

SHEET INDEX	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	MILLERS WAY DRIVE PLAN AND PROFILE & CHAPEL HILL DRIVE PLAN
3	CHAPEL HILL DRIVE PLAN AND PROFILE
4	MILLERS WAY DRIVE PLAN AND PROFILE
5	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
6	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
7	STORM DRAIN PROFILES
8	STORM DRAIN PROFILES
9	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
10	STORMWATER MANAGEMENT NOTES AND DETAILS
11	STORMWATER MANAGEMENT NOTES AND DETAILS
12	DRAINAGE AREA MAP & LANDSCAPING PLAN
13	DRAINAGE AREA MAP & LANDSCAPING PLAN
14	FOREST CONSERVATION PLAN
15	FOREST CONSERVATION PLAN
16	SOIL BORINGS
17	S.W.M. SOIL BORINGS AND POND DEWATERING DETAILS
18	OFF-SITE FOREST CONSERVATION PLAN, NOTES & DETAILS
19-20	STREAM RESTORATION PLANS AND DETAILS

FINAL ROAD CONSTRUCTION, GRADING AND SEDIMENT CONTROL PLANS

HOLLIFIELD HILLS

LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47

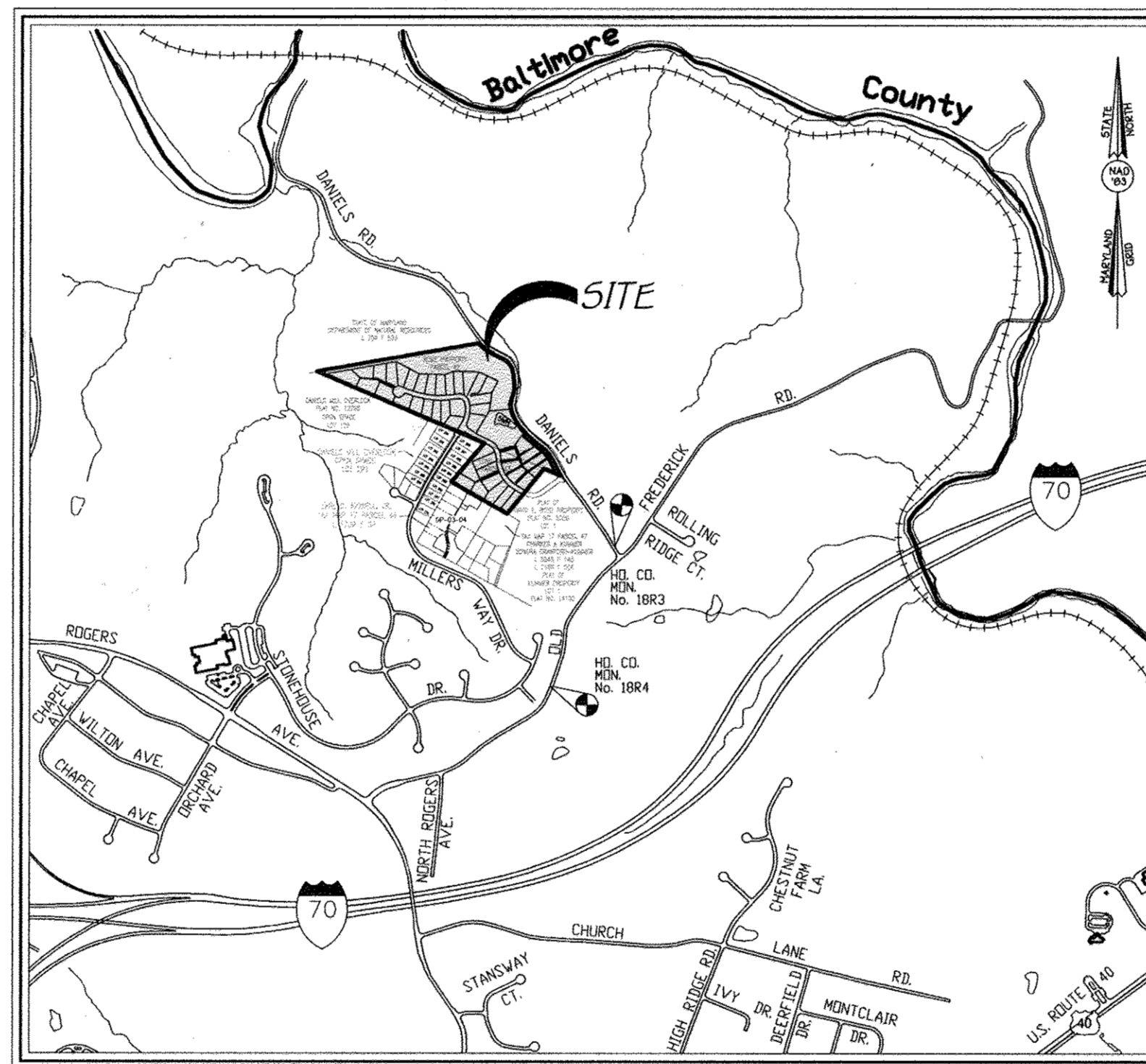
"A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240
and Long Acres, Lots 1 and 2, Plat No. 6062".

ZONED: R-20

TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43

ROAD CLASSIFICATION CHART		
ROAD	CLASSIFICATION	R/W WIDTH
MILLERS WAY DRIVE	PUBLIC ACCESS STREET	40'
CHAPEL HILL DRIVE	PUBLIC ACCESS STREET	40'

STREET LIGHT CHART				
STW. No.	STREET NAME	STATION	OFF-SET	FIXTURE/POLE TYPE
2	MILLERS WAY DRIVE	0+52	30'R	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.
4	MILLERS WAY DRIVE	3+22	15'L	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.
4	MILLERS WAY DRIVE	L.P. STA. 1+78	3' BACK OF CURB	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.
2	CHAPEL HILL DRIVE	3+81	15'L	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.
3	CHAPEL HILL DRIVE	6+27	15'R	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.
3	CHAPEL HILL DRIVE	7+85	15'R	100 WATT "PREMIER" H.P.S. VAPOR FIXTURE POST TOP FIXTURE MOUNTED ON A 14 FOOT BLACK FIBERGLASS POLE.



Vicinity Map
Scale: 1" = 1200'

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TRAFFIC CONTROL SIGNS				
STREET NAME	CL. STATION	OFFSET	POSTED SIGN	SIGN CODE
MILLERS WAY DRIVE	1+81	14'R	SPEED LIMIT 25	R2-1
CHAPEL HILL DRIVE	0+27	18'L	STOP	R1-1
CHAPEL HILL DRIVE	1+00	14'R	SPEED LIMIT 25	R2-1
CHAPEL HILL DRIVE	3+75	20'L	PRIVATE ADDRESS SIGN	
CHAPEL HILL DRIVE	5+40	20'R	PRIVATE ADDRESS SIGN	
MILLERS WAY DRIVE	L.P. 1+85	5' BEHIND CURB	PRIVATE ADDRESS SIGN	

APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>William J. Mahoney</i>	11-21-06	
CHIEF, BUREAU OF HIGHWAYS	DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Chris Kamm</i>	12/13/06	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE	
<i>William J. Mahoney</i>	12/13/06	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE	
REVISIONS		
NO.	DESCRIPTION	DATE
1	MOVE DAM POND OUT OF WETLANDS AREA AND REUSE ADJACENT PROPOSED LOT, STORM DRAIN & UTILITIES AND ADD SHEET 19-20 STREAM RESTORATION PLANS	9/9/06

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-20 PER 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP. LITE ZONING REGULATIONS EFFECTIVE 7/28/06.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS ARE APPROVED.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1800 AT LEAST (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY "M&S UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
- LOCATION: DANIELS ROAD, NORTH OF OLD FREDERICK ROAD, TAX MAP No. 17, PARCEL No. 42 & 43
- TOPOGRAPHIC INFORMATION ESTABLISHED AT TWO FOOT INTERVALS BASED ON AERIAL TOPOGRAPHY PREPARED BY AIR SURVEY CORPORATION DATED APRIL, 2000.
- PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS.
 - EXISTING WATER CONTRACT NO. 14-1307-D DRAINAGE AREA: PATAPSCO
 - EXISTING SEWER CONTRACT NO. 14-1307-D DRAINAGE AREA: PATAPSCO
- THIS HORIZONTAL AND VERTICAL DATUM SHOWN ARE BASED ON THE FOLLOWING HAD '83 HOWARD COUNTY CONTROL STATIONS: No. 1883 AND No. 1884.

HO. CO. MON. NO. 1883	N 596,747.870	ELEV. = 459.680
	1,367,360.555	
HO. CO. MON. NO. 1884	N 595,543.252	ELEV. = 475.951
	1,366,800.979	
- AREA TABULATION:

GROSS AREA OF TRACT:	26.381 AC. +/-
AREA OF FLOODPLAIN:	0.00 AC.
AREA OF STEEP SLOPES:	6.69 AC.
NET AREA OF TRACT:	19.70 AC. +/-
AREA OF PUBLIC ROAD R/W:	1.739 AC. +/-
AREA OF BUILDABLE LOTS:	16.049 AC. +/-
AREA OF OPEN SPACE LOTS:	3.650 AC. +/-
- LOT TABULATION:

TOTAL NO. OF PROPOSED LOTS:	47
NO. OF BUILDABLE LOTS:	43
NO. OF OPEN SPACE LOTS:	4
- OPEN SPACE AND RECREATIONAL OPEN SPACE TABULATION:

REQUIRED OPEN SPACE:	7.916 AC. +/-
OPEN SPACE PROVIDED:	8.569 AC. +/-
a) Non-Credited Open Space Lot 44 = 0.030 AC.	
b) Credited Open Space Provided = 0.969 AC. = 0.031 AC. = 0.938	
- RECREATIONAL OPEN SPACE PROVIDED: 237.50 FT. (0.100 AC.) OF OPEN SPACE. RECREATIONAL OPEN SPACE PROVIDED: ~~PROVIDE OPEN SPACE ALLOWED ON OPEN SPACE LOT 46 DUE TO WIDE STREAM RESTORATION.~~
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.
- DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
 - WIDTH - 12 FEET (8 FEET SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - SIX (6) INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
 - STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H2S LOADING)
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
- WETLAND AND STREAM DELINEATION INFORMATION SHOWN WAS TAKEN FROM REPORTS PREPARED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. DATED DECEMBER, 1999 AND VOGEL & ASSOCIATES, INC. DATED NOVEMBER, 2000 AND WAS APPROVED UNDER SP-01-06.
- TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP DATED SEPTEMBER, 2000 AND WAS APPROVED UNDER SP-01-06.
- SOILS INFORMATION TAKEN FROM SOIL MAP NO. 10, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY 1960 ISSUE.
- THE PROPOSED DISTURBANCE TO THE 25% OR GREATER STEEP SLOPE AREA WITHIN LOTS 24 AND 25 HAS BEEN DETERMINED NECESSARY BY DPZ FOR THE CONSTRUCTION OF THE MILLERS WAY DRIVE EXTENSION IN ACCORDANCE WITH SECTION 16.16(c) OF THE SUBDIVISION REGULATIONS, "APPROVED BY DPZ UNDER SP-01-06".
- DANIELS ROAD IS A SCENIC ROAD AS PER APPROVED SP-01-06 NO LANDSCAPING SHALL BE PLACED ALONG DANIELS ROAD WHICH WILL OBSTRUCT SIGHT LINES FROM THE INTERSECTION OF DANIELS ROAD AND THE FUTURE RIGHT-OF-WAY.
- THERE IS NO PUBLIC 100 YEAR FLOODPLAIN WITHIN THIS SUBMISSION.
- STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL, STREET LIGHT PLACEMENT AND TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN AND STREET LIGHT AND ANY TREE.
- FOREST STAND DELINEATION & FOREST CONSERVATION PLAN WAS PREPARED BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. DATED JANUARY, 2000 AND VOGEL & ASSOCIATES, INC. DATED NOVEMBER, 2000 AND WAS APPROVED UNDER SP-01-06.
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 37b SPECIFICATIONS. WATER QUALITY AND QUANTITY WILL BE PROVIDED BY A WET POND (B.M.P. NO. 1) LOCATED ON OPEN SPACE LOT 45. TYPE: PERMANENT WET POND OWNER: THE HOMEOWNER'S ASSOCIATION MAINTENANCE: THE HOMEOWNER'S ASSOCIATION & HOWARD COUNTY, MARYLAND
- PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS ARE F-84-195, F88-267, S-00-07, SP-01-06.
- THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 3.87 ACRES OF ON-SITE FOREST RETENTION, 1.31 ACRES OF ON-SITE PLANTING AND THE BALANCE OF 2.48 ACRES OF REFORESTATION OBLIGATION WILL BE PROVIDED IN AN OFF-SITE FOREST CONSERVATION EASEMENT ON "SCRIVENER PROPERTY". FOREST CONSERVATION PLAT LOCATED ON TAX MAP NO. 23, GRID NO. 5, PARCEL NO. 19 IN THE 2nd ELECTION DISTRICT. The surety amount for the on-site forest retention obligation is 1.31 ac. planting @ 40.50/sq.ft. = \$53.055.00 and retention @ 40.50/sq.ft. = \$54.015.00. The total forest retention surety amount for the required 7.66 ac. is \$107.070.00. 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.
- A PERMANENT LANDSCAPE SURETY FOR 50 SHADE TREES AND 35 EVERGREEN TREES IN THE AMOUNT OF \$25,000.00 IS PROVIDED IN A DEVELOPER'S AGREEMENT. A SURETY FOR 99 STREET TREES IN THE AMOUNT OF \$25,000 IS ALSO PROVIDED IN THE DEVELOPER'S AGREEMENT.
- "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 (1/2 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (2 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- ALL EXISTING STRUCTURES AND DRIVEWAYS WITHIN THE LIMITS OF DISTURBANCE ARE TO BE REMOVED.
- EXISTING WELL AND SEPTIC SYSTEM TO BE PROPERLY ABANDONED PRIOR TO RECORDING OF RECORD PLAT.
- 95% COMPACTION IN FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-180 STANDARDS.
- THE MDE DAM SAFETY DIVISION TRACKING NUMBER FOR THIS PROJECT IS NO. 200664995 AND THE WMA PERMIT FILE ASSIGNED TO THIS PROJECT IS NO. 06-MR-0064 AND 06-NR-3245.

AS BUILT 1/28/15



10-26-06
DATE

HOLLIFIELD HILLS
LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
"A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 1 and 2, Plat No. 6062".
ZONED R-20
TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: OCTOBER 24, 2006
SHEET 1 OF 26

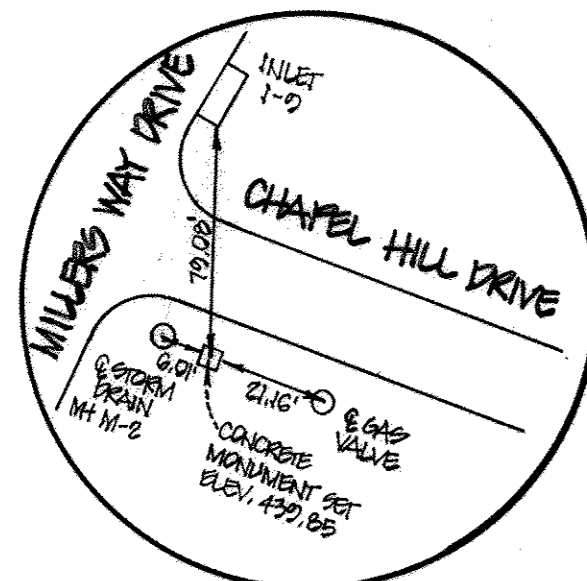
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 18775 BALTIMORE NATIONAL PKE
ELLSWORTH CITY, MARYLAND 21042
410-661-2922

OWNER / DEVELOPER
MID ATLANTIC DEVELOPMENT COMPANY
c/o B. JAMES GREENFIELD
6420 AUTUMN SEAS WAY
COLUMBIA, MARYLAND 21044
(410) 730-3940

☉ CURVE DATA
MILLERS WAY DRIVE
 STA. 0+73.50 TO STA. 2+55.95
 RADIUS = 249.64'
 ARC LENGTH = 102.37'
 TAN = 95.47'
 DELTA = 41°31'20"
 CHORD = 111°14'0"E, 170.34'

☉ CURVE DATA
CHAPEL HILL DRIVE
 STA. 0+62.00 TO STA. 1+61.00
 RADIUS = 630.35'
 ARC LENGTH = 99.80'
 TAN = 50.00'
 DELTA = 09°04'17"
 CHORD = 562°24'40"E, 99.70'

☉ CURVE DATA
CHAPEL HILL DRIVE
 STA. 1+93.59 TO STA. 3+75.60
 RADIUS = 196.73'
 ARC LENGTH = 102.01'
 TAN = 98.10'
 DELTA = 53°00'28"
 CHORD = 540°26'34"E, 175.59'



NO.	REVISIONS	DATE
1	MOVE SWM POND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM DRAIN & UTILITIES	3-01-07

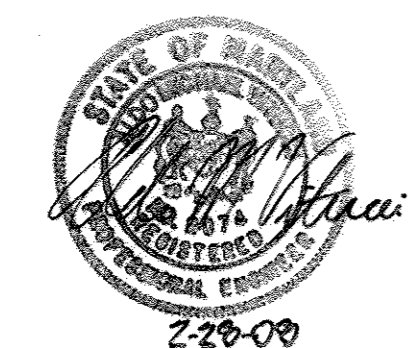
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hanon 4/16/08
 CHIEF, DIVISION OF LAND DEVELOPMENT

Adm
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 "FOR PUBLIC INFRASTRUCTURES ONLY"

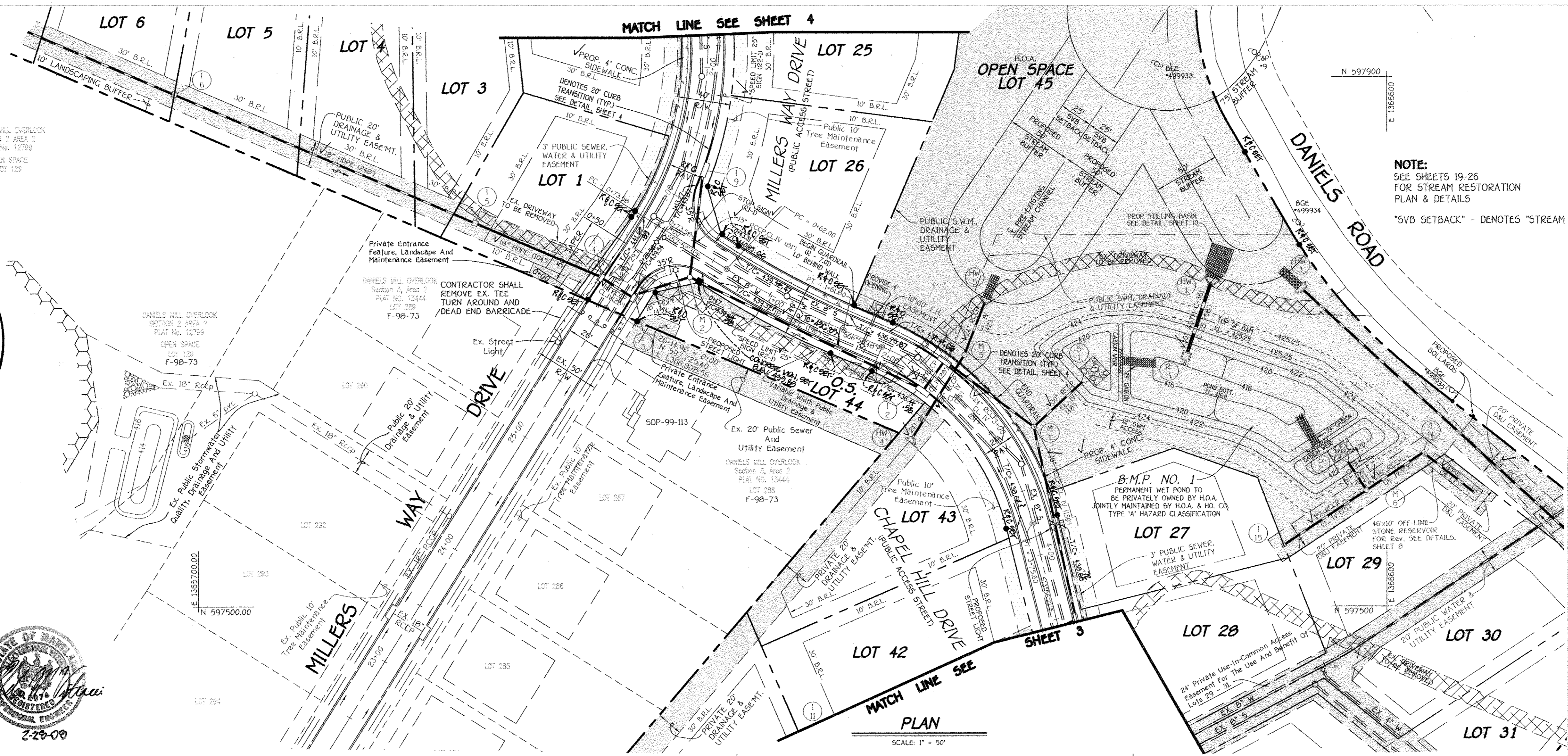
Willie R. Mott 4-2-09
 CHIEF, BUREAU OF HIGHWAYS



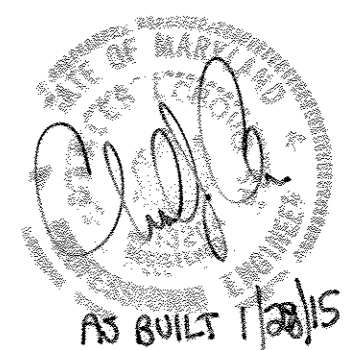
DANIELS HILL OVERLOOK
 SECTION 3, AREA 2
 PLAT NO. 12799
 OPEN SPACE
 LOT 129

DANIELS HILL OVERLOOK
 SECTION 3, AREA 2
 PLAT NO. 12799
 OPEN SPACE
 LOT 129

220-00



NOTE:
 SEE SHEETS 19-26
 FOR STREAM RESTORATION
 PLAN & DETAILS
 "SVB SETBACK" - DENOTES "STREAM VALLEY BUFFER SETBACK"



NOTE:
 95% COMPACTION IN ALL FILL AREAS SHALL BE IN
 ACCORDANCE WITH AASHTO T-180 STANDARDS.

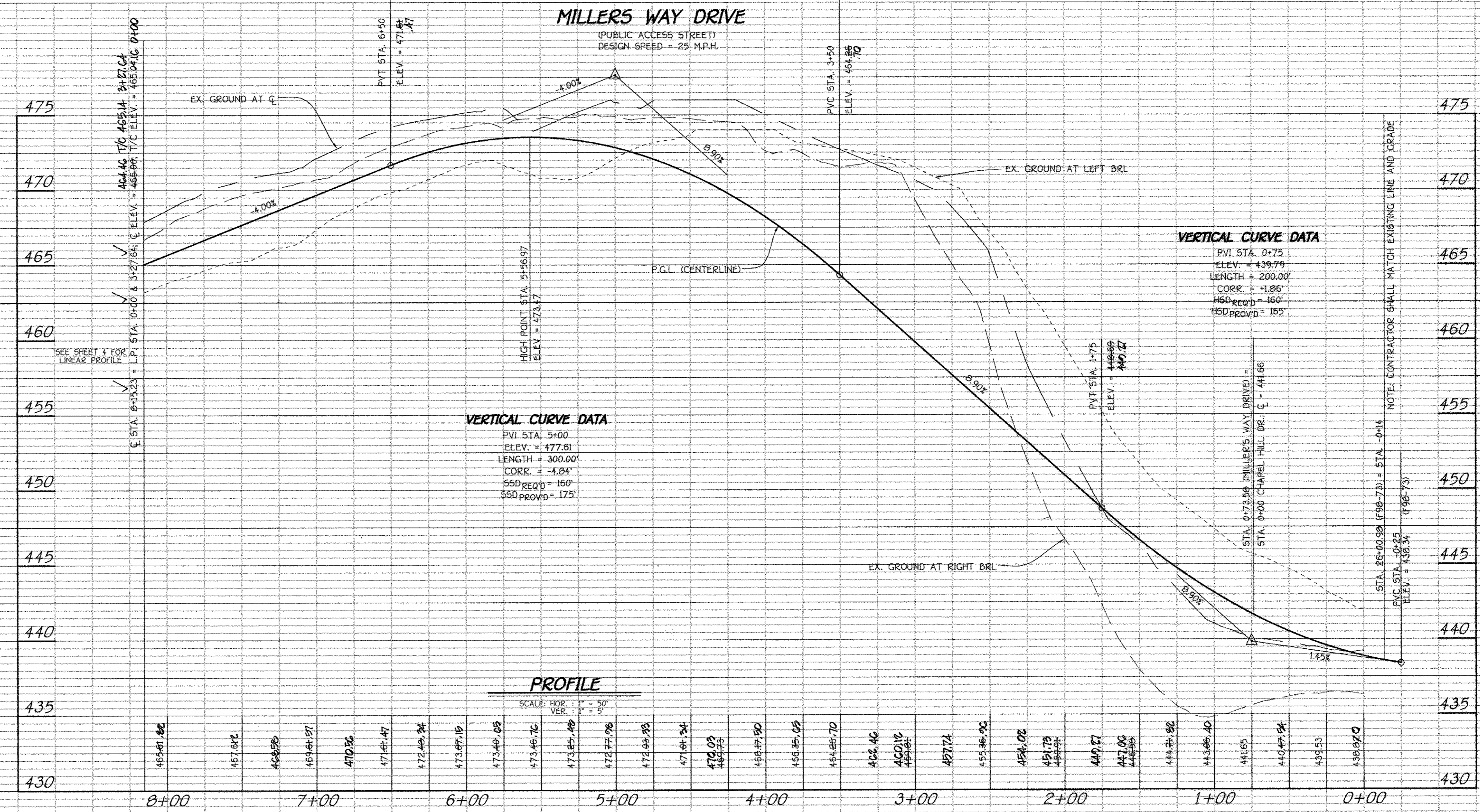
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 Lots 1 Thru 43 And
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 Zoned: R-20
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 2nd Election District Howard County, Maryland

MILLERS WAY DRIVE PLAN AND PROFILE
CHAPEL HILL DRIVE PLAN

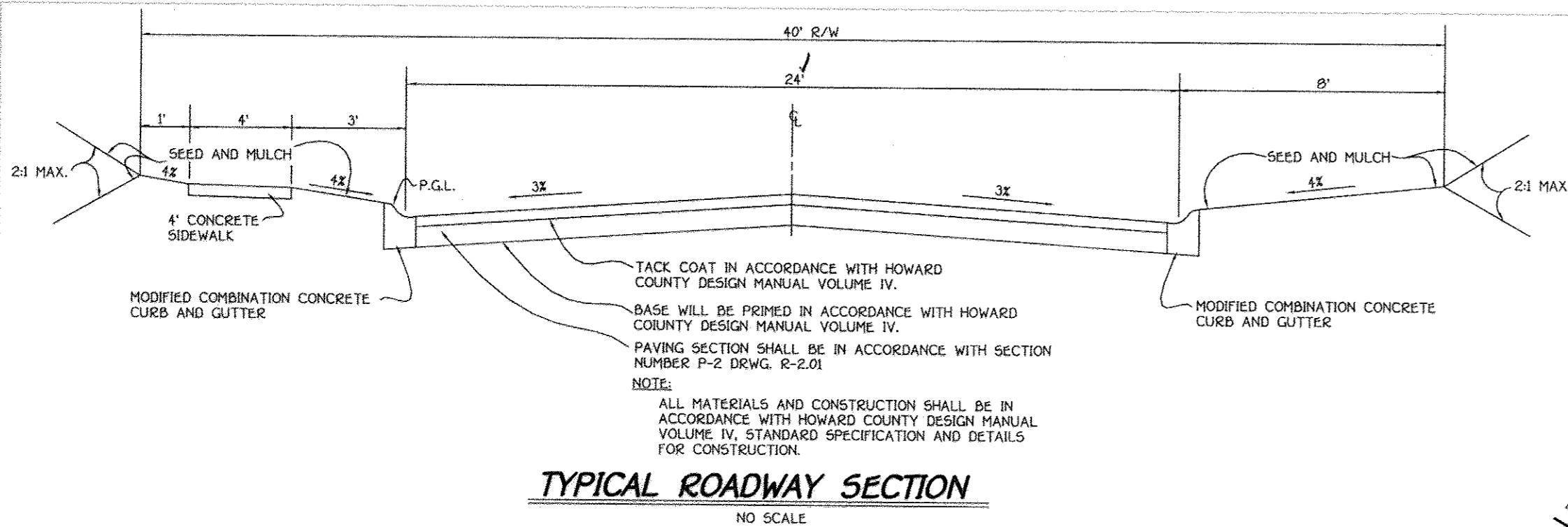
OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

SCALE: 1" = 50'
 DATE: JANUARY, 2008
 DES: A.M.V. DRN: J.C.L. CHK: A.M.V.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1800 E. BALTIMORE HIGHWAY, SUITE 100
 ELICOTT CITY, MARYLAND 21043
 (410) 588-2200



AS-BUILT



ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
MILLERS WAY DRIVE	PUBLIC ACCESS STREET	25 MPH	R-20	0+00 TO 9+23.14	P-2
CHAPEL HILL DRIVE	PUBLIC ACCESS STREET	25 MPH	R-20	0+00 TO 9+13	P-2

REVISIONS

NO.	DESCRIPTION	DATE
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

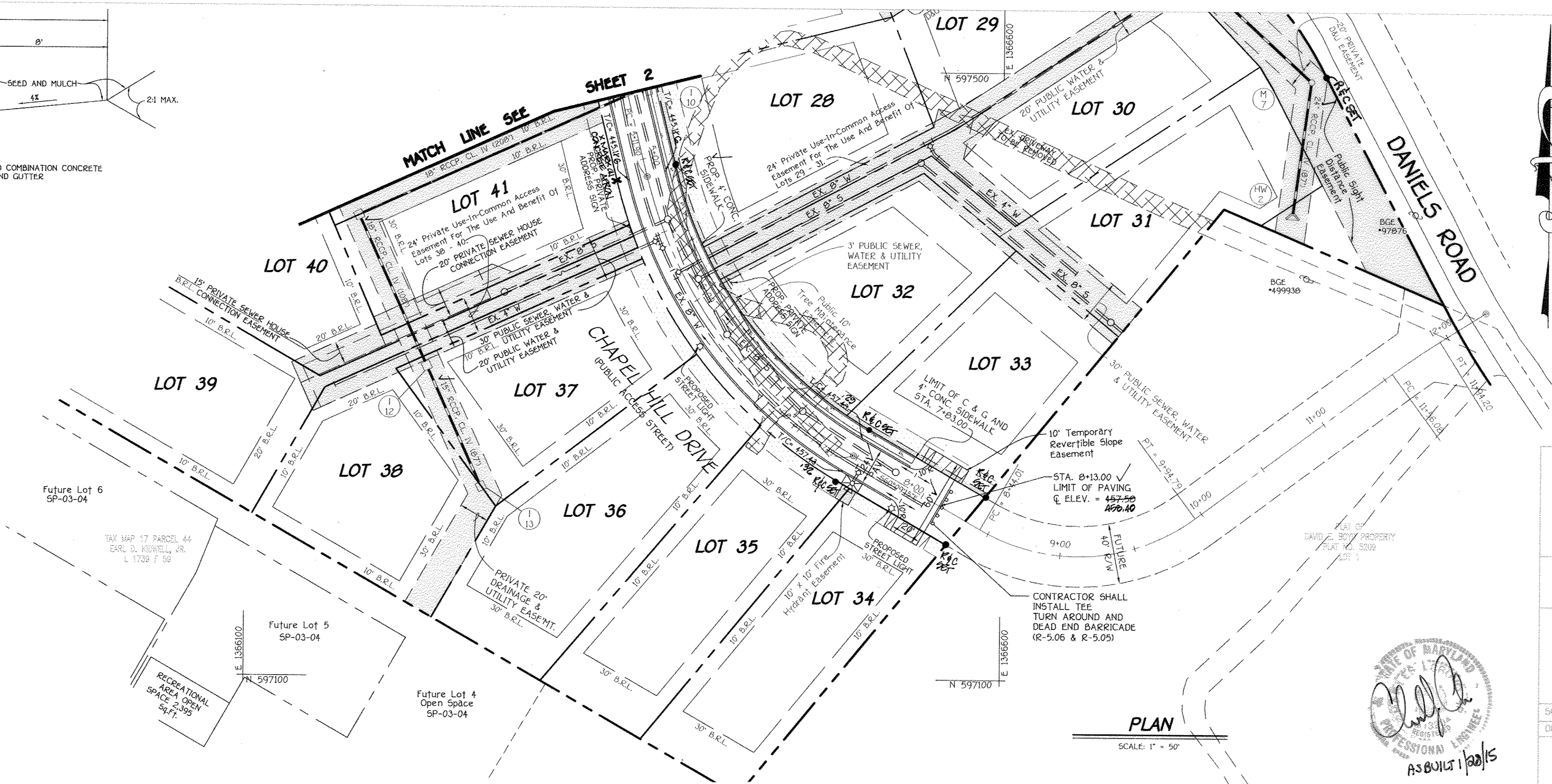
Cindy Hammett 4/19/08
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 4/20/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
"FOR PUBLIC INFRASTRUCTURES ONLY"

William R. McMillan 4-2-08
CHIEF, BUREAU OF HIGHWAYS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
DISTRICT ENGINEER



CHAPEL HILL DRIVE
STA. 5+11.90 TO STA. 7+47.19
RADIUS = 291.96'
ARC LENGTH = 235.28'
TAN = 124.47'
DELTA = 46°14'13"
CHORD = 537°02'40"E, 228.95'

NOTE:
95% COMPACTION IN ALL FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-100 STANDARDS.

HOLLIFIELD HILLS
Lots 1 Thru 43 And
Open Space Lots 44 Thru 47

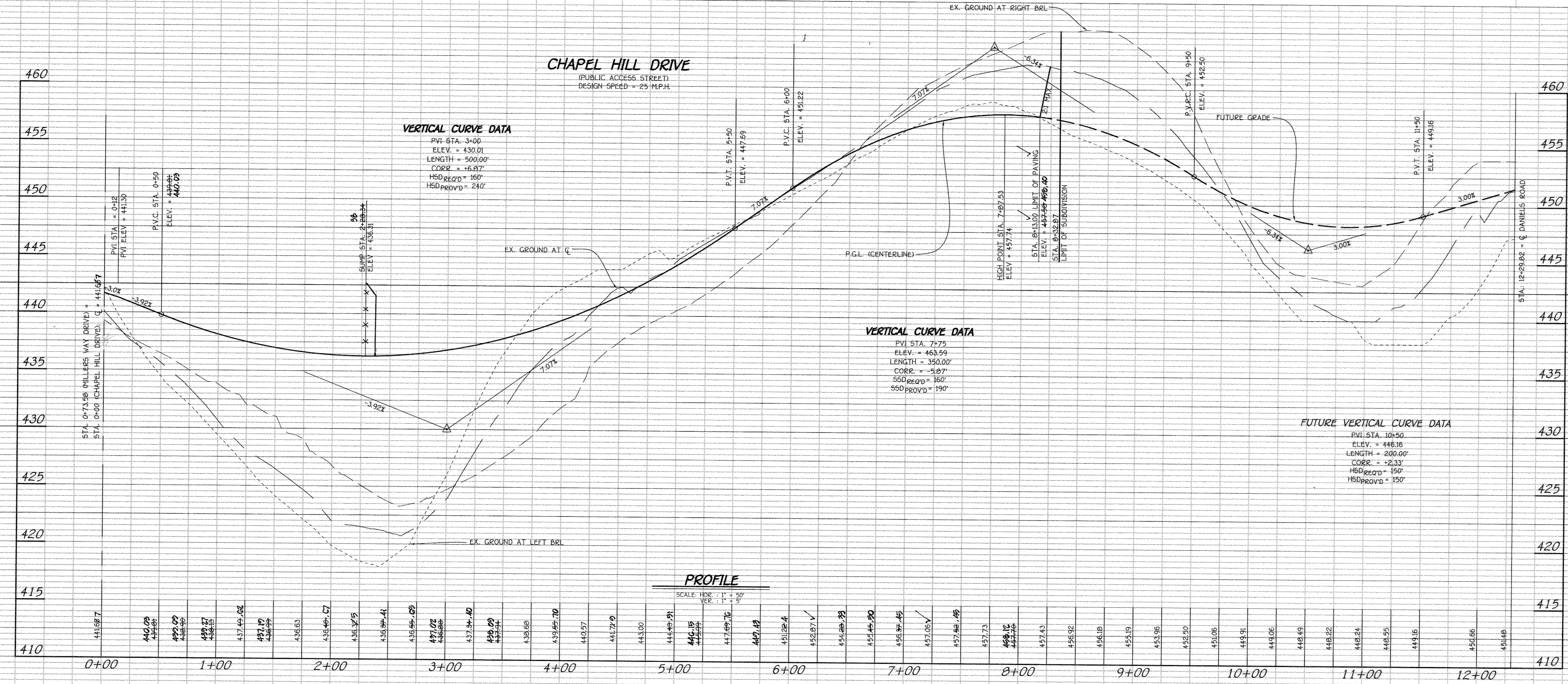
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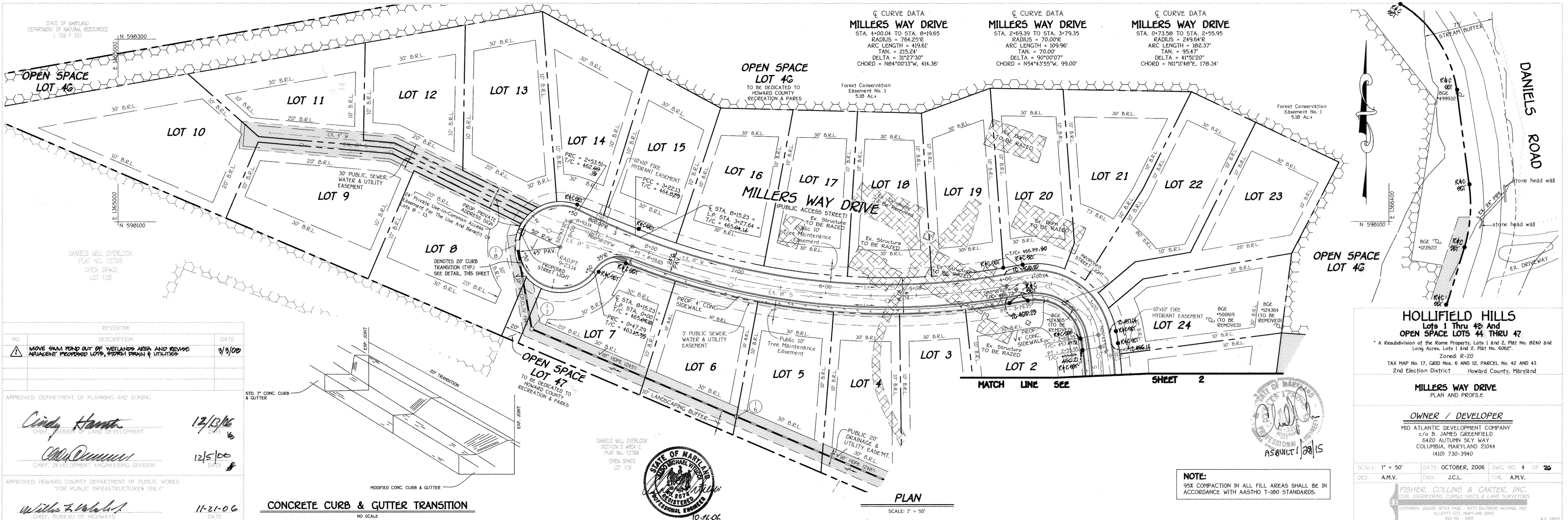
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6420 AUTUMN SKY WAY
COLUMBIA, MARYLAND 21044
(410) 730-3940

SCALE: 1" = 50' DATE: JANUARY, 2008 DWG. NO. 3 OF 26
DES. A.M.V. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS, CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 5672 GAITHERS PATENT FREE
BLUFF CREEK INDUSTRIAL PARK
(410) 481-8222





Curve Data	Curve Data	Curve Data
MILLERS WAY DRIVE STA. 4+00.04 TO STA. 8+19.65 RADIUS = 764.25'E ARC LENGTH = 419.61' TAN = 215.24' DELTA = 31°27'30" CHORD = N84°00'13"W, 414.36'	MILLERS WAY DRIVE STA. 2+69.39 TO STA. 3+79.35 RADIUS = 70.00'E ARC LENGTH = 109.96' TAN = 70.00' DELTA = 90°00'07" CHORD = N54°43'55"W, 99.00'	MILLERS WAY DRIVE STA. 0+73.58 TO STA. 2+55.95 RADIUS = 249.64'E ARC LENGTH = 182.37' TAN = 92.47' DELTA = 41°51'20" CHORD = N111°48'E, 178.34'

NO.	REVISIONS	DATE
1	MOVE SWM POND OUT OF WETLANDS AREA AND REMOVE ADJACENT PEPPERED LOTS, STORM DRAIN & UTILITIES	9/9/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Cindy Hamt</i>	12/2/06
<i>Mike Dennis</i>	12/5/06
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>William F. Walsh</i>	11-21-06

CONCRETE CURB & GUTTER TRANSITION
NO SCALE



PLAN
SCALE: 1" = 50'

NOTE:
95% COMPACTION IN ALL FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-190 STANDARDS.

HOLLIFIELD HILLS
Lots 1 Thru 43 And
OPEN SPACE LOTS 44 THRU 47
A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 1 and 2, Plat No. 6062.
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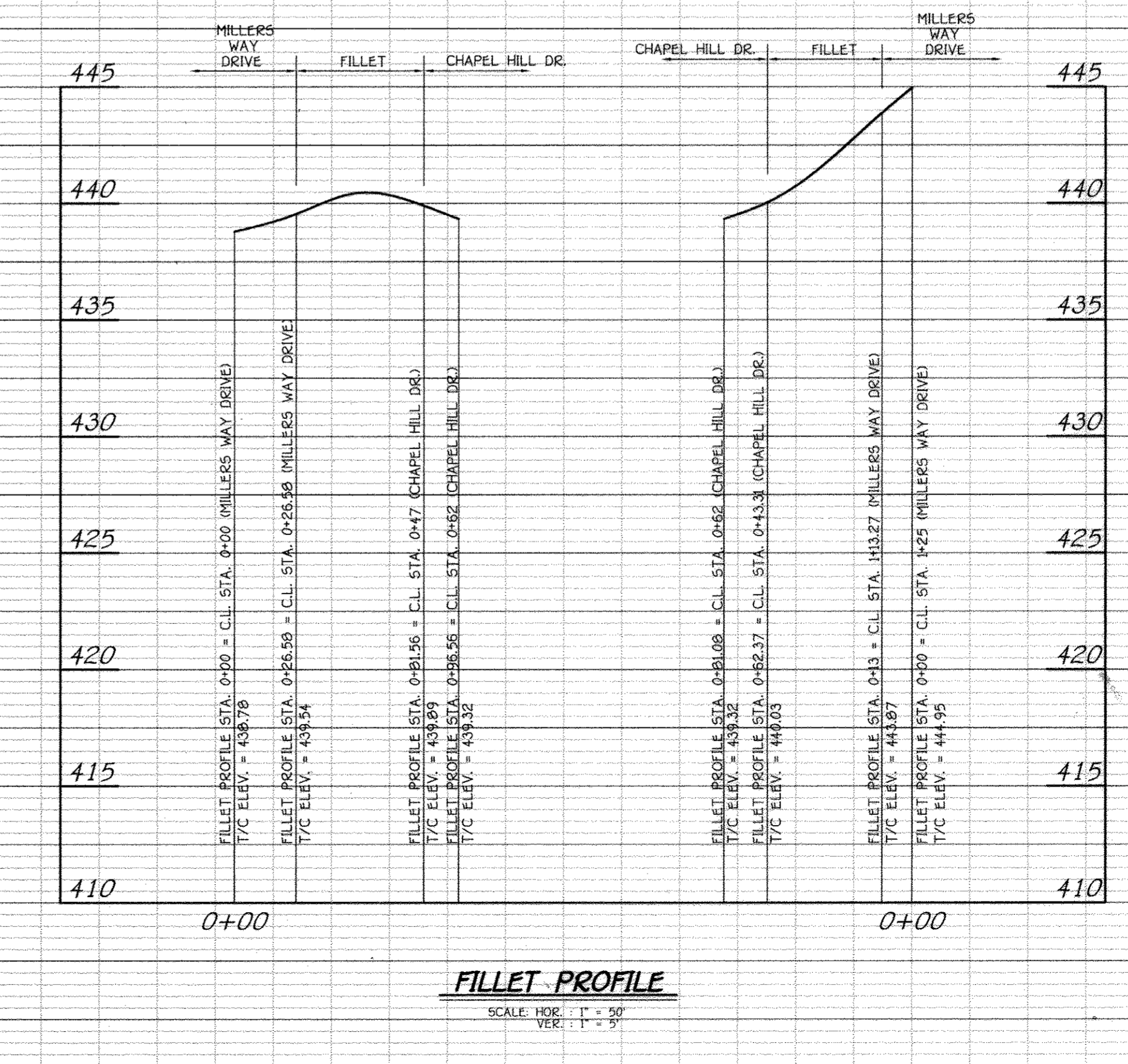
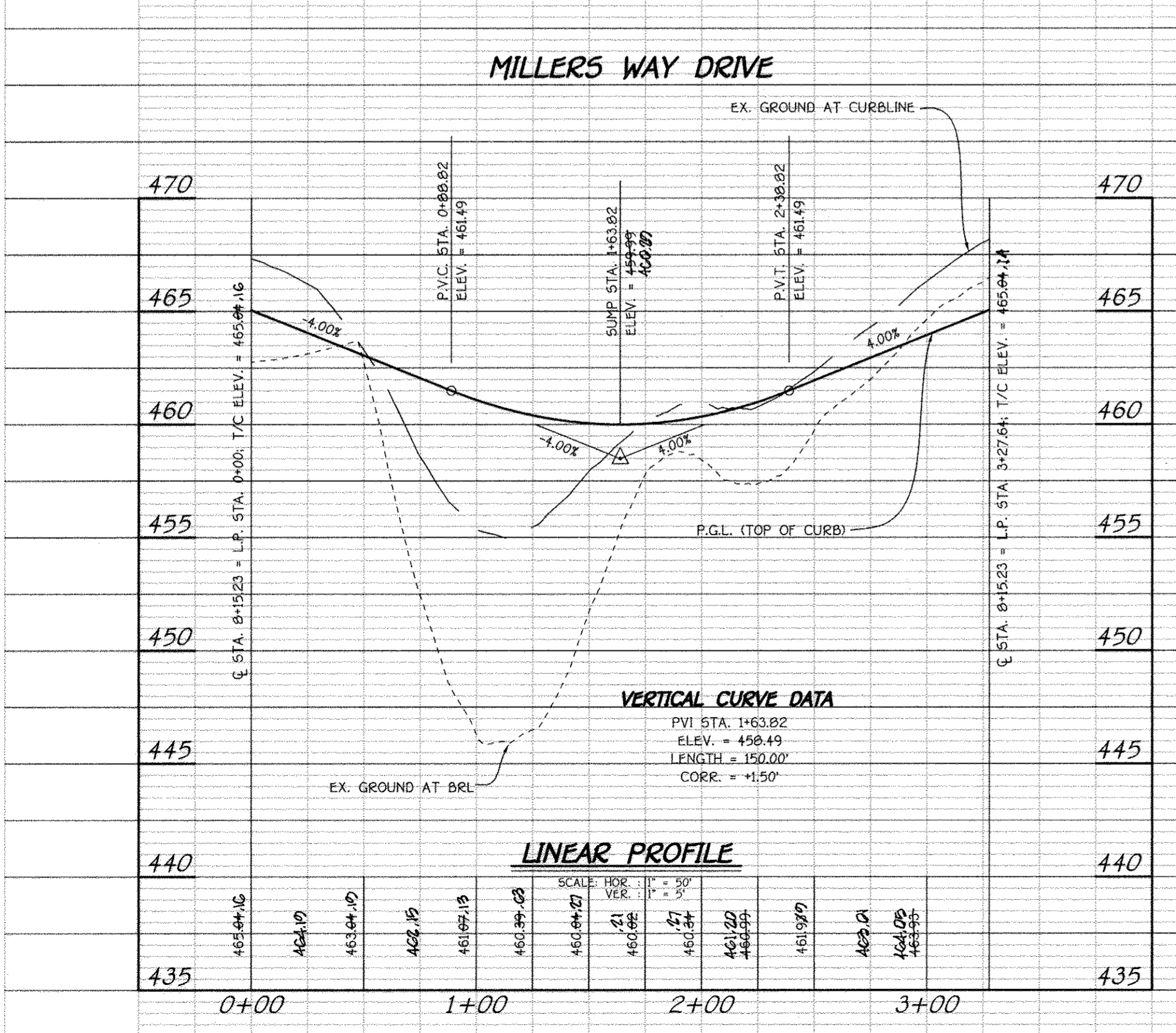
MILLERS WAY DRIVE
PLAN AND PROFILE

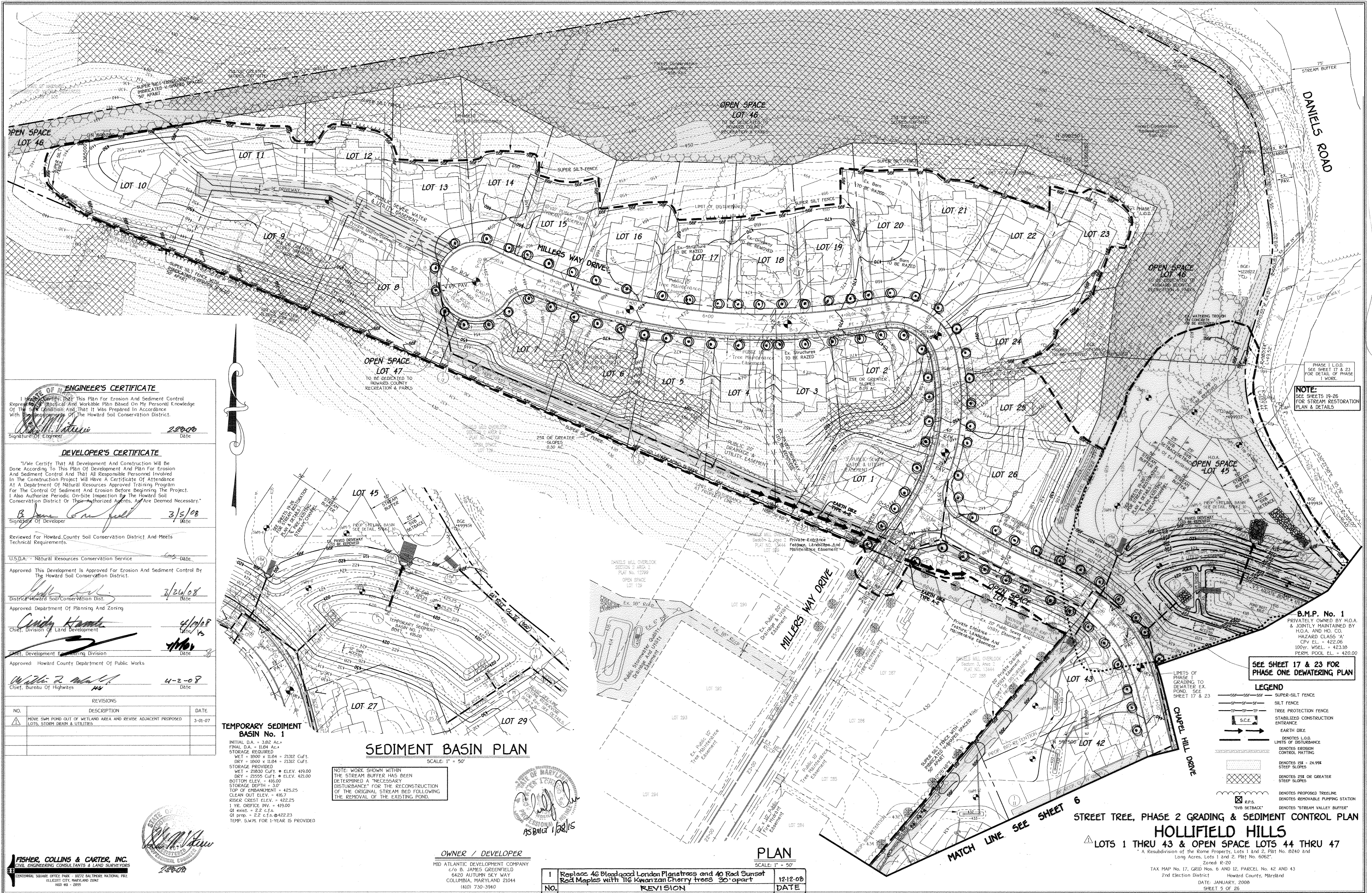
OWNER / DEVELOPER
MID ATLANTIC DEVELOPMENT COMPANY
c/o B. JAMES GREENFIELD
COLUMBIA, MARYLAND 21044
(410) 730-3940

SCALE: 1" = 50' DATE: OCTOBER, 2006 DWG. NO. 4 OF 26
DES. AM.V. GEN. J.C.L. CHK. AM.V.

FISHER, COLLINS & CARTER, INC.
REGISTERED PROFESSIONAL ENGINEERS & LAND SURVEYORS
CORPORATE SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL FREE
ELICOTT CITY, MARYLAND 21042
(410) 403-2400

104137 Rome-Long Property/104137 SHEET 2-4 ROAD PLANS.dwg 10/30/2006 9:38:17 AM 1:1



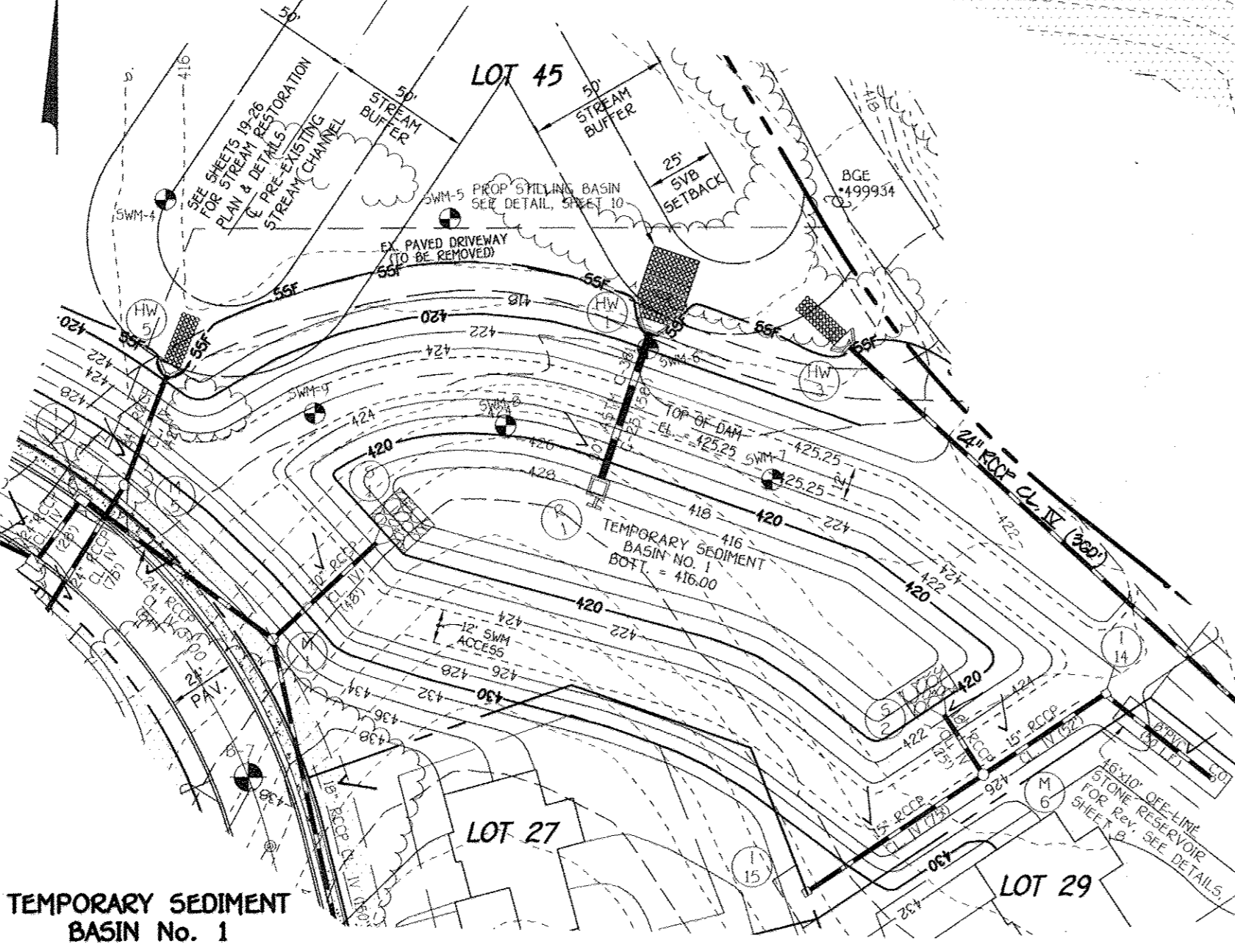


ENGINEER'S CERTIFICATE
 I hereby certify that this Plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the condition and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: *[Signature]* Date: 2/29/08

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 Soil Conservation District or their authorized agents, as deemed necessary.
 Signature of Developer: *[Signature]* Date: 3/5/08

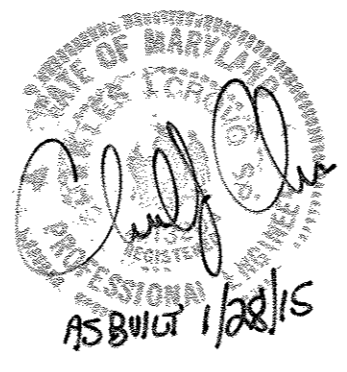
Reviewed for Howard County Soil Conservation District and Meets Technical Requirements.
 U.S.D.A. - Natural Resources Conservation Service Date: 4/5/08
 Approved: This Development is Approved for Erosion and Sediment Control by the Howard Soil Conservation District. Date: 3/26/08
 Approved: Department of Planning and Zoning Date: 4/1/08
 Chief, Division of Land Development
 Approved: Howard County Department of Public Works Date: 4-2-08
 Chief, Bureau of Highways

NO.	DESCRIPTION	DATE
1	MOVE SWM POND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM SEWER & UTILITIES.	3-01-07



TEMPORARY SEDIMENT BASIN No. 1
 INITIAL D.A. = 3.82 AC.
 FINAL D.A. = 11.84 AC.
 STORAGE REQUIRED
 WET = 1800 x 11.84 = 21312 Cuft.
 DRY = 1800 x 11.84 = 21312 Cuft.
 STORAGE PROVIDED
 WET = 21830 Cuft. • ELEV. 419.00
 DRY = 21950 Cuft. • ELEV. 421.00
 BOTTOM ELEV. = 415.00
 STORAGE DEPTH = 3.0'
 TOP OF EMBANKMENT = 425.25
 CLEAN OUT ELEV. = 416.7
 RISER CREST ELEV. = 422.25
 1 YR. OVERTOP. RW. = 419.00
 01 exist. = 2.2 c.f.s.
 01 prop. = 2.2 c.f.s. @ 122.23
 TEMP. SWM FOR 1-YEAR IS PROVIDED

SEDIMENT BASIN PLAN
 SCALE: 1" = 50'
 NOTE: WORK SHOWN WITHIN THE STREAM BUFFER HAS BEEN DETERMINED A "NECESSARY DISTURBANCE" FOR THE RECONSTRUCTION OF THE ORIGINAL STREAM BED FOLLOWING THE REMOVAL OF THE EXISTING POND.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK • 10772 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 461-2855

OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

NO.	REVISION	DATE
1	Replace 46 Bloodgood London Planetrees and 40 Red Sunset Red Maples with 116 Kwanzan Cherry trees 30' apart	12-12-09

NOTE:
 SEE SHEETS 19-26 FOR STREAM RESTORATION PLAN & DETAILS
 PHASE I L.O.D. SEE SHEET 17 & 23 FOR DETAIL OF PHASE I WORK.

B.M.P. No. 1
 PRIVATELY OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. AND HO. CO.
 HAZARDOUS CLASS "A"
 CPV E.L. = 422.05
 100% W.S.E.L. = 423.10
 PERM. POOL E.L. = 420.00

- LEGEND**
- SUPER-SILT FENCE
 - SILT FENCE
 - TREE PROTECTION FENCE
 - STABILIZED CONSTRUCTION ENTRANCE
 - S.C.E.
 - EARTH DIKE
 - DENOTES L.O.D.
 - LIMITS OF DISTURBANCE
 - DENOTES PROPOSED CONTROL PATTING
 - DENOTES 15% - 24.9% STEEP SLOPES
 - DENOTES 25% OR GREATER STEEP SLOPES
 - DENOTES PROPOSED TREELINE
 - DENOTES REMOVABLE PUMPING STATION
 - R.P.A.
 - "SVD SETBACK" DENOTES "STREAM VALLEY BUFFER"

HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Same Property, Lots 1 and 2, Plat No. 6240 and Long Acres, Lots 1 and 2, Plat No. 6052.
 Zoned R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2008
 SHEET 5 OF 28

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS AN ACCURATE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.
 Signature: *[Signature]* Date: 2/29/09

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 Attention 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 Conservation District Or Their Authorized Agents, As Are Deemed Necessary.
 Signature of Developer: *[Signature]* Date: 3/5/08

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements
 U.S.D.A. - Natural Resources Conservation Service Date: 3/26/08

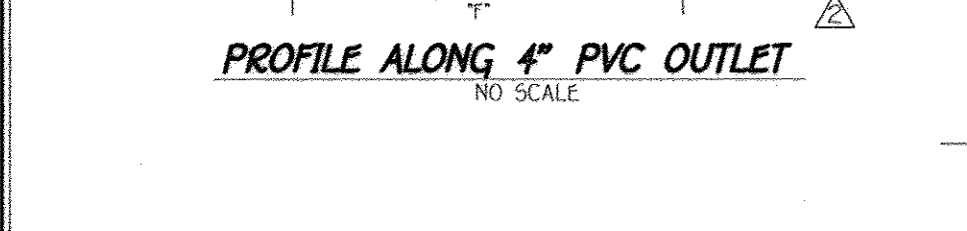
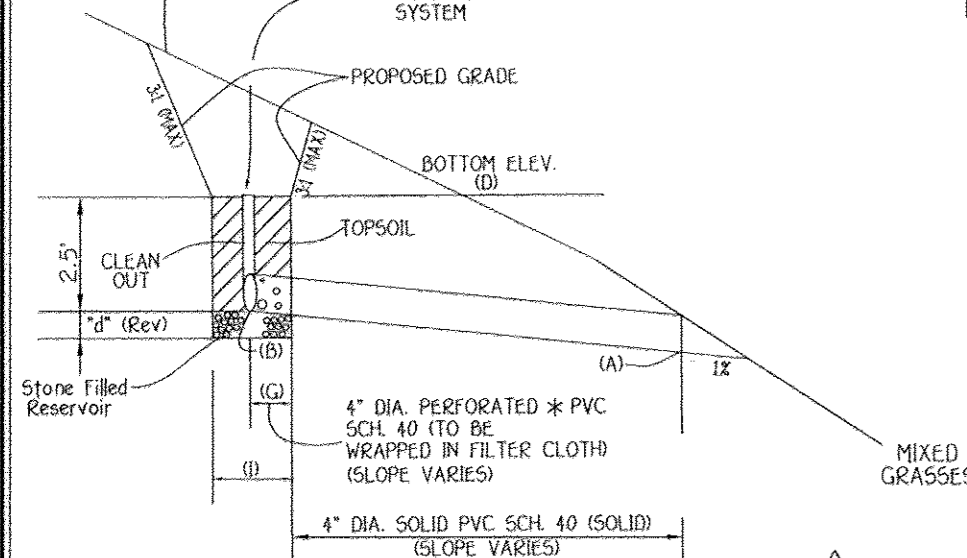
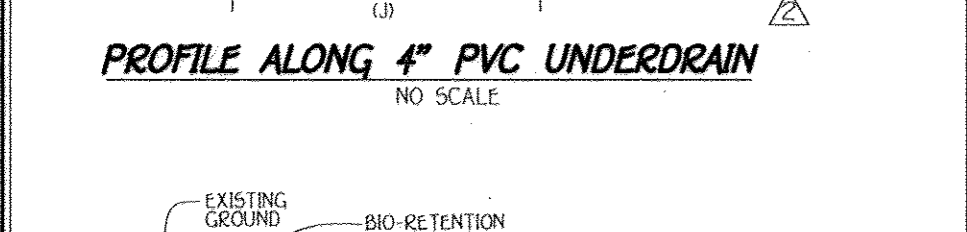
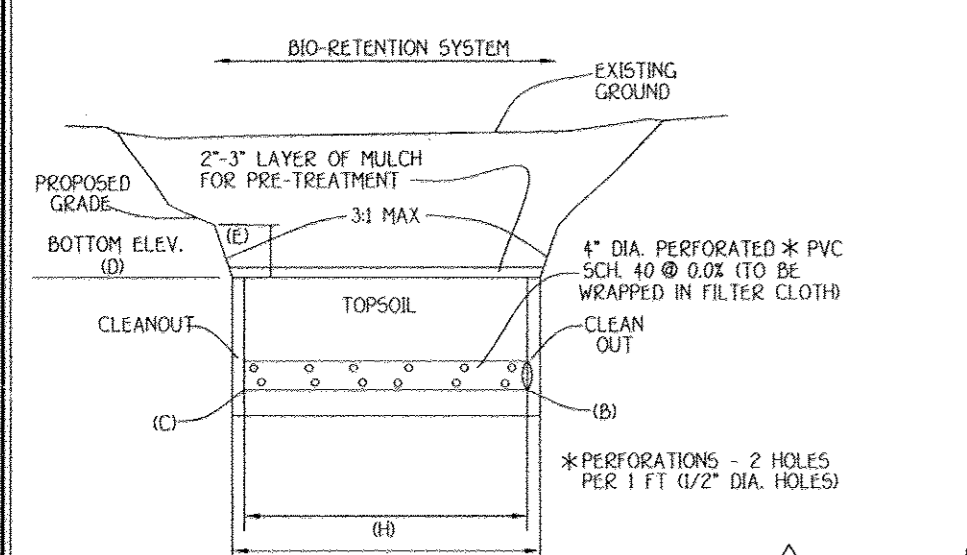
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard County Conservation District.
 District Howard Soil Conservation Dist. Date: 3/26/08

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development Date: 4/10/08

Approved: Howard County Department Of Public Works
 Chief, Bureau Of Highways Date: 4-2-08

REVISIONS

NO.	DESCRIPTION	DATE
1	MOVE SWM POND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM DRAIN & UTILITIES	3-01-07
2	ADD PRIVATE SWM FACILITIES FOR LOTS 39, 40, 42 & 43.	3-01-07



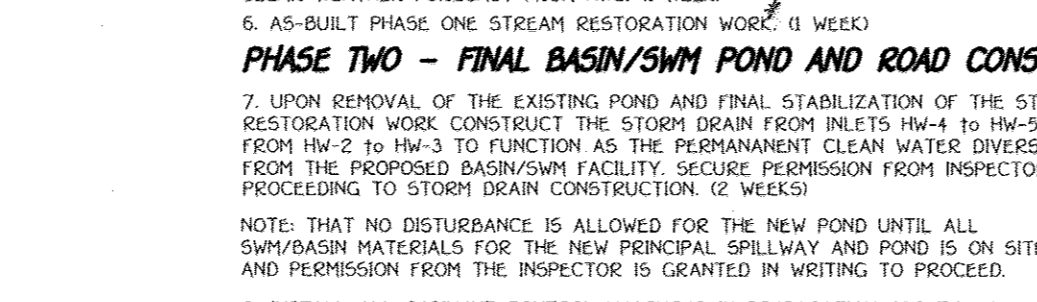
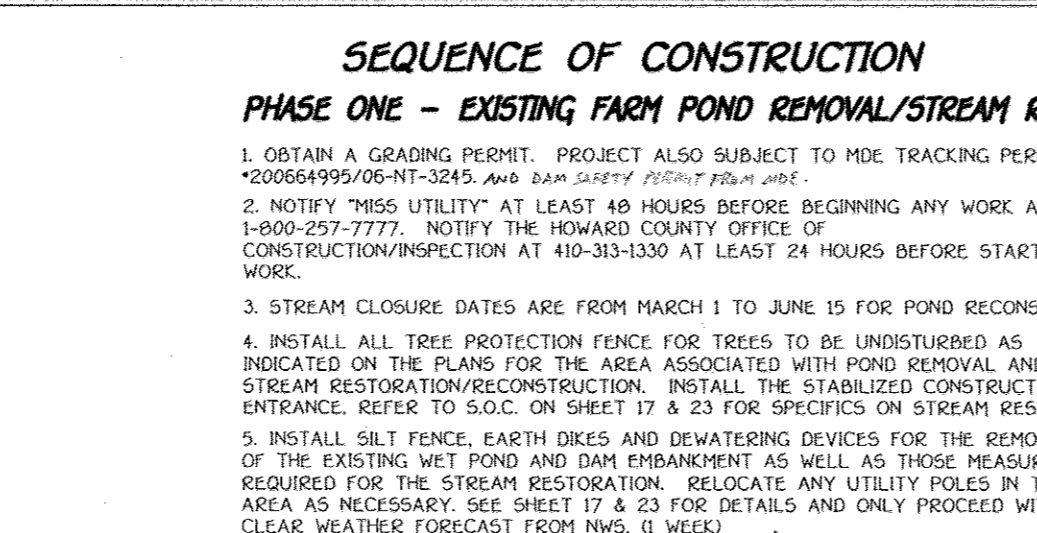
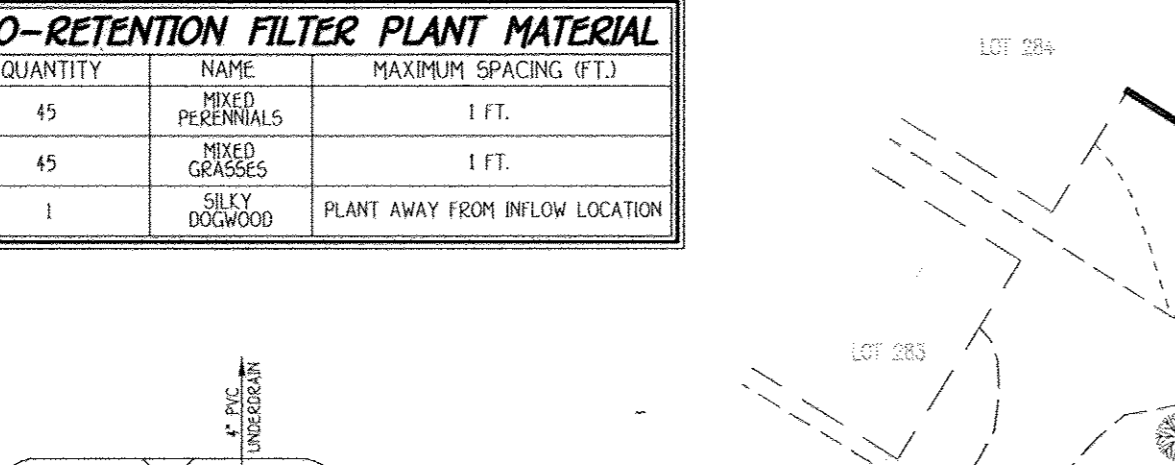
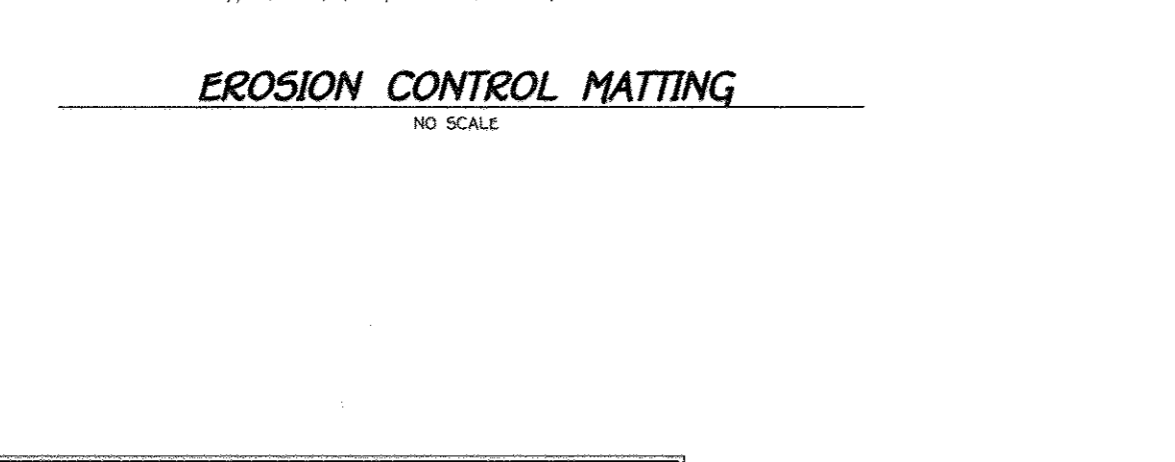
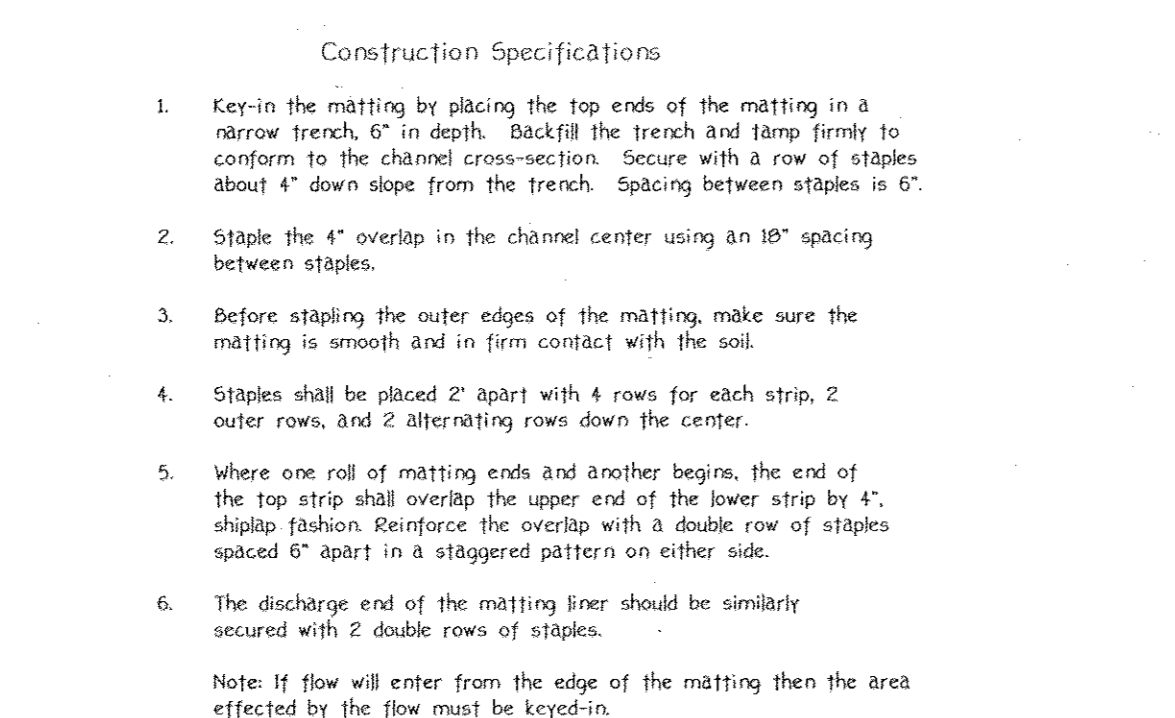
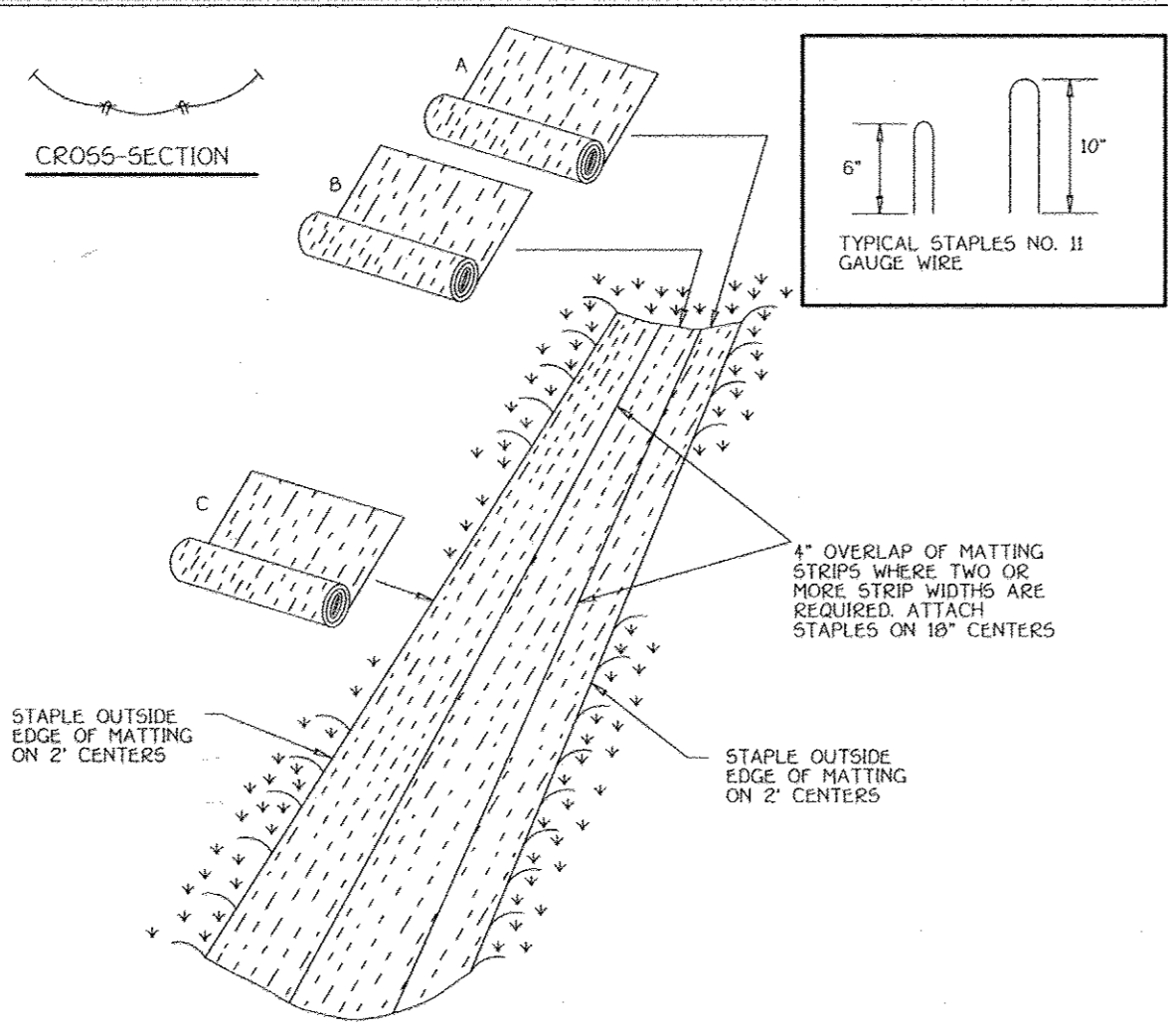
BIORETENTION FILTER DATA

BIORETENTION FILTER	A	B	C	D	E	F	G	H	I	J	"d" Rev
LOT 39	434.0	432.5	432.5	432.0	430.0	45'	2.5'	20"	5"	30"	1.09'
LOT 40	429.0	429.5	429.5	432.0	433.0	70'	2.5'	20"	5"	30"	1.09'
LOT 42	429.0	429.5	429.5	432.0	433.0	30'	2.5'	20"	5"	30"	1.09'
LOT 43	426.0	426.5	426.5	429.0	430.0	27'	2.5'	20"	5"	30"	0.97'

PRIVATE BIO-RETENTION FILTER OPERATION & MAINTENANCE SCHEDULE

- 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 CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIPES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER. 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.

FISHER, COLLINS & CARVER, INC.
 ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BAL THORNTON NATIONAL FIVE
 SUITE 1000 CITY HARLAND 2082
 4103 462 - 2855



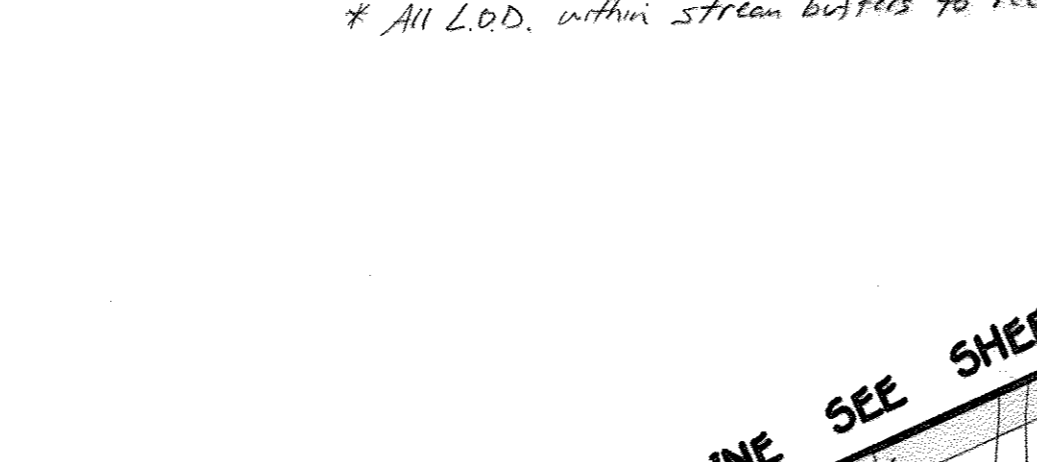
S.W.M. SUMMARY TABLE

TYPE OF REQUIREMENT	VOLUME REQUIRED	VOLUME PROVIDED
Rev (RECHARGE VOL. FOR ENTIRE SITE)	1,200 ACRES-FEET OR 0.026 ACRES-FEET	0.041 ACRES-FEET via 1 VOLUME and 1.05 AC. via 2 AREA METHOD
WV		
Study Point #1 (30.64 Acres)	0.7839 ac. ft.	0.7839 ac. ft @ BMP #1
Study Point #2 (10.47 Acres)	0.080 ac. ft.	Via buffer credits w/ level spreader
Study Point #3 (12.00 Acres)	0.046 ac. ft.	Via buffer credits w/ level spreader
Qrv		
Study Point #1 (30.64 Acres)	1,0530 acre-feet	1,0530 ac. ft @ BMP #1
Study Point #2 (10.47 Acres)	N/A	N/A since < 2 Cfs
Study Point #3 (12.00 Acres)	N/A	N/A since < 2 cfs

Note: Both Qv (Overbank Flood Protection or 10-year storm) and Qf (Extreme Flood Volume or 100-year storm) are not required for this site since this watershed area is not classified as one of the sensitive watershed areas for Howard County.

CONCLUSION:
 In conclusion, we have shown that this project meets the requirements for stormwater management within a sensitive R-20 zoning district. We have provided for both quantity and quality management for the proposed subdivision that will preserve a good portion of the pristine woods on-site.

DAM HAZARD CLASSIFICATION:
 A Dam breach analysis has been included with this report. The breach flows have been evaluated and show no significant impact or hazard to pedestrians, roads or buildings downstream. Therefore, we will classify this retrofit pond as a Class "A" Dam.



STREET TREE SCHEDULE

SYMBOL	QTY	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(C)	1196 LF / 30 x 2 - 116 TREES	KWANZAN CHERRY PRUNUS SERRULATA	2 1/2" - 3" CAL.	30' APART ON PUBLIC R/W (MILLERS WAY DRIVE) (CHAPEL HILL DRIVE)

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 c/o B. JAMES GREENFIELD
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 COLUMBIA, MARYLAND 21044
 (410) 730-3940

REVISION

NO.	REVISION	DATE
1	Replace 4G Bloodgood London Planetrees and 40 Red Sunset Red Maples with 116 Kwanzan Cherry trees 30' apart	12-12-08

NOTES:
 PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE RAINFALL.

* SEE PLANT MATERIAL SHEETS FOR QUANTITIES AND SPACING

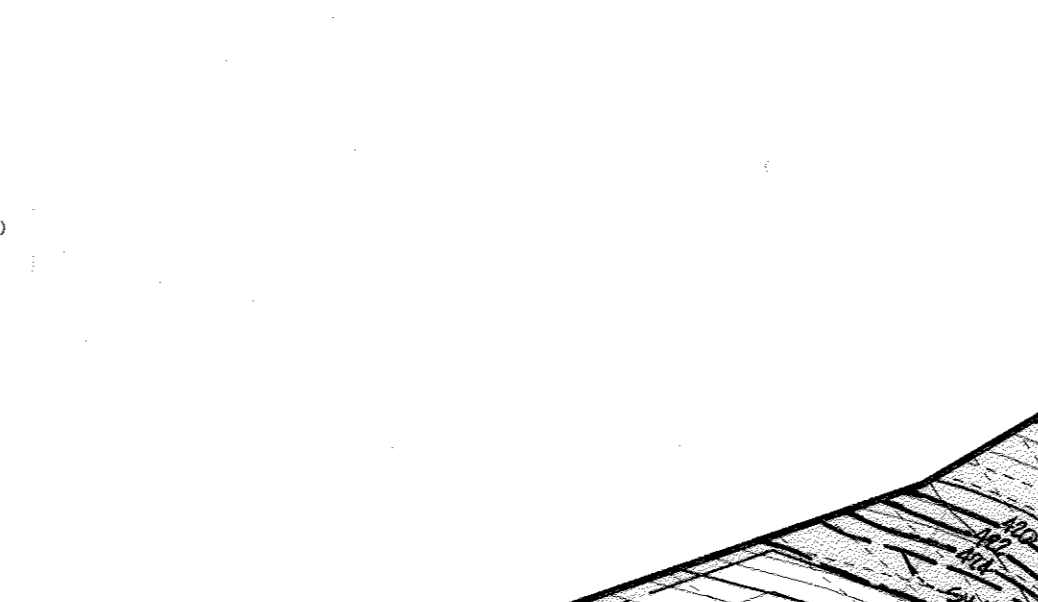
DATE: JANUARY, 2009
 SHEET 6 OF 26

EROSION CONTROL MATTING

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEY-IN.

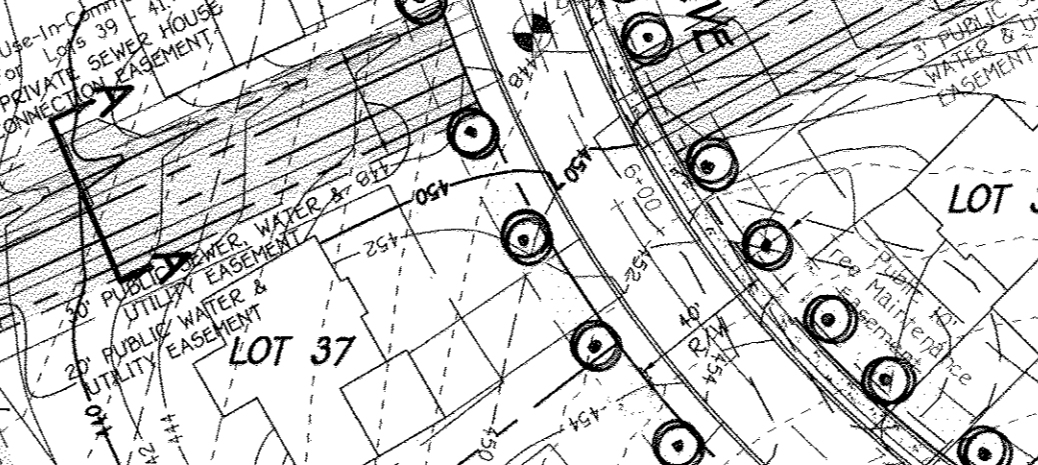
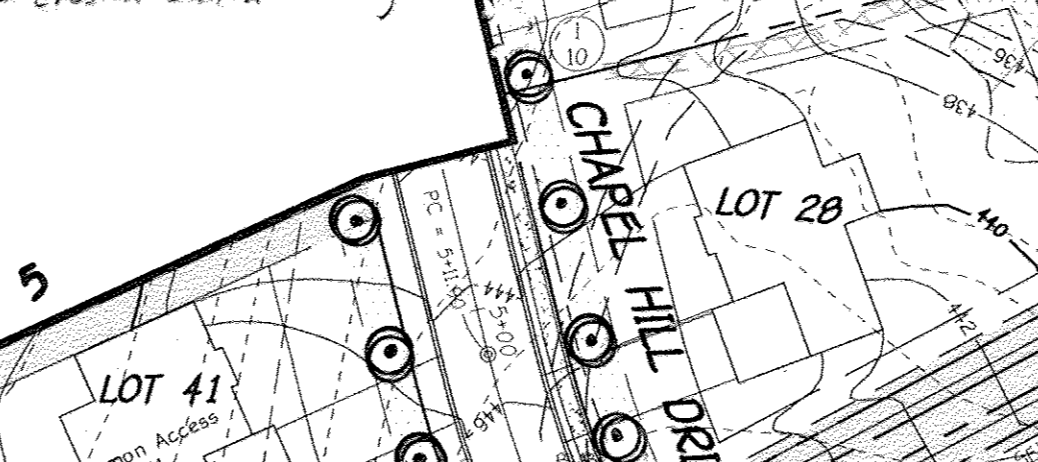
CONSTRUCTION SPECIFICATIONS

- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Dig the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shingle fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.



BIORETENTION FILTER PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT)
45	MIXED PERENNIALS	1 FT.
45	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



S.W.M. SUMMARY TABLE

TYPE OF REQUIREMENT	VOLUME REQUIRED	VOLUME PROVIDED
Rev (RECHARGE VOL. FOR ENTIRE SITE)	1,200 ACRES-FEET OR 0.026 ACRES-FEET	0.041 ACRES-FEET via 1 VOLUME and 1.05 AC. via 2 AREA METHOD
WV		
Study Point #1 (30.64 Acres)	0.7839 ac. ft.	0.7839 ac. ft @ BMP #1
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Note: Both Qv (Overbank Flood Protection or 10-year storm) and Qf (Extreme Flood Volume or 100-year storm) are not required for this site since this watershed area is not classified as one of the sensitive watershed areas for Howard County.

CONCLUSION:
 In conclusion, we have shown that this project meets the requirements for stormwater management within a sensitive R-20 zoning district. We have provided for both quantity and quality management for the proposed subdivision that will preserve a good portion of the pristine woods on-site.

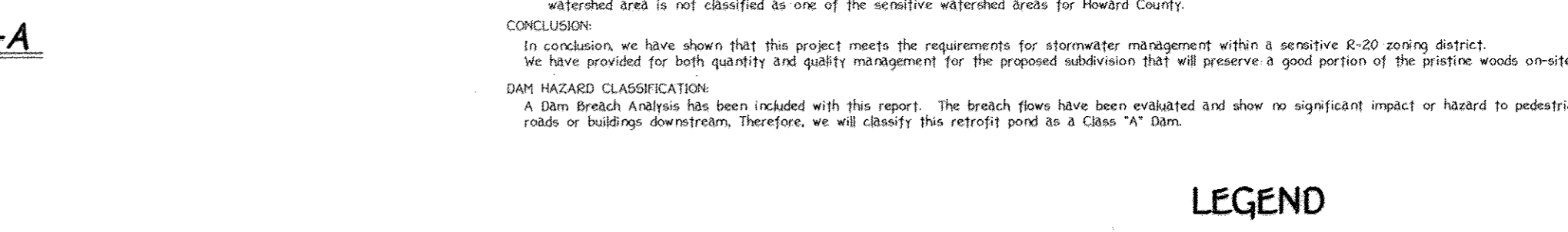
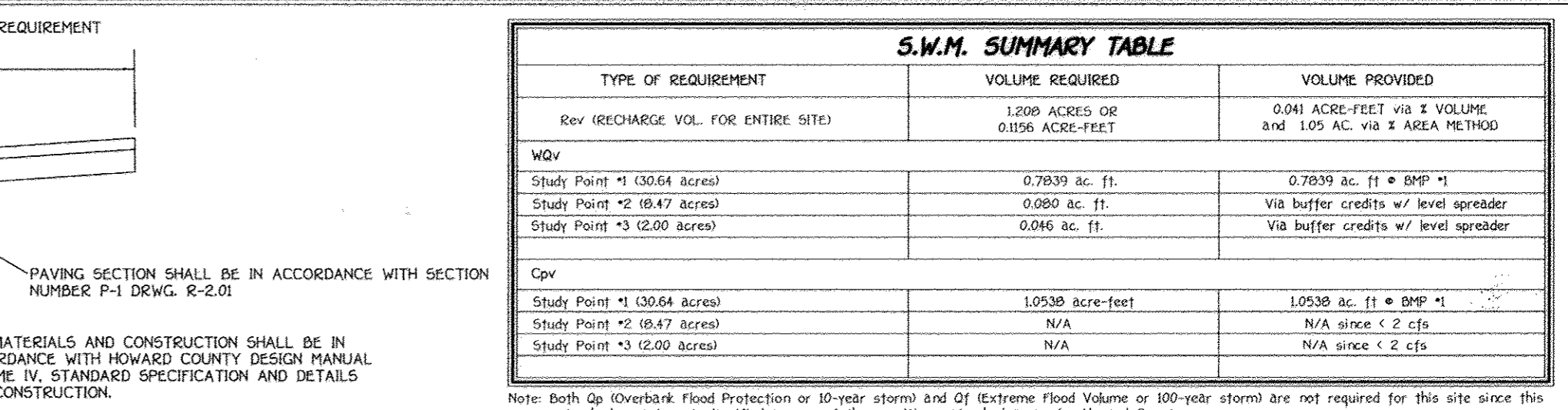
DAM HAZARD CLASSIFICATION:
 A Dam breach analysis has been included with this report. The breach flows have been evaluated and show no significant impact or hazard to pedestrians, roads or buildings downstream. Therefore, we will classify this retrofit pond as a Class "A" Dam.

OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
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REVISION

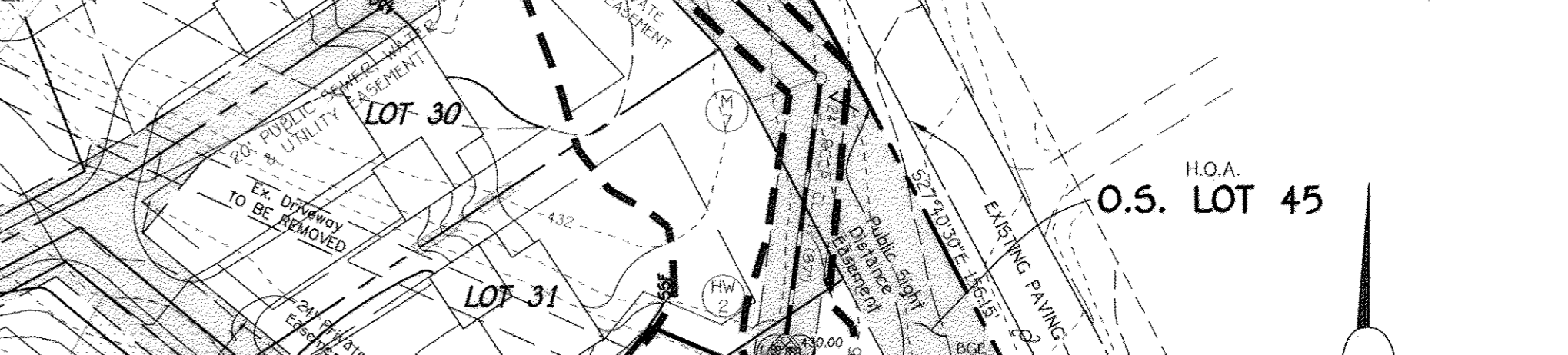
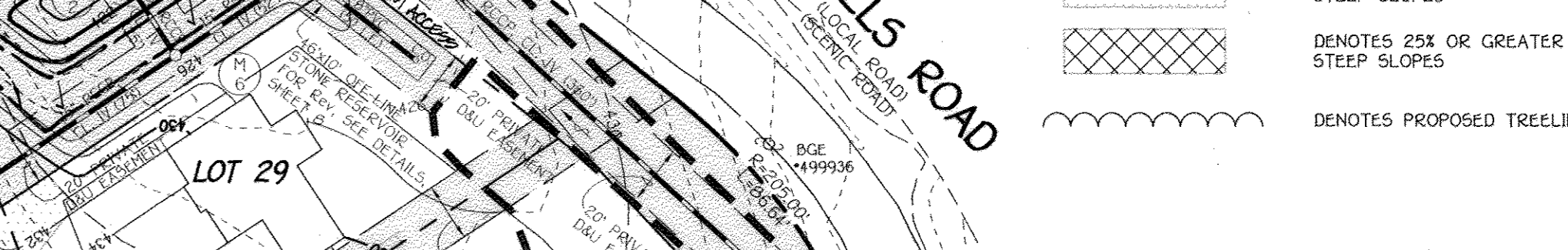
NO.	REVISION	DATE
1	Replace 4G Bloodgood London Planetrees and 40 Red Sunset Red Maples with 116 Kwanzan Cherry trees 30' apart	12-12-08

DATE: JANUARY, 2009
 SHEET 6 OF 26



BIORETENTION FILTER PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT)
45	MIXED PERENNIALS	1 FT.
45	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



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CONCLUSION:
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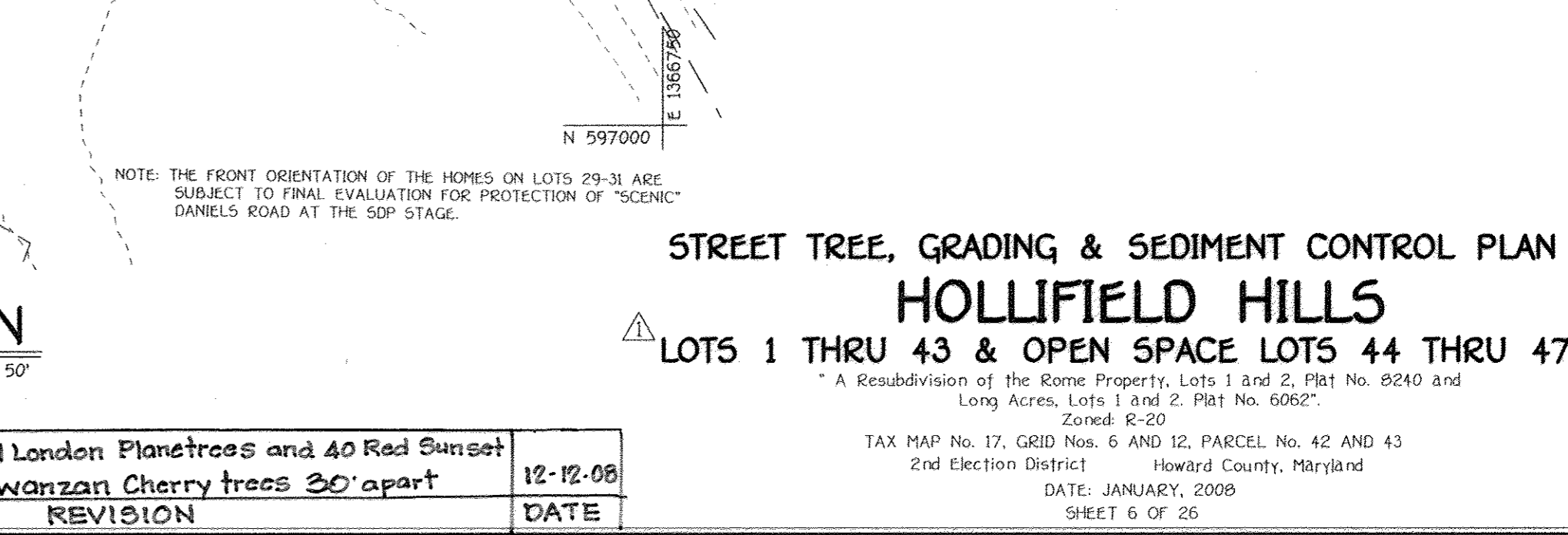
DAM HAZARD CLASSIFICATION:
 A Dam breach analysis has been included with this report. The breach flows have been evaluated and show no significant impact or hazard to pedestrians, roads or buildings downstream. Therefore, we will classify this retrofit pond as a Class "A" Dam.

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 COLUMBIA, MARYLAND 21044
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REVISION

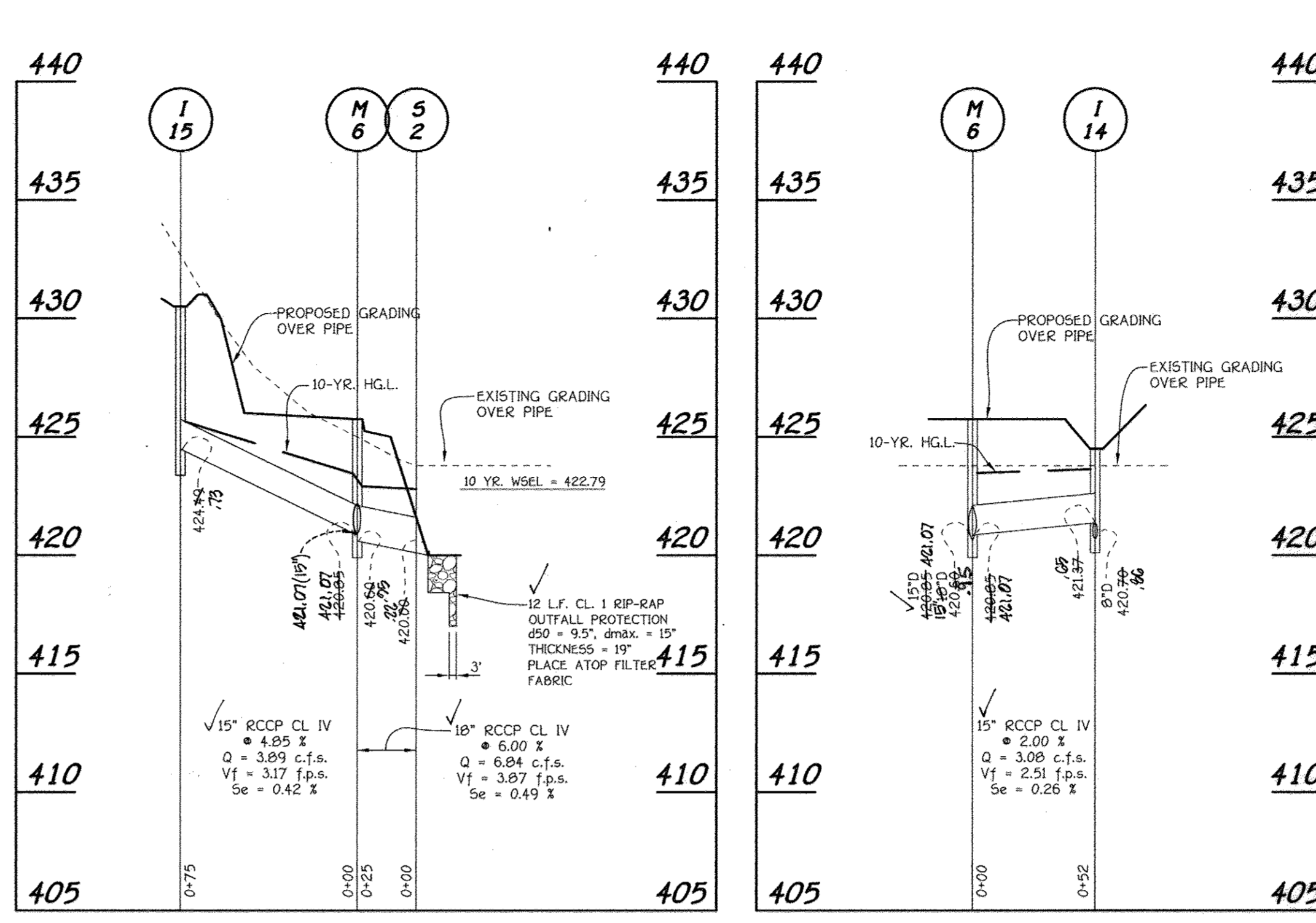
NO.	REVISION	DATE
1	Replace 4G Bloodgood London Planetrees and 40 Red Sunset Red Maples with 116 Kwanzan Cherry trees 30' apart	12-12-08

DATE: JANUARY, 2009
 SHEET 6 OF 26



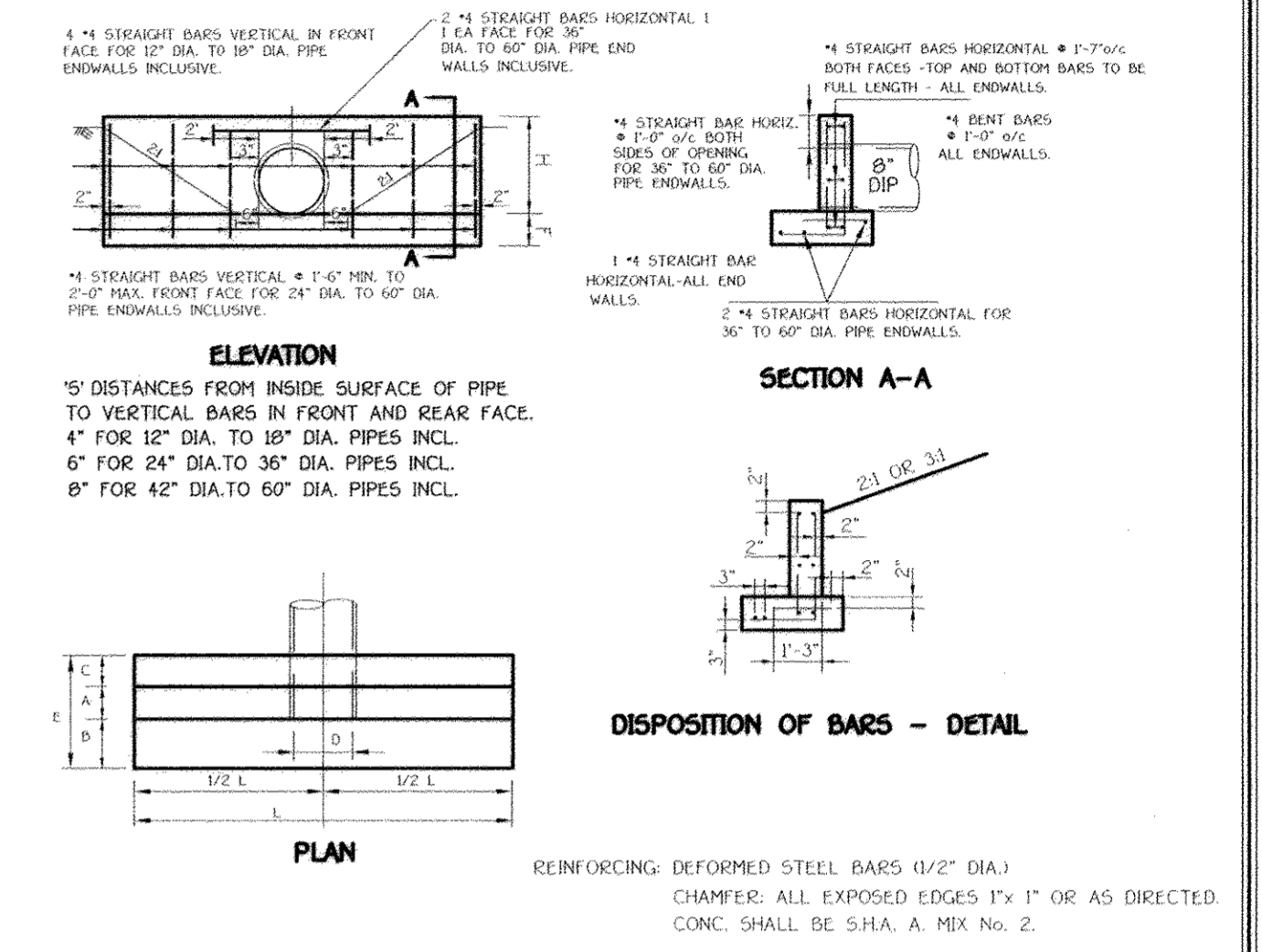
PIPE SCHEDULE		
SIZE	CLASS	LENGTH
8"	PVC SCHEDULE 40	50'
18"	HDPE	838'
15"	RCCP, CL. IV	308'
18"	RCCP, CL. IV	519'
24"	RCCP, CL. IV	676'
30"	RCCP, CL. IV	18'
30"	A57M C-361, C-25	58'

STRUCTURE SCHEDULE									
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION			TYPE	REMARKS	
				NORTH	EAST	W			
I-1	436.55.46	431.81 (24")	431.74 (24")	12.43' LT OF CL STA 2+20.34	4'	A-5V	S.D. 4.40		
I-2	436.55.36	432.44 (18")	431.95 (24")	12.43' RT OF CL STA 2+20.34	4'	A-5V	S.D. 4.40		
I-3	439.22.81	435.22 (18")	435.77 (18")	12.43' RT OF CL STA 0+17.50	2.5'	A-5V	S.D. 4.40		
I-4	439.22.43	435.54 (18")	435.42 (18")	12.43' LT OF CL STA 0+17.50	-	A-10V	S.D. 4.41		
I-5	444.88.13	437.44 (18")	437.39 (18")	597.789.22	1,365.908.01	5V	S.D. 4.22 W/ S.D. 4.93		
I-6	445.00.00	438.77 (18")	438.67 (18")	597.808.87	1,365.691.42	2.5'	5V	S.D. 4.22 W/ S.D. 4.93	
I-7	443.58.43	440.25 (15")	440.20 (18")	597.982.52	1,365.454.21	2.5'	5V	S.D. 4.22 W/ S.D. 4.93	
I-8	460.29.0	-	469.77 444.35 (15")	LP STA 1+61.82	2.5'	A-5V	S.D. 4.40		
I-9	444.97 445.08	-	400.78 444.58 (15")	12.43' RT OF CL STA 1+25.00	2.5'	A-10V	S.D. 4.41		
I-10	442.77.20	425.88 (18")	425.78 (18")	12.43' LT OF CL STA 4+51.50	2.5'	A-10V	S.D. 4.41		
I-11	436.55 432.84	427.00 (18")	426.93 (18")	597.403.83	1,366.174.17	2.58'	5V	S.D. 4.22 W/ S.D. 4.93	
I-12	436.55 434.93	431.70 (15")	429.40 (18")	597.301.81	1,366.220.21	2.58'	5V	S.D. 4.22 W/ S.D. 4.93	
I-13	437.00 436.73	-	433.75 (15")	597.225.02	1,366.256.70	2.58'	5V	S.D. 4.22 W/ S.D. 4.93	
I-14	424.58.97	-	421.37 (15")	420.78 (18")	597.616.24	1,366.627.76	2.58'	5V	S.D. 4.22 W/ S.D. 4.93
I-15	430.58.78	-	424.49 (15")	597.545.40	1,366.521.00	2.58'	5V	S.D. 4.22 W/ S.D. 4.93	
S-1	-	-	420.82 (30")	597.797.68	1,366.479.82	-	50° RCCP END SECTION	-	
S-2	-	-	420.88 (18")	597.791.42	1,366.471.80	-	50° RCCP END SECTION	-	
M-1	435.88.00	430.87 (24")	421.88 (30")	597.692.96	1,366.298.92	5'	PRECAST MANHOLE	G. 5.13	
M-2	440.38 437.74	434.81 (18")	432.79 (15")	434.84 (18")	597.742.58	4'	PRECAST MANHOLE	G. 5.12	
M-5	434.58.44	418.74 (24")	418.92 (24")	597.692.88	1,366.298.04	4'	PRECAST MANHOLE	G. 5.12	
M-6	425.38.20	421.07 (15")	420.68 (18")	597.742.58	1,366.479.82	4'	PRECAST MANHOLE	G. 5.12	
M-7	436.28 433.77	427.58 (24")	427.40 (24")	597.742.58	1,366.479.82	4'	PRECAST MANHOLE	G. 5.12	
HW-1	-	-	414.84 (30")	597.744.71	1,366.466.14	-	TYPE 'A' HEADWALL	S.D. 5.11	
HW-2	-	-	423.75 430.88 (24")	597.404.08	1,366.791.97	-	TYPE 'A' HEADWALL	S.D. 5.11	
HW-3	-	-	416.38 (24")	597.738.40	1,366.538.86	-	TYPE 'A' HEADWALL	S.D. 5.11	
HW-4	-	-	423.19 430.58 (24")	597.628.88	1,366.242.80	-	TYPE 'A' HEADWALL	S.D. 5.11	
HW-5	-	-	416.48 (24")	597.728.92	1,366.297.80	-	TYPE 'A' HEADWALL	S.D. 5.11	

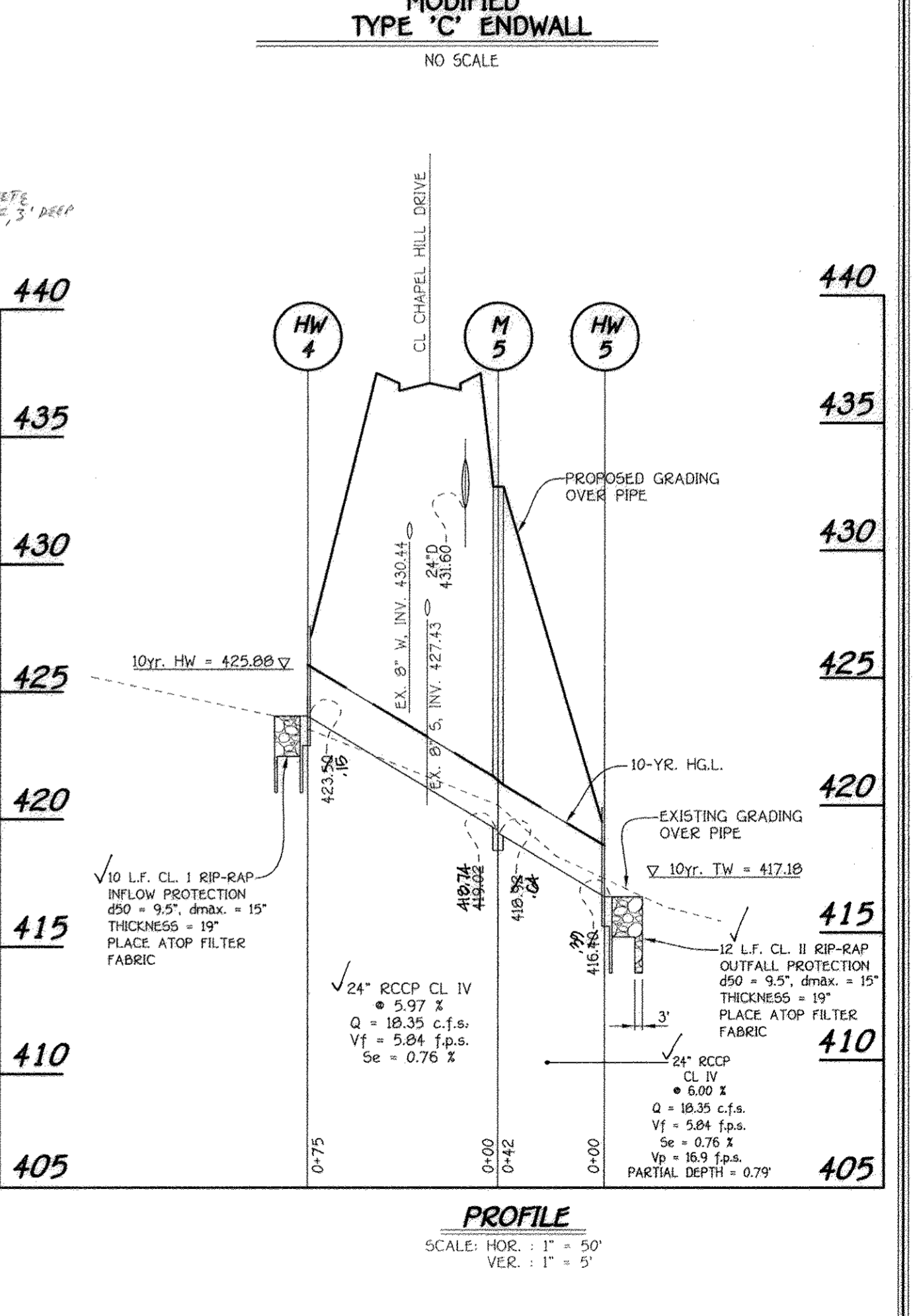
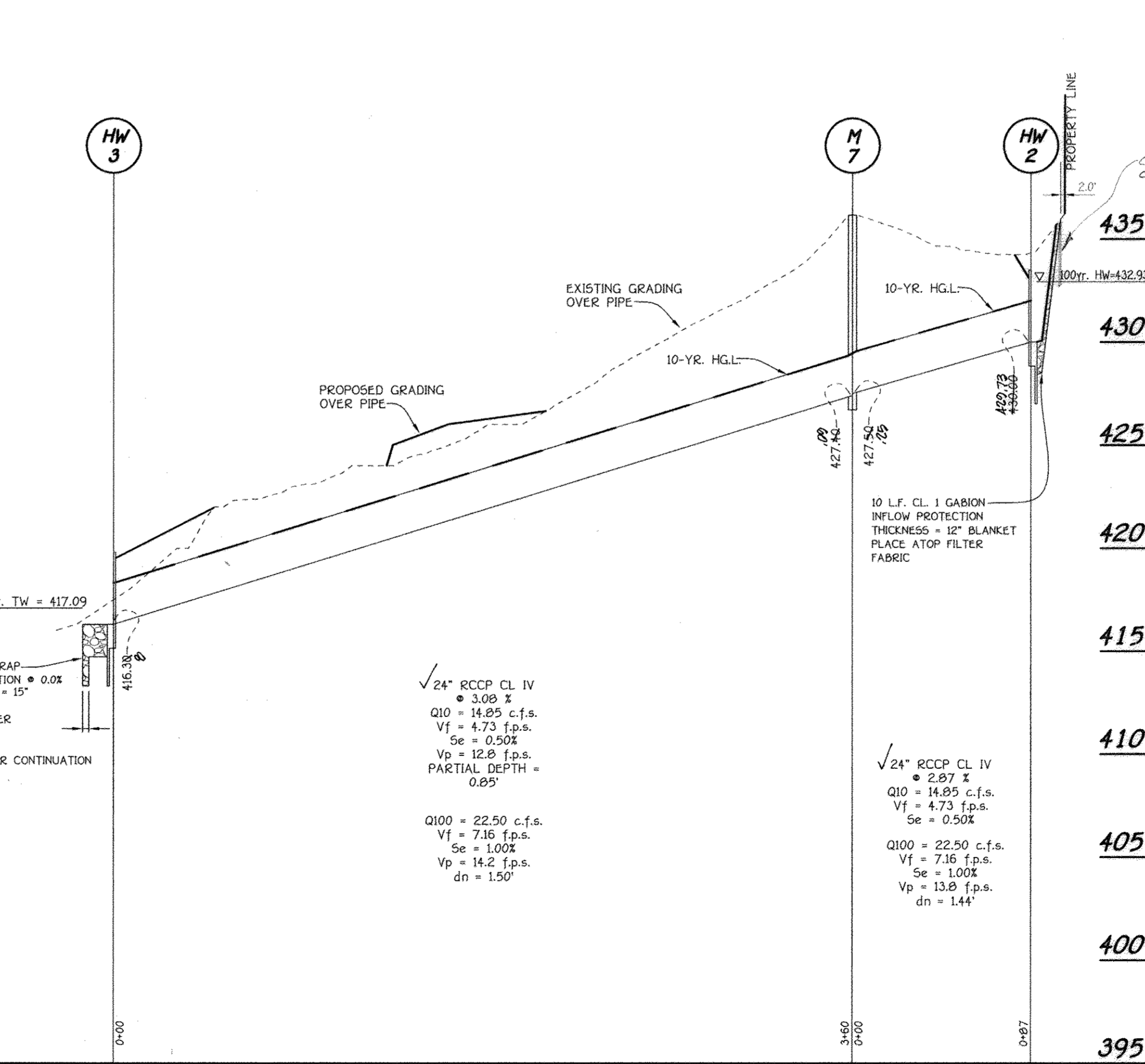
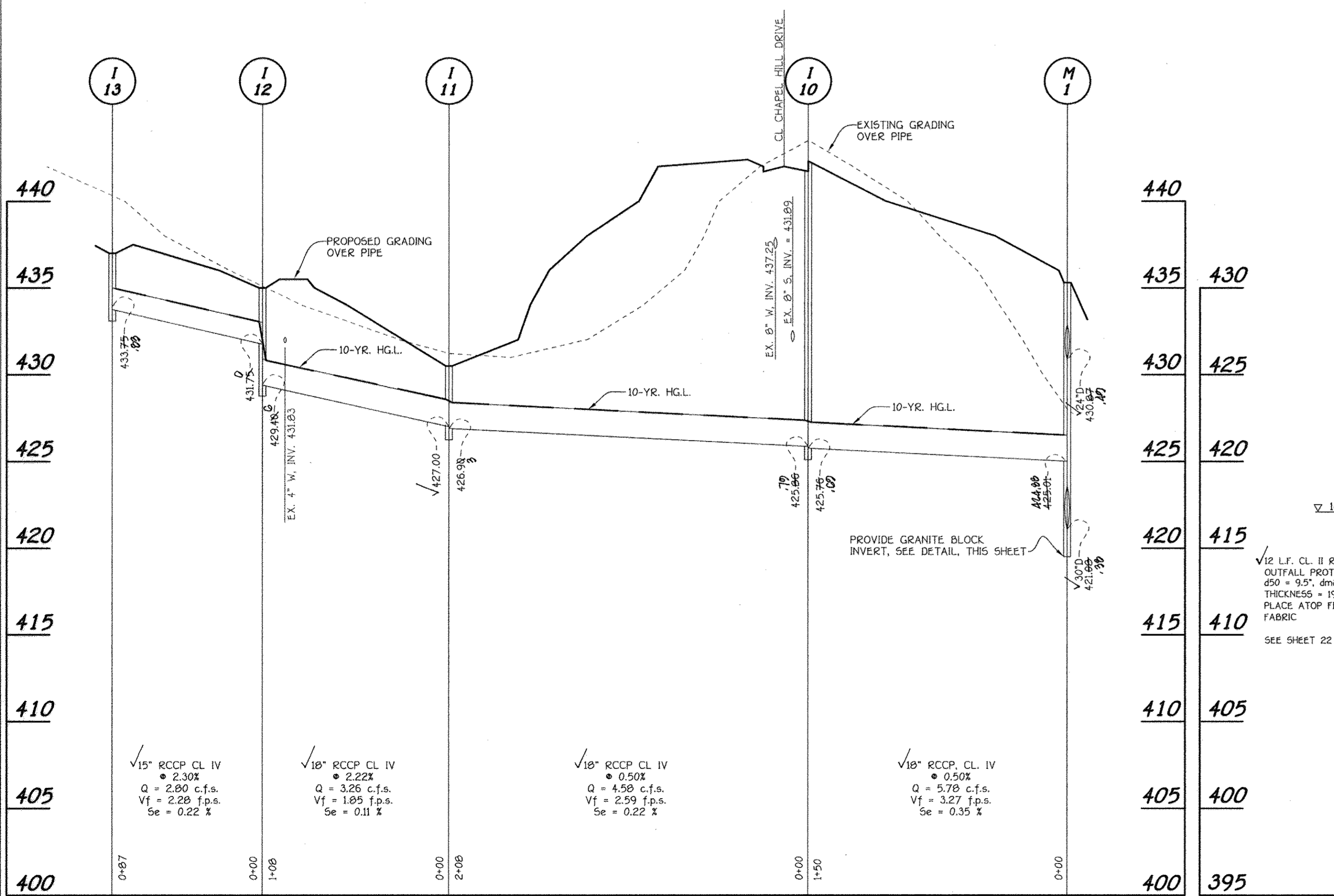


APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 4-2-08
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 4/1/08
 CHIEF, DIVISION OF LAND DEVELOPMENT
 APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 4/1/08

NO.	DESCRIPTION	DATE
1	MOVE SWM POND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM DRAIN & UTILITIES	3-31-07



D	AREA	DIMENSIONS						VOLUME	STEEL	
		A	B	C	E	F	H			CONC.
8"	0.79	9"	6"	6"	1'-9"	9"	1'-6"	5'-5"	0.61	38



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELKOTT CITY, MARYLAND 21046
 (410) 481-2055

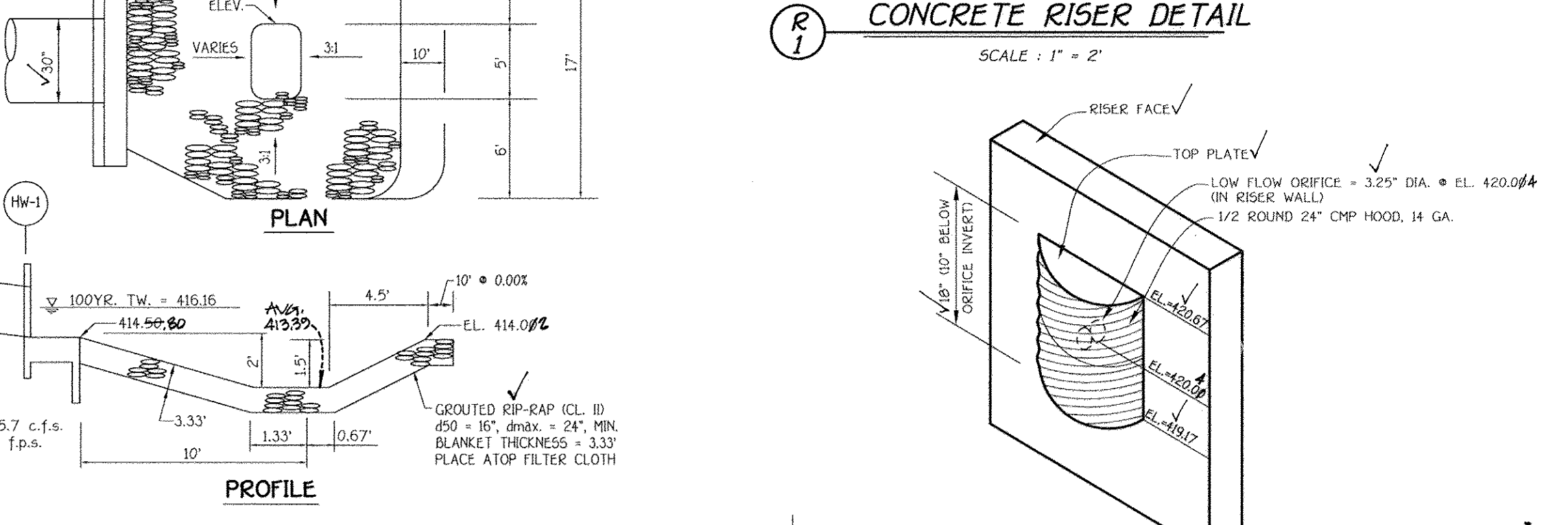
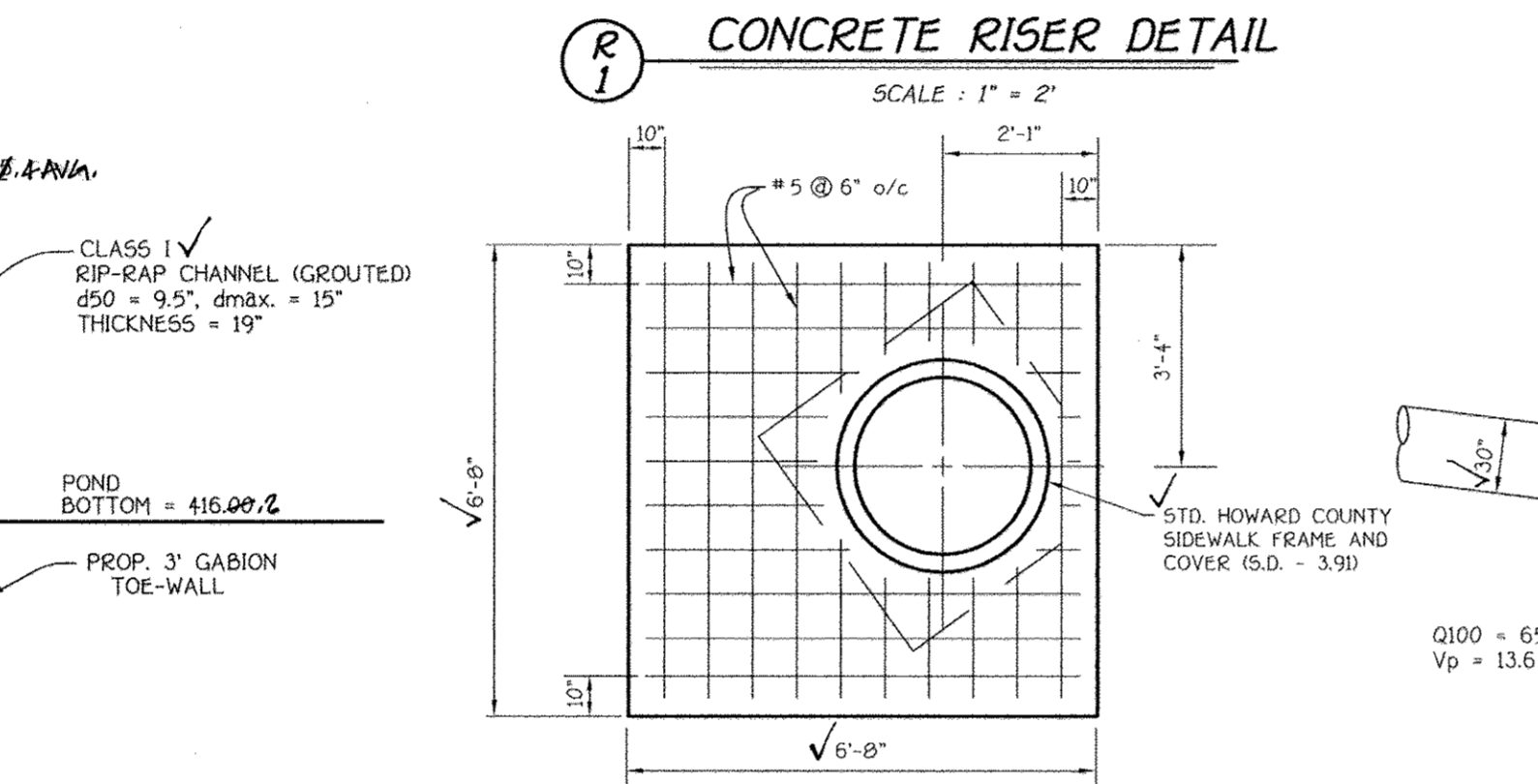
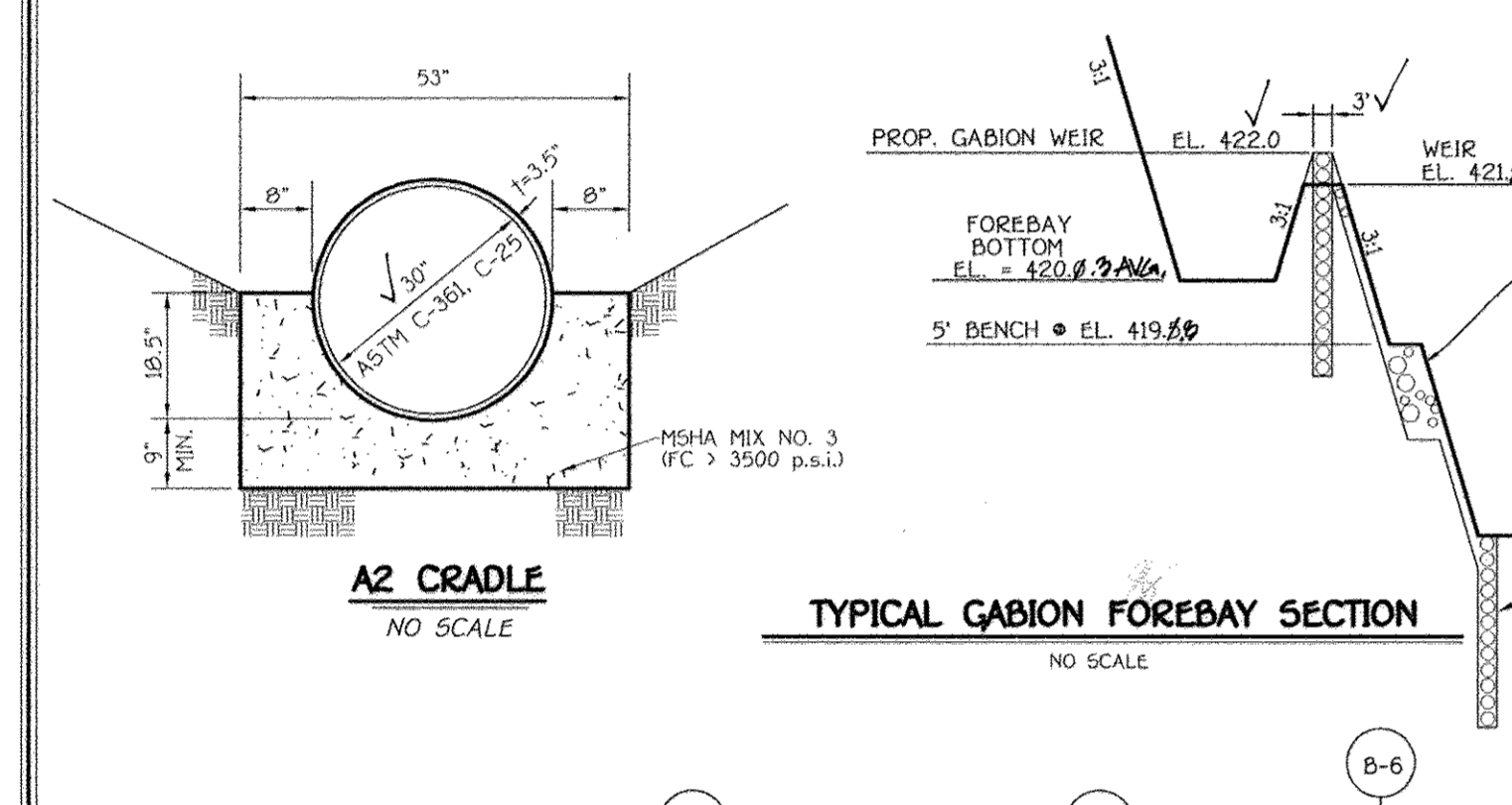
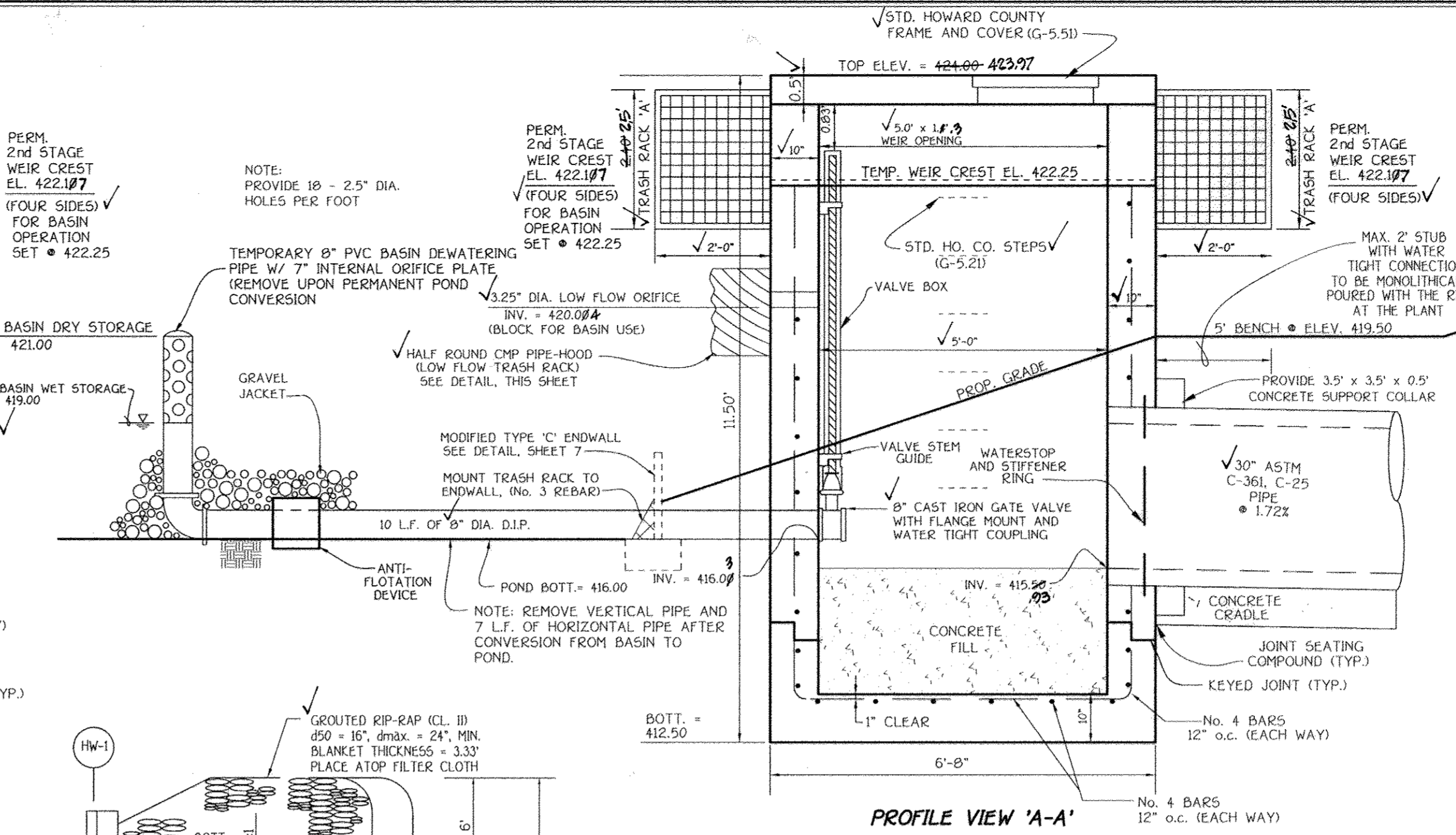
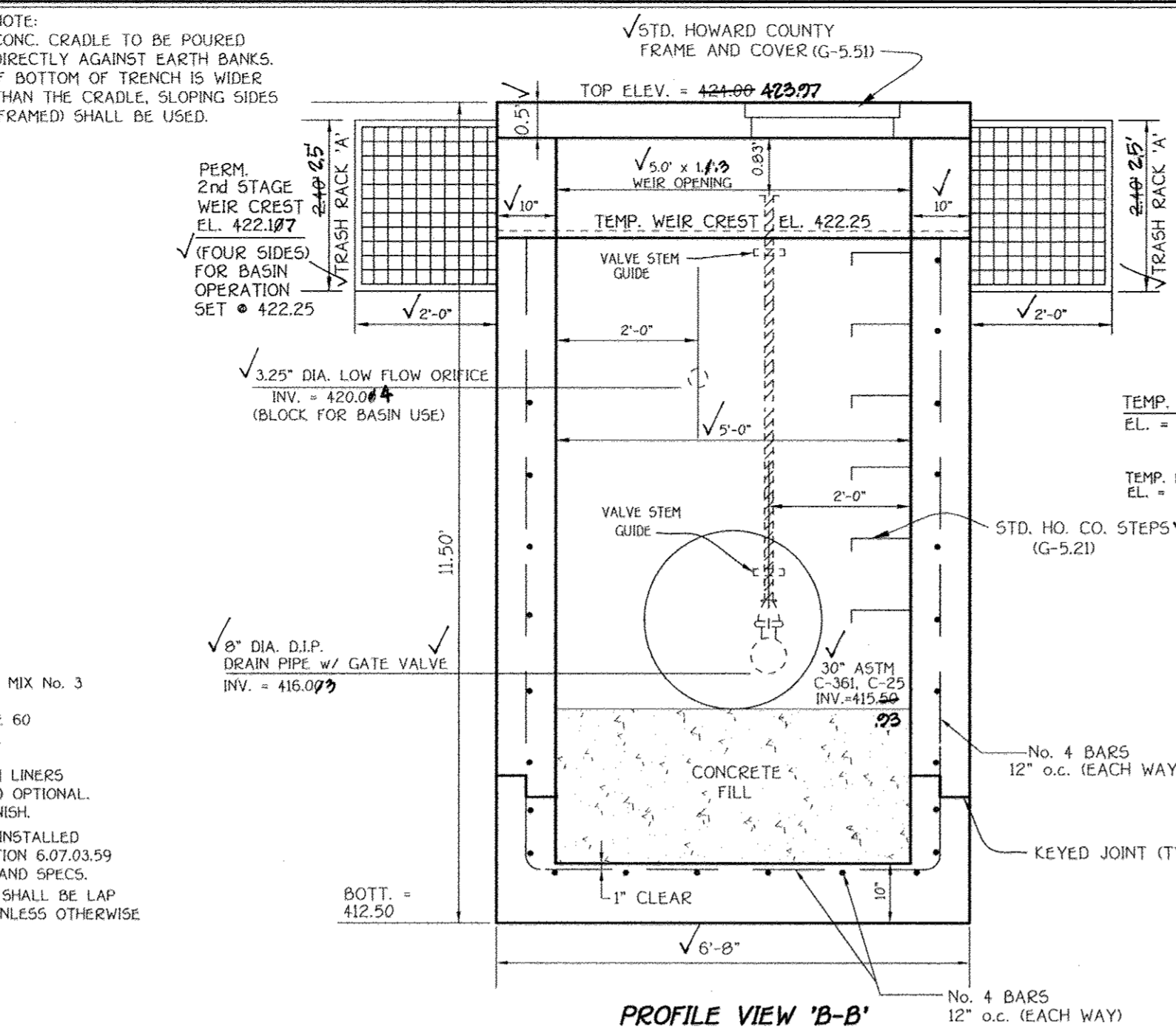
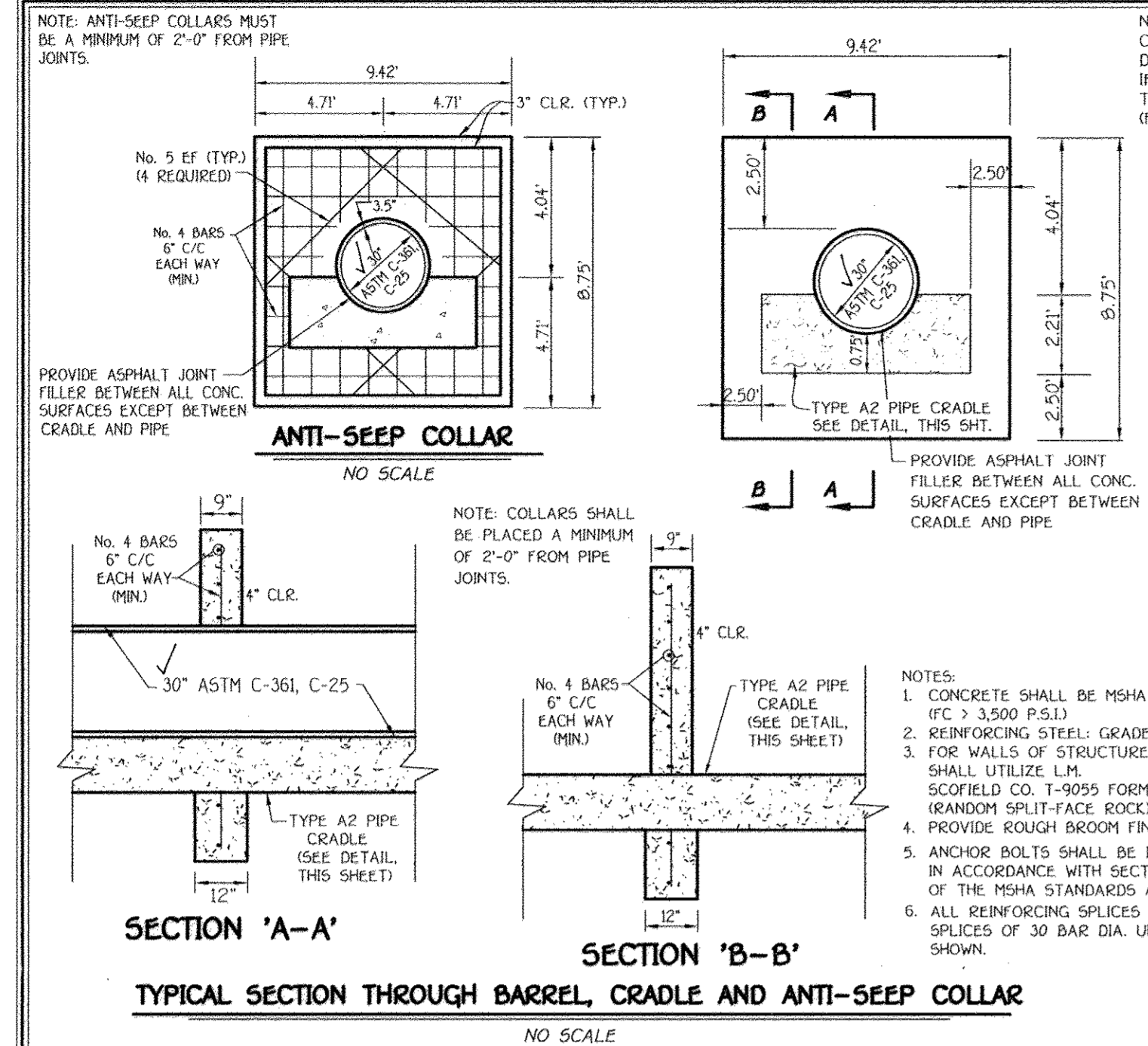
STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 License No. 12208

PROFILE
 SCALE: HOR. : 1" = 50'
 VER. : 1" = 5'

OWNER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AULURN SKY WAY
 COLUMBIA, MARYLAND 21044

DEVELOPER
 805 DEVELOPERS
 8808 CENTRE PARK DRIVE
 COLUMBIA, MARYLAND 21045
 ATTN: J. THOMAS SCHWENKER
 (410) 964-5522

STORM DRAIN PROFILES
HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 1 and 2, Plat No. 6052.
 Zoned R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2008
 SHEET 7 OF 26



ENGINEER'S CERTIFICATE

I hereby certify that this Plan for Erosion and Sediment Control Represents a Practical and Workable Plan Based On My Personal Knowledge of the Site Conditions and that it was Prepared in Accordance with the Requirements of the Howard Soil Conservation District.

Signature of Engineer: *[Signature]* Date: 1-20-08

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 Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature of Developer: *[Signature]* Date: 3/5/08

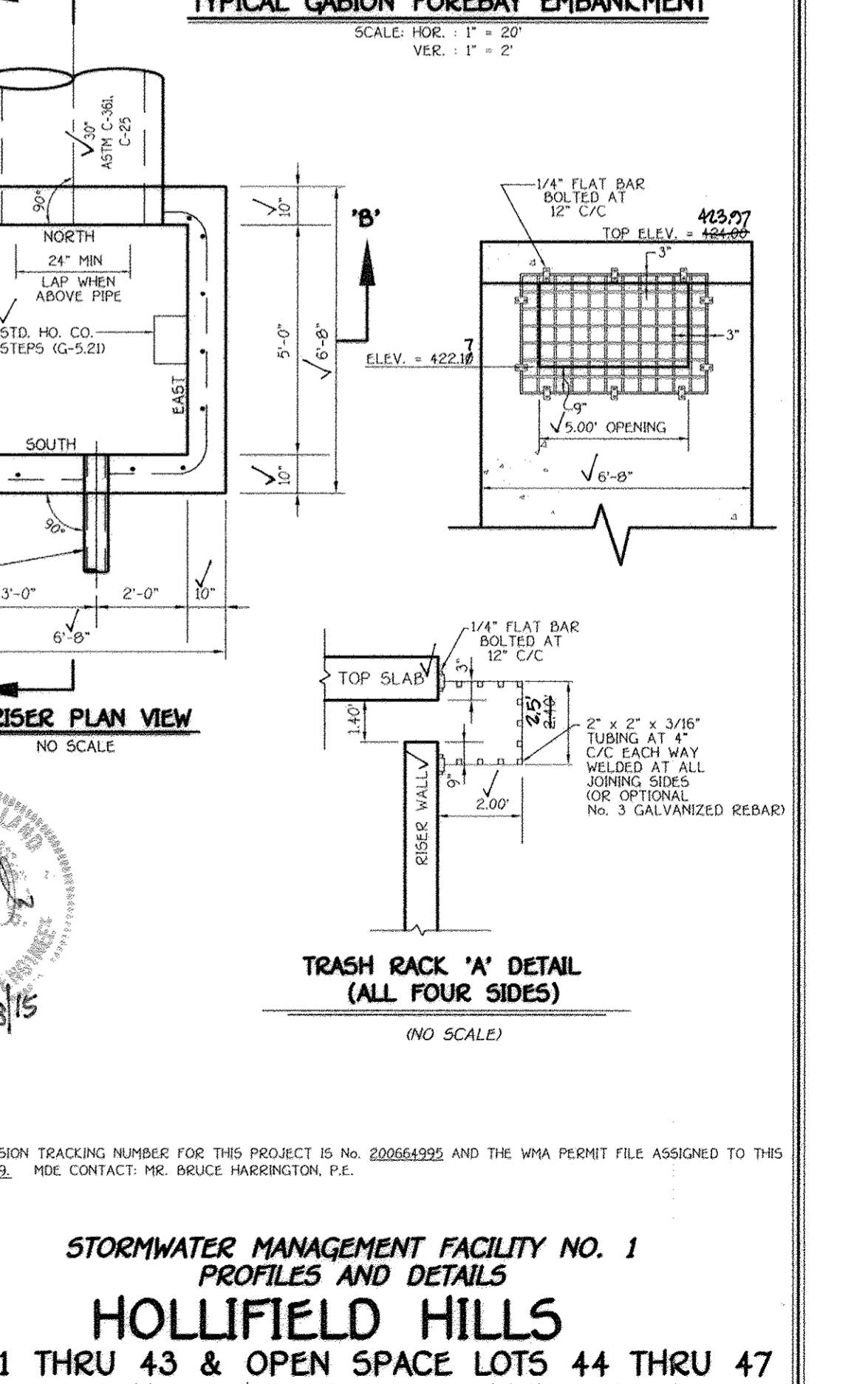
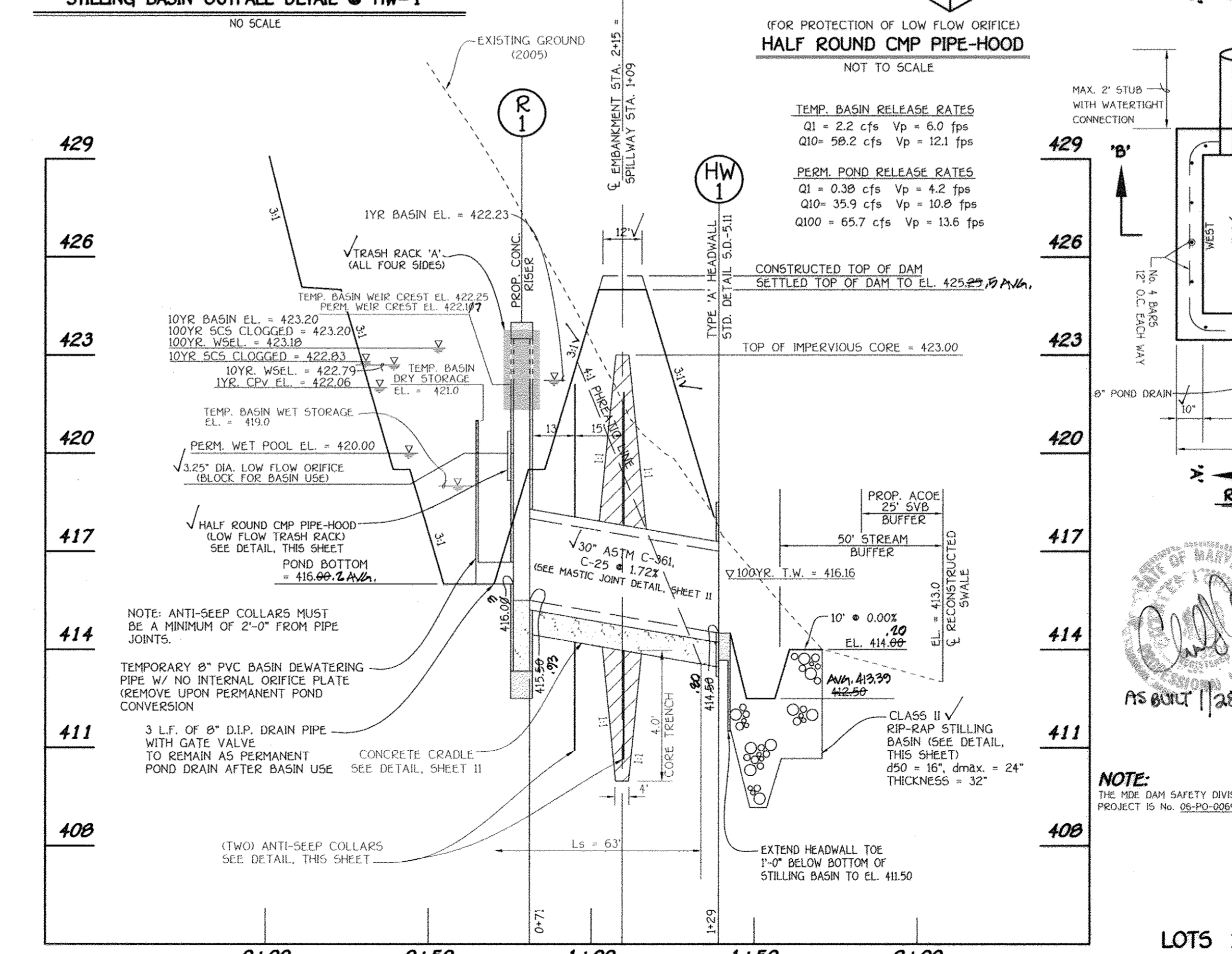
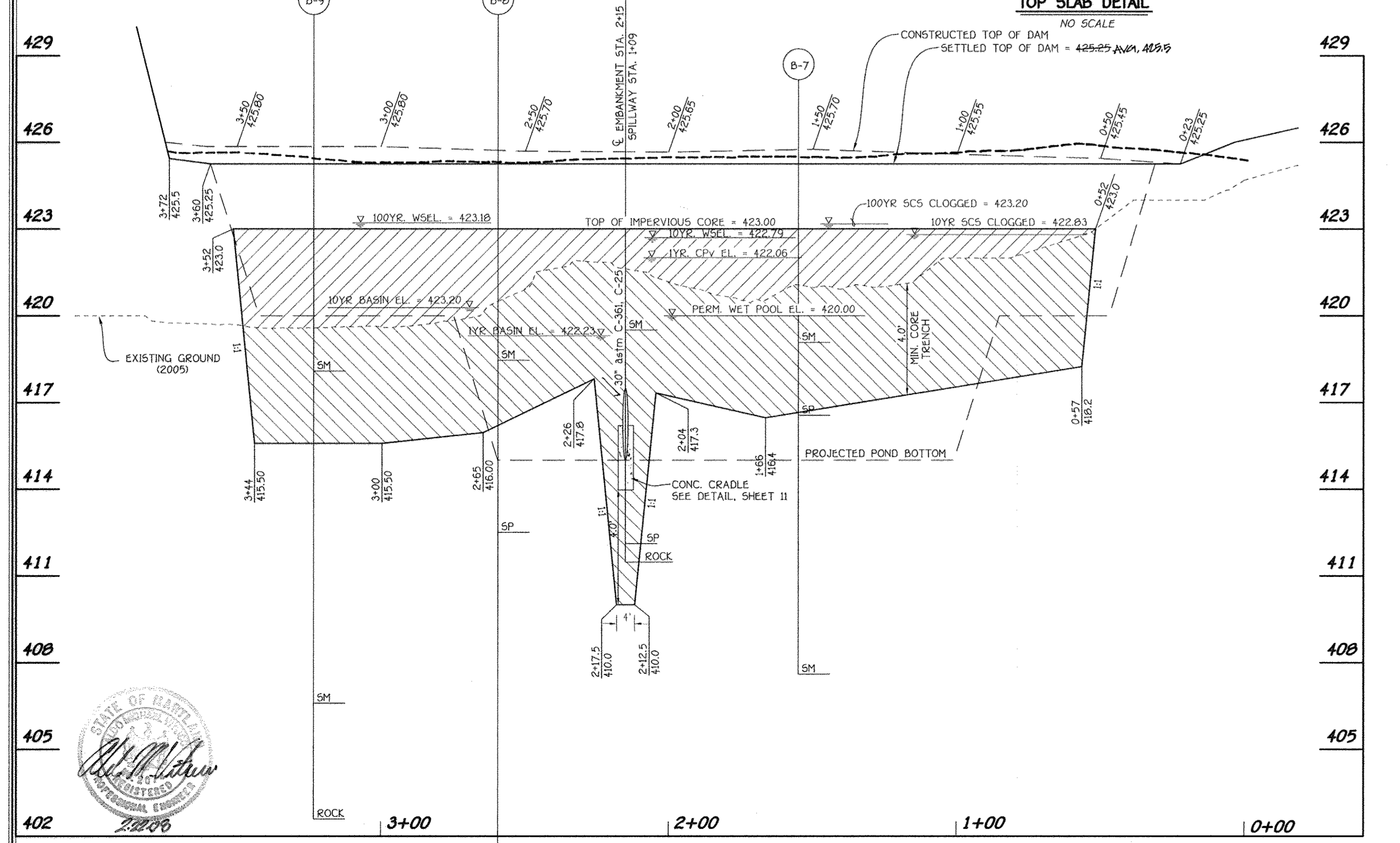
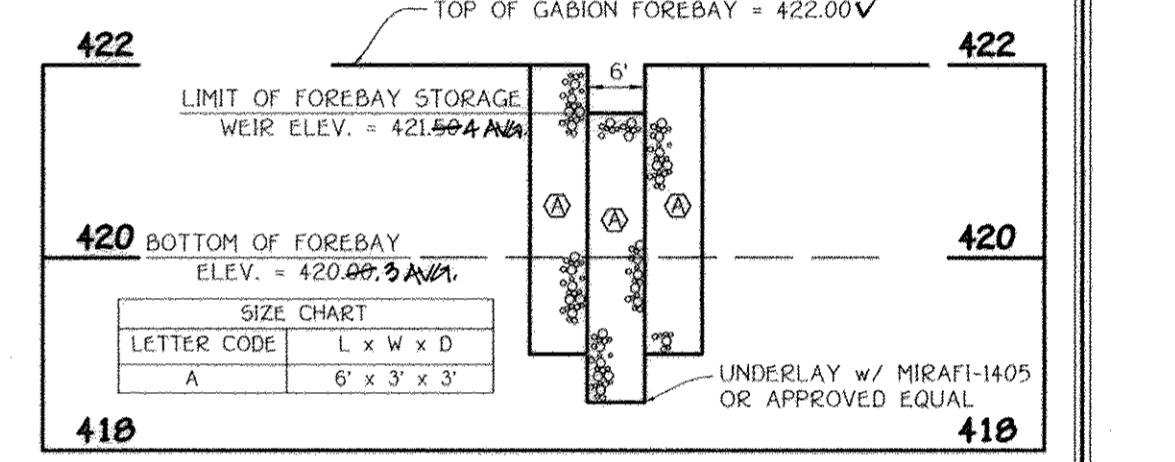
Reviewed For Howard County Soil Conservation District And Meets Technical Requirements. *[Signature]* Date: 3/26/08

Approved: Department of Planning And Zoning *[Signature]* Date: 4/10/08

Chief, Division Of Land Development *[Signature]* Date: 4/10/08

Approved: Howard County Department Of Public Works *[Signature]* Date: 4-2-08

Chief, Bureau Of Highways *[Signature]* Date: 4-2-08



STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-376. 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 6", frozen or other objectionable materials. Fill material from the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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

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 be so wet that water can be squeezed out.

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

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation 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 1:1 or flatter to be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1:1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed 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 be compacted 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 compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum 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 of flowable fill shall be used (bedding), over, and on the sides of the pipe. If 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 (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure or pipe unless there is a compacted 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 mil) on both sides of the pipe. This pipe and its appearances 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 appearances 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-190 Type A. Any aluminum coating damaged 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 appearances shall conform to the requirements of AASHTO Specification M-196 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-190 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, and 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 2/8 inch 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.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be provided an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8-inch closed end neoprene gasket, prepared to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lip type band with 12-inch wide by 3/8-inch thick closed end circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed end circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed end gaskets the full width of the flange is also acceptable.

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

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

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

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

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

Concrete - Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 404, Mix 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 331.

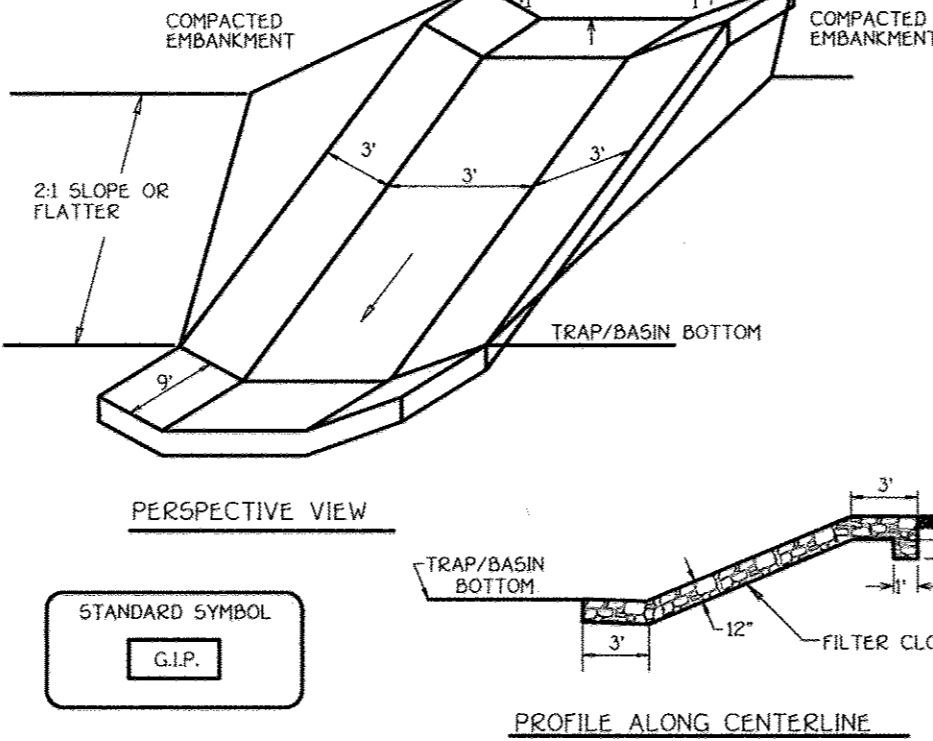
Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 321.09, Class C.

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 leveled and graded to the extent required to prevent obstruction 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 slopes 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 locations 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.

Stabilization - All borrow areas shall be graded to provide proper drainage and left in a slightly 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 Planning (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control - Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

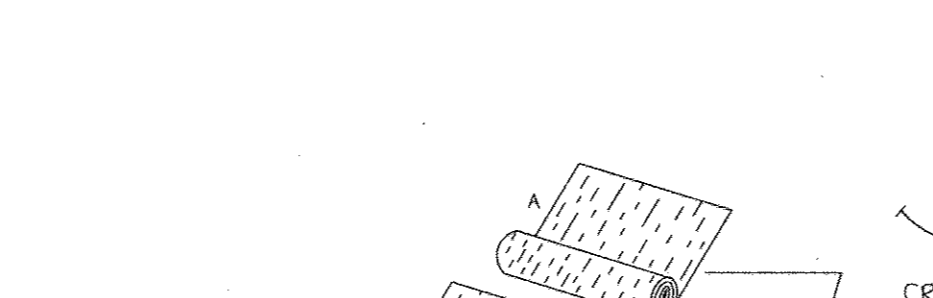
OPERATION AND MAINTENANCE - An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in the Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to 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.



- Construction Specifications
- Gabion inflow protection shall be constructed of 9' x 3' x 4' gabion baskets forming a triangular cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
 - Geotextile Class C shall be installed under all gabion baskets.
 - The stone used to fill the gabion baskets shall be 4" - 7".
 - Gabions shall be installed in accordance with manufacturers recommendations.
 - Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

GABION INFLOW PROTECTION

NOT TO SCALE

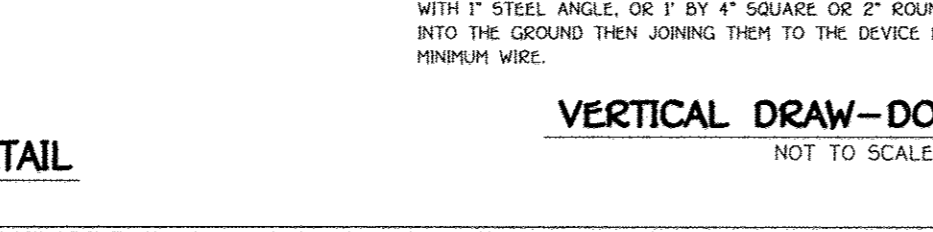
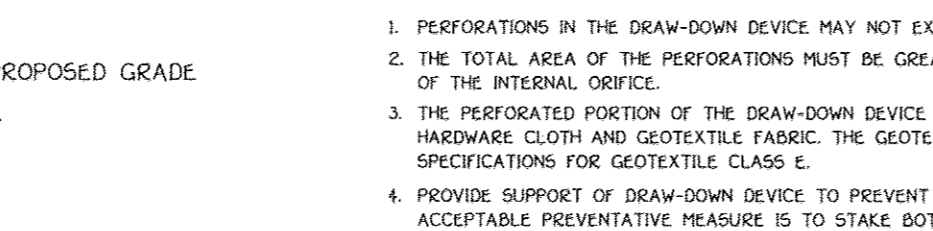
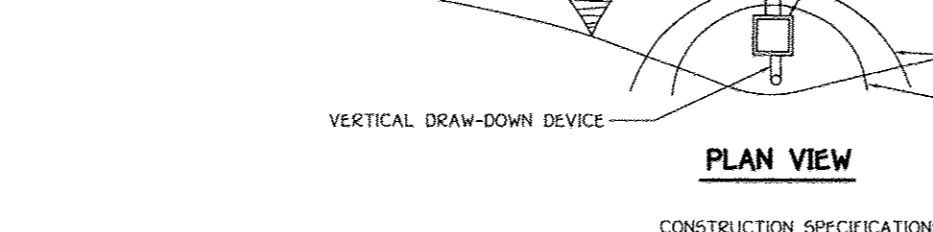
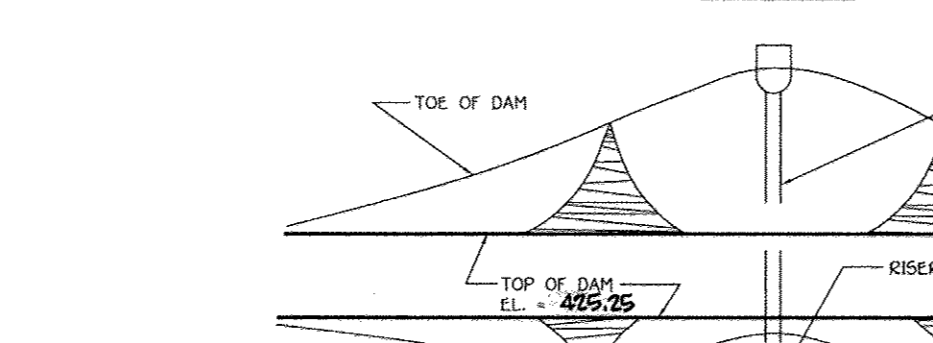
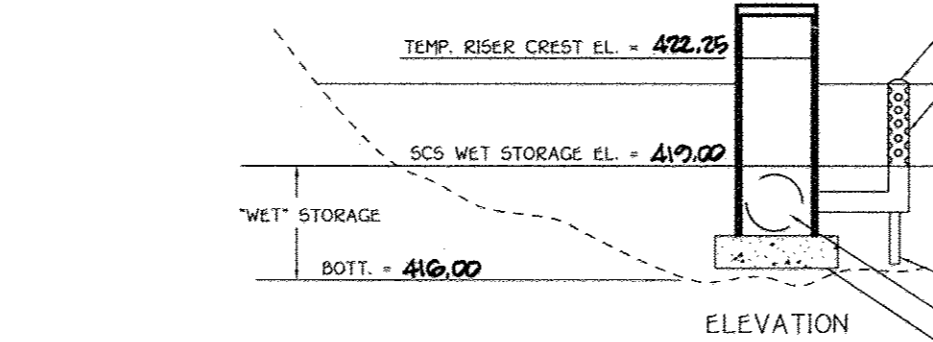
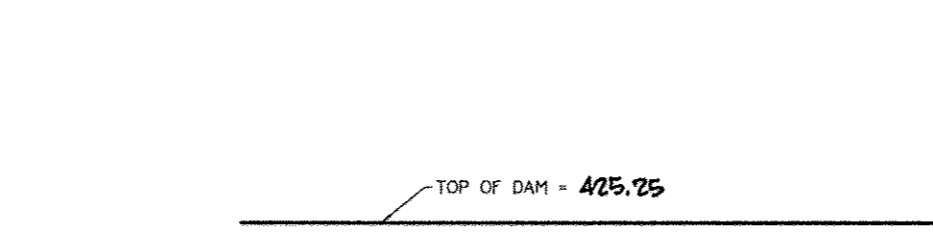


- Construction Specifications
- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" deep. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
 - Staple the 4" overlap in the channel center using an 18" spacing between staples.
 - Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
 - Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
 - Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4". Staple fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
 - The discharge end of the matting line should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be key-in.

EROSION CONTROL MATTING

NOT TO SCALE



The soil material encountered below the apparent fill layer were predominantly granular nature. These materials were visually classified in accordance with the USCS Soil Classification System (USCS) as silty sands (SM), sandy silts (ML) and coarse silts (ML). Relative densities of these materials ranged from loose to very dense.

Decomposed granular materials exhibiting Standard Penetration Test results in the range of 60 blows per 100 blows in 2 inches, were encountered at a depth of 10 to 12 ft in Boring SWM-2 and at a depth of 10 to 12 ft in Boring SWM-3.

The presence of water was monitored during our field exploration. Water was encountered at a depth ranging from 32 ft below existing site grades to 8.5 ft below existing site grades at the perimeter boring locations.

Based on the results of our field exploration and preliminary evaluation, it is our opinion that the pond embankment was constructed in accordance with USDA NRCS MD-376 (January, 2000) guidelines. On the basis of the boring data and our evaluation, the pond embankment does not appear to have been constructed with a core or core trench.

Modifications will be required to the embankment between the proposed pond can be utilized for stormwater management. The following items will need to be addressed during the final geotechnical study and final design development:

- A cut-off and core trench will be required. These relatively impermeable zones will need to be excavated and replaced with suitable materials as directed by USDA NRCS. For seepage control, if it is possible to provide a limited core trench in the area of the new spillway, this portion of the embankment will be necessary to excavate and replace the embankment materials with the placement of the new pipe. In other areas along the embankment, however, the placement of a new core trench is not practical. In such cases, alternative seepage control measures can be provided (such as its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

In order to replace the existing cutoff structure, it is recommended that the existing embankment materials be cut back along the embankment at a minimum of 4:1 (H:V). All engineered backfill materials should be properly bench-marked in the existing embankment materials.

Very loose materials were encountered in the borings. The low blow counts obtained could be the result of sample disturbance during Standard Penetration Testing. Such disturbance can occur at and below the water table. The presence of granular materials. The final geotechnical study should include the evaluation of existing materials and any requirements to understanding existing loose materials. It may be prudent to perform dilatometer testing during the final study. Further determine the in-situ strengths of these materials.

The field exploration also included a visual inspection of the existing embankment conditions. At the time of our field exploration, the existing embankment was covered by trees and brush. All trees and brush should be removed from the embankment in accordance with the "Maryland Department of Safety Manual". HCEA shall be on site during the clearing process to verify that all trees and brush are properly removed and to visually inspect the exposed embankment. Problems that may have gone unnoticed due to the overgrowth. Additional recommendations may be required if any problem areas are uncovered and identified.

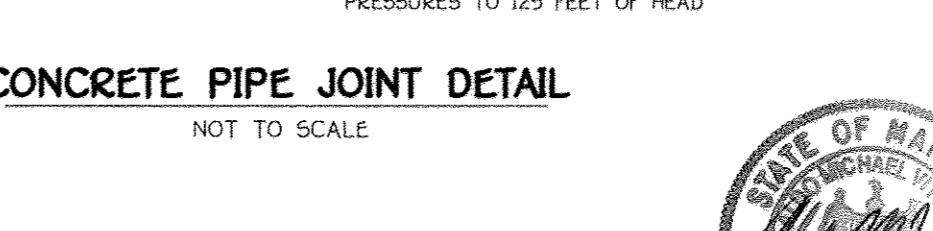
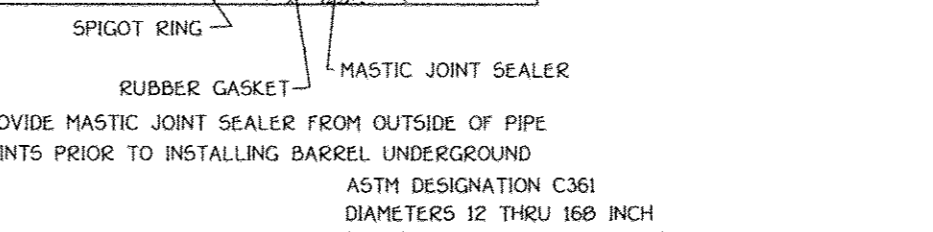
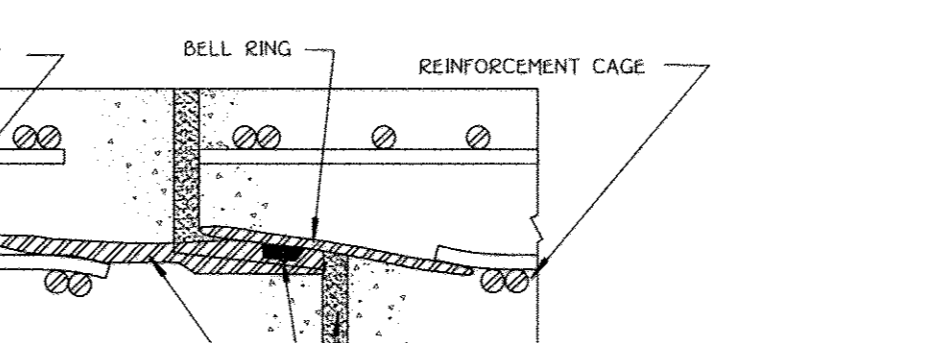
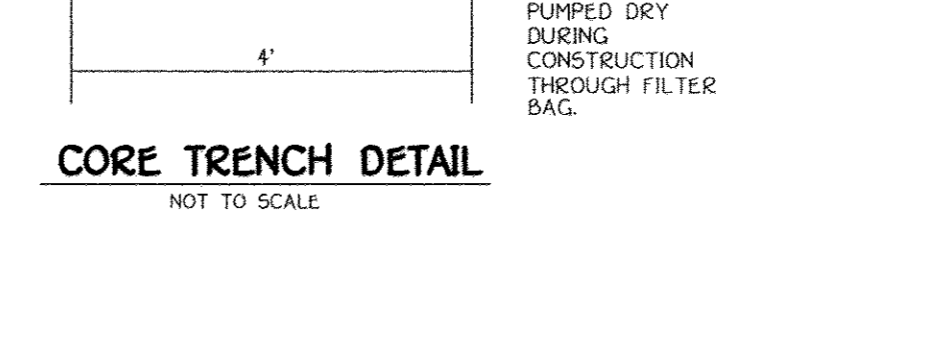
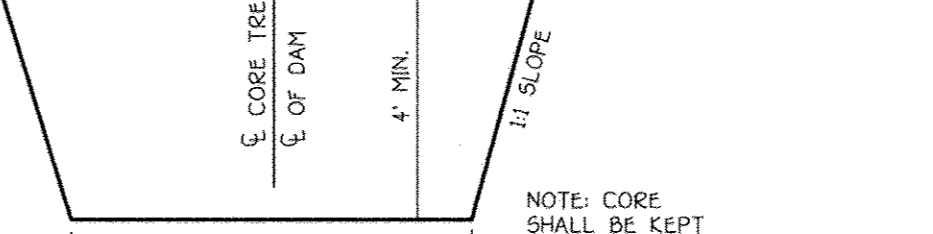
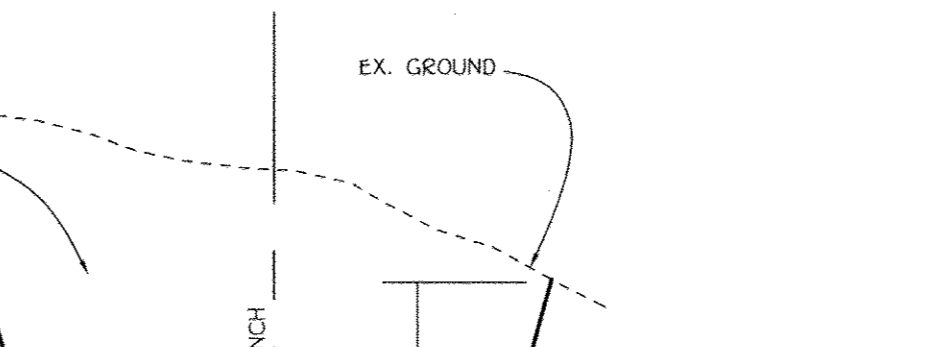
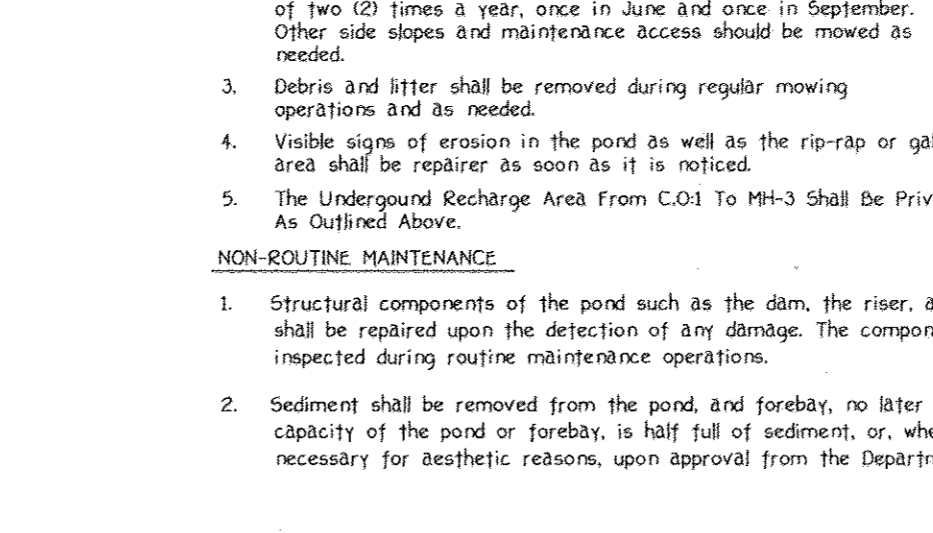
The site should be stripped of topsoil and any other unsuitable materials from the embankment or structure area in accordance with the Conservation Guidelines. After stripping operations have been completed, the exposed upgrade materials should be profiled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative using a Dynamic Cone Penetration Test. Any excessively soft or loose materials identified by profiling or penetrometer testing should be excavated to suitable fill soil, and then grades re-established with backfilling with suitable soil.

A representative of the Geotechnical Engineer should be present to monitor placement of any additional fill to be placed. Any materials that are not suitable for placement should be tested prior to placement to determine their suitability. All materials must be placed and compacted in accordance with USDA NRCS MD-376 specifications (that is, to a minimum of 95 percent of the Standard Proctor maximum dry density). Any new fill materials should be properly bench-marked in the existing embankment, where required.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES INCLUDING RECHARGE RESERVOIR

ROUTINE MAINTENANCE	
1.	Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
2.	Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
3.	Debris and litter shall be removed during regular mowing operations and as needed.
4.	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.
5.	The Underground Recharge Area from C.O1 to MH-3 Shall be Privately Maintained as Outlined Above.

NON-ROUTINE MAINTENANCE	
1.	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.
2.	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.



ENGINEER'S CERTIFICATE

I hereby certify that this Plan for Erosion and Sediment Control and the Construction Workable Plan Based On My Personal Knowledge of the Site and That It Was Prepared in Accordance with the Requirements of the Howard Soil Conservation District.

Signature: *[Signature]* Date: 10-26-06

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 Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature of Developer: *[Signature]* Date: 10/26/06

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

Signature: *[Signature]* Date: 11/4/06

U.S.D.A. - Natural Resources Conservation Service

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *[Signature]* Date: 11/6/06

District Howard Soil Conservation Dist.

Approved: Department Of Planning And Zoning

Signature: *[Signature]* Date: 11/13/06

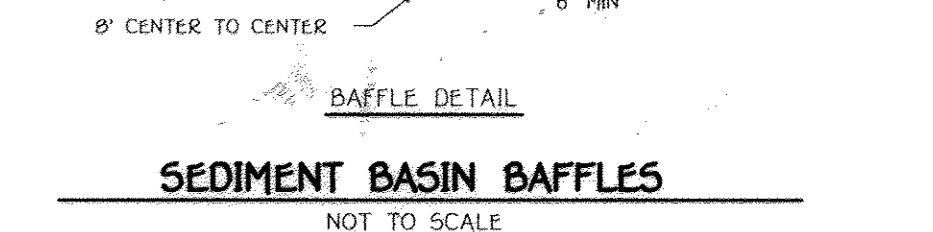
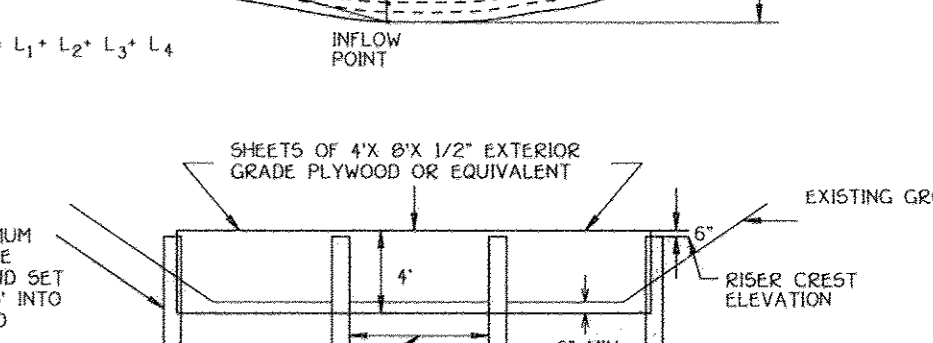
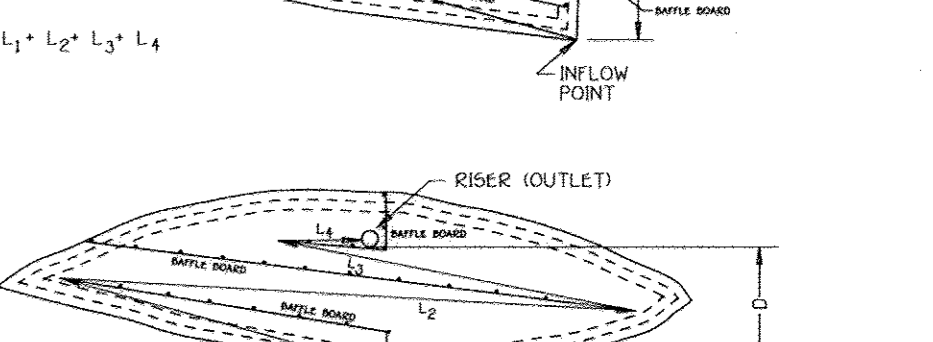
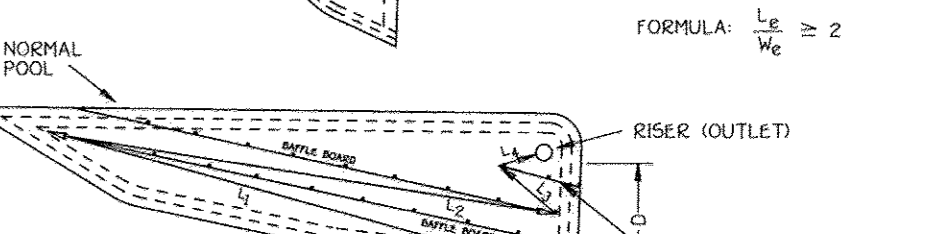
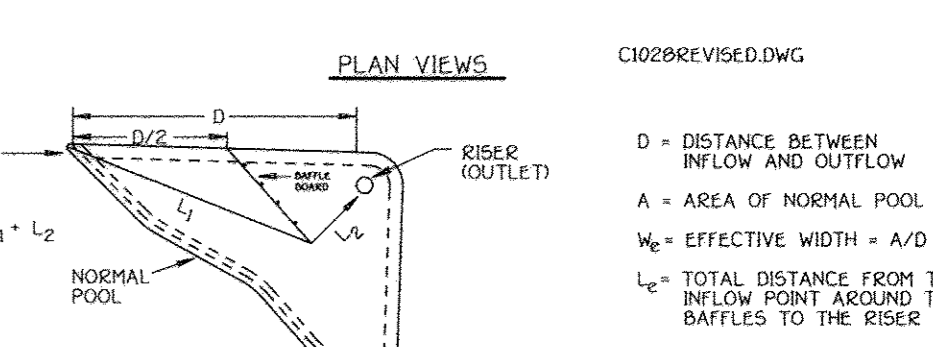
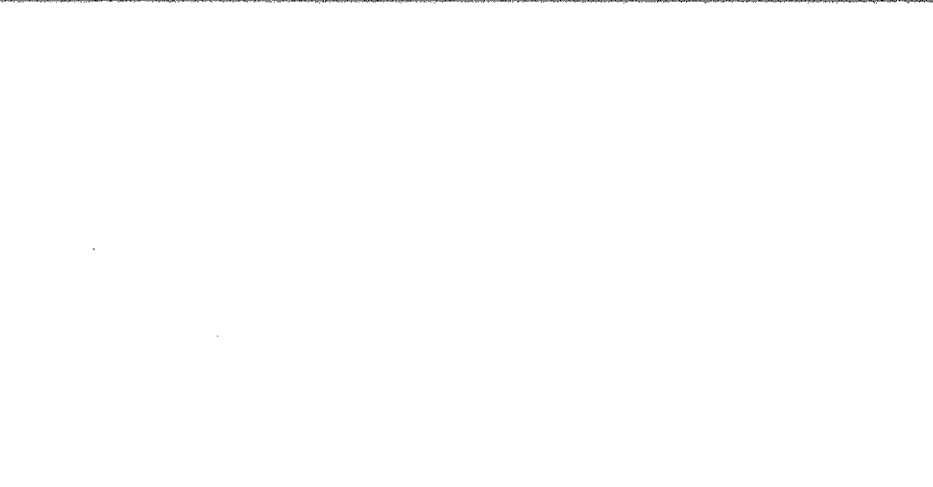
Chief, Division Of Land Development

Approved: Howard County Department Of Public Works

Signature: *[Signature]* Date: 11-21-06

Chief, Bureau Of Highways

REVISIONS		
NO.	DESCRIPTION	DATE
1	ADD SHADE POND OUT OF WETLANDS AREA AND REMOVE NEIGHBORHOOD PROPERTY LOTS, SPILLWAY DRAIN & UTILITIES	9/3/06



SEDIMENT BASIN BAFFLES

NOT TO SCALE

STORMWATER MANAGEMENT NOTES AND DETAILS

HOLLIFIELD HILLS

LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47

A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 11 and 12, Plat No. 6062.

Zoned R-20

TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43

2nd Election District Howard County, Maryland

DATE: OCTOBER 24, 2006

SHEET II OF 26

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTRAL SQUARE OFFICE PARK - 18772 BALDORNE NATIONAL PIKE

ELLSWORTH CITY, MARYLAND 21042

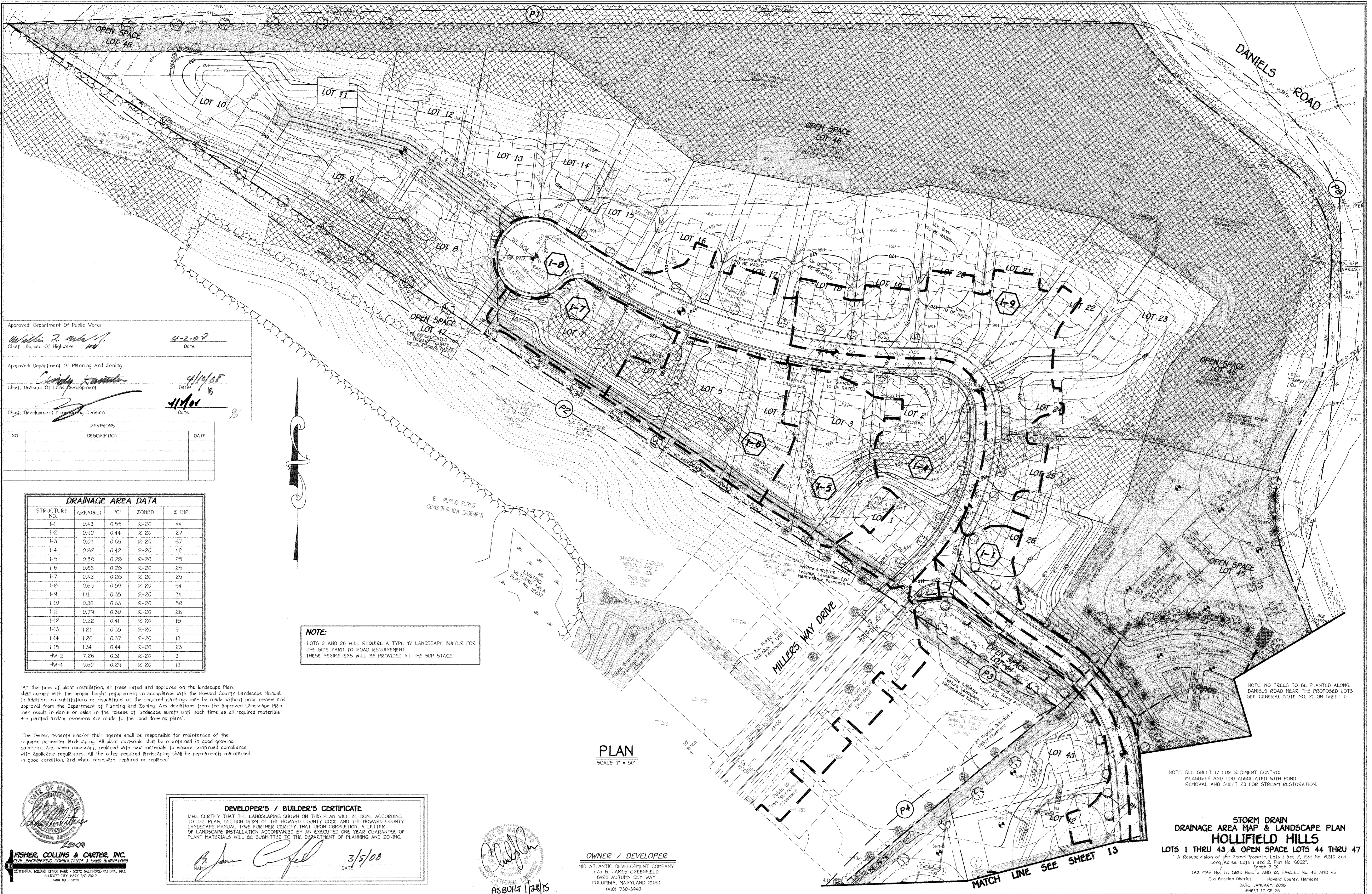
410-681-2899

STATE OF MARYLAND

PROFESSIONAL ENGINEER

[Signature]

11-21-06



Approved: Department Of Public Works
William P. ... 4-2-09
 Chief, Bureau Of Highways

Approved: Department Of Planning And Zoning
Cindy ... 4/10/09
 Chief, Division Of Land Development

Chief, Development Engineering Division
... 4/10/09

NO.	DESCRIPTION	DATE

DRAINAGE AREA DATA				
STRUCTURE NO.	AREA(ac.)	'C'	ZONED	% IMP.
I-1	0.43	0.55	R-20	44
I-2	0.90	0.44	R-20	27
I-3	0.03	0.65	R-20	67
I-4	0.82	0.42	R-20	42
I-5	0.58	0.28	R-20	25
I-6	0.66	0.28	R-20	25
I-7	0.42	0.28	R-20	25
I-8	0.69	0.59	R-20	64
I-9	1.11	0.35	R-20	34
I-10	0.36	0.63	R-20	58
I-11	0.79	0.30	R-20	26
I-12	0.22	0.41	R-20	18
I-13	1.21	0.35	R-20	9
I-14	1.26	0.37	R-20	13
I-15	1.34	0.44	R-20	23
HW-2	7.26	0.31	R-20	3
HW-4	9.60	0.29	R-20	13

NOTE:
 LOTS 2 AND 26 WILL REQUIRE A TYPE 'B' LANDSCAPE BUFFER FOR THE SIDE YARD TO ROAD REQUIREMENT. THESE PERIMETERS WILL BE PROVIDED AT THE SDP STAGE.

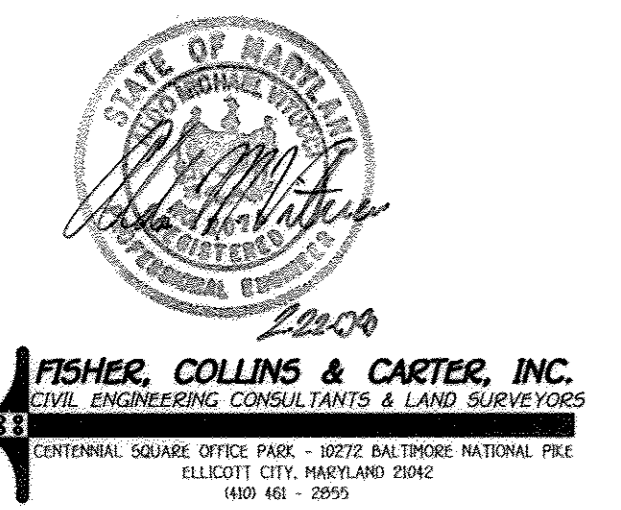
"At the time of plant installation, all trees listed and approved on the landscape plan shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval 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 the other required landscaping shall be permanently maintained in good condition and when necessary, repaired or replaced."

PLAN
 SCALE: 1" = 50'

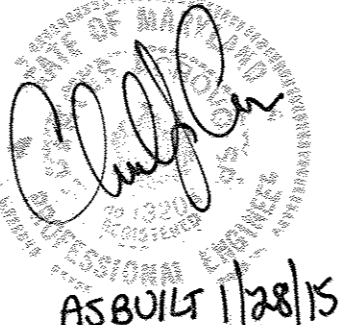
NOTE: NO TREES TO BE PLANTED ALONG DANIELS ROAD NEAR THE PROPOSED LOTS. SEE GENERAL NOTE NO. 21 ON SHEET D)

NOTE: SEE SHEET 17 FOR SEDIMENT CONTROL MEASURES AND LOD ASSOCIATED WITH POND REMOVAL AND SHEET 23 FOR STREAM RESTORATION.



DEVELOPER'S / BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[Signature] 3/5/09
 NAME DATE



OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

STORM DRAIN DRAINAGE AREA MAP & LANDSCAPE PLAN HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. B240 and Long/Acres, Lots 1 and 2, Plat No. 6062.
 Zoned R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2009
 SHEET 12 OF 26

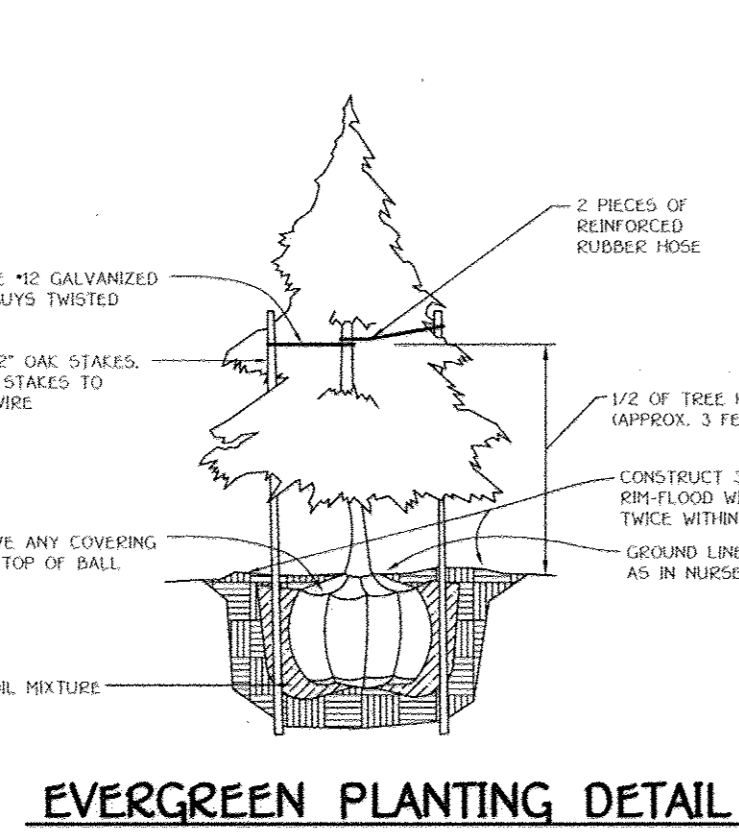
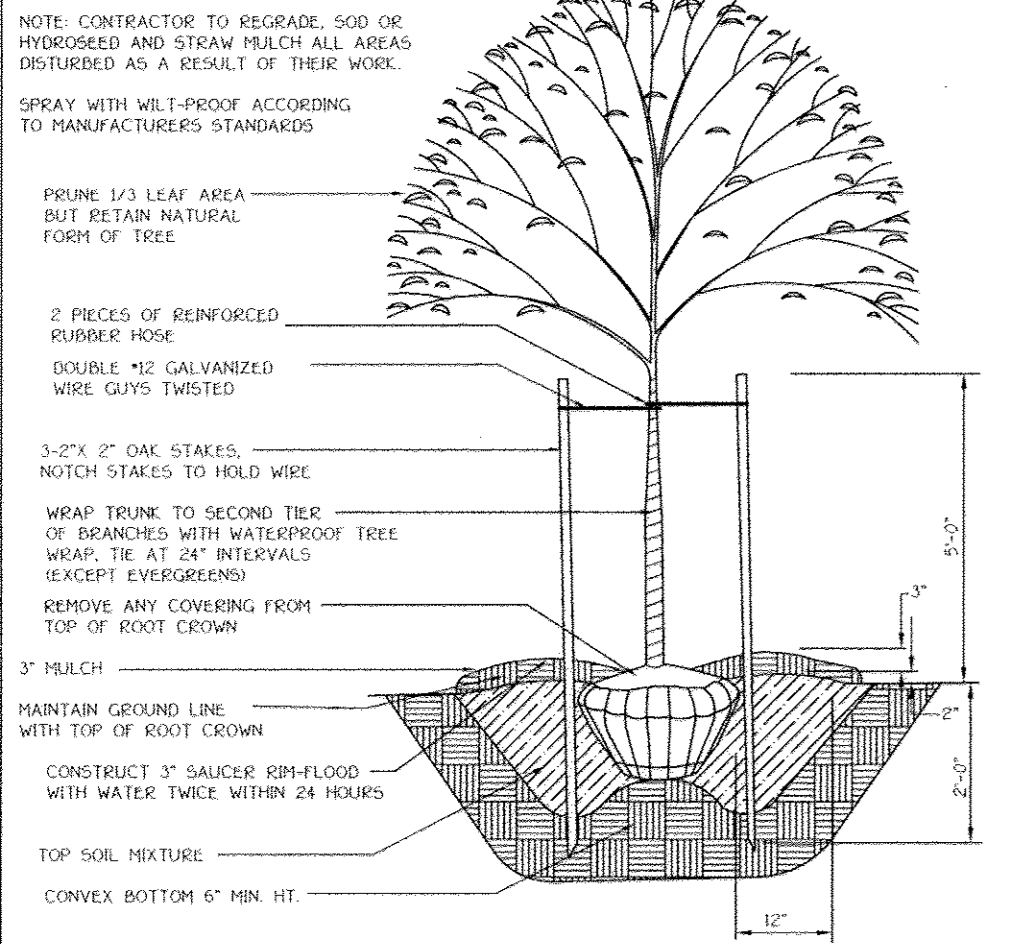
AS-BUILT F-06-50

Approved: Department Of Public Works
 Chief Bureau of Highways
 Date 4-2-08

Approved: Department Of Planning And Zoning
 Chief, Division Of Land Development
 Date 4/16/08

Chief, Development Engineering Division
 Date 4/16/08

NO.	DESCRIPTION	DATE



TREE PLANTING DETAIL

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 slope shown on the plant list and the American Association of Nurserymen 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, borers and all forms of insect infestation 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, no holdover 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 Area", hereinafter "Landscape Guidelines", approved by the Landscape Contractors Association of Metropolitan Washington and the National Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

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 plant list 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 mulch 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.

QTY.	KEY	NAME	SIZE
64	(Symbol)	ACER RUBRUM OCTOBER GLORY (OCTOBER RED MAPLE)	2 - 2 1/2" CALIPER FULL CROWN, BAB
16	(Symbol)	QUERCUS RUBRA RED OAK	2 - 2 1/2" CALIPER FULL CROWN, BAB
33	(Symbol)	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.

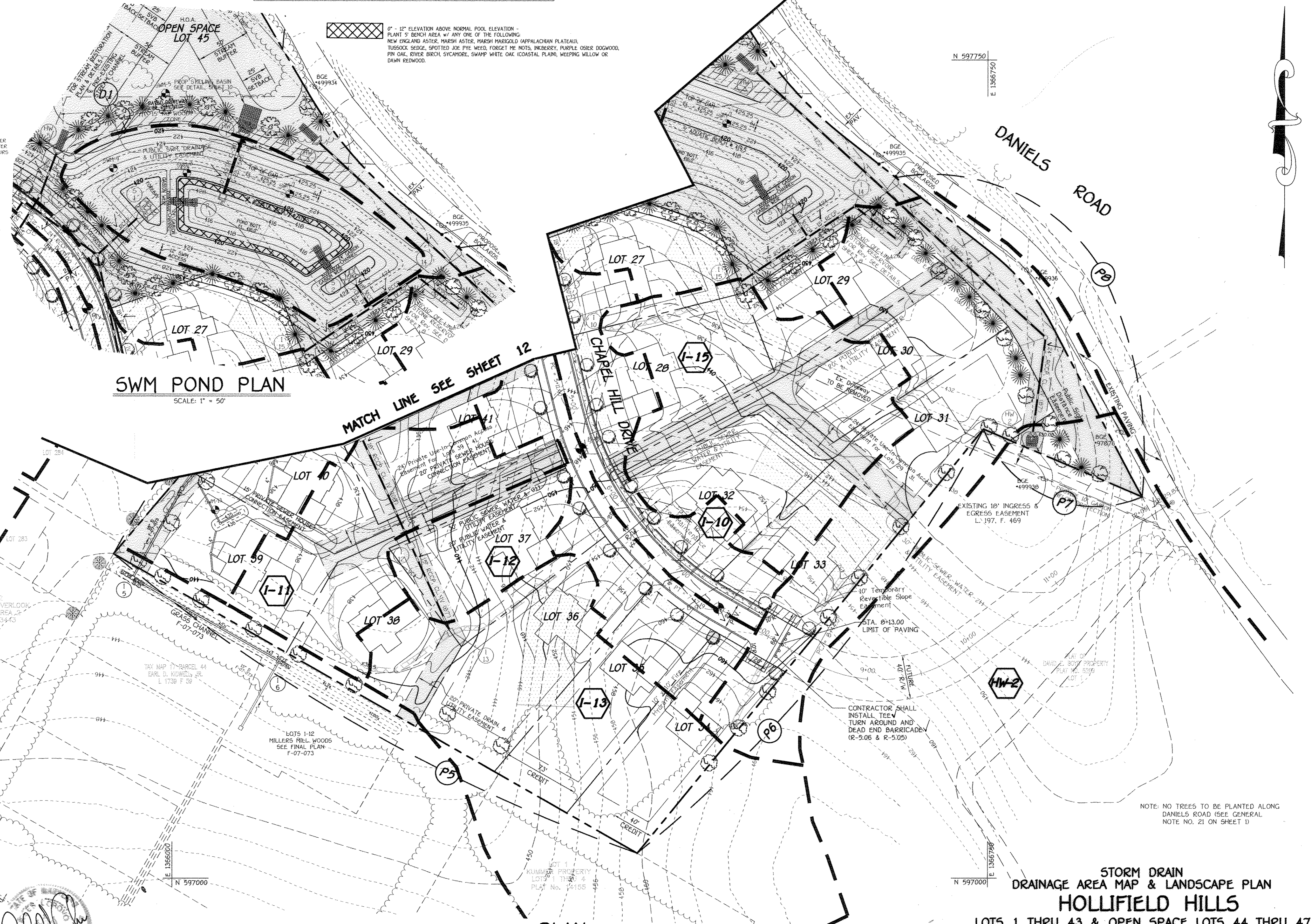
"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL". FINANCIAL SURETY FOR THE REQUIRED 80 SHADE TREES & 33 EVERGREEN TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$28,950.00.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21112
 (410) 461-2892

2008-08

SCHEDULE A PERIMETER LANDSCAPE EDGE														
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	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 BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	REMAINING PERIMETER	NUMBER OF PLANTS REQUIRED	SHADE TREES	EVERGREEN TREES	SHRUBS	NUMBER OF PLANTS PROVIDED	SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO PERIMETER	A	1414.21'	YES (034.21') F.C.E.	NO	380'	6	-	-	-	6	-	-	-
P-2	ADJACENT TO PERIMETER	A	1295.55'	YES (47')	NO	1148.55'	19	-	-	-	19	-	-	-
P-3	ADJACENT TO PERIMETER	A	215.93'	NO	NO	215.93'	4	-	-	-	4	-	-	-
P-4	ADJACENT TO PERIMETER	A	438.43'	NO	NO	438.43'	7	-	-	-	7	-	-	-
P-5	ADJACENT TO PERIMETER	A	554.41'	YES (113') EX. TREES	NO	441.41'	7	-	-	-	7	-	-	-
P-6	ADJACENT TO PERIMETER	A	502.34'	YES (86') EX. TREES	NO	416.34'	7	-	-	-	7	-	-	-
P-7	ADJACENT TO PERIMETER	A	158.59'	NO	NO	158.59'	3	-	-	-	3	-	-	-
P-8	ADJACENT TO ROADWAY	B	1210.31'	YES (681') F.C.E.	NO	529.31'	11	13	-	-	11	13	-	-
TOTAL							64	13	-	-	64	13	-	-

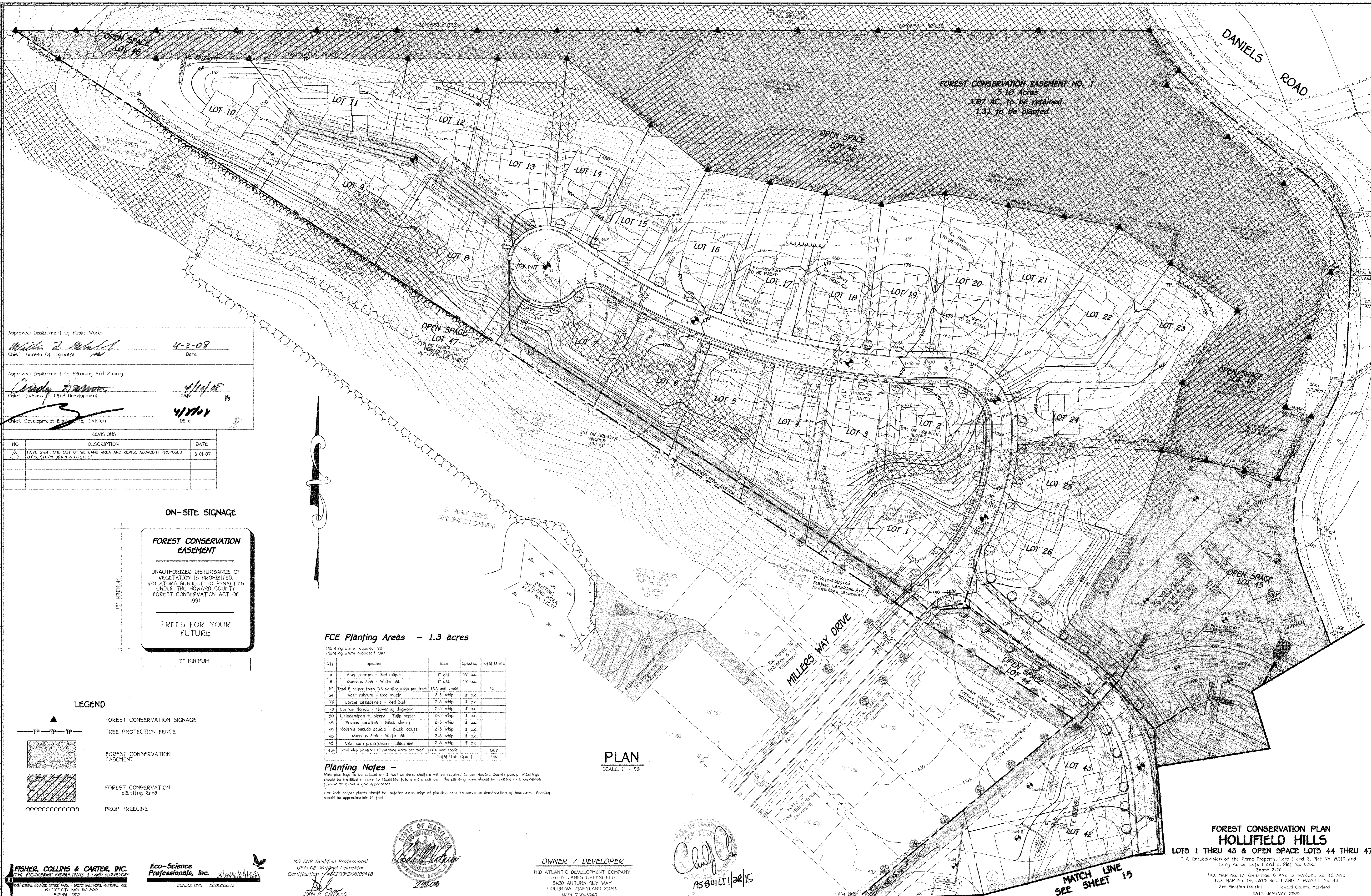
SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	DI: 787'
NUMBER OF TREES REQUIRED:	
SHADE TREES	16
EVERGREEN TREES	20
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
REMAINING PERIMETER	787'
NUMBER OF TREES PROVIDED:	
SHADE TREES	16
EVERGREEN TREES	20



OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

AS BUILT 1/28/13

STORM DRAIN DRAINAGE AREA MAP & LANDSCAPE PLAN
 HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Rome Property, Lots 1 and 2, Plot No. 0240 and Long Acres, Lots 1 and 2, Plot No. 5062.
 Zoned R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2008
 SHEET 13 OF 26



FOREST CONSERVATION EASEMENT NO. 1
 5.18 Acres
 3.87 AC. to be retained
 1.31 to be planted

Approved: Department Of Public Works
William Z. Mahler 4-2-08
 Chief, Bureau Of Highways Date

Approved: Department Of Planning And Zoning
Cindy Harmon 4/10/08
 Chief, Division Of Land Development Date

[Signature] 4/27/08
 Chief, Development Engineering Division Date

NO.	DESCRIPTION	DATE
1	MOVE SIGN FOND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM DRAIN & UTILITIES	3-01-07

ON-SITE SIGNAGE

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

15" MINIMUM
 11" MINIMUM

FCE Planting Areas - 1.3 acres

Planting units required: 910
 Planting units proposed: 910

Qty	Species	Size	Spacing	Total Units
6	Acer rubrum - Red maple	1" cal.	15' o.c.	
6	Quercus alba - White oak	1" cal.	15' o.c.	
12	Total 1" caliper trees (3.0 planting units per tree)	FCA unit credit		42
64	Acer rubrum - Red maple	2-3" whip	11' o.c.	
70	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
70	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
50	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
45	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
45	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
45	Quercus alba - White oak	2-3" whip	11' o.c.	
45	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
434	Total whip plantings (2 planting units per tree)	FCA unit credit		868
		Total Unit Credit		910

Planting Notes -
 Whip plantings to be spaced on 11 foot centers, shelters will be required as per Howard County policy. Plantings should be installed in rows to facilitate future maintenance. The planting rows should be created in a curvilinear fashion to avoid a grid appearance.
 One inch caliper plants should be installed along edge of planting area to serve as demarcation of boundary. Spacing should be approximately 15 feet.

LEGEND

- ▲ FOREST CONSERVATION SIGNAGE
- TP — TP — TP — TREE PROTECTION FENCE
- [Hatched Box] FOREST CONSERVATION EASEMENT
- [Diagonal Lines Box] FOREST CONSERVATION planting area
- ~ PROP TREELINE

PLAN
 SCALE: 1" = 50'

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PKWY
 ELLICOTT CITY, MARYLAND 21042
 410 461 - 2995

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional
 USACOE Wetland Delineator
 Certification # 06931006100448
[Signature]
 JOHN P. CAYOLES



OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

[Signature]
 AS BUILT 1/28/15

FOREST CONSERVATION PLAN
HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Rome Property, Lots 1 and 2, P&I No. 8240 and Long Acres, Lots 1 and 2, P&I No. 6062.
 Zoned R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND
 TAX MAP No. 18, GRID Nos. 1 AND 7, PARCEL No. 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2008
 SHEET 14 OF 25

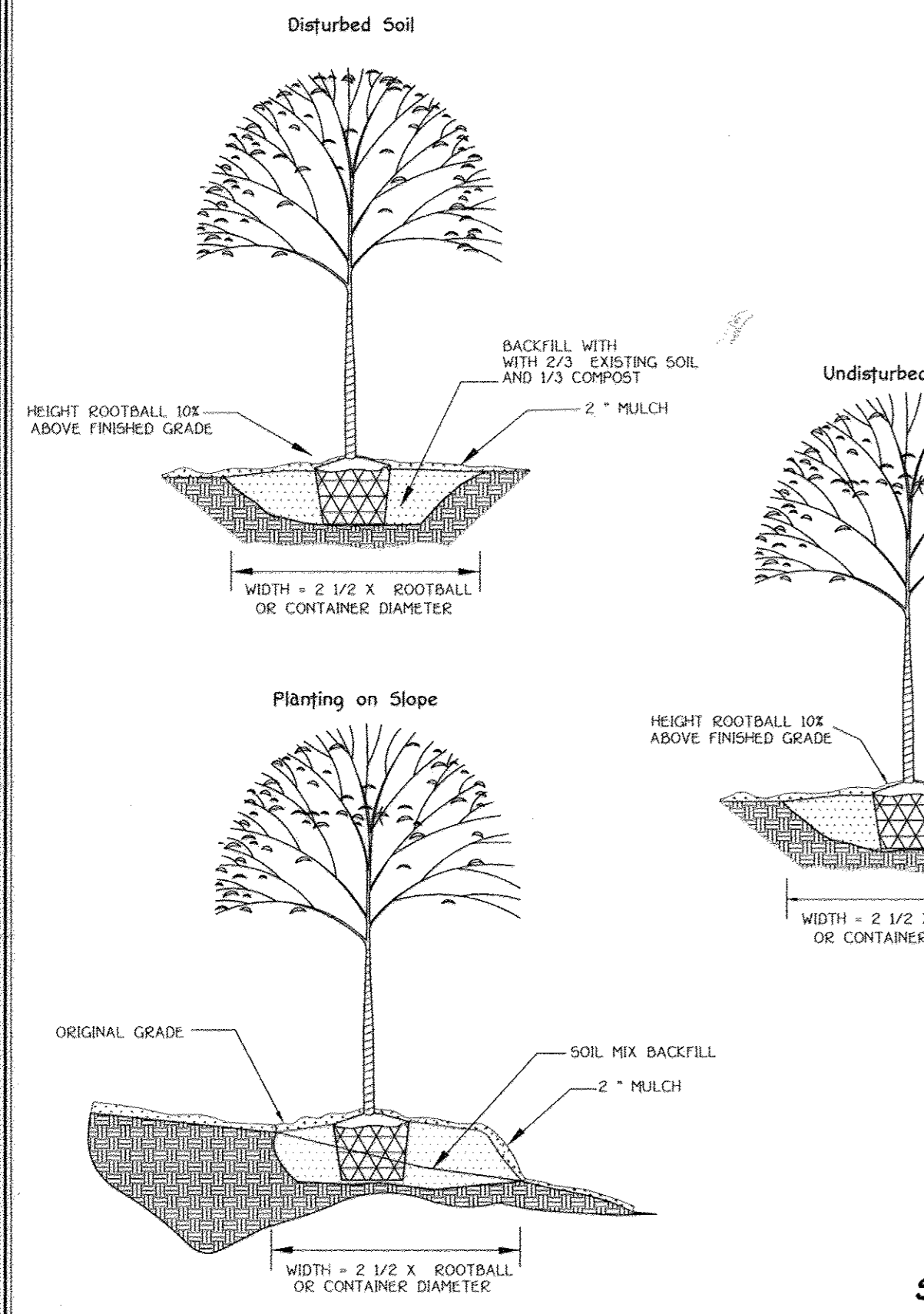
MATCH LINE
 SEE SHEET 15

Approved: Department Of Public Works
 Chief: Bureau of Highways
 Date: 4-2-09

Approved: Department Of Planning And Zoning
 Chief: Division Of Land Development
 Date: 4/16/09

Chief: Development Engineering Division
 Date: 4/16/09

NO.	DESCRIPTION	DATE
1	MOVE SWAMP POND OUT OF WETLAND AREA AND REVISE ADJACENT PROPOSED LOTS, STORM DRAIN & UTILITIES	3-01-07



NET TRACT AREA		Acres
A. Total tract area		26.4
B. Area within 100 Year Floodplain		0
C. Area to remain in agriculture		0
D. Net Tract Area		26.4
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR MPD CIA X		
E. Afforestation Threshold (percentage)	0.15	3.96
F. Conservation Threshold (percentage)	0.2	5.28
EXISTING FOREST COVER:		
G. Existing forest cover (excluding floodplain)		9.15
H. Area of forest above afforestation threshold		5.19
I. Area of forest above conservation threshold		3.87
BREAK EVEN POINT:		
J. Forest retention above threshold with no mitigation	0.77	
	Break-Even Point	6.05
K. Clearing permitted without mitigation		3.1
PROPOSED FOREST CLEARING		
L. Total area of forest to be Cleared or Retained Outside FCE		5.28
M. Total area of forest to be Retained in FCE		3.87
PLANTING REQUIREMENTS		
N. Reforestation for clearing above Conservation Threshold		0.97
P. Reforestation for clearing below Conservation Threshold		2.82
Q. Credit for retention above conservation threshold		0
R. Total reforestation required		3.79
S. Total afforestation required		0
T. Total reforestation and afforestation required		3.79

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1000 SQUARE SQUARE PARK - 1922 BALDWIN NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21032
 (410) 461-2955

Eco-Science Professionals, Inc.
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional
 USACOE Wetland Designer
 Certification # W0933MD06100418
 JOHN P. CANOLES

FCP NOTES:

- Any Forest Conservation Element (FCE) area shown herein is subject to protective covenants which may be found on the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective covenants.
- Levels of disturbance shall be restricted to areas within the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Element, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment clearing areas, etc. shall occur within areas designated as Forest Conservation Elements.
- Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along limits of disturbance occurring within 90 feet of the proposed FCE limits. Fencing height will be posted at a 30:60 foot intervals along all FCE limits.
- THE FOREST CONSERVATION REQUIREMENTS OF SECTION 18.030 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 382.2 ACRES OF ON-SITE FOREST RETENTION. 131.1 ACRES OF ON-SITE PLANTING AND THE BALANCE OF 251.1 ACRES OF REFORESTATION OBLIGATION WILL BE PROVIDED IN AN OFF-SITE FOREST CONSERVATION ELEMENT ON "CONSERVED PROPERTY" FOREST CONSERVATION PLAT LOCATED ON TAX MAP NO. 29, GRID NO. 5, PARCEL NO. 29 IN THE 2nd ELECTION DISTRICT. The surety amount for the on-site forest retention obligation is \$38,220,000.00. The surety amount for the off-site reforestation obligation is \$251,100,000.00. The total forestation surety amount for the required 756 ac. is \$382,200,000.00.
- The Forest Conservation Element has been established to meet the requirements of Section 18.030 of the Howard County Code and the Forest Conservation Act. No clearing, grading or construction is permitted within the forest conservation element; however, forest management practices as defined on the local Forest Conservation Element are allowed.

Planting/Soil Specifications

- Installation of bareroot plant stock shall take place between March 15 - April 20; bbb/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
- Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
- Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
- Fertilizer shall consist of Agriform 22-0-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Osmocote 8-6-12.
- Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
- All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

- Sediment control shall be installed in accordance with general construction plan for site.
- Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
- Upon completion of the planting, signage shall be installed as shown.
- Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

- Maintenance of plantings shall last for a period of 2 years.
- Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season as needed. During second growing season, once a month during May-September, if needed.
- Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
- Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
- Dead branches will be pruned from plantings.

Guarantee Requirements

A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild fires arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species of least 12 inches tall.

Surety for Forestation

The developer shall post a surety bond, letter of credit) to ensure that forestation plantings are completed.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation.

Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

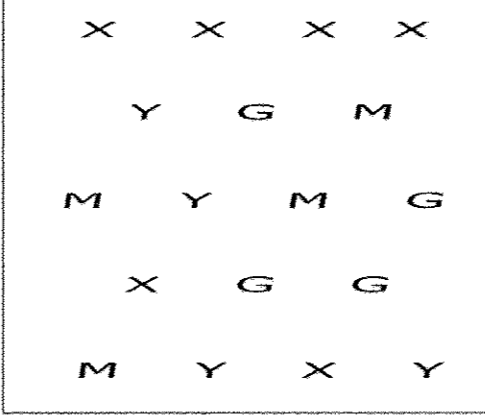
Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting/Seeding Specifications.

Planting Note per B.G.&E.

Trees with mature heights greater than 25' shall not be planted within 20' of either side of the utility pole line. Trees with mature heights greater than 40' shall not be planted within 45' of the utility pole line.

Finally, the recorded plat/drawing and associated Forest Conservation element documents recorded in the land records of Howard County shall note that trees retained or planted to comply with FCA requirements shall meet the conditions prescribed above for mature tree heights and planting distances from the lines, and that BGE shall have the right without mitigation requirements to remove or prune any trees situated within the Forest Conservation Area that BGE deems to pose a hazard to the overhead facilities regardless of the distance of the tree or trees from the overhead lines.

Plant Spacing Diagram



Tree Shelters - Installation Specifications

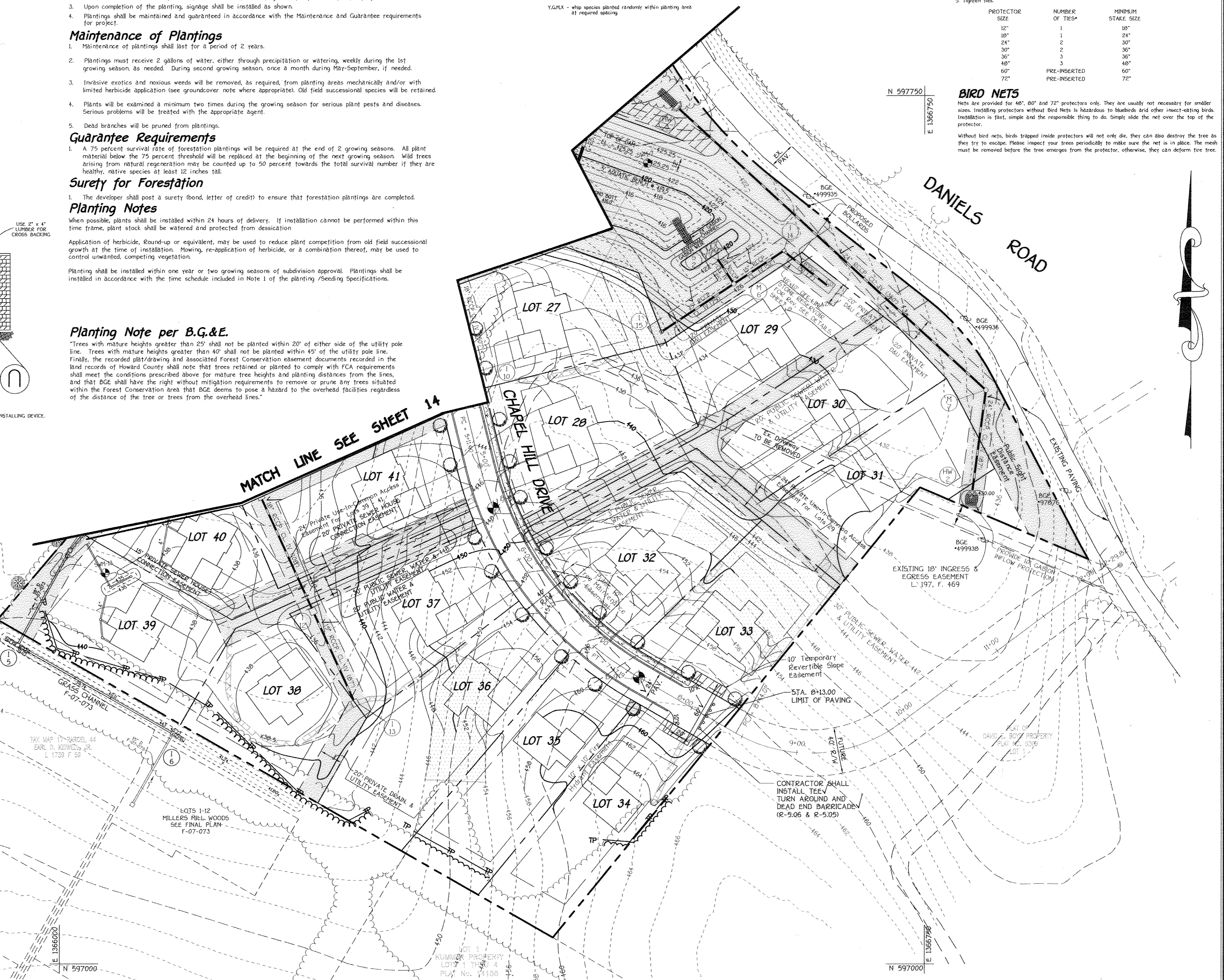
- After planting the tree in accordance with proper tree planting directions, pound or press the stake into the ground at a distance from the tree equal to about one-half the diameter of the protector.
 - The stake should be on the side of the tree toward the prevailing wind e.g. if the prevailing wind is from the west, the stake should be on the west side of the tree.
 - The top of the stake should be several inches higher than the top of the protector to secure the protector to the stake. See table below for stake sizes.
- Tree Pro**
- Fold the collar back over the outside of the protector, with the smooth side of the protector on the inside. The purpose of the collar is to provide a soft rim so the tree's bark won't be damaged.
 - With the holes lined up, slide the lockies through both holes in each side and lock the tie two or three clicks to keep it from falling out from between the number of lockies.
 - Carefully slide the protector down over the top of the tree and the lines down over the stake. PLEASE NOTE: If the trees have branches, carefully gather them together with their tops staying up before lowering the protector.
 - Make sure the bottom of the protector is in good contact with the ground. PLEASE NOTE: Proper protector installation does not require the protector to be pressed down into the ground because doing so can sometimes cause rodent problems. Rice, voles and other animals often build nests inside protectors that are too firmly planted in the ground.
 - Tighten ties.

PROTECTOR SIZE	NUMBER OF TIES*	MINIMUM STAKE SIZE
12"	1	16"
18"	1	24"
24"	2	30"
30"	2	36"
36"	3	36"
48"	3	48"
60"	PRE-INSERTED	60"
72"	PRE-INSERTED	72"

BIRD NETS

Nets are provided for 48", 60" and 72" protectors only. They are usually not necessary for smaller sizes. Installing protectors without Bird Nets is hazardous to birds and other insect-eating birds. Installation is fast, simple and the responsible thing to do. Simply slide the net over the top of the protector.

Without bird nets, birds trapped inside protectors will not only die, they can also destroy the tree as they try to escape. Please inspect your trees periodically to make sure the net is in place. The mesh must be removed before the tree emerges from the protector, otherwise, they can deform tree tree.



As Built 1/28/15

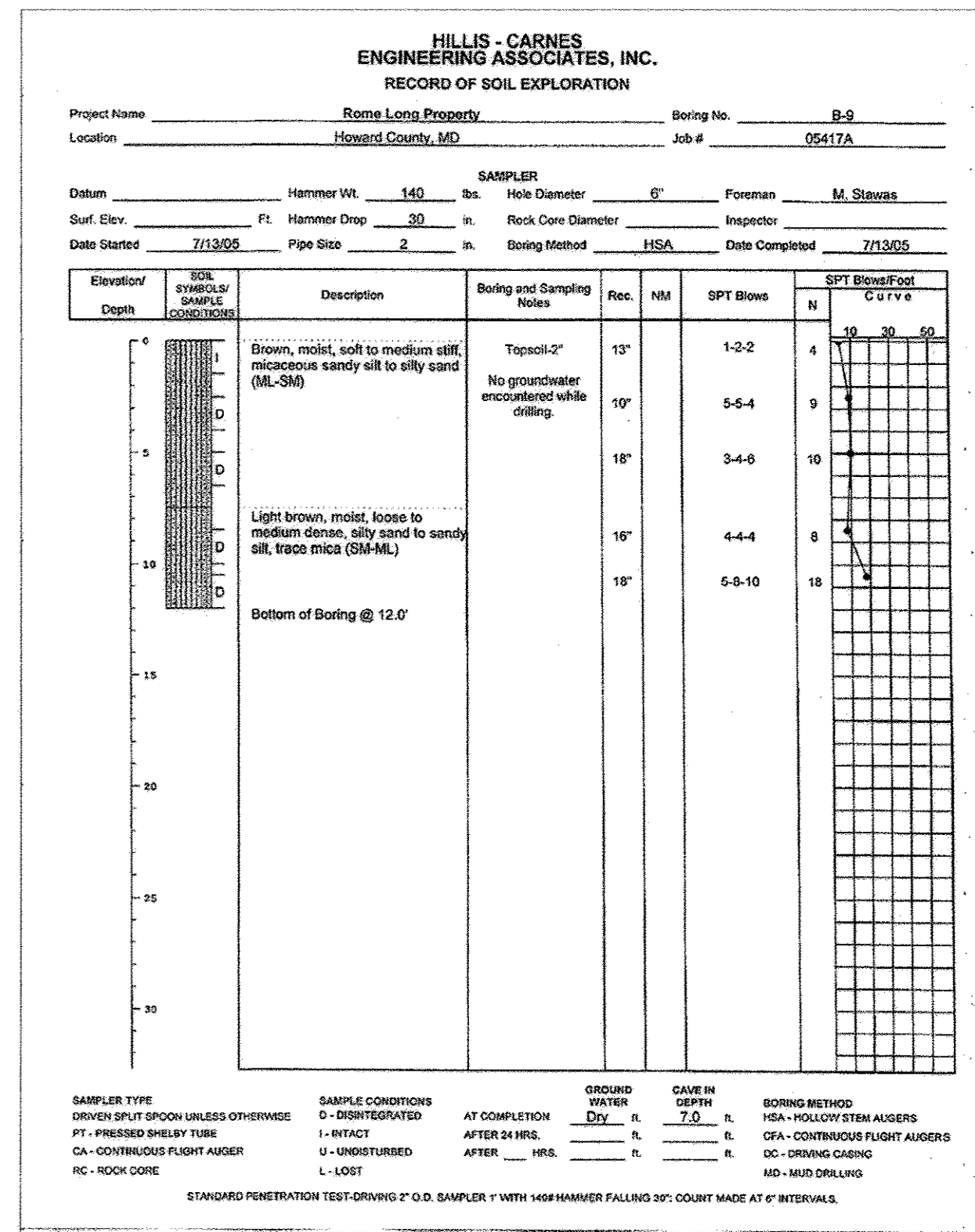
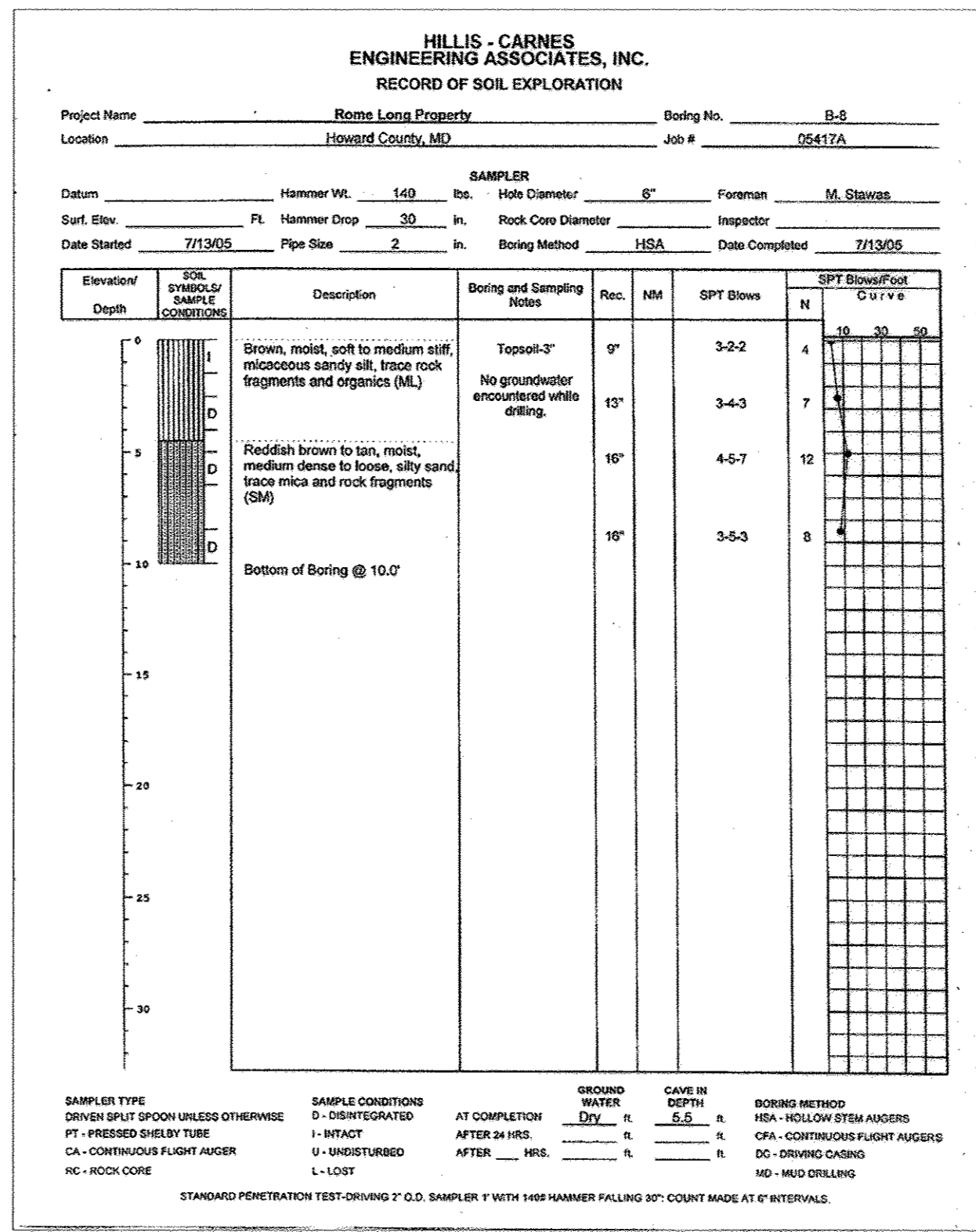
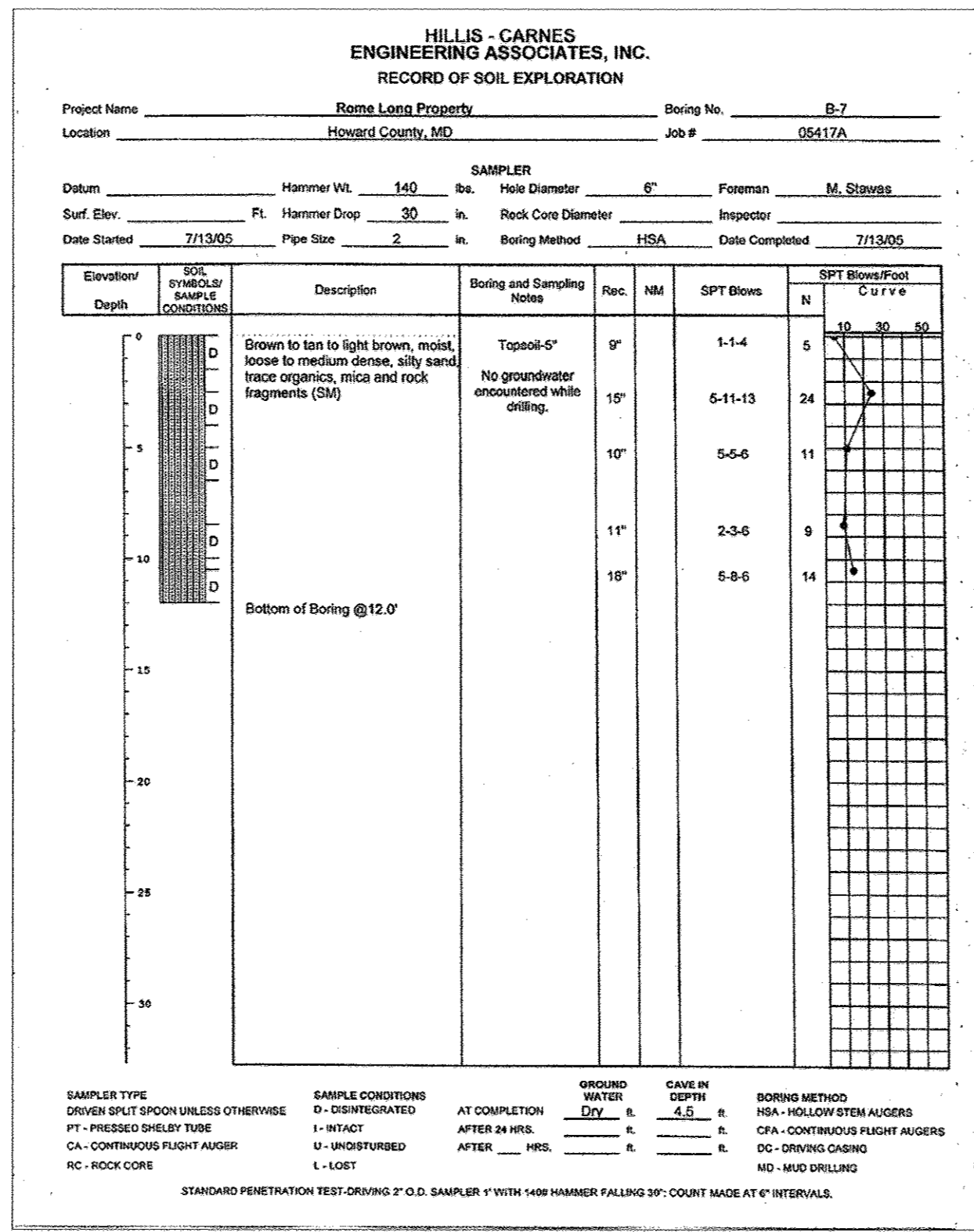
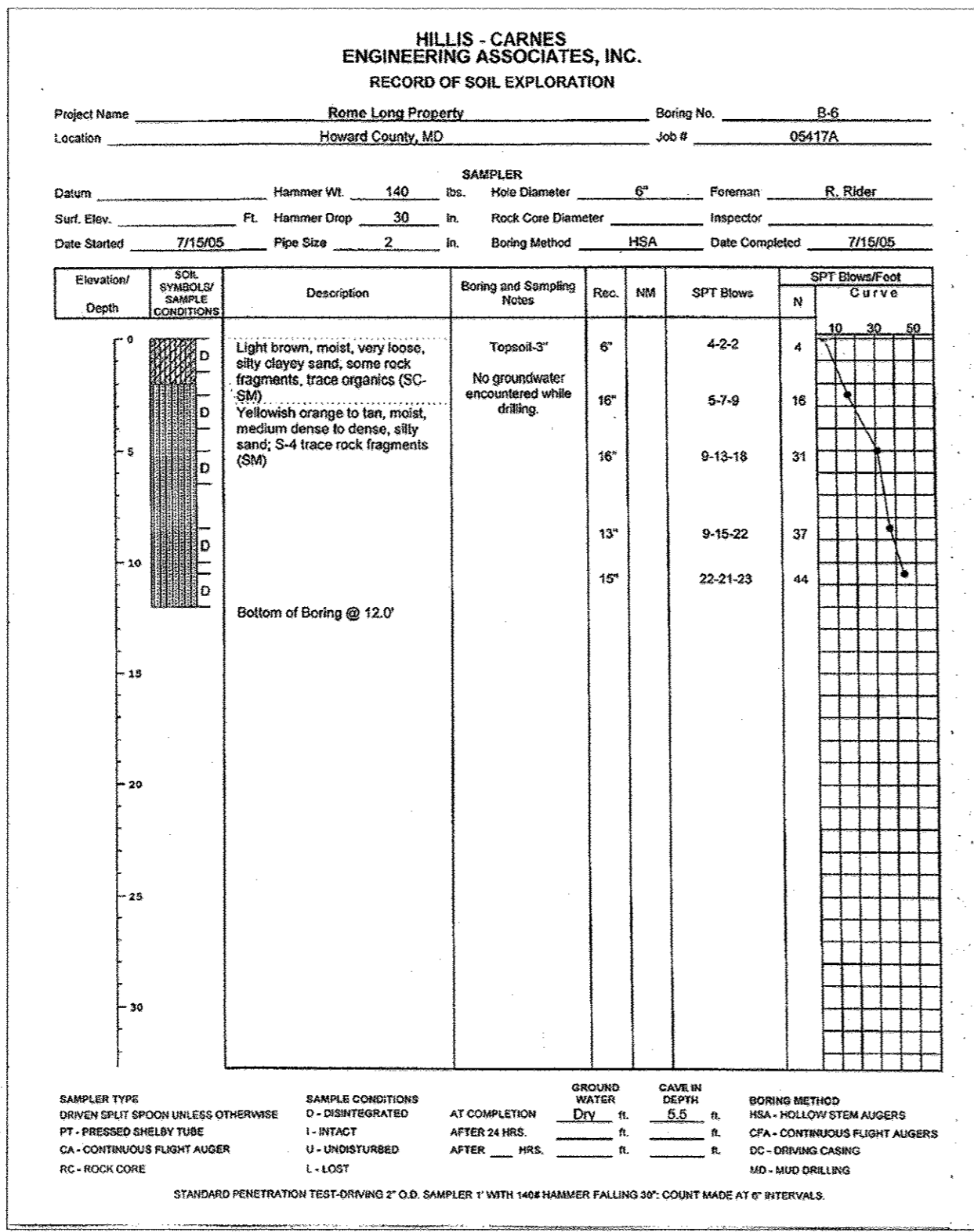
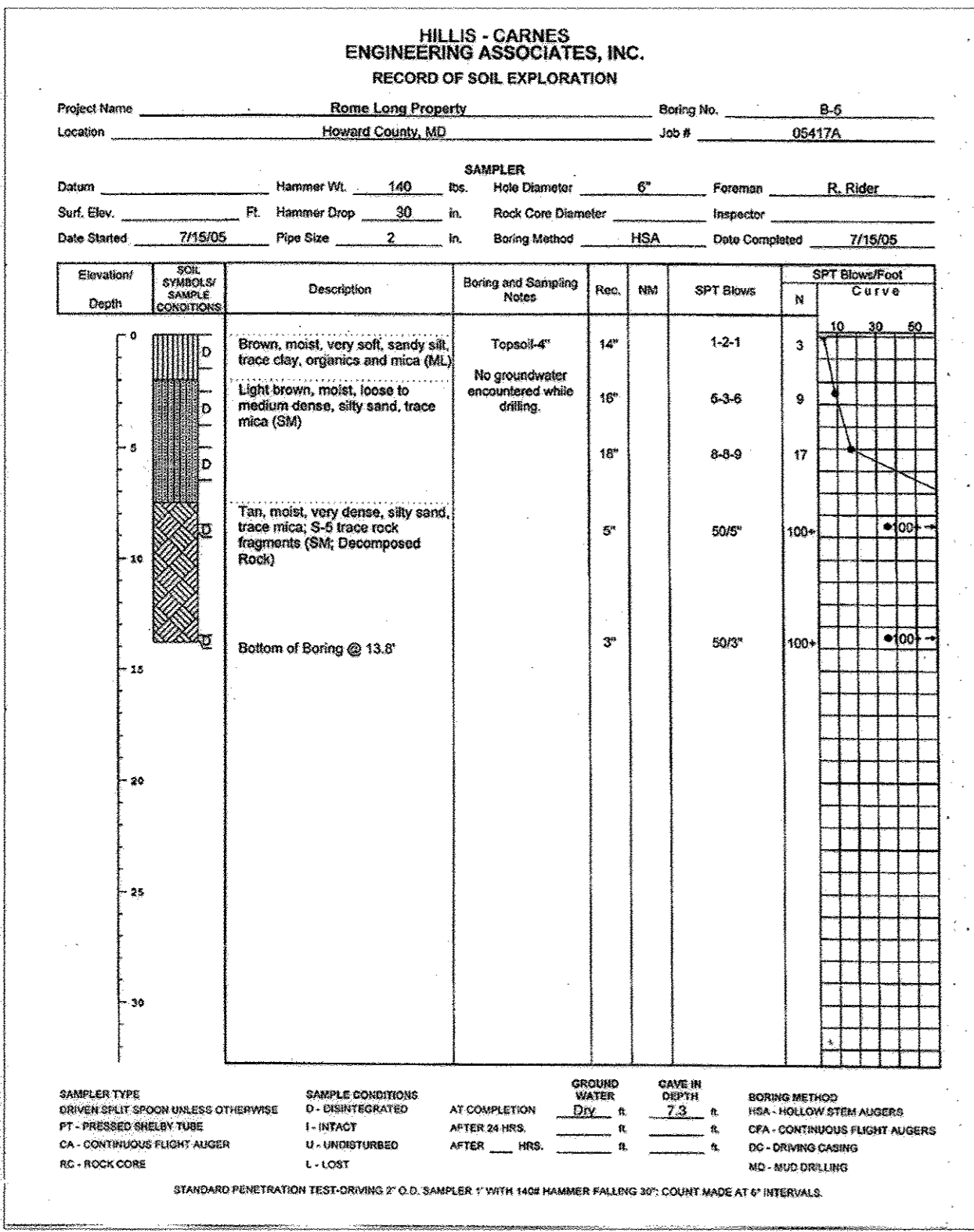
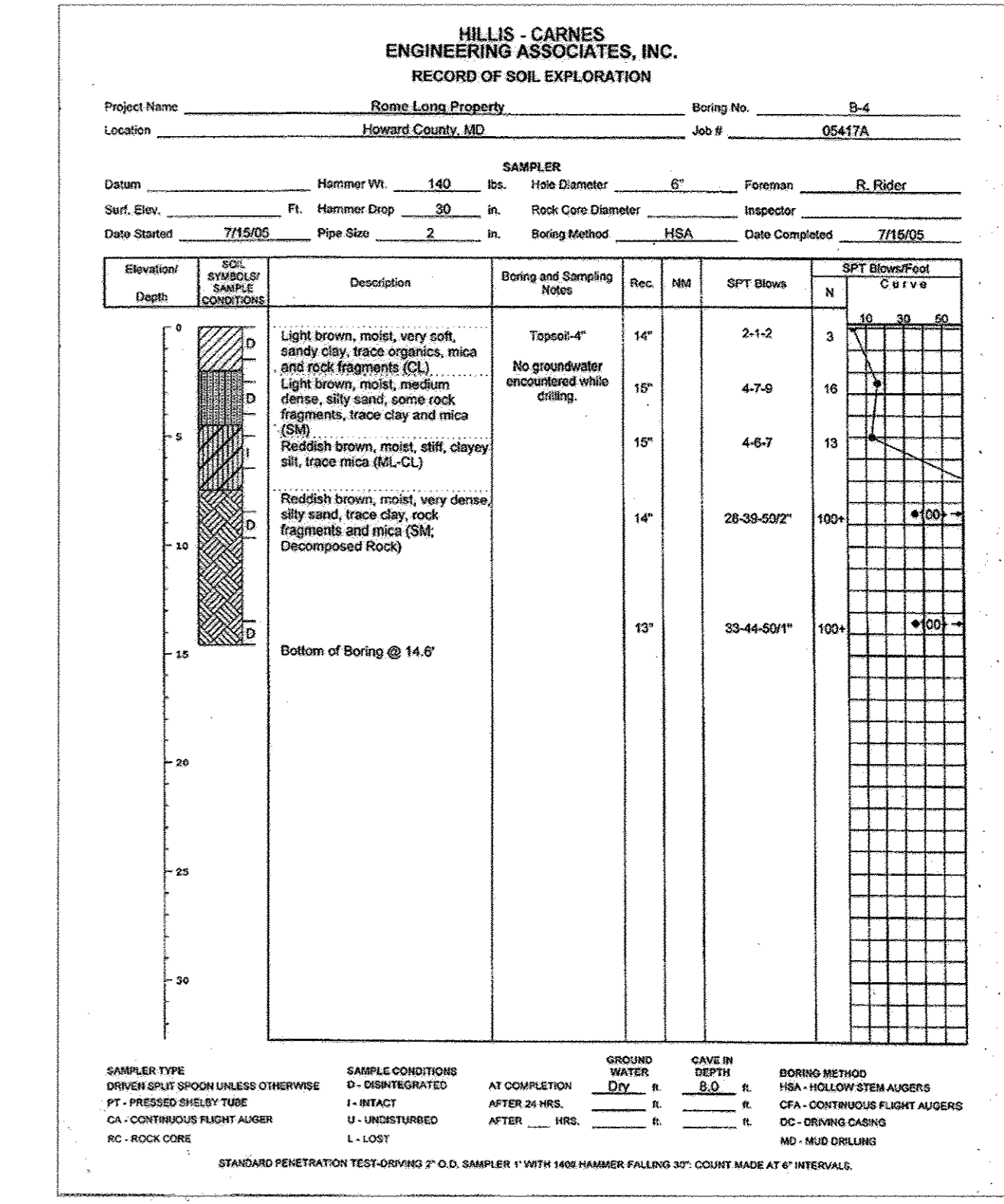
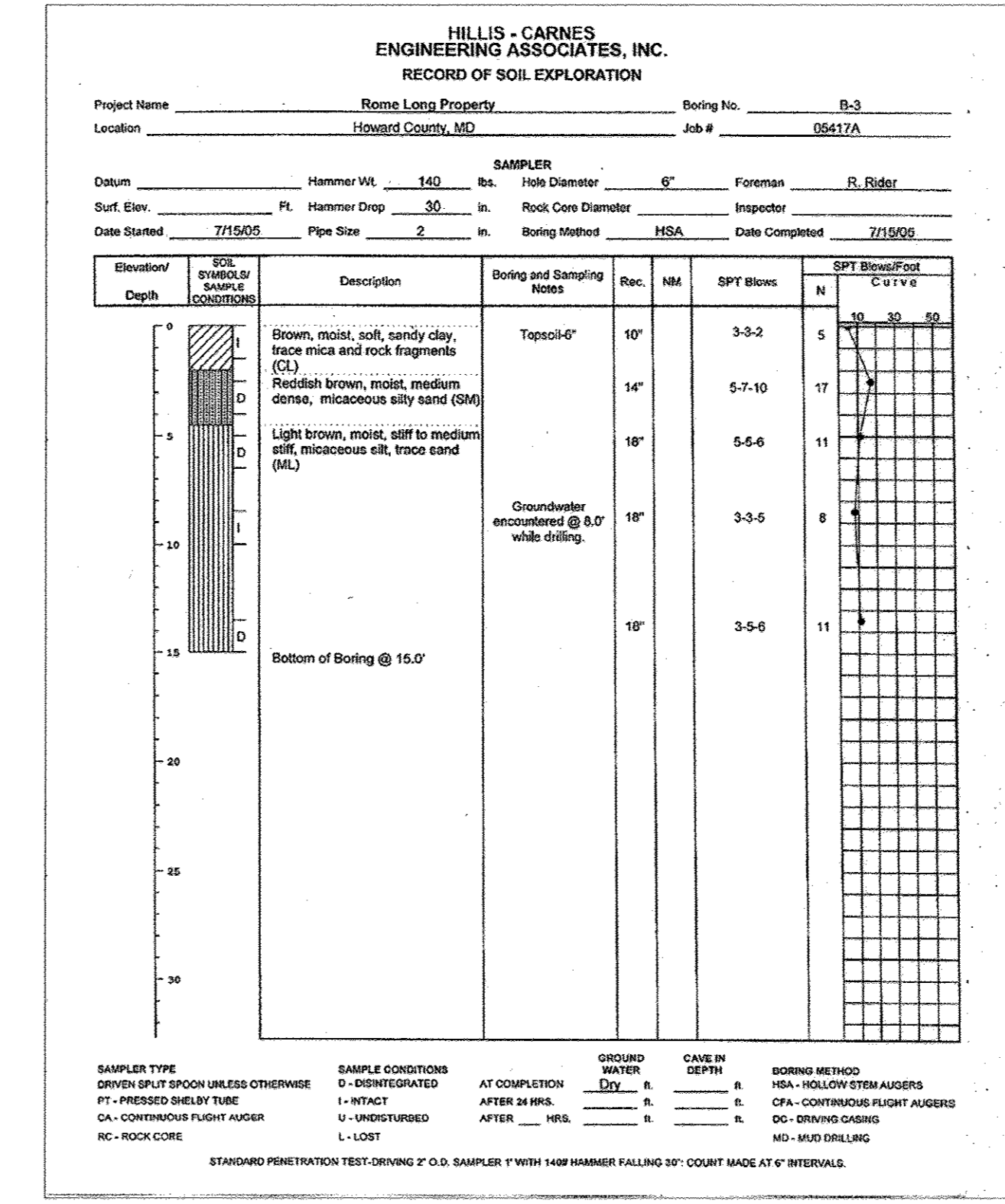
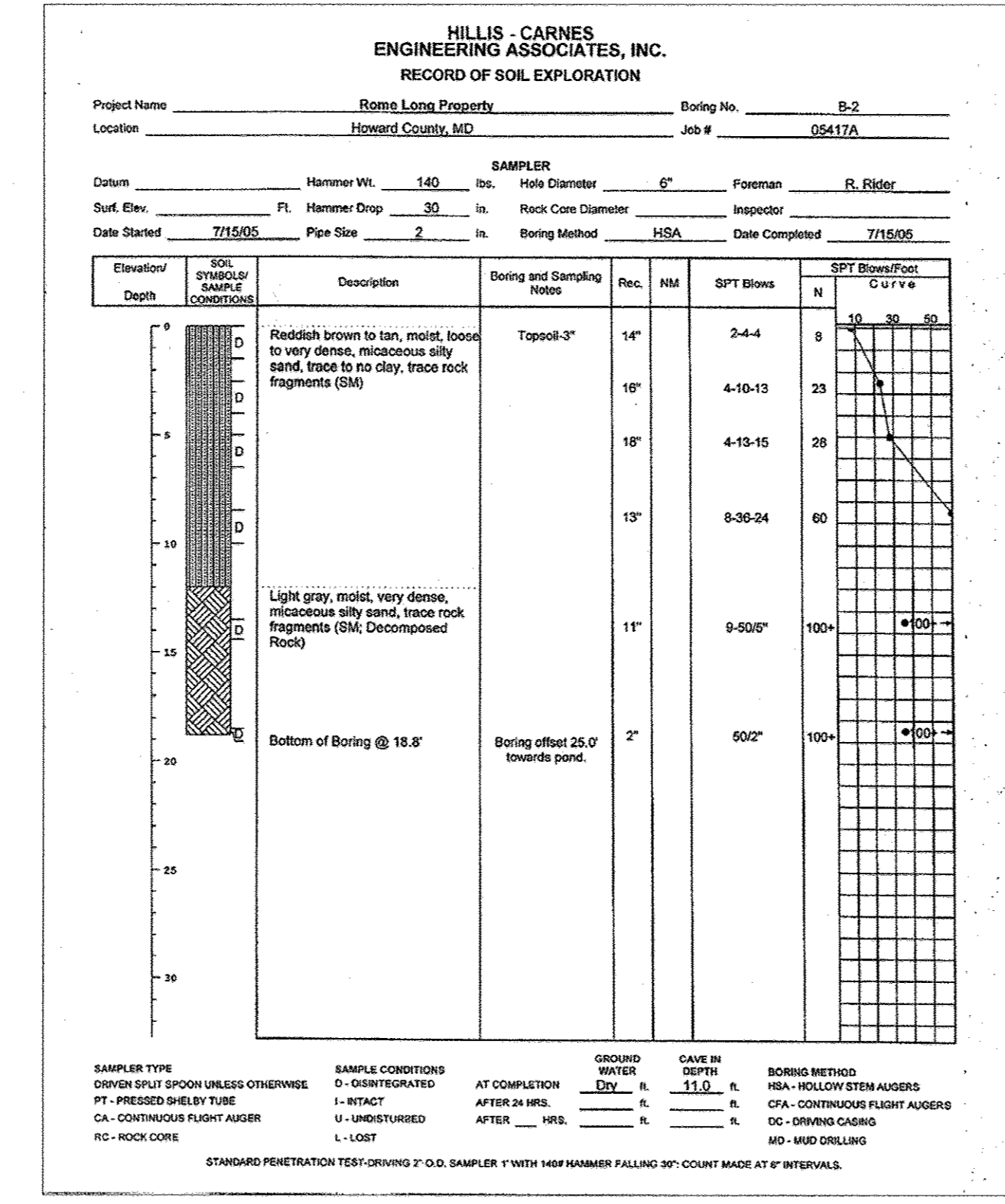
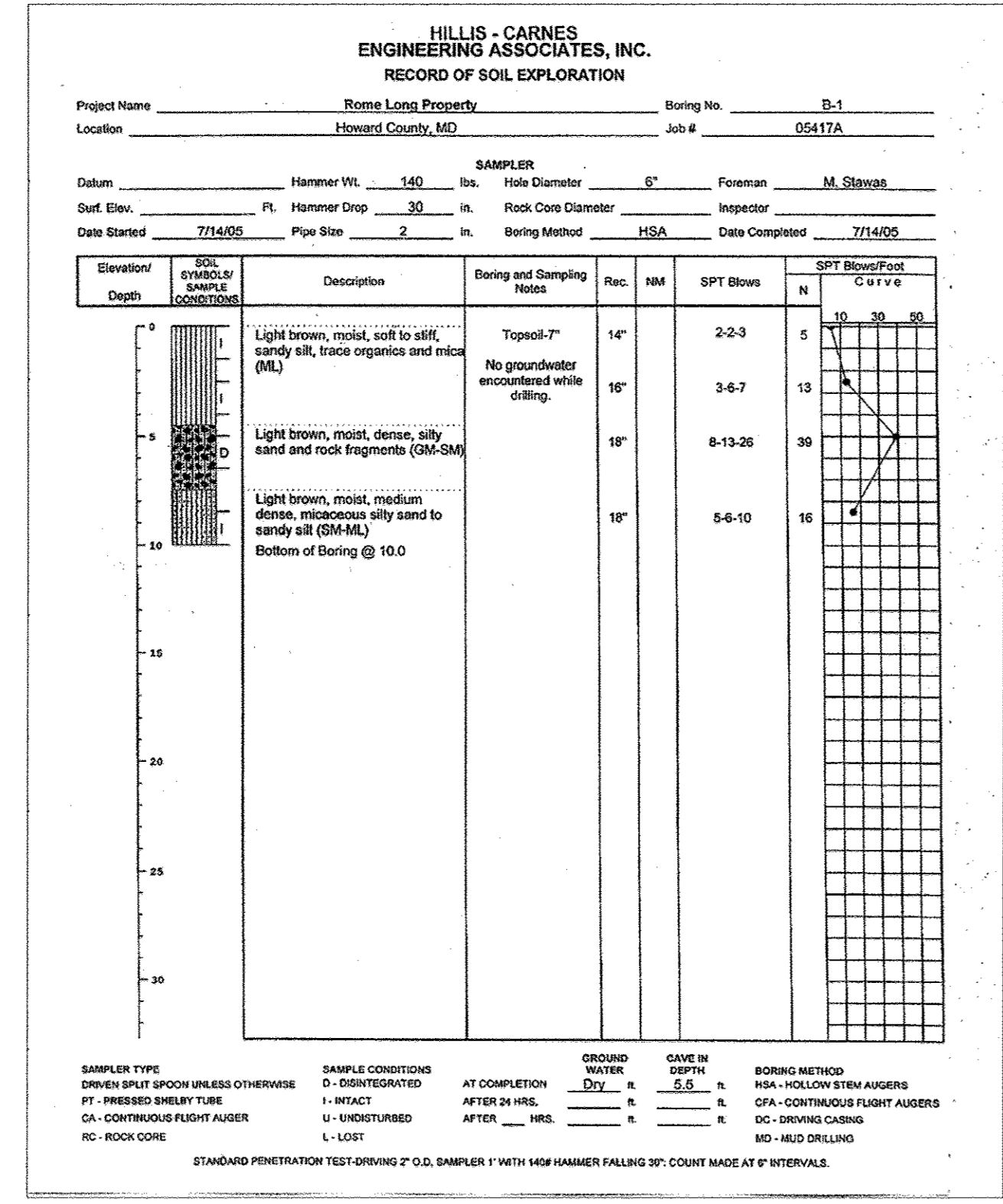
FOREST CONSERVATION PLAN
HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 * A Resubdivision of the Same Property, Lots 1 and 2, Plat No. B240 and Long Acres, Lots 1 and 2, Plat No. 6062.
 Zones: R-20
 TAX MAP NO. 17, GRID NOS. 6 AND 12, PARCEL NO. 42 AND
 TAX MAP NO. 18, GRID NOS. 1 AND 7, PARCEL NO. 43
 2nd Election District Howard County, Maryland
 DATE: JANUARY, 2008
 SHEET 15 OF 26

Approved: Department Of Public Works
 Chief: Bureau Of Highways
 Date: 11-21-06

Approved: Department Of Planning And Zoning
 Chief: Division Of Land Development
 Date: 12/13/06

Approved: Chief, Development Engineering Division
 Date: 12/15/06

NO.	REVISIONS	DATE
1	MOVE SHAW POND OUT OF WETLANDS AREA AND REVISE ADJACENT PROPOSED LOTS, SEWER, DRAIN & UTILITIES.	3/3/08



104137 Rome-Long Property\04137 SOIL BORINGS.dwg, 10/24/2006 4:47:33 PM, 1:1

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 461-2955



Owner/Developer
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 5420 ALTITUDE SKY WAY
 COLUMBIA, MARYLAND 21044

SOIL BORINGS
HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Re subdivision of the Rome Property, Lots 1 and 2, Plat No. 8210 and Long Acres, Lots 1 and 2, Plat No. 6082.
 Zoned: R-20
 TAX MAP No. 17 GRID Nos. 6 and 12 PARCEL Nos. 42 and 43
 2nd Election District Howard County, Maryland
 DATE: OCTOBER 24, 2006
 SHEET 16 OF 26

AS-BUILT F-06-50

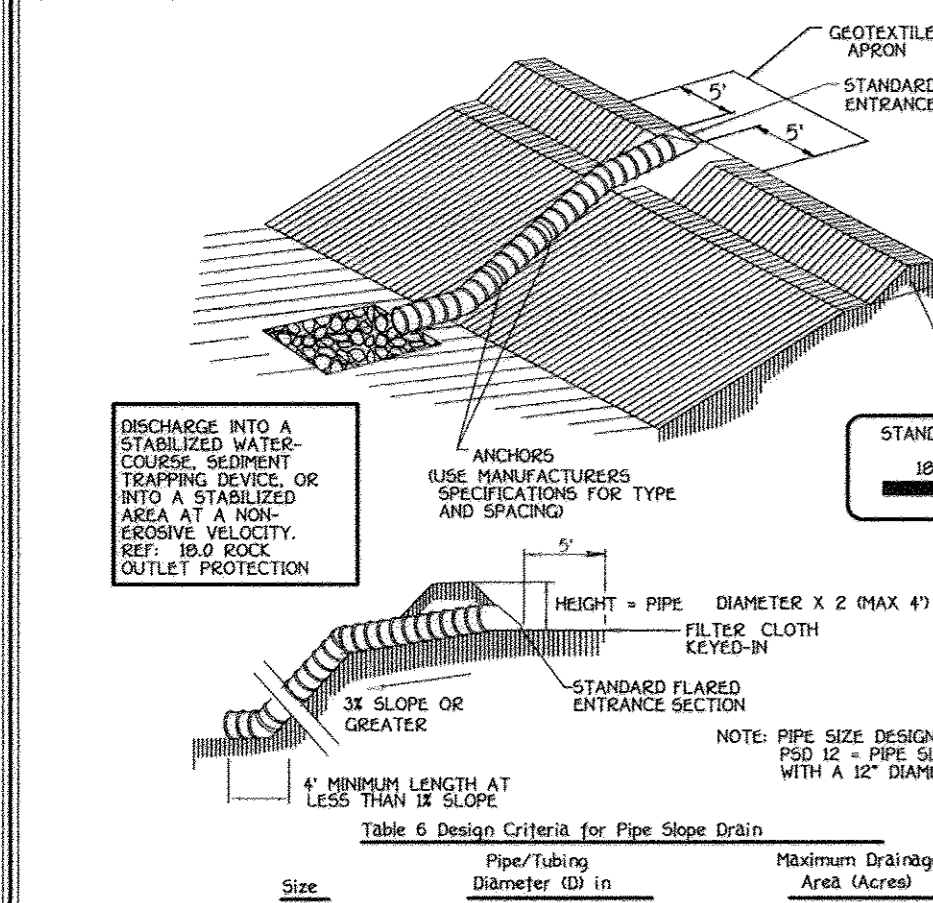
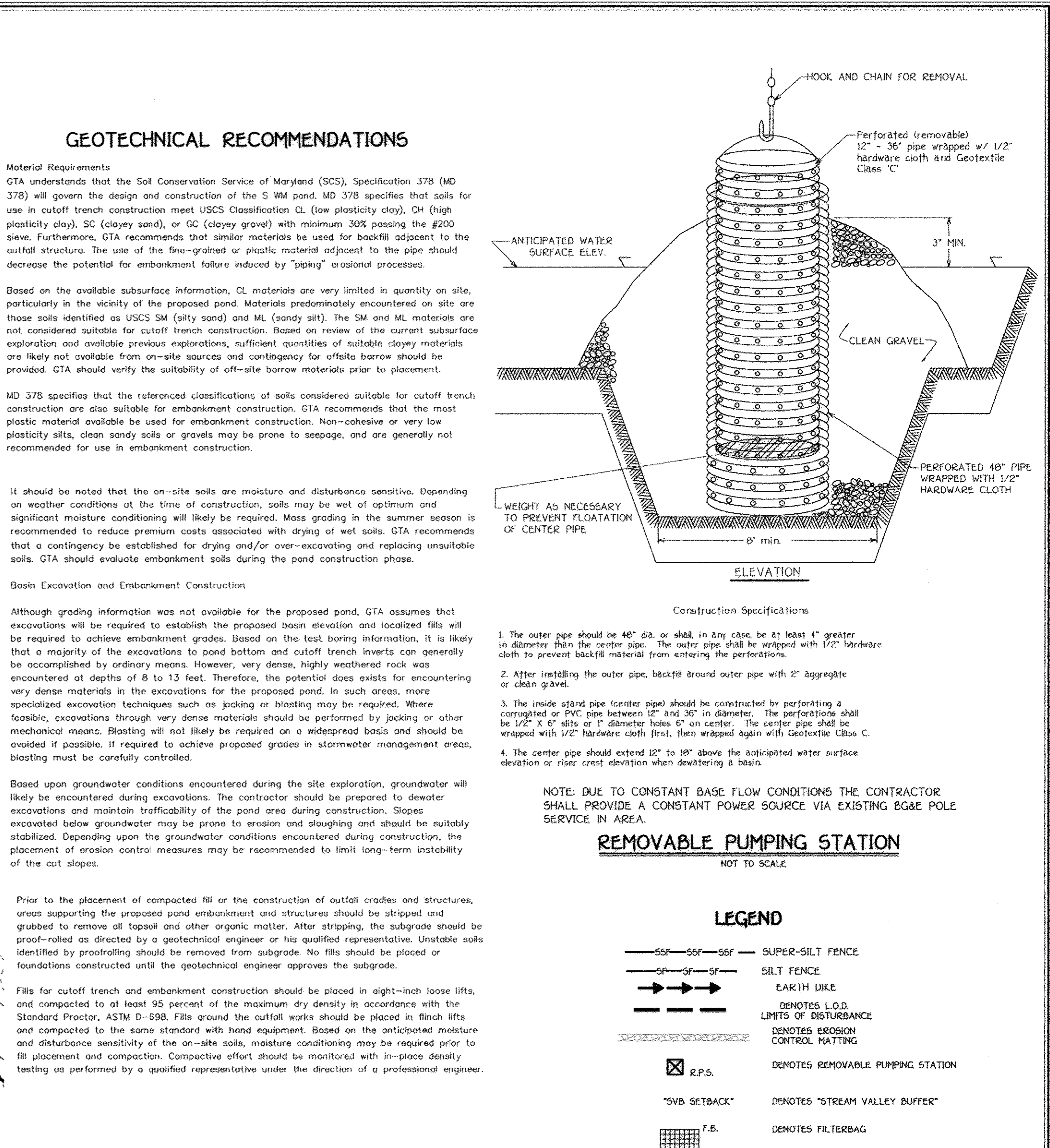
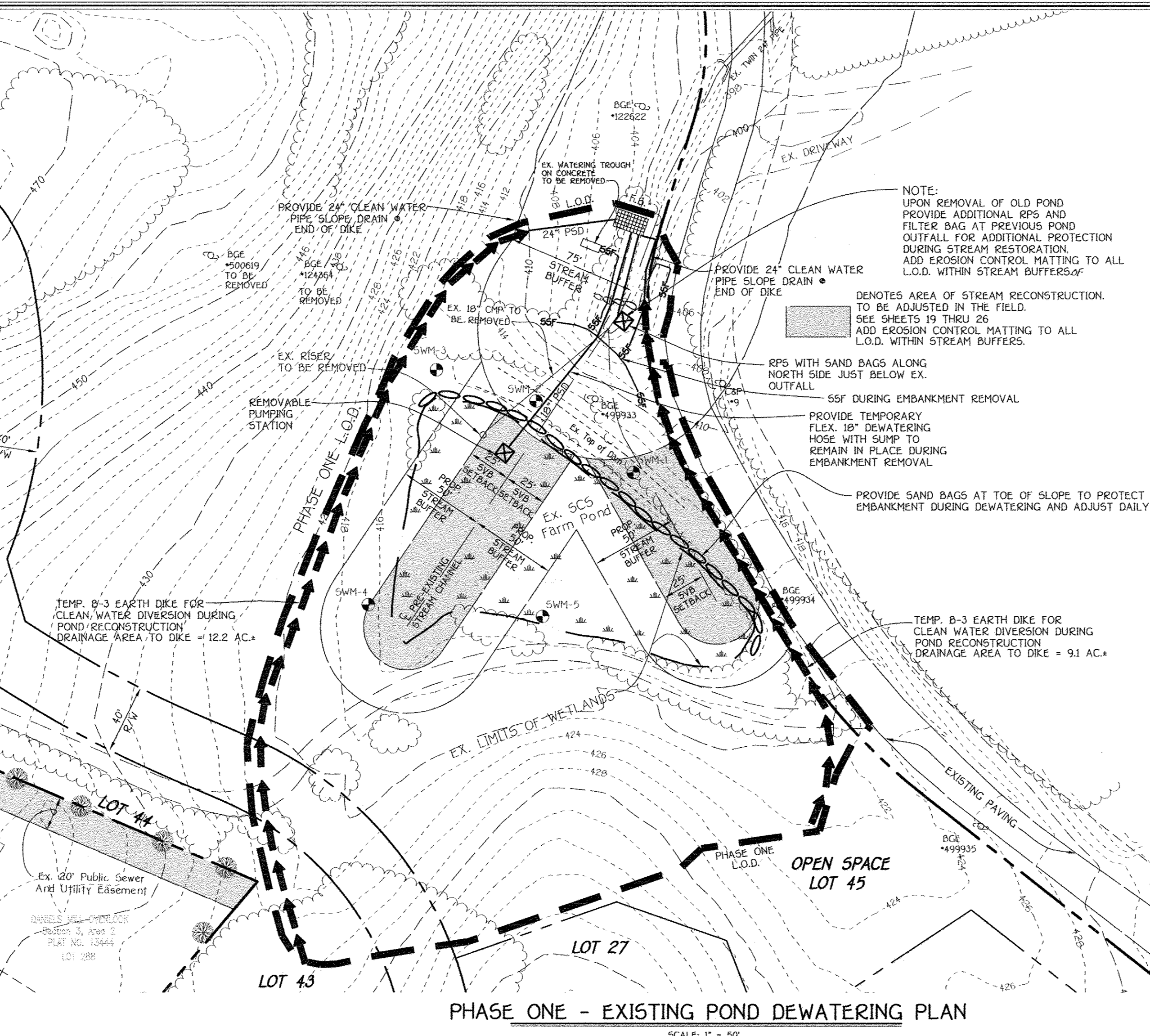
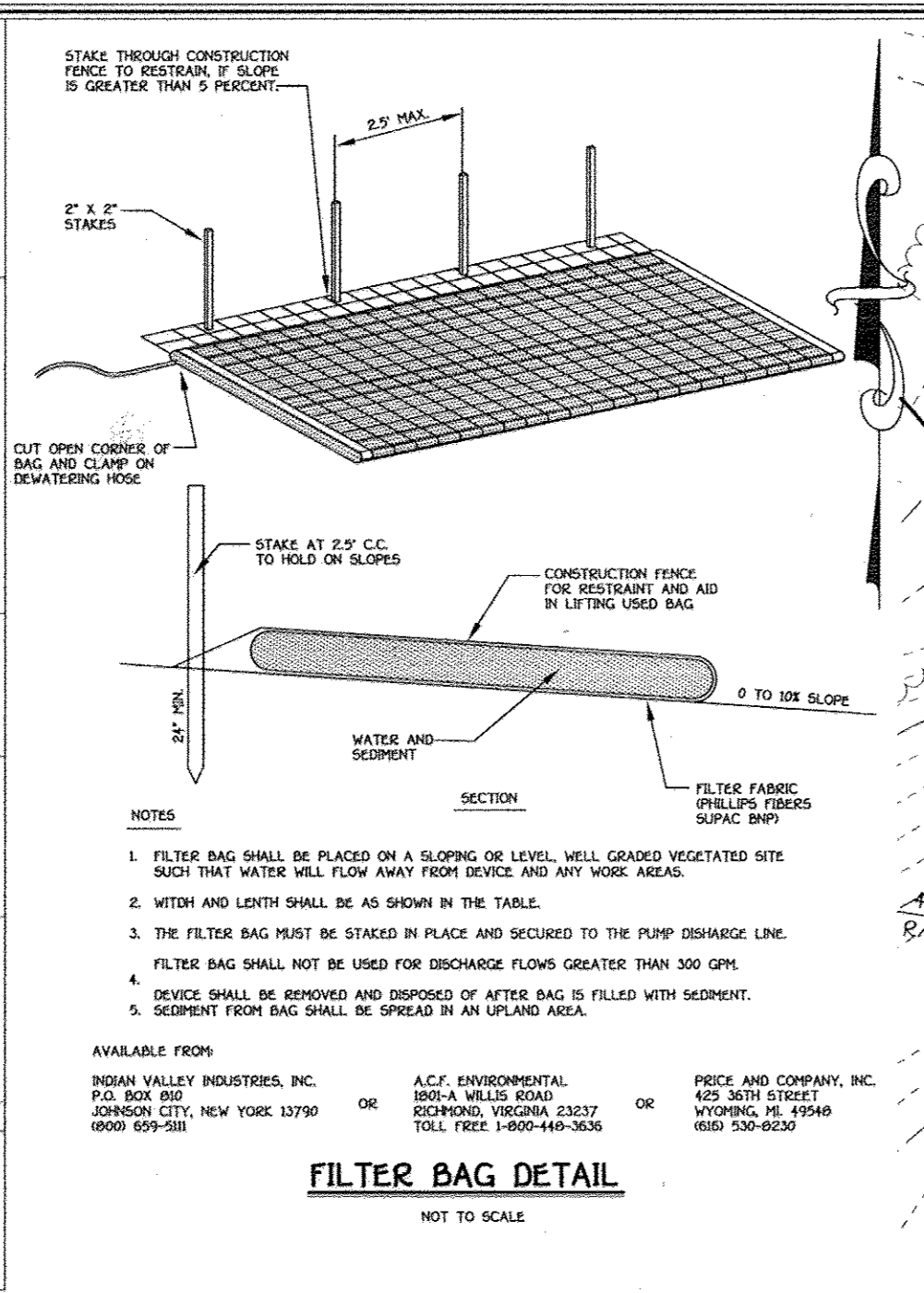
ENGINEER'S CERTIFICATE
 I hereby certify that this Plan for Erosion and Sediment Control is a Practical and Workable Plan Based on My Personal Knowledge of the Site Conditions and That It Was Prepared in Accordance with the Howard Soil Conservation District.

William M. Carter
 Signature of Engineer
 3-25-08
 Date

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 Personal On-Site Inspection by the Howard Soil Conservation District or Its Authorized Agents, As Deemed Necessary.

William M. Carter
 Signature of Developer
 3-25-08
 Date

Reviewed for Howard County Soil Conservation District and Meets Technical Requirements.
 U.S.D.A. - National Resources Conservation Service
 Approved This Development is Approved for Erosion and Sediment Control by the Howard Soil Conservation District.
 District Howard Soil Conservation Dist.
 Approved Department of Planning and Zoning
 Chief, Division of Land Development
 Approved Howard County Department of Public Works
 Chief, Bureau of Highways



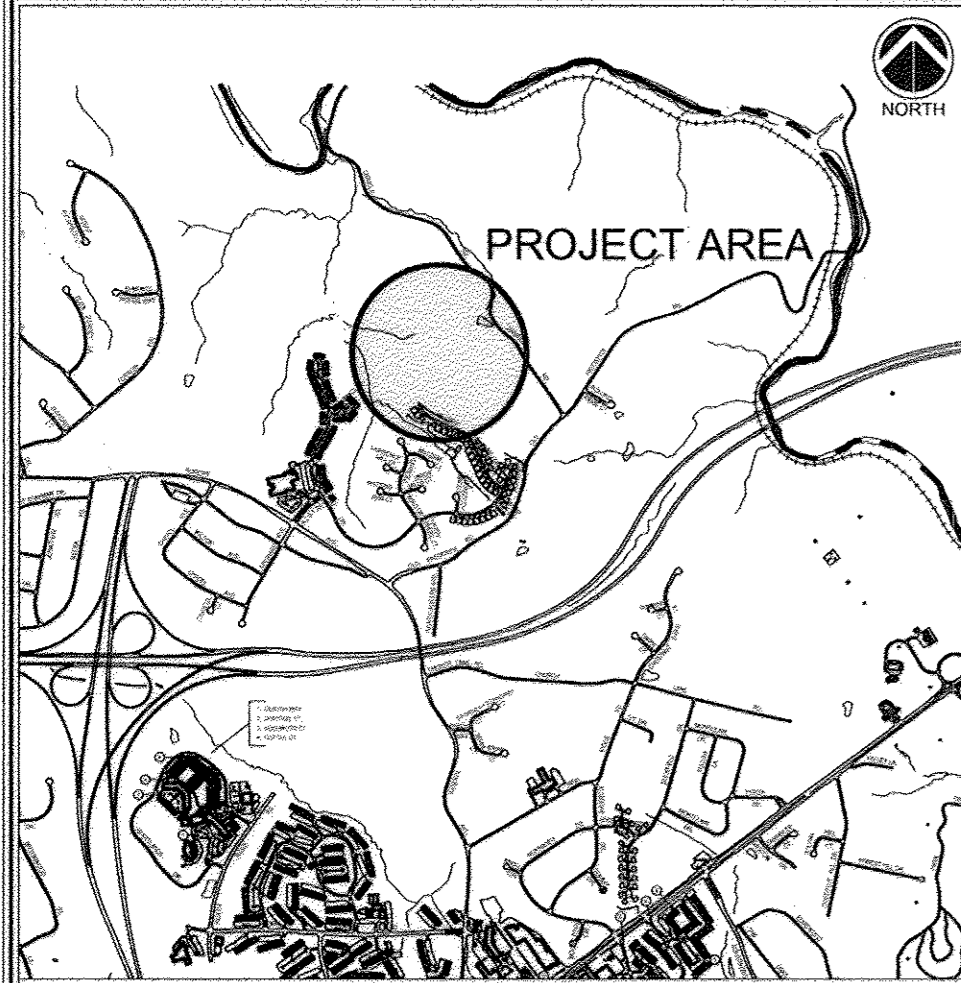
Construction Specifications - Pipe Slope Drain

- The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
- The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
- Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
- A three inch section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the invert of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
- The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.
- The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
- All pipe connections shall be watertight.
- Whenever possible where a PSD drains an unconsolidated area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable concrete that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be at the far end from the sediment control outlet as possible.
- When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
- Inspection and any required maintenance shall be performed periodically and after each rain event.
- The inlet must be kept open at all times.

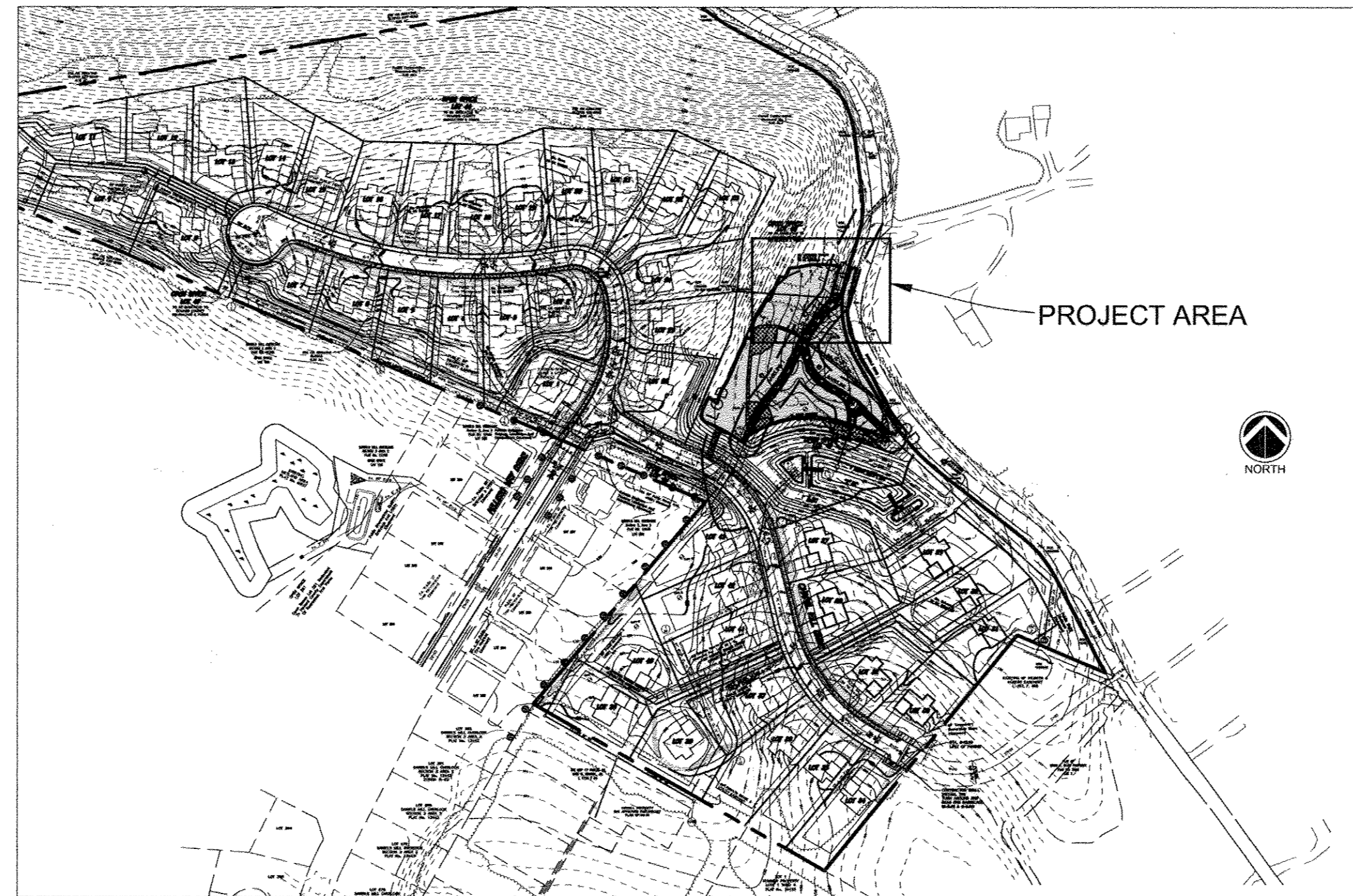
HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Rome Long Property, Howard County, MD
 Job #: 05417A

Elevation/Depth	SOIL SAMPLE DESCRIPTION	Notes	Soil Color	Moisture	Soil Consistency	Soil Structure	Soil Fragments	Soil Odors	Soil Temperature	Soil pH	Soil Specific Gravity	Soil Unit Weight	Soil Void Ratio	Soil Porosity	Soil Permeability	Soil Compressibility	Soil Shear Strength	Soil Cohesion	Soil Friction Angle	Soil Modulus	Soil Poisson's Ratio
0	Topsoil		10-15	15-20	Soft	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
10	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
20	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
30	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
40	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
50	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
60	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
70	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
80	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
90	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
100	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
110	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
120	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
130	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
140	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
150	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
160	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
170	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
180	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
190	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
200	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
210	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
220	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
230	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
240	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
250	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
260	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
270	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
280	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
290	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
300	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
310	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
320	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
330	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
340	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
350	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
360	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
370	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
380	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200	0.5-1.0	20-30	0.1-0.2	100-200	0.2-0.3
390	Light gray, moist, medium stiff, micaceous sandy silt (ML) FILL		10-15	15-20	Stiff	Loose	None		60-70	6.5-7.5	2.65-2.75	110-120	0.6-0.7	40-50	0.001-0.005	100-200</					



VICINITY MAP
Scale: 1" = 2,000'



THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved: *[Signature]* 3/24/08
Howard S.C.D.

APPROVED: DEPARTMENT OF PUBLIC WORKS
Walter T. Cole 4-2-08
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hamer 4/10/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 4/10/07
DATE

REVISIONS		
NO.	DESCRIPTION	DATE

HOLLIFIELD HILLS

STREAM STABILIZATION PLAN

Index of Sheets:

Cover Sheet	Sheet 19
Grading Plan	Sheet 20
Cross Sections	Sheet 21
Profile	Sheet 22
Phase one Pond removal and stream Restoration grading plan	Sheet 23
Notes and Details	Sheet 24
Planting Plan	Sheet 25
Planting Notes and Details	Sheet 26

Howard County, Maryland

December 2007



Environmental Systems Analysis, Inc.

162 West Street
Annapolis Maryland 21401
410.267.0495
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ELLEOTT CITY, MARYLAND 21042
410.461.2000

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MID ATLANTIC DEVELOPMENT COMPANY
c/o B. JAMES GREENFIELD
6420 AUTUMN SKY WAY
COLUMBIA, MARYLAND 21044
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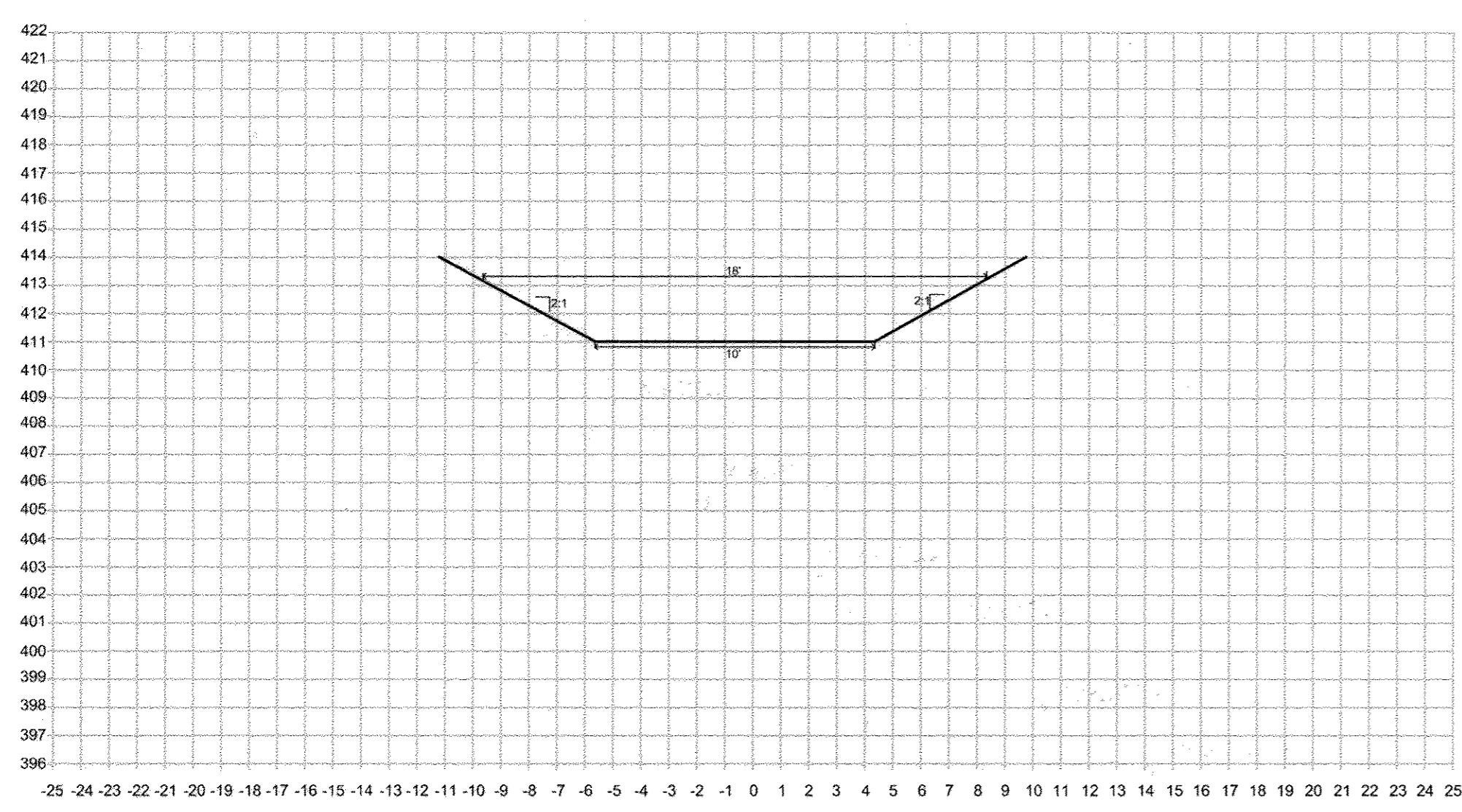
TITLE SHEET
HOLLIFIELD HILLS
LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
* A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 1 and 2, Plat No. 6062
ZONED R-20
TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY, 2007
SHEET 19 OF 26

APPROVED: DEPARTMENT OF PUBLIC WORKS
Willie Z. Miller 4-2-08
 CHIEF, BUREAU OF HIGHWAYS DATE

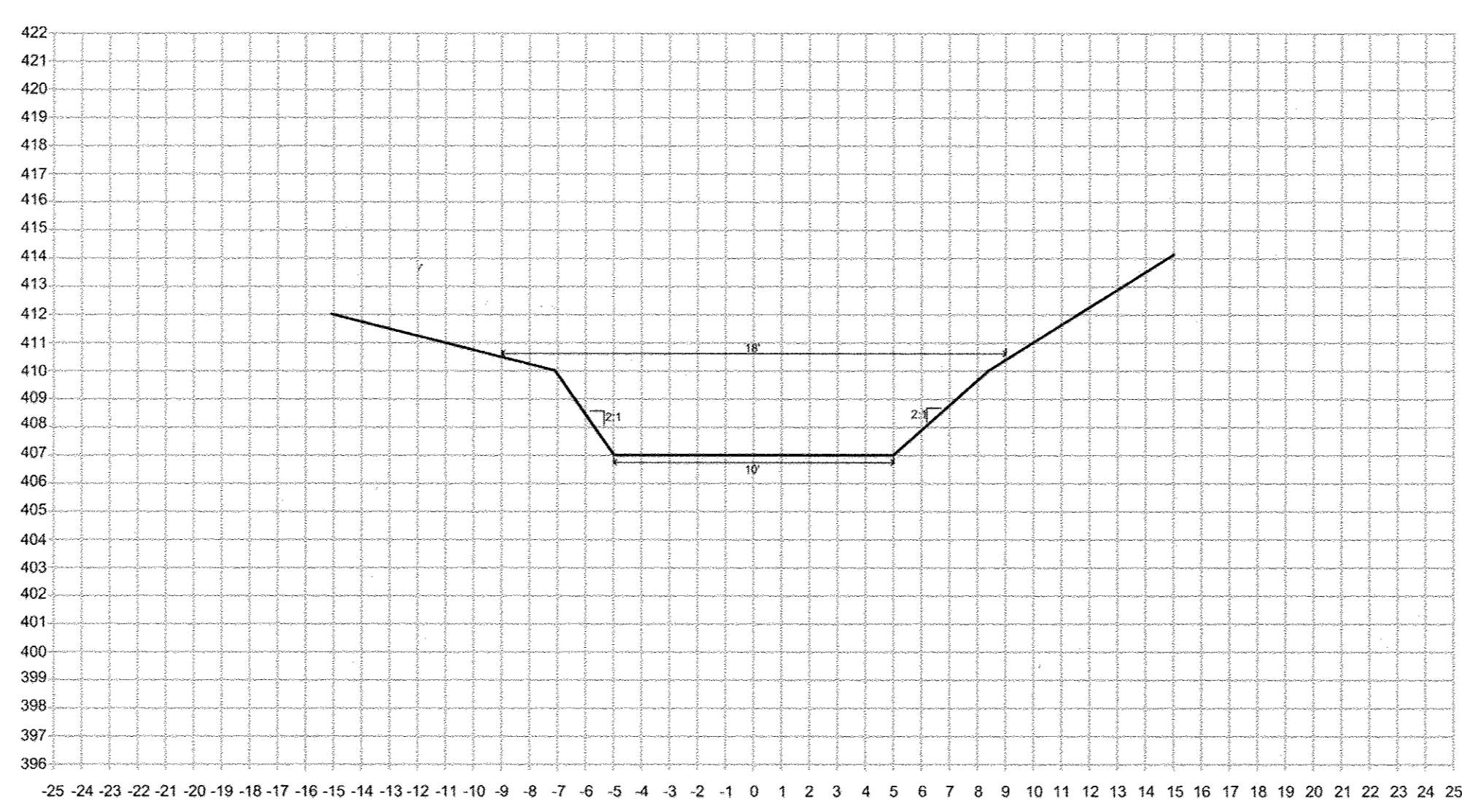
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Judy Hanna 4/10/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 4/18/08
 DATE

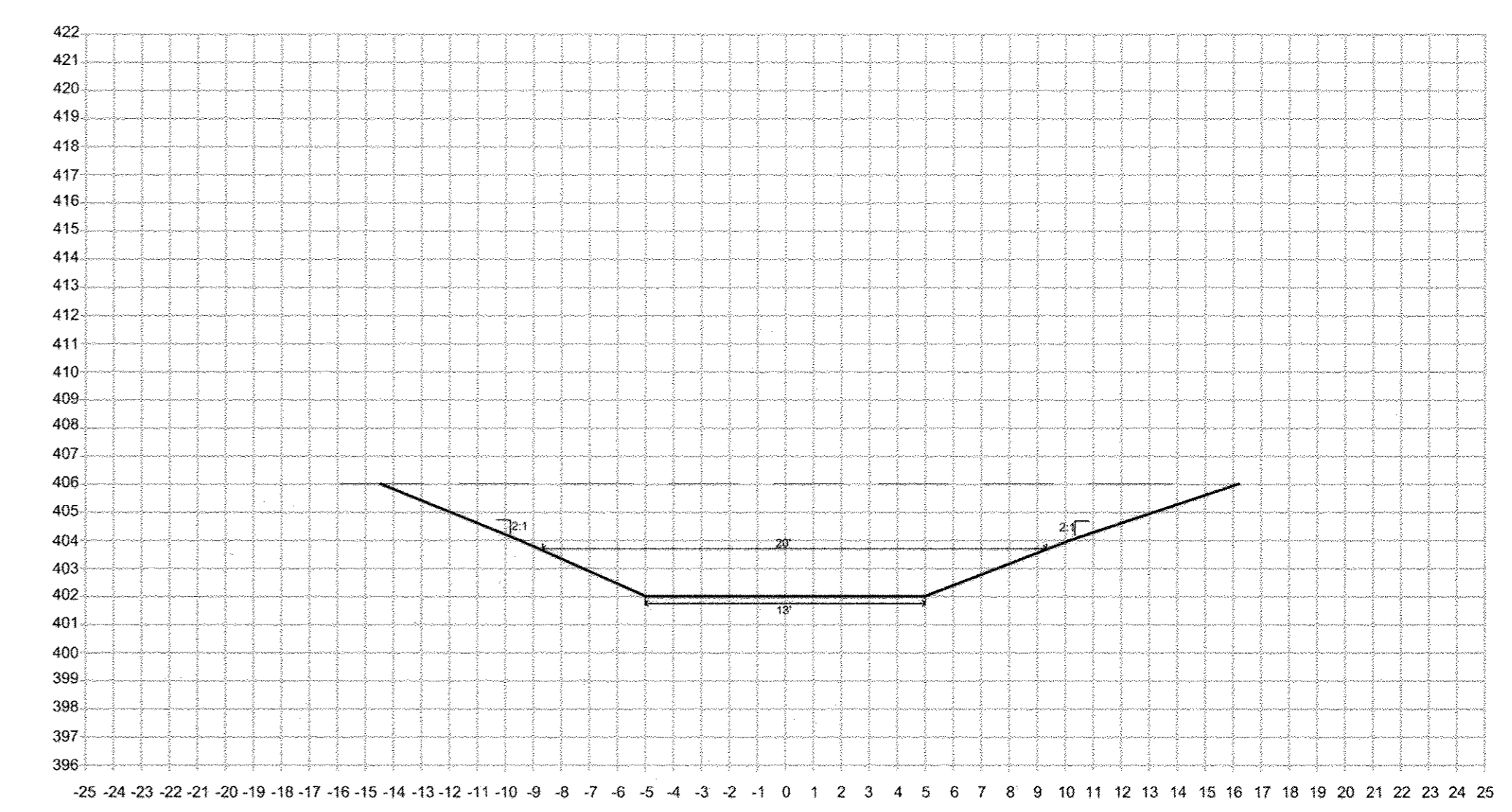
REVISIONS		
NO.	DESCRIPTION	DATE



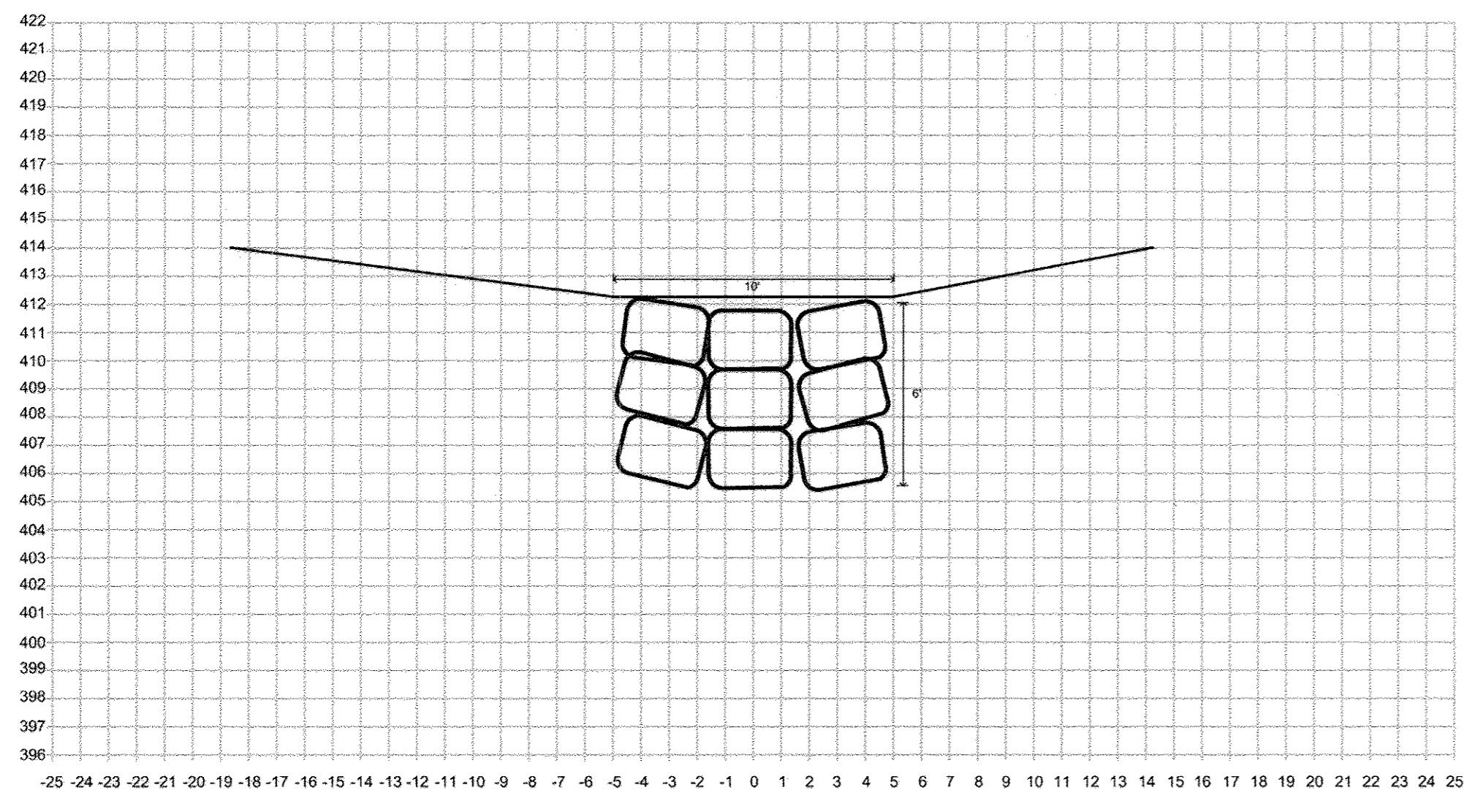
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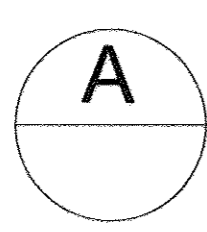
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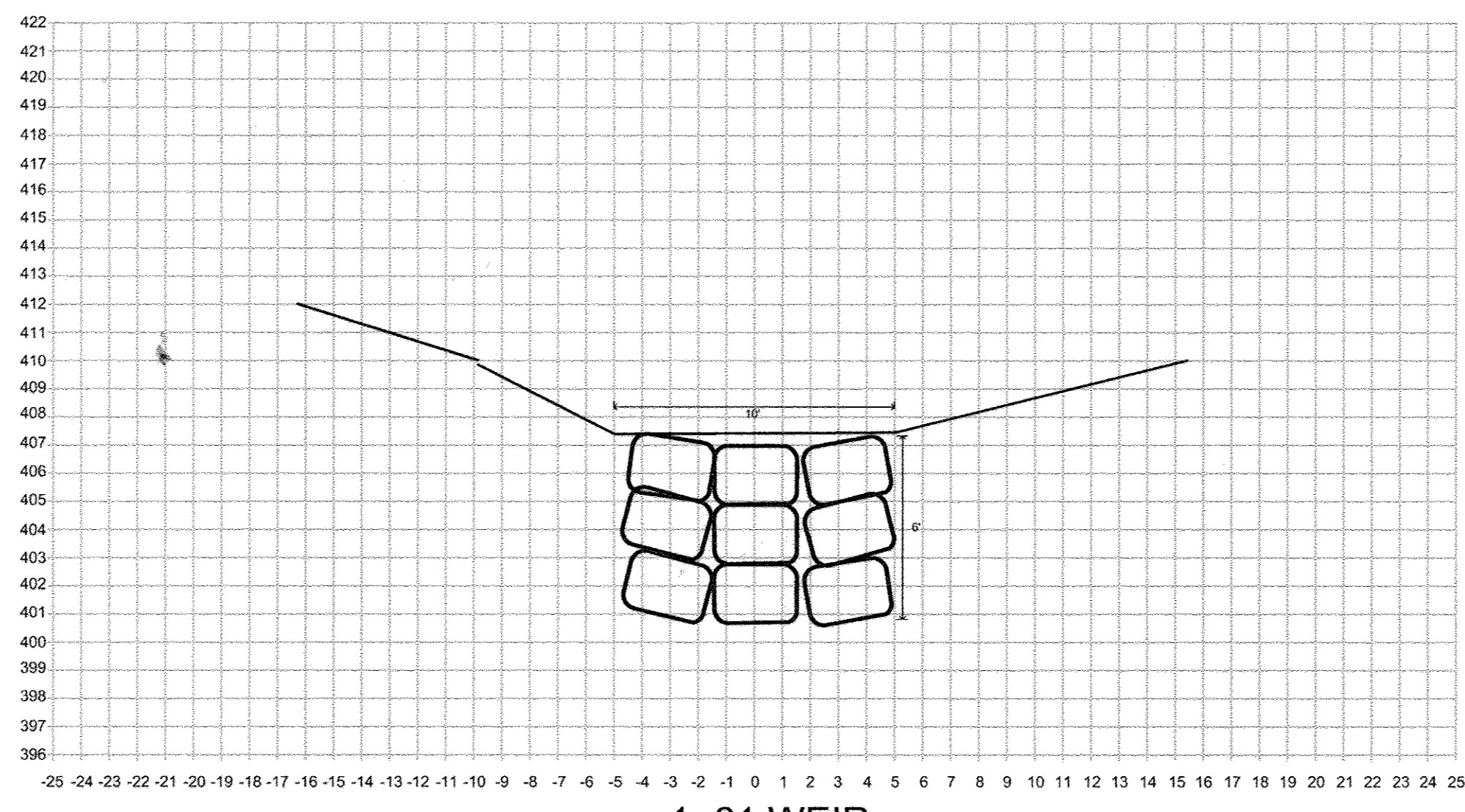
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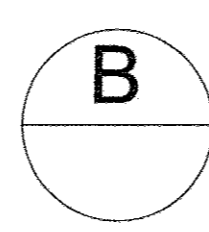
0+82 WEIR



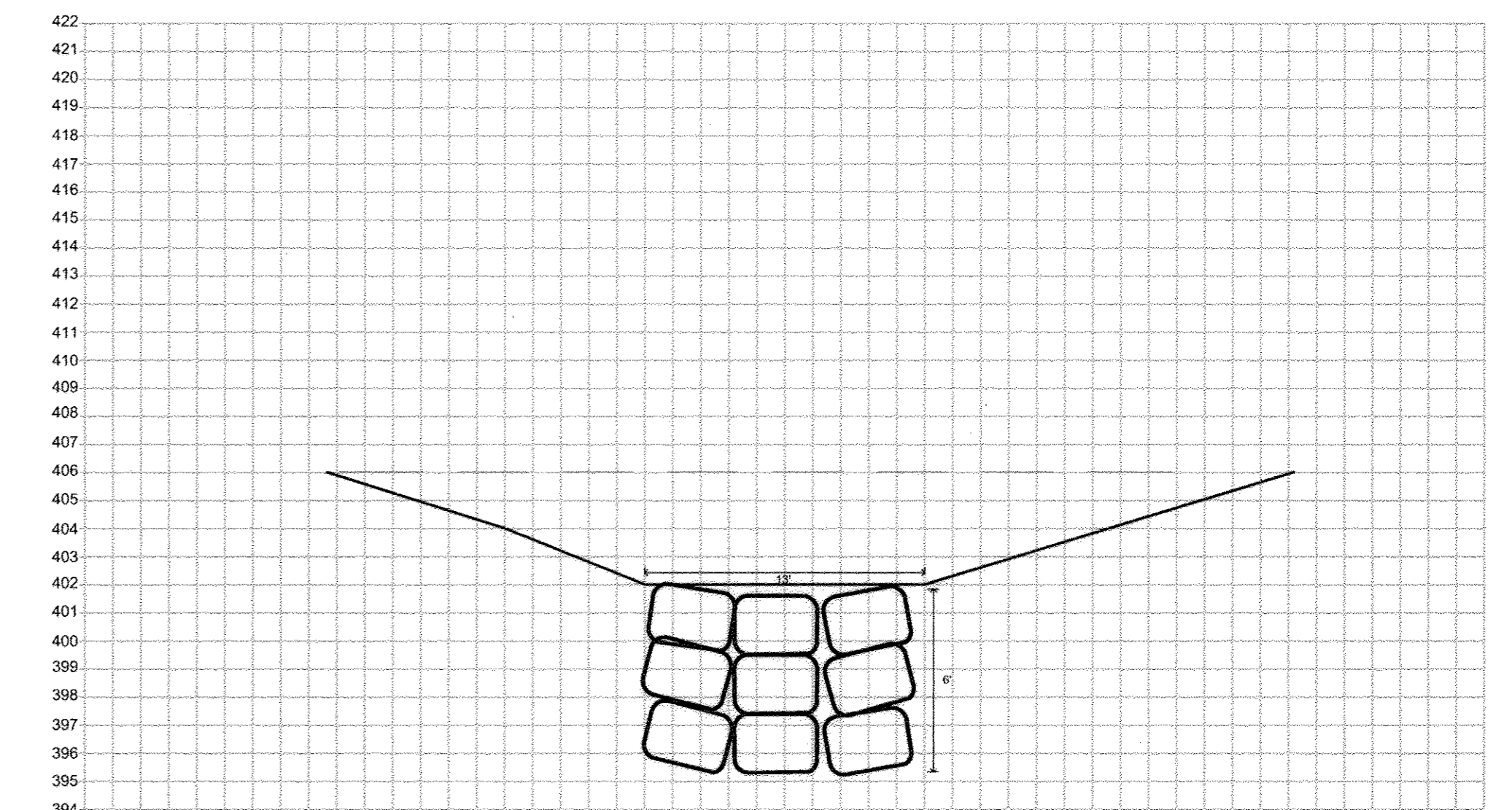
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 Velocity = 3.89 f.p.s.



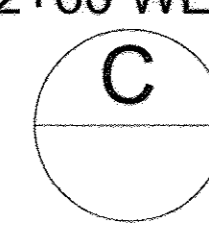
1+61 WEIR



Q10 = 50.75 c.f.s.
 Depth = 1.71'
 Velocity = 5.03 f.p.s.



2+60 WEIR



Q10 = 69.10 c.f.s.
 Depth = 1.45'
 Velocity = 6.05 f.p.s.

SCALE: 1"=5'



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 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

LEGEND
 --- Existing Grade
 --- Proposed Grade

CROSS SECTIONS HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 * A Resubdivision of the Rome Property, Lots 1 and 2, Pat No. 8240 and Long Acres, Lots 1 and 2, Pat No. 6062.
 ZONES R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY, 2007
 SHEET 21 OF 26

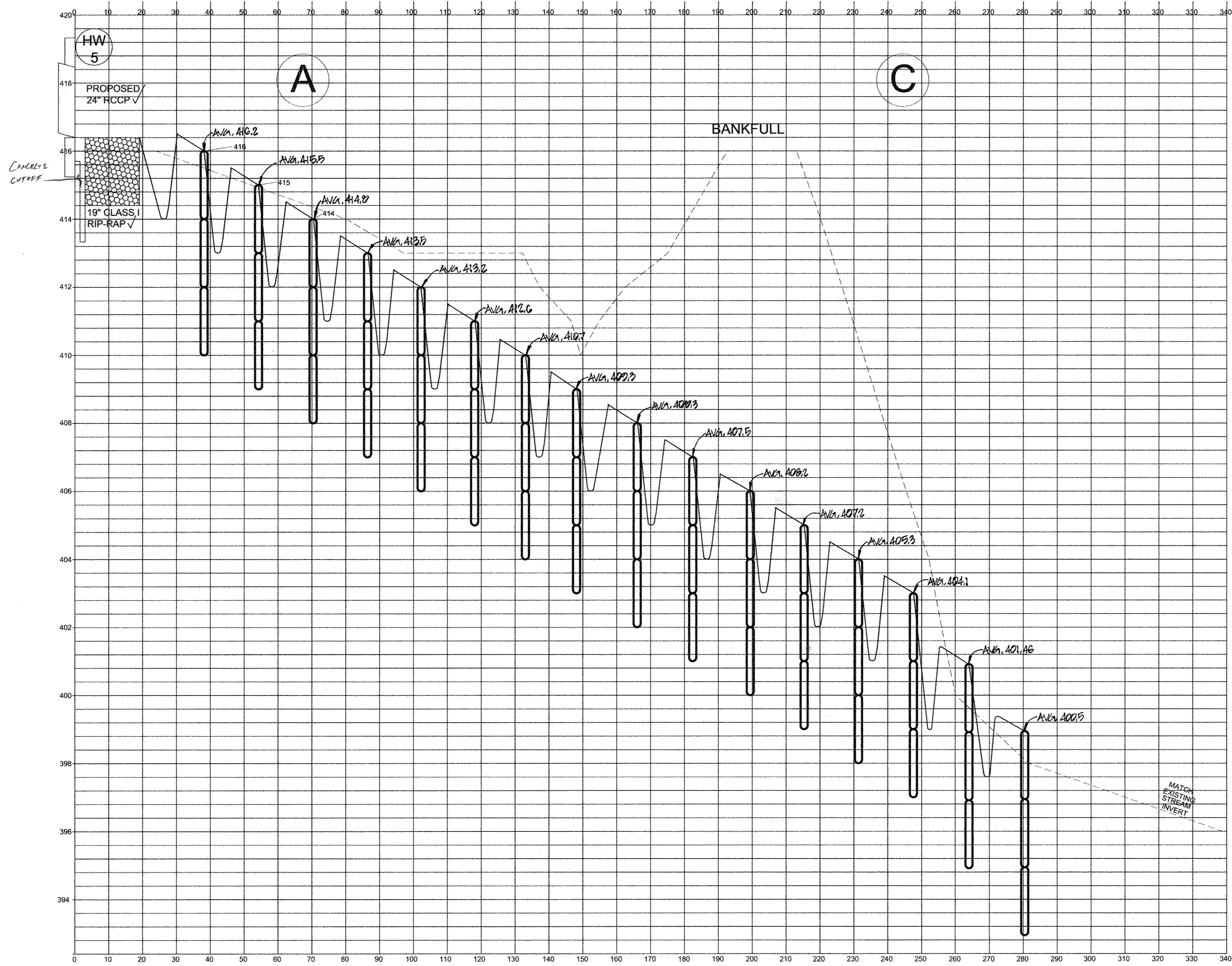
APPROVED: DEPARTMENT OF PUBLIC WORKS
William Z. ... 4-2-07
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy ... 4/14/07
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

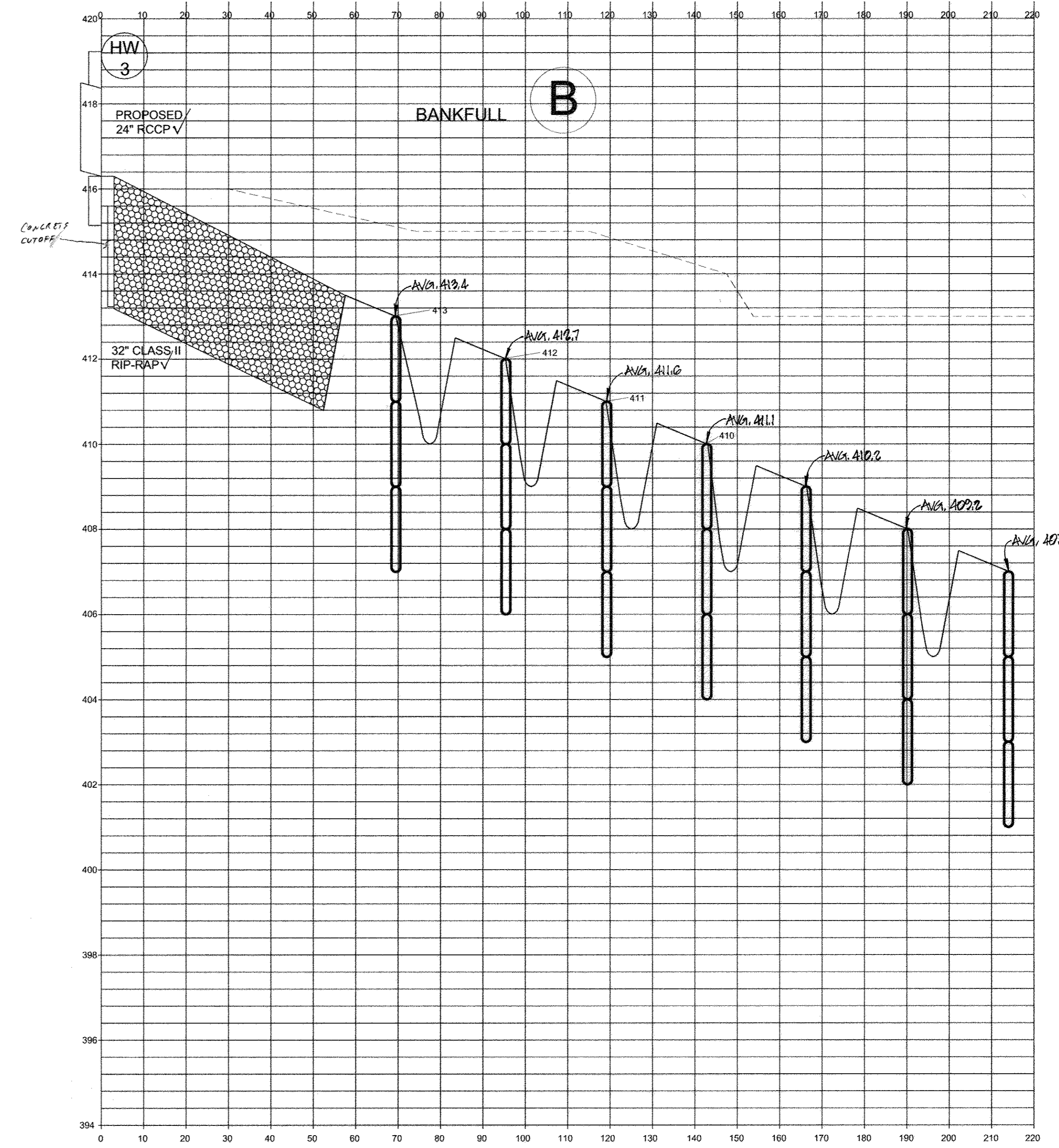
CHIEF, DEVELOPMENT ENGINEERING DIVISION
 7/1/07
 DATE

REVISIONS		
NO.	DESCRIPTION	DATE

BASELINE 1



BASELINE 2



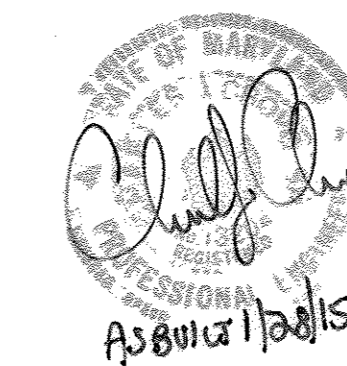
SCALE: 1"=20' HORIZONTAL
 1"=2' VERTICAL



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 (410) 461-2000

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 162 West Street
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LEGEND
 --- Existing Grade
 --- Proposed Grade

PROFILE
 HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and
 Long Acres, Lots 1 and 2, Plat No. 6062.
 ZONED R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY, 2007
 SHEET 22 OF 26



APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>William R. ...</i>	4-2-08	DATE
CHIEF, BUREAU OF HIGHWAYS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Judy ...</i>	4/10/08	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>[Signature]</i>	4/10/08	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
REVISIONS		
NO.	DESCRIPTION	DATE

PHASE ONE LIMITS OF DISTURBANCE REFER TO SHEET 17 FOR SEDIMENT CONTROL MEASURES

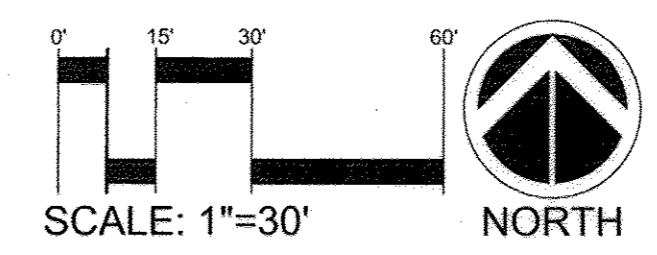
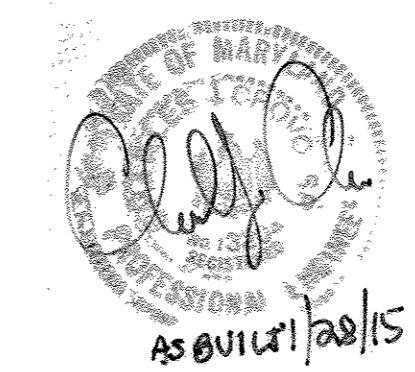
NOTE: SEE SHEETS 5 & 6 FOR REMAINDER OF SITE L.O.D. AND SEDIMENT CONTROL MEASURES.

SEQUENCE OF CONSTRUCTION: (FOR PHASE ONE POND REMOVAL/STREAM RESTORATION)

- Prior to installing sediment control measures or grading, a pre-construction meeting must be conducted on-site with the Howard County erosion and sediment control inspector, the owner's representative, restoration specialist, contractor, and the site engineer.
- The limits of disturbance must be field marked using stakes and flagging prior to clearing, installation of sediment control measures, construction, or other land disturbing activities.
- The contractor shall notify Miss Utility (1-800 257-7777) a minimum of 48 hours prior to start of construction. All utilities shall be located and marked prior to the start of work.
- Install SCE, silt fence, and all other sediment control devices.
- Clear vegetation within the limits of disturbance where necessary. All vegetation which is to be removed shall be flush cut using a chain saw. Vegetation which is scarred, nicked, or otherwise damaged shall be pruned to the satisfaction of the restoration specialist.
- Dewater existing pond to remove standing water.
- Install diversions at outfalls according to the plans. Divert any spring flow that is present in the pond bottom around work area.
- Provide stake out for proposed channel work.
- Rough grade/fill former pond area to approximate proposed grades.
- Excavate/shape trench at the location of the proposed stormwater infiltration channel. Trench should be as wide as the proposed weirs and 3 feet deeper than the invert elevation of the proposed pools.
- Fill trench with 3 feet of the specified sand mixture.
- Starting at the downstream limit of work, install stormwater infiltration channel according to the plans.
- Continue main channel to upstream limit. Stabilize all disturbed areas at the end of each day.
- Beginning at the confluence with the main channel, construct secondary channel from downstream moving upstream to terminus at stormwater outfalls.
- Stabilize all disturbed areas at the end of each day.
- Remove SCE, silt fence, and any other erosion and sediment control devices only after approval is granted from the Howard County inspector and all other applicable regulatory authorities.
- Install trees and shrubs according to planting plan.

* All L.O.D. within stream buffers to receive Erosion Control Matting.

LEGEND	
	25' Stream Buffer SVB Setback
	Existing Topography
	LOD
	Stabilized Construction Entrance
	Silt Fence
	Super Silt Fence
	Channel Identification
	Proposed Grade
	Cross Section Locations
	Proposed Weir
	Proposed Pool
	Treeline



PHASE ONE POND REMOVAL AND STREAM RESTORATION GRADING PLAN HOLLIFIELD HILLS
 LOTS 1 THRU 4 & OPEN SPACE LOTS 44 THRU 46
 * A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 8240 and Long Acres, Lots 1 and 2, Plat No. 6062.
 TAX MAP No. 17, GRID Nos. 5 AND 12, PARCEL No. 42 AND 43
 ZONED R-20
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY 2007
 SHEET 23 OF 26

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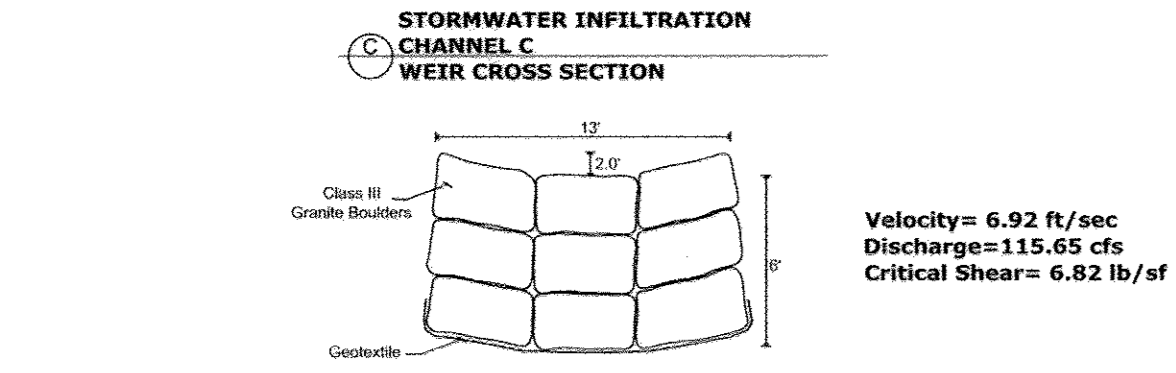
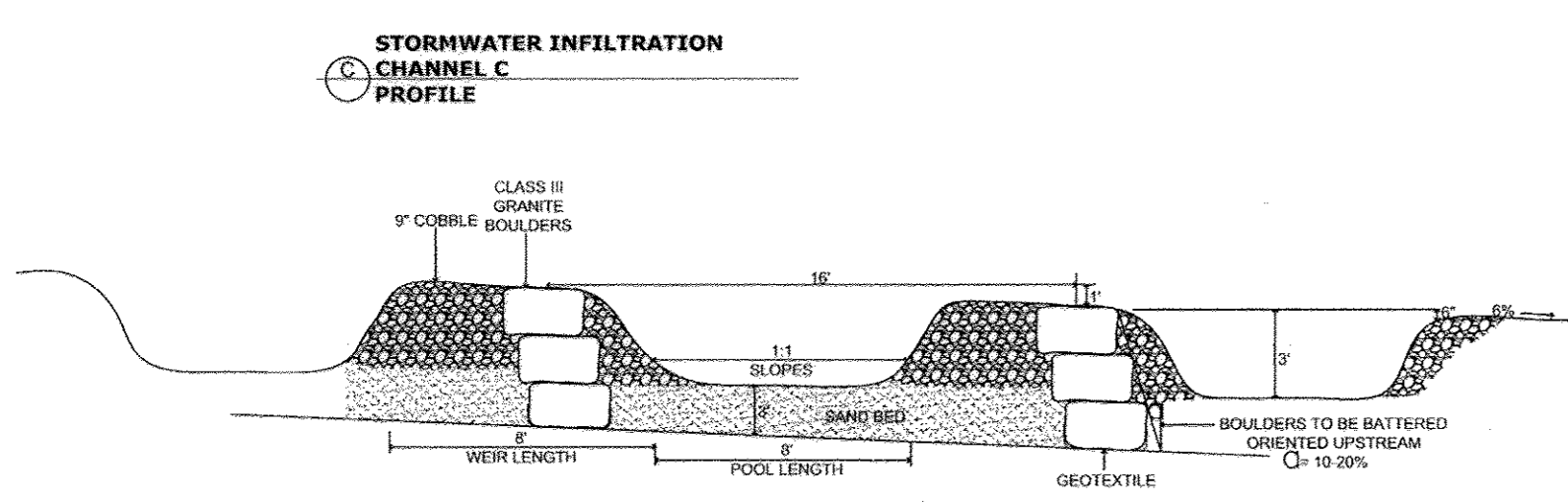
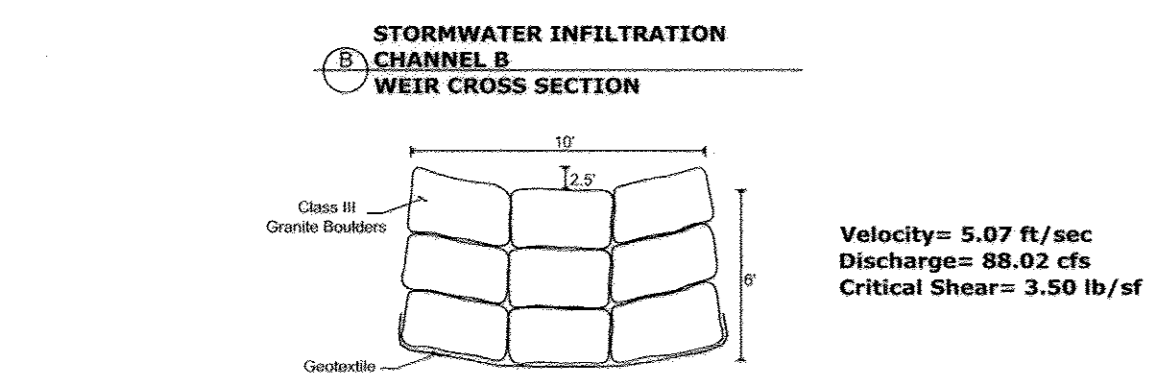
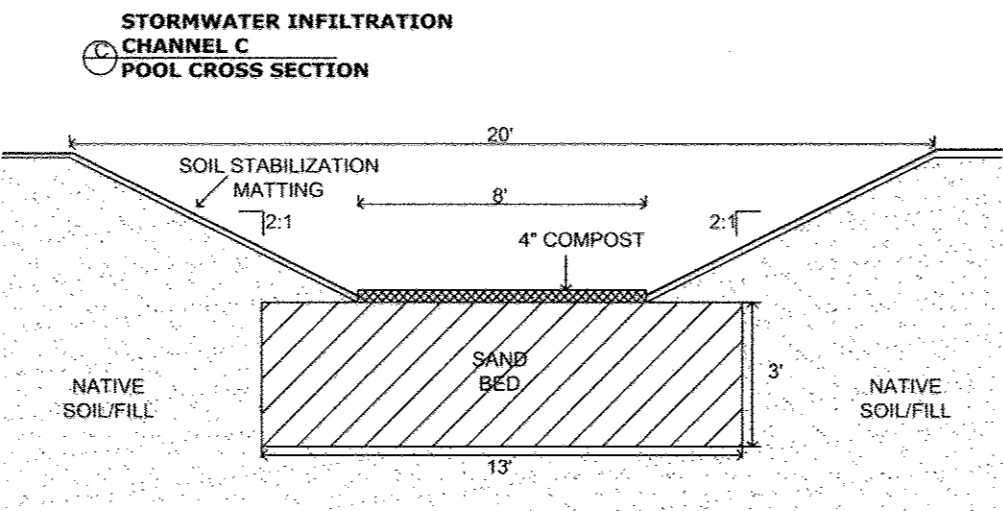
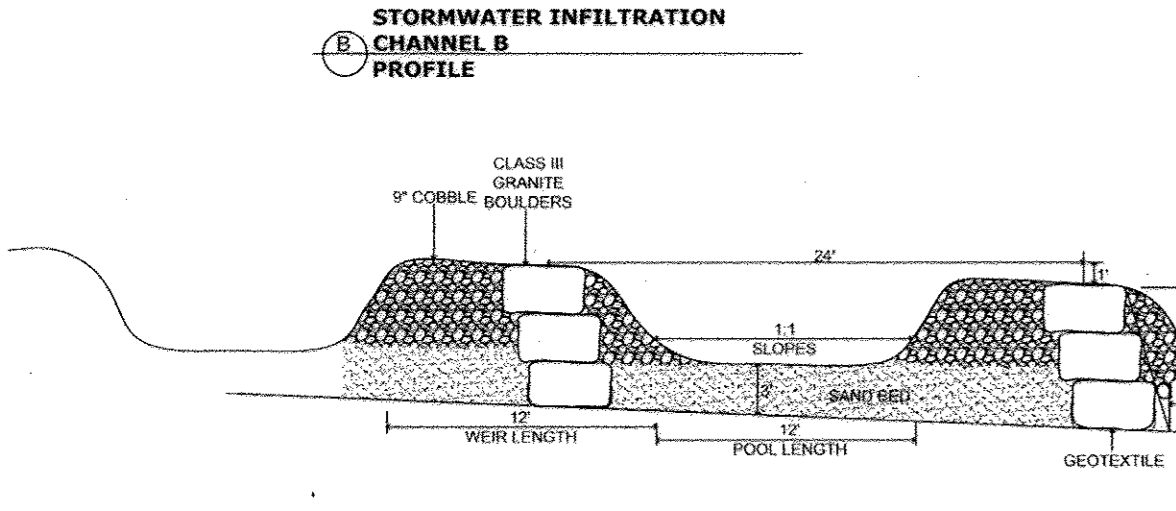
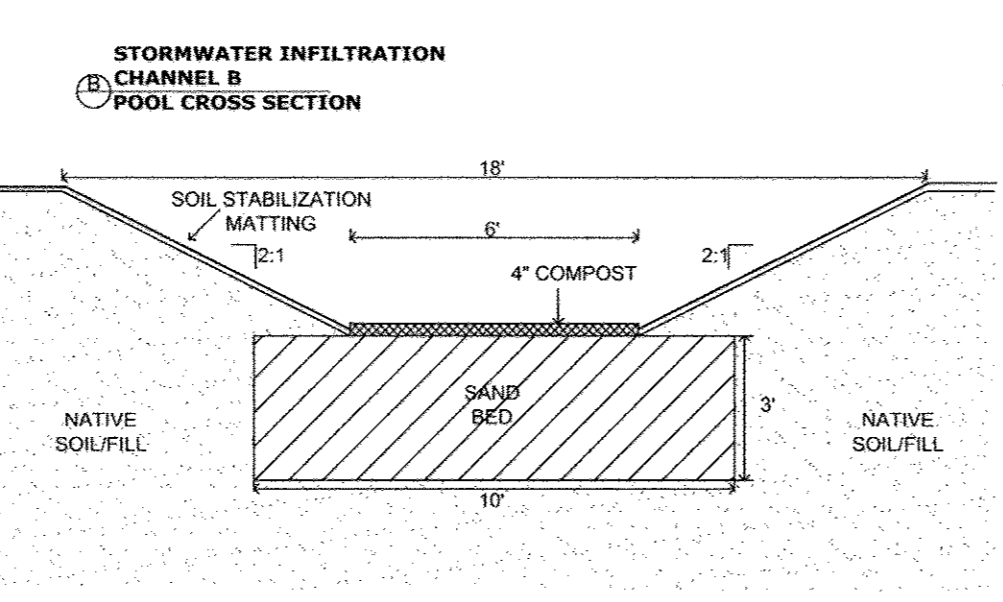
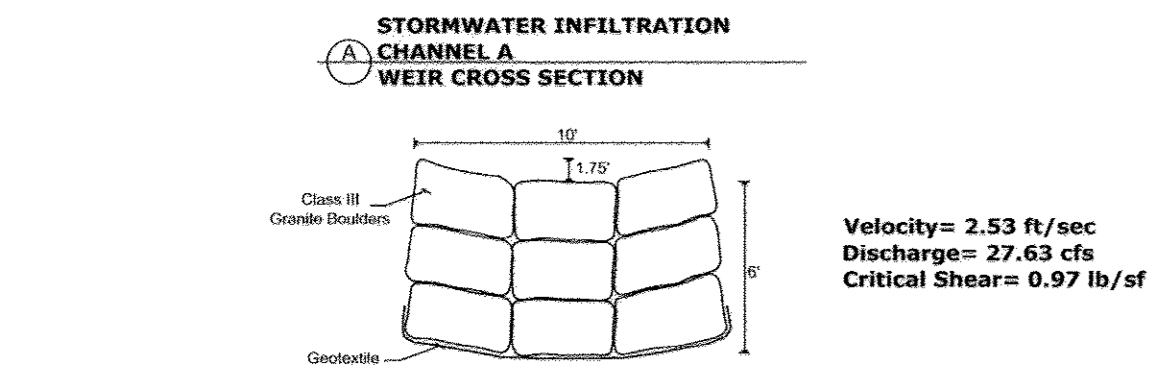
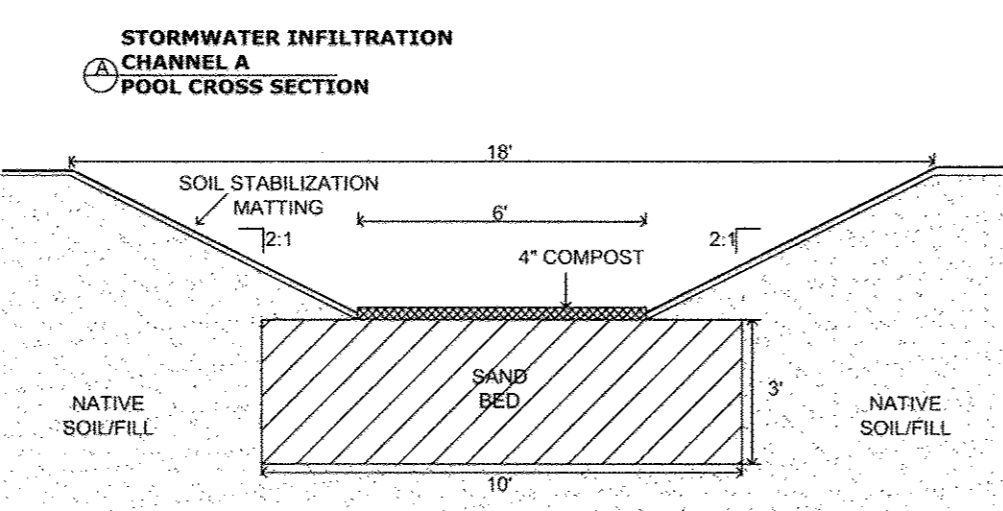
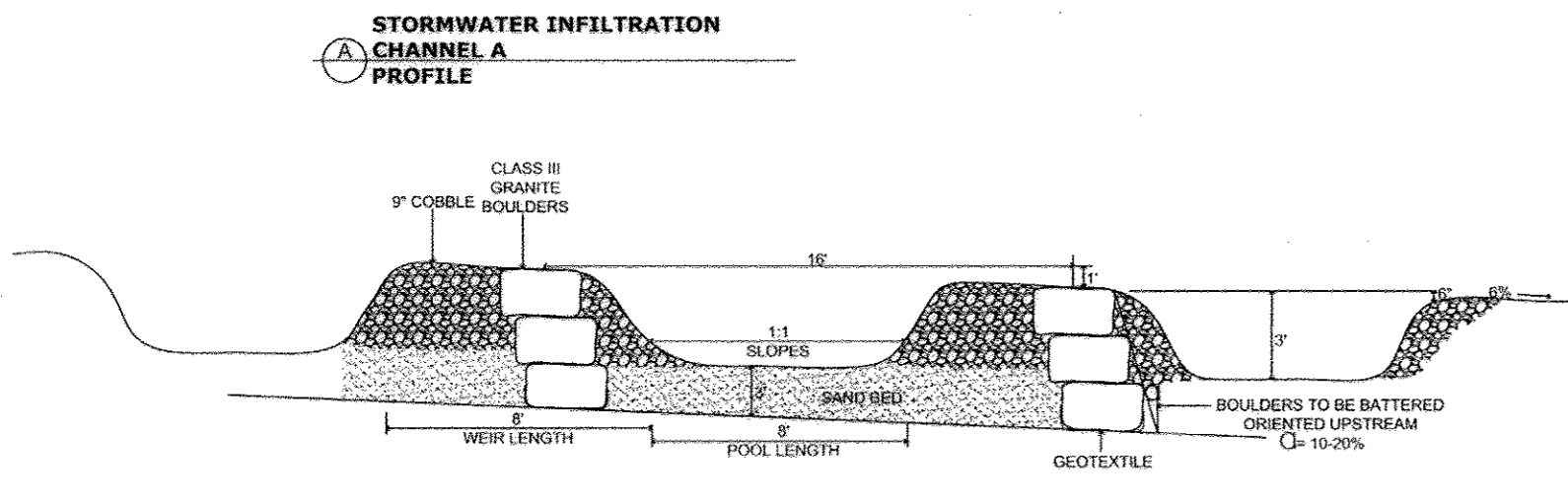
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 COLUMBIA, MARYLAND 21044
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 (410) 461-2995

F:\2006\04\137 Rome Long Property\dwg\REDLINES\ESA DWG.dwg, 3/4/2008 8:51:48 AM

APPROVED: DEPARTMENT OF PUBLIC WORKS
 W. W. W. 4-2-08
 CHIEF, BUREAU OF HIGHWAYS DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Cindy Hunter 4/10/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

REVISIONS		
NO.	DESCRIPTION	DATE

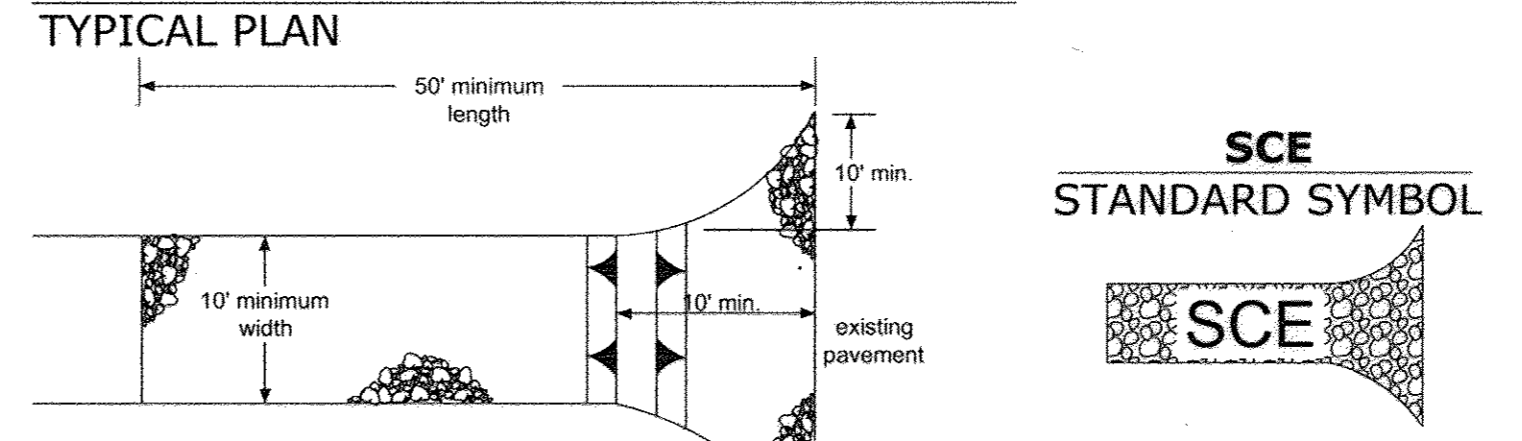


STORMWATER INFILTRATION CHANNEL

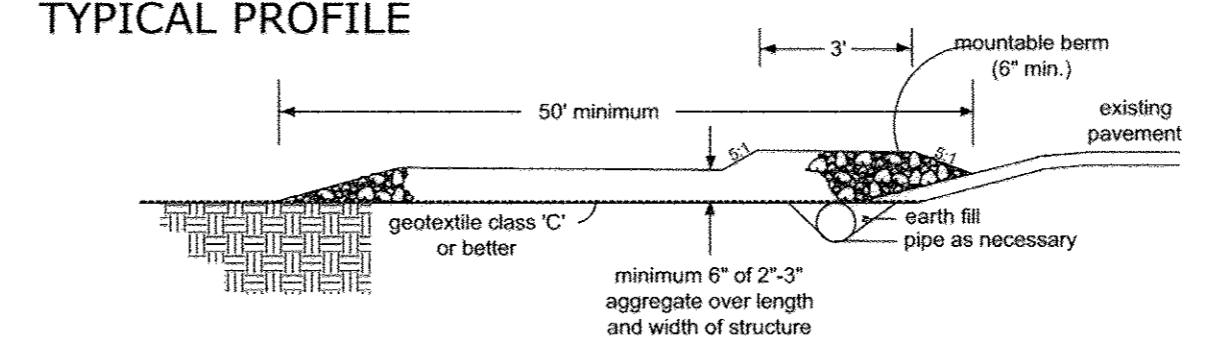
INSTALLATION SEQUENCE

1. See plan for location of channel and structures.
2. Install temporary tube diversion to existing 15" RCP located at the head of the proposed channel. Secure end of diversion tube into receiving channel such that erosion will not occur.
3. Excavate/fill/shape channel to accommodate the proposed stream design geometry, weir structures, and required boulder/stone placement.
4. Line channel with woven geotextile fabric (Amoco 2044 or similar) and secure using landscape staples or pins which are at least 10" in length.
5. Construct parabolic weirs using imbricated rip-rap as shown on the plans.
6. In pool areas, place class I rip-rap on geotextile to a depth of 19".
7. Place washed round gravel on top of class I rip rap and weir structures to completely cover all surfaces such that all voids are filled.
8. All elevations shall be measured continuously during construction, and all elevations must be within 0.2' of that shown on the plans.
9. Once the channel is completed, trim any exposed geotextile and fine grade all adjacent areas according to the plans such that there is a smooth transition between the channel and adjacent areas.
10. Once the restoration specialist approves the implementation, apply 4" of Leafgro® to the surface of all the pool areas within the channel, from the bottom to the top of the slope.
11. Apply seed to the slopes and install soil stabilization matting according to the plans.
12. Disconnect and remove the temporary tube diversion.
13. Seed and mulch all remaining disturbed areas.

STABILIZED CONSTRUCTION ENTRANCE



STABILIZED CONSTRUCTION ENTRANCE



STABILIZED CONSTRUCTION ENTRANCE CONSTRUCTION SPECIFICATIONS

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"-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 installation 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.

MATERIAL SPECIFICATIONS

Stone

Class III Granite is a specialty product which is predominately square or rectangular in shape with flat faces. Typical dimensions for each boulder are 4' L x 3' W x 1.5' D. Slight variations in size are acceptable, but each stone must weigh a minimum of 1500 lbs. and have a color which is predominantly grey, brown, or blue-grey; predominantly white stone will not be accepted.

9" Cobble shall be a natural aggregate which shall have a size distribution between 2 and 12 inches with a D50 of 9 inches. Stone shall be free of soil and organic material, with a density greater than 150 lbs./ft³. The color shall be predominantly grey, brown; predominantly white stone will not be accepted.

The contractor shall provide a sample of all stone to be used to the restoration specialist for inspection and approval prior to use in this project. Concrete and granular sedimentary stone is not acceptable. Stone which does not meet these specifications will be rejected without payment.

Sand

Sand shall be a natural, silica based product which is washed and free of debris, soil, and organic material. Fine or course aggregate sand is acceptable. Manufactured sand, limestone sand and stone dust of any type are not acceptable.

Geotextile

Woven geotextile fabric will be of Amoco 2044 grade or similar, will be inert to commonly encountered chemicals and hydrocarbons, will be rot and mildew resistant, and shall also resist deterioration from ultraviolet radiation.

Stabilization Seed

Seed shall be applied at a rate of 100 lbs. per acre and shall be comprised of the following mix:

Annual Rye	50 lbs.
Virginia Wild Rye	30 lbs.
Virginia Switchgrass	10 lbs.
Red Top	10 lbs.

Soil Stabilization Matting

The fabric shall consist of 100% high strength coconut fiber which is twisted and woven in a grid with 20 - 50% open area; no synthetic fibers are permissible. The thickness of the fabric shall be 0.35 inches with a dry weight of 23 OZ/SY. An example of an acceptable product is RoLanka BioD-Mat 70 woven bristle coil erosion control blanket (800)760-3215.

Landscape Staples

Landscape staples shall be a ten (10) inch, "U" shaped rigid wire product.

Select Borrow/Fill

Imported fill material, if required, shall be free of roots, trash, and all other non-soil material and shall classify as a loam (clay, silt and sand loams are acceptable). Soil color shall be predominantly brown and the structure shall be friable. The restoration specialist reserves the right to refuse fill material if it does not meet these general requirements.

Compost

Leafgro® compost shall be used; substitutions will not be accepted. It is available directly from Maryland Environmental Service or from select retailers located throughout the state. For information concerning this product, contact MES at 410-974-7268 or on the web at: <http://www.menv.com/content/products/leafgro.htm>

* Adapted from Anne Arundel County Design and Construction of Coastal Plains Outfalls Designed by Underwood & Associates



Environmental Systems Inc.
 162 West Street
 Annapolis Maryland 21401
 410.267.0495
 www.esatoday.com

OWNER / DEVELOPER
 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

NOTES AND DETAILS
HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47
 * A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. B240 and Long Acres, Lots 1 and 2, Plat No. 6062.
 ZONED R-20
 TAX MAP No. 17, GRID Nos. 6 AND 12, PARCEL No. 42 AND 43
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: JULY, 2007
 SHEET 24 OF 26

APPROVED: DEPARTMENT OF PUBLIC WORKS
Walter Z. Gabel 4-2-09 DATE
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Hammett 4/10/09 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

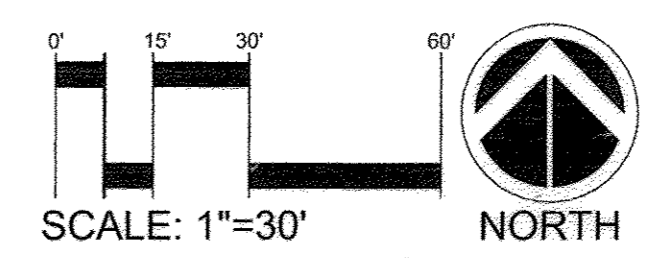
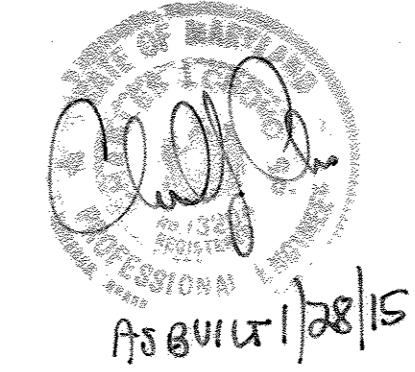
NO.	REVISIONS DESCRIPTION	DATE



NOTE: PLANTING SHOULD ONLY BE PERFORMED DURING THE GROWING SEASON, BEGINNING JUNE 1.

LEGEND

- Existing Topography
- Proposed Grade
- Cross Section Locations
- Proposed Weir
- Proposed Pool
- Treeline
- Planting Area
- Stabilized Construction Entrance
- Silt Fence
- Super Silt Fence
- Channel Identification



PLANTING PLAN
 HOLLIFIELD HILLS
 LOTS 1 THRU 43 & OPEN SPACE LOTS 44 THRU 47

A Resubdivision of the Rome Property, Lots 1 and 2, Plat No. 0280 and Long Acres, Lots 1 and 2, Plat No. 6062.
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 DATE: JULY, 2007
 SHEET 25 OF 26



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 Annapolis Maryland 21401
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 MID ATLANTIC DEVELOPMENT COMPANY
 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2995

PLANTING NOTES

GENERAL PLANTING NOTES

- The Landscape Contractor shall notify ESA, Inc. of the scheduled date for commencement of planting so that all planting materials and planting methods may be inspected and approved by ESA, Inc. **NO PLANTS SHALL BE INSTALLED WITHOUT A REPRESENTATIVE OF ESA, INC. ON SITE.**
- All plants shall be placed within the Limits of Disturbance, excluding the active channel.
- The Landscape Contractor is responsible for the location of all underground utilities. Repairs of utilities damaged during planting shall be at the Contractor's expense.
- Planting shall be performed in accordance with the latest edition of the Landscape Contractors Association's "Landscape Specification Guidelines" and as specified below.
- Plants may be installed from September 1 to November 15 and from March 15 to June 15. Planting shall not be performed outside of these dates without the expressed permission of ESA, Inc. In addition, planting shall not occur 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.

STANDARDS

- 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.
- All container stock shall be nursery-grown within a 200 mile radius of the site. Plant materials collected from the wild will be rejected.
- Plant material shall be obtained from nurseries that have been inspected and certified by state plant inspectors.
- The root system of container grown plants shall be white, well-developed, and well-distributed throughout the container with the roots visibly extending to the inside face of the growing container.
- If in leaf, the plants shall appear healthy with no leaf spots, leaf damage, leaf discoloration, leaf wilting or evidence of insects on the plant.
- There shall be no change in the quantity, size or species of scheduled plant material without the prior approval of ESA, Inc.

STORAGE AND DELIVERY

- Seed shall be delivered in containers (bottles, jars, paper/cloth bags/sacks) having labels that report the origin of the seed, the purity of the seed and the germination percentage, and date of germination testing of the seed.
- After being delivered to the job site, plants shall be stored in a cool, shady location. Plant root masses shall be kept moist with periodic watering until the time of planting.
- Soil root masses shall be thoroughly moist upon delivery to the site. Dry or light weight plants shall be rejected. If the soil/root masses are substantially smaller than the specified container size and loose soil exists on the bottom of the containers, the plants shall be rejected.
- All rejected material shall be immediately removed from the site.

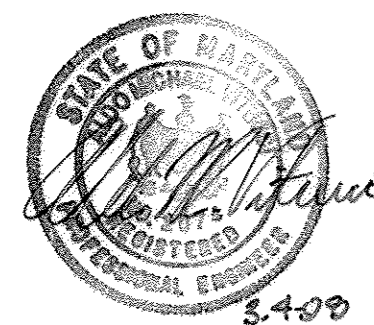
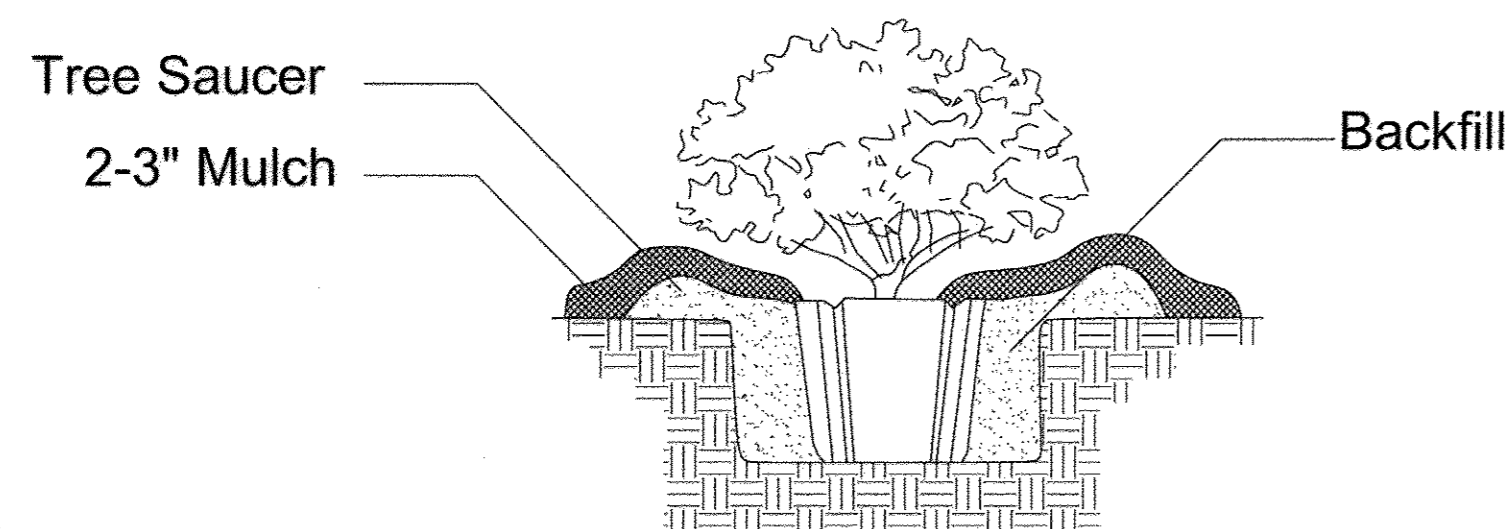
PLANTING

Master Schedule

QTY	SCIENTIFIC NAME	COMMON NAME	COND	SIZE*	HEIGHT*	SPACING
Trees						
95	<i>Platanus occidentalis</i>	American Sycamore	Cont.	3 gal.	4'	12' Random
95	<i>Quercus palustris</i>	Pin Oak	Cont.	3 gal.	4'	12' Random
95	<i>Fraxinus pennsylvanica</i>	Green Ash	Cont.	3 gal.	4'	12' Random
95	<i>Liriodendron tulipifera</i>	Tulip Poplar	Cont.	3 gal.	4'	12' Random
Shrubs						
120	<i>Chionanthus virginicus</i>	Fringe Tree	Cont.	2 gal.	2'	8' Random
120	<i>Hamamelis virginiana</i>	Witch Hazel	Cont.	2 gal.	2'	8' Random
120	<i>Lindera benzoin</i>	Spicebush	Cont.	2 gal.	2'	8' Random
120	<i>Viburnum dentatum</i>	Arrowwood	Cont.	2 gal.	2'	8' Random

PLANTING

Container Detail



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 162 West Street
 Annapolis Maryland 21401
 410.267.0495
 www.esatoday.com

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 c/o B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MARYLAND 21044
 (410) 730-3940

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK 10775 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 22842
 (410) 461-2955

PLANTING NOTES

TREES AND SHRUBS

- Excavate a planting hole at least 12" wider than the width of the rootball and to a depth which leaves approximately 1/8 of the rootball above the existing grade.
- Remove the plant either by cutting or inverting the container.
- To encourage the outward growth of the roots, make 4 to 5 one inch deep cuts the length of the root ball with a sharp knife or blade.
- Install containerized plant in the center of the hole with approximately 1/8 of the rootball above finished landscape grade.
- Backfill planting hole with two thirds existing soil and one third organic matter.
- Any surplus soil which remains after planting shall be used to create a small mound around the edge of the planting hole to hold water during watering operations.
- Thoroughly water the interior of the tree saucer until it is filled. Watering shall be undertaken even if it is raining. A second watering may be necessary to insure saturation of the rootball and elimination of the air pockets.
- Place a 3 foot diameter mulch ring around each plant. Mulch shall be a minimum depth of 2" and a maximum depth of 3". **DO NOT PLACE MULCH AGAINST THE TRUNK.**
- Prune any and all tree branches that are dead, diseased, damaged, or conflicting.
- Remove all tags, labels, strings, and wire from the trees.

SEEDING

- Loosen graded soils to a depth of 1 to 2 inches with a hand rake or other approved device.
- Apply seed when the soil is friable (soil should break up easily and not form clods when worked) using a broadcast seeder or a hydroseeder.
- If a broadcast seeder is used, mix the seed with a carrier of similar weight (perlite, vermiculite, sawdust, or similar product) and make two passes over each area. The second pass shall be made at a 90 degree angle to the first pass to ensure even seed distribution. Work seed into the soil with the back of a hand rake. Finally, press the seed into the soil with a hand roller or by simply walking on the seeded areas following raking to ensure soil to seed contact.
- If using a hydroseeder, no carrier is required and one pass over each area will be sufficient provided that all portions of the site to be seeded are covered.
- Mulch all disturbed areas with the exception of those covered with soil stabilization fabric with straw at a rate of 100 bales/acre or 16 cubic yards/acre.

PRODUCTS

- Organic Matter: Thoroughly shredded and well composted leaf material free of trash.
- Mulching Material:
 - Straw: Small grained, such as wheat or barley which is free of rot, mildew, and noxious weed seeds.
 - Mulch: Well-aged, medium to coarse hardwood or pine bark mulch, dark brown in color and free of foreign matter. If pine bark mulch is used, less than 10% shall be sapwood.

MAINTENANCE AND GUARANTEE

- Plant material shall be maintained by the Landscape Contractor for one year from the date of initial inspection and acceptance of the planting by ESA, Inc. Maintenance shall include all watering, fertilization and animal repellants necessary to ensure the survival and growth of the plants.
- The landscape contractor shall guarantee that 85% of the planted material shall be alive and healthy one year after the initial inspection and acceptance by ESA, Inc. At the end of this period, ESA, Inc. shall conduct a final inspection with the Landscape Contractor. All failed material exceeding 85% of the total plant quantity listed on these plans or as amended in writing by ESA, Inc. shall be replaced by the Landscape Contractor. This guarantee shall cover all damages except vandalism, fire, and flood, and animal predation.
- Plant material which is 25% dead or more shall be considered dead.
- Plant material replacements shall be of the same size, type, and variety as the plants specified in the planting schedule or as the approved substitutes for the original planting. Plants shall be furnished and planted as specified in these plans.

SOIL STABILIZATION MATTING

INSTALLATION SEQUENCE

- Slope to be covered shall be fine graded and seeded.
 - Beginning at the bottom of the slope at the upstream limit of the fabric, fasten edge of fabric using staples.
 - Unroll fabric parallel to slope, making sure there is full contact between soil and fabric. Consecutive rolls spliced across the slope shall be overlapped 3 inches from upstream to downstream. Place staples 1 foot apart along edges and where fabrics overlap.
 - Continue process moving up-slope. Overlap fabric edges 3 inches, and shingle such that the up-slope fabric overlaps the downslope fabric.
- Continue process until the area is covered. At the top of the slope, cut a 6" by 6" slot and place edge of fabric into slot. Secure with staples then backfill with soil and compact.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 with 2 sheets 4-2-08
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Cindy Hamer 4/10/08
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
 4/10/08 DATE

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