THE VILLAGE STAGE 7C & 7D
AT
286 LAKESIDE DRIVE OONOONBA

CTM STANDARD DRAWINGS

SEWERAGE RETICULATION

SEW-1103-1	RIGSS PIPELAYING TYPICAL ARRANGEMENTS
SEW-1104-1	SEWERAGE HOUSE CONNECTION TYPICAL CONSTRUCTION DETAILS RIGSS-SHEET1
SEW-1105-1	SEWERAGE HOUSE CONNECTION TYPICAL CONSTRUCTION DETAILS RIGSS-SHEET2
SEW-1200-1	SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR ANCHORS AND THRUST BLOCKS
SEW-1200-2	EMBEDMENT & TRENCH FILL TYPICAL ARRANGEMENT
SEW-1201-1	TYPICAL STANDARD EMBEDMENT FLEXIBLE & RIGID PIPES
SEW-1202-1	TYPICAL SPECIAL EMBEDMENT INADEQUATE FOUNDATIONS REQUIRING OVER EXCAVATION &REPLACEMENT
SEW-1207-2	TYPICAL DRAINAGE OF SEWER TRENCHES AND DIVERSION DRAINS
SEW-1300-1	MAINTENANCE HOLES < DN300 SEWER TYPES P1, P2 & P3 TYPICAL PRE-CAST
SEW-1301-1	CAST IN-SITU MAINTENANCE HOLE TYPICAL COPING & ANCHOR BRACKET DETAILS
SEW-1302-1	MAINTENANCE HOLES CAST IN-SITU & PRECAST TYPICAL PIPE CONNECTION DETAILS
SEW-1303-1	MAINTENANCE HOLES SEWERS < DN300 TYPICAL CHANGES IN LEVEL DETAILS
SEW-1303-4	TYPICAL STAINLESS BRACKETS FOR DN100 AND DN150 UPVC DROP PIPES
SEW-1304-1	MAINTENANCE HOLES SEWERS <DN300 TYPICAL CHANNEL ARRANGEMENTS
SEW-1305-1	MAINTENANCE HOLES TYPICAL CHANNEL DETAILS
SEW-1306-1	MAINTENANCE HOLES TYPICAL ALTERNATIVE DROP CONNECTIONS
SEW-1307-1	DN1000 TO DN1500 CAST IN-SITU MAINTENANCE HOLES TYPICAL DETAILS
SEW-1308-1	TYPICAL MAINTENANCE HOLE COVER & SURROUND DETAIL
SEW-1308-5	MAINTENANCE HOLE COVER SEWER-CLASS B-BOLT DOWN TYPICAL FRAME DETAILS
SEW-1308-6	MAINTENANCE HOLE COVER SEWER-CLASS B-BOLT DOWN TYPICAL COVER DETAILS
SEW-1308-7	MAINTENANCE HOLE COVER SEWER-CLASS B-BOLT DOWN TYPICAL COVER DETAILS
SEW-1313-1	MAINTENANCE HOLE SEWER CONNECTION DETAILS ALL PIPE MATERIALS
SEW-1314-1	MAINTENANCE STRUCTURES FOR DN225 AND SMALLER RIGSS TYPICAL ARRANGEMENT DETAILS
SEW-1314-2	MAINTENANCE SHAFTS MS AND VARIABLE BEND FOR RIGSS TYPICAL ARRANGEMENT DETAILS
SEW-1314-3	GRAVITY SEWERS RIGSS TYPICAL IN-LINE BEND DETAILS

CTM STANDARD DRAWINGS

WATER RETICULATION

SEQ-WAT-1102-1	TYPICAL MAINS CONSTRUCTION RETICULATION MAIN ARRANGEMENT
SEQ-WAT-1105-2	TYPICAL CONNECTION TO EXISTING MAINS
SEQ-WAT-1200-2	EMBEDMENT & TRENCH FILL TYPICAL ARRANGEMENT
SEQ-WAT-1201-1	STANDARD EMBEDMENT TYPICAL FLEXIBLE & RIGID PIPES
SEQ-WAT-1202-1	TYPICAL SPECIAL EMBEDMENT INADEQUATE FOUNDATIONS REQUIRING OVER EXCAVATION & REPLACEMENT
SEQ-WAT-1205-1	TYPICAL THRUST BLOCK DETAILS MASS CONCRETE
SEQ-WAT-1206-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VALVES
SEQ-WAT-1207-1	TYPICAL THRUST AND ANCHOR BLOCKS FOR VERTICAL BENDS
SEQ-WAT-1300-1	TYPICAL VALVE, HYDRANT AND WATER MAIN ROAD CROSSING ROAD AND PAVEMENT MARKERS
SEQ-WAT-1301-1	TYPICAL VALVE AND HYDRANT INSTALLATION VALVE ARRANGEMENT
SEQ-WAT-1302-1	TYPICAL VALVE AND HYDRANT INSTALLATION HYDRANT ARRANGEMENT
SEQ-WAT-1304-1	TYPICAL AIR VALVE INSTALLATION FOR TRUNK MAIN
SEQ-WAT-1305-1	TYPICAL SURFACE FITTING INSTALLATION VALVE AND HYDRANT SURFACE BOXES TRAFFICABLE AND NON-TRAFFICABLE
SEQ-WAT-1306-1	TYPICAL SURFACE FITTING INSTALLATION VALVE AND HYDRANT SURFACE BOXES SUPPORT AND SURROUND DETAILS

TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS

ROADWORKS

SD-001	TYPICAL CROSS SECTIONS-LOCAL STREETS
SD-015	VERGE ZONES AND TREES-GENERAL TYPE SECTIONS
SD-020	CONCRETE KERBING
SD-060	TRAFFIC SIGN INSTALLATION
SD-065	STREET NAME SIGN AND INSTALLATION DETAILS
SD-070	CONCRETE PATHWAY REINFORCED CONCRETE (MESH) ALTERNATIVE
SD-080	SUBSOIL DRAIN

DRAINAGE

SD-200	PRECAST GRATED KERB INLET SYSTEM AND CAST INSITU STORMWATER MANHOLE
SD-205	STORMWATER MANHOLE DETAILS
SD-210	PRECAST STORMWATER MANHOLE- SLAB TOP DETAILS
SD-215	RAISED GRATE FIELD INLET MANHOLE

LOCALITY PLAN
NOT TO SCALE

DRAWING SCHEDULE

Sheet Number	Sheet Title
C01	COVER SHEET
C02	NOTES - SHEET 1
C03	NOTES - SHEET 2
C04	NOTES - SHEET 3
C05	NOTES - SHEET 4
C06	SAFETY IN DESIGN - SHEET 1
C07	SAFETY IN DESIGN - SHEET 2
C08	EARTHWORKS PLAN - SHEET 1
C09	EARTHWORKS PLAN - SHEET 2
C10	EARTHWORKS TABLES & RETAINING WALL DETAIL
C11	SOIL EROSION & SEDIMENT CONTROL PLAN
C12	ROADWORKS PLAN - SHEET 1
C13	ROADWORKS PLAN - SHEET 2
C14	ROADWORKS DETAILS & SETOUT TABLES
C15	ROADWORKS LONG SECTION - SHEET 1
C16	ROADWORKS LONG SECTION - SHEET 2
C17	ROADWORKS CROSS SECTIONS - SHEET 1
C18	ROADWORKS CROSS SECTIONS - SHEET 2
C19	STORMWATER PLAN
C20	STORMWATER DETAILS SHEET 1
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C22	STORMWATER LONG SECTIONS SHEET 1
C23	STORMWATER LONG SECTIONS SHEET 2
C24	STORMWATER CATCHMENT PLAN
C25	STORMWATER CATCHMENT DETAILS
C26	WATER & SEWER PLAN - SHEET 1
C27	WATER & SEWER PLAN - SHEET 2
C28	SEWER LONG SECTIONS SHEET 1
C29	SEWER LONG SECTIONS SHEET 2

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

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C-ROSEL SHERWOOD

PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
COVER SHEET

NUMBER	SHEET NO.	REVISION
ROSE012	C01	B

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GENERAL NOTES

1. THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER WRITTEN INSTRUCTIONS OR SKETCHES THAT MAY BE ISSUED. THE CONTRACTOR QUALITY MANAGEMENT SYSTEM FOR THIS PROJECT SHALL COMPLY WITH THE TOWNSVILLE CITY COUNCIL REQUIREMENTS FOR A QUALITY CONTROLLED AND ASSURED DEVELOPMENT CONTRACT.
2. ALL DISCREPANCIES SHALL BE REFERRED TO THE SUPERINTENDENT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
3. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS SHALL NOT BE SCALED.
4. THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS.
5. ALL DIMENSIONS ARE IN METRES ON PLANS AND MILLIMETERS IN DETAILS UNLESS NOTED OTHERWISE. ALL CHAINAGES AND LEVELS ARE EXPRESSED IN METRES UNLESS NOTED OTHERWISE.
6. ALL EXISTING LEVELS AT CONNECTIONS TO EXISTING PIPES & PITS TO BE VERIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. EXPLOSIVES SHALL NOT BE USED FOR WORK UNDER THIS CONTRACT.
8. WHERE CONSTRUCTION CERTIFICATION IS REQUIRED, INSPECTIONS ARE TO BE PERFORMED BY A CERTIFYING ENGINEER. THE CONTRACTOR SHALL ALLOW FOR AND GIVE TWO (2) FULL WORKING DAYS NOTICE FOR ALL INSPECTIONS.
9. THE CONTRACTOR SHALL ALLOW IN HIS TENDER FOR APPROVED SUBSTITUTIONS DUE TO NON AVAILABILITY OF NOMINATED ITEMS.
10. NO SUBSTITUTIONS SHALL BE MADE WITHOUT OBTAINING THE APPROVAL OF THE ENGINEER. THE APPROVAL OF A SUBSTITUTION FROM THE SUPERINTENDENT SHALL NOT BE AN AUTHORISATION FOR A VARIATION. ANY VARIATION INVOLVED SHALL BE RESOLVED WITH THE SUPERINTENDENT BEFORE THE WORK COMMENCES.
11. NO HOLES, RECESSES OR CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT. WHERE THE SUPERINTENDENT HAS APPROVED INSTALLING A HOLE IN CONCRETE OR MASONRY ELEMENTS, HOLES FOR FIXING SHALL BE DRILLED (NOT CORED) USING HOLE SIZE AND DRILLING TECHNIQUE REQUIRED BY THE FIXING MANUFACTURERS INSTALLATION INSTRUCTIONS. NON DESTRUCTIVE METHODS SUCH AS GROUND PENETRATING RADAR AND/OR A CONCRETE COVER METER SHALL BE USED TO LOCATE REINFORCEMENT TO AVOID DAMAGE TO EXISTING REINFORCEMENT.
12. ALL MATERIALS AND ELEMENTS SHALL BE FIXED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS FOR THE NOMINATED LOADING CONDITIONS AND THE SUPPORTING STRUCTURE SHOWN ON THESE DRAWINGS.
13. THE CONTRACTOR SHALL PROVIDE SAFETY DATA SHEETS (SDS) OF ALL CHEMICALS TO BE USED IN THE PROJECT TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO BEING DELIVERED TO SITE. NO CHEMICALS SHALL BE BROUGHT ON SITE UNTIL THEY ARE ON THE GOVERNMENT APPROVED LIST OF CHEMICALS. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN APPROVAL FOR THE USE OF ALL CHEMICALS.
14. WHERE ELEMENTS OF WORK REQUIRE SHOP DRAWINGS TO BE PREPARED, THE CONTRACTOR SHALL SUBMIT ANY SHOP DRAWINGS AND MODELS TO THE SUPERINTENDENT FOR REVIEW PRIOR TO FABRICATION. THE REVIEW DOES NOT INCLUDE THE CHECKING OF DIMENSIONS AND QUANTITIES AND DOES NOT RELIEVE THE CONTRACTOR OF THEIR CONTRACTUAL RESPONSIBILITIES. THE CONTRACTOR SHALL ALLOW TEN (10) WORKING DAYS FOR REVIEW. THE SUPERINTENDENT HAS ALLOWED FOR ONE REVIEW OF SHOP DRAWINGS. THE CONSULTANT SHALL BE REIMBURSED FOR ADDITIONAL REVIEW.
15. THE SITE MAY CONTAIN HAZARDOUS MATERIAL (INCLUDING BUT NOT LIMITED TO ASBESTOS). THE CONTRACTOR SHALL IDENTIFY ALL HAZARDOUS MATERIALS AND TREAT/REMOVE IN ACCORDANCE WITH THE RELEVANT REGULATIONS, ACTS AND STANDARDS.
16. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS CODES AND THE BY-LAWS, ORDINANCES AND REQUIREMENTS OF THE RELEVANT AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION AND CONTRACT DOCUMENTS.
17. THE CONTRACTOR IS TO PROVIDE A GUARANTEE, GUARANTEEING THE WORKMANSHIP AND ENSURING THAT THE WORKS ARE CONSTRUCTED IN ACCORDANCE WITH OUR DESIGNS AND DOCUMENTATION AS APPROVED BY COUNCIL FOR CONSTRUCTION.
18. SURVEY CONDUCTED BY VISION SURVEYS ON 14th AUGUST 2025 DRAWING NO. 241074.
19. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING ANY TEMPORARY BENCHMARKS REQUIRED AND REINSTATING ANY PERMANENT BENCHMARKS DISTURBED.
20. ANY AREAS, STRUCTURES, PAVEMENTS OR SERVICES DAMAGED, DIRTIED OR MADE UNSERVICABLE DUE TO CONSTRUCTION WORKS SHALL BE REINSTATED TO THE SATISFACTION OF THE SUPERINTENDENT. ANY DAMAGE CAUSED TO EXISTING SERVICES WILL BE MADE GOOD AT THE CONTRACTORS EXPENSE.

DESIGN BY CONTRACTOR

1. IRRESPECTIVE OF THE FORM OF CONTRACT THAT IS USED FOR THE PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND CERTIFICATION OF ALL TEMPORARY WORKS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
   - DESIGN OF TEMPORARY ACCESS ROADS AND CONTRACTOR SET DOWN AREAS,
   - TRAFFIC MANAGEMENT,
   - TEMPORARY FACILITIES (INCLUDING FOUNDATION CERTIFICATION),
   - WORKING PLATFORMS TO SUIT PROPOSED CONSTRUCTION PLANT,
   - EDGE PROTECTION,
   - STABILITY OF TRENCH EXCAVATIONS (INCLUDING TRENCH SHORING),
   - FORMWORK AND BACKPROPPING, SCAFFOLDING AND ACCESS,
   - CERTIFIED LIFTING POINTS FOR REINFORCEMENT (FOR PREFABRICATED REINFORCEMENT WITH A MASS GREATER THAN 500kg),
   - LIFTING DESIGN FOR PRECAST CONCRETE AND PREFABRICATED ELEMENTS (UNLESS SPECIFICALLY SHOWN ON DESIGN DRAWINGS),
   - ENSURING PARTIALLY COMPLETED WORKS ARE IN A STABLE CONDITION AND NO ELEMENTS ARE OVERSTRESSED IN A TEMPORARY SITUATION,
   - EROSION AND SEDIMENT CONTROL. UNLESS NOTED OTHERWISE THE EROSION AND SEDIMENT CONTROL PLAN PROVIDED WITH THE DESIGN DOCUMENTATION IS A CONCEPT PLAN THAT ONLY INDICATES KEY REQUIRED TREATMENTS. WHERE THE CONTRACTOR PROPOSES AN ALTERNATIVE LAYOUTS OR STAGING, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING COUNCIL APPROVAL.
2. WHERE DESIGNS INCORPORATE PROPRIETARY PRODUCTS, THE DESIGN SHALL BE BASED ON PUBLICLY AVAILABLE PUBLISHED DATA FROM THE MANUFACTURER.
3. WHERE REQUESTED BY THE SUPERINTENDENT, THE CONTRACTOR SHALL PROVIDE DESIGN CALCULATIONS FOR REVIEW. PROCUREMENT OF ANY MATERIALS THAT ARE SUBJECT TO DESIGN AND CONSTRUCT BY THE CONTRACTOR PRIOR TO OBTAINING WRITTEN NON-REJECTION FROM THE SUPERINTENDENT IS AT THE CONTRACTORS OWN RISK.
4. UNLESS OTHERWISE AGREED WITH THE SUPERINTENDENT, CERTIFICATION SHALL BE PROVIDED VIA A FORM 15 SIGNED BY A REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND (RPEQ).

UTILITIES

1. EXISTING SERVICES INDICATED ON THE DRAWINGS ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SERVICES PRESENT. IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK THE POSITION OF ALL SERVICES WITH ALL SERVICES AUTHORITIES, AND ESTABLISH THE POSITION LEVEL AND SIZE OF THE UTILITY SERVICES IN THE FIELD PRIOR TO PROCEEDING WITH ANY CONSTRUCTION OR EXCAVATION WORK.
2. WHERE THE CONTRACT REQUIRES THE CONTRACTORS TO ADJUST, REMOVE, DIVERT, CUT INTO OR CUT OFF ANY SERVICE, THE CONTRACTORS SHALL ARRANGE FOR THE NECESSARY WORK TO BE EXECUTED AT THEIR COST. WHERE THE CONTRACT WORK DOES NOT NOMINATE THE CONTRACTOR TO CARRY OUT SUCH WORK, THE CONTRACTOR SHALL ADVISE THE SUPERINTENDENT.
3. ANY SERVICE MODIFIED OR CONNECTED TO IS TO HAVE ITS CONDITION EVALUATED TO ENSURE IT WILL MAINTAIN ITS SERVICEABILITY FOR THE DESIGN LIFE

ESCP & TMP

1. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION & MAINTENANCE OF THE SOIL EROSION & SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AS PER TOWNSVILLE CITY COUNCIL GUIDELINES AND APPLICABLE 'CATCHMENTS AND CREEKS' FIELD GUIDES.
2. DURING CONSTRUCTION ALL CONTRACTOR VEHICLES THAT ARE NOT ABLE TO BE CONTAINED ON SITE MUST ONLY UTILISE SPACES WITHIN THE ROAD RESERVE THAT DIRECTLY FRONTS THE SUBJECT ALLOTMENT, UNLESS OTHERWISE APPROVED BY COUNCIL. VEHICLES MUST NOT AT ANY TIME OBSTRUCT FOOTPATH AREAS OR SIGHT LINES WITHIN THE VICINITY OF THE DEVELOPMENT.
3. ALL MATERIAL AND MACHINERY TO BE USED DURING THE CONSTRUCTION PERIOD ARE TO BE WHOLLY STORED ON THE SITE UNLESS OTHERWISE AGREED IN WRITING BY COUNCIL.
4. THE OWNER IS RESPONSIBLE FOR THE IMPLEMENTATION & MAINTENANCE OF THE SOIL EROSION & SEDIMENT CONTROL POST CONSTRUCTION.

WATER RETICULATION NOTES

1. THESE DRAWINGS ARE READ IN CONJUNCTION WITH THE RELEVANT STD DWGS, CONSTRUCTION SPECIFICATIONS AND ADDENDUM TO WSA.
2. WATER MAINS ARE CONSTRUCTED ON A 2.8m ALIGNMENT FROM PROPERTY BOUNDARIES UNO.
3. COVER TO WATER MAINS TO BE 600mm UNO.
4. UNLESS OTHERWISE ADVISED BY THE SUPERINTENDENT, EMBEDMENT SHALL BE TYPE 3 AS PER DRAWING SEQ-WAT-1201-1. PIPE UNDERLAY, SIDE SUPPORT AND OVERLAY MATERIAL SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION.
5. PROVIDE COVER BOXES AT ALL VALVES AND HYDRANTS. SURFACE BOXES SHALL BE TYPE D COMPLYING WITH DRAWING SEQ-WAT-1305-1 UNLESS NOTED OTHERWISE.
6. DUCTILE IRON FITTINGS ARE TO BE USED WITH PVC PIPE. FITTINGS MAY BE FBE COATED AND LINED OR CEMENT LINED WITH A BITUMINOUS EXTERNAL COATING.
7. ALL POTABLE AND FIRE WATER TO BE M-PVC PN16 UNLESS NOTED OTHERWISE.
8. VALVES MARKERS TO COMPLY WITH DRAWING SEQ-WAT-1300-1.
9. IF COVER TO VALVE SPINDLE IS GREATER THAN 350mm THEN AN EXTENSION SPINDLE SHALL BE INSTALLED TO ACHIEVE COVER REQUIREMENTS.
10. USE PRE-TAPPED CONNECTORS ON DN100 & DN150 NEW MAIN INSTALLATIONS.
11. USE TAPPING BANDS FOR CONNECTIONS TO EXISTING MAINS AND NEW MAINS >DN 150.
12. TAPPING BANDS ON PVC PIPE TO BE FULL CIRCLE CLAMPING
13. ALL BENDS, TEES AND FITTINGS TO BE D.I.C.L. SOCKET END UNLESS NOTED OTHERWISE.
14. ALL FITTINGS TO BE PROVIDED WITH THRUST ANCHOR OF MIN. AREA AGAINST SOLID GROUND TO TRANSFER UNBALANCED FORCES FROM FITTINGS TO SOLID GROUND.
15. SINGLE PIPELINE THRUST BLOCKS TO BE IN ACCORDANCE WITH WSA-REQUIREMENTS AND MINIMUM THRUST AREA. FOR MULTIPLE PIPES SHALL BE CONFIRMED DURING THE SCHEMATIC DESIGN.
16. PERMANENT ANCHORS TO BE 25MPa CONCRETE. TEMPORARY ANCHORS MAY BE APPROVED TIMBER TOMS.
17. VALVES TO BE SUPPORTED ON CONCRETE PADS TO CARRY WEIGHT OF VALVE.
18. CROSSES TO BE ANCHORED AS FOR TEES WHERE ONE OR MORE BRANCHES CLOSED OFF.
19. MINIMUM AREA OF ANCHORS FOR REDUCERS/TAPERS TO BE EQUAL TO DIFFERENCE IN AREA FOR DEAD END ANCHORS OF DIAMETERS OF EACH END OF REDUCER.
20. MAXIMUM SIZE OF DRILLED HOLES FOR SERVICE CONNECTIONS IN PVC PIPE TO BE 30% DN OR 50 (LOWER VALUE TO BE USED) LARGER HOLES CAN BE USED FOR UNDER PRESSURE TAPPING.
21. FINISH THRUST BLOCKS APPROXIMATELY 100mm ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°
22. THE MANUFACTURERS RECOMMENDED PRACTICE FOR THE ANCHORING OF BENDS, TEES, CROSSES, VALVES AND REDUCERS ETC. SHALL BE FOLLOWED.
23. WHEN SETTING PIPES IN CONCRETE A MEMBRANE OF POLYTHENE, P.V.C. OR FELT SHALL SURROUND THE PIPE AND THE FITTINGS TO PERMIT MOVEMENT.
24. CONNECTIONS TO EXISTING WATER MAIN SHALL BE MADE AT SUCH TIMES AS WILL CAUSE THE LEAST INTERFERENCE WITH THE SUPPLY. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH COUNCIL OR OTHER AUTHORITY CONCERNED FOR THE TIMING OF THE WORK INCLUDING THE NEED TO ISOLATE THE EXISTING MAINS AND NOTIFICATION OF AFFECTED DWELLING OCCUPANTS. ANY COUNCIL FEES ASSOCIATED WITH THE CONNECTION SHALL BE PAID FOR BY THE CONTRACTOR.

TRAFFIC SIGN NOTES

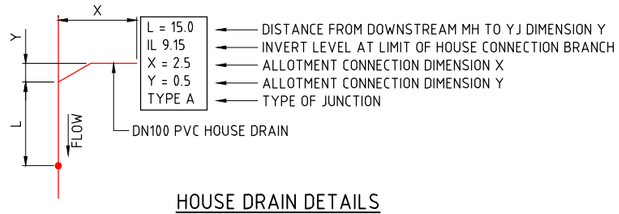
1. ALL EXISTING SIGNS TO REMAIN UNLESS SHOWN OTHERWISE
2. SIGNS ARE TO BE IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORT AND MAIN ROAD QUEENSLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
3. REFER TCC STD DRAWING SD-060 FOR TRAFFIC SIGN DETAILS
4. REFER TCC STD DRAWING SD-065 FOR STREET SIGN DETAILS
5. THE FOLLOWING SIGNS SHALL BE MOUNTED TO PROVIDE THE CLEARANCE INDICATED TO THE UNDERSIDE OF THE SIGN:
   - ALL OTHER SIGNS 2.5m ABOVE FOOTPATH LEVEL
   - HAZARD MARKERS (D4-4 SERIES) 0.6m ABOVE THE MOUNTED SURFACE

LINE MARKING NOTES

1. LINE MARKING IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORT AND MAIN ROADS QUEENSLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. LINE MARKING PAINT SHALL COMPLY WITH MAIN ROADS TECHNICAL STANDARD MRTS 45-ROAD SURFACE DELINEATION (REFLECTIVE TYPE).

SEWER NOTES

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE RELEVANT STANDARD DRAWINGS, CONSTRUCTION SPECIFICATIONS AND ADDENDUM TO WSA.
2. SEWER MAINS ARE CONSTRUCTED ON A 1.8m ALIGNMENT FROM PROPERTY BOUNDARIES UNO.
3. SEWER GRAVITY MAINS TO BE U-PVC, CLASS SN8 (UNLESS NOTED OTHERWISE).
4. ALL SEWER PIPES TO BE RUBBER RING JOINTED UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR MUST REQUEST APPROVAL (REQUEST FOR PRIVATE WORKS QUOTATION) FOR CONNECTION TO EXISTING SEWERS FROM TOWNSVILLE WATER AND WASTE. WORKS SHALL BE EITHER PREFORMED BY COUNCIL OR DELEGATED TO THE CONTRACTOR AT THE DISCRETION OF COUNCIL. ALL NECESSARY WORKS REQUIRED IN COMPLETING CONNECTIONS TO "LIVE" MAINTENANCE HOLES, INCLUDING ALL WORKS UNDERTAKEN BY COUNCIL AT "LIVE" MAINTENANCE HOLES IN DELIVERING THE WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR - REFER ALSO TO WSA 02-2014, PART 2, SECTION 23.
6. MANHOLES (MH) TO BE STANDARD SEWER MANHOLES ø1050. MAINTENANCE SHAFTS TO COMPLY WITH COUNCIL STANDARDS AND MANUFACTURERS SPECIFICATIONS. COVERS TO BE CLASS B UNLESS NOTED OTHERWISE.
7. ALL CONNECTIONS TO MAINTENANCE HOLES SHALL BE AT A SHORT CONNECTOR 450 MIN. TO 600 MAX. LONG.
8. UNLESS OTHERWISE ADVISED BY THE SUPERINTENDENT EMBEDMENT SHALL BE TYPE 3 AS PER DRAWING SEQ-SEW-1201-1. PIPE UNDERLAY, SIDE SUPPORT AND OVERLAY MATERIAL SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATION.
9. TRENCH WIDTHS SPECIFIED ARE MINIMUM WIDTHS THAT ARE REQUIRED TO A LEVEL OF 300mm TRAFFICABLE OR 150mm NON-TRAFFICABLE ABOVE THE OBVERT OF THE PIPE. TRENCH WIDTHS ABOVE THIS LEVEL MAY BE WIDENED TO SUIT SAFETY REQUIREMENTS.
10. MINIMUM COVER TO SEWER PIPES AT MAINTENANCE HOLES TO BE 1200mm. AT INTERMEDIATE LOCATIONS MINIMUM COVER TO BE 750mm WITHOUT CONCRETE SURROUND. MAXIMUM COVER TO BE 5000mm
11. METAL TRACER TAPES FOR LOCATION AND IDENTIFICATION OF BURIED PVC/PE/GRP PRESSURE MAINS AND IDENTIFICATION TAPES FOR IDENTIFICATION OF BURIED PIPELINES TO BE CREAM COLOURED POLYTHENE TAPE WITH INSCRIPTION: "CAUTION-SEWER MAIN BURIED BELOW". METAL TRACER TAPE TO BE LAID ALONG THE MAIN ON TOP OF THE PIPE EMBEDMENT MATERIAL, AND TO BE ATTACHED TO THE METAL SURFACE FITTINGS TO PROVIDE CONNECTION POINTS FOR LOCATING DEVICES.
12. ADAPTER COUPLINGS TO BE PROVIDED TO SUIT.
13. CONCRETE TO BE GRADE S32 SULPHIDE RESISTANT.
14. UNLESS OTHERWISE APPROVED FOR PARTICULAR SITE CONDITIONS, SHORT PIPES (500mm MAX.) TO BE FLEXIBLY JOINTED TO ALL SECTIONS BEDDED ON OR SURROUNDED WITH CONCRETE. MAXIMUM FALL ACROSS MAINTENANCE HOLE SHALL BE 150mm, UNLESS A DROP INLET IS USED.
15. ALL PROPERTY CONNECTION SEWERS SHALL FINISH WITH AN INSPECTION TEE WITH THE END AND INSPECTION OPENING SCREW CAPPED. HOUSE CONNECTION INSPECTION TEE LOCATION MARKER AS PER DRAWING SEQ-SEW-1104-1.



HOUSE DRAIN DETAILS

NOT TO SCALE

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C-ROSEL SHERWOOD

PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING

NOTES - SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C02	B

Plot Date15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\civil\ROSE012-COVER SHEET

EARTHWORKS NOTES

1. ALL WORKS SHALL BE COMPLETED IN ACCORDANCE WITH:
   - COUNCIL REQUIREMENTS
   - THE APPROVED EROSION AND SEDIMENT CONTROL PLAN/REPORT
   - THE GEOTECHNICAL REPORT (WHERE AVAILABLE)
   - THE CULTURAL HERITAGE REPORT (WHERE AVAILABLE)
   - BUSHFIRE MANAGEMENT PLAN (WHERE AVAILABLE)
   - NOISE IMPACT ASSESSMENT (WHERE AVAILABLE)

   WHERE ANY DISCREPANCY OCCURS WITH THE ABOVE IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE SUPERINTENDENT FOR A DIRECTION.
2. EARTHWORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH "AS3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS", EXCEPT WHERE VARIED BY THESE NOTES AND THE SPECIFICATION.
3. THE CONTRACTOR SHALL PROVIDE A NOISE IMPACT ASSESSMENT, COMPLYING WITH SC6.4.19(4)(b) OF THE TCC CITY PLAN AND INFORM THE SUPERINTENDENT 10 WORKING DAYS BEFORE THE INTENTION OF ROCK BREAKING ACTIVITIES. THE SUPERINTENDENT MAY IMPOSE RESTRICTIONS ON THE ROCK BREAKING HOURS OF WORK.
4. ROCK SHALL BE DEFINED AS MATERIAL WHICH CANNOT BE RIPPED AT A PRODUCTION RATE EXCEEDING THE RATE SPECIFIED IN TABLE 1. THE CRAWLER EXCAVATOR SHALL BE EQUIPPED WITH A HEAVY DUTY BUCKET OR ROCK BUCKET (APPROVED BY THE MANUFACTURER OF THE CRAWLER EXCAVATOR FOR USE WITH THE PARTICULAR MODEL OF CRAWLER EXCAVATOR FOR EXCAVATION IN ROCK) OF WIDTH NO GREATER THAN STATED IN TABLE 1. THE BUCKET TEETH SHALL BE FITTED WITH HIGH-PENETRATION BOOTS.

   TABLE 1 - PRODUCTION RATE LIMIT FOR NON-RIPPABLE MATERIAL AND CLASSIFICATION OF EXCAVATORS AND SHOVEL LOADERS.

CLASS NUMBER OF CRAWLER EXCAVATOR	OPERATING MASS (kg)	NET ENGINE POWER (kW)	MAXIMUM BUCKET WIDTH (mm)	PRODUCTION RATE (m^3/h)
55	≥ 12,500 < 15,000	≥ 55 < 65	450	1.5
85	≥ 19,000 < 23,000	≥ 85 < 100	600	3
115	≥ 27,000 < 31,000	≥ 115 < 135	750	4.5
155	≥ 38,000 < 44,000	≥ 155 < 175	900	7
200	≥ 50,000 < 60,000	≥ 200 < 235	1050	10

   NOTES:
   - CLASS NUMBER SHALL BE THE NUMBER OR LOWER OF THE TWO NUMBERS, FOR WHICH THE MACHINE WOULD BE CLASSIFIED SEPARATELY BY NET ENGINE POWER AND BY OPERATING MASS.
   - OPERATING MASS SHALL ALSO INCLUDE STANDARD ATTACHMENTS, FOR EXAMPLE, ONE-PIECE BOOM STANDARD STICK, SMALL BUCKET, STANDARD UNDERCARRIAGE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION AND TESTING THAT SHALL COMPLY WITH THE SPECIFICATION.
6. CERTIFICATES OF ALL DENSITY TESTS SHALL BE PROVIDED TO THE SUPERINTENDENT WITH FIVE (5) WORKING DAYS OF THE TEST RESULTS BEING AVAILABLE. SHOULD THE CONTRACTOR PROCEED WITH EARTHWORKS, PAVEMENT OR BUILDING CONSTRUCTION PRIOR TO NON-REJECTION OF DENSITY TESTS, ALL WORKS ARE COMPLETED AT THE SOLE RISK OF THE CONTRACTOR. UPON COMPLETION OF EARTHWORKS A COMBINED REPORT (INCLUDING LOCALITY) PLAN SHALL BE PROVIDED TO THE SUPERINTENDENT.
7. EXISTING SURFACES UNDER NEW WORKS ARE TO BE STRIPPED OF ALL VEGETATION, TOPSOIL AND UNCONTROLLED FILL TO A MINIMUM DEPTH OF 100mm. ALL TREE STUMPS AND ROOTS SHALL BE CHASED OUT AND REMOVED. IF DECLARED WEEDS ARE ENCOUNTERED THE CONTRACTOR IS TO ADVISE THE SUPERINTENDENT AND DISPOSE OF THEM IN AN APPROVED MANNER.
8. ANY EXCAVATION REQUIRED TO REMOVE EXISTING MANHOLES, PITS STUMPS, ROOTS OR OTHER EXISTING ELEMENTS SHALL BE BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) OR WITH FILL COMPACTED TO 98% STANDARD COMPACTION DRY DENSITY RATIO (OR HILF DENSITY RATIO) OR A DENSITY INDEX OF 75.
9. THE EXPOSED SUBGRADE SHALL BE TYNED AND THE MOISTURE CONTENT BE ADJUSTED TO BE ±2% OF THE OPTIMUM MOISTURE CONTENT.
10. EXPOSED SUBGRADES AND EXCAVATED SURFACES WITH A SLOPE EQUAL TO OR FLATTER THAN 3 HORIZONTAL TO 1 VERTICAL SHALL BE PROOF ROLLED IN THE PRESENCE OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF THE SUBGRADE. PROOF ROLLING SHALL BE UNDERTAKEN IN ACCORDANCE WITH DTMR METHOD Q723, USING A SINGLE AXLE WATER TRUCK HOLDING 7,000 LITRES OR APPROVED EQUIVALENT. IN CONFINED LOCATIONS WHERE THE PLANT NOMINATED IN Q723 WILL NOT FIT, AT LEAST 6 PASSES OF THE HEAVIEST PLANT PRACTICABLE SHALL BE USED FOR PROOF ROLLING OR, WHERE APPROVED BY THE ENGINEER, A LEG RAMMER (NOT A PLATE COMPACTOR) MAY BE USED. ANY SOFT SPOTS IDENTIFIED DURING THE PROOF ROLL MUST BE TREATED AS DIRECTED BY THE CERTIFYING ENGINEER. UNLESS OTHERWISE APPROVED BY THE ENGINEER ANY SOFT SPOTS IDENTIFIED SHALL BE REMOVED AND REINSTATED AS DIRECTED BY THE ENGINEER.
10. THE EXPOSED SURFACE SHALL BE VISUALLY INSPECTED BY THE ENGINEER TO ENSURE THAT NO LOCAL SOFT SPOTS EXIST. ANY SOFT SPOTS IDENTIFIED SHALL BE RECTIFIED AS DIRECTED BY THE SUPERINTENDENT.
11. GENERAL FILL (IF REQUIRED) SHALL BE APPROVED FILL COMPLYING WITH THE FOLLOWING:
   - FREE FROM ORGANIC MATTER
   - MAXIMUM NOMINAL PARTICLE SIZE OF 75mm
   - SHALL BE SOIL TYPE: GW, GM, GC, SW, SM, SC, CL OR CI (AS DEFINED BY AS1726) UNLESS OTHERWISE APPROVED BY THE ENGINEER.
   - A MINIMUM SOAKED CBR OF 15%
   - LIQUID LIMIT LESS THAN 40%
   - LINEAR SHRINKAGE OF BETWEEN 1.5 AND 7.5%
   - WEIGHTED PLASTICITY INDEX LESS THAN 2200
   - CBR SWELL LESS THAN 2.5%

   WHERE CBR AND SWELL ARE VALUES AT OPTIMUM MOISTURE CONTENT (OMC), 97% STANDARD COMPACTION DRY DENSITY RATIO USING STANDARD COMPACTIVE EFFORT, 4 DAY SOAKED BASED ON 4.5kg SURCHARGE.
12. FILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS AND COMPACTED TO 98% STANDARD COMPACTION DRY DENSITY RATIO (OR HILF DENSITY RATIO) UNO EXCEPT AREAS BENEATH LANDSCAPING THAT ARE GREATER THAN 600mm AWAY FROM EITHER:
   - PAVEMENT EDGE;
   - SHOULDER EDGE; OR
   - BUILDING PLATFORM

   AND ARE NOT ON A BATTER, WHICH SHALL BE COMPACTED TO 85% STANDARD COMPACTION DRY DENSITY RATIO (OR HILF DENSITY RATIO).
13. THE EXISTING SURFACE LEVELS AND CONTOURS ARE BASED ON SURVEY CONDUCTED BY VISION SURVEY. ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE DESIGN DOCUMENTATION SHALL BE IMMEDIATELY REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
14. PROMPTLY COVER ANY EXPOSED CLAY SUBGRADE WITH A MINIMUM 150mm OF FILL.
15. THE CONTRACTOR SHALL ENSURE THAT THE SIDES AND BOTTOMS OF ALL EXCAVATIONS ARE STABLE DURING ALL STAGES OF CONSTRUCTION AND REMAIN FREE OF ORGANIC MATERIAL AND RUBBISH. THE CONTRACTOR SHALL ENSURE THAT IF A PERSON ENTERS A TRENCH MORE THAN 1.5m DEEP, THE FOLLOWING CONTROL MEASURES ARE IMPLEMENTED:
   A. HAS SHORING OR SHIELDING IN PLACE; OR
   B. THE TRENCH IS BENCHED; OR
   C. THE TRENCH IS BATTERED - ANGLE NOT EXCEEDING 45° AND THE BOTTOM VERTICAL FACE IS NOT TO EXCEED 0.5m HIGH; AND
   D. IS APPROVED AS A SAFE WORK PLACE (IN WRITING) BY A SUITABLE QUALIFIED GEOTECHNICAL ENGINEER.
16. EXCAVATIONS NEAR THE EDGE OF THE FOOTING SYSTEM SHALL BE BACKFILLED IN SUCH A WAY AS TO PREVENT ACCESS OF WATER TO THE FOUNDATION. TRENCHES SHALL BE SLOPED AWAY FROM THE BUILDING AND SHALL BE PLUGGED BY BACKFILLING WITH COMPACTED CLAY IN THE TOP 300mm WITHIN 150mm OF THE BUILDING.
17. WHERE PIPES PASS UNDER THE FOOTING SYSTEM, THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE.
18. THE SITE SHALL BE MAINTAINED AT ESSENTIALLY STABLE MOISTURE CONDITIONS AND EXTREMES OF WETTING AND DRYING PREVENTED.
19. THE SITE SHALL BE GRADED OR DRAINED SO THAT WATER CANNOT POND AGAINST OR NEAR THE BUILDING. THE GROUND IMMEDIATELY ADJACENT TO THE BUILDING SHALL BE GRADED TO A UNIFORM FALL OF 50mm MINIMUM AWAY FROM THE BUILDING OVER THE FIRST METRE.
20. GRADE EVENLY BETWEEN LEVELS SHOWN.
21. SURFACES DISTURBED DURING CONSTRUCTION SHALL BE MADE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

STORMWATER DRAINAGE

1. STORMWATER DRAINAGE PIPES TO BE
   1.1. ALL REINFORCED CONCRETE STORMWATER DRAINAGE PIPES ARE TO BE MINIMUM CLASS 3, HAVE BELLED - SOCKET RUBBER RING JOINTS AND LAID ON HS2 BEDDING IN ACCORDANCE WITH AS3725 UNO.
   1.2. INFORMATION TO BE SUPPLIED UPON DELIVERY OF ALL REINFORCED CONCRETE PIPES SHALL BE AS PER SECTION 6 OF AS/NZS4058. MEANS OF DEMONSTRATING COMPLIANCE (SUB POINT J OF SECTION 6.1) SHALL INCLUDE EITHER:
   -EACH DELIVERY DOCKET STATING CONFORMANCE TO AS/NZS4058 OR
   -ONE COMPLIANCE CERTIFICATE STATING CONFORMANCE TO AS/NZS4058 PER PROJECT
   INSPECTION OF DELIVERED REINFORCED CONCRETE PIPES BY THE ENGINEER, PRIOR TO INSTALLATION, IS A WITNESS POINT FOR THE PROJECT.
2. ALL STORMWATER PIPEWORK IS TO BE LAID WITH THE SOCKET FACING UPSTREAM. ALL WORKS ARE TO COMMENCE AT THE OUTLET END OF EACH LINE. ALL CUT ENDS OF CONCRETE PIPES SHALL BE TREATED WITH AN APPROVED MIGRATING CORROSION INHIBITOR (MCI) AND AN APPROVED PROTECTIVE EPOXY COATING.
3. THE CONTRACTOR IS TO ORGANISE AND STAGE CONSTRUCTION WORK AND UNDERTAKE ANY DIVERSION WORKS, TO PROTECT WORKS IN PROGRESS UNTIL SUCH A TIME AS THE WORKS ARE IN A FINISHED AND STABLE CONDITION AND TO ENSURE EXISTING DRAINS ARE ABLE TO CONVEY ALL STORMWATER FLOWS THAT MAY OCCUR DURING THE PERIOD OF THE CONSTRUCTION WORKS.
4. THE DRAINAGE SYSTEM FOR THE SITE SHALL BE COMPLETED BY THE FINISH OF CONSTRUCTION OF THE BUILDING. WATER RUN OFF DURING CONSTRUCTION SHALL BE COLLECTED AND CHANNELED AWAY FROM THE BUILDING SITE. WATER SHALL NOT BE ALLOWED TO POND IN TRENCHES.
5. ANY DAMAGE TO THE WORKS DUE TO STORMWATER FLOWS OR FLOODING DURING THE CONSTRUCTION PERIOD IS AT THE CONTRACTORS RISK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING OF THE SITE SHOULD ANY PONDING OF WATER OCCUR DURING CONSTRUCTION.
7. SETOUT POINT FOR STORMWATER STRUCTURES IS AS INDICATED IN THE DRAWINGS UNLESS NOTED OTHERWISE.
8. STORMWATER STRUCTURES ARE TO BE CONSTRUCTED PERPENDICULAR TO THE INCOMING PIPEWORK UNLESS NOTED OTHERWISE.
10. CONCRETE DESIGN FOR STORMWATER STRUCTURES HAS BEEN BASED ON THE USAGE OF THE DRAINAGE SYSTEM FOR FRESH WATER ONLY.
11. PROVIDE SUBSOIL DRAINS AT PITS, MANHOLES AND ACCESS CHAMBERS AS PER SUBSOIL DRAINAGE NOTES.
12. PROVIDE MASS CONCRETE BENCHING IN STORMWATER ACCESS CHAMBERS TO ALLOW MINIMUM 30mm FALL ACROSS PITS. ADJUST BENCHING IN EXISTING MANHOLES AND PITS THAT ARE BEING MODIFIED OR ADJUSTED TO SUIT NEW STORMWATER DRAINAGE.
13. GRATES AND FRAMES SHALL COMPLY WITH THE DRAWINGS AND BE INSTALLED IN ACCORDANCE WITH AS 3996 AND THE MANUFACTURERS RECOMMENDATIONS.
   HINGED GRATES ARE TO BE PROVIDED ON ALL KERB INLET PITS AND WHERE THE MASS OF THE GRATE LID EXCEEDS 20kg.
   HINGED GRATES ARE TO BE PROVIDED WITH A POSITIVE MECHANICAL RETAINER TO SECURE THEM FIRMLY IN PLACE WHEN IN THE OPEN POSITION.
14. ALL EXPOSED EDGES ON STORMWATER PITS TO BE ROUNDED TO 5mm RADIUS.
15. PRECAST COMPONENTS SHALL BE CONNECTED BY MEANS OF HOT DIPPED GALVANISED R24 DOWELS DRILLED AND EPOXIED 200mm INTO SUPPORTING STRUCTURE.
16. DOWEL EPOXY TO BE APPROVED BY THE SUPERINTENDENT PRIOR TO USE.
17. HORIZONTAL JOINT SPACE (~10mm) SHALL BE FILLED WITH A 3:1 SAND:CEMENT MORTAR.
18. VERTICAL JOINTS BETWEEN PRECAST COMPONENTS SHALL BE SEALED WITH AN APPROVED PRODUCT FIXED TO THE EXTERNAL FACE OF THE JOINT. APPLICATION OF EPOXY TO BE AS PER MANUFACTURER'S INSTRUCTIONS OR TECHNICAL DATA SHEETS. INSTALLATION TO BE COMPLETED WITHIN THE POT LIFE OF THE EPOXY PRODUCT.
19. CONNECTION OF STORM WATER DRAINS TO PITS SHALL INCLUDE SWIVEL JOINTS AND FLEXIBLE EXPANSION CONNECTIONS. ANY JOINTS WITH 1m OF THE SLAB EDGE SHALL BE ARTICULATED TO ACCOMMODATE GROUND MOVEMENTS WITHOUT LEAKAGE. AS CONSTRUCTED FALLS IN DRAINAGE SHALL TAKE INTO ACCOUNT THE REACTIVITY OF THE SITE.
20. THE MAXIMUM AND MINIMUM PIPE GRADES SHALL CONFIRM WITH THE FOLLOWING:

PIPE DIAMETER (mm)	MAXIMUM GRADE (%)	MINIMUM GRADE (%)
375	15.0	0.40
450	11.0	0.30

21. SITE STORMWATER DRAINAGE SHALL BE FREE OF LEAKS WHEN SUBJECTED TO THE WATER TEST REQUIREMENTS OF AS/NZS 3500.3.
22. THE CONTRACTOR SHALL CONDUCT INSPECTIONS OF THE STORMWATER DRAINAGE PIPE USING CCTV IN ACCORDANCE WITH WSA 05 CONDUIT INSPECTION REPORT CODE OF AUSTRALIA AND PROVIDE SUMMARY REPORTS. ALL CONDUITS SHALL BE CLEANED PRIOR TO CCTV INSPECTION. CRACK WIDTHS SHALL BE MEASURED AND RECORDED TO A 0.5mm ACCURACY. LONGITUDINAL JOINT DISPLACEMENT SHALL BE MEASURED AND RECORDED TO AN ACCURACY OF 5mm. AN INSPECTION SHALL BE PERFORMED:
   - PRIOR TO PRACTICAL COMPLETION / ON MAINTENANCE,
   - IMMEDIATELY AFTER ANY SECTION OF STORMWATER DRAINAGE IS REPAIRED,
   - PRIOR TO THE END OF THE DEFECTS LIABILITY PERIOD/OFF MAINTENANCE.
23. STORMWATER DRAINAGE CERTIFICATION REQUIREMENTS SHALL BE AS PER THE FOLLOWING TABLE:

ITEM	TEST	RATE
PARTICLE SIZE DISTRIBUTION	AS 1289.3.6.1	FOR RCP BEDDING, HAUNCH ZONE, SIDE ZONE 1 PER MATERIAL

SUBSOIL DRAINAGE

1. ALL SUBSURFACE DRAINS SHALL BE CLASS 1000 DIAMETER (D=100mm), CORRUGATED SLOTTED PIPE TO AS 2439.1 WRAPPED IN A TUBULAR, SEAMLESS FILTER SOCK. JOINTS, COUPLINGS, ELBOWS TEES AND CAPS MUST ALSO COMPLY WITH AS2349.1 AND ONLY THE MANUFACTURERS RECOMMENDED FITTINGS SHALL BE USED.
2. ABSOLUTE MINIMUM GRADE OF SUBSOIL DRAIN IS TO BE 0.5%. PREFERABLE GRADE OF SUBSOIL DRAINS IS 1%.
3. ALL SUBSOIL DRAINS SHALL BE PLACED WITHIN A FREE DRAINING MATERIAL ENCLOSED WITH A GEOTEXTILE SURROUND. THE GEOTEXTILE SURROUND SHALL COMPLY WITH DTMR TECHNICAL SPECIFICATION MRTS27 AND HAVE A MINIMUM STRENGTH CLASS OF A. MINIMUM DIMENSIONS OF FREE DRAINING MATERIAL ARE AS NOMINATED ON THE DRAWING. WHERE NO DIMENSIONS ARE SHOWN, A MINIMUM OF 300mm x 300mm.
4. FREE DRAINING MATERIAL SHALL BE EITHER
   - 20mm NOMINAL NO FINES CONCRETE; OR
   - NON-COHESIVE, GRANULAR MATERIAL WITH A GRADING COMPLYING WITH THE BELOW TABLE AND MATERIAL PROPERTIES COMPLYING WITH:
     - MINIMUM DENSITY = 2500kg/m^3;
     - WET STRENGTH (GREATER THAN 100kN) AND WET/DRY STRENGTH VARIATION (SHALL NOT EXCEED 35%) TO AS1141.22;
     - LOS ANGELES VALUE TO AS1141.23 COMPLIES WITH AS2758.4; AND
     - WEAK PARTICLES TO AS1141.32 (SHALL NOT EXCEED 1%).

TEST SIEVE (mm)	PERCENT PASSING BY MASS	
	20mm NOMINAL FREE DRAINING MATERIAL	10mm NOMINAL FREE DRAINING MATERIAL
19.0	85-100	100
9.5	25-55	85-100
2.36	0-5	0-10
0.075	0-2	0-2

5. SUBSOIL DRAINS SHALL NOT BE USED WITHIN 1.5m OF THE BUILDING OUTLINE UNLESS APPROVED BY THE SUPERINTENDENT.
6. WHERE THE NOMINAL DIAMETER OF THE STORMWATER IS GREATER THAN OR EQUAL TO 375mm, PROVIDE SUBSOIL DRAINAGE PIPE, 3000mm LONG WRAPPED IN TUBULAR, SEAMLESS FILTER SOCK AT EACH STORMWATER MANHOLE AND ALL STORMWATER PITS ADJACENT TO INLET PIPEWORK.
7. WHERE A SUBSOIL DRAIN IS DISCHARGED INTO A STORMWATER MANHOLE OR PIT, UNLESS NOTED OTHERWISE THE OUTLET OF THE SUBSOIL DRAIN SHALL BE LOCATED ABOVE THE LEVEL OF THE OBVERT OF THE STORMWATER PIPES/CULVERTS. THE SUBSOIL DRAIN OUTLETS SHALL BE FITTED WITH PEST-PROOF FLAPS.
8. MINIMUM COVER OVER SUBSURFACE DRAIN PIPE FOR VARIOUS COMPACTORS SHALL BE AS FOLLOWS:
   HAND HELD UNITS - 100 mm
   UNITS < 15 TONNES - 200 mm
   UNITS > 15 TONNES - 300 mm
9. PROVIDE CLEANOUTS AT HEAD OF PIPE, AT 90 DEGREE BENDS AND 60 METRE INTERVALS (MAX) UNLESS SHOWN OTHERWISE.
10. FOR LCJ ENGINEERS TO PROVIDE CONSTRUCTION CERTIFICATION (FORM 12) FOR THE WORKS THE FOLLOWING SHALL BE PROVIDED IN ACCORDANCE WITH NOTE 4.

ACTIVITY	KEY QUALITY VERIFICATION REQUIRMENTS	MAXIMUM LOT SIZE	MINIMUM TEST FREQUENCY	TEST METHOD
FREE DRAINING MATERIAL	MATERIAL QUALITY: WET STRENGTH	1 PER CONTRACT	1 PER CONTRACT	AS1141.22
	WET/DRY STRENGTH VARIATION	1 PER CONTRACT	1 PER CONTRACT	AS1141.22
	DENSITY	1 PER CONTRACT	1 PER CONTRACT	
	LOS ANGELES VALUE	1 PER CONTRACT	1 PER CONTRACT	AS2758.4
	WEAK PARTICLES	1 PER CONTRACT	1 PER CONTRACT	AS1141.32
	PARTICLE SIZE DISTRIBUTION	1 PER MATERIAL SOURCE		AS1289.6.3.1

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

REVISION		APP'D	DATE
B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26

APPROVAL

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DRAWN	DESIGNED
SLT	SLT
APPROVED	DATE
RPEQ:	

CLIENT
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PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
NOTES - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C03	B

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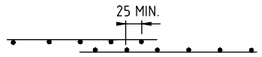
REINFORCEMENT

1. REINFORCEMENT SYMBOLS
   R - GRADE 230R PLAIN ROUND BARS TO AS/NZS4671
   N - GRADE 500 DEFORMED BARS TO AS/NZS4671
   L - GRADE 500 HARD DRAWN WELDED WIRE FABRIC TO AS/NZS4671
   W - HARD DRAWN PLAIN WIRE TO AS/NZS4671
2. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
3. REINFORCEMENT SHALL BE SUPPLIED AND BENT IN ACCORDANCE WITH AS3600. REBENDING OF REINFORCEMENT WITH OR WITHOUT HEATING IS NOT PERMITTED WITHOUT THE APPROVAL OF THE ENGINEER.
4. SPLICES TO REINFORCEMENT SHALL ONLY BE MADE IN POSITIONS SHOWN OR AS APPROVED OTHERWISE BY THE ENGINEER.
5. REINFORCEMENT SPLICES SHALL BE FULL STRENGTH TENSION SPLICES WITH LAPS AS FOLLOWS UNLESS NOTED OTHERWISE.

	fc'	MIN. COVER	N12	N16	N20
ALL HORIZONTAL AND VERTICAL BARS U.N.O	25MPa	30mm	480	750	1030
	32MPa	40mm	390	590	840
	40MPa	45mm	350	530	750
	50MPa	50mm	350	460	610
HORIZONTAL BARS WITH >300 CONCRETE BELOW BAR	25MPa	30mm	630	970	1340
	32MPa	40mm	500	770	1090
	40MPa	45mm	450	650	930
	50MPa	50mm	450	600	800

6. THE MINIMUM FABRIC LAP SHALL BE TWO CROSS WIRES PLUS 25mm. STAGGER SHEETS TO AVOID EXCESSIVE THICKNESS AT LAPS.

7. USE MECHANICAL SPLICES ONLY WHERE SPECIFIED OR APPROVED BY THE ENGINEER.
8. DO NOT WELD REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
9. PROVIDE 3-N12 DIAGONAL BARS x 2000 LONG IN THE TOP LAYER AT ALL RE-ENTRANT CORNERS. 100 MIN. SPACING.
10. REINFORCING BARS SHALL NOT BE CUT TO CLEAR PENETRATIONS NOT DETAILED ON THE DRAWINGS BUT BE DISPLACED TO CLEAR THEM. ADDITIONAL REINFORCING CONSISTENT WITH THE REINFORCEMENT MAT SPACING IS TO BE PROVIDED IN LINE WITH THE BLOCKOUTS.
11. SUPPORT ALL REINFORCEMENT SECURELY IN ITS CORRECT POSITION DURING CONCRETING BY SECURELY TYING WITH 1.25mm WIRE TO APPROVED PLASTIC TIPPED BAR CHAIRS, SPACERS OR SUPPORT BARS. SUPPORT SPACINGS SHALL BE SUCH AS TO POSITION AND MAINTAIN THE REINFORCEMENT TO THE TOLERANCES OF AS3600 AND SHALL BE AT 800mm MAXIMUM CENTRES IN SLABS. BAR CHAIRS SHALL COMPLY WITH AS/NZS 2425. PLASTIC TIPPED STEEL BAR CHAIRS SHALL NOT BE USED FOR EXTERNAL WORK.
12. FOR LCJ ENGINEERS TO APPROVE CONSTRUCTION CERTIFICATION, CONTRACTOR SUBMISSIONS, QUALITY ASSURANCE REQUIREMENTS, INSPECTION AND TESTING SHALL COMPLY WITH TABLE 1 OF DRAWING C04

FORMWORK

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS 3610 AND AS 3600.
2. THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. EXPOSED FORMED SURFACES SHALL HAVE A CLASS 3 SURFACE FINISH AND A 20mm CHAMFER UNLESS NOTED OTHERWISE. OBTAIN SIZES AND LOCATIONS OF PENETRATIONS FROM WORKSHOP DRAWINGS APPROVED BY THE ENGINEER. SIZES MUST NOT EXCEED DIMENSIONS WHERE SHOWN ON THE DRAWINGS.
4. FORMWORK STRIPPING AND BACK PROPPING OF SOFFITS SHALL BE IN ACCORDANCE WITH AS 3610 AND SHALL OCCUR NO SOONER THAN:
   - FORMWORK STRIPPING: 4 DAYS
   - REMOVAL OF SHORES OR BACKPROPS: 12 DAYS

   OR WHEN 25MPa CONCRETE STRENGTH HAS BEEN REACHED. CONCRETE STRENGTH IS TO BE CONFIRMED BY A COMPRESSIVE STRENGTH TEST.
5. FOR LCJ ENGINEERS TO PROVIDE CONSTRUCTION CERTIFICATION (FORM 12) FOR THE WORKS, THE OPPORTUNITY TO INSPECT AND REVIEW THE FOLLOWING ITEMS (PROVIDED BY THE CONTRACTOR) AS A MINIMUM:

ITEM	RATE	TYPE
FORMWORK DESIGN AND CERTIFICATION	ALL FORMWORK REQUIRING DOCUMENTATION	**HOLD POINT**

STEELWORK

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS 4100 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. UNLESS NOTED OTHERWISE OR APPROVED
   2.1. STEEL TO BE AUSTRALIAN MADE IN COMPLIANCE WITH THE RELEVANT AUSTRALIAN STANDARDS.
   2.2. MINIMUM STEEL GRADES TO BE 300 FOR HOT ROLLED SECTIONS INCLUDING FLATS AND 250 FOR PLATE.
   2.3. WELDS TO BE E48XX.
   2.4. WELDS TO BE 6mm CONTINUOUS FILLETS.
   2.5. PROVIDE FIXINGS FOR NON STRUCTURAL ELEMENTS AND GALVANISING VENT HOLES (WHERE APPLICABLE) WITHOUT WEAKENING STRUCTURAL MEMBERS IN ANY WAY.
3. UNLESS NOTED OR SPECIFIED OTHERWISE
   PROVIDE SURFACE COATINGS TO STEELWORK AS FOLLOWS;
   3.1. ALL BOLTS ARE TO BE HOT-DIPPED GALVANISED.
   3.2. STEELWORK SHALL BE HOT-DIPPED GALVANISED.
   3.3. FINISH TOP COATS TO THE CLIENTS SPECIFICATIONS.

CONCRETE

1. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH AS 3600 EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. THE CONTRACTOR SHALL ALLOW FOR AND GIVE TWO FULL WORKING DAYS NOTICE FOR ALL INSPECTIONS.
3. CONCRETE GRADES AND COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS SPECIFIED OTHERWISE:

ELEMENT		EXPOSURE	COVER	GRADE
CULVERT BASE SLAB	- AGAINST GROUND	A2	50	N40
	- FINISHED	B1	40	N40
PITS	- EXTERNAL	B1	40	N32
	- INTERNAL	A1	40	N32
FENCES		B1	40	N25
FOOTPATHS	- AGAINST GROUND	A2	45	N25
	- FINISHED	B1	40	N25
FOOTINGS	- AGAINST GROUND	A2	45	N25
	- FORMED FINISHED	B1	60	N25
KERBS	SHALL COMPLY WITH AS2876. MANUALLY PLACED CONCRETE SHALL BE GRADE N32. MACHINE-PLACED CONCRETE SHALL HAVE A MINIMUM OF, OR EQUIVALENT OF 320kg OF CEMENT PER CUBIC METRE OF CONCRETE			

   MINIMUM CONCRETE GRADES OF MINOR ELEMENTS ARE INDICATED ON THE DESIGN DRAWINGS, WHERE NO GRADE IS SPECIFIED CONCRETE SHALL BE GRADE N32
4. ALL CONCRETE SUPPLIED SHALL HAVE A SLUMP OF 80+/-15mm AND A MAXIMUM NOMINAL AGGREGATE SIZE OF 20mm UNLESS SPECIFIED OTHERWISE .
5. CONCRETE SAMPLING AND TESTING SHALL BE BY PROJECT ASSESSMENT TO AS3600 AND AS1379 UNLESS SPECIFIED OTHERWISE.
6. THE SLAB AND FOUNDATION DESIGN HAS BEEN BASED ON THE FOLLOWING ASSUMPTIONS:
   SITE REACTIVITY (ACCORDING TO AS2870): CLASS M.
   MINIMUM SAFE ALLOWABLE BEARING PRESSURES 100kPa
7. SHOULD CONDITIONS OTHER THAN THOSE DESCRIBED ABOVE BE ENCOUNTERED THEN REFER TO THE ENGINEER FOR POSSIBLE FOOTING REDESIGN.
8. ALL STRUCTURES CAST AGAINST GROUND SHALL BE LAID ON AN APPROVED VAPOUR BARRIER, OR A 50mm THICK N15 BLINDING LAYER EXCEPT FOR FOOTINGS.
9. PROPERLY FORM ALL CONSTRUCTION JOINTS AND LOCATE THEM ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.
10. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
11. THE INSTALLATION CHEMICAL ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.
    SITE TESTING SHALL BE PERFORMED ON MECHANICAL AND CHEMICAL ANCHORS TO VALIDATE CORRECT INSTALLATION (PROOF TESTING).
    A MINIMUM TEST SAMPLE POPULATION SHALL BE THREE SPECIMENS OR 2.5% OF THE TOTAL RELEVANT ANCHOR POPULATION, WHICHEVER IS GREATER. IF A SINGLE FAILURE IS RECORDED, THE MINIMUM TEST SAMPLE POPULATION SHALL BE INCREASED TO SIX TEST SPECIMENS OR 5% OF THE TOTAL RELEVANT ANCHOR POPULATION, WHICHEVER IS GREATER. IF TWO OR MORE TEST SAMPLES FAIL, ALL ANCHORS IN THE RELEVANT ANCHOR POPULATION SHALL BE TESTED.
    THE 'TEST SAMPLE POPULATION' IS DEFINED AS A GROUP OF ANCHORS REPRESENTATIVE OF THE RELEVANT ANCHOR POPULATION, HAVING THE SAME TYPE OF ANCHOR, THE SAME BASE MATERIAL (THAT HAS NOT EXPERIENCED DIFFERENT ENVIRONMENTAL EXPOSURE), SAME INSTALLATION METHOD AND SAME INSTALLATION PERSONNEL. WHERE ANY OF THESE VARIABLES CHANGE, THIS GROUP OF ANCHORS SHALL BE CONSIDERED A SEPARATE ANCHOR POPULATION.
    ALL SITE TESTING OF POST-INSTALLED ANCHORS SHALL BE UNDERTAKEN ACCORDING TO THE REQUIREMENTS OF AEFAC TECHNICAL NOTE 'SITE TESTING GUIDELINES VOLUMES 1 TO 4'. (AVAILABLE AT HYPERLINK "http://www.aefac.org.au/resources.php").
12. ALL CHEMICAL & EXPANSIVE ANCHORS IN CONCRETE OR REINFORCED BLOCKWORK SHALL BE HOT DIPPED GALVANISED AND HILTI OR RAMSET PRODUCTS OR AN APPROVED EQUIVALENT. UNLESS NOTED OTHERWISE, EPOXY FOR CHEMICAL ANCHORS SHALL BE RAMSET REO 502. MINIMUM INSTALLATION REQUIREMENTS SHALL BE AS FOLLOWS.

SIZE	MINIMUM EDGE DISTANCE	MINIMUM SPACING	MINIMUM EMBEDMENT DEPTH	MAXIMUM LOAD FOR PROOF TESTING
M12	100	100	110	6.4 kN
M16	125	125	125	12.2 kN
M20	150	150	140	13.0 kN

13. NO ADMIXTURES SHALL BE USED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER EXCEPT IN STANDARD CONTROLLED GRADE CONCRETE. CALCIUM CHLORIDE ADMIXTURES WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
14. COMPACT ALL CONCRETE DURING PLACEMENT USING HIGH FREQUENCY MECHANICAL VIBRATORS.
15. CURE ALL CONCRETE SURFACES EXPOSED WITHIN 7 DAYS OF INITIAL SET USING A METHOD APPROVED BY AS3799 OR THE STRUCTURAL ENGINEER. COMMENCE CURING WITHIN 1 HOUR OF INITIAL SET OR FIRST EXPOSURE AND CONTINUE FOR AT LEAST 7 DAYS AFTER POURING CONCRETE.
16. THE PROCEDURES OUTLINED IN THE FOLLOWING DATA SHEETS,"CURING OF CONCRETE", "AVOID EARLY CRACKING" AND "HOT-WEATHER CONCRETING", SHALL BE FOLLOWED TO REDUCE THE RISK OF PLASTIC SHRINKAGE CRACKING.
17. MAINTAIN SPECIFIED COVER AT CHAMFERS, DRIP GROOVES, REGLETS AND OTHER MINOR CONCRETE SURFACE TREATMENTS.
18. CONCRETE TO BE BROOM FINISHED
19. UNLESS NOTED OTHERWISE TOLERANCES SHALL COMPLY WITH REQUIREMENTS SET OUT IN THE TABLE BELOW:

ELEMENT	POSITION/ SIZE	SURFACE QUALITY
SLABS AND DISH DRAINS	MAX. DEVIATION FROM ANY SPECIFIED HEIGHT, PLAN OR CROSS-SECTIONAL DIMENSION TO BE THE GREATER OF 1/200 TIMES SPECIFIED DIMENSIONS OR 5mm. SURFACE LEVEL TO BE WITHIN ±10mm OF SPECIFIED LEVEL	EXPOSED EDGES TO BE CLASS 3. FLATNESS- MAX. DEVIATION FROM A 3m STRAIGHTEDGE PLACED ANYWHERE ON THE SURFACE: 5mm.

20. FOR LCJ ENGINEERS TO APPROVE CONSTRUCTION CERTIFICATION, CONTRACTOR SUBMISSIONS, QUALITY ASSURANCE REQUIREMENTS, INSPECTION AND TESTING SHALL COMPLY WITH TABLE 1 OF DRAWING C04.

TABLE 1 - JOB SPECIFIC QUALITY ASSURANCE REQUIREMENTS FOR CONCRETE, REINFORCEMENT AND FORMWORK

ACTIVITY	KEY QUALITY VERIFICATION REQUIREMENTS		MINIMUM TEST FREQUENCY	TEST METHOD AND/OR ACCEPTANCE CRITERIA
PRODUCTS AND MATERIALS	BAR CHAIRS	SUBMIT MANUFACTURERS TECHNICAL DATA SHEET	1 PER BAR CHAIR TYPE	CONCRETE BAR CHAIRS TO BE A DTMR REGISTERED PRODUCT
	REINFORCEMENT	SUBMIT THE MANUFACTURER'S CERTIFICATE OF COMPLIANCE WITH AS/NZS 4671 (2019)	1 PER REINFORCEMENT SOURCE	JAS ANZ ACCREDITED THIRD-PART CERTIFICATION
	CONCRETE	SUBMIT THE SUPPLIER'S MIX DESIGN CERTIFICATE	1 PER CONCRETE MIX TYPE	
	JOINT SEALANT	SUBMIT DETAILS OF THE PROPOSED PRODUCT	1 PER JOINT SEALANT TYPE	
	EVAPORATION RETARDING COMPOUND	SUBMIT DETAILS OF PROPOSED PRODUCT	1 PER MATERIAL	TO BE A DTMR REGISTERED PRODUCT
	LIQUID CURING COMPOUNDS	SUBMIT MANUFACTURERS TECHNICAL DATA SHEET AND SAFETY DATA SHEET	1 PER CURING COMPOUND	TO BE TYPE 2 TO AS 3799 AND TO BE A DTMR REGISTERED CURING COMPOUND
	CURING BY COVERING	SUBMIT DETAILS OF THE PROPOSED COVERING MATERIAL	1 PER PROPOSED CURING METHOD	
	REPAIR MATERIALS	SUBMIT PROPOSALS FOR EPOXY RESIN/GROUT AND ELASTOMERIC SEALANT	1 PER EACH DIFFERENT REPAIR METHOD	
PLACEMENT	SLUMP		EVERY POUR	
	TEMPERATURE AT POINT OF DISCHARGE AND ELAPSED DELIVERY TIME		EVERY POUR	
	CONCRETE STRENGTH		MINIMUM OF 1 SAMPLE (THREE CYLINDERS) FROM EACH 50m³ OF CONCRETE	
	REINFORCEMENT	IN PLACE PRIOR TO CONCRETE POURING	FIRST POUR -HOLD POINT SUBSEQUENT POURS -WITNESS POINT	INSPECTION BY ENGINEER (AND SUPERINTENDENT WHERE REQUESTED)

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

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B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26

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APPROVED	DATE
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ECONOMIC DEVELOPMENT QLD
C-ROSEL SHERWOOD

PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
NOTES - SHEET 3

NUMBER	SHEET NO.	REVISION
ROSE012	C04	B

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PAVEMENT NOTES

1. THIS SET OF NOTES SHALL BE READ IN CONJUNCTION WITH THE QUEENSLAND TRANSPORT AND MAIN ROADS (DTMR) SPECIFICATIONS MANUAL, JOB SPECIFIC ANNEXURES, THE CONTRACT AND ALL OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS. JOB SPECIFIC QUALITY ASSURANCE REQUIREMENTS SHALL COMPLY WITH TABLE 1.
2. ADOPTED SUBGRADE CBR HAVE BEEN SHOWN ON PAVEMENT SECTIONS. WHERE NO CBR IS GIVEN, 3% HAS BEEN ADOPTED. PAVEMENT MAKE UP MAY ONLY BE ALTERED BY APPROVAL OF THE DESIGN ENGINEER, IF THE EXPOSED SUBGRADE CONDITION DIFFER FROM THE DESIGN ASSUMPTIONS.
3. THE SUBGRADE AND ALL PAVEMENT LAYERS SHALL BE PROOF ROLLED IN THE PRESENCE OF THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF THE SUBGRADE AND ALL PAVEMENT LAYERS TO PROOF ROLL. PROOF ROLLING SHALL BE UNDERTAKEN IN ACCORDANCE WITH DTMR METHOD Q723, USING A SINGLE AXLE WATER TRUCK HOLDING 7,000 LITRES OR APPROVED EQUIVALENT. IN CONFINED LOCATIONS WHERE THE PLANT NOMINATED IN Q723 WILL NOT FIT AT LEAST SIX PASSES OF THE HEAVIEST PLANT PRACTICABLE SHALL BE USED FOR PROOF ROLLING OR, WHERE APPROVED BY THE ENGINEER, A LEG RAMMER (NOT A PLATE COMPACTOR) MAY BE USED. ANY SOFT SPOTS IDENTIFIED DURING THE PROOF ROLL MUST BE TREATED AS DIRECTED BY THE CERTIFYING ENGINEER.
4. FLEXIBLE PAVEMENTS SHALL COMPLY WITH THE RELEVANT DTMR TECHNICAL SPECIFICATIONS UNLESS NOTED OTHERWISE.
5. PRIOR TO ORDERING MATERIALS AND COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR REVIEW:
   - INSPECTION AND TEST PLANS FOR PAVEMENT CONSTRUCTION;
   - ASPHALT QUALITY PLAN (AQP);
   - RECYCLED ASPHALT PAVEMENT (RAP) MANAGEMENT PLAN (IF APPLICABLE);
   - QUARRY REGISTRATION CERTIFICATE FOR EACH QUARRY SUPPLYING PAVEMENTMATERIALS; AND
   - MIX DESIGN CERTIFICATE FOR LIGHTLY BOUND BASE, HEAVILY BOUND (CATEGORY 1 AND 2), AND ASPHALT MATERIALS.
6. PAVEMENT LAYERS SHALL HAVE THE FOLLOWING TARGET COMPACTION UNLESS NOTED OTHERWISE:

MATERIAL	VALUE	TEST METHOD
TYPE 2.1	100% MODIFIED COMPACTION	Q140A
TYPE 2.3	100% STANDARD COMPACTION	
SUBGRADE	98% STANDARD COMPACTION	AS1289.5.7.1 (HILF)

   COMPACTION TESTS SHALL BE UNDERTAKEN ON A LOT BASIS IN ACCORDANCE WITH THE RELEVANT TECHNICAL SPECIFICATION.
7. SHOULD ANY QUALITY SUBMISSIONS NOT CONFORM TO THE REQUIREMENTS CONTAINED WITHIN THE CONTRACT DOCUMENTATION, IT SHALL CONSTITUTE A NON-CONFORMANCE UNDER THE CONTRACT. WHEN CONSIDERING ACCEPTANCE OF A NON-CONFORMANCE, THE PREDETERMINED ACCEPTANCE CRITERIA WITHIN THE RELEVANT DTMR SPECIFICATION SHALL APPLY.
8. ASPHALT PROCESS CONTROL SHALL BE A CONTROL CHART FOR INDIVIDUAL SAMPLES, IN ACCORDANCE WITH AP-PWT15. WHERE REQUESTED THE CONTRACTOR SHALL PROVIDE THE CONTROL CHART FOR THIS PROJECT TO THE ENGINEER.
9. ALL CRACKS GREATER THAN 2mm SHALL BE FILLED PRIOR TO THE PLACEMENT OF ANY ASPHALT. CRACKS SHALL BE FILLED WITH AN APPROVED POLYMER MODIFIED SEALANT AND SHALL BE LEVEL WITH THE SURFACE.
10. THE FINAL ASPHALT PAVEMENT SURFACE OF PRIVATE AREAS SHALL HAVE A MAXIMUM DEVIATION FROM A 3m STRAIGHT EDGE OF 5mm AT THE DATE OF PRACTICAL COMPLETION. THE FINAL ASPHALT PAVEMENT SURFACE OF PUBLIC AREAS SHALL HAVE SURFACE SHAPE COMPLYING WITH MRTS30.
11. ALL PAVEMENT LAYERS AND THE FINISHED SURFACE LEVELS SHALL BE SURVEYED BY A REGISTERED SURVEYOR. THE SURVEY SHALL PROVIDE LEVELS AT DESIGN SETOUT POINTS AND AT 10m MAX SPACING FOR:
    A) SUBGRADE;
    B) ALL LAYERS OF GROUND SURFACE TREATMENTS;
    C) ALL LAYERS OF SUBBASE;
    D) BASE;
    E) FINISH SURFACE;

    SURVEY SHALL BE PROVIDED AT COMPLETION OF EACH LAYER AND SHOULD BE TAKEN AT THE SAME LOCATIONS FROM THE PREVIOUS LAYER TO ENSURE ACCURATE THICKNESS MEASUREMENTS. UPON PROJECT COMPLETION A COMPLETE PACKAGE OF ALL SURVEY LAYERS SHALL BE PROVIDED.
12. THE THICKNESS OF A COMPACTED LAYER SHALL NOT VARY FROM THE NOMINATED LAYER THICKNESS BY MORE THAN THE TOLERANCE GIVEN IN THE RELEVANT DTMR TECHNICAL SPECIFICATIONS.
13. SURVEY ASSESSMENT SHALL ALSO BE USED AS MEANS OF DETERMINING COMPLIANCE. THE SURVEY ASSESSMENT CARRIED OUT SHALL:
    - COMPARE THE AS CONSTRUCTED 3D SURVEY SURFACES OF ALL PAVEMENT LAYERS.
    - DETERMINE THE CONSTRUCTED LAYER THICKNESS OF ALL PAVEMENT LAYERS.
    - COMPARE THE LAYER THICKNESS TO THE DESIGN THICKNESS.
    - ASSESS THE AS CONSTRUCTED LAYER THICKNESSES AGAINST THE AVERAGE LAYER THICKNESS REQUIREMENTS GIVEN IN THE RELEVANT DTMR TECHNICAL SPECIFICATIONS.
    - TO ACHIEVE COMPLIANCE, FOR EACH PAVEMENT AND ASPHALT LAYER, THE MAJORITY OF THE AREA SHALL COMPLY WITH THE AVERAGE LAYER THICKNESS TOLERANCES.
14. UPON COMPLETION OF THE WORKS, A WATER TEST SHALL BE CARRIED OUT BY DISCHARGING WATER ONTO THE FINISHED SURFACE. AFTER THE FLOW HAS CEASED, WATER SHALL NOT POND ON ASPHALT OR SPRAY SEAL SURFACES. MAXIMUM DEPTH OF WATER PONDING ON CONCRETE FINISHES SHALL NOT EXCEED 5mm.

TABLE 1: JOB SPECIFIC QUALITY ASSURANCE REQUIREMENTS

ITEM	TEST	RATE	TYPE
FOR EACH GRANULAR PAVEMENT MATERIAL, PAVEMENT LAYER AND MATERIAL SOURCE, UNLESS NOTED OTHERWISE			
SOURCE TESTING			
WET STRENGTH	AS 1141.22	TO COMPLY WITH QUARRY REGISTRATION CERTIFICATE	**HOLD POINT**
WET/DRY STRENGTH VARIATION			
WATER ABSORPTION	AS 1141.6.1		
DEGRADATION FACTOR	Q208B		
PRODUCT TESTING			
FLAKINESS INDEX	Q201	1 PER 2,500t (MIN. OF 2 PER LAYER)	**HOLD POINT**
PARTICLE SIZE DISTRIBUTION	Q103A	1 PER 1,000t	
LIQUID LIMIT	Q104A		
LINEAR SHRINKAGE	Q106		
CBR (4-DAY SOAKED)	Q113A	1 PER 2,500t (MIN. OF 2 PER LAYER)	**HOLD POINT** (CBR TESTING REQUIRED FOR ALL IMPORTED MATERIALS AND ONLEADS)
AVERAGE LEAST DIMENSION (ALD) COVER AGGREGATE ONLY	AS1141.20.3	MIN. 1 FOR EACH AGGREGATE TYPE, NOMINAL SIZE AND SOURCE; AND REPEAT TESTS FOR EVERY 1000t	**HOLD POINT**
FOR EACH ASPHALT MIX, LAYER AND MATERIAL SOURCE, UNLESS NOTED OTHERWISE			
PRODUCT TESTING			
FILLER IN ASPHALT - VOIDS IN DRY COMPACTED FILLER	AS/NZS 1141.17	1 PER MONTH, PER MIX	**HOLD POINT**
FILLER IN ASPHALT - METHYLENE BLUE VALUE FOR THE COMBINED FILLER	AS/NZS 1141.66	1 PER MONTH, PER MIX WHERE METHYLENE BLUE VALUE >10mg/g	
PARTICLE SIZE DISTRIBUTION	Q308A, AS/NZS 2891.3.1	AS PER MRTS30 TABLE 5.4.1(a) WITH A MINIMUM OF 1 TEST	
BINDER CONTENT			
MAXIMUM DENSITY	AS/NZS 2891.7.1		
AIR VOIDS IN LABORATORY COMPACTED SAMPLE	MRTS30 Cl7.2.2		
TENSILE STRENGTH RATIO	ATM 232	1 IN THE FIRST LOT AND 1 PER 5,000t THEREAFTER	
CONSTRUCTION STANDARD TESTS			
COMPACTION -BASE AND SUBBASE	Q140A (HILF TEST NOT APPROVED)	1 PER 500m² (MIN. 4 PER LAYER)	**HOLD POINT** (REFER ALSO TO PAVEMENT NOTES)
-SUBGRADES	AS1289.5.7.1 (HILF)		
DEGREE OF SATURATION	Q146	1 PER 500m² (MIN. 4 PER LAYER)	**HOLD POINT**
PROOF ROLL	Q723	SUBGRADE AND BASE LAYER	**HOLD POINT** (REFER ALSO TO PAVEMENT NOTES)
		SUBBASE LAYERS	WITNESS POINT (REFER ALSO TO PAVEMENT NOTES)
BALL PENETRATION	AG:PT/T251	5 TESTS PER LOT (TEST LOCATIONS TO BE DETERMINED IN ACCORDANCE WITH AS1289.1.4.2 OR AS AGREED WITH THE ENGINEER. TESTING SHALL BE CARRIED OUT IN BOTH WHEEL PATHS OF A TRAFFICABLE LANE.	**HOLD POINT**
SURVEY	-	EACH LAYER	REFER TO PAVEMENT NOTES
SURFACE SHAPE (DEVIATION FROM A STRAIGHT EDGE)	Q712	ON THE FINAL PAVEMENT SURFACE **WITHIN LANE OF PUBLIC ROADWAY:** 1 PER 20m OF EACH PAVING RUN **LONGITUDINAL JOINTS OF PUBLIC ROADWAY:** 1 PER 20m **TRANSVERSE JOINT OF PUBLIC ROADWAY:** 1 PER JOINT IN EACH WHEELPATH **AREAS OUTSIDE OF PUBLIC ROADWAYS:** AT 3m CENTRES IN EACH DIRECTION	
ASPHALT PRODUCTION TEMPERATURE	-	1 PER DELIVERED LOAD	**HOLD POINT**
ASPHALT DISPATCH TEMPERATURE	-		
ASPHALT INSITU AIR VOIDS	CORE SAMPLING AS PER MRTS30 Cl9.2.2	**<50m²:** 0 PER LAYER (3 PER LAYER MEASURED DIP RECORDS SHALL BE PROVIDED IN LIEU OF CORE SAMPLES) **51 - 500m²:** 3 PER LAYER **501 - 1,000m²:** 4 PER LAYER **1,001 -5,000m²:** 5 PER LAYER **>5,000m²:** 10 PER LAYER	
ASPHALT LAYER THICKNESS	CORE SAMPLING AS PER MRTS30 Cl9.4.2.4(B)		

SAFETY IN DESIGN INFORMATION
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PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
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DRAWING
NOTES - SHEET 4

NUMBER	SHEET NO.	REVISION
ROSE012	C05	B

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SAFETY IN DESIGN REPORT

1. THE WORK HEALTH AND SAFETY ACT 2011 REQUIRES DESIGNERS PROVIDE A WRITTEN REPORT OUTLINING THE HAZARDS IDENTIFIED BY THE DESIGNER, ACTIONS TAKEN TO REDUCE THOSE RISKS AND ANY OTHER REMAINING HAZARDS.
2. HAZARDS OUTLINED IN THIS REPORT ARE STRUCTURAL AND CIVIL ENGINEERING IN NATURE, WHICH HAVE BEEN IDENTIFIED SO FAR AS REASONABLE AND PRACTICABLE. OTHER DESIGNERS MAY IDENTIFY ADDITIONAL HAZARDS AND RELEVANT PERSONS MUST REVIEW ALL DESIGNERS' SAFETY IN DESIGN REPORTS.
3. THE ASSET OWNER, CLIENT, CONTRACTOR AND MAINTENANCE CONTRACTOR MUST ENSURE THAT ALL RELEVANT PERSONS ARE MADE AWARE OF THE PROVISIONS OF THE REPORT.
4. THIS REPORT APPLIES TO ALL STAGES OF THE ASSET LIFE INCLUDING CONSTRUCTION, MAINTENANCE, USE AND DEMOLITION.
5. RISKS NOTED AT EACH LIFECYCLE STAGE MAY APPLY TO OTHER STAGES. RELEVANT PERSONS SHALL REVIEW ALL STAGES.

CONTROL MEASURES

1. HAZARDS ARE CONTROLLED THROUGH RISK CONTROL MEASURES AS FOLLOWS:
   ELIMINATION – REMOVE THE HAZARD THROUGH DESIGN MEASURES
   ENGINEERING – PROVIDE AN ENGINEERING SOLUTION TO CONTROL THE RISK
   ADMINISTRATION– USE OF ADMINISTRATION CONTROLS TO INFLUENCE PEOPLE

DESIGN BASIS

1. THIS WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS LISTED ON THE FORM 15.
2. THE FOLLOWING TESTING HAS BEEN UNDERTAKEN:
   - GEOTECHNICAL TESTING – REFER GEOTECHNICAL REPORT NO:
   - ASBESTOS TESTING – REFER...

LIFECYCLE STAGE: CONSTRUCTION

HAZARDS		CONTROL MEASURE	CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION		
FALLS, SLIPS AND TRIPS	WORK AT HEIGHT	PROVIDE SCAFFOLDING AS REQUIRED			✓	CONTRACTOR	CONTRACTOR TO ENSURE ADEQUATE ACCESS AND FALL PROTECTION IS PROVIDED
		PROVIDE EDGE PROTECTION			✓	CONTRACTOR	
		FOLLOW PROVISIONS OF CODE OF PRACTICE: PREVENTION OF FALLS IN GENERAL CONSTRUCTION			✓	CONTRACTOR	
	UNEVEN SURFACES	WHERE APPLICABLE, LEVELS DESIGNED TO MINIMISE UNEXPECTED STEPS AND FALLS		✓		ENGINEER	STEPS AND RAMPS TO BE TO AUSTRALIAN STANDARDS
	EXPOSED REINFORCING BARS	PROVIDE HOOKS TO TOP OF BARS WHERE POSSIBLE		✓		ENGINEER	ENSURE EXPOSED REINFORCEMENT IS TREATED TO REDUCE POTENTIAL HAZARD
		PROVIDE SAFETY CAPS TO UNHOOKED BARS			✓	CONTRACTOR	
WORK ON EXISTING STRUCTURES	STRUCTURE COLLAPSE	OBTAIN EXISTING STRUCTURAL DRAWINGS WHERE POSSIBLE	✓			ENGINEER/CONTRACTOR	SOME EXISTING DRAWINGS WERE AVAILABLE FOR THIS STRUCTURE
		FULLY PROP ANY LOAD BEARING ELEMENTS DURING CONSTRUCTION			✓	CONTRACTOR	MAINTAIN STRUCTURE IN A STABLE CONDITION
LOADS ON PARTIAL STRUCTURES		ENSURE DESIGN LOADS ARE NOT APPLIED TO PARTIALLY CONSTRUCTED STRUCTURE			✓	CONTRACTOR	MAINTAIN STRUCTURE IN A STABLE CONDITION
		WHERE POSSIBLE, DESIGN STRUCTURE FOR PARTIALLY CONSTRUCTED STATE		✓		ENGINEER	ENSURE ALL STAGES OF CONSTRUCTION ARE CONSIDERED IN DESIGN
		CONTRACTOR MUST CONSULT ENGINEER IF DESIGN LOADS WILL BE APPLIED TO PARTIAL STRUCTURES			✓	CONTRACTOR	TEMPORARY USE/ STORAGE OF EQUIPMENT/ GOODS OR MACHINERY ON PARTIAL STRUCTURES TO BE APPROVED BY THE ENGINEER
		TEMPORARILY PROP STRUCTURES AS REQUIRED DURING CONSTRUCTION			✓	CONTRACTOR	TEMPORARY PROPPING IS REQUIRED FOR THIS STRUCTURE
FALLING OBJECTS	STRUCTURAL COMPONENTS	PROVIDE CLEARLY MARKED LIFTING POINTS		✓		ENGINEER	DOCUMENT LIFTING POINTS ON THE COMPONENTS TO BE LIFTED
		CREATE EXCLUSION ZONES			✓	CONTRACTOR	ENSURE NO ACCESS WHERE THERE IS A POTENTIAL FOR FALLING OBJECTS
		ENSURE TEMPORARY PROPS ARE ADEQUATELY DESIGNED AND SECURED		✓		ENGINEER/CONTRACTOR	CONTRACTOR TO PROVIDE TEMPORARY WORK DESIGN
	LOOSE OBJECTS	PROVIDE FLOOR FALL THOUGH PROTECTION WHERE > 1500mm CLEARANCE TO FLOOR BELOW		✓		CONTRACTOR	ENSURE ITEMS CANNOT FALL THROUGH FLOOR
CRUSHING COLLAPSE OF STACKED MATERIALS	HEAVY CONSTRUCTION MATERIALS	PROVIDE EXCLUSION ZONES WHEN MOVING MATERIALS, ENSURE MATERIALS ARE STABLE BEFORE MOVING PLANT			✓	ENGINEER/CONTRACTOR	ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS
SERVICES	RUPTURE OF SERVICE, POSSIBLE ELECTROCUTION	IDENTIFY AND DOCUMENT EXISTING SERVICES			✓	ENGINEER	WHERE KNOWN, EXISTING SERVICES HAVE BEEN NOTED ON PLANS
		DIAL BEFORE YOU DIG			✓	CONTRACTOR	CONTRACTOR RESPONSIBLE TO CONTACT DIAL BEFORE YOU DIG PRIOR TO BEGINNING WORK.
		PROVIDE LOAD PATH AROUND SERVICES		✓		ENGINEER	ENSURE SERVICES ARE COORDINATED DURING DESIGN &/OR SUFFICIENT SUPPORTS PROVIDED SUCH THAT THE STRUCTURE IS STABLE AROUND SERVICES
		ISOLATE SERVICE PRIOR TO CONSTRUCTION	✓			CONTRACTOR	
	OVERHEAD POWERLINES	ENSURE ADEQUATE CLEARANCE TO OVERHEAD POWERLINES			✓	CONTRACTOR	CONTRACTOR TO CONTACT SERVICE PROVIDER AND FOLLOW APPROPRIATE PROCEDURES AS NECESSARY
		ENSURE APPROPRIATE SERVICE PROVIDERS ARE NOTIFIED AND HAZARD FLAGGING IS INSTALLED		✓	✓	CONTRACTOR	
EARTHWORKS	WORK NEAR SHAFTS OR EXCAVATIONS	WHERE POSSIBLE, DESIGN FOR INSTALLATION WITHOUT ENTERING EXCAVATION	✓			ENGINEER	
		WHERE POSSIBLE, PROVIDE EXCAVATION SIDE SUPPORT, OR BENCHES/BATTERS		✓		ENGINEER/CONTRACTOR	PROVIDE SAFE ACCESS AND MAINTAIN A STABLE CONDITION.
		CREATE EXCLUSION ZONES AROUND EXCAVATIONS			✓	CONTRACTOR	PROVIDE CONTROLS TO MINIMISE ACCESS
	EROSION AND SEDIMENT CONTROL	COMPLY WITH EROSION AND SEDIMENT CONTROL PLAN			✓	CONTRACTOR	
	CONSTRUCTION OF AND AROUND STEEP BATTERS	WHERE POSSIBLE FLATTEN BATTERS TO LESS THAN 1 VERTICAL TO 3 HORIZONTAL		✓		ENGINEER/CONTRACTOR	CONTRACTOR TO PROVIDE METHOD STATEMENT FOR BATTERS STEEPER THAN 1 VERTICAL IN 3 HORIZONTAL
	SLOPE STABILITY	OBTAIN A GEOTECHNICAL REPORT AND COMPLY WITH RECOMMENDATIONS	✓		✓	CONTRACTOR	CONTRACTOR RESPONSIBLE FOR ENSURING EXCAVATIONS REQUIRED TO CONSTRUCT THE WORK ARE STABLE
TRAFFIC MANAGEMENT	WORK INVOLVING PUBLIC ROADWAYS, RAILWAYS OR SHIPPING LANES	PROVIDE A TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE MUTCD WHERE APPLICABLE – (INSTALL SIDE TRACKS WHERE NECESSARY)		✓		CONTRACTOR	A TRAFFIC MANAGEMENT PLAN WAS NOT PREPARED FOR THIS PROJECT FOR DESIGN. CONTRACTOR TO PROVIDE TRAFFIC MANAGEMENT PLAN AS REQUIRED FOR CONSTRUCTION
		PROVIDE OFF STREET CARPARKING, ADEQUATE SITE ACCESS AND MATERIAL STORAGE AREAS	✓		✓	CONTRACTOR	CONTRACTOR TO PROVIDE APPROPRIATE OFF STREET LAYDOWN/ STORAGE/ PARKING AREAS AS REQUIRED
WATER BODIES	DROWNING	ISOLATE OR DRAIN WATER BODY WHERE POSSIBLE			✓	CONTRACTOR	
		PROVIDE APPROPRIATE PPE			✓	CONTRACTOR	
	ELECTROCUTION	AVOID ELECTRICAL WORK NEAR WATER BODIES			✓	CONTRACTOR	ENSURE APPROPRIATE CONTROLS ARE IN PLACE
	CAVE INS	CONTRACTOR TO PROVIDE DEWATERING EQUIPMENT AS REQUIRED AND ENSURE THAT THE DEWATERING PROCESS DOES NOT COMPROMISE THE STABILITY OF ADJACENT WORKS			✓	CONTRACTOR	MAINTAIN A STABLE CONDITION
PLANT	OVERTURNING/COLLISION	FOLLOW PROVISIONS OF CODE OF PRACTICE: MANAGING RISKS OF PLANT AT THE WORKPLACE			✓	CONTRACTOR	ENSURE APPROPRIATE PROVISIONS ARE IN PLACE BEFORE MOVING OR WORKING WITH PLANT
	LOADS ON STRUCTURE OR EARTHWORKS	EXCLUDE PLANT FROM EXCAVATION/RETAINING STRUCTURE/BATTER ZONE OF INFLUENCE			✓	CONTRACTOR	ENSURE PLANT CANNOT ACCESS EXCAVATIONS/ RETAINING STRUCTURES/ BATTER ZONE OF INFLUENCE
		DESIGN STRUCTURE FOR APPROPRIATE PLANT LOADS		✓		ENGINEER	ENSURE STRUCTURE HAS BEEN DESIGNED FOR APPROPRIATE CONSTRUCTION LOADS
	COLLISIONS	PROVIDE EXCLUSION ZONES AROUND OPERATING PLAN			✓	CONTRACTOR	ENSURE PERSONNEL, EQUIPMENT AND MACHINERY CANNOT INTERACT WHEN MOVING HEAVY MATERIALS.
HAZARDOUS SUBSTANCES	ASBESTOS	NOMINATE KNOWN LOCATIONS OF ASBESTOS CONTAMINATION			✓	CONTRACTOR	ENSURE ASBESTOS MATERIAL IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED
		DO NOT DISTURB POSSIBLE ASBESTOS MATERIAL			✓	CONTRACTOR	
		TEST POSSIBLE ASBESTOS MATERIALS PRIOR TO DISTURBING			✓	CONTRACTOR	
	TREATED TIMBER	USE APPROPRIATE PPE WHEN CUTTING, SANDING OR DRILLING			✓	CONTRACTOR	ENSURE TREATED TIMBER IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED.
		DO NOT BURN TREATED TIMBER			✓	CONTRACTOR	
	VOLATILE ORGANIC COMPOUNDS	KEEP AREAS WELL VENTILATED WHEN USING GLUES, SOLVENTS AND PAINTS			✓	CONTRACTOR	ENSURE APPROPRIATE CONTROLS ARE IN PLACE
	SYNTHETIC MINERAL FIBRE	USE APPROPRIATE PPE WHEN HANDLING FIBREGLASS, ROCKWOOL OR SIMILAR PRODUCTS			✓	CONTRACTOR	ENSURE APPROPRIATE TREATMENTS/ INSTALLATION METHODS ARE USED FOR THESE PRODUCTS
	CONTAMINATED LAND	REMOVE / CONTAIN SUBSTANCE PRIOR TO CONSTRUCTION			✓	CONTRACTOR	ENSURE CONTAMINATED LAND IS IDENTIFIED, TREATED, STORED AND DISPOSED OF AS MANDATED.

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THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
SAFETY IN DESIGN - SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C06	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-COVER SHEET

LIFECYCLE STAGE: MAINTENANCE

HAZARDS		CONTROL MEASURE	CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION		
TRAFFIC INCIDENTS	MAINTENANCE CONTRACTOR SAFETY	PROVIDE A TRAFFIC CONTROL PLAN WHERE APPLICABLE WHEN PERFORMING MAINTENANCE		✓	✓	MAINTENANCE CONTRACTOR	
FALLS, SLIPS AND TRIPS	WORK AT HEIGHT	WHERE POSSIBLE, PLACE ITEMS OF REGULAR MAINTENANCE AT LOW HEIGHT	✓			ENGINEER	CONSIDER MAINTENANCE ACTIVITES DURING DESIGN
		WHERE APPROPRIATE, PROVIDE SAFE ACCESS TO ITEMS AT HEIGHT, INCLUDING ANCHOR POINTS OR FIXED LADDERS		✓		ENGINEER	
CONFINED SPACE	ENCLOSED SPACES	MINIMISE THE REQUIREMENT TO ENTER CONFINED SPACES FOR MAINTENANCE	✓			ENGINEER	CONSIDER ALTERNATE SOLUTIONS
		FOLLOW THE PROVISIONS OF CODE OF PRACTICE: CONFINED SPACES			✓	CONTRACTOR	COMPLY WITH REQUIREMENTS
		PROVIDE WARNING SIGNS			✓	ARCHITECT	
	STORMWATER DEVICES	PROVIDE INFRASTRUCTURE THAT CAN BE MAINTAINED WITHOUT CONFINED SPACE ENTRY		✓		ENGINEER/ARCHITECT	CONSIDER ALTERNATE SOLUTIONS
ACCESS	ACCESS TO PITS AND MANHOLES	WHERE POSSIBLE ACCESS MANHOLES AND PITS HAVE BEEN PLACED IN PUBLIC PROPERTY AND NOT WITHIN PRIVATE LOTS OR TRAFFIC LANES	✓	✓		ENGINEER	
MATERIAL SELECTION AND DESIGN	MATERIAL DURABILITY	SELECT MATERIALS WHICH REQUIRE MINIMAL MAINTENANCE DURING DESIGN LIFE		✓		ENGINEER	CONSIDER DURABILITY OF MATERIALS
	LOADS ON STRUCTURE	DESIGN SURFACE FOR APPROPRIATE MAINTENANCE LOADS - ELEVATED WORK PLATFORMS ETC.		✓		ENGINEER	ENSURE MAINTENANCE LOADS ARE CONSIDERED IN DESIGN
		WHERE POSSIBLE PROVIDE LEVEL WORKING SURFACE FOR MAINTENANCE		✓		ENGINEER	CONSIDER ACCESS REQUIREMENTS
RETAINING STRUCTURES	TRENCHING/PAVEMENT MAINTENANCE	DESIGN ALLOWS FOR REMOVAL OF PAVEMENT UP TO 500mm DEEP FOR MAINTENANCE		✓		ENGINEER	
MANUAL TASKS	LIFTING OF MATERIALS	PROVIDE MECHANICAL LIFTING DEVICES OR LIFTING POINTS WHERE APPROPRIATE		✓		ENGINEER	
		PROVIDE TRAINING FOR WORKERS			✓	CLIENT	
HAZARDOUS SUBSTANCES	SKIN/EYE IRRITATION	PROVIDE EYE WASH STATION AND SAFETY SHOWER WHERE APPROPRIATE			✓	ENGINEER/ARCHITECT	

LIFECYCLE STAGE: USE FOR INTENDED PURPOSE

HAZARDS		CONTROL MEASURE	CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION		
GENERAL ARRANGEMENT	TYING INTO EXISTING INFRASTRUCTURE	ENSURE NEW WORKS TIE INTO EXISTING AS PER CURRENT DESIGN STANDARDS WHERE ABLE. IF UNABLE, ENSURE CONSISTENCY WITH SURROUNDING ENVIRONMENT AND ENSURE RESIDUAL RISK IS CONVEYED TO THE STAKEHOLDER.		✓		ENGINEER	RESIDUAL RISKS: - NO PEDESTRIAN/ BIKE PATH AS PER EXISTING CONDITIONS - EXISTING CULVERT DOES NOT SUIT CURRENT SM1600 LOADING REQUIREMENTS
	PROJECT RESTRAINTS (eg BUDGET, REGULATORY, PROPERTY, EXISTING CONDITIONS) MAY PREVENT AN IDEAL DESIGN FROM BEING COMPLETED	THE ASSET OWNER MAY BE REQUIRED TO PROVIDE MORE MAINTENANCE THAN PROJECTS WITHOUT RESTRAINTS			✓	ASSET OWNER / CLIENT / MAINTENANCE CONTRACTOR	WHOLE OF LIFE COSTS MAY BE HIGHER IF PROJECT CONSTRAINTS ARE IN PLACE
PAVEMENT DETERIORATION	ROUTINE AND PREVENTATIVE MAINTENANCE	ENSURE SCHEDULED MAINTENANCE WORKS ARE IN ACCORDANCE WITH STANDARD ROAD MAINTENANCE PRACTICES BUT ARE AT LEAST SUFFICIENT TO MAINTAIN THE SKID RESISTANCE, SHAPE, PROFILE AND AMENITY OF THE PAVEMENT AND PREVENT AQUAPLANING			✓	MAINTENANCE CONTRACTOR / ASSET OWNER	ENSURE MAINTENANCE IS SCHEDULED APPROPRIATELY
DRAINAGE STRUCTURES	ROUTINE AND PREVENTATIVE MAINTENANCE	ENSURE SCHEDULED MAINTENANCE WORK ARE IN ACCORDANCE WITH STANDARD MAINTENANCE PRACTICES FOR DRAINAGE BUT ARE AT LEAST SUFFICIENT TO MAINTAIN THE HYDRAULIC PERFORMANCE OF DRAINAGE STRUCTURES AND PREVENT PIPING AND/OR EROSION OF TRENCH BACKFILL			✓	MAINTENANCE CONTRACTOR / ASSET OWNER	ENSURE MAINTENANCE IS SCHEDULED APPROPRIATELY
LINEMARKING / SIGNAGE	FADING	REPLACE WHEN REFLECTIVITY AND / OR LUMINOSITY DOES NOT COMPLY WITH MINIMUM REQUIREMENTS			✓	MAINTENANCE CONTRACTOR / ASSET OWNER	ENSURE MAINTENANCE IS SCHEDULED APPROPRIATELY
FALLS, SLIPS AND TRIPS	ELEVATED PATHS AND WALKWAYS	PROVIDE ADEQUATE BALUSTRADES		✓		ENGINEER / CONTRACTOR	COMPLY WITH PROVISIONS OF ACCESS STANDARDS/ REGULATIONS
	UNEVEN SURFACES	WHERE APPLICABLE, LEVELS DESIGNED TO ELIMINATE UNEXPECTED STEPS AND FALLS		✓		ENGINEER / CONTRACTOR	
	SLIPPERY SURFACES	PROVIDE ADEQUATE DRAINAGE TO ALL SURFACES		✓		ENGINEER / CONTRACTOR	
FALLING OBJECTS	LOOSE OBJECTS	BALUSTRADES AND BARRIERS TO COMPLY WITH ASSET OWNERS REQUIREMENTS		✓		ENGINEER	PROVIDE EXCLUSION ZONES IF THERE IS A POTENTIAL FOR FALLING OBJECTS
		RESTRICT ACCESS TO LOW LEVEL AREAS			✓	ASSET OWNER	ENSURE NO ACCESS WHERE THERE IS A POTENTIAL FOR FALLING OBJECTS
TRAFFIC MANAGEMENT	VEHICLES	DESIGN VEHICLE AND ROAD SAFETY MEASURES COMPLY WITH ASSET OWNERS REQUIREMENTS		✓		ENGINEER	
	PEDESTRIANS	PEDESTRIANS SEPARATED FROM TRAFFIC		✓		ENGINEER	NO SEPARATION HAS BEEN PROVIDED, BUT CONSISTENT WITH EXISTING DESIGN & ADJACENT SECTION OF ROAD
	CYCLISTS	SEPARATED FROM VEHICLE TRAFFIC, NO PINCH POINTS IN DESIGN AND NON-SLIP PAVEMENT MARKINGS ADOPTED WHERE WITHIN DESIGNATED CYCLE WAYS		✓		ENGINEER	NO SEPARATION HAS BEEN PROVIDED, BUT CONSISTENT WITH EXISTING DESIGN & ADJACENT SECTION OF ROAD
	WORKER AND TRAFFIC INTERACTION	SEPARATE TRAFFIC AND PEDESTRIANS WHERE POSSIBLE	✓			ENGINEER	NO SEPARATION HAS BEEN PROVIDED, BUT CONSISTENT WITH EXISTING DESIGN & ADJACENT SECTION OF ROAD
	EMERGENCY AND WASTE MANAGEMENT VEHICLE	ENSURE ADEQUATE ACCESS AND CLEARANCE FOR EMERGENCY AND WASTE MANAGEMENT VEHICLES		✓		ENGINEER / MAINTENANCE CONTRACTOR	ENSURE CLEARANCES INCLUDED IN DESIGN AND MAINTAINED
	UNEXPECTED OVERSIZED VEHICLES	CONSIDERED IN GEOMETRIC DESIGN OF ROAD	✓			ENGINEER	DESIGN IN ACCORDANCE WITH APPLICABLE STANDARDS/ REFERENCES
EROSION	LANDSCAPING AREAS	ENSURE WORKS ARE ESTABLISHED AT HANDOVER AND VEGETATION TYPE, SOIL TYPE AND PREPARATION IS SUITABLE TO ENSURE LANDSCAPING IS SUSTAINABLE			✓	MAINTENANCE CONTRACTOR	ENSURE AREAS ARE MAINTAINED AND PERIODICALLY INSPECTED FOR EROSION
	HARD LANDSCAPING AREAS	ENSURE WORKS ARE MAINTAINED DURING DESIGN LIFE TO ENSURE THAT EROSION DOES NOT COMPROMISE THE SAFETY OF USERS			✓	MAINTENANCE CONTRACTOR	
DISABLED ACCESS	ACCESS AND EGRESS	ENSURE DESIGN CATERS FOR PERSONS WITH DISABILITIES		✓		ENGINEER / ARCHITECT	

LIFECYCLE STAGE: DEMOLITION

HAZARDS		CONTROL MEASURE	CONTROL			PERSON RESPONSIBLE FOR CONTROL	ADDITIONAL NOTES
			ELIMINATION	ENGINEERING	ADMINISTRATION		
SEQUENCING	EARTH COLLAPSE	ENSURE EARTH IS STABLE BEFORE REMOVING STRUCTURE			✓	CONTRACTOR	
	STRUCTURE COLLAPSE	CLEARLY NOTE ANY CONSTRUCTION SEQUENCING REQUIREMENTS ON PLANS			✓	ENGINEER	PROVIDE STRUCTURE DEMOLITION PLANS AND SEQUENCING AS REQUIRED
		FULL SUPPORT STRUCTURE DURING DEMOLITION AND REMOVE IN METHODICAL FASHION			✓	CONTRACTOR	CONTRACTOR TO MAINTAIN STRUCTURE IN STABLE CONDITION DURING SEQUENCED DEMOLITION

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PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
SAFETY IN DESIGN - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C07	B

Plot Date15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\civil\ROSE012-COVER SHEET

NATURAL SURFACE LEVELS WITHIN ADJOINING PROPERTIES TO BE CONFIRMED PRIOR TO WORKS COMMENCING

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NATURAL SURFACE LEVELS WITHIN ADJOINING PROPERTIES TO BE CONFIRMED PRIOR TO WORKS COMMENCING

NEW RETAINING WALL.
REFER DRG C10 FOR DETAILS.

CONTINUES DRAWING C09

EARTHWORKS PLAN
SCALE 1:250 AT A1

LEGEND

- NATURAL SURFACE CONTOURS (0.1m INTERVALS)
- FINISHED SURFACE CONTOURS (0.1m INTERVALS)
- 1:145 FINISHED SURFACE GRADE
- (72) FS4.87 +0.09 (POINT NUMBER) FINISHED SURFACE LEVEL CUT (–) / FILL (+) DEPTH

Levels Table

Number	Minimum Level	Maximum Level	Color
1	-0.288	-0.100	
2	-0.100	0.000	
3	0.000	0.100	
4	0.100	0.250	
5	0.250	0.500	
6	0.500	1.000	
7	1.000	1.500	
8	1.500	2.000	
9	2.000	2.378	

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-5 0 5 10
SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

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DRAWING
EARTHWORKS PLAN - SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C08	B

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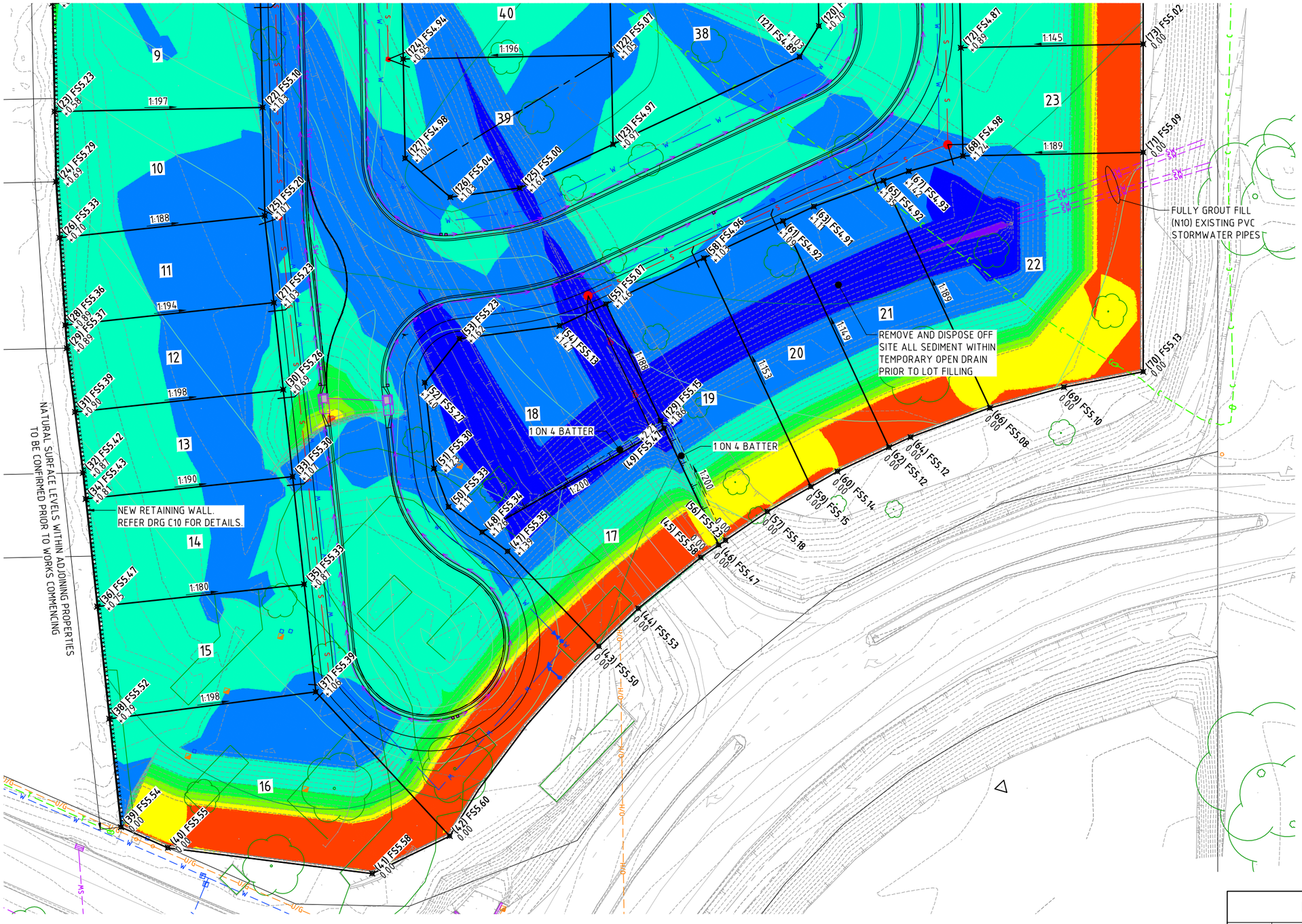
CONTINUES DRAWING C08



EARTHWORKS PLAN
SCALE 1:250 AT A1

LEGEND

- NATURAL SURFACE CONTOURS (0.1m INTERVALS)
- FINISHED SURFACE CONTOURS (0.1m INTERVALS)
- 1:145 FINISHED SURFACE GRADE
- (172) FS4.87 +0.89 (POINT NUMBER) FINISHED SURFACE LEVEL CUT (-) / FILL (+) DEPTH

Levels Table

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8	1.500	2.000	
9	2.000	2.378	

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SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

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DRAWING
EARTHWORKS PLAN - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C09	B

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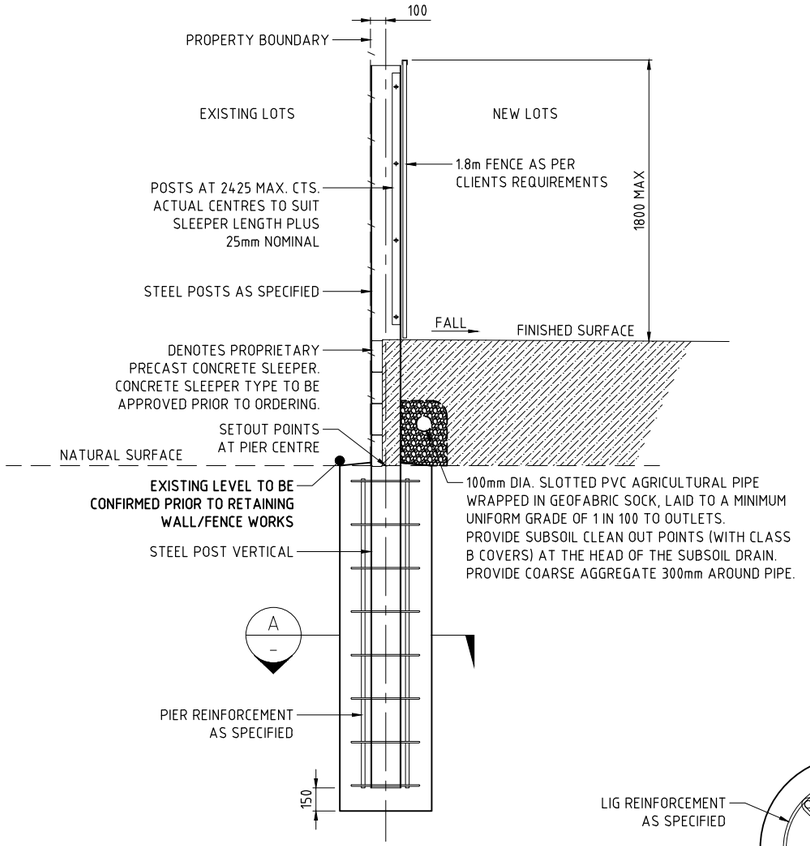
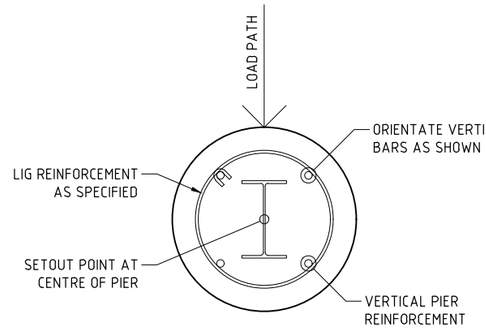
POINT TABLE			
POINT #	EASTING	NORTHING	LEVEL
1	480467.809	7866954.906	4.42
2	480444.894	7866947.666	4.54
3	480471.716	7866942.503	4.50
4	480448.810	7866935.269	4.61
5	480474.856	7866932.591	4.56
6	480475.325	7866930.010	4.57
7	480452.726	7866922.873	4.69
8	480478.161	7866914.758	4.66
9	480457.364	7866908.192	4.77
10	480450.207	7866905.932	4.80
11	480480.084	7866904.354	4.72
12	480453.369	7866895.919	4.86
13	480482.014	7866893.953	4.78
14	480456.532	7866885.906	4.91
15	480483.956	7866883.484	4.83
16	480459.714	7866875.830	4.97
17	480484.586	7866880.084	4.85
18	480486.714	7866873.345	4.88
19	480462.876	7866865.817	5.05
20	480489.876	7866863.332	4.96
21	480466.038	7866855.804	5.13
22	480493.791	7866850.935	5.10
23	480469.953	7866843.408	5.23
24	480472.492	7866835.367	5.29
25	480497.706	7866838.539	5.20
26	480474.801	7866829.044	5.33
27	480501.697	7866828.827	5.23
28	480478.407	7866819.173	5.36
29	480479.360	7866816.562	5.37
30	480505.717	7866819.127	5.26
31	480482.474	7866809.492	5.39
32	480485.443	7866802.752	5.42
33	480509.738	7866809.429	5.30
34	480486.644	7866799.854	5.43
35	480514.716	7866797.418	5.33
36	480491.622	7866787.845	5.47
37	480519.695	7866785.409	5.39
38	480496.811	7866775.330	5.52
39	480501.822	7866763.238	5.54
40	480507.930	7866762.448	5.55
41	480532.351	7866766.406	5.58
42	480540.014	7866773.354	5.60
43	480550.796	7866800.261	5.50
44	480554.043	7866805.948	5.53
45	480559.527	7866813.949	5.58
46	480561.174	7866815.974	5.47
47	480537.050	7866808.110	5.35
48	480533.472	7866809.449	5.34
49	480550.922	7866827.571	5.47
50	480528.744	7866811.217	5.33

POINT TABLE			
POINT #	EASTING	NORTHING	LEVEL
51	480525.768	7866815.153	5.30
52	480521.799	7866824.727	5.27
53	480524.298	7866830.958	5.23
54	480535.422	7866835.857	5.13
55	480540.011	7866839.913	5.07
56	480561.805	7866816.749	5.23
57	480565.648	7866821.474	5.18
58	480549.751	7866848.524	4.96
59	480569.820	7866825.821	5.15
60	480572.365	7866828.472	5.14
61	480557.618	7866855.478	4.92
62	480577.487	7866833.001	5.12
63	480560.685	7866858.189	4.91
64	480579.632	7866834.897	5.12
65	480567.827	7866863.527	4.92
66	480587.788	7866840.946	5.08
67	480570.426	7866865.470	4.93
68	480576.156	7866869.061	4.98
69	480595.621	7866845.856	5.10
70	480604.234	7866850.316	5.13
71	480596.809	7866875.583	5.09
72	480572.241	7866881.458	4.87
73	480593.143	7866888.058	5.02
74	480568.326	7866893.854	4.81
75	480589.477	7866900.533	4.93
76	480566.238	7866900.467	4.77
77	480565.124	7866906.476	4.73
78	480585.811	7866913.008	4.84
79	480561.816	7866924.307	4.61
80	480580.734	7866930.281	4.72
81	480558.322	7866943.143	4.49
82	480575.372	7866948.527	4.58
83	480583.947	7866951.047	4.63
84	480556.499	7866952.971	4.43
85	480556.114	7866954.191	4.42
86	480580.729	7866961.964	4.56
87	480552.956	7866964.205	4.35
88	480577.767	7866972.040	4.49
89	480548.919	7866977.006	4.27
90	480573.988	7866984.922	4.40
91	480533.951	7866967.924	4.29
92	480510.118	7866960.400	4.59
93	480486.270	7866952.870	4.47
94	480537.864	7866955.527	4.38
95	480514.027	7866948.000	4.66
96	480490.185	7866940.471	4.54
97	480539.974	7866948.846	4.43
98	480515.673	7866942.780	4.69
99	480491.372	7866936.713	4.56
100	480541.075	7866942.909	4.47

POINT TABLE			
POINT #	EASTING	NORTHING	LEVEL
101	480517.056	7866935.324	4.73
102	480493.036	7866927.739	4.61
103	480543.005	7866932.507	4.54
104	480518.985	7866924.922	4.79
105	480494.966	7866917.337	4.67
106	480544.934	7866922.105	4.61
107	480520.915	7866914.520	4.85
108	480496.895	7866906.935	4.73
109	480547.323	7866909.227	4.69
110	480523.304	7866901.642	4.92
111	480499.284	7866894.057	4.80
112	480549.713	7866896.342	4.78
113	480525.412	7866890.275	4.98
114	480525.873	7866888.817	4.99
115	480501.111	7866884.209	4.85
116	480502.032	7866881.292	4.87
117	480552.874	7866886.336	4.82
118	480529.034	7866878.807	5.04
119	480505.194	7866871.279	4.91
120	480555.142	7866879.150	4.85
121	480553.977	7866874.949	4.89
122	480532.195	7866868.795	5.07
123	480535.429	7866858.553	4.97
124	480508.356	7866861.267	4.94
125	480526.147	7866850.347	5.00
126	480518.455	7866846.960	5.04
127	480511.943	7866849.907	4.98
129	480550.260	7866828.320	5.15



TYPICAL CONCRETE SLEEPER WALL
SCALE 1:20 AT A1



SECTION A
SCALE 1: 10

WALL SPECIFICATIONS - MAX 1.8m FENCE						
RETAINING WALL HEIGHT (H)	INSTALLED SUBSOIL	POST SIZE	POST SPACING *	PIER DEPTH	PIER DIAMETER	PIER REINFORCEMENT
400mm	NO	200UB25.4	2425mm	1800mm	600mm	4N24 VERT, N12-300 LIGS HORIZ
600mm	NO	200UB25.4	2425mm	2200mm	600mm	4N24 VERT, N12-300 LIGS HORIZ
800mm	NO	200UB25.4	2425mm	2600mm	600mm	4N24 VERT, N12-300 LIGS HORIZ
1000mm	NO	200UB25.4	2425mm	3200mm	600mm	4N24 VERT, N12-300 LIGS HORIZ
1200mm	YES	200UB25.4	2425mm	2400mm	600mm	4N24 VERT, N12-300 LIGS HORIZ
1420mm	YES	200UB25.4	2425mm	3000mm	600mm	4N24 VERT, N12-300 LIGS HORIZ

* ACTUAL POST SPACING TO SUIT SLEEPER LENGTH PLUS 25mm

PIER SOIL PARAMETERS	
BULK DENSITY	19kN/m³
INTERNAL FRICTION ANGLE	30°
COHESION	5kPa
GEOTECHNICAL ENGINEER TO CONFIRM SOIL CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.	

LOADING NOTES

1. ALL LOADS TO AS/NZS 1170 SERIES AND AS4678.
2. DEAD LOADS ARE AS FOLLOWS:
   - SELF WEIGHT OF WALL
   - BACKFILL = 19kN/m³
   - FRICTION ANGLE = 30°
   - COHESION = 5kPa
3. LIVE LOADS ARE AS FOLLOWS:
   - SURCHARGE = 5kPa
   - WALLS WITH SUBSOIL DRAINS HAVE BEEN DESIGNED AS A FREE DRAINING STRUCTURE. NO POREWATER PRESSURE HAS BEEN ALLOWED FOR.
4. ONLY LIGHTWEIGHT / HAND-OPERATED MACHINERY IS PERMITTED FOR COMPACTION WITHIN 2m OF THE BACK OF THE WALL.

CONSTRUCTION METHODOLOGY

1. AUGER PILES, INCLUDING INSTALLATION OF SACRIFICIAL/TEMPORARY LINER (HEAVY DUTY PLASTUBE PVC LINER CLASS 140FW OR EQUIVALENT) TO PREVENT CAVE INS.
2. INSTALLATION OF PREFABRICATED REINFORCEMENT INCLUDING UB'S INTO FOOTINGS
3. POUR CONCRETE.
4. INSTALLATION OF PRECAST CONCRETE SLEEPERS / PANELS
5. INSTALLATION OF GEOFABRIC, SUBSOIL DRAINS AND DRAINAGE GRAVEL (20mm DRAINAGE SCREENINGS).
6. INSTALLATION OF BACKFILL AND COMPACTION OF FILL LAYER (WITH LIGHT / HAND OPERATED MACHINERY ONLY).

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

REVISION	APP'D	DATE
B FOR APPROVAL ISSUE	DEJ	15/04/26
A ORIGINAL ISSUE	DEJ	02/04/26

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C-ROSEL SHERWOOD

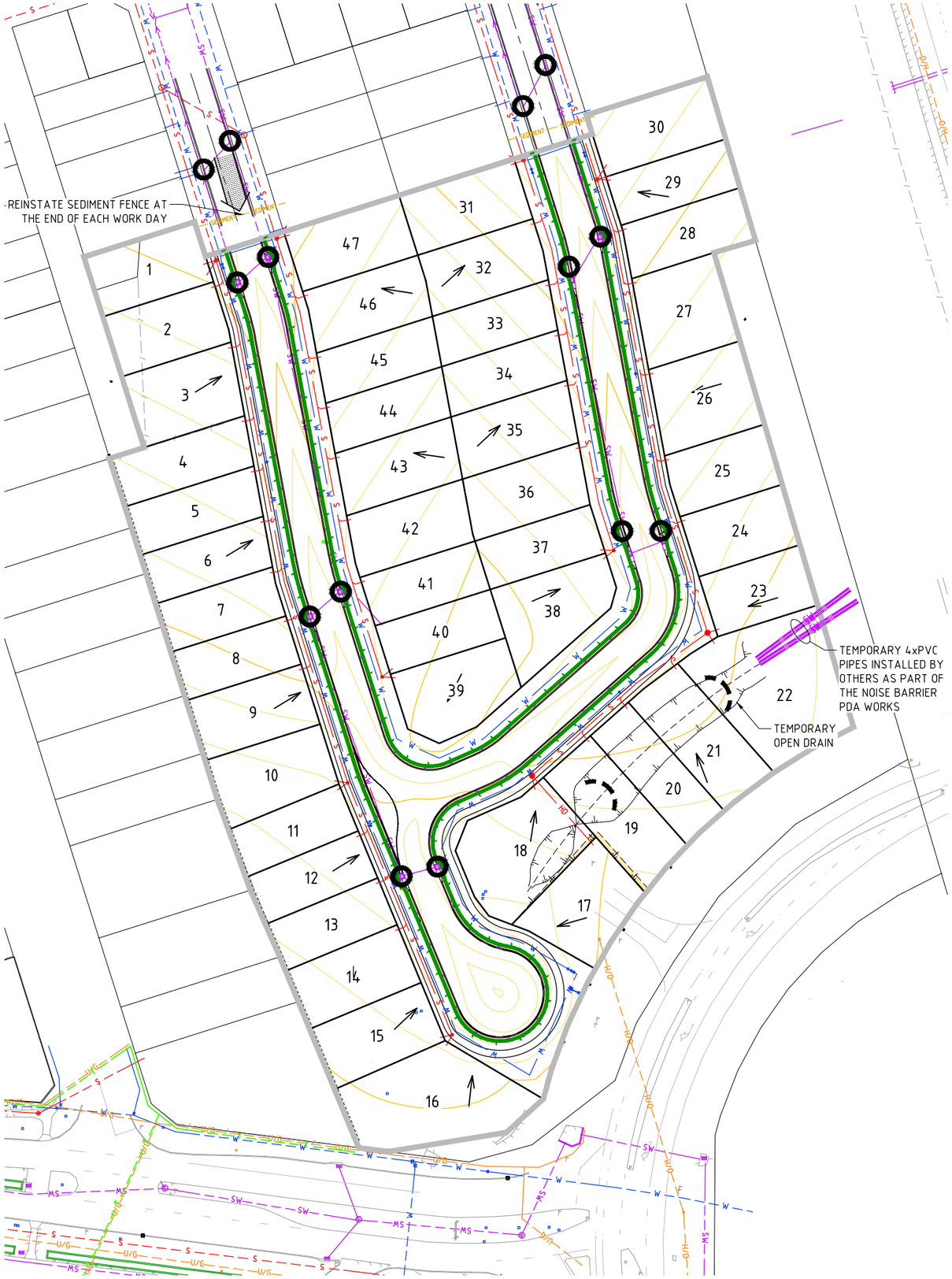
PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
EARTHWORKS TABLES & RETAINING WALL DETAIL

NUMBER	SHEET NO.	REVISION
ROSE012	C10	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-EARTHWORKS



ESC PLAN
SCALE 1:500 AT A1

SOIL EROSION AND SEDIMENT CONTROL ASSESSMENT

1. THE RUSLE SOIL LOSS EQUATION HAS BEEN USED TO DETERMINE AN 'INDICATOR' OF POTENTIAL SOIL LOSS AT THIS SITE.
   A = R. K. LS. C. P
   WHERE:
   - A = ANNUAL SOIL LOSS DUE TO EROSION [t/ha/yr]
   - R = RAINFALL EROSIVITY FACTOR - AS PER TABLE E1 OF IECA FOR TOWNSVILLE
   - K = SOIL ERODIBILITY FACTOR
   - LS = TOPOGRAPHIC FACTOR RELATED TO SLOPE LENGTH AND SLOPE GRADIENT
   - C = COVER AND MANAGEMENT FACTOR
   - P = EROSION CONTROL PRACTICE FACTOR

2. K = 0.043 BASED ON SM (SILTY SAND) - FROM GEOTECH BOREHOLES
3. LS = 0.23 BASED ON TABLE E3 FOR SLOPE LENGTH = 150m AND SLOPE GRADIENT = 1%
4. C = 1 BASED ON EXPOSED SURFACES BEING UNTREATED WITH 0% GRASS COVER.
5. P = 1.3 BASED ON TABLE E11 FOR COMPACTED AND SMOOTH GROUND CONDITIONS
6. SUMMARY OF PREDICTED MONTHLY AND ANNUAL SOIL LOSSES:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARLY
R =	1806	1858	1085	371	123	41	41	80	32	91	266	825	6619
K =	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
LS =	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
C =	1	1	1	1	1	1	1	1	1	1	1	1	1
P =	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
A =	23.2	23.9	13.9	4.8	1.6	0.5	0.5	1.0	0.4	1.2	3.4	10.6	85.1

NOTES:

BASED ON THE ABOVE ASSESSMENT:

a) A TYPE 3 SEDIMENT CONTROL (e.g. SEDIMENT FENCE) WILL BE SUITABLE FOR THE MONTHS OF APRIL TO NOVEMBER.
b) A TYPE 2 SEDIMENT CONTROL (e.g. COMPOST BERM) WILL BE SUITABLE FOR THE MONTHS OF DECEMBER TO MARCH.

CATCHMENTS & CREEKS STANDARD DRAWINGS

DRAINAGE CONTROL TECHNIQUES
OTHER DRAINAGE STRUCTURES
RCD-1 CHECK DAMS

EROSION CONTROL TECHNIQUES
NATURAL MATERIALS
R-1 REVEGETATION - GENERAL
ENTRY/EXIT SYSTEMS
EXIT-1 CONSTRUCTION EXIT - ROCK PAD (CONSTRUCTION SITES)
EXIT-2 CONSTRUCTION EXIT - ROCK PAD (CONSTRUCTION SITES)
SHEET FLOW
BZ-1 BUFFER ZONES (GRASSED)
GFS-1 GRASS FILTER STRIPS
GFS-2 GRASS FILTER STRIPS
SF-1 SEDIMENT FENCE
SF-2 SEDIMENT FENCE
MINOR CONCENTRATED FLOW
CDT-1 CHECK DAM SEDIMENT TRAP
STORMWATER INLETS
FS-1 FILTER SOCKS - CONCENTRATED FLOW
OG-1 ON-GRADE KERB INLET SEDIMENT TRAP
SA-1 SAG KERB INLET SEDIMENT TRAP

LEGEND

- SEDIMENT FENCE
- EXISTING STORMWATER
- NEW STORMWATER
- SITE EXTENT
- 600mm WIDE GRASS STRIP ALONG BACK OF KERB WITH 400mm WIDE LATERAL STRIP PLACED EVER 5m MAX. SITE EXTENT (600, 400, 5m MAX.)
- TEMPORARY CONSTRUCTION ENTRY/EXIT
- ROCK CHECK DAM
- KERB INLET INLET PIT PROTECTION
- SURFACE FLOW DIRECTION

NOTES

1. EXPOSED EARTH TO BE HYDROMULCHED.
2. THE CONTRACTOR IS RESPONSIBLE FOR REVEGETATION AND ESTABLISHMENT OF DISTURBED AREAS DUE TO CONSTRUCTION ACTIVITIES BEYOND WHAT IS SHOWN IN THE DESIGN.
3. FOR CONSTRUCTION OF SOIL EROSIONS & SEDIMENT CONTROL DEVICES REFER CATCHMENT & CREEK STANDARD DRAWINGS FOR DETAILS.
4. TEMPORARY DRAINAGE CONTROL. FLOW SHOULD BE DIVERTED AROUND THE WORK SITE WHERE POSSIBLE.
5. ALL DRAINAGE, EROSION AND SEDIMENT CONTROLS TO BE INSTALLED AND BE OPERATIONAL BEFORE COMMENCING UP-SLOPE EARTHWORKS.
6. NO PARKING OR STOCKPILING OF MATERIALS IS PERMITTED ON THE LOWER SIDE OF THE SEDIMENT FENCE.
7. GRASS VERGES SHALL BE MAINTAINED AS MUCH AS PRACTICAL TO PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
8. BUILDER SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE DO SO IN A FORWARD DIRECTION.
9. SAFETY ISSUES MUST BE CONSIDERED AT ALL TIMES & INCORPORATE TRAFFIC CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT.
10. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES FROM THE TIME OF SITE ESTABLISHMENT COMMENCES UNTIL THE SITE HAS ACHIEVED "OFF MAINTENANCE" STATUS OR UNTIL THE SITE HAS BEEN STABILISED TO THE SATISFACTION OF THE SUPERINTENDENT.
11. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED BY THE SUPERINTENDENT.
12. CONTROL MEASURES MAY BE REMOVED WHEN ON-SITE EROSION IS CONTROLLED AND 70% PERMANENT SOIL COVERAGE IS OBTAINED OVER ALL UPSTREAM DISTURBED LAND.
13. IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES TO BE EITHER MULCHED, COVERED WITH EROSION CONTROL BLANKETS OR TURFED IF EARTHWORKS ARE EXPECTED TO BE DELAYED FOR MORE THAN 14 DAYS.

SAFETY IN DESIGN INFORMATION
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-10 0 10 20
SCALE OF METRES 1:500 AT A1 & 1:1000 AT A3

REVISION		APP'D	DATE
B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26

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THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
SOIL EROSION & SEDIMENT CONTROL PLAN

NUMBER	SHEET NO.	REVISION
ROSE012	C11	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ESCP

CONNECT NEATLY INTO EXISTING FOOTPATH AND TRANSITION TO NEW PROFILE OF 1m IF REQUIRED. REFER TCC STD DRG SD-070 FOR CONNECTION DETAILS

JOIN NEATLY INTO EXISTING PAVEMENT AS PER PAVEMENT CUTBACK DETAIL ON DRG C14

JOIN NEATLY INTO EXISTING PAVEMENT AS PER PAVEMENT CUTBACK DETAIL ON DRG C14

CONNECT NEATLY INTO EXISTING FOOTPATH AND TRANSITION TO NEW PROFILE OF 1m IF REQUIRED. REFER TCC STD DRG SD-070 FOR CONNECTION DETAILS

2/N12 HOOP BARS SURROUNDING SEWER ACCESS WITH ABLEFLEX AND SEALANT

2/N12 HOOP BARS SURROUNDING SEWER ACCESS WITH ABLEFLEX AND SEALANT

2/N12 HOOP BARS SURROUNDING SEWER ACCESS WITH ABLEFLEX AND SEALANT

MC01 - LEGGETT CRESCENT CONTROL LINE

MC01 - LEGGETT CRESCENT CONTROL LINE

MC01 - LEGGETT CRESCENT CONTROL LINE
2/N12 HOOP BARS SURROUNDING SEWER ACCESS WITH ABLEFLEX AND SEALANT

LEGGETT CRESCENT

282.608
280.000
TP269.252
TP263.128
260.000
240.000
220.000
TP215.859
TP209.736
200.000
180.000
TP176.309
IP 161.476
140.000
100.000
TP105.832
120.000
0.000
TP17.465
20.000
TP23.588
40.000
60.000
TP70.857
TP76.980
80.000
TP91.422
TP140.4

1 2 3 4 5 6 7 8 9 10 11 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

3.0% 3.0% 3.30 3.30

L1 L2 L3 L4 L5 L6 L7 C1 C2 C3 C4 C5 C6 C7 C8

CONTINUES DRAWING C13

ROADWORKS PLAN
SCALE 1:250 AT A1

LEGEND

- SW — EXISTING STORMWATER
- EXISTING SUBSOIL
- S — EXISTING SEWER MAIN
- W — EXISTING WATER MAIN
- C — EXISTING COMMUNICATIONS
- SW — NEW STORMWATER
- NEW SUBSOIL
- HD — NEW SEWER HOUSE DRAIN
- S — NEW SEWER MAIN
- W — NEW WATER MAIN
- FINISHED SURFACE CONTOURS (0.1m INTERVALS)
- NEW ROAD PAVEMENT
- NEW 1.5m WIDE FOOTPATH
- 120.000 ROAD CHAINAGE

# DENOTES NEW KERB TO BE CONNECTED TO EXISTING KERB WITH 2/N12 HOT DIP GALVANISED DOWELS x 450 LONG AT EACH SIDE OF DRIVEWAY (150 EMBEDMENT AND EPOXY GROUTED INTO EXISTING KERB) IF REQUIRED TRANSITION TO NEW KERB PROFILE OVER 500mm.

THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE PROVIDER.

SAFETY IN DESIGN INFORMATION
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-5 0 5 10
SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

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A	ORIGINAL ISSUE	DEJ	02/04/26
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THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
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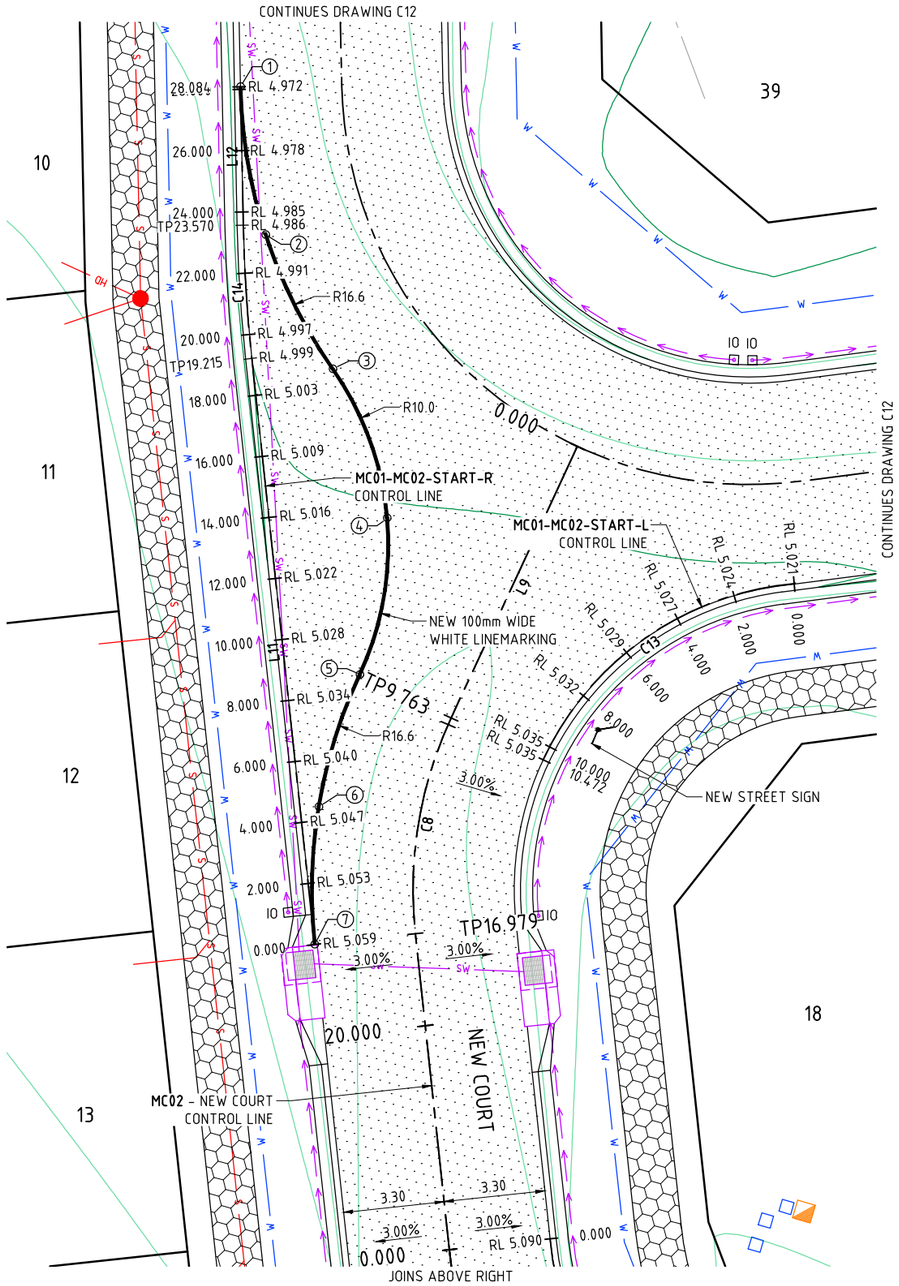
DRAWING
ROADWORKS PLAN - SHEET 1

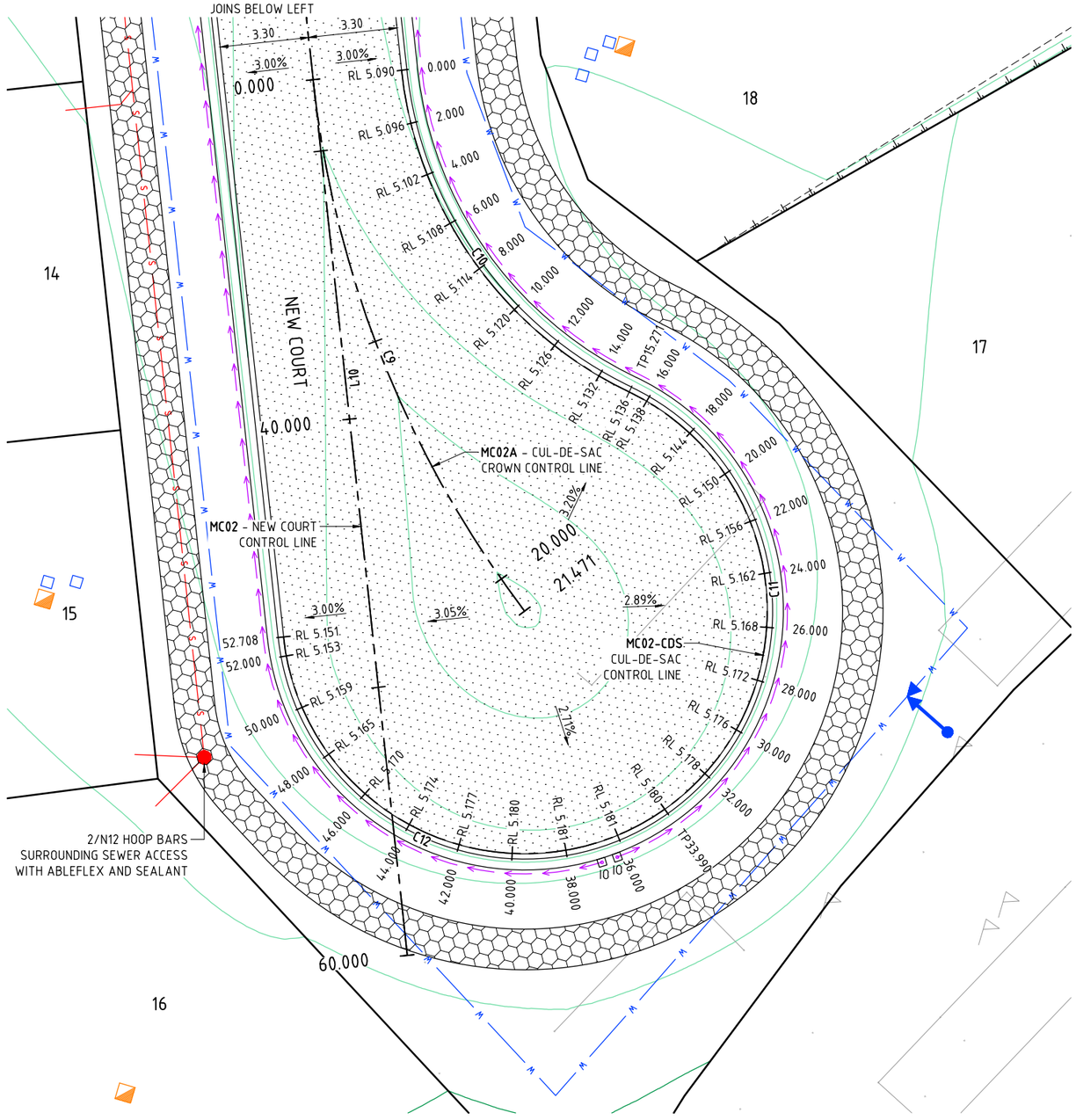
NUMBER	SHEET NO.	REVISION
ROSE012	C12	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS



INTERSECTION DETAIL PLAN

SCALE 1:100 AT A1



CUL-DE-SAC DETAIL PLAN

SCALE 1:100 AT A1

LINEMARKING SETOUT TABLE		
POINT #	EASTING	NORTHING
1	480500.691	7866846.354
2	480502.836	7866841.956
3	480506.170	7866838.375
4	480509.243	7866834.209
5	480509.823	7866829.066
6	480509.756	7866824.550
7	480510.898	7866820.208

THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE PROVIDER.

LEGEND

- EXISTING STORMWATER
- EXISTING SUBSOIL
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING COMMUNICATIONS
- NEW STORMWATER
- NEW SUBSOIL
- NEW SEWER HOUSE DRAIN
- NEW SEWER MAIN
- NEW WATER MAIN
- FINISHED SURFACE CONTOURS (0.1m INTERVALS)
- NEW ROAD PAVEMENT
- NEW 1.5m WIDE FOOTPATH
- 120.000 ROAD CHAINAGE
- ⑦ LINEMARKING SETOUT POINT

SAFETY IN DESIGN INFORMATION

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-2 0 2 4

SCALE OF METRES 1:100 AT A1 & 1:200 AT A3

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SLT	SLT
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RPEQ:	

CLIENT
ECONOMIC DEVELOPMENT QLD
C-ROSEL SHERWOOD

PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
ROADWORKS PLAN - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C13	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS

MC01 ALIGNMENT SETOUT TABLE

Number	CHAINAGE	EASTING	NORTHING	Line/Chord Direction	RADIUS
L1	0+00.000 0+17.465	480542.054 480547.313	7866970.486 7866953.832	S17° 31' 29.73"E	
C1	0+17.465 0+23.588	480547.313 480548.795	7866953.832 7866947.895	S14° 01' 00.70"E	50.000
L2	0+23.588 0+70.857	480548.795 480557.417	7866947.895 7866901.418	S10° 30' 31.68"E	
C2	0+70.857 0+76.980	480557.417 480558.899	7866901.418 7866895.482	S14° 01' 00.70"E	50.000
L3	0+76.980 0+91.422	480558.899 480563.248	7866895.482 7866881.710	S17° 31' 29.72"E	
C3	0+91.422 1+05.832	480563.248 480559.607	7866881.710 7866868.581	S15° 29' 57.67"W	12.500
L4	1+05.832 1+40.407	480559.607 480533.702	7866868.581 7866845.681	S48° 31' 25.07"W	
C4	1+40.407 1+48.133	480533.702 480527.221	7866845.681 7866841.532	S57° 22' 37.26"W	25.000
L5	1+48.133 1+53.968	480527.221 480521.881	7866841.532 7866839.181	S66° 13' 49.45"W	
C5	1+53.968 1+76.309	480521.881 480503.837	7866839.181 7866847.348	N65° 38' 50.13"W	13.300
L6	1+76.309 2+09.736	480503.837 480493.772	7866847.348 7866879.223	N17° 31' 29.72"W	
C6	2+09.736 2+15.859	480493.772 480492.290	7866879.223 7866885.160	N14° 01' 00.70"W	50.000
L7	2+15.859 2+63.128	480492.290 480483.668	7866885.160 7866931.637	N10° 30' 31.68"W	
C7	2+63.128 2+69.252	480483.668 480482.186	7866931.637 7866937.574	N14° 01' 02.42"W	50.000
L8	2+69.252 2+82.608	480482.186 480478.164	7866937.574 7866950.311	N17° 31' 33.16"W	

MC02 ALIGNMENT SETOUT TABLE

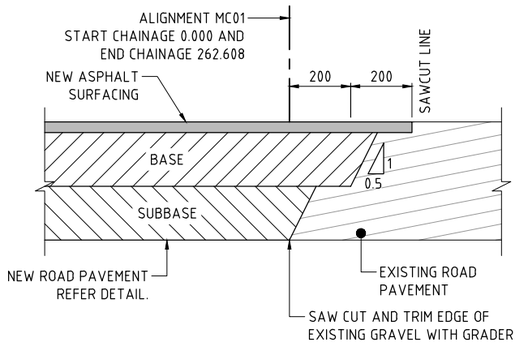
Number	CHAINAGE	EASTING	NORTHING	Line/Chord Direction	RADIUS
L9	0+00.000 0+09.763	480514.537 480513.082	7866838.201 7866828.548	S8° 34' 25.92"W	
C8	0+09.763 0+16.979	480513.082 480513.947	7866828.548 7866821.472	S6° 58' 14.81"E	13.300
L10	0+16.979 0+60.000	480513.947 480530.421	7866821.472 7866781.730	S22° 30' 55.55"E	

MC02A ALIGNMENT SETOUT TABLE

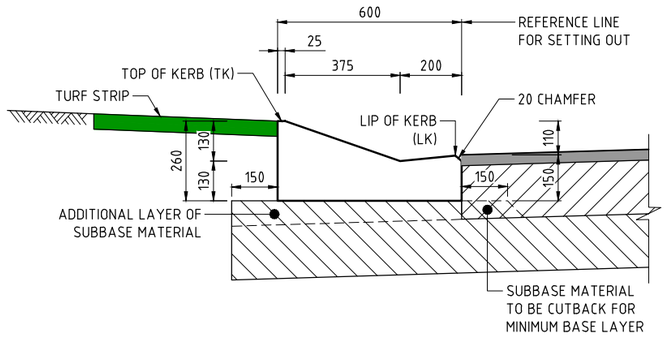
Number	CHAINAGE	EASTING	NORTHING	Line/Chord Direction	RADIUS
C9	0+00.000 0+21.471	480517.916 480531.003	7866811.898 7866795.211	S38° 06' 25.87"E	39.450

MC02-CDS ALIGNMENT SETOUT TABLE

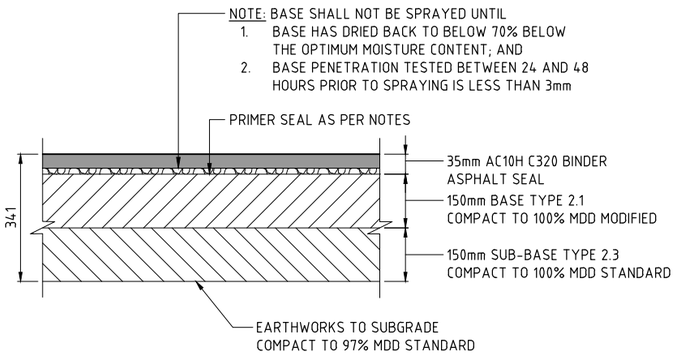
Number	CHAINAGE	EASTING	NORTHING	Line/Chord Direction	RADIUS
C10	0+00.000 0+15.271	480520.964 480532.435	7866813.162 7866804.097	S51° 40' 52.78"E	15.000
C11	0+15.271 0+33.990	480532.435 480538.064	7866804.097 7866789.631	S21° 15' 51.16"E	9.000
C12	0+33.990 0+52.708	480538.064 480522.689	7866789.631 7866791.765	N82° 05' 54.09"W	9.000



TYPICAL PAVEMENT CUT-BACK DETAIL
SCALE 1:10



LAYBACK KERB & CHANNEL - L1
SCALE 1:10 AT A1



TYPICAL PAVEMENT SECTION
SCALE 1:10 AT A1

PRIMER SEAL DETAILS

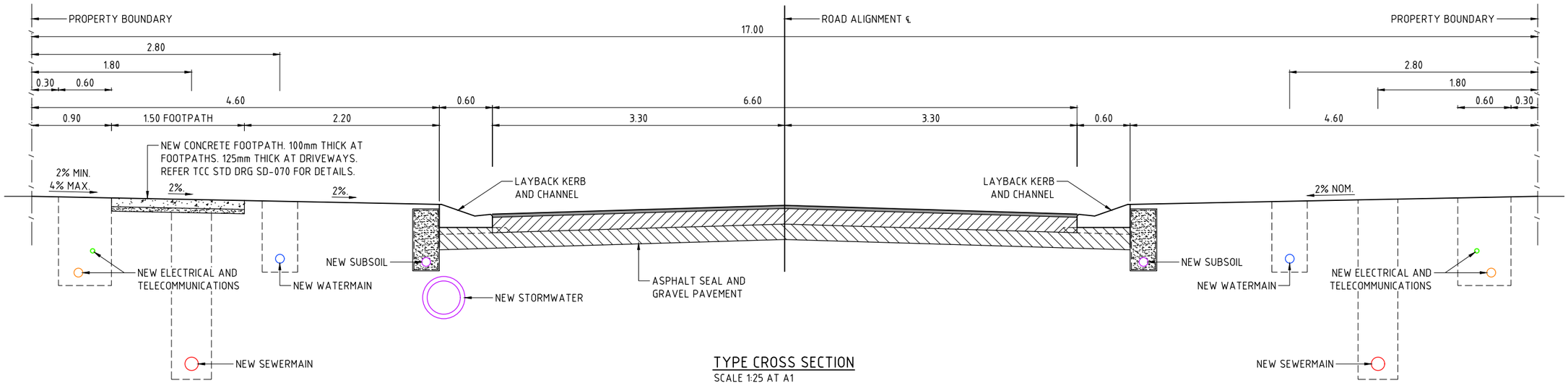
PRIMER SEAL
CRS 67 EMULSION @ 1.1 l/m²
10mm PRECOATED AGGREGATE @ 110m²/m³

SEAL NOTES:

THE NOMINATED SPREAD RATES AND SEAL RATES ARE ESTIMATED RATES ONLY.

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL SUPPLY THE FOLLOWING TO THE ENGINEER (AT LEAST ONE FULL WORKING DAY PRIOR TO SEALING OPERATIONS):
   - AVERAGE LEAST DIMENSION (ALD)
   - BALL PENETRATION

   UPON REVIEW OF THE ABOVE THE ADJUSTED DESIGN RATES SHALL BE PROVIDED BY THE ENGINEER.



TYPE CROSS SECTION
SCALE 1:25 AT A1

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

-0.5 0 0.5 1
SCALE OF METRES 1:25 AT A1
& 1:50 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		APP'D	DATE

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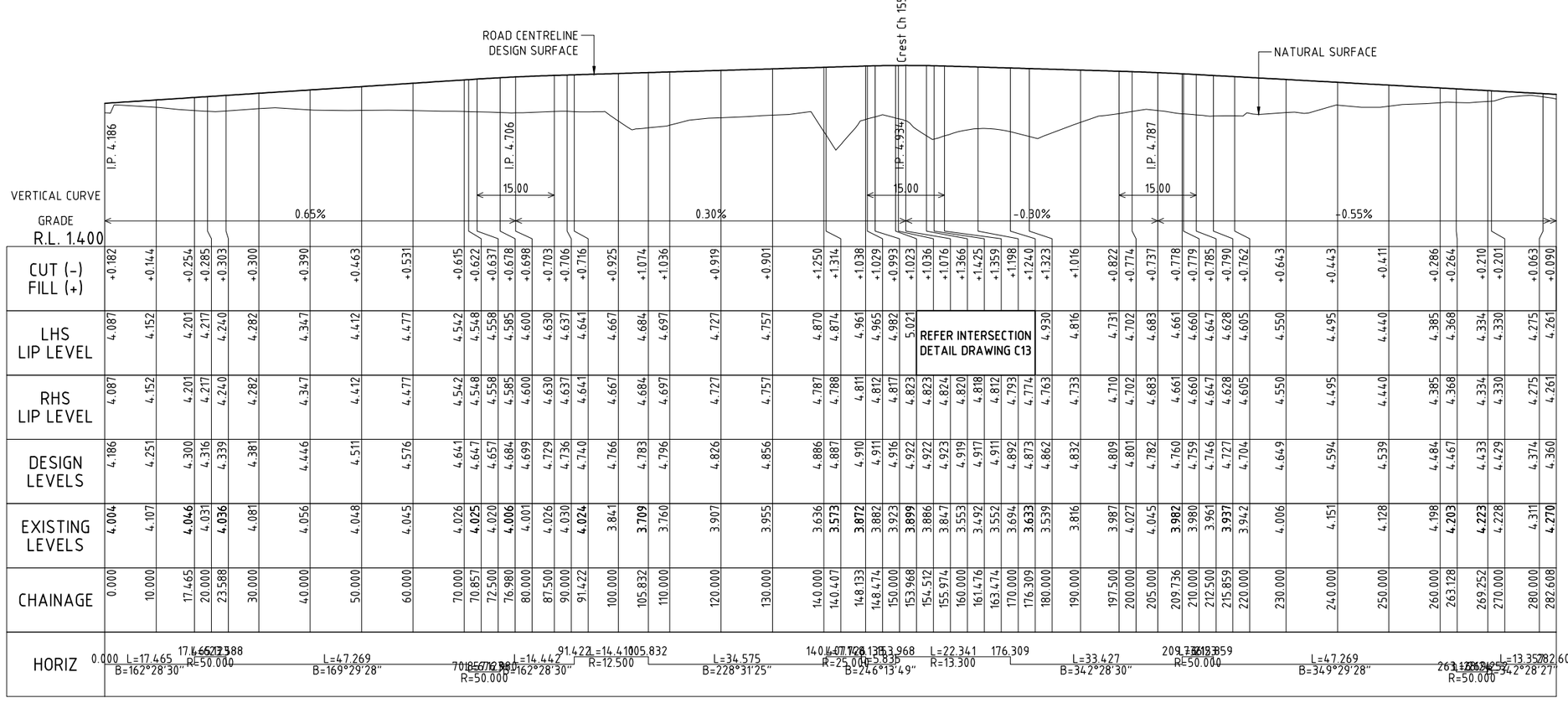
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
ROADWORKS DETAILS &
SETOUT TABLES

NUMBER	SHEET NO.	REVISION
ROSE012	C14	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS



CHAINAGE	EXISTING LEVELS	DESIGN LEVELS	RHS LIP LEVEL	LHS LIP LEVEL	CUT (-) FILL (+)
0.000	4.004	4.186	4.087	4.087	+0.182
10.000	4.107	4.251	4.152	4.152	+0.144
17.465	4.046	4.300	4.201	4.201	+0.254
20.000	4.031	4.316	4.217	4.217	+0.285
23.588	4.036	4.339	4.240	4.240	+0.303
30.000	4.081	4.381	4.282	4.282	+0.300
40.000	4.056	4.446	4.347	4.347	+0.390
50.000	4.048	4.511	4.412	4.412	+0.463
60.000	4.045	4.576	4.477	4.477	+0.531
70.000	4.026	4.641	4.542	4.542	+0.615
70.857	4.025	4.647	4.548	4.548	+0.622
72.500	4.020	4.657	4.558	4.558	+0.637
76.980	4.006	4.684	4.585	4.585	+0.678
80.000	4.001	4.699	4.600	4.600	+0.698
87.500	4.026	4.729	4.630	4.630	+0.703
90.000	4.030	4.736	4.637	4.637	+0.706
91.422	4.024	4.740	4.641	4.641	+0.716
100.000	3.841	4.766	4.667	4.667	+0.925
105.832	3.709	4.783	4.684	4.684	+1.074
110.000	3.760	4.796	4.697	4.697	+1.036
120.000	3.907	4.826	4.727	4.727	+0.919
130.000	3.955	4.856	4.757	4.757	+0.901
140.000	3.636	4.886	4.787	4.870	+1.250
140.497	3.573	4.887	4.788	4.874	+1.314
148.133	3.872	4.910	4.811	4.961	+1.038
148.474	3.882	4.911	4.812	4.965	+1.029
150.000	3.923	4.916	4.817	4.982	+0.993
153.968	3.899	4.922	4.823	5.021	+1.023
154.512	3.886	4.922	4.823		+1.036
155.974	3.847	4.923	4.824		+1.076
160.000	3.553	4.919	4.820		+1.366
161.476	3.492	4.917	4.818		+1.425
163.474	3.552	4.911	4.812		+1.359
170.000	3.694	4.892	4.793		+1.198
176.309	3.633	4.873	4.774		+1.240
180.000	3.539	4.862	4.763	4.930	+1.323
190.000	3.816	4.832	4.733	4.816	+1.016
197.500	3.987	4.809	4.710	4.731	+0.822
200.000	4.045	4.801	4.702	4.702	+0.774
205.000	4.045	4.782	4.683	4.683	+0.737
209.736	3.982	4.760	4.661	4.661	+0.778
210.000	3.980	4.759	4.660	4.660	+0.779
212.500	3.961	4.746	4.647	4.647	+0.785
215.859	3.937	4.727	4.628	4.628	+0.790
220.000	3.942	4.704	4.605	4.605	+0.762
230.000	4.006	4.649	4.550	4.550	+0.643
240.000	4.151	4.594	4.495	4.495	+0.443
250.000	4.128	4.539	4.440	4.440	+0.411
260.000	4.198	4.484	4.385	4.385	+0.286
263.128	4.203	4.467	4.368	4.368	+0.264
269.252	4.223	4.433	4.334	4.334	+0.210
270.000	4.228	4.429	4.330	4.330	+0.201
280.000	4.311	4.374	4.275	4.275	+0.063
282.608	4.270	4.360	4.261	4.261	+0.090

MC01 LONG SECTION (LEGGETT CRESCENT)
SCALE 1:500 HORIZONTAL
1:50 VERTICAL

SAFETY IN DESIGN INFORMATION
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SCALE OF METRES 1:500 AT A1
& 1:1000 AT A3 HORIZ
-10 0 10 20
-1 0 1 2
SCALE OF METRES 1:50 AT A1
& 1:100 AT A3 VERT

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		**APP'D**	**DATE**

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SLT	SLT
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286 LAKESIDE DRIVE
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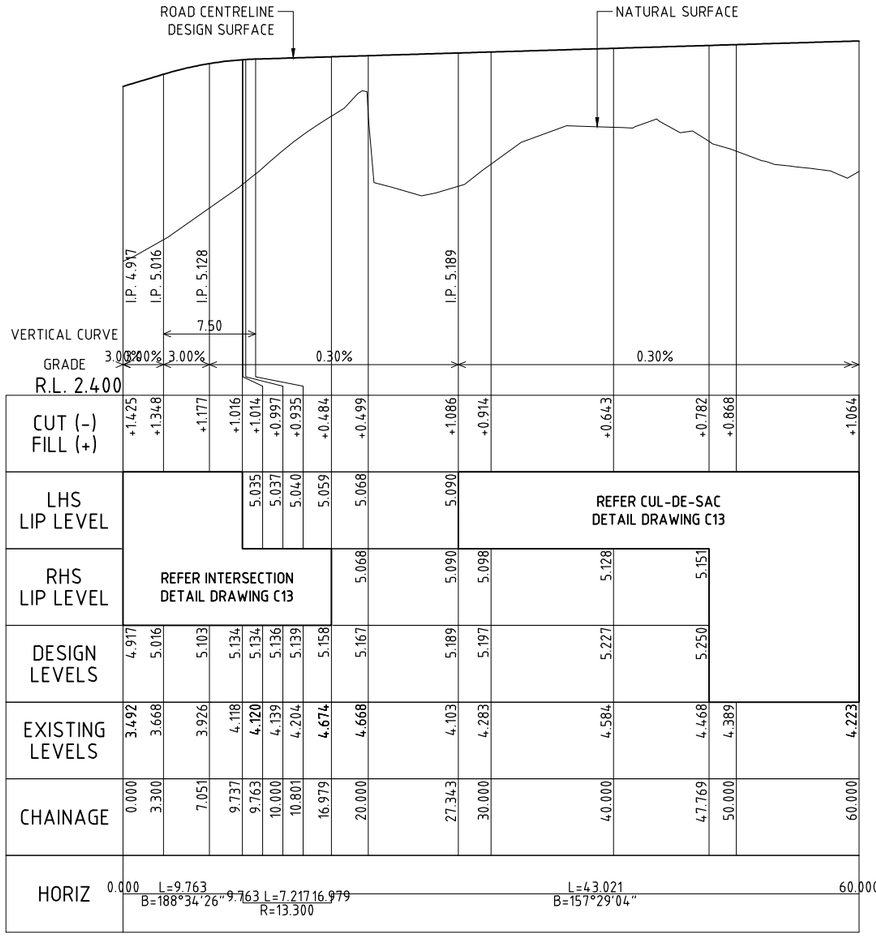
DRAWING
ROADWORKS LONG SECTION
- SHEET 1

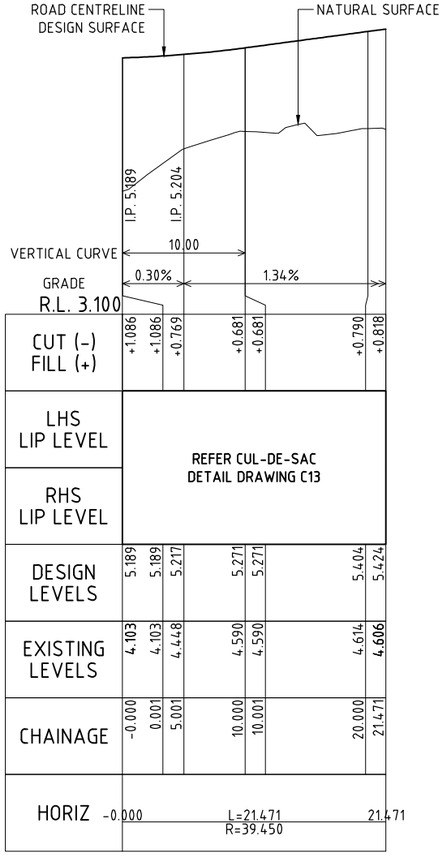
NUMBER	SHEET NO.	REVISION
ROSE012	C15	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS LONG SECTIONS



MC02 LONG SECTION (NEW COURT)

SCALE 1:250 HORIZONTAL
1:25 VERTICAL



MC02A LONG SECTION (NEW CUL-DE-SAC)

SCALE 1:250 HORIZONTAL
1:25 VERTICAL

SAFETY IN DESIGN INFORMATION
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SCALE OF METRES 1:250 AT A1
& 1:500 AT A3 HORIZ
-5 0 5 10
-0.5 0 0.5 1
SCALE OF METRES 1:25 AT A1
& 1:50 AT A3 VERT

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		**APP'D**	**DATE**

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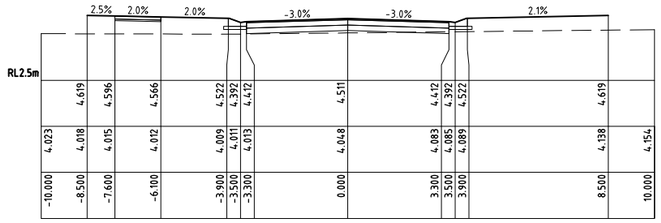
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
ROADWORKS LONG SECTION
- SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C16	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS LONG SECTIONS



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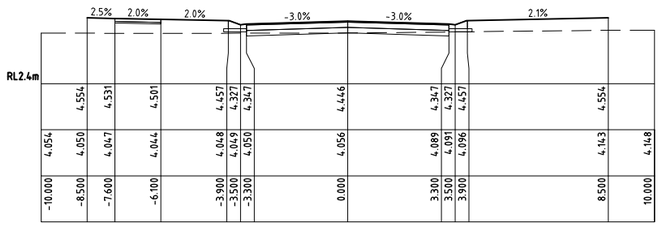

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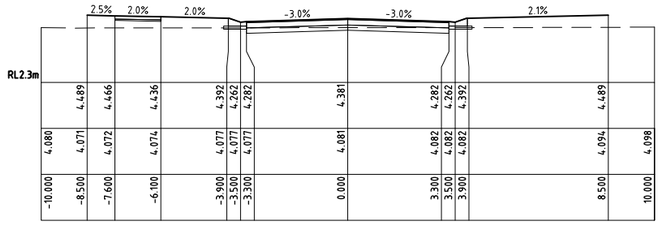

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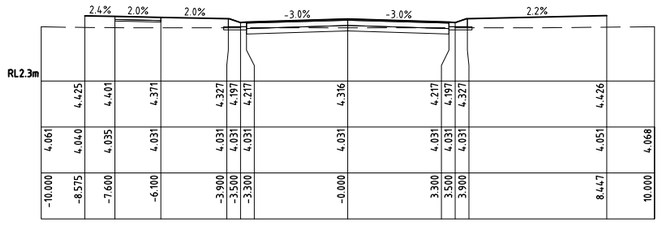

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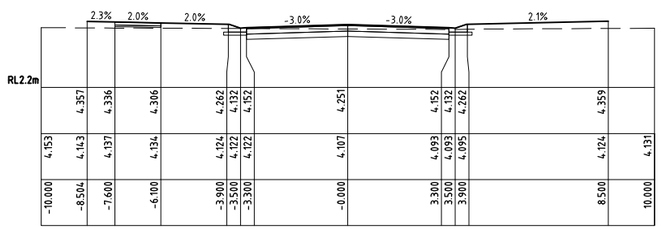

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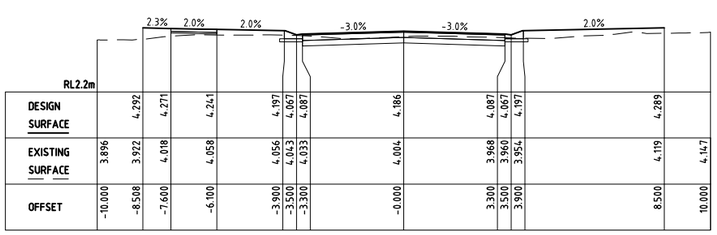

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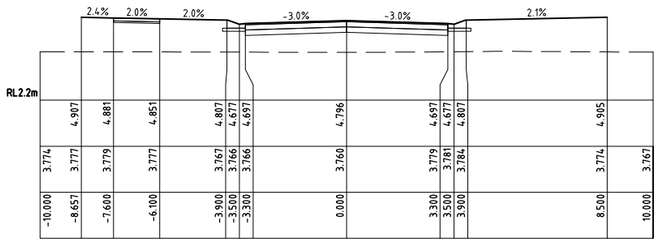

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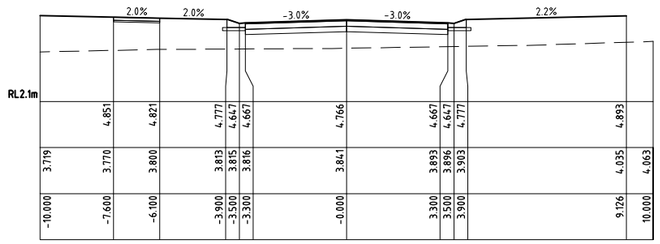

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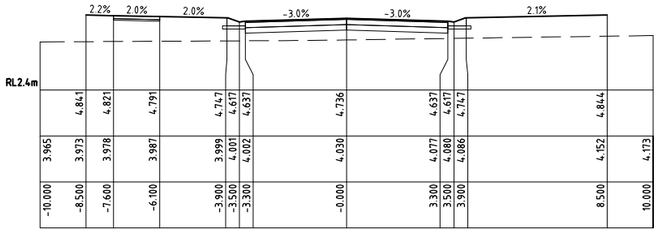

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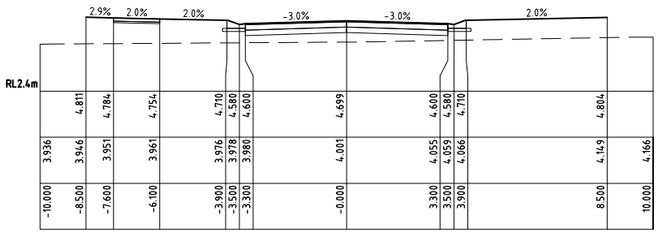

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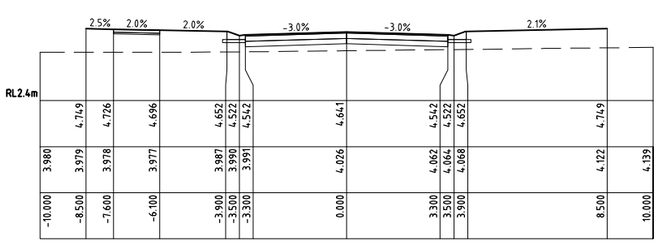

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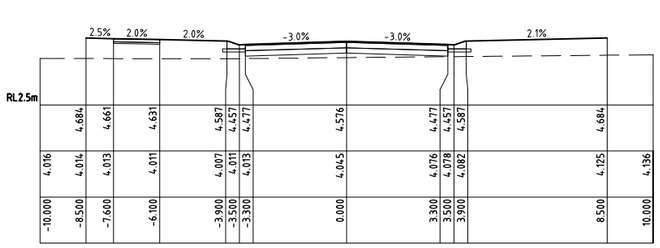

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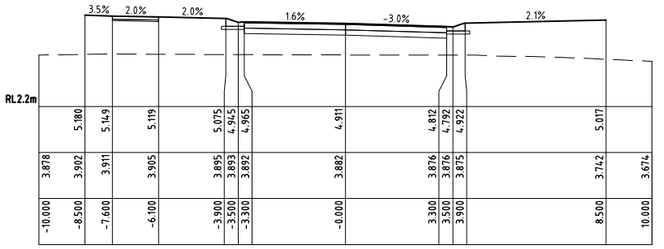

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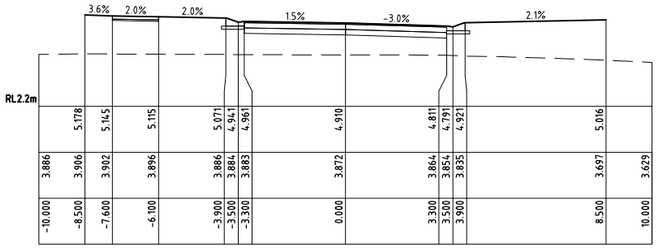
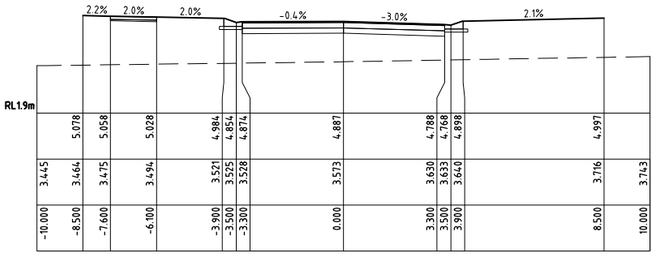


Ch 148.13 m



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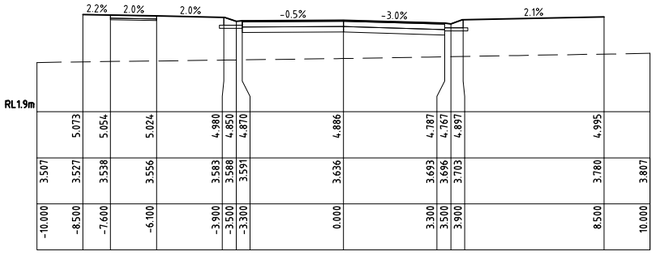

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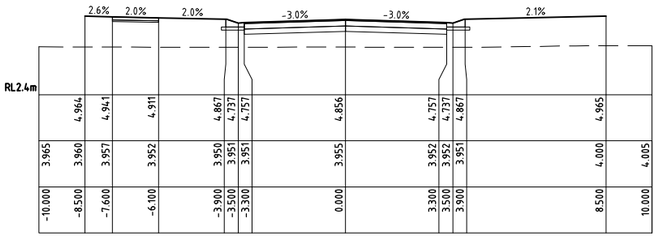

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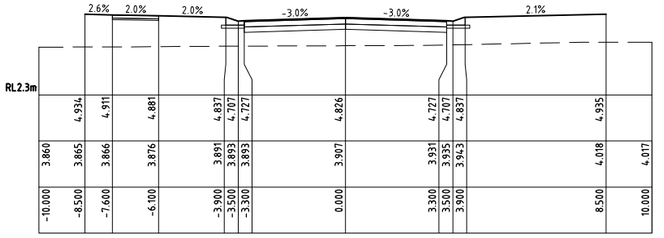

Ch 120.00 m

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-2 0 2 4
SCALE OF METRES 1:100 AT A1
& 1:200 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
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PROJECT
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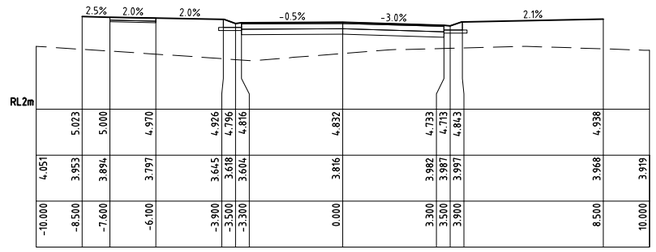
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
ROADWORKS CROSS SECTIONS - SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C17	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS CROSS SECTIONS



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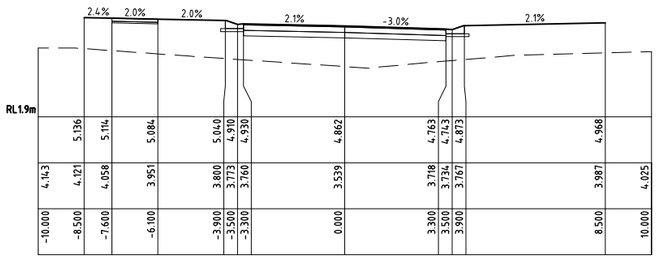

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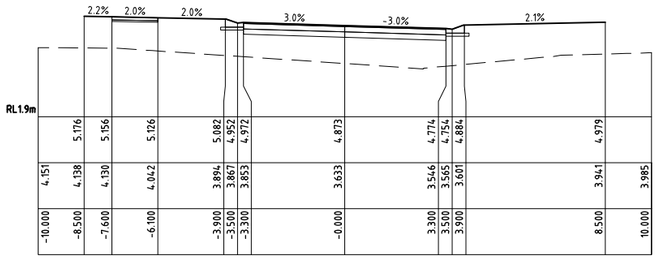

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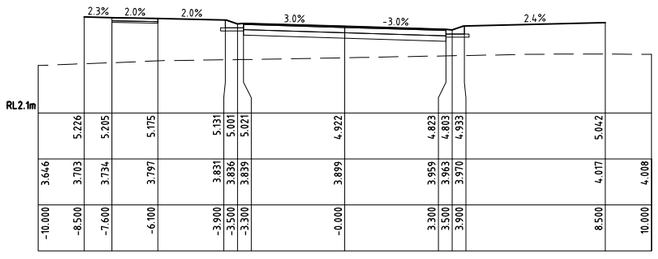

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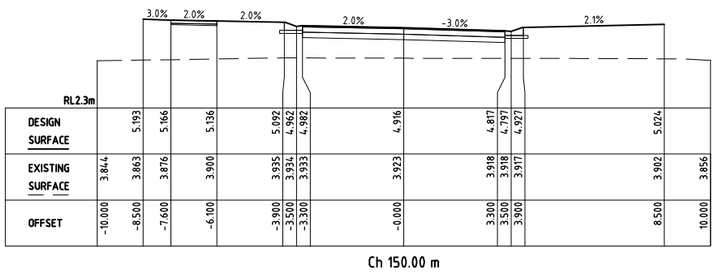

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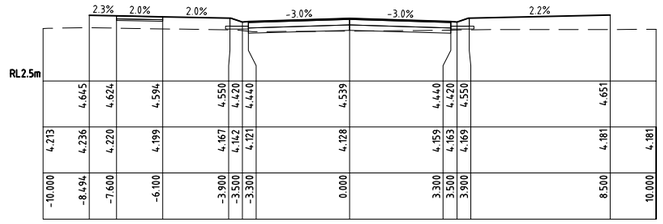

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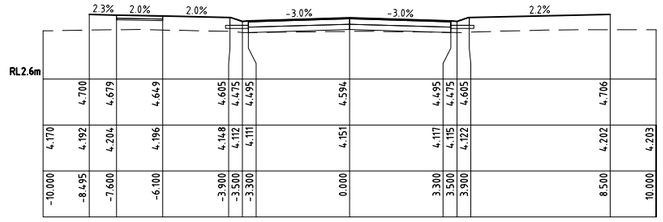

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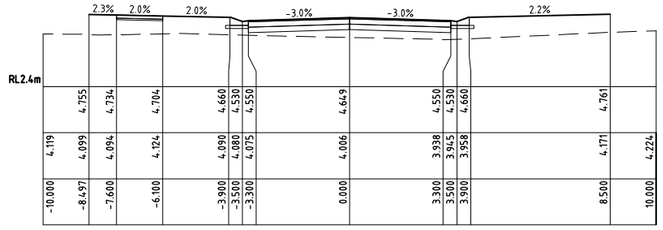

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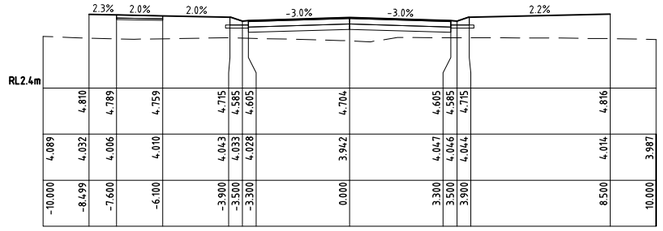

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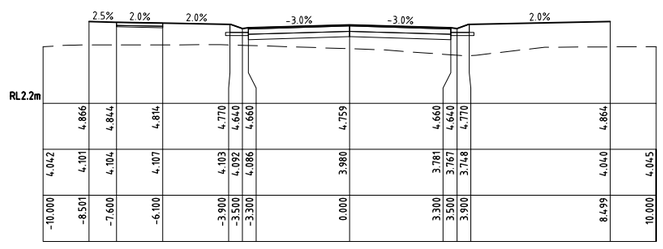

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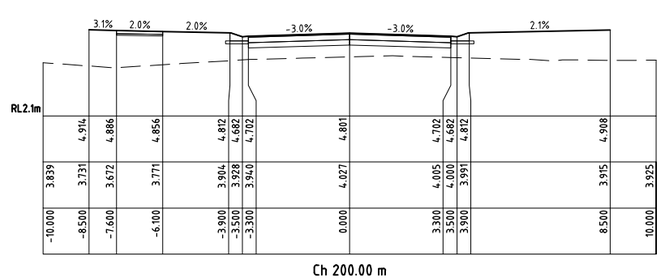

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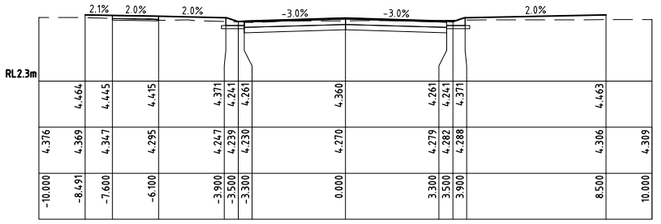

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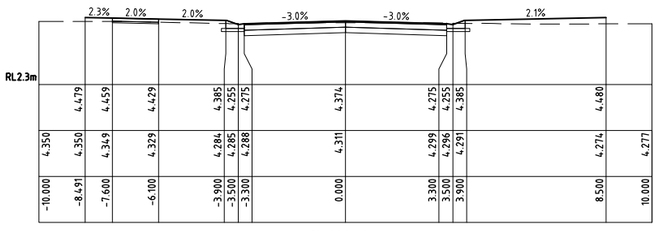

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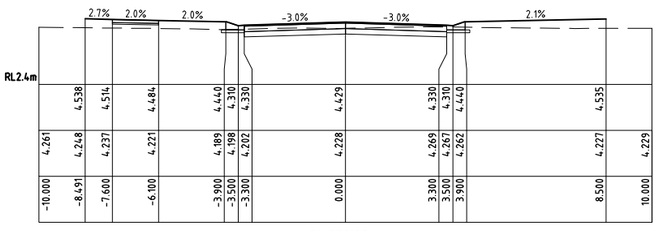

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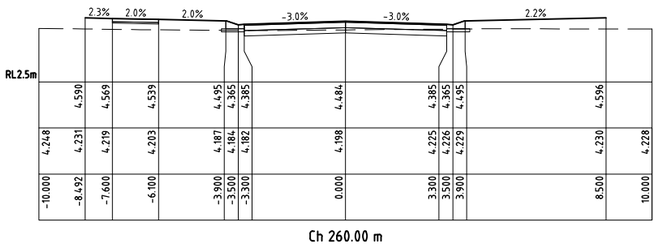

Ch 260.00 m

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-2 0 2 4

SCALE OF METRES 1:100 AT A1
& 1:200 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
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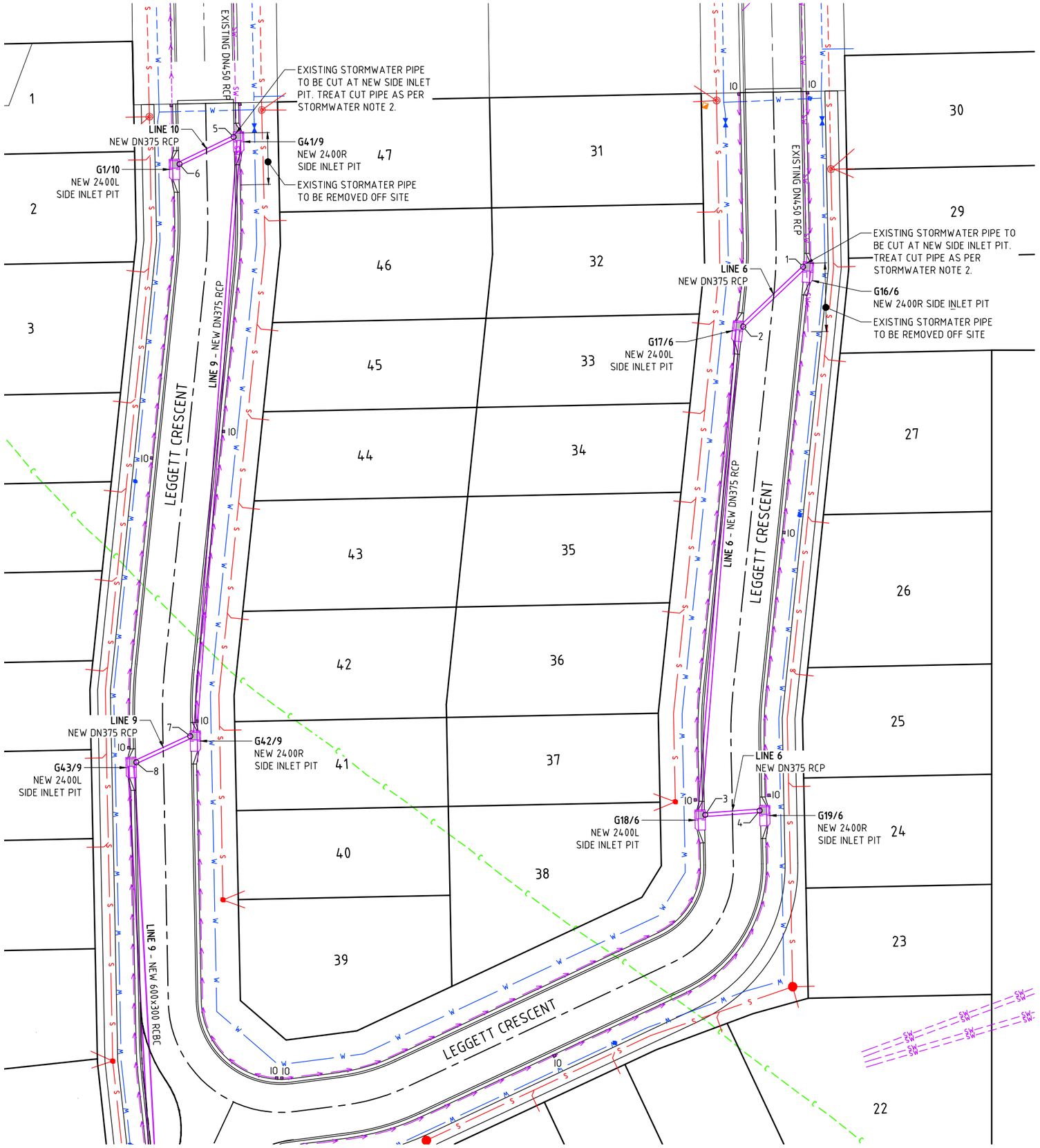
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

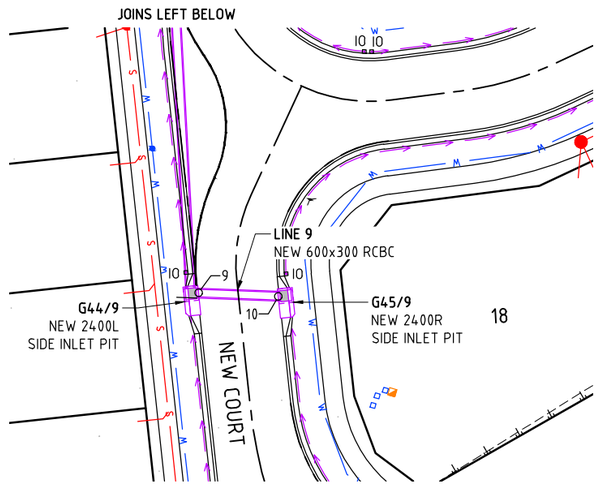
DRAWING
ROADWORKS CROSS SECTIONS - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C18	B

Plot Date15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-ROADWORKS CROSS SECTIONS



STORMWATER PLAN
SCALE 1:250 AT A1



STORMWATER PLAN
SCALE 1:250 AT A1

NOTE:
REFER TO CUL-DE-SAC DETAIL PLAN ON DRAWING C13 FOR CONTINUATION OF SUBSOIL DRAINS.

SIDE INLET PIT SETOUT TABLE

POINT NUMBER	PIT NUMBER	EASTING	NORTHING
1	G16/6	480551.253	7866951.690
2	G17/6	480546.444	7866942.918
3	G18/6	480558.393	7866886.390
4	G19/6	480564.424	7866888.678
5	G41/9	480482.444	7866947.452
6	G1/10	480477.236	7866942.557
7	G42/9	480497.482	7866878.167
8	G43/9	480492.234	7866873.399
9	G44/9	480511.212	7866819.662
10	G45/9	480517.538	7866821.218

LEGEND

- SW — EXISTING STORMWATER
- EXISTING SUBSOIL
- S — EXISTING SEWER MAIN
- W — EXISTING WATER MAIN
- C — EXISTING COMMUNICATIONS
- SW — NEW STORMWATER
- NEW SUBSOIL & INSPECTION OPENING (IO)
- HD — NEW SEWER HOUSE DRAIN
- S — NEW SEWER MAIN
- W — NEW WATER MAIN
- 3 — PIT SETOUT POINT

THE CONTRACTOR SHALL DETERMINE THE CORRECT LOCATIONS OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCEMENT OF WORKS IN CONJUNCTION WITH THE RELEVANT SERVICE PROVIDER.

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-5 0 5 10
SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

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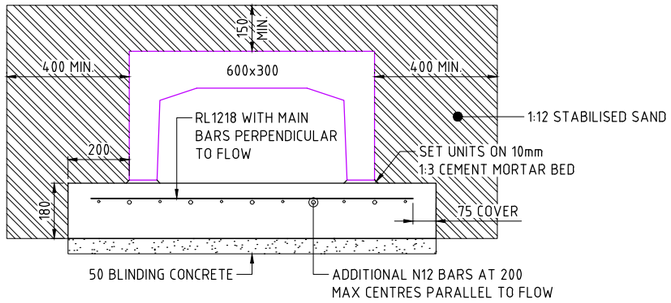
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

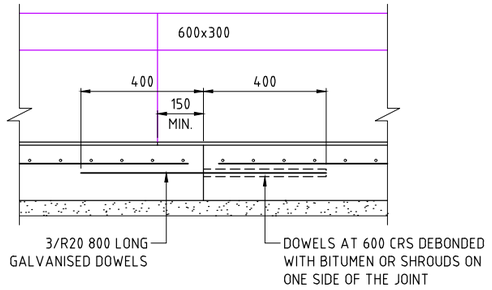
DRAWING
STORMWATER PLAN

NUMBER	SHEET NO.	REVISION
ROSE012	C19	B

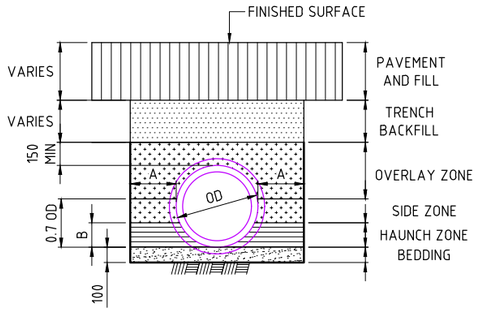
Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSEL\rose012 the village, stage 7c & 7d, oonoonba\CAD\civil\ROSE012-STORMWATER



RCBC DETAILS
SCALE 1:10 AT A1



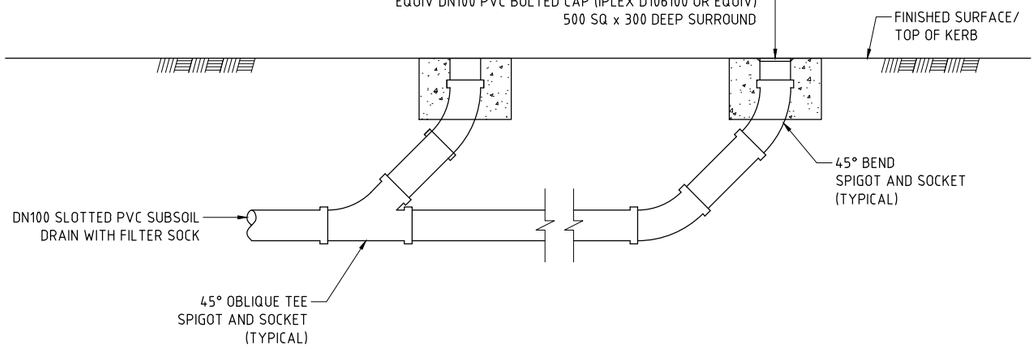
RCBC SLAB JOINT DETAIL
SCALE 1:10 AT A1



RCP HS2 SUPPORT - TRAFFICABLE AREAS
SCALE 1:20 AT A1

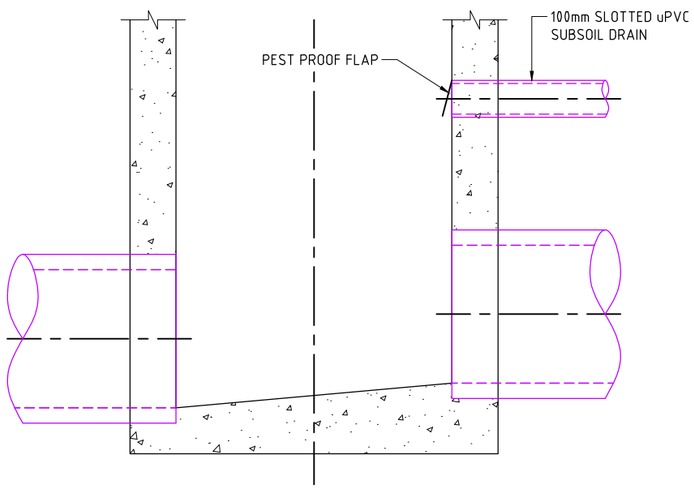
REINFORCED CONCRETE PIPE (RCP)			
PIPE SIZE	MINIMUM WIDTH, A (mm)	HAUNCH DEPTH, B (0.3 OD mm)	MAXIMUM ALLOWABLE TRENCH WIDTH (mm)
375	300	135	1200
450	300	160	1300

INSPECTION OPENING COVER
HAVESTOCK DN225 HM203 CLASS D INSPECTION OPENING OR EQUIV DN100 PVC BOLTED CAP (IPLEX D106100 OR EQUIV)
500 SQ x 300 DEEP SURROUND



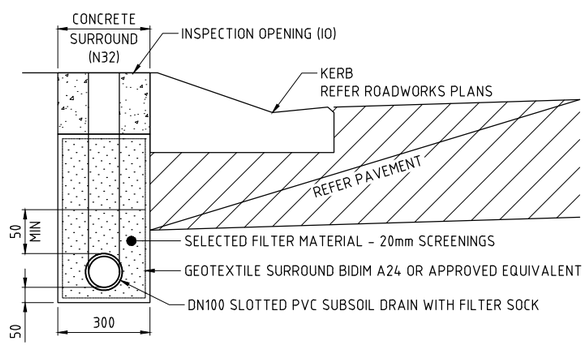
SUBSOIL DRAIN CLEANOUT SECTIONAL ELEVATION
SCALE 1:10 AT A1

NOTES
1. SUBSOIL CLEANOUTS TO BE PROVIDED AT THE HEAD OF THE DRAIN AND AT MAX 60m SPACING. OUTLETS TO BE PROVIDED AT 100m MAX SPACING.



SUBSOIL DRAIN DETAIL AT MANHOLE AND GULLY PITS
SCALE 1:10 AT A1

PIPE TRENCH AND BACKFILL NOTES
1. UNLESS NOTED OTHERWISE:
   RCP
   BEDDING SHALL COMPLY WITH AS/NZS 3725.
   HAUNCH, SIDE AND OVERLAY ZONE SHALL BE CLSM.
   PVC
   BEDDING, SIDE ZONE AND OVERLAY ZONE IN NON TRAFFICABLE AREAS SHALL COMPLY WITH EMBEDMENT MATERIAL REQUIREMENTS OF AS/NZS 2566.2.
   SIDE AND OVERLAY ZONE IN TRAFFICABLE AREAS SHALL BE CLSM.
2. TRENCH BACKFILL SHALL BE IMPORTED GENERAL FILL AS PER EARTHWORKS NOTES. SITE WON MATERIAL SHALL NOT BE USED WITHOUT THE APPROVAL OF THE ENGINEER.
3. FOR THE PURPOSES OF THIS PROJECT ALL STORMWATER LINES ARE IN TRAFFICABLE AREAS
4. CONTROLLED LOW STRENGTH MATERIAL (CLSM) SHALL BE STABILISED SAND 12:1 SAND CEMENT RATIO (BY MASS) OR AN APPROVED EQUIVALENT AND SHALL COMPLY WITH AS/NZS 2566.2 APPENDIX K. 28 DAY UCS TESTING FOR CLSM SHALL BE COMPLETED AT THE MINIMUM RATE OF:
   - 1 TEST PER DAYS PRODUCTION
   - 1 TEST PER 50m^3
   NO LIVE LOADS FROM CONSTRUCTION EQUIPMENT AND TRAFFIC LOADING SHALL BE PERMITTED OVER THE TRENCH FOR 3 DAYS AFTER PLACEMENT OR UNTIL CLSM HAS REACHED A UCS GREATER THAN 0.8MPa. TESTING TO CONFIRM EARLY DAY TRAFFICKING SHALL BE COMPLETED AT THE SAME RATE AS THE MINIMUM TESTING.
5. BACKFILLING AND CONSTRUCTION TO BE STAGED TO ENSURE THAT FLOATATION OF THE STORMWATER PIPE DURING PLACEMENT IS NOT AN ISSUE. UNLESS APPROVED OTHERWISE, LIMIT THE DEPTH OF THE INITIAL POUR TO A MAXIMUM OF 175mm ABOVE INVERT AND SUBSEQUENT POUR LIFTS TO A MAXIMUM INCREMENTAL HEIGHT OF 100mm. THE PREVIOUS LIFT SHALL HAVE REACHED INITIAL SET (i.e. NO LONGER FLUID) PRIOR TO PLACEMENT OF THE SUBSEQUENT POUR LIFT.
6. NO CONSTRUCTION VEHICLES SHALL TRAVERSE PIPE TRENCHES UNTIL THE MINIMUM COVER HAS BEEN PLACED. WHERE THE CONTRACTOR PROPOSES TO TRAVEL CONSTRUCTION PLANT IN EXCESS OF 5 TONNES GROSS MASS OVER PIPE DRAINAGE BEFORE THE MINIMUM COVER HAS BEEN PLACED, THE CONTRACTOR SHALL DESIGN AND PROVIDE ADEQUATE PROTECTIVE MEASURES FOR THE CROSSINGS AND SHALL SUBMIT THE PROPOSALS TO THE SUPERINTENDENT FOR PRIOR APPROVAL.
7. THE CONSTRUCTION LOADS TO BE PLACED ON THE PIPE SHALL BE CHECKED BY THE CONTRACTOR. FOR REINFORCED CONCRETE PIPE (RCP), FOR THE SPECIFIED PIPE CLASS AND SIZE, THE CONTRACTOR SHALL PROGRESSIVELY BACKFILL THE PIPE USING THE FILL DEPTH AND CONSTRUCTION EQUIPMENT PERMISSIBLE IN TABLE B1 OF AS/NZS 3725. FOR RCP, IF THE CONTRACTOR CHOOSES HEAVIER PLANT AND/OR LESS COVER THAN THE PERMISSIBLE COMBINATIONS IN TABLE B1 OF AS/NZS 3725, THEN THE SELECTED PIPE CLASS AND INSTALLATION TECHNIQUE MUST BE CERTIFIED BY THE CONTRACTOR'S RPEQ DESIGN ENGINEER.



TYPICAL SUBSOIL DRAIN
SCALE 1:10 AT A1

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-0.2 0 0.2 0.4
SCALE OF METRES 1:10 AT A1 & 1:20 AT A3

-0.4 0 0.4 0.8
SCALE OF METERS 1:20 AT A1 & 1:40 AT A3

REVISION		APP'D	DATE
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PROJECT
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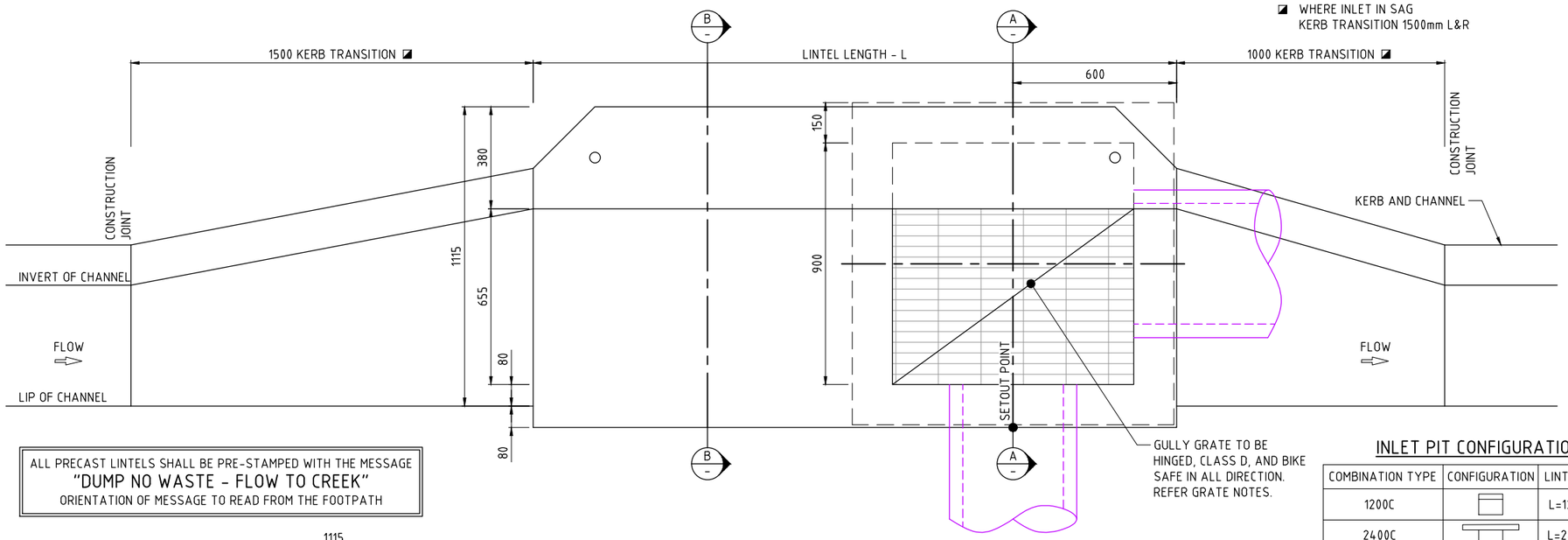
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
STORMWATER DETAILS
SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C20	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\civil\ROSE012-STORMWATER

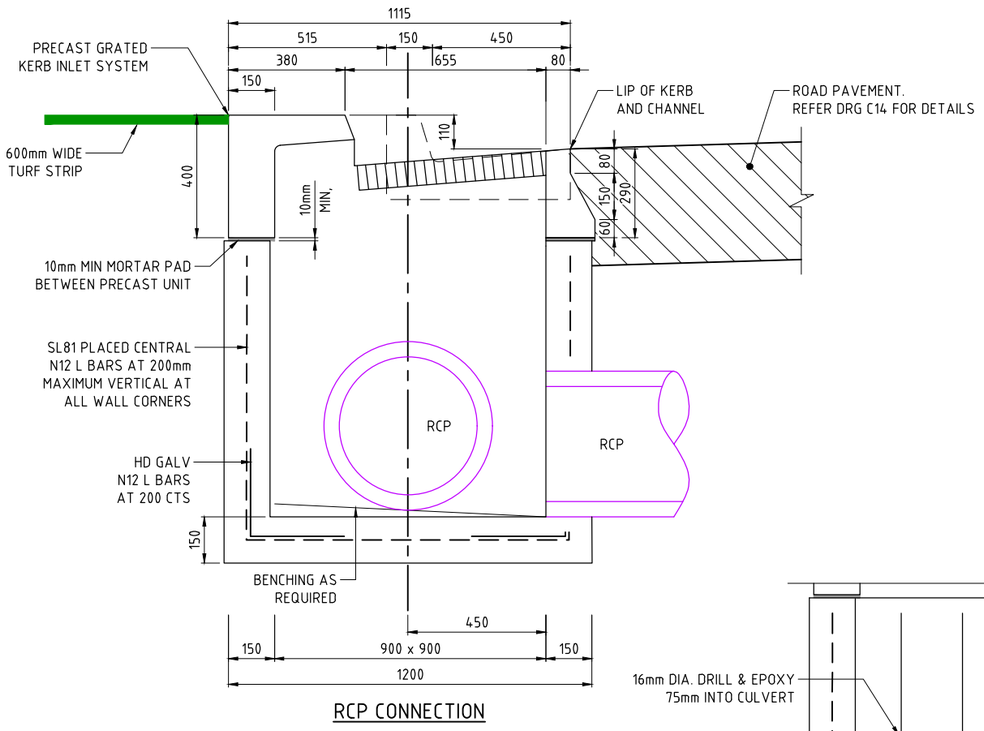


PLAN VIEW
SCALE 1:10 AT A1

ALL PRECAST LINTELS SHALL BE PRE-STAMPED WITH THE MESSAGE
"DUMP NO WASTE - FLOW TO CREEK"
ORIENTATION OF MESSAGE TO READ FROM THE FOOTPATH

INLET PIT CONFIGURATION

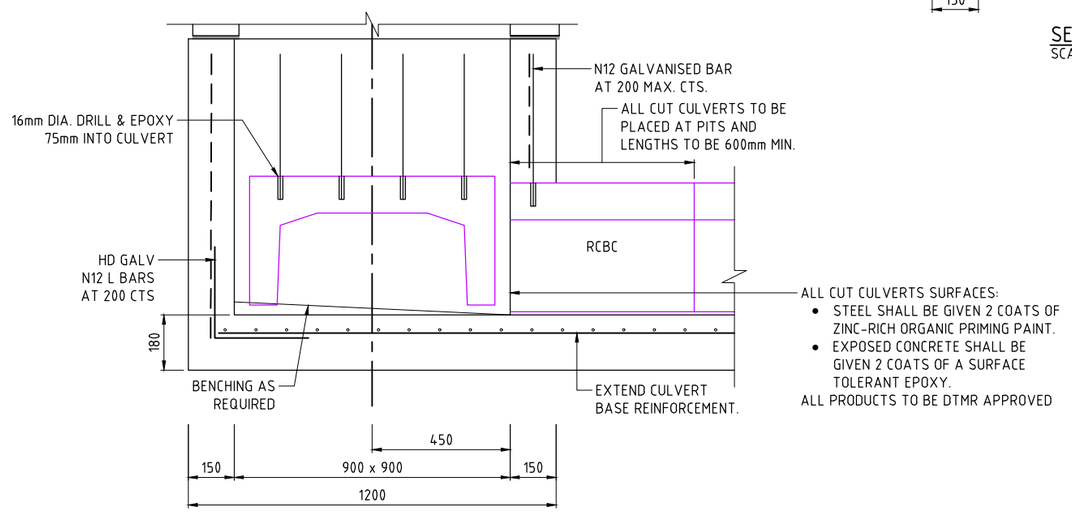
COMBINATION TYPE	CONFIGURATION	LINTEL LENGTH
1200C		L=1200mm
2400C		L=2400mm
2400R		L=2400mm
2400L		L=2400mm
3600C		L=3600mm
3600R		L=3600mm
3600L		L=3600mm



RCP CONNECTION

SECTION A
SCALE 1:10

SECTION B
SCALE 1:10



RCBC CONNECTION

ALL CUT CULVERTS SURFACES:
- STEEL SHALL BE GIVEN 2 COATS OF ZINC-RICH ORGANIC PRIMING PAINT.
- EXPOSED CONCRETE SHALL BE GIVEN 2 COATS OF A SURFACE TOLERANT EPOXY.

ALL PRODUCTS TO BE DTMR APPROVED

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

-0.2 0 0.2 0.4
SCALE OF METRES 1:10 AT A1 & 1:20 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		APP'D	DATE

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SLT	SLT
APPROVED	DATE
RPEQ:	

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C-ROSEL SHERWOOD

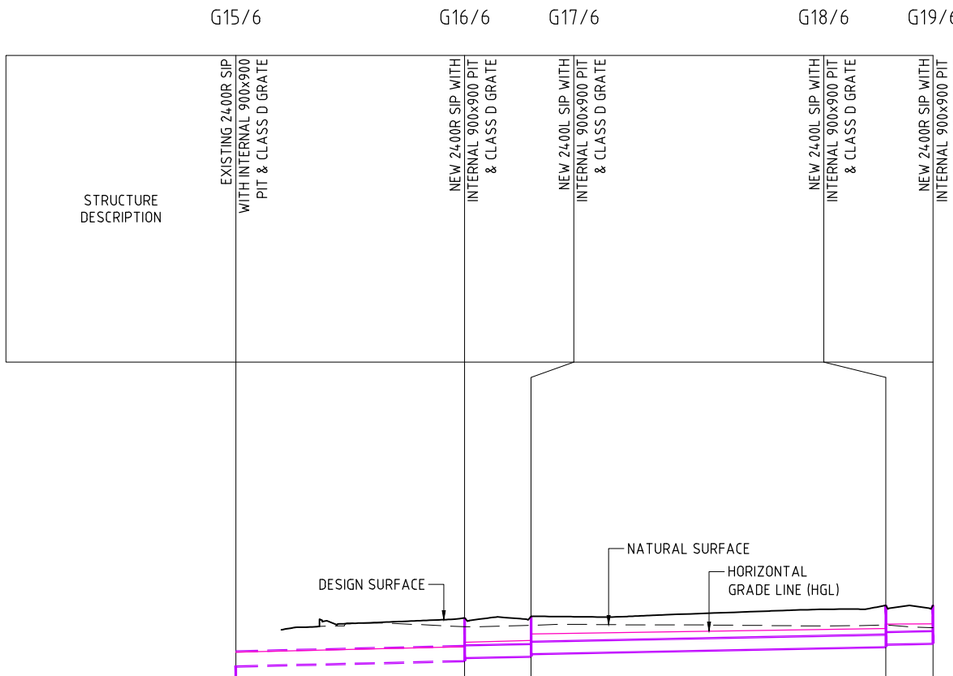
PROJECT
AFFORDABLE HOUSING OPPORTUNITY
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
STORMWATER DETAILS
SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C21	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-STORMWATER



PIPE SIZE (mm) PIPE CLASS		EXISTING Ø450 Class 3 RRJ			Ø375 Class 3 RRJ			Ø375 Class 3 RRJ			Ø375 Class 3 RRJ	
PIPE SLOPE (1 in X) PIPE GRADE (%)		1:217 0.5%			1:250 0.4%			1:250 0.4%			1:250 0.4%	
PIPE FLOW (L/s) CAPACITY FLOW(L/s)		227.2 193.4			176.7 110.9			130.4 110.9			78.4 110.9	
FULL PIPE VELOCITY (m/s) NORMAL DEPTH VELOCITY (m/s)		1.43 1.43			1.60 1.60			1.18 1.18			0.71 1.09	
DATUM RL -9.8												
HGL ELEVATION	3.197			3.369	3.519		3.577	3.789		3.963	4.110	4.360
DEPTH TO INVERT				1.393	1.293		1.301	1.222		1.344	1.265	1.232
INVERT LEVEL	2.747			2.919	3.019		3.062	3.142		3.373	3.453	3.484
DESIGN SURFACE				4.312			4.364			4.718		4.716
EXISTING SURFACE				4.027			4.068			4.084		3.986
SETOUT COORDINATES	7866987.363(N) 480540.451(E)			480551.846(E) 7866951.832(N)			480545.844(E) 7866942.807(N)			480557.811(E) 7866886.206(N)		480565.006(E) 7866888.861(N)
CHAINAGE	0.000		37.314	37.314		10.839	48.152		57.852	106.004		113.674

STORMWATER LONG SECTION - LINE 6 - 39% AEP

SCALE 1:1000 HORIZONTAL
1:100 VERTICAL

SAFETY IN DESIGN INFORMATION
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SCALE OF METRES 1:100 AT A1
& 1:200 AT A3 VERT
-2 0 2 4
-10 0 10 20
SCALE OF METRES 1:500 AT A1
& 1:1000 AT A3 HORIZ

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		**APP'D**	**DATE**

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SLT	SLT
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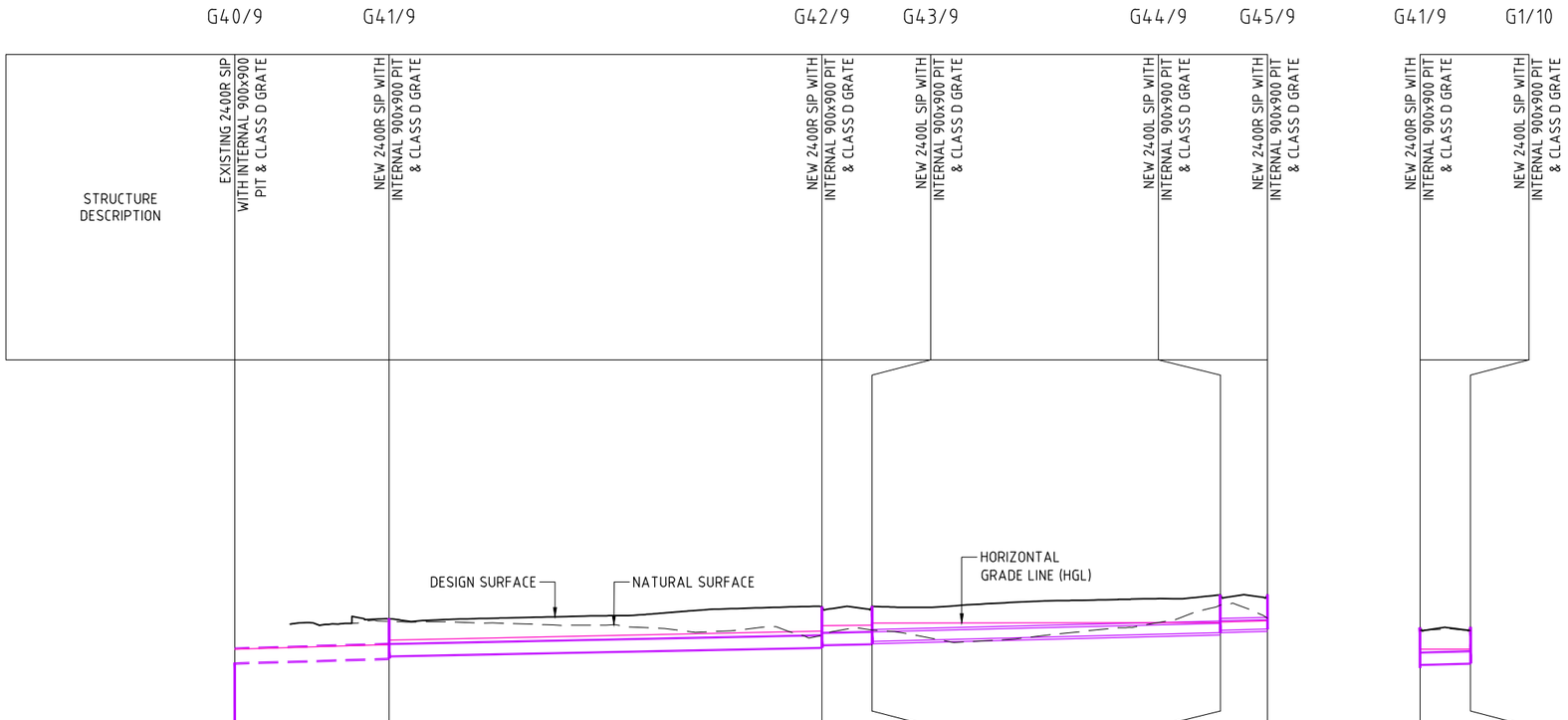
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
STORMWATER LONG SECTIONS SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C22	B

Plot Date:5/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-STORMWATER


G40/9
G41/9
G42/9
G43/9
G44/9
G45/9
G41/9
G1/10
STRUCTURE DESCRIPTION
EXISTING 2400R SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400R SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400R SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400L SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400L SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400R SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400R SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
NEW 2400L SIP WITH INTERNAL 900x900 PIT & CLASS D GRATE
DESIGN SURFACE
NATURAL SURFACE
HORIZONTAL GRADE LINE (HGL)

| | | |

CATCHMENT PLAN
SCALE 1:500 AT A1

LEGEND

- CATCHMENT BOUNDARY
- DIRECTION OF FLOW
- A — CATCHMENT ID
- 1.0ha — CATCHMENT AREA
- STORMWATER PIT

HYDROLOGY TABLE

CATCHMENT ID	AREA ha	TIME min	C10	C2	I2 mm/hr	Q2 m3/s	C100	I100 mm/hr	Q100 m3/s
A	0.186	5.0	0.84	0.71	150	0.055	1.00	360	0.186
B	0.194	5.0	0.84	0.71	150	0.058	1.00	360	0.194
C	0.117	5.0	0.84	0.71	150	0.035	1.00	360	0.117
D	0.362	5.0	0.84	0.71	150	0.108	1.00	360	0.362
E	0.244	5.0	0.84	0.71	150	0.073	1.00	360	0.244
F	0.239	5.0	0.84	0.71	150	0.071	1.00	360	0.239
G	0.245	5.0	0.84	0.71	150	0.073	1.00	360	0.245
H	0.076	5.0	0.84	0.71	150	0.023	1.00	360	0.076
J	0.214	5.0	0.84	0.71	150	0.064	1.00	360	0.214
K	0.088	5.0	0.84	0.71	150	0.026	1.00	360	0.088
A+B+C+D	0.859	5.0	0.84	0.71	150	0.256	1.00	360	0.859
E+F+G+H+J+K	1.106	5.0	0.84	0.71	150	0.330	1.00	360	1.106

SAFETY IN DESIGN INFORMATION
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-10 0 10 20
SCALE OF METRES 1:500 AT A1 & 1:1000 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		APP'D	DATE

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THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
STORMWATER CATCHMENT PLAN

NUMBER	SHEET NO.	REVISION
ROSE012	C24	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-STORMWATER CATCHMENT

DRAINAGE CALCULATIONS - Return Period: 2yrs - Location: Townsville

LOCATION		TIME			CATCHMENT RUNOFF					INLET DESIGN								DRAIN DESIGN							DESIGN LEVELS						
	STRUCTURE No.		TIME OF CONCENTRATION	RAINFALL INTENSITY		RUNOFF CO-EFFICIENT	CATCHMENT AREA	CATCHMENT DISCHARGE		FLOW IN KERB	INLET TYPE	INLET CURVE	FLOW TO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	FLOW WIDTH	FLOW DEPTH		PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE SIZE	No. OF PIPES (1 IF BLANK)	PIPE CLASS	FLOW VELOCITY	CAPACITY FLOW (MANNINGS)	CAPACITY FLOW (HGL)		OBVERT LEVELS	DRAIN SECTION HGL	UPSTREAM H.G.L.	DOWNSTREAM H.G.L.	W.S.E.	SURFACE OR K&C INVERT LEVEL	STRUCTURE No.
			tc min	I mm/hr		C	A ha	Q L/s		L/s			Qg L/s	Qb L/s		m	m		Qp L/s	L m	S %	mm			V m/s	L/s	L/s		m	m	m	m	m	m	
	G16/6		5	150		0.71	0.186	55		87	LLG-MK-2400-3.3%XF	GG 0.5%	65			2.477	0.088		210	37	0	450		Class 3 RRJ	1.32	193	263		3.369	3.369	3.482	3.197	4.330	4.330	G16/6
														22	G15/6																			
	G17/6		5	150		0.71	0.194	58		65	LLG-MK-2400-3.3%XF	GG 0.5%	50	15	G15/6	2.208	0.080		150	11	0	375		Class 3 RRJ	1.36	111	151		3.437	3.526	3.666	3.482	4.379	4.379	G17/6
	G18/6		5	150		0.71	0.117	35		35	LLG-MK-2400-3.3%XF	GG 0.5%	28	7	G17/6	1.971	0.073		108	58	0	375		Class 3 RRJ	0.97	111	151		3.748	3.787	3.902	3.666	4.733	4.733	G18/6
	G19/6		5	150		0.71	0.362	108		113	LLG-MK-2400-3.3%XF	GG 0.5%	81	32	G16/6	3.097	0.107		80	8	0	375		Class 3 RRJ	0.73	110	150		3.859	4.161	4.161	3.902	4.732	4.732	G19/6

DRAINAGE CALCULATIONS - Return Period: 2yrs - Location: Townsville

LOCATION		TIME			CATCHMENT RUNOFF					INLET DESIGN								DRAIN DESIGN							DESIGN LEVELS						
	STRUCTURE No.		TIME OF CONCENTRATION	RAINFALL INTENSITY		RUNOFF CO-EFFICIENT	CATCHMENT AREA	CATCHMENT DISCHARGE		FLOW IN KERB	INLET TYPE	INLET CURVE	FLOW TO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	FLOW WIDTH	FLOW DEPTH		PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE SIZE	No. OF PIPES (1 IF BLANK)	PIPE CLASS	FLOW VELOCITY	CAPACITY FLOW (MANNINGS)	CAPACITY FLOW (HGL)		OBVERT LEVELS	DRAIN SECTION HGL	UPSTREAM H.G.L.	DOWNSTREAM H.G.L.	W.S.E.	SURFACE OR K&C INVERT LEVEL	STRUCTURE No.
			tc min	I mm/hr		C	A ha	Q L/s		L/s			Qg L/s	Qb L/s		m	m		Qp L/s	L m	S %	mm			V m/s	L/s	L/s		m	m	m	m	m	m	
	G41/9		5	150		0.71	0.244	73		90	LLG-MK-2400-3.3%XF	GG 0.5%	67	23	G40/9	2.597	0.092		253	25	1	450		Class 3 RRJ	1.59	217	296		3.524	3.524	3.653	3.377	4.393	4.393	G41/9
	G42/9		5	150		0.71	0.241	72		72	LLG-MK-2400-3.3%XF	GG 0.5%	55	17	G41/9	2.445	0.087		144	71	0	375		Class 3 RRJ	1.31	111	151		3.813	3.912	4.071	3.653	4.781	4.781	G42/9
	G45/9		5	150		0.71	0.088	26		26	LLG-MK-2400-3.3%XF	GG 0.5%	21	5	G19/6	1.765	0.067		21	8	0	600x300		Class 3 RCBC	0.11	220	288		4.342	4.229	4.229	4.181	5.174	5.174	G45/9
	G43/9		5	150		0.71	0.076	23		37	LLG-MK-2400-3.3%XF	GG 0.5%	30	7	G1/10	1.920	0.072		93	8	0	375		Class 3 RRJ	0.85	110	150		3.926	4.085	4.145	4.071	4.795	4.795	G43/9
	G44/9		5	150		0.71	0.214	64		64	LLG-MK-2400-3.3%XF	GG 0.5%	49	14	G43/9	2.546	0.090		69	57	0	600x300		Class 3 RCBC	0.37	222	290		4.223	4.165	4.181	4.145	5.171	5.171	G44/9
	G1/10		5	150		0.71	0.239	71		79	LLG-MK-2400-3.3%XF	GG 0.5%	59	19	G40/9	2.462	0.088		59	8	0	375		Class 3 RRJ	0.54	123	169		3.590	3.825	3.825	3.653	4.410	4.410	G1/10

SAFETY IN DESIGN INFORMATION
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REVISION		APP'D	DATE
B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26

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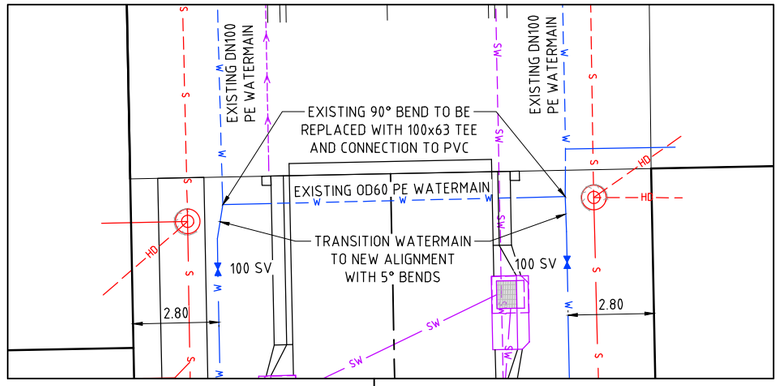
THE VILLAGE STAGE 7C & 7D

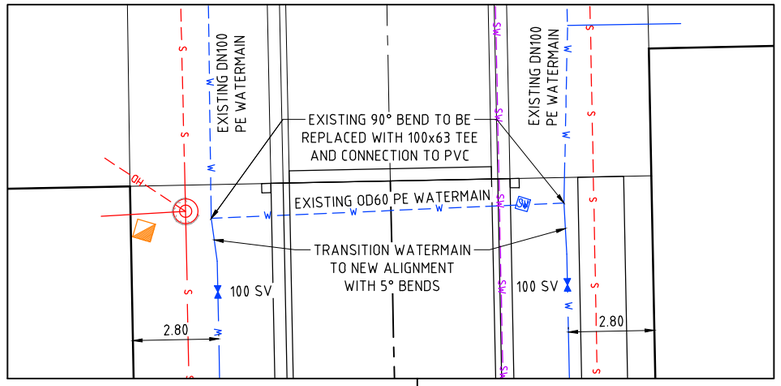
286 LAKESIDE DRIVE
OONOONBA

DRAWING
STORMWATER CATCHMENT DETAILS

NUMBER	SHEET NO.	REVISION
ROSE012	C25	B

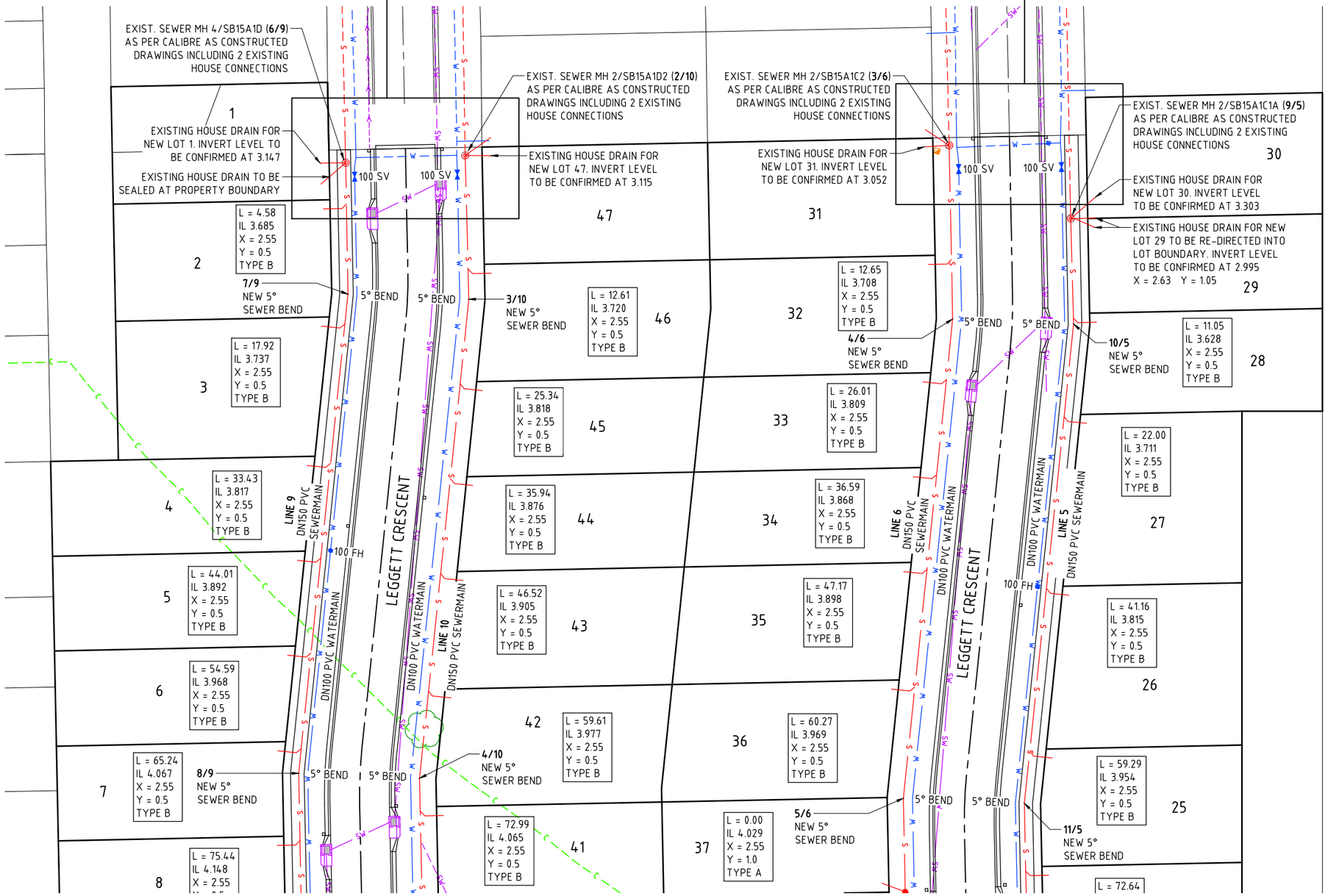
Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-STORMWATER CATCHMENT





DETAILED WATERMAIN CONNECTION PLANS

SCALE 1:100 AT A1



WATER & SEWER PLAN

SCALE 1:250 AT A1

LEGEND

- EXISTING STORMWATER
- EXISTING SUBSOIL
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING COMMUNICATIONS
- NEW STORMWATER
- NEW SUBSOIL
- NEW SEWER HOUSE DRAIN
- NEW SEWER MAIN
- NEW MAINTENANCE HOLE
- NEW MAINTENANCE SHAFT
- NEW WATER MAIN
- NEW FIRE HYDRANT
- NEW SLUICE VALVE
- NEW 50mm AIR VALVE WITH VENT PIPE COMPLYING WITH DRAWING SEQ-WAT-1304-1

SAFETY IN DESIGN INFORMATION

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-2 0 2 4

SCALE OF METRES 1:100 AT A1 & 1:200 AT A3

-5 0 5 10

SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		APP'D	DATE

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THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
WATER & SEWER PLAN - SHEET 1

NUMBER	SHEET NO.	REVISION
ROSE012	C26	B

Plot Date15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-WATER & SEWER

CONTINUES DRAWING C26

Y = 0.5
TYPE B

SEWER BEND

8
L = 75.44
IL 4.148
X = 2.55
Y = 0.5
TYPE B

9
L = 85.94
IL 4.205
X = 2.55
Y = 0.5
TYPE B

10
L = 0.00
IL 4.221
X = 2.55
Y = 1.23
TYPE B

L = 0.00
IL 4.371
X = 2.55
Y = 0.56
TYPE B

9/9
NEW SEWER MS

11

12
L = 10.05
IL 4.416
X = 2.55
Y = 0.5
TYPE B

13
L = 21.05
IL 4.454
X = 2.55
Y = 0.5
TYPE B

14
L = 31.55
IL 4.458
X = 2.55
Y = 0.5
TYPE A

15
L = 0.00
IL 4.459
X = 2.55
Y = 0.39
TYPE A

16
L = 0.00
IL 4.438
X = 1.99
Y = 1.60
TYPE A

10/9
NEW SEWER MS

22.5° & 15° BENDS

100 FH

NEW COURT

DN100 PVC WATERMAIN

DN150 PVC SEWERMAIN
LINE 9

41
L = 72.99
IL 4.065
X = 2.55
Y = 0.5
TYPE B

40
L = 0.00
IL 4.077
X = 2.55
Y = 1.0
TYPE A

39
L = 0.00
IL 4.019
X = 2.55
Y = 1.0
TYPE A

5/10
NEW SEWER MS

37
L = 0.00
IL 4.029
X = 2.55
Y = 1.0
TYPE A

38
L = 0.00
IL 3.856
X = 2.55
Y = 1.0
TYPE A

5/6
NEW 5°
SEWER BEND

6/6
NEW SEWER MS

5° BEND

5° BEND

11/5
NEW 5°
SEWER BEND

25
X = 2.55
Y = 0.5
TYPE B

24
L = 72.64
IL 4.031
X = 2.55
Y = 0.5
TYPE B

23
L = 0.00
IL 3.894
X = 2.55
Y = 0.0
TYPE A

45° & 30° BENDS

12/5
NEW SEWER MH

LEGGETT CRESCENT

DN100 PVC WATERMAIN

LINE 5
DN150 PVC
SEWERMAIN

13/5
NEW 5°
SEWER BEND

22
L = 0.00
IL 3.924
X = 2.55
Y = 0.15
TYPE A

21
L = 9.13
IL 4.013
X = 2.55
Y = 0.5
TYPE A

20
L = 22.41
IL 4.067
X = 2.55
Y = 0.5
TYPE A

14/5
NEW SEWER MH

19
L = 32.90
IL 4.137
X = 2.55
Y = 0.5
TYPE A

18
L = 0.00
IL 4.240
X = 2.55
Y = 1.5
TYPE A

17
L = 0.00
IL 4.545
X = 19.16
Y = 0.0
TYPE A

30° BEND
30° BEND
45° BEND
45° BEND
45° BEND
15° BEND
15° BEND
15° BEND
30° BEND
10° BEND
90° BEND
90° BEND

100 SY
100 FH
100 AV

DENOTES APPROXIMATE LOCATION OF VENT POLE. ACTUAL LOCATION TO BE CONFIRMED ON-SITE PRIOR TO CONSTRUCTION.

WATER & SEWER PLAN
SCALE 1:250 AT A1

LEGEND

- EXISTING STORMWATER
- EXISTING SUBSOIL
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING COMMUNICATIONS
- NEW STORMWATER
- NEW SUBSOIL
- NEW SEWER HOUSE DRAIN
- NEW SEWER MAIN
- NEW MAINTENANCE HOLE
- NEW MAINTENANCE SHAFT
- NEW WATER MAIN
- NEW FIRE HYDRANT
- NEW SLUICE VALVE
- NEW 50mm AIR VALVE WITH VENT PIPE COMPLYING WITH DRAWING SEQ-WAT-1304-1

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

-5 0 5 10
SCALE OF METRES 1:250 AT A1 & 1:500 AT A3

B	FOR APPROVAL ISSUE	DEJ	15/04/26
A	ORIGINAL ISSUE	DEJ	02/04/26
REVISION		APP'D	DATE

APPROVAL

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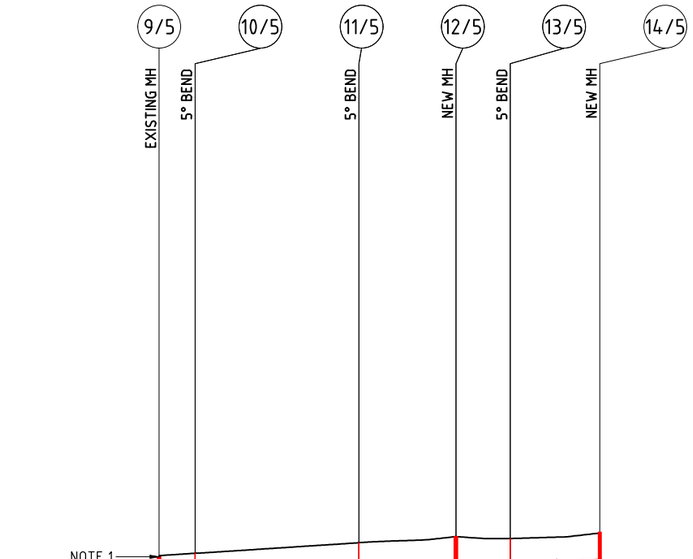
THE VILLAGE STAGE 7C & 7D

286 LAKESIDE DRIVE
OONOONBA

DRAWING
WATER & SEWER PLAN - SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C27	B

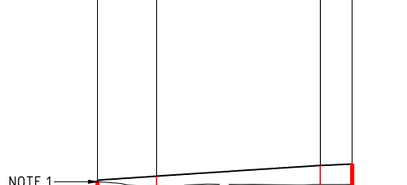
Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-WATER & SEWER



PIPE DETAILS SLOPE/GRADE		DN150 PVC 1:170		DN150 PVC 1:170		DN150 PVC 1:95		DN150 PVC 1:95
DATUM RL -1.100								
DEPTH TO INVERT	1.367	1.413		1.442	1.457	1.376	1.126	1.027
INVERT LEVEL	2.907	2.976		3.290	3.476	3.556	3.743	4.050
FINISHED SURFACE	4.311	4.389		4.732	4.933		4.868	5.045
EXISTING SURFACE	4.139	4.027		3.964	3.778		3.800	3.396
PIT COORDINATE	7866963.665(N) 480551.146(E)	7866952.535(N) 480554.749(E)		7866900.031(N) 480564.489(E)	7866869.847(N) 480574.020(E)		7866859.598(N) 480559.562(E)	7866840.278(N) 480537.687(E)
CHAINAGE	0.000	11.699	11.699	53.400	65.099	31.653	96.752	17.722	114.474	29.185	143.659

SEWERMAIN LONG SECTION - LINE 5

SCALE 1:1000 HORIZONTAL
1:100 VERTICAL



PIPE DETAILS SLOPE/GRADE		DN150 PVC 1:95		DN150 PVC 1:95		DN150 PVC 1:95
DATUM RL -1.200						
DEPTH TO INVERT	1.437	1.411		1.198	1.133	
INVERT LEVEL	2.776	2.979		3.541	3.650	
FINISHED SURFACE	4.259	4.390		4.739	4.783	
EXISTING SURFACE	4.208	4.032		4.117	4.126	
PIT COORDINATE	7866967.652(N) 480535.926(E)	7866949.283(N) 480541.724(E)		7866896.719(N) 480551.463(E)	7866886.877(N) 480554.590(E)	
CHAINAGE	0.000	19.262	19.262	53.400	72.662	10.384	83.046

SEWERMAIN LONG SECTION - LINE 6

SCALE 1:1000 HORIZONTAL
1:100 VERTICAL

NOTES

1. EXISTING MANHOLE (MH) TOP TO BE RAISED WITH GROUT CONBEXTRA GP INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS

MANHOLE	EXISTING TOP LEVEL	FINISHED SURFACE TOP LEVEL
9/5	4.274	4.311
3/6	4.213	4.259
2/10	4.360	4.432

SAFETY IN DESIGN INFORMATION
THERE MAY BE ADDITIONAL HAZARDS/RISKS NOT NORMALLY ASSOCIATED WITH THE TYPES OF WORK SHOWN ON THIS DRAWING. REFER TO THE SAFETY IN DESIGN REPORT.

SCALE OF METRES 1:1000 AT A1
& 1:2000 AT A3 HORIZ
-20 0 20 40
-2 0 2 4
SCALE OF METRES 1:100 AT A1
& 1:200 AT A3 VERT

B	FOR APPROVAL ISSUE	DEJ	15/04/26
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REVISION		APP'D	DATE

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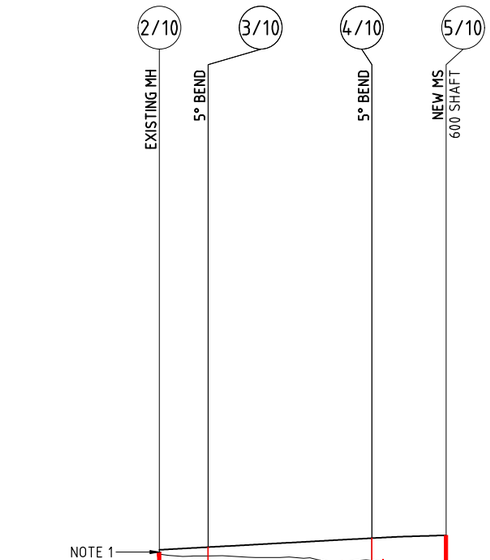
286 LAKESIDE DRIVE
OONOONBA

DRAWING
SEWER LONG SECTIONS
SHEET 1

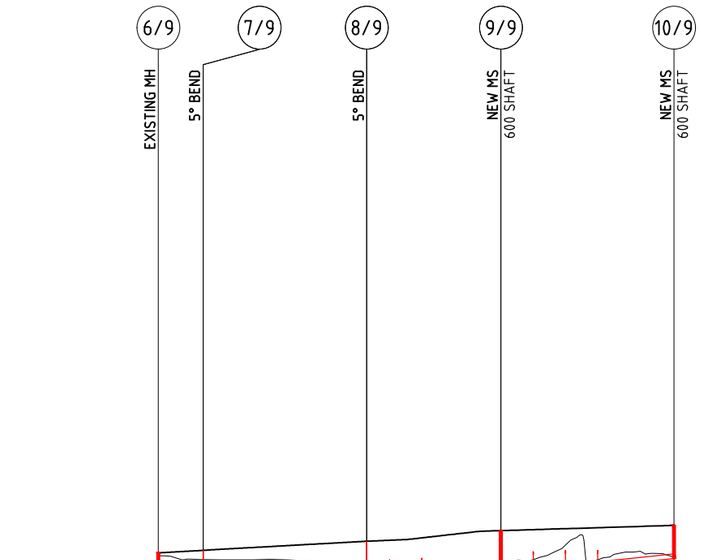
NUMBER	SHEET NO.	REVISION
ROSE012	C28	B

Plot Date:15/04/2026 9:46 AM User: SThorburn File Name: J:\ROSEL\rose012 the village stage 7c & 7d, oonoonba\CAD\civil\ROSE012-WATER & SEWER



PIPE DETAILS SLOPE/GRADE DATUM RL -1.200	2/10		3/10		4/10		5/10
		DN150 PVC 1:95		DN150 PVC 1:95		DN150 PVC 1:95	
DEPTH TO INVERT	1.544		1.538		1.268		1.106
INVERT LEVEL	2.816		2.984		3.546		3.800
FINISHED SURFACE	4.432		4.522		4.814		4.906
EXISTING SURFACE	4.291		4.234		4.072		4.049
PIT COORDINATE	7866951.434(N) 4804784.740(E)		7866936.276(N) 4804889.622(E)		7866883.712(N) 4804999.361(E)		7866860.725(N) 4805006.639(E)
CHAINAGE	0.000	15.924	15.924	53.400	69.324	24.169	93.493

SEWERMAIN LONG SECTION - LINE 10
SCALE 1:1000 HORIZONTAL
1:100 VERTICAL



PIPE DETAILS SLOPE/GRADE DATUM RL -1.100	6/9		7/9		8/9		9/9		10/9
		DN150 PVC 1:170		DN150 PVC 1:170		DN150 PVC 1:170		DN150 PVC 1:95	
DEPTH TO INVERT	1.510		1.481		1.464		1.554 1.504		1.089
INVERT LEVEL	2.949		3.035		3.349		3.606 3.656		4.250
FINISHED SURFACE	4.434		4.515		4.813		5.160		5.339
EXISTING SURFACE	4.344		4.213		4.136		4.104		4.301
PIT COORDINATE	7866946.948(N) 4804772.255(E)		7866933.027(N) 4804776.605(E)		7866880.520(N) 4804786.336(E)		7866838.807(N) 4804799.508(E)		7866786.652(N) 4805211.128(E)
CHAINAGE	0.000	14.585	14.585	53.401	67.986	43.744	111.729	56.459	168.188

SEWERMAIN LONG SECTION - LINE 9
SCALE 1:1000 HORIZONTAL
1:100 VERTICAL

NOTES

1. EXISTING MANHOLE (MH) TOP TO BE RAISED WITH GROUT CONBEXTRA GP INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS

MANHOLE	EXISTING TOP LEVEL	FINISHED SURFACE TOP LEVEL
9/5	4.274	4.311
3/6	4.213	4.259
2/10	4.360	4.432

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SCALE OF METRES 1:1000 AT A1
& 1:2000 AT A3 HORIZ
-20 0 20 40
-2 0 2 4
SCALE OF METRES 1:100 AT A1
& 1:200 AT A3 VERT

B	FOR APPROVAL ISSUE	DEJ	15/04/26
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286 LAKESIDE DRIVE
OONOONBA

DRAWING
SEWER LONG SECTIONS
SHEET 2

NUMBER	SHEET NO.	REVISION
ROSE012	C29	B

Plot Date:15/04/2026 9:47 AM User: SThorburn File Name: J:\ROSE\rose012 the village, stage 7c & 7d, oonoonba\CAD\Civil\ROSE012-WATER & SEWER