

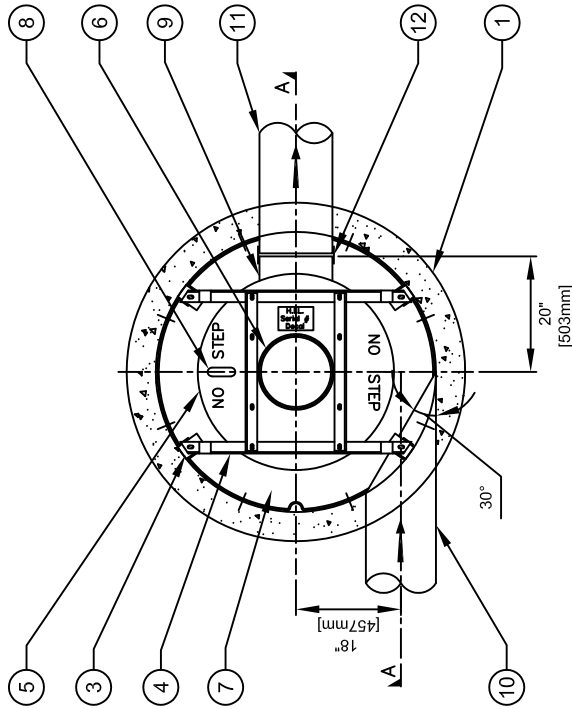
**SECTION A-A**

**EQUIPMENT PERFORMANCE**

The stormwater treatment unit shall adhere to the hydraulic parameters given below and provide the storage capacities as follows:

1. **Performance objectives:** The unit shall be capable of treating the peak flow rate below.
2. **Peak treatment flow:** 3.0 cfs [85 L/s]
3. **Depth of flow in overflow pipe at 3.0 cfs:** 8 in. [204 mm]
4. **Estimated headloss\* at 3.0 cfs:** 5 in. [127 mm]
5. **Sediment storage capacity:** 0.70 Cu. yd. [0.54 cu.m.]
6. **Oil storage capacity:** 70 Gal. [265 liters]
7. **Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.**

\*Headloss is defined as the difference between static water level at the inlet of the Downstream Defender to the free water surface in the overflow pipe, assuming free discharge. Dimensions are general and intended for guidance only. The orientation of the inlet pipe and overflow pipe can be adjusted to site requirements. See site plan for orientation.



**PLAN VIEW**

PARTS LIST	
ITEM	DESCRIPTION
1	I.D. CONCRETE MANHOLE
2	MANHOLE LID, FRAME & COVER
3	LEDGER ANGLE (TYP.)
4	SUPPORT FRAME
5	DIP PLATE
6	CENTER SHAFT & CONE
7	BENCHING SKIRT
8	FLOATABLES LID W/ VENT
9	OVERFLOW PIPE STUB
10	TANGENTIAL INLET PIPE (BY OTHERS)
11	OVERFLOW PIPE (BY OTHERS)
12	PIPE COUPLING (BY OTHERS)

Any warranty made by Hydro International only applies to those items supplied by it. Hydro International does not accept any responsibility or liability for any structure, plant or equipment (or the performance thereof) designed, built, manufactured or supplied by any third-party. Hydro International has a policy of continuous product development and reserves the right to amend the specifications of any of its products or equipment at any time. Hydro International expressly disclaims any liability for the performance of its equipment (or any part thereof) used or made subject to conditions outside of the conditions set forth in Hydro International's design specifications. Hydro International owns the copyright in and to this drawing, which is supplied in confidence, and all intended recipients of the drawing, by their use thereof, agree to hold the drawing in confidence and not to use it for any purpose other than for which it was supplied and not reproduce, in whole or in part, the drawing or any of the equipment or structures depicted therein, without prior written permission of Hydro International.

RC 02/02/09	PROPOSAL
Rev By	Date
02/02/09	3/8" = 1' - 0"
Drawn By	Checked Eng.
RC	Approved By

**Title**  
4-FT DIAMETER  
DOWNSTREAM DEFENDER®  
[1219 mm]

STANDARD UNIT

GENERAL ARRANGEMENT



94 HUTCHINS DRIVE  
PORTLAND, ME 04102  
TEL: 207.756.6200  
FAX: 207.756.6212  
EMAIL:  
STORMWATERINQUIRY  
@HIL-TECH.COM

CAD Ref:	DD4GA2
Project No.	
Drawings No.	DD4GA2 Rev.

RC 02/02/09	PROPOSAL
Rev By	Date
02/02/09	1/4" = 1' - 0"
Drawn By	Checked Eng.
RC	Approved By
Checked Prod.	

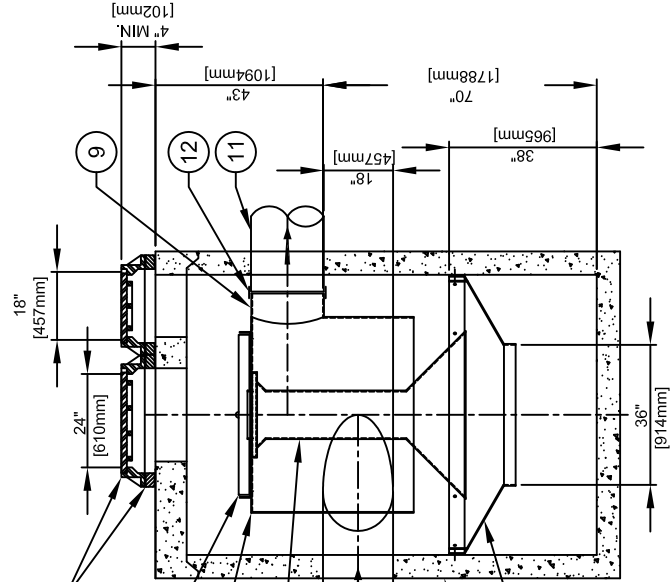
Title  
 6-FT DIAMETER  
 DOWNSTREAM DEFENDER®  
 [1829 mm]  
 STANDARD UNIT

GENERAL ARRANGEMENT

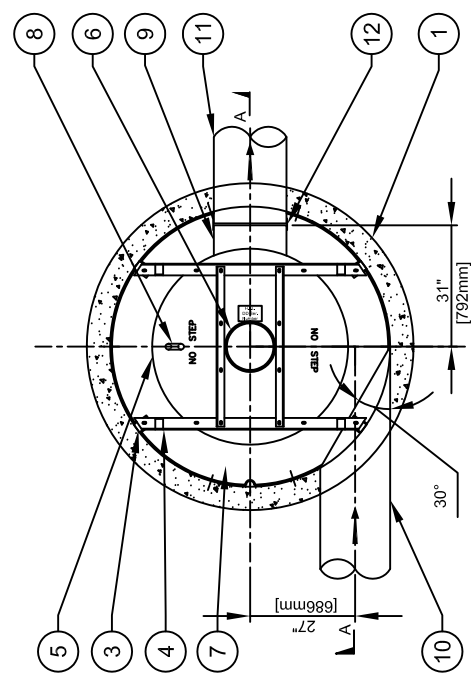


94 HUTCHINS DRIVE  
 PORTLAND, ME 04102  
 TEL: 207.756.6200  
 FAX: 207.756.6212  
 EMAIL:  
 STORMWATERINQUIRY  
 @HIL-TECH.COM

CAD Ref: DD6GA2  
 Project No.  
 Drawings No. DD6GA2 Rev.



SECTION A-A



PLAN VIEW

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given below and provide storage capacities as follows:

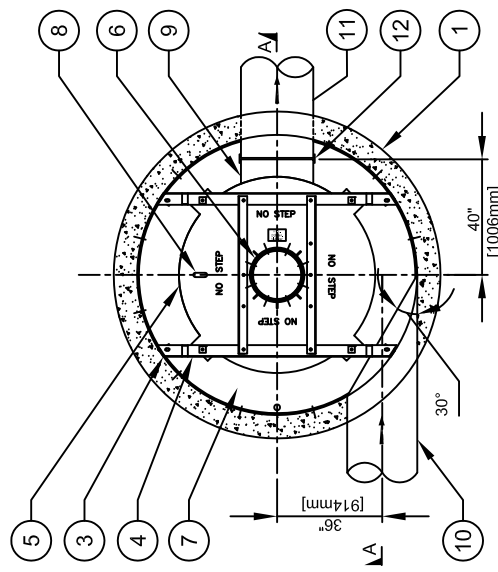
1. Performance objectives: The unit shall be capable of treating the peak flow rate below.
2. Peak treatment flow: 8.0 cfs [227 L/s]
3. Depth of flow in overflow pipe at 8.0 cfs: 11 in. [280 mm]
4. Estimated headloss\* at 8.0 cfs: 8 in. [204 mm]
5. Sediment storage capacity: 2.10 cu. yd. [1.61 cu.m.]
6. Oil storage capacity: 230 Gal. [871 liters]
7. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

\*Headloss is defined as the difference between static water level at the inlet of the Downstream Defender to the free water surface in the overflow pipe, assuming free discharge. Dimensions are general and intended for guidance only. The orientation of the inlet pipe and overflow pipe can be adjusted to site requirements. See site plan for orientation.

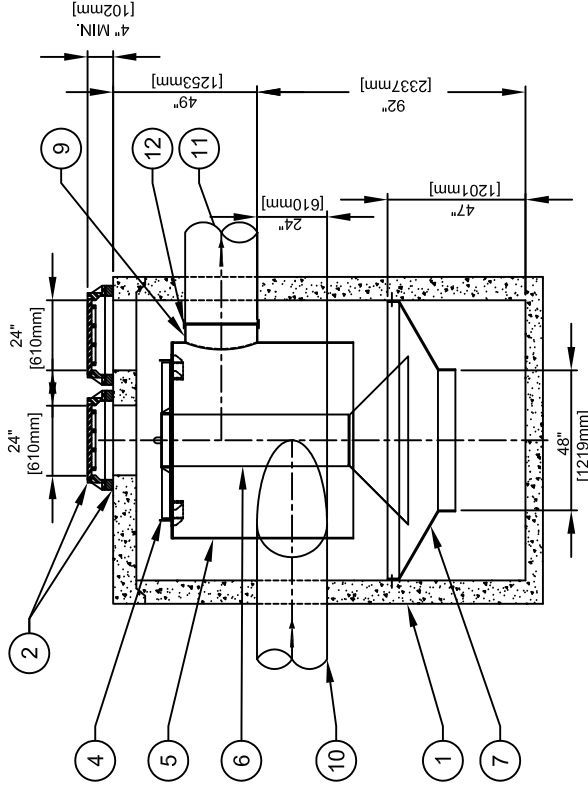
PARTS LIST

ITEM	SIZE	DESCRIPTION
1	72 in.	I.D. CONCRETE MANHOLE
2	24 in.	MANHOLE LID, FRAME & COVER
	18 in.	MANHOLE LID, FRAME & COVER
3		LEDGER ANGLE (TYP.)
4		SUPPORT FRAME
5		DIP PLATE
6		CENTER SHAFT & CONE
7		BENCHING SKIRT
8		FLOATABLES LID W/ VENT
9	18 in.	OVERFLOW PIPE STUB
10	18 in.	TANGENTIAL INLET PIPE (BY OTHERS)
11	18 in.	OVERFLOW PIPE (BY OTHERS)
12		PIPE COUPLING (BY OTHERS)

Any warranty made by Hydro International only applies to those items supplied by it. Hydro International does not accept any responsibility or liability for any structure, plant or equipment (or the performance thereof) designed, built, manufactured or supplied by any third-party. Hydro International has a policy of continuous product development and reserves the right to amend the specifications of any of its products or equipment at any time. Hydro International expressly disclaims any liability for the performance of its equipment (or any part thereof) used or made subject to conditions outside of the conditions set forth in Hydro International's design specifications. Hydro International owns the copyright in and to this drawing, which is supplied in confidence, and all intended recipients of the drawing, by their use thereof, agree to hold the drawing in confidence and not to use it for any purpose other than for which it was supplied and not reproduce, in whole or in part, the drawing or any of the equipment or structures depicted therein, without prior written permission of Hydro International.



PLAN VIEW



SECTION A-A

PARTS LIST	
ITEM	DESCRIPTION
1	I.D. CONCRETE MANHOLE
2	MANHOLE LID, FRAME & COVER
3	LEDGER ANGLE (TYP.)
4	SUPPORT FRAME
5	DIP PLATE
6	CENTER SHAFT & CONE
7	BENCHING SKIRT
8	FLOATABLES LID W/ VENT
9	OVERFLOW PIPE STUB
10	TANGENTIAL INLET PIPE (BY OTHERS)
11	OVERFLOW PIPE (BY OTHERS)
12	PIPE COUPLING (BY OTHERS)

**EQUIPMENT PERFORMANCE**

The stormwater treatment unit shall adhere to the hydraulic parameters given below and provide storage capacities as follows:

- Performance objectives:** The unit shall be capable of treating the peak flow rate below.
- Peak treatment flow: 15.0 cfs [425 L/s]
- Depth of flow in overflow pipe at 15.0 cfs: 19 in. [483 mm]
- Estimated headloss\* at 15.0 cfs: 8 in. [204 mm]
- Sediment storage capacity: 4.65 Cu. yd. [3.56 cu.m.]
- Oil storage capacity: 525 Gal. [1987 liters]
- Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.

\*Headloss is defined as the difference between static water level at the inlet of the Downstream Defender to the free water surface in the overflow pipe, assuming free discharge.

Dimensions are general and intended for guidance only. The orientation of the inlet pipe and overflow pipe can be adjusted to site requirements. See site plan for orientation.

Any warranty made by Hydro International only applies to those items supplied by it. Hydro International does not accept any responsibility or liability for any structure, plant or equipment (or the performance thereof) designed, built, manufactured or supplied by any third-party. Hydro International has a policy of continuous product development and reserves the right to amend the specifications of any of its products or equipment at any time. Hydro International expressly disclaims any liability for the performance of its equipment (or any part thereof) used or made subject to conditions outside of the conditions set forth in Hydro International's design specifications. Hydro International owns the copyright in and to this drawing, which is supplied in confidence, and all intended recipients of the drawing, by their use thereof, agree to hold the drawing in confidence and not to use it for any purpose other than for which it was supplied and not reproduce, in whole or in part, the drawing or any of the equipment or structures depicted therein, without prior written permission of Hydro International.

RC 02/02/09	PROPOSAL
Rev By	Date
Date	02/02/09
Rev	3/16" = 1' - 0"
Drawn By	Checked Eng.
RC	Approved By
Checked Prod.	Approved By

Title  
8-FT DIAMETER  
DOWNSTREAM DEFENDER®  
[2438 mm]

STANDARD UNIT

GENERAL ARRANGEMENT



94 HUTCHINS DRIVE  
PORTLAND, ME 04102  
TEL: 207.756.6200  
FAX: 207.756.6212  
EMAIL:  
STORMWATERINQUIRY  
@HIL-TECH.COM

CAD Ref:	DD8GA2
Project No.	
Drawings No.	DD8GA2 Rev.