

# ANNEXURE CP1.C

## CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

Council Reference No: .....

### EXAMPLE SUBDIVISIONAL INSPECTION & TEST PLAN

DEVELOPMENT NAME: ..... Consulting Engineer: .....

Elements of Work	Testing Requirements			Consulting Engineer's Responsibility	Council's Responsibility
	Test	Standard * (Refer Note 1)	Frequency		
<b>Pre-Start Meeting</b>		Construction Procedures CP1		Outline performance and standard required. Highlight critical aspects of the design.	Outline performance and standard required. Highlight critical aspects of the design.
<b>Allotment Filling</b> Quality of Material Compaction Alignment	Visual AS1298 FSL survey lot boundaries and features	} Refer AS3798	} Refer AS3798	Level 1 supervision to allotments and within road reserve, Level 2 Supervision elsewhere in accordance with AS3798.	Visit site for random audit inspections if considered warranted.
<b>Subgrade</b> Compaction  CBR Tests  Horizontal and Vertical Alignments Profile	AS1289 & Proof Rolling CBR 4 day Soaked (1pt) and in-situ CBR Survey String Line	Construction Specification C213 No discernible movement Construction Specification C213 Construction Specification C213 Construction Specification C213	Construction Specification C213  Construction Specification C213 IP, TP, Centreline (25m) 25m	Engineer to make routine visits and to attend during proof rolling and to examine and assess all test results and cross section geometry. Pavement Design to be prepared.	Visit site for random audit inspections (including joint inspections during proof rolling) if considered warranted. Pavement Design approval before proceeding with placement of pavement layers.

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Elements of Work	Testing Requirements			Consulting Engineer's Responsibility	Council's Responsibility
	Test	Standard *(Refer Note 1)	Frequency		
<b>Subgrade Replacement</b> (CBR 15 Material) Material Quality Compaction (a) For on site material (b) For graded material Profile & Depth	QA material supplier Proof Rolling Minimum Roller Passes AS1289 String Line/ Survey	Construction Specification C213 No discernible movement Visual 98% Standard 25m	} Construction Specification C213	Engineer to make sufficient routine visits to assess quality of materials & that operations will achieve a sound compacted layer & to examine & assess all test results	Visit site for random audit inspections if considered warranted.
<b>Sub-base Layer</b> Material Compaction Profile & Depth	QA Material Supplier AS1289 String Line/ Survey	DOT Standard Spec MRS11.05 100% Standard Construction Specification C242	} Construction Specification C242	Engineer to make routine visits & to attend proof rolling & examine & assess all test results	Visit site for random inspections if considered warranted
<b>Base Layer</b> Material Quality Compaction Horizontal & Vertical Alignments (i) With no Kerb & Channelling (ii) With Kerb & Channelling Profile	QA Material Supplier Proof Rolling AS1289 Reduced Level Reduced Level String Line	DOT Standard Spec MRS11.05 No discernible movement 100% Standard Construction Specification C242 Construction Specification C242 Construction Specification C242	} Construction Specification C242 3 per 200m 20m 20m	Engineer to make routine visits & to attend proof rolling & examine & assess all test results	Visit site for random audit inspections (including joint inspections during proof rolling) if considered warranted.

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Elements of Work	Testing Requirements			Consulting Engineer's Responsibility	Council's Responsibility
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<b>Asphalt Surfacing</b> Material Quality Compaction and Thickness  Horizontal & Vertical Alignments Work record Profile	QA Material Supplier AC Core Test – With Completed 'Random Sampling Location' sheet #  String Line  Annexure C245.A String Line	} Construction Specifications C245.	Asphalt Core Test 1 Test Per 400m2 As per C245 Horizontal - 1 Test Per 200m2 Vertical - 1 Test Per 50m	Engineer to undertake a Pre-seal Inspection	Visit site for random inspections if considered warranted
<b>Sprayed Bituminous Surfacing</b> Material Quality Work Records	QA Material Supplier Spray Record Sheet Details of Work Form - Annexure C244.A	} Construction Specifications C244.	Construction Specification C244  Construction Specification C244	Engineer to undertake a Pre-seal Inspection	Visit site for random inspections if considered warranted
<b>Subsurface Drains</b> Pipe Filter Material Cleaning Joints and Markers Geofabric	Visual QA Material Supplier Visual Visual	} Construction Specifications C230, C231, C232, C233.	Each Each Each	Engineer to make random audit inspections of Contractors performance	Visit site for random inspections if considered warranted
<b>Kerb and Channel</b> Material Quality Horizontal & Vertical Alignments	Survey QA Material Supplier Water Test	} Construction Specifications C224, C271.	Each 20m	Engineer to inspect prior to kerb placement and completed kerb. Water test where appropriate.	Visit site for random inspection if considered warranted.
<b>Road Crossing Conduits</b> Location Markers	Visual Visual		Each Conduit Each Marker	Engineer to make random Audit inspections of Contractors Performance	Visit site for random inspection is considered warranted

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# Note: 50% of all core samples are to be taken 1m from the carriageway centreline

Elements of Work	Testing Requirements			Consulting Engineer's Responsibility	Council's Responsibility
	Test	Standard *(Refer Note 1)	Frequency		
<b>Stormwater Drainage</b> Location of Structures SL & IL at Structures  Material Quality/ Bedding,  Manholes Drain lines Backfilling CCTV Testing	Survey Survey  Visual  Visual Visual Visual CCTV	} Construction Specification C220, C221, C222, C223.  Straightness Straightness Construction Specification C220	Each Each  Construction Specification C220, C221, C222, C223.  Each Each Construction Specification C220 If ordered by Council#	Engineer to make sufficient visits to assess compliance with specification & to view progress and works	Visit site for inspection prior to backfilling.
<b>Topsoiling &amp; Grassing</b>	Visual	Construction Specification C273	Construction Specification C273	Engineer to confirm all affected areas are topsoiled, grassed & maintained.	Visit site for check at defects liability inspection.
<b>Soil and Water Management Measures</b>	Visual	Council approved Soil and Water Management Plan Contractor's Soil and Water Quality Management Strategy	Every site visit	Ensure continuous maintenance of measures	Ensure compliance with Council's local laws, Development guidelines and EPA requirements.
<b>All Works Prior to Defects Liability</b>	Visual		Inspections	Engineer to confirm all works comply with design intent before arranging "Defects Liability" inspection and complete the "Defects Liability" Inspection Checklist prior to joint inspection with Council	Joint "Defects Liability" inspection with Consulting Engineer & notify requirements, if any

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<b>Sewerage Reticulation</b>					
Location MH's & HC's	Survey	} Construction Specification C402	Each	Engineer to make random visits to confirm generally that all structures & pipelines are constructed & located within Council tolerances and to assess all test results. Engineer to witness & approve all pressure tests of the lines, all hydrostatic tests at all manholes and mirror all lines	Witness hydrostatic testing of manholes
IL at MH & HC's	Survey		Each		Visual inspection of lines prior to backfill if CCTV inspection of lines is not ordered
Bedding	Visual		Construction Specification C402		Witness air pressure test.
Manholes & Benching	Appearance-structural integrity		Each		Audit inspections to mirror some lines only.
Pipelines	Survey		Each		Joint "Defects Liability" inspection with Consulting Engineer & notify requirements, if any.
Backfilling > 2m deep and a road crossing	Compaction AS1289		Construction Specification C402		
Pressure Testing Pipelines	Air Pressure Test		All lines		
Hydrostatic Testing of Manholes	Hydrostatic Testing		Each Manhole		
CCTV Testing	CCTV		If ordered by Council #		

# Note: Prior to backfill inspections not required if CCTV ordered

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<b>Water Reticulation</b> Location RP Boundary Set Out Valves, Hydrants, Scours, Bends  Depth  Material Quality (Bedding, Concrete, Pipes) Pipelines Backfilling Pressure Testing Disinfection	Survey Visual - Surface Boxes - Other  Reduced Level (where nominated) Visual elsewhere  QA Material Supplier  Visual AS1289 Pressure Test Chlorine residual	} Construction Specification C401	All lines  Each All lines } Construction Specification C401  Each Construction Specification C401 All lines Construction Specification C401	Engineer to make sufficient job visits to confirm generally that construction is in accordance with requirements & that location of all fittings are within Council Tolerances. Pressure testing of all pipelines to be witnessed.	Witness Water pressure tests. Joint "Defects Liability" inspection with Consulting Engineer & notify requirements, if any. Visual site inspection prior to backfill and line sterilisation.
<b>Minor Concrete Works/ Ready Mix</b> Material Quality Consistency Strength Finished Surface	QA Material Supplier Slump Test Compressive Strength Visual	} Construction Specification C271	1 per Load (Max Lot size 15m <sup>3</sup> ) 2 pairs per 15m <sup>3</sup> 1 cross-section per 15m	Engineer to make sufficient visits to assess compliance with specification & to view progress and works	Visit site for random inspection if considered warranted.
<b>Minor Concrete Works/ Sprayed Concrete</b> Material Quality Strength	QA Material Supplier Test Panels and Cores and Compressive Strength Cores	} Construction Specification C271	Construction Specification C271	Engineer to make sufficient visits to assess compliance with specification & to view progress and works	Visit site for random inspection if considered warranted.

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<b>Prior to Acceptance of works for "Defects Liability Period"</b>	As constructed Drawings to be prepared and Submitted to Council All Test results to be compiled and held by Consulting Engineer and a confirmation statement of this shall be forwarded to Council with request for "Defects Liability".			Forward "As Constructed" submission to Council. Ensure Licensed Surveyors certificate is attached and also attached Engineers certification. Finalise all other Documentation in accordance with CMDG Construction Procedures.	Council to accept & conduct Audit checks of As Constructed Drawings & advise any requirements. When completed advise in writing of acceptance of works for commencement of "Defects Liability Period"
<b>During "Defects Liability Period"</b>	Any defects to be repaired Works to be maintained as per Specification			Consulting Engineer to confirm all minor omissions & defects have received suitable attention & to examine & approve site prior or asking for "Final Acceptance of works" Inspection	Council to advise Consulting Engineer of any defects
<b>Prior to Final Acceptance of works.</b>	Confirmation that no defects are evident Works maintained safe & in good order All Test results to be compiled (for example CCTV if required) and held by Consulting Engineer and a confirmation statement of this shall be forwarded to Council with request for "Off Defects Liability".			Consulting Engineer to accompany Council Inspector & to note any requirements and forward test results if required.	Council Inspector to accompany Consulting Engineer & Contractor & to advise any requirements. When completed advise in writing of final acceptance of works.

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