COURTNEY DRIVE
UPPER COOMERA

OPERATIONAL WORKS
STAGE 02
No. 41901-02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

SCHEDULE OF DRAWINGS

NUMBER	REV. NO.	TITLE
GENERAL		
41901-02-000	B	COVER SHEET
41901-02-003	A	SAFETY IN DESIGN
41901-02-004	A	RISK MATRIX & NOTES
41901-02-005	B	ROAD HIERARCHY & STAGING PLAN SHEET 01
41901-02-006	A	ROAD HIERARCHY & STAGING PLAN SHEET 02
EARTHWORKS: EXISTING FEATURES & DEMOLITION		
41901-02-020	B	PLAN SHEET 01
41901-02-021	A	PLAN SHEET 02
EARTHWORKS: BULK EARTHWORKS CUT FILL		
41901-02-040	B	PLAN SHEET 01
41901-02-041	A	PLAN SHEET 02
41901-02-042	A	PLAN SHEET 03
41901-02-045	A	GEOTECHNICAL REQUIREMENTS PLAN
41901-02-050	B	EARTHWORKS SECTION KEY PLAN
41901-02-051	B	SECTIONS-SHEET 01
41901-02-052	B	SECTIONS-SHEET 02
EARTHWORKS: RETAINING WALL & DETAIL GRADING		
41901-02-060	B	PLAN SHEET 01
41901-02-061	B	PLAN SHEET 02
41901-02-062	B	PLAN SHEET 03
41901-02-063	B	PLAN SHEET 04
41901-02-070	B	DETAILS
41901-02-071	A	FINAL TRIM DETAILS
EARTHWORKS: PADMOUNT SECTIONS		
41901-02-075	B	PADMOUNT 4 SHEET 01
41901-02-076	B	PADMOUNT 6 SHEET 02
EARTHWORKS: FINAL SURFACE & SEDIMENT AND EROSION CONTROL		
41901-02-080	B	PLAN SHEET 01
41901-02-081	B	PLAN SHEET 02
41901-02-082	B	PLAN SHEET 03
41901-02-083	A	PLAN SHEET 04
ROADS: COMBINED SERVICES		
41901-02-090	B	PLAN SHEET 01
41901-02-091	B	PLAN SHEET 02
41901-02-092	B	PLAN SHEET 03
ROADS: ROADWORKS		
41901-02-100	C	PLAN SHEET 01
41901-02-101	B	PLAN SHEET 02
41901-02-102	A	PLAN SHEET 03
41901-02-120	A	DETAILS
ROADS: LONGITUDINAL SECTIONS		
41901-02-200	B	COURTNEY DRIVE-ROAD 01 SHEET 01
41901-02-201	B	COURTNEY DRIVE-ROAD 01 (Cont.) SHEET 02
41901-02-202	A	ROAD 03
41901-02-203	B	ROAD 04 & ROAD 07
41901-02-204	A	ROAD 10 & ACCESS BASIN 01
ROADS: CROSS SECTIONS		
41901-02-300	A	COURTNEY DRIVE-ROAD 01 SHEET 01
41901-02-301	B	COURTNEY DRIVE-ROAD 01 (Cont.) SHEET 02
41901-02-302	B	COURTNEY DRIVE-ROAD 01 (Cont.) SHEET 03
41901-02-303	A	ROAD 03 SHEET 01
41901-02-304	A	ROAD 03 (Cont.) SHEET 02
41901-02-305	A	ROAD 04
41901-02-306	B	ROAD 07 & ROAD 10
41901-02-307	A	ACCESS BASIN 01
ROADS: INTERSECTION GRADING		
41901-02-400	B	DETAILS
ROADS: JOINTING DETAILS		
41901-02-410	B	DETAILS SHEET 01
41901-02-411	B	DETAILS SHEET 02
ROADS: LINEMARKING AND SIGNAGE		
41901-02-420	A	PLAN SHEET 01
41901-02-421	A	PLAN SHEET 02
SEWER: SEWER RETICULATION		
41901-02-500	B	PLAN SHEET 01
41901-02-501	B	PLAN SHEET 02
41901-02-502	A	PLAN SHEET 03
41901-02-510	A	DETAILS
SEWER: PROFILES		
41901-02-530	B	SHEET 01
41901-02-531	B	SHEET 02
41901-02-532	B	SHEET 03
41901-02-533	B	SHEET 04
41901-02-534	B	SHEET 05
41901-02-535	B	SHEET 06
SEWER: HOUSE CONNECTION PROFILES		
41901-02-550	B	SHEET 01
41901-02-551	B	SHEET 02
DRAINAGE: STORMWATER		
41901-02-600	B	PLAN SHEET 01
41901-02-601	B	PLAN SHEET 02
41901-02-602	A	PLAN SHEET 03
DRAINAGE: PROFILES		
41901-02-620	C	SHEET 01
41901-02-621	B	SHEET 02
41901-02-622	B	SHEET 03
41901-02-623	B	SHEET 04
41901-02-624	A	SHEET 05
41901-02-625	A	SHEET 06
41901-02-626	C	SHEET 07
DRAINAGE: PIT OUTLETS & TYPICAL DETAILS		
41901-02-640	B	OUTLETS & TYPICAL DETAILS SHEET 01
41901-02-641	B	RCBC OUTLET
41901-02-642	B	STABILISATION PLAN
DRAINAGE: PIT DETAILS		
41901-02-650	B	PIT DETAILS SHEET 01
41901-02-651	B	PIT DETAILS SHEET 02
41901-02-652	B	PIT DETAILS SHEET 03
DRAINAGE: BASINS & CULVERTS		
41901-02-660	B	PLAN SHEET 01
41901-02-661	B	PLAN SHEET 02
41901-02-662	A	SECTIONS SHEET 01
41901-02-663	A	SECTIONS SHEET 02
41901-02-664	B	DETAILS SHEET 01
41901-02-665	B	DETAILS SHEET 02
DRAINAGE: CATCHMENT		
41901-02-670	B	PLAN SHEET 01
41901-02-671	A	PLAN SHEET 02
DRAINAGE: CALCULATION TABLES		
41901-02-680	B	MINOR CALC TABLE SHET 01
41901-02-680A	A	MINOR CALC TABLE SHEET 02
41901-02-681	B	MAJOR CALC TABLE SHEET 01
41901-02-681A	A	MAJOR CALC TABLE SHEET 02
WATER: WATER RETICULATION		
41901-02-700	B	PLAN SHEET 01
41901-02-701	B	PLAN SHEET 02
41901-02-702	B	PLAN SHEET 03
41901-02-710	A	DETAILS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

COMPASS ASSURANCE ISO 9001 QUALITY

CLIENT

HB Land

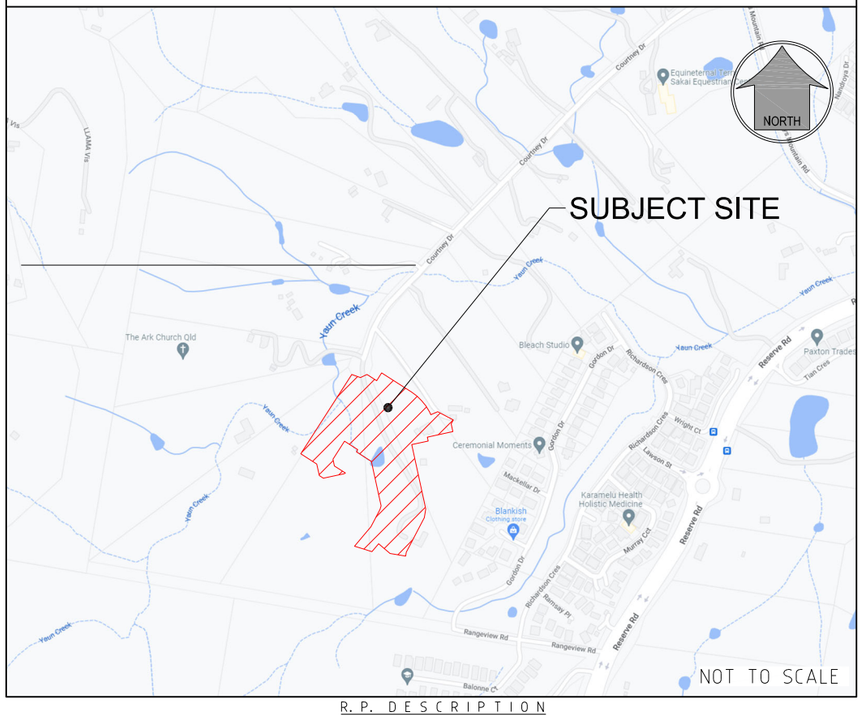
SUB-CONSULTANTS

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.
41901-02-000	C

F:\Autocad Client\419 - HB Land\01 - Courtney Drive\Precinct-Stage 02\Engineering Drawings\Current\41901-02-000.dwg, COVER SHEET, 23/02/2024 8:21:18 AM, 1:2

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

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	Permanent Disability	Possible	12	High	- 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	Failing 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
Temporary Stormwater Construction Sediment Ponds	Drowning	Construction and Maintenance	Public, Contractors & Council	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
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 02

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	13-10-23	COUNCIL ISSUE	EP

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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
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-003	A

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

RISK MATRIX & NOTES

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Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-004

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.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

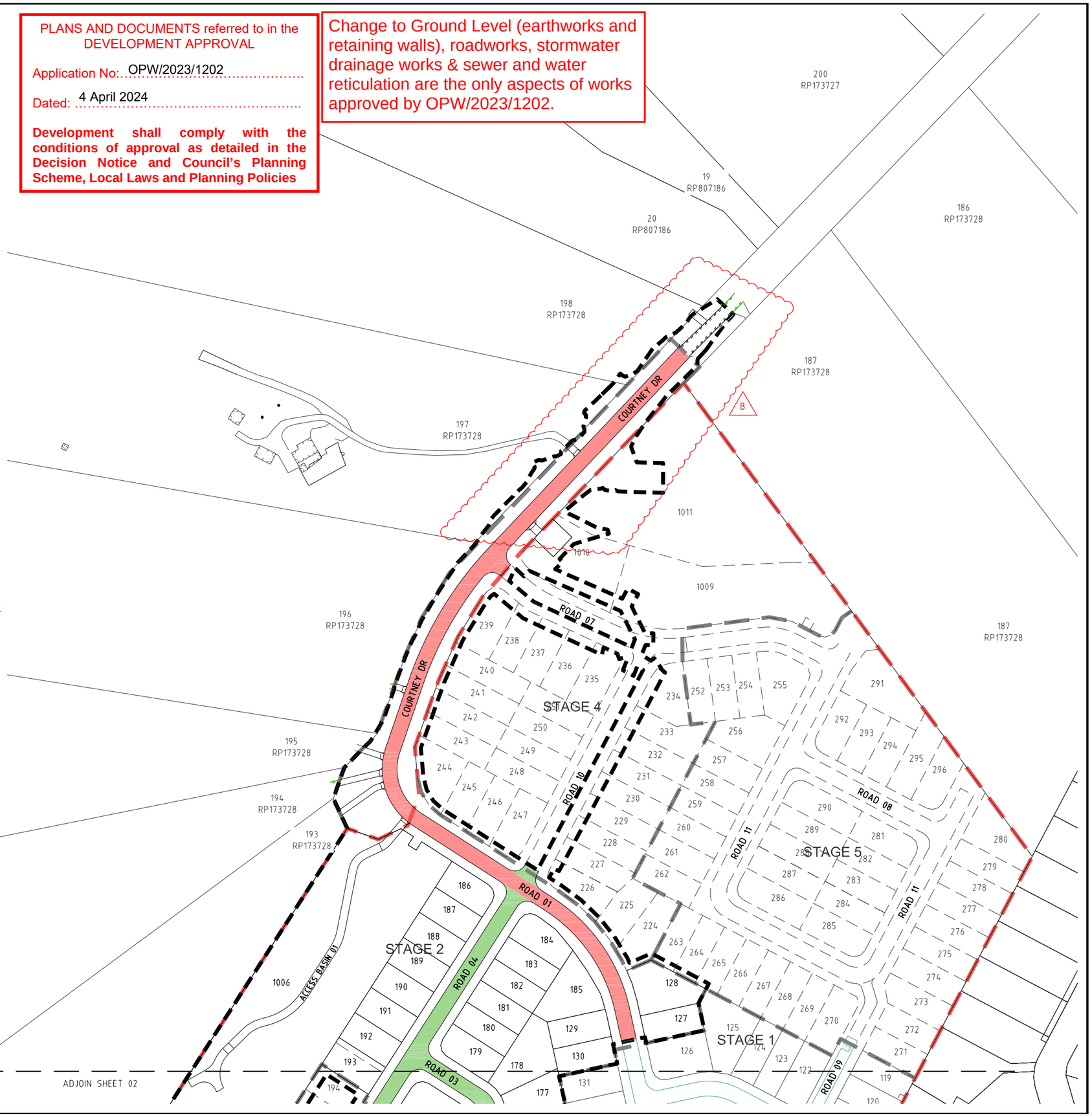
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

LEGEND

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

REFER 120 DRAWING 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



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	17-01-24	COURTNEY DR & LIMIT OF WORKS AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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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
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-005
REV B

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LEGEND

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

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- 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

DIAL BEFORE YOU DIG www.1100.com.au

ADJOIN SHEET 01

STAGE 1

STAGE 2

STAGE 3

ROAD 01

ROAD 02

ROAD 03

ROAD 04

ROAD 06

ROAD 09

MACKELLAR DR

PATTERSON CT

GORDON DR

RANGEVIEW ROAD

1001 1002 1003 1004 1005 1007 1008

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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DRAWING TITLE

ROAD HIERARCHY,
STAGING PLAN
&
GENERAL NOTES
SHEET 02

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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-006	A

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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GENERAL

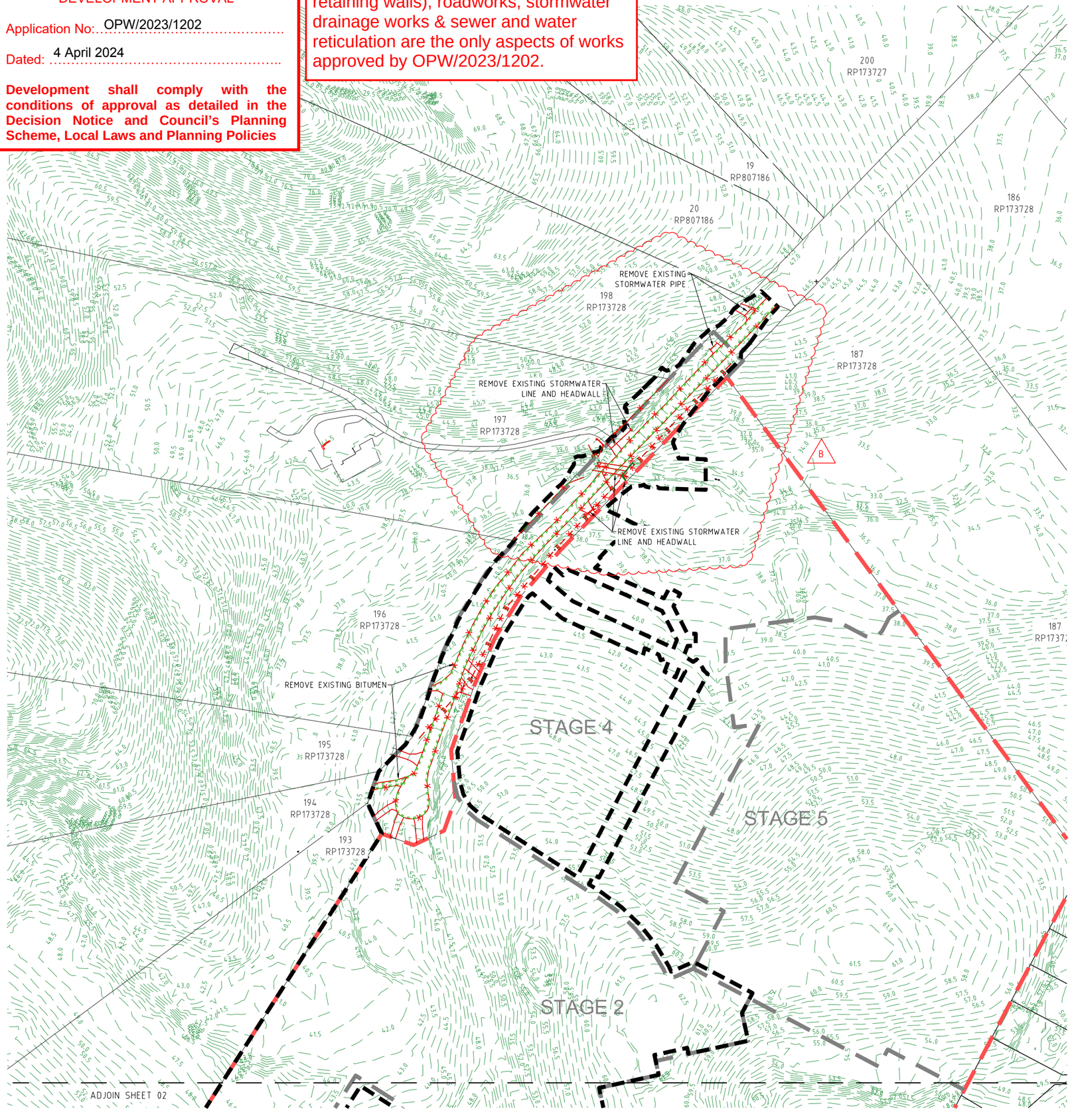
1. EXISTING SERVICES - EXTERNAL WORKS
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES & TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED 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
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- 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 02

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	17-01-24	LIMIT OF WORKS BDY AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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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 SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
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Project Coordination
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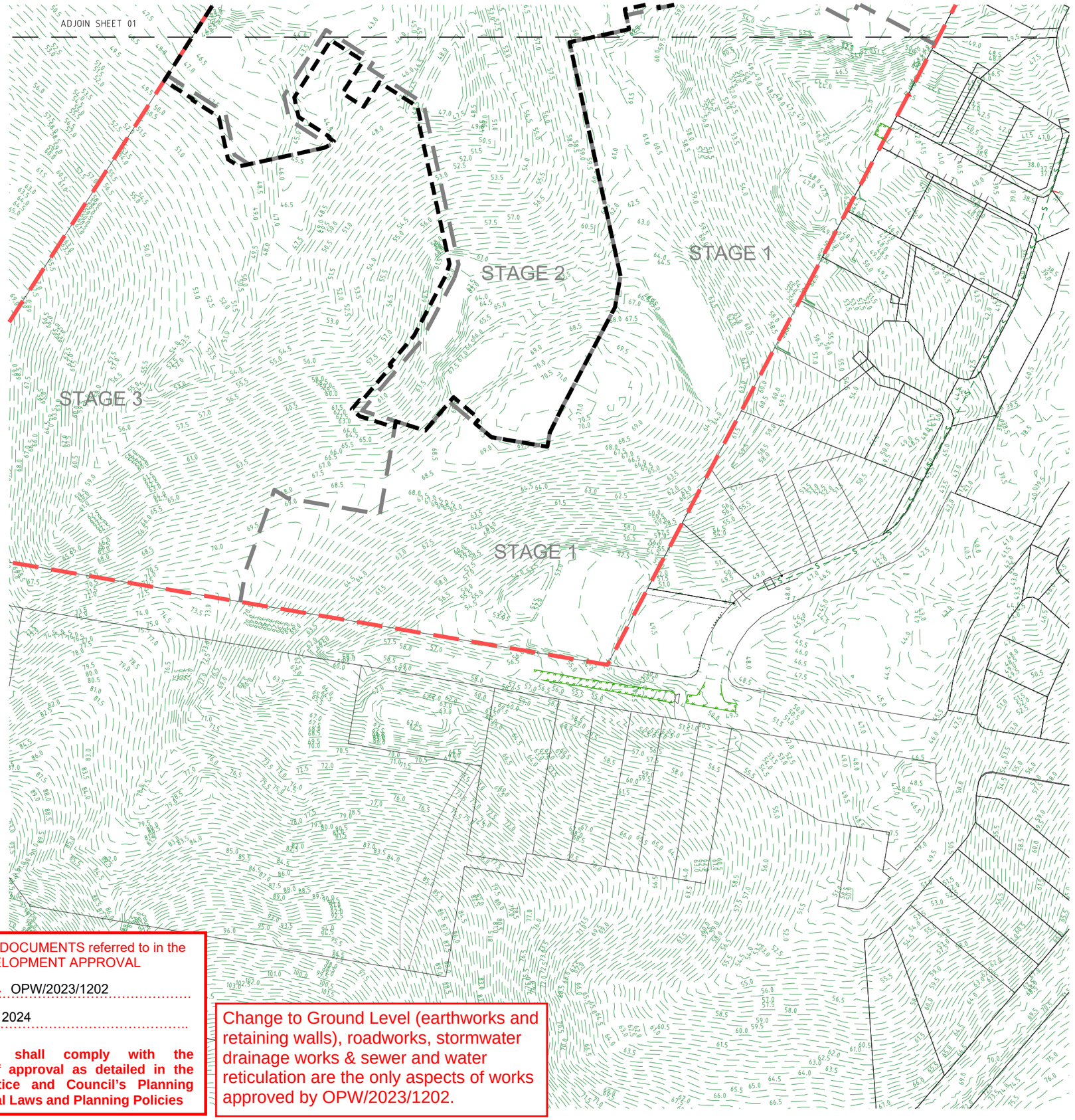
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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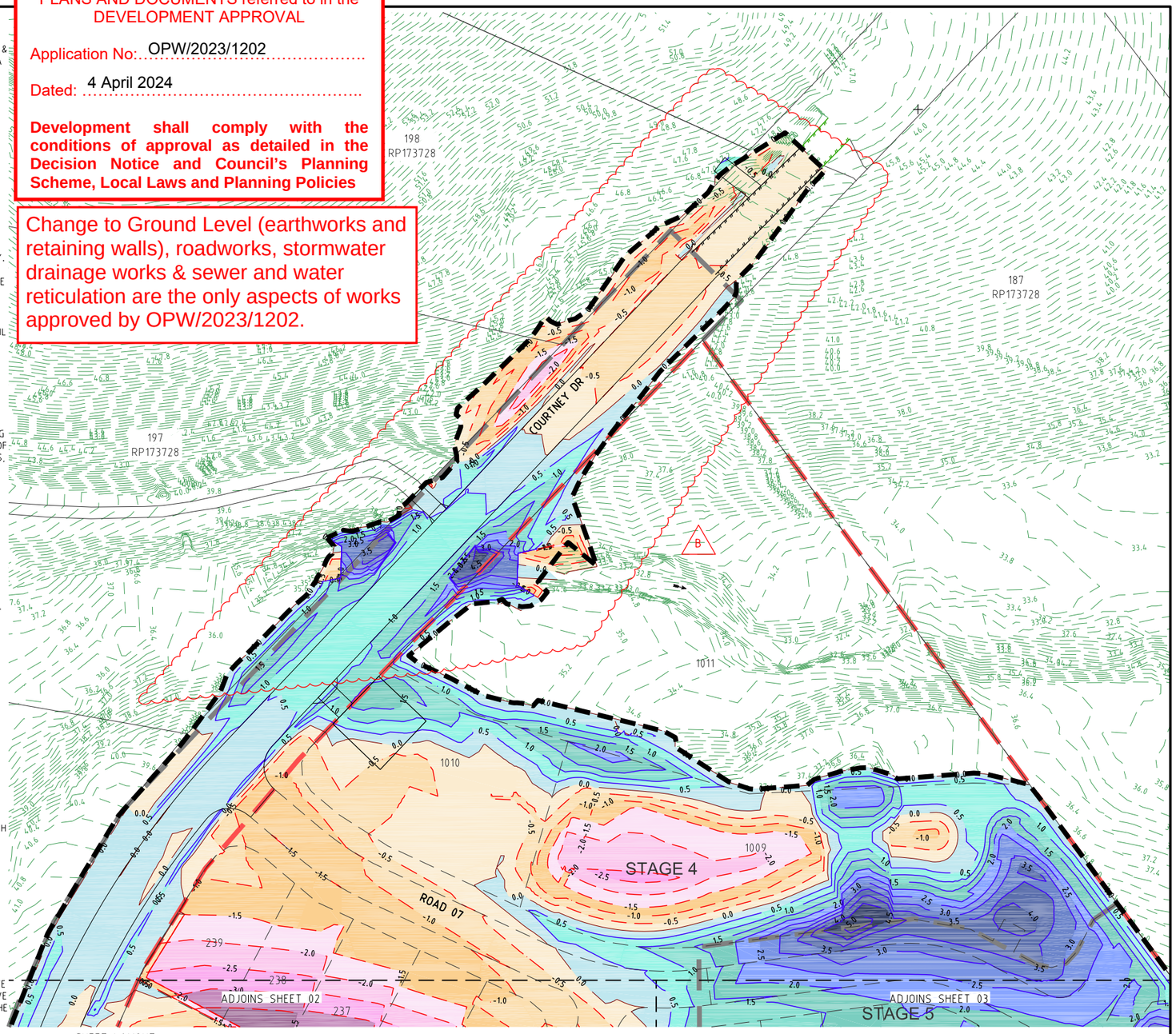
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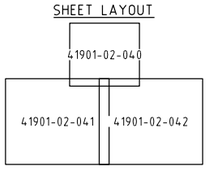
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EARTHWORKS

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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LEGEND

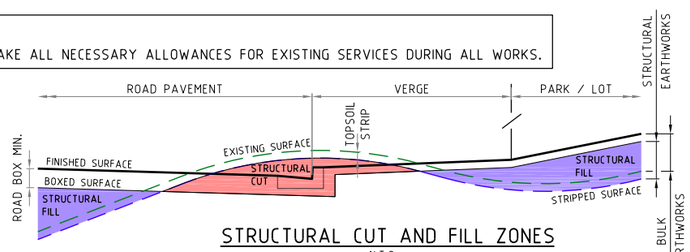
- EXISTING PROPERTY LINE
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- FUTURE PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- LIMIT OF EARTHWORKS BOUNDARY
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- -0.5 CUT CONTOUR
- 0.0 INTERFACE CONTOUR
- 0.5 FILL CONTOUR

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

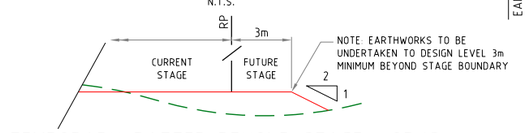
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BULK EARTHWORKS (EXISTING TO FINISHED SURFACE)

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.

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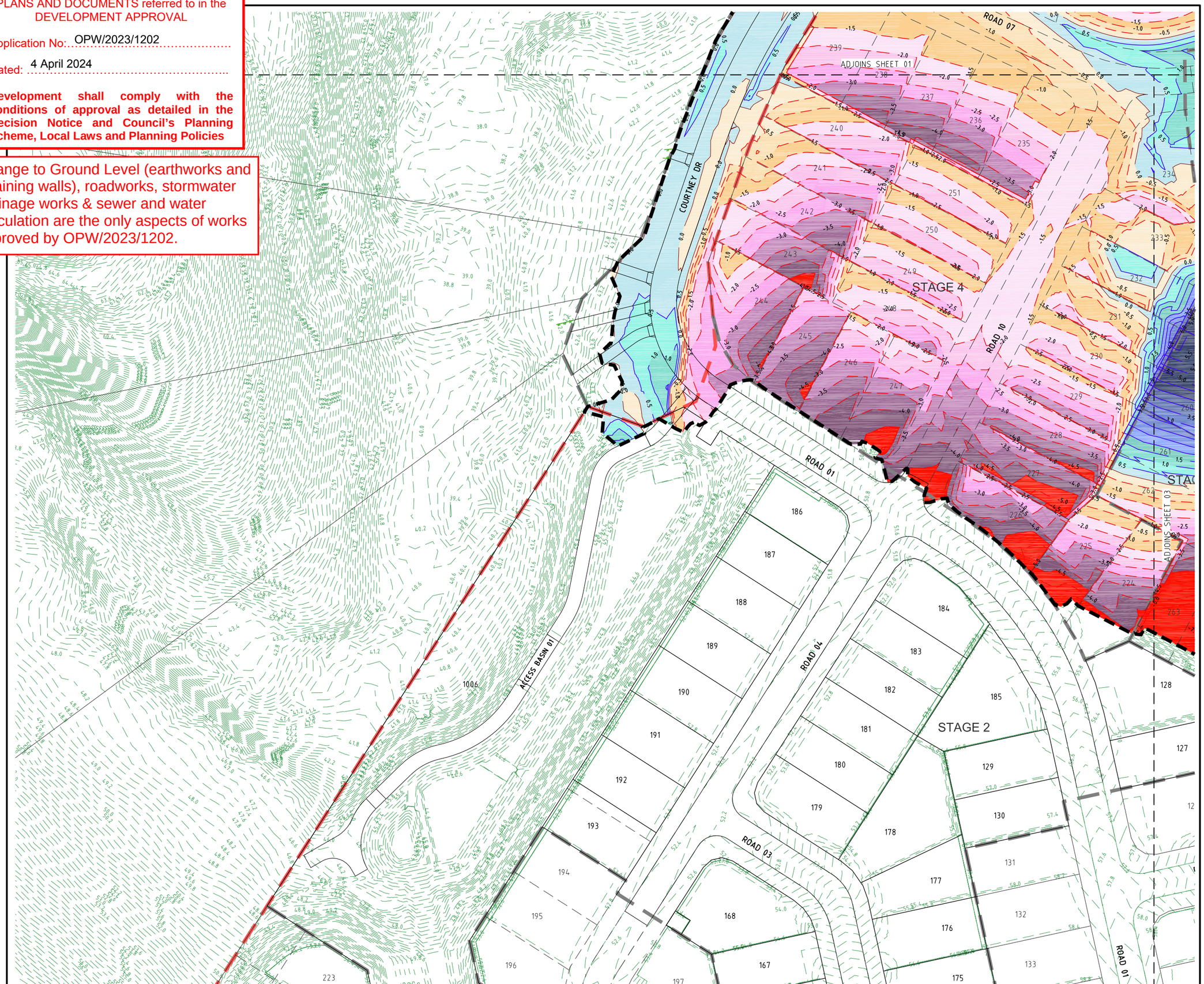
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ADJOINS SHEET 01

ADJOINS SHEET 02

STAGE 5

STAGE 5

ROAD 11

ROAD 08

ROAD 11

ROAD 09

ROAD 06

ROAD 01

GORDON

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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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BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

EARTHWORKS
CUT TO FILL
PLAN
SHEET 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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ABN: 39 116 375 065

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-042	A

K:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-040.dwg, PLAN SHEET 03, 19/01/2024 12:51:38 PM, 1:2

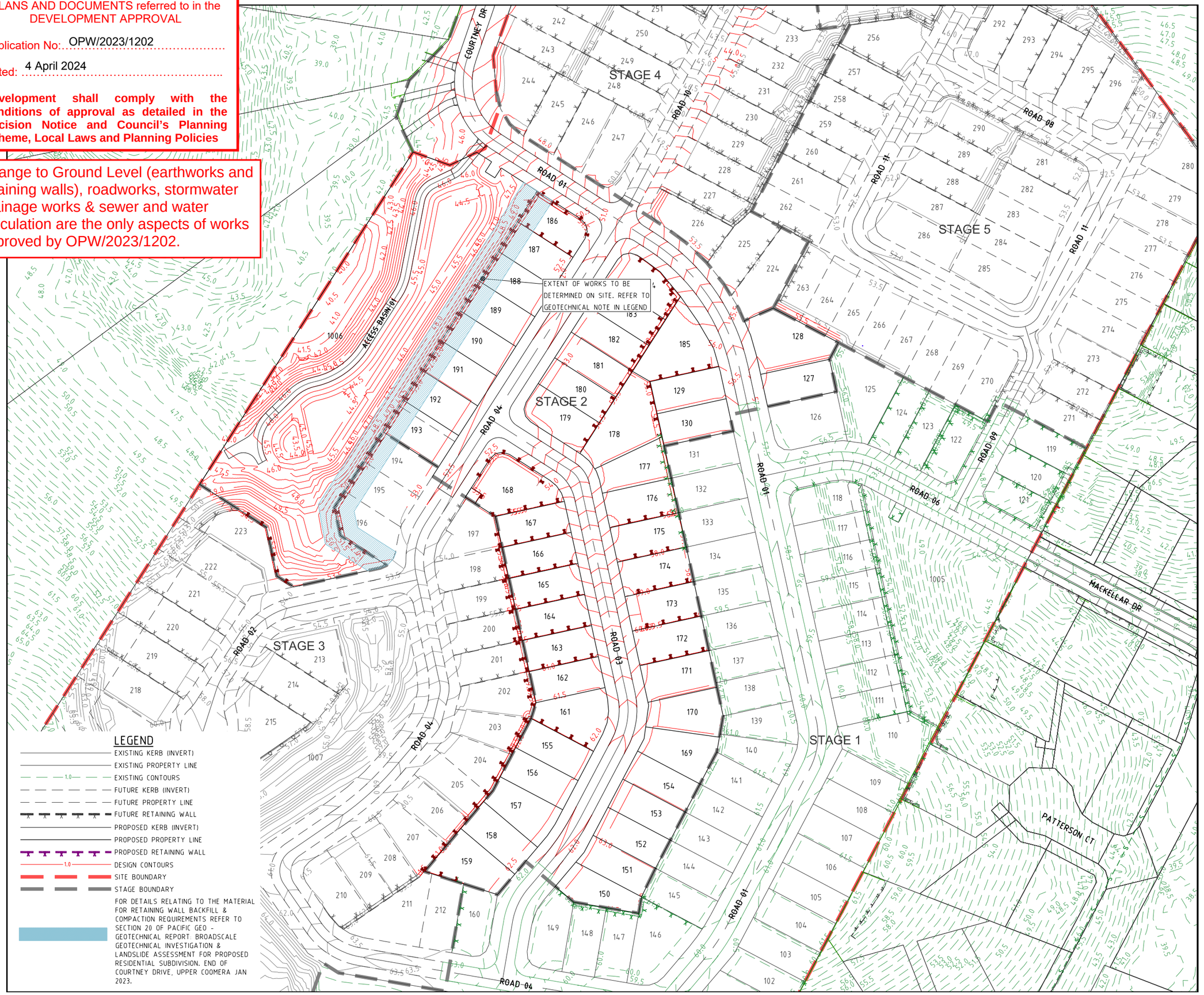
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



LEGEND

- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE RETAINING WALL
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- DESIGN CONTOURS
- 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 02

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
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

GEOTECHNICAL REQUIREMENTS PLAN

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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ABN: 39 116 375 065

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Suite 9, 19 Short St
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER: 41901-02-045

REV: A

I:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-045.dwg, GEOTECHNICAL REQUIREMENTS PLAN, 19/01/2024 1:55:26 PM, 1:2

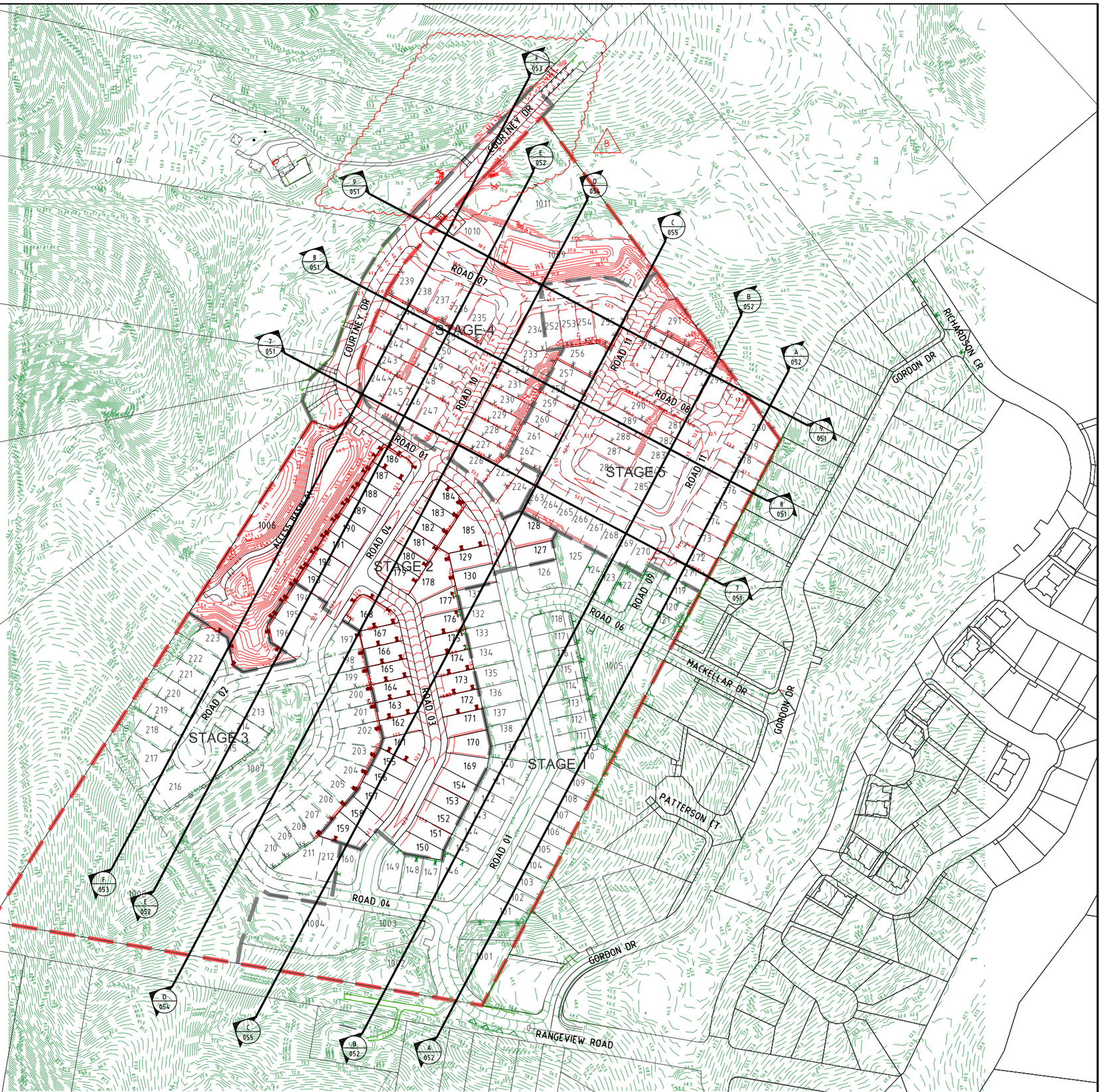
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



LEGEND

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

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	17-01-24	CONTOURS AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

BULK EARTHWORKS
SECTION KEY PLAN

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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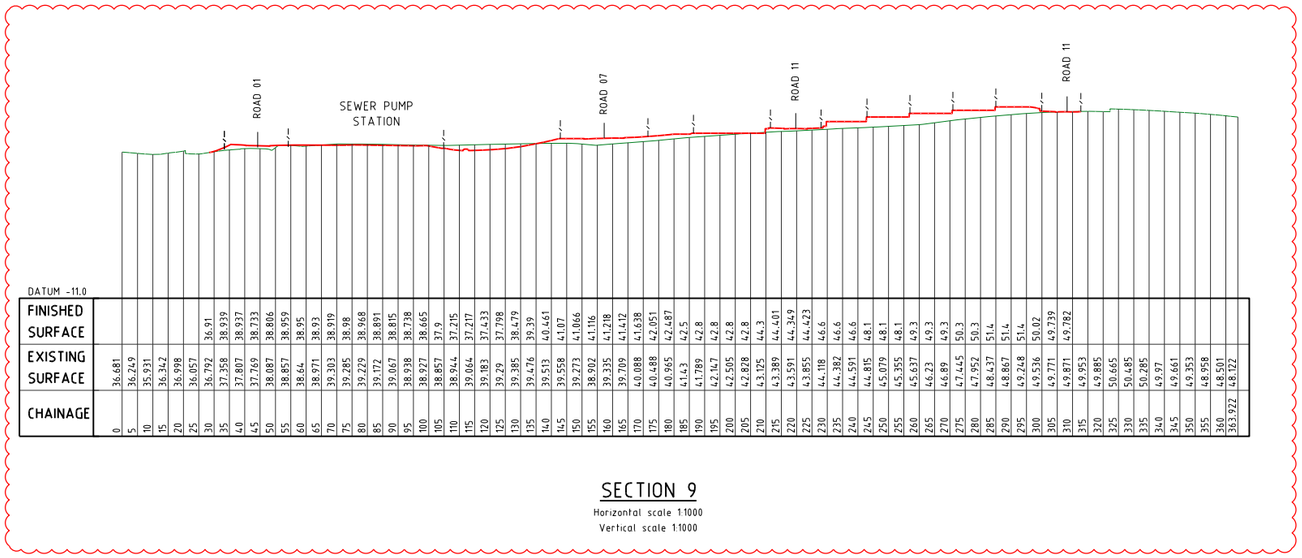
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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-050	B

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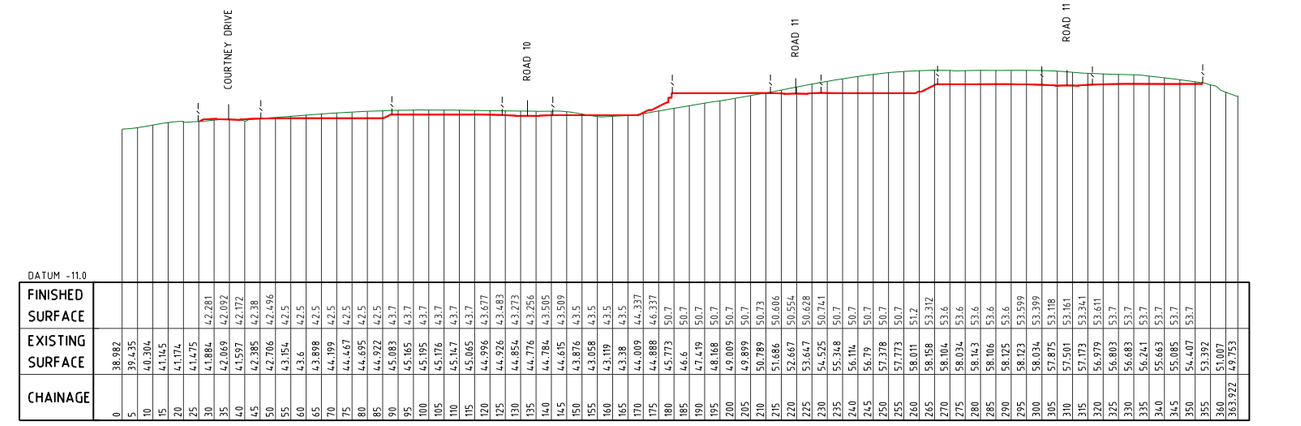
DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
0		36.681
5		36.249
10		35.931
15		36.342
20		36.998
25		36.057
30	36.91	36.792
35	38.939	37.358
40	38.937	37.807
45	38.733	37.769
50	38.806	38.087
55	38.959	38.857
60	38.95	38.64
65	38.93	38.971
70	38.919	39.303
75	38.98	39.285
80	38.968	39.229
85	38.891	39.172
90	38.815	39.067
95	38.738	38.938
100	38.665	38.927
105	37.9	38.857
110	37.215	38.944
115	37.217	39.064
120	37.433	39.183
125	37.798	39.29
130	38.479	39.385
135	39.39	39.476
140	40.461	39.513
145	41.07	39.558
150	41.066	39.273
155	41.116	38.902
160	41.218	39.335
165	41.412	39.709
170	41.638	40.088
175	42.051	40.488
180	42.487	40.965
185	42.5	41.143
190	42.8	41.789
195	42.8	42.147
200	42.8	42.505
205	42.8	42.828
210	44.3	43.125
215	44.401	43.389
220	44.349	43.591
225	44.423	43.855
230	46.6	44.118
235	46.6	44.382
240	46.6	44.591
245	48.1	44.815
250	48.1	45.079
255	48.1	45.355
260	49.3	45.637
265	49.3	46.23
270	49.3	46.89
275	50.3	47.445
280	50.3	47.952
285	51.4	48.437
290	51.4	48.867
295	51.4	49.248
300	50.02	49.536
305	49.739	49.771
310	49.782	49.871
315		49.953
320		49.885
325		50.665
330		50.485
335		50.285
340		49.97
345		49.661
350		49.353
355		48.958
360		48.501
363.922		48.122

SECTION 9

Horizontal scale 1:1000
Vertical scale 1:1000

B

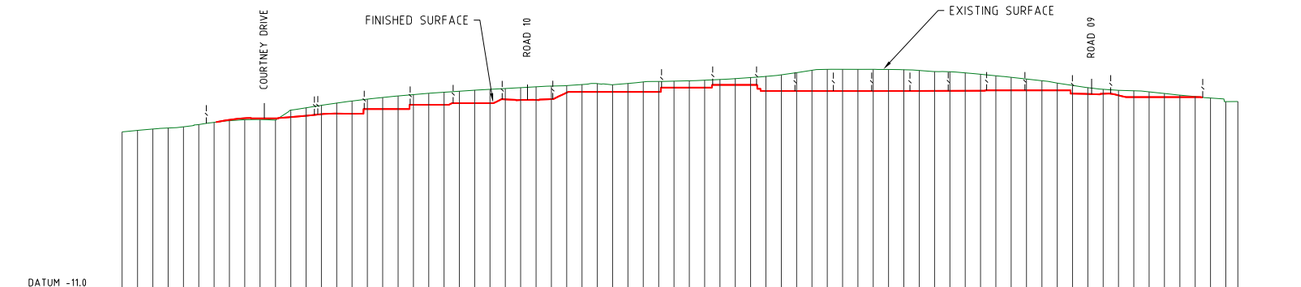


DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
0		38.982
5		39.435
10		40.304
15		41.145
20		41.174
25		41.475
30	42.281	41.884
35	42.092	42.069
40	42.172	41.597
45	42.38	42.385
50	42.496	42.706
55	42.5	43.154
60	42.5	43.6
65	42.5	43.898
70	42.5	44.199
75	42.5	44.467
80	42.5	44.695
85	43.7	44.922
90	43.7	45.083
95	43.7	45.165
100	43.7	45.195
105	43.7	45.176
110	43.7	45.147
115	43.7	45.065
120	43.677	44.996
125	43.483	44.926
130	43.273	44.856
135	43.256	44.776
140	43.505	44.784
145	43.509	44.615
150	43.5	43.876
155	43.5	43.058
160	43.5	43.119
165	43.5	43.38
170	44.337	44.009
175	46.337	44.888
180	50.7	45.773
185	50.7	46.6
190	50.7	47.419
195	50.7	48.168
200	50.7	49.009
205	50.7	49.899
210	50.73	50.789
215	50.606	51.686
220	50.554	52.667
225	50.628	53.647
230	50.741	54.525
235	50.7	55.348
240	50.7	56.114
245	50.7	56.79
250	50.7	57.378
255	50.7	57.773
260	51.2	58.011
265	53.312	58.158
270	53.6	58.104
275	53.6	58.034
280	53.6	58.143
285	53.6	58.106
290	53.6	58.125
295	53.599	58.123
300	53.399	58.034
305	53.118	57.875
310	53.161	57.501
315	53.341	57.173
320	53.611	56.979
325	53.7	56.803
330	53.7	56.683
335	53.7	56.241
340	53.7	55.663
345	53.7	55.085
350	53.7	54.407
355		53.392
360		51.007
363.922		49.753

SECTION 8

Horizontal scale 1:1000
Vertical scale 1:1000



DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
0		40.35
5		40.857
10		41.302
15		41.628
20		42.027
25		42.729
30		43.475
35	44.27	44.069
40	44.808	44.312
45	44.766	44.354
50	44.767	44.282
55	45.184	47.453
60	45.617	48.216
65	46.142	49.01
70	46.354	49.796
75	46.3	50.429
80	47.8	51.013
85	47.8	51.589
90	47.8	52.092
95	49.2	52.49
100	49.2	52.914
105	49.2	53.334
110	49.7	53.673
115	49.7	54.004
120	49.7	54.258
125	50.965	54.503
130	50.754	54.772
135	50.786	55.068
140	51.043	55.288
145	53.165	55.462
150	53.4	55.8
155	53.4	56.111
160	53.4	55.749
165	53.4	56.165
170	53.4	56.647
175	53.4	56.769
180	54.8	56.928
185	54.8	57.088
190	54.8	57.27
195	55.7	57.451
200	55.7	57.773
205	55.7	58.138
210	53.7	58.504
215	53.7	58.965
220	53.7	59.667
225	53.7	60.441
230	53.7	60.76
235	53.7	60.75
240	53.7	60.75
245	53.7	60.75
250	53.7	60.734
255	53.7	60.628
260	53.7	60.382
265	53.7	60.02
270	53.8	59.964
275	53.8	59.618
280	53.8	59.161
285	53.9	58.671
290	53.9	58.151
295	53.9	57.599
300	53.9	57.047
305	53.9	56.272
310	52.85	55.507
315	52.725	54.778
320	52.782	54.258
325	52.299	53.906
330	51.7	53.177
335	51.7	53.416
340	51.7	52.875
345	51.7	52.356
350	51.7	51.904
355		51.402
360		50.242
363.922		50.277

SECTION 7

Horizontal scale 1:1000
Vertical scale 1:1000

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
B	17-01-24	SECTION 9 AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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Robin Russell & ASSOCIATES PTY. LTD.
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DRAWING TITLE

BULK EARTHWORKS
SECTIONS
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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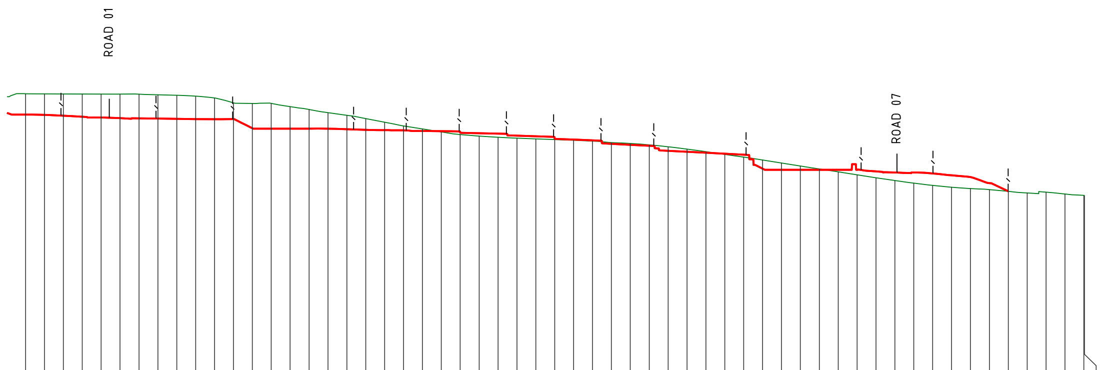
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Southport QLD 4215

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

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-051
REV: B

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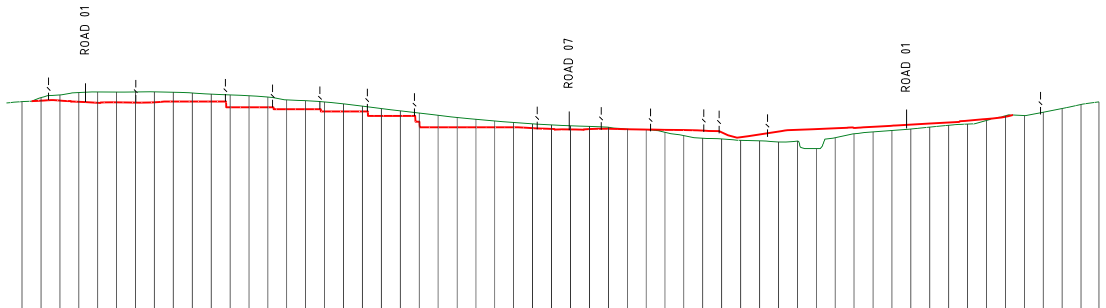
DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
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	56.217	62.485
410	56.2	62.217
415	56.2	61.824
420	56.2	60.527
425	53.789	60.378
430	53.7	60.363
435	53.7	59.513
440	53.7	58.755
445	53.7	57.924
450	53.548	57.236
455	53.4	56.353
460	53.29	55.384
465	53.241	54.397
470	53.09	53.621
475	53.021	52.844
480	52.6	52.204
485	52.485	51.794
490	52.361	51.401
495	51.826	51.178
500	51.666	50.954
505	51.015	50.822
510	50.799	50.664
515	50.583	50.414
520	49.672	50.011
525	49.412	49.733
530	49.171	49.368
535	47.824	48.894
540	47.569	48.289
545	47.314	47.544
550	47.059	46.849
555	46.8	46.154
560	43.088	45.412
565	42.8	44.612
570	42.8	43.813
575	42.8	43.026
580	42.8	42.251
585	42.8	41.477
590	42.378	40.663
595	42.078	39.964
600	42.064	39.276
605	41.858	38.654
610	41.35	38.293
615	40.906	37.932
620	39.297	37.554
625		37.12
630		36.689
635		36.893
640		36.407
645		36.024
645.166		36.014

SECTION C

Horizontal scale 1:1000
Vertical scale 1:1000

B

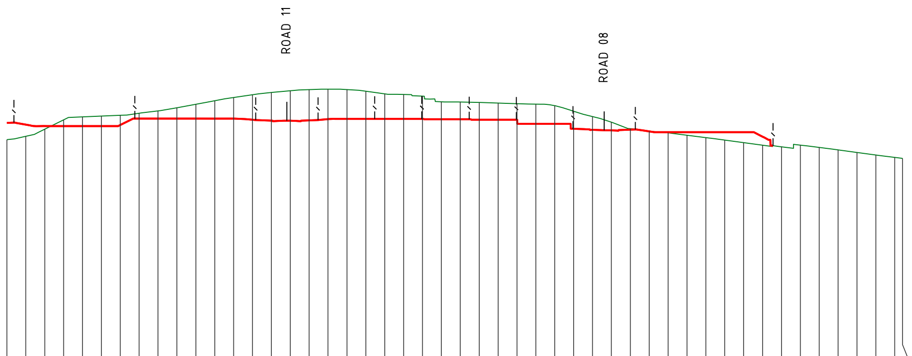


DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
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375	46.582	48.05
380	46.236	48.694
385	45.98	48.844
390	46.09	48.81
395	46.046	48.834
400	46.099	48.861
405	46.3	48.76
410	46.3	48.593
415	46.3	48.317
420	44.8	48.048
425	44.8	47.877
430	44.8	47.474
435	44.3	46.748
440	44.3	46.478
445	43.7	46.177
450	43.7	45.682
455	43.7	45.068
460	42.5	44.454
465	42.5	43.857
470	41	43.279
475	39.5	42.692
480	39.5	42.114
485	39.5	41.643
490	39.5	41.155
495	39.5	40.765
500	39.279	40.4
505	39.059	40.146
510	38.954	39.934
515	39.019	39.743
520	39.103	39.533
525	38.998	39.077
530	38.906	38.8
535	38.826	38.17
540	38.8	37.28
545	38.618	36.591
550	38.167	36.406
555	36.856	36.038
560	37.603	35.906
565	38.375	35.683
570	38.842	35.875
575	39.028	33.884
580	39.24	36.744
585	39.326	37.78
590	39.621	38.271
595	39.917	38.652
600	40.22	39.046
605	40.487	39.553
610	40.779	40.028
615	41.256	40.353
620	41.694	41.301
625	42.303	42.552
630		42.607
635		43.49
640		44.472
645		45.527
649.736		46.224

SECTION F

Horizontal scale 1:1000
Vertical scale 1:1000

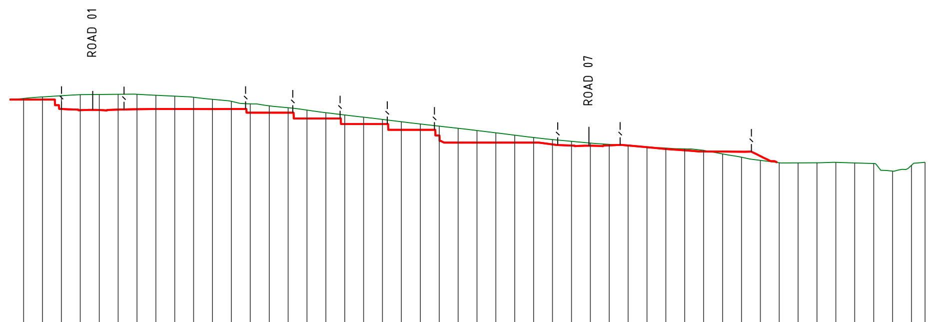


DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
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375	51.9	53.545
380	51.9	54.343
385	51.9	54.551
390	52.18	54.759
395	53.9	55.285
400	53.9	55.932
405	53.9	56.741
410	53.9	57.676
415	53.9	58.619
420	53.9	59.469
425	53.567	60.208
430	53.341	60.783
435	53.296	61.239
440	53.414	61.543
445	53.728	61.668
450	53.8	61.568
455	53.8	61.12
460	53.8	60.438
465	53.8	60.276
470	53.8	59.809
475	53.7	58.336
480	53.7	58.264
485	53.6	58.132
490	53.6	58.002
495	53.6	57.829
500	52.5	57.695
505	52.5	57.32
510	51.179	55.826
515	50.895	54.431
520	50.745	52.951
525	50.934	51.196
530	50.501	50.546
535	50.3	50.106
540	50.3	49.48
545	50.3	48.853
550	50.3	48.182
555	50.3	47.511
560	49.1	46.84
565		46.416
570		46.841
575		46.246
580		45.581
585		44.913
590		44.218
595		43.602
597.051		43.325

SECTION B

Horizontal scale 1:1000
Vertical scale 1:1000

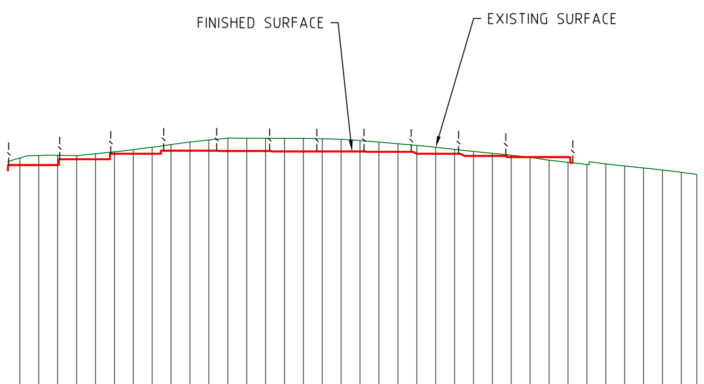


DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
360	51.7	51.967
365	51.7	52.385
370	49.203	52.705
375	48.887	52.992
380	48.899	53.018
385	49.038	53.067
390	49.16	53.077
395	49.2	52.832
400	49.2	52.582
405	49.2	52.273
410	49.2	51.752
415	49.2	51.196
420	48.2	50.557
425	48.2	50.025
430	48.2	49.519
435	46.7	48.896
440	46.7	48.203
445	45.2	47.616
450	45.2	47.02
455	45.2	46.418
460	43.7	45.82
465	43.7	45.226
470	42.2	44.658
475	40.3	44.08
480	40.3	43.482
485	40.3	42.878
490	40.3	42.263
495	40.3	41.649
500	39.831	41.09
505	39.531	40.63
510	39.486	40.171
515	39.573	39.822
520	39.545	39.503
525	39.082	39.039
530	38.618	38.839
535	38.243	38.647
540	37.95	38.255
545	37.913	37.323
550	37.889	36.441
555	36.734	35.609
560		34.984
565		34.929
570		34.957
575		35.063
580		34.922
585		34.774
590		32.755
595		34.296
598.595		35.092

SECTION E

Horizontal scale 1:1000
Vertical scale 1:1000

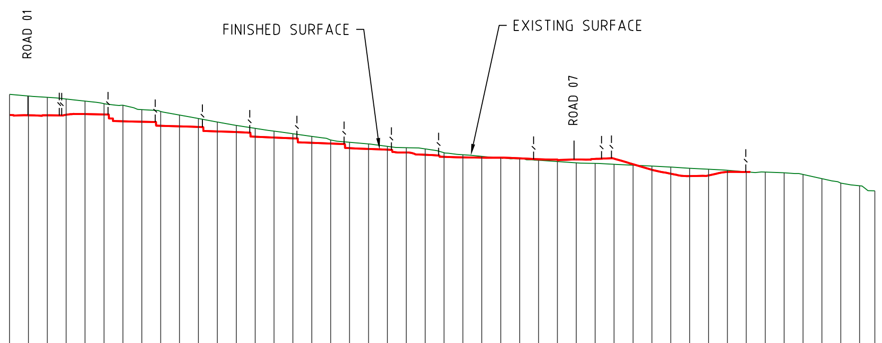


DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
375	50.2	52.057
380	50.2	52.73
385	50.2	52.777
390	51.7	52.7
395	51.7	53.193
400	53.2	53.678
405	53.2	54.284
410	53.2	54.92
415	54	55.628
420	54	56.3
425	54	56.836
430	53.9	57.334
435	53.9	57.298
440	53.9	57.281
445	53.8	57.263
450	53.8	57.245
455	53.8	57.143
460	53.8	57
465	53.8	56.649
470	53.7	56.249
475	53.7	55.851
480	53.2	55.39
485	53.2	54.906
490	53.2	54.347
495	52.6	53.787
500	52.6	53.302
505	52.3	52.798
510	52.3	52.165
515	52.3	51.498
520	52.3	50.92
525		50.338
530		50.52
535		49.931
540		49.432
545		48.878
550		48.251
554.081		47.756

SECTION A

Horizontal scale 1:1000
Vertical scale 1:1000



DATUM -11.0

CHAINAGE	FINISHED SURFACE	EXISTING SURFACE
430	52.46	57.54
435	52.448	57.196
440	52.577	56.746
445	52.758	56.198
450	52.655	55.518
455	50.858	55.099
460	50.738	53.951
465	49.678	53.46
470	49.522	52.482
475	49.363	51.572
480	48.177	50.66
485	47.988	49.772
490	46.793	48.991
495	46.57	48.25
500	46.366	47.552
505	45.15	46.841
510	44.948	45.911
515	43.75	45.297
520	43.544	44.853
525	43.322	44.228
530	42.583	43.884
535	41.975	43.562
540	41.468	42.553
545	41.3	42.006
550	41.232	41.575
555	41.222	41.164
560	41.067	40.934
565	40.82	40.526
570	40.716	40.194
575	40.756	39.85
580	40.893	39.71
585	40.982	39.471
590	39.505	39.24
595	38.006	38.999
600	36.988	38.761
605	36.4	38.425
610	36.532	38.168
615	37.45	37.906
620	37.45	37.472
625		37.409
630		37.218
635		36.797
640		35.693
645		34.512
650		33.811
653.995		32.46

SECTION D

Horizontal scale 1:1000
Vertical scale 1:1000

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
B	17-01-24	SECTION F AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

BULK EARTHWORKS
SECTIONS
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
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DESIGNED RB		DRAWN EP	
APPROVED [signature]		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-052 REV B

f:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-050.dwg, SECTIONS-SHEET 02, 19/01/2024 1:52:28 PM, 1:2

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

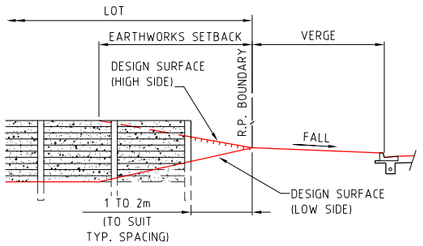
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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.

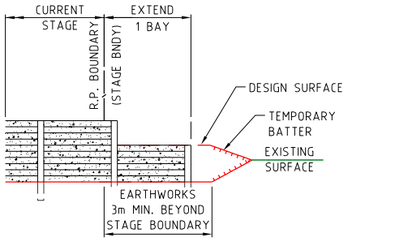
LEGEND

- 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
- 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 DRG. 071)



TYPICAL SIDE BOUNDARY CONSTRUCTION

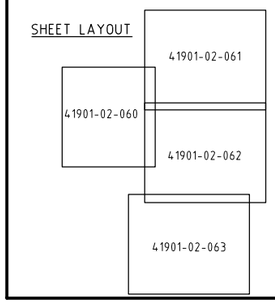
SCALE 1:100 - A1 (1:200 - A3)



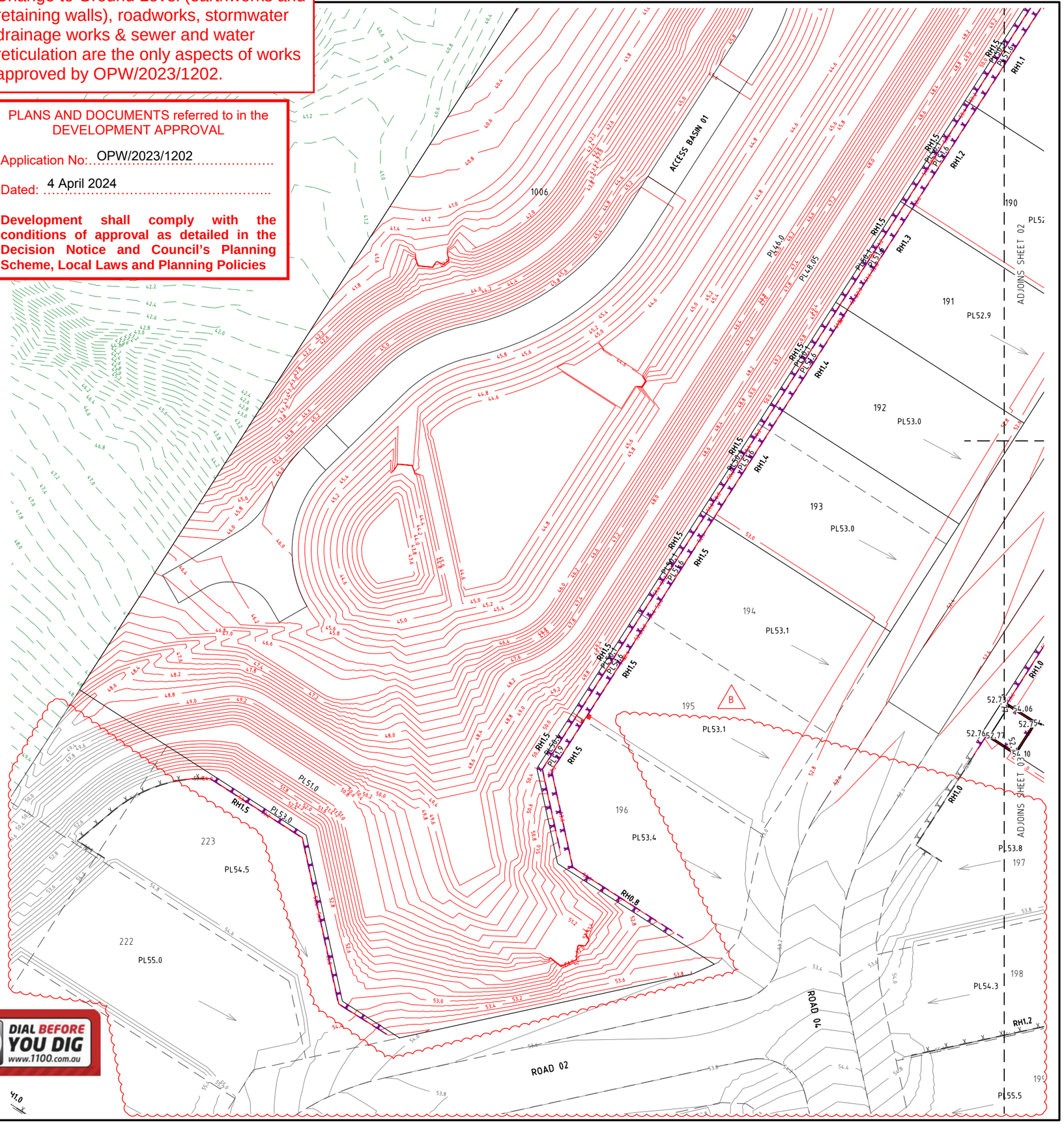
TYPICAL STAGE BOUNDARY CONSTRUCTION

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

SHEET LAYOUT



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29/11/23	CONTOURS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

RETAINING WALL AND DETAIL GRADING PLAN SHEET 01

MORTONS urbansolutions
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-060 | REV B

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	CONTOURS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-061

REV: B

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ADJOINS SHEET 02

ADJOINS SHEET 01

ADJOINS SHEET 04

ROAD 04

ROAD 06

ROAD 03

ROAD 01

REFER TO STRUCTURAL ARTS SK-01 FOR RETAINING WALL DETAILS

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	CONTOURS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 03

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-062

REV: B

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ADJOINS SHEET 03

ROAD 04

ROAD 03

ROAD 01

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	INIT
B	29-11-23	CONTOURS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

RETAINING WALL
AND DETAIL GRADING PLAN
SHEET 04

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-063

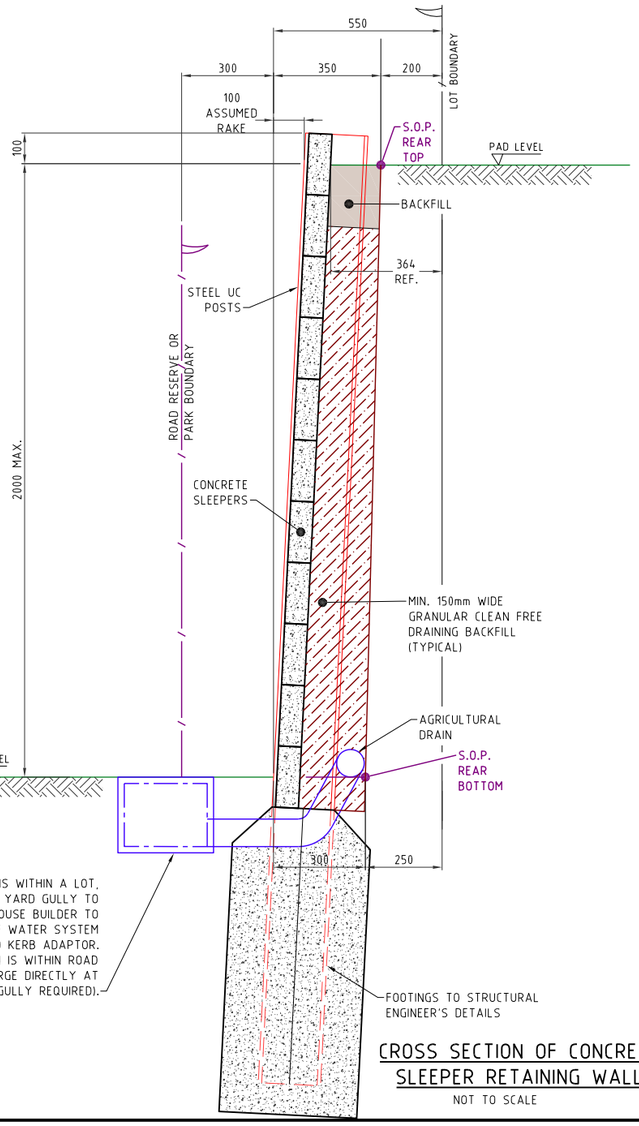
REV B

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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.
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
    600mm ROAD RESERVE/OPEN SPACE
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 INSTALLEDON POSTS. NO BRACKETS 5m FROM FRONT BOUNDARY.
15. ALL FOOTINGS MUST BE A MINIMUM OF 200mm FROM PROPERTY BOUNDARY.

B



CROSS SECTION OF CONCRETE SLEEPER RETAINING WALL

NOT TO SCALE

RETAINING WALL COLOUR AND FACE FINISH NOTE:

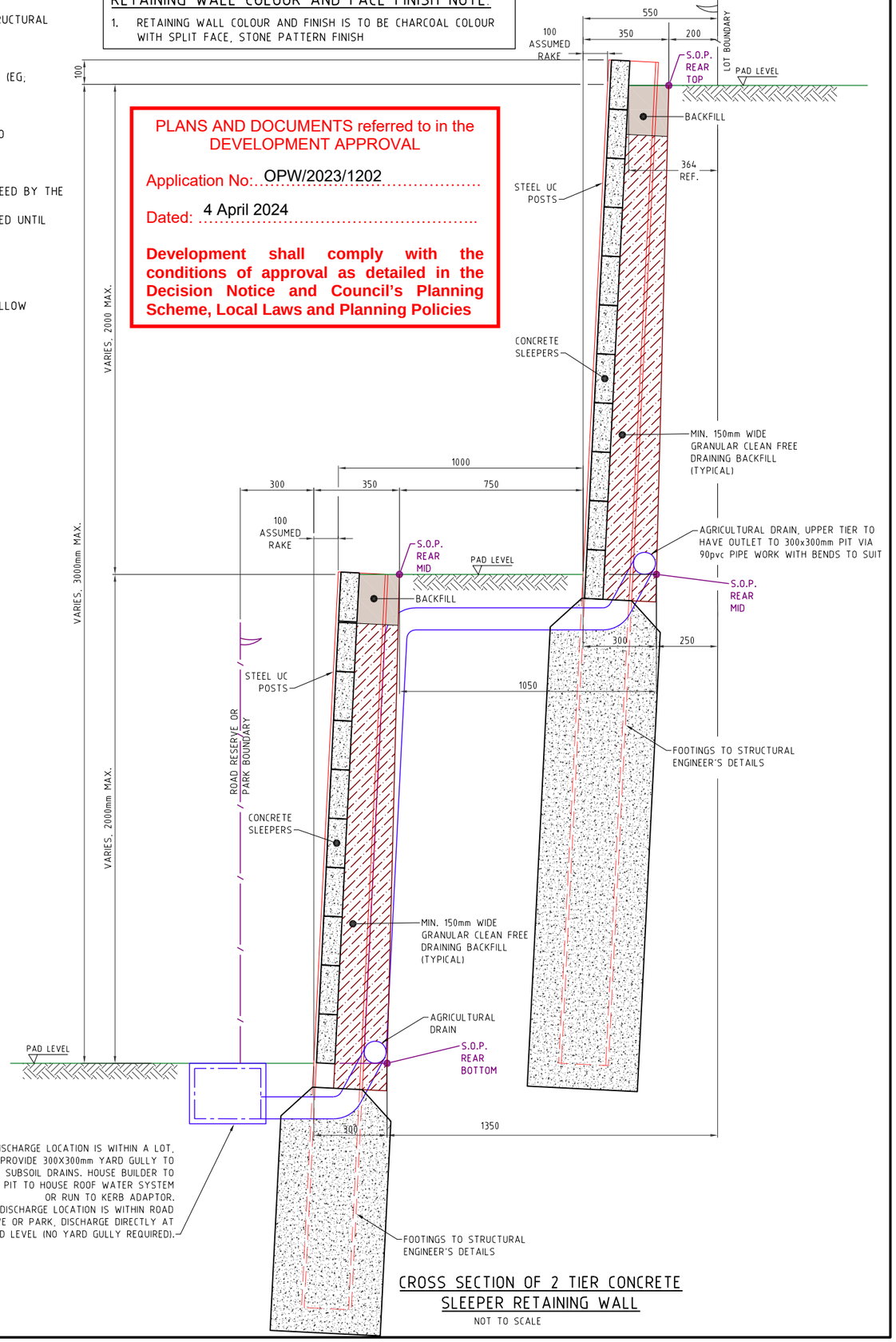
1. RETAINING WALL COLOUR AND FINISH IS TO BE CHARCOAL COLOUR WITH SPLIT FACE, STONE PATTERN FINISH

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



CROSS SECTION OF 2 TIER CONCRETE SLEEPER RETAINING WALL

NOT TO SCALE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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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REV	DATE	DESCRIPTION	INT
B	29-11-23	NOTES DELETED & AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

RETAINING WALL DETAILS

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Civil Engineering
Project Coordination
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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-070
REV: B

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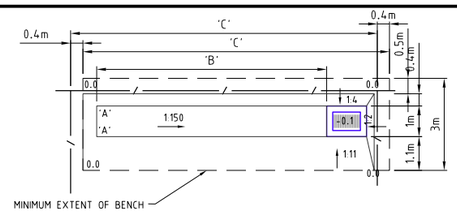
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

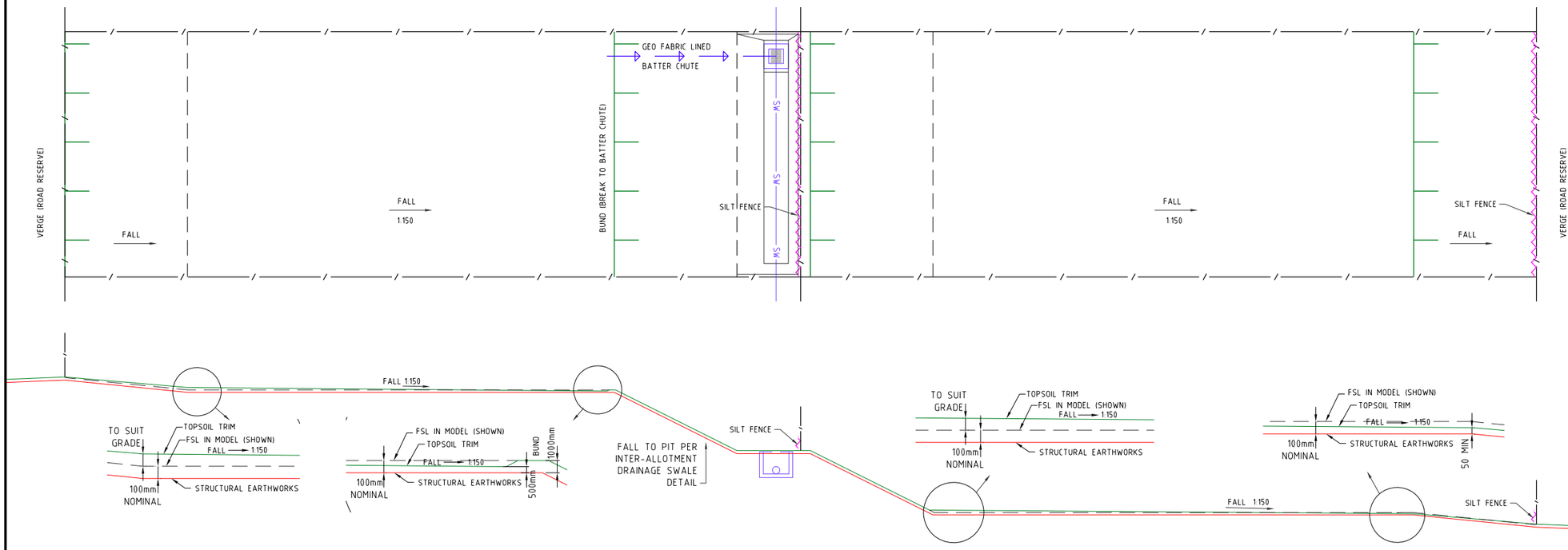
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



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

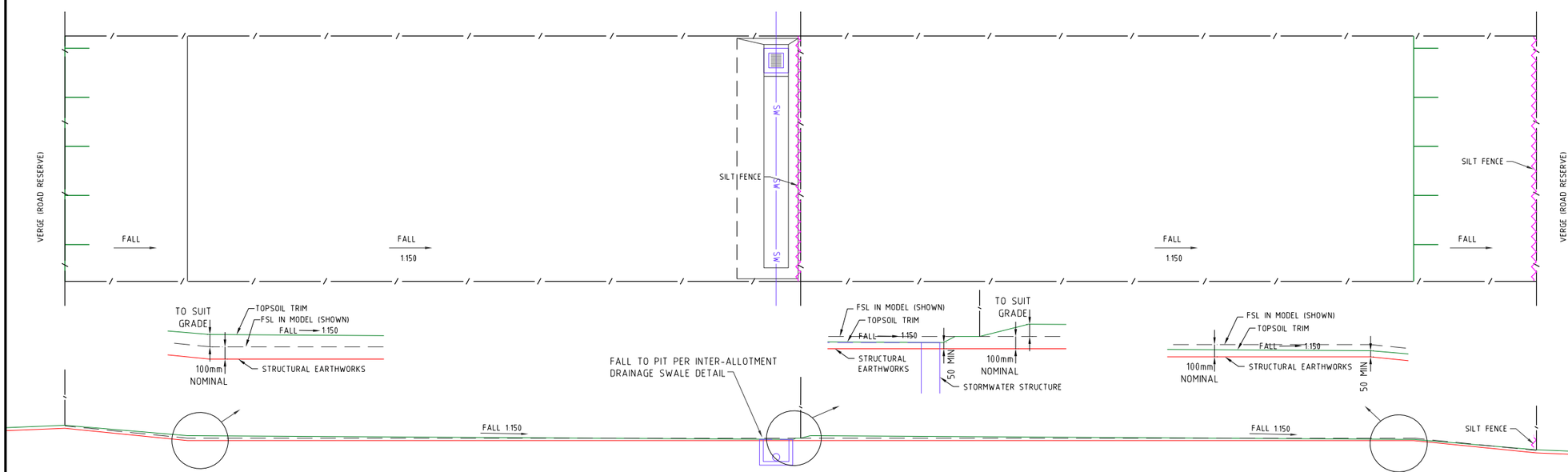
INTER-ALLOTMENT DRAINAGE SWALE

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 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

FINAL TRIM DETAILS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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ABN: 39 116 375 065

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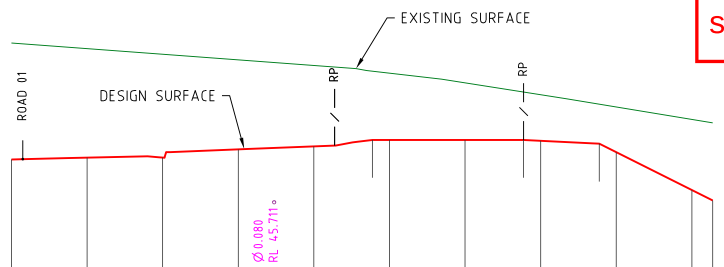
DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-071	A

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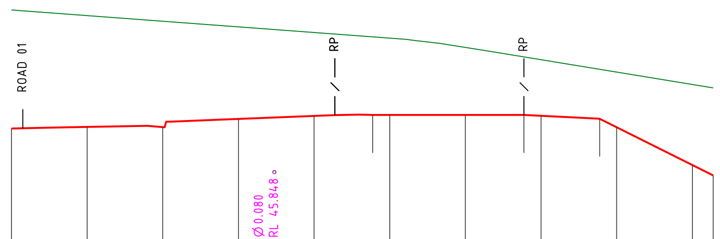


DATUM 44.0

FINISHED SURFACE	46.883	46.932	46.932	47.15		47.23	47.4 / 47.4	47.4	47.4 / 47.378	47.3 / 47.075	46.075	45.8
EXISTING SURFACE	49.966	49.817	49.668	49.519		49.37	49.167	48.911	48.596	48.271	47.942	47.852
CHAINAGE	0	2	4	6	SEW 24 CH 6.95	8	9.55 / 10	12	13.55 / 14	15.55 / 16	18	18.55

LONGITUDINAL SECTION 4A

Horizontal scale 1:100
Vertical scale 1:100

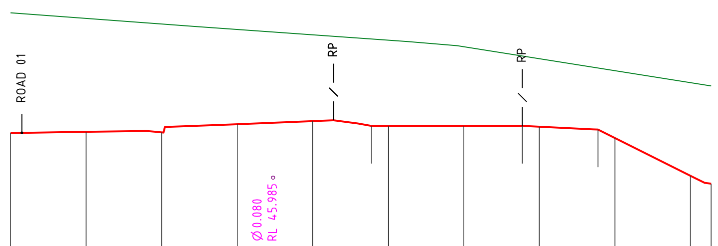


DATUM 44.0

FINISHED SURFACE	47.043	47.085	47.079	47.296		47.376	47.4 / 47.4	47.4	47.4 / 47.378	47.3 / 47.075	46.075	45.8
EXISTING SURFACE	50.18	50.031	49.882	49.733		49.585	49.436	49.189	48.864	48.535	48.206	48.115
CHAINAGE	0	2	4	6	SEW 24 CH 6.95	8	9.55 / 10	12	13.55 / 14	15.55 / 16	18	18.55

LONGITUDINAL SECTION 4B

Horizontal scale 1:100
Vertical scale 1:100

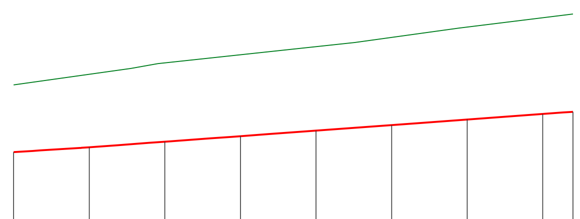


DATUM 44.0

FINISHED SURFACE	47.203	47.239	47.226	47.443		47.523	47.4 / 47.4	47.4	47.4 / 47.378	47.3 / 47.075	46.075	45.866
EXISTING SURFACE	50.395	50.246	50.097	49.952		49.81	49.668	49.495	49.178	48.86	48.543	48.456
CHAINAGE	0	2	4	6	SEW 24 CH 6.95	8	9.55 / 10	12	13.55 / 14	15.55 / 16	18	18.55

LONGITUDINAL SECTION 4C

Horizontal scale 1:100
Vertical scale 1:100

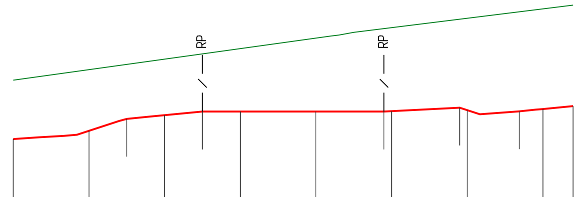


DATUM 45.0

FINISHED SURFACE	46.855	46.982	47.129	47.276	47.422	47.569	47.716	47.863	47.921
EXISTING SURFACE	48.634	48.914	49.216	49.431	49.645	49.889	50.161	50.41	50.509
CHAINAGE	0	2	4	6	8	10	12	14	14.8

LONGITUDINAL SECTION 4D

Horizontal scale 1:100
Vertical scale 1:100

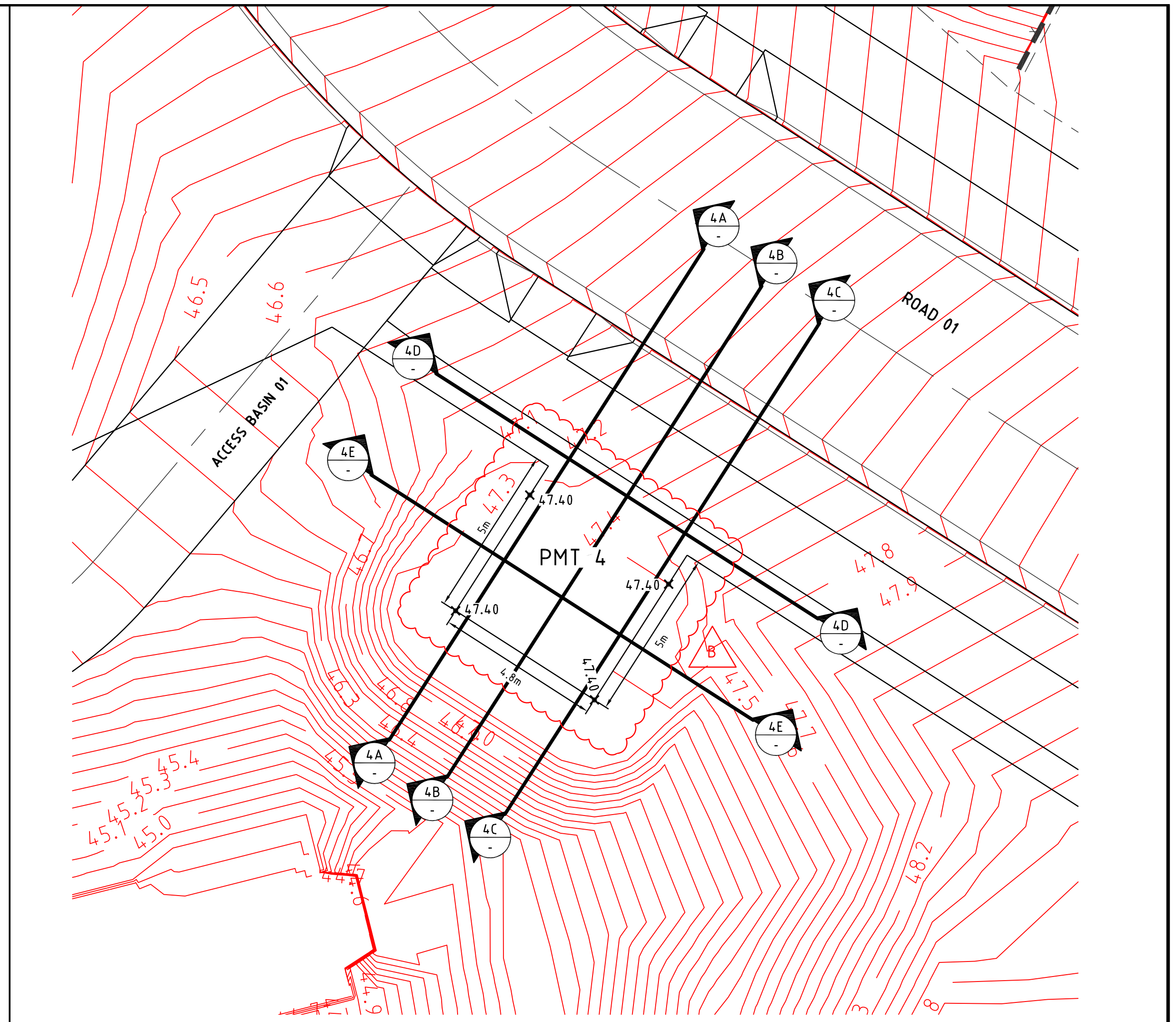


DATUM 45.0

FINISHED SURFACE	46.674	46.892	47.209	47.306	47.4	47.4	47.4	47.41	[illegible]	47.407	47.468	47.546
EXISTING SURFACE	48.233	48.51		48.788		49.065	49.343	49.62	49.869		50.118	50.218
CHAINAGE	0	2	3.00	4	5.00	6	8	9.80 / 10	12.80 / 12	13.37	14	14.8

LONGITUDINAL SECTION 4E

Horizontal scale 1:100
Vertical scale 1:100



PLAN

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

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

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	SPOT LEVELS ADDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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BENNETT+BENNETT

DRAWING TITLE

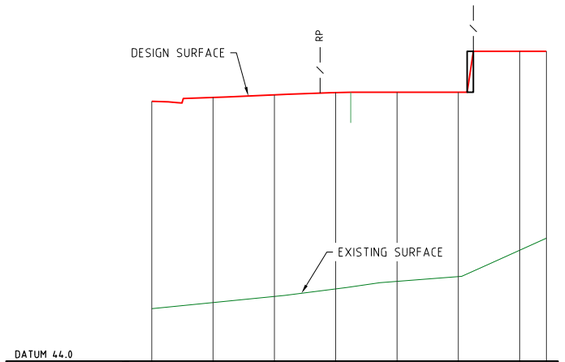
PADMOUNT SECTIONS
PADMOUNT 4
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB | DRAWN EP
APPROVED | RPEQ 4706 | DATE 13-10-23

DRAWING NUMBER 41901-02-075 | REV B

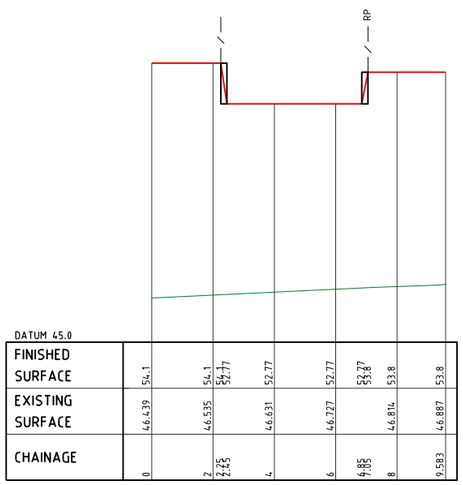
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DATUM 44.0										
FINISHED SURFACE	52.471	52.599	52.679	52.756	52.77	52.77	52.77	52.77 54.1	54.1	54.1
EXISTING SURFACE	45.712	45.911	46.11	46.354		46.602	46.757		47.616	48.009
CHAINAGE	0	2	4	6	6.49	8	10	10.29 10.49	12	12.873

LONGITUDINAL SECTION C

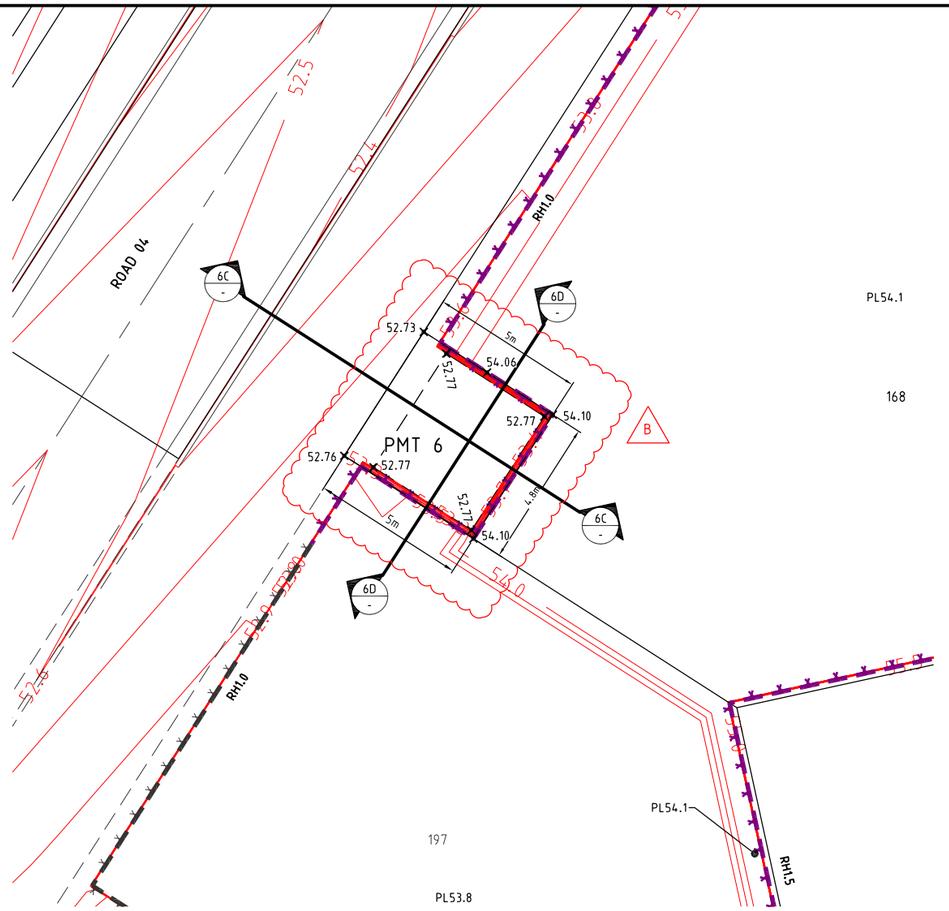
Horizontal scale 1:100
Vertical scale 1:100



DATUM 45.0							
FINISHED SURFACE	54.1	54.1 54.77	52.77	52.77	53.87 53.8	53.8	53.8
EXISTING SURFACE	46.439	46.535	46.631	46.727		46.814	46.887
CHAINAGE	0	2 2.45	4	6	6.85 8	8	9.583

LONGITUDINAL SECTION D

Horizontal scale 1:100
Vertical scale 1:100



PLAN

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

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

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STAGE 02

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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)

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DRAWING TITLE

PADMOUNT SECTIONS
PADMOUNT 6
SHEET 01

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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-076
REV B

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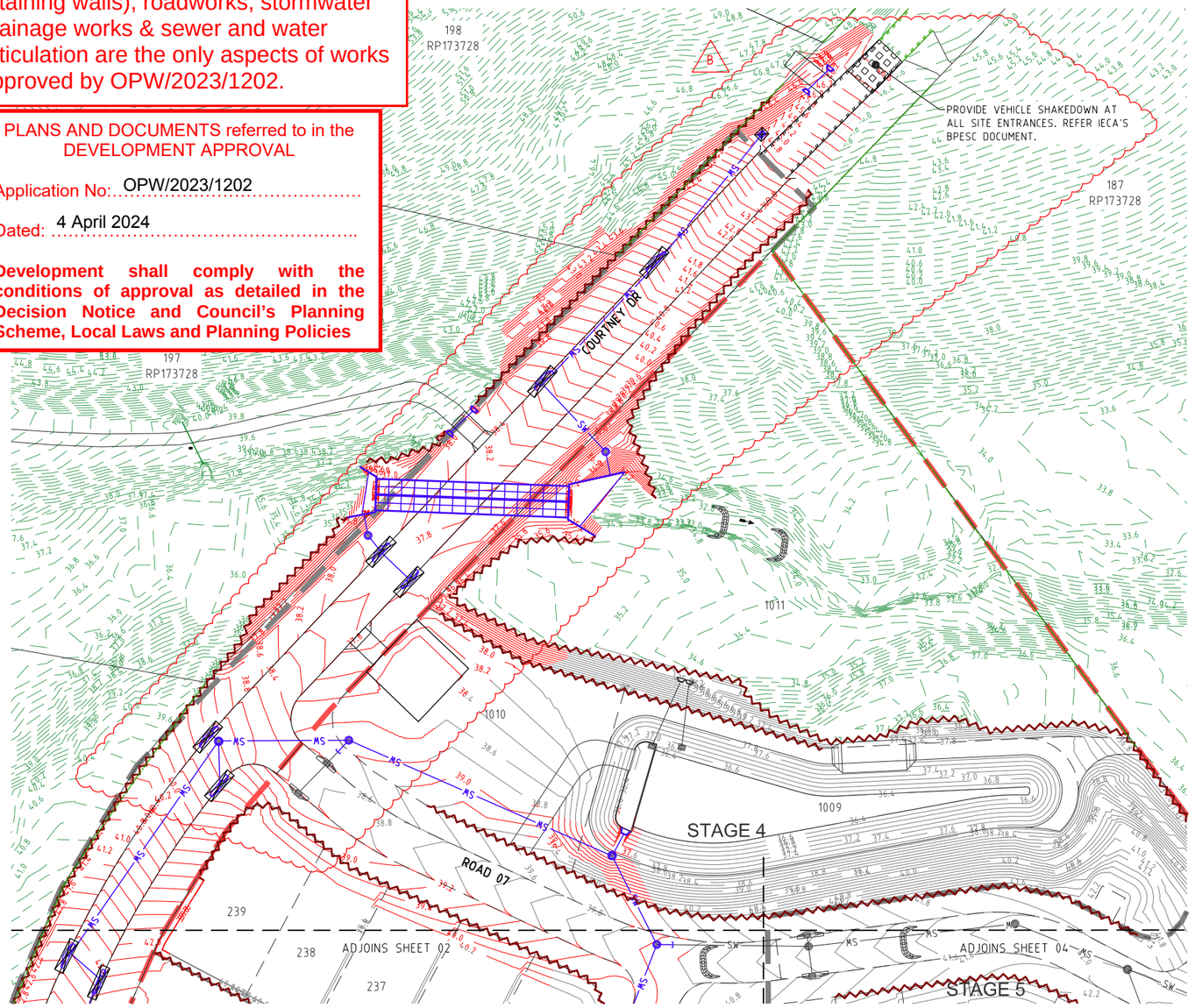
SEDIMENT AND EROSION

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.

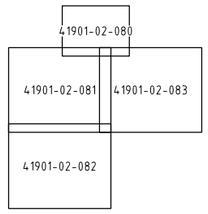


LEGEND

- 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
- TREES
- SEDIMENT FENCE
- SCOUR PROTECTION
- TEMPORARY SEDIMENT BASIN
- STORMWATER INLET FILTER
- ROCK CHECK DAM
- VEHICLE SHAKEDOWN (AT ALL SITE ENTRANCES MIN.)

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 02

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	15-01-24	CONTOURS & SEDIMENT AND EROSION AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-080
REV: B

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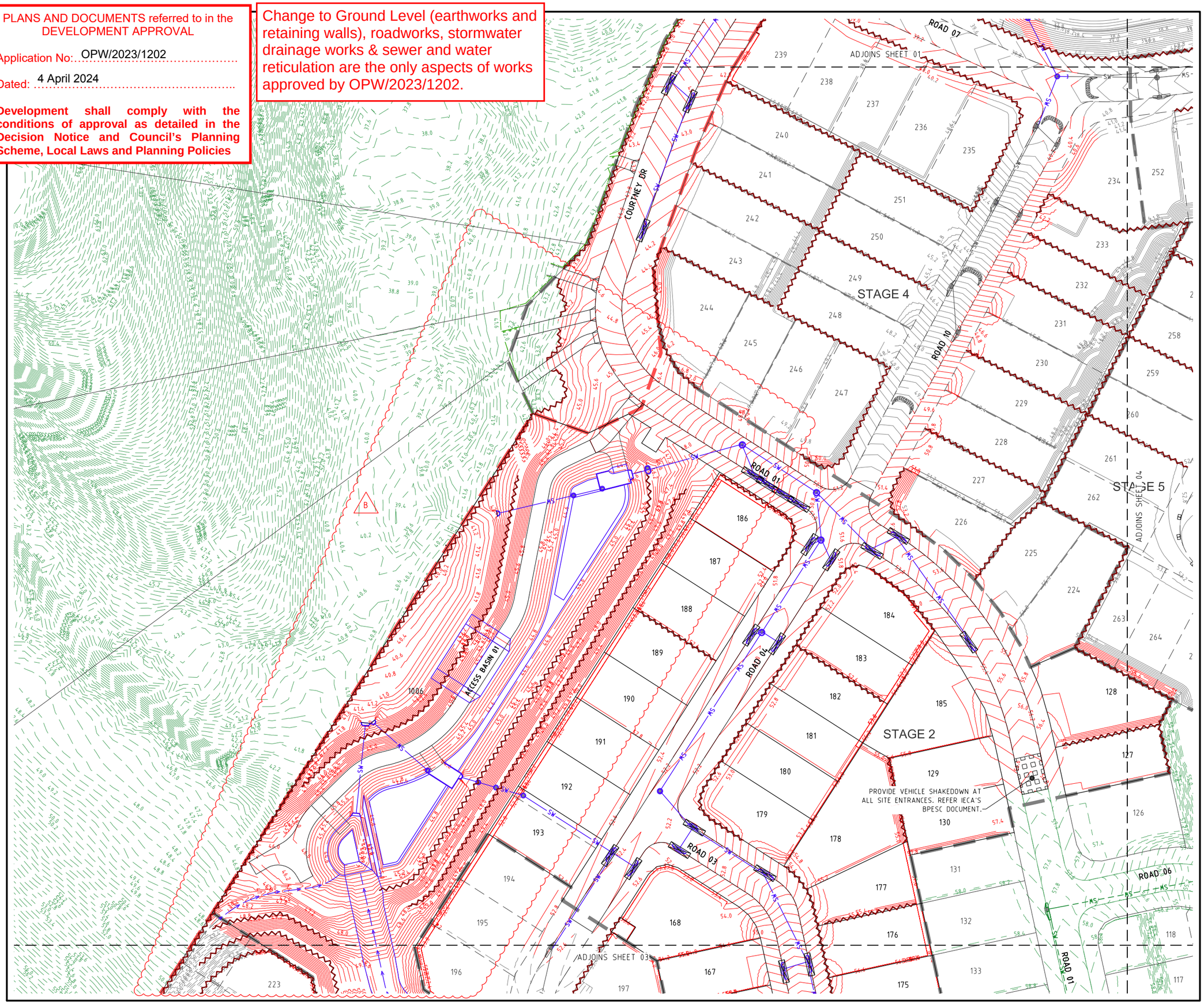
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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

REV	DATE	DESCRIPTION	INT
B	29-11-23	BASIN STORMWATER AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 02

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DRAWING NUMBER	REV
41901-02-081	B

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ADJOINS SHEET 02

LOCALISED EARTHWORKS IN THIS AREA TO MAINTAIN CHANNEL PROFILE THROUGH ROAD 02. STORMWATER CULVERT TO BE INSTALLED AS PART OF STAGE 3 WORKS.

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

STAGE 3

STAGE 2

STAGE 1

ROAD 01

ROAD 02

ROAD 03

ROAD 04

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PROJECT NAME

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DRAWING TITLE

FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 03

MORTONS urbansolutions
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Civil Engineering
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DRAWING NUMBER 41901-02-082

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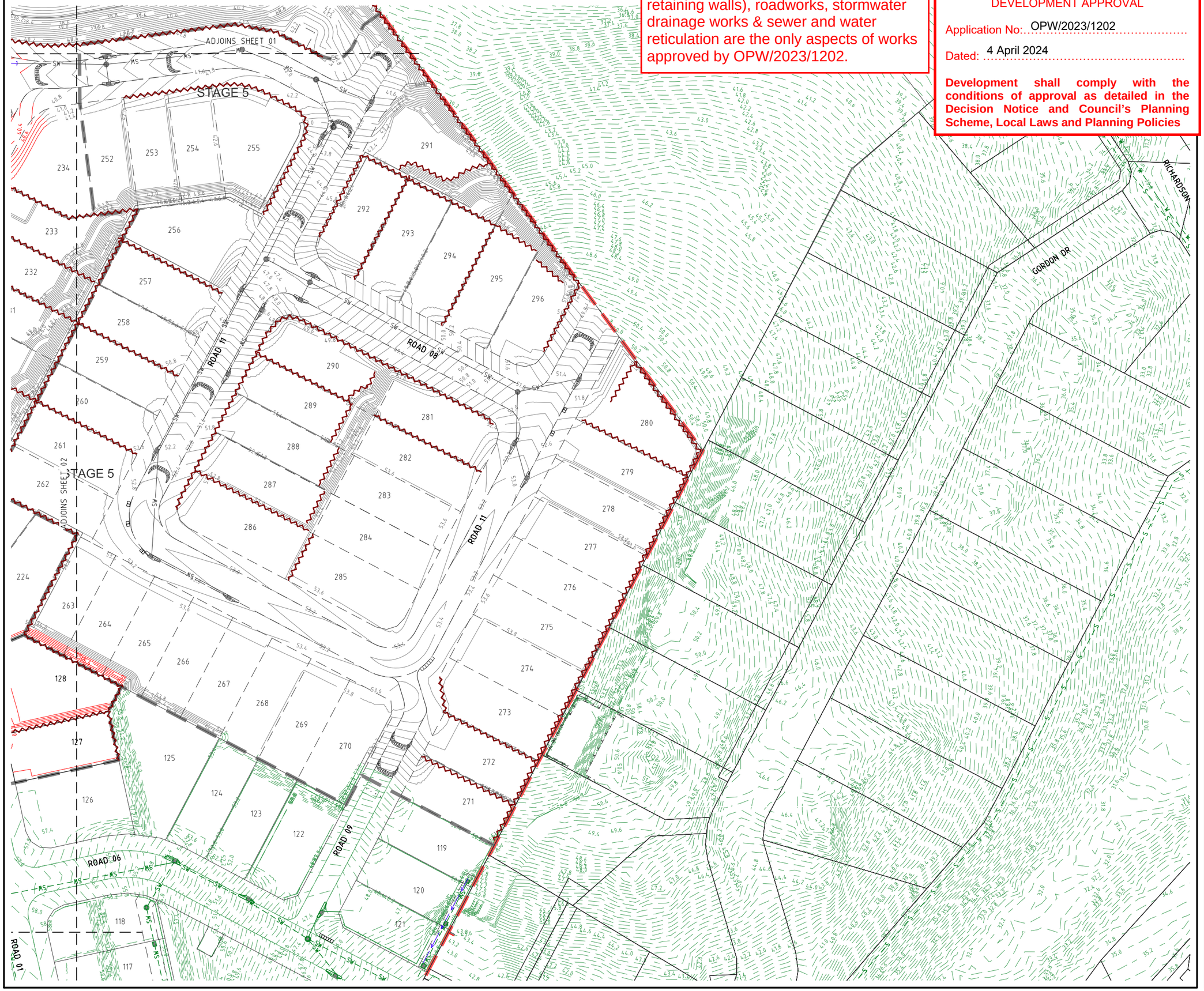
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DRAWING TITLE

FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 04

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APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-083	A

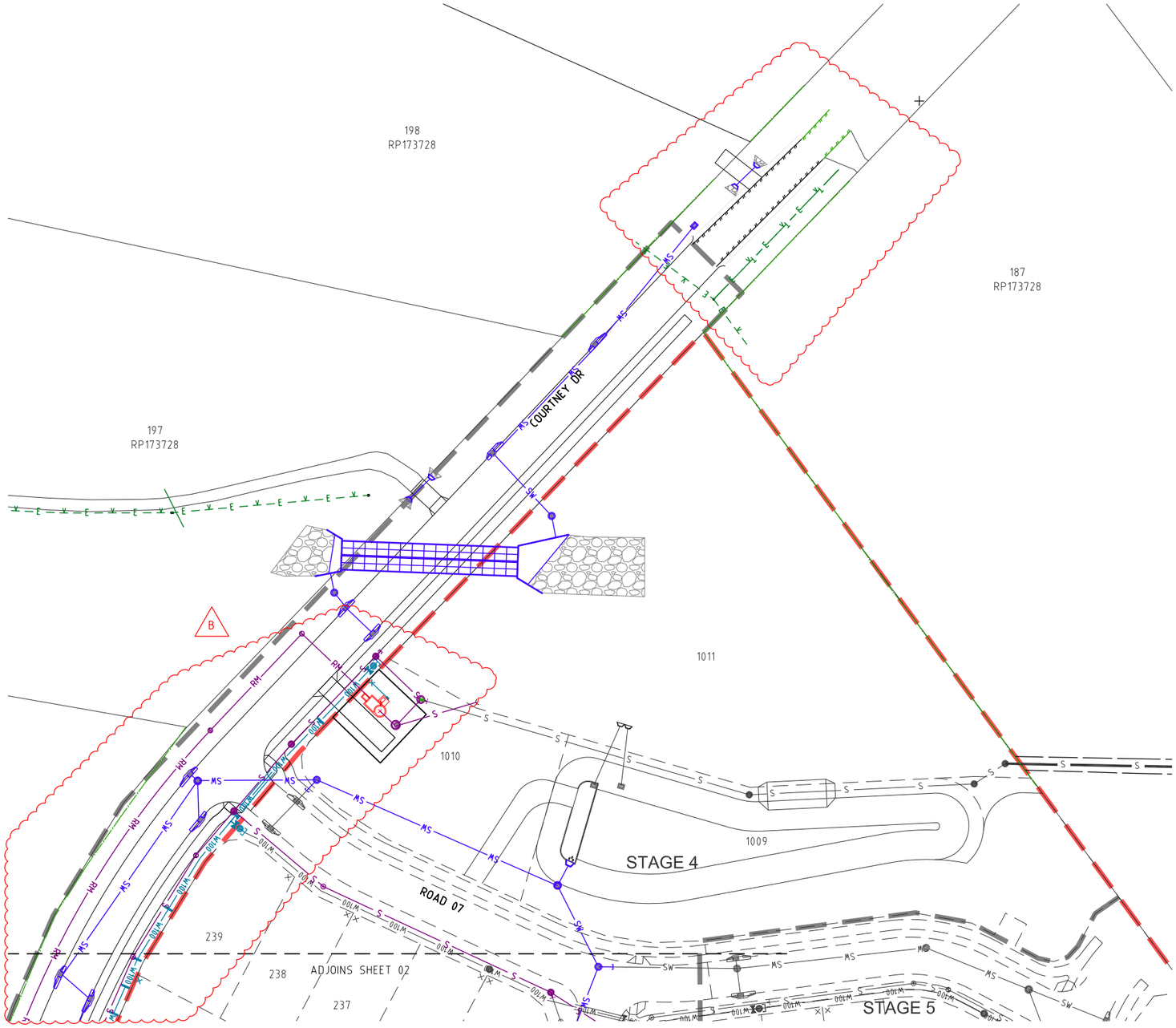
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CONSTRUCTION SERVICES

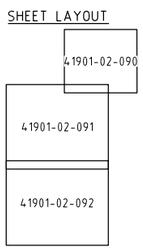
1. CONSTRUCTION OF SEWER/ROOFWATER/STORMWATER/SERVICES
   EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH & TO PROTECT PIPE WORK & DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS. TOPSOIL & GRASS SEED AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER & ROOFWATER DRAINAGE CONSTRUCTION. DEPRESS 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
- EXISTING RISING MAIN
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING ROOFWATER
- EXISTING SUBSOIL
- EXISTING WATER
- EXISTING WATER
- EXISTING WATER
- EXISTING WATER
- EXISTING WATER
- EXISTING WATER
- EXISTING WATER CONDUIT
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED FOOTPATH
- PROPOSED RISING MAIN
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED ROOFWATER
- PROPOSED SUBSOIL
- PROPOSED WATER
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- PROPOSED WATER
- PROPOSED WATER
- PROPOSED WATER
- PROPOSED WATER CONDUIT
- FUTURE PROPERTY LINE
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- FUTURE RISING MAIN
- FUTURE SEWER
- FUTURE STORMWATER
- FUTURE ROOFWATER
- FUTURE SUBSOIL
- FUTURE WATER
- FUTURE WATER
- FUTURE WATER
- FUTURE WATER
- FUTURE WATER
- FUTURE WATER
- FUTURE WATER CONDUIT
- SITE BOUNDARY
- STAGE BOUNDARY



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CLIENT

HB Land

NORTH

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BENNETT+BENNETT

DRAWING TITLE

COMBINED SERVICES PLAN
SHEET 01

MORTONS urbansolutions
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Civil Engineering
Project Coordination
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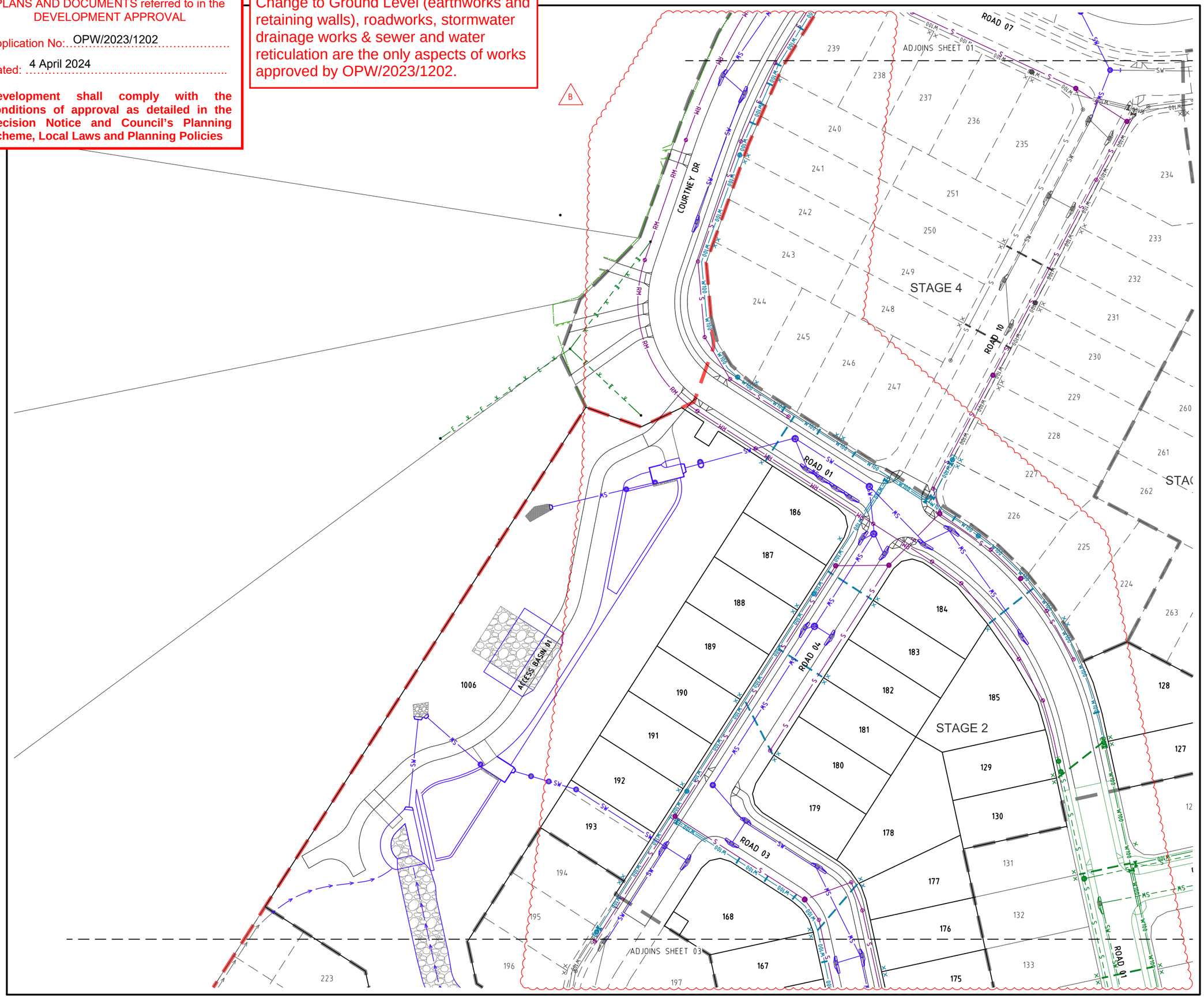
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41901-02-091	B

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ADJOINS SHEET 02

STAGE 3

STAGE 2

STAGE 1

ROAD 01

ROAD 02

ROAD 03

ROAD 04

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COMBINED SERVICES PLAN
SHEET 03

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41901-02-092	B

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ROADWORKS

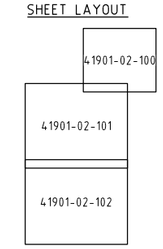
1. PAVEMENT DEPTHS
   a) THE DESIGN PAVEMENT DEPTHS ALLOWED IN EARTHWORKS CALCULATIONS ARE BASED ON THE DEPTHS SHOWN IN THE SCHEDULE OF PAVEMENT DEPTHS ON DRAWING 120.
   b) THE PAVEMENT DEPTHS GIVEN ARE DESIGN DEPTHS ONLY & MAY BE VARIED AFTER SUB-GRADE TESTS ARE TAKEN. THE CONTRACTOR IS TO PROVIDE 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

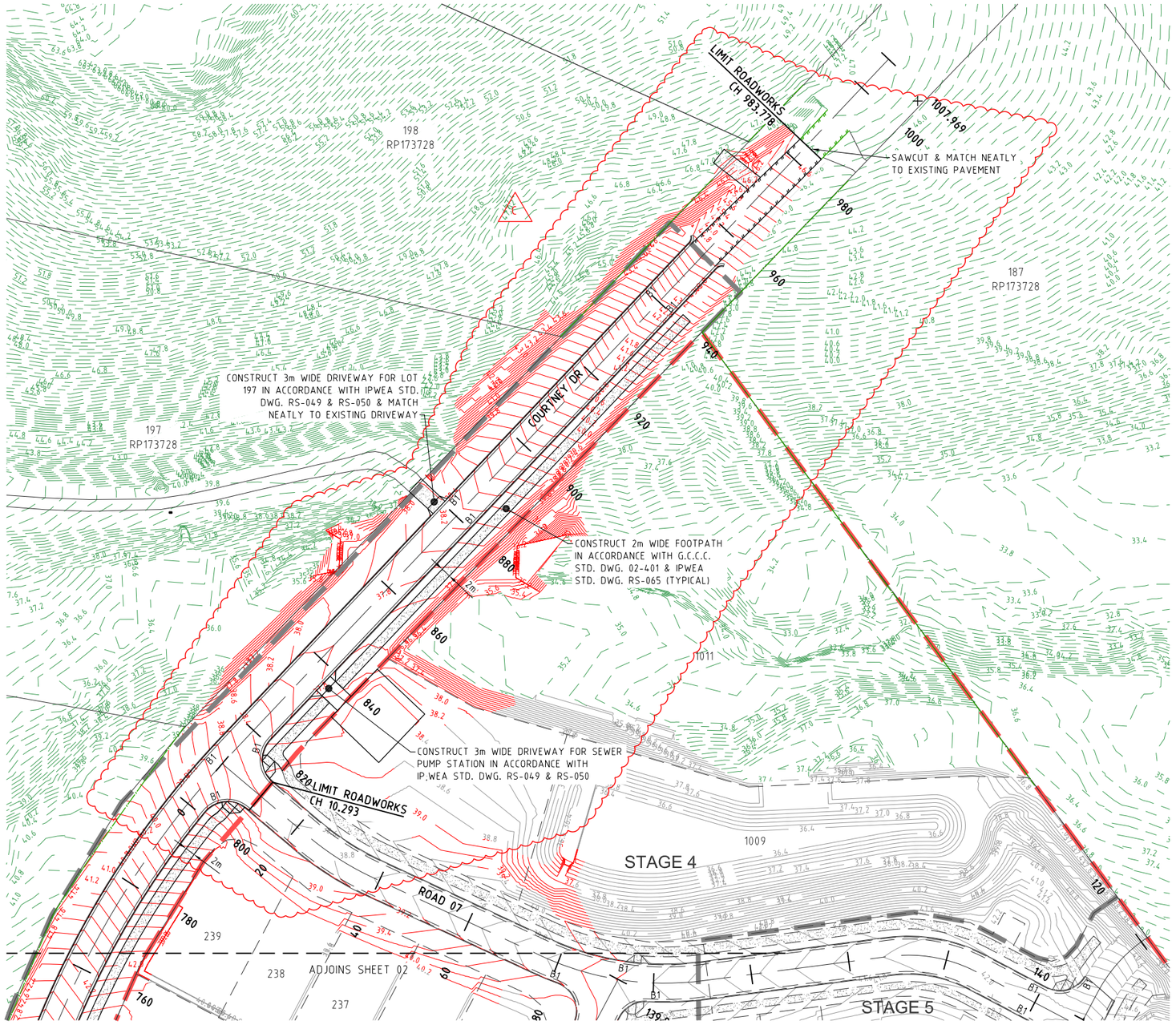
- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE KERB
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- FUTURE CONTOURS
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- DESIGN CONTOURS
- PROPOSED CONCRETE
- 41.065 CENTRELINE CHAINAGE
- B1 BARRIER KERB & CHANNEL

REFER TO DRG. 120 FOR KERB TYPES

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DRAWING TITLE

ROADWORKS
PLAN
SHEET 01

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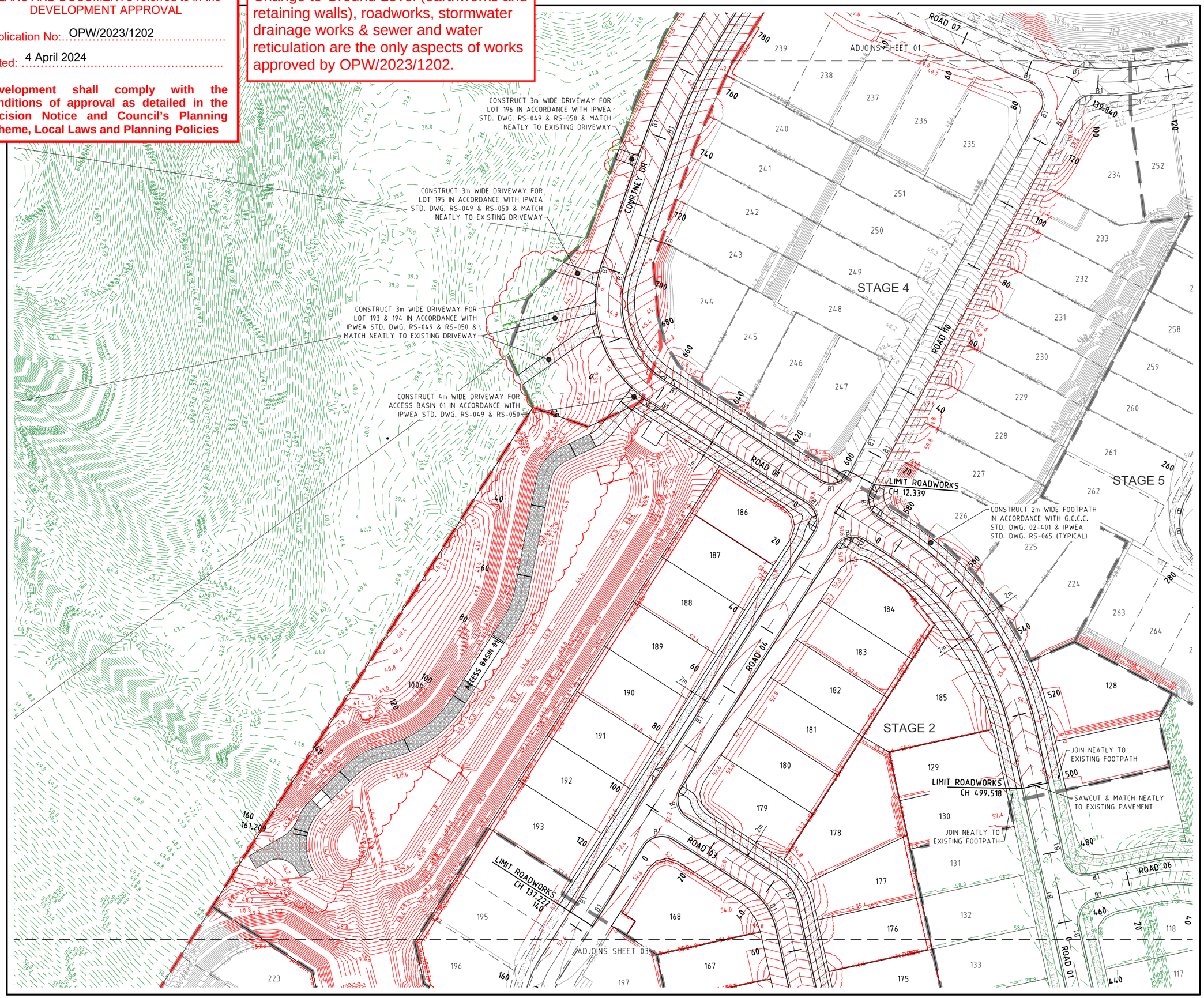
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COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

HB Land

NORTH

0 5 10 15 20 25m

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

REV	DATE	DESCRIPTION	INT
B	29-11-23	BASIN HATCH AMENDED & DRIVEWAY HATCH ADDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

ROADWORKS
PLAN
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-101	B

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ADJOINS SHEET 02

LOCALISED EARTHWORKS IN THIS AREA TO MAINTAIN CHANNEL PROFILE THROUGH ROAD 02. STORMWATER CULVERT TO BE INSTALLED AS PART OF STAGE 3 WORKS.

CONSTRUCT 2m WIDE FOOTPATH IN ACCORDANCE WITH G.C.C.C. STD. DWG. 02-401 & IPWEA STD. DWG. RS-065 (TYPICAL)

JOIN NEATLY TO EXISTING FOOTPATH

SAWCUT & MATCH NEATLY TO EXISTING PAVEMENT

LIMIT ROADWORKS CH 222.133

STAGE 1

STAGE 2

STAGE 3

ROAD 01

ROAD 02

ROAD 03

ROAD 04

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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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BENNETT + BENNETT

DRAWING TITLE

ROADWORKS
PLAN
SHEET 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-102	A

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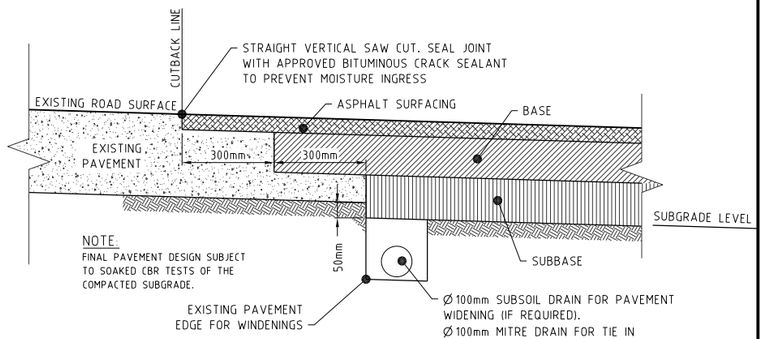
SCHEDULE OF PAVEMENT DEPTHS

ROAD NAME	SURFACING	BASE	SUB-BASE	LOWER SUB-BASE	CLASSIFICATION	DESA OR VPD	DESIGN GUIDE
ROAD 03, ROAD 04 & ROAD 10	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
COURTNEY DRIVE & ROAD 01 & ROAD 07	25mm ASPHALT	100mm TYPE 2.1 (CBR 60)	100mm TYPE 2.3 (CBR 45)	100mm TYPE 2.5 (CBR 15)	RESIDENTIAL COLLECTOR ST	751-3000	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.

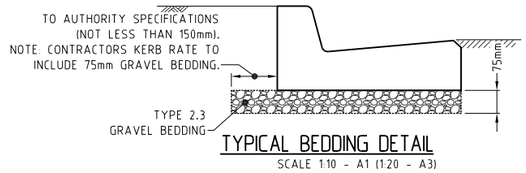
SCHEDULE OF KERB TYPES

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



PAVEMENT WIDENING AND TIE-IN DETAIL

NOT TO SCALE



TYPICAL BEDDING DETAIL

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

Pavement design to be approved by Contributed Assets.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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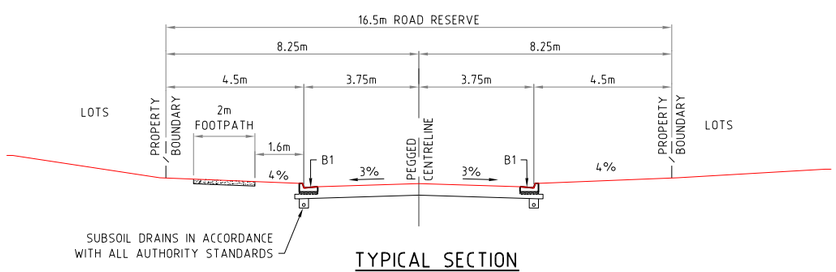
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

TYPICAL SECTION
7.5m ROAD-16.5m ROAD RESERVE
ROAD 01

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

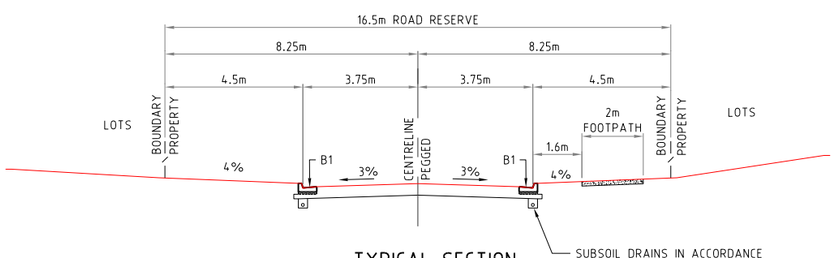
TYPICAL SECTION
7.5m ROAD-20m ROAD RESERVE
COURTNEY DRIVE

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



TYPICAL SECTION
7.5m ROAD-16.5m ROAD RESERVE
ROAD 03 & ROAD 07

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



TYPICAL SECTION
7.5m ROAD-16.5m ROAD RESERVE
ROAD 04 & ROAD 10

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

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

ROADWORKS DETAILS

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Southport QLD 4215

DESIGNED RB	DRAWN EP	
APPROVED	RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-120	A

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EXISTING | STAGE 2

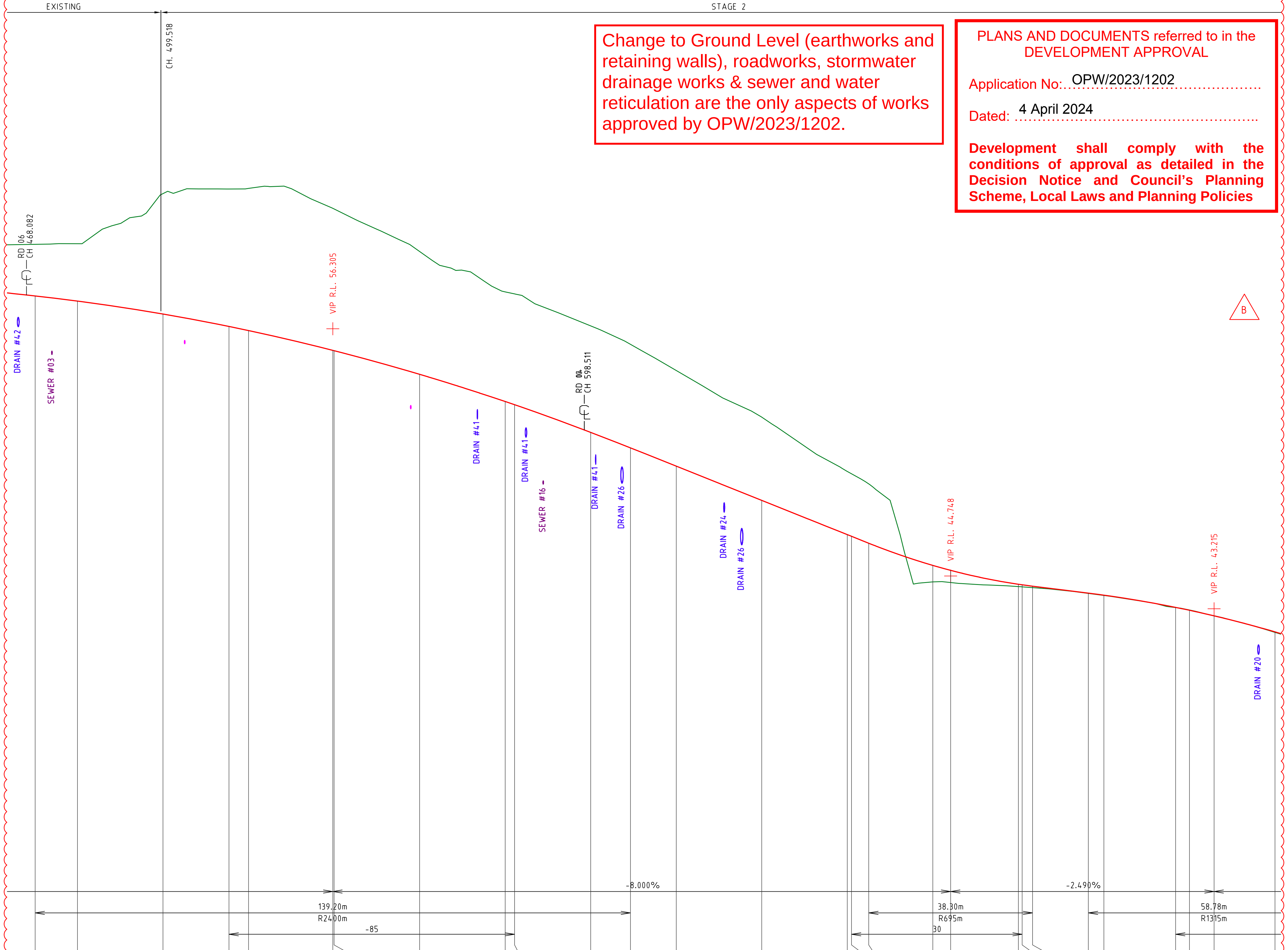
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



CHAINAGE	CONTROL LINE LEVELS	EXISTING SURFACE	DEPTH
470.107	57.836	60.25	2.414
480	57.598	60.279	2.682
500	56.992	62.621	5.628
515.44	56.41	62.838	6.427
520	56.22	62.864	6.644
539.707	55.296	61.933	6.637
540	55.281	61.904	6.623
560	54.175	59.915	5.74
580	52.902	58.028	5.125
582.199	52.752	57.933	5.181
600	51.463	56.439	4.976
609.307	50.737	55.577	4.84
620	49.881	54.353	4.472
640	48.281	52.176	3.895
660	46.681	49.643	2.962
660.985	46.602	49.527	2.925
665.014	46.28	49.05	2.77
680	45.243	44.474	-0.769
684.162	45.012	44.441	-0.571
700	44.362	44.252	-0.11
700.893	44.336	44.239	-0.097
703.31	44.272	44.203	-0.069
716.366	43.946	43.931	-0.016
720	43.851	43.835	-0.016
736.752	43.281	43.272	-0.009
740	43.146	43.159	0.013
745.757	42.886	42.891	0.005
760	42.136	42.113	-0.024

LONGITUDINAL SECTION 01

COURTNEY DRIVE/ROAD 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	LONG SECTION AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

LONGITUDINAL SECTIONS
COURTNEY DRIVE/ROAD 01
SHEET 01

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Southport QLD 4215

DESIGNED RB | DRAWN EP
APPROVED [signature] | RPEQ 4706 | DATE 13-10-23

DRAWING NUMBER 41901-02-200 | REV B

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STAGE 2 | EXISTING

CH. 983.778

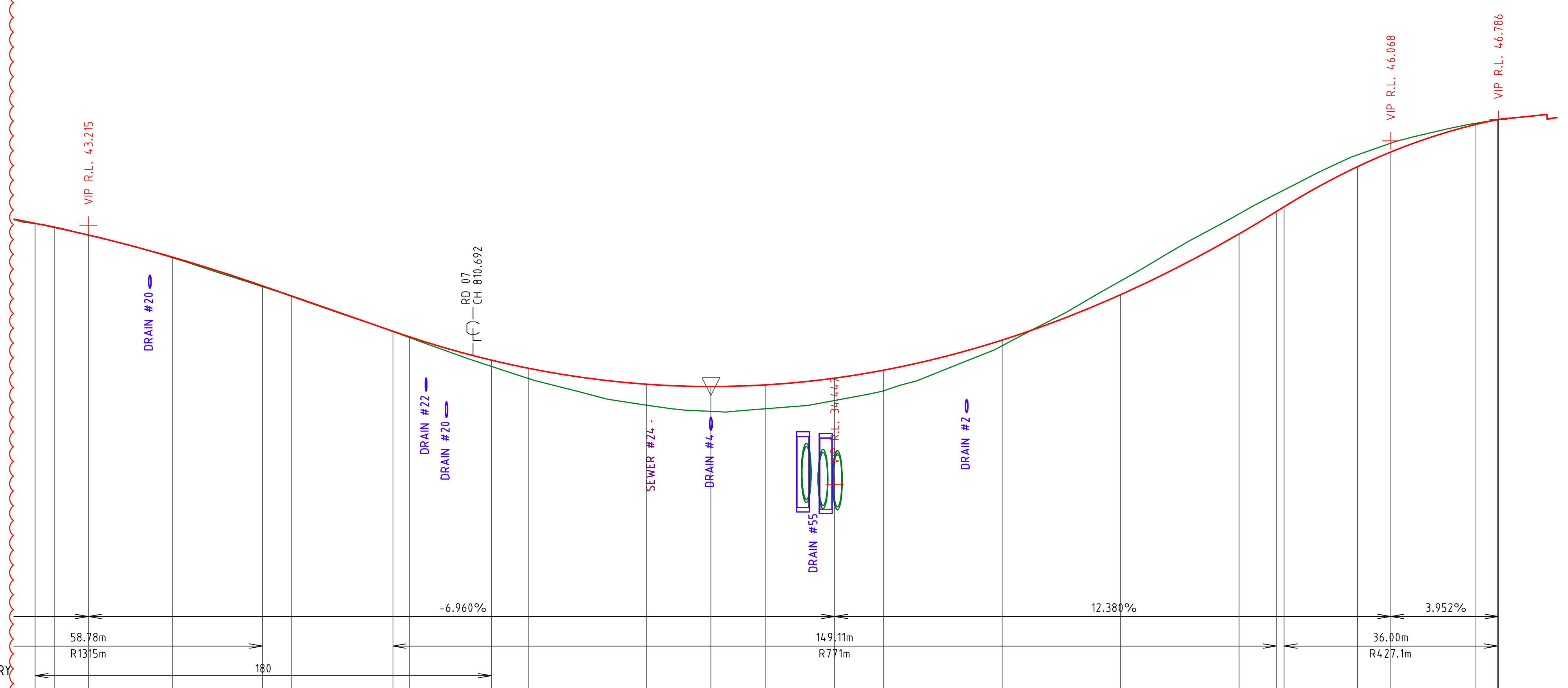
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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CHAINAGE	CONTROL LINE LEVELS	EXISTING SURFACE	DEPTH
736.752	43.281	43.272	-0.009
740	43.146	43.159	0.013
745.757	42.886	42.891	0.005
760	42.136	42.113	-0.024
775.148	41.169	41.141	-0.028
780	40.831	40.817	-0.015
797.185	39.635	39.624	-0.011
800	39.445	39.418	-0.026
813.788	38.659	38.449	-0.209
820	38.385	38.04	-0.345
840	37.844	37.135	-0.709
850.845	37.768	36.928	-0.84
860	37.822	37.014	-0.808
871.739	38.051	37.296	-0.755
880	38.319	37.626	-0.694
900	39.335	39.143	-0.192
920	40.87	41.334	0.464
940	42.923	43.599	0.676
946.293	43.676	44.271	0.594
947.615	43.84	44.406	0.566
960	45.194	45.595	0.401
965.615	45.689	45.988	0.299
980	46.621	46.66	0.039
983.615	46.779	46.78	0.001
983.778	46.786	46.786	0

LONGITUDINAL SECTION COURTNEY DRIVE/ROAD 01 (Cont.)

B

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	LONG SECTION AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

LONGITUDINAL SECTIONS
COURTNEY DRIVE/ROAD 01 (Cont.)
SHEET 02

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Civil Engineering
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Southport QLD 4215

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DRAWING NUMBER 41901-02-201 | REV B

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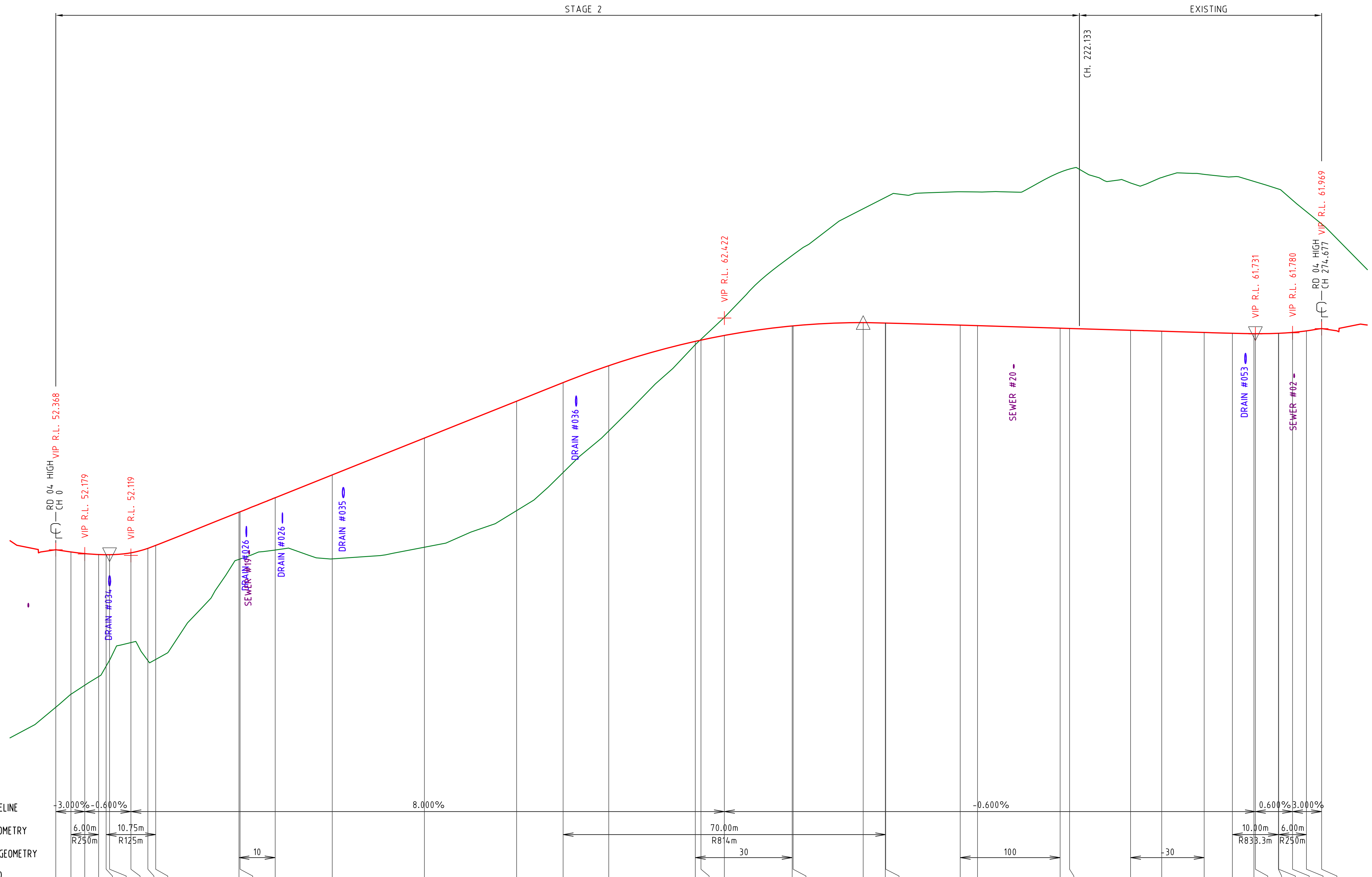
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

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Dated: 4 April 2024

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DATUM 38.0

CHAINAGE	CONTROL LINE LEVELS	EXISTING SURFACE	DEPTH
0	52.368	45.53	-6.838
3.3	52.269	46.094	-6.175
6.3	52.197	46.487	-5.71
9.3	52.161	46.861	-5.3
10.926	52.151	47.314	-4.837
11.676	52.149	47.576	-4.573
16.3	52.235	48.336	-3.898
20	52.426	47.549	-4.877
21.674	52.549	47.603	-4.946
39.752	53.995	51.947	-2.048
40	54.015	51.963	-2.052
47.606	54.623	52.353	-2.271
60	55.615	51.968	-3.647
80	57.215	52.476	-4.739
100	58.815	54.064	-4.751
110.094	59.622	55.718	-3.904
120	60.355	57.525	-2.829
138.772	61.412	61.267	-0.145
140	61.466	61.5	0.034
145.094	61.67	62.455	0.785
159.797	62.081	65.142	3.061
160	62.085	65.172	3.087
175.21	62.227	67.168	4.941
180	62.213	67.655	5.442
180.094	62.212	67.665	5.452
196.259	62.115	67.907	5.792
200	62.093	67.898	5.805
217.931	61.985	68.748	6.762
220	61.973	68.875	6.902
233.222	61.894	68.287	6.393
240	61.853	68.523	6.67
249.206	61.798	68.661	6.863
255.315	61.761	68.555	6.794
260	61.746	68.356	6.61
260.315	61.746	68.337	6.591
265.315	61.761	68.026	6.265
265.377	61.762	68.022	6.261
268.377	61.798	67.543	5.746
271.377	61.87	67.046	5.176
274.677	61.969	66.51	4.541

LONGITUDINAL SECTION ROAD 03

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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)

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DRAWING TITLE

LONGITUDINAL SECTIONS
ROAD 03

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Urban & Regional Planning
Civil Engineering
Project Coordination
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DRAWING NUMBER 41901-02-202 | REV A

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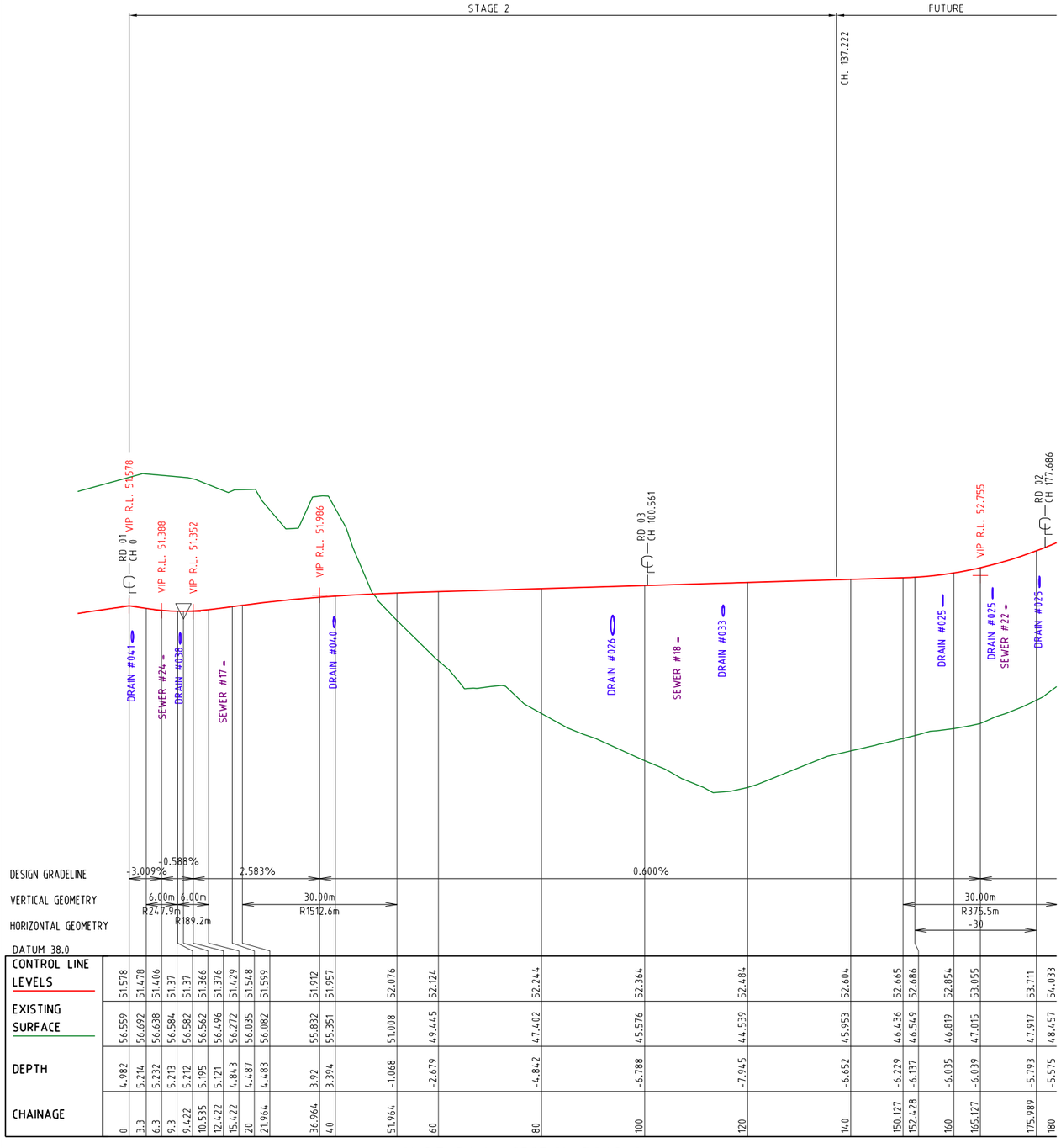
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

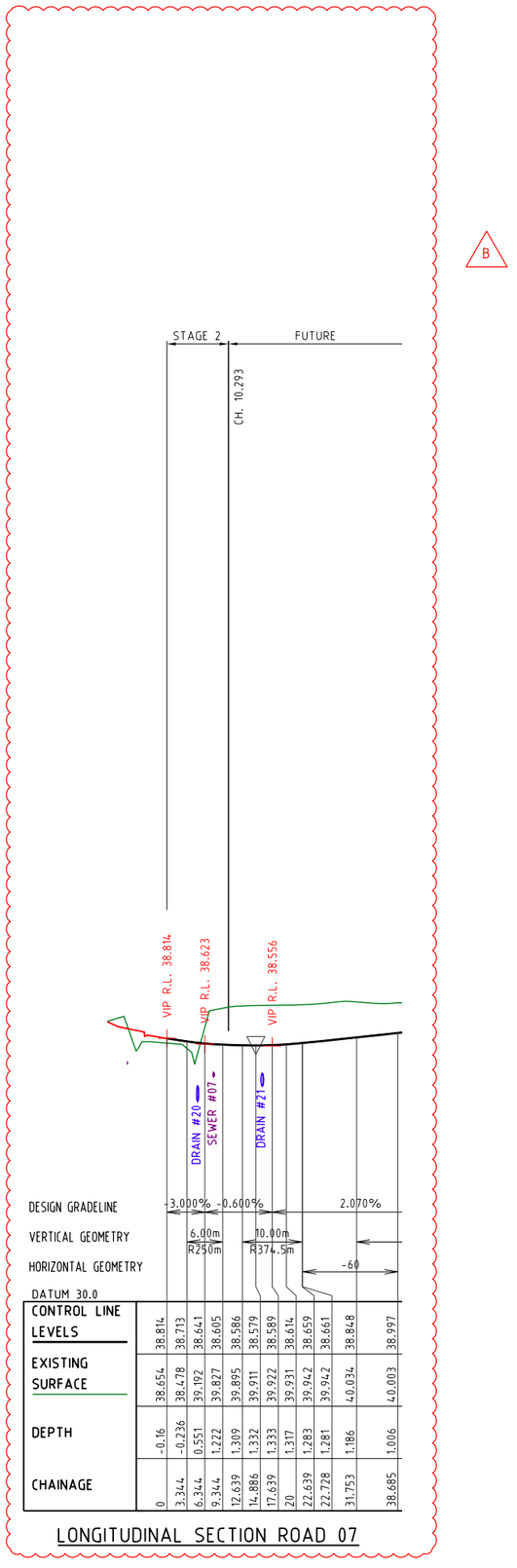
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CHAINAGE	0	3.3	6.3	9.3	9.422	10.535	12.422	15.422	20	21.964	36.964	40	51.964	60	80	100	120	140	150.127	152.428	160	165.127	175.989	180
DEPTH	4.982	5.214	5.232	5.213	5.212	5.195	5.121	4.843	4.487	4.483	3.92	3.394	-1.068	-2.679	-4.842	-6.788	-7.945	-6.652	-6.229	-6.137	-6.035	-6.039	-5.793	-5.575
EXISTING SURFACE	56.559	56.692	56.638	56.584	56.582	56.562	56.496	56.272	56.035	56.082	55.832	55.351	51.008	49.445	47.402	45.576	44.539	45.953	46.436	46.549	46.819	47.015	47.917	48.457
CONTROL LINE LEVELS	51.578	51.478	51.406	51.37	51.37	51.366	51.376	51.429	51.548	51.599	51.912	51.957	52.076	52.124	52.244	52.364	52.484	52.604	52.665	52.686	52.854	53.055	53.711	54.033

LONGITUDINAL SECTION ROAD 04



CHAINAGE	0	3.344	6.344	9.344	12.639	14.886	17.639	20	22.639	22.728	31.753	38.685
DEPTH	-0.16	-0.236	0.551	1.222	1.309	1.332	1.333	1.317	1.283	1.281	1.186	1.006
EXISTING SURFACE	38.654	38.478	39.192	39.827	39.895	39.911	39.922	39.931	39.942	39.942	40.034	40.003
CONTROL LINE LEVELS	38.814	38.713	38.641	38.605	38.586	38.579	38.589	38.614	38.659	38.661	38.848	38.997

LONGITUDINAL SECTION ROAD 07

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	LONG SECTION AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

LONGITUDINAL SECTIONS
ROAD 04
&
ROAD 07

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

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-203
REV: B

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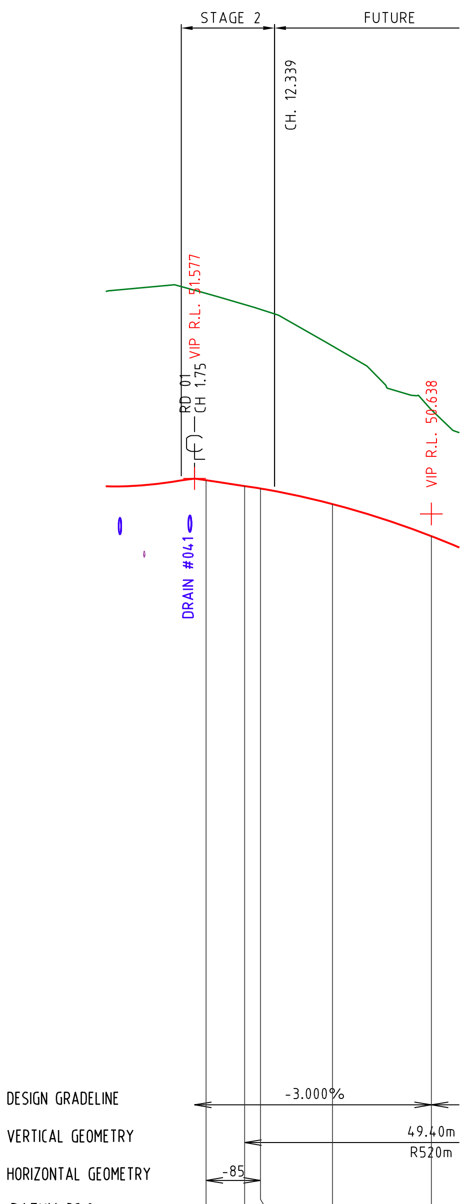
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

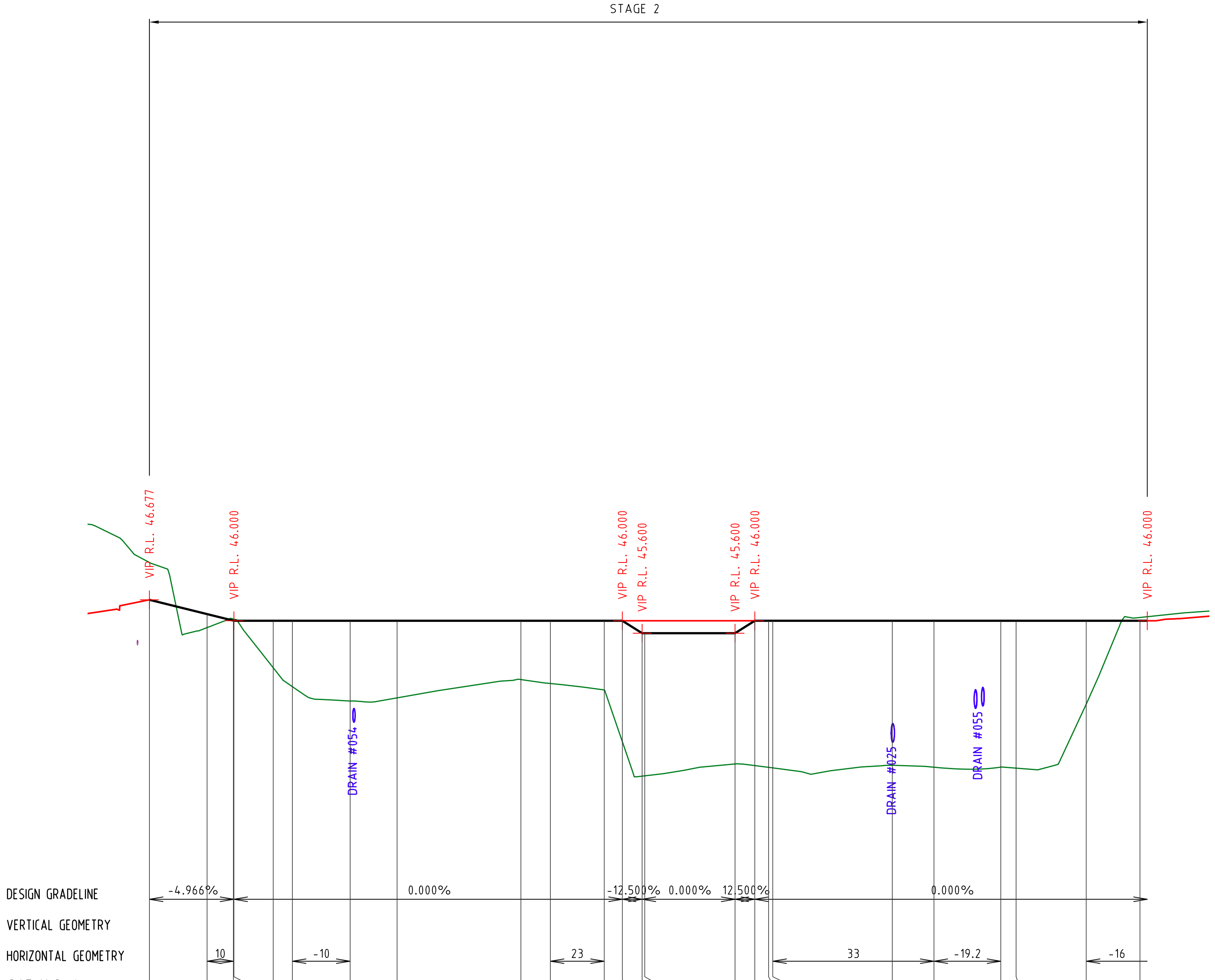
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



CHAINAGE	CONTROL LINE LEVELS	EXISTING SURFACE	DEPTH
0		56.655	
3.277	51.532	56.475	4.944
8.374	51.379	56.183	4.805
10.464	51.312	56.055	4.743
20	50.9	55.082	4.182
33.074	50.051	53.394	3.343

LONGITUDINAL SECTION ROAD 10



CHAINAGE	CONTROL LINE LEVELS	EXISTING SURFACE	DEPTH
0	46.677	47.886	1.209
9.318	46.215	45.78	-0.435
13.562	46.004	46.056	0.052
13.641	46	46.052	0.052
20	46	44.481	-1.519
23.09	46	43.87	-2.13
32.419	46	43.406	-2.594
40	46	43.509	-2.491
60	46	44.102	-1.898
64.769	46	43.972	-2.028
73.472	46	43.76	-2.24
76.383	46	42.094	-3.906
79.583	45.6	40.98	-4.62
80	45.6	40.99	-4.61
94.583	45.6	41.374	-4.226
97.783	46	41.322	-4.678
100	46	41.266	-4.734
100.695	46	41.248	-4.752
120	46	41.329	-4.671
126.728	46	41.267	-4.733
137.523	46	41.273	-4.727
140	46	41.236	-4.764
151.324	46	43.306	-2.694
160	46	46.107	0.107
161.209		46.132	

LONGITUDINAL SECTION ACCESS BASIN 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

LONGITUDINAL SECTIONS
ROAD 10
&
ACCESS BASIN 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN EP	
APPROVED (signature)	RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-204 REV A

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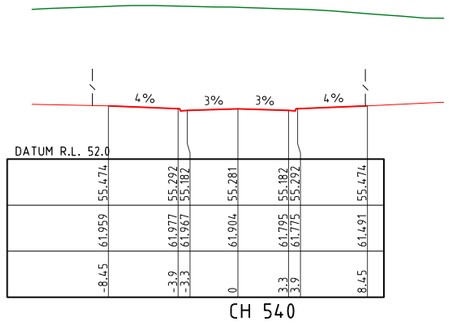
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

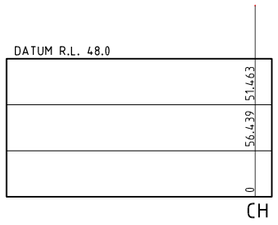
Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

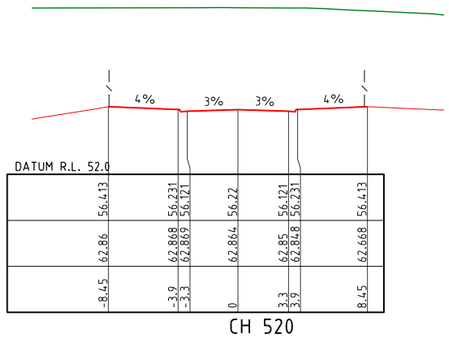
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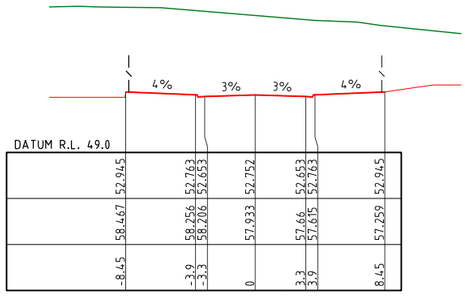
CH 540



CH 600

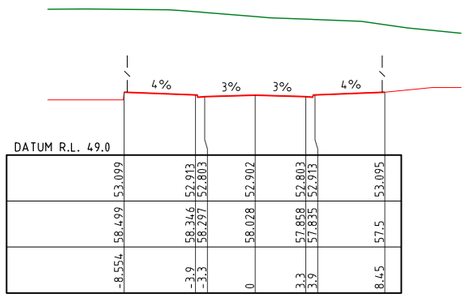


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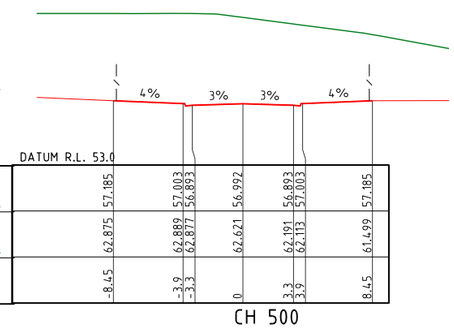


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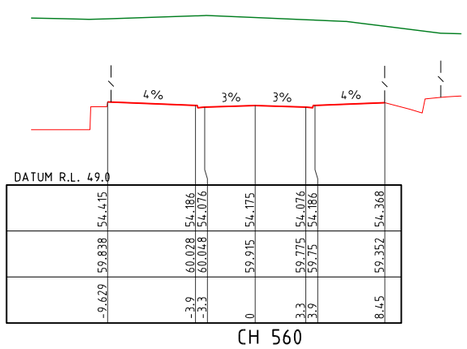
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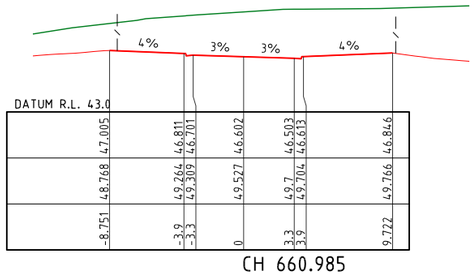
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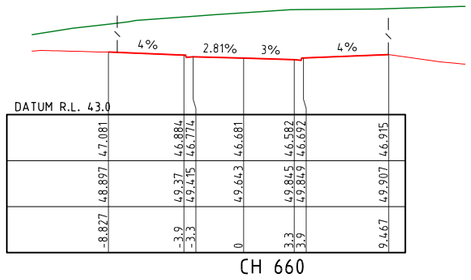
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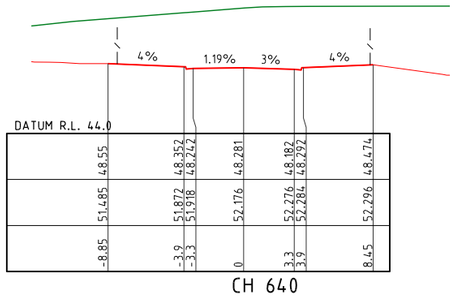
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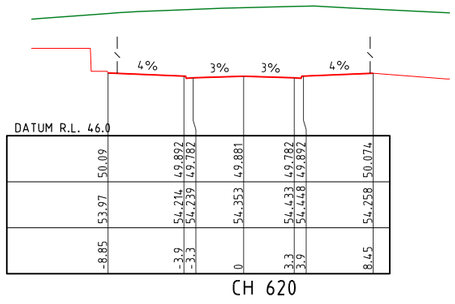
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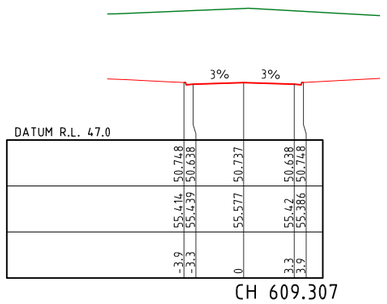
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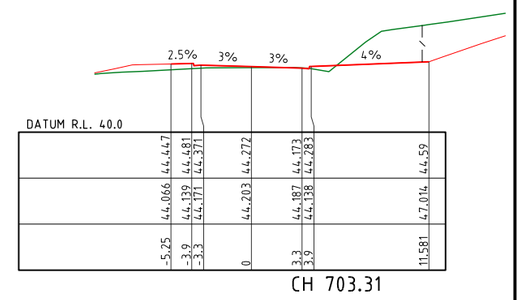
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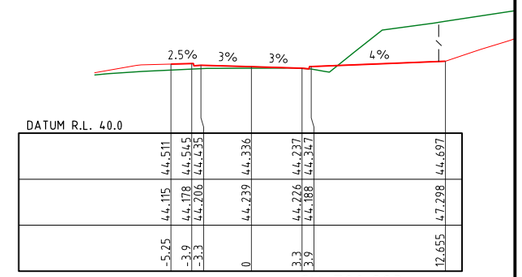
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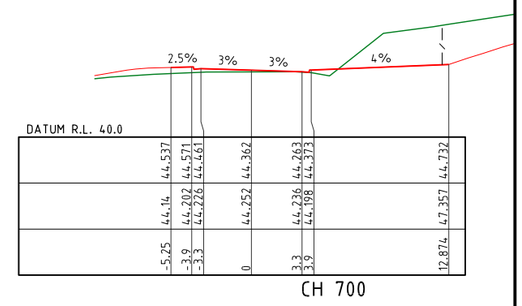
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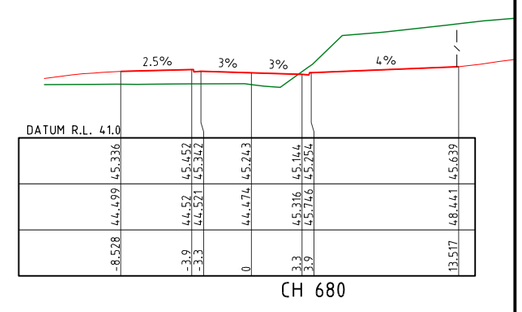
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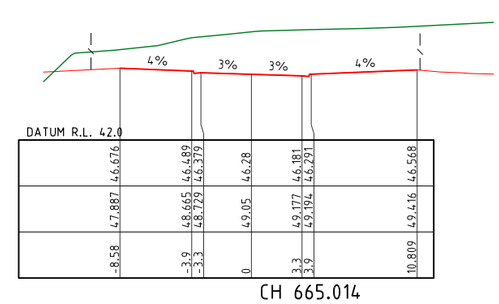
CH 700.893



CH 700



CH 680



CH 665.014

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

COURTNEY DRIVE/ROAD 01

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

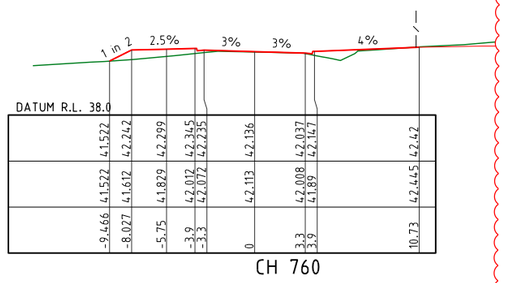
CROSS SECTIONS
COURTNEY DRIVE/ROAD 01
SHEET 01

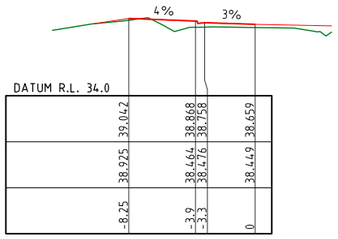
MORTONS urbansolutions
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PO Box 2484
Southport QLD 4215
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Suite 9, 19 Short St
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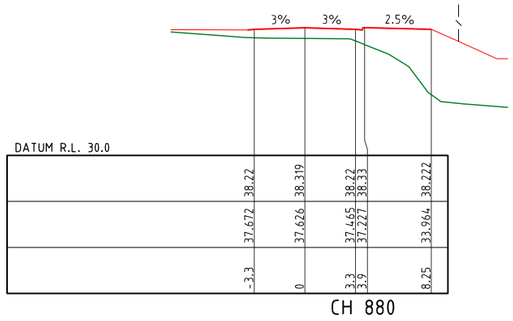
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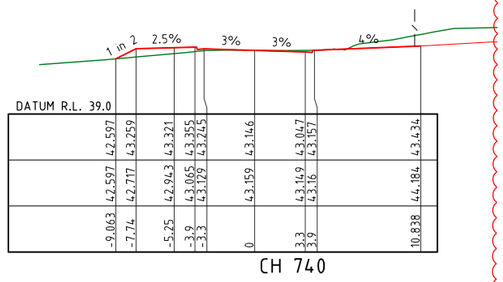
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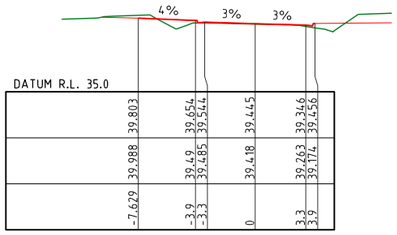
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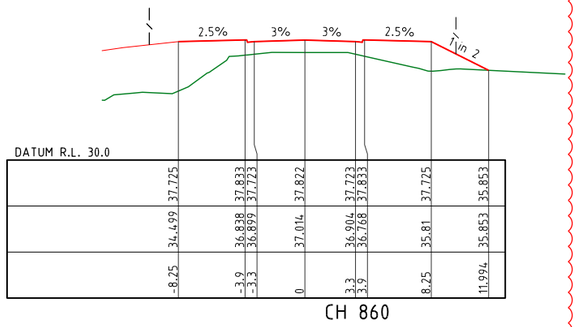


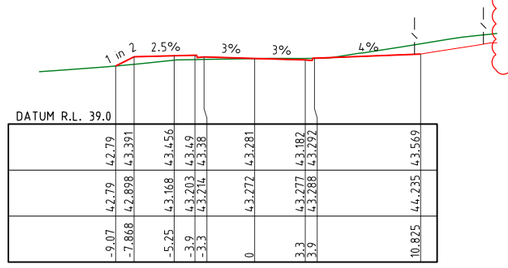


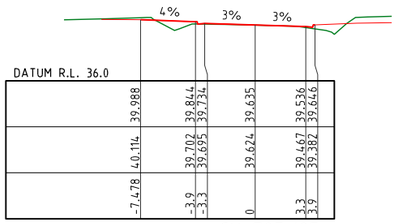


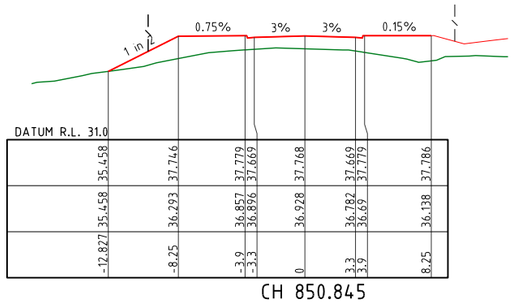


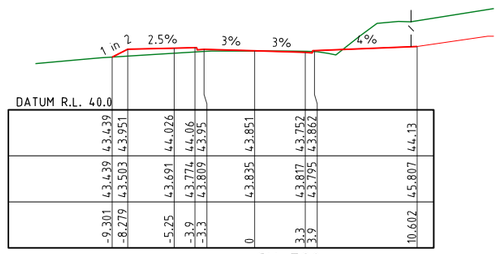


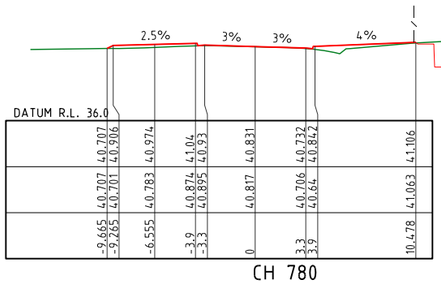


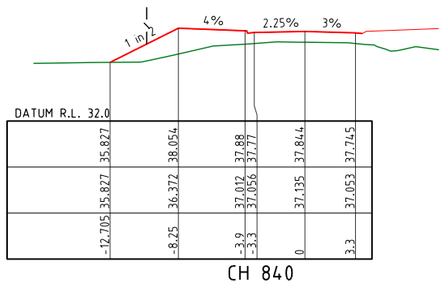


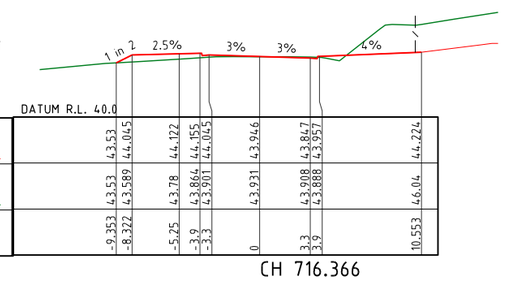


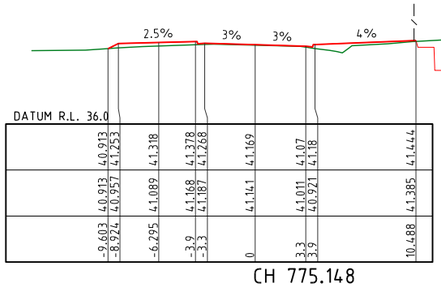


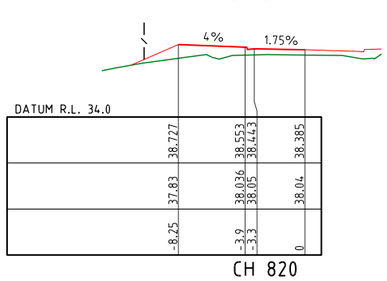












NOTES:

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.

DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
OFFSET

COURTNEY DRIVE/ROAD 01 (Cont.)

B

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No:..OPW/2023/1202.....

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	CROSS SECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

CROSS SECTIONS
COURTNEY DRIVE/ROAD 01 (Cont.)
SHEET 02

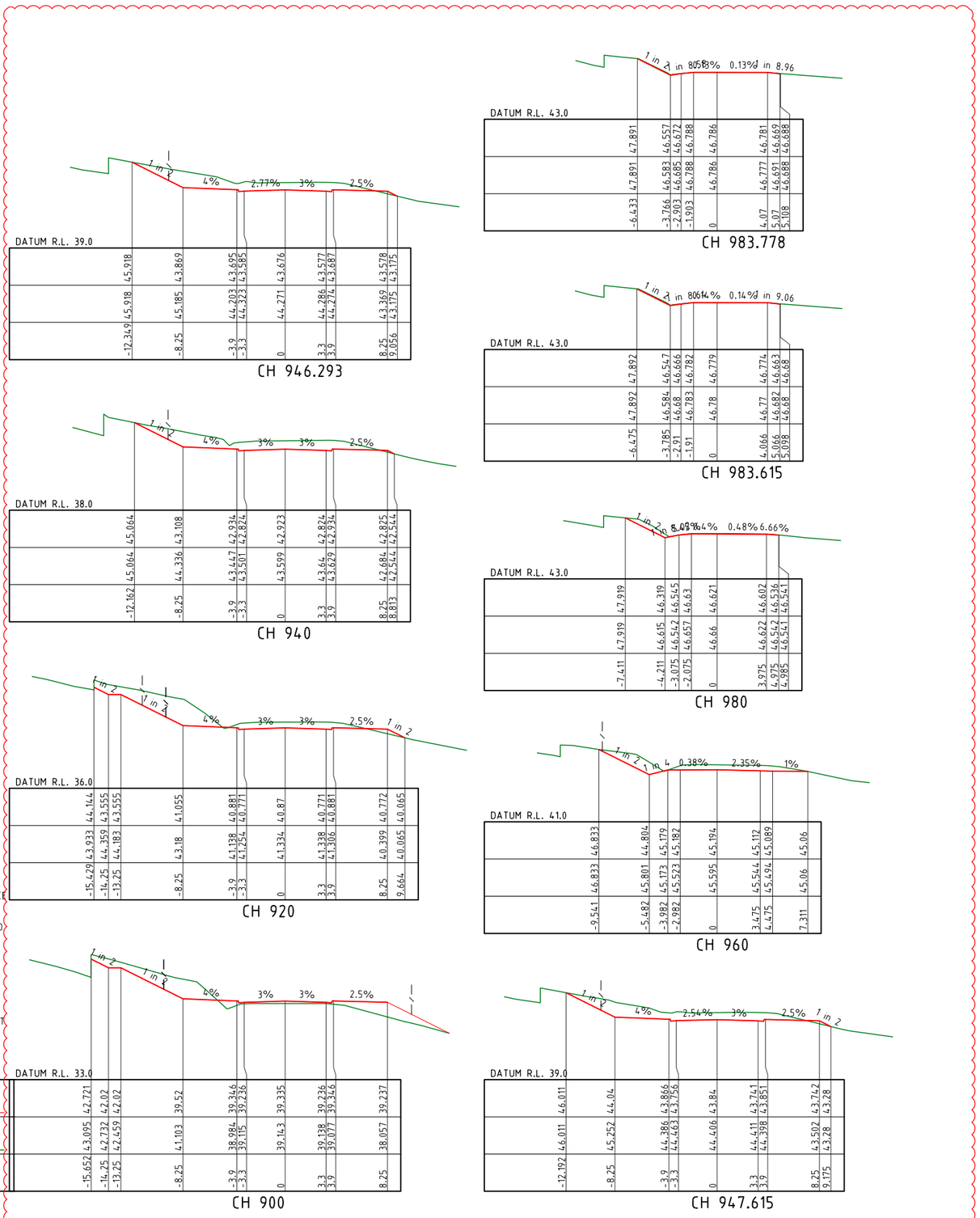
MORTONS urbansolutions
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Mortons-Urban Solutions
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Postal Address
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN EP
APPROVED RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-301 | REV B

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B



COURTNEY DRIVE/ROAD 01 (Cont.)

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.

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	CROSS SECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

CROSS SECTIONS
COURTNEY DRIVE/ROAD 01 (Cont.)
SHEET 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
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Tel 07 5571 1099
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PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-302 REV B

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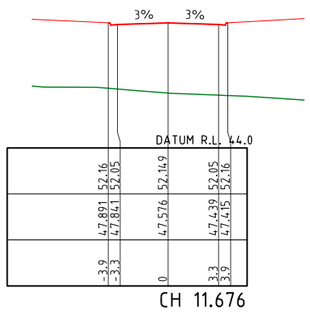
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

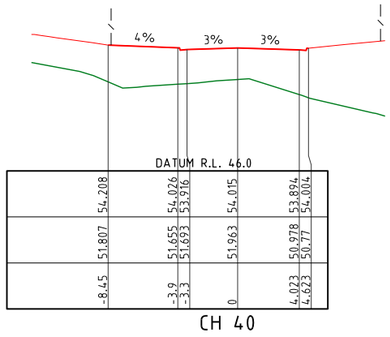
Application No: OPW/2023/1202

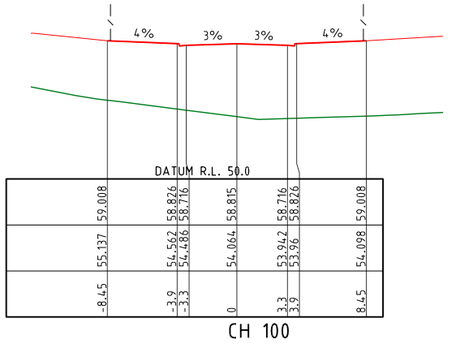
Dated: 4 April 2024

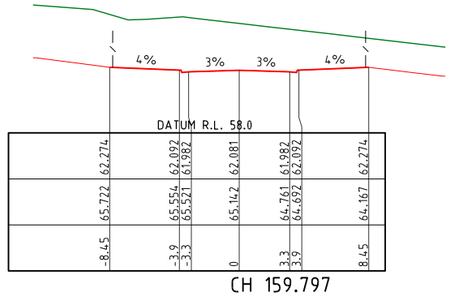
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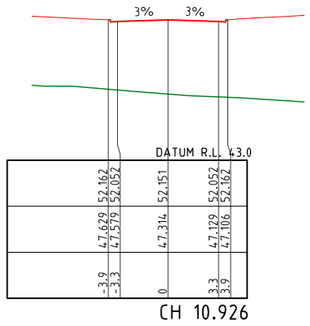
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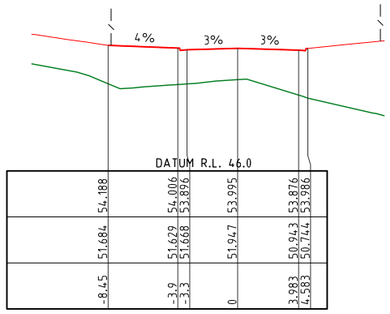


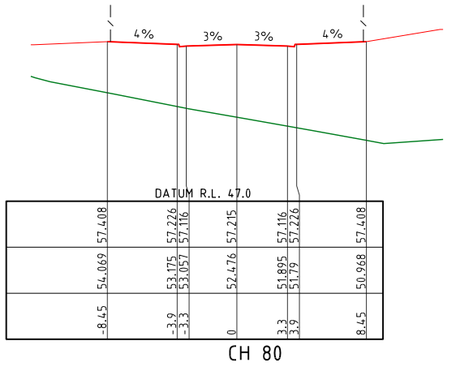


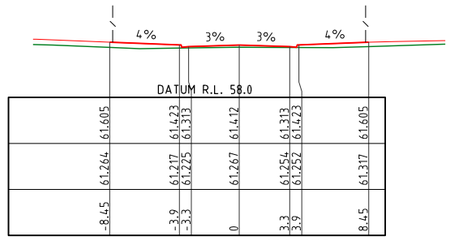


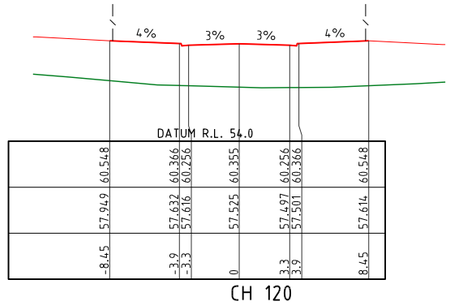


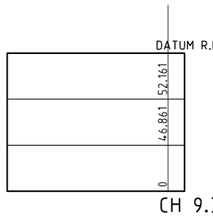


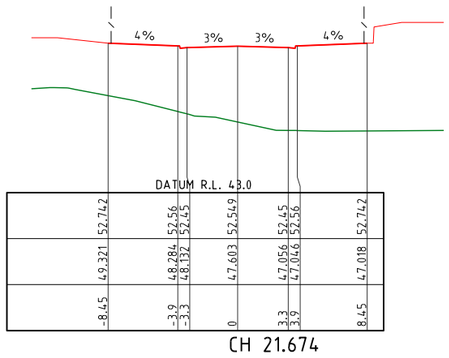


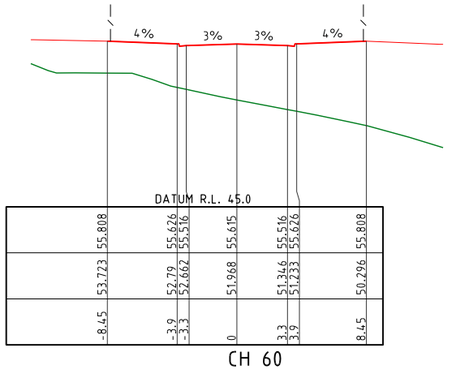


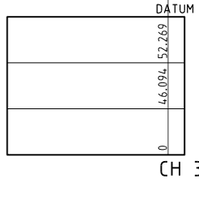








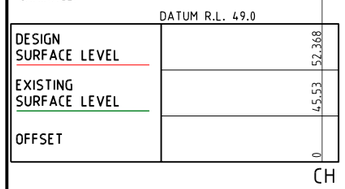


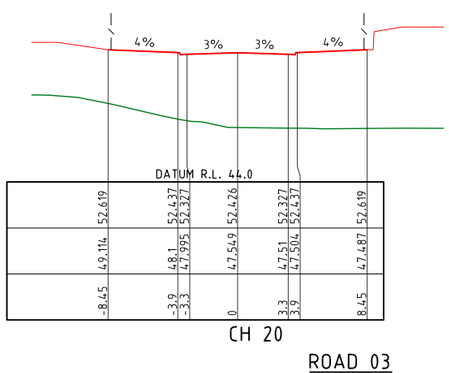


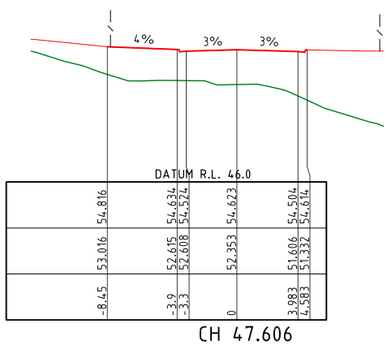
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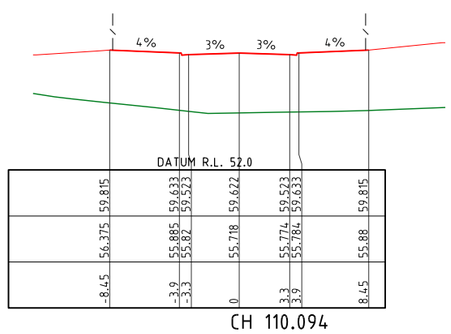
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ROAD 03

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

CROSS SECTIONS
ROAD 03
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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Postal Address
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-303

REV A

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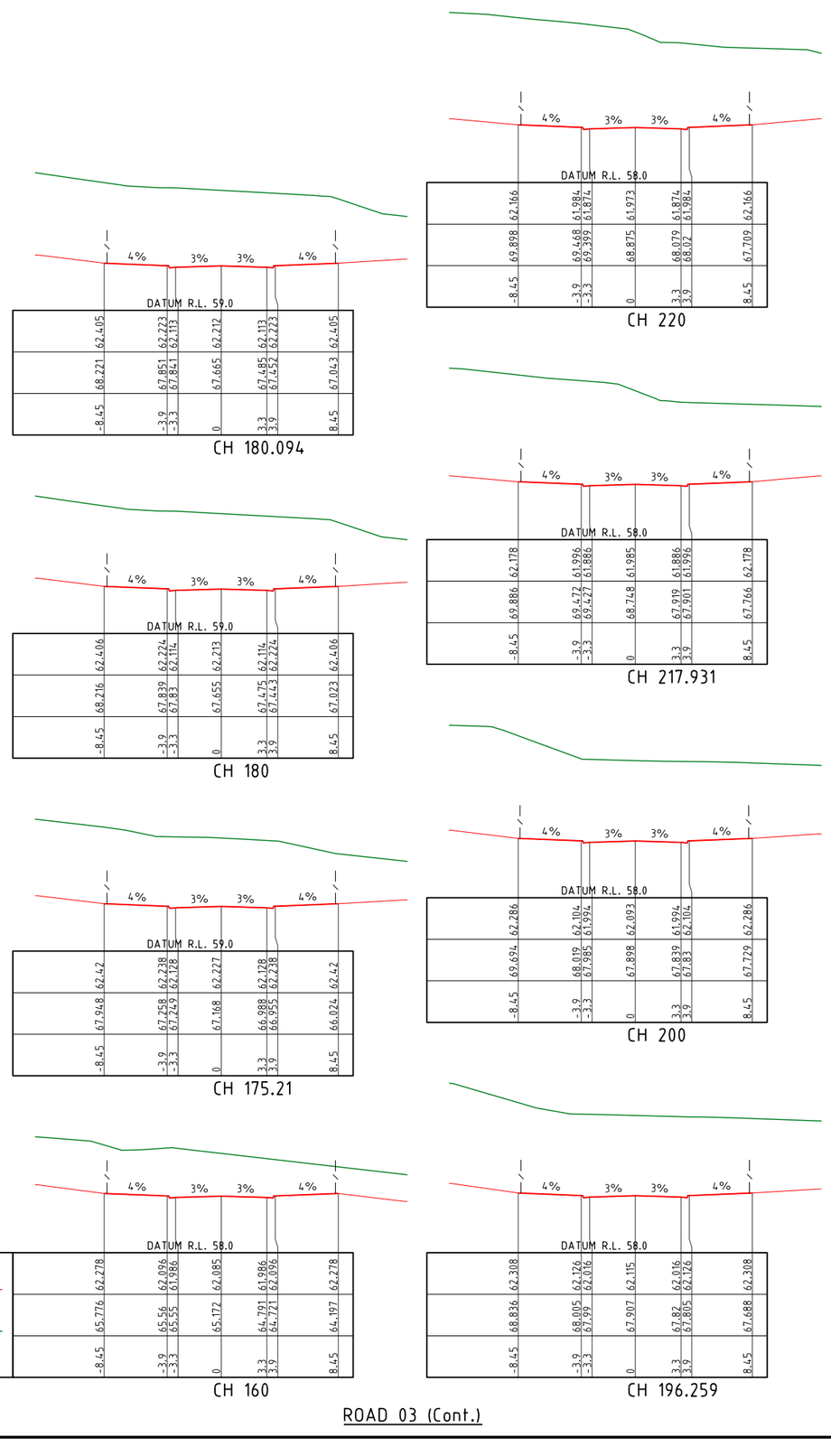
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Application No: OPW/2023/1202

Dated: 4 April 2024

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ROAD 03 (Cont.)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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BENNETT + BENNETT

DRAWING TITLE

CROSS SECTIONS
ROAD 03 (Cont.)
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-304	A

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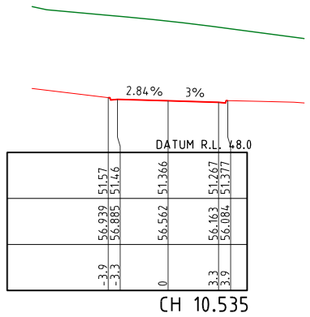
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

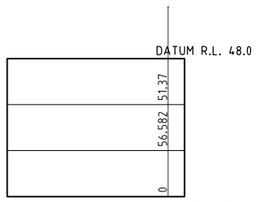
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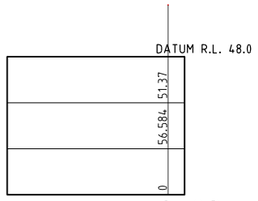
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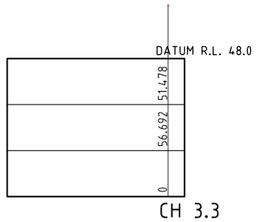
CH 10.535



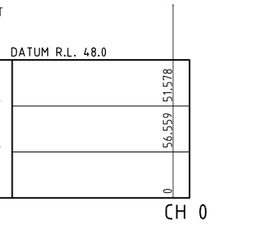
CH 9.422



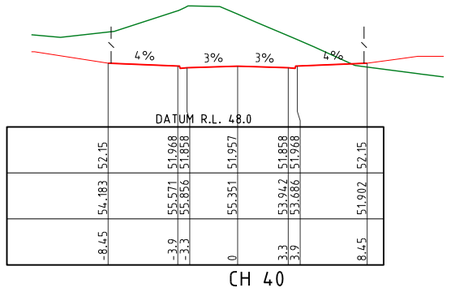
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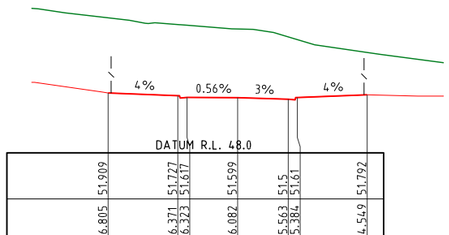
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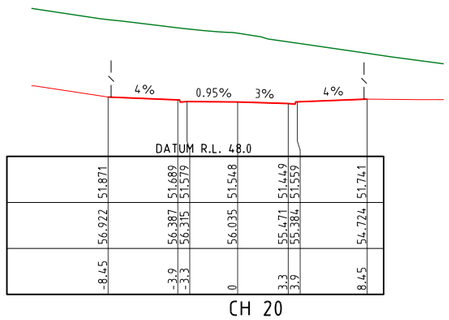
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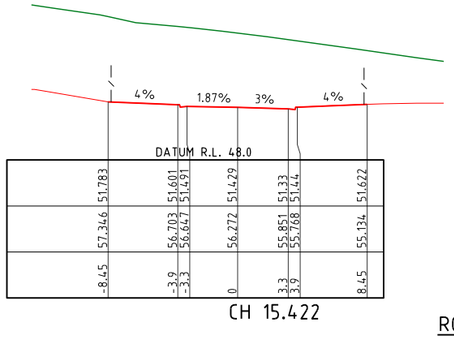
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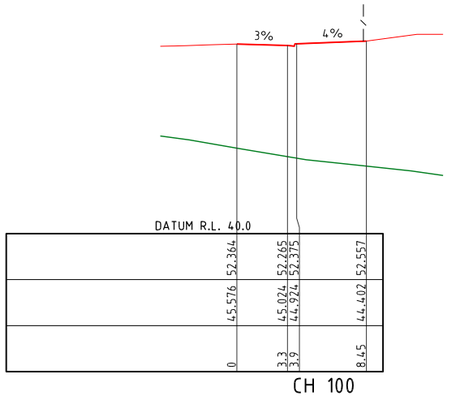
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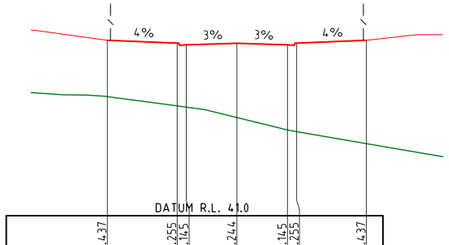
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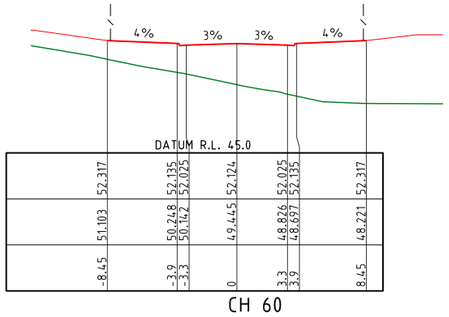
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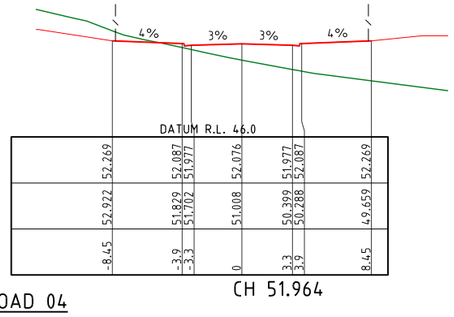
CH 100



CH 80

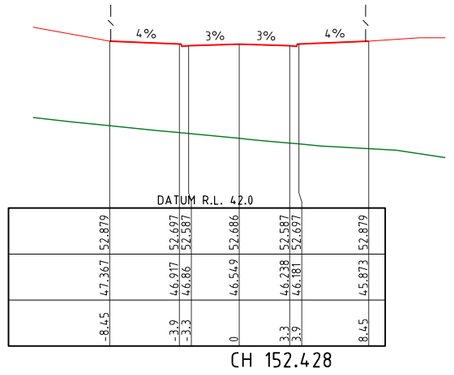


CH 60

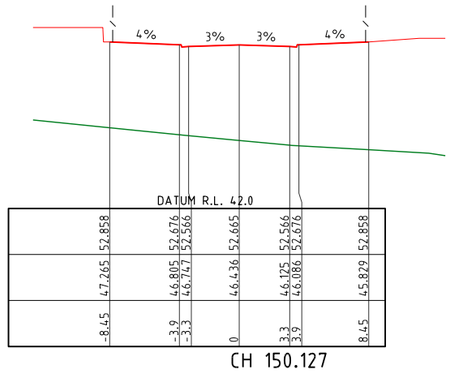


CH 51.964

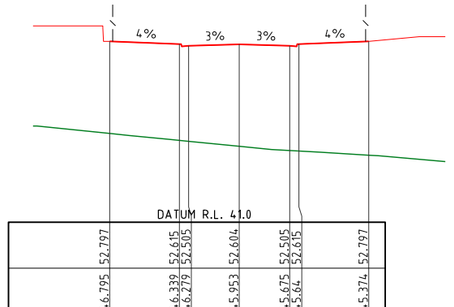
ROAD 04



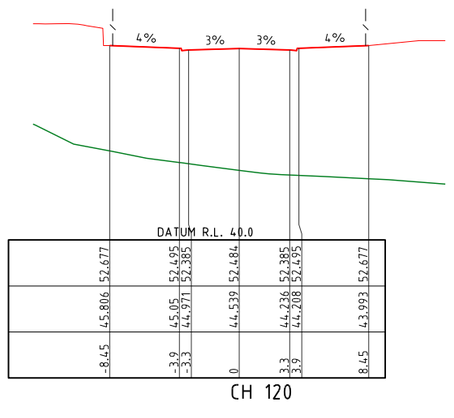
CH 152.428



CH 150.127



CH 140



CH 120

NOTES:

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STAGE 02

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

CROSS SECTIONS
ROAD 04

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
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Southport QLD 4215

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

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-305

REV A

I:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-300.dwg, ROAD 04, 19/01/2024 1:57:03 PM, 1:2

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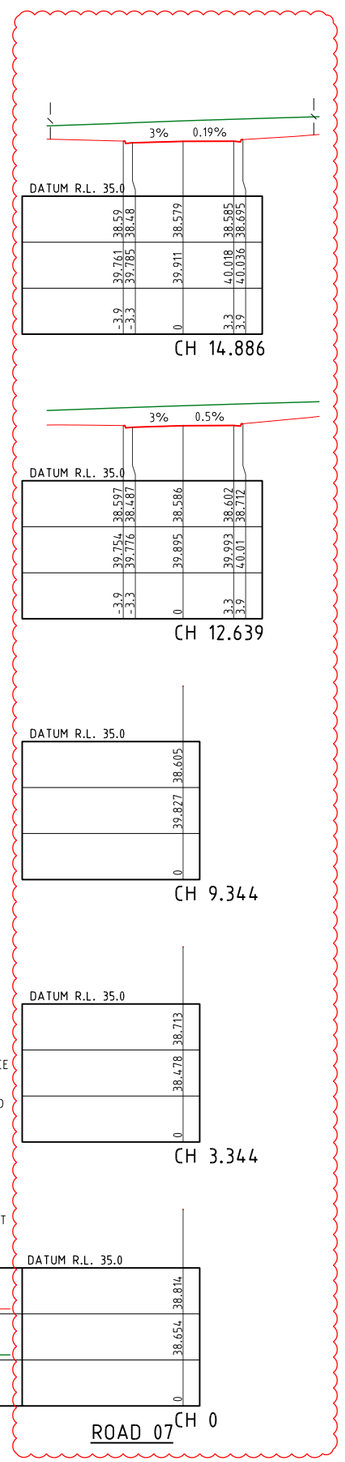
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

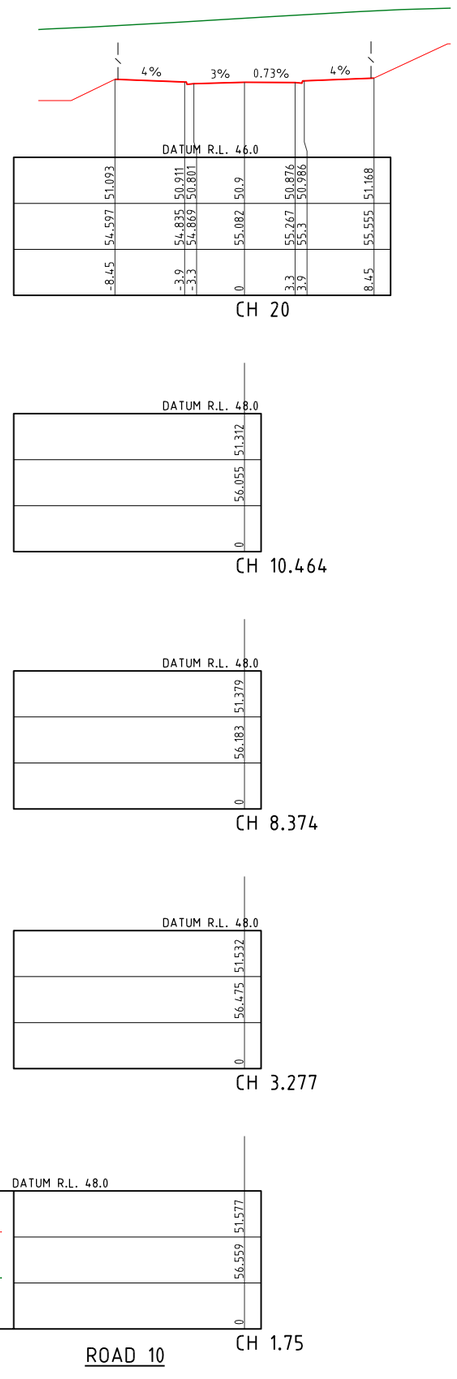
Application No: OPW/2023/1202

Dated: 4 April 2024

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B





NOTES:

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STAGE 02

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HB Land

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REV	DATE	DESCRIPTION	INT
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BENNETT + BENNETT

DRAWING TITLE

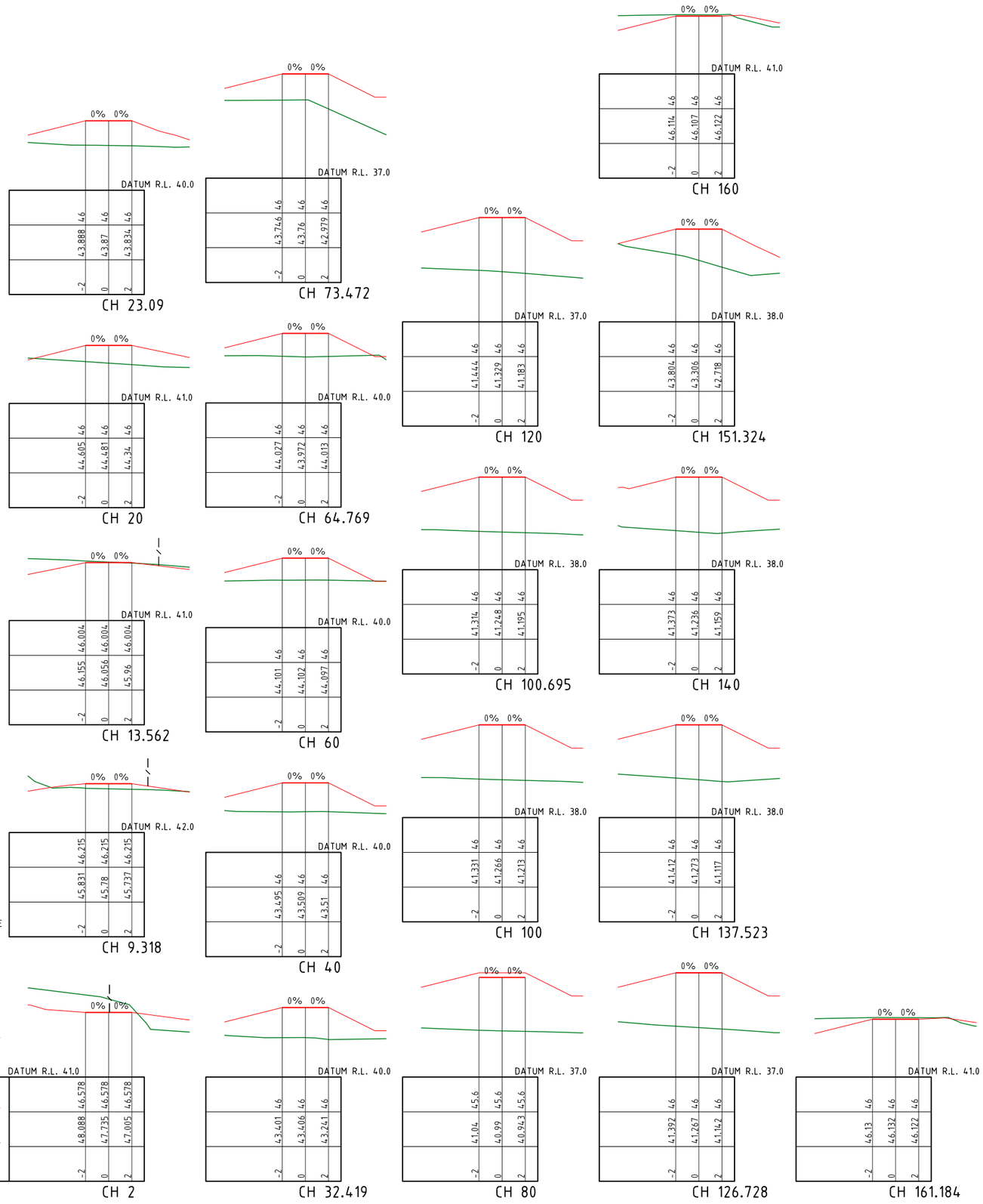
CROSS SECTIONS
ROAD 07
&
ROAD 10

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

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-306 REV B

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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.

ACCESS BASIN 01

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

CROSS SECTIONS
ACCESS BASIN 01

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-307

REV A

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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

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

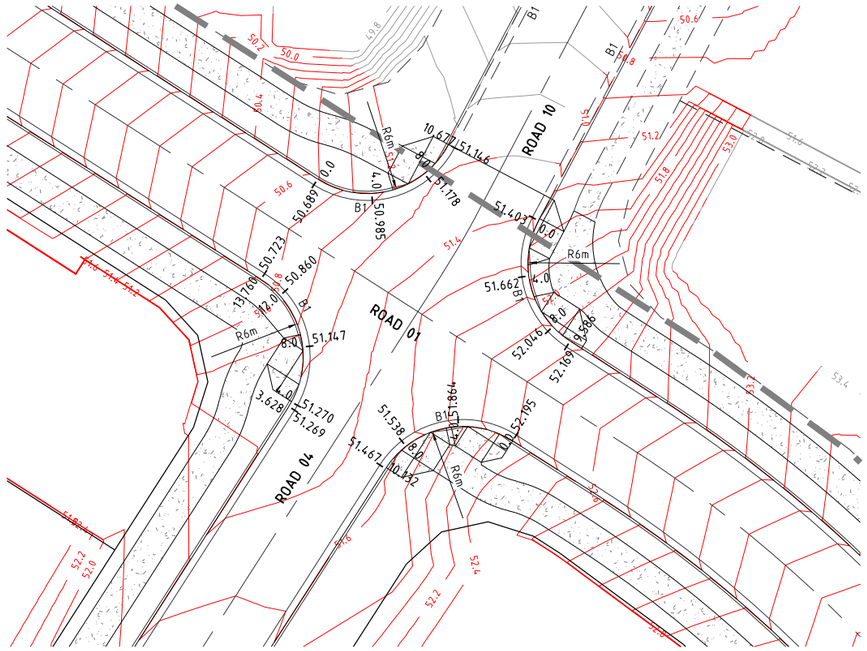
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

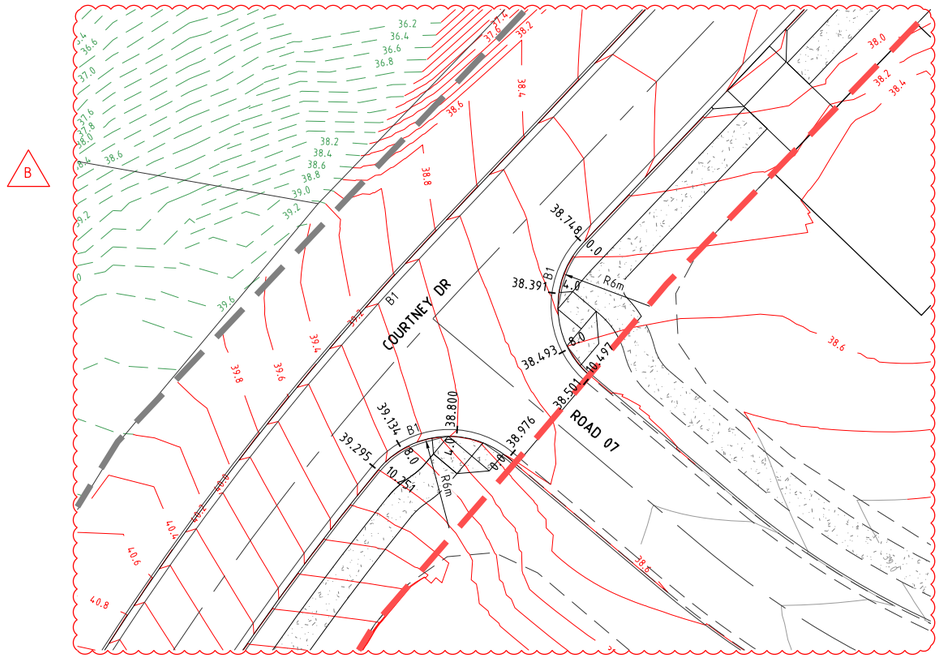
Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

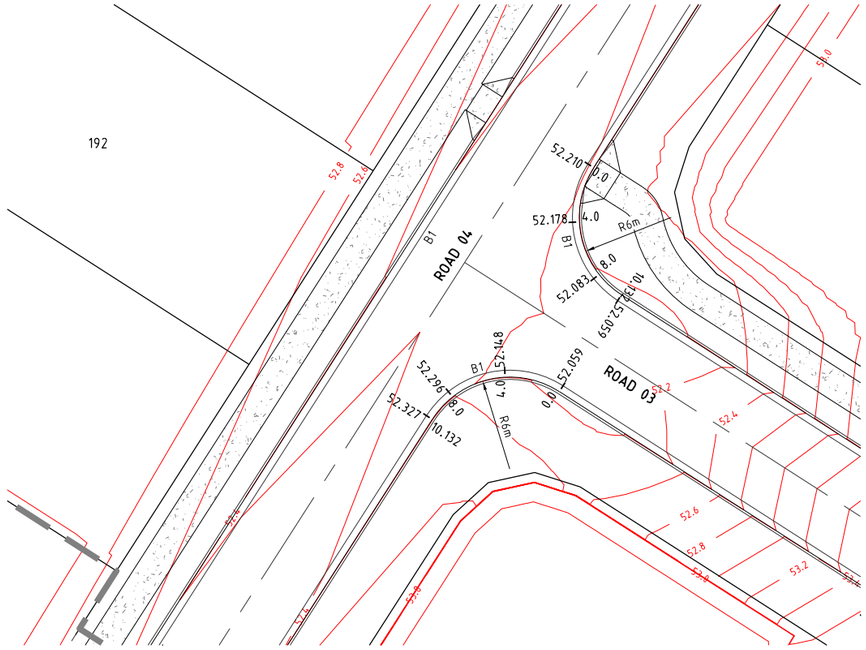
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



INTERSECTION
ROAD 01, 04 & 10



INTERSECTION
COURTNEY DRIVE & ROAD 07



INTERSECTION
ROAD 03 & ROAD 04

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 02

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	15-01-24	CONTOURS & GRADING AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

INTERSECTION
GRADING DETAILS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

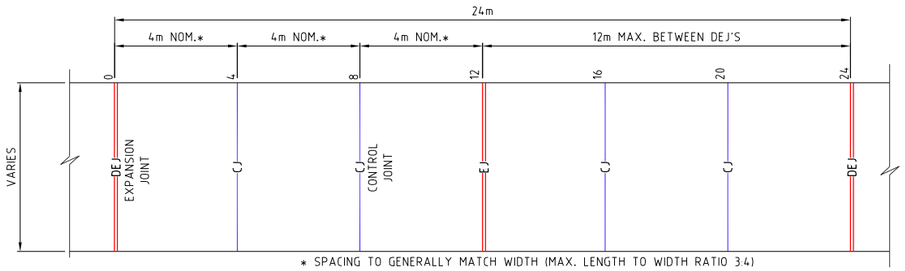
DRAWING NUMBER 41901-02-400

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 STANDARDS
   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

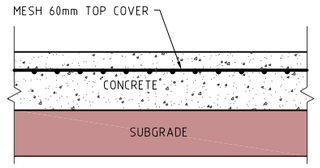
SCALE 1:50 - A1 (1:100 - A3)

0 0.5 1.0 1.5 2.0 2.5m

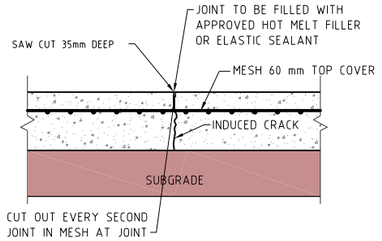
Scale 1:50 - A1 (1:100 - A3)

SCHEDULE OF CONCRETE PAVEMENTS					
FUNCTION	SURFACING	SUBGRADE PREPARATION	THICKNESS 'T'	STRENGTH	REINCORCING
FOOTPATH 2m 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

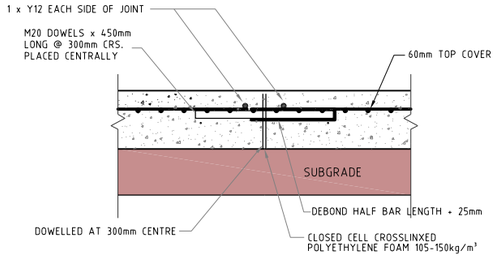
NOTE: FOOTPATH JOINTING TO BE IN ACCORDANCE WITH IPWEAQ DWG RS-065 SUPERINTENDENT TO CONFIRM SUBGRADE PREPARATION



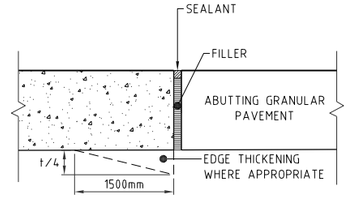
TYPICAL BROOM FINISHED CONCRETE PAVEMENT DETAIL
NOT TO SCALE



CONTROL JOINT (4m SPACING) (CJ)
NOT TO SCALE



DOWELLED EXPANSION JOINT DETAIL (24m SPACING) (DEJ)
NOT TO SCALE

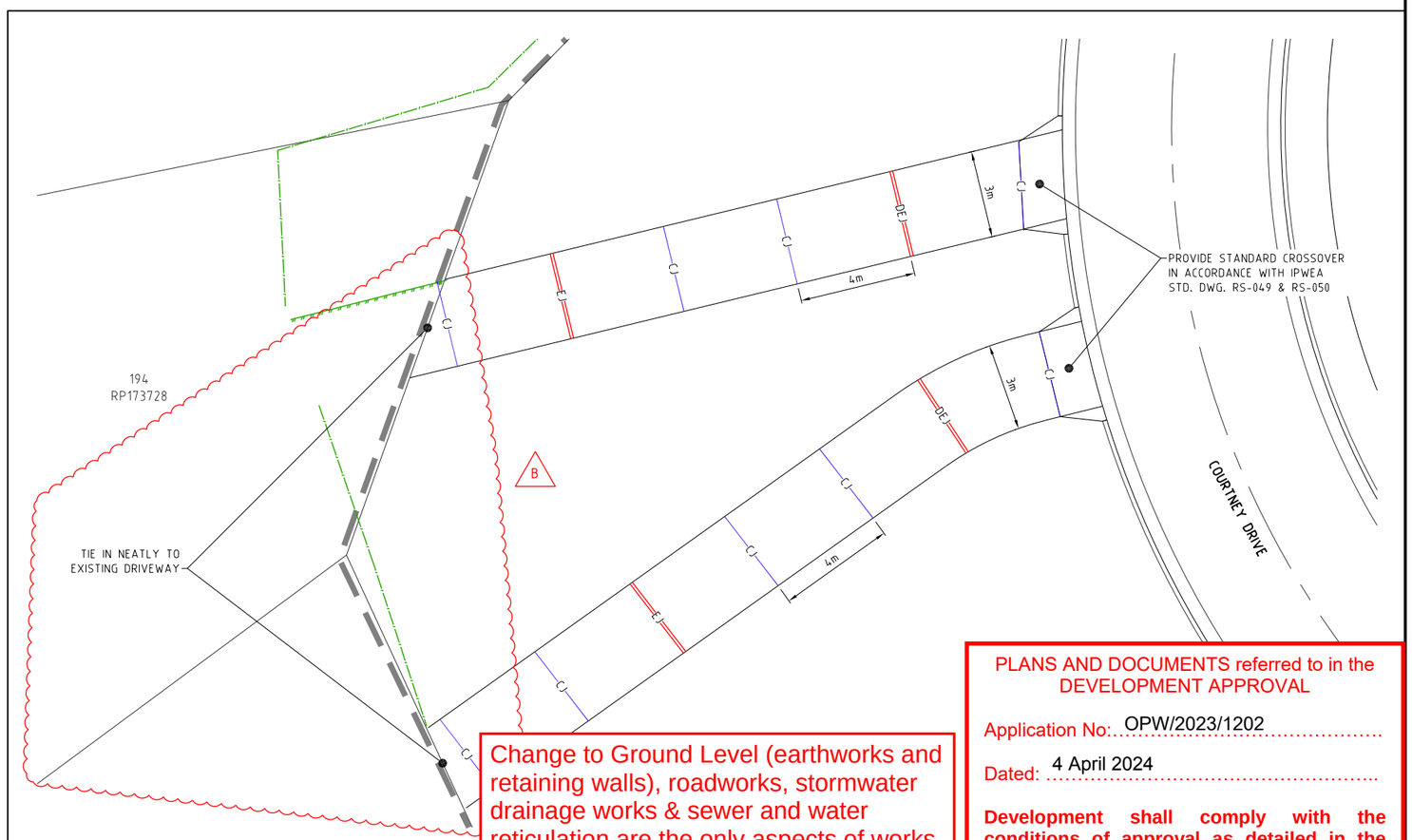


ISOLATION JOINT (IJ)
NOT TO SCALE

LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB
- FUTURE KERB
- FUTURE PROPERTY LINE
- PROPERTY LINE
- FACE OF KERB, FOOTPATHS
- LIP AND BACK OF KERB
- CONTROL LINE / CENTER OF ROAD
- 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.

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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 1 2 3 4 5m

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

REV	DATE	DESCRIPTION	INT
B	17-01-24	NOTE ADDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

CONCRETE JOINTING DETAILS SHEET 01

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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-410 REV B

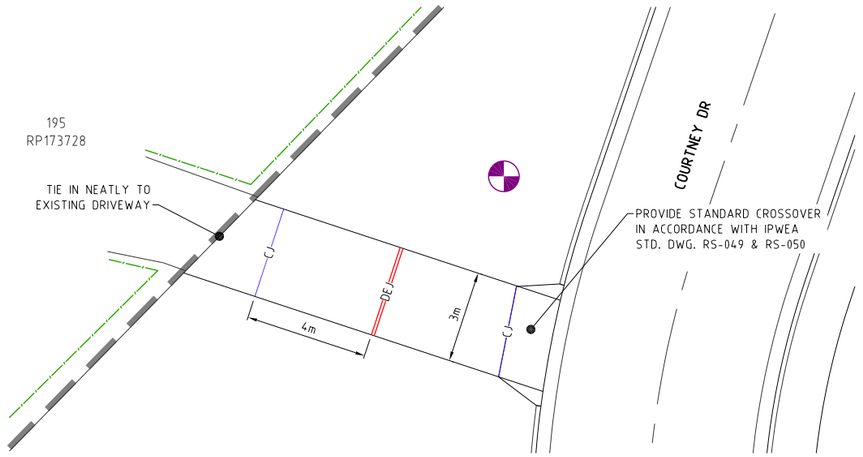
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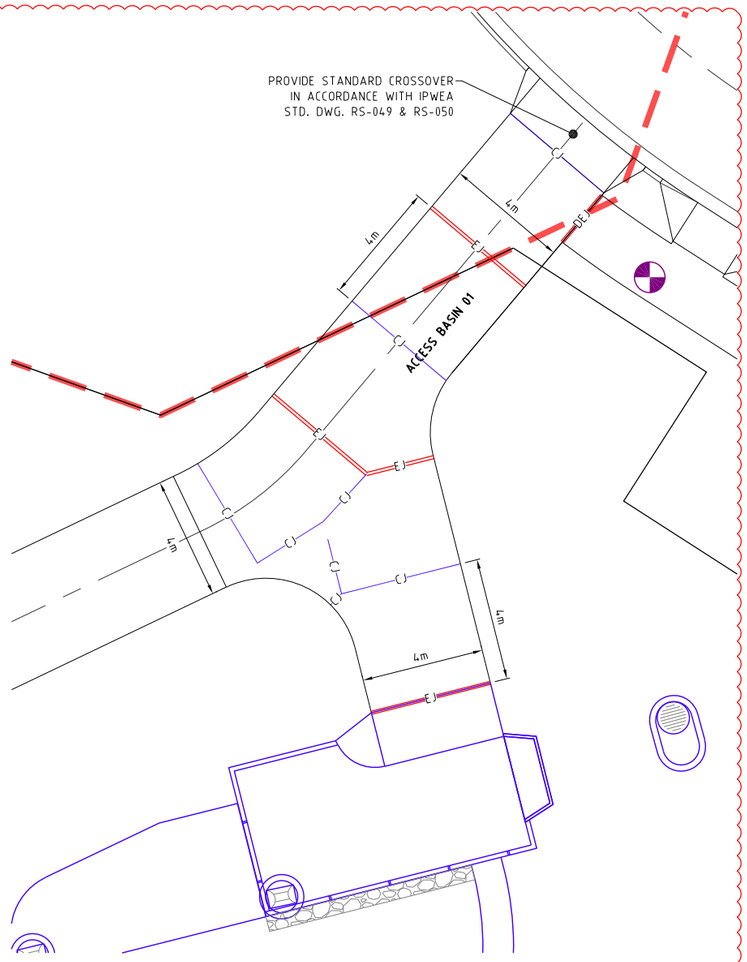
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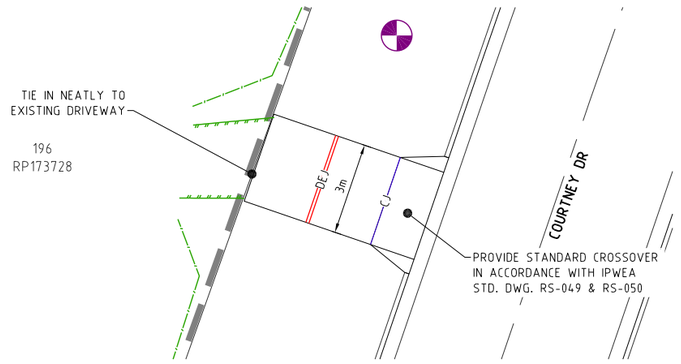
- EXISTING PROPERTY LINE
- EXISTING KERB
- FUTURE KERB
- FUTURE PROPERTY LINE
- PROPERTY LINE
- FACE OF KERB, FOOTPATHS
- LIP AND BACK OF KERB
- CONTROL LINE / CENTER OF ROAD
- SITE BOUNDARY
- STAGE BOUNDARY
- EJ — EXPANSION JOINT
- DEJ — DOWELED EXPANSION JOINT
- IJ — ISOLATION JOINT
- SJ — SAW JOINT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

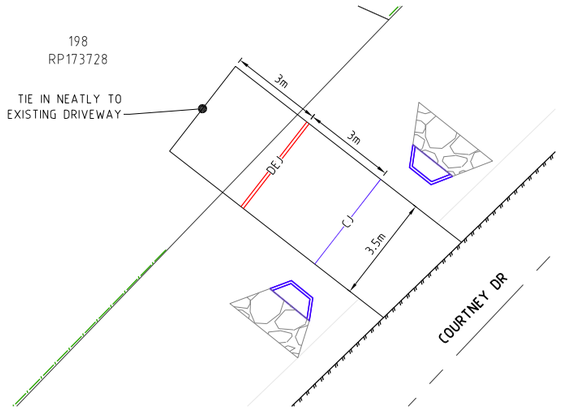
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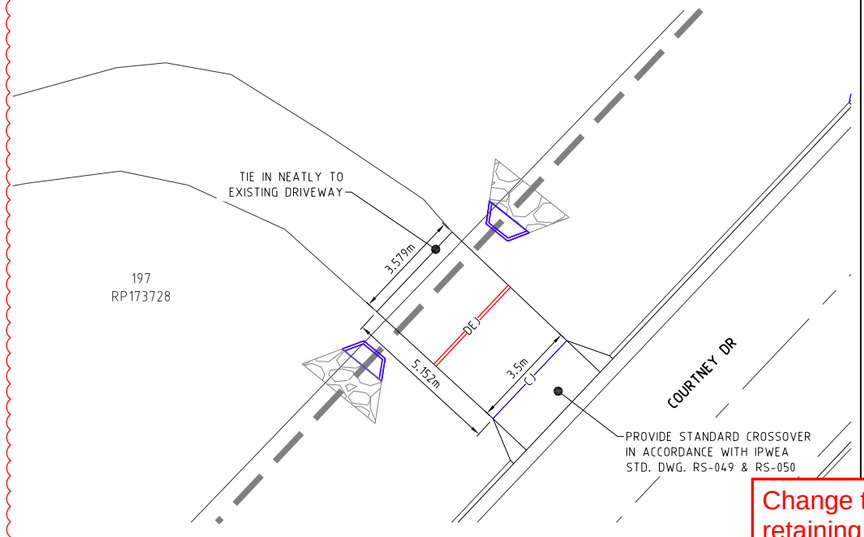
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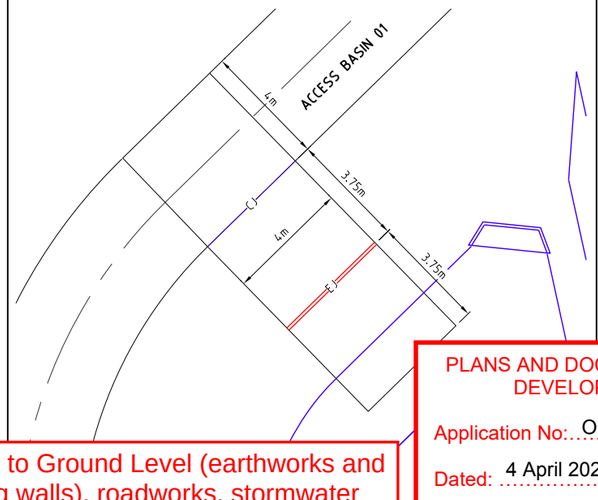


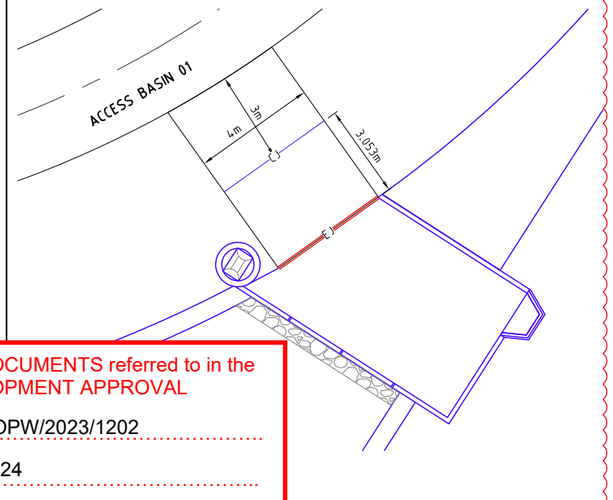












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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	JOINTING AMENDED, D.WAY ADDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.
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DRAWING TITLE

CONCRETE
JOINTING DETAILS
SHEET 02

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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-411 REV B

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Application No: OPW/2023/1202

Dated: 4 April 2024

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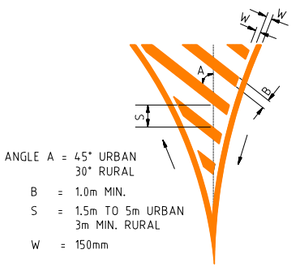
NOTES

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

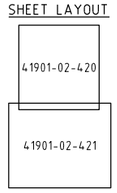
W = 150mm

CHEVRONS

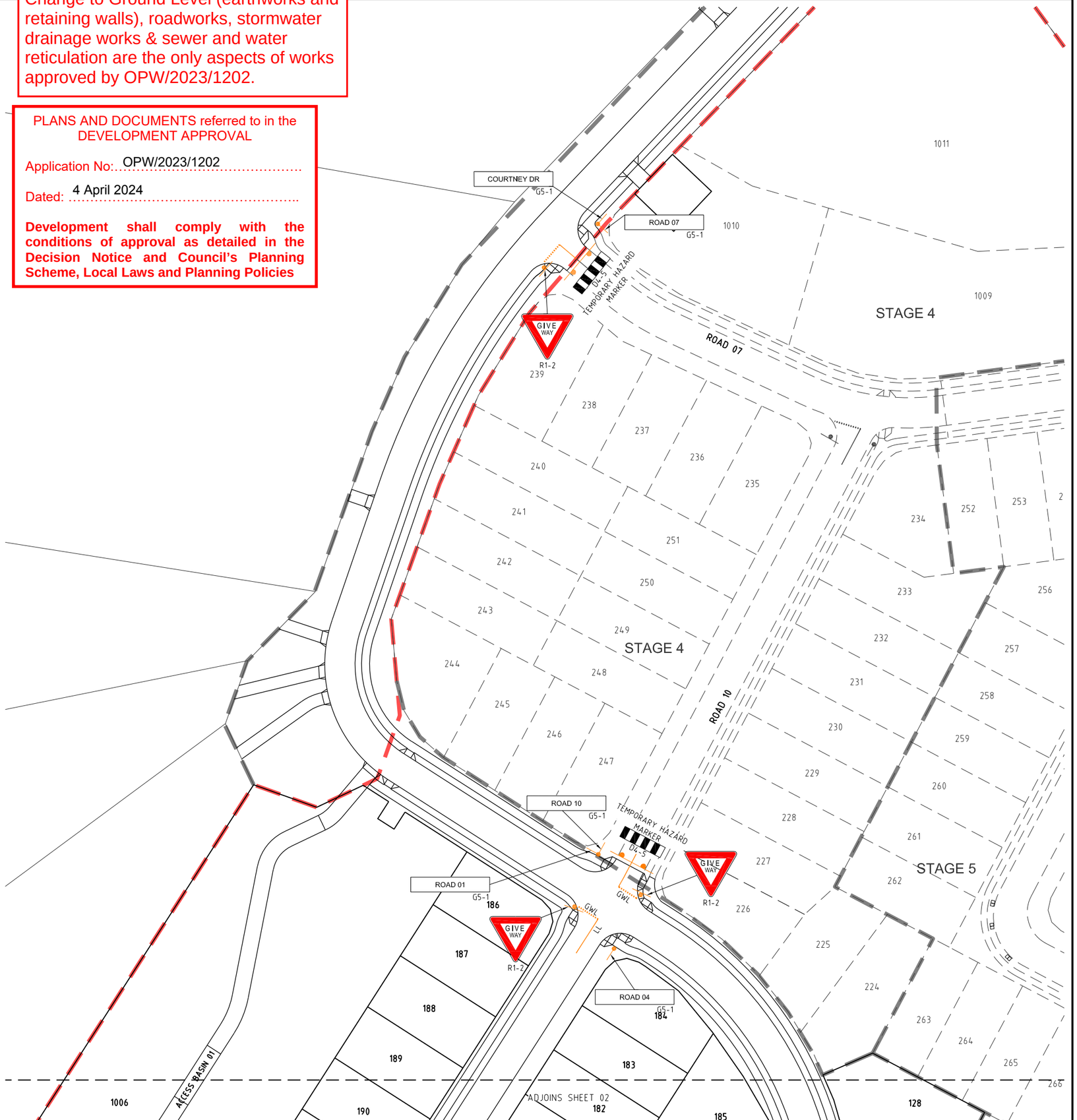
LEGEND

- 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

SHEET LAYOUT



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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

LINEMARKING & SIGNAGE PLAN SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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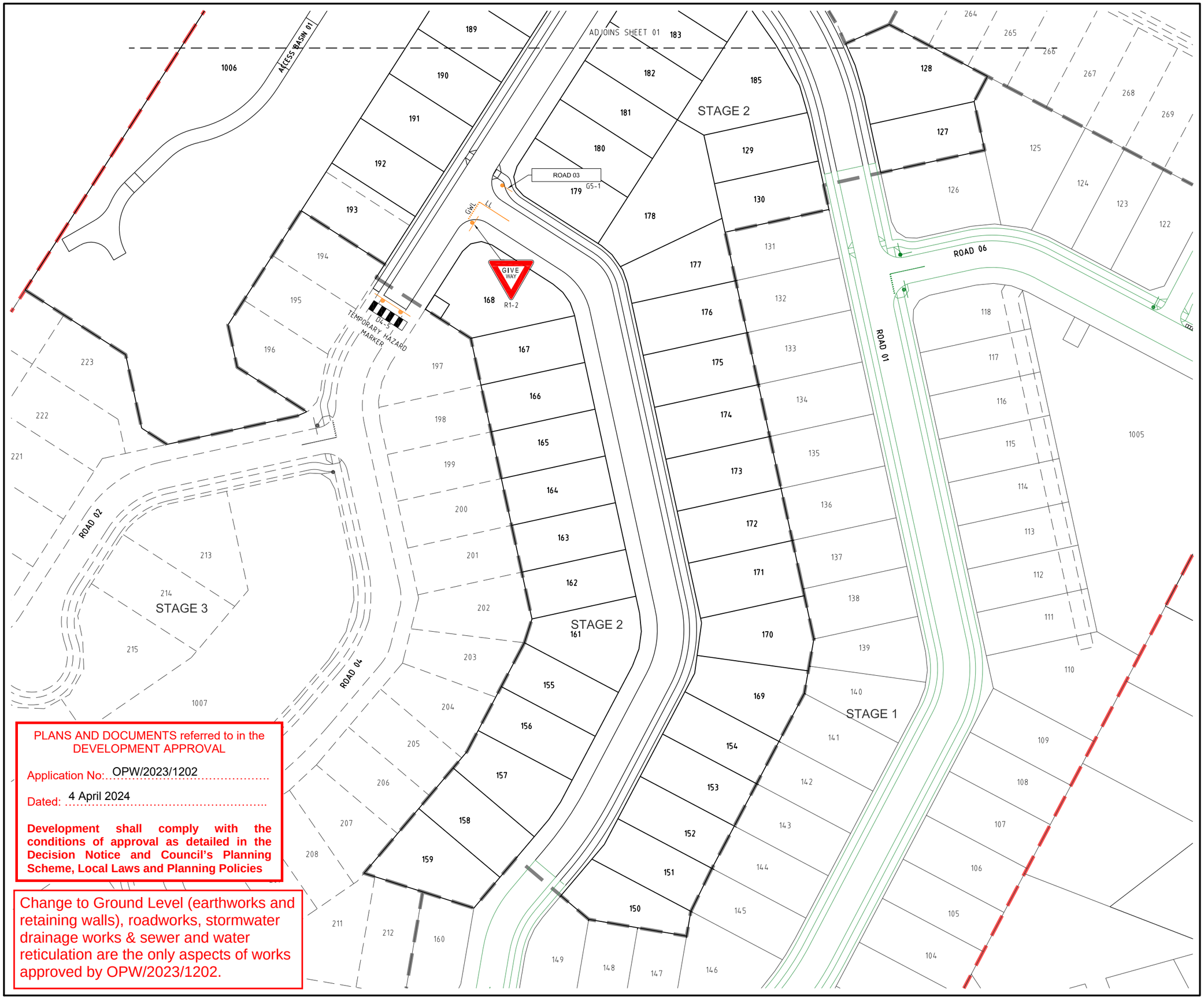
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-420	A

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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LINEMARKING & SIGNAGE PLAN
SHEET 02

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41901-02-421	A

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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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

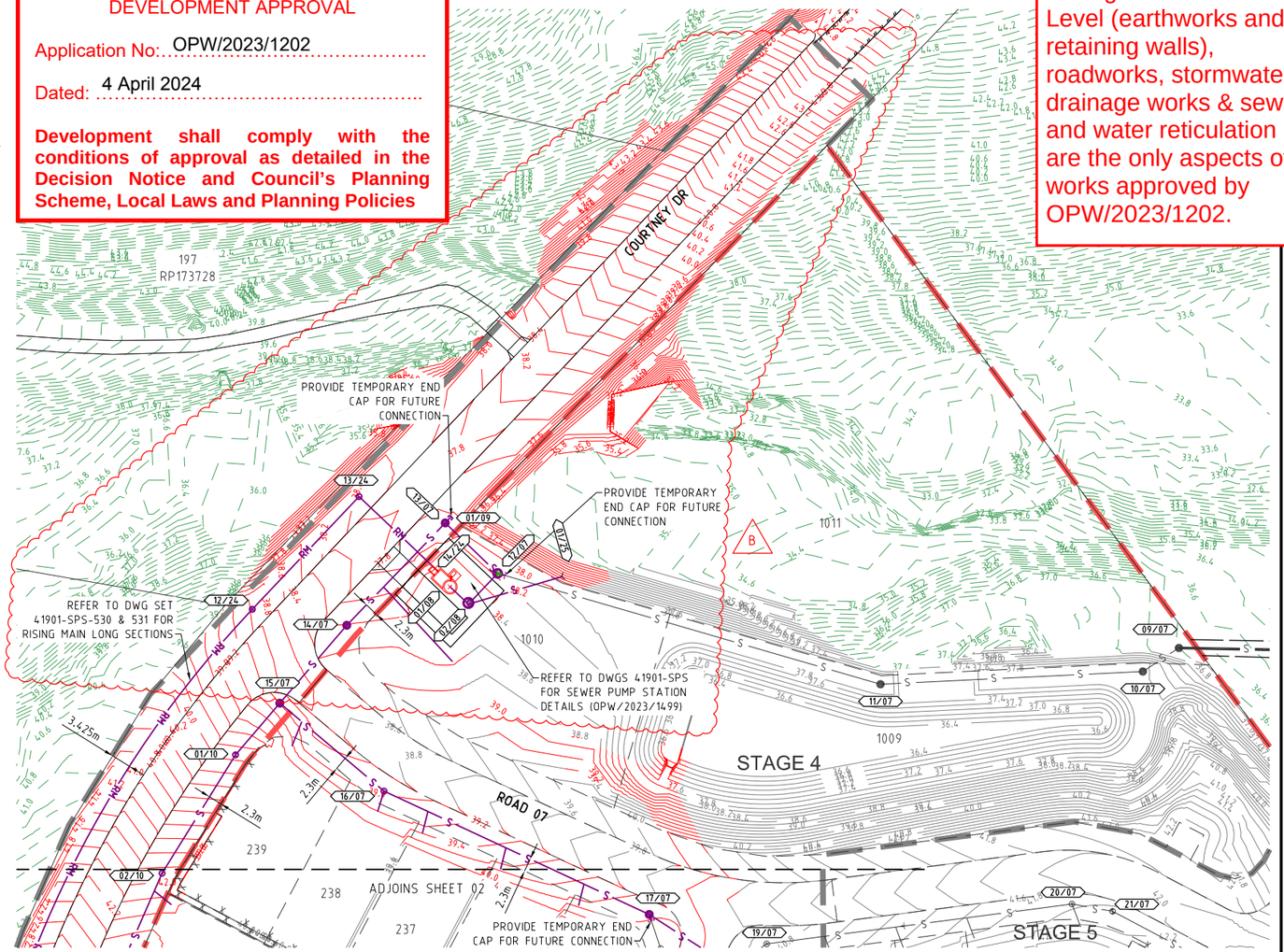
A. THE DESIGN & CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

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 DN160 PE (OR 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.



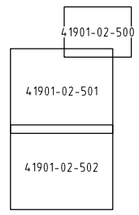
ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

DIAL BEFORE YOU DIG www.1100.com.au

SEWER PIPE SPECIFICATIONS

SEWER MAIN LOCATION	PIPE MATERIAL SPECIFICATION
GRAVITY VERGE	PVC-U SN8
GRAVITY ROAD CROSSING	PVC-U SN8
HOUSE CONNECTIONS	PVC-U SN10
RISING MAIN TRENCHED	PE100 PN16 SDR11

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

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	Alteration to existing MH benching required (y/n)
1(A)	PLUG EXISTING STUB FROM MH 10/03 CIVIL CONTRACTOR TO LAY NEW LINE 24 AFTER TESTING AND INSPECTING, NOTIFY GOLD COAST WATER AND WASTE AND PROVIDE ALL NECESSARY DOCUMENTATION.	150	10/03	Stub from receiving MH	B	-	56.824	56.824	55.383	1.440	N
1(B)	CONTRACTOR TO MAKE LIVE CONNECTIONS UNDER SUPERVISION OF GOLD COAST WATER AND WASTE. AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.										
2(A)	PLUG EXISTING STUB FROM MH 01/20 CIVIL CONTRACTOR TO LAY NEW LINE 20 AFTER TESTING AND INSPECTING, NOTIFY GOLD COAST WATER AND WASTE AND PROVIDE ALL NECESSARY DOCUMENTATION.	150	01/20	Stub from MH	B	-	62.106	62.106	60.304	1.803	N
2(B)	CONTRACTOR TO MAKE LIVE CONNECTIONS UNDER SUPERVISION OF GOLD COAST WATER AND WASTE. AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.										
3(A)	PLUG EXISTING STUB FROM MH 01/20 CIVIL CONTRACTOR TO LAY NEW LINE 21 AFTER TESTING AND INSPECTING, NOTIFY GOLD COAST WATER AND WASTE AND PROVIDE ALL NECESSARY DOCUMENTATION.	150	01/20	Stub from MH	B	-	62.106	62.106	60.3843	1.723	N
3(B)	CONTRACTOR TO MAKE LIVE CONNECTIONS UNDER SUPERVISION OF GOLD COAST WATER AND WASTE. AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.										

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	NOTES ADDED & CONTOURS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 01

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APPROVED		RPEQ 4706	DATE 13-10-23

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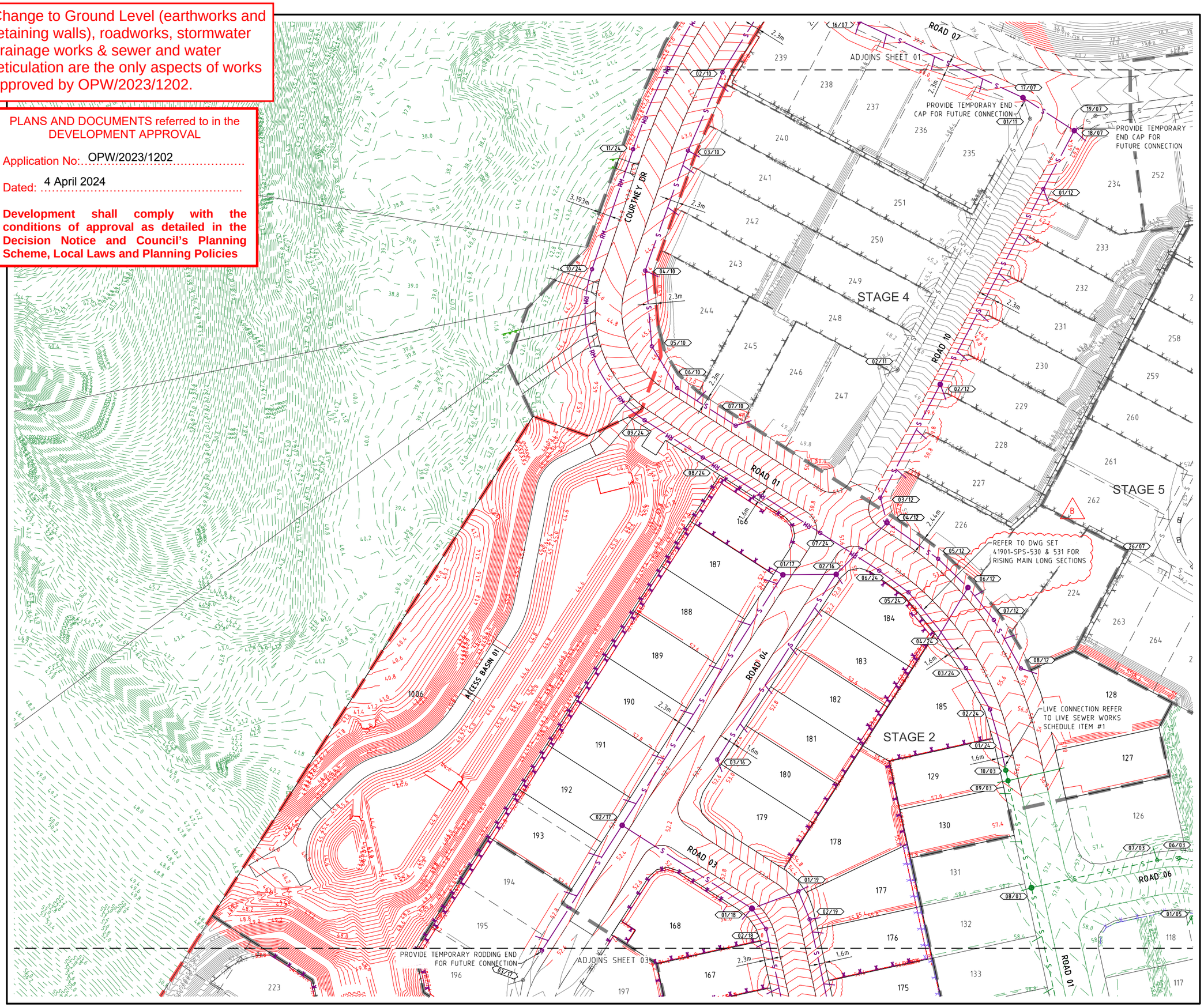
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

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CLIENT

HB Land

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0 5 10 15 20 25m

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SEWER RETICULATION PLAN SHEET 02

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41901-02-501	B

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ADJOINS SHEET 02

PROVIDE TEMPORARY RODDING END FOR FUTURE CONNECTION

LIVE CONNECTION REFER TO LIVE SEWER WORKS SCHEDULE ITEM #3

LIVE CONNECTION REFER TO LIVE SEWER WORKS SCHEDULE ITEM #2

ROAD 01

ROAD 02

ROAD 03

ROAD 04

STAGE 1

STAGE 2

STAGE 3

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0 5 10 15 20 25m

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DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 03

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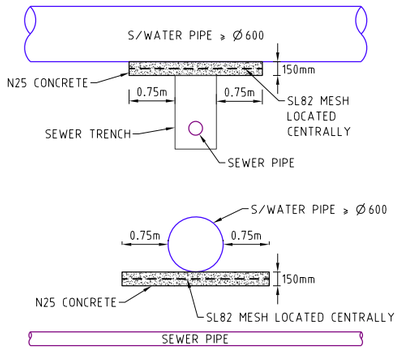
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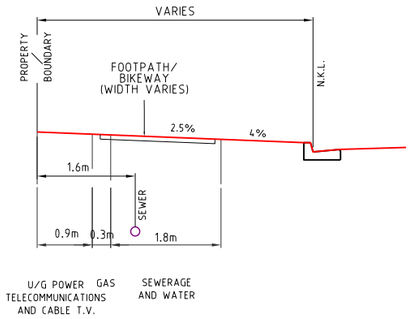
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BRIDGING DETAILS FOR STORMWATER PIPES ≥ Ø600

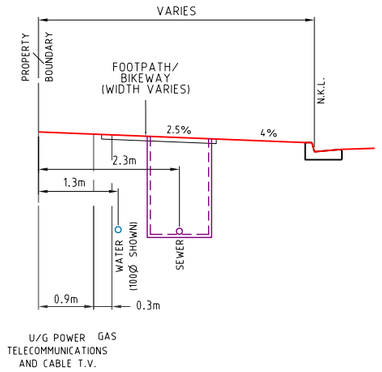
NOT TO SCALE



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

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0 0.5 1.0 1.5 2.0 2.5m
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41901-02-510	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

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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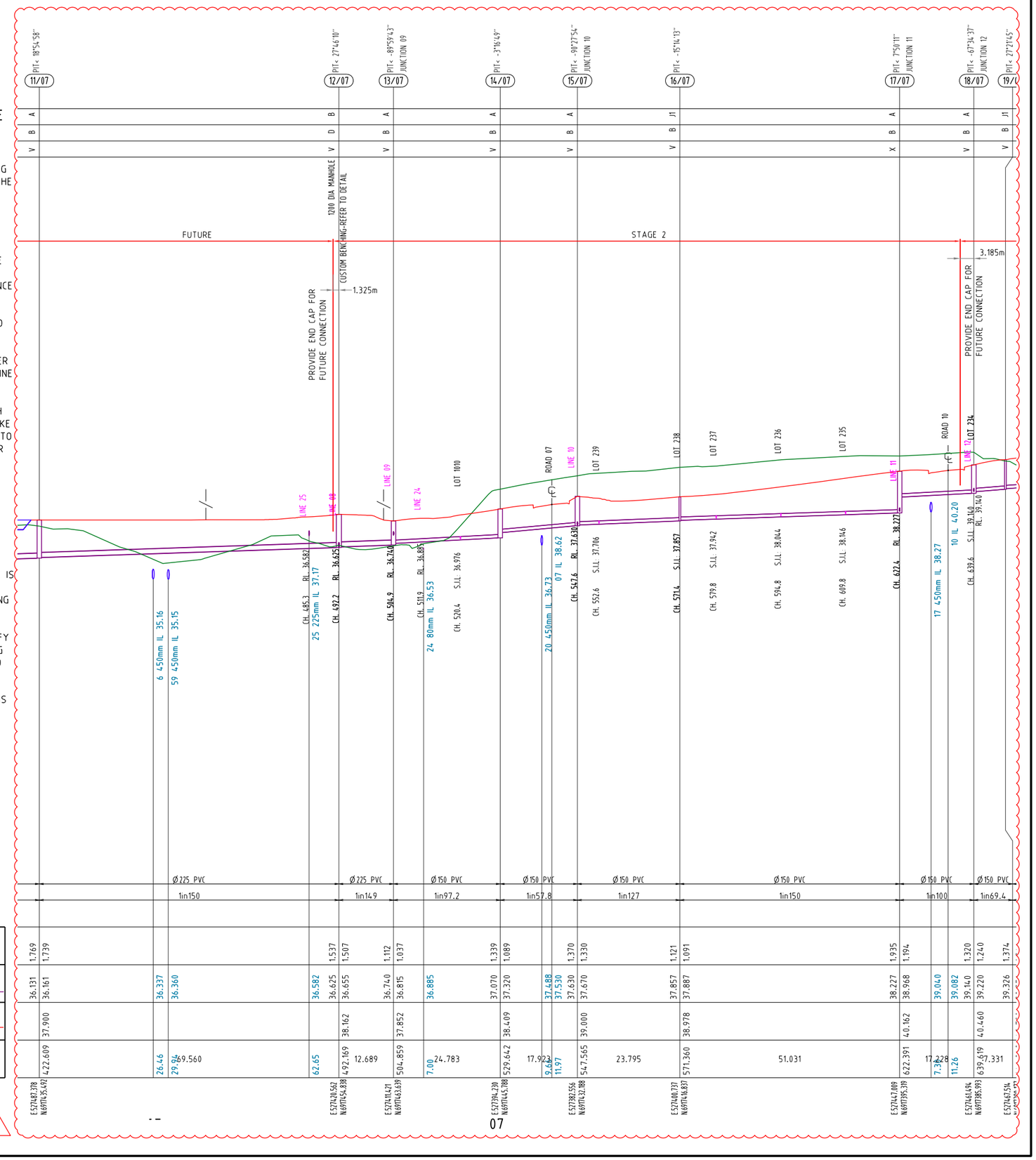
STRUCTURE TYPE
LID CLASS
DROP TYPE

* 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

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
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3. ALL PRESSURE MAINS PE100 PN16 SDR11
4. ALL EMBEDMENT TYPE IS TO BE TYPE 3 U.N.O
5. ALL BENDS TO BE LONG RADIUS BEND, 1.2m RADIUS MIN.
6. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF PIPEWORK
7. PROTECTIVE COATING IS TO BE INSTALLED TO MAINTENANCE STRUCTURES (WHERE REQUIRED) IN ACCORDANCE WITH CLAUSE 4.7.2 OF SEQ SEWERAGE CODE.
8. TRENCHSTOPS IN ACCORDANCE WITHSEQ-WAT-1209-1



REV	DATE	DESCRIPTION	INT
B	17-01-24	PROFILE AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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)

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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	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-530 REV B

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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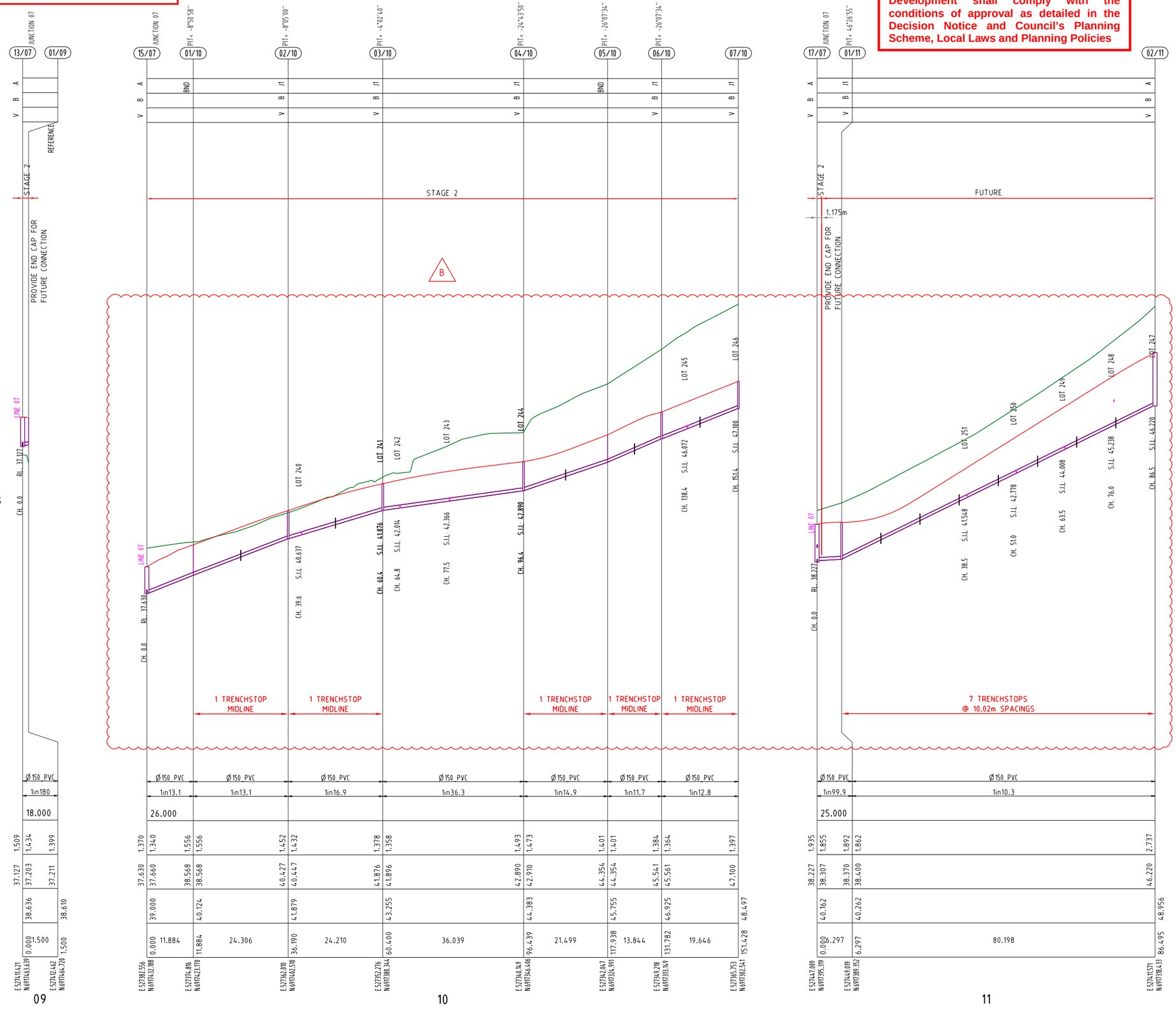
STRUCTURE TYPE
LID CLASS
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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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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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	29-11-23	TRENCH STOPS ADDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 02

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-531
REV: B

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

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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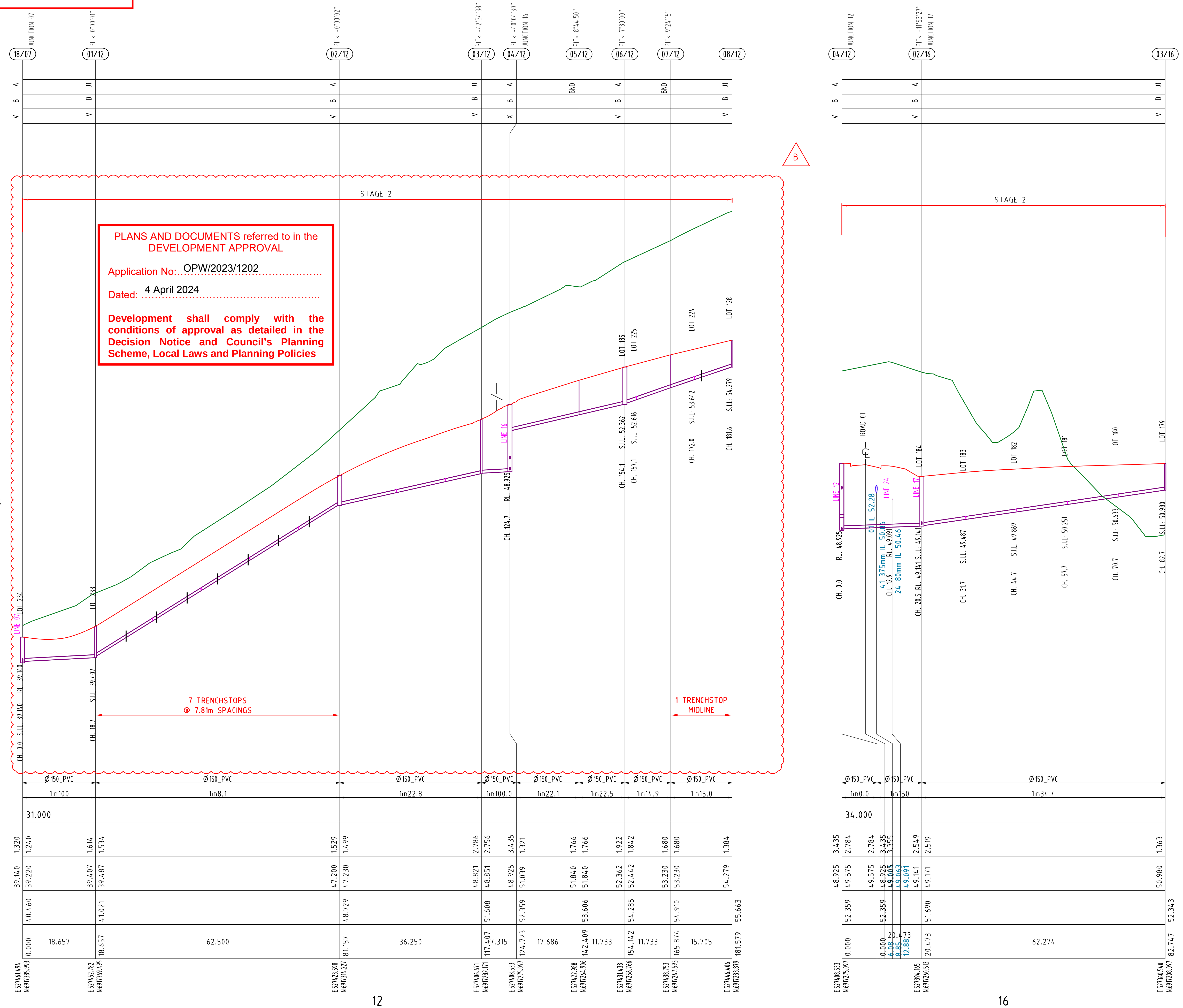
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	17-01-24	TEXT ADDED & TRENCHSTOPS AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 03

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DESIGNED RB | DRAWN EP
APPROVED | RPEQ 4706 | DATE 13-10-23

DRAWING NUMBER 41901-02-532 | REV B

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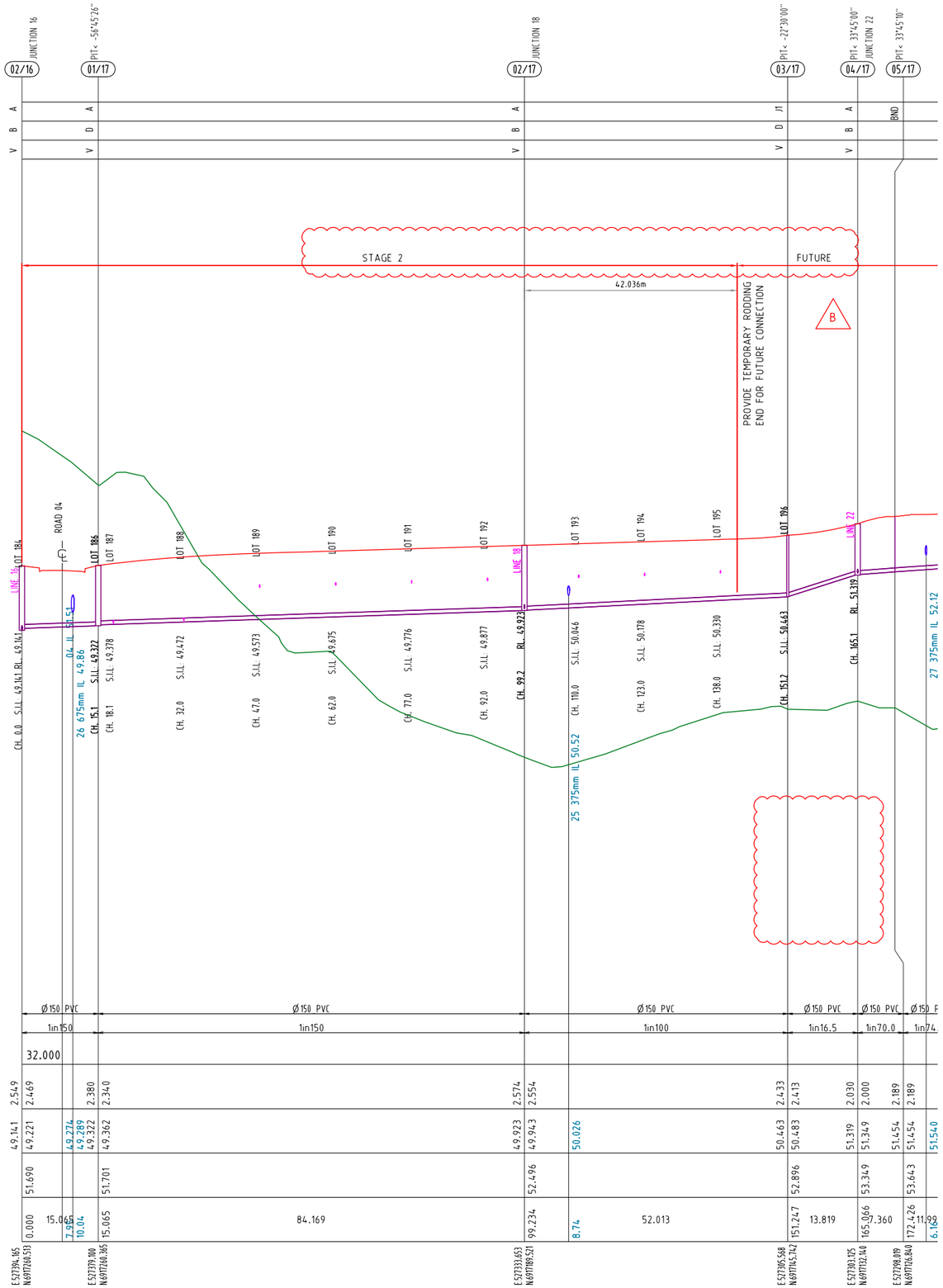
STRUCTURE TYPE
LID CLASS
DROP TYPE

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	17-01-24	TEXT ADDED & TRENCHSTOPS REMOVED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 04

MORTONS urbansolutions
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MUS Pty Ltd T/As:
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Postal Address
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER 41901-02-533
REV B

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

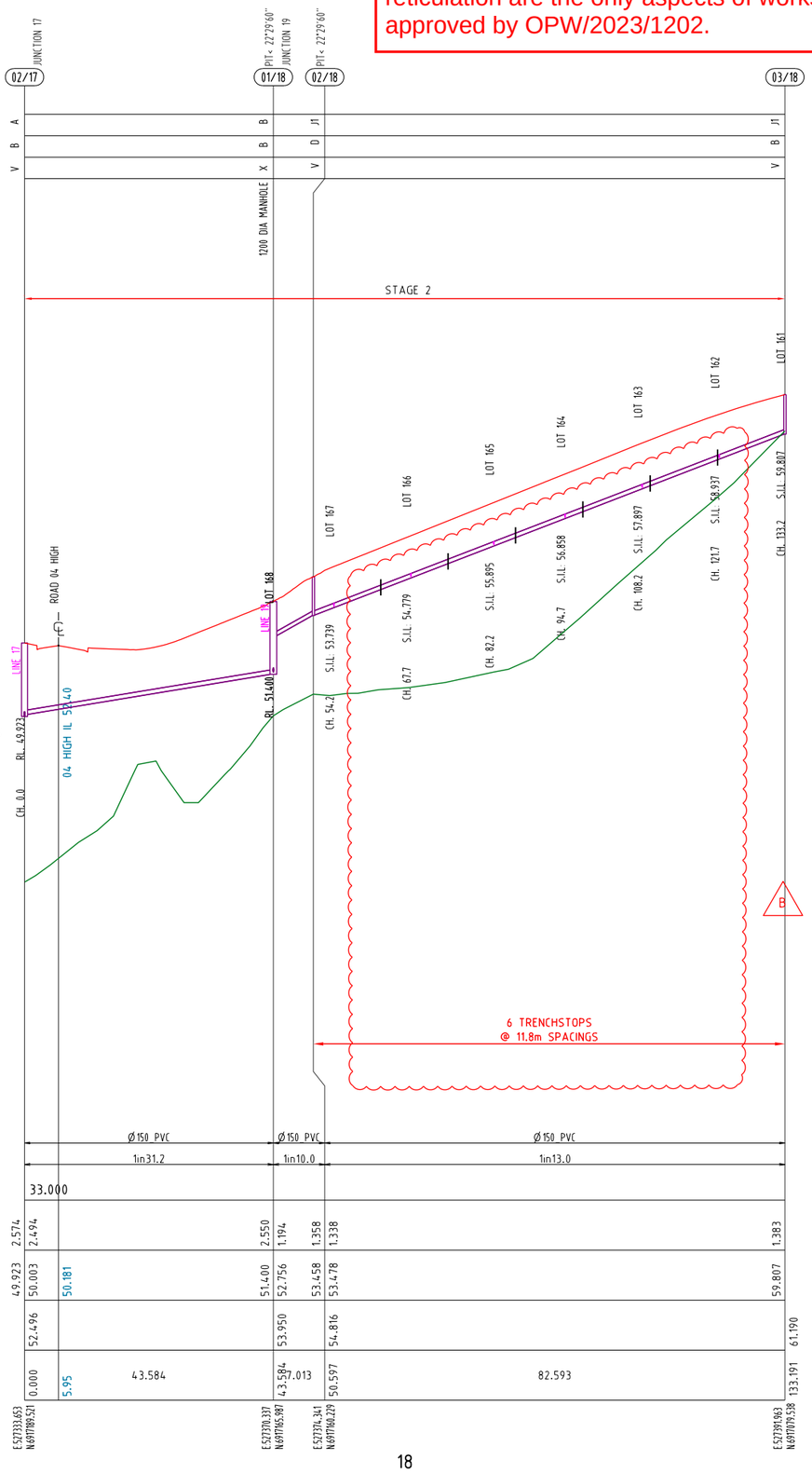
STRUCTURE TYPE
LID CLASS
DROP TYPE

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8. TRENCHSTOPS IN ACCORDANCE WITHSEQ-WAT-1209-1



PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.
DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LINE NO. 18 20 21

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

RP DESCRIPTION

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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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	INIT
B	17-01-24	TRENCHSTOPS AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 05

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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-534 REV B

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

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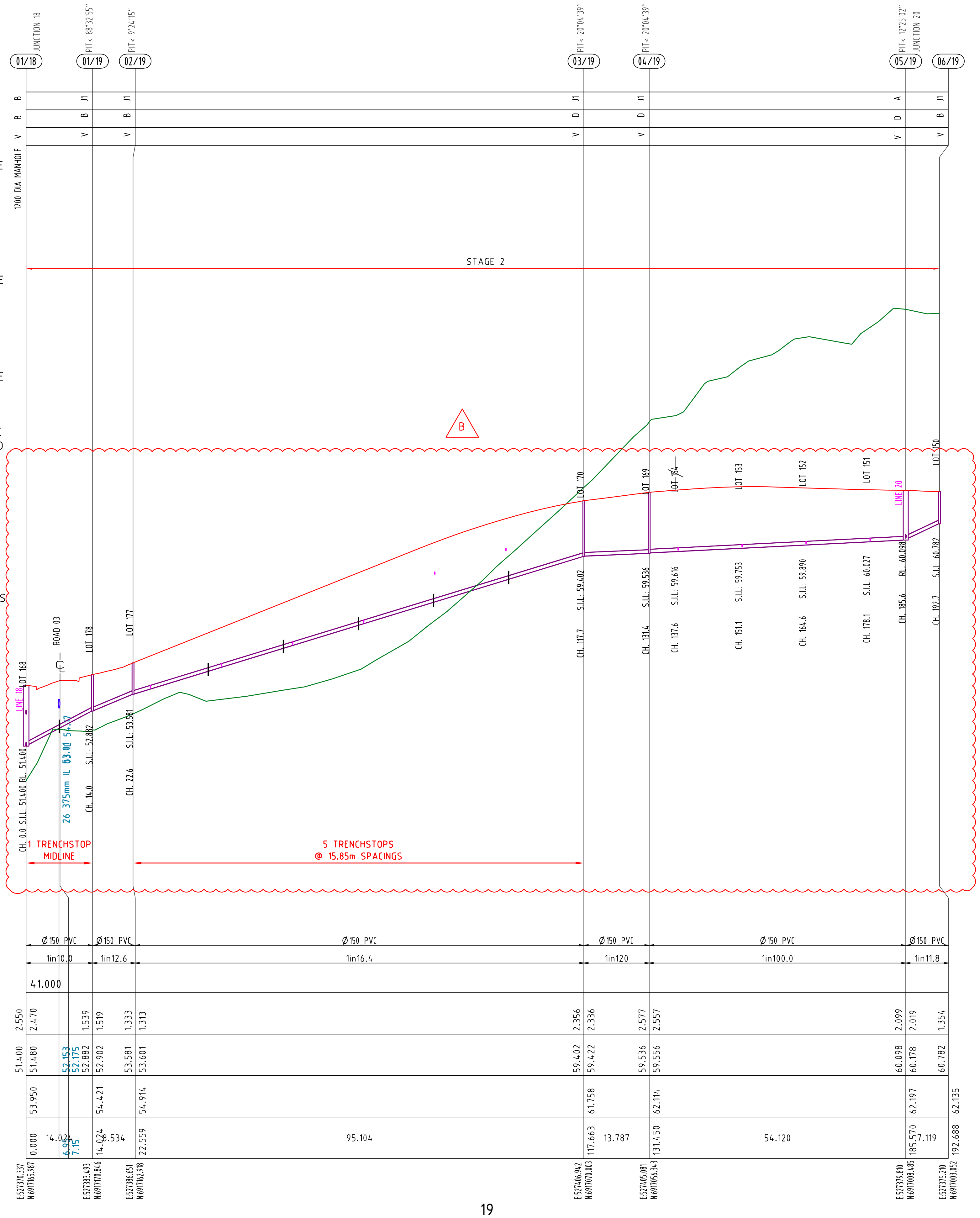
STRUCTURE TYPE
LID CLASS
DROP TYPE

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8. TRENCHSTOPS IN ACCORDANCE WITHSEQ-WAT-1209-1



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	17-01-24	TRENCHSTOPS AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 06

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Gold Coast Office
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Southport QLD 4215

DESIGNED RB		DRAWN EP	
APPROVED (signature)		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-535 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

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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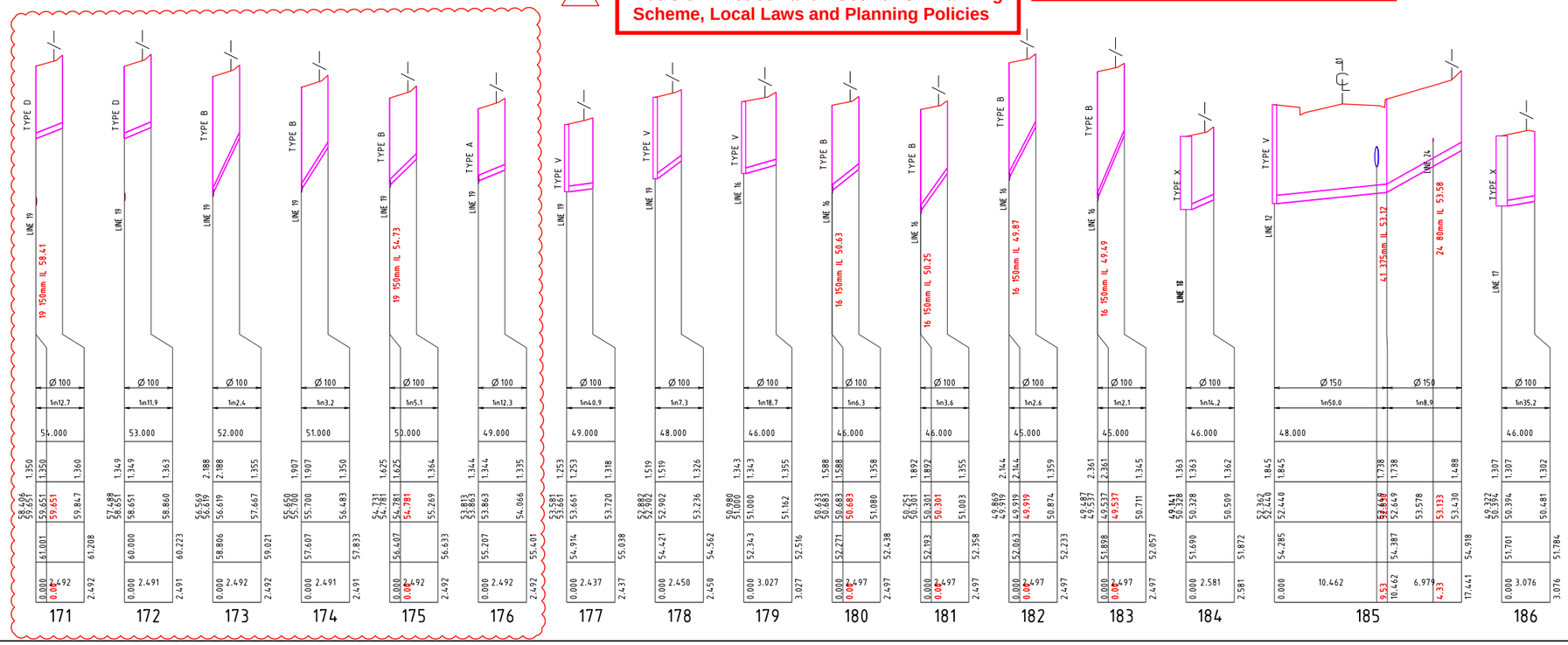
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B

NOTES

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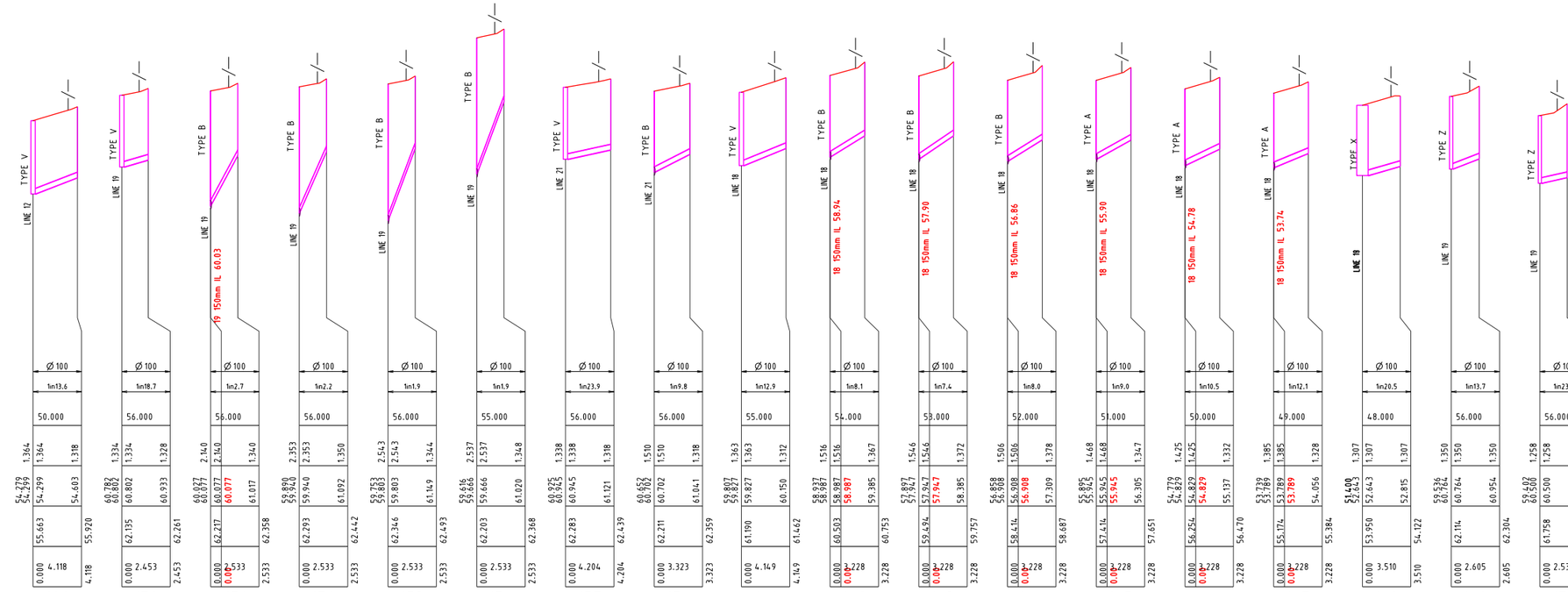
2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN6 UNLESS NOTED OTHERWISE



NOTES

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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

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

Vert. Scale 1:50 - A1 (1:100 - A3)

REV	DATE	DESCRIPTION	INT
B	27-11-23	HOUSE CONNECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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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Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER 41901-02-550

REV B

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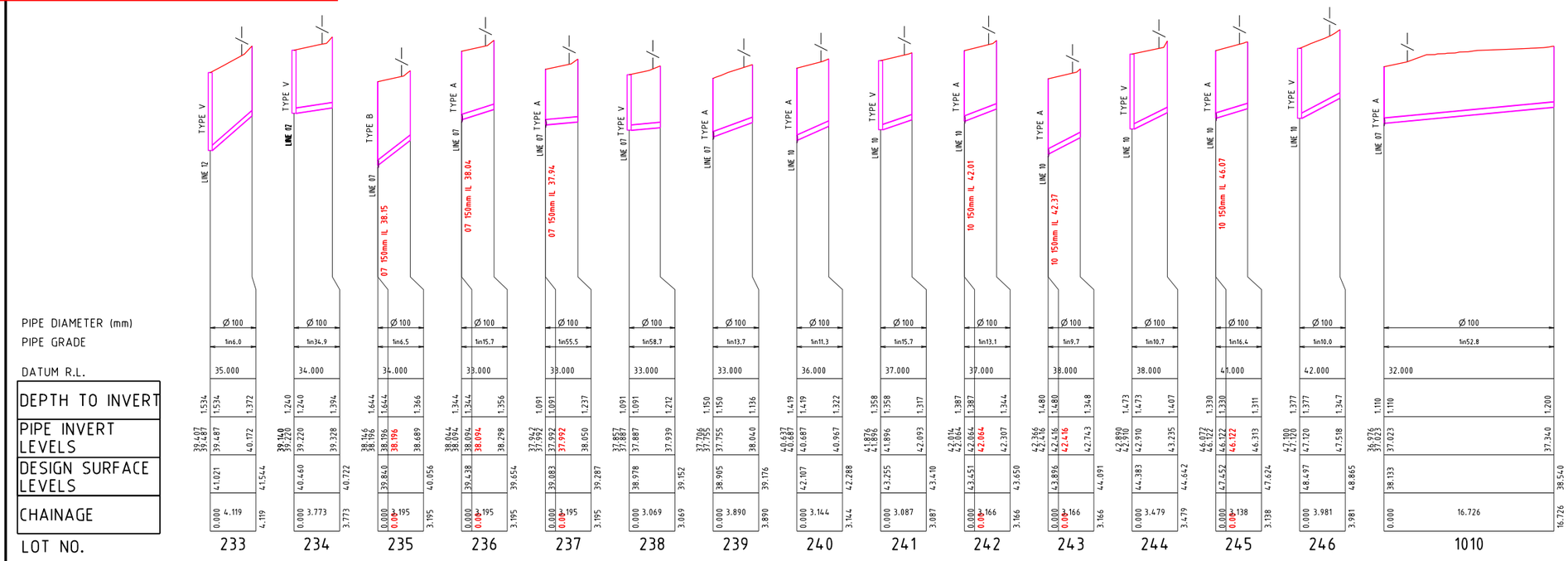
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

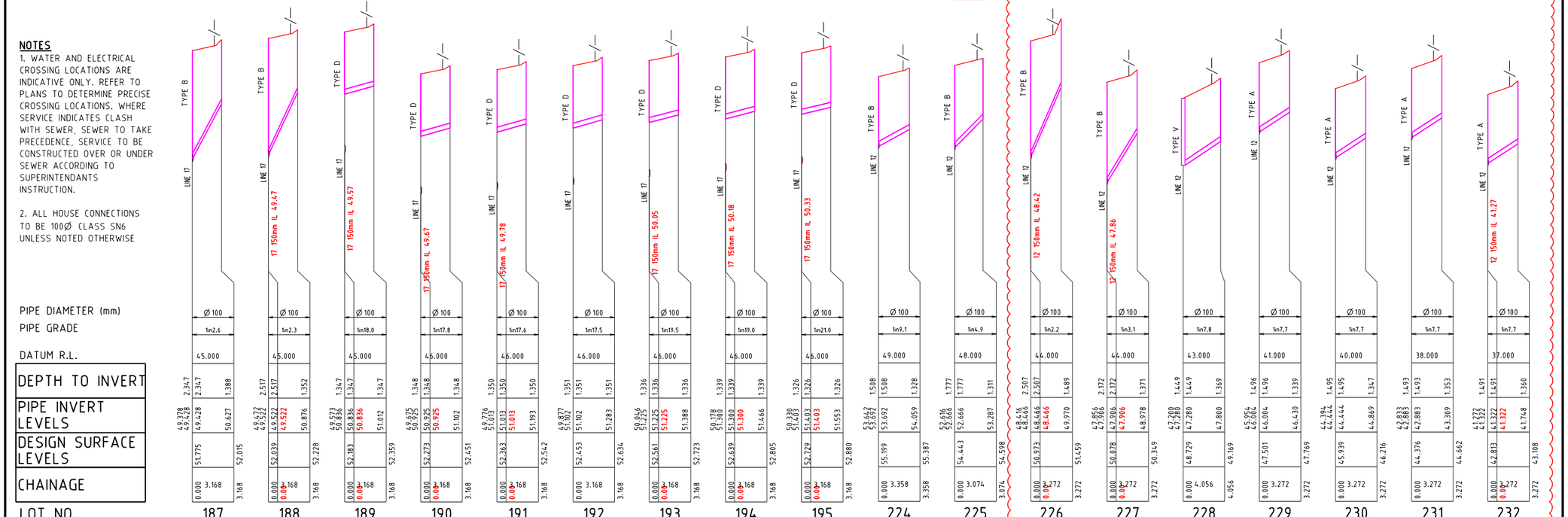
Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.





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

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	27-11-23	HOUSE CONNECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.
BENNETT + BENNETT

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 02

MORTONS urbansolutions
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER 41901-02-551 REV B

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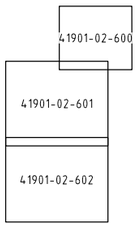
STORMWATER

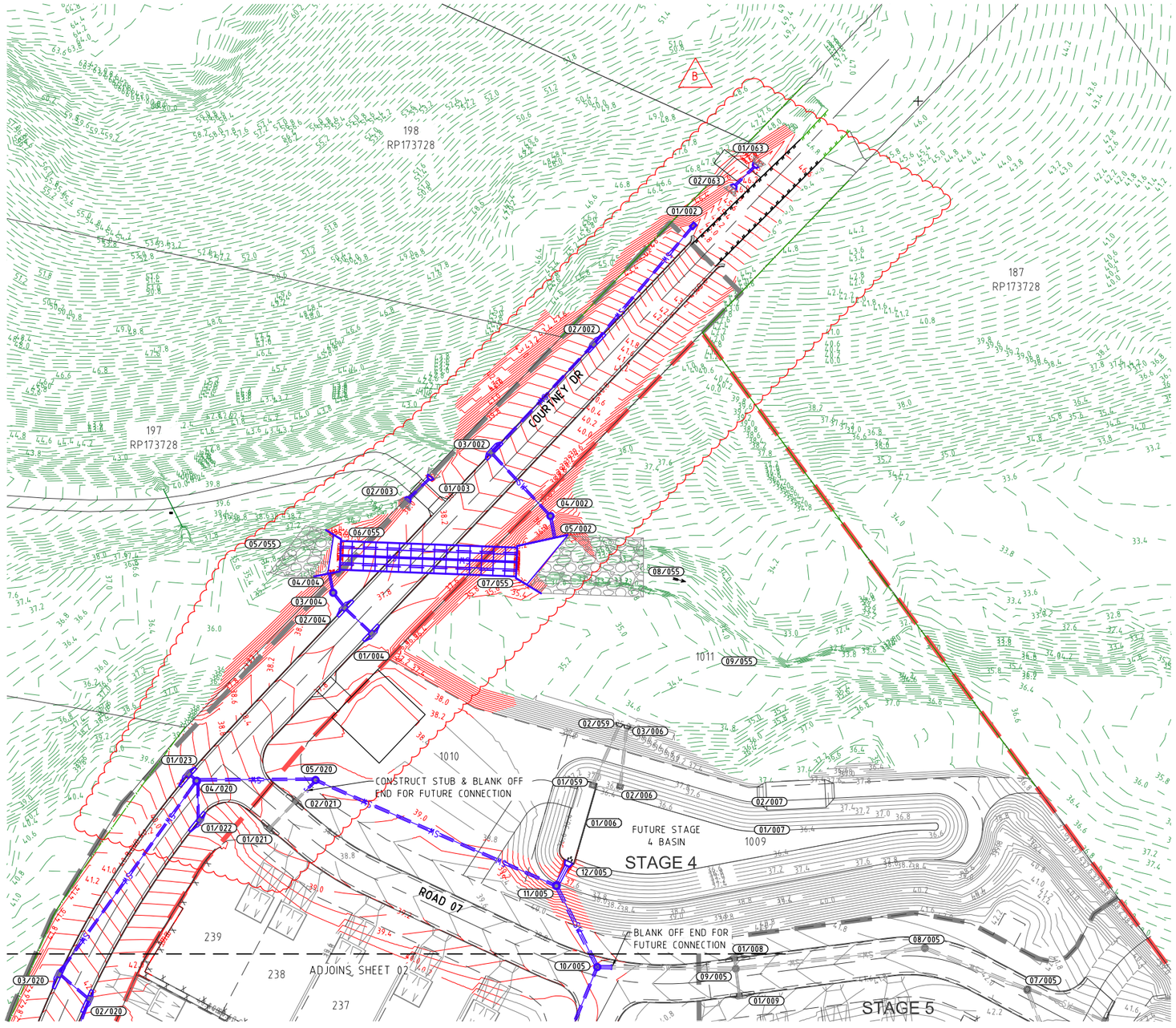
1. ALL FIELD GULLIES SHALL CONTAIN A 150mm DIA STUB 600mm BELOW GRADE LEVEL FOR FUTURE ROOFWATER DRAINAGE.
2. MANHOLES TO BE IN ACCORDANCE WITH IPWEAQ STANDARD DRAWING No DS-010, DS-015, DS-018, DS-019, DS-020, DS-021 OR STRUCTURAL DRAWINGS (STRUCTURAL DRAWINGS TAKE PRECEDENCE).
3. OUTLET HEADWALLS TO 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

SHEET LAYOUT





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.

DIAL BEFORE YOU DIG www.1100.com.au

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	CONTOURS & STORMWATER AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-600 REV B

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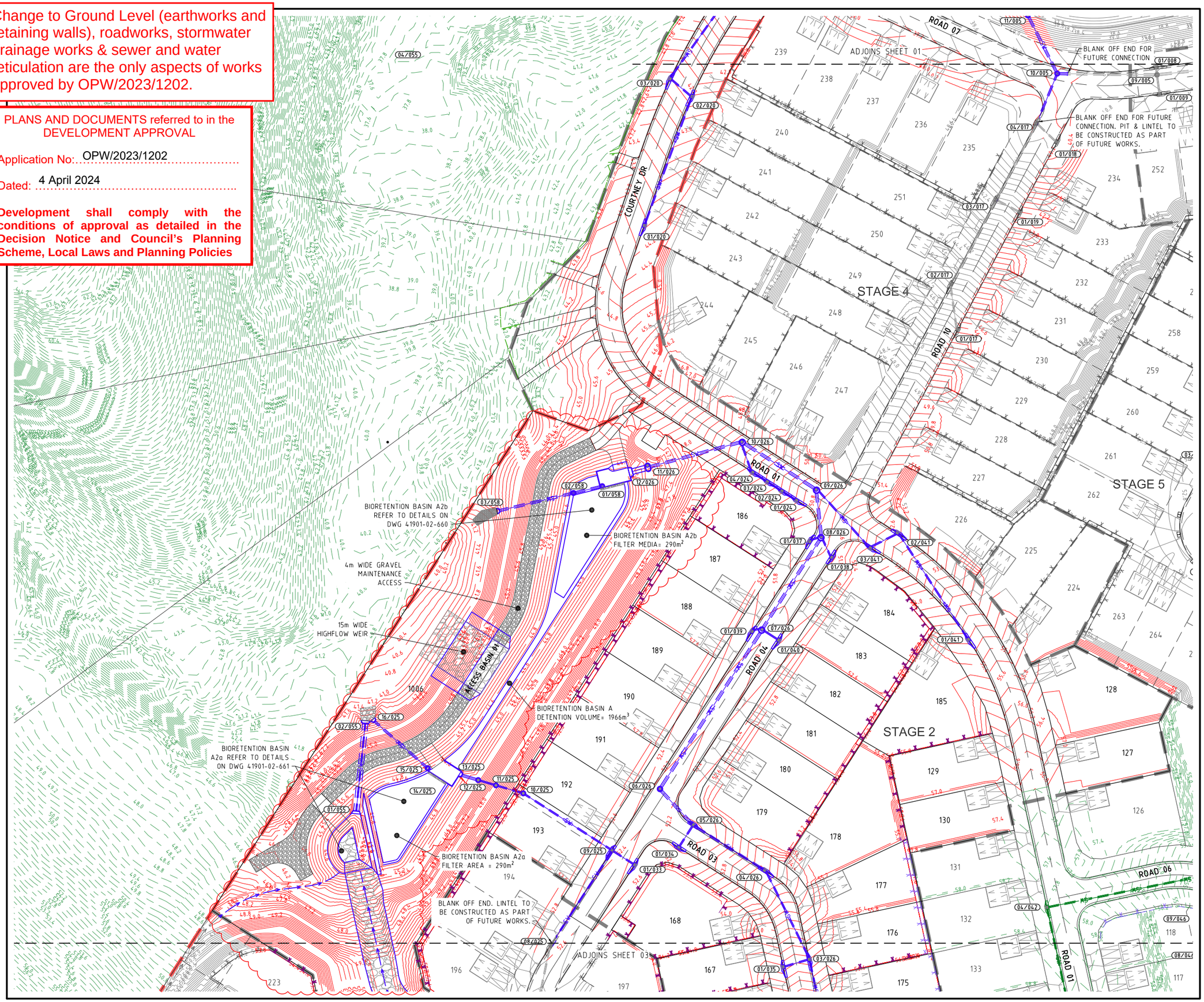
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	BASIN STORMWATER AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-601	B

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BLANK OFF END. LINTEL TO BE CONSTRUCTED AS PART OF FUTURE WORKS.

ADJOINS SHEET 02

LOCALISED EARTHWORKS IN THIS AREA TO MAINTAIN CHANNEL PROFILE THROUGH ROAD 02. STORMWATER CULVERT TO BE INSTALLED AS PART OF STAGE 3 WORKS.

STAGE 3

STAGE 2

STAGE 1

ROAD 01

ROAD 02

ROAD 03

ROAD 04

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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DRAWING TITLE

STORMWATER DRAINAGE PLAN SHEET 03

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-602	A

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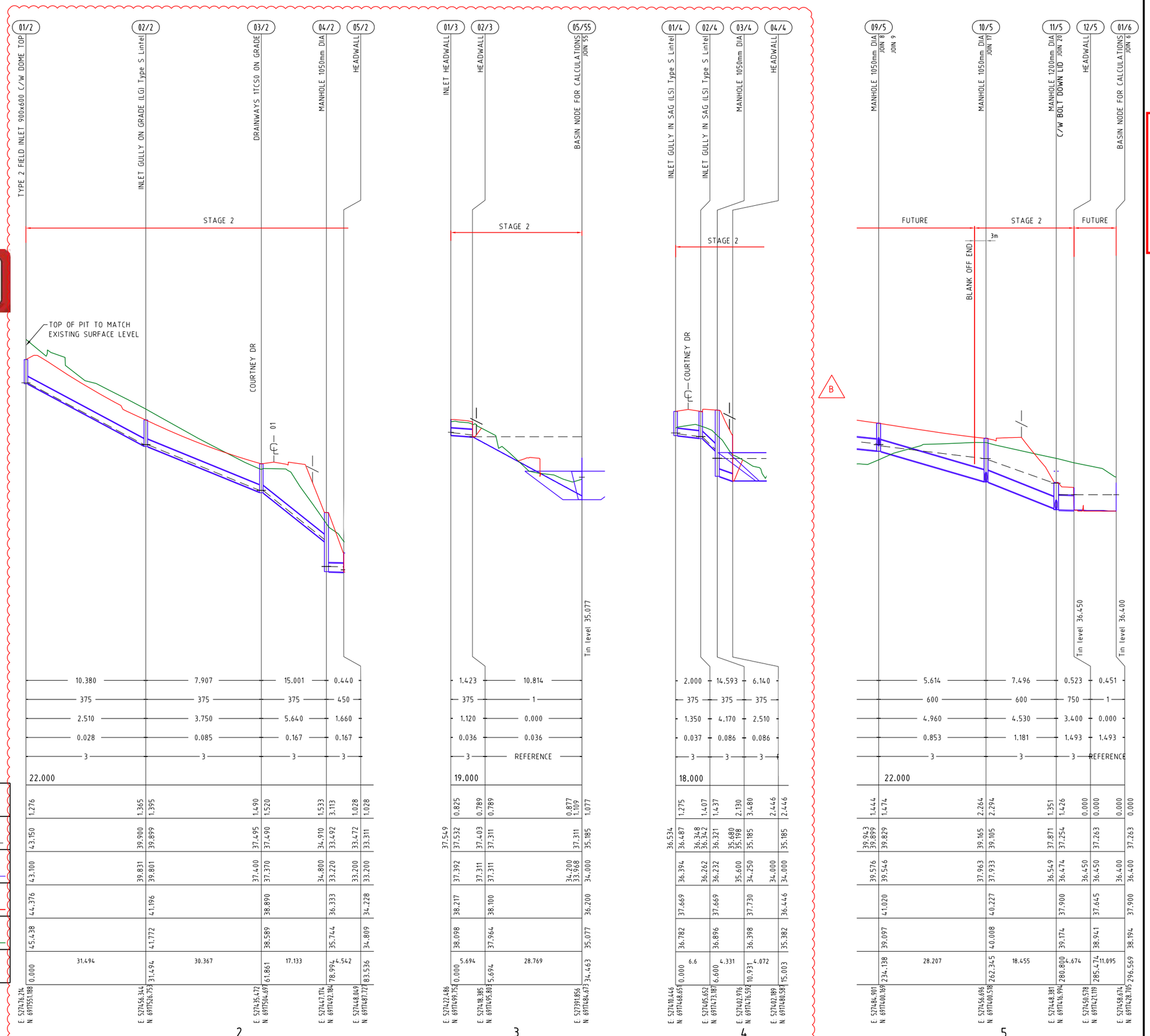
STRUCTURE NAME

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.



DRAINAGE LINE

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

RP DESCRIPTION

LOT 188 189 190 191 & 192 ON RP173728

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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	15-01-24	LONG SECTIONS AMENDED	BL
B	29-11-23	LONG SECTIONS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 01

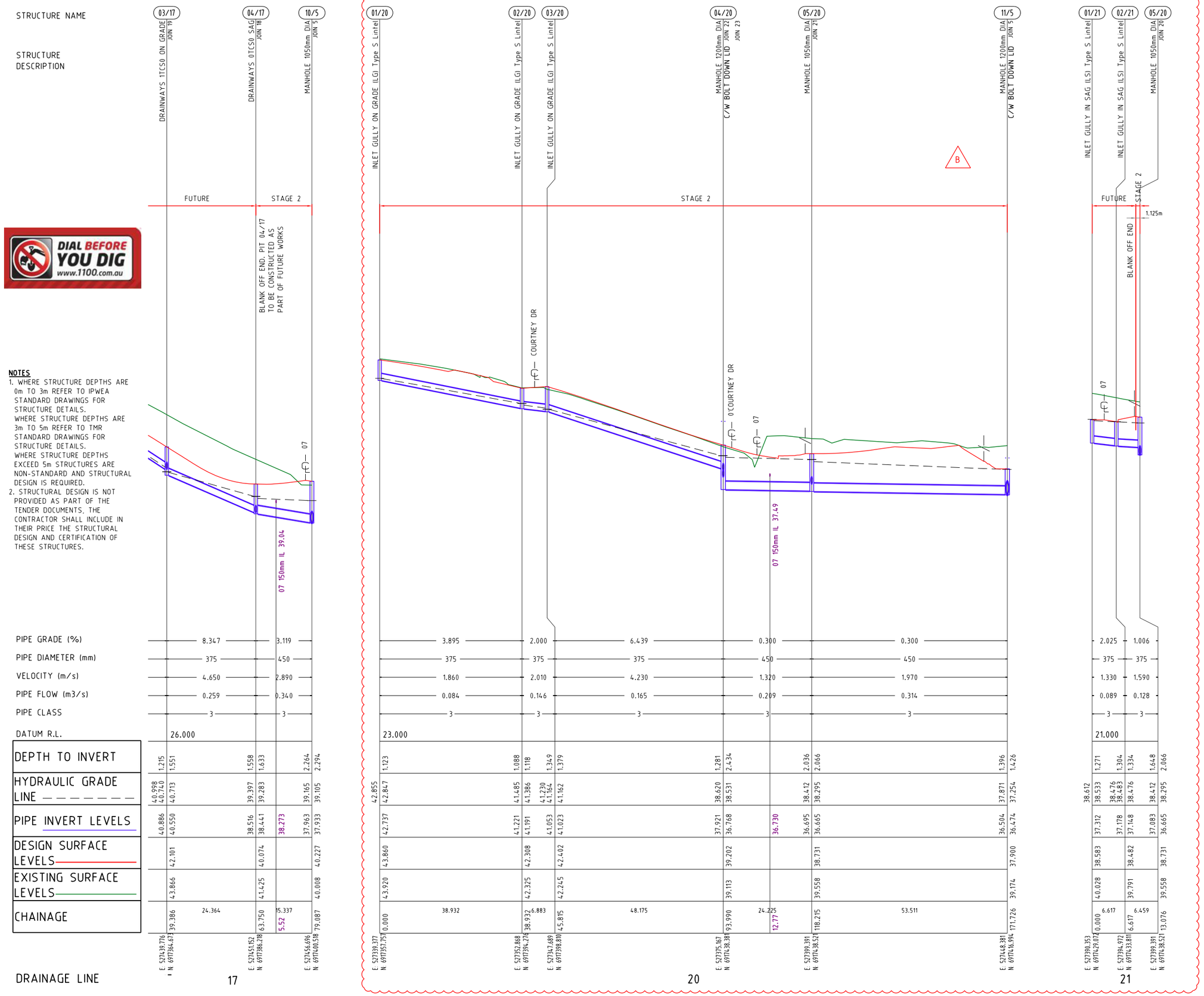
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APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER 41901-02-620

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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	15-01-24	LONG SECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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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APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-621 REV B

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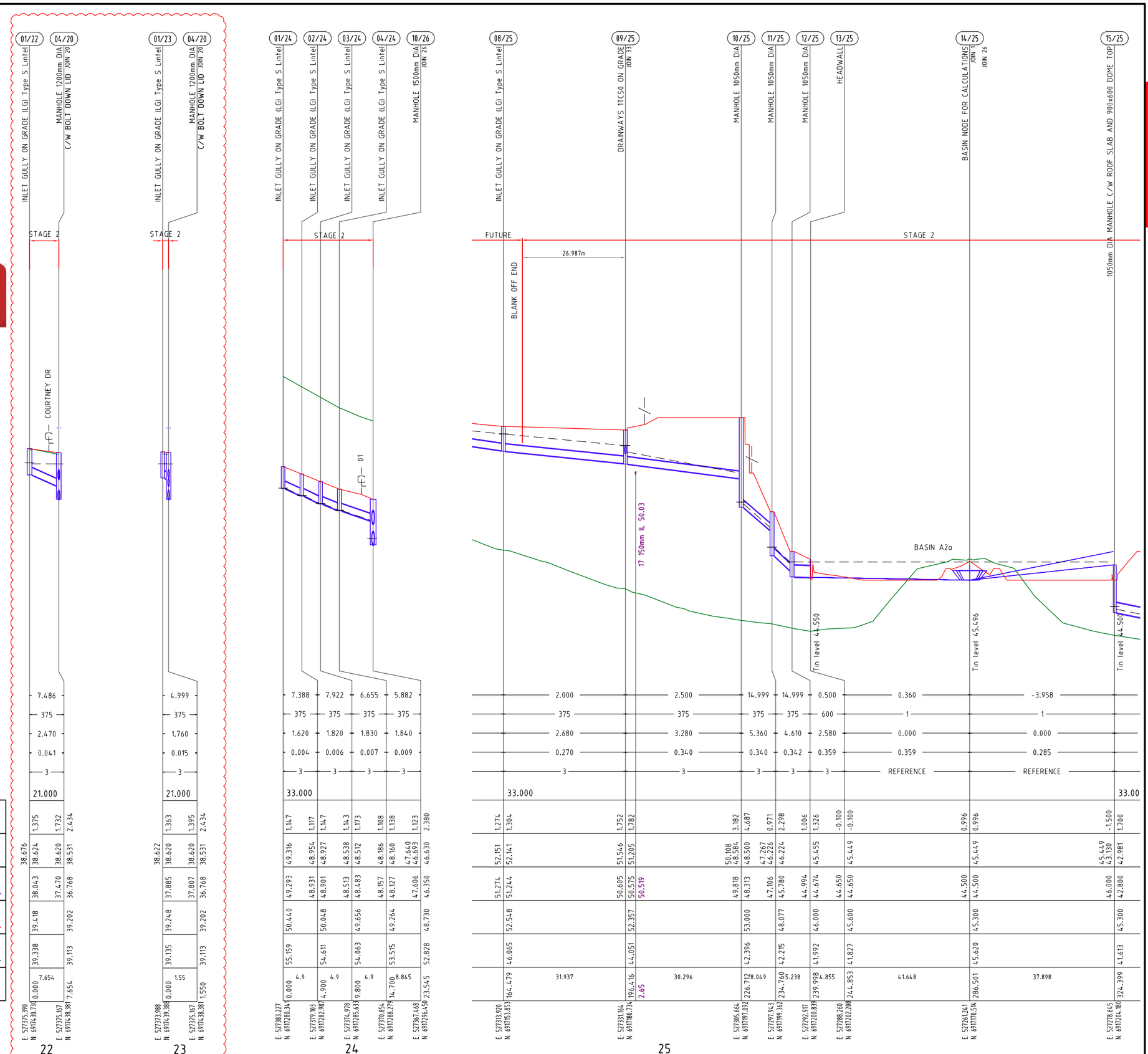
STRUCTURE DESCRIPTION

B



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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PROJECT NAME

COURTNEY DR UPPER COOMERA

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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Vert. Scale 1:100 - A1 (1:200 - A3)

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B	15-01-24	LONG SECTIONS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-622	B

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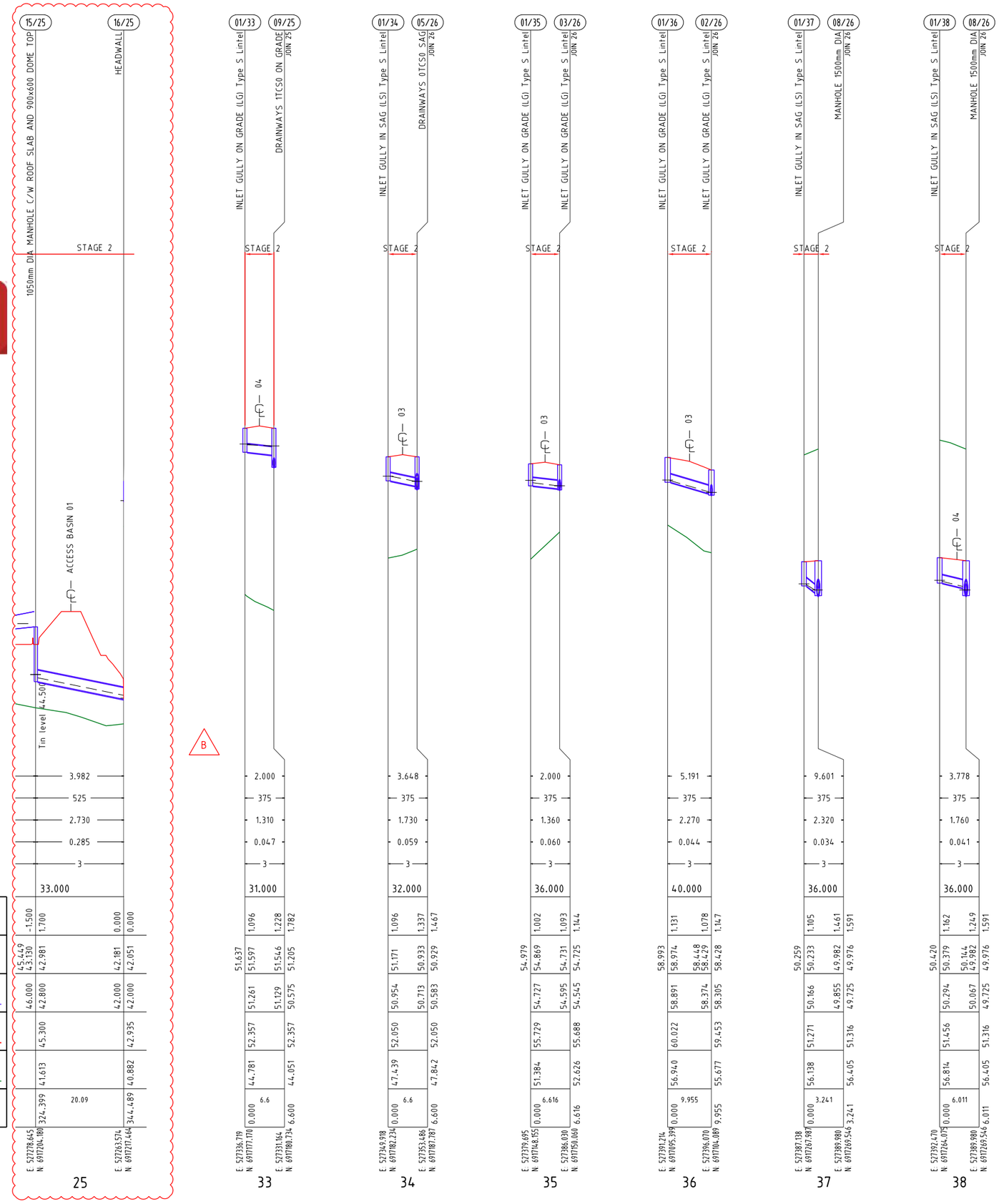
STRUCTURE NAME

STRUCTURE DESCRIPTION



NOTES

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DRAINAGE LINE

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	LONG SECTIONS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
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www.urbansolutions.net.au
Tel 07 5571 1099

Postal Address
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Southport QLD 4215

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

DESIGNED RB	DRAWN EP
APPROVED	RPEQ 4706

DATE 13-10-23

DRAWING NUMBER 41901-02-623

REV B

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STRUCTURE NAME

STRUCTURE DESCRIPTION

	01/26	02/26	03/26	04/26	05/26	06/26	07/26	08/26	09/26	10/26
	INLET GULLY ON GRADE (LG) Type S Lintel	INLET GULLY ON GRADE (LG) Type S Lintel JOIN 36	INLET GULLY ON GRADE (LG) Type S Lintel JOIN 35	INLET GULLY ON GRADE (LG) Type S Lintel	DRAINWAYS OTCSD SAG JOIN 34	MANHOLE 1200mm DIA	MANHOLE 1500mm DIA JOIN 39 JOIN 40	MANHOLE 1500mm DIA JOIN 37 JOIN 38	MANHOLE 1500mm DIA JOIN 41	MANHOLE 1500mm DIA JOIN 24
PIPE GRADE (%)		6.126	7.842	7.400	6.586	0.721	0.667	1.000	5.071	6.250
PIPE DIAMETER (mm)		375	375	375	450	675	675	675	675	675
VELOCITY (m/s)		3.010	4.500	4.890	3.470	2.190	2.170	2.930	5.040	6.160
PIPE FLOW (m3/s)		0.054	0.139	0.248	0.306	0.394	0.395	0.526	0.598	0.784
PIPE CLASS		3	3	3	3	3	3	3	3	3
DATUM R.L.	34.000									34.000
DEPTH TO INVERT	1.131	1.073	1.147	1.073	1.144	1.072	1.375	1.437	1.467	1.789	1.819	1.806	1.836	1.561	1.591	1.688	1.718	1.281	2.380
HYDRAULIC GRADE LINE	60.237	58.458 58.429	58.428	54.734 54.731	54.725	52.656 52.365	52.363	50.933	50.929	50.824	50.801	50.416	50.412	50.085 49.982	49.976	49.285	49.278	47.696 46.693	46.630
PIPE INVERT LEVELS	60.153	58.380	58.305	54.615	54.545	53.011	52.491	52.188	50.613	50.583	50.482	50.452	50.096	50.066	49.861	49.755	49.725	49.615	49.041	49.011	47.449	46.350
DESIGN SURFACE LEVELS	61.285		59.453		55.688		53.563		52.050		52.271		51.902		51.316		50.729		48.730
EXISTING SURFACE LEVELS	61.110		55.677		52.626		51.421		47.842		45.875		54.677		56.405		55.560		52.828
CHAINAGE	0.000	28.949	28.949	76.003	27.754	20.50	23.906	103.757	14.008	127.664	141.672	53.485	195.156	31.054	20.20	226.210	2.69	13.489	239.699	24.996	264.695	2
	E 527402.246 N 6917075.806	E 527396.070 N 6917184.089	E 527386.030 N 6917150.060	E 527373.608 N 6917174.878	E 527353.486 N 6917187.787	E 527344.333 N 6917198.390	E 527373.212 N 6917243.408	E 527389.980 N 6917269.544	E 527388.508 N 6917282.354	E 527367.468 N 6917296.450									

STAGE 2

19 150mm IL 52.15

17 150mm IL 49.29

24 80mm IL 50.54

DRAINAGE LINE

26

26

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.

DIAL BEFORE YOU DIG www.1100.com.au

PROJECT NAME

COURTNEY DR UPPER COOMERA

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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	17-01-24	PROFILES REVISED	EP
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 05

MORTONS urbansolutions
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Civil Engineering
Project Coordination
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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER 41901-02-624

REV A

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

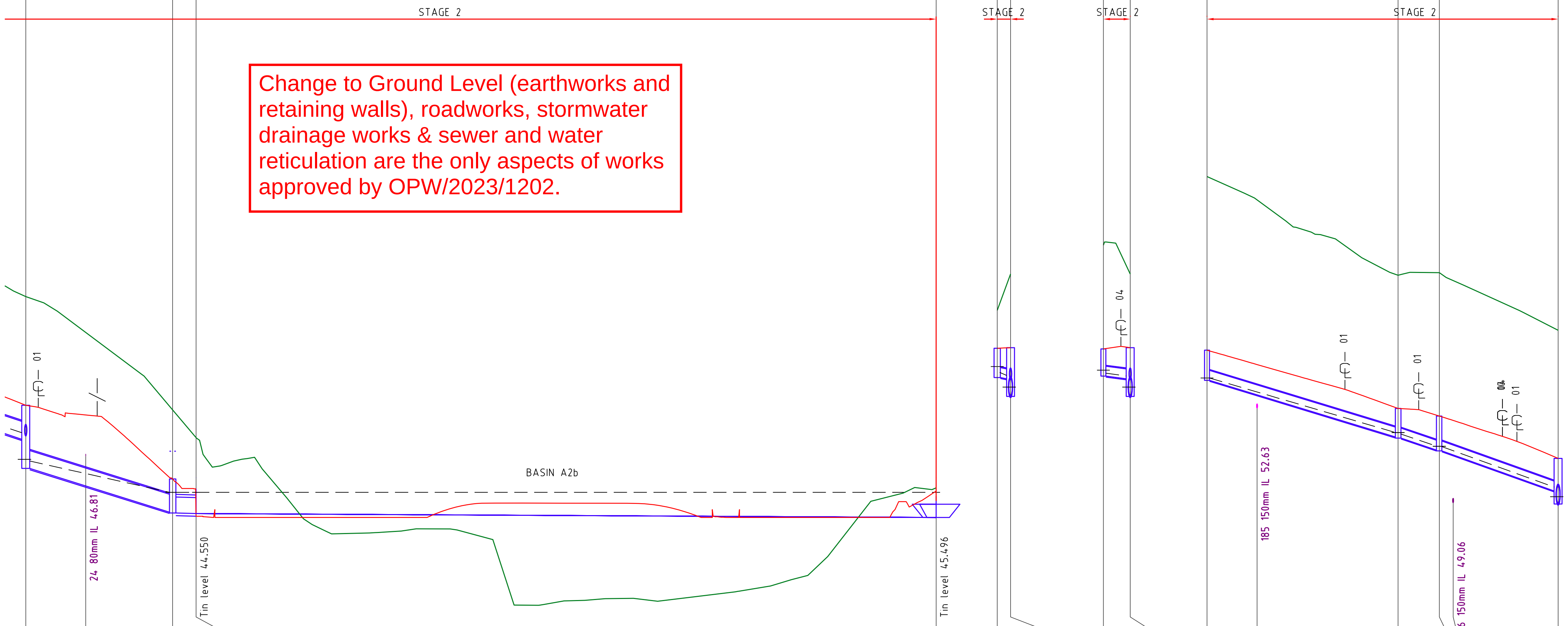
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

DIAL BEFORE YOU DIG www.1100.com.au

STRUCTURE NAME / STRUCTURE DESCRIPTION

Structure name	Structure description
10/26	MANHOLE 1500mm DIA JOIN 24
11/26	1200 DIA MANHOLE EXTENDED 600mm
12/26	HEADWALL
14/25	BASIN NODE FOR CALCULATIONS JOIN 25
01/39	INLET GULLY ON GRADE (LG) Type S Lintel
07/26	MANHOLE 1500mm DIA JOIN 26
01/40	INLET GULLY ON GRADE (LG) Type S Lintel
07/26	MANHOLE 1500mm DIA JOIN 26
01/41	INLET GULLY ON GRADE (LG) Type S Lintel
02/41	INLET GULLY ON GRADE (LG) Type S Lintel
03/41	INLET GULLY ON GRADE (LG) Type S Lintel
09/26	MANHOLE 1500mm DIA JOIN 26



NOTES

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DRAINAGE LINE 26 (DATUM R.L. 34.000)

	10/26	24 80mm IL 46.81	11/26	12/26	14/25
PIPE GRADE (%)		5.949	0.500	0.108	
PIPE DIAMETER (mm)		675	1500x600	1	
VELOCITY (m/s)		5.300	2.410	0.000	
PIPE FLOW (m3/s)		0.793	0.793	0.793	
PIPE CLASS		3	RCBC	REFERENCE	
DEPTH TO INVERT	1.281 / 2.380		1.251 / 1.281	-0.100 / -0.100	0.996 / 0.996
HYDRAULIC GRADE LINE	47.696 46.693 / 46.630		45.451	45.449	45.449
PIPE INVERT LEVELS	47.449 / 46.350	45.689	44.702 / 44.672	44.650 / 44.650	44.500 / 44.500
DESIGN SURFACE LEVELS	48.730		45.953	45.580	45.300
EXISTING SURFACE LEVELS	52.828		48.556	47.509	45.620
CHAINAGE	264.695	27.698 / 11.31	292.393 (4.42)	296.814 (139.526)	436.340
Coordinates	E: 527367.468 N: 6917296.450		E: 527340.749 N: 6917289.153	E: 527336.477 N: 6917288.018	E: 527261.241 N: 6917170.514

DRAINAGE LINE 39 (DATUM R.L. 35.000)

	01/39	07/26
PIPE GRADE (%)	1.915	
PIPE DIAMETER (mm)	375	
VELOCITY (m/s)	1.150	
PIPE FLOW (m3/s)	0.079	
PIPE CLASS	3	
DEPTH TO INVERT	1.105	1.173 / 1.836
HYDRAULIC GRADE LINE	51.193 / 50.970	50.856 50.416 / 50.412
PIPE INVERT LEVELS	50.776	50.728 / 50.066
DESIGN SURFACE LEVELS	51.882	51.902
EXISTING SURFACE LEVELS	53.308	54.677
CHAINAGE	0.000 (2.518)	2.518
Coordinates	E: 527370.836 N: 6917242.574	E: 527373.212 N: 6917243.408

DRAINAGE LINE 40 (DATUM R.L. 35.000)

	01/40	07/26
PIPE GRADE (%)	2.000	
PIPE DIAMETER (mm)	375	
VELOCITY (m/s)	1.290	
PIPE FLOW (m3/s)	0.057	
PIPE CLASS	3	
DEPTH TO INVERT	1.026	1.173 / 1.836
HYDRAULIC GRADE LINE	51.055 / 50.942	50.835 50.416 / 50.412
PIPE INVERT LEVELS	50.829	50.728 / 50.066
DESIGN SURFACE LEVELS	51.855	51.902
EXISTING SURFACE LEVELS	55.765	54.677
CHAINAGE	0.000 (5.05)	5.050
Coordinates	E: 527377.463 N: 6917240.681	E: 527373.212 N: 6917243.408

DRAINAGE LINE 41 (DATUM R.L. 38.000)

	01/41	185 150mm IL 52.63	02/41	03/41	16 150mm IL 49.06	09/26
PIPE GRADE (%)		5.928	5.837		6.748	
PIPE DIAMETER (mm)		375	375		375	
VELOCITY (m/s)		2.470	3.230		4.300	
PIPE FLOW (m3/s)		0.067	0.150		0.193	
PIPE CLASS		3	3		3	
DEPTH TO INVERT	1.137		1.075 / 1.116	1.283 / 1.313		1.229 / 1.718
HYDRAULIC GRADE LINE	53.759		51.703 / 51.649	51.185 / 51.174		49.647 49.285 / 49.278
PIPE INVERT LEVELS	53.671	53.125	51.536 / 51.495	51.041 / 51.011	50.858	49.500 / 49.011
DESIGN SURFACE LEVELS	54.809		52.611	52.324		50.729
EXISTING SURFACE LEVELS	61.352		57.634	57.732		55.560
CHAINAGE	0.000 (36.022)	9.45	36.022 (7.776)	43.798 (22.393)	2.61	66.190
Coordinates	E: 527432.013 N: 6917240.881		E: 527411.167 N: 6917270.259	E: 527404.143 N: 6917266.923		E: 527388.508 N: 6917282.954

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER PROFILES SHEET 06

MORTONS urbansolutions
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Southport QLD 4215

DESIGNED RB	DRAWN EP
APPROVED	RPEQ 4706 / DATE 13-10-23

DRAWING NUMBER 41901-02-625 REV A

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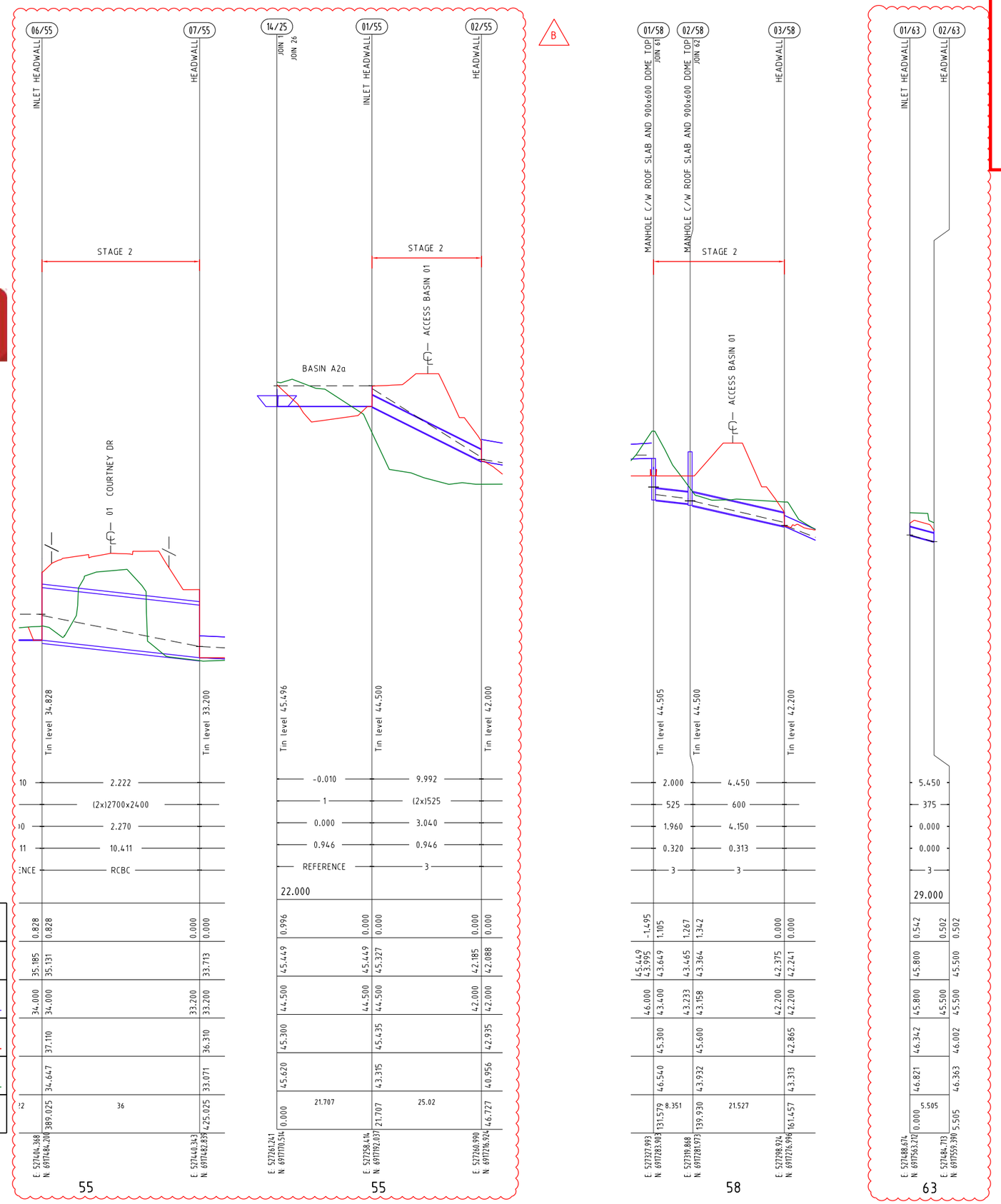
STRUCTURE NAME

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

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	LONG SECTIONS AMENDED, LINE 63 ADDED	BL
B	29-11-23	LONG SECTIONS UPDATED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

STORMWATER PROFILES SHEET ~~06~~ 07

MORTONS urbansolutions
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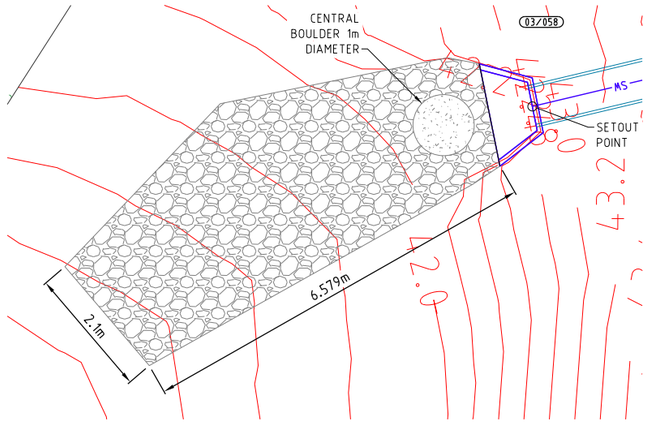
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APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-626

REV: C

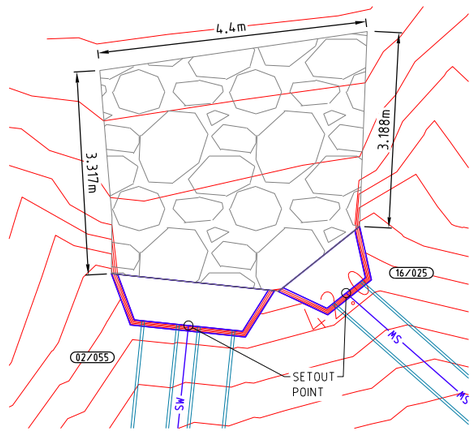
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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



SCOUR PROTECTION DESIGN	
HW 03/058	SIZE 600mm
VELOCITY = 4.15m/s	
LENGTH = 6.579m	d50 300mm
SCOUR PROTECTION TYPE = RENO MATTRESS 300mm THICK	

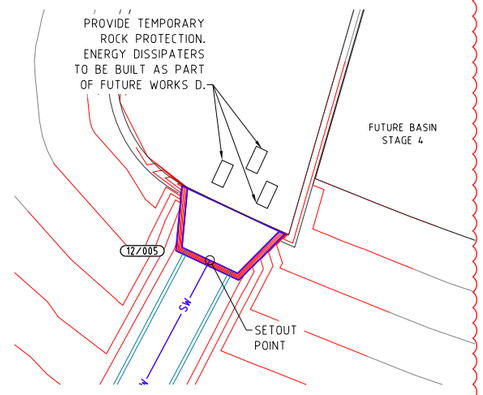
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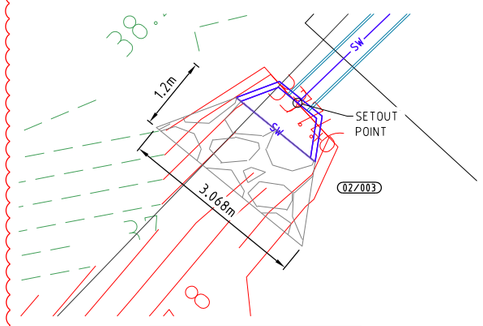


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VELOCITY = 3.04m/s	
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SCOUR PROTECTION TYPE = RENO MATTRESS 170mm THICK	

SCOUR PROTECTION DESIGN	
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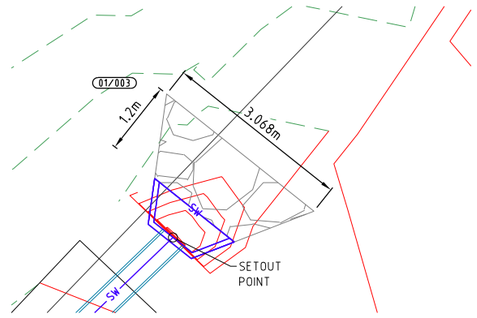
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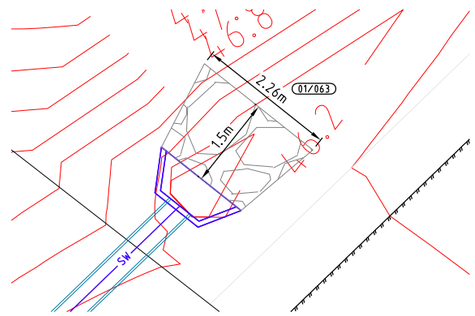
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HW 02/003	SIZE 375mm
VELOCITY = 1.12m/s	
LENGTH = 1m	d50 100mm
SCOUR PROTECTION TYPE = RENO MATTRESS 170mm THICK	

CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA



SCOUR PROTECTION DESIGN	
HW 01/003	SIZE 375mm
VELOCITY = 1.12m/s	
LENGTH = 1m	d50 100mm
SCOUR PROTECTION TYPE = RENO MATTRESS 170mm THICK	

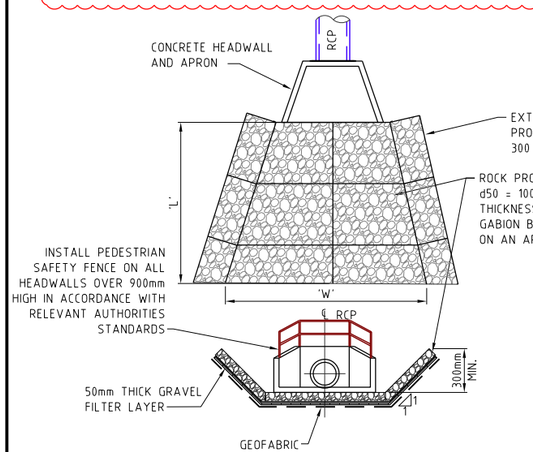
CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA



SCOUR PROTECTION DESIGN	
HW 01/063	SIZE 375mm
VELOCITY = 1.38m/s	
LENGTH = 1.5m	d50 100mm
SCOUR PROTECTION TYPE = RENO MATTRESS 170mm THICK	

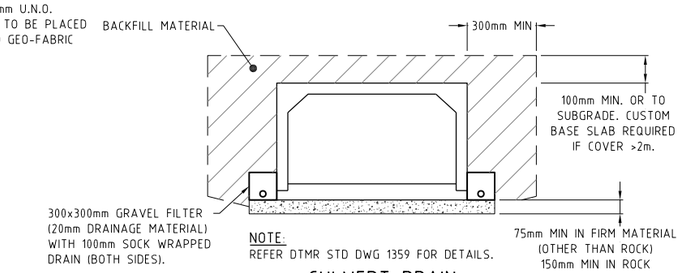
CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA

B



TYPICAL GABION SCOUR PROTECTION DETAIL

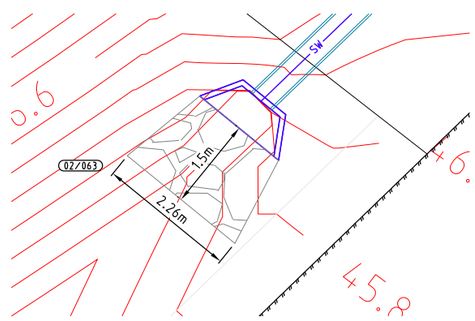
SCALE 1 : 100 - A1 (1:200 - A3)



NOTE:
REFER DTMR STD DWG 1359 FOR DETAILS.

CULVERT DRAIN

NOT TO SCALE



SCOUR PROTECTION DESIGN	
HW 02/063	SIZE 375mm
VELOCITY = 1.38m/s	
LENGTH = 1.5m	d50 100mm
SCOUR PROTECTION TYPE = RENO MATTRESS 170mm THICK	

CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

NORTH

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)

REV	DATE	DESCRIPTION	INT
B	29-11-23	PIPE COORDINATES AMENDED, HW'S ADDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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BENNETT+BENNETT

DRAWING TITLE

STORMWATER OUTLETS AND TYPICAL 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

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PO Box 2484
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mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099

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

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-640	B

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

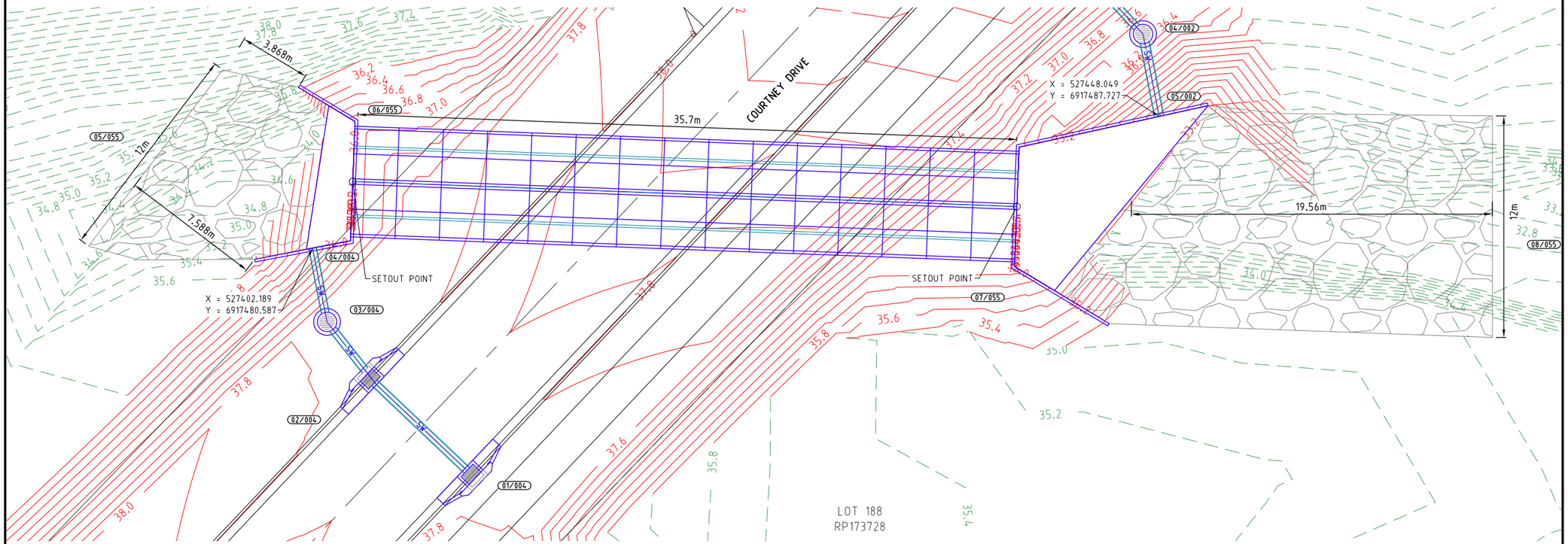
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

NOTE
RCBC TO BE INSTALLED IN ACCORDANCE WITH DTMR REQUIREMENTS. HEADWALLS ARE NON STANDARD, CONTRACTOR TO ARRANGE STRUCTURAL DESIGN, CERTIFICATION & FINAL CONSTRUCTION.



SCOUR PROTECTION DESIGN	
HW 06/055	SIZE 2.7m x 2.4m RCBC (x2)
VELOCITY = 2.27m/s	
LENGTH = 12m x 4m	d50 = 500mm
SCOUR PROTECTION TYPE = LOOSE ROCK 500mm THICK	

CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA

SCOUR PROTECTION DESIGN	
HW 07/055	SIZE 2.7m x 2.4m RCBC (x2)
VELOCITY = 2.27m/s	
LENGTH = 18m x 12m	d50 = 500mm
SCOUR PROTECTION TYPE = LOOSE ROCK 900mm THICK	

CALCULATIONS UNDERTAKEN USING PROPRIETARY PRODUCT DATA

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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 1.25 1.5 3.75 5 6.25m

Scale 1:125 - A1 (1:250 - A3)

REV	DATE	DESCRIPTION	INT
B	15-01-24	STORMWATER CULVERT AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER
RCBC
OUTLET
SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-641	B

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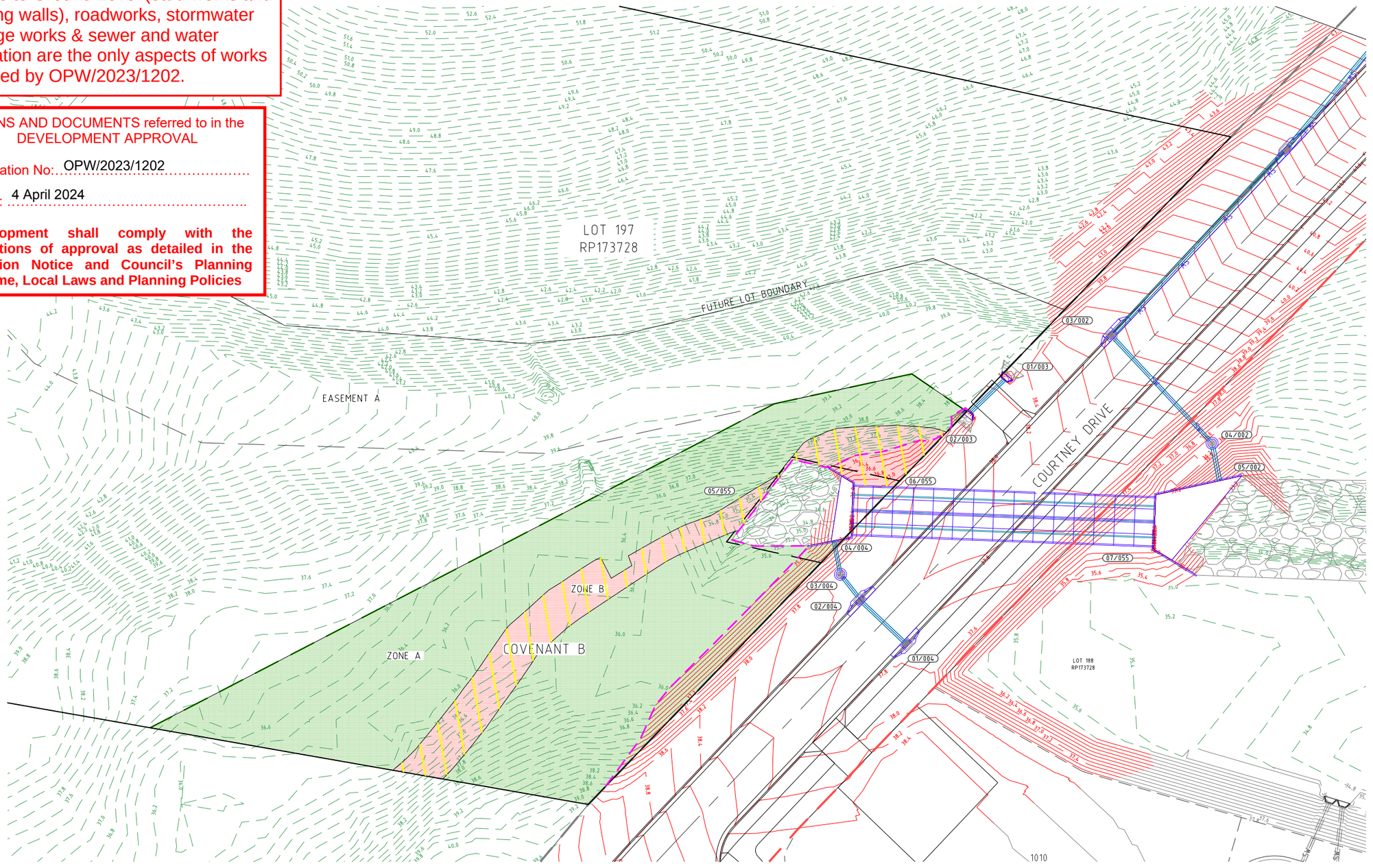
Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



LEGEND

- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING PROPERTY LINE
- EXISTING CONTOURS (1.0)
- FUTURE KERB
- FUTURE PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED PROPERTY LINE
- DESIGN CONTOURS (1.0)
- PROPOSED STORMWATER (SW)
- PROPOSED ROOFWATER (RW)
- PROPOSED SUBSOIL (SS)
- LOT 197 BOUNDARY
- COVENANT BOUNDARY
- MANHOLE
- FIELD INLET
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- ZONE A - REHABILITATION AND REVEGETATION IN ACCORDANCE WITH THE APPROVED COVENANT AND MANAGEMENT AND REHABILITATION PLAN PREPARED BY WOLTER CONSULTING GROUP (EMP/2019/40)
- ZONE B - REHABILITATION AND REVEGETATION IN ACCORDANCE WITH THE APPROVED COVENANT AND MANAGEMENT AND REHABILITATION PLAN PREPARED BY WOLTER CONSULTING GROUP (EMP/2019/40) REQUIRING JUTE MATTING INSTALLATION
- PROPOSED DRAINAGE EASEMENT IN FAVOUR OF CITY OF GOLD COAST
- EXTENT OF WORKS BY HB QLD Pty Ltd

NOTES:

HB QLD Pty Ltd WORKS TO INCLUDE:

-EARTHWORKS;
-INSTALLATION OF STORMWATER BOX CULVERTS AND HEADWALL;
-PLACEMENT OF ROCK SCOUR ON GEOFABRIC;
-STABILISATION OF DISTURBED AREAS INCLUDING JUTE MATTING (IF REQUIRED);
-REHABILITATION AND REVEGETATION WITHIN ZONE A AND B AS PER APPROVED COVENANT MANAGEMENT AND REHABILITATION PLAN BY WOLTER CONSULTING GROUP (EMP/2019/40)

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
A	23-02-24	COUNCIL ISSUE	BL

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

POST CONSTRUCTION STABILISATION PLAN LOT 197 ON RP173728

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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DESIGNED	RB	DRAWN	BL
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-642	B

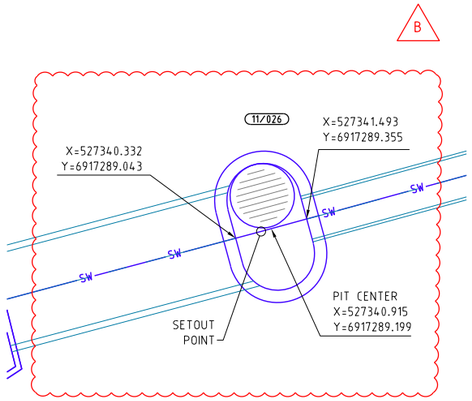
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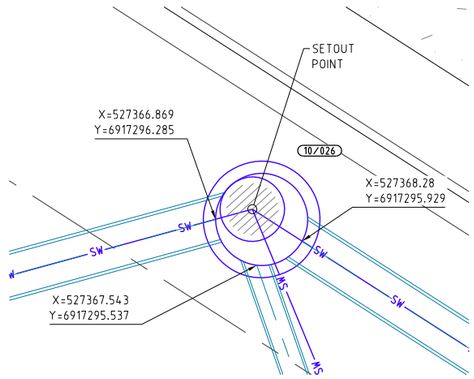
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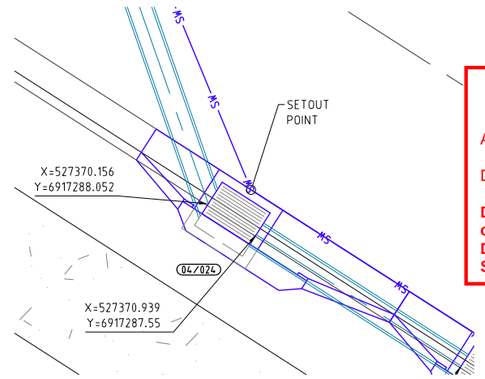
- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- SW — SW — EXISTING STORMWATER
- RW — RW — EXISTING ROOFWATER
- EXISTING STORMWATER PIPES
- EXISTING ROOFWATER PIPES
- FUTURE KERB (INVERT)
- FUTURE KERB (LIP & BACK)
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- SW — FUTURE STORMWATER
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- RW — 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

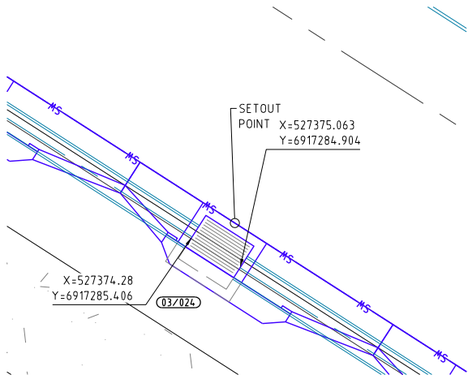
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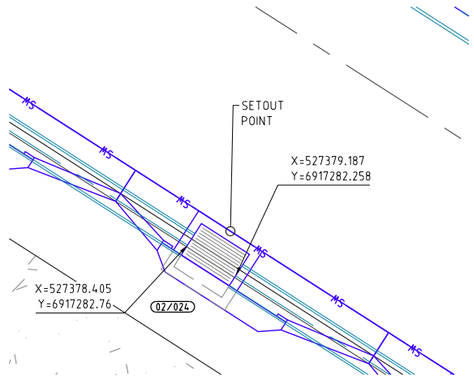
THE STORMWATER PIT IMAGE ARE DIAGRAMATIC ONLY & THE CONTRACTOR MUST ENSURE THEY MATCH NEATLY INTO THE WORKS

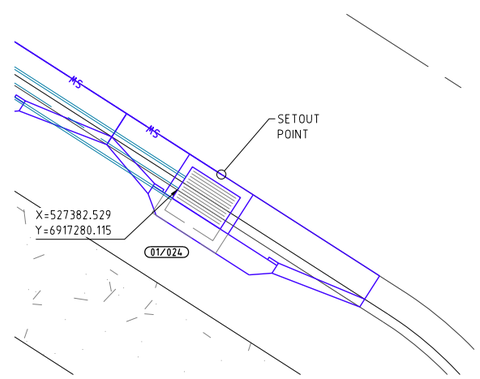


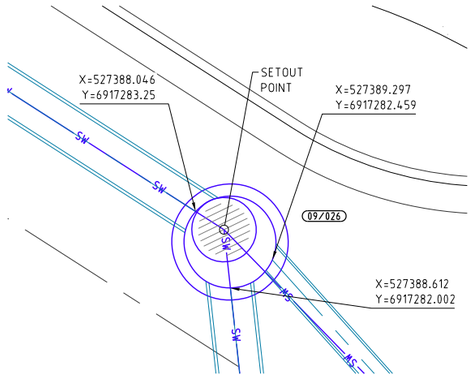


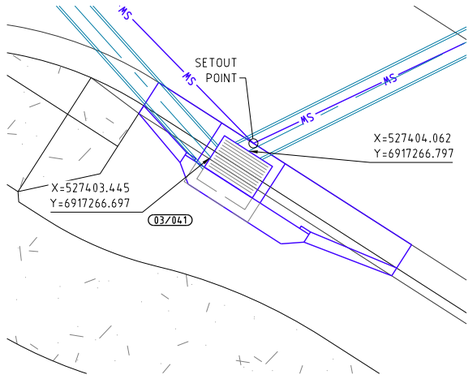


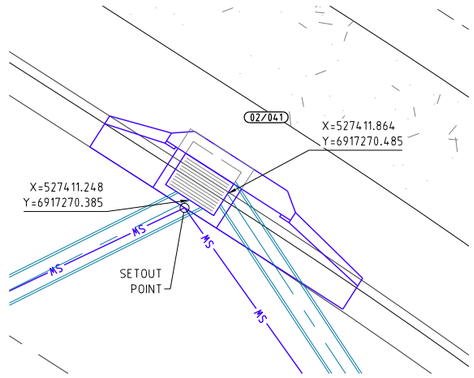


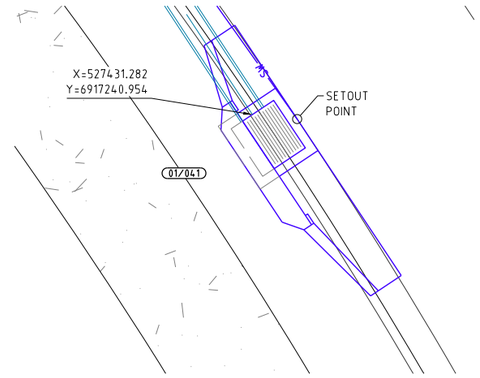


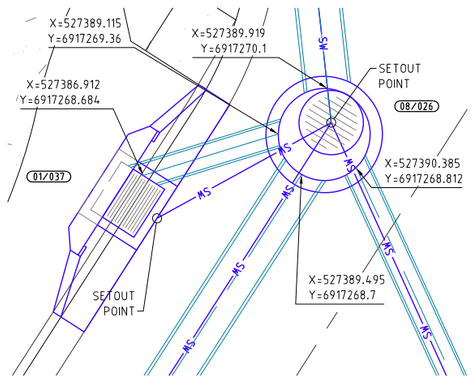


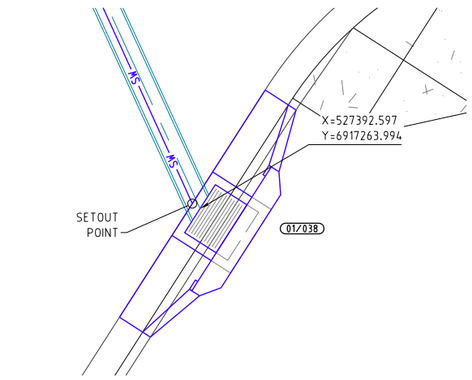


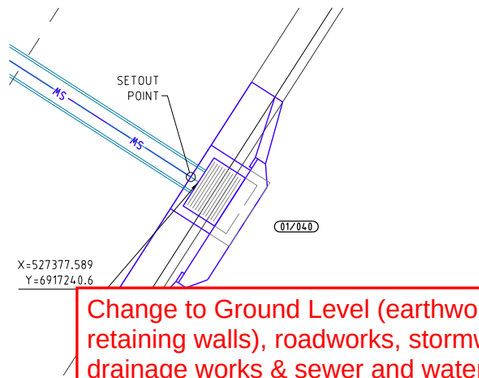


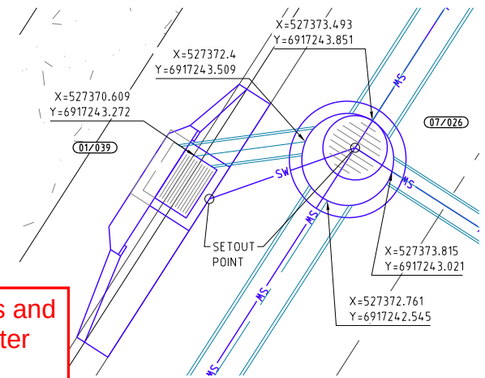












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PROJECT NAME

COURTNEY DR UPPER COOMERA

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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	29-11-23	COORDINATES REVISED	BL
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

STORMWATER
PIT DETAILS
SHEET 01

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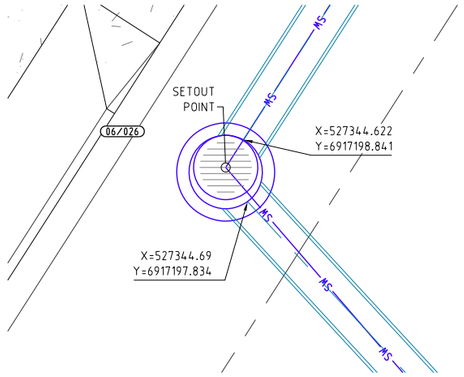
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Southport QLD 4215

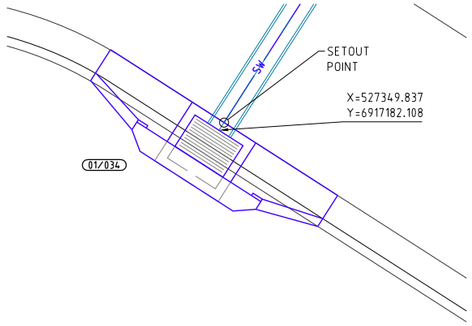
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Southport QLD 4215

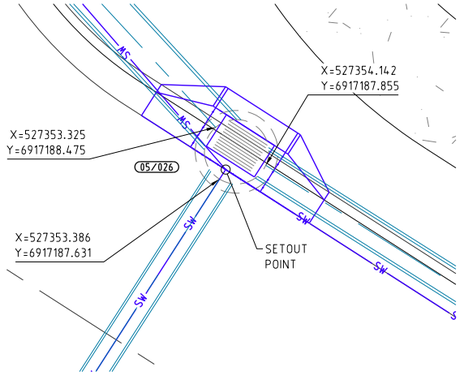
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APPROVED	RPEQ 4706	DATE	13-10-23

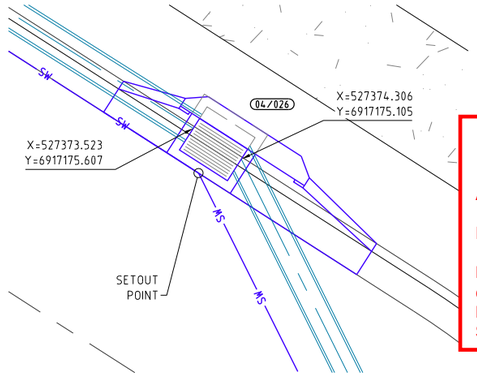
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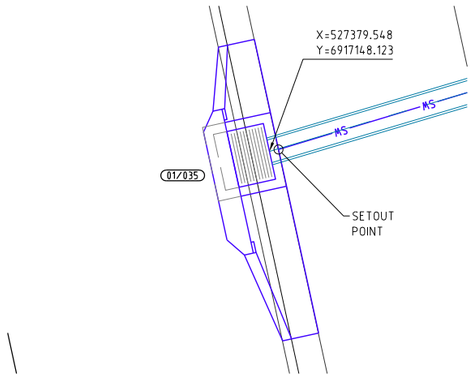
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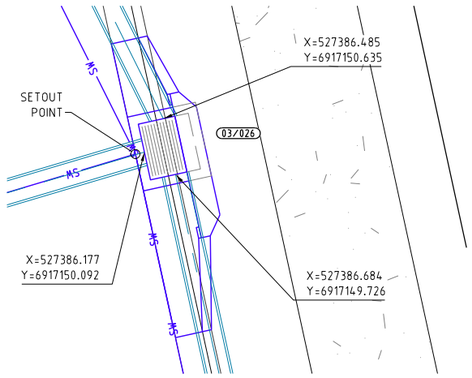


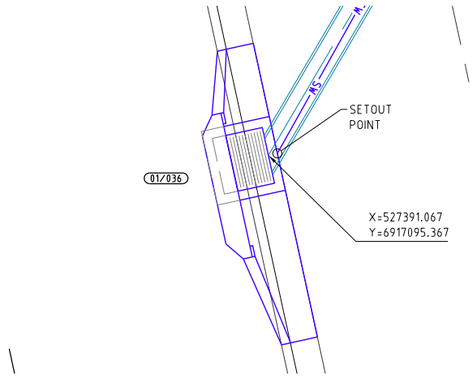


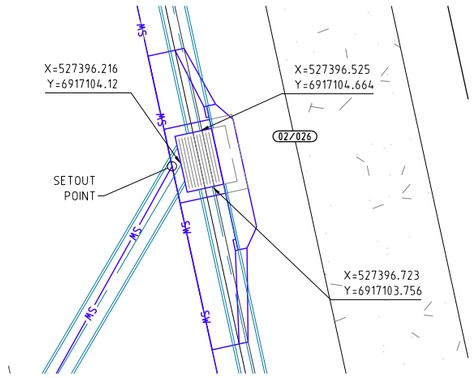


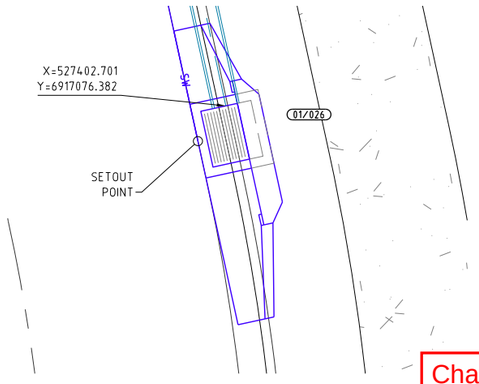


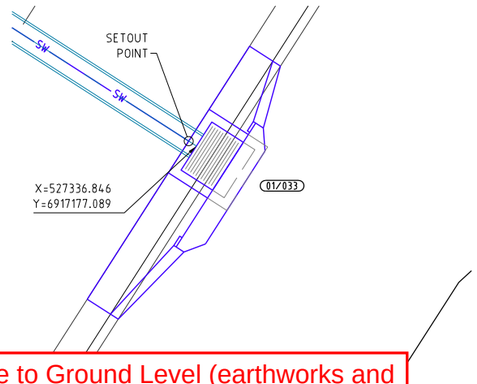


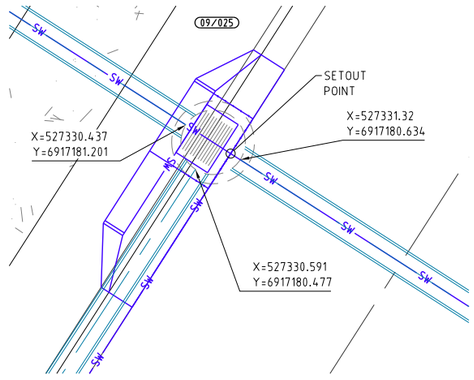


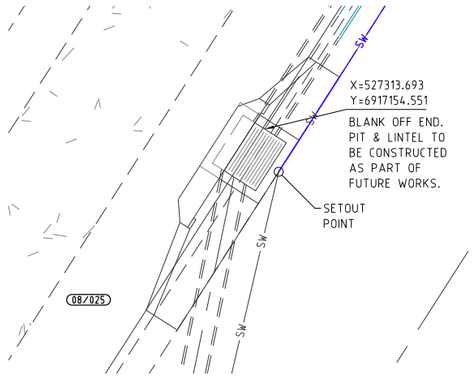


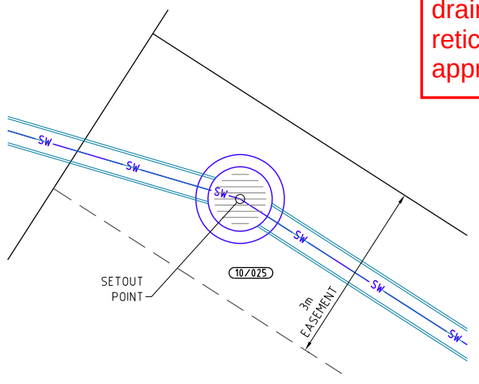


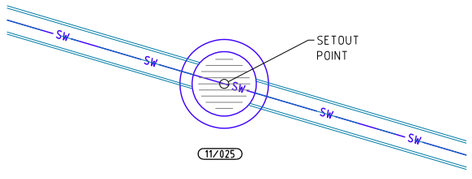


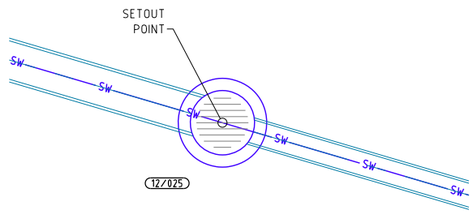


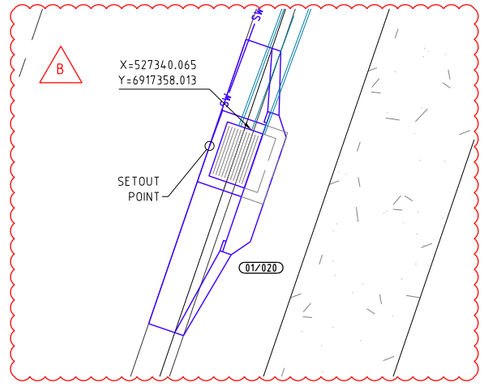












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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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NORTH

0 0.5 1.0 1.5 2.0 2.5m

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

REV	DATE	DESCRIPTION	INT
B	15-01-24	PIT DETAILS AMENDED	BL
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ASSOCIATED CONSULTANTS

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BENNETT + BENNETT

DRAWING TITLE

STORMWATER
PIT DETAILS
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As
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ABN: 39 116 375 065
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Tel 07 5571 1099

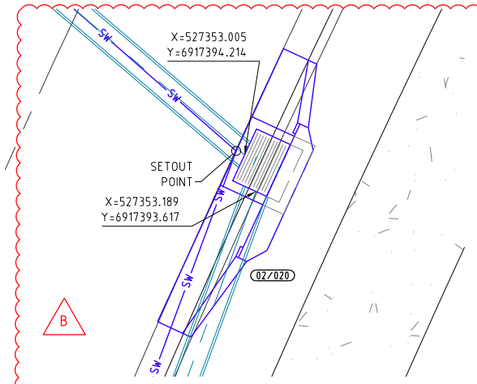
Postal Address
PO Box 2484
Southport QLD 4215

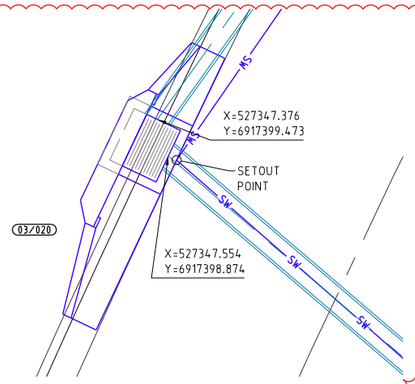
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

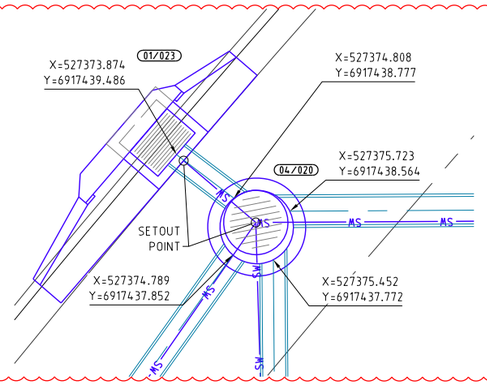
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APPROVED	RPEQ 4706		DATE	13-10-23

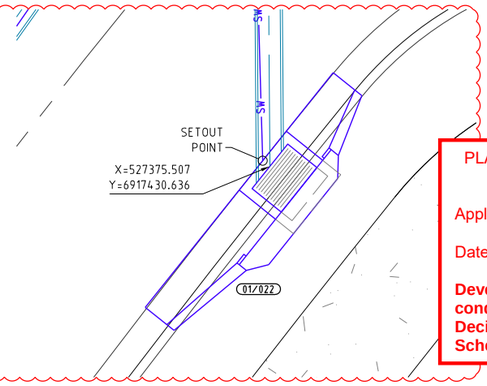
DRAWING NUMBER	REV
41901-02-651	B

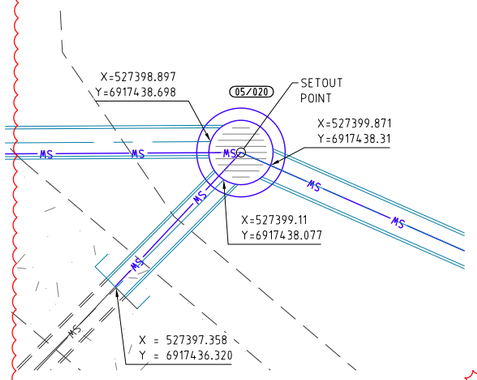
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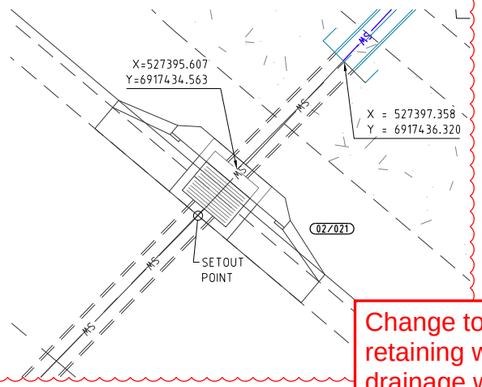


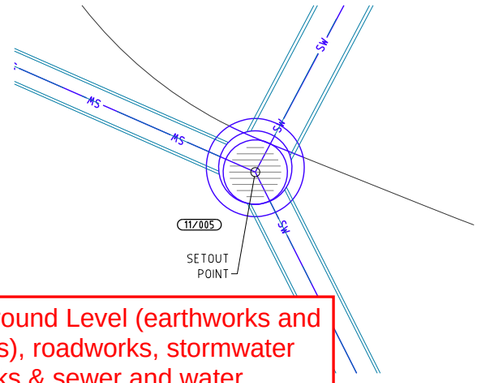


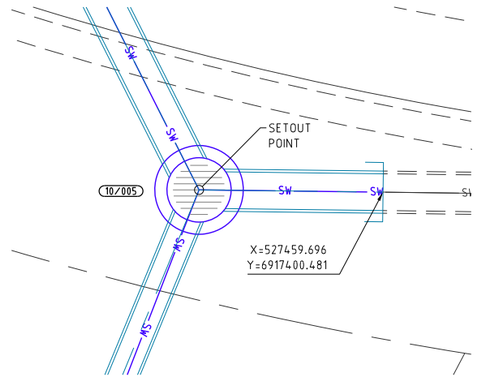


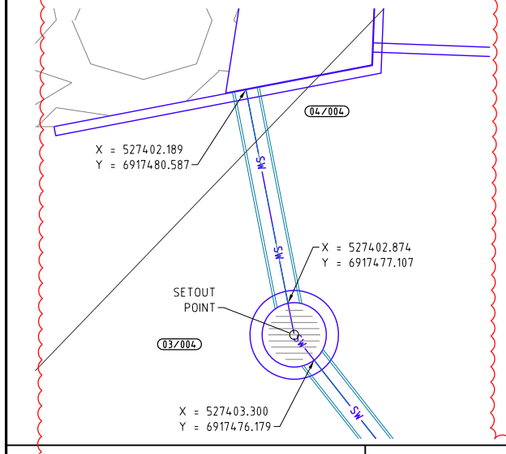


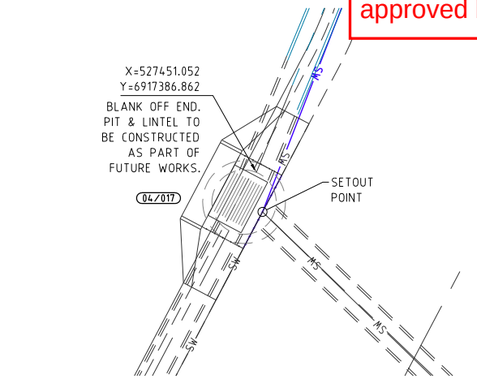


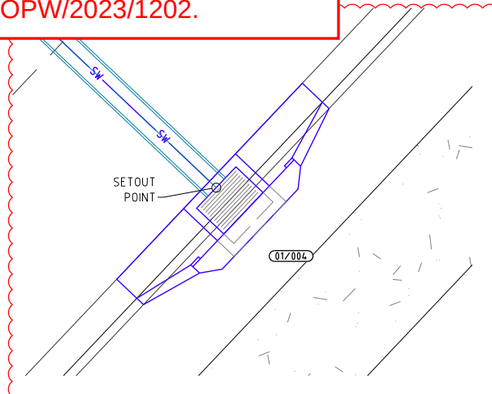


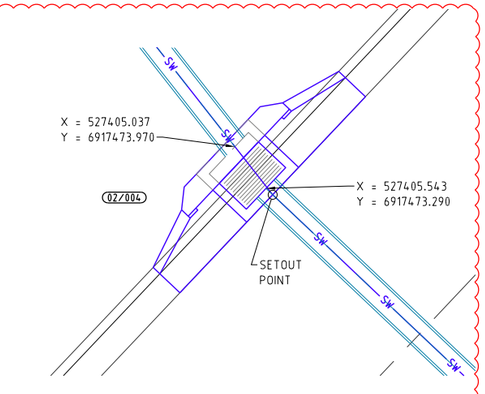


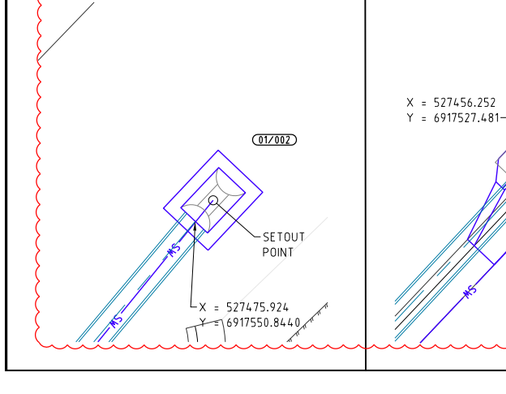


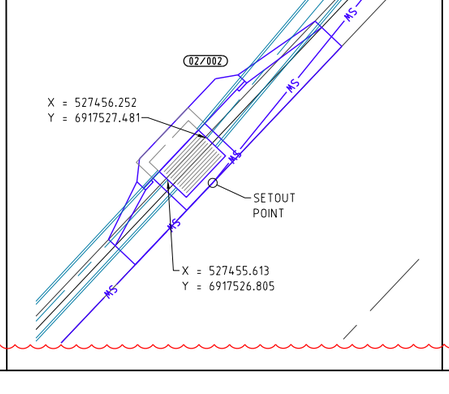


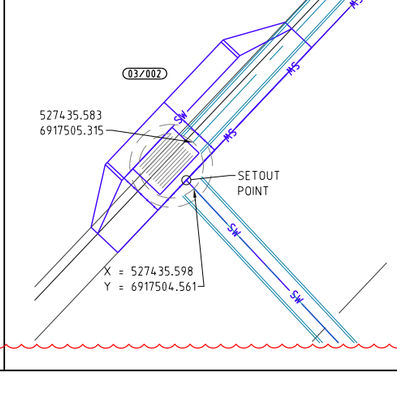


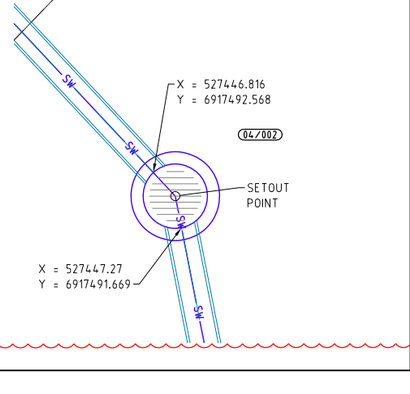


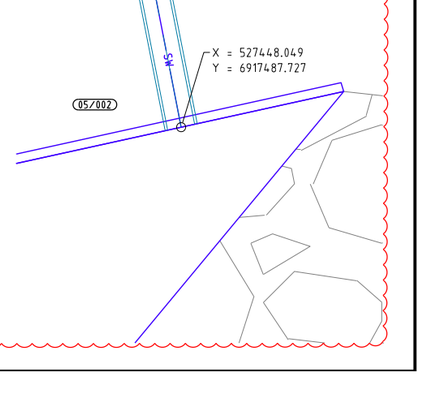












Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

NORTH

0 0.5 1.0 1.5 2.0 2.5m

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

REV	DATE	DESCRIPTION	INT
B	15-01-24	PIT DETAILS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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~~ 03

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-652	B

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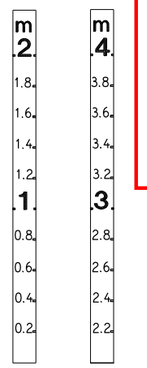
BASIN CONSTRUCTION

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



FLOOD DEPTH INDICATORS
NOT TO SCALE



WARNING SIGN
NOT TO SCALE

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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BASIN PLAN A2a

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

BIO FILTRATION BASIN NOTES

- BIO FILTRATION BASIN TO BE EXCAVTED TO LEVEL BELOW FILTRATION MEDIA
- UNSUITABLE MATERIAL TO BE REMOVED OFF SITE AND BASIN TRIMMED TO FINAL PROFILE PRIOR TO PLACEMENT OF FILTER MEDIA AT 80% COMPLETION OF HOUSING

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	STORMWATER AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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
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mortons@urbansolutions.net.au
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PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

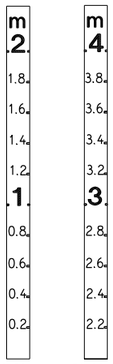
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LEGEND

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

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G9-22-1 G9-22-2

FLOOD DEPTH INDICATORS

NOT TO SCALE



WARNING SIGN

NOT TO SCALE

BIO FILTRATION BASIN NOTES

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- UNSUITABLE MATERIAL TO BE REMOVED OFF SITE AND BASIN TRIMMED TO FINAL PROFILE PRIOR TO PLACEMENT OF FILTER MEDIA AT 80% COMPLETION OF HOUSING

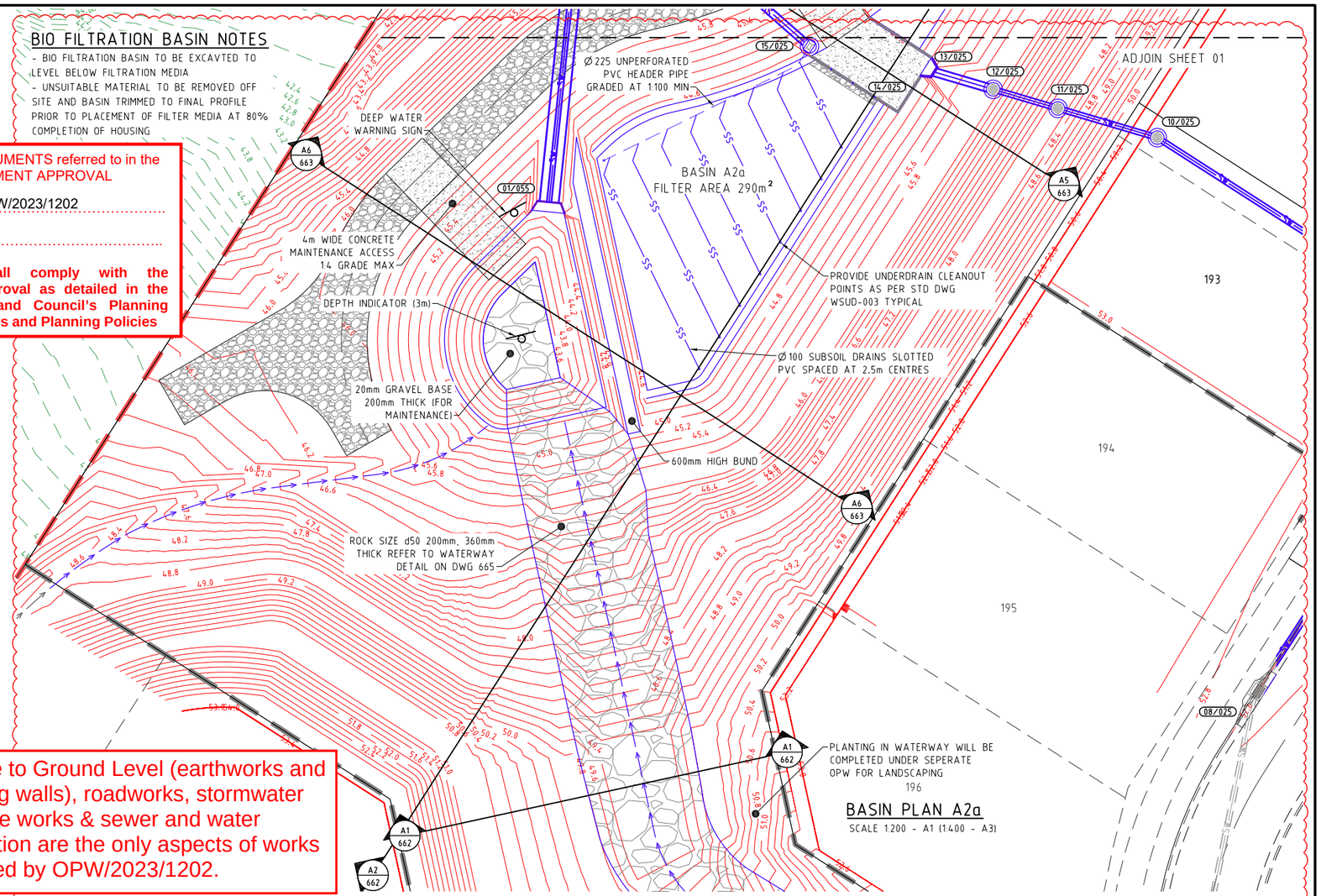
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

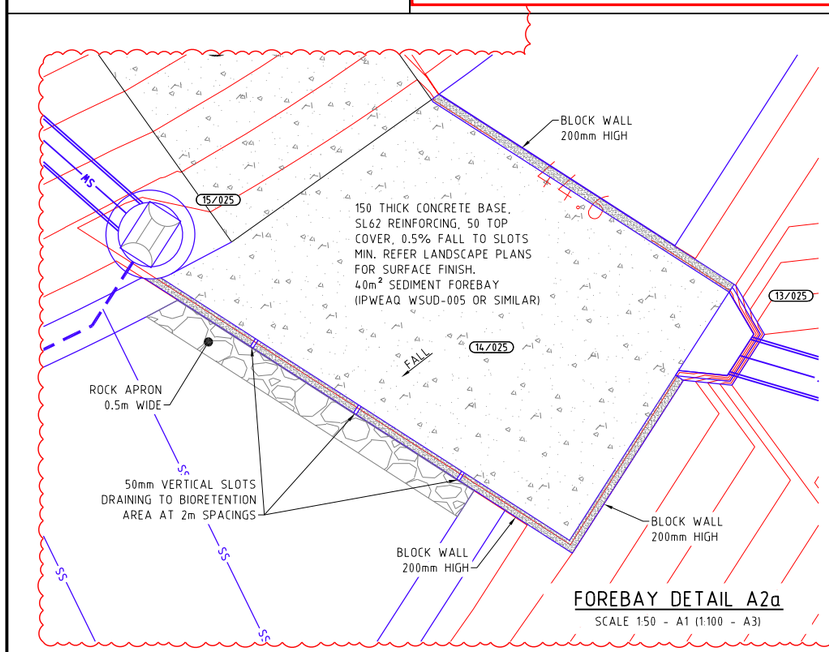
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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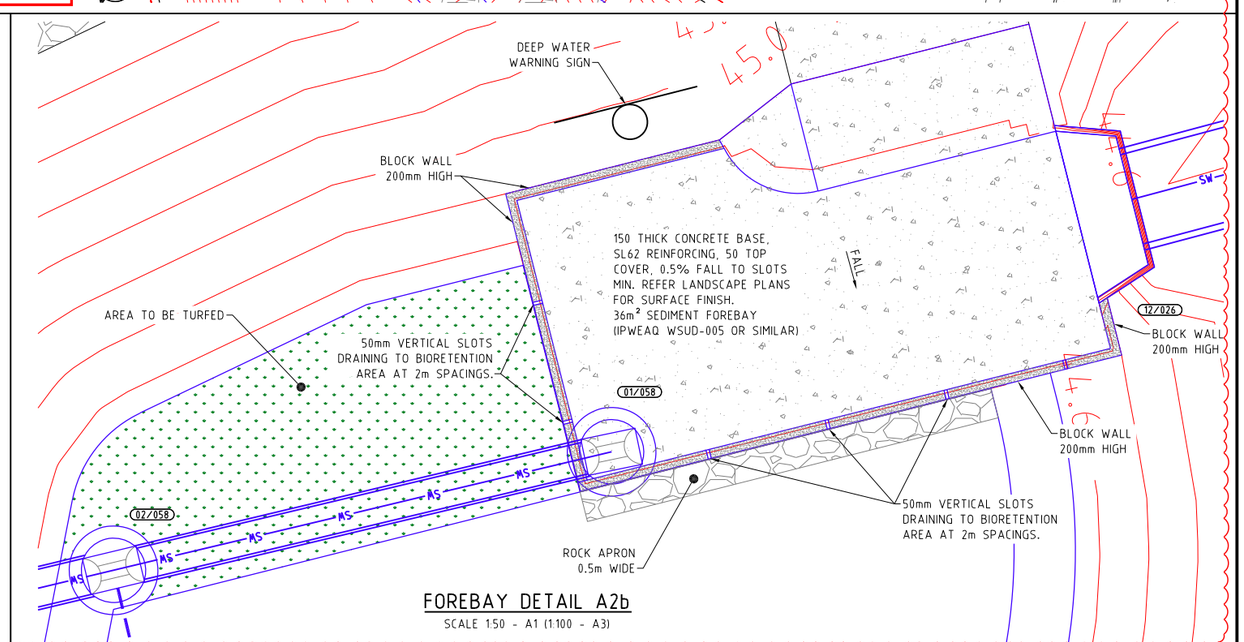
BASIN PLAN A2a

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



FOREBAY DETAIL A2a

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



FOREBAY DETAIL A2b

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

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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
B	29-11-23	STORMEATER AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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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

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-661

REV B

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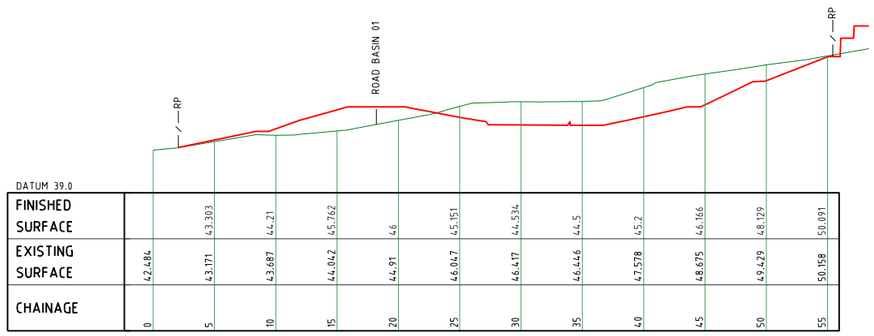
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

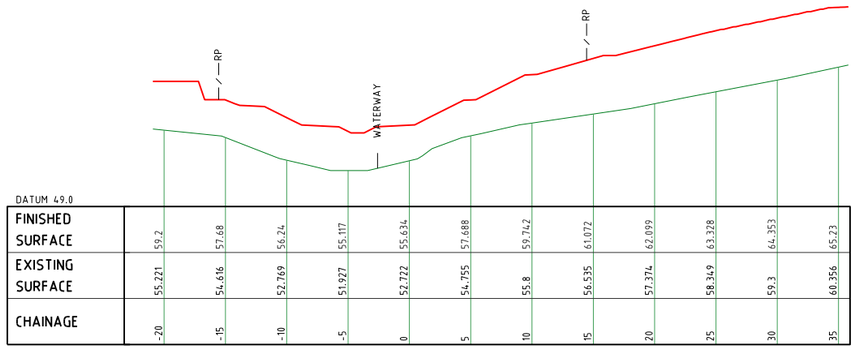
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



DATUM 39.0												
FINISHED SURFACE		43.393	44.21	45.762	46	45.151	44.534	44.5	45.2	46.166	48.129	50.091
EXISTING SURFACE	42.484	43.171	43.687	44.042	44.91	46.047	46.417	46.446	47.578	48.675	49.429	50.158
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55

LONGITUDINAL SECTION A3

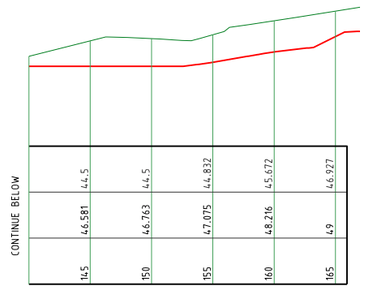
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Vertical scale 1:250



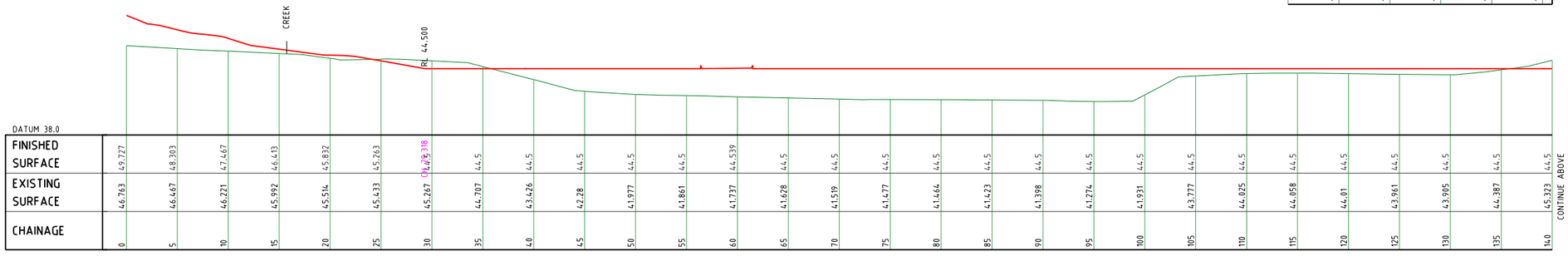
DATUM 49.0												
FINISHED SURFACE	59.2	57.68	56.24	55.117	55.634	57.688	59.742	61.072	62.099	63.328	64.353	65.23
EXISTING SURFACE	55.221	54.616	52.769	51.927	52.722	54.755	55.8	56.535	57.374	58.349	59.3	60.356
CHAINAGE	-20	-15	-10	-5	0	5	10	15	20	25	30	35

LONGITUDINAL SECTION A1

Horizontal scale 1:250
Vertical scale 1:250



CONTINUE BELOW					
	44.5	44.5	44.832	45.672	46.927
	46.581	46.763	47.075	48.216	49
	145	150	155	160	165



DATUM 38.0																														
FINISHED SURFACE	49.727	48.303	47.467	46.413	45.832	45.263	44.5	44.5	44.5	44.5	44.5	44.539	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5
EXISTING SURFACE	46.763	46.467	46.221	45.992	45.514	45.433	45.267	44.707	43.426	42.28	41.977	41.861	41.737	41.628	41.519	41.477	41.464	41.423	41.398	41.274	41.931	43.777	44.025	44.058	44.01	43.961	43.905	42.387	45.323	CONTINUE ABOVE
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	

LONGITUDINAL SECTION A2

Horizontal scale 1:250
Vertical scale 1:250

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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

REV	DATE	DESCRIPTION	INT
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

STORMWATER BASIN SECTIONS SHEET 01

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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

DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER: 41901-02-662

REV: A

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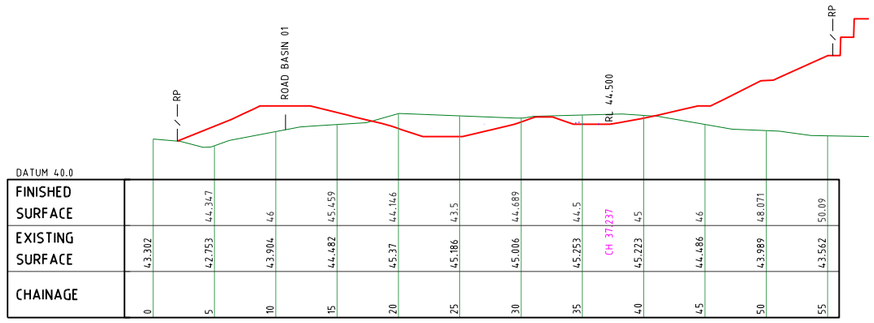
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

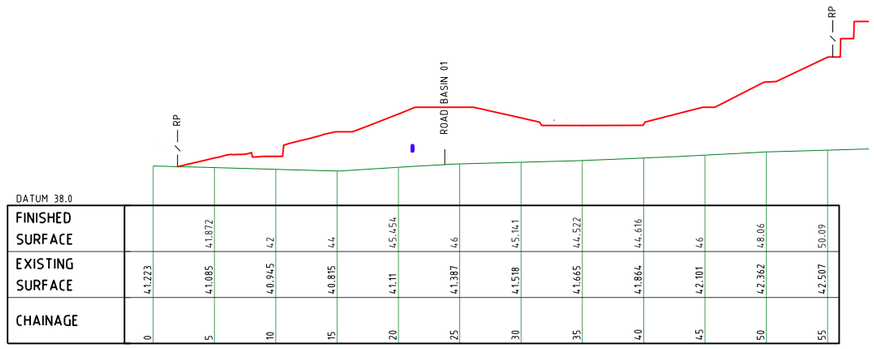
Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



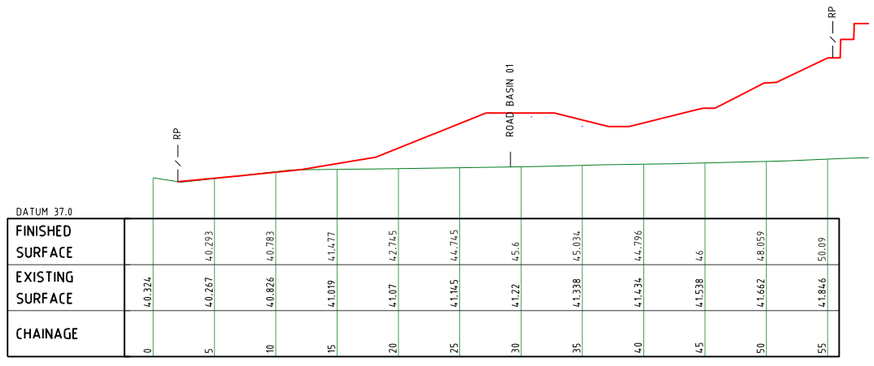
LONGITUDINAL SECTION A6

Horizontal scale 1:250
Vertical scale 1:250



LONGITUDINAL SECTION A5

Horizontal scale 1:250
Vertical scale 1:250



LONGITUDINAL SECTION A4

Horizontal scale 1:250
Vertical scale 1:250

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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

REV	DATE	DESCRIPTION	INT
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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

DRAWING TITLE

STORMWATER
BASIN
SECTIONS
SHEET 02

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APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER	REV
41901-02-663	A

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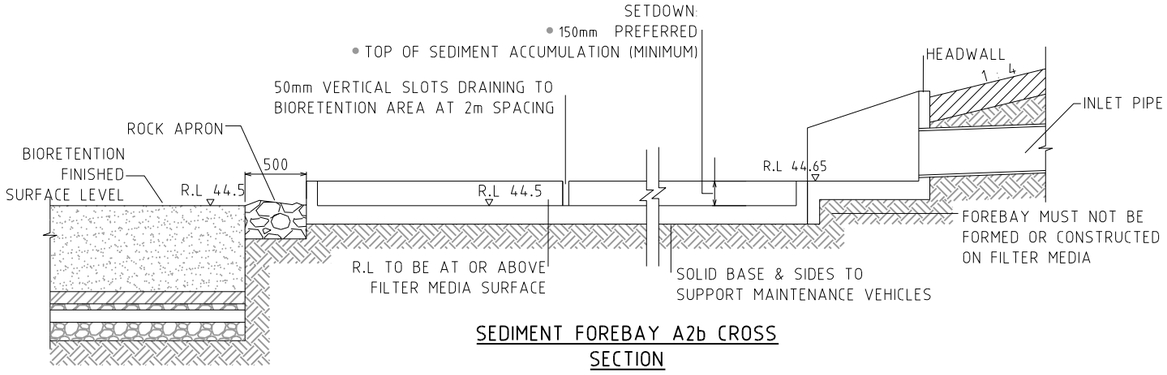
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

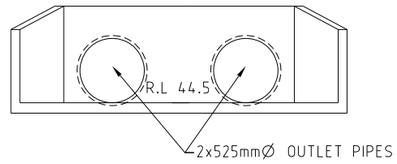
Dated: 4 April 2024

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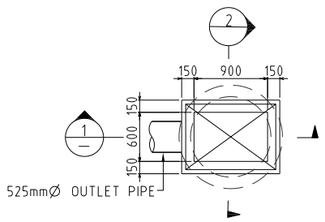
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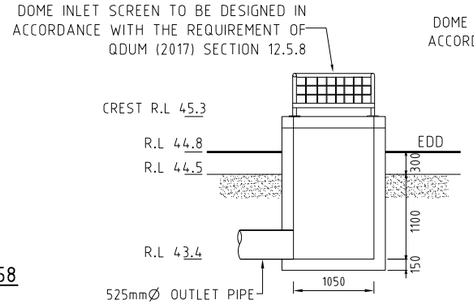
SEDIMENT FOREBAY A2b CROSS SECTION



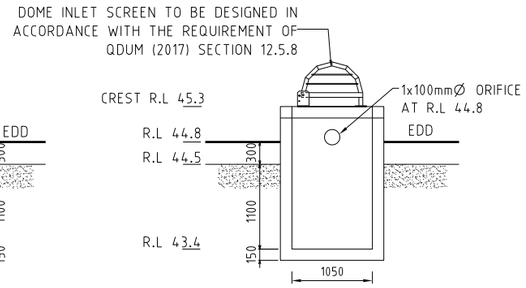
HEADWALL 01/055
(2x525mm OUTLET PIPES)



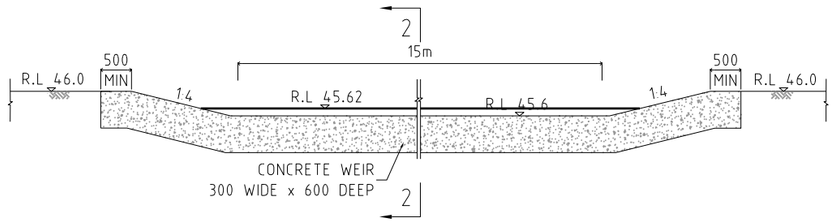
OVERFLOW STRUCTURE 01/058



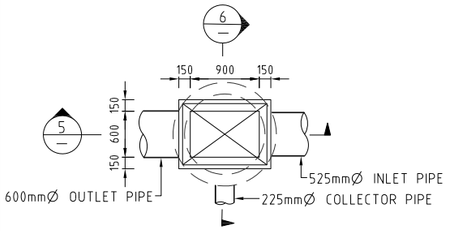
SECTION 1-1



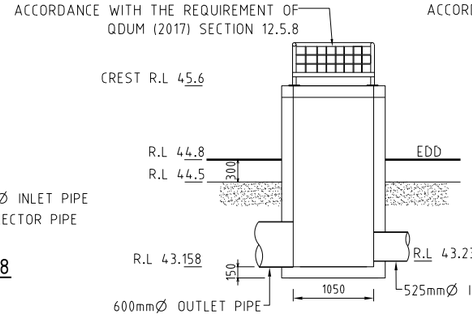
SECTION 2-2



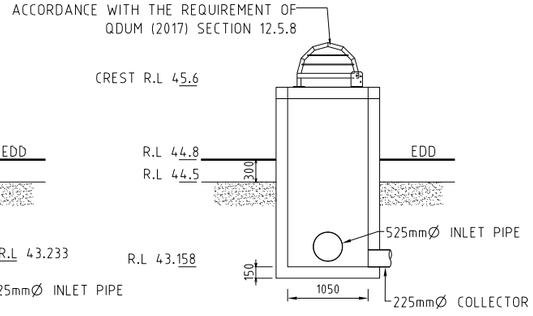
WEIR DETAIL SECTION 1-1



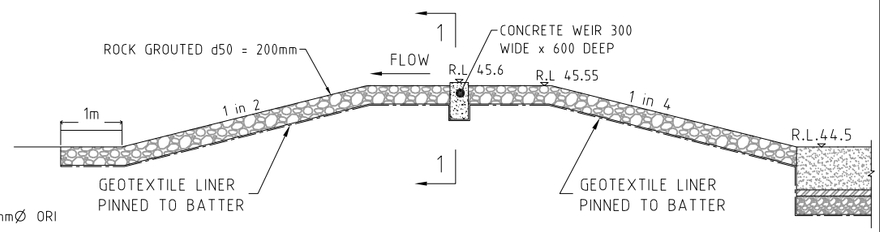
OVERFLOW STRUCTURE 02/058



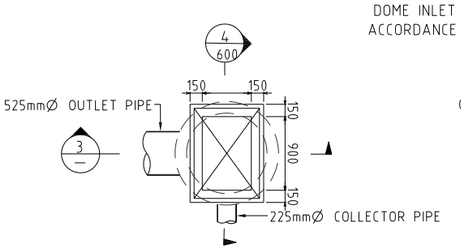
SECTION 5-5



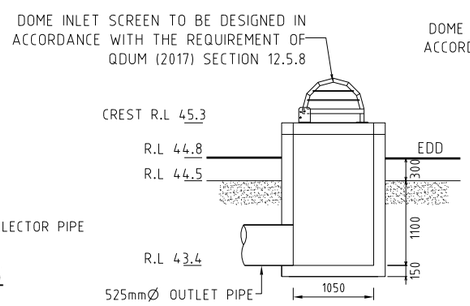
SECTION 6-6



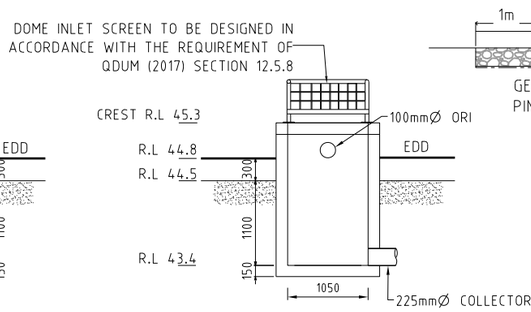
WEIR CROSS SECTION 2-2



OVERFLOW STRUCTURE 15-025



SECTION 3-3



SECTION 4-4

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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

NTS

REV	DATE	DESCRIPTION	INT
B	29-11-23	DETAILS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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DRAWING TITLE

STORMWATER
BASIN
DETAILS & SECTIONS
SHEET 01

MORTONS urbansolutions
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DESIGNED RB | DRAWN EP | APPROVED | RPEQ 4706 | DATE 13-10-23

DRAWING NUMBER 41901-02-664 | REV B

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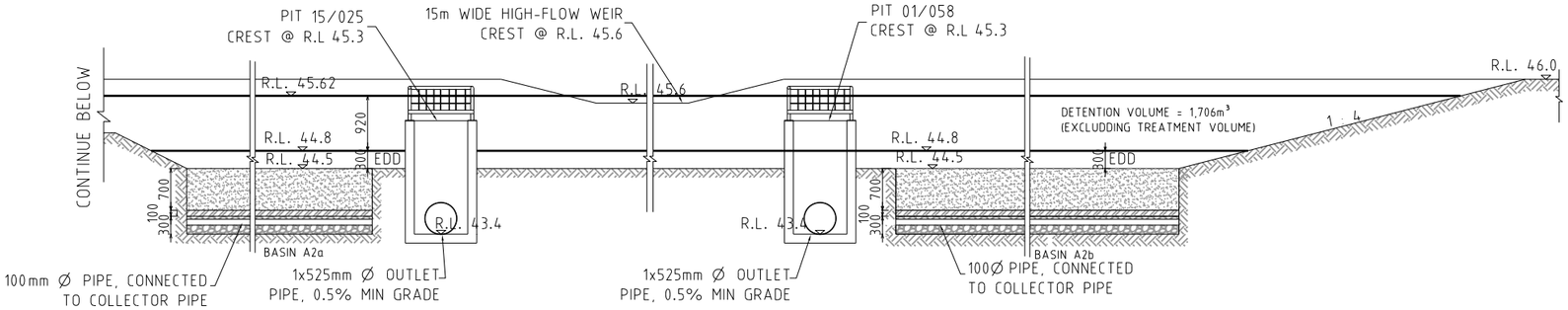
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

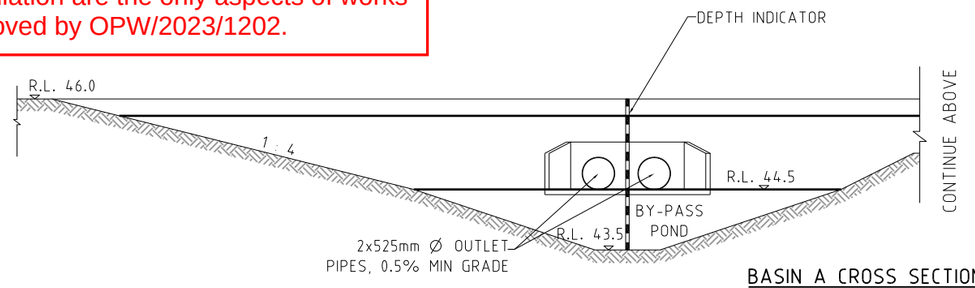
Application No: OPW/2023/1202

Dated: 4 April 2024

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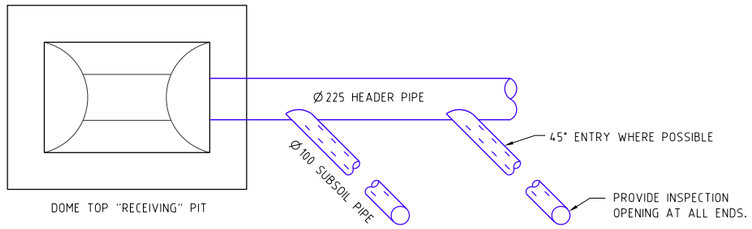




BASIN A CROSS SECTION A-A

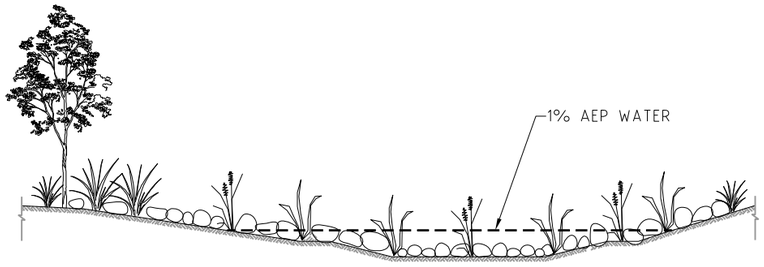
SCALE 1:50

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



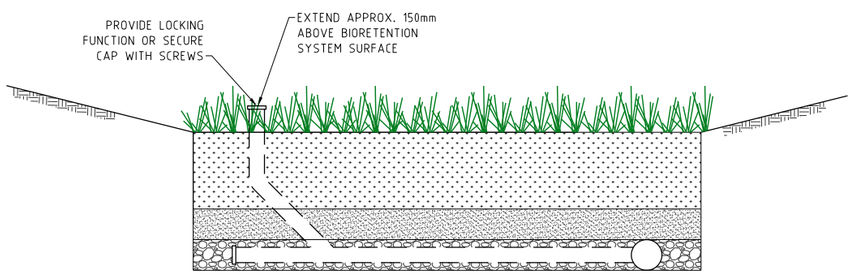
TYPICAL HEADER & SUBSOIL DETAILS

N.T.S.



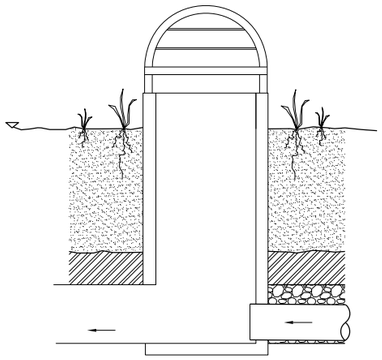
WATERWAY SECTION A1-661

N.T.S.



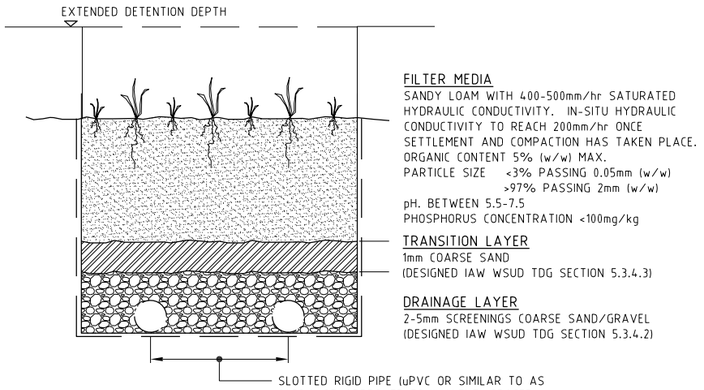
BIORETENTION FILTER TYPICAL SECTION

N.T.S.



TYPPICAL 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 02

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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A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER
BASIN
DETAILS & SECTIONS
SHEET 02

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Urban & Regional Planning
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APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-665

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LEGEND

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

SHEET LAYOUT

41901-02-670

41901-02-671

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	15-01-24	CATCHMENT NUMBER & AREAS AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT + BENNETT

DRAWING TITLE

STORMWATER
CATCHMENT PLAN
SHEET 01

MORTONS urbansolutions
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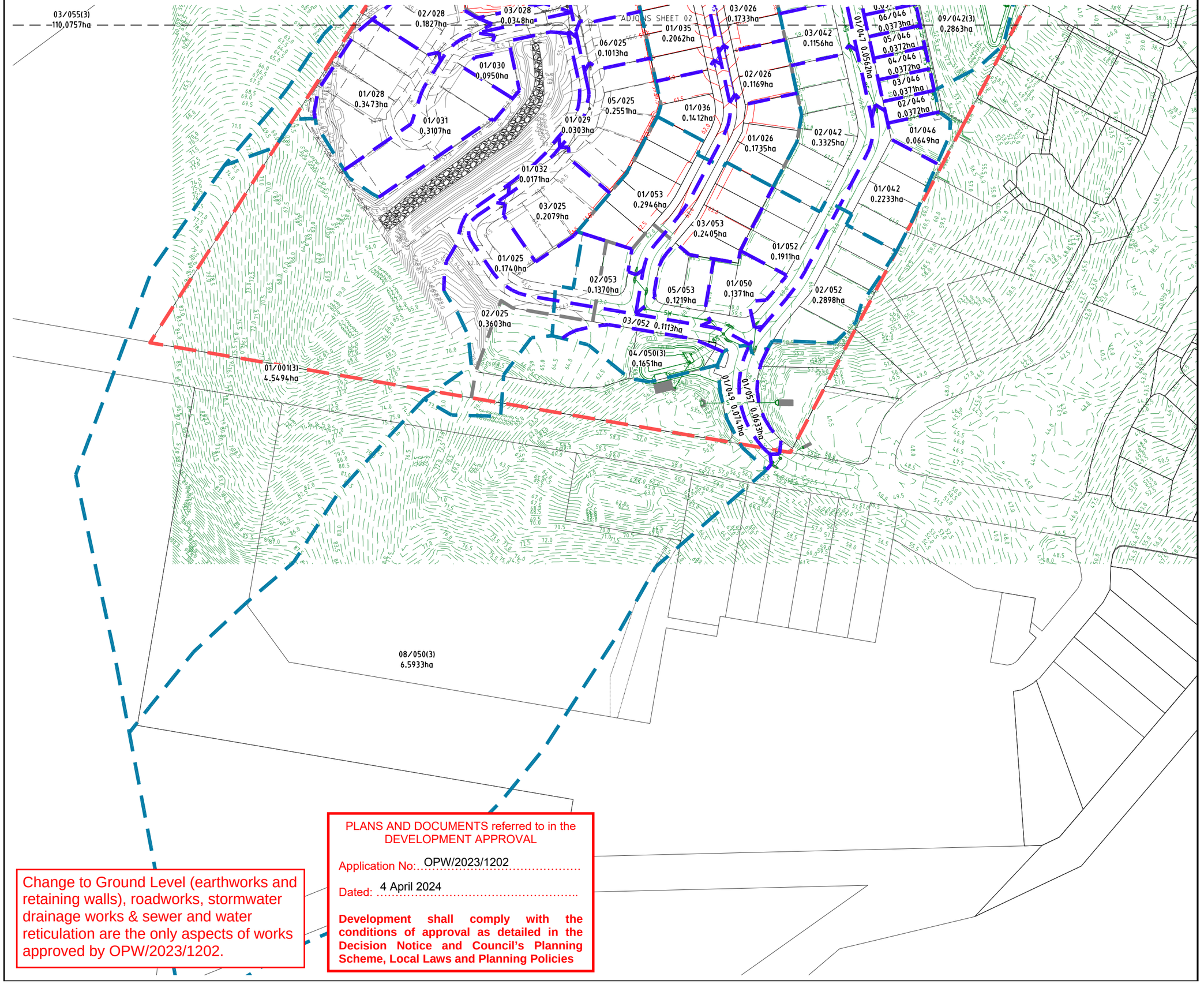
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APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER	REV
41901-02-670	B

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COURTNEY DRIVE
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NORTH

0 10 20 30 40 50m

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

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APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-671

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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

NODE			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW				APPROACH FLOW					FLOW AT PIT				PIT		HGL				PIPE	HEADLOSSES						
			A.1	A.2	A.3	CRITICAL	INTENSITY		CURRENT	A.1	A.2	A.3	CRITICAL	GRADE	FLOW				CAPTURED	BYPASS			GRADE	GRADE	PIT	PIPE		GRADE	FLOW	COEFFICIENT		HEADLOSS		CAPACITY	VELOCITY	
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	
01/2	02/2	TYPE 2 FIELD INLET 900x600 C/W DOME TOP			0.274			0.877				0.057	60	1.0	57	1.48	0.02		28	29	0.02	02/2	1.000	44.376	43.15	43.15	39.90	10.32	0.03	9.7	0.0	0.0	0.0	0.040	2.510	01/2
02/2	03/2	INLET GULLY ON GRADE (LG) Type S Lintel	0.021		0.144	90	61.3	0.877	0.830	0.007		0.030	60	9.7	65	1.25	0.01		57	8	0.01	03/2	9.683	41.196	39.90	39.90	37.49	7.92	0.09	3.9	0.0	0.0	0.0	0.130	3.750	02/2
03/2	04/2	DRAINWAYS 1TCS0 ON GRADE	0.029		0.432	90	61.3		0.830	0.009		0.090	60	5.8	106	1.60	0.02		83	22	0.02	02/4	5.792	38.890	37.50	37.49	34.91	15.06	0.17	2.3	0.0	0.0	0.0	0.190	5.640	03/2
04/2	05/2	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	36.333	33.49	33.49	33.47	0.44	0.17	2.1	0.0	0.0	0.0	0.680	1.660	04/2
05/2	08/55	HEADWALL											25	1.0	0				0				1.000	34.228	33.31	33.31	33.29	0.07	0.19	0.0	0.0	0.0	0.0	0.000	0.910	05/2
08/55	09/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0				0				1.000	34.000	33.29											08/55
01/3	02/3	INLET HEADWALL			0.174							0.036	60	1.0	36				36				1.000	38.217	37.55	37.53	37.40	2.27	0.04	0.5	0.0	0.0	0.0	0.130	1.120	01/3
02/3	05/55	HEADWALL											25	1.0	0				0				1.000	38.100	37.31	37.31	37.31	0.00	0.04	0.0	0.0	0.0	0.0			02/3
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							4.638	90	1.0	4638				4638				1.000	36.200	35.19											05/55
01/4	02/4	INLET GULLY IN SAG (LS) Type S Lintel	0.112			90	61.3	0.877	0.830	0.037			60	0.2	37	1.07	0.00		37	0	0.00	O 01/4	0.174	37.669	36.53	36.49	36.35	2.11	0.04	9.7	0.0	0.0	0.0	0.110	1.350	01/4
02/4	03/4	INLET GULLY IN SAG (LS) Type S Lintel	0.071		0.048	90	61.3	0.877	0.830	0.023		0.010	60	0.2	51	1.07	0.00		51	0	0.00	O 02/4	0.174	37.669	36.34	36.32	35.68	14.80	0.09	4.2	0.0	0.0	0.0	0.100	4.170	02/4
03/4	04/4	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	37.730	35.20	35.19	35.19	0.00	0.09	2.1	0.0	0.1	0.0	0.150	2.510	03/4
04/4	05/55	HEADWALL											25	1.0	0				0				1.000	36.446	35.19	35.19	35.19	0.00	0.09	0.0	0.0	0.0	0.0			04/4
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							4.638	90	1.0	4638				4638				1.000	36.200	35.19											05/55
01/5	02/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.222			90	61.3	0.877	0.830	0.073			60	1.0	73	1.07	0.00		72	0	0.00	02/5	1.000	53.037	52.15	52.09	51.77	1.30	0.07	9.7	0.0	0.1	0.0	0.280	1.420	01/5
02/5	03/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.101			90	61.3	0.877	0.830	0.033			60	1.0	33	1.07	0.00		33	0	0.00	03/5	1.000	52.886	51.77	51.76	51.33	1.49	0.11	1.9	0.0	0.0	0.0	0.380	2.080	02/5
03/5	04/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.205			90	61.3	0.877	0.830	0.067			60	1.0	67	0.00	0.00		67	0	0.00	04/5	1.000	52.252	51.26	51.26	47.23	7.82	0.17	2.0	0.0	0.0	0.0	0.270	4.600	03/5
04/5	05/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.207			90	61.3	0.877	0.830	0.068			60	1.0	68	0.00	0.00		68	0	0.00	01/11	1.000	48.247	47.23	47.20	46.08	10.21	0.36	1.3	0.0	0.0	0.0	0.300	5.400	04/5
05/5	06/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	47.204	45.83	45.81	42.11	8.82	0.70	1.0	0.0	0.0	0.0	0.640	6.530	05/5
06/5	07/5	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	42.982	42.05	41.93	41.34	4.08	0.73	2.0	0.0	0.1	0.0	0.460	2.790	06/5
07/5	08/5	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	41.996	41.34	41.17	40.93	1.08	0.79	0.7	0.0	0.2	0.0	1.020	2.850	07/5
08/5	09/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	41.853	40.76	40.75	39.94	2.08	0.78	0.4	0.0	0.0	0.0	0.690	4.060	08/5
09/5	10/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	41.020	39.90	39.83	39.17	2.35	0.85	0.3	0.0	0.1	0.0	0.450	4.960	09/5
10/5	11/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	40.227	39.17	39.11	37.87	6.69	1.18	1.1	0.0	0.4	0.0	0.540	4.530	10/5
11/5	12/5	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	37.900	37.87	37.25	37.26	-0.19	1.49	1.2	0.0	0.6	0.0	1.430	3.400	11/5
12/5	01/6	HEADWALL											25	1.0	0				0				1.000	37.645	37.26	37.26	37.26	0.00	1.49	0.0	0.0	0.0	0.0			12/5
01/17	02/17	INLET GULLY ON GRADE (LG) Type S Lintel	0.254			90	61.3	0.877	0.830	0.084			60	1.0	107	1.25	0.01		94	10	0.01	01/19	1.000	46.789	45.77	45.74	44.42	10.58	0.09	9.1	0.0	0.0	0.0	0.130	3.480	01/17
02/17	03/17	INLET GULLY ON GRADE (LG) Type S Lintel	0.197			90	61.3	0.877	0.830	0.065			60	1.0	65	0.00	0.00		65	0	0.00	03/17	1.000	45.463	44.42	44.41	41.00	12.70	0.16	2.0	0.0	0.0	0.0	0.190	5.410	02/17
03/17	04/17	DRAINWAYS 1TCS0 ON GRADE	0.111			90	61.3	0.877	0.830	0.037			60	1.0	37	0.00	0.00		37	0	0.00	04/17	1.000	42.101	40.74	40.71	39.40	5.40	0.26	1.3	0.0	0.0	0.0	0.390	4.650	03/17
04/17	10/5	DRAINWAYS 0TCS0 SAG	0.079			90	61.3	0.877	0.830	0.026			60	1.0	28	1.12	0.00		27	1	0.00	01/21	1.000	40.074	39.40	39.28	39.17	0.77	0.34	0.7	0.0	0.2	0.0	0.520	2.890	04/17
10/5	11/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	40.227	39.17											10/5
01/20	02/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.281			90	61.3	0.877	0.830	0.093			60	2.5	93	1.29	0.01		84	8	0.01	02/20	2.490	43.860	42.86	42.85	41.49	3.50	0.08	7.0	0.0	0.0	0.0	0.190	1.860	01/20
02/20	03/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.200			90	61.3	0.877	0.830	0.066			60	5.5	73	1.23	0.01		64	7	0.01	01/22	5.500	42.308	41.49	41.39	41.23	2.27	0.15	2.0	0.0	0.1	0.0	0.450	2.010	02/20
03/20	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.061			90	61.3	0.877	0.830	0.020			60	5.4	20	0.00	0.00		20	0	0.00	01/23	5.434	42.402	41.16	41.16	38.62	5.28	0.17	2.0	0.0	0.0	0.0	0.290	4.230	03/20
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	39.202	38.62	38.53	38.41	0.49	0.21	1.8	0.0	0.1	0.0	1.030	1.320	04/20
05/20	11/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	38.731	38.41	38.29	37.87	0.79	0.31	0.9	0.0	0.1	0.0	1.540	1.970	05/20
11/5	12/5	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	37.900	37.87											11/5
01/21	02/21	INLET GULLY IN SAG (LS) Type S Lintel	0.291			90	61.3	0.877	0.830	0.096			60	0.6	97	1.47	0.01		85	9	0.01	02/21	0.561	38.583	38.61	38.53	38.48	0.86	0.09	9.7	0.0	0.1	0.0	0.280	1.330	01/21
02/21	05/20	INLET GULLY IN SAG (LS) Type S Lintel	0.092			90	61.3	0.877	0.830	0.030			60	0.7	38	1.07	0.00		38	0	0.00	01/4	0.698	38.482	38.48	38.48	38.41	0.99	0.13	1.7	0.0	0.0	0.0	0.560	1.590	02/21
05/20	11/5	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	38.731	38.41											05/20
01/22	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.109			90	61.3	0.877	0.830	0.036			60	7.0	42	1.07	0.00		41	0	0.00	01/21	7.036	39.418	38.68	38.62	38.62	0.05	0.04	9.7	0.0	0.1	0.0	0.070	2.470	01/22
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	39.202	38.62											04/20
01/23	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.021			90	61.3	0.877	0.830	0.007			60	6.0	7	0.00	0.00		7	0	0.00	02/4	6.030	39.248	38.62	38.62	38.62	0.00	0.02	6.1	0.0	0.0	0.0	0.030	1.760	01/23
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	39.202	38.62											04/20
01/24	02/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.014			90	61.3	0.877	0.830	0.004			60	8.0	5	1.07	0.00		5	0	0.00	02/24	8.000	50.440	49.32	49.32	48.95	7.39	0.00	7.0	0.0	0.0	0.0	0.010	1.620	01/24
02/24	03/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.005			90	61.3	0.877	0.830	0.001			25	8.0	1	0.00	0.00		1	0	0.00	03/24	8.000	50.048	48.93	48.93	48.54	7.94	0.01	1.3	0.0	0.0	0.0	0.010	1.820	02/24
03/24	04/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.004			90	61.3	0.877	0.830	0.001			25	8.0	1	0.00	0.00		1	0	0.00	04/24	8.000	49.656	48.51	48.51	48.19	6.65	0.01	1.0	0.0	0.0	0.0	0.010	1.830	03/24
04/24	10/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.005			90	61.3	0.877	0.830	0.002			60	8.0	2	0.00	0.00		2	0	0.00	03/20	8.000	49.264	48.16	48.16	47.64	5.88	0.01	1.3	0.0	0.0	0.0	0.020	1.840	04/24
10/26	11/26	MANHOLE 1500mm DIA											25	1.0	0				0				1.000	48.730	46.69											10/26
01/25	02/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			90	61.3	0.877	0.830	0.057			60	1.5	57	0.00	0.00		57	0	0.00	03/25	1.497	60.599	59.72	59.67	59.46	2.04	0.06	9.7	0.0	0.0	0.0	0.180	1.280	01/25
02/25	03/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.360			90	61.3	0.877	0.830	0.119			60	2.0	119	1.52	0.01		99	18	0.01	01/32	1.951	60.461	59.46	59.46	58.34	2.82	0.16	4.2	0.0	0.0	0.0	0.410	2.670	02/25
03/25	04/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.208			90	61.3	0.877	0.830	0.069			60	3.7	69	1.20	0.00		61	5	0.00	05/25	3.667	59.255	58.34	58.32	57.26	4.14	0.24	1.4	0.0	0.0	0.0	0.520	3.670	03/25
04/25	05/25	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	58.171	57.21	57.21	55.50	6.91	0.24	0.4	0.0	0.0	0.0	0.400	4.950	04/25
05/25	06/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.255			90	61.3	0.877	0.830	0.084			60	8.4	88	1.36	0.01		70	17	0.01	06/25	8.412	56.410	55.49	55.48	53.44	7.57	0.31	1.4	0.0	0.0	0.0	0.450	4.830	05/25
06/25	07/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.101			90	61.3	0.877	0.830	0.033			60	8.6	49	1.11	0.00		46	1	0.00	01/33	8.590	54.091	53.44	53.37	52.78	6.28	0.35	1.0	0.0	0.2	0.0	0.550	3.200	06/25
07/25	08/25	MANHOLE 1200mm DIA											25	1.0	0				0				1.000	53.534	52.78	52.69	52.15	1.93	0.27	1.3	0.0	0.1	0.0	0.710	3.090	07/25
08/25	09/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.112			90	61.3	0.877	0.830	0.037			60	0.6	37	0.00	0.00		37	0	0.00	09/25	0.600	52.548	52.15	52.14	51.55	1.86	0.27	0.7	0.0	0.1	0.0	0.840	2.680	08/25
09/25	10/25	DRAINWAYS 1TCS0 ON GRADE	0.107			90	61.3	0.877	0.830	0.035			60	0.6	35	0.00	0.00		35	0	0.00	01/39	0.600	52.357	51.55	51.21	50.11	3.62	0.34	1.5	0.0	0.3	0.0	0.940	3.280	09/25
10/25	11/25	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	53.000	48.58	48.50	47.27	15.32	0.34	1.6	0.0	0.1	0.0	0.380	5.360	10/25
11/25	12/25	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	48.077	46.23	46.22	45.46	14.68	0.34	1.6	0.0	0.1	0.0	0.380	4.610	11/25
12/25	13/25	MANHOLE 1050mm DIA											25	1.0	0				0				1.000	46.000	45.46	45.46	45.45	0.12	0.36	0.0	0.0	0.0	0.0	0.640	2.580	12/25
13/25	14/25	HEADWALL											25	1.0	0				0				1.000	45.600	45.45	45.45	45.45	0.00	0.36	0.0	0.0	0.0	0.0			13/25
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.211	60	1.0	211				211				1.000	45.300	45.45	45.45	45.45	0.00	0.29	0.0	0.0	0.0	0.0			14/25
15/25	16/25	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											60	1.0	285	0.00	0.00		285	0	0.00	03/55	1.000	45.300	43.13	42.98	42.18	3.98	0.29	9.7	0.0	0.1	0.0	0.260	2.730	15/25
16/25	03/55	HEADWALL											25	1.0	0				0				1.000	42.935	42.05	42.05	39.99	3.00	0.28	0.0	0.0	0.0	0.0	0.010	0.400	16/25
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							9.110	90	1.0	9110				9110				1.000	41.083	39.99											03/55

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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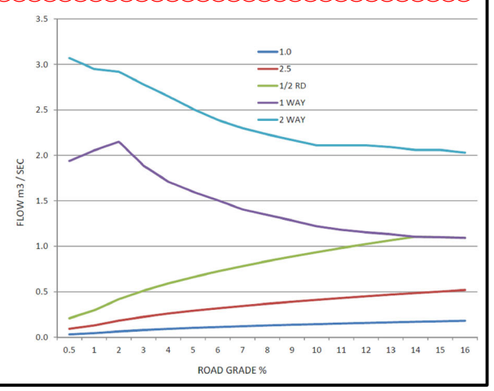
NOTES:

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 02

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

REV	DATE	DESCRIPTION	INT
B	17-01-24	CALC TABLE AMENDED	EP
A	13-10-23	COUNCIL ISSUE	EP

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Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MINOR
STORM EVENT
SHEET 01

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Civil Engineering
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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
		DATE	13-10-23

DRAWING NUMBER: 41901-02-680

REV: B

K:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-680.dwg, MINOR CALC TABLE SHEET 01, 19/01/2024 3:50:00 PM, 1:2

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

NODE			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW				APPROACH FLOW				FLOW AT PIT				PIT		HGL			PIPE	HEADLOSSES						
			A.1	A.2	A.3	CRITICAL	INTENSITY		CURRENT	A.1	A.2	A.3	CRITICAL	GRADE	FLOW			CAPTURED	BYPASS			GRADE	GRADE	PIT	PIPE			GRADE	FLOW	COEFFICIENT		HEADLOSS		CAPACITY	VELOCITY	
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	NODE
01/26	02/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			90	61.3	0.877	0.830	0.057			60	4.0	57	1.15	0.00	54	3	0.00	02/26	3.953	61.285	60.24	60.24	58.46	6.15	0.05	7.0	0.0	0.0	0.0	0.100	3.010	01/26
~~02/26~~	~~03/26~~	~~INLET GULLY ON GRADE (LG) Type S Lintel~~	~~0.117~~			~~90~~	~~61.3~~	~~0.877~~	~~0.830~~	~~0.039~~			~~60~~	~~7.9~~	~~41~~	~~1.07~~	~~0.00~~	~~41~~	~~0~~	~~0.00~~	~~03/26~~	~~7.944~~	~~59.453~~	~~58.43~~	~~58.43~~	~~54.73~~	~~7.85~~	~~0.14~~	~~1.5~~	~~0.0~~	~~0.0~~	~~0.0~~	~~0.220~~	~~4.500~~	~~02/26~~
03/26	04/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.173			90	61.3	0.877	0.830	0.057			60	8.0	57	1.19	0.00	51	5	0.00	04/26	8.000	55.688	54.73	54.72	52.66	7.45	0.25	1.3	0.0	0.0	0.0	0.400	4.890	03/26
04/26	05/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.188			90	61.3	0.877	0.830	0.062			60	8.0	67	1.27	0.01	58	9	0.01	05/26	8.000	53.563	52.37	52.36	50.93	5.98	0.31	0.9	0.0	0.0	0.0	0.320	3.470	04/26
05/26	06/26	DRAINWAYS 0TC50 SAG	0.069			90	61.3	0.877	0.830	0.023			60	0.7	31	0.00	0.00	31	0	0.00	01/40	0.659	52.050	50.93	50.93	50.82	0.75	0.39	0.4	0.0	0.0	0.0	0.420	2.190	05/26
06/26	07/26	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	52.271	50.82	50.80	50.42	0.72	0.40	1.7	0.0	0.0	0.0	0.440	2.170	06/26
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.42	50.41	50.08	1.05	0.53	0.4	0.0	0.0	0.0	0.480	2.930	07/26
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	49.98	49.98	49.29	5.12	0.60	0.6	0.0	0.0	0.0	0.240	5.040	08/26
09/26	10/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	50.729	49.29	49.28	47.70	6.33	0.78	0.7	0.0	0.0	0.0	0.290	6.160	09/26
10/26	11/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	48.730	46.69	46.63	45.45	4.26	0.79	2.1	0.0	0.1	0.0	0.300	5.300	10/26
11/26	12/26	1200 DIA MANHOLE EXTENDED 600mm											25	1.0	0			0				1.000	45.953	45.45	45.45	45.45	0.05	0.79	0.2	0.0	0.0	0.0	0.350	2.410	11/26
12/26	14/25	HEADWALL											25	1.0	0			0				1.000	45.580	45.45	45.45	45.45	0.00	0.79	0.0	0.0	0.0	0.0			12/26
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.211	60	1.0	211			211				1.000	45.300	45.45											14/25
01/33	09/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.143			90	61.3	0.877	0.830	0.047			60	0.6	48	1.07	0.00	48	0	0.00	01/34	0.600	52.357	51.64	51.60	51.55	0.77	0.05	9.7	0.0	0.1	0.0	0.140	1.310	01/33
09/25	10/25	DRAINWAYS 1TC50 ON GRADE	0.107			90	61.3	0.877	0.830	0.035			60	0.6	35	0.00	0.00	35	0	0.00	01/39	0.600	52.357	51.55											09/25
01/34	05/26	INLET GULLY IN SAG (LS) Type S Lintel	0.165			90	61.3	0.877	0.830	0.054			60	0.7	61	1.15	0.00	59	0	0.00	05/26	0.659	52.050	51.17	51.17	50.93	3.61	0.06	9.7	0.0	0.0	0.0	0.130	1.730	01/34
05/26	06/26	DRAINWAYS 0TC50 SAG	0.069			90	61.3	0.877	0.830	0.023			60	0.7	31	0.00	0.00	31	0	0.00	01/40	0.659	52.050	50.93											05/26
01/35	03/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.206			90	61.3	0.877	0.830	0.068			60	8.0	69	1.24	0.01	59	7	0.01	01/34	8.000	55.729	54.98	54.87	54.73	2.09	0.06	9.7	0.0	0.1	0.0	0.190	1.360	01/35
03/26	04/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.173			90	61.3	0.877	0.830	0.057			60	8.0	57	1.19	0.00	51	5	0.00	04/26	8.000	55.688	54.73											03/26
01/36	02/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.141			90	61.3	0.877	0.830	0.047			60	7.1	47	1.09	0.00	44	2	0.00	01/35	7.090	60.022	58.99	58.97	58.45	5.28	0.04	9.7	0.0	0.0	0.0	0.090	2.270	01/36
02/26	03/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.117			90	61.3	0.877	0.830	0.039			60	7.9	41	1.07	0.00	41	0	0.00	03/26	7.944	59.453	58.43											02/26
01/37	08/26	INLET GULLY IN SAG (LS) Type S Lintel	0.099			90	61.3	0.877	0.830	0.033			60	1.0	34	1.07	0.00	34	0	0.00	01/24	1.039	51.271	50.26	50.23	49.98	7.74	0.03	9.7	0.0	0.0	0.0	0.050	2.320	01/37
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	49.98											08/26
01/38	08/26	INLET GULLY IN SAG (LS) Type S Lintel	0.124			90	61.3	0.877	0.830	0.041			60	0.9	41	1.07	0.00	41	0	0.00	01/37	0.907	51.456	50.42	50.38	50.14	3.91	0.04	9.7	0.0	0.0	0.0	0.090	1.760	01/38
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	49.98											08/26
01/39	07/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.256			90	61.3	0.877	0.830	0.084			60	1.2	84	1.22	0.00	79	2	0.00	01/37	1.226	51.882	51.19	50.97	50.86	4.53	0.08	9.2	0.0	0.2	0.0	0.250	1.150	01/39
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.42											07/26
01/40	07/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			90	61.3	0.877	0.830	0.057			60	1.4	57	0.00	0.00	57	0	0.00	01/38	1.358	51.855	51.06	50.94	50.83	2.12	0.06	9.7	0.0	0.1	0.0	0.180	1.290	01/40
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.42											07/26
01/41	02/41	INLET GULLY ON GRADE (LG) Type S Lintel	0.239			90	61.3	0.877	0.830	0.079			60	5.6	79	1.31	0.01	67	11	0.01	03/41	5.609	54.809	53.76	53.76	51.70	5.71	0.07	7.0	0.0	0.0	0.0	0.120	2.470	01/41
02/41	03/41	INLET GULLY ON GRADE (LG) Type S Lintel	0.314			90	61.3	0.877	0.830	0.103			60	6.6	103	1.45	0.02	78	24	0.02	01/17	6.586	52.611	51.70	51.65	51.19	5.97	0.15	2.9	0.0	0.1	0.0	0.270	3.230	02/41
03/41	09/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.103			90	61.3	0.877	0.830	0.034			60	7.0	44	1.07	0.00	43	0	0.00	01/38	7.008	52.324	51.19	51.17	49.65	6.82	0.19	1.8	0.0	0.0	0.0	0.330	4.300	03/41
09/26	10/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	50.729	49.29											09/26
01/55	02/55	INLET HEADWALL											25	1.0	0			0				1.000	45.435	45.45	45.33	42.19	12.56	0.95	0.5	0.0	0.1	0.0	0.270	3.040	01/55
02/55	03/55	HEADWALL											25	1.0	0			0				1.000	42.935	42.09	42.09	39.99	3.01	0.95	0.0	0.0	0.0	0.0	0.010	0.410	02/55
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							9.110	90	1.0	9110			9110				1.000	41.083	39.99	39.99	37.63	1.90	9.70	0.0	0.0	0.0	0.0	0.080	1.880	03/55
04/55	05/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	39.250	37.60	37.60	35.19	1.78	9.70	0.0	0.0	0.0	0.0	0.070	0.830	04/55
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							4.638	90	1.0	4638			4638				1.000	36.200	35.19	35.19	35.19	0.00	10.41	0.0	0.0	0.0	0.0			05/55
06/55	07/55	INLET HEADWALL											25	1.0	0			0				1.000	37.110	35.19	35.13	33.71	3.94	10.41	0.4	0.0	0.1	0.0	0.070	2.270	06/55
07/55	08/55	HEADWALL											25	1.0	0			0				1.000	36.310	33.71	33.71	33.34	1.06	10.42	0.0	0.0	0.0	0.0	0.320	1.760	07/55
08/55	09/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	34.000	33.29	33.29	33.24	0.26	11.43	0.0	0.0	0.0	0.0	0.180	2.440	08/55
09/55		REFERENCE											25	1.0	0			0				1.000	34.000	33.24											09/55
01/58	02/58	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											60	1.0	285	0.00	0.00	285	0	0.00	03/55	1.000	45.300	44.00	43.65	43.47	2.20	0.32	5.5	0.0	0.3	0.0	0.400	1.960	01/58
02/58	03/58	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											25	1.0	0	0.00	0.00	0	0	0.00	03/55	1.000	45.600	43.36	43.36	42.38	4.59	0.31	0.0	0.0	0.0	0.0	0.190	4.150	02/58
03/58	03/55	HEADWALL											25	1.0	0			0				1.000	42.865	42.24	42.24	39.99	7.56	0.31	0.0	0.0	0.0	0.0	0.010	0.460	03/58
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							9.110	90	1.0	9110			9110				1.000	41.083	39.99											03/55
01/6	02/6	BASIN NODE FOR CALCULATIONS											60	1.0	66			66				1.000	37.900	37.26	37.45	37.45	0.00	0.64	0.0	0.0	0.0	0.0			01/6
01/63	02/63	INLET HEADWALL											25	1.0	0			0				1.000	46.342	45.80	45.80	45.50	5.45	0.00	0.0	0.0	0.0	0.0	0.000	0.000	01/63
02/63		HEADWALL											25	1.0	0			0				1.000	46.002	45.50											02/63

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	19-01-24	COUNCIL ISSUE	EP

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Robin Russell & ASSOCIATES PTY. LTD.

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DRAWING TITLE

STORMWATER
CALCULATION TABLES
MINOR
STORM EVENT
SHEET 02

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Civil Engineering
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DESIGNED RB | DRAWN EP | APPROVED | RPEQ 4706 | DATE 13-10-23

DRAWING NUMBER 41901-02-680A | REV A

K:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-680.dwg, MINOR CALC TABLE SHEET 02, 19/01/2024 3:57:03 PM, 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	
01/2	02/2	TYPE 2 FIELD INLET 900x600 C/W DOME TOP			0.274			0.877				0.122	25	1.0	122	1.89	0.06	33	89	0.06	02/2	1.000	44.376	43.15	43.15	39.93	10.24	0.03	9.7	0.0	0.0	0.0	0.050	2.060	01/2
02/2	03/2	INLET GULLY ON GRADE (LG) Type S Lintel	0.021		0.144	120	133.6	0.877	0.916	0.012		0.064	25	9.7	162	1.81	0.05	96	65	0.04	03/2	9.683	41.196	39.93	39.92	37.54	7.84	0.13	4.6	0.0	0.0	0.0	0.200	3.610	02/2
03/2	04/2	DRAINWAYS 1TCS0 ON GRADE	0.029		0.432	120	133.6		0.916	0.016		0.193	25	5.8	270	2.97	0.07	140	129	0.07	02/4	5.792	38.890	37.54	37.53	34.94	15.10	0.27	2.0	0.0	0.0	0.0	0.300	6.130	03/2
04/2	05/2	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	36.333	33.86	33.61	33.57	0.97	0.28	2.0	0.0	0.3	0.0	1.120	1.810	04/2
05/2	08/55	HEADWALL											25	1.0	0			0				1.000	34.228	33.56	33.56	33.56	0.01	0.54	0.0	0.0	0.0	0.0	0.010	1.020	05/2
08/55	09/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	34.000	33.56											08/55
01/3	02/3	INLET HEADWALL			0.174							0.078	25	1.0	78			78				1.000	38.217	37.70	37.68	37.45	4.06	0.08	0.5	0.0	0.0	0.0	0.290	1.150	01/3
02/3	05/55	HEADWALL											25	1.0	0			0				1.000	38.100	37.31	37.31	37.31	0.00	0.08	0.0	0.0	0.0	0.0			02/3
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							9.478	25	1.0	9478			9478				1.000	36.200	36.34											05/55
01/4	02/4	INLET GULLY IN SAG (LS) Type S Lintel	0.112			120	133.6	0.877	0.916	0.062			60	0.2	554	4.38	0.14	174	376	0.16	O 01/4	0.174	37.669	37.55	37.32	37.16	2.38	0.17	4.7	0.0	0.4	0.0	0.540	1.860	01/4
02/4	03/4	INLET GULLY IN SAG (LS) Type S Lintel	0.071		0.048	120	133.6	0.877	0.916	0.039		0.021	25	0.2	180	2.98	0.03	113	65	0.04	O 02/4	0.174	37.669	37.16	36.98	36.75	5.43	0.28	1.5	0.0	0.3	0.0	0.320	4.730	02/4
03/4	04/4	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	37.730	36.75	36.51	36.34	3.98	0.28	1.5	0.0	0.3	0.0	0.490	2.590	03/4
04/4	05/55	HEADWALL											25	1.0	0			0				1.000	36.446	36.34	36.34	36.34	0.00	0.28	0.0	0.0	0.0	0.0			04/4
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							9.478	25	1.0	9478			9478				1.000	36.200	36.34											05/55
01/5	02/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.222			120	133.6	0.877	0.916	0.124			25	1.0	124	2.47	0.01	98	24	0.02	02/5	1.000	53.037	52.29	52.20	51.87	1.30	0.10	8.8	0.0	0.1	0.0	0.380	1.400	01/5
02/5	03/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.101			120	133.6	0.877	0.916	0.056			25	1.0	80	1.36	0.01	71	8	0.01	03/5	1.000	52.886	51.87	51.83	51.38	1.54	0.17	2.0	0.0	0.0	0.0	0.620	2.150	02/5
03/5	04/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.205			120	133.6	0.877	0.916	0.114			25	1.0	118	1.45	0.02	95	23	0.02	04/5	1.000	52.252	51.29	51.29	47.90	6.57	0.26	1.9	0.0	0.0	0.0	0.410	4.600	03/5
04/5	05/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.207			120	133.6	0.877	0.916	0.115			25	1.0	137	1.50	0.02	106	31	0.02	01/11	1.000	48.247	47.91	47.74	47.06	6.16	0.56	1.1	0.0	0.3	0.0	0.480	5.540	04/5
05/5	06/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	47.204	47.06	46.95	43.16	9.01	0.89	1.0	0.0	0.2	0.0	0.810	6.520	05/5
06/5	07/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	42.982	43.16	42.73	42.05	4.70	0.97	1.5	0.0	0.4	0.0	0.610	3.430	06/5
07/5	08/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	41.996	42.05	41.73	41.31	1.85	0.98	0.9	0.0	0.3	0.0	1.280	3.480	07/5
08/5	09/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	41.853	41.32	41.29	40.62	1.76	0.96	0.4	0.0	0.1	0.0	0.850	4.060	08/5
09/5	10/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	41.020	40.62	40.45	39.99	1.62	1.04	0.2	0.0	0.2	0.0	0.550	4.880	09/5
10/5	11/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	40.227	39.99	39.75	38.29	7.88	1.45	1.1	0.0	0.5	0.0	0.660	5.140	10/5
11/5	12/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	37.900	38.30	37.61	37.54	1.56	1.81	1.0	0.0	0.9	0.0	1.730	4.090	11/5
12/5	01/6	HEADWALL											25	1.0	0			0				1.000	37.645	37.54	37.54	37.54	0.00	1.81	0.0	0.0	0.0	0.0			12/5
01/6	02/6	BASIN NODE FOR CALCULATIONS											25	1.0	141			141				1.000	37.900	37.54											01/6
01/17	02/17	INLET GULLY ON GRADE (LG) Type S Lintel	0.254			120	133.6	0.877	0.916	0.142			25	1.0	213	1.74	0.05	142	69	0.05	01/19	1.000	46.789	45.81	45.76	44.44	10.61	0.14	6.7	0.0	0.0	0.0	0.190	3.660	01/17
02/17	03/17	INLET GULLY ON GRADE (LG) Type S Lintel	0.197			120	133.6	0.877	0.916	0.110			25	1.0	110	1.36	0.02	90	20	0.02	03/17	1.000	45.463	44.44	44.44	41.88	9.50	0.23	1.9	0.0	0.0	0.0	0.280	5.740	02/17
03/17	04/17	DRAINWAYS 1TCS0 ON GRADE	0.111			120	133.6	0.877	0.916	0.062			25	1.0	81	1.25	0.01	72	8	0.00	04/17	1.000	42.101	41.88	41.70	40.23	6.04	0.42	1.3	0.0	0.6	0.0	0.640	4.680	03/17
04/17	10/5	DRAINWAYS 0TCS0 SAG	0.079			120	133.6	0.877	0.916	0.044			25	1.0	177	3.48	0.13	-168	315	0.12	01/21	1.000	40.074	40.23	40.14	39.99	1.00	0.44	1.0	0.0	0.2	0.0	0.670	2.880	04/17
10/5	11/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	40.227	39.99											10/5
01/20	02/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.281			120	133.6	0.877	0.916	0.156			25	2.5	156	1.80	0.03	110	46	0.03	02/20	2.490	43.860	42.87	42.86	41.69	3.02	0.11	7.0	0.0	0.0	0.0	0.240	1.860	01/20
02/20	03/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.200			120	133.6	0.877	0.916	0.111			25	5.5	156	1.76	0.04	101	54	0.04	01/22	5.500	42.308	41.69	41.46	41.27	2.66	0.21	2.0	0.0	0.2	0.0	0.650	2.230	02/20
03/20	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.061			120	133.6	0.877	0.916	0.034			25	5.4	34	0.00	0.00	34	0	0.00	01/23	5.434	42.402	41.22	41.19	39.18	4.18	0.24	1.9	0.0	0.0	0.0	0.420	4.400	03/20
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	39.202	39.18	38.91	38.68	0.92	0.33	1.5	0.0	0.3	0.0	1.620	2.070	04/20
05/20	11/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	38.731	38.68	38.65	38.29	0.67	0.36	0.9	0.0	0.1	0.0	1.760	2.250	05/20
11/5	12/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	37.900	38.30											11/5
01/21	02/21	INLET GULLY IN SAG (LS) Type S Lintel	0.291			120	133.6	0.877	0.916	0.162			60	0.6	490	3.90	0.15	102	395	0.15	02/21	0.561	38.583	38.77	38.72	38.69	0.47	0.10	9.7	0.0	0.1	0.0	0.300	1.350	01/21
02/21	05/20	INLET GULLY IN SAG (LS) Type S Lintel	0.092			120	133.6	0.877	0.916	0.051			60	0.7	438	4.57	0.18	-113	506	0.19	01/4	0.698	38.482	38.69	38.69	38.68	0.03	0.13	2.7	0.0	0.1	0.0	0.590	1.520	02/21
05/20	11/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	38.731	38.68											05/20
01/22	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.109			120	133.6	0.877	0.916	0.061			25	7.0	114	1.67	0.03	77	36	0.02	01/21	7.036	39.418	39.26	39.19	39.18	0.12	0.08	9.7	0.0	0.2	0.0	0.120	2.510	01/22
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	39.202	39.18											04/20
01/23	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.021			120	133.6	0.877	0.916	0.012			25	6.0	12	0.00	0.00	12	0	0.00	02/4	6.030	39.248	39.18	39.18	39.18	0.06	-0.04	6.7	0.0	0.0	0.0	-0.070	1.430	01/23
04/20	05/20	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	39.202	39.18											04/20
01/24	02/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.014			120	133.6	0.877	0.916	0.008			25	8.0	93	1.47	0.02	68	25	0.02	02/24	8.000	50.440	49.44	49.39	49.02	7.55	0.07	7.0	0.0	0.1	0.0	0.110	2.510	01/24
02/24	03/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.005			120	133.6	0.877	0.916	0.003			25	8.0	27	0.00	0.00	27	0	0.00	03/24	8.000	50.048	49.02	49.01	48.61	8.14	0.10	1.4	0.0	0.0	0.0	0.150	3.640	02/24
03/24	04/24	INLET GULLY ON GRADE (LG) Type S Lintel	0.004			120	133.6	0.877	0.916	0.002			25	8.0	2	0.00	0.00	2	0	0.00	04/24	8.000	49.656	48.59	48.59	48.26	6.76	0.10	0.4	0.0	0.0	0.0	0.160	3.810	03/24
04/24	10/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.005			120	133.6	0.877	0.916	0.003			25	8.0	3	0.00	0.00	3	0	0.00	03/20	8.000	49.264	48.24	48.24	47.71	5.94	0.10	0.7	0.0	0.0	0.0	0.180	3.620	04/24
10/26	11/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	48.730	47.39											10/26
01/25	02/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			120	133.6	0.877	0.916	0.097			25	1.5	97	1.45	0.01	82	14	0.01	03/25	1.497	60.599	59.86	59.74	59.54	2.05	0.08	9.6	0.0	0.1	0.0	0.250	1.280	01/25
02/25	03/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.360			120	133.6	0.877	0.916	0.200			25	2.0	200	2.21	0.05	127	72	0.05	01/32	1.951	60.461	59.54	59.46	58.63	2.08	0.21	2.6	0.0	0.1	0.0	0.540	2.620	02/25
03/25	04/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.208			120	133.6	0.877	0.916	0.116			25	3.7	128	1.67	0.03	89	38	0.03	05/25	3.667	59.255	58.64	58.51	57.32	4.64	0.36	1.2	0.0	0.1	0.0	0.780	3.740	03/25
04/25	05/25	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	58.171	57.27	57.24	56.03	4.92	0.36	0.4	0.0	0.0	0.0	0.600	4.970	04/25
05/25	06/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.255			120	133.6	0.877	0.916	0.142			25	8.4	177	1.85	0.05	102	75	0.04	06/25	8.412	56.410	56.03	55.79	54.21	5.85	0.46	0.9	0.0	0.4	0.0	0.670	4.780	05/25
06/25	07/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.101			120	133.6	0.877	0.916	0.056			25	8.6	130	3.14	0.10	-90	204	0.10	01/33	8.590	54.091	54.21	54.19	53.64	5.78	0.42	0.9	0.0	0.2	0.0	0.650	3.830	06/25
07/25	08/25	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	53.534	53.64	53.59	52.77	2.98	0.28	1.7	0.0	0.2	0.0	0.740	3.070	07/25
08/25	09/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.112			120	133.6	0.877	0.916	0.062			25	0.6	162	5.19	0.10	-123	284	0.13	09/25	0.600	52.548	52.77	52.61	52.42	0.58	0.27	1.9	0.0	0.2	0.0	0.840	2.680	08/25
09/25	10/25	DRAINWAYS 1TCS0 ON GRADE	0.107			120	133.6	0.877	0.916	0.060			25	0.6	336	3.44	0.05	213	110	0.06	01/39	0.600	52.357	52.51	51.68	50.19	4.90	0.44	1.5	0.0	0.7	0.0	1.210	3.940	09/25
10/25	11/25	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	53.000	48.86	48.58	47.29	16.04	0.44	1.5	0.0	0.3	0.0	0.490	5.390	10/25
11/25	12/25	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	48.077	47.12	46.62	45.76	16.48	0.43	1.5	0.0	0.5	0.0	0.490	4.760	11/25
12/25	13/25	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	46.000	45.76	45.76	45.75	0.29	0.43	0.2	0.0	0.0	0.0	0.770	2.590	12/25
13/25	14/25	HEADWALL											25	1.0	0			0				1.000	45.600	45.75	45.75	45.75	0.00	0.43	0.0	0.0	0.0	0.0			13/25
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.455	25	1.0	455			455				1.000	45.300	45.75	45.75	45.75	0.00	0.73	0.0	0.0	0.0	0.0			14/25
15/25	16/25	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											60	1.0	728	0.00	0.00	728	0	0.00	03/55	1.000	45.300	43.98	43.21	42.31	4.49	0.73	2.9	0.0	0.8	0.0	0.650	3.950	15/25
16/25	03/55	HEADWALL											25	1.0	0			0				1.000	42.935	42.09	42.09	40.28	2.62	0.73	0.0	0.0	0.0	0.0	0.030	0.570	16/25
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							24.596	90	1.0	24596			24596				1.000	41.083	40.28											03/55

B

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 02

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	15-01-24	CALC TABLE AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

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Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MAJOR
STORM EVENT
SHEET 01

MORTONS urbansolutions
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Civil Engineering
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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-681

REV B

K:\autocad client\419 - hb land\01 - courtney drive\precinct-stage 02\engineering drawings\Current\41901-02-681.dwg, MAJOR CALC TABLE SHEET 01, 19/01/2024 3:26:04 PM, 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	
01/26	02/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			120	133.6	0.877	0.916	0.097			25	4.0	97	1.48	0.02	73	23	0.02	02/26	3.953	61.285	60.26	60.25	58.47	6.16	0.07	7.0	0.0	0.0	0.0	0.130	3.170	01/26
02/26	03/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.117			120	133.6	0.877	0.916	0.065			25	7.9	88	1.44	0.02	65	22	0.02	03/26	7.944	59.453	58.45	58.45	54.79	7.77	0.20	1.6	0.0	0.0	0.0	0.310	4.520	02/26
03/26	04/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.173			120	133.6	0.877	0.916	0.096			25	8.0	117	1.61	0.03	79	38	0.03	04/26	8.000	55.688	54.80	54.78	52.70	7.49	0.36	1.1	0.0	0.0	0.0	0.580	5.150	03/26
04/26	05/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.188			120	133.6	0.877	0.916	0.105			25	8.0	141	1.75	0.04	89	51	0.03	05/26	8.000	53.563	52.48	52.40	51.51	3.73	0.45	0.9	0.0	0.1	0.0	0.470	3.470	04/26
05/26	06/26	DRAINWAYS 0TC50 SAG	0.069			120	133.6	0.877	0.916	0.038			25	0.7	181	2.54	0.01	135	12	0.03	01/40	0.659	52.050	51.51	51.39	51.24	1.01	0.74	1.2	0.0	0.1	0.0	0.800	2.150	05/26
06/26	07/26	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	52.271	51.25	51.08	50.61	0.88	0.74	1.7	0.0	0.2	0.0	0.830	2.260	06/26
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.61	50.59	50.24	1.13	0.95	0.3	0.0	0.0	0.0	0.870	3.240	07/26
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	50.15	50.13	49.43	5.16	1.08	0.6	0.0	0.0	0.0	0.440	5.180	08/26
09/26	10/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	50.729	49.43	49.39	47.78	6.42	1.34	0.7	0.0	0.0	0.0	0.490	6.540	09/26
10/26	11/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	48.730	47.39	47.38	45.75	5.88	1.43	1.8	0.0	0.3	0.0	0.540	5.310	10/26
11/26	12/26	1200 DIA MANHOLE EXTENDED 600mm											25	1.0	0			0				1.000	45.953	45.75	45.75	45.75	0.16	1.43	0.0	0.0	0.0	0.0	0.630	2.460	11/26
12/26	14/25	HEADWALL											25	1.0	0			0				1.000	45.580	45.75	45.75	45.75	0.00	1.43	0.0	0.0	0.0	0.0			12/26
14/25	15/25	BASIN NODE FOR CALCULATIONS			1.016							0.455	25	1.0	455			455				1.000	45.300	45.75											14/25
01/33	09/25	INLET GULLY ON GRADE (LG) Type S Lintel	0.143			120	133.6	0.877	0.916	0.080			60	0.6	274	3.22	0.09	133	197	0.08	01/34	0.600	52.357	52.48	52.46	52.42	0.65	0.11	9.7	0.0	0.1	0.0	0.350	1.320	01/33
09/25	10/25	DRAINWAYS 1TC50 ON GRADE	0.107			120	133.6	0.877	0.916	0.060			25	0.6	336	3.44	0.05	213	110	0.06	01/39	0.600	52.357	52.51											09/25
01/34	05/26	INLET GULLY IN SAG (LS) Type S Lintel	0.165			120	133.6	0.877	0.916	0.092			25	0.7	324	5.53	0.04	179	99	0.04	05/26	0.659	52.050	51.94	51.76	51.51	3.80	0.18	5.5	0.0	0.2	0.0	0.410	1.730	01/34
05/26	06/26	DRAINWAYS 0TC50 SAG	0.069			120	133.6	0.877	0.916	0.038			25	0.7	181	2.54	0.01	135	12	0.03	01/40	0.659	52.050	51.51											05/26
01/35	03/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.206			120	133.6	0.877	0.916	0.115			25	8.0	133	1.66	0.03	85	45	0.02	01/34	8.000	55.729	55.14	54.94	54.79	2.12	0.09	9.4	0.0	0.2	0.0	0.260	1.360	01/35
03/26	04/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.173			120	133.6	0.877	0.916	0.096			25	8.0	117	1.61	0.03	79	38	0.03	04/26	8.000	55.688	54.80											03/26
01/36	02/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.141			120	133.6	0.877	0.916	0.079			25	7.1	79	1.39	0.02	60	18	0.01	01/35	7.090	60.022	59.03	58.99	58.46	5.29	0.06	9.7	0.0	0.0	0.0	0.120	2.270	01/36
02/26	03/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.117			120	133.6	0.877	0.916	0.065			25	7.9	88	1.44	0.02	65	22	0.02	03/26	7.944	59.453	58.45											02/26
01/37	08/26	INLET GULLY IN SAG (LS) Type S Lintel	0.099			120	133.6	0.877	0.916	0.055			25	1.0	155	2.09	0.06	68	86	0.06	01/24	1.039	51.271	50.39	50.34	50.15	5.99	0.07	9.7	0.0	0.1	0.0	0.100	2.330	01/37
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	50.15											08/26
01/38	08/26	INLET GULLY IN SAG (LS) Type S Lintel	0.124			120	133.6	0.877	0.916	0.069			25	0.9	110	1.91	0.03	61	49	0.03	01/37	0.907	51.456	50.48	50.40	50.16	3.89	0.06	9.7	0.0	0.1	0.0	0.140	1.770	01/38
08/26	09/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.316	50.15											08/26
01/39	07/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.256			120	133.6	0.877	0.916	0.142			25	1.2	227	2.69	0.04	148	75	0.05	01/37	1.226	51.882	51.34	50.97	50.91	2.38	0.15	7.1	0.0	0.4	0.0	0.470	1.690	01/39
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.61											07/26
01/40	07/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.174			120	133.6	0.877	0.916	0.097			25	1.4	97	1.55	0.01	82	14	0.01	01/38	1.358	51.855	51.22	50.97	50.86	2.32	0.08	9.6	0.0	0.2	0.0	0.250	1.300	01/40
07/26	08/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	51.902	50.61											07/26
01/41	02/41	INLET GULLY ON GRADE (LG) Type S Lintel	0.239			120	133.6	0.877	0.916	0.133			25	5.6	143	1.71	0.03	95	47	0.03	03/41	5.609	54.809	53.78	53.78	51.76	5.58	0.10	7.0	0.0	0.0	0.0	0.170	2.490	01/41
02/41	03/41	INLET GULLY ON GRADE (LG) Type S Lintel	0.314			120	133.6	0.877	0.916	0.175			25	6.6	175	1.84	0.05	101	72	0.05	01/17	6.586	52.611	51.77	51.70	51.24	5.95	0.20	2.5	0.0	0.1	0.0	0.360	3.220	02/41
03/41	09/26	INLET GULLY ON GRADE (LG) Type S Lintel	0.103			120	133.6	0.877	0.916	0.057			25	7.0	102	1.56	0.02	72	29	0.02	01/38	7.008	52.324	51.24	51.21	49.68	6.85	0.27	1.8	0.0	0.0	0.0	0.450	4.440	03/41
09/26	10/26	MANHOLE 1500mm DIA											25	1.0	0			0				1.000	50.729	49.43											09/26
01/55	02/55	INLET HEADWALL											25	1.0	0			0				1.000	45.435	45.75	45.57	42.21	13.43	1.15	0.5	0.0	0.2	0.0	0.320	3.580	01/55
02/55	03/55	HEADWALL											25	1.0	0			0				1.000	42.935	42.10	42.10	40.28	2.61	1.15	0.0	0.0	0.0	0.0	0.020	0.380	02/55
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							24.596	90	1.0	24596			24596				1.000	41.083	40.28	40.28	37.92	1.90	25.98	0.0	0.0	0.0	0.0	0.220	2.550	03/55
04/55	05/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	39.250	37.87	37.87	36.34	1.13	25.97	0.0	0.0	0.0	0.0	0.200	1.400	04/55
05/55	06/55	BASIN NODE FOR CALCULATIONS			20.019							9.478	25	1.0	9478			9478				1.000	36.200	36.34	36.34	36.34	0.00	27.97	0.0	0.0	0.0	0.0			05/55
06/55	07/55	INLET HEADWALL											25	1.0	0			0				1.000	37.110	36.34	36.24	34.04	6.11	27.97	0.4	0.0	0.1	0.0	0.200	3.250	06/55
07/55	08/55	HEADWALL											25	1.0	0			0				1.000	36.310	34.04	34.04	33.71	0.97	27.97	0.0	0.0	0.0	0.0	0.860	2.400	07/55
08/55	09/55	100% CAPTURE FOR FUTURE EXTENSION											25	1.0	0			0				1.000	34.000	33.56	33.56	33.51	0.26	28.79	0.0	0.0	0.0	0.0	0.460	3.300	08/55
09/55		REFERENCE											25	1.0	0			0				1.000	34.000	33.51											09/55
01/58	02/58	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											60	1.0	728	0.00	0.00	728	0	0.00	03/55	1.000	45.300	45.02	43.95	43.64	3.69	0.75	2.2	0.0	1.1	0.0	0.950	3.700	01/58
02/58	03/58	MANHOLE C/W ROOF SLAB AND 900x600 DOME TOP											60	1.0	140	0.00	0.00	140	0	0.00	03/55	1.000	45.600	43.58	43.47	42.51	4.45	0.89	0.8	0.0	0.1	0.0	0.530	5.010	02/58
03/58	03/55	HEADWALL											25	1.0	0			0				1.000	42.865	42.28	42.28	40.28	6.70	0.89	0.0	0.0	0.0	0.0	0.020	0.720	03/58
03/55	04/55	100% CAPTURE FOR FUTURE EXTENSION			110.076							24.596	90	1.0	24596			24596				1.000	41.083	40.28											03/55
01/63	02/63	INLET HEADWALL											25	1.0	0			0				1.000	46.342	45.80	45.80	45.50	5.45	0.00	0.0	0.0	0.0	0.0	0.000	0.000	01/63
02/63		HEADWALL											25	1.0	0			0				1.000	46.002	45.50											02/63

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 02

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	19-01-24	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING

Robin Russell & ASSOCIATES PTY. LTD.

BENNETT+BENNETT

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MAJOR
STORM EVENT
SHEET 02

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ	4706
DATE	13-10-23		

DRAWING NUMBER: 41901-02-681A

REV: A

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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.

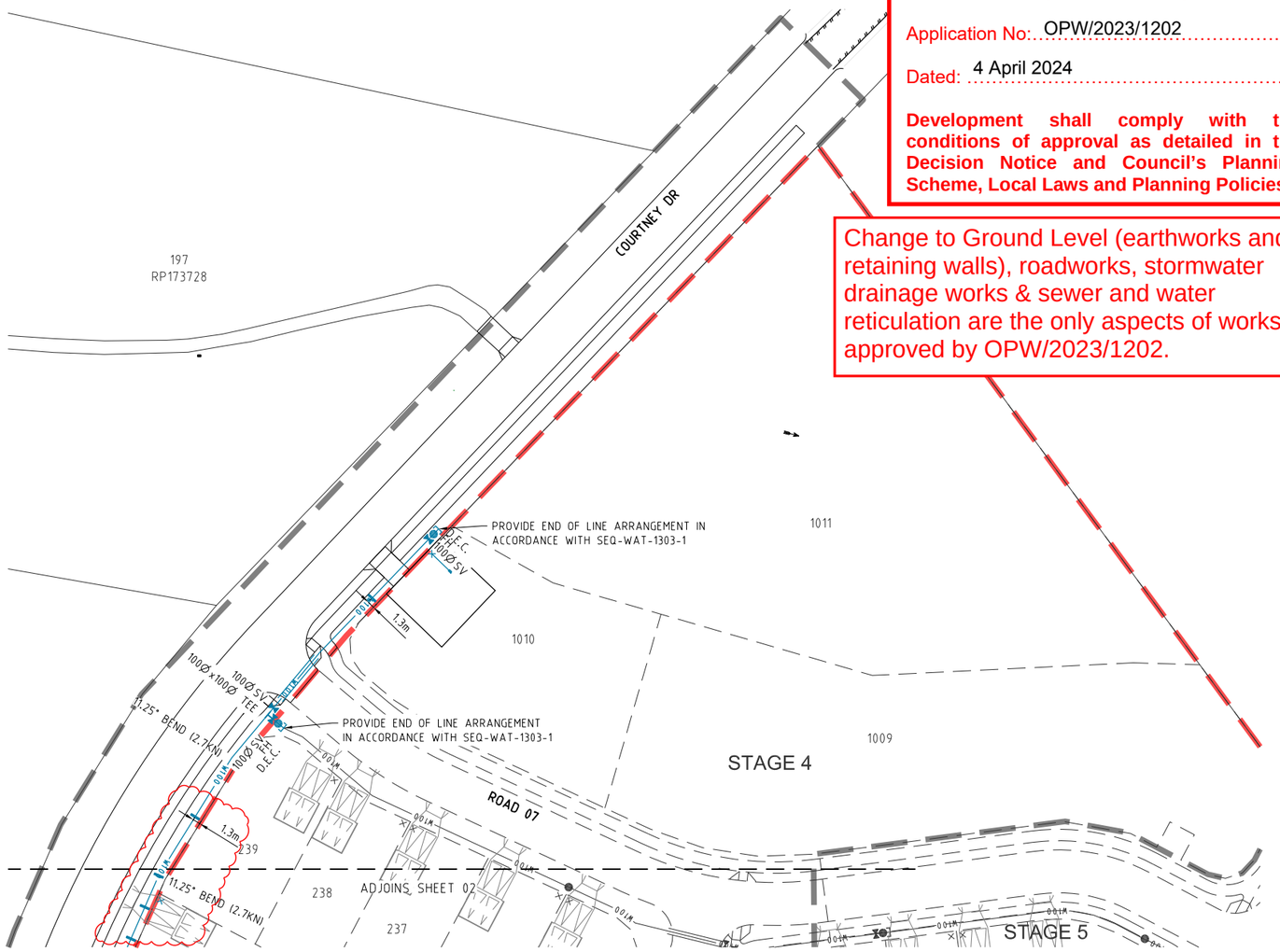
PROJECT SPECIFIC WATER NOTES

a. ALL PROPERTY CONNECTION ROAD CROSSINGS TO BE SLEEVED WITH DN100 uPVC CONDUIT.
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. READYTAPS ARE CURRENTLY NOT ACCEPTED BY C.O.G.C. TAPPING BANDS TO BE INSTALLED WITH MIN. DISTANCE OF 600mm BETWEEN EACH TAPPING BAND IS REQUIRED.
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.

B

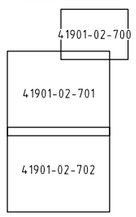
LEGEND

- 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 225Ø WATER MAIN
- FUTURE 250Ø WATER MAIN
- FUTURE 300Ø 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
- PROPOSED 225Ø WATER MAIN
- PROPOSED 250Ø WATER MAIN
- PROPOSED 300Ø WATER MAIN
- HYDRANT
- TEE
- REDUCER
- SLUICE VALVE
- ENDCAP
- SCOUR VALVE
- AIR VALVE
- METER LOCATION
- TRENCH STOP
- SERVICE CONDUIT
- DICL ROAD CROSSING



Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

SHEET LAYOUT



WATER PIPE SPECIFICATIONS

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

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	TRENCHSTOPS ADDED & NOTE AMENDED	BL
A	13-10-23	COUNCIL ISSUE	EP

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ASSOCIATED CONSULTANTS

BIOME WATER AND ENVIRONMENTAL CONSULTING
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BENNETT+BENNETT

DRAWING TITLE

WATER RETICULATION PLAN SHEET 01

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		DATE	13-10-23

DRAWING NUMBER 41901-02-700 REV B

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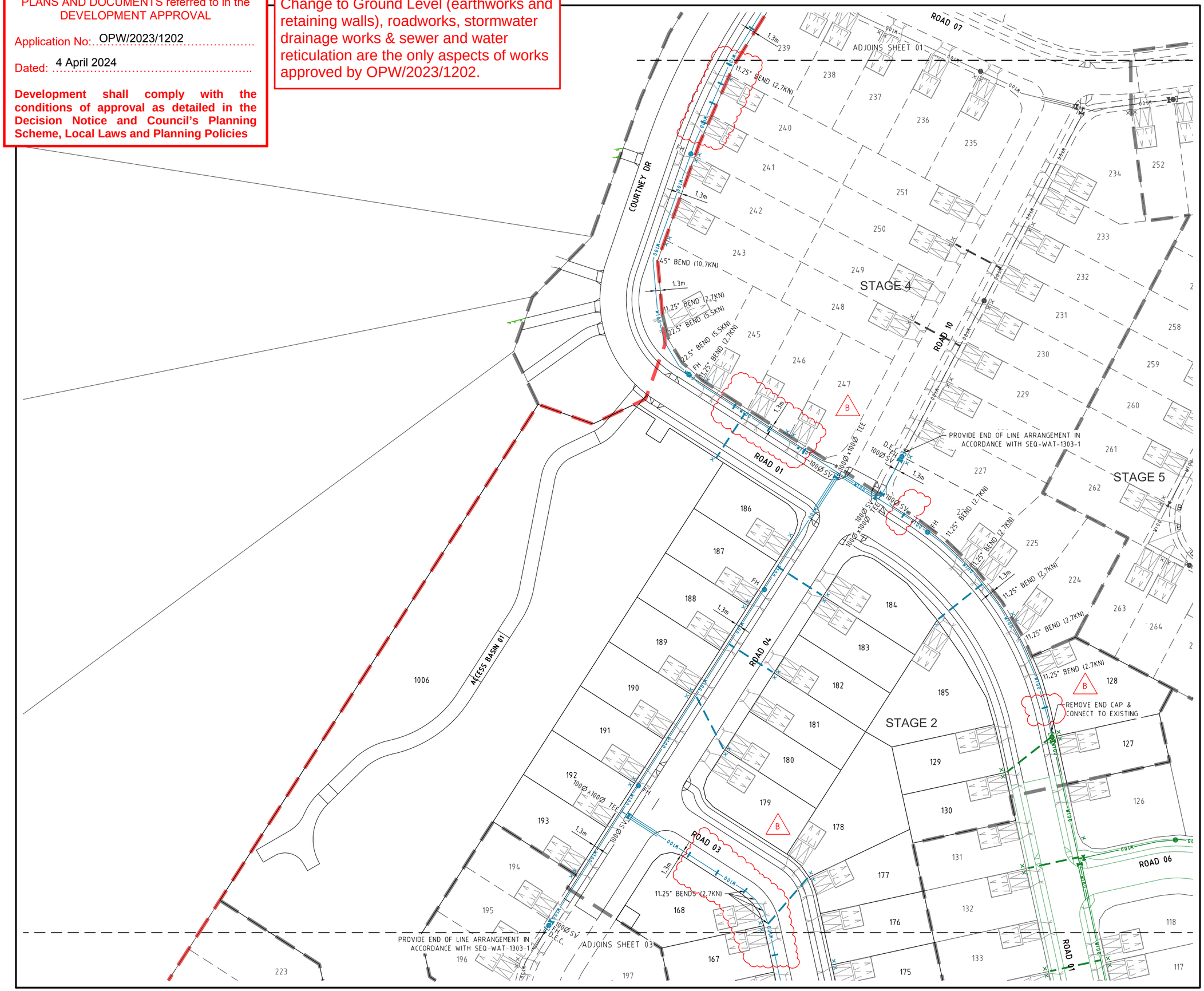
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.



PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	29-11-23	TRENCHSTOPS ADDED	BL
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DRAWING TITLE

WATER RETICULATION PLAN SHEET 02

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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-701 REV B

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ADJOINS SHEET 02

PROVIDE END OF LINE ARRANGEMENT IN ACCORDANCE WITH SEQ-WAT-1303-1

11.25° BENDS (2.7KN)

STAGE 1

STAGE 2

STAGE 3

ROAD 01

ROAD 02

ROAD 03

ROAD 04

EXISTING HOUSE CONNECTION FOR LOT 159

EXISTING HOUSE CONNECTION FOR LOT 150

REMOVE END CAP & CONNECT TO EXISTING

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

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LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

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HB Land

NORTH

0 5 10 15 20 25m

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

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B	29-11-23	TRENCHSTOPS ADDED	BL
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BENNETT + BENNETT

DRAWING TITLE

WATER RETICULATION PLAN SHEET 03

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DESIGNED	RB	DRAWN	EP
APPROVED		RPEQ 4706	DATE 13-10-23

DRAWING NUMBER 41901-02-702

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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

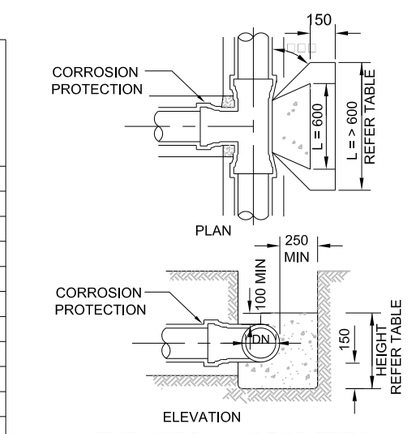
THRUST BLOCK LENGTH

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

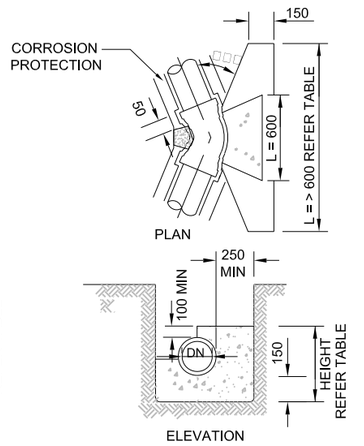
THRUST BLOCK DIMENSIONS - 1200kPa

● INDICATES BLOCK LENGTH OF 600

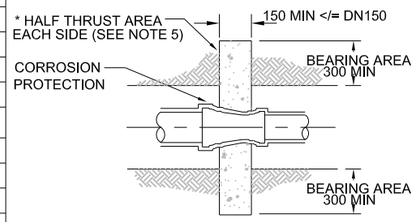
* = SPECIAL DESIGN



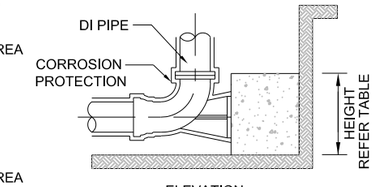
THRUST BLOCK FOR TEES
(FOR HORIZONTAL THRUST)



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 JOINTS TO BE CLEAR OF CONCRETE.
   CONCRETE THRUST BLOCK ANCHORS FOR VALVES TO BE AS DETAILED ON SEQ-WAT-1206-1.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1202

Dated: 4 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls), roadworks, stormwater drainage works & sewer and water reticulation are the only aspects of works approved by OPW/2023/1202.

PROJECT NAME

COURTNEY DR UPPER COOMERA

STAGE 02

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	13-10-23	COUNCIL ISSUE	EP

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BENNETT+BENNETT

DRAWING TITLE

WATER RETICULATION DETAILS

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Project Coordination
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DESIGNED	RB	DRAWN	EP
APPROVED	RPEQ 4706	DATE	13-10-23

DRAWING NUMBER 41901-02-710

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