

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

NOTES

1. SITE LAYOUT AND DESIGNS INDICATIVE ONLY AND SUBJECT TO CHANGE DURING DETAILED DESIGN DEVELOPMENT.
2. 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

FOR CONSENT

Plot Date: Mar 04, 2016 - 11:17am U:\loba\2073300\01_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.
1	03.12.15	ISSUED FOR CONSENT	W.O.	M.A.E.

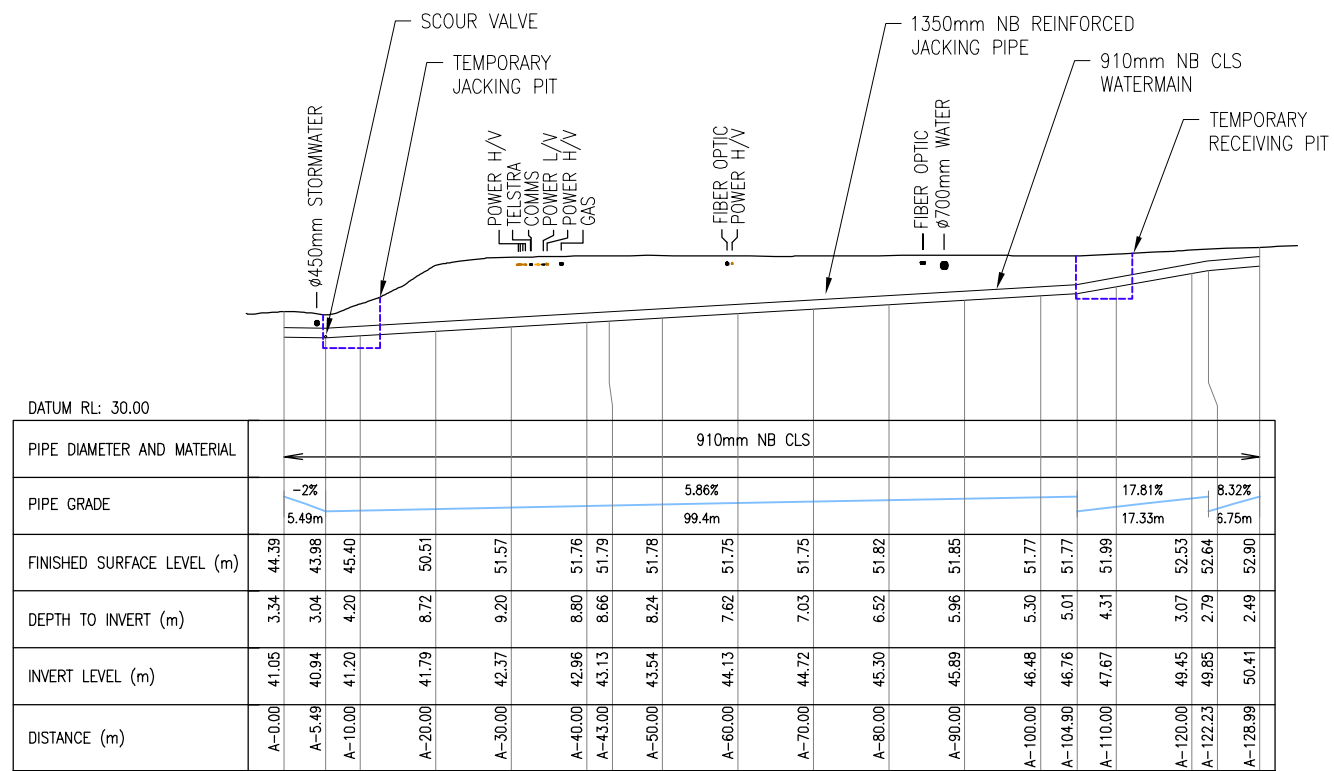
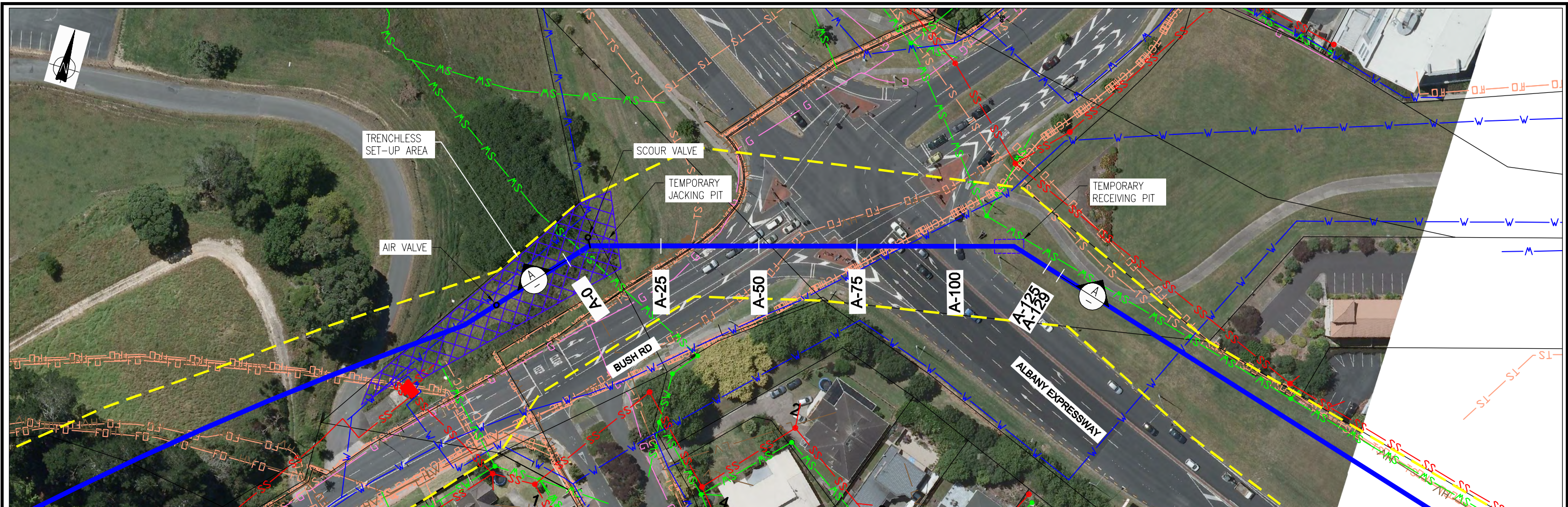
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DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
INFRASTR APP'D		

OPERATIONS
 INFRASTRUCTURE

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NORTH HARBOUR No.2 WATERMAIN
 CIVIL DESIGN
 OTEHA STREAM OPTION 2 - TRENCHLESS - SHEET 2 OF 2

CAD FILE	2010674.331-332	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-332	ISSUE	-
DWG No.	2010674.332		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 - 11:28am U:\Jobs\2010674\01_DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\2010674_336.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.

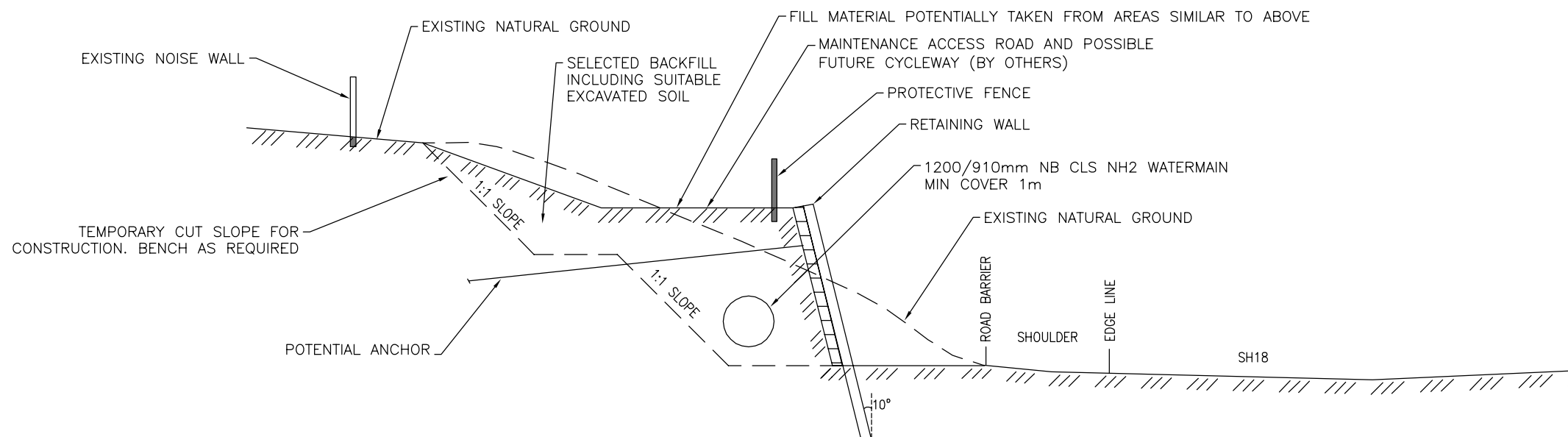
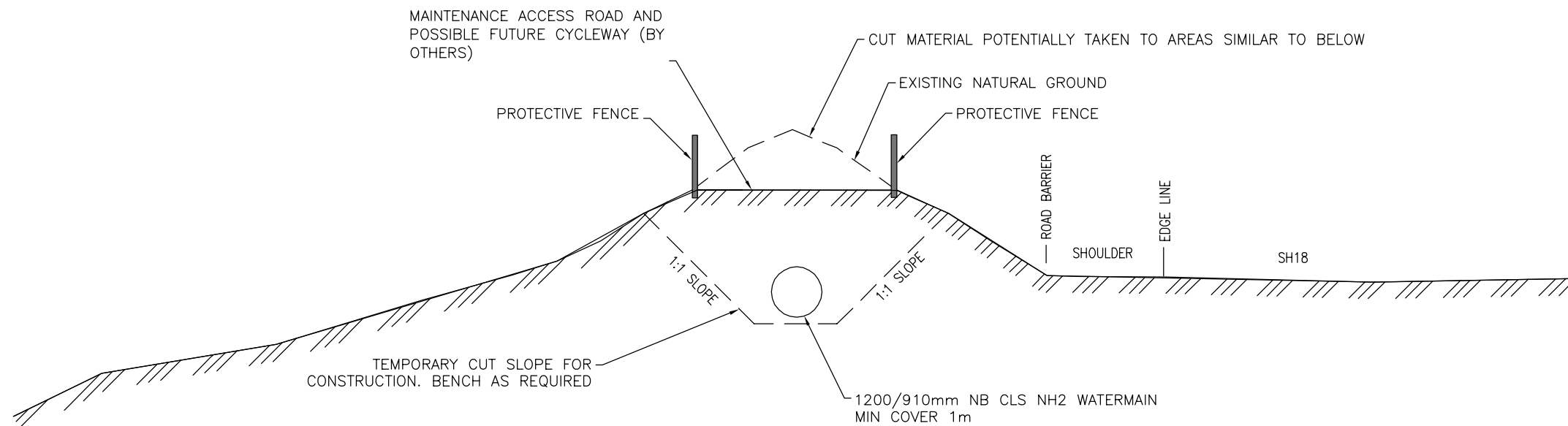
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DES. CHECKED	M.R.	09.14
DRAWN	B.K.	09.14
DWG. CHECKED	M.R.	09.14
PROJECT LEADER	M.A.E.	09.14
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NORTH HARBOUR No.2 WATERMAIN CIVIL DESIGN
ALBANY EXPRESSWAY CROSSING - TRENCHLESS

OPERATIONS	INFRASTRUCTURE

CAD FILE	2010674.336	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-C-336	ISSUE	-
DWG No.	2010674.336		2



TYPICAL SH18 CONSTRUCTION SECTIONS
SCALE: 1:100

TABLE 1: INDICATIVE CLEAR ZONE DISTANCES FROM EDGE OF THROUGH TRAVELLED WAY

Design speed (km/h)	Design ADT	Clear zone width (m)					
		Fill batter			Cut batter		
		6:1 to flat	4:1 to 5:1	3:1 and steeper ⁽²⁾	6:1 to flat	4:1 to 5:1	3:1 and steeper ⁽²⁾
110	> 6000	10.5 ⁽¹⁾	14.0 ⁽¹⁾	(2)	9.0	9.0	7.5

TAKEN FROM TABLE 4.1 IN AUSTRROADS PART 6:10 ROADSIDE DESIGN, SAFETY AND BARRIERS

TABLE 2: INDICATIVE CURVE CORRECTION FACTOR

CURVE CORRECTION FACTOR OF CLEAR ZONE WIDTH AT 110KM/H DESIGN SPEED	
CURVE RADIUS	FACTOR
900	1.2
700	1.3
600	1.4
500	1.4
450	1.5

TAKEN FROM TABLE 4.2 IN AUSTRROADS PART 6:10 ROADSIDE DESIGN, SAFETY AND BARRIERS

NOTE:

- SECTION DETAILS ARE INDICATIVE ONLY AND SUBJECT TO SITE SPECIFIC CONSTRAINTS.
- IT IS INTENDED THAT SECTIONS OF THE ACCESS WAY MAY BE UPGRADED TO A CYCLE WAY (BY OTHERS) AT A FUTURE DATE.
- CLEAR ZONE REQUIREMENTS MUST BE CONFIRMED WITH ROAD CONTROLLING AUTHORITY
- IF CLEAR ZONE WIDTH REQUIREMENT IS NOT MET A BARRIER ALONG THE ROAD WILL BE REQUIRED AND APPROVED BY ROAD CONTROLLING AUTHORITY.
- ROAD BARRIER DESIGN SHALL TAKE INTO ACCOUNT ALL POTENTIAL ROADSIDE HAZARDS. FULL BARRIER ASSESSMENT AND DESIGN TO BE COMPLETED BY A QUALIFIED ENGINEER.

FOR CONSENT

Plot Date: Mar 04, 2016 - 12:04pm U:\Jobs\2016\201603\DWG_Current\08_AEE_Main_Route_AEE_Drawing_Set\ 2010674_351.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	J.S.K.	11-14
DES. CHECKED	J.K.	11-14
DRAWN	J.S.K.	11-14
DWG. CHECKED	J.K.	11-14
PROJECT LEADER	E.M.	10-13
INFRASTR'R APP'D	C.T.	10-13

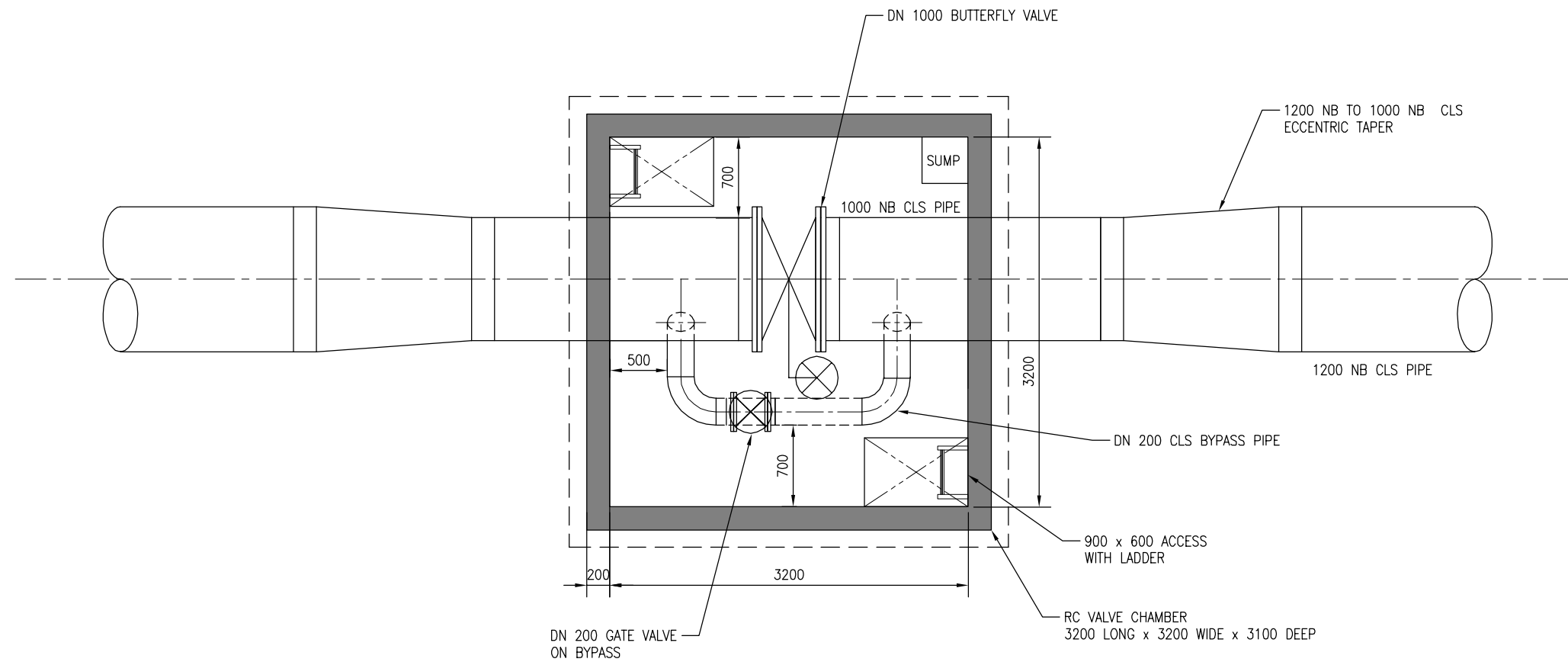
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NORTH HARBOUR No.2 WATERMAIN
CIVIL DESIGN
 TYPICAL SH18 CONSTRUCTION SECTION

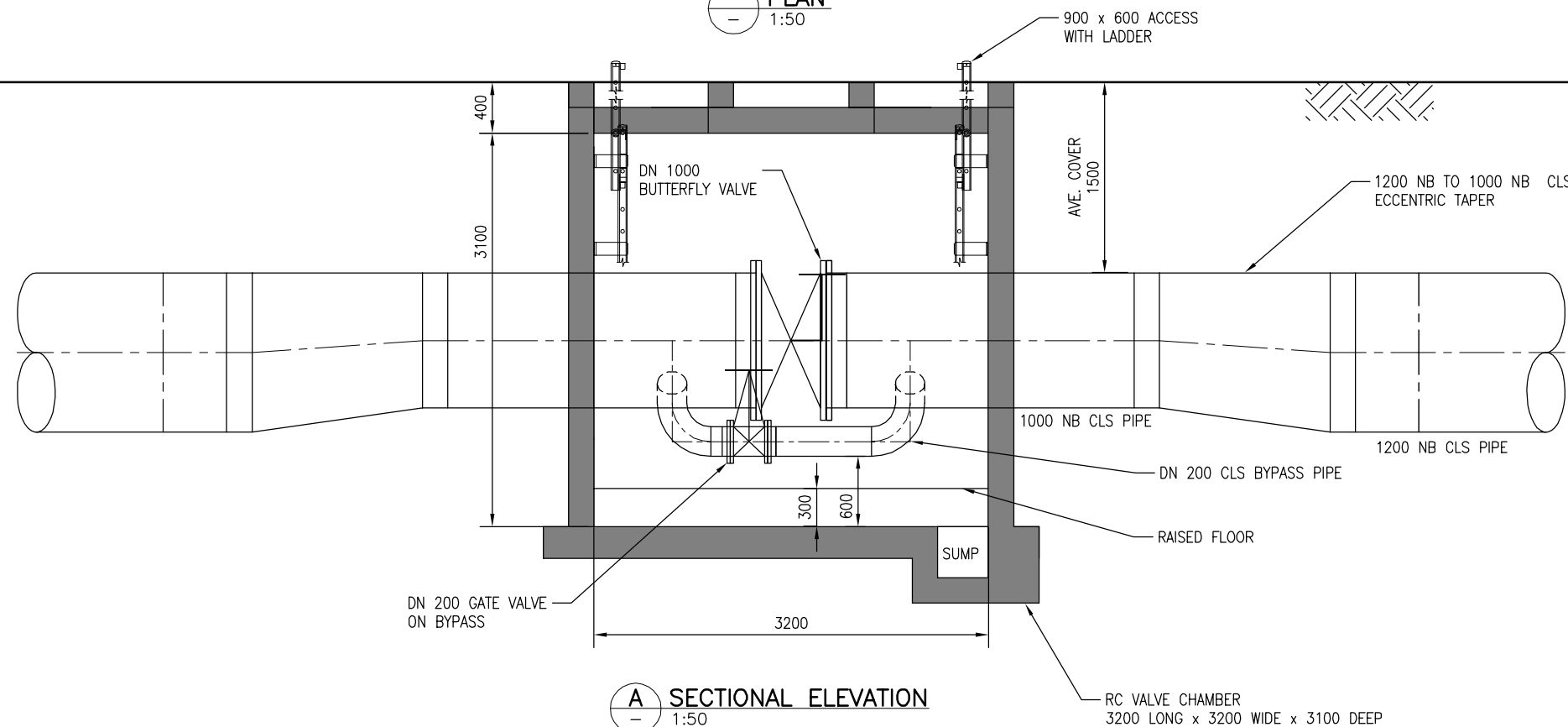
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ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	5663
REF No.	WMNH2-91-C-351	ISSUE	-
DWG No.	2010674.351		2

NOTES

1. SITE LAYOUT AND DESIGNS INDICATIVE ONLY AND SUBJECT TO CHANGE DETAILED DESIGN DEVELOPMENT.
2. REFER TO DRAWING 2010673.415 FOR FULL SET OF PROJECT NOTES



PLAN
1:50



SECTIONAL ELEVATION
1:50

AIR VALVE TO BE LOCATED WITHIN 5m OF LINE VALVE. REFER TO WSL STANDARD DWG'S 2001979.143 & 2001979.146 FOR DETAILS

FOR CONSENT

Plot Date: Mar 04, 2016 - 12:07pm U:\naba\2010673\00\01_DWG_Current\08_AEE\Main Route_AEE_Drawing Set\ 2010674_353.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.

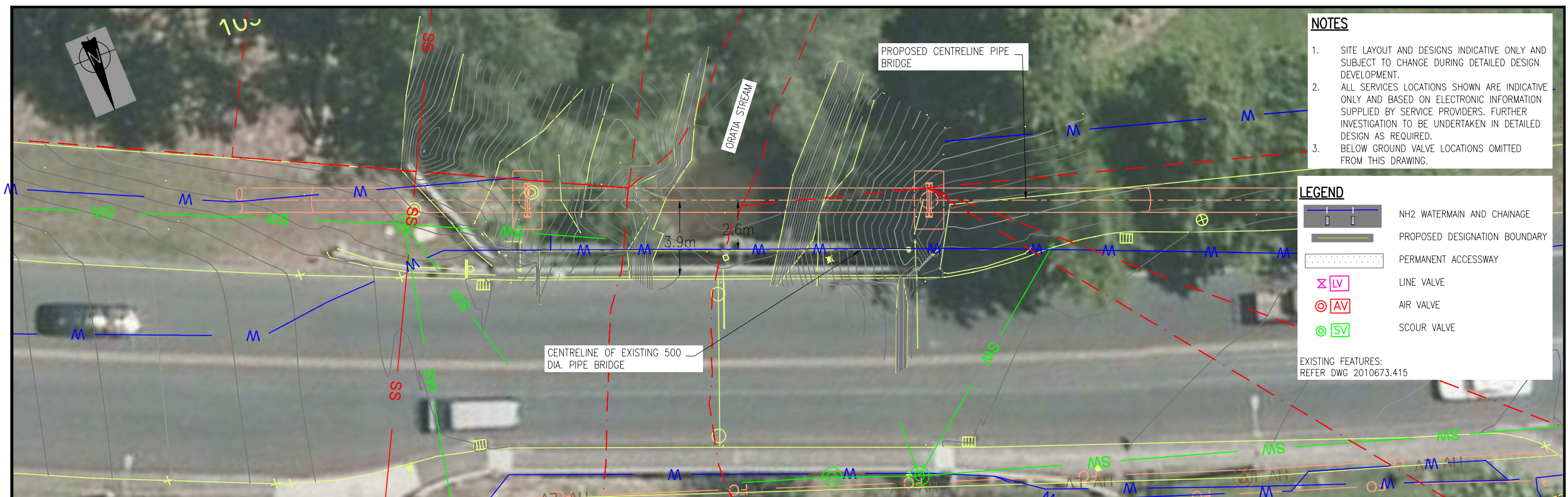
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DRAWN	N.H.	11.14
DWG. CHECKED	A.T.S.	11.14
PROJECT LEADER	M.A.E.	11.14
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NORTH HARBOUR No.2 WATERMAIN
 CIVIL DESIGN
 TYPICAL LINE VALVE CHAMBER

CAD FILE	2010674.353	DATE	22.02.16
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	5663
REF No.	WMNH2-91-C-353	ISSUE	-
DWG No.	2010674.353		2

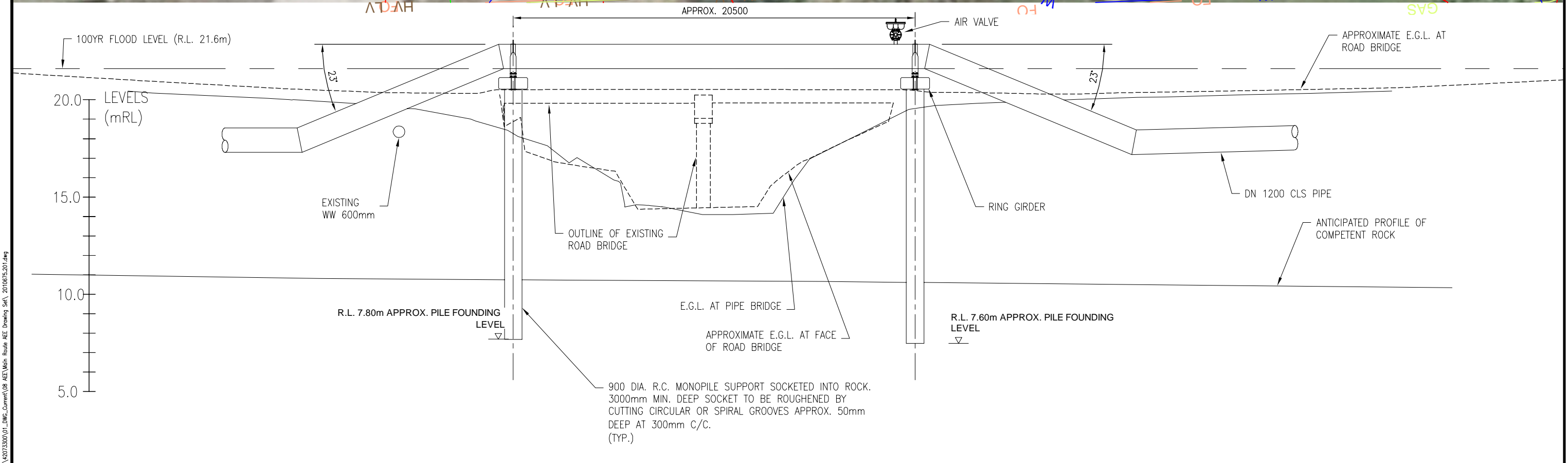


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 3. BELOW GROUND VALVE LOCATIONS OMITTED FROM THIS DRAWING.

LEGEND

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

EXISTING FEATURES:
REFER DWG 2010673.415



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ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	M.W.	M.A.E.
1	04.12.15	ISSUED FOR CONSENT	M.W.	M.A.E.

DESIGNED	P.E.	12.15
DES. CHECKED	A.M.	12.15
DRAWN	P.E.	12.15
DWG. CHECKED	M.R.	12.15
PROJECT LEADER	M.A.E.	12.15
INFRASTR'R APP'D		

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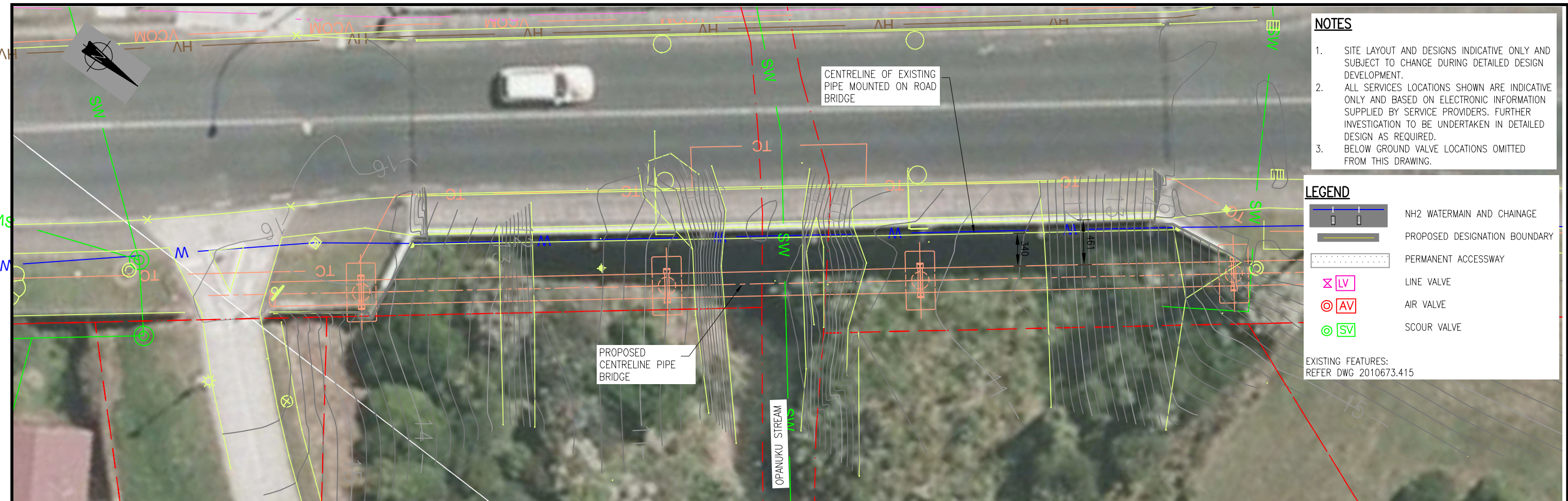
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NORTH HARBOUR No.2 WATERMAIN STRUCTURAL

ORATIA STREAM CROSSING OPTION 2 GENERAL ARRANGEMENT

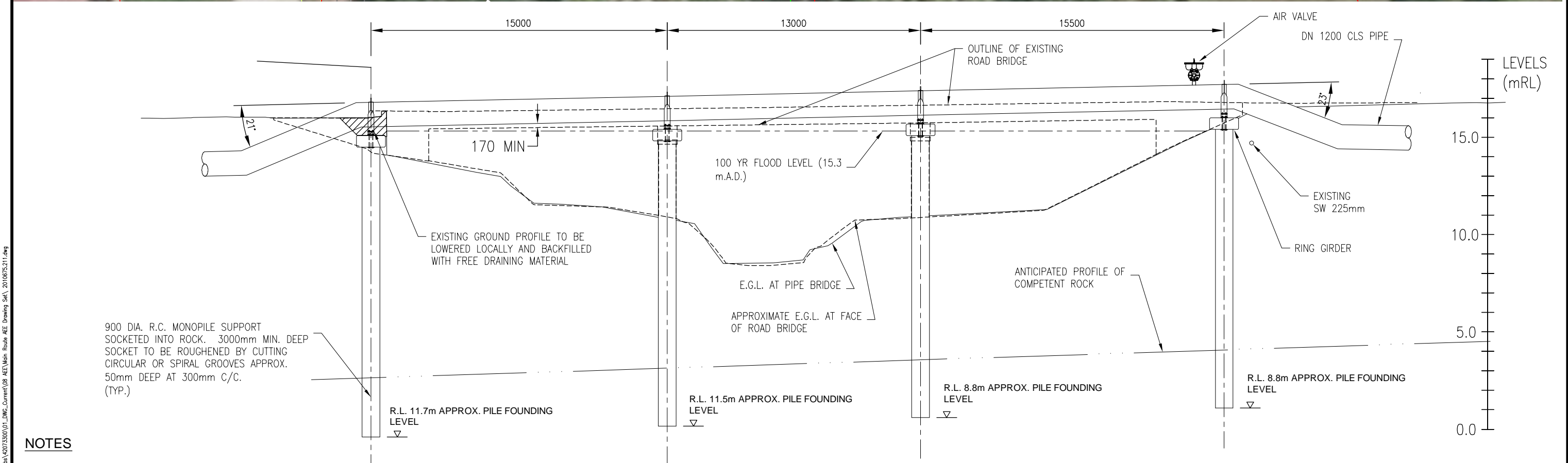
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 Plot Date: Mon 04, 2016 - 4:55pm



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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



- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.

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ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	M.W.	M.A.E.
1	04.12.15	ISSUED FOR CONSENT	M.W.	M.A.E.

DESIGNED	P.E.	12.15
DES. CHECKED	A.M.	12.15
DRAWN	P.E.	12.15
DWG. CHECKED	M.R.	12.15
PROJECT LEADER	M.A.E.	12.15
INFRASTR APP'D		

OPERATIONS

Watercare

INFRASTRUCTURE

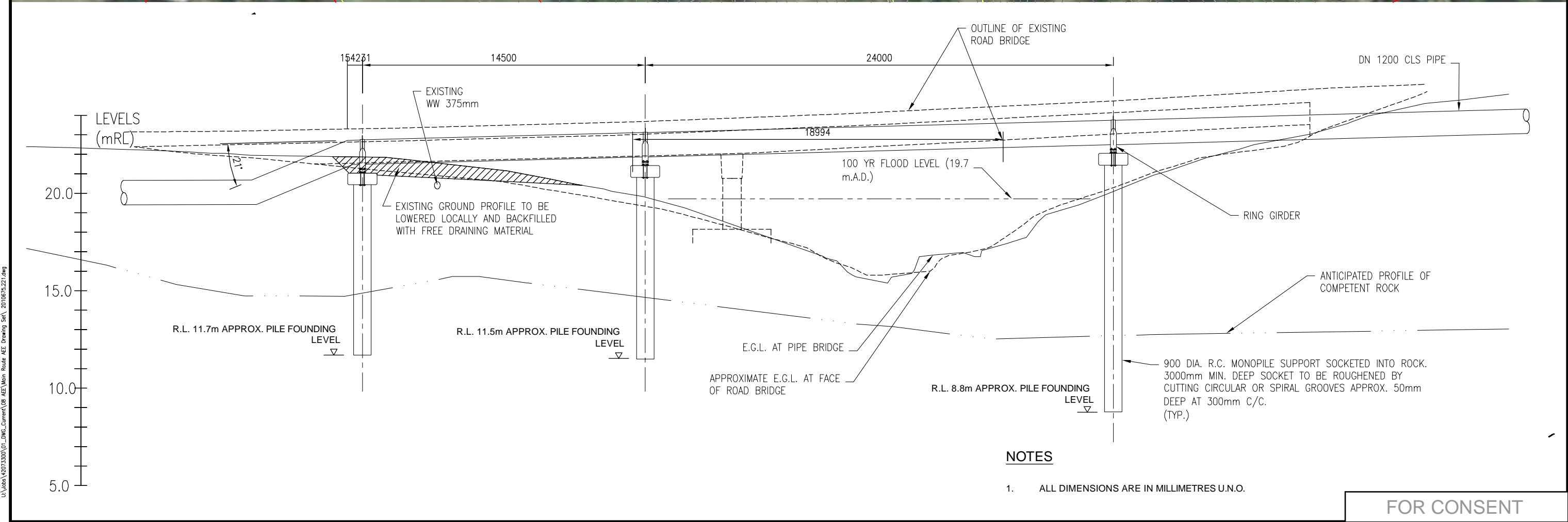
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NORTH HARBOUR No.2 WATERMAIN STRUCTURAL

OPANUKU STREAM CROSSING GENERAL ARRANGEMENT

CAD FILE	2010675.211	DATE	22.02.16
ORIGINAL SCALE	A3 1:200	CONTRACT No.	5663
REF No.	WMNH2-91-S-211	ISSUE	-
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 Plot Date: Mon 04, 2016 - 4:55pm



ISSUE	DATE	AMENDMENT	BY	APPD.
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1	04.12.15	ISSUED FOR CONSENT	M.W.	M.A.E.

DESIGNED	P.E.	12.15
DES. CHECKED	A.M.	12.15
DRAWN	P.E.	12.15
DWG. CHECKED	M.R.	12.15
PROJECT LEADER	M.A.E.	12.15
INFRASTR'R APP'D		

OPERATIONS

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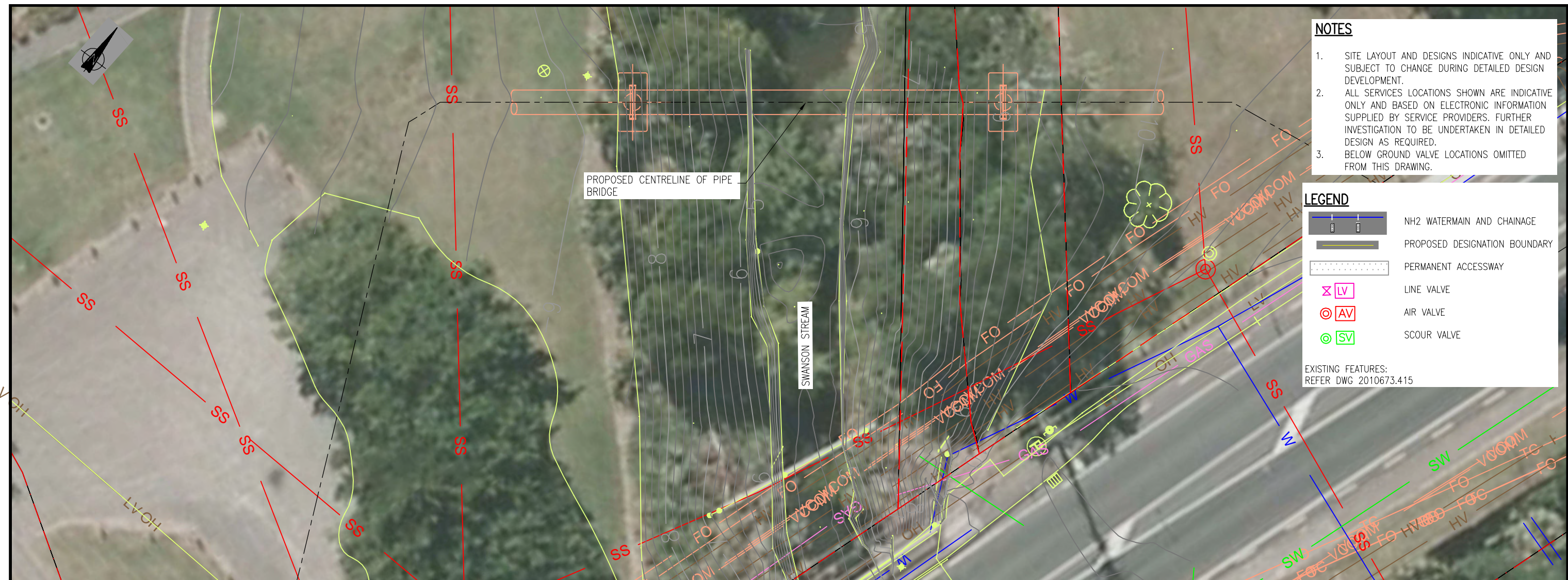
INFRASTRUCTURE

NORTH HARBOUR No.2 WATERMAIN STRUCTURAL

PAREMUKA STREAM CROSSING GENERAL ARRANGEMENT

CAD FILE	2010675.221	DATE	22.02.16
ORIGINAL SCALE	A3 1:200	CONTRACT No.	5663
REF No.	WMNH2-91-S-221	ISSUE	-
DWG No.	2010675.221		2

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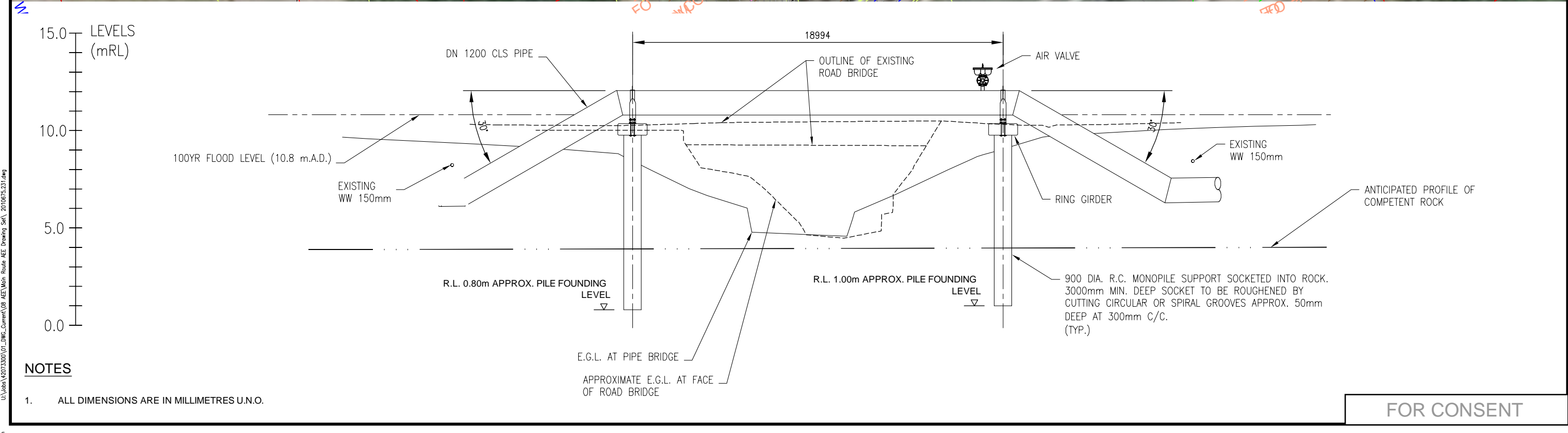


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LEGEND

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

EXISTING FEATURES:
REFER DWG 2010673.415

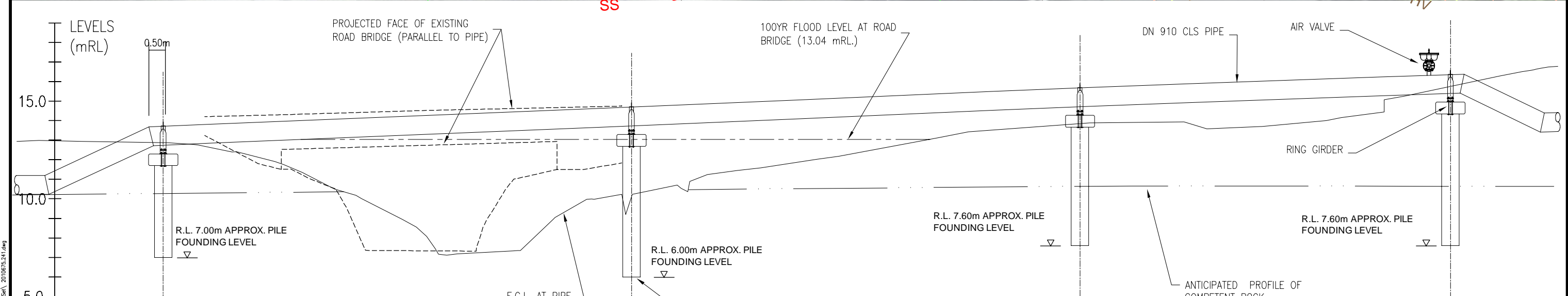
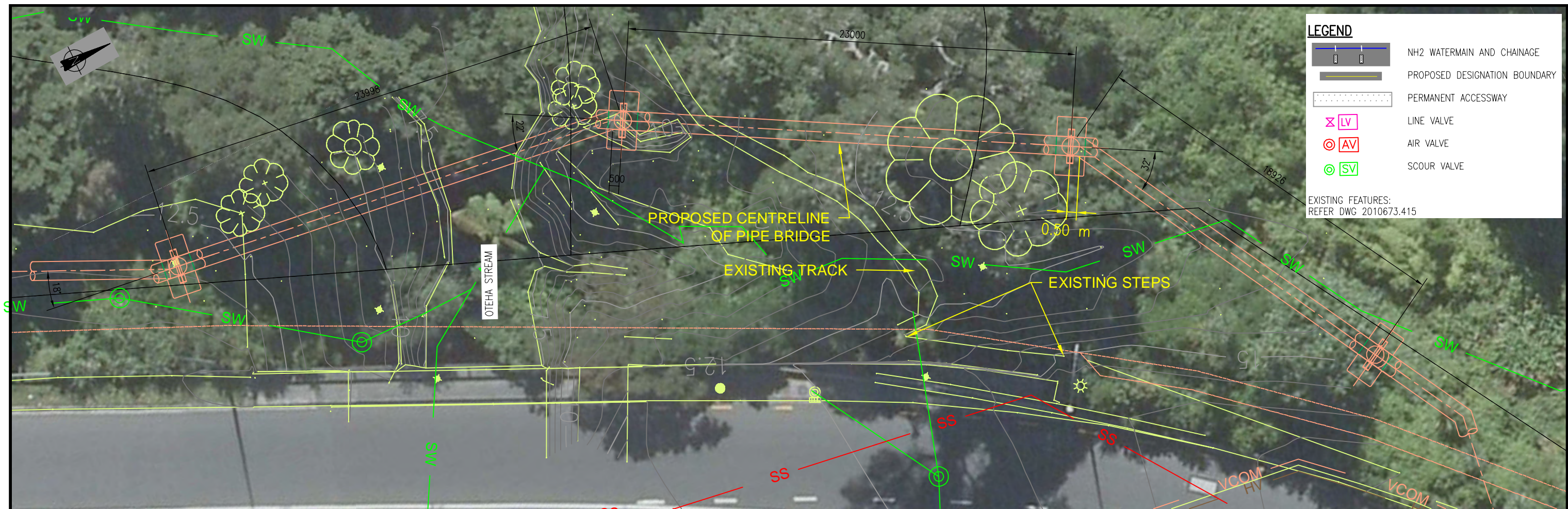


- NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.

FOR CONSENT

DESIGNED		P.E.	12.15	OPERATIONS		NORTH HARBOUR No.2 WATERMAIN STRUCTURAL	CAD FILE	2010675.231	DATE	22.02.16
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DRAWN		P.E.	12.15	INFRASTRUCTURE	<small>COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</small>	SWANSON STREAM CROSSING GENERAL ARRANGEMENT	REF No.	WMNH2-91-S-231	ISSUE	-
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PROJECT LEADER		M.A.E.	12.15							
INFRASTR APP'D										
ISSUE	DATE	AMENDMENT	BY	APPD.						
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	M.W.	M.A.E.						
1	04.12.15	ISSUED FOR CONSENT	M.W.	M.A.E.						

Plot Date: Mar 04, 2016 - 4:55pm
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NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

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2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	M.W.	M.A.E.
1	04.12.15	ISSUED FOR CONSENT	M.W.	M.A.E.

DESIGNED	P.E.	DATE
DES. CHECKED	A.M.	12.15
DRAWN	P.E.	12.15
DWG. CHECKED	M.R.	12.15
PROJECT LEADER	M.A.E.	12.15
INFRASTR'R APP'D		

OPERATIONS
INFRASTRUCTURE



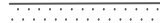





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NORTH HARBOUR No.2 WATERMAIN STRUCTURAL
 OTEHA STREAM CROSSING OPTION 2 GENERAL ARRANGEMENT

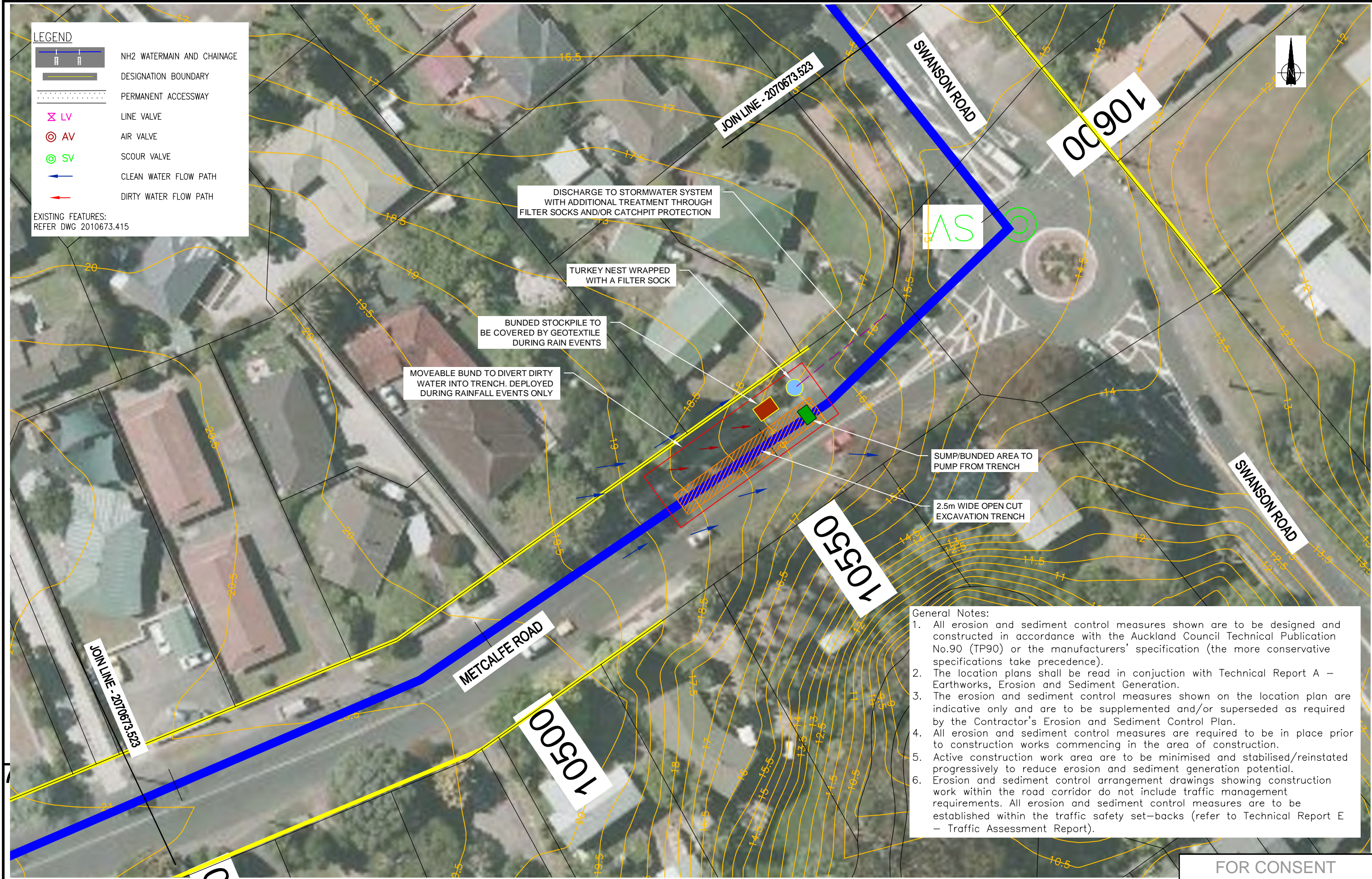
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REF No.	WMNH2-91-S-241	ISSUE	-
DWG No.	2010675.241		2

Plot Date: Mon 04, 2016 - 5:01pm
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LEGEND

-  NH2 WATERMAIN AND CHAINAGE
-  DESIGNATION BOUNDARY
-  PERMANENT ACCESSWAY
-  LINE VALVE
-  AIR VALVE
-  SCOUR VALVE
-  CLEAN WATER FLOW PATH
-  DIRTY WATER FLOW PATH

EXISTING FEATURES:
REFER DWG 2010673.415



- General Notes:**
1. All erosion and sediment control measures shown are to be designed and constructed in accordance with the Auckland Council Technical Publication No.90 (TP90) or the manufacturers' specification (the more conservative specifications take precedence).
 2. The location plans shall be read in conjunction with Technical Report A – Earthworks, Erosion and Sediment Generation.
 3. The erosion and sediment control measures shown on the location plan are indicative only and are to be supplemented and/or superseded as required by the Contractor's Erosion and Sediment Control Plan.
 4. All erosion and sediment control measures are required to be in place prior to construction works commencing in the area of construction.
 5. Active construction work area are to be minimised and stabilised/reinstated progressively to reduce erosion and sediment generation potential.
 6. Erosion and sediment control arrangement drawings showing construction work within the road corridor do not include traffic management requirements. All erosion and sediment control measures are to be established within the traffic safety set-backs (refer to Technical Report E – Traffic Assessment Report).

FOR CONSENT

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT – UPDATED WITH WSL COMMENTS	W.O.	M.A.E.
1	16.12.15	EROSION AND SEDIMENT CONTROL PLANS	W.O.	N.H.

DESIGNED	N.H.	02.16
DES. CHECKED	M.A.E.	02.16
DRAWN	W.O.	02.16
DWG. CHECKED	N.H.	02.16
PROJECT LEADER	M.A.E.	02.16
INFRASTR'R APP'D		

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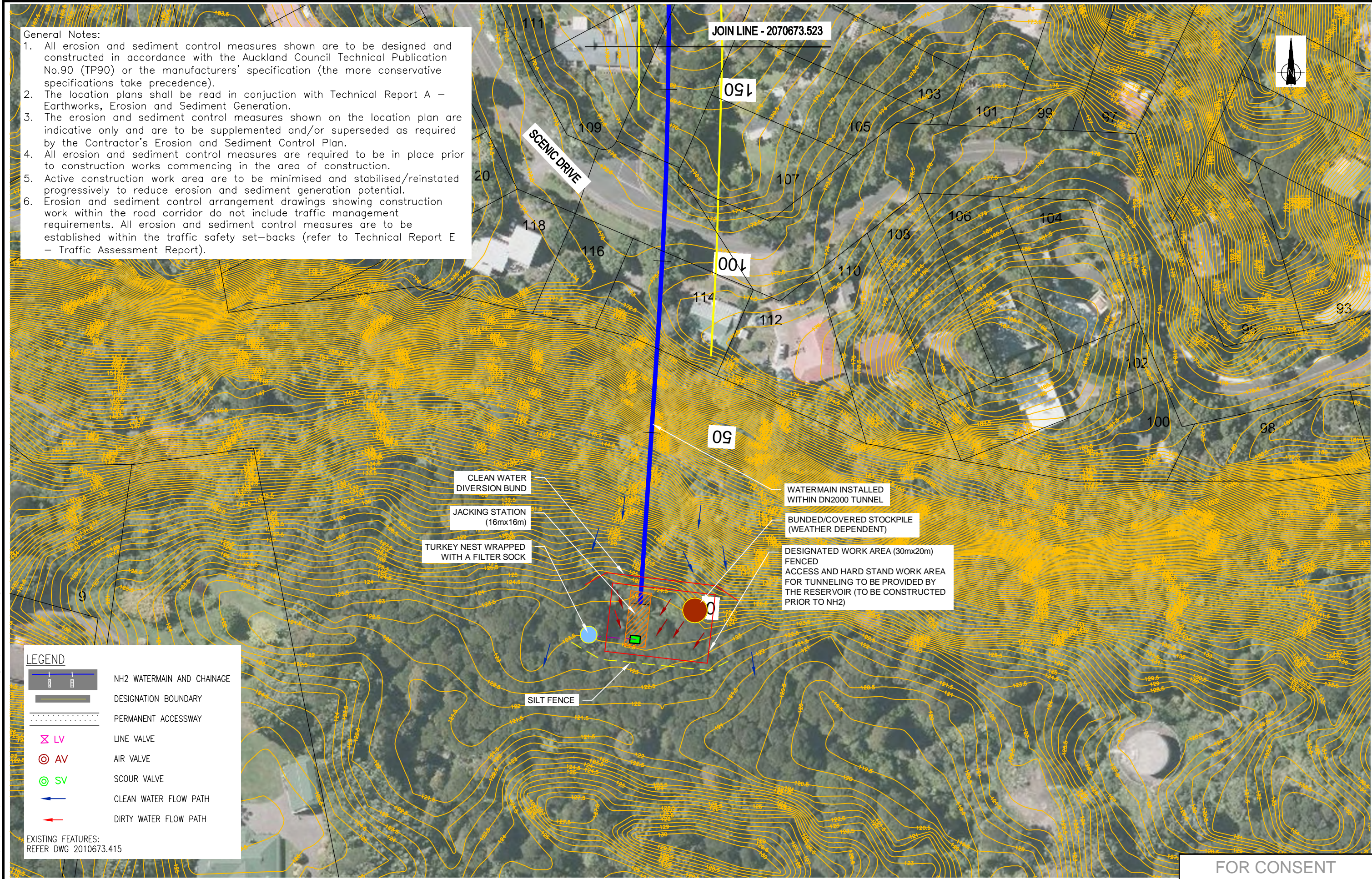
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**NORTH HARBOUR No.2 WATERMAIN
EROSION AND SEDIMENT CONTROL ARRANGEMENT
REPRESENTATIVE OPEN-CUT TRENCH ESC LOCATION PLAN**

CAD FILE	2010676.001-006	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	WMNH2-91-E-001	ISSUE	-
DWG No.	2010676.001		2

Plot Date: Mar 03, 2016 9:23am U:\naiba\2010673\000\01_DWG_Current\08_AEE\Main Route_AEE_Drawing Set\ 2010676.001-006.dwg

- General Notes:
1. All erosion and sediment control measures shown are to be designed and constructed in accordance with the Auckland Council Technical Publication No.90 (TP90) or the manufacturers' specification (the more conservative specifications take precedence).
 2. The location plans shall be read in conjunction with Technical Report A – Earthworks, Erosion and Sediment Generation.
 3. The erosion and sediment control measures shown on the location plan are indicative only and are to be supplemented and/or superseded as required by the Contractor's Erosion and Sediment Control Plan.
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LEGEND

- NH2 WATERMAIN AND CHAINAGE
- DESIGNATION BOUNDARY
- PERMANENT ACCESSWAY
- LINE VALVE (LV)
- AIR VALVE (AV)
- SCOUR VALVE (SV)
- CLEAN WATER FLOW PATH
- DIRTY WATER FLOW PATH

EXISTING FEATURES:
REFER DWG 2010673.415

FOR CONSENT

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2	22.02.16	ISSUED FOR CONSENT – UPDATED WITH WSL COMMENTS	W.O.	N.H.
1	16.12.15	EROSION AND SEDIMENT CONTROL PLANS	W.O.	N.H.

DESIGNED	N.H.	02.16
DES. CHECKED	M.A.E.	02.16
DRAWN	W.O.	02.16
DWG. CHECKED	N.H.	02.16
PROJECT LEADER	M.A.E.	02.16
INFRASTR APP'D		

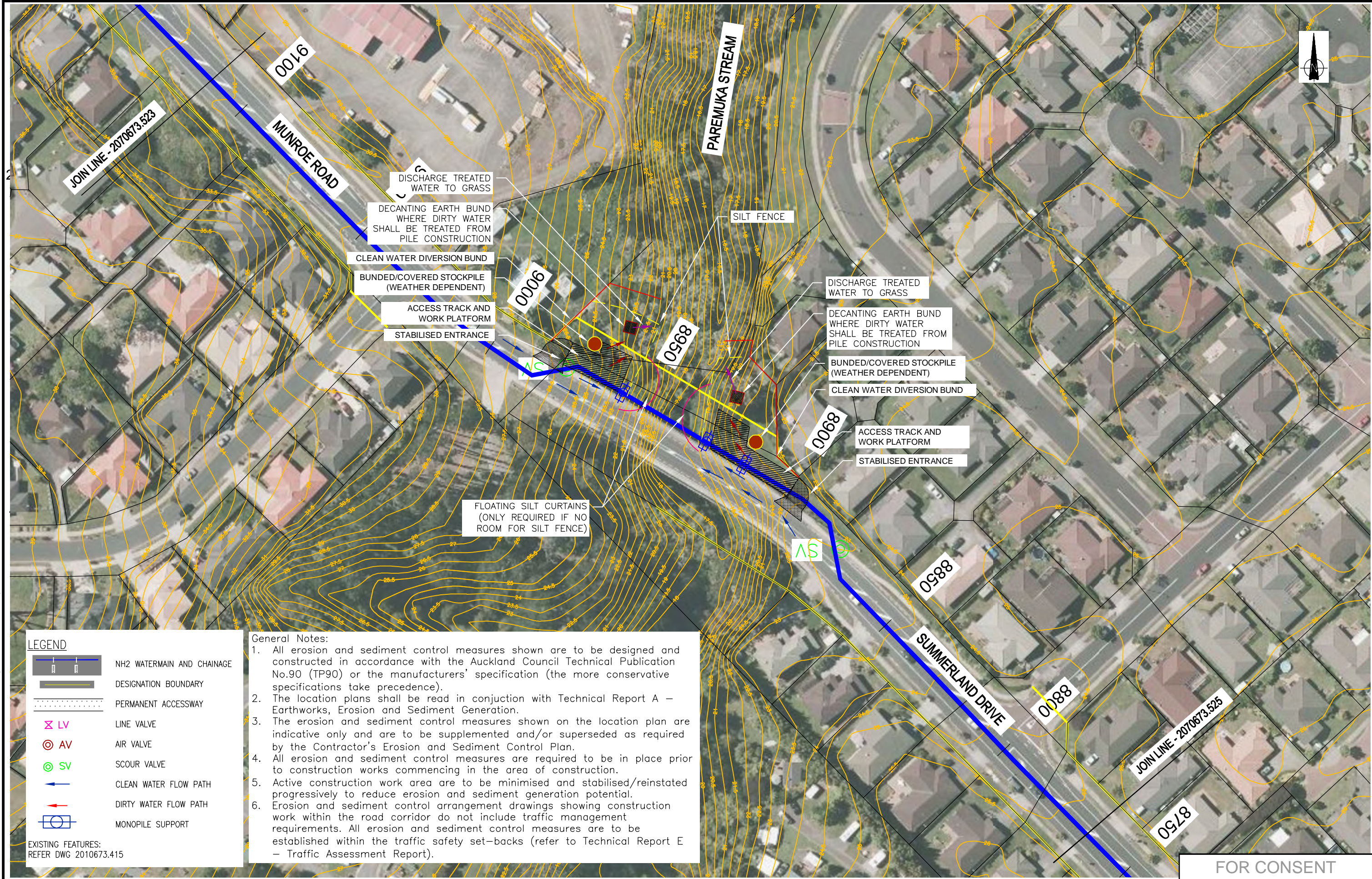
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**NORTH HARBOUR No.2 WATERMAIN
EROSION AND SEDIMENT CONTROL ARRANGEMENT
REPRESENTATIVE TUNNELLING ACCESS SHAFT ESC LOCATION PLAN**

CAD FILE	2010676.001-006	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
1:1,000			
REF No.	WMNH2-91-E-003	ISSUE	-
DWG No.	2010676.003		2

Plot Date: Mar 03, 2016 9:28am U:\naea\2073300\01_DWG_Current\08_AEE\Main Route_AEE_Drawing Set\ 2010676.001-006.dwg



LEGEND

	NH2 WATERMAIN AND CHAINAGE
	DESIGNATION BOUNDARY
	PERMANENT ACCESSWAY
	LV LINE VALVE
	AV AIR VALVE
	SV SCOUR VALVE
	CLEAN WATER FLOW PATH
	DIRTY WATER FLOW PATH
	MONOPILE SUPPORT

EXISTING FEATURES:
REFER DWG 2010673.415

General Notes:

1. All erosion and sediment control measures shown are to be designed and constructed in accordance with the Auckland Council Technical Publication No.90 (TP90) or the manufacturers' specification (the more conservative specifications take precedence).
2. The location plans shall be read in conjunction with Technical Report A – Earthworks, Erosion and Sediment Generation.
3. The erosion and sediment control measures shown on the location plan are indicative only and are to be supplemented and/or superseded as required by the Contractor's Erosion and Sediment Control Plan.
4. All erosion and sediment control measures are required to be in place prior to construction works commencing in the area of construction.
5. Active construction work area are to be minimised and stabilised/reinstated progressively to reduce erosion and sediment generation potential.
6. Erosion and sediment control arrangement drawings showing construction work within the road corridor do not include traffic management requirements. All erosion and sediment control measures are to be established within the traffic safety set-backs (refer to Technical Report E – Traffic Assessment Report).

FOR CONSENT

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT – UPDATED WITH WSL COMMENTS	W.O.	N.H.
1	16.12.15	EROSION AND SEDIMENTATION CONTROL PLANS	W.O.	N.H.

DESIGNED	N.H.	02.16
DES. CHECKED	M.A.E.	02.16
DRAWN	W.O.	02.16
DWG. CHECKED	N.H.	02.16
PROJECT LEADER	M.A.E.	02.16
INFRASTR'R APP'D		

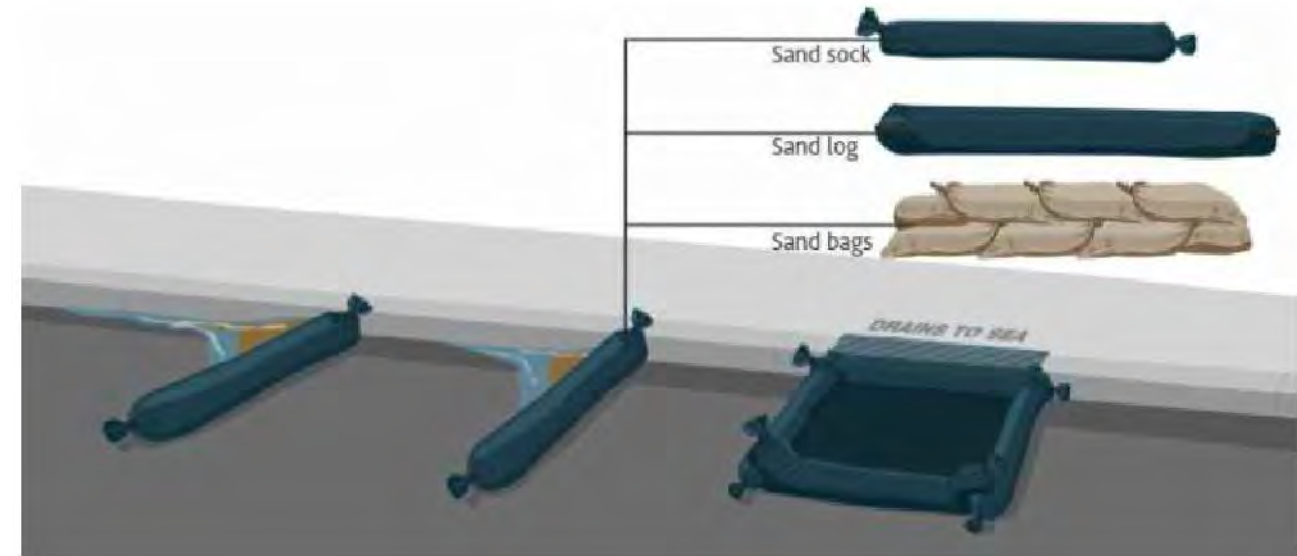
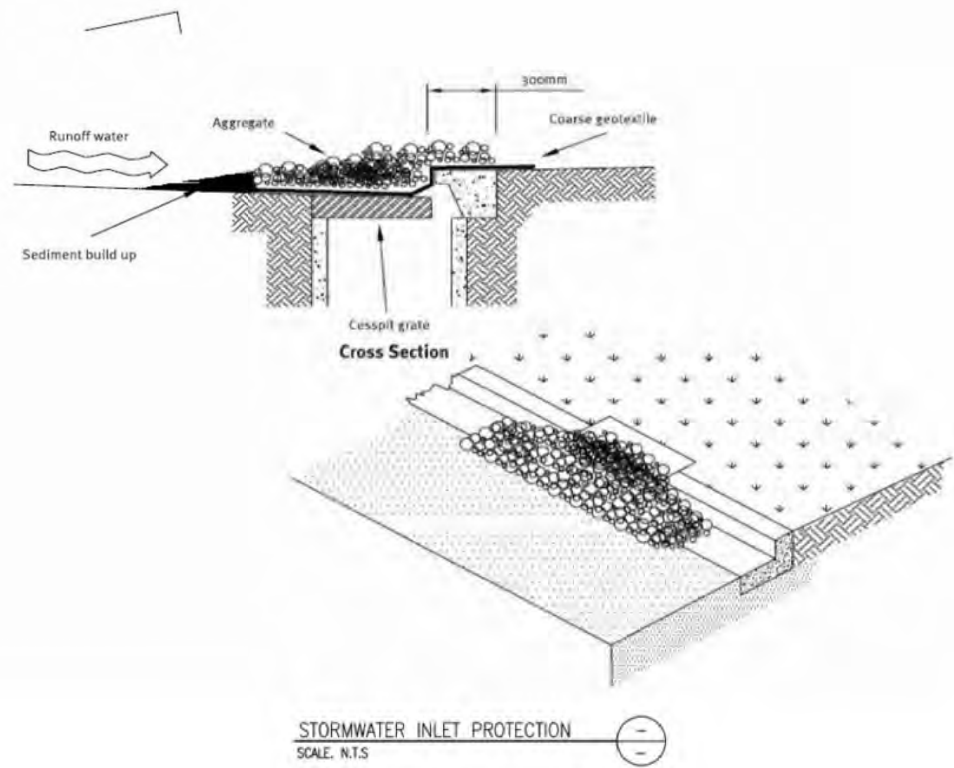
Watercare

**NORTH HARBOUR No.2 WATERMAIN
EROSION AND SEDIMENT CONTROL ARRANGEMENT
REPRESENTATIVE PIPE-BRIDGE ESC LOCATION PLAN**

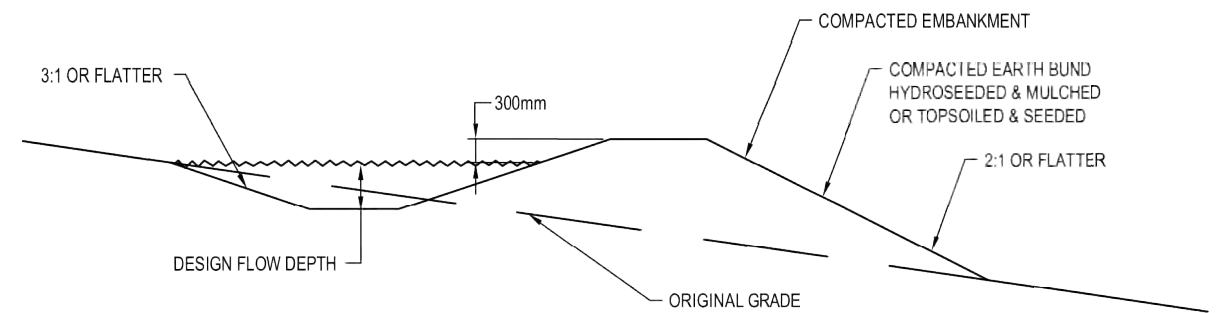
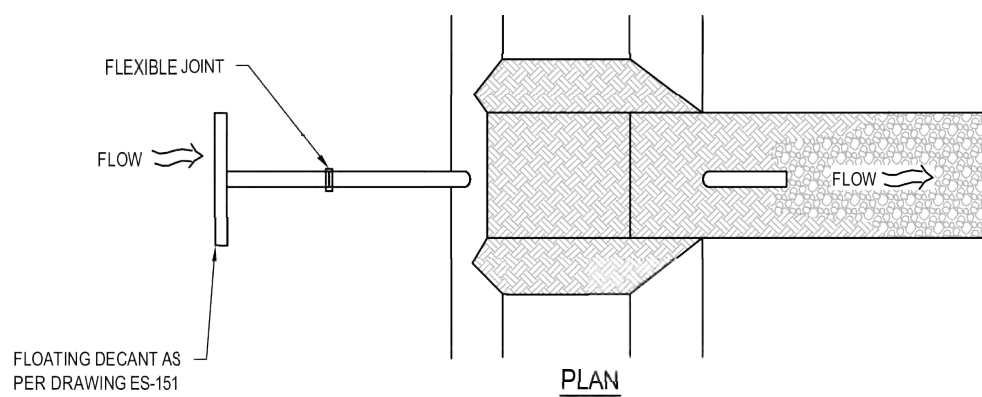
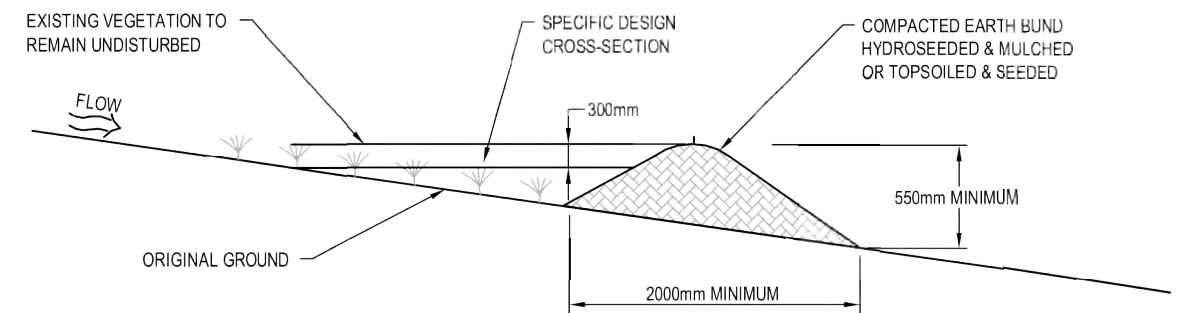
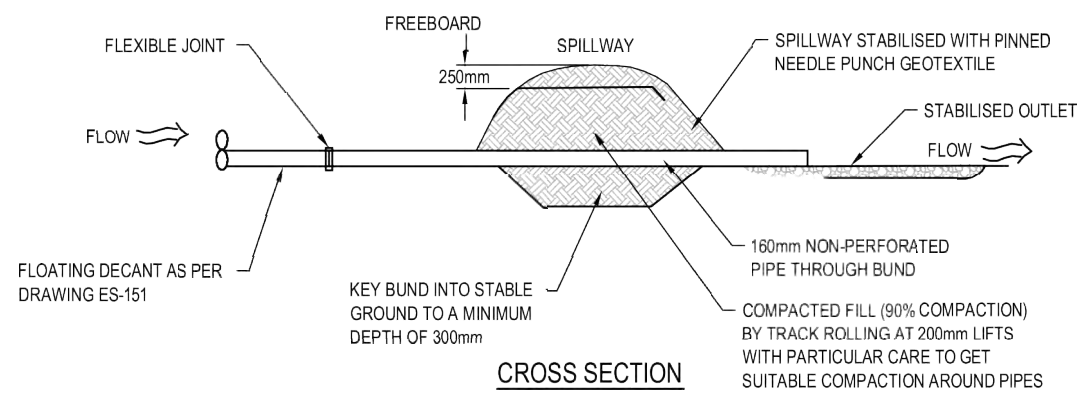
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CAD FILE	2010676.001-006	DATE	22.02.16
ORIGINAL SCALE	A3	CONTRACT No.	5663
REF No.	MWNH2-91-E-004	ISSUE	-
DWG No.	2010676.004		2

Plot Date: Mar 03, 2016 - 9:30am U:\naeh\2073500\01_DWG_Current\08_AEE\Main Route_AEE_Drawing Set\ 2010676.001-006.dwg



CATCHPIT PROTECTION ARRANGEMENT
SCALE: N.T.S



NOTE:
1. CHEMICAL TREATMENT (FLOCCULATION) TO BE PROVIDED FOR ALL DECANTING EARTH BUNDS

DECANTING EARTH BUND
NOT TO SCALE

FOR CONSENT

Plot Date: Mar 03, 2016 9:52am U:\Jobs\2016\2016-01-DWG_Current\OB_AEE\Main Route_AEE_Drawing Set\ 2010676.001-006.dwg

ISSUE	DATE	AMENDMENT	BY	APPD.
2	22.02.16	ISSUED FOR CONSENT - UPDATED WITH WSL COMMENTS	W.O.	N.H.
1	16.12.15	EROSION AND SEDIMENTATION CONTROL PLANS	W.O.	N.H.

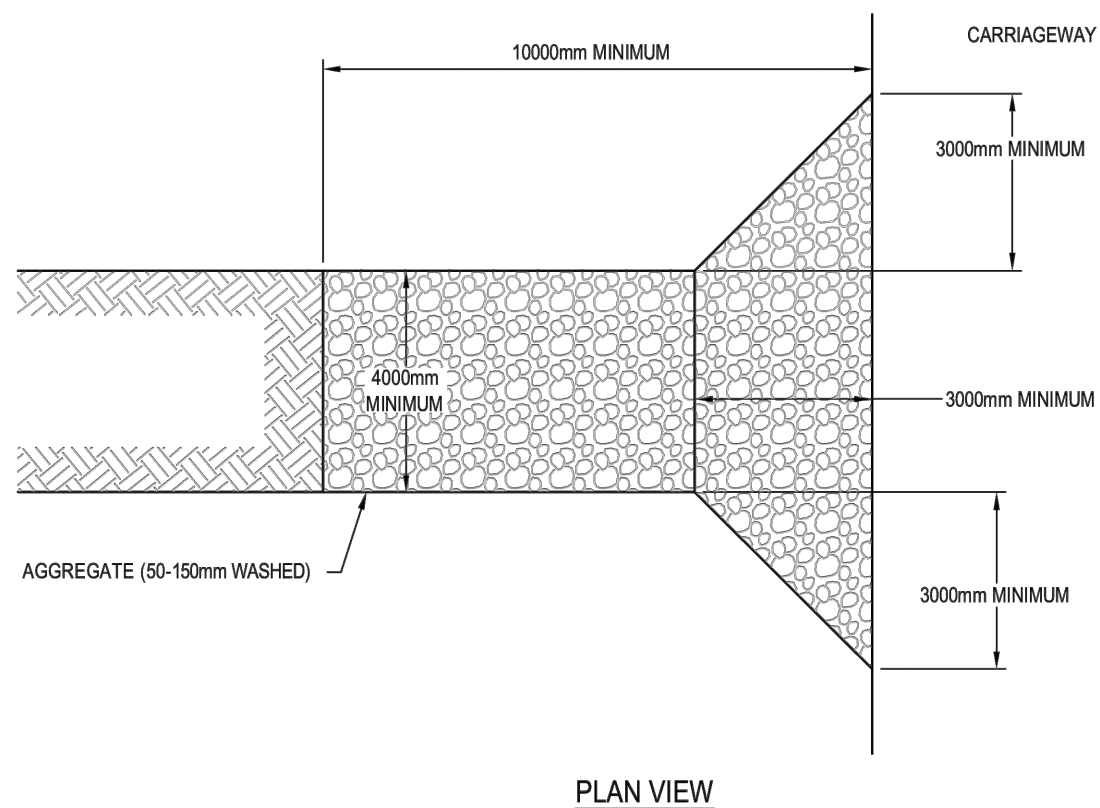
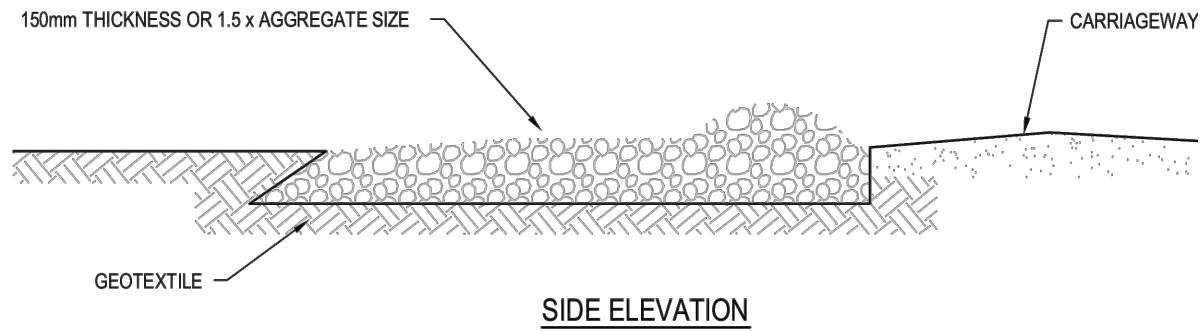
DESIGNED	N.H.	02.16
DES. CHECKED	M.A.E.	02.16
DRAWN	W.O.	02.16
DWG. CHECKED	N.H.	02.16
PROJECT LEADER	M.A.E.	02.16
INFRASTR'R APP'D		

OPERATIONS
INFRASTRUCTURE

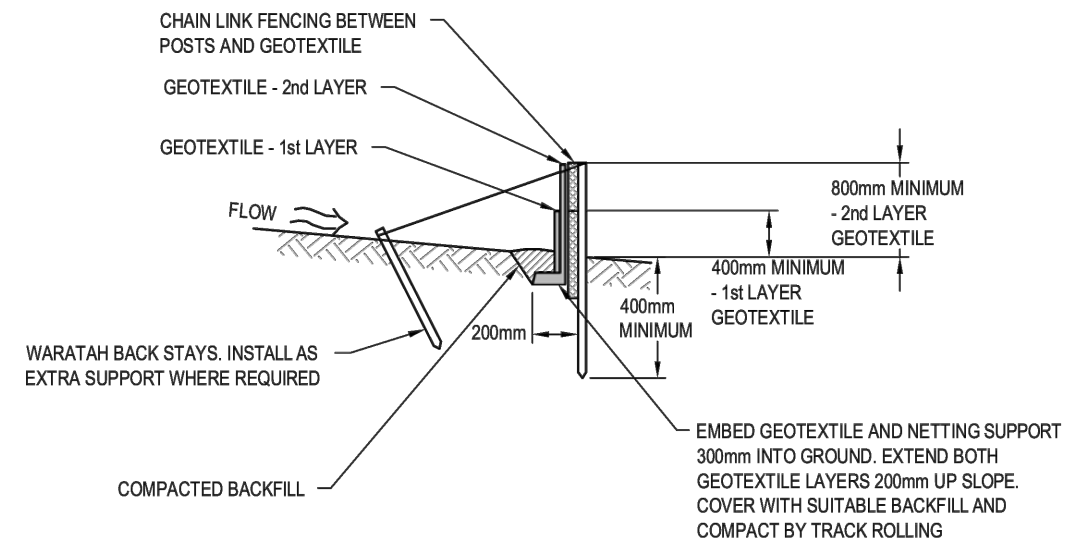
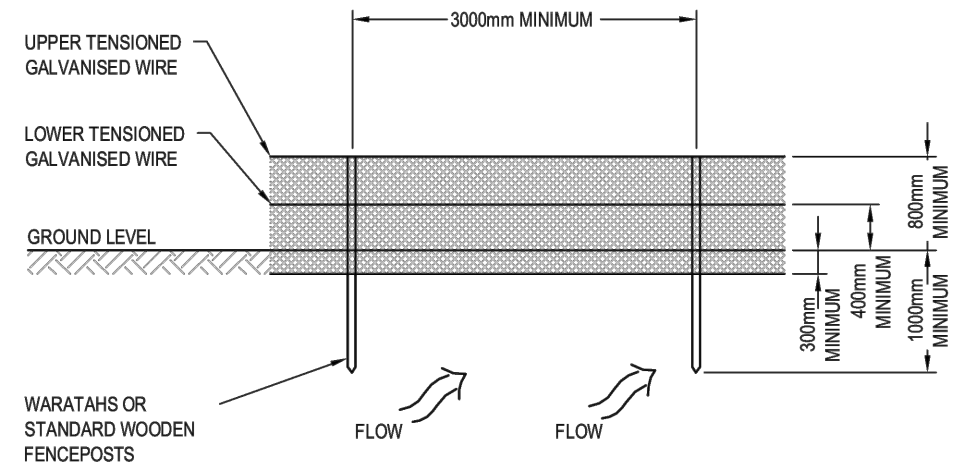
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NORTH HARBOUR No.2 WATERMAIN
EROSION AND SEDIMENT CONTROL ARRANGEMENT
CATCHPIT PROTECTION, DECANTING EARTH BUND, DIVERSION BUNDS (TYPICAL DETAILS)

CAD FILE	2010676.001-006	DATE	22.02.16
ORIGINAL SCALE	A3 NTS	CONTRACT No.	5663
REF No.	WMNH2-91-E-005	ISSUE	-
DWG No.	2010676.005		2



STABILISED CONSTRUCTION ENTRANCE
NOT TO SCALE



SUPER SILT FENCE
NOT TO SCALE

FOR CONSENT

Plot Date: Mar 03, 2016 - 9:55am U:\vuba\42073300\01_DWG_Current\08_AEE\Main_Route_AEE_Drawing_Set\ 2010676.001-006.dwg

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

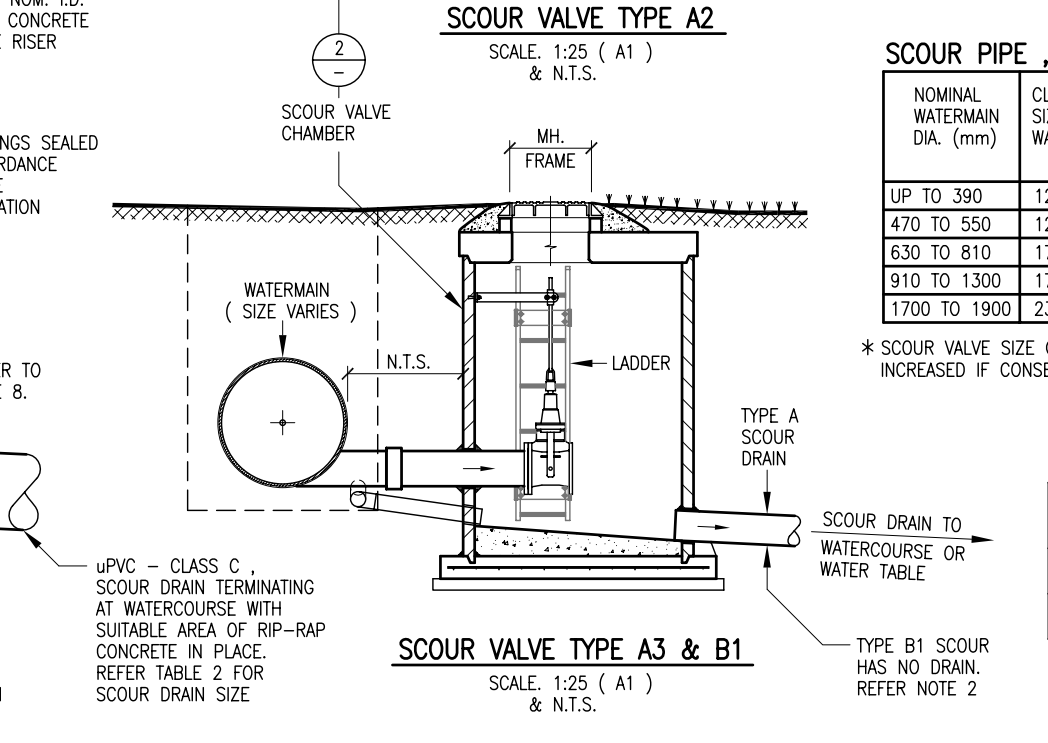
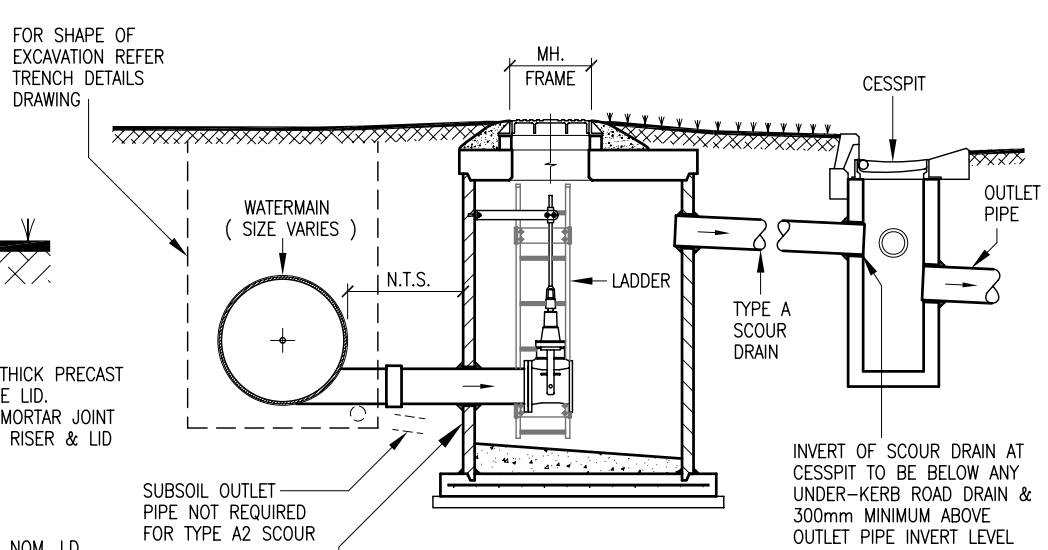
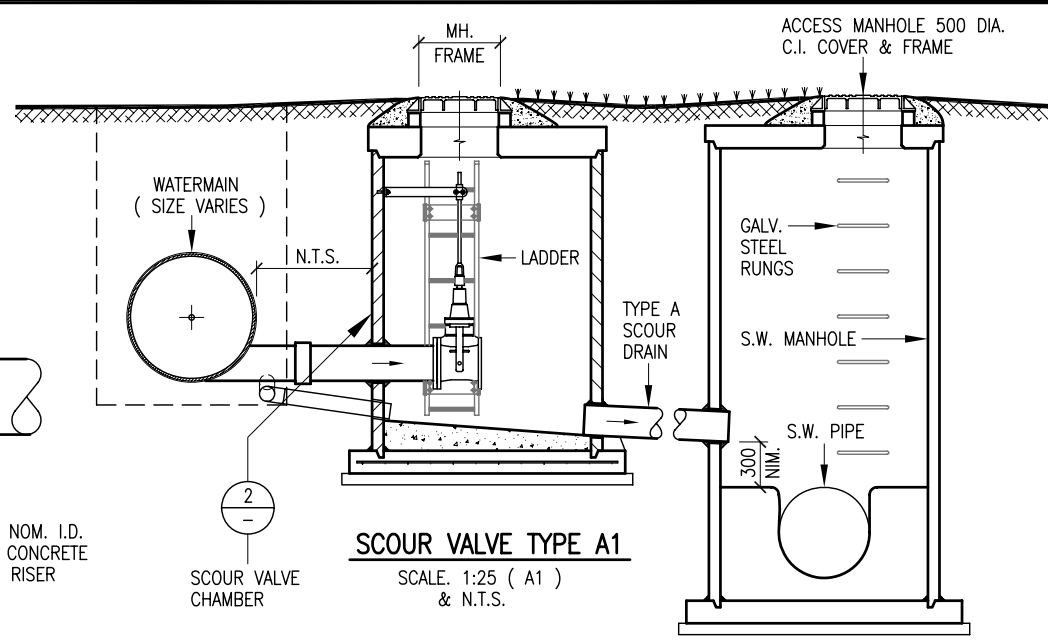
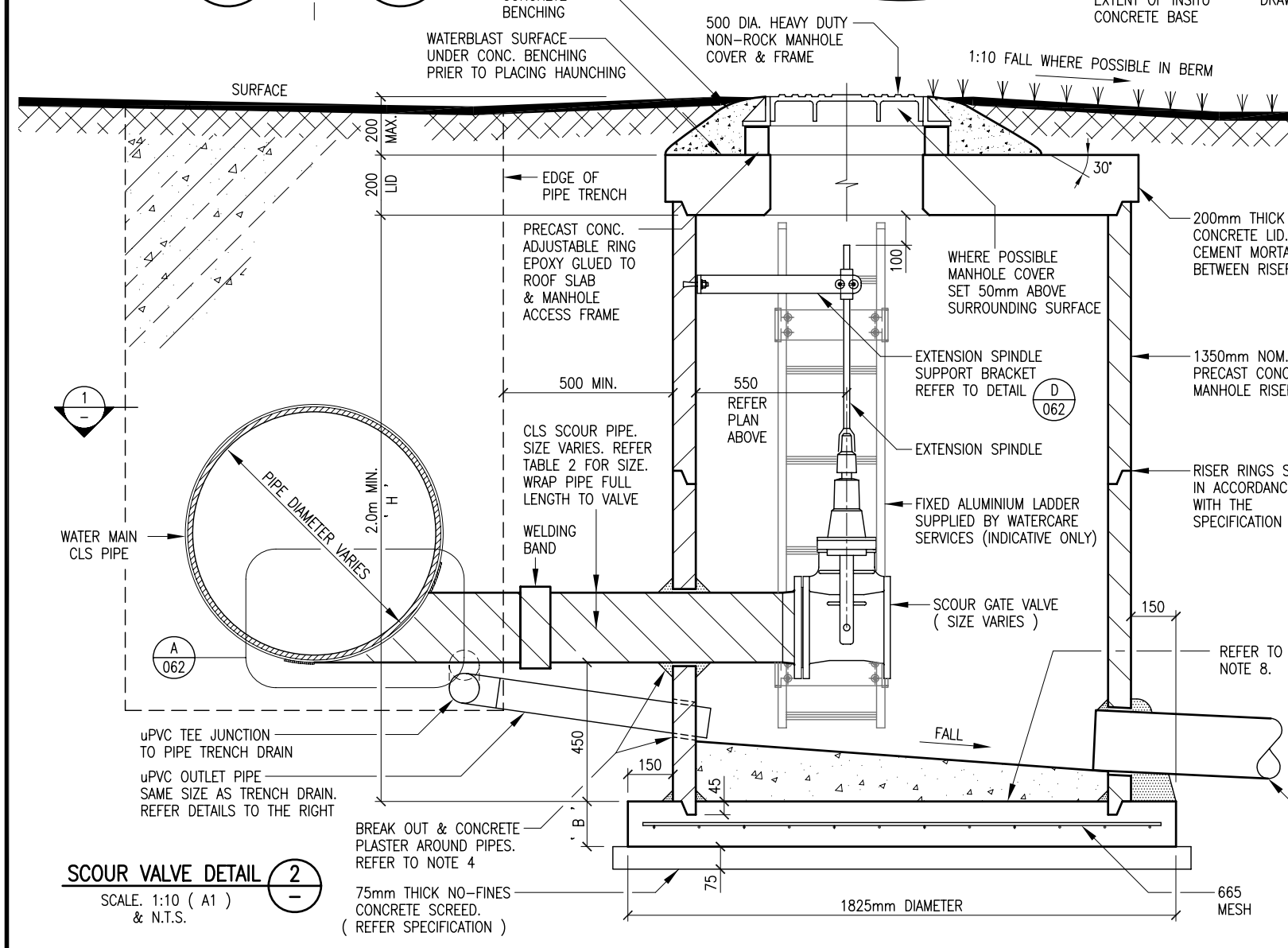
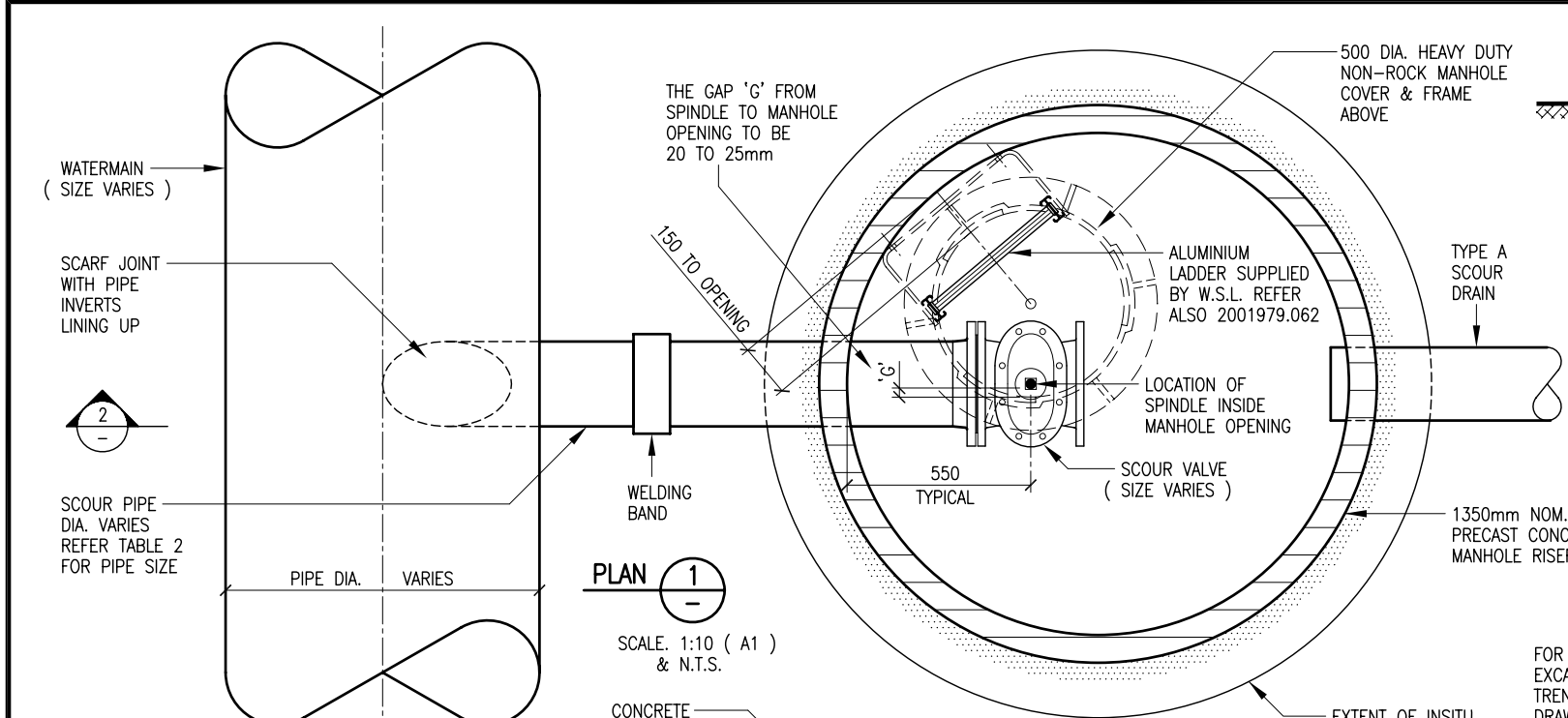
DESIGNED	N.H.	02.16
DES. CHECKED	M.A.E.	02.16
DRAWN	W.O.	02.16
DWG. CHECKED	N.H.	02.16
PROJECT LEADER	M.A.E.	02.16
INFRASTR APP'D		

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INFRASTRUCTURE

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NORTH HARBOUR No.2 WATERMAIN
EROSION AND SEDIMENT CONTROL ARRANGEMENT
STABILISED ENTRANCE, SUPER SILT FENCE (TYPICAL DETAILS)

CAD FILE	2010676.001-006	DATE	22.02.16
ORIGINAL SCALE	A3	NTS	CONTRACT No. 5663
REF No.	WMNH2-91-E-006	ISSUE	-
DWG No.	2010676.006		2



- NOTES**
- CAST-IN-SITU CONCRETE STRENGTH TO BE 20MPa. AT 28 DAYS
 - SCOUR TYPE :
 - (TYPE A SCOURS) A1, A2, & A3 ARE THOSE WHICH HAVE AN OUTLET SCOUR DRAIN WHICH IS LEAD TO A STORMWATER MANHOLE, CESSPIT, OR WATERCOURSE.
 - (TYPE B SCOURS) B1 ARE THOSE THAT DO NOT HAVE AN OUTLET SCOUR DRAIN FROM THE SCOUR VALVE CHAMBER
 - MANHOLE LID & SPINDLE TO BE LOCATED FOR EASY ACCESS
 - BREAK OUT HOLES THROUGH RISER WALLS FOR PIPES TO BE PLASTERED AFTER INSTALLATION TO ENGINEER'S SATISFACTION
 - ALL METALWORK TO BE HOT-DIP GALVANISED. STEEL PIPES & VALVES TO BE PAINTED IN ACCORDANCE WITH SPECIFICATION
 - THIS DRAWING HAS BEEN DEVELOPED USING AN 810mm NOM. DIA. CLS WATER MAIN & A 200mm NOM. DIA. CLS SCOUR PIPE TO SCALES SHOWN. FOR OTHER PIPE SIZES THIS DRAWING IS NOT TO SCALE.
 - FLANGES TO CLS SCOUR TO BE STANDARD W.S.L. WELDNECK FLANGES IN ACCORDANCE WITH WELDNECK FLANGE DRAWINGS 2001979 .025 & .026
 - PRECAST FLANGED BASE MAY BE SUBSTITUTED FOR CAST INSITU BASE.
 - MANHOLES TO BE SEALED AGAINST THE INGRESS OF WATER. REFER SPECIFICATION, SECTION 229

TABLE 2
SCOUR PIPE , SCOUR VALVE & DRAIN SIZES

NOMINAL WATERMAIN DIA. (mm)	CLS SCOUR PIPE SIZE FROM WATERMAIN	SCOUR VALVE SIZE *	uPVC CLASS C DRAIN PIPE FROM SCOUR CHAMBER
UP TO 390	121 OD x 4.76	100	150
470 TO 550	121 OD x 4.76	100	150
630 TO 810	178 OD x 4.76	150	200
910 TO 1300	178 OD x 4.76	150	200
1700 TO 1900	232 OD x 4.76	200	250

* SCOUR VALVE SIZE CAN BE INCREASED IF CONSENT ALLOWS

TABLE 1
SCOUR VALVE CHAMBER BASE

MANHOLE DEPTH 'H' (mm)	THICKNESS OF BASE 'B' (mm)
0 TO 2400	150
2410 TO 3600	200

ISSUE	DATE	AMENDMENT	BY	APPD.	DATE
F	5:11	TABLE 2 REVISED	L.C.	T.C.	06-05
E	1:11	LADDER BRACKET & DIMENSIONS ALTERED	L.C.	J.P.	06-05
D	2:09	S.V. CHAMBER WITH C.I. CIRCULAR LID	L.C.	T.C.	06-05
C	9:08	LID DEPTH INCREASED TO 200mm	I.M.	T.C.	06-05
B	12:06	SUBSOIL DRAIN OUTLET AMENDED	L.C.	T.C.	06-05
A	9:06	NOTES ADDED TO DRAWING	L.C.	J.P.	06-05

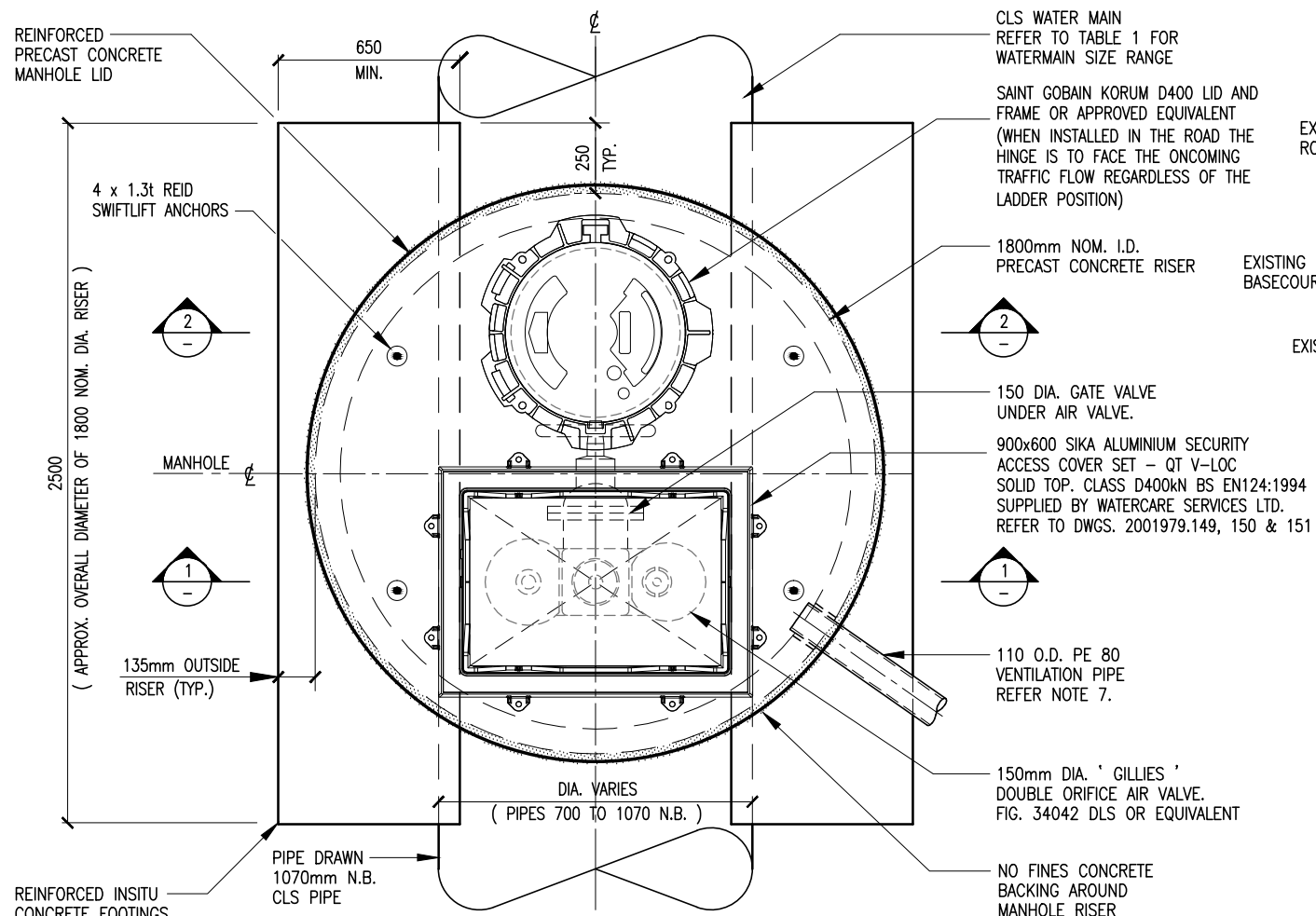
DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	AM APPROVED
T.C.	J.P.	L.C.	I.M.	T.C.	A.S.

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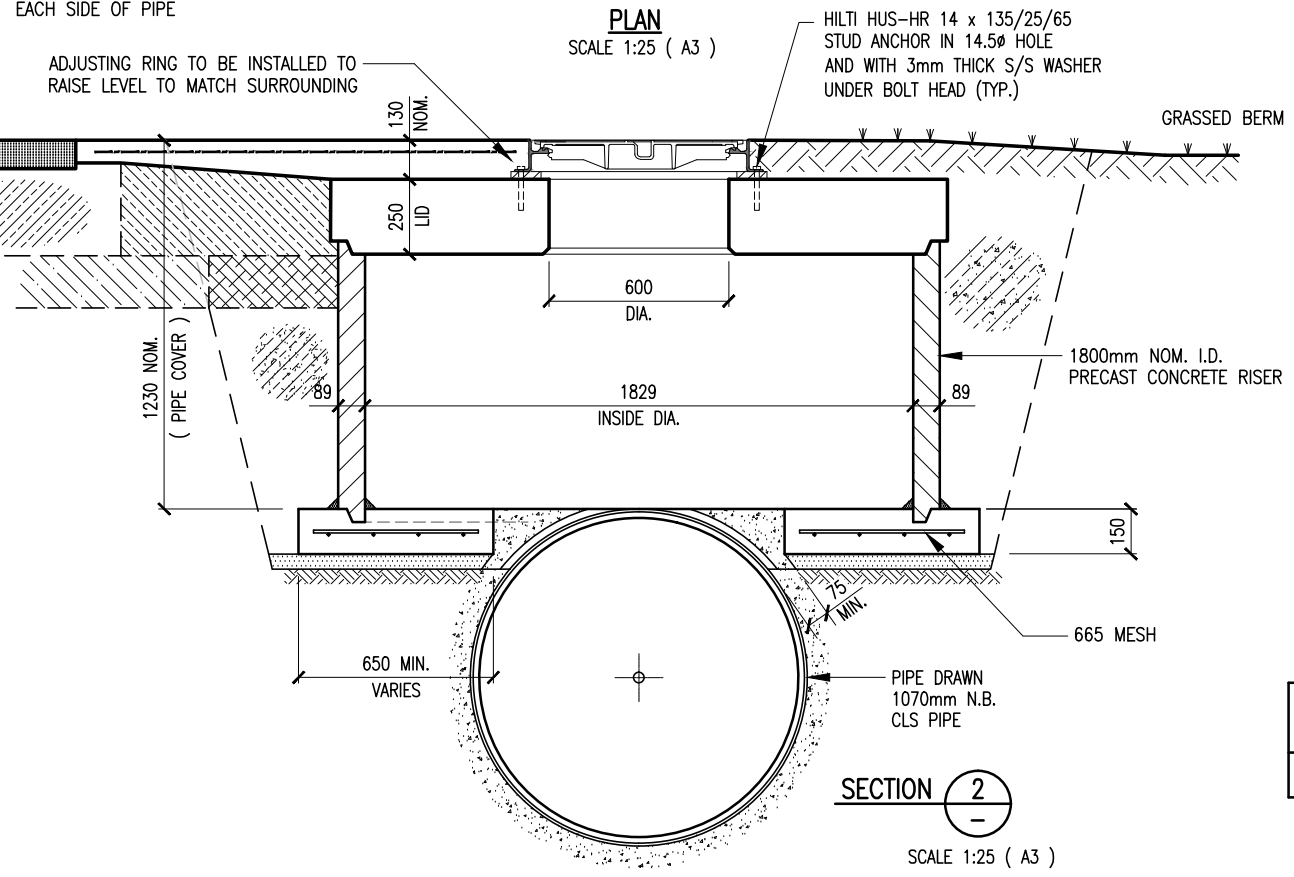
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WATERCARE SERVICES WATER RETICULATION
STANDARD PIPELINES
SCOUR VALVE CHAMBER DETAILS - CIRCULAR LID - SHEET 1

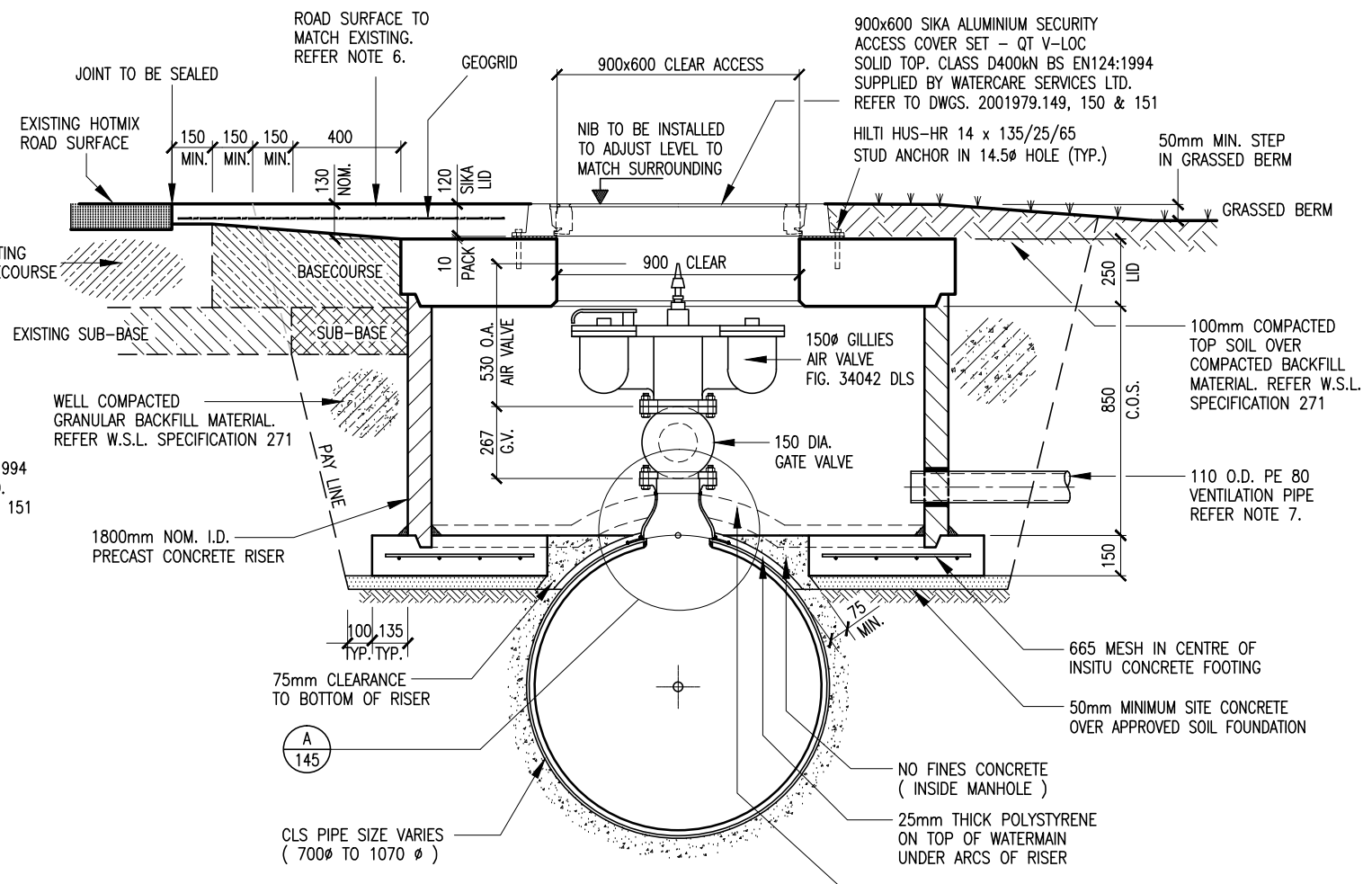
CAD FILE 2001979.061F	DATE 5-5-11
ORIGINAL SCALE A1	CONTRACT No.
AS SHOWN	
DRAWING No. 2001979 .061	ISSUE F



PLAN
SCALE 1:25 (A3)



SECTION 2
SCALE 1:25 (A3)



SECTION 1
SCALE 1:25 (A3)

SPECIAL NOTE

WHEN INSTALLED IN THE ROAD THE KORUM LID SHOULD BE ON THE TRAFFIC SIDE OF THE CHAMBER SO THAT THE LID DOES NOT OPEN OVER THE RECTANGULAR OPENING. THE HINGE IS TO FACE THE ONCOMING TRAFFIC FLOW REGARDLESS OF THE LADDER POSITION. THE CHAMBER SHOULD BE POSITIONED ACCORDINGLY TO ALLOW THIS

CONCRETE NOTES

- REFER TO DWG 2001979 .144 FOR CONCRETE LID & REINFORCING
- CONCRETE FOR FOOTINGS TO HAVE A STRENGTH OF 40MPa.
- PROVIDE 50 MIN. SIDE COVER & 65mm BOTTOM COVER TO 665 HRC MESH IN FOOTINGS

TABLE 1 – MANHOLE RISER & AIR VALVE SIZE
USE CLASS 'X' FLUSH JOINTS CONCRETE RISER

NOM. CLS PIPE DIA. (mm)	NOM. SIZE OF RISER (mm)	AIR VALVE SIZE (mm)
700, 760, 810, 910 & 1070	1800	150

NOTES

- FOOTING TO BE FOUNDED ON COMPACTED MATERIAL TO ENGINEER'S SPECIFICATION
- REFER "CONCRETE NOTES" FOR CONCRETING DETAILS
- THIS DWG. TO BE READ IN CONJUNCTION WITH DWG. 2001979.145 FOR CONCENTRIC REDUCER AND COLLAR DETAILS
- BACKFILL FOR CHAMBERS :
 - IN BERM TO BE HARDFILLED TO WITHIN 100mm OF SURFACE – 100mm TOPSOIL & GRASSED
 - IN PAVEMENTS BACKFILL AS TRENCH BACKFILL DETAIL
- ALL AIR VALVES SHALL BE GILLIES BRAND DOUBLE AIR RELIEF VALVES FOR WATER PIPELINE APPLICATIONS OR APPROVED ALTERNATIVE
- ALL DIMENSIONS TO BE CONFIRMED ON SITE
- ROAD SURFACE RESTORATION TO BE IN ACCORDANCE WITH 'CODE OF PRACTICE FOR WORKING IN THE ROAD' OR AS AGREED WITH ROAD CONTROLLING AUTHORITY
- REFER TO DWG. 2001979.116 FOR DETAILS OF 110 O.D. PE80 SDR17 VENTILATION PIPE. THE DEPTH & DIRECTION TO VERTICAL SUPPORT POST TO BE DETERMINED ON SITE.
- REFER TO STD. SPECS. FOR FABRICATION & INSTALLATION OF STEEL PIPEWORK ASSEMBLIES – 277.3.8 AIR VALVES, FOR FURTHER INFORMATION
- ISOLATION GATE VALVE TO BE IN ACCORDANCE WITH WATERCARE STD. SPEC. 257

L:\Common\GRIEGG\DWG\2013\Std Water Retic Chambers - B Park\2001979.143.dwg, 24/07/2013 2:41:41 p.m.

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ISSUE	DATE	AMENDMENT	BY	APPD.
-	05:13	APPROVED FOR CONSTRUCTION	I.M.	T.C.
1	04:13	PRELIMINARY – DRAWN FOR 1070mm N.B. PIPE	L.C.	T.C.

DESIGNED T.C. 04:13
DES. CHECKED T.C.
DRAWN L.C. 04:13
DWG. CHECKED T.C.
PROJECT LEADER T.C. 05-13
INFRASTR APP'D

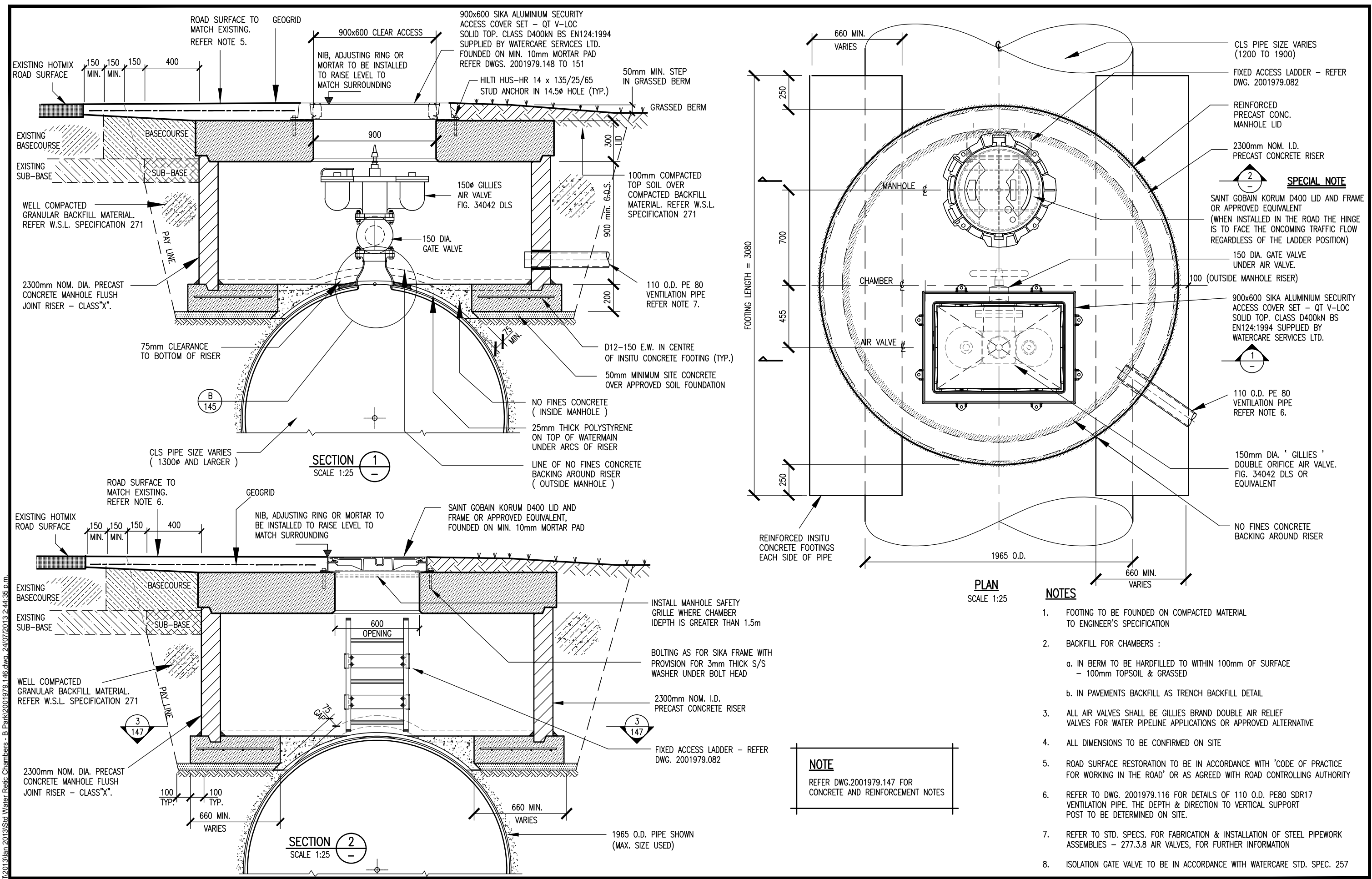
T. HAWKE
OPERATIONS
A. STEWART
INFRASTRUCTURE

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WATER RETICULATION STANDARD
150mm DIA. AIR VALVE CHAMBER – DOUBLE ACCESS
FOR PIPES 700 DIA. TO 1070 DIA. – DIMENSIONS AND DETAILS

CAD FILE 2001979.143	DATE 17-06-13
ORIGINAL SCALE A3 1:25	CONTRACT No.
REF No.	ISSUE
DWG No. 2001979.143	



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ISSUE	DATE	AMENDMENT	BY	APPD.
-	05-13	APPROVED FOR CONSTRUCTION	I.M.	T.C.
2	02-13	REVISED CHAMBER SIZE - FOR APPROVAL	I.M.	
1	02-13	PRELIMINARY - FOR ENGINEERS APPROVAL	I.M.	

DESIGNED	B.P.	02-13
DES. CHECKED		
DRAWN	I.M.	02-13
DWG. CHECKED		
PROJECT LEADER	T.C.	05-13
INFRASTR APP'D		

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A. STEWART
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WATER RETICULATION STANDARD
150mm DIA. AIR VALVE CHAMBER - DOUBLE ACCESS
 FOR PIPES 1200 DIA. TO 1900 DIA. - DIMENSIONS AND DETAILS

CAD FILE	2001979.146	DATE	17-06-13
ORIGINAL SCALE	A3 AS SHOWN	CONTRACT No.	-
REF No.	-	ISSUE	-
DWG No.	2001979.146		

- NOTES**
- FOOTING TO BE FOUNDED ON COMPACTED MATERIAL TO ENGINEER'S SPECIFICATION
 - BACKFILL FOR CHAMBERS :
 - IN BERM TO BE HARDILLED TO WITHIN 100mm OF SURFACE - 100mm TOPSOIL & GRASSED
 - IN PAVEMENTS BACKFILL AS TRENCH BACKFILL DETAIL
 - ALL AIR VALVES SHALL BE GILLIES BRAND DOUBLE AIR RELIEF VALVES FOR WATER PIPELINE APPLICATIONS OR APPROVED ALTERNATIVE
 - ALL DIMENSIONS TO BE CONFIRMED ON SITE
 - ROAD SURFACE RESTORATION TO BE IN ACCORDANCE WITH 'CODE OF PRACTICE FOR WORKING IN THE ROAD' OR AS AGREED WITH ROAD CONTROLLING AUTHORITY
 - REFER TO DWG. 2001979.116 FOR DETAILS OF 110 O.D. PE80 SDR17 VENTILATION PIPE. THE DEPTH & DIRECTION TO VERTICAL SUPPORT POST TO BE DETERMINED ON SITE.
 - REFER TO STD. SPECS. FOR FABRICATION & INSTALLATION OF STEEL PIPEWORK ASSEMBLIES - 277.3.8 AIR VALVES, FOR FURTHER INFORMATION
 - ISOLATION GATE VALVE TO BE IN ACCORDANCE WITH WATERCARE STD. SPEC. 257

NOTE
 REFER DWG.2001979.147 FOR CONCRETE AND REINFORCEMENT NOTES