID ATLANTIC DEVELOPMENT COMPANY  
C/O MR. JAMES GREENFIELD  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

**SEDIMENT AND EROSION CONTROL NOTES AND DETAILS**  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

ZONED: RR-DEO  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MAY 11, 2009  
SHEET 15 OF 21

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. ...* 5-26-09  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cheryl ...* 6/14/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

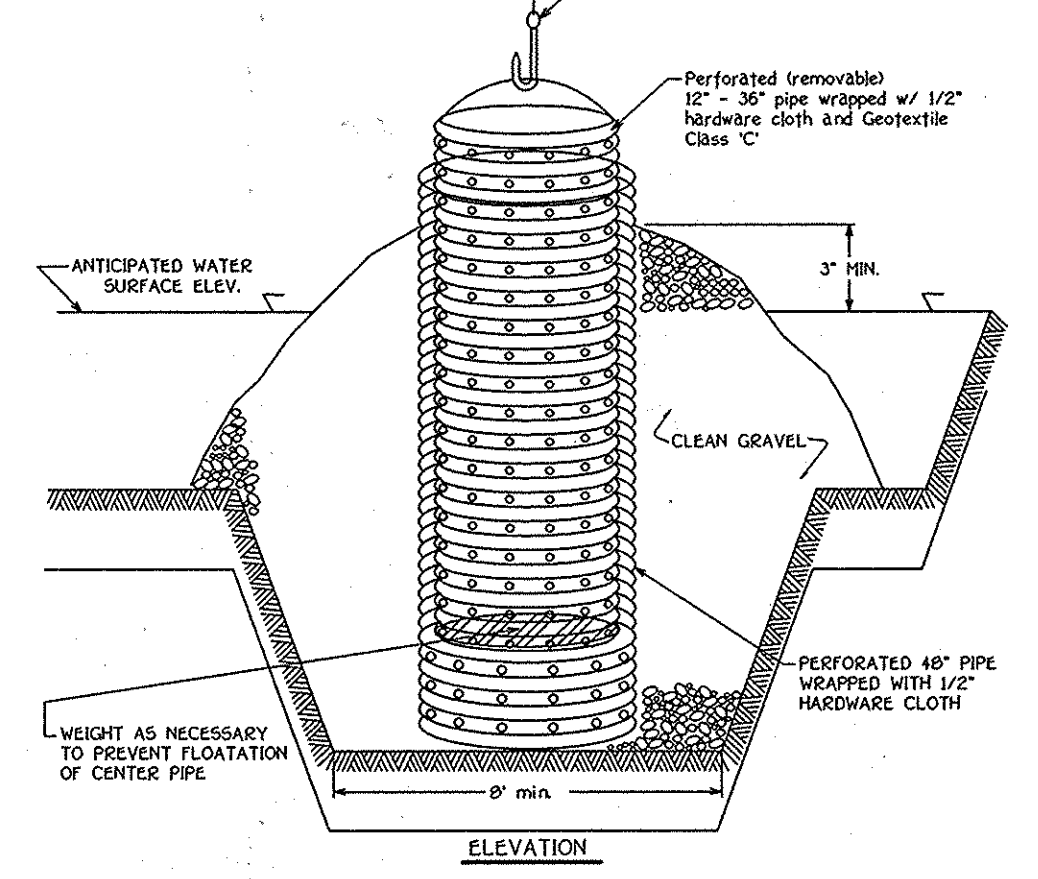
*Chris ...* 6/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ENGINEER'S CERTIFICATE**  
I have prepared this Plan For Erosion And Sediment Control For the above project. This Plan is based on the site conditions and the information provided to me. I have prepared this Plan in accordance with the requirements of the Howard County Soil Conservation District.  
Signature: *...* Date: 5/21/09

**DEVELOPER'S CERTIFICATE**  
I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard County Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary.  
Signature Of Developer: *...* Date: 5/21/09

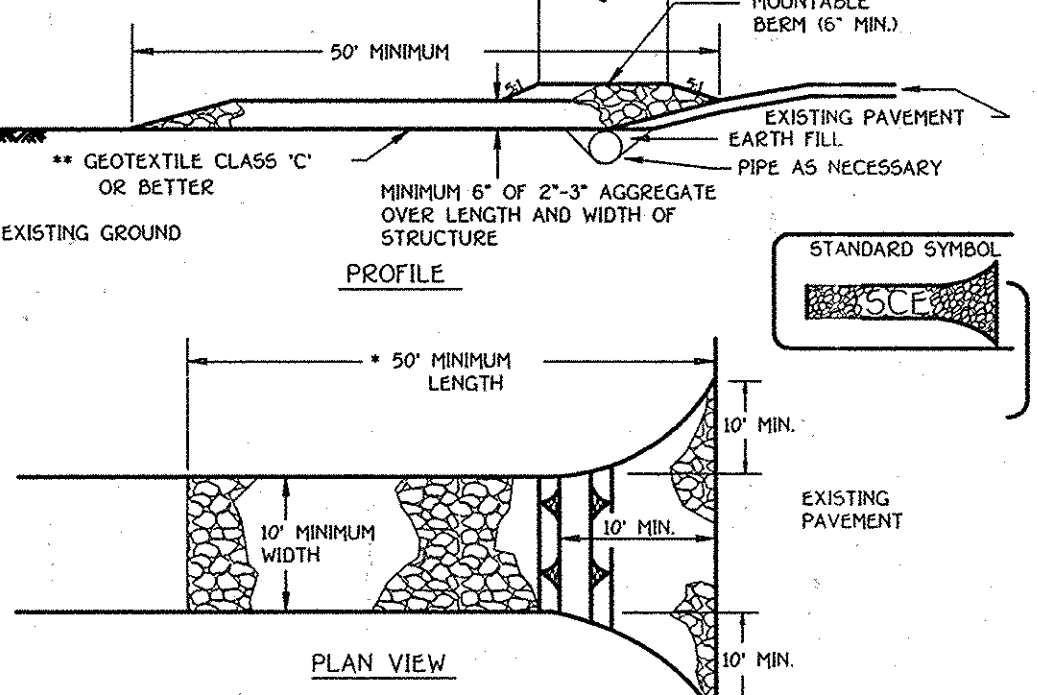
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard County Soil Conservation District.  
District: Howard Soil Conservation Dist. Date: 5/21/09

**REMOVABLE PUMPING STATION**



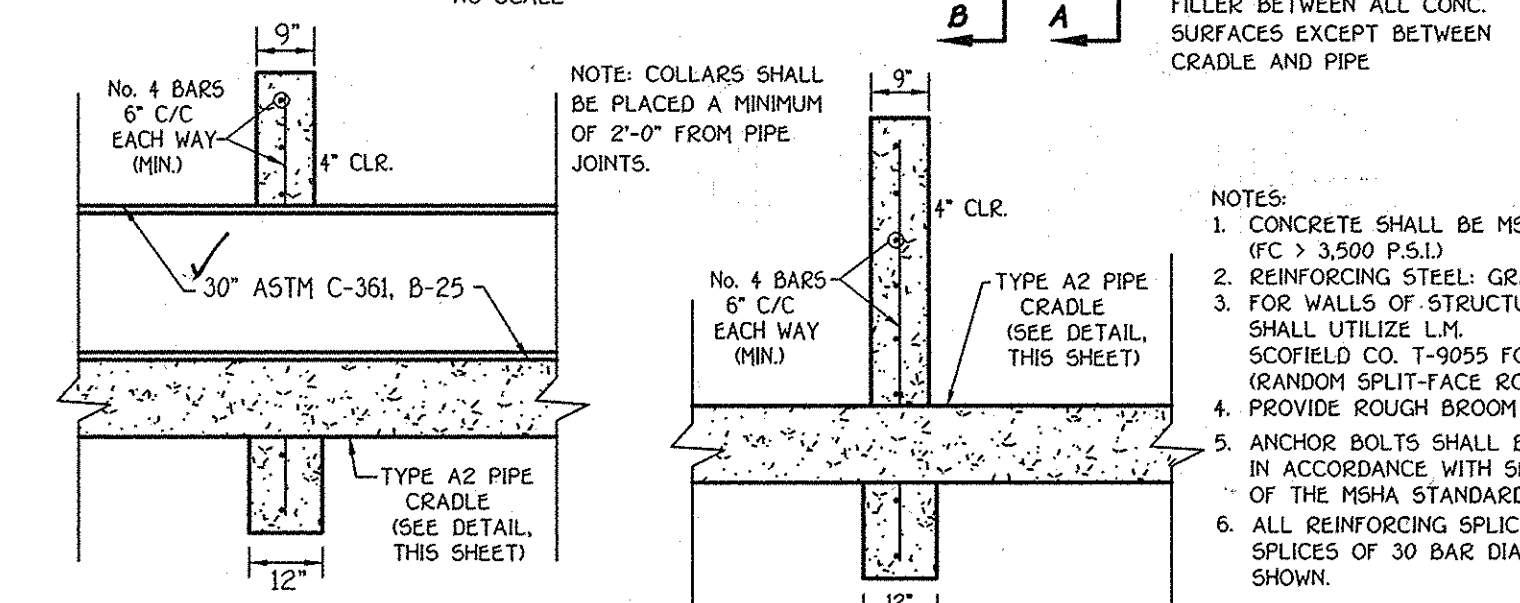
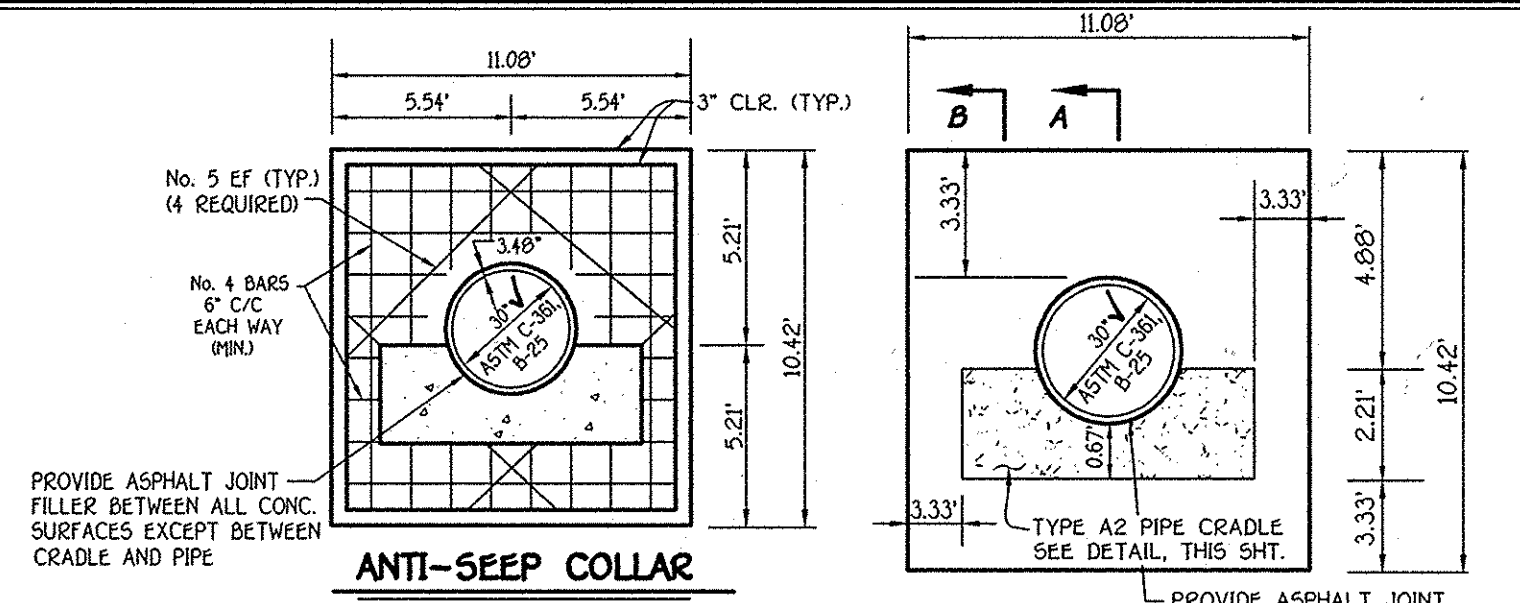
- Construction Specifications
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
  2. After installing the outer pipe, backfill around outer pipe with 2" aggregate.
  3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" x 6" slots or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
  4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

**STABILIZED CONSTRUCTION ENTRANCE**

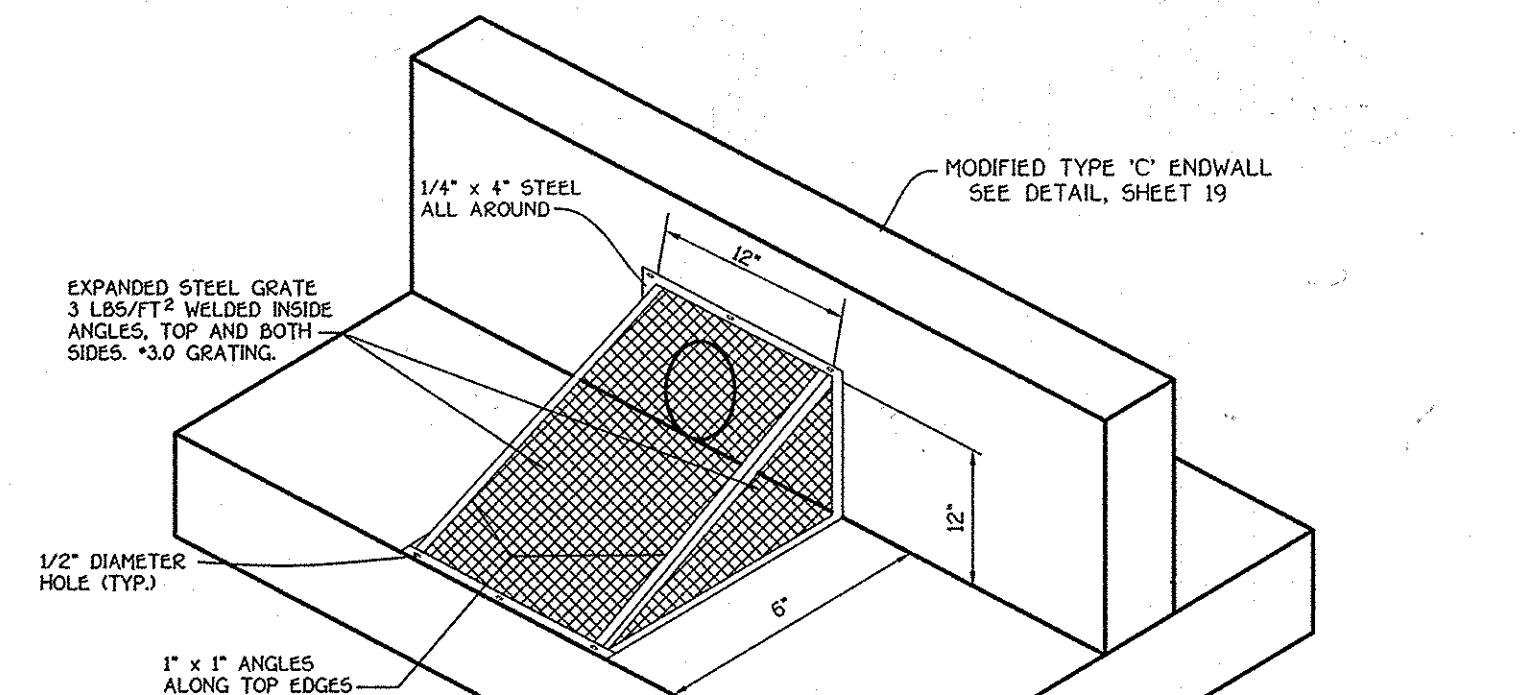


- Construction Specification
1. Length - minimum of 50' (30' for single residence lot).
  2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
  4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
  6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

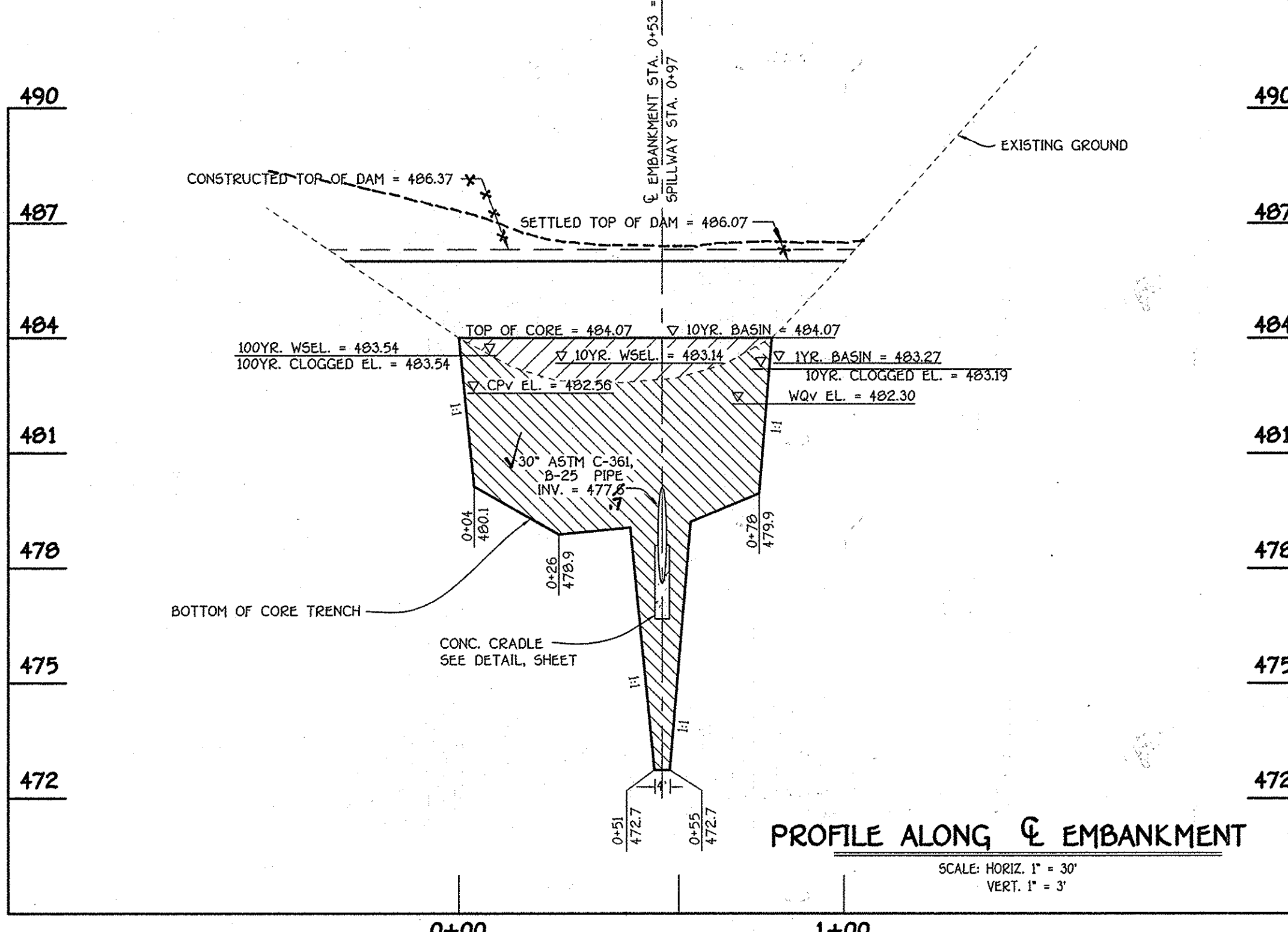
THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-09-043



SECTION 'A-A' SECTION 'B-B'  
TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR  
NO SCALE



EXPANDED METAL TRASH RACK  
NOT TO SCALE



PROFILE ALONG EMBANKMENT  
SCALE: HORIZ. 1" = 30' VERT. 1" = 3'

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES FOR BMP POND #1**

**ROUTINE MAINTENANCE**

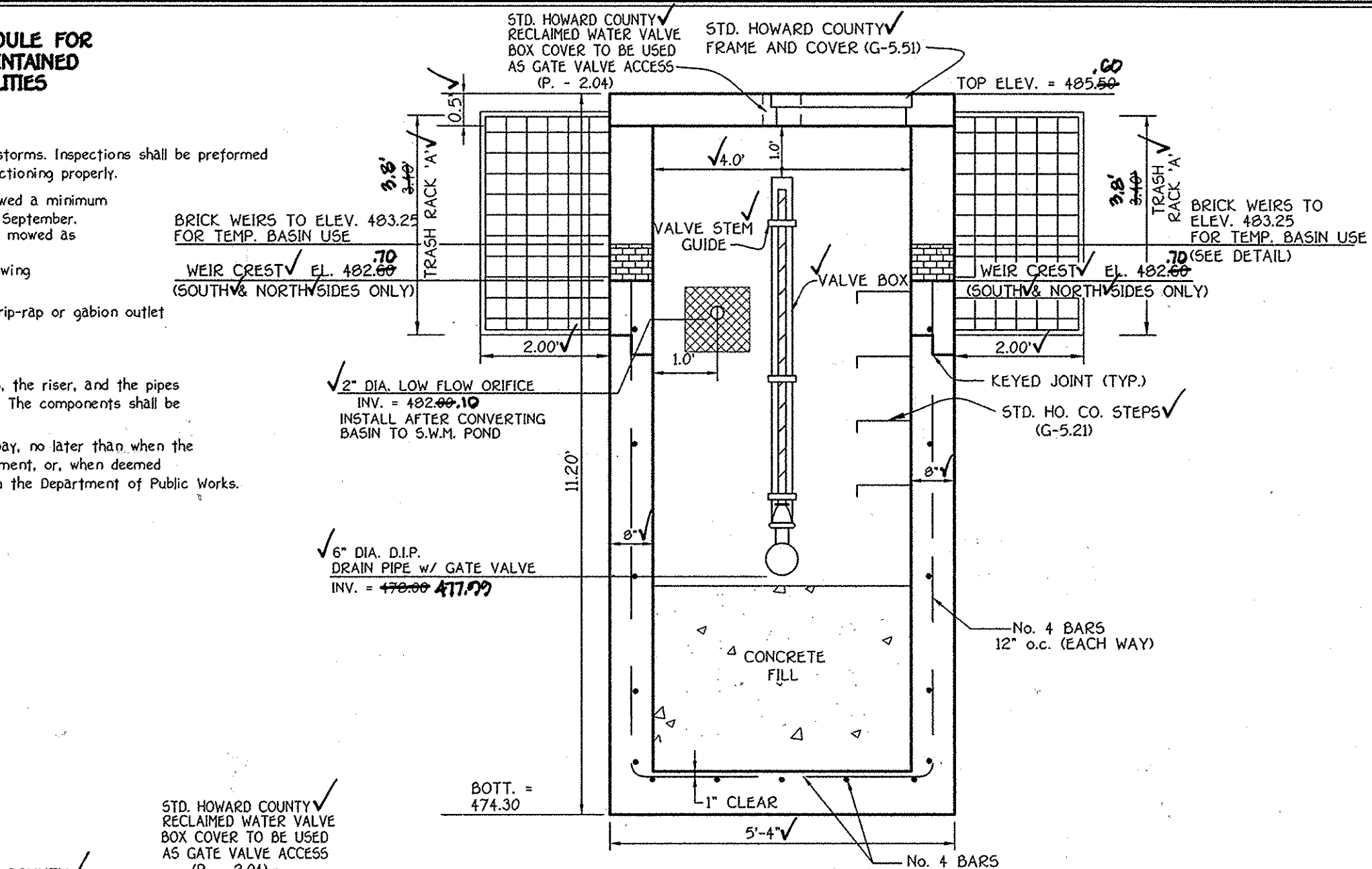
- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
- Debris and litter shall be removed during regular mowing operations and as needed.
- Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repaired as soon as it is noticed.

**NON-ROUTINE MAINTENANCE**

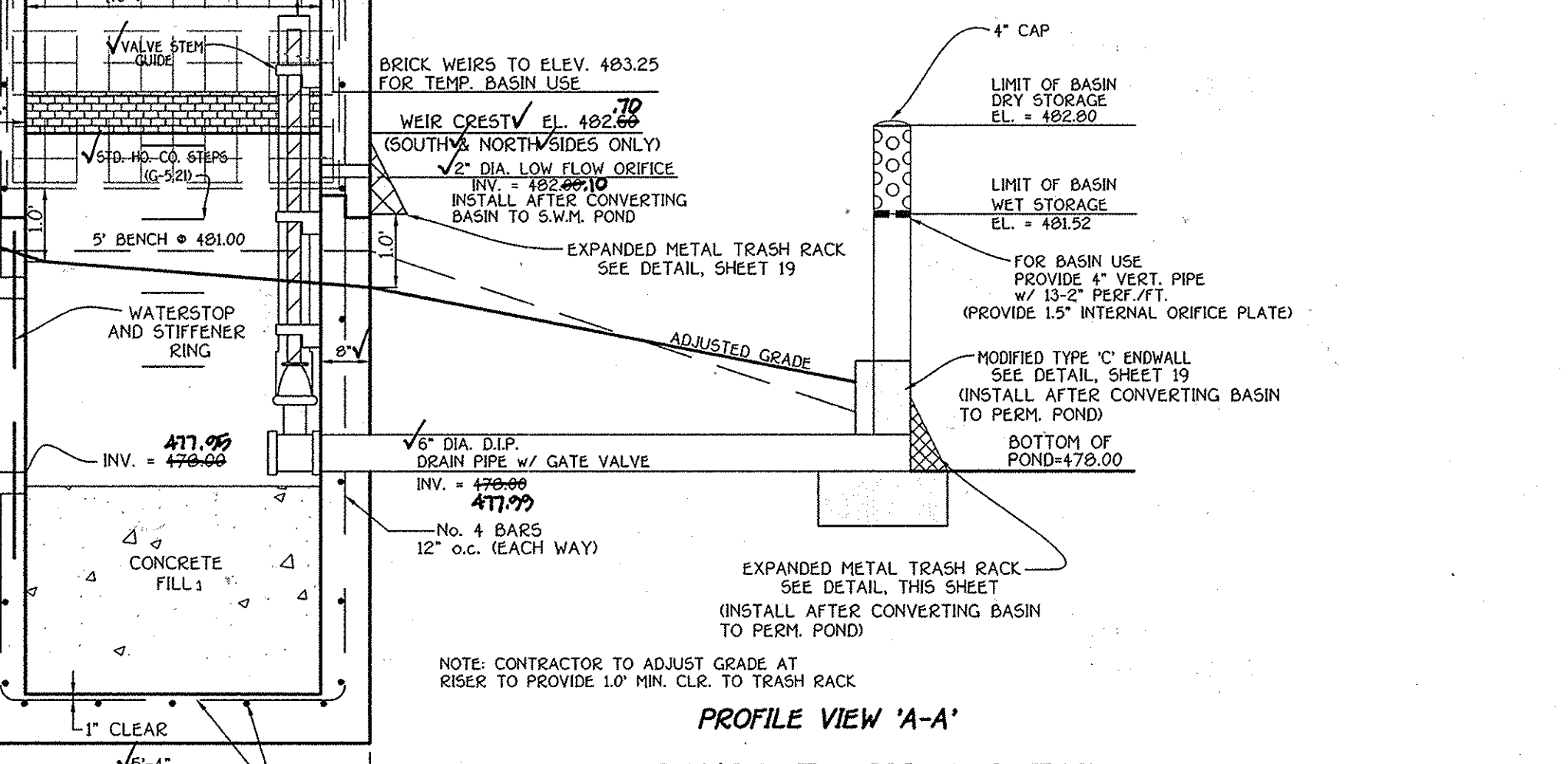
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

**NOTES:**

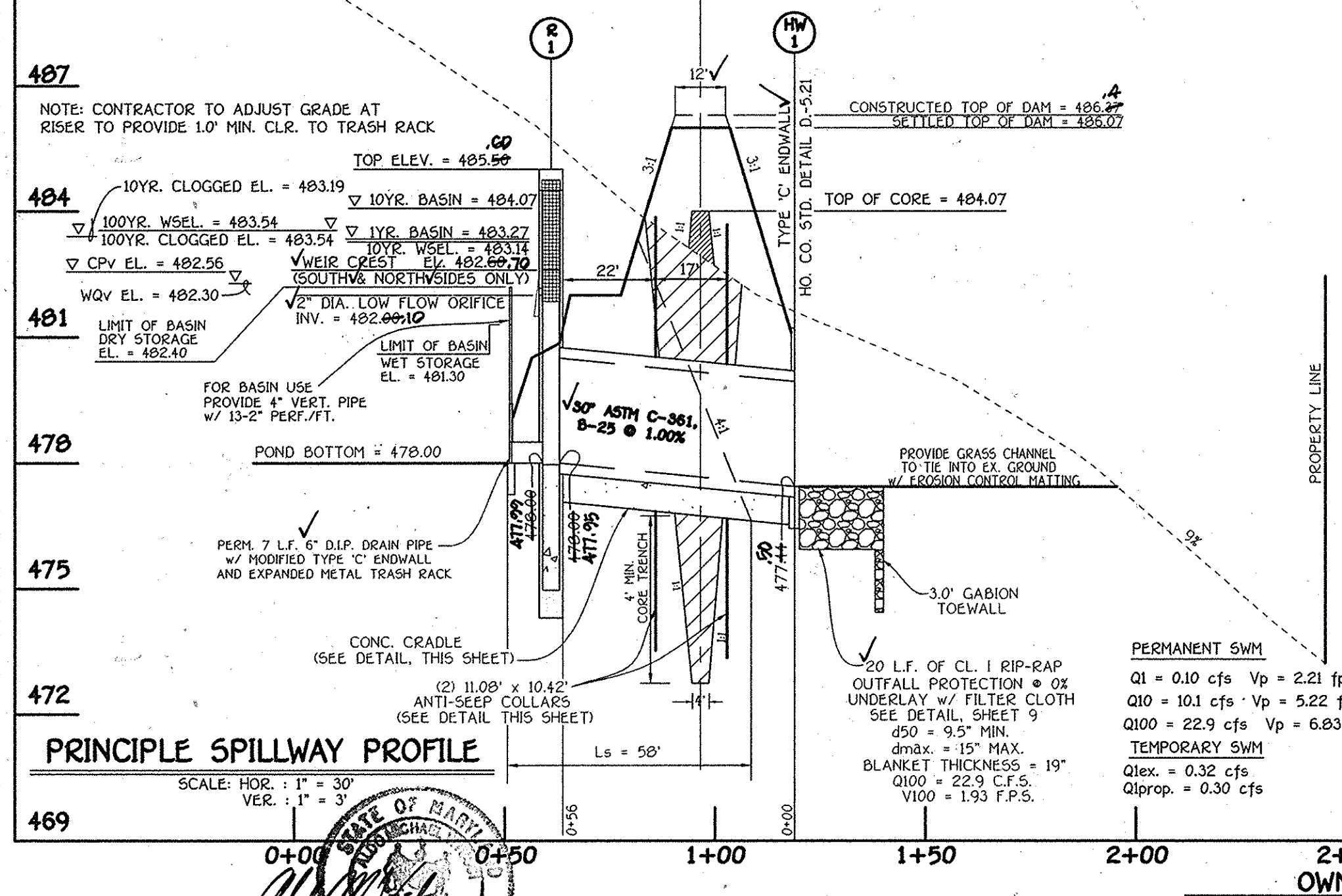
- CONCRETE SHALL BE MSHA MIX NO. 3 (FC > 3500 P.S.I.)
- REINFORCING STEEL GRADE 60
- FOR WALLS OF STRUCTURE SHALL UTILIZE L.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
- PROVIDE ROUGH BROOM FINISH.
- ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
- ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.



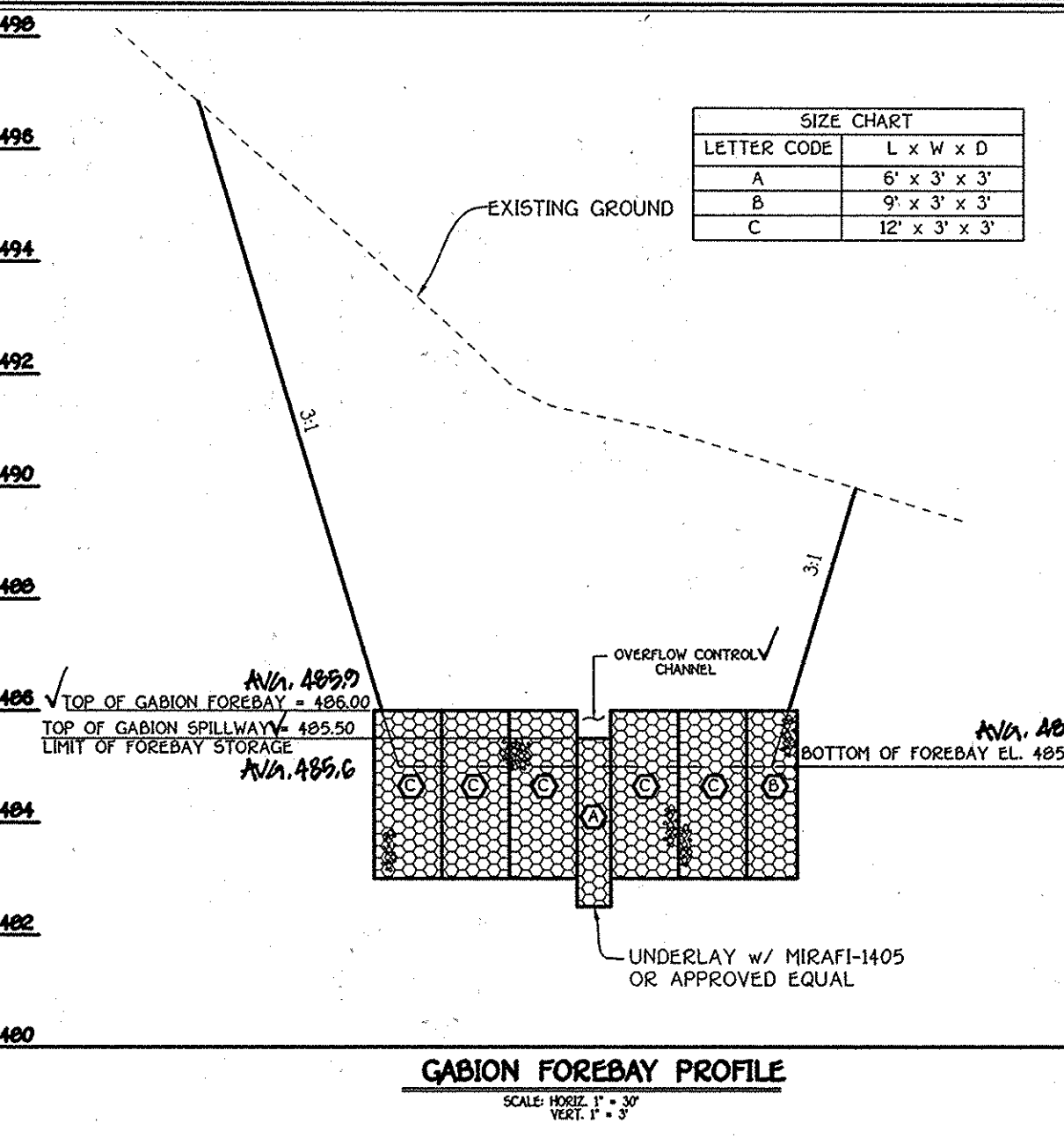
PROFILE VIEW 'B-B' CONCRETE RISER DETAIL  
SCALE: 1" = 2'



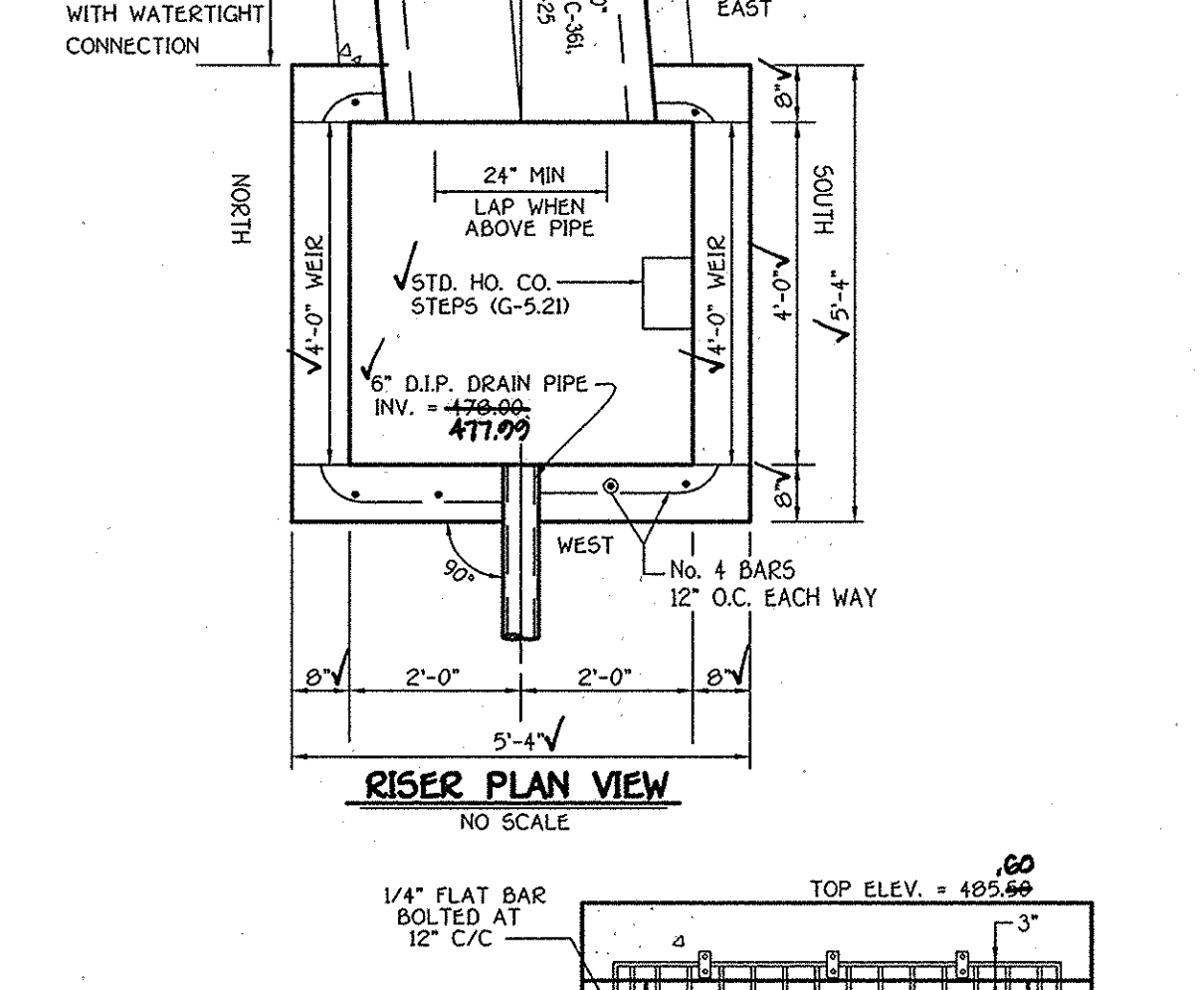
PROFILE VIEW 'A-A' CONCRETE RISER DETAIL  
SCALE: 1" = 2'



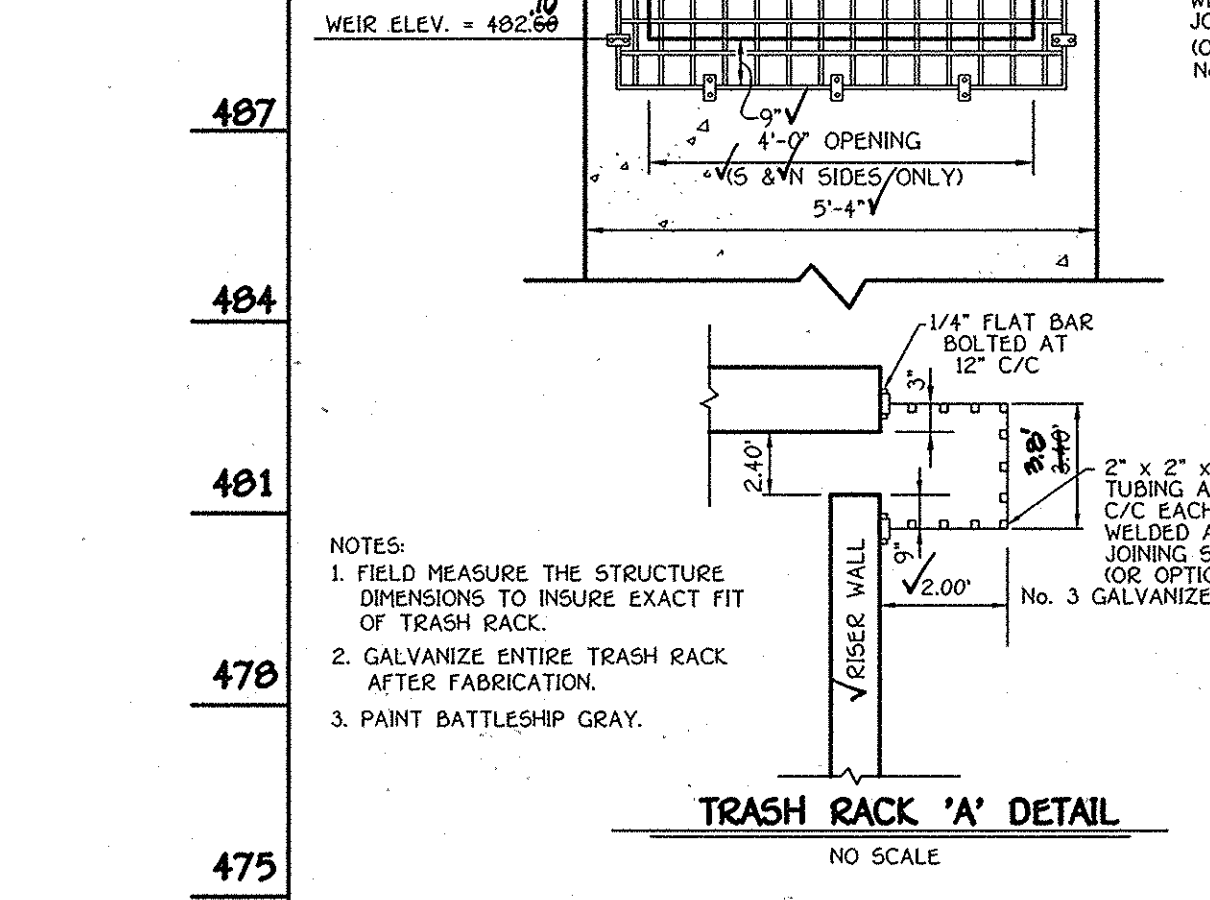
PRINCIPLE SPILLWAY PROFILE  
SCALE: HOR. 1" = 30' VERT. 1" = 3'



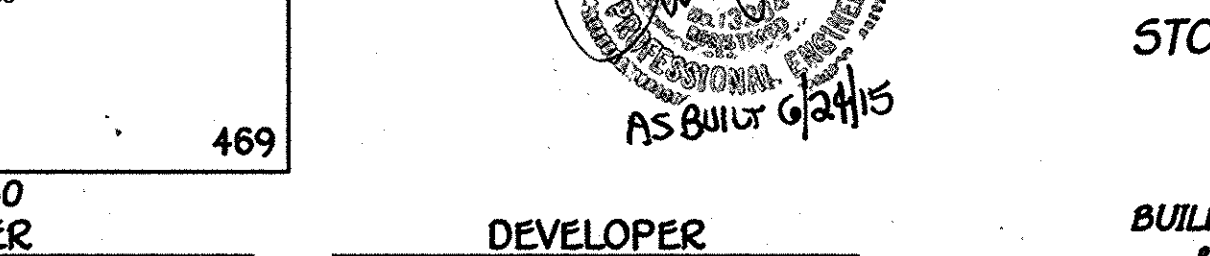
GABION FOREBAY PROFILE  
SCALE: HORIZ. 1" = 30' VERT. 1" = 3'



RISER PLAN VIEW  
NO SCALE



TRASH RACK 'A' DETAIL  
NO SCALE



TOP SLAB DETAIL  
NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter R. Marshall* 5-26-09  
CHIEF, BUREAU OF HIGHWAYS DATE  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hamer* 6/4/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*John Dammun* 6/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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. James Greenfield* 5/12/09  
Signature Of Developer DATE  
B. JAMES GREENFIELD  
Printed Name Of Developer

By The Engineer:  
I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That I 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.

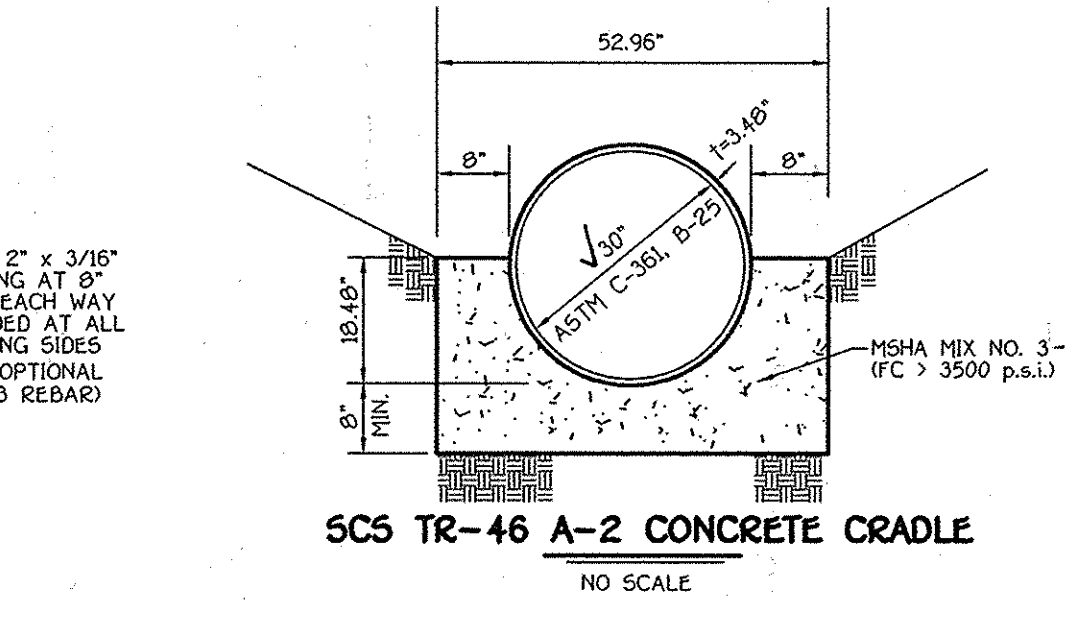
*Walter R. Marshall* 5/20/09  
Signature Of Engineer DATE  
WALTER R. MARSHALL  
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.  
*Walter R. Marshall* 5/21/09  
Signature Of Engineer DATE  
WALTER R. MARSHALL  
Printed Name Of Engineer

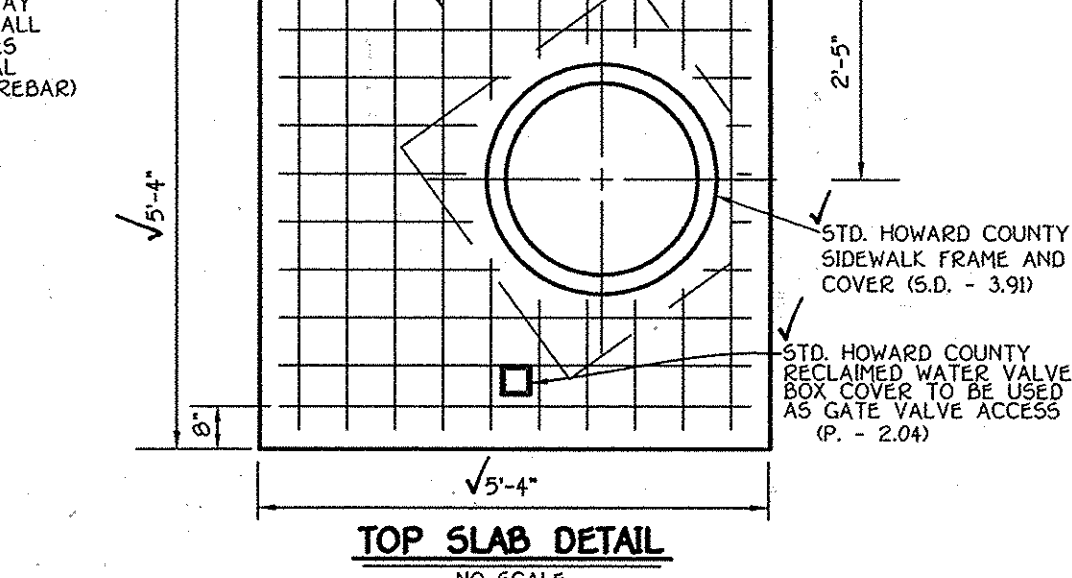
AS-BUILT CERTIFICATION  
I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.  
*Walter R. Marshall* 13004  
Signature DATE  
WALTER R. MARSHALL  
Printed Name Of Engineer

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate 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.

NOTE:  
CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FRAMED) SHALL BE USED.



SCS TR-46 A-2 CONCRETE CRADLE  
NO SCALE



TOP SLAB DETAIL  
NO SCALE

**STORMWATER MANAGEMENT NOTES & DETAILS**  
**B.M.P. No. 1**  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

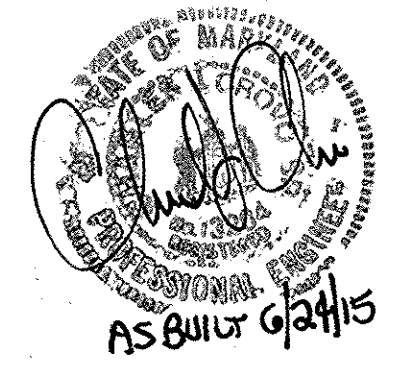
ZONED: RR-DEO  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MAY 11, 2009  
SHEET 16 OF 21

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
4100 401 - 2895

ALDO M. VITALE  
Professional Engineer  
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. 20748, Expiration Date February 22, 2011.

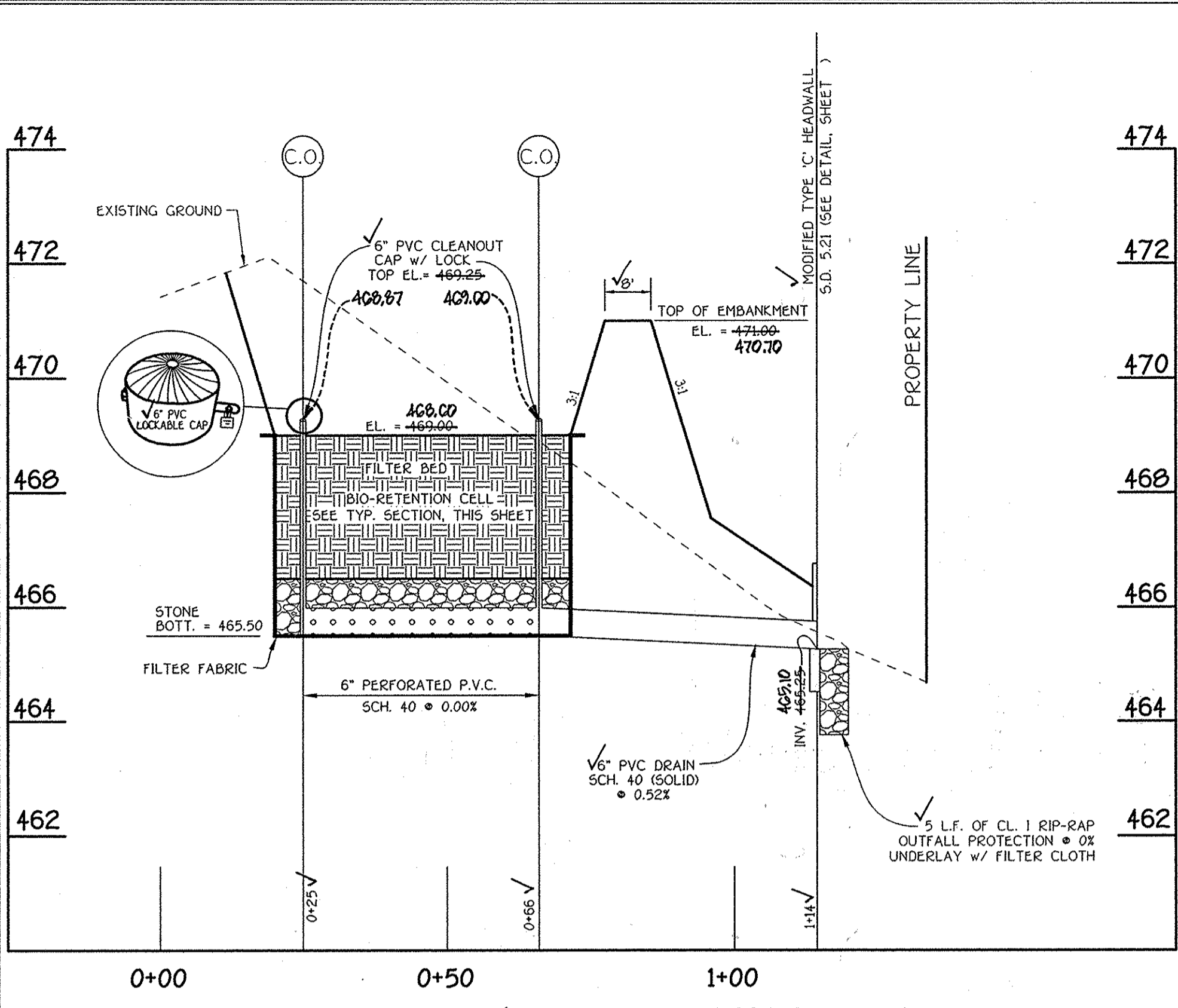
M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
c/o MR. JAMES GREENFIELD  
LAND HOLDINGS HALL SHOP ROAD, LLC  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

DEVELOPER  
MID ATLANTIC DEVELOPMENT COMPANY  
c/o MR. JAMES GREENFIELD  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
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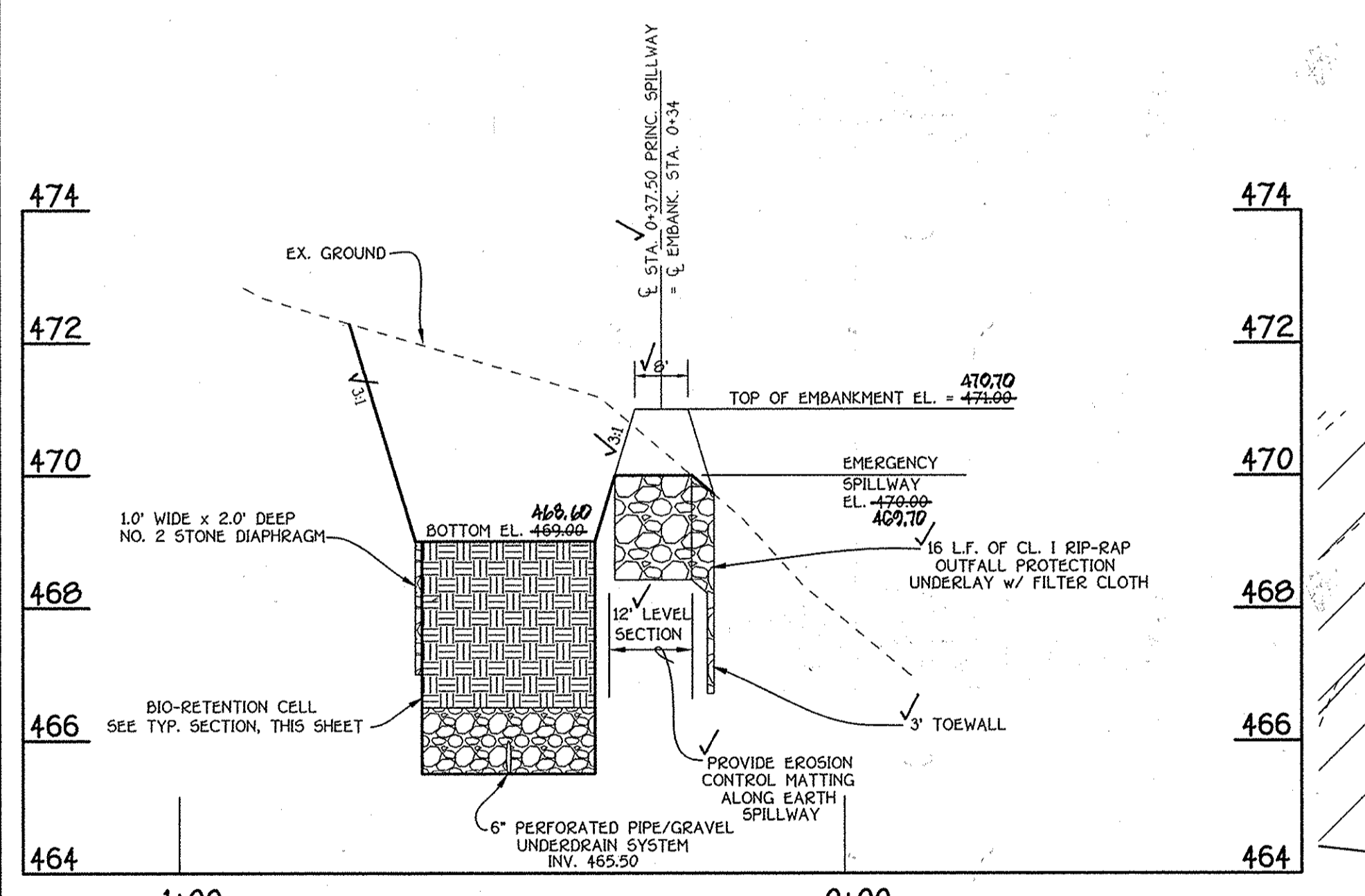
F-09-043  
AS-BUILT





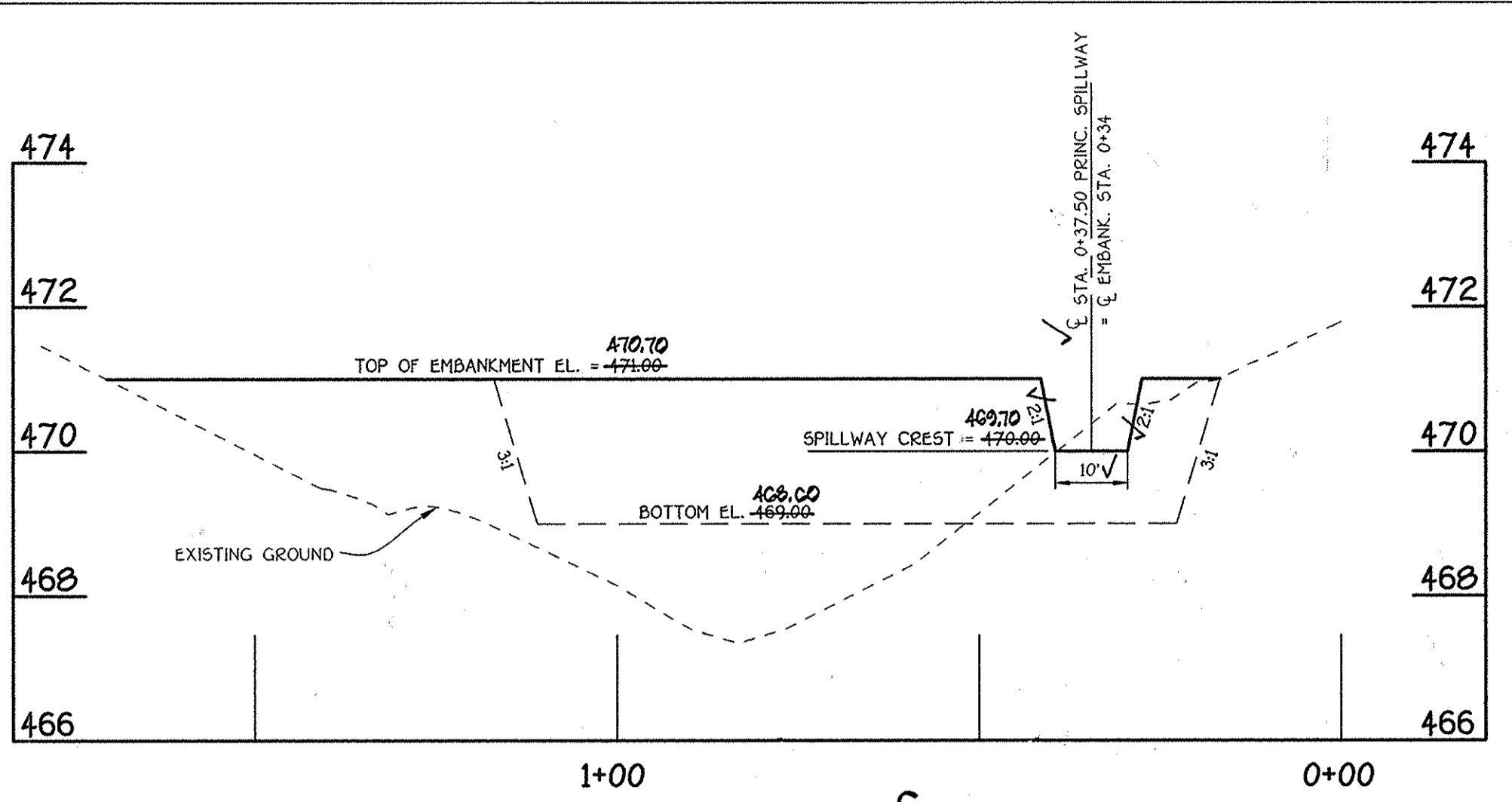
SECTION 'A-A' THRU S.W.M. FACILITY B.M.P. No. 2

SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



EMERGENCY SPILLWAY PROFILE

SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'



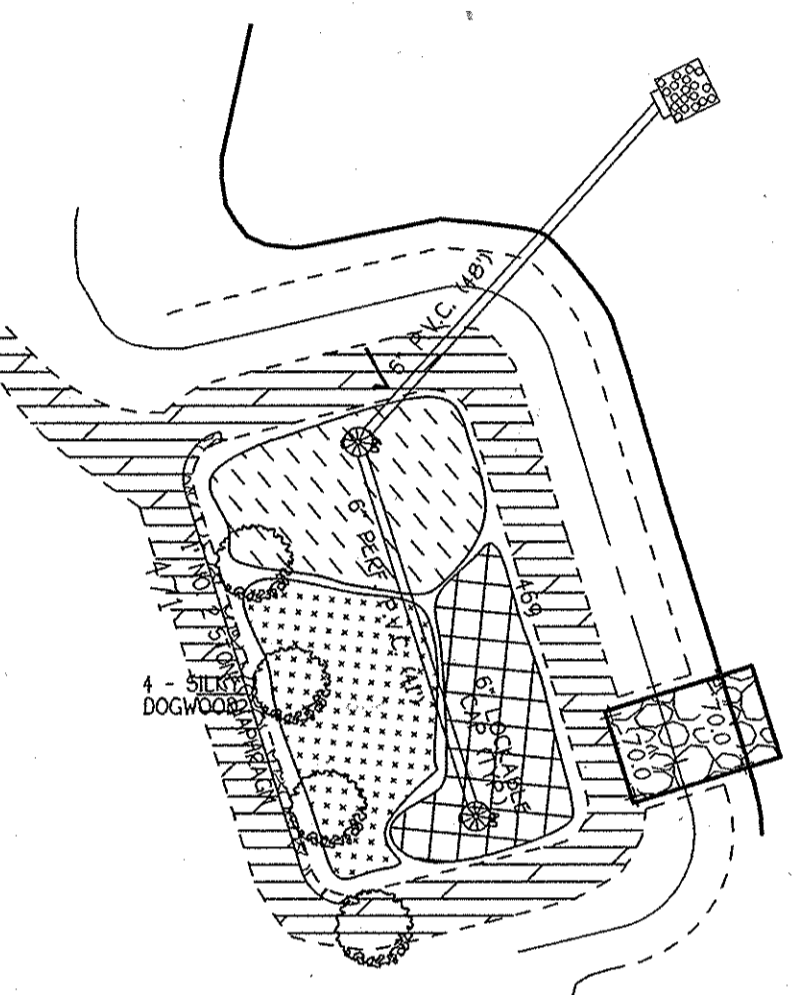
S.W.M. FACILITY PROFILE ALONG EMBANKMENT

SCALE: HORIZ. 1" = 20'  
VERT. 1" = 2'

BIO-RETENTION No. 2 PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
4	SILKY DOGWOOD	12
10	WITCH HAZEL	12
10	RED OSLER DOGWOOD	12
15	WINTER BERRY	12
MIXED PERENNIALS AND GRASSES		
N/A	BLUEJOINT	N/A

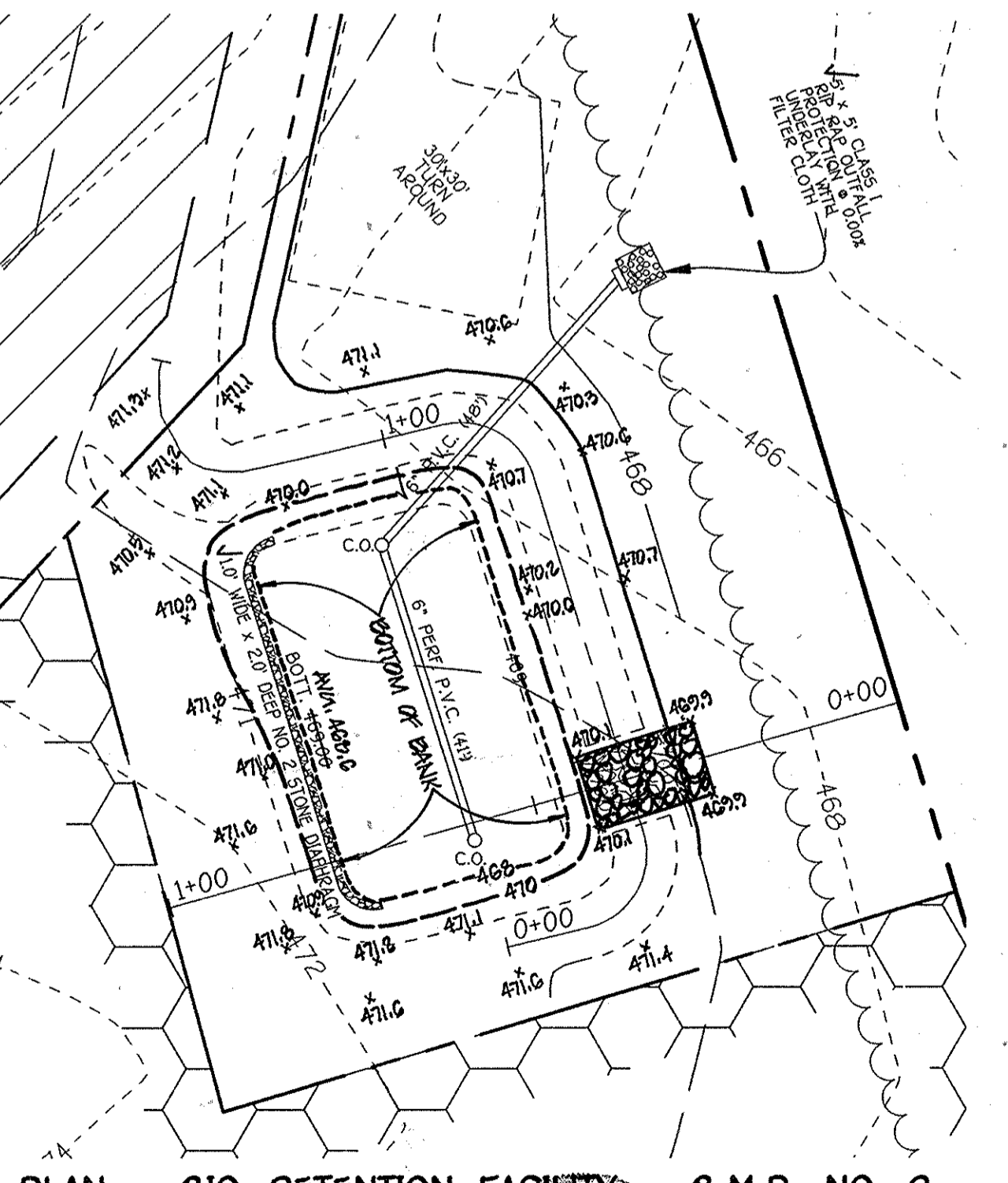
NOTE: THE PLANTING SCHEDULE AND SPECIES FOR BMP No. 2 IS FOR DESIGN PURPOSES. PLANT DISTRIBUTION AND TYPES MAY BE SUBSTITUTED WITH SPECIES LISTED IN THE M.D.C. "2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II".

- RED OSLER DOGWOOD
- WINTER BERRY
- WITCH HAZEL
- MIXED PERENNIALS (E.G. CARDINAL FLOWER, TALL CONE FLOWER)
- MIXED GRASSES (E.G. BROOMSEDGE SWITCH GRASS)



Storm Water Management Facility No. 2 Bio-Retention Facility

SCALE: 1" = 20'

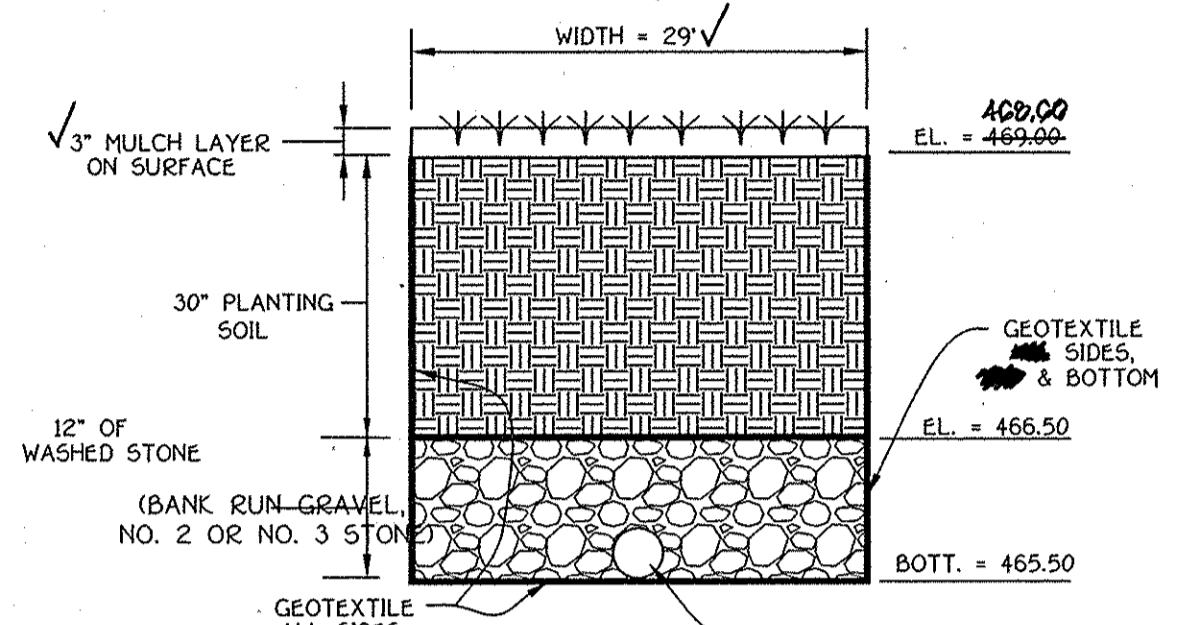


PLAN - BIO-RETENTION FACILITY - B.M.P. NO. 2

SCALE: 1" = 20'

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIO-RETENTION FACILITIES

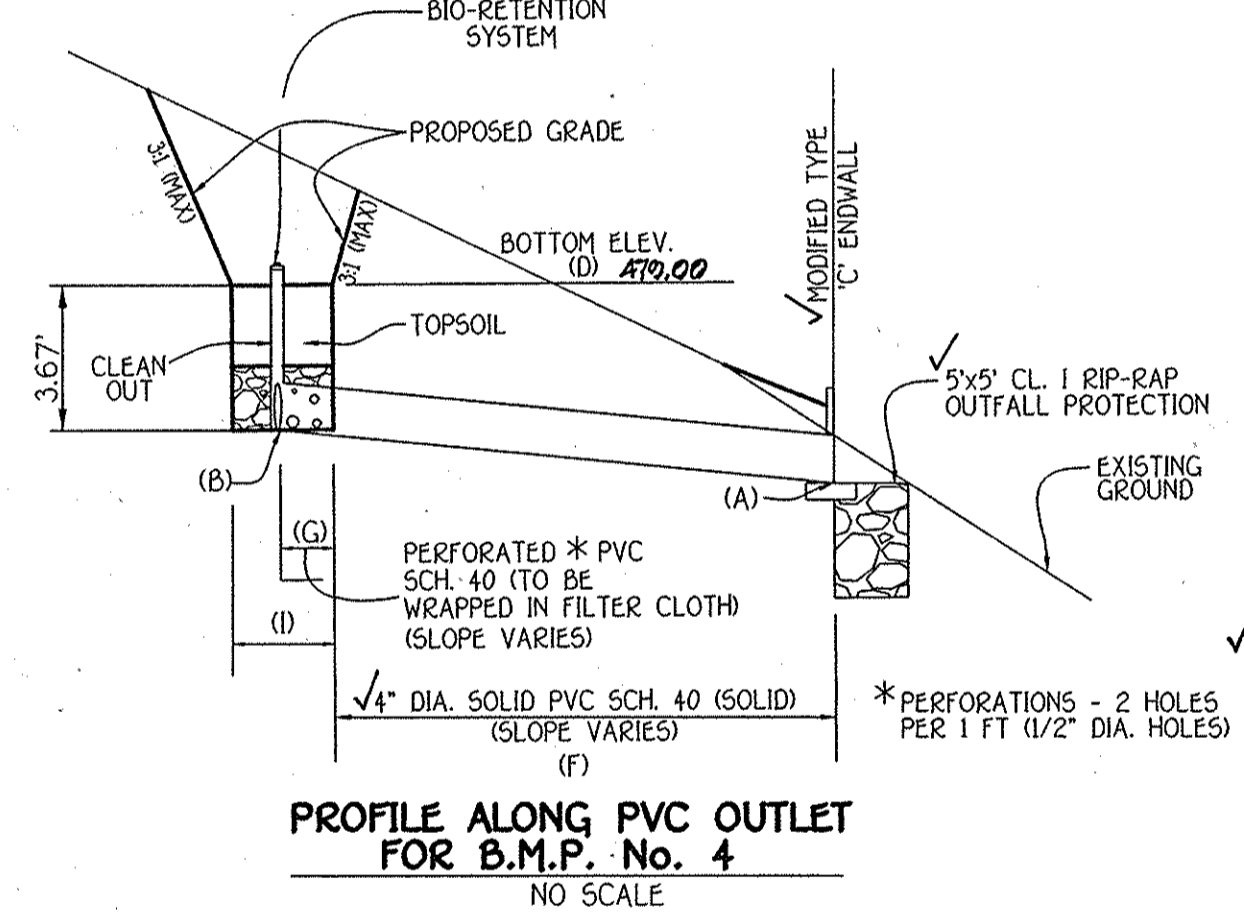
- Annual Maintenance of Plant Material, Mulch Layer and Soil Layer is Required. Maintenance of Mulch and Soil is Limited to Correcting Areas of Erosion or Wash Out. Any Mulch Replacement shall be Done in the Spring. Plant Material shall be Checked For Disease, and Insect Infestation and Maintenance will Address Dead Material and Pruning.
- Schedule of Plant Inspection will be Twice a Year in Spring and Fall. This Inspection will Include Removal of Dead and Diseased Vegetation Considered Beyond Treatment, Treatment of All Diseased Trees and Shrubs and Replacement of All Deficient Stakes and Wire.
- Mulch shall be Inspected Each Spring. Remove Previous Mulch Layer Before Applying New Layer once Every 2 to 3 Years.
- Soil Erosion to be Addressed on An As Needed Basis, with A Minimum of Once Per Month and After Heavy Storm Events.



TYPICAL SECTION - BIO-RETENTION FACILITY FOR B.M.P. No. 2

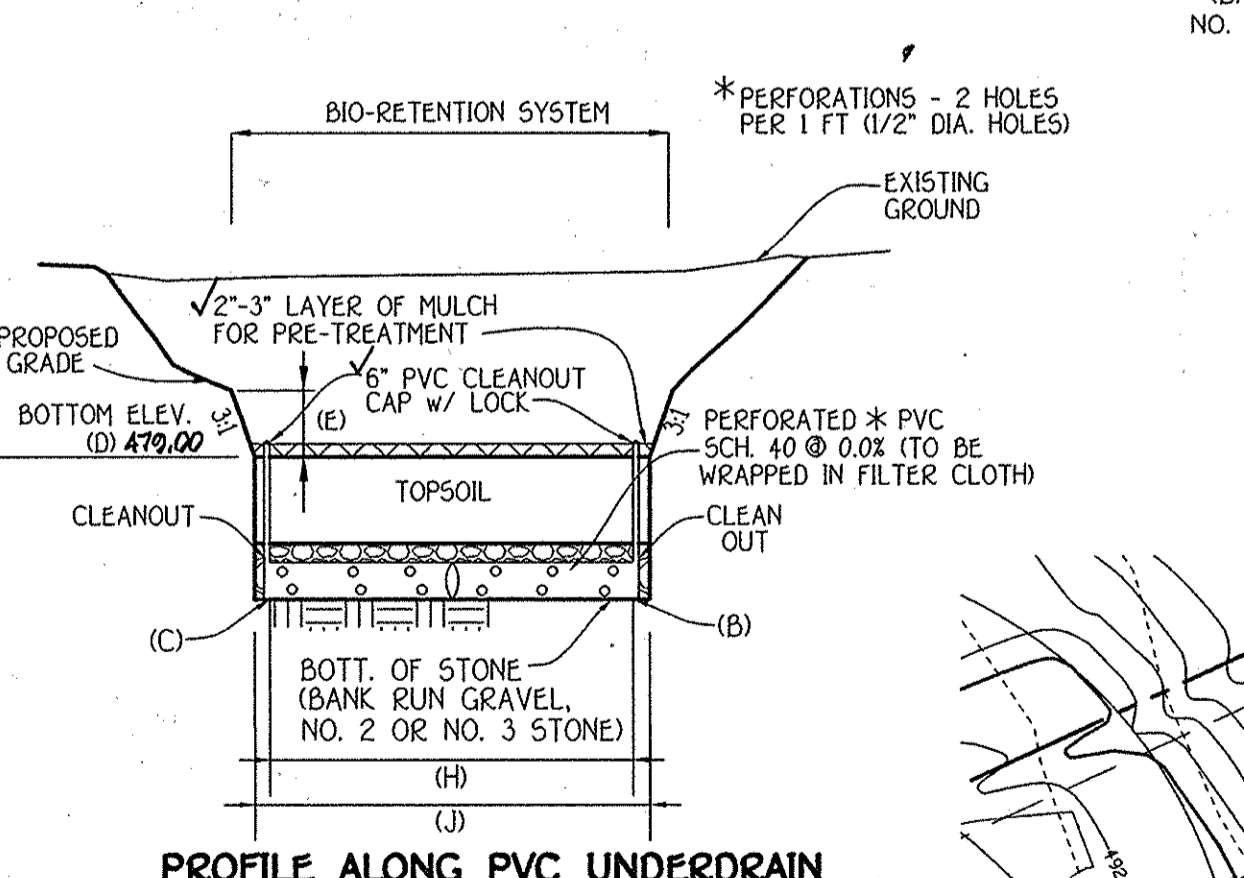
NO SCALE

BIO-RETENTION No. 4 PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



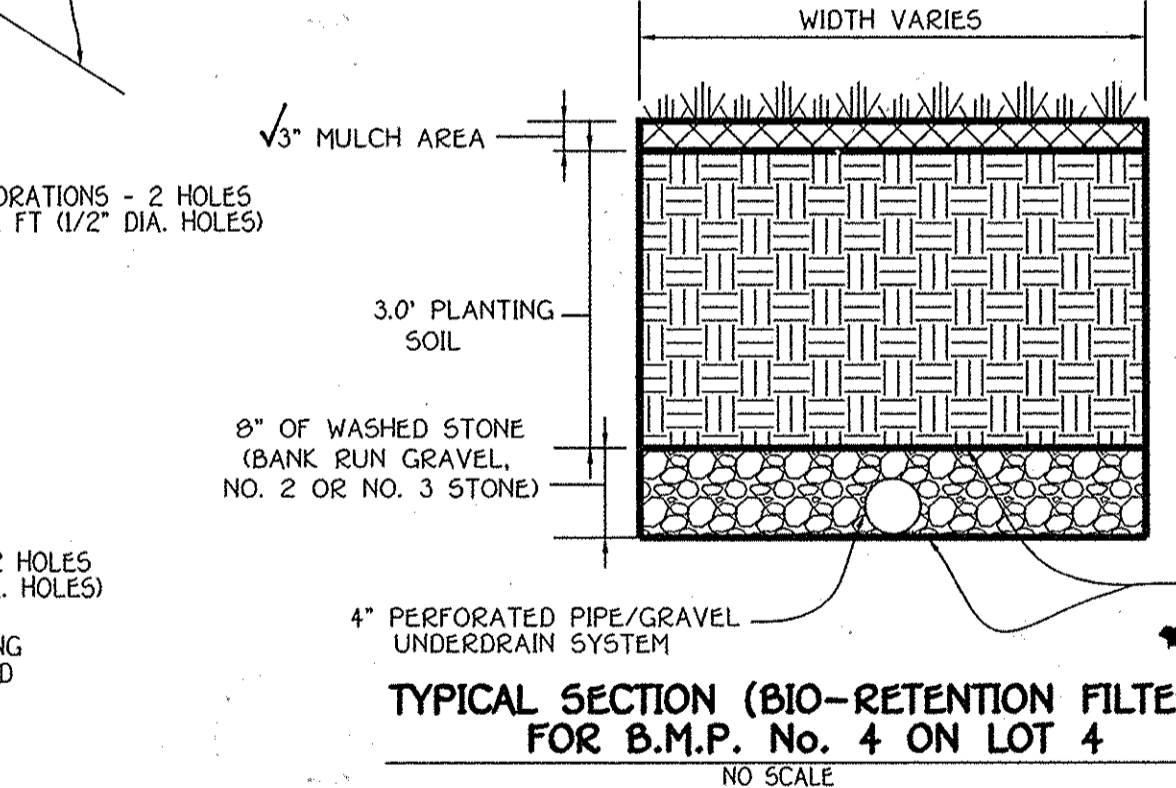
PROFILE ALONG PVC OUTLET FOR B.M.P. No. 4

NO SCALE



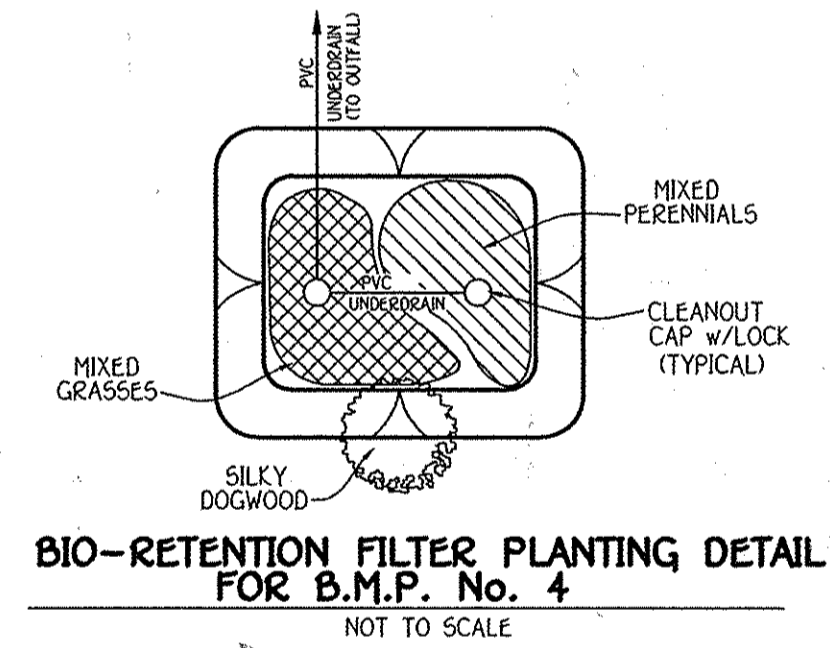
PROFILE ALONG PVC UNDERDRAIN FOR B.M.P. No. 4

NO SCALE



TYPICAL SECTION (BIO-RETENTION FILTER) FOR B.M.P. No. 4 ON LOT 4

NO SCALE



BIO-RETENTION FILTER PLANTING DETAIL FOR B.M.P. No. 4

NOT TO SCALE

- MIXED PERENNIALS: CUT-LEAF CONEFLOWER, CARDINAL FLOWER, TRANSCANT ASTER
- MIXED GRASSES: TUFTED FOXTAIL, BROOM SEDGE, SWITCH GRASS
- SILKY DOGWOOD

NOTES: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE BIO-RETENTION CELL

BIO-RETENTION FILTER DATA										
BIO-RETENTION FILTER	A	B	C	D	E	F	G	H	I	J
BMP #4	474.00	474.33	474.33	474.00	1.0V	40.5'	7.5'	20'	15'	30'
LOT 4	475.00			475.00						

STORMWATER MANAGEMENT NOTES & DETAILS  
B.M.P. No. 2 & No. 4  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
ZONED: RR-200  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MAY 11, 2009  
SHEET 17 OF 21

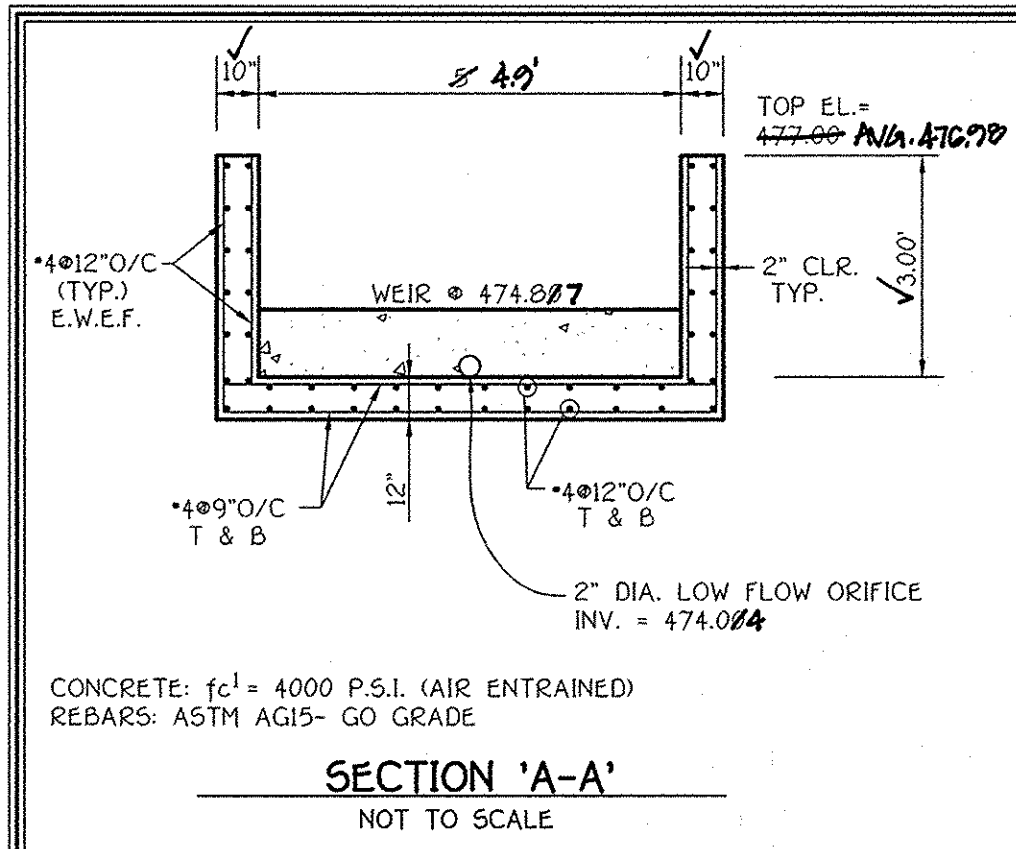
FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
3330 CANTONAL SQUARE OFFICE PARK - 19722 MANTON NATIONAL PIKE  
ELK CREEK CITY, MARYLAND 21042  
410 461-2999

ALDON J. GREENFIELD  
DATE: 5/12/09  
I, ALDON J. GREENFIELD, hereby certify that these documents were prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.

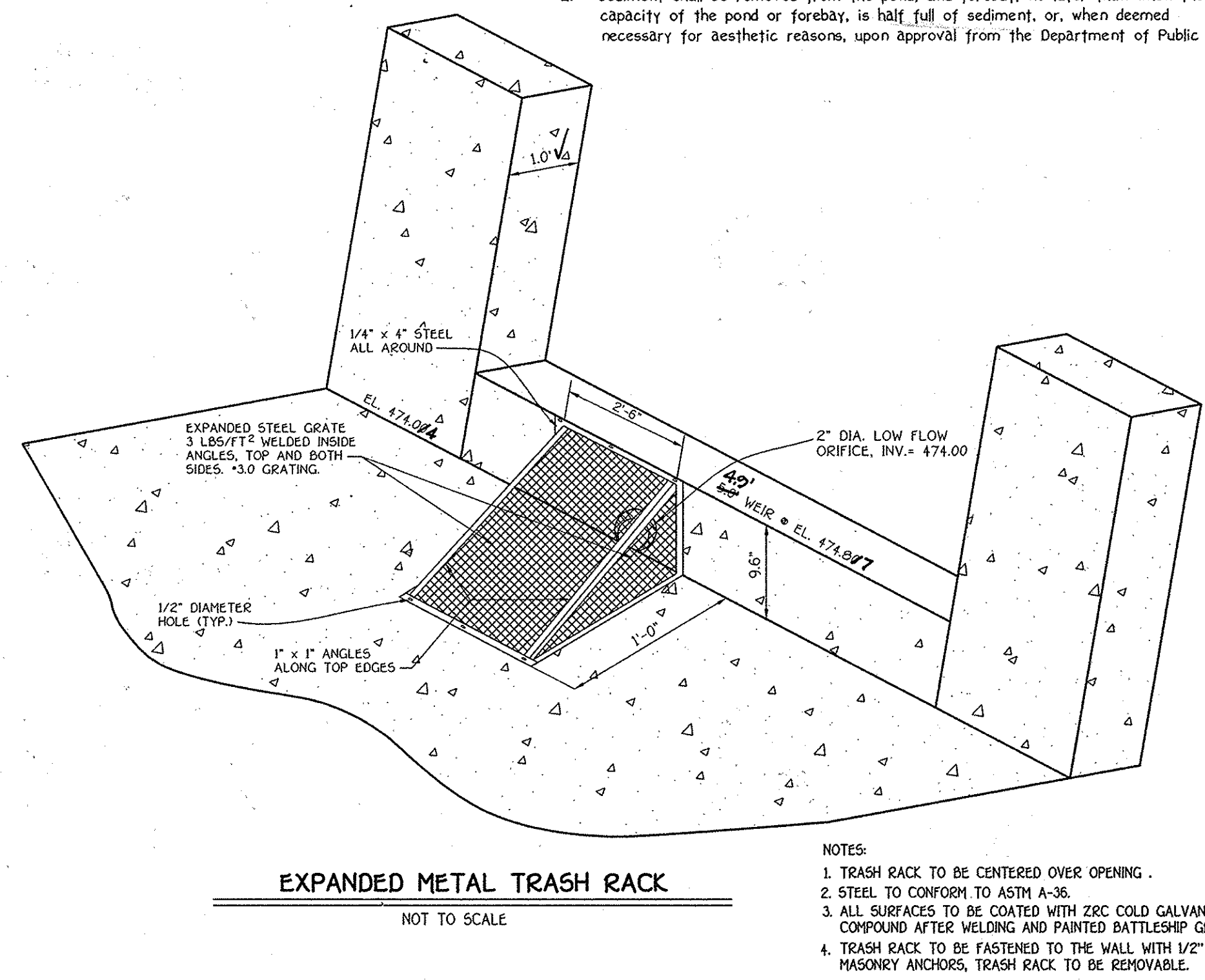
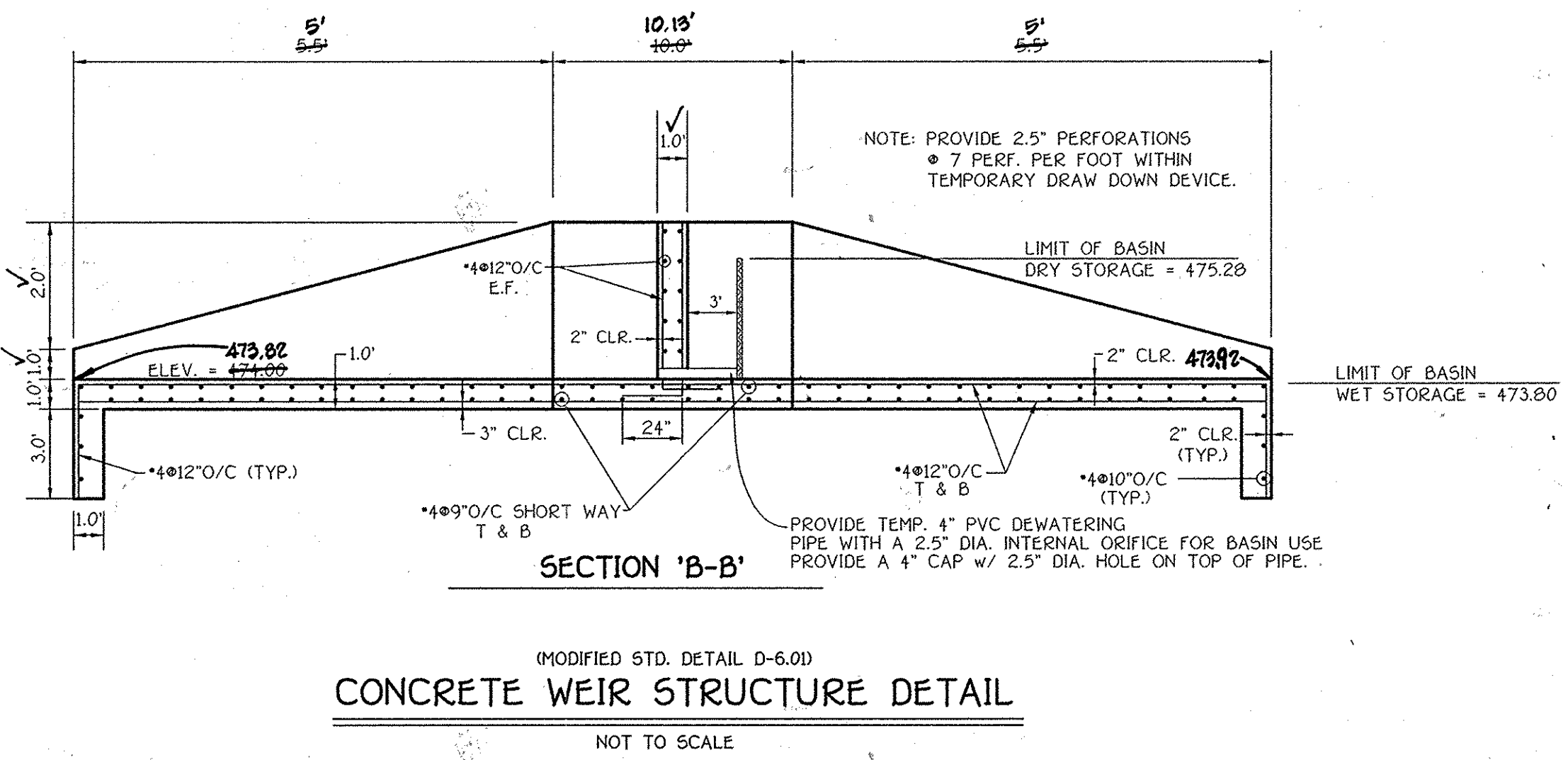
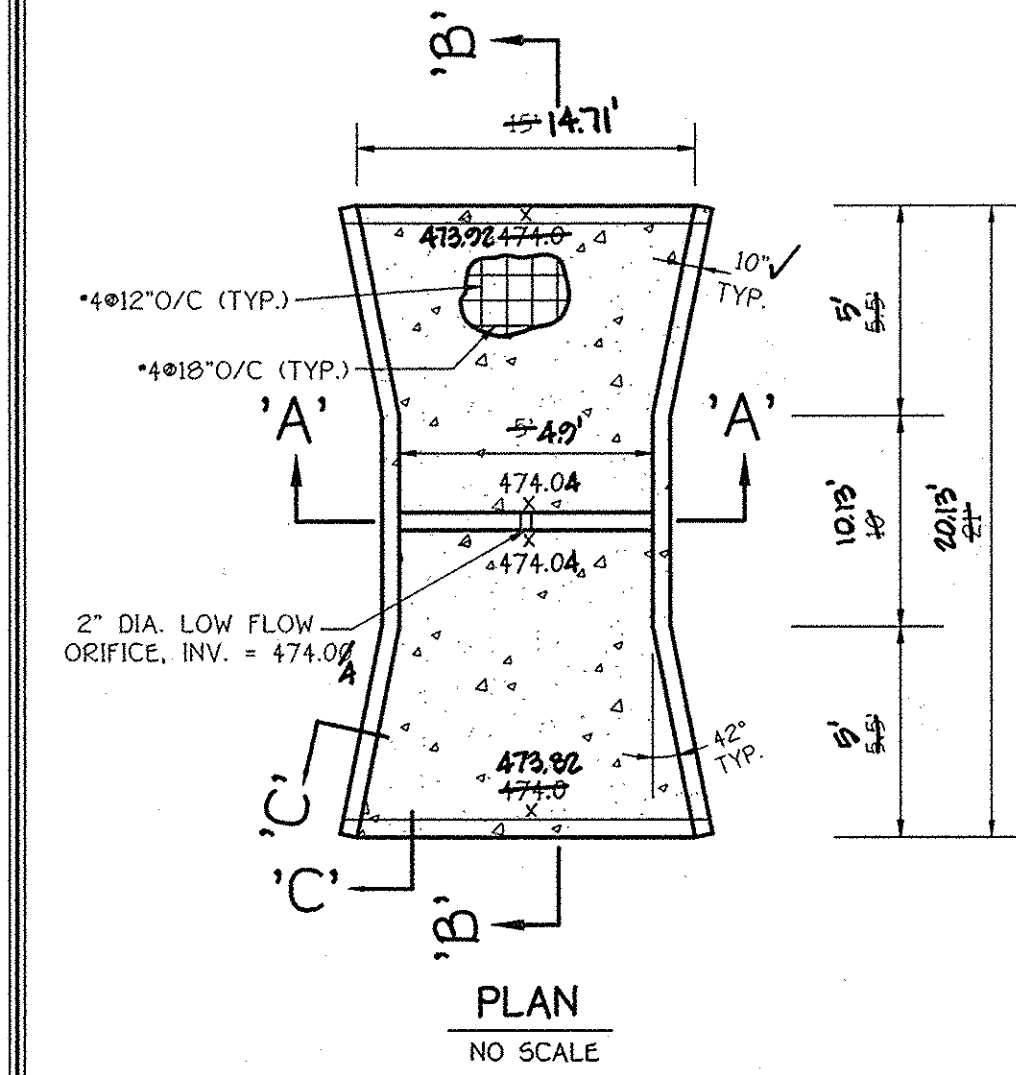
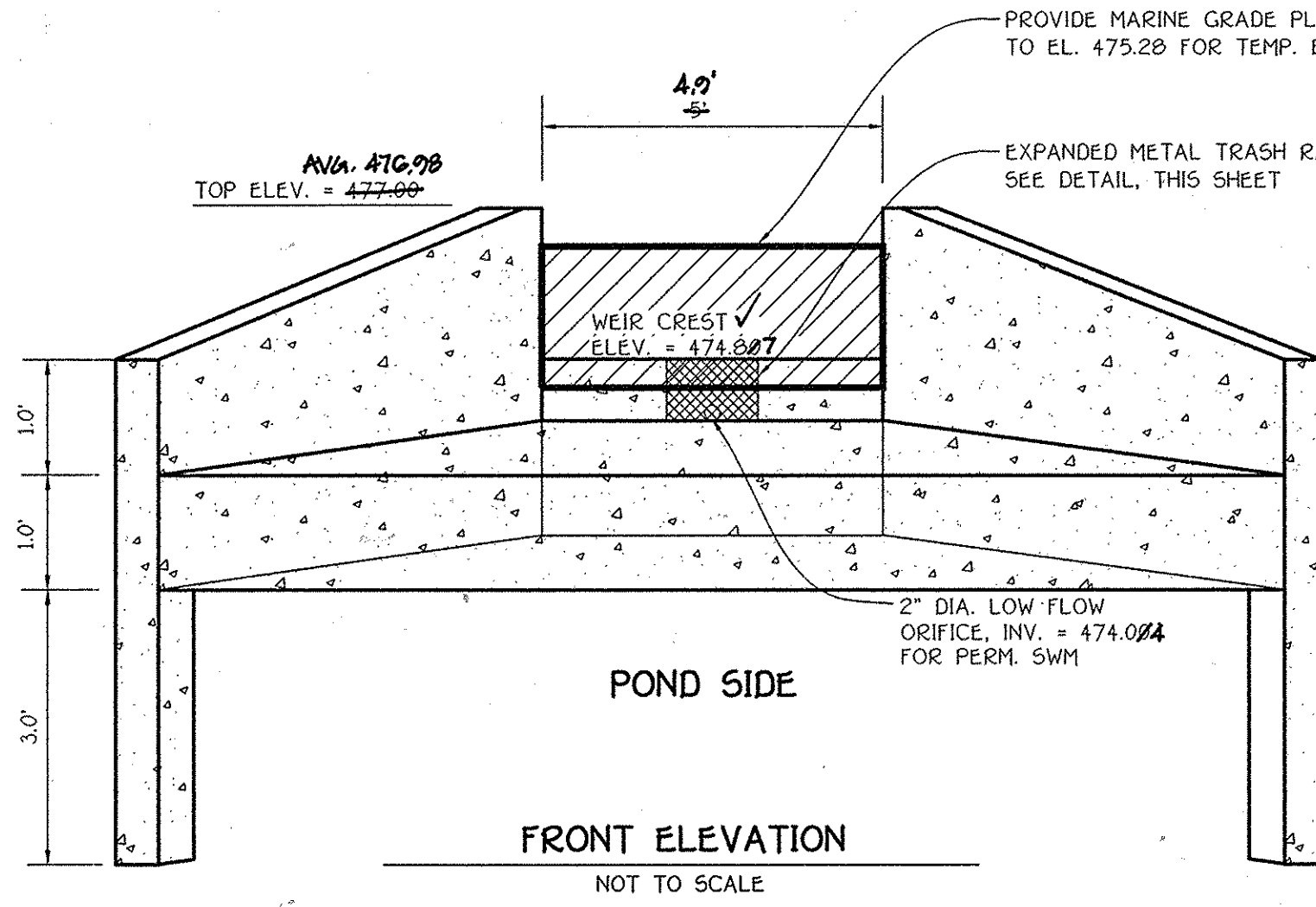
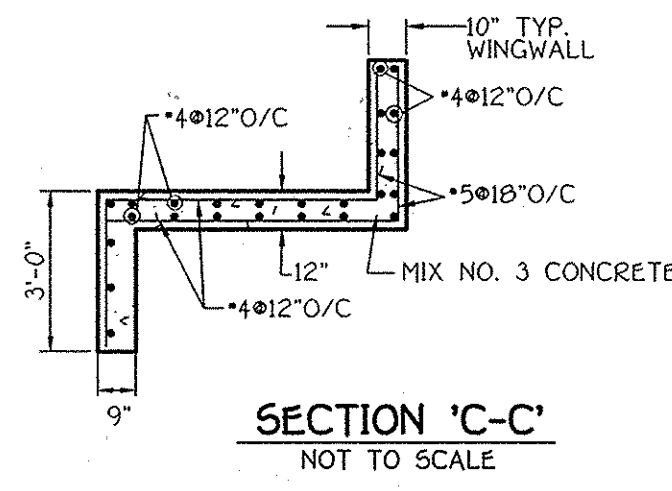
AS BUILT 6/24/15

OWNER  
M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
c/o MR. JAMES GREENFIELD  
LAND HOLDINGS HALL SHOP ROAD, LLC  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

DEVELOPER  
MID ATLANTIC DEVELOPMENT COMPANY  
c/o MR. JAMES GREENFIELD  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732



CONCRETE: f<sub>c</sub>' = 4000 P.S.I. (AIR ENTRAINED)  
REBAR: ASTM A615 - 60 GRADE



**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES FOR BMP POND #3**

- ROUTINE MAINTENANCE**
- Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
  - Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
  - Debris and litter shall be removed during regular mowing operations and as needed.
  - Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repaired as soon as it is noticed.
- NON-ROUTINE MAINTENANCE**
- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
  - Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter Z. Chubb*  
 CHIEF, BUREAU OF HIGHWAYS 5-26-09 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Cindy Hambs*  
 CHIEF, DIVISION OF LAND DEVELOPMENT 6/4/09 DATE

*W.D. Donnan*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 6/2/09 DATE

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."

*James Greenfield*  
 Signature Of Developer 5/12/09 DATE  
 B. JAMES GREENFIELD  
 Printed Name Of Developer

By The Engineer:  
 "I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer To 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."

*Walter Z. Chubb*  
 Signature 5/20/09 DATE  
 WALTER Z. CHUBB  
 Printed Name Of Engineer

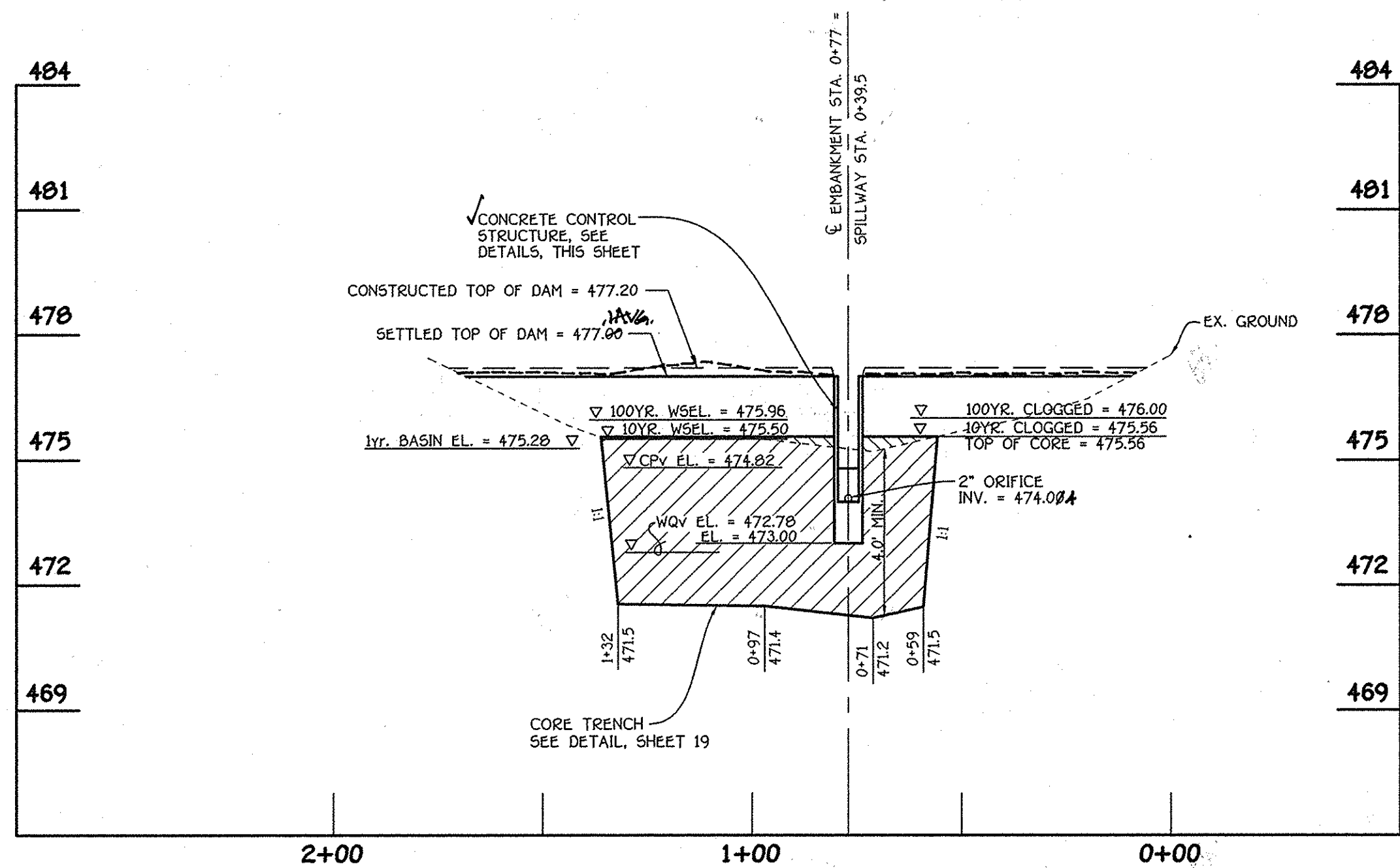
These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

*Walter Z. Chubb*  
 Signature 5/2/09 DATE  
 HOWARD SOIL CONSERVATION DISTRICT

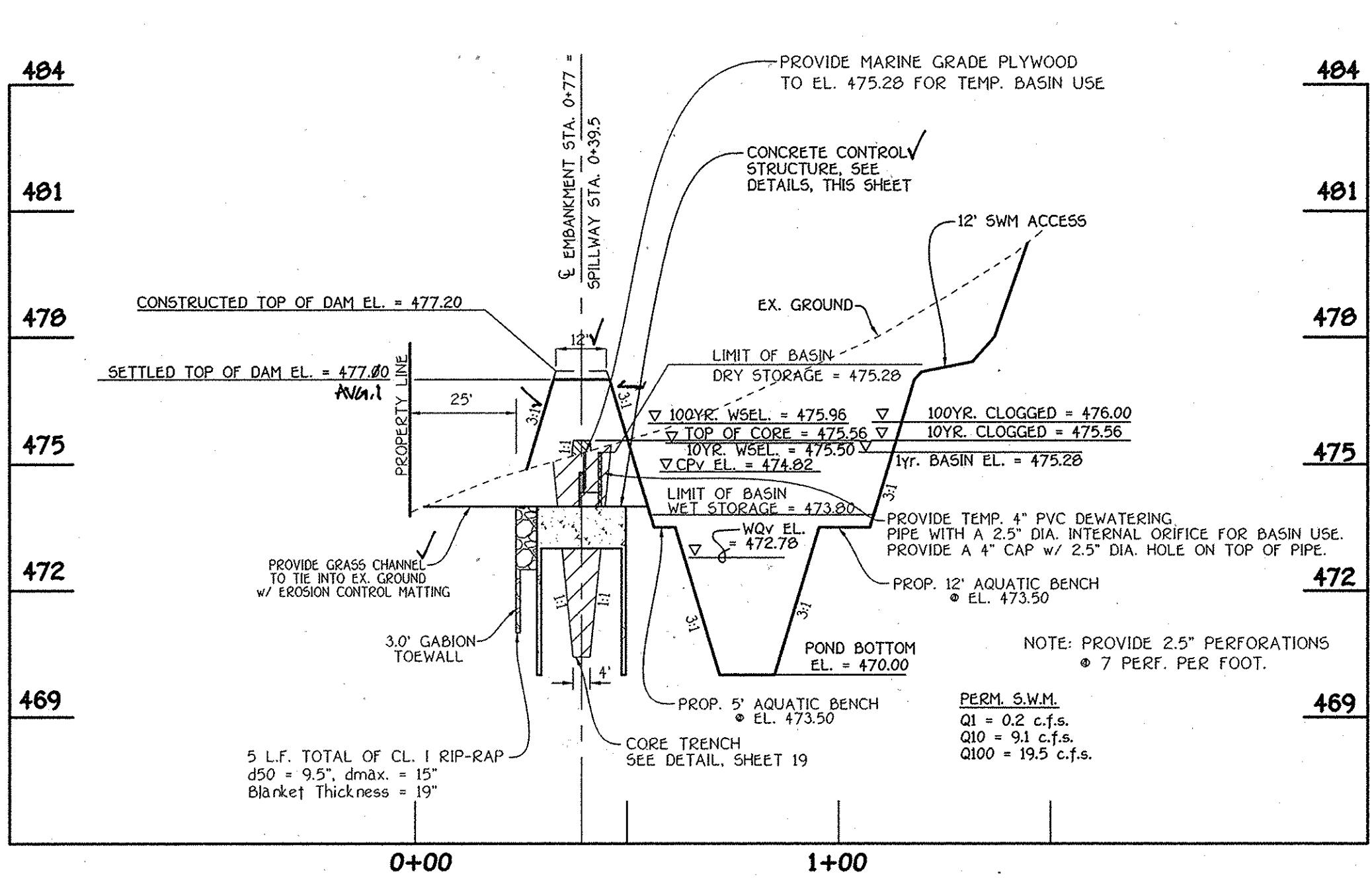
AS-BUILT CERTIFICATION  
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

*James Greenfield*  
 Signature 13004 P.E. No. 612415 DATE

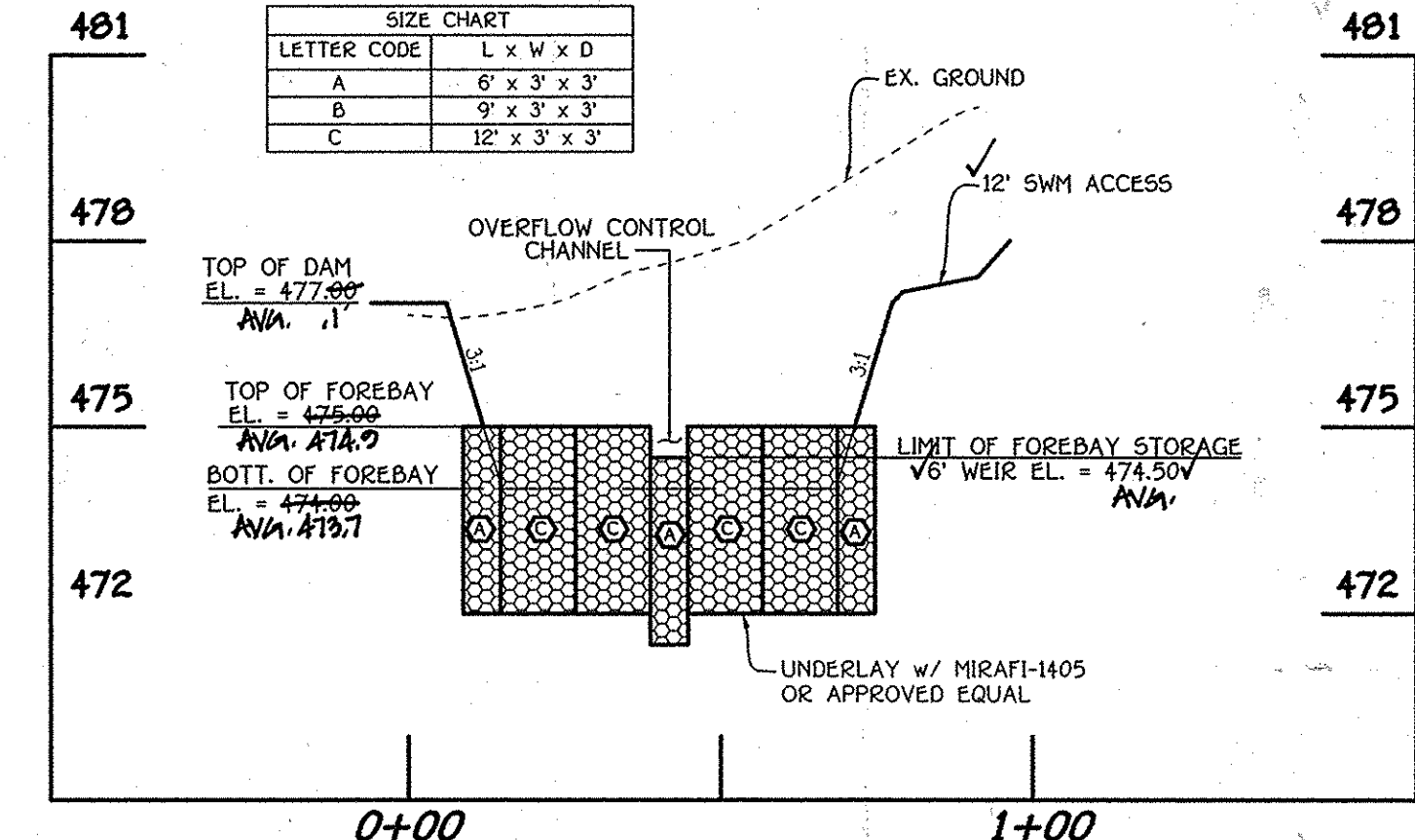
Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Engineer 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.



PROFILE ALONG EMBANKMENT  
 SCALE: HORIZ. 1" = 30'  
 VERT. 1" = 3'

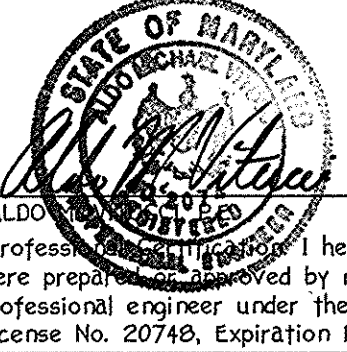


PRINCIPLE SPILLWAY PROFILE  
 SCALE: HORIZ. 1" = 30'  
 VERT. 1" = 3'



GABION FOREBAY PROFILE  
 SCALE: HORIZ. 1" = 30'  
 VERT. 1" = 3'

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLETTT CITY, MARYLAND 21044  
 (410) 481-2855



DATE 5/12/09  
 I hereby certify that these documents were prepared and approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20748, Expiration Date February 22, 2011.

OWNER  
 M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEISNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
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 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

DEVELOPER  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

STORMWATER MANAGEMENT NOTES & DETAILS  
 B.M.P. No. 3 / BASIN No. 2  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A'  
 & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MAY 11, 2009  
 SHEET 18 OF 21

F-09-043  
 AS-BUILT

# STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice PD-378. All references to ASTM and AASHTO 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 sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment. Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface.

For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

## 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 4", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification Code, SC, CH, or CL and must have at least 3% 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 shall 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 surveyed prior to placement of fill. Fill materials shall be placed in maximum 6-inch thick discrete compaction layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The structural backfill shall be placed concurrently with fill placement and not excavated into the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not 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 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 AASHTO Method T-99 (Standard Practice).

**Cut Off Trench** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation 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 insure maximum density and minimum permeability.

**Embankment Core** - The core shall be placed to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to insure maximum density and minimum permeability. In addition the core 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 inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven 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 completed fill of 24" or greater over the structure or pipe.

**Structure backfill** may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100/200 sieve 28 day unconfined compressive strength of 1,000 psi. The mixture shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" measured perpendicular to the outside of the pipe, flowable fill will be backfilled over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken to prevent bleed water from flowing over and on the sides of the pipe. 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 a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a completed fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill flowable fill zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials.

**Pipe Conduits**  
All pipes shall be circular in cross section.  
Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:  
1. Materials - Polymer Coated steel pipe - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (0.25 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.  
Materials - Aluminum Coated Steel Pipe - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight 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 AASHTO Specification M-310 Type A. Any aluminum coating chipped or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - Aluminum Pipe - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-310 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-310 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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 inches in thickness.  
3. Connections- All connections with pipes must be completely watertight. The drain 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 watertight. Simple bands are not considered to be watertight.

**Stabilization**  
All borrow areas shall be graded to provide proper drainage and left in a slight condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms 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-342D 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**  
An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs shall be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

**Concrete**  
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Div. No. 3.

**Rock Riprap**  
Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

**Geotextile** shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 9210A, Class C.

**Care of Water during Construction**  
All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or located and graded to the extent required to prevent obstructions in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated soils and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

**Concrete Pipe Joint Detail**  
NOTE: PROVIDE MASTIC JOINT SEALER FROM OUTSIDE OF PIPE JOINTS PRIOR TO INSTALLING BARREL UNDERGROUND  
ASTM DESIGNATION C361 DIAMETERS 12 THRU 360 INCH PRESSURES TO 125 FEET OF HEAD  
NOT TO SCALE

**KEYED JOINT DETAIL WALL SECTION TO WALL SECTION**  
NOT TO SCALE

**TYPICAL METAL BOLLARD DETAIL**  
NOT TO SCALE (STD. G-742)

# STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Definition**  
Purpose  
Conditions Where Practice Applies

- 1. This practice is limited to areas having 20:1 or flatter slopes where:  
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.  
b. The soil 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 20:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 20:1 shall have the appropriate stabilization shown on the plans.

## Construction and Material Specifications

- I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- II. Topsoil Specifications - Soil to be used as topsoil must meet the following:  
1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.  
2. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.  
3. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. The limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:  
1. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:  
1. Do soil testing Topsoil specifications, obtain test results dictating 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 tested soil demonstrates a pH of less than 6.0, sufficient lime shall be spread to raise the pH to 6.5 or higher.  
b. Organic content of topsoil shall be not less than 1.5 percent by weight.  
c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.  
d. No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

2. Place topsoil (if required) and apply soil amendments as specified in 200 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application  
1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Bins, Slope Silt Fence and Sediment Traps and Basins.

2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

3. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

4. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative For Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

1. Composted Sludge Material For use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:  
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under CDMAR 2640.06.  
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.  
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

2. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, 1/2 the normal line application rate.

References: Guideline Specifications, Soil Preparation and Soddling, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

# DUST CONTROL

## DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

## PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY.

## CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY TO OCCUR.

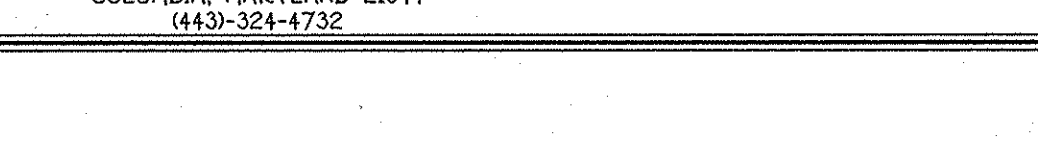
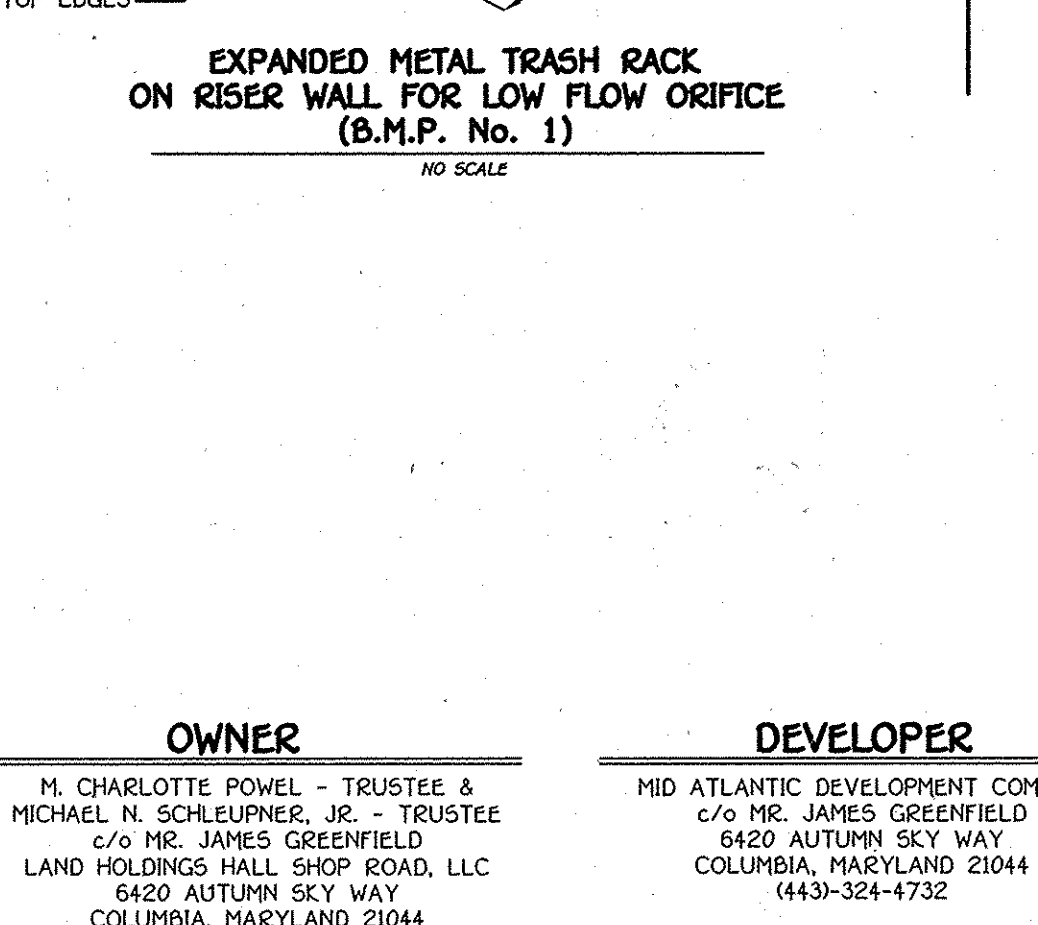
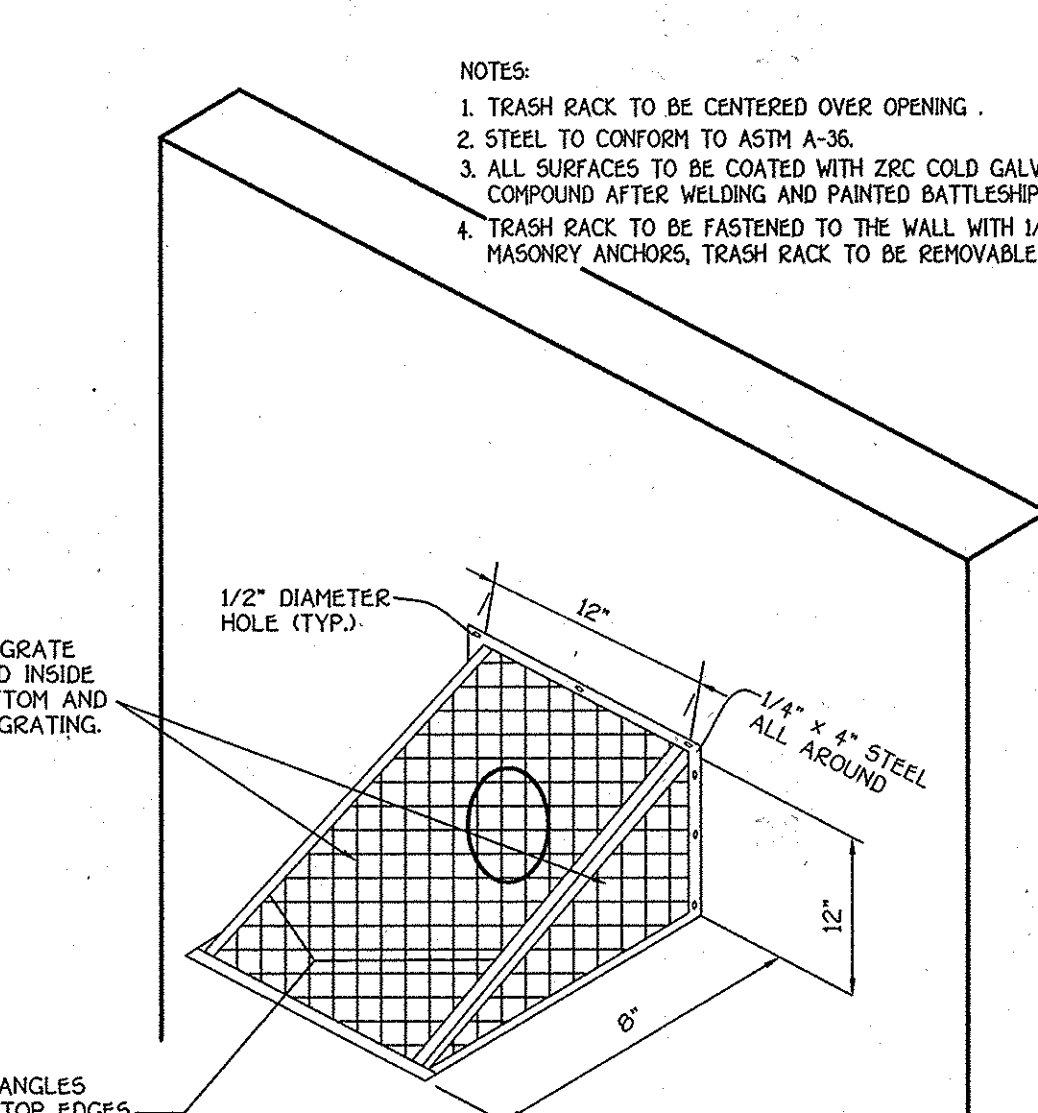
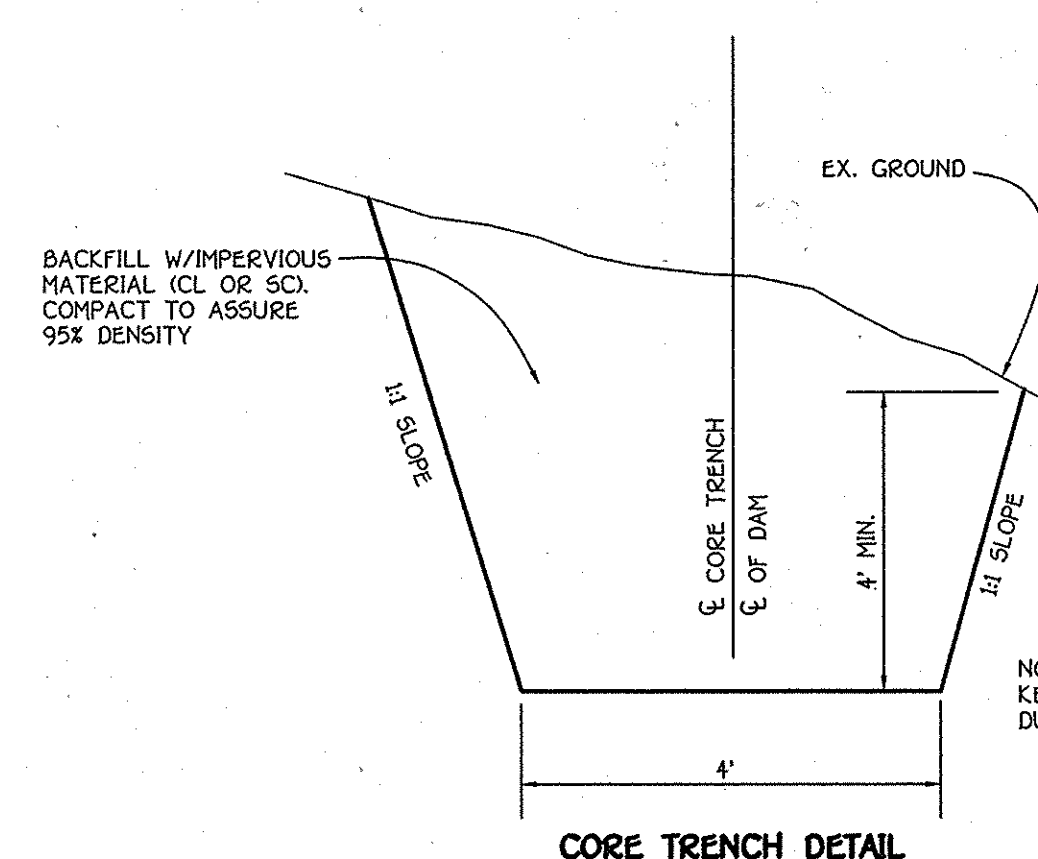
## SPECIFICATIONS

### TEMPORARY METHODS

- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
- VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
- TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE, THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
- IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
- BARRIERS - SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALE BIRES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
- CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

### PERMANENT METHODS

- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOIL, EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
- TOPSOILING - COVERING WITH LESS EROSION SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
- STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.



APPROVED: DEPARTMENT OF PUBLIC WORKS

W. R. ... 5-26-09  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

C. ... 6/4/09  
CHIEF, DIVISION OF LAND DEVELOPMENT

O. ... 6/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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."

Signature of Developer: J. ... 5/12/09  
Date

Signature of Engineer: B. James Greenfield  
Printed Name of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer To 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: J. ... 5/12/09  
Date

Printed Name of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature: B. James Greenfield 5/21/09  
Date

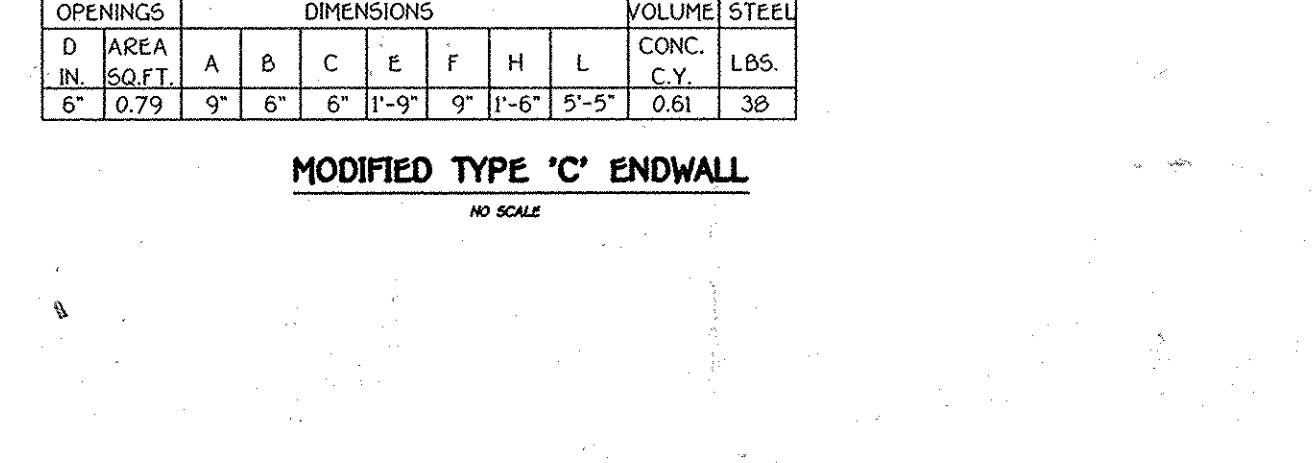
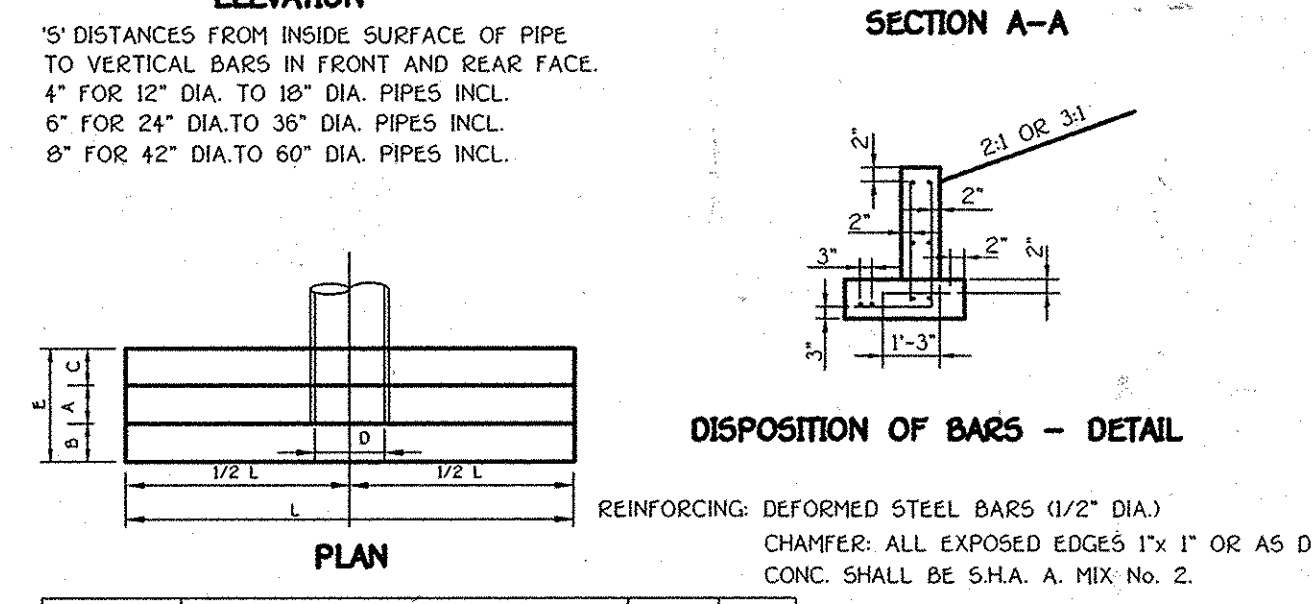
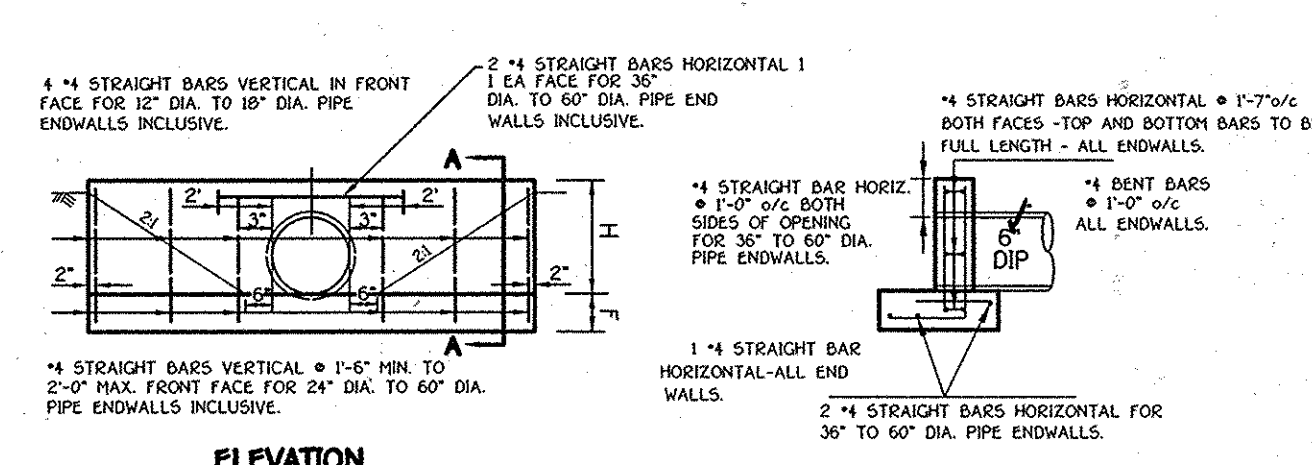
Howard Soil Conservation District

AS-BUILT CERTIFICATION

I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: J. ... 13204  
P.E. No. 62413  
Date

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate 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.



OPENINGS	D	A	B	C	E	F	H	L	VOLUME	
IN. SQ FT	AREA	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	
6"	0.79	9"	6"	6"	1'-9"	9"	1'-6"	9'-5"	0.61	38

MODIFIED TYPE 'C' ENDWALL  
NO SCALE

STORMWATER MANAGEMENT SPECIFICATIONS AND DETAILS  
SCHOOLEY MILL FARM  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
OWNER: M. CHARLOTTE POWEL - TRUSTEE & MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
DEVELOPER: MID ATLANTIC DEVELOPMENT COMPANY  
ZONED: RR-10C  
TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MAY 11, 2009  
SHEET 19 OF 21

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED STORM DRAIN
- FOREST CONSERVATION EASEMENT
- EXISTING TREELINE
- EXISTING TREADED LAWN (NOT WOODS)
- PROPOSED TREELINE
- PROPOSED WELL
- EXISTING WELL
- LOT LINE
- BOUNDARY LINE
- SPECIMEN TREE
- EXISTING TREE
- SOIL BORING

NO.	CONDITIONS	DATE
1	REVISED FIRE TALK & ADD COMMUNITY MAIL BOX	5/11/09

Schooley Mill Farm  
Forest Conservation Worksheet 2.2

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. R. ...* 3-26-09 DATE  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*...* 6/16/09 DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT

*...* 10/21/09 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

- Net Tract Area  
A. Total Tract Area  
B. Deductions  
C. Net Tract Area Land Use Category
- 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
- D. Afforestation Threshold (Net Tract Area x 20%)  
E. Conservation Threshold (Net Tract Area x 25%)
- Existing Forest Cover  
F. Existing Forest Cover within the Net Tract Area  
G. Area of Forest Above Conservation Threshold
- Break Even Point  
H. Break Even Point  
I. Forest Clearing Permitted Without Mitigation
- Proposed Forest Clearing  
J. Total Area of Forest to be Cleared  
K. Total Area of Forest to be Retained
- Planting Requirements  
L. Reforestation for Clearing Above the Conservation Threshold  
M. Reforestation for Clearing Below the Conservation Threshold  
N. Credit for Retention Above the Conservation Threshold  
P. Total Reforestation Required  
Q. Total Afforestation Required  
R. Total Planting Requirement

- A = 24.39
- B = 0.00
- C = 24.39
- D = 4.88
- E = .612
- F = 2.29
- G = 0.00
- H = 2.29
- I = 0.00
- J = 0.15
- K = 2.14
- L = 0.00
- M = 0.30
- N = 0.00
- P = 0.30
- Q = 2.59
- R = 2.89

**FOREST CONSERVATION EASEMENT**

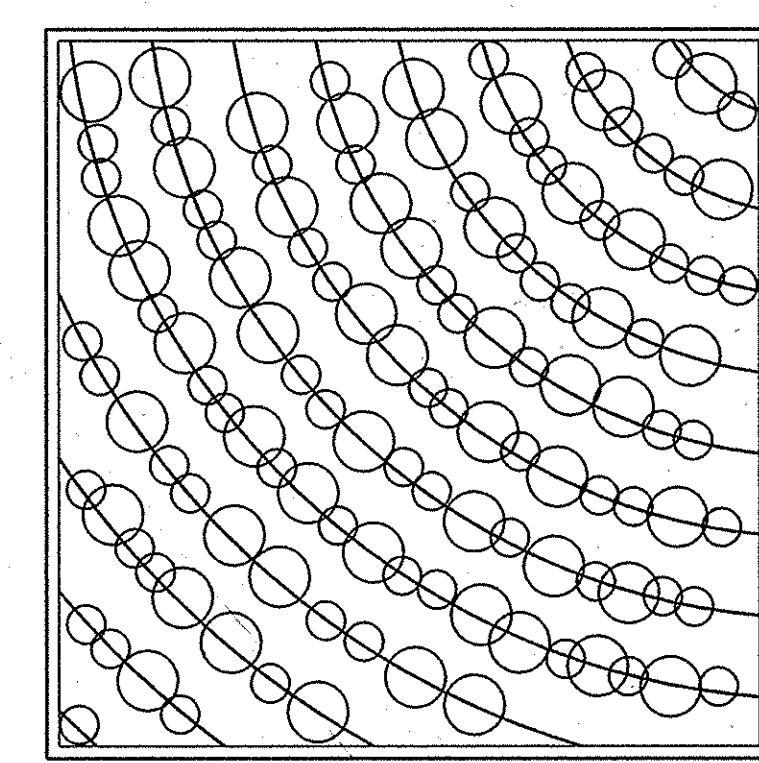
UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

**TREES FOR YOUR FUTURE**

11" MINIMUM

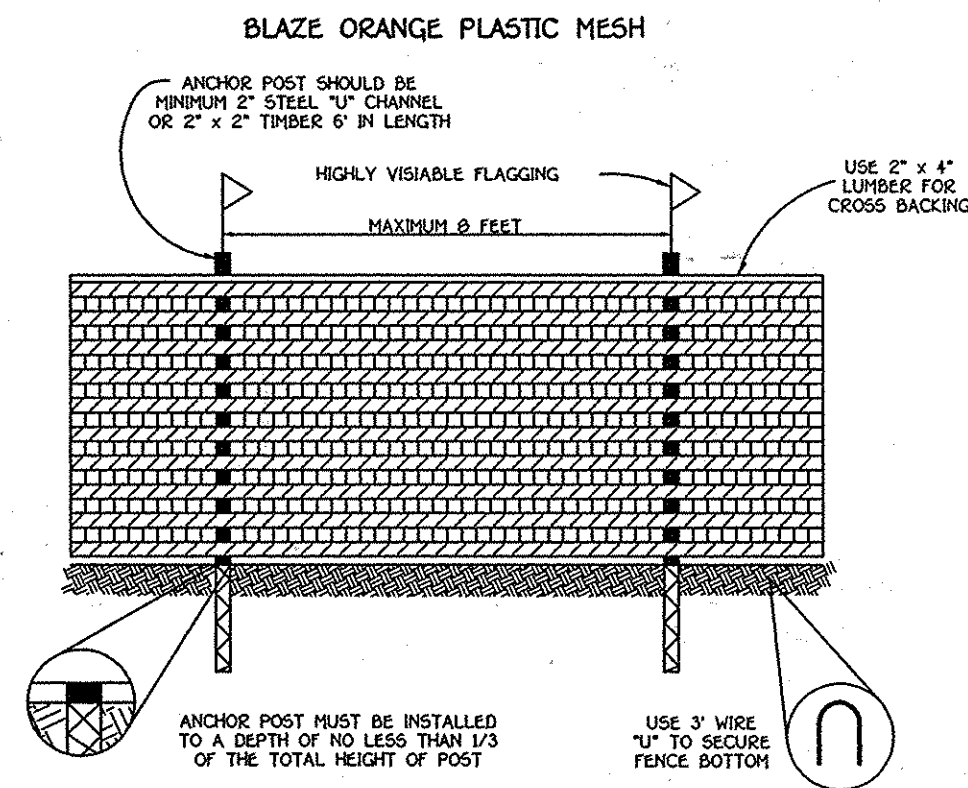
**SIGNAGE**  
Forest Protection Signage

PLANT LOCATIONS WILL BE DETERMINED BY A QUALIFIED FORESTRY PROFESSIONAL UTILIZING THE FOLLOWING METHODOLOGY



- Notes:
- Mix tree and shrub species in the staging area.
  - The qualified forestry professional will set the guide curvilinear line.
  - Set parallel curvilinear lines at 12' intervals.
  - Trees and shrubs will be planted at random spacing along the curvilinear lines.

**CURVILINEAR RANDOMIZED PLANTING**



- NOTES:
- FOREST PROTECTION DEVICE ONLY.
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - ROOT DAMAGE SHOULD BE AVOIDED.
  - PROTECTIVE SIGNAGE MAY ALSO BE USED.
  - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

**TREE PROTECTION DETAIL**  
NOT TO SCALE

**TREE PLANTING SCHEDULE**

The plan will require 2.59-acres of afforestation and 0.30-acre of reforestation for a total planting requirement of 2.89-acres. Tree planting will be performed using all 1-inch minimum caliper, container grown stock, at a rate of 200 trees per acre (15-feet on-center), for a total of 578 trees.

Species	No. Required
TULIP POPLAR LIRIODENDRON TULIPIFERA	50
RED MAPLE ACER RUBRUM	30
AMERICAN BEECH FAGUS GRANDIFOLIA	40
TULIP POPLAR LIRIODENDRON TULIPIFERA	40
WHITE PINE PINUS STROBUS	40
REDBUD CERCIS CANADENSIS	40
WHITE OAK QUERCUS ALBA	50
PIN OAK QUERCUS PALUSTRIS	50
WHITE FLOWERING DOGWOOD CORNUS FLORIDA	48
BLACK GUM NYSSA SYLVATICA	40
BLACK CHERRY PRUNUS SEROTINA	30
RED OAK QUERCUS RUBRA	30
HOCKERNUT HICKORY CARYA TOMENTOSA	30
PIGNUT HICKORY C. GLABRA	30
SASSAFRAS SASSAFRAS VARIFOLIUM	30

Notes: A bond must be posted in the amount of the initial cost of planting 50% of the bond can be returned upon successful planting, with the remaining difference of the bond released at the end of the second growing season, per inspection that 85% (491 trees per acre) or greater are alive and performing well.

**PLAN**  
SCALE: 1" = 50'

NOTE: THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. DATED DECEMBER 2006 AND WAS APPROVED UNDER SP-07-014.

**FOREST CONSERVATION PLAN**  
**SCHOOLEY MILL FARM**  
BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'

**DEVELOPER**  
MID ATLANTIC DEVELOPMENT COMPANY  
c/o MR. JAMES GREENFIELD  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

**OWNER**  
M. CHARLOTTE POWELL - TRUSTEE &  
MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
c/o MR. JAMES GREENFIELD  
LAND HOLDINGS HALL SHOP ROAD, LLC  
6420 AUTUMN SKY WAY  
COLUMBIA, MARYLAND 21044  
(443)-324-4732

**Marguerite Ratz** 5/11/09  
Marguerite Ratz Date  
Qualified Professional as per the  
1991 Maryland Forest Conservation Act  
Issued 12/02/2004

Property Of  
Howard County, Maryland  
2001, Folio 483  
Tax Map 40, Parcel 113  
Zoned: RR-DEO

**Professional Seal**  
I hereby certify that these documents  
were prepared by me, and that I am a duly licensed  
professional under the laws of the State of Maryland,  
License No. 20745, Expiration Date: February 22, 2011.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
33 CENTENNIAL SQUARE OFFICE PARK • 10772 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
410.461.2855

**PLANTING SPECIFICATIONS**

**GENERAL NOTES**

- The preparation of this plan, the notes and details were prepared using the guidelines of the Howard County Forest Conservation Manual.
- Afforestation/forestation planting and related work must be performed by a contractor that is knowledgeable and experienced in afforestation/forestation techniques and planting practices.
- All work shall be conducted in accordance with these plans. No changes to these plans may be made without the prior approval of P & Z.
- A pre-planting meeting shall be held to inspect the mitigation areas prior to implementation of the planting plan. The contractor must contact the owner's representative a minimum of 48 hours in advance of this meeting.
- The landscape contractor is responsible for the location of all underground utilities. He/she shall contact MD56 UTILITY a minimum of 48 hours in advance of any planting work. Utilities damaged during planting shall be repaired at the contractor's expense.
- The contractor shall remove any/all refuse from the designated mitigation areas. This refuse shall be hauled off-site.

**QUALITY ASSURANCE**

- Names of plant material listed conform generally with names accepted by the nursery trade. The contractor is to provide stock true to botanical name.
- All plant material shall conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen and as specified below. Plant material delivered to the site which does not conform to the American Standard for Nursery Stock or the following will be rejected by the owner's representative, and must be immediately removed from the site by the landscape contractor.
- Hardwood stock shall meet the following standards:  
 - Trees shall have a solid root mass with the soil in place. The roots shall appear clean and white in coloration. If growing, the trees shall appear healthy with no foliage spots, discoloration, wilting or other evidence of the presence of disease or insects.  
 - If specified material is not available, or species changes are requested, all substitutions must be approved by the owner's representative prior to scheduling a pre-planting meeting.
- All plant material shall be obtained from nurseries that have been inspected and certified by state plant inspectors.

**PRODUCT SPECIFICATIONS**

- FERTILIZER:** All fertilizer shall be granular, packet or pellet with 35 to 60% of the total nitrogen in a slow release form. For trees and shrubs fertilizer shall be a complete fertilizer with a minimum analysis of 10% nitrogen, 6% phosphorus, and 4% potassium. For use on specimen or significant trees, the fertilizer shall be high in phosphorus and low in nitrogen to promote root growth. A water-insoluble nitrogen, 2-year release fertilizer with a ratio of 20% nitrogen, 10% phosphorus and 2% potassium shall be added depending on the size of the plant and the manufacturer's recommended rate.
- ORGANIC MATTER:**
  - Peatmoss - Type I sphagnum peatmoss, finely divided with pH of 3.3-5.0.
  - Sedge Peat - Decomposed peat containing no identifiable fibers.
  - Composted - Approved, screened, polymer-dewaxed sewage sludge with a pH of 6.2-7.2.
- BACK-FILL MIXTURE:** Back-fill mixture for containerized trees shall be 3/4 existing soil mixed with 1/4 organic material plus granular fertilizer.
- MULCH:** Material shall be well aged, fine shredded hardwood, dark brown in color, or approved equal. Material shall be matching grade, uniform in size and free of foreign matter.

**PRE-PLANTING SPECIFICATIONS**

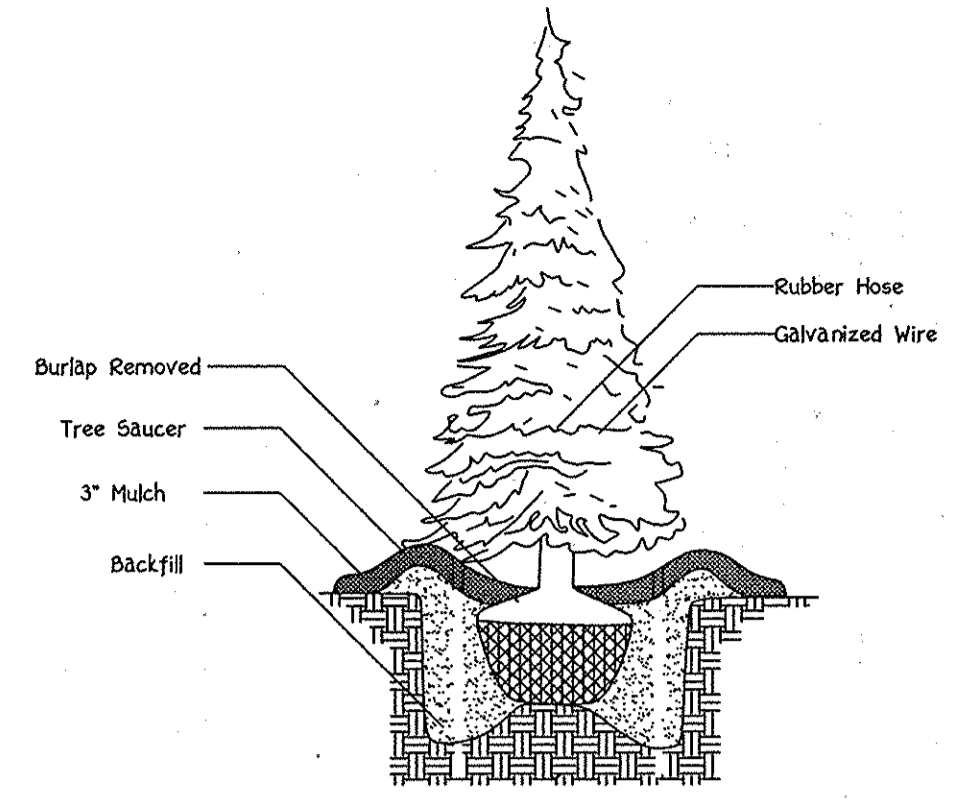
- Allow six (6) months in advance to order materials and plants.
- Acceptable planting time for container grown materials (trees, shrubs, and seedlings) is from March - June 15 and September - December. Planting shall not take place in sub-freezing temperatures, when the ground is frozen, or when the soil is too dry or wet, or otherwise in a condition not generally accepted as satisfactory for planting and may adversely affect plant materials.
- All planting areas shall be in a stabilized condition so as to minimize soil erosion. Seeding is NOT a part of these plan documents.
- The landscape contractor shall notify the owner's representative at least 2 weeks prior to the start of construction to arrange a pre-planting meeting.
- Planting shall occur within 24 hours of plant material delivery to the site. Plant materials left unplanted for more than 24 hours shall be protected from direct sun and weather and kept moist. Nursery stock shall not be left unplanted for more than 2 weeks.
- When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the owner's representative before planting.
- The landscape contractor is responsible for the location of all existing underground utilities. The repair of utilities damaged during planting shall be at the landscape contractor's expense.
- The landscape contractor is responsible for coordinating access to the site with the owner.
- All existing trash and impervious areas shown on the plan to be removed and any disturbed soil must be stabilized and seeded. It may be necessary to scarify and/or aerate the soil.
- Plants shall be inspected by the contractor and any material that is either damaged or which has root ball compaction, J-rooted, or linked root systems will be replaced. No plants will be stored on site. Plants will be planted immediately once received from the nursery.
- The fields prepared for planting shall be moved prior to planting. Planting areas that are graded and bare will be stabilized with a non-competitive seed mix.

**PLANTING SPECIFICATIONS**

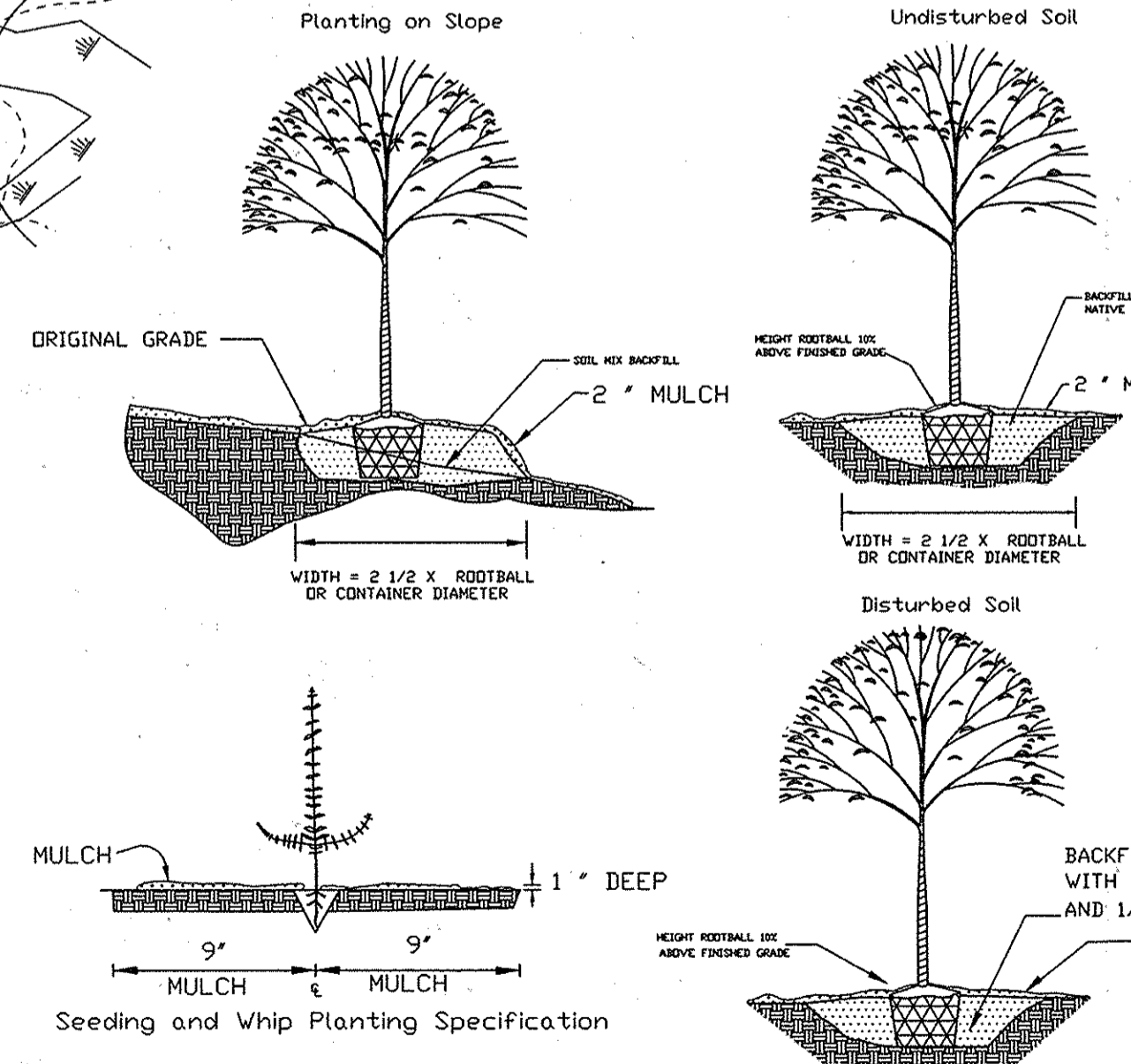
- Refer to the planting plan and plant schedule for plant material size, location and spacing.
- Planting holes should be tractor-dug, rather than hand-dug. The holes should be twice as wide as the root ball. De-consolidate the soil within the afforestation/forestation areas 12" by dicing or plowing, except in areas identified as wetlands on the plan.
- Backfill mixture for containerized trees shall be 3/4 existing soil mixed with 1/4 organic material or if planted on fill material 1/2 of native stockpiled topsoil or other approved equal. Remove the trees from the container and gently loosen the roots from the soil. During the backfilling procedure, thoroughly water soil around the root mass while tamping the backfilled mixture to eliminate any air pockets. After backfilling is complete, and the top of the root mass and planting area is mulched, water on the interior of the root mass until it is thoroughly saturated, even if it is raining.
- Only the number of trees that can be planted in one day shall be taken to the field.
- Trees shall be mulched after planting, as identified in the details on this sheet.
- Remove all tags, labels, string and wire from the planting material after planting.
- Planting field should be limited to 2.5 times root ball diameter. Native soil material will be used to backfill plant site and area will be packed to remove air pockets. Make soil evenly over the planting field and cover hole with three inches of mulch. Water to settle soil and provide moisture as needed.

**GUARANTEE AND REPLACEMENT**

- All plant material shall be guaranteed by the landscape contractor to remain alive and in a healthy, vigorous condition for a period of one year following planting.
- At the end of the one year guarantee period, 95% of the plant material shall be alive and healthy. All dead plants in excess of 85% of the total planted shall be replaced on a one-for-one basis at the contractor's expense.
- This guarantee shall cover losses due to all damages except vandalism, fire, and flood.
- A plant shall be considered dead when the main leader has died back or 25% of the crown is dead.
- Plant material replacements shall be of the same size, type, and variety as the plants specified in the planting schedule or as accepted in writing as substitutes before original planting. Plants shall be furnished, planted, and mulched as specified in these plans and at the expense of the landscape contractor.



**EVERGREEN PLANTING DETAIL CROSS SECTION**



**PLANTING**  
 Container Grown B & B Planting Detail

**CONSTRUCTION PERIOD PRACTICES**

The construction period extends from final approval of the development proposal until the release of all required guarantees specified for forest conservation requirements in the developer agreement.

**CONSTRUCTION PERIOD SUPERVISION**

As part of the construction period management and planting program, the developer shall designate an individual or firm to be fully responsible for implementing the requirements of approved forest conservation plan or requesting modifications of previously approved requirements concerning planting techniques, species or maintenance needs. Those responsible for implementation of the approved forest conservation plan during the construction period shall conform to the professional qualifications cited in Chapter VI of this manual.

**PROTECTING AND MANAGING FOREST RETENTION AREAS**

Forest retention areas are extremely vulnerable to damage, long term decline, and death stemming from improper design, construction practices, saving forests and specimen trees during the construction process requires site planning, engineering practices and construction methods that protect the biological needs of trees. A large horizontal/vertical principles are the basis of the protection guidelines and requirements cited in this manual.

- A tree's root system can be large, extending well beyond the drip line of the crown. Typically, root systems are very shallow, in the most cases being only 12" - 18" deep.
- Trees generally do not have top roots.
- There are about as many roots as there are twigs and branches. If roots die, branches will die to keep the tree in balance.
- Trees roots need a balance of water and air in the soil. Air only penetrates 12" - 18" into the soil. Stress and decline in tree health results when soil is piled on top of existing roots or roots are suddenly forced to sit in waterlogged soil or overly dry soil due to topography changes during construction.
- Soil compaction to bulk densities of 1.7 g/cm<sup>3</sup> centimeters or greater cannot support root growth. Existing roots in heavily compacted soils usually die.
- Trees growing in disturbed or tilled soils usually die back in proportion to the zone that is disturbed. Even minor disturbances such as tilling within the root zone for lawn installation will cause harm.
- Trees, especially large trees, may take a long time to show the effects of construction loss of soil. Trees may die 5 or even 10 years after being weakened by construction activity. Secondary stresses such as insects, disease, or drought may kill weakened trees while the same stress would not have affected a healthy tree.

**SOIL PROTECTION ZONE**

The soil protection zone must be protected from construction activity and other stresses (e.g. flooding) to protect the forest stand from damage. The forest retention practices for a development must address the specific needs and stresses the proposal may cause. Nevertheless, the need to define the soil protection zone (critical root area) for forest areas is the one factor common to all retention efforts.

The extent of the root system is quite large. The ratio of root expansion to crown spread can be 2:1 or larger on open grown specimen trees, and can be significantly larger still for trees growing in the interior of forest stands. Furthermore, the minimum requirement for root protection varies from species and soil type to soil type. For open grown trees, it is generally accepted that protecting the soil within the drip line of the tree is adequate to save the tree in most cases. For trees that have been part of forest communities, however, the soil protection zone may have to be modified to reflect a more complex relationship between crown spread and root growth.

**BEST MANAGEMENT PRACTICES DURING CONSTRUCTION**

Many of the construction period measures cited in the manual are for areas that should not be disturbed. The desire to protect areas within the limit of disturbance can be abated, modified by poor construction site management. The required construction period management program must therefore specify how construction activities will be managed to protect forest retention areas. The following should be depicted on site construction documents and/or forest conservation plans; they shall also be itemized in the developer agreement.

- storage of equipment and materials
- disposal of construction debris
- washing of equipment, disposal of wastewater from concrete operations, etc.
- employee parking
- temporary structures such as trailers, auxiliary facilities, etc.

Unless specifically exempted by the approved forest conservation plan, any use of forest retention area for these activities or other intrusion shall be a violation of the approved forest conservation plan.

Because reforestation and afforestation typically may involve disturbances greater than 5000 square feet, proper sediment and erosion controls may be required. Developers should refer to the Howard County Soil Conservation District for current standards, specifications and requirements. It may be necessary to protect forest retention areas from erosion and sedimentation caused by implementation of reforestation or afforestation plantings.

**CONSTRUCTION PERIOD PLANTING PROCEDURES**

The measures to protect forest retention areas emphasize avoiding them from development impacts. Reforestation or afforestation, in contrast, will often occur on land already disturbed by development activities or may be located on land which will require substantial preparation to be suitable for planting to survive and thrive. Reforestation and afforestation may also require a great deal of management once they are installed. Appendix H provides guideline specifications for proper planting, including techniques for site preparation and management. The following issues are of particular concern.

- General site preparation for planting for undisturbed sites, disturbance of soils should be limited to the planting field for each plant. For disturbed areas, soils should be treated by incorporating natural mulch within the top 12 inches, or with needed amendments such as organic mulch or leaf mold compost are preferred.
- Stream buffer planting borders of streams and other waterways may have been damaged before reforestation and afforestation and therefore may need more extensive restoration work before reforestation or afforestation can be successful. The following are guidelines for any work within a riparian zone:
  - Correct any erosion problems
  - Minimize or eliminate any chemical use
  - Maintain an undisturbed leaf layer and understory
  - Eliminate exotics
- Steep slope planting in areas of steep slopes or erodible soils, the preferred method of reforestation or afforestation is the use of seedings to minimize disturbance. Planting on open or disturbed steep slopes eventually will stabilize them. Until the roots become established, however, there may still be erosion problems. Monitoring the stability of the soil will be important to the success of the tree.
- Post-planting considerations for areas of large-scale disturbance, soils must be stabilized using a non-turf building ground cover or engineering fabric. To protect against intrusion and to prevent damage of planted areas, all reforestation and afforestation sites must be posted with appropriate signs and fences.

**CERTIFICATION OF COMPLETION**

At the end of the construction period, the designated qualified professional shall convey to the Department of Planning and Zoning certification that all forest retention areas have been preserved, all reforestation and afforestation plantings have been installed as required by the forest conservation plan and that all protection measures required for the post-construction period have been put in place. Appendix J contains a sample format for such certification. Planting must occur before June 30th to be credited toward the current growing season.

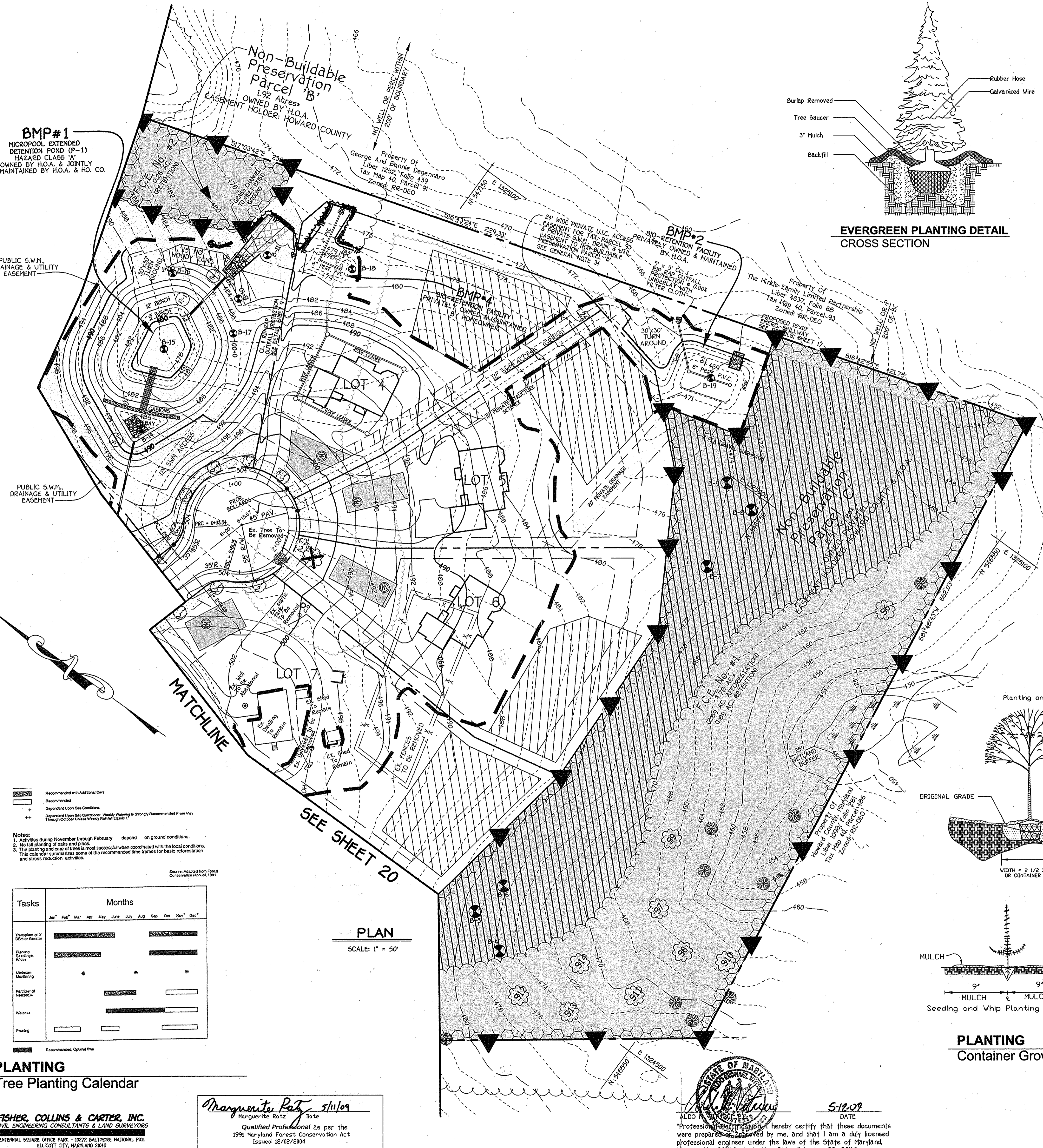
Upon review of the certification document for completeness and accuracy, the Department will notify the developer of the beginning of the post-construction management period.

**POST-CONSTRUCTION MANAGEMENT PRACTICES**

Many of the protection and management practices for the construction period must be continued for at least 2 growing seasons following official notification of completion of the development for a specific phase of the overall development if planting has been approved. The responsibility to meet the survival standards requires adequate watering, mulching and other appropriate measures. Also, inappropriate uses or intrusions must not occur; a responsibility that requires the knowledge and cooperation of the new occupants of the development.

**SURETY**

The forest conservation requirements per section 16.2200 of the Howard County code and the forest conservation manual for this subdivision will be satisfied by retention of 248 acres of forest and afforestation of 2.09 acres. The forest conservation surties in the amount of \$81,568,000 (\$14,450,000 x 5.65) x 4.50 = \$322,800,000 + \$48,640,000 + 2.09 acres x \$3,500,000/acre = \$125,808,000. Of afforestation = 0.50/acre x \$1, = \$48,244 for a total of \$81,568,000.



**BMP#1**  
 MICROPOOL EXTENDED DETENTION POND (P-1) HAZARD CLASS 'A' OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. & H.C. CO.

PUBLIC S.W.M. DRAINAGE & UTILITY EASEMENT

PUBLIC S.W.M. DRAINAGE & UTILITY EASEMENT

Recommended with Additional Cost  
 Recommended  
 Dependent Upon Site Conditions  
 And Other Factors (See Notes 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

Notes:  
 1. Activities during November through February depend on ground conditions.  
 2. No fall planting of oak species.  
 3. The planting and care of trees is most successful when coordinated with the local conditions. This calendar summarizes some of the recommended time frames for basic reforestation and stress reduction activities.

Tasks	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Transport of B & B or Greater												
Planting												
Mulching												
Watering												
Staking												
Planting												

**PLANTING**  
 Tree Planting Calendar

Marguerite Ratz 5/11/09  
 Marguerite Ratz Date  
 Qualified Professional as per the 1991 Maryland Forest Conservation Act Issued 12/02/2004

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 481-2955



5-12-09 DATE  
 Professional Engineer hereby certify that these documents were prepared, approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2011.

**OWNER**  
 M. CHARLOTTE POWELL - TRUSTEE &  
 MICHAEL N. SCHLEUPNER, JR. - TRUSTEE  
 c/o MR. JAMES GREENFIELD  
 LAND HOLDINGS HALL SHOP ROAD, LLC  
 6420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**DEVELOPER**  
 MID ATLANTIC DEVELOPMENT COMPANY  
 c/o MR. JAMES GREENFIELD  
 5420 AUTUMN SKY WAY  
 COLUMBIA, MARYLAND 21044  
 (443)-324-4732

**FOREST CONSERVATION PLAN**  
**SCHOOLEY MILL FARM**  
 BUILDABLE LOTS 1 - 11, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' - 'D'  
 ZONED: RR-DEO  
 TAX MAP 40, GRID 10 & 11, PARCEL 115 & 149  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 50'  
 DATE: MAY 11, 2009  
 SHEET 21 OF 21