

- NOTES**
- SITE LAYOUT AND DESIGNS INDICATIVE ONLY AND SUBJECT TO CHANGE DURING DETAILED DESIGN DEVELOPMENT.
 - ALL SERVICES LOCATIONS SHOWN ARE INDICATIVE ONLY AND BASED ON ELECTRONIC INFORMATION SUPPLIED BY SERVICE PROVIDERS. FURTHER INVESTIGATION TO BE UNDERTAKEN IN DETAILED DESIGN AS REQUIRED.

- LEGEND**
- NH2 WATERMAIN AND CHAINAGE
 - PROPOSED DESIGNATION BOUNDARY
 - PERMANENT ACCESSWAY
 - LV LINE VALVE
 - AV AIR VALVE
 - SV SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415

A LONG SECTION
SCALES: HORIZ 1:2000
VERT 1:2000

FOR CONSENT

Plot Date: Mar 04, 2016 - 10:48am U:\Jobs\22073300\01_DWG_Current\08_AEE\Main Route AEE Drawing Set\ 2010674.301-302.dwg

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

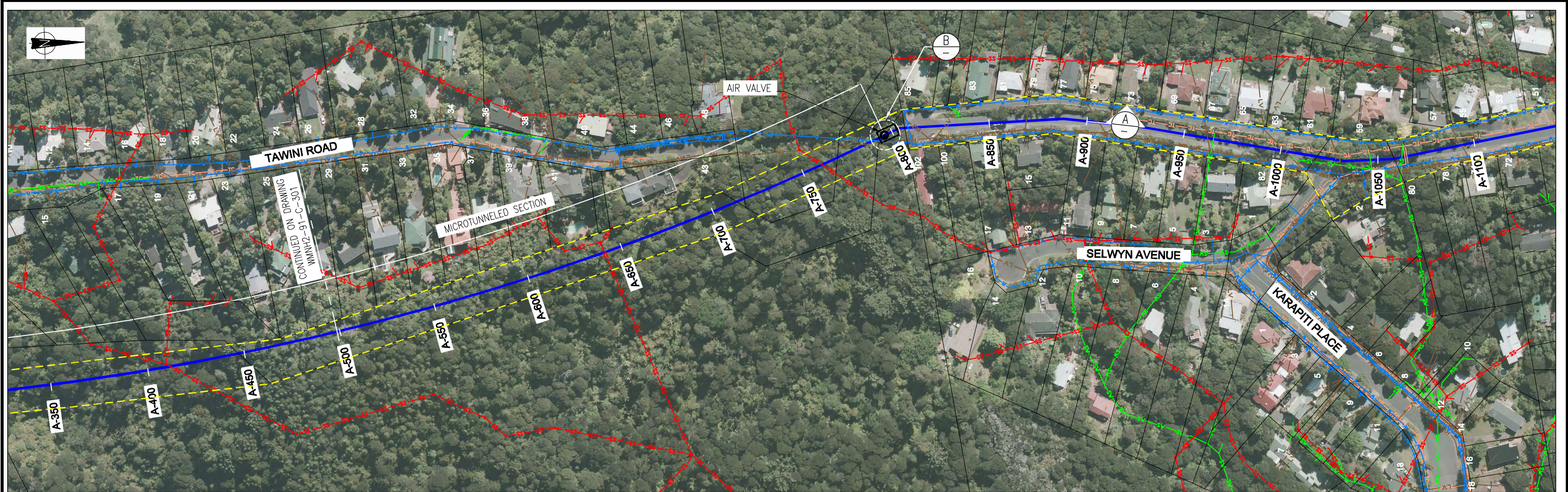
DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
INFRASTR APP'D		

OPERATIONS
INFRASTRUCTURE

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**NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN**
WOODLANDS PARK TUNNEL - SHEET 1 OF 2

CAD FILE	2010674.301-302	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-301	ISSUE	-
DWG No.	2010674.301		2



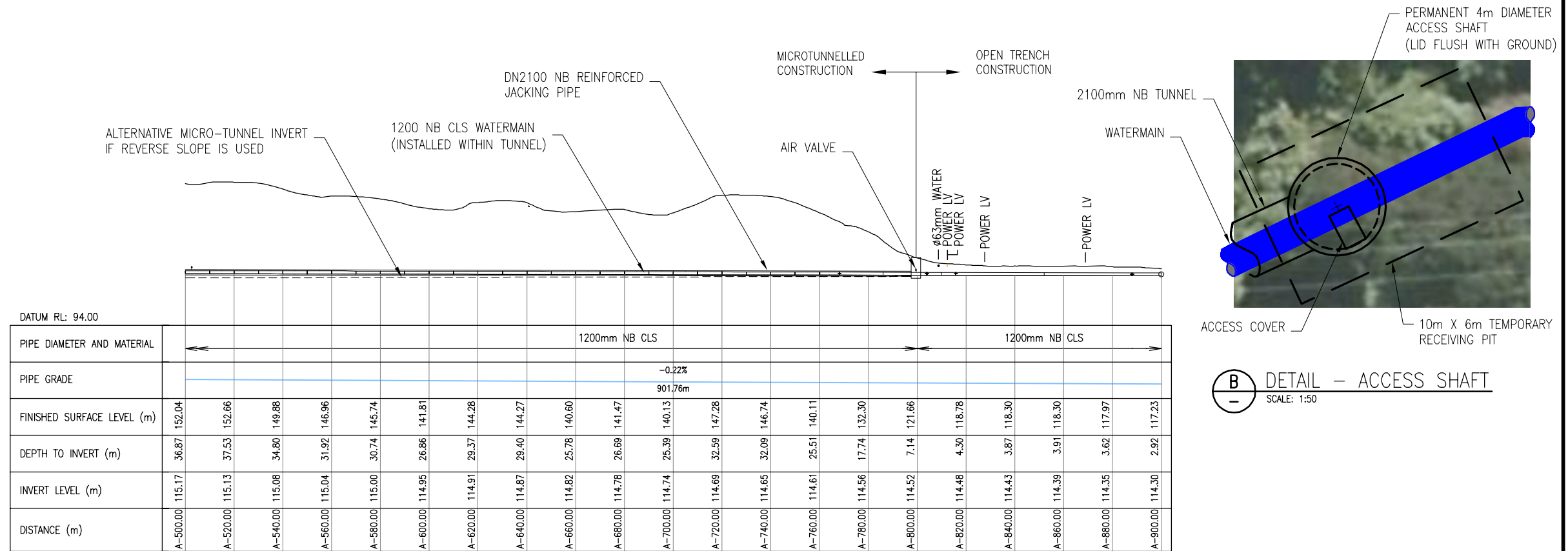
NOTES

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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- PROPOSED DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LINE VALVE
- AIR VALVE
- SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415



DATUM RL: 94.00

PIPE DIAMETER AND MATERIAL	1200mm NB CLS																				
PIPE GRADE	-0.22%																				
FINISHED SURFACE LEVEL (m)	152.04	152.66	149.88	146.96	145.74	141.81	144.28	144.27	140.60	141.47	140.13	147.28	146.74	140.11	132.30	121.66	118.78	118.30	117.25		
DEPTH TO INVERT (m)	36.87	37.53	34.80	31.92	30.74	26.86	29.40	29.40	25.78	26.69	25.39	32.59	32.09	25.51	17.74	7.14	4.30	3.67	2.92		
INVERT LEVEL (m)	115.17	115.13	115.08	115.04	115.00	114.95	114.91	114.87	114.82	114.78	114.74	114.69	114.65	114.61	114.56	114.52	114.48	114.43	114.30		
DISTANCE (m)	A-500.00	A-520.00	A-540.00	A-560.00	A-580.00	A-600.00	A-620.00	A-640.00	A-660.00	A-680.00	A-700.00	A-720.00	A-740.00	A-760.00	A-780.00	A-800.00	A-820.00	A-840.00	A-860.00	A-880.00	A-900.00

A LONG SECTION
SCALES: HORIZ 1:2000
VERT 1:2000

B DETAIL - ACCESS SHAFT
SCALE: 1:50

FOR CONSENT

Plot Date: Mar 04, 2016 - 10:48am U:\Jobs\2016\201603\20160300\01_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674_301-302.dwg

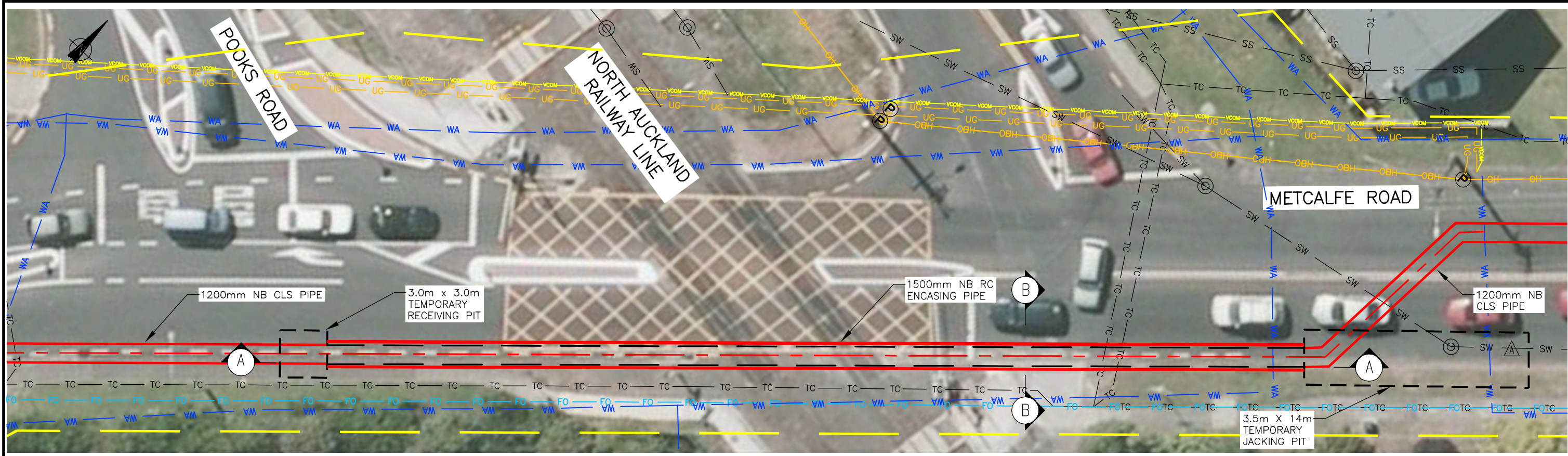
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
WOODLANDS PARK TUNNEL - SHEET 2 OF 2

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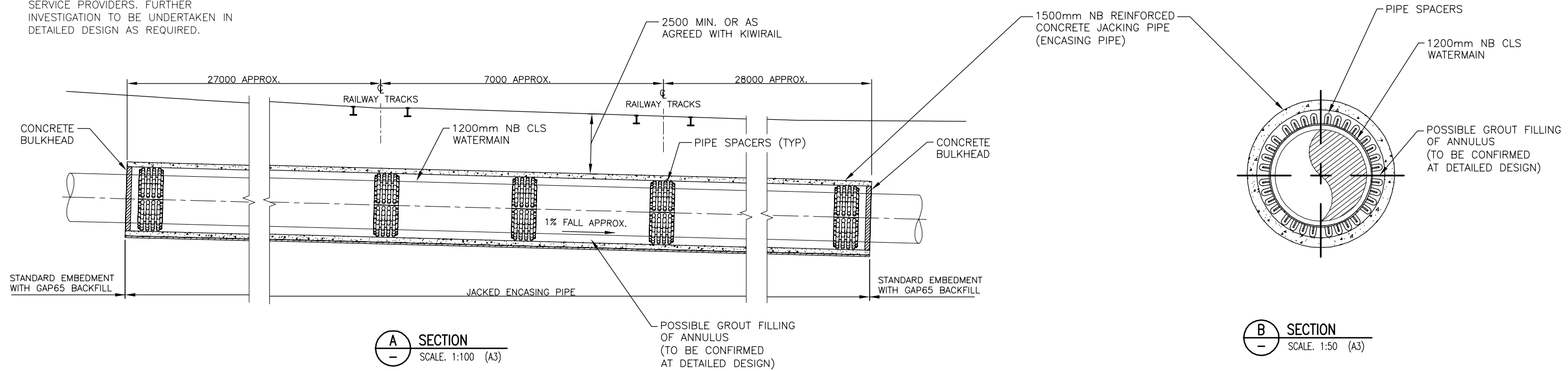
CAD FILE	2010674.301-302	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-302	ISSUE	-
DWG No.	2010674.302		2



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1 PLAN
SCALE: 1:250



A SECTION
SCALE: 1:100 (A3)

B SECTION
SCALE: 1:50 (A3)

FOR CONSENT

Plot Date: Mar 04, 2016 - @03:58pm 42073300\01_DWG_Current\08_AEE\Main_Route_AEE_Drawing_Sht_2010674.311-312.dwg

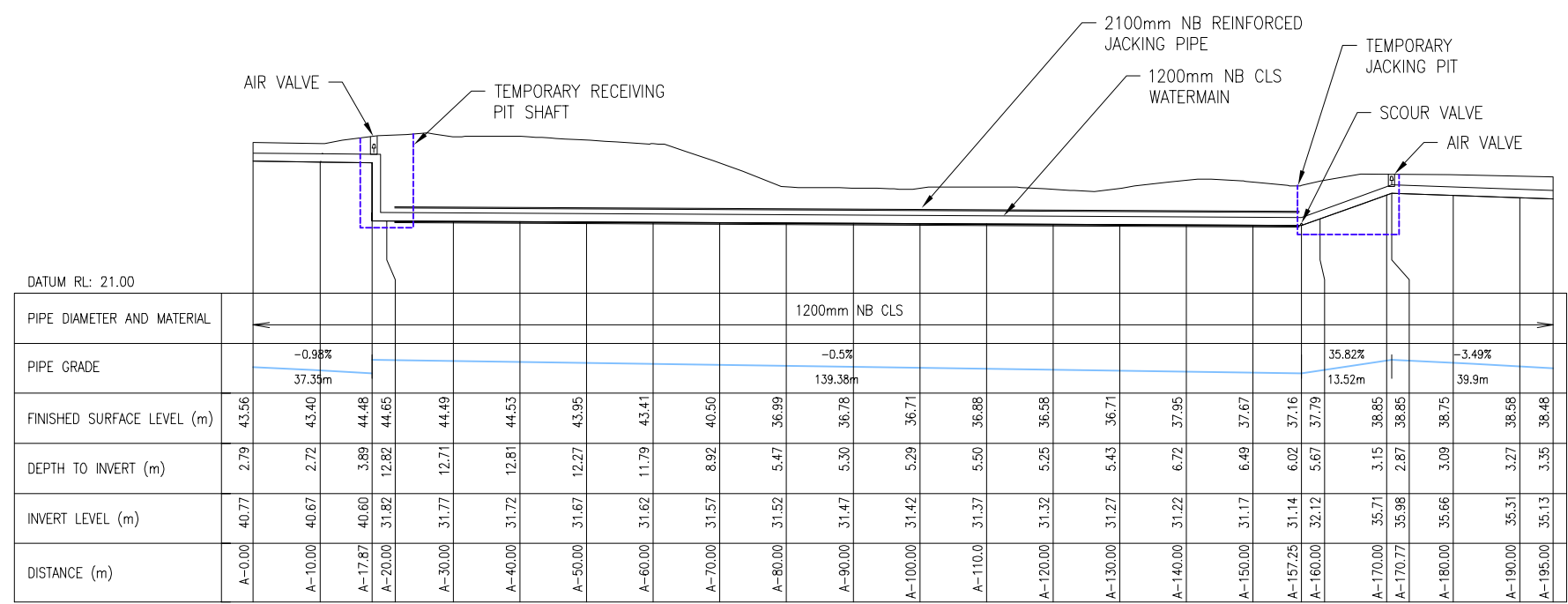
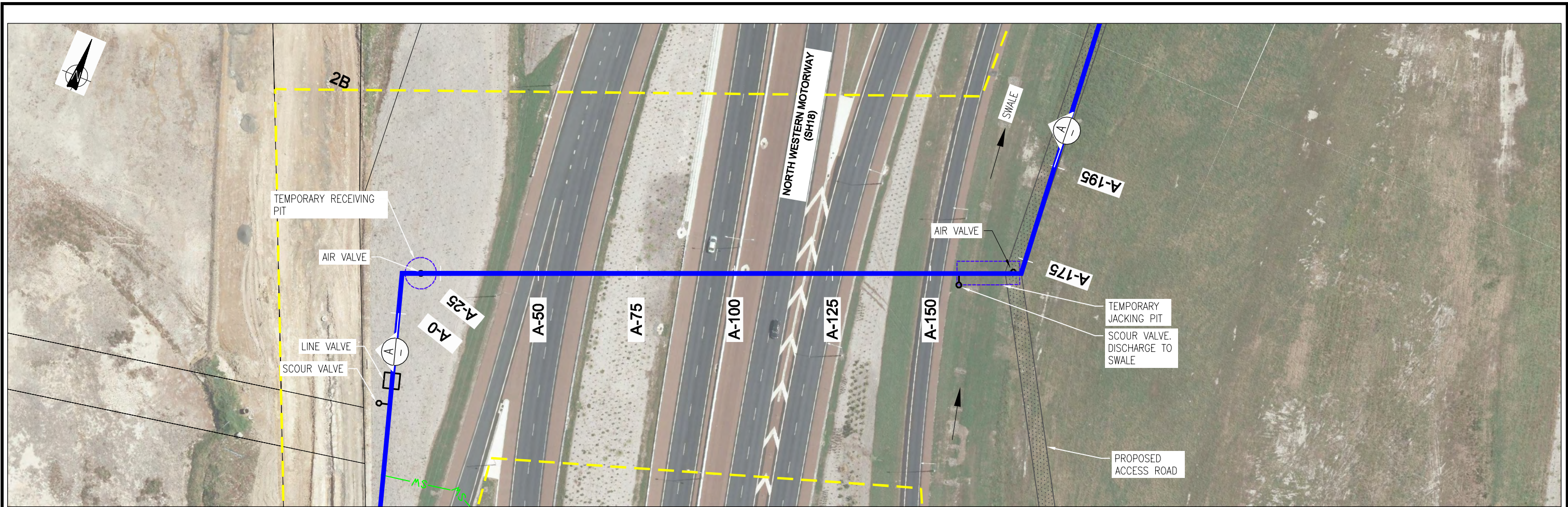
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	M.R.	08-14
DES. CHECKED	M.E.	08-14
DRAWN	M.N.V.	08-14
DWG. CHECKED	M.R.	08-14
PROJECT LEADER	M.A.E.	08-14
INFRASTR APP'D		

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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
METCALFE ROAD RAIL CROSSING OPTION 2 - PIPE JACKING

CAD FILE	2010674.311-312	DATE	22.02.16
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	5663
REF No.	WMNH2-91-C-312	ISSUE	-
DWG No.	2010674.312		2



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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- PROPOSED DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LINE VALVE
- AIR VALVE
- SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415

A LONG SECTION
 SCALES: HORIZ 1:1000
 VERT 1:1000

FOR CONSENT

Plot Date: Mar 04, 2016 - 10:52am U:\Jobs\2016\201603\DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674.316.dwg

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

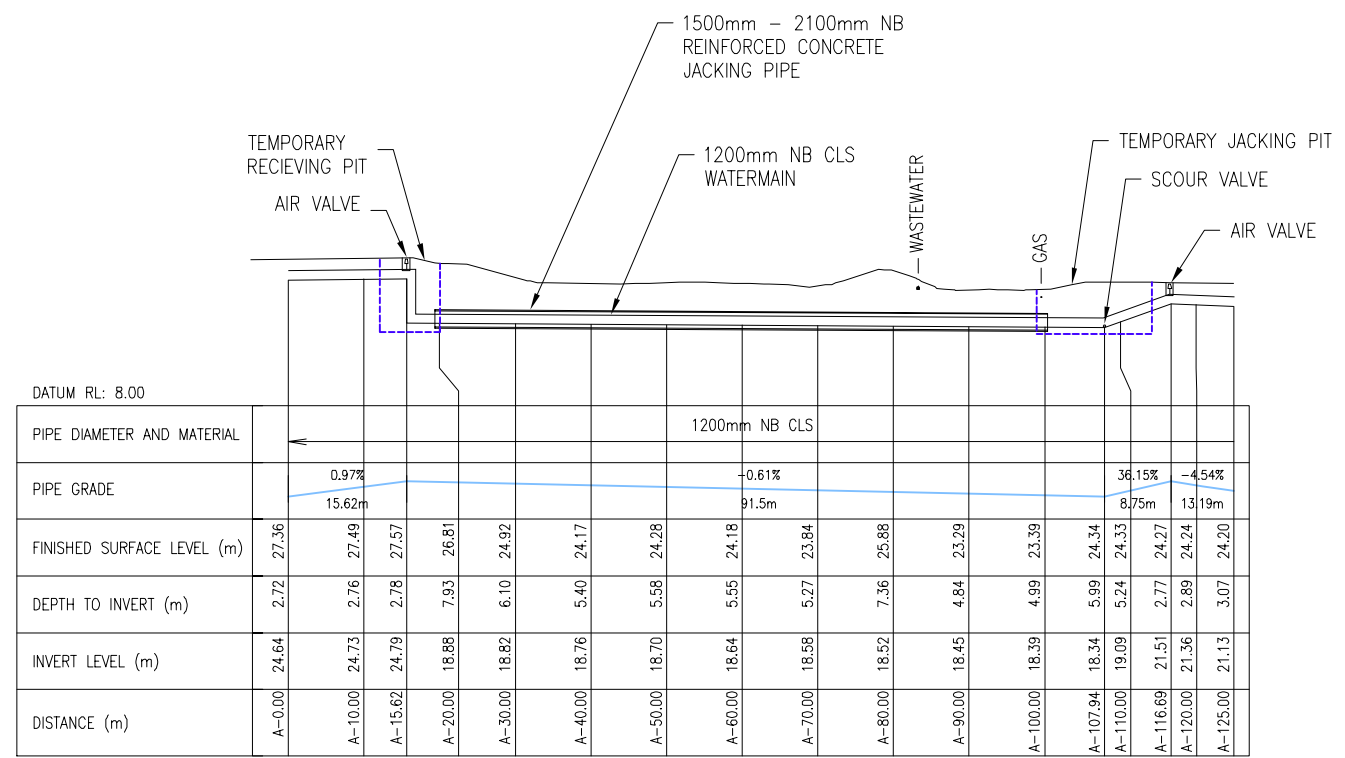
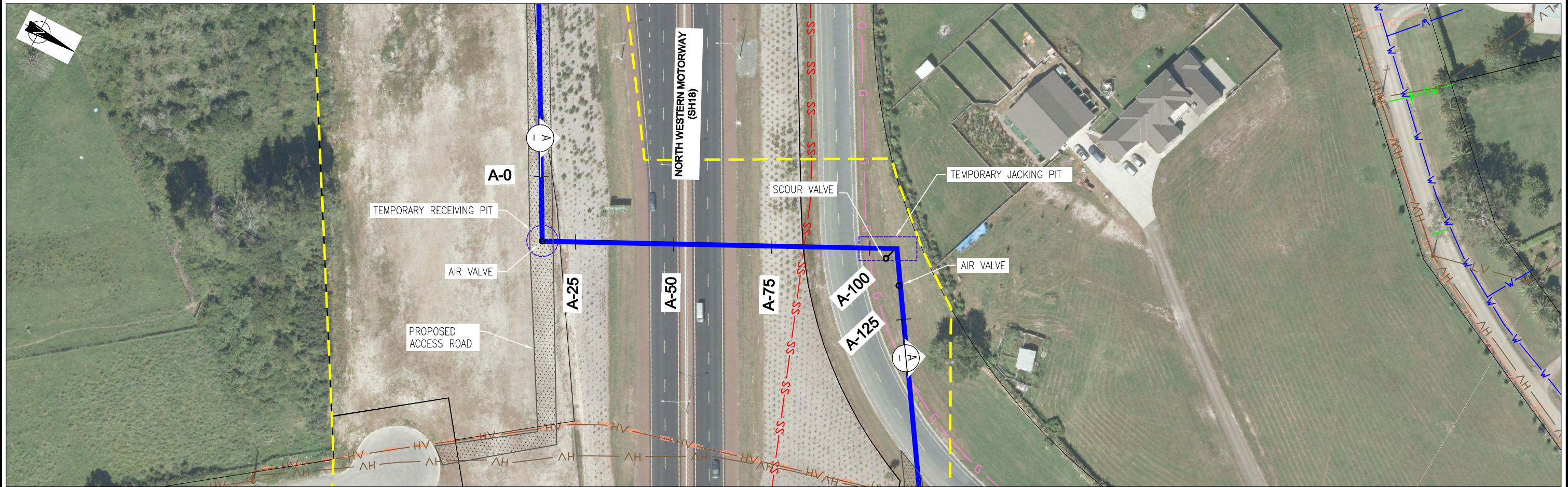
DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
INFRASTR APP'D		

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NORTH HARBOUR No.2 WATER MAIN
CIVIL DESIGN
 SH18 CROSSING - CHAINAGE 16.950

CAD FILE	2010674.316	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-316	ISSUE	-
DWG No.	2010674.316		2



A LONG SECTION
 SCALES: HORIZ 1:1000
 VERT 1:1000

NOTES

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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- PROPOSED DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LV LINE VALVE
- AV AIR VALVE
- SV SCOUR VALVE

EXISTING FEATURES:
 REFER DWG 2010673.415

FOR CONSENT

Plot Date: Mar 04, 2016 - 11:02am U:\Jobs\2016\201603\20160300\01_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\ 2010674_321.dwg

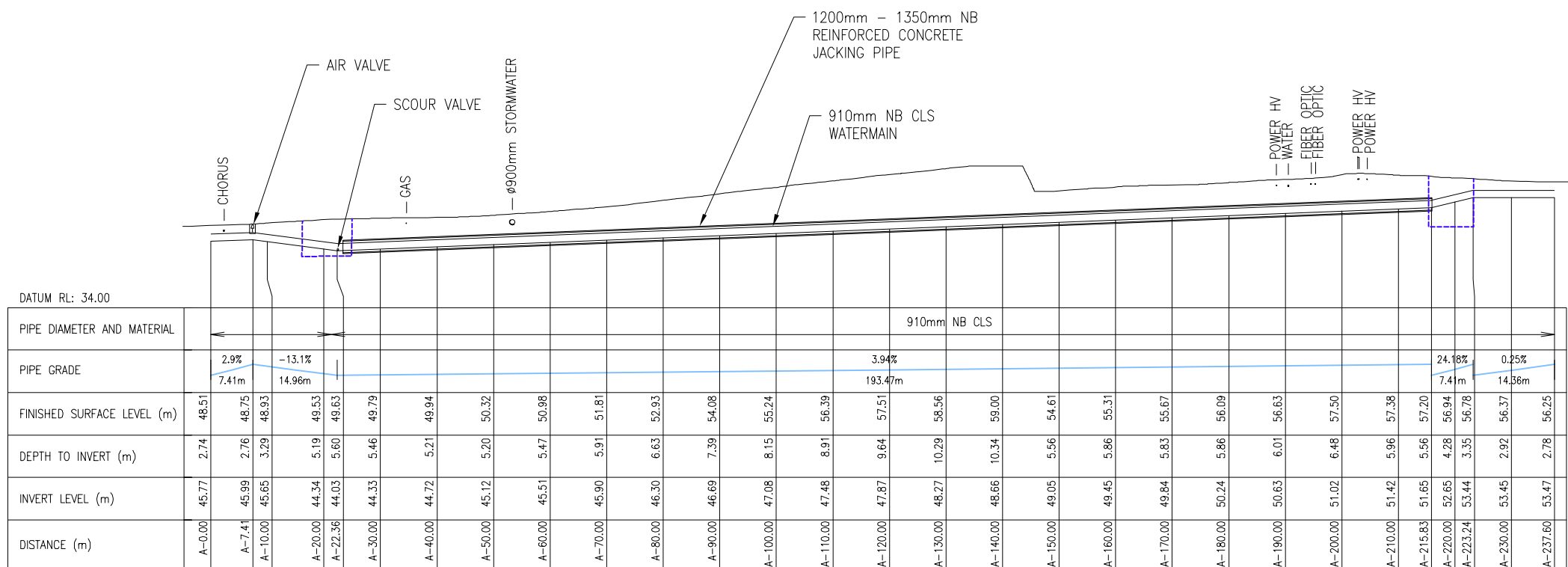
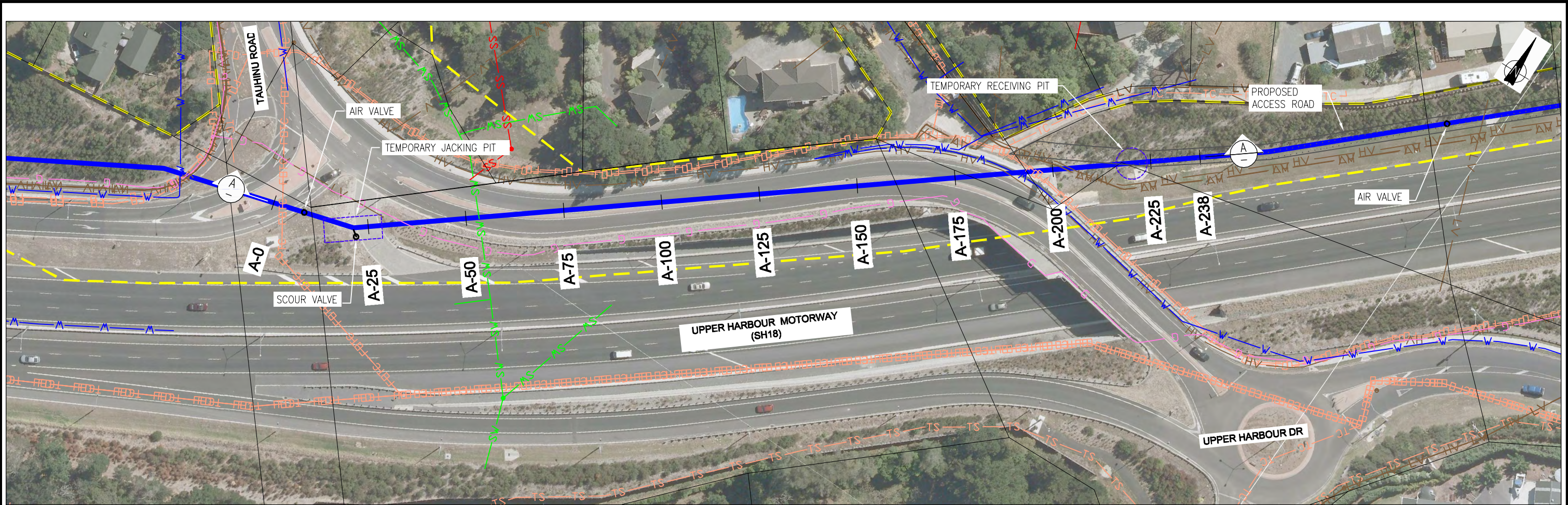
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
INFRASTR APP'D		

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**NORTH HARBOUR No.2 WATERMAIN
 CIVIL DESIGN
 SH18 CROSSING - CHAINAGE 20.700m**

CAD FILE	2010674.321	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
1:1,000			
REF No.	WMNH2-91-C-321		ISSUE
			-
DWG No.	2010674.321		2



NOTES

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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- PROPOSED DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LINE VALVE
- AIR VALVE
- SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415

A LONG SECTION
SCALES: HORIZ 1:1000
VERT 1:1000

FOR CONSENT

Plot Date: Mar 04, 2016 - 11:05am U:\Jobs\2016\201603\20160300\01_DWG_Current\01_AE\Main_Route_AE\Drawing Set\ 2010674_322.dwg

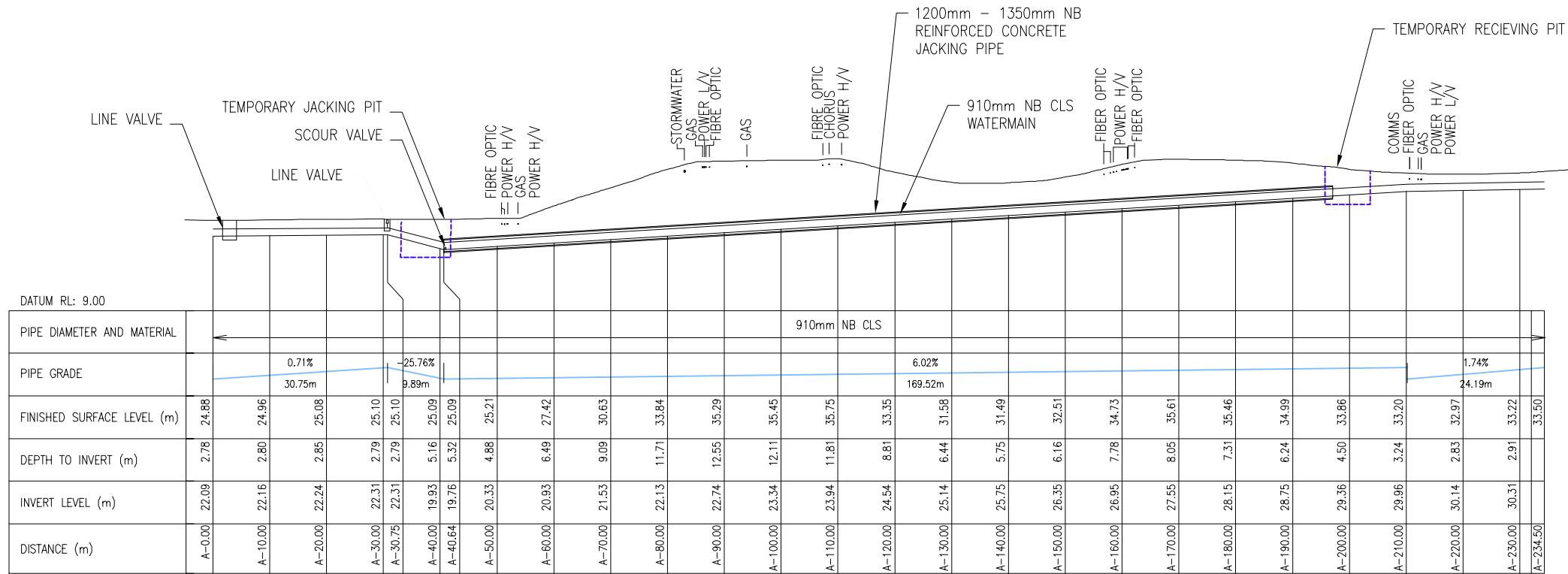
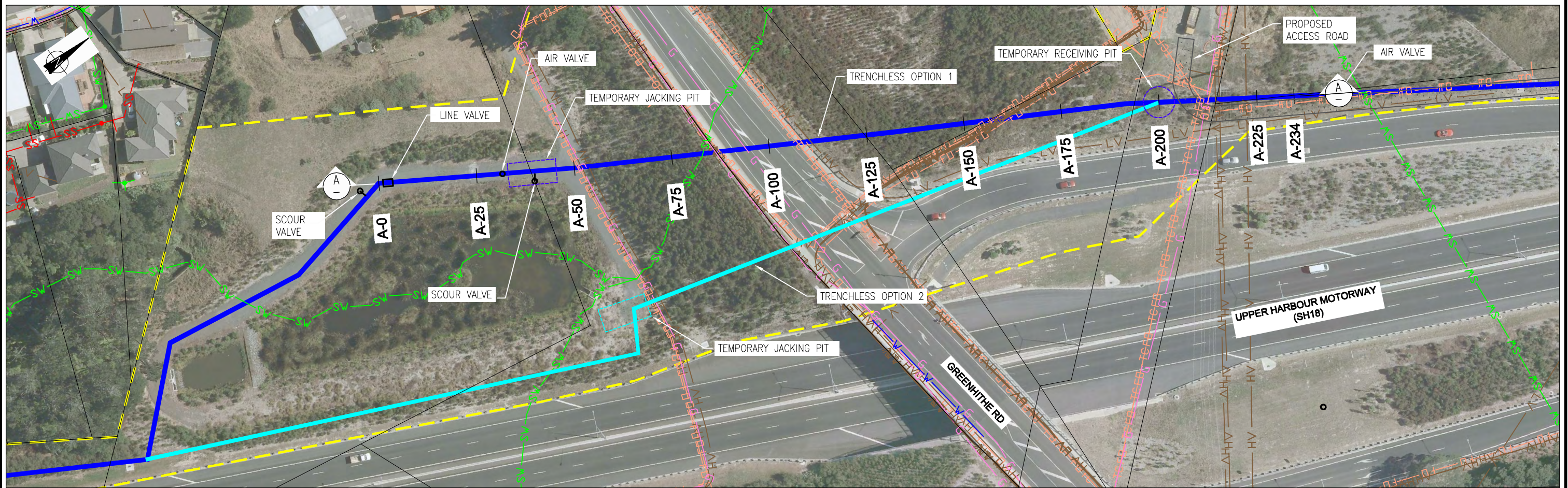
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
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**NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
TAUHINU ROAD TRENCHLESS OPTION**

CAD FILE	2010674.322	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-322	ISSUE	-
DWG No.	2010674.322		2



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- LEGEND**
- NH2 WATERMAIN AND CHAINAGE
 - PROPOSED DESIGNATION BOUNDARY
 - PERMANENT ACCESSWAY
 - LV LINE VALVE
 - AV AIR VALVE
 - SV SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415

A LONG SECTION
SCALES: HORIZ 1:1000
VERT 1:1000

FOR CONSENT

Plot Date: Mar 04, 2016 - 11:05am U:\Jobs\2016\201603\20160300\01_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674_323.dwg

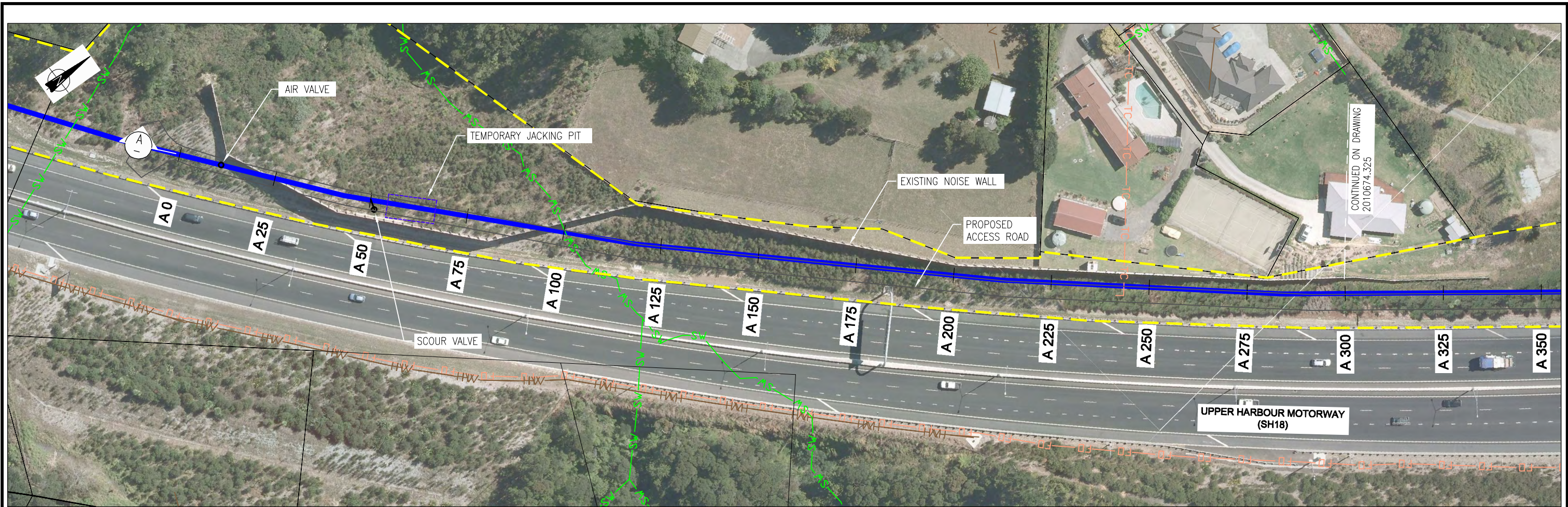
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
INFRASTR APP'D		

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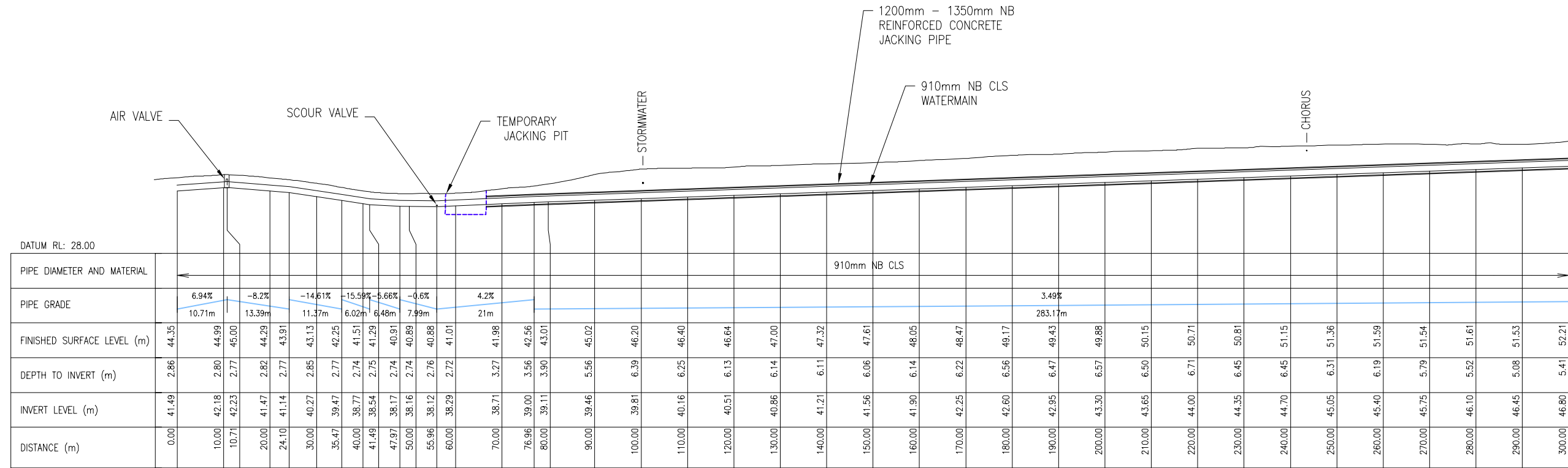
NORTH HARBOUR No.2 WATERMAIN CIVIL DESIGN
GREENHITHE ROAD TRENCHLESS OPTION

CAD FILE	2010674.323	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-323	ISSUE	-
DWG No.	2010674.323		2



CONTINUED ON DRAWING
2010674.325

UPPER HARBOUR MOTORWAY
(SH18)



NOTES

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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- PROPOSED DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LV LINE VALVE
- AV AIR VALVE
- SV SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415

A LONG SECTION
SCALES: HORIZ 1:1000
VERT 1:1000

FOR CONSENT

Plot Date: Mar 04, 2016 - 4:05pm U:\loba\20173000\01_DWG_Current\08_AEE\Main_Route_AEE_Drawing_Set\ 2010674_324-325.dwg

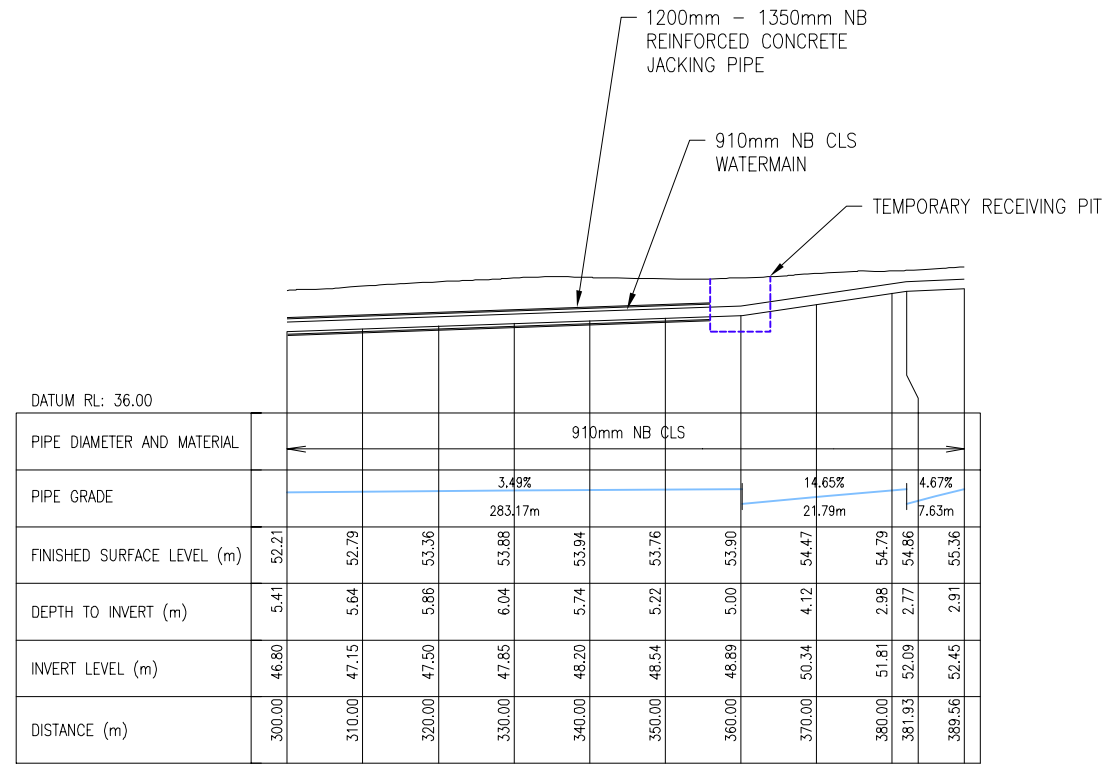
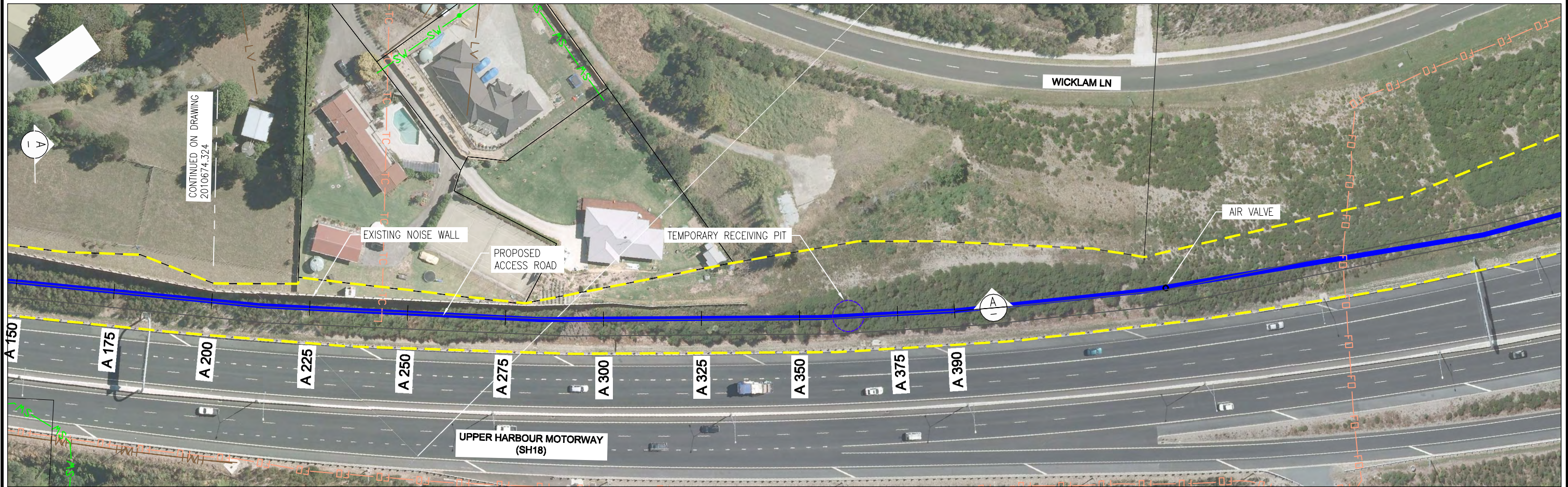
ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
SH18 TRENCHLESS OPTION - CHAINAGE 27,250m - SHEET 1 OF 2

CAD FILE	2010674.324-325	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-324	ISSUE	-
DWG No.	2010674.324		2



A LONG SECTION
 SCALES: HORIZ 1:1000
 VERT 1:1000

- NOTES**
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- LEGEND**
- NH2 WATERMAIN AND CHAINAGE
 - PROPOSED DESIGNATION BOUNDARY
 - PERMANENT ACCESSWAY
 - LV LINE VALVE
 - AV AIR VALVE
 - SV SCOUR VALVE

EXISTING FEATURES:
 REFER DWG 2010673.415

FOR CONSENT

Plot Date: Mar 04, 2016 - 4:56pm U:\loba\2073300\01_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674_324-325.dwg

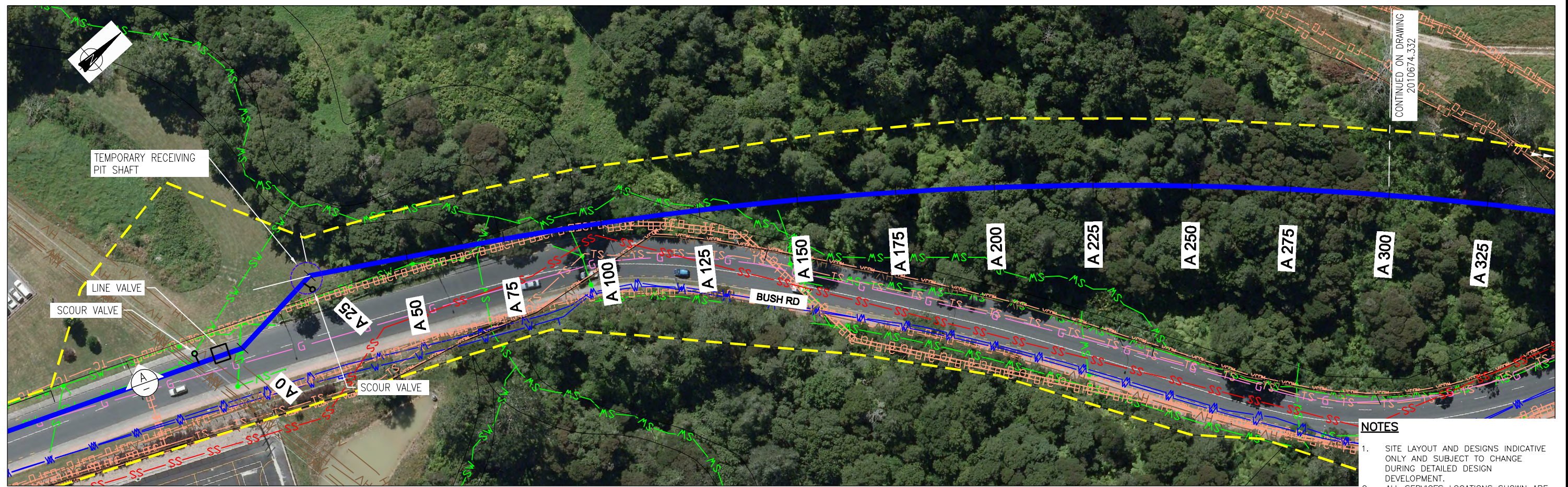
ISSUE	DATE	AMENDMENT	BY	APPD.
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1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

DESIGNED	N.H.	09.14
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DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
 SH18 TRENCHLESS OPTION - CHAINAGE 27,250m - SHEET 2 OF 2

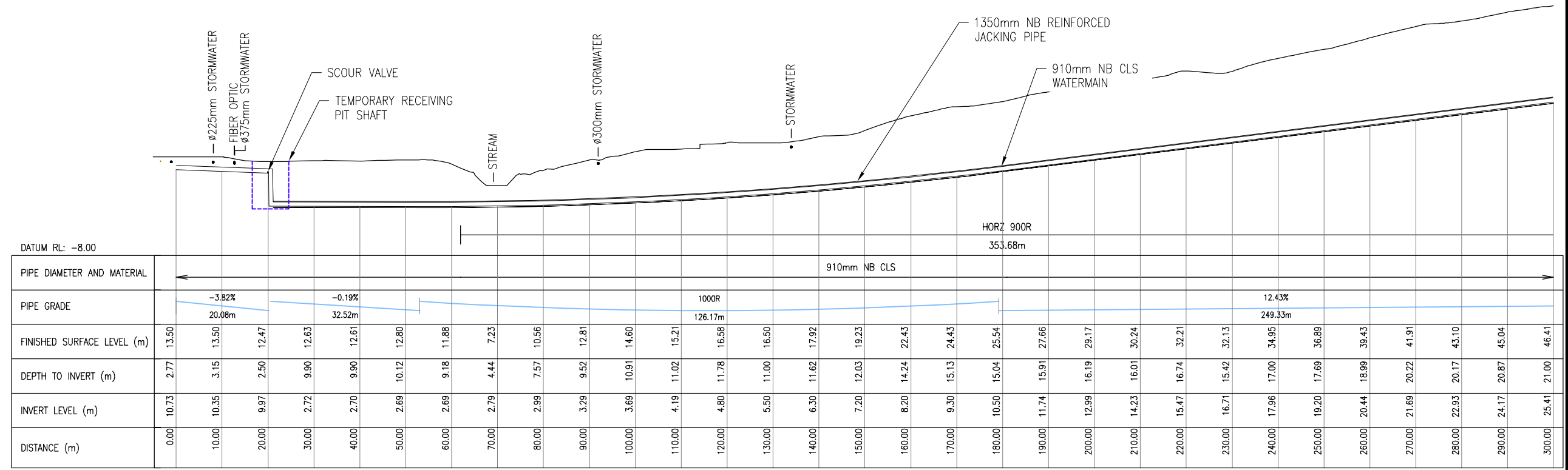
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ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-325	ISSUE	-
DWG No.	2010674.325		2



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- LEGEND**
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 - PROPOSED DESIGNATION BOUNDARY
 - PERMANENT ACCESSWAY
 - LV LINE VALVE
 - AV AIR VALVE
 - SV SCOUR VALVE

EXISTING FEATURES:
REFER DWG 2010673.415



A LONG SECTION
SCALES: HORIZ 1:1000
VERT 1:1000

FOR CONSENT

Plot Date: Mar 04, 2016 - 2:24pm U:\loba\2010673\001_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674_331-332.dwg

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
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DESIGNED	N.H.	09.14
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PROJECT LEADER	M.A.E.	09.14
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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
OTEHA STREAM OPTION 2 - TRENCHLESS - SHEET 1 OF 2

CAD FILE	2010674.331-332	DATE	22.02.16
ORIGINAL SCALE	A3 1:1,000	CONTRACT No.	5663
REF No.	WMNH2-91-C-331	ISSUE	-
DWG No.	2010674.331		2