

# SITE DEVELOPMENT PLAN

# BRAMPTON HILLS

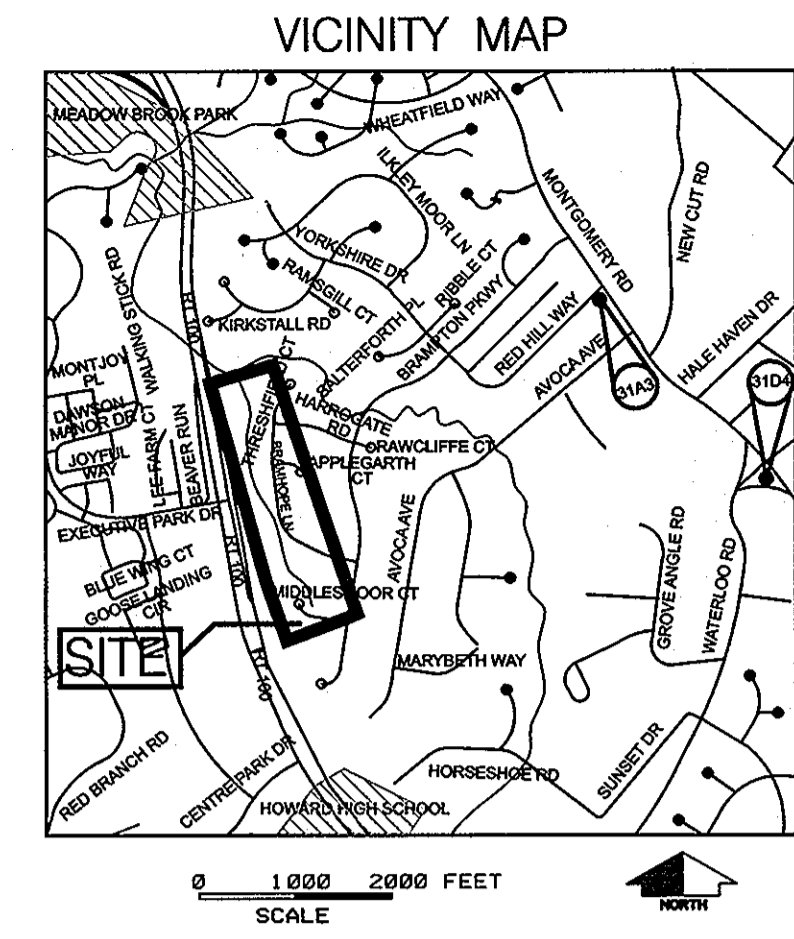
## SECTION 4, AREA 1,2,3

## STREAM STABILIZATION

### HOWARD COUNTY, MARYLAND

### DEPARTMENT OF PUBLIC WORKS

### CAPITAL PROJECT D-1158



ADC MAP COORD. 16 D2 AND D3

THE HORIZONTAL AND VERTICAL DATUM SHOWN HEREON ARE BASED ON GPS OBSERVATIONS FROM THE FOLLOWING:  
 N. G. S. TRAVERSE POINTS  
 HORIZONTAL NAD 1983/91  
 VERTICAL NAVD 1988

HOWARD COUNTY CONTROL POINTS	NORTH	EAST	ELEV
31D4	571700.651	1369606.360	494.49
31A3	573217.849	1368237.695	486.96

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#### LEGEND

LIMIT OF DISTURBANCE	---	LOD
EXISTING MAJOR CONTOURS	---	387
EXISTING MINOR CONTOURS	---	
PROPOSED CONTOURS	---	387
EXISTING 100 YEAR FLOODPLAIN	---	
PROPOSED 100 YEAR FLOODPLAIN	---	
EXISTING TREE TO BE SAVED		
EDGE OF TREELINE		
WATERS OF THE US	---	WUS
PROPERTY LINE	---	
EXISTING ROAD EDGE	---	
EXISTING SEWER LINE	---	S
EXISTING STORM DRAIN	---	SD
EXISTING SEWER MANHOLE		
EXISTING STORM DRAIN MANHOLE		
IMBRICATED BANK PROTECTION		
SINGLE STONE TOE PROTECTION		
DOUBLE STONE TOE PROTECTION		
RIFLE GRADE CONTROL		
SANDBAG DAM		
PUMP		
DEWATERING DEVICE		
SILT FENCE		SF
SUPER SILT FENCE		SSF
PIPE SLOPE DRAIN		
STABILIZED CONSTRUCTION ENTRANCE		
EXISTING FENCE	---	
EXISTING EASEMENT LINE	---	

#### SITE ANALYSIS DATA CHART

- TOTAL PROJECT AREA: 2.91 ACRES (126,809 SF).
- DISTURBED AREA: 2.91 ACRES (126,809 SF).
- PRESENT ZONING DESIGNATION: R-20
- PROPOSED USE FOR THE SITE: STABILIZE EXISTING BANK/CHANNEL EROSION
- OPEN SPACE ON SITE: 2.91 AC, 100% OF GROSS AREA
- APPLICABLE DPZ FILE REFERENCES: SDP-89-046, SDP-89-210, F-88-50, F-88-51, WP 08-036, ~~F07-82~~

#### ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS	PLAT #
116 / 393	4896 BRAMPTON PKWY	7497
166 / 393	4941 BRAMHOPE LN	7613
217 / 393	5020 MIDDLESNOOR CT	8801

#### SPECIAL CONTRACTOR NOTES

- 100-YEAR FLOODPLAIN ELEVATION IS SHOWN ON THE PLANS.
- NO STOCKPILE OF ANY MATERIAL IS ALLOWED IN THE 100-YEAR FLOODPLAIN.
- IN-STREAM WORK IS PROHIBITED FROM MARCH 1ST TO JUNE 15TH, INCLUSIVE. STREAM CLASSIFICATION: USE I-P.
- CONTRACTOR SHALL CONTINUALLY MONITOR WEATHER FORECASTS DURING WORK ACTIVITIES AND SCHEDULE WORK DURING FAVORABLE CONDITIONS.
- THE CONTRACTOR SHALL EXERCISE CARE IN ACTIVITIES INVOLVING EITHER CUT AND FILL OR GRADING IN THE VICINITY OF TREES THAT ARE TO REMAIN AT THE CONSTRUCTION SITE. ALL EARTH CUTS AND ACTIVITIES IN THE VICINITY OF TREES TO REMAIN SHALL BE MADE IN A MANNER THAT DOES NOT DISTURB THE CRITICAL ROOT ZONE WITHIN THE DRIPLINE OF THE TREE. PROTECTIVE ORANGE FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF THE CRITICAL ROOT ZONE PRIOR TO CONSTRUCTION. THE LOCATION OF THE PROTECTIVE ORANGE FENCING SHALL BE APPROVED BY HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL NOT STORE EQUIPMENT, MATERIALS AND/OR SUPPLIES BEYOND THE ORANGE FENCING SHOWN ON THE PLANS.
- UPON COMPLETION OF THE WORK, BUT PRIOR TO DE-MOBILIZATION, THE CONTRACTOR SHALL REMOVE ALL REMNANTS OF CONSTRUCTION MATERIALS FROM THE SITE. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITIONS.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, PHOTOGRAPHS OF THE PROPOSED WORK AREA AND ACCESS SHALL BE TAKEN.
- ALL TREES TO BE REMOVED SHALL BE CUT AT THE BASE WITH A SAW AND NOT PUSHED OVER. TREE STUMPS MAY BE LEFT IN PLACE, UNLESS OTHERWISE DIRECTED ON THE PLANS.
- REMOVED TREES AND BRUSH MAY BE REDISTRIBUTED ON SITE AT THE DISCRETION OF THE ENGINEER.
- THE SUBJECT PROPERTIES ARE ZONED R-20 PER FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/2006.
- THE DEPARTMENT OF PLANNING AND ZONING AND THE HOWARD SOIL CONSERVATION DISTRICT HAVE DETERMINED THAT THE DISTURBANCES WITHIN THE 100-YEAR FLOODPLAIN, WETLANDS, STREAM AND REQUIRED BUFFERS FOR THE PROPOSED STREAM RESTORATION PROJECT ARE CONSIDERED ESSENTIAL OR NECESSARY IN ACCORDANCE WITH SECTIONS 16.115(C) AND 16.116(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THIS PROJECT IS NOT A SUBDIVISION, AND THEREFORE THIS PLAN IS NOT REQUIRED TO MEET THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
- THIS PLAN MEETS THE REQUIREMENTS OF THE FOREST CONSERVATION REGULATIONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY CONTAINED HEREIN PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1800 24 HOURS IN ADVANCE OF ANY WORK BEING DONE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NUMBER 31D4 AND 31A3 WERE USED FOR THIS SITE.
- WATER IS PUBLIC.
- SEWER IS PUBLIC.
- STORMWATER MANAGEMENT IS NOT REQUIRED FOR THIS PROJECT SINCE THE PROJECT WILL NOT ADD IMPERVIOUS AREA NOR WILL IT CHANGE THE EXISTING HYDROLOGY OF THE SITE.
- EXISTING UTILITIES ARE BASED ON FIELD SURVEYS AND AVAILABLE RECORD DRAWINGS.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY KCI TECHNOLOGIES, INC. AND WAS APPROVED ON OCTOBER 6, 2008.
- THE WETLANDS DELINEATION FOR THIS PROJECT WAS PERFORMED BY CHESAPEAKE ENVIRONMENTAL MANAGEMENT, INC. IN NOVEMBER 2007.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY AB CONSULTANTS, INC., IN AUGUST 2007.
- ALL WORK SHALL BE CONSTRUCTED ACCORDING TO THE REQUIREMENTS OF THE NONTIDAL WETLANDS AND WATERWAYS PERMIT APPROVED JUNE 5, 2009. (MDE TRACKING #200863684/08-NT-3304).
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND KCI TECHNOLOGIES, INC. DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY SUCH INFORMATION TO HIS OWN SATISFACTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE CONTRACTOR MAKE FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- A WAIVER PETITION (WP-08-036) FROM SECTION 16.1202 WAS APPROVED ON 12/14/07 THAT ALLOWS THE USE OF THE AREA INSIDE THE LIMIT OF DISTURBANCE AS THE NET TRACT AREA IN THE FOREST CONSERVATION CALCULATIONS SUBJECT TO THE FOLLOWING CONDITIONS:
  - APPROVAL OF ANY REQUIRED PERMITS FOR DISTURBANCE WITHIN THE FLOODPLAIN AND ITS BUFFERS.
  - NO DISTURBANCE IS ALLOWED BEYOND THE LIMIT OF DISTURBANCE SHOWN ON THE WAIVER PETITION EXHIBIT.
  - ALL AREAS MUST BE REPLANTED AND STABILIZED.
- THE DEPARTMENT OF RECREATION AND PARKS WILL ASSUME RESPONSIBILITY FOR THE LONG-TERM PRESERVATION OF THE REFORESTATION REQUIREMENTS FOR THIS PROJECT UNDER THE RECREATION AND PARKS PLANNING AND ZONING FOREST MITIGATION PROGRAM. EASEMENT AREAS WILL BE DELINEATED AND LABELED BY RECREATION AND PARKS WITH "FOREST CONSERVATION AREA TO BE MANAGED BY RECREATION AND PARKS". ALL COSTS ASSOCIATED WITH PLANTING THE REQUIRED 1.04 ACRES WILL BE PAID BY THE DEPARTMENT OF PUBLIC WORKS.
- THE FOREST CONSERVATION EASEMENT AND PLAT WAS RECORDED BY THE COUNTY. THE ASSOCIATED PLAT NUMBER IS 20715-20719.

**ENGINEER'S CERTIFICATE**

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT"

*James Tomlinson*  
 SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)  
 JAMES TOMLINSON, PE

P.E. • 31201      7/10/09  
DATE

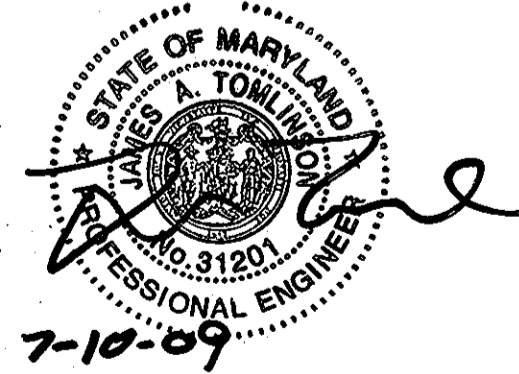
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**DEVELOPER'S CERTIFICATE**

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

*Howard E. Saltzman*  
 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)  
 Howard E. Saltzman

7/13/09  
DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

*Howard E. Saltzman* 7/13/09  
 DIRECTOR OF PUBLIC WORKS DATE

*Howard E. Saltzman* 7/13/09  
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

*Howard E. Saltzman* 7/13/09  
 CHIEF, STORMWATER MANAGEMENT DIVISION DATE

DEPARTMENT OF RECREATION AND PARKS, HOWARD COUNTY, MD

*John R. Sylla* 7/13/09  
 DIRECTOR OF RECREATION AND PARKS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Michael Dennis* 7/20/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Christy Harter* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Franklin Wylde* 8/21/09  
 DIRECTOR DATE

**PERMIT INFORMATION CHART**

SUBDIVISION NAME BRAMPTON HILLS	SECTION/AREA SECT. 4/AREA 1,2,3	LOT/PARCEL # SEE ADDRESS CHART
PLAT # OF L/F SEE ADDRESS CHART	ZONING R-20	TAX MAP NO. 30
GRID 12	ELECT. DISTR. 01	DENSUS TRACT 682302
WATER CODE PUBLIC	SEWER CODE PUBLIC	
20715-20719		
OWNER: HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION 7120 OAKLAND MILLS ROAD COLUMBIA, MD 21046 410-313-4700		

NO. REVISIONS DESCRIPTION DATE

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

**KCI**  
TECHNOLOGIES

BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4, AREAS 1,2,3  
 CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 505 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MD 21046  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MD 21046

TITLE SHEET

SCALE: NOT TO SCALE  
 DATE: OCTOBER, 2008  
 KCI JOB NO.: 01-043223.25  
 CAPITAL PROJECT NO.: D1158  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

SHEET NO.: 1 OF 35

STATE CONTRACT No. HO4085174  
 F.A. PROJECT No. STP-3(165)E  
 SDP-09-009

PLOTTED: 10:20 AM on Friday, July 10, 2009  
 BY: Hormay, Miller, Division: 0109 Natural Resources Management  
 FILE: W:\2004\01043223.25 Drawings\1101bram.dgn



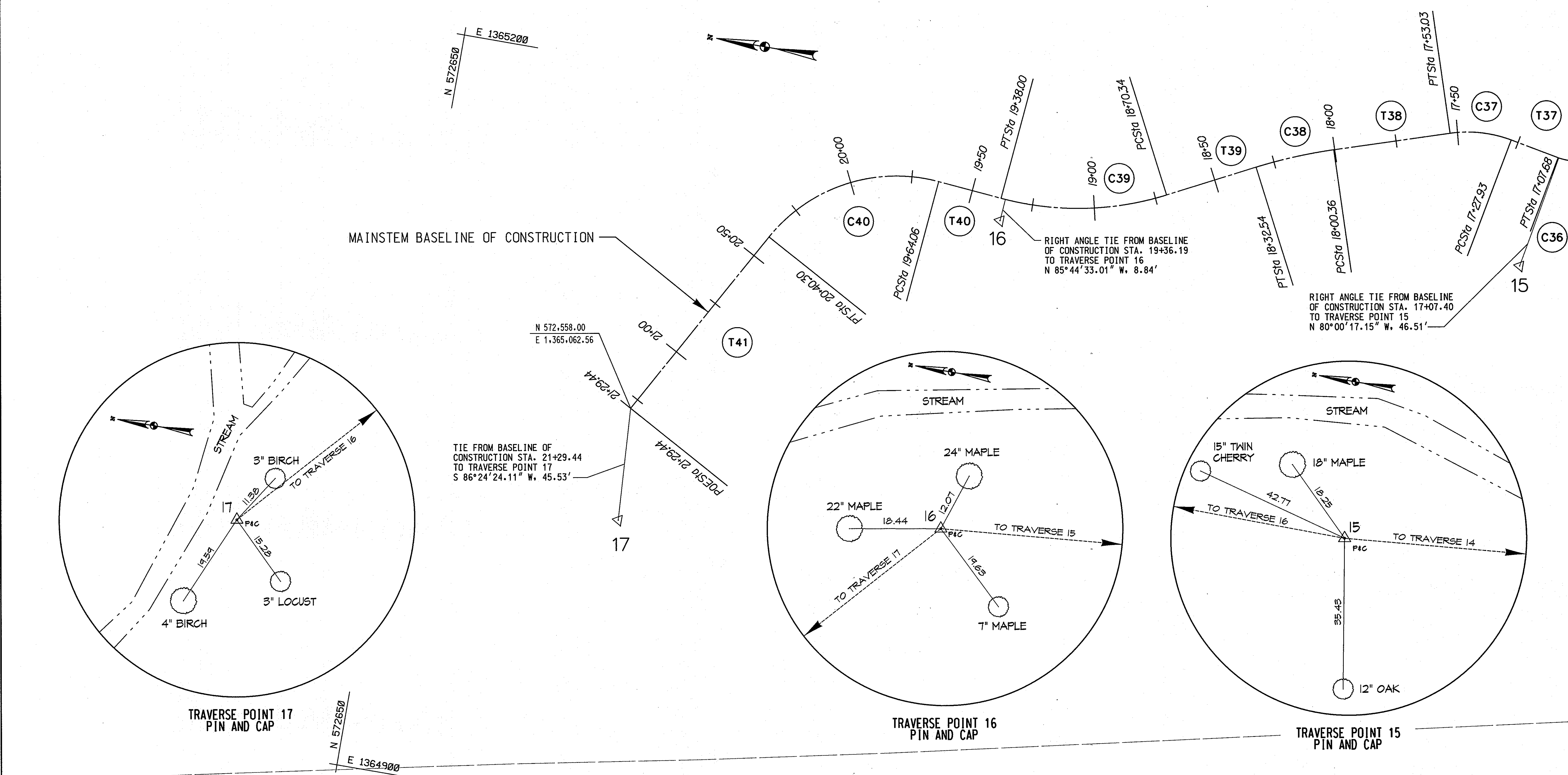




CURVE DATA					
CURVE NO.	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING
C36	20.00'	13.68'	39°11'16.26"	7.12'	N 08°47'47.59" W 13.41'
C37	50.00'	25.10'	28°45'37.99"	12.82'	N 03°34'58.46" W 24.84'
C38	200.00'	32.18'	09°13'11.81"	16.13'	N 22°34'23.36" W 32.15'
C39	120.00'	67.67'	32°18'33.26"	34.76'	N 11°01'42.63" W 66.78'
C40	66.00'	76.24'	66°11'20.64"	43.02'	N 27°58'06.33" W 72.07'

TANGENT DATA		
TANGENT NO.	BEARING	DISTANCE
T37	N 10°47'50.54" E	20.25'
T38	N 17°57'47.45" W	47.33'
T39	N 27°10'59.26" W	37.79'
T40	N 05°07'33.99" E	26.05'
T41	N 61°03'46.65" W	89.14'

TRAVERSE COORDINATE LIST			
PT #	NORTHING	EASTING	ELEVATION
15	N 572,214.51	E 1,365,180.93	390.99
16	N 572,424.11	E 1,365,163.08	385.87
17	N 572,555.15	E 1,365,017.12	379.89



NOTE: TRAVERSE POINTS 5, 8, 10, 11, 12, 14, 15, AND 16 ARE LOCATED WITHIN THE LOD. CONTRACTOR SHALL ATTEMPT TO PRESERVE POINTS DURING CONSTRUCTION OR RELOCATE.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*[Signature]* 7/27/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*[Signature]* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 8/24/08  
 DIRECTOR DATE

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 31201  
 EXPIRATION DATE: JANUARY 24, 2011

MATCHLINE A-A

NO. REVISIONS DESCRIPTION DATE

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

**KCI**  
 TECHNOLOGIES

BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4, AREAS 1,2,3  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 5170 COLUMBIA GATEWAY DRIVE  
 COLUMBIA, MD 21046  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 11000 WOODBURN ROAD  
 COLUMBIA, MD 21046  
 PARCEL 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 037, 038, 039, 040, 041, 042, 043, 044, 045, 046, 047, 048, 049, 050, 051, 052, 053, 054, 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069, 070, 071, 072, 073, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083, 084, 085, 086, 087, 088, 089, 090, 091, 092, 093, 094, 095, 096, 097, 098, 099, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 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999, 1000

SCALE: 1" = 20'

DATE: OCTOBER, 2008

KCI JOB NO.: 01-043223.25

CAPITAL PROJECT NO.: D1158

PERMIT ISSUE:

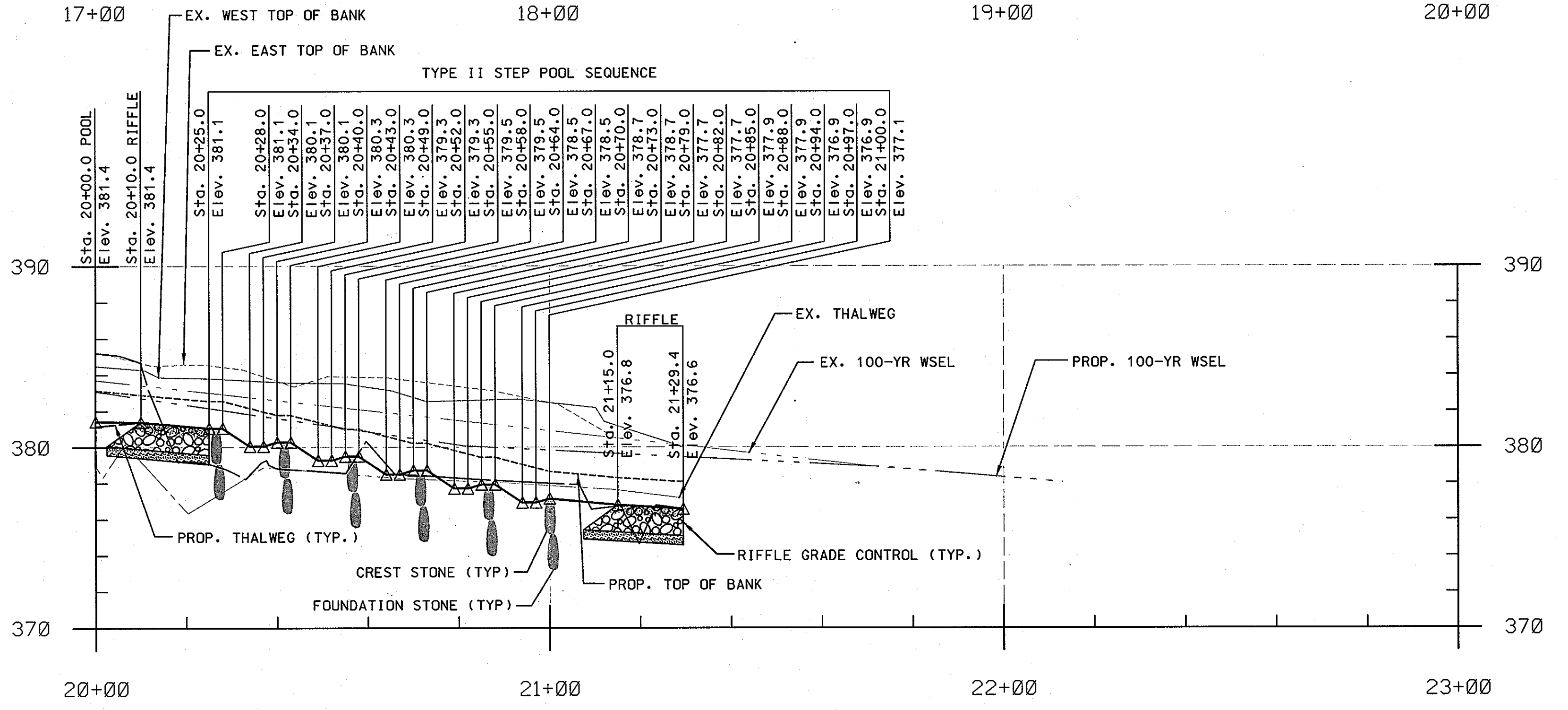
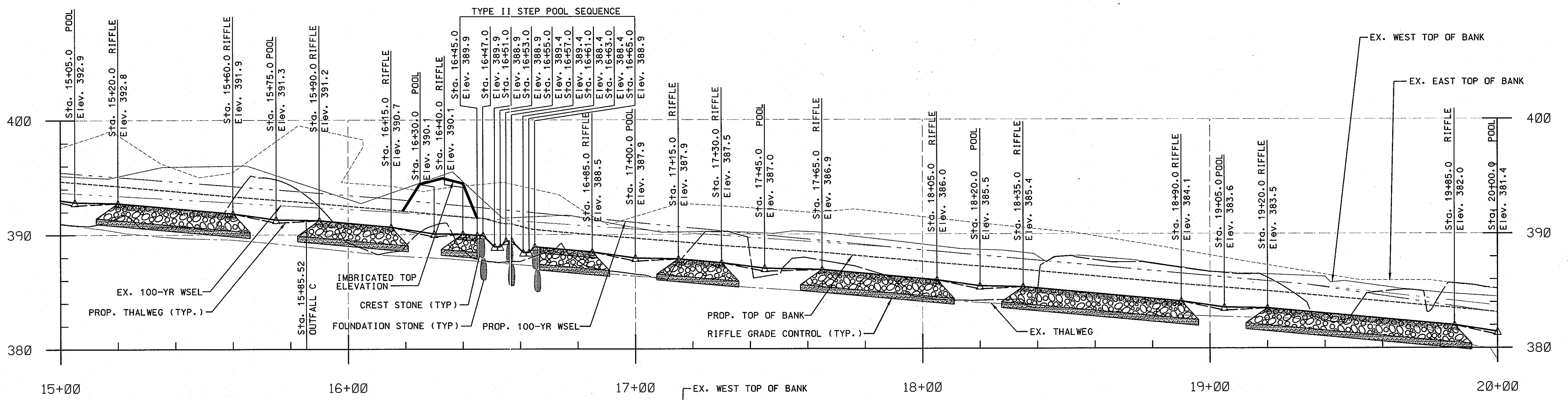
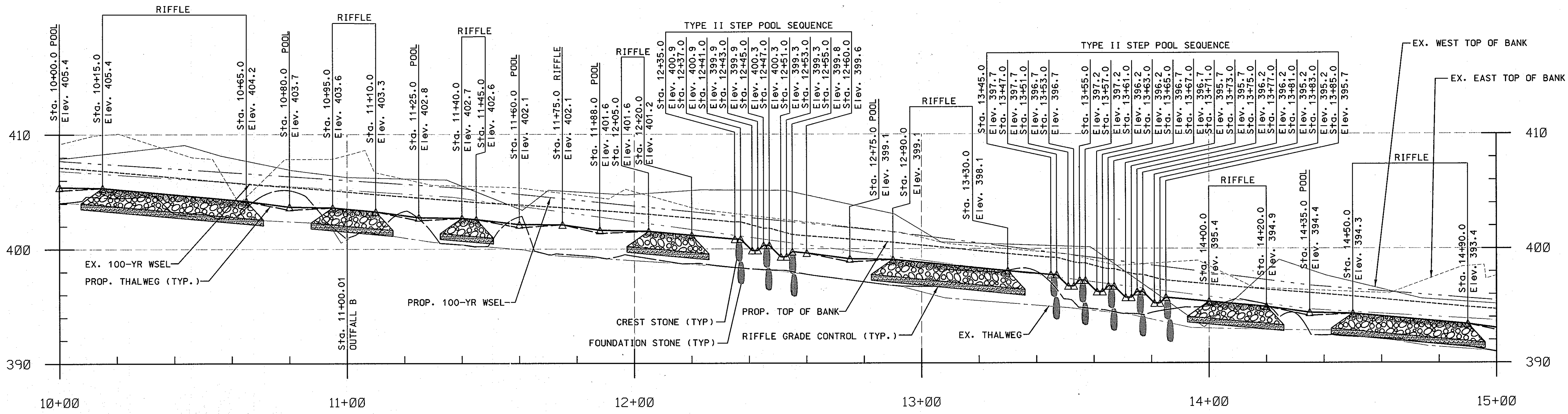
CONSTRUCTION ISSUE:

SHEET NO.: 5 OF 35

STATE CONTRACT NO. HD4085174 SDP-09-009  
 F.A. PROJECT NO. STP-9(185)E







**LEGEND**

EXISTING 100-YR WSEL ———

PROPOSED 100-YR WSEL - - - - -

**LEGEND**

EXISTING GROUND ———

PROPOSED GRADE ———

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*William J. ...* 7/22/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy ...* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

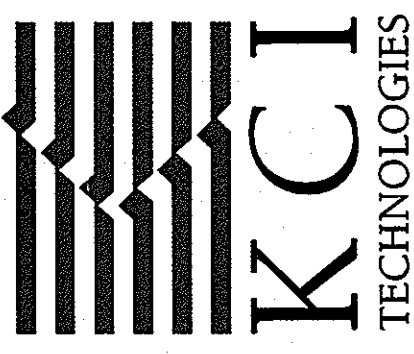
*Mark ...* 8/21/09  
DIRECTOR DATE



PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201, EXPIRATION DATE: JANUARY 24, 2011

NO.	REVISIONS DESCRIPTION	DATE
1	Add existing and proposed 100-year water surface elevations to legend	4-20-10

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com

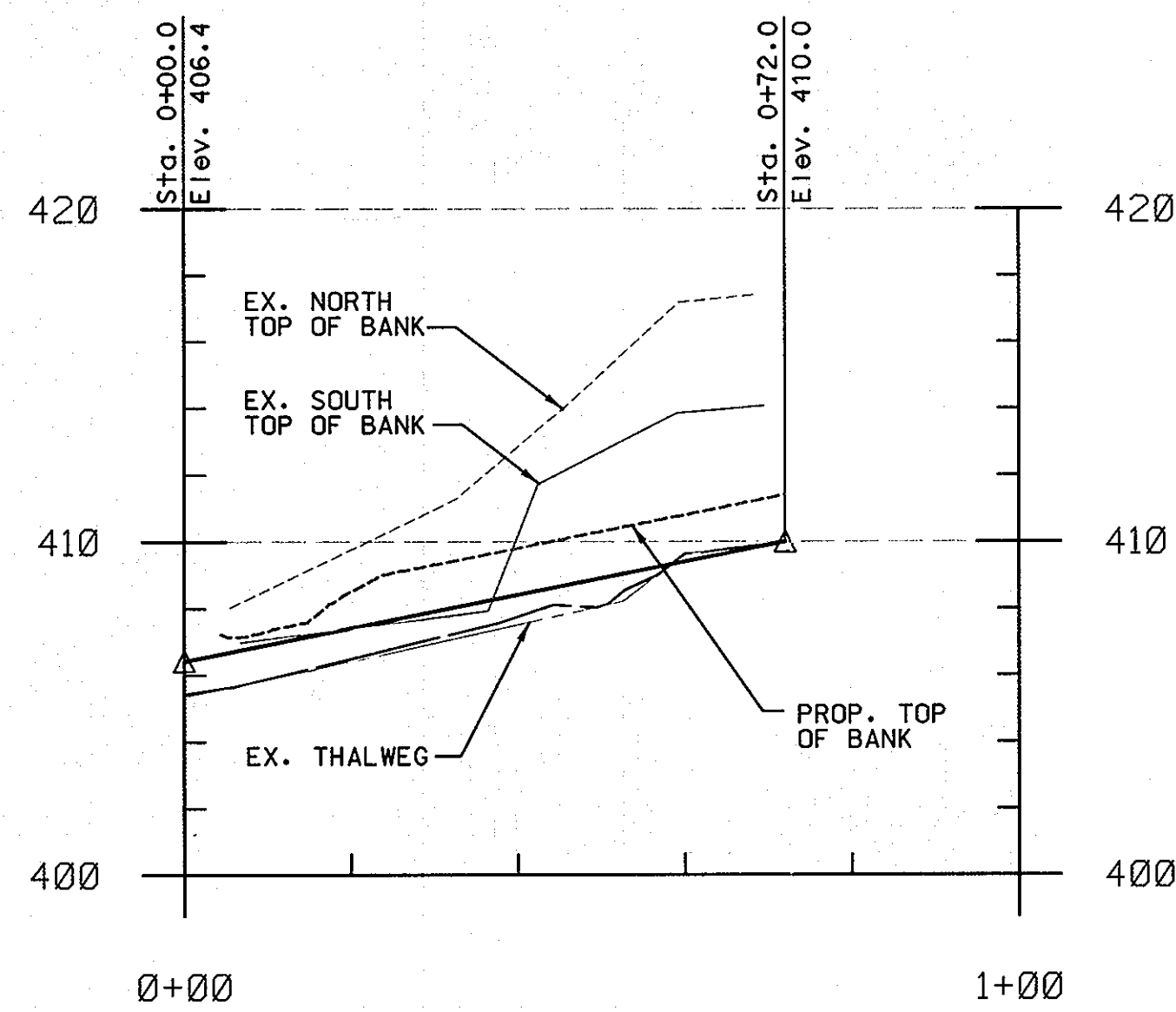


BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-158  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
1700 CHANDLER HILLS ROAD  
COLUMBIA, MD 21046  
410-316-7800

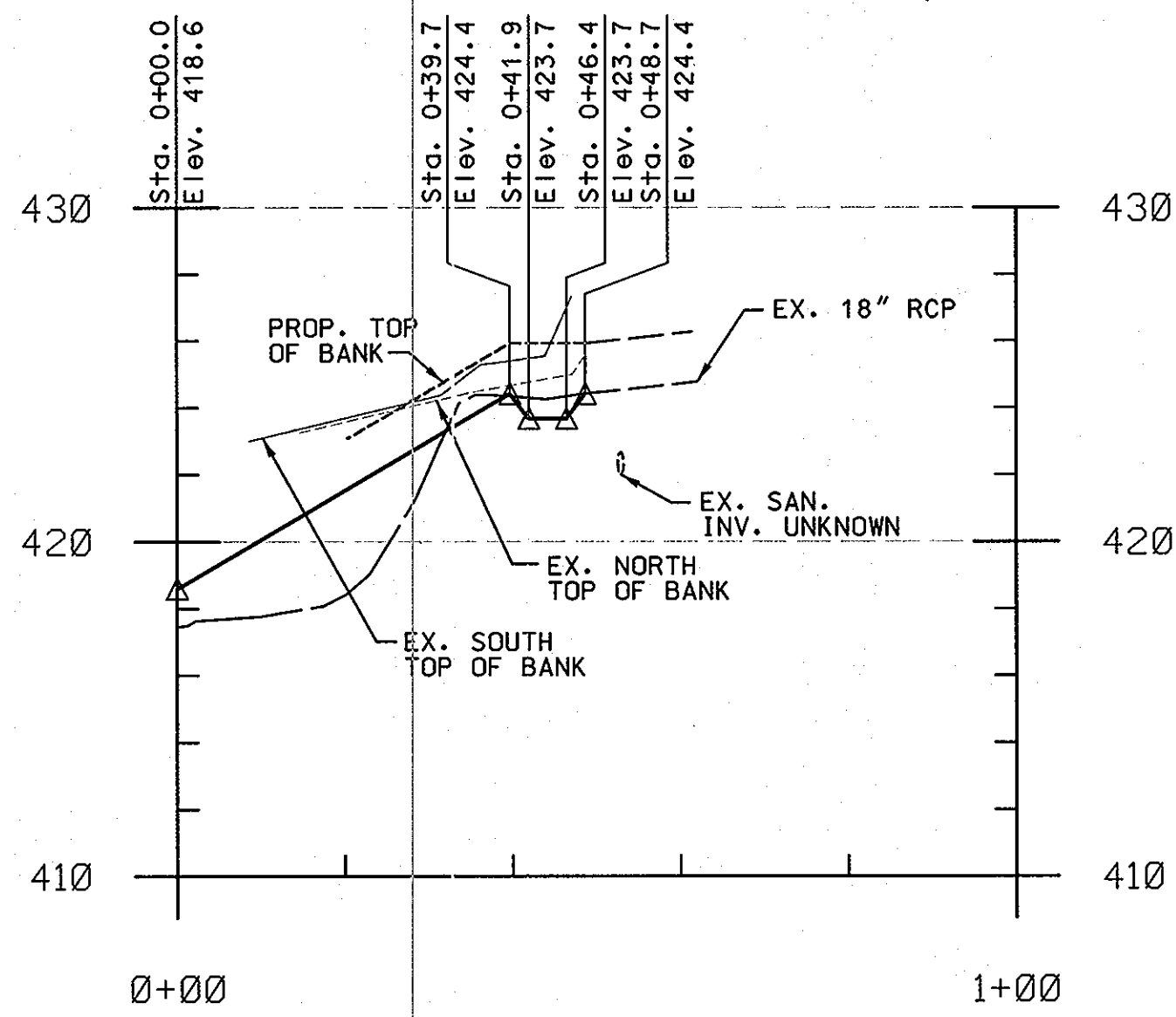
PROFILE SHEET

SCALE:	HOR. 1"=20'
	VERT. 1"=5'
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-043223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

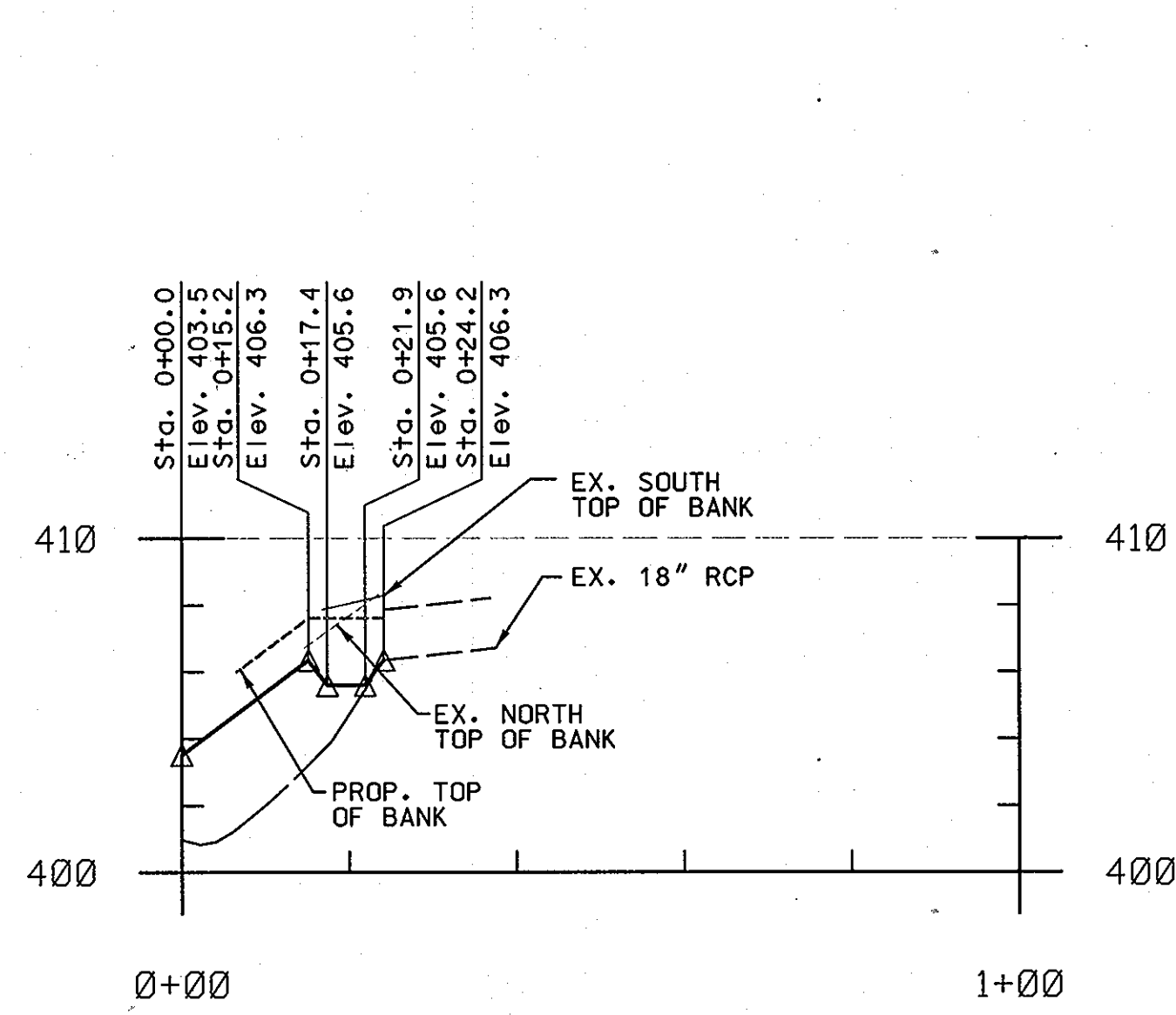




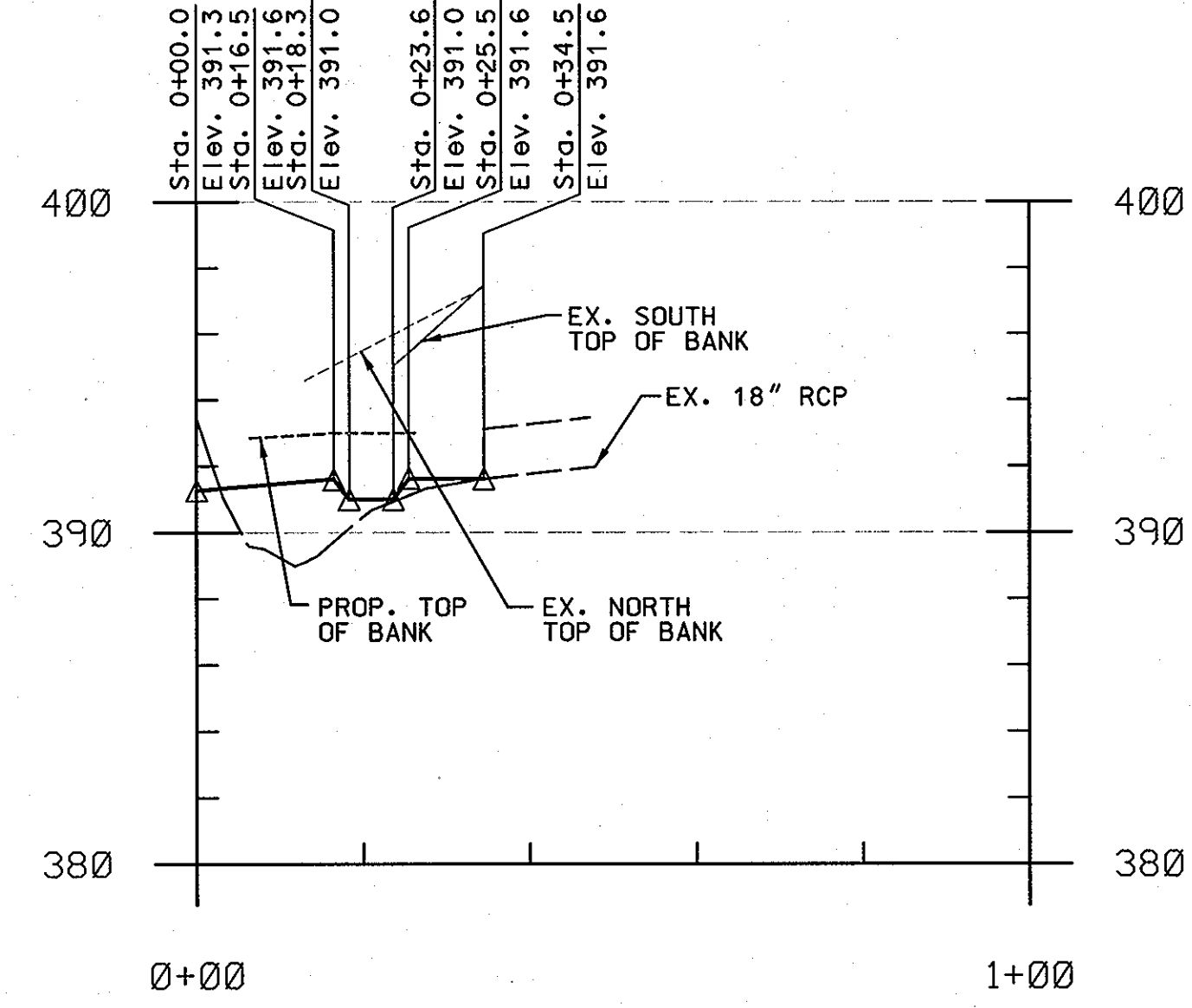
TRIBUTARY 1



OUTFALL A

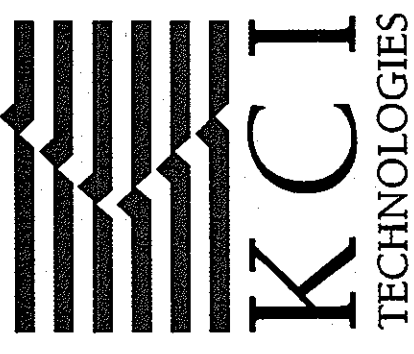


OUTFALL B



OUTFALL C

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com



BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4 AREAS 1,2,3  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 1700 CHANLOR HILLS ROAD  
 COLLEGE PARK, MD 20740  
 PARCEL 883, TAX MAP 30, ZONING R-36, ELECTION DISTRICT 01

PROFILE SHEET

SCALE:	HOR. 1"=20' VERT. 1"=5'
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-043223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

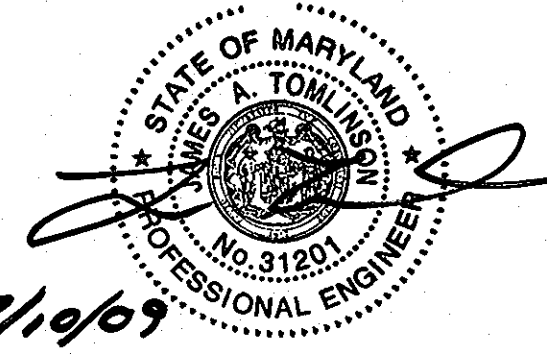
*[Signature]*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 7/2/09

*[Signature]*  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 8/19/09

*[Signature]*  
 DIRECTOR DATE 2/21/09

**LEGEND**

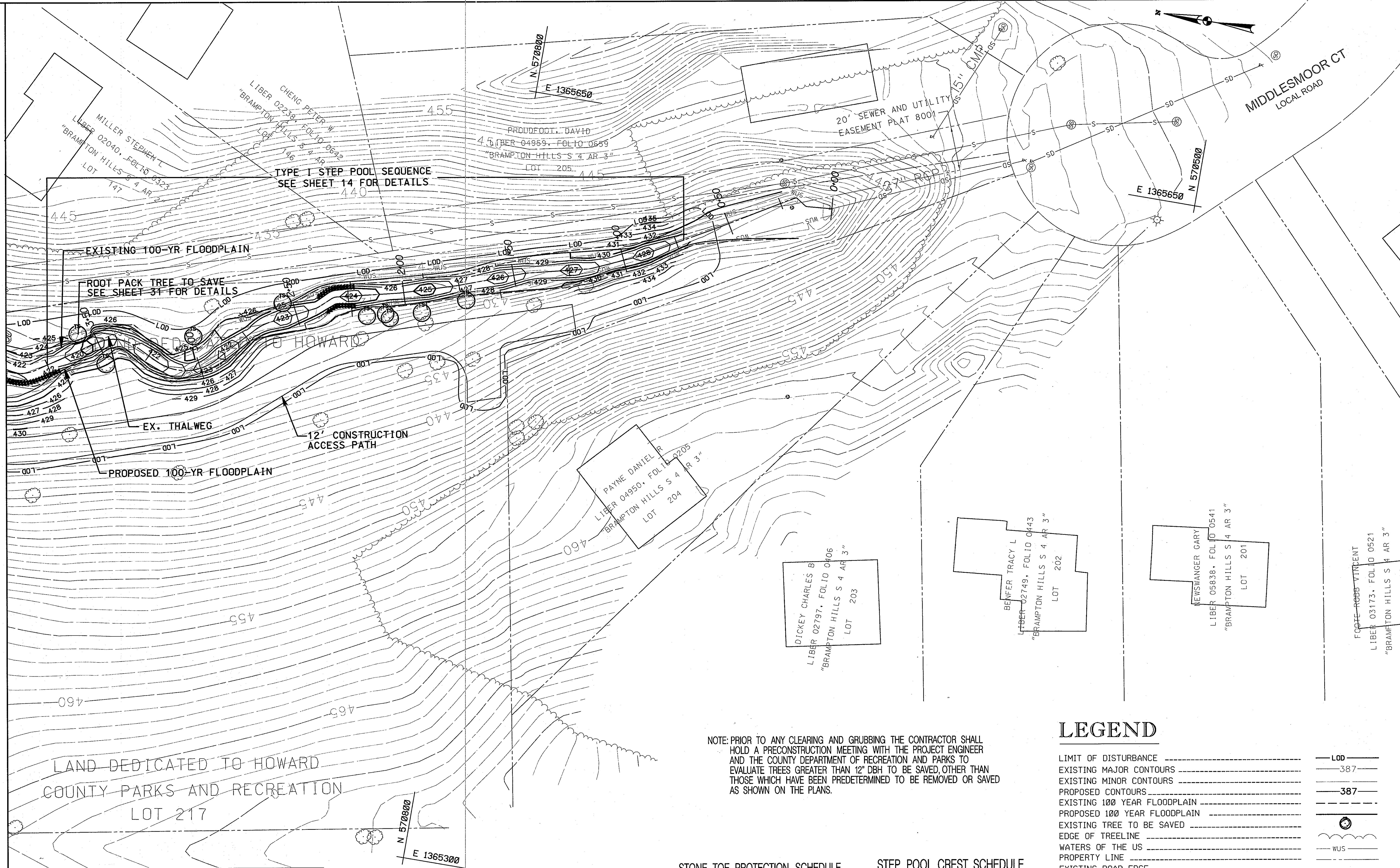
EXISTING GROUND	—————
PROPOSED GRADE	—————



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

PLOTTED: 12:08 PM on Thursday, July 06, 2009  
 FILE: H:\2004\01\04\3223.25\08.dwg  
 PLOT: 31201.dwg

MATCHLINE C-C



**LEGEND**

- LIMIT OF DISTURBANCE ----- LOD -----
- EXISTING MAJOR CONTOURS ----- 387 -----
- EXISTING MINOR CONTOURS ----- 387 -----
- PROPOSED CONTOURS ----- 387 -----
- EXISTING 100 YEAR FLOODPLAIN -----
- PROPOSED 100 YEAR FLOODPLAIN -----
- EXISTING TREE TO BE SAVED -----
- EDGE OF TREELINE -----
- WATERS OF THE US ----- WUS -----
- PROPERTY LINE -----
- EXISTING ROAD EDGE -----
- EXISTING SEWER LINE ----- S -----
- EXISTING SEWER MANHOLE ----- SM -----
- EXISTING STORM DRAIN ----- SD -----
- EXISTING STORM DRAIN MANHOLE ----- SM -----
- EXISTING FENCE -----
- IMBRICATED BANK PROTECTION -----
- SINGLE STONE TOE PROTECTION -----
- DOUBLE STONE TOE PROTECTION -----
- RIFFLE GRADE CONTROL -----
- EXISTING EASEMENT LINE -----

NOTE: PRIOR TO ANY CLEARING AND GRUBBING THE CONTRACTOR SHALL HOLD A PRECONSTRUCTION MEETING WITH THE PROJECT ENGINEER AND THE COUNTY DEPARTMENT OF RECREATION AND PARKS TO EVALUATE TREES GREATER THAN 12" DBH TO BE SAVED, OTHER THAN THOSE WHICH HAVE BEEN PREDETERMINED TO BE REMOVED OR SAVED AS SHOWN ON THE PLANS.

**STONE TOE PROTECTION SCHEDULE**

DOUBLE		
FROM STATION	TO STATION	OFFSET*
2+22	2+37.8	R
2+22	2+37.8	L
3+70.8	4+05	L

\* FACING DOWNSTREAM, MEASURED FROM BASELINE OF CONSTRUCTION

**STEP POOL CREST SCHEDULE**

STATION **	
0+72.5	2+39
1+05.8	2+72
1+39	3+05
1+72	3+38.5
2+05.5	3+71

\*\* INDICATES CENTER OF CREST WIDTH SEE PROFILE FOR EXTENT

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com

**BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1, 2, 3  
CAPITAL PROJECT D-188**

HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
10000 WOODMILL ROAD  
COLUMBIA, MD 21046

**GRADING PLAN**

SCALE: 1" = 20'  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D1158  
PERMIT ISSUE:  
CONSTRUCTION ISSUE:

PLOTTED: 11:20 AM on Thursday, July 09, 2009  
BY: Harmony Miller, Division: 0109, Nature of Resources Management  
FILE: M:\3223\01-043223.25\Drawings\grd188.dwg

7/10/09

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

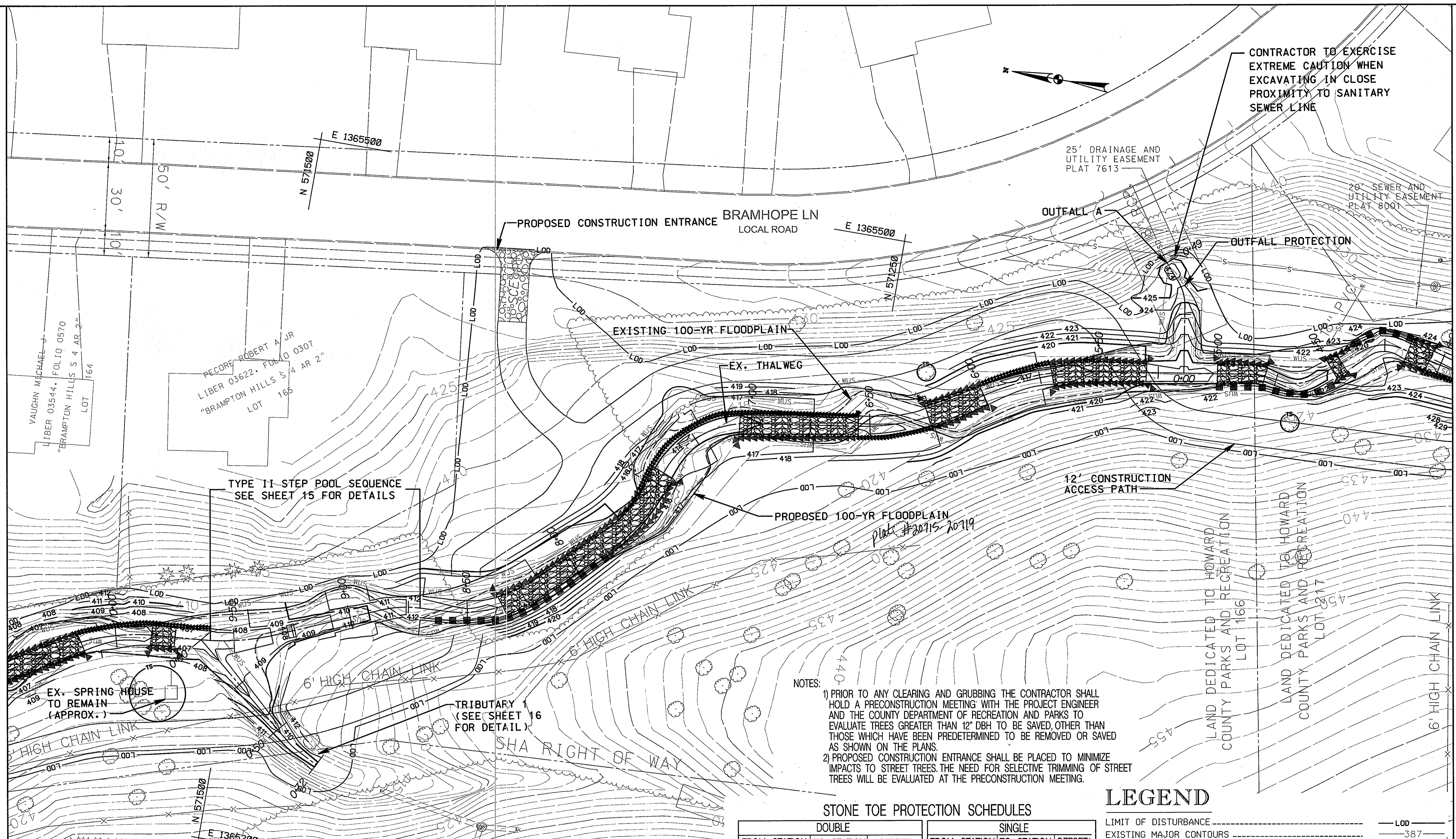
*Cindy Hunt* 8/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION 4 DATE

*Cindy Hunt* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Harold M. Cagle* 8/2/09  
DIRECTOR DATE

MATCHLINE B-B

MATCHLINE C-C



CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN EXCAVATING IN CLOSE PROXIMITY TO SANITARY SEWER LINE

25' DRAINAGE AND UTILITY EASEMENT PLAT 7613

20' SEWER AND UTILITY EASEMENT PLAT 8001

PROPOSED CONSTRUCTION ENTRANCE BRAMHOPE LN LOCAL ROAD

OUTFALL A

OUTFALL PROTECTION

EXISTING 100-YR FLOODPLAIN

EX. THALWEG

12' CONSTRUCTION ACCESS-PATH

PROPOSED 100-YR FLOODPLAIN

TYPE II STEP POOL SEQUENCE SEE SHEET 15 FOR DETAILS

EX. SPRING HOUSE TO REMAIN (APPROX.)

TRIBUTARY 1 (SEE SHEET 16 FOR DETAIL)

- NOTES:
- 1) PRIOR TO ANY CLEARING AND GRUBBING THE CONTRACTOR SHALL HOLD A PRECONSTRUCTION MEETING WITH THE PROJECT ENGINEER AND THE COUNTY DEPARTMENT OF RECREATION AND PARKS TO EVALUATE TREES GREATER THAN 12" DBH TO BE SAVED, OTHER THAN THOSE WHICH HAVE BEEN PREDETERMINED TO BE REMOVED OR SAVED AS SHOWN ON THE PLANS.
  - 2) PROPOSED CONSTRUCTION ENTRANCE SHALL BE PLACED TO MINIMIZE IMPACTS TO STREET TREES. THE NEED FOR SELECTIVE TRIMMING OF STREET TREES WILL BE EVALUATED AT THE PRECONSTRUCTION MEETING.

LAND DEDICATED TO HOWARD COUNTY PARKS AND RECREATION LOT 166

LAND DEDICATED TO HOWARD COUNTY PARKS AND RECREATION LOT 217

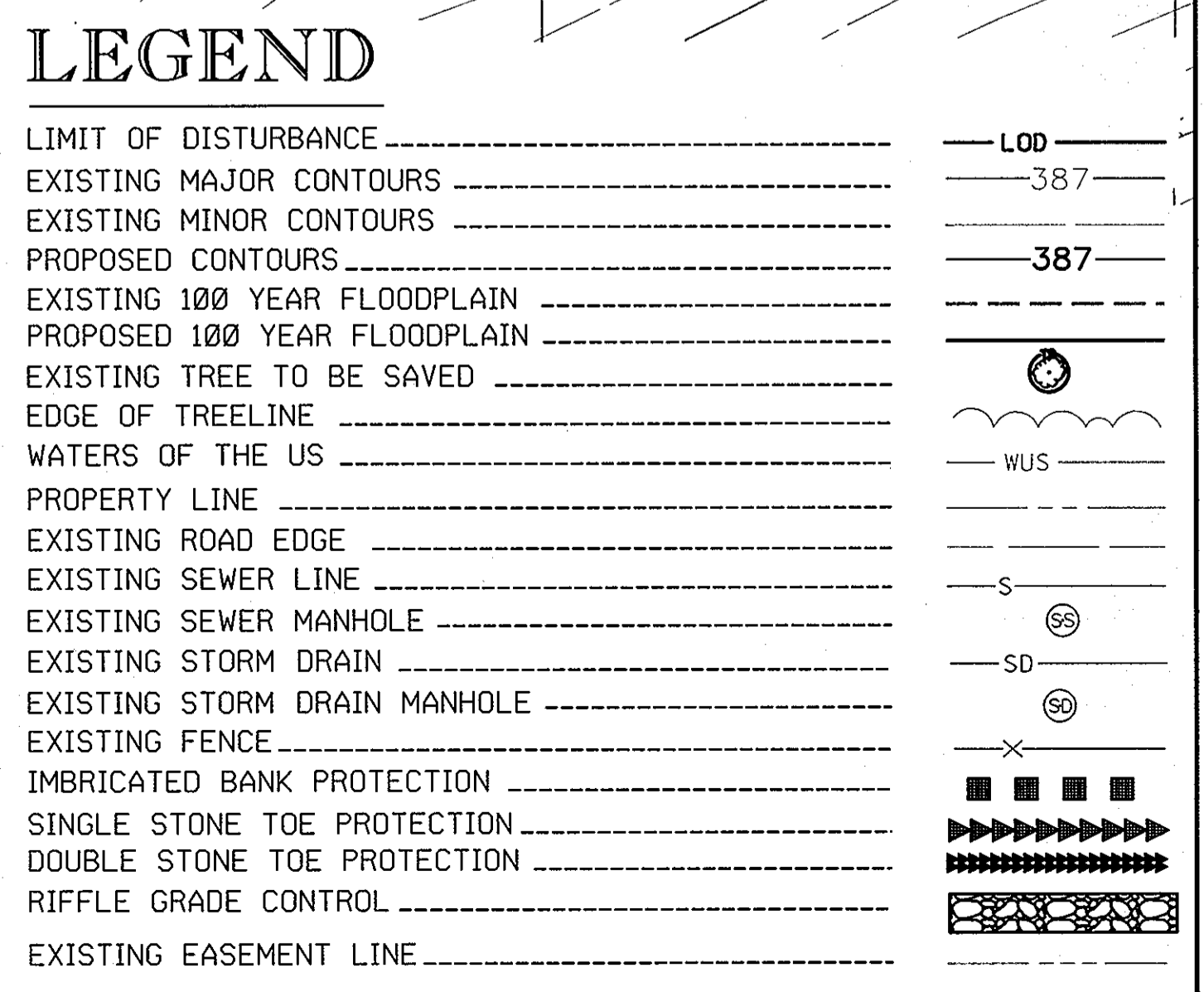
RIFLE GRADE CONTROL SCHEDULE		STEP POOL CREST SCHEDULE	
FROM STATION	TO STATION	STATION **	
4+05	4+15	8+71.5	
4+45	4+50	8+86.5	
4+80	5+00	9+01.5	
5+30	5+70	9+16.5	
6+00	6+25	9+31.5	
6+55	7+10	9+46.5	
7+45	8+35	9+61.5	
9+75	9+85		
10+15	10+65		

STONE TOE PROTECTION SCHEDULES					
DOUBLE			SINGLE		
FROM STATION	TO STATION	OFFSET*	FROM STATION	TO STATION	OFFSET*
0+72	4+05	L	4+05	4+15	R
5+70	6+00	R	4+05	4+15	L
6+25	6+55	L	4+35	4+50	R
6+55	7+55	R	4+45	4+55	L
9+60	10+15	R	4+80	5+00	R
			5+30	5+70	R
			5+30	5+70	L
			6+00	6+25	R
			6+00	6+25	L
			6+55	7+10	L
			7+45	7+85	L
			7+55	8+35	R
			9+75	9+85	L
			10+15	10+65	R
			10+15	10+65	L

\* FACING DOWNSTREAM, MEASURED FROM THE BASELINE OF CONSTRUCTION

IMBRICATED WALL SCHEDULE		
FROM STATION	TO STATION	OFFSET*
4+15	4+35	R
4+55	5+00	L
7+85	8+65	L

\* FACING DOWNSTREAM, MEASURED FROM BASELINE OF CONSTRUCTION SEE PROFILE FOR TOP ELEVATION



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*7/19/09*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*8/19/09*  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

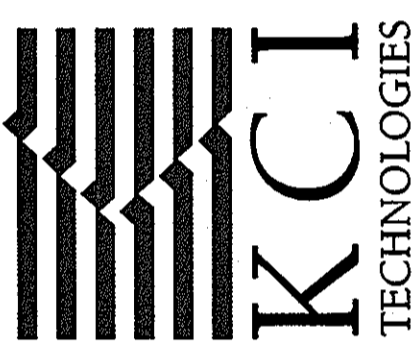
*8/21/09*  
 DIRECTOR DATE

PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31281, EXPIRATION DATE JANUARY 24, 2011

NO.	REVISIONS DESCRIPTION	DATE

KCFILE: M\ 2004 \ 01043223.25 \

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 WWW.KCI.COM



BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4 AREAS 1, 2, 3  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
 100 OAKLAND HILLS ROAD  
 COLUMBIA, MD 21046  
 (410) 316-7800

## GRADING PLAN

SCALE: 1" = 20'  
 DATE: OCTOBER, 2008  
 KCI JOB NO.: 01-043223.25  
 CAPITAL PROJECT NO.: D1158  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:





N 572750  
E 1365200

LAND DEDICATED TO HOWARD  
COUNTY PARKS AND RECREATION  
P/O LOT 116

TYPE II STEP POOL SEQUENCE  
SEE SHEET 15 FOR DETAILS

EX. THALWEG

APPROXIMATE LOCATION  
OF EXISTING TREE TO SAVE

12' CONSTRUCTION  
ACCESS PATH

PROPOSED 100-YR  
FLOODPLAIN  
(plat # 20115-20119)

EXISTING 100-YR FLOODPLAIN

LAND DEDICATED TO HOWARD  
COUNTY PARKS AND RECREATION  
P/O LOT 116

N 572750  
E 1365000

E 1365000  
N 572250

### LEGEND

- LIMIT OF DISTURBANCE LOD
- EXISTING MAJOR CONTOURS 387
- EXISTING MINOR CONTOURS 387
- PROPOSED CONTOURS 387
- EXISTING 100 YEAR FLOODPLAIN
- PROPOSED 100 YEAR FLOODPLAIN
- EXISTING TREE TO BE SAVED
- EDGE OF TREELINE
- EDGE OF WETLAND
- WATERS OF THE US WUS
- PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE
- EXISTING FENCE
- IMBRICATED BANK PROTECTION
- SINGLE STONE TOE PROTECTION
- DOUBLE STONE TOE PROTECTION
- RIFFLE GRADE CONTROL
- EXISTING EASEMENT LINE

NOTE: PRIOR TO ANY CLEARING AND GRUBBING THE CONTRACTOR SHALL HOLD A PRECONSTRUCTION MEETING WITH THE PROJECT ENGINEER AND THE COUNTY DEPARTMENT OF RECREATION AND PARKS TO EVALUATE TREES GREATER THAN 12" DBH TO BE SAVED, OTHER THAN THOSE WHICH HAVE BEEN PREDETERMINED TO BE REMOVED OR SAVED AS SHOWN ON THE PLANS.

#### RIFFLE GRADE CONTROL SCHEDULE

FROM STATION	TO STATION
17+15	17+30
17+65	18+05
18+35	18+90
19+20	19+85
20+10	20+25
21+15	21+29

#### STONE TOE PROTECTION SCHEDULES

DOUBLE		
FROM STATION	TO STATION	OFFSET*
16+85	17+15	L
17+15	18+35	R
18+90	19+33	L
19+70	20+25	R
20+10	20+25	L

SINGLE		
FROM STATION	TO STATION	OFFSET*
17+15	17+30	L
17+65	18+05	L
18+35	18+90	R
18+35	18+90	L
19+33	19+85	L
19+18	19+70	R
21+05	21+25	R
21+05	21+29	L

#### STEP POOL CREST SCHEDULE

STATION **
20+26.5
20+41.5
20+56.5
20+71.5
20+86.5
21+01.5

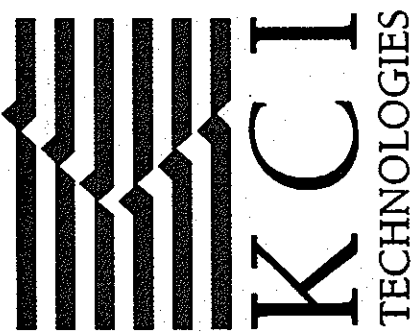
\*FACING DOWNSTREAM, MEASURED FROM BASELINE OF CONSTRUCTION

\*FACING DOWNSTREAM, MEASURED FROM BASELINE OF CONSTRUCTION

\*\* INDICATES CENTER OF CREST WIDTH SEE PROFILE FOR EXTENT

MATCHLINE A-A

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 123  
CAPITAL PROJECT D-158  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
ESTUARINE MANAGEMENT DIVISION  
870 COLUMBIA RD. 2ND FLOOR  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
1700 CHANDLER WALK ROAD  
COLUMBIA, MD 21046  
PARCEL 885 TAX MAP 36 ZONING R-30 SECTION DISTRICT 01

### GRADING PLAN

SCALE: 1" = 20'  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D158  
PERMIT ISSUE:  
CONSTRUCTION ISSUE:

PLOTTED: 11/20/07 PM on Thursday, July 08, 2008  
BY: Harmony Miller, Division: 009 Natural Resources Management  
FILE: M:\2007-2008\232325\232325.dwg, 232325.dwg



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

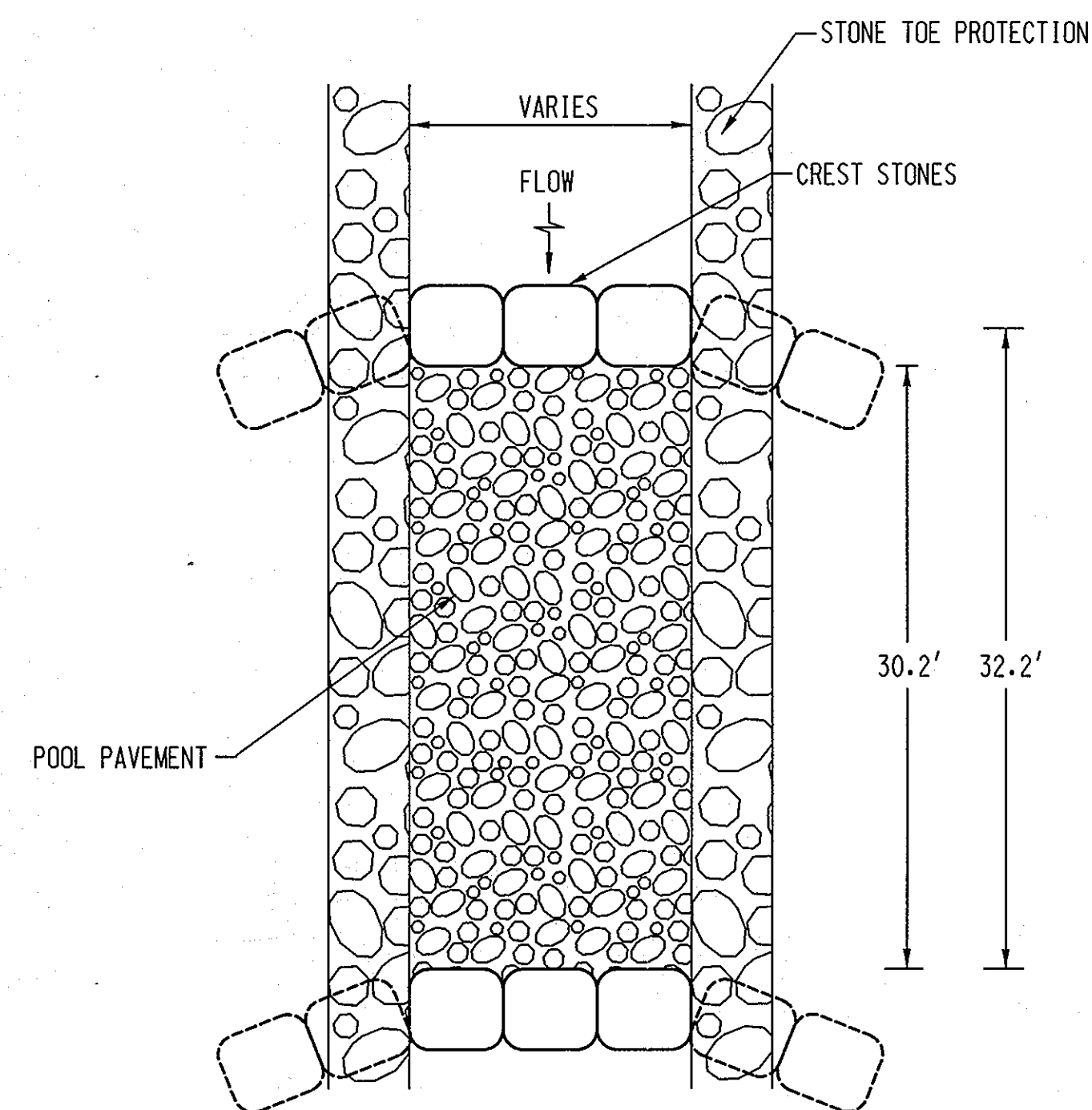
*John P. ...* 7/22/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy ...* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Paul ...* 8/21/09  
DIRECTOR DATE

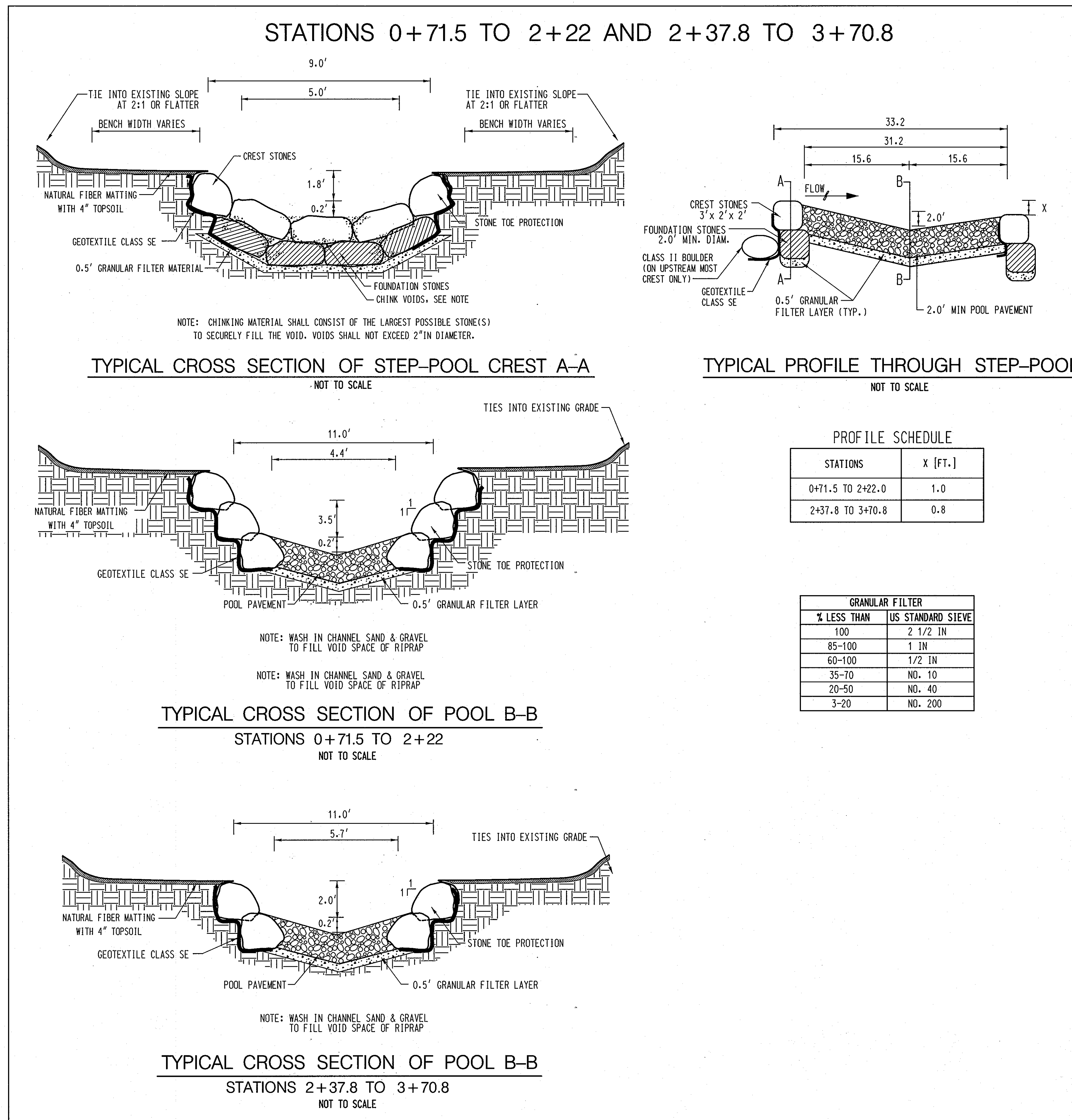
11/19/09  
PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011





NOTE: WASH IN CHANNEL SAND & GRAVEL TO FILL VOID SPACE OF POOL PAVEMENT

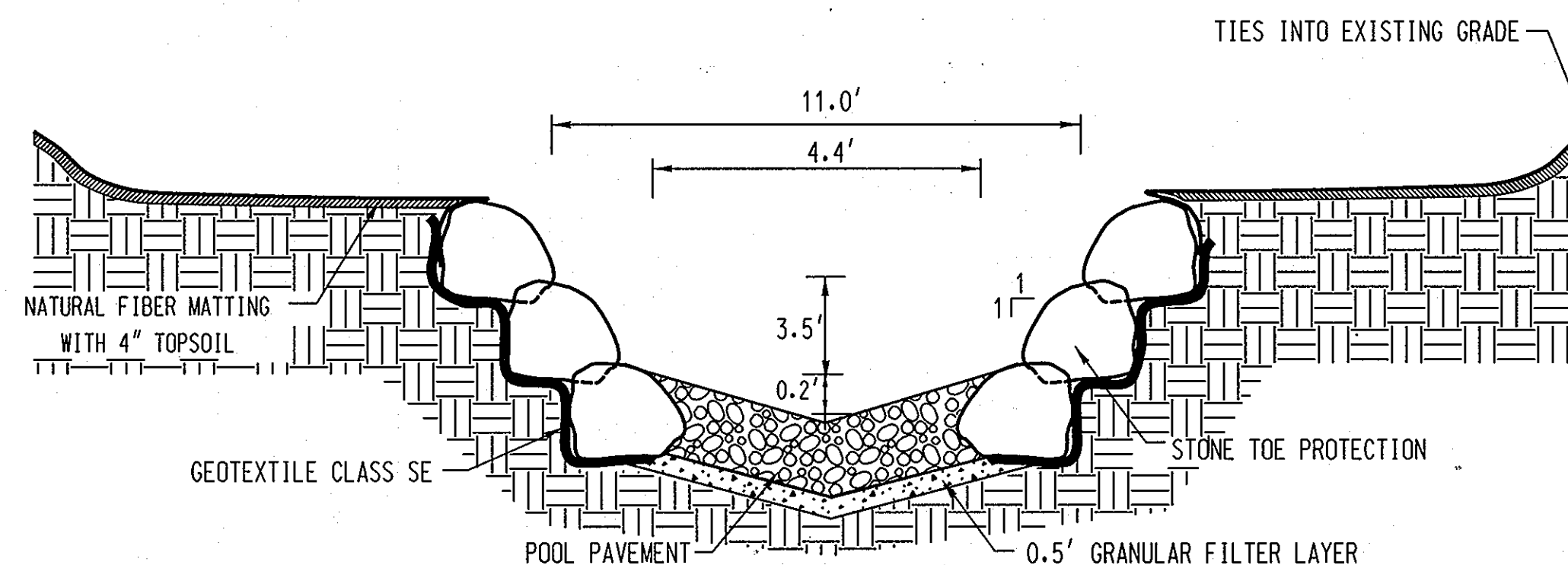
PLAN VIEW OF TYPICAL STEP-POOL SYSTEM  
STATIONS 0+71.5 TO 2+22 AND 2+37.8 TO 3+70.8  
NOT TO SCALE



NOTE: CHINKING MATERIAL SHALL CONSIST OF THE LARGEST POSSIBLE STONE(S) TO SECURELY FILL THE VOID. VOIDS SHALL NOT EXCEED 2" IN DIAMETER.

TYPICAL CROSS SECTION OF STEP-POOL CREST A-A  
NOT TO SCALE

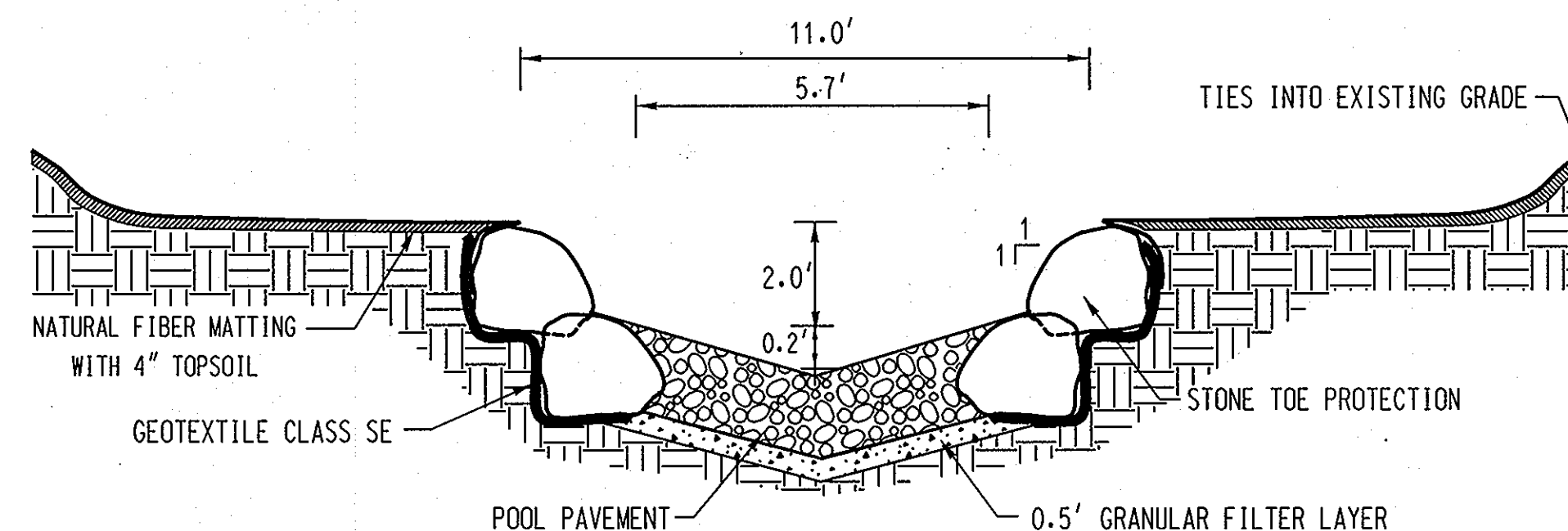
TYPICAL PROFILE THROUGH STEP-POOL  
NOT TO SCALE



NOTE: WASH IN CHANNEL SAND & GRAVEL TO FILL VOID SPACE OF RIPRAP

NOTE: WASH IN CHANNEL SAND & GRAVEL TO FILL VOID SPACE OF RIPRAP

TYPICAL CROSS SECTION OF POOL B-B  
STATIONS 0+71.5 TO 2+22  
NOT TO SCALE



NOTE: WASH IN CHANNEL SAND & GRAVEL TO FILL VOID SPACE OF RIPRAP

TYPICAL CROSS SECTION OF POOL B-B  
STATIONS 2+37.8 TO 3+70.8  
NOT TO SCALE

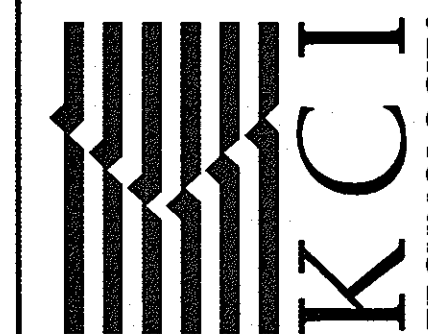
PROFILE SCHEDULE

STATIONS	X [FT.]
0+71.5 TO 2+22.0	1.0
2+37.8 TO 3+70.8	0.8

GRANULAR FILTER	
% LESS THAN	US STANDARD SIEVE
100	2 1/2 IN
85-100	1 IN
60-100	1/2 IN
35-70	NO. 10
20-50	NO. 40
3-20	NO. 200

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
WWW.KCI.COM



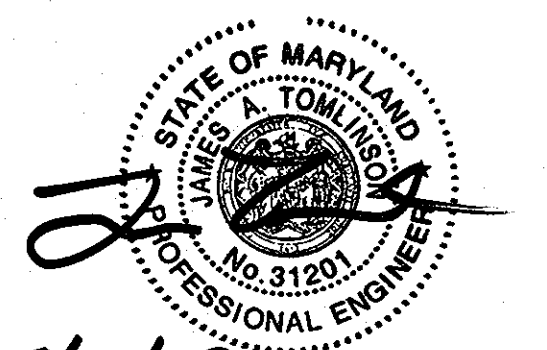
BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
STORMWATER MANAGEMENT DIVISION  
815 COLUMBIA AVE., 2ND FLOOR  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
700 CONARD MILLS ROAD  
COLUMBIA, MD 21046  
410-316-7800  
PARCEL 380.70X MAP 30.220103 R-36 ELECTION DISTRICT 01

STREAM  
DETAILS AND  
TYPICAL  
SECTIONS

SCALE:	NOT TO SCALE
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-04-3223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SHEET NO.: 14 OF 35

STATE CONTRACT NO. H04085174 SDP-09-009  
P.A. PROJECT No. STP-3(185)E



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*John Damm* 7/20/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

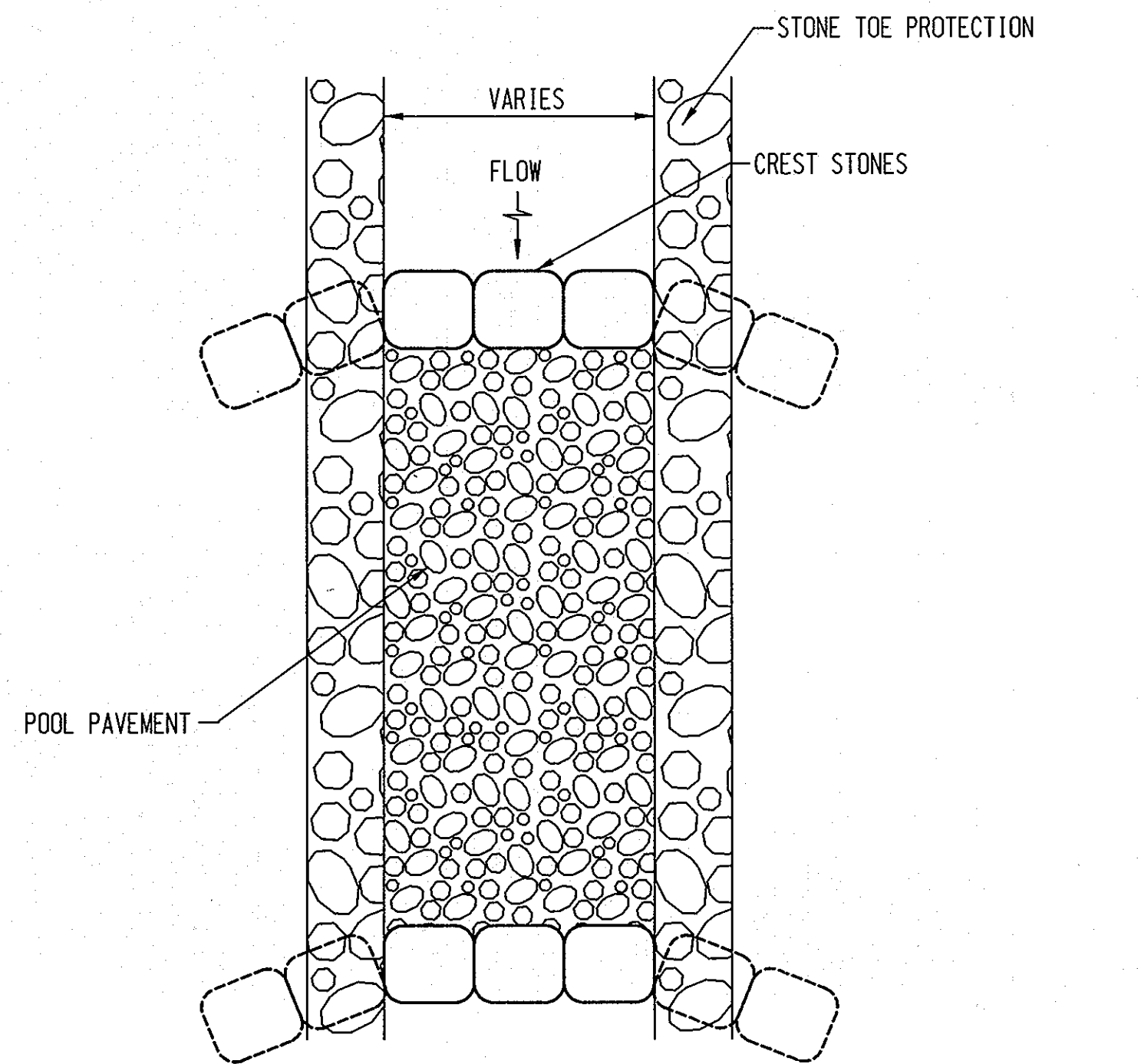
*Cindy Hamt* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*David W. Long* 8/21/09  
DIRECTOR DATE

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

PLOTTED: 12:08 PM on Thursday, July 09, 2009  
FILE: M:\2004\01\04\3223.25\Drawings\SDP02.dwg Management

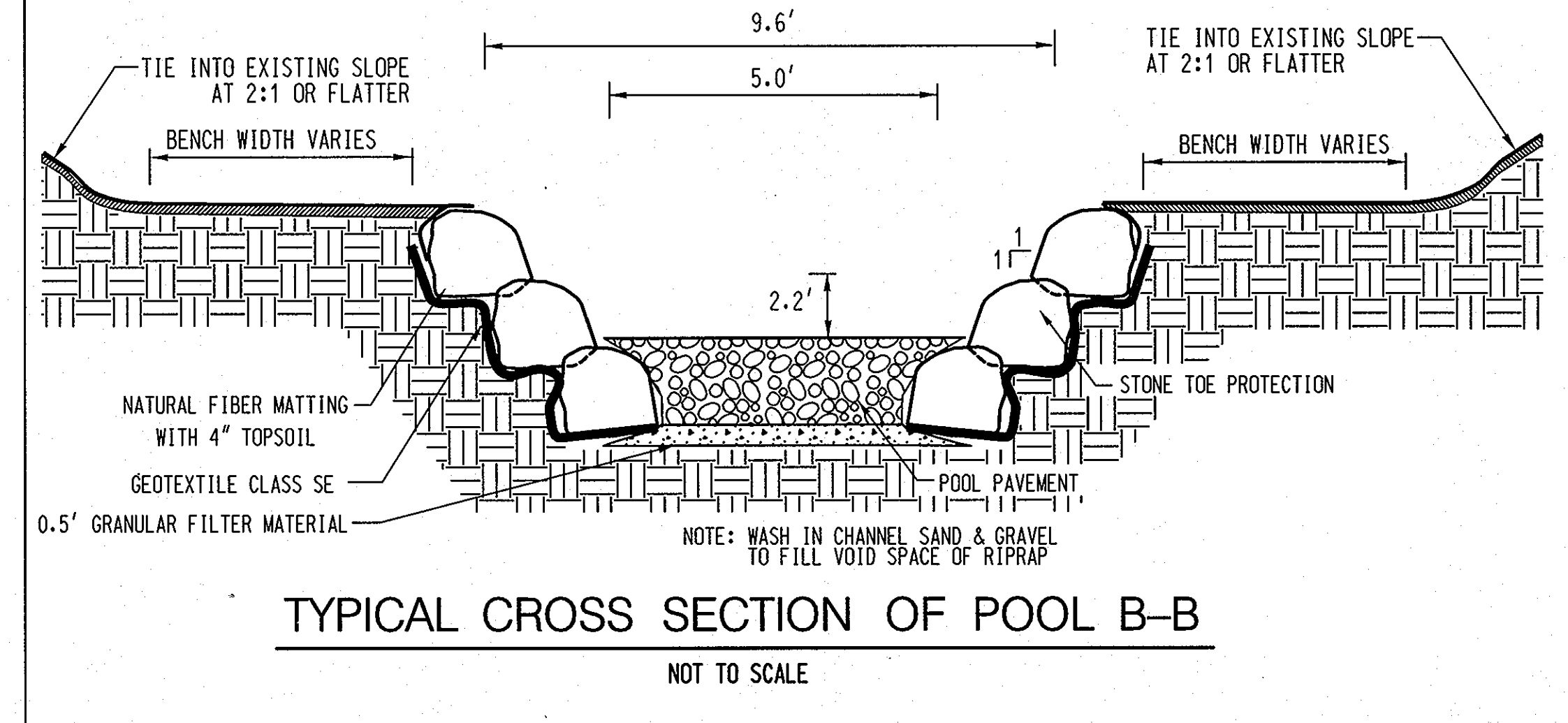
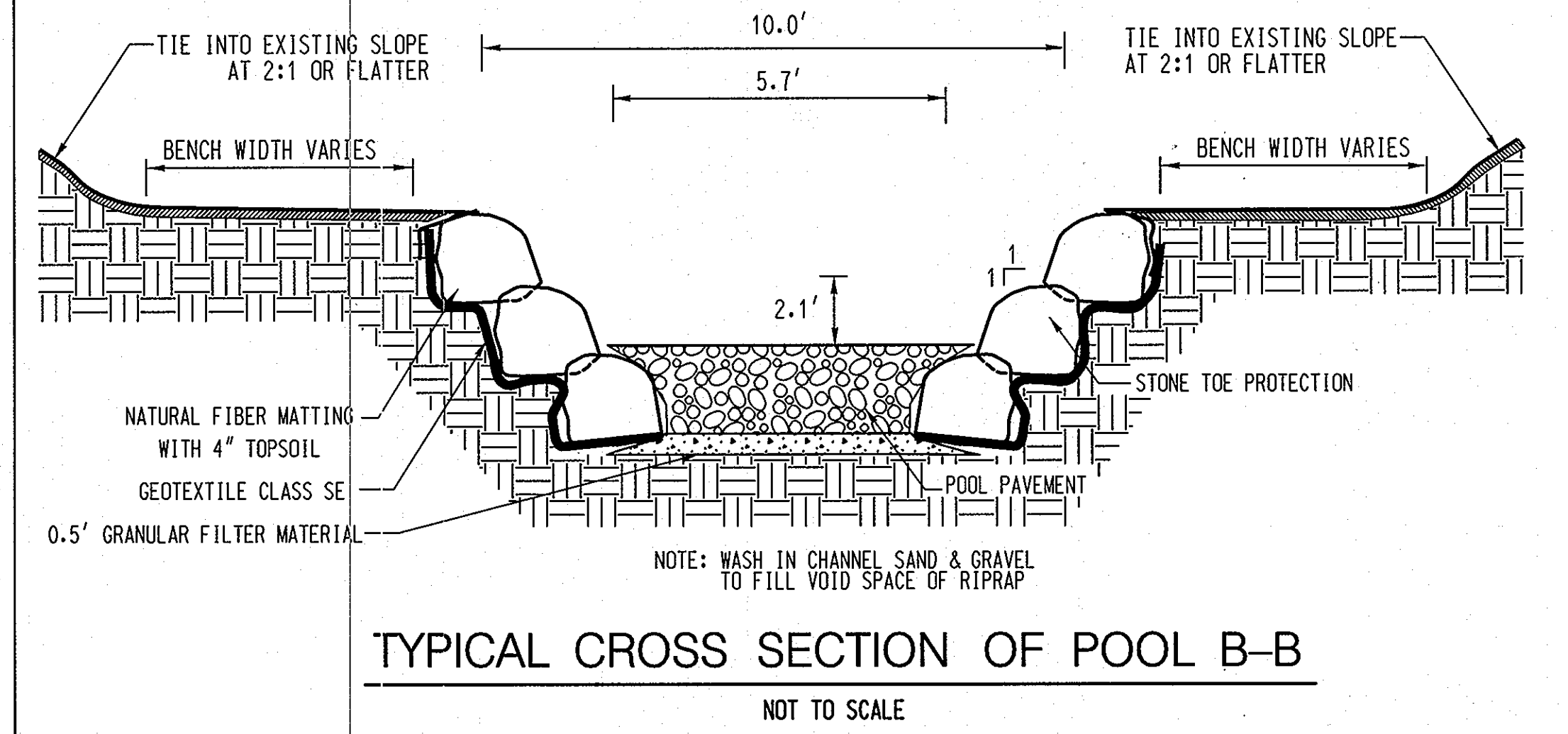
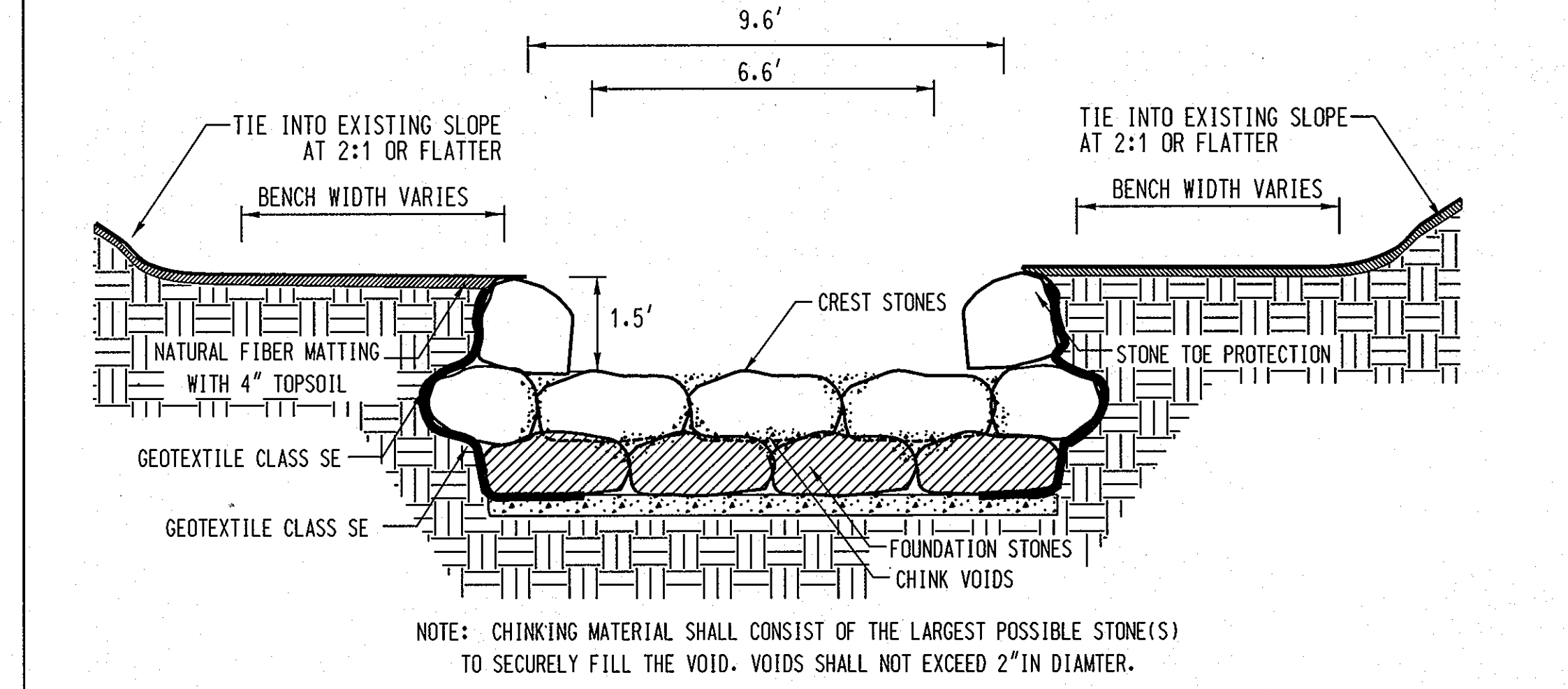
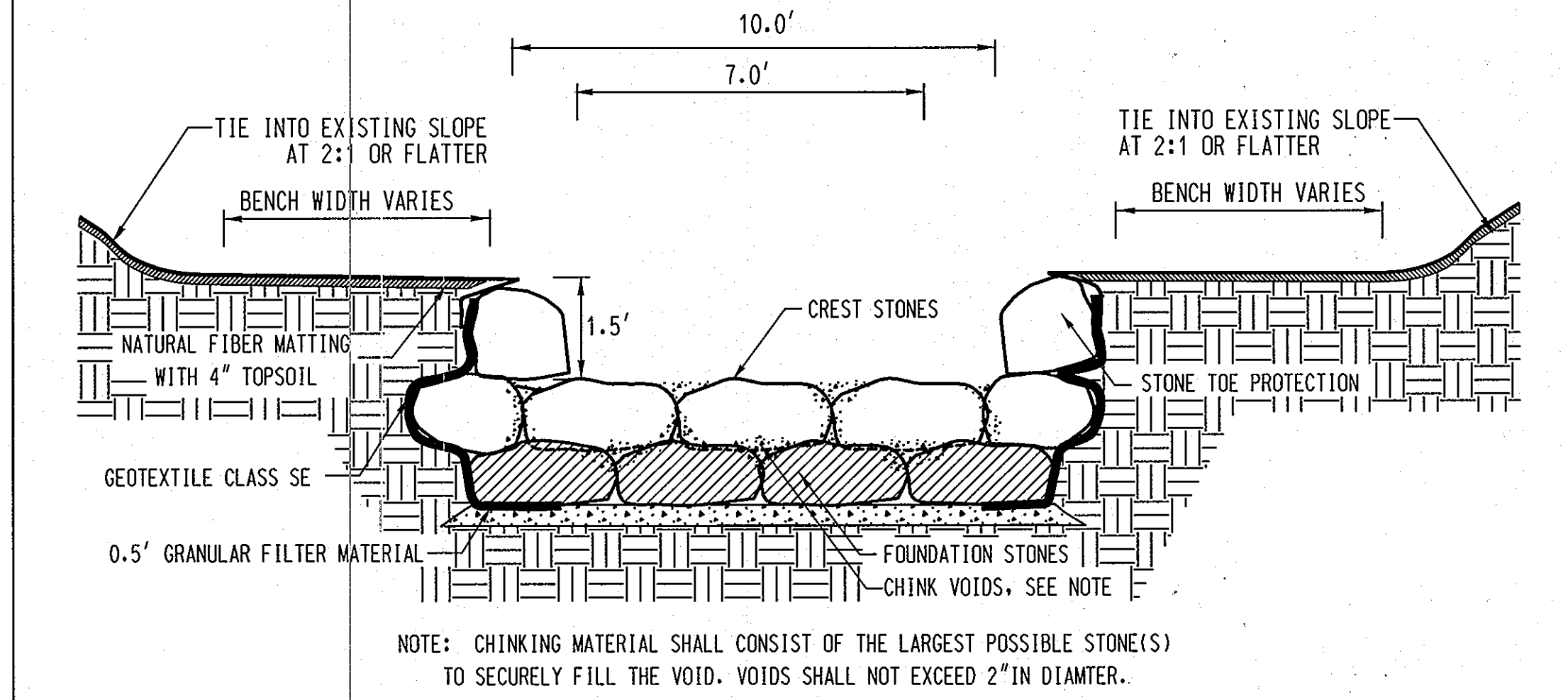
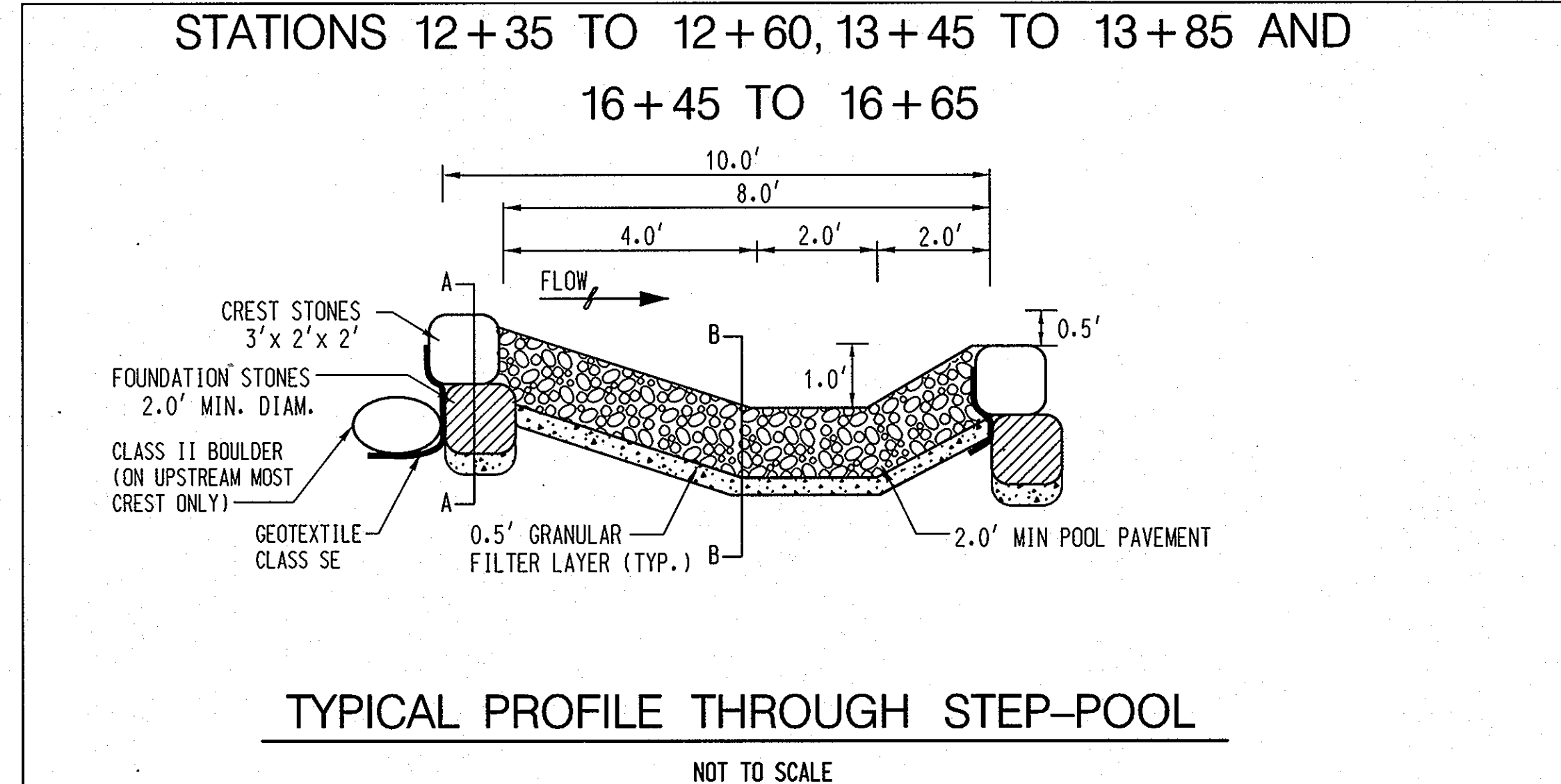
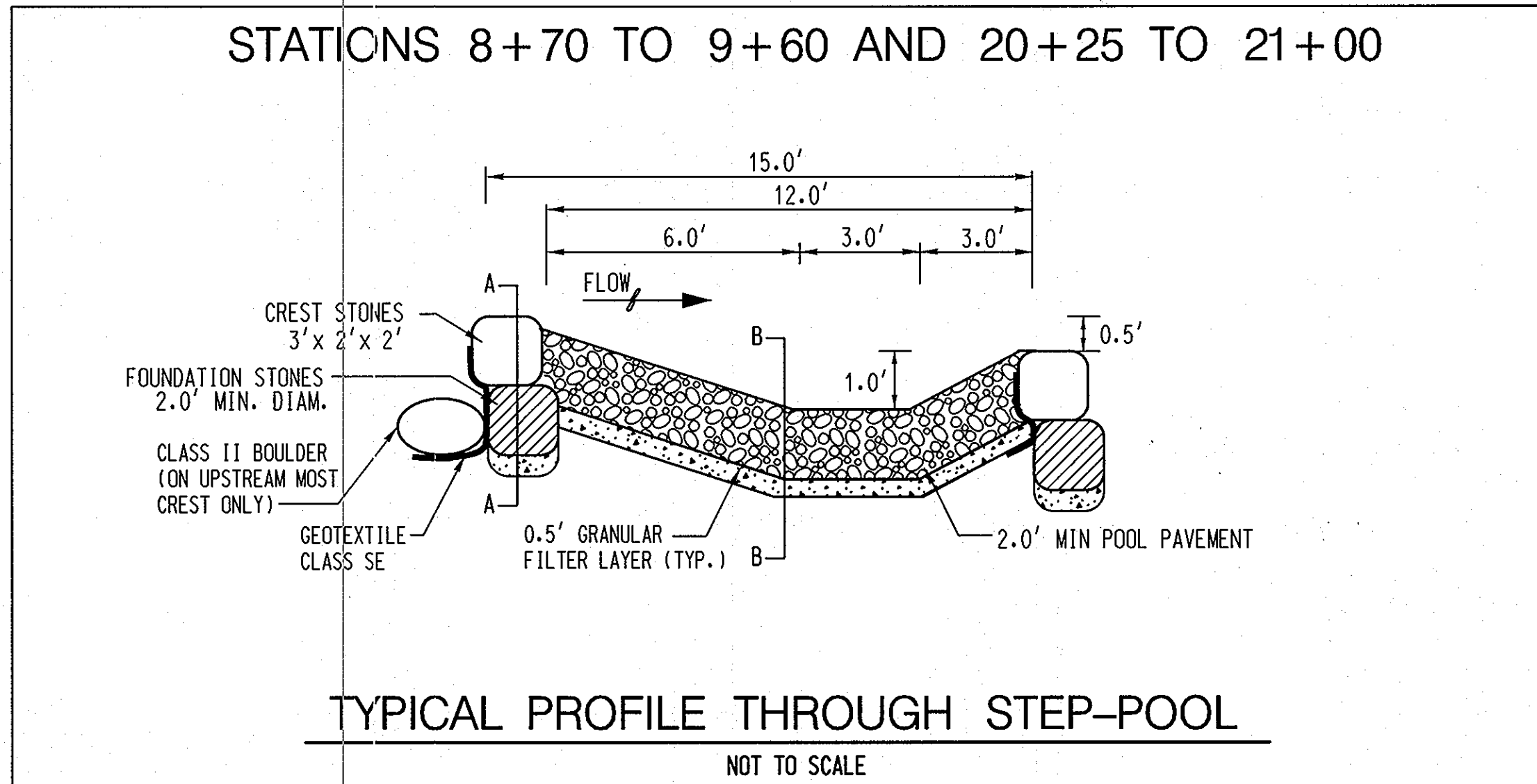
# TYPE II STEP POOL DETAILS



NOTE: WASH IN CHANNEL SAND & GRAVEL TO FILL VOID SPACE OF POOL PAVEMENT

NOTE: POOL LENGTHS VARY. SEE PROFILES THIS SHEET FOR LENGTHS.

PLAN VIEW OF TYPICAL STEP-POOL SYSTEM  
NOT TO SCALE



PLOTED: 12:08 PM on Thursday, July 06, 2009  
FILE: \\MS2004\0104\3223.25\Drawings\010303.dwg

7/10/09

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Michael R. ...* 7/21/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*... ..* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*... ..* 8/21/09  
DIRECTOR DATE

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com

KCI TECHNOLOGIES

BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-158  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
500 COLUMBIA AVENUE  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
1200 CHANDLER HILLS ROAD  
COLUMBIA, MD 21046  
PARCEL 989, TAX MAP 98, ZONING R-30, ELECTION DISTRICT 01

STREAM DETAILS AND TYPICAL SECTIONS

SCALE:	NOT TO SCALE
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-043223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

SHEET NO.: 15 OF 35

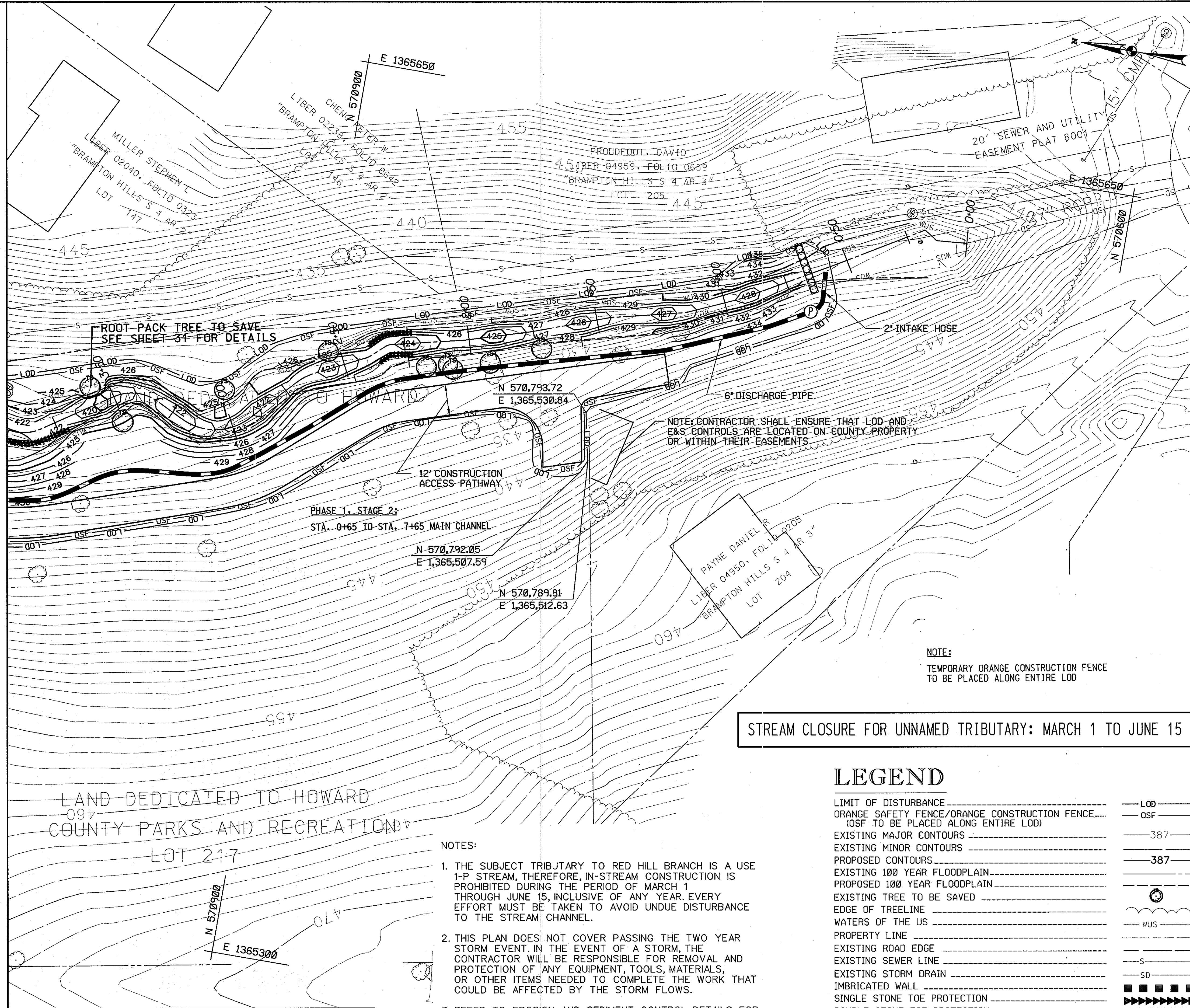








MATCHLINE C-C



- ### SEQUENCE OF CONSTRUCTION
1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION (410)-313-1880 AND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION (410)-537-3510 AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING ANY WORK.
  2. OBTAIN GRADING AND ALL NECESSARY PERMITS FOR CONSTRUCTION FROM THE COUNTY AT THE PRE-CONSTRUCTION MEETING.
  3. CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE COUNTY PROJECT MANAGER, HSCD INSPECTOR, A REPRESENTATIVE FROM MARYLAND DEPARTMENT OF ENVIRONMENT, HOWARD SOIL CONSERVATION DISTRICT, HOWARD COUNTY CONSTRUCTION INSPECTION, BUREAU OF UTILITY, AND MD SHA.
  4. CONTRACTOR SHALL TAKE EXTRA PRECAUTION FOR TRANSPORTING MATERIALS FROM THE STORAGE AREA TO THE CONSTRUCTION SITE. CONTRACTOR SHALL MINIMIZE THE IMPACT ON EXISTING TREES, WETLANDS, U.S. WATERS, EXISTING UTILITY AND OTHER EXISTING FEATURES.
  5. CONTRACTOR SHALL CAUTION THE TRUCK DRIVERS TO TAKE EXTRA PRECAUTION WHILE DRIVING ON THE TEMPORARY ACCESS PATHWAY SO THAT IT CAN MINIMIZE THE IMPACTS ON STREAMBED, SIDE SLOPES, EXISTING TREES, U.S. WATERS, AND ANY EXISTING FEATURES.
  6. ALL NECESSARY EASEMENTS AND/OR RIGHT OF WAYS SHALL BE REQUIRED PRIOR TO THE START OF THE JOB.
  7. ALL IN STREAM WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PUMP AROUND CRITERIA.

- #### PHASE 1 STAGE 1: (STA. 0+15 TO STA. 0+49 OUTFALL "A") ( 3 DAYS)
1. CONTRACTOR SHALL STAKE OUT LOD AND TREE SAVES PRIOR TO PRE-CONSTRUCTION MEETING.
  2. INSTALL SCE, SILT FENCE, TEMPORARY ACCESS BRIDGES USING THE ACCESS PATHWAY AS SHOWN ON THE PLAN OR AS DIRECTED BY SEDIMENT CONTROL INSPECTOR. THE ACCESS PATH SHALL BE STABILIZED WITH STONE OR PROTECTED WITH SILT FENCE AT THE INSPECTOR'S DISCRETION.
  3. PERFORM DITCH GRADING FROM STA. 0+15 TO 0+49 OF OUTFALL A AS SHOWN ON THE PLAN.
  4. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREA TO ITS FINAL GRADE AT THE END OF EACH WORK DAY. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  5. WITH PERMISSION FROM INSPECTOR CONTRACTOR SHALL PROCEED WITH PHASE 1 STAGE 2.

- #### PHASE 1 STAGE 2: (STA. 0+65 TO STA. 7+65 MAIN CHANNEL) ( 3 WEEKS)
1. INSTALL SAND BAGS, PUMP, DEWATERING DEVICE, INTAKE PIPE AND DISCHARGE PIPE ON MAIN CHANNEL AT STA. 0+65.
  2. WITH APPROVAL OF INSPECTOR COMMENCE IN STREAM WORK.
  3. PERFORM STREAM GRADING AND STREAM RESTORATION WORK ON MAIN CHANNEL FROM STA. 0+65 TO STA. 7+65 AND STABILIZE ALL DISTURBED AREAS AT FINAL GRADE. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  4. WITH PERMISSION FROM INSPECTOR REMOVE THE PUMP AROUND SYSTEM AND STABILIZE THE AREA DISTURBED BY THIS PROCESS. PROCEED WITH PHASE 2.

- #### PHASE 2 STAGE 1: (STA. 0+00 TO 0+24 OUTFALL B) ( 2 DAYS)
1. PERFORM DITCH GRADING FROM STA. 0+00 TO 0+24 OF OUTFALL B AS SHOWN ON THE PLAN.
  2. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREA TO ITS FINAL GRADE AT THE END OF EACH WORK DAY. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  3. WITH PERMISSION FROM INSPECTOR CONTRACTOR SHALL PROCEED WITH PHASE 2 STAGE 2.

- #### PHASE 2 STAGE 2: (STA. 7+50 TO STA. 15+15 MAIN CHANNEL AND STA. 0+00 TO 0+72 SHA TRIBUTARY) ( 3 DAYS)
1. INSTALL SAND BAGS, PUMP, DEWATERING DEVICE, INTAKE PIPE AND DISCHARGE PIPE ON MAIN CHANNEL AT STA. 7+50 AND SHA TRIBUTARY AT STA. 0+85.
  2. WITH APPROVAL OF INSPECTOR COMMENCE IN STREAM WORK.
  3. PERFORM STREAM GRADING AND STREAM RESTORATION WORK ON MAIN CHANNEL FROM STA. 7+65 TO STA. 15+00 AND ON SHA TRIBUTARY FROM STA. 0+00 TO STA. 0+74 AND STABILIZE ALL DISTURBED AREAS AT FINAL GRADE. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  4. WITH PERMISSION FROM INSPECTOR REMOVE THE PUMP AROUND SYSTEM AND STABILIZE THE AREA DISTURBED BY THIS PROCESS. PROCEED WITH PHASE 3.

- #### PHASE 3 STAGE 1: (STA. 0+00 TO 0+34 OUTFALL C) ( 2 DAYS)
1. PERFORM DITCH GRADING FROM STA. 0+00 TO 0+34 OF OUTFALL C AS SHOWN ON THE PLAN.
  2. CONTRACTOR SHALL STABILIZE ALL DISTURBED AREA TO ITS FINAL GRADE AT THE END OF EACH WORK DAY. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  3. WITH PERMISSION FROM INSPECTOR CONTRACTOR SHALL PROCEED WITH PHASE 3 STAGE 2.

- #### PHASE 3 STAGE 2: (STA. 15+00 TO STA. 21+30 MAIN CHANNEL) ( 3 WEEKS)
1. INSTALL SAND BAGS, PUMP, DEWATERING DEVICE, INTAKE PIPE AND DISCHARGE PIPE ON MAIN CHANNEL AT STA. 21+55.
  2. WITH APPROVAL OF INSPECTOR COMMENCE IN STREAM WORK.
  3. PERFORM STREAM GRADING AND STREAM RESTORATION WORK ON MAIN CHANNEL FROM STA. 15+15 TO STA. 21+30 AND STABILIZE ALL DISTURBED AREAS AT FINAL GRADE. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED BY END OF EACH DAY.
  4. WITH PERMISSION FROM INSPECTOR REMOVE THE PUMP AROUND SYSTEM AND STABILIZE THE AREA DISTURBED BY THIS PROCESS.
  5. REMOVE ALL STOCKPILE AREA AT THE END OF THE CONSTRUCTION AND STABILIZE THE AREA TO ITS EXISTING CONDITION.

- #### TIME RESTRICTION NOTES:
1. PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7 PM AND 7 AM, MONDAY THROUGH FRIDAY.
  2. CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7 PM AND 7 AM, MONDAY THROUGH FRIDAY.
  3. FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE FROM 5 PM AND 9 AM RESPECTIVELY.
  4. NO WORK SHALL BE DONE ON SUNDAY.
  5. WHILE PUMPS ARE SHUT DOWN, CONTRACTOR SHALL ENSURE THAT FLOW IS MAINTAINED THROUGH PROJECT SITE IN SUCH A MANNER THAT SEDIMENT-LADEN FLOW IS NOT DISCHARGED DOWNSTREAM.

STREAM CLOSURE FOR UNNAMED TRIBUTARY: MARCH 1 TO JUNE 15

### LEGEND

- LIMIT OF DISTURBANCE
- ORANGE SAFETY FENCE/ORANGE CONSTRUCTION FENCE (OSF TO BE PLACED ALONG ENTIRE LOD)
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- PROPOSED CONTOURS
- EXISTING 100 YEAR FLOODPLAIN
- PROPOSED 100 YEAR FLOODPLAIN
- EXISTING TREE TO BE SAVED
- EDGE OF TREELINE
- WATERS OF THE US
- PROPERTY LINE
- EXISTING ROAD EDGE
- EXISTING SEWER LINE
- EXISTING STORM DRAIN
- IMBRICATED WALL
- SINGLE STONE TOE PROTECTION
- DOUBLE STONE TOE PROTECTION
- RIFFLE GRADE CONTROL
- SANDBAG DAM
- PUMP
- DEWATERING DEVICE
- SILT FENCE
- SUPER SILT FENCE
- PIPE SLOPE DRAIN
- STABILIZED CONSTRUCTION ENTRANCE
- EDGE OF WETLAND
- WETLAND BUFFER
- CLEAR WATER DIVERSION FENCE

- #### NOTES:
1. THE SUBJECT TRIBUTARY TO RED HILL BRANCH IS A USE 1-P STREAM, THEREFORE, IN-STREAM CONSTRUCTION IS PROHIBITED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, INCLUSIVE OF ANY YEAR. EVERY EFFORT MUST BE TAKEN TO AVOID UNDUE DISTURBANCE TO THE STREAM CHANNEL.
  2. THIS PLAN DOES NOT COVER PASSING THE TWO YEAR STORM EVENT. IN THE EVENT OF A STORM, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY THE STORM FLOWS.
  3. REFER TO EROSION AND SEDIMENT CONTROL DETAILS FOR PUMP AROUND PRACTICE.
  4. RELOCATE SAND BAG DAMS AS NECESSARY TO FACILITATE GRADING WHERE STAGES OF CONSTRUCTION TIE TOGETHER.
  5. THE STOCKPILE AREA MUST BE REMOVED AT THE END OF CONSTRUCTION PERIOD AND THE AREA TO BE RESTABILIZED TO ITS EXISTING CONDITION.

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

*John R. Robertson* 7/16/09  
DIRECTOR

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Mark A. Hays* 7/22/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Cindy Hamer* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT

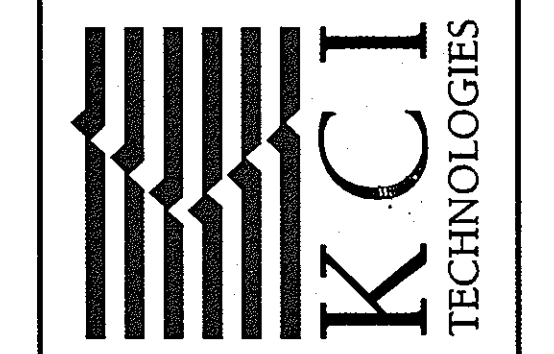
*Mark A. Hays* 8/24/09  
DIRECTOR

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

*John R. Robertson* 7/16/09  
PROFESSIONAL ENGINEER

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
STORMWATER MANAGEMENT DIVISION  
810 COLUMBIA AVENUE  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
1750 CHANDLER HILLS ROAD  
COLUMBIA, MD 21046  
PARCEL 308, TAX MAP 30, ZONING R-30, ELECTION DISTRICT 01

### EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

DATE: OCTOBER, 2008

KCI JOB NO.: 01-043223.25

CAPITAL PROJECT NO.: D1158

PERMIT ISSUE:

CONSTRUCTION ISSUE:

SHEET NO.: 19 OF 35

**STREAM CLOSURE FOR UNNAMED TRIBUTARY: MARCH 1 TO JUNE 15**

**NOTE:**  
TEMPORARY ORANGE CONSTRUCTION FENCE  
TO BE PLACED ALONG ENTIRE LOD

**NOTE:** CONTRACTOR SHALL ENSURE  
THAT LOD AND E&S CONTROLS  
ARE LOCATED ON COUNTY PROPERTY  
OR WITHIN THEIR EASEMENTS

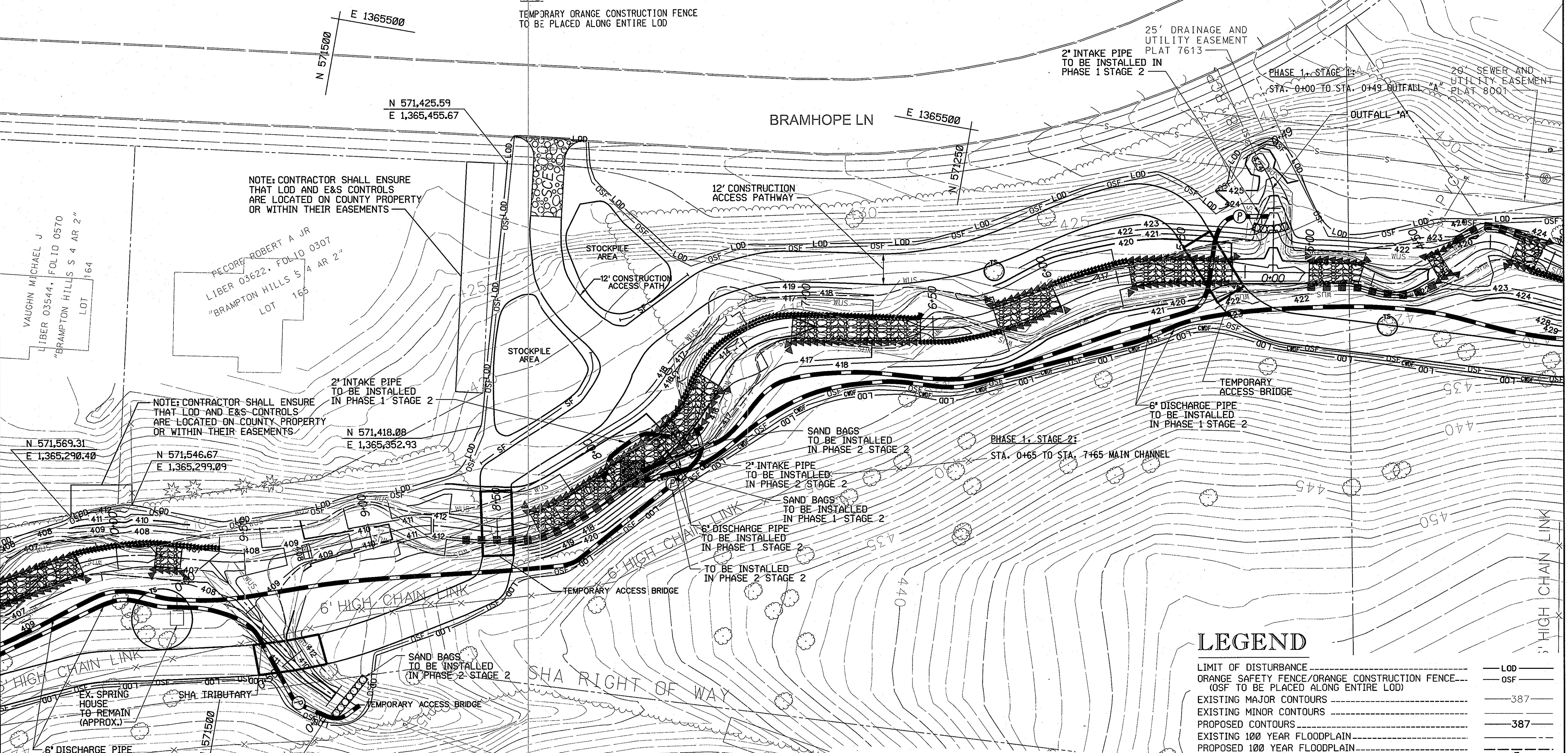
**NOTE:** CONTRACTOR SHALL ENSURE  
THAT LOD AND E&S CONTROLS  
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OR WITHIN THEIR EASEMENTS

VAUGHN MICHAEL J  
LIBER 03544, FOLIO 0570  
"BRAMPTON HILLS S 4 AR 2"  
LOT 164

RECORD- ROBERT A JR  
LIBER 03622, FOLIO 0307  
"BRAMPTON HILLS S 4 AR 2"  
LOT 165

MATCHLINE B-B

MATCHLINE C-C

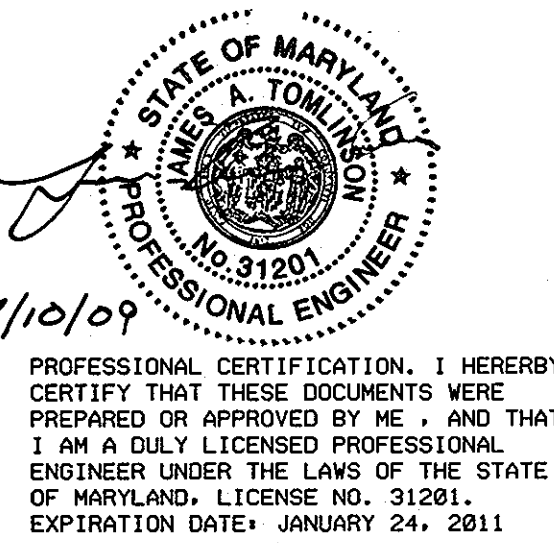


**LEGEND**

LIMIT OF DISTURBANCE	---	LOD
ORANGE SAFETY FENCE/ORANGE CONSTRUCTION FENCE (OSF TO BE PLACED ALONG ENTIRE LOD)	---	OSF
EXISTING MAJOR CONTOURS	---	387
EXISTING MINOR CONTOURS	---	387
PROPOSED CONTOURS	---	
EXISTING 100 YEAR FLOODPLAIN	---	
PROPOSED 100 YEAR FLOODPLAIN	---	
EXISTING TREE TO BE SAVED	○	
EDGE OF TREELINE	~	
WATERS OF THE US	WUS	
PROPERTY LINE	---	
EXISTING ROAD EDGE	S	
EXISTING SEWER LINE	---	
EXISTING STORM DRAIN	---	
IMBRICATED WALL	■ ■ ■ ■ ■	
SINGLE STONE TOE PROTECTION	▶ ▶ ▶ ▶ ▶	
DOUBLE STONE TOE PROTECTION	▶ ▶ ▶ ▶ ▶	
RIFFLE GRADE CONTROL	○ ○ ○ ○ ○	
SANDBAG DAM	○ ○ ○ ○ ○	
PUMP	⊕	
DEWATERING DEVICE	DD	
SILT FENCE	---	
SUPER SILT FENCE	---	
PIPE SLOPE DRAIN	---	
STABILIZED CONSTRUCTION ENTRANCE	---	
EDGE OF WETLAND	---	
WETLAND BUFFER	---	
CLEAR WATER DIVERSION FENCE	---	
CLASS 1 RIPRAP	---	

- NOTES:**
1. THE SUBJECT TRIBUTARY TO RED HILL BRANCH IS A USE 1-P STREAM, THEREFORE, IN-STREAM CONSTRUCTION IS PROHIBITED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, INCLUSIVE OF ANY YEAR. EVERY EFFORT MUST BE TAKEN TO AVOID UNDUE DISTURBANCE TO THE STREAM CHANNEL.
  2. THIS STREAM DIVERSION PLAN IS A SUGGESTED METHOD OF CONSTRUCTION ONLY. THE CONTRACTOR HAS THE OPTION OF SUBMITTING A DIFFERENT PLAN TO THE ENGINEER, THE HOWARD SCD, AND THE HOWARD COUNTY PROJECT MANAGER FOR APPROVAL.
  3. THIS PLAN DOES NOT COVER PASSING THE TWO YEAR STORM EVENT. IN THE EVENT OF A STORM, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY THE STORM FLOWS.
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APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*John R. Robinson* 7/22/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

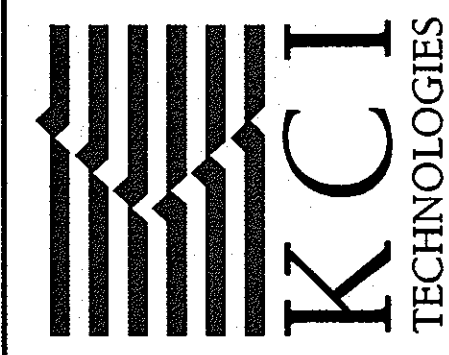
*Cindy Harris* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mark A. Leylek* 8/21/09  
DIRECTOR DATE

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

*John R. Robinson* 7/16/09  
HOWARD SCD DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



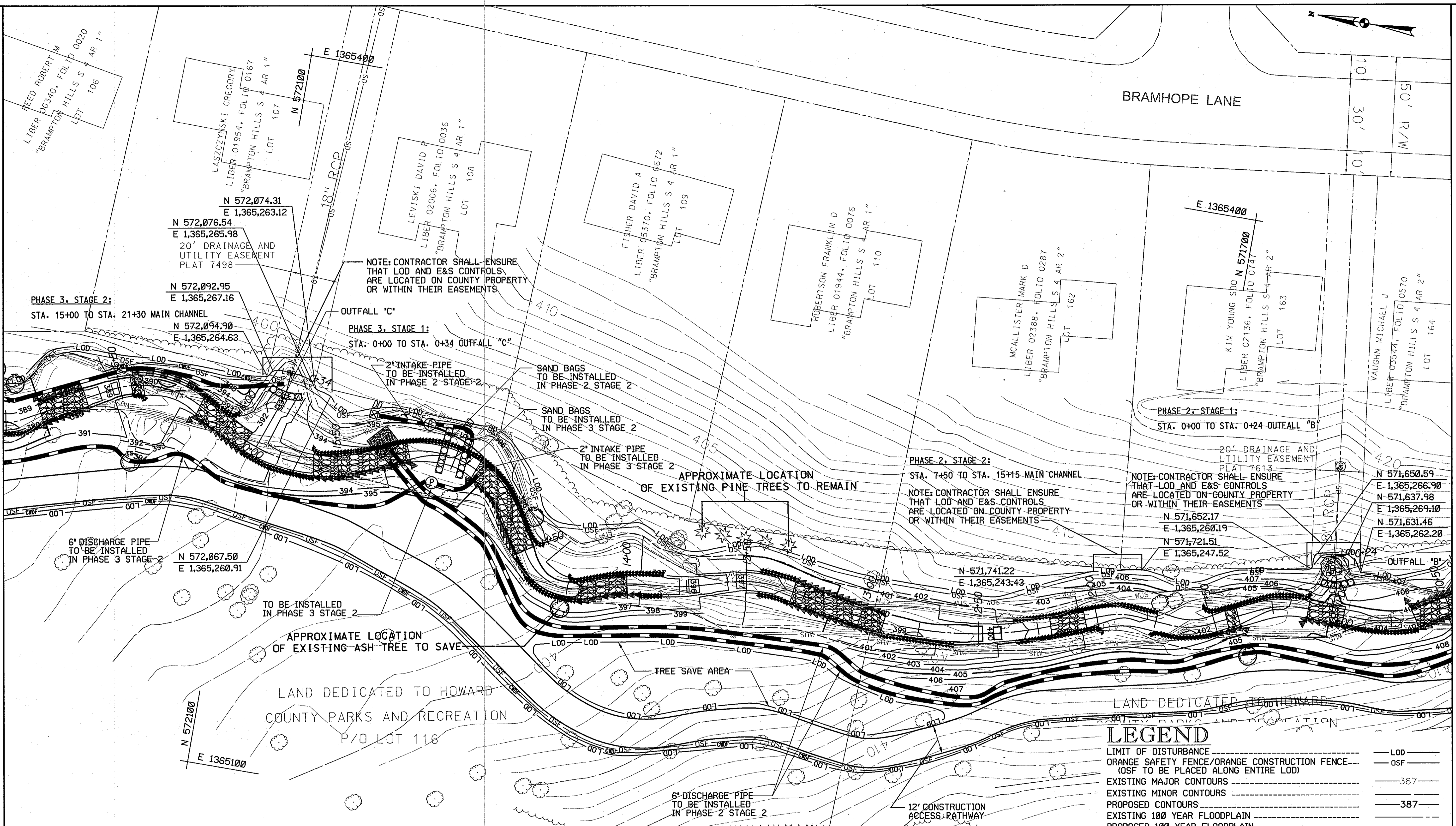
BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-158  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
1700 CHANON RD, SUITE 200  
COLUMBIA, MD 21046  
PHONE: (410) 316-7800  
FAX: (410) 316-7817

**EROSION AND SEDIMENT CONTROL PLAN**

SCALE: 1" = 20'  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D1158  
PERMIT ISSUE:  
CONSTRUCTION ISSUE:

MATCHLINE A-A

MATCHLINE B-B



STREAM CLOSURE FOR UNNAMED TRIBUTARY: MARCH 1 TO JUNE 15

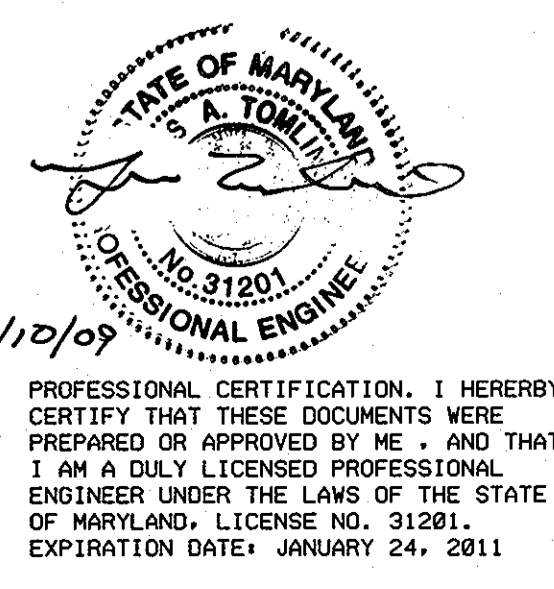
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  2. THIS STREAM DIVERSION PLAN IS A SUGGESTED METHOD OF CONSTRUCTION ONLY. THE CONTRACTOR HAS THE OPTION OF SUBMITTING A DIFFERENT PLAN TO THE ENGINEER, THE HOWARD SCD, AND THE HOWARD COUNTY PROJECT MANAGER FOR APPROVAL.
  3. THIS PLAN DOES NOT COVER PASSING THE TWO YEAR STORM EVENT IN THE EVENT OF A STORM, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY THE STORM FLOWS.
  4. REFER TO EROSION AND SEDIMENT CONTROL DETAILS FOR PUMP AROUND PRACTICE.
  5. RELOCATE SAND BAG DAMS AS NECESSARY TO FACILITATE GRADING WHERE STAGES OF CONSTRUCTION TIE TOGETHER.

**LEGEND**

LIMIT OF DISTURBANCE	LOD
ORANGE SAFETY FENCE/ORANGE CONSTRUCTION FENCE-- (OSF TO BE PLACED ALONG ENTIRE LOD)	OSF
EXISTING MAJOR CONTOURS	387
EXISTING MINOR CONTOURS	387
PROPOSED CONTOURS	387
EXISTING 100 YEAR FLOODPLAIN	
PROPOSED 100 YEAR FLOODPLAIN	
EXISTING TREE TO BE SAVED	
EDGE OF TREELINE	
WATERS OF THE US	WUS
PROPERTY LINE	
EXISTING ROAD EDGE	
EXISTING SEWER LINE	S
EXISTING STORM DRAIN	SD
IMBRICATED WALL	
SINGLE STONE TOE PROTECTION	
DOUBLE STONE TOE PROTECTION	
RIFFLE GRADE CONTROL	
SANDBAG DAM	
PUMP	P
DEWATERING DEVICE	DD
SILT FENCE	SF
SUPER SILT FENCE	SSF
PIPE SLOPE DRAIN	18" PSD
STABILIZED CONSTRUCTION ENTRANCE	
EDGE OF WETLAND	
WETLAND BUFFER	
CLEAR WATER DIVERSION FENCE	
CLASS I RIPRAP	

PLOTTED: 12:08 PM on Thursday, July 06, 2009  
FILE: H:\2004\0104\223\25\drainage\090202.dwg



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*John A. Tomlin* 7/2/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*Christy Hannon* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT

*Harold L. Loyde* 8/2/09  
DIRECTOR

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

*John L. Robertson* 7/16/09  
HOWARD SCD

NO.	REVISIONS DESCRIPTION	DATE
1	Add Class I Riprap to Legend	4-22-09

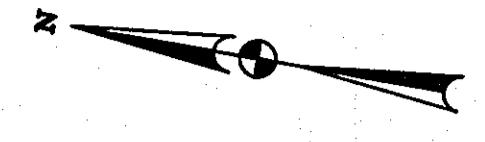
10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com



BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4 AREAS 1,2,3  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
STORMWATER MANAGEMENT DIVISION  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
7700 CHANDLER HILLS ROAD  
COLUMBIA, MD 21046  
PARCEL 888, EX. MAP 30, ZONING R-26, ELECTION DISTRICT 01

**EROSION AND SEDIMENT CONTROL PLAN**

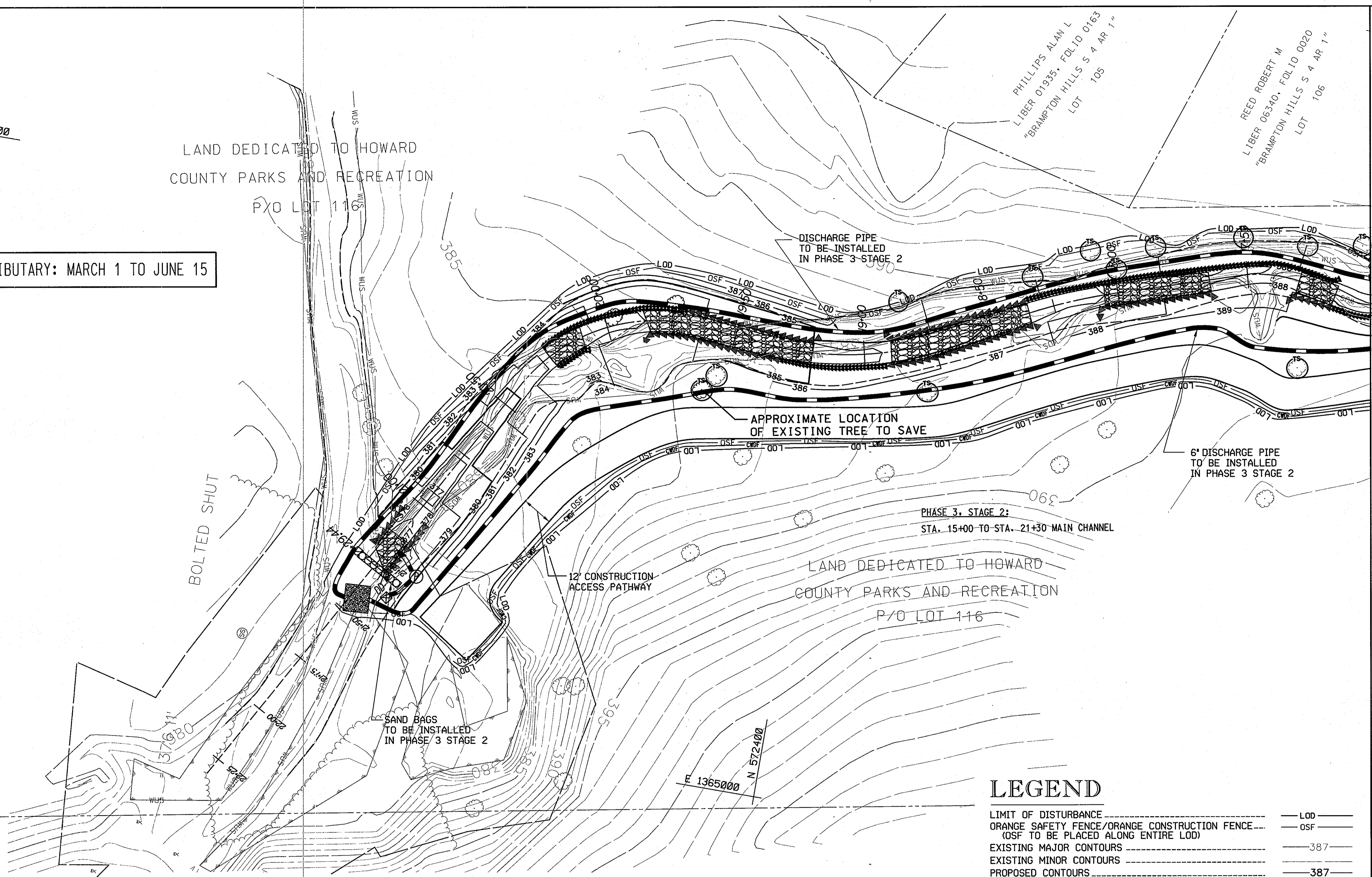
SCALE: 1" = 20'  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D1158  
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CONSTRUCTION ISSUE:



N 572750  
E 1365200

STREAM CLOSURE FOR UNNAMED TRIBUTARY: MARCH 1 TO JUNE 15

N 572750  
E 1365000



### LEGEND

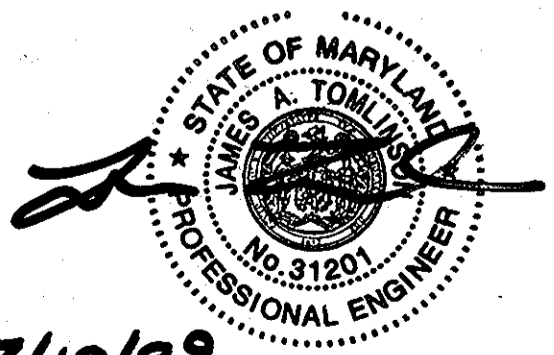
LIMIT OF DISTURBANCE	LOD
ORANGE SAFETY FENCE/ORANGE CONSTRUCTION FENCE (OSF TO BE PLACED ALONG ENTIRE LOD)	OSF
EXISTING MAJOR CONTOURS	387
EXISTING MINOR CONTOURS	387
PROPOSED CONTOURS	387
EXISTING 100 YEAR FLOODPLAIN	
PROPOSED 100 YEAR FLOODPLAIN	
EXISTING TREE TO BE SAVED	
EDGE OF TREELINE	
WATERS OF THE US	WUS
PROPERTY LINE	S
EXISTING ROAD EDGE	S
EXISTING SEWER LINE	S
EXISTING STORM DRAIN	SD
IMBRICATED WALL	
SINGLE STONE TOE PROTECTION	
DOUBLE STONE TOE PROTECTION	
RIFFLE GRADE CONTROL	
SANDBAG DAM	
PUMP	
DEWATERING DEVICE	
SILT FENCE	SF
SUPER SILT FENCE	SSF
PIPE SLOPE DRAIN	
STABILIZED CONSTRUCTION ENTRANCE	
EDGE OF WETLAND	
WETLAND BUFFER	
CLEAR WATER DIVERSION FENCE	
CLASS I RIPRAP	

### NOTES:

1. THE SUBJECT TRIBUTARY TO RED HILL BRANCH IS A USE 1-P STREAM, THEREFORE, IN-STREAM CONSTRUCTION IS PROHIBITED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, INCLUSIVE OF ANY YEAR. EVERY EFFORT MUST BE TAKEN TO AVOID UNDUE DISTURBANCE TO THE STREAM CHANNEL.
2. THIS STREAM DIVERSION PLAN IS A SUGGESTED METHOD OF CONSTRUCTION ONLY. THE CONTRACTOR HAS THE OPTION OF SUBMITTING A DIFFERENT PLAN TO THE ENGINEER, THE HOWARD SCD, AND THE HOWARD COUNTY PROJECT MANAGER FOR APPROVAL.
3. THIS PLAN DOES NOT COVER PASSING THE TWO YEAR STORM EVENT. IN THE EVENT OF A STORM, THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS, OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY THE STORM FLOWS.
4. REFER TO EROSION AND SEDIMENT CONTROL DETAILS FOR PUMP AROUND PRACTICE.
5. RELOCATE SAND BAG DAMS AS NECESSARY TO FACILITATE GRADING WHERE STAGES OF CONSTRUCTION TIE TOGETHER.

### TIME RESTRICTION NOTES:

1. PUMPING IS NOT PERMITTED BETWEEN THE HOURS OF 7 PM AND 7 AM, MONDAY THROUGH FRIDAY.
2. CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7 PM AND 7 AM, MONDAY THROUGH FRIDAY.
3. FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE FROM 5 PM AND 9 AM RESPECTIVELY.
4. NO WORK SHALL BE DONE ON SUNDAY.
5. WHILE PUMPS ARE SHUT DOWN, CONTRACTOR SHALL ENSURE THAT FLOW IS MAINTAINED THROUGH PROJECT SITE IN SUCH A MANNER THAT SEDIMENT-LADEN FLOW IS NOT DISCHARGED DOWNSTREAM.



7/10/09

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*John J. ...* 7/22/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION 4 DATE

*Cynthia ...* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

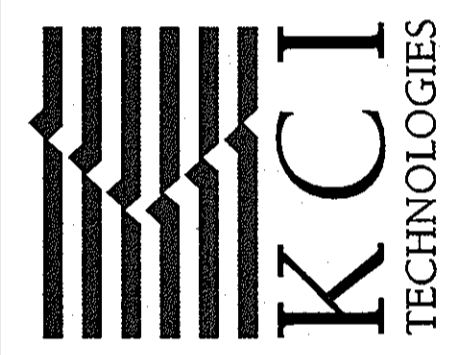
*Patrick ...* 8/21/09  
DIRECTOR DATE

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

*John ...* 7/16/09  
HOWARD SCD DATE

MATCHLINE A-A

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
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FAX: (410) 316-7817  
WWW.KCI.COM



BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4, AREAS 1,2,3  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
10000 WOODLAND HILLS ROAD  
COLUMBIA, MD 21046  
410-316-7800

### EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 20'  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D1158  
PERMIT ISSUE:  
CONSTRUCTION ISSUE:

TABLE 28 STONE SIZE

NUMBER	SIZE RANGE	D 50	D 100	AASHTO	HEIGHT
NUMBER 57*	3/8"-1 1/2"			M-43	N/A
NUMBER 1	2"-3"	3"		M-43	N/A
RIP-RAP**	4"-7"		7"	N/A	N/A
CLASS I	N/A	15"	N/A		150 LB. MAX.
CLASS II	N/A	24"	N/A		700 LB. MAX.
CLASS III	N/A	34"	N/A		2000 LB. MAX.

\* THIS CLASSIFICATION IS TO BE USED ON THE INSIDE FACE OF STONE OUTLETS AND CHECK DAMS.  
 \*\* THIS CLASSIFICATION IS TO BE USED WHENEVER SMALL RIP-RAP IS REQUIRED. THE STATE HIGHWAY ADMINISTRATION DESIGNATION FOR THIS STONE IS STONE FOR GABIONS ( 905.01.04).

24.0 MATERIALS AND SPECIFICATIONS  
 TABLE 27 GEOTEXTILE FABRICS

CLASS	APPARENT OPENING SIZE MM. MAX.	GRAB TENSILE STRENGTH LB. MIN.	BURST STRENGTH PSIMIN.
A	0.30**	250	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40 - 0.80 *	90	190

\* US STD. SIEVE CW-02215 \*\* .50 MM. MAX. FOR SUPER SILT FENCE

THE PROPERTIES SHALL BE DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

- APPARENT OPENING SIZE MSMT 323
- GRAB TENSILE STRENGTH ASTM D 1682 4"x8" SPECIMEN 1"x2" CLAMPS, 12"/ MM. STRAIN RATE IN BOTH PRINCIPAL DIRECTIONS OF GEOTEXTILE FABRIC.
- BURST STRENGTH ASTM D 3786

THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, AND WILL BE ROT AND MILDEW RESISTANT. IT SHALL BE MANUFACTURED FROM FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS, AND COMPOSED OF A MINIMUM OF 85% BY WEIGHT OF POLYOLEPHINS, POLYESTERS, OR POLYAMIDES. THE GEOTEXTILE FABRIC SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE.

IN ADDITION CLASSES A THROUGH E SHALL HAVE A 0.01 CM/SEC. MINIMUM PERMEABILITY WHEN TESTED IN ACCORDANCE WITH MSMT 507, AND AN APPARENT MINIMUM ELONGATION OF 20 PERCENT (20%) WHEN TESTED IN ACCORDANCE WITH THE GRAB TENSILE STRENGTH REQUIREMENTS LISTED ABOVE.

SILT FENCE CLASS F GEOTEXTILE FABRICS FOR ALL SILT FENCE SHALL HAVE A 50LB./IN. MINIMUM TENSILE STRENGTH AND A 20 LB./IN. MINIMUM TENSILE MODULES WHEN TESTED IN ACCORDANCE WITH MSMT 509. MATERIAL SHALL ALSO HAVE A 0.3 GAL./FT. SQUARED/MIN. FLOW RATE AND SEVENTY-FIVE PERCENT (75%) MINIMUM FILTERING EFFICIENCY WHEN TESTED IN ACCORDANCE WITH MSMT 322.

GEOTEXTILE FABRICS USED IN THE CONSTRUCTION OF THE SILT FENCE SHALL RESIST DETERIORATION FROM ULTRAVIOLET EXPOSURE. THE FABRIC SHALL CONTAIN SUFFICIENT AMOUNTS OF ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 12 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120 DEGREES F.

MATERIALS SPECIFICATIONS

HOWARD SOIL CONSERVATION DISTRICT  
 TEMPORARY SEEDING NOTES \*\*

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

**Seedbed Preparation:** -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

**Soil Amendments:** -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

**Seeding:** -- For periods March 1 - April 30 and from August 15 - October 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 - August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 ft.). For the period November 15 - February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching:** -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool. No asphalt emulsion shall be used for anchoring. Only a non-toxic, latex tacking material is allowed.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

HOWARD SOIL CONSERVATION DISTRICT  
 PERMANENT SEEDING NOTES \*\*

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

**Seedbed Preparation:** Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

**Soil Amendments:** In lieu of soil test recommendations, use one of the following schedules:

- Preferred** -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs/acre 30-0-0 ureaform fertilizer (8 lbs/1000 sq. ft.).
- Acceptable** -- Apply 2 tons/acre dolomitic limestone (92 lbs/1000 sq. ft.) and 1000 lbs/acre 10-10-10 fertilizer (23 lbs/1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

**Seeding** -- For the periods March 1 - April 30, and August 1 - October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/100sq. ft.) of weeping lovegrass. During the period of October 16 - February 28, protect site by: **Option 1** - Two tons per acre of well anchored straw mulch and seed as soon as possible in the spring. **Option 2** - Use sod. **Option 3** - Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool. No asphalt emulsion shall be used for anchoring. Only a non-toxic, latex tacking material is allowed.

**Maintenance** - Inspect all seeding areas and make needed repairs, replacements and reseedings.

\*\* Contractor shall perform a soil test at the site as a first order of business. The results shall be reviewed by Department of Recreation and Parks to determine appropriate soil amendments and fertilization needs for this project. No fertilizer or soil amendments shall be added without approval of Department of Recreation and Parks.

FILL MATERIAL AND COMPACTION REQUIREMENTS:

In general, existing on-site soils free from environmental contamination, building debris, frozen, organic or wet materials and with a Unified Soils Classification of CL-ML, or more granular, with a plasticity index less than 12 can be reused as compacted fill. On-site soils with a Unified Soils Classification of CL, CH, or MH or with liquid limits greater than 40 and plastic indices greater than or equal to 12 are not suitable as structural fill. If imported materials are required it shall have a Unified Soils Classification of SM or more granular and less plastic and a maximum dry density of at least 105-pcf in accordance with the modified proctor test method (ASTM D-1557) or as approved by the Engineer.

Fill shall be placed in horizontal, eight-inch maximum loose lifts and compacted to at least 92 percent of the Modified Proctor maximum dry density (ASTM D-1557), or alternately the Contractor shall compact each lift a minimum of 3 to 4 passes as approved by the Engineer. The moisture content of the fill shall be properly controlled during placement and shall be within 3 percentage points of the optimum moisture. Fill being placed on hillsides shall be benched to prevent a sliding failure plane.

As directed by the Engineer, in-place density tests shall be performed by an engineering technician on a full-time basis under the supervision of a geotechnical engineer licensed in the State of Maryland to verify that the proper degree of compaction is being obtained.

HOWARD COUNTY CONSERVATION DISTRICT  
 STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins must be fenced and warning signs posted around their perimeter in accordance with Vol.1, Chapter 12 of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

Site Analysis:	
Total Area of Site	2.92 Acres
Area Disturbed	2.92 Acres
Area to be roofed or paved	0 Acres
Area to be vegetatively stabilized	2.92 Acres
Total Cut	1318 Cu. Yds.
Total Fill	2019 Cu. Yds.
Offsite waste/borrow area location	To Be Determined

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter. Offsite waste/borrow site shall have an approved sediment control plan.

21.0 STANDARD AND SPECIFICATIONS

FOR

TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

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

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

Construction and Material Specifications

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

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nuttallgrass, poison ivy, thistle, or others as specified.

iii. Where the subsoils are highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 4 - Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

- pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
- Organic content of topsoil shall be not less than 1.5 percent by weight.
- Topsoil having soluble salt content greater than 500 parts per million shall not be used.
- No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time as elapsed (14 days min.) to permit dissipation of phytotoxic materials.

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

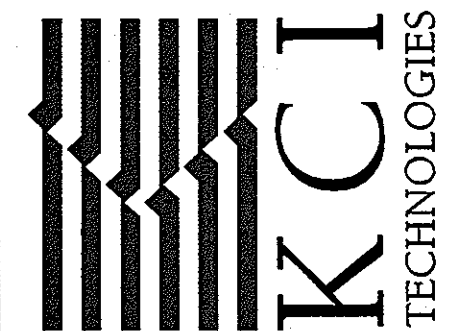
ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 4 - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

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

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com



BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4, AREAS 1,2,3  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 2700 COLUMBIA RD., 2ND FLOOR  
 HUNTSVILLE, MD 21086  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 2700 COLUMBIA HILLS ROAD  
 HUNTSVILLE, MD 21086  
 410-323-2100

EROSION AND  
 SEDIMENT  
 CONTROL  
 NOTES

SCALE:	
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-043223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*James A. Tomlinson* 7/2/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Hamm* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Joseph P. Coyle* 8/21/09  
 DIRECTOR DATE

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

*John L. Robertson* 7/14/09  
 HOWARD SOCD DATE

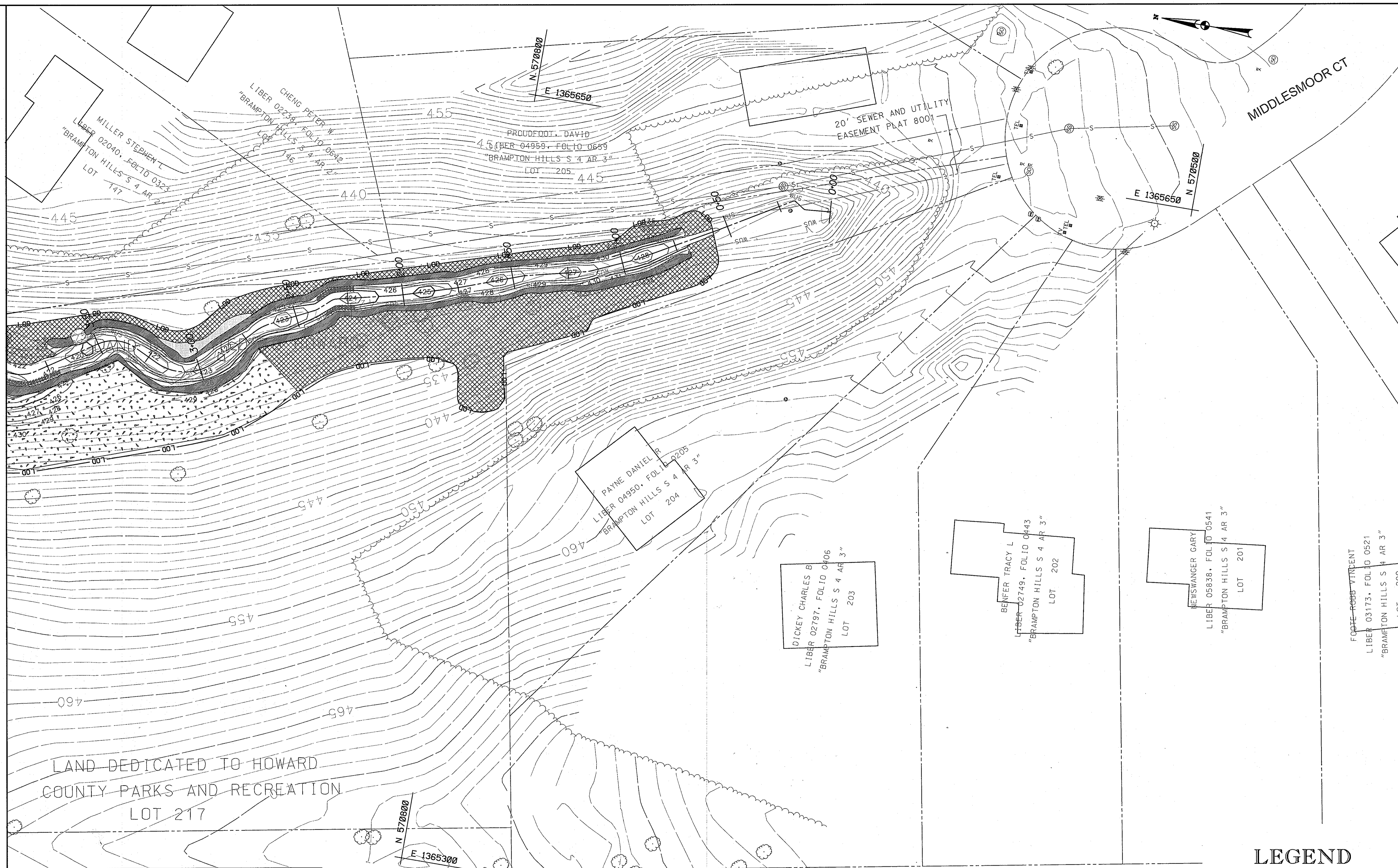






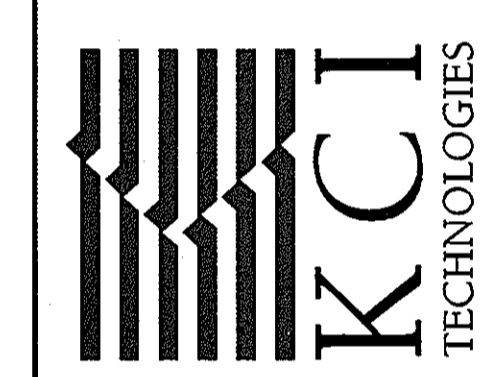


MATCHLINE C-C



NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 WWW.KCI.COM



**BRAMPTON HILLS**  
**STREAM STABILIZATION**  
 SECTION 4, AREAS 1,2,3  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 10000 WOODBURN ROAD  
 COLUMBIA, MD 21046  
 410-313-3100

**LANDSCAPE PLAN**

**LEGEND**

- LIVE STAKES
- RIPARIAN ZONE
- BENCH PROTECTION
- TURF GRASS ZONE
- FOREST CONSERVATION PLANTING ZONE

SCALE:	1" = 20'
DATE:	OCTOBER, 2008
KCI JOB NO.:	01-043223.25
CAPITAL PROJECT NO.:	D1158
PERMIT ISSUE:	
CONSTRUCTION ISSUE:	

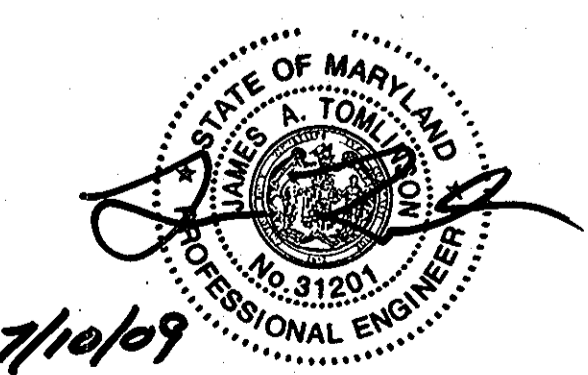
SHEET NO.: 27 OF 35

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Mr. [Signature]* 7/22/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris [Signature]* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Paul [Signature]* 8/21/09  
 DIRECTOR DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011





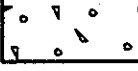
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MATCHLINE B-B

MATCHLINE C-C



### LEGEND

-  LIVE STAKES
-  RIPARIAN ZONE
-  BENCH PROTECTION
-  TURF GRASS ZONE
-  FOREST CONSERVATION PLANTING ZONE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*W.D. Williams* 7/22/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Harris* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

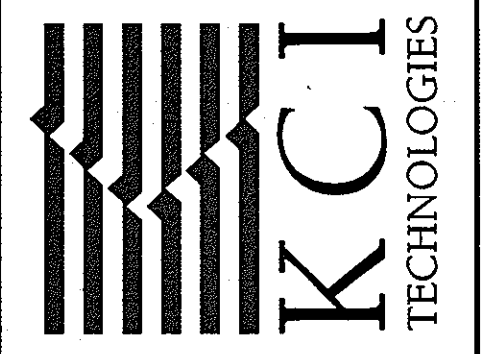
*Marsha P. Leigh* 8/24/09  
 DIRECTOR DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
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 FAX: (410) 316-7817  
 www.kci.com



**BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4 AREAS 1,2,3  
 CAPITAL PROJECT D-1158**

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 STORMWATER MANAGEMENT DIVISION  
 1700 COLUMBIA ROAD, SUITE 200  
 HUNTSVILLE, MD 21086  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 1700 COLUMBIA HILLS ROAD  
 HUNTSVILLE, MD 21086  
 PROJECT: 08-100-0000

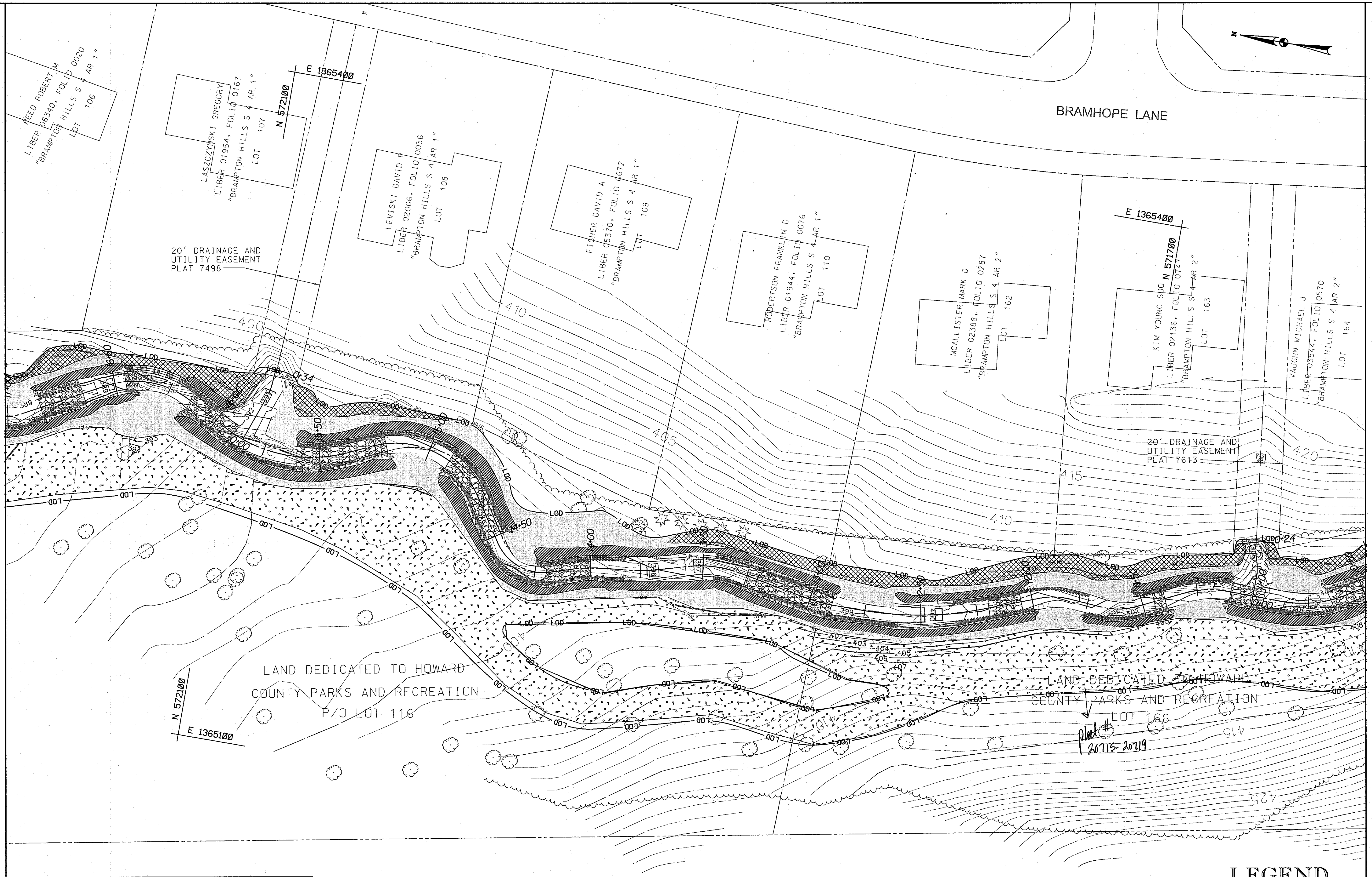
## LANDSCAPE PLAN

SCALE: 1" = 20'  
 DATE: OCTOBER, 2008  
 KCI JOB NO.: 01-043223.25  
 CAPITAL PROJECT NO.: D1158  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

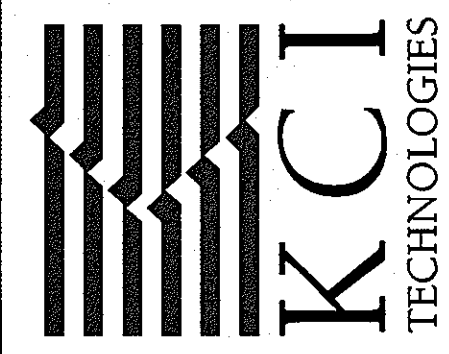
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MATCHLINE A-A

MATCHLINE B-B



10 NORTH PARK DRIVE  
 HUNT VALLEY, MD 21030  
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 FAX: (410) 316-7817  
 www.kci.com



BRAMPTON HILLS  
 STREAM STABILIZATION  
 SECTION 4 AREAS 123  
 CAPITAL PROJECT D-1158  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 STREAM CATCHMENT MANAGEMENT DIVISION  
 10000 WOODLAND HILLS ROAD  
 COLUMBIA, MD 21046  
 HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
 10000 WOODLAND HILLS ROAD  
 COLUMBIA, MD 21046

LANDSCAPE PLAN

SCALE: 1" = 20'  
 DATE: OCTOBER, 2008  
 KCI JOB NO.: 01-043223.25  
 CAPITAL PROJECT NO.: D1158  
 PERMIT ISSUE:  
 CONSTRUCTION ISSUE:

SHEET NO.: 29 OF 35

LEGEND

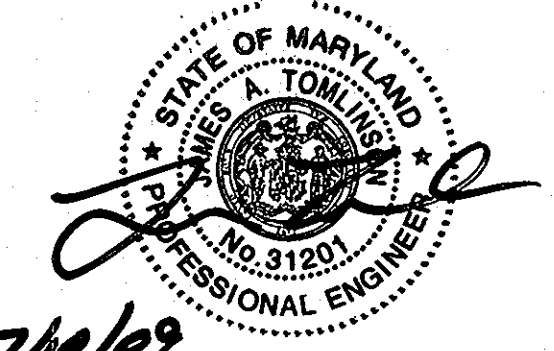
- LIVE STAKES
- RIPARIAN ZONE
- BENCH PROTECTION
- TURF GRASS ZONE
- FOREST CONSERVATION PLANTING ZONE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*John Vanaman* 7/22/09  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy Harris* 8/19/09  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Mark de Ceglie* 8/21/09  
 DIRECTOR DATE



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31201. EXPIRATION DATE: JANUARY 24, 2011

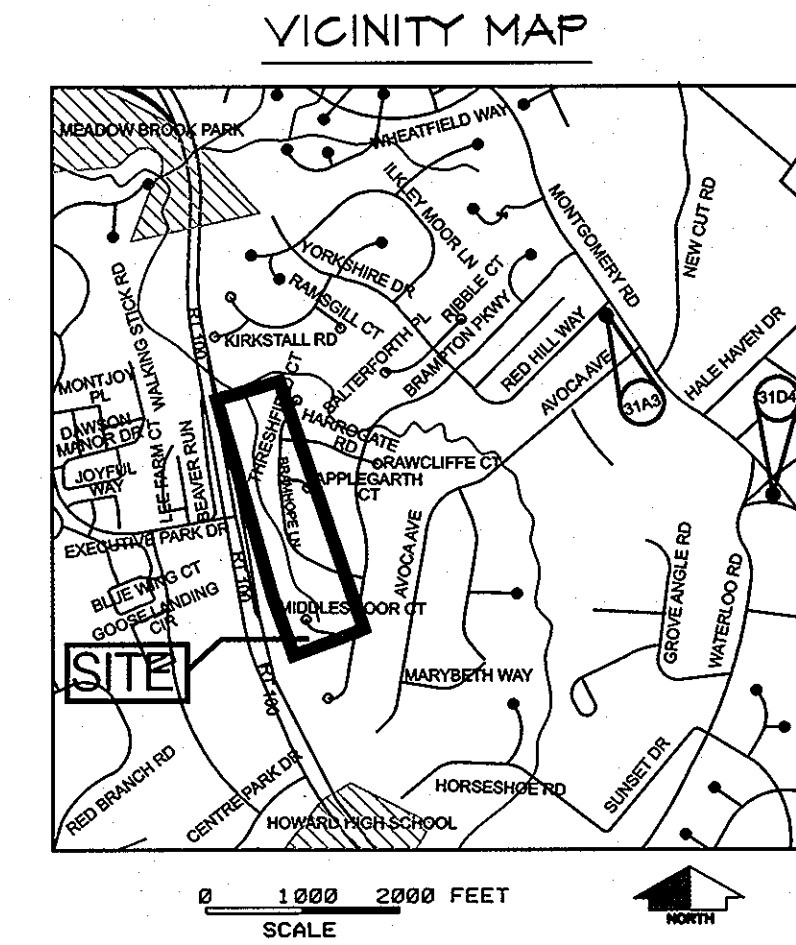












**LEGEND**

- EXISTING 100-YEAR FLOODPLAIN -----
- LIMIT OF DISTURBANCE ----- LOD
- ORANGE SAFETY FENCE ----- OSF
- WATERS OF THE UNITED STATES ----- WUS
- EDGE OF WETLAND -----
- 25' WETLAND BUFFER -----
- PROPERTY LINE -----
- EXISTING CONTOURS ----- 224
- EXISTING TREE LINE -----
- SPECIMEN TREES -----
- CRITICAL ROOT ZONE -----
- SPECIMEN TREE TO BE REMOVED -----
- TREE PROTECTION FENCING -----
- FOREST IMPACT -----
- STAND BOUNDARY DIVIDER -----
- FOREST CONSERVATION EASEMENT -----
- 50' TO 75' STREAM BUFFER -----
- SOIL LINES ----- GhB
- 15 TO 25% SLOPES -----
- 25% OR GREATER SLOPES -----
- STABILIZED CONSTRUCTION ENTRANCE -----

- NOTES:
- REFER TO SHEET 35 OF 35 FOR DEFINITIONS OF THE FOREST STANDS, SOILS, AND SPECIMEN TREES.
  - NO CRITICAL HABITAT AREAS.
  - REFER TO SHEETS 19 TO 26 OF 35 FOR DETAILS AND INFORMATION ON EROSION AND SEDIMENT CONTROL NOTES AND CONSTRUCTION PHASING.

**FOREST CONSERVATION AREA**

**TREES FOR YOUR FUTURE**

DUMPING, MACHINERY, OR STORAGE OF MATERIALS, CUTTING OR DISTURBANCE OF VEGETATION OR SOIL IN THIS AREA **IS STRICTLY PROHIBITED**

Howard County Code, Title 16 Subtitle 12

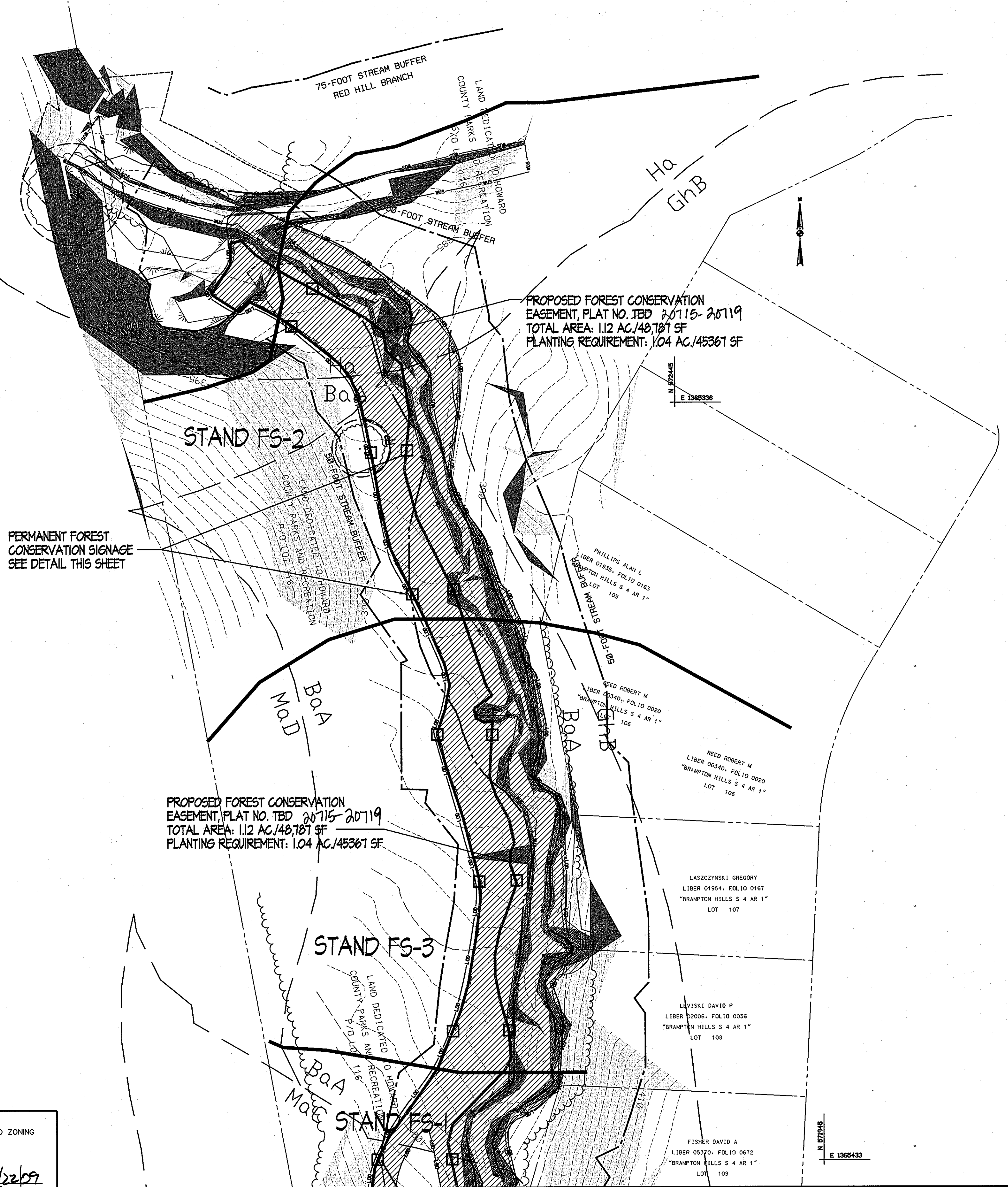
VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT

For more information or to report violations, please call Howard County Department of Recreation and Parks, Natural Resources Division

410-313-4725  
TTY 410-313-4665

HOWARD COUNTY PERMANENT FOREST CONSERVATION SIGNAGE  
NOT TO SCALE

NOTE: SEE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS FOR SIGNAGE SPECIFICATIONS



MATCHLINE B-B

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
<i>John P. ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	7/22/09 DATE
<i>Cecilia ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	8/19/09 DATE
<i>Frank ...</i> DIRECTOR	8/21/09 DATE

THIS PLAN WAS PREPARED BY:  
HARMONY MILLER  
KCI TECHNOLOGIES  
MDNR QUALIFIED PROFESSIONAL STATUS  
(02.21.2008)

*Harmony Miller* 10 JUL 2009  
SIGNATURE DATE

NO.	REVISIONS DESCRIPTION	DATE

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com

BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4, AREAS 1, 2, 3  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
400 WASHINGTON AVENUE  
COLUMBIA, MD 21046  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
7800 WASHINGTON AVENUE  
COLUMBIA, MD 21046  
410-313-4700

PARCEL 981 TAX MAP 58 ZONING P-30 ELECTION DISTRICT 01

SCALE: 1"=40'

DATE: OCTOBER, 2008

KCI JOB NO.: 01-043223.25

CAPITAL PROJECT NO.: D1158

PERMIT ISSUE:

CONSTRUCTION ISSUE:

SHEET NO.: 34 OF 35

STATE CONTRACT No. H04085174  
F.A. PROJECT No. STP-3(185)E

SDP-09-009

PLOTTED: 12:09 PM on Thursday, July 06, 2009  
 FILE: M:\2004\01043223.25\Drawings\FCP\FCPsheet3.dwg

EXHIBIT G - 12

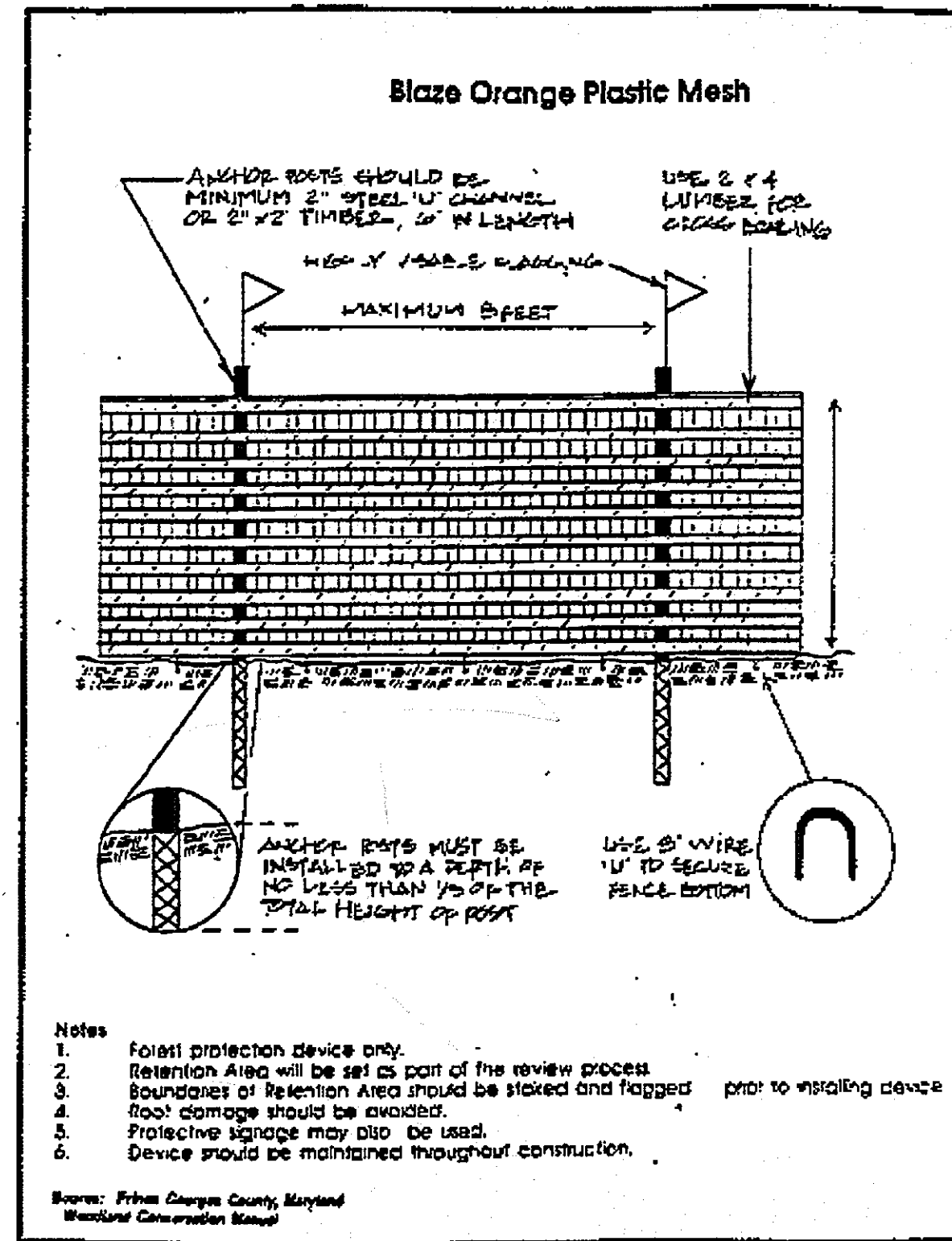


EXHIBIT G - 17

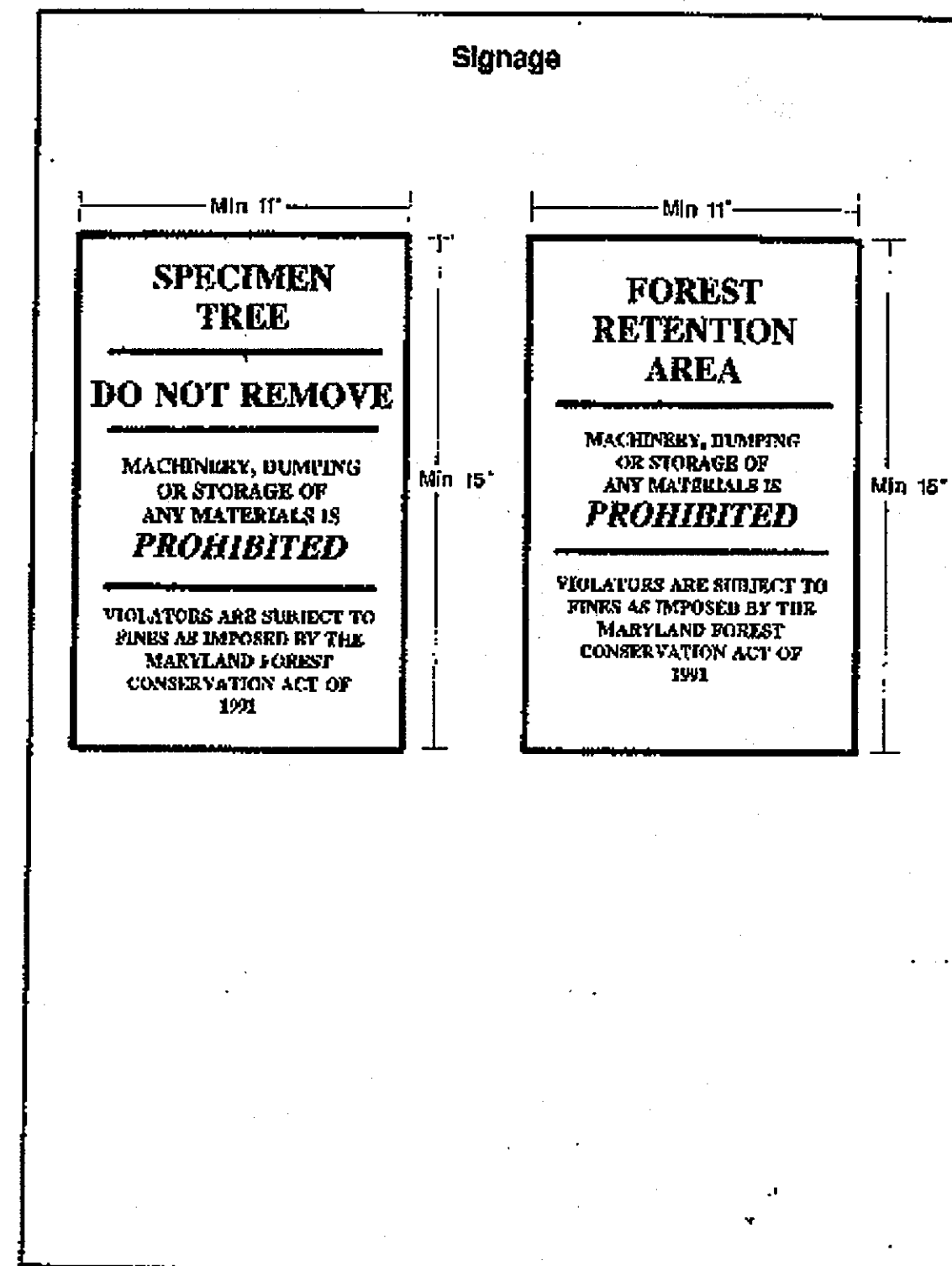
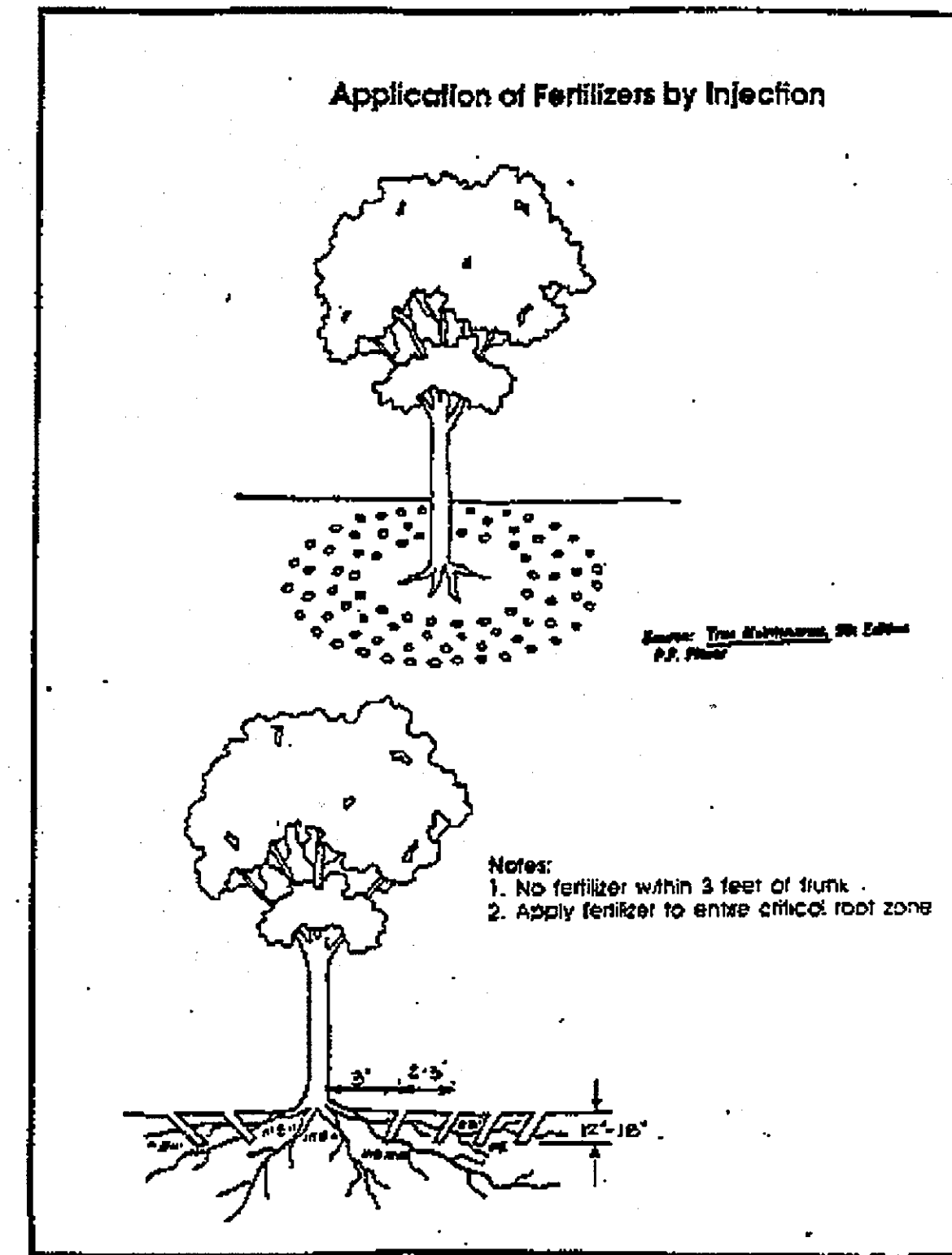


EXHIBIT G - 13



Brampton Hills Stream Stabilization - Howard County

Net Tract Area		
A. Total Tract Area	A=	2.91 ac.
B. Area within 100-year Floodplain	B=	1.16 ac.
C. Area to Remain in Agricultural Production	C=	0.00 ac.
D. Net Tract Area (D=(A-B-C))	D=	1.75 ac.
Land Use Category: Residential - Rural Medium Density		
E. Afforestation Threshold (D x 15%)	E=	0.26 ac.
F. Conservation Threshold (D x 20%)	F=	0.35 ac.
Existing Forest Cover		
G. Existing Forest Cover (excluding floodplain)	G=	1.72 ac.
H. Area of Forest Above Afforestation Threshold	H=	1.46 ac.
I. Area of Forest Above Conservation Threshold	I=	1.37 ac.
Break Even Point		
J. Forest Retention Above Threshold with no Mitigation	J=	0.62 ac.
K. Clearing Permitted Without Mitigation (K=G-J)	K=	1.10 ac.
Proposed Forest Clearing		
L. Total Area of Forest to be Cleared	L=	1.72 ac.
M. Total Area of Forest to be Retained (M=G-L)	M=	0.00 ac.
Planting Requirements		
N. Reforestation for Clearing Above the Conservation Threshold	N=	0.34 ac.
P. Reforestation for Clearing Below the Conservation Threshold	P=	0.70 ac.
Q. Credit for Retention Above the Conservation Threshold	Q=	0.00 ac.
R. Total Reforestation Required	R=	1.04 ac.
S. Total Afforestation Required	S=	0.00 ac.
T. Total Reforestation and Afforestation Requirement T=(R+S)	T=	1.04 ac.

EXHIBIT G - 14

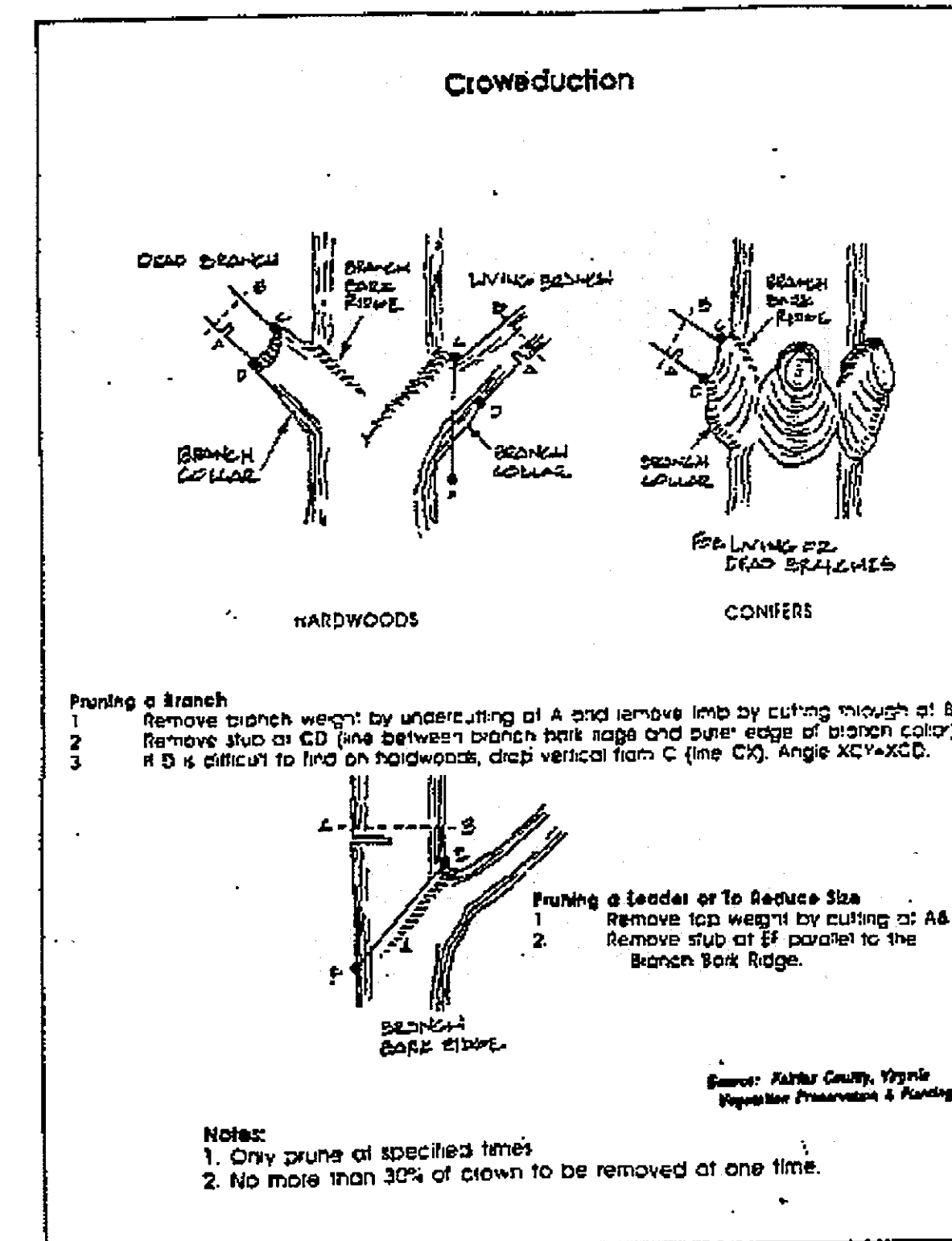


EXHIBIT G - 15

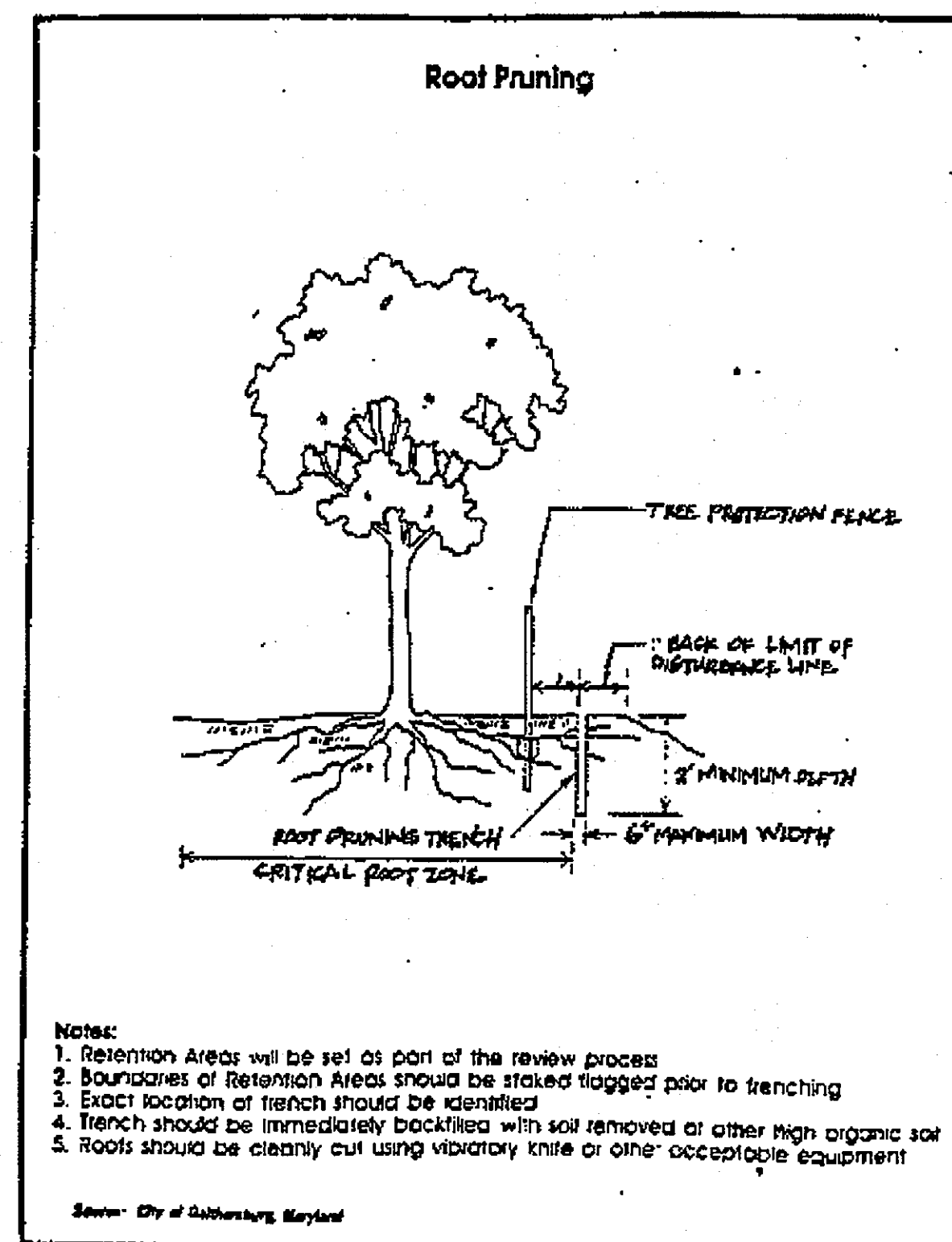


Table 1: Stand Summary

Stand Variable	FS 1	FS 2	FS 3	FS 4
Community Type	Green Ash	Red Maple	Black Cherry/Green Ash	Tulip Tree/Black Cherry
Area of Stand (acres)	2.12	2.33	1.46	3.72
Percent Canopy Closure	70 to 80%	70 to 80%	40 to 60%	80 to 90
Formal Sample Plots	1	1	1	1
Average Size Class of Dominant Trees (DBH)	10" to 17.9"	10" to 17.9"	10" to 17.9"	18"-29.9"
Basal Area (Sq. Ft.)	111	150	60	110
Retention Priority	Priority	Priority	Priority	Priority
Season when sampled	Summer	Summer	Summer	Summer

Table 2: Specimen Tree List

Specimen Tree ID	Scientific Name	Common Name	DBH	VIGOR
A	<i>Liriodendron tulipifera</i>	Tulip Tree	30	Good
B	** <i>Liriodendron tulipifera</i>	Tulip Tree	52	Good
C	<i>Liriodendron tulipifera</i>	Tulip Tree	45	Good
D	<i>Liriodendron tulipifera</i>	Tulip Tree	32	Excellent
E	<i>Liriodendron tulipifera</i>	Tulip Tree	31	Excellent
F	<i>Liriodendron tulipifera</i>	Tulip Tree	42.5	Excellent
G	<i>Liriodendron tulipifera</i>	Tulip Tree	32	Excellent
H	<i>Liriodendron tulipifera</i>	Tulip Tree	38	Excellent
I	<i>Liriodendron tulipifera</i>	Tulip Tree	32	Good
J	** <i>Prunus serotina</i>	Black Cherry	30	Poor
-K	** <i>Liriodendron tulipifera</i>	Tulip Tree	52	Fair

\*DBH: Diameter at breast height (4.5 feet above ground surface on the upslope side of the tree).  
\*\* Trees have a double stem 4.5 feet above ground surface

Table 3: Soil Mapping Units

BaA	Baile silt loam, 0-3% slope
GhB	Glenelg urban land complex, 0 to 8% slope
Ha	Hatboro-Codorus silt loams, 0 to 3% slope
MaC	Manor loam, 8 to 15% slope
MaD	Manor loam, 15 to 25% slope

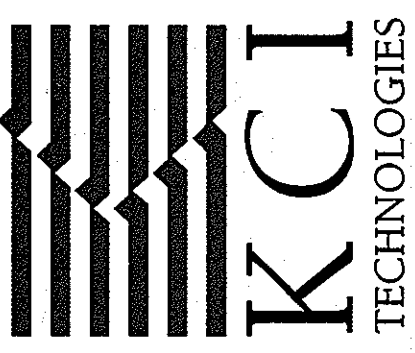
FOREST CONSERVATION NOTES

- SEE NOTE 22 ON SHEET 1 OF 35 REGARDING WAIVER PETITION.
- PLANTING REQUIREMENT SHALL BE MET THROUGH REPLANTING AND STABILIZATION WITHIN THE LIMITS OF DISTURBANCE.
- SEE SHEETS 27-30 OF 35 FOR LANDSCAPE PLANS AND SHEET 31 OF 35 FOR LANDSCAPE NOTES AND DETAILS.
- FOREST CONSERVATION EASEMENT IS 1.12 AC. AND PLANTING REQUIREMENT IS 1.04 AC. SEE SHEETS 33 AND 34 OF 35 FOR AREA WITHIN LOD THAT IS NOT CLEARED OR PLANTED BUT INCLUDED IN EASEMENT AREA.

Note:

- Total area of water resources, including wetlands: +/- 1.24 acres
- Total surface area of perennial and intermittent streams: +/- 1.12 acres.
- Total linear feet of perennial and intermittent streams: +/- 3259 feet
- Total area of scrub-shrub wetlands: +/- 0.12 acre
- Total forested area within limits of disturbance: +/- 2.91 acres
- Existing Zoning: Medium Density Residential
- Existing land use: Forest land deced to Howard County.
- No rare, threatened or endangered species were encountered during the field investigations. In addition, correspondence with the Maryland Historic Trust, the U.S. Fish and Wildlife Service, and the Maryland Department of Natural Resources indicate there are no records of historic resources or sensitive natural resources within the affected area.
- Base data provided by KCI Technologies Inc. North Park Drive, Hunt Valley, Maryland 21030-1888
- Wetlands were delineated by Chesapeake Environmental Management Inc. (CEM) on July 17, 2007.
- Wetlands shown represent the unverified USACOE water resource boundaries.
- Detailed topography was not available for areas west of FS-3.

10 NORTH PARK DRIVE  
HUNT VALLEY, MD 21030  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
WWW.KCI.COM



BRAMPTON HILLS  
STREAM STABILIZATION  
SECTION 4, AREAS 123  
CAPITAL PROJECT D-1158  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
1000 COLUMBIA AVENUE, SUITE 2000  
COLUMBIA, MARYLAND 21046  
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION  
1000 COLUMBIA AVENUE, SUITE 2000  
COLUMBIA, MARYLAND 21046

FOREST CONSERVATION NOTES AND DETAILS

SCALE: NTS  
DATE: OCTOBER, 2008  
KCI JOB NO.: 01-043223.25  
CAPITAL PROJECT NO.: D1158  
PERMIT ISSUE:  
CONSTRUCTION ISSUE:

THIS PLAN WAS PREPARED BY:  
HARMONY MILLER  
KCI TECHNOLOGIES  
MDNR QUALIFIED PROFESSIONAL STATUS  
(09-21-2008)  
SIGNATURE: *Harmony Miller* DATE: 14-JUL-2009

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

*Mr. [Signature]* 7/21/09  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Carly [Signature]* 8/19/09  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Frank [Signature]* 8/21/09  
DIRECTOR DATE