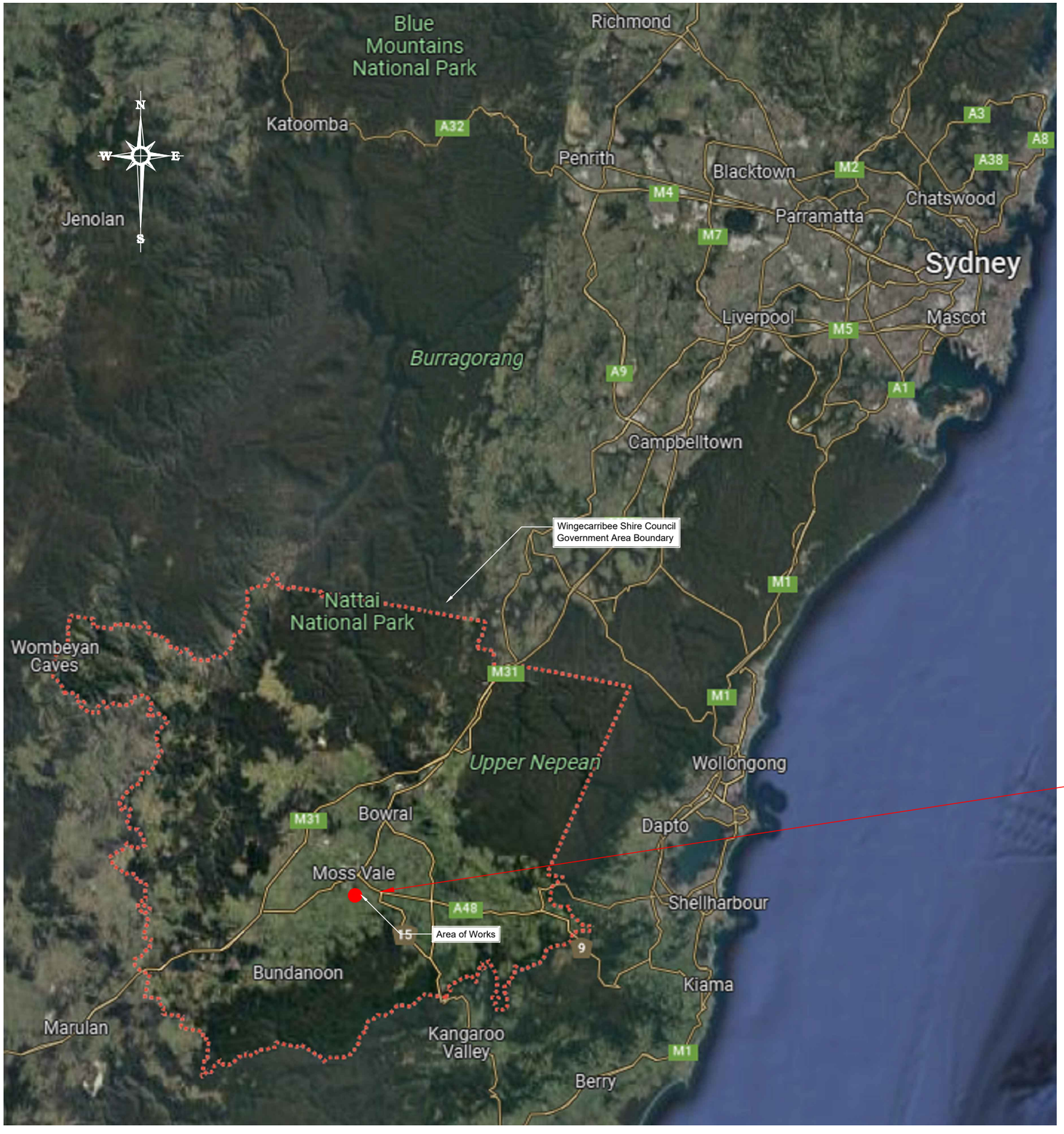
ASHBOURNE - INTERIM WASTEWATER TREATMENT SCHEME
AREA OF OPERATIONS

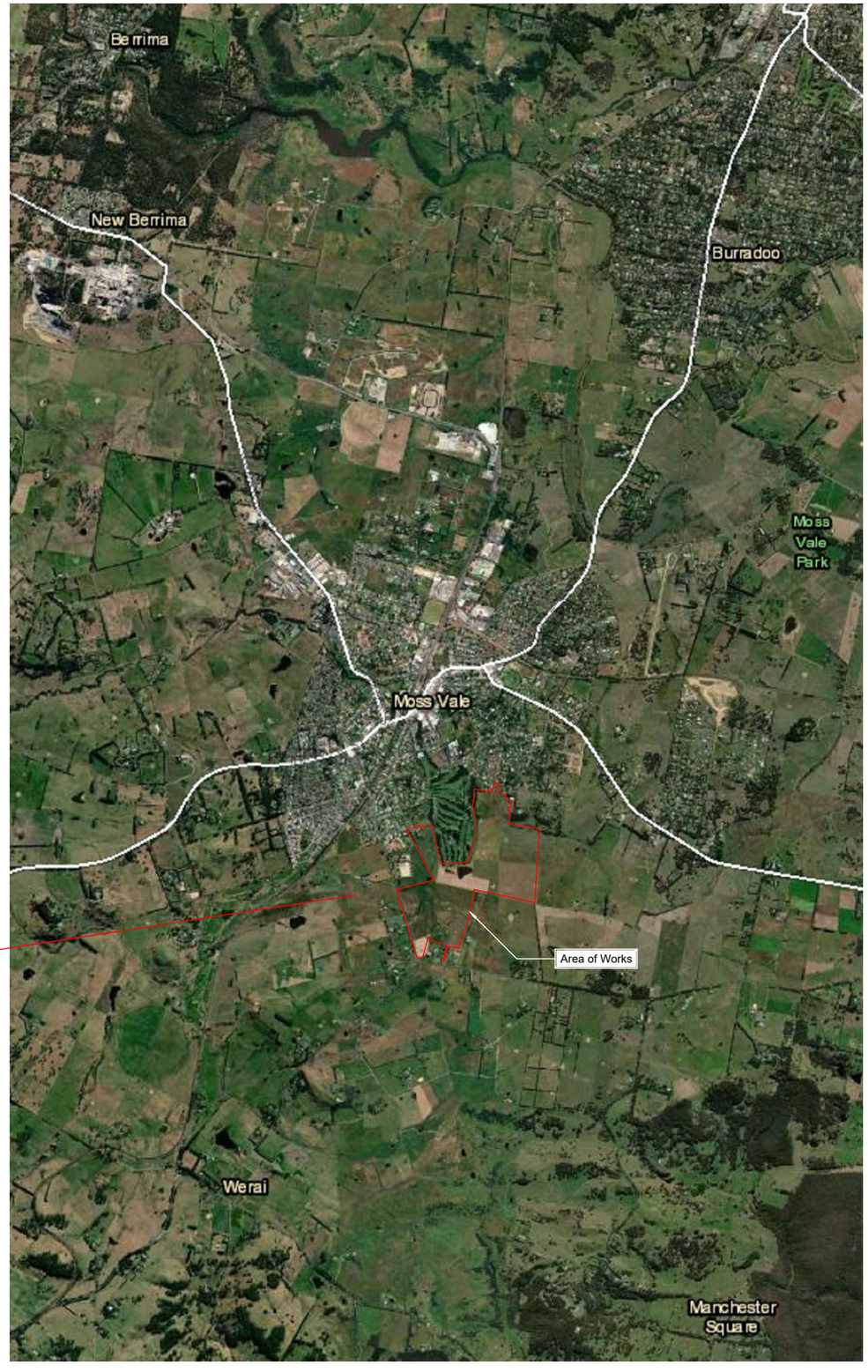
TRUEWATER AUSTRALIA
PEOPLE • WATER • ENVIRONMENT

DRAWING SCHEDULE	
PAGE NO.	**DRAWING TITLE**
01	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
02 - 05	PART 1 - AREA OF OPERATIONS
06 - 35	PART 2 - MUNICIPAL SEWER RETICULATION NETWORK
36 - 70	PART 3 - MUNICIPAL SPS AND EMERGENCY STORAGE
71 - 79	PART 4 - IWTS ACCESS PLANS (INTERIM RISING MAIN)
80 - 91	PART 5 - INTERIM WASTEWATER TREATMENT SCHEME (IWTS)
92 - 94	PART 6 - INTERIM EFFLUENT DISPERSAL SYSTEM (EDS)

JOB STATUS: CONCEPT		PROJECT: ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME	CLIENT: Aoyuan building a healthy lifestyle
DRAWING TITLE: COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE			
REV.: A	DRAWING NO.: ASHB-IWTS-G-0001	SCALE: 1:10500	DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

PART 1 - AREA OF OPERATIONS





REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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CLIENT
Aoyuan
building a healthy lifestyle

PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
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SCALE: NTS

JOB STATUS
CONCEPT

DRAWING TITLE
AREA OF OPERATIONS - LOCAL GOVERNMENT BOUNDARY

DRAWING NO.
ASHB-IWTS-G-0002

REV.
A

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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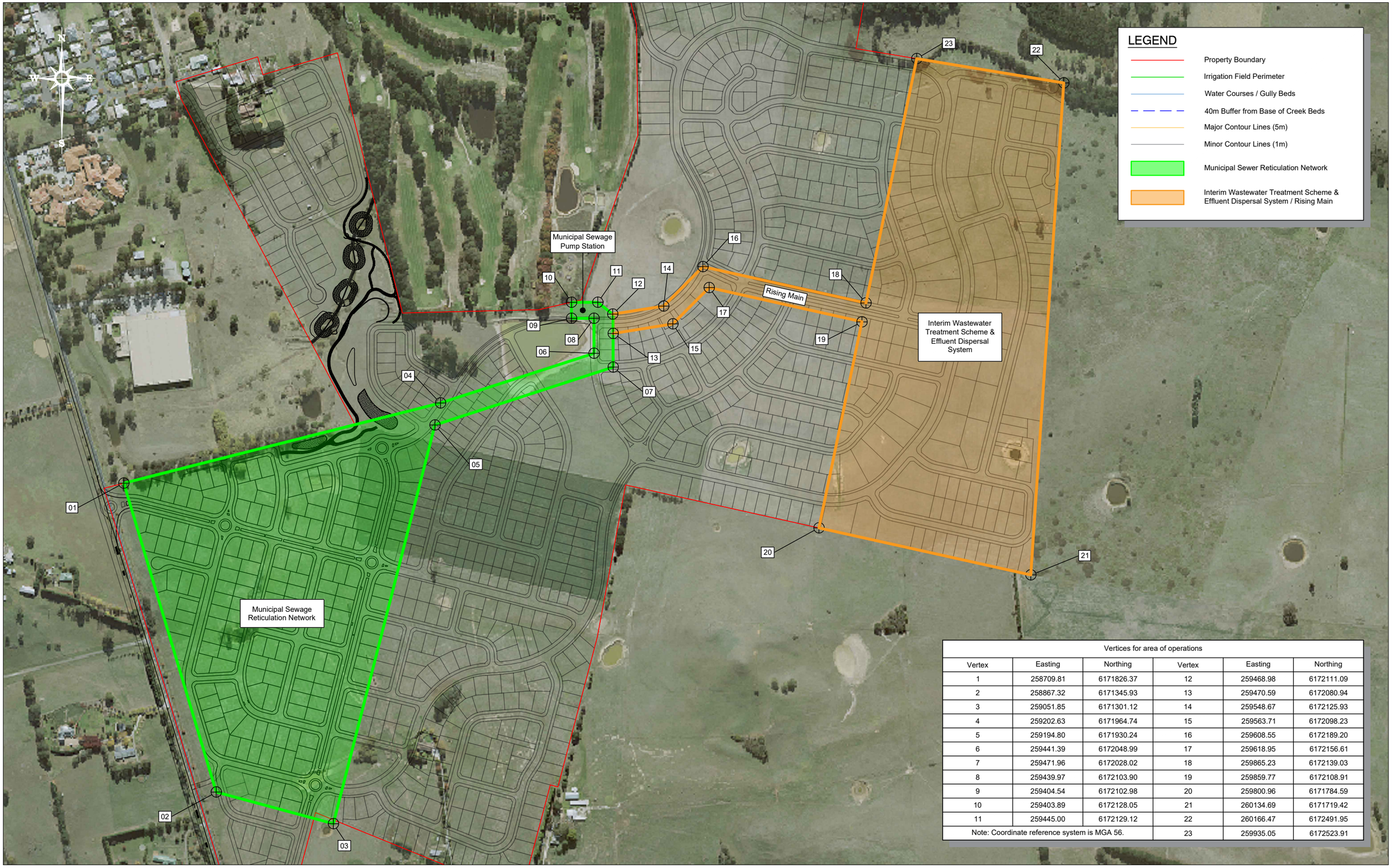
SCALE: NTS

JOB STATUS
CONCEPT

DRAWING TITLE
AREA OF OPERATIONS - LOT AND DP IDENTIFICATION

DRAWING NO.
ASHB-IWTS-G-0003

REV.
A



Vertices for area of operations					
Vertex	Easting	Northing	Vertex	Easting	Northing
1	258709.81	6171826.37	12	259468.98	6172111.09
2	258867.32	6171345.93	13	259470.59	6172080.94
3	259051.85	6171301.12	14	259548.67	6172125.93
4	259202.63	6171964.74	15	259563.71	6172098.23
5	259194.80	6171930.24	16	259608.55	6172189.20
6	259441.39	6172048.99	17	259618.95	6172156.61
7	259471.96	6172028.02	18	259865.23	6172139.03
8	259439.97	6172103.90	19	259859.77	6172108.91
9	259404.54	6172102.98	20	259800.96	6171784.59
10	259403.89	6172128.05	21	260134.69	6171719.42
11	259445.00	6172129.12	22	260166.47	6172491.95
Note: Coordinate reference system is MGA 56.			23	259935.05	6172523.91

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
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SCALE: NTS

JOB STATUS
CONCEPT

DRAWING TITLE
AREA OF OPERATIONS - BOUNDARY OF OPERATIONS

DRAWING NO. **ASHB-IWTS-G-0004**

REV. **A**

PART 2 - MUNICIPAL SEWER RETICULATION NETWORK

A1

CHELSEA GARDENS - MOSS VALE

STAGE 1A, 1B & 1C

POTABLE WATER & SEWER

LOCALITY PLAN
(NOT TO SCALE)

DRAWING LIST	
SHEET 1	COVER SHEET
SHEET 2	GENERAL NOTES
SHEET 3	POTABLE WATER GENERAL ARRANGEMENT
SHEET 4	POTABLE WATER DETAIL PLAN 1
SHEET 5	POTABLE WATER DETAIL PLAN 2
SHEET 6	POTABLE WATER DETAIL PLAN 3
SHEET 7	POTABLE WATER DETAIL PLAN 4
SHEET 8	POTABLE WATER THRUST BLOCK DETAILS 1
SHEET 9	POTABLE WATER THRUST BLOCK DETAILS 2
SHEET 10	GRAVITY SEWER GENERAL ARRANGEMENT
SHEET 11	GRAVITY SEWER DETAIL PLAN 1
SHEET 12	GRAVITY SEWER DETAIL PLAN 2
SHEET 13	GRAVITY SEWER DETAIL PLAN 3
SHEET 14	GRAVITY SEWER DETAIL PLAN 4
SHEET 15	GRAVITY SEWER LONGITUDINAL SECTION 1
SHEET 16	GRAVITY SEWER LONGITUDINAL SECTION 2
SHEET 17	GRAVITY SEWER LONGITUDINAL SECTION 3
SHEET 18	GRAVITY SEWER LONGITUDINAL SECTION 4
SHEET 19	GRAVITY SEWER LONGITUDINAL SECTION 5
SHEET 20	GRAVITY SEWER LONGITUDINAL SECTION 6
SHEET 21	GRAVITY SEWER LONGITUDINAL SECTION 7
SHEET 22	GRAVITY SEWER LONGITUDINAL SECTION 8
SHEET 23	SEWER MAINTENANCE STRUCTURE SCHEDULE
SHEET 24	STAGE 1 SEWERAGE SYSTEM CATCHMENT PLAN

No.	REVISION DESCRIPTION	BY	DATE
04	REVISED SEWER LAYOUT AT CLIENT REQUEST	K.G.	26/9/21
03	ISSUE FOR APPROVAL	K.G.	6/8/21
02	CLIENT COMMENTS ADDRESSED	K.G.	30/7/21
01	CONCEPT DESIGN	K.G.	2/7/21

SERVICE	DATE	REF.

WORK-AS-CONSTRUCTED CERTIFICATION

DEVELOPER: . . . . . .

PROJECT SUPERVISOR: . . . . . .

CONSTRUCTOR: . . . . . .

COMPLETED: . . . . . W.A.C. PREPARED: . . . . . .

ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.
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Quality System Endorsed Company

CLIENT: Aoyuan building a healthy lifestyle / WINGECARRIBEE SHIRE COUNCIL

TITLE: PLAN OF PROPOSED WATER INFRASTRUCTURE SERVICES
CHELSEA GARDENS - MOSS VALE (STAGE 1A, 1B & 1C)
YARRAWA ROAD & LOVELLE STREET, MOSS VALE
L.G.A. WINGECARRIBEE

COVER SHEET

SHEET 1 OF 24

VERSION: 04

DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER
SCALE: -	DATUM: -	U.S.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021

JOB No. 91/25368/1A

A1

POTABLE WATER NOTES

1 *ALL WORKS & MATERIALS ARE TO BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA 03–2011–3.1 & WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS WITH ASSOCIATED STANDARD DRAWINGS.*

2 ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS.

3 THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS OF SERVICES PRIOR TO CONSTRUCTION. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN WATER MAINS AND UNDERGROUND SERVICES MUST BE IN ACCORDANCE WITH SECTION 5.12.5 OF THE WATER SUPPLY CODE OF AUSTRALIA WSA 03–2011–3.1.

4 MAIN TO BE LAID GENERALLY 2.7m P.L. AT STANDARD DEPTH BELOW TOP OF KERB EXCEPT WHERE OTHERWISE SHOWN. *PIPE COVER SHALL CONFORM WITH CLAUSE 7.4.2.*

5 MAINLAYING NOT TO PROCEED PRIOR TO FORMATION OF FOOTWAYS TO FINISHED SURFACE LEVELS.

6 i) BENDS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 8.
ii) TAPERS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
iii) TEES TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
iv) HYDRANT BENDS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
v) STOP VALVES TO BE IN ACCORDANCE WITH WSC–WAT–001 (Issue A – 3/9/2010) & WSC–WAT–002 (Issue A – 2/9/2010).
vi) HYDRANTS TO BE IN ACCORDANCE WITH WSC–WAT–001 (Issue A – 3/9/2010) & WSC–WAT–003 (Issue A – 3/6/2010).

7 ROAD CROSSINGS & MAINS IN CARRIAGEWAYS TO HAVE STABILISED SAND (20:1 MIX) TRENCH BACKFILL TO SUB–GRADE LEVEL ONLY.

8 BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL W.A.C. DETAILS HAVE BEEN OBTAINED BY THE DESIGNER & APPROVAL FOR BACKFILLING GIVEN BY THE W.S.C.

9 ALL SURFACE FITTINGS LOCATED WITHIN PATHWAYS SHALL BE 'CONCRETE PAVEMENT' TYPE IN ACCORDANCE WITH WAT–1303–V & WAT–1304–V.

10 AREA COVERED BY TREE PRESERVATION ORDER.

11 ALL PROPERTY (MAIN TO METER) SERVICES MUST BE CONSTRUCTED TO WINGECARRIBEE SHIRE COUNCIL'S INSTALLATION REQUIREMENTS BY A LICENSED PLUMBER. THE WORKS MUST BE INSTALLED IN ACCORDANCE WITH THE CURRENT WINGECARRIBEE SHIRE COUNCIL PROPERTY (MAIN TO METER) SERVICE INSTALLATIONS TECHNICAL REQUIREMENTS, NSW CODE OF PRACTICE FOR PLUMBING & DRAINAGE AND AS/NZS3500.

12 ALL STEEL MAINS TO BE F.B.P.E. COATED TO AS 4321 & COMPLY WITH AS/NZS 1579. CEMENT LINING OF STEEL MAIN TO COMPLY WITH AS 1281. ALL WELDS & CORROSION PROTECTION OF STEEL MAIN TO BE IN ACCORDANCE WITH WAT–1408.

13 THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA ARE:

TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: Nil ***SEE NOTE 7***

NON–TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: 35 TESTS

14 DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSINGS. WHERE THERE ARE DUAL WATER SERVICES CROSSING, EACH WATER SERVICE TO BE IN A SEPARATE DN32 CONDUIT.

SEWER NOTES

1 *ALL WORKS & MATERIALS ARE TO BE IN ACCORDANCE WITH THE SEWERAGE CODE OF AUSTRALIA WSA 02–2002–2.2 & WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS WITH ASSOCIATED STANDARD DRAWINGS.*

2 ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS.

3 THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS OF SERVICES PRIOR TO CONSTRUCTION. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SEWERS AND UNDERGROUND SERVICES MUST BE IN ACCORDANCE WITH TABLE 1 OF WINGECARRIBEE SHIRE COUNCIL STANDARD DRAWING WSC–SEW–002 (Issue A – 2/5/2017).

4 ALL LOTS WERE VACANT AT TIME OF SURVEY.

5 ALL SURVEY MARKS ARE PEGS UNLESS OTHERWISE NOTED.

6 THE CONSTRUCTOR SHALL VERIFY ANY EXISTING INVERT LEVELS PRIOR TO CONSTRUCTION.

7 ROAD CROSSINGS & MAINS IN CARRIAGEWAYS SHALL HAVE STABILISED SAND (20:1 MIX) TRENCH BACKFILL TO SUB–GRADE LEVEL ONLY.

8 ALL STRUCTURES TO BE IN ACCORDANCE WITH MAINTENANCE STRUCTURE SCHEDULE (SHEET 23). SHOULD THE CONSTRUCTOR CHOOSE TO USE A DIFFERENT STRUCTURE TO THAT SHOWN IN THE SCHEDULE, THE W.S.C. MUST BE INFORMED IN WRITING FOR CONSIDERATION.

9 ALL STRUCTURES TO BE CONSTRUCTED TO PROPOSED FINISHED SURFACE LEVELS. THE CONSTRUCTOR IS TO LIAISE WITH THE SITE SUPERINTENDENT TO VERIFY ALL FINAL LEVELS.

10 PIPES TO BE CONCRETE ENCASED (SUPPORT TYPE 12u) SHOWN ACCORDINGLY:

11 AREAS HATCHED THUS NOT DRAINED.

12 DRAINAGE LIMITS ARE TO PROPOSED FINISHED SURFACE LEVELS.

13 DN100 PROPERTY CONNECTION SEWERS TO BE INSTALLED IN ACCORDANCE WITH WSC–SEW–004 (Issue A – 2/5/2017).

14 BUILDING OVER/ADJACENT TO SEWER. CONDITIONS APPLY. REFER TO WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS.

15 ALL LEVELS ELECTRONICALLY GENERATED. NO LEVEL BOOK AVAILABLE.

16 THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE SEWERAGE CODE OF AUSTRALIA (CLAUSE 22.3.4.4) ARE:

TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: Nil ***SEE NOTE 7***

NON–TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: 42 TESTS / 900mm LAYER

MAINTENANCE STRUCTURES:
1 TEST / 1m LAYER WITHIN 300mm OF EACH M.H. OR M.S.

POTABLE WATER PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH
DN225	D.I.C.L.	PN35	20
DN225	m.P.V.C.	PN16	205
DN150	D.I.C.L.	PN35	230
DN150	m.P.V.C.	PN16	1,320
DN100	D.I.C.L.	PN35	35
DN100	m.P.V.C.	PN16	1,670
		TOTAL	*3,480*

GRAVITY SEWER PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH
DN225	u.P.V.C.	SN8	391.54
DN150	u.P.V.C.	SN8	4,084.03
		TOTAL	*4,475.57*

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GENERAL NOTES

SHEET 2 OF 24 | VERSION: 04

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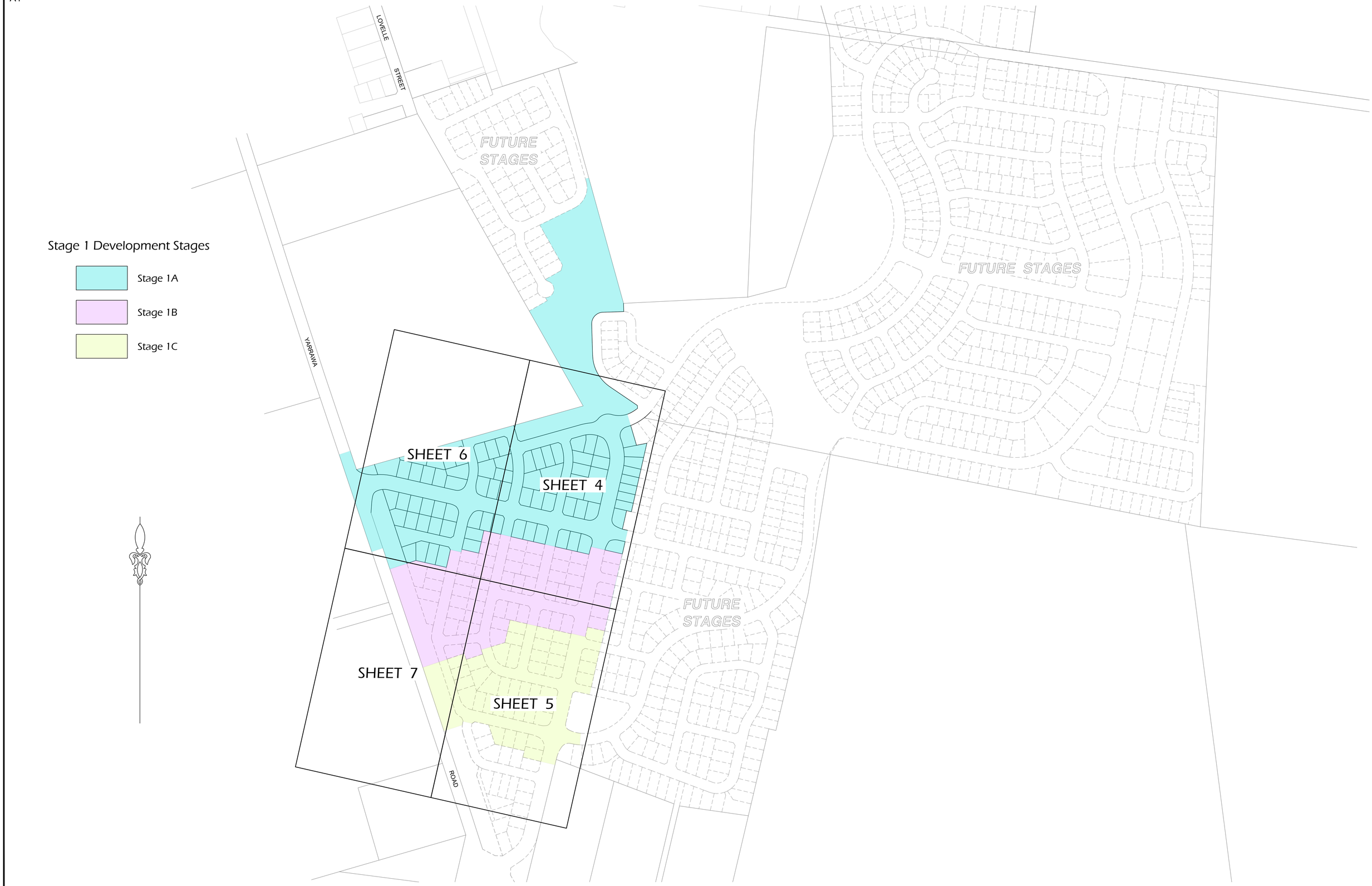

Stage 1 Development Stages

- Stage 1A
- Stage 1B
- Stage 1C

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POTABLE WATER GENERAL ARRANGEMENT

SHEET 3 OF 24

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A1


RECOVER HYDRANT BEND
SEE NOTE F1
LAY DN225 MAIN
DN300 LEAD-IN P.V.C. DN225 MAIN P.V.C.
Stage 2
PROPOSED ROAD (ROAD No.13)
LAY DN225 MAIN
HYDRANT BEND [259149.66, 6171711.86]
LAY DN150 MAIN
LAY DN150 D.I.C.L. MAIN THROUGH INTERSECTION
HYDRANT BEND [259131.79, 6171632.86]
LAY DN100 MAIN
PROPOSED ROAD (ROAD No.12)
ROAD
DN150 x 150 TEE
(ROAD No.02)
PROPOSED
DN225 x 225 TEE WITH DN225 x 150 TAPER
LAY DN225 D.I.C.L. MAIN THROUGH INTERSECTION
DN225 x 150 TEE WITH DN225 x 150 TAPER (S)
LAY DN150 D.I.C.L. MAIN THROUGH INTERSECTION
DN150 x 100 TEE
LAY DN150 MAIN
LAY DN225 MAIN
Stage 1B
LAY DN100 MAIN
(ROAD No.01)
(ROAD No.05)
FUTURE ROAD
BIO BASIN No.02
BIO BASIN No.01
PROPOSED ROAD (ROAD No.04)
DN150 x 100 TEE
LAY DN100 MAIN
NOTE F1:
THE LEAD-IN WATER MAIN TO BE DESIGNED BY OTHERS. THE LEAD-IN DESIGN IS NOT AVAILABLE AT THE TIME OF THIS STAGE 1 RETICULATION DESIGN COMPLETED. CONNECTION DETAIL IS TO BE REVISED AND SUBJECT TO THE FINAL LEAD-IN WATER MAIN DESIGN.
THE FITTINGS ON THE LEAD-IN MAIN NOT SHOWN UNTIL THE DESIGN IS AVAILABLE.
(ROAD No.04)
D.E.
2.0 W.
(ROAD No.04)
PROPOSED
DN150 x 100 TEE
LAY DN150 MAIN
JOIN LINE - SEE SHEET 6
JOIN LINE - SEE SHEET 5
'B'
'C'
LAY DN100 MAIN
DN150 x 150 TEE WITH DN150 x 100 TAPER (S)
LAY DN150 MAIN

DENOTES LAY MAIN UNDER SERVICE
DENOTES LAY MAIN OVER SERVICE

✱ DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.

0 10 20 30 40 50 METRES

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POTABLE WATER DETAIL PLAN 1

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SHEET 4 OF 24
VERSION: 04
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'B'

JOIN LINE - SEE SHEET 4

HYDRANT BEND [259103.12, 6171507.84]

HYDRANT BEND [259086.96, 6171441.88]

HYDRANT BEND [259065.94, 6171347.60]

HYDRANT BEND [259003.10, 6171315.40]

HYDRANT BEND [258879.09, 6171382.14]

PROPOSED ROAD (ROAD No.11)

PROPOSED ROAD (ROAD No.10)

PROPOSED ROAD (ROAD No.09)

PARK

LAY DN150 MAIN

LAY DN100 MAIN

LAY DN150 D.I.C.L. MAIN THROUGH INTERSECTION

LAY DN100 D.I.C.L. MAIN THROUGH INTERSECTION

DN450 SWD (1.4 Cov.)

DN1050 SWD (1.3 Cov.)

DN900 SWD (1.4 Cov.)

DN375 SWD (1.6 Cov.)

DN375 SWD (1.2 Cov.)

DN450 SWD (1.5 Cov.)

DN375 SWD (1.3 Cov.)

DN1350 SWD (1.1 Cov.)

DN1350 SWD (1.5 Cov.)

DN1350 SWD (1.4 Cov.)

DN450 SWD (1.1 Cov.)

PROPOSED ROAD (ROAD No.02)

PROPOSED ROAD (ROAD No.05)

PROPOSED ROAD (ROAD No.06)

PROPOSED ROAD (ROAD No.07)

ROAD (ROAD No.03)

ROAD (ROAD No.14)

ROAD (ROAD No.04)

DN150 x 100 TEE

DN150 x 150 TEE

DN150 x 150 TEE WITH DN150 x 100 TAPER (E)

DN100 x 100 TEE

Stage 1B

Stage 1C

FUTURE ROAD

SALES CENTRE

FUTURE ROAD

R.F.S. ACCESS TRACK

YARRAWA ROAD No.100

D. E.

2.0 W.

PW

LW

S

1213 1214 1215 1216 1217 1225 1226 1227 1234 1235 1236 1246 1247 1248 1249 1250 1251 1252 1253 1254 1303 1304 1305 1306 1307 1308 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1320 1321 1322 1323 1324 1325 1326 1327 1328 1329 1330 1331 1332 1333 1334 1335 1336 1337 1338 1339 1340 1341

'D'

JOIN LINE - SEE SHEET 7

✳ DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.

0 10 20 30 40 50 METRES

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POTABLE WATER DETAIL PLAN 2

SHEET 5 OF 24

VERSION: 04

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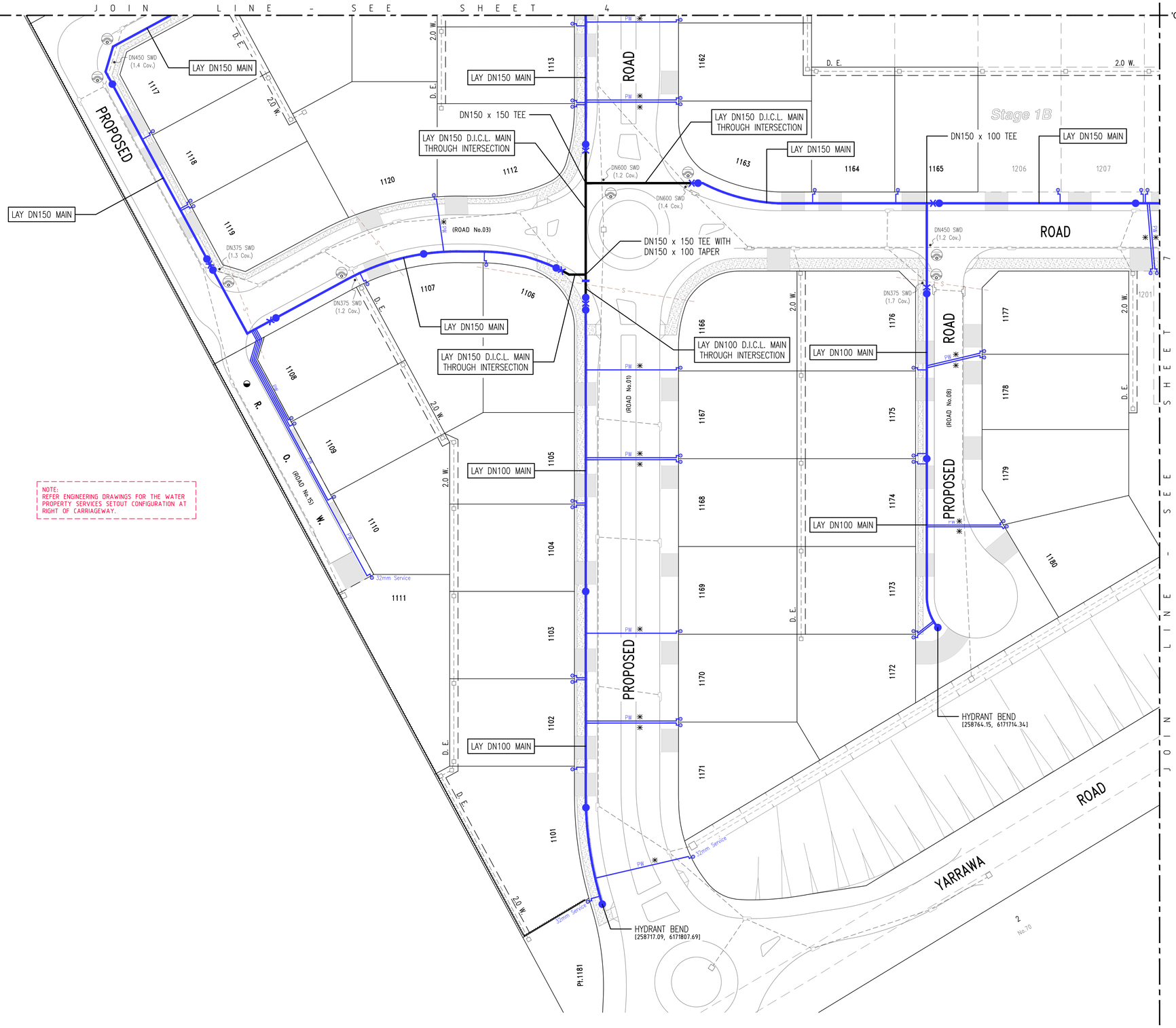
A1

'C' J O I N L I N E - S E E S H E E T 4 'C'

'E' S H E E T 7 - S E E J O I N L I N E 'E'



NOTE:
REFER ENGINEERING DRAWINGS FOR THE WATER PROPERTY SERVICES SETOUT CONFIGURATION AT RIGHT OF CARRIAGEWAY.

✳ DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.

◒ DENOTES EASEMENT FOR RIGHT OF CARRIAGEWAY & SERVICES 10.0 WIDE AND VARIABLE

0 10 20 30 40 50 METRES

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Quality System Endorsed Company

POTABLE WATER DETAIL PLAN 3

SHEET 6 OF 24 | VERSION: 04

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A1

'E'

'D' JOIN LINE - SEE SHEET 5 'D'

LAY DN100 MAIN

D. E. 2.0 W.

D. E. 2.0 W.

D. E. 2.0 W.

PROPOSED (ROAD No.07) ROAD

LAY DN150 MAIN

LAY DN150 MAIN

LAY DN150 MAIN

LAY DN150 MAIN

ROAD

Stage 1B

Stage 1C

1208 1209 1210 1211 1212 1255 1301 1302

DN1050 SWD (1.5 Cov.)

DN825 SWD (1.4 Cov.)

PROPOSED (ROAD No.03)

DN150 x 100 TEE

1202 1203 1204 1205

Stage 1B

32 No.90

12 No.74

2 No.70

YARRAWA

JOIN LINE - SEE SHEET 6

'E'

✳ DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.

0 10 20 30 40 50 METRES

ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.
RAR Incorporated in New South Wales
WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT
SHOP 7 & 8 'M CENTRE'
40 STERLING ROAD, MINCHINBURY NSW 2770
PH: (02) 9853 0200 FAX: (02) 9671 7399

Quality Endorsed Company

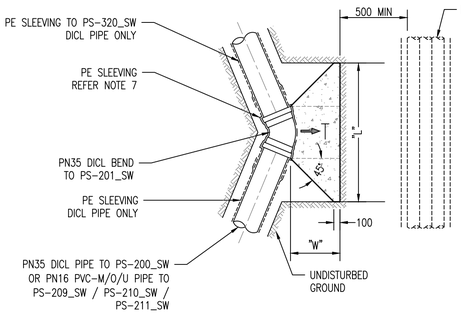
POTABLE WATER DETAIL PLAN 4

SHEET 7 OF 24

VERSION: 04

DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER	91/25368/1A
SCALE: 1:500	DATUM: -	U.B.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021	

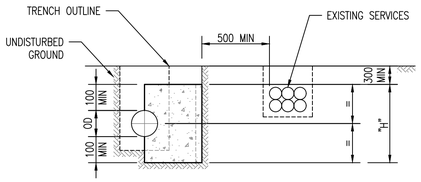
A1



HORIZONTAL BEND

THRUST BLOCK TYPE 1 PLAN

NOT TO SCALE



HORIZONTAL BEND

THRUST BLOCK TYPE 1 ELEVATION

NOT TO SCALE

HORIZONTAL BEND TYPE 1 NOTES :–

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. NOT USED.
4. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
5. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
6. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
7. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS–320_SW.
8. CONCRETE SHALL BE CLASS N25 TO PS–357_SW. SLUMP SHALL BE IN THE RANGE 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
10. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	250	350	500
150	177	120	150	7.1	50	0.142	300	400	600
225	259	120	150	15.2	50	0.304	300	500	800

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 1 (m^2)

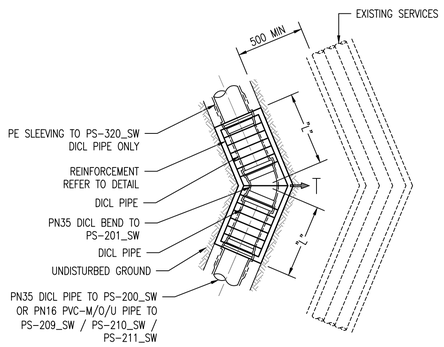
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	250	350	500
150	177	120	150	14.1	50	0.282	350	450	700
225	259	120	150	30.2	50	0.604	450	750	1000

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 1 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	300	450	650
150	177	120	150	27.7	50	0.554	400	600	950
150	177	120	150	27.7	100	0.277	300	400	700
225	259	120	150	59.3	50	1.186	600	1000	1500
225	259	120	150	59.3	100	0.593	400	700	1100

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 1 (m^2)

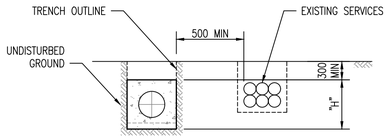
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	400	600	900
100	122	120	150	24.3	100	0.243	300	400	650
150	177	120	150	51.2	50	1.023	550	800	1300
150	177	120	150	51.2	100	0.512	350	600	900
225	259	120	150	109.6	50	2.192	REFER TO TYPE 2		
225	259	120	150	109.6	100	1.096	REFER TO TYPE 2		
225	259	120	150	109.6	200	0.548	300	650	1100



HORIZONTAL BEND

THRUST BLOCK TYPE 2 PLAN

NOT TO SCALE



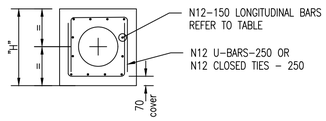
HORIZONTAL BEND

THRUST BLOCK TYPE 2 ELEVATION

NOT TO SCALE

HORIZONTAL BEND TYPE 2 NOTES :–

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS–320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS–357_SW. SLUMP SHALL BE IN THE RANGE 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE – D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS – N.
9. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
10. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



CONCRETE ENCASEMENT DETAIL

NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	600	450
150	177	120	150	7.1	50	0.142	600	500
225	259	120	150	15.2	50	0.304	600	600

THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	600	450
150	177	120	150	14.1	50	0.282	600	500
225	259	120	150	30.2	50	0.604	600	600

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN225	12N12

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	600	450
150	177	120	150	27.7	50	0.554	600	500
225	259	120	150	59.3	50	1.186	1200	600

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 2 (m^2)

DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	700	450
150	177	120	150	51.2	50	1.023	1300	500
225	259	120	150	109.6	50	2.192	2300	700

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Quality System Quality Endorsed Company

POTABLE WATER THRUST BLOCK DETAILS 1

SHEET 8 OF 24 | VERSION: 04

DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER	91/25368/1A
SCALE: -	DATUM: -	U.B.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021	

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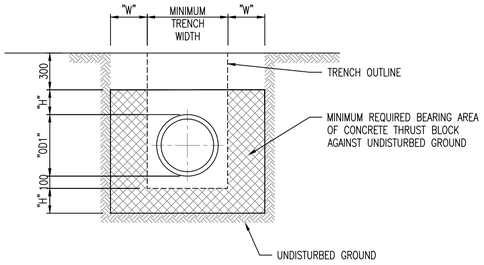
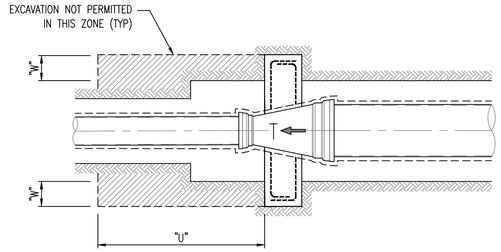


TAPER

DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND ELEVATION

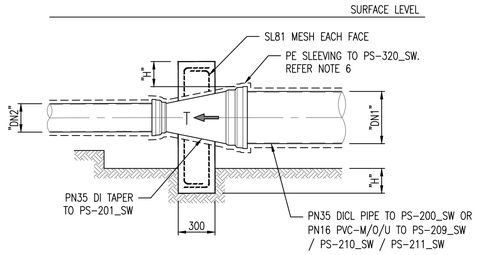
NOT TO SCALE



TAPER

DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND PLAN

NOT TO SCALE



TAPER

THRUST BLOCK REINFORCEMENT DETAIL

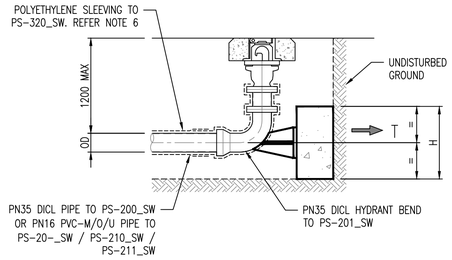
NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR TAPERS - TYPE 1 (m^2)

DN	OD	DN2	OD2	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHBP	REQUIRED BEARING AREA	H	MINIMUM TRENCH WIDTH	W	U
(mm)	(mm)	(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m^2)	(mm)	(mm)	(mm)	(mm)
150	177	100	122	120	150	19.0	50	0.380	200	380	300	1550
150	177	100	122	120	150	19.0	100	0.190	100	380	300	1200
150	177	100	122	120	150	19.0	200	0.095	100	380	300	1200
225	259	150	177	120	150	60.3	50	1.206	400	590	650	2400
225	259	150	177	120	150	60.3	100	0.603	350	590	300	2200
225	259	150	177	120	150	60.3	200	0.153	150	590	300	1500

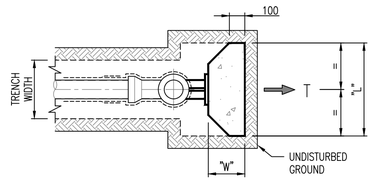
TAPER NOTES :–

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS–320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS–357_SW. SLUMP SHALL BE IN THE RANGE 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE – D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS – N.
9. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
10. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
11. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS ELEVATION

NOT TO SCALE



THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS PLAN

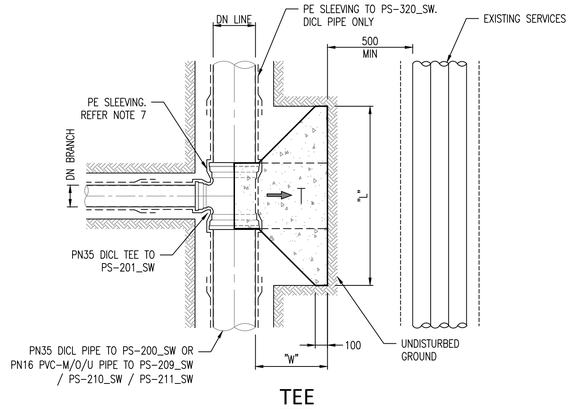
NOT TO SCALE

HYDRANT BENDS NOTES :–

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP <50kPa.
6. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVING) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS–320_SW.
7. CONCRETE SHALL BE CLASS N25 TO PS–357_SW. SLUMP SHALL BE IN THE RANGE 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
8. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
9. CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
10. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

THRUST BLOCK AREAS & DIMENSIONS FOR HYDRANT BENDS (m^2)

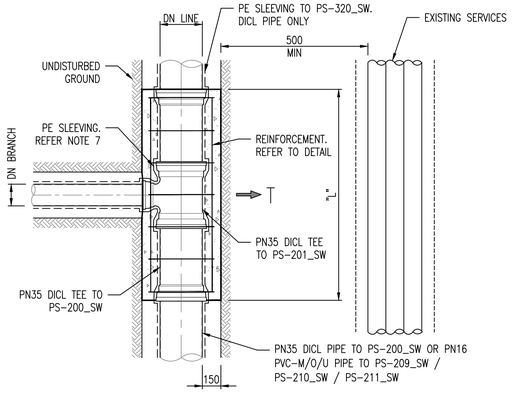
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHBP	W	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	450	450	800	0.344
100	122	120	150	17.2	100	250	450	450	0.172
100	122	120	150	17.2	200	250	350	450	0.086
150	177	120	150	36.2	50	750	500	1500	0.724
150	177	120	150	36.2	100	400	500	750	0.362
150	177	120	150	36.2	200	250	400	500	0.181



TEE

THRUST BLOCK TYPE 1 PLAN

NOT TO SCALE



TEE

THRUST BLOCK TYPE 2 PLAN

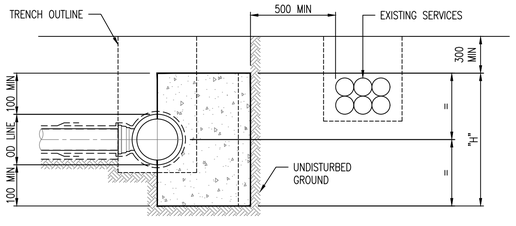
NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 1 (m^2)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHBP	H	L	W	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	500	700	400	0.344
100	122	120	150	17.2	100	400	450	250	0.172
100	122	120	150	17.2	200	400	400	300	0.086
150	177	120	150	36.2	50	700	1100	600	0.724
150	177	120	150	36.2	100	500	750	400	0.362
150	177	120	150	36.2	200	450	600	350	0.181
225	259	120	150	77.5	50	REFER TO TYPE 2			1.550
225	259	120	150	77.5	100	800	1200	500	0.775
225	259	120	150	77.5	200	600	800	300	0.388

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 2 (m^2)

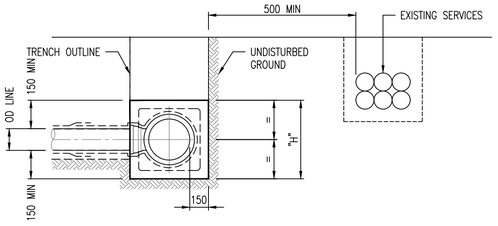
DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHBP	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(m^2)
100	122	120	150	17.2	50	650	1150	0.344
100	122	120	150	17.2	100	650	1150	0.172
100	122	120	150	17.2	200	650	1150	0.086
150	177	120	150	36.2	50	750	1200	0.724
150	177	120	150	36.2	100	650	1200	0.362
150	177	120	150	36.2	200	650	1200	0.181
225	259	120	150	77.5	50	900	2150	1.550
225	259	120	150	77.5	100	900	1300	0.775
225	259	120	150	77.5	200	900	1300	0.388



TEE

THRUST BLOCK TYPE 1 ELEVATION

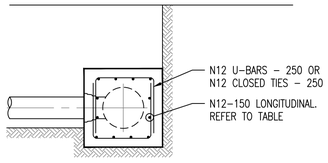
NOT TO SCALE



TEE

THRUST BLOCK TYPE 2 ELEVATION

NOT TO SCALE



TEE THRUST BLOCK TYPE 2 CONCRETE ENCASEMENT DETAIL

NOT TO SCALE

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN225	12N12

TEE NOTES :–

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
3. THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
4. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCK NOT TO INTERFERE WITH OTHER SERVICES.
5. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP <50kPa.
6. DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL. A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE CONDITIONS.
7. ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVING) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS–320_SW.
8. CONCRETE SHALL BE CLASS N25 TO PS–357_SW. SLUMP SHALL HAVE SLUMP IN THE RANGE OF 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
9. ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE – D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS – N.
10. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
11. DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
12. THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.

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POTABLE WATER THRUST BLOCK DETAILS 2

SHEET 9 OF 24

VERSION: 04

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K.GAO	K.GAO	D.SHEATHER	D.SHEATHER	91/25368/1A
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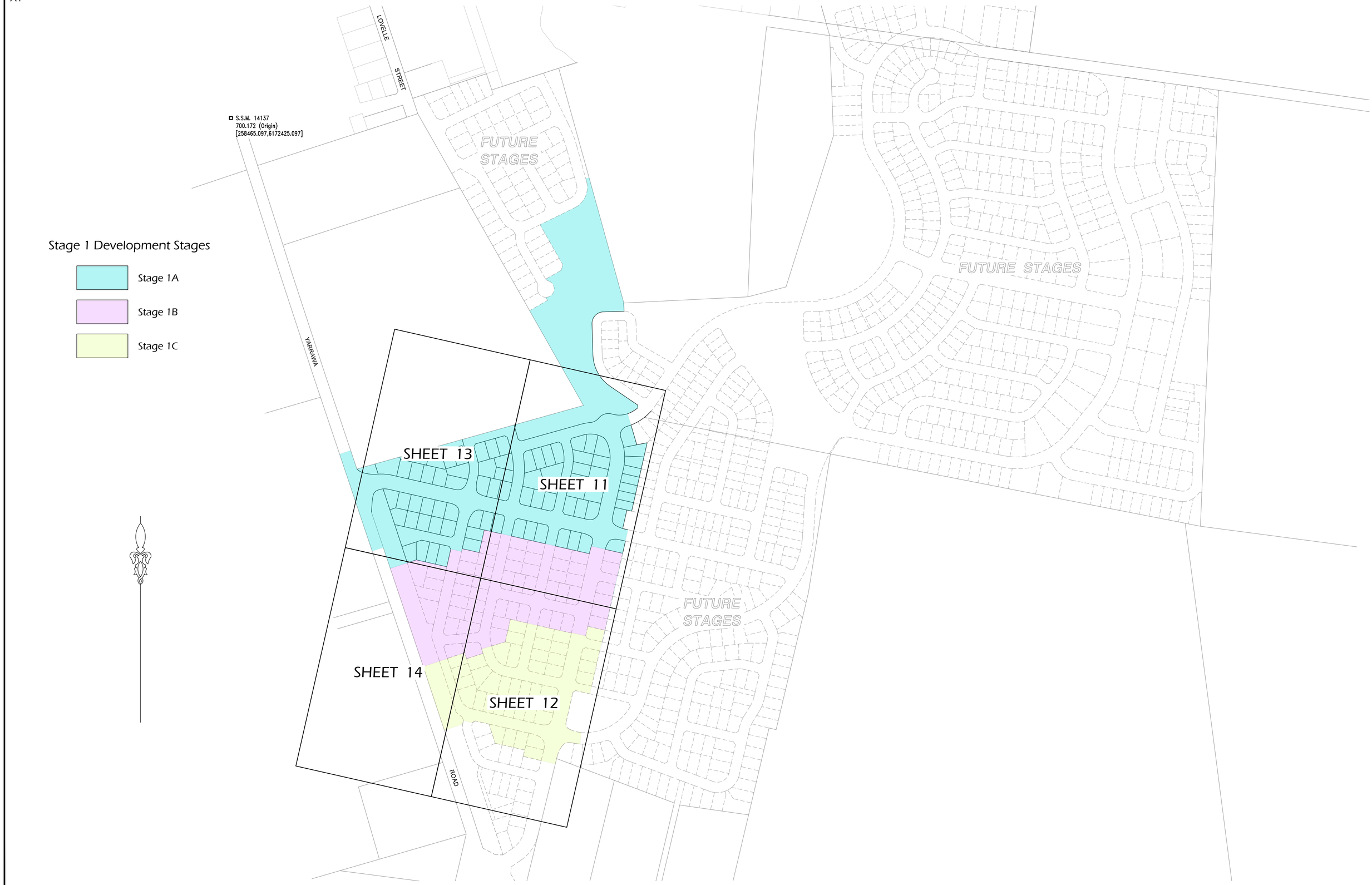
A1



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GRAVITY SEWER GENERAL ARRANGEMENT

SHEET 10 OF 24

VERSION: 04

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-	-	-	26/9/2021

JOB No.: 91/25368/1A

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M.H. TO BE CONSTRUCTED OVER EXISTING END

NOTE:
THE TEMPORARY SEWER LEAD-IN MAIN TO BE DESIGNED BY OTHERS. THE LEAD-IN DESIGN IS NOT AVAILABLE AT THE TIME OF THIS STAGE 1 RETICULATION DESIGN COMPLETED. THE ALIGNMENT AND STRUCTURES FOR LEAD-IN SEWER ON THIS PLAN ARE INDICATIVE ONLY AND SUBJECT TO THE FINAL TEMPORARY SEWER LEAD-IN DESIGN.

DENOTES EASEMENT FOR SEWER SUPPORT 3.0 W.

DENOTES EASEMENT FOR PADMOUNT SUBSTATION 2.75 W.

0 10 20 30 40 50 METRES

JOIN LINE - SEE SHEET 13

JOIN LINE - SEE SHEET 12

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GRAVITY SEWER DETAIL PLAN 1				SHEET 11 OF 24	VERSION: 04
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DENOTES EASEMENT FOR SEWER SUPPORT 3.0 W.

DENOTES EASEMENT FOR PADMOUNT SUBSTATION 2.75 W.

0 10 20 30 40 50 METRES

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GRAVITY SEWER DETAIL PLAN 2

SHEET 12 OF 24	VERSION: 04

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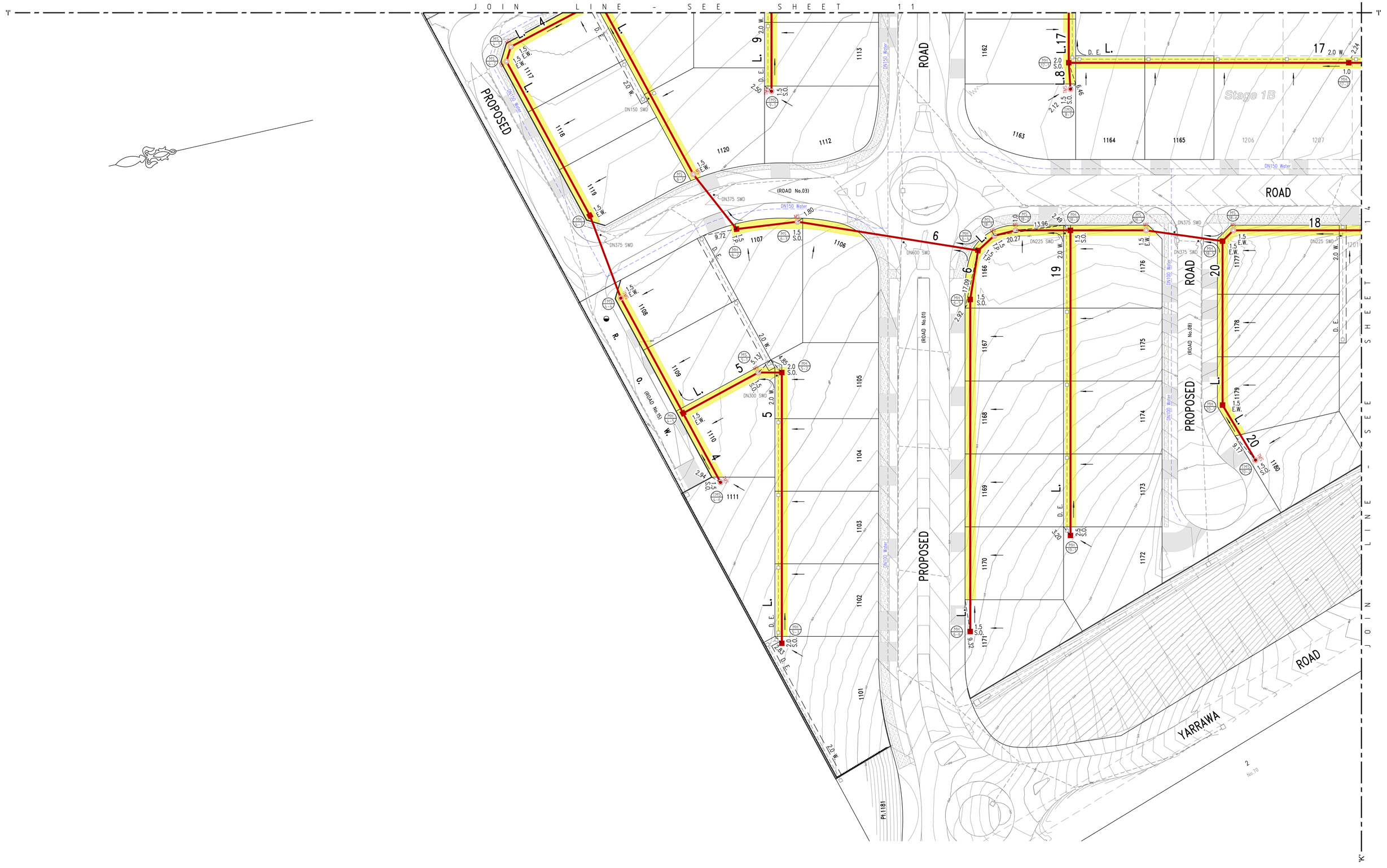

DENOTES EASEMENT FOR SEWER SUPPORT 3.0 W.

DENOTES EASEMENT FOR RIGHT OF CARRIAGEWAY & SERVICES 10.0 WIDE AND VARIABLE

0 10 20 30 40 50 METRES

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GRAVITY SEWER DETAIL PLAN 3

SHEET 13 OF 24 | VERSION: 04

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1:500	A.H.D.	-	26/9/2021

A1

'J' JOIN LINE - SEE SHEET 12 'J'

'K' JOIN LINE - SEE SHEET 13 'K'

PROPOSED ROAD (ROAD No.07)

PROPOSED (ROAD No.03)

ROAD

YARRAWA

Stage 1B

Stage 1C

L. 17 2.0 W.

D. E. 2.0 W.

5.88

2.0 S.O.

DN150 SWD

2.50

1.5 S.O.

L. 18 9.71 1.5 S.O.

9.33 1.5 S.O.

L. 24 2.0 W.

2.26

D. E.

1.5 S.O.

DN375 SWD

DN150 Water

DN100 Water

1208 1209 1210 1211 1212 1202 1203 1204 1205 1301 1302 1255

32 No.90

12 No.74

2 No.70

DENOTES EASEMENT FOR SEWER SUPPORT 3.0 W.

DENOTES EASEMENT FOR PADMOUNT SUBSTATION 2.75 W.

0 10 20 30 40 50 METRES

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GRAVITY SEWER DETAIL PLAN 4

SHEET 14 OF 24

VERSION: 04

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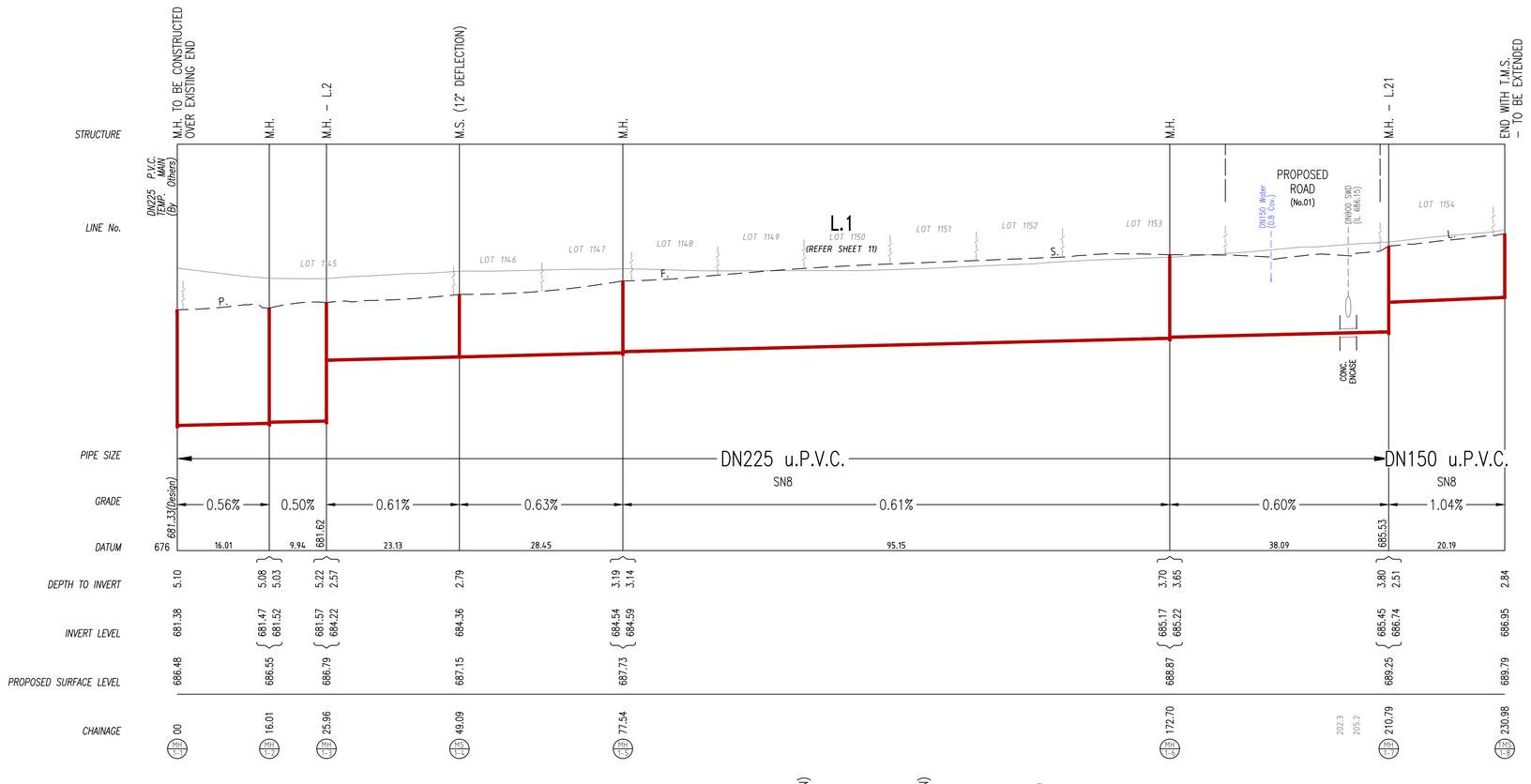

ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.	GRAVITY SEWER LONGITUDINAL SECTION 1	SHEET 15 OF 24	VERSION: 04
WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT SHOP 7 & 8 'M CENTRE' 40 STERLING ROAD, MINCHINBURY NSW 2770 PH: (02) 9853 0200 FAX: (02) 9671 7399	DRAFTED: K.GAO DESIGNED: K.GAO REVIEWED: D.SHEATHER VERIFIED: D.SHEATHER SCALE: HOR 1:500 VERT 1:125 DATUM: - U.G.S. REFERENCE: - DATE OF ISSUE: 26/9/2021		JOB No: 91/25368/1A

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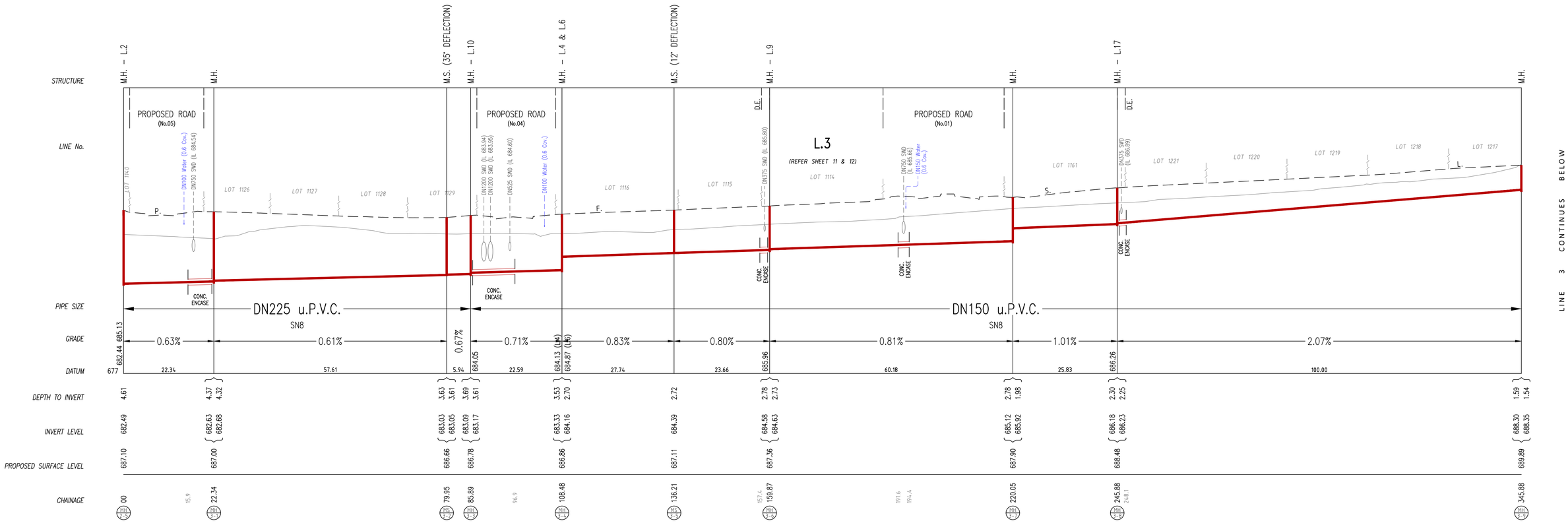

CONTINUED FROM ABOVE

LINE 3 CONTINUES BELOW

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GRAVITY SEWER LONGITUDINAL SECTION 2

SHEET 16 OF 24

VERSION: 04

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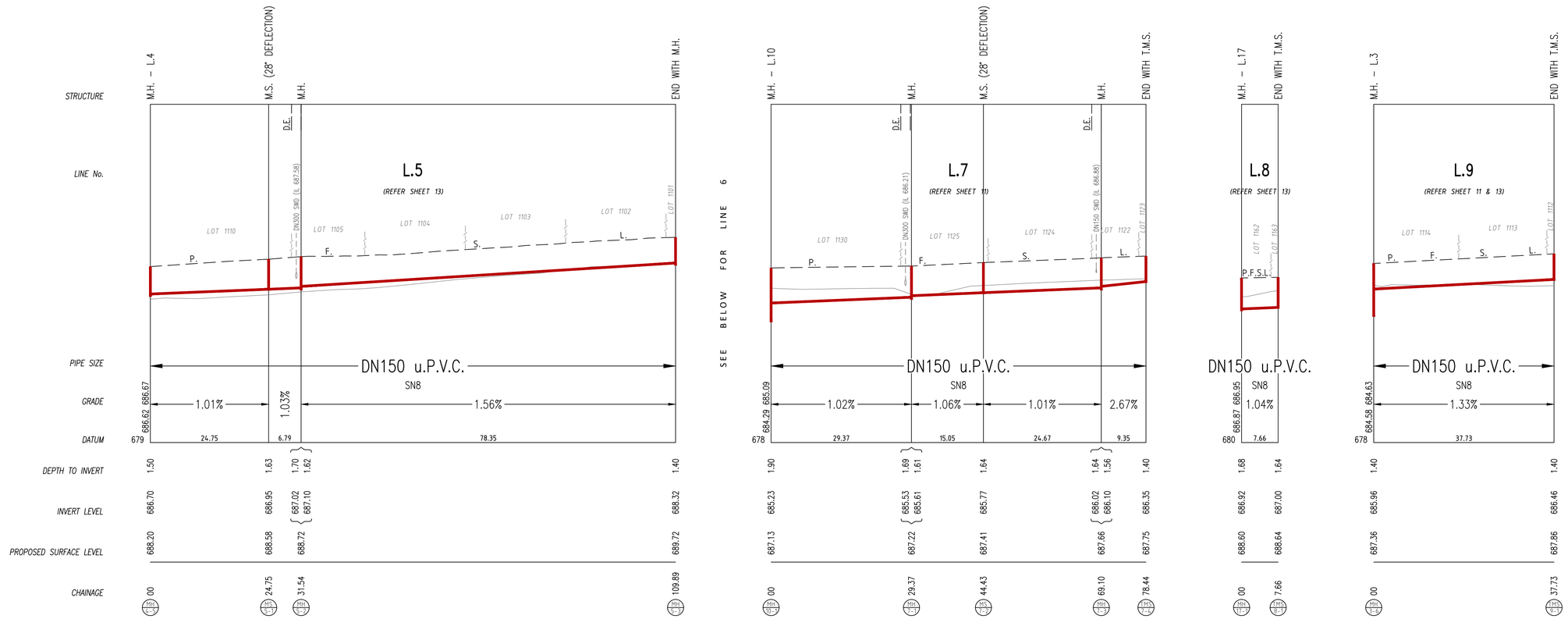

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GRAVITY SEWER LONGITUDINAL SECTION 3

SHEET 17 OF 24

VERSION: 04

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HOR 1:500 VERT 1:125	-	-	26/9/2021

JOB No: 91/25368/1A

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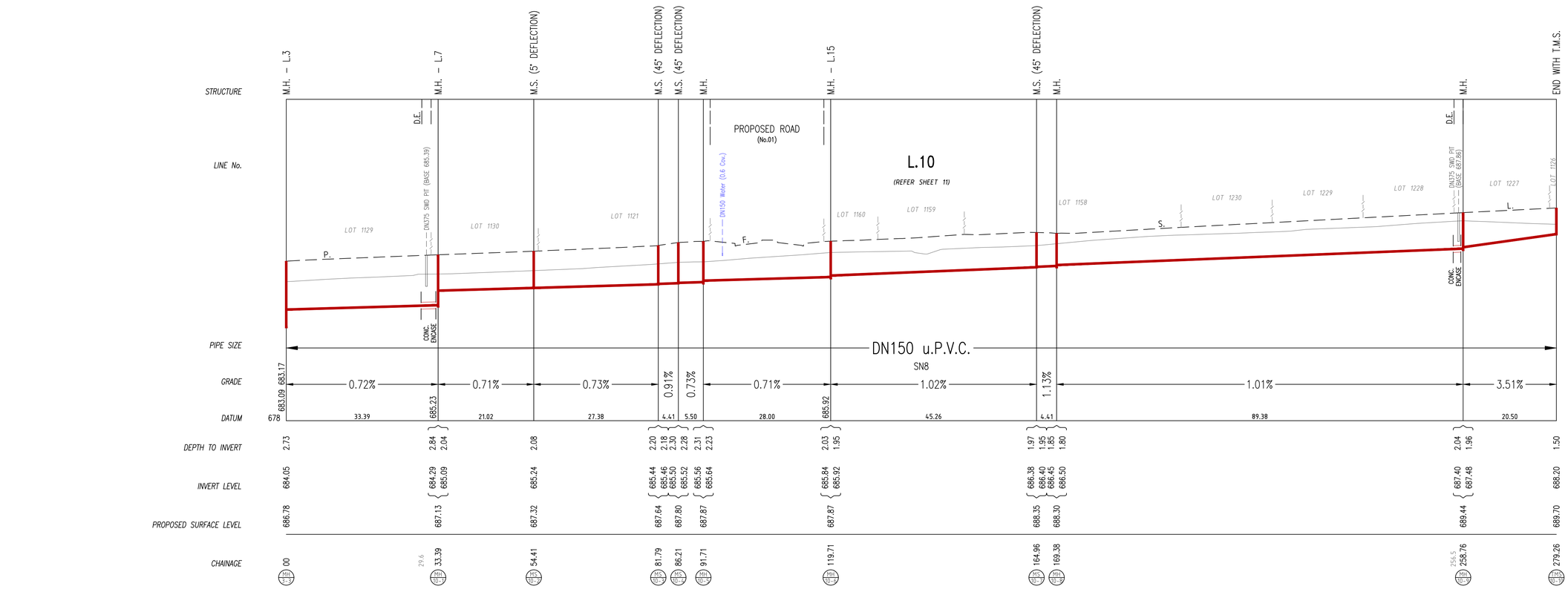

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GRAVITY SEWER LONGITUDINAL SECTION 4

SHEET 18 OF 24 | VERSION: 04

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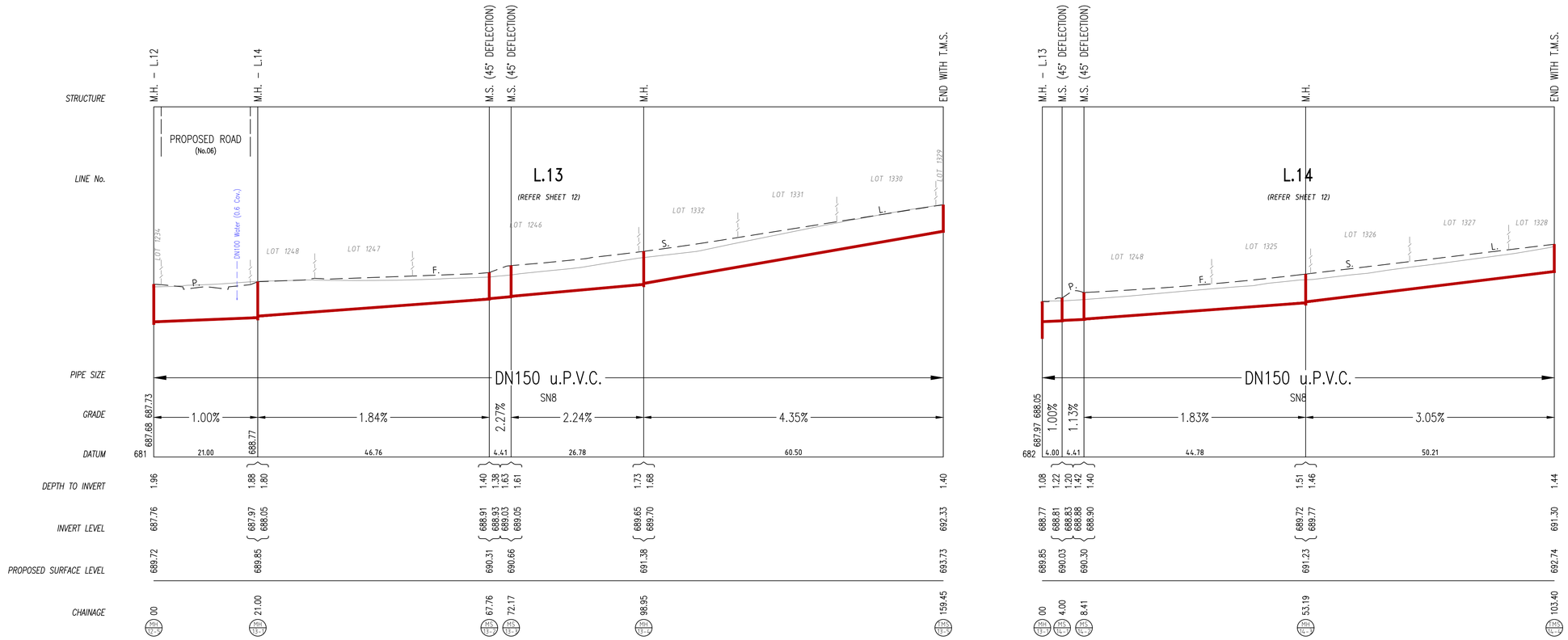

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GRAVITY SEWER LONGITUDINAL SECTION 5

SHEET 19 OF 24

VERSION: 04

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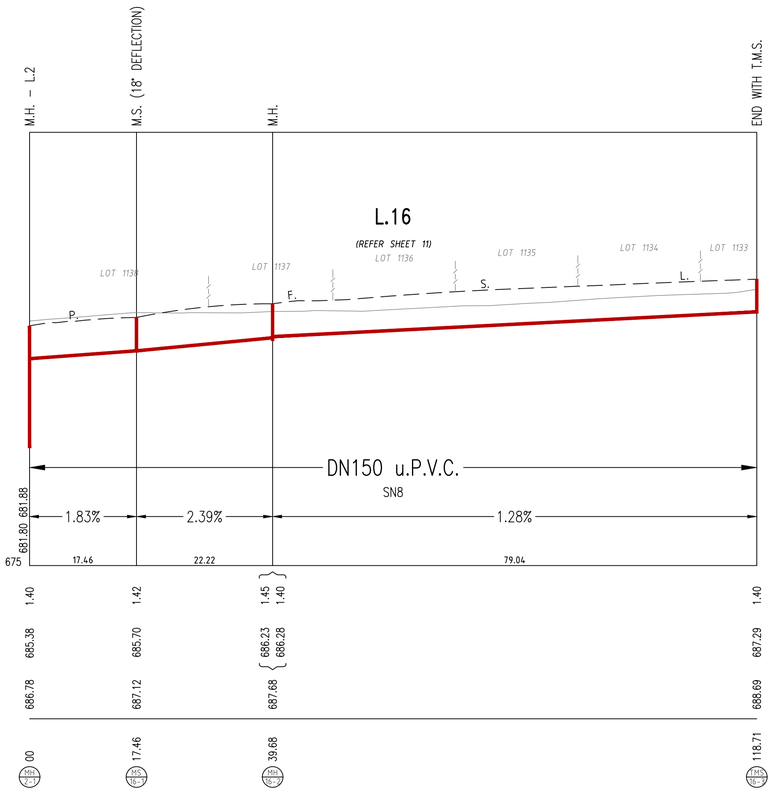

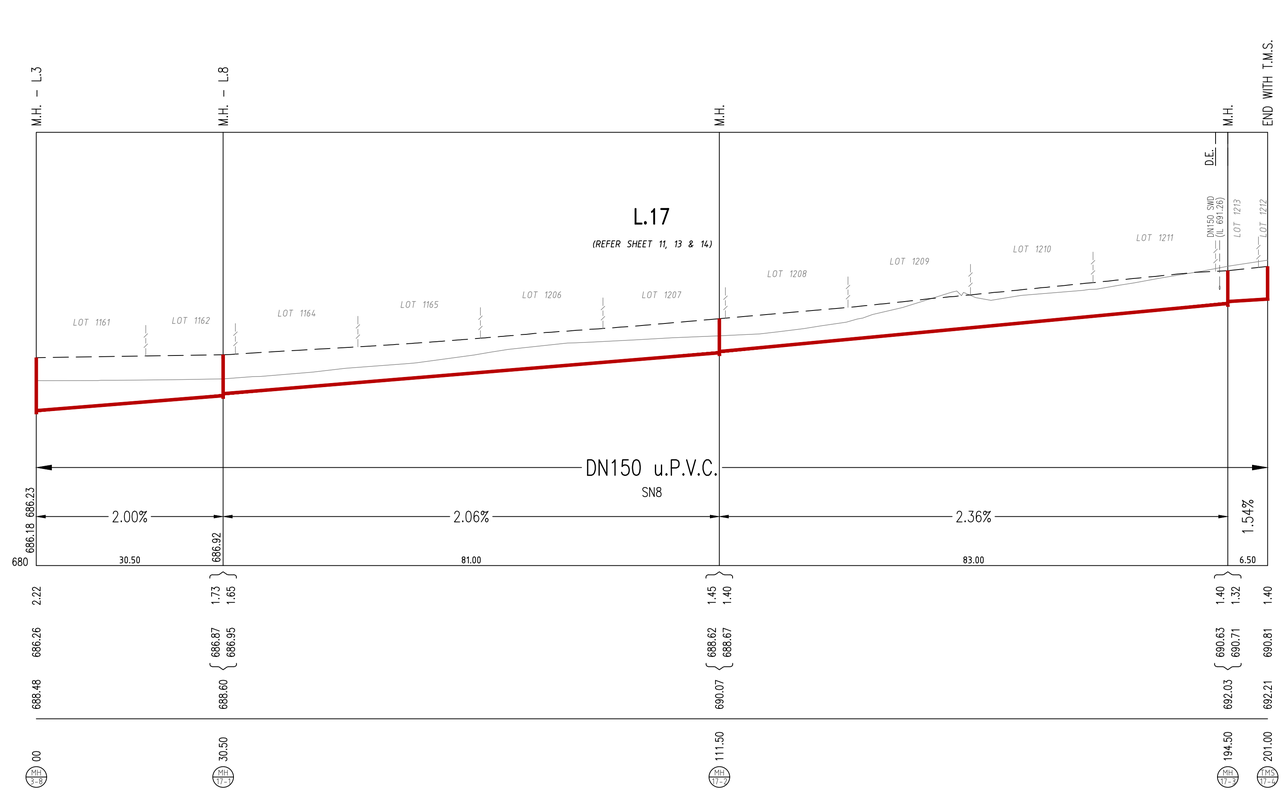

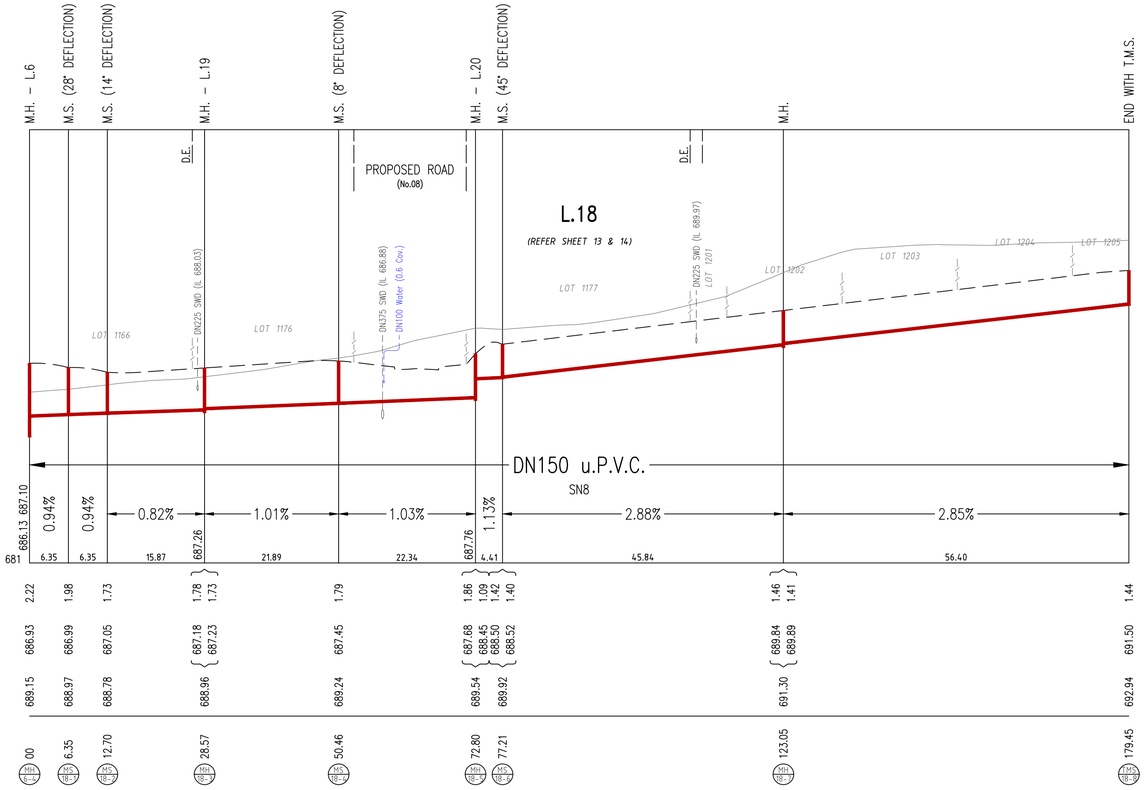

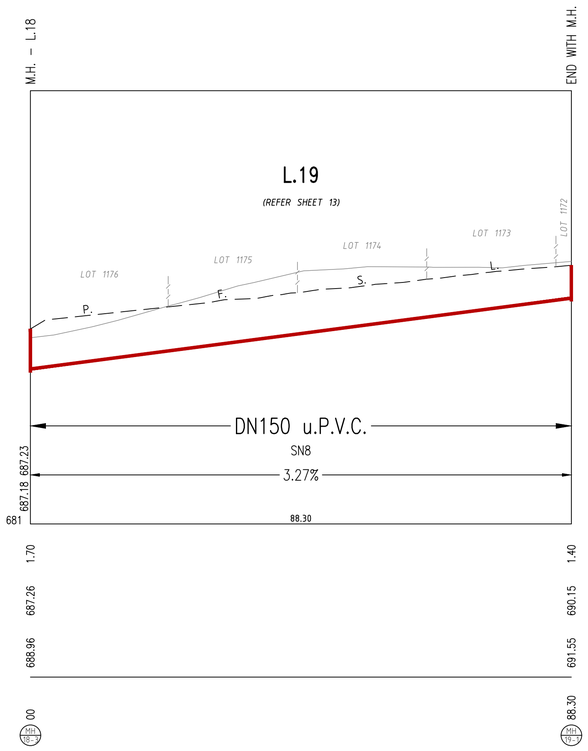

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GRAVITY SEWER LONGITUDINAL SECTION 6

SHEET 20 OF 24 | VERSION: 04

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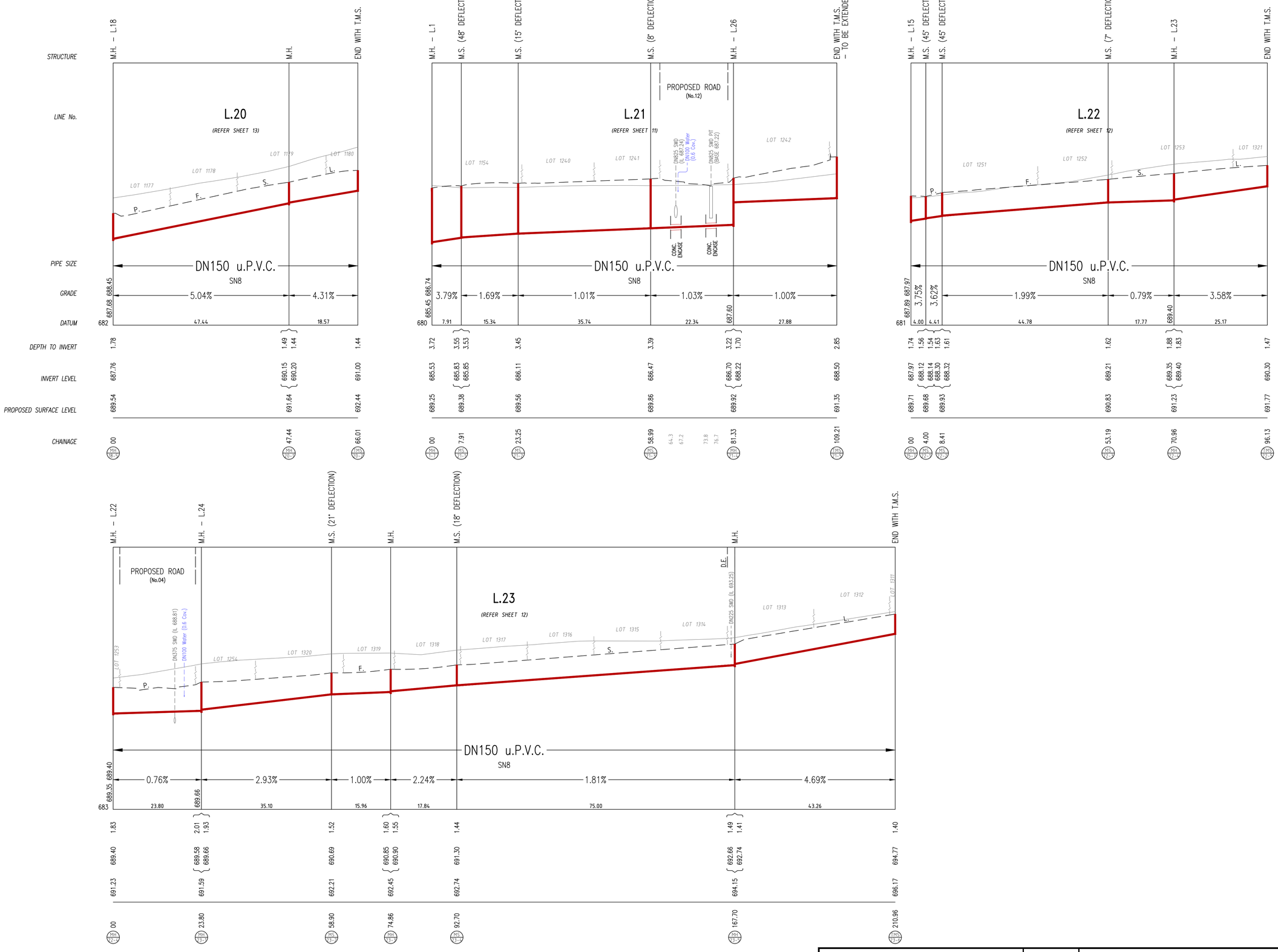

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GRAVITY SEWER LONGITUDINAL SECTION 7

SHEET 21 OF 24

VERSION: 04

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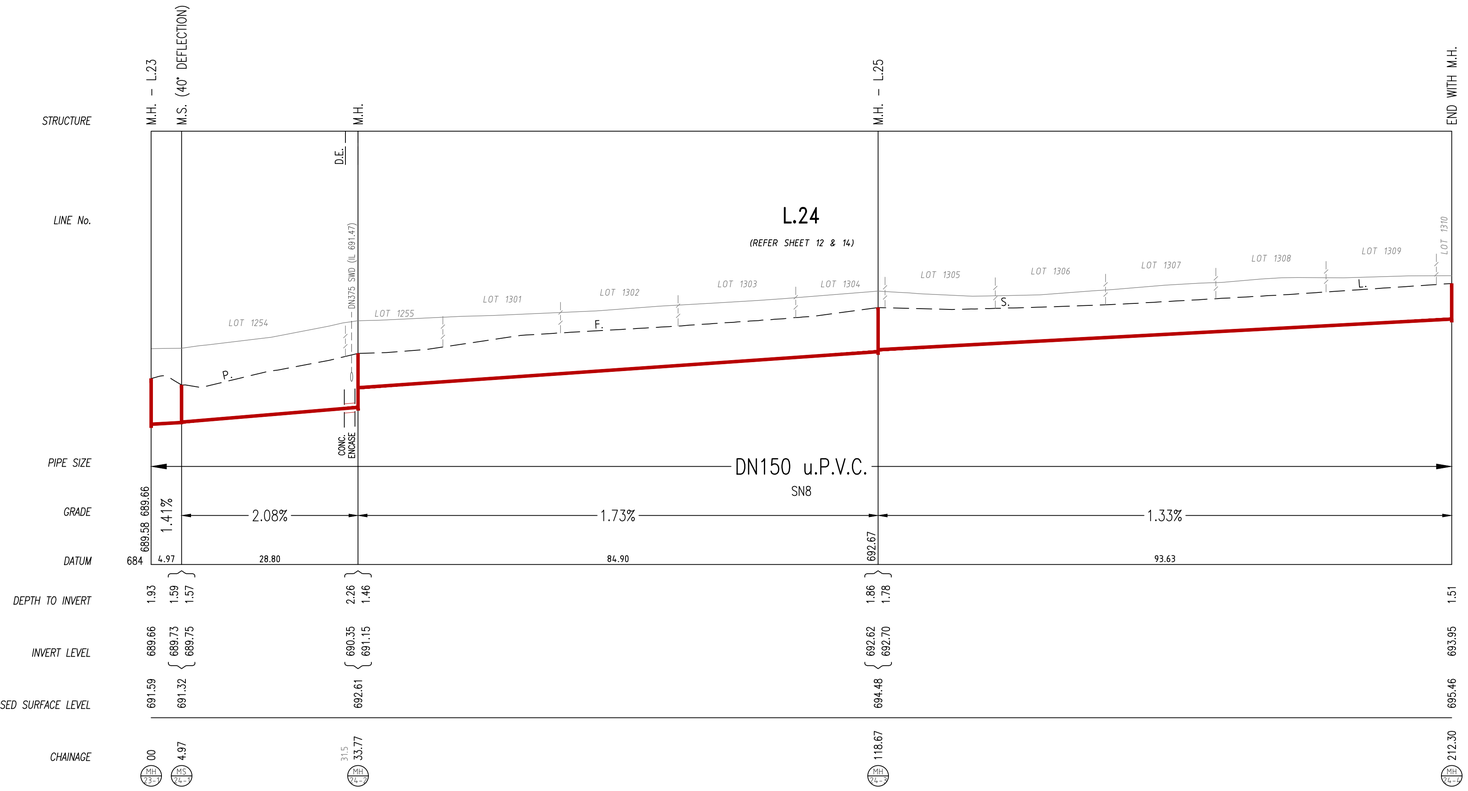

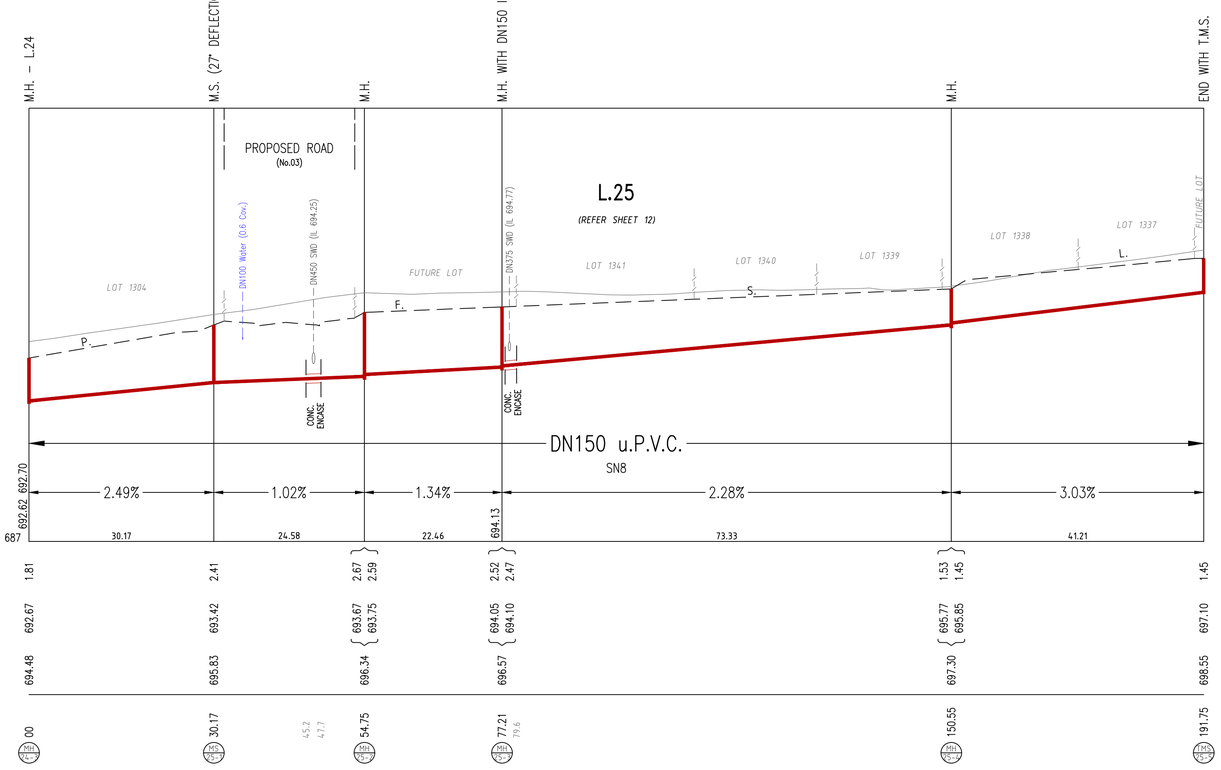

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GRAVITY SEWER LONGITUDINAL SECTION 8

SHEET 22 OF 24 | VERSION: 04

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MAINTENANCE STRUCTURE SCHEDULE

(REFER SEWER NOTE 8 ON SHEET 2 & MAINTENANCE SHAFT NOTES BELOW)

LINE NO.	CHAINAGE	TYPE & I.D.	DN RISER	CLASS OF COVER	MATERIAL	COMMENTS
1	00	MH 1-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	16.01	MH 1-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	25.96 (L.2 CH00)	MH 1-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
1	49.09	MS 1-4	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
1	77.54	MH 1-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	172.70	MH 1-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	210.79 (L.21 CH00)	MH 1-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
1	230.98	TMS 1-8	225	B	PVC-U	-
2	29.30	MH 2-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	38.16	MH 2-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	57.13	MH 2-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	90.45	MH 2-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	94.86 (L.3 CH00)	MH 2-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	108.93	MS 2-6	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	129.84	MS 2-7	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	149.89	MS 2-8	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	192.39 (L.11 CH00)	MH 2-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	212.39	TMS 2-10	225	B	PVC-U	-
3	22.34	MH 3-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	79.95	MS 3-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
3	85.89 (L.10 CH00)	MH 3-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	108.48 (L.4 CH00 & L.6 CH00)	MH 3-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 3 x EXTERNAL DROP INLETS
3	136.21	MS 3-5	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
3	159.87 (L.9 CH00)	MH 3-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	220.05	MH 3-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	245.88 (L.17 CH00)	MH 3-8	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	345.88	MH 3-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	409.38	TMS 3-10	225	B	PVC-U	-
4	28.88	MS 4-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
4	33.30	MS 4-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
4	84.05	MH 4-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
4	109.53	TMS 4-4	300	B	PVC-U	IN-LINE T.M.S. WITH HIGH LEVEL INLET
4	147.41 (L.5 CH00)	MH 4-5	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
4	170.16	TMS 4-6	225	D	PVC-U	-
5	24.75	MS 5-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
5	31.54	MH 5-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
5	109.89	MH 5-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	57.24	MS 6-1	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
6	77.46	MH 6-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	97.25	MS 6-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
6	148.15 (L.18 CH00)	MH 6-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
6	162.50	MH 6-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	258.59	MH 6-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	29.37	MH 7-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	44.43	MS 7-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
7	69.10	MH 7-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	78.44	TMS 7-4	225	B	PVC-U	-
8	7.66	TMS 8-1	225	B	PVC-U	-
9	37.73	TMS 9-1	225	B	PVC-U	-
10	33.39 (L.7 CH00)	MH 10-1	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
10	54.41	MS 10-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
10	81.79	MS 10-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	86.21	MS 10-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	91.71	MH 10-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	119.71 (L.15 CH00)	MH 10-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	164.96	MS 10-7	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	169.38	MH 10-8	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	258.76	MH 10-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	279.26	TMS 10-10	225	B	PVC-U	-
11	25.88	MS 11-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
11	57.27 (L.12 CH00)	MH 11-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
11	100.77	MS 11-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
11	107.11	MS 11-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
11	112.86	MH 11-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
11	186.87	TMS 11-6	225	B	PVC-U	-
12	4.41	MS 12-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	50.79	MH 12-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
12	119.17	MS 12-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	123.59	MS 12-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	127.59 (L.13 CH00)	MH 12-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
12	167.44	TMS 12-6	225	B	PVC-U	-
13	21.00 (L.14 CH00)	MH 13-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
13	67.76	MS 13-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
13	72.17	MS 13-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
13	98.95	MH 13-4	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
13	159.45	TMS 13-5	225	B	PVC-U	-

MAINTENANCE STRUCTURE SCHEDULE (CONTINUED)

(REFER SEWER NOTE 8 ON SHEET 2 & MAINTENANCE SHAFT NOTES BELOW)

LINE NO.	CHAINAGE	TYPE & I.D.	DN RISER	CLASS OF COVER	MATERIAL	COMMENTS
14	4.00	MS 14-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
14	8.41	MS 14-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
14	53.19	MH 14-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
14	103.40	TMS 14-4	225	B	PVC-U	-
15	5.5	MS 15-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	9.91	MS 15-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	56.29	MH 15-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	124.67	MS 15-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	129.09	MS 15-5	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	133.09	MH 15-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	154.09 (L.22 CH00)	MH 15-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	200.84	MS 15-8	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	205.26	MH 15-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	272.54	TMS 15-10	225	B	PVC-U	-
16	17.46	MS 16-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
16	39.68	MH 16-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
16	118.71	TMS 16-3	225	B	PVC-U	-
17	30.50 (L.8 CH00)	MH 17-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
17	111.50	MH 17-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
17	194.50	MH 17-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
17	201.00	TMS 17-4	225	B	PVC-U	-
18	6.35	MS 18-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	12.70	MS 18-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	28.57 (L.19 CH00)	MH 18-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
18	50.46	MS 18-4	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	72.80 (L.20 CH00)	MH 18-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
18	77.21	MS 18-6	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
18	123.05	MH 18-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
18	179.45	TMS 18-8	225	B	PVC-U	-
19	88.30	TMS 19-1	225	B	PVC-U	-
20	47.44	MH 20-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
20	66.01	TMS 20-2	225	B	PVC-U	-
21	7.91	MS 21-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
21	23.25	MS 21-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
21	58.99	MS 21-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
21	81.33 (L.26 CH00)	MH 21-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
21	109.21	TMS 21-5	225	B	PVC-U	
22	4.00	MS 22-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
22	8.41	MS 22-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
22	53.19	MS 22-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
22	70.96 (L.23 CH00)	MH 22-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
22	96.13	TMS 22-4	225	B	PVC-U	-
23	23.80 (L.24 CH00)	MH 23-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	58.90	MS 23-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
23	74.86	MH 23-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	92.70	MS 23-4	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
23	167.70	MH 23-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	210.96	TMS 23-6	225	B	PVC-U	-
24	4.97	MS 24-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
24	33.77	MH 24-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
24	118.67 (L.25 CH00)	MH 24-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
24	212.30	MH 24-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	30.17	MS 25-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
25	54.75	MH 25-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	77.21	MH 25-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	150.55	MH 25-4	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	191.75	TMS 25-5	225	B	PVC-U	-
26	4.41	MS 26-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
26	96.84	MH 26-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
26	119.18 (L.27 CH00)	MH 26-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
26	145.85	TMS 26-4	225	B	PVC-U	-
27	4.41	MS 27-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
27	57.67	MS 27-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1314-V
27	80.41	MH 27-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
27	133.31	MS 27-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
27	171.50	MH 27-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)

MAINTENANCE SHAFT NOTES:

ALL MAINTENANCE SHAFTS SHALL BE IN ACCORDANCE WITH WSC-SEW-005 (Issue A, 2/5/2017).

i) MAINTENANCE SHAFTS WITH 0° DEFLECTIONS TO BE IN ACCORDANCE WITH SEW-1314-V;
ii) MAINTENANCE SHAFTS WITH 1°-30° DEFLECTIONS TO BE IN ACCORDANCE WITH SEW-1315-V;
iii) MAINTENANCE SHAFTS WITH DEFLECTIONS IN EXCESS OF 30° TO BE PREFABRICATED UNITS (i.e. LONG RADIUS VARIABLE BENDS NOT PERMITTED AT INLETS / OUTLET).

* FOR DESIGN/GRADING PURPOSES, ALL MAINTENANCE SHAFTS IN EXCESS OF 30° ARE ASSUMED TO BE AYMROO 'C.A.M.S.' TYPE WITH 20mm CROSSFALL U.N.O.

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Quality System Endorsed Company

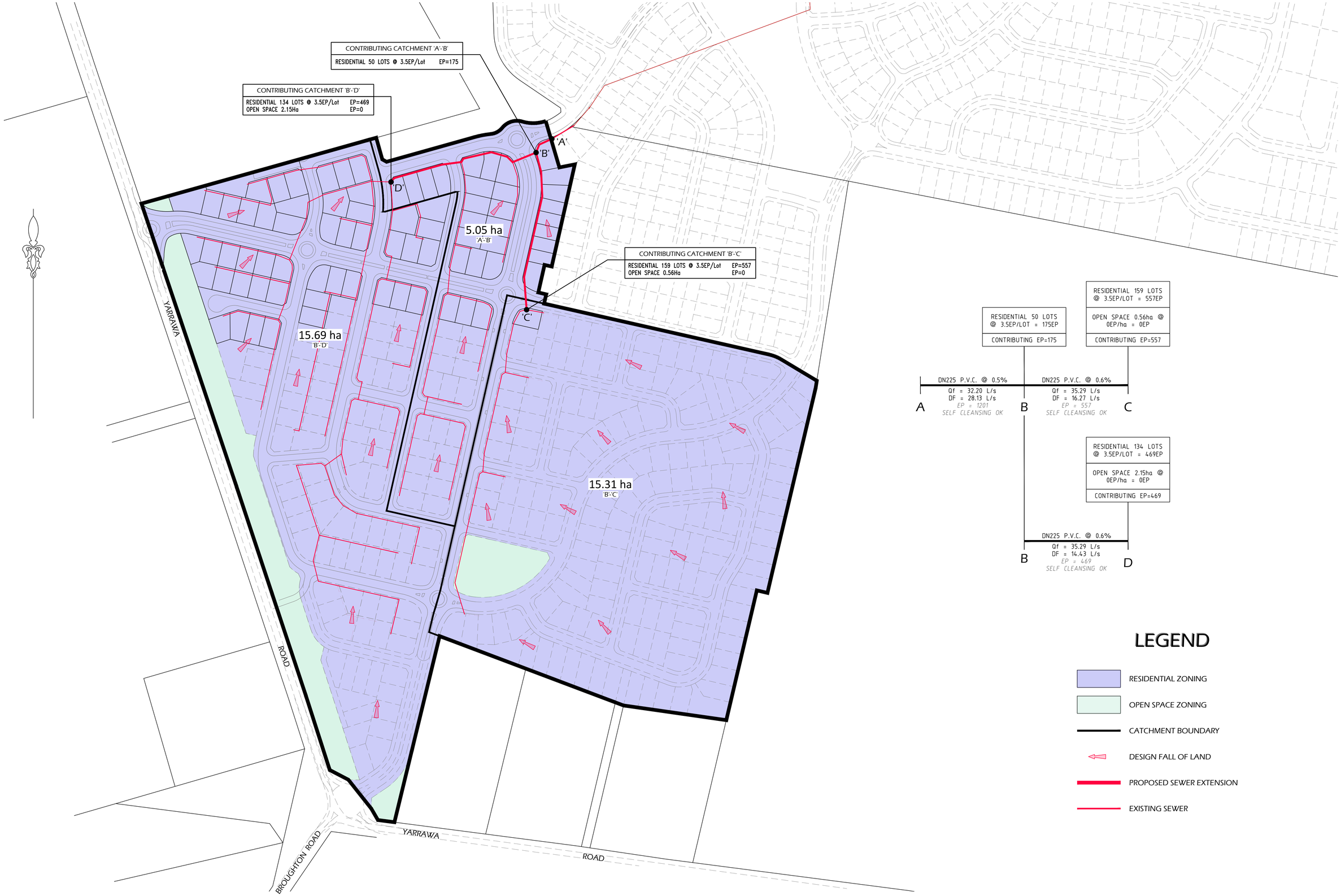
SEWER MAINTENANCE STRUCTURE SCHEDULE

SHEET 23 OF 24

VERSION: 04

DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No.
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER	91/25368/1A
SCALE: -	DATUM: -	U.B.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021	

A1



LEGEND

- RESIDENTIAL ZONING
- OPEN SPACE ZONING
- CATCHMENT BOUNDARY
- DESIGN FALL OF LAND
- PROPOSED SEWER EXTENSION
- EXISTING SEWER

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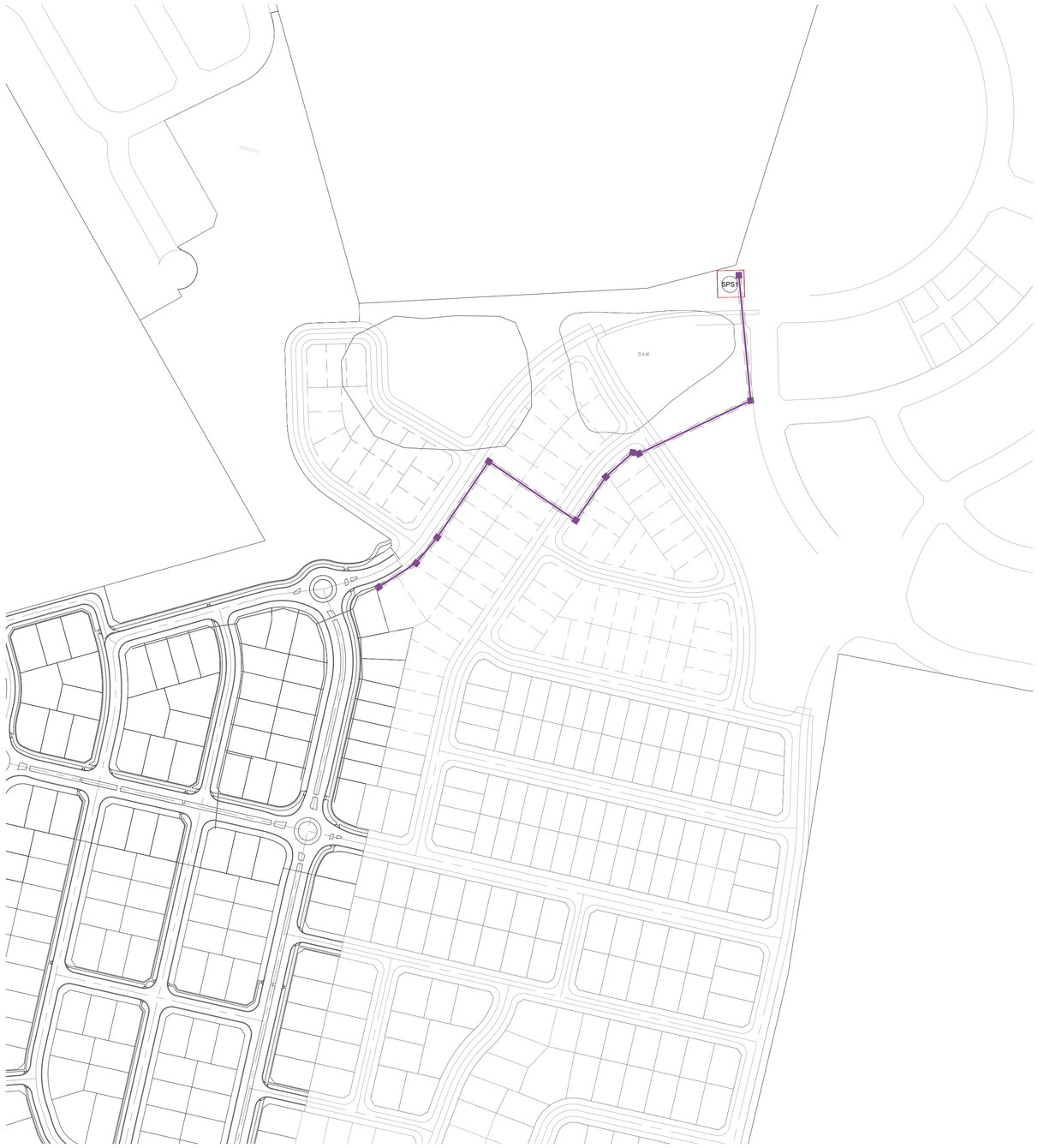
STAGE 1 SEWERAGE SYSTEM CATCHMENT PLAN

SHEET 24 OF 24 | VERSION: 04

DRAFTED:	DESIGNED:	REVIEWED:	VERIFIED:	JOB No:
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER	91/25368/1A
SCALE: -	DATUM: -	U.B.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021	



LOCALITY PLAN

NOTES:
1. THIS PLAN AND LONGITUDINAL SECTION HAS BEEN PREPARED USING LEVELS INTERPOLATED FROM LIDAR DATA AND LOCATION OF SERVICES AS PROVIDED BY WINGECARRIBEE SHIRE COUNCIL AND/OR DIAL BEFORE YOU DIG INFORMATION ONLY AND IS FOR PLANNING PURPOSES ONLY.
2. ALL LEVELS AND PIPE GRADES ARE SUBJECT TO CONFIRMATION OF LEVELS BY SURVEY.
3. LOCATION OF THE PROPOSED SEWER PIPE RELATIVE TO EXISTING SERVICES HAS YET TO BE CONFIRMED. ALL DESIGN DETAILS INCLUDING LOCATION, LEVEL AND LENGTH OF PIPE IS SUBJECT TO CONFIMATION OF LOCATION AND LEVEL OF EXISTING SURFACES AND SERVICES.

NOTES
SW1 All works are to be carried out in accordance with Wingecarribee shire Council Engineering Construction Specifications (current from 1/1/2021)
SW2 Manhole construction is to comply with standard drawing WSC-SEW-005 & as required by Council's Engineer
SW3 All services and assets are to be located by Dial Before You Dig and or investigations on site and located by hand digging, identified, marked and protected by the contractor.
SW4 Council is to be notified 48 hours prior to commencement of works and for inspections.
SW5 Junctions and sidelines are to be left open to allow work as executed inspection to be carried out prior to backfilling.
SW6 All work to be inspected by Council prior to backfilling.
SW7 Sewer junctions to be marked with sewer main marking tape tied from the sewer junction to a hardwood stake of minimum 40mm square X 400mm long at 100mm above ground, the stake to be painted yellow.
SW8 Riser to be fitted to all sewer junctions and terminated approximately 500mm below finished surface level where depth exceeds 1.2m. Refer PWD ST. 503.
SW9 Relevant fees to be paid for Council to undertake any junction cut-ins on existing mains.

DRAWING INDEX

DRAWING No.	TITLE	REVISION
18001-1-001	COVER SHEET	A
18001-2-600	PROPOSED SEWER COUNCIL DETAILS	A
18001-3-601	PLAN OF STAGE 1 LEAD IN SEWER WORKS	A
18001-4-620	PROPOSED SEWER LINE 1 LONGITUDINAL SECTION CH0.0 - CH334.385	A
18001-5-621	PROPOSED SEWER LINE 1 LONGITUDINAL SECTION CH334.385 - END	A

FOR IPART REVIEW
ISSUED FOR APPROVAL

REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.

REV	DESCRIPTION	DATE	DRN.	APP.

0 5 10 20 30 40
SCALE 1:500 AT A1 SIZE

Designed T.H.
Date
Drawn J.O.
Approved T.H.
Date
PS Number PS

Beveridge Williams
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Campbelltown NSW 2560
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Project Details: ASHBOURNE DEVELOPMENT SITE STAGE 1 SEWERAGE CONNECTION WORKS
Drawing Title: COVER SHEET

Sheet 01 of 05
Scale: 1:500 @ A1
N

Project Ref	Stage No	Drawing No	Rev
18001	1	001	A

S:\JOBS\18\18001\EMW_Eng\18001_202_CC (Stage 1 Temporary Sewer Connection)\Design\Drafting\STAGE 1 TEMP SEWER.dwg

TABLE 1 - CLEARANCES BETWEEN SEWERS AND OTHER UNDERGROUND SERVICES			
UTILITY (EXISTING SERVICE)	MINIMUM HORIZONTAL CLEARANCE (mm) NEW SEWER SIZE		MINIMUM VERTICAL CLEARANCE[1] (mm)
	≤ DN 300	> DN 300	
SEWERS ≤ DN 300	300	600	150[2]/300
SEWERS > DN 300	600	600	300
GAS MAINS	300[3]	600	150[2]/300
TELECOMMUNICATIONS CONDUITS AND CABLES	300[3]	600	225[2]/300
ELECTRICITY CONDUITS AND CABLES	500	1000	225/300
STORMWATER DRAINS[4]	300[3]	600	150[2 AND 5]/300
WATER MAINS	1000[2]/600	1000[2]/600	500[5]
KERBS	150[2]	600[2]	N/A

TABLE NOTES:

1. VERTICAL CLEARANCES APPLY WHEN SEWERS CROSS ONE ANOTHER, EXCEPT IN THE CASE OF WATER MAINS WHEN A VERTICAL SEPARATION SHALL ALWAYS BE MAINTAINED, EVEN WHEN THE SEWER MAIN ARE PARALLEL.
2. A MINIMUM VERTICAL CLEARANCE OF 300mm APPLIES IF THE SIZE OF EITHER THE EXISTING SERVICE OR PROPOSED SEWER IS >DN 300.
3. CLEARANCES CAN BE FURTHER REDUCED TO 150mm FOR DISTANCES UP TO 2m WHEN PASSING INSTALLATIONS SUCH AS POLES, PITS AND SMALL STRUCTURES, PROVIDING THE STRUCTURE IS NOT DESTABILIZED IN THE PROCESS.
4. SEWERS SHOULD ALWAYS CROSS UNDER WATER MAINS AND STORMWATER DRAINS. IF THIS REQUIREMENT CANNOT BE MET, CONSULT COUNCIL IN RESPECT OF ALTERNATIVES SUCH AS ADJUSTING THE WATER MAIN OR STORMWATER DRAIN WHERE THE SEWER CROSSES A WATER MAIN AT OR CLOSE TO 90°, THE VERTICAL CLEARANCE MAY BE REDUCED TO NOT LESS THAN 200mm PROVIDED THAT THE SEWER IS CONCRETE ENCASED AND A 50mm COMPRESSIBLE MATERIAL IS PLACED OVER THE ENCAGEMENT. THE ENCASEMENT SHALL NOT HAVE ANY JOINTS WITHIN 1000mm EITHER SIDE OF THE WATER MAIN AND SHALL CONFORM TO DRAWING WSC-SEW-XXX.
5. WHEN THE SEWER IS AT THE MINIMUM VERTICAL CLEARANCE BELOW THE WATER MAIN (500mm) MAINTAIN A MINIMUM HORIZONTAL CLEARANCE OF 1000mm. THIS MINIMUM HORIZONTAL CLEARANCE CAN BE REDUCED TO 600mm A THE VERTICAL CLEARANCE INCREASES TO 750mm.
6. CLEARANCE FROM KERBS SHALL BE MEASURED FROM THE NEAREST POINT OF THE KERB.
7. A SEWER TO BE CONSTRUCTED UNDER AN EXISTING OR PROPOSED STORMWATER PIPE OR CHANNEL ≤ DN 375 SHALL BE CONCRETE ENCEASED. THE CONCRETE ENCASEMENT SHALL EXTEND AT LEAST ONE METRE EACH SIDE OF THE STORMWATER PIPE OR CHANNEL. CLEARANCES BETWEEN THE SEWER AND OTHER SERVICES SHALL BE MEASURED FROM THE OUTER SURFACE OF THE CONCRETE ENCASEMENT.

ISSUE	AMENDMENTS	DRAWN	DATE

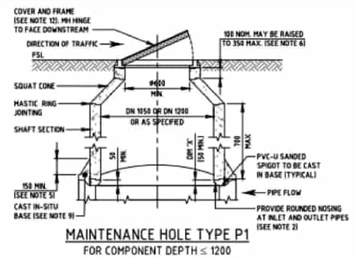
WINGECARRIBEE SHIRE COUNCIL

DRAWN M. MOLINA | SCALE N.T.S. | SHEET SIZE A3

WINGECARRIBEE SHIRE COUNCIL

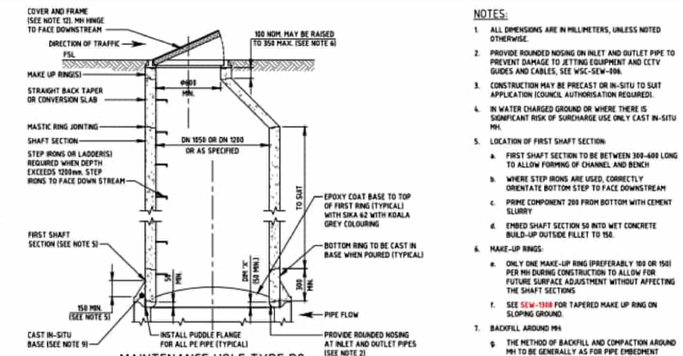
GENERAL NOTES AND CONNECTION DETAILS - SHEET 2

DATE: 02/05/2017 | PLAN No: WSC-SEW-002 | SHEET 02 OF XX | ISSUE: A



MAINTENANCE HOLE TYPE P1

FOR COMPONENT DEPTH ≤ 1200



MAINTENANCE HOLE TYPE P2

FOR COMPONENT DEPTH 1200 TO 6000

NOTES:

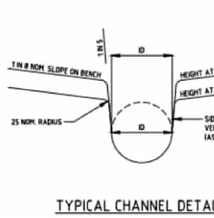
1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
2. PROVIDE ROUNDED NOSING ON INLET AND OUTLET PIPE TO PREVENT DAMAGE TO JETTING EQUIPMENT AND CCTV GUIDES AND CABLES. SEE WSC-SEW-006.
3. CONSTRUCTION MAY BE PRECAST OR IN-SITU TO SUIT APPLICATION (COUNCIL AUTHORISATION REQUIRED).
4. IN WATER CHARGED GROUND OR WHERE THERE IS SIGNIFICANT RISK OF SURCHARGE USE ONLY CAST IN-SITU MH.
5. LOCATION OF FIRST SHAFT SECTION:
   a. FIRST SHAFT SECTION TO BE BETWEEN 300-600 LONG TO ALLOW FORMING OF CHANNEL AND BENCH
   b. WHERE STEP IRONS ARE USED, CORRECTLY ORIENTATE BOTTOM STEP TO FACE DOWNSTREAM
   c. PRIME COMPONENT 200 FROM BOTTOM WITH CEMENT SLURRY
   d. EMBED SHAFT SECTION 50 INTO WET CONCRETE BUILD-UP OUTSIDE FILLET TO 150.
6. MAKE-UP RINGS:
   e. ONLY ONE MAKE-UP RING (PREFERABLY 100 OR 150) PER MH DURING CONSTRUCTION TO ALLOW FOR FUTURE SURFACE ADJUSTMENT WITHOUT AFFECTING THE SHAFT SECTIONS
   f. SEE SEW-1308 FOR TAPERED MAKE UP RING ON SLOPING GROUND.
7. BACKFILL AROUND MH
   g. THE METHOD OF BACKFILL AND COMPACTION AROUND MH TO BE GENERALLY AS FOR PIPE EMBEDMENT
   h. TAKE CARE TO RAISE SELECT FILL EQUALLY ALL AROUND THE MH TO AVOID UNBALANCED LATERAL LOADING.
8. FOR MH TYPE P2 INSTALL STEP IRONS OR LADDERS IN ACCORDANCE WITH COUNCIL REQUIREMENTS.
9. CONCRETE BASE TO BE 25Mpa, MIN. 1 CMTR PER MANHOLE.
10. FOR PIPE CONNECTIONS TO MH SEE SEW-1302.
11. WHERE THERE IS SIGNIFICANT RISK OF INFILTRATION OR TREE ROOT INTRUSION APPLY AND EXTERNAL BITUMASTIC SEAL TAPE 150 WIDE OVER A COAT OF MANUFACTURERS RECOMMENDED PRIME SEAL TO ALL JOINTS.
12. FOR LOAD CLASS OF MH/MS COVER AND FRAME, REFER TO TABLE 1 AND FINISH SURFACE LEVELS, REFER TO TABLE 2. COUNCIL APPROVED LIDS TO BE USED.
13. MH TYPE C2 TO BE USED - 6000 DEPTH CAST IN-SITU ONLY. SEE SEW-1301.
14. EXTERNAL DROP JUNCTION REFER TO SEW-1303.

TABLE 1 - LOAD CLASS OF MH/MS COVERS	
TYPICAL USE	CLASS
AREAS (INCLUDING FOOTWAYS) ACCESSIBLE ONLY TO PEDESTRIANS AND PEDAL CYCLISTS AND CLOSED TO OTHER TRAFFIC (EXTRA-LIGHT DUTY)	A
AREAS (INCLUDING FOOTWAYS AND LIGHT TRACTOR PATHS) ACCESSIBLE TO VEHICLES (EXCLUDING COMMERCIAL VEHICLES) OR LIVESTOCK (LIGHT DUTY)	B
MALLS AND AREAS OPEN TO SLOW MOVING COMMERCIAL VEHICLES (MEDIUM DUTY)	C
CARRIAGEWAYS OF ROADS AND AREAS OPEN TO COMMERCIAL VEHICLES	D
GENERAL DOCKS AND AIRCRAFT PAVEMENTS (EXTRA HEAVY DUTY - E)	E

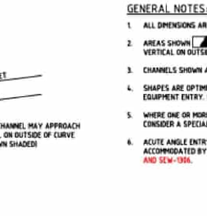
TABLE 2 - FINISHED LEVELS OF MH/MS COVERS	
LOCATION	H
UNDEVELOPED AREA	100
NEW SUBDIVISIONS	75
ROADS, LANE WAYS, FOOTWAYS & DRIVEWAYS	FLUSH
EXISTING BUILT UP AREAS	25

CALCULATING TOTAL PRECAST COMPONENT DEPTH (REFER TO NOTE 4)

TOTAL DEPTH OF PRECAST COMPONENT = + DEPTH TO INVERT OF HIGHEST NON-DROP INLET PIPE MINUS (ID OF INLET PIPE + PIPE WALL THICKNESS + DIM "X")



MAINTENANCE SHAFT



MASTIC JOINT DETAILS

NOTE: INSPECT COMPONENTS TO ENSURE THERE IS NO DAMAGE TO JOINT SURFACES

ISSUE	AMENDMENTS	DRAWN	DATE

WINGECARRIBEE SHIRE COUNCIL

DRAWN M. MOLINA | SCALE N.T.S. | SHEET SIZE A3

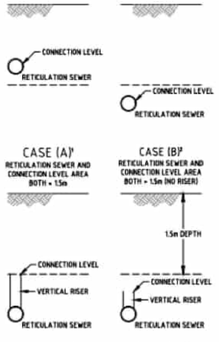
WINGECARRIBEE SHIRE COUNCIL

MAINTENANCE HOLES SEWERS ≤ DN 300

DATE: 02/05/2017 | PLAN No: WSC-SEW-005 | SHEET 05 OF XX | ISSUE: A

GENERAL NOTES:

1. THE LOCATION OF PROPERTY CONNECTION POINTS WILL BE DETERMINED BY THE STATUS OF DEVELOPMENT OF THE LOT.
2. PROPERTY CONNECTION POINTS ON VACANT LOTS SHALL BE LOCATED TO ACHIEVE THE MINIMUM DEPTH OF SEWERS, AS SHOWN IN DEPTH OF CONNECTION POINTS AND USE OF RISERS.
3. OFFSET BOUNDARY DISTANCES SHALL BE SPECIFIED BY COUNCIL.
4. WHERE NOT SPECIFIED, PROPERTY CONNECTION POINTS SHALL BE LOCATED:
   (a) 5m FROM THE SIDE BOUNDARY UNLESS THE POSITION OF THE DRIVEWAY IS KNOWN, IN WHICH CASE THE PROPERTY CONNECTION SEWER SHALL BE LOCATED CLEAR OF THE DRIVEWAY, AND
   (b) ON THE LOWER SIDE OF THE PROPERTY; OR
   (c) ON THE OPPOSITE SIDE OF THE LOT TO THE DRIVEWAY CROSSING, IF KNOWN, WHERE THE FALL ACROSS THE LOT IS SMALL.
5. WHEN SEWERS ARE CONSTRUCTED ALONG THE SIDE OF THE LOT, THE CONNECTION POINT SHALL BE LOCATED 2m FROM THE FRONT OR REAR BOUNDARY, DEPENDING ON THE DIRECTION OF THE FALL.
6. PROPERTY CONNECTION SEWERS SHALL BE CONSTRUCTED WITH SUFFICIENT HORIZONTAL STRAIGHT PIPES OR 300mm MINIMUM SO THAT THE PROPERTY CONNECTION FITTING IS LOCATED INSIDE THE LOT TO BE SERVICED.
7. THE CONNECTION POINT SHALL BE LOCATED
   (a) CLEAR OF OBSTRUCTION E.G. RETAINING WALLS, TREES, TREE ROOTS AND SURFACE IMPROVEMENTS E.G. DRIVEWAYS AND PAVED AREAS;
   (b) WHERE IT IS EASILY ACCESSIBLE FOR FUTURE MAINTENANCE;
   (c) WHERE THE CONNECTION LOT OWNER'S SANITARY DRAIN CAN BE CONSTRUCTED CLEAR OF EXISTING OBSTRUCTIONS AND SURFACE IMPROVEMENTS;
   (d) WHERE THE CONNECTING SANITARY DRAIN CAN BE CONSTRUCTED CLEAR OF ANY KNOWN FUTURE DEVELOPMENT E.G. SWIMMING POOL, DRIVEWAY ETC.;
   (e) TO AVOID UNNECESSARILY DEEP EXCAVATION <1.5m WHERE PRACTICABLE;
   (f) WITH CONSIDERATION TO ANY PREFERENCES OF LOW OWNERS;
   (g) A MINIMUM OF 2m FROM THE NEAREST SANITARY FIXTURE; AND
   (h) A MINIMUM OF 2m AWAY FROM ANY CORNER OF THE BUILDING.
8. WHERE SPECIFIED BY COUNCIL, DESIGNERS MAY BE REQUIRED TO NOMINATE THE TYPE OF PROPERTY CONNECTION SEWERS ON THE DESIGN DRAWINGS.
9. THERE ARE TWO BASIC METHODS OF PROVIDING THE PROPERTY CONNECTION POINT AT THE REQUIRED LOCATION AND DEPTH. THE FOLLOWING METHODS APPLY TO BOTH THE IO INTERFACE METHOD AND THE BURIED INTERFACE METHODS:
   (a) RUN-IN
   (b) VERTICAL RISER (JUMP-UP)
10. WHERE PERMITTED BY COUNCIL, CONSIDERATION MAY BE GIVEN TO 'TYPE T SPUR' OR 'Y' PROPERTY CONNECTIONS I.E. THOSE PROVIDING FOR CONNECTION OF TWO LOTS WHERE COST SAVING WOULD RESULT AND THE LOT OWNERS WOULD NOT BE DISADVANTAGED. NO MORE THAN TWO (2) LOTS SHALL BE CONNECTED TO A SINGLE POINT ON THE RETICULATION OR PROPERTY CONNECTION SEWER, REFER TO PLAN WSC-SEW-004.
11. PROPERTY CONNECTION SEWERS SHALL BE A MAXIMUM OF 10m IN LENGTH OR AS DIRECTED BY COUNCIL, MEASURED FROM THE SEWER TO THE BOUNDARY OF THE LOT TO BE SERVICED.
12. WHERE LONGER PROPERTY CONNECTION SEWERS ARE REQUIRED, THEY SHALL BE DESIGNED AND CONSTRUCTED TO THE SAME STANDARDS AS SEWERS AND SHALL BE PROVIDED WITH MAINTENANCE ACCESS; END-OF-LINE CROSSINGS OF ROADS UP TO 25m IN LENGTH MAY BE CLASSIFIED AS PROPERTY CONNECTION SEWERS.
13. A PROPERTY CONNECTION SEWER SHALL TERMINATE INSIDE THE LOT TO BE SERVICED.



DEPTH OF CONNECTION POINTS AND USE OF RISERS DETAIL

DETAIL NOTES:

1. THE MINIMUM DEPTH OF POINT OF CONNECTION TO THE RETICULATION SEWER SHALL BE THE CALCULATED LEVEL FOR THE MAXIMUM LOT DRAINAGE AND COMPLIANCE WITH SOFFIT REQUIREMENTS.
2. WHERE LOT CONTROL WARRANTS THE SEWER BEING DEEPER THAN 1.5m, THE POINT OF CONNECTION SHALL BE CONSTRUCTED AT THAT LEVEL OR DEEPER. A VERTICAL RISER (JUMP-UP) SHALL NOT EXTEND HIGHER THAN THAT LEVEL.
3. IN CASES WHERE THE RETICULATION SEWER IS DEEPER THAN 1.5m AND THE REQUIRED PROPERTY CONNECTION LEVEL IS LESS THAN 1.5m, A VERTICAL RISER (JUMP-UP) SHALL BE CONSTRUCTED TO A DEPTH OF NOT MORE THAN 1.5m BELOW FSL.
4. IF THE RETICULATION SEWER IS VERY DEEP AND THE PROPERTY CONNECTION LEVEL REQUIRED IS DEEPER THAN 1.5m, A RISER SHALL BE CONSTRUCTED TO THE REQUIRED PROPERTY CONNECTION LEVEL.
5. BOTH CASE (C) AND (D) MITIGATE THE LIKELIHOOD OF UNSAFE PRACTICES BEING ADOPTED BY PLUMBERS AND REDUCES THE LIFE CYCLE COSTS OF THE SANITARY DRAIN TO THE LOT OWNER.

TABLE 1 - MINIMUM COVERS OVER SEWERS	
LOCATION	MINIMUM COVER TO TOP OF SEWER (mm)
PUBLIC AND PRIVATE LOTS NOT SUBJECT TO VEHICULAR LOADING	600 - NEW DEVELOPMENTS 450 - EXISTING DEVELOPMENTS
PRIVATE LOTS ZONED RESIDENTIAL SUBJECT TO VEHICULAR LOADING	750
FOOTWAY, NATURE STRIPS, INDUSTRIAL AND COMMERCIAL LOTS, SEALED ROAD PAVEMENTS OTHER THAN MAJOR ROADS SUBJECT TO VEHICULAR LOADING	900
UNSEALED ROAD CARRIAGEWAYS	1200
MAJOR ROAD CARRIAGEWAYS	1200
FUTURE ROAD, RAIL AND TRAM PAVEMENTS	1200

TABLE 2 - MINIMUM PIPE SIZES FOR RETICULATION AND PROPERTY CONNECTION SEWERS	
SEWER	MINIMUM SIZE DN (mm)
PROPERTY CONNECTION SEWERS SERVICING SINGLE OCCUPANCY RESIDENTIAL LOTS	150
RETICULATION SEWERS SERVICING RESIDENTIAL LOTS, DUAL OCCUPANCY AND GRANNY FLATS, PROPERTY CONNECTION SEWER SERVICING COMMERCIAL AND INDUSTRIAL LOTS ≤ 300 m²	150
RETICULATION SEWER SERVICING COMMERCIAL AND INDUSTRIAL LOTS AND OTHER LOTS WHERE LARGE FLOWS MAY BE EXPECTED	225

TABLE 3 - PROPERTY CONNECTION SEWER GRADE TOLERANCES		
CATEGORY	DESIGN GRADE	MINIMUM ACCEPTABLE GRADE
DN 100	1.65% (1 IN 60)	15% FLATTER, 15% STEEPER
DN 150	1.2% (1 IN 83)	15% FLATTER, 15% STEEPER

ISSUE	AMENDMENTS	DRAWN	DATE

WINGECARRIBEE SHIRE COUNCIL

DRAWN M. MOLINA | SCALE N.T.S. | SHEET SIZE A3

WINGECARRIBEE SHIRE COUNCIL

GENERAL NOTES AND CONNECTION DETAILS - SHEET 1

DATE: 02/05/2017 | PLAN No: WSC-SEW-001 | SHEET 01 OF XX | ISSUE: A

90° BEND

LARGER MAIN LINE WITH BEND & 2 x SMALLER 90° OPPOSING INLETS

OPPOSING INLETS 90° OUTLET

STRAIGHT THROUGH & 90° INLET

TYPICAL CHANNEL DETAILS

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. AREAS SHOWN [▪] INDICATE WHERE THE SIDE OF THE CHANNEL APPROACHES VERTICAL ON OUTSIDE OF CURVE.
3. CHANNELS SHOWN ARE FOR DN 150 AND DN 225 PIPES IN STANDARD DN 1050 MH.
4. SHAPES ARE OPTIMUM HYDRAULICALLY, BUT MAY NOT ALLOW SOME MAINTENANCE EQUIPMENT ENTRY. MODIFY SHAPE TO SUIT COUNCIL EQUIPMENT.
5. WHERE ONE OR MORE INCOMING SEWERS EXCEED 10% GRADE THE DESIGNER IS TO CONSIDER A SPECIAL DESIGN SUCH AS CURVED SEWERS OR OUTLET TRANSITIONS.
6. ACUTE ANGLE ENTRY MAY BE APPROVED BY WSC FOR LOW FLOWS OR MAY BE ACCOMMODATED BY EXTERNAL DROP JUNCTION OR DROP CHAMBER SEE SEW-1304 AND SEW-1306.

ISSUE	AMENDMENTS	DRAWN	DATE

WINGECARRIBEE SHIRE COUNCIL

DRAWN M. MOLINA | SCALE NTS | SHEET SIZE A3

WINGECARRIBEE SHIRE COUNCIL

MAINTENANCE HOLES TYPICAL CHANNEL DETAILS

DATE: 02/05/2017 | PLAN No: WSC-SEW-006 | SHEET 06 OF XX | ISSUE: A

FOR IPART REVIEW
ISSUED FOR APPROVAL

REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.

REV	DESCRIPTION	DATE	DRN.	APP.

0 5 10 20 30 40

SCALE 1:500 AT A1 SIZE

Designed T.H. Date
Drawn J.O.
Approved T.H. Date
PS Number PS

Beveridge Williams

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Project Details: ASHBOURNE DEVELOPMENT SITE STAGE 1 SEWERAGE CONNECTION WORKS

Drawing Title: PRPOSED SEWER COUNCIL DETAILS

Sheet 02 of 05

Scale 1:500 @ A1

N

Project Ref	Stage No	Drawing No	Rev
18001	1	600	A

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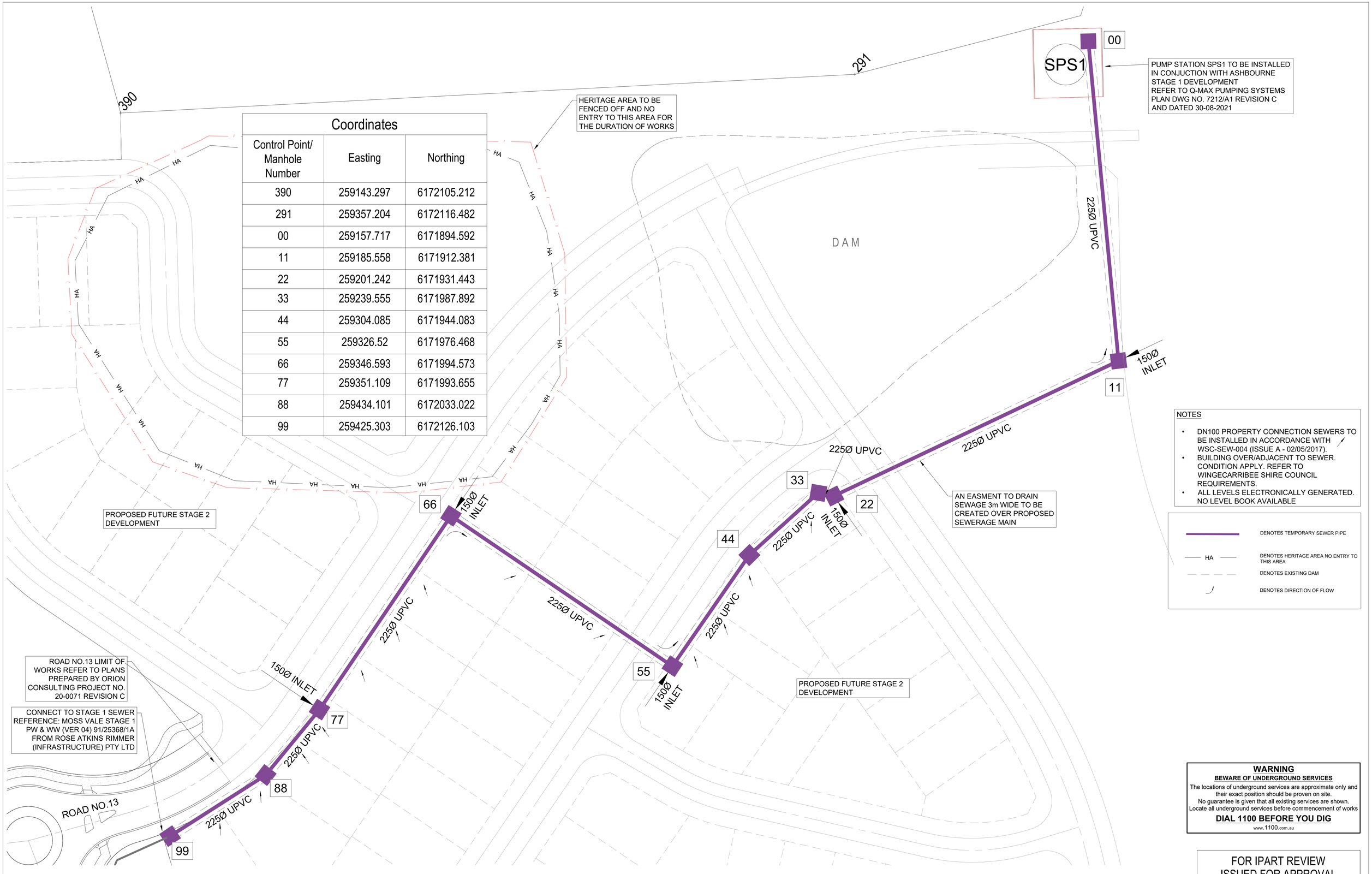

Coordinates

Control Point/ Manhole Number	Easting	Northing
390	259143.297	6172105.212
291	259357.204	6172116.482
00	259157.717	6171894.592
11	259185.558	6171912.381
22	259201.242	6171931.443
33	259239.555	6171987.892
44	259304.085	6171944.083
55	259326.52	6171976.468
66	259346.593	6171994.573
77	259351.109	6171993.655
88	259434.101	6172033.022
99	259425.303	6172126.103

NOTES

- DN100 PROPERTY CONNECTION SEWERS TO BE INSTALLED IN ACCORDANCE WITH WSC-SEW-004 (ISSUE A - 02/05/2017).
- BUILDING OVER/ADJACENT TO SEWER. CONDITION APPLY. REFER TO WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS.
- ALL LEVELS ELECTRONICALLY GENERATED. NO LEVEL BOOK AVAILABLE

DENOTES TEMPORARY SEWER PIPE

HA — DENOTES HERITAGE AREA NO ENTRY TO THIS AREA

DENOTES EXISTING DAM

DENOTES DIRECTION OF FLOW

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations 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.
Locate all underground services before commencement of works

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REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.

REV	DESCRIPTION	DATE	DRN.	APP.

0 5 10 20 30 40
SCALE 1:500 AT A1 SIZE

Designed T.H.
Date
Drawn J.O.
Approved T.H.
Date
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Project Details: ASHBOURNE DEVELOPMENT SITE STAGE 1 SEWERAGE CONNECTION WORKS

Drawing Title: PLAN OF STAGE 1 LEAD IN SEWER WORKS

Sheet 03 of 05

Scale: 1:500 @ A1

N

Project Ref	Stage No	Drawing No	Rev
18001	1	601	A

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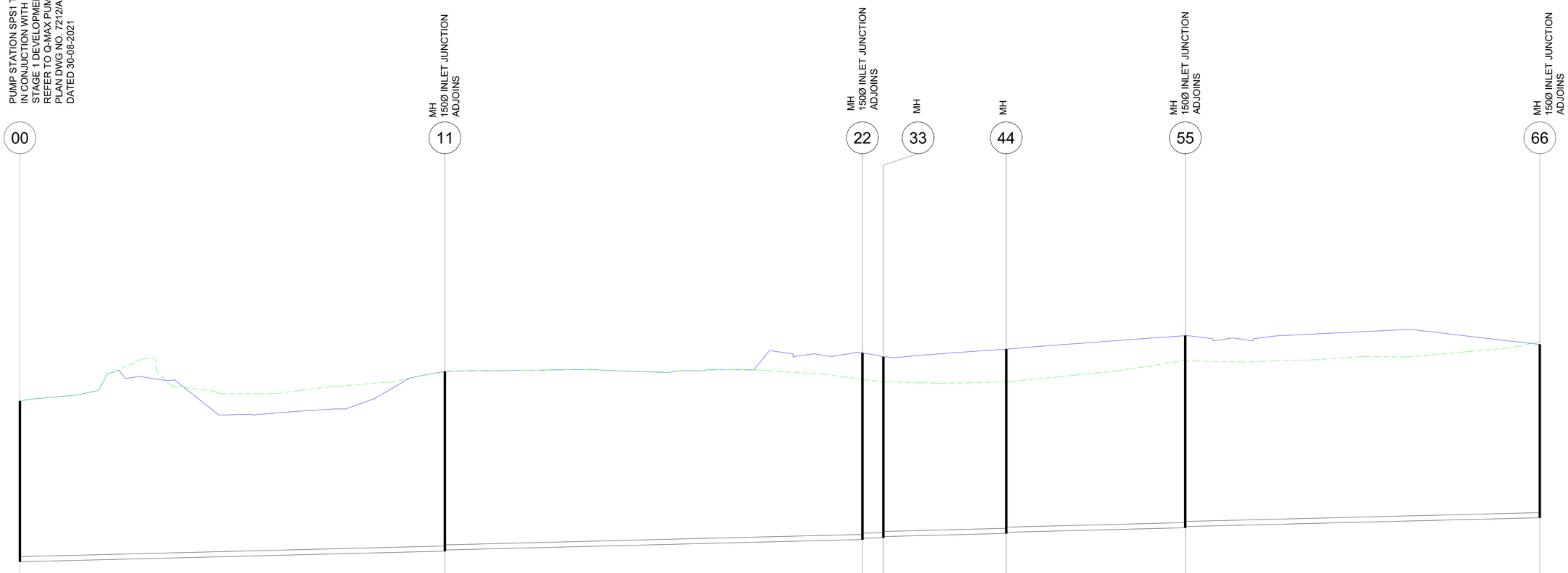

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MH - DENOTES MAINTENANCE HOLES TO COUNCIL STANDARD DWG WSC- SEW-005

PIPE DETAILS SLOPE/GRADE	00 – 11	11 – 22	22 – 33	33 – 44	44 – 55	55 – 66
	225Ø PVC 0.503%	225Ø PVC 0.501%	225Ø PVC 0.651%	225Ø PVC 0.518%	225Ø PVC 0.508%	225Ø PVC 0.5%
	93.496	91.856	4.608	27.032	39.396	77.996

DATUM RL 673.6

	00	11	22	33	44	55	66
DEPTH TO INVERT	7.077	7.902 7.852	8.212 8.162	7.956 7.906	8.108 8.058	8.453 8.403	7.629
INVERT LEVEL	678.590	679.060 679.110	679.570 679.620	679.650 679.700	679.840 679.890	680.090 680.140	680.530
FINISHED SURFACE	685.667	686.962	687.782	687.606	687.948	688.543	688.159
EXISTING SURFACE	685.667	686.962	686.630	686.518	686.523	687.444	688.287
CHAINAGE	0.000	93.496	185.352	189.960	216.992	256.388	334.385

SEWER LONGITUNDINAL SECTION FOR LINE 1

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

FOR IPART REVIEW
ISSUED FOR APPROVAL

REV	DESCRIPTION	DATE	DRN.	APP.	REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.					

HORIZ 1:500 0 5 10 20 30
VERT 1:100 0 1 2 4 6
SCALE AT A1 SIZE

Designed T.H.
Date
Drawn J.O.
Approved T.H.
Date
PS Number PS

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Project Details: ASHBOURNE DEVELOPMENT SITE STAGE 1 SEWERAGE CONNECTION WORKS

Drawing Title: PROPOSED SEWER LINE 1 LONGSECTION CH0.0 - CH334.385

Sheet 04 of 05

Scale: 1:500 H 1:100 V @ A1

N

Project Ref	Stage No	Drawing No	Rev
18001	1	620	A

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MH - DENOTES MAINTENANCE HOLES TO
COUNCIL STANDARD DWG WSC- SEW-005

WARNING

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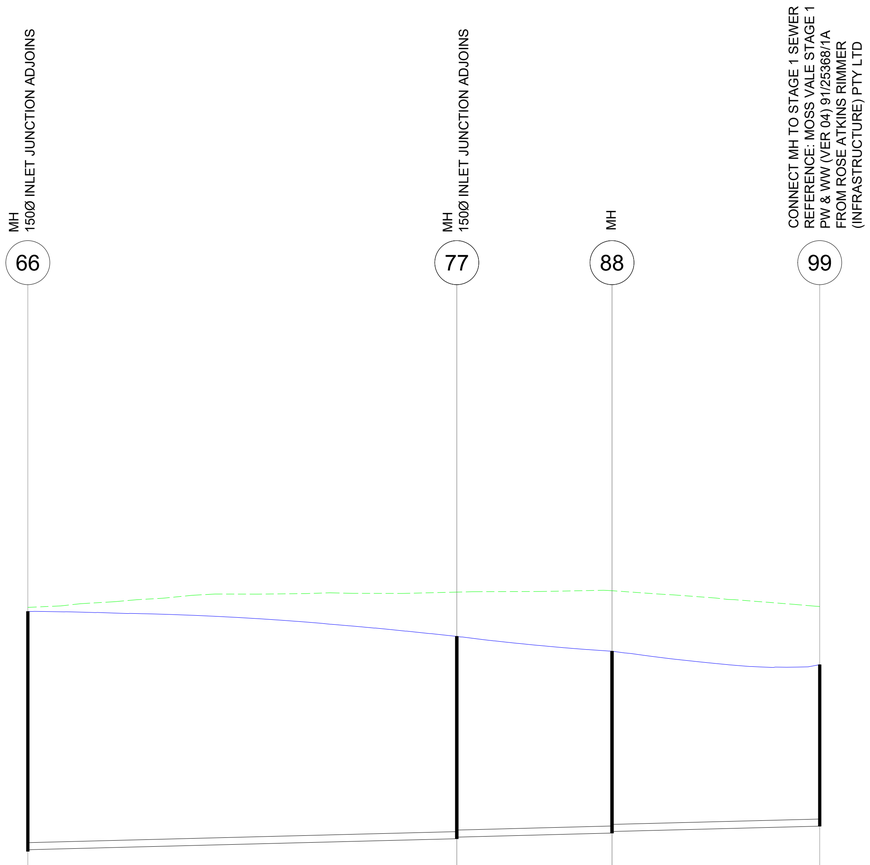

	66		77		88		99
PIPE DETAILS SLOPE/GRADE		225Ø PVC 0.513%		225Ø PVC 0.527%		225Ø PVC 0.515%	
DATUM RL 675.6							
DEPTH TO INVERT	7.579		6.434 6.384		5.784 5.734		5.135
INVERT LEVEL	680.580		680.930 680.980		681.110 681.160		681.330
FINISHED SURFACE	688.159		687.364		686.894		686.465
EXISTING SURFACE	688.287		688.772		688.817		688.314
CHAINAGE	334.385	68.223	402.608	24.685	427.293	33.039	460.332

SEWER LONGITUNDINAL SECTION FOR LINE 1

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

FOR IPART REVIEW
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REV	DESCRIPTION	DATE	DRN.	APP.	REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.					

HORIZ 1:500 0 5 10 20 30
VERT 1:100 0 1 2 4 6
SCALE AT A1 SIZE

Designed	T.H.
Date	
Drawn	J.O.
Approved	T.H.
Date	
PS Number	PS

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Project Details: ASHBOURNE DEVELOPMENT SITE STAGE 1
SEWERAGE CONNECTION WORKS

Drawing Title: PROPOSED SEWER LINE 1 LONGSECTION
CH334.385 - END

Sheet 05 of 05

Scale: 1:500 H 1:100 V @ A1

N

Project Ref	Stage No	Drawing No	Rev
18001	1	621	A

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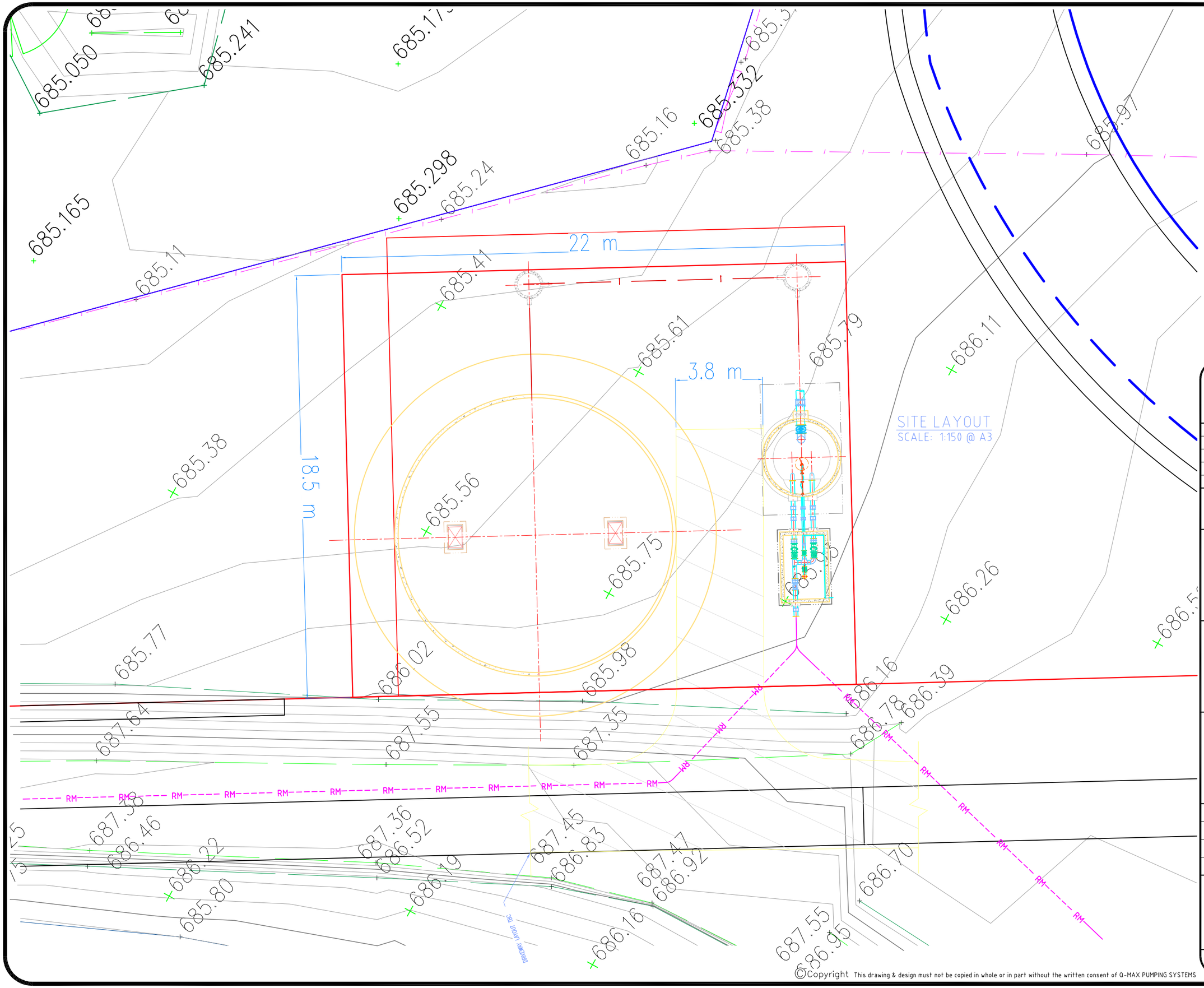
PART 3 - MUNICIPAL SPS AND EMERGENCY STORAGE



Rev	Description	Date
C	EST Updated	30.08.21
B	Inlet Chamber Removed	09.10.20
A	For Approval	02.10.20

Status

FOR APPROVAL

QMAX PUMPING SYSTEMS

Q-MAX PUMPING SYSTEMS
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QUEANBEYAN NSW 2620

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E SALES@QMAXPUMPING.COM.AU
WWW.QMAXPUMPING.COM.AU

DESIGNED FOR PERFORMANCE, BASED ON EXPERIENCE.

Client

PRIME MOSS VALE PTY LTD

Project

CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	30.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	1/7
Scale	1:150	Size	A3

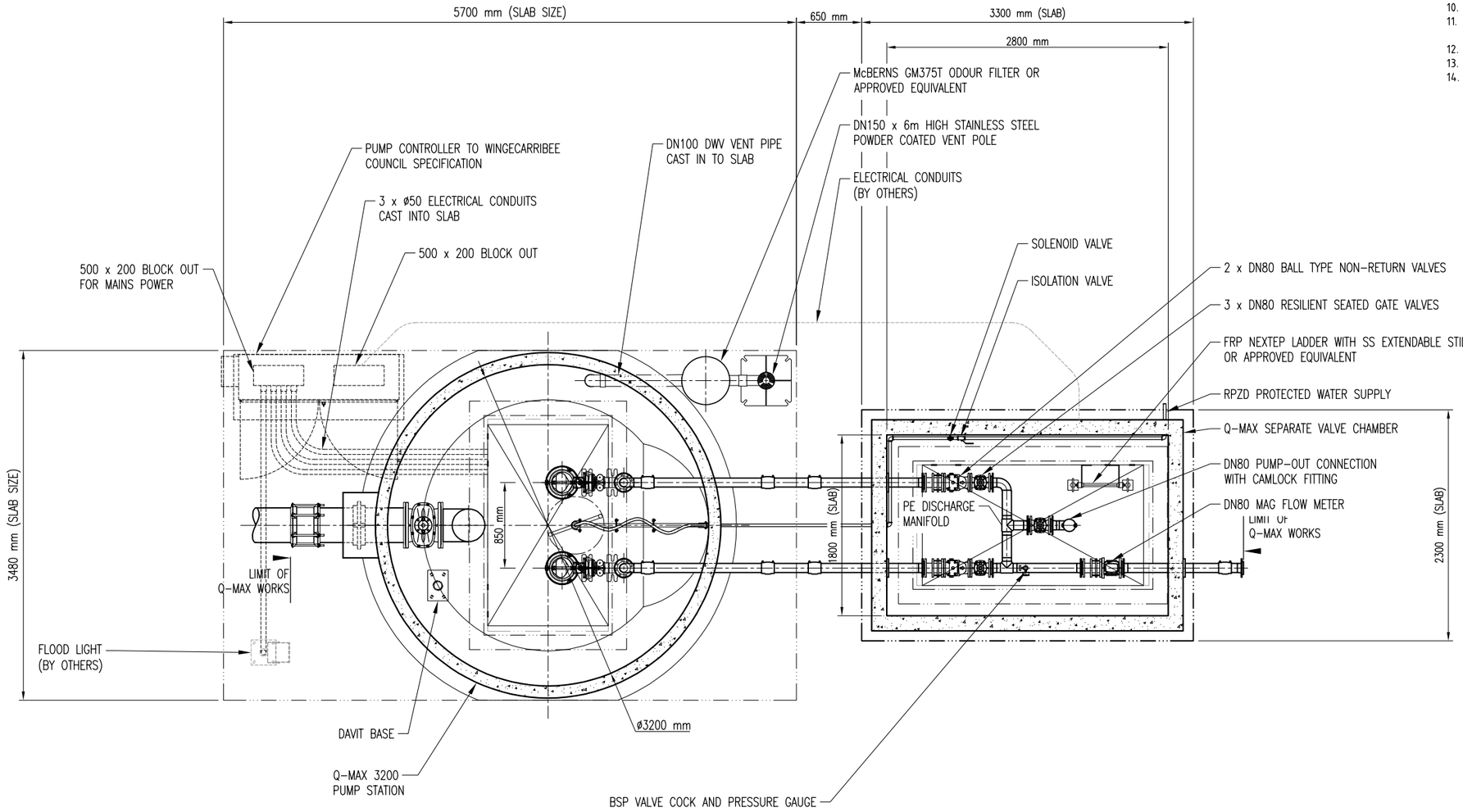
Title

Q-MAX 3200 PUMP STATION SITE LAYOUT

Drg No.	Rev
7212/A1	C

SPECIFICATIONS:

1. INTERNAL DIAMETER - 3200mm nominal.
2. METHOD OF MANUFACTURE - steel mould formed with intense mechanical vibration.
3. CONCRETE TYPE - sulfate resistant using calcareous aggregate.
4. STRENGTH - 50 MPa at 28 days. Internal finish to meet AS1510 Class 2.
5. WALL THICKNESS - 120mm with 60mm internal cover over reinforcement. Design conforms to AS 3735.
6. REINFORCEMENT - complies with AS/NZS 4671.
7. VALVE CHAMBER - full size 2200mm X 1800mm - formed as one section.
8. VALVES - 3 x DN80 resilient seated gate valves.
   - 2 x DN80 ball type non-return valves.
   - 1 x DN225 resilient seated inlet gate valve.
9. PIPEWORK - DN90 PN16 (SDR11) HDPE Pipework.
10. PUMPS - 2 x Sulzer XFP80E-CB1-PE110/2 submersible pumps - guiderail mounted.
11. ACCESS COVERS - lockable hinged aluminium access covers with hinged safety grate over wet well
12. LEVEL CONTROLS - BY OTHERS
13. PUMP CONTROLLER - BY OTHERS
14. LIFTING DETAILS - 4 x 10.0t 'Swift-Lifts in base and 4 x 5.0t in increments, valve chamber & coverslab.



SECTIONAL PLAN VIEW
SCALE: 1 : 50 @ A3

Rev	Description	Date
B	Inlet Chamber Removed	09.10.20
A	For Approval	06.10.20

Status: **FOR APPROVAL**

Q-MAX PUMPING SYSTEMS
PO BOX 6006
72 HIGH STREET
QUEANBEYAN NSW 2620
P 02 6128 1000 F 02 6128 1055
E SALES@QMAXPUMPING.COM.AU
WWW.QMAXPUMPING.COM.AU
DESIGNED FOR PERFORMANCE. BASED ON EXPERIENCE.

Client: PRIME MOSS VALE PTY LTD

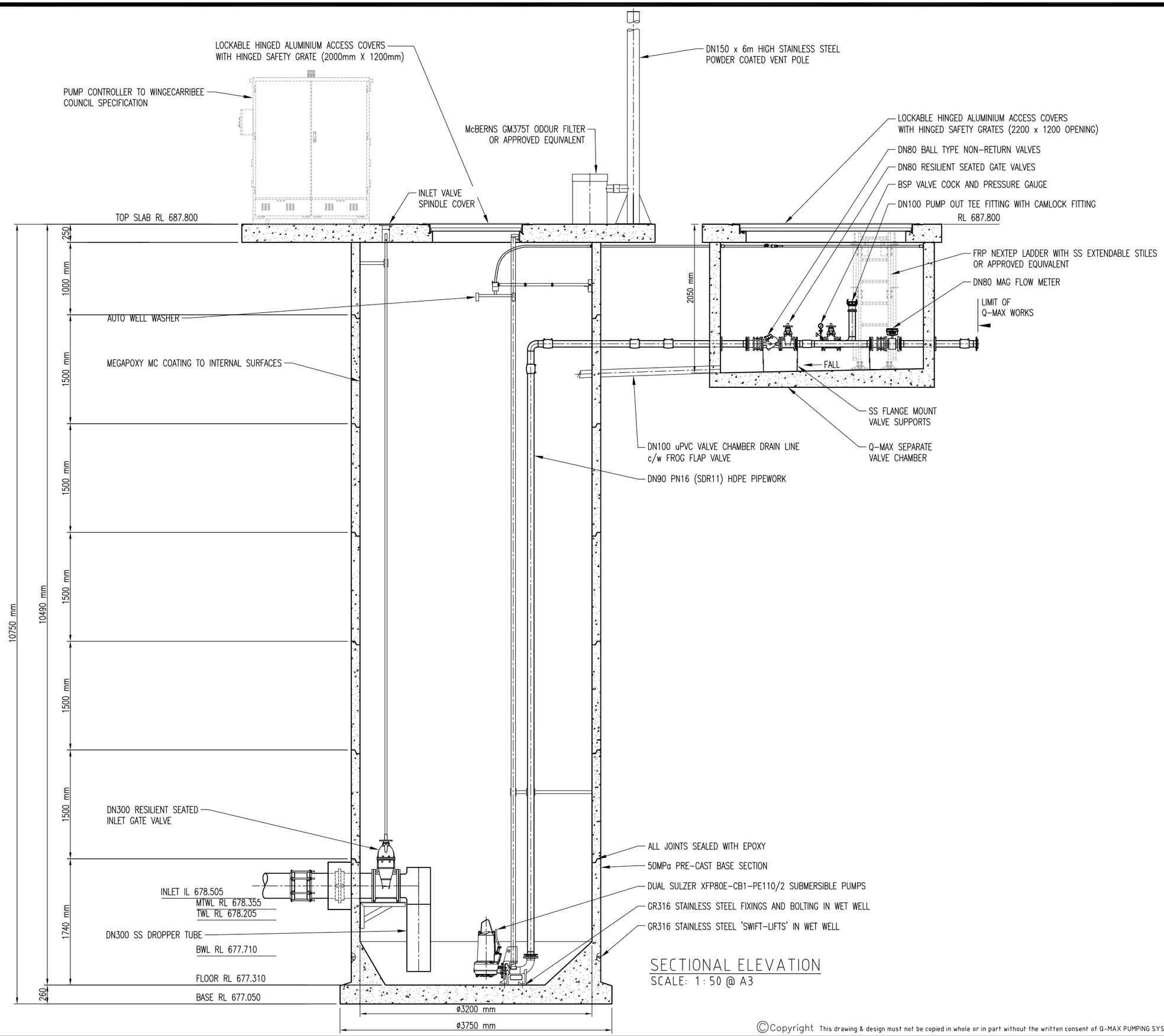
Project: CHELSEA GARDENS SEWER PUMP STATION

(INITIAL DESIGN)

Drawn	S. SHOKRAVI	Date	09.10.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	2/7
Scale	1 : 50	Size	A3

Title: Q-MAX 3200 PUMP STATION GENERAL LAYOUT (PLAN VIEW)

Drg No. 7212/A2 | Rev B



SECTIONAL ELEVATION
SCALE: 1 : 50 @ A3

Rev	Description	Date
B	Inlet Chamber Removed and Inlet Updated	09.10.20
A	For Approval	06.10.20

Status

FOR APPROVAL

Q-MAX PUMPING SYSTEMS
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QMAX PUMPING SYSTEMS

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Client

PRIME MOSS VALE PTY LTD

Project

CHELSEA GARDENS SEWER PUMP STATION

(INITIAL DESIGN)

Drawn	S. SHOKRAVI	Date	09.10.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	3/7
Scale	1 : 50	Size	A3

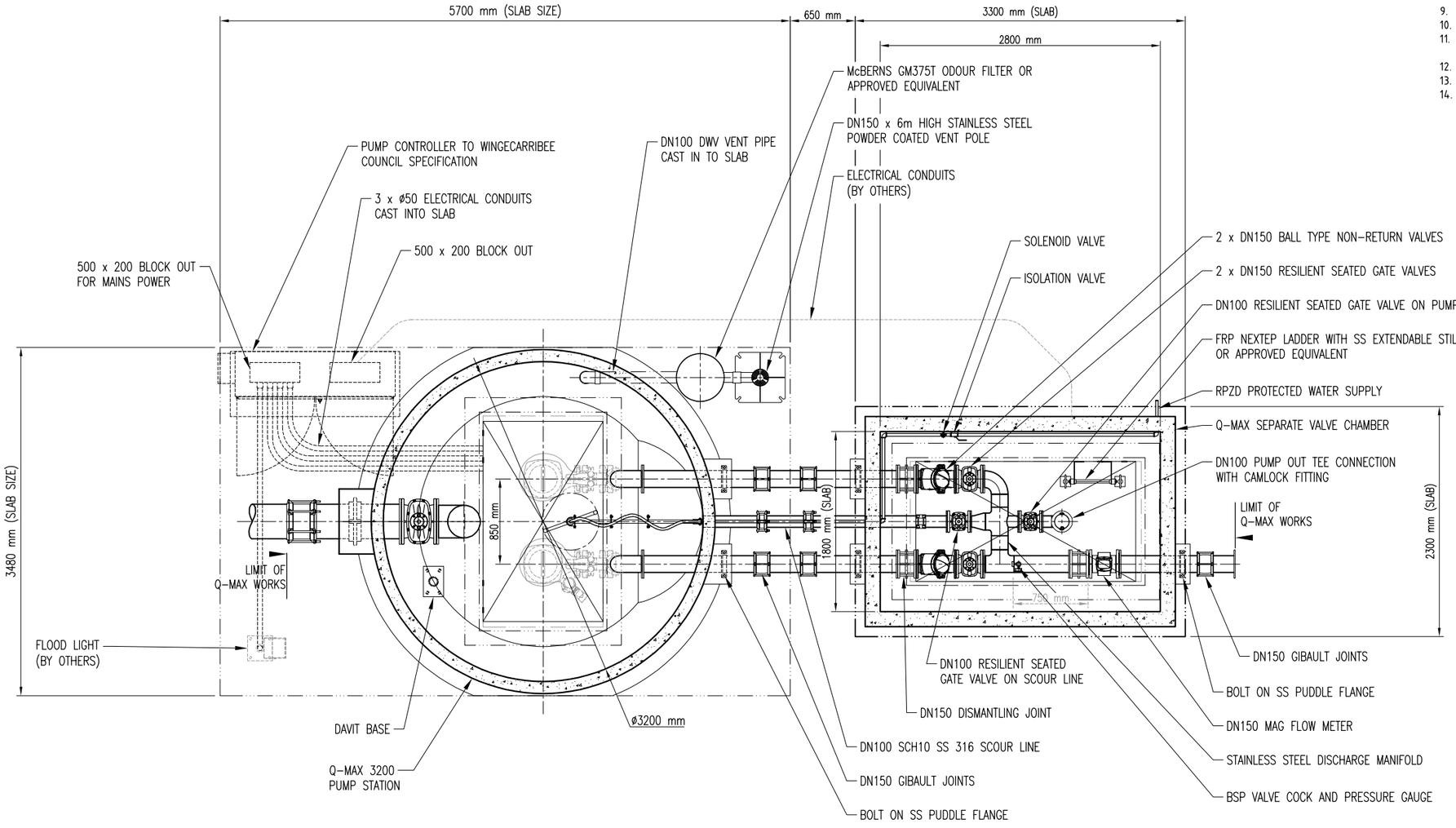
Title

Q-MAX 3200 PUMP STATION GENERAL LAYOUT (SECTIONAL ELEVATION)

Drg No.	Rev
7212/A3	B

SPECIFICATIONS:

1. INTERNAL DIAMETER - 3200mm nominal.
2. METHOD OF MANUFACTURE - steel mould formed with intense mechanical vibration.
3. CONCRETE TYPE - sulfate resistant using calcareous aggregate.
4. STRENGTH - 50 MPa at 28 days. Internal finish to meet AS1510 Class 2.
5. WALL THICKNESS - 120mm with 60mm internal cover over reinforcement. Design conforms to AS 3735.
6. REINFORCEMENT - complies with AS/NZS 4671.
7. VALVE CHAMBER - full size 2200mm X 1800mm - formed as one section.
8. VALVES - 2 x DN150 resilient seated gate valves.
   - 2 x DN150 ball type non-return valves.
   - 2 x DN100 resilient seated gate valve.
   - 1 x DN225 resilient seated inlet gate valve.
9. PIPEWORK - DN150 Sch10 316 SS Pipework.
10. PUMPS - Dual submersible pumps - guiderail mounted.
11. ACCESS COVERS - lockable hinged aluminium access covers with hinged safety grate over wet well
12. LEVEL CONTROLS - BY OTHERS
13. PUMP CONTROLLER - BY OTHERS
14. LIFTING DETAILS - 4 x 10.0t 'Swift-Lifts in base and 4 x 5.0t in increments, valve chamber & coverslab.



SECTIONAL PLAN VIEW
SCALE: 1 : 50 @ A3

Rev	Description	Date
B	Inlet Chamber Removed	09.10.20
A	For Approval	02.10.20

Status: **FOR APPROVAL**

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Client: PRIME MOSS VALE PTY LTD

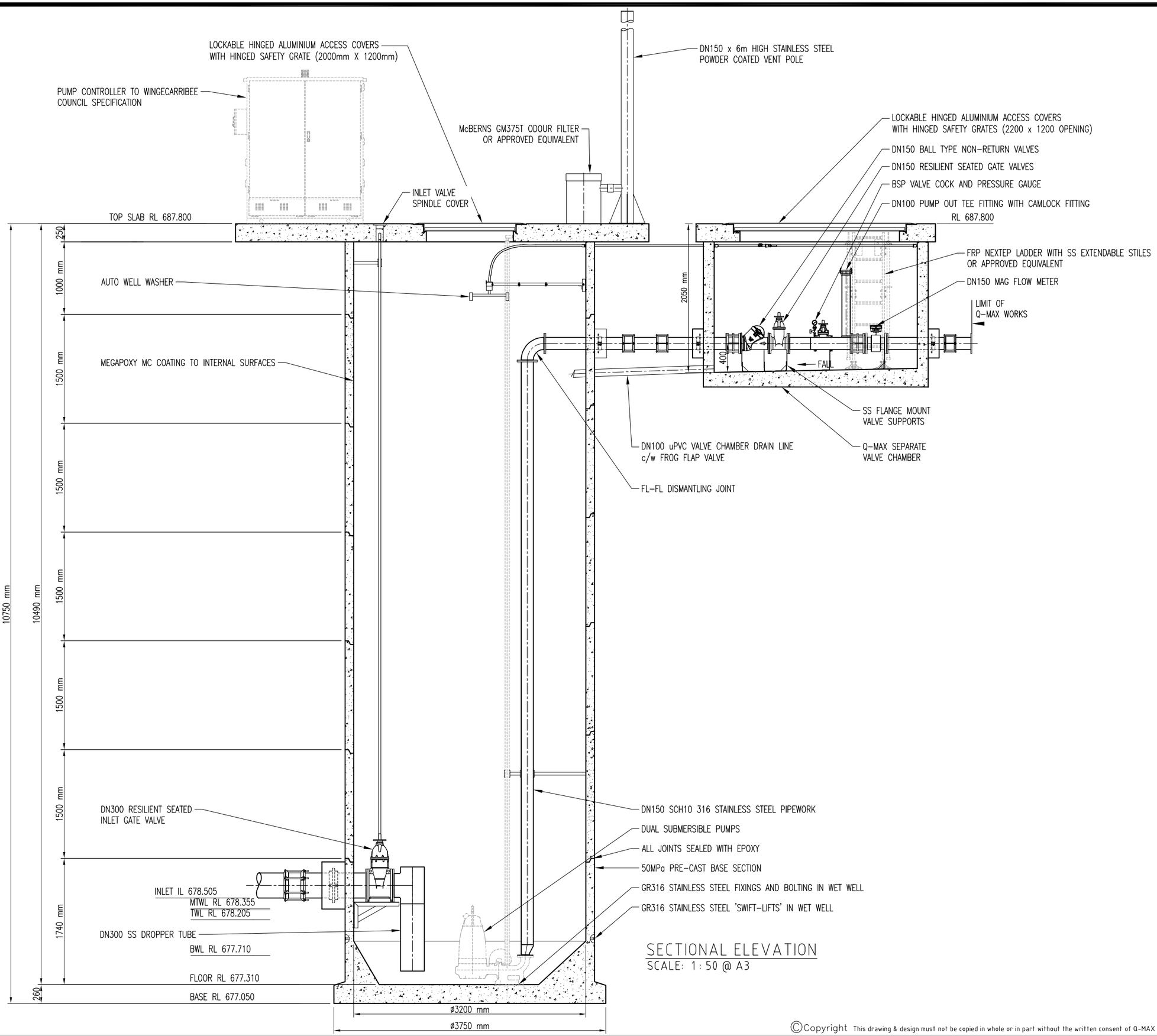
Project: CHELSEA GARDENS SEWER PUMP STATION

(ULTIMATE DESIGN)

Drawn	S. SHOKRAVI	Date	09.10.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	4/7
Scale	1 : 50	Size	A3

Title: Q-MAX 3200 PUMP STATION GENERAL LAYOUT (PLAN VIEW)

Drg No. 7212/A4 | Rev B



SECTIONAL ELEVATION
SCALE: 1 : 50 @ A3

Rev	Description	Date
B	Inlet Chamber Removed and Inlet Updated	09.10.20
A	For Approval	02.10.20

Status

FOR APPROVAL

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Project

CHELSEA GARDENS SEWER PUMP STATION

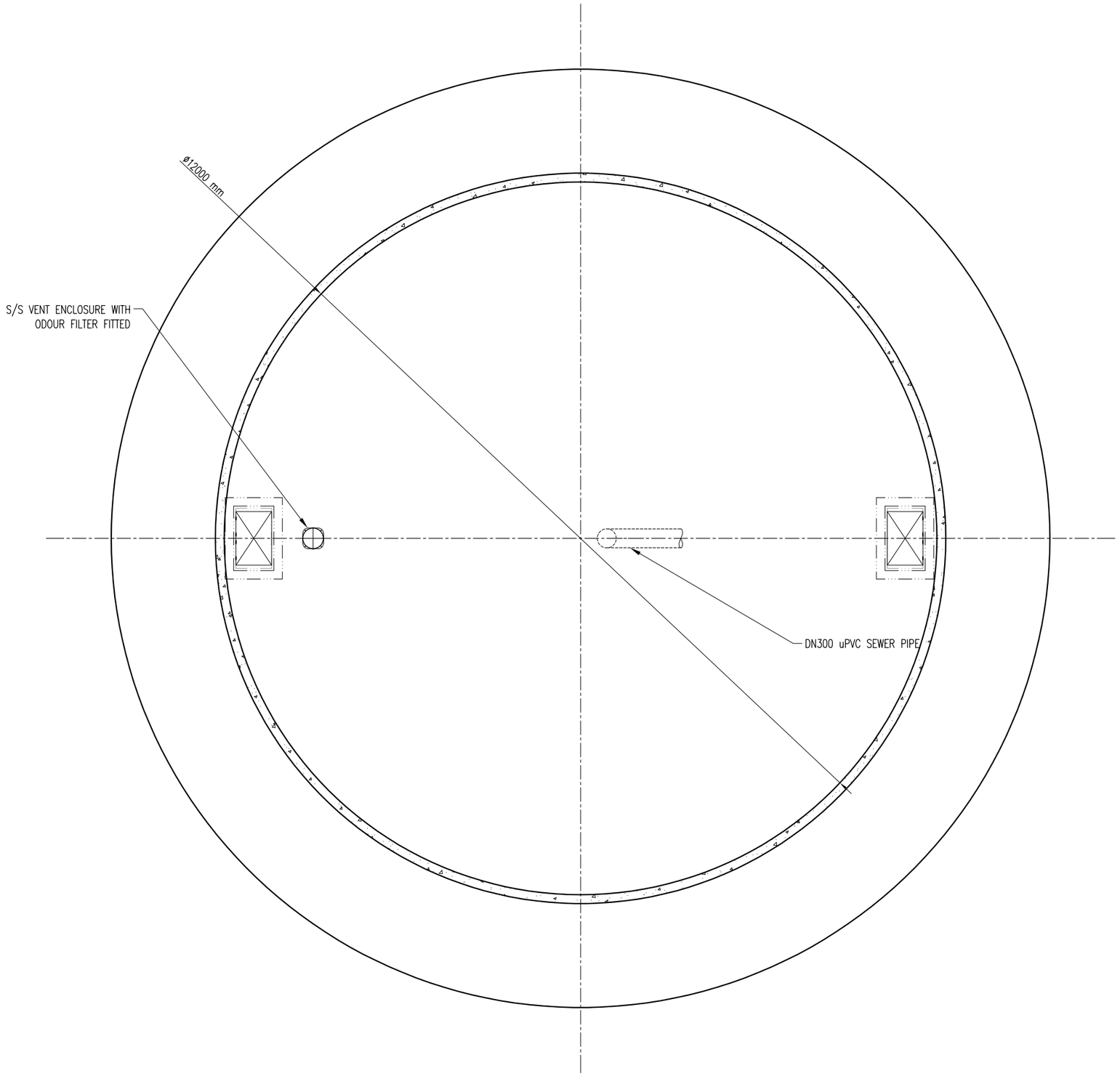
(ULTIMATE DESIGN)

Drawn	S. SHOKRAVI	Date	09.10.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	5/7
Scale	1 : 50	Size	A3

Title

Q-MAX 3200 PUMP STATION GENERAL LAYOUT (SECTIONAL ELEVATION)

Drg No.	Rev
7212/A5	B



ø12m EMERGENCY STORAGE TANK
250 KL CAPACITY
PLAN VIEW
SCALE: 1:75 @ A3

Rev	Description	Date
B	EST Updated	30.08.21
A	For Approval	02.10.20

Status

FOR APPROVAL

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Project

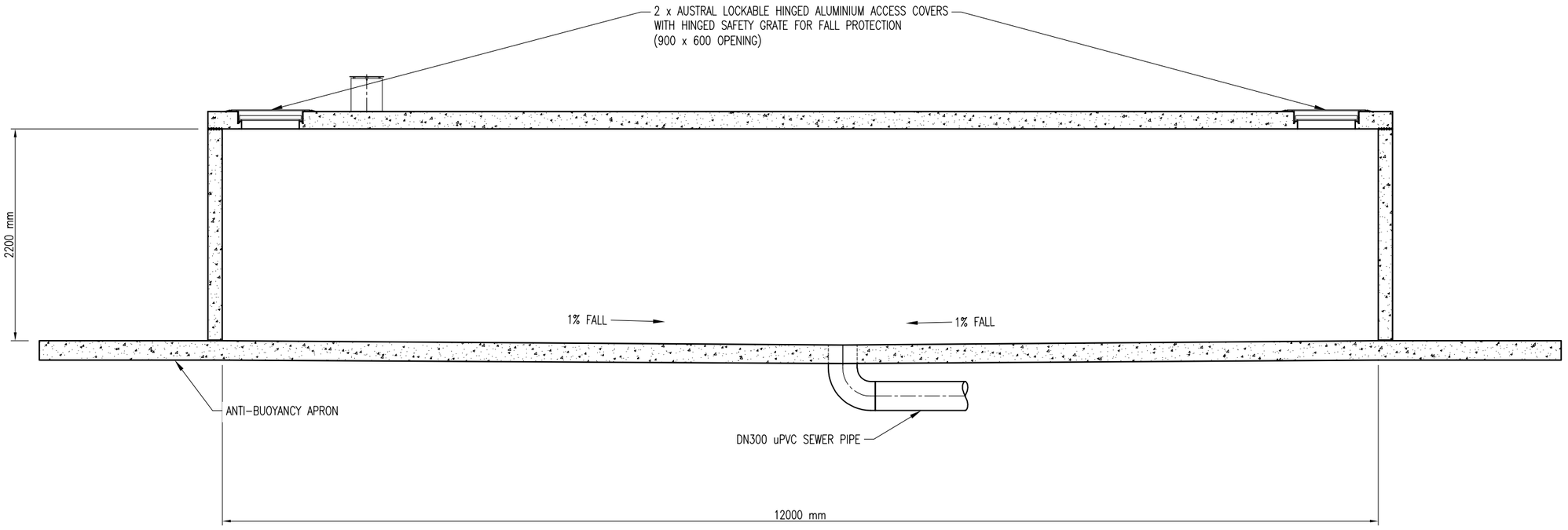
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	30.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	6/7
Scale	1 : 75	Size	A3

Title

Q-MAX 3200 PUMP STATION
523KL CAPACITY EMERGENCY STORAGE TANK
(PLAN VIEW)

Drg No.	Rev
7212/A6	B



ϕ12m EMERGENCY STORAGE TANK
250 KL CAPACITY
ELEVATION
SCALE: 1 : 50 @ A3

Rev	Description	Date
B	EST Updated	30.08.21
A	For Approval	02.10.20

Status

FOR APPROVAL

Q-MAX PUMPING SYSTEMS
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QMAX PUMPING SYSTEMS

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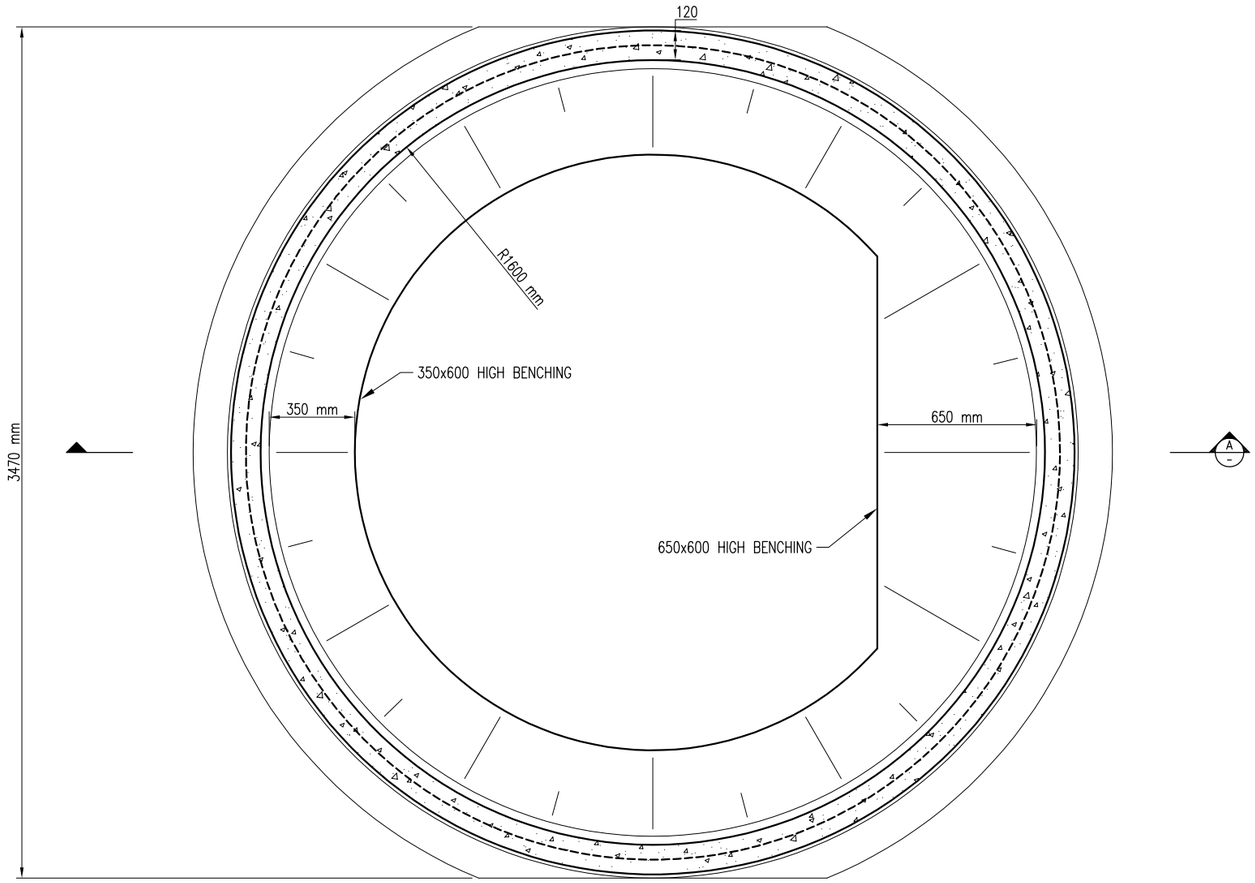
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	30.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Sheet	7/7
Scale	1 : 50	Size	A3

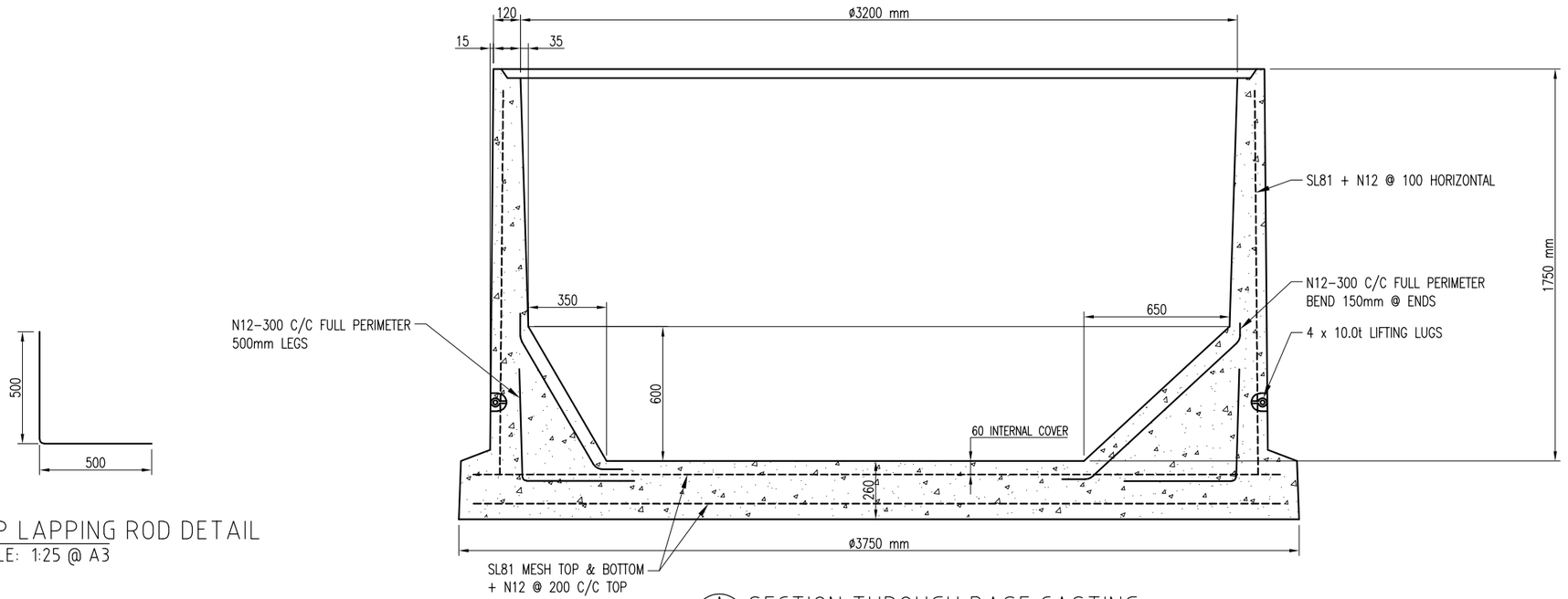
Title

Q-MAX 3200 PUMP STATION
523KL CAPACITY EMERGENCY STORAGE TANK
(SECTIONAL ELEVATION)

Drg No.	Rev
7212/A7	B



TYP BASE CASTING PLAN
SCALE: 1:25 @ A3



A / - SECTION THROUGH BASE CASTING
SCALE: 1:25 @ A3

TYP LAPPING ROD DETAIL
SCALE: 1:25 @ A3

Rev	Description	Date
A	For Approval	17.08.21

Status
FOR APPROVAL

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Client
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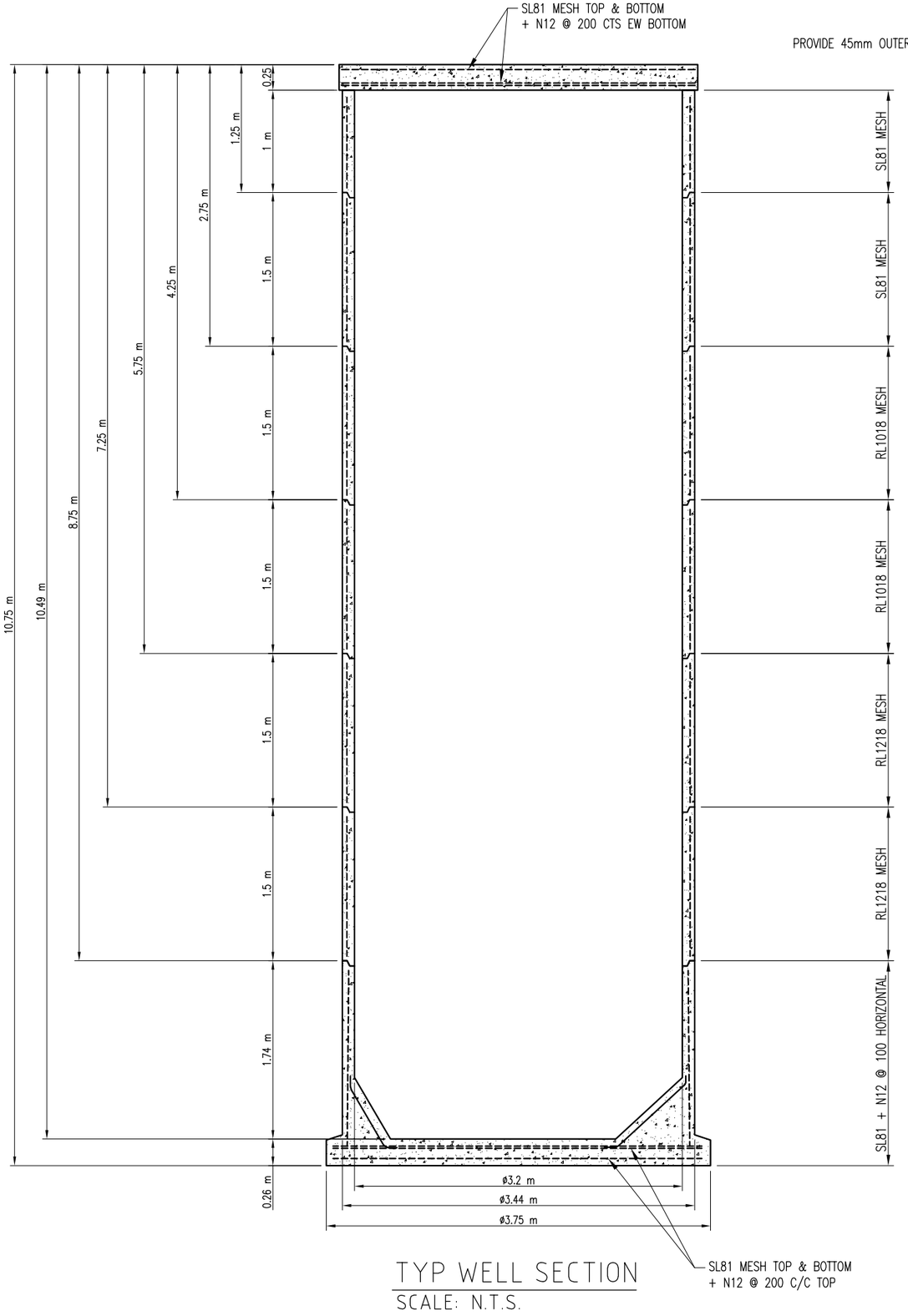
Project
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	17.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

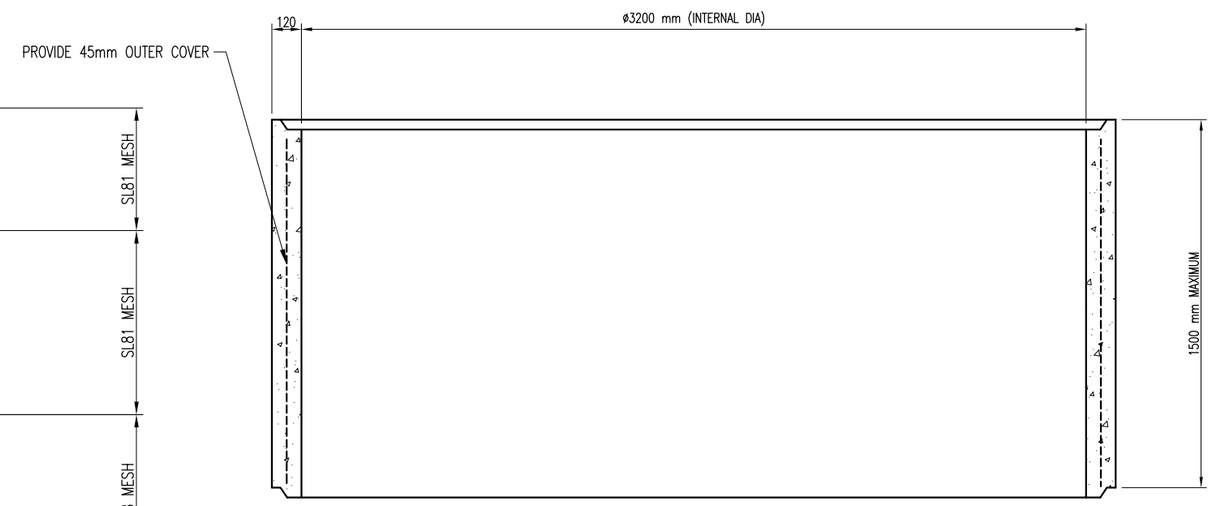
Title
Q-MAX 3200 BASE SECTION CASTING REINFORCEMENT DETAIL

Scale	1 : 25	Rev	A
Drg No.	7212/R01		



TYP WELL SECTION

SCALE: N.T.S.



SECTION THROUGH INCREMENT TYPICAL

SCALE: 1:25 @ A3

Rev	Description	Date
A	For Approval	17.08.21

Status

FOR APPROVAL

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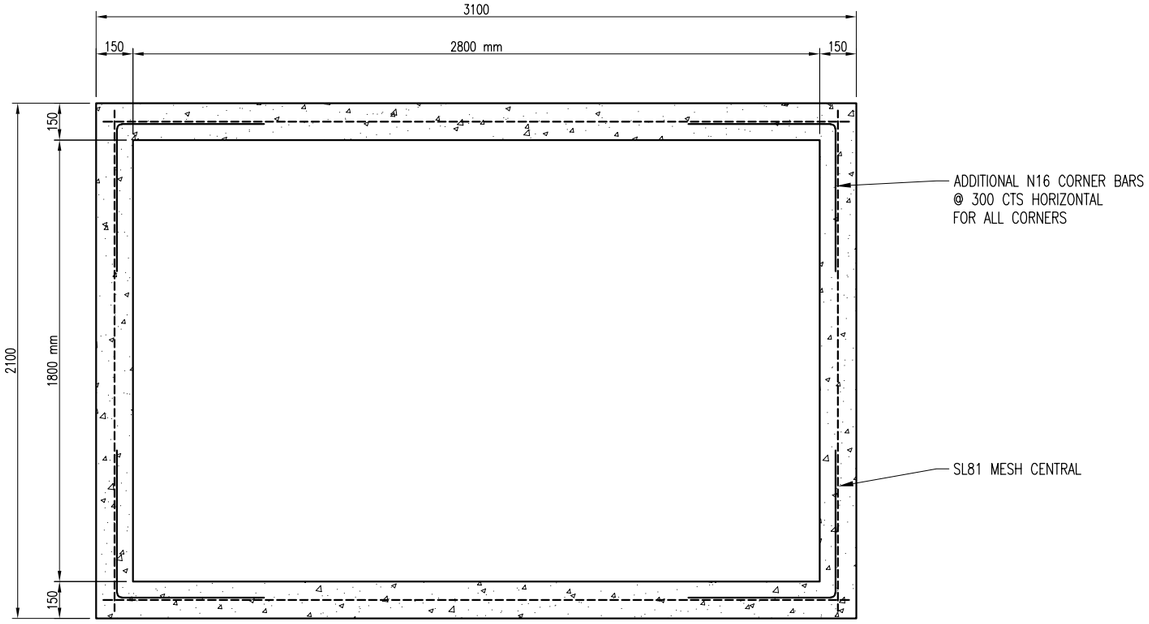
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	17.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

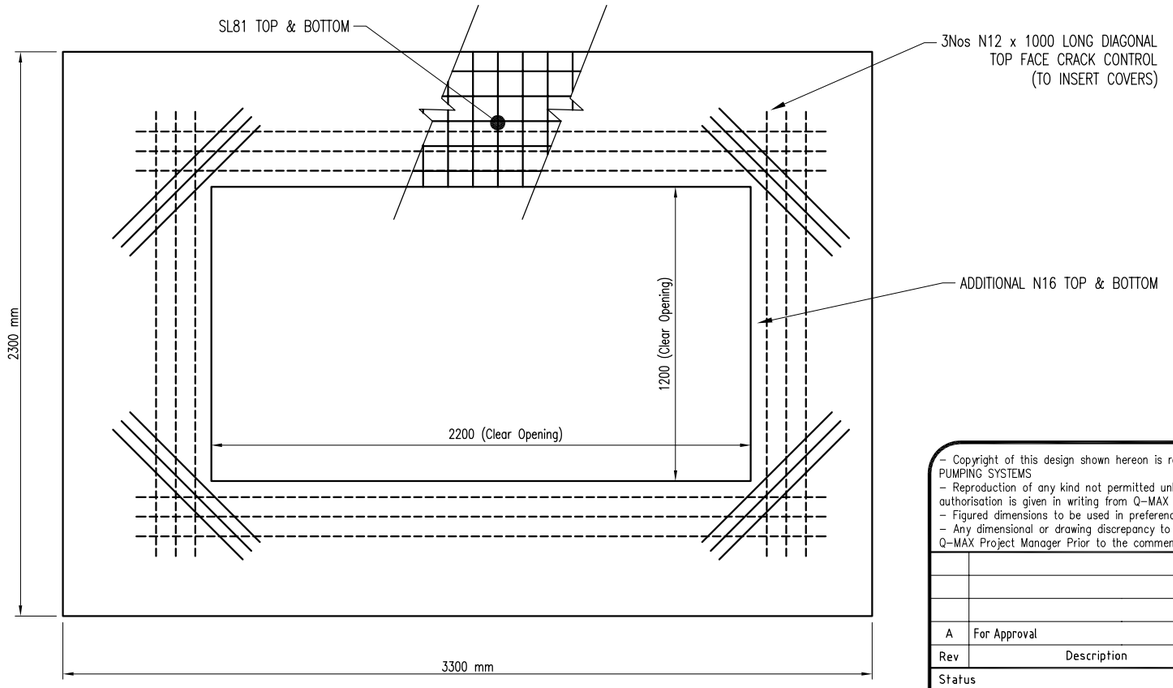
Title

Q-MAX 3200 STANDARD INCREMENT CASTING REINFORCEMENT DETAIL

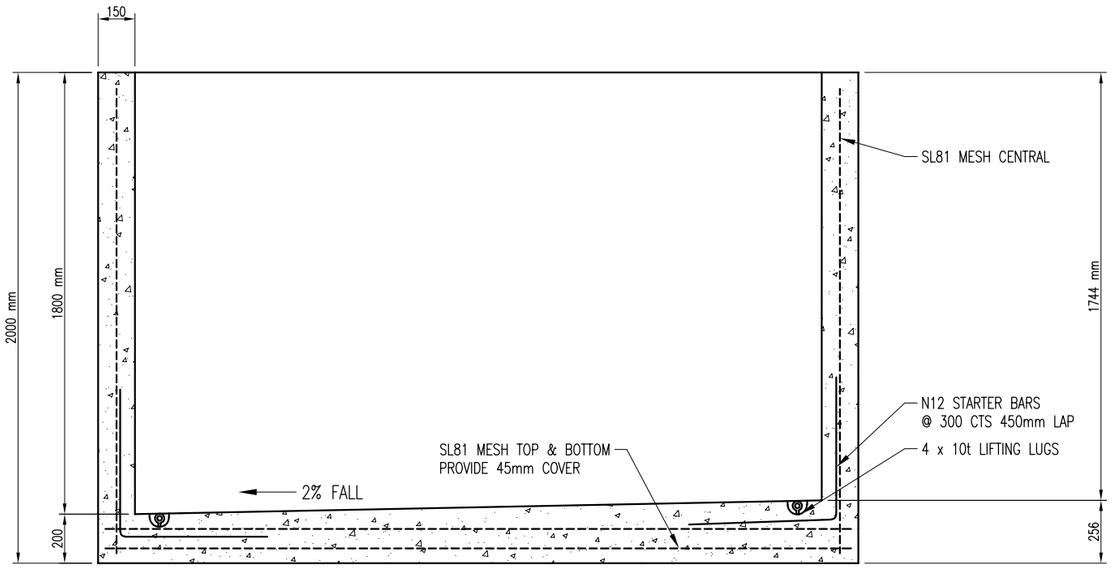
Scale	N.T.S.	Rev	A
Drg No.	7212/R02		



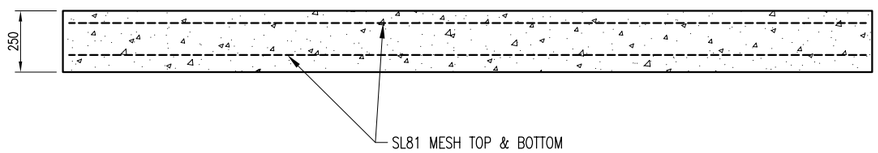
VALVE CHAMBER CASTING PLAN
SCALE: 1:25 @ A3



VALVE CHAMBER COVER SLAB PLAN
SCALE: 1:25 @ A3



SECTION THROUGH VALVE CHAMBER
SCALE: 1:25 @ A3



VALVE CHAMBER COVER SLAB SECTION
SCALE: 1:25 @ A3

Rev	Description	Date
A	For Approval	17.08.21

Status: **FOR APPROVAL**

Q-MAX PUMPING SYSTEMS
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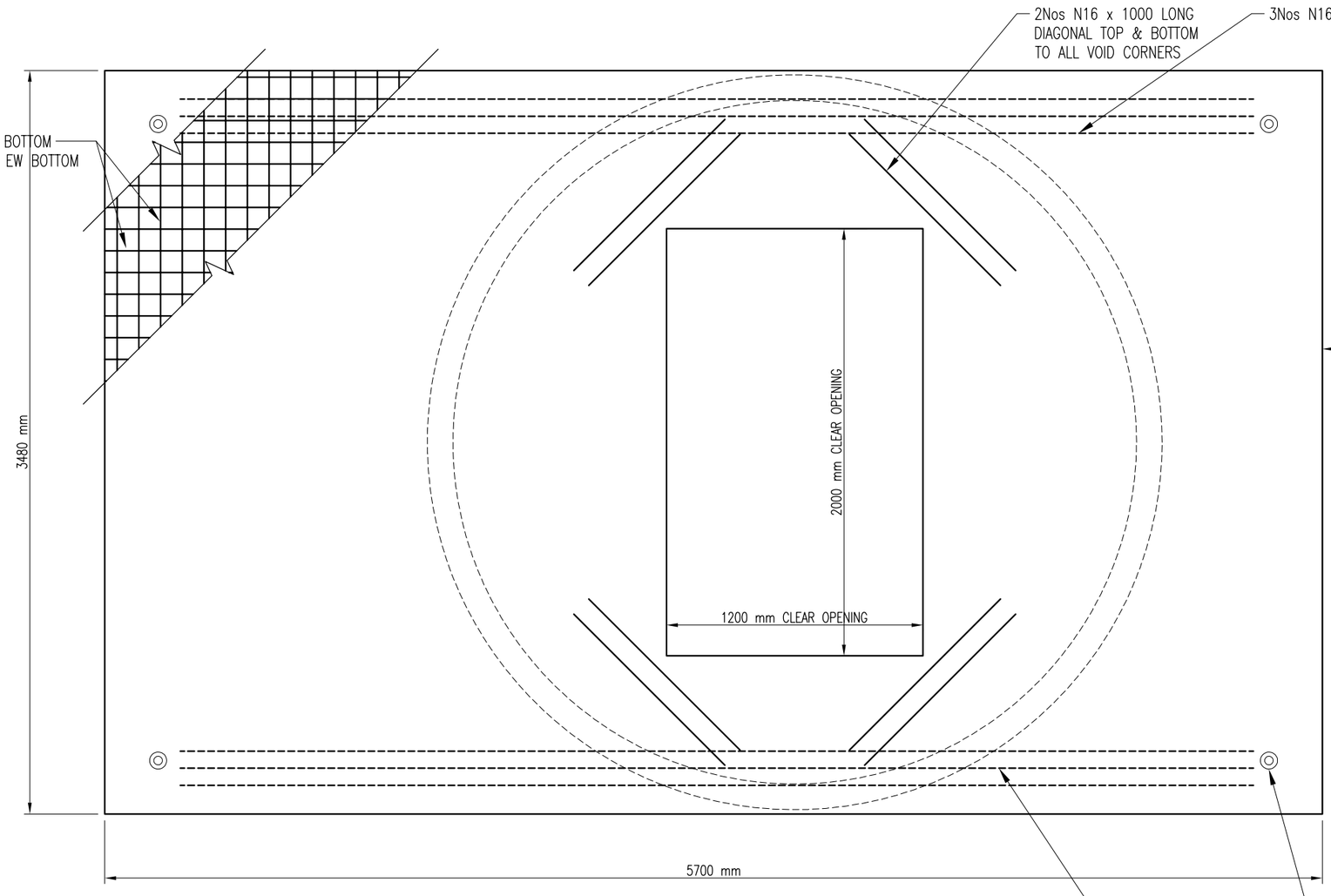
Client: PRIME MOSS VALE PTY LTD

Project: CHELSEA GARDENS SEWER PUMP STATION

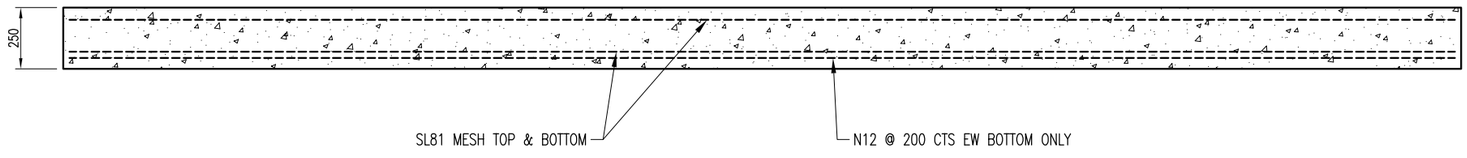
Drawn	S. SHOKRAVI	Date	17.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title: Q-MAX 3200 VALVE CHAMBER CASTING REINFORCEMENT DETAIL

Scale	1 : 25	Rev	A
Drg No.	7212/R03		



PUMPWELL COVER SLAB PLAN
SCALE: 1:25 @ A3



PUMPWELL COVER SLAB SECTION
SCALE: 1:25 @ A3

Rev	Description	Date
A	For Approval	17.08.21

Status
FOR APPROVAL

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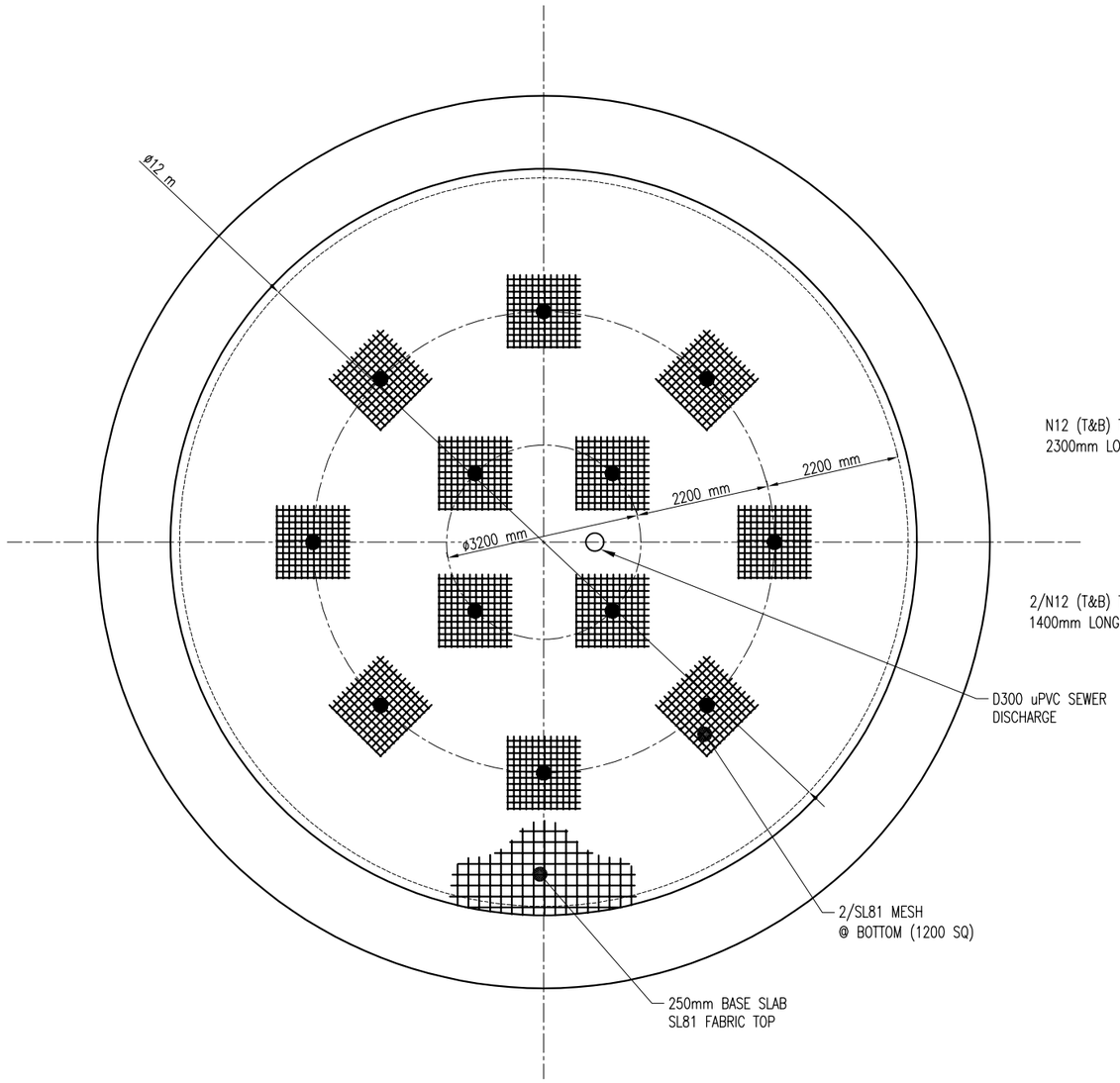
Client
PRIME MOSS VALE PTY LTD

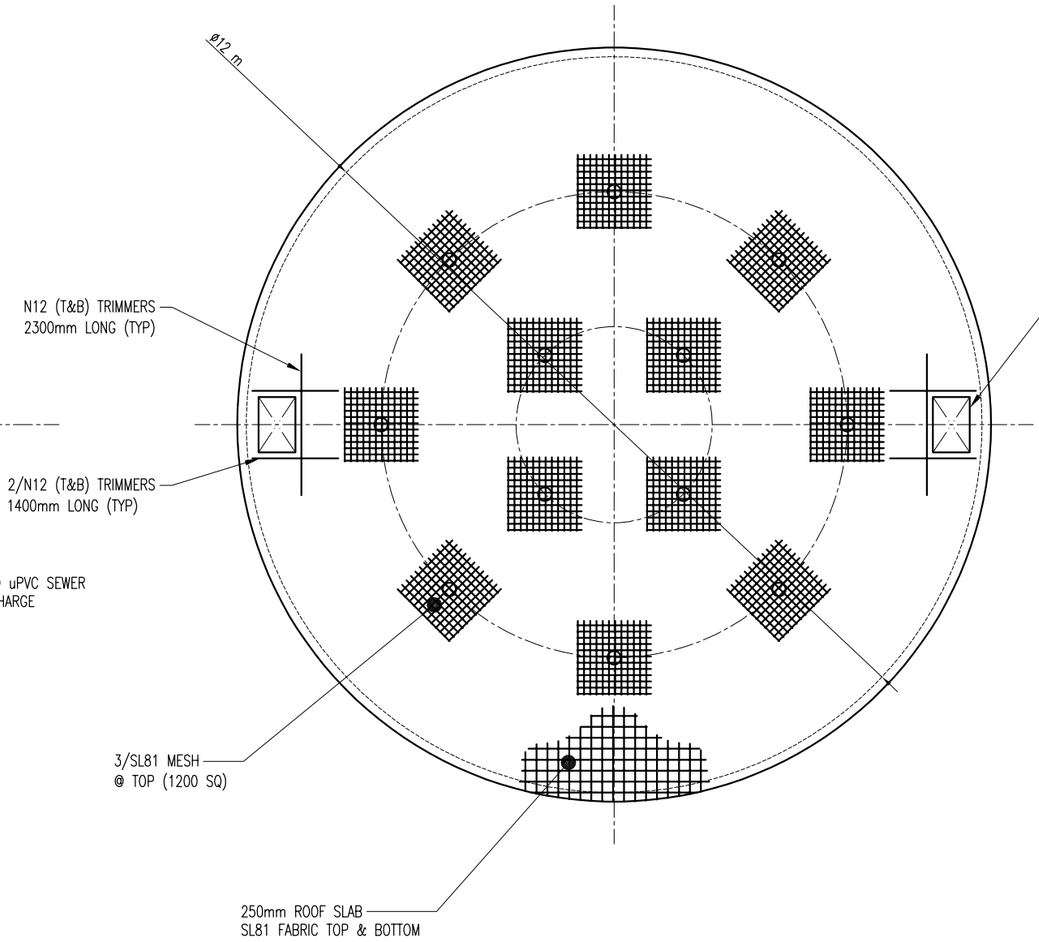
Project
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	17.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title
Q-MAX 3200 COVER SLAB CASTING REINFORCEMENT DETAIL

Scale	1 : 25	Rev	A
Drg No.	7212/R04		





ø12m EMERGENCY STORAGE TANK
250 KL CAPACITY
PLAN VIEW
SCALE: 1:100 @ A1

Rev	Description	Date
A	For Approval	27.08.21

Status: **FOR APPROVAL**

Q-MAX PUMPING SYSTEMS
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QMAX PUMPING SYSTEMS
DESIGNED FOR PERFORMANCE. BASED ON EXPERIENCE.

Client: PRIME MOSS VALE PTY LTD

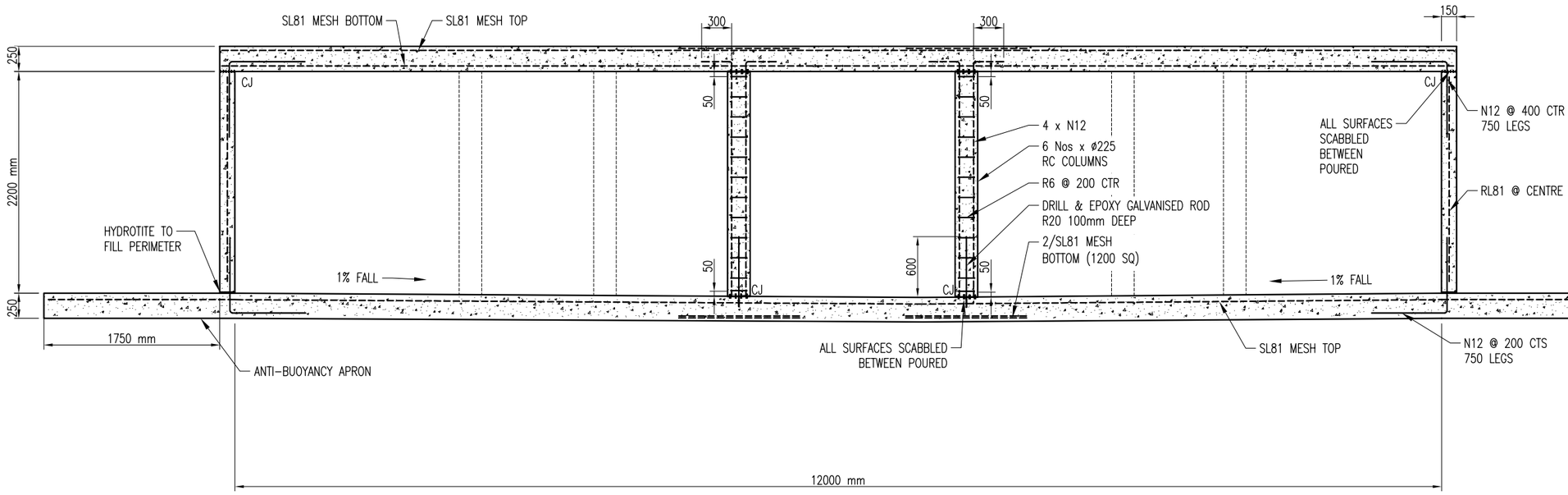
Project: CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	27.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title: Q-MAX Ø12m 250KL EMERGENCY STORAGE TANK REINFORCEMENT DETAILS SECTIONAL PLAN VIEW

Scale	1 : 100	Rev	A
Drg No.	7212/R05		

1. BASE & WALLS TO BE 40MPa CONCRETE, ROOF & COLUMNS TO BE 40MPa CONCRETE, MAX 20mm AGGREGATE TO AS 3600.
2. MINIMUM ALLOWABLE BEARING PRESSURE SOIL UNDER THE TANK TO BE 150 kPa.
3. THE MAXIMUM TANK INTERNAL WALL HEIGHT TO BE 2200mm.
4. MAXIMUM LIVE LOAD APPLIED ON THE TANK TO BE 5KPa.
5. THE STRUCTURE HAS BEEN DESIGNED TO AS 3600 & AS 3735 CONCRETE STRUCTURES FOR RETAINING LIQUIDS.
6. MINIMUM FABRIC SPLICE TO BE 250mm.
7. CONCRETE COVER TO REINFORCEMENT TO BE 50mm & 65mm @ AIR/WATER FACE.
8. PROVIDE 2/N12 TRIMMERS (4OFF) AROUND ANY WALL PENETRATIONS.
9. THE TANK HAS BEEN DESIGNED FOR BUOYANCY FOR FLOOD LEVELS @ TOP OF TANK ROOF AT NATURAL LEVEL.



ø12m EMERGENCY STORAGE TANK
250 KL CAPACITY
ELEVATION
SCALE: 1:50 @ A3

Rev	Description	Date
A	For Approval	27.08.21

Status
FOR APPROVAL

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Client
PRIME MOSS VALE PTY LTD

Project
CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	27.08.2021
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title
Q-MAX Ø12m 250KL EMERGENCY STORAGE TANK REINFORCEMENT DETAILS SECTIONAL ELEVATION

Scale	1 : 50	Rev	A
Drg No.	7212/R05		

ELECTRICAL ENGINEERING DRAWINGS FOR

CHELSEA GARDENS SEWER PUMP STATION

Rev	Description	Date
A	For Approval	18.08.20

Status

FOR APPROVAL

QMAX PUMPING SYSTEMS

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CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	18.18.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title

ELECTRICAL DETAILS

Scale	N.T.S.	Rev	A
Drg No.	20641	Page	1/1

ELECTRICAL DRAWING INDEX

20641 1 OF 1 DRAWING COVER SHEET
20641-E001 1 OF 1 DRAWING'S STANDARDS AND REGISTERS DRAWINGS NO'S AND TITLES
20641-E002 1 OF 5 GENERAL ARRANGEMENTS TYPICAL LAYOUT OUTSIDE DOORS
20641-E002 2 OF 5 GENERAL ARRANGEMENTS TYPICAL LAYOUT INNER DOORS
20641-E002 3 OF 5 GENERAL ARRANGEMENTS TYPICAL LAYOUT INNER DOORS REMOVED
20641-E002 4 OF 5 GENERAL ARRANGEMENTS TYPICAL LAYOUT NOTES & DETAILS
20641-E002 5 OF 5 GENERAL ARRANGEMENTS TYPICAL LAYOUT NOTES & DETAILS
20641-E003 1 OF 2 POWER DISTRIBUTION SINGLE LINE DIAGRAM
20641-E003 2 OF 2 POWER DISTRIBUTION POWER MONITORING
20641-E004 1 OF 2 MOTOR STARTERS PUMP NO1
20641-E004 2 OF 2 MOTOR STARTERS PUMP NO2
20641-E005 1 OF 1 DC DISTRIBUTION AUTO CONTROLS POWER CIRCUIT DIAGRAM
20641-E006 1 OF 1 DIGITAL INPUTS SCADAPACK ENET RTU OR PLC
20641-E007 1 OF 1 DIGITAL OUTPUTS SCADAPACK ENET RTU OR PLC
20641-E008 1 OF 2 ANALOG OUTPUTS SCADAPACK ENET RTU OR PLC
20641-E008 2 OF 2 PANASONIC BACK UP PLC
20641-E009 1 OF 1 HMI/PLC OVERVIEW
20641-E010 1 OF 1 MISC ITEMS PLC I-O ADDRESSES
20641-E011 1 OF 3 LABELS MINOR SPS STATIONS LABELS LIST
20641-E011 2 OF 3 LABELS LABELS SCHEDULE LIST1
20641-E011 3 OF 3 LABELS LABELS SCHEDULE LIST2

Rev	Description	Date
A	For Approval	18.08.20

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Drawn	S. SHOKRAVI	Date	18.18.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title

ELECTRICAL DETAILS

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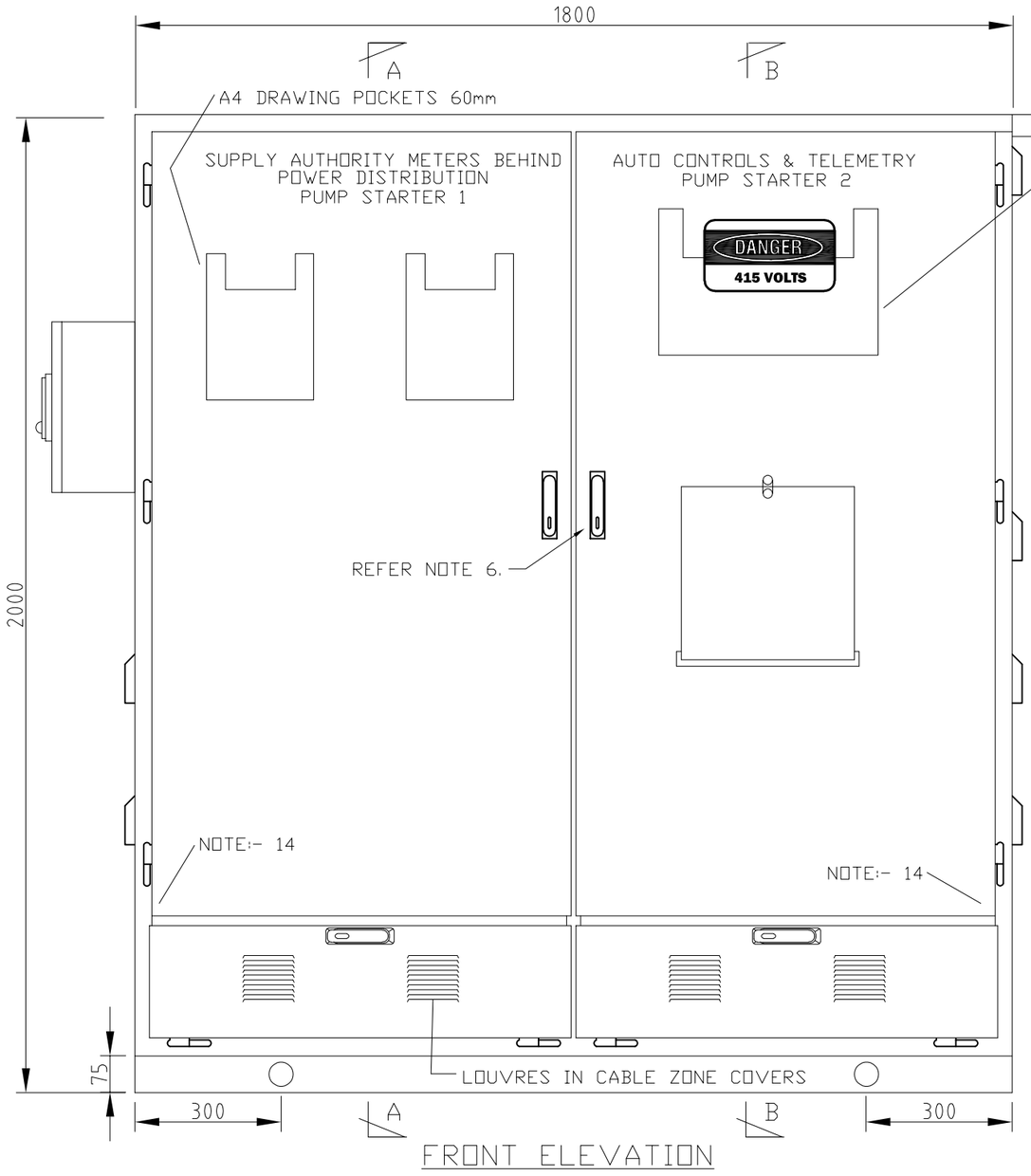

FRONT ELEVATION

CONSTRUCTION NOTES:

1. SCA SHALL BE CONSTRUCTED FROM 3.0mm MARINE GRADE ALUMINIUM.
2. ENCLOSURE TO HAVE DEGREE OF PROTECTION RATING OF IP56 TO AS1939-1990.
3. FORM OF SEGREGATION OF ASSEMBLY IS FORM 2BI TO AS1136.1.
4. CABINET TO BE POWDER COATED WILDERNESS GREEN INTERIOR & EXTERIOR. INNER DOORS TO BE POWDER COATED GLOSS WHITE
5. EQUIPMENT PANELS 3mm MILD STEEL AND PAINTED GLOSS WHITE.
6. EXTERIOR DOORS TO BE FITTED WITH STAINLESS SELECTRIX, 3 POINT LATCHING WITH ROLER ENDS AND FITTED PADLOCKING FACILITIES. DOORS TO BE HINGED ON CHROME PLATED BRASS LIFT OFF PIN HINGES WITH STAINLESS STEEL PIN HINGES-EXTERNAL.
7. INNER DOORS SHALL BE ALUMINIUM, FITTED WITH 'T' TYPE LOCKING HANDLES AND PINTLE TYPE HINGES.
8. PLINTH TO BE 75x50mm HOT DIPPED GALVANISED STEEL CHANNEL. THE PLINTH FLANGES SHALL FACE INWARD. A NEOPRENE OR SIMILAR MEDIUM SHALL BE PLACED BETWEEN THE PLINTH AND CABINET TO PREVENT ELECTROLYSIS REACTION.
9. PLINTH TO HAVE 2 OFF 50mm DIA. HOLES FOR LIFTING PIPE. WELDED PIPE THROUGH HOLES.
10. GLAND PLATES TO BE ALUMINIUM AND 5mm THICK.
11. INSULATION BUSHES TO BE FITTED AROUND ALL CUTOUTS.
12. POWER METERING SECTION COMPLIES WITH ENERGY AUTHORITY SERVICE AND INSTALLATION RULES.
13. SHORT CIRCUIT FAULT CAPACITY OF SWITCHBOARD IS 30kA FOR 1 SEC.
14. OUTSIDE DOORS TO BE FITTED WITH DOOR STAY'S AT THE BOTTOM OF BOTH DOORS ON THE INSIDE

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Client: PRIME MOSS VALE PTY LTD

Project: CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	18.18.2020
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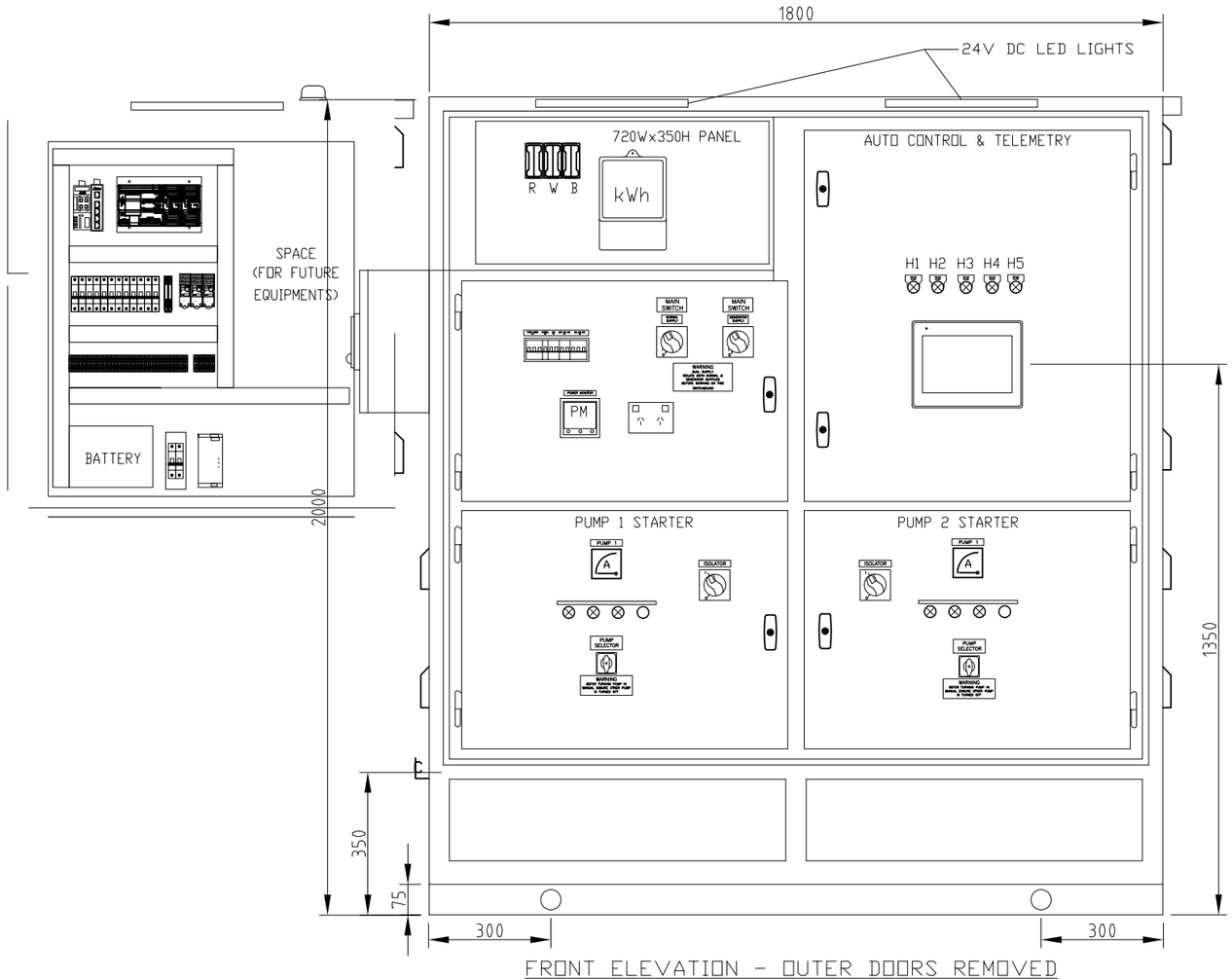
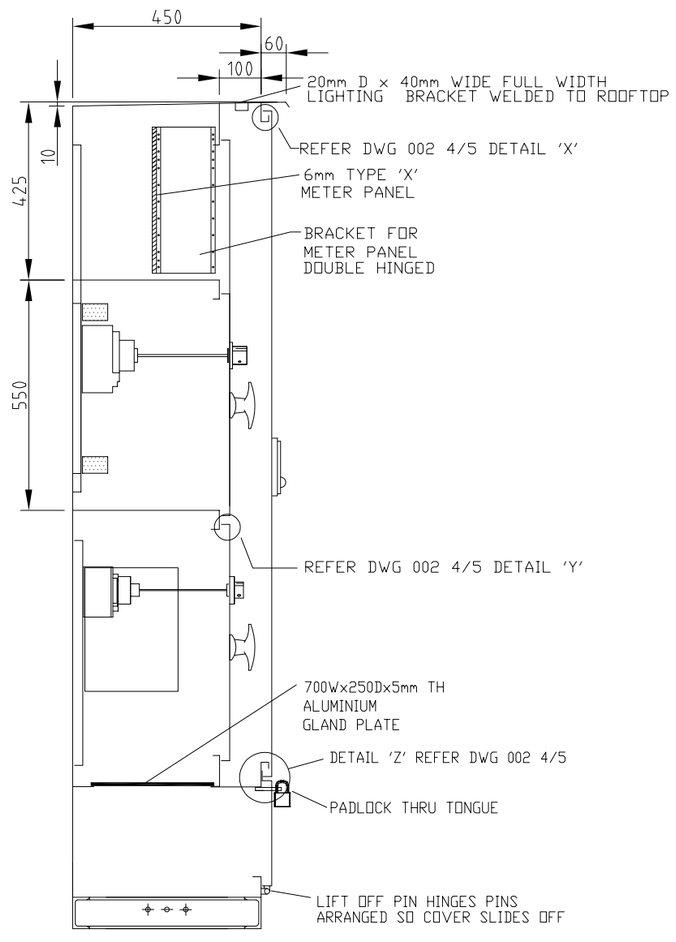


FRONT ELEVATION - OUTER DOORS REMOVED



SECTION A-A

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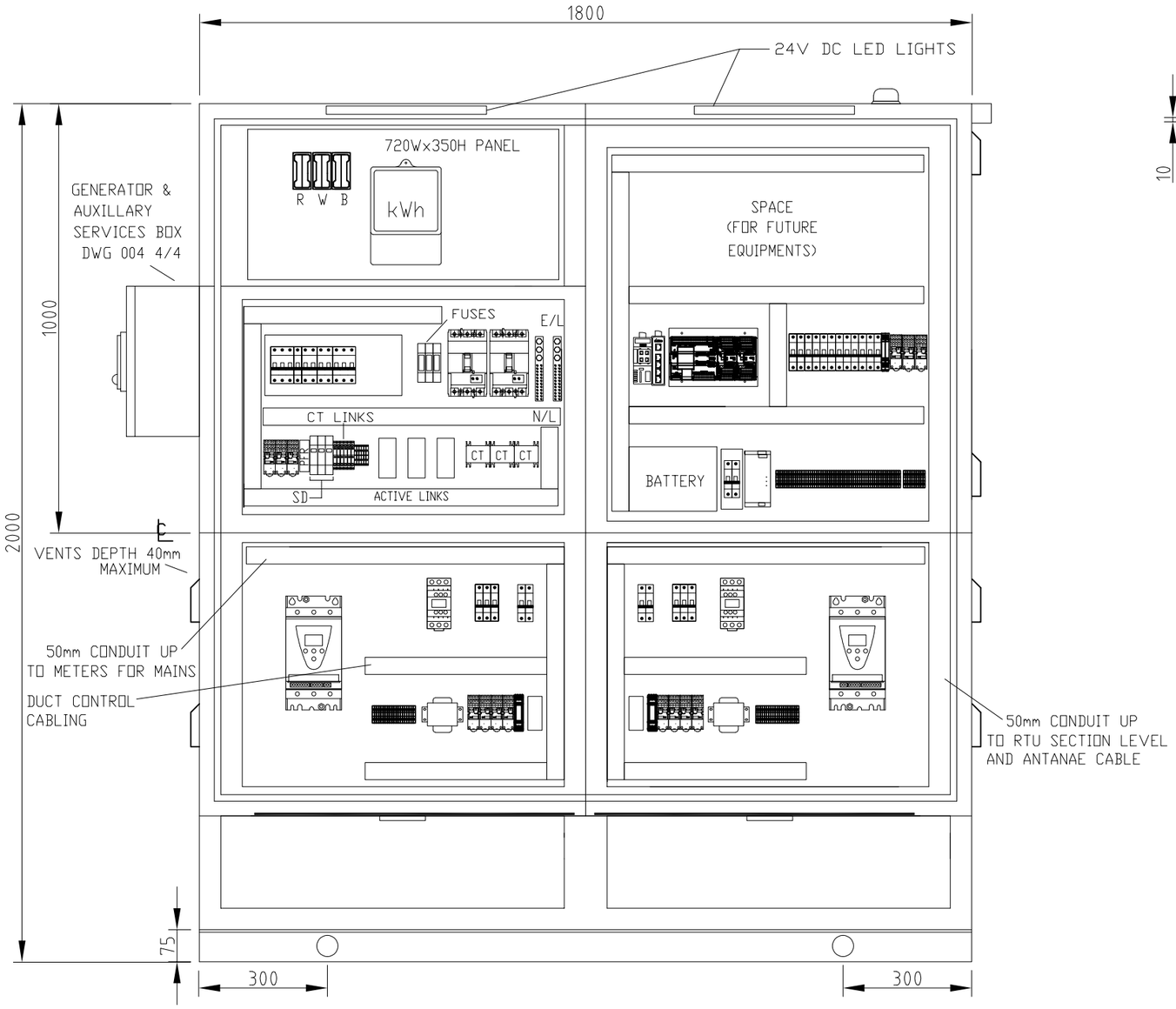
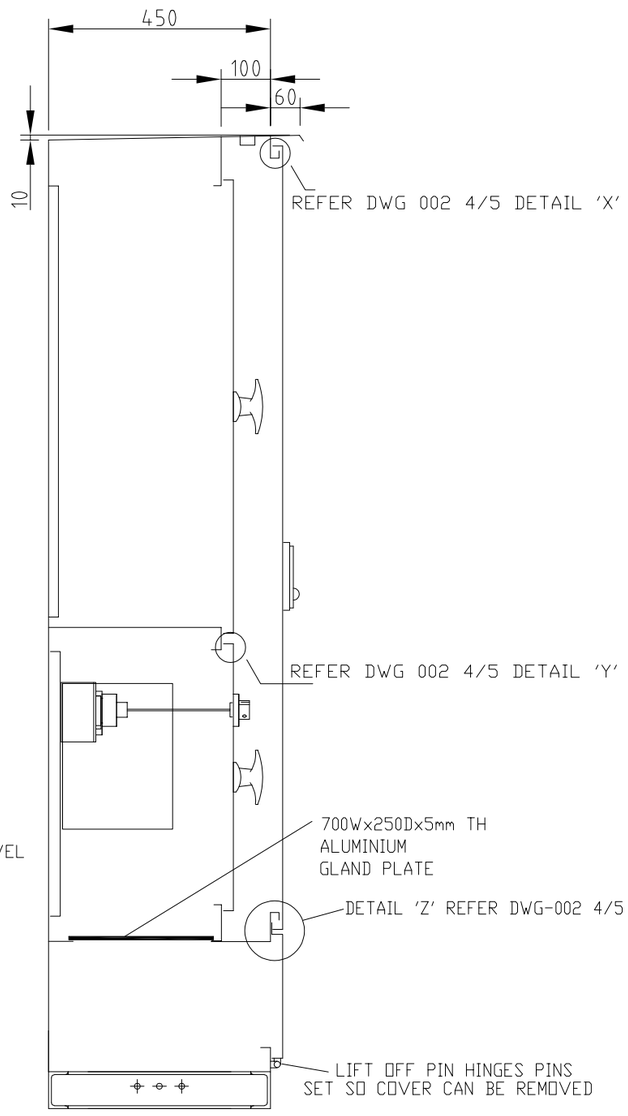


FRONT ELEVATION - INNER & OUTER DOORS REMOVED



SECTION B-B

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A	For Approval	18.08.20

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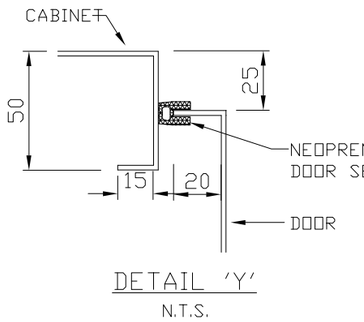

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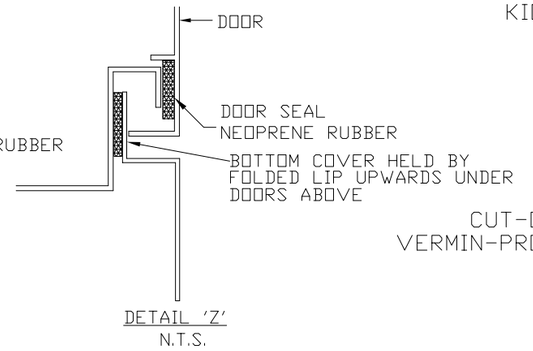

DETAIL 'Z'
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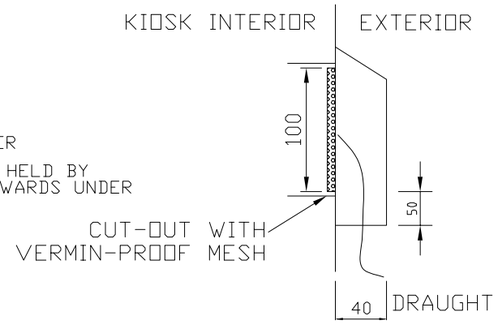
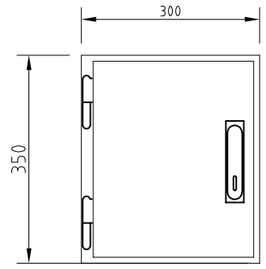
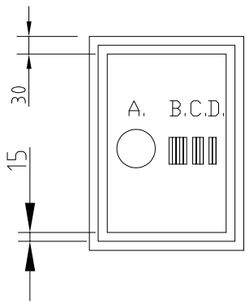


VENT DETAILS

GENERATOR & AUX SERVICES CONNECTION BOX





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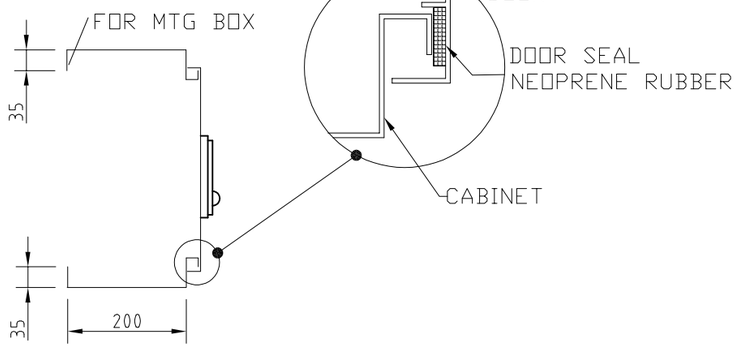
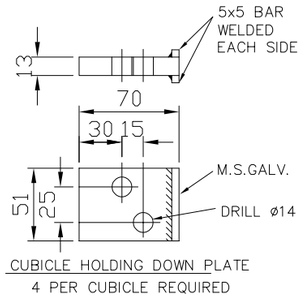
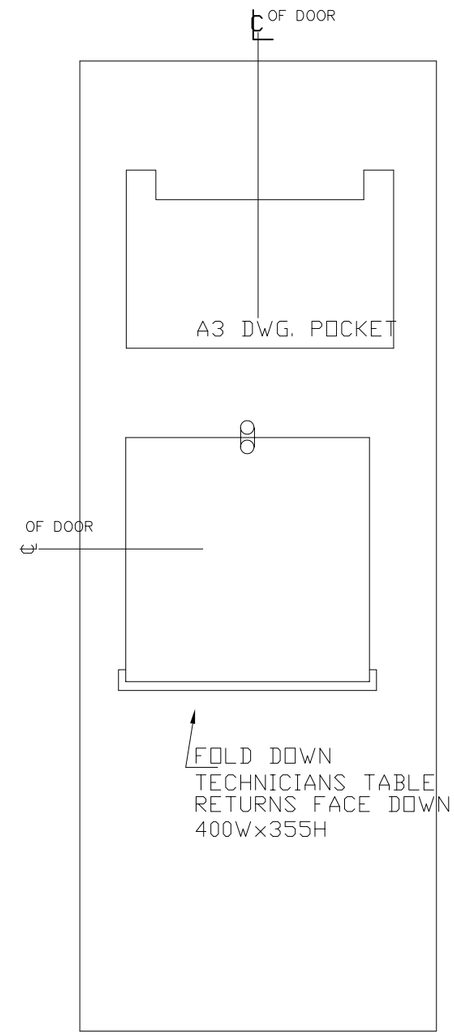




CUBICLE HOLDING DOWN PLATE
4 PER CUBICLE REQUIRED

MANUFACTURED SAME DETAILS AS CABINET

A. GENERATOR INLET (MARECHAL 150A)
B. 32A 3PH & N+E OUTLET TERMINALS (CBQ8-N8)
C. 240V SUPPLY TERMINALS (CBQ6-N6)
D. BY PASS HIGH LEVEL FLOAT TERMINALS TO PLC DI-29, WIRES 57 & 29 (BRIDGED WHEN NOT IN USE)



REAR VIEW RH DOOR
HINGED TECHNICIANS TABLE
SHELF UP

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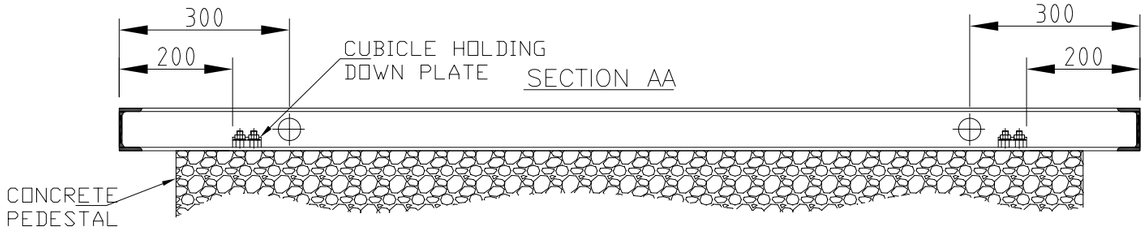
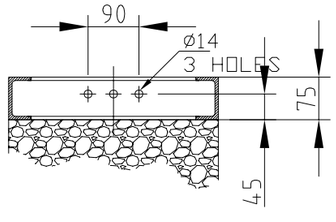
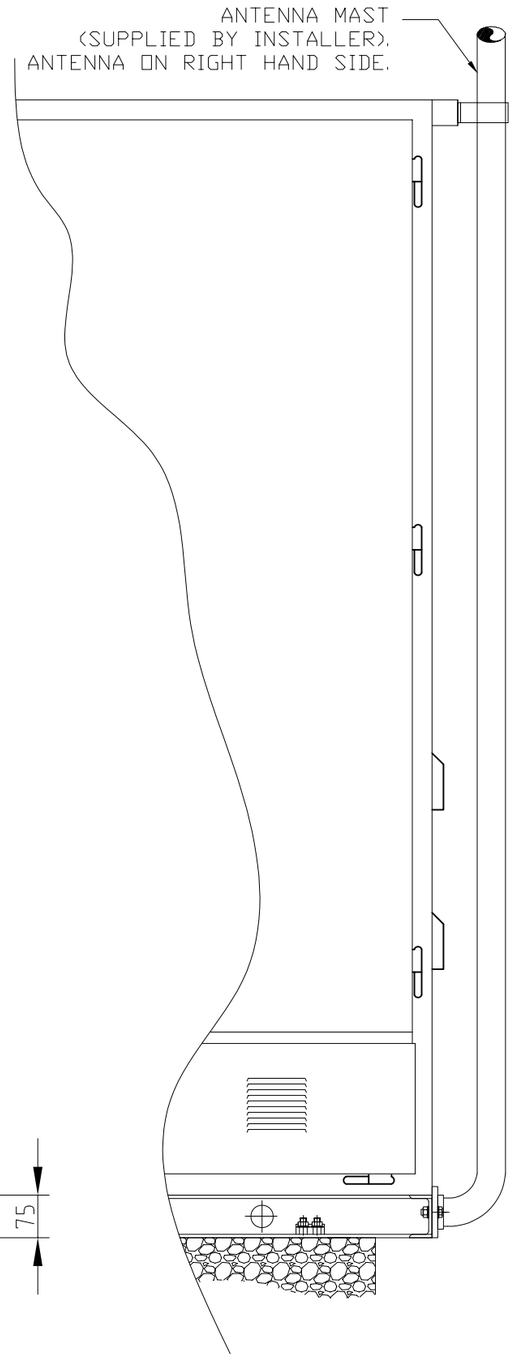
NOTES:-

1. ALL WELDS TO BE 6MM FILLET OR FULL PENETRATION BUTT WELD AS APPLICABLE SHOWN OTHERWISE
2. ALL JOINTS TO BE SEAL WELDED
3. FINISH HOT DIP GALVANIZED







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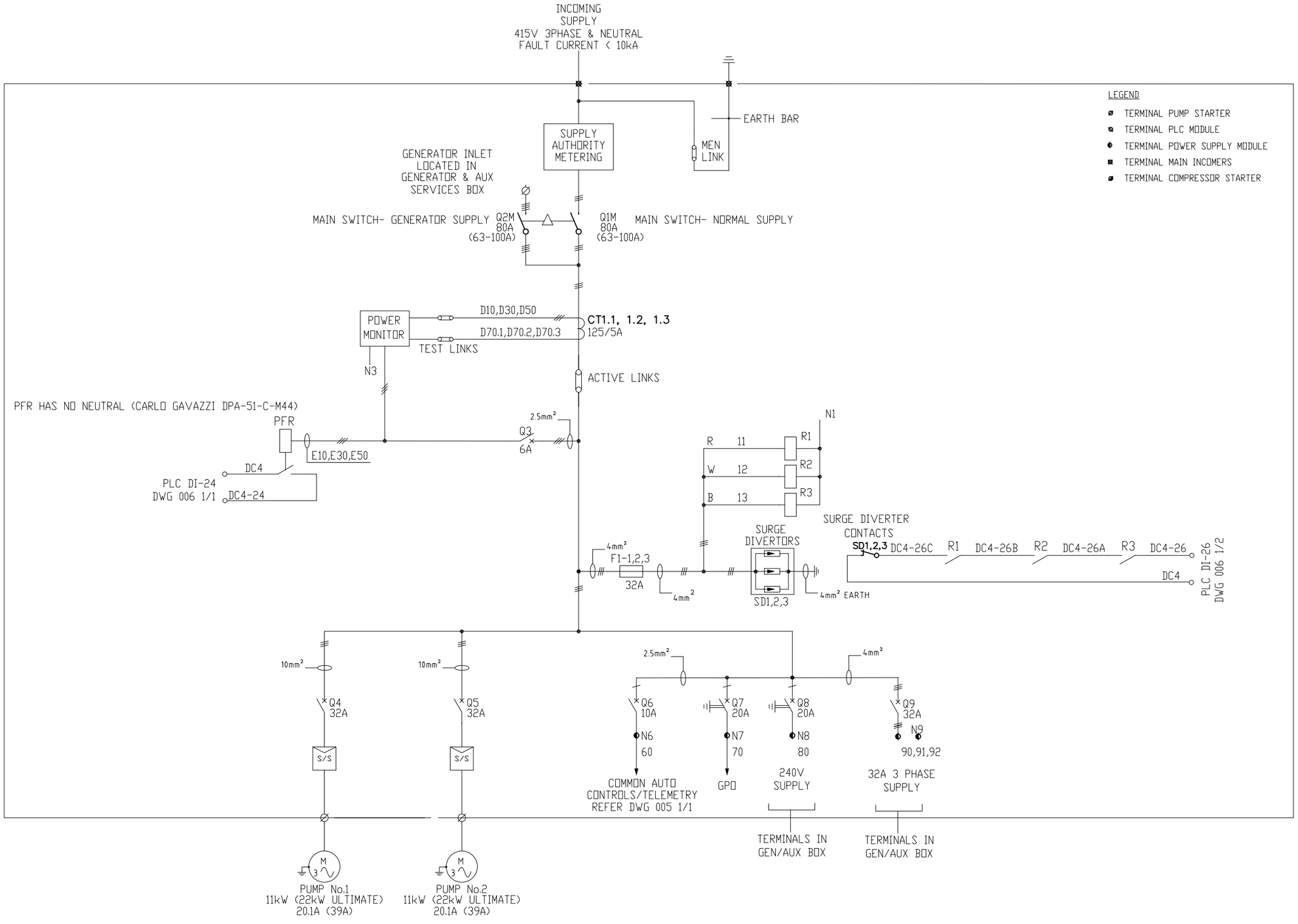

LEGEND

- TERMINAL PUMP STARTER
- TERMINAL PLC MODULE
- TERMINAL POWER SUPPLY MODULE
- TERMINAL MAIN INCOMERS
- TERMINAL COMPRESSOR STARTER

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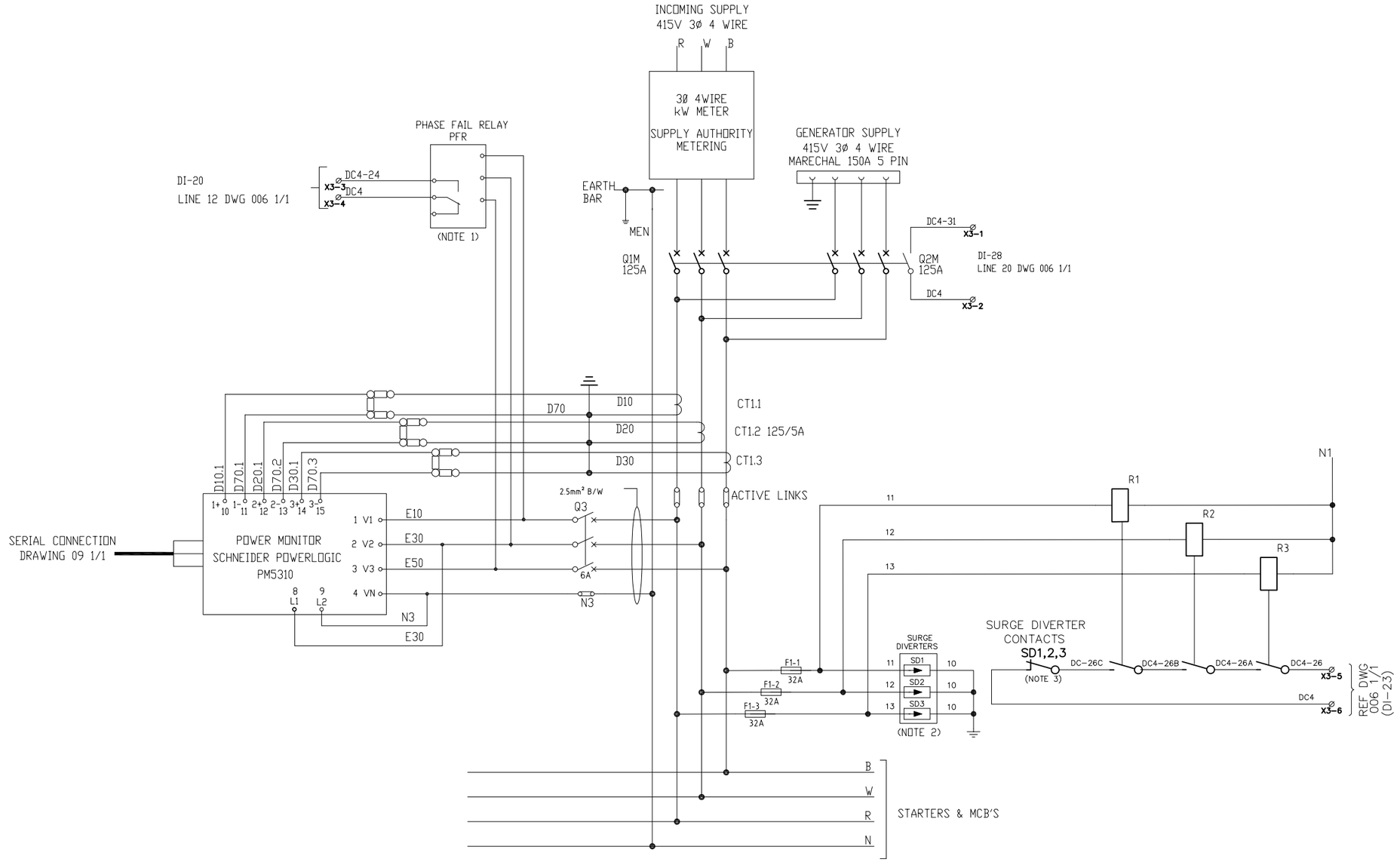

NOTES:
1. PHASE FAILURE RELAY - CARLO GAVAZZI DPA51-C-M44
2. SURGE DIVERTER - CRITEC TD5350TNC-277

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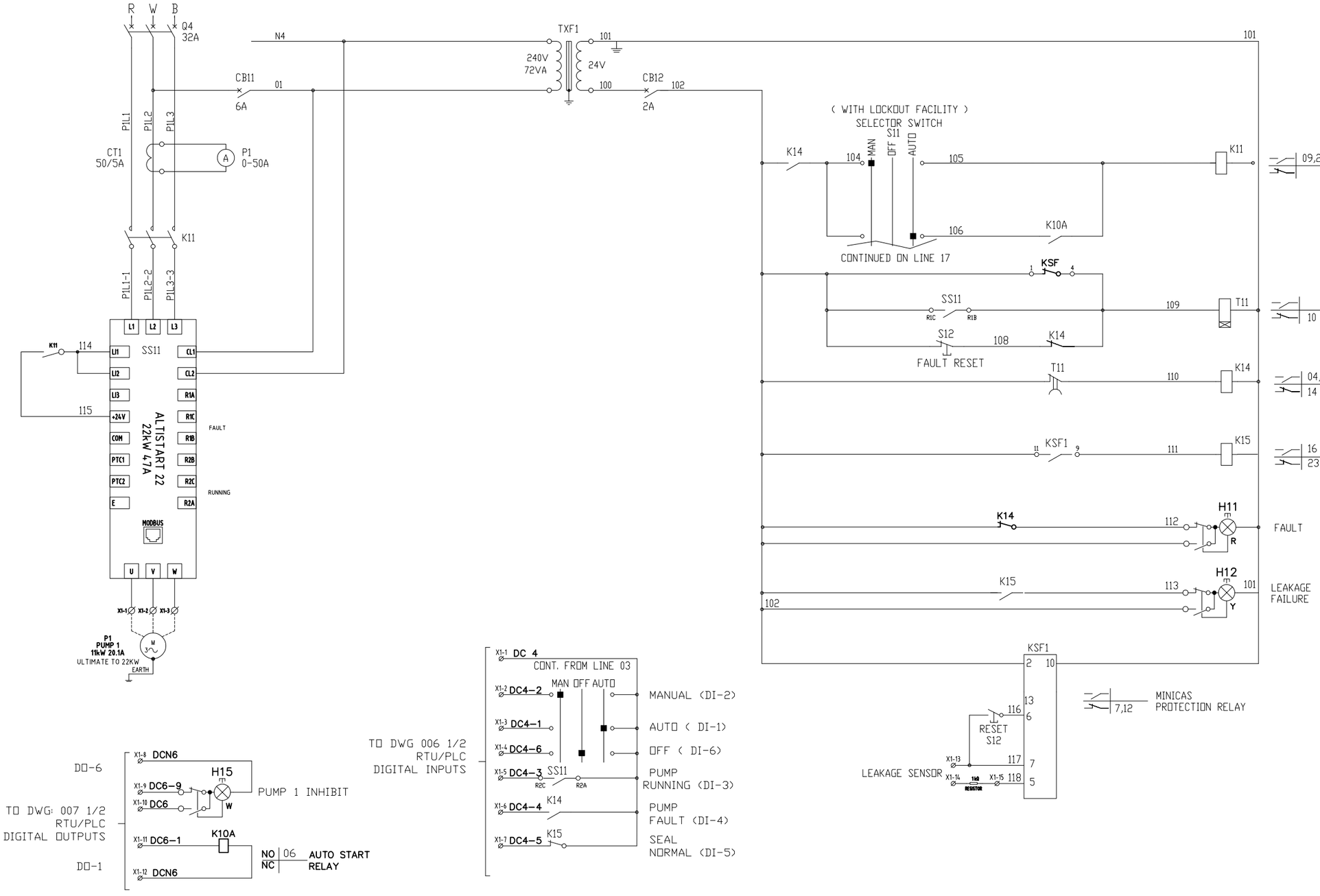

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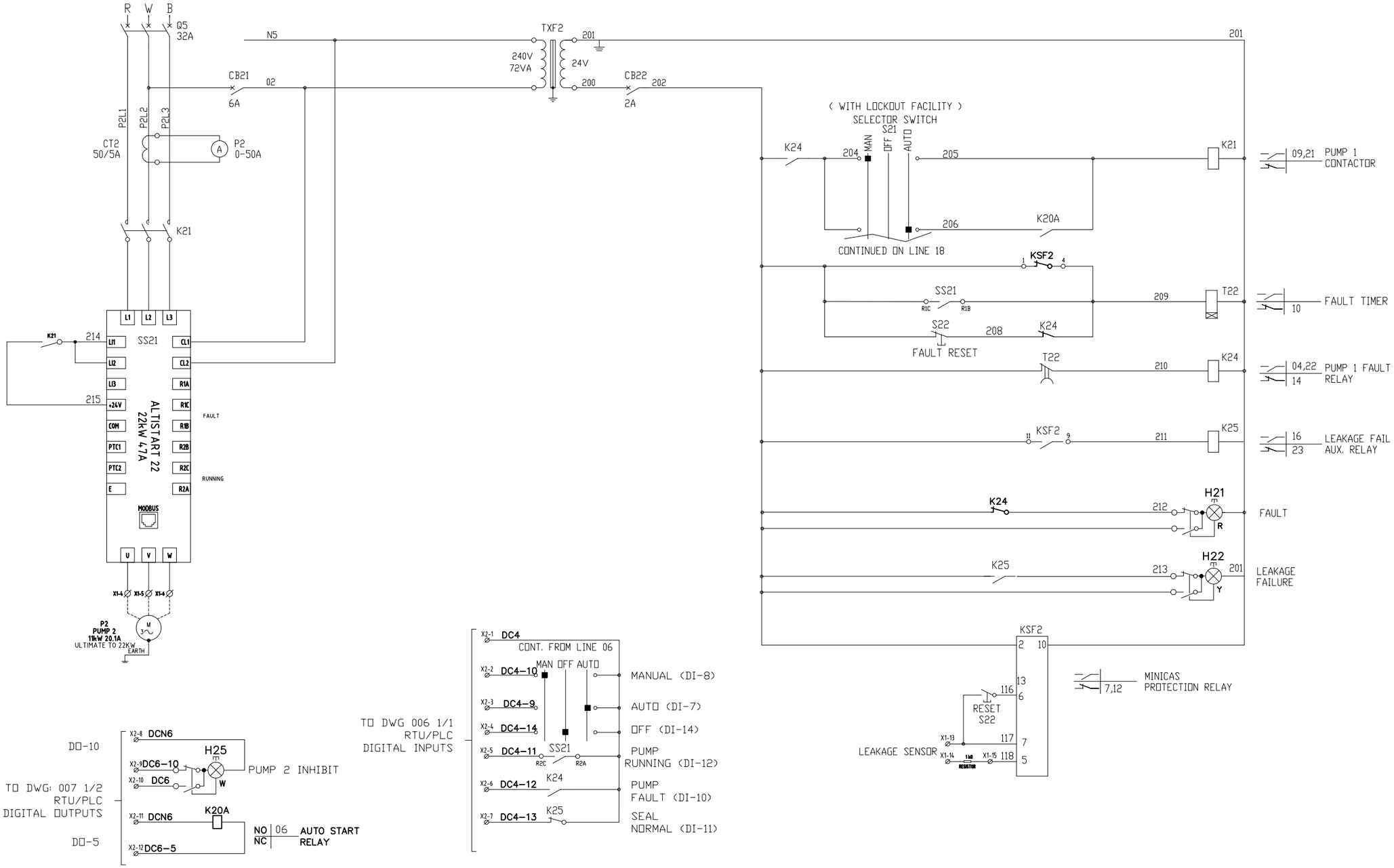

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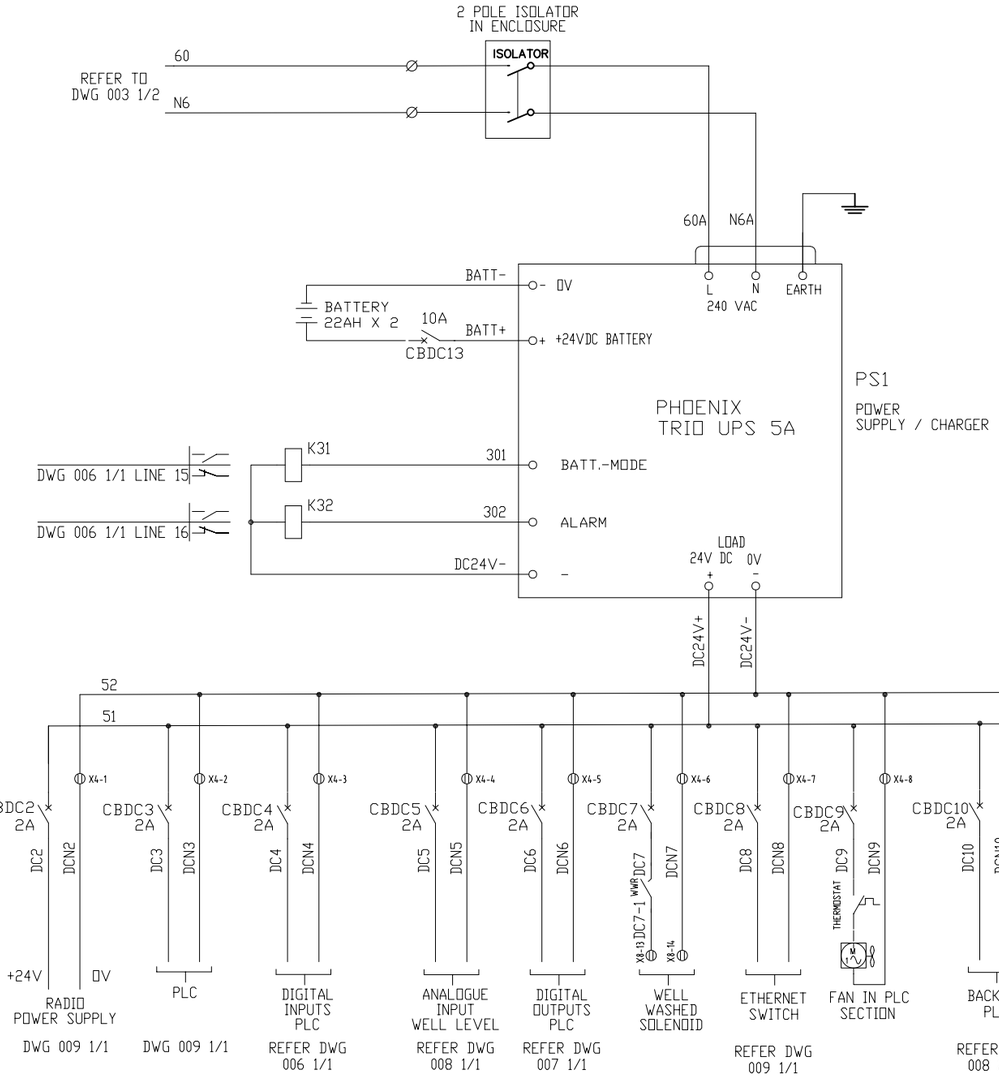

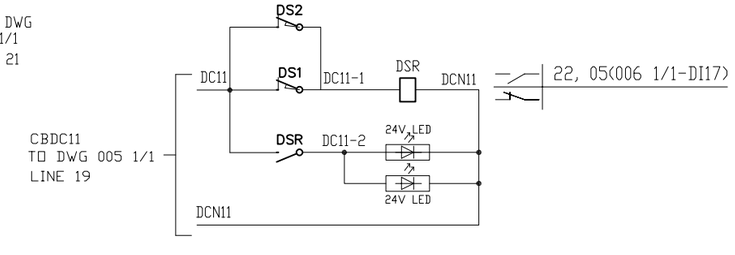

NOTES:

1. ALL CBDC CIRCUIT BREAKERS TO BE STANDARD AC RATED CB's
2. DS1 DOOR SWITCH OPERATES DSR RELAY.
   DOOR SWITCH IS N.C. WHEN OUTSIDE DOOR ARE OPEN.

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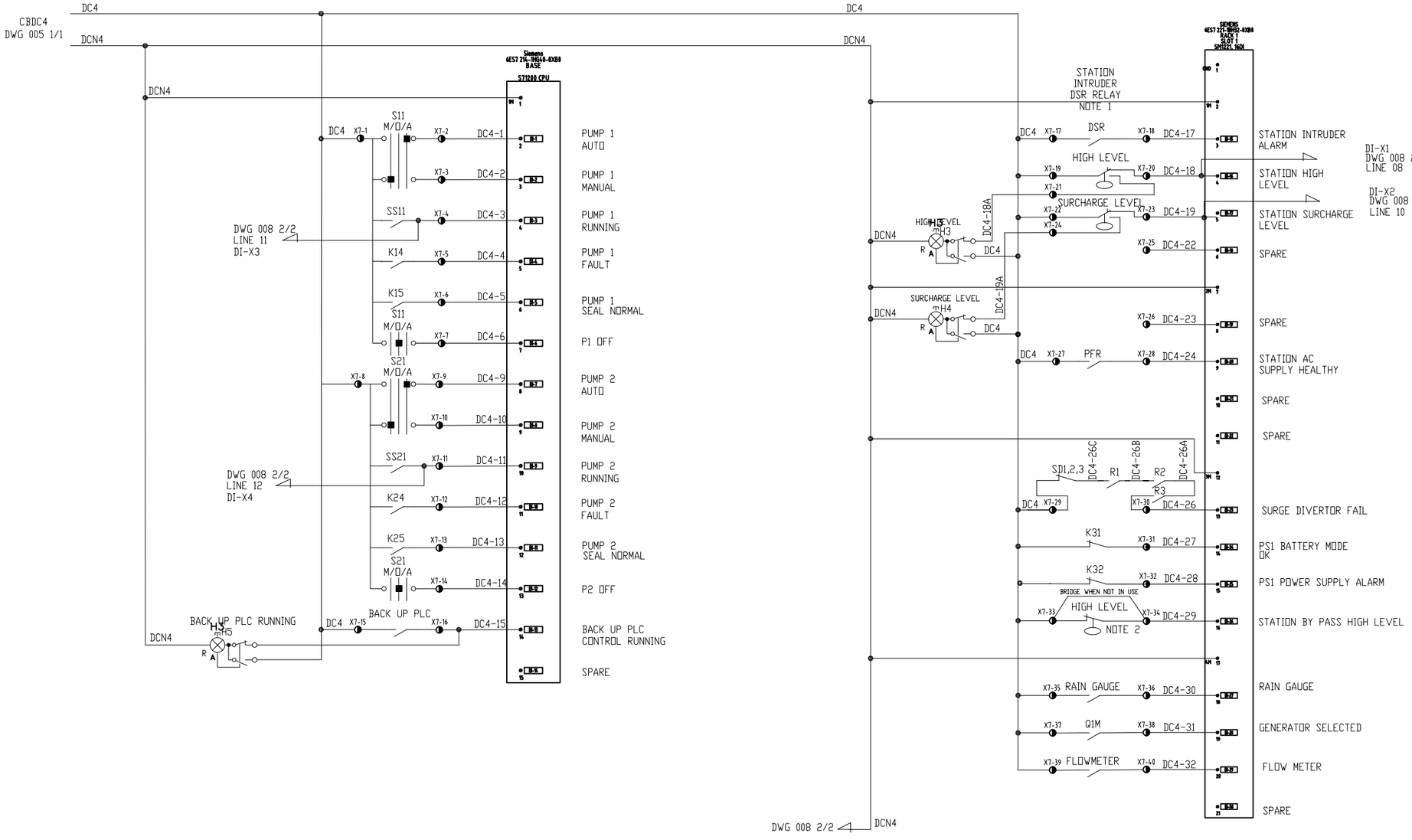
NOTES:

1. DOOR SWITCH DS1 TO OPERATE RELAY DSR WHEN OUTSIDE DOORS ARE OPENED.



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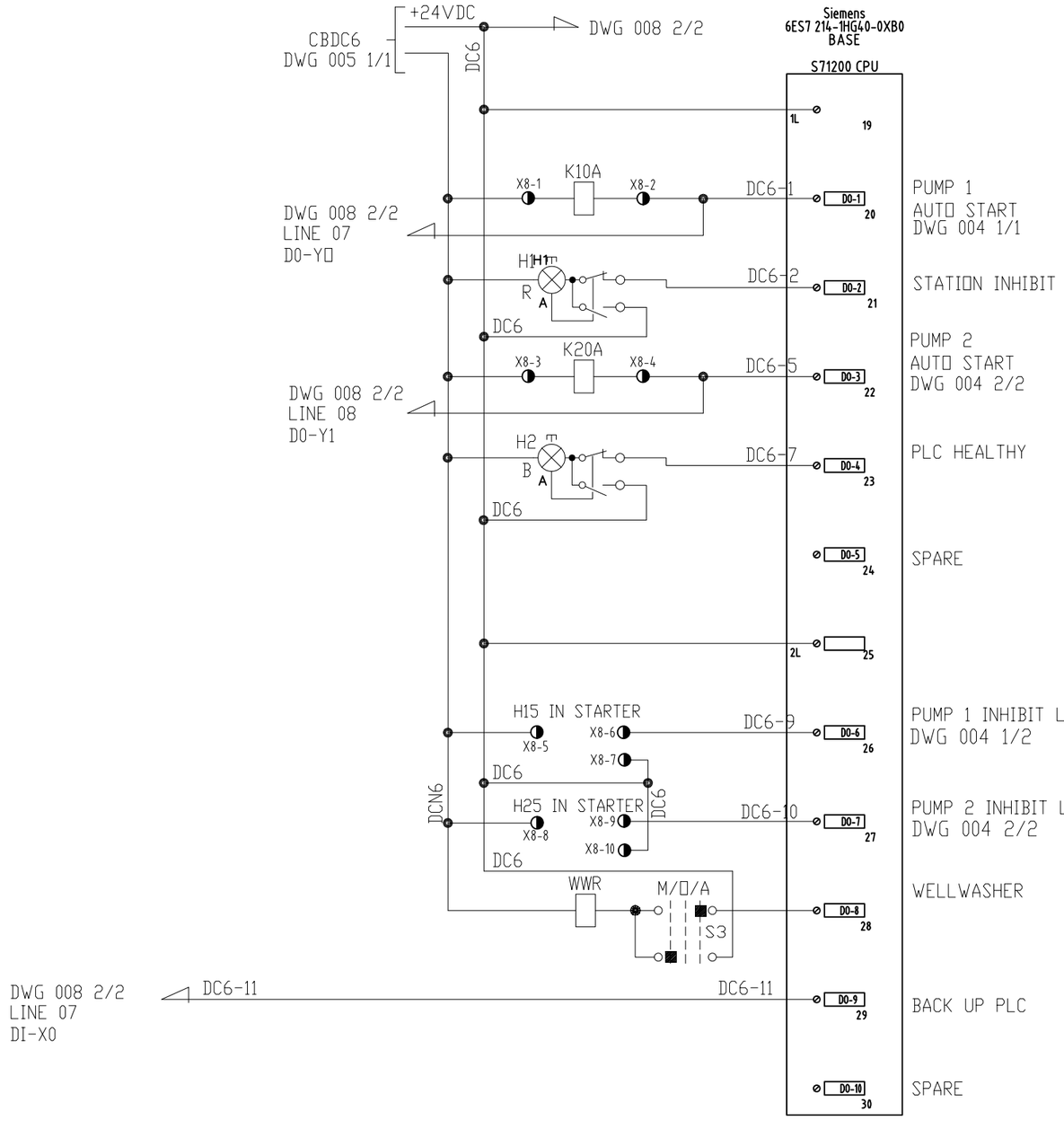

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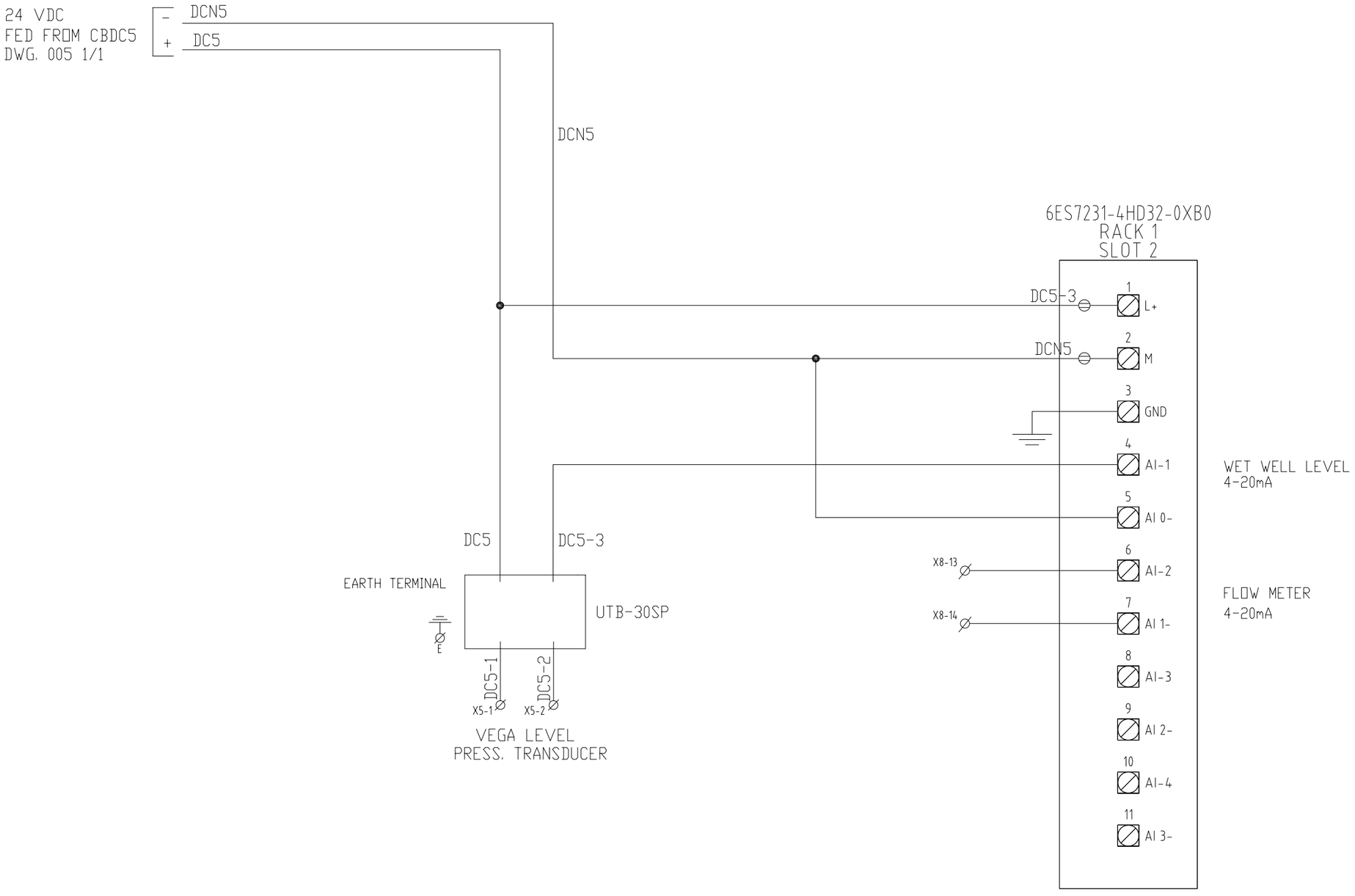

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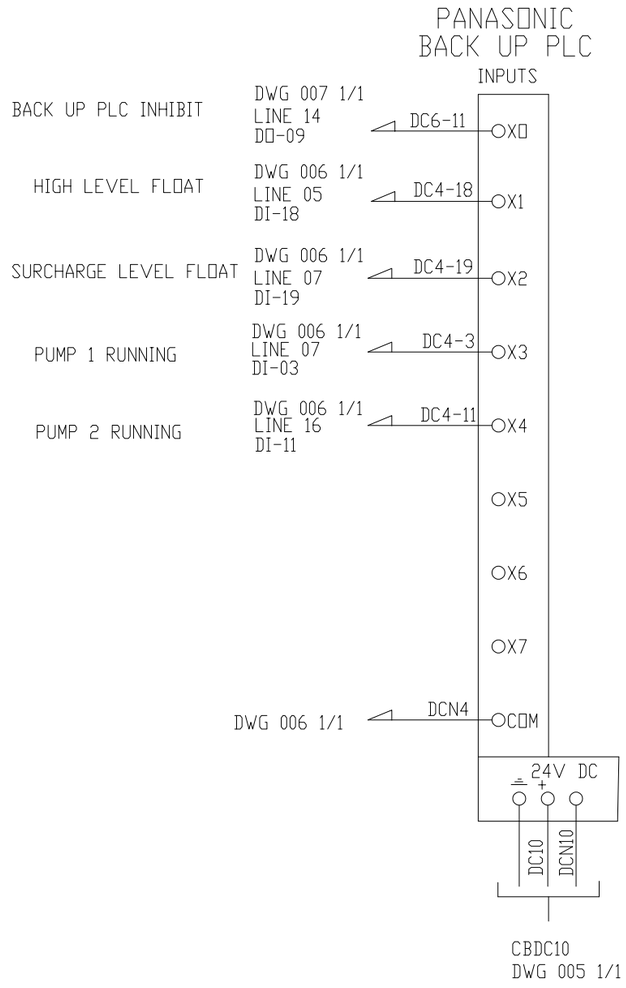

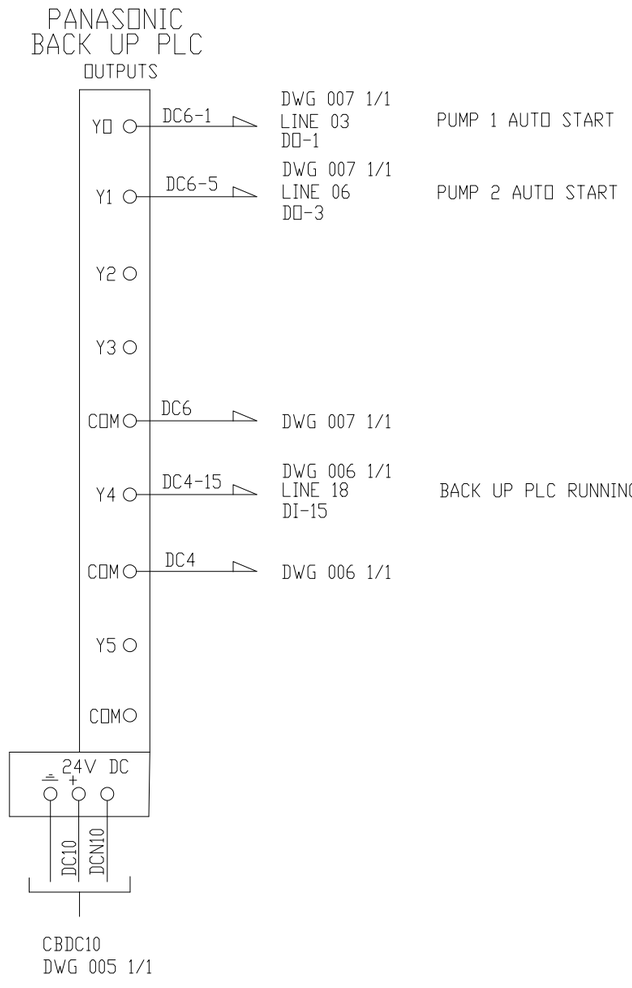

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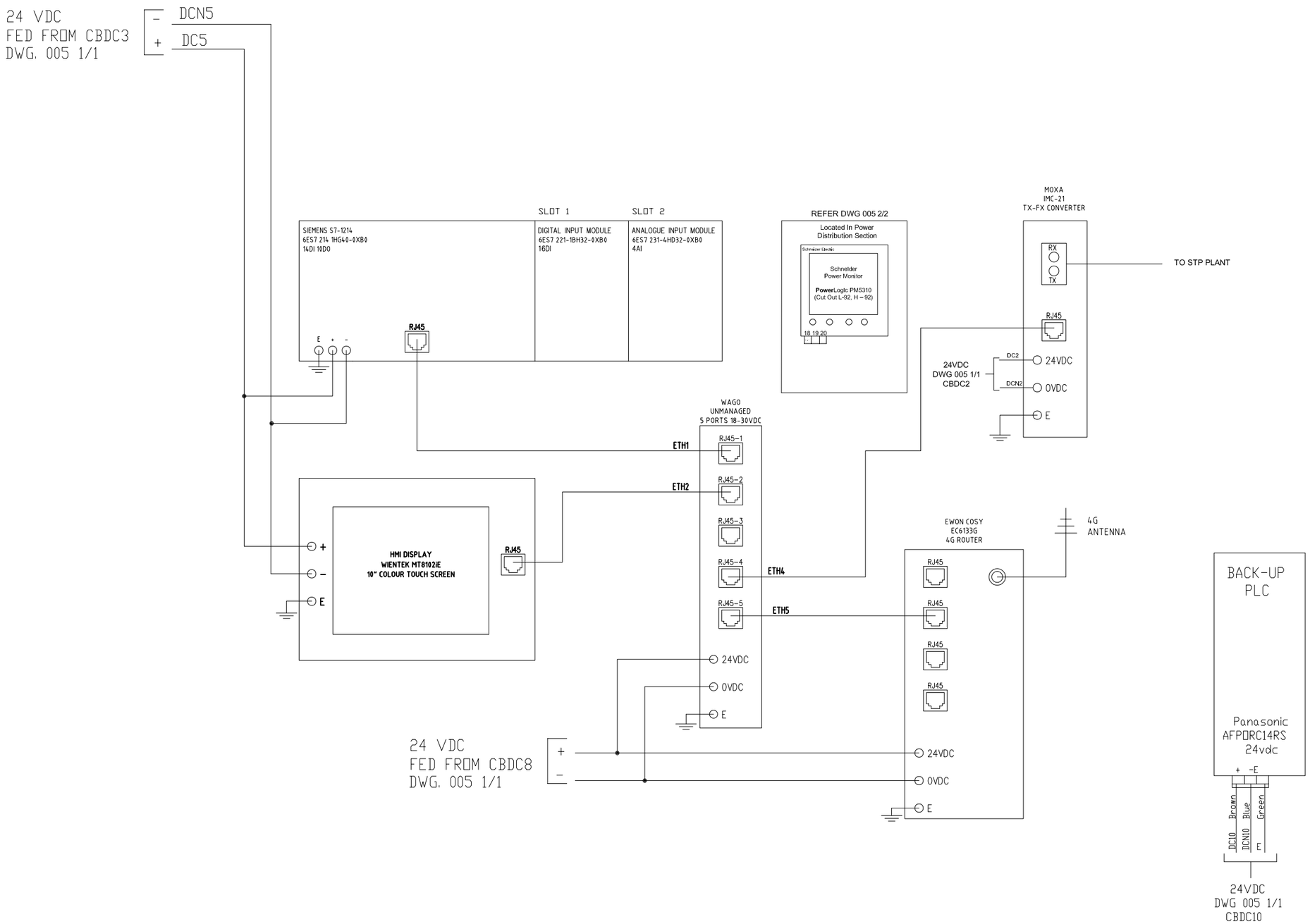

Rev	Description	Date
A	For Approval	18.08.20

Status

FOR APPROVAL

Q-MAX PUMPING SYSTEMS
PO BOX 6006
72 HIGH STREET
QUEANBEYAN NSW 2620

P 02 6128 1000 F 02 6128 1055
E SALES@QMAXPUMPING.COM.AU
WWW.QMAXPUMPING.COM.AU

DESIGNED FOR PERFORMANCE. BASED ON EXPERIENCE.

Client

PRIME MOSS VALE PTY LTD

Project

CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	18.18.2020
Designed	D. PRIDHAM		
Checked	P. PRIDHAM	Size	A3

Title

ELECTRICAL DETAILS

Scale	N.T.S.	Rev	A
Drg No.	20641-E009	Page	1/1

CHELSEA GARDENS SPS - PLC

Digital Inputs	Comments
DI-1	Pump 1 Auto
DI-2	Pump 1 Man
DI-3	Pump 1 Running
DI-4	Pump 1 Fault
DI-5	Pump 1 Seal Normal
DI-6	Pump 1 □FF
DI-7	Pump 2 Auto
DI-8	Pump 2 Man
DI-9	Pump 2 Running
DI-10	Pump 2 Fault
DI-11	Pump 2 Seal Normal
DI-12	Pump 2 □FF
DI-13	Spare
DI-14	Spare
DI-15	Station Intruder
DI-16	Station High Level
DI-17	Station Surcharge Level
DI-18	Spare
DI-19	Spare
DI-20	Station AC Supply Healthy
DI-21	Spare
DI-22	Spare
DI-23	Surge Diverter Fail
DI-24	DC Power Supply Battery □K
DI-25	DC Power Supply □K
DI-26	Station By-Pass High Level
DI-27	Rain Gauge
DI-28	Generator Selected
DI-29	Flow Meter
DI-30	Spare

Digital Outputs	Comments
D□-1	Pump 1 Auto Start
D□-2	Station Inhibit
D□-3	Pump 2 Auto Start
D□-4	Spare
D□-5	PLC Healthy
D□-6	Pump 1 Inhibit
D□-7	Pump 2 Inhibit
D□-8	Wellwasher
D□-9	Vent Fan Control
D□-10	

Analogue Inputs	Comments
AI-1	Wet Well Level
AI-2	Flow Meter
AI-3	Spare
AI-4	Spare

Rev	Description	Date
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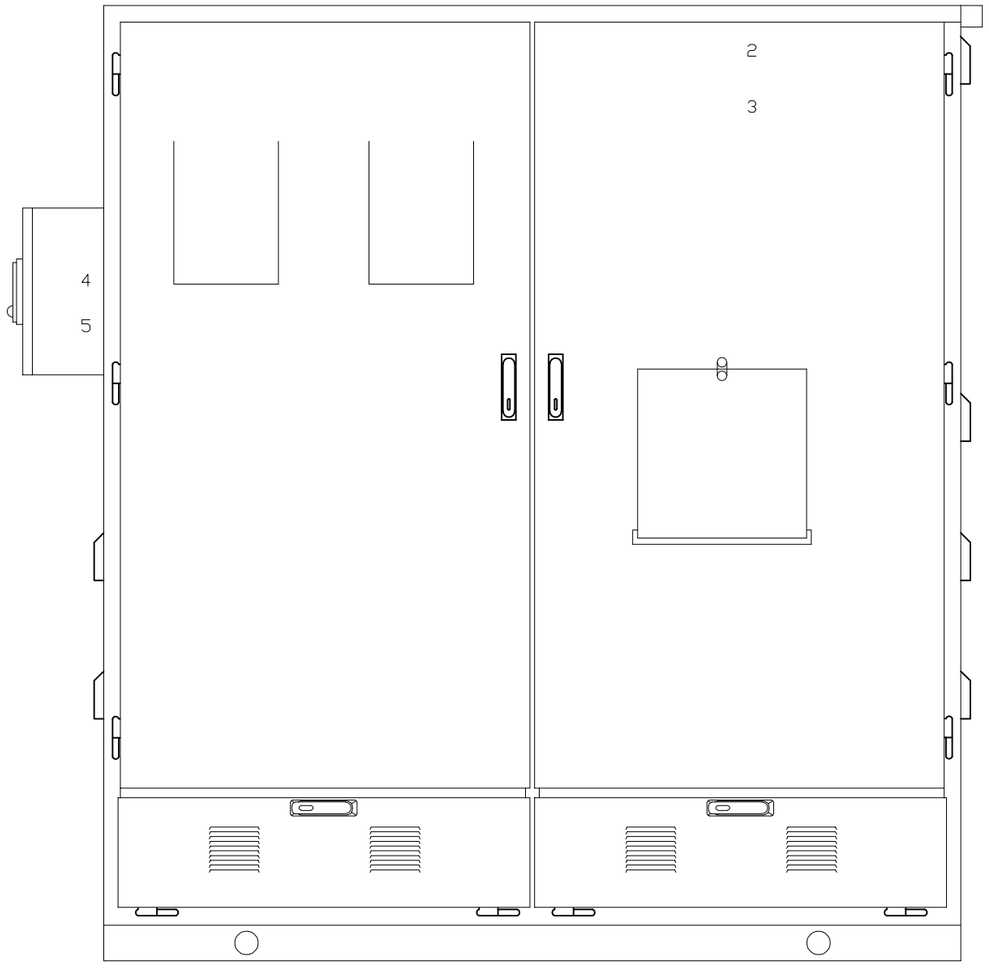
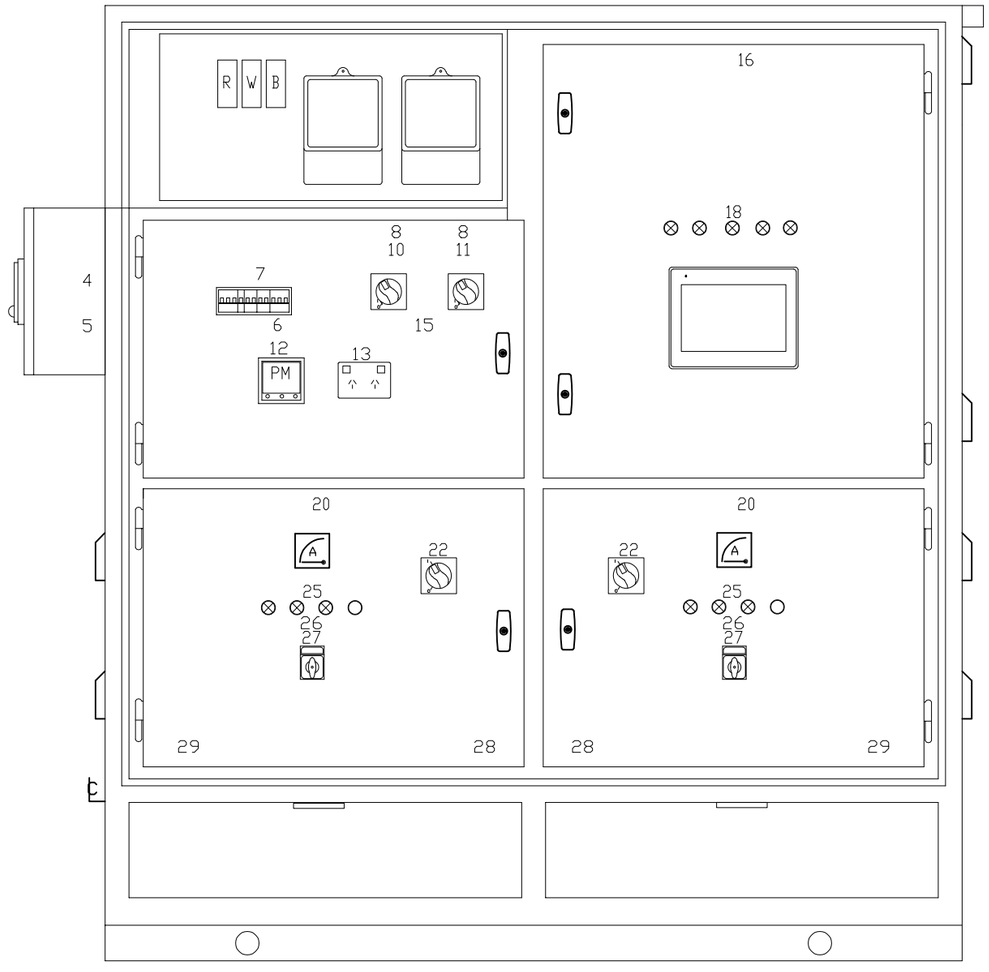
Scale	N.T.S.	Rev	A
Drg No.	20641-E010	Page	1/1

SEE DRAWING 20043-E0012 2/3 & 3/3



FRONT ELEVATION



FRONT ELEVATION - OUTER DOORS REMOVED

Rev	Description	Date
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Title

ELECTRICAL DETAILS

Scale	N.T.S.	Rev	A
Drg No.	20641-E011	Page	1/3

LOCATION No.	WORDING	LENGTH	HEIGHT	LETTER COLOUR	BACKGROUND COLOUR	MATERIAL	QTY	COMMENTS
OUTSIDE OF SCA								
2	CHELSEA GARDENS SPS	250(Min)	50	BLACK	SILVER	STAINLESS STEEL	1	
3		300	230			METAL	1	STANDARD SAFETY SIGN
4	GENERATOR & AUX SERVICES BOX	150	30	BLACK	SILVER	STAINLESS STEEL	1	OUTSIDE DOOR OF GENERATOR & AUX SERVICES BOX
5	GENERATOR INPUT SUPPLY 32A 3 PHASE + N & E SUPPLY - Q9 N9 240V SUPPLY - Q8 N8 HIGH LEVEL FLOAT	100	35	BLACK	WHITE	TRAFFOLYTE	1	INSIDE DOOR OF GENERATOR & AUX SERVICES BOX

POWER DISTRIBUTION SECTION								
6	POWER DISTRIBUTION	150	30	BLACK	WHITE	TRAFFOLYTE	1	
7	Q6 - AUTO CONTROLS Q7 - GPO Q8 - 240V AUX BOX Q9 - 32A AUX BOX	TO FIT	TO FIT	BLACK	WHITE	TRAFFOLYTE	1	
8	MAIN SWITCH	80	30	RED	WHITE	TRAFFOLYTE	2	
10	NORMAL SUPPLY	50	20	BLACK	WHITE	TRAFFOLYTE	1	
11	GENERATOR SUPPLY	50	20	BLACK	WHITE	TRAFFOLYTE	1	
12	POWER MONITOR	90	20	BLACK	WHITE	TRAFFOLYTE	1	
13	GPO FED FROM Q7	80	20	BLACK	WHITE	TRAFFOLYTE	1	
15	**WARNING** DUAL SUPPLY ISOLATE BOTH NORMAL & GENERATOR SUPPLIES BEFORE WORKING ON THIS SWITCHBOARD	120	60	WHITE	RED	TRAFFOLYTE	1	

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Client: PRIME MOSS VALE PTY LTD

Project: CHELSEA GARDENS SEWER PUMP STATION

Drawn	S. SHOKRAVI	Date	18.18.2020
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Title: ELECTRICAL DETAILS

Scale	N.T.S.	Rev	A
Drg No.	20641-E011	Page	2/3

LOCATION No.	WORDING	LENGTH	HEIGHT	LETTER COLOUR	BACKGROUND COLOUR	MATERIAL	QTY	COMMENTS
AUTO CONTROL SECTION								
16	AUTO CONTROLS AND TELEMETRY	200	30	BLACK	WHITE	TRAFFOLYTE	1	
18	STATION INHIBIT PLC HEALTHY HIGH LEVEL SURCHARGE LEVEL BACK-UP PLC RUNNING	SEE COMMENTS	20	BLACK	WHITE	TRAFFOLYTE	1	THESE LABELS ARE BE COMBINED INTO THE ONE LABEL WITH LENGTH TO SUIT
PUMP 1 & 2 STARTERS								
20	PUMP 1 STARTER	150	30	BLACK	WHITE	TRAFFOLYTE	1	
21	PUMP 2 STARTER	150	30	BLACK	WHITE	TRAFFOLYTE	1	
22	ISOLATOR	70	20	BLACK	WHITE	TRAFFOLYTE	2	
25	FAULT LEAKAGE FAILURE PUMP INHIBIT FAULT RESET	SEE COMMENTS	20	BLACK	WHITE	TRAFFOLYTE	2	THESE LABELS ARE BE COMBINED INTO THE ONE LABEL WITH LENGTH TO SUIT
26	WARNING BEFORE RUNNING PUMP IN MANUAL ENSURE OTHER PUMP IS TURNED OFF	70	30	WHITE	RED	TRAFFOLYTE	2	LOCATED DIRECTLY ABOVE PUMP SELECTOR SWITCH LABEL
27	PUMP SELECTOR	70	20	BLACK	WHITE	TRAFFOLYTE	2	

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Drg No.	20641-E011	Page	3/3

PART 4 - IWTS ACCESS PLANS (INTERIM RISING MAIN)

ASHBOURNE DEVELOPMENT

IWTS ACCESS PLANS

YARRAWA ROAD, MOSS VALE

NOTES

GENERAL

G1 All Development Consent Conditions are to be fully complied with throughout the completion of the project.

G2 All work to be in accordance with the Wingecarribee Shire Council Construction Specifications.

G3 Inspections by Council's Development Control Engineers are to be undertaken at critical stages when directed and where required by the Council Construction Specifications. Generally a minimum of 48 hours notice is required for inspections, however this may vary for certain inspections - see Council Construction Specifications for details.

G4 No work to be carried out on Council property or private property without the written permission of the owner. A copy of the written permission is to be sent to Council for its records.

G5 All rubbish, buildings, sheds, undergrowth, and fences are to be removed from the site and road reserves to the satisfaction of Council's Development Control Engineer

G6 All trees to be removed shall be clearly marked on site and inspected by Council staff prior to removal as required by the consent conditions.

G7 Where excavation is required adjacent to trees, all roots shall be clean cut and treated by a qualified arborist. Certification by the arborist that works have been done in accordance with best practice will be required to be submitted to Council prior to issue of the Construction Certificate.

G8 Make smooth connection to all existing engineering work.

G9 All existing services to be located and levelled by the Contractor prior to the commencement of work.

G10 All services affected by new work to be adjusted to suit in the field to the satisfaction of the relevant service authority.

G11 The Contractor shall provide traffic control which complies with AS1742.3 – 2002. A copy of the plan showing layout of proposed traffic control for the commencement of work and certified by a suitably qualified person is to be submitted to Council prior to commencement of any work. Further plans are to be submitted if work site alters.

G12 Any road restoration required shall be in 150mm layers of DGS 40 from the bottom of trench or top of sand overlay over any pipes, compacted to a minimum of 98% modified compaction with the final layer of 100mm of DGB 20 compacted to a minimum of 98% modified compaction and finished level with existing road surface.

G13 The Contractor shall maintain and/or restore any damage which may have been caused by the construction of the subdivision to the road pavement, roadside drainage or underground facilities in Council Road's which give access to the subdivision.

G14 All disturbed areas to be reinstated as nearly as possible to the pre-construction condition.

G15 Vehicular access and all services to be maintained at all times to adjoining properties affected by construction.

G16 The contractor shall ensure that effective sediment and erosion protection measures are in place on site at all times. Such measures shall be in accordance with the plans and the requirments of the Landcom manual "Managing Urban Stormwater Soils and Construction".

G17 The contractor shall obtain levels from the established benchmarks only.

G18 Proposed service crossings under existing roads shall be thrustboard under the road to avoid damaging the exist pavement.

G19 All works and procedures carried out in association with this development shall be completed in accordance with the requirements of the Workcover Authority and Work Health and Safety Legislation and Regulations.

G20 All contructors and demolition works shall be restricted to the following hours.
7am to 5pm Mondays to Fridays (inclusive)
8am to 1pm Saturdays
No work on Sundays and public holidays

G21 All waste shall be disposed of at an approved waste disposal depot and copies of all documentation associated with such disposal shall be provided to the principal. A waste control container shall be located on site and no waste material shall be stored on site other than in such container.

G22 Contractor shall erect a sign (minimum size of 300mmx400mm) at the entrance to the site prior to the commencement of any works advertising the following:-
- Full details of the PCA - Wingecarribee Shire Council
- Full details of the Construction Certificate
- Full details of the Development Consent DA
- Full details of the builder/contractor

ROADWORKS

R1 Final pavement thickness and testing requirements are to be in accordance with Council's Construction Specifications. 'Pavement Design and Testing'.

R2 Fill Areas:-

a) All road and fill areas to be cleared of undergrowth and grass, topsoil to be removed and stockpiled on site for spreading on footpaths, batter areas, and other fill areas prior to completion.

b) All unsuitable material, as determined by Council's Engineer, to be removed and replaced by select material excavated on site.

c) All filling to be controlled and inspected by Nata Registered Laboratory in accordance with Council's specifications, relevant Australian Standard and best accepted practice.

R3 All testing works shall be controlled and certified by Nata Registered Laboratory, copies of all test certificates clearly indicating the location of each test and laboratory's certificates covering the whole of the area tested are to be forwarded to Council.

R4 Conduits for electricity and telecom to be provided and placed as required.

R5 Service Conduits to be:-

a) Placed as directed by Integral Energy and as required by the Wingecarribee Shire Council.

b) Laid generally as specified by each relevant authority.

c) Backfilled with sharp course sand.

d) Extended minimum 300mm behind kerb.

e) Laid prior to placement of final surfacing.

R6 Subsoil drains shall be provided as shown and as required by Council's Engineer.

R7 Batters and footpath to be top soiled to a minimum depth of 150mm.

R8 150 x 50 H.D. galvanised steel kerb outlets to be placed in roll kerb and 90mm dia. galvanised steel pipe section to be placed in upright kerb on low side of lots not served by common drainage lines. Provide suitable adaptor to allow connection of 90mm dia Storm water pipe.

R9 Perambulator crossings to be provided in all kerb returns or where required by Council.

R10 Proposed services crossing existing roads shall be thrust bored under the road so as not to damage existing surface.

R11 Signposting and linemarking to conform with AS1742.2 raised retro-reflective pavement markers to conform with AS1906. All aprons and kerb face on central islands of roundabouts and all other islands should be delineated by reflective white marking.

R12 All lot numbers must be stencilled on kerb face adjacent to boundaries on both sides of each lot.

R13 Road subgrade and pavement materials to be compacted in accordance with Council's specifications.

R14 Signposting and line marking where required is to conform to AS1742.2. Raised retro-reflective pavement markers where required to conform to AS1906. All aprons and kerb faces on central islands of roundabouts and other islands are to be delineated with reflective white markings.

FILLING AND SITE REGRADING

D1 Dams to be stripped of topsoil. All exposed silt and other unsuitable material shall be removed and disposed of as directed by the Engineer.

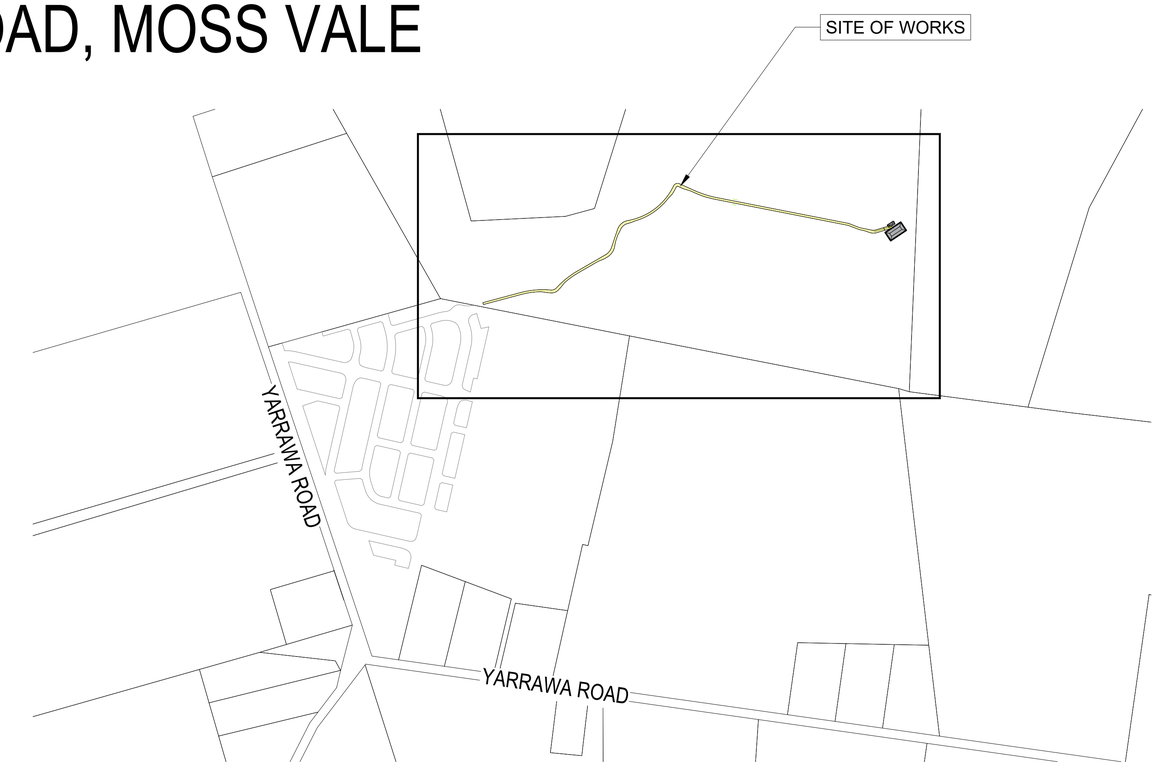
D2 Stripped area to be compacted to a depth of 200mm to a density not less than 95%%% standard maximum dry density. Fill material is to be placed in layers not more than 250mm thick loose measurement, following inspection of the stripped area by the Engineer.

D3 Inspection and testing of filled layers shall be carried out by qualified soils personnel and Nata Registered Soils Laboratory as follows:-
1. Upon clean up of base area.
2. At the conclusion of placement of maximum 500mm of compacted fill. (1 test per 100m2).
3. On completion of the works.

D4 A fill plan shall be prepared in accordance with Council's Construction Specifications and submitted to Council in the form of Standard Drawing SD 133.

D5 Where the slope of the natural surface exceeds one in four (1:4), benches are to be cut to prevent slipping of the placed fill material as required by the PCA.

D6 All batters are to be scarified to assist with adhesion of top soil to batter face.



SITE PLAN

NOT TO SCALE

SHEET REGISTER			
Sheet No.	Drawing No.	Drawing Title	Issue
1	18001-201-EMW-001	COVER SHEET	A
2	18001-201-EMW-011	PLAN OVERALL LOCALITY/ARRANGEMENT PLAN	A
3	18001-201-EMW-012	PLAN A WORKS AND SWM PLAN	A
4	18001-201-EMW-013	PLAN B WORKS AND SWM PLAN	A
5	18001-201-EMW-101	ACCESS TRACK LONGITUDINAL SECTION Ch0.000-Ch660.000	A
6	18001-201-EMW-102	ACCESS TRACK LONGITUDINAL SECTION Ch660.000-Ch1035.114 & ROAD TEMPLATES	A
7	18001-201-EMW-401	CATCHMENT PLAN	A
8	18001-201-EMW-551	SOIL & WATER MANAGEMENT NOTES	A

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations 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.
Locate all underground services before commencement of works

DIAL 1100 BEFORE YOU DIG

www.1100.com.au

FOR IPART REVIEW
ISSUED FOR APPROVAL

REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPEAL	16-09-2022	J.O.	T.H.

REV	DESCRIPTION	DATE	DRN.	APP.

Designed T.H.
Date
Drawn J.O.
Approved T.H.
Date
PS Number PS

Beveridge Williams
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Campbelltown NSW 2560
ph: 02 4625 5055
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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: COVER SHEET

Sheet 01 of 08

Scale: NOT TO SCALE

N

Project Ref	Stage No	Drawing No	Rev
18001	EMW	001	A

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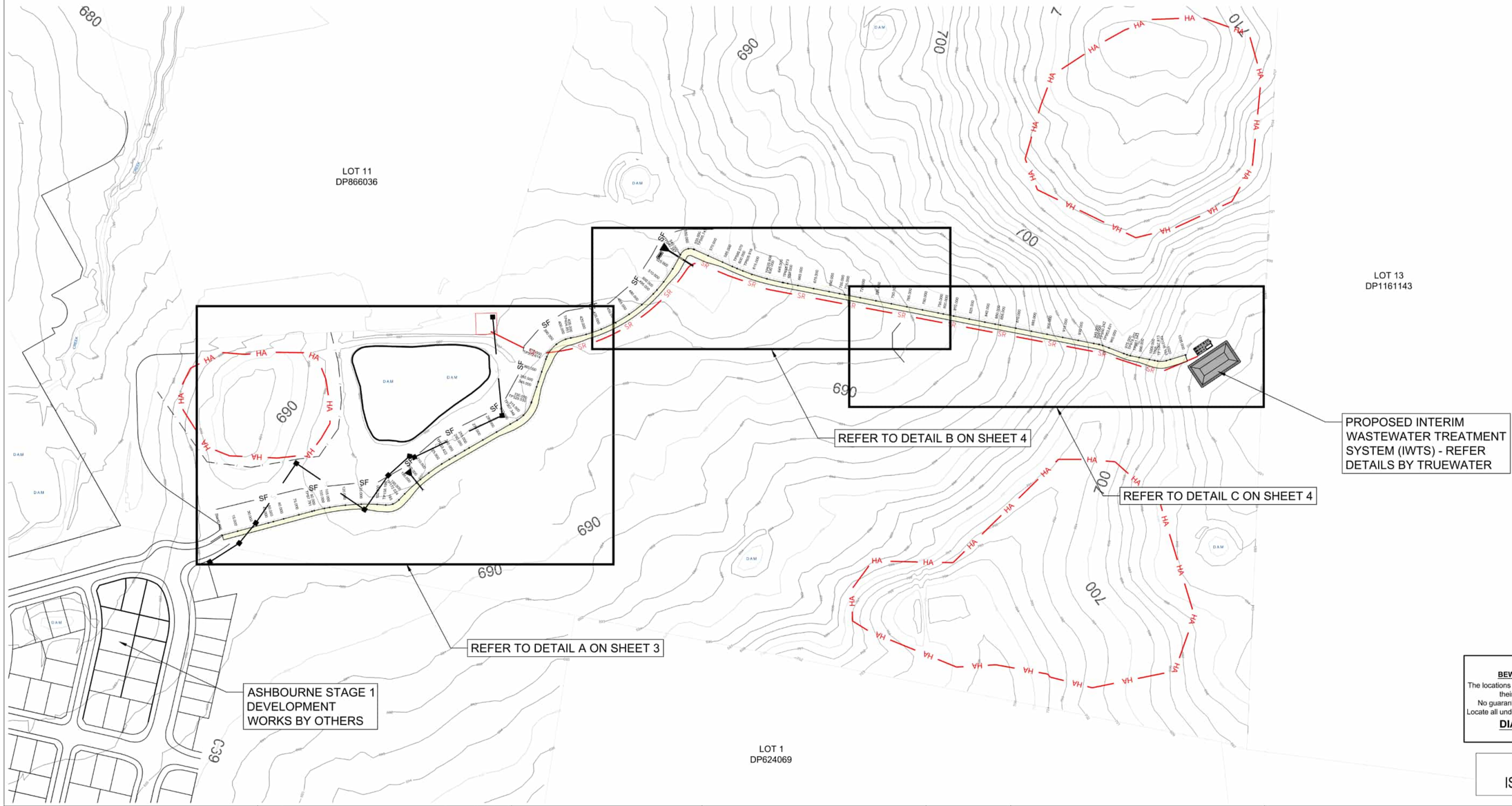

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REV	DESCRIPTION	DATE	DRN.	APP.

0 20 40 80 120 160
SCALE 1:2000 AT A1 SIZE

Designed Date	T.H.
Drawn	J.O.
Approved Date	T.H.
PS Number	PS

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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: PLAN OVERALL
LOCALITY/ARRANGEMENT PLAN

Sheet 02 of 08

Scale: 1:2000 @ A1

N

Project Ref	Stage No	Drawing No	Rev
18001	EMW	011	A

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SEWER PUMP STATION SPS1
REFER DRAWING 7212/A1 BY
QMAX PUMPING SYSTEMS

DAM

DAM

CONSTRUCT CULVERT 1 CH195. 675mmØ RRJ
CLASS 2 REINFORCED CONCRETE PIPE
U/S HEADWALL OFFSET 9m FROM CL INV 686.13
D/S HEADWALL OFFSET -9m FROM CL INV685.82
CONSTRUCT ROCK RIP RAP SCOUR PROTECTION
USING AVERAGE ROCK DIA 0.2m EXTENDING 5m
FROM HEADWALL VARYING IN WIDTH FROM 2m
AT HEADWALL TO 7m AT 5m FROM HEADWALL

TABLE DRAIN IN
ACCORDANCE WITH TYPICAL
SECTIONS TO BE
CONSTRUCTED ALONG LOW
SIDE OF ACCESS TRACK TO
DIRECT FLOWS OFF
PAVEMENT TO RAIN GARDEN

PROPOSED 125mm PE100 SDR11
RISING MAIN FROM SPS1 TO IWTS LAID
AT 800mm COVER. 50mm PE WATER
SERVICE LINE TO BE INCORPORATED
IN SAME TRENCH.

WIDEN PAVEMENT WIDTH TO
6.5m ON TRACK BEND

EXCESS MATERIAL
STOCKPILE

WIDEN PAVEMENT WIDTH TO
6.5m ON TRACK BEND

350mm HIGH MOUND 0.9m
WIDE AT TOP WITH 1 IN 4
BATTERS TO BE
CONSTRUCTED ALONG HIGH
SIDE OF ACCESS TRACK TO
DIVERT UPSTREAM FLOWS TO
CULVERTS

HERITAGE AREA NOT TO BE
ENTERED FOR THE DURAION
OF WORKS. CONTRACTOR TO
FENCE OFF HERITAGE AREA
TO PREVENT ENTRY. FENCE
TO BE MAINTAINED FOR THE
DURATION OF WORKS

CONSTRUCT TEMPORARY
4.5m WIDE ACCESS TRACK

350mm HIGH MOUND 0.9m
WIDE AT TOP WITH 1 IN 4
BATTERS TO BE
CONSTRUCTED ALONG HIGH
SIDE OF ACCESS TRACK TO
DIVERT UPSTREAM FLOWS TO
CULVERTS

WIDEN PAVEMENT WIDTH TO
6.5m ON TRACK BEND

MAKE SMOOTH CONNECTION TO ROAD 13
PAVEMENT CONSTRUCTION REFER TO PLAN
BY ORION CONSULTING REF PROJ No. 20-0071
SET No. 2 MILESTONE CC REVISION D

LEGEND

- DENOTES PROPOSED RISING MAIN AND WATER SERVICE SPS1 TO IWTS
- DENOTES STAGE 1 TEMPORARY 4.5m WIDE ACCESS TRACK TO IWTS
- DENOTES 10m NATURAL SURFACE CONTOURS
- DENOTES SEDIMENT FENCE TO BE INSTALLED AND MAINTAINED FOR DURATION OF WORKS
- DENOTES AREA OF HERITAGE SIGNIFICANCE
- DENOTES TEMPORARY STAGE 1 GRAVITY SEWER CONNECTION TO SPS1

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SCALE 1:500 AT A1 SIZE

Designed T.H.
Date
Drawn J.O.
Approved T.H.
Date
PS Number PS

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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: PLAN A
WORKS AND SWM PLAN

Sheet 03 of 08
Scale 1:500 @ A1

Project Ref	Stage No	Drawing No	Rev
18001	EMW	012	A

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TABLE DRAIN IN ACCORDANCE WITH TYPICAL SECTIONS TO BE CONSTRUCTED ALONG LOW SIDE OF ACCESS TRACK TO DIRECT FLOWS OFF PAVEMENT TO RAIN GARDEN

350mm HIGH MOUND 0.9m WIDE AT TOP WITH 1 IN 4 BATTERS TO BE CONSTRUCTED ALONG NORTH SIDE OF ACCESS TRACK CH 550 TO END TO DIVERT UPSTREAM FLOWS AWAY FROM PAVEMENT

EXCESS MATERIAL STOCKPILE

350mm HIGH MOUND 0.9m WIDE AT TOP WITH 1 IN 4 BATTERS TO BE CONSTRUCTED ALONG HIGH SIDE OF ACCESS TRACK TO DIVERT UPSTREAM FLOWS TO CULVERTS

PROPOSED 125mm PE100 SDR11 RISING MAIN FROM SPS1 TO IWTS LAID AT 800mm COVER. 50mm PE WATER SERVICE LINE TO BE INCORPORATED IN SAME TRENCH.

WIDEN PAVEMENT WIDTH TO 6.5m ON TRACK BEND

PROPOSED IWTS - REFER DETAILS BY TRUEWATER

DISCHARGE 350mm HIGH MOUND TO EXISTING VIA LEVEL SPREADER/CONTOUR DRAIN

CONSTRUCT RAINGARDEN CONSISTING OF 10m² MEDIA (LOAM/SAND) BED OVER 100mm DEEP WASHED RIVER SAND OVER 200mm THICK 10mm GRAVEL LAYER DRAINED BY A 90mmØ AG DRAIN DISCHARGING ONTO THE DOWNSTREAM EXISTING SURFACE VIA A 90mmØ UPVC PIPE. RAIN GARDEN BED SURFACE TO BE DEPRESSED 300mm BELOW SURROUNDING SURFACE LEVEL TO PROVIDE 300mm EXTENDED DETENTION OF INFLOWS.

TABLE DRAIN IN ACCORDANCE WITH TYPICAL SECTIONS TO BE CONSTRUCTED ALONG LOW SIDE OF ACCESS TRACK TO DIRECT FLOWS OFF PAVEMENT TO RAIN GARDEN

350mm HIGH MOUND 0.9m WIDE AT TOP WITH 1 IN 4 BATTERS TO BE CONSTRUCTED ALONG NORTH SIDE OF ACCESS TRACK CH 550 TO END TO DIVERT UPSTREAM FLOWS AWAY FROM PAVEMENT

WIDEN PAVEMENT WIDTH TO 6.5m ON TRACK BEND

CONSTRUCT CULVERT 2 CH538. 1050mmØ RRJ CLASS 2 REINFORCED CONCRETE PIPE U/S HEADWALL OFFSET 15.5m FROM CL INV 684.0 D/S HEADWALL OFFSET -12m FROM CL INV683.7 CONSTRUCT ROCK RIP RAP SCOUR PROTECTION USING AVERAGE ROCK DIA 0.2m EXTENDING 7m FROM HEADWALL VARYING IN WIDTH FROM 3m AT HEADWALL TO 8m AT 7m FROM HEADWALL

PROPOSED 125mm PE100 SDR11 RISING MAIN FROM SPS1 TO IWTS LAID AT 800mm COVER. 50mm PE WATER SERVICE LINE TO BE INCORPORATED IN SAME TRENCH.

350mm HIGH MOUND 0.9m WIDE AT TOP WITH 1 IN 4 BATTERS TO BE CONSTRUCTED ALONG HIGH SIDE OF ACCESS TRACK TO DIVERT UPSTREAM FLOWS TO CULVERTS

350mm HIGH MOUND 0.9m WIDE AT TOP WITH 1 IN 4 BATTERS TO BE CONSTRUCTED ALONG HIGH SIDE OF ACCESS TRACK TO DIVERT UPSTREAM FLOWS TO CULVERTS

LEGEND

- DENOTES PROPOSED RISING MAIN AND WATER SERVICE SPS1 TO IWTS
- DENOTES STAGE 1 TEMPORARY 4.5m WIDE ACCESS TRACK TO IWTS
- DENOTES 10m NATURAL SURFACE CONTOURS
- DENOTES AREA OF HERITAGE SIGNIFICANCE
- DENOTES TEMPORARY STAGE 1 GRAVITY SEWER CONNECTION TO SPS1

WARNING
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REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR APPROVAL	16-09-2022	J.O.	T.H.

0 5 10 20 30 40
SCALE 1:500 AT A1 SIZE

Designed T.H. Date
Drawn J.O.
Approved T.H. Date
PS Number PS

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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: PLAN B
WORKS AND SWM PLAN

Sheet 04 of 08
Scale 1:500 @ A1
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Project Ref	Stage No	Drawing No	Rev
18001	EMW	013	A

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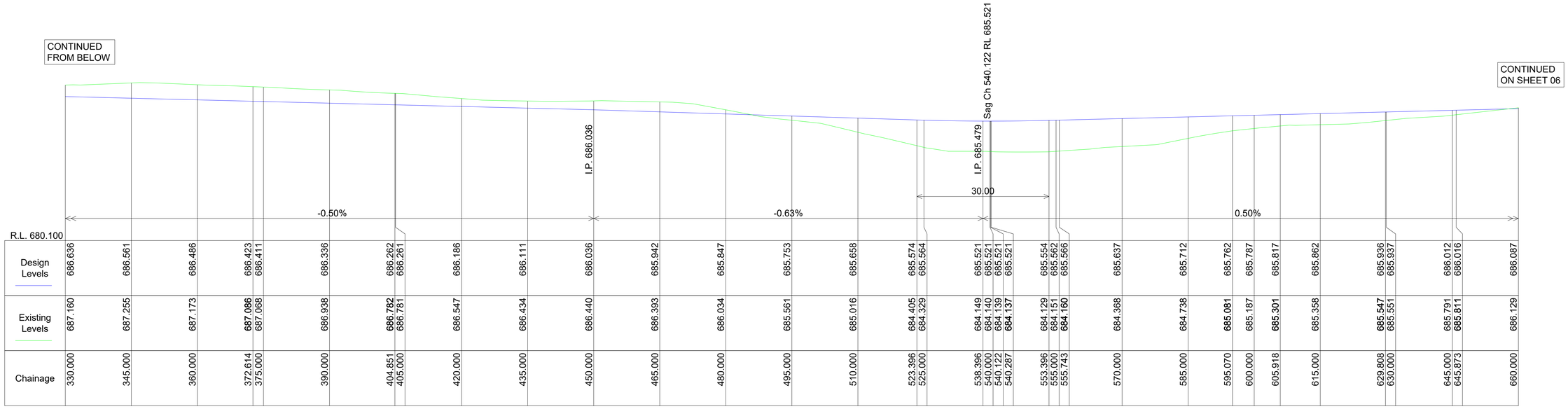
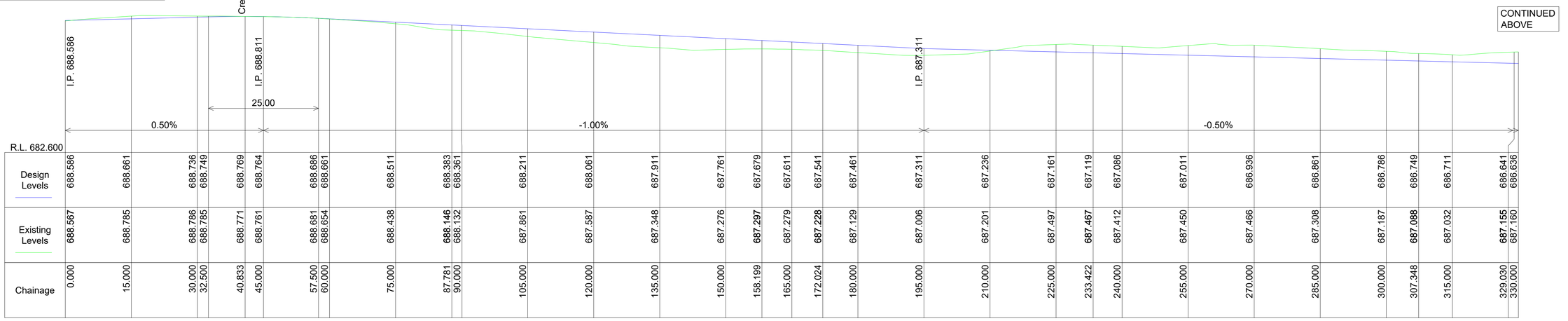


LONGITUDINAL SECTION FOR ACCESS TRACK - Ch330.000 to Ch660.000

SCALE H 1:500 V 1:100

MAKE SMOOTH CONNECTION TO ROAD 13 PAVEMENT CONSTRUCTION.
REFER TO PLAN BY ORION CONSULTING.
REF: PROJ 20-0071 SET NO. 2 MILESTONE CC REVISION D



LONGITUDINAL SECTION FOR ACCESS TRACK - Ch0.000 to Ch330.000

SCALE H 1:500 V 1:100

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HORIZ 1:500 0 5 10 20 30
VERT 1:100 0 1 2 4 6
SCALE AT A1 SIZE

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Approved T.H.
Date
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YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: ACCESS TRACK LONGITUDINAL SECTION
Ch0.000-Ch660.000

Sheet 05 of 08

Scale: 1:500 H 1:100 V @ A1

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Project Ref	Stage No	Drawing No	Rev
18001	EMW	101	A

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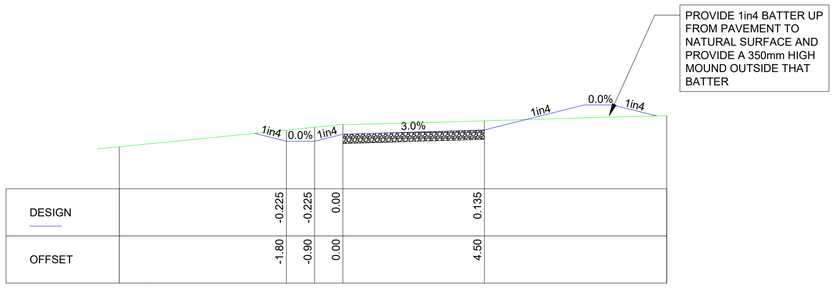

ROAD TEMPLATE FOR ACCESS TRACK - 1
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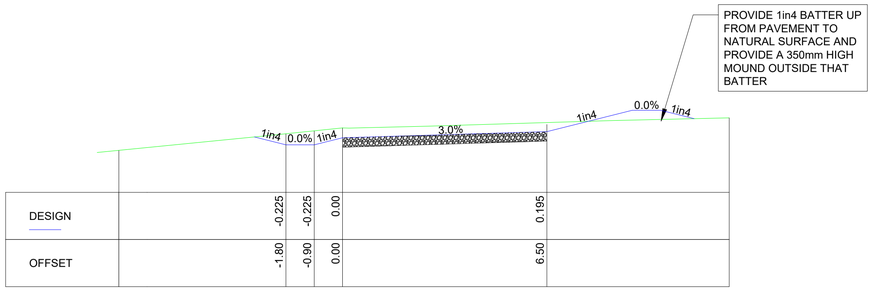
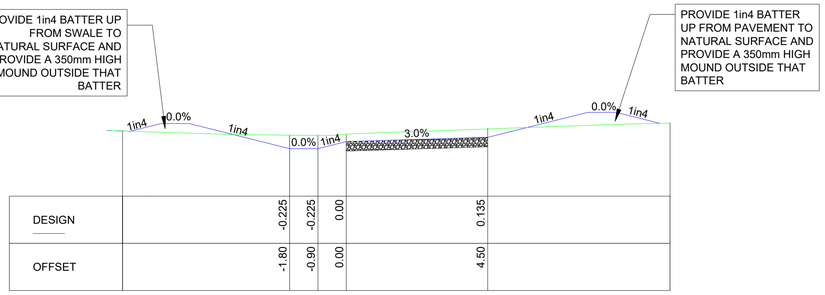


ROAD TEMPLATE FOR ACCESS TRACK - 3
SCALE 1:100 NATURAL



ROAD TEMPLATE FOR ACCESS TRACK - 2
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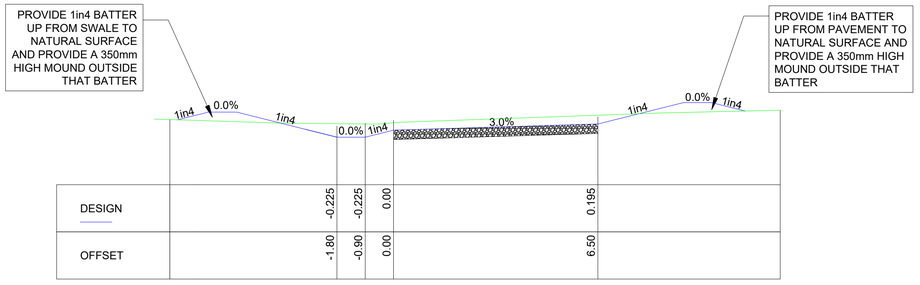

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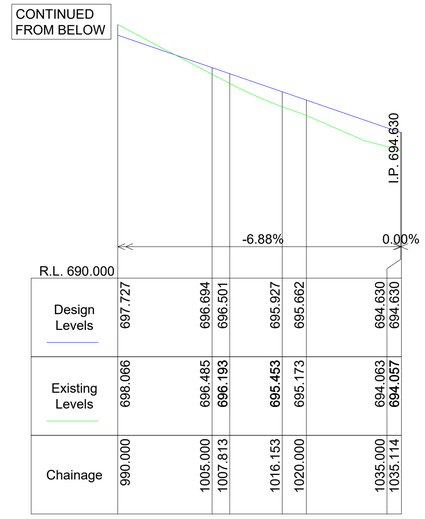
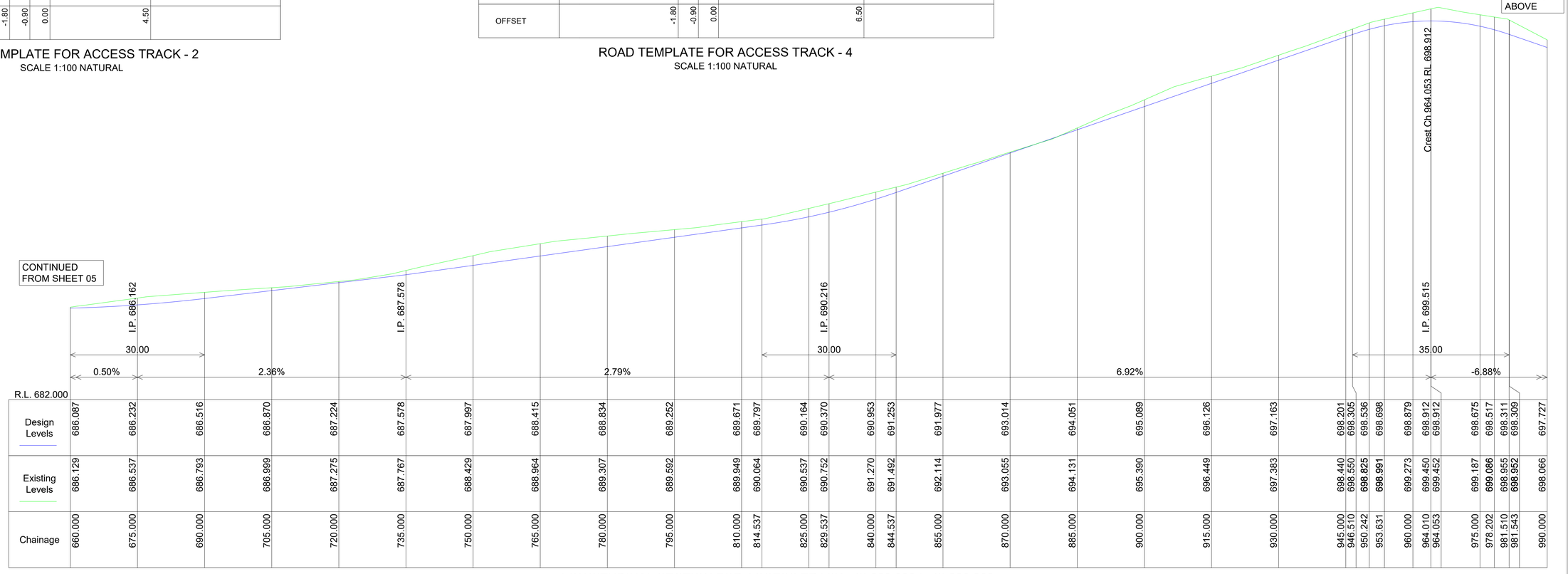


LONGITUDINAL SECTION FOR ACCESS TRACK - Ch990.000 to Ch1035.114
SCALE H 1:500 V 1:100

CHAINAGE	ROAD TEMPLATE
0-135	1
135-150	1-3 MERGE
150-180	3
180-195	3-1 MERGE
195-285	1
285-300	1-3 MERGE
300-330	3
330-345	3-1 MERGE
345-360	1
360-372.290	1-3 MERGE
372.290-405	3
405-420	3-1 MERGE
420-510	1
510-525	1-3 MERGE
525-540	3
540-550	3-4 MERGE
550-570	4
570-585	4-2 MERGE
585-990	2
990-1005	2-4 MERGE
1005-1035.114	4



LONGITUDINAL SECTION FOR ACCESS TRACK - Ch660.000 to Ch990.000
SCALE H 1:500 V 1:100

PAVEMENT DETAILS

WEARING COURSE 300mm THICK CRUSHED SANDSTONE

SUBGRADE COMPACTED TO 100% STANDARD COMPACTION
PAVEMENT DETAILS SUBJECT TO CONFIRMATION BY GEOTECHNICAL ENGINEER

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SCALE AT A1 SIZE

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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: ACCESS TRACK LONGITUDINAL SECTION
Ch660.000-Ch1035.114
& ROAD TEMPLATES

Sheet 06 of 08
Scale 1:500 H 1:100 V @ A1
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Project Ref	Stage No	Drawing No	Rev
18001	EMW	102	A

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CATCH IDENTIFIER	CATCH AREA	CATCH AREA (HA)	CATCH AREA (KM2)	Tc (MIN)	% IMPERVIOUS	C10	INTENSITY (mm/h) 5YR	C5	Q (m3/S) (5YR)
J	33494	3.349	0.033494	13	0%	0.70	82.8	0.602	0.46
H	33552	3.355	0.033552	13	0%	0.70	82.8	0.602	0.46
J+H	67046	6.705	0.067046	16	0%	0.70	74	0.602	0.83
G	56127	5.613	0.056127	15	0%	0.70	76.3	0.602	0.72
F	16436	1.644	0.016436	10	0%	0.70	92.5	0.602	0.25
G+F	72563	7.256	0.072563	17	0%	0.70	61.5	0.602	0.75
E	29211	2.921	0.029211	12	0%	0.70	86	0.602	0.42
G+F+E	101774	10.177	0.101774	19	0%	0.70	59.9	0.602	1.02

CATCH IDENTIFIER	CATCH AREA	CATCH AREA (HA)	CATCH AREA (KM2)	Tc (MIN)	% IMPERVIOUS	C10	INTENSITY (mm/h) 5YR	C5	Q (m3/S) (5YR)
A	6082	0.608	0.006082	7	0%	0.70	106	0.602	0.11
B	18747	1.875	0.018747	10	0%	0.70	92.5	0.602	0.29
A+B	24829	2.483	0.024829	11	0%	0.70	89.3	0.602	0.37
C	20999	2.100	0.020999	11	0%	0.70	92.5	0.602	0.32
A+B+C	45828	4.583	0.045828	14	0%	0.70	79.5	0.602	0.61
D	21186	2.119	0.021186	11	0%	0.70	92.5	0.602	0.33
A+B+C+D	67014	6.701	0.067014	16	0%	0.70	74	0.602	0.83

CATCH IDENTIFIER	CATCH AREA	CATCH AREA (HA)	CATCH AREA (KM2)	Tc (MIN)	% IMPERVIOUS	C10	INTENSITY (mm/h) 5YR	C5	Q (m3/S) (5YR)
E1	17537	1.7537	0.017537	10	0%	0.70	92.5	0.602	0.27
E2	20567	2.0567	0.020567	10	0%	0.70	92.5	0.602	0.32
E1+E2	38104	3.8104	0.038104	13	0%	0.70	82.8	0.602	0.53
E3	15116	1.5116	0.015116	9	0%	0.70	97	0.602	0.25
E1+E2+E3	53220	5.322	0.05322	15	0%	0.70	76.3	0.602	0.68
E4	17007	1.7007	0.017007	10	0%	0.70	92.5	0.602	0.26
E1+E2+E3+E4	70227	7.0227	0.070227	17	0%	0.70	71.7	0.602	0.84

CULVERT 1 DRAINS CATCHMENT J AND H UNDER ROAD. TOTAL FLOW OFF CATCHMENT = 0.83m³/s.
CAPACITY OF 675mmØ CULVERT WITH 1.15m OF HEAD ABOVE INVERT = 0.83m³/s.

CULVERT 2 DRAINS CATCHMENT G-E AND A-D UNDER ROAD. TOTAL FLOW OFF CATCHMENT = 1.85m³/s.
CAPACITY OF 1050mmØ CULVERT WITH 1.36m OF HEAD ABOVE INVERT = 1.85m³/s.

DENOTES CATCHMENT BOUNDARIES

DENOTES DIRECTION OF SURFACE FLOWS

CATCH E4
1.698ha

CATCH E3
1.498ha

CATCH E2
2.06ha

CATCH E1
1.766ha

CULVERT 2
CH 539
1050mmØ

CATCH A
0.619ha

CATCH B
1.878ha

CATCH C
2.094ha

CATCH D
2.096ha

CATCH E
2.911ha

CATCH F
1.661ha

CULVERT 1
CH 195
675mmØ

CATCH G
5.618ha

CATCH H
3.344ha

CATCH J
3.677ha

PROPOSED
STAGE 1
DEVELOPMENT

PROPOSED
STAGE 2
DEVELOPMENT

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A			J.O.	T.H.

REV	DESCRIPTION	DATE	DRN.	APP.

0 20 40 80 120 160
SCALE 1:2000 AT A1 SIZE

Designed Date T.H.
Drawn J.O.
Approved Date T.H.
PS Number PS

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Project Details: ASHBOURNE DEVELOPMENT
YARRAWA ROAD MOSS VALE
IWTS ACCESS PLANS

Drawing Title: CATCHMENT PLAN

Sheet 07 of 08

Scale: 1:2000 @ A1

Project Ref	Stage No	Drawing No	Rev
18001	EMW	401	A

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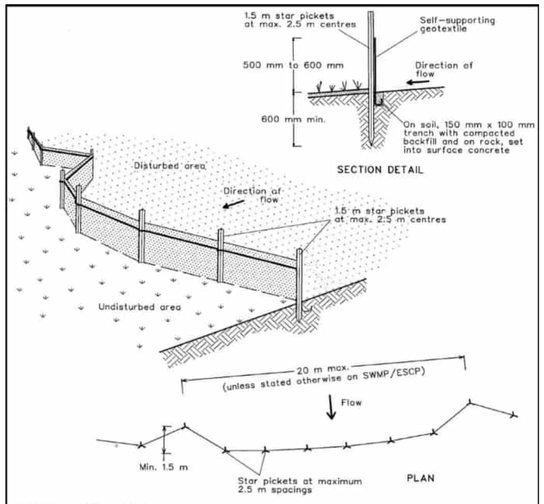


Construction Notes

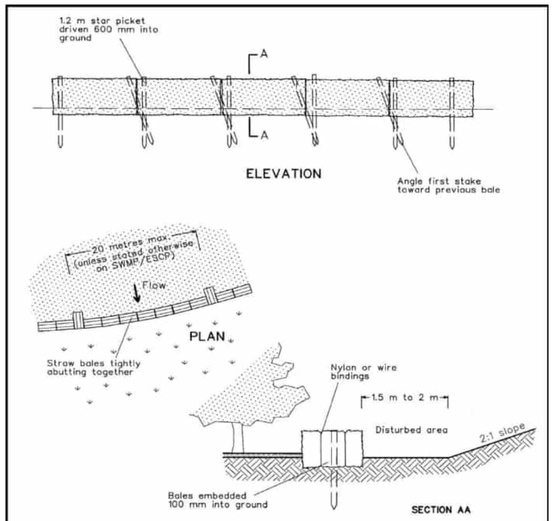
1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE **SD 6-8**

NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE LANDCOM'S MANUAL "MANAGING URBAN STORMWATER" 4TH EDITION, AUGUST 2004 .
2. WORKS SHALL BE UNDERTAKEN AS OUTLINED ON SHEET 3.
3. EROSION AND SEDIMENT CONTROL MEASURES AFFECTED BY WORKS ARE TO BE RE-ESTABLISHED PRIOR TO THE COMPLETION OF EACH DAY'S WORK.
4. THE CONTRACTOR IS TO STABILISE ALL STOCKPILES AND DISTURBED AREAS AS SOON AS THEY ARE FORMED TO FINAL LEVELS. STABILISATION TO BE BY HYDROSEEDING, OR AS DIRECTED BY THE SUPERINTENDENT AND/OR COUNCIL ENGINEER. ALL SEEDED AREAS ARE TO BE WATERED AT LEAST TWICE WEEKLY UNTIL GRASS IS ESTABLISHED OR COVERED WITH BITUMEN HAY MULCH. SEED MIXTURE FOR FOOTWAYS AND OTHER AREAS UNDER THE CONTROL OF COUNCIL ARE TO BE IN ACCORDANCE WITH COUNCIL'S SPECIFICATION. FOR OTHER AREAS, THE LIST OF PLANT SPECIES FOR TEMPORARY COVER IS:-
   JAPANESE MILLET AND OATS (RYECORN) AT 25kg/ha EACH - SPRING/SUMMER
   JAPANESE MILLET AT 10kg/ha AND OATS(RYECORN) AT 30kg/ha - AUTUMN/WINTER
   ALL SEEDED AREAS ARE TO BE WATERED TWICE WEEKLY UNTIL ESTABLISHED OR COVERED WITH BITUMEN STRAW MULCH.
5. WHERE SURFACE SLOPES ARE MORE THAN 6H:1V BITUMEN STRAW MULCH SHALL BE APPLIED AFTER SEEDING AT THE FOLLOWING RATES:-
   - MULCH 0.5kg/sqm
   - BITUMEN EMULSION 0.25l/sqm (50% WATER, 50% SLOW BREAKING ANIONIC EMULSION MIX
6. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS. SUCH MEASURES ARE TO BE TO THE SATISFACTION OF THE SUPERINTENDENT AND COUNCIL.
7. TOPSOIL SHALL BE RESPREAD ON CONSTRUCTION AREAS AND STABILISED AS SOON AS POSSIBLE WITHIN 60 DAYS OF DISTURBANCE. ALL DISTURBED AREAS ARE TO BE LEFT WITH A SCARIFIED SURFACE AT ALL TIMES TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING OF TOPSOIL.
8. FOLLOWING COMPLETION OF WORKS AND STABILISATION OF ALL DISTURBED SURFACES, ALL MATERIALS AND CONTROL MEASURES ARE TO BE REMOVED FROM SITE.
9. ALL SITE ACCESS TO BE ACHIEVED FROM DESIGNATED SITE ACCESS ONLY AS SHOWN. UNO OTHER ACCESS POINTS WILL BE PERMITTED.
10. SITE ACCESS SHALL BE PROTECTED BY THE INSTALLATION OF AN APPROVED SHAKER RAMP. SHAKER RAMP IS TO BE REGULARLY MAINTAINED TO ENSURE EFFECTIVENESS.
11. UPON COMPLETION OF FINAL EARTHWORKS OR AFTER WRITTEN DIRECTION OF COUNCIL, IMMEDIATE SILT CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14 DAYS.
12. THE AREA OVER ALL STORMWATER, POWER, TELEPHONE, GAS AND SEWER LINES NOT WITHIN STREETS IS TO BE MULCHED AND SEEDED AS SOON AS POSSIBLE BUT NO LATER THAN WITHIN 14 DAYS AFTER BACKFILL.
13. NO MORE THAN 150m OF TRENCH IS TO BE OPEN AT ANY ONE TIME.
14. ALL TEMPORARY EARTH BERMS, DIVERSION AND SEDIMENT BASIN EMBANKMENTS ARE TO BE TRACK ROLLED, SEEDED OR MULCHED OR SPRAYED WITH BITUMEN AS SOON AS THEY HAVE BEEN FORMED.
15. ALL FILLS ARE TO BE LEFT WITH A WINDROW AT LEAST 20cm HIGH AT THE TOP OF THE SLOPE AT THE END OF EACH DAY'S EARTHWORKS AND ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO "SEAL" THE EARTHWORKS.
16. STABILISATION OF ALL CUT AND FILL SLOPES SHALL BE COMMENCED WITHIN 14 DAYS OF COMPLETION OF FORMATION.
17. THE CONTRACTOR SHALL MAINTAIN AND PRODUCE ON REQUEST A LOGBOOK ON SITE DETAILING THE FOLLOWING:-
   - RECORDS OF ALL RAINFALL
   - DAILY CONDITION OF ALL EROSION AND SEDIMENT CONTROL MEASURES
   - ANY APPLICATION OF FLOCCULATION AGENTS TO BASINS
   - VOLUMES OF WATER DISCHARGED FROM BASINS
   - METHOD OF DISPOSAL OF WATER FROM BASINS
   - ANY ADDITIONAL REMEDIAL WORKS REQUIRED.

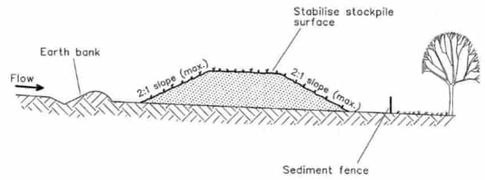
   THE ORIGINAL LOGBOOK SHALL BE ISSUED TO THE PROJECT MANAGER ON COMPLETION OF THE WORKS.
18. STOCKPILES TO BE MAX 2 METRE HIGH WITH SEDIMENT FENCING TO LOW SIDE LOCATED CLEAR OF WATERCOURSES
19. ALL STORMWATER PITS TO BE BLOCKED DURING CONSTRUCTION UNTIL SITE STABILISED.
20. DURING CONSTRUCTION WORKS ANY WORK AND STORAGE AREAS WHERE SPILLAGE MAY OCCUR MUST BE BUNDED. THE SIZE OF THE AREA TO BE BUNDED AND HEIGHT OF THE BUND WALLS MUST BE CALCULATED AS BEING EQUAL TO 110%OF THE TOTAL VOLUME STORED OR EQUAL TO THE LARGEST STORAGE CONTAINER, WHICH EVER IS GREATER. ALL PIPE WORK EXTENDING FROM THE BUNDED AREA MUST BE DIRECTED OVER THE BUND WALL AND HOSE COUPLINGS MUST BE PLACED SUCH THAT LEAKS AND SPILLAGE'S ARE CONTAINED. THE AREAS MUST BE GRADED TO A PIT/SUMP TO FACILITATE EMPTYING. ANY FILL USED MUST BE VALIDATED & SUITABLE & FREE OF SALINE & CONTAMINATION



Construction Notes

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

STRAW BALE FILTER **SD 6-7**



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

STOCKPILES **SD 4-1**

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Project Details	ASHBOURNE DEVELOPMENT YARRAWA ROAD MOSS VALE IWTS ACCESS PLANS
Drawing Title	SOIL & WATER MANAGEMENT NOTES

Sheet 08 of 08
Scale: NOT TO SCALE
N

Project Ref	Stage No	Drawing No	Rev
18001	EMW	551	A

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PART 5 - INTERIM WASTEWATER TREATMENT SCHEME

ASHBOURNE - DEVELOPMENT
INTERIM WASTEWATER TREATMENT SCHEME

TRUEWATER COMMUNITY

PEOPLE • WATER • ENVIRONMENT

DRAWING SCHEDULE	
DRG NO.	**DRAWING TITLE**
ASHB-IWTS-G-0001	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
ASHB-IWTS-G-0002	AREA OF OPERATIONS - LOCAL GOVERNMENT BOUNDARY
ASHB-IWTS-G-0003	AREA OF OPERATIONS - LOT AND DP IDENTIFICATION
ASHB-IWTS-G-0004	AREA OF OPERATIONS - BOUNDARY OF OPERATIONS
ASHB-IWTS-H-0001	INSTRUMENTATION LIST
ASHB-IWTS-H-0002	PROCESS FLOW DIAGRAM
ASHB-IWTS-H-0003	OVERALL SITE PLAN - GENERAL LOCATION
ASHB-IWTS-H-0004	SITE LOCALITY PLAN - IWTS LAYOUT
ASHB-IWTS-H-0005	KUBOTA IWTS FINISHED COMPOUND
ASHB-IWTS-H-0006	KUBOTA IWTS DETAIL
ASHB-IWTS-H-0007	KUBOTA IWTS AIR & ELECTRICAL CONFIGURATION
ASHB-IWTS-H-0008	KUBOTA IWTS ELEVATION DETAIL
ASHB-IWTS-H-0009	INTERIM INFLUENT STORAGE LAGOON DETAIL
ASHB-IWTS-H-0010	INTERIM EFFLUENT STORAGE LAGOON DETAIL
ASHB-IWTS-H-0011	INTERIM EFFLUENT DISPERSAL GENERAL SITE PLAN
ASHB-IWTS-H-0012	INTERIM EFFLUENT DISPERSAL SPECIFICATION

JOB STATUS CONCEPT		PROJECT ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME	CLIENT Aoyuan building a healthy lifestyle
DRAWING TITLE COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE			
REV. A	DRAWING NO. ASHB-IWTS-G-0001	SCALE: 1:10500	DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

GENERAL LEGEND

- 25 — 25mm POLYETHYLENE LINE (TREATED EFFLUENT)
- 32 — 32mm POLYETHYLENE LINE (TREATED EFFLUENT)
- 40 — 40mm POLYETHYLENE LINE (TREATED EFFLUENT)
- 50 — 50mm POLYETHYLENE LINE (TREATED EFFLUENT)
- 63 — 63mm POLYETHYLENE LINE (TREATED EFFLUENT)
- -20- — 20mm UPVC PIPE
- -25- — 25mm UPVC PIPE
- -40- — 40mm UPVC PIPE
- -50- — 50mm UPVC PIPE
- -100- — 100mm UPVC Pipe
- - 50 - - 50mm DWV PIPE
- - 100 - - 100mm DWV PIPE
- - 150 - - 150mm DWV PIPE
- 25PW — 25mm POTABLE WATER POLY LINE
- 32PW — 32mm POTABLE WATER POLY LINE
- 40PW — 40mm POTABLE WATER POLY LINE
- 415V — 415V POWER SUPPLY
- 240V — 240V POWER SUPPLY
- IWTS INTERNAL ELECTRICAL AND COMMUNICATIONS
- 17mm PC/RG DRIP LINE
- AIR LINE
- FLUSH BOX W/ FLUSH VALVE
- 5-WAY INDEXING VALVE
- SPRINKLER HEAD
- S — SAMPLE TESTING POINT
- T — ON-SITE TAP - WATER POINT LOCATION
- HR — HOSE REEL
- FH — FIRE HYDRANT
- SG — SIGHT GLASS
- P — POWER LOCATION - SINGLE PHASE
- P — POWER LOCATION - THREE PHASE

- VALVE - GENERIC
- VALVE - NORMALLY CLOSED
- BALL VALVE
- BALL VALVE - NORMALLY CLOSED
- GATE VALVE
- GATE VALVE - NORMALLY CLOSED
- KNIFE EDGE GATE VALVE
- KNIFE EDGE GATE VALVE NORMALLY CLOSED
- BUTTERFLY VALVE
- GLOBE VALVE
- BACKFLOW PREVENTER
- NON RETURN VALVE
- DIAPHRAGM VALVE
- PLUG VALVE
- PRESSURE REGULATING VALVE (SELF CONTAINED PRV OR PSV)
- SAFETY/RELIEF VALVE
- VAC / PRESS — PRESSURE & VACUUM RELIEF VALVE
- FLAP VALVE
- FOOT VALVE
- SLIDE VALVE
- PENSTOCK
- STOPBOARD FRAME
- STOPBOARD/BULKHEAD GATE (NORMALLY OPEN)
- STOPBOARD/BULKHEAD GATE (NORMALLY CLOSED)
- THREE PORT VALVE
- FOUR PORT VALVE W/ SOLENOID
- THREE WAY SOLENOID VALVE
- SOLENOID VALVE
- BACK PRESSURE VALVE
- REDUCER
- FLEXIBLE HOSE

- STATICALLY LOADED
- SPRING LOADED
- WEIGHT ACTUATOR
- FLOAT ACTUATOR
- H — MANUAL OPERATED VALVE - GENERIC
- MOTOR OPERATED VALVE - GENERIC
- CONTROL VALVE OPENS ON FAILURE OF ACTUATING ENERGY
- CONTROL VALVE CLOSES ON FAILURE OF ACTUATING ENERGY
- CONTROL VALVE RETAINS POSITION ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (GENERIC - SINGLE ACTUATING)
- PNEUMATIC CYLINDER ACTUATOR (SINGLE ACTUATING, SPRING RETURN) OPENS ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (SINGLE ACTUATING, SPRING RETURN) CLOSES ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (SINGLE ACTUATING, SPRING RETURN) RETAINS POSITION ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (GENERIC - DOUBLE ACTUATING)
- PNEUMATIC CYLINDER ACTUATOR (DOUBLE ACTUATING) OPENS ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (DOUBLE ACTUATING) CLOSES ON FAILURE OF ACTUATING ENERGY
- PNEUMATIC CYLINDER ACTUATOR (DOUBLE ACTUATING) RETAINS POSITION ON FAILURE OF ACTUATING ENERGY
- MASS FLOWMETER
- ULTRASONIC FLOWMETER
- MAGNETIC FLOWMETER
- TURBINE FLOWMETER
- POSITIVE DISPLACEMENT FLOWMETER

- EXHAUST FAN
- WEIR
- DECANTER
- PULSATION DAMPENER
- SPRAY NOZZLE
- AIR DIFFUSER
- DIFFUSER
- HUMIDIFIER
- WEIGHTED NON-RETURN INLET DAMPER
- DAMPER
- C — CHORINE CONTACT POINT
- INJECTOR
- AIR LIFT
- AIR OR GAS FILTER
- MEMBRANE FILTER
- STRAINER
- Y STRAINER
- DISK FILTER
- STEAM TRAP
- FLEXIBLE COUPLING
- EXPANSION JOINT
- FLANGE
- CAP FLANGE
- HOSE COUPLING
- PRESSURE UNION
- IA — SERVICE SUPPLY
- TP # — TIE-IN POINT
- FALL — DIRECTION OF FALL
- SCREW CONVEYOR
- BELT CONVEYOR
- VACUUM BREAKER

- PUMP, CENTRIFUGAL
- PUMP, SUBMERSIBLE
- PUMP, AXIAL
- PUMP, SUBMERGED SUCTION
- PUMP, POSITIVE DISPLACEMENT
- PUMP, METERING
- PUMP, ROTARY LOBE
- BLOWER OR FAN
- AIR COMPRESSOR GENERAL
- COMPRESSOR POSITIVE DISPLACEMENT
- COMPRESSOR CENTRIFUGAL
- SAFETY SHOWER C/W EYE WASH
- STATIC MIXER
- VIBRATOR
- MACERATOR
- HEATING/COOLING COIL
- AIR HEATER
- AIR COOLER
- FLOATING SURFACE AERATOR
- FIXED SURFACE AERATOR
- MIXER
- BAR SCREEN
- SCREW SCREEN
- AERATED SCREEN

- PRESSURE GAUGE
- INSTRUMENT, FRONT MOUNTED IN CENTRAL PANEL
- INSTRUMENT, REAR MOUNTED IN CENTRAL PANEL
- INSTRUMENT, FRONT MOUNTED IN LOCAL PANEL
- INSTRUMENT, REAR MOUNTED IN LOCAL PANEL
- COMPUTER INTERFACE WITH SHARED FUNCTIONS FOR DISPLAY & CONTROL LOCALLY MOUNTED
- COMPUTER INTERFACE WITH SHARED FUNCTIONS FOR DISPLAY & CONTROL CENTRAL PANEL MOUNTED
- COMPUTER INTERFACE WITH SHARED FUNCTIONS FOR DISPLAY & CONTROL LOCAL PANEL MOUNTED
- STATUS INDICATOR LOCALLY MOUNTED
- STATUS INDICATOR, FRONT MOUNTED IN CENTRAL PANEL
- STATUS INDICATOR, REAR MOUNTED INCENTRAL PANEL
- STATUS INDICATOR, FRONT MOUNTED IN LOCAL PANEL
- STATUS INDICATOR, REAR MOUNTED IN LOCAL PANEL
- PLC — PLC
- M — MOTOR CONTROL CENTRE
- I — INTERLOCK
  I = UNDEFINED LOGIC
  OR = LOGICAL OR
  & = LOGICAL AND
  NOT = LOGICAL NOT
- VSD — VARIABLE SPEED DRIVE
- MF — MOTOR
  MF = FIXED. MV = VARIABLE
- MF — MOTOR - SUBMERSIBLE
  MF = FIXED. MV = VARIABLE
- I / M — MANUAL INTERLOCK WITH DESIGNATED MAN/PLC SELECTOR SWITCH
- DIAPHRAGM SEAL
- EARTH
- AUDIBLE ALARM
- DWG NUMBER — CONTINUATION TAG
- X — X — LIMIT OF CONTRACT/ SPEC. CHANGE

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-

REFERENCE DRAWING	NUMBER
-	-

APPROVED BY	INITIAL
James Mahoney	
Daniel Mahoney	

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PEOPLE • WATER • ENVIRONMENT

CLIENT: Aoyuan — building a healthy lifestyle

PROJECT: **ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME**

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

SCALE: NTS

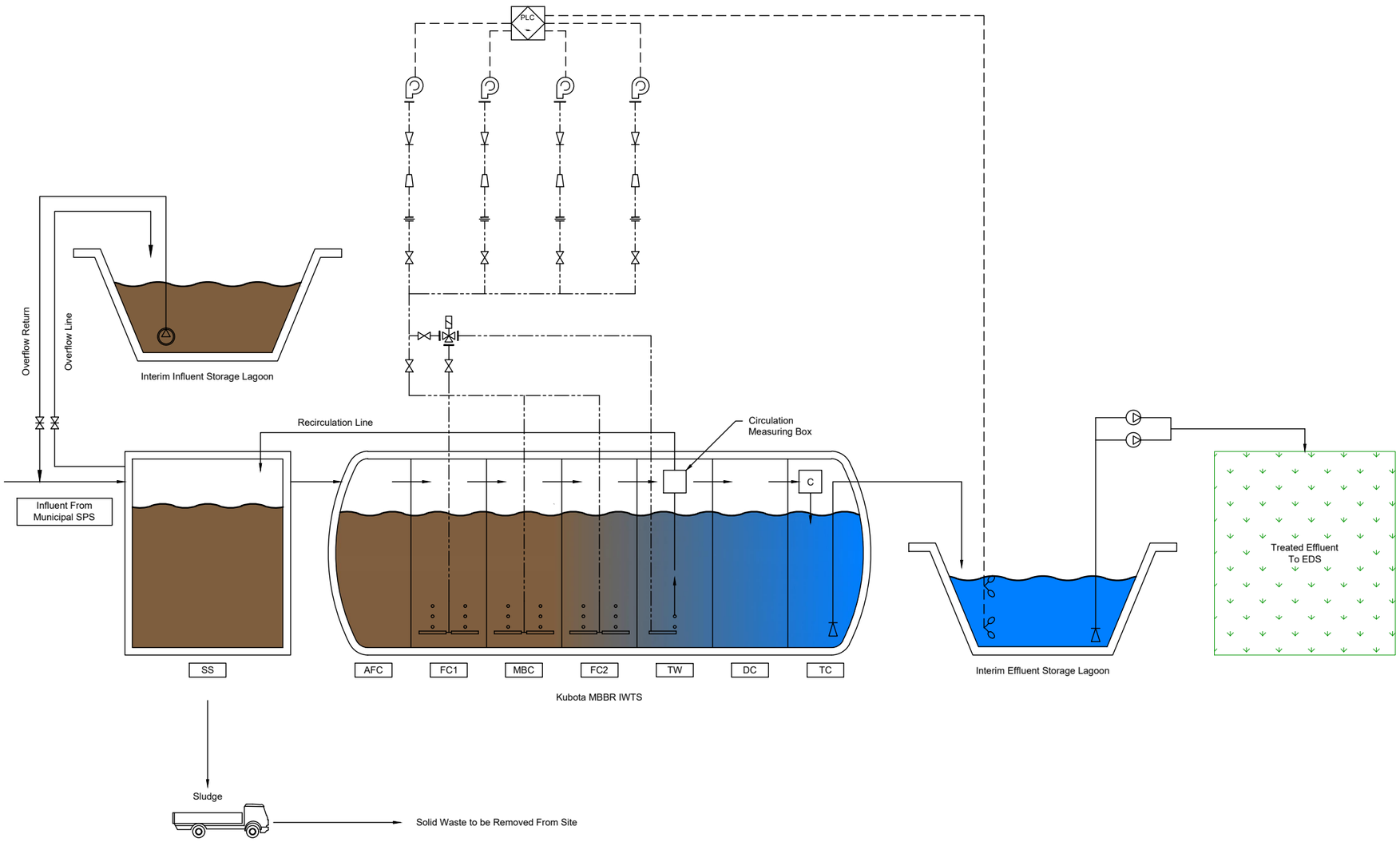
JOB STATUS: **CONCEPT**

DRAWING TITLE: **INSTRUMENTATION LIST**

DRAWING NO.: **ASHB-IWTS-H-0001**

REV.: **A**

Tank Name List		
Parts	Symbol	Tank Name
RC	EQ	Equalisation Tank
	SS	Sludge Storage Tank
FRP	AFC	Anaerobic Filter Chamber
	FC1	No.1 Filtration Chamber
	MBC	Moving Bed Chamber
	FC2	No.2 Filtration Chamber
	TW	Treated Water Chamber
	DC	Disinfection Chamber
	TC	Transfer Chamber



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

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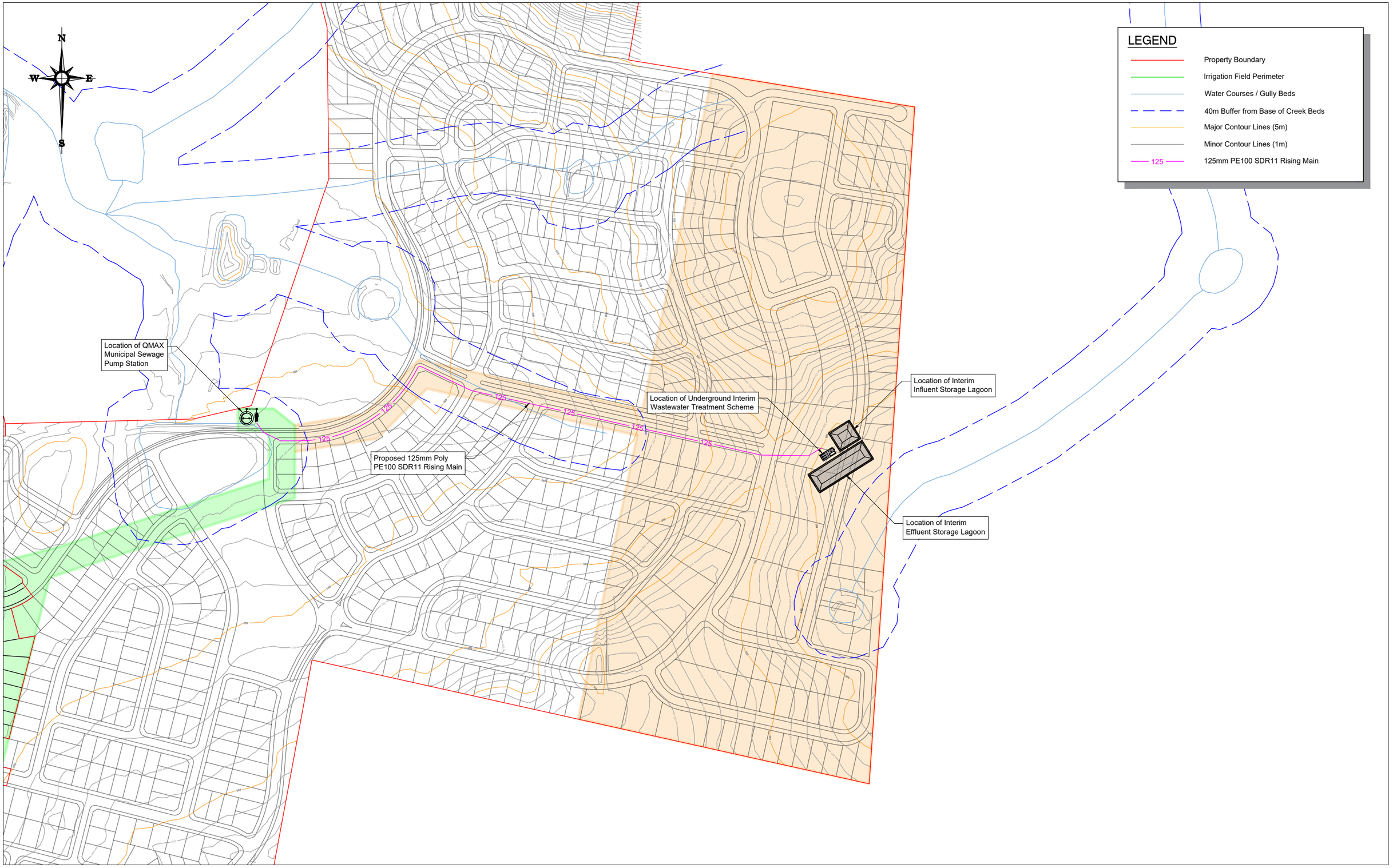
SCALE: NTS

JOB STATUS
CONCEPT

DRAWING TITLE
PROCESS FLOW DIAGRAM

DRAWING NO.
ASHB-IWTS-H-0002

REV.
A



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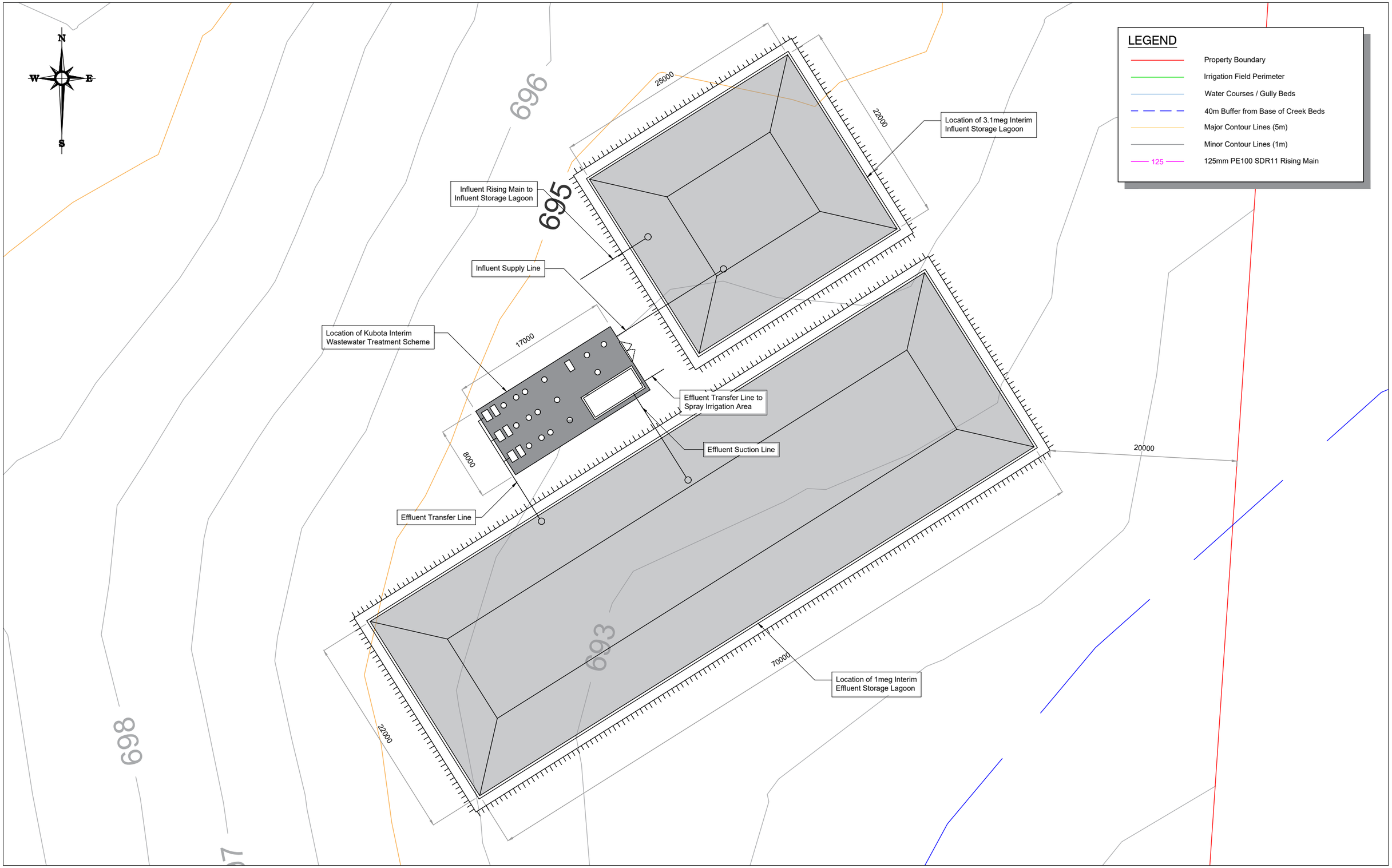
SCALE: 1:4000

JOB STATUS
CONCEPT

DRAWING TITLE
OVERALL SITE PLAN - GENERAL LOCATION

DRAWING NO.
ASHB-IWTS-H-0003

REV.
A



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
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							Daniel Mahoney	

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DISCLAIMER
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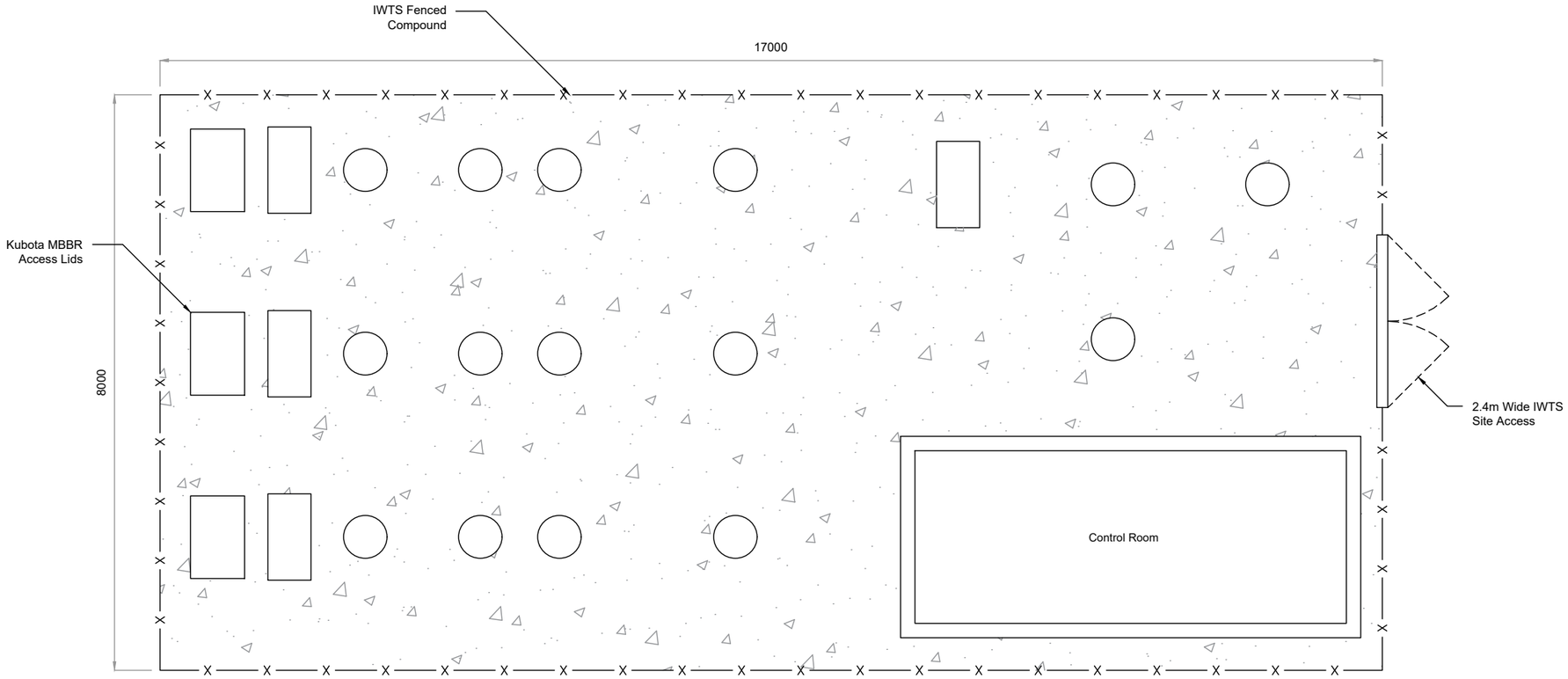
SCALE: 1:375

JOB STATUS
CONCEPT

DRAWING TITLE
SITE LOCALITY PLAN - IWTS LAYOUT

DRAWING NO.
ASHB-IWTS-H-0004

REV.
A



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
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							Daniel Mahoney	

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DISCLAIMER
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SCALE: 1:75

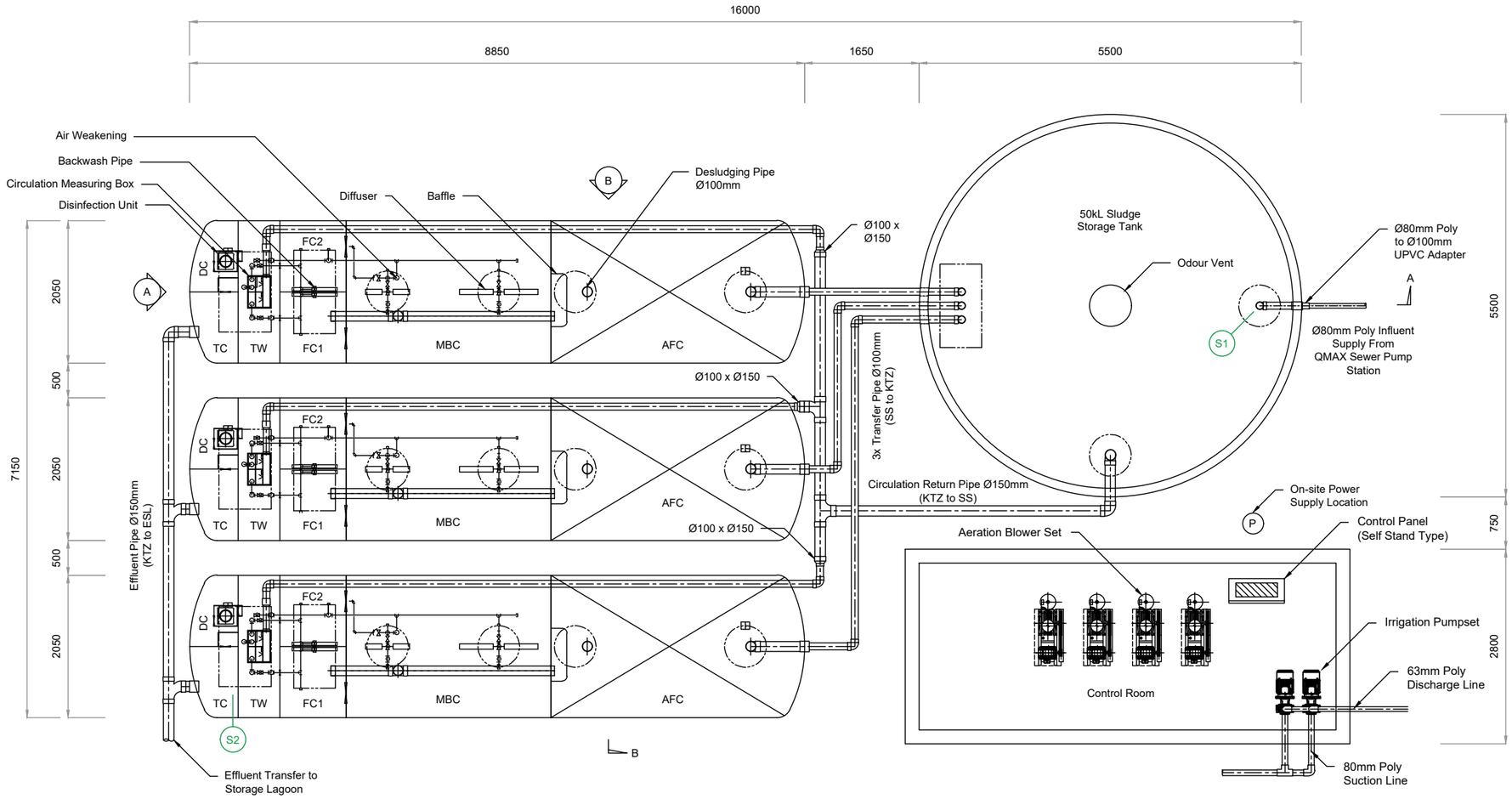
JOB STATUS
CONCEPT

DRAWING TITLE
KUBOTA IWTS FINISHED COMPOUND

DRAWING NO.
ASHB-IWTS-H-0005

REV.
A

Tank Name List		
Parts	Symbol	Tank Name
RC	EQ	Equalisation Tank
	SS	Sludge Storage Tank
FRP	AFC	Anaerobic Filter Chamber
	FC1	No.1 Filtration Chamber
	MBC	Moving Bed Chamber
	FC2	No.2 Filtration Chamber
	TW	Treated Water Chamber
	DC	Disinfection Chamber
	TC	Transfer Chamber



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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DISCLAIMER
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SCALE: 1:75

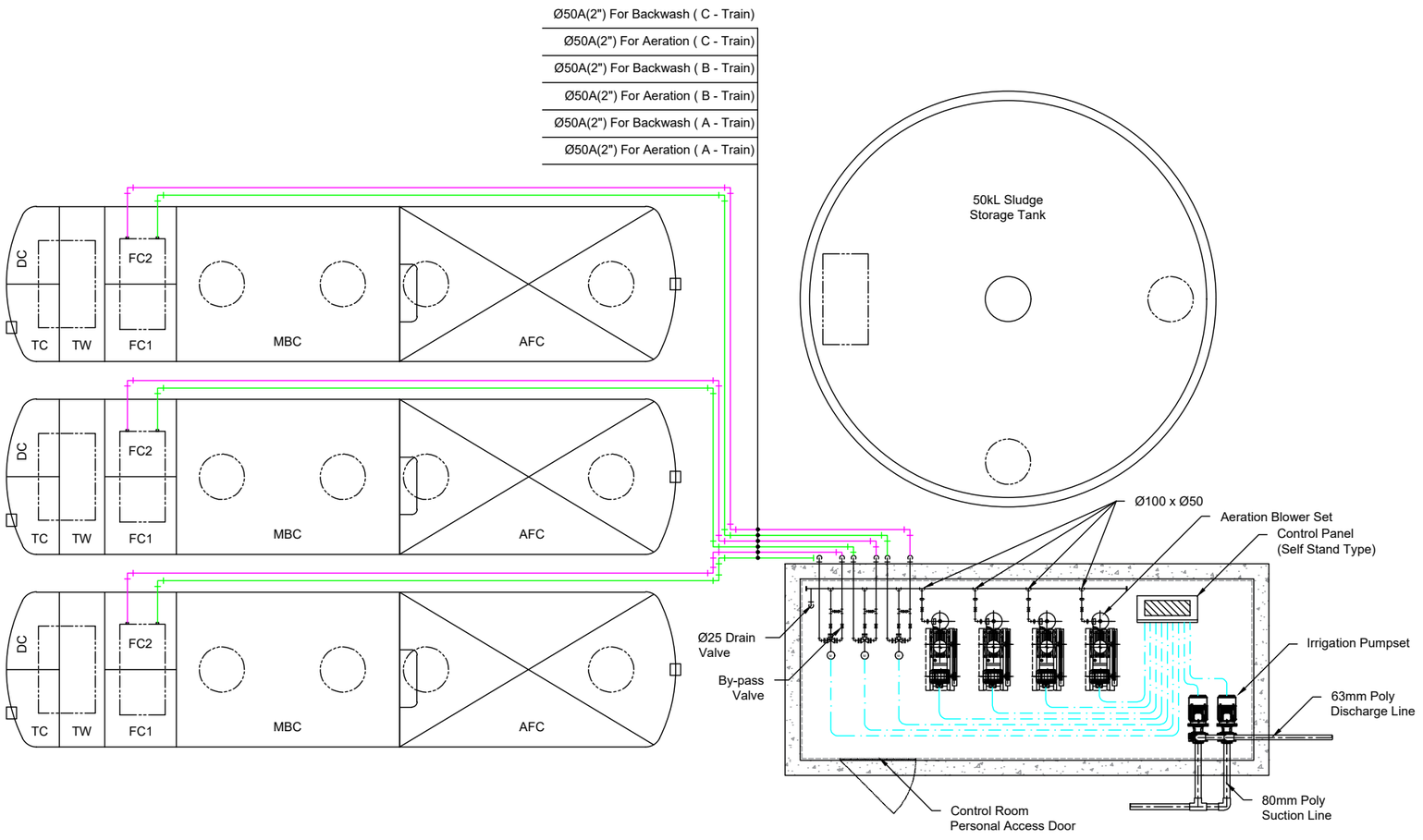
JOB STATUS
CONCEPT

DRAWING TITLE
KUBOTA IWTS DETAIL

DRAWING NO.
ASHB-IWTS-H-0006

REV.
A

Tank Name List		
Parts	Symbol	Tank Name
RC	EQ	Equalisation Tank
	SS	Sludge Storage Tank
FRP	AFC	Anaerobic Filter Chamber
	FC1	No.1 Filtration Chamber
	MBC	Moving Bed Chamber
	FC2	No.2 Filtration Chamber
	TW	Treated Water Chamber
	DC	Disinfection Chamber
	TC	Transfer Chamber



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
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							Daniel Mahoney	

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DISCLAIMER
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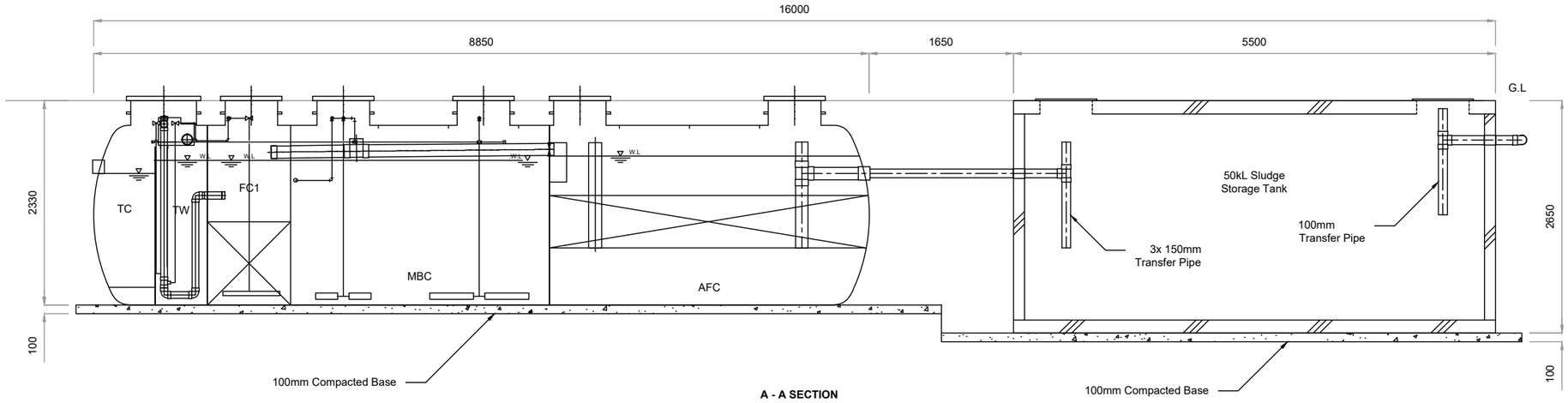
SCALE: 1:75

JOB STATUS
CONCEPT

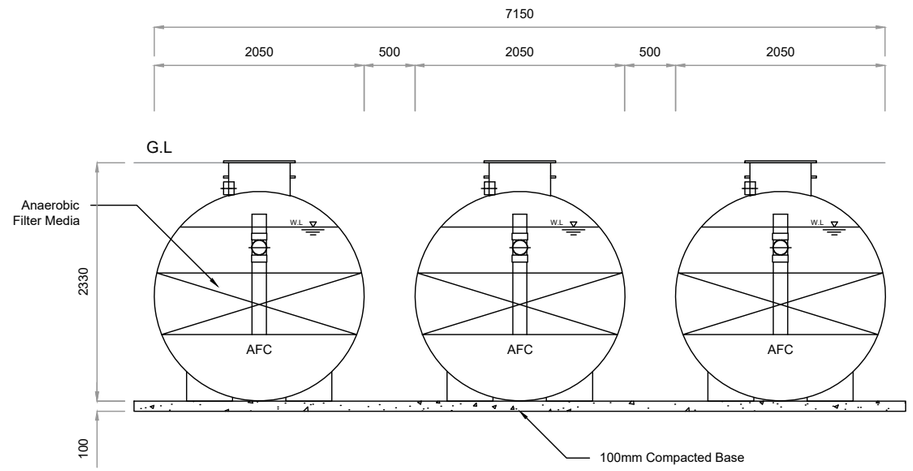
DRAWING TITLE
KUBOTA IWTS AIR & ELECTRICAL CONFIGURATION

DRAWING NO.
ASHB-IWTS-H-0007

REV.
A



A - A SECTION



B - B SECTION

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
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							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

SCALE: 1:60

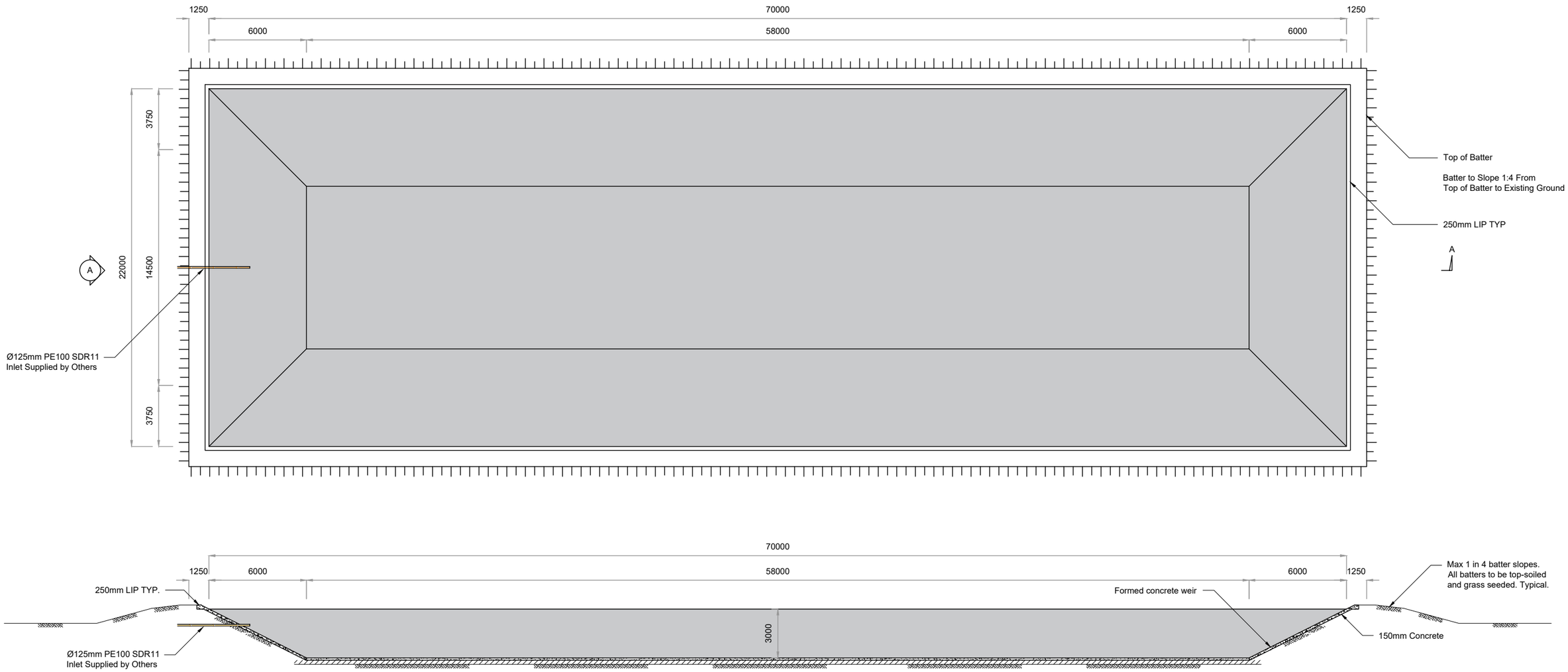
JOB STATUS
CONCEPT

DRAWING TITLE
KUBOTA IWTS ELEVATION DETAIL

DRAWING NO. **ASHB-IWTS-H-0008**

REV. **A**

INTERIM INFLUENT STORAGE = 3100m^3



A - A Section

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
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ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

SCALE: 1:250

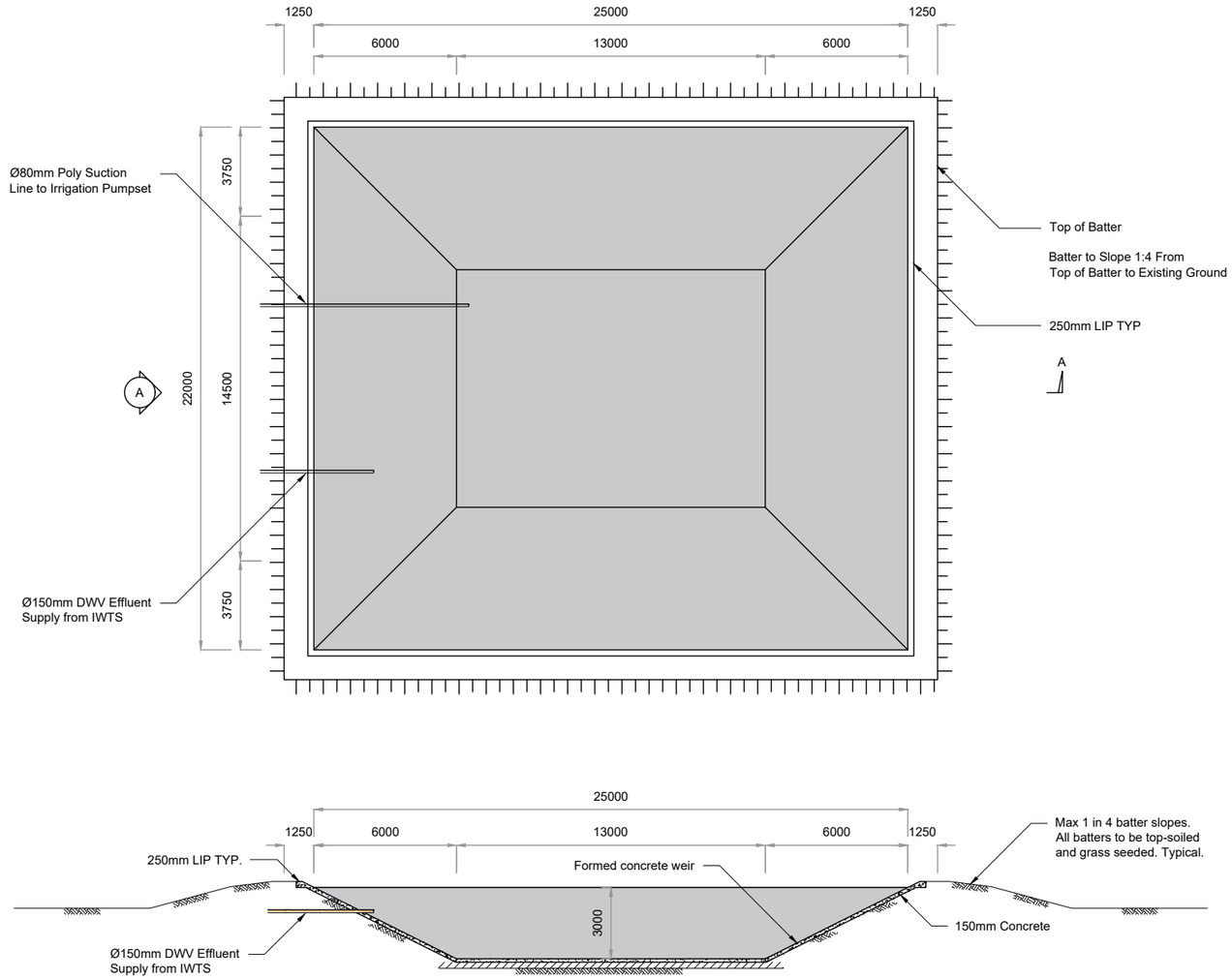
JOB STATUS
CONCEPT

DRAWING TITLE
INTERIM INFLUENT STORAGE LAGOON DETAIL

DRAWING NO. **ASHB-IWTS-H-0009**

REV. **A**

INTERIM EFFLUENT STORAGE = 1000m^3



A - A Section

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							APPROVED BY	INITIAL
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							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
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SCALE: 1:250

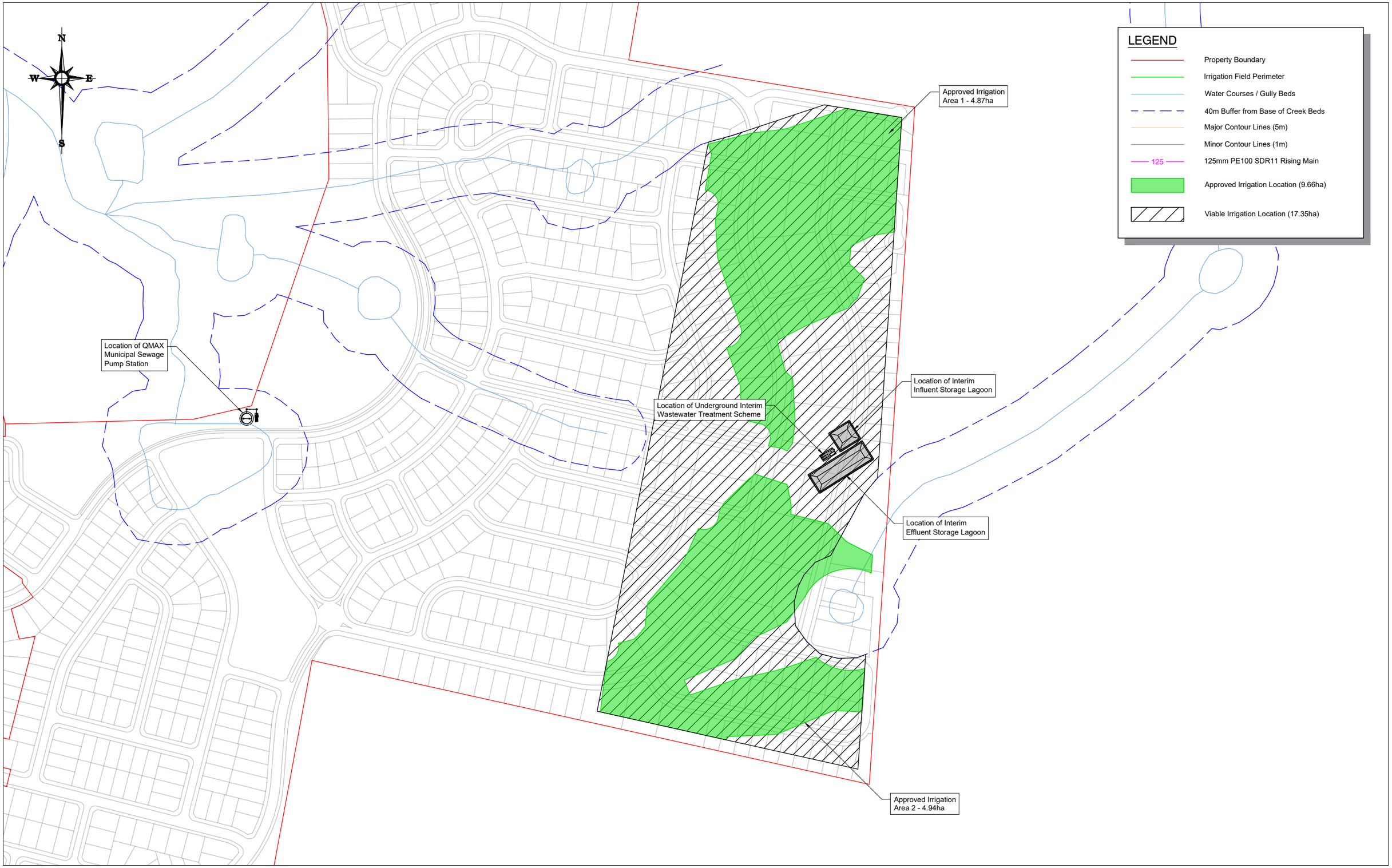
JOB STATUS
CONCEPT

DRAWING TITLE
INTERIM EFFLUENT STORAGE LAGOON DETAIL

DRAWING NO. **ASHB-IWTS-H-0010**

REV. **A**

PART 6 - INTERIM EFFLUENT DISPERSAL SYSTEM (EDS)



REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							-	-
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							James Mahoney	
							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
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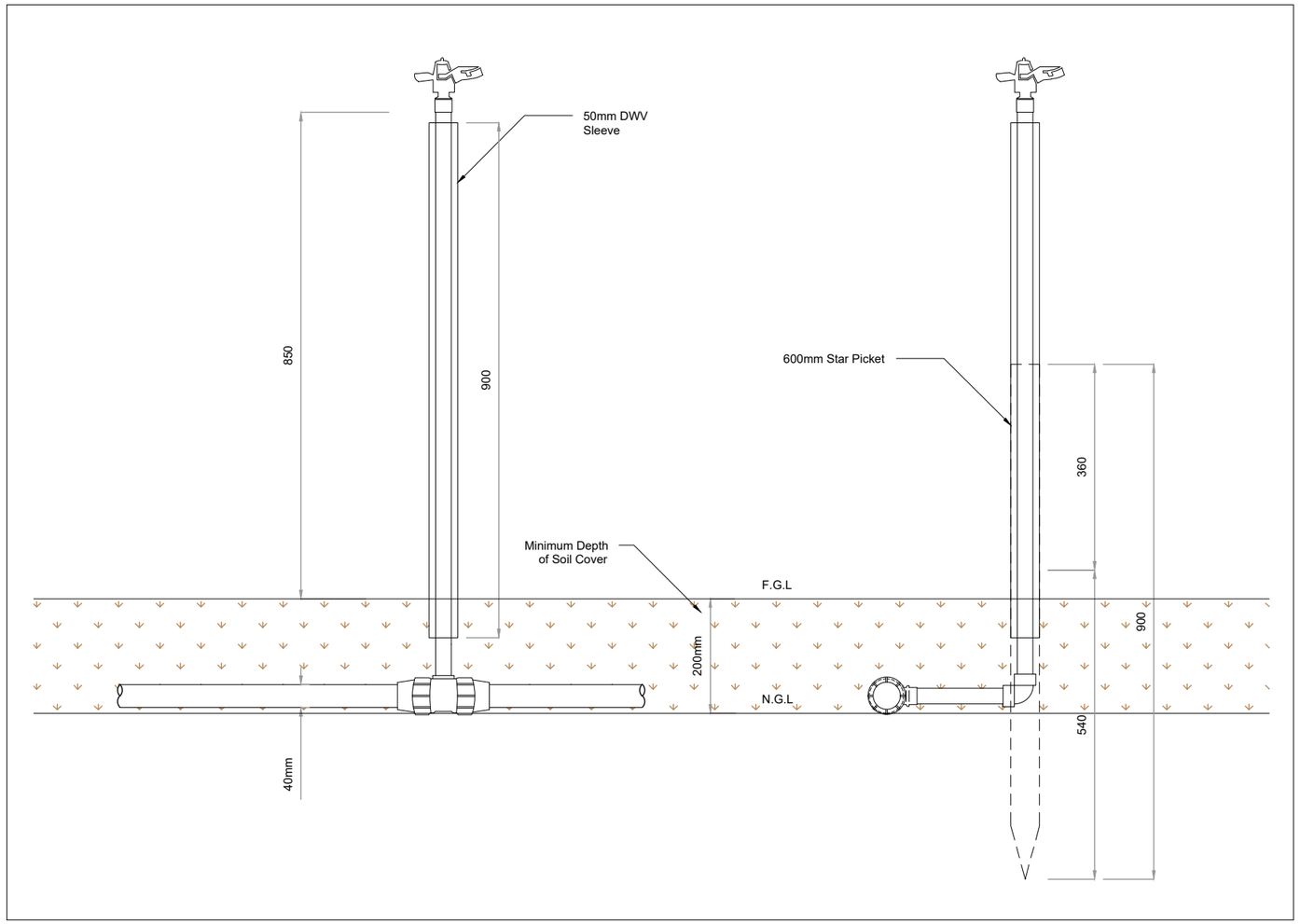
SCALE: 1:4000

JOB STATUS
CONCEPT

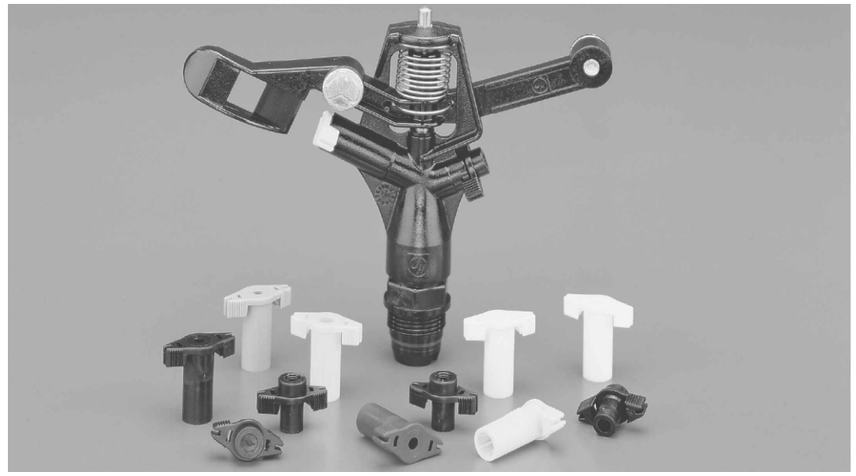
DRAWING TITLE
INTERIM EFFLUENT DISPERSAL GENERAL SITE PLAN

DRAWING NO. **ASHB-IWTS-H-0011**

REV. **A**



GENERAL SPRINKLER AND
RISER CONFIGURATION



True Water Rain Sprinkler

Irrigation Specifications - Sprinkler	
Irrigation Zone	4
Area per Zone	-
Sprinkler per Zone	7
Spray Diameter	26m (Approx)
Nozzle Type	4.5mm x 4.5mm
Flow Rate per Nozzle	32L / min @ 250 kPa
Flow Rate per Zone	224L / min @ 250 kPa
Design Flow Rate	224L / min or 3.73 l/s

Performance Chart - Double Jet

Size (mm)	3.7 x 2.5		4.1 x 2.8		4.4 x 3.2		4.5 x 4.5		5.4 x 3.0		6.1 x 3.2		7.1 x 2.5	
kPa	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)	Flow Lpm	Diameter (m)
200	15.8	24.4	19.7	24.9	22.2	25.6	25.2	26.3	29.8	27.6	31.7	28.4	44.6	29.8
250	17.7	25.5	22.1	25.8	24.9	26.3	32.0	27.8	33.5	29.3	41.5	30.1	50.1	31.7
300	19.5	25.8	24.4	27.3	27.3	27.6	34.3	29.3	36.7	31.4	44.8	33.0	55.0	34.4
350	21.1	26.5	26.2	27.5	29.5	27.7	37.1	27.7	39.8	31.3	49.3	32.7	59.4	34.4
400	22.2	26.8	27.9	28.0	31.3	28.5	39.1	30.5	41.7	32.4	52.0	34.7	63.0	35.8
450	24.0	28.0	29.8	28.2	33.6	29.0	42.0	30.8	45.2	31.7	56.0	32.5	67.5	33.6
Code	10150033700		10150034100		10150034400		10150034900		10150035400		10150036100		10150037100	

REV	DATE	REVISIONS	DRAWN	DESIGN	APP	REF NO.	REFERENCE DRAWING	NUMBER
A	25/10/22	CONCEPT DESIGN	CDN	JM	JM	-	-	-
							-	-
							-	-
							APPROVED BY	INITIAL
							James Mahoney	
							Daniel Mahoney	

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PROJECT
ASHBOURNE DEVELOPMENT, MOSS VALE - INTERIM WASTEWATER TREATMENT SCHEME

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY.

SCALE: NTS

JOB STATUS
CONCEPT

DRAWING TITLE
INTERIM EFFLUENT DISPERSAL SPECIFICATION

DRAWING NO. **ASHB-IWTS-H-0012**

REV. **A**