

MORTONS
urban**solutions**
Civil Engineering
Project Coordination
ABN: 39 116 375 065 Tel: (07) 55711099

[illegible][illegible]

FILE NO.	DESCRIPTION	AMENDMENT
	GENERAL	
41901-05-000	COVER SHEET	A
41901-05-003	SAFETY IN DESIGN	A
41901-05-004	R/R MATRIX & NOTES	A
41901-05-005	ROAD HIERARCHY STAGING PLAN & GENERAL NOTES	A
	EARTHWORKS: RETAINING WALL & DETAIL GRADING	
41901-05-060	CONTROL PLAN SHEET 01	A
41901-05-061	CONTROL PLAN SHEET 02	A
41901-05-062	CONTROL PLAN SHEET 03	A
41901-05-063	CONTROL PLAN SHEET 04	A
41901-05-070	RETAINING WALL DETAILS	A
	EARTHWORKS: FINAL SURFACE & SEDIMENT AND EROSION CONTROL	
41901-05-080	NOTES & LEGEND	A
41901-05-081	PLAN	A
	EARTHWORKS: COMBINED SERVICES	
41901-05-090	PLAN	A
	ROADS: ROADWORKS	
41901-05-100	PLAN	A
41901-05-120	DETAILS	A
	ROADS: LONGITUDINAL SECTIONS	
41901-05-200	SHEET 01	A
41901-05-201	SHEET 02	A
41901-05-202	SHEET 03	A
	ROADS: CROSS SECTIONS	
41901-05-300	SHEET 01	A
41901-05-301	SHEET 02	A
41901-05-302	SHEET 03	A
	ROADS: INTERSECTION GRADING	
41901-05-400	DETAILS	A
	ROADS: JOINTING	
41901-05-410	PLAN & DETAILS	A
	ROADS: LINEMARKING & SIGNAGE	
41901-05-420	PLAN- NOTES & LEGEND	A
	SEWER: RETICULATION	
41901-05-500	NOTES & LEGEND	A
41901-05-501	PLAN	A
41901-05-510	DETAILS	A
	SEWER: PROFILES	
41901-05-530	PROFILES SHEET 01	A
41901-05-531	PROFILES SHEET 02	A
41901-05-532	PROFILES SHEET 03	A
	SEWER: HOUSE CONNECTION PROFILES	
41901-05-550	HOUSE CONNECTION PROFILES SHEET 01	A
41901-05-551	HOUSE CONNECTION PROFILES SHEET 02	A
	DRAINAGE: STORMWATER	
41901-05-600	PLAN-NOTES & LEGEND	A
	DRAINAGE: PROFILES	
41901-05-620	PROFILES SHEET 01	A
41901-05-621	PROFILES SHEET 02	A
	DRAINAGE: PIT DETAILS & TYPICAL DETAILS	
41901-05-650	PIT DETAILS	A
	DRAINAGE: CATCHMENT	
41901-05-670	PLAN	A
	DRAINAGE: CALCULATION TABLES	
41901-05-680	MINOR SHEET 01	A
41901-05-681	MAJOR SHEET 02	A
	WATER: WATER RETICULATION	
41901-05-700	PLAN-NOTES & LEGEND	A
41901-05-710	DETAIL	A

[illegible][illegible]

I hereby acknowledge receipt of the documents as detailed above.
Signed: _____
Company: _____

Date: / /

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COURTNEY DRIVE UPPER COOMERA

OPW
STAGE 5
No. 41901-05

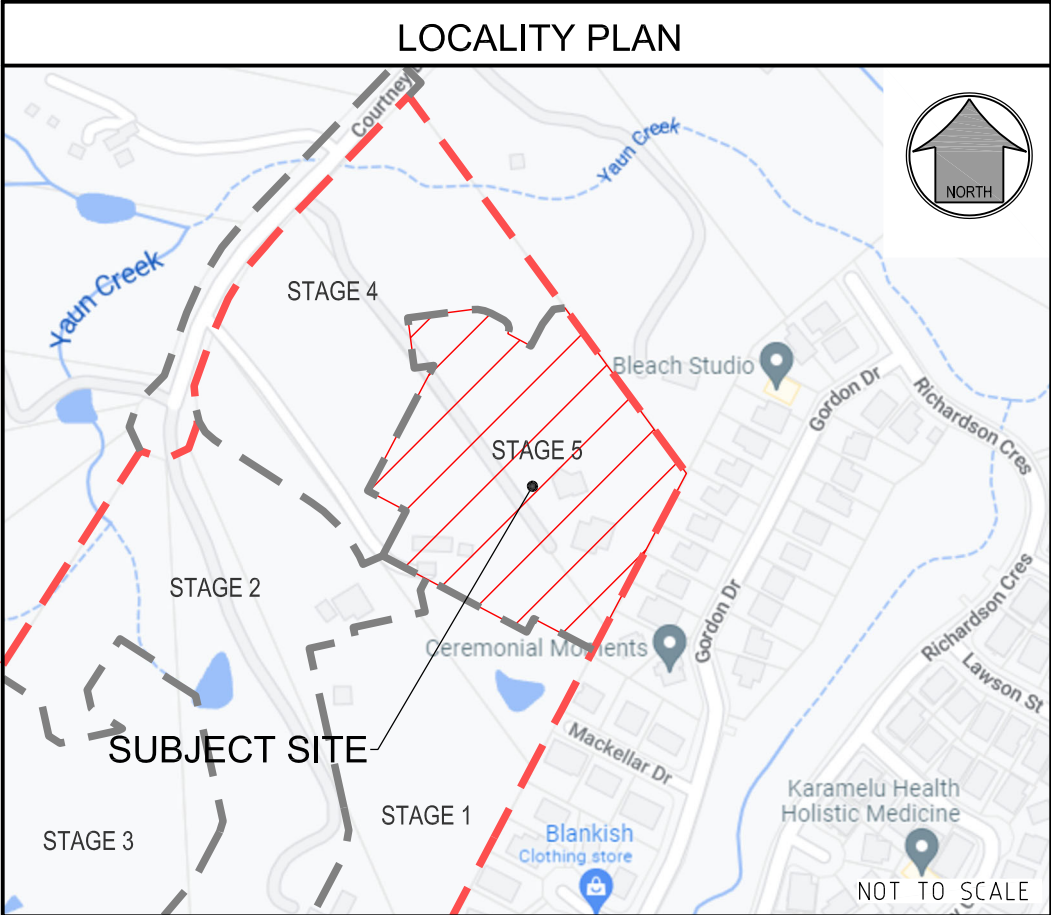
SCHEDULE OF DRAWINGS					
NUMBER	REV. NO.	TITLE	NUMBER	REV. NO.	TITLE
GENERAL			SEWER: PROFILES		
41901-05-000	A	COVER SHEET	41901-05-530	A	PROFILES SHEET 01
41901-05-003	A	SAFETY IN DESIGN	41901-05-531	A	PROFILES SHEET 02
41901-05-004	A	RISK MATRIX & NOTES	41901-05-532	A	PROFILES SHEET 03
41901-05-005	A	ROAD HIERARCHY STAGING PLAN & GENERAL NOTES	SEWER: HOUSE CONNECTION PROFILES		
EARTHWORKS: RETAINING WALL & DETAIL GRADING			41901-05-550	A	PROFILES SHEET 01
41901-05-060	A	PLAN SHEET 01	41901-05-551	A	PROFILES SHEET 02
41901-05-061	A	PLAN SHEET 02	DRAINAGE: STORMWATER		
41901-05-062	A	PLAN SHEET 03	41901-05-600	A	PLAN-NOTES & LEGEND
41901-05-063	A	PLAN SHEET 04	DRAINAGE: PROFILES		
41901-05-070	A	RETAINING WALL DETAILS	41901-05-620	A	PROFILES SHEET 01
EARTHWORKS: FINAL SURFACE & SEDIMENT AND EROSION CONTROL			41901-05-621	A	PROFILES SHEET 02
41901-05-080	A	NOTES & LEGEND	DRAINAGE: PIT DETAILS & TYPICAL DETAILS		
41901-05-081	A	PLAN	41901-05-650	A	PIT DETAILS
EARTHWORKS: COMBINED SERVICES			DRAINAGE: CATCHMENT		
41901-05-090	A	PLAN	41901-05-670	A	PLAN
ROADS: ROADWORKS			DRAINAGE: CALCULATION TABLES		
41901-05-100	A	PLAN	41901-05-680	A	MINOR SHEET 01
41901-05-120	A	DETAILS	41901-05-681	A	MAJOR SHEET 01
ROADS: LONGITUDINAL SECTIONS			WATER: WATER RETICULATION		
41901-05-200	A	SHEET 01	41901-05-700	A	PLAN-NOTES & LEGEND
41901-05-201	A	SHEET 02	41901-05-710	A	DETAIL
41901-05-202	A	SHEET 03			
ROADS: CROSS SECTIONS					
41901-05-300	A	SHEET 01			
41901-05-301	A	SHEET 02			
41901-05-302	A	SHEET 03			
ROADS: INTERSECTION GRADING					
41901-05-400	A	DETAILS			
ROADS: JOINTING DETAILS					
41901-05-410	A	PLAN & DETAILS			
ROADS: LINEMARKING AND SIGNAGE					
41901-05-420	A	PLAN-NOTES & LEGND			
SEWER: SEWER RETICULATION					
41901-05-500	A	NOTES & LEGEND			
41901-05-501	A	PLAN			
41901-05-510	A	DETAILS			



CLIENT



SUB-CONSULTANTS



R. P. DESCRIPTION

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

DRAWING NUMBER	AMEND.
41901-05-000	A

k:\outload client\419 - hb land\01 - courtney drive\prelim-stage-05\engineering drawings\Current\41901-05-003.dwg, SAFETY IN DESIGN, 30/10/2024 12:02:24 PM, 12

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	Unlikely	10	High	- 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	Permanent Disability	Unlikely	8	Moderate	- 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 - Electrocutation, 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	Falling	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
Deep excavation	Falling or collapse	Construction, Maintenance and demolition	Public, Client, Supervisors, Contractors	Permanent Disability	Possible	12	High	- Minimise depth of structure. - Bench deep trenches appropriately to minimise trench collapse risk. - Design in accordance with relevant standard. - Minimise the number of structures.	Structures designed in accordance with local authority requirements. Utilise RIGS sewer to reduce the number of access points. Graded pipelines as shallow as practical to reduce depth. Contractor to manage open excavations during construction in accordance with their Management Plans.	Permanent Disability	Rare	4	Low	On Going: Contractor to Monitor until end of Construction Phase
Stormwater and Sewer	Falling and Trench Collapse	Construction and Maintenance	Contractor & Asset Owner	Death	Unlikely	10	High	- Minimise depth of drainage lines. - Design in accordance with relevant standard.	Infrastructure designed in accordance with local authority requirements. Graded pipelines as shallow as practical to reduce depth.	Death	Rare	5	Moderate	On going: Contractor to Monitor until end of Pipe line construction completed.
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

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



A	30-10-24	COUNCIL ISSUE	BL
REV	DATE	DESCRIPTION	INT

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ASSOCIATED CONSULTANTS





DRAWING TITLE

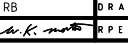
SAFETY IN DESIGN



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DESIGNED RB	DRAWN BL
APPROVED 	PEQ 4706
DATE 30-10-24	
DRAWING NUMBER	REV
41901-05-003	A

		Consequence				
		Minor / Insignificant (1)	First Aid Treatment (2)	Medical Treatment (3)	Permanent Disability (4)	Death (5)
Likelihood	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 05

RP DESCRIPTION
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DRAWING TITLE

RISK MATRIX
& NOTES



Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED RB	DRAWN BL
APPROVED 	PEQ 4706 DATE 30-10-24
DRAWING NUMBER 41901-05-004	REV A

GENERAL

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

PROJECT SPECIFIC REPORTS

- THE CONTRACTOR MUST FOLLOW THE RECOMMENDATIONS & PROCEDURES OUTLINED IN THE FOLLOWING REPORTS AT ALL TIMES:
- a) GEOTECHNICAL INVESTIGATION REPORTS (INCLUDING ANY ACID SULPHATE OR DISPERSIVE SOIL REPORTING)
b) VEGETATION & FAUNA MANAGEMENT PLANS
c) OTHER MANAGEMENT PLANS NOMINATED IN THE CONTRACT, AUTHORITIES APPROVAL CONDITIONS OR BY THE SUPERINTENDENT.

LEGEND

- URBAN ACCESS ROAD (7.5m CARRIAGEWAY) REFER 120 DRAWINGS SERIES FOR TYPICAL SECTIONS
- EXISTING PROPERTY LINE
EXISTING KERB (INVERT)
FUTURE PROPERTY LINE
FUTURE KERB (INVERT)
PROPOSED PROPERTY LINE
PROPOSED KERB (INVERT)
SITE BOUNDARY
STAGE BOUNDARY
LIMIT OF WORKS BOUNDARY



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

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

CLIENT

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

A	30-10-24	COUNCIL ISSUE	BL
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ASSOCIATED CONSULTANTS

DRAWING TITLE

ROAD HIERARCHY
STAGING PLAN
& GENERAL NOTES

Urban & Regional Planning
Civil Engineering
Project Coordination

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APPROVED	PER Q706 DATE 30-10-24
DRAWING NUMBER 41901-05-005	REV A

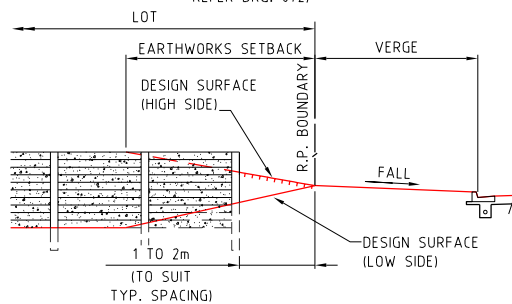
GENERAL

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2. SETOUT
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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

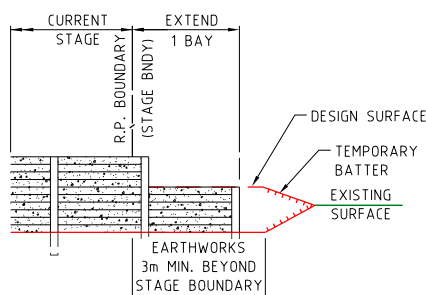
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- EXISTING RETAINING WALL
- EXISTING BOULDER WALL
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE CONTOURS
- FUTURE RETAINING WALL
- FUTURE BOULDER WALL
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- DESIGN CONTOURS
- PROPOSED SINGLE TIER RETAINING WALL
- PROPOSED TWO TIER RETAINING WALL
- PROPOSED BOULDER 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. 072)



TYPICAL SIDE BOUNDARY CONSTRUCTION

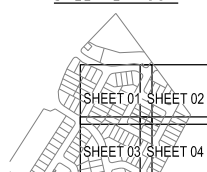
SCALE 1:100 - A1 (1:200 - A3)



TYPICAL STAGE BOUNDARY CONSTRUCTION

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

SHEET LAYOUT



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



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

REV	DATE	DESCRIPTION	INT
A	30-10-24	COUNCIL ISSUE	BL

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ASSOCIATED CONSULTANTS



DRAWING TITLE

RETAINING WALL
& DETAIL GRADING PLAN
SHEET 01

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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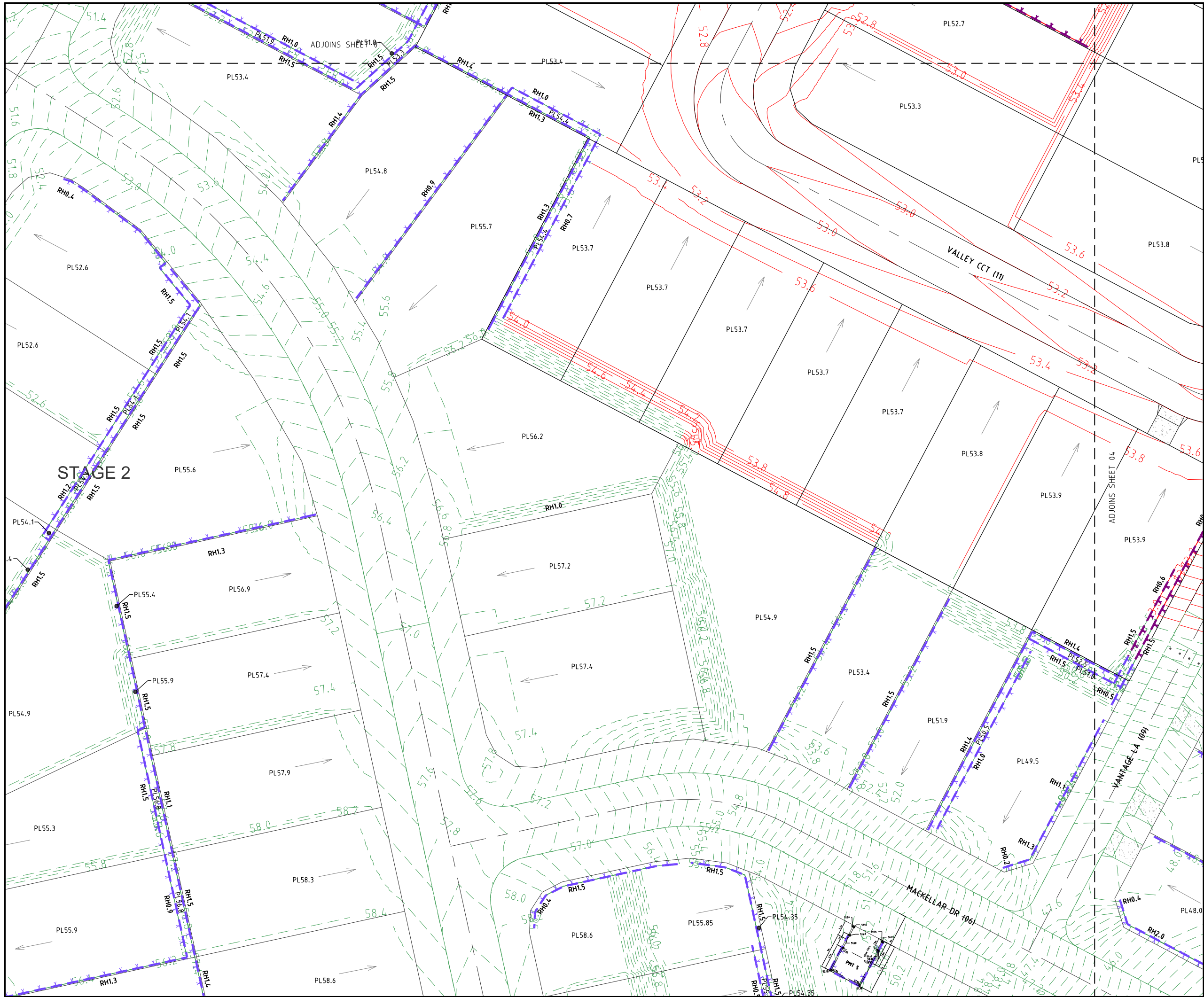
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DESIGNED RB	DRAWN BL
APPROVED RB	REPEATED DATE 30-10-24

DRAWING NUMBER
41901-05-060

REV
A



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

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

CLIENT

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

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DRAWING TITLE

RETAINING WALL
& DETAIL GRADING PLAN
SHEET 03

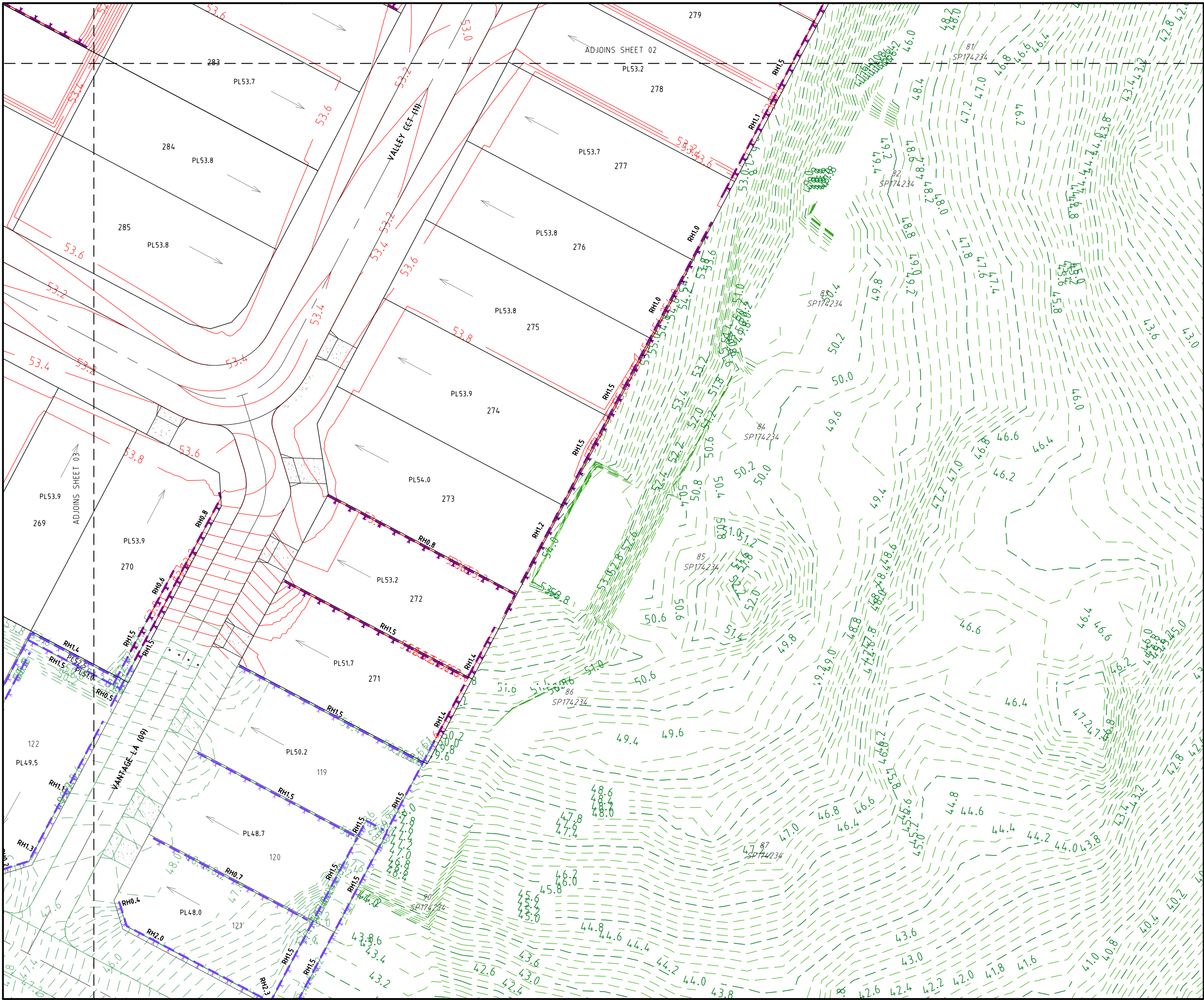
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DESIGNED RB	DRAWN BL
APPROVED	REQ 4706 DATE 30-10-24
DRAWING NUMBER 41901-05-062	REV A



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

GOLD COAST CITY COUNCIL

CLIENT

0 2.5 5 7.5 10 12.5m

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

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ASSOCIATED CONSULTANTS

WATER AND ENVIRONMENTAL CONSULTING

ROBIN RUSSELL & ASSOCIATES PTY. LTD.

DRAWING TITLE

RETAINING WALL
& DETAIL GRADING PLAN
SHEET 04

Urban & Regional Planning
Civil Engineering
Project Coordination

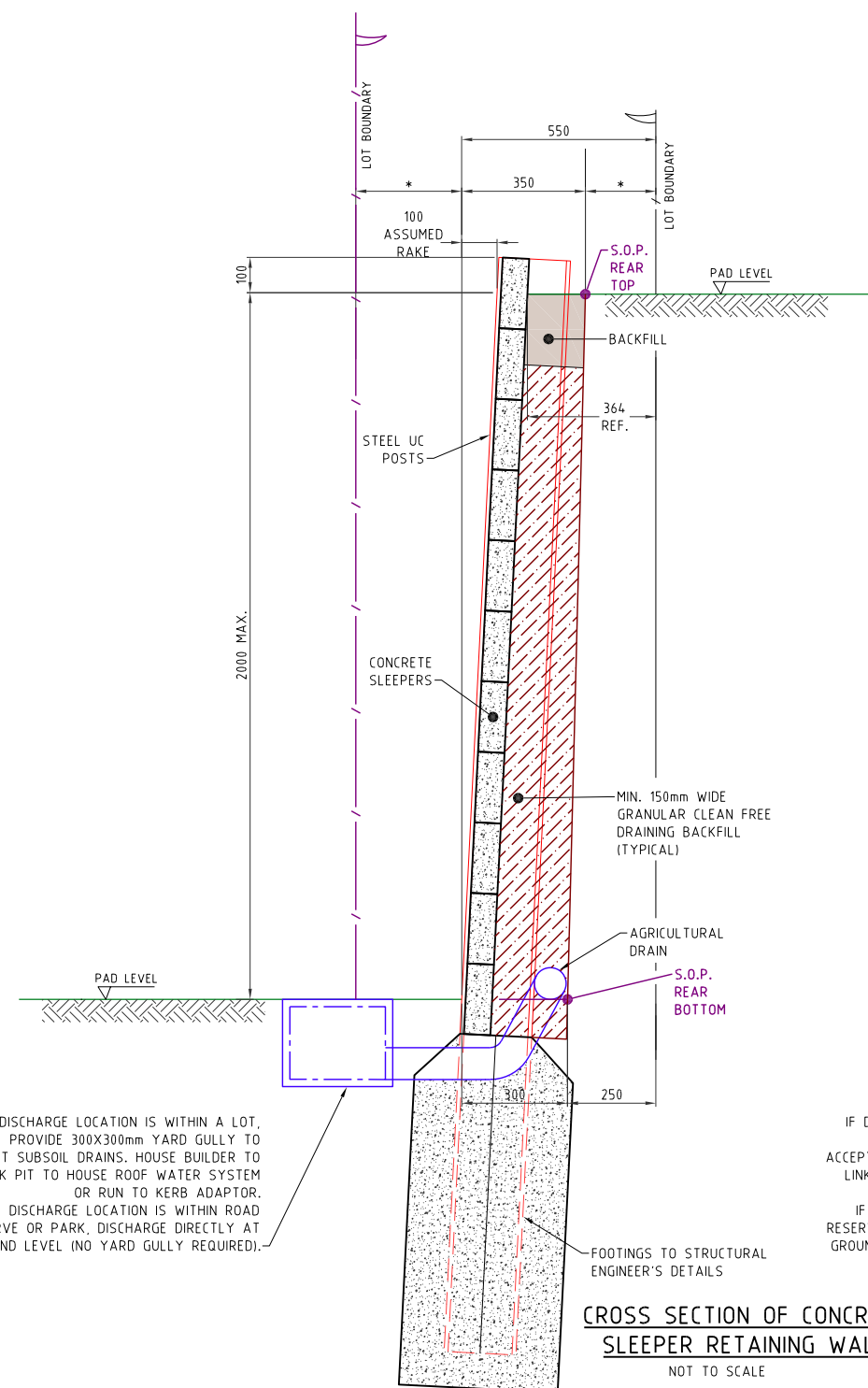
MUS Pty Ltd T/As:
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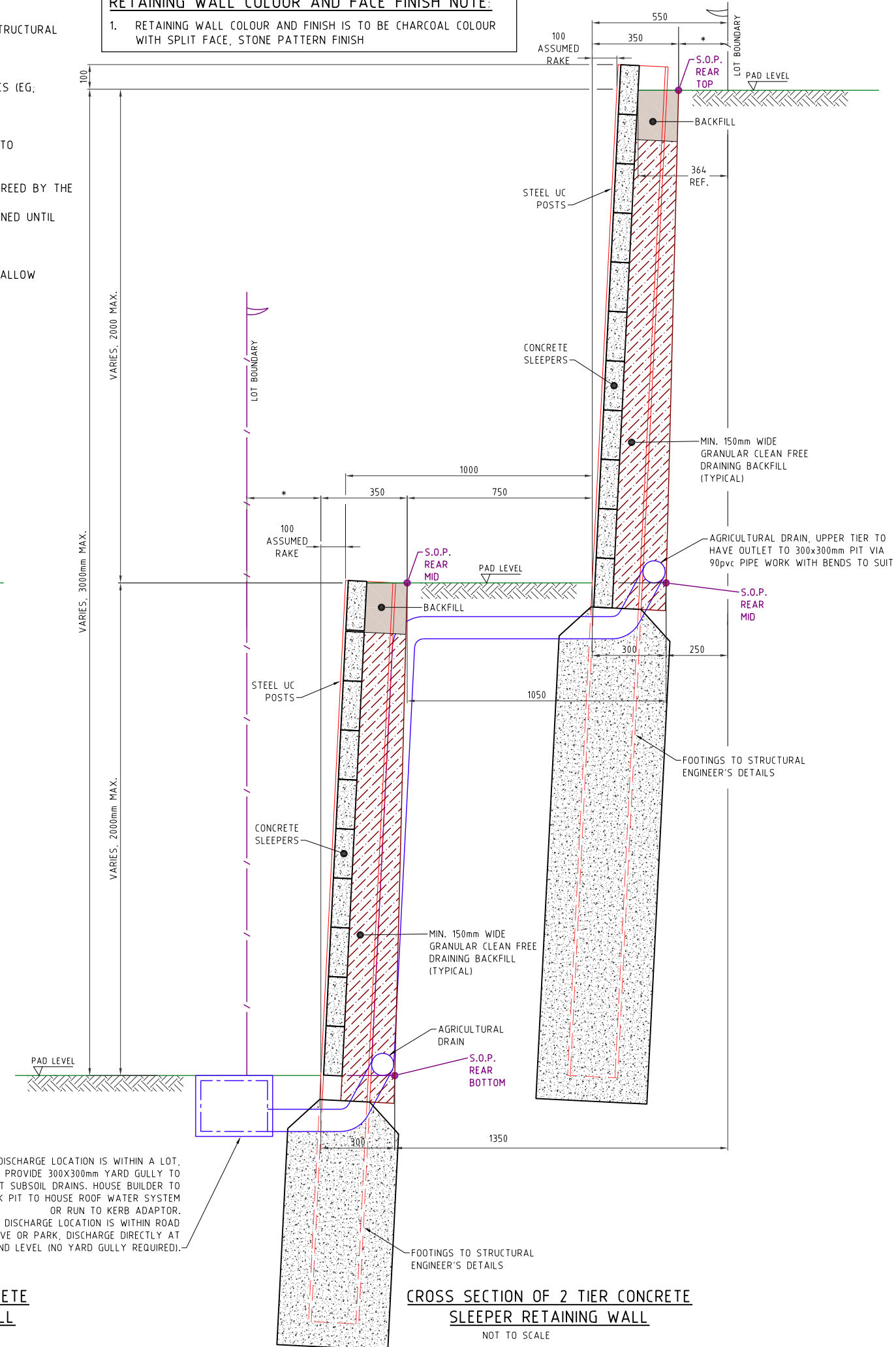
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1. RETAINING WALL DETAILS ARE INDICATIVE ONLY.
2. CONTRACTOR TO ARRANGE FOR DESIGN & CONSTRUCTION OF WALLS BY RPEQ STRUCTURAL ENGINEER. CONTRACTOR TO PROVIDE STRUCTURAL CERTIFICATION OF DESIGN & FINAL CONSTRUCTION.
3. ALLOW FOR 5kPa LOADING TO WALLS 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. SETBACKS- REFER TABLE
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 INSTALLATION POSTS. NO BRACKETS 5m FROM FRONT BOUNDARY.
15. ALL FOOTINGS MUST BE A MINIMUM OF 200mm FROM PROPERTY BOUNDARY.

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



CROSS SECTION OF CONCRETE
SLEEPER RETAINING WALL
NOT TO SCALE



CROSS SECTION OF 2 TIER CONCRETE
SLEEPER RETAINING WALL
NOT TO SCALE

COURTNEY DR
UPPER COOMERA

RP DESCRIPTION

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

C L I E N T



A	Date	COUNCIL ISSUE	
REV	DATE	DESCRIPTION	

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ASSOCIATED CONSULTANTS



D R A W I N G T I T L E

RETAINING WALL DETAILS



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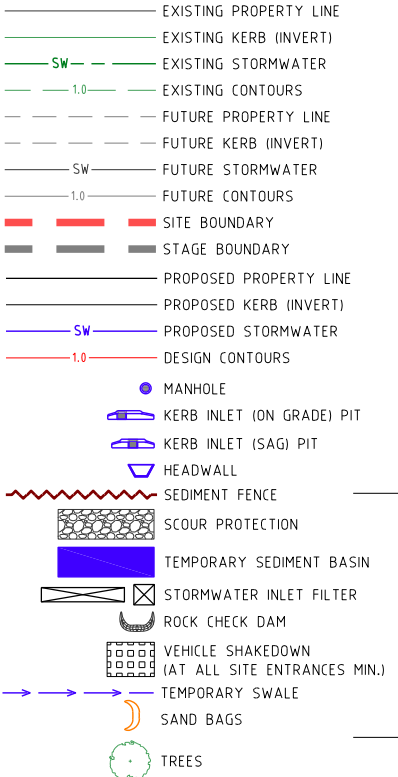
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DESIGNED	YYYY	DRAWN	ZZZZ
APPROVED	<i>dr. K. m...</i>	RPEQ4706	DATE 30-10-24
DRAWING NUMBER			REV
41901-05-070			A

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.
- d) 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.
16. EROSION & SEDIMENT CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE CONTRACTOR HOLDS ALL LIABILITY.

LEGEND



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

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.

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



0 5 10 15 20 25m
Scale 1500 - A1 (1:1000 - A3)

A	30-10-24	COUNCIL ISSUE	BL
REV	DATE	DESCRIPTION	INT

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ASSOCIATED CONSULTANTS



DRAWING TITLE

**FINAL SURFACE AND
SEDIMENT AND EROSION
NOTES & LEGEND**



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DESIGNED RB	DRAWN BL
APPROVED <i>A.K.M.</i>	PERQ4706 DATE 30-10-24

DRAWING NUMBER 41901-05-080	REV A
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PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

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

CLIENT

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ASSOCIATED CONSULTANTS

DRAWING TITLE

FINAL SURFACE AND
SEDIMENT AND EROSION
PLAN

Urban & Regional Planning
Civil Engineering
Project Coordination

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CONSTRUCTION SERVICES

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

LEGEND

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



187
RP173728

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



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

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ASSOCIATED CONSULTANTS



DRAWING TITLE

COMBINED SERVICES
PLAN

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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APPROVED <i>AK</i>	REQ 4706

DRAWING NUMBER
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ROADWORKS

1. PAVEMENT DEPTHS
- a. THE DESIGN PAVEMENT DEPTHS ALLOWED IN EARTHWORKS CALCULATIONS ARE BASED ON THE AUTHORITY'S MINIMUM PAVEMENT BOX.
- b. THE PAVEMENT DEPTHS GIVEN ARE NOMINAL 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. IN PROJECTS EXPECTING LIME STABILISED SUBGRADE, THE CONTRACTOR MUST PROVIDE LIME DEMAND TEST RESULTS WITH THE CBR REPORT.
- c. THE SUPERINTENDENT WILL COORDINATE THE AUTHORITIES APPROVAL OF THE PAVEMENT DESIGN.
- d. REFER TO DWG. 120 FOR TYPICAL ROAD SECTIONS.
- e. 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.
- f. 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.
- g. 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.
- h. ROCK
- THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR RATES.
- i. 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. FOR ALL KERB TYPES REFER TO DWG 120.
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
- FUTURE KERB
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY

PROPOSED CONCRETE

41.065 CENTRELINE CHAINAGE

REFER TO DRG. 120 FOR KERB TYPES

B1 BARRIER KERB & CHANNEL

B2 BARRIER KERB

ICH INVERT CHANNEL



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

0 5 10 15 20 25m

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

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ASSOCIATED CONSULTANTS

WATER AND ENVIRONMENTAL CONSULTING

ROBIN RUSSELL & ASSOCIATES PTY. LTD.

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DRAWING TITLE

ROADWORKS
PLAN

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Project Coordination

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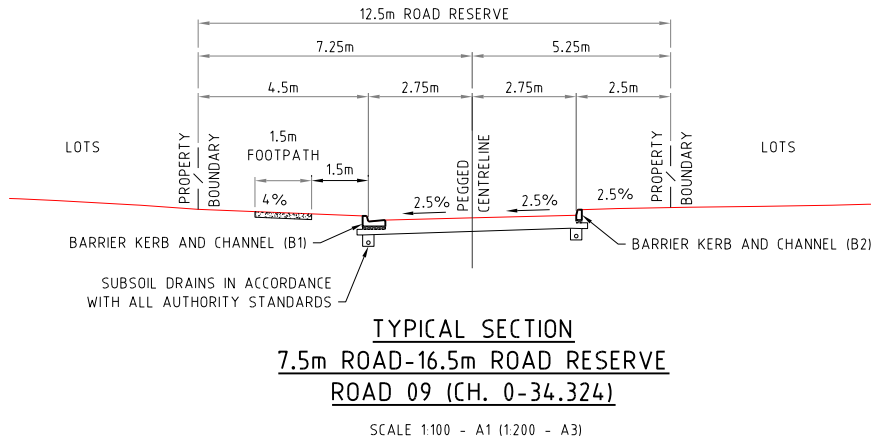
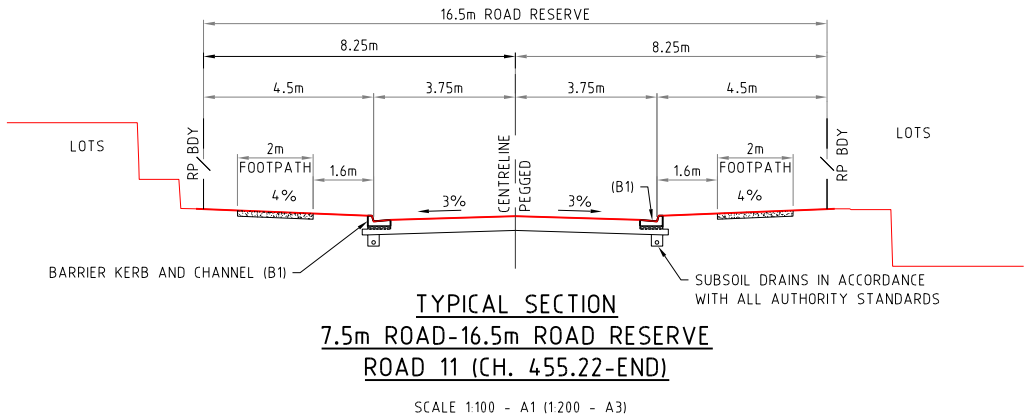
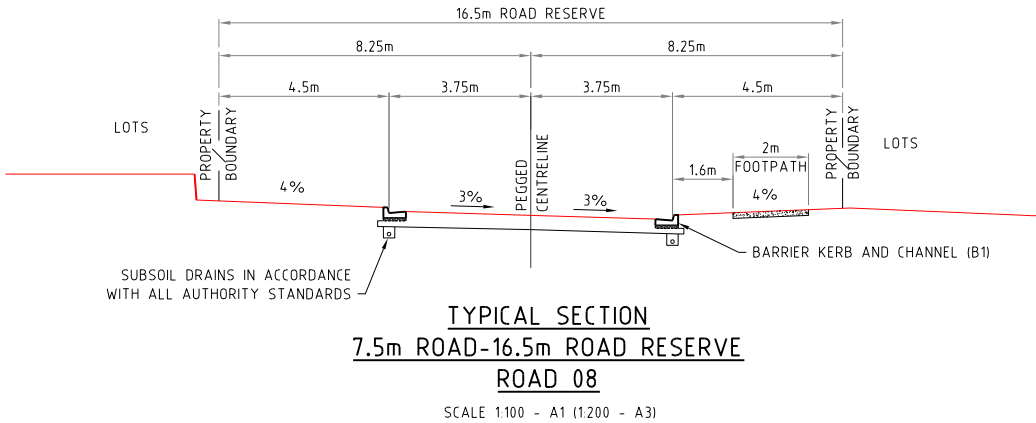
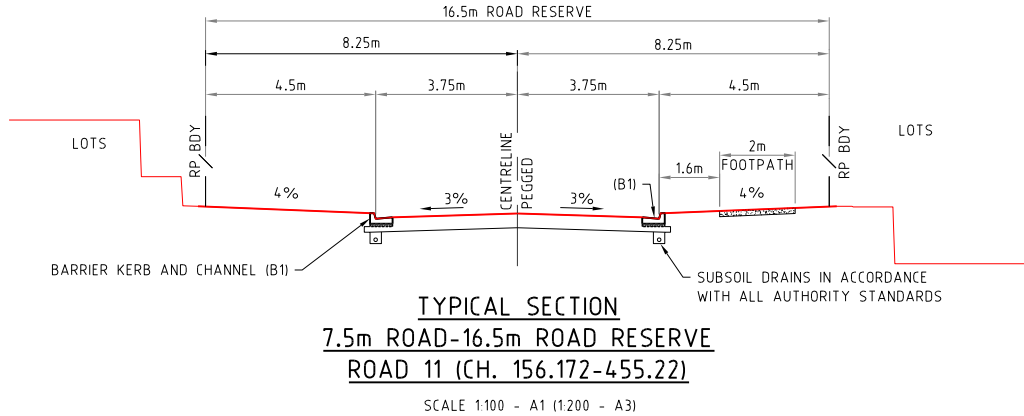
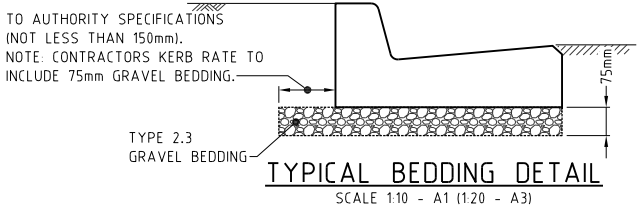
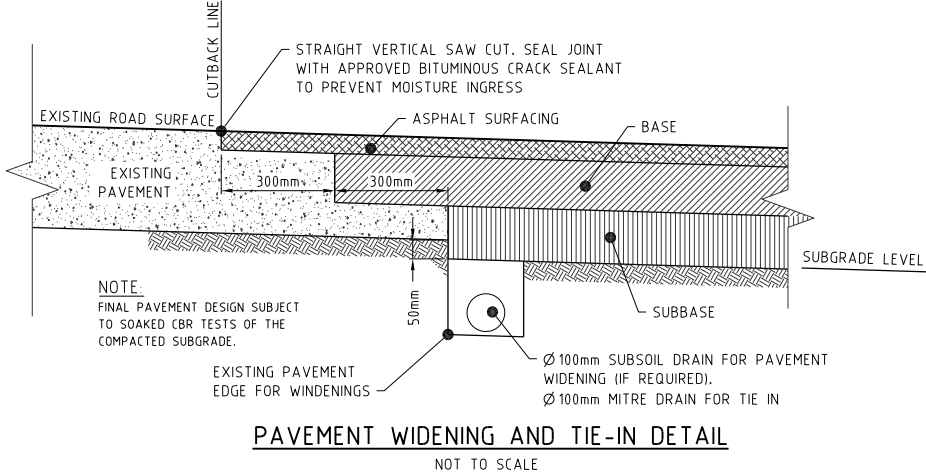
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APPROVED	PEREQT06 DATE 30-10-24
DRAWING NUMBER	REV
41901-05-100	A

SCHEDULE OF PAVEMENT DEPTHS							
ROAD NAME	SURFACING	BASE	SUB-BASE	LOWER SUB-BASE	CLASSIFICATION	VPD	DESIGN GUIDE
ROAD 08	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
ROAD 09	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
ROAD 11	25mm ASPHALT	100mm TYPE 2.1 (CBR 60)	100mm TYPE 2.3 (CBR 45)	100mm TYPE 2.5 (CBR 15)	RESIDENTIAL ACCESS ST	401-750	GCCC TABLE 2.11

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

SCHEDULE OF KERB TYPES		
KERB TYPE	IMAGE	REFERENCE
B1		IPWEA DWG. RS-080 NOTE: SUBSOIL DRAINS TO BE PLACED UNDER ALL KERBS.
B2		
CHANNEL 900		



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT

0 0.1 0.2 0.3 0.4 0.5m

Scale 1:10 - A1 (120 - A3)

0 1 2 3 4 5m

Scale 1:100 - A1 (1200 - A3)

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DRAWING TITLE

ROADWORKS
DETAILS

Urban & Regional Planning
Civil Engineering
Project Coordination

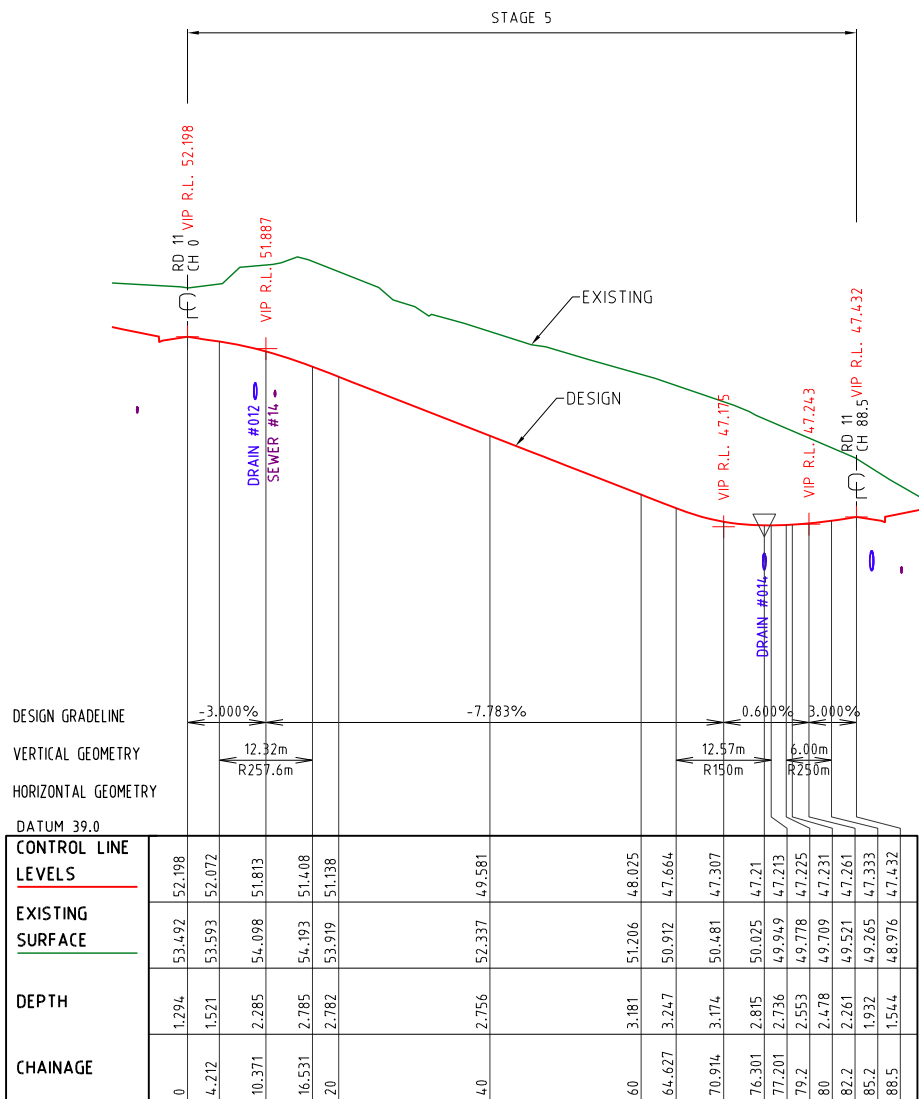
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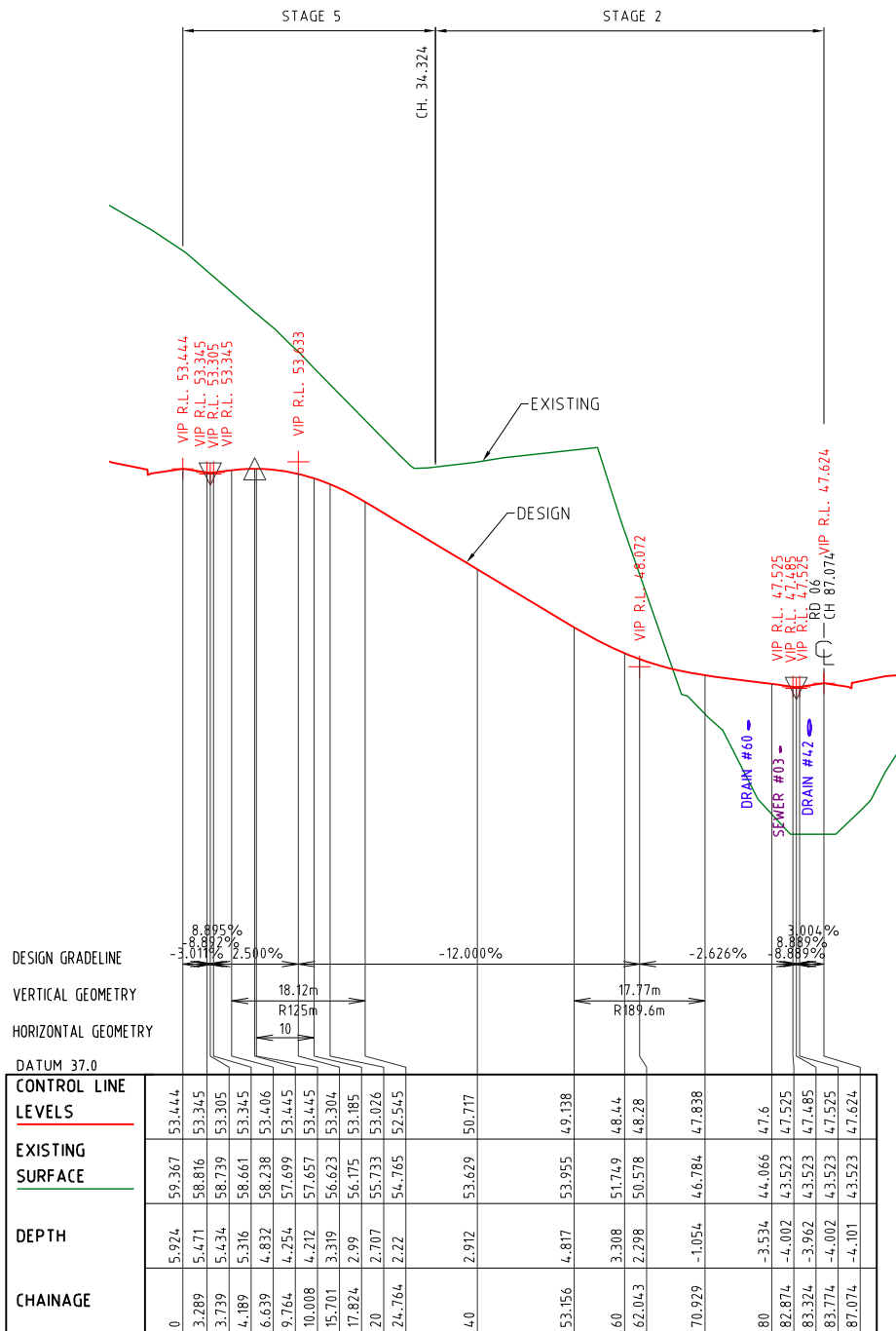
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APPROVED	REPEL706 DATE 30-10-24
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41901-05-120	A

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LONGITUDINAL SECTION 08



LONGITUDINAL SECTION 09

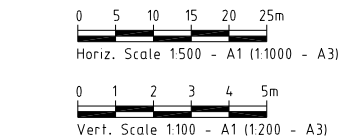
PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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



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LONGITUDINAL SECTIONS
ROAD 02

Urban & Regional Planning
Civil Engineering
Project Coordination

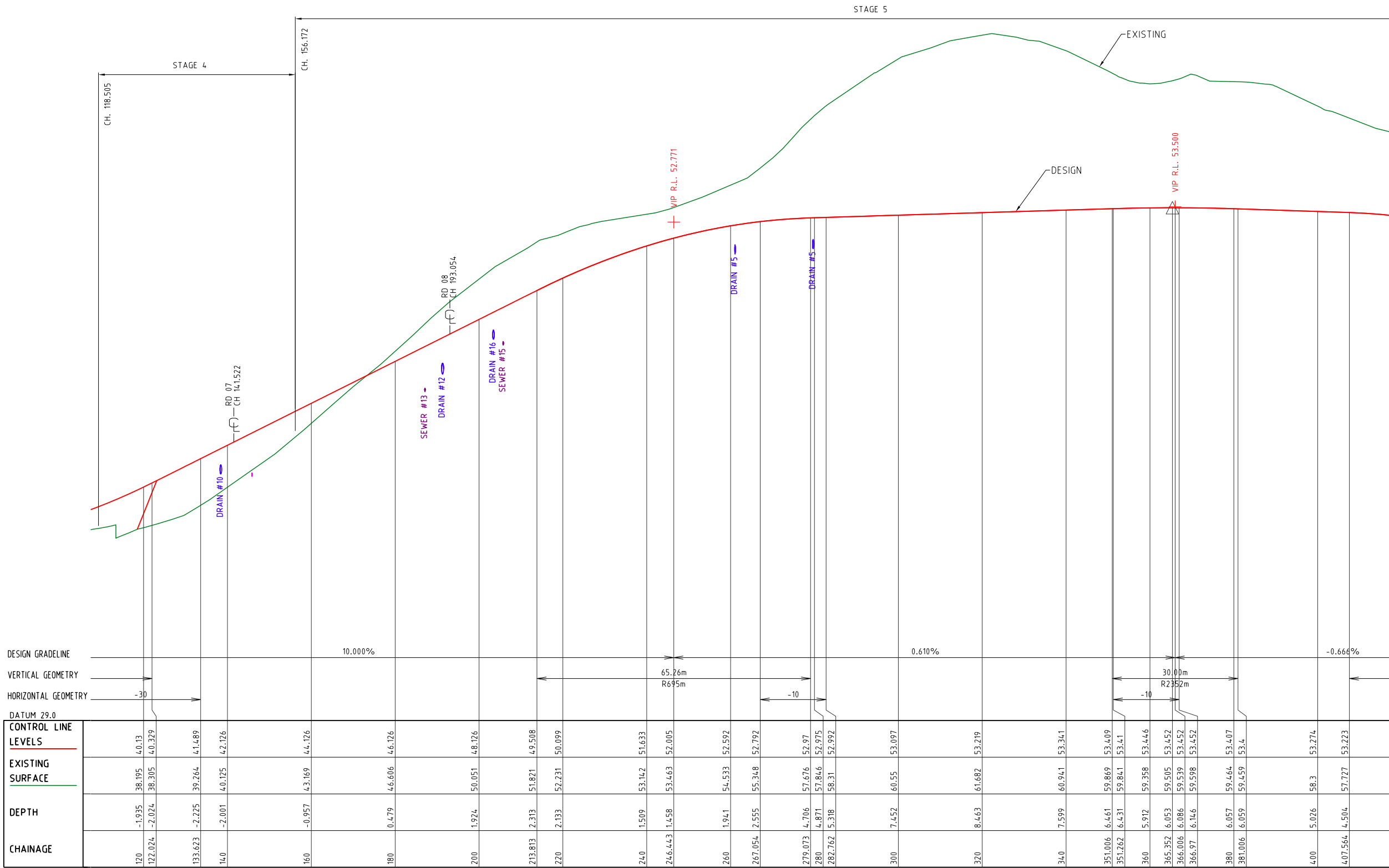
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DRAWING NUMBER	REV
41901-05-200	A

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LONGITUDINAL SECTION 11

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

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

CLIENT



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)

A30-10-24COUNCIL ISSUEBL

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LONGITUDINAL SECTIONS
ROADS 06 & 09


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Project Coordination

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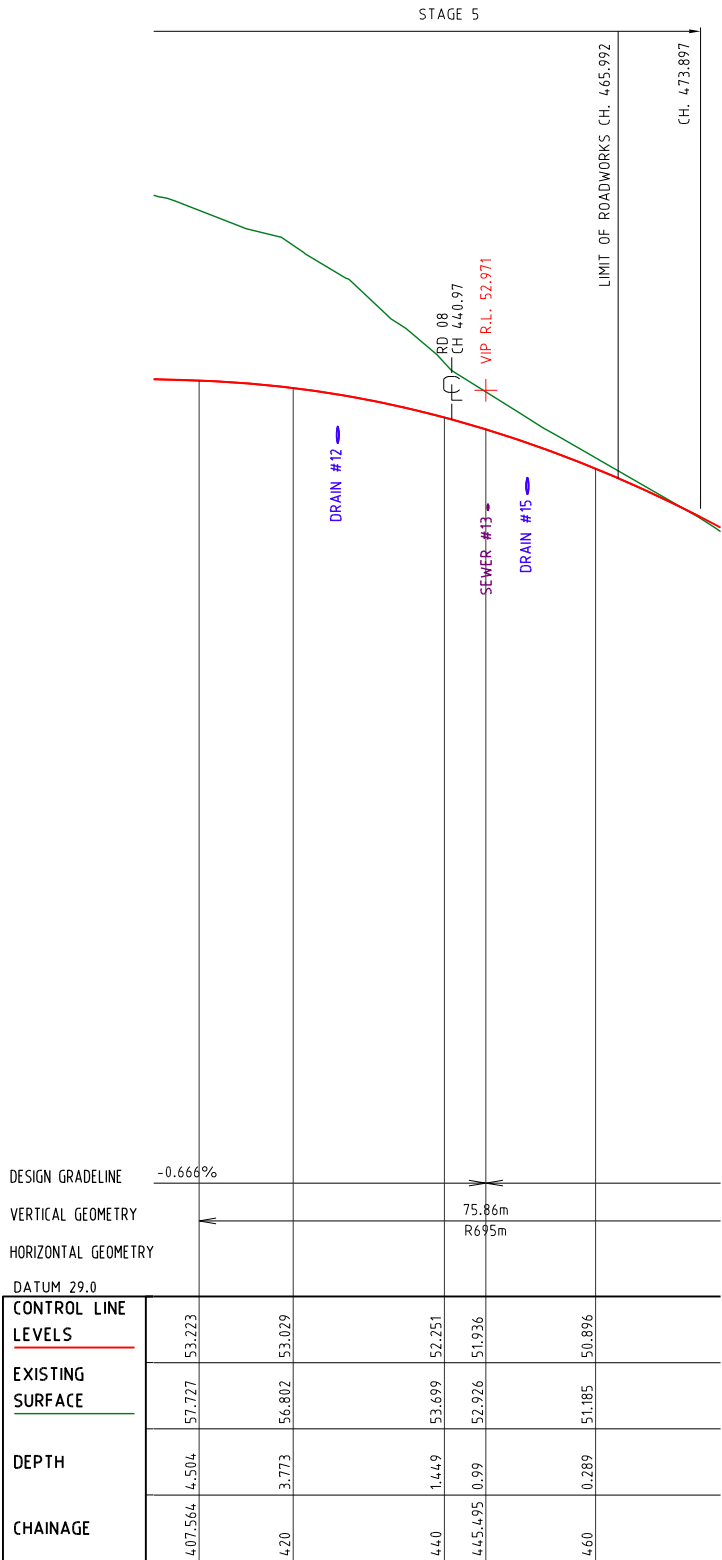
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DRAWING NUMBERREV

41901-05-201A

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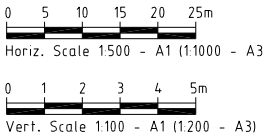
LONGITUDINAL SECTION 11 (Cont.)

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



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ROADS 06 & 09



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DRAWING NUMBER 41901-05-202	REV A

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	

-8.0	57.041	52.5
-8.85	57.032	51.835
-3.9	55.476	51.617
-3.3	55.28	51.507
0	54.193	51.408
3.3	53.105	51.309
3.9	52.907	51.419
8.45	51.287	51.601

CH 16.531

ROAD 08

-8.0	54.258	51.488
-8.85	54.247	49.988
-3.9	53.179	49.79
-3.3	53.049	49.68
0	52.337	49.581
3.3	51.534	49.482
3.9	51.387	49.592
8.45	50.551	49.774

CH 40

-8.0	53.215	49.932
-8.85	53.205	48.432
-3.9	52.177	48.224
-3.3	51.981	48.124
0	51.206	48.025
3.3	50.438	47.976
3.9	50.298	48.036
8.45	49.227	48.218

CH 60

-8.0	52.835	49.571
-8.85	52.825	48.071
-3.9	51.809	47.873
-3.3	51.686	47.763
0	50.912	47.664
3.3	50.13	47.565
3.9	49.988	47.635
8.45	48.974	47.857

CH 64.627

-3.9	50.736	47.419
-3.3	50.621	47.309
0	50.025	47.21
3.3	49.418	47.111
3.9	49.304	47.221

CH 76.301

-3.9	50.435	47.422
-3.3	50.322	47.312
0	49.949	47.213
3.3	49.344	47.114
3.9	49.231	47.224

CH 77.201

-2.9	58.255	53.459
-2.3	58.251	53.349
0	58.238	53.406
2.75	58.222	53.475
2.9	58.222	53.623

CH 6.639

-7.25	57.763	53.672
-2.9	57.724	53.498
-2.3	57.719	53.388
0	57.699	53.445
2.75	57.683	53.514
2.9	57.682	53.664
5.25	57.649	53.723
5.55	57.645	53.773

CH 9.764

-7.25	57.772	53.671
-2.9	57.683	53.497
-2.3	57.677	53.387
0	57.657	53.445
2.75	57.641	53.514
2.9	57.64	53.664
5.25	57.607	53.722
5.55	57.602	53.772

CH 10.008

-7.25	55.313	53.412
-2.9	55.842	53.238
-2.3	55.911	53.128
0	56.175	53.185
2.75	56.495	53.254
2.9	56.517	53.404
5.25	56.874	53.463
5.55	56.919	53.463
5.85	56.965	53.463
5.862	56.967	53.823

CH 17.824

-7.25	55.313	53.412
-2.9	55.842	53.238
-2.3	55.911	53.128
0	56.175	53.185
2.75	56.495	53.254
2.9	56.517	53.404
5.25	56.874	53.463
5.55	56.919	53.463
5.85	56.965	53.463
5.862	56.967	53.823

CH 17.824

-7.25	54.962	53.253
-2.9	55.4	53.079
-2.3	55.469	52.969
0	55.733	53.026
2.75	56.071	53.095
2.9	56.084	53.245
5.25	56.45	53.304
5.55	56.456	53.304
5.85	56.541	53.304
5.87	56.544	53.9

CH 20

-7.25	54.096	52.772
-2.9	54.432	52.598
-2.3	54.501	52.488
0	54.765	52.545
2.75	55.144	52.614
2.9	55.166	52.764
5.25	55.523	52.823
5.55	55.569	52.823
5.85	55.614	52.823
5.886	55.62	53.9

CH 24.764

-7.25	53.229	50.943
-2.9	53.469	50.769
-2.3	53.502	50.659
0	53.629	50.717
2.75	53.753	50.786
2.9	53.763	50.936
5.25	53.924	50.994
5.55	53.944	50.994
5.85	53.965	50.994
5.9	53.968	52.494
6.85	54.304	52.494
8.937	54.343	53.9

CH 40

-7.25	53.229	50.943
-2.9	53.469	50.769
-2.3	53.502	50.659
0	53.629	50.717
2.75	53.753	50.786
2.9	53.763	50.936
5.25	53.924	50.994
5.55	53.944	50.994
5.85	53.965	50.994
5.9	53.968	52.494
6.85	54.304	52.494
8.937	54.343	53.9

CH 40

-7.25	55.313	53.412
-2.9	55.842	53.238
-2.3	55.911	53.128
0	56.175	53.185
2.75	56.495	53.254
2.9	56.517	53.404
5.25	56.874	53.463
5.55	56.919	53.463
5.85	56.965	53.463
5.862	56.967	53.823

CH 17.824

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



0 2 4 6 8 10m

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

A	30-10-24	COUNCIL ISSUE	BL
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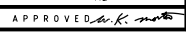
CROSS SECTIONS
ROAD 02


MORTONS
urban solutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DRAWING NUMBER	
41901-05-300	
REV	
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2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

DESIGN SURFACE LEVEL	DATUM R.L. 35.0
EXISTING SURFACE LEVEL	
OFFSET	

CH 123.893

DATUM R.L. 36.0

CH 133.623

DATUM R.L. 36.0

CH 140

DATUM R.L. 36.0

CH 160

DATUM R.L. 39.0

CH 180

DATUM R.L. 42.0

DATUM R.L. 44.0

CH 200

DATUM R.L. 46.0

CH 213.813

DATUM R.L. 46.0

CH 220

DATUM R.L. 46.0

CH 240

DATUM R.L. 47.0

CH 260

DATUM R.L. 48.0

CH 267.054

DATUM R.L. 49.0

CH 279.073

DATUM R.L. 49.0

CH 280

DATUM R.L. 49.0

DATUM R.L. 49.0

CH 282.762

DATUM R.L. 49.0

CH 300

DATUM R.L. 49.0

CH 320

DATUM R.L. 50.0

CH 340

DATUM R.L. 50.0

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



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

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ROAD 06

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

DESIGN SURFACE LEVEL	-9.028	60.501	53.628				
EXISTING SURFACE LEVEL	-4.478	60.04	53.446	-3.878	59.978	53.336	
OFFSET	0	59.505	53.452	3.3	59.099	53.353	8.45

CH 365.352

DESIGN SURFACE LEVEL	-9.442	60.534	53.609				
EXISTING SURFACE LEVEL	-4.892	60.004	53.427	-4.292	59.934	53.317	
OFFSET	0	59.358	53.446	3.3	58.832	53.347	4.2

CH 360

DESIGN SURFACE LEVEL	-8.776	60.51	53.593				
EXISTING SURFACE LEVEL	-4.226	60.189	53.411	-3.626	60.147	53.301	
OFFSET	0	59.841	53.41	3.3	59.428	53.311	8.45

CH 351.262

DESIGN SURFACE LEVEL	-8.709	60.528	53.594				
EXISTING SURFACE LEVEL	-4.159	60.213	53.412	-3.559	60.171	53.302	
OFFSET	0	59.869	53.409	3.3	59.464	53.31	8.45

CH 351.006

DESIGN SURFACE LEVEL	-8.45	58.411	53.467				
EXISTING SURFACE LEVEL	-3.9	58.307	53.285	-3.3	58.293	53.175	
OFFSET	0	58.3	53.274	3.3	58.207	53.175	8.45

CH 400

DESIGN SURFACE LEVEL	-8.45	59.825	53.593				
EXISTING SURFACE LEVEL	-3.9	59.563	53.411	-3.3	59.502	53.301	
OFFSET	0	59.459	53.4	3.3	59.354	53.301	8.45

CH 381.006

DESIGN SURFACE LEVEL	-8.45	59.819	53.6				
EXISTING SURFACE LEVEL	-3.9	59.575	53.418	-3.3	59.554	53.308	
OFFSET	0	59.464	53.407	3.3	59.36	53.308	8.45

CH 380

DESIGN SURFACE LEVEL	-8.776	60.488	53.635				
EXISTING SURFACE LEVEL	-4.226	60.066	53.453	-3.626	60.012	53.343	
OFFSET	0	59.598	53.452	3.3	59.223	53.363	8.45

CH 366.97

DESIGN SURFACE LEVEL	-8.45	49.381	49.9				
EXISTING SURFACE LEVEL	-3.9	49.41	49.718	-3.3	49.622	49.608	
OFFSET	0	49.688	49.707	3.3	49.185	53.285	8.45

CH 473

DESIGN SURFACE LEVEL	-8.45	50.813	51.089				
EXISTING SURFACE LEVEL	-3.9	51.044	50.907	-3.3	51.075	50.797	
OFFSET	0	51.185	50.896	3.3	51.247	50.797	8.45

CH 460

DESIGN SURFACE LEVEL	-8.45	53.699	52.251				
EXISTING SURFACE LEVEL	-3.9	53.645	52.152	-3.3	53.614	52.062	
OFFSET	0	53.729	52.444	3.3	53.348	53.421	8.45

CH 440

DESIGN SURFACE LEVEL	-8.45	57.39	53.222				
EXISTING SURFACE LEVEL	-3.9	57.18	53.04	-3.3	57.152	52.93	
OFFSET	0	56.802	53.029	3.3	56.409	52.93	8.45

CH 420

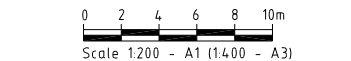
DESIGN SURFACE LEVEL	-8.45	58.077	53.416				
EXISTING SURFACE LEVEL	-3.9	57.986	53.234	-3.3	57.964	53.144	
OFFSET	0	57.727	53.223	3.3	57.472	53.174	8.45

CH 407.564

ROAD 11 (Cont.)

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05
RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL



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**CROSS SECTIONS
ROAD 06**



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APPROVED	<i>AK</i>	REQ 4706	DATE 30-10-24
DRAWING NUMBER			REV
41901-05-302			A

LEGEND

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

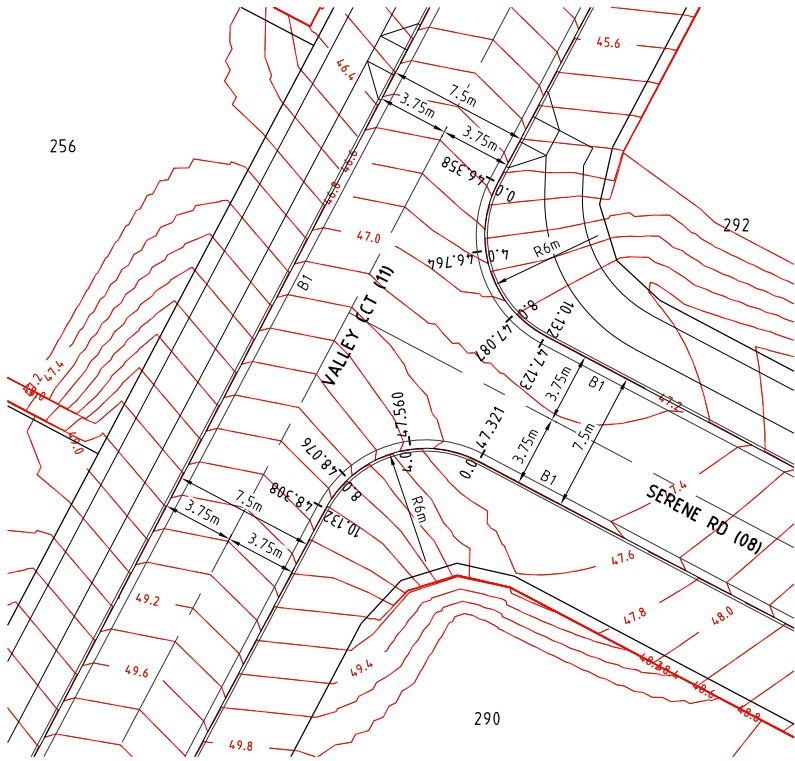
24.0 _ 41.065 INTERSECTION CHAINAGE & LEVEL

- B1 BARRIER KERB & CHANNEL
- B2 BARRIER KERB
- ICH INVERT CHANNEL

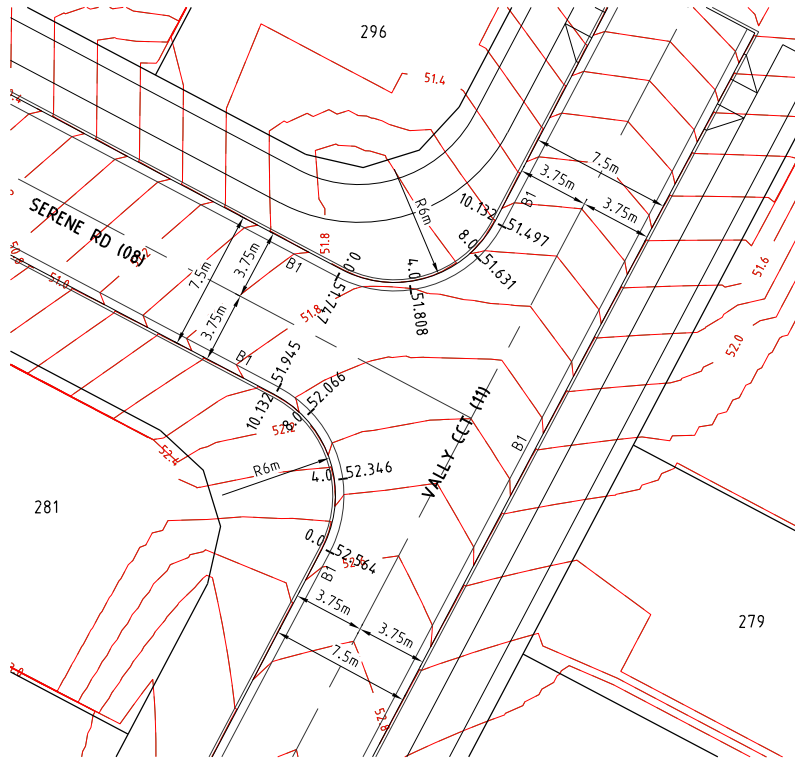
REFER TO DRG. 120 FOR KERB TYPES

NOTES:

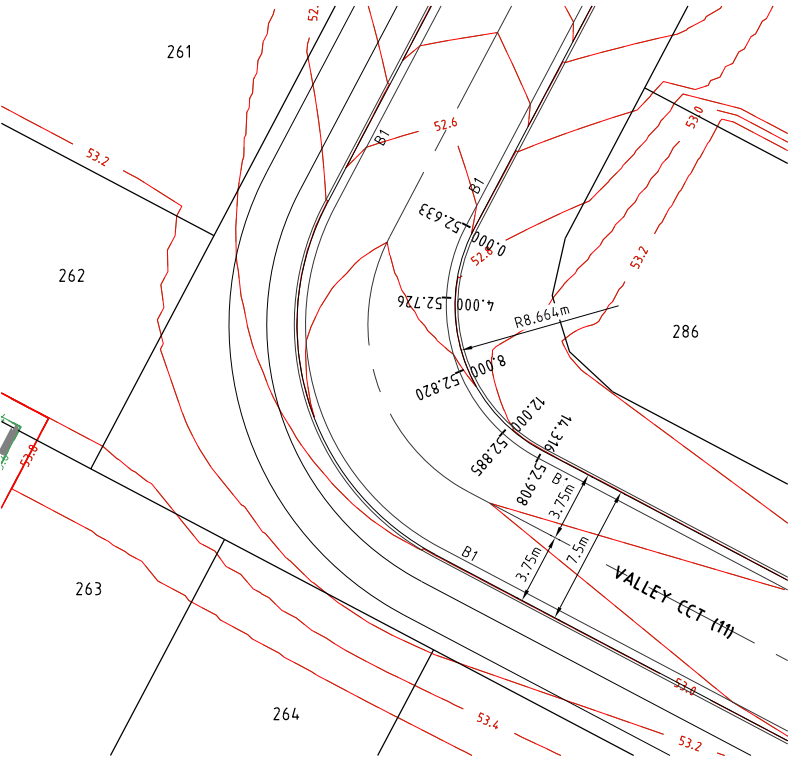
- SETOUT POINT DENOTES LIP OF KERB WHERE LIP OF KERB, OR FACE OF KERB WHERE NO LIP.
- FOR KERB TYPES REFER TO SCHEDULE OF KERB TYPES ON DWG. 120



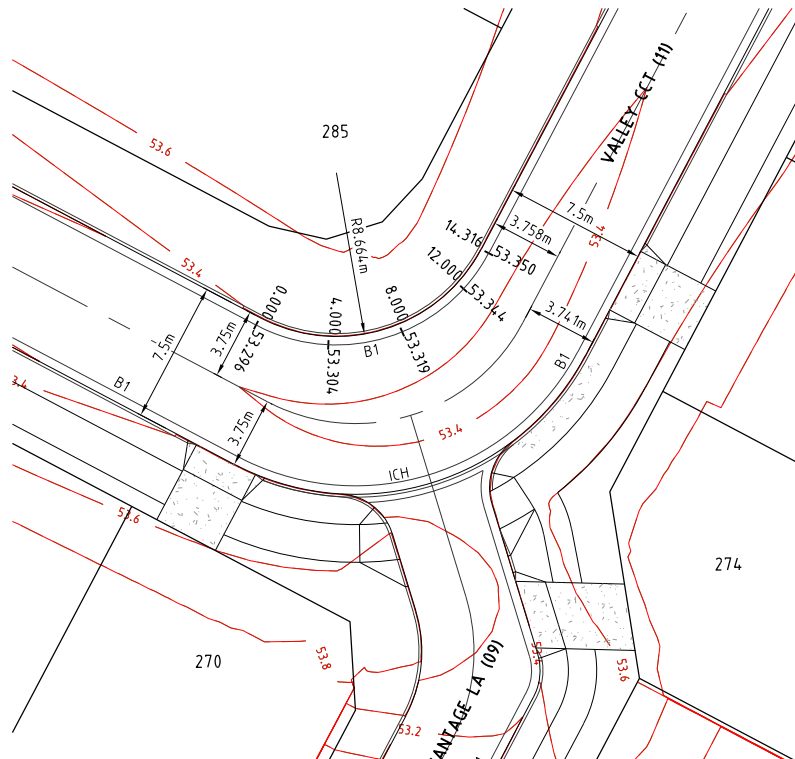
INTERSECTION
ROAD 11 & ROAD 08



INTERSECTION
ROAD 08 & ROAD 11



ROAD WIDENING
ROAD 11



ROAD WIDENING
ROAD 11 & ROAD 09

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



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

REV	DATE	DESCRIPTION	INT
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DRAWING TITLE

INTERSECTION
GRADING DETAILS



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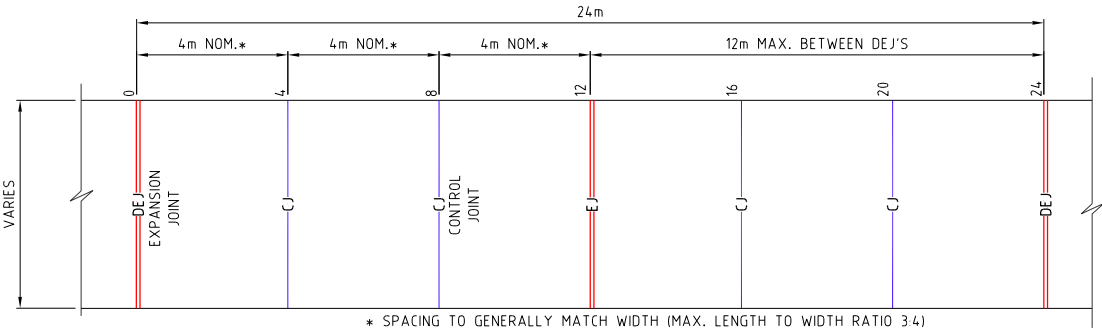
DESIGNED	RB	DRAWN	BL
APPROVED	A.K.M.	R.P.E.Q.706	DATE 30-10-24

DRAWING NUMBER
41901-05-400

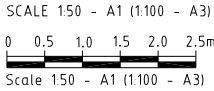
REV
A

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"

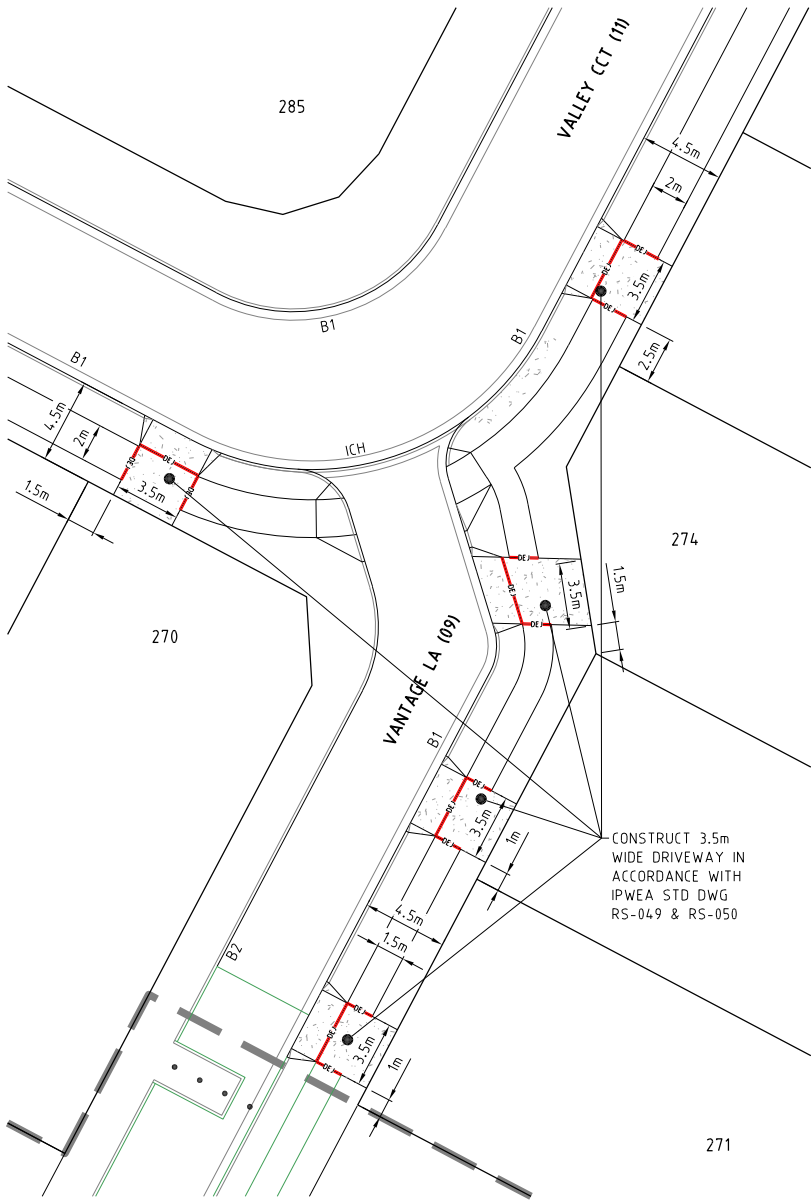


TYPICAL CONCRETE PAVEMENT DETAIL FOR DRIVEWAYS AND ROADS



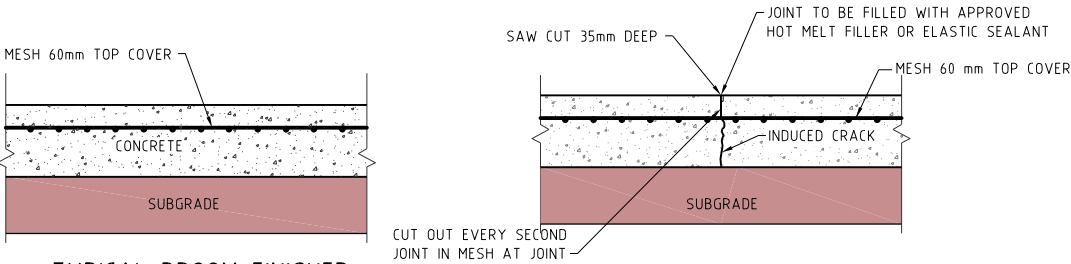
SCHEDULE OF CONCRETE PAVEMENTS					
FUNCTION	SURFACING	SUBGRADE PREPARATION	THICKNESS 'T'	STRENGTH	REINFORCING
FOOTPATH 1.5 AND 2.0M WIDE	HEAVY BROOM FINISH	50mm SAND BLINDING LAYER	100mm	32 mPa	SL 72 MESH
DRIVEWAY 5.5m WIDE	HEAVY BROOM FINISH	50mm SAND BLINDING LAYER OR 100mm (CBR 15)	125mm	32 mPa	SL 72 MESH

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



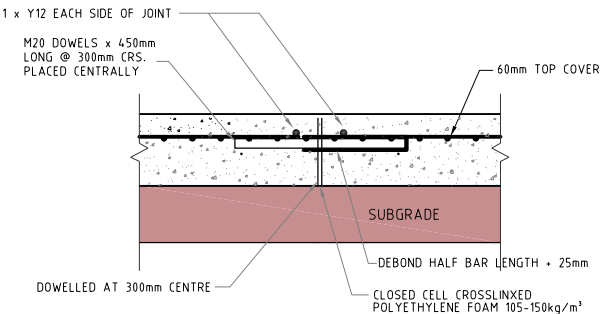
LEGEND

- 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.

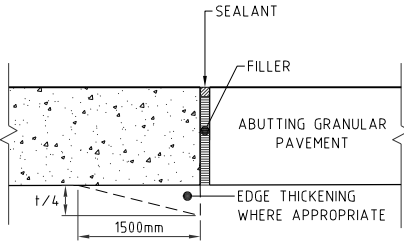


TYPICAL BROOM FINISHED
CONCRETE PAVEMENT DETAIL
NOT TO SCALE

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



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



ISOLATION JOINT (IJ)
NOT TO SCALE

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



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

REV	DATE	DESCRIPTION	INT
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ASSOCIATED CONSULTANTS



DRAWING TITLE

CONCRETE
JOINTING PLAN
& DETAILS

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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APPROVED	AK	REQ	706	DATE	30-10-24
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DRAWING NUMBER	REV
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41901-05-410

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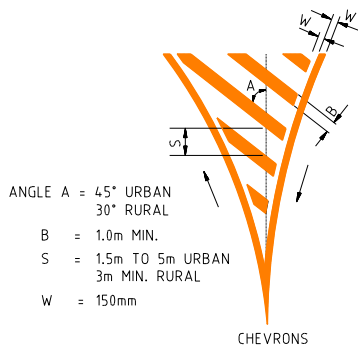
NOTES

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



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



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



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

REV	DATE	DESCRIPTION	INT
A	30-10-24	COUNCIL ISSUE	BL

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ASSOCIATED CONSULTANTS



DRAWING TITLE

LINEMARKING & SIGNAGE
PLAN

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED RB	DRAWN BL
APPROVED <i>A.K.M.</i>	DATE 30-10-24
DRAWING NUMBER 41901-05-420	REV A

SEQ CODE SEWER NOTES

SEQ CODE NOTES COPIED DIRECTLY FROM DRAWING SEQ-SEW-1101-3 (REV B).

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

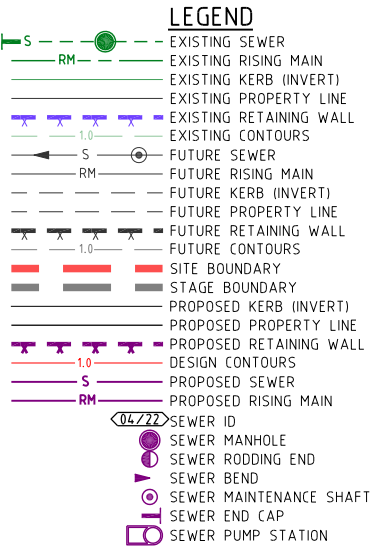
- A. THE DESIGN & CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

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 AND 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 AND 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 160 & A MAXIMUM DEPTH OF PROPERTY CONNECTION AT 1.5m, UNLESS OTHERWISE STATED.
- i. CONTRACTOR TO PAY ALL FEES & CHARGES ASSOCIATED WITH CONNECTIONS.



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

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

SERVICE PROVIDER AND CONSTRUCTOR LIVE SEWER WORKS SCHEDULE

No.	Description	Dia. Sewer	MH No.	MH/MS Type	Cover Type	Lot no	F.S.L	E.S.L	I.L	Depth to invert
1(A)	CIVIL CONTRACTOR TO MAKE APPLICATION TO LOGAN WATER FOR THE LIVE CONNECTION TO DOWNSTREAM SEWER MANHOLE AT EACH LOCATION (LINES 209)	150	23/07	J1	B	255	43.324	43.338	41.800	1.545
1(B)	0.5m FROM STUB END CAP, CONTRACTOR TO LAY NEW LINES 209. AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY LOGAN WATER.									
1(C)	LOGAN WATER TO REMOVE TEMPORARY END CAPS ON STUB & LINES 209 AND MAKE LIVE CONNECTION AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.									
2(A)	CIVIL CONTRACTOR TO MAKE APPLICATION TO LOGAN WATER FOR THE LIVE CONNECTION TO DOWNSTREAM SEWER MANHOLE AT EACH LOCATION (LINES 215)	150	1/04	J1	B	271	52.640	52.783	50.631	2.010
2(B)	0.5m FROM STUB END CAP, CONTRACTOR TO LAY NEW LINES 215. AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY LOGAN WATER.									
2(C)	LOGAN WATER TO REMOVE TEMPORARY END CAPS ON STUB & LINES 215 AND MAKE LIVE CONNECTION AFTER SUCCESSFUL "ON MAINTENANCE" INSPECTION.									

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



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

A	30-10-24	COUNCIL ISSUE	BL
REV	DATE	DESCRIPTION	INT

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ASSOCIATED CONSULTANTS



DRAWING TITLE

**SEWER RETICULATION
NOTES & LEGEND**



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DESIGNED RB	DRAWN BL
APPROVED <i>A.K.M.</i>	DATE 30-10-24

DRAWING NUMBER 41901-05-500	REV A
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PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
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DRAWING TITLE

SEWER RETICULATION
PLAN

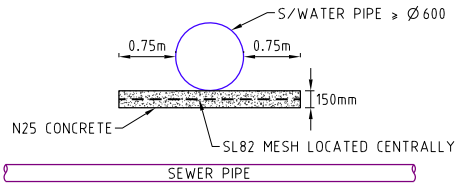
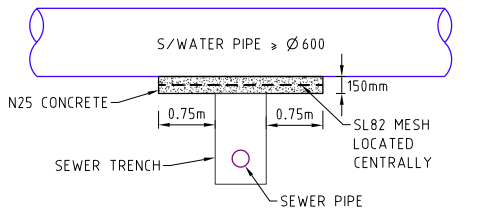


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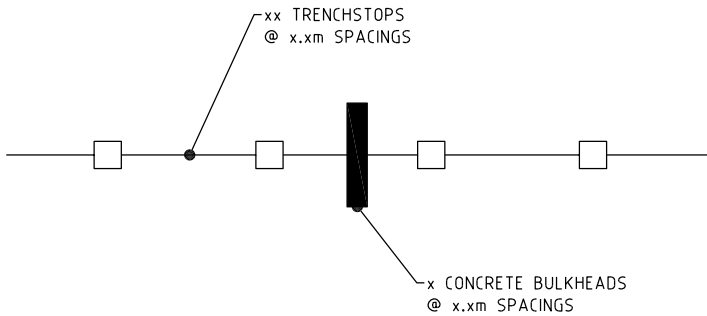
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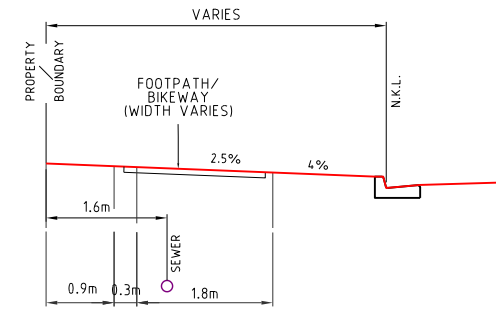
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APPROVED	<i>AK</i>	REQ4706	DATE 30-10-24
DRAWING NUMBER			REV
41901-05-501			A



BRIDGING DETAILS FOR
STORMWATER PIPES $\geq \varnothing 600$
NOT TO SCALE



TYPICAL TRENCHSTOP DETAIL
NTS

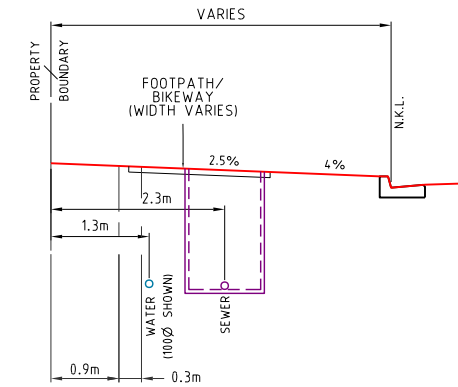


U/G POWER GAS
TELECOMMUNICATIONS
AND CABLE T.V.

C.O.G.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.



U/G POWER GAS
TELECOMMUNICATIONS
AND CABLE T.V.

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

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

PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT



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

A	30-10-24	COUNCIL ISSUE	BL
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SEWER RETICULATION
DETAILS



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APPROVED <i>a.k.m.</i>	DATE 30-10-24
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41901-05-510	A

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
BN D	BEND REFER TO SEQ STD DWGS SEQ-SEW-1314-3
RE	RODDING END MAINTENANCE STRUCTURE REFER TO SEQ STD DWGS SEQ-SEW-1314-1
EN D	PROPRIETARY END CAP
PS	SEWER PUMP STATION REFER TO RELEVANT SEQ STD DWGS
RC M	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 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	PROPRIETARY END CAP
PS	SEWER PUMP STATION REFER TO RELEVANT SEQ STD DWGS
RCM	RECEIVING MAINTENANCE STRUCTURE REFER TO RELEVANT SEQ STD SEWER PUMP STATION DWGS
G6	TYPE 'G6' TERMINAL MAINTENANCE SHAFT REFER TO SEQ STD DWGS SEQ-SEW-1314-1

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

STRUCTURE TYPE
LID CLASS
DROP TYPE

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH REFER TYPICAL SECTIONS & DETAILS FOR BRIDGING STRUCTURE DETAILS TRENCHSTOPS, BULKHEADS & CONCRETE ENCASEMENTS TO BE INSTALLED IN ACCORDANCE WITH SEQ SEWER CODE

- NOTES**
- 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
 - ALL GRAVITY uPVC SEWER PIPE TO BE CLASS SN8 U.N.O.
 - ALL PRESSURE MAINS PE100 PN16 SDR11
 - ALL EMBEDMENT TYPE IS TO BE TYPE 3 U.N.O
 - ALL BENDS TO BE LONG RADIUS BEND, 1.2m RADIUS MIN.
 - CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF PIPEWORK
 - PROTECTIVE COATING IS TO BE INSTALLED TO MAINTENANCE STRUCTURES (WHERE REQUIRED) IN ACCORDANCE WITH CLAUSE 4.7.2 OF SEQ SEWERAGE CODE.
 - TRENCHSTOPS IN ACCORDANCE WITH SEQ-WAT-1209-1

PIPE DIAMETER (mm)
PIPE GRADE

DATUM R.L.

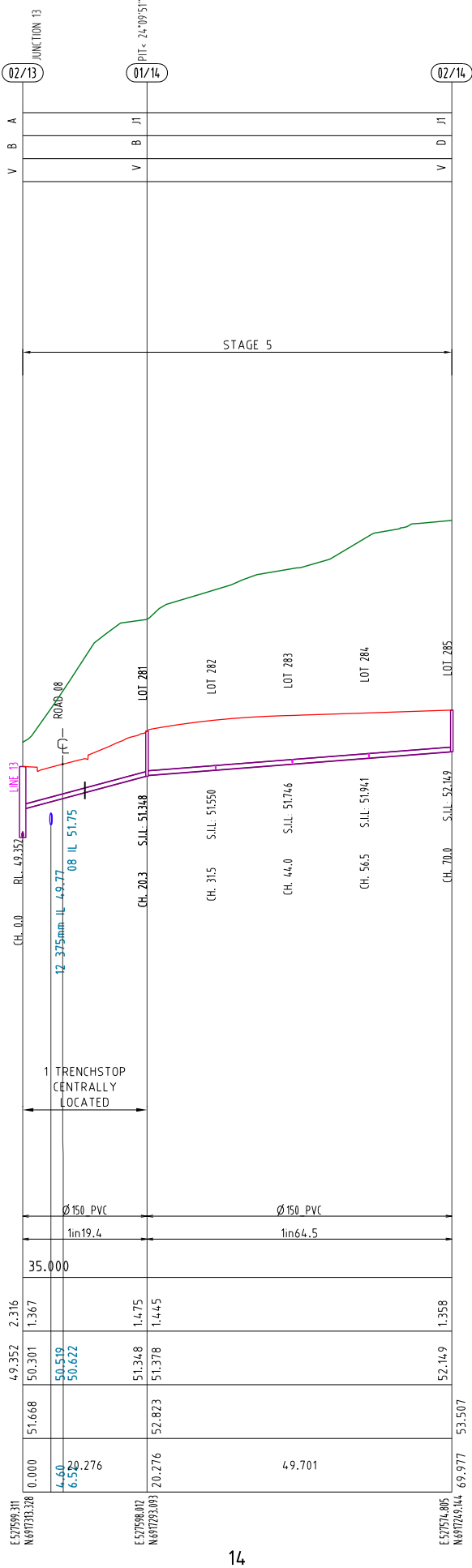
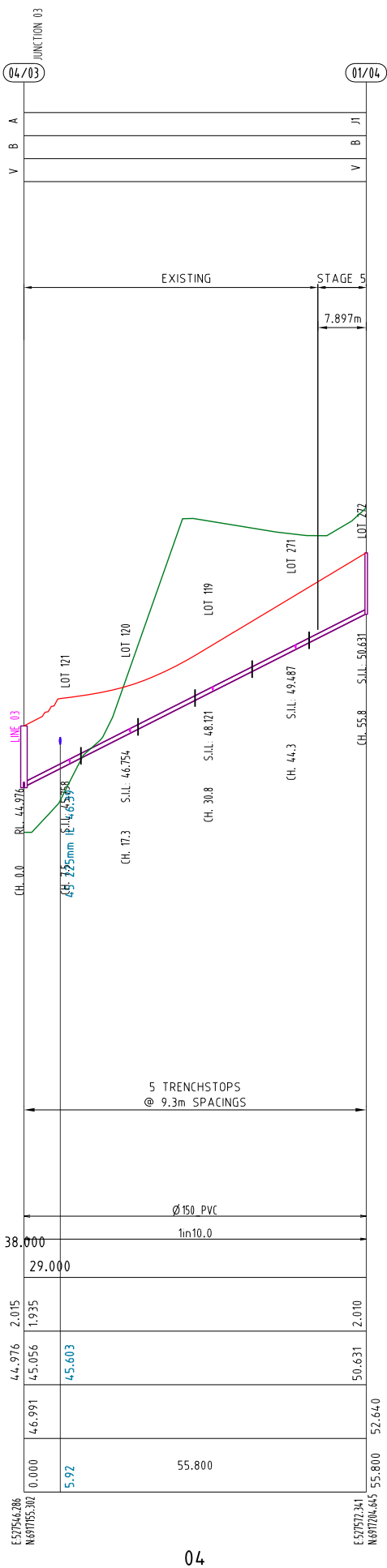
DEPTH TO INVERT

PIPE INVERT
LEVELS

DESIGN SURFACE
LEVELS

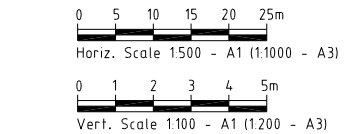
CHAINAGE

LINE NO.



PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05
RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL



REV	DATE	DESCRIPTION	INT
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**SEWER RETICULATION
PROFILES
SHEET 01**

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DESIGNED RB	DRAWN BL
APPROVED <i>AK</i>	REQ 4706
DRAWING NUMBER 41901-05-530	REV A

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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

2.ALL GRAVITY uPVC
SEWER PIPE TO BE
CLASS SN8 U.N.O.

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
WITH SEQ-WAT-1209-1

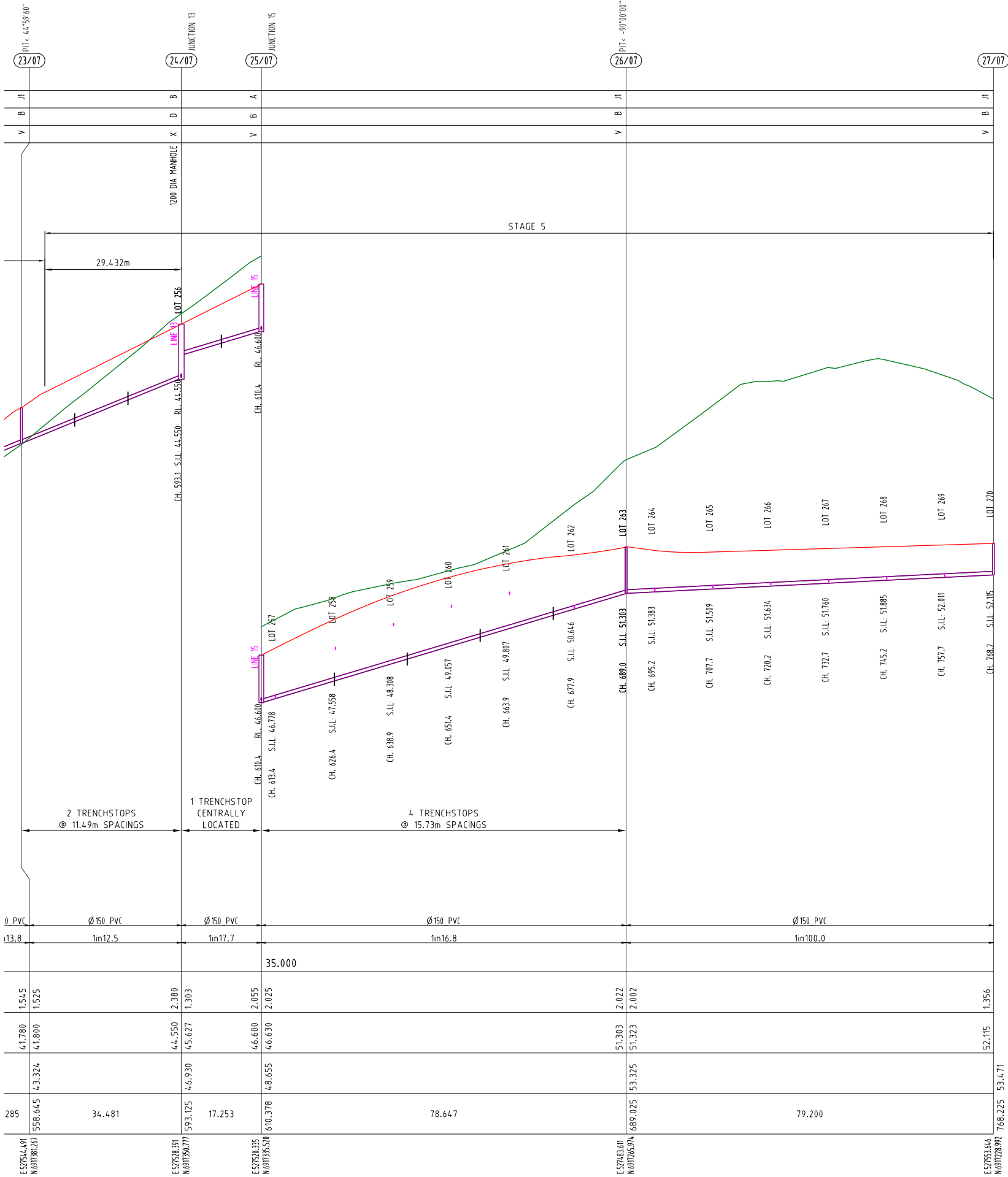
PIPE DIAMETER (mm)

PIPE GRADE

DATUM R.L.

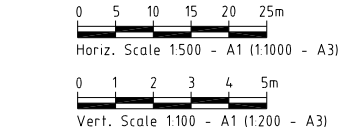
DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LINE NO.



PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05
RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL



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DRAWING TITLE
**SEWER RETICULATION
PROFILES
SHEET 02**

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APPROVED <i>AK</i>	PEQ4706
DRAWING NUMBER 41901-05-531	REV A

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

NOTES

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

2. ALL HOUSE CONNECTIONS TO BE 100Ø CLASS SN10 UNLESS NOTED OTHERWISE

PIPE DIAMETER (mm)

PIPE GRADE

DATUM R.L.

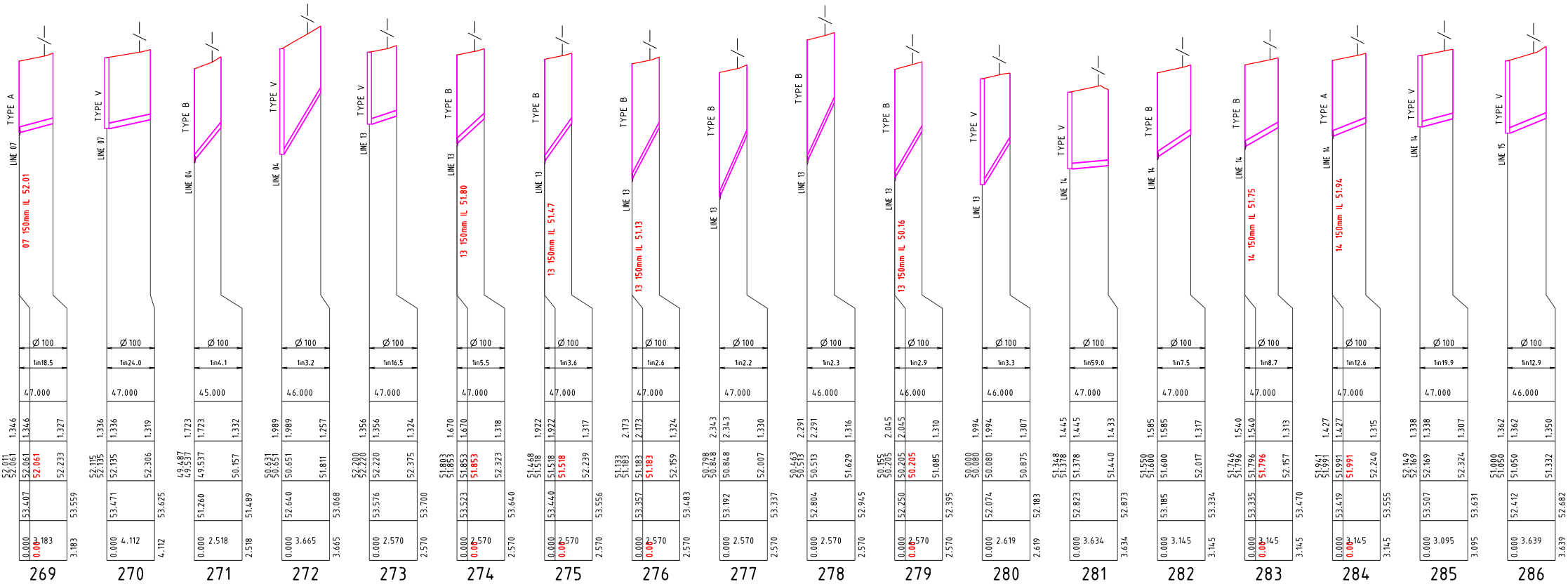
DEPTH TO INVERT

PIPE INVERT LEVELS

DESIGN SURFACE LEVELS

CHAINAGE

LOT NO.



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 SN10 UNLESS NOTED OTHERWISE

PIPE DIAMETER (mm)

PIPE GRADE

DATUM R.L.

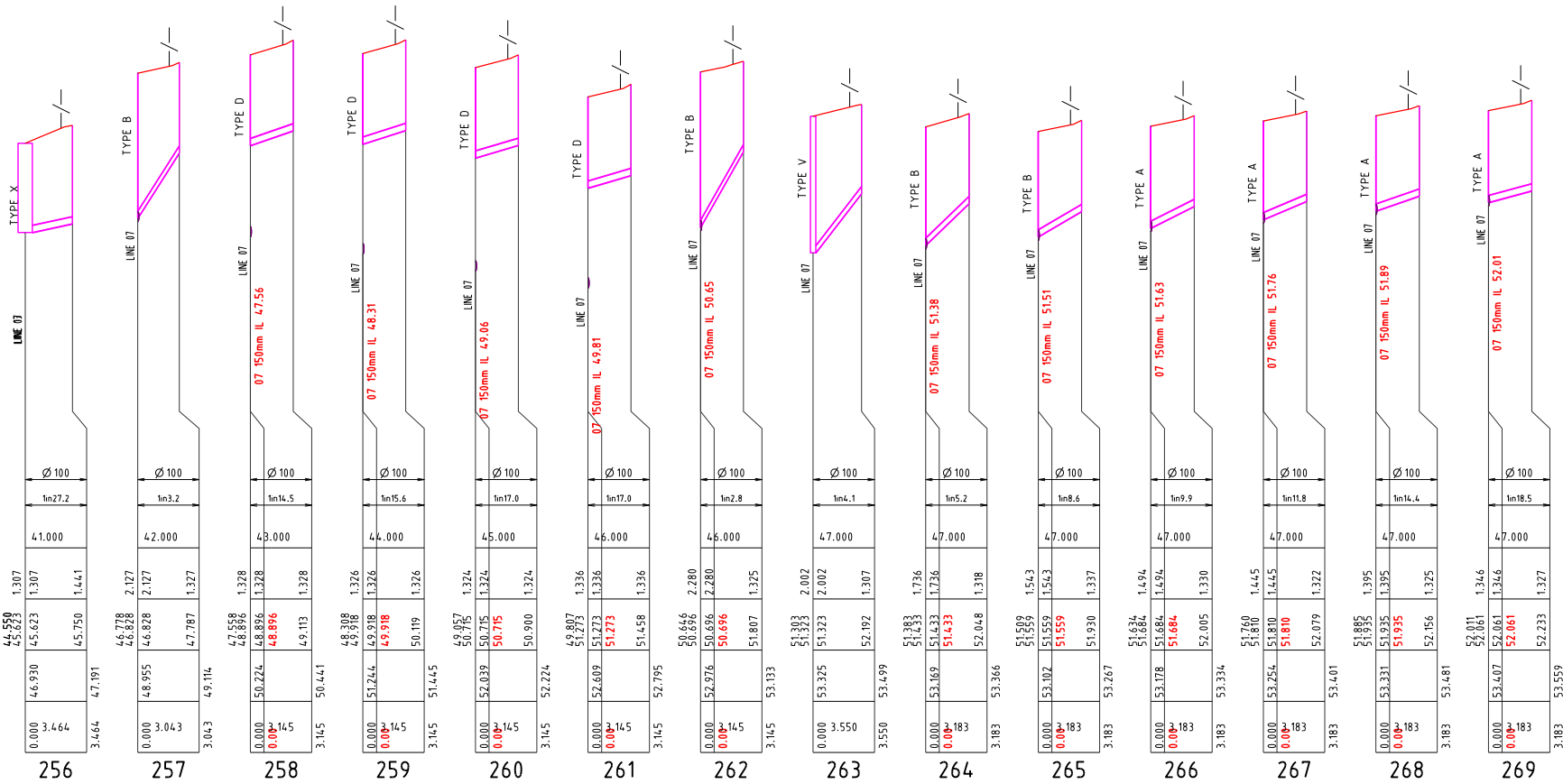
DEPTH TO INVERT

PIPE INVERT LEVELS

DESIGN SURFACE LEVELS

CHAINAGE

LOT NO.

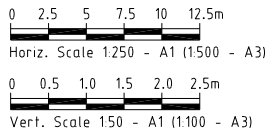


PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



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DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 01

MORTONS
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DESIGNED RB	DRAWN BL
APPROVED <i>[Signature]</i>	RECHECKED DATE 30-10-24

DRAWING NUMBER

41901-05-550

REV

A

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.

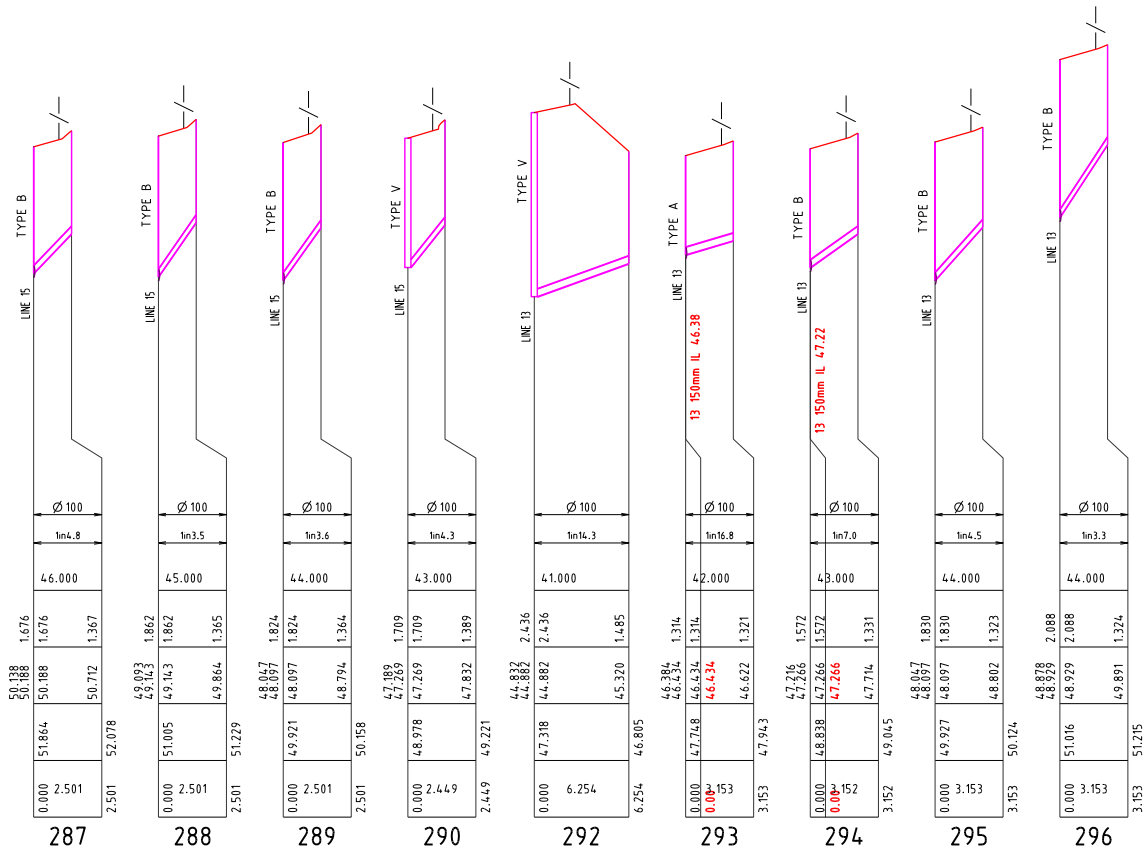
2. ALL HOUSE CONNECTIONS
TO BE 100Ø CLASS SN10
UNLESS NOTED OTHERWISE

PIPE DIAMETER (mm)
PIPE GRADE

DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



PROJECT NAME

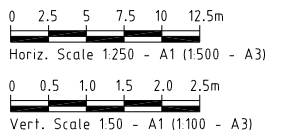
COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

C L I E N T



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ASSOCIATED CONSULTANTS



D R A W I N G T I T L E

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 02



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DESIGNED RB	DRAWN BL
APPROVED <i>[Signature]</i>	RPFD/706 DATE 30-10-74

D R A W I N G N U M B E R

41901-05-551

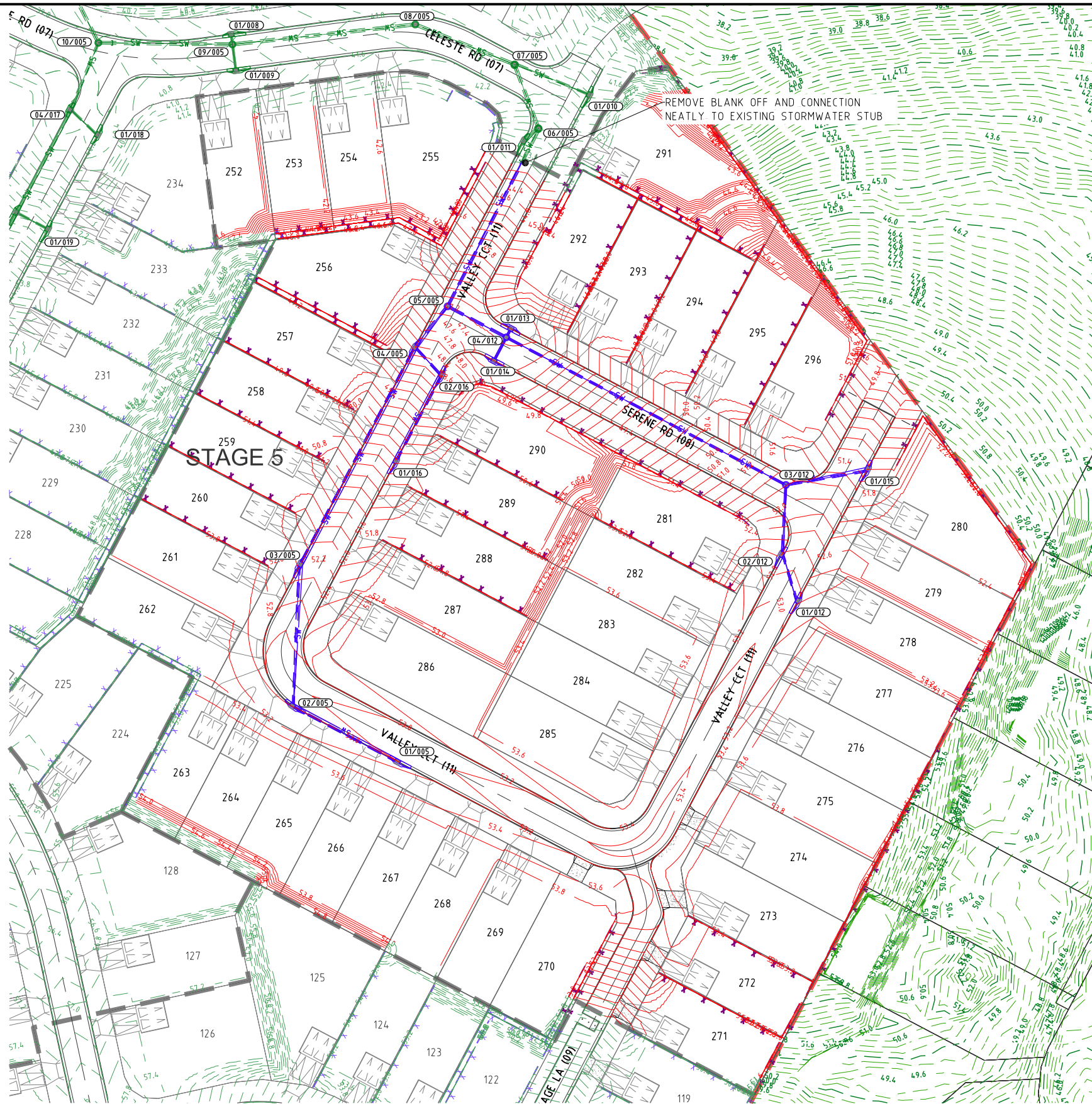
E V

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 RBCB SLABS ARE TO BE CAST INSITU.
16. ALL STORMWATER PITS ARE TO BE BENCH TO ALLOW FREE DRAINING FLOW.
17. ALL PIPES TO BE LAID IN ACCORDANCE WITH LOCAL AUTHORITY STANDARDS.

LEGEND

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



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT



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

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ASSOCIATED CONSULTANTS



DRAWING TITLE

STORMWATER
DRAINAGE
PLAN



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DESIGNED	RB	DRAWN	BL
APPROVED	A. K. M.	R. P. Q. 706	DATE 30-10-24

DRAWING NUMBER	REV
41901-05-600	A



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STRUCTURE NAME

STRUCTURE DESCRIPTION

NOTES

- 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.
- 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.

PIPE GRADE (%)

PIPE DIAMETER (mm)

VELOCITY (m/s)

PIPE FLOW (m³/s)

PIPE CLASS

DATUM R.L.

DEPTH TO INVERT

HYDRAULIC GRADE LINE

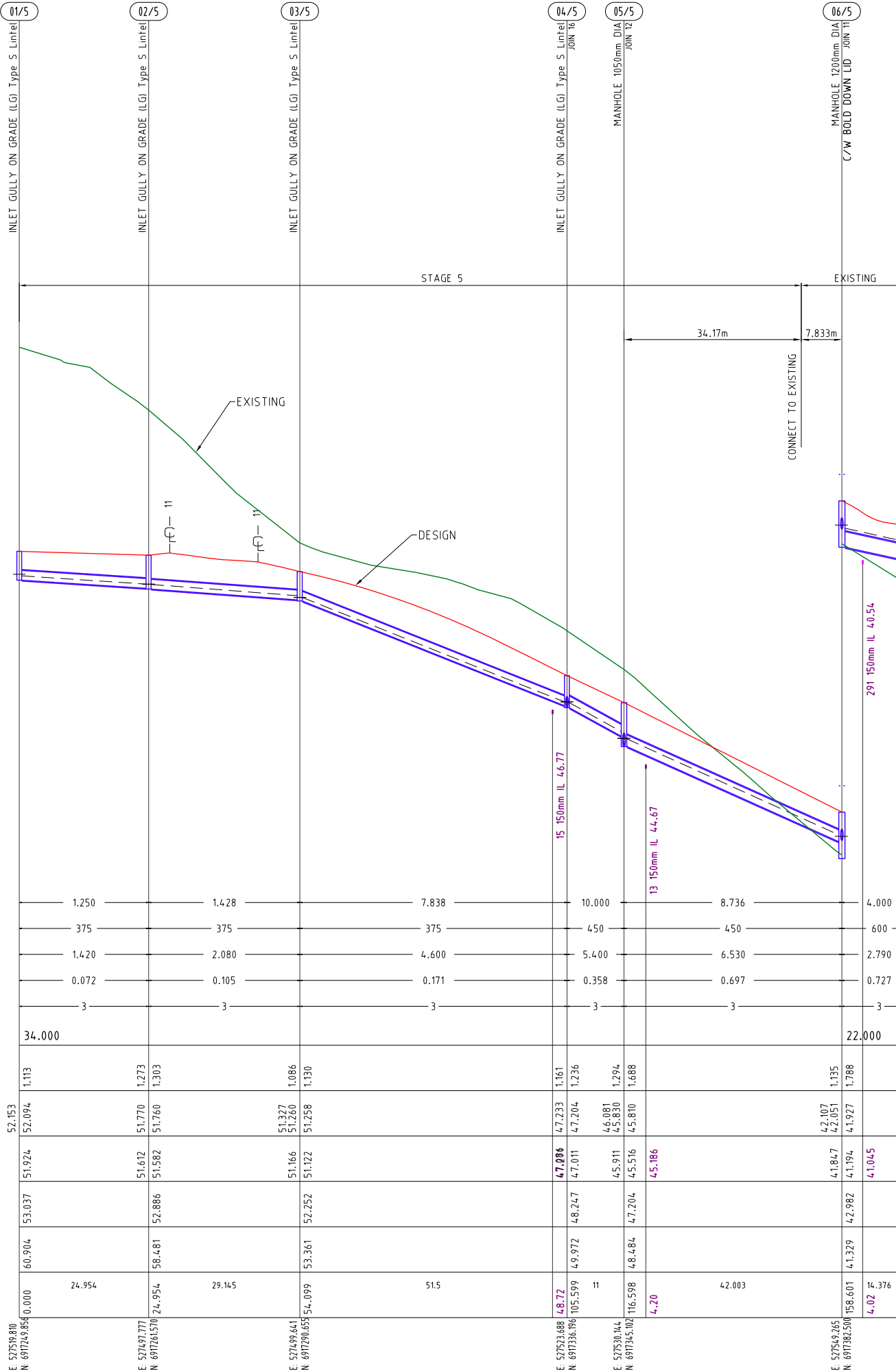
PIPE INVERT LEVELS

DESIGN SURFACE LEVELS

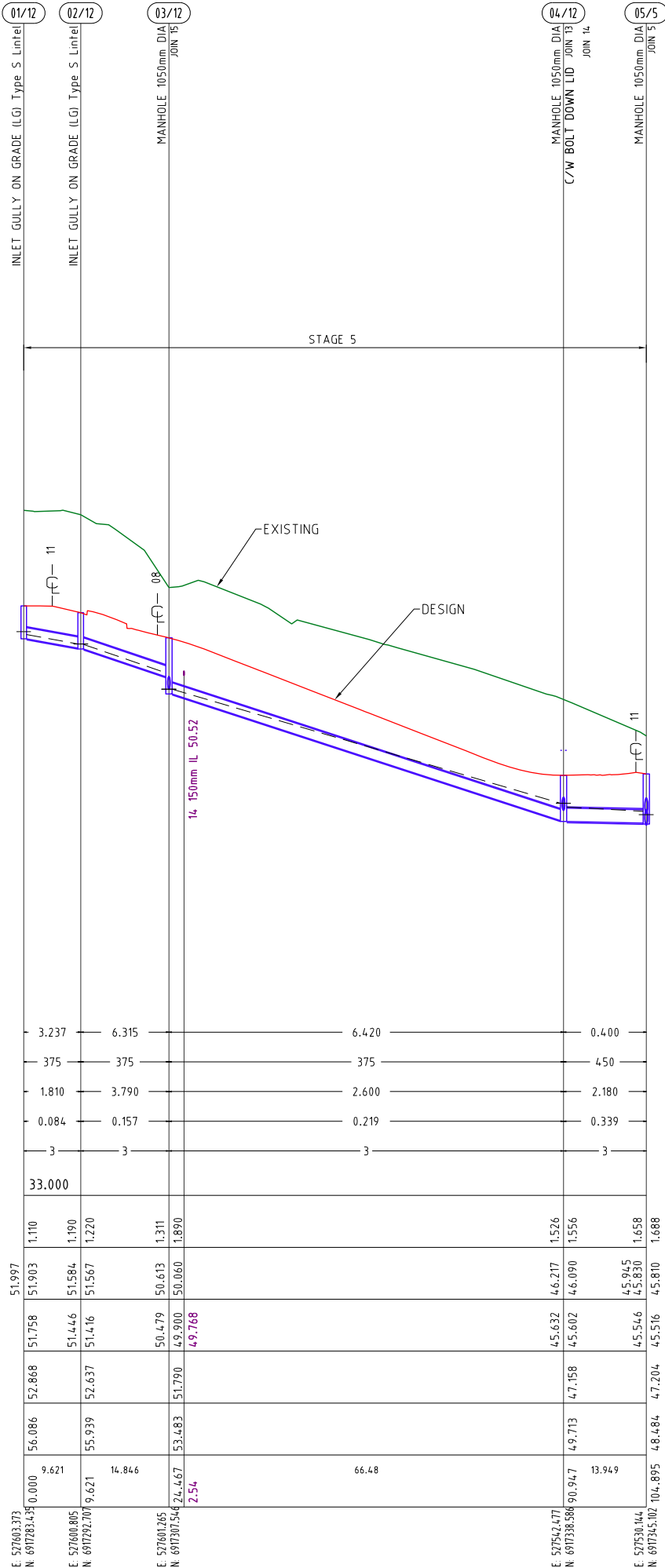
EXISTING SURFACE LEVELS

CHAINAGE

DRAINAGE LINE



5



12

PROJECT NAME

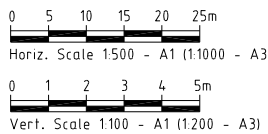
COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



A	30-10-24	COUNCIL ISSUE	BL
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DRAWING TITLE

STORMWATER
PROFILES
SHEET 01



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DESIGNED RB	DRAWN BL
APPROVED <i>A.K.M.</i>	PEREQA706

DRAWING NUMBER

41901-05-620

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.
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.

PIPE GRADE (%)

PIPE DIAMETER (mm)

VELOCITY (m/s)

PIPE FLOW (m³/s)

PIPE CLASS

DATUM R.L.

DEPTH TO INVERT

HYDRAULIC GRADE LINE

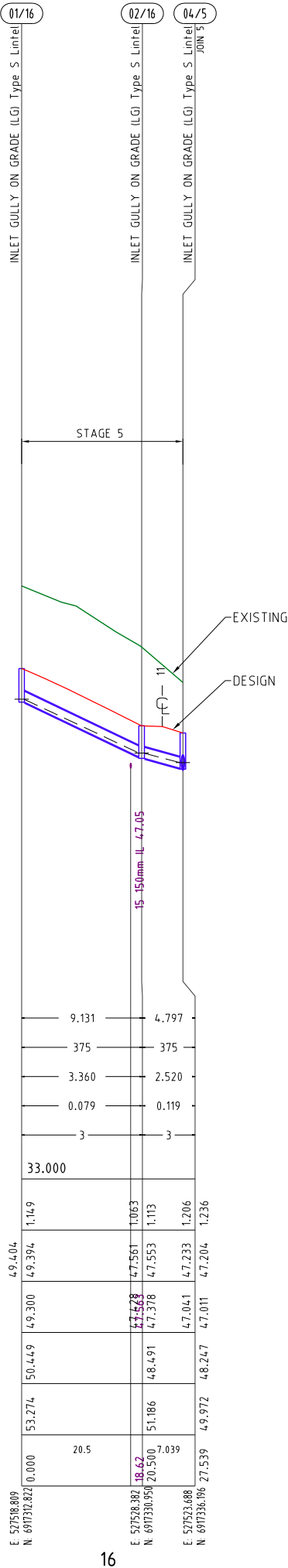
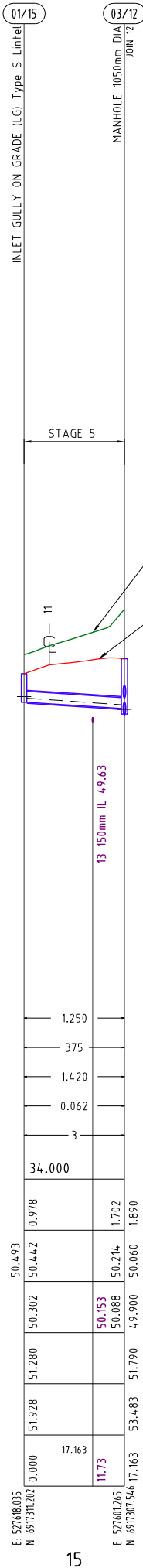
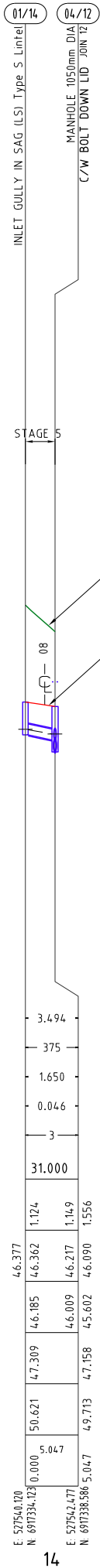
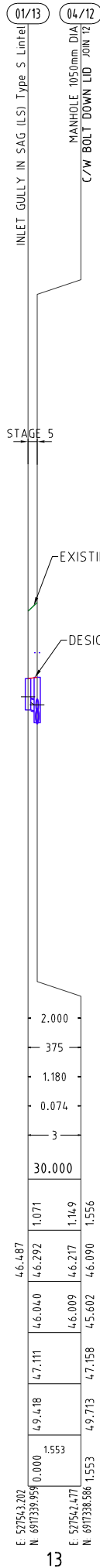
PIPE INVERT LEVELS

DESIGN SURFACE LEVELS

EXISTING SURFACE LEVELS

CHAINAGE

DRAINAGE LINE



PROJECT NAME

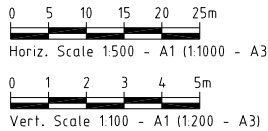
COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

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

CLIENT



REV	DATE	DESCRIPTION	INT
A	30-10-24	COUNCIL ISSUE	BL

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DRAWING TITLE

STORMWATER
PROFILES
SHEET 02



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DESIGNED	RB	DRAWN	BL
APPROVED	AK	PEQ4706	DATE 30-10-24

DRAWING NUMBER

41901-05-621

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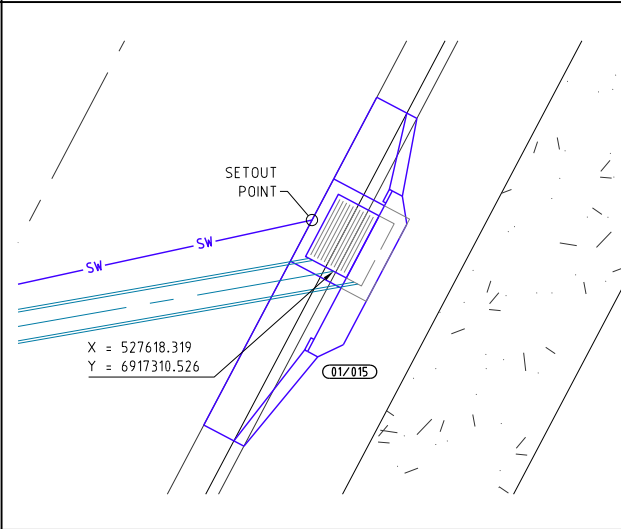
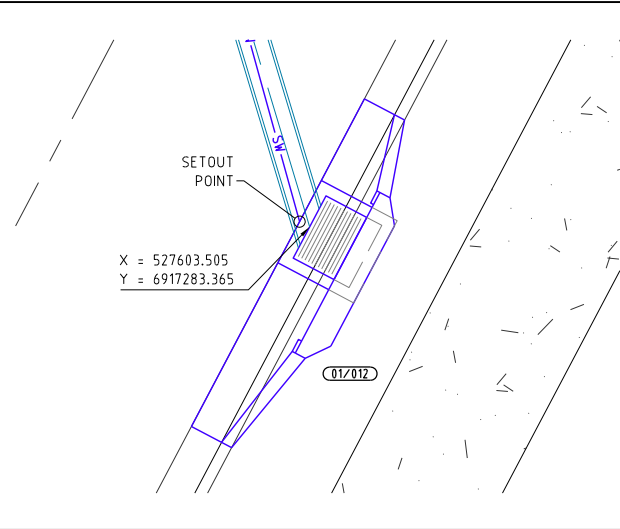
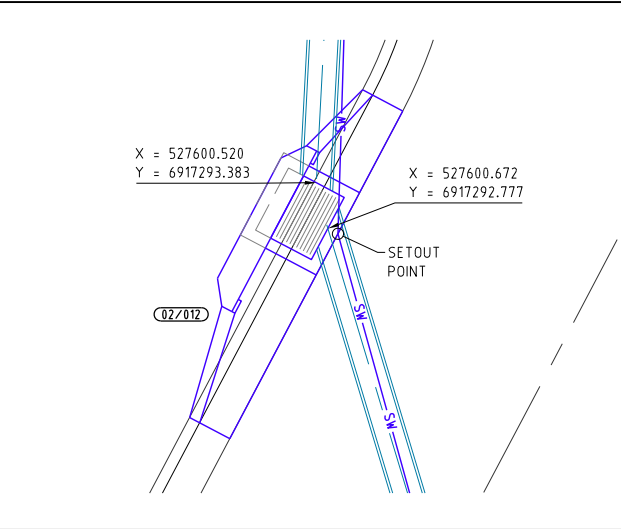
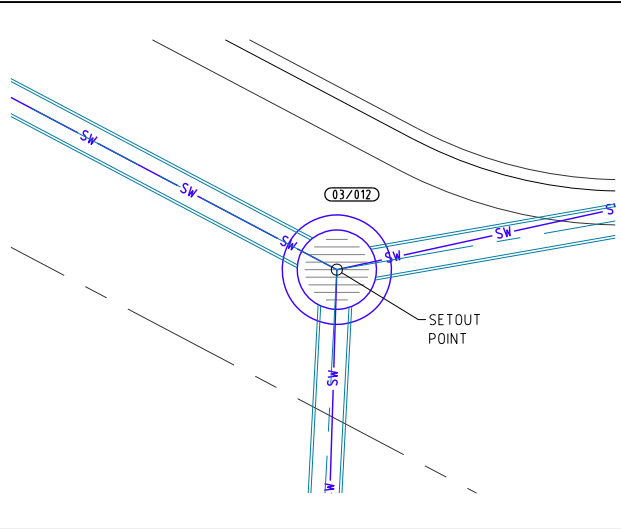
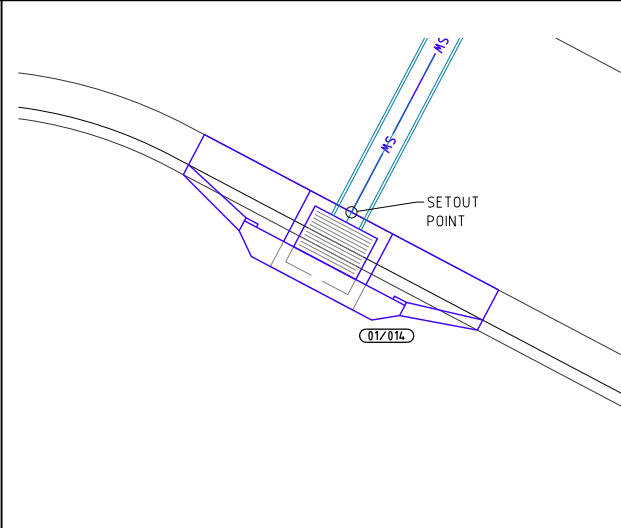
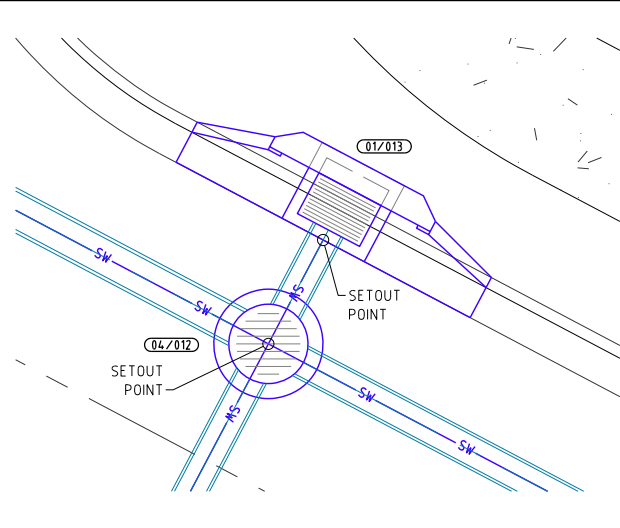
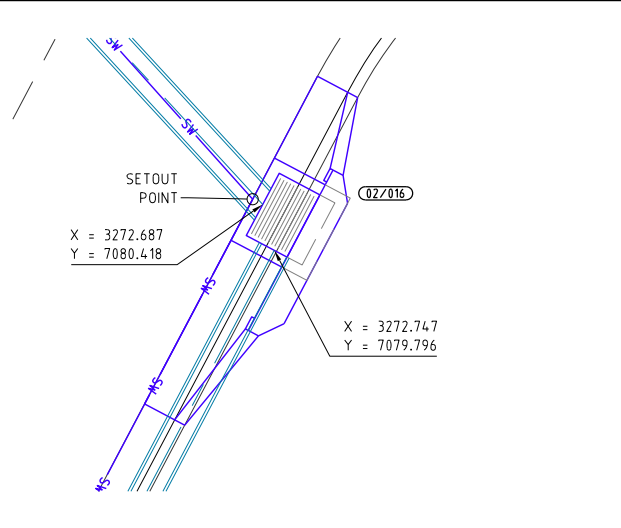
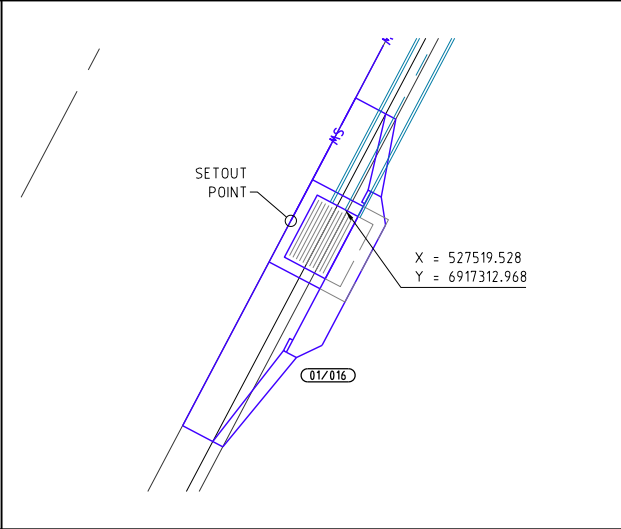
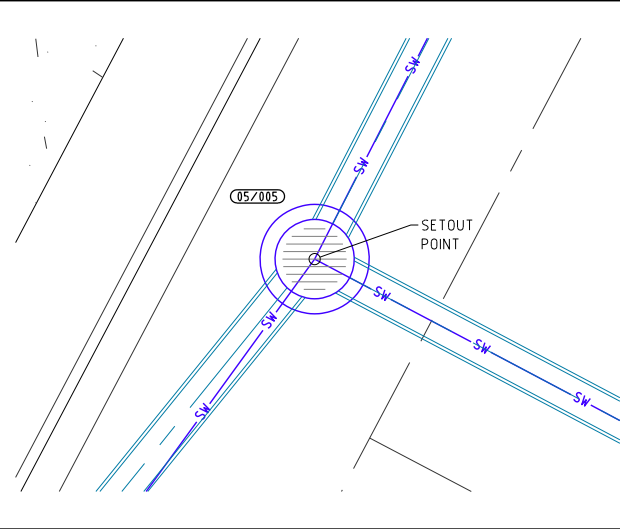
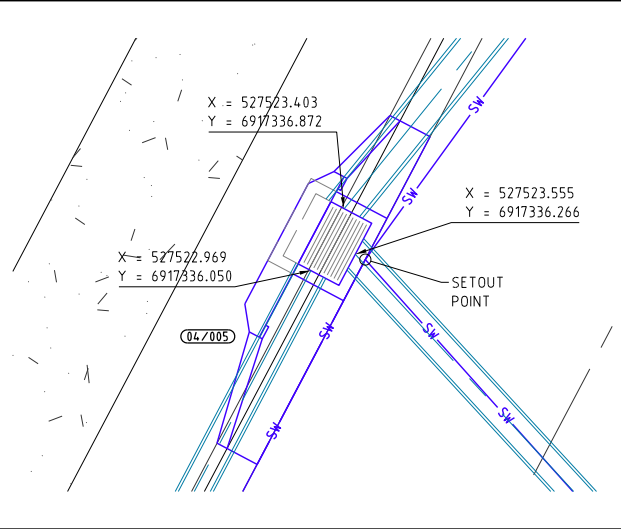
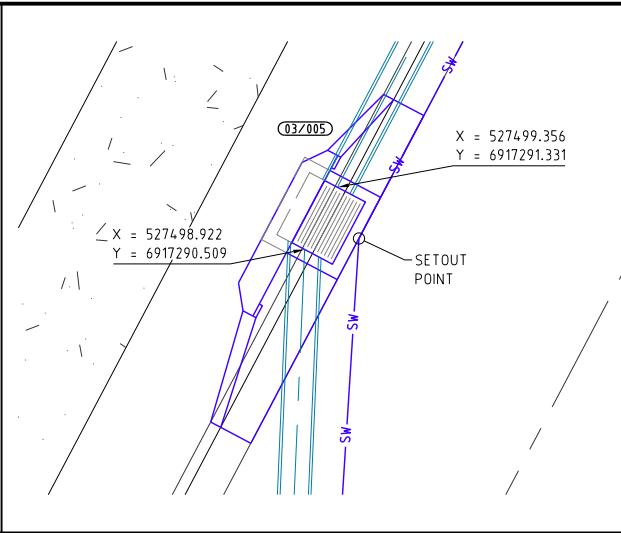
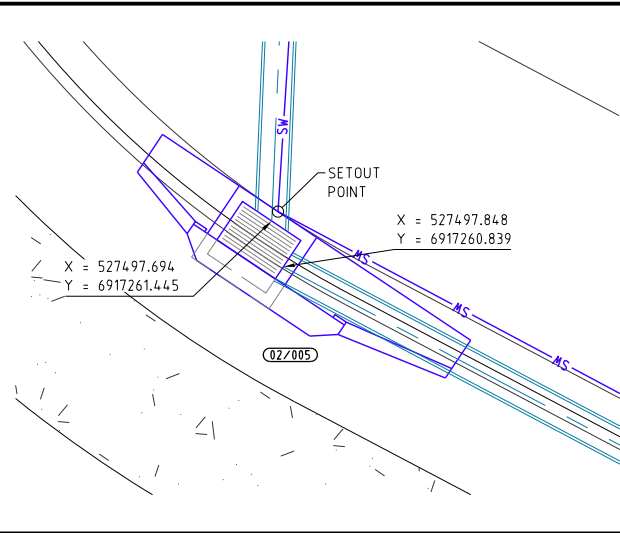
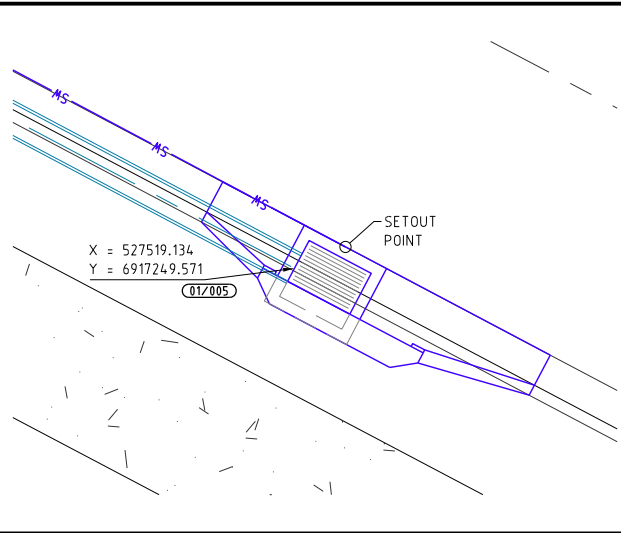
LEGEND

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

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

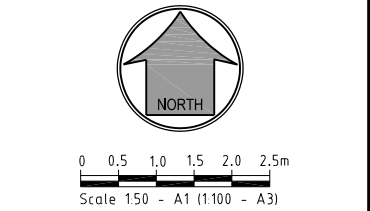
REFERENCE POINT LOCATION FOR
DRAINAGE STRUCTURES

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



PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05
RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL



REV	DATE	DESCRIPTION	INT
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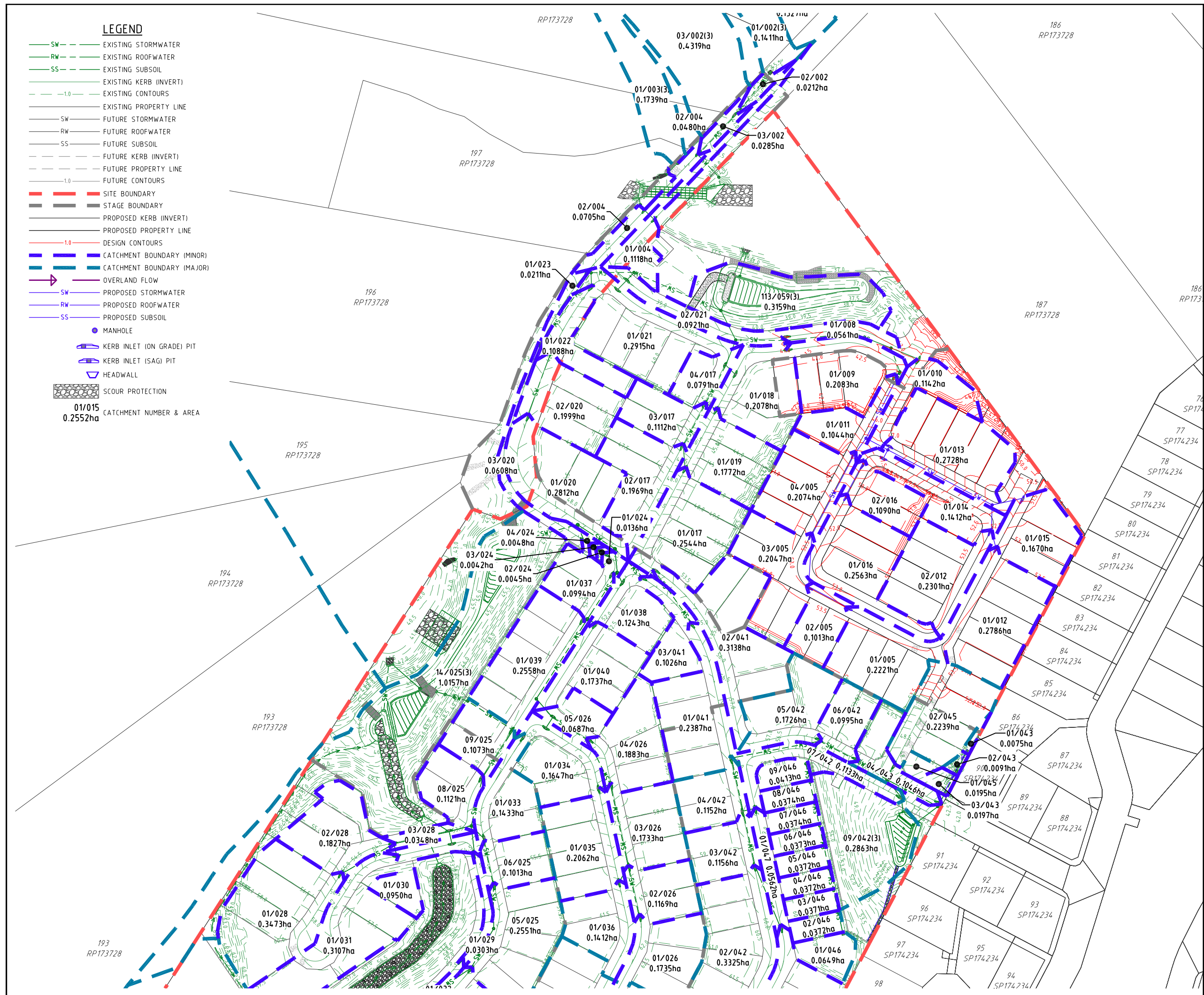


DRAWING TITLE
**STORMWATER
PIT DETAILS**

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Civil Engineering
Project Coordination
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DESIGNED RB	DRAWN BL
APPROVED <i>AK</i>	REPEQ 4706
DRAWING NUMBER 41901-05-650	REV A

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PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

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

REV	DATE	DESCRIPTION	INT
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ASSOCIATED CONSULTANTS

BIOME
WATER AND ENVIRONMENTAL CONSULTING

Robin Russell
& ASSOCIATES PTY. LTD.

BENNETT-BENNETT

DRAWING TITLE
**STORMWATER
CATCHMENT PLAN**

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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APPROVED		PEQ4706	DATE 30-10-24

DRAWING NUMBER
41901-05-670

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CALCULATION TABLES-MINOR 2YR ARI

0.5 ARI (Q2) MINOR FLOW - 12D DYNAMIC DRAINAGE RESULTS			* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM																																							
NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW			APPROACH FLOW		FLOW AT PIT		PIT		HGL		PIPE		HEADLOSSES		CAPACITY		VELOCITY															
NODE	FROM:	TO:	A1	A2	A3	CRITICAL STORM	INTENSITY MM/HR	10 YR	CURRENT	A1	A2	A3	CRITICAL ARI MIN.	GRADE	WIDTH	Dx/v	L/S	L/S	L/S	Dx/v	GRADE	GRATE RL	PIT RL	PIPE U/S RL	D/S RL	GRADE	FLOW M3/S	COEFFICIENT	Ku	Kw	HEADLOSS	RATIO	MS	NODE								
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	0.28	1.42	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	0.00	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	0.38	2.08	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	0.27	4.6	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	0.3	5.4	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	0.64	6.53	05/5							
06/5	07/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	42.982	42.05	41.92	41.34	4.04	0.73	2.0	0.0	0.1	0.0	0.46	2.79	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	1.02	2.85	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	0.69	4.06	08/5							
09/5	10/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	41.020	39.91	39.83	39.21	2.20	0.86	0.2	0.0	0.1	0.0	0.45	4.91	09/5							
10/5	11/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	40.227	39.21	39.19	37.90	7.00	1.19	1.1	0.0	0.4	0.0	0.55	4.2	10/5							
11/5	12/5	MANHOLE 1200mm DIA											25	1.0	0			0				1.000	37.900	37.90	37.27	37.26	0.21	1.49	1.1	0.0	0.6	0.0	1.43	3.41	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								
01/12	02/12	INLET GULLY ON GRADE (LG) Type S Lintel	0.279			90	61.3	0.877	0.830	0.092			60	1.0	92	1.27	0.01	84	7	0.01	01/15	1.000	52.868	52.00	51.90	51.58	3.32	0.08	9.1	0.0	0.1	0.0	0.2	1.81	01/12							
02/12	03/12	INLET GULLY ON GRADE (LG) Type S Lintel	0.230			90	61.3	0.877	0.830	0.076			60	1.0	76	1.07	0.00	74	1	0.00	01/13	1.000	52.637	51.58	51.57	50.61	6.43	0.16	2.1	0.0	0.0	0.0	0.27	3.79	02/12							
03/12	04/12	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	51.790	50.06	50.06	46.22	5.78	0.22	2.1	0.0	0.0	0.0	0.38	2.6	03/12							
04/12	05/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	47.158	46.22	46.09	45.95	1.04	0.34	0.7	0.0	0.1	0.0	1.45	2.18	04/12							
05/5	06/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	47.204	45.83										05/5								
01/13	04/12	INLET GULLY IN SAG (LS) Type S Lintel	0.273			90	61.3	0.877	0.830	0.090			60	0.6	90	1.34	0.01	74	15	0.01	01/10	0.800	47.111	46.49	46.29	46.22	4.83	0.07	9.3	0.0	0.2	0.0	0.23	1.18	01/13							
04/12	05/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	47.158	46.22										04/12								
01/14	04/12	INLET GULLY IN SAG (LS) Type S Lintel	0.141			90	61.3	0.877	0.830	0.047			60	0.6	47	1.07	0.00	47	0	0.00	01/13	0.800	47.309	46.38	46.36	46.22	2.87	0.05	9.7	0.0	0.0	0.0	0.11	1.65	01/14							
04/12	05/5	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	47.158	46.22										04/12								
01/15	03/12	INLET GULLY ON GRADE (LG) Type S Lintel	0.167			90	61.3	0.877	0.830	0.055			60	1.0	62	0.00	0.00	62	0	0.00	01/15	1.000	51.280	50.49	50.44	50.21	1.33	0.06	7.0	0.0	0.1	0.0	0.24	1.43	01/15							
03/12	04/12	MANHOLE 1050mm DIA											25	1.0	0			0				1.000	51.790	50.06										03/12								
01/16	02/16	INLET GULLY ON GRADE (LG) Type S Lintel	0.256			90	61.3	0.877	0.830	0.085			60	1.0	85	1.17	0.00	79	5	0.00	02/16	1.000	50.449	49.40	49.39	47.56	8.94	0.08	9.7	0.0	0.0	0.0	0.11	3.36	01/16							
02/16	04/5	INLET GULLY ON GRADE (LG) Type S Lintel	0.109			90	61.3	0.877	0.830	0.036			60	1.0	40	0.00	0.00	40	0	0.00	01/14	1.000	48.491	47.56	47.55	47.23	4.55	0.12	2.0	0.0	0.0	0.0	0.24	2.52	02/16							
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										04/5								

NOTES:

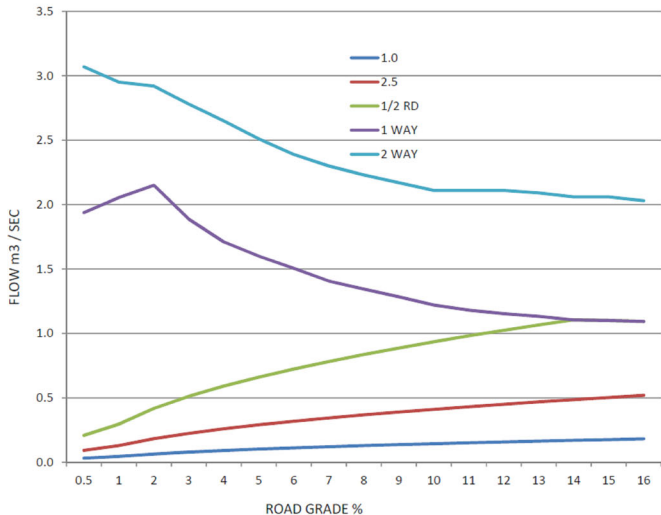
1. THESE CALCULATIONS ARE BASED ON IISAX2 DYNAMIC DRAINAGE ANALYSIS USING 12D SOFTWARE ANALYSIS.
2. INDIVIDUAL TIMES OF CONCENTRATION ARE GENERATED FOR EACH NODE & CATCHMENT TYPE USING TEMPORAL PATTERNS DETERMINED FROM THE RELEVANT AUTHORITY.
3. "TREAT" IN THE IFD TABLE REFERS TO 0.5x1 YEAR ARI, USED 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.

INTENSITY - FREQUENCY - DURATION (IFD) TABLE								
DURATION	ARI INTENSITY (YEAR)							
MINUTES	TREAT	1	2	5	10	20	50	100
5	59.5	119.0	151.0	186.0	206.0	234.0	270.0	298.0
6	55.5	111.0	141.0	174.0	193.0	219.0	253.0	279.0
10	45.5	91.0	116.0	143.0	159.0	181.0	209.0	231.0
20	33.4	66.8	85.1	106.0	117.0	134.0	155.0	171.0
30	27.3	54.5	69.4	86.4	96.2	110.0	127.0	141.0
60	18.4	36.7	46.8	58.6	65.5	74.8	87.1	96.5
120	11.7	23.4	30.0	37.8	42.4	48.6	56.9	63.2
180	8.9	17.7	22.7	28.8	32.4	37.3	43.7	48.6
360	5.5	10.9	14.0	18.0	20.3	23.5	27.7	30.9
720	3.4	6.9	8.9	11.4	13.0	15.0	17.8	20.0
1440	2.2	4.5	5.8	7.5	8.6	9.9	11.8	13.2
2880	1.5	2.9	3.8	4.9	5.6	6.5	7.7	8.7
4320	1.1	2.2	2.8	3.7	4.2	4.9	5.8	6.6

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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 Dv
FLOW CONSTRAINED TO 250mm DEEP MAX.
CAPACITY COMPOUND CROSS SECTION (ARR 1987 , 4.38) (n varies)



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT



A	30-10-24	COUNCIL ISSUE	BL
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DRAWING TITLE

STORMWATER

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CALCULATION TABLES-MAJOR 100YR ARI

0.01 ARI 10/100 Major FLOW - 120 DYNAMIC DRAINAGE RESULTS																																																		
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							
01/20	02/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.104				360	185.4	0.868	0.917	0.053						25	0.6	53		0.02	43	10	0.01	01/64	0.600	17.535	17.40	17.37	17.36	0.07	0.04	8.7	8.7	0.1	0.1	0.170	0.610	01/20											
02/20	03/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.308				360	185.4	0.868	0.917	0.158						60	0.6	169	3.04	0.05	102	57	0.03	03/20	0.600	17.508	17.36	17.18	16.81	0.68	0.14	6.0	4.9	0.5	0.3	0.680	1.440	02/20											
03/20	04/20	INLET GULLY ON GRADE (LG) Type S Lintel	0.281				360	185.4	0.868	0.917	0.143						60	1.9	196	4.11	0.05	99	82	0.07	05/20	1.917	16.843	16.81	16.70	16.52	0.73	0.24	1.7	1.7	0.2	0.2	0.660	1.860	03/20											
04/20	05/20	STD MANHOLE 1050mm DIA															25		0																															
05/20	06/20	DRAINWAYS 1TC50 ON GRADE Type S Lintel	0.218				360	185.4	0.868	0.917	0.112						60	0.6	188	3.09	0.06	111	74	0.06	02/55	0.600	16.238	16.24	16.21	16.16	0.48	0.33	8.3	1.8	0.1	0.2	0.660	1.530	05/20											
06/20	07/20	DRAINWAYS 1TC50 ON GRADE Type S Lintel	0.230				360	185.4	0.695	0.804	0.099						25	0.6	99		0.02	70	29	0.04	07/20	0.600	16.198	16.16	16.08	16.03	0.34	0.48	1.4	1.5	0.2	0.2	1.630	1.680	06/20											
07/20	08/20	DRAINWAYS 1TC50 ON GRADE Type S Lintel															25	0.6	51	1.79	0.01	41	9	0.01	01/41	0.600	16.102	16.03	15.98	15.86	0.34	0.54	0.5	0.5	0.0	0.0	1.430	1.550	07/20											
08/20	09/20	STD MANHOLE 1050mm DIA															25		0																															
09/20	10/20	STD MANHOLE 1200mm DIA															25		0																															
10/20	11/20	1200 DIA MANHOLE EXTENDED 600mm															25		0																															
11/20	12/20	STD MANHOLE 1200mm DIA															25		0																															
12/20	13/20	1200 DIA MANHOLE EXTENDED 600mm															25		0																															
13/20	13/58	STD MANHOLE 1350mm DIA															25		0																															
13/58																																																		
01/58	02/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.131				360	185.4	0.868	0.917	0.067						60	1.2	67		0.02	51	12	0.01	02/20	1.241	18.300	18.04	17.99	17.98	0.09	0.05	8.0	8.0	0.2	0.1	0.200	0.820	01/58											
02/58	03/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.214				360	185.4	0.868	0.917	0.109						60	1.2	109		0.03	72	34	0.03	03/58	1.241	18.174	17.98	17.88	17.60	0.50	0.12	4.0	5.6	0.3	0.2	0.610	1.140	02/58											
03/58	04/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.209				360	185.4	0.868	0.917	0.107						60	1.2	139	2.92	0.04	85	51	0.04	01/74	1.241	17.491	17.60	17.51	17.49	0.24	0.20	1.9	1.9	0.1	0.1	0.810	1.300	03/58											
04/58	05/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.179				360	185.4	0.868	0.917	0.091						60	1.2	91		0.03	64	26	0.03	05/58	1.241	17.414	17.41	17.35	16.92	0.89	0.26	1.5	1.5	0.3	0.2	0.790	1.850	04/58											
05/58	06/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.171				360	185.4	0.868	0.917	0.087						60	1.2	112	2.61	0.03	73	36	0.02	06/58	1.241	16.818	16.92	16.82	16.39	0.77	0.39	0.9	0.9	0.2	0.1	0.780	2.180	05/58											
06/58	07/58	DRAINWAYS 1TC50 ON GRADE Type S Lintel	0.237				360	185.4	0.868	0.917	0.121						60	0.6	151	4.40	0.03	91	64	0.06	01/71	0.611	16.242	16.39	16.30	15.88	0.63	0.52	0.9	0.9	0.3	0.1	0.690	2.300	06/58											
07/58	08/58	STD MANHOLE 1050mm DIA															25		0																															
08/58	09/58	STD MANHOLE 1350mm DIA															25		0																															
09/58	10/58	STD MANHOLE 1050mm DIA															25		0																															
10/58	11/58	STD MANHOLE 1200mm DIA															25		0																															
11/58	12/58	STD MANHOLE 1050mm DIA															25		0																															
12/58	13/58	STD MANHOLE 1050mm DIA															25		0																															
13/58	01/22	1800x1800 MANHOLE															25		0																															
01/22																																																		
01/64	02/64	INLET GULLY ON GRADE (LG) Type S Lintel	0.231				360	185.4	0.868	0.917	0.118						60	0.6	128	4.09	0.04	81	66	0.04	02/64	0.600	17.004	17.15	17.13	17.13	0.03	0.08	7.0	7.0	0.1	0.1	0.380	0.730	01/64											
02/64	03/64	INLET GULLY IN SAG (LS) Type S Lintel	0.114				360	185.4	0.868	0.917	0.058						60	0.2	120	6.24	0.03	123	64	0.05	01/70	0.175	16.946	17.13	17.06	17.04	0.21	0.14	2.7	2.7	0.2	0.2	1.270	1.280	02/64											
03/64	04/64	INLET GULLY IN SAG (LS) Type S Lintel	0.047				360	185.4	0.868	0.917	0.024						25	0.2	24		0.01	24	6	0.01	04/64	0.175	16.952	17.04	16.96	16.82	0.25	0.15	2.0	2.5	0.2	0.2	1.350	1.400	03/64											
04/64	05/64	INLET GULLY ON GRADE (LG) Type S Lintel	0.053				360	185.4	0.868	0.917	0.027						25	0.6	28	1.24	0.01	22	5	0.01	05/64	0.600	16.862	16.82	16.76	16.50	0.44	0.20	0.6	0.8	0.1	0.1	0.810	1.600	04/64											
05/64	06/64	DRAINWAYS 1TC50 ON GRADE Type S Lintel	0.166				360	185.4	0.868	0.917	0.085						60	1.3	89	1.88	0.03	63	23	0.03	01/68	1.269	16.465	16.46	16.37	15.72	1.25	0.32	1.0	1.0	0.3	0.1	0.810	2.240	05/64											
06/64	07/64	STD MANHOLE 1350mm DIA															25		0																															
07/64	08/58	STD MANHOLE 1050mm DIA															25		0																															
08/58																																																		
01/74	05/58	INLET GULLY ON GRADE (LG) Type S Lintel	0.198				360	185.4	0.868	0.917	0.101						60	1.2	147	3.42	0.05	84	73	0.04	01/73	1.241	16.848	16.97	16.93	16.92	0.12	0.08	9.1	9.1	0.2	0.2	0.300	0.780	01/74											
05/58																																																		

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05
RP DESCRIPTION
LOT 188, 189, 190, 191 & 192 ON RP173728
COURTNEY DRIVE
LOCALITY OF UPPER COOMERA
LOCAL AUTHORITY - GOLD COAST CITY COUNCIL



A	30-10-24	COUNCIL ISSUE	BL
REV	DATE	DESCRIPTION	INT

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DRAWING TITLE
STORMW

SEQ CODE WATER NOTES

SEQ CODE NOTES COPIED DIRECTLY FROM DRAWING SEQ-WAT-1101-3 (REV A).

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 FOR COGC 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
- 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.
- n. MINIMUM CLEARANCES ARE TO BE MAINTAINED BETWEEN PROPOSED WATER & SEWER IN ACCORDANCE WITH TABLE 5.5 OF WSA03 WATER WUPPLY CODE AUSTRALIA.

LEGEND

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



WATER PIPE SPECIFICATIONS

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



PROJECT NAME

COURTNEY DR
UPPER COOMERA

STAGE 05

RP DESCRIPTION

LOT 188, 189, 190, 191 & 192 ON RP173728

COURTNEY DRIVE

LOCALITY OF UPPER COOMERA

LOCAL AUTHORITY - GOLD COAST CITY COUNCIL

CLIENT



0 5 10 15 20 25m

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

A	30-10-24	COUNCIL ISSUE	BL
REV	DATE	DESCRIPTION	INT

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ASSOCIATED CONSULTANTS



DRAWING TITLE

WATER
RETICULATION
PLAN
SHEET 01



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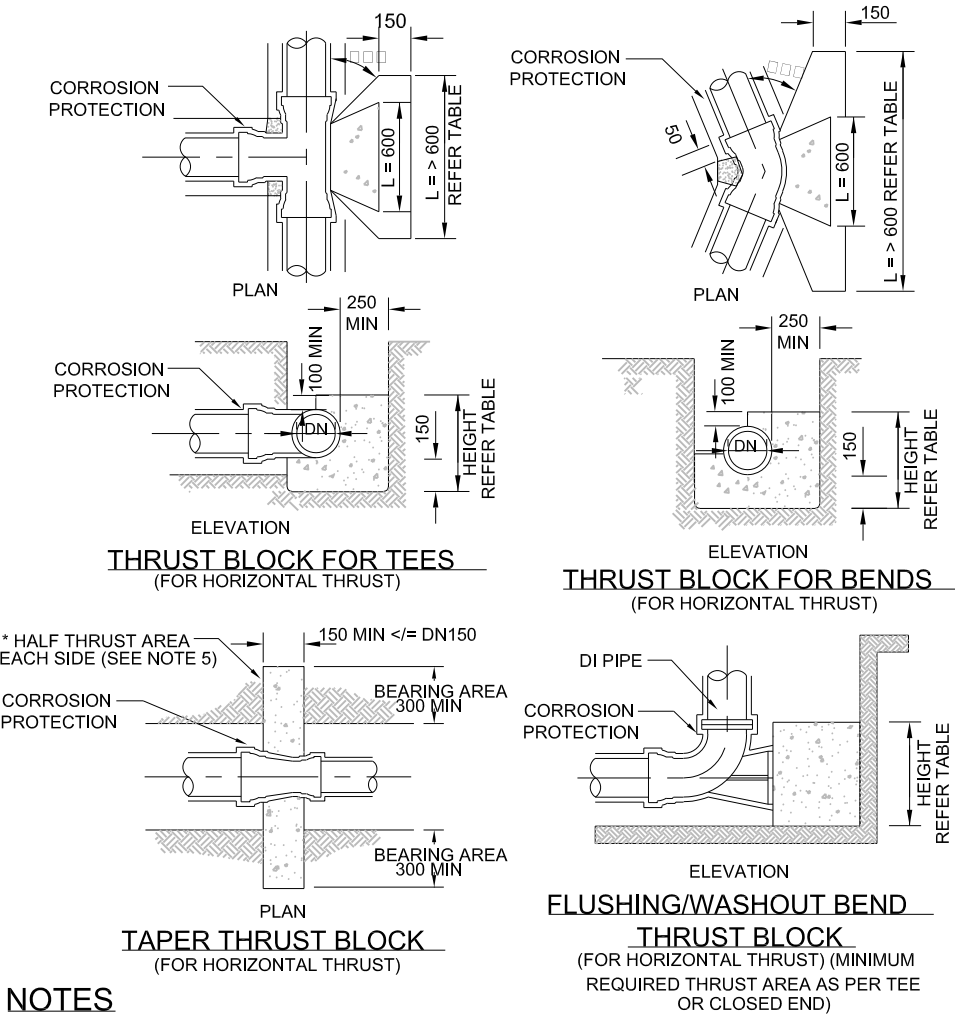
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THRUST BLOCK LENGTH								
PIPE DN.	FITTING	MAX. THRUST IN KN	THRUST BLOCK HEIGHT	STIFF CLAY 50 KPa.	VERY STIFF CLAY SANDY LOAM 100KPa.	SAND & GRAVEL HARDCLAY 150KPa.	SAND & GRAVEL CEMENTED WITH CLAY 200KPa.	ROCK 240kPa
100	90° BEND	19.8	400	1000	●	●	●	●
	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



NOTES

- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- 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 < 50kPa 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.
- THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES OR BE LOCATED OUTSIDE THE WATER MAIN ALLOCATION WITHOUT WATER AGENCY APPROVAL.
- ALL CONCRETE GRADE N20. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200kPa AND ACTUAL DI CL PIPE DIAMETERS.
- 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.
- FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURE FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN.
- 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.

THRUST BLOCK DIMENSIONS - 1200kPa

- INDICATES BLOCK LENGTH OF 600
- * = SPECIAL DESIGN

PROJECT NAME
**COURTNEY DR
UPPER COOMERA**

STAGE 05

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

CLIENT



REV	DATE	DESCRIPTION	INT
A	30-10-24	COUNCIL ISSUE	BL

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ASSOCIATED CONSULTANTS



DRAWING TITLE

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RETICULATION
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