NELSON CITY COUNCIL

INFRASTRUCTURAL ASSETS

CONTOUR DRAIN

Cross Section

Flow

Compacted Earth Bund

500mm

250mm

2m
SEE SECTION 9.3.3.2c
FOR GUIDANCE ON
WHERE BENCHED
SLOPES ARE TO BE
USED
Wide shallow level spillway over existing ground where possible, retaining the existing grass cover. Minimum width 6 metres. Bare areas to be stabilised with concrete, two layers of geotextile or other armouring.

Secure the ends of the level spreader by burying within the earth bund and haunching with concrete.

Bund/diversion channels to ensure all flow enters at the inlet end.

Level spreader full width of inlet end, batter into pond to be stabilised with soft matting geotextile.

Extra crest width may be required to provide for machinery access for cleaning out.

All bare surfaces to be stabilised with vegetation if the pond is to remain through a winter period, otherwise just the outer batter needs to be stabilised.

Pinned geotextile overlaid with large rock to break up flow.

Sediment Forebay (1m deep and 2m wide).
Waratahs placed either side of decant arm as alternative means of securing decant

Attach 1.8m long waratah to weight decant (see section A-A)

Standard end caps

Decant: Six equally spaced rows of 10mm diameter holes at 60mm spacings along the full length of the decant pipe, 200 holes per 1.5 ha catchment

Wire or steel straps to join decant and float

Flexible rubber joints glued and clamped – two joints to be used only for lower decant

Nylon cord to be tied through the end holes in decant and secured to the waratah

Single waratah fixed firmly behind cable ties/straps required to weight decant

Standard waratah placement at either end of the decant

Section A-A
Level spreader full width of inlet end, stabilised from the beginning of the inlet to the pond invert with appropriate soft matting textile.

Concrete haunching

3:1 inlet batter to be smoothed and free of voids

Sediment Retention Pond

Geotextile wrapped around level spreader and concrete haunching

Level spreader

Earth Bund with site concrete cover

Level spreader 150 mm x 50 mm timber weir

Forebay 1 m deep

Geotextile
Width of top embankment should be wide enough to ensure machinery access for de-sludging of pond, if there are no other access points available.

Spillway compacted and smoothed to eliminate all voids prior to laying and pinning appropriate geotextile/concrete.

Pond battens 2:1 to 3:1

Minimum freeboard 300mm

See decant detail

Live storage variable up to 1500mm

Dead storage 500mm

Pond base level

Waratah stakes

100mm diameter discharge pipe laid at 1 or 2% gradient

2 x rubber couplings to provide additional range

Rip-rap placed at pond outlet with geotextile placed underneath

Geotextile should be laid into the pond to a depth of at least 500mm below the spillway invert

Waratahs and strong nylon cord to control level of decant

Geotextile secured firmly to the embankment face

Anti-seep collars

SD 910

NELSON CITY COUNCIL

SEDIMENT RETENTION POND FOR CATCHMENTS UP TO 1.5ha

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE
Waist of top embankment should be wide enough to ensure machinery access for de-sludging of pond, if there are no other access points available.

Spillway compacted and smoothed to eliminate all voids prior to laying and pinning appropriate geotextile/concrete.

Pond batter 2:1 to 3:1

Minimum freeboard 300mm

60° Y junction

150mm diameter riser

150mm diameter discharge pipe laid at 1 or 2% gradient

150-100mm reduction

Upper decants extent of travel is over 50% of the live storage depth

See decant detail

Lower decants extent of travel is over 100% of the live storage depth – variable up to 1500mm

Dead storage 500mm

Waratah stake

2 x rubber couplings to provide additional range

2 x rubber couplings to provide additional range

Rip-rap placed at pond outlet with geotextile placed underneath

Geotextile should be laid into the pond to a depth of at least 500mm below the spillway invert

Waratahs and strong nylon cord to control level of decant

If necessary place a 30° bend to keep lower decant well away from upper decant

Geotextile secured firmly to the embankment face

Anti-seep collars

Cross Section

Plan

SEDIMENT RETENTION POND FOR CATCHMENTS BETWEEN 1.5ha and 3ha

NELSON CITY COUNCIL

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SD 911

SENIOR EXECUTIVE INFRASTRUCTURE DATE
Width of top embankment should be wide enough to ensure machinery access for de-sludging of pond, if there are no other access points available.

Spillway compacted and smoothed to eliminate all voids prior to laying and pinning appropriate geotextile/concrete.

Pond batter 2:1 to 3:1

Minimum freeboard 300mm

Concrete riser may require weighting or anchoring to prevent floating

Middle decant operates over top 2/3 of live storage only

Lower decant operates over full depth of live storage up to 1500mm

Waratah stakes required for all decants

Cross Section

300mm diameter discharge pipe laid at 1 or 2% gradient

Lowest Inlet pipe to riser is angled upward at 15° to ease tension on flexible joint

See decant detail

Plan

Rip-rap placed at pond outlet with geotextile placed underneath

Geotextile should be laid into the pond to a depth of at least 500mm below the spillway invert

Waratahs and strong nylon cord to control level of decant

Geotextile secured firmly to the embankment face

Anti-seep collars

NELSON CITY COUNCIL

SEDIMENT RETENTION POND FOR CATCHMENTS BETWEEN 3ha and 5ha

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SD 912

SENIOR EXECUTIVE INFRASTRUCTURE

DATE
Steel standards such as waratahs or standard wooden fencepost driven a minimum of 400mm into the ground.

Elevation

Geotextile fixed firmly to post/waratah

Compacted backfill

Trench geotextile 200 mm minimum into ground

Cross Section

Overlap wooden battens

Standard Fabric Joint

Where required returns a minimum of 2 metres in length to reduce velocity along the silt fence and provide intermediate impoundment

Perspective View

Ends of returned wired back to stake or waratah

Provide leakproof joint at the junction of the return and main silt fence alignment

NELSON CITY COUNCIL

SILT FENCE

INFRASTRUCTURAL ASSETS

APPROVED 29/07/2010

SENIOR EXECUTIVE INFRASTRUCTURE DATE

SD 913
NELSON CITY COUNCIL

STORMWATER INLET PROTECTION

INFRASTRUCTURAL ASSETS

APPROVED

29/07/2010

SD 914
Cross Section

- Key bund into stable ground to a minimum depth of 0.3 m.
- 160 mm non-perforated pipe through bund
- Compacted fill (90% compaction) by track rolling at 200 mm lifts with particular care to get suitable compaction around pipes.

Elevation

- 2 m minimum

Plan

- Decanting Earth Bund
  - Maximum Catchment 0.3 ha
  - 2% volume
  - (60m³ per 0.3 ha catchment)

Outlet Detail

- 160 mm dia. Perforated novacoil pipe fixed to waratah with wire ties.
- Right angle PVC elbow joints to be glued and fixed with PK screws.

Live storage volume - 70% of total treatment volume
- 1m maximum height to spillway level
- Dead storage volume - 30% of total treatment volume
- Level invert surrounding decant