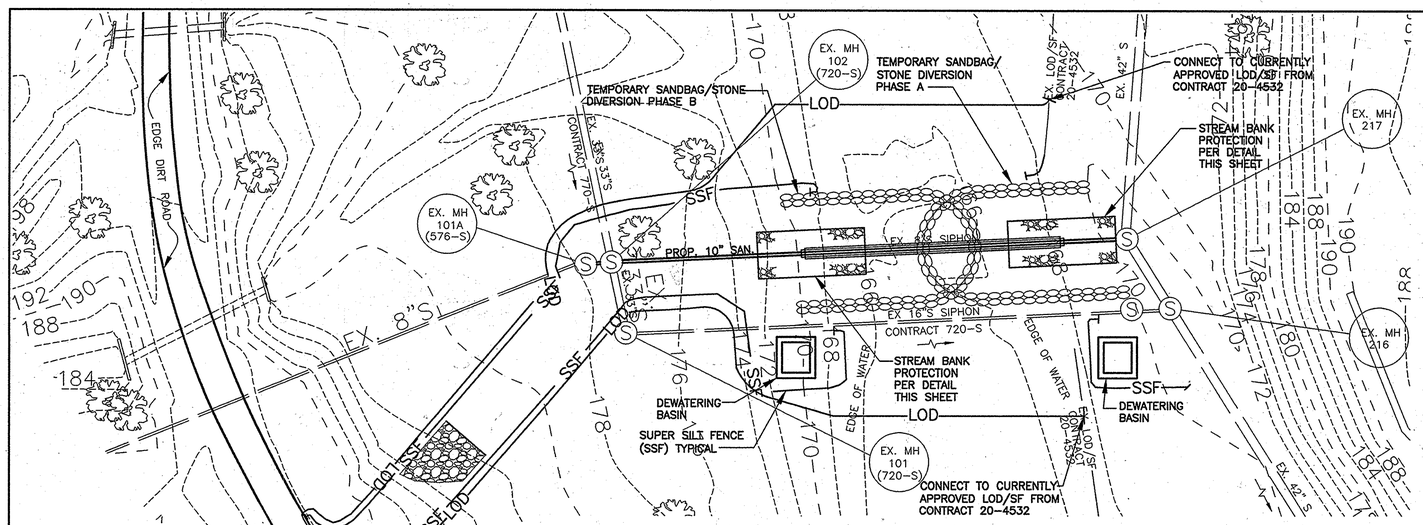
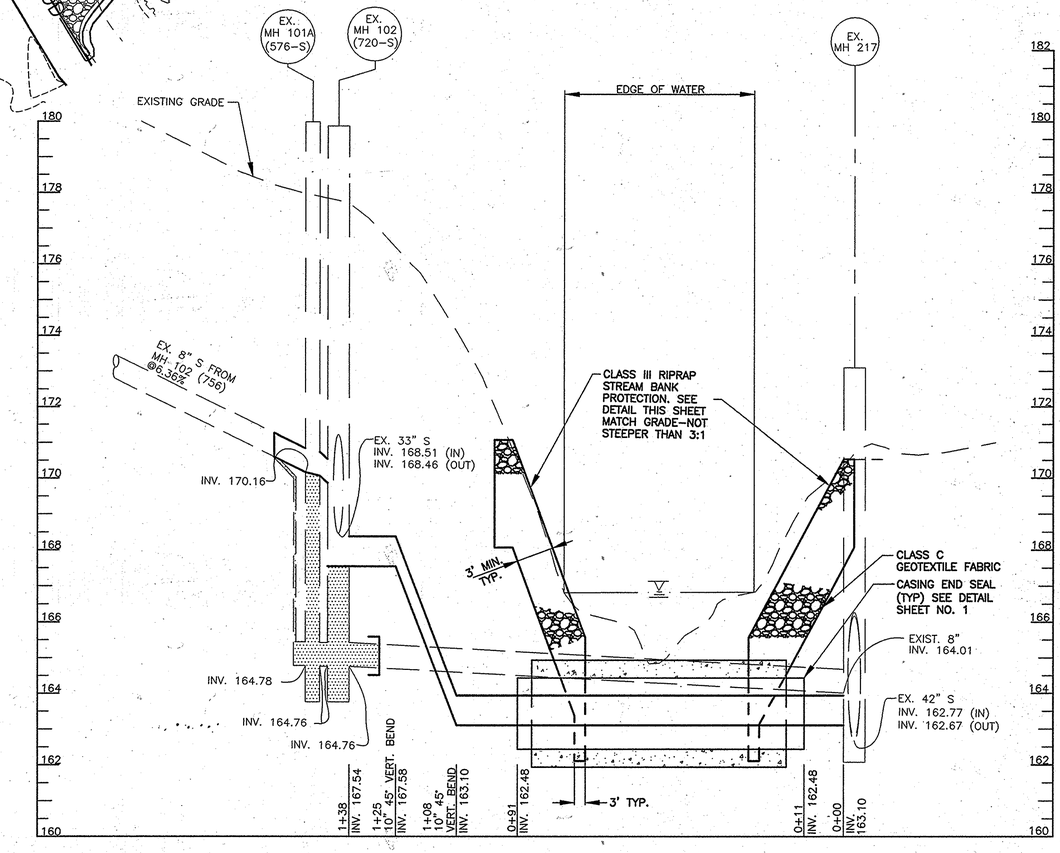


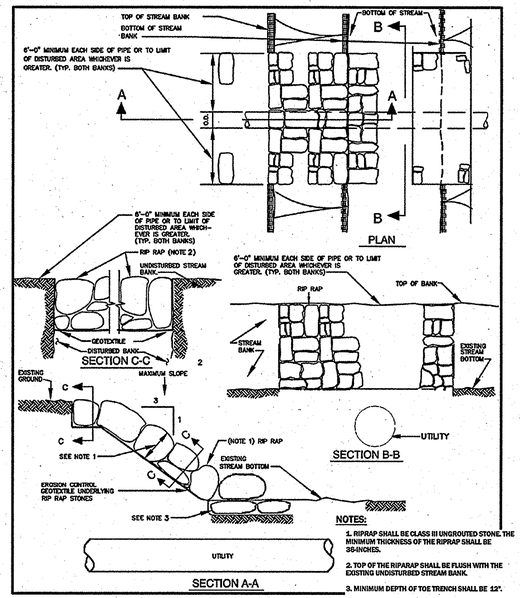
STREAM CROSSING DETAIL

1"=20'



PROFILE – STREAM CROSSING

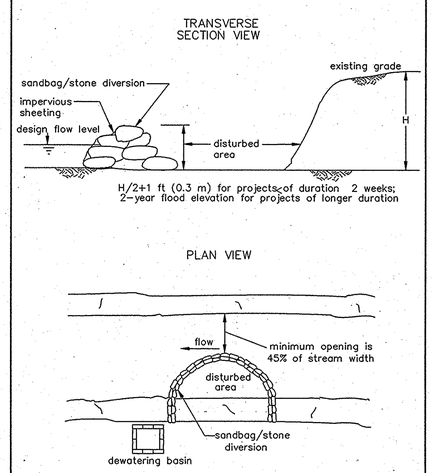
SCALE: 1"=20' HORIZ
1"=2' VERT.



DETAIL
STREAM BANK PROTECTION AT CROSSING

NO SCALE

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION



TEMPORARY INSTREAM CONSTRUCTION MEASURES	REVISED NOVEMBER 2000 PAGE 1.5 – 3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap*: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- *Sheeting*: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.

TEMPORARY INSTREAM CONSTRUCTION MEASURES — *MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES Revised November 2000*

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MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

TEMPORARY INSTREAM CONSTRUCTION MEASURES — *MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES Revised November 2000*

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STREAM CROSSING NOTES:

1) STREAM CROSSING SHALL BE INSTALLED IN ACCORDANCE WITH MGCW STANDARD 1.5. PHASE A WILL OCCUR FROM STATION 0+00 (EX. MH 217) TO STATION 0+45. PHASE B WILL OCCUR FROM STATION 0+45 TO STATION 0+90.

2) ALL EROSION CONTROL MEASURES NECESSARY FOR INSTALLATION OF THE SEWER MAIN ACROSS THE STREAM SHALL BE REMOVED ONLY UPON STREAM STABILIZATION AND APPROVAL OF THE SEDIMENT CONTROL INSPECTOR.

3) CONTRACTOR TO PUMP THE WATER FROM THE DISTURBED AREA FOR EACH STREAM CROSSING VIA A PUMP AND HOSE TO THE DEWATERING BASIN IN ORDER THAT WORK MAY PROCEED IN THE DRY.

4) RIPRAP SHALL MATCH EXISTING NATIVE STONE. TEXAS QUARRY WHITE STONE SHALL NOT BE ACCEPTABLE.

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. 20745 EXPIRATION DATE: 2-19-2013

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 12/12/08	CHIEF, BUREAU OF ENGINEERING	DATE 12/12/08
CHIEF, BUREAU OF UTILITIES	DATE 12/12/08	CHIEF, UTILITY DESIGN DIVISION	DATE 12/11/08

Patton Harris Rust & Associates, Inc.
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

STATE OF MARYLAND — GARY CLIFFORD LEE — NO. 20745 — REGISTERED PROFESSIONAL ENGINEER

DES:	B.G.W.
DRN:	R.J.C.
CHK:	G.C.L.
SEPTEMBER, 2010	

BY	NO.	REVISION	DATE

10" REPLACEMENT INVERTED SIPHON
STREAM CROSSING DETAILS

600' SCALE MAP 47 & 48 | BLOCK 1843 & 1942

AS-BUILT 3/21/11

LITTLE PATUXENT
PARALLEL INTERCEPTOR SEWER
CAPITAL PROJECT S-6175
CONTRACT NO. 20-4532
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 2

P:\project\16331\1-0\Env\Plans\AS-BUILTS\Stream Crossing Plan & Details AB.dwg, 7/27/2011 8:58:21 AM, TDS600.pc3