1 Tunnel Design

1.1 Tunnel system shall consist of a three-sided, bottom and sides section with a removable top assembled to form a completely enclosed tunnel.

1.2 Tunnel top should integrate the sidewalk surface where applicable.

1.3 Tunnels shall be designed for AASHTOHL-93 vehicle loading. The precast concrete units shall be tested and conform to the current edition of the American Concrete Institute Standard ACI-711, Section 301.

1.4 Tunnel lifting hooks shall be recessed and the joints shall be properly sealed and watertight.

1.5 Pipe support steel and anchor plates shall be provided in the tunnel top at regular intervals not to exceed 8'-0" on center.

2 Soil Conditions

2.1 Soil conditions shall be determined for each application.

3 Tunnel Gaskets

3.1 Manufacturer shall flexible plastic gaskets for all joints in the installation.

3.2 Manufacturer shall also provide a sufficient quantity of primer to adequately prepare joints for installation under wet conditions.

4 Tunnel Manhole Frames and Lids

4.1 Manhole frames and lids shall be selected for each application with Purdue approval.

5 Tunnel Top Waterproofing Standards

5.1 60 mil thermoplastic (PVC) sheet waterproofing with non-woven fiberglass reinforcing

5.2 Heat-welded seams

5.3 Containment grid strips at 10’ o.c.

5.4 Wrap membrane down sides of tunnel 24"

5.5 Drainage Panels

5.5.1 Three-dimensional, high-impact resistant polymeric grid with woven monofilament drainage fabric bonded to the grid

5.5.2 Minimum compressive strength of 18,000 psf (ASTM D1621)

5.5.3 Minimum flow of 1.34 gpm/ft width at 3600 psf sustained for 300 hours, and hydraulic gradient of 0.01 (ASTM D4716)

5.5.4 Filter fabric shall have a permeability coefficient of 0.015 cm/sec