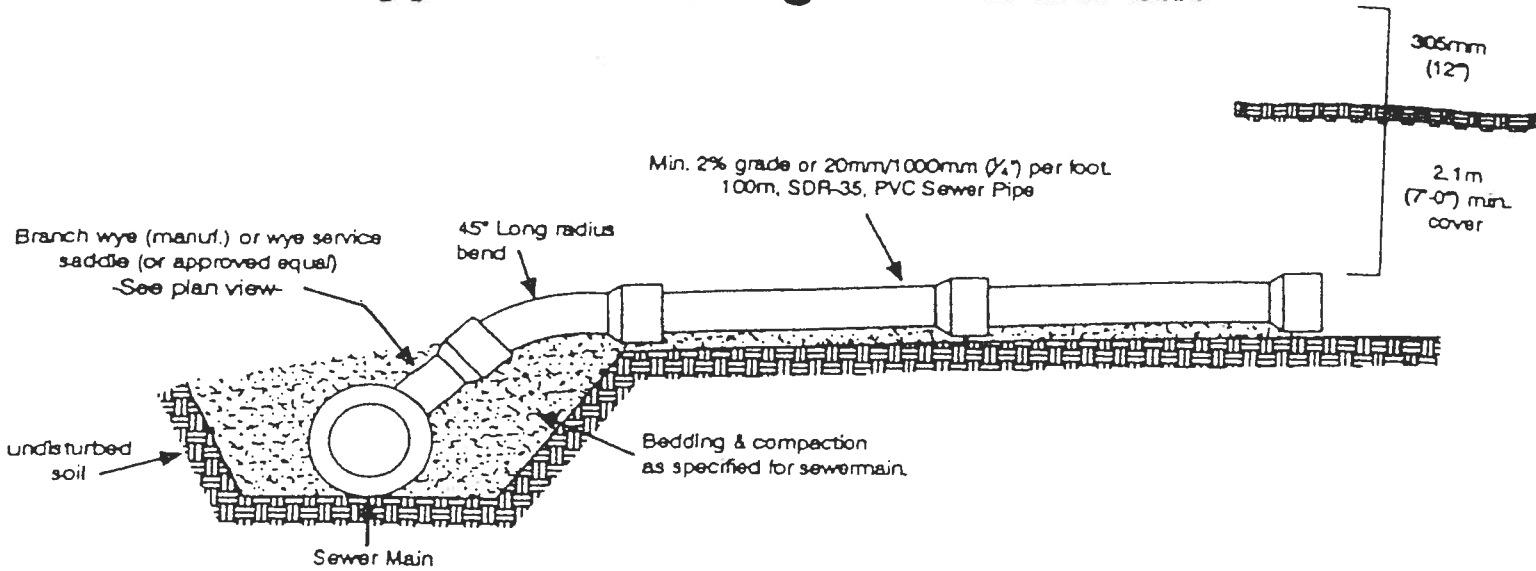
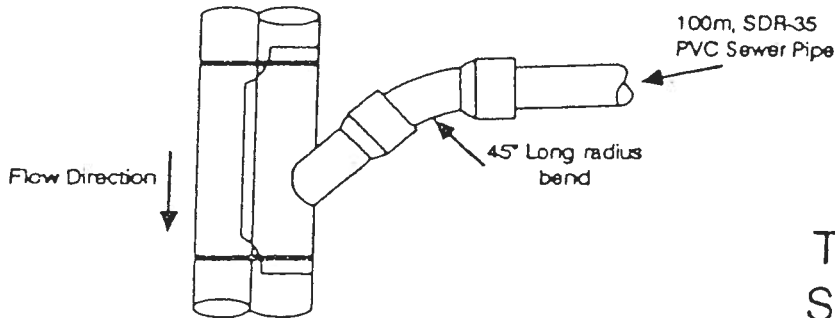


SCHEDULE 'B'

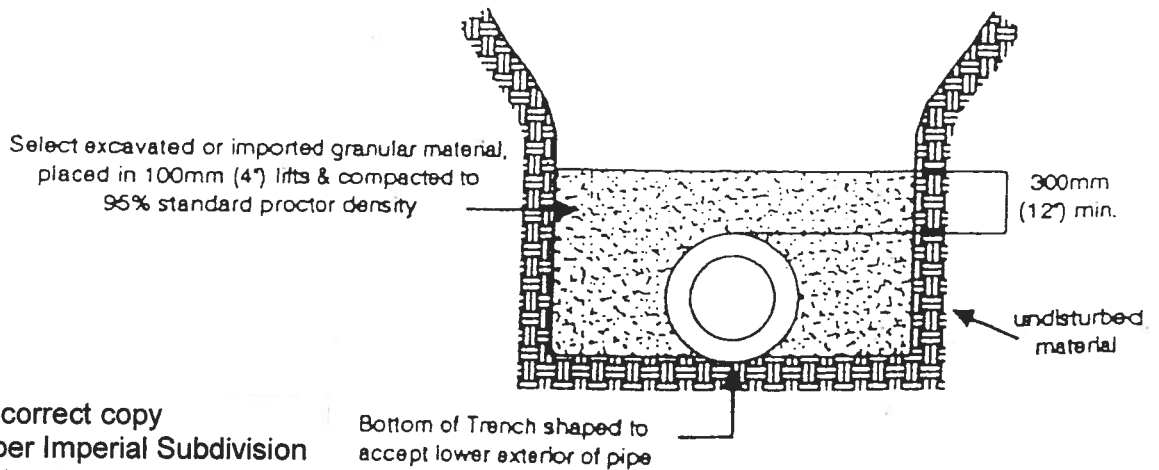
Typical Building Sewer Detail



-Plan View-



Typical Off Roadway Service Trench Detail



CERTIFIED a true and correct copy
of Schedule 'B' to "Harper Imperial Subdivision
Sewage Regulation By-law No. 1939, 2011."


Fred Banham, Chief Administrative Officer

Not to Scale

SCHEDULE 'C'

Typical Pressure Building Sewer Specifications

A. Pressure Building Sewer System Overview

The sanitary sewer from each lot gravity feeds to:

- i) A (2) two compartment septic tank and to an on-site lift station; **OR**
- ii) An on-site lift station complete with a grinder pump.

Each station pressures up the mainline, pushing the wastewater to the main lift station, where required. From there it flows to the treatment lagoons and is discharged seasonally.

Refer to the attached drawing for a general overview of the sewer service collection system. All materials shall be CSA approved and installed as per the BC Sewerage System Standard practice manual, referred to in the BC Sewerage Regulations

B. Pumps

All pumps to be effluent or grinder pumps complete with controls as per the following specifications.

- Each pump chamber to contain an effluent pump or a grinder pump, isolation valve and check valve;
- Curb stop to be placed at each property line; and
- The size of the pump is dependent on the location of the property and should be chosen in consultation with the approving authority.

General

The installation shall include a complete, automatic, sewage pump station as manufactured by Engineered Pump Systems, ITT Flygt or E/One Sewer Systems or approved equivalent. The pump shall be a submersible sewage pump with the following features:

- All cast iron construction, no sheet metal or plastic parts shall be allowed;
- Recessed type impellers;
- Effluent pump impellers should be capable of handling ground slurry;
- Grinder pumps shall be capable of reducing all components in normal domestic sewage, including a reasonable amount of "foreign objects," such as paper, wood, plastic, glass, wipes, rubber and the like, to finely-divided particles which will pass freely through the passages of the pump and the discharge piping;
- Oil filled electrical motors with overload-heat sensor;
- Double shaft seals with seal leak probe;
- Stainless steel cutters; and
- Stainless steel fasteners.

SCHEDULE 'C'
Typical Pressure Building Sewer Specifications
- continued -

Piping and Valves

- Minimum 1 ¼" piping;
- Check valve; and
- Isolation valves.

Level Controls

Furnish (3) three float switches to provide automatic pump control of the wet well liquid levels. Level switches to provide the following functions:

- FS #3 High level alarm;
- FS #2 Pump on; and
- FS#1 Off (fail-safe).

Control Panel

The pump control panel shall be CSA approved fully automatic type. The panel shall provide "operator friendly" LED type display indication of the following functions:

- Power on light;
- Float switch indication lights;
- Pump on light;
- Seal fail alarm light; and
- High level alarm light and buzzer.

Chamber

Pump chambers shall meet the following requirements:

- The sump chamber shall be of fibreglass or concrete construction. Any concrete tanks must be waterproof; and
- Gravity service lines directly to Grinder Pump System chambers should be minimum 2% slope for 100mm diameter pipes and 1% slope for 150mm diameter pipes.
- Ground must slope away from pump chambers on all sides.

C. Septic Tanks

Effluent Pump System

Septic tanks installed as part of Effluent Pump Systems shall meet the following requirements:

- All septic tanks shall be sized and located in conformance with the latest CSA Standard, Design, Material and manufacturing requirements for prefabricated septic tanks and holding tanks;
- All tanks to have at least two compartments with the pumps in a third chamber;
- Gravity service lines from residences to septic tanks should be 2% slope for 100mm diameter pipes and 1% slope for 150mm diameter pipes;
- Ground must slope away from septic tanks on all sides; and
- All concrete tanks shall be water proof including all risers to the surface.

Grinder Pump System

Septic tanks are not required as part of Grinder Pump Systems.

SCHEDULE 'C'
Typical Pressure Building Sewer Specifications
- continued -

D. Piping

- Pipe to be sized for peak flows for all future connections
- Minimum 50mm diameter for mainlines, 38mm for service lines
- Minimum 2.7m cover
- Shut off valves for every 300m of mainline pipe
- Air relief valves at all high points
- Horizontal alignment: 2.5m from property line unless in conflict with other utilities
- Design velocity should be 0.6m/s minimum and 3.0m/s maximum
- All piping shall be backfilled as followed:
 - Bedding: Sand 50mm below pipe up to 300mm above pipe compacted to 95% SPD
 - Under boulevard or field: 95% SPD compaction
 - Under road or driveway: 98% SPD compaction to 1m below surface
100% SPD compaction to surface
- Acceptable pipe material: HDPE or PVC. All fittings on HDPE pipe to be compression type complete with stainless steel inserts

E. Allowable Connections

- Domestic sanitary sewer is the only allowable liquid in the system
- It must be treated by a two compartment septic tank prior to entering the system
- Weeping tile and drainage system cannot be tied to system

F. Design

- All systems larger than a single family house require detailed designs prepared by a Professional Engineer to be submitted for approval prior to commencing construction
- All installations shall require record drawings showing what was installed. These drawings must be submitted for approval

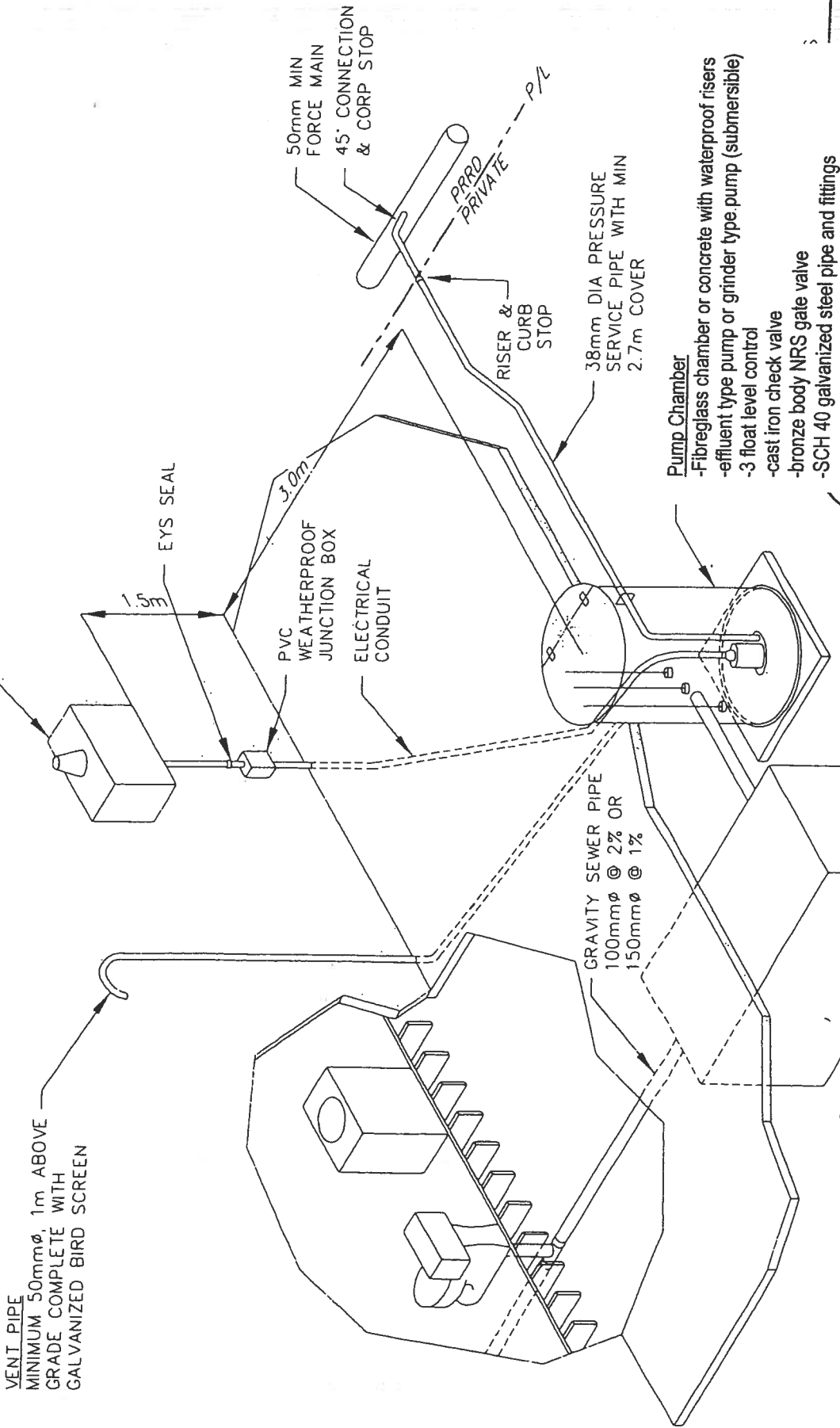
G. Appurtenances

- All valves shall be suitable for corrosive soils
- All bolts to be stainless steel
- All above grade appurtenances in the road right of way to be adequately protected against boulevard traffic
- All concrete shall be Type 50 to protect against corrosive soils

Peace River Regional District
By-law No. 1939, 2011
SCHEDULE 'C'

VENT PIPE
MINIMUM 50mm ϕ , 1m ABOVE
GRADE COMPLETE WITH
GALVANIZED BIRD SCREEN

CONTROL PANEL
-OUTDOOR WEATHERPROOF
-SIMPLEX CONTROL PANEL
-HIGH LEVEL ALARM
-REMOTE ALARM OUTPUT



**CERTIFIED a true and correct copy of
Schedule 'C' to "Harper Imperial
Subdivision Sewage Regulation By-law
No. 1939, 2011."**

Septic tank refers to CSA standards for design
Material and manufacturing requirements for
pre-fabricated septic and holding tanks.
Septic tanks are not required for Grinder
Pump Systems.