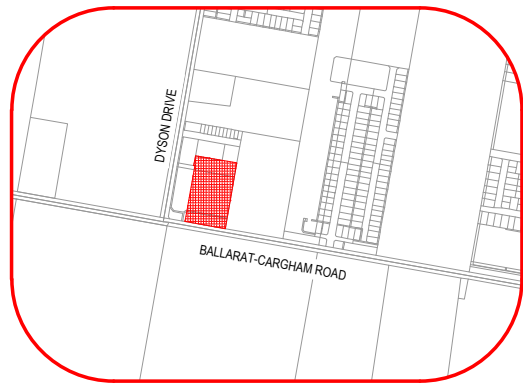


**DESIGN HEAD DW:** 80m (Nominal)  
**ZONE:** RESIDENTIAL  
**TEST PRESSURE:** 1000 kPa



**LOCALITY PLAN**

SCALE: 1:100

**General Notes:**

- Only contractors accredited by Central Highlands Water shall be eligible to construct these works.
- Only products approved and catalogued by the Water Agency shall be used.
- Works must be constructed according to WSA 03-2011 MRWA edition. The Contractor shall ensure that they are conversant with all current revisions, amendments and updates that the relevant Water Agency has made to their standards.
- DW assets shall only be constructed after deeper assets affecting the water mains have been constructed (eg: sewerage & drainage assets).
- This design is to be read in conjunction with road and drainage plans.
- The Contractor shall obtain a road opening permit for any works within the road reserve and comply with all requirements of the road owner.
- For interpretation of the symbols used in this design, refer to drawing MRWA-W-100.

**Survey, Set Out and Asset Recording**

- Temporary Bench Marks (TBM) for the set out of works to the Australian Height Datum (AHD) are provided in the design drawings.
- All levels are in metres to AHD.
- All coordinates are in metres to the Map Grid of Australia (MGA 54-94) or to the Local Coordinate System.
- The Contractor is directly responsible for ensuring the project set out is consistent with the design. Should actual site conditions conflict in any way with that documented, the Contractor shall contact the Superintendent for clarification before proceeding.
- The Contractor is to engage a suitably qualified and experienced Surveyor to undertake asset recording of the work. All surveyor works and data recording shall be undertaken in accordance with the MRWA survey manual.
- All specific pipe materials (eg: PVC-O) shall be indicated in the As Constructed information

**Products and Materials (Refer Table 1 & 2)**

- For PE pipe construction refer to drawing MRWA-W-103 and WSA01 (PE pipeline code). Welders shall be accredited to PMBWELD301A(Butt) and PMBWELD302B(Electrofusion).

**Appurtenances (Fittings - Refer Table 3)**

- All valves and hydrants shall be marked according to drawings MRWA-W-300 and MRWA-W-301.
- Valve surrounds, covers and spindles shall be constructed in accordance with drawing MRWA-W-302.

- Hydrant surface arrangements shall be constructed in accordance with drawings MRWA-W-303.
- Flange and flange bolts shall be constructed in accordance with drawings MRWA-W-306A and MRWA-W-306B.
- All valves shall be located directly out from the apex of the splay corner (unless otherwise indicated).

**Water Main Alignment, Trenching & Cover (Refer Table 4 & 5)**

- Trench, pipe placement, embedment and backfill dimensions as per standard drawing MRWA-W-202.
- Offsets of mains from property boundaries shall be: min 600mm (mains < DN100) and min 1m (mains ≥DN100).
- All water mains shall pass over drains and sewers unless shown otherwise in the design drawings.

**Embedment**

- Embedment material shall be as per WSA-PS-360 and WSA-PS-361.
- Embedment shall be placed as per drawings MRWA-W-201 and MRWA-W-203.

**Backfill**

- All water mains under roadways to be backfilled with 20mm Class 2 crushed rock in 150mm layers, compacted to 100% (upper backfill) and 95% (lower backfill) in accordance with MRWA-W201. All water mains under footpaths/vehicle crossings to be backfilled with 20mm Class 3 crushed rock and extended 500mm either side of future paving in 150mm layers compacted to 95% in accordance with MRWA-W201. Contractor to verify position of vehicle crossings prior to backfilling. Refer drawing MRWA-W201.
- Non trafficable backfill shall be completed as per MRWA-W-201 and the current version of the MRWA Backfill Specification.

**Thrust Restraint (Refer Table 6)**

- Construct concrete thrust restraints as per drawings MRWA-W- 204, 205A, 205B and 205C.
- Timber / Recycled plastic blocks as per drawings MRWA-W-204 and MRWA-W-206.
- Thrust restraints have been designed on the basis of the AHBP (ground strength) nominated in TABLE 6. The Contractor shall confirm the actual ground conditions and discuss with the Superintendent any ground conditions which are found to be different to that nominated.

**Property Services**

- Skewed tappings to be laid with detectable marker tape (tracer wire) in accordance with Clause 15.12 of WSA 03-2011 MRWA edition.

**Connections (All types)**

- Connection of ≥DN100 offtakes to existing mains shall be as indicated in the design drawings and as per drawing MRWA-W-106.
- Connection of DN40, 50 & 63 PE offtakes shall be as per drawing MRWA-W-107.
- Property Service Connections as per drawing MRWA-W-111.
- All property service connections to new residential RRJ reticulation mains are to be completed using pretapped connectors.

**Other Services (Refer Table 4 & 7)**

- To receive the most up to date information prior to construction, "Dial before you Dig" shall be undertaken to aid in the location of other services. Other services shall be carefully located prior to full excavation at the contractor's cost. Any clashes of proposed new works with other assets shall be reported to the Superintendent immediately for clarification.
- Clearances to other services shall be as per Table 7 and Table 5.5 of WSA03- 2011 MRWA edition. These clearances shall apply to surface covers as well as underground assets.

**Earthworks and Retaining Walls:**

- In areas subject to earthworks, construction of water assets shall not commence until earthworks and retaining walls has been completed unless written approval has been given by the Water Authority.

**Testing, Asset Acceptance and Live Connections**

- Post construction activities (of both DW & NDW) such as swabbing,

- water quality testing, pressure testing and chlorination shall be carried out in accordance with WSA03-2011 MRWA edition and the MRWA Water Quality Compliance Specification. All test results shall be documented and reported to the Superintendent.
- The Water Agency shall be notified in writing 2 full working days in advance of testing being undertaken.
- The Water Agency shall be notified in writing 5 full working days in advance of connection to the live network being undertaken. Shut down work shall be as short as practical and scheduled to commence at 9am on working days with completion to occur no later than 4pm. In industrial and commercial areas, the impact on business shall be considered and it may be necessary to carry out the work outside normal working hours.
- Valves connecting new assets to the Water Agency's live system shall not be operated by the Contractor.

DRAWING No.	TITLE
1801844-02-700-WLOC	NOTES, SCHEDULES & LOCALITY PLAN
1801844-02-710-WDET	DETAIL PLAN
1801844-02-711-WDET	WATER LONGSECTION
1801844-02-712-WDET	WATER DETAIL PLAN

TABLE 1. New Pipe Schedule

Size (DN)	New Work		Drinking Main		Reference
	Type	Class	Length (m)		
25	PE (Property Services)	16	-	-	WSA-PS-25
63	PE	16	56.2	-	WSA-PS-207
100	PVC-O	16	79.8	-	WSA-PS-210
125	PE	16	16.0	-	WSA-PS-207
225	PVC-O	16	44.4	-	WSA-PS-210
300	PVC-O	16	46.2	-	WSA-PS-210
355	PE	16	103.8	-	WSA-PS-207

TABLE 2. Pipe Material Schedule

Material	Reference	Material	Reference
PVC-M	WSA-PS-209	PE (RETIC & SUBMAIN)	WSA-PS-207
PVC-O	WSA-PS-210	PE (PROPERTY SERVICES)	WSA-PS-215

TABLE 3. Hydrant & Washout Schedule (All DW hydrants & Washouts are Water Agency owned)

Main Size	Fitting Type	Ownership	Location	Street	Location
355	HYDRANT	CHW	IN LINE	BALLARAT-CARNGHAM RD	CH 2.00
355	CHLORINATION	CHW	END OF LINE	BALLARAT-CARNGHAM RD	AT THE END OF LINE (EAST)
300	HYDRANT/AIR VALVE	CHW	IN LINE	BALLARAT-CARNGHAM RD	CH 133.073
125	HYDRANT	CHW	IN LINE	HATHAWAY CLOSE	1m S OF EBL LOT 19
63	HYDRANT	CHW	IN LINE	HATHAWAY CLOSE	8m N OF EBL LOT 15
63	WASHOUT	CHW	END OF LINE	HATHAWAY CLOSE	AT THE END OF LINE (NORTH)

TABLE 4. Service Alignment Schedule (offsets in m)

Location	Gas		Water		Electricity		Telecommunication		Sewer	
	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)
HATHAWAY CLOSE	E	2.10	E	2.80	W	2.90	W	2.20	E	1.00
SERVICE ROAD	S	11.42	S	12.10	N	2.80	N	2.40	N Ex	1.00
COURT BOWL HEAD		2.10		2.55		3.15		2.95		-

Offsets are from Road Reserve Boundary

TABLE 6. Thrust Restraint Schedule

Location	Type	Thrust	AHBP (kPa) USED	Area (m <sup>2</sup> ), or W(m) x Y(m)	No. Locations
A	IN LINE	DN355 VALVE/ FLANGED TEE	50	3.42, 2.569x1.541	1
B	IN LINE	DN300 FL-SOC CONNECTOR/AIR VALVE	50	0.37, 0.783x0.470	2
C	IN LINE	DN125 TEE	50	0.43, 0.897x0.538	1
D	IN LINE	DN125 VALVE	50	0.43, 0.897x0.538	1
E	IN LINE	DN63 VALVE/ SOC-FL	50	0.43, 0.897x0.538	1
F	END OF LINE	DN63 WASHOUT	50	0.23, 0.618x0.371	1
G	IN LINE	DN355 SCOUR VALVE	50	3.42, 2.569x1.541	1
H	END OF LINE	DN355 CHLORINATION	50	2.20, 1.915x1.149	1
I	IN LINE	DN225 60° BEND	50	1.03, 1.312x0.787	1
J	PLAIN	DN225 60° BEND	50	1.03, 1.312x0.787	1
K	PLAIN	DN225 TEE CONNECTION	50	1.03, 1.312x0.787	1

TABLE 7. Vertical Clearances

Existing or proposed service	Minimum Vertical Clearance(mm)	Existing or proposed service	Minimum Vertical Clearance(mm)
Water mains ≤ DN375	150	Electricity conduits and cables	225
Water mains >DN375	300	Stormwater drains & pits	150
Gas mains	150	Sewers - gravity	500
Teleco conduits and cables	150	Sewers - pressure & vacuum	300

- Vertical clearance between water mains shall depend on the larger main diameter.
- Water mains shall cross over sewers and drains unless shown otherwise.
- Maintain additional clearance from High Voltage electrical cables to allow for a protective barrier and marking.

**WARNING**  
 BEWARE OF UNDERGROUND SERVICES  
 THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**WARNING**  
 BEWARE OF ASBESTOS  
 SOME UNDERGROUND SERVICES MAYBE CONSTRUCTED FROM ASBESTOS CONTAINING MATERIAL. CONTACT THE SUPERINTENDENT FOR INSTRUCTIONS ON HOW TO MANAGE ANY POTENTIAL ASBESTOS HAZARD.

THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE WATER AUTHORITY PRIOR TO COLLECTING A WATER QUALITY SAMPLE FROM A HYDRANT.

ENSURE THRUST BLOCK IS A MINIMUM 2.0m CLEAR OF PERPENDICULAR TRENCH CROSSINGS INCLUDING PITS.

FOR THE DURATION OF PROCLAIMED WATER RESTRICTIONS, THE CONTRACTOR SHALL CONFORM WITH THE RESTRICTIONS AND ANY OTHER WATER CONSERVATION REQUIREMENTS IMPOSED BY THE WATER AGENCY.

**ISSUED FOR CONSTRUCTION**

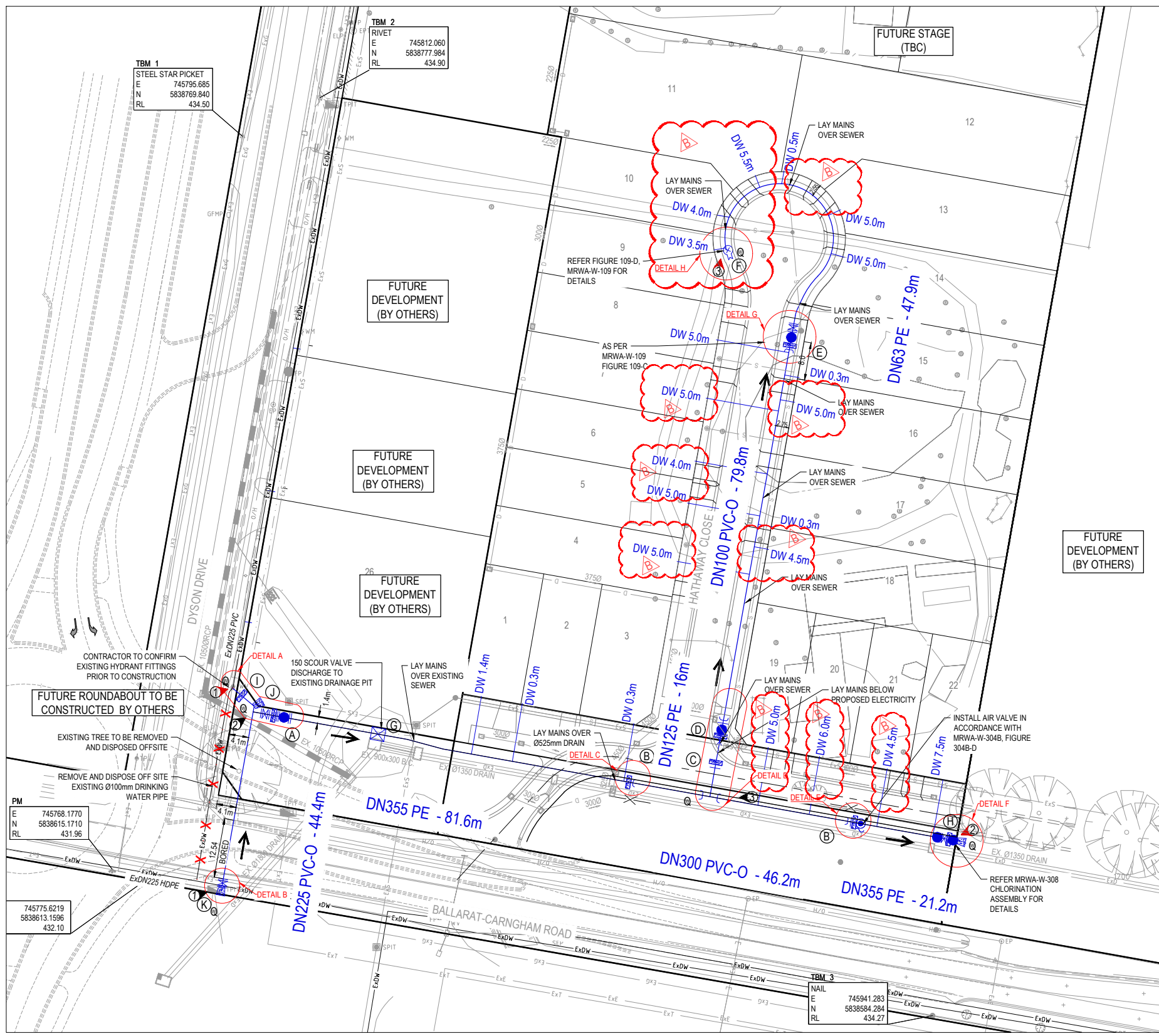
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B	WATER AND GAS CONDUITS LOCATIONS AMENDED	14.07.21	R.C.				
A	ISSUED FOR CONSTRUCTION	29.06.21	R.C.				
P1	TABLES UPDATED	09.02.21	J.S.				
P0	ISSUED FOR INFORMATION	28.10.20	J.S.				

**Beveridge Williams**  
 Suite 3/180 Eleanor Dr  
 Lucas VIC 3350  
 ph: 03 5327 2000  
 www.beveridgewilliams.com.au  
 BEVERIDGE WILLIAMS REFERENCE: 1801844-02-700-WLOC



**CENTRAL HIGHLANDS WATER**  
 CITY OF BALLARAT  
 MAPLE LANE ESTATE - STAGE 02  
 WATER RETICULATION EXTENSION No.1801844-02  
 NOTES, SCHEDULES & LOCALITY PLAN

SCALE: AS SHOWN  
 SHEET 01 OF 04  
 DRAWING No.: 1801844-02-W  
 01



**LEGEND**

- X VALVE
- H WATER AUTHORITY HYDRANT
- SWAB DIRECTION
- S SWAB INSERTION POINT
- R SWAB REMOVAL POINT
- Chlorination symbol CHLORINATION
- Endcap symbol ENDCAP
- Ferrule symbol FERRULE (MALE OUTLET THREAD)
- Soc Washout Bend symbol SOC WASHOUT BEND WITH HYDRANT
- Water Quality Sampling Point symbol WATER QUALITY SAMPLING POINT (DUAL WATER)
- Change of Pipe Material symbol CHANGE OF PIPE MATERIAL

0 10 20 50 Scale 1:1000 @ A3  
 0 10 20 50 Scale 1:500 @ A1

**ISSUED FOR CONSTRUCTION**

B	WATER AND GAS CONDUITS LOCATIONS AMENDED	14.07.21	R.C.			DESIGNED	P.HUNJAN	PROJECT NUMBER	1801844-02
A	ISSUED FOR CONSTRUCTION	29.06.21	R.C.			DRAWN	P.HUNJAN	MELWAY REFERENCE	
P1	UPDATED BASED ON CHW COMMENTS	09.02.21	J.S.			CHECKED	J.SPARK	AUTHORISED	J.SPARK
P0	ISSUED FOR INFORMATION	28.10.20	J.S.			DATE	DATE	DATE	DATE
REV	DESCRIPTION	DATE	APPROVED	REV	DESCRIPTION	DATE	APPROVED	DATE	DATE

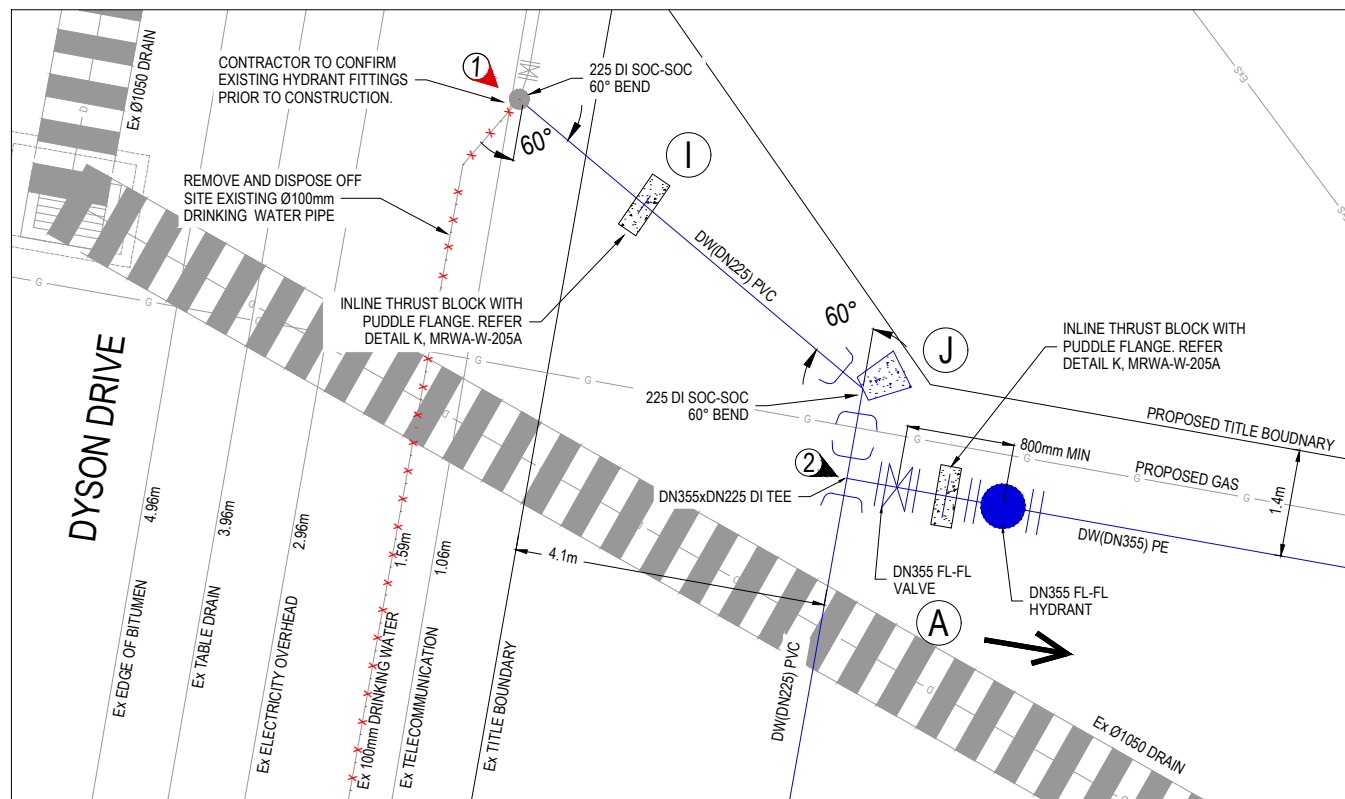
**BW Beveridge Williams**  
 Suite 3/180 Eleanor Dr  
 Lucas VIC 3350  
 ph: 03 5327 2000  
 www.beveridgewilliams.com.au



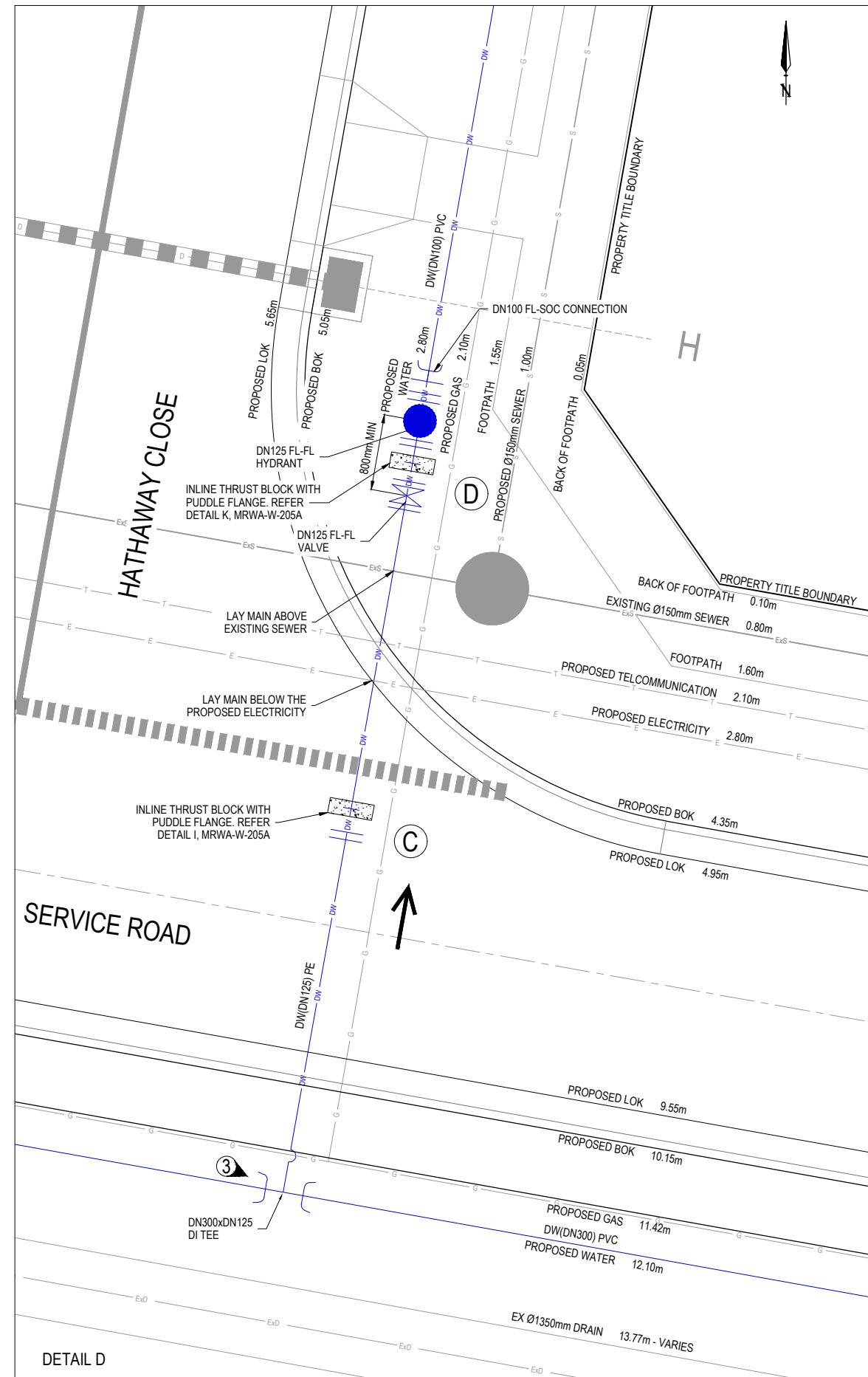
**CENTRAL HIGHLANDS WATER**  
 CITY OF BALLARAT  
 MAPLE LANE ESTATE - STAGE 02  
 WATER RETICULATION EXTENSION No.1801844-02  
 DETAIL PLAN

SCALE: AS SHOWN
SHEET 02 OF 04
DRAWING No.: 1801844-02-W
REV 02

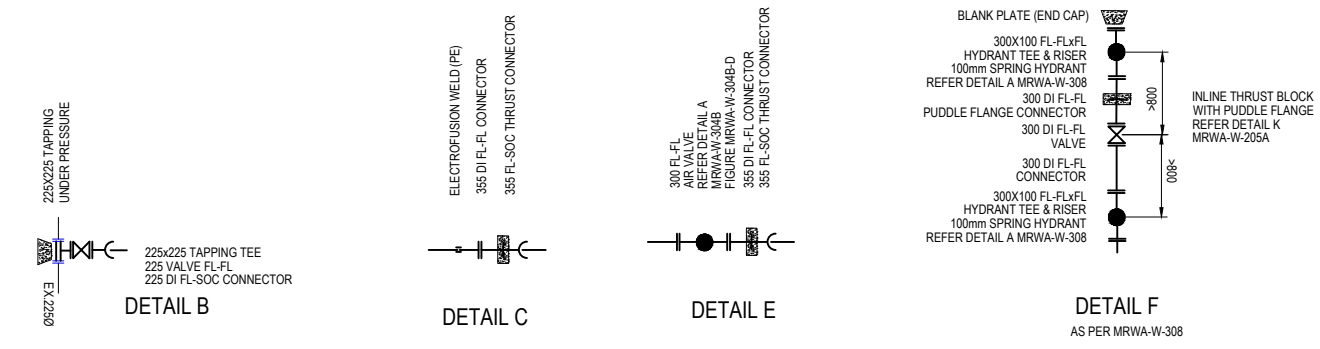




DETAIL A



DETAIL D



**LEGEND**

- VALVE
- WATER AUTHORITY HYDRANT
- SWAB DIRECTION
- SWAB INSERTION POINT
- SWAB REMOVAL POINT
- CHLORINATION
- ENDCAP
- FERRULE (MALE OUTLET THREAD)
- SOC WASHOUT BEND WITH HYDRANT
- WATER QUALITY SAMPLING POINT (DUAL WATER)
- CHANGE OF PIPE MATERIAL

**ISSUED FOR CONSTRUCTION**

B	WATER AND GAS CONDUITS LOCATIONS AMENDED	14.07.21	R.C.				DESIGNED	P.HUNJAN	PROJECT NUMBER	1801844-02
A	ISSUED FOR CONSTRUCTION	29.06.21	R.C.				DRAWN	P.HUNJAN	MELWAY REFERENCE	
P1	UPDATED BASED ON CHW COMMENTS	09.02.21	J.S.				CHECKED	J.SPARK	AUTHORISED	J.SPARK
P0	ISSUED FOR INFORMATION	28.10.20	J.S.				DATE	22.10.20	DATE	22.10.20
REV	DESCRIPTION	DATE	APPROVED	REV	DESCRIPTION	DATE	APPROVED	CHECKED	DATE	22.10.20

**Beveridge Williams**  
 Suite 3/180 Eleanor Dr  
 Lucas VIC 3350  
 ph: 03 5327 2000  
 www.beveridgewilliams.com.au



**CENTRAL HIGHLANDS WATER**  
 CITY OF BALLARAT  
 MAPLE LANE ESTATE - STAGE 02  
 WATER RETICULATION EXTENSION No.1801844-02  
 WATER DETAIL PLAN

SCALE: NOT TO SCALE

SHEET 04 OF 04	REV
DRAWING No.: 1801844-02-W	B
04	