

RED HILL BRANCH STREAM STABILIZATION

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS CAPITAL PROJECT D-1158

INDEX OF SHEETS

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LEGEND

LIMIT OF DISTURBANCE	-----	LOD
EXISTING MAJOR CONTOURS	-----	
EXISTING MINOR CONTOURS	-----	
PROPOSED CONTOURS	-----	307
EXISTING TREE TO BE SAVED	○	TS
EDGE OF TREELINE	○	
WATERS OF THE US	-----	WUS
PROPERTY LINE	-----	
EXISTING SANITARY SEWER EASEMENT	-----	
EXISTING DRAINAGE AND UTILITY EASEMENT	-----	
EXISTING ROAD EDGE	-----	
EXISTING FENCE	-----	
EX. 100 YEAR FLOODPLAIN	-----	
PROP. 100 YEAR FLOODPLAIN	-----	
EXISTING TREE	○	
WETLAND	-----	
25' WETLAND BUFFER	-----	
EXISTING PROPERTY LINE	-----	
EXISTING SANITARY SEWER EASEMENT	-----	
EXISTING DRAINAGE & UTILITY EASEMENT	-----	
EXISTING SANITARY SEWER LINE	-----	
EXISTING STORM DRAIN	-----	
EXISTING STORM DRAIN MANHOLE	○	
STONE SILL	-----	
CLAY CHANNEL PLUG	-----	
STONE TOE PROTECTION	-----	
RIFFLE GRADE CONTROL	-----	
STABILIZED CONSTRUCTION ENTRANCE	-----	SCE
PUMP	○	P
SILT BAG DEWATERING DEVICE	-----	SD
SAND BAG DAM	-----	
HOSE	-----	
ORANGE SAFETY FENCE	-----	OSF
SILT FENCE	-----	SF

SITE ANALYSIS DATA CHART

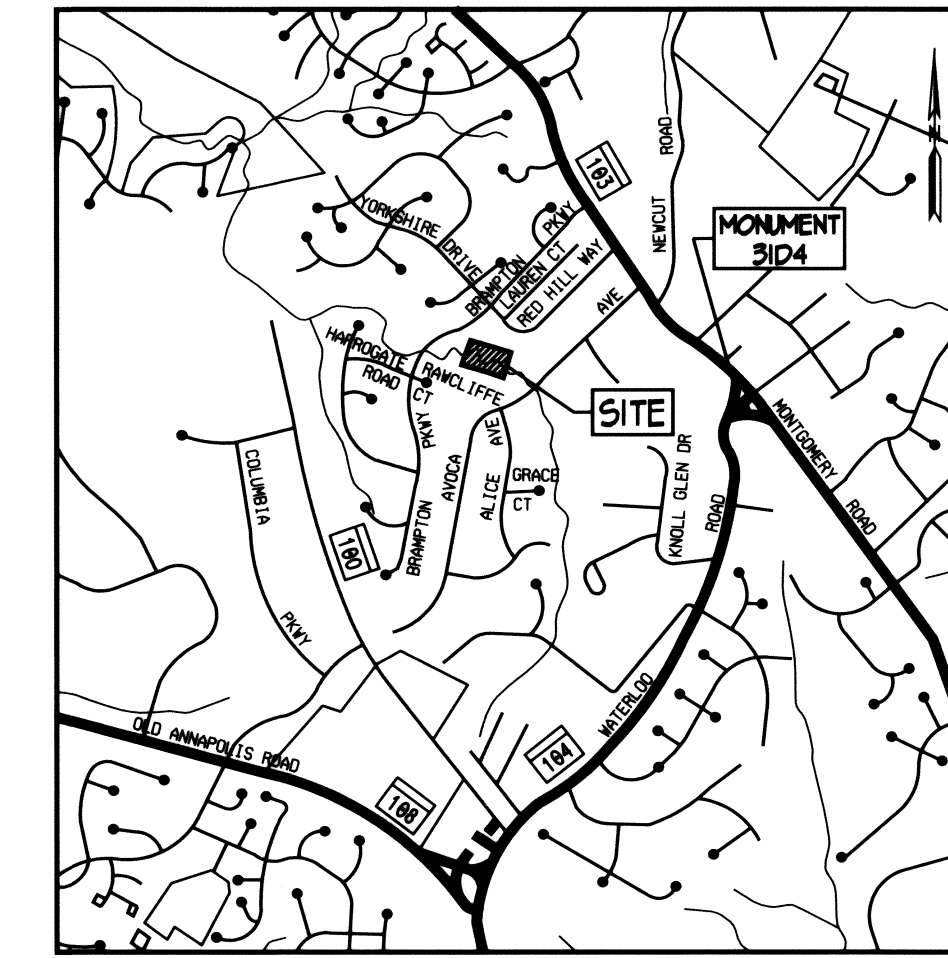
- TOTAL PROJECT AREA: 0.61 ACRES (26,482 SF).
- DISTURBED AREA: 0.61 ACRES (26,482 SF).
- PRESENT ZONING DESIGNATION: R-20
- PROPOSED USE FOR THE SITE: STABILIZE EXISTING BANK/CHANNEL EROSION
- OPEN SPACE ON SITE: 0.57 AC, 93% OF GROSS AREA
- APPLICABLE DPZ FILE REFERENCES: F-81-90, F-88-162

ADDRESS CHART

LOT/PARCEL #	STREET ADDRESS	PLAT #
11 / 15	4841 RED HILL WAY	4909
1-21 / A	OPEN SPACE LOT	4909
21 / NA	OPEN SPACE LOT	8161

SPECIAL CONTRACTOR NOTES

- 100-YEAR FLOODPLAIN BOUNDARY IS SHOWN ON THE PLANS.
- 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 THE ENGINEER OR HIS/HER REPRESENTATIVE 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.
- ALL MATERIAL SHALL BE REMOVED AND DISPOSED OF OFFSITE.



VICINITY MAP
SCALE: 1" = 2000'

ADC MAP NO. 4815 GRID E-2

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

TRAVERSE COORDINATE LIST	POINT #	NORTHING	EASTING	ELEVATION
	203	N 572,054.35	E 1,361,145.79	404.64
	204	N 572,195.33	E 1,366,998.36	402.74

HOWARD COUNTY CONTROL POINT	NORTH	EAST	ELEVATION
3104	571700.6929	1369606.3482	494.421

GENERAL NOTES

- 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 WILL MEET THE PURPOSE AND INTENT OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL BY ALTERNATIVE COMPLIANCE.
- THERE ARE NO BURIAL GROUNDS OR CEMETERY SITES LOCATED ON THE PROJECT SITE.
- THIS PLAN MEETS THE REQUIREMENTS OF FOREST CONSERVATION, WHICH INCLUDES 0.0 ACRES OF RETENTION AND 0.23 ACRES OF PROPOSED REFORESTATION PLANTING WITHIN THE LIMIT OF DISTURBANCE. THE REFORESTATION EXCEEDS THE REQUIRED 0.04 ACRES OF REFORESTATION. REFER TO FOREST CONSERVATION PLAN SHEETS 13 AND 14.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 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 MONUMENT NUMBER 3104 WAS 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.
- THE WETLANDS DELINEATION FOR THIS PROJECT WAS PERFORMED BY KCI TECHNOLOGIES, INC. IN OCTOBER 2009.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY AB CONSULTANTS, INC. IN NOVEMBER 2009.
- ALL WORK SHALL BE CONSTRUCTED ACCORDING TO THE REQUIREMENTS OF THE NONTIDAL WETLANDS AND WATERWAYS PERMIT APPROVED 08/03/2010. (MDE TRACKING #10-NT-0145/201060524).
- 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-10-162) FROM SECTION 16.155(A)(1)(II), 16.1201(N) AND 16.1205(A)(7), WAS APPROVED ON JUNE 30, 2010. THE WAIVER APPROVAL GRANTS RELIEF FROM THE REQUIREMENT TO SUBMIT A SITE DEVELOPMENT PLAN, ALLOWS THE USE OF THE PROJECT LIMIT-OF-DISTURBANCE AS THE NET TRACT AREA FOR COMPUTATION OF FOREST CONSERVATION OBLIGATIONS, AND ALLOWS THE REMOVAL OF A SPECIMEN TREE AS PART OF THE PROJECT SCOPE.

ENGINEER'S CERTIFICATE	
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT"	
<i>Kathy L. Hoverman</i>	P.E. # 38311
SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) KATHY L. HOVERMAN, P.E.	DATE 9/10/10
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 SOIL CONSERVATION DISTRICT"	
<i>Mark S. Schomard</i>	DATE 9/10/10
SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE)	DATE

DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD

Janet K... 9/10/10
DIRECTOR OF PUBLIC WORKS DATE

Evelyn E. ... 9/10/10
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

Mark S. Schomard 9/10/10
CHIEF, STORMWATER MANAGEMENT DIVISION DATE

DEPARTMENT OF RECREATION AND PARKS, HOWARD COUNTY, MD

John R. ... 9/10/10
DIRECTOR OF RECREATION AND PARKS DATE

PERMIT INFORMATION CHART

SUBDIVISION NAME BROOKVIEW ESTATES MONTGOMERY ESTATES	SECTION/AREA	LOT/PARCEL # SEE CHART
PLAT # OF L/P SEE CHART	TAX MAP NO. 7 R-20	ELECT. DISTR. 31 01
CENSUS TRACT 602302	WATER CODE PUBLIC	SEWER CODE PUBLIC

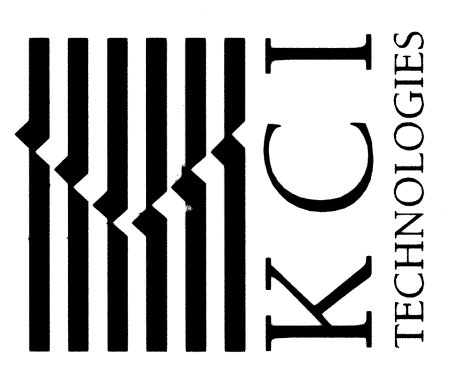
OWNER:
HOWARD COUNTY
DEPARTMENT OF PUBLIC WORKS
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

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

Approved: *John R. ...* 9/10/10
Howard S.C.D. Date

NOTE: AS-BUILTS COMPLETED IN JANUARY 2011 AND PROVIDED ON SHEET 3 AND NEW SHEET 4A.

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
WWW.KCI.COM



RED HILL BRANCH
STREAM STABILIZATION
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
6751 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION
700 COLUMBIA GATEWAY DRIVE
COLUMBIA, MD 21046

TAX MAP #1 ZONING R-20 ELECTION DISTRICT 01

TITLE SHEET

SCALE: 0 0.5 1.0 FEET

DATE: SEPTEMBER 2010

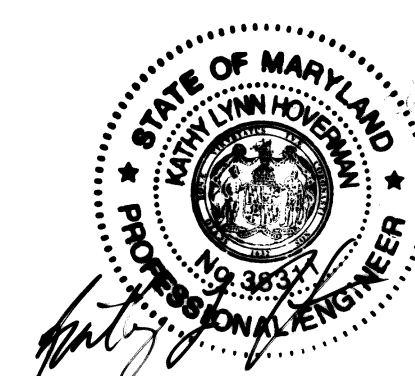
KCI JOB NO.: 01-081795.27

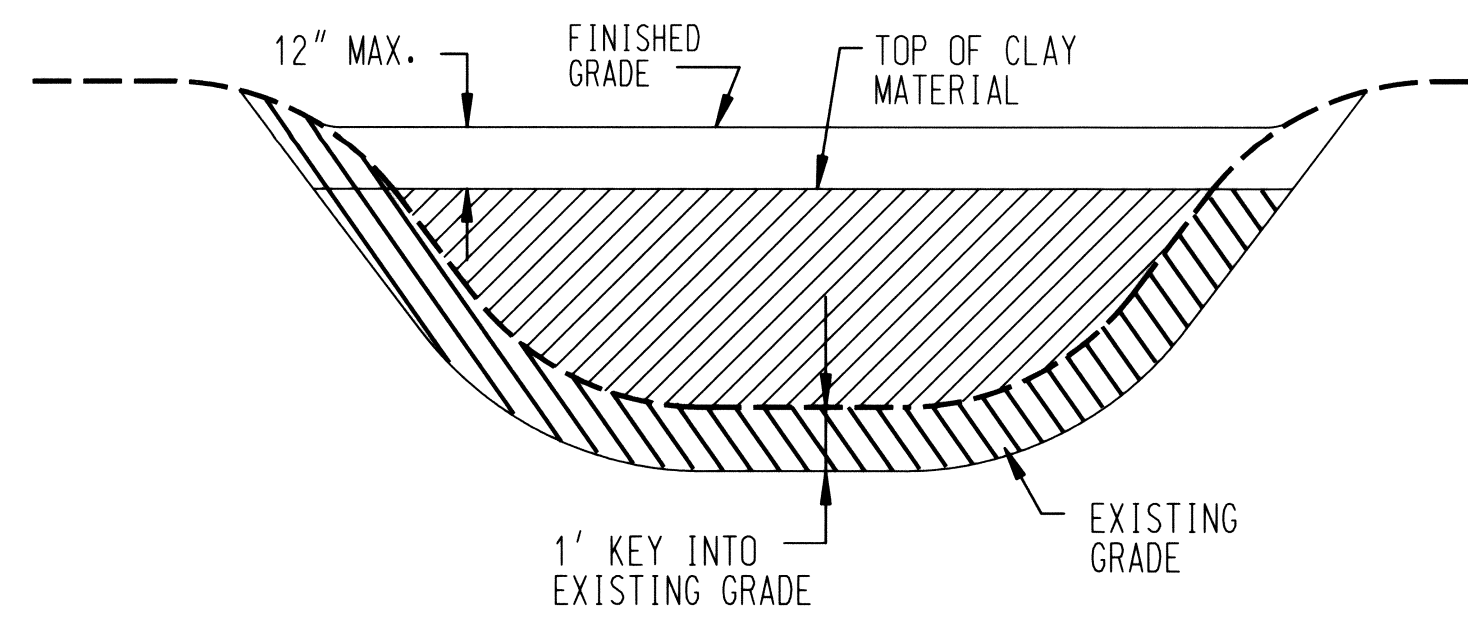
CAPITAL PROJECT NO.: D1158

PERMIT ISSUE:

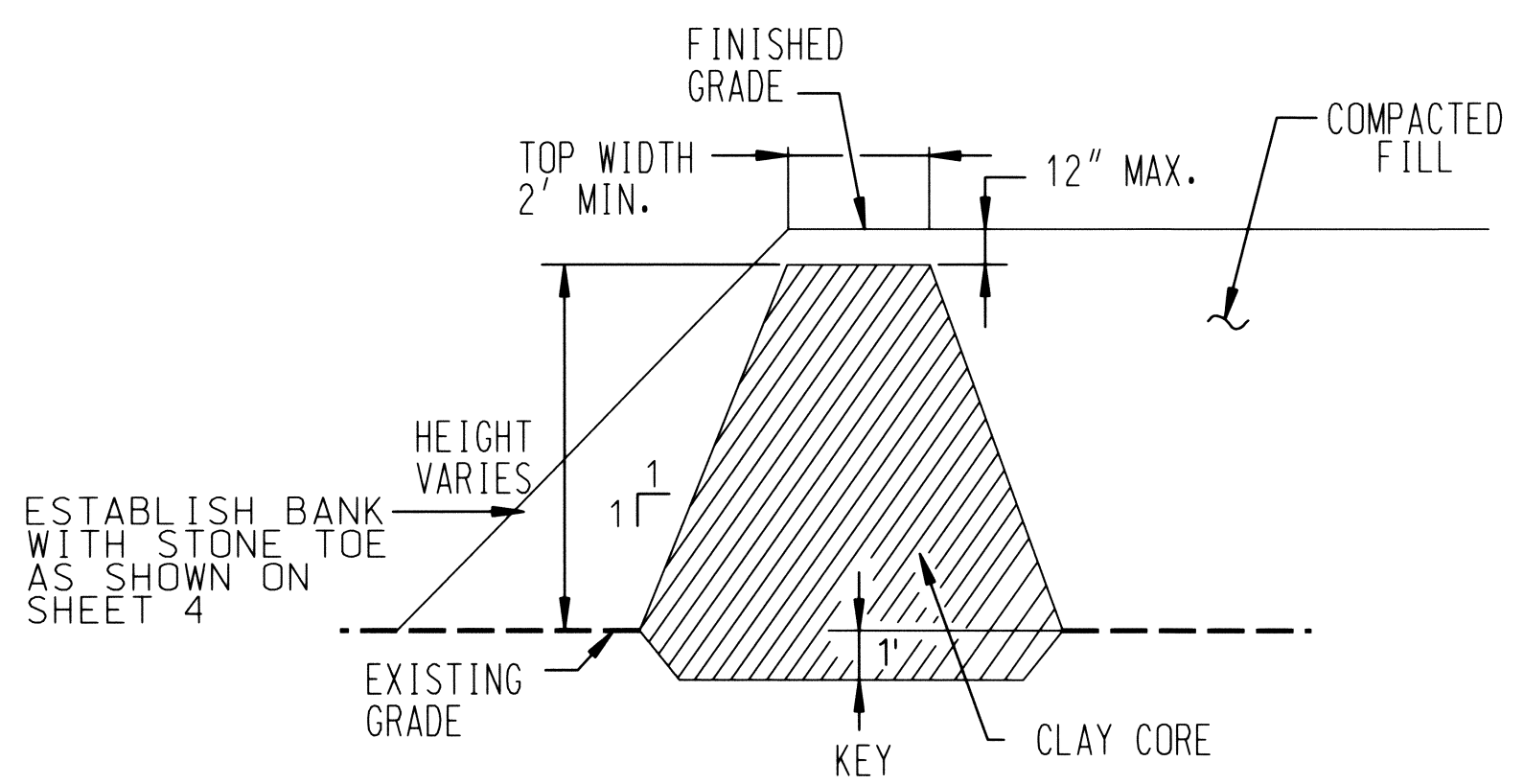
CONSTRUCTION ISSUE:

PLOTTED: 11:51 AM on Thursday, September 09, 2010
 BY: Harmony Miller, Division: PDSO, Natural Res. GMA - Emp
 FILE: M:\2008\01081795.27\Drawings\101.dwg





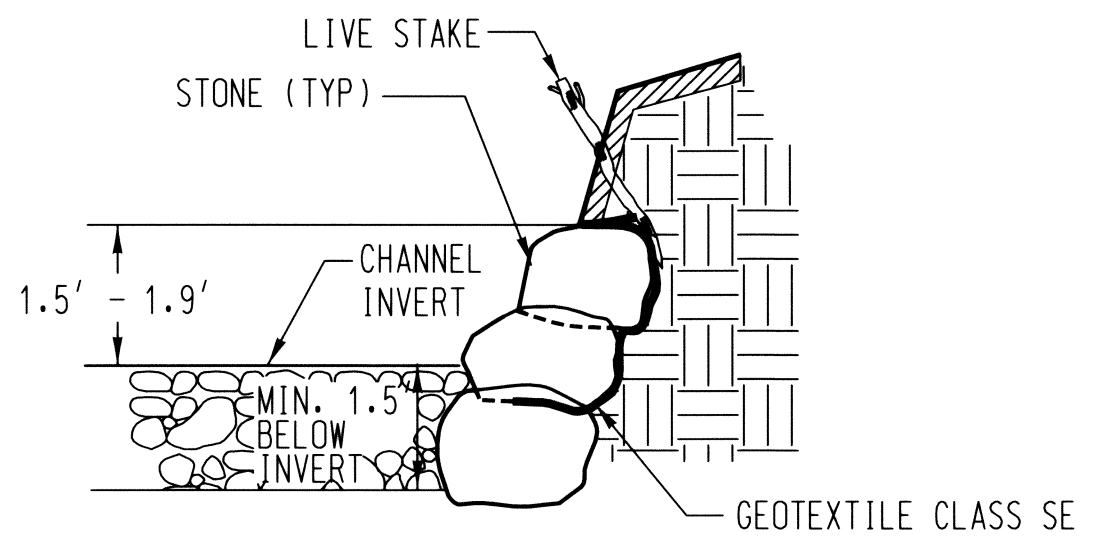
ELEVATION



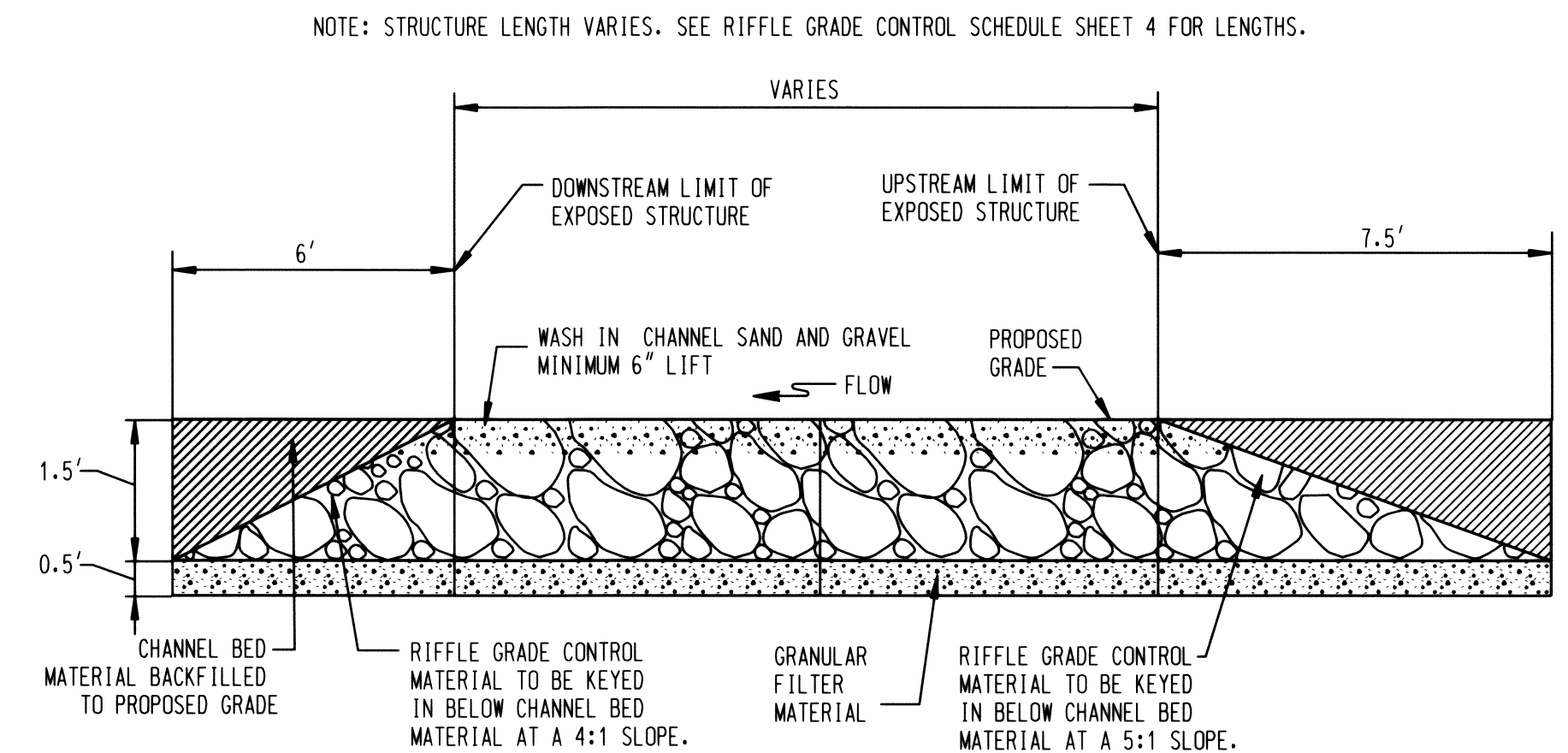
CROSS-SECTION

- NOTES:
1. CLAY MATERIAL MUST BE UNIFIED SOIL CLASSIFICATION SC OR CC MATERIAL AND MUST BE COMPACTED TO 85% OF AASHTO SPECIFICATION T-99 OR ASTM D698.
 2. COMPACTED FILL MUST BE COMPACTED TO 95% OF AASHTO SPECIFICATION T-99 OR ASTM D698.
 3. EXCAVATION INCIDENTAL TO PAY ITEM.

CLAY CHANNEL BLOCK
NOT TO SCALE

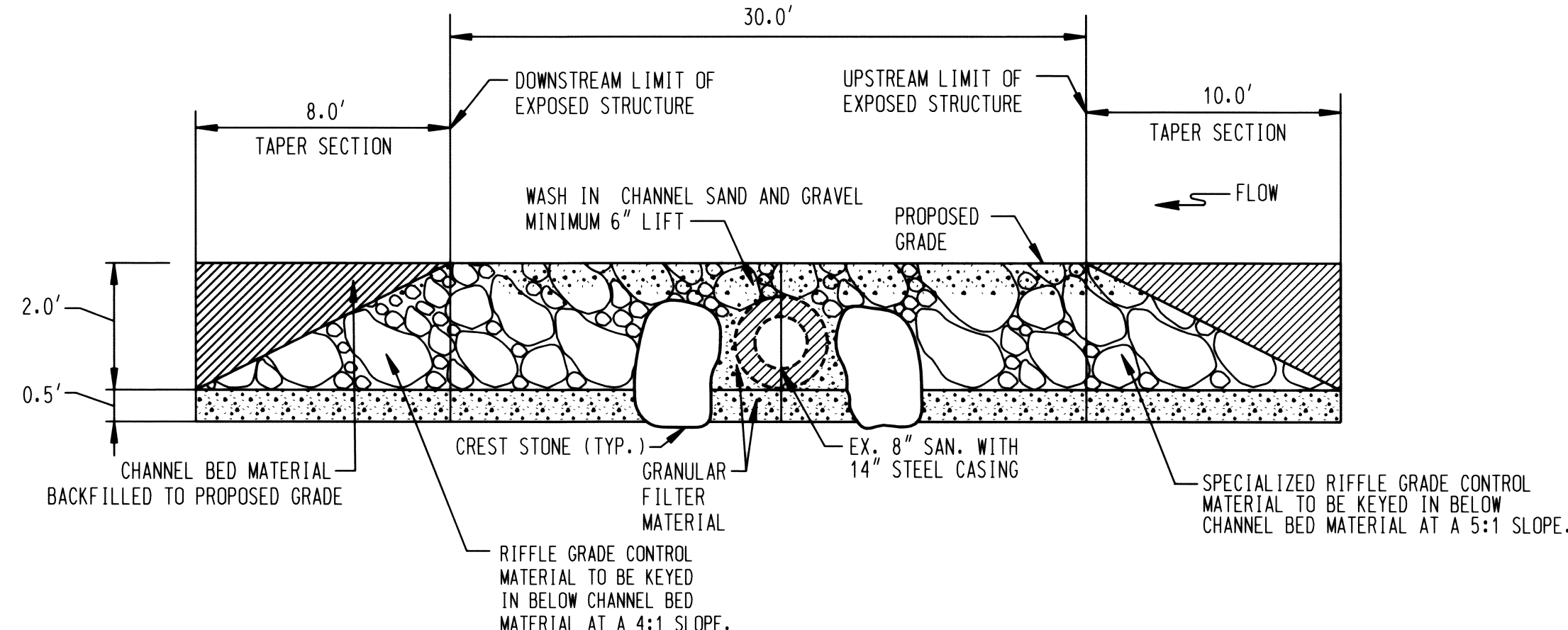


TYPICAL STONE TOE PROTECTION DETAIL
NOT TO SCALE

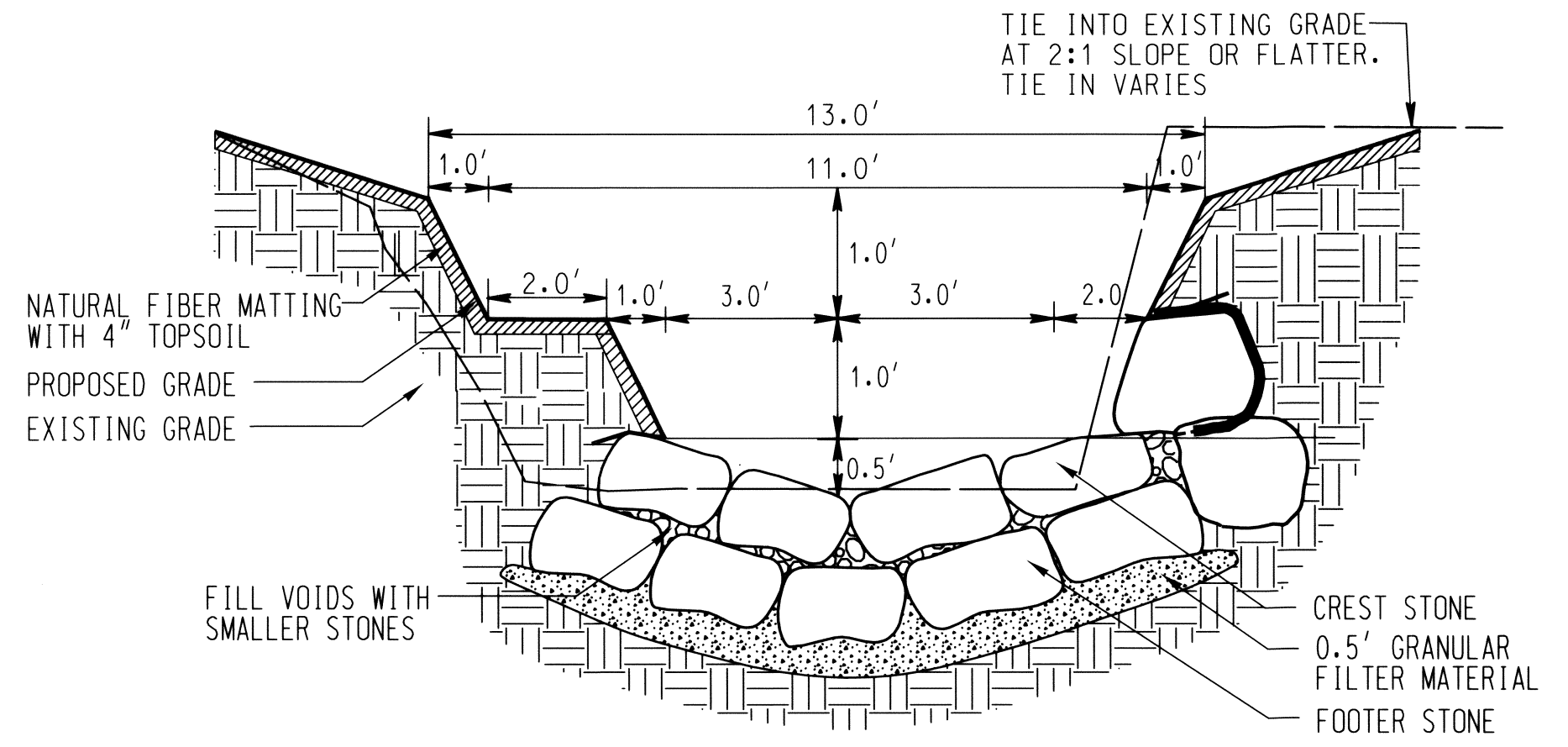


- NOTE: STRUCTURE LENGTH VARIES. SEE RIFFLE GRADE CONTROL SCHEDULE SHEET 4 FOR LENGTHS.
- NOTES:
1. ALL RIFFLE GRADE CONTROL STRUCTURES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM SO THAT IT IS SHINGLED IN THE DOWNSTREAM DIRECTION.
 2. THE RIFFLE GRADE CONTROL MATERIAL SHALL BE PLACED TO ITS FULL DEPTH MOVING FROM ONE BANK TO THE OPPOSING BANK.
 3. SEE SHEET 4 FOR STATIONING

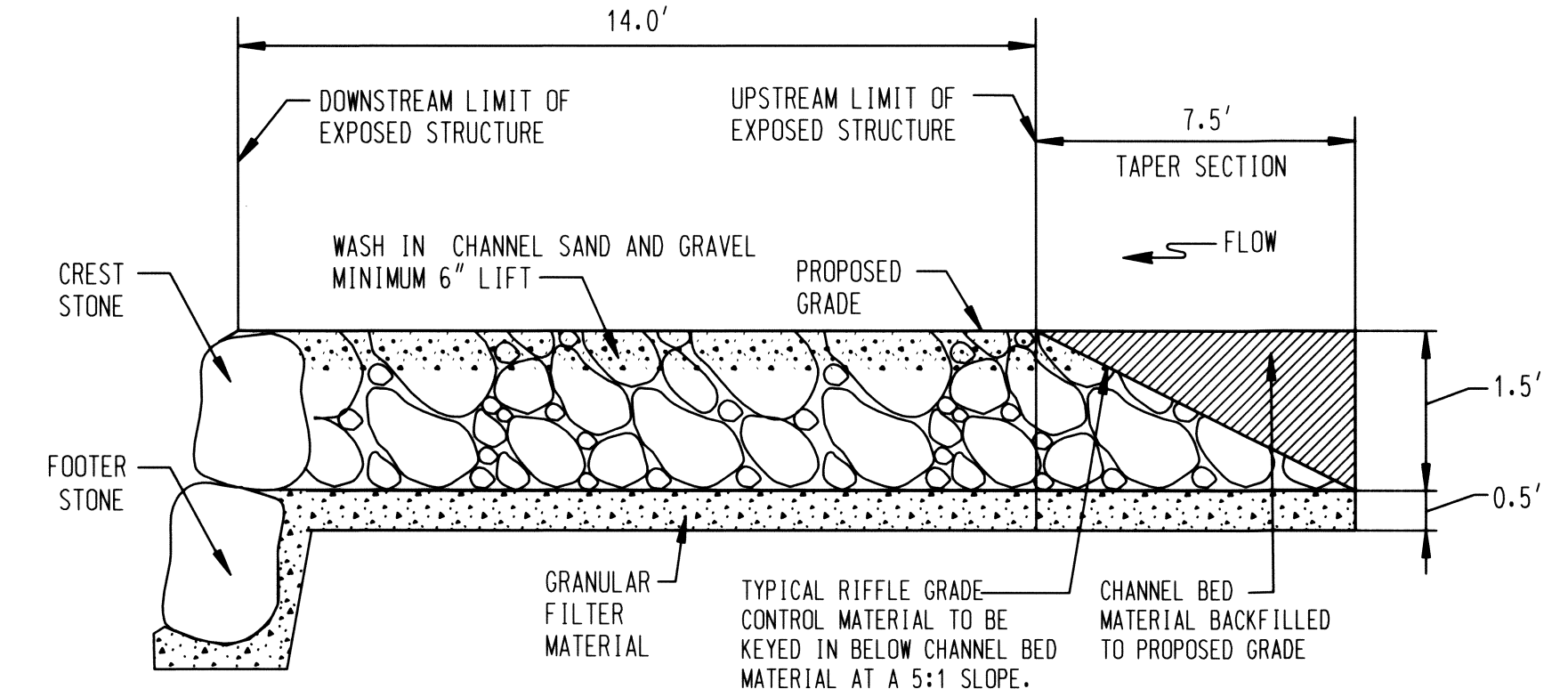
TYPICAL RIFFLE GRADE CONTROL PROFILE
NOT TO SCALE



RIFFLE GRADE CONTROL PROFILE WITH SANITARY SEWER PROTECTION
STATION 1+65 TO 1+95
NOT TO SCALE

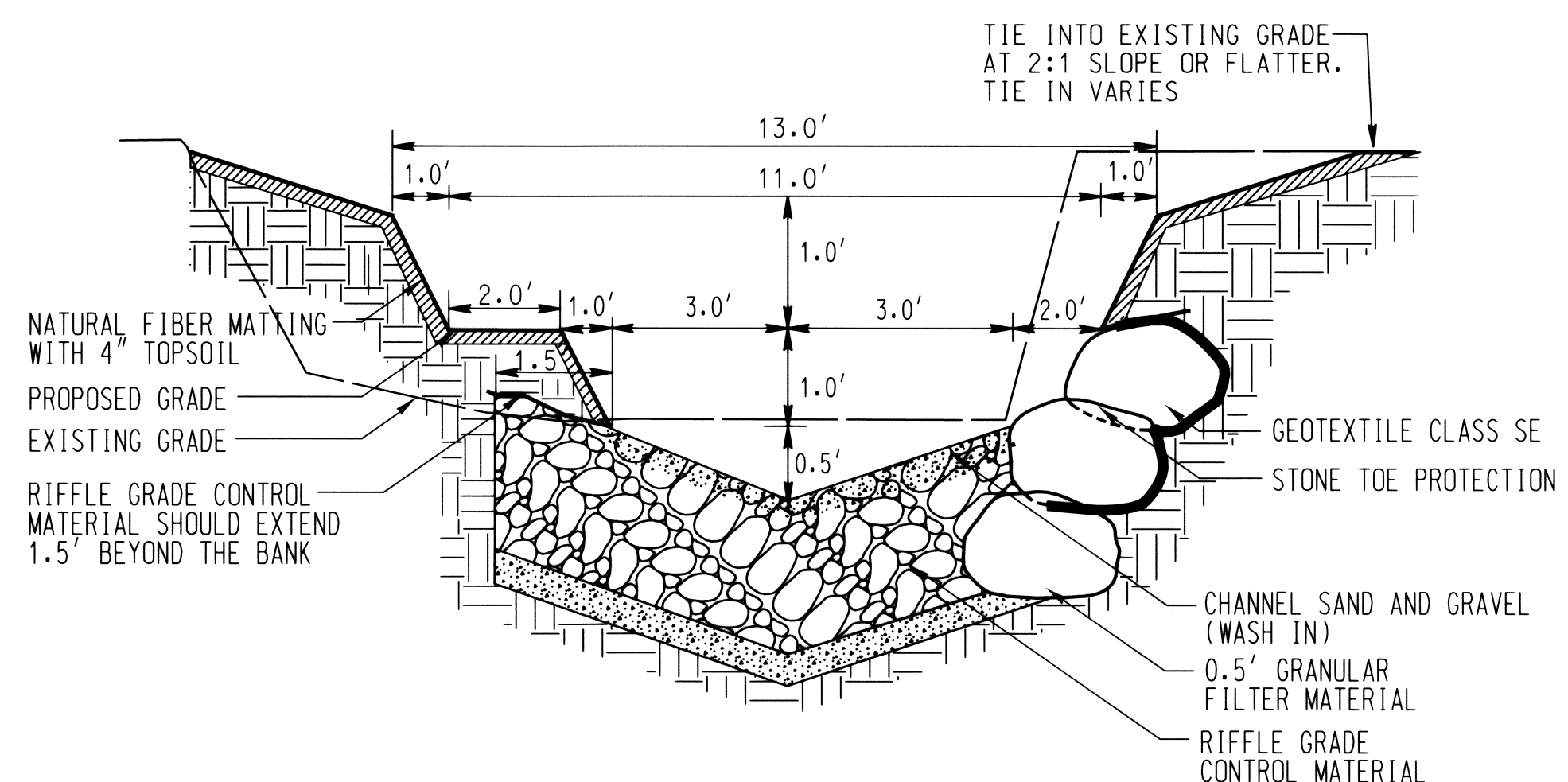


TYPICAL SILL STRUCTURE
STA. 3+79
NOT TO SCALE



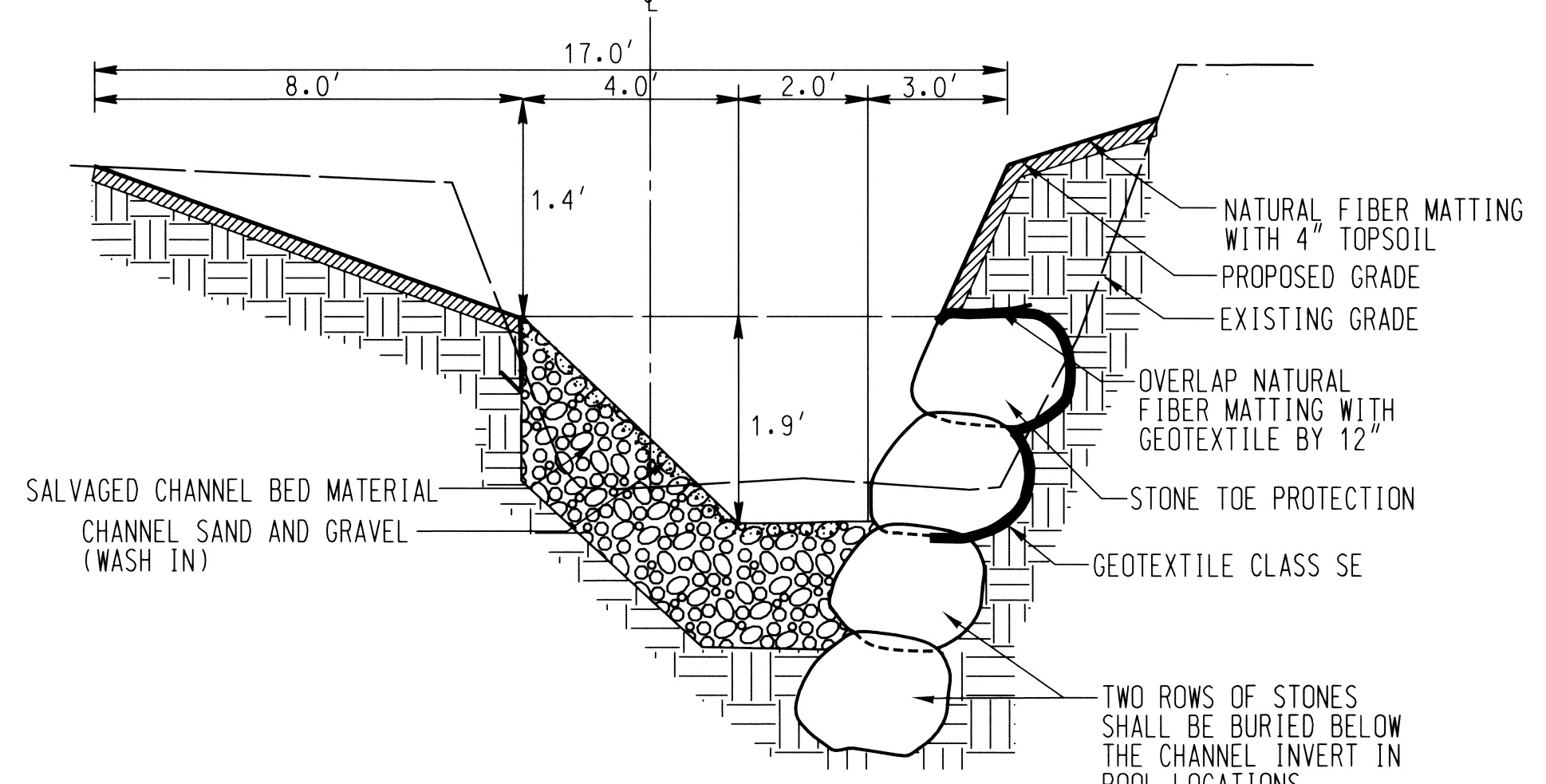
- NOTES:
1. ALL RIFFLE GRADE CONTROL STRUCTURES SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM SO THAT IT IS SHINGLED IN THE DOWNSTREAM DIRECTION.
 2. THE RIFFLE GRADE CONTROL MATERIAL SHALL BE PLACED TO ITS FULL DEPTH MOVING FROM ONE BANK TO THE OPPOSING BANK.
 3. A SILL SHALL BE PLACED ALONG THE DOWNSTREAM EDGE OF THE RIFFLE GRADE CONTROL.

TYPICAL RIFFLE GRADE CONTROL PROFILE WITH SILL
STATION 3+65 TO 3+79
NOT TO SCALE



TYPICAL RIFFLE GRADE CONTROL
NOT TO SCALE

NOTE: RIFFLE GRADE CONTROLS ARE TO BE PLACED AS SHOWN ON SHEET 3.

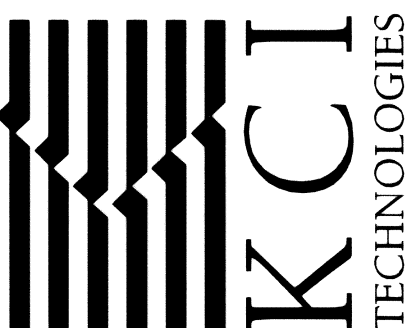


TYPICAL POOL
NOT TO SCALE

NOTE: POOL LOCATIONS ARE LABELED ON SHEET 3.

NO.	REVISIONS DESCRIPTION	DATE

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SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com



RED HILL BRANCH
STREAM STABILIZATION
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION
STORMWATER MANAGEMENT DIVISION
600 COLUMBIA PIKE
COLUMBIA, MD 21046
TAX MAP 31 ZONING R-38 ELECTION DISTRICT 01

DETAILS

SCALE: 0 5 10 FEET
NOT TO SCALE

DATE: SEPTEMBER 2010
KCI JOB NO.: 01-081795.27
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. 38311. EXPIRATION DATE: JANUARY 6, 2012

SEQUENCE OF CONSTRUCTION

1. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777, AND HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410)-537-3510 AT LEAST SEVEN (7) DAYS PRIOR TO BEGINNING ANY WORK. (7 DAYS)
2. OBTAIN GRADING AND ALL NECESSARY PERMITS FOR CONSTRUCTION FROM THE COUNTY AT THE PRE-CONSTRUCTION MEETING (1 DAY)
MDE TRACKING NUMBER 10-NI-0145201060524, APPROVED 08032010
3. CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE COUNTY PROJECT MANAGER, A REPRESENTATIVE FROM THE MARYLAND DEPARTMENT OF ENVIRONMENT, HOWARD COUNTY CONSTRUCTION INSPECTION, BUREAU OF UTILITIES. (1 DAY)
4. CONTRACTOR SHALL TAKE EXTRA PRECAUTION FOR TRANSPORTING MATERIALS TO THE CONSTRUCTION SITE. CONTRACTOR SHALL MINIMIZE THE IMPACT ON STREAMBED, SIDE SLOPES, EXISTING TREES, WETLANDS, U.S. OF WATERS, EXISTING UTILITIES AND OTHER EXISTING FEATURES.
5. ALL NECESSARY EASEMENTS AND/OR RIGHT OF WAYS SHALL BE REQUIRED PRIOR TO THE START OF THE JOB. (1 DAY)
6. ALL IN-STREAM WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PUMP AROUND CRITERIA.
7. CONTRACTOR SHALL STAKE OUT LOD PRIOR TO PRE-CONSTRUCTION MEETING (1 DAY)

PHASE 2

1. PLACE PUMP AROUND HOSE AT SAND BAG DAM STA. 1+75 ON THE SOUTH STREAM BANK BEGIN PUMP AROUND OPERATION DISCHARGING ONTO SAND BAGS AT OUTFALL (1 DAY)
2. INSTALL DOWNSTREAM SAND BAG DAM AT STA. 3+91 SEDIMENT LADEN WATER SHALL NOT BE DISCHARGED DIRECTLY INTO THE STREAM. DEWATER ENTRAPPED AREA BEHIND SAND BAGS TO A SILT BAG DEWATERING DEVICE PRIOR TO DISCHARGE DOWNSTREAM. (1 DAY)
3. GRADE EXISTING STREAM FROM STA 1+75 TO STA 3+91 (STONE TOE PROTECTION, STONE RIFFLE AND POOL SECTIONS) AS SHOWN ON PLANS. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED WITH PROPOSED FILTER MATTING OR SEED AND MULCH AT THE END OF EACH DAY. (1 WEEK)
4. UPON COMPLETION, WITH PERMISSION FROM THE INSPECTOR REMOVE SAND BAG DAMS AT STATIONS 1+75 AND 3+91 AND THE PUMP-AROUND. STABILIZE THE AREA DISTURBED BY THE PROCESS. (1 DAY)
5. PLACE TOP SOIL AT REGRADED AREAS AND PERMANENTLY STABILIZE ALL DISTURBED AREAS TO THE FULL WIDTH OF L.O.D., INCLUDING OVERBANK AREAS. (3 DAYS)
6. WHEN THE SITE IS STABILIZED AND WITH THE PERMISSION OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE ANY AREAS DISTURBED BY THIS ACTIVITY. (2 DAYS)

PHASE 1

1. CLEAR AND GRUB THOSE AREAS WITHIN THE LIMIT OF DISTURBANCE REQUIRED TO ESTABLISH THE PROPOSED SEDIMENT CONTROL MEASURES. (2 DAYS)
2. INSTALL ALL PERIMETER CONTROL DEVICES INCLUDING ORANGE SAFETY FENCE, SILT FENCE, AND STABILIZED CONSTRUCTION ENTRANCE. INSTALL 24" FLEXIBLE PIPE FROM EXISTING STORM DRAIN OUTFALL TO UPSTREAM OF THE RESTORATION WORK. NO WORK SHALL BE PERFORMED UNTIL THESE DEVICES ARE APPROVED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. (3 DAYS)
3. PROVIDE TREE PROTECTION ACCORDING TO LANDSCAPE DETAIL SHEET. (1 DAY)
4. INSTALL UPSTREAM SAND BAG DAM AT STA 0+00 PLACE PUMP AROUND HOSE ON THE NORTH STREAM BANK BEGIN PUMP AROUND OPERATION DISCHARGING ONTO SAND BAGS AT OUTFALL. (1 DAY)
5. INSTALL DOWNSTREAM SAND BAG DAM AT STA 1+75 SEDIMENT LADEN WATER SHALL NOT BE DISCHARGED DIRECTLY INTO THE STREAM. DEWATER ENTRAPPED AREA BEHIND SAND BAGS TO A SILT BAG DEWATERING DEVICE PRIOR TO DISCHARGE DOWNSTREAM. PLACE TEMPORARY ACCESS BRIDGE. (1 DAY)
6. GRADE EXISTING STREAM FROM STA 0+00 TO STA 1+75 (STONE TOE PROTECTION, STONE RIFFLE AND POOL SECTIONS) AS SHOWN ON PLANS. CONTRACTOR SHALL DISTURB ONLY THAT MUCH AREA WHICH CAN BE BROUGHT TO FINAL GRADE AND STABILIZED WITH PROPOSED FILTER MATTING OR SEED AND MULCH AT THE END OF EACH DAY. (1 WEEK)
7. UPON COMPLETION REMOVE THE UPSTREAM SAND BAG DAM AT STA 0+00. REMOVE ANY SEDIMENT CONTROL MEASURES AT THE DISCRETION OF THE INSPECTOR. (1 DAY)
8. PLACE TOPSOIL AT REGRADED AREAS AND PERMANENTLY STABILIZE ALL DISTURBED AREAS TO THE FULL WIDTH OF L.O.D., INCLUDING OVERBANK AREAS WITH PERMISSION OF THE INSPECTOR. PROCEED TO PHASE 2. (3 DAYS)

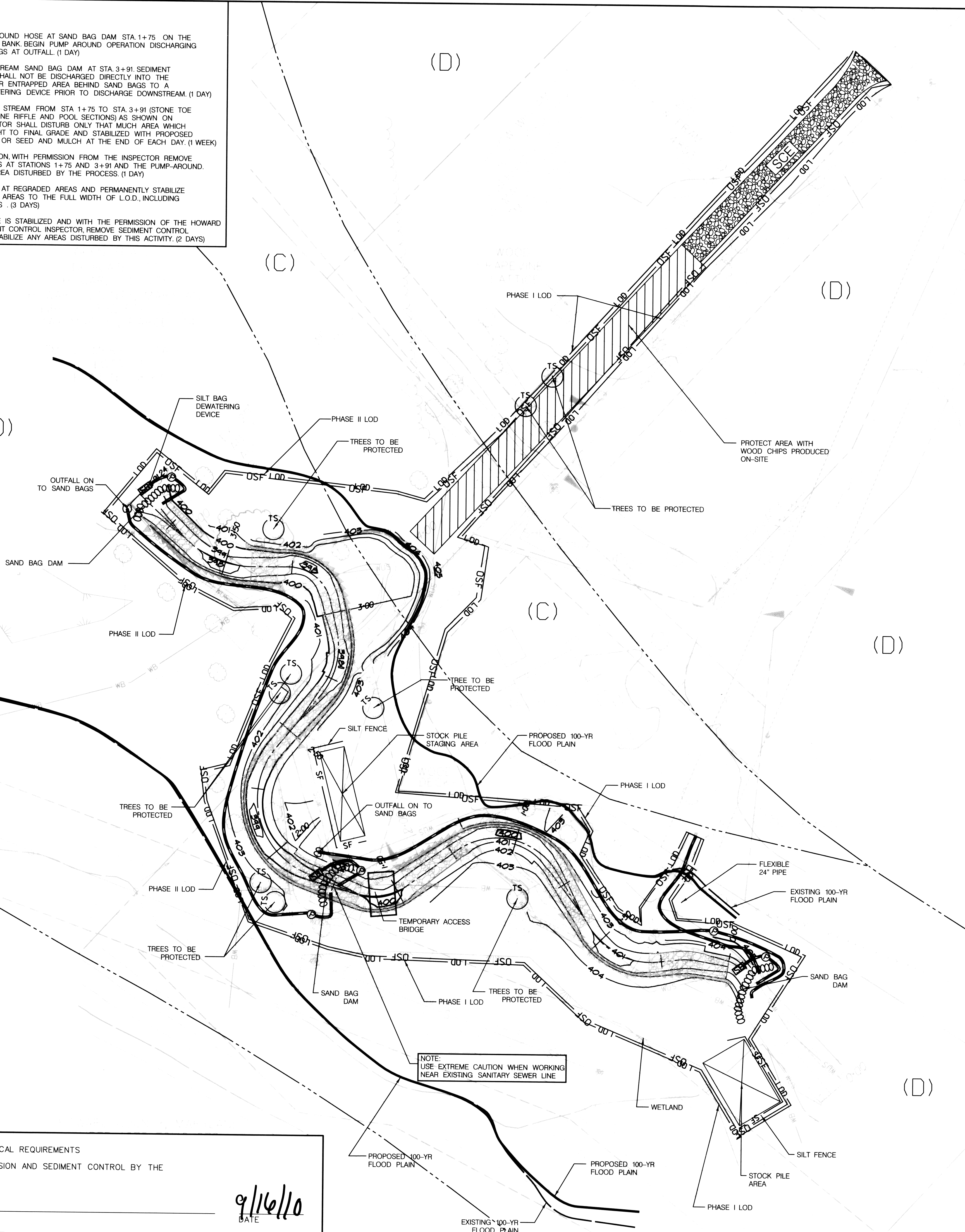
- NOTES:**
1. HARVEST AND STOCKPILE EXISTING BED MATERIAL FOR REUSE.
 2. USE EXTREME CAUTION WHEN WORKING NEAR EXISTING SANITARY LINES.
 3. ALL TREES REMOVED DURING CLEARING ACTIVITIES SHOULD BE CHIPPED ON SITE AND USED AS CALLED OUT ON THIS SHEET. STOCK PILE ANY REMAINING CHIPS FOR FUTURE USE AS DIRECTED BY THE ENGINEER.
 4. LIMIT STOCKPILE HEIGHT TO A MAXIMUM OF 3 FEET WITH IN FLOOD PLAIN AS PER MDE REGULATIONS (COMAR 26.17.04.08)

NOTE:
USE EXTREME CAUTION WHEN WORKING NEAR EXISTING SANITARY SEWER LINE

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. 38311. EXPIRATION DATE: JANUARY 6, 2012

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

John K. Roberts
DATE: 9/16/10



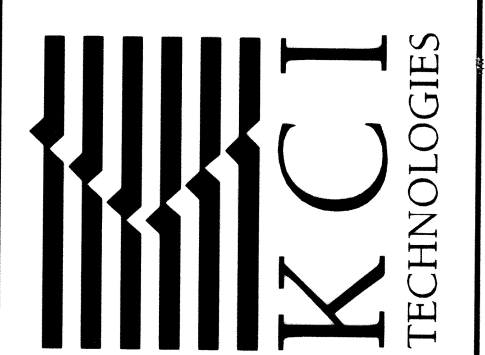
LEGEND

- (P) PUMP
- (TS) TREE SAVE
- (SBD) FILTER BAG DEWATERING DEVICE
- ~~~~~ SAND BAG DAM
- LOD --- LIMIT OF DISTURBANCE
- HOSE --- HOSE
- OSF --- ORANGE SAFETY FENCE
- SF --- SILT FENCE
- (SCE) STABILIZED CONSTRUCTION ENTRANCE
- SOIL BOUNDARY --- SOIL BOUNDARY
- (D) SOIL TYPE
- /// WOOD CHIPS
- PROPOSED 100-YR FLOOD PLAIN --- PROPOSED 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN --- EXISTING 100-YR FLOOD PLAIN

- NOTES:**
1. THE SUBJECT TRIBUTARY TO LITTLE PATUXENT RIVER 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 7:00 P M AND 7:00 AM, MONDAY THROUGH FRIDAY.
 2. CONSTRUCTION EQUIPMENT SHALL NOT BE STARTED NOR RUN BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM, MONDAY THROUGH FRIDAY.
 3. FOR SATURDAY WORK, THE ABOVE HOURS SHALL BE 5:00 PM TO 9:00 AM, RESPECTIVELY.
 4. NO WORK SHALL BE DONE ON SUNDAY.

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
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RED HILL BRANCH STREAM STABILIZATION
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
STORMWATER MANAGEMENT DIVISION
1075 COLUMBIA AVE. #248
COLUMBIA, MD 21046
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION
TAX MAP 31 ZONING 10-20 ELECTION DISTRICT 01

EROSION AND SEDIMENT CONTROL PLAN

SCALE: 0 0.5 1.0 FEET

DATE: SEPTEMBER 2010

KCI JOB NO.: 01-081795.27

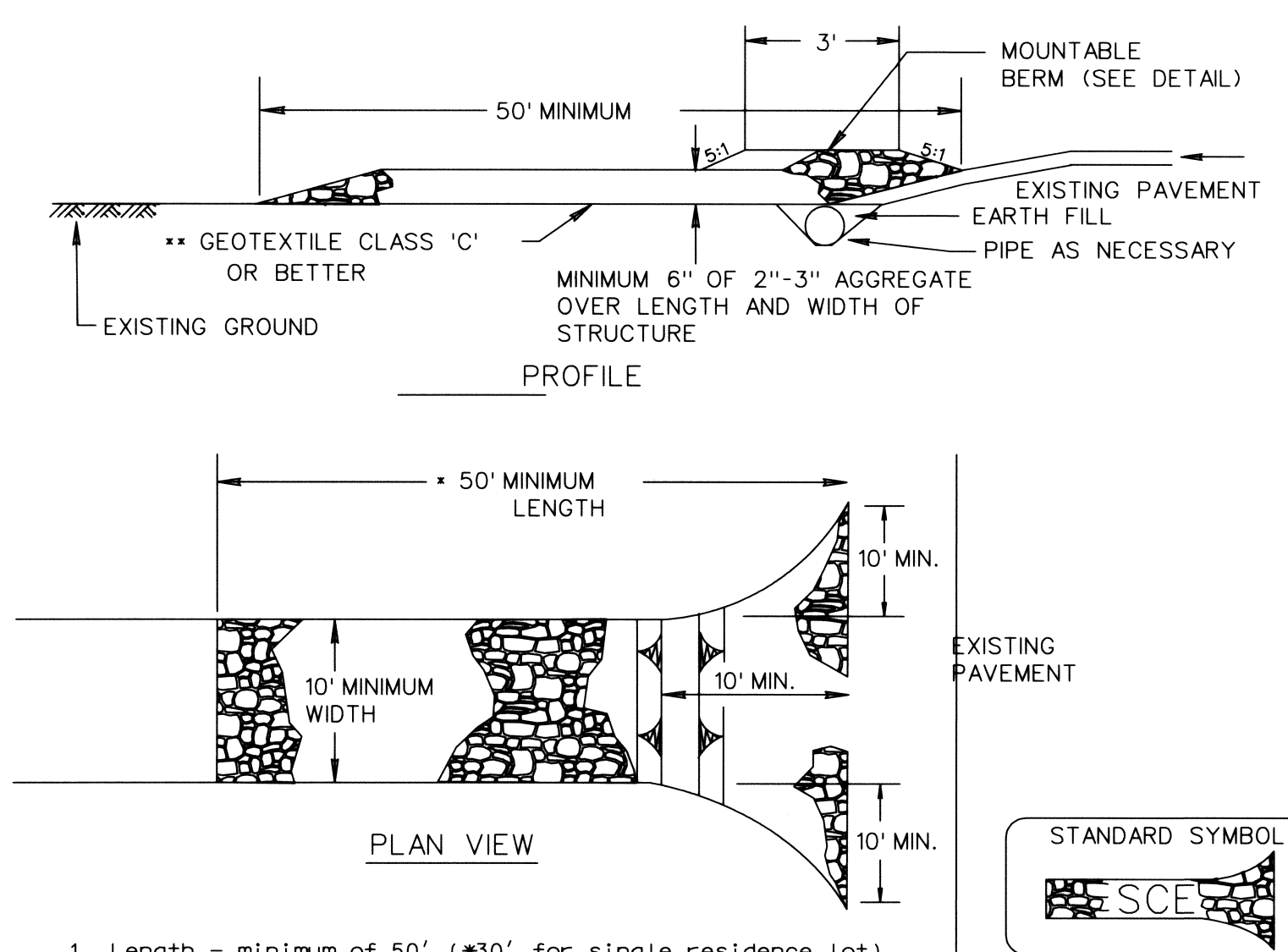
CAPITAL PROJECT NO.: D1158

PERMIT ISSUE:

CONSTRUCTION ISSUE:

SHEET NO.: 8 OF 14

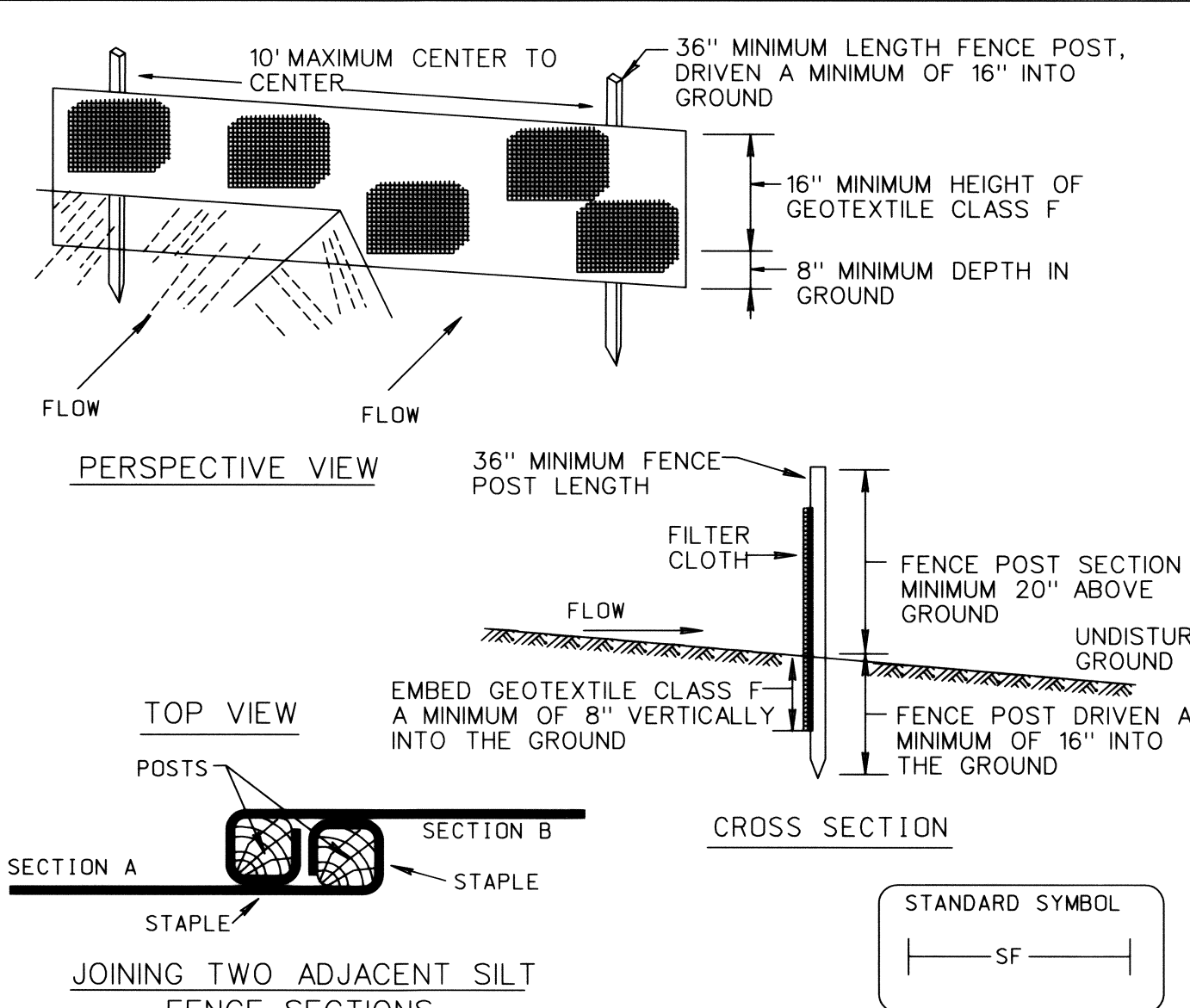
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Length - minimum of 50' (*30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
Construction Specification
- 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.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
- 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.

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

DETAIL 22 - SILT FENCE



- Construction Specifications
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

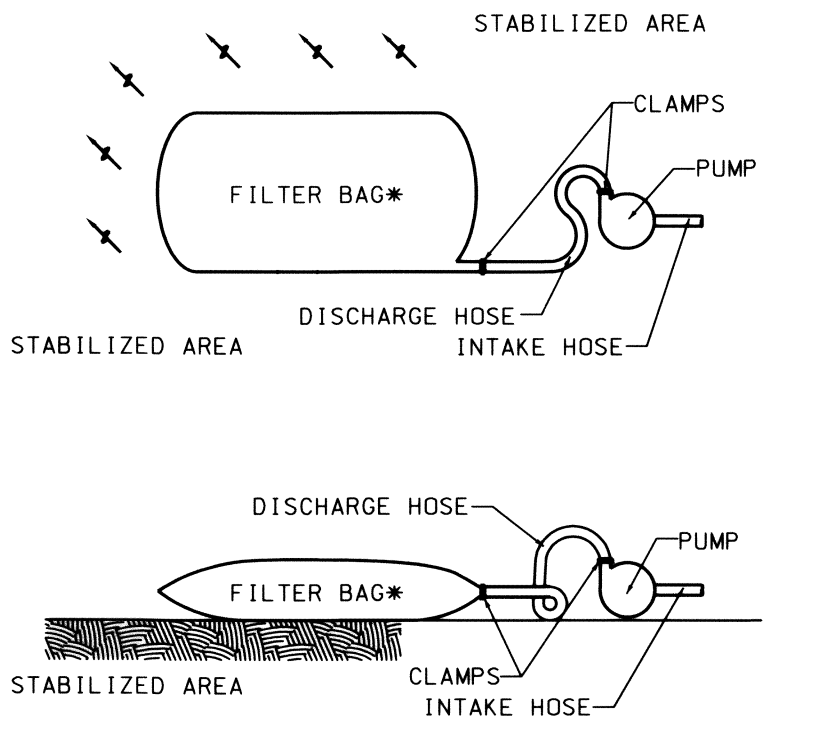
Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ² /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
 - Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E - 15 - 3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

FILTER BAG SPECIFICATIONS

- SILT BAG SHALL BE MADE OF NON-WOVEN GEOTEXTILE WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET PER SIDE
- ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. SEAM STRENGTH SHALL WITHSTAND 100 LB/IN USING ASTM D-4884 TEST METHOD.
- FILTER BAG SHALL HAVE A NOZZLE LARGE ENOUGH TO ACCOMMODATE A FOUR(4) INCH DIAMETER PUMP DISCHARGE HOSE
- NOZZLE SHALL BE SEALED TIGHTLY AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE TO PREVENT UNFILTERED WATER FROM ESCAPING.
- FILTER BAG SHALL BE PLACED ON A LEVEL OR GENTLY SLOPING (5% MAXIMUM) AREA.
- FILTER BAG SHALL BE PLACED UPON A BASE OF STRAW BALES OR THREE (3) INCHES OF CLEAN STONE TO PROMOTE DEWATERING THROUGH BOTTOM SURFACE OF THE FILTER BAG.
- PUMPING RATES SHALL BE CONTROLLED TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG. AS THE BAG BECOMES FILLED WITH SEDIMENT THE PUMPING RATE SHALL BE REDUCED.
- THE FILTER BAG SHALL BE DEWATERED, REMOVED AND DISPOSED OF UPON COMPLETION OF PUMPING OPERATIONS OR AFTER IT HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. THE DEWATERED SEDIMENT FROM THE BAG SHALL BE SPREAD IN AN UPLAND AREA AND STABILIZED WITHIN 24 HOURS.
- THE GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS WITH PROPERTIES DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

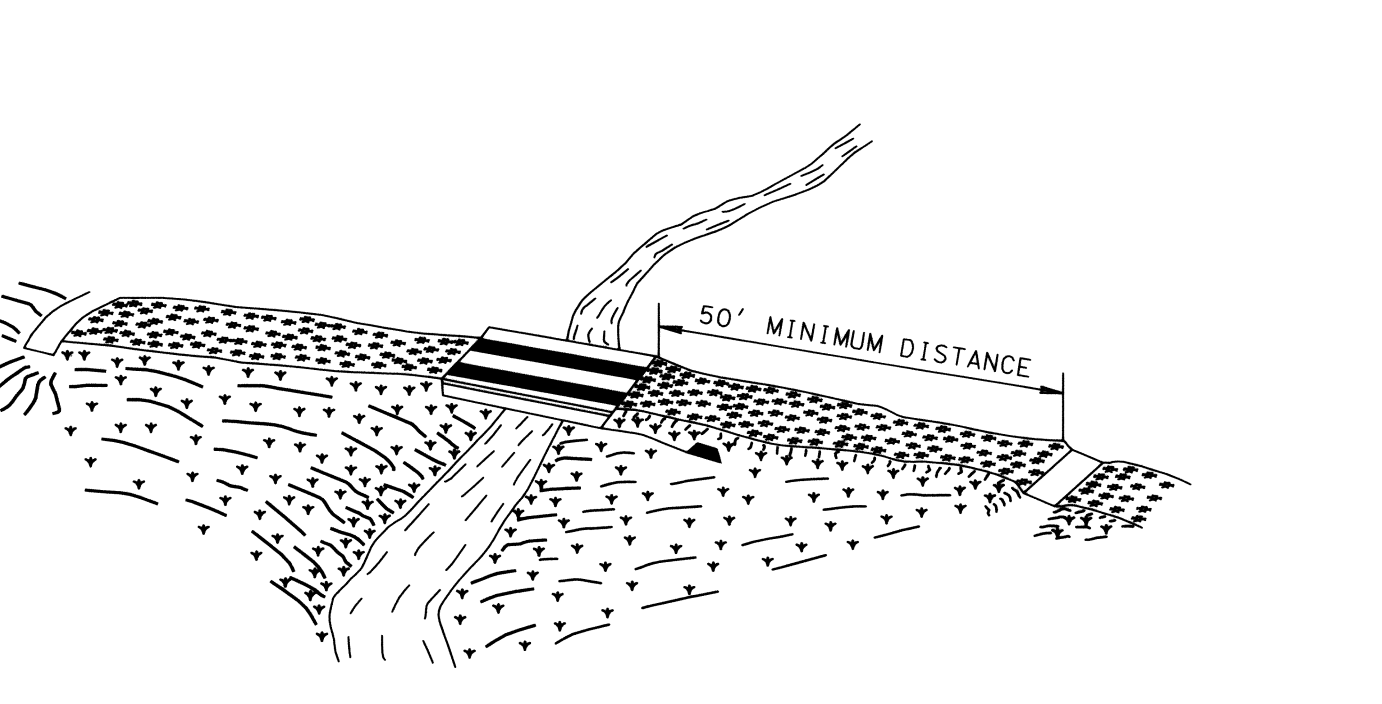
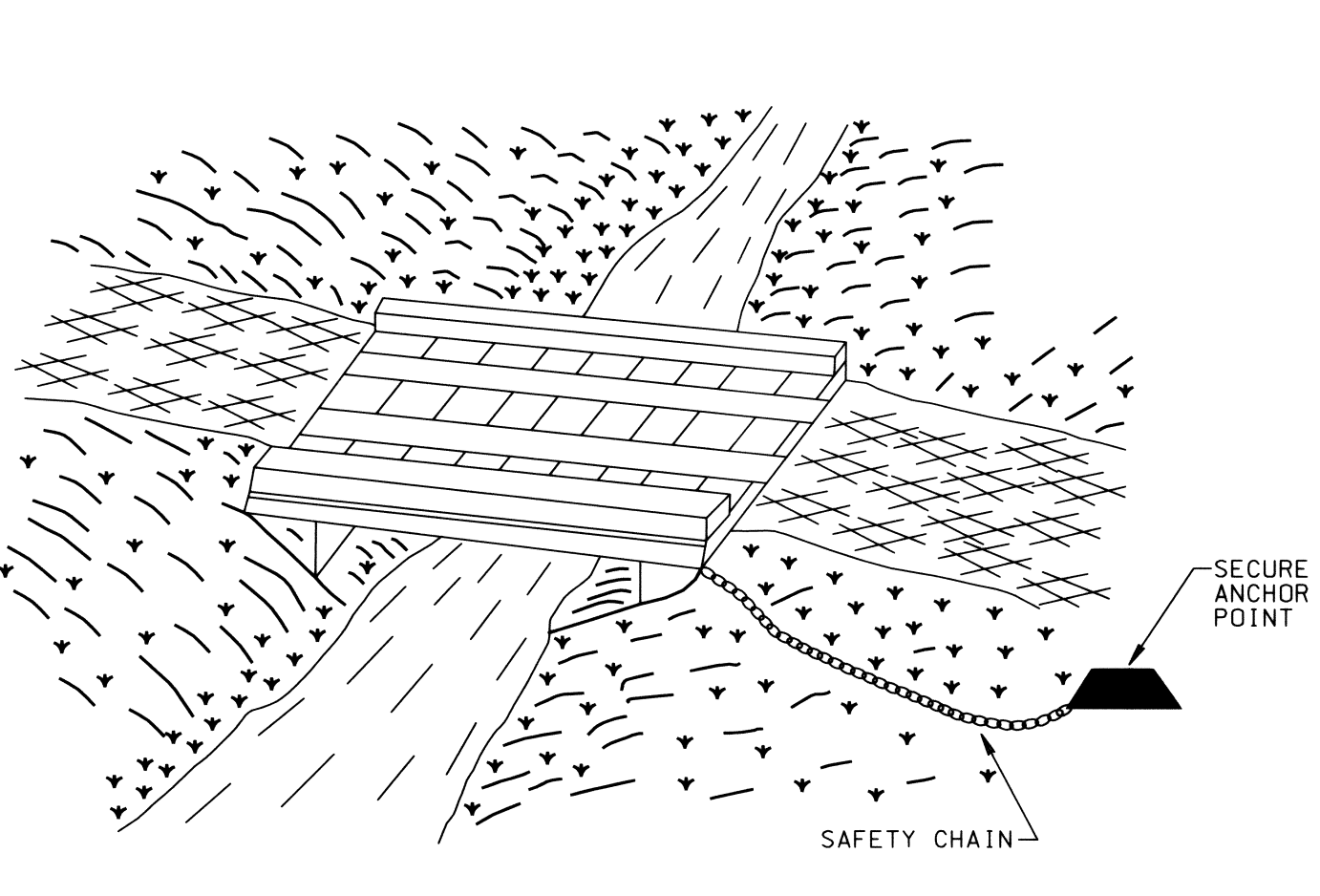
WEIGHT	10 OZ/YD	ASTM D-3776
GRAB TENSILE	210 LBS.	ASTM D-4632
PUNCTURE	150 LBS.	ASTM D-4833
FLOW RATE	70 GAL/MIN/SF	ASTM D-4491
PERMITIVITY (SEC)	1.3 SEC-1	ASTM D-4991
UV RESISTANCE	70% STRENGTH AT 500 HRS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751



FILTER BAG DEWATERING DEVICE FOR PUMPED WATER

- NOTES: 1. PLACE FILTER BAGS ON STABLE OR WELL VEGETATED AREAS WHICH ARE FLATTER THAN 5% AND WILL NOT ERODE WHEN SUBJECTED TO BAG DISCHARGES.
2. CLAMP PUMP DISCHARGE HOSES SECURELY INTO FILTER BAGS.
3. LIMIT PUMPING RATE TO 1/2 THE MANUFACTURER'S MAXIMUM PUMPING RATE.
4. WHEN SEDIMENTS FILL 1/2 THE VOLUME OF A FILTER BAG, IMMEDIATELY REMOVE THAT BAG FROM SERVICE. PROPERLY DISPOSE OF SPENT BAGS WITH THEIR SEDIMENTS.
- NOTE: ALL WATER COLLECTED WITHIN THE LIMIT OF DISTURBANCE (WITH THE EXCEPTION OF WATER DIVERTED AROUND THE WORK AREA) SHALL BE PUMPED THROUGH THE FILTER BAG.

DETAIL 35 - TEMPORARY ACCESS BRIDGE



TEMPORARY ACCESS BRIDGE

- Construction Specifications
- Restriction - Construction, use, or removal of a temporary access bridge will not normally have any time of year restrictions since construction, use, or removal should not affect the stream or its banks, unless the bridge is built with a pier(s) in the water.
 - Bridge Placement - A temporary bridge structure shall be constructed at or above the bank elevation to prevent the entrapment of floating materials and debris.
 - Abutments - Abutments shall be placed parallel to, and on, stable banks.
 - Bridge Span - Bridges shall be constructed to span the entire channel. If the channel width exceeds 8' (as measured from top-of-bank to top-of-bank), then a footing, pier, or bridge support may be constructed within the waterway. One additional footing, pier, or bridge support will be permitted for each additional 8' width of the channel. However, no footing, pier, or bridge support will be permitted within the channel for waterways less than 8' wide.
 - Stringers - Stringers shall either be logs, sawn timber, prestressed concrete beams, metal beams, or other approved materials.
 - Deck Material - Decking materials shall be of sufficient strength to support the anticipated load. All decking members shall be placed perpendicular to the stringers, butted tightly, and securely fastened to the stringers. Decking materials must be butted tightly to prevent any soil material tracked onto the bridge from falling into the waterway below.
 - Run Planks (optional) - Run planking shall be securely fastened to the length of the span. One run plank shall be provided for each track of the equipment wheels. Although run planks are optional, they may be necessary to properly distribute loads.
 - Curbs or fenders - Curbs or fenders may be installed along the outer sides of the deck. Curbs or fenders are an option which will provide additional safety.

TEMPORARY ACCESS BRIDGE

- Bridge Anchors - Bridges shall be securely anchored at only one end using steel cable or chain. Anchoring at only one end will prevent channel obstruction in the event that floodwaters float the bridge. Acceptable anchors are large trees, large boulders, or driven steel anchors. Anchoring shall be sufficient to prevent the bridge from floating downstream and possibly causing an obstruction to the flow.
- Stabilization - All areas disturbed during installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for "Critical Area Stabilization With Permanent Seeding."

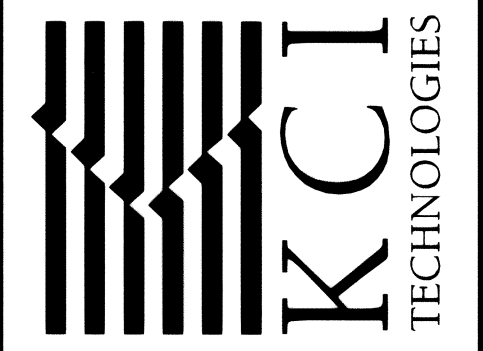
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H - 29 - 9 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Philip Robertson
HOWARD SCD
g/lu/lo
DATE

STATE OF MARYLAND
KATHY LYNN HOLDEN
PROFESSIONAL ENGINEER
NO. 3831
Kathy J. Holden
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. 38311. EXPIRATION DATE: JANUARY 6, 2012

NO.	REVISIONS DESCRIPTION	DATE

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
www.kci.com



RED HILL BRANCH
STREAM STABILIZATION
HOWARD COUNTY DEPARTMENT OF PARKS AND RECREATION
STORMWATER MANAGEMENT DESIGN WORKS
6811 COLUMBIA AVENUE
COLUMBIA, MD 21046
TAX MAP 31, ZONING R-20, ELECTION DISTRICT 01

EROSION & SEDIMENT CONTROL DETAILS

SCALE: 0 5 10 FEET
NOT TO SCALE
DATE: SEPTEMBER 2010
KCI JOB NO.: 01-081795.27
CAPITAL PROJECT NO.: 01158
PERMIT ISSUE:
CONSTRUCTION ISSUE:

PLOTTED: 11:52 AM on Thursday, September 09, 2010
FILE: M:\2008\01081795.27\Drawings\SES-F003_Rev.dwg.dgn

