LEGEND
- Property Boundary
- Existing Wastewater
- Existing Stormwater
- Existing Water Supply
- Existing Power
- Existing Telephone Cable
- ToE of New Batter
- Top of New Batter
- New Cut
- New Fill
- New Accessway
- New Drainage Channel
- New Permanent Fencing

New Levee
New drainage Channel

Form base of levee around existing light poles up to 300mm.

New 300 dia RORR class 2 culvert with headwall on inlet. Headwall and flapgate on outlet.

New accessway

New permanent fencing

New drainage channel

Notes:
1. All dimensions are in metres unless noted otherwise.
2. Aerial photo and services sourced from Top of the South Maps - https://www.topofthesouthmaps.co.nz/ licensed by Top of the South Maps for re-use under the Creative Commons Attribution 4.0 New Zealand Licence (CC BY 4.0). Accessed 14/09/2019.
3. Services shown on this drawing are indicative only. Contractor to identify, locate and protect services as necessary to complete the works safely.
NEW LEVEE

NEW DRAINAGE CHANNEL (SPI)

NEW 1.5m HIGH BY 2.0m WIDE BY 3.0m LONG PRECAST BOX CULVERT TO MATCH EXISTING CULVERT, INSTALLED NEXT TO EXISTING WITH MATCHED INVERTS. FOUNDATION AS PER DRAWING 1004808.0200-043. CONCRETE TOPPING SLAB TO SPAN BOTH CULVERTS. 150mm THICK 30MPa CONCRETE WITH 663 MESH CENTRALLY PLACED DOWELED TO CULVERTS SAFETY FENCE AND RIP RAP ARMOUR AS PER DRAWING 1004808.00200-043.

NEW 300mm DIA RORU CLASS 2 CULVERT WITH SUMP INLET. HEADWALL AND FLAPGATE ON OUTLET

NEW BOX CULVERT AND PEDESTRIAN / EQUESTRIAN ACCESSWAY. REFER TO DRAWING 043 FOR DETAILS

FORM BASE OF LEVEE AROUND EXISTING LIGHT POLES (UP TO 500mm)

150mm THICK AP40 SURFACING TO ACCESS RAMP

REMOVE EXISTING VEGETATION AND MULCH / DISPOSE AS PER SPECIFICATION
NEW 300mm DA RORJ CLASS 2 CULVERT WITH HEADWALL INLET, HEAD WALL AND FLAP GATE ON OUTLET, GRADE SOIL LOCALLY TO INLET.

NEW LEVEE

NEW VEHICLE ACCESSWAY.
150mm THICK AP40 SURFACING.

NEW SPILLWAY

NEW LEVEE

EXISTING OPEN CHANNEL FROM HAMPDEN STREET WITH 300mm DA RORJ CLASS2 PIPE INCLUDING HEADWALL AND FLAP GATE AT OUTLET

NEW 1350mm DA RORJ CLASS 2 CULVERT WITH CONCRETE HEADWALLS AT INLET & OUTLET. REFER DRAWING 44 FOR DETAILS

NEW HURRICANE CHEF GATE (OR APPROVED EQUIVALENT)
3.6m LONG X 1.05m HIGH

NEW RIPRAP ARMOURING. D50 / 300mm ROCK EXTENDING TO TOP OF SPILLWAY BANK

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. AERIAL PHOTO AND SERVICES SOURCED FROM TOP OF THE SOUTH MAPS
3. SERVICES SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. CONTRACTOR TO IDENTIFY, LOCATE AND PROTECT SERVICES AS NECESSARY TO COMPLETE THE WORKS SAFELY.
Datum RL160

NEW 300mm DIA RCRRJ PIPE DRAINING TO CREEK INCLUDING FLAP GATE ON OUTLET. RETAIN EXISTING SUMP.
EXISTING 300 DIA STORMWATER PIPE

NEW 300 DIA RCRRJ WITH FLAPGATE ON OUTLET AND NEW SUMP
NEW VEHICLE ACCESSWAY USING EXISTING CULVERT
NEW PEDESTRIAN ACCESS STAIRS (INCLUDING BICYCLE RAMP)
NEW BOX CULVERT FOR PEDESTRIAN/EQUESTRIAN ACCESS (REFER DWG 043)
EXISTING STORMWATER TO BE REMOVED.
EXISTING CULVERT TO BE REMOVED.

LEGEND

--- DESIGN LEVEE CREST
- - - - - EXISTING GROUND LEVEL

DESIGN LEVEE CREST RL (m)  RL 160

EXISTING GROUND RL (m)  RL 160

HEIGHT / DEPTH (m)

CHAINAGE (m)

LEVEE

Horizontal Scale: 1:1000
Vertical Scale: 1:100

NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. VERTICAL DATUM NELSON VERTICAL DATUM 1955 (NVD 1955).
3. EXISTING GROUND LEVEL SURFACE SOURCED FROM LINZ DATA SERVICE
   NELSON CITY COUNCIL & TASMAN DISTRICT COUNCIL, FOR RE-USE UNDER CC BY 4.0.
4. SERVICES SOURCED FROM TOP OF THE SOUTH MAPS <https://www.topofthesouthmaps.co.nz/app//> , LICENSED BY TOP OF THE SOUTH MAPS
   FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 NEW ZEALAND LICENCE (CC BY 4.0). ACCESSED 14/09/2019.
### LEVEE

**Horizontal Scale:** 1:1000  
**Vertical Scale:** 1:100

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#### DESIGN LEVEE CREST RL (m)

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**NOTES:**

1. **All dimensions are in metres unless noted otherwise.**
3. **Existing ground level surface sourced from LINZ Data Service.**
   - Licensed by Nelson City Council & Tasman District Council, for re-use under CC BY 4.0.
4. **Services sourced from Top of the South Maps.**
   - [Source](https://www.topofthesouthmaps.co.nz/app//)
   - Licensed by Top of the South Maps for re-use under the Creative Commons Attribution 4.0 New Zealand licence (CC BY 4.0).
### Section at Chainage 0m

<table>
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### Notes
1. All dimensions are in metres unless noted otherwise.
3. Existing ground level sources from LINZ Data Service.

[For re-use under CO 8.3 sources from the LINZ Data Service and licensed by Nelson City Council & Tasman District Council.]

**Legend**
- **—** Design Surface
- **— — — — —** Existing Surface

---

### Construction Issue

**Client:** Tasman District Council

**Project:** C1149 Neds Creek Flood Protection

**Sheet 1 of 8**

**Scale:** 1:100

**Datum RL 166**

**Offset:**
-1.04
-0.50
0.50
1.12
### Section at Chainage 340m

**Datum RL 186**

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**Section at Chainage 380m**

**Datum RL 184**

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### Section at Chainage 400m

**Datum RL 184**

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### Notes:

1. All dimensions are in metres unless noted otherwise.
LEGEND

---
DESIGN SURFACE
---
EXISTING SURFACE

NOTES:
1. All dimensions are in metres unless noted otherwise.
2. Horizontal and vertical datum are set at RL 164 (NVD1955).
3. Existing ground level, surface sourced from LINZ DATASERVICE.

EXISTING LEVEL (m)
DESIGN LEVEL (m)
Datum RL 164

SECTION AT CHAINAGE 440m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 480m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 420m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 460m
Horizontal Scale 1:100
Vertical Scale 1:50

NOTES:
1. All dimensions are in metres unless noted otherwise.
2. Vertical datum is NELSON VERTICAL DATUM 1955 (NVD 1955).
3. Existing ground level, surface sourced from LINZ DATASERVICE.

EXISTING LEVEL (m)
DESIGN LEVEL (m)
Datum RL 164

SECTION AT CHAINAGE 440m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 480m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 420m
Horizontal Scale 1:100
Vertical Scale 1:50

SECTION AT CHAINAGE 460m
Horizontal Scale 1:100
Vertical Scale 1:50

DATA: 1191.0x842.0
LEGEND

--- DESIGN SURFACE
--- --- EXISTING SURFACE

**SECTION AT CHAINAGE 500m**

Datum RL 164

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**SECTION AT CHAINAGE 560m**

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**SECTION AT CHAINAGE 520m**

Datum RL 164

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**SECTION AT CHAINAGE 540m**

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NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. VERTICAL DATUM NELSON VERTICAL DATUM 1955 (NVD 1955).

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This drawing is not to be used for construction purposes unless signed as approved.

---

LEVEE CROSS SECTIONS

TASMAN DISTRICT COUNCIL
C1149 NEDS CREEK FLOOD PROTECTION

SHEET 6 OF 8

---

A TENDER DESIGN - FOR CLIENT REVIEW
B TENDER ISSUE
C CONSTRUCTION ISSUE

DESIGNED
DLG
ARAC
OCT 19

DRAWN
DFL
OLVR
OCT 19

CHECKED
DFL
OLVR
JAN 20

CONSTRUCTION ISSUE
NEVILLE LAVRACK
21.01.20

SHEET N
do not scalE FROM THIS DRAWING - IF IN DOUBT, ASK.

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NOTE FOR ARCHITECTURAl ENGINEERING: THIS ISSUE IS FOR CONSTRUCTiON PURPOSES.

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NOTE FOR ARCHITECTURAl ENGINEERING: THIS ISSUE IS FOR RE-USE UNDER CC BY 4.0.

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LEGEND

--- DESIGN SURFACE

--- --- EXISTING SURFACE

SECTION AT CHAINAGE 600m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>EXISTING LEVEL(m)</th>
<th>DESIGN LEVEL(m)</th>
</tr>
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<tbody>
<tr>
<td>0.00</td>
<td>166.72</td>
<td>165.68</td>
</tr>
<tr>
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</tr>
<tr>
<td>0.00</td>
<td>166.72</td>
<td>165.68</td>
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SECTION AT CHAINAGE 640m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>EXISTING LEVEL(m)</th>
<th>DESIGN LEVEL(m)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>166.63</td>
</tr>
<tr>
<td>0.00</td>
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<td>166.63</td>
</tr>
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SECTION AT CHAINAGE 680m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

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<th>OFFSET</th>
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SECTION AT CHAINAGE 580m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

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<tr>
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</tr>
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</tr>
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SECTION AT CHAINAGE 620m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>EXISTING LEVEL(m)</th>
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<tr>
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<td>166.60</td>
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<td>0.00</td>
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<td>166.60</td>
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SECTION AT CHAINAGE 660m
Horizonal Scale 1:100
Vertical Scale 1:50

Datum RL 164

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</tr>
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</tr>
</tbody>
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NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. VERTICAL DATUM NELSON VERTICAL DATUM 1955 (NVD 1955).
3. EXISTING GROUND LEVEL SURFACE SOURCED FROM LINZ DATA SERVICE
   SOURCED FROM THE LINZ DATA SERVICE AND LICENSED BY
   NELSON CITY COUNCIL & TASMAN DISTRICT COUNCIL, FOR RE-USE UNDER CC BY 4.0.
<table>
<thead>
<tr>
<th>Height / Depth (m)</th>
<th>0.00</th>
<th>0.89</th>
<th>166.89</th>
<th>166</th>
<th>20.00</th>
<th>1.53</th>
<th>166.34</th>
<th>164.81</th>
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</thead>
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<td>164.52</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Design and Drawn by:**
Neville Laverack

**Checked by:**
D.J.A. Jan. 2020

**Tender Design - For Client Review:**
Quho Oct. 1998

**Preliminary Draft:**
OLWH Sep. 1999

**Approval Date:**
21.01.20
100-300mm of topsoil and grass to be planted and maintained on top of levee

Topsoil and organics to be stripped and undercut to a minimum depth of 300mm. Engineer to inspect undercut prior to placing fill.

Compacted low permeability fine grained fill approved by the engineer as per specification.

Note: vertical exaggeration.

Levee Crest RL, refer to DWG 020-022.

New drainage channel.

Existing NEDS Creek channel.

Note: vertical exaggeration.
100mm of topsoil and grass to be planted and maintained in spillway.

SECTION

TYPICAL SPILLWAY SECTION (CH0-16)

NOTE: VERTICAL EXAGGERATION

100mm of topsoil and grass to be planted and maintained in spillway.

SECTION

TYPICAL SPILLWAY SECTION (CH60)

NOTE: VERTICAL EXAGGERATION

100mm of topsoil and grass to be planted and maintained in spillway.

SECTION

TYPICAL SPILLWAY SECTION (CH40)

NOTE: VERTICAL EXAGGERATION

100mm of topsoil and grass to be planted and maintained in spillway.

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This drawing is not to be used for construction purposes unless signed as approved.
EXISTING CREEK INVERT 1350Ø RCRRJ CLASS 2 PIPE @ 0.5% GRADE

PLACE 100mm TOPSOIL, SOW AND ESTABLISH GRASS

AP40 METALLED SURFACE 150mm THICK
LOW PERMEABILITY FINE GRAINED FILL (APPROVED)

FILTER PATCH FROM ENGINEER APPROVED FILTER MATERIAL (TYPE 2A - REFER SPECIFICATION)

HYNDS WW1350 PRECAST CONCRETE HEADWALL OR EQUIVALENT APPROVED

4.0m LONG RIP RAP PROTECTION APRON AT OUTLET.
D50 / 300mm ROCK, 450mm DEEP, LAID ON BIDIM A39 FILTER CLOTH TO EXTEND TO TOP OF BANK OF EXISTING NEDS CREEK CHANNEL.

CULVERT TO FILL WITH GRAVEL NATURALLY AFTER CONSTRUCTION

CULVERT TO BE INSTALLED APPROX. 400mm BELOW EXISTING BED LEVEL.
INVERTS TO BE CONFIRMED ONSITE

AP20 PIPE BEDDING

LEGEND

1. VERTICAL DATUM NELSON VERTICAL DATUM 1955 (NVD 1955)
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

NOTES:

SCALE (A)

A3 SCALE 1:100

TDC PLAN No.

Engineering Manager

DATE

DESIGNED DRAWN DESIGN CHECKED DRAWING CHECKED

QUAL DFL QUAL DFL QUAL ULYR

CONSTRUCTION ISSUE

CONSTRUCTION ISSUE

TENDER DESIGN - FOR CLIENT REVIEW

TENDER ISSUE

TENDER DESIGN - FOR CLIENT REVIEW

DFA

DATE

APPROVED DATE

TASMAN DISTRICT COUNCIL

C1149 NEDS CREEK FLOOD PROTECTION

CONSTRUCTION ISSUE

CLIENT

PROJECT

TENDER ISSUE

TENDER DESIGN - FOR CLIENT REVIEW

TENDER ISSUE

TENDER DESIGN - FOR CLIENT REVIEW

TENDER ISSUE
NOTE:
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. AERIAL PHOTO AND SERVICES SOURCED FROM TOP OF THE SOUTH MAPS.

A3 SCALE 1:50

DRAWING STATUS

CLIENT
TASMAN DISTRICT COUNCIL

PROJECT
C1149 NEDS CREEK FLOOD PROTECTION

TITLE
BOX CULVERT DETAILS

REPORT OF THE ENGINEERS & SURVEYORS TO THE OWNER OF THE DWG. 1004808.0200-043

DETAILED DESIGN DRAWINGS - SCHEDULE 4 - BOX CULVERTS

SECTION 08 - PEDESTRIAN / EQUESTRIAN CROSSING BOX CULVERT CROSS SECTION

COMPACTED LOW PERMEABILITY FINE GRAINED FILL (APPROVED) AS PER SPECIFICATION

GALVANISED STEEL HANDRAIL AS PER NTLDM DWG. 419

OUTLET OF BOX CULVERT TO BE SURROUNDED IN A 450mm LAYER OF 200mm-400mm ROCK ARMOURING (D50=300mm) UNDERLAIN BY BIDIM A39. PLACE AS ROCK WALL TO RETAIN PATH BATTER. 4.0m LONG RIP RAP PROTECTION APRON AT OUTLET. D50 / 300mm ROCK, 450mm DEEP, LAID ON BIDIM A39 FILTER CLOTH TO EXTEND TO TOP OF BANK OF EXISTING NEDS CREEK CHANNEL.

OUTLET OF BOX CULVERT TO BE SURROUNDED IN A 450mm LAYER OF 200mm-400mm ROCK ARMOURING (D50=300mm) UNDERLAIN BY BIDIM A39. PLACE AS ROCK WALL TO RETAIN PATH BATTER.

TOPSOIL AND ORGANICS TO BE STRIPPED AND UNDERCUT TO A MINIMUM DEPTH OF 300 MM. ENGINEER TO INSPECT UNDERCUT PRIOR TO PLACING FILL, THEN FILLED WITH COMPACTED AP40.

CURVED WALL TO RETAIN PATH BATTER. 4.0m LONG RIP RAP PROTECTION APRON AT OUTLET. D50 / 300mm ROCK, 450mm DEEP, LAID ON BIDIM A39 FILTER CLOTH TO EXTEND TO TOP OF BANK OF EXISTING NEDS CREEK CHANNEL.

GALVANISED STEEL HANDRAIL AS PER NTLDM DWG. 419

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