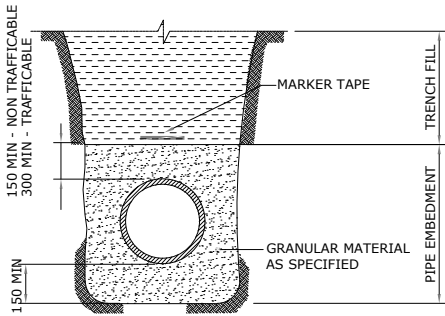


DRAWING TITLE		
TRUNK SEWER COVER PLAN		
PROJECT No.	DRAWING No.	REVISION
24-0750	0600	E

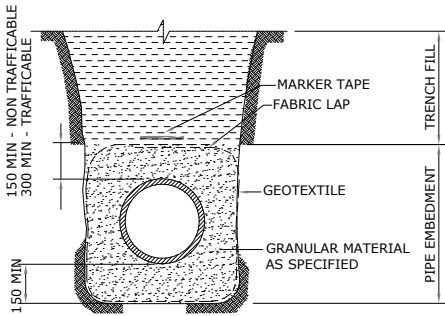
- GENERAL NOTES:**
- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER AND SEWERAGE CODE SPECIFICATIONS AND STANDARDS (SEQCODE).
 - UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
 - THE CONSTRUCTION OF THE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE SEQ SERVICE PROVIDER.
 - ALL DESIGN AND CONSTRUCTION ACTIVITIES UNDERTAKEN SHALL COMPLY WITH CURRENT WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND LEGISLATION/
 - ALL PIPES AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
 - WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE TESTED BY A NATA CERTIFIED TEST LABORATORY IN ACCORDANCE WITH THE SEQ CODE. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED WORKS WILL NOT BE ISSUED BY THE SEQ SERVICE PROVIDER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
 - WHERE PIPES HAVE A GRADE OF 1 IN 20 OR STEEPER, BULKHEADS OR TRENCHSTOPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEQ-SEW-1206-1.
 - THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
 - EXISTING MAINS SHALL BE DISUSED /ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ CODE.
 - HOLD POINT:** ONCE THE BASE OF MANHOLES HAVE BEEN POURED, CONSTRUCTION SHALL ONLY RE-COMMENCE ONCE THE SUPERINTENDENT AND/OR ENGINEER HAVE INSPECTED THE WORKS
 - BENCH MARK AND LEVELS TO AHD.
 - THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO CONSTRUCT THE WORKS AS DOCUMENTED AND STRICTLY IN ACCORDANCE WITH THE RELEVANT AUTHORITY STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
 - EXISTING SERVICES RELEVANT TO THE PROJECT HAVE BEEN CONSIDERED THROUGHOUT DESIGN AND IS BASED ON SURVEY INFORMATION PROVIDED BY THE SURVEYOR AND THE CONTRACTOR. THE RPEQ WHO CERTIFIED THE DESIGN OR THE PRINCIPAL'S CONSTRUCTION RPEQ HAVE RELIED UPON THIS INFORMATION TO INFORM THE DESIGN. THE CONTRACTOR SHALL VERIFY THE POSITION OF ANY UNDERGROUND SERVICES WITHIN THE AREAS OF WORKS AND SHALL BE RESPONSIBLE FOR MAKING GOOD ANY DAMAGE THERETO. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT ONLY BY THE SERVICE OWNER AUTHORITY UNLESS APPROVED OTHERWISE.
 - PRIOR TO COMMENCING WORK, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL RELEVANT LOCAL AUTHORITY PERMITS.
 - THE CONTRACTOR SHALL NOT COMMENCE THE DEMOLITION OF ANY EXISTING BUILDINGS AND/OR STRUCTURES WITHOUT APPROVAL FROM THE SUPERINTENDENT.
 - THE CONTRACTOR SHALL APPLY INDUSTRY BEST PRACTICE SO WORKS SHALL NOT DISTURB OR AFFECT NEARBY RESIDENTS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES. CONTRACTOR TO ENSURE THAT ACCESS AND SERVICES TO EXISTING PROPERTIES ARE AVAILABLE AT ALL TIMES.
 - THE CERTIFICATION OF THIS DESIGN IS BASED ON SURVEY AND POTHOLE INFORMATION PROVIDED BY THE SURVEYOR AND/OR CONTRACTOR AT THE TIME OF DESIGN. PRIOR TO COMMENCEMENT OF WORKS, THE CONTRACTOR SHALL VERIFY LEVELS OF EXISTING SERVICE CROSSINGS AND CONNECTION POINTS AND NOTIFY THE RPEQ WHO CERTIFIED THE DESIGN OR THE PRINCIPAL'S CONSTRUCTION RPEQ OF ANY DISCREPANCIES BETWEEN ACTUAL AND PROPOSED DESIGN LEVELS. THE CERTIFICATION OF THIS DESIGN IS BASED ON SURVEY AND POTHOLE INFORMATION PROVIDED BY THE SURVEYOR AND CONTRACTOR AT THE TIME OF DESIGN.
 - THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE APPROVED VEGETATION MANAGEMENT PLAN, WHERE APPLICABLE. WHEN IN DOUBT, ALL EXISTING TREES ARE TO REMAIN UNLESS DIRECTED OTHERWISE.
 - THE CONTRACTOR SHALL NOTE DURING THE COURSE OF THE WORKS WHEN JOINT INSPECTIONS WITH THE AUTHORITY AND THE SUPERINTENDENT ARE REQUIRED. THESE INCLUDE PRE-STARTS, SUBGRADES, PRE-SEALS, CLEARING, AND OTHER SUCH INSPECTIONS AS NOMINATED DURING THE PRE-START, IN THE APPROVAL AND THE SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE NO WORKS PROCEED PAST THE INSPECTION POINT UNTIL THE JOINT INSPECTION HAS BEEN SUCCESSFULLY COMPLETED.
 - ALL EXISTING ROADS THAT ARE DISTURBED DURING THE WORKS ARE TO BE REINSTATED

GENERAL NOTES – SEWER

- ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY THE SEQ SERVICE PROVIDER AT THE DEVELOPER'S COST.
- SEWERS SHALL BE DISUSED/ABANDONED IN ACCORDANCE WITH PROCEDURE SET OUT IN THE GRAVITY SEWER CODE.
- DETECTABLE MARKER TAPE SHALL BE USED FOR ALL SEWER PIPES (EXPECT FOR PIPE IN A STEEL ENVELOPER PIPE) IN ACCORDANCE WITH SEQ STANDARD DRAWING SEQ-SEW-1200 SERIES AND SEQ CODE STANDARDS.
- CONCRETE FOR MH CONSTRUCTION SHALL BE SPECIAL CLASS TO WSA PS-358 WITH REQUIREMENT OF CALCAREOUS AGGREGATES.
- CONSTRUCTION OF PAVEMENT IN UNSEALED ROAD SHOULDERS SHALL BE IN ACCORDANCE WITH SEQ STANDARD DRAWING SEQ-SEW-1205-1.
- FOR CAST-IN-SITU MAINTENANCE HOLES, COPING AND ANCHOR BRACKETS TO BE AS PER SEQ-SEW-1301-1, WITH AMENDMENTS AS SHOWN ON DETAIL DRAWING FOR PE LINED MANHOLES NECKS
 - TOP SLAB REINFORCEMENT TO BE AS PER SEQ-SEW-1301-26-A
- FOR POLYETHYLENE LINER (PE LINER) MAINTENANCE HOLES REFER TO SEQ-SEW-1101-6 A FOR INSTALLATION REQUIREMENTS



TYPE 3 SUPPORT
(NTS)



TYPE 4 SUPPORT - WITH GEOTEXTILE
(NTS)

PIPEWORK

- WHERE CONNECTING TO EXISTING PIPEWORK, THE LEVEL AND DIAMETER OF THE EXISTING PIPEWORK, SHALL BE CONFIRMED BY THE CONTRACTOR, PRIOR TO CONNECTION.
- ALL FLANGES SHALL BE IN ACCORDANCE WITH AS 4087, CLASS 14 FOR CAST IRON AND, CLASS 16 FOR DUCTILE IRON AND STEEL, UNO.
- ALL BACKING PLATES, NUTS, BOLTS AND WASHERS TO BE A MINIMUM GRADE 316 STAINLESS STEEL. COAT THE THREADED SECTIONS OF ALL STAINLESS STEEL BOLTS WITH AN ANTI-SEIZE LUBRICANT
- INSTALL VALVE IDENTIFICATION CAP ON ALL SPINDLES.
- GASKET MATERIAL TO COMPLY WITH AS4087 AND IN ACCORDANCE WITH WSA 109.
- ALL FLANGE BOLT HOLE ORIENTATIONS SHALL BE OFF-CENTRE UNO.
- ALL FLANGE BOLT SETS SHALL BE GRADE 316 STAINLESS STEEL. REFER AS 4087 - TABLE C1 FOR CLASS.
- FLANGE GASKET MATERIAL AND THICKNESS SHALL BE IN ACCORDANCE WITH AS 4087 - TABLE C1.
- THRUST AND PUDDLE FLANGES SHALL BE CAST CENTRALLY WITHIN WALLS UNLESS SHOWN OTHERWISE.
- ALL SPIGOT AND SOCKET DICL PIPEWORK SHALL BE CLASS PN35.
- ALL GATE AND REFLUX VALVES SHALL BE INTERNALLY AND EXTERNALLY COATED WITH A POLYMERIC COATING. ALL GATE VALVES SHALL BE RESILIENT SEATED. ALL REFLUX VALVES SHALL BE RESILIENT SEATED SWING FLEX CHECK VALVE OR SIMILAR APPROVED TOP OPENING VALVE.
- DUCTILE IRON FITTINGS MAY BE USED WITH DI & PVC PIPE. FITTINGS SHALL BE FBE COATED AND LINED. CEMENT LINED WITH A BITUMINOUS EXTERNAL COATING MAY BE USED WITH APPROVAL. DO NOT USE PVC FITTINGS.
- PE SLEEVING, COLOURED FOR THE PRODUCT IS REQUIRED ON ALL DI PIPE AND FITTINGS APPLIED IN ACCORDANCE WITH AS 3681. TWO THICKNESS REQUIRED BETWEEN FITTINGS AND THRUST BLOCK. REINSTATE ANY DAMAGED SLEEVING AS PER MANUFACTURER'S SPECIFICATIONS.
- DI SPIGOTS SHALL NOT BE FITTED INTO PVC SOCKETS.

PVC PIPE

- PVC PIPE SHALL NOT BE IN CONTACT WITH THRUST BLOCK CONCRETE.
- MAXIMUM SIZE OF DRILLED HOLES FOR SERVICE CONNECTIONS IN PVC PIPE TO BE 30% OF DN OR 50 (LOWER VALUE TO BE USED).
- PVC PIPE SHALL NOT BE BENT OR CURVED

EMBEDMENT MATERIAL AND DESIGN

- PLACEMENT OF EMBEDMENT, TRENCHFILL & COMPACTION TO MEET THE REQUIREMENTS OF THE SEQ CODE AND DESIGN DRAWINGS.
- EXCAVATE OR COMPACT TRENCH FLOOR TO PROVIDE A FLAT FIRM BASE TO SUPPORT BEDDING MATERIAL AND MINIMISE PIPELINE SETTLEMENT. WHEN EXCAVATED, REPLACE WITH GRANULAR MATERIAL AS SPECIFIED FOR BEDDING OR ADOPT SUPPORT AS REQUIRED.
- WHERE ADDITIONAL SUPPORT IS REQUIRED THIS SHALL BE REFERRED TO GEO-TECHNICAL ENGINEER FOR REVIEW. SUPPORT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 300 WITH A 20mm NOMINAL SIZE CRUSHED ROCK COMPLYING WITH TABLE G2 OR G3 OF AS2566.2. ADDITIONAL BEDDING SHALL BE WRAPPED WITH GEOTEXTILE TO FORM A SEPARATE GEOTEXTILE PILLOW FOUNDATION FOR PIPE EMBEDMENT.
- ENSURE BEDDING IS DEEP ENOUGH THAT PIPE JOINT PROJECTIONS (SOCKETS, FLANGES) DO NOT TOUCH TRENCH FLOOR.
- GEOTEXTILE BIDIM A24 OR APPROVED EQUIVALENT TO BE USED WHERE TRENCH FILL IS A MIGRATORY NATIVE SOIL OR SAND OR FINE CLAY MATERIAL, AND WHERE SPECIFIED IN THE DESIGN.
- LAY GEOTEXTILE FILTER FABRIC AGAINST TRENCH FLOOR AND WALLS SUCH THAT IT FULLY ENCASES THE EMBEDMENT AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
 - PRESS FABRIC INTO THE VOIDS BEFORE INSTALLING EMBEDMENT TO PREVENT FABRIC TEARING.
 - PROVIDE A MINIMUM OF 250 OVERLAP AT ALL FABRIC JOINTS.
- PURCHASE SPECIFICATIONS FOR EMBEDMENT MATERIAL ARE DETAILED IN THE SEQ CODE ACCEPTED PRODUCTS AND MATERIALS LIST. TRENCH FILL SHALL COMPLY WITH SEQ-SEW-1200-2. 10. DETECTABLE MARKER TAPE SHALL BE PROVIDED EITHER ABOVE THE EMBEDMENT ZONE OR 1000 BELOW THE F.S.L, WHICHEVER IS CLOSEST TO F.S.L
- MARKER TAPE SHALL BE DETECTABLE TYPE IN ACCORDANCE WITH IPAM LIST, COLOUR CREAM FOR NON-PRESSURE AND PRESSURE SEWERAGE. THE TAPE SHALL BE MARKED "CAUTION SEWER BURIED BELOW"
- TEMPORARY OR SHORT TERM BATTERS (UP TO 4 WEEKS) CAN BE CONSTRUCTED TO THE GRADIENTS PRESENTED IN TABLE 7 OF REPORT 8043 – 24-231.
- USE TYPE 4 EMBEDMENT WITH GEOFABRIC WRAPPING IN ALL DISPERSIVE/FILL AREAS.
- WRAPPING MUST FULLY ENCAPSULATE BEDDING WITH 250mm OVERLAP AT JOINS.
- TRENCH BASE TO ACHIEVE MINIMUM BEARING PRESSURE OF 100kPa UNLESS OTHERWISE SPECIFIED.
- BACKFILL COMPACTED TO 98% STANDARD COMPACTION PER AS3798 AND VERIFIED TO LCC REQUIREMENTS.
- THRUST BLOCKS TO HAVE A MINIMUM HORIZONTAL BEARING PRESSURE ALLOWANCE OF 50kPa.
- TRENCH BACKFILL FOR DEEP TRENCHES (>5m) MUST ACHIEVE A DENSITY RATIO OF AT LEAST 98% STANDARD AT MOISTURE CONTENTS RANGING BETWEEN +/- 2% OMC AND TESTED AT FREQUENCIES REQUIRED BY LOGAN WATER.

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: **DEV2025/1653**
Date: **24/09/2025**



LIVE SEWER WORKS

No.	DESCRIPTION	DIA. SEWER	EXISTING ASSET ID AT CONNECTION	MH/MS TYPE	COVER TYPE	LOT & PLAN No.	F.S.L.	E.S.L.	CONNECTION I.L.	CONNECTION DEPTH TO INVERT	ALTERATION TO EXISTING MH BENCHING REQUIRED (Y/N)
1 (A)	0.50m FROM EXISTING STUB, CONSTRUCTOR, TO LAY NEW SEWERS. AFTER CLEANSING, TESTING AND INSPECTION, NOTIFY LOGAN WATER.	DN375	EX1/1 STUB	-	-	DWG-0610	45.115	45.115	43.210	1.905	N
1 (B)	CONSTRUCTOR, UNDER LOGAN WATER SUPERVISION, TO REMOVE TEMPORARY END CAP ON EXISTING STUB AND MAKE LIVE CONNECTION AFTER SUCCESSFUL 'ON MAINTENANCE' INSPECTION.										

REV	DATE	DESIGN	DRAWN	REVISION DETAILS		DRAWN	STATUS		SCALE	CLIENT	PROJECT NAME	DRAWING TITLE		
A	17.03.25	BR	BR	ORIGINAL ISSUE		BR	FOR APPROVAL					TRUNK SEWER GENERAL NOTES		
B	02.04.25	BR	BR	CLIENT UPDATES										
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE										
D	22.07.25	BR	BR	FOR APPROVAL										
E	15.08.25	BR	BR	FOR APPROVAL		BR	APPROVED DANIEL COLLINS  RPEQ 18631 DATE 22.08.25					TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN		
F	22.08.25	BR	BR	RFI RESPONSE										
						BR	FOR AND ON BEHALF OF COLLIER'S INTERNATIONAL ENGINEERING & DESIGN PTY LTD					PROJECT No.	DRAWING No.	REVISION
												24-0750	0601	F

PLOT - Z: Aug 2025 03:01 PM LOCATION - H:\2025-0408 Uncluttered (L2025-0408) - Final\Drawings\Kadafi Trunk Sewer\24-0750-0601-TRUNK SEWER COVER.dwg

MAINTENANCE HOLES – DESIGN REQUIREMENT

1. DESIGN AND CONSTRUCTION OF ALL SEWERAGE INFRASTRUCTURE SHALL BE RPEQ CERTIFIED.
2. TOP SLABS HAVE BEEN DESIGNED FOR THE FOLLOWING LIVE LOADS AND LOCATIONS

LOCATION	LIVE LOAD	ACCESS COVER TO AS 3996
RESERVES, RESIDENTIAL ALLOTMENTS, FOOTPATHS AND VERGES	25 kN	CLASS RATING B
ROADWAYS AND DRIVEWAYS, COMMERCIAL, INDUSTRIAL AND NON-RESIDENTIAL ALLOTMENTS	80 kN	CLASS RATING D

- DESIGN LIFE 100 YEARS
 - DEAD LOAD AS DETERMINED FROM SEQ SEWER CODE STANDARD DRAWINGS.
 - LIVE LOADS TO AS 1170.1 AND AS 5100.2
3. DURABILITY CLASSIFICATION

STRUCTURE	COVER LOCATION	EXPOSURE CLASSIFICATION AS3600, AS3735	REINFORCEMENT COVER (mm)
SLABS	TOP	B2 TO AS3600-	40
	BOTTOM	B2 TO AS3735	50 INCLUDING PE LINER THICKNESS

4. SEQ CODE SEWER MH STANDARD DRAWINGS THAT ARE APPLICABLE TO LOGAN WATER HAVE ASSUMED THAT A MINIMUM SOIL BEARING PRESSURE OF 50 KPA CAN BE ACHIEVED. RESPONSIBILITY FOR ALL ASPECTS OF THE DESIGN AND CONSTRUCTION OF SEWER INFRASTRUCTURE RESTS SOLELY WITH THE CERTIFYING RPEQ.
5. SEQ CODE SEWER MH STANDARD DRAWINGS THAT ARE APPLICABLE TO LOGAN WATER HAVE ASSUMED THAT A MINIMUM SOIL BEARING PRESSURE OF 50 KPA CAN BE ACHIEVED. RESPONSIBILITY FOR ALL ASPECTS OF THE DESIGN AND CONSTRUCTION OF SEWER INFRASTRUCTURE RESTS SOLELY WITH THE CERTIFYING RPEQ.

MAINTENANCE HOLES - GENERAL

1. THESE NOTES RELATE TO ALL TOP SLABS AND CAST-INSITU MAINTENANCE HOLES FOR LOGAN WATER.
2. MAINTENANCE HOLE TOP SLABS SHALL BE PRECAST ELEMENTS.
3. DIMENSIONS IN MILLIMETRES U.N.O.
4. DIMENSIONS NOT TO BE SCALED FROM DRAWINGS.
5. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK ON SITE.
6. MATERIALS AND WORKMANSHIP TO COMPLY WITH THE CURRENT STANDARDS AUSTRALIA CODES, BUILDING CODE OF AUSTRALIA, SEW CODE, WSAA PRODUCT SPECIFICATIONS, BY-LAWS AND ORDNANCES OF RELEVANT BUILDING AUTHORITIES. EXISTING STRUCTURES TO BE MAINTAINED IN A STABLE CONDITION AND NO PART TO BE OVER-STRESSED DURING CONSTRUCTION.
8. ADDITIONAL SITE EXAVATION SHALL OCCUR UNTIL SUITABLE FOUNDATION MATERIAL IS LOCATED. ALL OVEREXCAVATION SHALL BE REPLACED WITH A LEAN MIX CONCRETE OR C.L.S.M.

MAINTENANCE HOLES

1. MAINTENANCE HOLES SHALL BE LOCATED CENTRALLY OVER SEWERS UNLESS SPECIFIED OTHERWISE. REFER DRAWINGS SEQ-SEW-1304-1 AND SEQ-SEW-1305-1
2. OBVERT LEVEL OF THE UPSTREAM SEWER PIPE SHALL ALWAYS BE ABOVE THE OBVERT LEVEL OF THE DOWNSTREAM SEWER PIPE UNLESS APPROVED OTHERWISE.
3. ALL CONSTRUCTION JOINTS SHALL INCLUDE HYDROPHILIC SEALS INSTALLED TO MANUFACTURER'S SPECIFICATIONS.
4. MAINTENANCE HOLE CONNECTORS, INCLUDING HYDROPHILIC SEALS AND PUDDLE FLANGES SHALL BE THE PRE-FABRICATED TYPE UNLESS APPROVED OTHERWISE.
5. ENDS OF SEWER PIPES SHALL FINISH FLUSH WITH THE INSIDE FACE OF MAINTENANCE HOLE WALL.
6. FINISHED BENCHING SHALL PROVIDE A SMOOTH NON-TURBULENT FLOW.
7. SAFETY CHAINS AND ALL CONNECTIONS SHALL BE STAINLESS STEEL GRADE 316.
8. PROPERTY CONNECTION JUNCTIONS SHALL NOT BE CONSTRUCTED ON SHORT PIPES AT MAINTENANCE HOLES OR BULKHEADS.

MAINTENANCE HOLE CIRCULAR ACCESS COVERS

1. CIRCULAR ACCESS COVERS AND FRAMES SHALL BE RATED TO CLASS RATING B OR CLASS RATING D TO AS 3996.
2. PRODUCT CERTIFICATION TO AS 3996 SHALL BE SUPPLIED FOR EACH COVER ASSEMBLY.
3. COVERS, FRAMES AND RISER RINGS, WHERE REQUIRED, SHALL BE SUPPLIED ASSEMBLED.
4. COVERS SHALL BE SOLID TOP. IN LOGAN WATER AREAS ONLY, CLASS B CONCRETE INFILL COVERS MAY BE USED.
5. COVERS SHALL HAVE IDENTIFICATION TAGS DETAILING, SEWER / VACUUM SEWER / CLASS RATING B, D / SEALED / COVER PATTERN DETAIL /SEQ-SP NAME / WEIGHT.
6. BOLT DOWN COVERS SHALL BE PROVIDED IN FLOOD PRONE AREAS, STORM SURGE AREAS, SURCHARGING SEWERS AND WHERE SPECIFIED IN THE DESIGN.
7. BOLT DOWN COVER FRAMES TO BE FIXED TO THE TOP SLAB WITH 4 M16 STAINLESS STEEL CHEMICAL ANCHORS. EMBEDMENT LENGTH SHALL BE MINIMUM 110 mm UNLESS APPROVED OTHERWISE.

CONCRETE

1. CONCRETE WORKMANSHIP AND MATERIALS TO COMPLY WITH AS 3600 AND AS 3610
2. CONCRETE TO COMPLY WITH AS 1379, AS 1478.1, AS 1478.2, AS 3582.1, AS 3582.2, AS 3582.3 AND AS 3972.
3. SLUMP TO BE AS REQUIRED FOR PLACEMENT, COMPACTION AND FINISHING. A SAMPLE OF FRESH CONCRETE SHALL BE TESTED FOR SLUMP AND STRENGTH UPON ARRIVAL ON SITE.
4. WATER NOT TO BE ADDED TO CONCRETE AFTER TRUCK HAS LEFT BATCHING PLANT UNLESS APPROVED OTHERWISE.
5. TEST SLUMP OF EACH BATCH OF CONCRETE DELIVERED.
6. DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF FORMWORK BY CONTRACTOR.
7. CONCRETE CONSTRUCTION TOLERANCES TO AS 3610.
8. CONCRETE SIZES DO NOT INCLUDE FINISHES. SIZES NOT TO BE REDUCED OR PENETRATIONS ADDED.
9. CONDUITS, PIPES, ETC. NOT TO BE PLACED IN CONCRETE COVER TO THE REINFORCEMENT.
10. EXPOSED EDGES AND RE-ENTRANT CORNERS TO HAVE 25 MM CHAMFERS OR FILLETS UNLESS NOTED OTHERWISE.
11. CONSTRUCTION JOINTS AS DETAILED AND LOCATED ON DESIGN DRAWINGS.
12. CONCRETE SURFACE FINISHES TO AS 3610. FORMED EXPOSED SURFACES - CLASS 2
13. CONCRETE TEMPERATURE NOT TO EXCEED TEMPERATURES STATED BELOW.

CONCRETE STRUCTURE	CONCRETE STRENGTH	TEMPERATURE LIMIT
CONCRETE SECTIONS LESS THAN 600mm THICK	EQUAL TO OR MORE THAN 40MPa	35°C
CONCRETE SECTIONS EQUAL TO OR GREATER THAN 600mm THICK	EQUAL TO OR MORE THAN 40 MPa	27°C

14. CONCRETE CURING TO AS3600 AS SOON AS POSSIBLE AFTER PLACING AND FINISHING.
15. CONCRETE GRADE S40.

TYPE OF AGGREGATE	CALCAREOUS
COMPRESSIVE STRENGTH AT 28 DAYS	40 MPa
MIN. CEMENT CONTENT	380 kg/m ³
MAX. CEMENTITIOUS MATERIAL	25%
MAX W/C RATIO	0.5
NOMINAL SLUMB	80 mm±15
DRYING SHRINKAGE AT 21 DAYS	500 x 10 ⁻⁶
MAXIMUM AGGREGATE SIZE	20 mm
MINIMUM AGGREGATE SIZE	10 mm

16. CONCRETE SHALL BE SPECIAL CLASS TO WSA-PS 358 WITH CALCAREOUS AGGREGATE.
17. BENCHING FINISH SHALL CONSIST OF EQUAL PARTS OF CEMENT AND SAND.
18. HOLD POINT: ONCE THE BASE OF MANHOLES HAVE BEEN POURED, CONSTRUCTION SHALL ONLY RE-COMMENCE ONCE THE SUPERINTENDENT AND/OR ENGINEER HAVE INSPECTED THE WORKS

REINFORCEMENT

1. REINFORCEMENT FOR THE TOP SLABS SHALL BE A PREFABRICATED ELEMENT.
2. REINFORCEMENT TO COMPLY WITH AS4671.
3. SYMBOLS ON DRAWINGS FOR GRADE AND TYPE OF REINFORCEMENT ARE:
- R - STRUCTURAL GRADE 250 PLAIN ROUND BARS
 - N - HOT ROLLED GRADE 500 DEFORMED BAR, DUCTILITY CLASS N
 - L - HOT ROLLED GRADE 500 DEFORMED BAR, DUCTILITY CLASS L
 - SL - HARD DRAWN WIRE GRADE 500 MESH, DUCTILITY CLASS L
 - RL - HARD DRAWN WIRE GRADE 500 MESH, DUCTILITY CLASS L
 - W - STEEL REINFORCING WIRE GRADE 500
4. REINFORCEMENT DESIGNATION AS FOLLOWS (e.g. 14/N16-250 EF)
- 14 - NUMBER OF BARS
 - N - BAR GRADE AND DUCTILITY CLASS
 - 16 - BAR DIAMETER IN mm
 - 250 - SPACING OF BARS IN mm
 - EF - LOCATION
5. ABBREVIATIONS TO REINFORCEMENT LOCATION:
- EW - EACH WAY
 - EF - EACH FACE
 - B - BOTTOM
 - T - TOP
 - CP - CENTRALLY PLACED
6. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY ONLY AND NOT NECESSARILY IN TRUE PROJECTION.
7. REINFORCEMENT TO BE FIXED SECURELY AND SUPPORTED ON PROPRIETY CONCRETE, METAL OR PLASTIC SUPPORTS.
8. REINFORCEMENT TO BE SPliced AS SHOWN ON PROJECT DRAWINGS. LAP LENGTHS TO COMPLY WITH AS 3600 AND TABLE BELOW U.N.O.

BAR SIZE	LAP LENGTH (mm)
N12	350
N16	500
N20	600
N24	700
N28	850
N32	950

9. REINFORCEMENT NOT TO BE WELDED UNLESS SHOWN ON PROJECT DRAWINGS OR APPROVED OTHERWISE.
10. REINFORCEMENT NOT TO BE BENT, CUT OR HEATED ON SITE UNLESS APPROVED OTHERWISE.
11. REINFORCEMENT TO BE CLEAN, FREE OF MILL SCALE, RUST, OIL, GREASE ETC.
12. DOWEL LOCATION TOLERANCE SHALL BE +/- HALF THE DIAMETER OF THE DOWEL. THE ALIGNMENT TOLERANCE SHALL BE 2 mm IN 300 mm.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1653

Date: 24/09/2025



Queensland
Government

PLOT - 22 Jul 2025 02:28 PM LOCATION - H-2222-0403 Unsubdivided Lot 1, Lot 2, Lot 3, Lot 4, Lot 5, Lot 6, Lot 7, Lot 8, Lot 9, Lot 10, Lot 11, Lot 12, Lot 13, Lot 14, Lot 15, Lot 16, Lot 17, Lot 18, Lot 19, Lot 20, Lot 21, Lot 22, Lot 23, Lot 24, Lot 25, Lot 26, Lot 27, Lot 28, Lot 29, Lot 30, Lot 31, Lot 32, Lot 33, Lot 34, Lot 35, Lot 36, Lot 37, Lot 38, Lot 39, Lot 40, Lot 41, Lot 42, Lot 43, Lot 44, Lot 45, Lot 46, Lot 47, Lot 48, Lot 49, Lot 50, Lot 51, Lot 52, Lot 53, Lot 54, Lot 55, Lot 56, Lot 57, Lot 58, Lot 59, Lot 60, Lot 61, Lot 62, Lot 63, Lot 64, Lot 65, Lot 66, Lot 67, Lot 68, Lot 69, Lot 70, Lot 71, Lot 72, Lot 73, Lot 74, Lot 75, Lot 76, Lot 77, Lot 78, Lot 79, Lot 80, Lot 81, Lot 82, Lot 83, Lot 84, Lot 85, Lot 86, Lot 87, Lot 88, Lot 89, Lot 90, Lot 91, Lot 92, Lot 93, Lot 94, Lot 95, Lot 96, Lot 97, Lot 98, Lot 99, Lot 100, Lot 101, Lot 102, Lot 103, Lot 104, Lot 105, Lot 106, Lot 107, Lot 108, Lot 109, Lot 110, Lot 111, Lot 112, Lot 113, Lot 114, Lot 115, Lot 116, Lot 117, Lot 118, Lot 119, Lot 120, Lot 121, Lot 122, Lot 123, Lot 124, Lot 125, Lot 126, Lot 127, Lot 128, Lot 129, Lot 130, Lot 131, Lot 132, Lot 133, Lot 134, Lot 135, Lot 136, Lot 137, Lot 138, Lot 139, Lot 140, Lot 141, Lot 142, Lot 143, Lot 144, Lot 145, Lot 146, Lot 147, Lot 148, Lot 149, Lot 150, Lot 151, Lot 152, Lot 153, Lot 154, Lot 155, Lot 156, Lot 157, Lot 158, Lot 159, Lot 160, Lot 161, Lot 162, Lot 163, Lot 164, Lot 165, Lot 166, Lot 167, Lot 168, Lot 169, Lot 170, Lot 171, Lot 172, Lot 173, Lot 174, Lot 175, Lot 176, Lot 177, Lot 178, Lot 179, Lot 180, Lot 181, Lot 182, Lot 183, Lot 184, Lot 185, Lot 186, Lot 187, Lot 188, Lot 189, Lot 190, Lot 191, Lot 192, Lot 193, Lot 194, Lot 195, Lot 196, Lot 197, Lot 198, Lot 199, Lot 200, Lot 201, Lot 202, Lot 203, Lot 204, Lot 205, Lot 206, Lot 207, Lot 208, Lot 209, Lot 210, Lot 211, Lot 212, Lot 213, Lot 214, Lot 215, Lot 216, Lot 217, Lot 218, Lot 219, Lot 220, Lot 221, Lot 222, Lot 223, Lot 224, Lot 225, Lot 226, Lot 227, 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PLOT - 22 Jul 2025 02:28 PM LOCATION - H:\22\22-0408 Undullah (Jobtown), Flagstone\Design\Acad\Trunk Sewer\24-0750-0600\TRUNK SEWER COVER\dwg

7. SOUNDS THAT INDICATE VOIDS. VOIDS TO BE FILLED BY INJECTION GROUT AND PE SHEET REPAIRED BY EXTRUSION WELDING OVER THE INJECTION HOLE.
REFER TO SEQ CODE CIVIL IPAM LIST FOR APPROVED PE LINER PRODUCTS. PREPARATION, APPLICATION AND INSTALLATION OF LINER TO COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND BE READ IN CONJUNCTION WITH WSA 201 MANUAL FOR SELECTION AND APPLICATION OF PROTECTIVE COATINGS AND SEQ-SEW-1101-6.
PE LINING TO EXTEND TO BASE OF MANHOLE PRIOR TO BENCHING BEING POURED.

STRUCTURAL STEEL

1. STRUCTURAL STEEL WORKMANSHIP AND MATERIALS TO COMPLY WITH AS 4100.
2. STEEL TO COMPLY WITH:
 - AS 1163 GRADE C350 FOR RECTANGULAR AND HOLLOW SECTIONS.
 - AS 3678 FOR PLATES AND FLOOR PLATES.
 - AS 3679.1 GRADE 300 OR BHP GRADE 300 PLUS FOR PARALLEL FLANGE CHANNELS.
 - AS 3679.2 GRADE 300 FOR WELDED BEAMS AND COLUMNS.
 - OTHER SECTIONS TO COMPLY WITH AS 3678 OR AS 3679 GRADE 250.
3. WELDS TO AS 1554.
 - WELD CATEGORY SP.
 - BUTT WELDS TO BE FULL PENETRATION WELDS.
 - WELDS TO BE 6 MM CONTINUOUS FILLET WELDS ALL ROUND INTERFACES.
 - ELECTRODES TO AS 1554 CLASSIFICATION E48XX.
4. BOLTS TO AS 1275. COMMERCIAL GRADE 4.6/S TO AS 1111 AND AS 1112. HIGH STRENGTH STRUCTURAL BOLTS TO AS 1252.
 - BOLTS, NUTS AND WASHERS M16 AND LARGER TO GRADE 8.8/S. M12 TO BE GRADE 4.6/S
 - STRUCTURAL CONNECTIONS TO BE 2 M16 8.8/S WITH 10 mm THICK CLEAT PLATE U.N.O.
 - INSTALL WASHERS UNDER BOLT HEAD AND NUT. INSTALL TAPERED WASHERS AS REQUIRED.
 - BOLT PROJECTION BEYOND NUT TO BE MINIMUM TWO THREADS AND MAXIMUM 10 mm
5. HOLD DOWN BOLTS TO BE GRADE 4.6/S U.N.O. HOLD DOWN BOLTS GROUPS TO BE RIGIDLY
6. TIED FOR CORRECT SET-OUT AND LOCATION.
7. SEAL WELD HOLLOW SECTIONS WITH 3 MM THICK CAP PLATE UNLESS NOTED OTHERWISE.
8. GROUT BASE PLATES WITH HIGH STRENGTH NON-SHRINK PRE-MIXED GROUT BEFORE COLUMNS ARE LOADED.

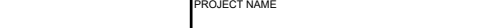
1. STEELWORK TO BE HOT DIP GALVANISED TO AS 4680 SYSTEM DESIGNATION HDG600 AND THREADED FASTENERS TO AS 1214.
2. DAMAGED GALVANISED COATING REPAIR:
POWER CLEAN TO AS 1627.2
SOLVENT CLEAN/ DEGREASE TO AS 1627.1
APPLY TIN/ZINC TO PRE-HEATED STEEL OVERLAPPING THE GALVANISING COATING.

1. EXPOSED REINFORCEMENT AND CONCRETE REPAIRED AS FOLLOWS:
 - CORE HOLES ON EACH CORNER OF AREA TO BE CUT.
 - SAW CUT CONCRETE, PERPENDICULAR TO CONCRETE SURFACE, 15 mm DEEP AROUND PERIMETER OF THE OPENING.
 - BREAKOUT REMAINING CONCRETE AROUND THE OPENING WITHOUT DAMAGING REINFORCEMENT.
 - CUT EXPOSED REINFORCEMENT SO THAT IS 30 mm CLEAR OF THE PIPE.
 - CLEAN CONCRETE SURFACE AND REMOVE ALL LOOSE MATERIAL.
 - ABRASIVE BLAST CLEAN EXPOSED REINFORCEMENT. IF IT IS CORRODED AND APPLY "NITOPRIME" ZINC RICH PRIMER UNLESS APPROVED OTHERWISE.
 - THOROUGHLY SOAK SUBSTRATE WITH CLEAN WATER FOR A MINIMUM OF TWO HOURS.
 - PLACE N12 CIRCULAR TRIMMER ON BOTH SIDES OF THE PIPE FLANGE.
 - INSTALL HYDROTITE CJ-07-25 SEAL ON PIPE 50 mm FROM CONCRETE SURFACE UNLESS APPROVED OTHERWISE.
 - APPLY "NITOBOND HAR" PRIMER TO CONCRETE SURFACE UNLESS APPROVED OTHERWISE.
 - POUR CONCRETE/GROUT UNDER PRESSURE TO FILL OPENING.
 - FILL CONCRETE/GROUT TO SUPPLIER REQUIREMENTS.

1. ALL EXPOSED REINFORCEMENT AND MILD STEEL ANCHORED TO BE REPAIRED AS FOLLOWS:
 - SAW CUT OR CHISEL CUT CONCRETE, PERPENDICULAR TO CONCRETE SURFACE, 15 mm DEEP AROUND REINFORCEMENT/ANCHOR.
 - BREAKOUT CONCRETE AROUND REINFORCEMENT/ANCHOR TO A DEPTH OF 60 mm.
 - CUT EXPOSED REINFORCEMENT/ANCHOR AT A MINIMUM DEPTH OF 50 mm FROM CONCRETE SURFACE.
 - CLEAN CONCRETE SURFACE AND REMOVE ALL LOOSE MATERIAL.
 - ABRASIVE BLAST CLEAN EXPOSED REINFORCEMENT/ANCHOR.
 - APPLY "NITOPRIME" ZINC RICH PRIMER TO REINFORCEMENT/ANCHOR UNLESS APPROVED OTHERWISE.
 - THOROUGHLY SOAK SUBSTRATE WITH CLEAN WATER.
 - APPLY "NITOBOND HAR" PRIMER TO CONCRETE UNLESS APPROVED OTHERWISE.
 - APPLY "RENDEROC HB40" TO FILL OPENING UNLESS APPROVED OTHERWISE.

1. STAINLESS STEEL TO COMPLY TO ASTM A240/A240M AND ASTM A480/ A480M.
2. FABRICATION BY MANUFACTURERS ASSDA ACCREDITED OR APPROVED EQUIVALENT.
3. STAINLESS STEEL TO BE GRADE 316 OR 316L U.N.O.
4. STORAGE, FABRICATION AND WELDING TO BE IN APPROVED DEDICATED AREAS.
5. WELDING, CLEANING, PICKLING AND PASSIVATION TO COMPLY TO AS 1554.6 AND WTIA TECHNICAL NOTE 16 WELDING OR STAINLESS STEEL.
6. SURFACE FINISH TO BE 2B OR BETTER TO ASTM A480.
7. MEMBERS TO BE ACID PASSIVATED AFTER FABRICATION.
8. ANTI GALLING COMPOUND "DURALAC" OR SEQ-SP APPROVED EQUIVALENT REQUIRED ON ALL FASTENERS UNLESS APPROVED OTHERWISE.

1. THE PE LINER SHALL FORM A COMPLETELY SEALED AND WELDED ROBUST CONTINUOUS MEMBRANE SYSTEM. THE PE LINER SHALL BE BUILT TO THE MH CONSTRUCTION TOLERANCES WITHOUT ANY DEFECTS SUCH AS BULGING, WARPING, PINCHING, OVERLAPPING.
2. THE PE SHEETS SHALL:
 - HAVE A MINIMUM THICKNESS OF 2.5 mm.
 - ACHIEVE A MECHANICAL BOND BETWEEN THE CONCRETE AND LINER.
 - BE INSTALLED BY AN ACCREDITED APPLICATOR APPROVED BY THE MANUFACTURER.
 - BE TENSIONED OVER THE FORMWORK WITHIN THE YIELD ELONGATION LIMIT PRIOR TO SECURING TO THE FORMWORK.
3. PREPARATION, APPLICATION AND INSTALLATION TO COMPLY WITH THE MANUFACTURER'S SPECIFICATION.
4. POURED CONCRETE TO BE AT A COOLER AMBIENT TEMPERATURE THAN THE TEMPERATURE WHEN THE PE SHEETS WERE ATTACHED TO THE FORMWORK.
5. EXTRUSION WELDING AND WELD TESTING AT SEAMS TO BE UNDERTAKEN BY THE APPROVED APPLICATOR TO THE MANUFACTURER'S SPECIFICATION.
6. ENCAPSULATION OF ANCHORS TO BE CHECKED BY TAPPING THE SURFACE TO DETECT HOLLOW

REV	DATE	DESIGN	DRAWN	REVISION DETAILS		DRAWN	STATUS	SCALE	CLIENT	PROJECT NAME	DRAWING TITLE		
A	17.03.25	BR	BR	ORIGINAL ISSUE		BR	FOR APPROVAL			MONARCH GLEN No. 1 PTY LTD	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 2 OF 2		
B	02.04.25	BR	BR	CLIENT UPDATES									
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE									
D	22.07.25	BR	BR	FOR APPROVAL									
						DESIGN	APPROVED DANIEL COLLINS	RPEQ 18631	DATE 22.07.25				
						BR							
							FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD						
									ASSOCIATED CONSULTANT	TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	PROJECT No. 24-0750	DRAWING No. 0603	REVISION D

LEGEND

- PROPOSED TRUNK SEWER MAIN
- PROPOSED PACKAGE 1
- PROPOSED PACKAGE 2
- PROPOSED PACKAGE 3

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1653

Date: 24/09/2025



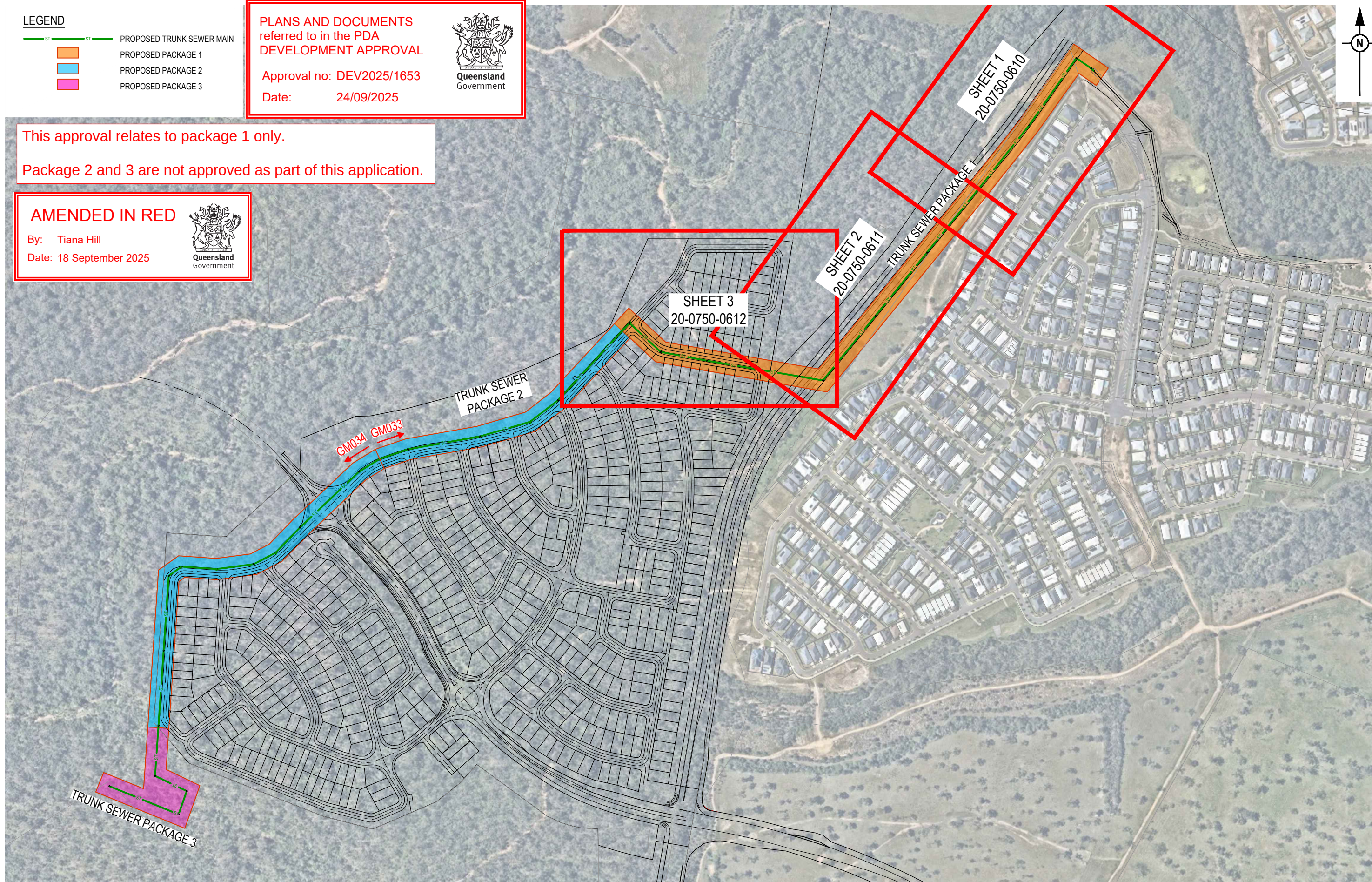
This approval relates to package 1 only.

Package 2 and 3 are not approved as part of this application.

AMENDED IN RED

By: Tiana Hill

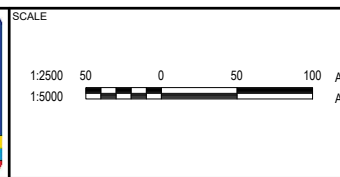
Date: 18 September 2025



PLOT: 22 JUL 2025 02:28 PM LOCATION: H:\2222-0403 Unclashed\Jobwork\Flagstone\Design\Asat\Trunk Sewer\24-0750-0605\TRUNK SEWER KEY PLAN.dwg

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE
D	22.07.25	BR	BR	FOR APPROVAL

DRAWN	STATUS
BR	FOR APPROVAL
DESIGN	APPROVED
BR	DANIEL COLLINS RPEQ 18631 DATE 22.07.25
FOR AND ON BEHALF OF COLLIER'S INTERNATIONAL ENGINEERING & DESIGN PTY LTD	



PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN - PACKAGE 1
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE		
TRUNK SEWER KEY PLAN		
PROJECT No.	DRAWING No.	REVISION
24-0750	0605	D



EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS
FOR EASTING AND NORTHING SETOUT OF
SEWER STRUCTURES AND ENDS.

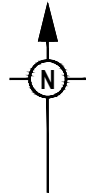
Date: 24/09/2025



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|---|-----------------------------------|
|  | PROPOSED AREA OF WORKS |
|  | PROPOSED TRUNK SEWER MAIN |
|  | PROPOSED SEWER MAIN |
|  | EXISTING SEWER MAIN |
|  | PROPOSED MICROTUNNEL |
|  | PROPOSED EASEMENT |
|  | FINISHED SURFACE CONTOURS |
|  | PROPOSED STORMWATER DRAINAGE PIPE |
|  | PROPOSED WATER MAIN |
|  | PROPOSED SWALE DRAIN |
|  | PROPOSED GRAVEL ACCESS TRACK |



REV	DATE	DESIGN	DRAWN	REVISION DETAILS		DRAWN	STATUS		SCALE 1:50010501020A1 1:1000	CLIENT  ASSOCIATED CONSULTANT	PROJECT NAME MONARCH GLEN No. 1 PTY LTD TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	DRAWING TITLE		
A	17.03.25	BR	BR	ORIGINAL ISSUE		BR	FOR APPROVAL APPROVED DANIEL COLLINS  RPEQ 18631 DATE 22.08.25 FOR AND ON BEHALF OF COLLIER'S INTERNATIONAL ENGINEERING & DESIGN PTY LTD					TRUNK SEWER MAIN LAYOUT PLAN SHEET 1 OF 3		
B	02.04.25	BR	BR	CLIENT UPDATES								PROJECT No. 24-0750		
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE								DRAWING No. 0610		
D	22.07.25	BR	BR	FOR APPROVAL								REVISION E		
E	22.08.25	BR	BR	RFI RESPONSE										
						BR								

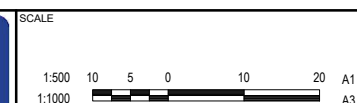


NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS
FOR EASTING AND NORTHING SETOUT OF
SEWER STRUCTURES AND ENDS.



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE
D	22.07.25	BR	BR	FOR APPROVAL
E	22.08.25	BR	BR	RFI RESPONSE

DRAWN	STATUS	
BR	FOR APPROVAL	
DESIGN	APPROVED DANIEL COLLINS	RPEQ 18631 DATE 22.08.20
BR		
FOR AND ON BEHALF OF COLLINS INTERNATIONAL ENGINEERING & DESIGN PTY LTD		



ASSOCIATED CONSULTANT

TRUNK SEWER MAIN - PACKAGE 1
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
**TRUNK SEWER MAIN OPTION 1
MICROTUNNELLING LAYOUT
PLAN SHEET 3 OF 3**

PROJECT No.	DRAWING No.	REVISION
24-0750	0612	E

REFER SHEET 2 FOR CONTINUATION

PILOT - 22 Aug 2025 03:02 PM LOCATION - H:\21\22-0408 Undullah (Jdown), FlagstonelDesign\Acael\Trunk Sewer\240750-0610-TRUNK SEWER\LAYOUT CP1.dwg

STRUCTURE NAME	1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1	16/1	17/1		
STRUCTURE TYPE & DROP	C3 V	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED	C3 V PE LINED		
STRUCTURE LID TYPE	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D		
BRANCH LINE No.		-9°	-90°	4°	1°			61°		1°	32°	-90° 2	10°	21° 3	-79°	6°	-8°	-11° 4	-91°
BRANCH DROP TYPES												V		Z				Z	

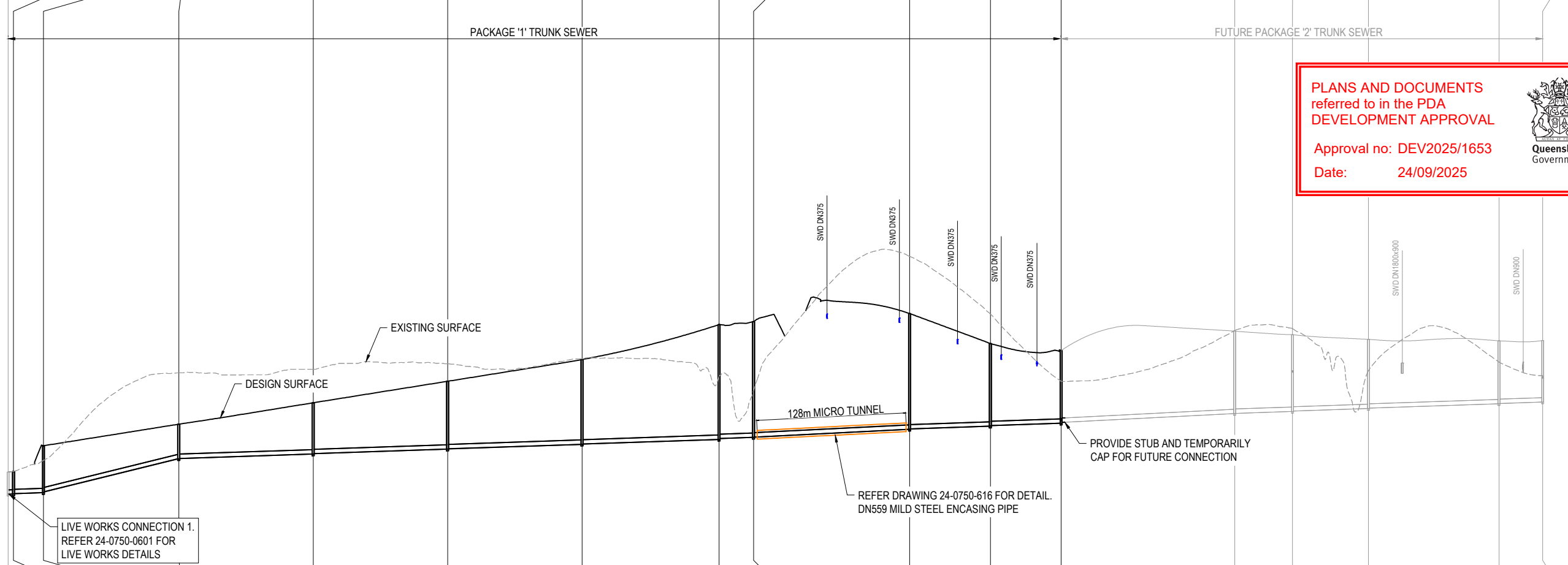
STRUCTURE TYPES
C1 = CAST-IN-SITU 1.0500
C2 = CAST-IN-SITU 1.2000
C3 = CAST-IN-SITU 1.5000
C4 = CAST-IN-SITU 1.8000
C5 = CAST-IN-SITU 2.0000
C6 = CAST-IN-SITU 2.4000

FOR DEEP STRUCTURES - REFER TO
LOGAN WATER STANDARD DRAWING
LW-SEW-DWG-2052
MH DROP TYPES:
AS PER LW-SEW-DWG-2120
DROP TYPES:
V = DROP THROUGH BASE
Z = >750mm INTERNAL DROP
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT
DOWN

NOTE: PE LINING OF MANHOLES:
PE LINING REQUIREMENTS AS PER
SEWER SEQ CODE CLAUSE 7.6.2.

EMBEDMENT NOTE:
REFER TO DWG. No. 0601 FOR PIPE
EMBEDMENT & TRENCHFILL DETAIL.

IF MATERIAL CHANGES FROM ROCK
TO OTHER MATERIAL, GEOTECH TO
CONFIRM IF TYPE 4 BEDDING IS
REQUIRED.



PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1653
Date: 24/09/2025

DATUM RL(m)	34.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		</
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LINE NUMBER LINE 1

PLOT: 27 Aug 2025 09:30 AM LOCATION: H:\2025\0408_Undrains (Jzovm)\Fragments\Design\Kadit Trunk Sewer\24-0750-0610-TRUNK SEWER LAYOUT OPT1.dwg

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE
D	22.07.25	BR	BR	FOR APPROVAL
E	22.08.25	BR	BR	RFI RESPONSE
F	27.08.25	BR	BR	UPDATE PIPE TYPE

DRAWN	STATUS
BR	FOR APPROVAL
DESIGN	APPROVED
BR	DANIEL COLLINS RPEQ 18631 DATE 27.08.25
FOR AND ON BEHALF OF COLLIER'S INTERNATIONAL ENGINEERING & DESIGN PTY LTD	

SCALE

1:2000 20 0 20 40 60 80 100 A1

1:4000 HORIZONTAL A3

1:200 2 0 2 4 6 8 10 A1

1:400 VERTICAL A3

CLIENT

PROJECT NAME

MONARCH GLEN No. 1 PTY LTD

TRUNK SEWER MAIN - PACKAGE 1

HOMESTEAD DRIVE

MONARCH GLEN

DRAWING TITLE

TRUNK SEWER OPTION 1

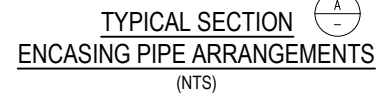
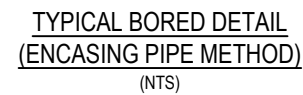
MICROTUNNELLING

LONGITUDINAL SECTIONS

PROJECT No. 24-0750

DRAWING No. 0613

REVISION F



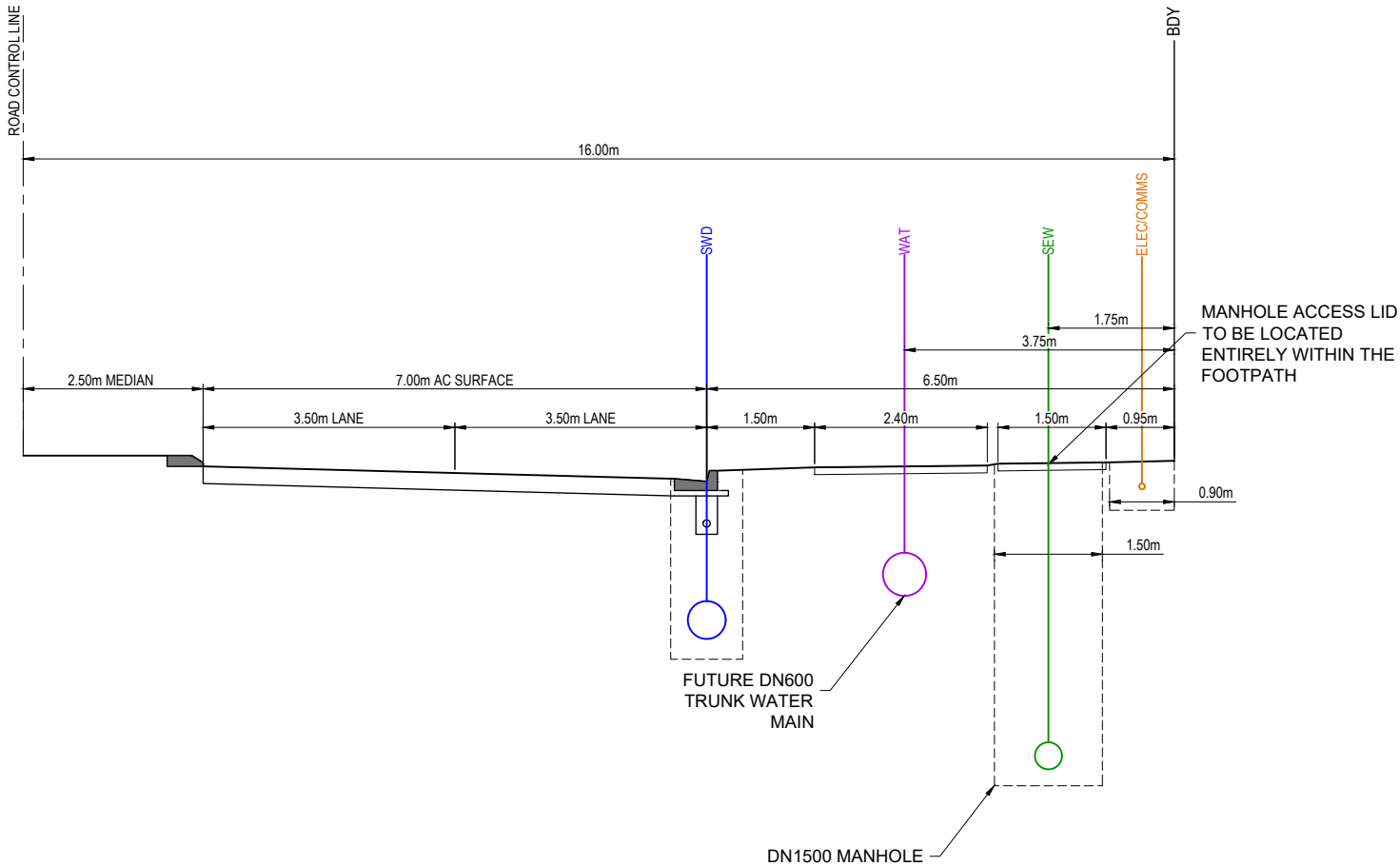
1. ENCASING PIPE
 - REINFORCING CONCRETE CLASS 4 BUTT JOINED WITH STEEL LOCATING BANDS, OR
 - WELDED MILD STEEL
 - GRP JACKING PIPE.
2. STEEL PIPE JOINTS TO BE EITHER PLAIN OR PLAIN ENDS WITH WELDED COLLAR OR BUTT WELDED OR SLIP-IN TYPE WELDED JOINT. EXTERNAL COATING REQUIRED.
3. FILL VOIDS OUTSIDE OF ENCASING PIPE WITH PRESSURE GROUT DURING INSTALLATION
4. BORED HOLE TO ENCASING PIPE GROUT MIX BY WEIGHT IS 0.67 WATER : 1.0 CEMENT : 1.0 SAND WITH THE SAND TO BE WELL ROUNDED SAND AND SEQ-SP APPROVED PLASTICISERS MAY BE USED.
5. ENCASING PIPE TO SEWER PIPE GROUT MIX IS A FLOWABLE 1MPa MINIMUM GROUT WITH A LOW HEAT OF HYDRATION WITH AGGREGATE BEING A FINE WELL ROUNDED SAND AND PLASTICISERS MAY BE USED. THE MIX DESIGN SHALL BE APPROPRIATE FOR THE SPECIFIC PIPE MATERIALS AND SITE CONDITIONS AND SHALL BE APPROVED BY THE SUPERINTENDENT.
6. FULLY WRAP PVC COATED SCL PIPE USING BITUMASTIC WRAPPING TAPE SYSTEM THAT EXTENDS AT LEAST
7. 300 mm WITHIN CONCRETE ENCASEMENT TO AT LEAST 300mm BEYOND CONCRETE ENCASEMENT AND ENSURING TAPE OVERLAPS THE UNDAMAGED PVC COATING BY AT LEAST 150 mm.
8. PLACE MARKERS ABOVE BURIED PIPELINE AT THE POINTS WHERE IT ENTERS AND LEAVES THE PROPERTY.
9. FINAL DESIGN TO BE IN ACCORDANCE WITH AS 4799.
10. SEE SEQ-SEW-1402-1 FOR DETAILS OF ENCASING SEWER MAIN INSTALLATION.
11. THE CONTRACTOR SHALL ENSURE THAT THE PVC CARRIER PIPE IS NOT IMPACTED BY FLOATION OR THERMAL REVERSION DURING THE GROUTING PROCESS. A METHODOLOGY SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO PROCEEDING WITH WORKS.
12. DETAILS SHOWN ARE TYPICAL. THE CONTRACTOR SHALL PREPARE A SPECIFIC DESIGN FOR THE INSTALLATION AND OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY FOR THE DESIGN. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY TO ACCESS THE SITE. THE DESIGN SHALL COMPLY WITH LOGAN WATER SPECIFICATION PR9787 - SPECIFICATION FOR MICROTUNNELLING AND PIPEJACKING.



REV	DATE	DESIGN	DRAWN	REVISION DETAILS	DRAWN	STATUS		SCALE		CLIENT	PROJECT NAME	DRAWING TITLE		
												PROJECT No.	DRAWING No.	REVISION
A	17.03.25	BR	BR	ORIGINAL ISSUE	BR	FOR APPROVAL		NOT TO SCALE		MONARCH GLEN No. 1 PTY LTD	TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	24-0750	0614	E
B	02.04.25	BR	BR	CLIENT UPDATES										
C	20.06.25	BR	BR	SEWER ALIGNMENT UPDATE										
D	22.07.25	BR	BR	FOR APPROVAL										
E	27.08.26	BR	BR	RFI RESPONSE										
					DESIGN	APPROVED DANIEL COLLINS 	RPEQ 18631	DATE 27.08.25						
					BR	FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD			ASSOCIATED CONSULTANT					

LEGEND

- PROPOSED SEWER MAIN
- PROPOSED STORMWATER PIPE
- PROPOSED WATER PIPE
- PROPOSED ELECTRICAL/COMMUNICATIONS



32.00m ROAD RESERVE - NEW BEITH ROAD - TYPICAL VERGE PROFILE
SCALE: 1:200 (A1)
SCALE: 1:400 (A3)

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

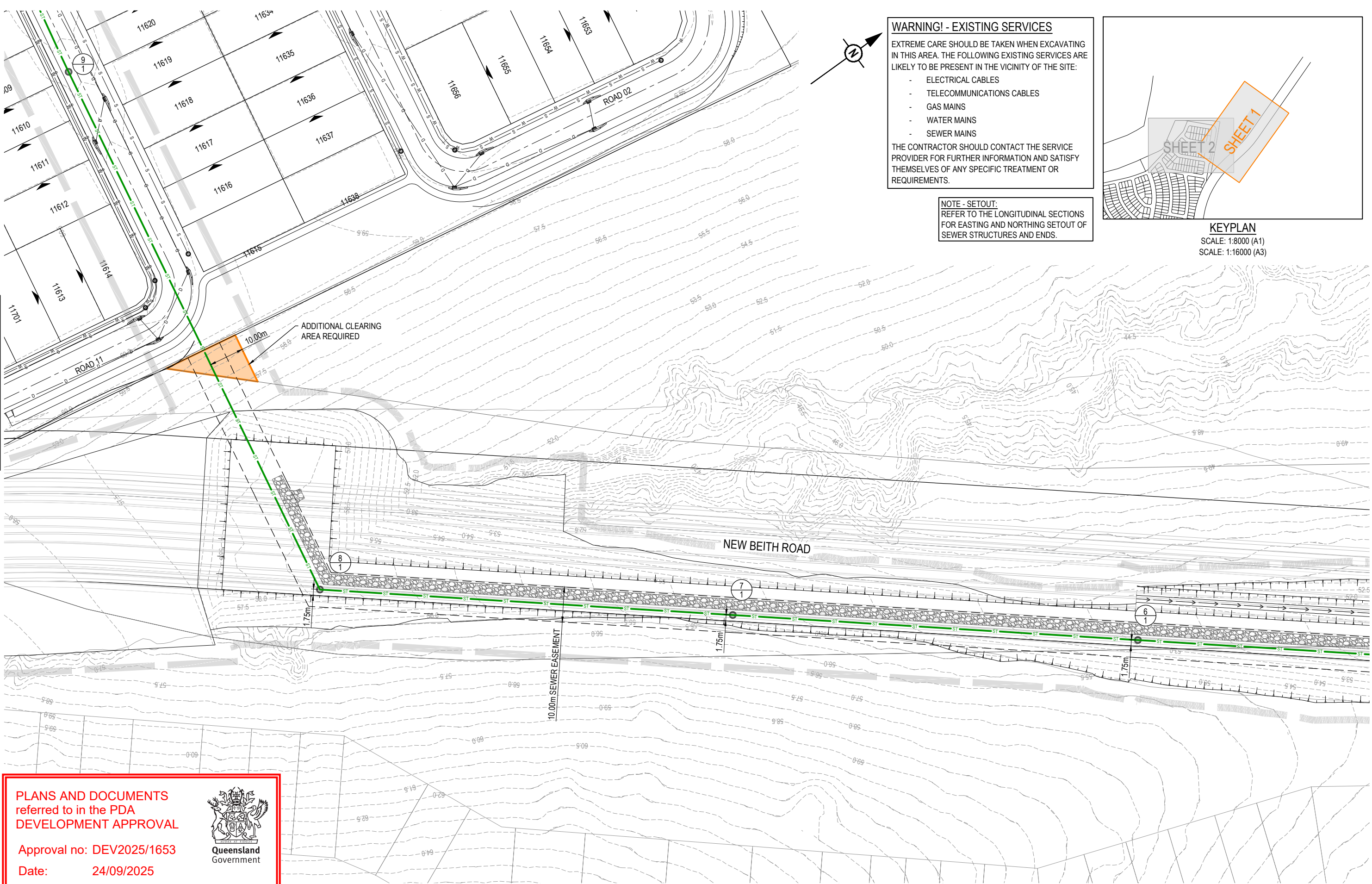
Approval no: DEV2025/1653
Date: 24/09/2025



REV	DATE	DESIGN	DRAWN	REVISION DETAILS	DRAWN	STATUS	SCALE	CLIENT	PROJECT NAME	DRAWING TITLE
A	27.08.25	BR	BR	ORIGINAL ISSUE	BR	FOR APPROVAL	1:200 1:400	mirvac	MONARCH GLEN No. 1 PTY LTD	TRUNK SEWER NEW BEITH ROAD VERGE PROFILE
					DESIGN	APPROVED DANIEL COLLINS RPEQ 18631 DATE 27.08.25				
					BR	FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD		ASSOCIATED CONSULTANT	TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	PROJECT No. 24-0750 DRAWING No. 0615 REVISION A

REFER SHEET 3 FOR CONTINUATION

PLOT: 22 Aug 2025 03:03 PM LOCATION: H:\2025\24-0750\Uncluttered\Drawings\Trunk Sewer\24-0750-0620\TRUNK SEWER LAYOUT CP21.dwg

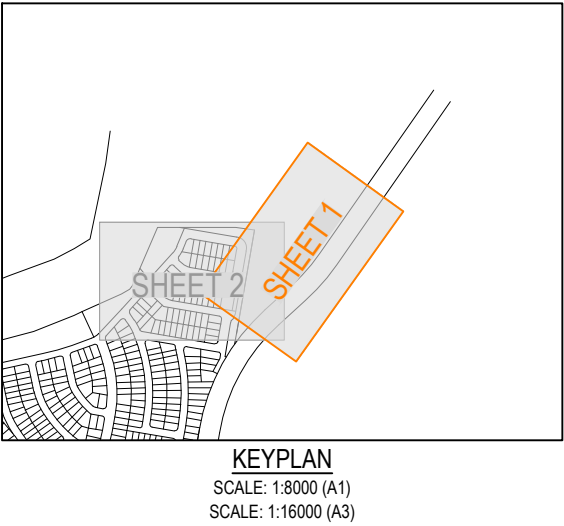


WARNING! - EXISTING SERVICES
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS FOR EASTING AND NORTHING SETOUT OF SEWER STRUCTURES AND ENDS.



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1653

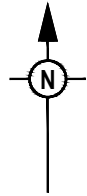
Date: 24/09/2025



Queensland Government

REFER SHEET 1 FOR CONTINUATION

REVISION DETAILS					DRAWN		STATUS		Colliers	SCALE 1:500 10 5 0 10 20 A1 1:1000	CLIENT  ASSOCIATED CONSULTANT	PROJECT NAME MONARCH GLEN No. 1 PTY LTD TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	DRAWING TITLE TRUNK SEWER MAIN OPTION 2 OPEN CUT TRENCHING LAYOUT PLAN SHEET 1 OF 2		
REV	DATE	DESIGN	DRAWN	ORIGINAL ISSUE	BR	BR	NOT FOR CONSTRUCTION	DESIGN					PROJECT No.	DRAWING No.	REVISION
A	22.08.25	BR	BR	ORIGINAL ISSUE	BR	BR	NOT FOR CONSTRUCTION	APPROVED DANIEL COLLINS RPEQ 18631 DATE 22.08.25					24-0750	0620	A



DRAWING TITLE		
TRUNK SEWER MAIN OPTION 2 OPEN CUT TRENCHING LAYOUT PLAN SHEET 2 OF 2		
PROJECT No.	DRAWING No.	REVISION
24-0750	0621	A

STRUCTURE NAME	1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	10/1	11/1	12/1	13/1	14/1	15/1	16/1	17/1
STRUCTURE TYPE & DROP	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V	C3 V
STRUCTURE LID TYPE	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
BRANCH LINE No.	-9°	-90°	4°		1°			61°	1°	32°	-90°	10°	21°	-79°	6°	-8°
BRANCH DROP TYPES											V		Z			Z

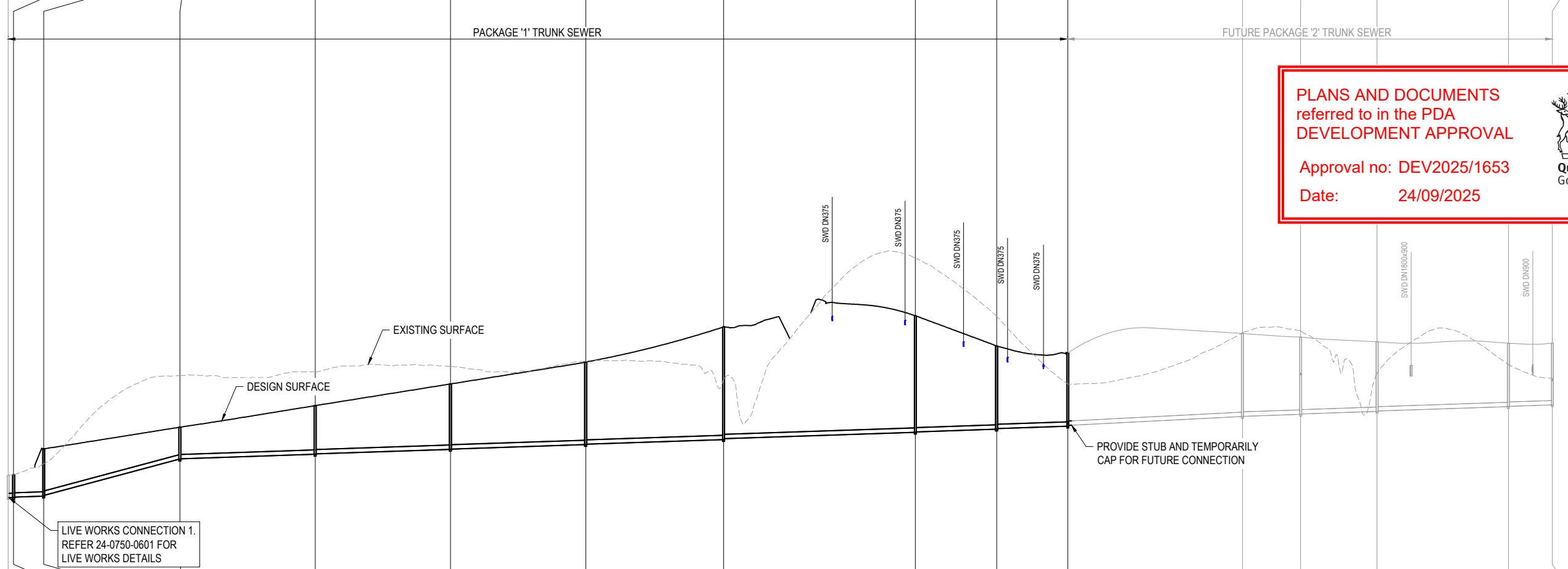
STRUCTURE TYPES
C1 = CAST-IN-SITU 1.0500
C2 = CAST-IN-SITU 1.2000
C3 = CAST-IN-SITU 1.5000
C4 = CAST-IN-SITU 1.8000
C5 = CAST-IN-SITU 2.0000
C6 = CAST-IN-SITU 2.4000

FOR DEEP STRUCTURES - REFER TO
LOGAN WATER STANDARD DRAWING
LW-SEW-DWG-2052
MH DROP TYPES:
AS PER LW-SEW-DWG-2120
DROP TYPES:
V = DROP THROUGH BASE
Z = >750mm INTERNAL DROP
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT
DOWN

NOTE: PE LINING OF MANHOLES:
PE LINING REQUIREMENTS AS PER
SEWER SEQ CODE CLAUSE 7.6.2.

EMBEDMENT NOTE:
REFER TO DWG. No. 601 FOR PIPE
EMBEDMENT & TRENCHFILL DETAIL.

IF MATERIAL CHANGES FROM ROCK
TO OTHER MATERIAL, GEOTECH TO
CONFIRM IF TYPE 4 BEDDING IS
REQUIRED.



DATUM RL(m)	34.0															
LAND USE	ROAD RES.				ROAD RESERVE (NEW BEITH ROAD)			NEW BEITH ROAD	OPEN SPACE		ROAD RESERVE			ROAD RESERVE		
PIPE DIA & TYPE								DN375 SewerMAX+ SN20						DN375 SewerMAX+ SN20		
PIPE GRADE (1 in x)	1 IN 300	1 IN 300	1 IN 37.744	1 IN 300	1 IN 300	1 IN 300	1 IN 300	1 IN 300	1 IN 200	1 IN 300	1 IN 300	1 IN 200	1 IN 300	1 IN 300	1 IN 300	1 IN 300
EMBEDMENT								TYPE '3' (REFER EMBEDMENT NOTE)						TYPE '3' (REFER EMBEDMENT NOTE)		
JUNCTION INVERT LEVEL											49.559					53.232
DEPTH TO INVERT	1.905	1.905	1.952	1.922							6.282	6.202				5.312
SEWER INVERT LEVEL	43.210	43.210	43.225	43.265							49.334	49.414				51.168
DESIGN SURFACE LEVEL	45.115	45.115	45.178	45.178							55.615	55.615				56.457
EXISTING SURFACE LEVEL	45.115	45.115	45.178	45.178							55.615	55.615				56.457
SETOUT	E33773.363	N73669.192	E33770.033	N73872.438	E33748.867	N73887.261	E33681.869	N73791.395	E33609.633	N73700.872	E33536.450	N73610.888	E33463.259	N73520.893	E33388.634	N73429.136
RUNNING CHAINAGE	0.000	4.650	4.650	25.840	30.491	116.794	147.284	115.969	263.253	115.987	379.240	116.000	495.240	118.271	613.511	164.419

LINE NUMBER LINE 1

PLOT: 27 Aug 2025 09:30 AM LOCATION: H:\2025\0408 Uncluttered (Jzovm) \Figs\Long\Design\Long\Trunk Sewer\24-0750-0601\TRUNK SEWER LAYOUT CP21.dwg

REV	DATE	DESIGN	DRAWN	REVISION DETAILS	DRAWN	STATUS		SCALE 1:2000 20 0 20 40 60 80 100 A1 1:4000 HORIZONTAL 1:200 2 0 2 4 6 8 10 A1 1:400 VERTICAL	CLIENT ASSOCIATED CONSULTANT	PROJECT NAME MONARCH GLEN No. 1 PTY LTD TRUNK SEWER MAIN - PACKAGE 1 HOMESTEAD DRIVE MONARCH GLEN	DRAWING TITLE TRUNK SEWER OPTION 2 OPEN CUT TRENCHING LONGITUDINAL SECTIONS	PROJECT No. 24-0750	DRAWING No. 0622	REVISION B
A	22.08.25	BR	BR	ORIGINAL ISSUE	BR	NOT FOR CONSTRUCTION								
B	27.08.25	BR	BR	UPDATE PIPE TYPE	BR	APPROVED DANIEL COLLINS RPEQ 18631 DATE 27.08.25								
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD														