

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

KEY PLAN



ORIGINAL DRAWING IN COLOUR	FOR TENDER NOT FOR CONSTRUCTION

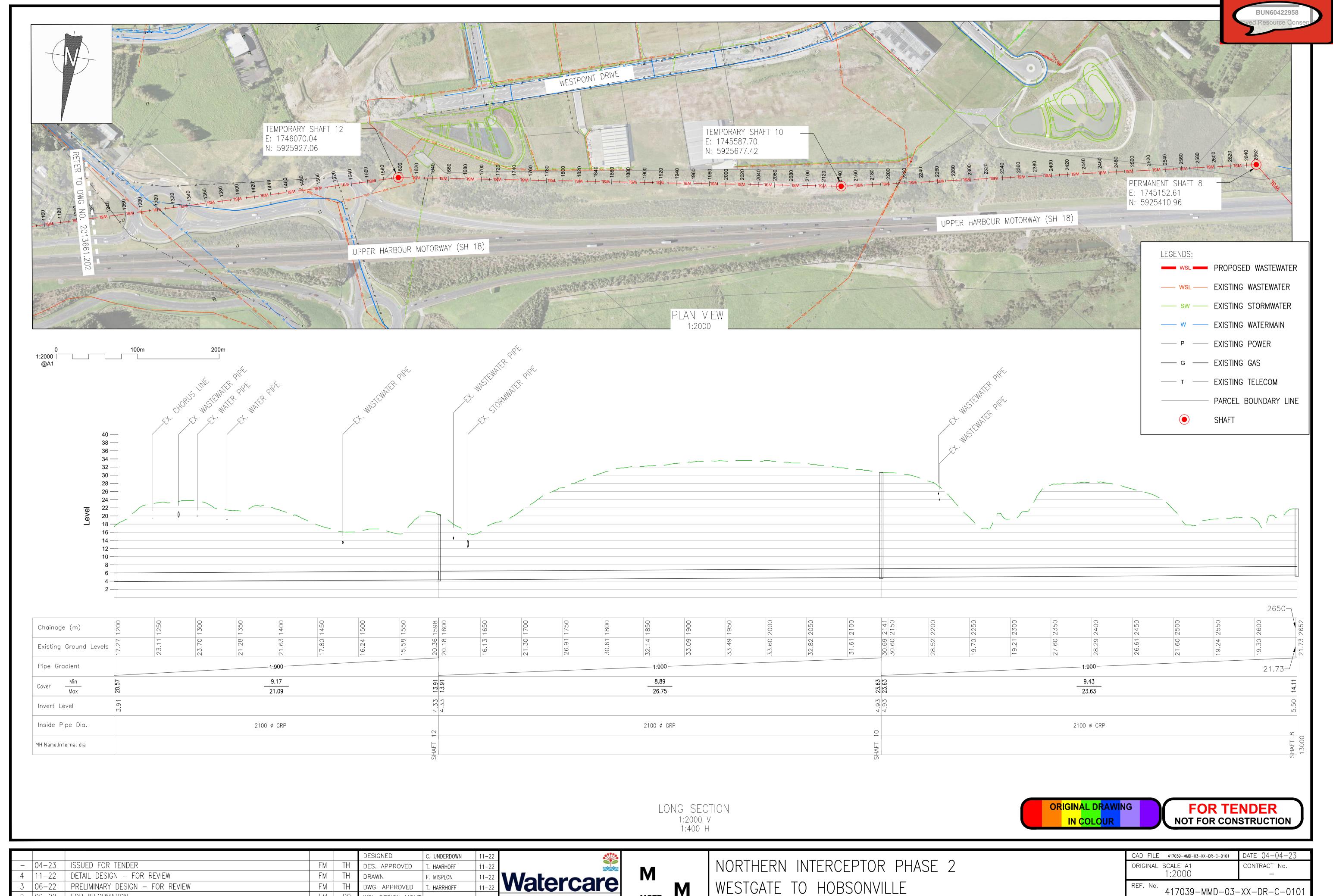
	DESIGNED C. UNDERDOWN		NODTHEDNI WITEDOEDTOD DILLAGE O	CAD FILE 2013661.001 DATE 04-04-23
	DES. APPROVED T. HAARHOFF		NORTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1 CONTRACT No.
	DRAWN F. MISPLON	Watercare M		AS SHOWN —
- 04-23 ISSUED FOR TENDER	FM TH DWG. APPROVED T. HAARHOFF	vvaler care M	WESTGATE TO HOBSONVILLE	REF. No.
2 11-22 DETAIL DESIGN - FOR REVIEW	FM TH WSL DESIGN MGMT.	COPYRIGHT — This drawing, the design		417039-MMD-00-XX-DR-Z-0001
1 07-22 PRELIMINARY DESIGN - FOR REVIEW	FM TH WSL PROJ. LEAD	concept, remain the exclusive property of Watercare Services Limited and may not be	TITLE PAGE	DWG. No.
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			DESIGNED	C. UNDERDOWN	11-22			CAD FILE 417039-MMD-03-XX-DR-C-0100	DATE 04-04-23
_	04-23	ISSUED FOR TENDER FM TH	DES. APPROVED	T. HAARHOFF	11-22		NORTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1	CONTRACT No.
4	11-22	DETAIL DESIGN — FOR REVIEW FM TH	DRAWN	F. MISPLON	11-22	Motorocko M		1:2000	_
3	07-22	PRELIMINARY DESIGN — FOR REVIEW FM TH	DWG. APPROVED	T. HARRHOFF	11-22	Watercare	WESTGATE TO HOBSONVILLE	REF. No. 417039-MMD-03-	VV DD C 0100
2	02-22	FOR INFORMATION FM PC	WSL DESIGN MGM7	Г.		COPYRIGHT — This drawing, the design MOTT	WESTS/TIE TO TIOBSONVILLE	41/039-MMD-03-	-XX-DK-C-0100
1	02-22	FOR INFORMATION FM PC	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be	NI TUNNEL PLAN AND LONG SECTION (1 OF 2)	DWG. No.	ISSUE
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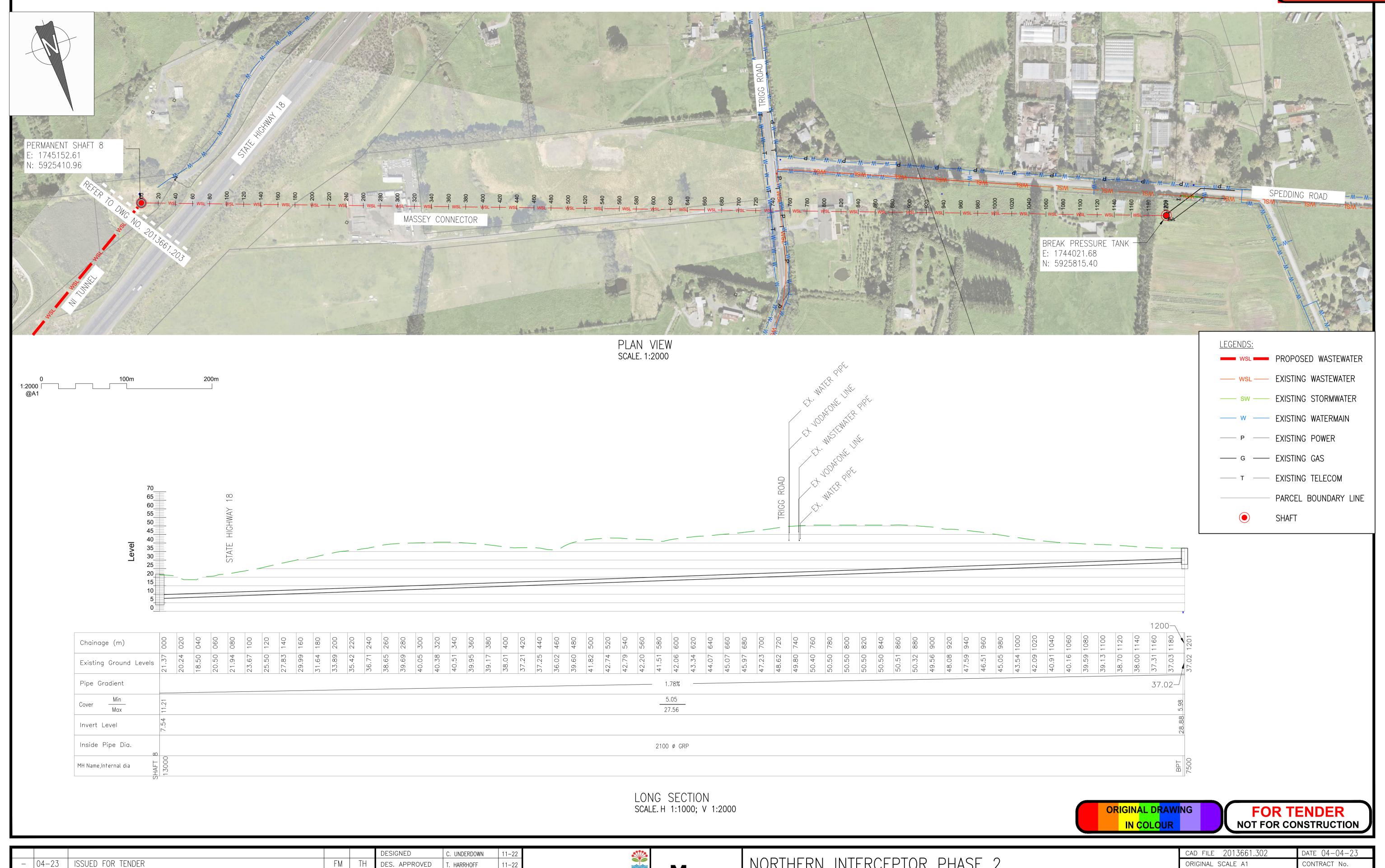
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					DESIGNED C. UNDERDOWN	11-22				CAD FILE 417039-MMD-03-XX-DR-C-0101	DATE 04-04-23
_	04-23	ISSUED FOR TENDER	FM	TH	DES. APPROVED T. HAARHOFF	11-22		I	NORTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1	CONTRACT No.
4	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	DRAWN F. MISPLON	11-22	Motorocko	I VI		1:2000	_
3	06-22	PRELIMINARY DESIGN - FOR REVIEW	FM	TH	DWG. APPROVED T. HARRHOFF	11-22	Watercare	M	WESTGATE TO HOBSONVILLE	REF. No. 417039-MMD-03-	VV DP C 0101
2	02-22	FOR INFORMATION	FM	PC	WSL DESIGN MGMT.		COPYRIGHT — This drawing, the design	MOTT	WESTS/TE TO TIOBSOTTVILLE		-XX-DI\-C-0101
1	02-22	FOR INFORMATION	FM	PC	WSL PROJ. LEAD		concept, remain the exclusive property of Watercare Services Limited and may not be	MACDONALD	NI TUNNEL PLAN AND LONG SECTION (2 OF 2)	DWG. No.	ISSUE I
ISSU	E DATE	AMENDMENT	BY	APPD.	BY	DATE	used without approval. Copyright reserved.		···· · · ···· · · · · · · · · · · · ·	2013661.2	<u> 1</u> 03 -

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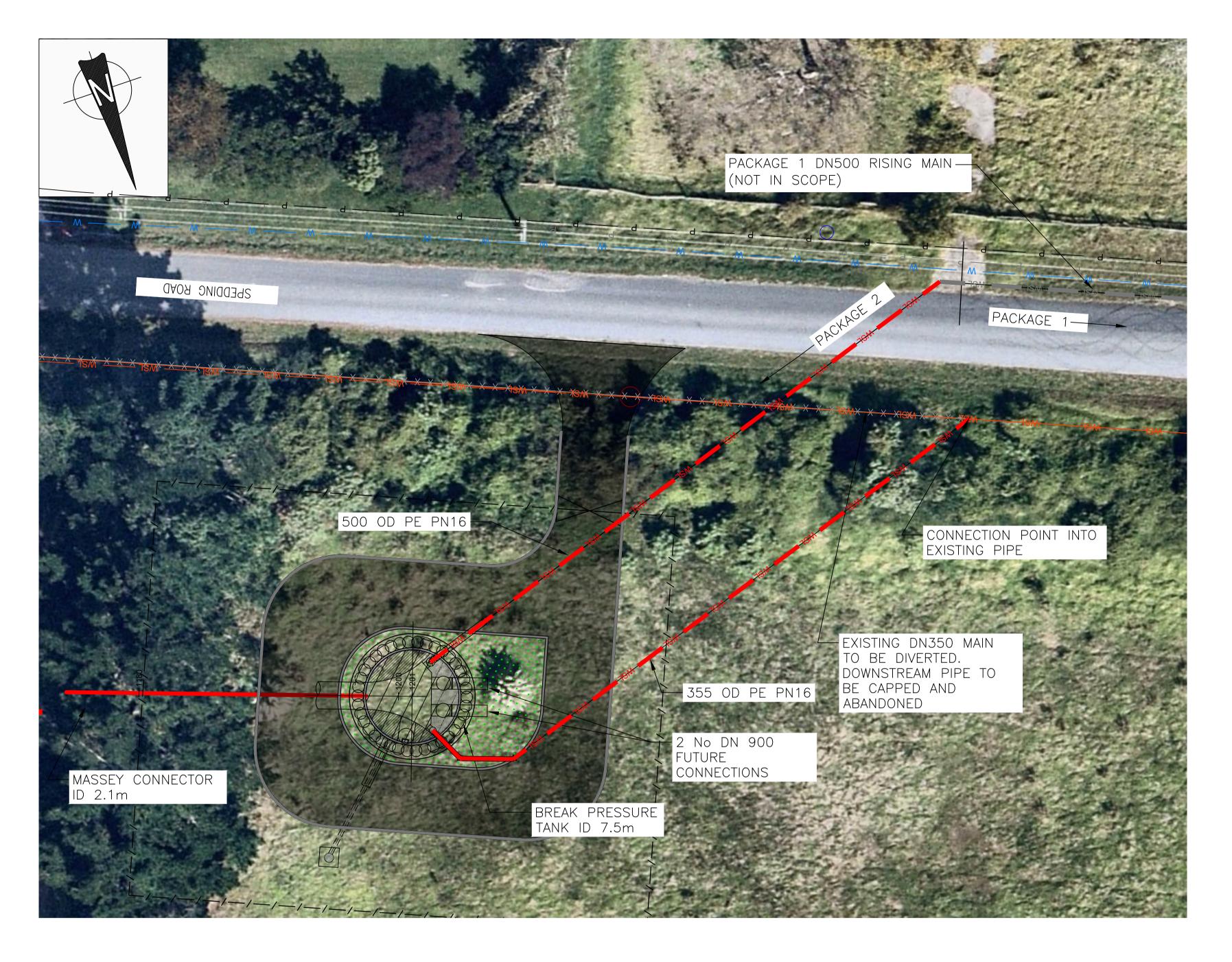


					DESIGNED	C. UNDERDOWN	11-22	
_	04-23	ISSUED FOR TENDER	FM	TH	DES. APPROVED	T. HARRHOFF	11-22	
4	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	DRAWN	F. MISPLON	11-22	
3	05-22	PRELIMINARY DESIGN - FOR REVIEW	FM	PC	DWG. APPROVED	T. HARRHOFF	11-22	Watercare
2	02-22	SHAFT 8 REVISED	FM	PC	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design
1	10-21	SKETCH FOR DISCUSSION	FM	PC	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not
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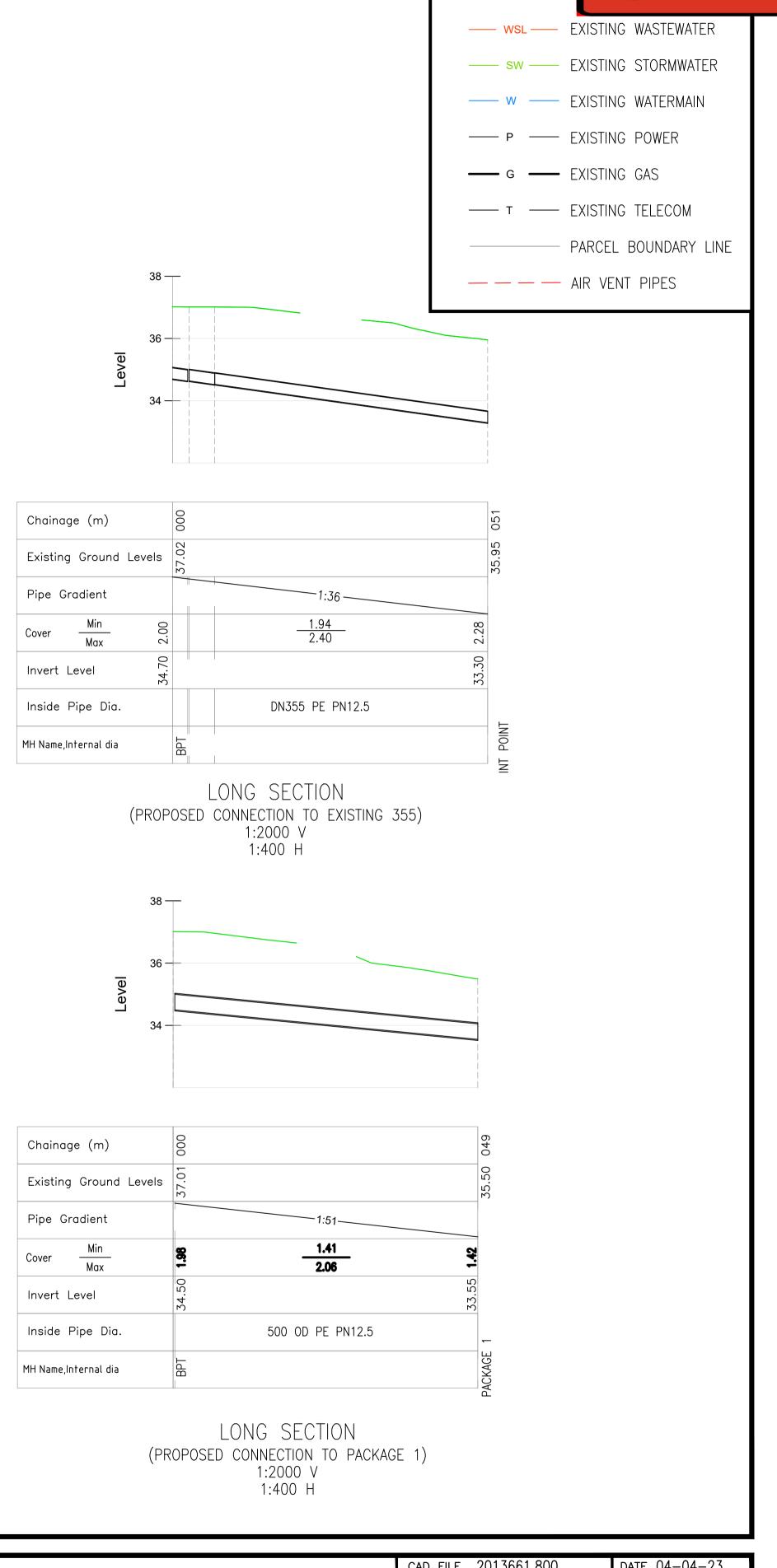
MOTT MACDONALD

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE MASSEY CONNECTOR PLAN AND LONG SECTION

CAD FILE 2013661.302	DATE 04-04-23						
original scale a1 1:2000	CONTRACT No. —						
REF. No. 417039-MMD-01-XX-DR-C-0100							
DWG. No. 2013661.3	02 ISSUE -						



PLAN VIEW SCALE. 1:200



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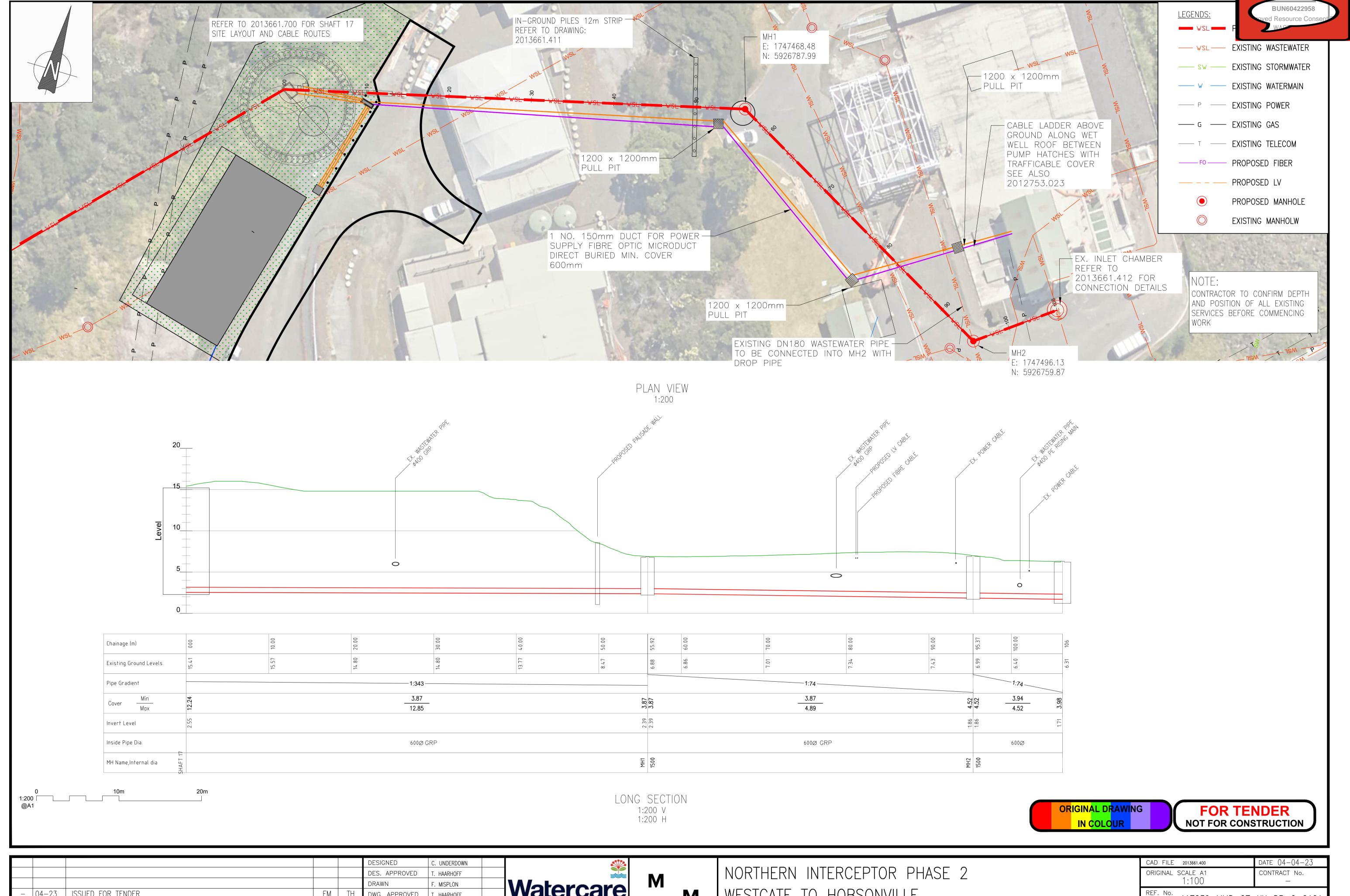
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1:200 @A1	
ORIGINAL DRAWING IN COLOUR	FOR TENDER NOT FOR CONSTRUCTION

					DESIGNED	C. UNDERDOWN	05-22	
					DES. APPROVED	P. CORRIS	05-22	
					DRAWN	F. MISPLON	05-22	
					DWG. APPROVED	P. CORRIS	05-22	V
_	04-23	ISSUED FOR TENDER	FM	TH	WSL DESIGN MGMT.			COI
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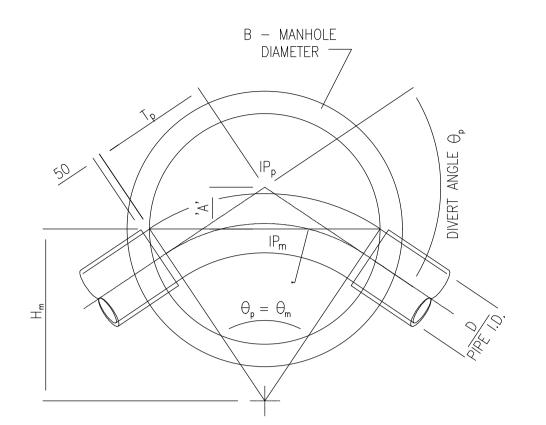
M MOTT MACDONALD NORTHERN INTERCEPTOR PHASE 2
WESTGATE TO HOBSONVILLE
MASSEY CONNECTOR INCOMING PIPE PLAN AND LONG SECTIONS

CAD FILE 2013661.800	DATE 04-04-23
ORIGINAL SCALE A1	CONTRACT No.
1:2000	_
REF. No. 417039-MMD-01-	-XX-DR-C-0101
REF. No. 417039-MMD-01-	-XX-DR-C-0101

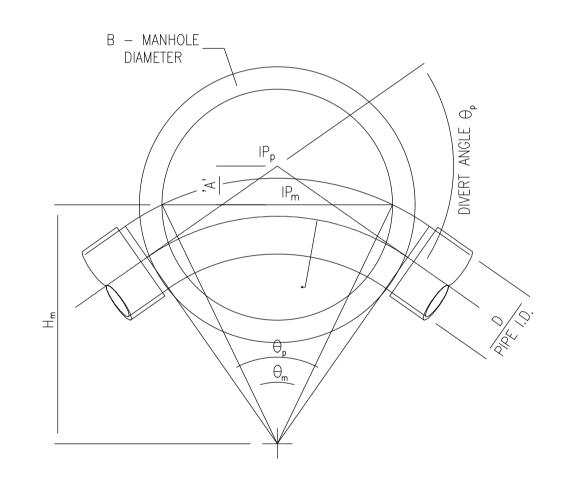


	DESIGNED	C. UNDERDOWN				CAD FILE 2013661.400 D	DATE 04-04-23
	DES. APPROVED	T. HAARHOFF		I NO	RTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1 C	CONTRACT No.
	DRAWN	F. MISPLON	Watercare M			1:100	
- 04-23 ISSUED FOR TENDER FM TH	DWG. APPROVED	T. HAARHOFF	vvalercare	M WES	ESTGATE TO HOBSONVILLE	REF. No. 417039-MMD-07-X	VV DD C 0101
2 11-22 DETAIL DESIGN - FOR REVIEW FM TH	WSL DESIGN MGMT		COPYRIGHT — This drawing, the design MOT	TT	STOME TO HODSONVILLE	417039-MMD-07-X	XX-DK-C-0101
1 07-22 PRELIMINARY DESIGN - FOR REVIEW FM TH	WSL PROJ. LEAD		concept, remain the exclusive property of MAC	CDONALD FXIS	STING HOBSONVILLE PS CONNECTION PLAN AND LONGITUDINAL SECTION	DWG. No.	ISSUE
ISSUE DATE AMENDMENT BY APPD.		BY DAT	used without approval. Copyright reserved.	LAIO	CHITCH TIGBOOT VILLE TO CONTINUE TE II VIVID ECITORION LE CECTION	2013661.40	JU -





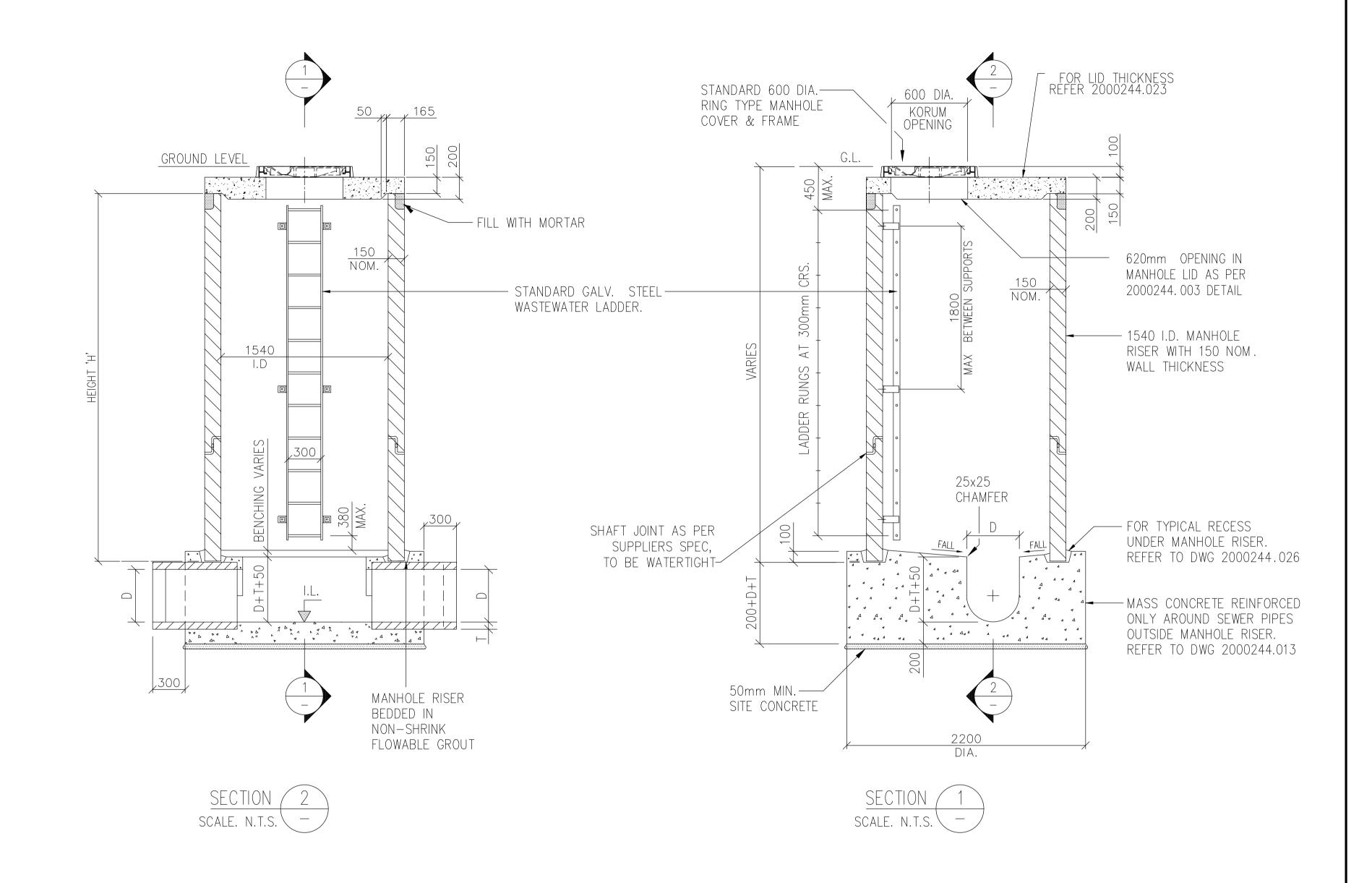
MH1 - TRANSLATED MANHOLE (TYPE A1)



<u>MH2 - TRANSLATED MANHOLE (TYPE A2)</u>

TABLE SHOWING DIMENSIONS FOR MANHOLE CONSTRUCTION											
MANHOLE	TYPE	В	D	θ p	0 m	R	Нр	Hm	А		
NUMBER		(mm)	(mm)	0 p	0111	(mm)	(mm)	(mm)	(mm)		
MH1	TA1	1540	570	0.750	0.793	1810	1943	1882	64		
MH2	TA2	1540	570	1.152	0.793	1743	2424	1882	543		

- 1. BASED ON WATERCARE STANDARD DRAWING 2000244.025.
- 2. THE MINIMUM REQUIRED SHEAR STRENGTH OF THE SOIL BELOW THE STRUCTURAL BASE IS 50KPA. THE SOIL IS TO BE INSPECTED AND TESTED BY THE GEOTECHNICAL ENGINEER TO CONFIRM THAT IT MEETS THE MINIMUM REQUIRED SHEAR STRENGTH.
- 3. ANY ORGANIC OR SOFT CLAY ENCOUNTERED ON THE EXCAVATED GROUND IS
- TO BE NOTIFIED TO THE GEOTECHNICAL ENGINEER.
- 4. LADDERS, CHAMBER LIDS AND DROP PIPE STRUCTURES TO BE INSTALLED IN
- ACCORDANCE WITH WATERCARE STANDARD DRAWINGS
 5. MH2 TO CONNECT TO EXISTING DN180 WASTEWATER PIPE WITH INTERNAL
- 5. MH2 TO CONNECT TO EXISTING DN180 WASTEWATER PIPE WITH INTERNAL DROP PIPE AS PER WATERCARE STANDARD DRAWING 2000244.028



MANUOLE NUMBER	LOC	CATION	EXISTING	LL (ELEV)	FLOW	SIZE (mm)	SCHEMATIC LAYOUT	PIPE DETAIL		
MANHOLE NUMBER	EASTING (m)	NORTHING (m)	OR NEW		TYPE			No	ø (mm)	IL(ELEV)
MH1	1747468.47	5926788.00	NEW	6.88	WW	ø1500 CLASS V	2	1 2	600 NEW 600 NEW	2.39 2.39
MH2	1747496.13	5926759.87	NEW	7.00	WW	ø1500 CLASS V	2 3 1	1 2 3	600 NEW 600 NEW 180 EXTG	1.86 1.86 TBC ON SITE

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IN COLOUR	NOT FOR CONSTRUCTION	J

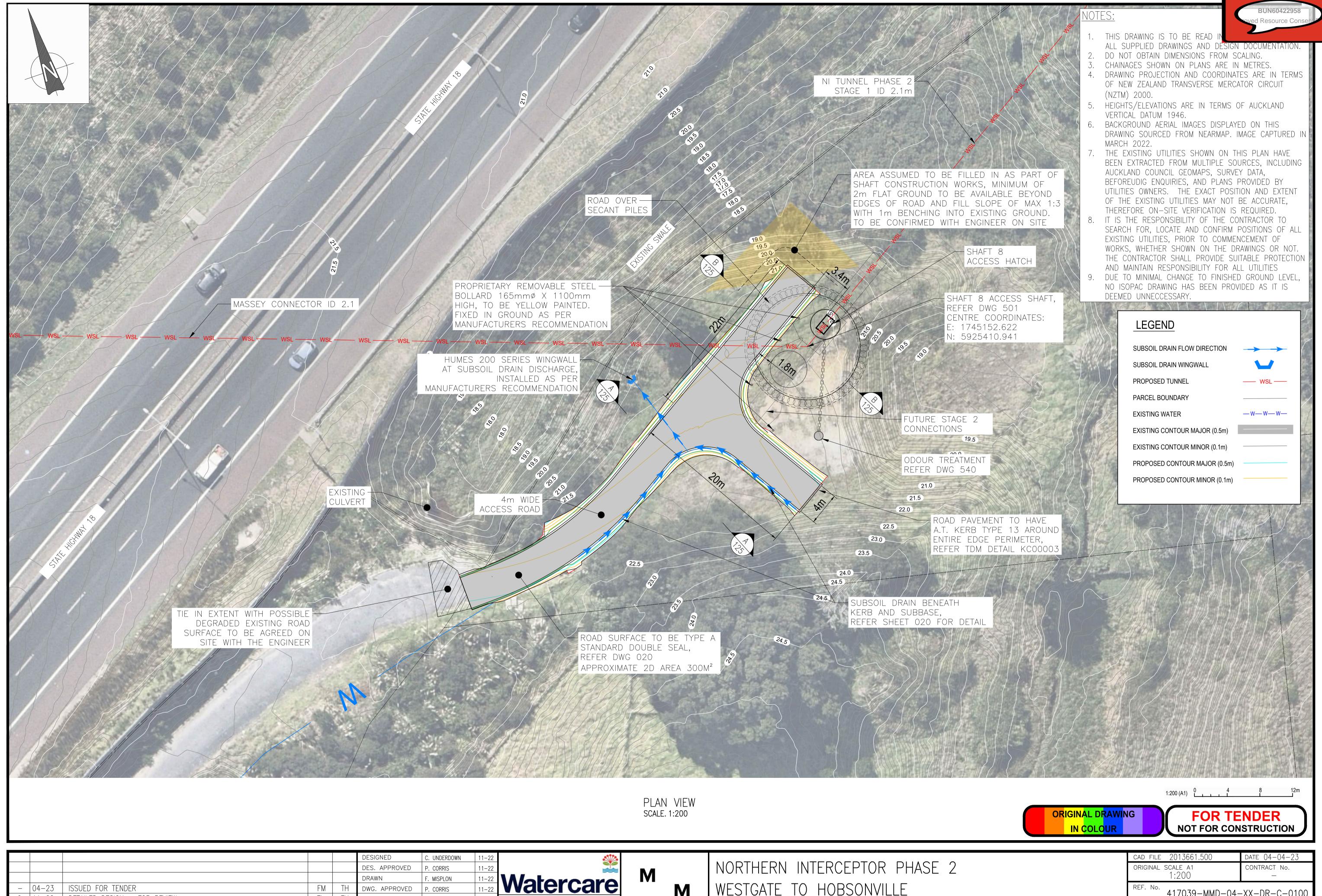
					DESIGNED	J. LATINA	11-22	w w
					DES. APPROVED	T. HAARHOFF	11-22	
					DRAWN	F. MISPLON	11-22	Watercare
					DWG. APPROVED	T. HAARHOFF	11-22	vvaler Care
_	04-23	ISSUED FOR TENDER	FM	TH	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design
1	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be
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NORTHERN	INTERCEPTOR PHASE	2
WESTGATE	TO HOBSONVILLE	

MANHOLE	1	AND	2	LAYOUT	AND	SECTION

CAD FILE 2013661.410	DATE 04-	-04-23	
original scale a1 1:2000	CONTRACT No. —		
REF. No. 417039-MMD-07-	-XX-DR-	-C-0001	
DWG. No. 2013661.4	10	ISSUE —	



					DESIGNED	C. UNDERDOWN	11-22	
					DES. APPROVED	P. CORRIS	11-22	
					DRAWN	F. MISPLON	11-22	1
_	04-23	ISSUED FOR TENDER	FM	TH	DWG. APPROVED	P. CORRIS	11-22	1
2	11-22	DETAILED DESIGN — FOR REVIEW	TL	TH	WSL DESIGN MGMT.			(
1	05-22	PRELIMINARY DESIGN — FOR REVIEW	FM	PC	WSL PROJ. LEAD			C
ISSUF	DATE	AMFNDMFNT	BY	APPD.		BY	DATE	u u



MOTT MACDONALD

WESTGATE TO HOBSONVILLE

SHAFT 8 SITE LAYOUT

	CAD FILE 2013661.500	DATE 04-	-04-23
	original scale a1 1:200	CONTRACT	- No. -
	REF. No. 417039-MMD-04-	-XX-DR-	-C-0100
	DWG. No. 2013661.5	$\cap \cap$	ISSUE —
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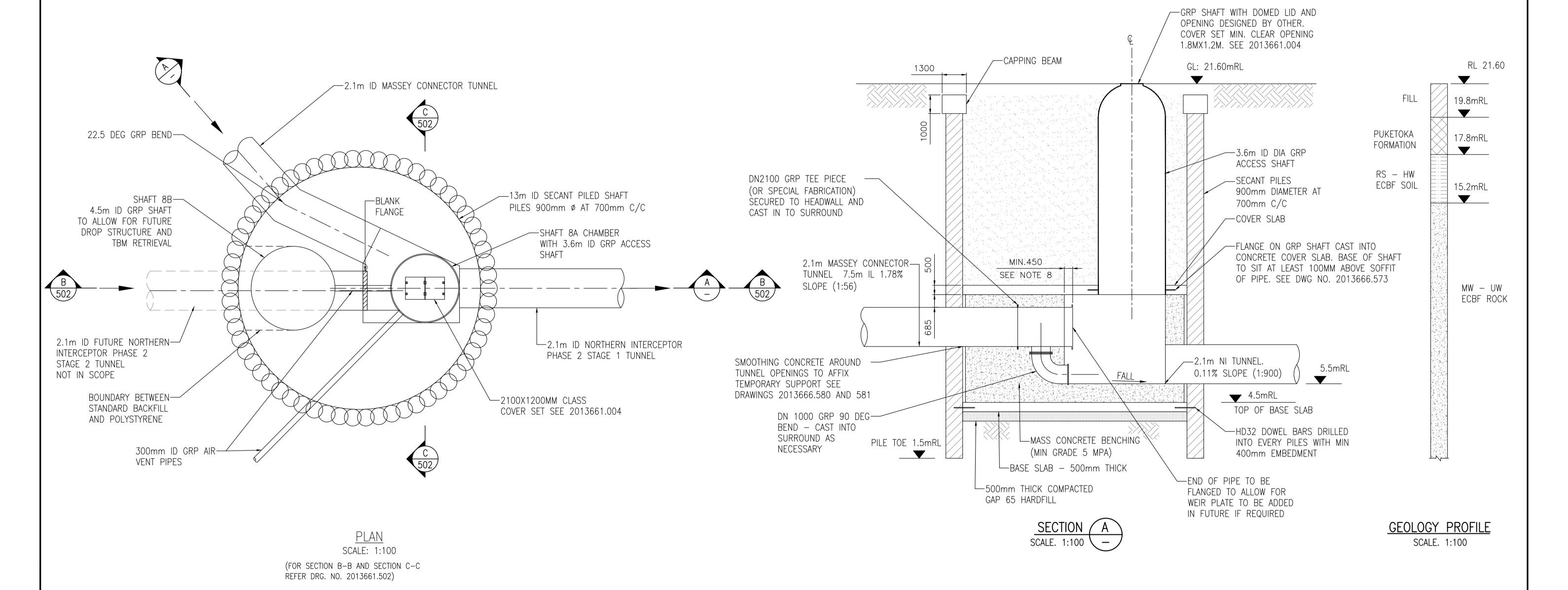
- I. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- 3. LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
- 4. SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE DWG. NO. 2013666.673 FOR DETAILS
- 5. TBM CUTTER DIAMETER ASSUMED = 2325 TO 2575MM
- 6. GENERAL ARRANGEMENT OF GRP ACCESS SHAFTS SHOWN. DETAILED DESIGN TO BE COMPLETED BY SUPPLIER IN ACCORDANCE WITH PARTICULAR SPECIFICATION CIVIL
- 7. BACKFILL AROUND FUTURE TUNNEL OPENING TO BE POLYSTYRENE OR OTHER LOW STRENGTH MATERIAL SUBJECT TO APPROVAL BY ENGINEER
- 8. MASSEY CONNECTOR TOP PIPE TO PROTUDE INTO CHAMBER WITH SUFFICIENT SPACE TO AFFIX BLANK FLANGE IN FUTURE. PIPE FLANGE SHALL BE SUPPLIED IN ACCORDANCE WITH WATERCARE MATERIAL SUPPLY STANDARD
- 9. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS

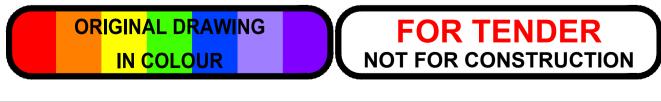
GEOTECHNICAL NOTES:

- 1. FROM GEOTECHNICAL INVESTIGATION, SHAFT IS TO BE FOUNDED ON ECBF, THE EXCAVATED GROUND IS TO BE INSPECTED BY WATERCARE'S ENGINEER TO CONTRACT PRIOR TO CONSTRUCTION.
- 2. GEOLOGICAL CONDITIONS BASED ON GEOLOGICAL PROFILE. REFER TO GBR FOR DETAILS. GROUNDWATER TABLE ASSUMED AT SURFACE.
- 3. REFER TO PARTICULAR SPECIFICATION GEOTECHNICAL FOR BACKFILL REQUIREMENTS

SAFETY IN DESIGN NOTES:

1. PRESSURE RELIEF MUST REMAIN IN PLACE UNTIL BACKFILL REACHES REQUIRED HEIGHT. SEE 2013661.590 INDICATIVE CONSTRUCTION SEQUENCE.





						DESIGNED	C. UNDERDOWN	05-22	
ı						DES. APPROVED	P. CORRIS	05-22	
	_	04-23	ISSUED FOR TENDER	FM	TH	DRAWN	F. MISPLON	05-22	
Ī	3	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	DWG. APPROVED	P. CORRIS	05-22	V
I	2	07-22	PRELIMINARY DESIGN — FOR REVIEW. MINOR AMENDMENTS	FM	PC	WSL DESIGN MGMT.			COI
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M MOTT MACDONALD

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

SHAFT 8 GENERAL ARRANGEMENT PLAN AND SECTION A

CAD FILE 2013661.501	DATE 04-	-04-23
original scale a1 1:2000	CONTRACT	「 No. -
REF. No. 417039-MMD-04-	-XX-DR-	-C-0001
DWG. No.	504	ISSUE
<u> 2013661 .</u>	<u>501</u>	_

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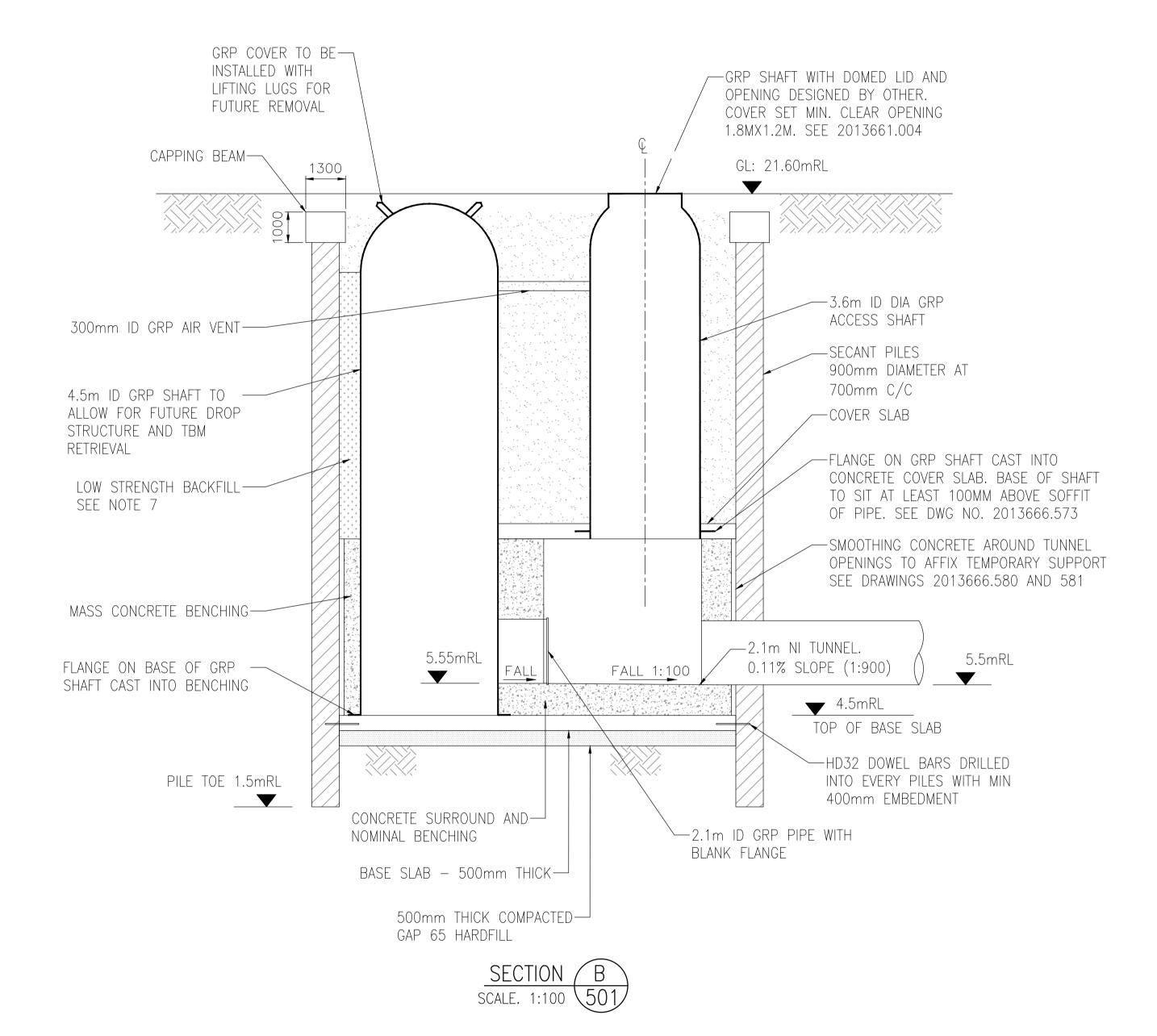
- 1. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
- SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE DWG. NO. 2013666.673 FOR DETAILS
- 5. TBM CUTTER DIAMETER ASSUMED = 2325 TO 2575MM
- 6. GENERAL ARRANGEMENT OF GRP ACCESS SHAFTS SHOWN. DETAILED DESIGN TO BE COMPLETED BY SUPPLIER IN ACCORDANCE WITH PARTICULAR SPECIFICATION - CIVIL
- 7. BACKFILL AROUND FUTURE TUNNEL OPENING TO BE POLYSTYRENE OR OTHER LOW STRENGTH MATERIAL SUBJECT TO APPROVAL BY ENGINEER
- 8. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS

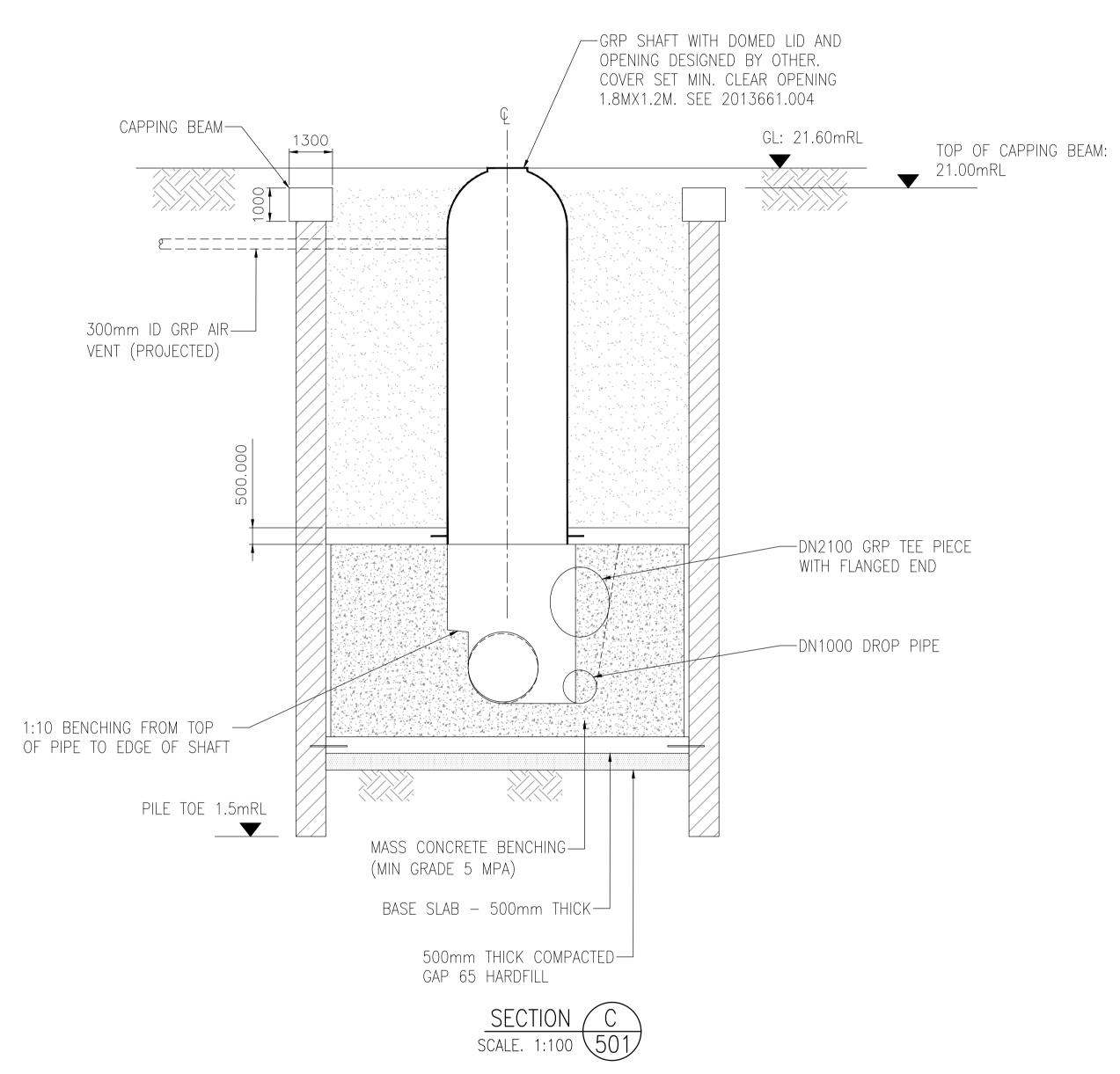
GEOTECHNICAL NOTES:

- 1. FROM GEOTECHNICAL INVESTIGATION, SHAFT IS TO BE FOUNDED ON ECBF, THE EXCAVATED GROUND IS TO BE INSPECTED BY WATERCARE'S ENGINEER TO CONTRACT PRIOR TO CONSTRUCTION.
- 2. GEOLOGICAL CONDITIONS BASED ON GEOLOGICAL PROFILE. REFER TO GBR FOR DETAILS. GROUNDWATER TABLE ASSUMED AT SURFACE.
- 3. REFER TO PARTICULAR SPECIFICATION GEOTECHNICAL FOR BACKFILL REQUIREMENTS

SAFETY IN DESIGN NOTES:

1. PRESSURE RELIEF MUST REMAIN IN PLACE UNTIL BACKFILL REACHES REQUIRED HEIGHT. SEE 2013661.590 INDICATIVE CONSTRUCTION SEQUENCE.





ORIGINAL DRAWING IN COLOUR

FOR TENDER NOT FOR CONSTRUCTION

BUN60422958

					DESIGNED	C. UNDERDOWN	11-22	
					DES. APPROVED	T. HAARHOFF	11-22	
					DRAWN	F. MISPLON	11-22	Wotorooro
					DWG. APPROVED	T. HAARHOFF	11-22	Watercare
_	04-23	ISSUED FOR TENDER	FM	TH	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design
1	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be
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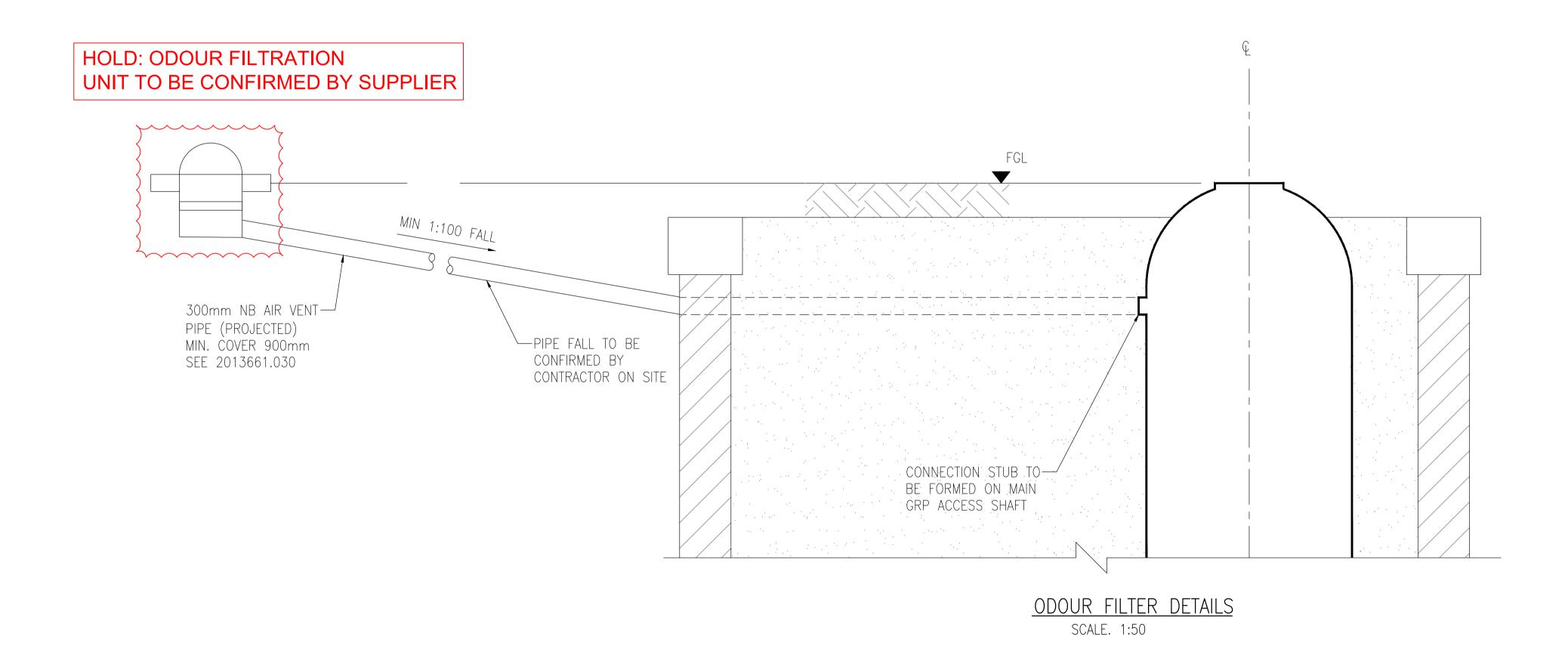
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MACDONALD

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE SHAFT 8 GENERAL ARRANGEMENT SECTION B AND C

cad file 2013661.501	DATE 04-	-04-23
ORIGINAL SCALE A1	CONTRACT	No.
1:2000	_	_
REF. No. 417039-MMD-04-	-XX-DR-	-C-0002
DWG. No.		ISSUE
2013661 .	502	_
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- 1. DESIGN STAGE IS DETAILED DESIGN. DRAWING NOT TO BE USED FOR CONSTRUCTION.
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- 3. LOCATION OF FILTER AS PER DRAWING 2013661.500
- 4. ODOUR FILTRATION UNIT SIZE AND CIVIL INTERFACE REQUIREMENTS TO BE CONFIRMED BY OCU SUPPLIER IN ACCORDANCE WITH 417039-MMD-00-XX-SP-M-0007 PARTICULAR SPECIFICATION ODOUR CONTROL UNIT
- 5. DETAILED DESIGN OF FOUNDATION FOR FILTER TO BE COMPLETED BY CONTRACTOR





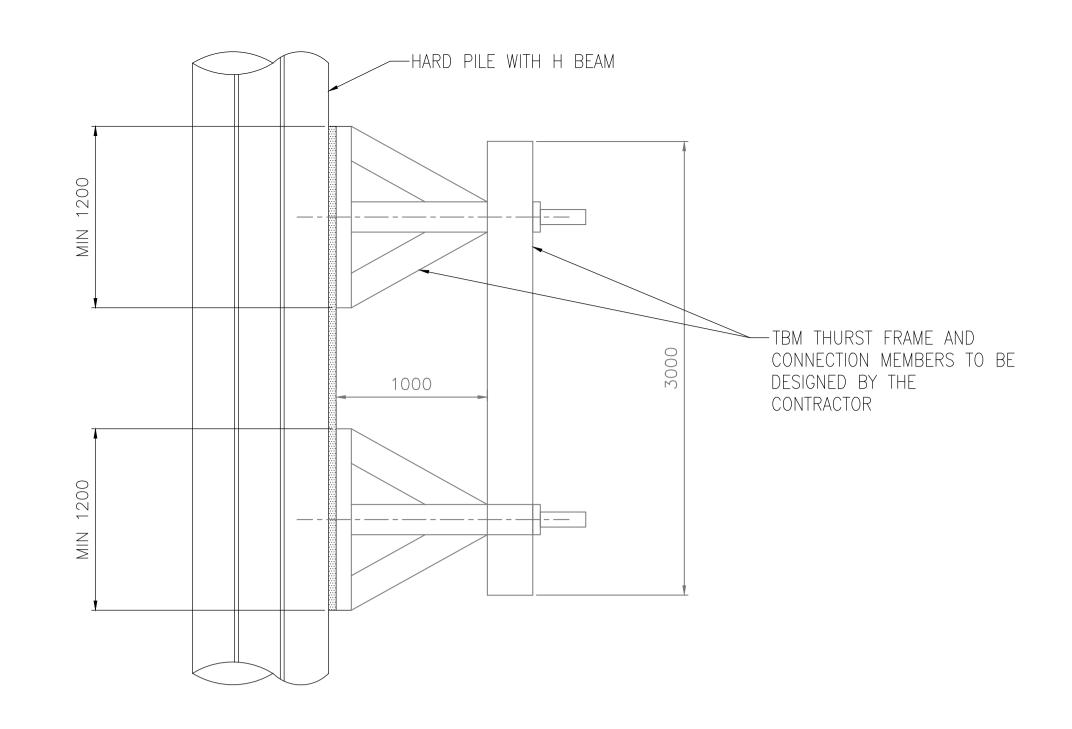
					DESIGNED	C. UNDERDOWN		
					DES. APPROVED	T. HAARHOFF		
					DRAWN	S. POWAR		Motorooro
					DWG. APPROVED	T. HAARHOFF		Watercare
1	04-23	ISSUED FOR TENDER	FM	TH	WSL DESIGN MGMT	-		COPYRIGHT — This drawing, the design
1	11-22	DETAILED DESIGN — FOR REVIEW	SP	TH	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be
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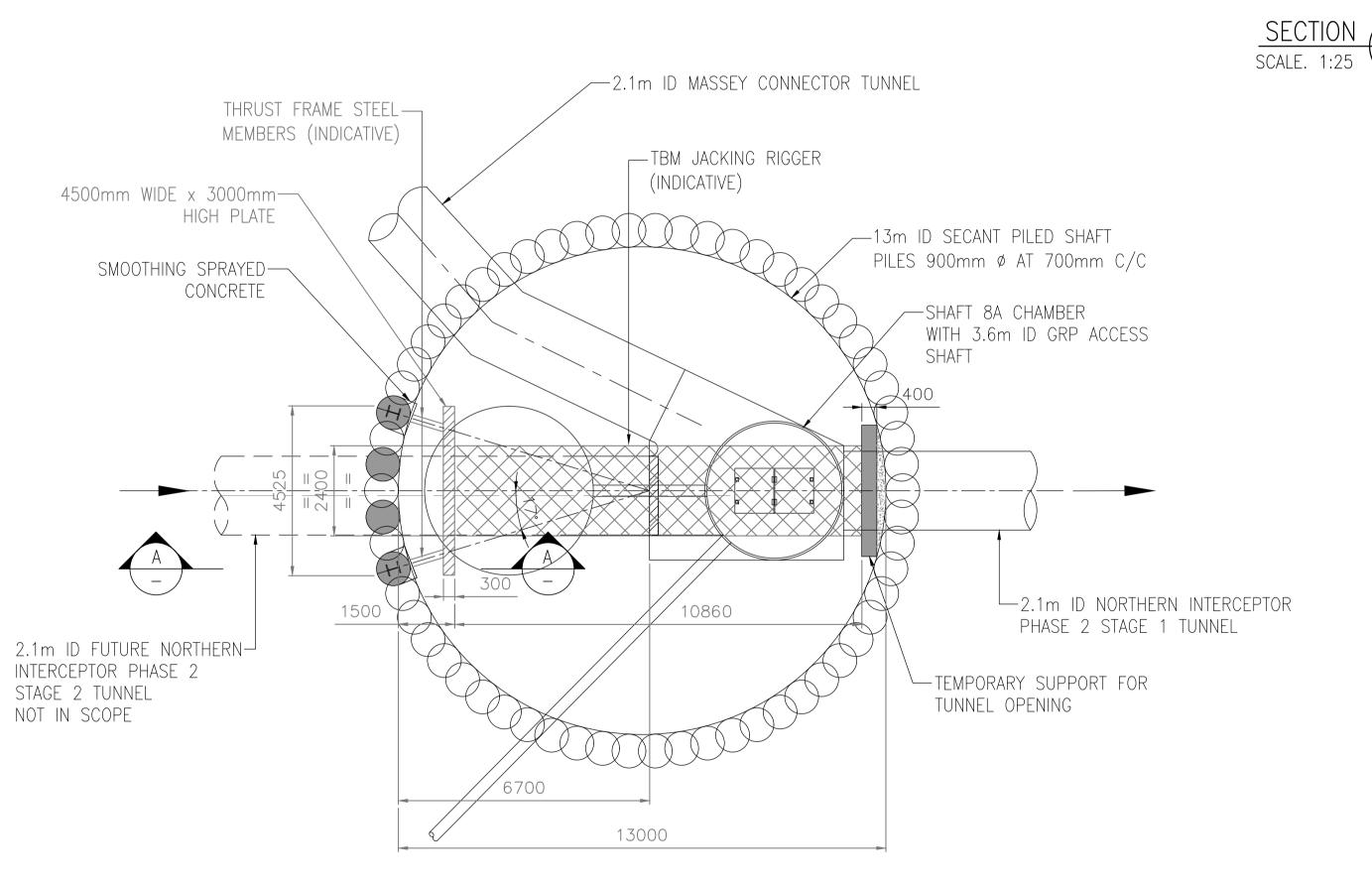


NORTHERN INTERCEPTOR PHASE 2
WESTGATE TO HOBSONVILLE
SHAFT 8 ODOUR FILTER DETAILS

CAD FILE 2013661.500	DATE 04-04-23			
ORIGINAL SCALE A1	CONTRACT No.			
AS SHOWN	_	-		
REF. No. 417039-MMD-04-XX	(-DR-C-0)300		
DWG. No.		ISSUE		
2013661.5	40			

- 1. THE JACKING ARRANGEMENT SHOWN ON THIS DRAWING IS INDICATIVE ONLY AND SHALL BE DESIGNED BY THE CONTRACTOR.
- 2. HARD PILES ON EITHER SIDE OF THE OPENING FOR PIPE CONNECTIONS SHALL BE INSTALLED WITH AN ADDITIONAL STEEL H SECTION AS SHOWN (EXACT LOCATION SHALL BE DETERMINED ON SITE)
- 3. THE THRUST LOAD FROM TBM SHALL ACT DIRECTLY ON THE HARD PILES WITH THE ADDITIONAL STEEL H SECTION AS SHOWN PERPENDICULAR TO THE FLANGE OF THE STEEL SECTION.
- 4. THE THRUST LOAD SHALL BE DISTRIBUTED VERTICALLY OVER MIN 1200mm AT TWO DISTINCT LOCATIONS AS SHOWN ON SECTION A.
- 5. THE HARD PILES FALLING WITHIN THE FUTURE STAGE 2 OPENING SHALL USE GFRP BARS FOR REINFORCEMENT.
- 6. JACKING THRUST LOAD SHALL NOT EXCEED 1500TONNE.





TEMPORARY SUPPORT FOR-TUNNEL OPENING -THRUST FRAME STEEL MEMBERS (INDICATIVE) TBM JACKING RIGGER (INDICATIVE) 4500mm WIDE x 3000mm-HIGH PLATE 3500mm x 3500mm_ CONCRETE BLOCK JACKING ARRANGEMENT FOR MASSEY

CONNECTOR TUNNEL (INDICATIVE)

SCALE: 1:100

JACKING ARRANGEMENT FOR NORTHERN INTERCEPTOR PHASE 2 STAGE 1 (INDICATIVE) SCALE: 1:100

HARD PILE WITH GFRP REBAR (INDICATIVE)

HARD PILE WITH STEEL REBAR AND H BEAM (INDICATIVE)



FOR TENDER NOT FOR CONSTRUCTION

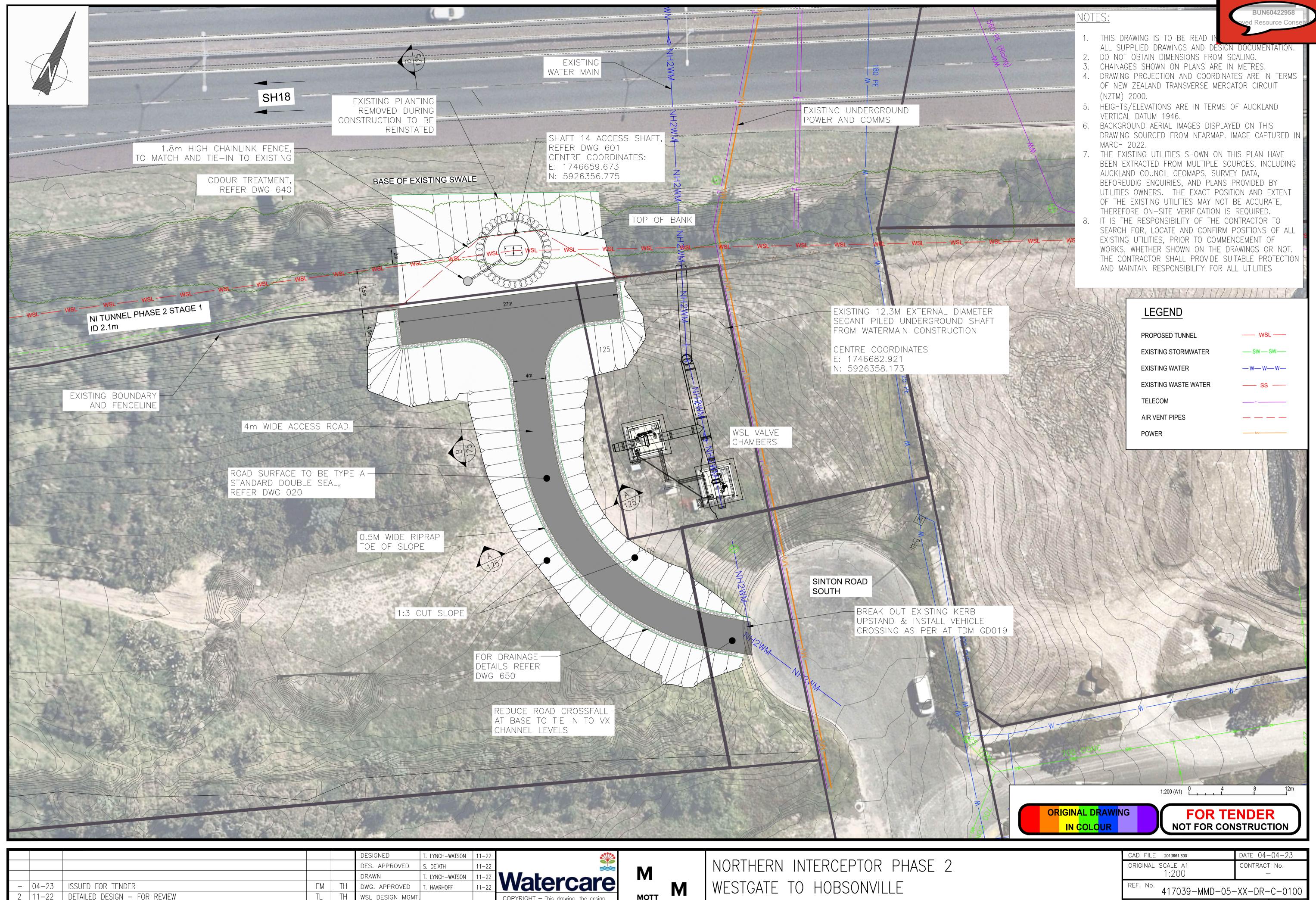
					DESIGNED	C. YUEN	11-22	w w
					DES. APPROVED	Y. CHAN	11-22	
					DRAWN	S. POWAR	11-22	Wotorooro
					DWG. APPROVED	T. HAARHOFF	11-22	Watercare
_	04-23	ISSUED FOR REVIEW	FM	TH	WSL DESIGN MGMT			COPYRIGHT — This drawing, the design
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MACDO	NALD

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE SHAFT 8 INDICATIVE TBM JACKING ARRANGEMENT DETAILS AND ASSUMED JACKING ARRANGEMENT

CAD FILE 2013666.574	DATE 04-04-23				
original scale a1 1:2000	CONTRACT No. —				
REF. No. 417039-MMD-04-XX-DR-S-0204					
DWG. No.	ISSUE				
2013666.	<u> 574 </u>				



	1	07-22	PRELIMINARY DESIGN - FOR REVIEW	FM	TH	WSL PROJ. LEAD
1	ISSUE	DATE	AMENDMENT	BY	APPD.	
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SHAFT 14 SITE LAYOUT

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original scale a1 1:200	CONTRACT N	No.			
REF. No. 417039-MMD-05-XX-DR-C-0100					
DWG. No. 2013661.6	00	ISSUE —			

- 1. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
- SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE DWG. NO. 2013666.673 FOR DETAILS
- 5. TBM CUTTER DIAMETER ASSUMED = 2325 TO 2575MM
- GENERAL ARRANGEMENT OF GRP ACCESS SHAFTS SHOWN. DETAILED DESIGN TO BE COMPLETED BY SUPPILER IN ACCORDANCE WITH PARTICULAR SPECIFICATION — CIVIL
- 7. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS

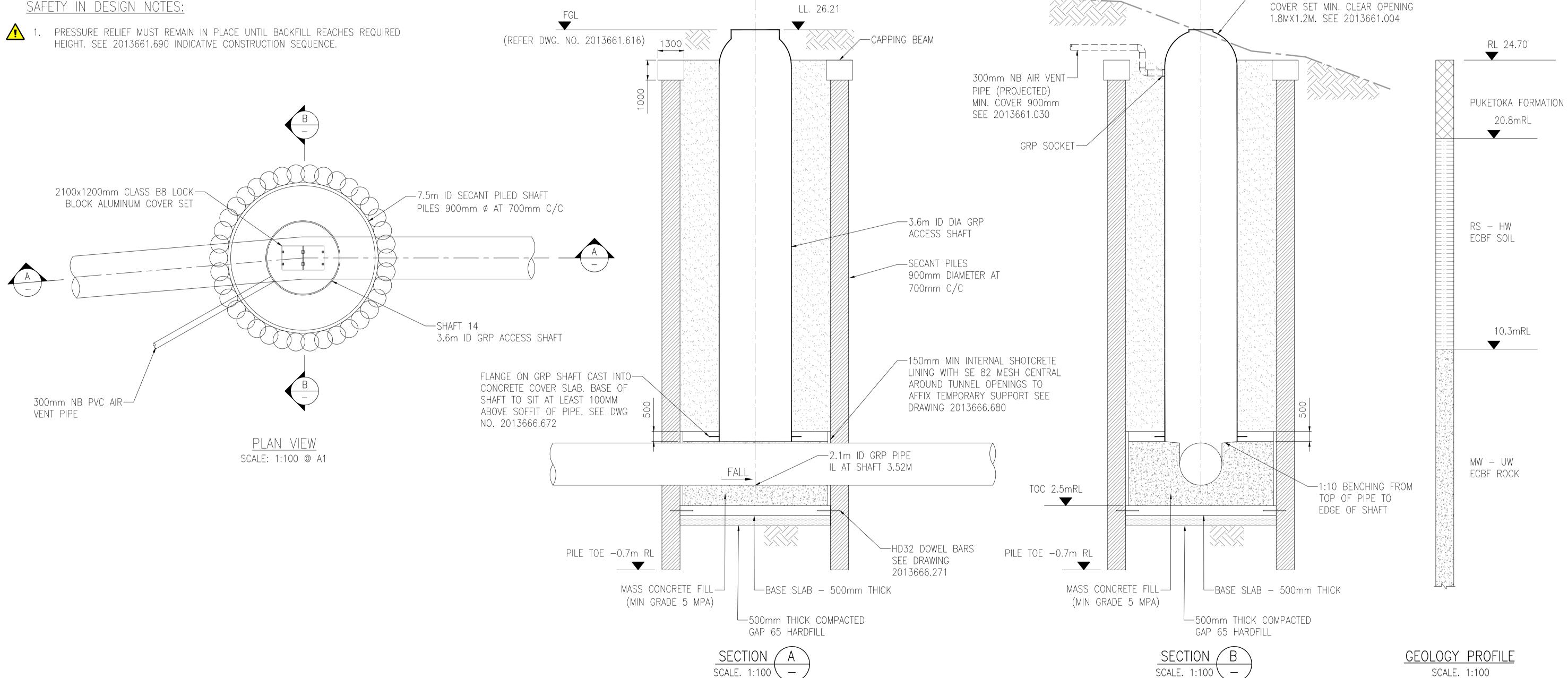
GEOTECHNICAL NOTES:

- 1. FROM GEOTECHNICAL INVESTIGATION, SHAFT IS TO BE FOUNDED ON ECBF, THE EXCAVATED GROUND IS TO BE INSPECTED BY WATERCARE'S ENGINEER TO CONTRACT PRIOR TO CONSTRUCTION.
- 2. GEOLOGICAL CONDITIONS BASED ON GEOLOGICAL PROFILE. REFER TO GBR FOR DETAILS. GROUNDWATER TABLE ASSUMED AT SURFACE.
- 3. REFER TO PARTICULAR SPECIFICATION GEOTECHNICAL FOR BACKFILL REQUIREMENTS

SAFETY IN DESIGN NOTES:

AMENDMENT

SSUE DATE



				DESIGNED	C. UNDERDOWN	
				DES. APPROVED	T. HAARHOFF	
				DRAWN	F. MISPLON	
_	04-23	ISSUED FOR TENDER FM	ΤH	DWG. APPROVED	T. HAARHOFF	Watercare
2	11-22	DETAILED DESIGN — FOR REVIEW FM	ΤH	WSL DESIGN MGMT.		COPYRIGHT — This drawing, the design
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BY APPD.

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NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

APPROX EXISTING

GROUND

I SHAFT 14 GENERAL ARRAN

CAD FILE 2013661.601	DATE 04-	-04-23
original scale a1 NTS	CONTRACT	No.
REF. No. 417039-MMD-05-	-XX-DR-	-C-0001
2013661.6	01	ISSUE —

FOR TENDER

NOT FOR CONSTRUCTION

-GRP SHAFT WITH DOMED LID AND OPENING DESIGNED BY OTHER.

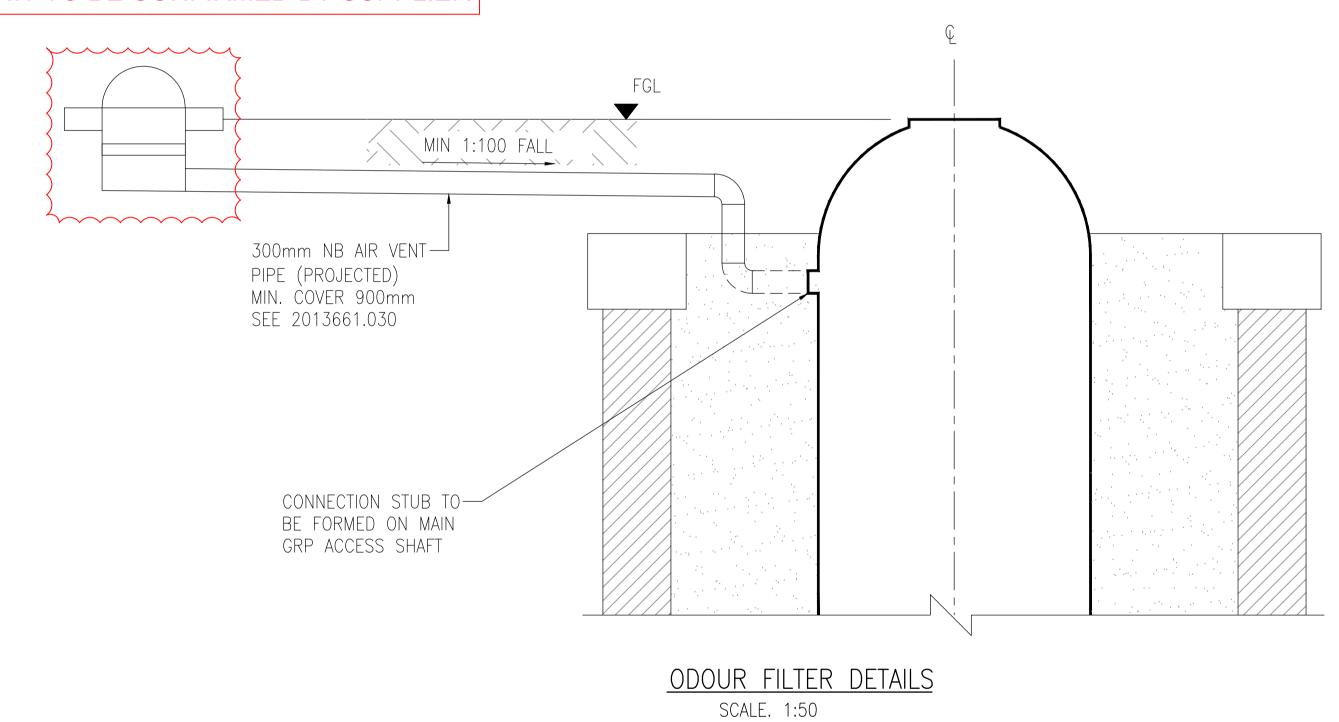
ORIGINAL DRAWING

IN COLOUR

BUN60422958
royed Resource Consent

- 1. DESIGN STAGE IS DETAILED DESIGN. DRAWING NOT TO BE USED FOR CONSTRUCTION.
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- 3. LOCATION OF FILTER AS PER DRAWING 2013661.501
- 4. ODOUR FILTRATION UNIT SIZE AND CIVIL INTERFACE REQUIREMENTS TO BE CONFIRMED BY OCU SUPPLIER IN ACCORDANCE WITH 417039-MMD-00-XX-SP-M-0007 PARTICULAR SPECIFICATION ODOUR CONTROL UNIT
- 5. DETAILED DESIGN OF FOUNDATION FOR FILTER TO BE COMPLETED BY CONTRACTOR

HOLD: ODOUR FILTRATION UNIT TO BE CONFIRMED BY SUPPLIER



ORIGINAL DRAWING
IN COLOUR

FOR TENDER
NOT FOR CONSTRUCTION

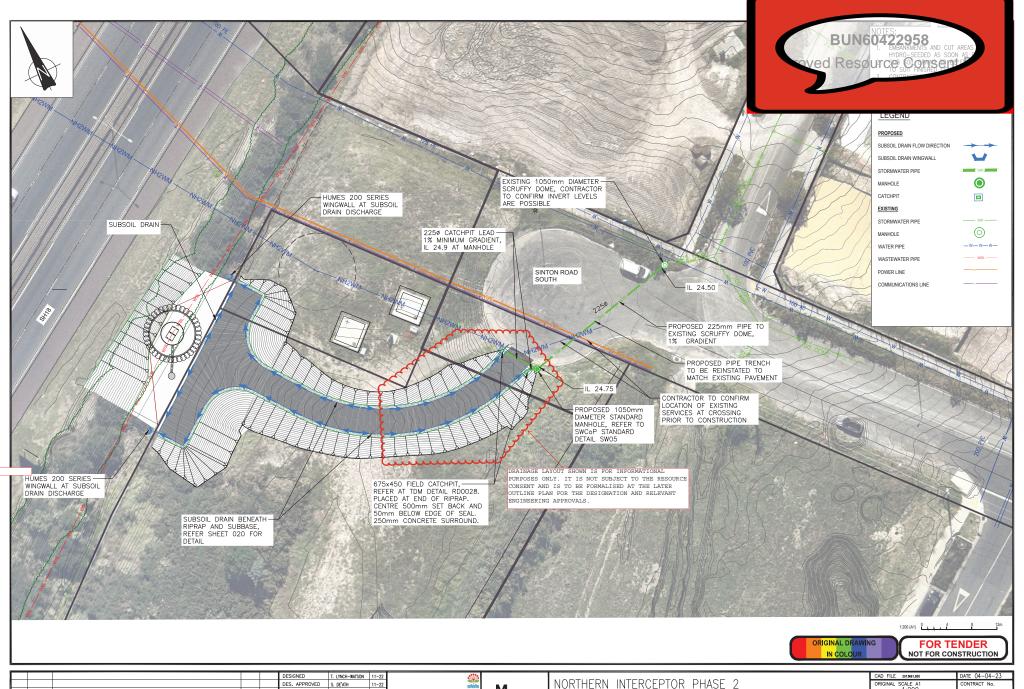
					DESIGNED	C. UNDERDOWN		
					DES. APPROVED	T. HAARHOFF		
					DRAWN	S. POWAR		Motoro
					DWG. APPROVED	T. HAARHOFF		Waterd
_	04-23	ISSUED FOR TENDER	FM	TH	WSL DESIGN MGMT.			COPYRIGHT — This drawing
1	11-22	DETAILED DESIGN — FOR REVIEW	SP	TH	WSL PROJ. LEAD			concept, remain the exclusive Watercare Services Limited an
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE	used without approval. Copyri



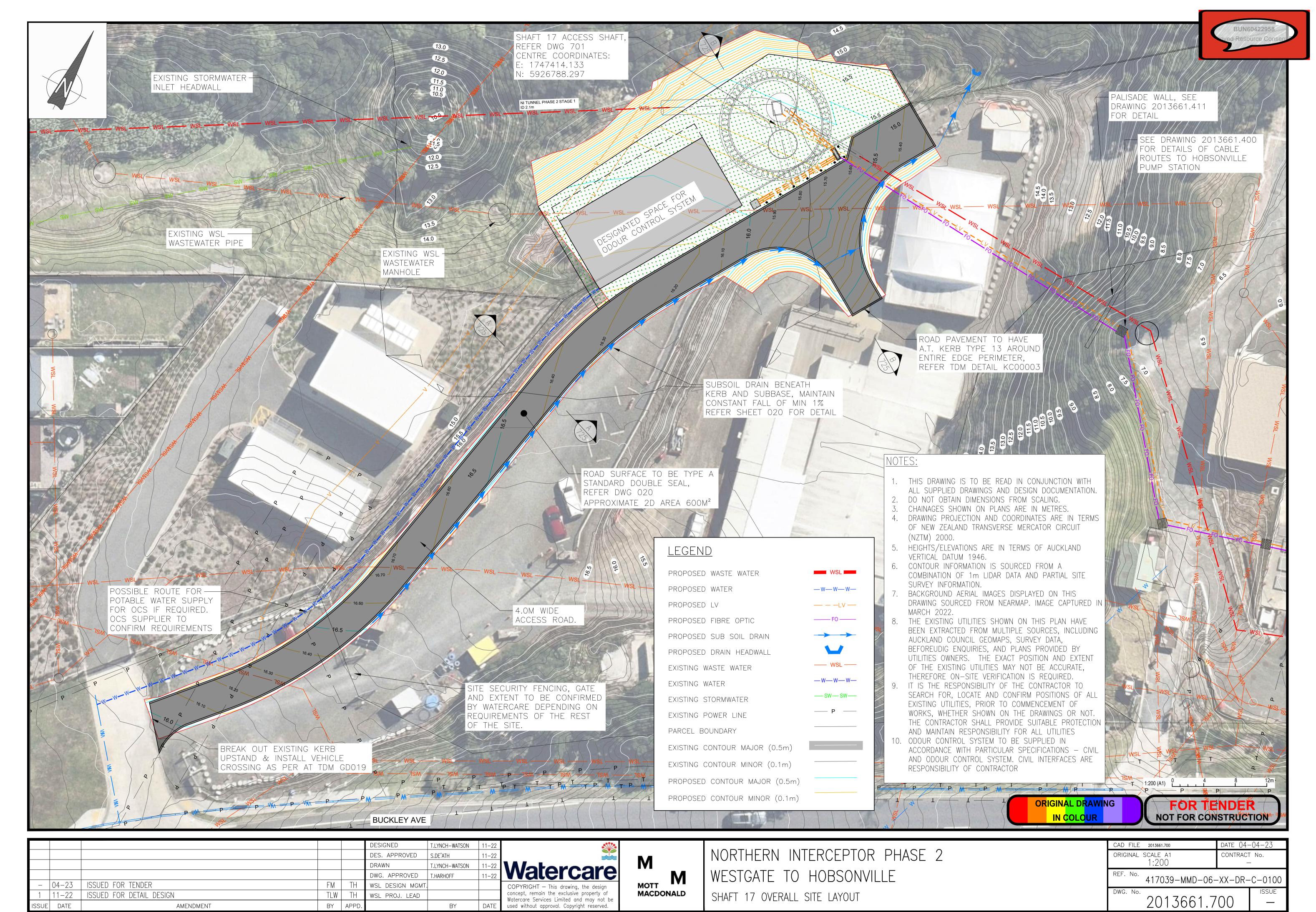
NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

SHAFT 14 ODOUR FILTER DETAILS

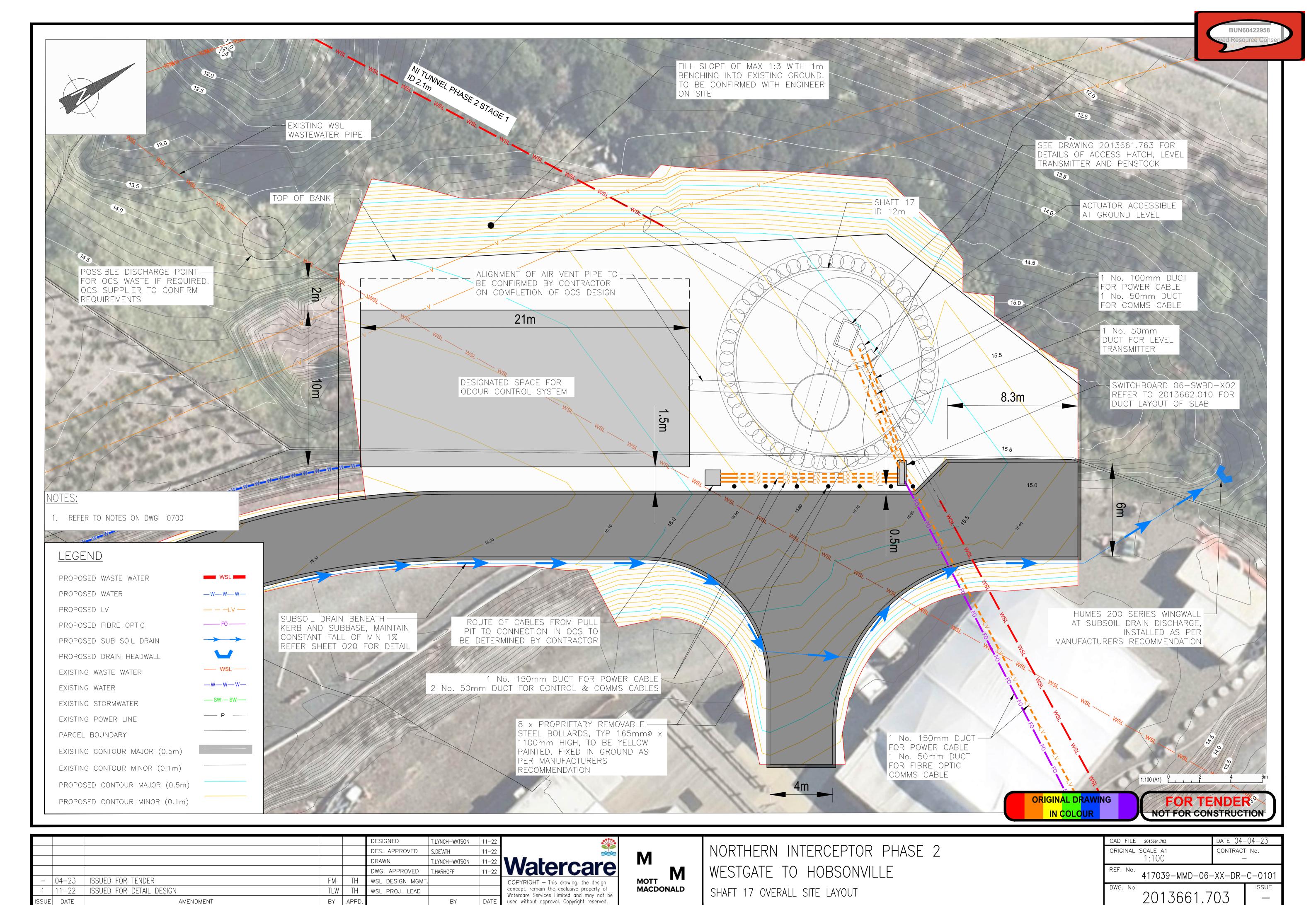
CAD FILE 2013661.640	DATE 04-	-04-23	
ORIGINAL SCALE A1	CONTRACT No.		
AS SHOWN	_	_	
REF. No. 417039-MMD-05-X>	(-DR-C-(0300	
DWG. No.		ISSUE	
2013661.6	40	_	



			DESIGNED	T. LYNCH-WATSON	11-22	***		l	CAD FILE 2013661.650	DATE 04-04-23
			DES. APPROVED	S. DE'ATH	11-22			NORTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1	CONTRACT No.
			DRAWN	T. LYNCH-WATSON	11-22	Motorogra	M		1:200	-
B 12-24 Issued for Consent			DWG. APPROVED	T. HAARHOFF	11-22	Watercare	мотт М	WESTGATE TO HOBSONVILLE	REF. No. 417039-MMD-05-	_VV_DP_C_0150
- 04-23 ISSUED FOR TENDER	FM	TH	WSL DESIGN MGM	г.		COPYRIGHT - This drawing, the design	мотт	WESTS/WE TO TISBUSTIFIEEE		
1 11-22 DETAILED DESIGN - FOR REVIEW	TL	TH	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be	MACDONALD	SHAFT 14 SITE DRAINAGE LAYOUT	DWG. No.	ISSUE ISSUE
ISSUE DATE AMENDMENT	BY	APPD.		BY	DATE	used without approval. Copyright reserved.		THE PERSON NAMED IN COLUMN 19 WITH THE PERSON NAMED	2013661.6	JON SMICH TO
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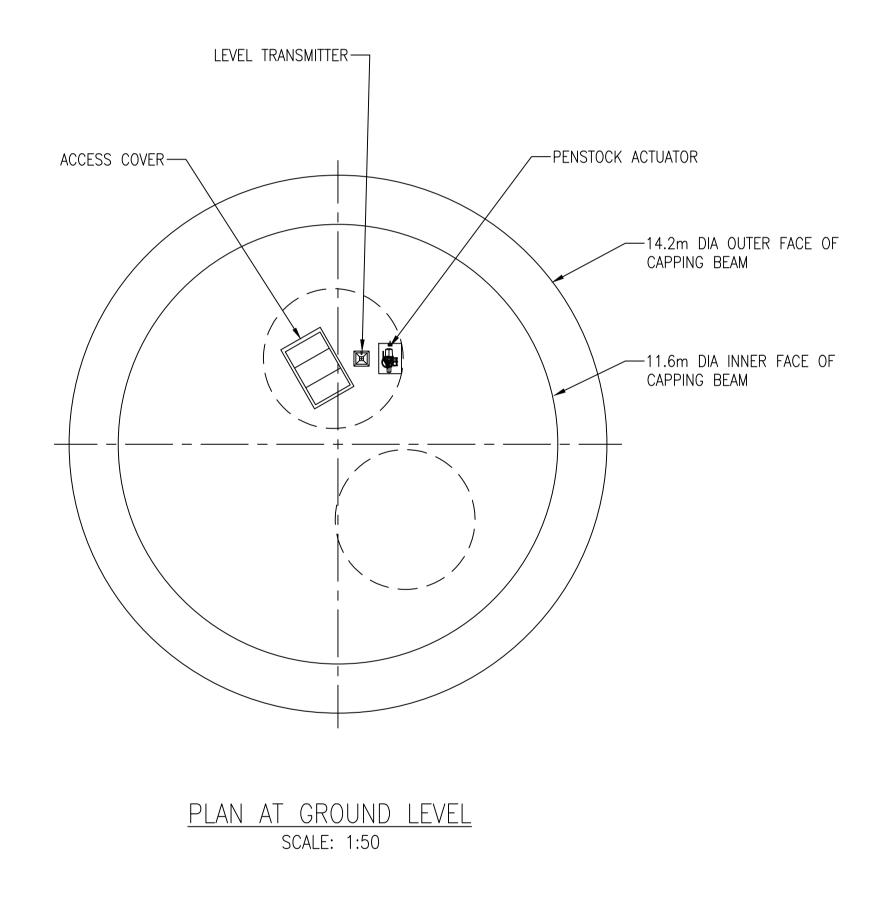
- 1. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- 3. LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
- 4. SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE DWG. NO. 2013666.773 FOR DETAILS
- 5. TBM CUTTER DIAMETER ASSUMED = 2325 TO 2575MM
- 6. GENERAL ARRANGEMENT OF GRP ACCESS SHAFTS SHOWN. DETAILED DESIGN TO BE COMPLETED BY SUPPLIER IN ACCORDANCE WITH PARTICULAR SPECIFICATION CIVIL
- 7. BACKFILL AROUND FUTURE TUNNEL OPENING TO BE POLYSTYRENE OR OTHER LOW STRENGTH MATERIAL SUBJECT TO APPROVAL BY ENGINEER
- 8. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS
 9. REFER TO DRAWING 2013661.763 FOR DETAILS OF CHAMBER LID, LEVEL TRANSMITTER AND PENSTOCK ACTUATOR INSTALLATION.

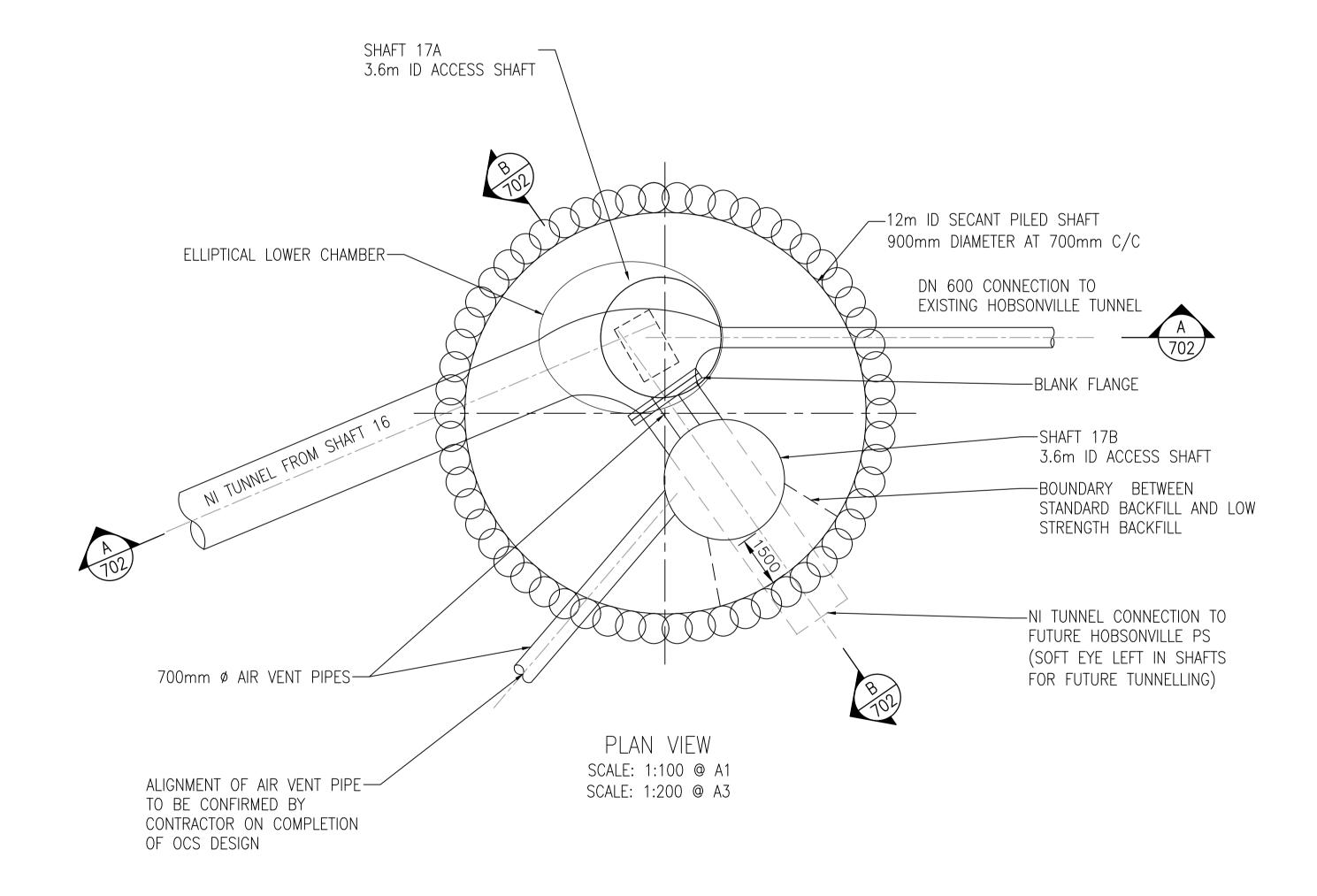
GEOTECHNICAL NOTES:

- 1. FROM GEOTECHNICAL INVESTIGATION, SHAFT IS TO BE FOUNDED ON PUKETOKA FORMATION, THE EXCAVATED GROUND IS TO BE INSPECTED BY WATERCARE'S ENGINEER TO CONTRACT PRIOR TO CONSTRUCTION.
- 2. GEOLOGICAL CONDITIONS BASED ON GEOLOGICAL PROFILE. REFER TO GBR FOR DETAILS. GROUNDWATER TABLE ASSUMED AT SURFACE.
- 3. REFER TO PARTICULAR SPECIFICATION GEOTECHNICAL FOR BACKFILL REQUIREMENTS

SAFETY IN DESIGN NOTES:

1. PRESSURE RELIEF MUST REMAIN IN PLACE UNTIL BACKFILL REACHES REQUIRED HEIGHT. SEE 2013661.790 INDICATIVE CONSTRUCTION SEQUENCE.







FOR TENDER
NOT FOR CONSTRUCTION

BUN60422958

					DESIGNED	C. UNDERDOWN		*
					DES. APPROVED	T. HAARHOFF		
					DRAWN	F. MISPLON		
1	04-23	ISSUED FOR TENDER	FM	TH	DWG. APPROVED	P. CORRIS		Watercare
2	11-22	DETAIL DESIGN — FOR REVIEW	FM	TH	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design
1	06-22	PRELIMINARY DESIGN — FOR REVIEW	FM	TH	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be
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MOTT MACDONALD

NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

SHAFT 17 LAYOUT PLAN

CAD FILE 2013661.701	DATE ()4-	04-23
ORIGINAL SCALE A1	CONTRACT	No.
AS SHOWN	_	
REF. No.		
417039-MMD-06-XX	-DR-C-0	001
DWG. No.		ISSUE
2013661.7	01	_

- 1. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
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- 8. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS 9. REFER TO DRAWING 2013661.763 FOR DETAILS OF CHAMBER LID, LEVEL

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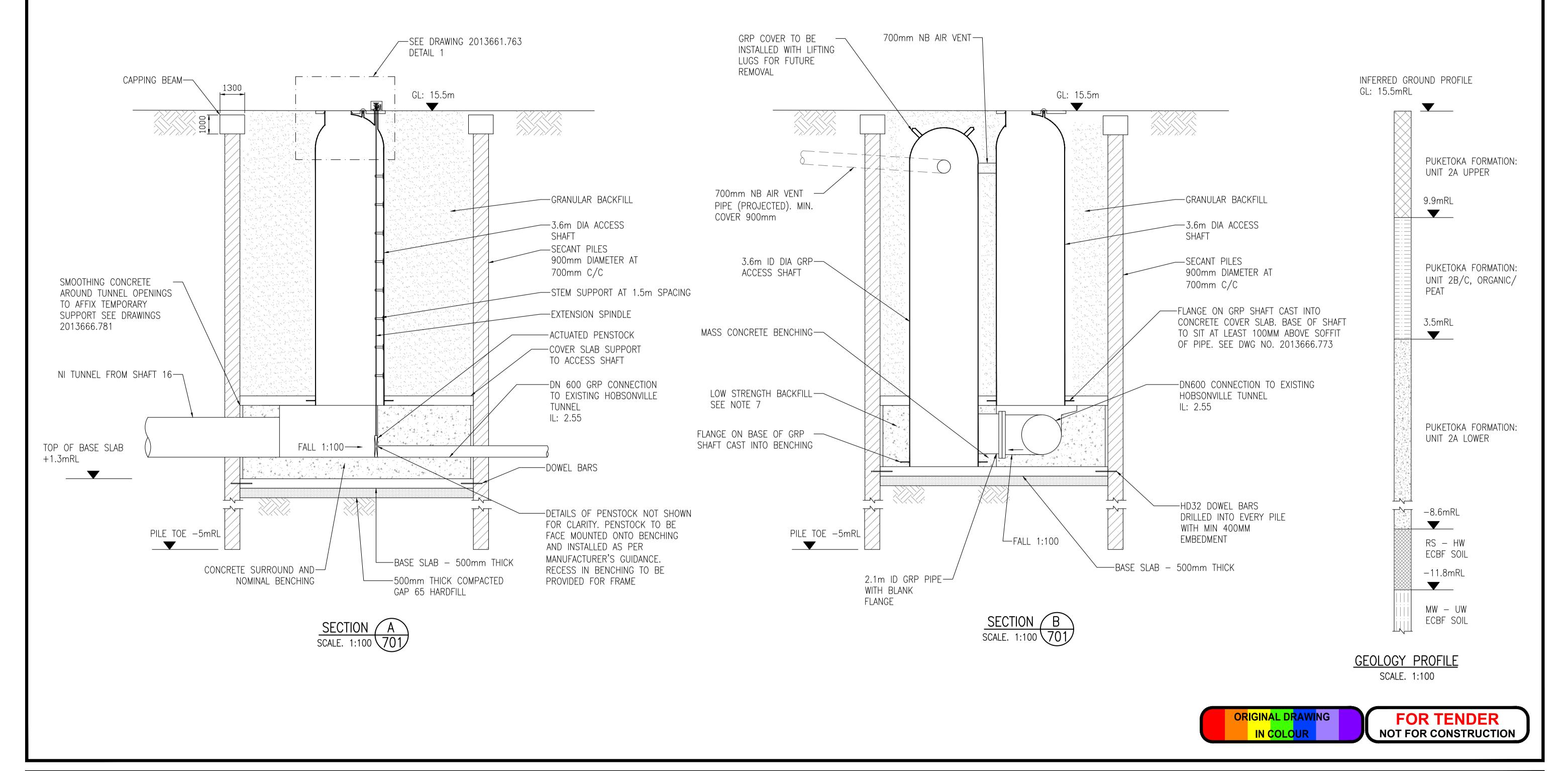
9. REFER TO DRAWING 2013661.763 FOR DETAILS OF CHAMBER LID, LEY TRANSMITTER AND PENSTOCK ACTUATOR INSTALLATION.

GEOTECHNICAL NOTES:

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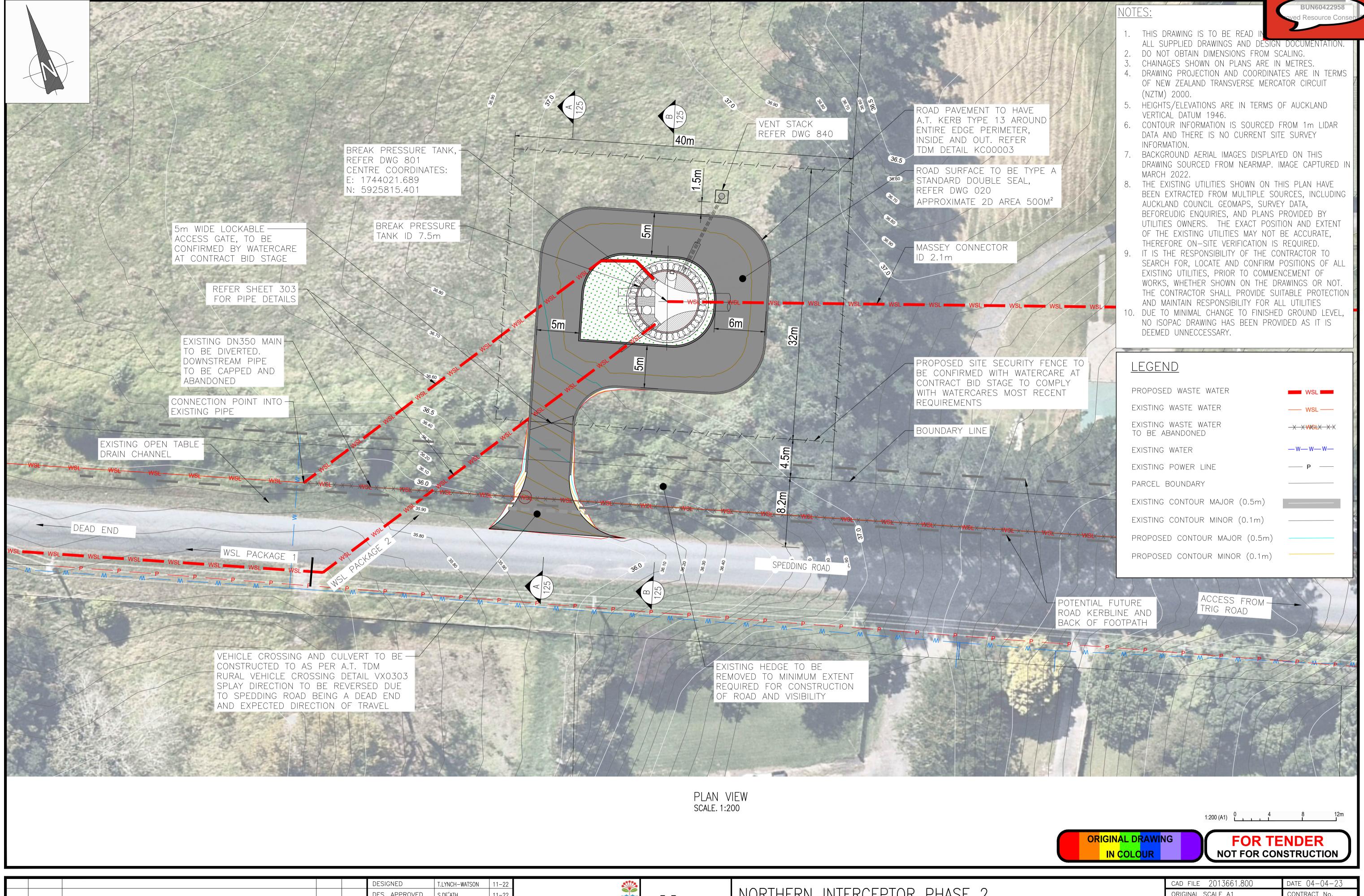
SAFETY IN DESIGN NOTES:

1. PRESSURE RELIEF MUST REMAIN IN PLACE UNTIL BACKFILL REACHES REQUIRED HEIGHT. SEE 2013661.790 INDICATIVE CONSTRUCTION SEQUENCE.



BUN60422958

			DESIGNED	C. UNDERDOWN		*		NASTUESNI MITES AESTAS. SUMAE. A	CAD FILE 2013661.701	DATE 04-04-23
			DES. APPROVED	T. HAARHOFF			N.A	NORTHERN INTERCEPTOR PHASE 2	ORIGINAL SCALE A1	CONTRACT No.
			DRAWN	F. MISPLON		Motorooro	IYI		AS SHOWN	
- 04-23 ISSUED FOR TENDER	FM	TH	DWG. APPROVED	P. CORRIS		Watercare	матт М	WESTGATE TO HOBSONVILLE	REF. No.	VV DD 0 0000
2 11-22 DETAIL DESIGN - FOR REVIEW	FM	TH	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design	MOTI		417039-MMD-06-	XX-DR-C-0002
1 06-22 PRELIMINARY DESIGN - FOR REVIEW	FM	TH	WSL PROJ. LEAD			concept, remain the exclusive property of	MACDONALD	SHAFT 17 SECTIONS	DWG. No.	7CO I ISSUE
ISSUE DATE AMENDMENT	BY	APPD.		BY	DATE	used without approval. Copyright reserved.			2013661.	/62 -



					DESIGNED	T.LYNCH-WATSON	11-22	
					DES. APPROVED	S.DE'ATH	11-22	
					DRAWN	T.LYNCH-WATSON	11-22	M
_	04-23	ISSUED FOR TENDER	FM	TH	DWG. APPROVED	T.HARHOFF	11-22	V
2	11-22	ISSUED FOR DETAIL DESIGN	FM	TH	WSL DESIGN MGMT.	•		COF
1	05-22	PRELIMINARY DESIGN - FOR REVIEW	FM	PC	WSL PROJ. LEAD			conc Wate
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE	used



M MOTT MACDONALD NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

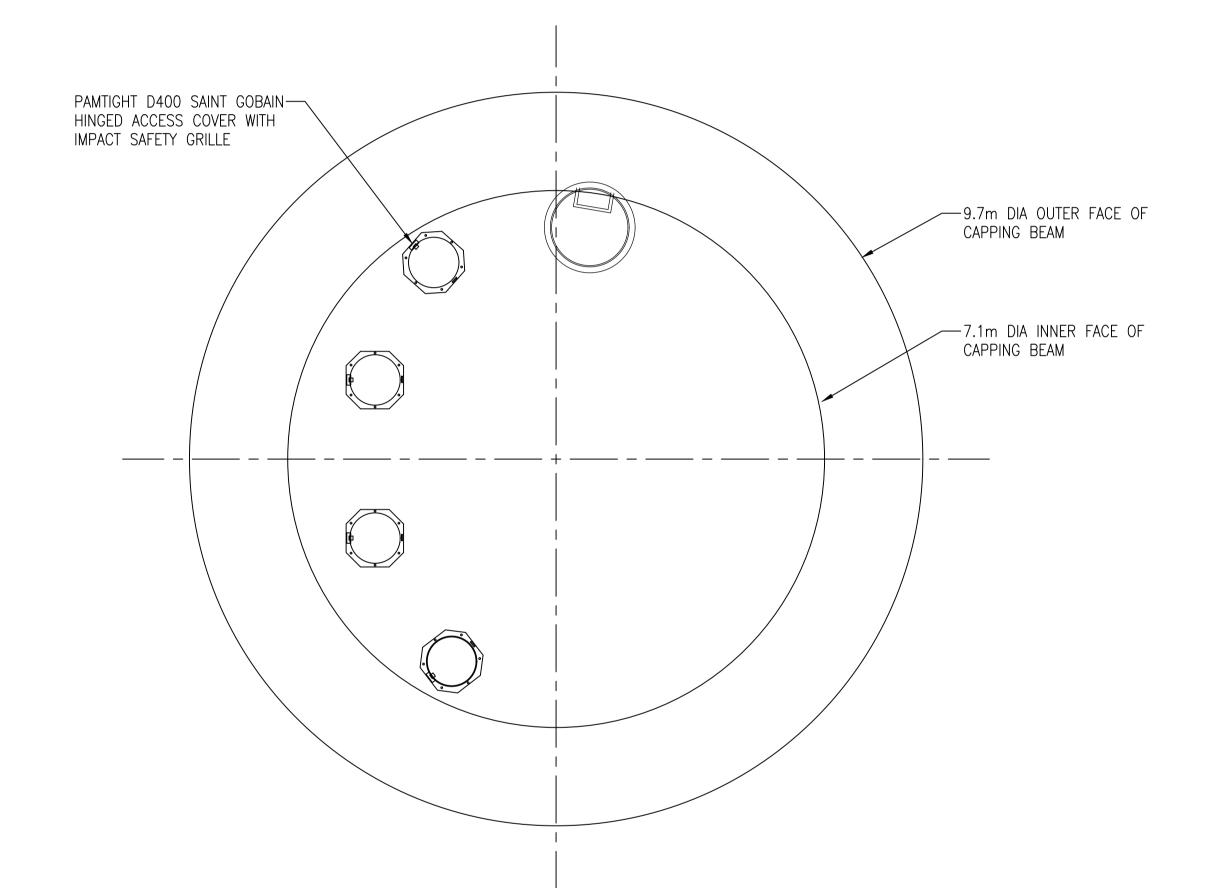
BREAK PRESSURE TANK SITE LAYOUT

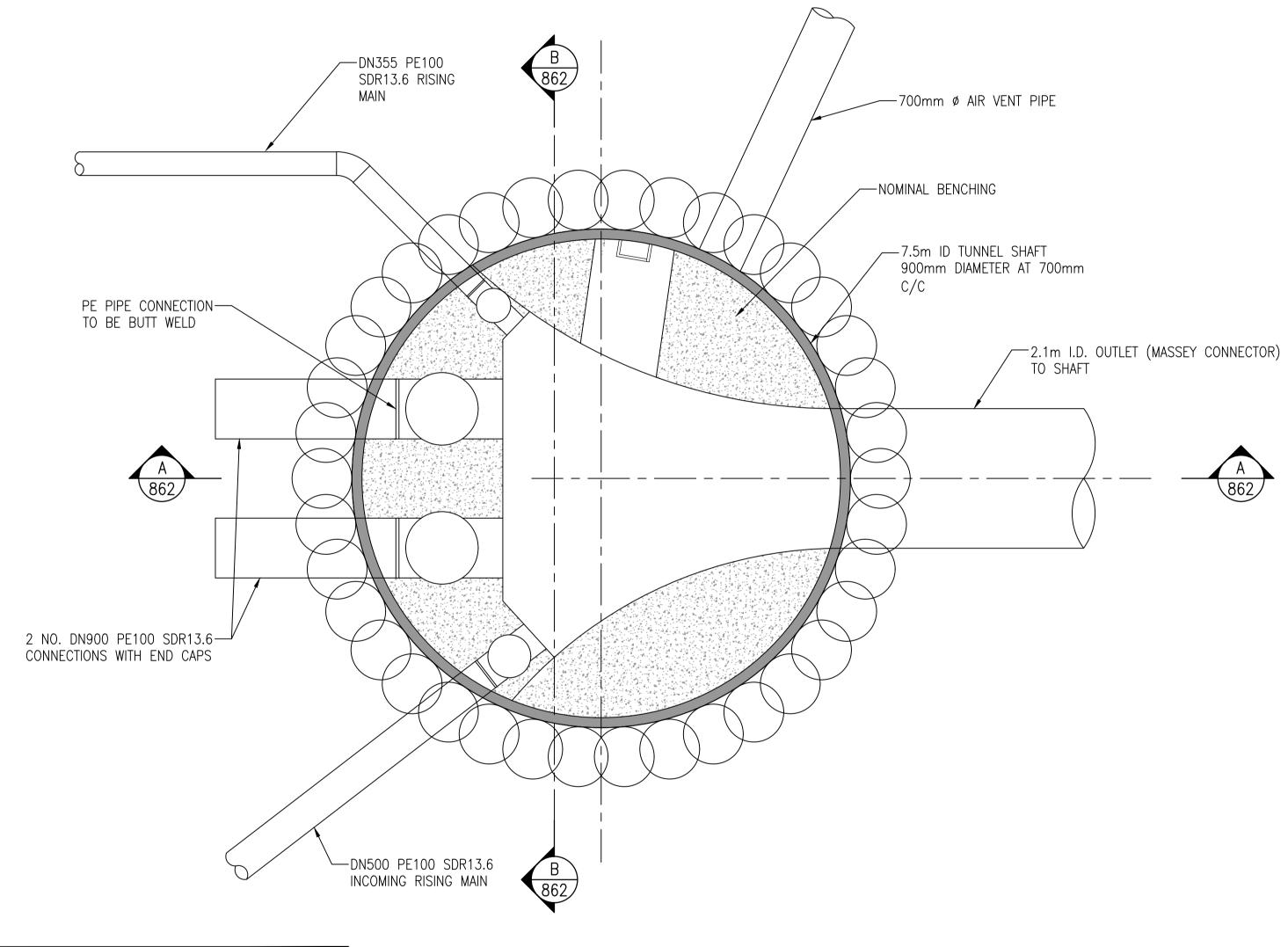
CAD FILE 2013661.800	DATE 04-04-23
original scale a1 1:200	CONTRACT No.
REF. No. 417039-MMD-02-	-XX-DR-C-0100
DWG. No.	ISSUE
2013661.8	00 -

- 1. DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- 2. DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
- 3. LEVELS ARE IN TERMS OF DATUM AUCKLAND 1946
- 4. SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE DWG. NO. 2013666.873 FOR DETAILS
- 5. TBM CUTTER DIAMETER=2325mm TO 2575
- 6. MINIMUM 600mm MANHOLE COVER, REFER TO WSL DRAWINGS WW35, 37 AND 40 FOR MANHOLE THROAT. COVER DETAILS AND SAFETY GRILL.
- 7. BENCHING SURFACE TO BE FINISHED SMOOTH TROWEL WITH A GRADIENT OF 1 IN
- 8. CONCRETE COVER SLAB ON SHAFT SHALL BE HN-H0-72 RATED.
- 9. ALL ACCESS COVERS SHALL BE TRAFFICABLE AND HAVE IMPACT SAFETY GRILLES UNLESS OTHERWISE NOTED.
- 10. ALL ACCESS COVERS TO BE FITTED WITH CONCRETE SURROUNDING IN ACCORDANCE WITH WATERCARE STANDARDS.
- 11. SAFETY GRILLE SHALL COMPLY WITH AS3996 CLASS A.
- 12. GRILLE SHALL BE CONSTRUCTED FROM STAINLESS STEEL 316L GRADE OR AN APPROVED EQUIVALENT MATERIAL WITH ADEQUATE STRENGTH AND CORROSION
- 13. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE PENETRATIONS

GEOTECHNICAL NOTES:

- 1. FROM GEOTECHNICAL INVESTIGATION, SHAFT IS TO BE FOUNDED ON ECBF, THE EXCAVATED GROUND IS TO BE INSPECTED BY WATERCARE'S ENGINEER TO CONTRACT PRIOR TO CONSTRUCTION.
- 2. GEOLOGICAL CONDITIONS BASED ON GEOLOGICAL PROFILE. REFER TO GBR FOR
- DETAILS. GROUNDWATER TABLE ASSUMED AT SURFACE.
- 3. REFER TO PARTICULAR SPECIFICATION GEOTECHNICAL FOR BACKFILL REQUIREMENTS





PLAN ABOVE GROUND SCALE: 1:50

			PIPE DETAILS				
SIZE	MATERIAL	STATUS	DESCRIPTION	PIPE PENETRATI	ON CENTER POINT	INVERT LEV	EL (mRL)
SIZE	WATERIAL	STATUS	DESCRIPTION	EASTING (m)	NORTHING (m)	TOP	воттом
DN355	PE100 PN12.5	NEW	INCOMING (WITH DROP PIPE)	1744020.798	5925818.869	34.7	29.34
DN900	PE100 PN12.5	NEW	INCOMING (WITH DROP PIPE)	1744018.651	5925817.598	34.5	29.34
DN900	PE100 PN12.5	NEW	INCOMING (WITH DROP PIPE)	1744017.946	5925815.629	34.5	29.34
DN500	PE100 PN12.5	NEW	INCOMING (WITH DROP PIPE)	1744018.871	5925813.15	34.5	29.34
DN700	GRP PN16	NEW	OUTGOING AIR VENT PIPE	1744024.419	5925817.759	35	.09

PLAN BELOW GROUND SCALE: 1:50

ORIGINAL DRAWING

FOR TENDER NOT FOR CONSTRUCTION

BUN60422958

					DESIGNED	C. UNDERDOWN	11-22	*
					DES. APPROVED	T. HAARHOFF	11-22	
					DRAWN	F. MISPLON	11-22	
_	04-23	ISSUED FOR TENDER	FM	Ξ	DWG. APPROVED	T. HAARHOFF	11-22	Watercare
2	11-22	DETAILED DESIGN — FOR REVIEW	SP	H	WSL DESIGN MGMT.			COPYRIGHT — This drawing, the design
1	05-22	PRELIMINARY DESIGN — FOR REVIEW	FM	PC	WSL PROJ. LEAD			concept, remain the exclusive property of Watercare Services Limited and may not be
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M MOTT MACDONALD

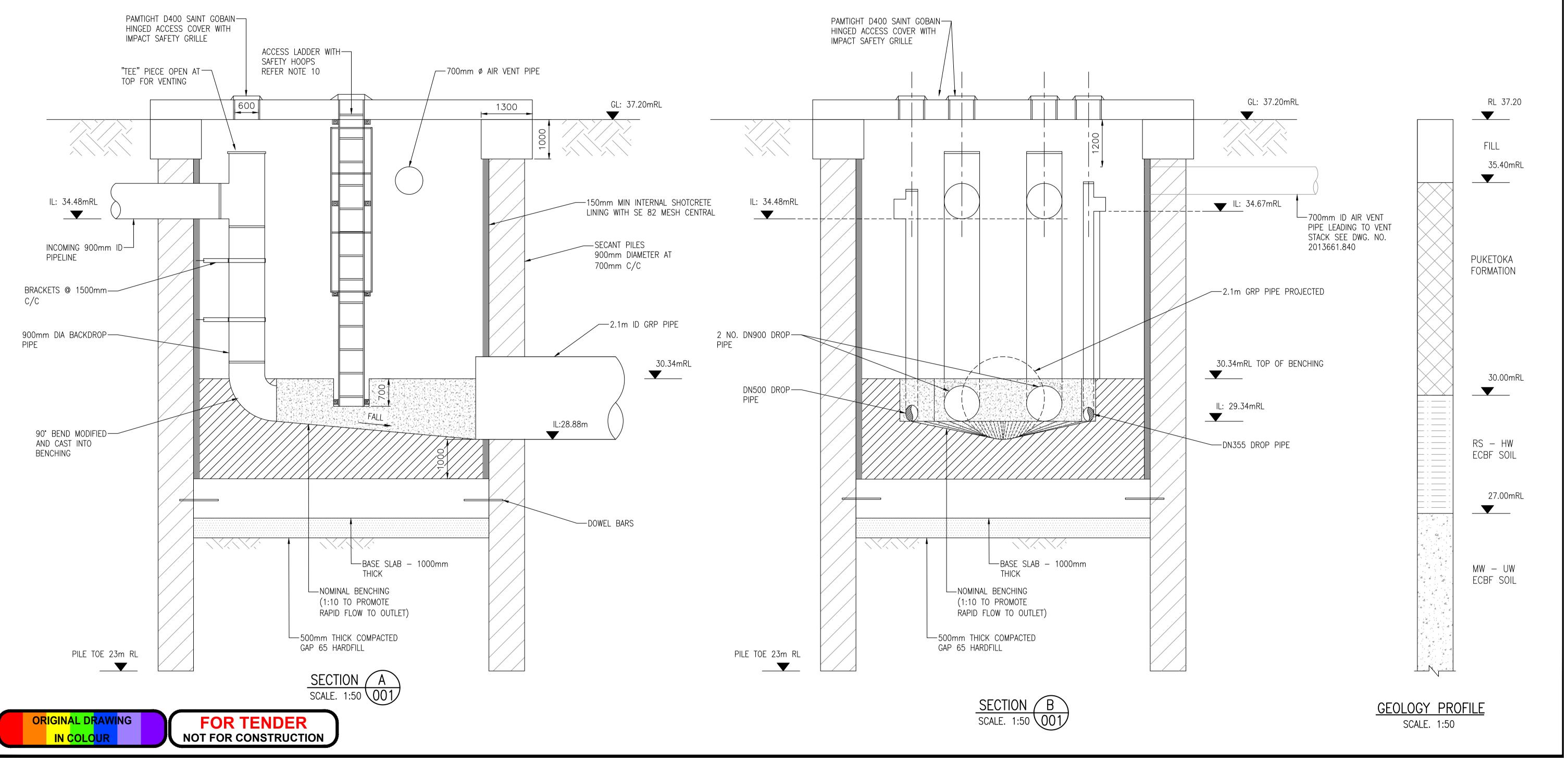
NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

BREAK PRESSURE TANK LAYOUT

DWG. No. 2013661 .	801	ISSUE			
REF. No. 417039-MMD-02-	-XX-DR-	-C-0001			
ORIGINAL SCALE A1 1:50	CONTRACT No. —				
CAD FILE 2013661.801	DATE 04-	-04-23			

- DESIGN PHASE IS DETAILED DESIGN. DRAWING NOT FOR CONSTRUCTION
- DO NOT OBTAIN DIMENSIONS BY SCALING FROM THE DRAWING
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- 4. SECANT PILES 900MM DIAMETER WITH MINIMUM 200MM OVERLAP. SEE
- DWG. NO. 2013666.873 FOR DETAILS 5. TBM CUTTER DIAMETER = 2325 TO 2575MM
- 6. MINIMUM 700MM AIR SEALED ACCESS COVER IN ACCORDANCE WITH WATERCARE MATERIAL SUPPLY STANDARD AND STANDARD DRAWINGS.
- 7. ACCESS COVERS FOR DROP PIPE INSPECTION POINTS TO BE PAMTIGHT D400 HINGED ACCESS COVERS.
- 8. ALL ACCESS COVERS TO BE TRAFFIC RATED AND HAVE IMPACT SAFETY GRILLES INSTALLED.
- 9. ALL ACCESS COVERS TO BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATION
- 10. REFER TO WATERCARE STANDARD DRAWING 20000244.003 FOR DETAILS OF GALVANISED STEEL ACCESS LADDER. LADDER TO BE PROVIDED WITH EXTENSION IN ACCORDANCE WITH WATERCARE STANDARD DRAWING 2000244.046.
- 11. HYDROPHILIC SEALS TO BE PROVIDED AROUND ALL PIPE





								_
					DESIGNED	C. UNDERDOWN	11-22	
					DES. APPROVED	T. HAARHOFF	11-22	
					DRAWN	F. MISPLON	11-22	
_	04-23	ISSUED FOR TENDER	FM	TH	DWG. APPROVED	T. HAARHOFF	11-22	
1	11-22	DETAILED DESIGN — FOR REVIEW	SP	TH	WSL DESIGN MGMT.			
1	05-22	PRELIMINARY DESIGN — FOR REVIEW	FM	PC	WSL PROJ. LEAD			(
ISSUE	DATE	AMENDMENT	BY	APPD.		BY	DATE	



M MOTT MACDONALD NORTHERN INTERCEPTOR PHASE 2 WESTGATE TO HOBSONVILLE

BREAK PRESSURE TANK SECTIONS

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1:50 —	JZ
ORIGINAL SCALE A1 CONTRACT No.	
CAD FILE 2013661.801 DATE 04-04-23	

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