

Appendix M: ENGINEERING PLAN CHECKLIST ~~Pump Station~~
~~Specification~~

Commented [SC1]: New appendix M was previous appendix O. Changes to what was in Appendix O are shown with double underline and strikethrough

WDC Engineering Plan Checklist

All references to NZS4404 should be read in conjunction with Whanganui District Council Supplement Document 2016.

Please strike-out what is not applicable to the application

Roading

(Reference Section 3 NZS4404:2010 and Whanganui District Council Supplement Document 2016)

(Reference Section 3 NZS4404:2004 and WDC Supplement Document 2012)

The submitted engineering plans should include all existing and proposed utilities

Layout

1. Plan and Long-section
 - a. Grade (Pg 48 + 49, Table 3.1 and 3.2 NZS 4404:2004)
 - b. Kerbline
 - c. Centre of Road
 - d. Subsoil drains
 - e. Vehicle Crossings shown on plans (Appendix B) (Appendix A, Supplement Document 2012)
 - f. Turning head details
 - g. Horizontal and Vertical Curves
2. Cross-section
 - a. Crossfall
 - b. Services locations within the legal or proposed road
 - c. Carriageway Width
 - d. Berms
 - e. Footpaths
 - f. Detailed paving structure
 - g. Subsoil drains
 - h. Kerb and Channel

Items to be considered for inclusion in Roding Design

3. Intersection details
4. Streetlights
5. Street trees
6. Road markings
7. Street signs
8. Pedestrian Links

Pavement

9. Pavement design (Section 3.3 NZS4404:2010) (Section 3.3.3 NZS4404:2004)
10. CBR – Pavement depth
11. Road pavement materials
12. Subsoil drains
13. Kerb and Channel type

Testing

14. Road formation testing schedule submitted (Appendix L) (Appendix I, Supplement Document 2012)

Stormwater

(Reference Section 4 NZS4404:2010 ~~2004~~ and WDC Supplement Document 2016 ~~2004~~)

The submitted engineering plans should include all existing and proposed utilities

Layout

1. Plan and Long-section
 - a. Grades
 - b. Positioning in relation to other services
2. Manholes
 - a. Size and type.
 - b. Lid Level and Invert Level, all connection invert levels (**Appendix B: CM-WDC-003 Supplement Document 2016**) (**Appendix A: CM-WDC-003 Supplement Document 2012**)
 - c. Drops through MH
 - d. Change in direction
 - e. Losses through MH's
 - f. Haunching
3. Sumps in Right of Way or Road
4. Laterals to each lot direct to a reticulated system
5. Overland Flow Paths / Secondary Flow Paths shown on plans (**Section 4.3 & 4.4 NZS4404:2010**) (**Section 4.3.2.4 & 4.3.9 NZS4404:2004**)
6. Existing drains(open drains/ culvert drains)

Design

7. Pipe size sufficient to serve design
8. Pipe material/class
9. Stormwater calculation sheets (**Section 4.3 & 4.4 NZS4404:2010**) (**Section 4.3.2 NZS4404:2004**)
10. Bedding specification (**Appendix I, Section 4 Supplement Document 2016**) (**Appendix I, Section 4.2 Page 19 Supplement Document 2012**)
11. Is on site attenuation a requirement for this catchment (**Refer to TA Engineer**)
12. Swale design (if required)

Testing

13. CCTV of existing mains prior to site work commencing
14. Testing for pipe laying (**Appendix I, Section 4 Supplement Document 2016 2012**)
 - a. Schedule of all testing requirements
 - b. Specify Accredited Laboratory
15. Post construction CCTV

Wastewater

(Reference Section 5 NZS4404:2004 and WDC Supplement Document 2012)

Commented [SC2]: Brenda – I assume this needs to be updated?

The submitted engineering plans should include all existing and proposed utilities

Layout

1. Plan and Long-section
 - a. Grades
 - b. Positioning in relation to other services
2. Manholes (Section 5.3 & 5.4 NZS4404:2010) (Section 5.3.6 NZS4404:2004)
 - a. Size and type.
 - b. Lid Level and Invert Level, all connection invert levels (Section 5.3 & 5.4 NZS4404:2010) (Section 5.3.6 NZS4404:2004)
 - c. Drops through MH
 - d. Change in direction
 - e. Losses through MH's
 - f. Haunching
3. Future Catchment Design taken into account (Section 5.3 & 5.4 NZS4404:2010) (Section 5.3.1.2 NZS4404:2004)
4. Laterals to each lot

Design

5. Pipe size sufficient to serve design (Section 5.3 & 5.4 NZS4404:2010) (Section 5.3.5.3 – 5.3.5.6 NZS4404:2004)
6. Pipe material/class
7. Adequate grades
 - a. Self-cleaning
 - b. Provide gravity line
8. Bedding Material
9. Layout
 - a. Minimum clearances (NZS4404:2010) (Table 5.1 pg.123 NZS4404:2004)
10. Pump station design calculations
11. Rising mains, specific design required (Section 5.3 & 5.4 NZS4404:2010) (Section 5.3.10 NZS4404:2004)

Testing

12. CCTV of existing mains prior to site work commencing
13. Testing Schedule for pipe laying (Appendix I, Section 4 Supplement Document 2016 2012)
 - a. Schedule of all testing requirements
 - b. Specify Accredited Laboratory
14. Post Construction CCTV

Water

(Reference Section 6 NZS4404:2004 and WDC Supplement Document 2012)

Commented [SC3]: Brenda – I assume this needs to be updated?

The submitted engineering plans should include all existing and proposed utilities

Layout

- 1- Mains Layout and depths (Section 6.3 & 6.4 NZS4404:2010) (Section 6.3 NZS4404:2004)
2. Property service connection and toby
- 3- Approved material identified (Appendix A Supplement Document 2016) (Appendix C Supplement Document 2012)
- 4- Types and Locations of appurtenances (Section 6.3 & 6.4 NZS4404:2010) (Section 6.4-6.7 NZS4404:2004)
 - a. Stop Valves
 - b. Pressure Reducing Valves
 - c. Hydrant and Fire Services (refer to NZS 4509)
 - d. Scours and Pump out branches
 - e. Termination details
 - f. Backflow preventers (Appendix B: WS-WDC-011 Supplement Document 2016), alternative design can be discussed with TA (Appendix A: WS-WDC-011 Supplement Document 2012), alternative design can be discussed with TA
5. Water Meters in Commercial/Industrial development
- 6- Location and Details of Trust Blocks and Anchor (NZS4404:2010) (Drawing WS-904 Page 202-204 NZS4404:2004)

Design

7. Adequate Hydraulics proven in design
8. Pipe size sufficient for design
9. Material and class of pipe
10. Bedding Material (Appendix I, Section 5.5 Supplement Document 2016 2012)

Testing

- 11- Pressure Testing (Appendix C NZS4404:2010) (Section 6.10.4, Supplement Document 2012)
12. Disinfection (Appendix D NZS4404:210) (Section 6.10.6 NZS4404:2004)

Not currently available.