Pro-Eco-Lite Headwalls

The use of end treatments on drainage structures has been proven to be a best practice in the engineering community for many decades. Pro-Eco-Lite™ headwalls combine the benefits of new construction materials with solid engineering principles to make sure that your drainage structures exceed your performance expectations. The use of a Pro-Eco-Lite™ headwall will typically improve hydraulics, reduce erosion and improve esthetics. The benefits to the owner are lower maintenance costs, reduction of sediment pollution, and an increase of structure service life.

Improved Hydraulics

Pro-Eco-Lite™ headwalls increase the flow capacity of pipes by reducing turbulence and directing flow at the inlet.

Erosion Protection

A Pro-Eco-Lite™ headwall prevents erosion of the embankment at an inlet by providing a durable surface at the pipe entry point. At the outlet of a drainage structure, Pro-Eco-Lite™ headwalls allow the flow to spread across their apron, reducing the energy level and the potential for scour of the embankment. Lastly, Pro-Eco-Lite™ headwalls with proper installation will help prevent piping; the unwanted flow of water through the embankment backfill along the outside of a pipe conduit.

Visibility and Structural Support

Pro-Eco-Lite™ headwalls visually identify pipe openings, which in turn protect them from traffic and road maintenance equipment. Lastly, Pro-Eco-Lite™ headwalls provide structural support for the road and prevent crushing of the pipe when daylighting from an embankment.

Engineered from a composite reinforced polymer concrete, Pro-Eco-Lite™ headwalls combine the lightweight characteristics of plastics with the strength of concrete.

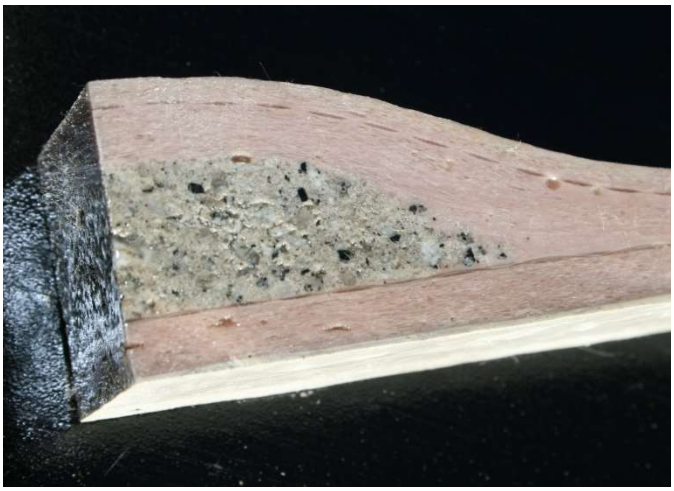
Benefits that differentiate Pro-Eco-Lite™ headwalls from other pipe end treatment solutions include:

Lightweight

Pro-Eco-Lite™ headwalls are approximately 10% the weight of comparable concrete headwalls making them ideal for weak subgrade conditions (resist settlement). Shipping Pro-Eco-Lite™ headwalls is economical as several of the lightweight units can be nested on a single pallet in many instances. The low weight also makes them ideal for installation by crews with no equipment or light equipment and allows for a faster installation resulting in cost savings for both the contractor and owner.

Durable

The composite reinforced polymer concrete materials used to manufacture the body of a Pro-Eco-Lite™ headwall are non-conductive and generally impervious to a broad range of corrosive environments. These same materials are fire retardant materials, reducing the potential for ignition when exposed to grass fires. Lastly, the fiberglass skin of the Pro-Eco-Lite™ headwall is UV stabilized, insuring a long service life when exposed to sunlight.



Versatile

Pro-Eco-Lite headwalls can be customized for solutions that can be developed for your specific site requirements.

ENVIROCONNECT™ and XPORT™ pipe stub systems provide a simple, positive (no grout) connection to any pipe type including HDPE (ribbed and smooth wall), PVC (ribbed and smooth wall), CSP, and Concrete. FRP pipe connections can be made to allow connection to precast concrete and other types of rigid style pipes.

Pro-Eco-Lite™ headwalls are available in a wide range of wall heights (450mm to 2620mm) and will suit pipe sizes up to 90" diameter. The Standard Pro-Eco-Lite™ headwall is manufactured to match a 45 degree embankment slope and the Low-Profile Pro-Eco-Lite™ headwall is manufactured to match a 22.5 degree embankment slope.

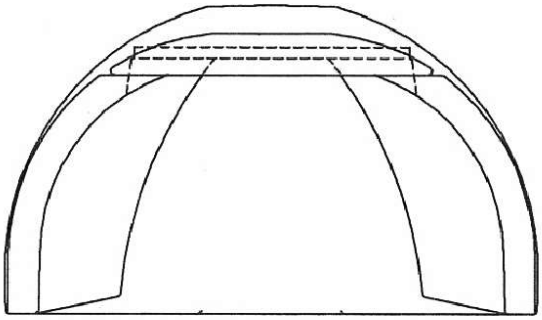
Pro-Eco-Lite™ headwalls are available with a wide variety of accessories to suit your project needs including: trash racks, security grills, weir boards, scour protection aprons, flap gates, slide gates, and handrails.




Environmentally Friendly

Pro-Eco-Lite™ headwalls are manufactured from non-corrosive materials, meeting Federal requirements for nonpolluting of streams and ditches.

Dimension & Selection Tables



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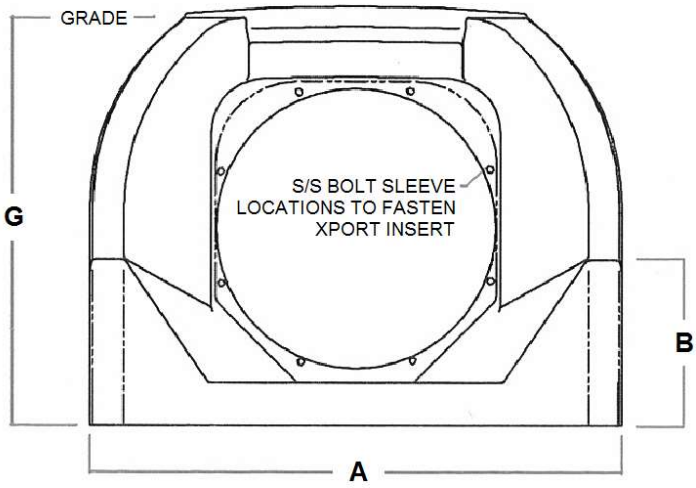
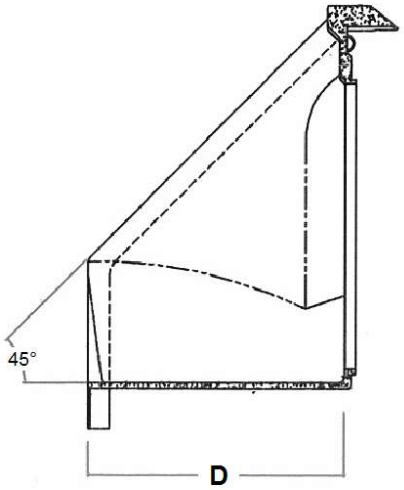
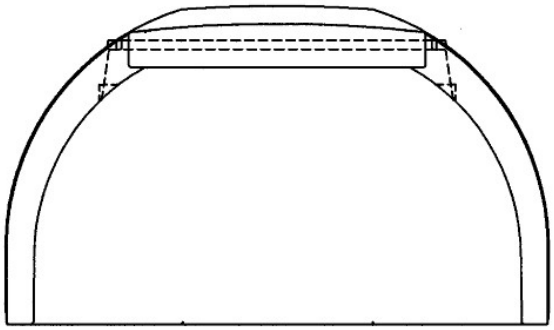


ELEVATION



SIDE SECTION

Standard Headwall – 45 Degree Head Slope (Dimensions in Millimetres)							
Series	**Max. Pipe Diameter**	**Max. Gate Diameter**	**'A' Dimension**	**'B' Dimension**	**'D' Dimension**	**'G' Dimension**	**Headwall Weight (kg)**
1.5	**300**	**N/A**	**711**	**228**	**327**	**514**	**18.2**
2	**450**	**305**	**1066**	**311**	**350**	**635**	**27.3**
3	**600**	**406**	**1321**	**419**	**635**	**1026**	**59.5**
4	**900**	**762**	**1899**	**591**	**1111**	**1454**	**109.1**
5	**1200**	**915**	**2388**	**711**	**1170**	**1839**	**277.3**



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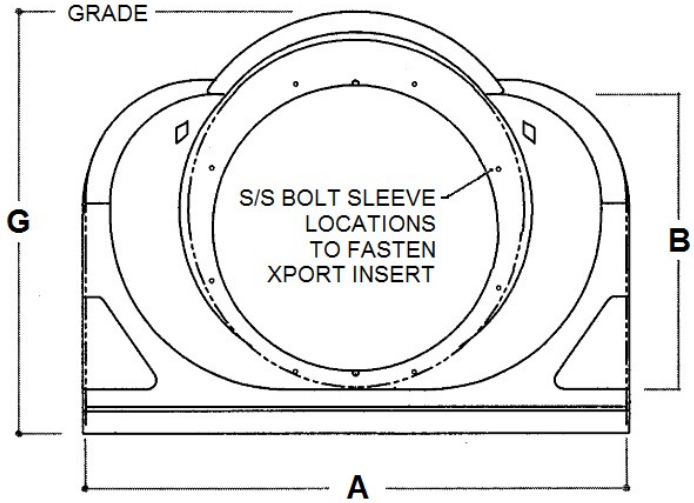

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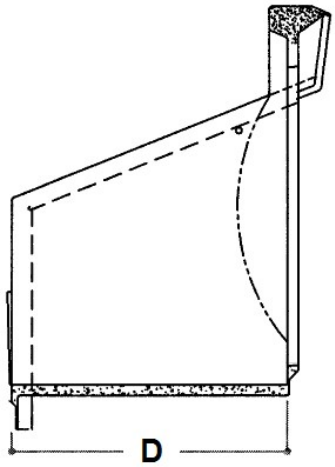

SIDE SECTION

Low Profile Headwall – 22.5 Degree Head Slope (Dimensions in Millimetres)							
Series	**Max. Pipe Diameter**	**Max. Gate Diameter**	**'A' Dimension**	**'B' Dimension**	**'D' Dimension**	**'G' Dimension**	**Headwall Weight (kg)**
2	**450**	**305**	**900**	**514**	**460**	**690**	**27.3**
3	**600**	**406**	**1345**	**825**	**675**	**910**	**59.5**
4	**900**	**762**	**1880**	**1022**	**956**	**1464**	**109.1**
5	**1200**	**915**	**2375**	**1346**	**1200**	**1804**	**277.3**
6	**1600**	**1220**	**3156**	**1083**	**1524**	**1930**	**452.3**
7	**2400**	**1525**	**3851**	**1575**	**1956**	**2680**	**659.1**

Typical Specification of Pro-Eco-Lite™ Headwall

SUPPLY OF POLYMER CONCRETE HEADWALL STRUCTURES

This specification covers the requirements for the supply of reinforced composites and polymer concrete headwall structures. Structures are intended for use in exposed applications as inlets and outlets for culverts and gravity storm water systems.

1. Applicable Standards

- ASTM E84-00a Standard Test Method for Surface Burning Characteristics of Building Materials

2. Definitions

- ASTM American Society for Testing & Materials

3. Materials

3.1. Structure and accessories shall be finished in a low visibility colour, such as concrete beige or grey. CSA approved UV stabilized colour coating safe for potable water.

3.2. All steel fittings and fasteners shall be stainless steel.

3.3. Structure shall be fabricated from a Class 1 frame rated matrix to ASTM E84-00a

3.4. Markings

All polymer concrete headwall structures supplied shall be clearly marked with the following information:

Series Number
Pipe Diameter
Manufacturer Name
Part Number

3.5. Approved Products

Pro-Eco-Lite Headwalls

4. Requirements

4.1. Headwall Structure

4.1.1. Product supplied shall be furnished by a quality manufacturer who is engaged in the manufacture of polymer concrete headwall structures.

4.1.2. Product supplied shall be in new and serviceable condition.

4.1.3. All systems, sub-systems and structures shall be shop fabricated and assembled into the largest practical size suitable for transporting.

4.1.4. All cut ends, holes and abrasions of polymer concrete headwall structures shall be sealed with compatible resin coating to prevent intrusion of moisture after fabrication.

4.1.5. Headwalls structures shall have a slope of 22.5° or 45°. Required slope will be indicated on the contract drawings.

4.1.6. Pipe Connection

4.1.7. Pipe stubs shall match the specified type, size, and configuration of storm sewer pipe and/or culvert pipe. A positive connection between the headwall and pipe/culvert must be formed through the pipe stub. No grouting will be permitted.

4.1.8. An FRP pipe stub is to be used for connection to concrete pipe. Follow manufacturer's recommendations when joining FRP stub to concrete pipe.

4.1.9. Security Grids / Trash Racks (If Required)

4.1.10. Security grids shall be manufactured from pultruded reinforced composite rods a minimum diameter of 12mm.

4.1.11. Trash Racks shall be manufactured from pultruded reinforced composite rods a minimum diameter of 19mm for horizontal bars and 38mm for vertical bars.

4.1.12. Grid collar and hinge components to be manufactured from UHMWPE material.

4.1.13. Apron (If Required)

4.1.14. Apron shall be fabricated of fiber reinforced composite with localized fiber reinforced polymer concrete material, compatible with the headwall material.

4.1.15. Aprons shall be a minimum 300mm deep and extend full width of the headwall structure

4.1.16. Aprons shall be attached to the lower edge of the headwall structure with stainless steel fasteners at a maximum spacing of 100mm.

5. Shipping, Storage, Handling and Protection

5.1. Shipping, handling and storage shall be as specified by the manufacturer's recommendations.

5.2. Headwall structure and accessories shall be shipped from the manufacturer palletized and banded with exposed edges protected by cardboard to prevent damage in shipment.

6. Inspection and Testing

6.1. All materials shall be subject to inspection, sampling, and quality assurance testing by the consultant and the contractor shall provide safe and convenient access acceptable to the consultant for inspection and sampling of materials, and shall co-operate in the inspection and sampling process when requested to do so.

6.2. The contractor at his expense shall replace any material found unacceptable by the consultant with acceptable material.

END OF SECTION

Other CIF Composites Inc manufactured products: