COURTNEY DRIVE
UPPER COOMERA

OPERATIONAL WORKS
STAGE 01
No. 41901-01

SCHEDULE OF DRAWINGS

NUMBER	REV. NO.	TITLE	NUMBER	REV. NO.	TITLE
GENERAL			ROADS: INTERSECTION GRADING		
41901-01-000	C	COVER SHEET	41901-01-400	B	DETAILS
41901-01-003	A	SAFETY IN DESIGN	ROADS: JOINTING DETAILS		
41901-01-004	A	RISK MATRIX & NOTES	41901-01-410	B	PLAN AND DETAILS
41901-01-005	C	ROAD HIERARCHY STAGING PLAN & GENERAL NOTES	ROADS: LINEMARKING AND SIGNAGE		
EARTHWORKS: EXISTING FEATURES & DEMOLITION			41901-01-420	B	PLAN SHEET 01
41901-01-020	B	PLAN	41901-01-421	B	PLAN SHEET 02
EARTHWORKS: BULK EARTHWORKS CUT FILL			SEWER: SEWER RETICULATION		
41901-01-040	A	PLAN SHEET 01	41901-01-500	B	PLAN SHEET 01
41901-01-041	A	PLAN SHEET 02	41901-01-501	B	PLAN SHEET 02
41901-01-042	A	PLAN SHEET 03	41901-01-510	A	DETAILS
41901-01-043	B	PLAN SHEET 04	SEWER: PROFILES		
41901-01-045	B	GEOTECHNICAL REQUIREMENTS PLAN	41901-01-530	B	SHEET 01
41901-01-050	A	EARTHWORKS SECTION KEY PLAN	41901-01-531	B	SHEET 02
41901-01-051	A	SECTIONS-SHEET 01	41901-01-532	B	SHEET 03
41901-01-052	A	SECTIONS-SHEET 02	41901-01-533	B	SHEET 04
41901-01-053	A	SECTIONS-SHEET 03	SEWER: HOUSE CONNECTION PROFILES		
41901-01-054	A	SECTIONS-SHEET 04	41901-01-550	B	SHEET 01
41901-01-055	A	SECTIONS-SHEET 05	41901-01-551	B	SHEET 02
EARTHWORKS: RETAINING WALL & DETAIL GRADING			DRAINAGE: STORMWATER		
41901-01-060	B	PLAN SHEET 01	41901-01-600	C	PLAN SHEET 01
41901-01-061	B	PLAN SHEET 02	41901-01-601	C	PLAN SHEET 02
41901-01-062	B	PLAN SHEET 03	DRAINAGE: PROFILES		
41901-01-063	B	PLAN SHEET 04	41901-01-620	B	SHEET 01
41901-01-064	B	PLAN SHEET 05	41901-01-621	B	SHEET 02
41901-01-065	B	PLAN SHEET 06	41901-01-622	B	SHEET 03
41901-01-070	B	DETAILS SHEET 01	41901-01-623	B	SHEET 04
41901-01-070A	A	DETAILS SHEET 02	DRAINAGE: PIT DETAILS & TYPICAL DETAILS		
41901-01-071	A	FINAL TRIM DETAILS	41901-01-640	B	OUTLETS & TYPICAL DETAILS SHEET 01
EARTHWORKS: PADMOUNT SECTIONS			41901-01-650	B	PIT DETAILS SHEET 01
41901-01-075	A	PADMOUNT 1	41901-01-651	B	PIT DETAILS SHEET 02
41901-01-076	A	PADMOUNT 5	41901-01-652	B	PIT DETAILS SHEET 03
EARTHWORKS: FINAL SURFACE & SEDIMENT AND EROSION CONTROL			DRAINAGE: BASINS & CULVERTS		
41901-01-080	B	PLAN SHEET 01	41901-01-660	C	PLAN SHEET 01
41901-01-081	B	PLAN SHEET 02	41901-01-661	C	PLAN SHEET 02
ROADS: COMBINED SERVICES			41901-01-662	A	SECTIONS
41901-01-090	C	PLAN SHEET 01	41901-01-663	C	DETAILS SHEET 01
41901-01-091	C	PLAN SHEET 02	41901-01-664	A	DETAILS SHEET 02
ROADS: ROADWORKS			DRAINAGE: CATCHMENT		
41901-01-100	C	PLAN SHEET 01	41901-01-670	B	PLAN SHEET 01
41901-01-101	B	PLAN SHEET 02	41901-01-671	B	PLAN SHEET 02
41901-01-120	B	DETAILS	DRAINAGE: CALCULATION TABLES		
ROADS: LONGITUDINAL SECTIONS			41901-01-680	B	MINOR
41901-01-200	B	SHEET 01	41901-01-681	B	MAJOR
41901-01-201	B	SHEET 02	WATER: WATER RETICULATION		
41901-01-202	B	SHEET 03	41901-01-700	B	PLAN SHEET 01
41901-01-203	B	SHEET 04	41901-01-701	B	PLAN SHEET 02
ROADS: CROSS SECTIONS			41901-01-710	A	DETAILS
41901-01-300	A	SHEET 01			
41901-01-301	A	SHEET 02			
41901-01-302	A	SHEET 03			
41901-01-303	A	SHEET 04			
41901-01-304	A	SHEET 05			
41901-01-305	B	SHEET 06			

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CLIENT

HB Land

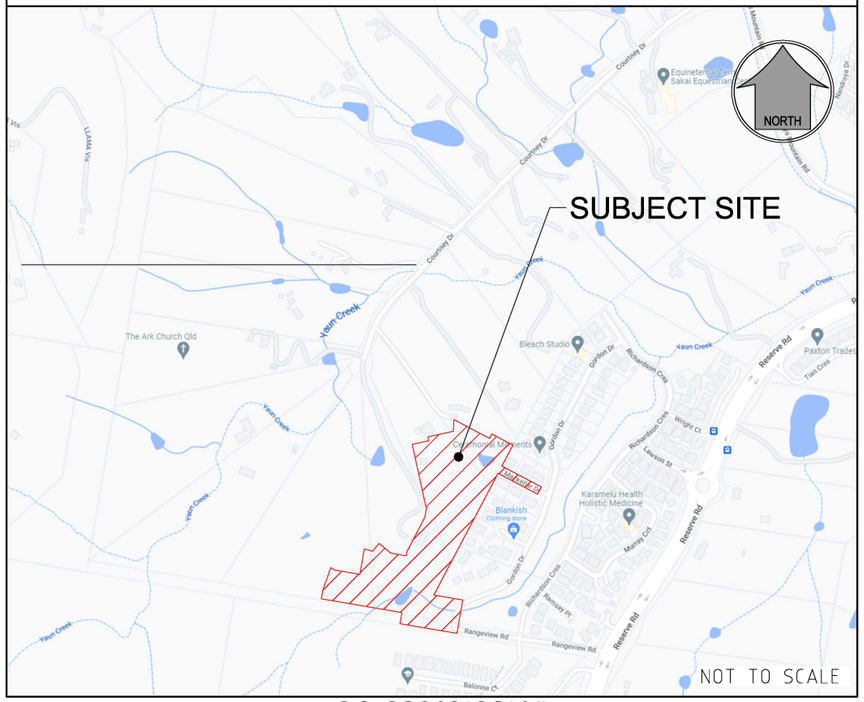
SUB-CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

LOCALITY PLAN



R. P. DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

DRAWING NUMBER	AMEND.
41901-01-000	C

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DESIGN ITEM	POTENTIAL HAZARD	PHASE	THOSE AT RISK	PRE-TREATMENT RISK ASSESSMENT				TREATMENT OPTIONS	- ADOPTED TREATMENT - REASON - BY WHOM	RESIDUAL RISK ASSESSMENT				ONGOING RESPONSIBILITY
				SEVERITY	LIKELIHOOD (RISK)	Risk Product	RISK RATING			SEVERITY	LIKELIHOOD (RISK)	Risk Product	RISK RATING	
Road Design	Traffic Speed	Operational	Public	Death	Possible	15	Significant	- Design compliance with Local Council requirements, Queensland Streets and appropriate sections of Austroads. - Lot layout to consider natural slow points in road layout. - Consideration of slow points within Local street network.	Town Planners and Council to ensure original layout reduces risk (i.e. minimise long straight roads). Designer to consider inclusion of slow points in consultation with Council and prepare design in accordance with applicable standards.	Permanent Disability	Rare	4	Low	Closed
Road Design	Unclear priorities at intersections or slow points	Operational	Public	Death	Unlikely	10	High	- Design compliance with Local Council requirements, Queensland Streets and appropriate sections of Austroads. - Linemarking to be provided in accordance with MUTCD and Council's approval.	Designer to incorporate linemarking in accordance with MUTCD and Council's requirements to assist in minimising confusion at intersections and slow points.	Permanent Disability	Rare	4	Low	Closed
Traffic Management	Accidents at the interface between public and work site	Construction	Contractor & Public	Permanent Disability	Unlikely	8	Moderate	- Traffic Management Plan to be prepared by suitable qualified consultant. - TMP to consider temporary lighting, signals, barriers/separation and other traffic management measures.	Contractor to prepare site specific TMP incorporating appropriate measures to minimise risk at interface of work site and public roads.	Permanent Disability	Rare	4	Low	On Going: Contractor to monitor until end of Construction Phase
Public Access	Public wandering onto work site	Construction	Contractor & Public	Death	Unlikely	10	High	- Appropriate signage to be installed at public interface - Fencing to discourage accidental access to site	Contractor to prepare site specific Construction Management Plan to minimise risk of public access to the site.	Death	Rare	5	Moderate	On Going: Contractor to monitor until end of Construction Phase
Existing Services	Working on or near existing services - Electrocution, disrupt critical services, explosion	Construction	Contractor, Public & Asset Owner	Death	Possible	15	Significant	- Design to consider existing services and include appropriate clearances or protection measures. - Dial Before You Dig to be performed prior to design commencing. - Developer provide survey of any critical existing infrastructure prior to design. - Design drawings to show known services. - Connection point to be detailed in accordance with the relevant standard.	Contractor to physically locate and confirm service location information. Dial Before You Dig logo to be added to drawings. Connection details design and annotated on drawings in accordance with Water Authority requirements.	Death	Rare	5	Moderate	On Going: Contractor to monitor until end of Construction Phase
Retaining Walls	Failing	Construction, operational, maintenance and demolition	Contractor, Public & Asset Owner	Medical Treatment	Possible	9	High	- Minimise the height if retaining walls. - Minimise the number of locations.	Batters designed in all locations practical. Heights of wall minimised by civil designer. Safety fencing requirements included on drawings.	Medical Treatment	Unlikely	6	Moderate	On Going: Contractor to monitor until end of Construction Phase
Earthworks Surface	Working on steep Batters	Construction and maintenance	Contractor & Asset Owner	Medical Treatment	Possible	9	High	- Minimise the height of batters. - Minimise the number of locations. - Extend services up batters where possible to reduce future works on batter slopes.	Batters designed to minimum practical height in all locations practical. Services to be constructed up the batters to ensure future batter stability.	Medical Treatment	Rare	3	Low	On Going: Contractor to monitor until end of Construction Phase and Asset Owner to continue monitoring for future maintenance.
Deep excavation	Falling or collapse	Construction, Maintenance and demolition	Public, Client, Supervisors, Contractors	Permanent Disability	Possible	12	High	- Minimise depth of structure. - Bench deep trenches appropriately to minimise trench collapse risk. - Design in accordance with relevant standard. - Minimise the number of structures.	Structures designed in accordance with local authority requirements. Utilise RIGS sewer to reduce the number of access points. Graded pipelines as shallow as practical to reduce depth. Contractor to manage open excavations during construction in accordance with their Management Plans.	Permanent Disability	Rare	4	Low	On Going: Contractor to Monitor until end of Construction Phase
Stormwater and Sewer	Falling and Trench Collapse	Construction and Maintenance	Contractor & Asset Owner	Death	Unlikely	10	High	- Minimise depth of drainage lines. - Design in accordance with relevant standard.	Infrastructure designed in accordance with local authority requirements. Graded pipelines as shallow as practical to reduce depth.	Death	Rare	5	Moderate	On going: Contractor to Monitor until end of Pipe line construction completed.
Stormwater Inlets	Drowning	Operational	Public	Death	Possible	15	Significant	- Design to minimise stormwater inlets within public areas. - Install inlet grates on stormwater inlets where required.	Risk assessment of stormwater inlets undertaken in accordance with QUDM requirements and stormwater inlet grates have been specified where required.	Death	Rare	5	Moderate	Closed
Permanent Stormwater Basin Infrastructure	Drowning	Maintenance and demolition	Public	Death	Possible	15	Significant	- Site fencing and warning signs to be installed. - Minimise depth - Design access and egress in accordance with QUDM and Asset Owner requirements.	Notes annotated on civil drawings for contractor to provide fencing and signage. Designed in accordance Qudm for access and egress. Depth minimised.	Death	Rare	5	Moderate	Monitor until end of Construction of Sediment Basins

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

SAFETY IN DESIGN

MORTONS urbansolutions
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Civil Engineering
Project Coordination

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Tel 07 5571 1099

Postal Address
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Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-003	A

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Likelihood	Consequence: Minor / Insignificant (1)	First Aid Treatment (2)	Medical Treatment (3)	Permanent Disability (4)	Death (5)
Almost Certain (5)	Moderate	High	Significant	Significant	Significant
Likely (4)	Low	Moderate	High	Significant	Significant
Possible (3)	Low	Moderate	High	High	Significant
Unlikely (2)	Low	Low	Moderate	Moderate	High
Rare (1)	Low	Low	Low	Low	Moderate

LEVEL OF RISK
SIGNIFICANT 15 to 25
HIGH 9 to 14
MODERATE 5 to 8
LOW 1 to 4

NOTES:

1. THIS SID REGISTER IN NO WAY RELIEVES THE PRINCIPAL, CONTRACTOR, ASSET OWNER OR ANY OTHER PARTY OF THEIR OWN OBLIGATIONS UNDER THE WORKPLACE HEALTH AND SAFETY ACT AND THEIR DUTY OF CARE. THIS IS PROVIDED AS INFORMATION FOR PARTIES TO ASSIST IN MEETING THEIR OWN OBLIGATIONS AND IS BY NO MEANS A COMPLETE LIST. THIS SID REGISTER OR THE NOTES AND DETAILS INCLUDED WITHIN THE DESIGN DRAWINGS DO NOT RELIEVE THE PRINCIPAL CONTRACTOR OF ANY OBLIGATION UNDER ALL RELEVANT LEGISLATION OR GUIDELINE.
2. ALL CONTRACTORS AND ASSET OWNERS REMAIN RESPONSIBLE IN THE PREPARATION OF THEIR OWN SAFETY MANAGEMENT PLANS AND SUITABLE SAFE WORK METHOD STATEMENTS.
3. THIS SID REGISTER IDENTIFIES ATYPICAL FEATURES OF THE DESIGN. COMMON/TYPICAL FEATURES OF THIS DESIGN ARE NOT INCLUDED IN THIS SID REGISTER.

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

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ASSOCIATED CONSULTANTS

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BENNETT+BENNETT

DRAWING TITLE

RISK MATRIX
& NOTES

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Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-004 REV A

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GENERAL

1. CONTRACT SPECIFICATIONS
   ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION.
2. SETOUT
   SURVEY SETOUT INFORMATION HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR TO ENABLE THE CONTRACTOR TO ACCURATELY SETOUT THE WORKS TO THE CO-ORDINATES SHOWN. SETOUT INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
3. DATUM
   LEVELS SHOWN ARE TO A.H.D.
4. TRENCH SPOIL
   ALL MATERIALS ARISING FROM ROADS & SERVICES ARE TO BE COMPACTED TO FUTURE STAGES. TO LEVEL 1 IF NO SPOIL AREA IS AVAILABLE THESE MATERIALS SHALL BE TRUCKED TO A LICENSED TIP. THESE WORKS FORM PART OF THE CONTRACTED WORKS.
5. CHECK ELECTRONIC SETOUT
   CONTRACTOR IS RESPONSIBLE TO ENSURE ANY ELECTRONIC DATA FILES MATCH THE DRAWINGS.
6. PRE START
   a. ERECT SITE SIGNAGE. CONSTRUCT ENTRY & EXIT POINT AS INDICATED.
   b. CONSTRUCT VEHICLE WASHDOWN AREA & ASSOCIATED SILT MANAGEMENT DEVICES.
   c. CONSTRUCT SITE OFFICE & STORAGE COMPOUND AREA.
   d. INSTALL EROSION & SEDIMENT CONTROL DEVICES AS PER THE CONTRACTOR'S EROSION & SEDIMENT CONTROL PLAN.
   e. ERECT TEMPORARY TREE PROTECTION FENCING IN ACCORDANCE WITH THE APPROVED VEGETATION MANAGEMENT PLAN & AUTHORITIES APPROVAL CONDITIONS (IF REQUIRED).
7. HEALTH & SAFETY
   ALL WORKS UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH & SAFETY LEGISLATION.
8. STOCKPILING

STOCKPILING OF ANY SURPLUS MATERIAL IS NOT PERMITTED

PROJECT SPECIFIC REPORTS

THE CONTRACTOR MUST FOLLOW THE RECOMMENDATIONS & PROCEDURES OUTLINED IN THE FOLLOWING REPORTS AT ALL TIMES:

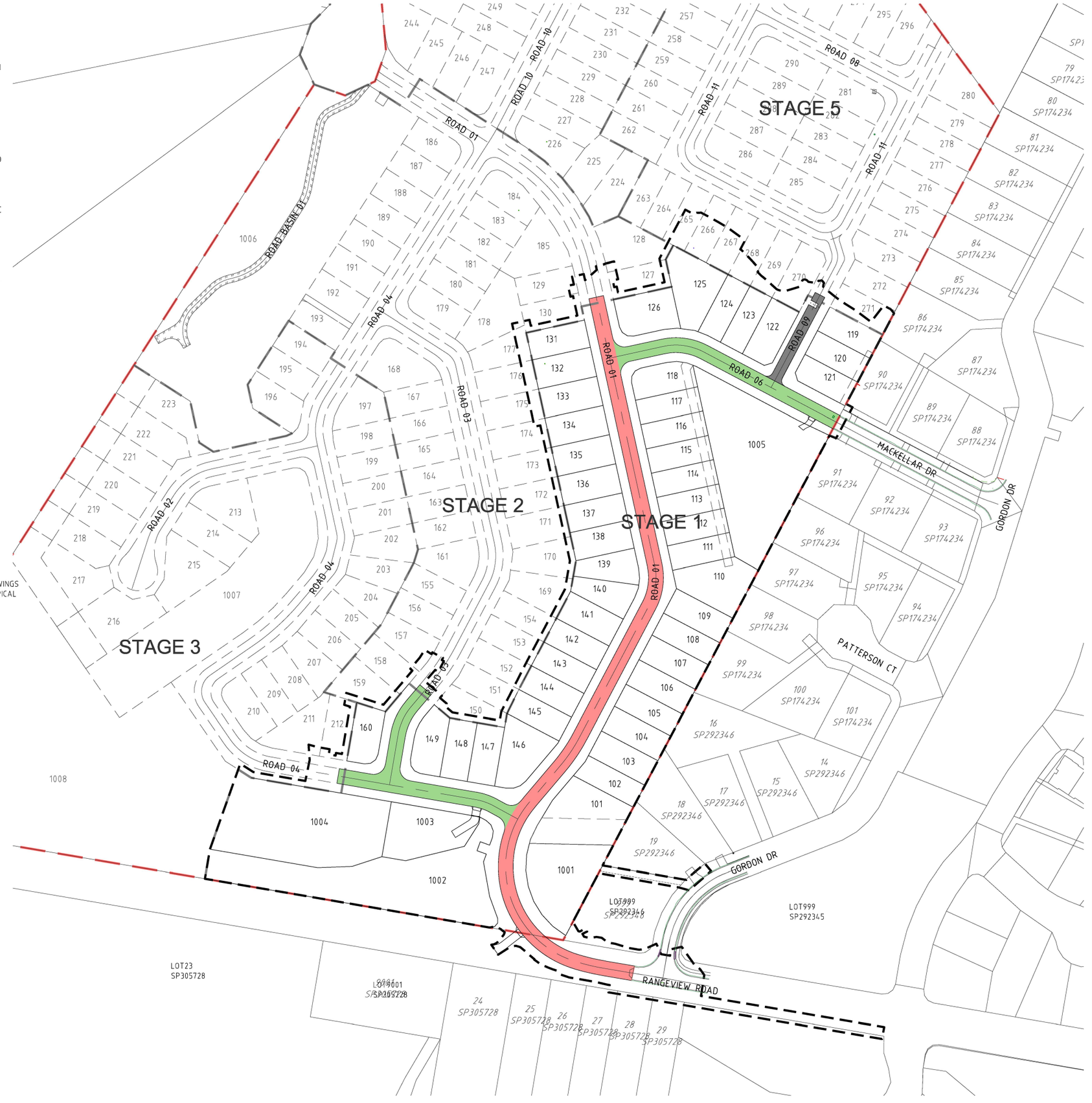
a) GEOTECHNICAL INVESTIGATION REPORTS (INCLUDING ANY ACID SULPHATE OR DISPERSIVE SOIL REPORTING)
b) VEGETATION & FAUNA MANAGEMENT PLANS
c) OTHER MANAGEMENT PLANS NOMINATED IN THE CONTRACT, AUTHORITIES APPROVAL CONDITIONS OR BY THE SUPERINTENDENT.

LEGEND

- RESIDENTIAL ACCESS STREET (5.5m CARRIAGEWAY)
- RESIDENTIAL ACCESS STREET (7.5m CARRIAGEWAY)
- RESIDENTIAL COLLECTOR STREET (7.5m CARRIAGEWAY)

REFER 120 DRAWINGS SERIES FOR TYPICAL SECTIONS

- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- SITE BOUNDARY
- STAGE BOUNDARY
- LIMIT OF WORKS BOUNDARY



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	20-03-23	ROAD HIERARCHY AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

ROAD HIERARCHY,
STAGING PLAN
&
GENERAL NOTES

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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Southport QLD 4215

DESIGNED RB	DRAWN EMH
APPROVED	RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-005 | REV C

GENERAL

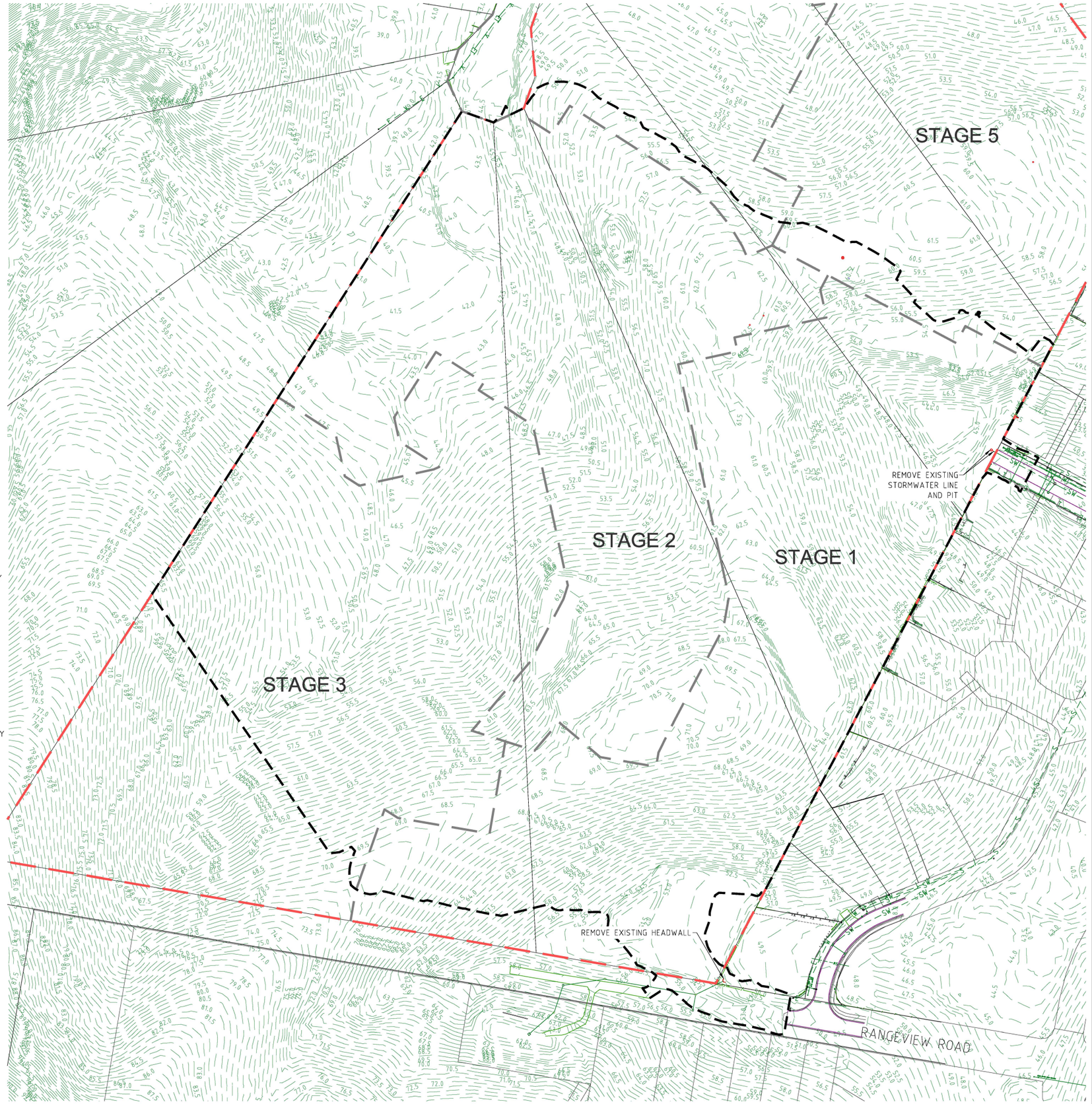
1. EXISTING SERVICES - EXTERNAL WORKS
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES & TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY BY THE CONTRACT WORKS.
2. EXISTING STRUCTURES
   ALL EXISTING STRUCTURES & ASSOCIATED INFRASTRUCTURE TO BE REMOVED & DISPOSED OF OFF SITE.
3. EXISTING DAMS
   EXISTING DAMS TO BE DEWATERED. ALL SILT & DEBRIS ARE TO BE REMOVED & LAWFULLY DISPOSED OF TO A TIP OFF SITE, OR INCORPORATED INTO THE SITE EARTHWORKS AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. REPLACEMENT FILL IS TO BE LOCATED & COMPACTED IN ACCORDANCE WITH LOCAL COUNCIL'S SPECIFICATIONS.

NOTE:
CONTRACTOR TO MAKE ALL NECESSARY ALLOWANCES FOR LOCATION AND PROTECTION OF EXISTING SERVICES DURING WORKS.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING FENCE
- EXISTING KERB
- EXISTING EDGE OF BITUMEN
- CONTROL LINE / CENTER OF ROAD
- EXISTING FOOTPATH
- EXISTING EDGE OF VEGETATION
- RM — EXISTING RISING MAIN
- S — EXISTING SEWER
- SW — EXISTING STORMWATER
- W — EXISTING WATER
- G — EXISTING GAS
- E — EXISTING UNDERGROUND ELECTRICITY
- E — EXISTING OVERHEAD ELECTRICITY
- T — EXISTING TELSTRA
- C — EXISTING COMMUNICATIONS
- 1.0 — EXISTING CONTOURS MAJOR
- 1.5 — EXISTING CONTOURS MINOR
- RM — DEMOLISH RISING MAIN
- S — DEMOLISH SEWER
- SW — DEMOLISH STORMWATER
- W — DEMOLISH WATER
- G — DEMOLISH GAS
- E — DEMOLISH UNDERGROUND ELECTRICITY
- E — DEMOLISH OVERHEAD ELECTRICITY
- T — DEMOLISH TELSTRA
- C — DEMOLISH COMMUNICATIONS
- SITE BOUNDARY
- STAGE BOUNDARY
- LIMIT OF WORKS BOUNDARY
- TREE PROTECTION FENCE
- TREES TO BE RETAINED
- TREES TO BE REMOVED

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

EXISTING FEATURES AND DEMOLITION PLAN

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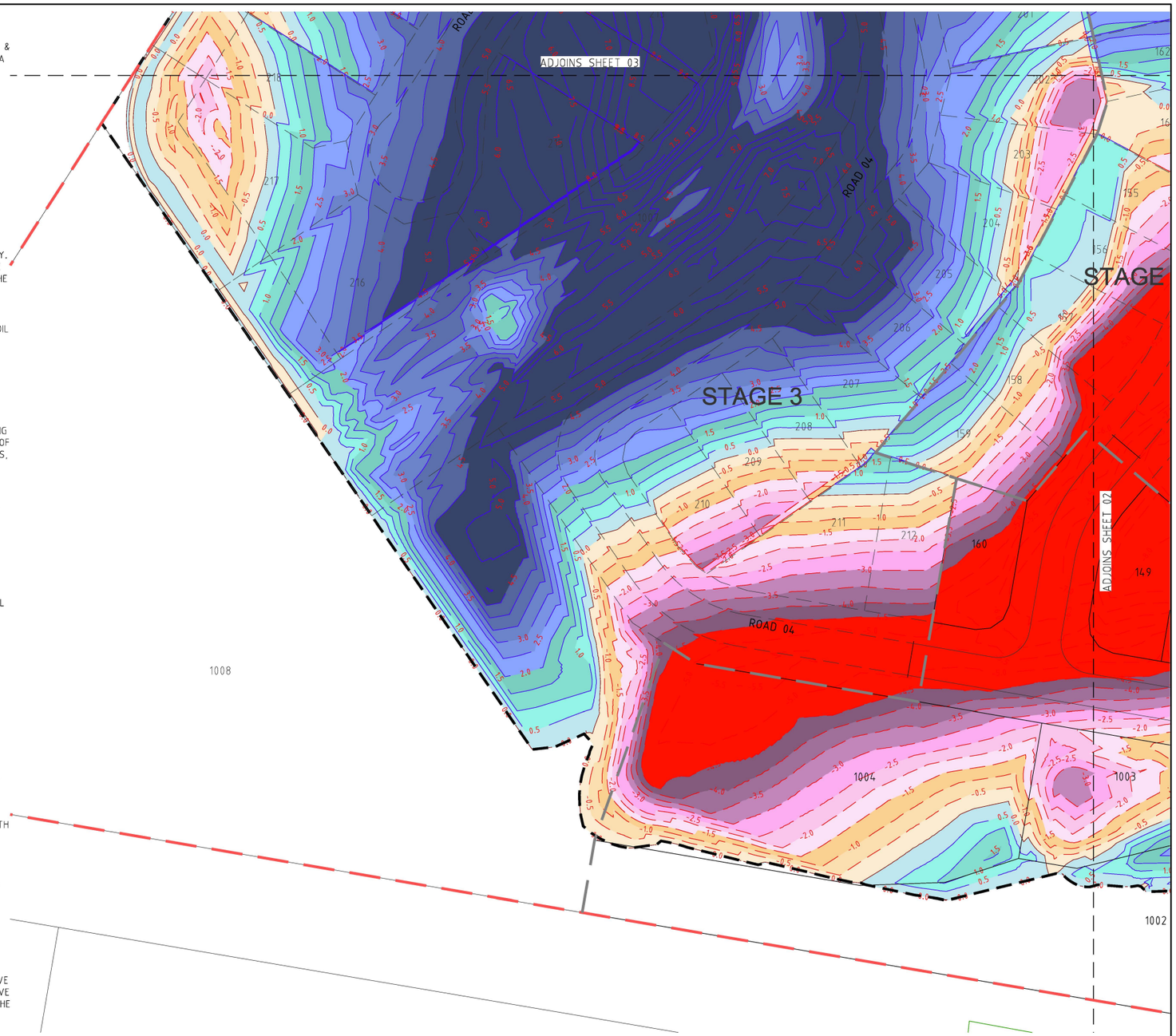
DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-020 | REV B

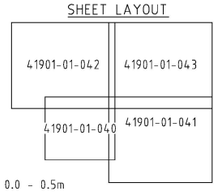
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EARTHWORKS

1. TOPSOIL STRIPPING
   TOPSOIL SHALL BE STRIPPED ACROSS THE ENTIRE LIMIT OF THE EARTHWORKS CUT & FILL AREAS & SHALL BE STOCKPILED IN A LOCATION APPROVED BY THE SUPERINTENDENT. THE EXISTING STRATA IS TO BE TREATED IN ACCORDANCE WITH THE SPECIFICATION PRIOR TO PLACING ANY FILL.
2. EARTHWORKS LEVELS
   EARTHWORKS LEVELS SHOWN ON DRAWINGS ARE TO FINISHED SURFACE LEVELS & INCLUDE 100mm OF TOPSOIL.
3. COMPACTION STANDARD
   SITE FILLING & TRENCH BACKFILL SHALL BE COMPACTED TO THE STANDARDS OUTLINED IN THE LOCAL AUTHORITY'S SPECIFICATIONS. FILL BATTER FACES ARE TO BE OVERFILLED, COMPACTED & CUT BACK TO DESIGN LEVELS. ALL CUT BATTERS ARE TO BE CUT BACK & TRIMMED TO DESIGN LEVELS.
4. PAVEMENT DEPTHS
   THE DESIGN PAVEMENT DEPTHS ALLOWED IN EARTHWORKS CALCULATIONS ARE BASED ON THE DEPTHS SHOWN IN THE SCHEDULE OF PAVEMENT DEPTHS. THE PAVEMENT DEPTHS GIVEN ARE DESIGN DEPTHS ONLY & MAY BE VARIED AFTER SUB GRADE TESTS ARE TAKEN & AUTHORITY APPROVAL.
5. TESTING & CERTIFICATION
   ALL COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. TESTING AUTHORITY. ALL SITE FILLING SHALL BE TESTED AT LEVEL 1 REQUIREMENTS. THE CONTRACTOR IS TO PROVIDE ALL REQUIRED EARTHWORKS CERTIFICATIONS IN ACCORDANCE WITH THE APPROVAL CONDITIONS. THE CONTRACTOR IS TO PROVIDE A CONSTRUCTED EARTHWORKS SLOPE STABILITY CERTIFICATION CONFIRMING REQUIRED F.O.S. CERTIFIED BY A RPEQ.
6. TOPSOIL REPLACEMENT
   ALL FOOTPATHS, BATTERS & ALLOTMENT CUT & FILL AREAS SHALL BE TOPSOILED WITH TOPSOIL FROM ONSITE STOCKPILES, & AMELIORATE SOIL AS NECESSARY TO ENSURE GRASS STRIKE.
7. GRASSING
   ALL CUT/FILL AREAS, DISTURBED AREAS & TRENCHED AREAS SHALL BE GRASSED TO THE SATISFACTION OF THE SUPERINTENDENT & LOCAL AUTHORITY.
8. ROCK
   THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR EARTHWORKS RATE.
9. EARTHWORKS ZONE
   THE FOLLOWING ACTIVITIES ARE PROHIBITED OUTSIDE THE EARTHWORKS ZONE - STORAGE & MIXING OF MATERIALS, VEHICLE PARKING, LIQUID DISPOSAL, MACHINERY REPAIRS/REFUELING, PLACEMENT OF SITE OFFICES OR SHEDS, COMBUSTION OF ANY MATERIAL, STOCKPILING OF SOIL, RUBBLE OR DEBRIS, ANY FILLING OR EXCAVATION INCLUDING TRENCHES, TOPSOIL, SKIMMING AND/OR SURFACE EXCAVATION UNLESS OTHERWISE APPROVED BY THE RELEVANT AUTHORITY.
10. CONSTRUCTION - STOCKPILING
    TEMPORARY SILT FENCE TO BE ERECTED 5m FROM TOE OF BATTER ON LOW SIDE OF STOCKPILING. STOCKPILE SITE TO BE CLEAR OF ADJACENT PROPERTY BOUNDARIES SO AS NOT TO CAUSE A NUISANCE TO ADJOINING PROPERTIES. NO STOCKPILES ARE TO BE LOCATED WITHIN THE TREE PROTECTION ZONE, REFER VEGETATION MANAGEMENT PLAN FOR MORE DETAILS. THE CONTRACTOR SHALL NOT CREATE STOCKPILES OF SURPLUS MATERIALS UNLESS DIRECTED BY THE SUPERINTENDENT. ALL MATERIALS ARISING FROM THE WORKS SHALL BE COMPACTED TO FUTURE FILL AREAS AS NOMINATED OR REMOVED FROM THE SITE.
11. TOPSOIL SCREENING
    TOPSOIL SHALL BE SCREENED BY THE CONTRACTOR WHEN DIRECTED BY THE SUPERINTENDENT. ALL UNSUITABLE MATERIAL SCREENED FROM THE TOPSOIL WILL BE TAKEN TO AN OFFSITE TIP BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
12. EARTHWORKS MATERIAL SIZE
    ALL EARTHWORKS MATERIAL IS TO BE BROKEN DOWN TO AN ACCEPTABLE SIZE TO BE COMPACTED UNDER LEVEL 1 FILL. WHERE THE RELEVANT GUIDELINES DON'T SPECIFY AN ACCEPTABLE SIZE, EARTHWORKS MATERIAL IS TO BE BROKEN DOWN TO A SIZE NO LARGER THAN 75mm.
13. MOISTURE CONTENT
    EARTHWORKS MOISTURE VARIATION TO NOT EXCEED ±2% OF THE OPTIMUM MOISTURE CONTENT.
14. SURFACE FINISH
    THE FINISHED SURFACE LEVEL IS TO BE CAPPED WITH FINER MATERIAL & SMOOTH DRUM ROLLED & GRADED TO PROMOTE SURFACE WATER RUNOFF IN A CONTROLLED MANNER.
15. EARTHWORKS LIMITS
    THE CONTRACTOR IS TO TIE IN TO THE NATURAL SURFACE AT THE LIMIT OF THE EARTHWORKS. THE TIE IN IS TO BE COMPLETED IN A MANNER TO ENSURE THERE IS NO PONDING OF SURFACE WATER.
16. IMPORTED MATERIAL
    LOTS - ALL IMPORTED MATERIAL FOR PLACEMENT ON LOTS TO BE A MINIMUM CBR 10 MATERIAL & HAVE A SWELL % <1.5.
    ROADS - ALL IMPORTED MATERIAL FOR PLACEMENT ON ROADS TO BE A MINIMUM CBR10 MATERIAL WITH A SWELL % <1.5, LIQUID LIMIT <70 & PLASTICITY IDEX <45.
    SOIL PARAMETERS TO BE REVIEWED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT ON SITE.
17. REACTIVE SOILS
    a) ALL REACTIVE TOPSOIL TO BE IDENTIFIED BY THE GEOTECHNICAL ENGINEER & BE SEPARATED FROM THE NON REACTIVE TOPSOIL.
    b) ALL REACTIVE TOPSOIL TO BE RESPREAD IN THE OPEN SPACE AREA. WHERE REACTIVE TOPSOIL IS REQUIRED TO BE RESPREAD ON DEVELOPABLE AREAS THE CONTRACTOR SHALL LIME TREAT THE TOPSOIL TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
    c) WHEN UNDERTAKING THE EARTHWORKS CUT ALL MATERIALS SHOULD BE SELECTIVELY SORTED SO THAT THE REACTIVE SOILS ARE SEPARATED FROM THE LOW REACTIVE RESIDUAL SOILS & XW BEDROCK
    d) ALL REACTIVE SOILS ARE TO BE PLACED IN THE LOWER SECTIONS OF FILL WITH THE LESS REACTIVE RESIDUAL SOILS & XW BEDROCK TO BE PLACE IN THE UPPER FILLS. ALTERNATIVELY, THE REACTIVE SOILS CAN BE BLENDED WITH THE LESS REACTIVE SOILS & XW ROCK TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
    e) NO REACTIVE CLAY SOILS SHOULD BE PLACED WITHIN THE UPPER 0.75M APPROX. FILL PROFILE WHERE POSSIBLE.
    f) WHEN PLACING FILL OVER HIGHLY REACTIVE SOILS, TREATMENT MAY BE REQUIRED IF THE FILLS ARE ONLY MINOR, 0.3m APPROX. & THE REACTIVE SOIL PROFILE IS GREATER THAN 0.7m APPROX. IN THESE AREAS SUBGRADE REPLACEMENT OF AT LEAST 0.75m OF NON REACTIVE / LOW REACTIVE MATERIAL OVERLYING THE REACTIVE SOILS SHALL BE UNDERTAKEN.
    g) ALL WORKS ASSOCIATED WITH THE IDENTIFICATION, PLACEMENT & TREATMENT OF REACTIVE SOILS SHALL BE UNDERTAKEN TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.



SHEET LAYOUT



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NOTE:
CONTRACTOR TO MAKE ALL NECESSARY ALLOWANCES FOR EXISTING SERVICES DURING ALL WORKS.

LEGEND

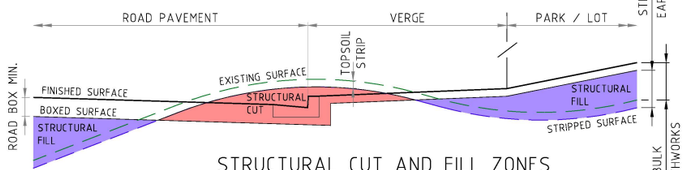
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- EXISTING KERB (INVERT)
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- LIMIT OF EARTHWORKS BOUNDARY
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- -0.5 CUT CONTOUR
- 0.0 INTERFACE CONTOUR
- 0.5 FILL CONTOUR

CUT #
- 4.5m +
- 4.0 - 4.5m
- 3.5 - 4.0m
- 3.0 - 3.5m
- 2.5 - 3.0m
- 2.0 - 2.5m
- 1.5 - 2.0m
- 1.0 - 1.5m
- 0.5 - 1.0m
- 0.0 - 0.5m

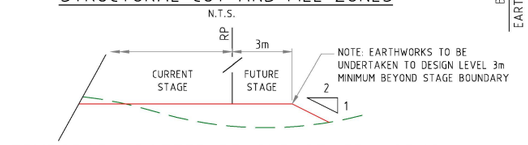
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- 0.5 - 1.0m
- 1.0 - 1.5m
- 1.5 - 2.0m
- 2.0 - 2.5m
- 2.5 - 3.0m
- 3.0 - 3.5m
- 3.5 - 4.0m
- 4.0 - 4.5m
- 4.5m +

BULK EARTHWORKS (EXISTING TO FINISHED SURFACE)

NOTES:
1. EARTHWORKS VOLUMES ARE APPROXIMATE ONLY, CONTRACTOR TO VERIFY & ALLOW FOR ANY DISCREPANCY IN THE CONTRACT VALUE.
2. VOLUMES INDICATE THE STRUCTURAL QUANTITY OF EARTHWORKS, IE BETWEEN THE EXISTING SURFACE & THE UNDERSIDE OF THE MINIMUM BOX & OF THE FSL, AS PROSCRIBED IN THE CONTRACT DOCUMENTATION.
3. NO ALLOWANCE FOR COMPACTION OR BULKING FACTOR IS INCLUDED IN THE EARTHWORKS VOLUMES. THE CONTRACTOR IS TO MAKE ALLOWANCES FOR BULKING/COMPACTION AS PART OF THEIR CONTRACT WORKS.
4. THE CONTRACTOR IS TO VERIFY EXISTING SURFACE & TOPSOIL DISTRIBUTION PRIOR TO SIGNING THE CONTRACT. THE CONTRACTORS PRICE FOR THESE WORKS IS DEEMED TO BE ACCEPTING OF THE NATURAL SURFACE & TOPSOIL DISTRIBUTION.
5. THE CONTRACTOR IS REQUIRED TO EXPORT / IMPORT AS NEEDED TO ACHIEVE THE FINAL SURFACE LEVELS. THE EXPORT/IMPORT AS REQUIRED TO COMPLETE EARTHWORKS FORMS PART OF THE CONTRACT WORKS.
6. WHERE NO SPOIL AREA IS AVAILABLE WITHIN THE PROJECT FOOTPRINT, THE CIVIL CONTRACTOR SHALL EXPORT EXCESS MATERIALS TO A LICENCED TIP OFF SITE. THESE WORKS FORM PART OF THE CONTRACT WORKS.



STRUCTURAL CUT AND FILL ZONES
N.T.S.



TEMPORARY BATTER BEYOND STAGE WORKS
N.T.S.

PROJECT NAME
COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT
HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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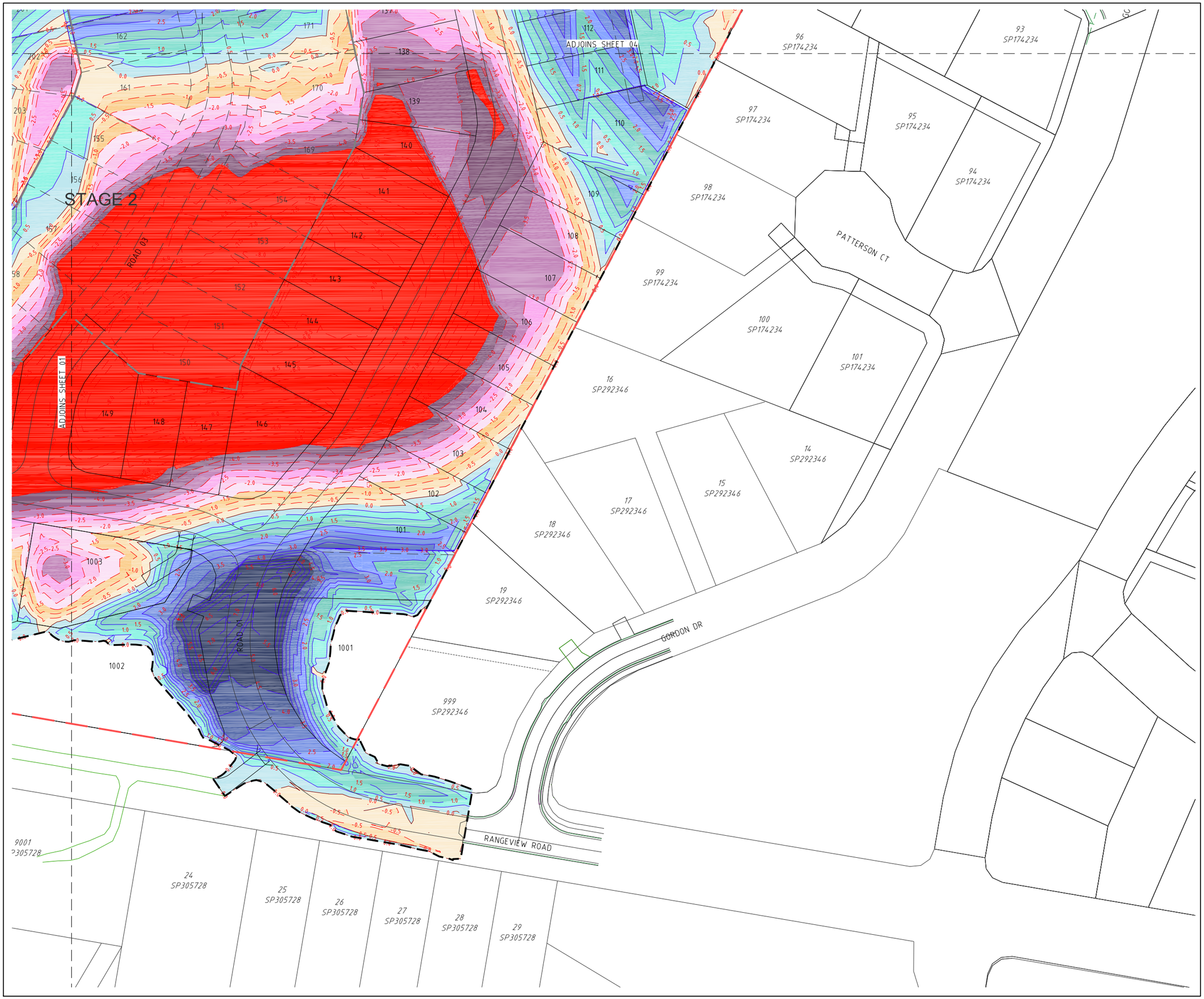
DRAWING TITLE
EARTHWORKS
CUT TO FILL
PLAN
SHEET 01

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APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-040
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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
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DRAWING TITLE

EARTHWORKS
CUT TO FILL
PLAN
SHEET 02

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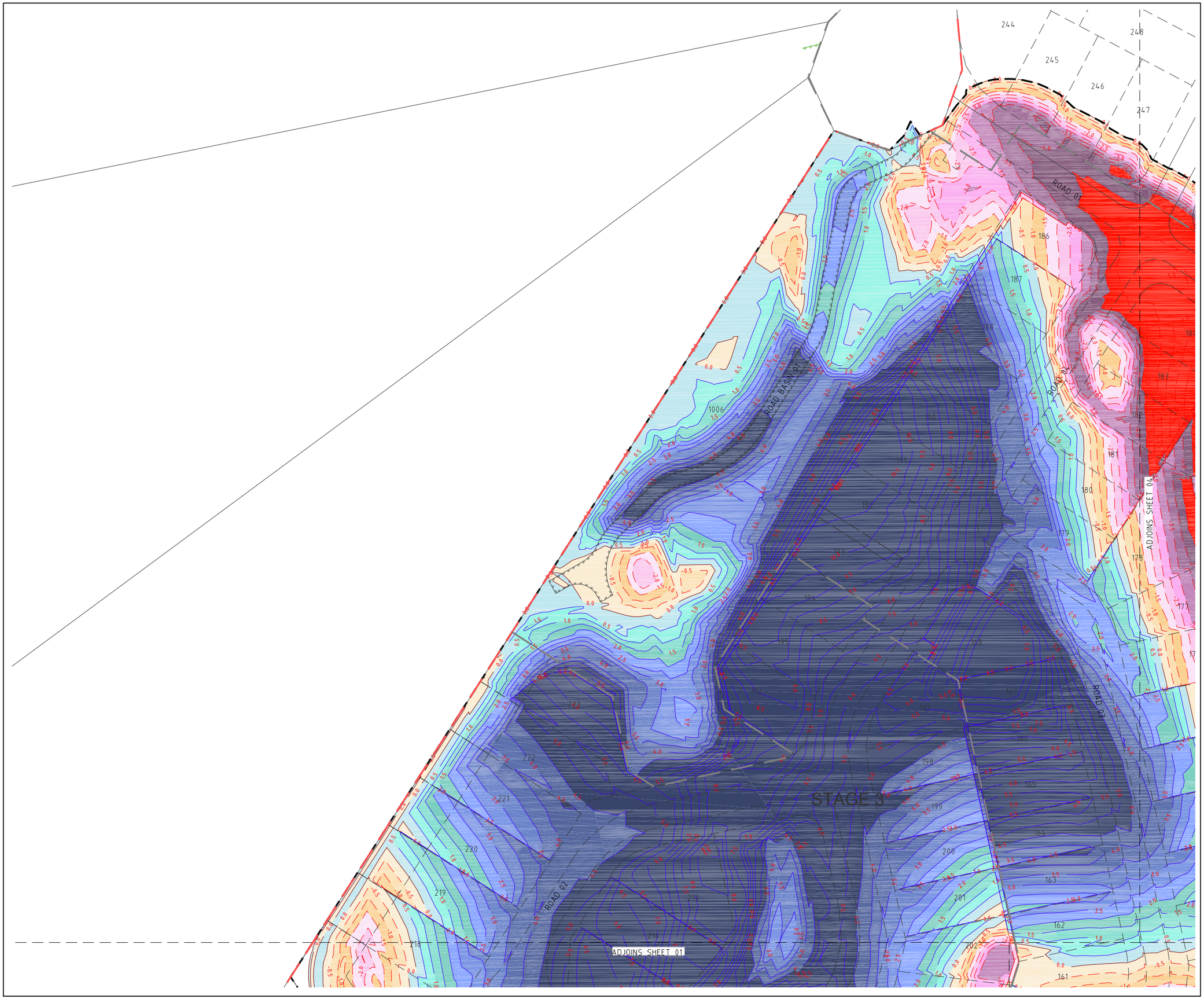
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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
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EARTHWORKS
CUT TO FILL
PLAN
SHEET 03

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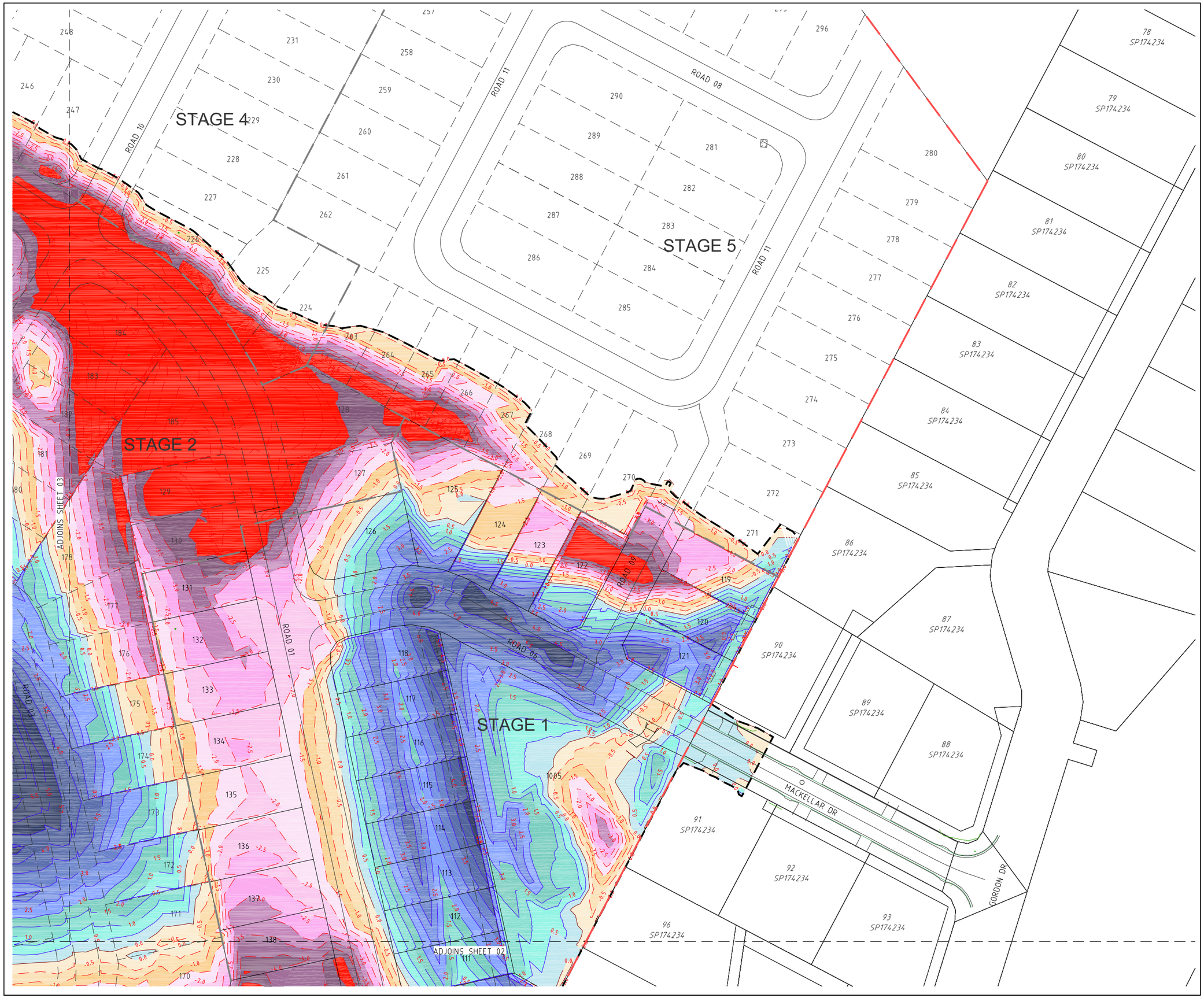
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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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DRAWING TITLE

EARTHWORKS
CUT TO FILL
PLAN
SHEET 04

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APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
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EXTENT OF WORKS TO BE DETERMINED ON SITE. REFER TO GEOTECHNICAL NOTE IN LEGEND

EXTENT OF WORKS TO BE DETERMINED ON SITE. REFER TO GEOTECHNICAL NOTE IN LEGEND

STAGE 1

STAGE 2

STAGE 3

ROAD 01

ROAD 02

ROAD 03

ROAD 04

ROAD 05

ROAD 06

ROAD 11

ROAD BASIN 01

PATTERSON CT

GORDON DR

MACKELLAR

SP174234

SP292346

LEGEND

- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING CONTOURS (1.0)
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE RETAINING WALL
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- DESIGN CONTOURS (1.0)
- SITE BOUNDARY
- STAGE BOUNDARY

FOR DETAILS RELATING TO THE MATERIAL FOR RETAINING WALL BACKFILL & COMPACTION REQUIREMENTS REFER TO SECTION 20 OF PACIFIC GEO - GEOTECHNICAL REPORT: BROADSCALE GEOTECHNICAL INVESTIGATION & LANDSLIDE ASSESSMENT FOR PROPOSED RESIDENTIAL SUBDIVISION. END OF COURTNEY DRIVE, UPPER COOMERA JAN 2023.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 7.5 15 22.5 30 37.5m

Scale 1:750 - A1 (1:1500 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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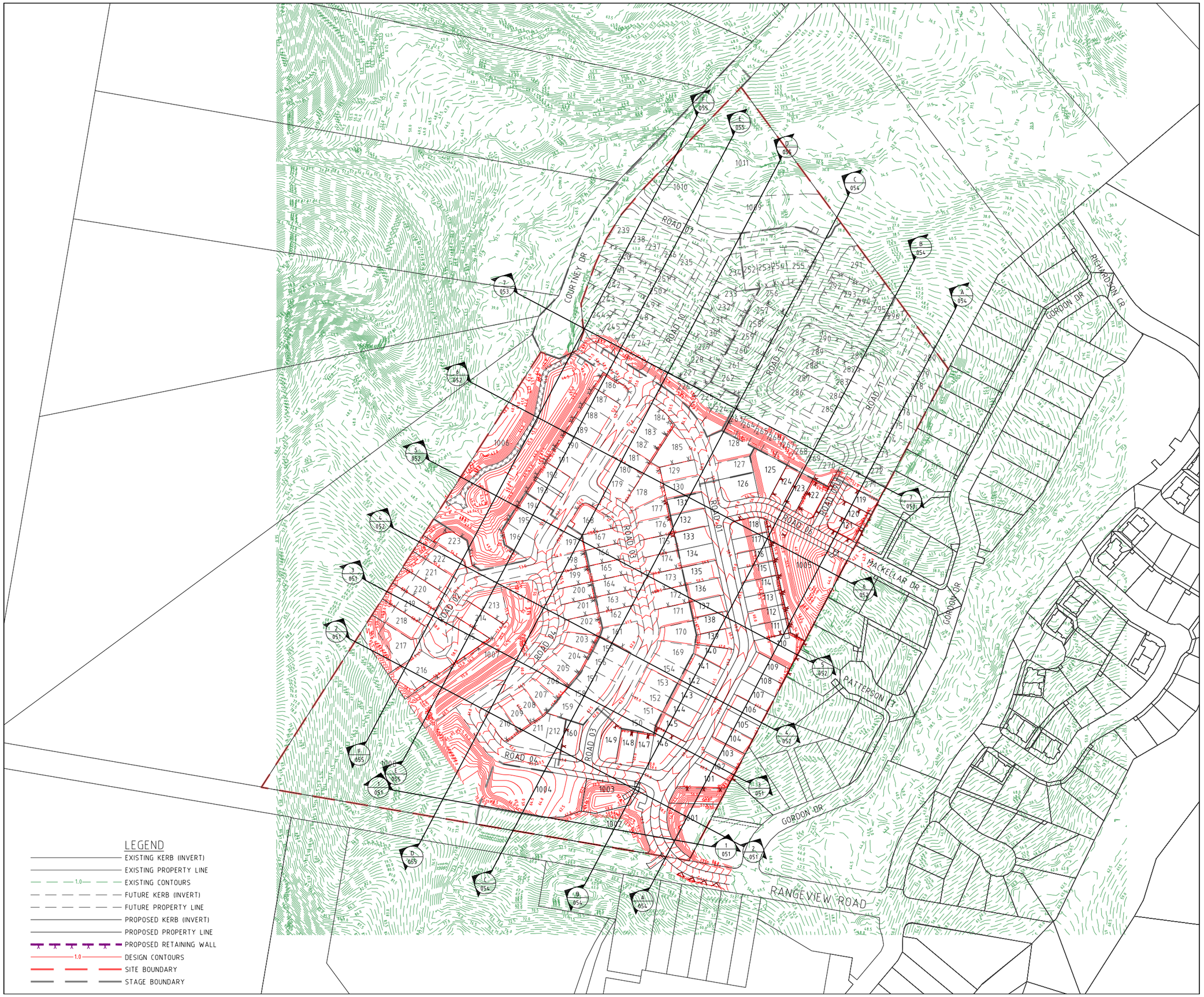
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APPROVED		RPEQ 4706	DATE 03-03-23

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 15 30 45 60 75m

Scale 1:1500 - A1 (1:3000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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BULK EARTHWORKS
SECTION KEY PLAN

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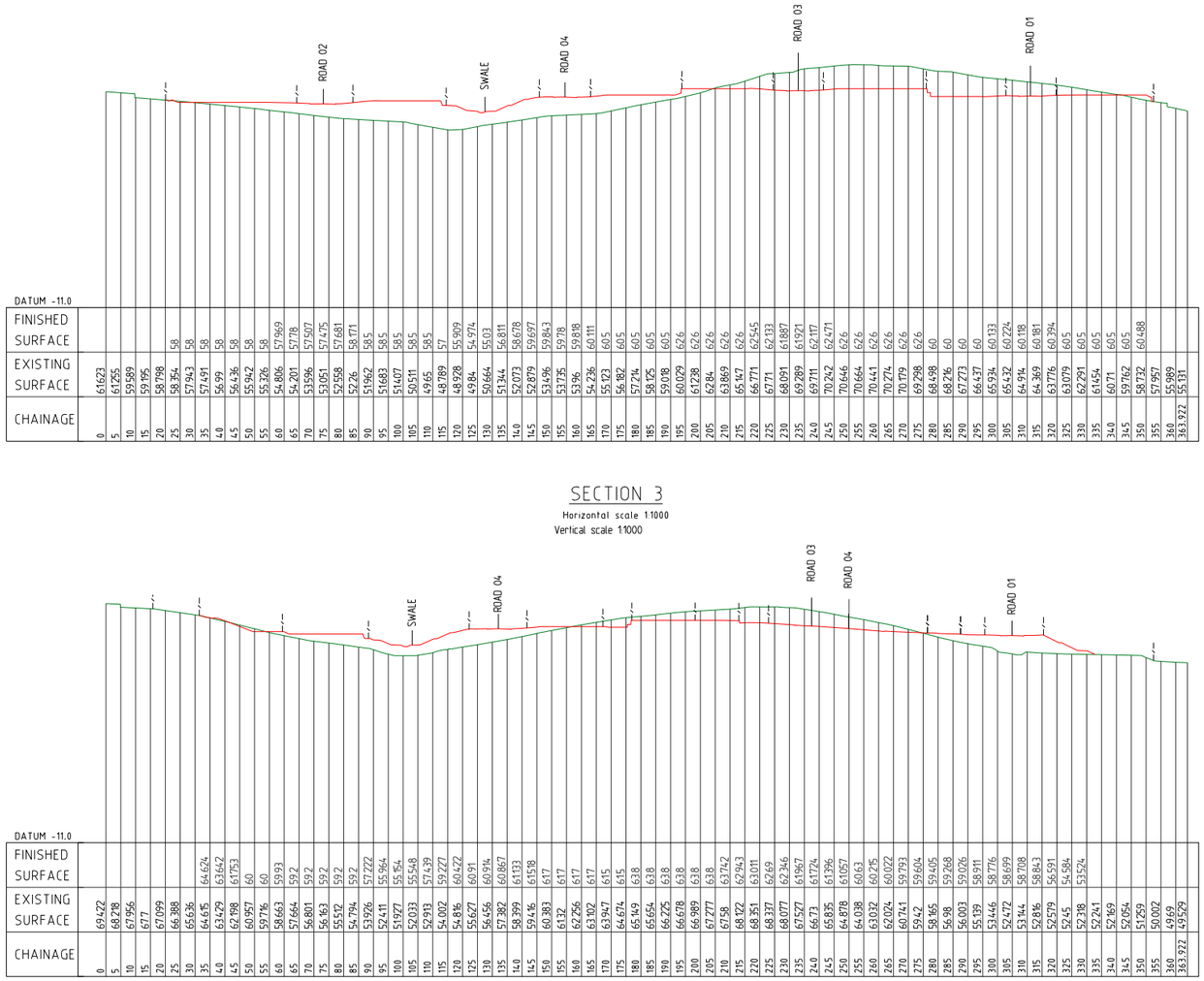
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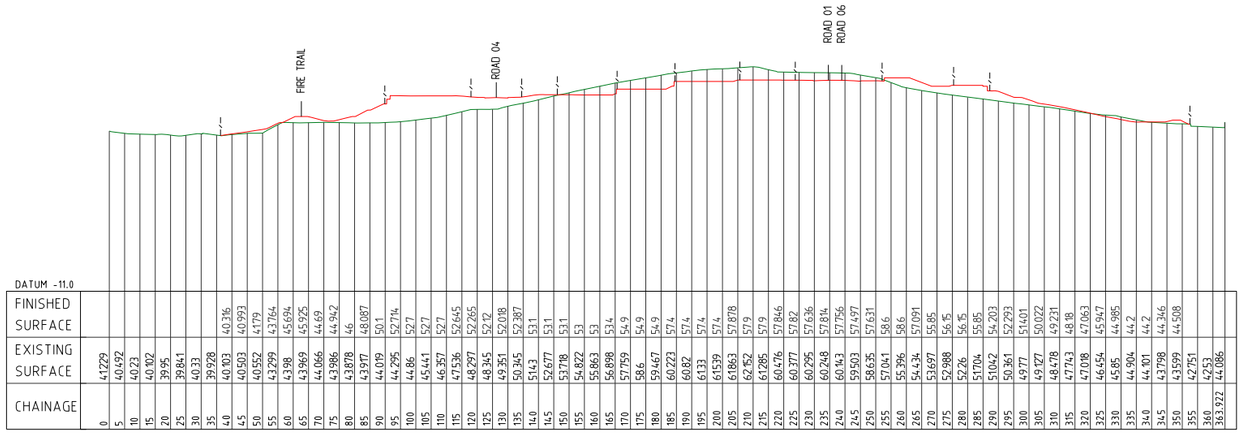
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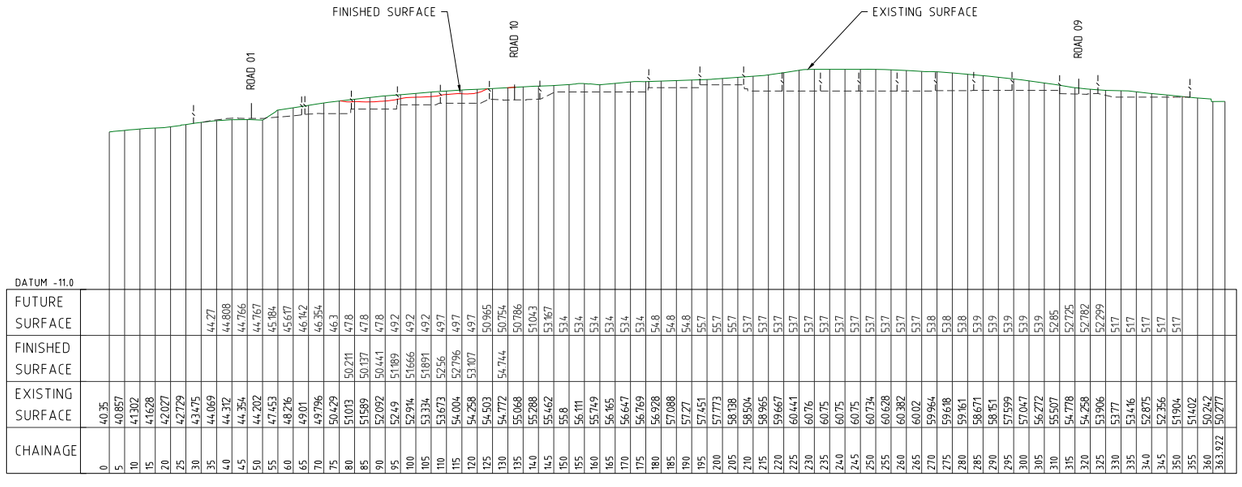
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ROAD 02
SWALE
ROAD 04
ROAD 03
ROAD 01

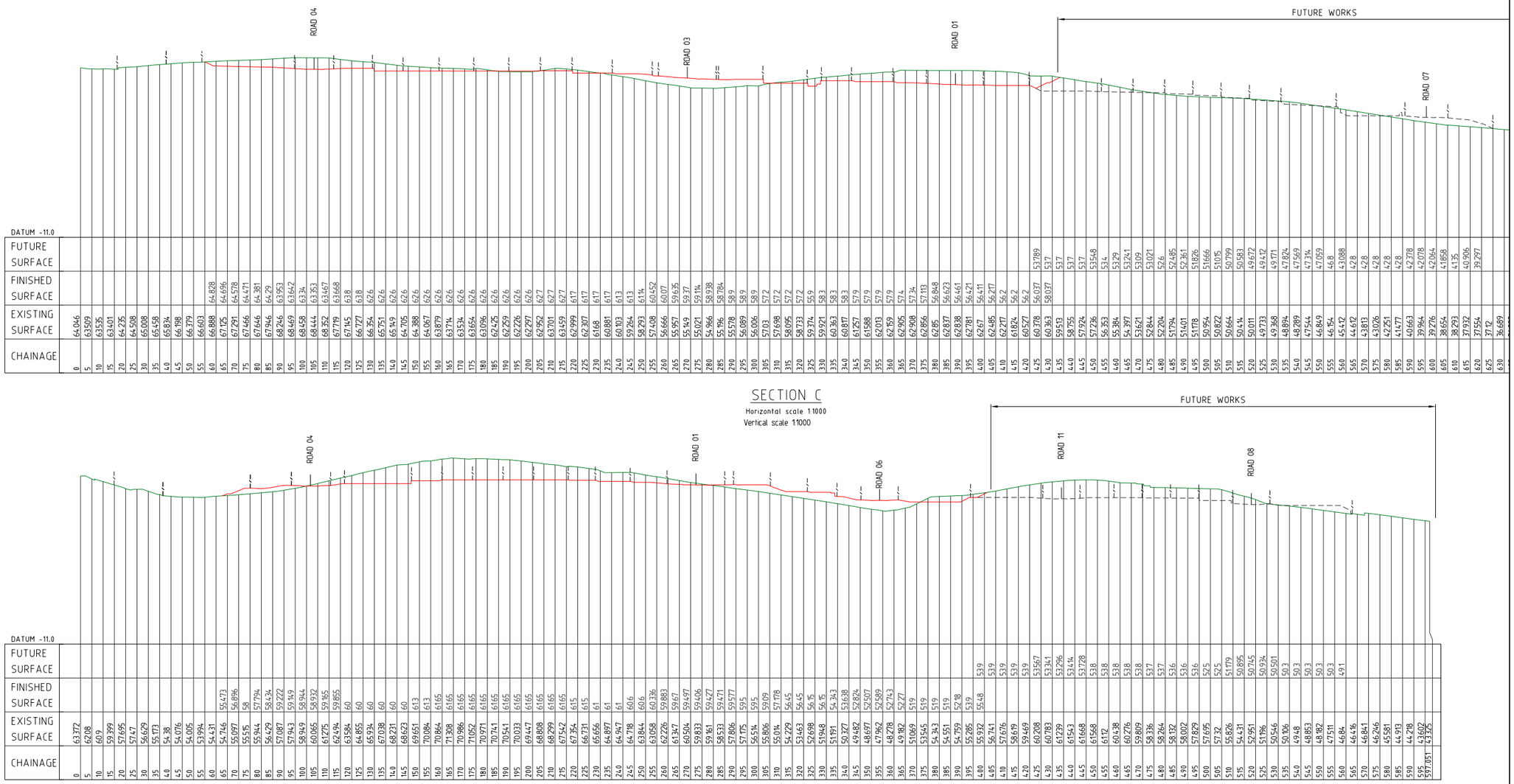
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| DATUM -11.0 | | |



| DATUM -11.0 | | |



DATUM -11.0

CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
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5			63.509
10			63.536
15			63.401
20			64.235
25			64.508
30			65.008
35			65.458
40			65.834
45			66.198
50			66.379
55			66.603
60		64.828	66.888
65		64.696	67.125
70		64.578	67.291
75		64.471	67.466
80		64.381	67.646
85		64.29	67.946
90		63.953	68.246
95		63.642	68.469
100		63.34	68.458
105		63.353	68.444
110		63.467	68.352
115		63.668	67.719
120		638	67.145
125		638	66.727
130		626	66.354
135		626	65.751
140		626	65.149
145		626	64.705
150		626	64.388
155		626	64.067
160		626	63.879
165		626	63.714
170		626	63.534
175		626	63.654
180		626	63.096
185		626	62.425
190		626	62.259
195		626	62.226
200		626	62.297
205		627	62.952
210		627	63.701
215		627	63.459
220		617	62.999
225		617	62.307
230		617	6168
235		617	60.881
240		613	60.103
245		613	59.264
250		614	58.293
255		60.452	57.408
260		60.07	56.666
265		59.635	55.957
270		59.37	55.149
275		59.114	55.021
280		58.938	54.966
285		58.784	55.196
290		58.9	55.578
295		58.9	56.089
300		58.9	56.006
305		57.2	57.03
310		57.2	57.698
315		57.2	58.095
320		57.2	58.733
325		55.9	59.374
330		58.3	59.921
335		58.3	60.363
340		58.3	60.877
345		57.9	61.457
350		57.9	61.588
355		57.9	62.013
360		57.9	62.159
365		57.4	62.905
370		57.34	62.908
375		57.113	62.856
380		56.848	62.85
385		56.623	62.837
390		56.461	62.838
395		56.421	62.781
400		56.411	62.67
405		56.277	62.485
410		56.2	62.217
415		56.2	61.824
420		56.2	60.527
425		56.2	60.378
430	51.789	56.037	60.363
435	537	56.037	59.513
440	537		58.755
445	537		57.924
450	537		57.236
455	535.8		56.353
460	534		55.384
465	532.9		54.397
470	532.1		53.621
475	531.9		52.844
480	531.2		52.204
485	526		51.794
490	524.8		51.401
495	523.6		51.178
500	521.8		50.954
505	520.5		50.822
510	519.9		50.664
515	519.9		50.474
520	519.9		50.011
525	519.9		49.733
530	519.9		49.368
535	519.9		48.894
540	519.9		48.289
545	519.9		47.544
550	519.9		46.849
555	519.9		46.154
560	519.9		45.412
565	519.9		44.612
570	519.9		43.813
575	519.9		43.026
580	519.9		42.251
585	519.9		41.477
590	519.9		40.663
595	519.9		39.964
600	519.9		39.276
605	519.9		38.654
610	519.9		38.293
615	519.9		37.932
620	519.9		37.554
625	519.9		37.12
630	519.9		36.689

SECTION C

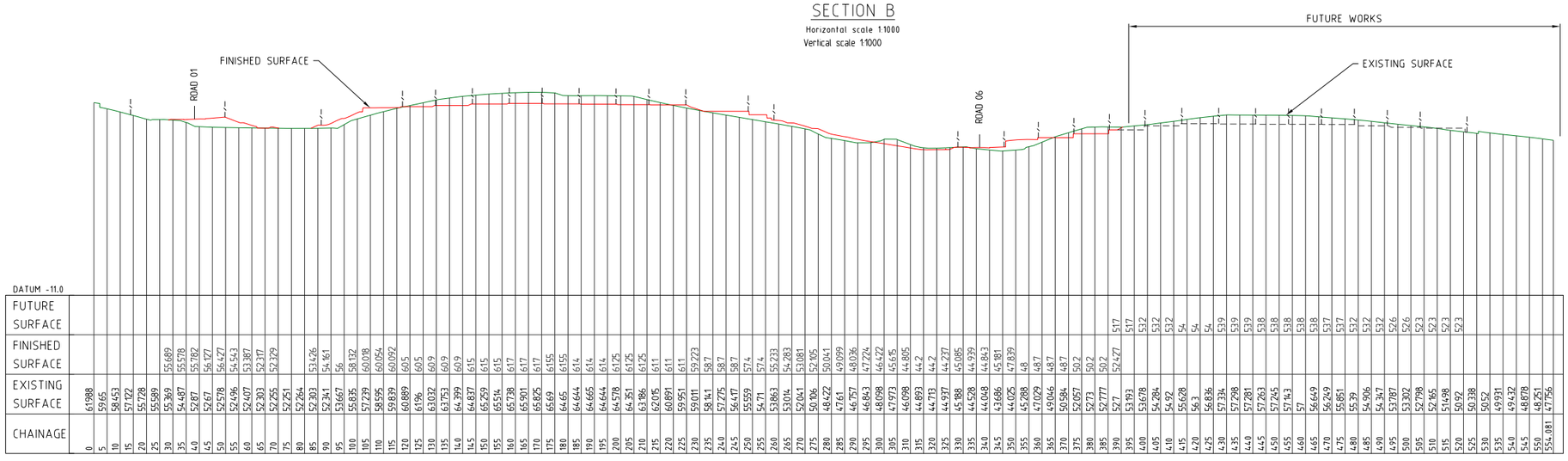
Horizontal scale 1:1000
Vertical scale 1:1000

DATUM -11.0

CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
0			61.988
5			59.65
10			58.453
15			57.122
20			55.728
25		55.689	55.589
30		55.578	55.369
35			54.487
40		55.782	52.87
45		56.177	52.67
50		56.427	52.578
55		54.543	52.496
60		53.387	52.407
65		52.317	52.303
70		52.329	52.255
75			52.251
80			52.264
85		53.426	52.303
90		54.161	52.341
95		56	53.667
100		58.132	55.835
105		60.018	57.239
110		60.054	58.595
115		60.092	59.839
120		605	60.889
125		605	6196
130		609	63.032
135		609	63.753
140		609	64.399
145		615	64.837
150		615	65.259
155		615	65.554
160		617	65.738
165		617	65.901
170		617	65.825
175		6155	65.69
180		6155	64.65
185		614	64.644
190		614	64.665
195		614	64.644
200		61.25	64.578
205		61.25	64.351
210		61.25	63.186
215		611	62.015
220		611	60.891
225		611	59.951
230		59.223	59.011
235		587	58.141
240		587	57.275
245		587	56.417
250		574	55.559
255		574	54.71
260		55.233	53.863
265		54.283	53.014
270		53.081	52.041
275		52.105	50.106
280		50.041	48.422
285		49.099	47.61
290		48.036	46.757
295		47.224	46.843
300		46.422	48.098
305		45.615	47.973
310		44.805	46.098
315		44.2	44.893
320		44.2	44.713
325		44.237	44.937
330		45.085	45.188
335		44.939	44.528
340		44.843	44.048
345		45.981	43.886
350		47.839	44.025
355		48	45.288
360		48.7	47.029
365		48.7	49.046
370		48.7	50.584
375		50.2	52.057
380		50.2	52.73
385		50.2	52.777
390	517	52.477	527
395	517		53.193
400	517		53.678
405	517		54.284
410	517		54.92
415	517		55.628
420	517		56.3
425	517		56.836
430	517		57.334
435	517		57.298
440	517		57.281
445	517		57.263
450	517		57.245
455	517		57.143
460	517		57
465	517		56.649
470	517		56.249
475	517		55.851
480	517		55.39
485	517		54.906
490	517		54.347
495	517		53.787
500	517		53.302
505	517		52.798
510	517		52.465
515	517		51.498
520	517		50.92
525	517		50.338
530	517		50.052
535	517		49.931
540	517		49.432
545	517		48.878
550	517		48.251
554.081	517		47.756

SECTION B

Horizontal scale 1:1000
Vertical scale 1:1000



DATUM -11.0

CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
0			63.372
5			62.08
10			60.9
15			59.399
20			57.695
25			57.47
30			56.629
35			55.173
40			54.38
45			54.076
50			54.005
55			53.994
60			54.431
65			54.746
70			55.097
75			55.555
80			55.944
85			56.429
90			57.087
95			57.943
100			58.949
105			60.065
110			61.275
115			62.494
120			63.584
125			64.855
130			65.924
135			67.038
140			68.221
145			68.623
150			69.651
155			70.084
160			70.864
165			71.308
170			70.986
175			71.052
180			70.971
185			70.741
190			70.541
195			70.033
200			69.447
205			68.808
210			68.299
215			67.542
220			67.354
225			66.731
230			65.656
235			64.947
240			64.778
245			63.844
250			63.058
255			62.226
260			61.347
265			60.504
270			59.833
275			59.161
280			58.533
285			57.806
290			57.175
295			56.514
300			55.806
305			55.014
310			54.229
315			53.463
320			52.698
325			51.948
330			51.191
335			50.377
340			49.482
345			48.697
350			47.962
355			48.278
360			49.182
365			49.469
370			48.619
375			47.676
380			46.741
385			45.805
390			45.285
395			45.532
400			45.548
405			45.741
410			45.963
415			46.219
420			46.469
425			46.708
430			46.783
435			46.739
440			46.543
445			46.668
450			46.968
455			46.112
460			46.038
465			46.276
470			46.809
475			46.336
480			46.264
485			46.132
490			46.002
495			45.829
500			45.695
505			45.732
510			45.826
515			44.431
520			42.951
525			41.196
530			40.546
535			40.106
540			39.948
545			48.863
550			48.382
555			47.911
560			46.484
565			46.416
570			46.841
575			46.246
580			45.581
585			44.913
590			44.278
595			43.602
597.051			43.325

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 10 20 30 40 50m
Vert. Scale 1:1000 - A1 (1:2000 - A3)

0 10 20 30 40 50m
Horiz. Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

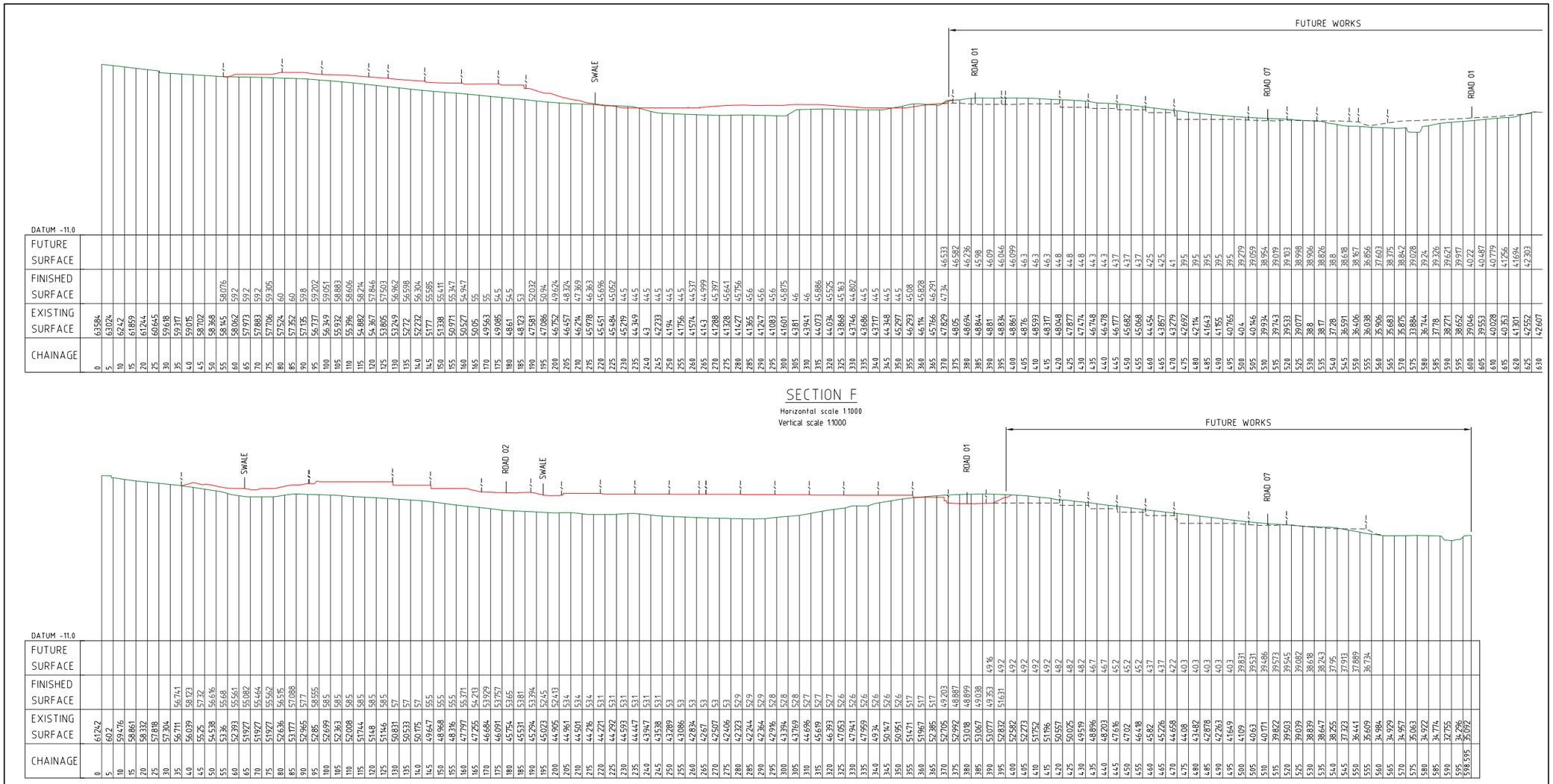
BULK EARTHWORKS
SECTIONS
SHEET 04

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Civil Engineering
Project Coordination
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ4706	DATE	03-03-23

DRAWING NUMBER: 41901-01-054
REV: A

F:\Autocad Client\419 - HB Land\01 - Courtney Drive\Precinct-Stage 01\Engineering Drawings\Current\41901-01-050.dwg, SECTIONS-SHEET 04, 1/08/2023 7:48:53 AM, 1:2



CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
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5	46.582		48.05
10	46.236		48.694
15	45.98		48.844
20	46.09		48.81
25	46.046		48.834
30	46.099		48.861
35	46.3		48.76
40	46.3		48.593
45	46.3		48.317
50	44.8		48.048
55	44.8		47.877
60	44.8		47.474
65	44.3		46.748
70	44.3		46.478
75	44.3		46.177
80	44.37		45.682
85	44.37		45.068
90	44.37		44.454
95	44.25		43.857
100	44.25		43.279
105	44.1		42.692
110	39.5		42.114
115	39.5		41.643
120	39.5		41.155
125	39.5		40.765
130	39.5		40.4
135	39.279		40.146
140	39.093		39.934
145	39.019		39.743
150	38.954		39.533
155	39.019		39.077
160	38.998		38.88
165	38.906		38.817
170	38.826		37.28
175	38.8		36.591
180	38.618		36.406
185	38.567		36.098
190	38.686		35.906
195	37.603		35.683
200	38.375		35.875
205	38.842		33.884
210	39.028		36.744
215	39.24		37.78
220	39.326		38.271
225	39.621		38.652
230	39.947		39.046
235	40.22		39.553
240	40.487		40.028
245	40.779		40.353
250	41.266		41.301
255	41.694		41.694
260	42.303		42.552
265			42.607

DATUM -11.0

SECTION F

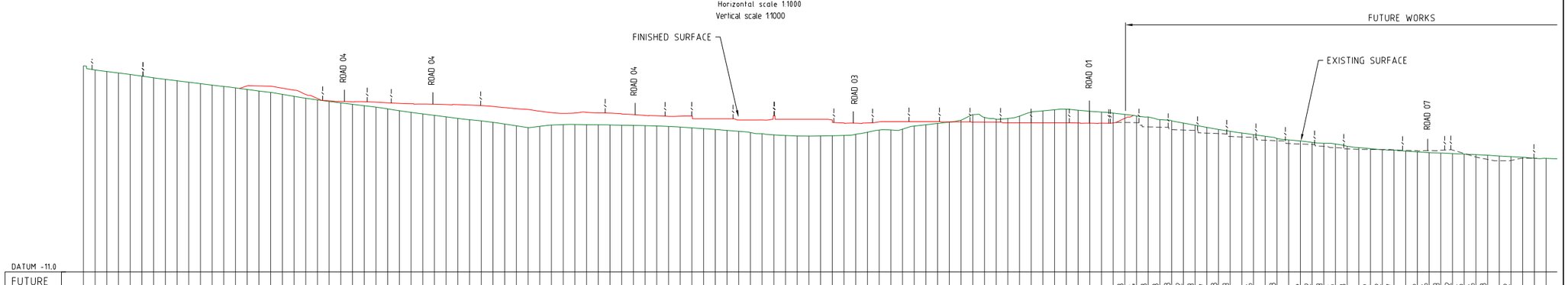
Horizontal scale 1:1000
Vertical scale 1:1000

CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
0	61.242		63.584
5	60.2		63.024
10	59.476		62.42
15	58.861		61.859
20	58.332		61.244
25	57.888		60.645
30	57.304		59.618
35	56.711	56.741	59.317
40	56.039	56.123	59.015
45	55.25	57.32	58.702
50	54.538	56.616	58.368
55	53.36	55.68	58.145
60	52.393	55.561	58.062
65	51.927	55.082	57.973
70	51.927	55.464	57.883
75	51.927	55.562	57.706
80	52.636	56.515	57.524
85	53.177	57.088	57.352
90	52.965	577	57.195
95	52.85	58.555	56.737
100	52.699	585	56.349
105	52.363	585	55.932
110	52.008	585	55.396
115	51.744	585	54.882
120	51.48	585	54.367
125	51.146	585	53.805
130	50.831	57	53.249
135	50.533	57	52.72
140	50.175	555	52.232
145	49.647	555	51.77
150	48.968	555	51.338
155	48.316	555	50.971
160	47.797	55.371	50.527
165	47.255	54.213	50.05
170	46.684	53.929	49.563
175	46.091	53.757	49.085
180	45.754	53.65	48.61
185	45.531	53.581	48.123
190	45.294	53.394	47.581
195	45.023	52.45	47.086
200	44.905	52.413	46.752
205	44.961	534	46.457
210	44.501	534	46.214
215	44.216	534	45.978
220	44.221	531	45.696
225	44.292	531	45.484
230	44.593	531	45.219
235	44.447	531	44.349
240	43.947	531	43
245	43.538	531	42.233
250	43.289	53	41.94
255	43.086	53	41.756
260	42.834	53	41.574
265	42.67	53	41.43
270	42.507	53	41.288
275	42.406	53	41.328
280	42.323	529	41.427
285	42.244	529	41.365
290	42.364	529	41.247
295	42.916	528	41.083
300	43.394	528	41.601
305	43.769	528	43.81
310	44.696	527	43.941
315	45.619	527	44.073
320	46.393	527	44.034
325	47.053	526	43.868
330	47.941	526	43.746
335	47.959	526	43.686
340	49.34	526	43.717
345	50.147	526	44.348
350	50.951	526	45.297
355	51.471	517	46.293
360	51.967	517	46.114
365	52.385	517	45.766
370	52.705	49.203	47.829
375	52.992	48.887	48.05
380	53.018	48.899	48.694
385	53.067	49.038	48.844
390	53.077	49.353	48.81
395	52.832	51.631	48.834
400	52.582	492	48.861
405	52.213	492	48.76
410	51.752	492	48.593
415	51.196	492	48.317
420	50.557	48.2	48.048
425	50.025	48.2	47.877
430	49.519	48.2	47.474
435	48.896	467	46.748
440	48.203	467	46.478
445	47.636	45.2	46.177
450	47.02	45.2	45.682
455	46.418	45.2	45.068
460	45.82	45.2	44.454
465	45.226	437	43.857
470	44.658	437	43.279
475	44.08	42.2	42.692
480	43.482	40.3	42.114
485	42.878	40.3	41.643
490	42.263	40.3	41.155
495	41.649	40.3	40.765
500	41.09	39.831	40.4
505	40.663	39.531	40.146
510	40.171	39.486	39.934
515	39.822	39.573	39.743
520	39.503	39.545	39.533
525	39.039	39.082	39.077
530	38.839	38.618	38.88
535	38.647	38.243	38.817
540	38.255	37.95	37.28
545	37.323	37.913	36.591
550	36.441	37.889	36.406
555	35.609	36.734	36.098
560	34.984		35.906
565	34.929		35.683
570	34.957		35.875
575	35.063		33.884
580	34.922		36.744
585	34.774		37.78
590	32.755		38.271
595	34.296		38.652
598.595	35.092		39.046

DATUM -11.0

SECTION E

Horizontal scale 1:1000
Vertical scale 1:1000



CHAINAGE	FUTURE SURFACE	FINISHED SURFACE	EXISTING SURFACE
0	76.906		
5	75.966		
10	74.493		
15	73.867		
20	73.222		
25	72.533		
30	71.816		
35	71.146		
40	70.552		
45	69.91		
50	69.325		
55	68.7		
60	68.104		
65	67.489		
70	66.833	68.373	
75	66.177	68.344	
80	65.566	68.298	
85	64.749	67.379	
90	63.89	66.512	
95	63.078	64.735	
100	62.389	62.982	
105	61.733	61.981	
110	61.115	61.72	
115	60.509	61.547	
120	59.913	61.618	
125	59.277	61.464	
130	58.567	61.093	
135	57.759	60.904	
140	57.036	60.752	
145	56.416	60.593	
150	55.775	60.561	
155	55.107	60.397	
160	54.48	60.355	
165	53.918	60.179	
170	53.413	59.989	
175	52.779	59.534	
180	52.064	59.085	
185	51.307	58.617	
190	50.593	58.302	
195	51.081	57.556	
200	51.637	56.94	
205	51.813	56.628	
210	51.887	56.789	
215	518	57.059	
220	51.74	56.819	
225	51.68	56.723	
230	51.571	56.333	
235	51.492	56.127	
240	51.404	55.731	
245	51.267	55.578	
250	51.038	55.366	
255	50.791	55.442	
260	50.453	555	
265	50.098	54.3	
270	49.743	54.3	
275	49.37	54.3	
280	48.981	538	
285	48.656	538	
290	47.954	538	
295	47.464	55.6	
300	47.198	54.1	
305	46.995	54.1	
310	46.967	54.1	
315	47.001	54.1	
320	47.083	53.804	
325	47.223	52.512	
330	47.707	52.438	
335	48.583	52.535	
340	49.521	52.981	
345	49.939	531	
350	49.905	531	
355	51.208	531	
360	51.765	531	
365	52.338	531	
370	52.868	53	
375	53.735	529	
380	56.108	529	
385	54.912	529	
390	54.153	529	
395	54.43	526	
400	55.664	526	
405	57.783	526	
410	57.716	526	
415	58.169	526	
420	58.392	526	
425	57.983	525.19	
430	57.54	52.46	
435	57.196	52.448	
440	56.746	52.566	52.758
445	56.398	54.521	52.664
450	55.538		50.858
455	55.099		50.738
460	53.951		49.678
465	53.46		49.522
470	52.482		49.363
475	51.572		48.977
480	50.66		47.988
485	49.772		46.793
490	48.991		46.57
495	48.25		46.366
500	47.552		45.5
505	46.841		44.948
510	45.941		43.75
515	45.297		43.544
520	44.853		43.322
525	44.228		42.583
530	43.884		41.975
535	43.562		41.668
540	42.553		413
545	42.006		41.222
550	41.575		41.222
555	41.164		41.067
560	40.934		40.82
565	40.526		40.776
570	40.194		40.776
575	39.85		40.893
580	39.71		40.982
585	39.471		39.505
590	39.24		38.006
595	38.999		36.988
600	38.761		364
605	38.425		36.532
610	38.168		37.45
615	37.906		37.45
620	37.472		
625	37.409		
630	37.218		

DATUM -11.0

SECTION D

Horizontal scale 1:1000
Vertical scale 1:1000

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 10 20 30 40 50m
Vert. Scale 1:1000 - A1 (1:2000 - A3)

0 10 20 30 40 50m
Horiz. Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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DRAWING TITLE

BULK EARTHWORKS
SECTIONS
SHEET 05

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER: 41901-01-055
REV: A

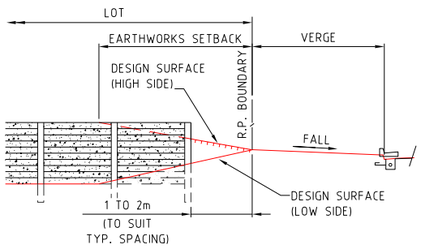
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GENERAL

1. CONTRACT SPECIFICATIONS
   ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION.
2. SETOUT
   SURVEY SETOUT INFORMATION HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR TO ENABLE THE CONTRACTOR TO ACCURATELY SETOUT THE WORKS TO THE CO-ORDINATES SHOWN. SETOUT INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
3. DATUM
   LEVELS SHOWN ARE TO A.H.D.
4. EXISTING SERVICES - EXTERNAL WORKS
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES & TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY BY THE CONTRACT WORKS.
5. ALL MATERIALS ARISING FROM RETAINING WALL CONSTRUCTION ARE TO BE COMPACTED TO FUTURE STAGES, TO LEVEL 1 OR IF DIRECTED BY THE SUPERINTENDENT SHALL BE TRUCKED TO A LICENSED TIP.

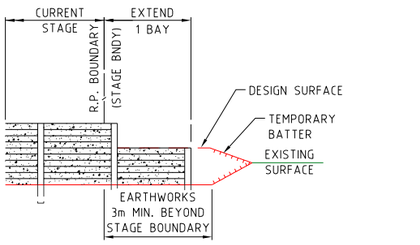
LEGEND

- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- 1.0 EXISTING CONTOURS
- EXISTING RETAINING WALL
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- 1.0 FUTURE CONTOURS
- FUTURE RETAINING WALL
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- 1.0 DESIGN CONTOURS
- PROPOSED SINGLE TIER RETAINING WALL
- PROPOSED TWO TIER RETAINING WALL
- PROPOSED SINGLE TIER "A" GRADE SANDSTONE BLOCK RETAINING WALL
- PL50.4 NOMINAL LOT PAD LEVEL
- RH1.0 INDICATIVE WALL HEIGHT
- DETAIL PAD FALL DIRECTION (CONTRACTOR TO ENSURE LOTS FALL TO ROAD AT 1:150 MIN. REFER DWG. 461)



TYPICAL SIDE BOUNDARY CONSTRUCTION

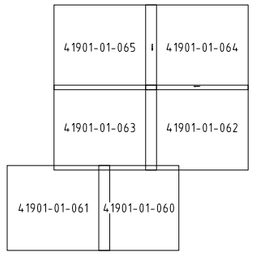
SCALE 1:100 - A1 (1:200 - A3)

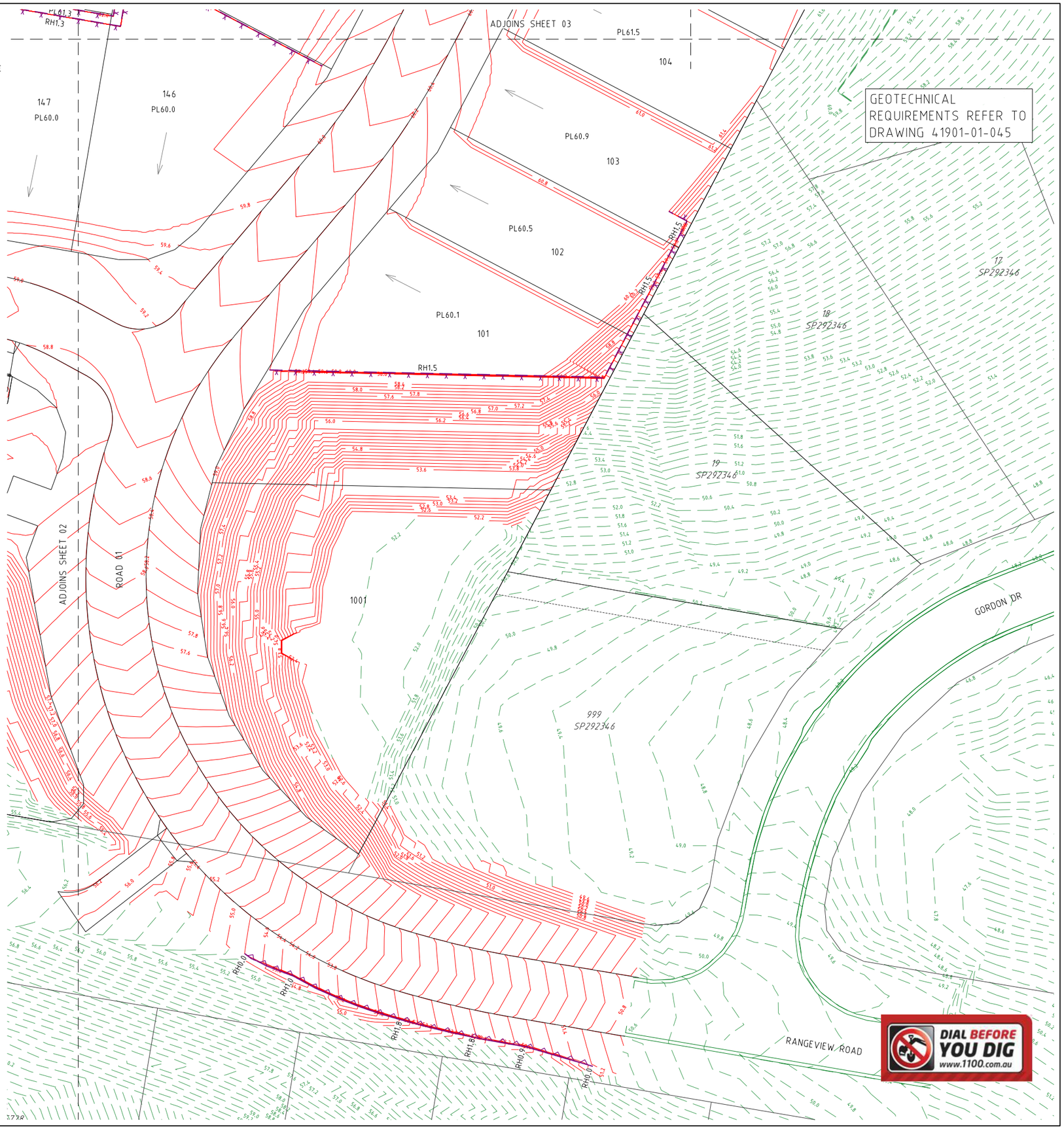


TYPICAL STAGE BOUNDARY CONSTRUCTION

SCALE 1:100 - A1 (1:200 - A3)

SHEET LAYOUT





PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2.5 5 7.5 10 12.5m
Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

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BENNETT + BENNETT

DRAWING TITLE

RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

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PL63.8

160

PL62.6

ADJOINS SHEET 04

RH1.2

ROAD 03

149

PL61.1

148

PL60.3

147

PL60.0

PL61.3

RH1.3

ROAD 04

1004

1003

57.0 FLOOR

1002

9001

SP305728

ADJOINS SHEET 01

ROAD 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2.5 5 7.5 10 12.5m

Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 02

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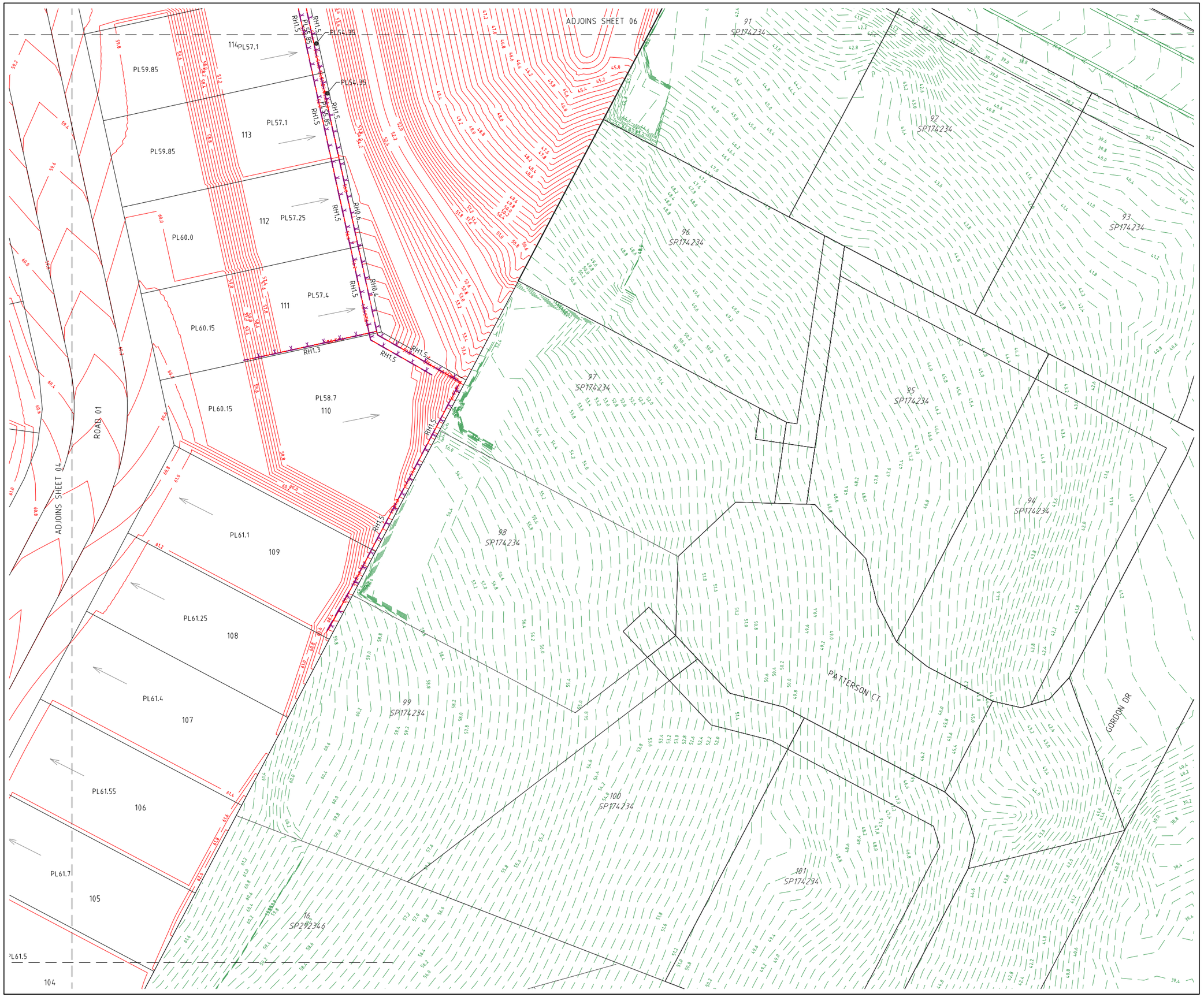
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APPROVED	RPEQ4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-061	B

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2.5 5 7.5 10 12.5m

Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 03

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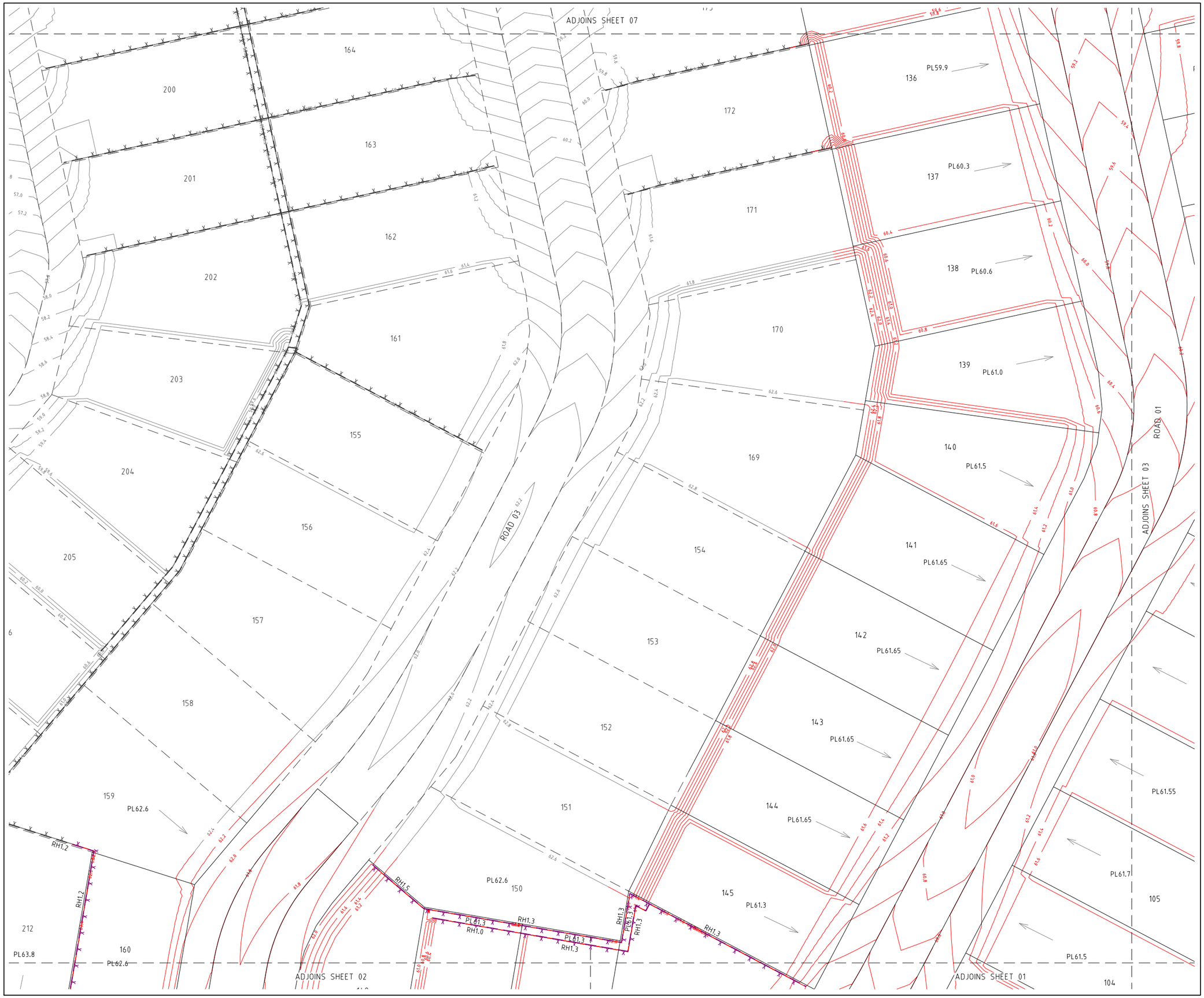
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41901-01-062	B

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 04

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2.5 5 7.5 10 12.5m
Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 05

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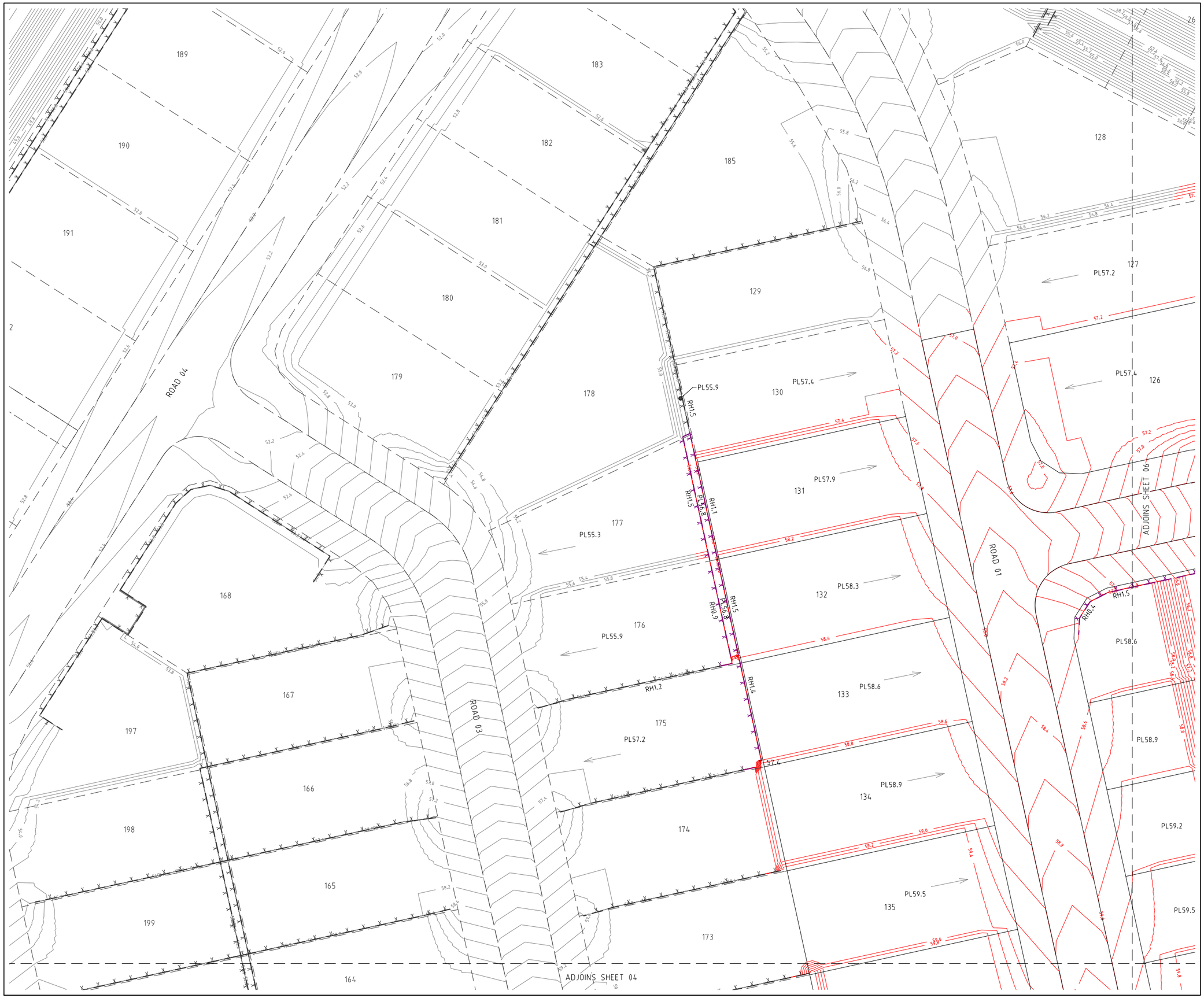
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APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2.5 5 7.5 10 12.5m
Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
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DRAWING TITLE

RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 06

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APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER: 41901-01-065
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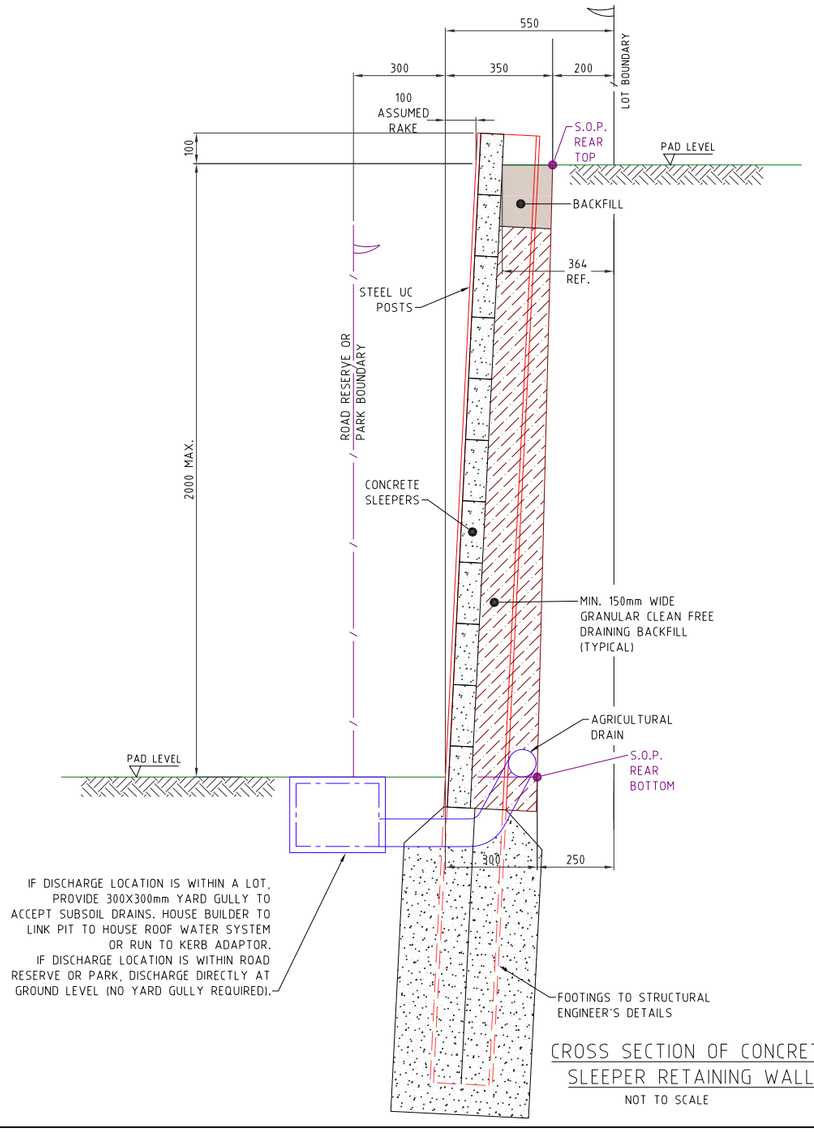
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NOTES:

1. RETAINING WALL DETAILS ARE INDICATIVE ONLY.
2. CONTRACTOR TO ARRANGE FOR DESIGN & CONSTRUCTION OF WALLS BY RPEQ STRUCTURAL ENGINEER. CONTRACTOR TO PROVIDE STRUCTURAL CERTIFICATION OF DESIGN & FINAL CONSTRUCTION.
3. ALLOW FOR 5KPa LOADING TO WALLS EXCEPT ADJACENT TO ROADS WHICH REQUIRE A 10kPa LOADING.
4. CONTRACTOR TO CONFIRM LOCATION OF LOT BOUNDARY PRIOR TO COMMENCING WALL CONSTRUCTION.
5. THE BUILDING ON THE HIGHER SIDE OF THE RETAINING WALL MUST MAINTAIN AN OFFSET OR APPROPRIATE FOUNDATION STRUCTURES (EG. PIERS) IN ORDER TO ENSURE THE ENTIRE DEPTH OF THE RETAINING WALL IS FREE FROM THE ZONE OF INFLUENCE OF THE BUILDING/OVERBURDEN LOAD UNLESS OTHERWISE SPECIFIED BY STRUCTURAL ENGINEER.
6. STRUCTURAL ENGINEER TO DESIGN SLAB & PIER.
7. AGRICULTURAL DRAIN TO DISCHARGE TO 300x300mm STORMWATER PIT. HOUSE BUILDER TO CONNECT 300x300mm STORMWATER PIT TO ROOFWATER SYSTEM.
8. RETAINING WALL DESIGN TO ALLOW FOR ALL SERVICES (ADJACENT OR BELOW) & HAVE NO IMPACT.
9. SANDSTONE & PROPRIETARY RETAINING WALLS TO BE DESIGNED & CONSTRUCTED TO HAVE VERTICAL FACE UNLESS OTHERWISE AGREED BY THE SUPERINTENDENT.
10. ANY WALL GREATER THAN 0.9M HIGH TO INSTALL A FALL BARRIER AT THE TOP OF WALL. THE FALL BARRIER IS TO BE MAINTAINED UNTIL THE END OF THE MAINTENANCE PERIOD OR THE ASSOCIATED LOT IS SOLD BY THE DEVELOPER.
11. REFER TO LANDSCAPE ARCHITECT FOR RETAINING WALL COLOUR & FINISH.
12. * SETBACK FROM BOUNDARY TO BE.
    200mm SIDE BOUNDARY
    400mm REAR BOUNDARY
    600mm ROAD RESERVE
13. WHERE RETAINING WALLS ARE LOCATED WITHIN 2m OF A PMT SITE THE RETAINING WALL IS TO BE DESIGNED & CONSTRUCTED TO ALLOW EXCAVATION OF THE FULL PMT SITE TO A DEPTH OF 1.3m.
14. FENCE BRACKETS TO BE INSTALLED ON POSTS, NO BRACKETS 5m FROM FRONT BOUNDARY.
15. ALL FOOTINGS MUST BE A MINIMUM OF 200mm FROM PROPERTY BOUNDARY.

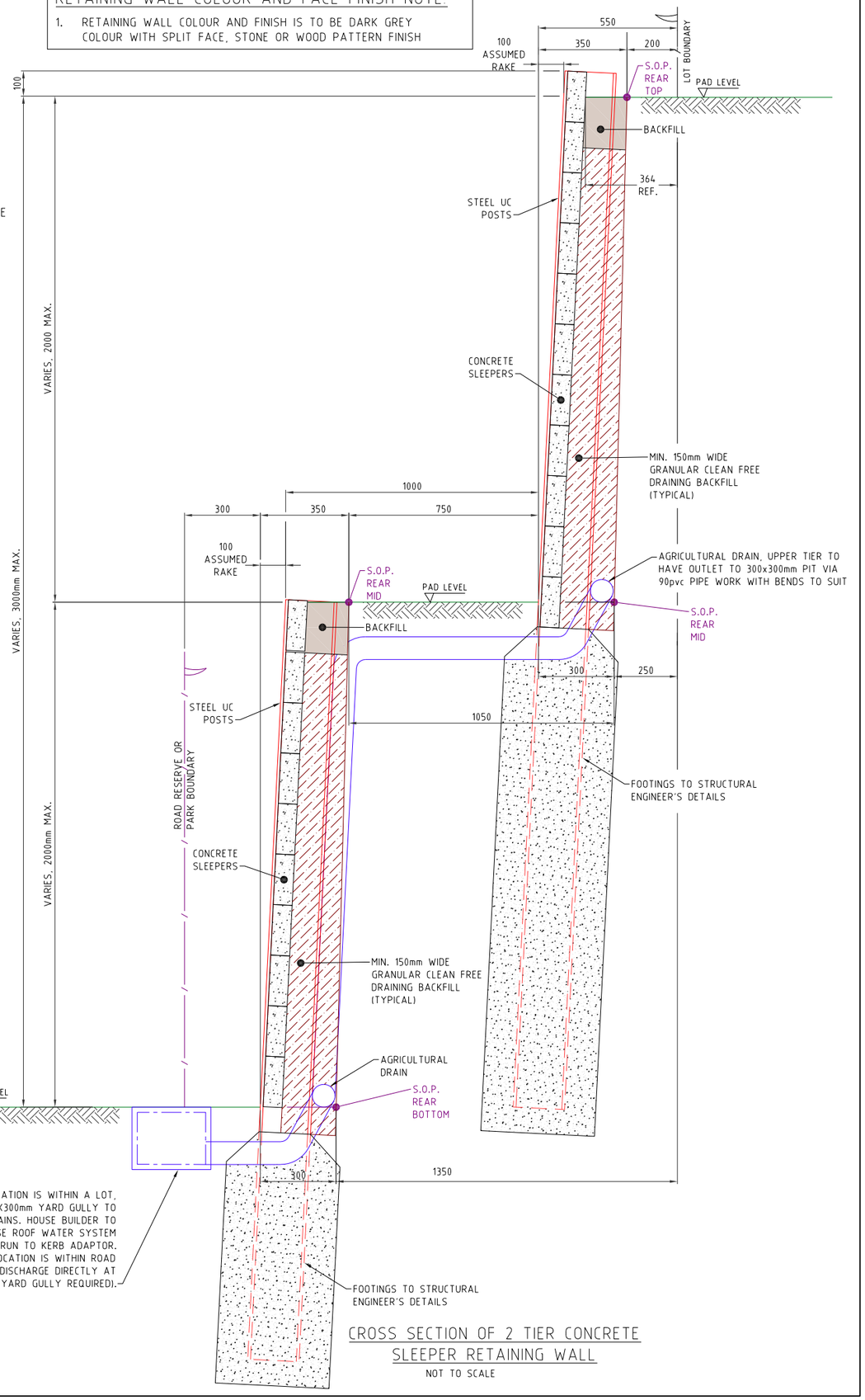
RETAINING WALL COLOUR AND FACE FINISH NOTE:

1. RETAINING WALL COLOUR AND FINISH IS TO BE DARK GREY COLOUR WITH SPLIT FACE, STONE OR WOOD PATTERN FINISH



CROSS SECTION OF CONCRETE SLEEPER RETAINING WALL

NOT TO SCALE



CROSS SECTION OF 2 TIER CONCRETE SLEEPER RETAINING WALL

NOT TO SCALE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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DRAWING TITLE

RETAINING WALL DETAILS SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ4706	DATE	03-03-23

DRAWING NUMBER 41901-01-070

REV B

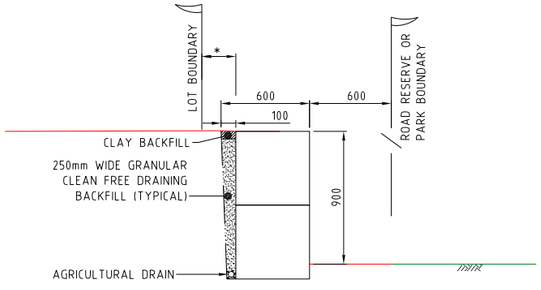
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NOTES:

1. RETAINING WALL DETAILS ARE INDICATIVE ONLY.
2. CONTRACTOR TO ARRANGE FOR DESIGN & CONSTRUCTION OF WALLS BY RPEQ STRUCTURAL ENGINEER. CONTRACTOR TO PROVIDE STRUCTURAL CERTIFICATION OF DESIGN & FINAL CONSTRUCTION.
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4. CONTRACTOR TO CONFIRM LOCATION OF LOT BOUNDARY PRIOR TO COMMENCING WALL CONSTRUCTION.
5. THE BUILDING ON THE HIGHER SIDE OF THE RETAINING WALL MUST MAINTAIN AN OFFSET OR APPROPRIATE FOUNDATION STRUCTURES (EG. PIERS) IN ORDER TO ENSURE THE ENTIRE DEPTH OF THE RETAINING WALL IS FREE FROM THE ZONE OF INFLUENCE OF THE BUILDING/OVERBURDEN LOAD UNLESS OTHERWISE SPECIFIED BY STRUCTURAL ENGINEER.
6. STRUCTURAL ENGINEER TO DESIGN SLAB & PIER.
7. AGRICULTURAL DRAIN TO DISCHARGE TO 300x300mm STORMWATER PIT. HOUSE BUILDER TO CONNECT 300x300mm STORMWATER PIT TO ROOFWATER SYSTEM.
8. RETAINING WALL DESIGN TO ALLOW FOR ALL SERVICES (ADJACENT OR BELOW) & HAVE NO IMPACT.
9. SANDSTONE & PROPRIETARY RETAINING WALLS TO BE DESIGNED & CONSTRUCTED TO HAVE VERTICAL FACE UNLESS OTHERWISE AGREED BY THE SUPERINTENDENT.
10. ANY WALL GREATER THAN 0.9M HIGH TO INSTALL A FALL BARRIER AT THE TOP OF WALL. THE FALL BARRIER IS TO BE MAINTAINED UNTIL THE END OF THE MAINTENANCE PERIOD OR THE ASSOCIATED LOT IS SOLD BY THE DEVELOPER.
11. REFER TO LANDSCAPE ARCHITECT FOR RETAINING WALL COLOUR & FINISH.
12. * SETBACK FROM BOUNDARY TO BE.
    200mm SIDE BOUNDARY
    400mm REAR BOUNDARY
    600mm ROAD RESERVE
13. WHERE RETAINING WALLS ARE LOCATED WITHIN 2m OF A PMT SITE THE RETAINING WALL IS TO BE DESIGNED & CONSTRUCTED TO ALLOW EXCAVATION OF THE FULL PMT SITE TO A DEPTH OF 1.3m.
14. FENCE BRACKETS TO BE INSTALLED ON POSTS, NO BRACKETS 5m FROM FRONT BOUNDARY.
15. ALL FOOTINGS MUST BE A MINIMUM OF 200mm FROM PROPERTY BOUNDARY.

BOULDER WALL SPECIFIC NOTES

1. BOULDER WALL INDICATIVE ONLY. CONTRACTOR TO CONSTRUCT TO STRUCTURAL ENGINEERS SPECIFICATION
2. BOTTOM ROW OF BOULDERS TO BE KEYED INTO NATURAL GROUND 0.2m (MINIMUM)
3. CONCRETE FOOTING IF DIRECTED BY STRUCTURAL ENGINEER.
4. BOTTOM ROW OF BOULDERS TO BE LAID HORIZONTAL OR TO SLOPE INTO THE FACE OF THE BATTER



GRADE 'A' SANDSTONE BLOCK WALL DETAIL

NOT TO SCALE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

RETAINING WALL DETAILS SHEET 02

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Civil Engineering
Project Coordination

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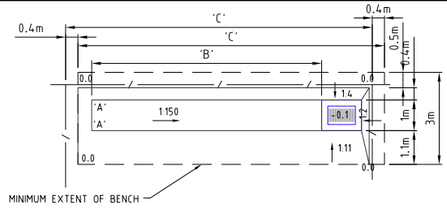
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Southport QLD 4215

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APPROVED	RPEQ 4706	DATE 03-03-23

DRAWING NUMBER	REV
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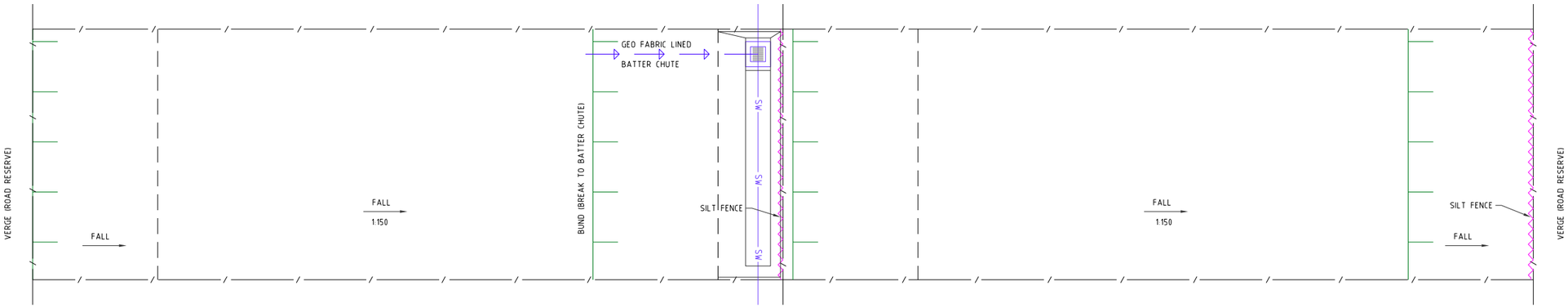
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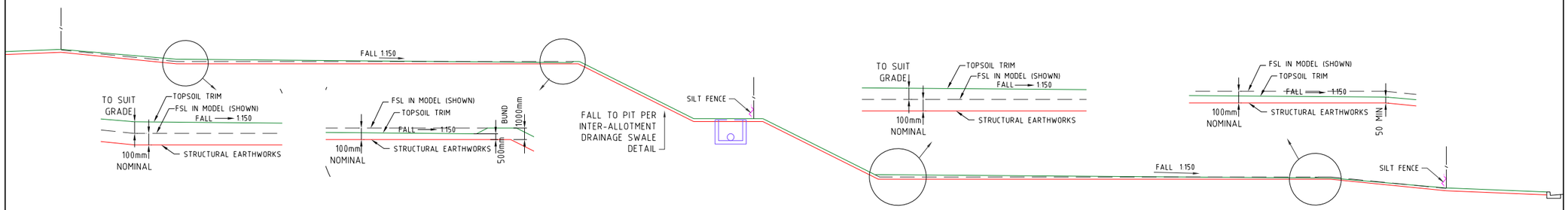


LOT WIDTH 'C'	HEIGHT 'A'	LENGTH 'B'
10	-0.050	7.500
12.5	-0.033	10.000
14	-0.023	11.500
16	-0.01	13.500
18	0.0	15.000
20	0.0	15.000

INTER-ALLOTMENT DRAINAGE SWALE

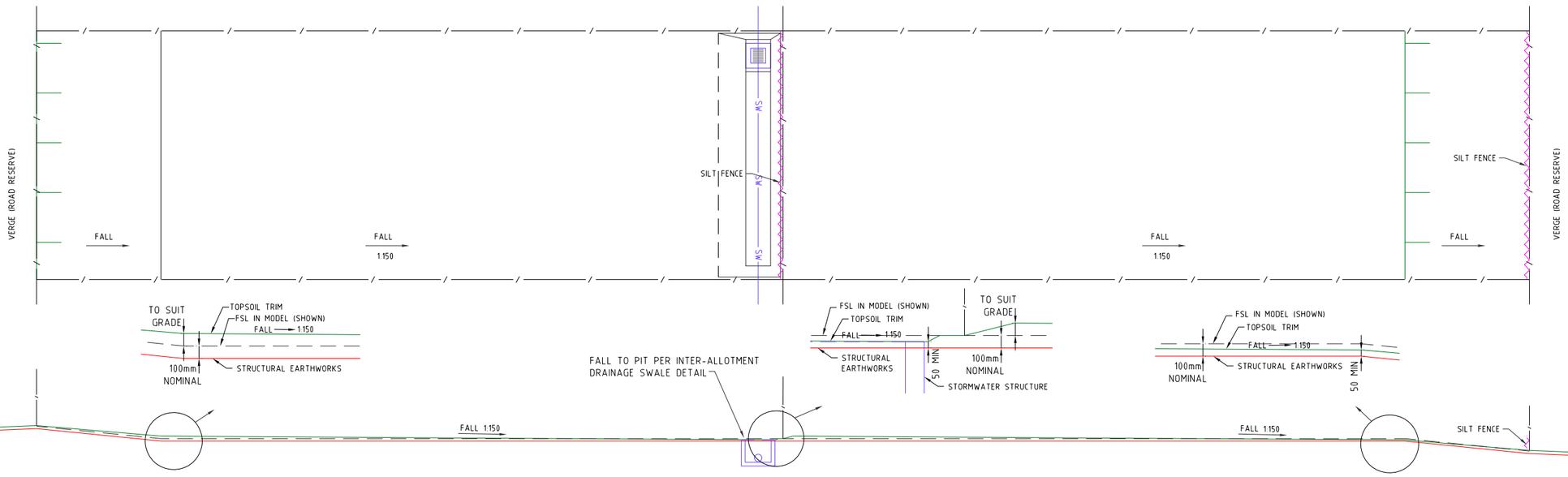
NOTE: GRADING OCCURS WITHIN MODEL, NO ADDITIONAL DEPRESSION OF PIT SURFACE LEVEL REQUIRED.





TYPICAL TOPSOIL TRIM (BENCHED LOTS)

NOT TO SCALE



TYPICAL TOPSOIL TRIM (NON BENCHED LOTS)

NOT TO SCALE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

FINAL TRIM
DETAILS
SHEET 01

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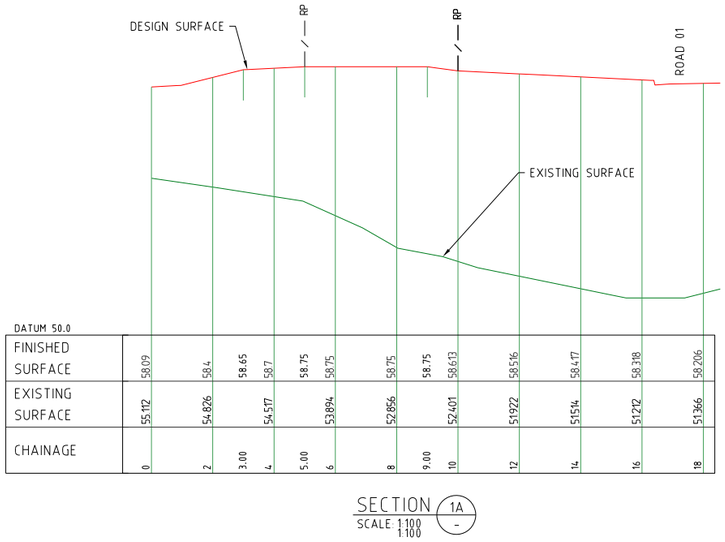
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APPROVED		RPEQ 4706	DATE 03-03-23

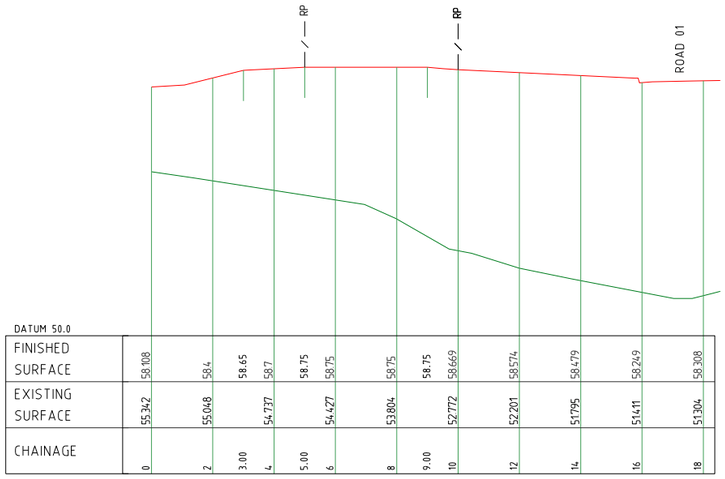
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41901-01-071	A

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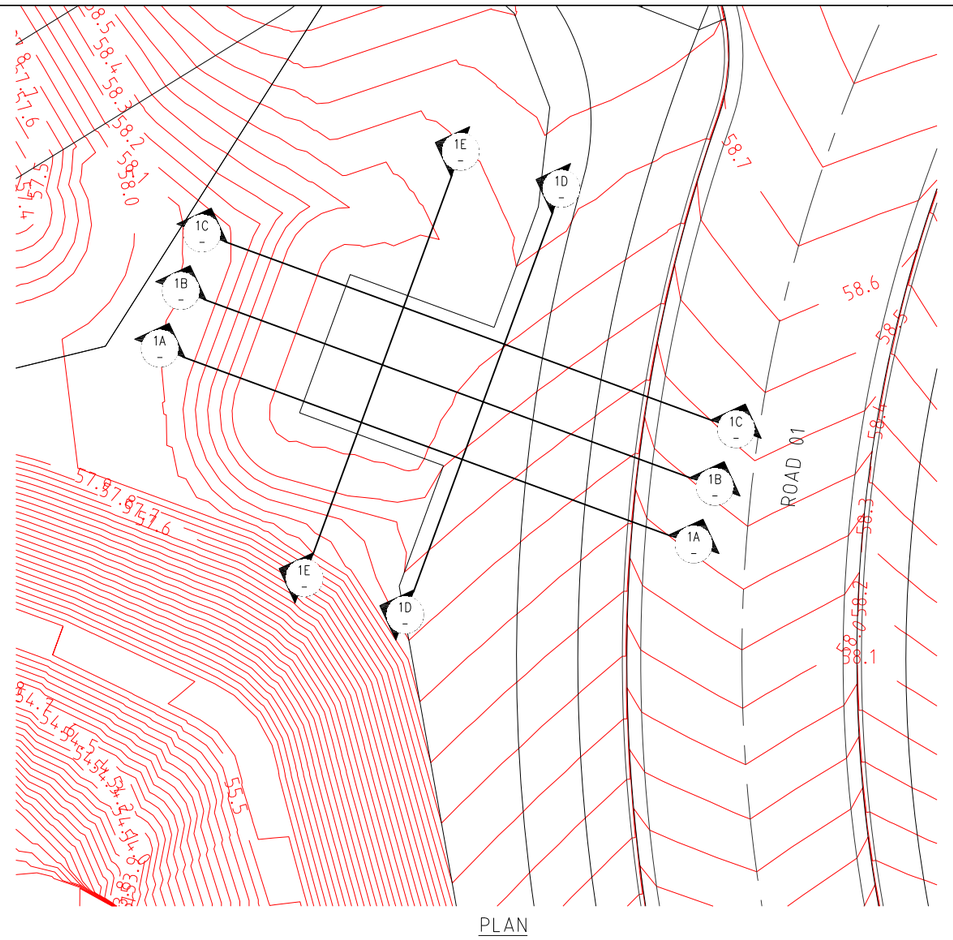
DATUM 50.0													
FINISHED SURFACE	58.09	58.4	58.65	58.7	58.75	58.75	58.75	58.75	58.613	58.516	58.417	58.318	58.206
EXISTING SURFACE	55.112	54.826	54.517		53.894	52.856		52.401	51.922	51.514	51.212		51.366
CHAINAGE	0	2	3.00	4	5.00	6	8	9.00	10	12	14	16	18

SECTION 1A
SCALE: 1:100
1:100



DATUM 50.0													
FINISHED SURFACE	58.108	58.4	58.65	58.7	58.75	58.75	58.75	58.75	58.669	58.574	58.479	58.249	58.308
EXISTING SURFACE	55.342	55.048	54.737		54.427	53.804		52.772	52.201	51.795	51.411		51.304
CHAINAGE	0	2	3.00	4	5.00	6	8	9.00	10	12	14	16	18

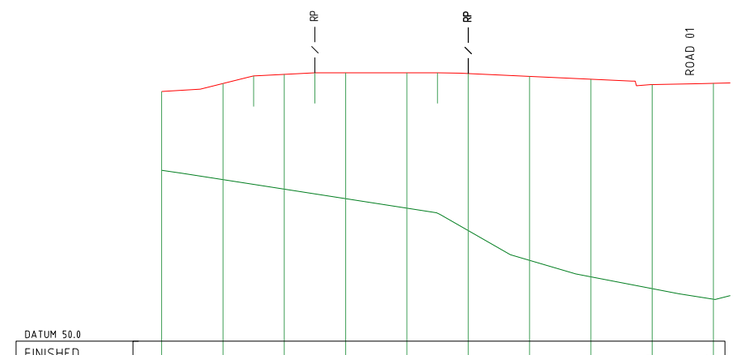
SECTION 1B
SCALE: 1:100
1:100



PLAN

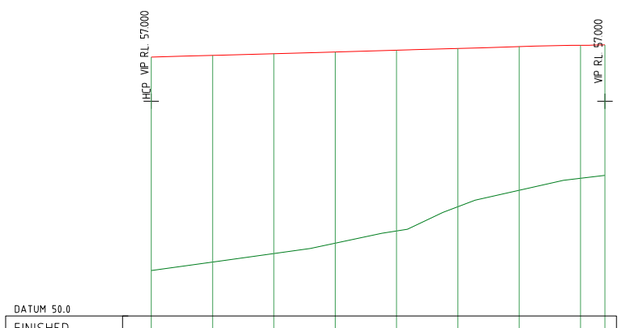
LEGEND

- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- 1.0 DESIGN CONTOURS



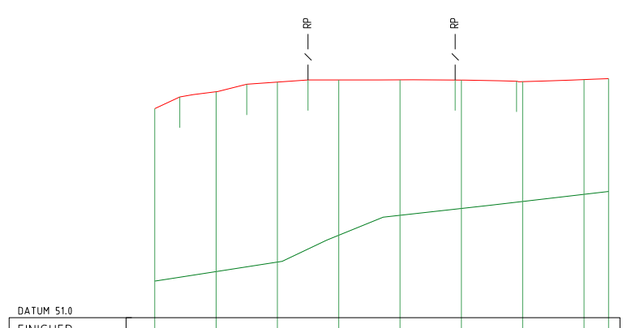
DATUM 50.0													
FINISHED SURFACE	58.14	58.4	58.65	58.7	58.75	58.75	58.75	58.75	58.727	58.634	58.541	58.366	58.407
EXISTING SURFACE	55.571	55.269	54.958		54.648	54.337		53.607	52.637	52.098	51.714		51.369
CHAINAGE	0	2	3.00	4	5.00	6	8	9.00	10	12	14	16	18

SECTION 1C
SCALE: 1:100
1:100



DATUM 50.0										
FINISHED SURFACE	58.44	58.494	58.549	58.605	58.663	58.721	58.78	58.824	58.837	
EXISTING SURFACE	51.479	51.756	52.034	52.372	52.77	53.56	54.098	54.488	54.581	
CHAINAGE	0	2	4	6	8	10	12	14	14.8	

SECTION 1D
SCALE: 1:100
1:100



DATUM 51.0													
FINISHED SURFACE	57.895	58.194	58.366	58.608	58.679	58.75	58.875	58.975	58.75	58.746	58.709	58.694	58.761	58.791
EXISTING SURFACE	52.992		52.504		52.814		53.687		54.338	54.558		54.786	55.019	55.112
CHAINAGE	0	0.81	2	3.00	4	5.00	6	8	9.80	10	11.80	12	14	14.8

SECTION 1E
SCALE: 1:100
1:100

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
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ASSOCIATED CONSULTANTS

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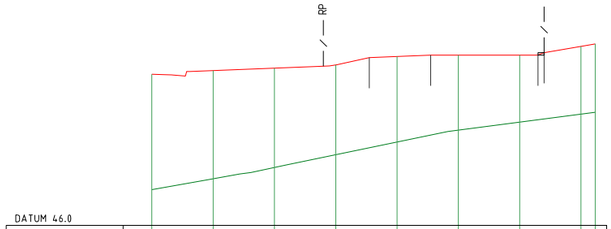
PADMOUNT SECTIONS
PADMOUNT 1
SHEET 01

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APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-075 | REV A

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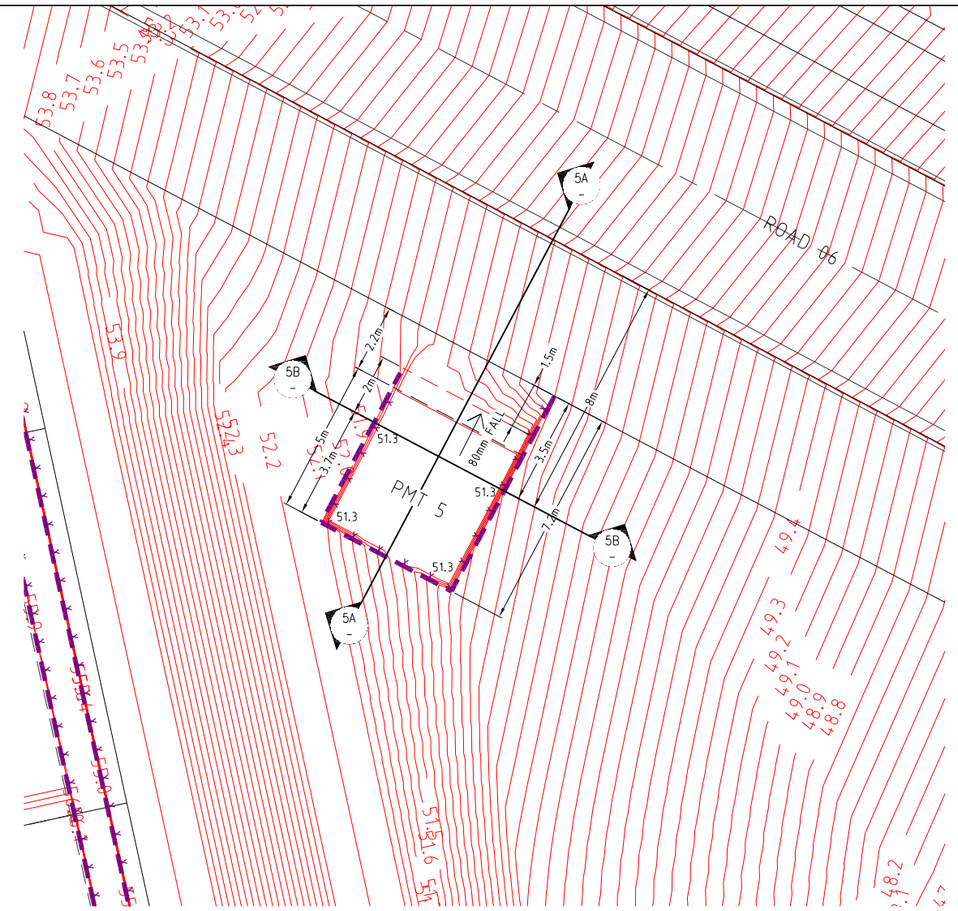


DATUM 46.0														
FINISHED SURFACE	50.925		51.046		51.126		51.231	51.47	51.506	51.55	51.555	51.555	51.583	51.836	51.95
EXISTING SURFACE	47.764		47.517		47.885		48.301		48.775	49.103		49.364		49.625	49.686
CHAINAGE	0		2		4		6	7.10	8	9.10	10	12	12.88	14	14.463

SECTION 5A
SCALE: 1:100
1:100

DATUM 47.0								
FINISHED SURFACE	52.046	51.861	51.828	51.555	51.555	51.555	50.895	50.712	50.4
EXISTING SURFACE	49.449	49.241		49.01		48.747		48.485	48.248
CHAINAGE	0	2	2.35	2.83	4	6	6.95	8	9.797

SECTION 5B
SCALE: 1:100
1:100



PLAN

LEGEND

- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- 1.0 DESIGN CONTOURS

NOTE:
FOR DETAILS RELATING TO RETAINING WALLS REFER TO STRUCTURAL ARTS DRAWING SK-01 ENERGEX PADMOUNT TRANSFORMER 5 PLAN & DETAILS

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
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ASSOCIATED CONSULTANTS

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DRAWING TITLE

PADMOUNT SECTIONS
PADMOUNT 5
SHEET 01

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-076	A

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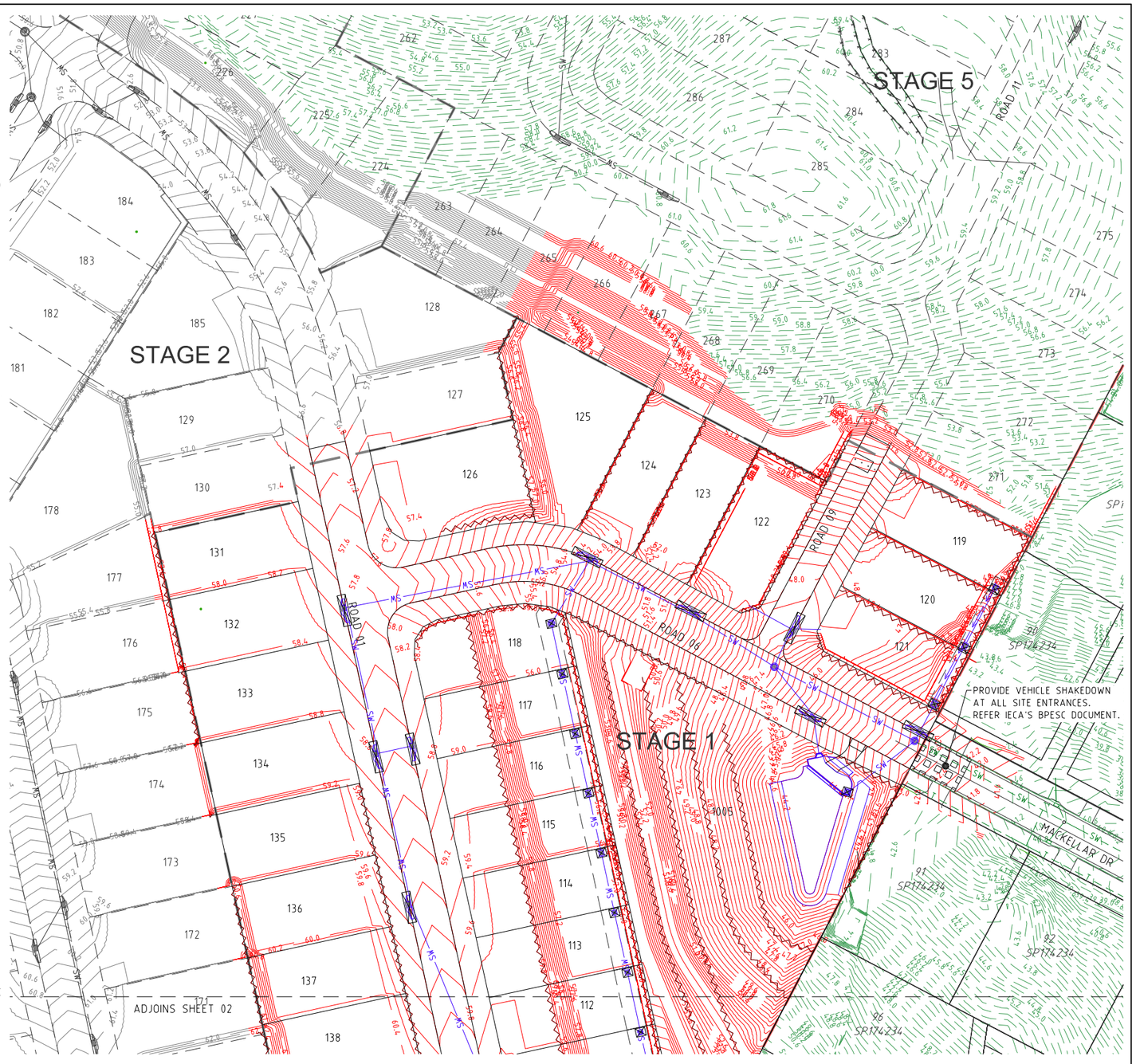
SEDIMENT AND EROSION

1. THE EROSION & SEDIMENT CONTROL DEVICES SHOWN ON THESE DRAWINGS ARE INDICATIVE & PROVIDED FOR SUBMISSION TO LOCAL AUTHORITY ONLY. NOTWITHSTANDING THE EROSION & CONTROL DEVICES SHOW ON THESE DRAWINGS, THE CONTRACTOR MUST PREPARE & FOLLOW A SITE SPECIFIC EROSION & SEDIMENT CONTROL PLAN TO MEET ALL LOCAL & STATE GOVERNMENT LEGISLATION INCLUDING BUT NOT LIMITED TO:
   a. ENVIRONMENTAL PROTECTION ACT WITH SPECIFIC REFERENCE TO PARTS S440G & S319
   b. STATE PLANNING POLICY

   PRESCRIBED WATER CONTAMINANTS (AS DEFINED IN THE ENVIRONMENTAL PROTECTION ACT 1994) MUST NOT BE RELEASED FROM THE SITE OR TO WATERS WITHIN THE SITE, OR BE LIKELY TO BE RELEASED SHOULD RAINFALL OCCUR, UNLESS ALL REASONABLE & PRACTICABLE MEASURES ARE TAKEN TO PREVENT OR MINIMISE THE RELEASE & CONCENTRATION OF CONTAMINATION. THE ESC PLAN MUST BE DESIGNED, IMPLEMENTED & MAINTAINED IN ACCORDANCE WITH "BEST PRACTICE EROSION & SEDIMENT CONTROL" PUBLISHED BY THE INTERNATIONAL EROSION CONTROL ASSOCIATION (AUSTRALASIAN CHAPTER) (IECA, 2008).
2. TO COMPLY WITH THE REQUIREMENTS OF THE EP ACT & BEST PRACTICE DESIGN, THE SEDIMENT BASINS ON THE SITE MUST BE DESIGNED & IMPLEMENTED TO ACHIEVE THE FOLLOWING:
   SEDIMENT BASINS ARE TO BE DESIGNED, IMPLEMENTED & MAINTAINED TO A STANDARD WHICH WOULD ACHIEVE AT LEAST 80% OF THE AVERAGE ANNUAL RUNOFF VOLUME OF THE CONTRIBUTING CATCHMENT TREATED (I.E. 80% HYDROLOGIC EFFECTIVENESS) TO 50MG/L TSS OR LESS & PH IN THE RANGE 6.5-8.5

   THIS WILL REQUIRE THE INSTALLATION & OPERATION OF A HIGH-EFFICIENCY SEDIMENT BASIN(S) DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS CONTAINED IN THE "BEST PRACTICE EROSION & SEDIMENT CONTROL - APPENDIX B SEDIMENT BASIN DESIGN & OPERATION" PUBLISHED BY THE INTERNATIONAL EROSION CONTROL ASSOCIATION (AUSTRALASIAN CHAPTER) (IECA, 2016, DRAFT)
3. THE EROSION & SEDIMENT CONTROL PLAN MUST BE PREPARED & CERTIFIED BY A CERTIFIED PROFESSIONAL IN EROSION & SEDIMENT CONTROL & FOLLOW THE REQUIREMENTS OUTLINED IN IECA'S BEST PRACTICE EROSION & SEDIMENT CONTROL DOCUMENT & THE QUEENSLAND URBAN DRAINAGE MANUAL.
4. PRIOR TO THE COMMENCEMENT OF WORKS ONSITE THE CONTRACTOR MUST MAKE THEMSELVES AWARE OF ALL PREVIOUS GEOTECHNICAL REPORTS & DETERMINE THE DISPERSIVE CHARACTERISTICS OF THE SOIL (INCLUDING PERFORMING ANY SOIL TESTS IF REQUIRED). THE RESULTS OF THIS REVIEW & ANY TESTS MUST BE INCLUDED IN THE CONTRACTOR'S EROSION & SEDIMENT CONTROL PLAN. A COPY OF ALL TEST RESULTS MUST BE PROVIDED TO THE SUPERINTENDENT.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION & DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION (INCLUDING THE MAINTENANCE PERIOD). NOTWITHSTANDING THE CONTROL MEASURES OR FINISHED EARTHWORKS DESIGN SHOWN ON THESE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ADDITIONAL OR ALTERNATIVE EROSION & SEDIMENT CONTROL MEASURES TO MINIMISE SEDIMENT ACROSS OR LEAVING THE SITE.
6. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS (INCLUDING WEEKENDS & PUBLIC HOLIDAYS) & AT ALL TIMES REMAINS RESPONSIBLE TO:
   a) CLEAN & REPAIR CONTROL DEVICES WHENEVER THE ACCUMULATED SEDIMENT REDUCES THEIR CAPACITY BY 50%.
   b) MAINTAIN POSITIVE GRADES OF ALL PERIMETER BANKS & SWALES TO AN OUTLET.
   c) PROTECT ANY DOWNSTREAM CONSTRUCTION.
   d) CONTROLLING DUST.
   e) MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH DETAILS OUTLINED IN THEIR EROSION & SEDIMENT CONTROL PLAN & AS DIRECTED BY THE SUPERINTENDENT.
7. THE CONTRACTOR'S PLAN SHALL ALLOW FOR SUITABLE ACCESS TO ALLOW MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. NO ADDITIONAL VEGETATION CLEARING IS PERMITTED FOR GAINING ACCESS UNLESS APPROVED BY THE SUPERINTENDENT.
8. THE CONTRACTOR MAY REQUEST APPROVAL FROM THE SUPERINTENDENT TO REUSE THE STOCKPILED MULCH FOR STABILISING BATTERS ONLY IN LOCATIONS WHERE THE APPROVED LANDSCAPE OPW DESIGN REQUIRES MULCH ULTIMATELY.
9. CONSTRUCTION STOCKPILING
   a) TOPSOIL SHALL BE STRIPPED & STOCKPILED IN LOCATIONS NOMINATED ON THE CONSTRUCTION DRAWINGS OR IN LOCATIONS AGREED WITH THE SUPERINTENDENT.
   b) ADDITIONAL VEGETATION CLEARING IS NOT PERMITTED TO FACILITATE THE STOCKPILING OF MATERIALS UNLESS SHOWN ON THE APPROVED VEGETATION MANAGEMENT PLAN.
   c) ANY STOCKPILE SITE MUST BE CLEAR OF ADJACENT PROPERTY BOUNDARIES SO AS NOT TO CAUSE A NUISANCE TO ADJOINING PROPERTIES.
   d) NO STOCKPILES ARE TO BE LOCATED WITHIN THE TREE PROTECTION ZONE OF VEGETATION.
   e) A TEMPORARY SILT FENCE IS TO BE ERECTED APPROXIMATELY 5m FROM TOE OF BATTER ON LOW SIDE OF STOCKPILING.
10. NOTWITHSTANDING THE DETAILS SHOWN IN THE CONTRACTOR'S EROSION & SEDIMENT CONTROL PLAN, DURING CONSTRUCTION THE CONTRACTOR MUST:
    a) SIZE ALL TEMPORARY SEDIMENT BASINS APPROPRIATELY TO TREAT THE UPSTREAM CATCHMENT. NOTE THAT THE PERMANENT BIO BASINS SHOWN ON THESE DRAWINGS ARE SIZED FOR THE ULTIMATE CATCHMENT NOT FOR THE CONSTRUCTION PHASE.
    b) PLACE A ROCK BUND AROUND ALL HEADWALLS DURING CONSTRUCTION.
    c) PROVIDE KERB INLET PROTECTION TO ALL GULLIES.
    c) PLACE A MINIMUM 1.0m WIDE TURF STRIP BEHIND ALL KERBS & IN A HERRINGBONE LAYOUT WITHIN THE ROAD VERGE.
    d) MAINTENANCE (INCLUDING FLOCCULATION IF REQUIRED & PUMP OUT) OF ALL CONSTRUCTION SEDIMENT BASINS (WHETHER EXISTING OR NEW).
    e) CLEAN OUT OF ALL GROSS POLLUTANT TRAPS, SEDIMENT FOREBAYS & ALL OTHER PERMANENT SEDIMENT CONTROL DEVICES AT BOTH ON & OFF MAINTENANCE.
11. CONTRACTOR TO CONFIRM THE EXTENTS OF REQUIRED GRASSING TREATMENTS WITH THE SUPERINTENDENT AT LEAST 7 DAYS PRIOR TO FINAL TRIMMING.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT GRASSING STRIKE RATES ARE ACHIEVED AT THE ON & OFF MAINTENANCE INSPECTIONS IN ACCORDANCE WITH COUNCIL REQUIREMENTS. THIS INCLUDES THE SUPPLY & INSTALLATION OF ANY REQUIRED CHEMICAL/FERTILISER AMELIORATION TO ACHIEVE THE SPECIFIED GRASS STRIKE RATES.
13. GEOFABRIC LINING OF CHANNELS & CHECK DAMS MAY BE REQUIRED SUBJECT TO THE SITE CONDITIONS.
14. BATTERS WITHIN PUBLIC OPEN SPACE TO BE VEGETATED IN ACCORDANCE WITH APPROVED OPEN SPACE MANAGEMENT PLAN & LANDSCAPING OPW. CONTRACT DOCUMENTATION WILL SPECIFY WHETHER THIS IS THE CIVIL CONTRACTOR OR THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO SUPPLY & INSTALL. THE CIVIL CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUITABLE ACCESS FOR THE LANDSCAPE CONTRACTOR TO PERFORM THEIR WORKS.
15. MAINTENANCE PERIOD (PRE TO POST CONSTRUCTION)
    a) ALL PROTECTION MEASURES ARE TO BE INSPECTED & MAINTAINED REGULARLY
    b) REPAIRS ARE TO BE EFFECTED IMMEDIATELY.
    c) SILT AFTER RAIN IS TO BE CLEANED FROM STREETS & ALLOTMENTS IMMEDIATELY & CORRECTIVE ACTION TAKEN TO AVOID A RE-OCCURRENCE.
    d) AT OFF-MAINTENANCE & ONLY WHEN DIRECTED BY COUNCIL, REMOVE & DISPOSE OFFSITE ALL TEMPORARY EROSION & SEDIMENT CONTROL DEVICES.

NOTE:
SEDIMENT AND EROSION CONTROL MEASURES SHOWN RELATE TO THE FINISHED SURFACE ONLY AND ARE CONCEPTUAL ONLY. THE CONTRACTOR IS TO PREPARE A SITE SPECIFIC CONSTRUCTION AND MAINTENANCE PHASE SEDIMENT AND EROSION CONTROL PLAN.



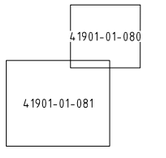
LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- EXISTING STORMWATER
- EXISTING CONTOURS
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- FUTURE STORMWATER
- FUTURE CONTOURS
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED STORMWATER
- DESIGN CONTOURS

- MANHOLE
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SEDIMENT FENCE
- SCOUR PROTECTION
- TEMPORARY SEDIMENT BASIN
- STORMWATER INLET FILTER
- ROCK CHECK DAM
- VEHICLE SHAKEDOWN (AT ALL SITE ENTRANCES MIN.)
- TREES

PROVIDE SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION BPESC DOCUMENT.

SHEET LAYOUT



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-080 | REV B

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ADJOINS SHEET 01

STAGE 2

STAGE 3

ROAD 01

ROAD 02

ROAD 03

ROAD 04

GORDON DR

RANGEVIEW ROAD

PROVIDE VEHICLE SHAKEDOWN AT ALL SITE ENTRANCES. REFER IECA'S BPESC DOCUMENT.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
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A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

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DRAWING TITLE

FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 02

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Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER	REV
41901-01-081	B

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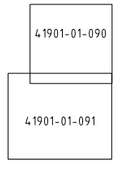
CONSTRUCTION SERVICES

1. CONSTRUCTION OF SEWER/ROOFWATER/STORMWATER/SERVICES
   EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH & TO PROTECT PIPE WORK & DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS. TOPSOIL & GRASS SEED AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER & ROOFWATER DRAINAGE CONSTRUCTION. DEPRESS GROUND AROUND TEMPORARY FIELD INLETS TO CREATE SILT POND.
2. TRIP HAZARD
   MANHOLES OR STRUCTURES INSTALLED IN THE ROAD, FOOTPATH OR VERGE MUST MATCH NEATLY WITH NO TRIP HAZARD.
3. EXISTING SERVICES - EXTERNAL WORKS
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES & TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY BY THE CONTRACT WORKS.

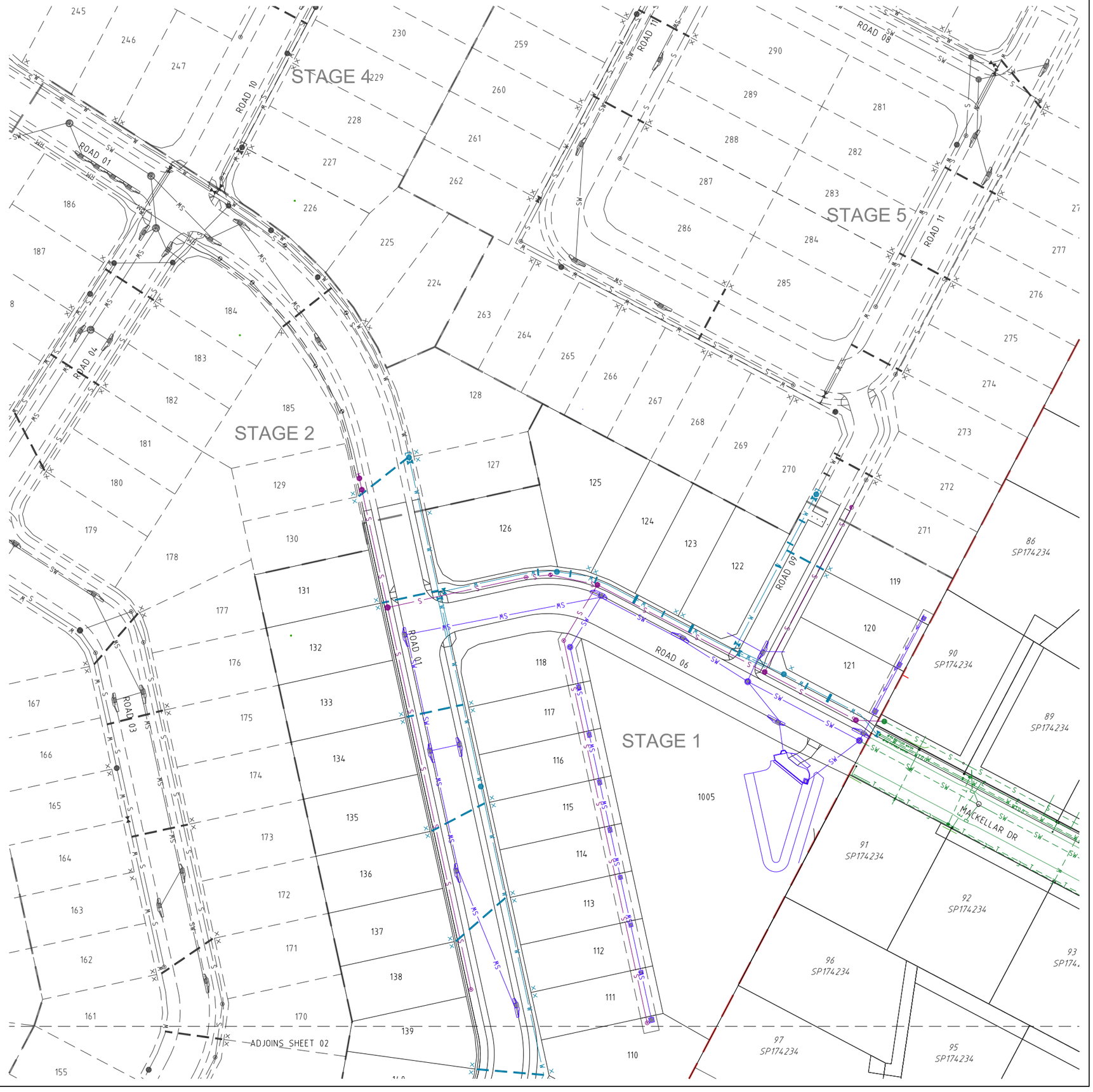
LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- EXISTING FOOTPATH
- RM — EXISTING RISING MAIN
- S — EXISTING SEWER
- SW — EXISTING STORMWATER
- RW — EXISTING ROOFWATER
- SS — EXISTING SUBSOIL
- W100 — EXISTING WATER
- W150 — EXISTING WATER
- W200 — EXISTING WATER
- W225 — EXISTING WATER
- W250 — EXISTING WATER
- W300 — EXISTING WATER
- EXISTING WATER CONDUIT
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED FOOTPATH
- RM — PROPOSED RISING MAIN
- S — PROPOSED SEWER
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- W300 — PROPOSED WATER
- PROPOSED WATER CONDUIT
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- FUTURE FOOTPATH
- RM — FUTURE RISING MAIN
- S — FUTURE SEWER
- SW — FUTURE STORMWATER
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- W100 — FUTURE WATER
- W150 — FUTURE WATER
- W200 — FUTURE WATER
- W225 — FUTURE WATER
- W250 — FUTURE WATER
- W300 — FUTURE WATER
- FUTURE WATER CONDUIT
- SITE BOUNDARY
- STAGE BOUNDARY

SHEET LAYOUT



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	20-03-23	STORMWATER BASIN ACCESS AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

COMBINED SERVICES PLAN
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
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Project Coordination

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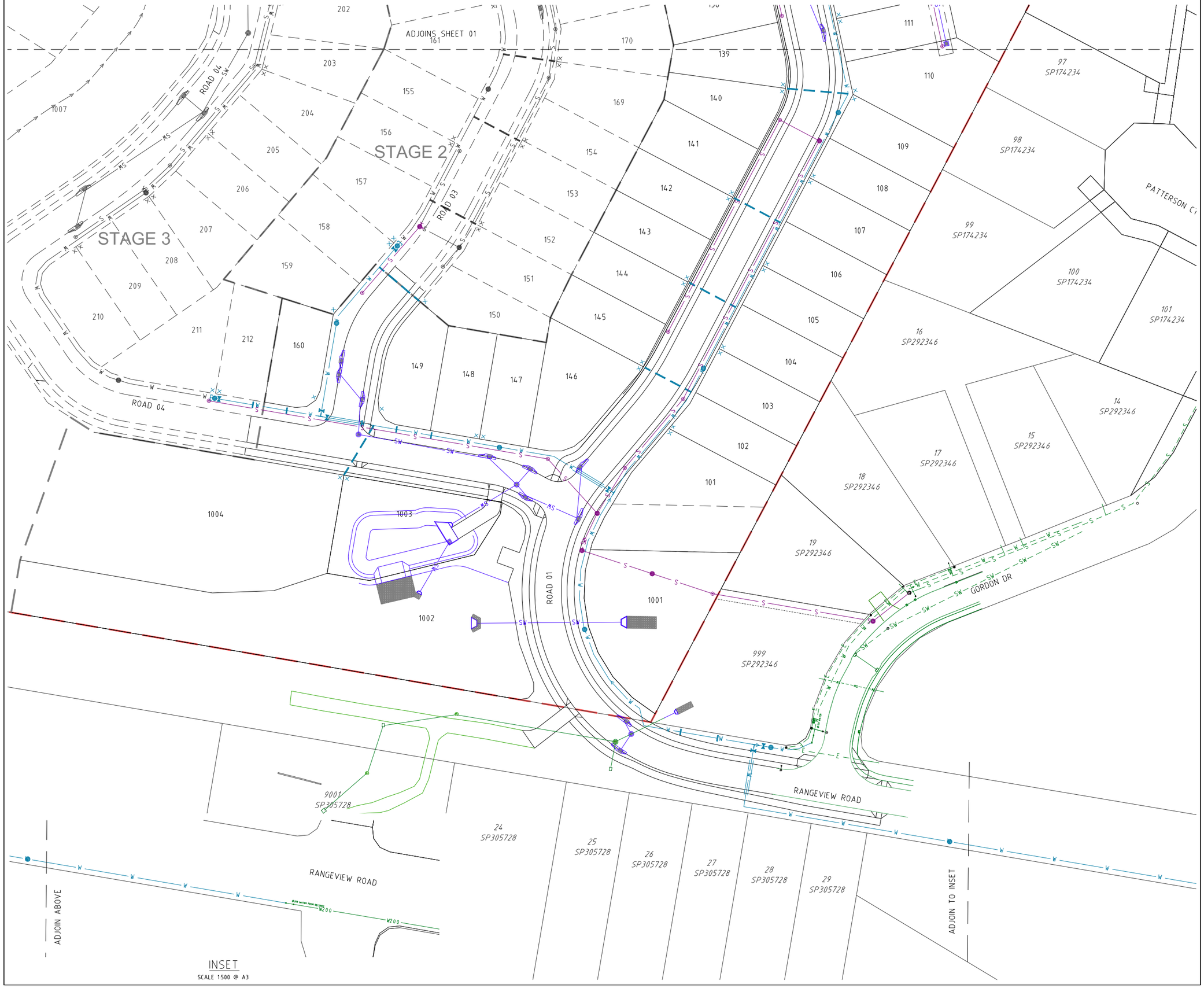
Postal Address
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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-090	C

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	09-03-23	STORMWATER AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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DRAWING TITLE

COMBINED SERVICES
PLAN
SHEET 02

MORTONS urbansolutions
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Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-091
REV C

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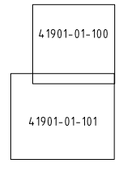
ROADWORKS

1. PAVEMENT DEPTHS
   a) THE DESIGN PAVEMENT DEPTHS ALLOWED IN EARTHWORKS CALCULATIONS ARE BASED ON THE DEPTHS SHOWN IN THE SCHEDULE OF PAVEMENT DEPTHS ON DRAWING 120.
   b) THE PAVEMENT DEPTHS GIVEN ARE DESIGN DEPTHS ONLY & MAY BE VARIED AFTER SUB-GRADE TESTS ARE TAKEN. THE CONTRACTOR IS TO PROVIDE THE SUPERINTENDENT A SUBGRADE C.B.R. REPORT PREPARED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.
   THE SUPERINTENDENT WILL COORDINATE THE AUTHORITIES APPROVAL OF THE PAVEMENT DESIGN.
   c) REFER TO DWG. 120 FOR TYPICAL ROAD SECTIONS.
2. TESTING
   ALL COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. TESTING AUTHORITY. ALL SITE FILLING SHALL BE TESTED AT LEVEL 1 REQUIREMENTS.
3. SUBSOIL DRAINS
   SUBSOIL DRAINS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL AUTHORITY'S SPECIFICATIONS. SUBSOIL DRAINS SHALL BE PLACED UNDER ALL KERB STRUCTURES & ARE TO BE CONSTRUCTED TO A DEPTH GREATER THAN THAT OF THE INVERT OF THE DEEPEST SERVICE CROSSING.
4. MITRE DRAINS
   MITRE DRAINS ARE TO BE CONSTRUCTED ALONG THE CUT/FILL INTERFACE & SAG/LOW POINTS OF ALL ROADS. CONTRACTOR TO REQUEST DIRECTION FROM SUPERINTENDENT WHETHER TO INSTALL MITRE DRAIN AT ROCK ENCOUNTERED IN SUBGRADE. ALL MITRE DRAINS MUST BE FREE DRAINING & TIE INTO THE ADJACENT SUBSOIL DRAINS.
5. ROCK
   THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR RATES.
6. TURF
   1.0m TURF STRIP TO BE INSTALLED BEHIND THE BACK OF ALL KERBS. A PERPENDICULAR TURF STRIP AT MAXIMUM 10m INCREMENTS MUST BE INSTALLED TO FULL VERGE WIDTH FOR SEDIMENT & EROSION CONTROL PURPOSES.
7. KERBS
   ALL KERBS TO BE CONSTRUCTED IN ACCORDANCE WITH AUTHORITY STANDARDS
8. PAVEMENT TIE-IN
   PAVEMENT TIE-IN TO BE IN ACCORDANCE WITH DWG. 120

LEGEND

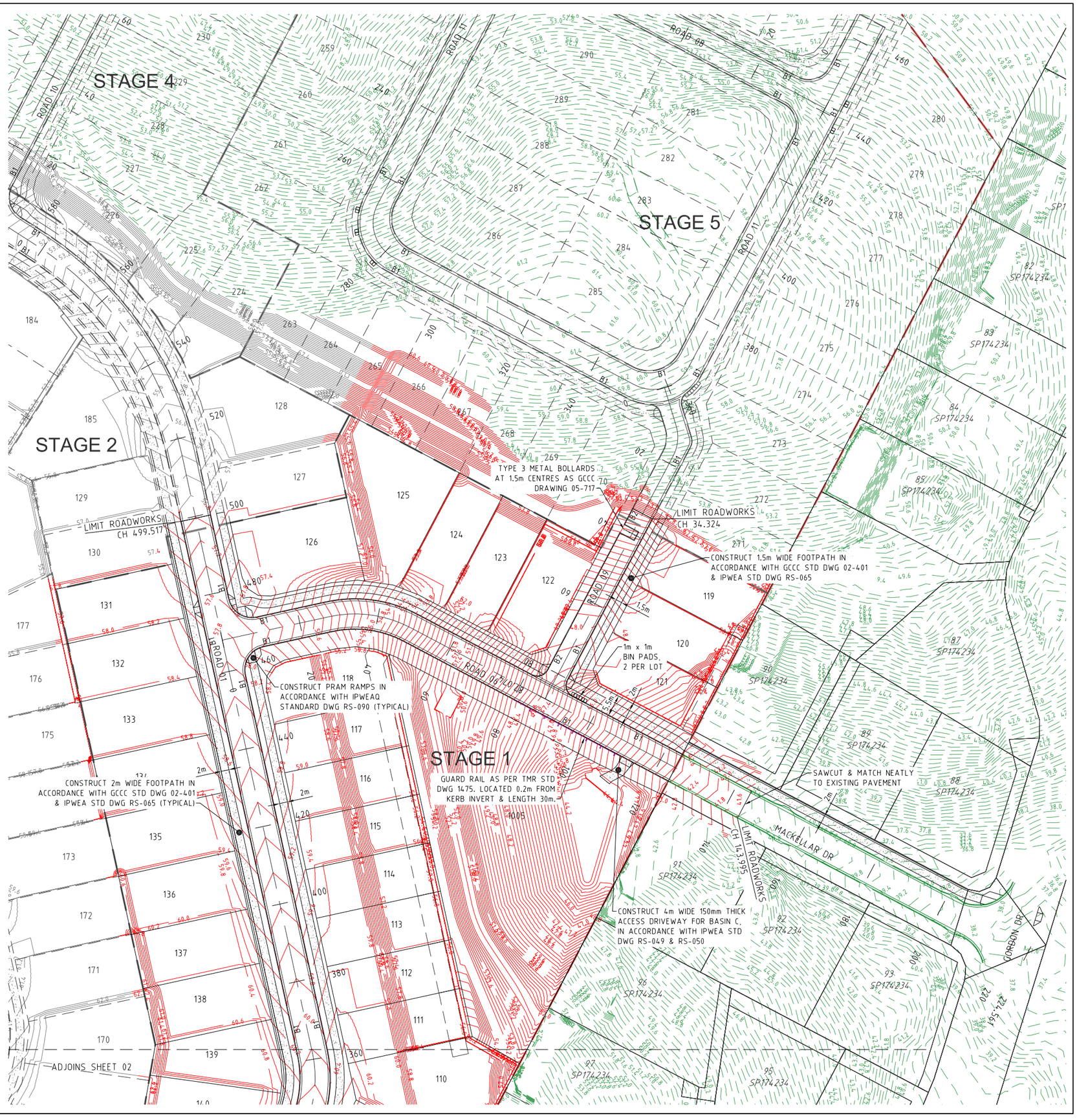
- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE KERB
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- FUTURE CONTOURS
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- DESIGN CONTOURS
- PROPOSED CONCRETE
- 41.065 CENTRELINE CHAINAGE

SHEET LAYOUT



REFER TO DRG. 120 FOR KERB TYPES — B1 BARRIER KERB & CHANNEL

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	20-03-23	DRIVEWAY ACCESS LOCATION AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

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DRAWING TITLE

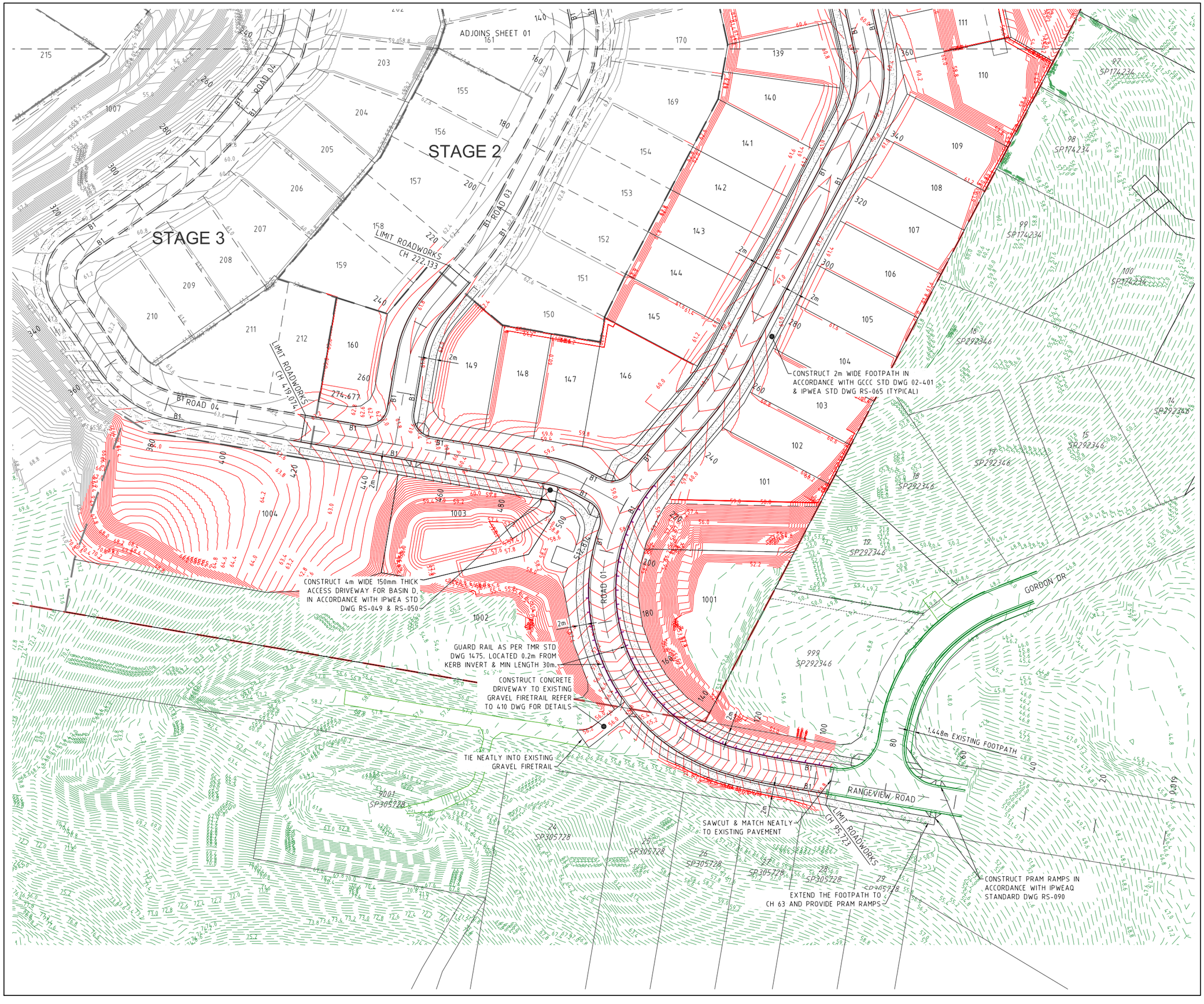
ROADWORKS
PLAN
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-100 — REV C

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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Robin Russell & ASSOCIATES PTY. LTD.
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DRAWING TITLE

ROADWORKS
PLAN
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
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DRAWING NUMBER	REV
41901-01-101	B

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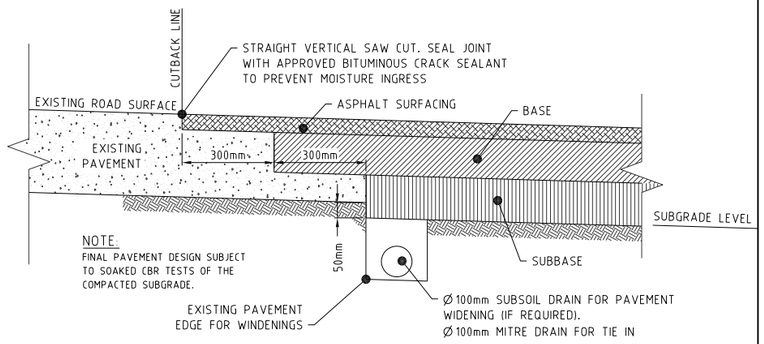
SCHEDULE OF PAVEMENT DEPTHS

ROAD NAME	SURFACING	BASE	SUB-BASE	LOWER SUB-BASE	CLASSIFICATION	DESA OR VPD	DESIGN GUIDE
ROAD 01	25mm ASPHALT	100mm TYPE 2.1 (CBR 60)	100mm TYPE 2.3 (CBR 45)	100mm TYPE 2.5 (CBR 15)	RESIDENTIAL COLLECTOR ST	3000	GCCC TABLE 2.11
ROAD 03, 04 & 06	25mm ASPHALT	100mm TYPE 2.1 (CBR 60)	100mm TYPE 2.3 (CBR 45)	100mm TYPE 2.5 (CBR 15)	RESIDENTIAL ACCESS ST	401-750	GCCC TABLE 2.11

NOTE. THE PAVEMENT DEPTHS ARE GIVEN AS A GUIDE ONLY AND FINAL PAVEMENT DESIGN WILL BE DETERMINED AFTER CBR TESTING IS UNDERTAKEN, AND COUNCIL HAVE APPROVED THE DESIGN. PLEASE NOTE CBR10 IS MAXIMUM INSITU CBR VALUE.

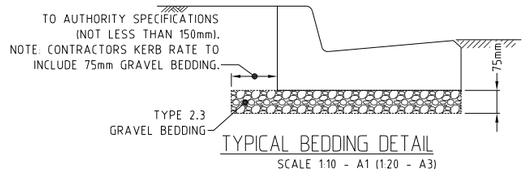
SCHEDULE OF KERB TYPES

KERB TYPE	IMAGE	REFERENCE
B1		IPWEA DWG. RS-080 NOTE: SUBSOIL DRAINS TO BE PLACED UNDER ALL KERBS.
B2		



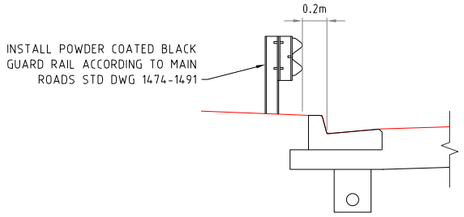
PAVEMENT WIDENING AND TIE-IN DETAIL

NOT TO SCALE



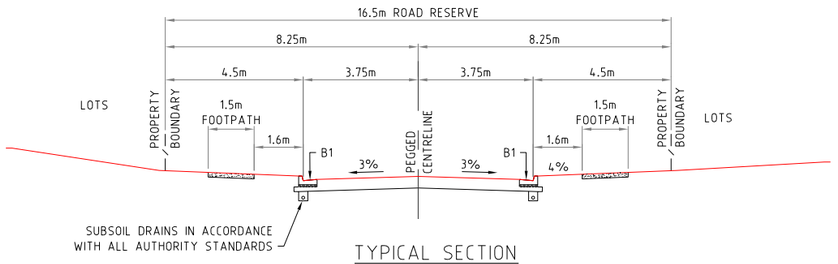
TYPICAL BEDDING DETAIL

SCALE 1:10 - A1 (1:20 - A3)



GUARDRAIL DETAIL

SCALE. 1:25 - A1 (1:50 - A3)

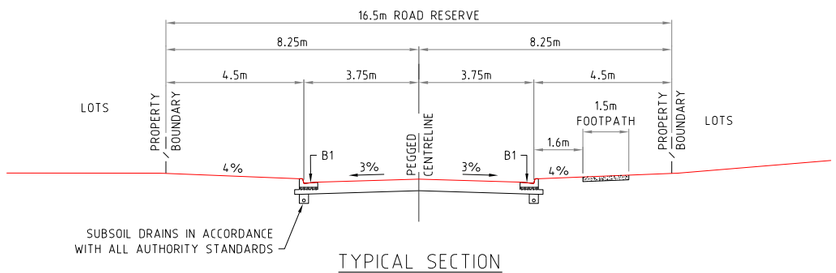


TYPICAL SECTION

7.5m ROAD-16.5m ROAD RESERVE

ROAD 01 & 04

SCALE 1:100 - A1 (1:200 - A3)

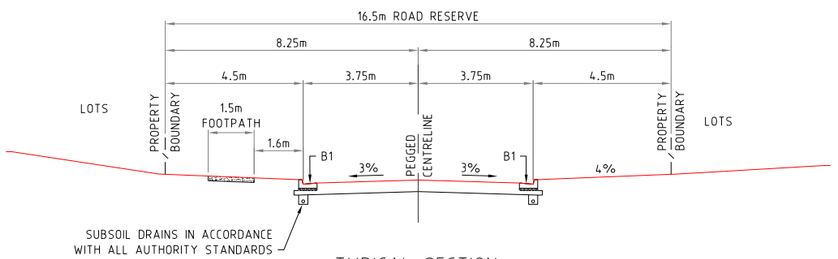


TYPICAL SECTION

7.5m ROAD-16.5m ROAD RESERVE

ROAD 04

SCALE 1:100 - A1 (1:200 - A3)

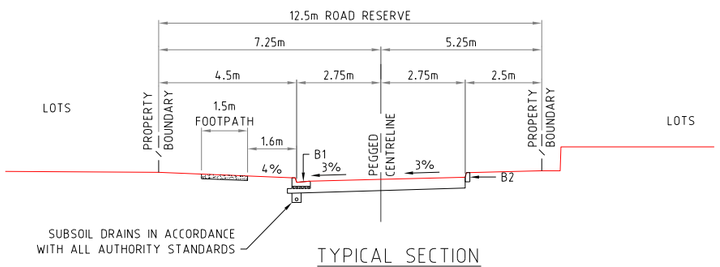


TYPICAL SECTION

7.5m ROAD-16.5m ROAD RESERVE

ROAD 03 & 06

SCALE 1:100 - A1 (1:200 - A3)



TYPICAL SECTION

5.5m ROAD-12.5m ROAD RESERVE

ROAD 09

SCALE 1:100 - A1 (1:200 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)
0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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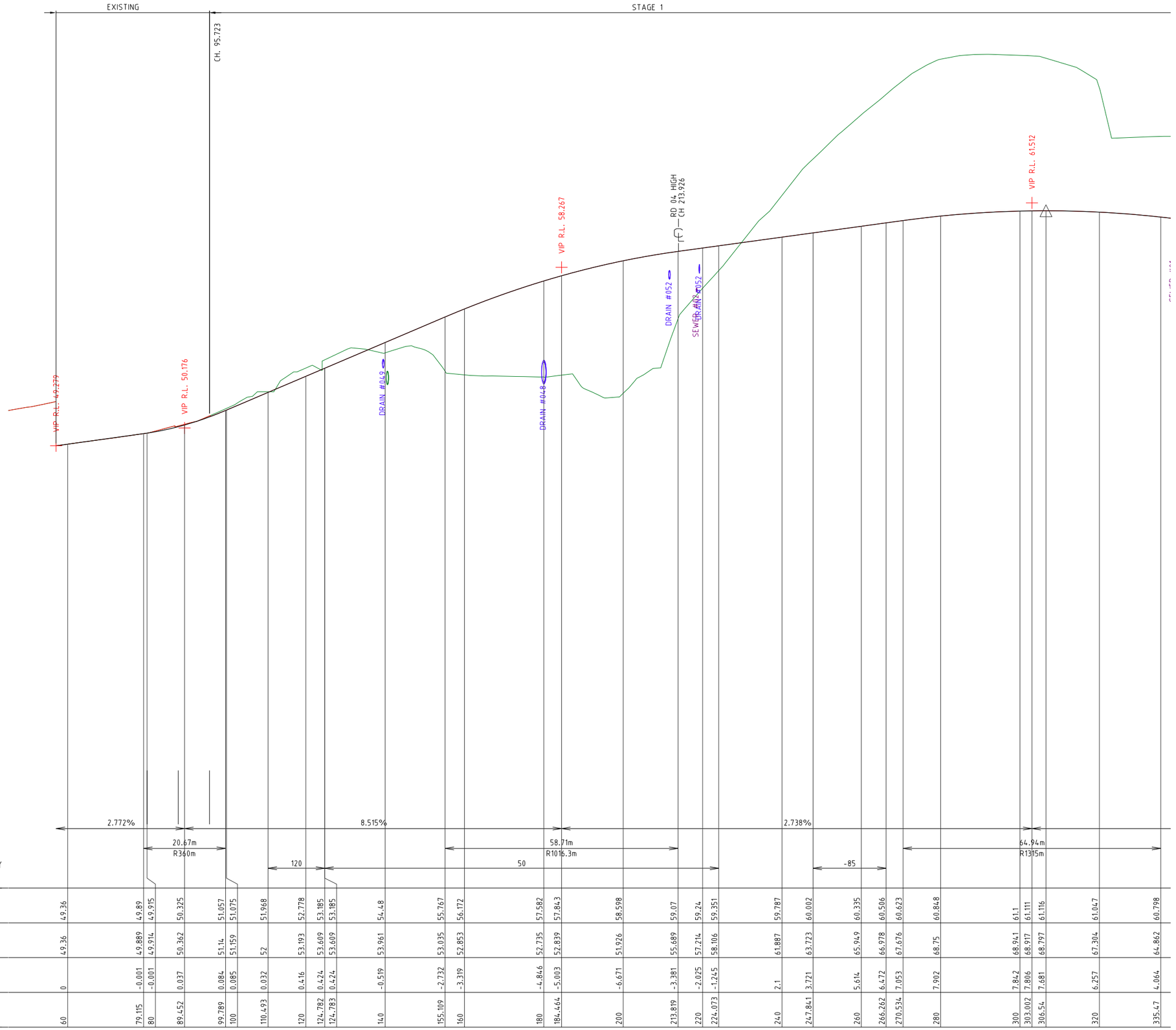
ROADWORKS DETAILS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-120 | REV B

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LONGITUDINAL SECTION ROAD 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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LONGITUDINAL SECTIONS
ROAD 01

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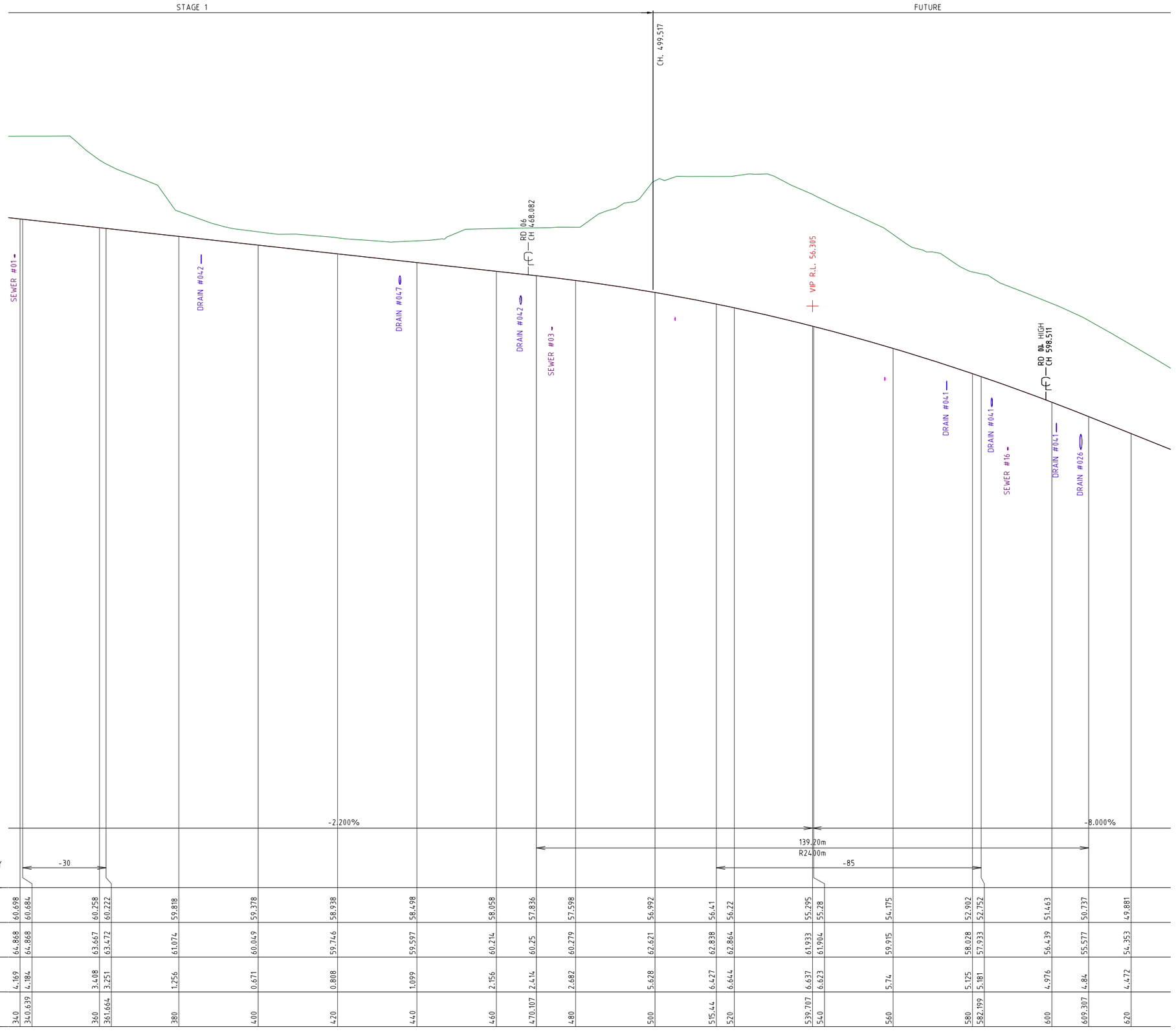
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Southport QLD 4215

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APPROVED	RPEQ 4706	DATE	03-03-23

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LONGITUDINAL SECTION ROAD 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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LONGITUDINAL SECTIONS
ROAD 01

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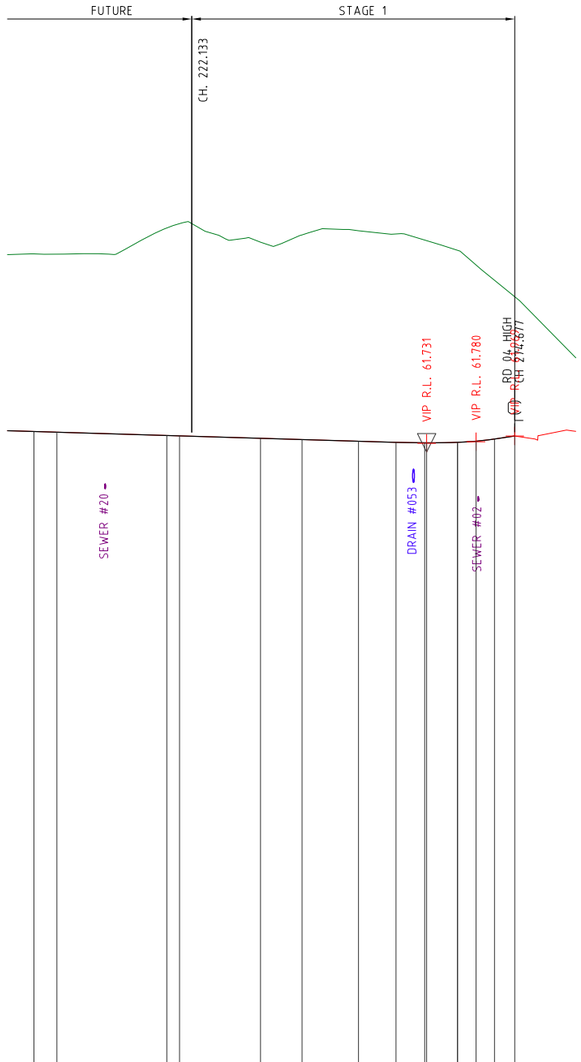
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Southport QLD 4215

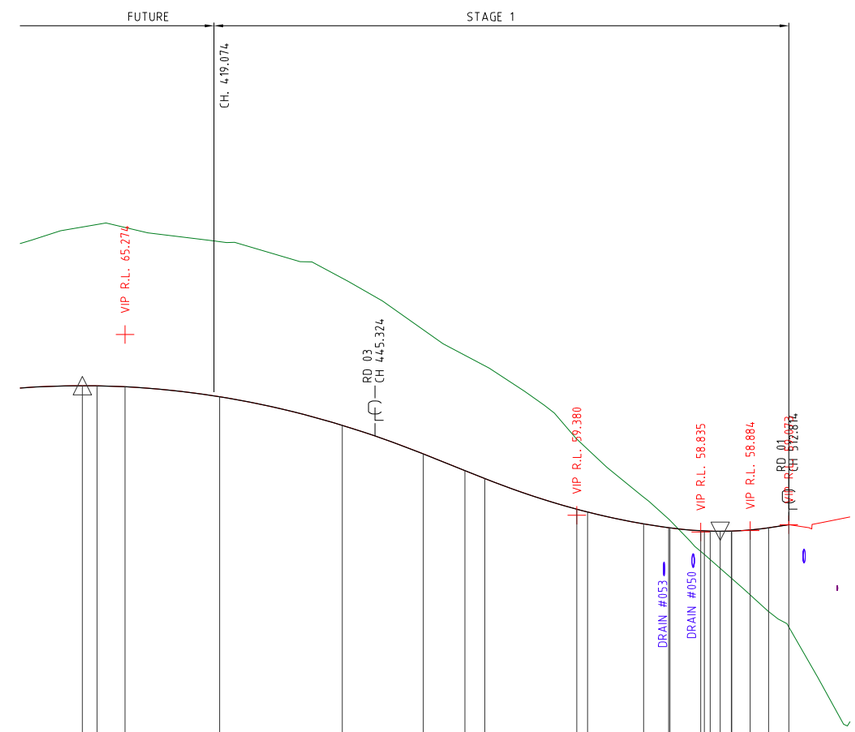
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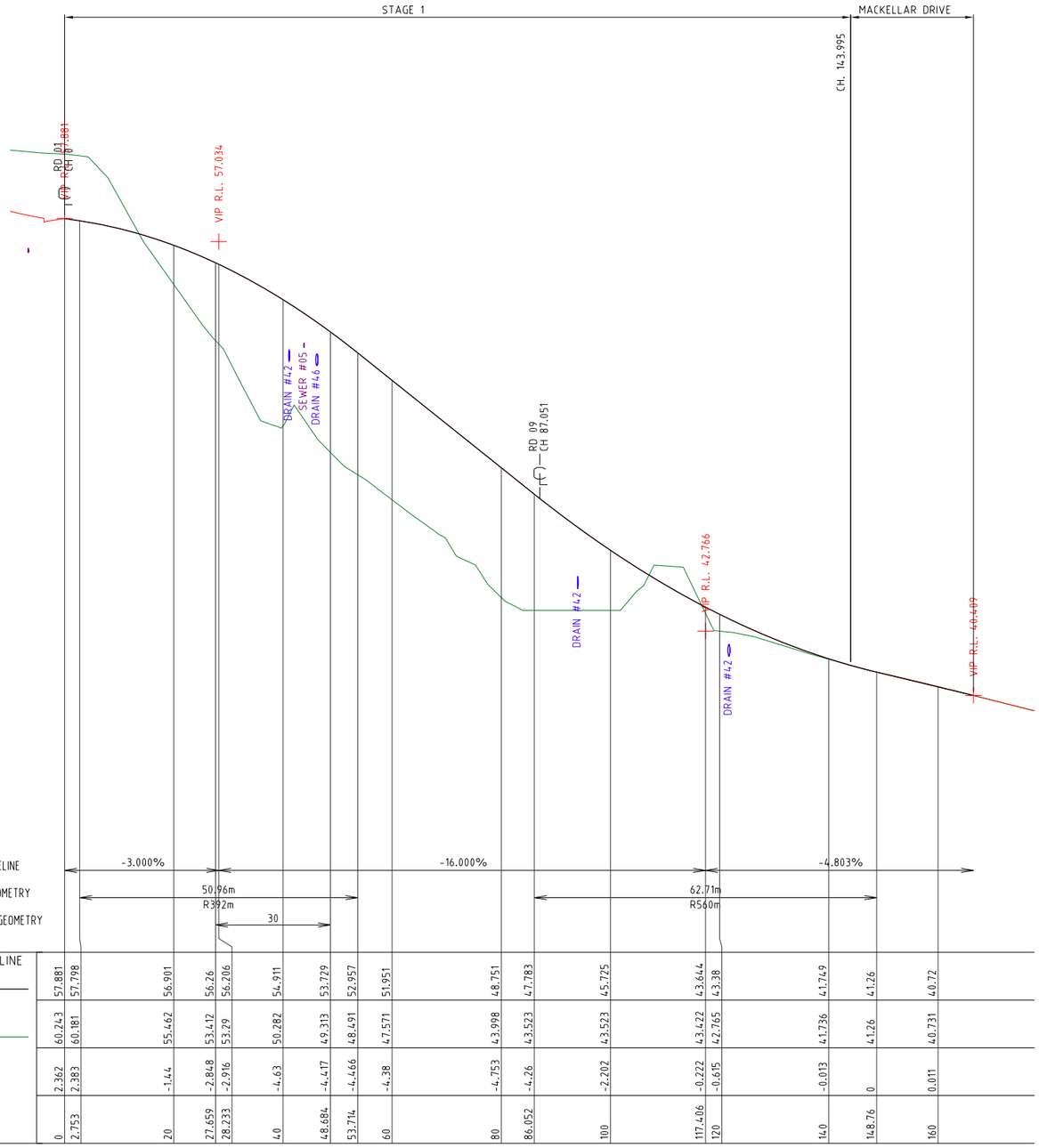
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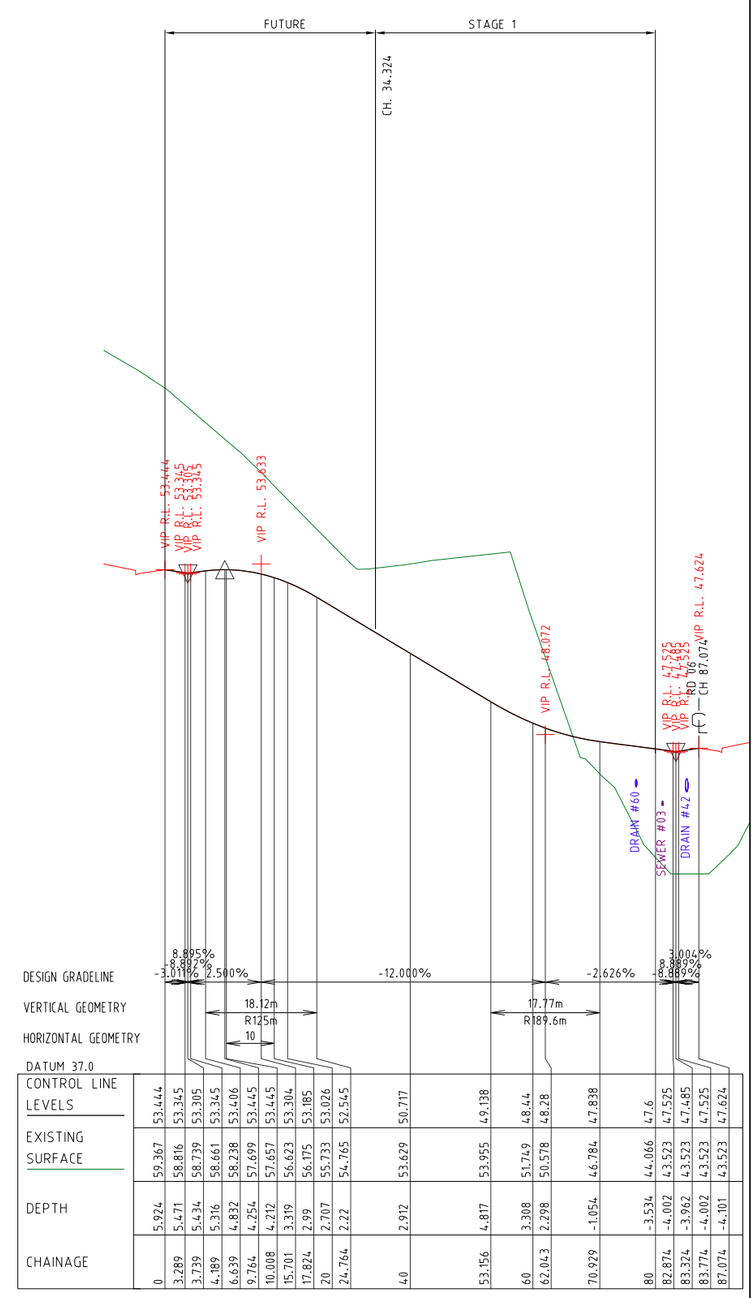

FUTURE
STAGE 1
CH. 222.133
VIP R.L. 61.731
VIP R.L. 61.780
RD 04 HIGH
CH 274.877
SEWER #20
DRAIN #053
SEWER #02


FUTURE
STAGE 1
CH. 419.074
VIP R.L. 65.274
RD 03
CH 445.324
VIP R.L. 59.380
VIP R.L. 58.835
VIP R.L. 58.884
RD 01
CH 517.874
DRAIN #053
DRAIN #050

| | | |



LONGITUDINAL SECTION 06



LONGITUDINAL SECTION 09

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMETS	EP
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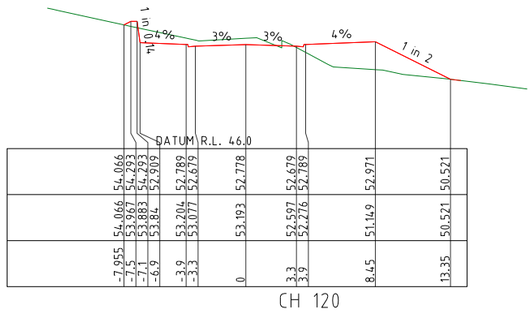
LONGITUDINAL SECTIONS
ROADS 06 & 09

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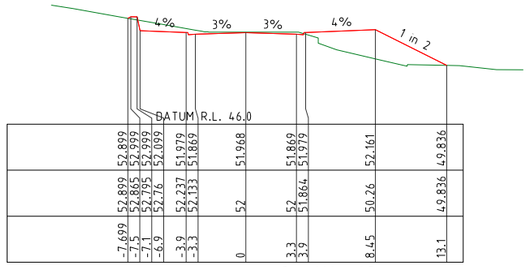
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APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-203
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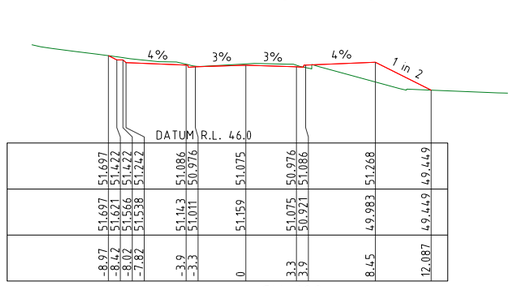
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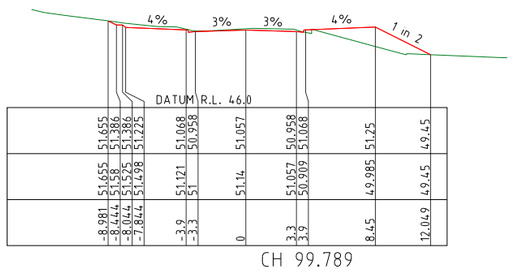
CH 120



CH 110.493



CH 100

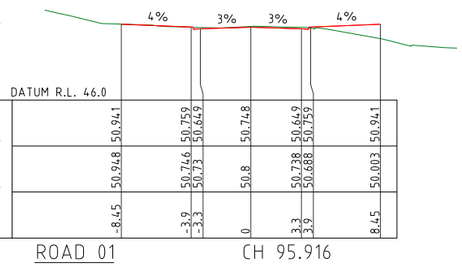


CH 99.789

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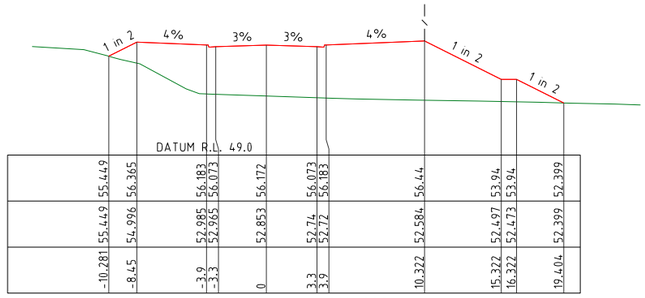
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2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

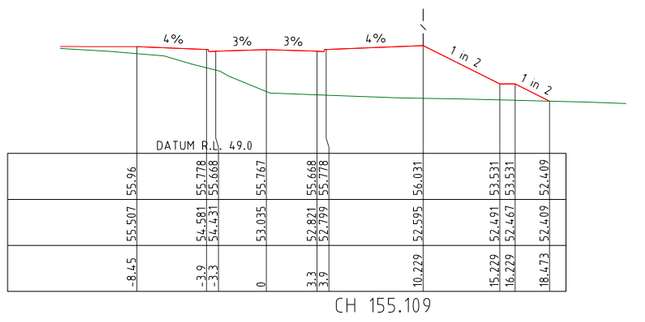


DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
OFFSET

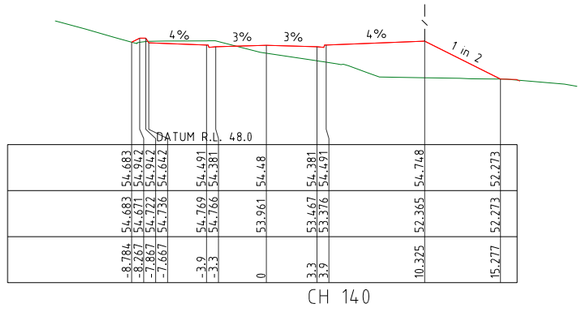
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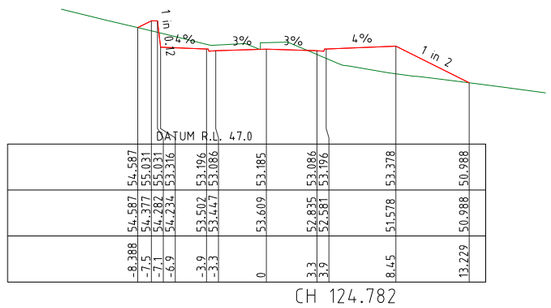
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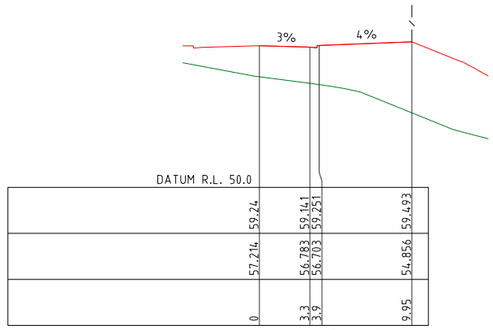
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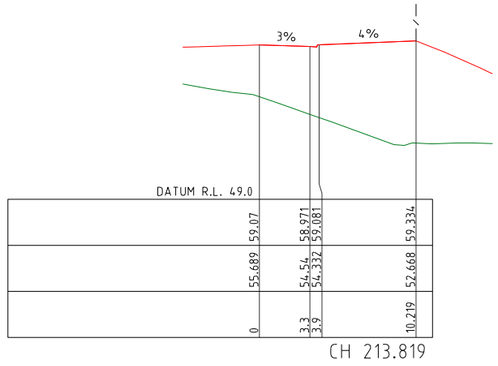
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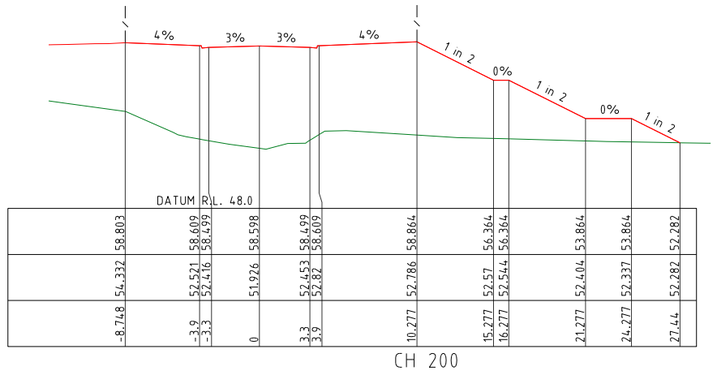
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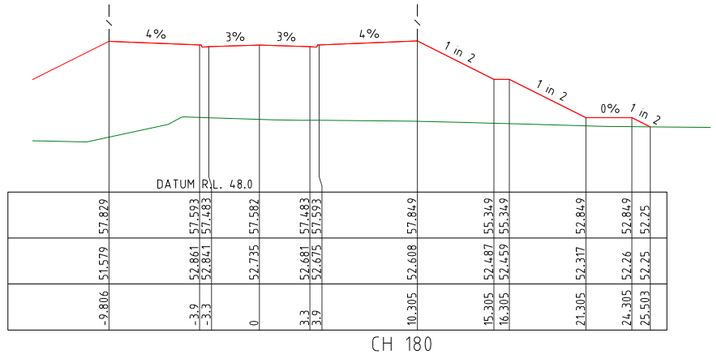
CH 220



CH 213.819



CH 200



CH 180

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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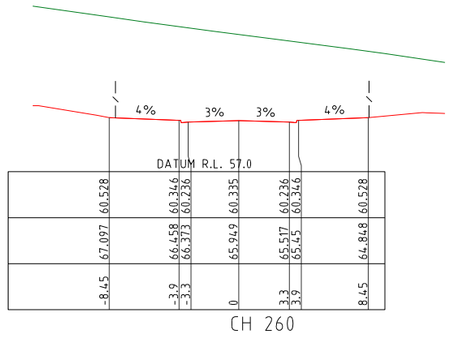
CROSS SECTIONS
ROAD 01

MORTONS urbansolutions
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Civil Engineering
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MUS Pty Ltd T/As
Mortons-Urban Solutions
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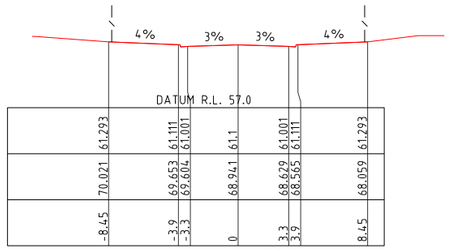
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APPROVED	RPEQ 4706	DATE	03-03-23

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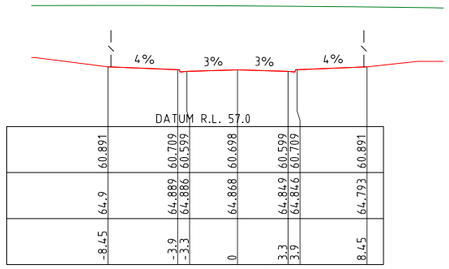
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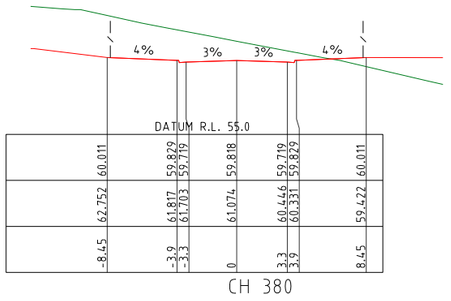
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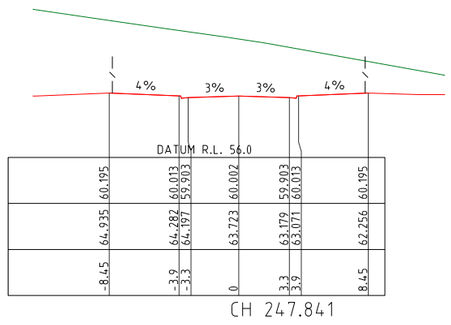
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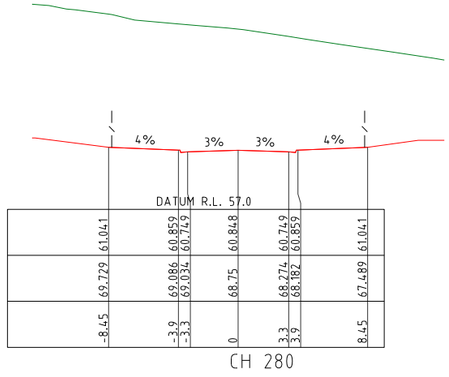
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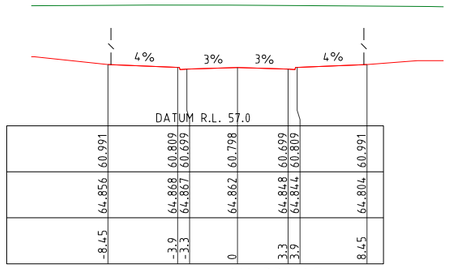
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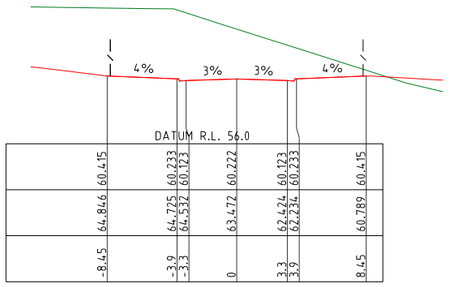
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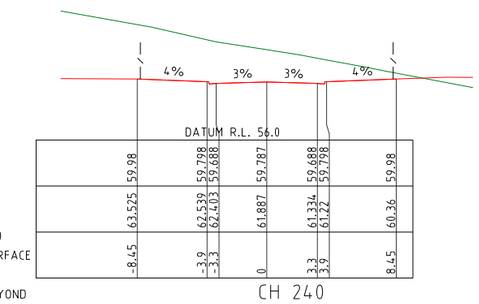
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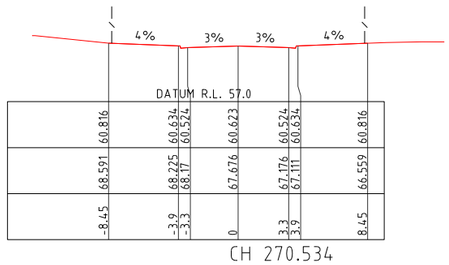
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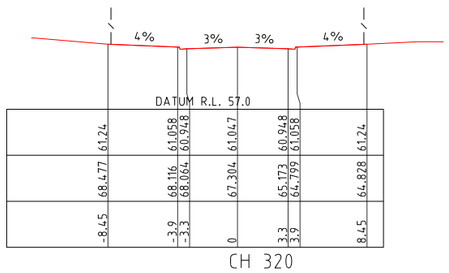
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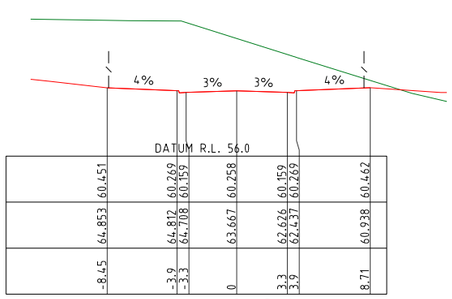
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CH 270.534



CH 320

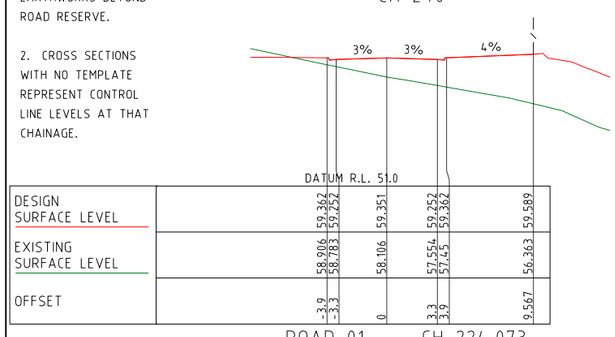


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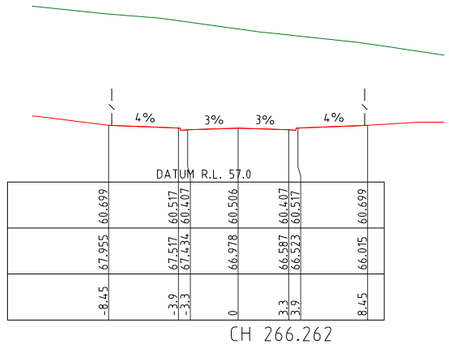
NOTES:

1. REFER TO 080 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

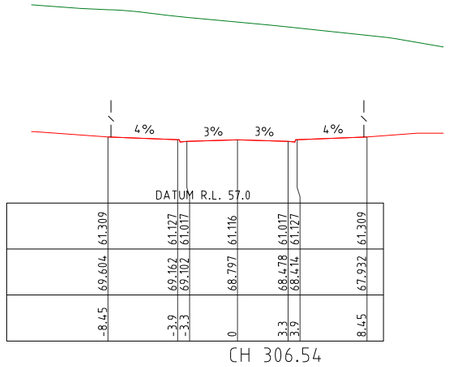
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



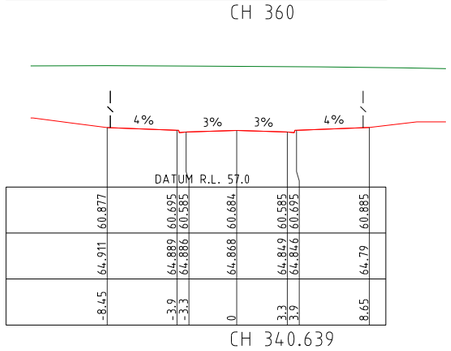
ROAD 01 CH 224.073



CH 266.262



CH 306.54



CH 340.639

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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DRAWING TITLE

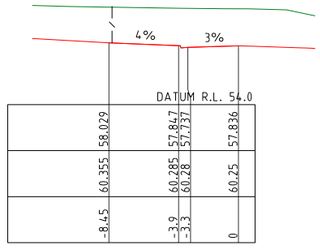
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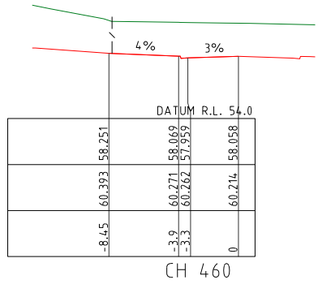
MORTONS urbansolutions
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ABN: 39 116 375 065
mortons@urbansolutions.net.au
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PO Box 2484
Southport QLD 4215
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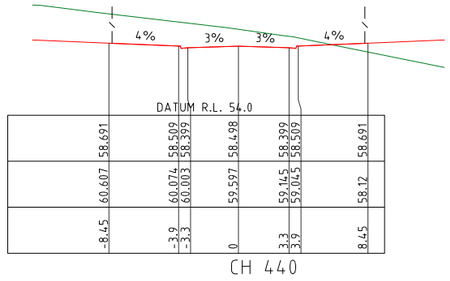
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APPROVED	RPEQ4706	DATE	03-03-23

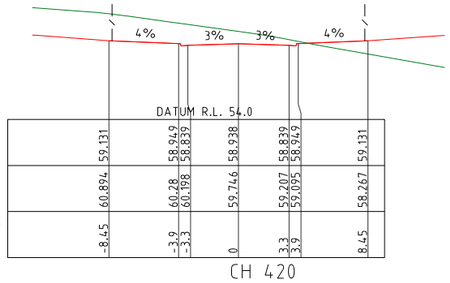
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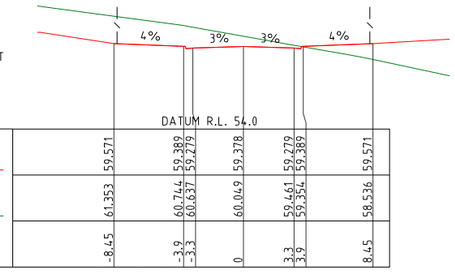
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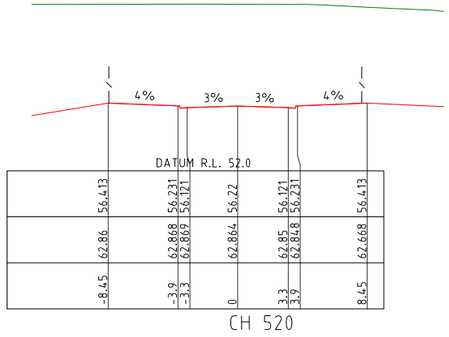


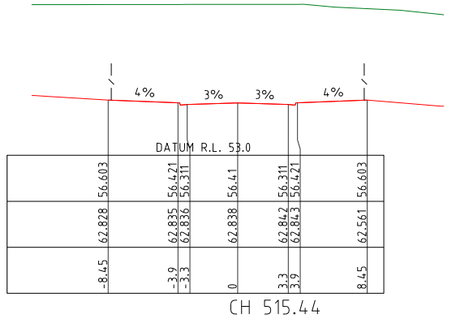


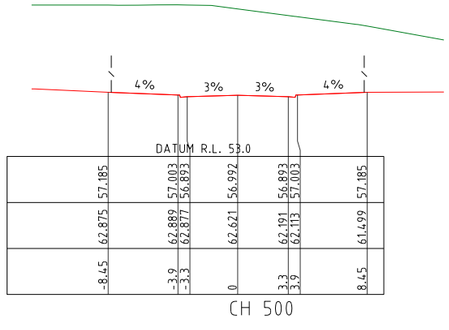
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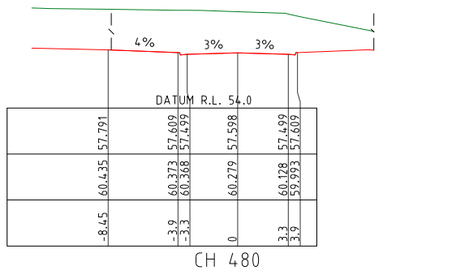
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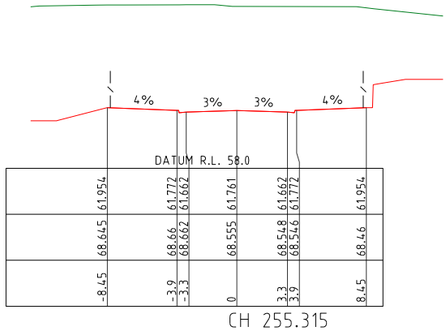
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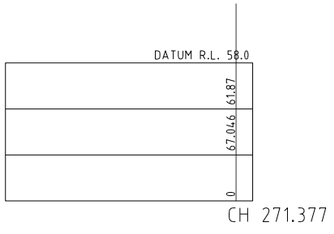


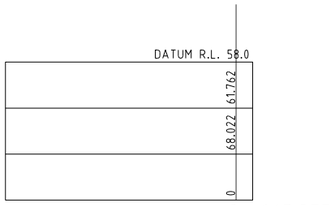


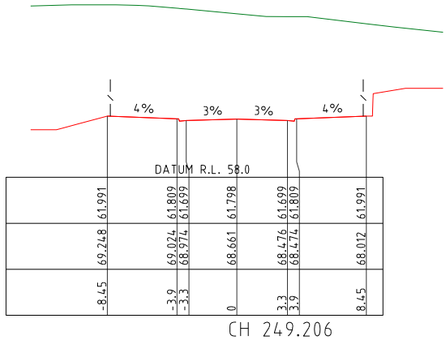


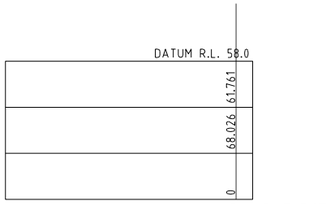


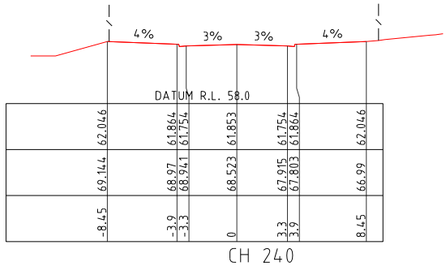


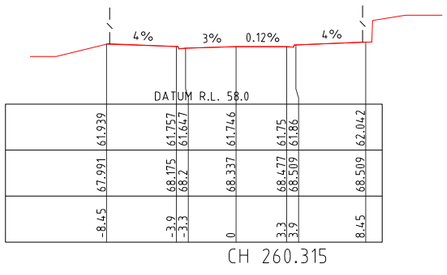


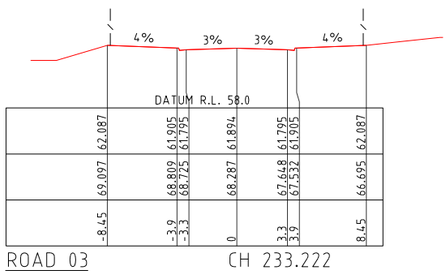


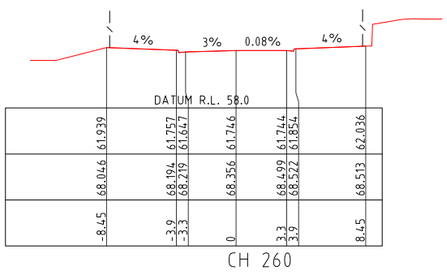












PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
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DRAWING TITLE

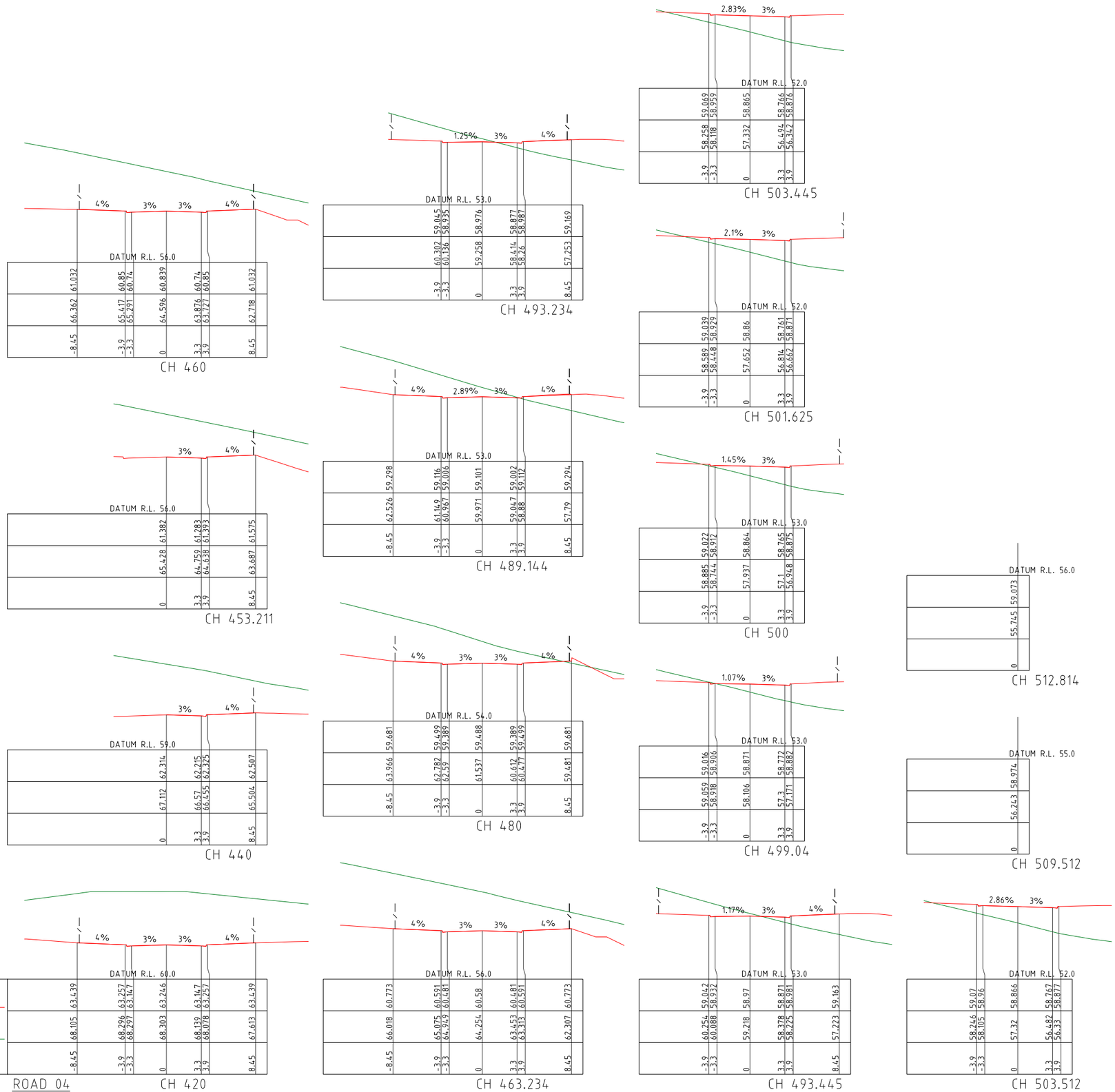
CROSS SECTIONS
ROAD 01 CONTINUED
AND ROAD 03

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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-302
REV A

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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DRAWING TITLE

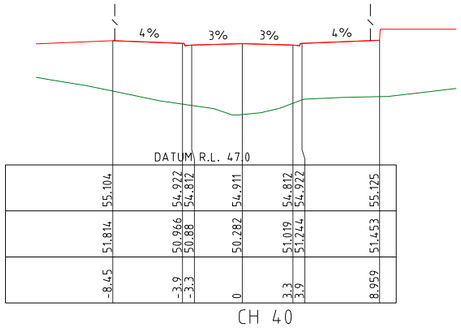
CROSS SECTIONS
ROAD 04

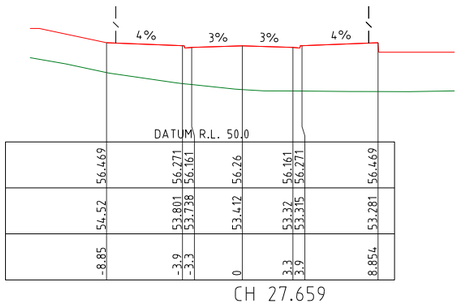
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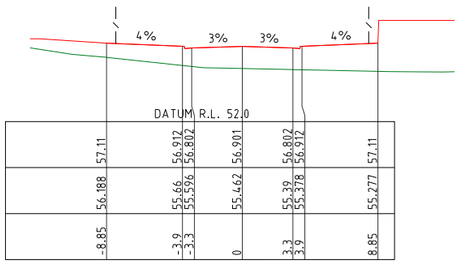
DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

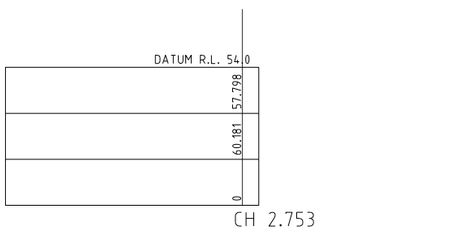
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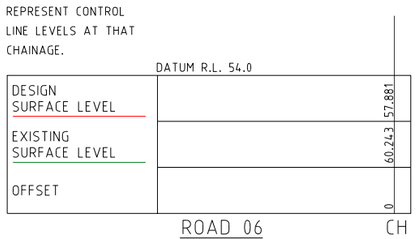


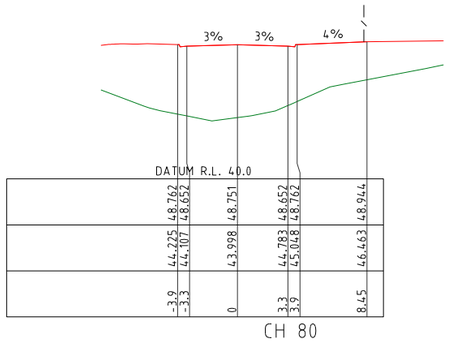


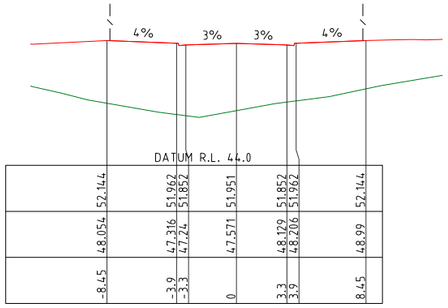
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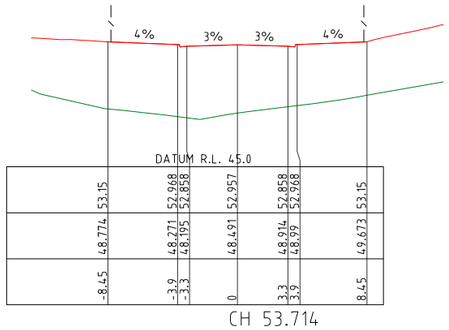
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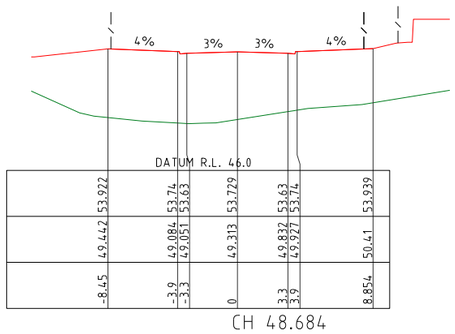
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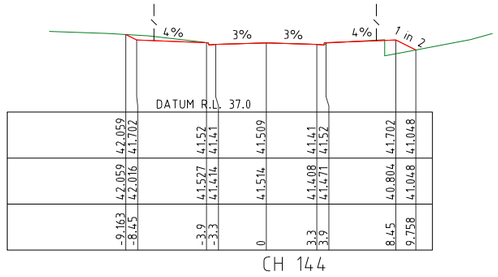


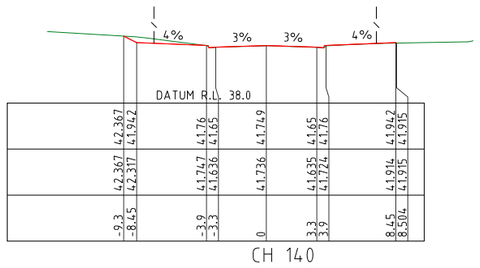


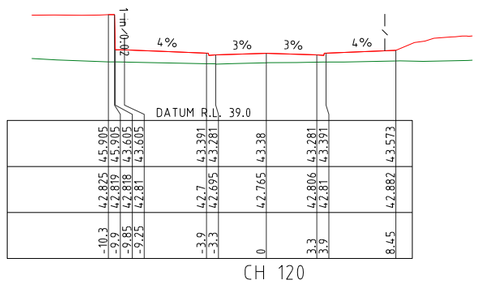


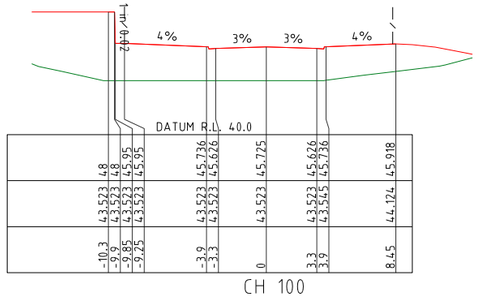


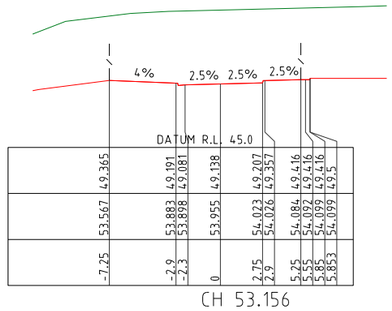




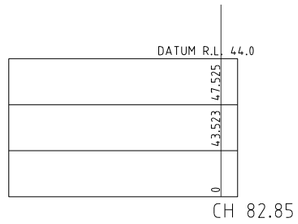




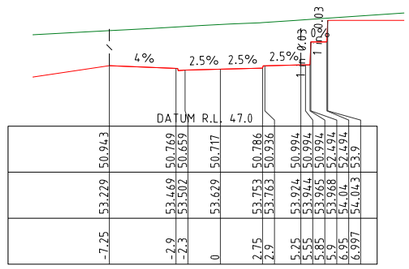

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3%
3%
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DATUM R.L. 40.0
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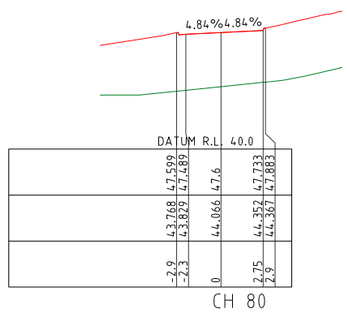
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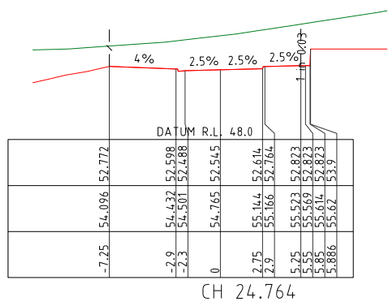
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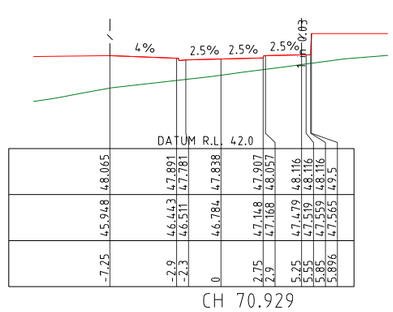
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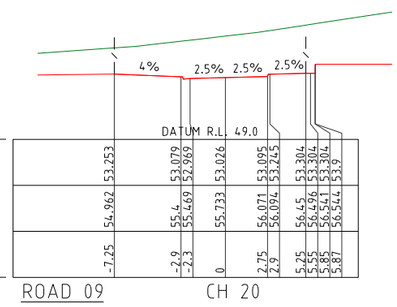
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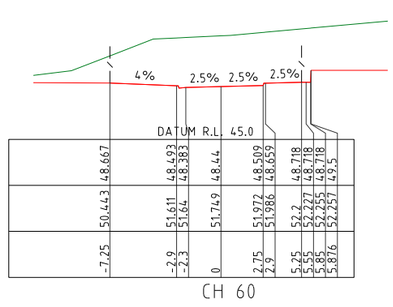
CH 24.764



CH 70.929



ROAD 09 CH 20



CH 60

NOTES:

1. REFER TO 080 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

DESIGN SURFACE LEVEL

EXISTING SURFACE LEVEL

OFFSET

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

CROSS SECTIONS
ROAD 09

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Project Coordination

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER	REV
41901-01-305	B

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LEGEND

- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE KERB
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- FUTURE CONTOURS
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- DESIGN CONTOURS
- PROPOSED CONCRETE

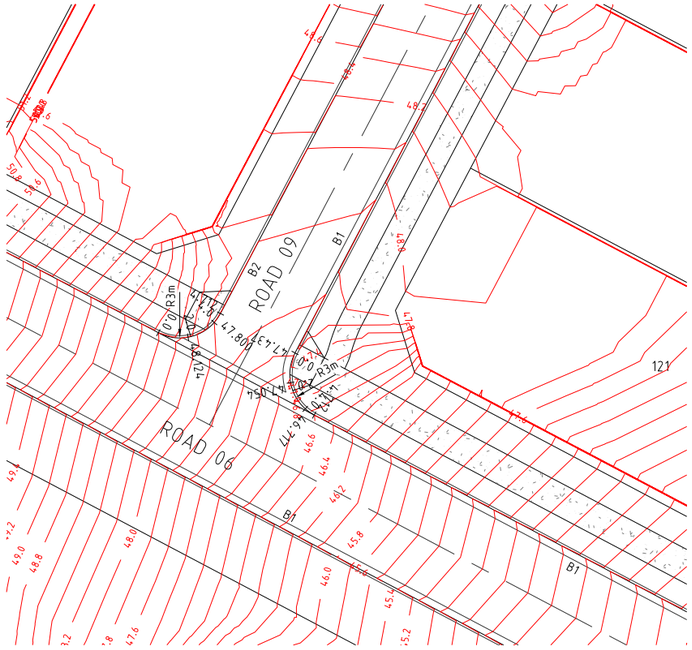
24.0 _ 41.065 INTERSECTION CHAINAGE & LEVEL

B1 BARRIER KERB & CHANNEL
B2 BARRIER KERB

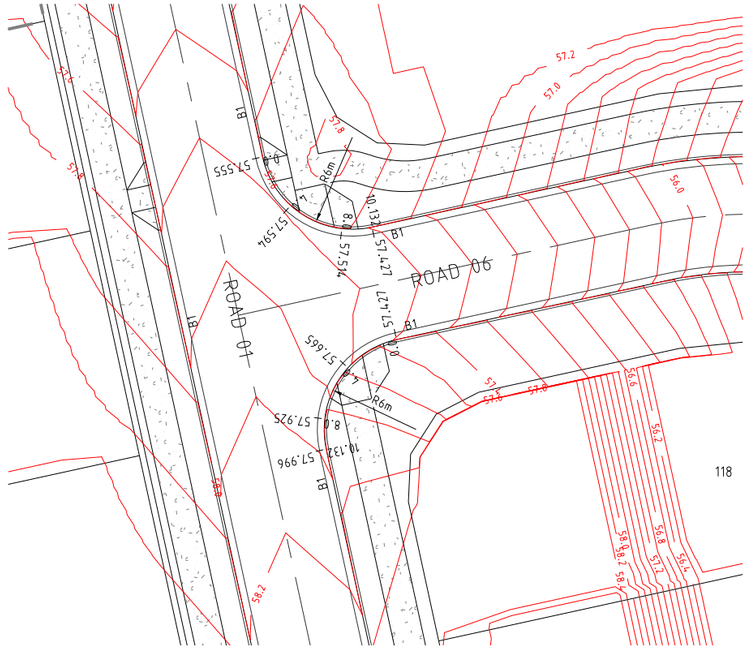
REFER TO DRG. 120 FOR KERB TYPES

NOTES:

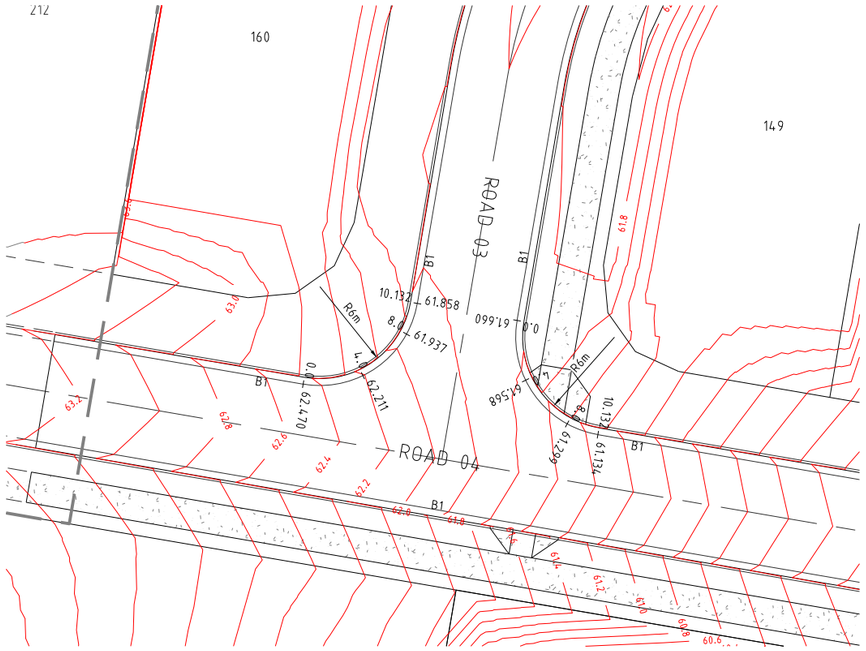
1. SETOUT POINT DENOTES LIP OF KERB WHERE LIP OF KERB, OR FACE OF KERB WHERE NO LIP.
2. FOR KERB TYPES REFER TO SCHEDULE OF KERB TYPES ON DWG. 120



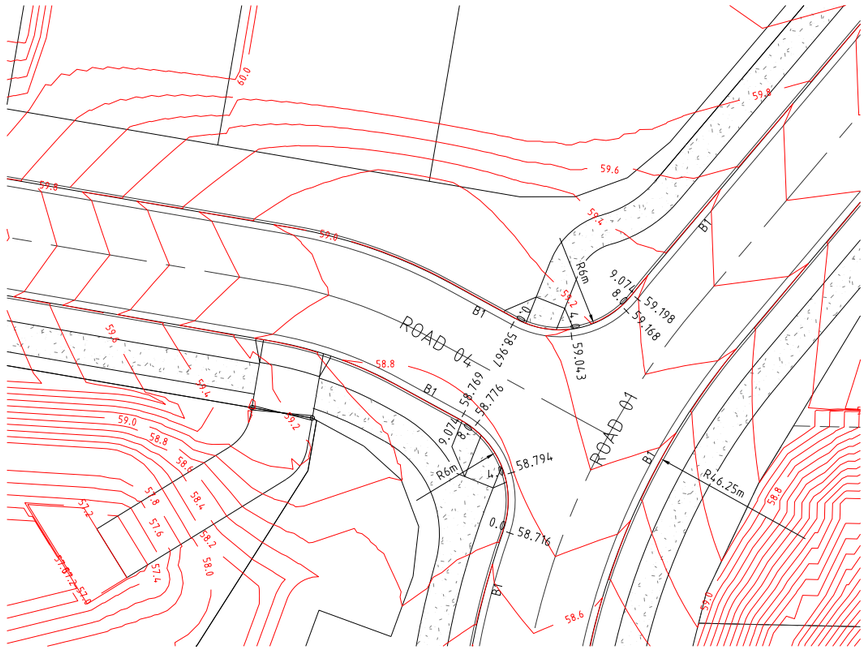
INTERSECTION
ROAD 06 & ROAD 09



INTERSECTION
ROAD 01 & ROAD 06



INTERSECTION
ROAD 03 & ROAD 04



INTERSECTION
ROAD 01 & ROAD 04

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

INTERSECTION
GRADING DETAILS

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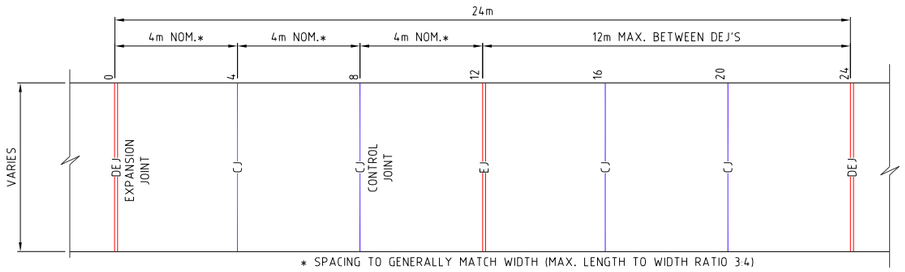
DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-400
REV B

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CONCRETE PAVEMENT DRIVEWAY:

1. CONCRETE MIX
   THE CONCRETE SHALL HAVE A MINIMUM 28 DAY CHARACTERISTIC COMPRESSIVE STRENGTH AS SPECIFIED IN THE SCHEDULE OF CONCRETE PAVEMENTS TABLE, MAXIMUM WATER/CEMENT RATIO OF 0.45 & A MINIMUM CEMENT CONTENT OF 300kg/m³.
2. SUBGRADE PREPARATION
   THE SUBGRADE TO THE CONCRETE PAVEMENT AREAS SHALL BE PREPARED THE SAME AS CONVENTIONAL ROADS. REFER TO SCHEDULE OF CONCRETE PAVEMENTS TABLE.
3. TRAFFIC
   TRAFFIC SHALL NOT BE ALLOWED ON THE FINISHED CONCRETE PAVEMENT FOR AT LEAST 14 DAYS AFTER COMPLETION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING MEASURES TO PREVENT UNAUTHORISED ACCESS.
4. JOINTS
   ALL JOINTS SHALL BE LOCATED GENERALLY PERPENDICULAR TO THE CENTRELINE. ALL CONTROL JOINTS TO BE COMPLETED AS SOON AS CONCRETE HAS CURED SUFFICIENTLY SO AS NOT TO DAMAGE THE SLAB SURFACE.
   ALL JOINTS ARE TO BE INSTALLED AS DETAILED ON IPWEAQ STD DWG RS-065.
5. GENERAL
   THE GRAVEL PAVEMENT SHALL BE NEATLY PROFILED & TRIMMED TO ENSURE CONSTANT CONCRETE DEPTHS & PROFILES. ACTUAL CONSTRUCTION REQUIREMENTS MAY VARY FROM THE DETAILS SHOWN & THEREFORE ALL CONSTRUCTION DETAILS SHOULD BE VERIFIED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION COMMENCING. PROVIDE ABLEFLEX BETWEEN KERB & DRIVEWAY.
6. COMPLIANCE ST&ARDS
   SLIP RESISTANCE OF SURFACE MATERIALS IN ACCORDANCE WITH AUSTRALIAN STANDARDS.
   AS/NZS 4586: 2013 SLIP RESISTANCE OF NEW PEDESTRIAN SURFACE MATERIALS.
   AS/NZS 4663: 2013 SLIP RESISTANCE MEASUREMENT OF EXISTING PEDESTRIAN SURFACES
   HB A:A 197: 1999 "AN INTRODUCTORY GUIDE TO THE SLIP RESISTANCE OF PEDESTRIAN SURFACE MATERIALS"



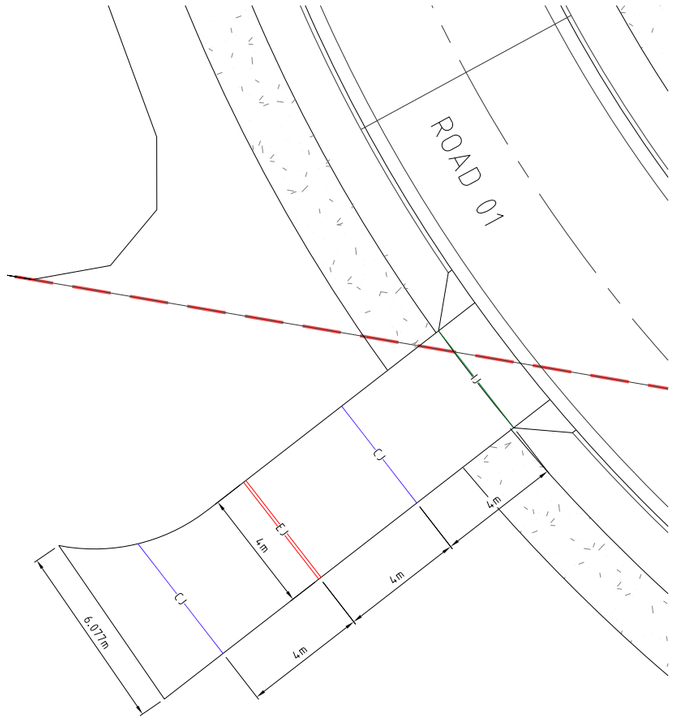
TYPICAL CONCRETE PAVEMENT DETAIL FOR DRIVEWAYS AND ROADS

SCALE 1:50 - A1 (1:100 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

SCHEDULE OF CONCRETE PAVEMENTS					
FUNCTION	SURFACING	SUBGRADE PREPARATION	THICKNESS 'T'	STRENGTH	REINCORCING
FOOTPATH 1.5 AND 2.0M WIDE	HEAVY BROOM FINISH	50mm SAND BLINDING LAYER	100mm	32 mPa	SL 72 MESH
DRIVEWAY STORMWATER BASIN	HEAVY BROOM FINISH	100mm (CBR 15)	175mm	32 mPa	SL 72 MESH

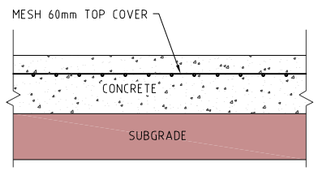
NOTE: FOOTPATH JOINTING TO BE IN ACCORDANCE WITH IPWEAQ DWG RS-065
SUPERINTENDENT TO CONFIRM SUBGRADE PREPARATION



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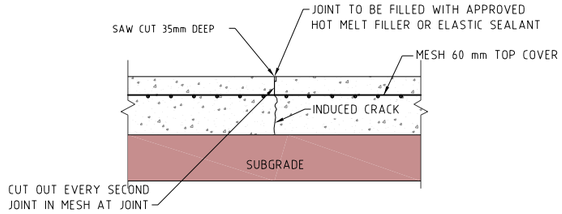
LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB
- FUTURE KERB
- FUTURE PROPERTY LINE
- PROPERTY LINE
- FACE OF KERB, FOOTPATHS
- LIP AND BACK OF KERB
- SITE BOUNDARY
- STAGE BOUNDARY
- EJ — EXPANSION JOINT
- DEJ — DOWELED EXPANSION JOINT
- IJ — ISOLATION JOINT
- -SJ- — SAW JOINT
- CJ — CONTROL JOINT
- KJ — KEY JOINT
- 2xN12 BARS AROUND PENETRATIONS TYP.



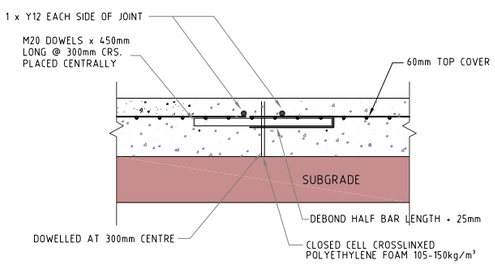
TYPICAL BROOM FINISHED CONCRETE PAVEMENT DETAIL

NOT TO SCALE



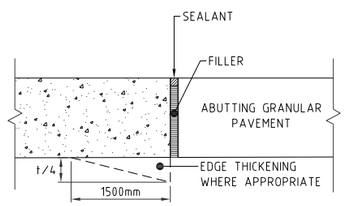
CONTROL JOINT (4m SPACING) (CJ)

NOT TO SCALE



DOWELLED EXPANSION JOINT DETAIL (24m SPACING) (EJ)

NOT TO SCALE



ISOLATION JOINT (IJ)

NOT TO SCALE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

CONCRETE JOINTING PLAN AND DETAILS

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DESIGNED RB	DRAWN EMH
APPROVED	RPEQ 4706
DRAWING NUMBER 41901-01-410	REV B

DATE 03-03-23

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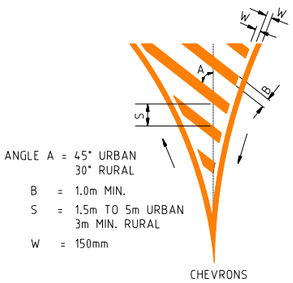
NOTES

1. LINEMARKING & SIGNAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". ALL SIGNAGE SHOWN IS DIAGRAMMATIC ONLY, & MUST BE INSTALLED AT THE HEIGHT, ORIENTATION & WITH APPROPRIATE POLE SUPPORT AS SPECIFIED IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL SIGN POSTS & SIGN RAILS TO BE GALVANISED UNLESS NOTED OTHERWISE.

PAVEMENT MARKING LEGEND

- EXISTING EDGE LINE - EL
- EXISTING EDGE LINE YELLOW - EL(Y)
- EXISTING CONTINUITY LINE - CL
- EXISTING TURN LINE - TL
- EXISTING BARRIER LINE - BL(B)
- EXISTING BARRIER LINE - BL
- EXISTING LANE LINE - LL
- EXISTING LANE LINE - LL(B)
- EXISTING GIVE WAY LINE - GWL
- EXISTING STOP LINE - SL
- EDGE LINE - EL
- EDGE LINE YELLOW - EL(Y)
- CONTINUITY LINE - CL
- TURN LINE - TL
- BARRIER LINE - BL(B)
- BARRIER LINE - BL
- LANE LINE - LL
- LANE LINE - LL(B)
- GIVE WAY LINE - GWL
- STOP LINE - SL

NOTE: REFER TO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ALL LINEMARKING AND SIGN STANDARDS



ANGLE A = 45° URBAN
30° RURAL
B = 1.0m MIN.
S = 1.5m TO 5m URBAN
3m MIN. RURAL
W = 150mm

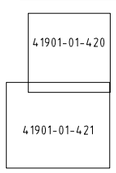
CHEVRONS

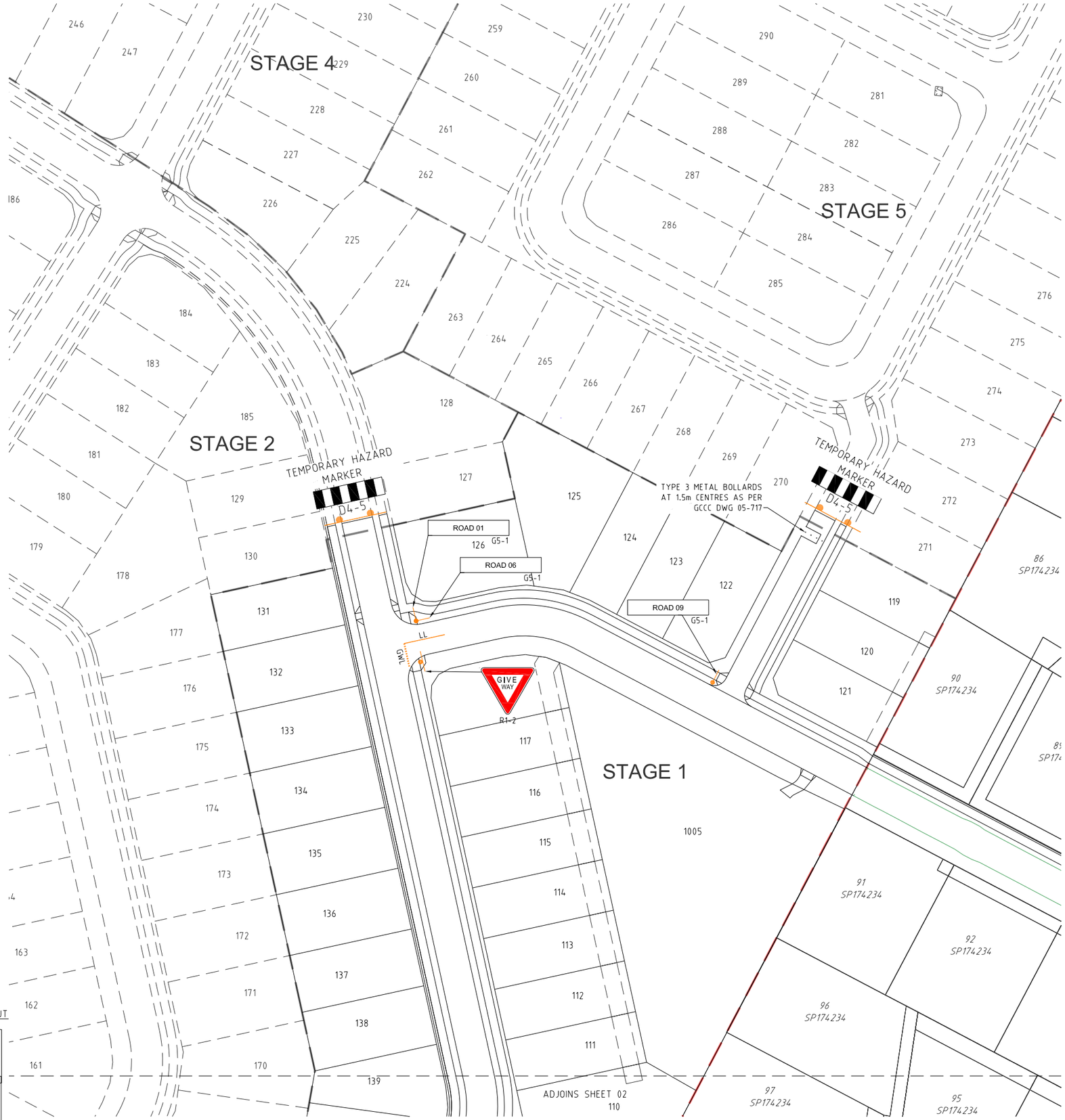
LEGEND

- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING FOOTPATH
- FUTURE KERB (INVERT)
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- SIGN POST
- SIGN POST
- SIGN POST

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SHEET LAYOUT





PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

LINEMARKING & SIGNAGE PLAN SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-420 REV B

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ADJOINS SHEET 01

STAGE 2

STAGE 3

TEMPORARY HAZARD MARKER D4-5

TEMPORARY HAZARD MARKER D4-5

ROAD 03

ROAD 04

ROAD 01

GIVE WAY R1-2

GIVE WAY R1-2

SLOW DOWN

TC1622-1 (B SIZE)

RANGEVIEW ROAD

215 1007 203 204 205 206 207 208 209 210 211 212 161 155 156 157 158 159 170 169 154 153 152 151 150 148 147 146 139 140 141 142 143 144 145 111 110 109 108 107 106 105 104 103 102 101 1004 1003 1002 1001 97 SP174234 98 SP174234 99 SP174234 100 SP174234 16 SP292346 14 SP292346 15 SP292346 17 SP292346 18 SP292346 19 SP292346 999 SP292346 9001 SP305728 24 SP305728 25 SP305728 26 SP305728 27 SP305728 28 SP305728 29 SP305728

PROJECT NAME

COURTNEY DR UPPER COOMERA

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0 5 10 15 20 25m
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BENNETT+BENNETT

DRAWING TITLE

LINEMARKING & SIGNAGE
PLAN
SHEET 02

MORTONS urbansolutions
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-421	B

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SEQ CODE SEWER NOTES

SEQ CODE NOTES COPIED DIRECTLY FROM DRAWING SEQ-SEW-1101-3.

VEGETATION PROTECTION

A. TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
B. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8 m BATTENS CLOSELY SPACED & ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION & REMAIN UNTIL COMPLETION.
C. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
D. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL

A. TOPSOIL & SUBSOIL SHALL BE STOCKPILED SEPARATELY.
B. CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
C. IF ACID SULPHATE SOILS EXIST IN THE WORKS AREA. THE CONTRACTOR MUST PREPARE A RISK ASSESSMENT BASED ON THE QUEENSLAND ACID SULPHATE SOIL TECHNICAL MANUAL & MANAGE THE ACID SULPHATE SOILS AS PER THE MANUAL.

CREEK CROSSINGS

A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHALL BE STOCKPILED WITHIN 5 m OF THE CREEK.

REHABILITATION

A. PREDISTURBANCE SOIL PROFILES & COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

SAFETY

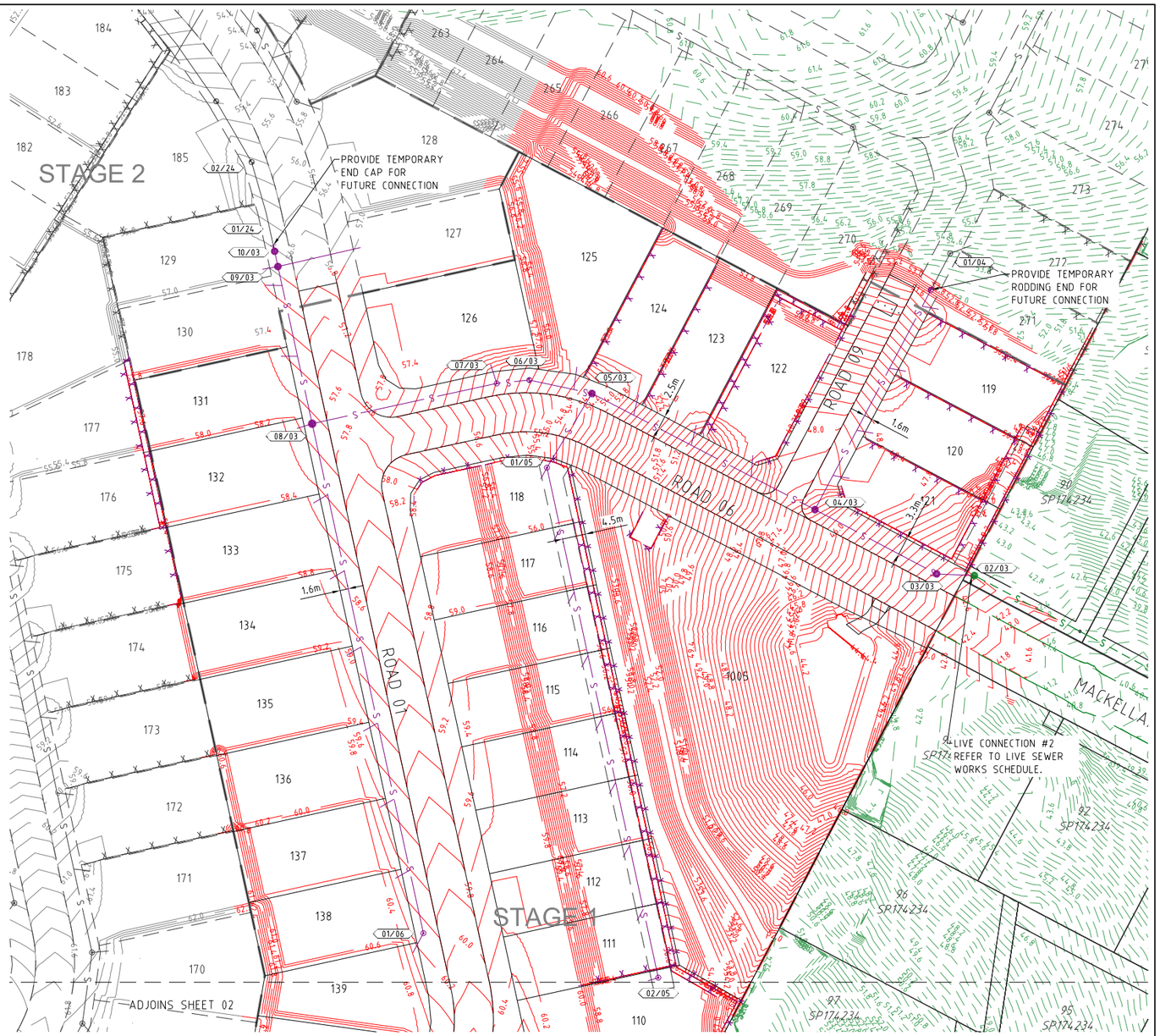
A. THE DESIGN & CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

GENERAL

1. ALL WORK & MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE SPECIFICATIONS & STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS & WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE SEQ SERVICE PROVIDER SEWERAGE SYSTEM.
4. ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY DEVELOPER'S APPROVED CONTRACTOR UNDER THE SUPERVISION OF SEQ'S AGENT AT THE DEVELOPER'S COST.
5. ALL PIPES & MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS & MATERIALS" LIST.
6. EACH ALLOTMENT SHALL BE SERVED BY A DN100 PVC PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL, A DN150 PVC PROPERTY CONNECTION SHALL BE PROVIDED.
7. PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
8. PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300 mm & A MAXIMUM OF 750 mm. UNITYWATER REQUIRES MINIMUM EXTENSION OF 500 mm INTO PROPERTY.
9. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300 mm (LOOSE) IN DEPTH & SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE SEQ SERVICE PROVIDER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
10. WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER,BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SEQ SEWER CODE.
11. THE CONTRACTOR SHALL VERIFY THE LOCATION & DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
12. SEWERS SHALL BE DISUSED /ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ SEWER CODE.
13. BENCH MARK & LEVELS TO AHD.
14. ~~THE EXISTING DWELLING ON LOT 3, REFER SEQ-SEW-1100, SERVED BY A SEPTIC SYSTEM, SHALL BE CONNECTED TO THE NEW SEWER BY A LICENCED PLUMBER IN ACCORDANCE WITH THE RELEVANT STATUTORY & COUNCIL REQUIREMENTS. THE SEPTIC SYSTEM, INCLUDING TRENCHES,SHALL BE REMOVED AT THE DEVELOPER'S COST. ALL FIXTURES SHALL BE UPGRADED IF REQUIRED BY PLUMBING CODE.~~ STANDARD NOTE NOT APPLICABLE & THEREFORE DELETED.
15. EXISTING ALLOTMENTS REQUIRING A PROPERTY CONNECTION FROM EXISTING SEWERS SHALL BE PROVIDED BY THE SEQ SERVICE PROVIDER AT THE DEVELOPERS COST.

PROJECT SPECIFIC SEWER NOTES

a. ALL SEWER MAINS TO BE AS PER SEWER PIPE SPECIFICATIONS TABLE.
b. NOTWITHSTANDING THE STANDARD SEQ NOTES ABOVE, ALL MATERIALS & WORKS MUST BE IN ACCORDANCE WITH THE SERVICE PROVIDER'S APPROVAL CONDITIONS & THE SEQ WS&S D&C CODE.
c. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR SEWER RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT.
d. THE CONTRACTOR TO PROVIDE CALCAREOUS CONCRETE WHERE SPECIFIED IN THE SEQ CODE BY THE RELEVANT AUTHORITY.
e. WATER & ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDENT'S INSTRUCTION
f. ALL BENDS TO BE LONG RADIUS BEND TO MEET MANUFACTURER'S MINIMUM RADIUS REQUIREMENTS U.N.O.
g. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF WORKS ON-SITE.
h. PROPERTY CONNECTIONS HAVE BEEN DESIGNED TO CONTROL THE REQUIRED SERVICE AREA OF EACH LOT AT A GRADE OF 1:60 & A MAXIMUM DEPTH OF PROPERTY CONNECTION AT 1.5m. UNLESS OTHERWISE STATED.
i. CONTRACTOR TO PAY ALL FEES & CHARGES ASSOCIATED WITH CONNECTIONS.

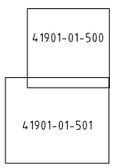


ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

SEWER PIPE SPECIFICATIONS

SEWER MAIN LOCATION	PIPE MATERIAL SPECIFICATION
GRAVITY VERGE	PVC-U SN8
GRAVITY ROAD CROSSING	PVC-U SN8
HOUSE CONNECTIONS	PVC-U SN6

SHEET LAYOUT



LEGEND

- EXISTING SEWER
- EXISTING RISING MAIN
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING RETAINING WALL
- EXISTING CONTOURS
- FUTURE SEWER
- FUTURE RISING MAIN
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE RETAINING WALL
- FUTURE CONTOURS
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- DESIGN CONTOURS
- PROPOSED SEWER
- PROPOSED RISING MAIN
- SEWER MANHOLE
- SEWER RODDING END
- SEWER BEND
- SEWER MAINTENANCE SHAFT
- SEWER END CAP
- SEWER PUMP STATION

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SERVICE PROVIDER AND CONSTRUCTOR LIVE SEWER WORKS SCHEDULE

No.	Description	Dia. Sewer	MH No.	MH/MS Type	Cover Type	Lot no	F.S.L	E.S.L	I.L	Depth to invert
1(A)	CONTRACTOR TO BREAK INTO EXISTING MAINTENANCE HOLE 01/01 AND CONSTRUCT SEWER MAIN AND PLUG PRIOR TO START OF CONSTRUCTION.	150	EXISTING 1/01	MH	B	LOT 19 ON SP292346	48.535	48.535	47.690	0.845
1(B)	CONTRACTOR TO LAY NEW LINES 1 AND 2 AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY GOLD COAST WATER AND WASTE.	150	1/01	MH			48.535	48.535	47.690	0.845
1(C)	GOLD COAST WATER AND WASTE TO CONFIRM THE REMOVAL OF PLUG LINE 1 AND MAKE LIVE CONNECTIONS AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.									
2(A)	CONTRACTOR TO BREAK INTO EXISTING MAINTENANCE HOLE 02/03 AND CONSTRUCT SEWER MAIN AND PLUG PRIOR TO START OF CONSTRUCTION.	150	EXISTING 02/03	MH	B	LOT 19 ON SP292346	42.710	42.710	40.760	1.950
2(B)	CONSTRUCTOR TO LAY NEW LINE 3 AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY GOLD COAST WATER AND WASTE.									
2(C)	GOLD COAST WATER AND WASTE TO CONFIRM THE REMOVAL OF PLUG LINE 3 AND MAKE LIVE CONNECTIONS AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.									

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

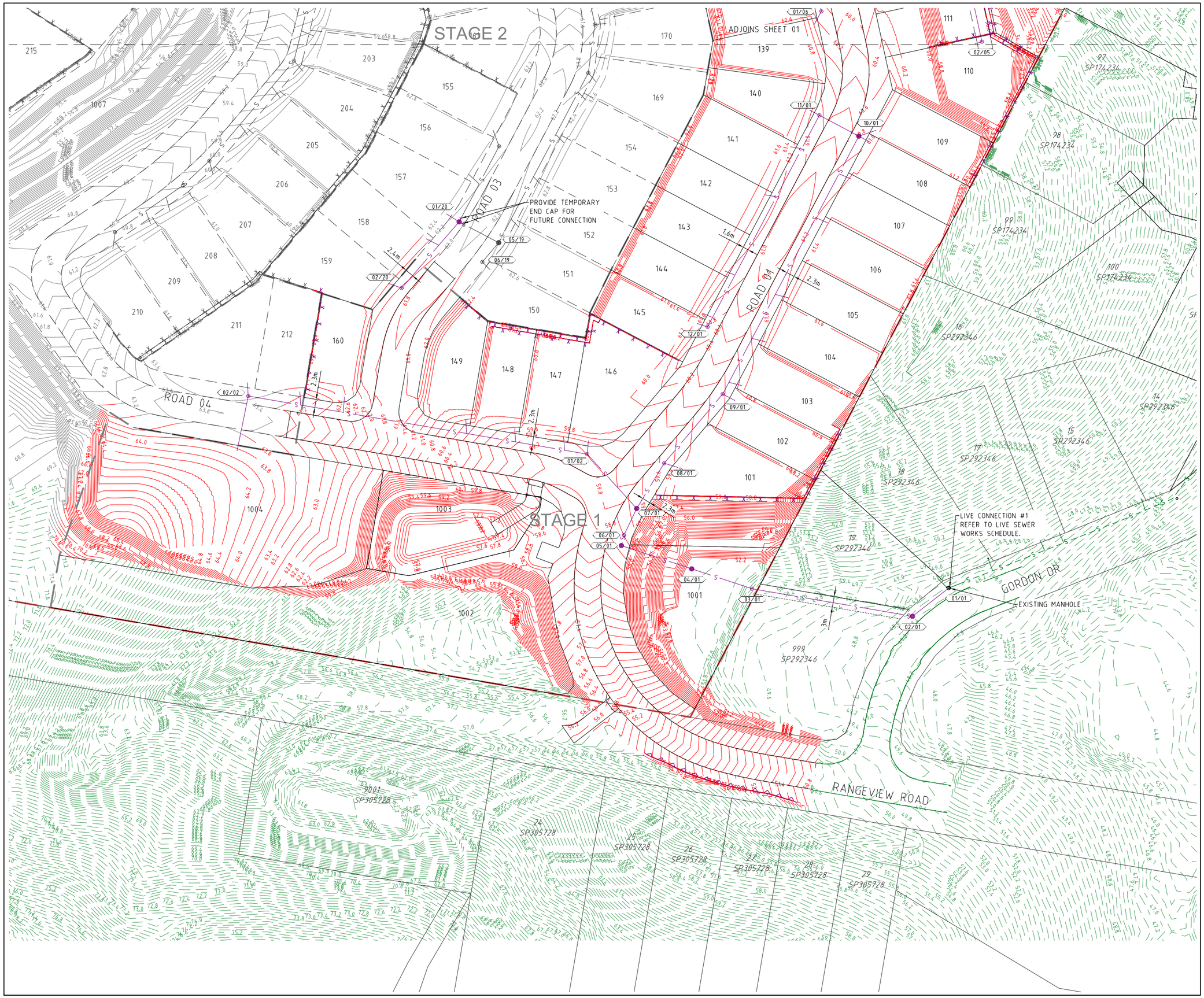
SEWER RETICULATION PLAN SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-500 REV B

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

SEWER RETICULATION PLAN SHEET 02

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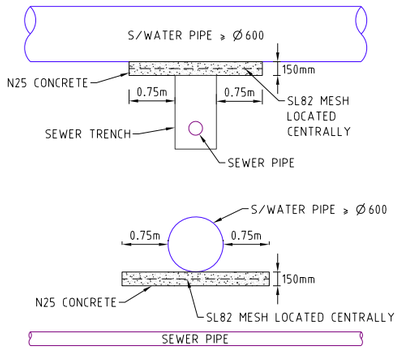
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Suite 9, 19 Short St
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ4706	DATE	03-03-23

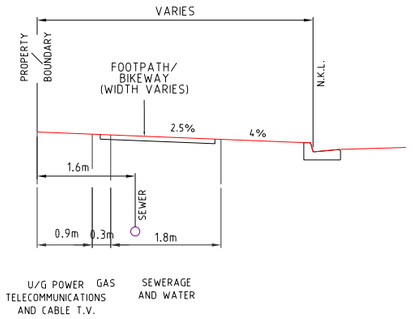
DRAWING NUMBER	REV
41901-01-501	B

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BRIDGING DETAILS FOR STORMWATER PIPES ≥ Ø600

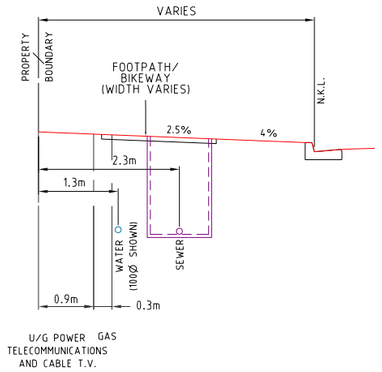
NOT TO SCALE



G.C.C.C. TYPICAL SERVICES SEWER RETICULATION ONLY

SCALE 1:50 - A1 (1:100 - A3)

1. PUBLIC UTILITIES ALLOCATIONS ARE MEASURED FROM THE REAL PROPERTY BOUNDARY.
2. LIGHT POLE, TREE ALLOCATIONS AND FOOTPATHS ARE MEASURED FROM THE NOMINAL KERB LINE.



G.C.C.C. TYPICAL POTABLE WATER AND SEWER RETICULATION (SAME SIDE)

SCALE 1:50

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

SEWER RETICULATION DETAILS

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER: 41901-01-510
REV: A

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SEWER STRUCTURE LIDS

D	TRAFFICABLE LID
B	NON-TRAFFICABLE LID
M	'M' PREFIX DESIGNATES BOLT DOWN LID

RIGS STRUCTURE TYPES

P(x)	PRECAST CONCRETE SEWER MAINTENANCE STRUCTURE REFER TO SEQ STD DWG SEQ-SEW-1300-1
A	TYPE 'A' 1050mm DIA. MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1307-1
B	TYPE 'B' 1200mm DIA. MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1307-1
C	TYPE 'C' 1500mm DIA. MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1307-1
J1	TYPE 'J1' MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1314-2
BND	BEND REFER TO SEQ STD DWGS SEQ-SEW-1314-3
RE	RODDING END MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1314-1
END	PROPRIETORY END CAP
PS	SEWER PUMP STATION REFER TO RELEVANT SEQ STD DWGS
RCM	RECEIVING MAINTENANCE STRUCTURE REFER TO RELEVANT SEQ STD SEWER PUMP STATION DWGS
G6	TYPE 'G6' TERMINAL MAINTENANCE SHAFT REFER TO SEQ STD DWGS SEQ-SEW-1314-1

RIGS STRUCTURE DROPS

V	STRAIGHT THROUGH SEWER REFER TO SEQ STD DWG SEQ-SEW-1303-1
W	OBLIQUE BACKDROP REFER TO SEQ STD DWG SEQ-SEW-1303-1
X	INTERNAL BACKDROP REFER TO SEQ STD DWG SEQ-SEW-1303-1
Y	EXTERNAL BACKDROP REFER TO SEQ STD DWG SEQ-SEW-1303-1

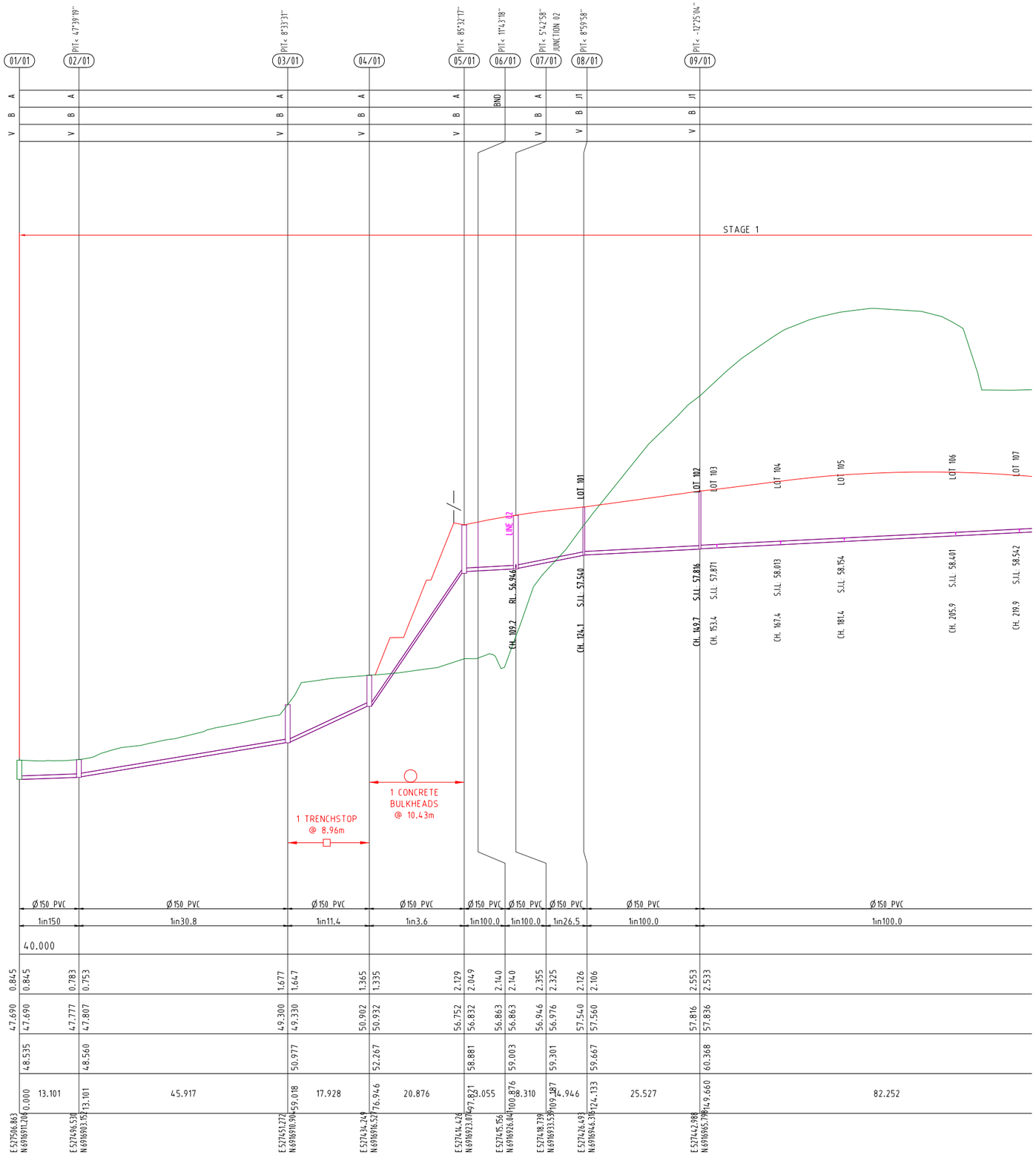
STRUCTURE TYPE
LID CLASS
DROP TYPE

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH REFER TYPICAL SECTIONS & DETAILS FOR BRIDGING STRUCTURE DETAILS

| TRENCHSTOPS, BULKHEADS & CONCRETE ENCASEMENTS TO BE INSTALLED IN ACCORDANCE WITH SEQ SEWER CODE

NOTES

1. IF SHOWN, WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDENTS INSTRUCTION
2. ALL GRAVITY uPVC SEWER PIPE TO BE CLASS SN8 U.N.O.
3. ALL PRESSURE MAIN uPVC SEWER PIPE TO BE CLASS SN16 U.N.O.
4. ALL EMBEDMENT TYPE IS TO BE TYPE 3 U.N.O
5. ALL BENDS TO BE LONG RADIUS BEND, 3m RADIUS
6. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF PIPEWORK
7. PROTECTIV COATING IS TO BE INSTALLED TO MAINTENANCE STRUCTURES (WHERE REQUIRED) IN ACCORDANCE WITH CLAUSE 4.7.2 OF SEQ SEWERAGE CODE.



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-530 | REV B

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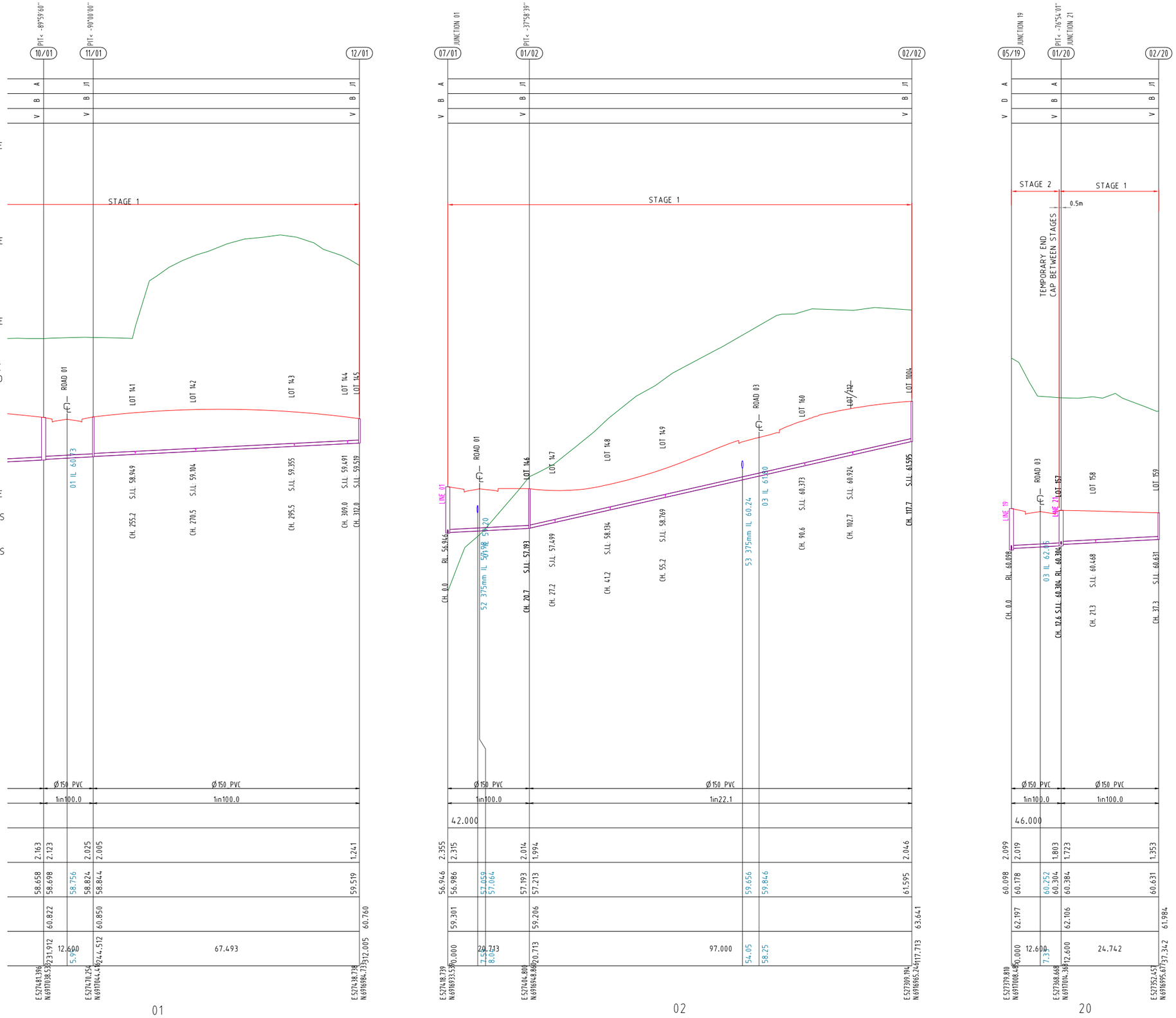
STRUCTURE TYPE
LID CLASS
DROP TYPE

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH REFER TYPICAL SECTIONS & DETAILS FOR BRIDGING STRUCTURE DETAILS

| TRENCHSTOPS, BULKHEADS & CONCRETE ENCASEMENTS TO BE INSTALLED IN ACCORDANCE WITH SEQ SEWER CODE

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2. ALL GRAVITY uPVC SEWER PIPE TO BE CLASS SN8 U.N.O.
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4. ALL EMBEDMENT TYPE IS TO BE TYPE 3 U.N.O
5. ALL BENDS TO BE LONG RADIUS BEND, 3m RADIUS
6. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF PIPEWORK
7. PROTECTIV COATING IS TO BE INSTALLED TO MAINTENANCE STRUCTURES (WHERE REQUIRED) IN ACCORDANCE WITH CLAUSE 4.7.2 OF SEQ SEWERAGE CODE.



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
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BENNETT+BENNETT

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 02

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER: 41901-01-531
REV: B

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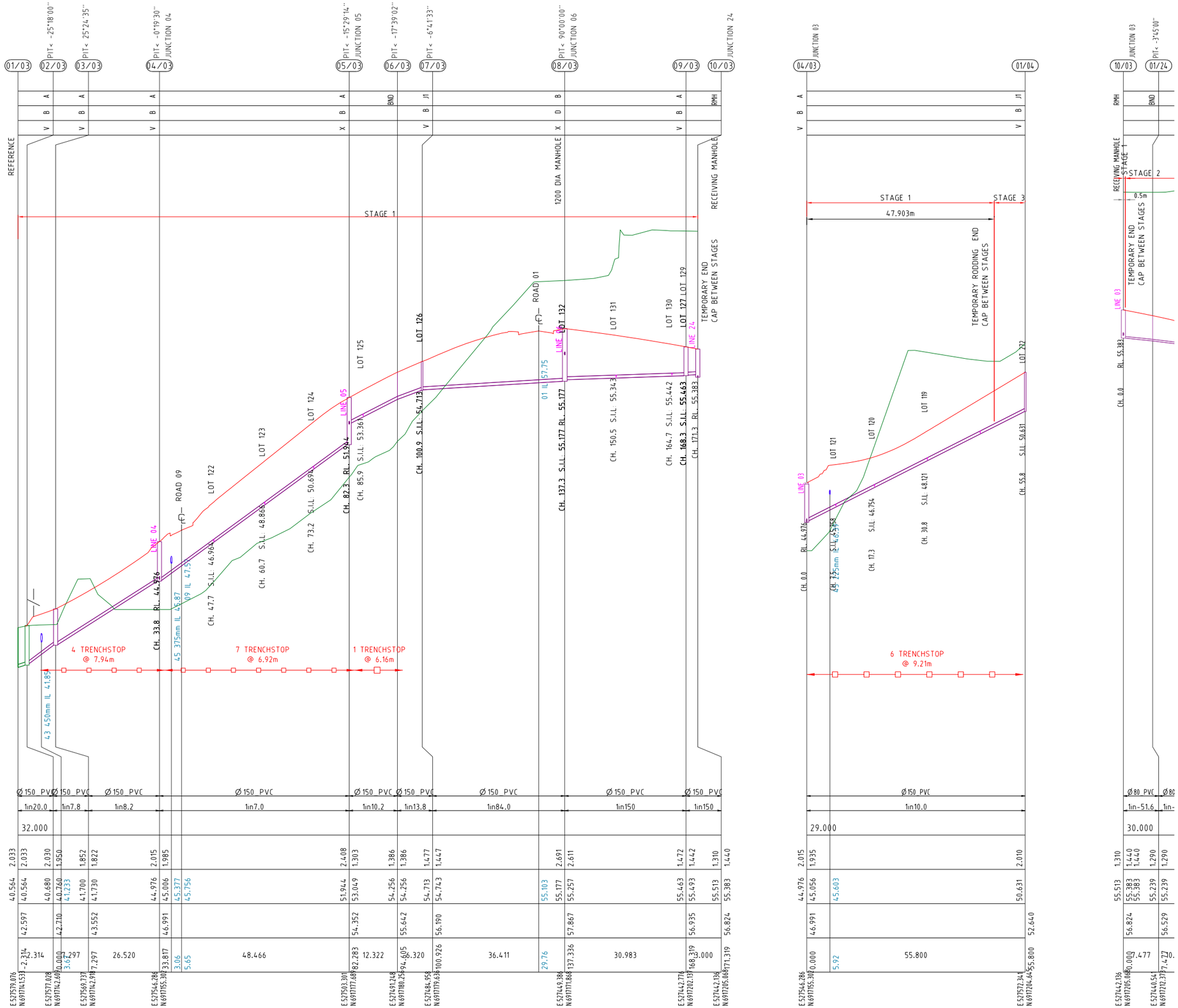
STRUCTURE TYPE
LID CLASS
DROP TYPE

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH REFER TYPICAL SECTIONS & DETAILS FOR BRIDGING STRUCTURE DETAILS

| TRENCHSTOPS, BULKHEADS & CONCRETE ENCASEMENTS TO BE INSTALLED IN ACCORDANCE WITH SEQ SEWER CODE

NOTES

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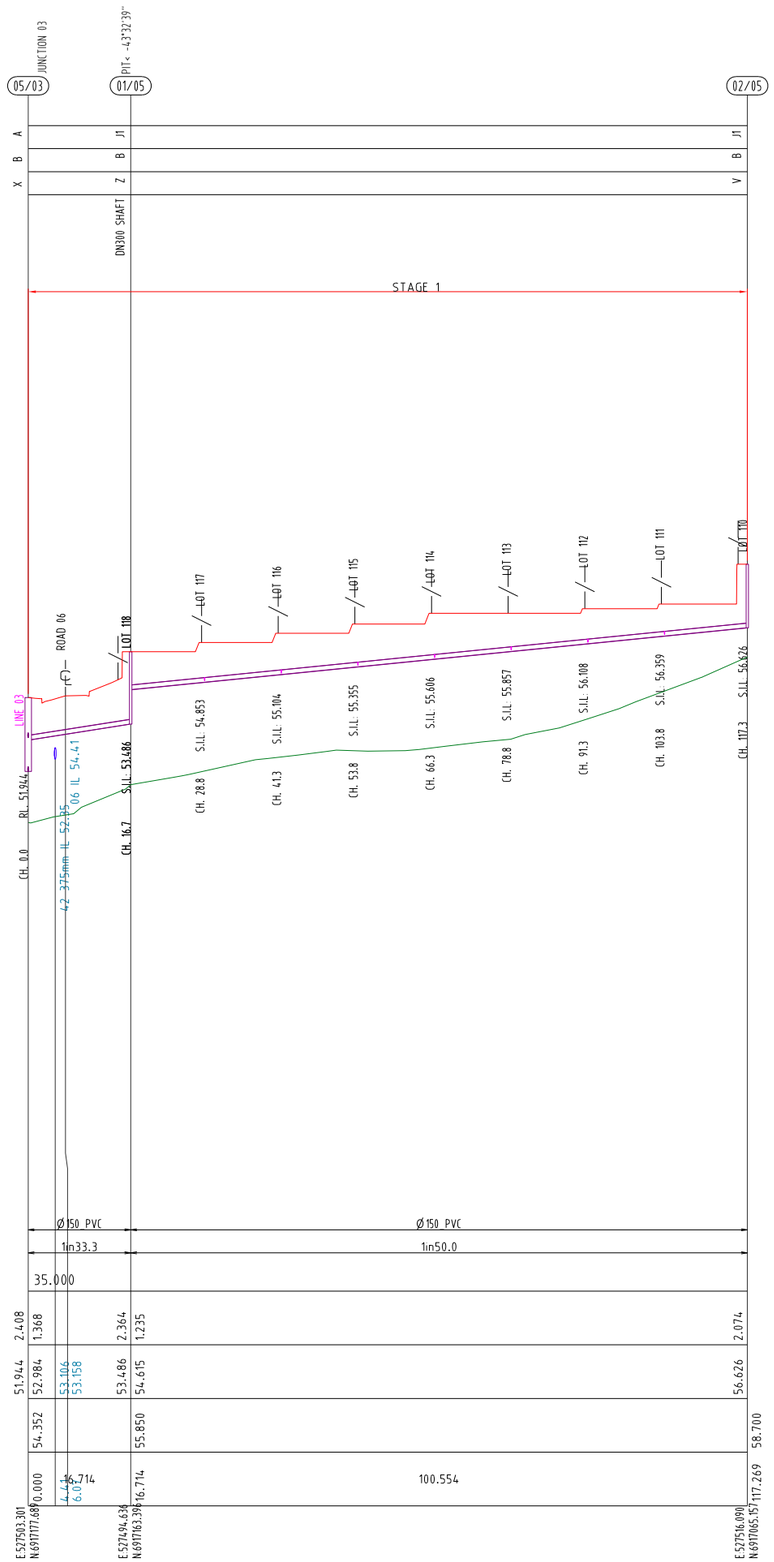
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DROP TYPE

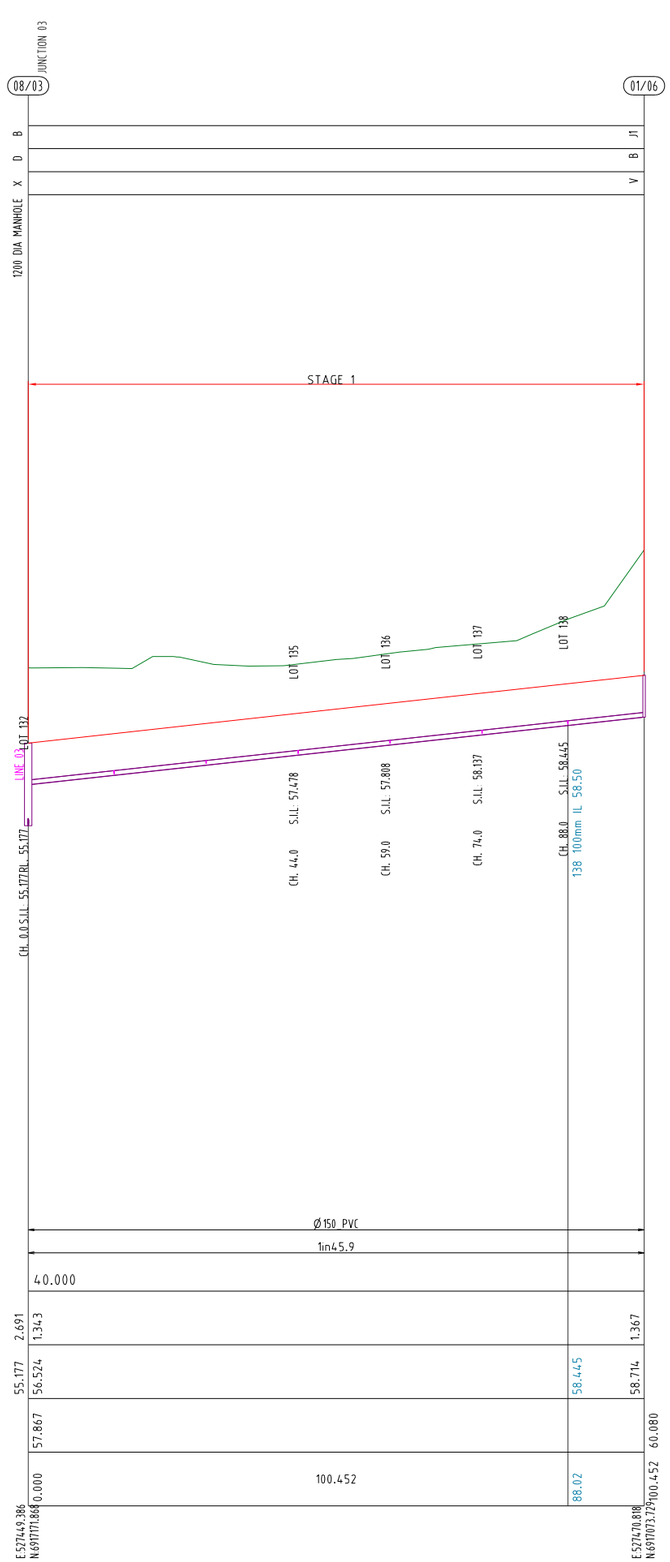
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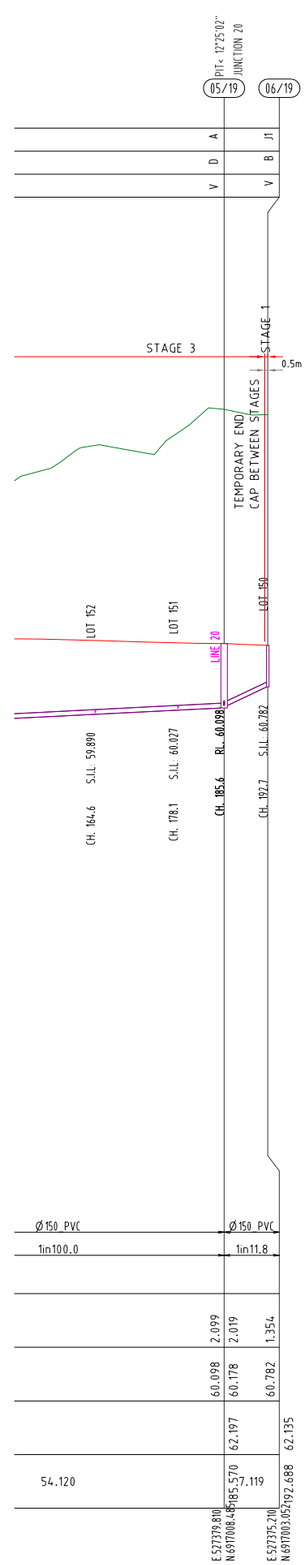
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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
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DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 04

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ	4706
		DATE	03-03-23

DRAWING NUMBER 41901-01-533
REV B

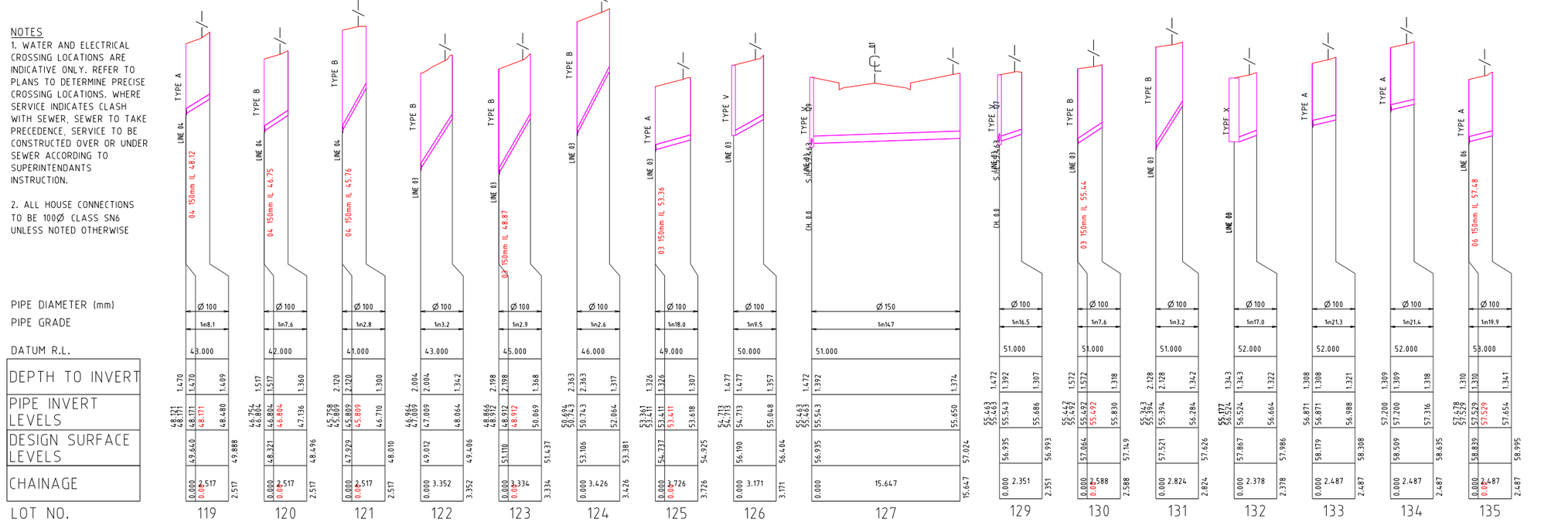
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RIGS STRUCTURE DROPS	
A	SEWER PROPERTY CONNECTION (STANDARD & EXTENDED) REFER TO SEQ STD DWGS SEQ-SEW-1104-1
B	SEWER PROPERTY CONNECTION (SLOPED CONNECTION) REFER TO SEQ STD DWGS SEQ-SEW-1104-1
D	SEWER PROPERTY CONNECTION (VERTICAL RISER) REFER TO SEQ STD DWG SEQ-SEW-1105-1
V	SEWER PROPERTY CONNECTION (STRAIGHT THROUGH SEWER) REFER TO SEQ STD DWG SEQ-SEW-1303-1
X	SEWER PROPERTY CONNECTION (INTERNAL BACKDROP) REFER TO SEQ STD DWG SEQ-SEW-1303-1
Z	RISER CONNECTION TO PORTION OF MAINTENANCE SHAFT



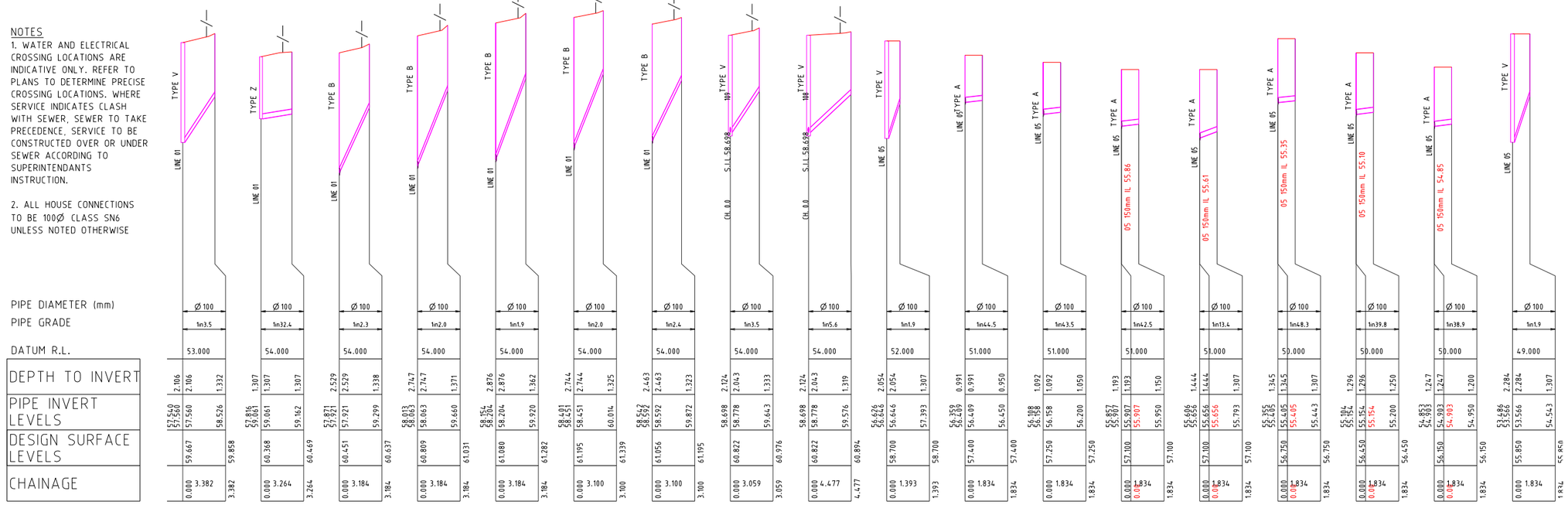
NOTES
1. WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDANTS INSTRUCTION.

2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN6 UNLESS NOTED OTHERWISE



NOTES
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2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN6 UNLESS NOTED OTHERWISE



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 01

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Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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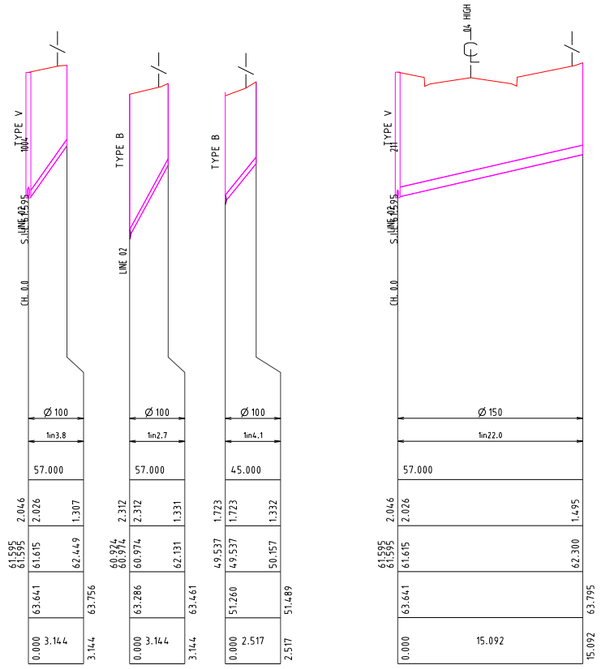
DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-550
REV B

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NOTES
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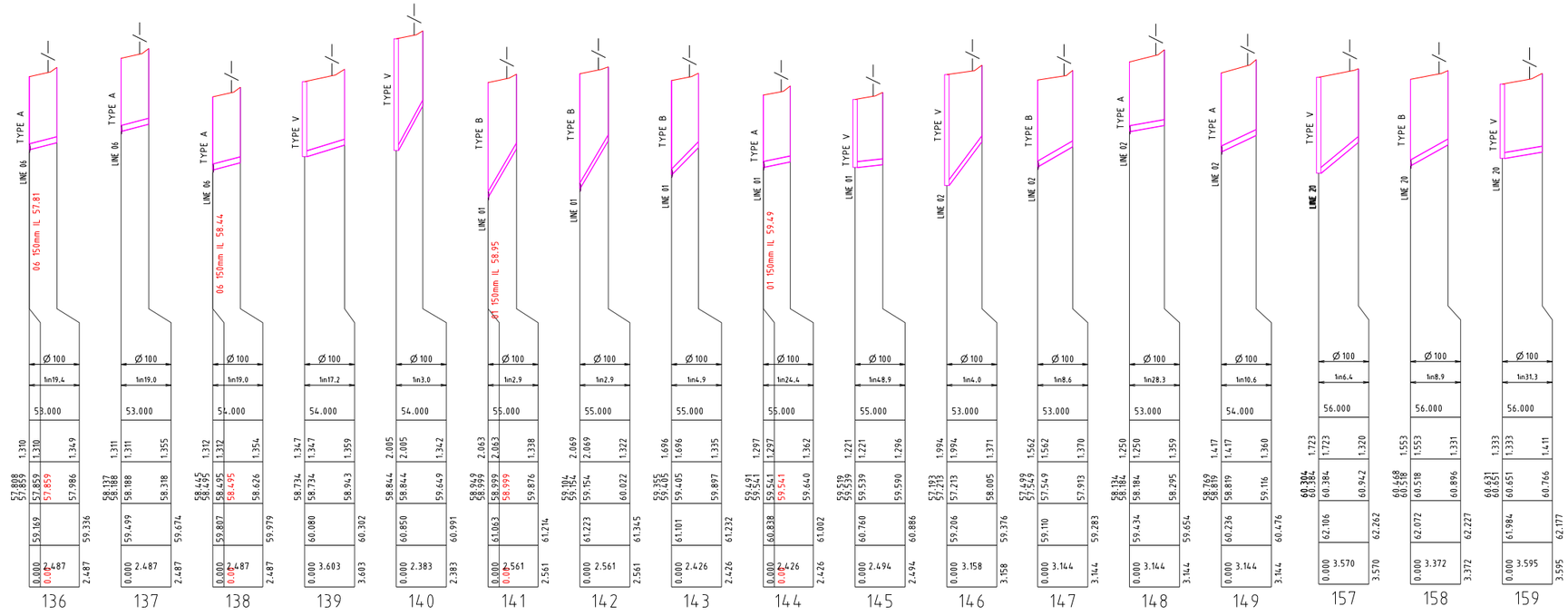
2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN6 UNLESS NOTED OTHERWISE



PIPE DIAMETER (mm)	Ø 100	Ø 100	Ø 100	Ø 150
PIPE GRADE	1in3.8	1in2.7	1in4.1	1in22.0
DATUM R.L.	57.000	57.000	45.000	57.000
DEPTH TO INVERT	2.046 / 2.026 / 1.307	2.312 / 2.312 / 1.331	1.723 / 1.723 / 1.332	2.046 / 2.026 / 1.495
PIPE INVERT LEVELS	61.595 / 61.615 / 62.449	60.974 / 60.974 / 62.131	49.537 / 49.537 / 50.157	61.595 / 61.615 / 62.300
DESIGN SURFACE LEVELS	63.641 / 63.756	63.286 / 63.461	51.260 / 51.489	63.641 / 63.795
CHAINAGE	0.000 3.144 3.144	0.000 3.144 3.144	0.000 2.517 2.517	0.000 15.092 15.092
LOT NO.	211	212	271	1004

NOTES
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2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN6 UNLESS NOTED OTHERWISE



PIPE DIAMETER (mm)	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100	Ø 100
PIPE GRADE	1in19.4	1in19.0	1in19.0	1in17.2	1in3.0	1in2.9	1in2.9	1in4.9	1in24.4	1in48.9	1in4.0	1in8.6	1in28.3	1in10.6	1in6.4	1in8.9	1in31.3	
DATUM R.L.	53.000	53.000	54.000	54.000	54.000	55.000	55.000	55.000	55.000	55.000	53.000	53.000	53.000	54.000	56.000	56.000	56.000	
DEPTH TO INVERT	1.310 / 1.310 / 1.349	1.311 / 1.311 / 1.355	1.312 / 1.312 / 1.354	1.347 / 1.347 / 1.359	2.005 / 2.005 / 1.342	2.063 / 2.063 / 1.338	2.069 / 2.069 / 1.322	1.696 / 1.696 / 1.335	1.297 / 1.297 / 1.362	1.221 / 1.221 / 1.296	1.994 / 1.994 / 1.371	1.562 / 1.562 / 1.370	1.250 / 1.250 / 1.359	1.417 / 1.417 / 1.360	1.723 / 1.723 / 1.320	1.553 / 1.553 / 1.331	1.333 / 1.333 / 1.411	
PIPE INVERT LEVELS	57.808 / 57.859 / 57.986	58.137 / 58.188 / 58.318	58.445 / 58.495 / 58.626	58.734 / 58.734 / 58.943	58.844 / 58.844 / 59.649	58.969 / 58.999 / 59.876	59.154 / 59.154 / 60.022	59.355 / 59.405 / 59.897	59.541 / 59.541 / 59.640	59.539 / 59.539 / 59.590	57.213 / 57.213 / 58.005	57.549 / 57.549 / 57.913	58.184 / 58.184 / 58.295	58.819 / 58.819 / 59.116	60.384 / 60.384 / 60.942	60.518 / 60.518 / 60.896	60.651 / 60.651 / 60.766	
DESIGN SURFACE LEVELS	59.169 / 59.336	59.499 / 59.674	59.807 / 59.979	60.080 / 60.302	60.850 / 60.991	61.063 / 61.214	61.223 / 61.345	61.101 / 61.232	60.838 / 61.002	60.760 / 60.886	59.206 / 59.376	59.110 / 59.283	59.434 / 59.654	60.236 / 60.476	62.106 / 62.262	62.072 / 62.227	61.984 / 62.177	
CHAINAGE	0.000 2.487 2.487	0.000 2.487 2.487	0.000 2.487 2.487	0.000 3.603 3.603	0.000 2.383 2.383	0.000 2.561 2.561	0.000 2.561 2.561	0.000 2.426 2.426	0.000 2.426 2.426	0.000 2.494 2.494	0.000 3.158 3.158	0.000 3.144 3.144	0.000 3.144 3.144	0.000 3.144 3.144	0.000 3.570 3.570	0.000 3.372 3.372	0.000 3.595 3.595	
LOT NO.	136	137	138	139	140	141	142	143	144	145	146	147	148	149	157	158	159	

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 02

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Civil Engineering
Project Coordination
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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-551 REV B

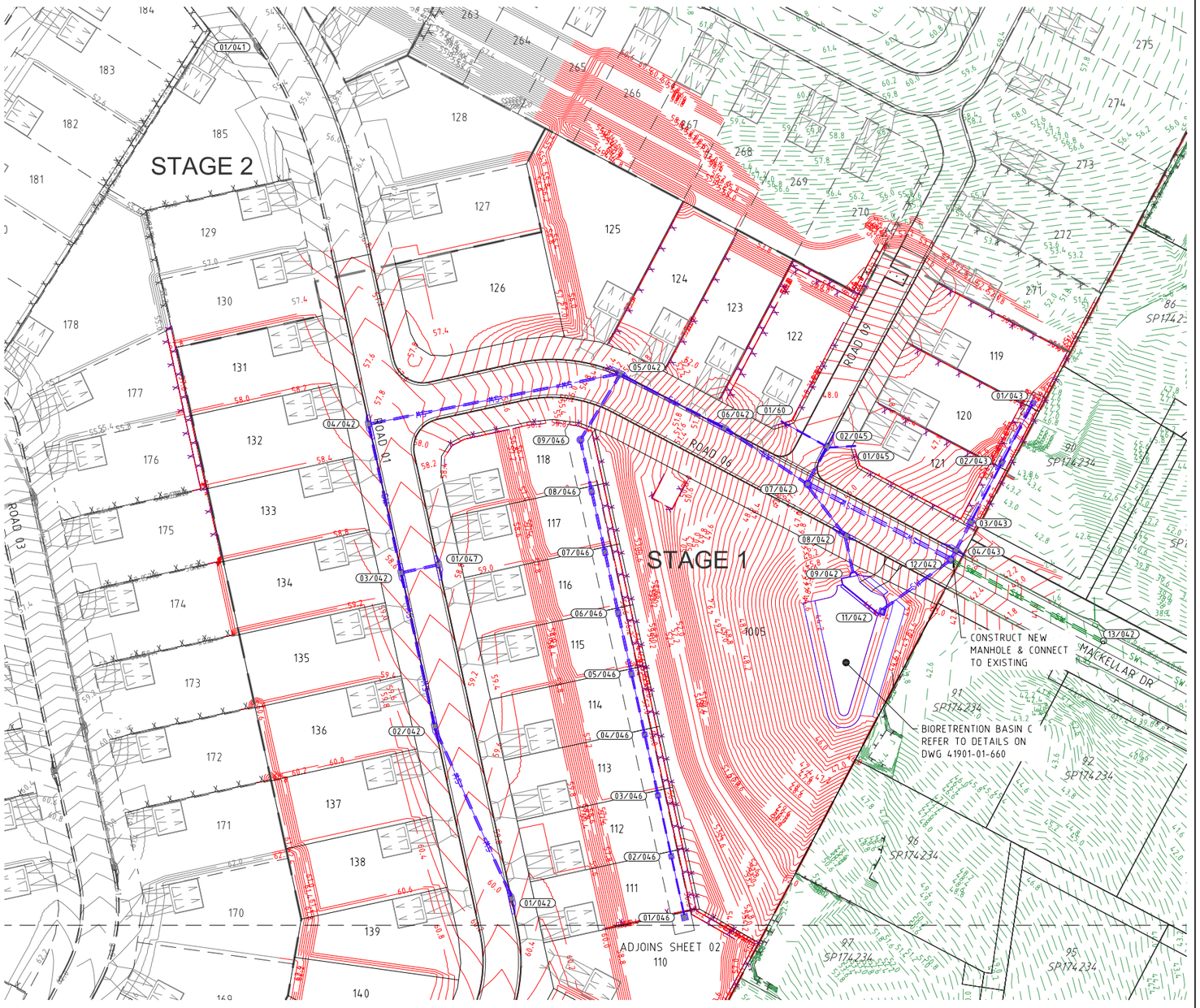
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STORMWATER

1. ALL FIELD GULLIES SHALL CONTAIN A 150mm DIA STUB 600mm BELOW GRADE LEVEL FOR FUTURE ROOFWATER DRAINAGE.
2. MANHOLES TO BE IN ACCORDANCE WITH IPWEAQ STANDARD DRAWING No DS-010, DS-015, DS-018, DS-019, DS-020, DS-021 OR STRUCTURAL DRAWINGS (STRUCTURAL DRAWINGS TAKE PRECEDENCE).
3. OUTLET HEADWALLS TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARD DRAWINGS.
4. ALL HEADWALLS WITH A FALL GREATER THAN 900mm HIGH REQUIRE INSTALLATION OF PEDESTRIAN SAFETY FENCES.
5. PIPE JOINT TYPES TO BE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS.
6. ALL ALLOTMENTS TO BE GRADED SUCH THAT FUTURE ROOFWATER DRAINAGE DISCHARGES TO KERB OR TO PIPED DRAINAGE SYSTEM.
7. ALL PIPE 300mm DIA & GREATER SHALL BE CONSTRUCTED USING SRC OR FRC PIPES. CONTRACTOR MAY ELECT TO USE PVC PIPES WITHIN ALLOTMENTS FOR PIPES SMALLER THAN 300mm DIA.
8. FOR SETOUT DETAILS REFER TO 640 SERIES DRAWINGS (PROFILES & PIT DETAILS).
9. GULLY PITS TO BE IN ACCORDANCE WITH IPWEAQ STANDARD DRAWING No DS-060, DS-061, DS-062, DS-063. WHERE PITS ARE CONSTRUCTED AS DRAINWAY PITS, TO BE IN ACCORDANCE WITH IPWEAQ STANDARD DRAWINGS No 05-068.
10. LOTS WHICH CAN DRAIN OVERLAND FLOW TO THE STREET SWALE / DRAINAGE WITHOUT FLOWING THROUGH ADJOINING PROPERTIES NEED TO PROVIDE FOR Q100 OVERLAND FLOW TO THE ROAD
11. LOT EARTHWORKS DURING BUILDING CONSTRUCTION MUST NOT CHANGE FLOW PATH DIRECTION UNLESS IT IS REPLACED WITH ANOTHER FLOW PATH DRAINING TO THE ROAD SWALE / DRAINAGE.
12. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR STORMWATER RATE.
13. PIPE CLASS - PIPE CLASSES/TRENCH BEDDING SHOWN ON THE DRAWINGS ARE SUBJECT TO THE CONTRACTORS PREFERRED INSTALLATION METHOD. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE APPROPRIATE PIPE CLASSES & BEDDING, & CONSIDERING CONSTRUCTION LOADING.
14. KERB ADAPTORS ARE TO BE INSTALLED TO AUTHORITIES REQUIREMENTS.
15. ALL RCBC SLABS ARE TO BE CAST INSITU.

LEGEND

- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING PROPERTY LINE
- EXISTING RETAINING WALL
- EXISTING STORMWATER (SW)
- EXISTING ROOFWATER (RW)
- EXISTING SUBSOIL (SS)
- EXISTING CONTOURS (1.0)
- FUTURE KERB
- FUTURE PROPERTY LINE
- FUTURE RETAINING WALL
- FUTURE STORMWATER (SW)
- FUTURE ROOFWATER (RW)
- FUTURE SUBSOIL (SS)
- SITE BOUNDARY
- STAGE BOUNDARY
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- DESIGN CONTOURS (1.0)
- PROPOSED STORMWATER (SW)
- PROPOSED ROOFWATER (RW)
- PROPOSED SUBSOIL (SS)
- MANHOLE
- FIELD INLET
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION

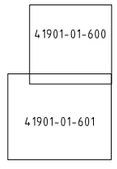


REFERENCE POINT LOCATION FOR DRAINAGE STRUCTURES

STRUCTURE TYPE	HORIZONTAL CONTROL (Reference Point Location)	VERTICAL CONTROL (Reference Level)
MANHOLE / GRATED PIT	CENTRE OF MANHOLE / PIT	FINISHED SURFACE LEVEL
GULLY PIT	LIP AT CENTRE OF PIT	FINISHED SURFACE LEVEL (LIP OF CHANNEL)
HEADWALL	INTERSECTION OF HEADWALL FACE & PIPE CENTRELINE	INVERT LEVEL

REFER TO DWG SERIES 640 FOR ALL DRAINAGE STRUCTURE SETOUT AND/OR CUSTOM DETAILS.

SHEET LAYOUT



DIAL BEFORE YOU DIG www.1100.com.au

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	20-03-23	STORMWATER BASIN ACCESS AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

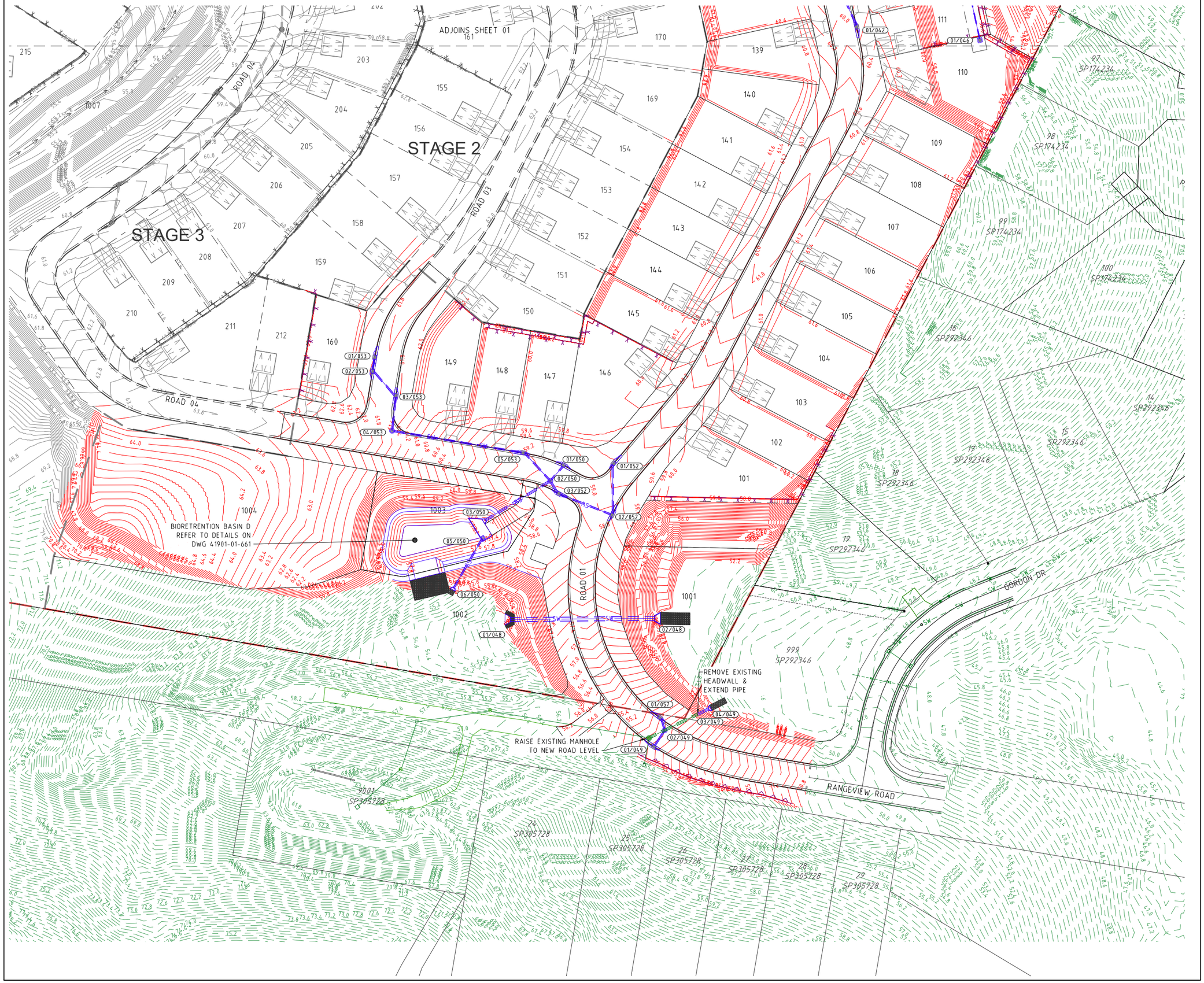
STORMWATER DRAINAGE PLAN SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-600 REV C

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	09-03-23	STORMWATER PIPE AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

STORMWATER
DRAINAGE
PLAN
SHEET 02

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-601	C

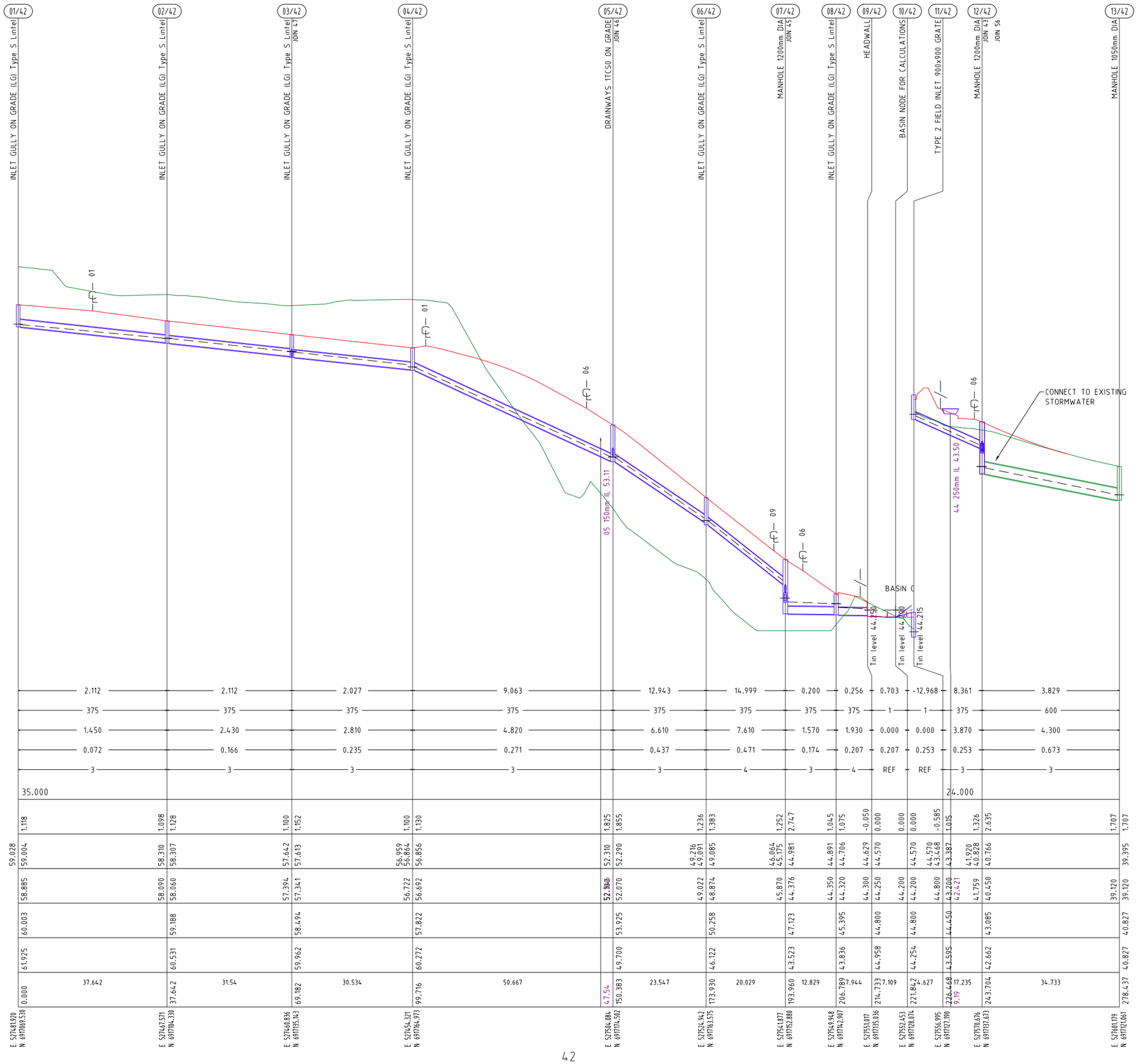
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STRUCTURE NAME

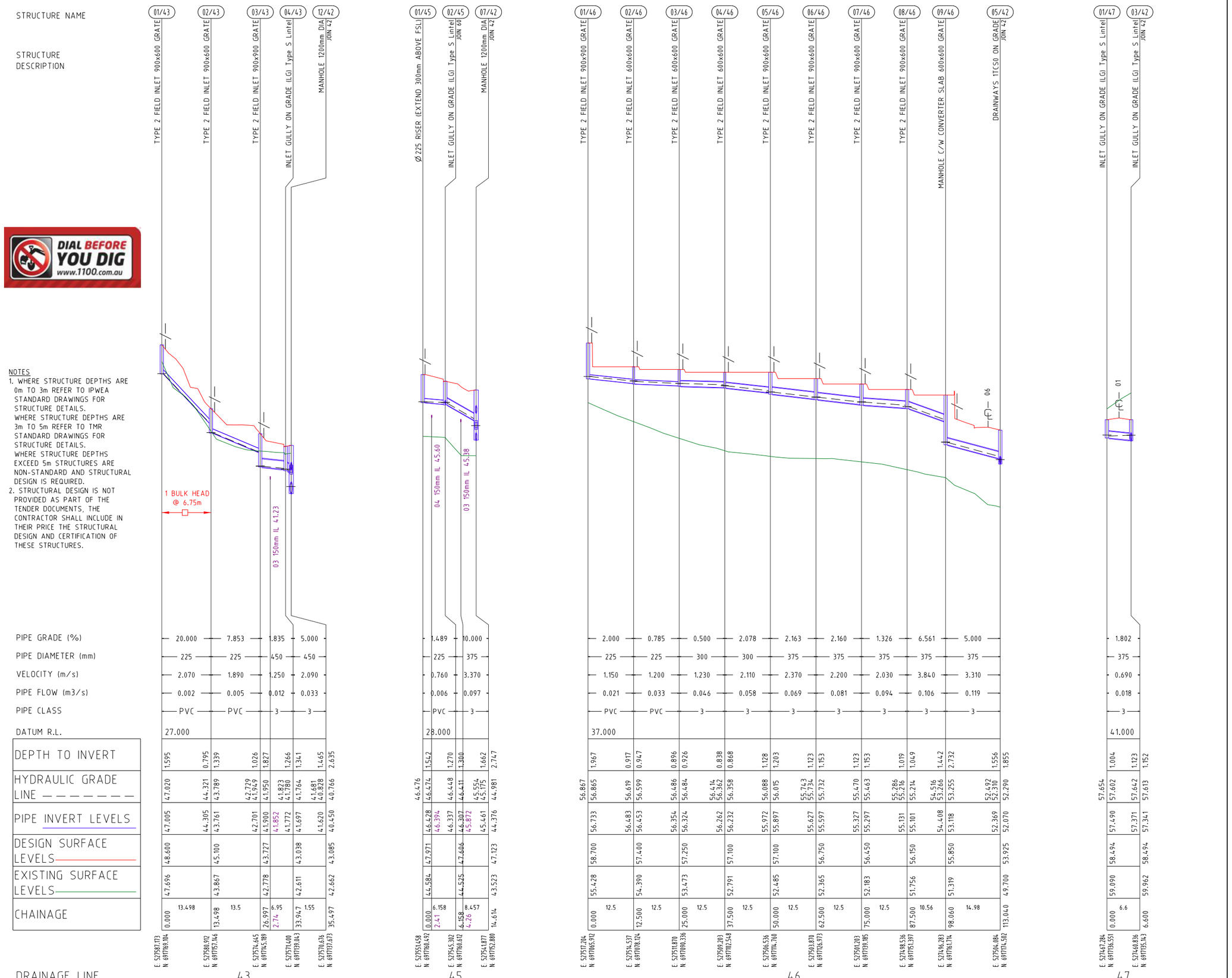
STRUCTURE DESCRIPTION



NOTES
1. WHERE STRUCTURE DEPTHS ARE 0m TO 3m REFER TO IPWEA STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS ARE 3m TO 5m REFER TO TMR STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS EXCEED 5m STRUCTURES ARE NON-STANDARD AND STRUCTURAL DESIGN IS REQUIRED.
2. STRUCTURAL DESIGN IS NOT PROVIDED AS PART OF THE TENDER DOCUMENTS, THE CONTRACTOR SHALL INCLUDE IN THEIR PRICE THE STRUCTURAL DESIGN AND CERTIFICATION OF THESE STRUCTURES.



| | | |



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	09-03-23	STORMWATER PROFILE AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 02

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ	4706
		DATE	03-03-23

DRAWING NUMBER 41901-01-621
REV B

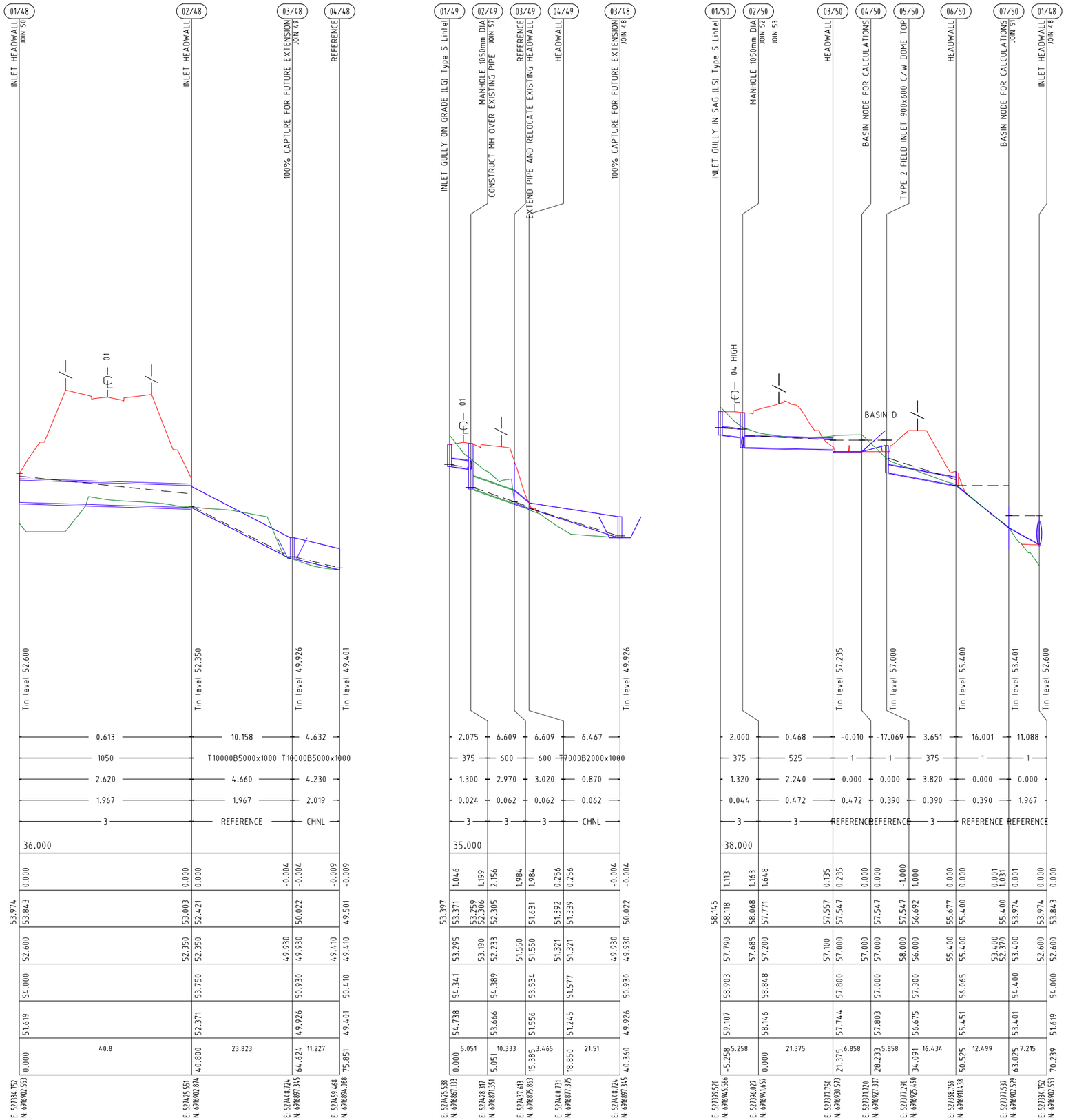
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STRUCTURE NAME

STRUCTURE DESCRIPTION



NOTES
1. WHERE STRUCTURE DEPTHS ARE 0m TO 3m REFER TO IPWEA STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS ARE 3m TO 5m REFER TO TMR STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS EXCEED 5m STRUCTURES ARE NON-STANDARD AND STRUCTURAL DESIGN IS REQUIRED.
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DRAINAGE LINE

48 49 50

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 03

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-622 REV B

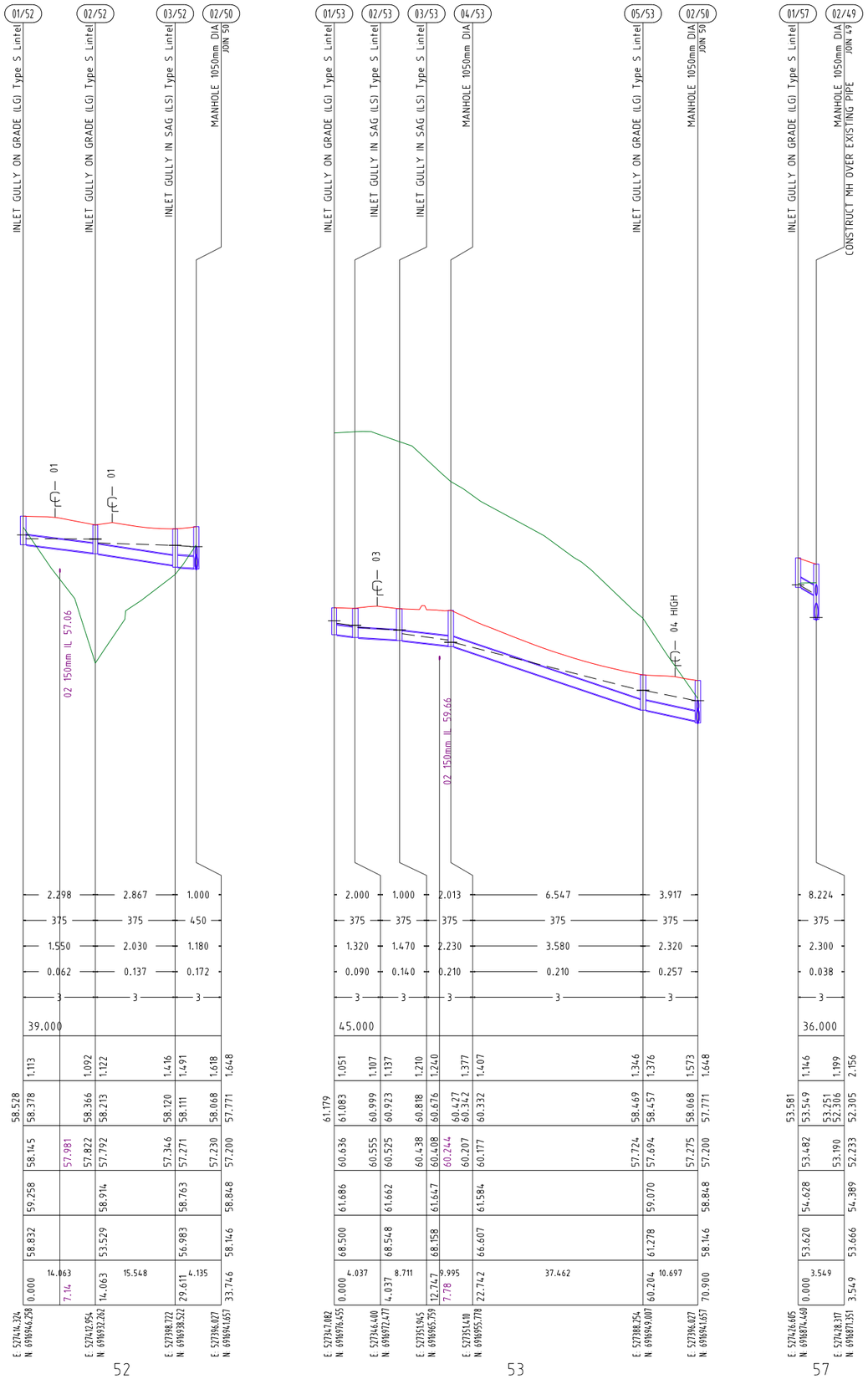
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STRUCTURE NAME

STRUCTURE DESCRIPTION



NOTES
1. WHERE STRUCTURE DEPTHS ARE 0m TO 3m REFER TO IPWEA STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS ARE 3m TO 5m REFER TO TMR STANDARD DRAWINGS FOR STRUCTURE DETAILS. WHERE STRUCTURE DEPTHS EXCEED 5m STRUCTURES ARE NON-STANDARD AND STRUCTURAL DESIGN IS REQUIRED.
2. STRUCTURAL DESIGN IS NOT PROVIDED AS PART OF THE TENDER DOCUMENTS, THE CONTRACTOR SHALL INCLUDE IN THEIR PRICE THE STRUCTURAL DESIGN AND CERTIFICATION OF THESE STRUCTURES.



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

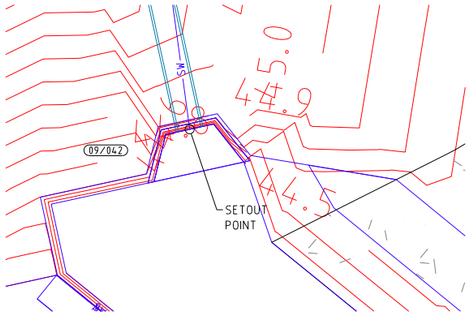
STORMWATER PROFILES SHEET 04

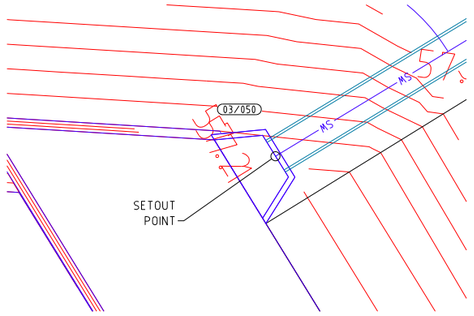
MORTONS urbansolutions
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MUS Pty Ltd T/As
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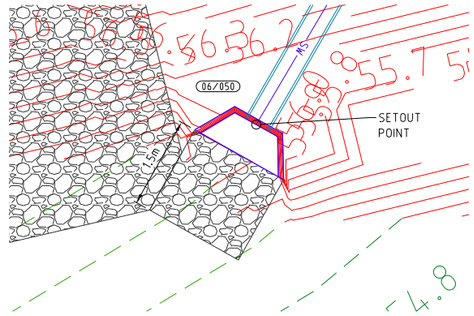
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APPROVED		RPEQ 4706	DATE 03-03-23

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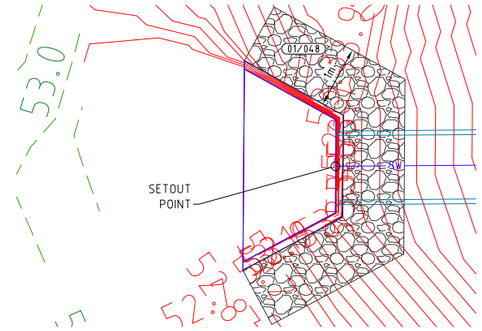






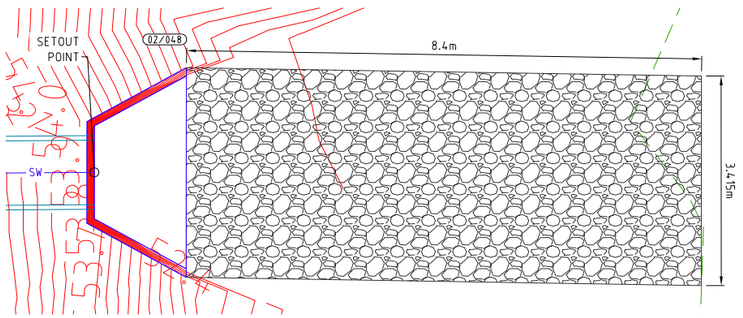
SCOUR PROTECTION DESIGN	
HW 06/050	SIZE 375mm
VELOCITY = 3.91m/s	
LENGTH = 1.5m	d50 = 200mm
SCOUR PROTECTION TYPE = RENO MATTRESS 400mm THICK	

CALCULATIONS UNDERTAKEN USING
PROPRIETARY PRODUCT DATA



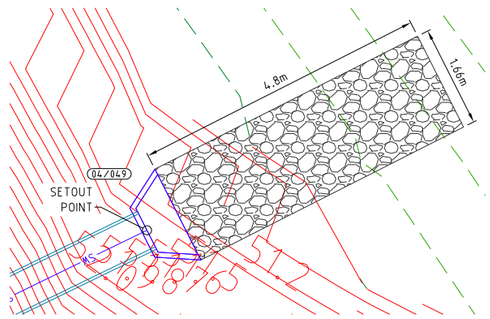
SCOUR PROTECTION DESIGN	
HW 01/048	SIZE 1050mm
VELOCITY = 3.91 m/s	
WIDTH = 1m	d50 = 200mm
SCOUR PROTECTION TYPE = GROUTED ROCK PITCHING 400mm THICK	

CALCULATIONS UNDERTAKEN USING
FIGURE 8.12 FROM QUDM 2016



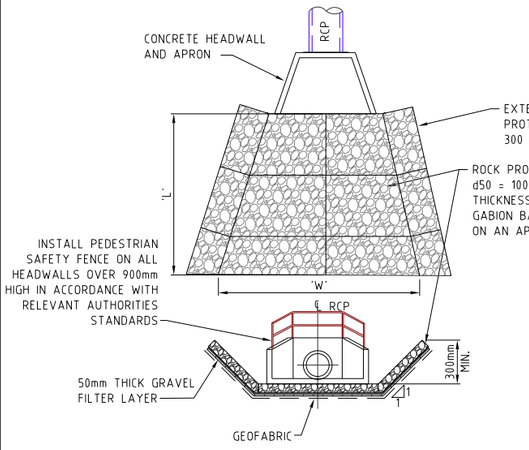
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SCOUR PROTECTION TYPE = RENO MATTRESS 600mm THICK	

CALCULATIONS UNDERTAKEN USING
PROPRIETARY PRODUCT DATA



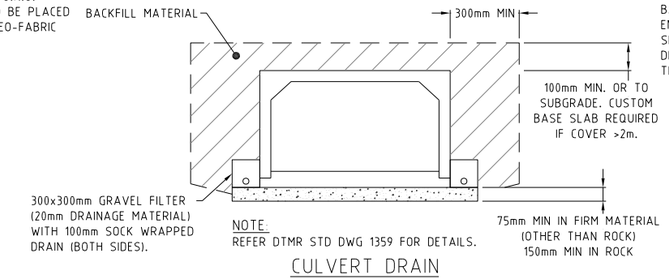
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LENGTH = 4.8m	d50 = 300mm
SCOUR PROTECTION TYPE = RENO MATTRESS 600mm THICK	

CALCULATIONS UNDERTAKEN USING
PROPRIETARY PRODUCT DATA



TYPICAL GABION SCOUR PROTECTION DETAIL

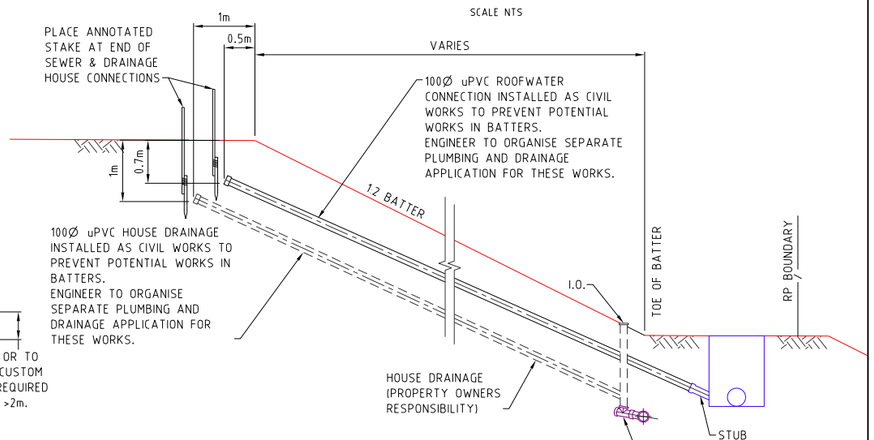
SCALE 1 : 100 - A1 (1:200 - A3)



NOTE
REFER DTMR STD DWG 1359 FOR DETAILS.

CULVERT DRAIN

SCALE NTS



SEWER & STORMWATER HOUSE CONNECTION DETAIL

(WHERE INDICATED ON PLAN)

SCALE 1:50 - A1 (1:100 - A3)

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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BENNETT+BENNETT

DRAWING TITLE

STORMWATER
OUTLETS AND
TYPICAL DETAILS
SHEET 01

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

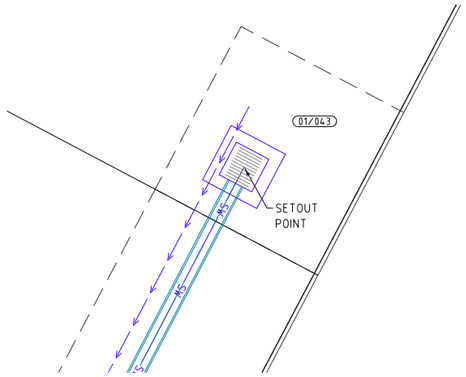
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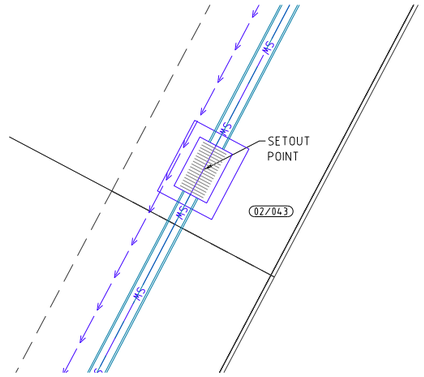
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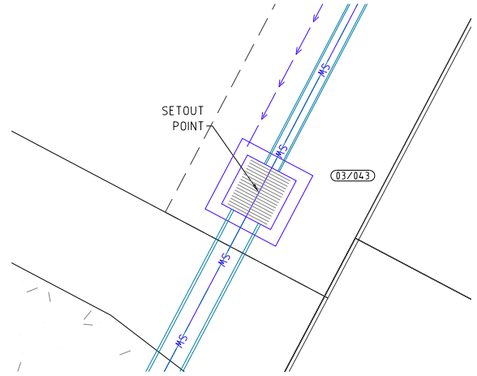
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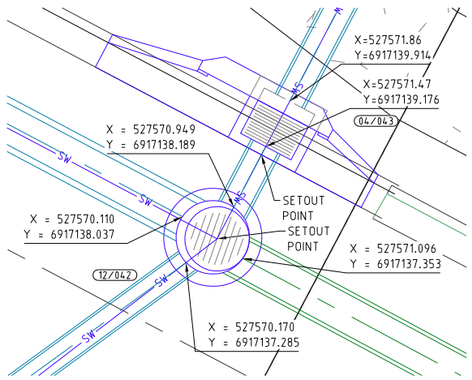
- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- EXISTING STORMWATER
- EXISTING ROOFWATER
- EXISTING STORMWATER PIPES
- EXISTING ROOFWATER PIPES
- FUTURE KERB (INVERT)
- FUTURE KERB (LIP & BACK)
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- FUTURE STORMWATER
- FUTURE ROOFWATER
- FUTURE STORMWATER PIPES
- FUTURE ROOFWATER PIPES
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- PROPOSED STORMWATER
- PROPOSED ROOFWATER
- PROPOSED STORMWATER PIPES
- PROPOSED ROOFWATER PIPES
- MANHOLE
- FIELD INLET
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- 10/001 DRAINAGE PIT & LINE NO.
- CONCRETE

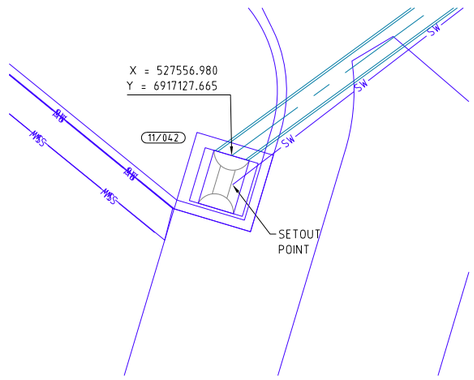
NOTE
THE STORMWATER PIT IMAGE ARE DIAGRAMATIC ONLY & THE CONTRACTOR MUST ENSURE THEY MATCH NEATLY INTO THE WORKS

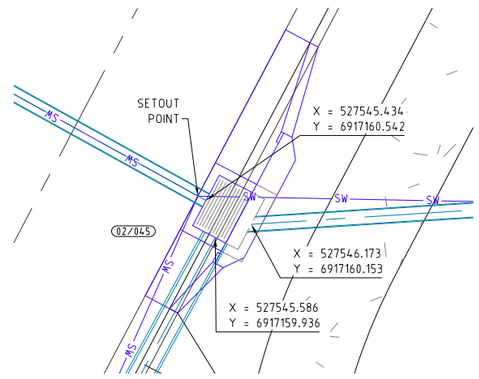


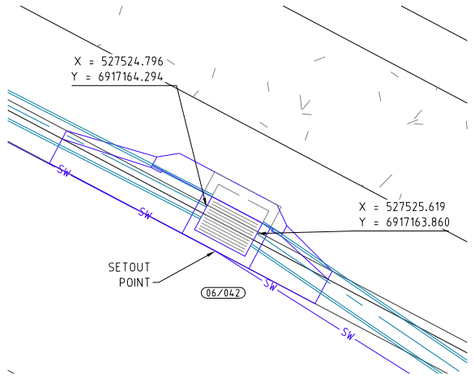


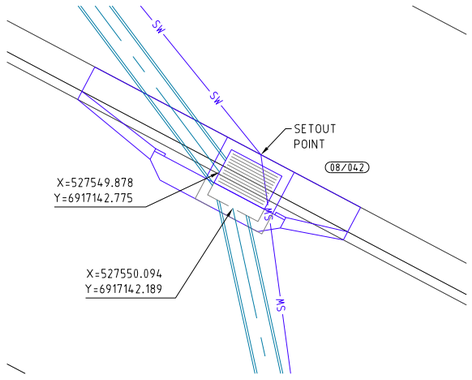


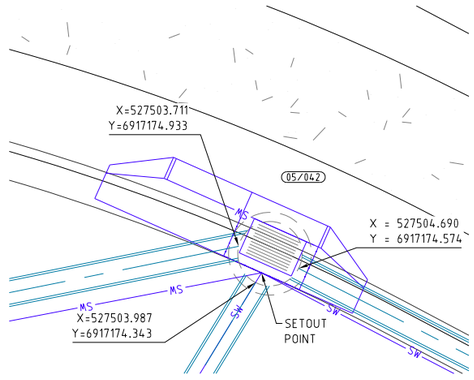


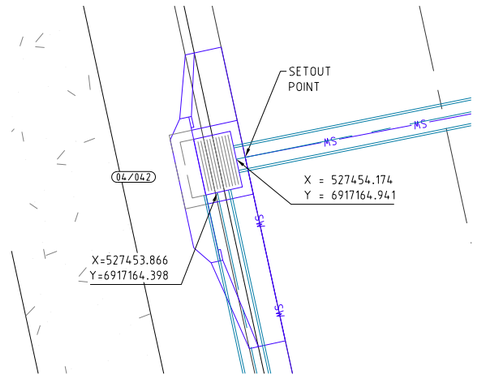


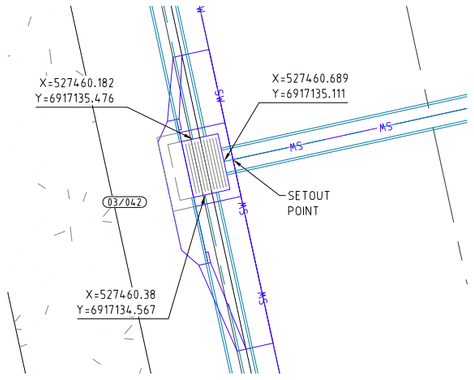


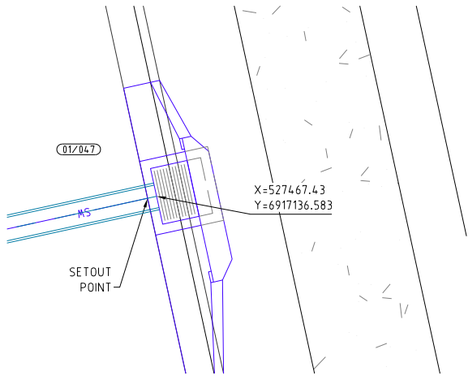


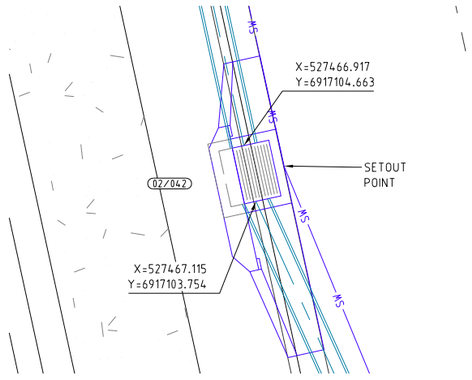


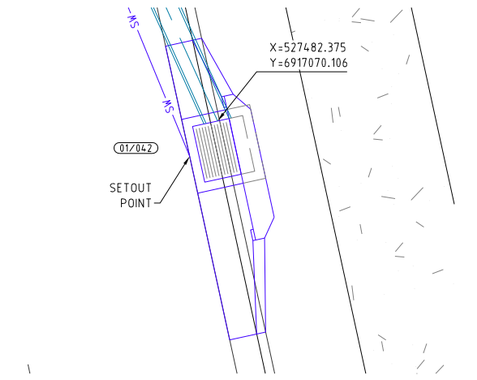












PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
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Robin Russell & ASSOCIATES PTY. LTD.
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DRAWING TITLE

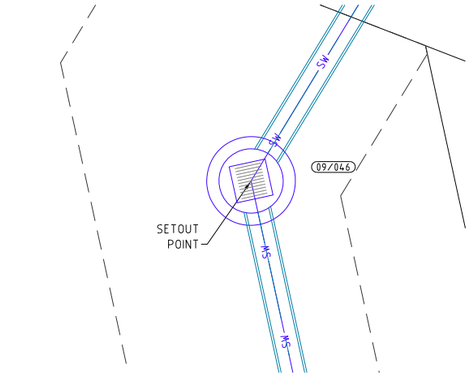
STORMWATER
PIT DETAILS
SHEET 01

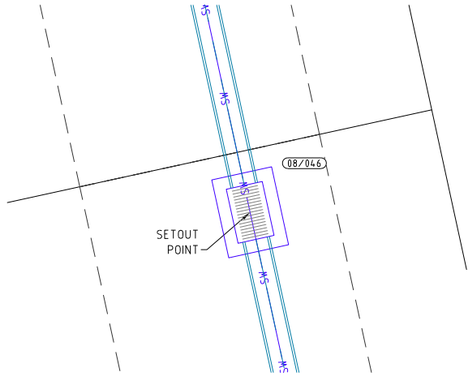
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Southport QLD 4215

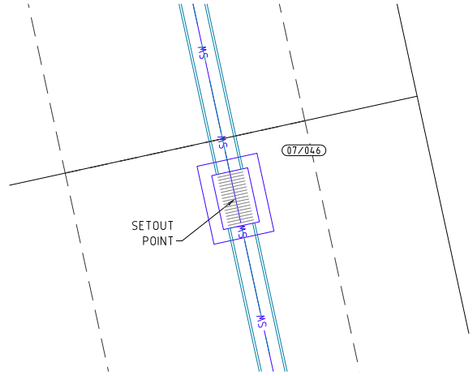
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APPROVED	RPEQ 4706	DATE	03-03-23

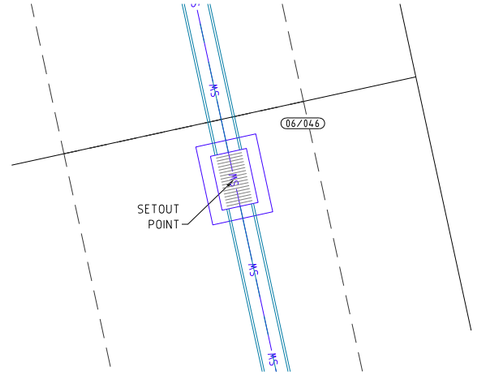
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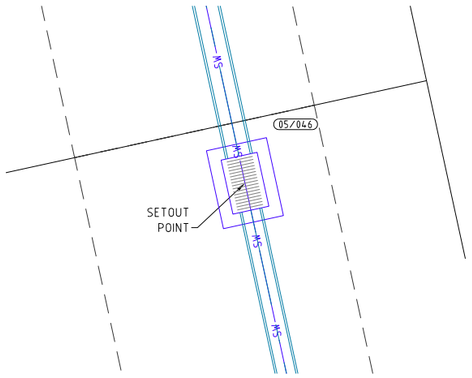
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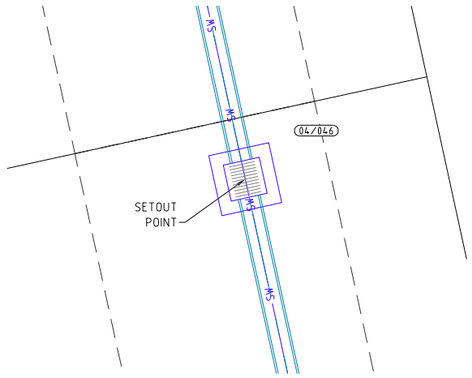


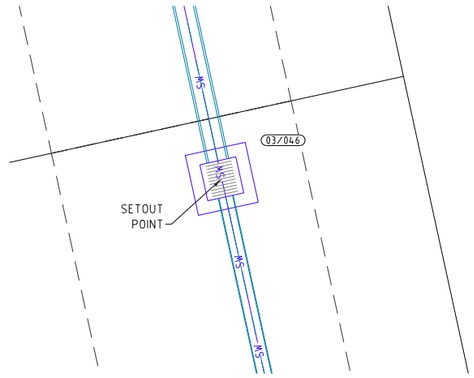


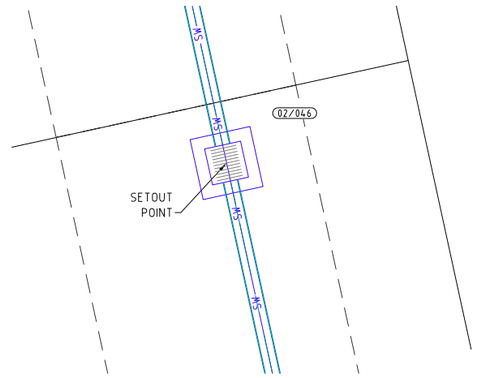


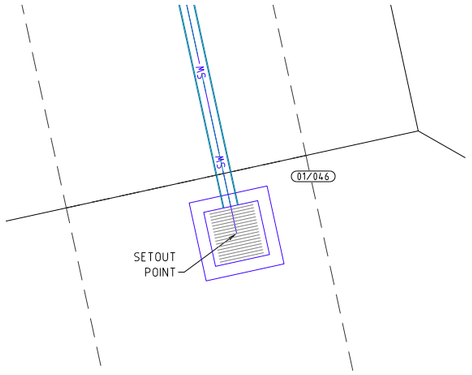


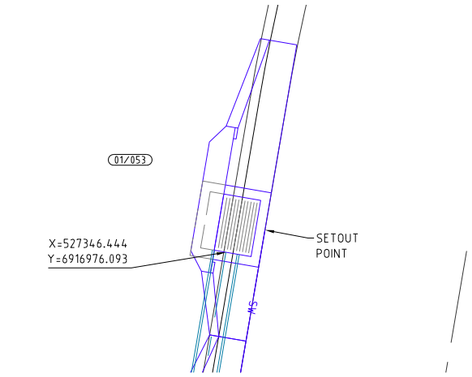


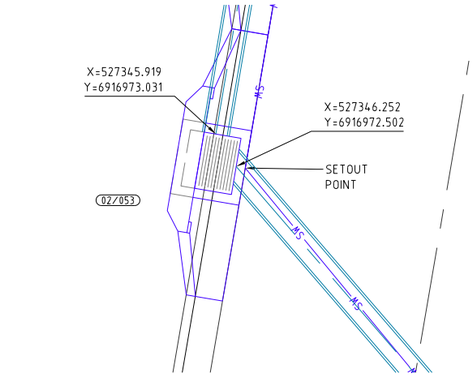


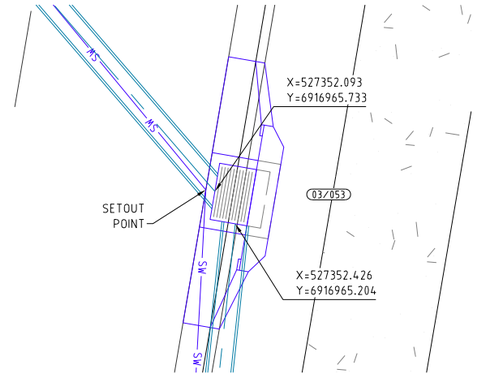


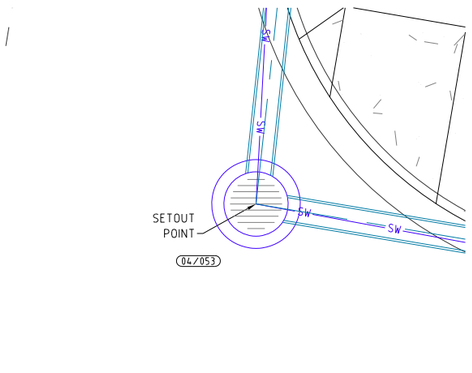


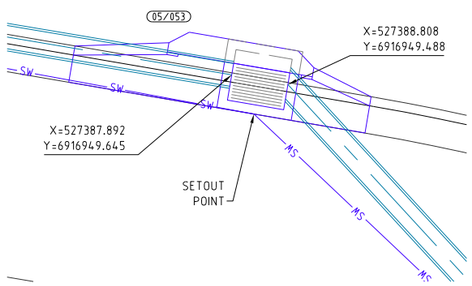


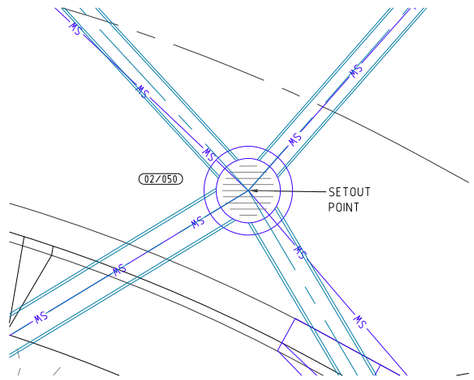


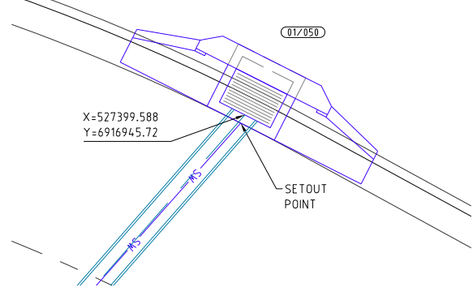












PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

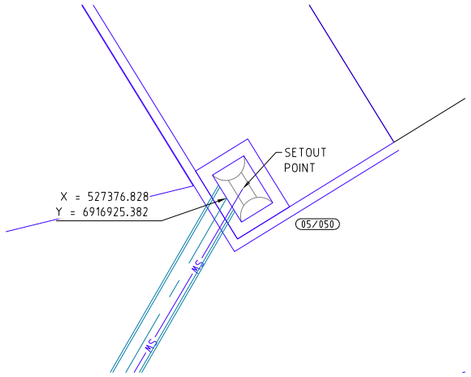
STORMWATER
PIT DETAILS
SHEET 02

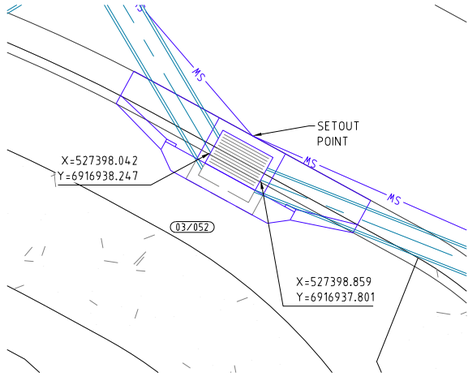
MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
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PO Box 2484
Southport QLD 4215
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Suite 9, 19 Short St
Southport QLD 4215

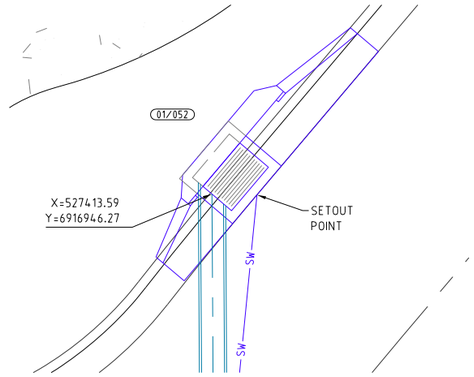
DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

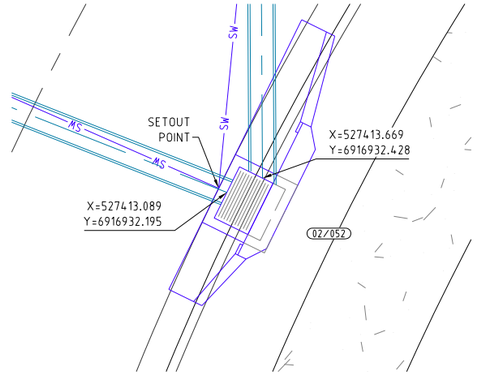
DRAWING NUMBER	REV
41901-01-651	B

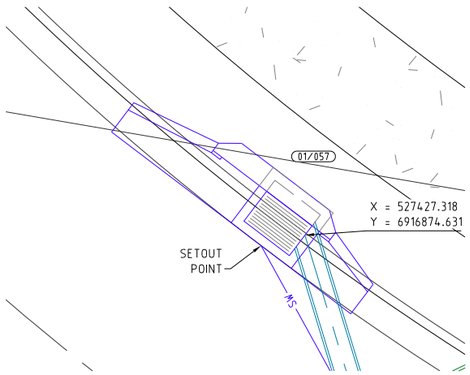
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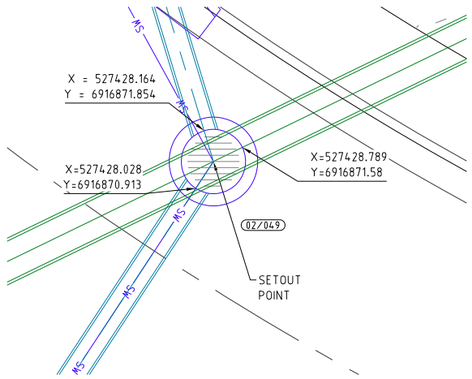


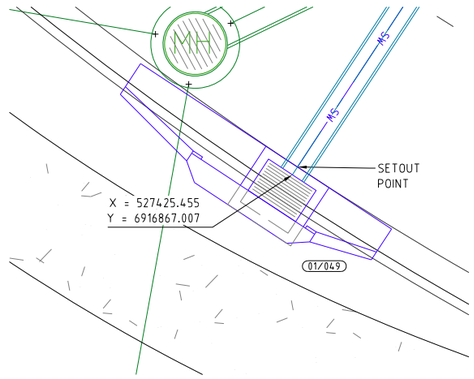












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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

STORMWATER
PIT DETAILS
SHEET 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER	REV
41901-01-652	B

BASIN CONSTRUCTION

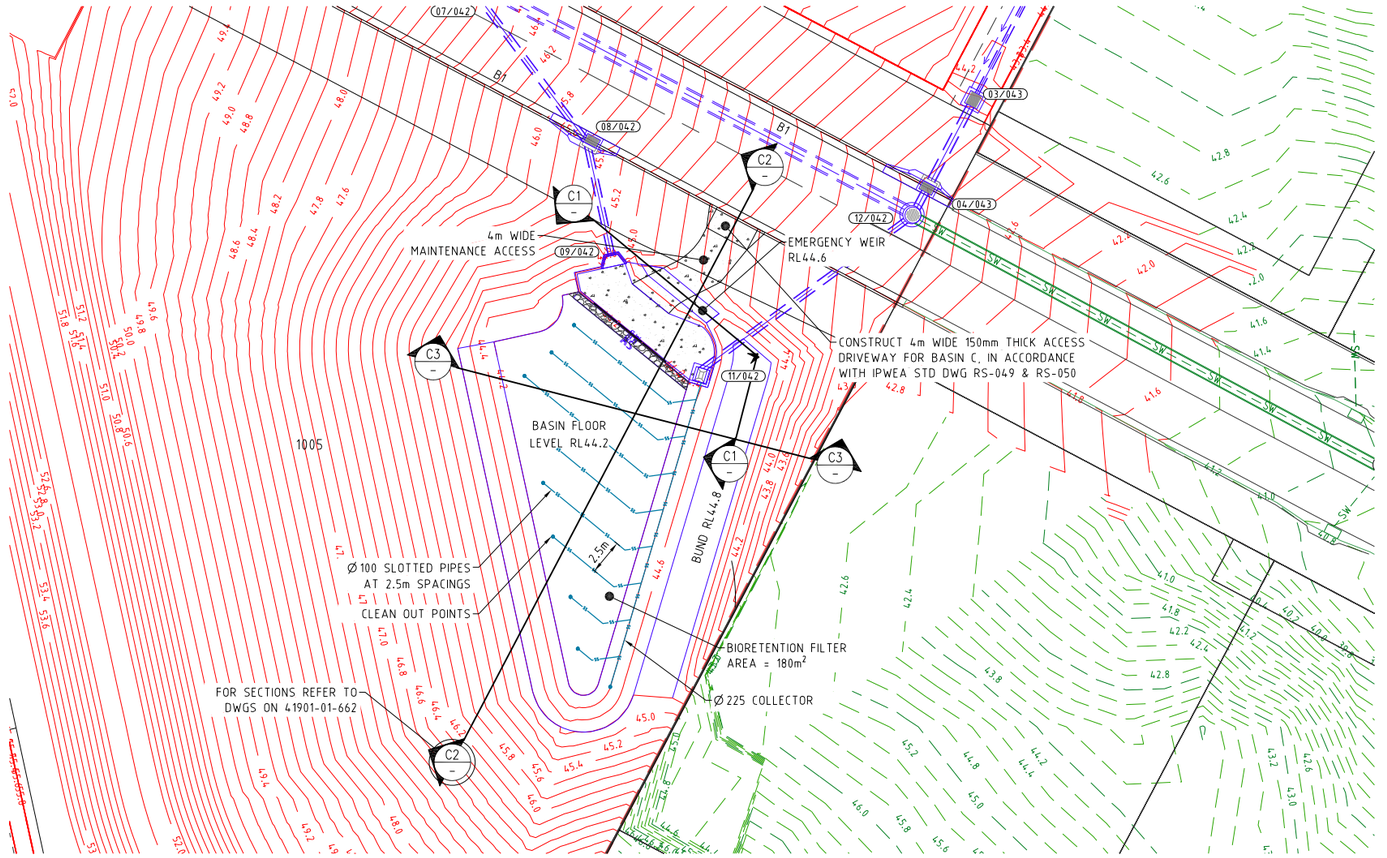
1. PRIOR TO COMMENCING CONSTRUCTION OF THE DETENTION BASIN THE DIVERSION OF SURFACE WATER FROM THE PROPOSED WORKS AREA, USING MEASURES SUCH AS OPEN DRAINS/SUMPS, ARE REQUIRED TO AID IN SITE DEWATERING.
2. FOR THE ENTIRE EMBANKMENT AREA STRIPPING OF VEGETATION & ANY HIGHLY ORGANIC TOP SOILS & ANY SOFT CLAYS TO DEPTHS OF APPROXIMATELY 0.3m IS REQUIRED.
3. THE STRIPPED SURFACE IS TO BE INSPECTED & TESTED BY A GEOTECHNICAL ENGINEER.
4. SUBJECT TO GEOTECHNICAL ENGINEER'S INSPECTION EXCAVATION OF A CUTOFF KEY ALONG THE EMBANKMENT CENTERLINE AT LEAST 0.5m - 1.0m INTO THE FOUNDATION MATERIALS SHALL BE REQUIRED.
5. THE CLAY FILLING FOR THE BASIN WALLS SHALL BE PLACED IN HORIZONTAL LAYERS OF 200mm THICKNESS & COMPACTED TO A DENSITY RATIO WITHIN THE RANGE 98% - 102% STANDARD COMPACTION (AS 1289.5.1.1). PLACEMENT MOISTURE CONTENTS SHOULD BE WITHIN THE RANGE OMC -1% TO OMC +2% (WHERE OMC = OPTIMUM MOISTURE CONTENT FOR STANDARD COMPACTION).
6. IF THE CIVIL CONTRACTOR IS CONSTRUCTING THE BIO BASIN FILTER MEDIA AFTER THE CONSTRUCTION OF THE BASIN INLET & OUTLET STRUCTURES, THE CIVIL CONTRACTOR IS TO CONFIRM THE LEVELS OF THE INLET & OUTLET STRUCTURES PRIOR TO COMMENCING BASIN CONSTRUCTION.

WALL DETAILS CONTAINED WITH THIS SET ARE INDICATIVE ONLY. ALL RETAINING WALLS AND FOOTINGS ARE SUBJECT TO DETAILED DESIGN AND CERTIFICATION BY AN APPROPRIATELY QUALIFIED R.P.E.Q CERTIFIED ENGINEER.

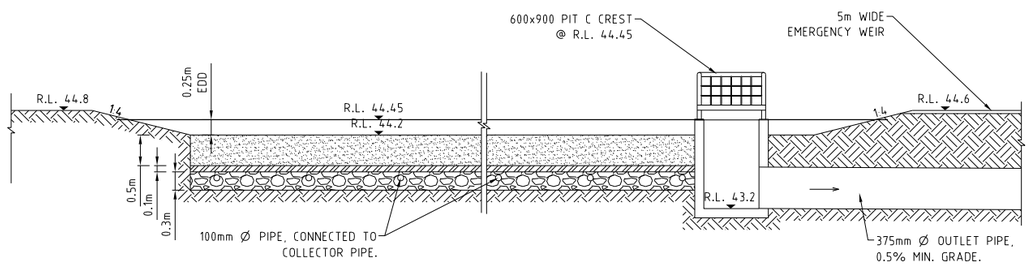
LEGEND

- EXISTING PROPERTY LINE
- 1.0 EXISTING CONTOURS
- SW EXISTING STORMWATER
- FUTURE PROPERTY LINE
- SW FUTURE STORMWATER
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPERTY LINE
- PROPOSED KERB
- 1.0 DESIGN CONTOURS
- SW PROPOSED STORMWATER
- MANHOLE
- FIELD INLET
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- 10/001 STORMWATER PIT & LINE NO.

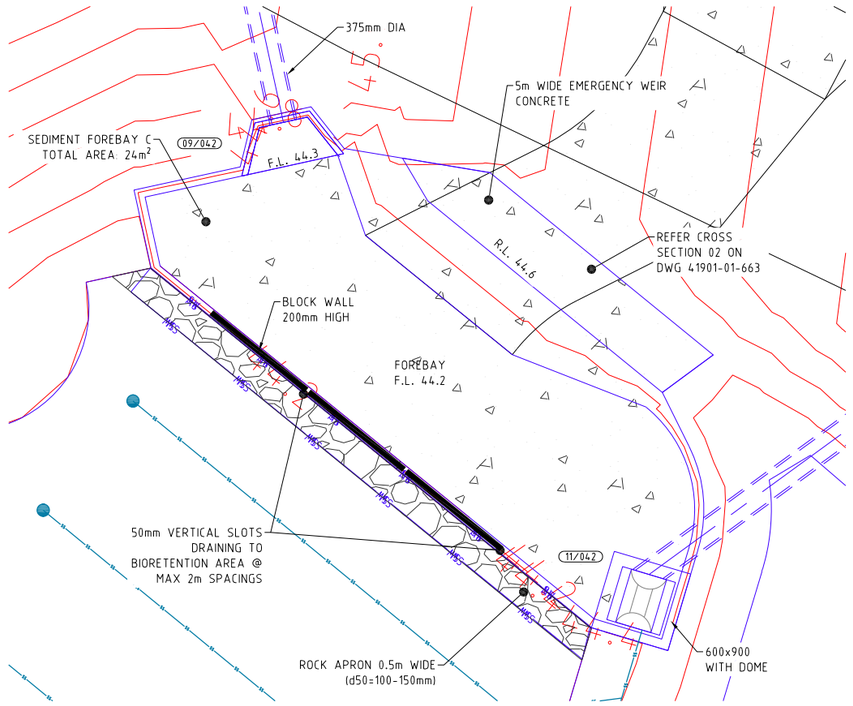
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BASIN C PLAN
SCALE 1:200 - A1 (1:400 - A3)



BASIN C CROSS SECTION
SCALE 1:50 - A1 (1:100 - A3)



SEDIMENT FOREBAY C DETAIL
SCALE 1:50 - A1 (1:100 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)
0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	09-03-23	NOTES & SCOUR PROTECTION AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

STORMWATER
BASIN
PLAN AND DETAILS
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
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Tel 07 5571 1099

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-660
REV C

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BASIN CONSTRUCTION

1. PRIOR TO COMMENCING CONSTRUCTION OF THE DETENTION BASIN THE DIVERSION OF SURFACE WATER FROM THE PROPOSED WORKS AREA, USING MEASURES SUCH AS OPEN DRAINS/SUMPS, ARE REQUIRED TO AID IN SITE DEWATERING.
2. FOR THE ENTIRE EMBANKMENT AREA STRIPPING OF VEGETATION & ANY HIGHLY ORGANIC TOP SOILS & ANY SOFT CLAYS TO DEPTHS OF APPROXIMATELY 0.3m IS REQUIRED.
3. THE STRIPPED SURFACE IS TO BE INSPECTED & TESTED BY A GEOTECHNICAL ENGINEER.
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5. THE CLAY FILLING FOR THE BASIN WALLS SHALL BE PLACED IN HORIZONTAL LAYERS OF 200mm THICKNESS & COMPACTED TO A DENSITY RATIO WITHIN THE RANGE 98% - 102% STANDARD COMPACTION (AS 1289.5.1.1). PLACEMENT MOISTURE CONTENTS SHOULD BE WITHIN THE RANGE OMC -1% TO OMC +2% (WHERE OMC = OPTIMUM MOISTURE CONTENT FOR STANDARD COMPACTION).
6. IF THE CIVIL CONTRACTOR IS CONSTRUCTING THE BIO BASIN FILTER MEDIA AFTER THE CONSTRUCTION OF THE BASIN INLET & OUTLET STRUCTURES, THE CIVIL CONTRACTOR IS TO CONFIRM THE LEVELS OF THE INLET & OUTLET STRUCTURES PRIOR TO COMMENCING BASIN CONSTRUCTION.

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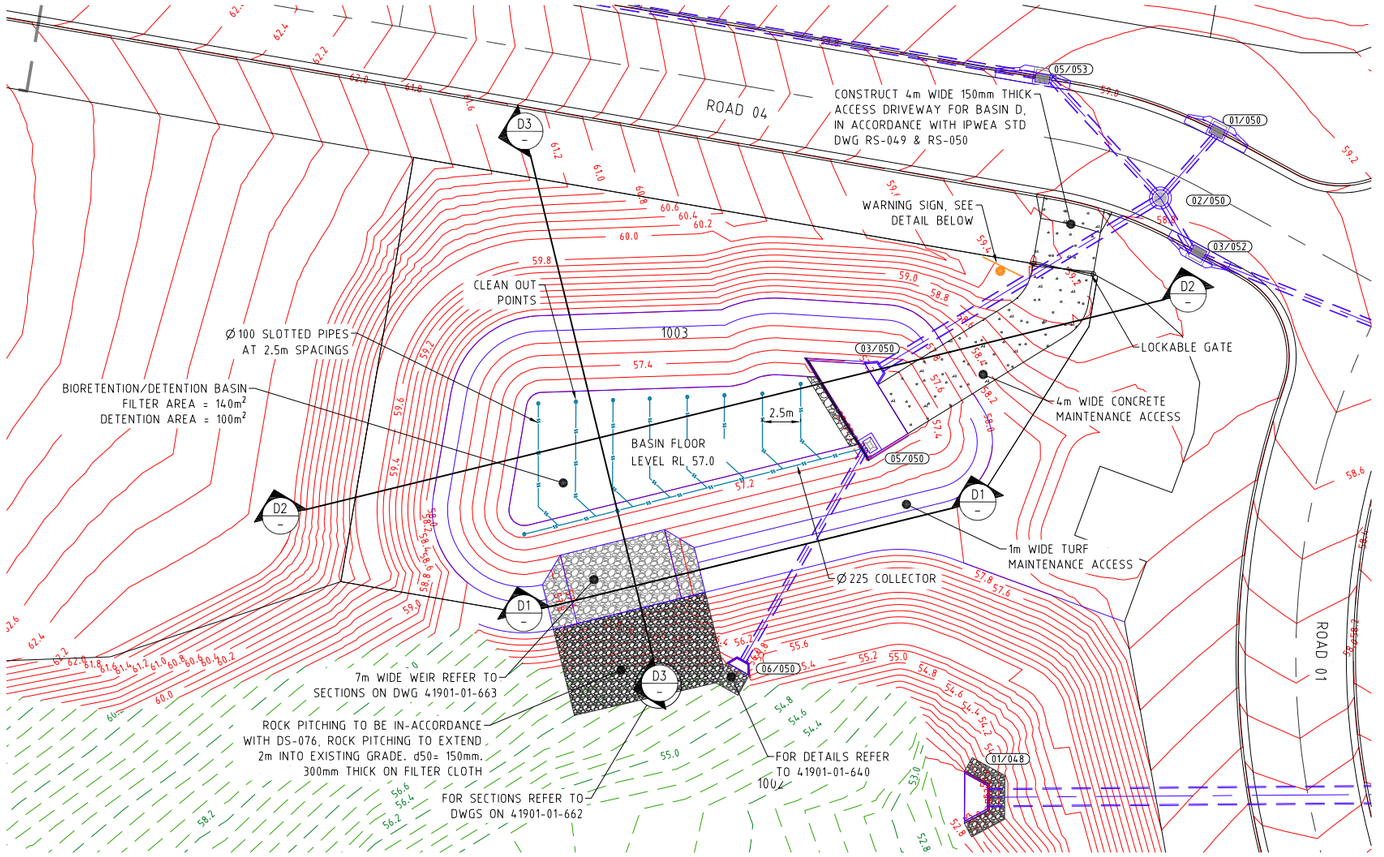
LEGEND

- EXISTING PROPERTY LINE
- 1.0 EXISTING CONTOURS
- SW EXISTING STORMWATER
- FUTURE PROPERTY LINE
- SW FUTURE STORMWATER
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPERTY LINE
- PROPOSED KERB
- 1.0 DESIGN CONTOURS
- SW PROPOSED STORMWATER
- MANHOLE
- FIELD INLET
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- 10/001 STORMWATER PIT & LINE NO.

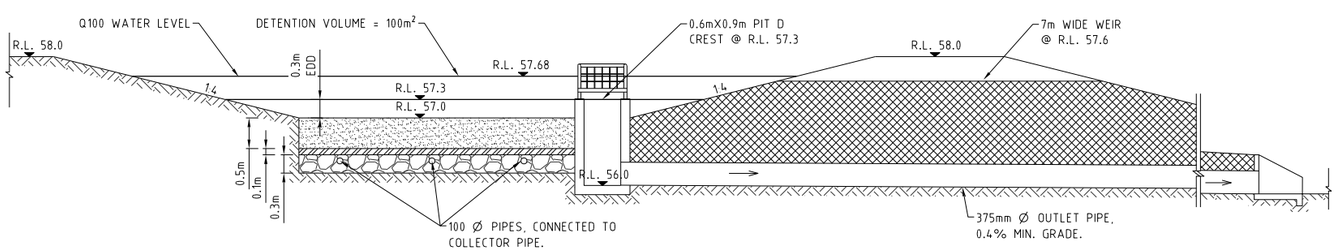
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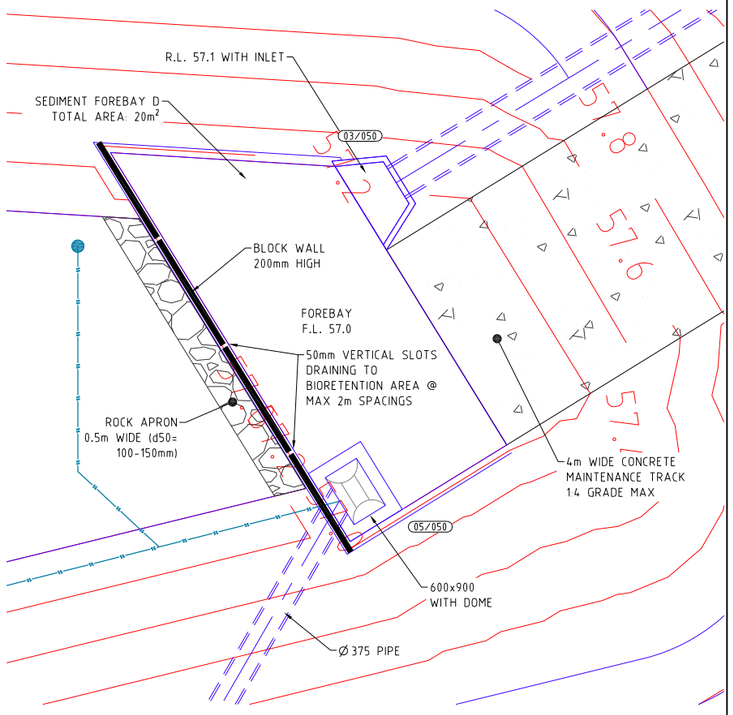
FLOOD WARNING SIGN
NOT TO SCALE



BASIN D PLAN
SCALE 1:200 - A1 (1:400 - A3)



BASIN D CROSS SECTION
SCALE 1:50 - A1 (1:100 - A3)



SEDIMENT FOREBAY D DETAIL
SCALE 1:50 - A1 (1:100 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)
0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	20-03-23	LOCKABLE GATE AND NOTES ADDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

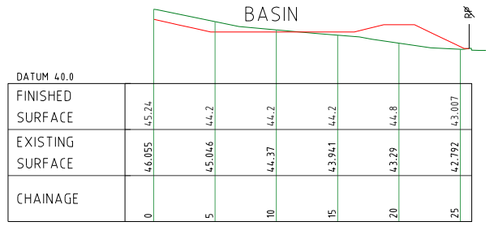
STORMWATER
BASIN
PLAN AND DETAILS
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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www.urbansolutions.net.au
Tel 07 5571 1099
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-661
REV C

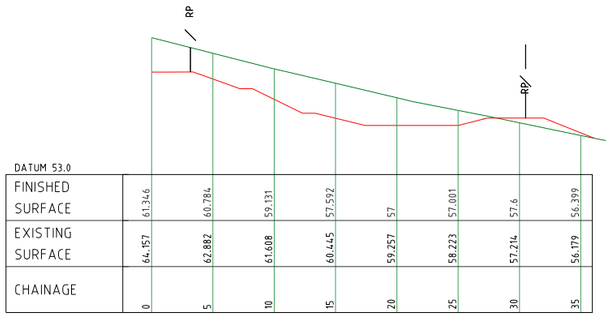
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DATUM 40.0						
FINISHED SURFACE	45.24	44.2	44.2	44.2	44.8	43.007
EXISTING SURFACE	46.055	45.046	44.37	43.941	43.29	42.792
CHAINAGE	0	5	10	15	20	25

LONGITUDINAL SECTION C3

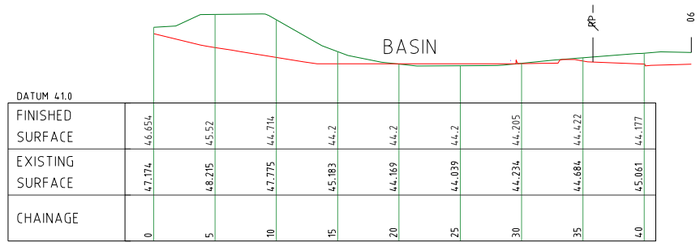
Horizontal scale 1:250
Vertical scale 1:250



DATUM 53.0								
FINISHED SURFACE	61.346	60.784	59.131	57.592	57	57.001	57.6	56.399
EXISTING SURFACE	64.157	62.882	61.608	60.445	59.257	58.223	57.214	56.179
CHAINAGE	0	5	10	15	20	25	30	35

LONGITUDINAL SECTION D3

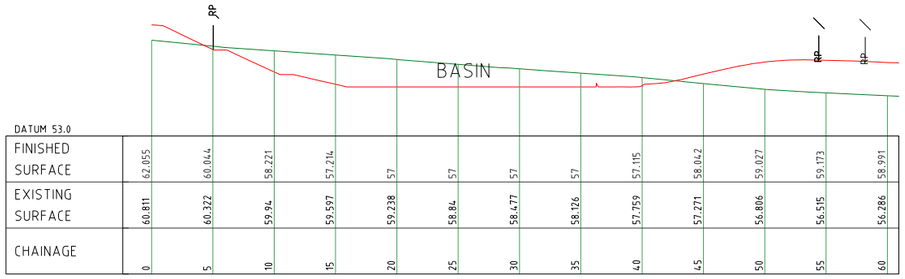
Horizontal scale 1:250
Vertical scale 1:250



DATUM 41.0									
FINISHED SURFACE	46.654	45.52	44.714	44.2	44.2	44.2	44.205	44.422	44.177
EXISTING SURFACE	47.174	48.215	47.775	45.183	44.169	44.039	44.234	44.684	45.061
CHAINAGE	0	5	10	15	20	25	30	35	40

LONGITUDINAL SECTION C2

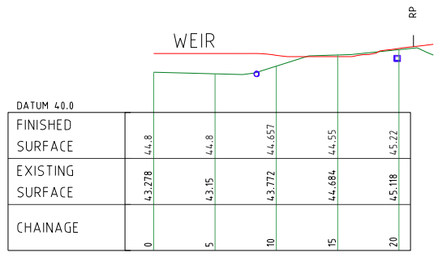
Horizontal scale 1:250
Vertical scale 1:250



DATUM 53.0												
FINISHED SURFACE	62.055	60.044	58.221	57.214	57	57	57	57	57.115	58.042	59.027	59.173	58.991
EXISTING SURFACE	60.811	60.322	59.94	59.597	59.238	58.84	58.477	58.126	57.759	57.271	56.806	56.515	56.286
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60

LONGITUDINAL SECTION D2

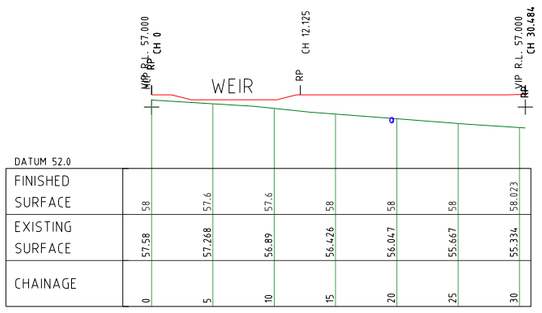
Horizontal scale 1:250
Vertical scale 1:250



DATUM 40.0					
FINISHED SURFACE	44.8	44.8	44.657	44.55	45.22
EXISTING SURFACE	43.278	43.15	43.772	44.684	45.118
CHAINAGE	0	5	10	15	20

LONGITUDINAL SECTION C1

Horizontal scale 1:250
Vertical scale 1:250



DATUM 52.0							
FINISHED SURFACE	58	57.6	57.6	58	58	58	58.023
EXISTING SURFACE	57.58	57.268	56.89	56.426	56.047	55.667	55.334
CHAINAGE	0	5	10	15	20	25	30

LONGITUDINAL SECTION D1

Horizontal scale 1:250
Vertical scale 1:250

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

0 2.5 5 7.5 10 12.5m
Scale 1:250 - A1 (1:500 - A3)

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

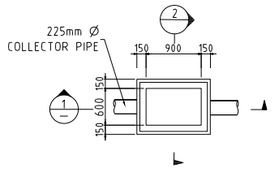
STORMWATER
BASIN
SECTIONS

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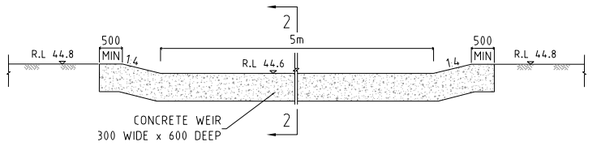
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APPROVED	RPEQ4706	DATE	03-03-23

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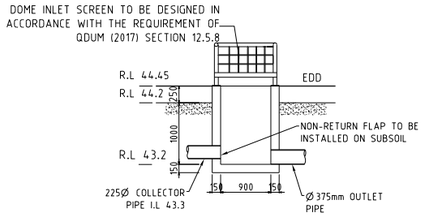
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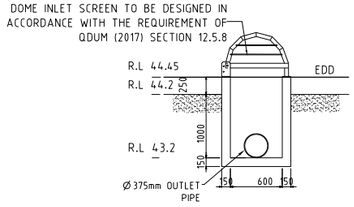
OVERFLOW STRUCTURE PLAN - PIT C



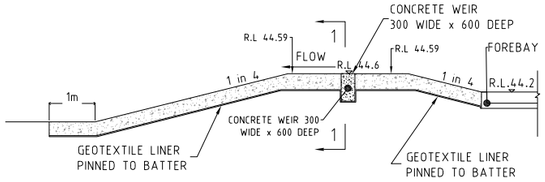
WEIR DETAIL SECTION 1-1



SECTION 1 - 1

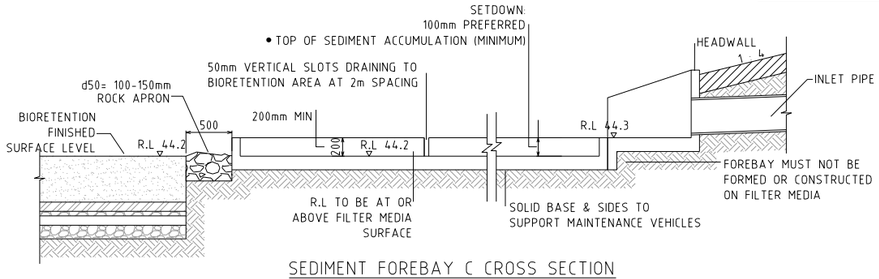


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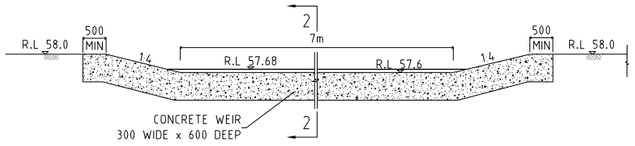
WEIR CROSS SECTION 2-2

BASIN C OUTLET DETAILS

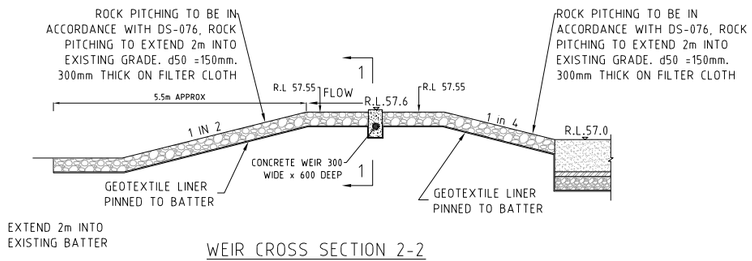


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BASIN C INLET DETAILS

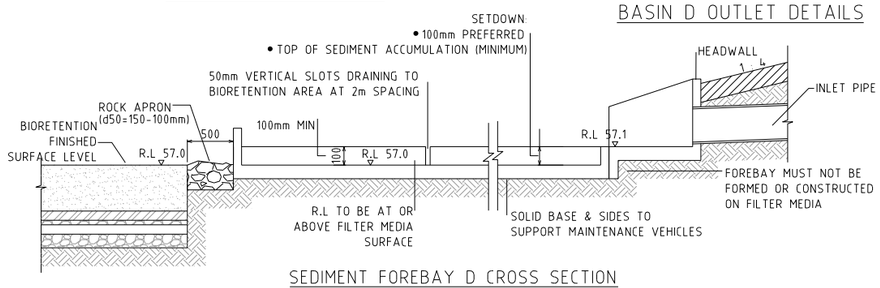


WEIR DETAIL SECTION 1-1



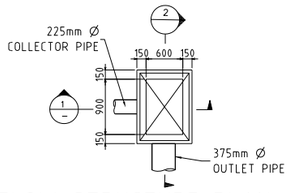
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BASIN D OUTLET DETAILS

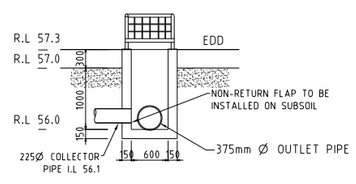


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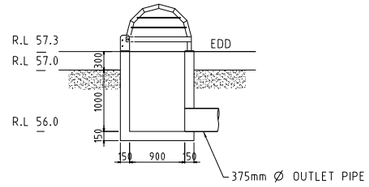
BASIN D INLET DETAILS



OVERFLOW STRUCTURE PLAN - PIT D



SECTION 1 - 1



SECTION 2 - 2

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
C	14-07-23	RFI AMENDMENTS	EP
B	09-03-23	NOTES AND DETAILS AMENDED	JB
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

STORMWATER
BASIN
DETAILS
SHEET 01

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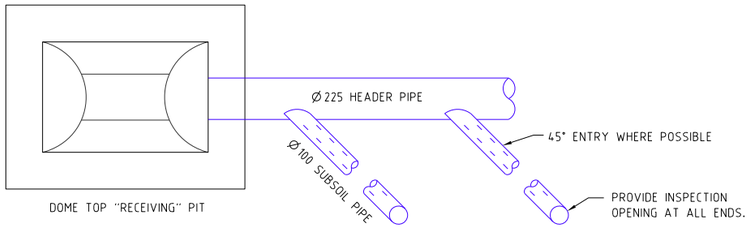
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APPROVED	RPEQ 4706
DATE 03-03-23	

DRAWING NUMBER 41901-01-663

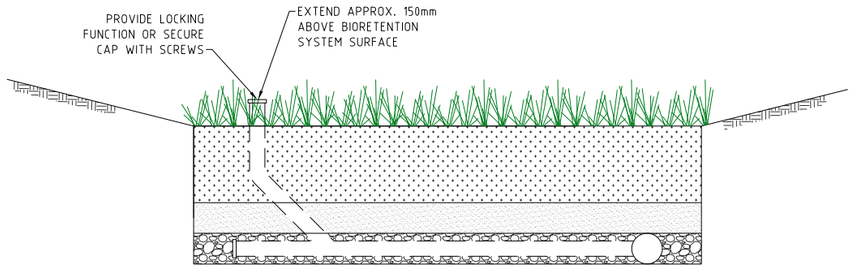
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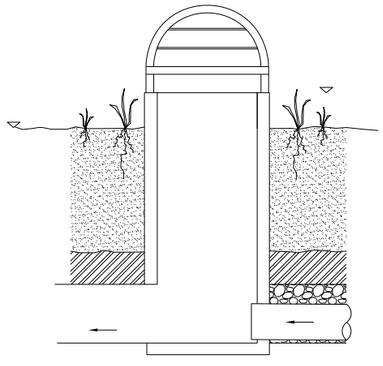
NOTES:
1. STRUCTURAL STABILITY AND PERMEABILITY OF WATER RETENTION BUNDS TO BE DESIGNED BY GEOTECHNICAL ENGINEER.
2. CONSTRUCTION TIMING OF BIO-RETENTION MEDIA DETAILED IN CONTRACT. PLANTING OF MEDIA TO OCCUR AFTER 80% DWELLING COMPLETION



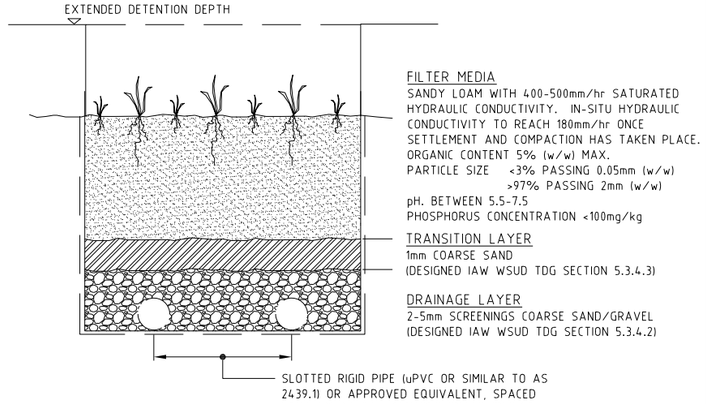
HEADER & SUBSOIL DETAILS
N.T.S.



BIORETENTION FILTER TYPICAL SECTION
N.T.S.



HEADER PIPE CONNECTION DETAIL
N.T.S.



BIO-RETENTION MEDIA CROSS SECTION
N.T.S.
* LAYER THICKNESSES AND MATERIAL SPECIFICATIONS ARE INDICATIVE ONLY, REFER TO APPROVED STORMWATER MANAGEMENT PLAN.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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BENNETT+BENNETT

DRAWING TITLE

STORMWATER BASIN DETAILS SHEET 02

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DESIGNED RB	DRAWN EMH
APPROVED RPEQ 4706	DATE 03-03-23

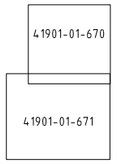
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LEGEND

- SW — EXISTING STORMWATER
- RW — EXISTING ROOFWATER
- SS — EXISTING SUBSOIL
- EXISTING KERB (INVERT)
- 1.0 — EXISTING CONTOURS
- EXISTING PROPERTY LINE
- SW — FUTURE STORMWATER
- RW — FUTURE ROOFWATER
- SS — FUTURE SUBSOIL
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- 1.0 — FUTURE CONTOURS
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- 1.0 — DESIGN CONTOURS
- CATCHMENT BOUNDARY (MINOR)
- CATCHMENT BOUNDARY (MAJOR)
- OVERLAND FLOW
- SW — PROPOSED STORMWATER
- RW — PROPOSED ROOFWATER
- SS — PROPOSED SUBSOIL
- MANHOLE
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- 01/015 0.2552ha — CATCHMENT NUMBER & AREA

SHEET LAYOUT



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER
CATCHMENT PLAN
SHEET 01

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Urban & Regional Planning
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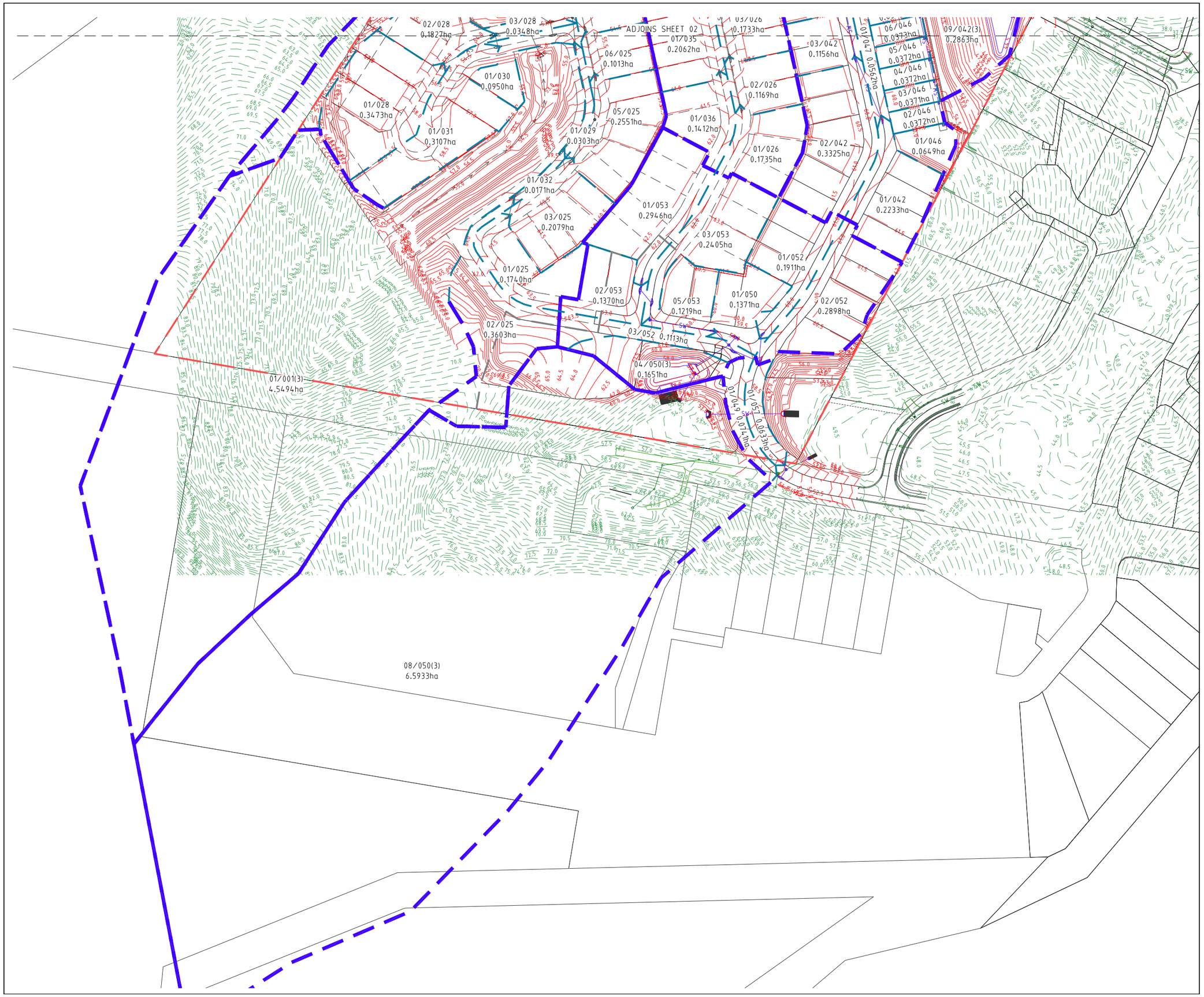
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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER	REV
41901-01-670	B

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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BENNETT+BENNETT

DRAWING TITLE

STORMWATER
CATCHMENT PLAN
SHEET 02

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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ4706	DATE	03-03-23

DRAWING NUMBER 41901-01-671 REV B

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CALCULATION TABLES-MINOR 2YR ARI

0.5 ARI (Q2) MINOR FLOW - 12D DYNAMIC DRAINAGE RESULTS

* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.	CATCHMENT FLOW				APPROACH FLOW					FLOW AT PIT				PIT		HGL			PIPE	HEADLOSSES						
NODE			A.1	A.2	A.3	CRITICAL	INTENSITY		CURRENT	A.1	A.2	A.3	CRITICAL	GRADE	FLOW				BYPASS			GRADE	GRATE	PIT	PIPE			GRADE	FLOW	COEFFICIENT		HEADLOSS		CAPACITY	VELOCITY	NODE
FROM	TO	NODE TYPE	HA	HA	HA	STORM	MM/HR	10 YR	Storm	HA	HA	HA	ARI MIN.	%	L/S	WIDTH	DxV	L/S	L/S	DxV	NODE	%	RL.	RL	U/S RL.	D/S RL.	%	M3/S	Ku	Kw	Ku	Kw	RATIO	M/S	
01/42	02/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.223			90	61.3	0.877	0.830	0.074			60	2.2	74	1.07	0.00	72	0	0.00	01/47	2.200	60.003	59.03	59.00	58.31	1.84	0.07	7.0	0.0	0.0	0.0	0.220	1.450	01/42
02/42	03/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.333			90	61.3	0.877	0.830	0.110			60	2.2	110	1.53	0.01	94	14	0.01	03/42	2.200	59.188	58.31	58.31	57.64	2.11	0.17	3.3	0.0	0.0	0.0	0.500	2.430	02/42
03/42	04/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.116			90	61.3	0.877	0.830	0.038			60	2.2	52	1.07	0.00	52	0	0.00	04/42	2.200	58.494	57.64	57.61	56.96	2.14	0.24	1.1	0.0	0.0	0.0	0.720	2.810	03/42
04/42	05/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.115			90	61.3	0.877	0.830	0.038			60	2.2	38	0.00	0.00	38	0	0.00	01/41	2.200	57.822	56.86	56.86	52.31	8.97	0.27	1.8	0.0	0.0	0.0	0.390	4.820	04/42
05/42	06/42	DRAINWAYS 1TCS0 ON GRADE	0.173			90	61.3	0.877	0.830	0.057			60	12.5	57	1.19	0.01	50	7	0.01	06/42	12.528	53.925	52.31	52.29	49.22	13.05	0.44	1.1	0.0	0.0	0.0	0.530	6.610	05/42
06/42	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.100			90	61.3	0.877	0.830	0.033			60	16.0	40	1.13	0.00	36	3	0.00	04/43	16.000	50.258	49.09	49.08	46.06	15.08	0.47	0.5	0.0	0.0	0.0	0.530	7.610	06/42
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	47.123	45.17	44.98	44.85	0.97	0.21	1.8	0.0	0.3	0.0	1.330	1.980	07/42
08/42	09/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.113			90	61.3	0.877	0.830	0.037			60	13.4	37	0.00	0.00	37	0	0.00	O 08/42	13.420	45.395	44.85	44.66	44.60	0.82	0.25	1.0	0.0	0.2	0.0	1.710	2.310	08/42
09/42	10/42	HEADWALL											25	1.0	0			0				1.000	44.800	44.57	44.57	44.57	0.00	0.25	0.0	0.0	0.0	0.0			09/42
10/42	11/42	BASIN NODE FOR CALCULATIONS			0.286							0.060	60	1.0	60			60				1.000	44.800	44.57	44.57	44.57	0.00	0.26	0.0	0.0	0.0	0.0			10/42
11/42	12/42	TYPE 2 FIELD INLET 900x900 GRATE											60	1.0	259	0.00	0.00	259	0	0.00	O 11/42	1.000	44.450	43.47	43.39	41.92	8.52	0.26	3.4	0.0	0.1	0.0	0.390	3.880	11/42
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	43.085	40.83	40.76	39.40	3.94	0.67	2.1	0.0	0.1	0.0	0.430	4.300	12/42
13/42		MANHOLE 1050mm DIA											25	1.0	0			0				1.000	40.827	39.40											13/42
01/43	02/43	TYPE 2 FIELD INLET 900x600 GRATE	0.008			90	61.3	0.877	0.830	0.002			25	1.0	2	0.00	0.00	2	0	0.00	02/43	1.000	48.600	47.02	47.02	44.32	20.00	0.00	9.7	0.0	0.0	0.0	0.010	2.070	01/43
02/43	03/43	TYPE 2 FIELD INLET 900x600 GRATE	0.009			90	61.3	0.877	0.830	0.003			25	1.0	3	0.00	0.00	3	0	0.00	03/43	1.000	45.100	43.79	43.79	42.73	7.85	0.01	3.3	0.0	0.0	0.0	0.030	1.890	02/43
03/43	04/43	TYPE 2 FIELD INLET 900x900 GRATE	0.020			90	61.3	0.877	0.830	0.006			25	1.0	6	0.00	0.00	6	0	0.00	04/43	1.000	43.727	41.95	41.95	41.82	1.83	0.01	3.2	0.0	0.0	0.0	0.020	1.250	03/43
04/43	12/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.053			90	61.3	0.877	0.830	0.017			60	9.7	20	0.00	0.00	20	0	0.00	O 04/43	9.670	43.038	41.78	41.76	41.68	5.35	0.03	4.1	0.0	0.0	0.0	0.040	2.090	04/43
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	43.085	40.83											12/42
10/42	11/42	BASIN NODE FOR CALCULATIONS			0.286							0.060	60	1.0	60			60				1.000	44.800	44.57	44.57	44.57	0.00	0.02	0.0	0.0	0.0	0.0			10/42
01/45	02/45	Ø 225 RISER (EXTEND 300mm ABOVE FSL)	0.020			90	61.3	0.877	0.830	0.006			25	1.0	6			6				1.000	47.971	46.48	46.47	46.45	0.42	0.01	6.9	0.0	0.0	0.0	0.090	0.760	01/45
02/45	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.224			90	61.3	0.877	0.830	0.074			60	1.0	74			74				1.000	47.606	46.45	46.41	45.55	10.13	0.10	6.4	0.0	0.0	0.0	0.130	3.370	02/45
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	47.123	45.17											07/42
01/46	02/46	TYPE 2 FIELD INLET 900x900 GRATE	0.065			90	61.3	0.877	0.830	0.021			60	1.0	21			21				1.000	58.700	56.87	56.87	56.62	1.97	0.02	9.7	0.0	0.0	0.0	0.260	1.150	01/46
02/46	03/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	57.400	56.62	56.60	56.49	0.90	0.03	1.7	0.0	0.0	0.0	0.650	1.200	02/46
03/46	04/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	57.250	56.49	56.48	56.41	0.56	0.05	0.6	0.0	0.0	0.0	0.510	1.230	03/46
04/46	05/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	57.100	56.36	56.36	56.09	2.16	0.06	1.1	0.0	0.0	0.0	0.320	2.110	04/46
05/46	06/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	57.100	56.02	56.01	55.74	2.18	0.07	0.4	0.0	0.0	0.0	0.210	2.370	05/46
06/46	07/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	56.750	55.73	55.73	55.47	2.10	0.08	1.0	0.0	0.0	0.0	0.240	2.200	06/46
07/46	08/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	56.450	55.47	55.46	55.29	1.42	0.09	0.8	0.0	0.0	0.0	0.360	2.030	07/46
08/46	09/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			90	61.3	0.877	0.830	0.012			60	1.0	12			12				1.000	56.150	55.22	55.21	54.52	6.61	0.11	0.8	0.0	0.0	0.0	0.180	3.840	08/46
09/46	05/42	MANHOLE C/W CONVERTER SLAB 600x600 GRATE	0.041			90	61.3	0.877	0.830	0.014			60	1.0	14			14				1.000	55.850	53.27	53.26	52.49	5.09	0.12	2.2	0.0	0.0	0.0	0.230	3.310	09/46
05/42	06/42	DRAINWAYS 1TCS0 ON GRADE	0.173			90	61.3	0.877	0.830	0.057			60	12.5	57	1.19	0.01	50	7	0.01	06/42	12.528	53.925	52.31											05/42
01/47	03/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.056			90	61.3	0.877	0.830	0.019			60	2.2	19	0.00	0.00	19	0	0.00	08/42	2.200	58.494	57.65	57.60	57.64	-0.61	0.02	7.0	0.0	0.1	0.0	0.060	0.680	01/47
03/42	04/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.116			90	61.3	0.877	0.830	0.038			60	2.2	52	1.07	0.00	52	0	0.00	04/42	2.200	58.494	57.64											03/42
01/48	02/48	INLET HEADWALL											25	1.0	0			0				1.000	54.000	53.98	53.84	53.00	2.06	1.97	0.5	0.0	0.1	0.0	0.710	2.620	01/48
02/48	03/48	INLET HEADWALL											25	1.0	0			0				1.000	53.750	52.42	52.42	50.02	10.07	1.97	0.0	0.0	0.0	0.0	0.010	4.660	02/48
03/48	04/48	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	50.930	50.02	50.02	49.50	4.64	2.02	0.0	0.0	0.0	0.0	0.020	4.230	03/48
04/48		REFERENCE											25	1.0	0			0				1.000	50.410	49.50											04/48
01/49	02/49	INLET GULLY ON GRADE (LG) Type S Lintel	0.074			90	61.3	0.877	0.830	0.024			60	8.0	24			24				7.988	54.341	53.40	53.37	53.26	2.22	0.02	9.7	0.0	0.0	0.0	0.070	1.300	01/49
02/49	03/49	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	54.389	52.31	52.31	51.63	6.52	0.06	2.1	0.0	0.0	0.0	0.030	2.970	02/49
03/49	04/49	REFERENCE											25	1.0	0			0				1.000	53.534	51.63	51.63	51.39	6.90	0.06	0.0	0.0	0.0	0.0	0.030	3.020	03/49
04/49	03/48	HEADWALL											25	1.0	0			0				1.000	51.577	51.34	51.34	50.02	6.12	0.06	0.0	0.0	0.0	0.0	0.000	0.870	04/49
03/48	04/48	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	50.930	50.02											03/48
01/50	02/50	INLET GULLY IN SAG (LS) Type S Lintel	0.137			90	61.3	0.877	0.830	0.045			60	0.5	45	1.07	0.00	45	0	0.00	03/52	0.479	58.903	58.10	58.08	58.02	1.08	0.04	9.7	0.0	0.1	0.0	0.130	1.320	01/50
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	58.848	58.02	57.76	57.55	1.02	0.47	1.6	0.0	0.3	0.0	1.000	2.220	02/50
03/50	04/50	HEADWALL											25	1.0	0			0				1.000	57.800	57.55	57.55	57.55	0.00	0.47	0.0	0.0	0.0	0.0			03/50
04/50	05/50	BASIN NODE FOR CALCULATIONS			0.165							0.034	60	1.0	34			34				1.000	57.000	57.55	57.55	57.55	0.00	0.39	0.0	0.0	0.0	0.0			04/50
05/50	06/50	TYPE 2 FIELD INLET 900x600 C/W DOME TOP											60	1.0	390	0.00	0.00	390	0	0.00	07/50	1.000	57.300	57.55	56.69	55.68	6.18	0.39	1.9	0.0	0.9	0.0	0.890	3.820	05/50
06/50	07/50	HEADWALL											25	1.0	0			0				1.000	56.065	55.40	55.40	55.40	0.00	0.39	0.0	0.0	0.0	0.0			06/50
07/50	01/48	BASIN NODE FOR CALCULATIONS			6.593							1.814	60	1.0	1814			1814				1.000	54.400	53.98	53.97	53.97	0.00	1.97	0.0	0.0	0.0	0.0			07/50
01/48	02/48	INLET HEADWALL											25	1.0	0			0				1.000	54.000	53.98											01/48
04/50	05/50	BASIN NODE FOR CALCULATIONS			0.165							0.034	60	1.0	34			34				1.000	57.000	57.55	57.60	57.60	0.00	0.00	0.0	0.0	0.0	0.0			04/50
01/52	02/52	INLET GULLY ON GRADE (LG) Type S Lintel	0.191			90	61.3	0.877	0.830	0.063			60	2.7	63	0.00	0.00	63	0	0.00	01/50	2.738	59.258	58.48	58.33	58.32	0.03	0.06	9.7	0.0	0.2	0.0	0.180	1.550	01/52
02/52	03/52	INLET GULLY ON GRADE (LG) Type S Lintel	0.290			90	61.3	0.877	0.830	0.096			60	3.1	96	1.40	0.01	77	17	0.01	01/57	3.071	58.914	58.32	58.17	58.07	0.62	0.14	4.5	0.0	0.2	0.0	0.350	2.100	02/52
03/52	02/50	INLET GULLY IN SAG (LS) Type S Lintel	0.111			90	61.3	0.877	0.830	0.037			60	0.7	37	1.07	0.00	37	0	0.00	01/49	0.694	58.763	58.07	58.06	58.02	1.04	0.17	0.8	0.0	0.0	0.0	0.460	1.200	03/52
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	58.848	58.02											02/50
01/53	02/53	INLET GULLY ON GRADE (LG) Type S Lintel	0.295			90	61.3	0.877	0.830	0.097			60	0.6	97	1.53	0.00	91	6	0.01	02/53	0.600	61.686	61.18	61.08	61.00	2.08	0.09	6.9	0.0	0.1	0.0	0.280	1.320	01/53
02/53	03/53	INLET GULLY IN SAG (LS) Type S Lintel	0.137			90	61.3	0.877	0.830	0.045			60	1.6	51	1.07	0.00	51	0	0.00	03/53	1.602	61.662	61.00	60.92	60.82	1.19	0.14	1.9	0.0	0.1	0.0	0.610	1.470	02/53
03/53	04/53	INLET GULLY IN SAG (LS) Type S Lintel	0.241			90	61.3	0.877	0.830	0.079			60	0.3	79	1.28	0.01	69	9	0.01	05/53	0.262	61.647	60.82	60.68	60.43	2.49	0.21	1.7	0.0	0.1	0.0	0.650	2.230	03/53
04/53	05/53	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	61.584	60.34	60.33	58.42	5.09	0.21	1.9	0.0	0.0	0.0	0.360	3.520	04/53
05/53	02/50	INLET GULLY ON GRADE (LG) Type S Lintel	0.122			90	61.3	0.877	0.830	0.040			60	3.9	49	0.00	0.00	48	0	0.00	01/50	3.888	59.070	58.42	58.41	58.02	3.67	0.26	1.1	0.0	0.2	0.0	0.570	2.330	05/53
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	58.848	58.02											02/50
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.211	60	1.0	211			211				1.000	44.500	45.25	45.60	45.60	0.00	0.00	0.0	0.0	0.0	0.0			14/25
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	47.123	45.17	45.17	41.71	10.63	0.38	1.9	0.0	0.0	0.0	0.300	5.580	07/42
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	43.085	40.83											12/42
01/57	02/49	INLET GULLY ON GRADE (LG) Type S Lintel	0.063			90	61.3	0.877	0.830	0.021			60	9.2	38	0.00	0.00	38	0	0.00	O 01/57	9.206	54.628	53.58	53.55	53.25	8.40	0.04	9.7	0.0	0.0	0.0	0.060	2.300	01/57
02/49	03/49	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	54.389	52.31											02/49
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.211	60	1.0	211			211				1.000	44.500	45.25	45.25	45.25	0.00	1.00	0.0	0.0	0.0	0.0			14/25
01/60	02/45	Ø 225 RISER (EXTEND 300mm ABOVE FSL)	0.049			90	61.3	0.877	0.830	0.016			60	1.0	16			16				1.000	49.390	46.65	46.64	46.45	1.98	0.02	9.4	0.0	0.0	0.0	0.200	1.170	01/60
02/45	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.224			90	61.3	0.877	0.830	0.074			60	1.0	74			74				1.000	47.606	46.45											02/45

INTENSITY - FREQUENCY - DURATION (IFD) TABLE

DURATION	ARI INTENSITY (YEAR)							
MINUTES	TREAT	1	2	5	10	20	50	100
5	62.5	125	158	193	212	239	275	301
6	58.5	117	148	181	199	225	258	284
10	48	96	122	149	164	186	214	235
20	35.2	70.4	89.3	110	122	138	159	175
30	28.7	57.4	72.9	90.1	99.8	113	131	144
60	19.45	38.9	49.5	61.7	68.6	78.1	90.6	100
120	12.6	25.2	32.2	40.5	45.3	51.8	60.3	66.8
180	9.6	19.2	24.7	31.2	35	40.2	46.9	52.1
360	6.05	12.1	15.6	20	22.5	26	30.5	34
720	3.89	7.78	10.1	13	14.8	17.1	20.3	22.7
1440	2.595	5.19	6.73	8.8	10.1	11.7	13.9	15.6
2880	1.74	3.48	4.53	5.98	6.87	8.04	9.59	10.8
4320	1.325	2.65	3.46	4.61	5.3	6.23	7.45	8.42

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NOTES:

1. THESE CALCULATIONS ARE BASED ON IISAX2 DYNAMIC DRAINAGE ANALYSIS USING 12D SOFTWARE ANALYSIS.
2. INDIVIDUAL TIMES OF CONCENTRATION ARE GENERATED FOR EACH NODE & CATCHMENT TYPE USING TEMPORAL PATTERNS DETERMINED FROM THE RELEVANT AUTHORITY.
3. "TREAT" IN THE IFD TABLE REFERS TO 0.5x1 YEAR ARI, USED TO DETERMINE WATER QUALITY TREATMENT FLOWS.
4. CATCHMENT 1 REFERS TO TYPICAL URBANISED CATCHMENTS WITH LOTS <1000m2. THE IMPERVIOUS PORTION OF THE CATCHMENT TIME OF CONCENTRATION (TC) IS TYPICALLY 5 MINUTES & THE PERVIOUS PORTION OF THE CATCHMENT TYPICALLY HAS AN 8 MINUTE TC.
5. CATCHMENT 2 IS TYPICALLY USED TO MODEL LOTS >1000m2, WITH INDIVIDUAL PERCENTAGES OF IMPERVIOUS SURFACE & TC'S.
6. CATCHMENT 3 IS TYPICALLY USED TO MODEL OPEN SPACE & RURAL CATCHMENTS WITH INDIVIDUAL PERCENTAGES OF IMPERVIOUS SURFACE & TC'S.

FLOW CAPACITY m3/s 7.5m RD (KERB AND CHANNEL)

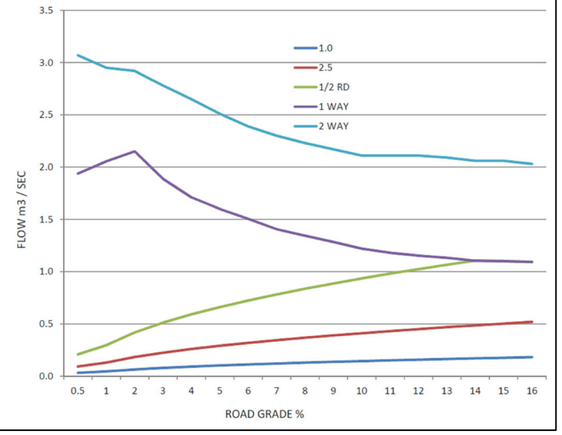
	KR	LANE	1/2 RD	1 WAY	2 WAY
MAX. WIDTH	1.0	2.5	3.75	11.175	14.8
MAX. AREA m2	0.021	0.101	0.219	1.421	2.104
Rd Grade %					
0.5	0.032	0.092	0.209	1.938	3.070
1	0.046	0.130	0.296	2.054	2.950
2	0.064	0.184	0.418	2.150	2.920
3	0.079	0.225	0.512	1.886	2.780
4	0.091	0.260	0.591	1.711	2.650
5	0.102	0.291	0.661	1.600	2.510
6	0.112	0.318	0.724	1.505	2.390
7	0.120	0.344	0.782	1.407	2.300
8	0.129	0.368	0.836	1.345	2.230
9	0.137	0.390	0.887	1.285	2.170
10	0.144	0.411	0.935	1.220	2.110
11	0.151	0.431	0.981	1.180	2.110
12	0.158	0.450	1.024	1.154	2.110
13	0.164	0.469	1.066	1.133	2.090
14	0.170	0.486	1.106	1.105	2.060
15	0.176	0.503	1.101	1.101	2.060
16	0.182	0.520	1.093	1.093	2.030

NOTES:

FLOW CONSTRAINED TO 0.4 DxV

FLOW CONSTRAINED TO 250mm DEEP MAX.

CAPACITY COMPOUND CROSS SECTION (ARR 1987 , 4.38) (n varies)



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MINOR STORM EVENT

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ	4706
DATE	03-03-23		

DRAWING NUMBER: 41901-01-680

REV: B

F:\Autocad Client\419 - HB Land\01 - Courtney Drive\Precinct-Stage 01\Engineering Drawings\Current\41901-01-680.dwg, MINOR, 1/08/2023 7:58:28 AM, 1:2

CALCULATION TABLES-MAJOR 100YR ARI

0.01 ARI (Q100) Major FLOW - 12D DYNAMIC DRAINAGE RESULTS

* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW				APPROACH FLOW					FLOW AT PIT				PIT		HGL			PIPE	HEADLOSSES							
NODE			A.1	A.2	A.3	CRITICAL	INTENSITY		CURRENT	A.1	A.2	A.3	CRITICAL	GRADE	FLOW				CAPTURED	BYPASS			GRADE	GRATE	PIT	PIPE		GRADE	FLOW	COEFFICIENT		HEADLOSS		CAPACITY	VELOCITY	NODE
FROM	TO	NODE TYPE	HA	HA	HA	STORM	MM/HR	10 YR	Storm	HA	HA	HA	ARI MIN.	%	L/S	WIDTH	DxV		L/S	L/S	DxV	NODE	%	RL.	RL	U/S RL.	D/S RL.	%	M3/S	Ku	Kw	Ku	Kw	RATIO	M/S	
01/42	02/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.223			120	133.6	0.877	0.916	0.124			25	2.2	124	1.74	0.02		96	27	0.02	01/47	2.200	60.003	59.26	59.02	58.96	0.17	0.10	7.0	0.0	0.2	0.0	0.300	1.470	01/42
02/42	03/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.333			120	133.6	0.877	0.916	0.185			25	2.2	185	2.35	0.04		121	62	0.04	03/42	2.200	59.188	58.96	58.91	58.39	1.65	0.21	2.8	0.0	0.1	0.0	0.640	2.380	02/42
03/42	04/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.116			120	133.6	0.877	0.916	0.064			25	2.2	126	1.76	0.02		96	28	0.02	04/42	2.200	58.494	58.39	58.12	57.10	3.35	0.36	1.0	0.0	0.3	0.0	1.120	3.290	03/42
04/42	05/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.115			120	133.6	0.877	0.916	0.064			25	2.2	91	1.41	0.01		77	14	0.01	01/41	2.200	57.822	57.01	56.91	53.89	5.96	0.44	1.5	0.0	0.1	0.0	0.640	4.940	04/42
05/42	06/42	DRAINWAYS 1TC50 ON GRADE	0.173			120	133.6	0.877	0.916	0.096			25	12.5	96	1.44	0.03		65	31	0.03	06/42	12.528	53.925	53.89	53.16	49.50	15.53	0.73	1.1	0.0	0.8	0.0	0.880	6.960	05/42
06/42	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.100			120	133.6	0.877	0.916	0.055			25	16.0	86	1.44	0.02		56	29	0.02	04/43	16.000	50.258	49.50	49.40	46.13	16.28	0.75	0.4	0.0	0.1	0.0	0.850	8.130	06/42
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	47.123	45.27	45.07	44.93	1.04	0.21	1.8	0.0	0.3	0.0	1.320	1.980	07/42
08/42	09/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.113			120	133.6	0.877	0.916	0.063			25	13.4	63	1.64	0.01		49	10	0.01	O 08/42	13.420	45.395	44.93	44.71	44.60	1.30	0.24	1.1	0.0	0.2	0.0	1.690	2.290	08/42
09/42	10/42	HEADWALL											25	1.0	0				0				1.000	44.800	44.60	44.60	44.60	0.00	0.24	0.0	0.0	0.0	0.0			09/42
10/42	11/42	BASIN NODE FOR CALCULATIONS			0.286							0.128	25	1.0	128				128				1.000	44.800	44.60	44.60	44.60	0.00	0.18	0.0	0.0	0.0	0.0			10/42
11/42	12/42	TYPE 2 FIELD INLET 900x900 GRATE											25	1.0	181	0.00	0.00		181	0	0.00	O 11/42	1.000	44.450	43.41	43.35	41.89	8.47	0.18	4.7	0.0	0.1	0.0	0.270	3.720	11/42
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	43.085	41.02	40.87	39.46	4.05	0.96	1.9	0.0	0.2	0.0	0.620	4.410	12/42
13/42		MANHOLE 1050mm DIA											25	1.0	0				0				1.000	40.827	39.46											13/42
01/43	02/43	TYPE 2 FIELD INLET 900x600 GRATE	0.008			120	133.6	0.877	0.916	0.004			25	1.0	4	0.00	0.00		4	0	0.00	02/43	1.000	48.600	47.03	47.03	44.33	20.00	0.00	9.7	0.0	0.0	0.0	0.020	2.400	01/43
02/43	03/43	TYPE 2 FIELD INLET 900x600 GRATE	0.009			120	133.6	0.877	0.916	0.005			25	1.0	5	0.00	0.00		5	0	0.00	03/43	1.000	45.100	43.80	43.80	42.74	7.86	0.01	3.1	0.0	0.0	0.0	0.060	2.190	02/43
03/43	04/43	TYPE 2 FIELD INLET 900x900 GRATE	0.020			120	133.6	0.877	0.916	0.011			25	1.0	11	0.00	0.00		11	0	0.00	04/43	1.000	43.727	41.97	41.96	41.87	1.38	0.02	2.9	0.0	0.0	0.0	0.040	1.380	03/43
04/43	12/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.053			120	133.6	0.877	0.916	0.029			25	9.7	58	1.53	0.01		49	7	0.01	O 04/43	9.670	43.038	41.87	41.79	41.71	5.29	0.07	5.3	0.0	0.1	0.0	0.080	2.030	04/43
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	43.085	41.02											12/42
10/42	11/42	BASIN NODE FOR CALCULATIONS			0.286							0.128	25	1.0	128				128				1.000	44.800	44.60	44.60	44.60	0.00	0.17	0.0	0.0	0.0	0.0			10/42
01/45	02/45	Ø225 RISER (EXTEND 300mm ABOVE FSL)	0.020			120	133.6	0.877	0.916	0.011			25	1.0	11				11				1.000	47.971	46.55	46.50	46.52	-0.31	0.01	7.0	0.0	0.1	0.0	0.150	0.760	01/45
02/45	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.224			120	133.6	0.877	0.916	0.125			25	1.0	125				125				1.000	47.606	46.52	46.44	45.58	10.18	0.16	5.0	0.0	0.1	0.0	0.230	3.470	02/45
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	47.123	45.27											07/42
01/46	02/46	TYPE 2 FIELD INLET 900x900 GRATE	0.065			120	133.6	0.877	0.916	0.036			25	1.0	36				36				1.000	58.700	57.08	57.07	56.82	2.02	0.04	8.0	0.0	0.0	0.0	0.430	1.160	01/46
02/46	03/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	57.400	56.82	56.74	56.57	1.34	0.06	1.6	0.0	0.1	0.0	1.090	1.430	02/46
03/46	04/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	57.250	56.57	56.56	56.48	0.63	0.08	0.6	0.0	0.0	0.0	0.870	1.340	03/46
04/46	05/46	TYPE 2 FIELD INLET 600x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	57.100	56.43	56.41	56.13	2.23	0.10	1.1	0.0	0.0	0.0	0.540	2.250	04/46
05/46	06/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	57.100	56.06	56.06	55.81	2.00	0.12	0.3	0.0	0.0	0.0	0.350	2.540	05/46
06/46	07/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	56.750	55.81	55.79	55.56	1.90	0.14	0.9	0.0	0.0	0.0	0.410	2.210	06/46
07/46	08/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	56.450	55.56	55.53	55.34	1.51	0.16	0.8	0.0	0.0	0.0	0.610	2.190	07/46
08/46	09/46	TYPE 2 FIELD INLET 900x600 GRATE	0.037			120	133.6	0.877	0.916	0.021			25	1.0	21				21				1.000	56.150	55.26	55.26	54.55	6.69	0.18	0.8	0.0	0.0	0.0	0.310	4.270	08/46
09/46	05/42	MANHOLE C/W CONVERTER SLAB 600x600 GRATE	0.041			120	133.6	0.877	0.916	0.023			25	1.0	23				23				1.000	55.850	54.25	54.00	53.89	0.74	0.21	2.1	0.0	0.3	0.0	0.410	3.400	09/46
05/42	06/42	DRAINWAYS 1TC50 ON GRADE	0.173			120	133.6	0.877	0.916	0.096			25	12.5	96	1.44	0.03		65	31	0.03	06/42	12.528	53.925	53.89											05/42
01/47	03/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.056			120	133.6	0.877	0.916	0.031			25	2.2	57	1.07	0.00		57	0	0.00	08/42	2.200	58.494	58.44	58.39	58.39	0.06	0.06	7.0	0.0	0.1	0.0	0.180	0.680	01/47
03/42	04/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.116			120	133.6	0.877	0.916	0.064			25	2.2	126	1.76	0.02		96	28	0.02	04/42	2.200	58.494	58.39											03/42
01/48	02/48	INLET HEADWALL											25	1.0	0				0				1.000	54.000	54.94	54.62	53.31	3.22	3.07	0.5	0.0	0.3	0.0	1.100	3.600	01/48
02/48	03/48	INLET HEADWALL											25	1.0	0				0				1.000	53.750	52.44	52.44	50.05	10.04	3.07	0.0	0.0	0.0	0.0	0.020	5.490	02/48
03/48	04/48	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0				0				1.000	50.930	50.05	50.05	49.53	4.63	3.17	0.0	0.0	0.0	0.0	0.020	5.010	03/48
04/48		REFERENCE											25	1.0	0				0				1.000	50.410	49.53											04/48
01/49	02/49	INLET GULLY ON GRADE (LG) Type S Lintel	0.074			120	133.6	0.877	0.916	0.041			25	8.0	131				85				7.988	54.341	53.69	53.43	53.32	2.24	0.09	9.7	0.0	0.3	0.0	0.260	1.310	01/49
02/49	03/49	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	54.389	52.36	52.36	51.67	6.62	0.15	2.1	0.0	0.0	0.0	0.070	3.760	02/49
03/49	04/49	REFERENCE											25	1.0	0				0				1.000	53.534	51.67	51.67	51.43	6.90	0.15	0.0	0.0	0.0	0.0	0.070	4.020	03/49
04/49	03/48	HEADWALL											25	1.0	0				0				1.000	51.577	51.35	51.35	50.05	6.05	0.15	0.0	0.0	0.0	0.0	0.000	0.970	04/49
03/48	04/48	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0				0				1.000	50.930	50.05											03/48
01/50	02/50	INLET GULLY IN SAG (LS) Type S Lintel	0.137			120	133.6	0.877	0.916	0.076			25	0.5	216	2.97	0.06		112	105	0.06	03/52	0.479	58.903	58.76	58.68	58.57	1.96	0.11	9.7	0.0	0.1	0.0	0.350	1.290	01/50
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	58.848	58.57	58.08	57.68	1.86	0.66	1.3	0.0	0.5	0.0	1.410	3.040	02/50
03/50	04/50	HEADWALL											25	1.0	0				0				1.000	57.800	57.68	57.68	57.68	0.00	0.66	0.0	0.0	0.0	0.0			03/50
04/50	05/50	BASIN NODE FOR CALCULATIONS			0.165							0.074	25	1.0	74				74				1.000	57.000	57.68	57.68	57.68	0.00	0.40	0.0	0.0	0.0	0.0			04/50
05/50	06/50	TYPE 2 FIELD INLET 900x600 C/W DOME TOP											25	1.0	402	0.00	0.00		402	0	0.00	07/50	1.000	57.300	57.68	56.75	55.68	6.50	0.40	1.9	0.0	0.9	0.0	0.920	3.910	05/50
06/50	07/50	HEADWALL											25	1.0	0				0				1.000	56.065	55.40	55.40	55.40	0.00	0.40	0.0	0.0	0.0	0.0			06/50
07/50	01/48	BASIN NODE FOR CALCULATIONS			6.593							3.391	25	1.0	3391				3391				1.000	54.400	54.94	54.94	54.94	0.00	3.07	0.0	0.0	0.0	0.0			07/50
01/48	02/48	INLET HEADWALL											25	1.0	0				0				1.000	54.000	54.94											01/48
04/50	05/50	BASIN NODE FOR CALCULATIONS			0.165							0.074	25	1.0	74				74				1.000	57.000	57.68	57.68	57.68	0.00	0.32	0.0	0.0	0.0	0.0			04/50
01/52	02/52	INLET GULLY ON GRADE (LG) Type S Lintel	0.191			120	133.6	0.877	0.916	0.106			25	2.7	106	1.61	0.02		86	20	0.01	01/50	2.738	59.258	59.11	58.99	58.97	0.12	0.09	9.7	0.0	0.2	0.0	0.250	1.560	01/52
02/52	03/52	INLET GULLY ON GRADE (LG) Type S Lintel	0.290			120	133.6	0.877	0.916	0.161			25	3.1	161	1.86	0.05		102	68	0.04	01/57	3.071	58.914	58.97	58.88	58.67	1.36	0.19	5.2	0.0	0.2	0.0	0.480	2.080	02/52
03/52	02/50	INLET GULLY IN SAG (LS) Type S Lintel	0.111			120	133.6	0.877	0.916	0.062			25	0.7	164	2.17	0.06		71	92	0.05	01/49	0.694	58.763	58.67	58.62	58.57	1.06	0.25	0.8	0.0	0.1	0.0	0.660	1.540	03/52
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	58.848	58.57											02/50
01/53	02/53	INLET GULLY ON GRADE (LG) Type S Lintel	0.295			120	133.6	0.877	0.916	0.164			25	0.6	164	2.46	0.02		127	37	0.02	02/53	0.600	61.686	61.60	61.47	61.38	2.18	0.13	4.2	0.0	0.1	0.0	0.390	1.330	01/53
02/53	03/53	INLET GULLY IN SAG (LS) Type S Lintel	0.137			120	133.6	0.877	0.916	0.076			25	1.6	113	2.62	0.02		86	26	0.02	03/53	1.602	61.662	61.38	61.18	61.04	1.64	0.21	1.6	0.0	0.2	0.0	0.930	1.920	02/53
03/53	04/53	INLET GULLY IN SAG (LS) Type S Lintel	0.241			120	133.6	0.877	0.916	0.134			25	0.3	160	2.11	0.06		69	90	0.06	05/53	0.262	61.647	61.04	60.79	60.48	3.08	0.28	1.4	0.0	0.3	0.0	0.870	2.780	03/53
04/53	05/53	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	61.584	60.45	60.36	59.18	3.14	0.28	1.7	0.0	0.1	0.0	0.480	3.470	04/53
05/53	02/50	INLET GULLY ON GRADE (LG) Type S Lintel	0.122			120	133.6	0.877	0.916	0.068			25	3.9	157	3.10	0.06		97	124	0.07	01/50	3.888	59.070	59.18	59.03	58.57	4.30	0.35	1.4	0.0	0.3	0.0	0.770	3.130	05/53
02/50	03/50	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	58.848	58.57											02/50
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.455	25	1.0	455				455				1.000	44.500	45.74	45.74	45.74	0.00	1.80	0.0	0.0	0.0	0.0			14/25
07/42	08/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	47.123	45.27	45.24	41.76	10.68	0.72	1.5	0.0	0.0	0.0	0.570	6.350	07/42
12/42	13/42	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	43.085	41.02											12/42
01/57	02/49	INLET GULLY ON GRADE (LG) Type S Lintel	0.063			120	133.6	0.877	0.916	0.035			25	9.2	101	2.11	0.02		69	30	0.02	O 01/57	9.206	54.628	53.67	53.57	53.27	8.37	0.07	9.7	0.0	0.1	0.0	0.110	2.300	01/57
02/49	03/49	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	54.389	52.36											02/49
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.455	25	1.0	455				455				1.000	44.500	45.74	45.74	45.74	0.00	0.76	0.0	0.0	0.0	0.0			14/25
01/60	02/45	Ø225 RISER (EXTEND 300mm ABOVE FSL)	0.049			120	133.6	0.877	0.916	0.027			25	1.0	27				27				1.000	49.390	46.75	46.72	46.52	2.01	0.03	9.1	0.0	0.0	0.0	0.330	1.150	01/60
02/45	07/42	INLET GULLY ON GRADE (LG) Type S Lintel	0.224			120	133.6	0.877	0.916	0.125			25	1.0	125				125				1.000	47.606	46.52											02/45

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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BENNETT + BENNETT

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MAJOR STORM EVENT

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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER: 41901-01-681

REV: B

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SEQ CODE WATER NOTES

SEQ CODE NOTES COPIED DIRECTLY FROM DRAWING SEQ-WAT-1101-3.

VEGETATION PROTECTION

A. TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
B. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED & ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION & REMAIN UNTIL COMPLETION.
C. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
D. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL

A. TOPSOIL & SUBSOIL SHALL BE STOCKPILED SEPARATELY.
B. CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
C. IF ACID SULPHATE SOILS EXIST IN THE WORKS AREA. THE CONTRACTOR MUST PREPARE A RISK ASSESSMENT BASED ON THE QUEENSLAND ACID SULPHATE SOIL TECHNICAL MANUAL & MANAGE THE ACID SULPHATE SOILS AS PER THE MANUAL.

CREEK CROSSINGS

A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHALL BE STOCKPILED WITHIN 5m OF THE CREEK.

REHABILITATION

A. PREDISTURBANCE SOIL PROFILES & COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

GENERAL NOTES

1. ALL WORK & MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS & STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS & WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
4. COVER ON MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN SEQ-WAT-1200-2.
5. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWINGS.
6. A WATER METER SUPPLIED AT THE DEVELOPER'S COST, IS TO BE INSTALLED AT THE SERVICE POINT OF EACH LOT IN ACCORDANCE WITH THE STANDARD DRAWING FOR THE SEQ-SP.
7. ALL MATERIALS USED IN THE WORKS SHALL COMPLY WITH THE SEQ-SP's ACCEPTED PRODUCTS & MATERIALS LIST OR BE APPROPRIATELY SHOWN, LISTED & DEFINED IN THE ENGINEERING SUBMISSION SO THAT THE ALTERNATIVE PRODUCT OR MATERIAL CAN BE ASSESSED & IF APPROPRIATE, APPROVED BY THE SEQ-SP.
8. ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS.
9. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING NO.SEQ-WAT-1410-1.
10. THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.

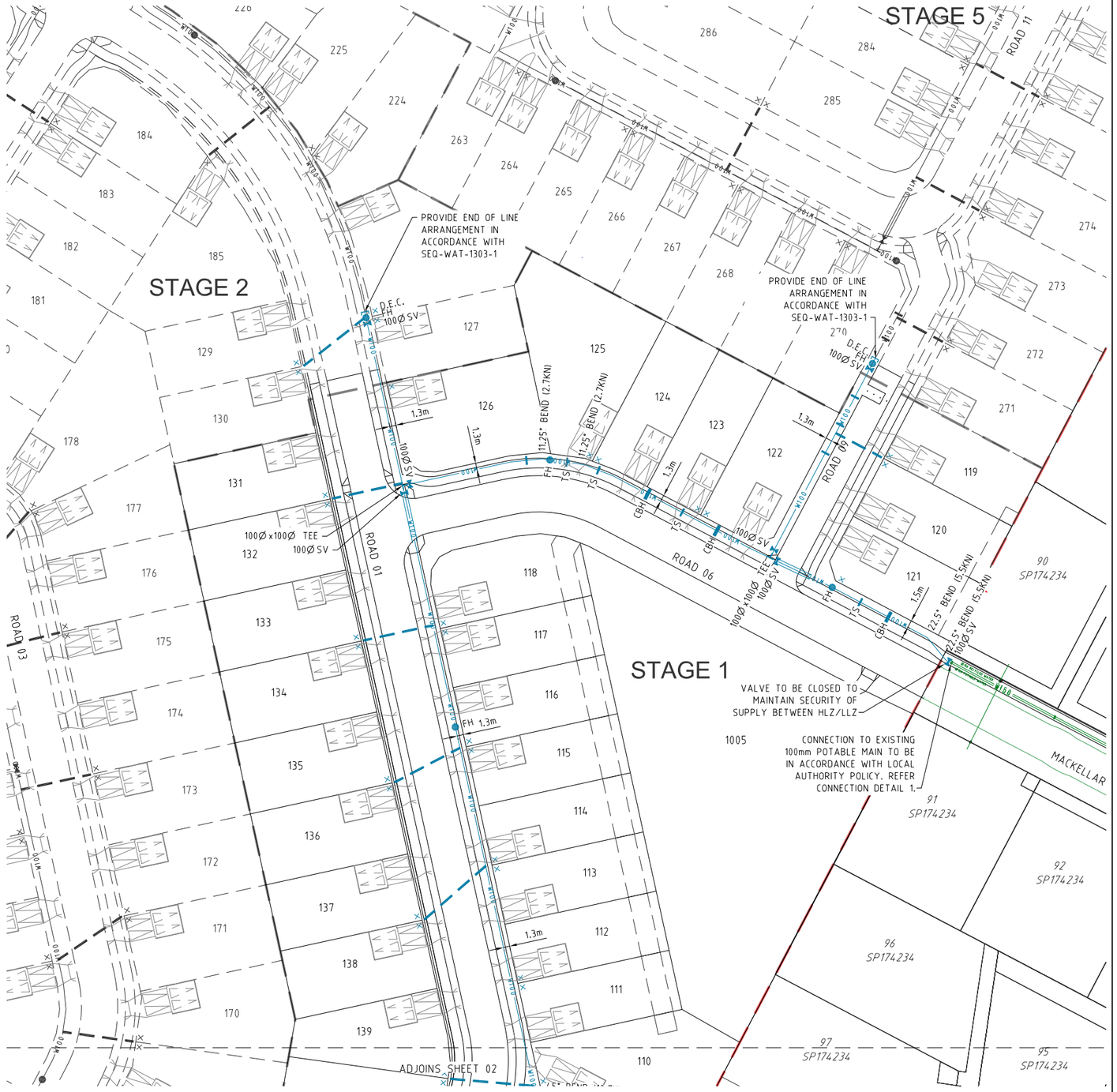
ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

PROJECT SPECIFIC WATER NOTES

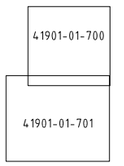
a. ALL PROPERTY CONNECTION ROAD CROSSINGS TO BE SLEEVED WITH DN100 uPVC PN12 CONDUIT IN ACCORDANCE WITH SEQ-WAT-1106-1.
b. ALL MATERIALS ARE TO BE SUPPLIED & CONSTRUCTED IN ACCORDANCE WITH SEQ CODE.
c. WATER METERS ARE TO BE SUPPLIED & INSTALLED AT ALL WATER SERVICE / CONNECTION POINTS IN ACCORDANCE WITH SEQ-WAT-1106-1.
d. THRUST BLOCKS TO BE LOCATED & INSTALLED BY CONTRACTOR IN ACCORDANCE WITH SEQ CODE.
e. TRENCH STOPS & BULKHEADS TO BE IN ACCORDANCE WITH WATER AUTHORITY REQUIREMENTS.
f. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR WATER RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT.
g. FOOTPATHS SHOWN FOR INFORMATION PURPOSES ONLY.
h. ALL WATER CONSTRUCTION WORK UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH & SAFETY LEGISLATION.
i. MINIMUM WATERMAIN COVER TO BE IN ACCORDANCE WITH SECTION 7.4.2 TABLE 7.2 OF THE SEQ AMENDMENT TO WATER SUPPLY CODE OF AUSTRALIA.
j. CONTRACTOR TO PAY ALL FEES & CHARGES ASSOCIATED WITH CONNECTIONS.
k. END OF LINE ARRANGEMENTS (EG. CUL-DE-SAC HEADS) TO BE CONSTRUCTED IN ACCORDANCE WITH SEQ-WAT-1104-1.
l. TEMPORARY CONSTRUCTION HYDRANTS TO BE PROVIDED IN ACCORDANCE WITH SEQ-WAT-1303-1 AT ALL CONNECTIONS.
m. ALL LIVE CONNECTIONS ARE TO BE ORGANISED BY THE CIVIL CONTRACTOR & UNDERTAKEN BY COUNCIL AT THE DEVELOPERS EXPENSE.

LEGEND

- EXISTING 100Ø WATER MAIN
- EXISTING 150Ø WATER MAIN
- EXISTING 200Ø WATER MAIN
- EXISTING 225Ø WATER MAIN
- EXISTING 250Ø WATER MAIN
- EXISTING 300Ø WATER MAIN
- EXISTING FOOTPATH
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- FUTURE 100Ø WATER MAIN
- FUTURE 150Ø WATER MAIN
- FUTURE 200Ø WATER MAIN
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE FOOTPATH
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED FOOTPATH
- SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED 100Ø WATER MAIN
- PROPOSED 150Ø WATER MAIN
- PROPOSED 200Ø WATER MAIN
- HYDRANT (FH)
- TEE
- REDUCER
- SCOUR VALVE
- ENDCAP
- SLUICE VALVE
- AIR VALVE
- METER LOCATION
- TRENCH STOP (TS)
- CONCRETE BULKHEAD (CBH)
- SERVICE CONDUIT
- DICL ROAD CROSSING



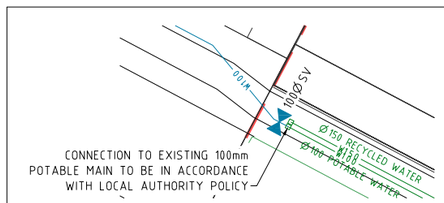
SHEET LAYOUT



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WATER PIPE SPECIFICATIONS

WATER MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	PVC-M SERIES 2 PN16
ROAD CROSSING	DICL PN35



CONNECTION DETAIL 1

SCALE 1:200 - A1 (1:400 - A3)

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
Robin Russell & ASSOCIATES PTY. LTD.
BENNETT+BENNETT

DRAWING TITLE

WATER RETICULATION PLAN SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As
Mortons-Urban Solutions
ABN 39 116 375 065

Postal Address
PO Box 2484
Southport QLD 4215

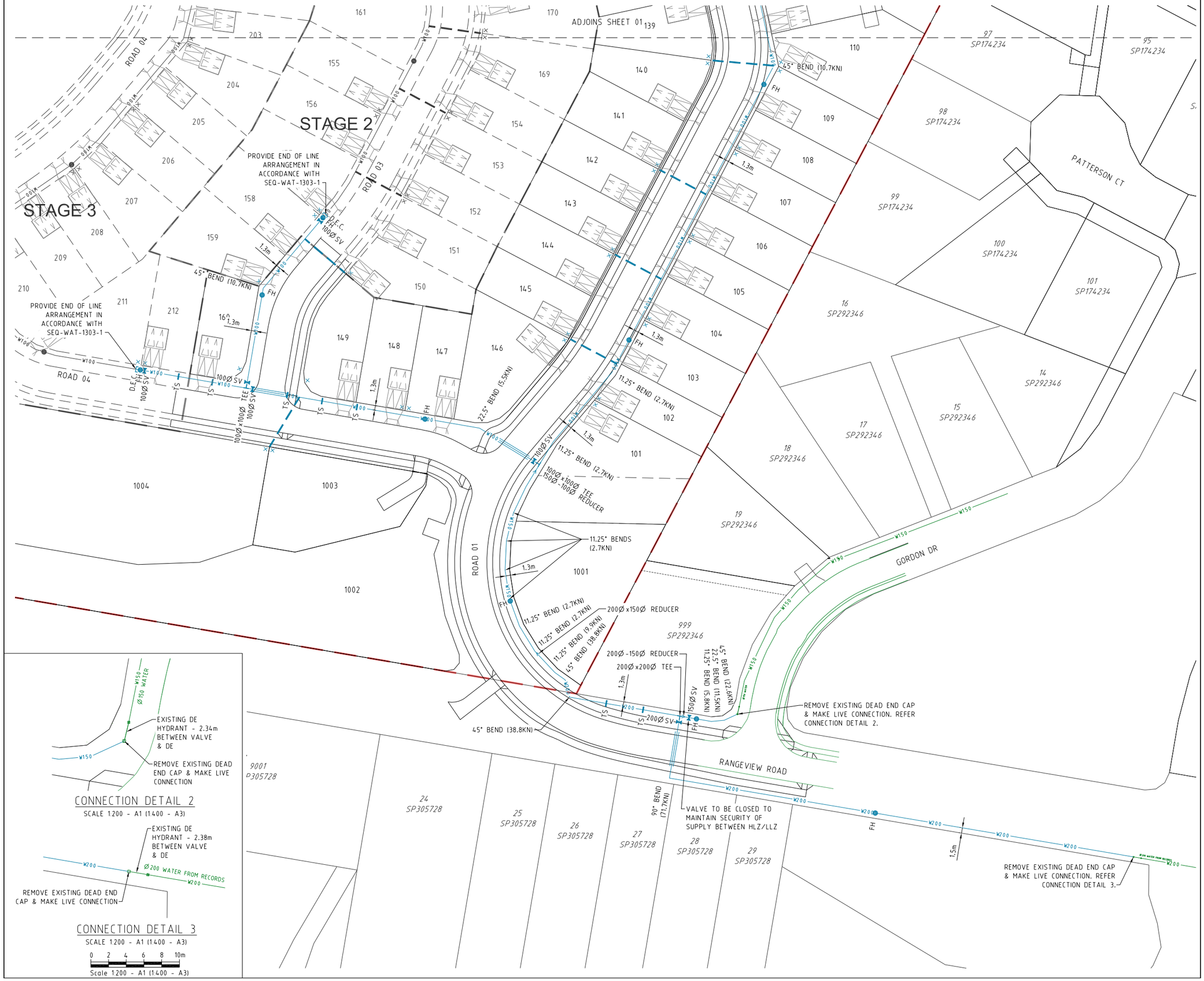
mortons@urbansolutions.net.au
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Tel 07 5571 1099

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER: 41901-01-700
REV: B

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CONNECTION DETAIL 2

SCALE 1:200 - A1 (1:400 - A3)

CONNECTION DETAIL 3

SCALE 1:200 - A1 (1:400 - A3)

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

REV	DATE	DESCRIPTION	INT
B	14-07-23	RFI AMENDMENTS	EP
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

WATER RETICULATION PLAN SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As
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DESIGNED	RB	DRAWN	EMH
APPROVED	RPEQ 4706	DATE	03-03-23

DRAWING NUMBER 41901-01-701

REV B

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THRUST BLOCK LENGTH

PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 KPa.	VERY STIFF CLAY SANDY LOAM 100KPa.	SAND & GRAVEL HARDCLAY 150KPa.	SAND & GRAVEL CEMENTED WITH CLAY 200KPa.	ROCK 240kPa
100	90° BEND	19.8	400	1000	●	●	●	●
	60° BEND	14.0		700	●	●	●	●
	45° BEND	10.7		●	●	●	●	●
	22.5° BEND	5.5		●	●	●	●	●
	11.25° BEND	2.7		●	●	●	●	●
	TEE OR CLOSED END	14.0		700	●	●	●	●
150	90° BEND	41.7	450	1860	930	●	●	●
	60° BEND	29.5		1320	660	●	●	●
	45° BEND	22.6		1000	●	●	●	●
	22.5° BEND	11.5		●	●	●	●	●
	11.25° BEND	5.8		●	●	●	●	●
	TEE OR CLOSED END	29.5		1300	660	●	●	●
200	90° BEND	71.7	550	*	1300	870	650	●
	60° BEND	50.7		1850	920	●	●	●
	45° BEND	38.8		1410	700	●	●	●
	22.5° BEND	19.8		720	●	●	●	●
	11.25° BEND	9.9		●	●	●	●	●
	TEE OR CLOSED END	50.7		1850	920	●	●	●
225	90° BEND	89.4	600	*	1500	1000	750	●
	60° BEND	63.2		2110	1060	700	●	●
	45° BEND	48.4		1620	810	●	●	●
	22.5° BEND	24.6		830	●	●	●	●
	11.25° BEND	12.4		●	●	●	●	●
	TEE OR CLOSED END	63.2		210	1060	700	●	●
250	90° BEND	109.0	650	*	1700	1120	840	700
	60° BEND	77.1		2400	1200	800	●	●
	45° BEND	59.0		1820	910	●	●	●
	22.5° BEND	30.1		930	●	●	●	●
	11.25° BEND	15.1		●	●	●	●	●
	TEE OR CLOSED END	77.1		2400	1200	800	●	●
300	90° BEND	158.6	700	*	2270	1510	1140	950
	60° BEND	112.2		*	1600	1070	800	670
	45° BEND	85.9		2453	1230	820	●	●
	22.5° BEND	43.8		1250	630	●	●	●
	11.25° BEND	22.0		630	●	●	●	●
	TEE OR CLOSED END	112.2		*	1600	1070	800	750

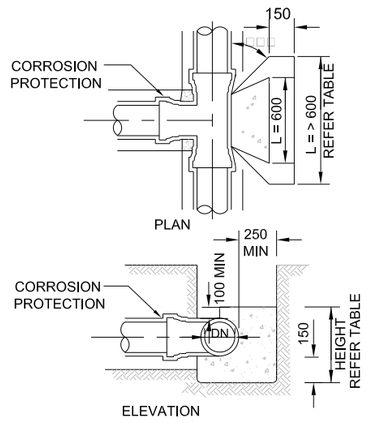
THRUST BLOCK LENGTH

PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 KPa.	VERY STIFF CLAY SANDY LOAM 100KPa.	SAND & GRAVEL HARDCLAY 150KPa.	SAND & GRAVEL CEMENTED WITH CLAY 200KPa.	ROCK 240kPa
375	90° BEND	241.9	800	*	*	2220	1510	1260
	60° BEND	171.0		*	2140	1430	1070	890
	45° BEND	130.9		*	1640	1090	820	680
	22.5° BEND	66.7		1670	840	●	●	●
	11.25° BEND	33.5		840	●	●	●	●
	TEE OR CLOSED END	171.0		*	2140	1430	1070	890
450	90° BEND	342.6	900	*	*	2540	1900	1590
	60° BEND	242.3		*	2690	1800	1350	1120
	45° BEND	185.4		*	2060	1375	1030	860
	22.5° BEND	94.5		2100	1050	700	●	●
	11.25° BEND	47.5		1060	●	●	●	●
	TEE OR CLOSED END	242.3		*	2690	1800	1350	1120
500	90° BEND	418	1000	*	*	2790	2090	1740
	60° BEND	295.6		*	*	1970	1480	1230
	45° BEND	226.2		*	2260	1510	1130	940
	22.5° BEND	115.3		2310	1150	770	●	●
	11.25° BEND	58.0		1160	●	●	●	●
	TEE OR CLOSED END	295.5		*	*	1970	1480	1230
600	90° BEND	593	1100	*	*	*	2700	2250
	60° BEND	419		*	*	2540	1910	1590
	45° BEND	320		*	2920	1950	1460	1220
	22.5° BEND	164		2980	1490	990	750	620
	11.25° BEND	82.2		1500	750	●	●	●
	TEE OR CLOSED END	419		*	*	2540	1910	1590
750	90° BEND	909	1300	*	*	*	*	2920
	60° BEND	643		*	*	*	2480	2060
	45° BEND	492		*	*	2530	1890	1580
	22.5° BEND	251		*	1930	1290	970	810
	11.25° BEND	126.1		1940	970	650	●	●
	TEE OR CLOSED END	643		*	*	*	2480	2060
900 (Ø960 MSCL)	90° BEND	1,228	1500	*	*	*	*	3420
	60° BEND	868		*	*	*	2900	2420
	45° BEND	664		*	*	2960	2220	1850
	22.5° BEND	339		*	2260	1510	1130	940
	11.25° BEND	170		2270	1140	760	●	●
	TEE OR CLOSED END	868		*	*	*	3300	2650

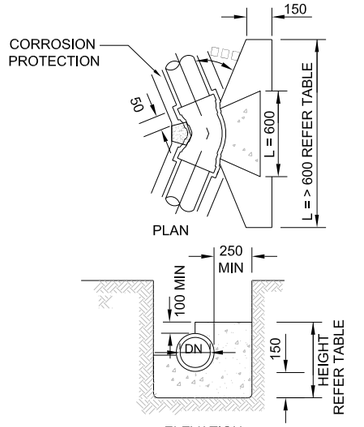
THRUST BLOCK DIMENSIONS - 1200kPa

● INDICATES BLOCK LENGTH OF 600

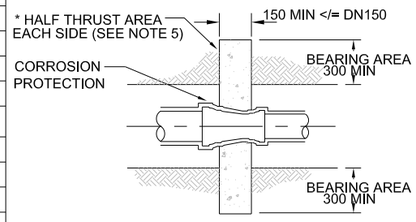
* = SPECIAL DESIGN



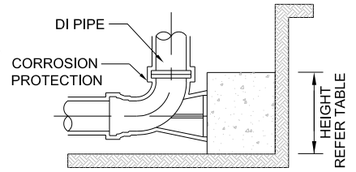
THRUST BLOCK FOR TEES
(FOR HORIZONTAL THRUST)



THRUST BLOCK FOR BENDS
(FOR HORIZONTAL THRUST)



TAPER THRUST BLOCK
(FOR HORIZONTAL THRUST)



FLUSHING/WASHOUT BEND THRUST BLOCK
(FOR HORIZONTAL THRUST) (MINIMUM REQUIRED THRUST AREA AS PER TEE OR CLOSED END)

NOTES

1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. SOIL CLASSIFICATIONS USED ON THIS DRAWING ARE EXPLAINED IN SEQ-WAT-12110-1. DO NOT USE STANDARD THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WITH < 5OkPa BEARING CAPACITY EG;
   –VERY SOFT, SOFT OR FIRM CLAY.
   –LOOSE CLEAN SAND.
   –UNCOMPACTED FILL OR REFUSE.
   A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE SOILS.
3. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES OR BE LOCATED OUTSIDE THE WATER MAIN ALLOCATION WITHOUT WATER AGENCY APPROVAL.
4. ALL CONCRETE GRADE N20. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200kPa AND ACTUAL DICL PIPE DIAMETERS.
5. THE MINIMUM THRUST AREA FOR TAPER THRUST BLOCKS TO BE EQUAL TO THE DIFFERENCE BETWEEN THE THRUST AREAS FOR TEES OR CLOSED ENDS OF EQUIVALENT DIAMETER TO THOSE EACH SIDE OF TAPER. THE DETAIL SHOWN IS FOR < OR = DN150 MAINS. FOR LARGER MAINS, THE TAPER THRUST BLOCK SHALL BE REINFORCED AND OF A SIZE AS SHOWN IN SEQ-WAT-1206-1.
6. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURE FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN.
7. WHEN POURING CONCRETE AGAINST FITTINGS PLACE A MEMBRANE OF POLYETHYLENE, PVC OR FELT BETWEEN THE FITTING AND CONCRETE TO PREVENT DAMAGE TO THE FITTING. PIPE
8. JOINTS TO BE CLEAR OF CONCRETE.
   CONCRETE THRUST BLOCK ANCHORS FOR VALVES TO BE AS DETAILED ON SEQ-WAT-1206-1.

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 01

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

REV	DATE	DESCRIPTION	INT
A	03-03-23	COUNCIL ISSUE	JB

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ASSOCIATED CONSULTANTS

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DRAWING TITLE

WATER
RETICULATION
DETAILS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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DESIGNED	RB	DRAWN	EMH
APPROVED		RPEQ 4706	DATE 03-03-23

DRAWING NUMBER 41901-01-710
REV A

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