Product Notes

Product Note 3.141

Re: EPA Phase II, Best Management Practices
ADS Hood/Flow Control Devices

Date: **February** 2002

By: **Greg Baryluk, P.E.**

Introduction

Under the Phase II program, the EPA is concerned with both the quality of water discharged as well as the quantity. These factors can be controlled at various locations within a storm sewer system with an ADS hood/ flow control device installed on the outlet of a catch basin, manhole or similar structure.

ADS HDPE Water Quality Alternatives

From a quality perspective, ADS manufactures hoods, either a tee or bend, which are designed with a long leg extending towards the bottom of the structure. The invert of this extended leg is located lower than the invert of the outlet of the structure. Because of this invert difference, outgoing storm water is forced to go under the extended leg and then up to the outlet to be discharged from the structure. This helps to facilitate flotable trash removal as well as flotable oils and greases, which are held up within the structure due to the elevation differential. Additionally, this elevation difference also assists with removal of sediments from storm water as the hood can also acts as a baffle or weir plate against the incoming storm water.

One of the many benefits of HDPE pipe is the ability to design it into numerous configurations. As such, hoods are available in multiple shapes and sizes. ADS hoods can be fabricated with cleanout ports as well as with a metal flap gate that can be lifted for cleaning access.

ADS HDPE Water Quantity Alternatives

To address water quantity concerns, ADS hoods can be modified with orifice plates manufactured on the inflow end of the hood (i.e., bottom of the longer leg) to restrict and control flow from the structure. Furthermore, a hood can also be manufactured with orifices located on the back of the hood to perform flow control. (Pictures of hoods with manufactured orifices are shown below.)

Quantity control can also be addressed with the use of ADS standard reducing components. ADS reducers can be installed inline within the storm drain system to control flow. If flow control is not achievable with the ADS products discussed above, specialized orifice flow control mechanisms can be engineered to meet these needs.

Hood/Flow control bend

Hood/Flow control tee

EPA Fact Sheet Referral

Storm Water Technology Fact Sheet, ***Water Quality Inlets***

Specification for Corrugated Polyethylene Pipe Hood/Flow Control Device

Part 1: General

1.1 Hood/Flow Control Device Description

1.1.1 The Hood/Flow Control Device shall either take the form of a bend or tee installed on the outlet of a structure per the diameter and length shown on the plans. The Hood/Flow Control Device shall have as optional an orifice plate and/or orifices pre-drilled on the Device.

1.2 Reference

1.2.1 AASHTO M 252M-00 (2000): Standard Specification for Corrugated Polyethylene Pipe, 75- to 250-mm Diameter.
1.2.2 AASHTO M 294M-01: Standard Specification for Corrugated Polyethylene Pipe, 300- to 1200-mm Diameter.
1.2.3 ASTM D3350: Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.

1.3 Submittals

1.3.1 All Devices not covered by this specification shall be approved by the Engineer seven (7) days prior to the bid letting.

Part 2: Products

2.1 Acceptable Manufacturers

2.1.1 The Hood/Flow Control Device shall be N-12 Pipe (4” – 48") as manufactured by Advanced Drainage Systems, Inc., or pre-approved equal.

2.2 Materials

2.2.1 General. The prescribed sizes of pipe are nominal inside diameter. Hood/Flow Control Devices shall be of the size and length as shown on the plans with orifice plates and/or orifices prescribed by the Engineer.

2.2.2 Smooth Interior Corrugated Polyethylene Pipe. The Hood/Flow Control Device supplied under this specification shall be high-density polyethylene pipe with a corrugated exterior and smooth interior for 4” to 10" diameters meeting AASHTO M 252M (Type S) and 12” to 48" diameters meeting AASHTO M 294M (Type S).

Material shall meet ASTM D3350 resin cell classification 335420C. Flow calculations shall be based on a Mannings "n" value of 0.012.

All raw materials and pipe products shall be produced and manufactured in the United States of America.

Part 3: Execution

3.1 Inspection

3.1.1 All Hood/Flow Control Devices shall be inspected. Damaged devices may not be accepted.

3.3 Installation

3.2.1 Installation shall be per local agency requirements or manufacturer’s published recommendations.

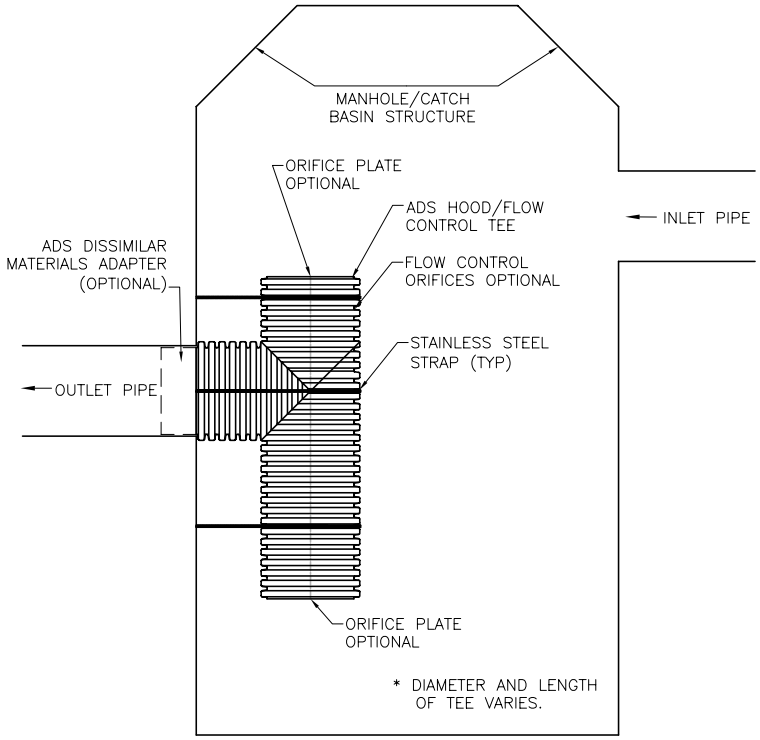
Maintenance Procedures

Hood/Flow Control Devices should be inspected monthly to determine depth of accumulated sediment and amount of floatable materials.

Accumulated sediments should be cleaned out at least twice per year or more frequently if monthly inspections indicate a need. Sediments should be removed when it accumulates within 6 inches of the bottom of the Hood/Flow Control Device. This can be done by removing the floatables (both debris and oils) and siphoning off the permanent pool and manually removing the sediments.

Collected materials should be properly disposed of.

HOOD/FLOW CONTROL TEE INSTALLATION DETAIL



1. FOR RETROFIT INSTALLATIONS OR DISSIMILAR MATERIALS ADAPTING, TEE SHALL BE FABRICATED WITH N–12 DISSIMILAR MATERIALS ADAPTER (SHOWN ABOVE).
2. FOR NEW INSTALLATIONS CONNECTING TO HDPE PIPE. CONNECTION FROM OUTLET PIPE TO TEE SHALL BE MADE WITH ADS SPLIT COUPLER. JOINT SHALL BE LOCATED AT MIDPOINT OF STRUCTURE WALL AND SHALL EITHER BE GROUTED OR BOOTED IN PLACE.
3. TEE SHALL BE SUPPORTED WITH A MINIMUM OF THREE STAINLESS STEEL STRAPS AT APPROXIMATE LOCATIONS SHOWN.
4. STAINLESS STEEL STRAPS SHALL BE ANCHORED INTO STRUCTURE WITH FASTENERS.
5. IF ORIFICES ARE INCORPORATED FOR FLOW CONTROL, CARE SHALL BE TAKEN SO AS TO NOT INSTALL STRAPS OVER THE ORIFICE.
6. FINAL DIAMETER AND LENGTH OF TEE AND SIZE AND LOCATION OF ORIFICES (EITHER ON PLATE OR IN THE TEE) SHALL BE DETERMINED BY THE ENGINEER.

NOTE: ALL DIMENSIONS ARE NOMINAL

ADVANCED DRAINAGE SYSTEMS, INC.

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BY	DATE
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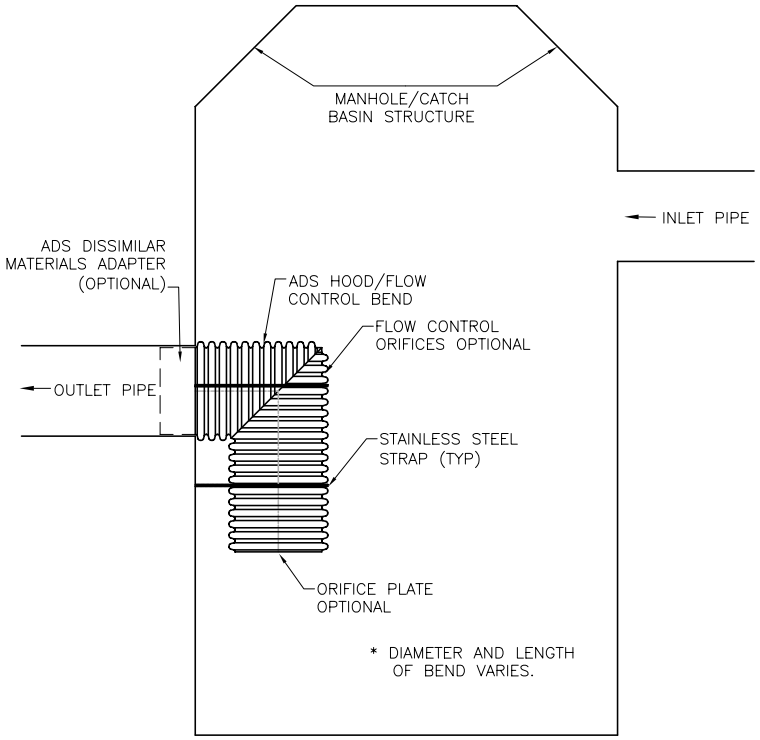
HOOD/FLOW CONTROL BEND INSTALLATION DETAIL



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