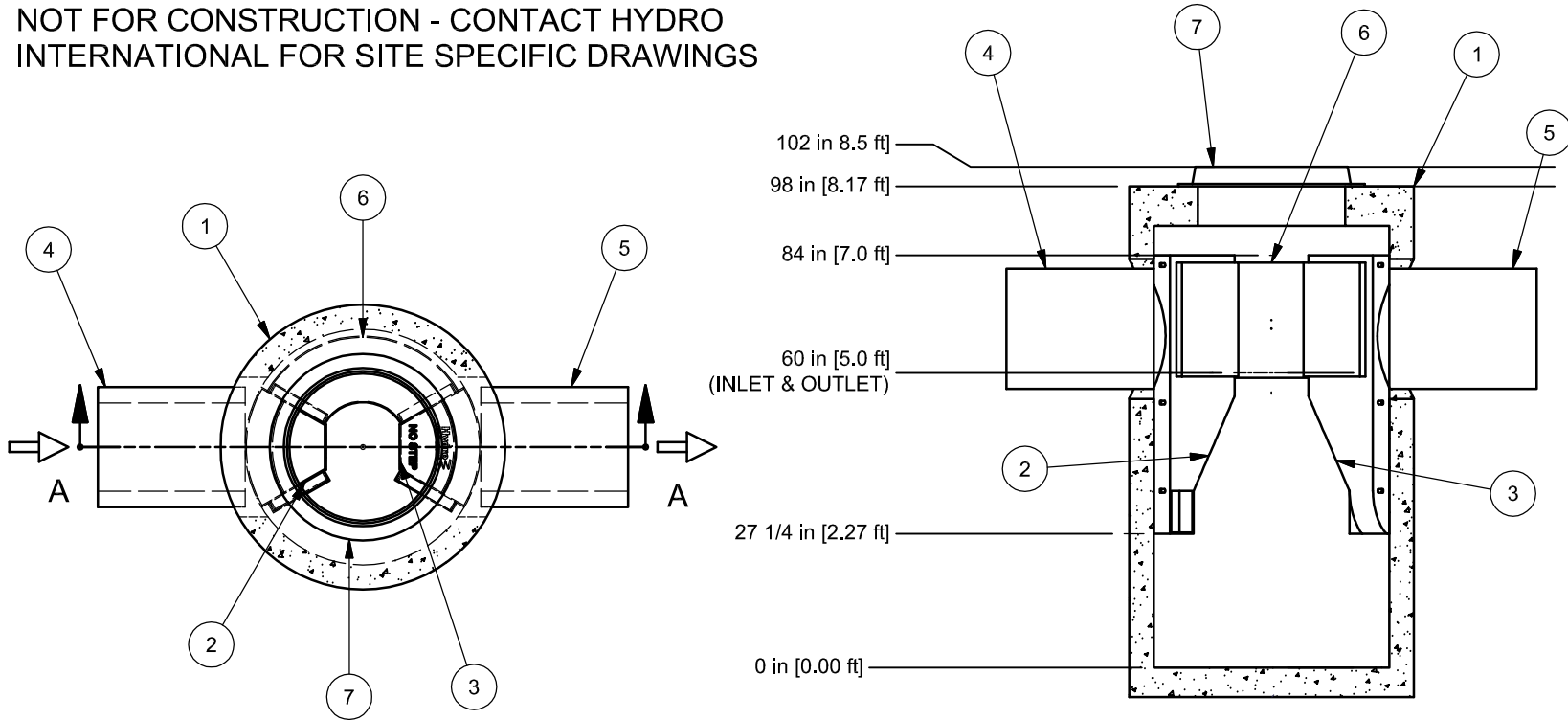


NOT FOR CONSTRUCTION - CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS



SECTION A-A

CAPACITIES:

1. PEAK HYDRAULIC FLOW: 6.0 cfs (170 l/s)
2. TREATMENT FLOW: 0.7 cfs (20 l/s)
3. SEDIMENT STORAGE CAPACITY: 0.2 cu. yd. (0.15 cu. m.)
4. OIL STORAGE CAPACITY: 180 gal. (681 liters)

ADDITIONAL DESIGN INFORMATION:

1. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 18 in.
2. MAXIMUM NUMBER OF INLET PIPES: 2
3. MINIMUM ANGLE BETWEEN PIPES: 90 DEGREES

Parts List

ITEM	QTY.	DESCRIPTION	SIZE (in)
1	1	I.D. CONCRETE MANHOLE	48
2	1	INLET CHUTE (W/ FLOATABLES TRAP)	
3	1	OUTLET CHUTE	
4	1	INLET PIPE (BY OTHERS)	18
5	1	OUTLET PIPE (BY OTHERS)	18
6	1	HIGH FLOW BYPASS	
7	1	FRAME AND COVER (OR GRATE)	30

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

B	MJ	2/11/14	SUMP DEPTH
A	JL	6/10/13	QTY. LIST
REV	BY	DATE	DESCRIPTION

REVISION HISTORY

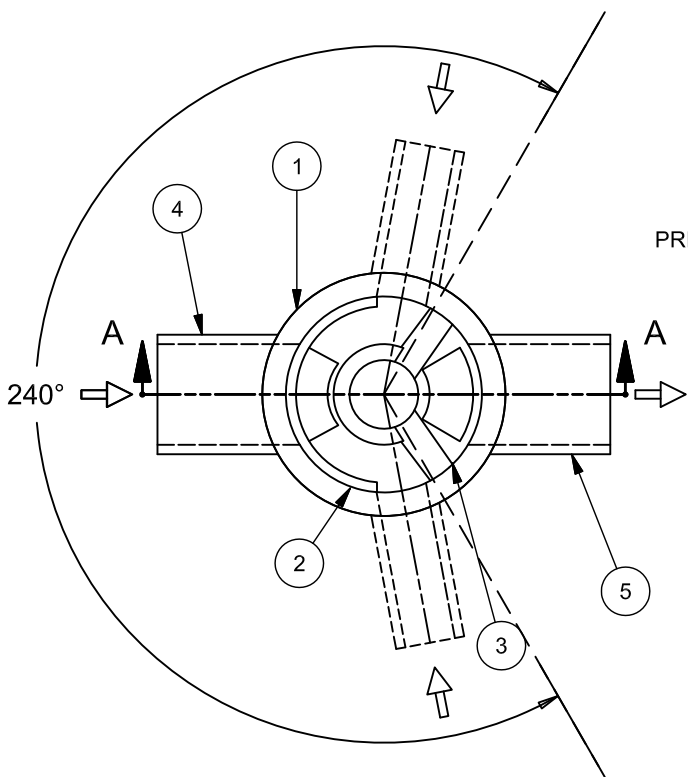
Date	Scale	
11/1/2011	5/16" = 1'-0"	
Drawn	Checked	Approved
EMH	MRJ	MRJ

Title
4-FT DIAMETER
FIRST DEFENSE

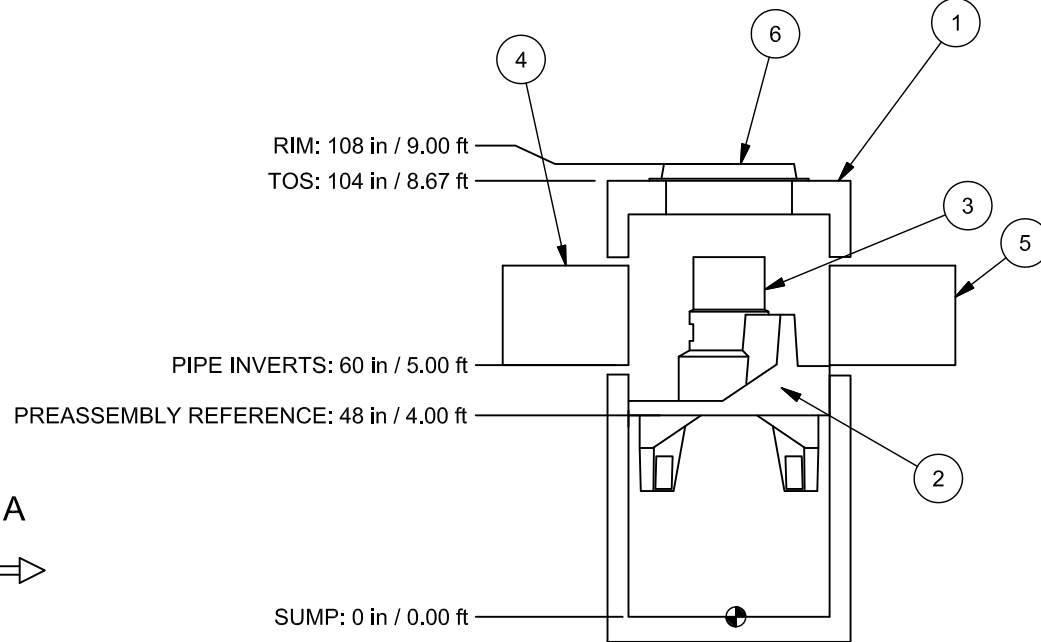
GENERAL ARRANGEMENT



Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com



Inlet pipe(s) can enter anywhere within 240° arc.



SECTION A-A

GENERAL NOTES:

1. General Arrangement drawings only. Contact Hydro International for site specific fabrication drawings.
2. The diameter of the inlet & outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plans).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PRODUCT SPECIFICATIONS:

- A. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
- B. The treatment system shall fit within the limits of excavation (area and depth) as shown in the project plans and will not exceed the dimensions for the design flow rates specified herein.
- C. The treatment system shall remove greater than or equal to 90% of TSS based on the Target Particle Size (TPS) of 106 microns and/or 80% of TSS based on the TPS of 230 microns at 0.7 cfs and 1.2 cfs, respectively.
- D. The treatment system shall convey the Peak On-line Flow Rates of up to 15 cfs without causing upstream surcharge conditions. Full-scale independent laboratory scour testing shall demonstrate effluent control of less than or equal to 5 mg/L for all flows up to 200% of MTFR-106.
- E. The treatment system shall be capable of capturing and retaining fine silt and sand size particles. Analysis of captured sediment from full-scale field installations shall demonstrate particle sizes predominately in the 20-micron range

Pipe Dia (inches)	Peak Flow Rate (cfs)	Min. Cover (F/G - Invert) (feet)	Invert - Sump (feet)	Storage Capacity (yd3)	Oil Storage Capacity (Gal.)
12	3	2.3	5	0.23	180
18	8	3.2			
24	15	4.0			

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

RC	1/8/14	FIRST ISSUE
REV/BY	DATE	DESCRIPTION

REVISION HISTORY

Date	Scale	
01/08/14	1/4" = 1'0"	
Drawn RC	Checked	Approved

Title

4-FT DIAMETER
FIRST DEFENSE

HIGH CAPACITY
MAX FLOW

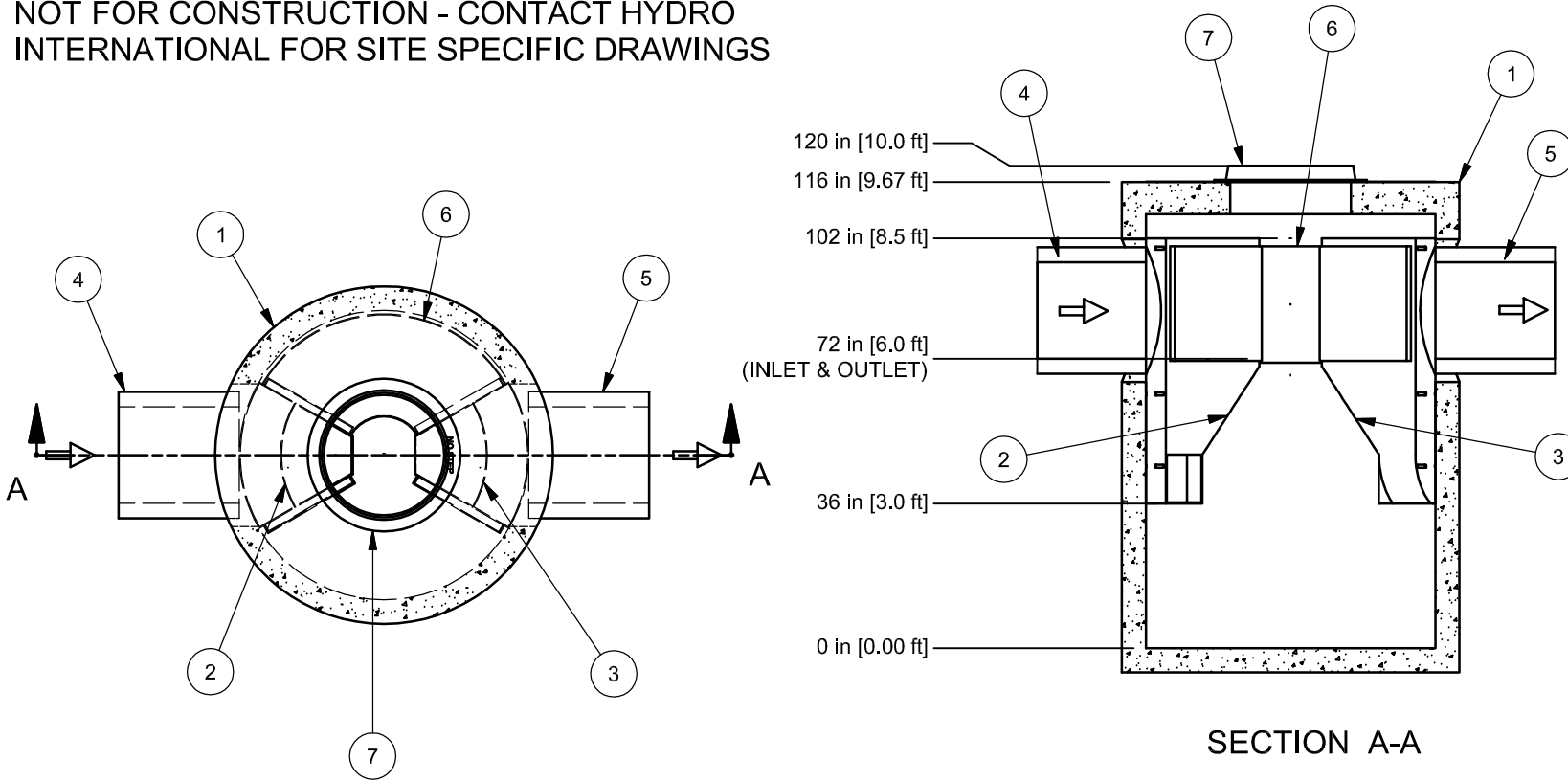


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Parts List		
ITEM	SIZE (in)	DESCRIPTION
1	48	I.D. PRECAST MANHOLE
2		LEDGER SUPPORT
3		SEPARATION MODULE
4	24	INLET PIPE (BY OTHERS)
5	24	OUTLET PIPE (BY OTHERS)
6	30	FRAME AND COVER (OR GRATE) (ROUND)

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SECTION A-A

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

B	MJ	2/19/14	SUMP DEPTH
A	JL	6/10/13	QTY. LIST
REV	BY	DATE	DESCRIPTION

REVISION HISTORY

Date	Scale	
11/1/2011	1/4" = 1'-0"	
Drawn	Checked	Approved
EMH	MRJ	MRJ

Title

6-FT DIAMETER
FIRST DEFENSE

GENERAL ARRANGEMENT



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CAPACITIES:

1. PEAK HYDRAULIC FLOW: 18.0 cfs (510 l/s)
2. TREATMENT FLOW: 2.2 cfs (62 l/s)
3. SEDIMENT STORAGE CAPACITY: 0.52 cu. yd. (0.40 cu. m.)
4. OIL STORAGE CAPACITY: 420 gal. (1590 liters)

ADDITIONAL DESIGN INFORMATION:

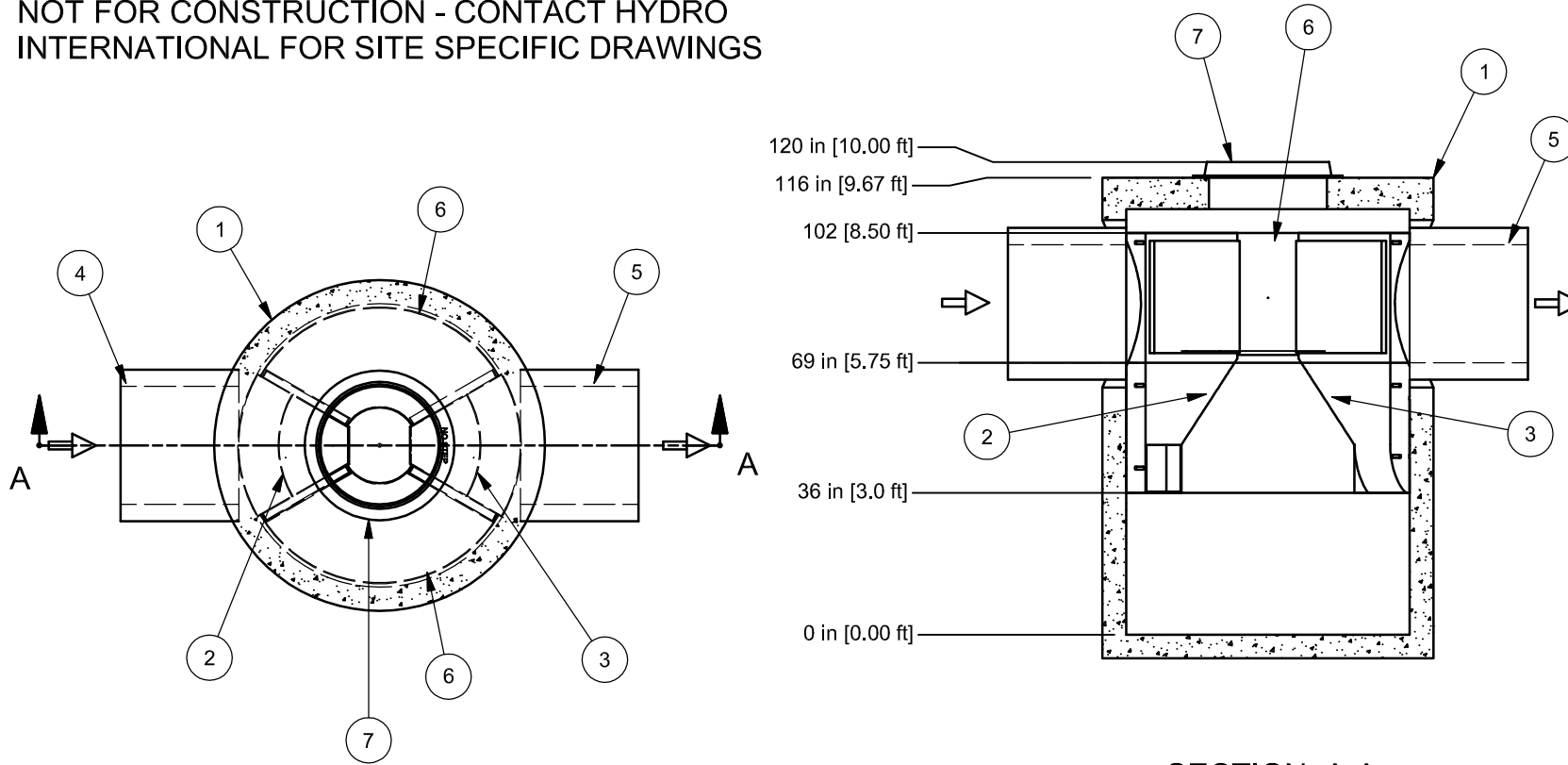
1. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 24 in.
2. MAXIMUM NUMBER OF INLET PIPES: 2
3. MINIMUM ANGLE BETWEEN PIPES: 90 DEGREES

Parts List

ITEM	QTY.	DESCRIPTION	SIZE (in)
1	1	I.D. CONCRETE MANHOLE	72
2	1	INLET CHUTE (W/ FLOATABLES TRAP)	
3	1	OUTLET CHUTE	
4	1	INLET PIPE (BY OTHERS)	24
5	1	OUTLET PIPE (BY OTHERS)	24
6	1	HIGH FLOW BYPASS	
7	1	FRAME AND COVER (OR GRATE)	30

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NOT FOR CONSTRUCTION - CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS



SECTION A-A

CAPACITIES:

1. PEAK HYDRAULIC FLOW: 25.0 cfs (708 l/s)
2. TREATMENT FLOW: 2.2 cfs (62 l/s)
3. SEDIMENT STORAGE CAPACITY: 0.52 cu. yd. (0.40 cu. m.)
4. OIL STORAGE CAPACITY: 420 gal. (1590 liters)

ADDITIONAL DESIGN INFORMATION:

1. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 30 in.
2. MAXIMUM NUMBER OF INLET PIPES: 1
3. MINIMUM ANGLE BETWEEN PIPES: 90 DEGREES

Parts List

ITEM	QTY.	DESCRIPTION	SIZE (in)
1	1	I.D. CONCRETE MANHOLE	72
2	1	INLET CHUTE (W/ FLOATABLES TRAP)	
3	1	OUTLET CHUTE	
4	1	INLET PIPE (BY OTHERS)	30
5	1	OUTLET PIPE (BY OTHERS)	30
6	2	HIGH FLOW BYPASS	
7	1	FRAME AND COVER (OR GRATE)	30

Notes

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

B	MJ	2/19/14	SUMP DEPTH
A	JL	6/10/13	QTY. LIST
REV BY	DATE	DESCRIPTION	

REVISION HISTORY

Date	Scale	
11/1/2011	1/4" = 1'-0"	
Drawn	Checked	Approved
EMH	MRJ	MRJ

Title
 6-FT DIAMETER
 FIRST DEFENSE
 30" IN/OUT, DOUBLE BYPASS

GENERAL ARRANGEMENT



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