# GORE DISTRICT COUNCIL

# SUBDIVISION AND LAND DEVELOPMENT BYLAW

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# SECTION 10

# INSTALLATION OF UTILITIES

## 10.1 SCOPE

This section applies to all underground and overhead services; i.e. power, telephone, cable TV, gas, water, wastewater and stormwater.

Where relevant this section is to also be read in conjunction with Section 11 - Piped Utilities and Section 12 - Cabled Utilities.

## 10.2 OBJECTIVE

The practices specified or advised in this section are intended to:

(a) Provide utilities that meet the needs of people and communities; and

(b) Ensure the building and upgrade of utilities is “sustainable” as possible so as to limit any long term adverse effects and help “Future Proof” the subdivision or land development.

## 10.3 PERFORMANCE STANDARDS

The installation of utilities shall be carried out in conformity with this Bylaw and associated Standard Drawings, in such a manner that:

(a) The general performance standards of Section 1.4 are met.

(b) Existing utility services are extended and upgraded where necessary to permit connection at each new property and also to allow for future development in the area.

(c) Where one or more of the utility services are not available, that the subdivision or land development is able to sustain the lack of the particular service in its own right.

(d) Utility services are located within road reserves where practical and parallel to common property boundaries wherever practically possible.

(e) Utility services within road reserves are provided at the designated locations and depths.

(f) Utility services are provided in a manner which can be economically maintained over their design life.

Dispensation may only be permitted subject to approval of Council (see Section 15).

## 10.4 POSITIONING OF UTILITIES

Within road reserves utilities are to be laid at the positions as shown on the Standard Drawing M01 (Standard Berm Layout Details). In general terms these positions shall be as follows:

| | | |
|---|---|---|
| Power | - | 700 mm from property boundary |
| Telecommunications | - | 1 metre from boundary |

| | | |
|---|---|---|
| Water | - | between telecommunications and back of footpath |
| Wastewater/Stormwater/Gas | - | 1 – 2 metres outside the face of the kerb channel. |

There shall be a minimum horizontal clearance of 500 mm between pipes and between pipes and cables.

The position of all utilities is to be marked by laying appropriate detector tape in the backfill above the utility, generally at 300 mm above the crown of pipes or cables.

Utilities shall generally be aligned parallel with the road network. However their alignment may deviate from the standard parallel alignment provided there is no interference with other services and the pipes are still fully located in the road reserve.

Where there is no alternative Council utilities may be located on private property in areas which will not reduce the building area available on the lot (that is, within any front, side or rear yard areas). Pipelines shall be located not closer than 1.5 metres plus one half the depth to invert from any building, or structure.

Where a Council utility or utility structure is laid within private property, it shall be protected by an easement in favour of Council and of sufficient width to allow practical access for maintenance. Such access shall be not less than 4.0 metres wide nor less than the sum of 600 mm plus the pipe diameter plus the depth to invert.

Non-Council utilities shall not be installed within private property or on Council reserves without the express approval of Council. In such situations an accurate as-built plan as well as appropriate easement documents will be required.

Power transformers and local area telephone terminals shall be located on their own separate allotment or widened portion of road reserve if they cannot be safely and conveniently placed within the clear width of the berm.

Gas distribution networks shall be designed and installed in accordance with NZS 5258 Gas Distribution Networks.

## 10.5 POSITIONING OF LATERAL CONNECTIONS

Details of connections to a property for utility services shall be supplied to Council on completion. As a guide, the following locations should be adopted wherever possible:

| | | |
|---|---|---|
| Power and Telephone | - | immediately adjacent to side boundary |
| Stormwater | - | 1 metre from lower elevation side boundary |
| Sewer | - | 1.5 metres from lower elevation side boundary |
| Water | - | centre of road frontage |
| Gas | - | centre of road frontage |

All piped connections shall extend to 500 mm inside the property boundary.

The depth of connection at the property frontage shall be:

| | | |
|---|---|---|
| Power and Telephone | - | minimum 600 mm cover, if installed |
| Stormwater and Sewer | - | minimum 750 mm cover, preferred depth 900 mm cover, but sufficient to service all future building connections at grades set out in the Building Code |

| | | |
|---|---|---|
| Water | - | 450 mm cover |
| Gas | - | Minimum 450 mm cover (low pressure) |
| | - | Minimum 600 mm cover (intermediate pressure) |

The position of stormwater and sewer laterals shall be shown by incorporating a vertical riser on the service line and extending to 200 mm above ground level. The top of the riser shall be securely capped. Sewer laterals are to be painted red to clearly distinguish them from storm laterals.

Water connections shall include a toby valve clearly marked with a cover.

## 10.6 STATUS OF LATERALS

All services within the boundaries of the road reserve shall be the property of Council or a utility company once formally taken over by that organisation.

Unless specifically arranged otherwise and protected by an easement, services through privately owned allotments shall be the responsibility of the landowner.

Accordingly, in the construction of new services to rear allotments, Council's policy is as follows:

(a) A separate connection to be provided to each allotment wherever possible.

(b) Where various allotments are serviced by a common right of way or access lot, a public drain is to be constructed along the right of way. The public drain is to be constructed to Council's standards with manholes at each end (or manhole and cleaning eye where permitted by Council) and maintenance access for Council is to be provided via a registered easement in gross.

(c) The costs of registering easements and agreements against titles shall be borne by the Developer.

In the case of common sewers or storm drains, Council will require manholes at each end of the service, or one manhole and one cleaning eye depending on the length, in order to maintain the line and remedy any blockage. In the case of common water supplies Council will require the installation of appropriate valving in order to isolate the supply.

## 10.7 TRENCHING

Before any excavation is commenced in a road or public area a Corridor Access Request shall be made to Council. In all cases the position and depth of all existing underground services in the locality, including telephone and electric power cables shall be ascertained from the appropriate authority as accurately as possible. All necessary steps shall be taken to prevent damage to or accident arising from interference with such services. Any leaks or fractures discovered or damage caused shall be reported immediately to the authority concerned.

Trenching shall be carried out in accordance with any conditions set in the Road Opening Permit and in such a manner that adjacent ground stability is maintained and there is no danger to the public.

The minimum width of the trench should be such that the barrel of the pipe is not closer than 150 mm to the trench wall, or to timbering.

Not more than 120 metres of trench should be open at any one time.

If road material is to be reused, care shall be taken to prevent it being mixed with soil.

In fine-grained soil (clay, silt or fine sand) good drainage of the trench floor shall be ensured and ponding and flooding avoided at all stages. It is essential to prevent disturbance of softening of fine-grained soils on the trench floor. This is achieved firstly by proper drainage and then by placing a layer of granular bedding material on the undisturbed formation as soon as it is uncovered and before commencement of laying. Soft spots should be hardened to the general condition of the bottom by tamping in extra granular bedding material.

Large areas of soft foundation material shall be stabilised so that movement of the trench bottom will not occur after the trench has been backfilled. This can be accomplished by over-excavating and replacing the excavated material with compacted granular material similar to that used in road foundations, or by the use of ground stabilisation fabric.

The depth of compacted granular material shall be varied in accordance with the softness of the foundation material, but should not be excessive. A depth of 500 mm should not normally be exceeded.

## 10.8 STEEP TRENCHES

Where the longitudinal slope of the base of the trench is 1 in 8 or greater, anti-scour blocks shall be provided. These anti-scour blocks shall be:

(a) Constructed from 150 mm thick concrete (17.5 MPa) up to pipe diameters of 300 mm and 300 mm thick concrete for diameters greater than 300 mm.

(b) Keyed into the sides and floor of the trench by 150 mm.

(c) Extended to 300 mm above the pipe or to ground level where the pipe cover is less than 300 mm, and

(d) Spaced at:

  (i) 7.5 metres centres for trench slopes between 1 in 8 and 1 in 5, or

  (ii) 5.0 metres centres for trench slopes greater than 1 in 5.

Note: The anti-scour blocks partition off the trench and prevent ground or surface water running along the trench and causing scouring.

## 10.9 EXCAVATION BELOW WATER

Should water appear in excavations, it shall be kept down below the level of the joints and bedding by the appropriate means of either a side channel and pumping, or well pointing.

All wells or sumps shall be sunk and pumps fixed so as not to interfere with the work of bedding, laying and jointing of the pipe.

## 10.10 BACKFILLING

Backfilling shall be carried out in conformity with Standard Drawings D12 and D13 and in such a way as to:

(a) Give even support to the sides of the pipe and not cause any deformation or pipe offset.

(b) Not settle, shrink or expand differently to the ground each side of the trench.

(c) Give full support equivalent to the adjacent ground and to reinstated surfacings.

In order to achieve these standards it is expected that in general:

(a) Care must be given to dewatering trenches before backfill.

(b) The utility is bedded on sand or fine chip with particle size in the range 5 mm to 10 mm.

(c) Selected backfill with particle size in the range 5 mm to 20 mm, free from organic material, lumps and stones larger than 40 mm be carefully placed around the utilities and compacted by hand in layers not exceeding 150 mm thick, until the backfill is 150 mm above the crown of the utility.

(d) The bulk backfill be spread and compacted in layers suitable for the method of compaction, but generally no more than 300 mm deep.

(e) Any temporary trench timbering is withdrawn as the backfilling proceeds.

(f) No backfilling shall be compacted to a lesser standard than the undisturbed ground immediately adjacent to the trench.

(g) Reinstatement of the ground surface shall be to a high standard to avoid slumping of any trench. Where trenches cross existing sealed carriageways they shall be topped with the same surface as that carriageway.

The performance standards for backfilling are as follows:

(a) The minimum density is 2,200 kg/$m^3$ in road reserve and 2,100 kg/$m^2$ elsewhere, or 95% maximum clay density as measured by laboratory test.

(b) Density tests are carried out at sufficient frequency to verify the standard of compaction.

(c) A minimum Clegg Impact Hammer (CIV) test average value of 40 must be achieved over the surface of compacted basecourse on the carriageway prior to sealing. A minimum CIV of 20 is required on the compacted aggregate foundation surface under a concrete or asphalt footpath.

(d) There is no discernible or measurable surface depression on the reinstated trench over a 12 month period.