

INDEPENDENT ENGINEERING EXPERTS' REPORT: FINAL VERSION 31st MARCH 2009

VOLUME III, APPENDIX 2

Depth to bored tunnel where it crosses beneath roads and estimated rockhead depths from ground investigations completed in connection with reference design

Road Name	Chainage	Area reference	Measured depth (m) from ground surface to reference design track level (measured from RO drawing) ⁽¹⁾	Estimated depth to top of tunnel (reference design) ⁽²⁾	Minimum depth (m) to top of tunnel (measured from RO drawing) ⁽³⁾	Railway Order drawing from which tunnel depth measurements taken		Depth to inferred rockhead level (top of limestone) (m) ⁽⁴⁾	Estimated thickness of limestone above top of tunnel (m)		RPA/Jacobs drawing from which inferred rockhead depths have been measured	
						Plan Number	Link to electronic version on www.dublinmetronorth.ie/		Reference design ⁽²⁾	Minimum tunnel depth ⁽³⁾	Title: <i>Exploratory hole location plan and inferred geological section (incl. MGI data). Contract No. B0307000</i>	Drawing No.
Hampstead Avenue	13700-13740	MN106	19	14.2	11	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	19.5	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-231 (rev A01)	11 of 14
Griffith Avenue	14160-14180	MN106	18	13.2	11	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	11.4	1.8	Top of tunnel in superficial materials	B-MN-0000-GE-231 (rev A01)	11 of 14
Bantry Road	14220-14260	MN106	20	15.2	12	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	12	3.2	0	B-MN-0000-GE-231 (rev A01)	11 of 14
Valentia Road	14440-14480	MN106	24.5	19.7	17	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	14.5	5.2	2.5	B-MN-0000-GE-231 (rev A01)	11 of 14
Home Farm Road	14540-14560	MN106	26.5	21.7	19	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	12.4	9.3	6.6	B-MN-0000-GE-231 (rev A01)	11 of 14
Ferguson Road	14640-14660	MN106	28	23.2	20	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	12.4	10.8	7.6	B-MN-0000-GE-231 (rev A01)	11 of 14
Millbourne Avenue	15060-15140	MN106	32.5	27.7	26	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	11	16.7	15	B-MN-0000-GE-232 (rev A01)	12 of 14
Millmount Avenue	15100-15120	MN106	31.5	26.7	24.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	10	16.7	14.5	B-MN-0000-GE-232 (rev A01)	12 of 14
Woodville Road	15220-15260	MN106	29.5	24.7	23.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	8	16.7	15.5	B-MN-0000-GE-232 (rev A01)	12 of 14
Botanic Avenue	15260-15280	MN106	29	24.2	22	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	8	16.2	14	B-MN-0000-GE-232 (rev A01)	12 of 14
Hollybank Road	15380-15400	MN106	32.5	27.7	24	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	12	15.7	12	B-MN-0000-GE-232 (rev A01)	12 of 14

⁽¹⁾ To nearest 0.5m⁽²⁾ Assumes top of reference design tunnel is 4.8m vertically above track level.⁽³⁾ Tunnel crown at upper limit of sub-surface lands to be acquired.⁽⁴⁾ From RPA inferred geological drawings

INDEPENDENT ENGINEERING EXPERTS' REPORT: FINAL VERSION 31st MARCH 2009

VOLUME III, APPENDIX 2

Depth to bored tunnel where it crosses beneath roads and estimated rockhead depths from ground investigations completed in connection with reference design

Road Name	Chainage	Area reference	Measured depth (m) from ground surface to reference design track level (measured from RO drawing) ⁽¹⁾	Estimated depth to top of tunnel (reference design) ⁽²⁾	Minimum depth (m) to top of tunnel (measured from RO drawing) ⁽³⁾	Railway Order drawing from which tunnel depth measurements taken		Depth to inferred rockhead level (top of limestone) (m) ⁽⁴⁾	Estimated thickness of limestone above top of tunnel (m)		RPA/Jacobs drawing from which inferred rockhead depths have been measured	
						Plan Number	Link to electronic version on www.dublinmetronorth.ie/		Reference design ⁽²⁾	Minimum tunnel depth ⁽³⁾	Title: <i>Exploratory hole location plan and inferred geological section (incl. MGI data).</i> Contract No. B0307000	
											Drawing No.	Sheet No.
Carlingford Road	15460-15480	MN106	32.5	27.7	19	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	14.5	13.2	4.5	B-MN-0000-GE-232 (rev A01)	12 of 14
Dargyle Road	15520-15560	MN106	31.5	26.7	24.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	15.5	11.2	9	B-MN-0000-GE-232 (rev A01)	12 of 14
St Joseph Avenue	15520-15540	MN106	28	23.2	21	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	14.5	8.7	6.5	B-MN-0000-GE-232 (rev A01)	12 of 14
St Alphonsus Road	15680-15700	MN106	25	20.2	17.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	11.2	9	6.3	B-MN-0000-GE-232 (rev A01)	12 of 14
St Alphonsus Avenue	15760-15780	MN106	23	18.2	16.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	10.4	7.8	6.1	B-MN-0000-GE-232 (rev A01)	12 of 14
St Annes Road	15880-15900	MN106	21	16.2	14	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	8.5	7.7	5.5	B-MN-0000-GE-232 (rev A01)	12 of 14
Grattan Parade	15920-15940	MN106	20.5	15.7	13.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	8.4	7.3	5.1	B-MN-0000-GE-232 (rev A01)	12 of 14
Whitworth Road	16000-16060	MN106	23.5	18.7	15.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	10.5	8.2	5	B-MN-0000-GE-232 (rev A01)	12 of 14
St Ignatius Road	16120-16160	MN106	24	19.2	16	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	15	4.2	1	B-MN-0000-GE-232 (rev A01)	12 of 14
Innsfallen Parade	16220-16240	MN106	24.5	19.7	16	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	19	0.7	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Kenmare Parade	16260-16280	MN106	24	19.2	15.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	21	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14

(1) To nearest 0.5m

(2) Assumes top of reference design tunnel is 4.8m vertically above track level.

(3) Tunnel crown at upper limit of sub-surface lands to be acquired.

(4) From RPA inferred geological drawings

INDEPENDENT ENGINEERING EXPERTS' REPORT: FINAL VERSION 31st MARCH 2009

VOLUME III, APPENDIX 2

Depth to bored tunnel where it crosses beneath roads and estimated rockhead depths from ground investigations completed in connection with reference design

Road Name	Chainage	Area reference	Measured depth (m) from ground surface to reference design track level (measured from RO drawing) ⁽¹⁾	Estimated depth to top of tunnel (reference design) ⁽²⁾	Minimum depth (m) to top of tunnel (measured from RO drawing) ⁽³⁾	Railway Order drawing from which tunnel depth measurements taken		Depth to inferred rockhead level (top of limestone) (m) ⁽⁴⁾	Estimated thickness of limestone above top of tunnel (m)		RPA/Jacobs drawing from which inferred rockhead depths have been measured	
						Plan Number	Link to electronic version on www.dublinmetronorth.ie/		Reference design ⁽²⁾	Minimum tunnel depth ⁽³⁾	Title: <i>Exploratory hole location plan and inferred geological section (incl. MGI data).</i> Contract No. B0307000	Drawing No.
Muckross Parade	16320-16300	MN106	23.5	18.7	14.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	22	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
North Circular Road	16380-16340	MN106	22	17.2	12.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	23.2	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Eccles Street	16580-16620	MN106	28	23.2	17.5	MN-LN 106 O-O	Longitudinal section MN106 (08-LMN000LO106001A.pdf)	28.8	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
St Joseph's Parade	16694-16700	MN107	29	24.2	17.5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	28.5	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
St Joseph's Place	16720-16740	MN107	30	25.2	15	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	30.1	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Blessington Court	16740-16760	MN107	30	25.2	20	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	31	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Blessington Street	16800-16840	MN107	30.5	25.7	20.5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	30	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Dorset Street Upper	16820-16860	MN107	30.5	25.7	20.5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	29	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Frederick Lane	16961-16980	MN107	30	25.2	20	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	26	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Parnell Sq North	17040-17060	MN107	29	24.2	5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	25	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14
Parnell Street	17280-17320	MN107	23.5	18.7	13	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	25	Top of tunnel in superficial materials	Top of tunnel in superficial materials	B-MN-0000-GE-233 (rev A01)	13 of 14

(1) To nearest 0.5m

(2) Assumes top of reference design tunnel is 4.8m vertically above track level.

(3) Tunnel crown at upper limit of sub-surface lands to be acquired.

(4) From RPA inferred geological drawings

INDEPENDENT ENGINEERING EXPERTS' REPORT: FINAL VERSION 31st MARCH 2009

VOLUME III, APPENDIX 2

Depth to bored tunnel where it crosses beneath roads and estimated rockhead depths from ground investigations completed in connection with reference design

Road Name	Chainage	Area reference	Measured depth (m) from ground surface to reference design track level (measured from RO drawing) ⁽¹⁾	Estimated depth to top of tunnel (reference design) ⁽²⁾	Minimum depth (m) to top of tunnel (measured from RO drawing) ⁽³⁾	Railway Order drawing from which tunnel depth measurements taken		Depth to inferred rockhead level (top of limestone) (m) ⁽⁴⁾	Estimated thickness of limestone above top of tunnel (m)		RPA/Jacobs drawing from which inferred rockhead depths have been measured	
						Plan Number	Link to electronic version on www.dublinmetronorth.ie/		Reference design ⁽²⁾	Minimum tunnel depth ⁽³⁾	Title: <i>Exploratory hole location plan and inferred geological section (incl. MGI data).</i> Contract No. B0307000	Drawing No.
Upper Abbey Street	17760-17800	MN107	27.5	22.7	5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	8	14.7	Top of tunnel in superficial materials	B-MN-0000-GE-234 (rev A01)	14 of 14
Fleet Street	18040-18080	MN107	28	23.2	5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	10	13.2	Top of tunnel in superficial materials	B-MN-0000-GE-234 (rev A01)	14 of 14
Harry Street	18580-18600	MN107	26	21.2	9.5	MN-LN 107 O-O	Longitudinal section MN107 (17-LMN000LO107001A.pdf)	9	12.2	0.5	B-MN-0000-GE-234 (rev A01)	14 of 14

⁽¹⁾ To nearest 0.5m⁽²⁾ Assumes top of reference design tunnel is 4.8m vertically above track level.⁽³⁾ Tunnel crown at upper limit of sub-surface lands to be acquired.⁽⁴⁾ From RPA inferred geological drawings