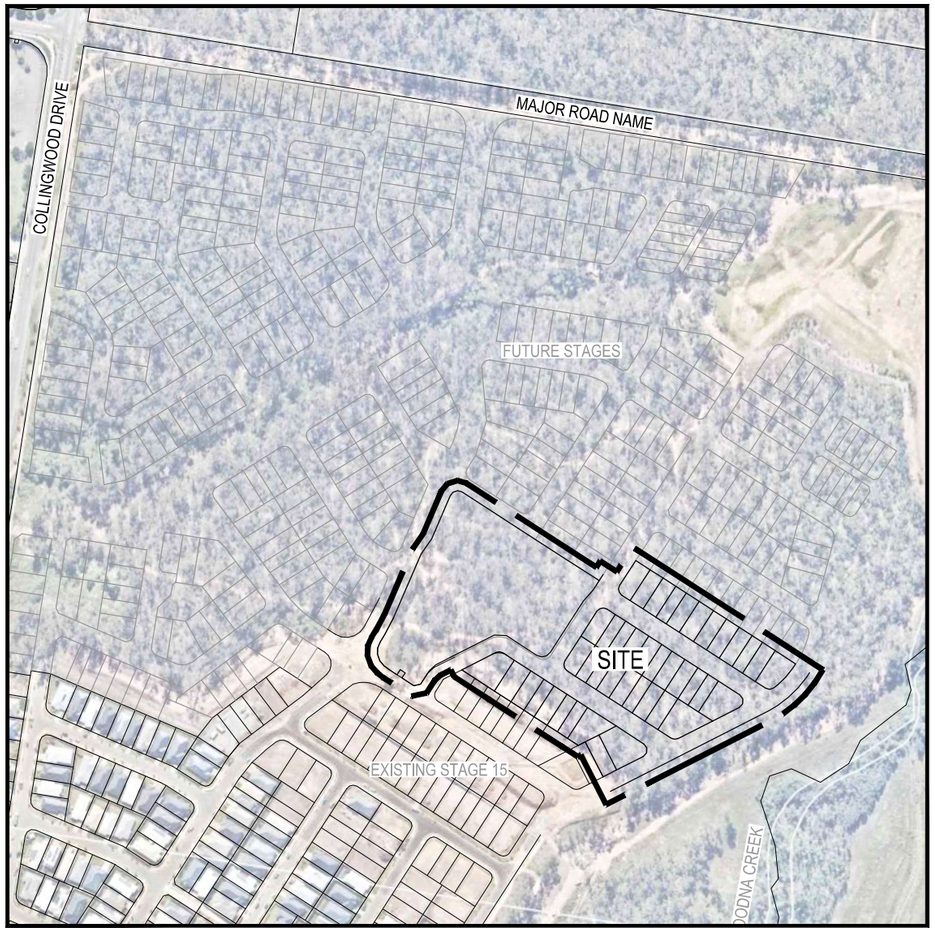
WOODLINKS VILLAGE - STAGE 16

COLLINGWOOD DRIVE, COLLINGWOOD PARK

FOR 'CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED'

DRAWING LIST



LOCALITY PLAN
SCALE 1:2500 (A1)
SCALE 1:5000 (A3)

PROJECT INFORMATION SUMMARY:
No. OF LOTS = 42
AREA OF SITE = 4.8 ha
RP DESCRIPTION LOT 5507 ON SP266999
DATUM LEVEL AND LOCATION P.M. 110122 RL 40.320 AHD
LOCAL AUTHORITY: IPSWICH CITY COUNCIL
COUNCIL REFERENCE NUMBER: 4280/15/MAMC/A

NOTE:
THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH:
- VEGETATION MANAGEMENT PLAN
- LANDSCAPE ARCHITECT'S PLANS
- ELECTRICAL, COMMUNICATIONS AND GAS CONSULTANT'S PLANS
- SEDIMENT AND EROSION HAZARD ASSESSMENT
- SAFETY IN DESIGN REPORT

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:2500 / 1:5000 — 50 0 50 100 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: COVER PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	100	B

GENERAL NOTES:

1. THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO CONSTRUCT THE WORKS AS DOCUMENTED AND STRICTLY IN ACCORDANCE WITH THE RELEVANT AUTHORITY STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
2. THE EXISTING SERVICES THAT ARE SHOWN ON THE DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY. NO RESPONSIBILITY IS TAKEN BY THE SUPERINTENDENT OR THE PRINCIPAL FOR INFORMATION THAT HAS BEEN SUPPLIED BY OTHERS, OR ANY EXISTING SERVICES THAT MAY BE PRESENT NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE POSITION OF ANY UNDERGROUND SERVICES WITHIN THE AREAS OF WORKS AND SHALL BE RESPONSIBLE FOR MAKING GOOD ANY DAMAGE THERETO. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT ONLY BY THE SERVICE OWNER AUTHORITY UNLESS APPROVED OTHERWISE.
3. ALL CONSTRUCTION ACTIVITIES UNDERTAKEN SHALL COMPLY WITH CURRENT WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND LEGISLATION.
4. PRIOR TO COMMENCING WORK, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL RELEVANT LOCAL AUTHORITY PERMITS.
5. THE CONTRACTOR SHALL NOT COMMENCE THE DEMOLITION OF ANY EXISTING BUILDINGS AND/OR STRUCTURES WITHOUT APPROVAL FROM THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL APPLY INDUSTRY BEST PRACTICE SO WORKS SHALL NOT DISTURB OR AFFECT NEARBY RESIDENTS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES. CONTRACTOR TO ENSURE THAT ACCESS AND SERVICES TO EXISTING PROPERTIES ARE AVAILABLE AT ALL TIMES.
7. THE CONTRACTOR SHALL VERIFY LEVELS OF EXISTING SERVICE CROSSINGS AND CONNECTION POINTS PRIOR TO COMMENCEMENT OF WORKS AND NOTIFY SUPERINTENDENT OF ANY DISCREPANCIES BETWEEN ACTUAL AND PROPOSED DESIGN LEVELS.
8. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE APPROVED VEGETATION MANAGEMENT PLAN, WHERE APPLICABLE. WHEN IN DOUBT, ALL EXISTING TREES ARE TO REMAIN UNLESS DIRECTED OTHERWISE.
9. HOLD POINT: ONCE THE BASE OF MANHOLES, INSPECTION PITS, GULLIES AND FIELD INLETS FOR STORMWATER DRAINAGE AND SEWER RETICULATION HAVE BEEN POURED, CONSTRUCTION SHALL ONLY RE-COMMENCE ONCE THE SUPERINTENDENT AND/OR ENGINEER HAVE INSPECTED THE WORKS.
10. THE CONTRACTOR SHALL NOTE DURING THE COURSE OF THE WORKS WHEN JOINT INSPECTIONS WITH THE AUTHORITY AND THE SUPERINTENDENT ARE REQUIRED. THESE INCLUDE PRE-STARTS, SUBGRADES, PRE-SEALS, CLEARING, AND OTHER SUCH INSPECTIONS AS NOMINATED IN THE APPROVAL AND THE SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE NO WORKS PROCEED PAST THE INSPECTION POINT UNTIL THE JOINT INSPECTION HAS BEEN SUCCESSFULLY COMPLETED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE MOVEMENT OF TRAFFIC AND THE PROTECTION OF PERSON AND PROPERTY THROUGH AND AROUND THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC MANAGEMENT INCLUDING THE DESIGN, CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ROADWAYS, DETOURS, SIGNS, LIGHTS AND BARRIER AS REQUIRED STRICTLY IN ACCORDANCE WITH THE RELEVANT AUTHORITY REQUIREMENTS.

BULK EARTHWORKS NOTES

1. NOTWITHSTANDING THE EXTENTS OF CUTTING AND FILLING SHOWN ON DRAWINGS, THE SUPERINTENDENT RESERVES THE RIGHT TO ADJUST THE FINISHED SURFACE LEVELS AND EARTHWORKS EXTENTS THROUGH WRITTEN DIRECTION.
2. THE CONTRACTOR SHALL UNDERTAKE ALL CLEARING USING INDUSTRY BEST PRACTICE INCLUDING CONSIDERATION OF FAUNA RELOCATION.
3. THE CONTRACTOR SHALL UNDERTAKE ALL EARTHWORKS IN ACCORDANCE WITH AS3798-2007 AND LOCAL AUTHORITY REQUIREMENTS. LEVEL 1 SUPERVISION IS REQUIRED.
4. THE CONTRACTOR SHALL CONSIDER LOADS GENERATED BY THE EARTHWORKS OPERATIONS SO AS TO AVOID DAMAGE TO ALL PIPES, SERVICES AND STRUCTURES.
5. THE EARTHWORKS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT'S SEDIMENT AND EROSION CONTROL PLAN, WHERE APPLICABLE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLANNING, DESIGN, CERTIFICATION, IMPLEMENTATION AND MAINTENANCE OF AN EROSION AND SEDIMENT CONTROL PLAN THAT IS COMPLIANT WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) GUIDELINE 'BEST PRACTICE EROSION AND SEDIMENT CONTROL' AND RELEVANT COUNCIL POLICIES.

ROADWORKS AND DRAINAGE NOTES

1. ALL WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S STANDARD DRAWINGS, METHODS AND SPECIFICATIONS.
2. NOTWITHSTANDING THE EXTENTS OF CUTTING AND FILLING SHOWN ON DRAWINGS, THE SUPERINTENDENT RESERVES THE RIGHT TO ADJUST THE FINISHED SURFACE LEVELS AND EARTHWORKS EXTENTS THROUGH WRITTEN DIRECTION.
3. NEW CONSTRUCTION SHALL BE NEATLY JOINED TO EXISTING FORMATION. WHERE REQUIRED, THE EXISTING FORMATION SHALL BE SAW CUT IN ACCORDANCE WITH IPWEAQ STD DRG RS-170. LEVELS AND GRADIENTS AT CONNECTIONS WITH EXISTING WORKS MAY BE VARIED AS REQUIRED TO ACHIEVE A SMOOTH CONNECTION.
4. THE CONTRACTOR SHALL UNDERTAKE ALL EARTHWORKS IN ACCORDANCE WITH AS3798-2007 AND LOCAL AUTHORITY REQUIREMENTS. LEVEL 1 SUPERVISION IS REQUIRED.
5. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH THE SUBGRADE TEST RESULTS NECESSARY FOR ALL PAVEMENT DESIGN.
6. THE CONTRACTOR SHALL ENSURE A MINIMUM OF 75mm TOPSOIL TO ALL VERGE AND BATTER AREAS (AND STABILISATION AS ORDERED)
7. THE CONTRACTOR SHALL INSTALL ALL FOOTPATH AND PRAM RAMPS IN COMPLIANCE WITH THE AUTHORITY'S STANDARD DRAWINGS. PRAM RAMPS ARE TO BE LOCATED CLEAR OF DRAINAGE GULLY PITS AND FUTURE DRIVEWAY POSITIONS INDICATED ON THE LAYOUT PLANS.
8. THE CONTRACTOR SHALL INSTALL SUBSOIL DRAINS UNDER ALL KERBS AS REQUIRED BY THE LOCAL AUTHORITY'S STANDARDS.
9. THE CONTRACTOR SHALL ENSURE THAT ALL RETAINING WALL SUBSOIL DRAINS ARE TO CONNECT TO EITHER KERB ADAPTORS, KERB SUBSOIL DRAINS OR STORMWATER DRAINAGE STRUCTURES. CONTRACTOR TO DEMONSTRATE TO SUPERINTENDENT THAT SUITABLE CONNECTIONS HAVE BEEN PROVIDED FOR ALL WALLS.
10. ALL STORMWATER DRAINAGE MATERIALS, BEDDING, JOINTING AND STEP IRON REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITIESS STANDARD DRAWINGS, METHODS AND SPECIFICATIONS.
11. THE STORMWATER PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY. THE CONTRACTOR SHALL ASSESS THE SUITABILITY OF MACHINERY USED ON SITE AND THE ANTICIPATED CONSTRUCTION LOADS, AND UPGRADE THE PIPE CLASSES IF NECESSARY IN ACCORDANCE WITH AS3725-2007.
12. THE TERM D_{50} DOCUMENTED ON THE DRAWINGS, IN RELATION TO ROCK ARMORING, CORRESPONDS TO THE REQUIRED MEDIAN DIAMETER OF THE PLACED ROCKS. THE ROCKS USED SHALL NOT VARY IN SIZE BY +/- 30% OF THE PROPOSED D_{50} SIZE.

ROOFWATER NOTES

1. THE GEOMETRIC CENTRE SHALL BE TAKEN AS THE SETOUT POINT FOR ALL STRUCTURES, UNLESS DETAILED OTHERWISE.
2. ROOFWATER ALIGNMENT, COVER, MATERIALS, BEDDING, JOINTING AND STEP IRON REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S STANDARD DRAWINGS, METHODS AND SPECIFICATIONS.
3. ALL PVC PIPES ARE TO BE MINIMUM CLASS SN8.
4. END CAPS SHALL BE INSTALLED ON ENDS OF ALL PIPES AND STUBS.
5. WHERE ROOFWATER PIPES ARE ALIGNED BEHIND PROPOSED RETAINING WALLS, THE CONTRACTOR IS TO REFER TO THE SPECIFIC PROJECT DESIGN DETAILS AND CONFIRM CLEARANCES WITH THE SUPERINTENDENT PRIOR TO LAYING OF THE PIPES.
6. PROPERTY CONNECTIONS SHALL BE 100Ø UNLESS SHOWN OTHERWISE. THE CONTRACTOR SHALL EXTEND CONNECTIONS A MINIMUM OF 1.0m BEYOND ADJACENT SEWER LINES, WHERE APPLICABLE.
7. IN INSTANCES WHERE REAR ALLOTMENT DRAINAGE IS NOT PROVIDED, THE CONTRACTOR SHALL INSTALL A ROOFWATER CONNECTION TO EACH PROPERTY BY ONE OF THE FOLLOWING METHODS, AS SHOWN ON THE LAYOUT PLAN:
   - TWO ROOFWATER KERB ADAPTOR 500mm FROM THE DOWNSTREAM BOUNDARY (UNLESS SHOWN ON A DIFFERENT ALIGNMENT). WHERE THERE IS A CONCRETE FOOTPATH, A ROOFWATER PIPE SHALL BE INSTALLED FROM THE PROPERTY BOUNDARY CONNECTED TO THE KERB ADAPTOR AT 1.25% MINIMUM GRADE IN ACCORDANCE WITH COUNCIL'S STANDARDS.
   - ONE 150Ø ROOFWATER PIPE CONNECTED TO PROPOSED STORMWATER GULLY PIT OR MANHOLE AT MINIMUM 1.0% GRADE WITH 1.0m COVER.

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE:

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: GENERAL NOTES

PROJECT No.	DRAWING No.	REVISION
19-0023	101	B

WARNING! - EXISTING SERVICES

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

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

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

NOTE:
CONTRACTOR TO PREPARE 'CPSEC' CERTIFIED EROSION AND SEDIMENT CONTROL PLAN PRIOR TO COUNCIL PRE-START MEETING.

FUTURE STAGE

CARNELIAN CRESCENT

QUARTZ ROAD

PERIDOT STREET

ELDER PARADE

EXISTING STAGE

0.50m RETURN WALL (BOTH SIDES)

PROVIDE 2.0m WIDE SPACING FOR LANDSCAPING STAIRS, REFER LANDSCAPING PLANS FOR DETAILS.

REFER LANDSCAPE ARCHITECTS PLANS FOR DETAILS

REFER LANDSCAPE ARCHITECTS PLANS FOR DETAILS.

PROPOSED 1.80m HIGH TIMBER FENCE

EXISTING PMT SITE

ROAD CL04

ROAD CL03

ROAD CL02

ROAD CL12

EMTA

RP116224

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED EARTHWORKS PAD SETBACK LINE
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- PROPOSED 'A GRADE SANDSTONE BOULDER WALL' (MAX. 0.90m HIGH)
- EXISTING LANDSCAPE SLEEPER RETAINING WALL
- PROPOSED STEEL SAFETY FENCE
- PROPOSED FINISHED SURFACE LEVEL (FSL)
- EXISTING SURFACE LEVEL (ESL)
- PROPOSED AREA OF CUT
- PROPOSED AREA OF FILL
- INDICATIVE DRIVEWAY LOCATIONS
- ZERO LOT BOUNDARY
- PROPOSED 1.80m HIGH TIMBER FENCE
- EXISTING STORMWATER DRAINAGE PIPE
- EXISTING SEWERAGE MAIN
- EXISTING WATER MAIN
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G
- EXISTING ELECTRICAL CABLE O/H
- EXISTING TREE TO REMAIN - REFER VMP
- EXISTING TREE TO BE REMOVED - REFER VMP

AS-CONSTRUCTED CERTIFICATION

Signature: ..... Date: 26/06/20

ANDREW NGO RPEQ No. 12329

For and on behalf of Peakurban PTY LTD

AS CONSTRUCTED LEGEND

- AS CONSTRUCTED RETAINING WALL
- AS CONSTRUCTED SANDSTONE WALL

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS PREPARED BY SAUNDERS HAVILL FOR EARTHWORKS LEVELS.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	03.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	LF	CL	PERIDOT STREET AMENDED, SPOT LEVELS UPDATED, CUT AND FILL HATCH UPDATED
C	03.02.20	LF	SC	RETAINING WALL ADDED
D	03.03.20	LF	CL	NORTHERN RETAINING WALL REMOVED, SPOT LEVELS AND NOTE ADDED
E	10.03.20	AC	CL	RETAINING WALL ADDED TO LOT 501, SANDSTONE BOULDER WALL AMENDED
F	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD

DESIGN: TD

STATUS: AS CONSTRUCTED

APPROVED: ANDREW NGO RPEQ 12329

FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

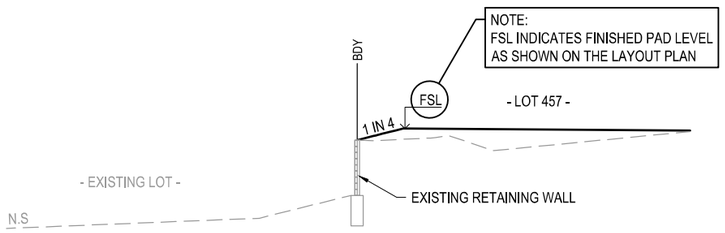
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16

COLLINGWOOD DRIVE, COLLINGWOOD PARK

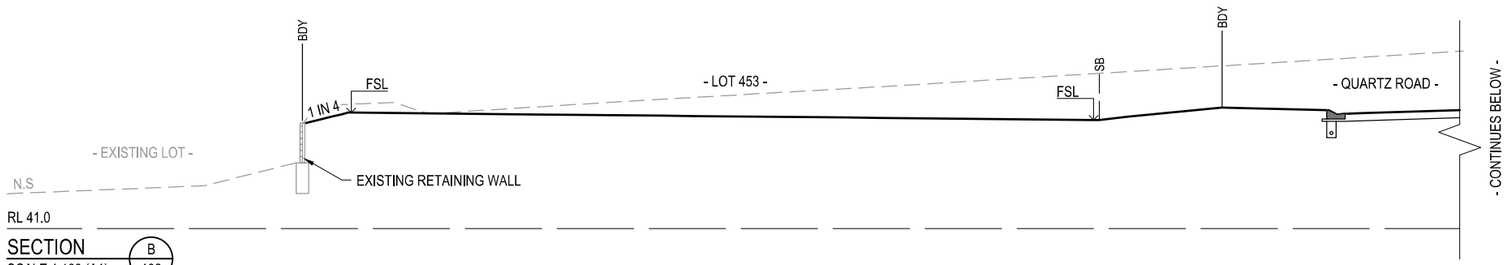
DRAWING TITLE: BULK EARTHWORKS LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	102	F



RL 45.0

SECTION A
SCALE 1:100 (A1)
SCALE 1:200 (A3)
102



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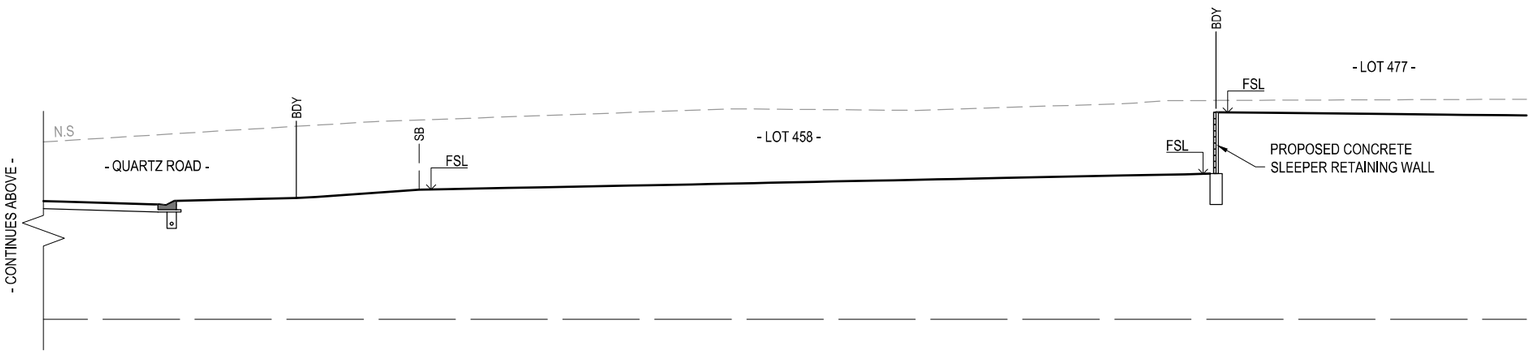

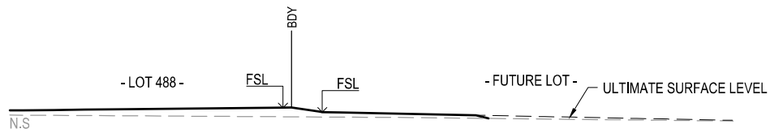

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SECTION C
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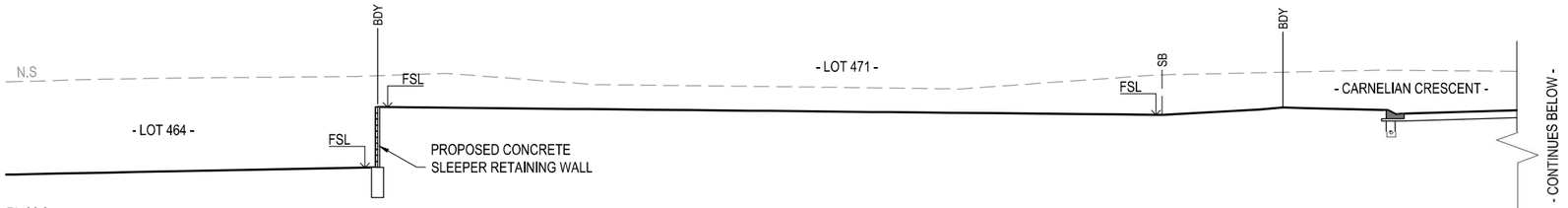

RL 36.0

SECTION D
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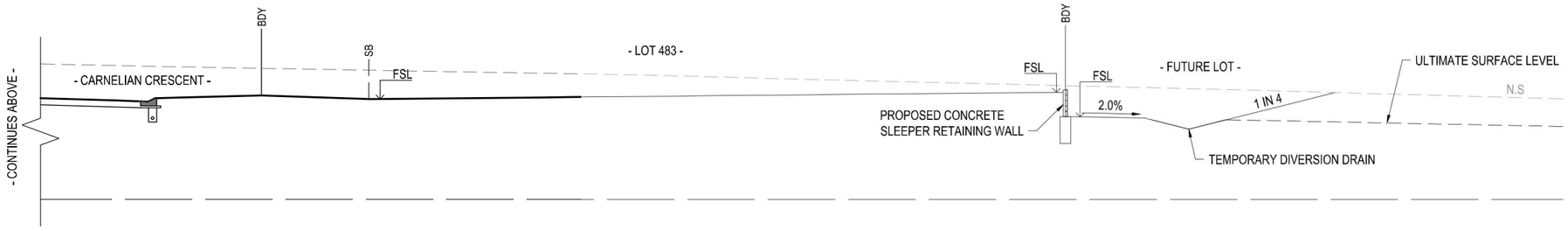
SCALE 1:200 (A3)
102



AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	10.03.20	AC	CL	SECTION D UPDATED
C	22.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

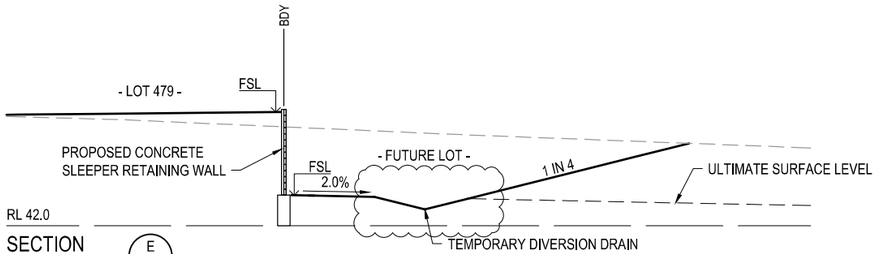
CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE,
COLLINGWOOD PARK

DRAWING TITLE: BULK EARTHWORKS TYPICAL SECTIONS SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
19-0023	103	C



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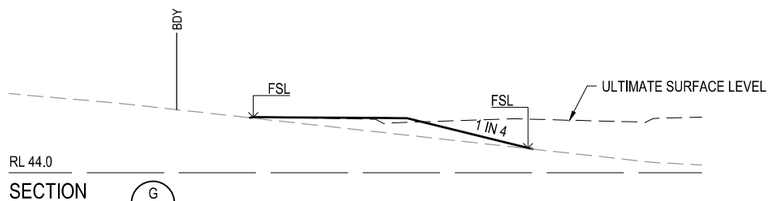
SECTION E 102

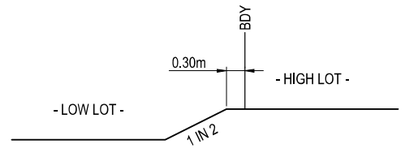
SCALE 1:100 (A1)
SCALE 1:200 (A3)



RL 44.0

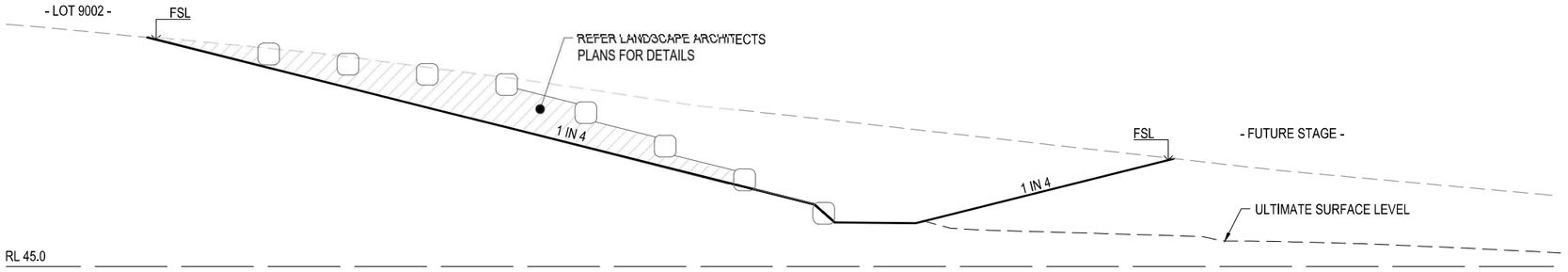
SECTION G 102

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



TYPICAL STEP BETWEEN LOTS DETAIL

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



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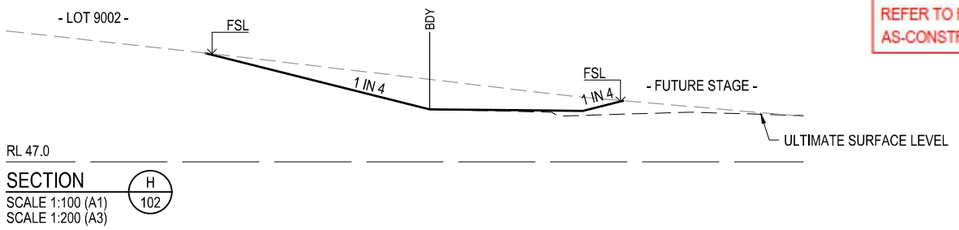
SECTION F 102

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

RETAINING WALL NOTES:

1. ALL RETAINING WALLS ARE TO BE DELIVERED UNDER DESIGN AND CONSTRUCTION ARRANGEMENT - FORMS 15 AND 16 CERTIFICATIONS ARE TO BE PROVIDED BY THE CONTRACTOR.
2. DESIGN OF WALLS TO CONSIDER ALL LOADS (FENCES, DWELLINGS ETC) AND ASSOCIATED IMPACTS FROM ANY ADJACENT SERVICES - FOOTING DEPTHS TO BE EXTENDED AS REQUIRED.
3. GEOTECHNICAL CONDITIONS ARE TO BE CONFIRMED AND APPROPRIATELY CONSIDERED FOR ALL WALLS.
4. REFER LANDSCAPE DRAWINGS FOR FURTHER INFORMATION ON RETAINING WALLS, PARTICULARLY RELATING TO FINISHES.
5. TEMPORARY SAFETY FENCING TO BE INSTALLED BEHIND ALL WALLS 1.0m HIGH AND GREATER.



RL 47.0

SECTION H 102

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

AS CONSTRUCTED LEVELS:

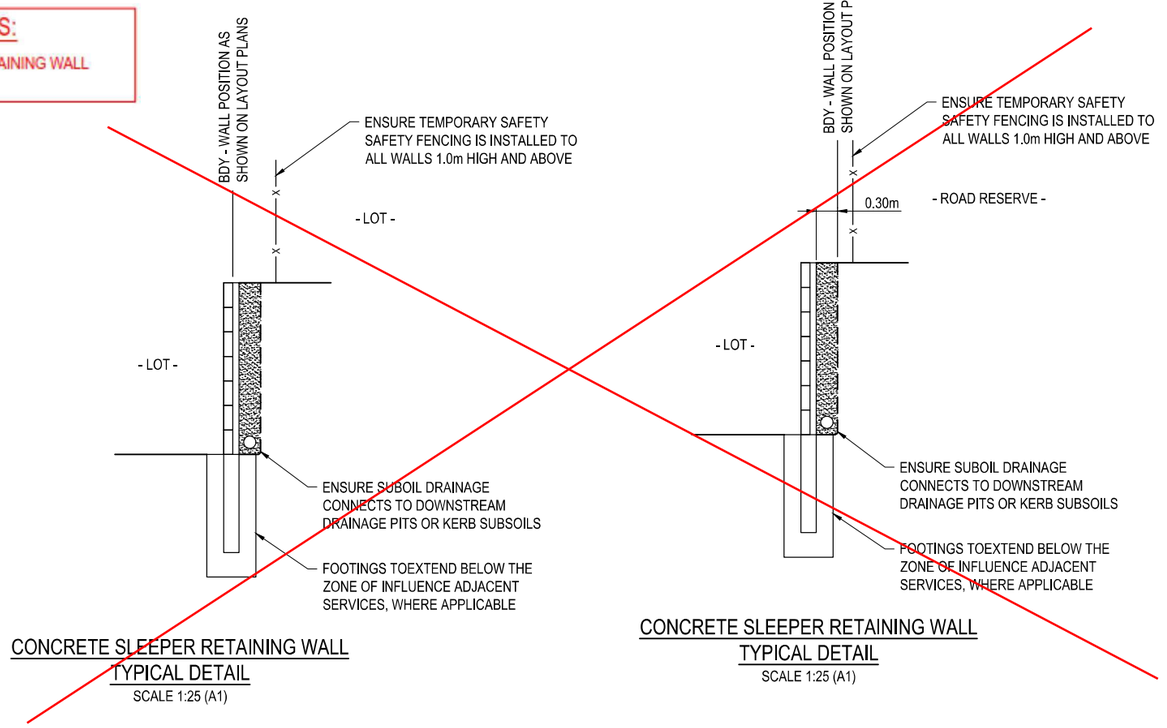
REFER TO FORM 15 AND 16 FOR RETAINING WALL AS-CONSTRUCTED DETAILS

AS-CONSTRUCTED CERTIFICATION

Signature: ..... Date: 26/06/20

ANDREW NGO RPEQ No. 12329

For and on behalf of Peakurban PTY LTD



CONCRETE SLEEPER RETAINING WALL TYPICAL DETAIL

SCALE 1:25 (A1)

CONCRETE SLEEPER RETAINING WALL TYPICAL DETAIL

SCALE 1:25 (A1)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	03.03.20	LF	CL	SECTION 'F' UPDATED TO SUIT LAYOUT
C	10.03.20	AC	CL	SECTION E UPDATED
D	22.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD

DESIGN: TD

STATUS: AS CONSTRUCTED

APPROVED: ANDREW NGO RPEQ 12329

FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16

COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: BULK EARTHWORKS TYPICAL SECTIONS SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
19-0023	104	D

ROOFWATER CONNECTION NOTE:

THE CONTRACTOR SHALL INSTALL A ROOFWATER CONNECTION TO EACH PROPERTY BY ONE OF THE FOLLOWING METHODS, AS SHOWN ON THE LAYOUT PLAN:

- TWO ROOFWATER KERB ADAPTOR 500mm FROM THE DOWNSTREAM BOUNDARY (UNLESS SHOWN ON A DIFFERENT ALIGNMENT). WHERE THERE IS A CONCRETE FOOTPATH, A ROOFWATER PIPE SHALL BE INSTALLED FROM THE PROPERTY BOUNDARY CONNECTED TO THE KERB ADAPTOR AT 1.25% MINIMUM GRADE, IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.
- ONE 150Ø ROOFWATER PIPE CONNECTED TO PROPOSED STORMWATER GULLY PIT OR MANHOLE AT MINIMUM 1.0% GRADE WITH 1.0m COVER.
- ONE 150Ø ROOFWATER PIPE DISCHARGING TO THE FILTER SURFACE LEVEL OF PROPOSED TREE PIT AT MINIMUM 1.0% GRADE.

WARNING! - EXISTING SERVICES

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

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

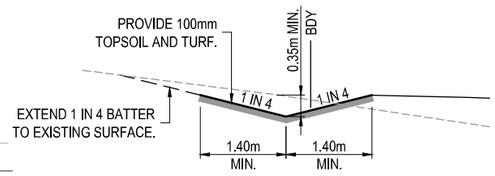
THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

KERB TYPES NOTE:

REFER TO THE SURVEY SETOUT ENGINEERING DRAWING FOR KERB TYPES AND TRANSITION LOCATIONS

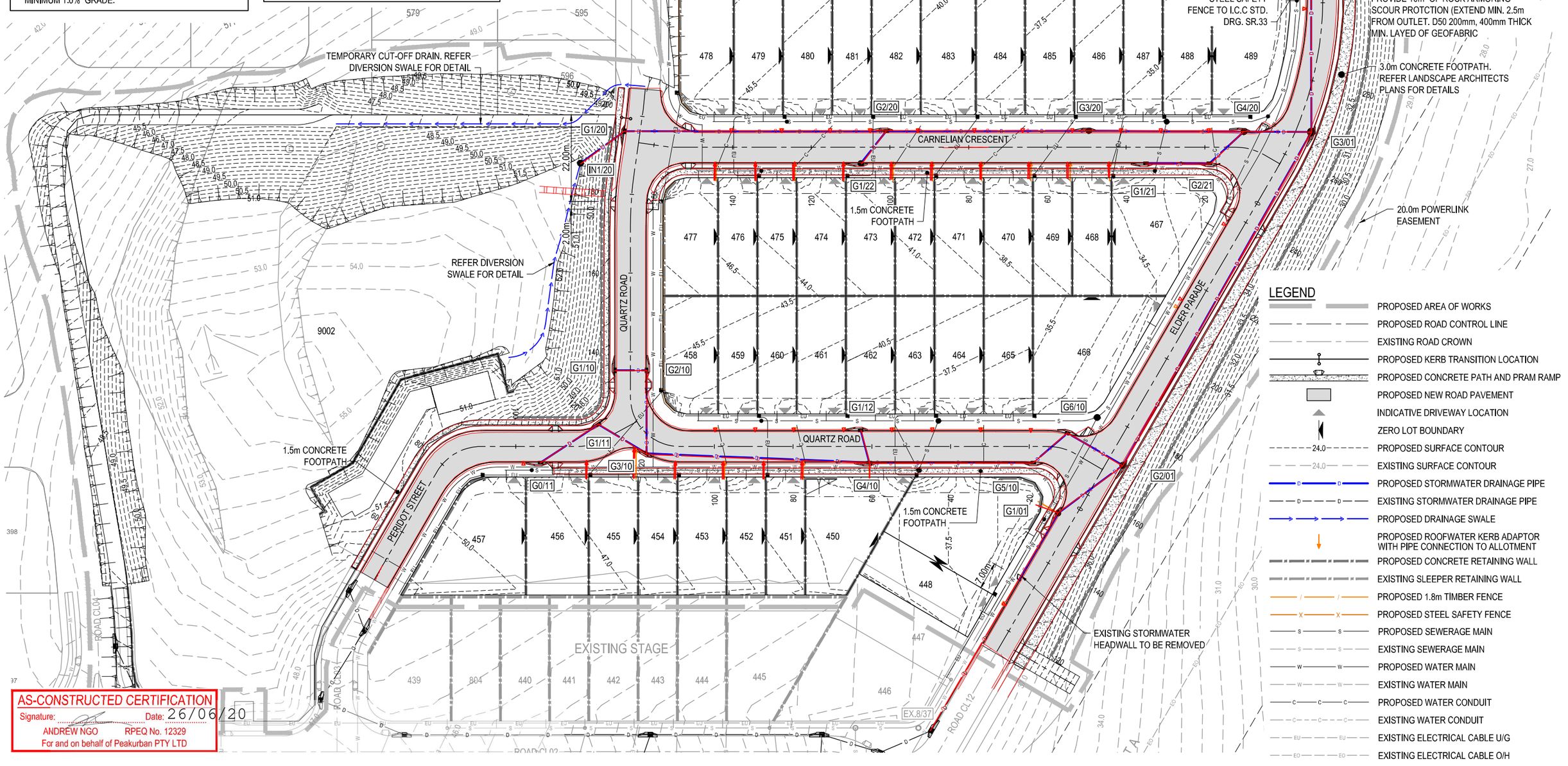
AS CONSTRUCTED LEGEND

- KERB
- CONCRETE PATH AND PRAM RAMP
- STORMWATER DRAINAGE PIPE
- KERB ADAPTOR WITH PIPE CONNECTION



DIVERSION SWALE (TYPICAL)

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



LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED ROAD CONTROL LINE
- EXISTING ROAD CROWN
- PROPOSED KERB TRANSITION LOCATION
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED DRAINAGE SWALE
- PROPOSED ROOFWATER KERB ADAPTOR WITH PIPE CONNECTION TO ALLOTMENT
- PROPOSED CONCRETE RETAINING WALL
- EXISTING SLEEPER RETAINING WALL
- PROPOSED 1.8m TIMBER FENCE
- PROPOSED STEEL SAFETY FENCE
- PROPOSED SEWERAGE MAIN
- EXISTING SEWERAGE MAIN
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED WATER CONDUIT
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G
- EXISTING ELECTRICAL CABLE O/H

AS-CONSTRUCTED CERTIFICATION

Signature: ..... Date: 26/06/20

ANDREW NGO RPEQ No. 12329

For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	03.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	21.01.20	LF	CL	RETAINING WALL AMENDED IN LOT 449
C	03.02.20	LF	SC	RETAINING WALL ADDED
D	10.03.20	AC	CL	SANDSTONE BOULDER WALL AMENDED
E	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD

DESIGN: TD

STATUS: AS CONSTRUCTED

APPROVED: ANDREW NGO RPEQ 12329

FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16

COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	105	E

CONTROL LINE SETOUT - PERIDOT STREET

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	6205.166	3911.441	32°53'01.36"			
TC	22.559	6217.414	3930.386	32°53'01.36"			
IP 2	27.224	6220.007	3934.396		R = 17.750	9.330	30°06'59.83"
CT	31.889	6224.262	3936.564	63°00'01.19"			
TC	77.562	6264.957	3957.299	63°00'01.19"			
IP 3	84.408	6271.680	3960.724		R = 13.100	13.692	59°52'59.89"
CT	91.254	6278.017	3956.628	122°53'01.07"			
TC	115.670	6298.520	3943.372	122°53'01.07"			
IP 4	119.176	6301.528	3941.427		R = -14.000	7.013	28°42'00.08"
CT	122.682	6305.100	3941.166	94°11'00.99"			
IP 5	132.269	6314.662	3940.466	94°11'00.99"			

CONTROL LINE SETOUT - ELDER PARADE

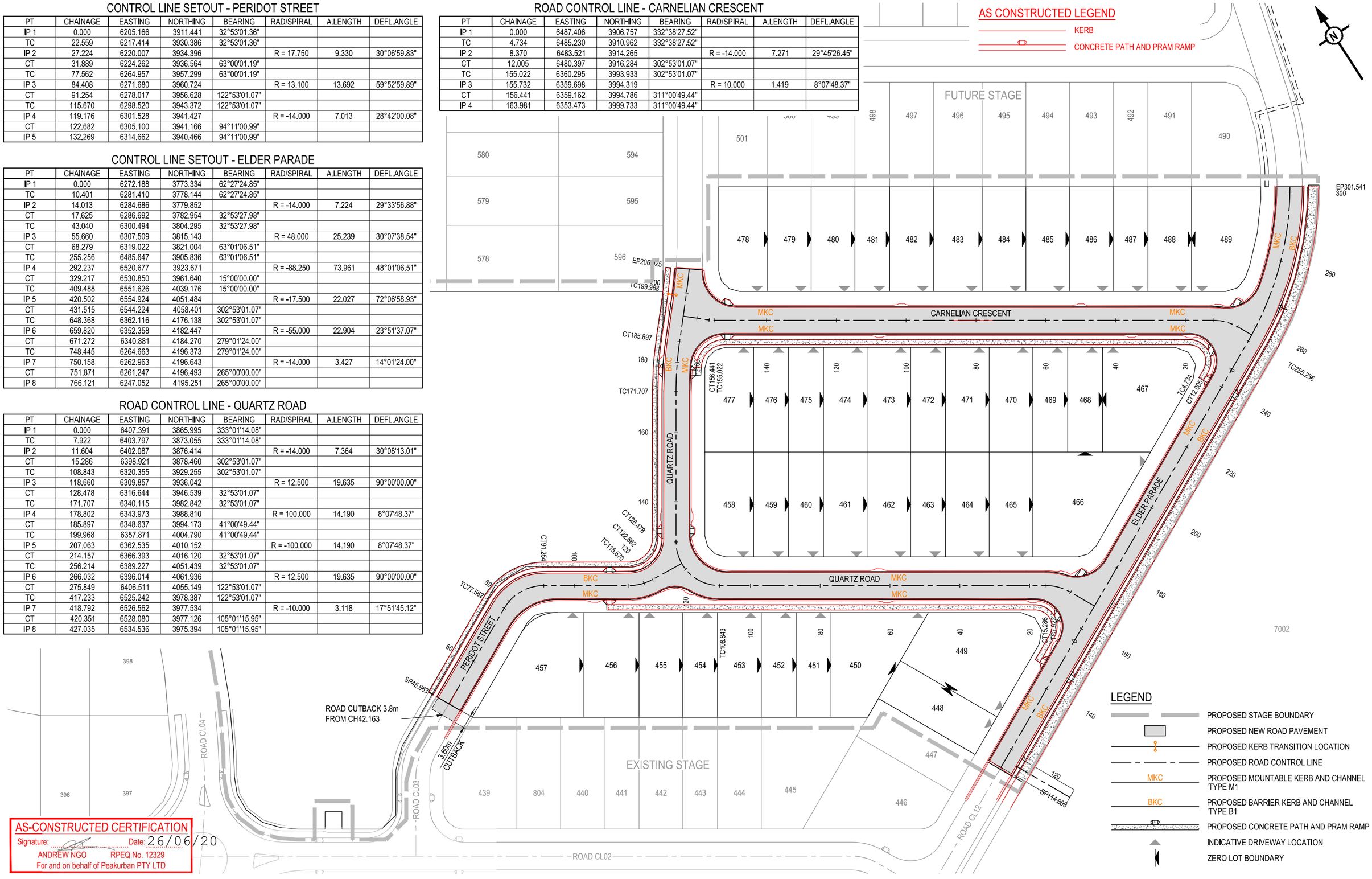
PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	6272.188	3773.334	62°27'24.85"			
TC	10.401	6281.410	3778.144	62°27'24.85"			
IP 2	14.013	6284.686	3779.852		R = -14.000	7.224	29°33'56.88"
CT	17.625	6286.692	3782.954	32°53'27.98"			
TC	43.040	6300.494	3804.295	32°53'27.98"			
IP 3	55.660	6307.509	3815.143		R = 48.000	25.239	30°07'38.54"
CT	68.279	6319.022	3821.004	63°01'06.51"			
TC	255.256	6485.647	3905.836	63°01'06.51"			
IP 4	292.237	6520.677	3923.671		R = -88.250	73.961	48°01'06.51"
CT	329.217	6530.850	3961.640	15°00'00.00"			
TC	409.488	6551.626	4039.176	15°00'00.00"			
IP 5	420.502	6554.924	4051.484		R = -17.500	22.027	72°06'58.93"
CT	431.515	6544.224	4058.401	302°53'01.07"			
TC	648.368	6362.116	4176.138	302°53'01.07"			
IP 6	659.820	6352.358	4182.447		R = -55.000	22.904	23°51'37.07"
CT	671.272	6340.881	4184.270	279°01'24.00"			
TC	748.445	6264.663	4196.373	279°01'24.00"			
IP 7	750.158	6262.963	4196.643		R = -14.000	3.427	14°01'24.00"
CT	751.871	6261.247	4196.493	265°00'00.00"			
IP 8	766.121	6247.052	4195.251	265°00'00.00"			

ROAD CONTROL LINE - QUARTZ ROAD

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	6407.391	3865.995	333°01'14.08"			
TC	7.922	6403.797	3873.055	333°01'14.08"			
IP 2	11.604	6402.087	3876.414		R = -14.000	7.364	30°08'13.01"
CT	15.286	6398.921	3878.460	302°53'01.07"			
TC	108.843	6320.355	3929.255	302°53'01.07"			
IP 3	118.660	6309.857	3936.042		R = 12.500	19.635	90°00'00.00"
CT	128.478	6316.644	3946.539	32°53'01.07"			
TC	171.707	6340.115	3982.842	32°53'01.07"			
IP 4	178.802	6343.973	3988.810		R = 100.000	14.190	8°07'48.37"
CT	185.897	6348.637	3994.173	41°00'49.44"			
TC	199.968	6357.871	4004.790	41°00'49.44"			
IP 5	207.063	6362.535	4010.152		R = -100.000	14.190	8°07'48.37"
CT	214.157	6366.393	4016.120	32°53'01.07"			
TC	256.214	6389.227	4051.439	32°53'01.07"			
IP 6	266.032	6396.014	4061.936		R = 12.500	19.635	90°00'00.00"
CT	275.849	6406.511	4055.149	122°53'01.07"			
TC	417.233	6525.242	3978.387	122°53'01.07"			
IP 7	418.792	6526.562	3977.534		R = -10.000	3.118	17°51'45.12"
CT	420.351	6528.080	3977.126	105°01'15.95"			
IP 8	427.035	6534.536	3975.394	105°01'15.95"			

ROAD CONTROL LINE - CARNELIAN CRESCENT

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	6487.406	3906.757	332°38'27.52"			
TC	4.734	6485.230	3910.962	332°38'27.52"			
IP 2	8.370	6483.521	3914.265		R = -14.000	7.271	29°45'26.45"
CT	12.005	6480.397	3916.284	302°53'01.07"			
TC	155.022	6360.295	3993.933	302°53'01.07"			
IP 3	155.732	6359.698	3994.319		R = 10.000	1.419	8°07'48.37"
CT	156.441	6359.162	3994.786	311°00'49.44"			
IP 4	163.981	6353.473	3999.733	311°00'49.44"			



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	MPG	AMENDED CUTBACK LINE
C	24.01.20	LF	MPG	EDGE RESTRAINT KERB NOTES REMOVED
D	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SURVEY SETOUT AND KERB TYPES LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	106	D

~~ASSUMED~~ PAVEMENT DETAILS ~~(SUBJECT TO CBR TESTING)~~

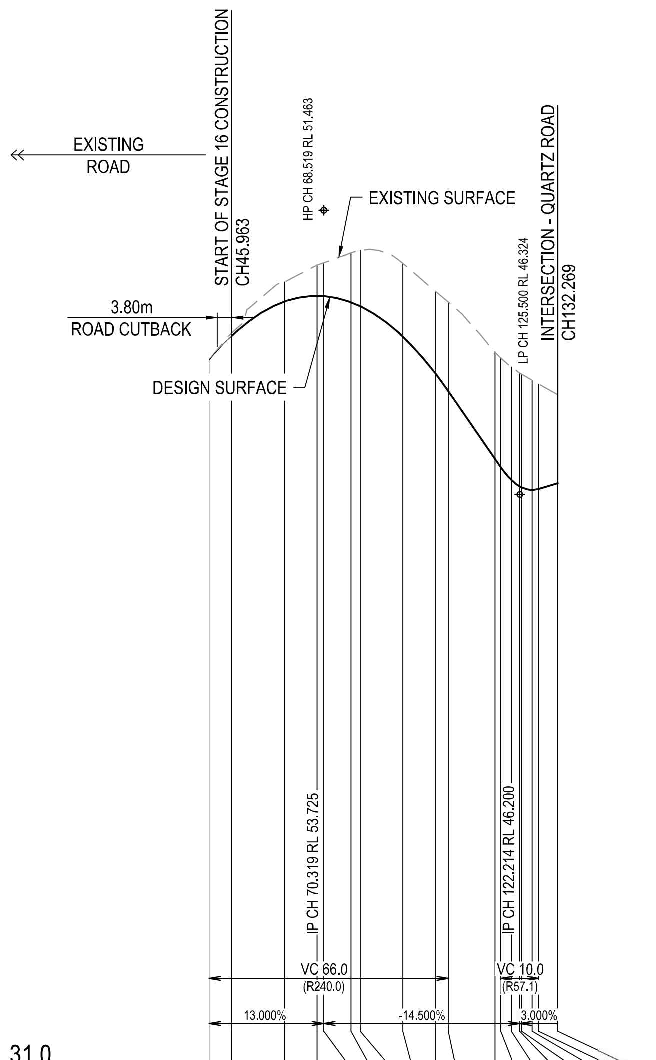
ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUBBASE	TOTAL DEPTH
PERIDOT STREET	ACCESS STREET	1.0×10^5	3	35mm	125mm	100mm	160mm	420mm

NOTE: ~~THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON AN ASSUMED CBR.~~ THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY ~~FOR FINAL PAVEMENT DESIGN~~

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD



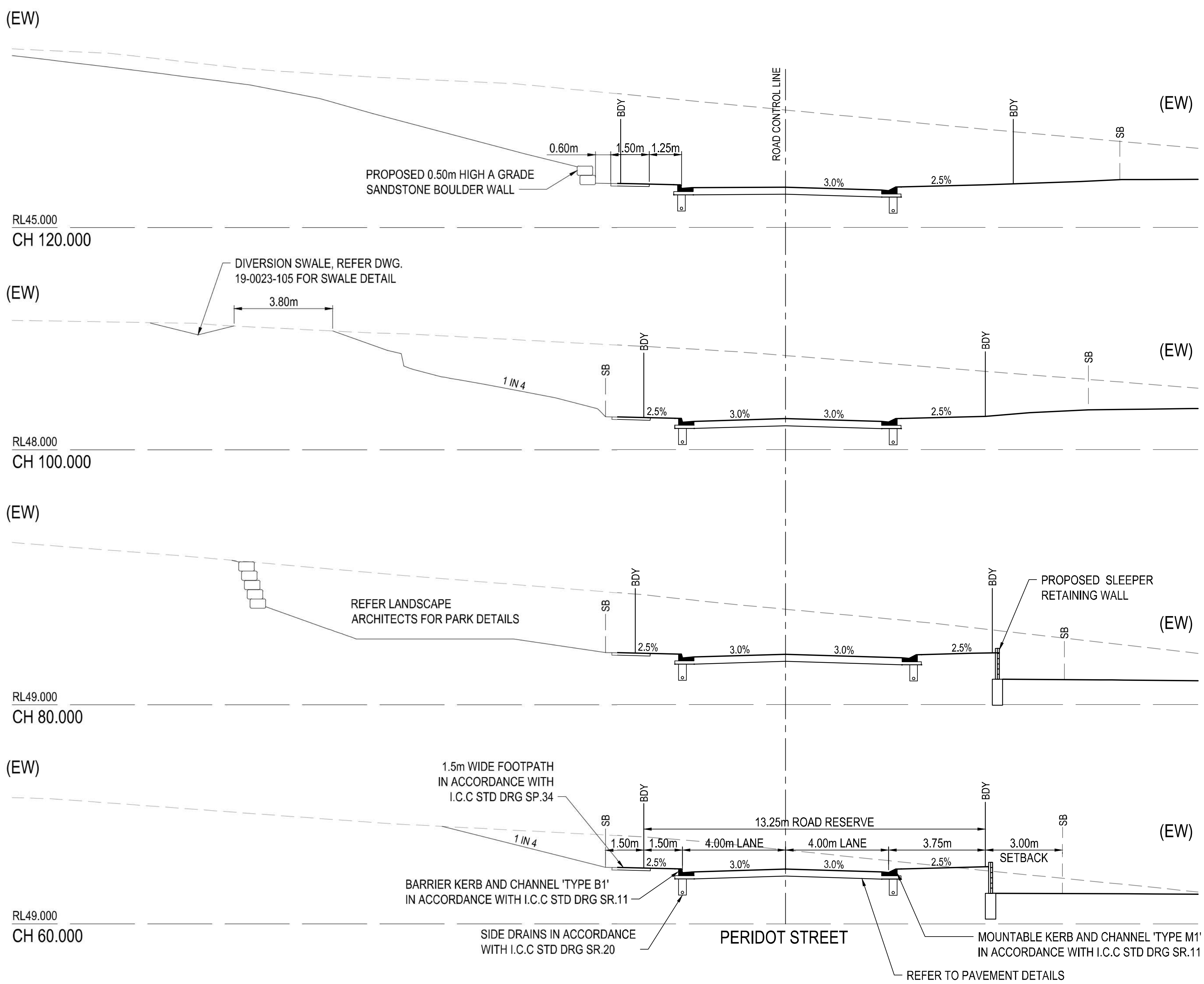
DATUM RL 31.0

CHAINAGES	CUT (-) / FILL	LHS LIP LEVEL	RHS LIP LEVEL	DESIGN SURFACE	EXISTING SURFACE
40.000	-0.015			49.768	49.783
45.963	-0.078			50.403	50.480
60.000	-0.516	51.205	51.200	51.311	51.827
68.519	-0.810	51.356	51.351	51.463	52.273
70.319	-0.882	51.349	#	51.456	52.338
77.562	-1.309	51.186	#	51.292	52.601
80.000	-1.482	51.081	#	51.188	52.670
91.254	-1.936	50.279	#	50.386	52.322
100.000	-2.175	49.291	49.286	49.398	51.573
103.319	-2.352	48.833	48.828	48.940	51.291
115.670	-2.822	46.977	47.037	47.149	49.971
117.214	-2.890	#	46.813	46.925	49.814
120.000	-2.985	#	46.477	46.589	49.574
122.214	-3.001	#	46.308	46.418	49.419
122.682	-2.998	#	46.282	46.393	49.391
125.500	-2.903	#	#	46.324	49.227
127.214	-2.780	#	#	46.350	49.130
132.269	-2.339	#	#	46.501	48.840

HORIZONTAL CURVES: R13.100, R-14.000

\# REFER INTERSECTION DRAWINGS FOR LIP LEVELS

PERIDOT STREET



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	MPG	PERIDOT STREET LONGITUDINAL SECTION AMENDED
C	10.03.20	AC	CL	SANDSTONE BOULDER WALL AMENDED
D	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:100 / 1:200 — 1 0 1 2 3 4 5 — A1 / A3
1:1000 / 1:2000 — 10 0 10 20 30 40 50 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: PERIDOT STREET LONGITUDINAL SECTION AND CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
19-0023	107	D

~~ASSUMED~~ PAVEMENT DETAILS ~~(SUBJECT TO CBR TESTING)~~

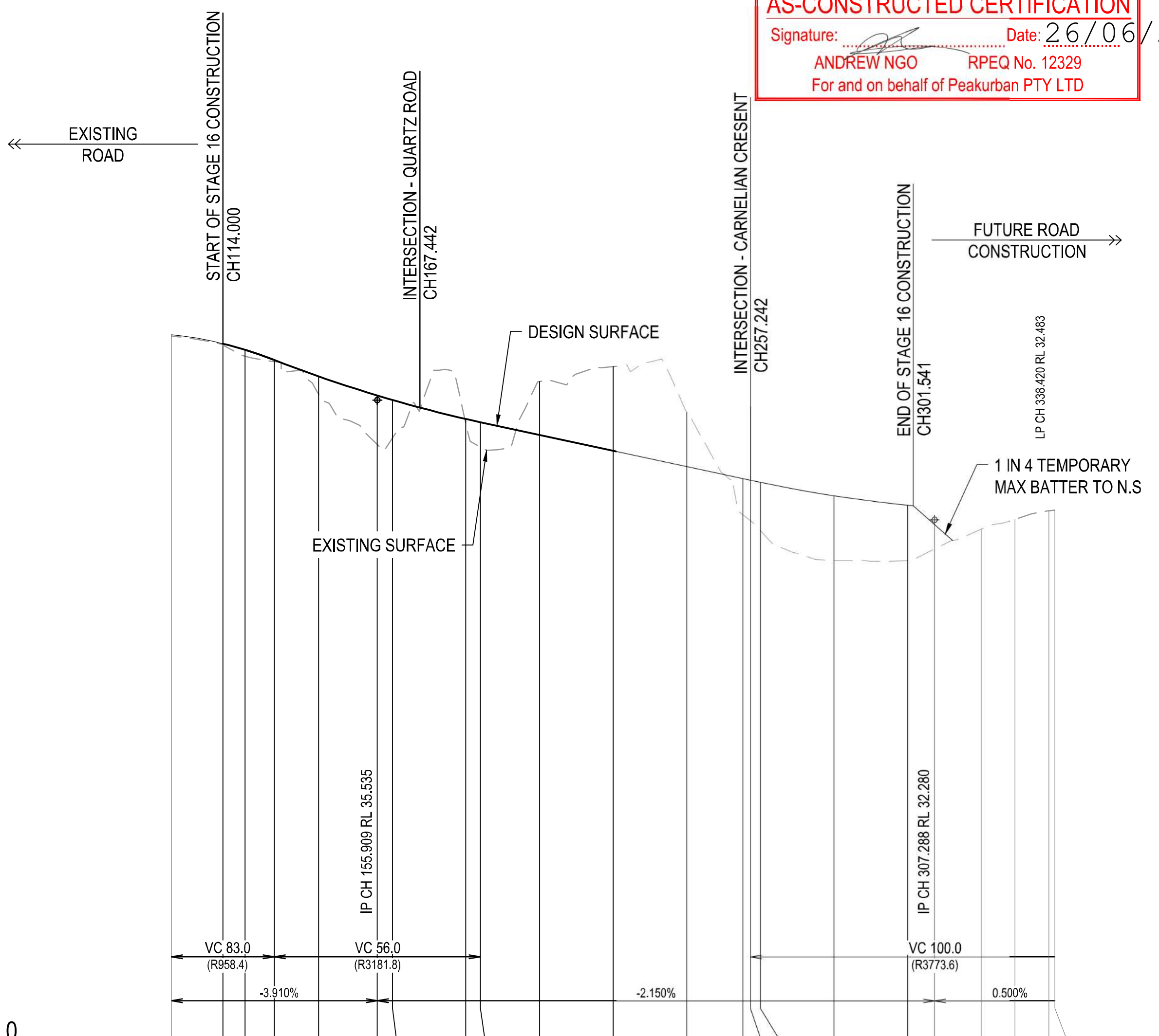
ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUBBASE	TOTAL DEPTH
ELDER PARADE	ACCESS STREET	1.0×10^5	3	35mm	125mm	100mm	160mm	420mm

~~NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON AN ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN~~

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS
PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

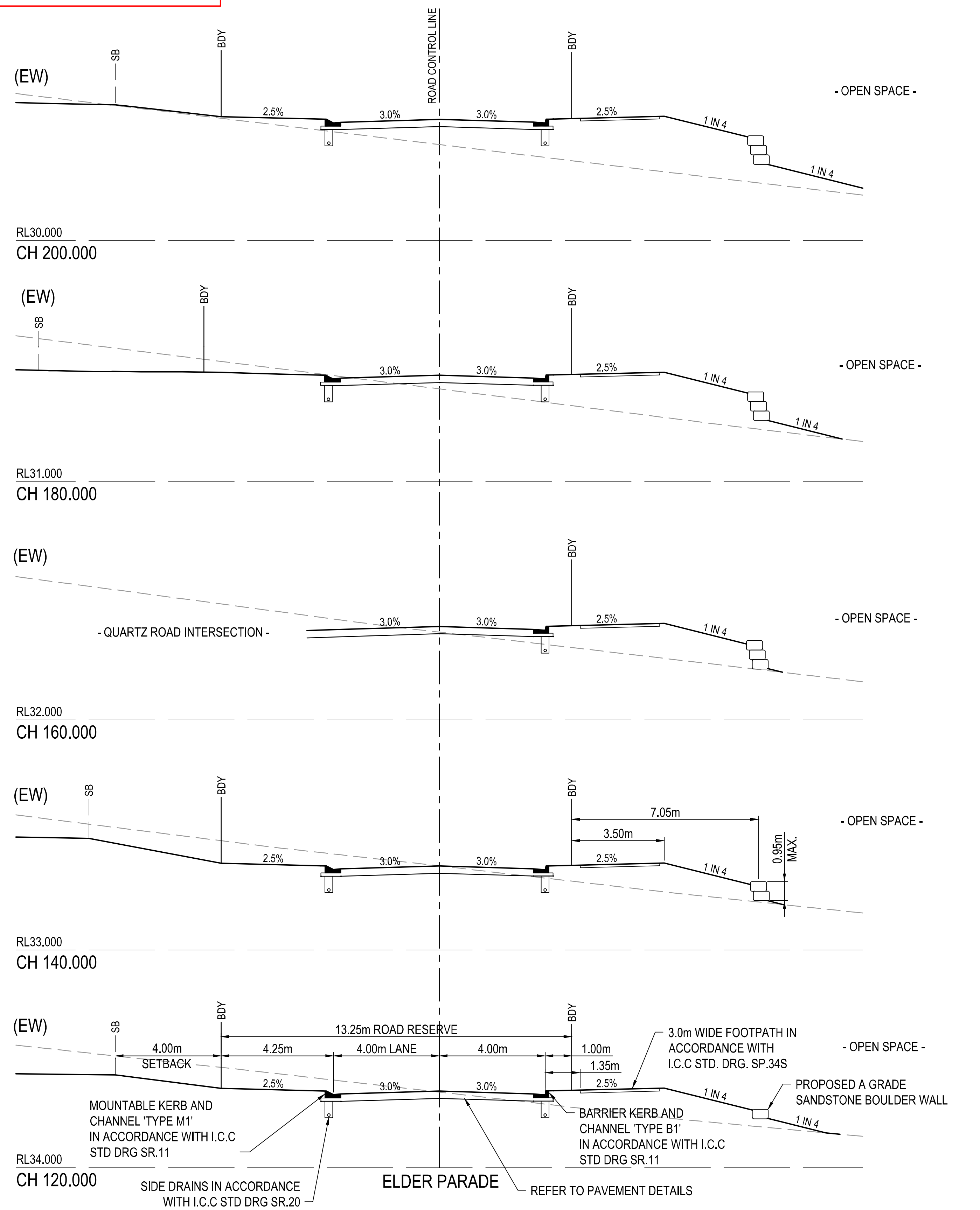


DATUM RL 18.0

CUT (-) / FILL	0.036	0.040	0.176	0.045	0.488	1.331	1.038	0.112	0.674	-1.454	-2.292	-1.483	0.983	1.102	1.313	1.766	1.506	1.124	0.506	0.201	-0.040	-0.058
LHS LIP LEVEL		36.961	36.794	36.518	36.049	#			34.821	34.475	34.045	33.615	#			32.823	32.567					
RHS LIP LEVEL		36.966	36.799	36.523	36.054	35.516	35.396	34.910	34.826	34.480	34.050	33.620	33.292	33.248	33.191	32.828	32.572			48.004		
DESIGN SURFACE	37.314	37.072	36.906	36.629	36.180	35.658	35.536	35.019	34.933	34.587	34.157	33.727	33.399	33.355	33.298	32.935	32.678	32.611	32.528	32.494	32.483	32.483
EXISTING SURFACE	37.278	37.032	36.730	36.584	35.692	34.327	34.498	34.907	34.259	36.041	36.449	35.209	32.416	32.253	31.985	31.169	31.172	31.487	32.022	32.293	32.523	32.541
CHAINAGES	100.000	114.000	120.000	127.909	140.000	155.909	160.000	180.000	183.908	200.000	220.000	240.000	255.256	257.288	260.000	280.000	300.000	307.288	320.000	329.217	338.420	340.000
HORIZONTAL CURVES																R-88.250						

\# REFER INTERSECTION DRAWINGS FOR LIP LEVELS

ELDER PARADE



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	MPG	ELDER PARADE LONGITUDINAL SECTION AMENDED
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: **AS CONSTRUCTED**
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:100 / 1:200 (A1 / A3); 1:1000 / 1:2000 (A1 / A3)

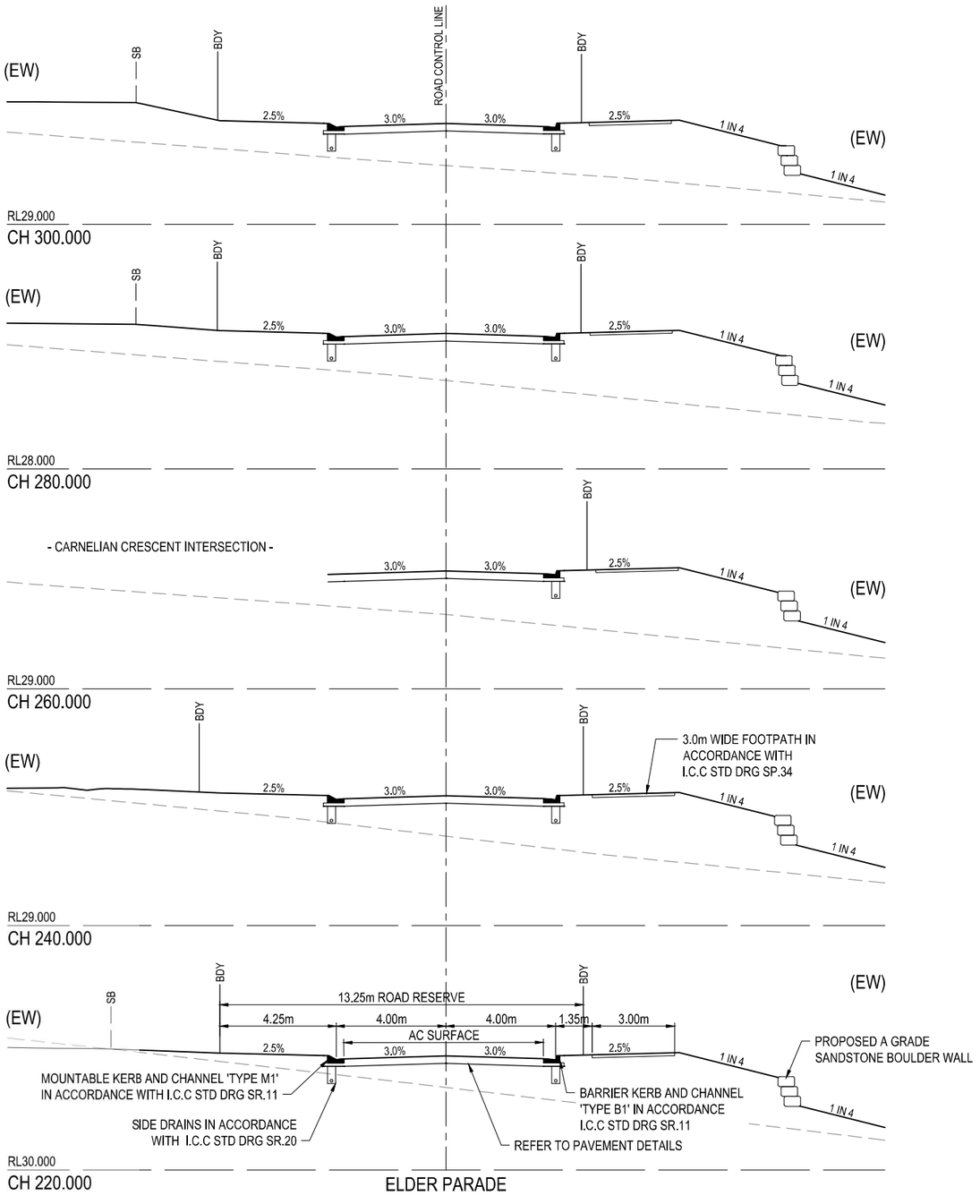
CLIENT: **CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED**
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP, PH: 1300 123 744

PROJECT NAME: **WOODLINKS VILLAGE - STAGE 16**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **ELDER PARADE LONGITUDINAL SECTION AND CROSS SECTIONS**

PROJECT No. **19-0023** | DRAWING No. **108** | REVISION **C**

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS



AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	06.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: ELDER PARADE CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
19-0023	109	B

~~ASSUMED~~ PAVEMENT DETAILS ~~(SUBJECT TO CBR TESTING)~~

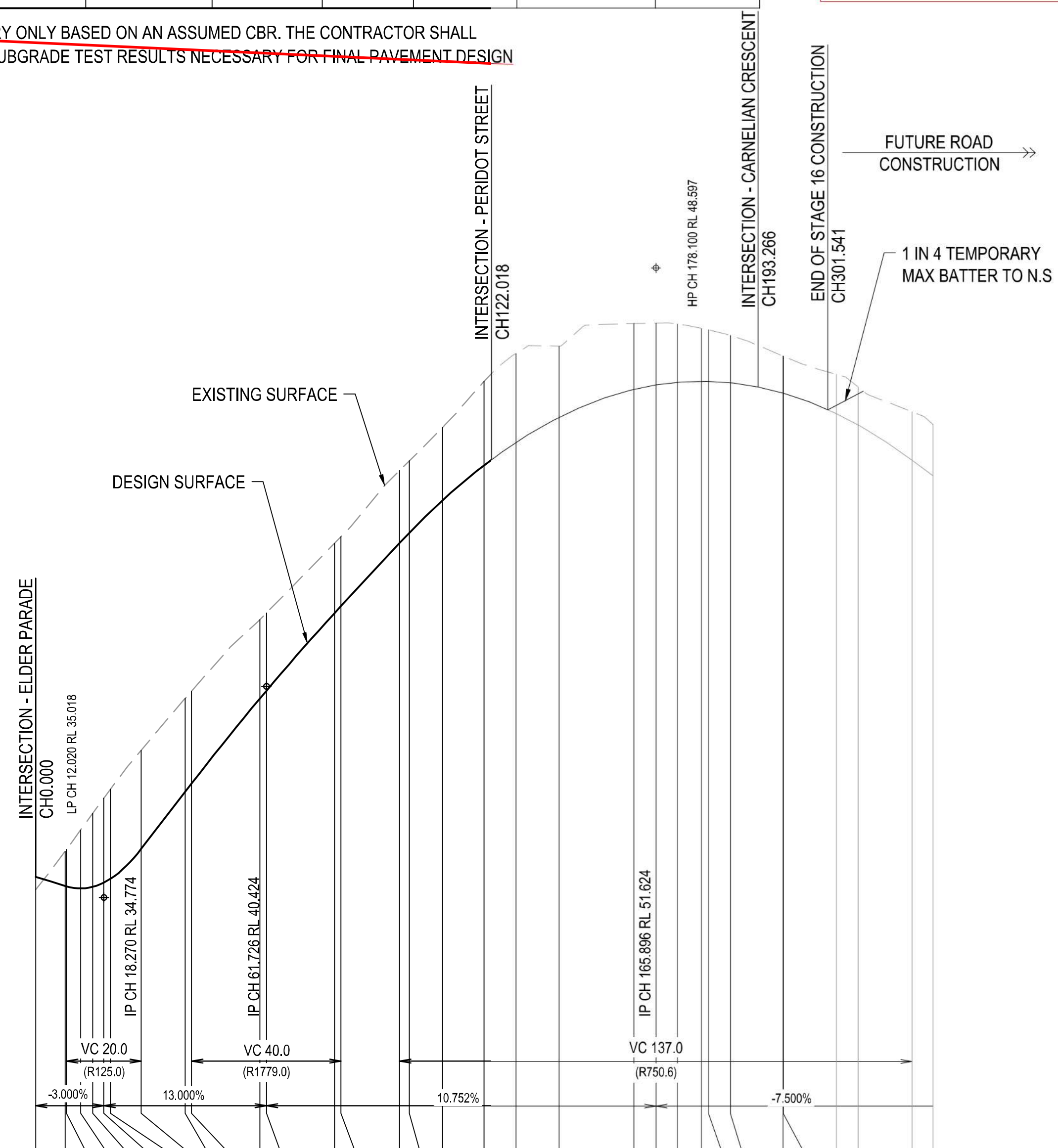
ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUBBASE	TOTAL DEPTH
QUARTZ ROAD	ACCESS STREET	1.0×10^5	3	35mm	125mm	100mm	160mm	420mm

~~NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON AN ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN~~

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS



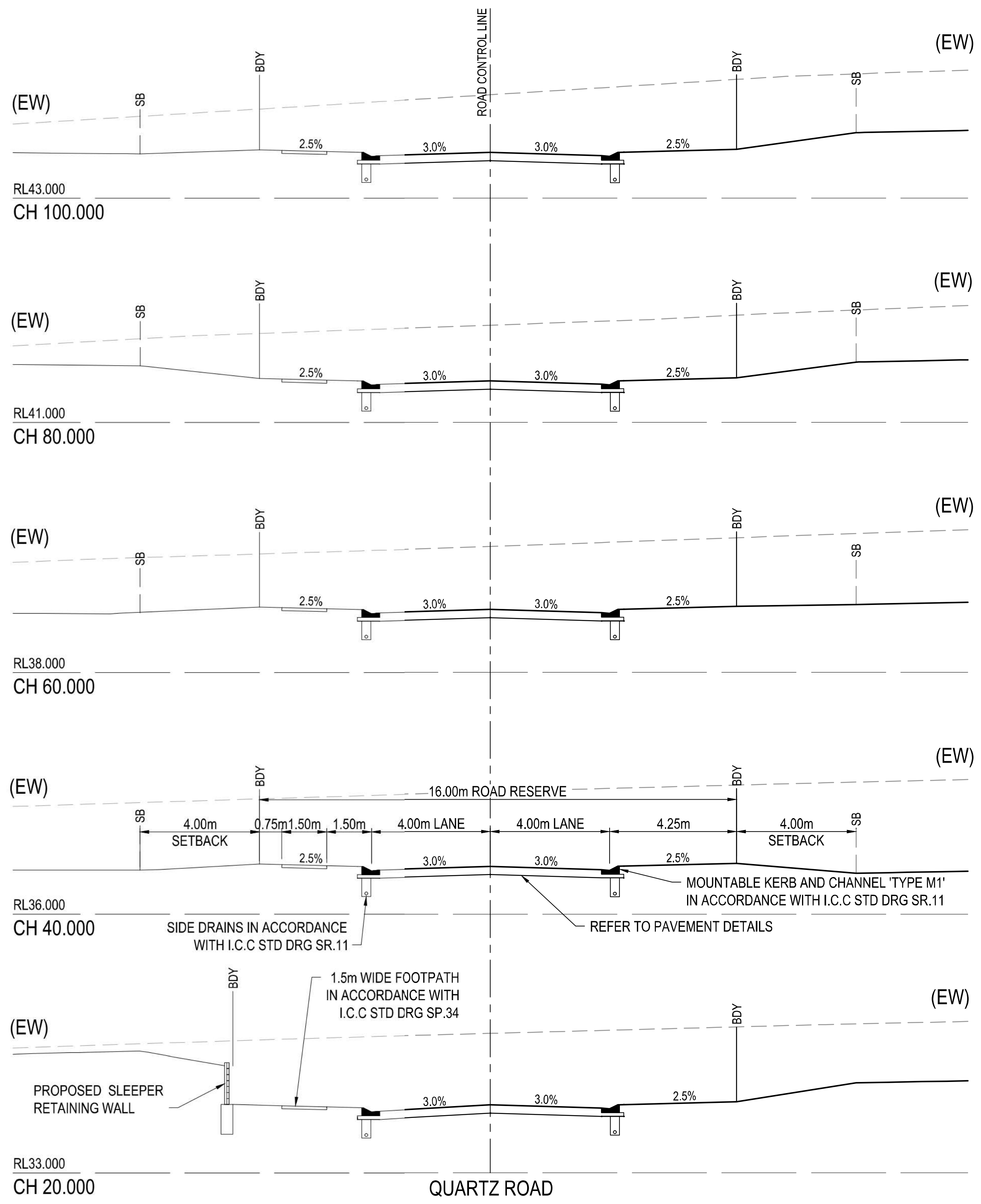
DATUM RL 28.0

CHAINAGES	CUT (-) / FILL	LHS LIP LEVEL	RHS LIP LEVEL	DESIGN SURFACE	EXISTING SURFACE
0.000	0.339	#	#	35.322	34.983
7.922	-0.929	#	#	35.085	36.013
8.270	-0.985	#	#	35.074	36.060
12.020	-1.557	#	34.893	35.018	36.575
15.286	-1.967	#	34.949	35.061	37.028
18.270	-2.261	34.993	35.063	35.174	37.435
20.000	-2.394	35.062	35.161	35.273	37.667
28.270	-2.645	35.963	35.963	36.074	38.719
40.000	-2.507	37.487	37.487	37.599	40.106
41.726	-2.479	37.712	37.712	37.824	40.303
60.000	-2.106	39.994	39.994	40.105	42.211
61.726	-2.076	40.199	40.199	40.311	42.387
80.000	-1.867	42.276	42.276	42.388	44.255
81.726	-1.859	42.462	42.462	42.574	44.433
97.396	-1.944	44.147	44.147	44.259	46.202
100.000	-1.930	44.422	44.422	44.534	46.464
108.843	-1.951	45.290	#	45.402	47.353
120.000	-2.243	#	#	46.349	48.591
128.478	-2.381	#	#	46.957	49.338
140.000	-1.902	47.524	47.518	47.630	49.532
160.000	-1.758	48.272	48.267	48.379	50.137
165.896	-1.654	48.391	48.386	48.498	50.152
171.707	-1.554	48.463	48.458	48.570	50.124
178.100	-1.414	48.491	48.485	48.597	50.011
180.000	-1.375	48.488	#	48.595	49.970
185.897	-1.261	48.450	#	48.557	49.818
199.968	-0.986	48.167	#	48.279	49.265
200.000	-0.986	48.166	#	48.278	49.264
214.157	-1.045	32.758	#	47.731	48.776
220.000	-1.012	32.674	#	47.428	48.440
234.396	-1.293		#	46.486	47.779
240.000	-1.371		#	46.066	47.437

HORIZONTAL CURVES: R-14.000 R12.500 R100.000 R-100.000

REFER INTERSECTION DRAWINGS FOR LIP LEVELS

QUARTZ ROAD



QUARTZ ROAD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: **AS CONSTRUCTED**
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:100 A1 / 1:200 A3 (1 0 1 2 3 4 5); 1:1000 A1 / 1:2000 A3 (10 0 10 20 30 40 50)

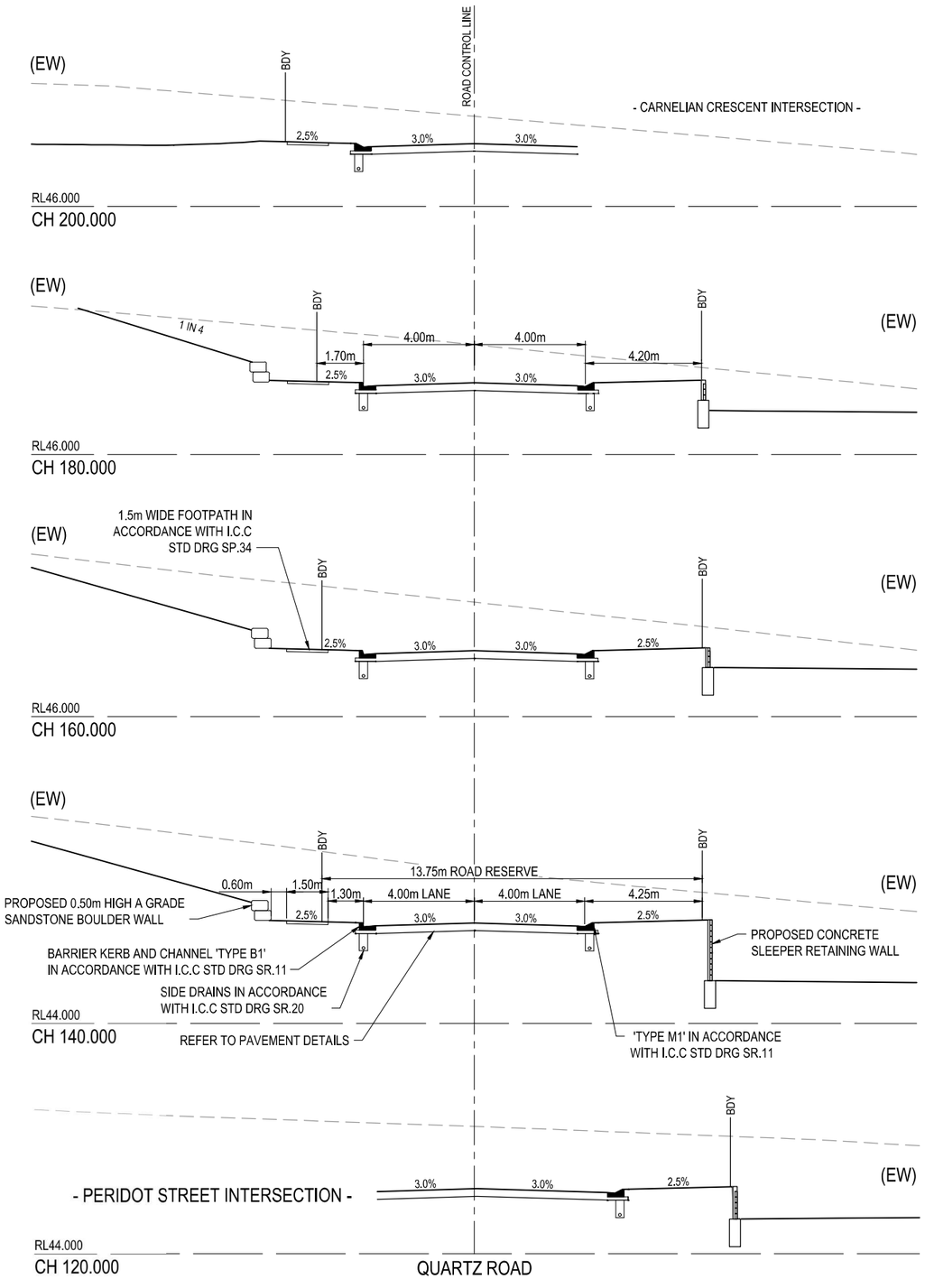
CLIENT: **CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED**
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: **WOODLINKS VILLAGE - STAGE 16**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **QUARTZ ROAD LONGITUDINAL SECTION AND CROSS SECTIONS**

PROJECT No.: 19-0023 | DRAWING No.: 110 | REVISION: B

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS



AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	10.03.20	AC	CL	SANDSTONE BOULDER WALL AMENDED
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: QUARTZ ROAD CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
19-0023	111	C

~~ASSUMED~~ PAVEMENT DETAILS ~~(SUBJECT TO CBR TESTING)~~

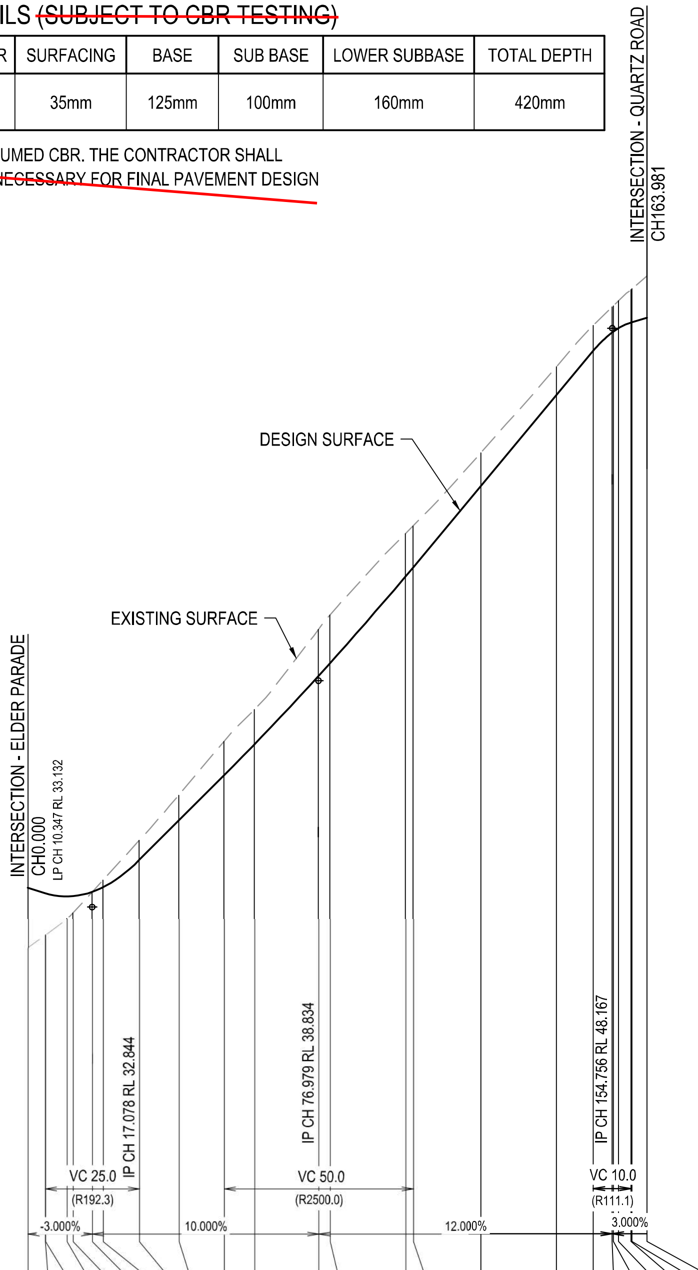
ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUBBASE	TOTAL DEPTH
CARNELIAN CRESCENT	ACCESS STREET	1.0×10^5	3	35mm	125mm	100mm	160mm	420mm

~~NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON AN ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN~~

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS
PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

(EW) REFER TO BULK EARTHWORKS DRAWING FOR LOT GRADING AND FINISHED SURFACE LEVELS

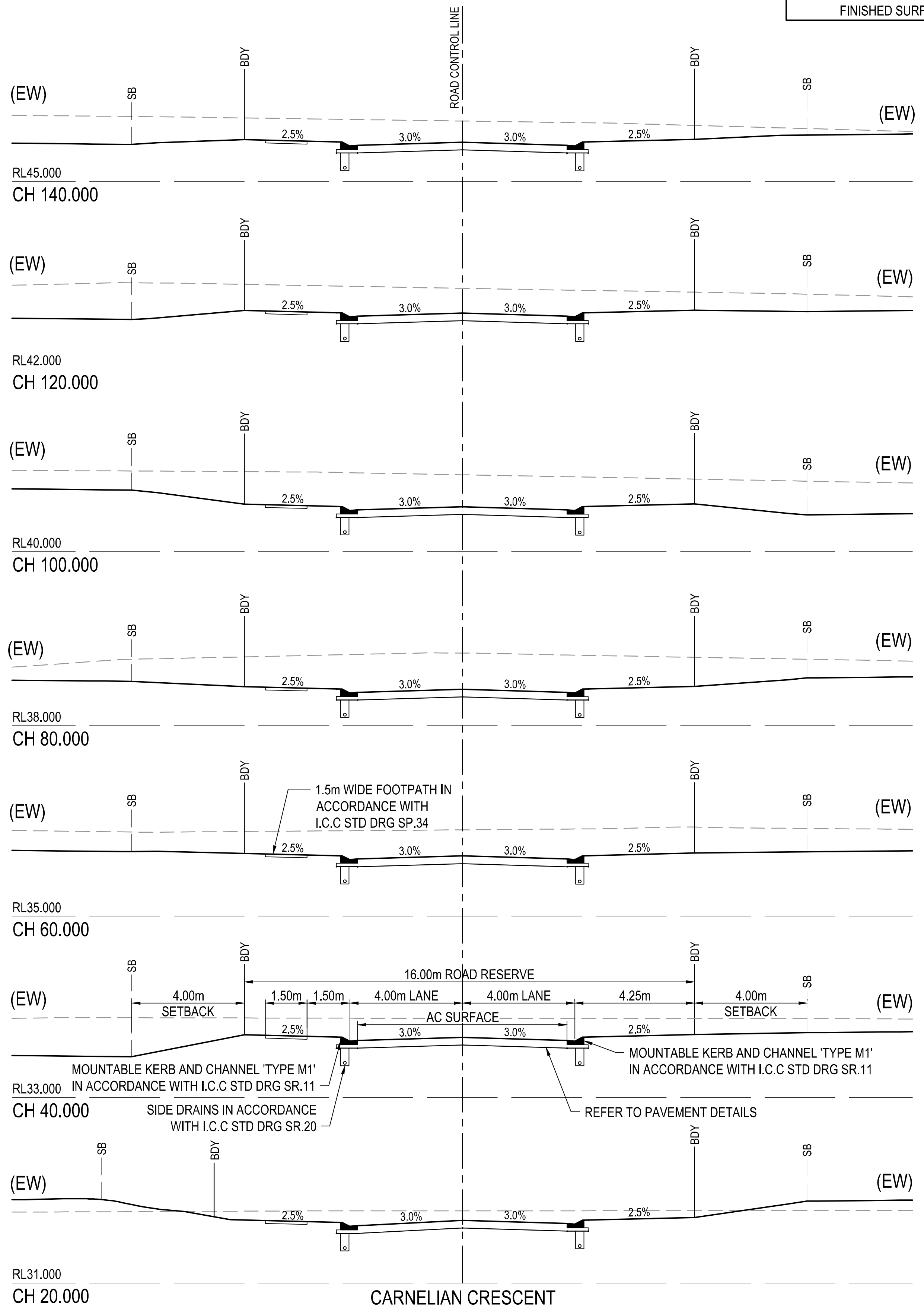


DATUM RL 27.0

CUT (-) / FILL		1.113	1.097	0.593	0.450	0.005	-0.191	-0.519	-0.673	-0.893	-0.924	-1.235	-1.283	-1.133	-1.096	-0.875	-0.752	-0.674	-0.675	-0.681	-0.724	-0.878	-0.891	-1.110
LHS LIP LEVEL	#						33.135	33.982	35.024	36.222	37.037	38.847	39.181	41.485	41.722	43.885	46.285	47.455	#					
RHS LIP LEVEL	#					34.073	33.263	33.982	35.024	36.222	37.037	38.847	39.181	41.485	41.722	43.885	46.285	#						
DESIGN SURFACE		33.219	33.214	33.132	33.139	33.250	33.374	34.094	35.136	36.334	37.149	38.959	39.293	41.597	41.834	43.996	46.396	47.567	48.055	48.074	48.168	48.317	48.324	48.444
EXISTING SURFACE	31.768	32.106	32.117	32.540	32.689	33.245	33.565	34.613	35.809	37.227	38.073	40.193	40.576	42.730	42.930	44.871	47.148	48.241	48.729	48.755	48.892	49.195	49.216	49.554
CHAINAGES	0.000	4.578	4.734	10.347	12.005	17.078	20.000	29.578	40.000	51.979	60.000	76.979	80.000	100.000	101.979	120.000	140.000	149.756	154.756	155.022	156.441	159.756	160.000	163.981
HORIZONTAL CURVES		R-14.000																	R10.000 H					

REFER INTERSECTION DRAWINGS FOR LIP LEVELS

CARNELIAN CRESCENT



CARNELIAN CRESCENT

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: **AS CONSTRUCTED**
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

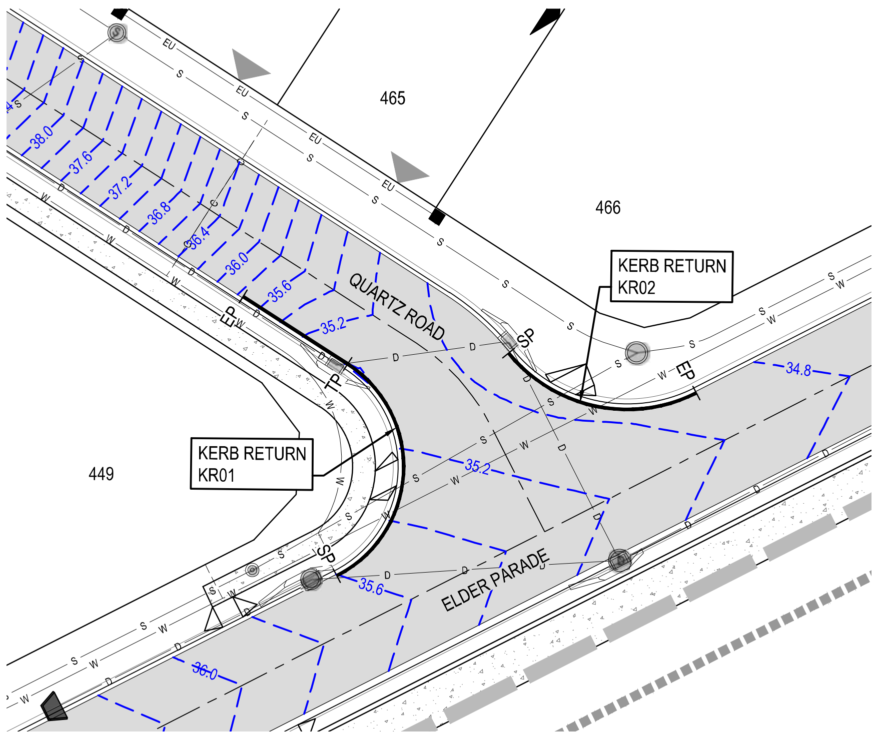
PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

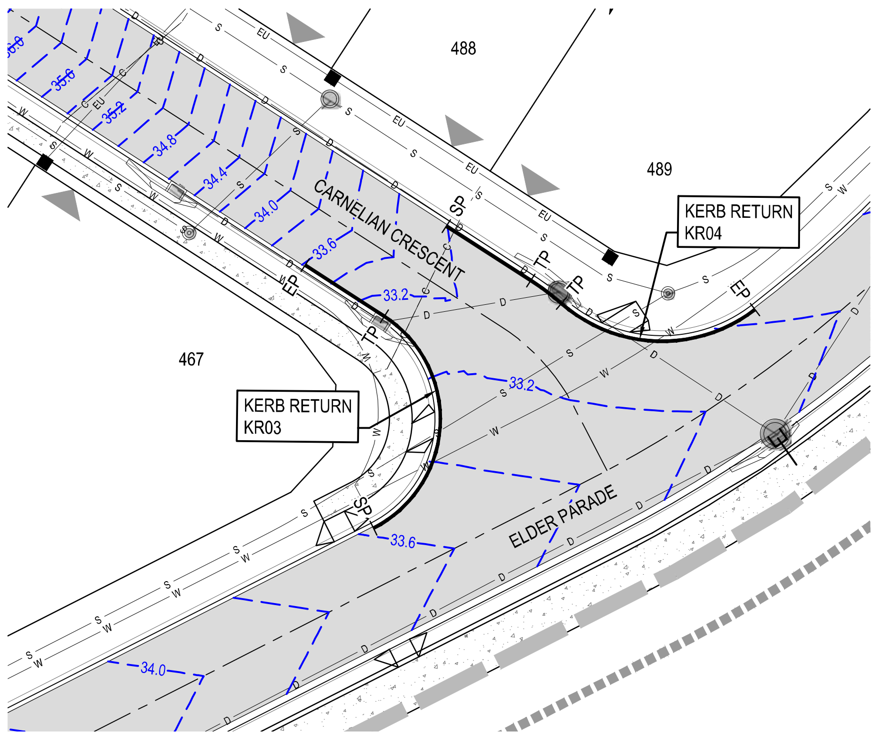
SCALE
1:100 / 1:200 — 1 0 1 2 3 4 5 — A1 / A3
1:1000 / 1:2000 — 10 0 10 20 30 40 50 — A1 / A3

CLIENT: **CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED**
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: **WOODLINKS VILLAGE - STAGE 16**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **CARNELIAN CRESCENT LONGITUDINAL SECTION AND CROSS SECTIONS**
PROJECT No.: **19-0023**
DRAWING No.: **112**
REVISION: **B**

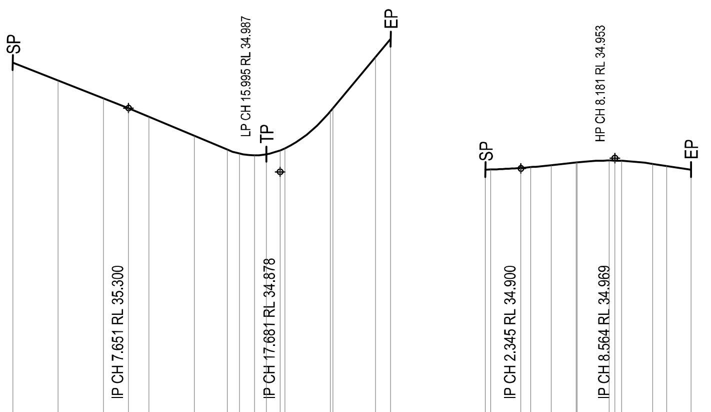




LEGEND

- PROPOSED ROAD CONTROL LINE
- PROPOSED KERB INVERT LINE
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- 53.4 — PROPOSED PAVEMENT CONTOUR (0.2m INTERVAL)
- D — PROPOSED STORMWATER DRAINAGE PIPE
- S — PROPOSED SEWERAGE MAIN
- W — PROPOSED WATER MAIN
- C — PROPOSED WATER CONDUIT
- PROPOSED KERB SETOUT LINE
- SP — PROPOSED KERB SETOUT START POINT
- EP — PROPOSED KERB SETOUT END POINT

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS
PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS



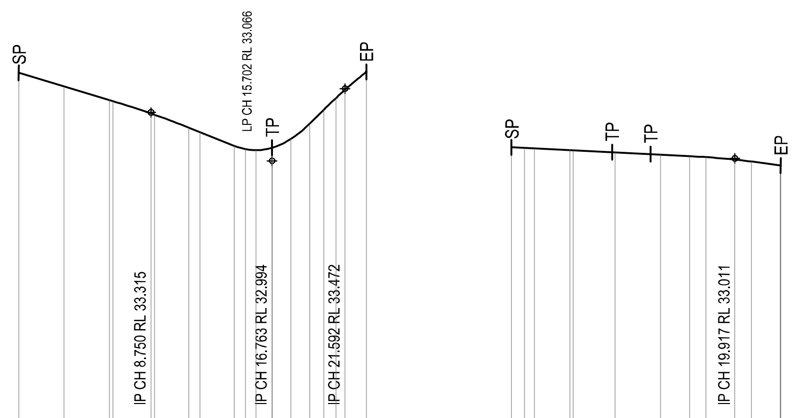
DATUM RL 33.0

LIP LEVEL	35.600	35.482	35.364	35.300	35.243	35.117	35.025	34.999	34.987	34.994	35.020	35.034	35.277	35.298	35.637	35.757
NORTHING	3863.155	3864.979	3867.541	3869.140	3870.485	3873.400	3875.269	3875.882	3876.548	3877.002	3877.494	3877.668	3879.296	3879.394	3880.925	3881.468
EASTING	6393.602	6395.961	6397.488	6397.890	6397.970	6397.340	6396.229	6395.687	6394.948	6394.316	6393.554	6393.286	6390.767	6390.615	6388.248	6387.407
CHAINAGES	0.000	3.000	6.000	7.651	9.000	12.000	14.181	15.000	15.995	16.774	17.681	18.000	21.000	21.181	24.000	25.000
HORIZONTAL CURVES	R-8.000															

KR 01

LIP LEVEL	34.893	34.894	34.904	34.909	34.922	34.941	34.941	34.953	34.953	34.951	34.931	34.917	34.893
NORTHING	3877.873	3877.608	3876.241	3875.860	3875.190	3874.589	3874.571	3874.200	3874.180	3874.175	3874.410	3874.654	3875.263
EASTING	6405.083	6405.305	6406.760	6407.292	6408.458	6409.998	6410.059	6412.139	6412.522	6412.957	6415.005	6415.908	6417.385
CHAINAGES	0.000	0.345	2.345	3.000	4.345	6.000	6.064	8.181	8.564	9.000	11.064	12.000	13.599
HORIZONTAL CURVES	R-10.000												

KR 02



DATUM RL 31.0

LIP LEVEL	33.577	33.487	33.397	33.390	33.309	33.300	33.215	33.185	33.094	33.072	33.066	33.081	33.082	33.139	33.242	33.333	33.411	33.465	33.584
NORTHING	3903.025	3904.849	3907.412	3907.648	3910.105	3910.355	3912.566	3913.270	3915.203	3915.752	3916.231	3916.866	3916.872	3917.538	3918.223	3918.723	3919.166	3919.488	3920.252
EASTING	6471.914	6474.273	6475.799	6475.881	6476.284	6476.281	6475.912	6475.652	6474.489	6473.999	6473.486	6472.637	6472.627	6471.598	6470.537	6469.765	6469.079	6468.582	6467.399
CHAINAGES	0.000	3.000	6.000	6.250	8.750	9.000	11.250	12.000	14.263	15.000	15.702	16.763	16.774	18.000	19.263	20.183	21.000	21.592	23.000
HORIZONTAL CURVES	R-8.000																		

KR 003

LIP LEVEL	33.085	33.080	33.077	33.065	33.064	33.050	33.035	33.026	33.019	33.003	32.991	32.964	32.963
NORTHING	3920.238	3919.767	3919.413	3918.012	3917.875	3916.354	3915.502	3915.419	3915.534	3916.020	3916.448	3917.460	3917.478
EASTING	6481.143	6481.871	6482.419	6484.300	6484.459	6486.788	6489.652	6491.565	6492.641	6494.492	6495.486	6497.112	6497.135
CHAINAGES	5.134	6.000	6.653	9.000	9.210	12.000	15.000	16.917	18.000	19.917	21.000	22.917	22.947
HORIZONTAL CURVES	R17.725	R-10.000											

KR 04

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: **AS CONSTRUCTED**
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

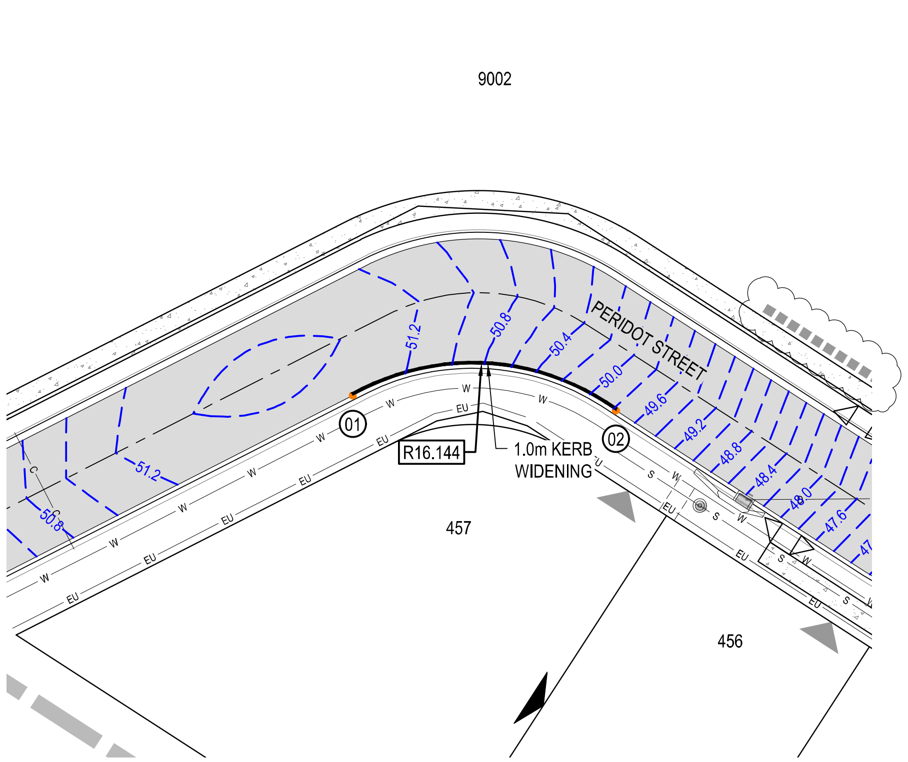
PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

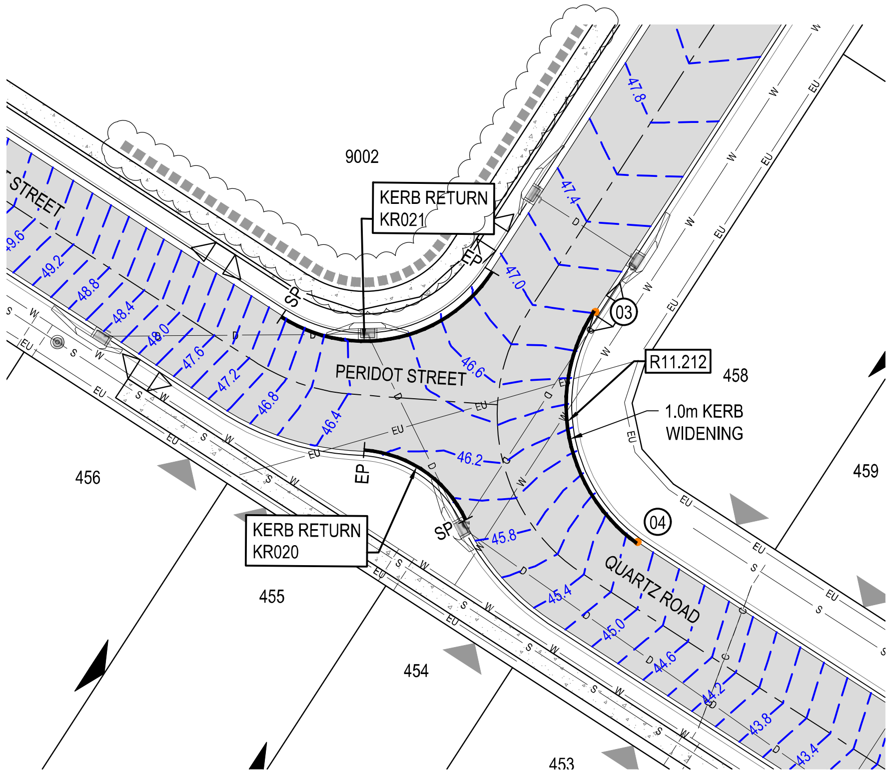
SCALE
1:250 / 1:500 — 5 0 5 10 — A1 / A3 — HORIZONTAL / LAYOUT
1:25 / 1:50 — 0.25 0 0.25 0.5 0.75 1 1.25 — A1 / A3 — VERTICAL

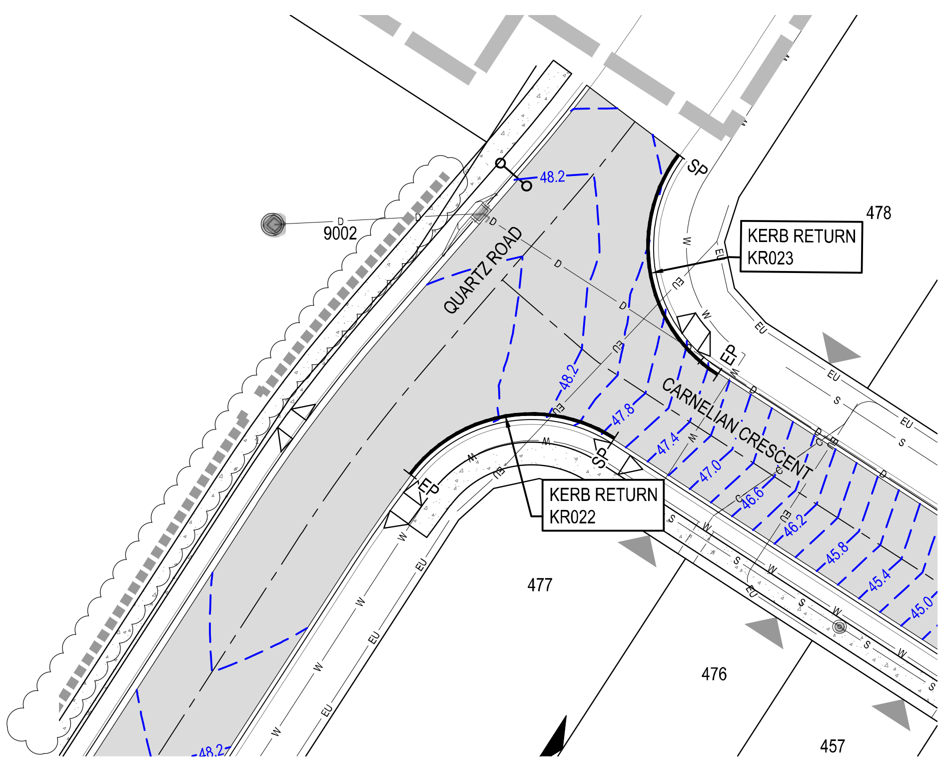
CLIENT: **CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED**
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: **WOODLINKS VILLAGE - STAGE 16**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **INTERSECTION DETAILS LAYOUT PLAN SHEET 1 OF 2**
PROJECT No.: 19-0023
DRAWING No.: 113
REVISION: B







WARNING! - EXISTING SERVICES

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

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

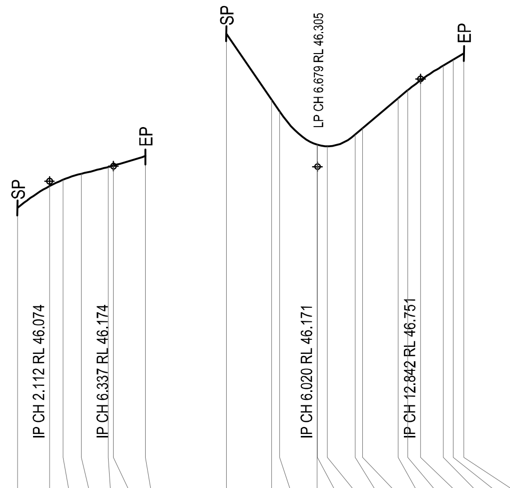
THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS PREPARED BY SAUNDERS HAVILL FOR FINISHED SURFACE LEVELS

KERB WIDENING SETOUT

NUMBER	EASTING	NORTHING
01	6262.583	3951.909
02	6279.980	3950.923
03	6321.142	3946.635
04	6323.933	3931.396

AS-CONSTRUCTED CERTIFICATION
Signature: Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD



DATUM RL 44.0

KR 020

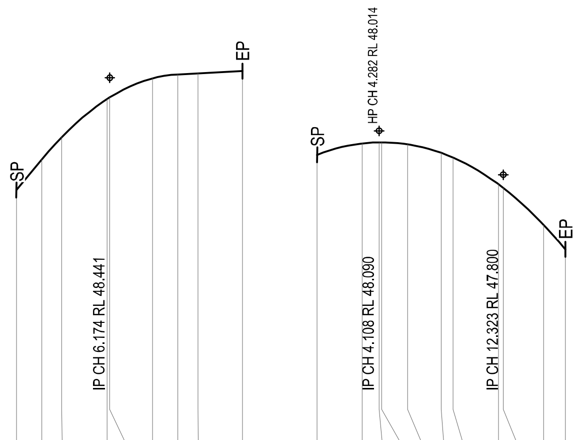
HORIZONTAL CURVES: R-8.000

CHAINAGES	EASTING	NORTHING	LIP LEVEL
0.000	6312.473	3932.818	45.899
2.112	6311.330	3934.587	46.043
3.000	6310.718	3935.230	46.085
4.225	6309.765	3935.997	46.124
6.000	6308.202	3936.831	46.169
6.337	6307.886	3936.949	46.178
8.449	6305.824	3937.378	46.241

KR 021

HORIZONTAL CURVES: R-10.000

CHAINAGES	EASTING	NORTHING	LIP LEVEL
0.000	6300.406	3946.380	47.049
3.000	6303.130	3945.151	46.612
3.520	6303.634	3945.023	46.536
6.000	6306.096	3944.781	46.316
6.020	6306.116	3944.782	46.315
6.679	6306.774	3944.822	46.305
8.520	6308.580	3945.162	46.383
9.000	6309.039	3945.305	46.424
11.342	6311.149	3946.306	46.623
12.000	6311.695	3946.674	46.677
12.842	6312.356	3947.196	46.741
14.342	6313.415	3948.255	46.839
15.000	6313.828	3948.768	46.878
15.708	6314.233	3949.348	46.919



DATUM RL 46.0

KR 022

HORIZONTAL CURVES: R-10.000

CHAINAGES	EASTING	NORTHING	LIP LEVEL
0.000	6360.833	3989.150	47.700
1.674	6359.358	3989.937	47.901
3.000	6358.109	3990.379	48.048
6.000	6355.143	3990.749	48.300
6.174	6354.969	3990.743	48.311
9.000	6352.200	3990.225	48.437
10.674	6350.667	3989.559	48.463
12.000	6349.544	3988.856	48.470
14.949	6347.442	3986.803	48.484

KR 023

HORIZONTAL CURVES: R-10.000

CHAINAGES	EASTING	NORTHING	LIP LEVEL
0.000	6365.224	4007.951	47.932
3.000	6363.801	4005.322	48.007
4.108	6363.484	4004.262	48.014
4.282	6363.444	4004.092	48.014
6.000	6363.218	4002.391	48.001
8.216	6363.361	4000.185	47.945
9.000	6363.528	3999.418	47.914
12.000	6364.702	3996.670	47.737
12.323	6364.876	3996.398	47.713
15.000	6366.636	3994.391	47.468
16.431	6367.778	3993.531	47.307

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	MPG	PERIDOT STREET PAVEMENT CONTOURS AND KERB RETURNS AMENDED
C	10.03.20	AC	CL	SANDSTONE BOULDER WALL AMENDED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:250 / 1:500 — HORIZONTAL / LAYOUT — A1 / A3
1:25 / 1:50 — VERTICAL — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: INTERSECTION DETAILS LAYOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
19-0023	114	C

NOTES:

1. ALL SIGNS AND LINEMARKING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND I.C.C. STANDARDS.
2. TRAFFIC SIGN POSTS SHALL BE IN ACCORDANCE WITH I.C.C. STD. DRG. SR.25.
3. STREET NAME SIGN SHALL BE IN ACCORDANCE WITH I.C.C. STD. DRG. SR.26
4. CONTRACTOR TO ENSURE SIGN LOCATIONS ARE CLEAR OF FUTURE DRIVEWAY LOCATIONS - LOCATE ON PB OR MID BLOCK.

FUTURE STAGE

EXISTING STAGE

CARNELIAN CRESCENT

CARNELIAN CRES

QUARTZ ROAD

PERIDOT STREET

ELDER PARADE

ELDER PDE

QUARTZ RD

PERIDOT ST

D4-5

CREST W5-11

40 km/h W8-2

GIVE WAY R1-2A

LL-C

GL

22.8m

19.8m

10.0m

4.00m

9002

7002

LEGEND

- PROPOSED STAGE BOUNDARY
- PROPOSED STREET NAME SIGN
- PROPOSED ROAD SIGN
- EXISTING STREET NAME SIGN
- EXISTING ROAD SIGN
- GL PROPOSED GIVE WAY LINE
- LL-C PROPOSED LANE LINE - CONTINUOUS
- EXISTING LINEMARKING (LINETYPES AS PER PROPOSED)

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	CL	W5-11, W8-2 SIGNS ADDED TO PERIDOT STREET
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 (10 5 0 10 20) A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SIGNS & LINEMARKING LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	115	C

LEGEND

- G4/20 — CATCHMENT NAME
- CATCHMENT BOUNDARY
- FUTURE CATCHMENT BOUNDARY
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- 24.0 — PROPOSED SURFACE CONTOUR
- 24.0 — EXISTING SURFACE CONTOUR
- PROPOSED AREA OF WORKS
- PROPOSED SWALE DRAIN

FUTURE STAGE

FUTURE CATCHMENT LEAVES NETWORK

FUTURE CATCHMENT LEAVES NETWORK

EXISTING STAGE

EXISTING MAJOR OVERLAND FLOW LEAVES NETWORK

EX.8/37

G1/01 G1/10 G1/11 G1/12 G1/20 G1/21 G1/22 G2/01 G2/10 G2/20 G2/21 G3/01 G3/10 G3/20 G4/10 G4/20 G5/10 G6/10 G0/11 IN1/20

CATCHMENT AREAS

NAME	AREA (ha)
G1/01	0.169
G1/10	0.076
G1/11	0.147
G1/12	0.191
G1/20	0.036
G1/21	0.255
G1/22	0.187
G2/01	0.062
G2/10	0.036
G2/20	0.197
G2/21	0.161
G3/01	0.075
G3/10	0.206
G3/20	0.197
G4/10	0.172
G4/20	0.157
G5/10	0.183
G6/10	0.272
IN1/20	0.159

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	10.03.20	AC	CL	CONTOURS AMENDED TO SUIT SANDSTONE BOULDER WALL
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: STORMWATER DRAINAGE CATCHMENT LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	116	C

LINE 11

STRUCTURE NAME	STRUCTURE DESCRIPTION
G0/11	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G1/11	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - SAG
G3/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE

LINE 10

STRUCTURE NAME	STRUCTURE DESCRIPTION
G1/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G2/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G3/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G4/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G5/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - SAG
G6/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - SAG
G2/01	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE on 1200Ø MH

LINE 12

STRUCTURE NAME	STRUCTURE DESCRIPTION
G1/12	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G4/10	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE

LINE 20

STRUCTURE NAME	STRUCTURE DESCRIPTION
IN1/20	STD FIELD INLET; TYPE 1 - 900mm x 900mm on 1200Ø MH
G1/20	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G2/20	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE
G3/20	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE on 1050Ø MH
G4/20	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE on 1200Ø MH
G3/01	STD TYPE A GULLY - LIP IN LINE; 2.4m LINTEL - ON GRADE on 1500Ø MH

STORMWATER STRUCTURE NOTE:

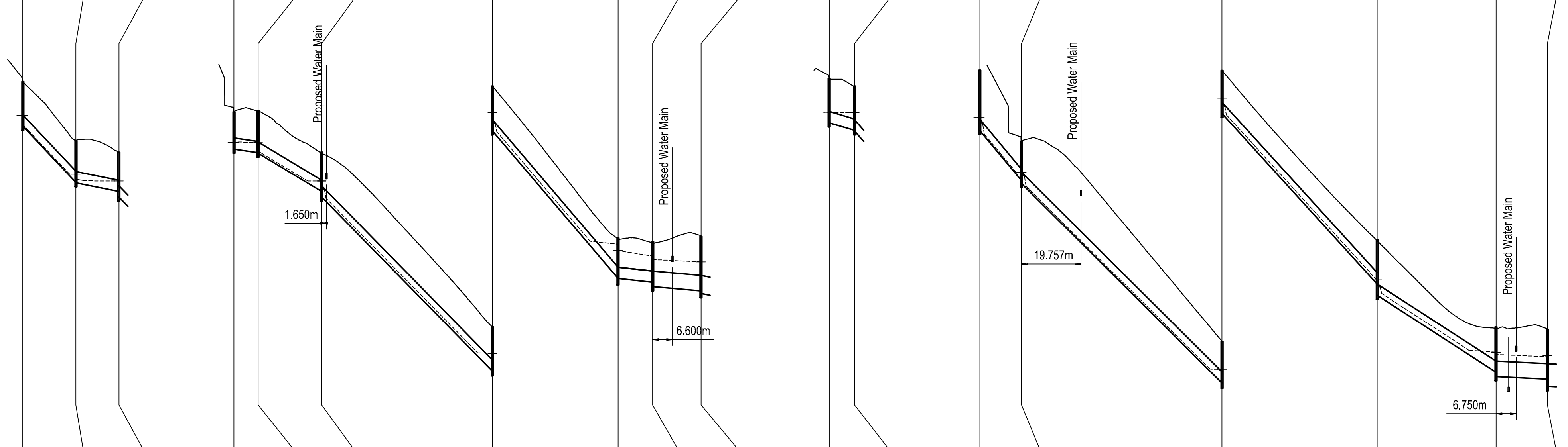
STANDARD ROUND MANHOLES LESS THAN 3.0m DEEP:
CONSTRUCT IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.

STANDARD ROUND MANHOLES 3.0m > 5.3m DEEP:
CONSTRUCT IN ACCORDANCE WITH TMR STD DRAWINGS 1307 AND 1308.

STANDARD ROUND MANHOLES GREATER THAN 5.3m DEEP:
SHALL BE STRUCTURALLY DESIGNED (CERTIFIED) AND CONSTRUCTED BY CONTRACTOR ON A CASE BY CASE BASIS.

ROUND EXTENDED (900mm MAX) MANHOLES:
CONSTRUCT IN ACCORDANCE WITH PEAK URBAN STD DRAWINGS S-101 & S-102.

RECTANGULAR STRUCTURE (SPECIAL):
SHALL BE STRUCTURALLY DESIGNED (CERTIFIED) AND CONSTRUCTED BY CONTRACTOR ON A CASE BY CASE BASIS.



LINE 11 (DATUM RL 31.0)

	G0/11	G0/11–G1/11	G1/11–G3/10	G3/10
PIPE SIZEmm (Class)		375(3)	375(3)	
PIPE GRADE %		11.38% ~~10.60%~~	1.87% ~~2.00%~~	
PIPE SLOPE 1 in X		~~9.43~~ 1 in 9	~~50.00~~ 1 in 54	
FULL PIPE FLOW VELOCITY (m/s)				
PART FULL FLOW VELOCITY (m/s)		2.50	1.81	
WATER LEVEL IN STRUCTURE	47.125	45.160	44.933	
HYDRAULIC GRADE LEVEL	47.275	46.957 45.160	44.993 44.930	44.775
PIPE FLOW (Cumecs)		0.022	0.056	
DEPTH TO INVERT		~~1.487~~ 1.480 1.500 ~~1.387~~	~~1.407~~ 1.487 1.250 ~~1.303~~	
INVERT LEVEL OF DRAIN		~~46.906~~ 46.94 44.91 ~~44.892~~	~~44.872~~ 44.89 44.62 ~~44.587~~	
DESIGN SURFACE LEVEL	48.42 ~~48.390~~	46.41 ~~46.279~~	45.87 ~~45.890~~	
SETOUT	E: 6288.473	N: 3945.018 E: 6306.061	N: 3945.160 E: 6312.318	N: 3932.350
RUNNING CHAINAGE	0.000	~~17.588~~ 17.84 17.588	~~14.257~~ 14.45 31.845	

LINE 10 (DATUM 23.0)

	G1/10	G1/10–G2/10	G2/10–G3/10	G3/10–G4/10	G4/10–G5/10	G5/10–G6/10	G6/10–G2/01	G2/01
PIPE SIZEmm (Class)		375(3)	375(3)	375(3)	375(3)	375(3)	525(3)	
PIPE GRADE %		1.34% ~~1.50%~~	5.88% ~~6.00%~~	10.19% ~~10.21%~~	11.65% ~~11.75%~~	0.94% ~~1.11%~~	0.98% ~~0.90%~~	
PIPE SLOPE 1 in X		~~66.67~~ 1 in 75	~~16.67~~ 1 in 17	~~9.80~~ 1 in 10	~~8.51~~ 1 in 9	~~90.40~~ 1 in 106	~~110.59~~ 1 in 102	
FULL PIPE FLOW VELOCITY (m/s)				1.02(0.791y)	1.69(1.321y)	1.40(1.091y)	1.34(1.021y)	
PART FULL FLOW VELOCITY (m/s)		1.31 (1.221y)	2.34	3.96	4.79			
WATER LEVEL IN STRUCTURE	46.215	46.205	44.933	39.211	34.620	34.482	34.253	
HYDRAULIC GRADE LEVEL	46.215	46.207 46.205	45.926 44.930	44.775 39.211	38.974 34.620	34.537 34.467	34.328 34.253	33.803
PIPE FLOW (Cumecs)		0.026	0.035	0.112	0.186	0.222	0.283	
DEPTH TO INVERT		~~1.247~~ 1.260 1.400 ~~1.406~~	~~1.426~~ 1.487 1.250 ~~1.303~~	~~1.490~~ 1.450 1.420 ~~1.468~~	~~1.488~~ 1.500 1.360 ~~1.342~~	~~1.417~~ 1.450 1.380 ~~1.423~~	~~1.491~~ 1.500 1.860 ~~1.811~~	
INVERT LEVEL OF DRAIN		~~45.993~~ 46.02 45.91 ~~45.873~~	~~45.853~~ 44.89 44.62 ~~44.587~~	~~44.400~~ 44.42 38.64 ~~38.619~~	~~38.599~~ 38.56 33.73 ~~33.700~~	~~33.625~~ 33.64 33.53 ~~33.498~~	~~33.430~~ 33.89 33.30 ~~33.285~~	
DESIGN SURFACE LEVEL	47.28 ~~47.240~~	47.31 ~~47.279~~	45.87 ~~45.890~~	40.06 ~~40.087~~	35.09 ~~35.042~~	34.91 ~~34.921~~	35.16 ~~35.096~~	
SETOUT	E: 6317.059	N: 3954.419 E: 6323.781	N: 3950.073 E: 6312.318	N: 3932.350 E: 6358.594	N: 3899.680 E: 6393.593	N: 3877.017 E: 6404.966	N: 3878.586 E: 6412.325	N: 3864.130
RUNNING CHAINAGE	0.000	~~8.005~~ 8.23 8.005	~~21.106~~ 21.27 29.111	~~56.647~~ 56.74 85.758	~~41.696~~ 41.48 127.454	~~11.481~~ 11.69 138.935	~~16.036~~ 16.69 154.971	

LINE 12

	G1/12	G1/12–G4/10	G4/10
PIPE SIZEmm (Class)		375(3)	
PIPE GRADE %		2.86% ~~3.00%~~	
PIPE SLOPE 1 in X		~~33.33~~ 1 in 35	
FULL PIPE FLOW VELOCITY (m/s)		0.38(0.311y)	
PART FULL FLOW VELOCITY (m/s)		1.94	
WATER LEVEL IN STRUCTURE	39.224	39.211	
HYDRAULIC GRADE LEVEL	39.224	39.216 39.211	38.974
PIPE FLOW (Cumecs)		0.042	
DEPTH TO INVERT		~~1.472~~ 1.420 1.420 ~~1.468~~	
INVERT LEVEL OF DRAIN		~~38.872~~ 38.89 38.64 ~~38.619~~	
DESIGN SURFACE LEVEL	40.31 ~~40.344~~	40.06 ~~40.087~~	
SETOUT	E: 6361.201	N: 3907.700 E: 6358.594	N: 3899.680
RUNNING CHAINAGE	0.000	~~8.433~~ 8.74 8.433	

LINE 20 (DATUM 33.0 / 24.0)

	IN1/20	IN1/20–G1/20	G1/20–G2/20	G2/20–G3/20	G3/20–G4/20	G4/20–G3/01	G3/01
PIPE SIZEmm (Class)		375(3)	375(3)	375(3)	375(3)	525(3)	
PIPE GRADE %		12.73% ~~12.00%~~	9.79% ~~9.96%~~	10.78% ~~11.00%~~	6.29% ~~6.50%~~	0.52% ~~0.50%~~	
PIPE SLOPE 1 in X		~~8.33~~ 1 in 8	~~10.04~~ 1 in 10	~~9.09~~ 1 in 9	~~15.38~~ 1 in 16	~~200.00~~ 1 in 192	
FULL PIPE FLOW VELOCITY (m/s)			0.35(0.271y)		1.40(1.111y)	1.33(1.031y)	
PART FULL FLOW VELOCITY (m/s)		3.04	2.89	4.12	3.68		
WATER LEVEL IN STRUCTURE	49.045	47.231	40.688	34.651	32.253	32.131	
HYDRAULIC GRADE LEVEL	49.045	48.984 47.231	47.225 40.688	40.557 34.651	34.517 32.253	32.178 32.099	31.874
PIPE FLOW (Cumecs)		0.037	0.039	0.117	0.155	0.281	
DEPTH TO INVERT		~~2.013~~ 1.750 1.280 ~~1.304~~	~~1.404~~ 1.490 1.310 ~~1.384~~	~~1.429~~ 1.460 1.410 ~~1.464~~	~~1.839~~ 1.870 1.450 ~~1.512~~	~~1.655~~ 1.630 1.670 ~~1.646~~	
INVERT LEVEL OF DRAIN		~~48.609~~ 48.78 47.01 ~~46.950~~	~~46.850~~ 46.80 40.28 ~~40.227~~	~~40.182~~ 40.13 34.59 ~~34.517~~	~~34.142~~ 34.13 31.65 ~~31.581~~	~~31.438~~ 31.47 31.38 ~~31.353~~	
DESIGN SURFACE LEVEL	50.53 ~~50.622~~	48.29 ~~48.254~~	41.59 ~~41.611~~	36.00 ~~35.981~~	33.10 ~~33.093~~	33.05 ~~32.999~~	
SETOUT	E: 6338.261	N: 4003.384 E: 6352.067	N: 4004.105 E: 6407.922	N: 3967.993 E: 6451.171	N: 3940.032 E: 6484.221	N: 3918.557 E: 6498.789	N: 3909.103
RUNNING CHAINAGE	0.000	~~13.825~~ 13.83 13.825	~~66.512~~ 66.59 80.337	~~51.500~~ 51.39 131.837	~~39.395~~ 39.45 171.232	~~17.085~~ 17.23 188.317	

AS-CONSTRUCTED CERTIFICATION
Signature: [signature] Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	MPG	AMENDED G0/11 LEVELS
C	06.02.20	LF	SC	AMMENDED PIPE SIZE
D	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

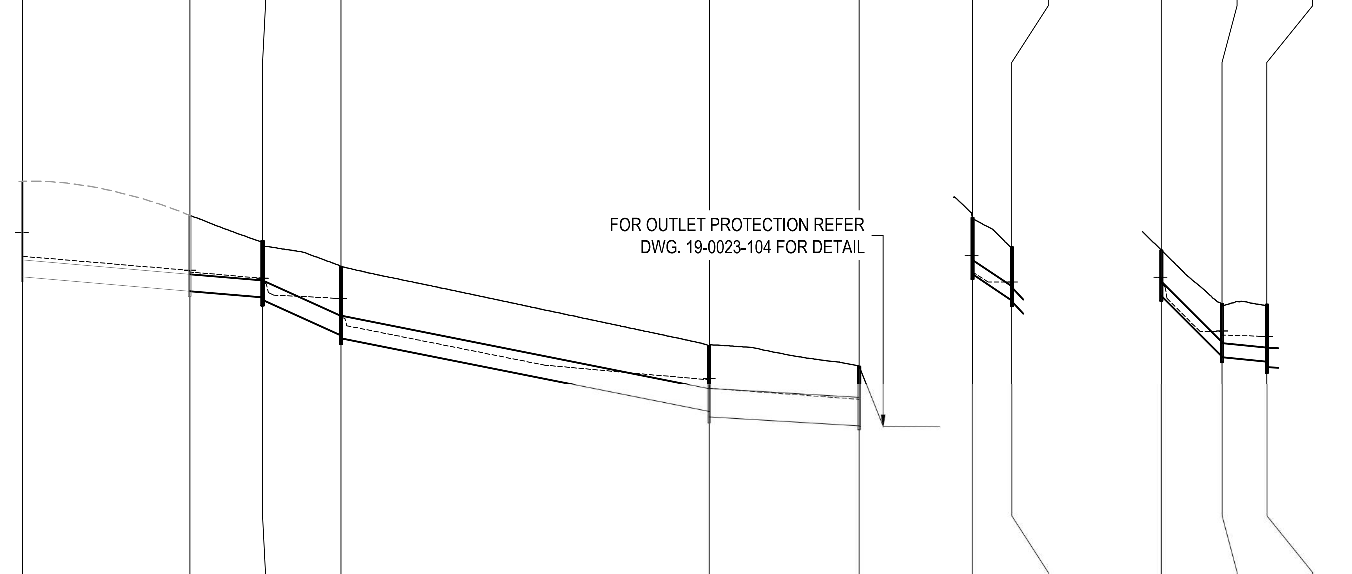
PEAKURBAN
DEVELOPMENT ENGINEERS • ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:1000 / 1:2000 — HORIZONTAL (A1 / A3)
1:100 / 1:200 — VERTICAL (A1 / A3)
1:20 / 1:40 — SECTIONS (A1 / A3)

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 2
PROJECT No.: 19-0023
DRAWING No.: 117
REVISION: D



STORMWATER STRUCTURE NOTE:

STANDARD ROUND MANHOLES LESS THAN 3.0m DEEP:
CONSTRUCT IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.

STANDARD ROUND MANHOLES 3.0m > 5.3m DEEP:
CONSTRUCT IN ACCORDANCE WITH TMR STD DRAWINGS 1307 AND 1308.

STANDARD ROUND MANHOLES GREATER THAN 5.3m DEEP:
SHALL BE STRUCTURALLY DESIGNED (CERTIFIED) AND CONSTRUCTED BY CONTRACTOR ON A CASE BY CASE BASIS.

ROUND EXTENDED (900mm MAX) MANHOLES:
CONSTRUCT IN ACCORDANCE WITH PEAK URBAN STD DRAWINGS S-101 & S-102.

RECTANGULAR STRUCTURE (SPECIAL):
SHALL BE STRUCTURALLY DESIGNED (CERTIFIED) AND CONSTRUCTED BY CONTRACTOR ON A CASE BY CASE BASIS.

DATUM RL 22.0 (LINE 01) — 28.0 (LINE 22) — DATUM RL 21.0 (LINE 21)

LINE	STRUCTURE NAME	STRUCTURE DESCRIPTION	WATER LEVEL IN STRUCTURE	HYDRAULIC GRADE LEVEL	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT	RUNNING CHAINAGE
01	EX/01	EXISTING GULLY PIT	36.000	36.000 / 35.370	~~2.380~~ 2.392	~~34.820~~ 34.828	37.22 ~~37.208~~	E: 6334.889 N: 3833.898	0.000
01	~~IN1/01~~	END OF EXISTING 450Ø RCP	35.002	34.996 / 34.953	~~2.006~~ / ~~2.006~~	~~34.447~~ / ~~34.447~~	~~36.453~~	E: 6374.337 N: 3853.980	44.265
01	G1/01	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE on 1050Ø MH	34.790	34.790 / 34.732	1.390 ~~1.500~~ / ~~1.568~~ 1.500	34.28 ~~34.282~~ / ~~34.214~~ 34.17	35.67 ~~35.782~~	E: 6391.466 N: 3862.700	63.486
01	G2/01	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE on 1200Ø MH	34.253	34.253 / 33.803	1.850 ~~1.818~~ / ~~1.893~~ 1.630	33.31 ~~33.278~~ / ~~33.203~~ 31.47	35.16 ~~35.096~~	E: 6412.325 N: 3864.130	84.282
01	G3/01	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE on 1500Ø MH	32.131	32.099 / 31.874	1.750 ~~1.735~~ / ~~1.885~~ 1.900	31.30 ~~31.264~~ / ~~31.114~~ 31.15	33.05 ~~32.999~~	E: 6498.789 N: 3909.103	181.702
01	OUT/01	CONCRETE HEADWALL	31.632	31.632	1.140 ~~1.581~~	30.92 ~~30.876~~	32.06 ~~32.457~~	E: 6520.133 N: 3942.692	221.371
22	G1/22	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	41.075	41.075 / 40.805	~~1.490~~ 1.420	~~40.901~~ 40.95	42.37 ~~42.391~~	E: 6398.039 N: 3964.678	0.000
22	G2/20	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	40.688	40.688 / 40.557	1.360 ~~1.409~~	40.23 ~~40.202~~	41.59 ~~41.611~~	E: 6407.922 N: 3967.993	10.423
21	G1/21	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	33.816	33.816 / 33.704	~~1.202~~ 1.210	~~33.329~~ 33.32	34.53 ~~34.531~~	E: 6458.923 N: 3925.316	0.000
21	G2/21	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG	32.392	32.383 / 32.286	1.420 ~~1.390~~ / ~~1.410~~ 1.420	31.73 ~~31.720~~ / ~~31.700~~ 31.73	33.15 ~~33.110~~	E: 6472.421 N: 3916.553	16.093
21	G4/20	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE on 1200Ø MH	32.249	32.249 / 32.174	1.630 ~~1.512~~	31.47 ~~31.581~~	33.10 ~~33.093~~	E: 6484.221 N: 3918.557	27.912

PIPE	PIPE SIZEmm (Class)	PIPE GRADE %	PIPE SLOPE 1 in X	FULL PIPE FLOW VELOCITY (m/s)	PART FULL FLOW VELOCITY (m/s)	PIPE FLOW (Cumecs)	LENGTH
EX/01 – IN1/01	450(2)	~~0.86%~~ 0.89%	~~116.28~~ 1 in 112	1.65(1.651y)		0.262	~~44.265~~ 64.13
IN1/01 – G1/01	450(2)	~~0.86%~~	~~116.28~~	1.65(1.651y)		0.262	~~19.221~~
G1/01 – G2/01	525(3)	~~4.50%~~ 4.24%	~~22.22~~ 1 in 24	1.41(1.381y)	3.77	0.297	~~20.796~~ 20.29
G2/01 – G3/01	600(3)	~~1.99%~~ 1.96%	~~50.24~~ 1 in 51	2.06(1.791y)	3.28	0.582	~~97.420~~ 97.46
G3/01 – OUT/01	750(3)	~~0.60%~~ 0.58%	~~166.67~~ 1 in 173	1.98(1.651y)		0.887	~~39.669~~ 39.88
G1/22 – G2/20	375(3)	~~6.70%~~ 6.37%	~~14.92~~ 1 in 16	0.38(0.311y)	2.30	0.042	~~10.423~~ 10.52
G1/21 – G2/21	375(3)	~~10.00%~~ 9.24%	~~10.00~~ 1 in 11	0.47(0.391y)	3.15 (2.991y)	0.052	~~16.093~~ 16.34
G2/21 – G4/20	375(3)	~~1.00%~~ 2.17%	~~100.00~~ 1 in 46	0.89(0.681y)		0.098	~~11.819~~ 11.96

AS-CONSTRUCTED CERTIFICATION
Signature: .... Date 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	23.01.20	AC	MPG	AMENDED G1/22 LEVELS
C	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD — DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN — DEVELOPMENT ENGINEERS • ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: HORIZONTAL 1:1000 A1 / 1:2000 A3; VERTICAL 1:100 A1 / 1:200 A3; SECTIONS 1:20 A1 / 1:40 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 2

PROJECT No. 19-0023 — DRAWING No. 118 — REVISION C

CALCULATIONS TABLE

LOCATION / TIME / SUB-CATCHMENT RUNOFF

DESIGN ARI (yrs)	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT (%)	tc SUB-CATCHMENT TIME OF CONC. (min)	I RAINFALL INTENSITY (mm/h)	C10 10yr RUNOFF CO-EFFICIENT	C CO-EFFICIENT OF RUNOFF	A SUB-CATCHMENT AREA (ha)	C×A EQUIVALENT AREA (ha)	+CA SUM OF (C × A) (ha)	Q SUB-CATCHMENT DISCHARGE (l/s)
2 100	G0/11	G0/11 to G1/11	G0/11			10.00 10.00	112 255		0.75 1.00	0.095 0.095	0.071 0.095	0.071 0.095	22 67
2 100	G1/11	G1/11 to G3/10	G0/11;G1/11			10.00 10.00	112 255		0.75 1.00	0.147 0.147	0.110 0.147	0.110 0.147	34 104
2 100	G1/10	G1/10 to G2/10	G1/10			8.00 8.00	123 279		1.00 1.00	0.076 0.076	0.076 0.076	0.076 0.076	26 59
2 100	G2/10	G2/10 to G3/10	G1/10;G2/10			5.00 5.00	146 325		0.75 1.00	0.036 0.036	0.027 0.036	0.027 0.036	11 33
2 100	G3/10	G3/10 to G4/10	G0/11;G1/11;G1/10;G 2/10;G3/10			10.00 10.00	112 255		0.75 1.00	0.111 0.111	0.083 0.111	0.083 0.111	26 79
2 100	G1/12	G1/12 to G4/10	G1/12			10.00 10.00	112 255		0.75 1.00	0.191 0.191	0.143 0.191	0.143 0.191	44 135
2 100	G4/10	G4/10 to G5/10	G0/11;G1/11;G1/10;G 2/10;G3/10;G1/12;G4 /10			10.00 10.00	112 255		0.75 1.00	0.172 0.172	0.129 0.172	0.129 0.172	40 122
2 100	G5/10	G5/10 to G6/10	G0/11;G1/11;G1/10;G 2/10;G3/10;G1/12;G4 /10;G5/10			10.00 10.00	112 255		0.75 1.00	0.183 0.183	0.137 0.183	0.137 0.183	43 130
2 100	G6/10	G6/10 to G2/01	G0/11;G1/11;G1/10;G 2/10;G3/10;G1/12;G4 /10;G5/10;G6/10			10.00 10.00	112 255		0.75 1.00	0.272 0.272	0.203 0.272	0.203 0.272	63 193
2 100	IN1/20	IN1/20 to G1/20	IN1/20			10.00 10.00	112 255		0.75 1.00	0.159 0.159	0.119 0.159	0.119 0.159	37 113
2 100	G1/20	G1/20 to G2/20	IN1/20;G1/20			10.00 10.00	112 255		0.75 1.00	0.010 0.010	0.007 0.010	0.007 0.010	2 7
2 100	EX/01	EX/01 to IN1/01											
2 100	IN1/01	IN1/01 to G1/01											
2 100	G1/01	G1/01 to G2/01	G1/01			10.00 10.00	112 255		0.75 1.00	0.169 0.169	0.126 0.169	0.126 0.169	39 120

INLET DESIGN

STRUCTURE No.	FLOW IN K&C (INC. BYPASS) (l/s)	ROAD GRADE AT INLET (%)	MINOR FLOW ROAD CAPACITY (l/s)	INLET TYPE	Qg FLOW INTO INLET (l/s)	Qb BYPASS FLOW (l/s)	BYPASS STRUCTURE No.
G0/11	22 FLOW WIDTH 0.433 m	13.50	502	1	22 (UNLOCKED 0)	0	
G1/11	34 FLOW WIDTH 0.087 m	4.46	147	13S0.08F0.8	34 (UNLOCKED 0)	0	G3/10
G1/10	26 FLOW WIDTH 0.759 m	5.68	326	1	26 (UNLOCKED 0)	0	G1/11
G2/10	11 FLOW WIDTH 0.292 m	5.69	326	1	11 (UNLOCKED 0)	0	G1/12
G3/10	26 FLOW WIDTH 0.841 m	4.27	283	1	26 (UNLOCKED 0)	0	G4/10
G1/12	44 FLOW WIDTH 0.859 m	11.94	472	1	42 (UNLOCKED 0)	2	G6/10
G4/10	40 FLOW WIDTH 0.798 m	11.91	472	1	40 (UNLOCKED 0)	0	G5/10
G5/10	43 FLOW WIDTH 0.417 m	0.00	147	13S0.08F0.8	43 (UNLOCKED 0)	0	G6/10
G6/10	65 FLOW WIDTH 1.239 m	0.00	147	13S0.08F0.8	65 (UNLOCKED 0)	0	G2/21
IN1/20	37 FLOW WIDTH 2.139 m	0.00	174	30S0.15	37 (UNLOCKED 0)	0	G1/20
G1/20	2	2.34	209	1	2 (UNLOCKED 0)	0	G2/20
EX/01							
IN1/01				24			
G1/01	39 FLOW WIDTH 1.213 m	3.18	244	1	39 (UNLOCKED 0)	0	G5/10

DRAIN DESIGN

STRUCTURE No.	tc CRITICAL TIME OF CONC. (min)	I RAINFALL INTENSITY (mm/h)	+CA TOTAL (C × A) (ha)	Qt MAJOR TOTAL FLOW (l/s)	Qm MAJOR SURFACE FLOW CAPACITY (l/s)	Qs MAJOR SURFACE FLOW (l/s)	Qp PIPE FLOW (l/s)	L REACH LENGTH (m)	S PIPE GRADE (%)	PIPE / BOX DIMENSIONS (CLASS) (mm)	V FLOW VELOCITY FULL (PIPE GRADE VELOCITY) (m/s)	T TIME OF FLOW IN REACH (min)	STRUCTURE CHART No.
G0/11	10.00 10.00	112 255	0.071 0.095	67	2458	45 (Pipe flow= Grate flow)	22	17.588	10.60	375(3)	0.20(0.161y) (5.16)	0.29	
G1/11	10.29 10.29	111 252	0.181 0.242	169	3078	114 (Pipe flow= Sum upstr atten flows)	56	14.257	2.00	375(3)	0.51(0.401y) (2.24)	0.24	
G1/10	8.00 8.00	123 279	0.076 0.076	59	2942	33 (Pipe flow= Grate flow)	26	8.005	1.50	375(3)	0.24(0.191y) (1.94)	0.13	
G2/10	8.13 8.13	122 277	0.103 0.112	86	2945	51 (Pipe flow= Sum upstr atten flows)	35	21.106	6.00	375(3)	0.32(0.251y) (3.89)	0.35	
G3/10	10.53 10.53	110 250	0.367 0.465	323	3087	211 (Pipe flow= Sum upstr atten flows)	112	56.647	10.21	375(3)	1.02(0.791y) (5.07)	0.93	
G1/12	10.00 10.00	112 255	0.143 0.191	135	2516	93 (Pipe flow= Grate flow)	42	8.433	3.00	375(3)	0.38(0.311y) (2.75)	0.14	
G4/10	11.46 11.46	106 242	0.639 0.828	557	2530	370 (Pipe flow= Sum upstr atten flows)	186	41.696	11.75	375(3)	1.69(1.321y) (5.44)	0.41	
G5/10	11.87 11.87	104 238	0.776 1.011	668		(Pipe flow= Sum upstr atten flows)	222	11.481	1.11	450(3)	1.40(1.091y) (1.88)	0.14	
G6/10	12.01 12.01	104 237	0.979 1.283	845		(Pipe flow= Sum upstr atten flows)	283	16.036	0.90	525(3)	1.34(1.021y) (1.87)	0.20	
IN1/20	10.00 10.00	112 255	0.119 0.159	113		(Pipe flow= Grate flow)	37	13.825	12.00	375(3)	0.34(0.261y) (5.49)	0.23	
G1/20	10.23 10.23	111 253	0.126 0.169	119	2389	80 (Pipe flow= Sum upstr atten flows)	39	66.512	9.96	375(3)	0.35(0.271y) (5.01)	1.11	
EX/01	10.79 10.79	108 248	0.380 0.380	262		(Pipe flow set by user)	262	44.265	0.86	450(2)	1.65(1.651y) (1.66)	0.45	
IN1/01	11.24 11.24	107 244	0.380 0.380	258		(Pipe flow= Sum upstr atten flows)	262	19.221	0.86	450(2)	1.65(1.651y) (1.66)	0.19	
G1/01	11.43 11.43	106 242	0.506 0.549	369	2785	73 (Pipe flow= Sum upstr atten flows)	297	20.796	4.50	525(3)	1.41(1.381y) (4.17)	0.25	

STRUCTURE No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS	Kl LAT. HEADLOSS CO-EFFICIENT / hl LAT. PIPE STRUCT. HEADLOSS
G0/11	Qg 0.022 Qo 0.022 Do 375 CHRT 32: Vo2/2gDo 0.01 H/Do 0.00 Kg side flow 10.71 end flow 7.49 Part full downstream pipe	Upstream HGL 47.125 below outlet pipe obv 47.131 Set Kp to 1
G1/11	Qg 0.034 Qo 0.056 Do 375 Angle 64 Chart 45 S/Do 2.5 chartdeg Du/Do 1.00 K0 2.16 K0.5 1.81 Qu/Qo 0.39 Cg 1.13 K 1.77 S/Do 2.0 K0 2.47 K0.5 2.34 K 2.33 S/Do 1.5 K0 2.74 K0.5 2.80 K 2.81 Interp val for S/Do 1.11 Kw 3.19 CHART 44	S/Do 2.0 K0 1.99 K0.5 2.11 K 2.13 S/Do 1.5 K0 2.12 K0.5 2.17 K 2.17 Interp val for S/Do 1.11 Ku 2.21 Part full downstream pipe Upstream HGL 45.160 below outlet pipe obv 45.247 Set Kp to 1
G1/10	Qg 0.026 Qo 0.026 Do 375 CHRT 32: Vo2/2gDo 0.01 H/Do 0.00 Kg side flow 10.64 end flow 7.45 Part full downstream pipe	Upstream HGL 46.215 below outlet pipe obv 46.368 Set Kp to 1
G2/10	Qg 0.009 Qo 0.035 Do 375 Angle 89 Chart 47 S/Do 2.5 chartdeg Du/Do 1.00 K0 1.92 K0.5 2.12 Qu/Qo 0.74 Cg 0.61 K 2.04 S/Do 2.0 K0 2.44 K0.5 2.40 K 2.41 S/Do 1.5 K0 2.67 K0.5 2.58 K 2.62 Interp val for S/Do 1.04 Kw 2.80 CHART 46	S/Do 2.0 K0 2.04 K0.5 1.92 K 1.97 S/Do 1.5 K0 2.09 K0.5 2.31 K 2.22 Interp val for S/Do 1.04 Ku 2.46 Part full downstream pipe Upstream HGL 46.205 below outlet pipe obv 46.228 Set Kp to 1
G3/10	Qg 0.025 Qo 0.112 Do 375 Flow G1/11 made eqv grate flow Flow G2/10 made eqv grate flow CHRT 32: Vo2/2gDo 0.14 H/Do 0.00 Kg side flow 7.12 end flow 5.57 K vals above for stepped pipes as grate flow grate flow decreased by 0.055 from G1/11 grate flow decreased by 0.031 from G2/10 Routine 2.8 CHART 48 Du/Do 1.00 Qu/Qo 0.49 K 1.51 d/Do 2.0 chrt Qg/Qo 0.23 Kg 0.38 d/Do 1.5 chrt Qg/Qo 0.23 Kg 0.43 d/Do 1.00 Interp value Kg 0.49 Ku=Kw= 1.99 Combined pipes @ 90 deg defl'n Join Pipes:	G1/11 and G2/10 Vel1 0.501 Vel2 0.285 Eq Dia 511 Angle 230 Flow 0.087 Angle 90 Chart 47 S/Do 2.5 chartdeg Du/Do 1.36 K0 1.82 K0.5 1.68 Qu/Qo 0.77 Cg 0.53 K 1.74 S/Do 2.0 K0 2.35 K0.5 2.40 K 2.38 S/Do 1.5 K0 2.60 K0.5 2.34 K 2.46 Interp val for S/Do 1.35 Kw 2.49 CHART 46 S/Do 2.0 K0 2.14 K0.5 1.58 K 1.84 S/Do 1.5 K0 2.09 K0.5 2.30 K 2.20 Interp val for S/Do 1.35 Ku 2.31 Interpolated Ku= 2.09 Kw= 2.15 K vals step pipes as pipe flow Ku 2.09 Kw 2.15 Averaged Ku 2.92 Kw 2.97
G1/12	Qg 0.042 Qo 0.042 Do 375 CHRT 32: Vo2/2gDo 0.02 H/Do 0.00 Kg side flow 10.27 end flow 7.27 Part full downstream pipe	Upstream HGL 39.224 below outlet pipe obv 39.247 Set Kp to 1
G4/10	Qg 0.038 Qo 0.186 Do 375 Routine 2.1 CHART 48 Du/Do 1.00 Qu/Qo 0.58 K 1.33 d/Do 2.0 chrt Qg/Qo 0.20 Kg 0.33 d/Do 1.5 chrt Qg/Qo 0.20 Kg 0.37 d/Do 1.00 Interp value Kg 0.42 Ku=Kw= 1.74 Combined pipes in line case Join Pipes:	G3/10 and G1/12 Vel1 0.978 Vel2 0.363 Eq Dia 482 Angle 201 Flow 0.148 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.29 Qg/Qo 0.20 K 0.82 S/Do 1.42 cor 0.25 Ku 1.07 Kw 1.07 Interpolated Ku= 1.63 Kw= 1.63
G5/10	Qg 0.040 Qo 0.222 Do 450 CHART 37 Angle 41 Case2 S/Do 2.5 Du/Do 0.83 Qg/Qo 0.18 K 0.79 S/Do 2.21 cor 0.04 Ku 0.83 Kw 0.83	
G6/10	Qg 0.061 Qo 0.283 Do 525 Angle 71 Chart 43 S/Do 2.5 chartdeg Du/Do 0.86 K0 1.35 K0.5 1.78 Qu/Qo 0.79 Cg 0.51 K 1.57 S/Do 2.5 K0 1.35 K0.5 1.78 K 1.57 S/Do 2.0 K0 1.41 K0.5 1.98 K 1.70	Interp val for S/Do 2.03 Kw 1.69 CHART 42 S/Do 2.5 K0 1.09 K0.5 1.77 K 1.43 S/Do 2.0 K0 1.10 K0.5 1.94 K 1.53 Interp val for S/Do 2.03 Ku 1.52
IN1/20	Qg 0.037 Qo 0.037 Do 375 CHRT 32: Vo2/2gDo 0.02 H/Do 0.00 Kg side flow 10.40 end flow 7.33	
G1/20	Qg 0.002 Qo 0.039 Do 375 Flow IN1/20 made eqv grate flow CHRT 32: Vo2/2gDo 0.02 H/Do 0.00 Kg side flow 10.37 end flow 7.31 K vals above for stepped pipes as grate flow grate flow decreased by 0.037 from IN1/20	CHART 37 Angle 36 Case3 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.06 K 0.81 S/Do 1.02 cor 0.10 Ku 0.91 Kw 0.91 K vals step pipes as pipe flow Ku 0.91 Kw 0.91
EX/01	Qo 0.262 Do 450 CHRT 32: Vo2/2gDo 0.31 H/Do 0.21 Kg side flow 4.54 end flow 3.84	
IN1/01	Qo 0.262 Do 450 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 1.65 WSE 0.05 Ku 0.31 Kw 0.36	
G1/01	Qg 0.037 Qo 0.297 Do 525 CHART 34 Angle 23 Case3 S/Do 2.5 Du/Do 0.86 Qg/Qo 0.13 K 0.36 S/Do 1.11 cor 0.21 Ku 0.57 Kw 0.57	

HEADLOSSES / PART FULL / DESIGN LEVELS

STRUCTURE No.	V2/2g VELOCITY HEAD (m)	Ku U/S HEADLOSS COEFFICENT	hu U/S PIPE STRUCT. HEADLOSS (m)	Kw W.S.E CO-EFFICIENT	hw CHANGE IN W.S.E (m)	Sf PIPE FRICTION SLOPE (%)	hf PIPE FRICTION HEADLOSS (L × Sf) (m)	DEPTH (m)	Vp VELOCITY (m/s)	OBVERT LEVELS (m)	DRAIN SECTION H.G.L (m)	UPSTREAM H.G.L (m)	LAT. H.G.L (m)	W.S.E. (m)	SURFACE OR K&C INVERT LEVEL (m)	STRUCTURE No.
G0/11	0.002	1.00	0.318	1.00	0.318	0.02	0.003	0.051 (0.0451y)	2.50 (2.311y)	47.131 45.267	46.807 45.160	47.125		47.125	48.243	G0/11
G1/11	0.013	1.00	0.167	1.00	0.167	0.10	0.014	0.121 (0.1051y)	1.81 (1.681y)	45.247 44.962	44.993 44.930	45.160		45.160	46.279	G1/11
G1/10	0.003	1.00	0.008	1.00	0.008	0.02	0.002	0.088 (0.0781y)	1.31 (1.221y)	46.368 46.248	46.207 46.205	46.215		46.215	47.240	G1/10
G2/10	0.005	1.00	0.279	1.00	0.279	0.04	0.008	0.073 (0.0641y)	2.34 (2.181y)	46.228 44.962	45.926 44.930	46.205		46.205	47.279	G2/10
G3/10	0.053	2.92	0.155	2.97	0.158	0.41	0.232	0.114 (0.1001y)	3.96 (3.671y)	44.775 38.994	44.775 39.211	44.930		44.933	45.890	G3/10
G1/12	0.007	1.00	0.008	1.00	0.008	0.06	0.005	0.095 (0.0851y)	1.94 (1.821y)	39.247 38.994	39.216 39.211	39.224		39.224	40.344	G1/12
G4/10	0.146	1.63	0.237	1.63	0.237	1.13	0.471	0.143 (0.1261y)	4.79 (4.481y)	38.974 34.075	38.974 34.620	39.211		39.211	40.087	G4/10
G5/10	0.100	0.83	0.083	0.83	0.083	0.61	0.070			34.075 33.948	34.537 34.467	34.620		34.620	35.042	G5/10
G6/10	0.092	1.52	0.139	1.69	0.154	0.47	0.075			33.948 33.803	34.328 34.253	34.467		34.482	34.921	G6/10
IN1/20	0.006	10.40	0.061	10.40	0.061	0.04	0.006	0.063 (0.0561y)	3.04 (2.821y)	48.984 47.325	48.984 47.231	49.045		49.045	50.622	IN1/20
G1/20	0.006	0.91	0.006	0.91	0.006	0.05	0.033	0.067 (0.0591y)	2.89 (2.671y)	47.225 40.602	47.225 40.688	47.231		47.231	48.254	G1/20
EX/01	0.139	4.54	0.630	4.54	0.630	0.85	0.374			35.278 34.897	35.370 34.996	36.000		36.000	37.208	EX/01
IN1/01	0.139	0.31	0.043	0.36	0.049	0.85	0.163			34.897 34.732	34.953 34.790	34.996		35.002	36.453	IN1/01
G1/01	0.101	0.57	0.058	0.57	0.058	0.51	0.106	0.207 (0.2051y)	3.77 (3.741y)	34.732 33.796	34.732 34.253	34.790		34.790	35.782	G1/01

AS-CONSTRUCTED CERTIFICATION
Signature: [illegible] Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

CALCULATIONS TABLE

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: **AS CONSTRUCTED**
APPROVED: ANDREW NGO RPEQ 12329
[illegible]
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE

CLIENT: **CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED**
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: **WOODLINKS VILLAGE - STAGE 16**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **STORMWATER DRAINAGE CALCULATIONS TABLE SHEET 1 OF 2**

PROJECT No.: 19-0023 | DRAWING No.: 119 | REVISION: B

LOCATION					TIME			SUB-CATCHMENT RUNOFF						INLET DESIGN							DRAIN DESIGN											HEADLOSSES							PART FULL			DESIGN LEVELS						
						tc	I	C10	C	A	C×A	+CA	Q					Qg	Qb		tc	I	+CA	Qt	Qm	Qs	Qp	L	S		V	T			V2/2g	Ku	hu	Kl	hl	Kw	hw	Sf	hf		Vp						
DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT	SUB-CATCHMENT TIME OF CONC.	RAINFALL INTENSITY	10yr RUNOFF CO-EFFICIENT	CO-EFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EQUIVALENT AREA	SUM OF (C x A)	SUB-CATCHMENT DISCHARGE	FLOW IN K&C (INC. BYPASS)	ROAD GRADE AT INLET	MINOR FLOW ROAD CAPACITY	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	MAJOR TOTAL FLOW	MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE / BOX DIMENSIONS (CLASS)	FLOW VELOCITY FULL (PIPE GRADE VELOCITY)	TIME OF FLOW IN REACH	STRUCTURE CHART No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS	VELOCITY HEAD	U/S HEADLOSS COEFFICIENT	U/S PIPE STRUCT. HEADLOSS	LAT. HEADLOSS CO-EFFICIENT	LAT. PIPE STRUCT. HEADLOSS	W.S.E CO-EFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEADLOSS (L x Sf)	DEPTH	VELOCITY	OBVERT LEVELS	DRAIN SECTION H.G.L	UPSTREAM H.G.L	LAT. H.G.L	W.S.E.	SURFACE OR K&C INVERT LEVEL	STRUCTURE No.
yrs					%	min	mm/h			ha	ha	ha	l/s	l/s	%	l/s		l/s	l/s		min	mm/h	ha	l/s	l/s	l/s	m	%	mm	m/s	min			m		m		m		m	%	m	m	m/s	m	m	m	m	m	m	
2 100	G2/01	G2/01 to G3/01	G0/11;G1/11;G1/10;G2/10;G3/10;G1/12;G4/10;G5/10;G6/10;G1/01;G2/01			5.00 5.00	146 325		0.75 1.00	0.063 0.063	0.047 0.063	0.047 0.063	19 57	19 FLOW WIDTH	2.47 0.823 m	215	1	19 (UNLOCKED)	0	G3/01	12.21 12.21	103 236	1.532 1.895	1242	2454	661 (Pipe flow= Sum upstr	582 atten flows)	97.420	1.99	600(3)	2.06(1.791y) (3.06)	0.79		Qg 0.013 Qo 0.582 Do 600 Routine 2.24 Join Pipes: G6/10 and G1/01 Vel1 1.294 Vel2 1.332 Eq Dia 742 Angle 237 Flow 0.568 Angle 57 Chart 43 S/Do 2.5 chartdeg Du/Do 1.24 K0 1.41 K0.5 2.16 Qu/Qo 0.98 Cg 0.06 K 1.46	0.216	2.08	0.450	S/Do 2.0 K0 1.41 K0.5 2.70 K 1.49 S/Do 1.5 K0 1.52 K0.5 3.05 K 1.61 Interp val for S/Do 1.57 Kw 1.59 CHART 42 S/Do 2.0 K0 1.60 K0.5 2.36 K 1.65 S/Do 1.5 K0 2.14 K0.5 2.37 K 2.16 Interp val for S/Do 1.57 Ku 2.08	2.08	0.450	0.90	0.876	0.360 (0.3291y)	3.28 (3.181y)	33.803 31.864	33.803 32.099	34.253		34.253	35.096	G2/01
2 100	G1/22	G1/22 to G2/20	G1/22			10.00 10.00	112 255		0.75 1.00	0.187 0.187	0.140 0.187	0.140 0.187	44 133	44 FLOW WIDTH	12.29 0.838 m	479	1	42 (UNLOCKED)	2	G1/21	10.00 10.00	112 255	0.140 0.187	132	2515	91 (Pipe flow= Grate	42 flow)	10.423	5.00	375(3)	0.38(0.311y) (3.55)	0.17		Qg 0.042 Qo 0.042 Do 375 CHRT 32: Vo2/2gDo 0.02 H/Do 0.00 Kg side flow 10.27 end flow 7.27 Part full downstream pipe	0.007	1.00	0.270	Upstream HGL 41.075 below outlet pipe obv 41.098 Set Kp to 1	1.00	0.270	0.06	0.006	0.082 (0.0751y)	2.30 (2.181y)	41.098 40.577	40.805 40.688	41.075		41.075	42.391	G1/22
2 100	G2/20	G2/20 to G3/20	IN1/20;G1/20,G1/22; G2/20			10.00 10.00	112 255		0.75 1.00	0.197 0.197	0.147 0.197	0.147 0.197	46 140	46 FLOW WIDTH	12.04 0.874 m	474	1	43 (UNLOCKED)	3	G3/20	11.34 11.34	106 243	0.413 0.553	373	2519	256 (Pipe flow= Sum upstr	117 atten flows)	51.500	11.00	375(3)	1.06(0.851y) (5.26)	0.81		Qg 0.041 Qo 0.117 Do 375 Routine 2.1 CHART 48 Du/Do 1.00 Qu/Qo 0.32 K 1.82 d/Do 2.0 chrt Qg/Qo 0.35 Kg 0.66 d/Do 1.5 chrt Qg/Qo 0.35 Kg 0.79 d/Do 1.00 Interp value Kg 0.92 Ku=Kw= 2.74 Combined pipes in line case Join Pipes:	0.057	2.28	0.131	G1/20 and G1/22 Vel1 0.336 Vel2 0.356 Eq Dia 530 Angle 154 Flow 0.076 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.41 Qg/Qo 0.35 K 1.20 S/Do 1.26 cor 0.50 Ku 1.70 Kw 1.70 Interpolated Ku= 2.28 Kw= 2.28	2.28	0.131	0.45	0.230	0.114 (0.1021y)	4.12 (3.861y)	40.557 34.892	40.557 34.651	40.688		40.688	41.611	G2/20
2 100	G3/20	G3/20 to G4/20	IN1/20;G1/20,G1/22; G2/20,G3/20			10.00 10.00	112 255		0.75 1.00	0.197 0.197	0.147 0.197	0.147 0.197	46 140	48 FLOW WIDTH	10.24 0.961 m	438	1	45 (UNLOCKED)	4	G4/20	12.15 12.15	103 236	0.560 0.750	492	2618	337 (Pipe flow= Sum upstr	155 atten flows)	39.395	6.50	375(3)	1.40(1.111y) (4.04)	0.47		Qg 0.041 Qo 0.155 Do 375 Flow G2/20 made eqv grate flow CHRT 32: Vo2/2gDo 0.27 H/Do 0.00 Kg side flow 5.18 end flow 4.34 K vals above for stepped pipes as grate flow grate flow decreased by 0.114 from G2/20	0.100	1.34	0.134	CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.27 K 0.99 S/Do 1.36 cor 0.35 Ku 1.34 Kw 1.34 K vals step pipes as pipe flow Ku 1.34 Kw 1.34	1.34	0.134	0.78	0.308	0.152 (0.134y)	3.68 (3.451y)	34.517 31.956	34.517 32.253	34.651		34.651	35.981	G3/20
2 100	G1/21	G1/21 to G2/21	G1/21			10.00 10.00	112 255		0.75 1.00	0.255 0.255	0.191 0.255	0.191 0.255	59 181	61 FLOW WIDTH 1.129 m DOWNSTREAM 0.097m	9.93	431	1	52 (UNLOCKED)	10	G2/21	10.00 10.00	112 255	0.191 0.255	181			52 (Pipe flow= Grate	21.093 flow)	10.00	375(3)	0.47(0.391y) (5.02)	0.35		Qg 0.052 Qo 0.052 Do 375 CHRT 32: Vo2/2gDo 0.03 H/Do 0.00 Kg side flow 9.95 end flow 7.10	0.011	9.95	0.112		9.95	0.112	0.09	0.018	0.078 (0.0711y)	3.15 (2.991y)	34.204 32.095	34.204 32.388	34.316		34.316	35.032	G1/21
2 100	G2/21	G2/21 to G4/20	G1/21;G2/21			10.00 10.00	112 255		0.75 1.00	0.161 0.161	0.120 0.161	0.120 0.161	37 114	47 FLOW WIDTH	0.00 0.584 m	147	13S0.08F0.8	47 (UNLOCKED)	0	G4/20	10.35 10.35	110 252	0.311 0.416	291	0	192 (Pipe flow=	99 Sum upstream	11.819 flows)	1.00	375(3)	0.89(0.681y) (1.59)	0.20		Qg 0.047 Qo 0.099 Do 375 Angle 41 Chart 41 S/Do 2.5 chartdeg Du/Do 1.00 K0 2.39 K0.5 2.19 Qu/Qo 0.52 Cg 0.96 K 2.20 S/Do 2.0 K0 2.52 K0.5 2.50 K 2.50 S/Do 1.5 K0 2.83 K0.5 2.91 K 2.91	0.040	2.41	0.097	Interp val for S/Do 1.86 Kw 2.61 CHART 40 S/Do 2.0 K0 2.25 K0.5 2.36 K 2.35 S/Do 1.5 K0 2.29 K0.5 2.54 K 2.53 Interp val for S/Do 1.86 Ku 2.41	2.61	0.105	0.32	0.038			32.075 31.956	32.291 32.253	32.388		32.396	33.110	G2/21
2 100	G4/20	G4/20 to G3/01	IN1/20;G1/20,G1/22; G2/20,G3/20,G1/21; G2/21;G4/20			10.00 10.00	112 255		0.75 1.00	0.169 0.169	0.126 0.169	0.126 0.169	39 120	43 FLOW WIDTH	0.50 2.073 m	97	1	43 (UNLOCKED)	0		12.62 12.62	101 233	0.997 1.335	864	1104	583 (Pipe flow= Sum upstr	281 atten flows)	17.085	0.50	525(3)	1.33(1.031y) (1.39)	0.21		Qg 0.039 Qo 0.281 Do 525 Routine 2.1 CHART 48 Du/Do 0.71 Qu/Qo 0.54 K 0.84 d/Do 2.0 chrt Qg/Qo 0.14 Kg 0.11 d/Do 1.5 chrt Qg/Qo 0.14 Kg 0.12 d/Do 1.43 Interp value Kg 0.12 Ku=Kw= 0.95 Combined pipes in line case Join Pipes:	0.090	0.84	0.075	G3/20 and G2/21 Vel1 1.375 Vel2 0.827 Eq Dia 514 Angle 165 Flow 0.243 CHART 33 Angle 0 S/Do 2.5 Du/Do 0.98 Qg/Qo 0.14 K 0.61 S/Do 1.56 cor 0.14 Ku 0.75 Kw 0.75 Interpolated Ku= 0.84 Kw= 0.84	0.84	0.075	0.46	0.079			31.956 31.871	32.178 32.099	32.253		32.253	33.093	G4/20
2 100	G3/01	G3/01 to OUT/01	G0/11;G1/11;G1/10;G2/10;G3/10;G1/12;G4/10;G5/10;G6/10;G1/01;G2/01;IN1/20;G1/20;G1/22;G2/20;G3/20;G1/21;G2/21;G4/20;G3/01			5.00 5.00	146 325		0.75 1.00	0.079 0.079	0.059 0.079	0.059 0.079	24 71	24 FLOW WIDTH	0.59 1.479 m	105	1	24 (UNLOCKED)	0		13.00 13.00	100 230	2.588 3.309	2114	1200	1227 (Pipe flow=	887 Sum upstream	39.669 flows)	0.60	750(3)	1.98(1.651y) (1.96)	0.33		Qg 0.024 Qo 0.887 Do 750 Routine 2.8 CHART 48 Du/Do 0.80 Qu/Qo 0.66 K 0.66 d/Do 2.0 chrt Qg/Qo 0.03 Kg 0.02 d/Do 1.5 chrt Qg/Qo 0.03 Kg 0.02 d/Do 1.00 Interp value Kg 0.02 Ku=Kw= 0.68 Combined pipes @ 90 deg defl'n Join Pipes: G2/01 and G4/20 Vel1 2.058 Vel2 1.300 Eq Dia 779 Angle 228 Flow 0.863	0.200	1.13	0.225	Angle 90 Chart 47 S/Do 2.5 chartdeg Du/Do 1.04 K0 1.91 K0.5 2.07 Qu/Qo 0.87 Cg 0.07 K 1.92 S/Do 2.0 K0 2.43 K0.5 2.40 K 2.43 S/Do 1.5 K0 2.66 K0.5 2.56 K 2.66 Interp val for S/Do 1.68 Kw 2.57 CHART 46 S/Do 2.0 K0 2.05 K0.5 1.88 K 2.04 S/Do 1.5 K0 2.09 K0.5 2.31 K 2.11 Interp val for S/Do 1.68 Ku 2.08 Interpolated Ku= 1.13 Kw= 1.29	1.29	0.257	0.61	0.242			31.870 31.632	31.874 31.632	32.099		32.131	32.999	G3/01

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE

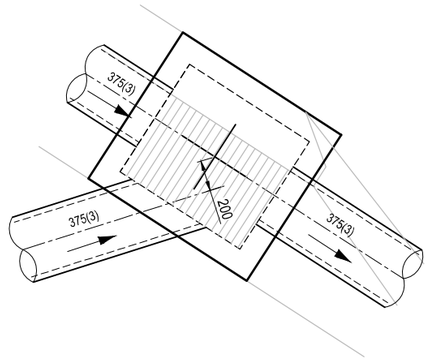
CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP
PH: 1300 123 744

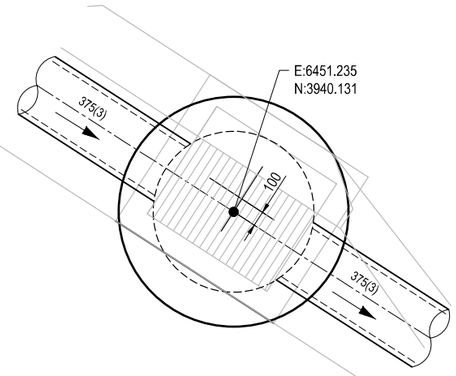
PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE,
COLLINGWOOD PARK

DRAWING TITLE: STORMWATER DRAINAGE CALCULATIONS TABLE SHEET 2 OF 2

PROJECT No.: 19-0023
DRAWING No.: 120
REVISION: B



G2/20 - 835mm x 930mm
STANDARD TYPE A GULLY
1:20 (A1)
1:40 (A3)



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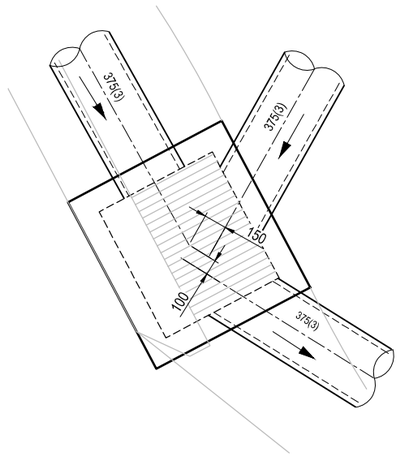
STANDARD TYPE A GULLY on 1050Ø MANHOLE
1:20 (A1)
1:40 (A3)



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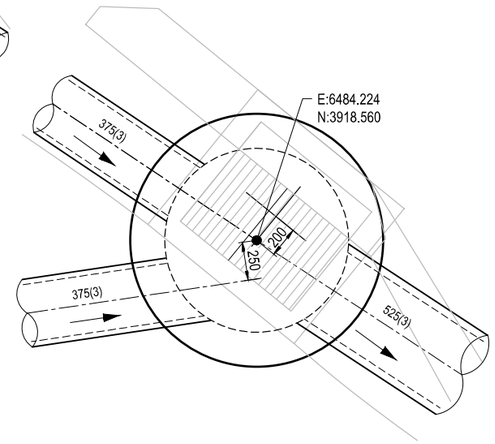
1:40 (A3)



G4/20 - 835mm x 930mm
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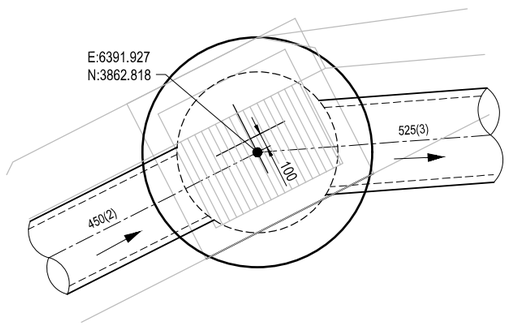
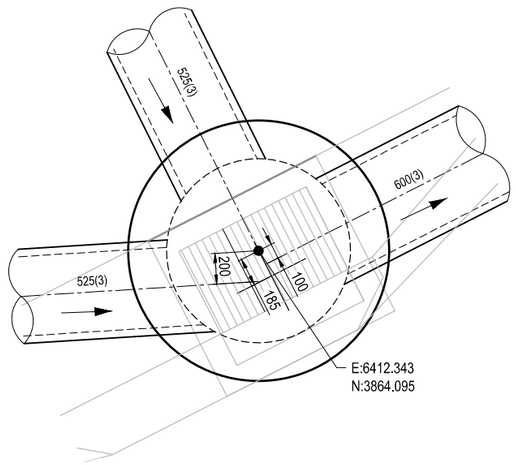
1:20 (A1)
1:40 (A3)

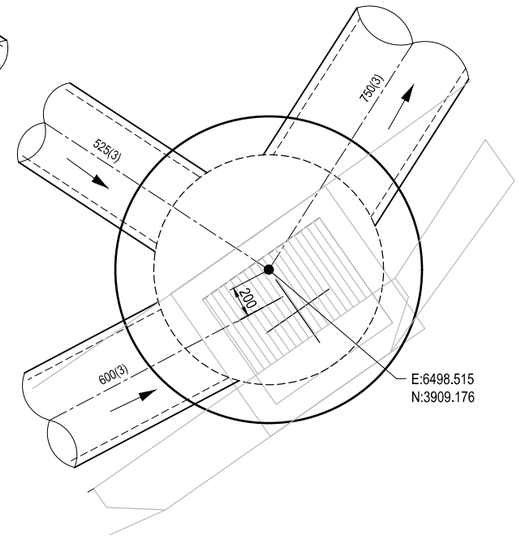


G1/01 - 835mm x 930mm
STANDARD TYPE A GULLY on 1050Ø MANHOLE
1:20 (A1)
1:40 (A3)



G2/01 - 835mm x 930mm
STANDARD TYPE A GULLY on 1200Ø MANHOLE
1:20 (A1)
1:40 (A3)

AS-CONSTRUCTED CERTIFICATION
Signature: ..... Date: 26/06/20
ANDREW NGO RPEQ No. 12329
For and on behalf of Peakurban PTY LTD



G3/01 - 835mm x 930mm
STANDARD TYPE A GULLY on 1500Ø MANHOLE
1:20 (A1)
1:40 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	02.12.19	AC	CL	ISSUED FOR CONSTRUCTION
B	26.05.20	TD	SC	AS CONSTRUCTED

DRAWN: TD
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:20 1:40 — 0.2 0 0.2 0.4 0.6 0.8 1 — A1 A3

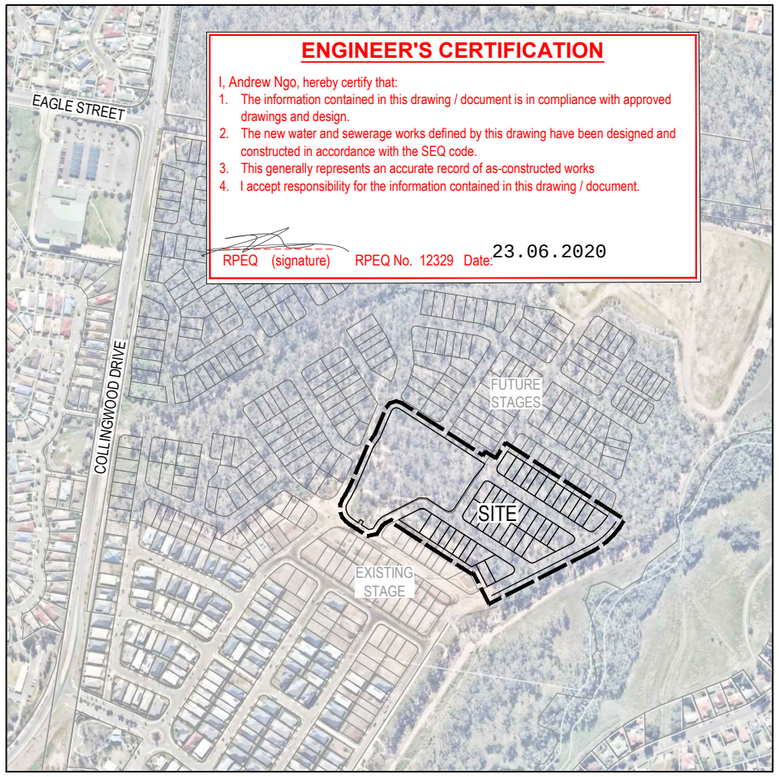
CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: STORMWATER DRAINAGE STRUCTURE DETAILS

PROJECT No.	DRAWING No.	REVISION
19-0023	121	B



ENGINEER'S CERTIFICATION

I, Andrew Ngo, hereby certify that:

1. The information contained in this drawing / document is in compliance with approved drawings and design.
2. The new water and sewerage works defined by this drawing have been designed and constructed in accordance with the SEQ code.
3. This generally represents an accurate record of as-constructed works
4. I accept responsibility for the information contained in this drawing / document.

RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

LOCALITY PLAN
1:4000 (A1)
1:8000 (A3)

NAME OF ESTATE		WOODLINKS STAGE 16
SUBDIVIDER		CANBERRA ESTATES
Q.U.U. APPLICATION No.		19-PNT-40253
Q.U.U. DELEGATE APPROVAL DATE		23.08.2019
DRAWING/PLAN No.		19-0023-300-302
No. OF ALLOTMENTS		42
AREA		4.8ha
LENGTH OF SEWERS	DN110 PE100	~~105m~~ 115m
	DN160 PE100	~~1213m~~ 1175m

ENVIRONMENTAL CONDITIONS

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 AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
C. TREE ROOTS SHALL BE TUNNELED 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 AND 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.

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 AND COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

GENERAL NOTES:

1. THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO CONSTRUCT THE WORKS AS DOCUMENTED AND STRICTLY IN ACCORDANCE WITH THE RELEVANT AUTHORITY STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
2. THE EXISTING SERVICES THAT ARE SHOWN ON THE DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY. NO RESPONSIBILITY IS TAKEN BY THE SUPERINTENDENT OR THE PRINCIPAL FOR INFORMATION THAT HAS BEEN SUPPLIED BY OTHERS, OR ANY EXISTING SERVICES THAT MAY BE PRESENT NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE POSITION OF ANY UNDERGROUND SERVICES WITHIN THE AREAS OF WORKS AND SHALL BE RESPONSIBLE FOR MAKING GOOD ANY DAMAGE THERETO. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT ONLY BY THE SERVICE OWNER AUTHORITY UNLESS APPROVED OTHERWISE.
3. ALL DESIGN AND CONSTRUCTION ACTIVITIES UNDERTAKEN SHALL COMPLY WITH CURRENT WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND LEGISLATION.
4. PRIOR TO COMMENCING WORK, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL RELEVANT LOCAL AUTHORITY PERMITS.
5. THE CONTRACTOR SHALL NOT COMMENCE THE DEMOLITION OF ANY EXISTING BUILDINGS AND/OR STRUCTURES WITHOUT APPROVAL FROM THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL APPLY INDUSTRY BEST PRACTICE SO WORKS SHALL NOT DISTURB OR AFFECT NEARBY RESIDENTS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES. CONTRACTOR TO ENSURE THAT ACCESS AND SERVICES TO EXISTING PROPERTIES ARE AVAILABLE AT ALL TIMES.
7. THE CONTRACTOR SHALL VERIFY LEVELS OF EXISTING SERVICE CROSSINGS AND CONNECTION POINTS PRIOR TO COMMENCEMENT OF WORKS AND NOTIFY SUPERINTENDENT OF ANY DISCREPANCIES BETWEEN ACTUAL AND PROPOSED DESIGN LEVELS.
8. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE APPROVED VEGETATION MANAGEMENT PLAN, WHERE APPLICABLE. WHEN IN DOUBT, ALL EXISTING TREES ARE TO REMAIN UNLESS DIRECTED OTHERWISE.
9. HOLD POINT: ONCE THE BASE OF MANHOLES HAVE BEEN POURED, CONSTRUCTION SHALL ONLY RE-COMMENCE ONCE THE SUPERINTENDENT AND/OR ENGINEER HAVE INSPECTED THE WORKS.
10. THE CONTRACTOR SHALL NOTE DURING THE COURSE OF THE WORKS WHEN JOINT INSPECTIONS WITH THE AUTHORITY AND THE SUPERINTENDENT ARE REQUIRED. THESE INCLUDE PRE-STARTS, SUBGRADES, PRE-SEALS, CLEARING, AND OTHER SUCH INSPECTIONS AS NOMINATED DURING THE PRE-START, IN THE APPROVAL AND THE SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE NO WORKS PROCEED PAST THE INSPECTION POINT UNTIL THE JOINT INSPECTION HAS BEEN SUCCESSFULLY COMPLETED.

SEWERAGE NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT WSAA GRAVITY SEWERAGE CODE OF AUSTRALIA SPECIFICATIONS AND STANDARD - SOUTH EAST QUEENSLAND SERVICE PROVIDERS EDITION.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND 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 Q.U.U. SEWERAGE SYSTEM.
4. ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE SUPERVISED BY Q.U.U. AT THE DEVELOPER'S COST.
5. ALL PIPES AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
6. EACH ALLOTMENT SHALL BE SERVED BY A DN110 PE PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL, A DN160 PE 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 300mm AND A MAXIMUM OF 750mm.
9. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (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 Q.U.U. UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
10. WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER, TRENCH STOPS AND BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TABLE 9.1 OF THE SEQ SEWER CODE AND DRGS SEQ-SEW-1206-1 AND 1207-1.
11. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
12. SEWERS SHALL BE DISUSED/ABANDONED IN ACCORDANCE WITH PROCEDURE SET OUT IN THE GRAVITY SEWER CODE.
13. BENCH MARK AND LEVELS TO AHD.
14. THE DESIGN HAS BEEN UNDERTAKEN TO COMPLY WITH CURRENT Q.U.U. STANDARDS AND THE WSAA GRAVITY SEWERAGE CODE OF AUSTRALIA SPECIFICATIONS AND STANDARD - SOUTH EAST QUEENSLAND SERVICE PROVIDERS EDITION
15. CONSTRUCT EMBEDMENT AND TRENCHFILL TO SEQ-SEW-1200-2, 1201-1 TO 1205-1 (TYPE 4 SUPPORT UNLESS GEOTECHNICAL INVESTIGATIONS DEMONSTRATE THAT TYPE 3 SUPPORT IS ADEQUATE. TYPE 4 SUPPORT TO BE USED WHERE MIGRATORY NATIVE SOILS (OR SAND OR FINE CLAY MATERIAL) ARE ENCOUNTERED ADJACENT TO THE EMBEDMENT ZONE AND SINGLE SIZE AGGREGATE IS USED) AND COUNCIL STANDARD FOR ROADWAYS, WHICHEVER IS MORE ONEROUS.
16. CONSTRUCT BULKHEADS AND TRENCH STOPS TO SEQ-SEW-1206-1 AND TRENCH DRAINS TO SEQ-SEW-1207-1.
17. CONSTRUCT MH'S TO SEQ-SEW-1301-1 TO 1301-7 (TYPE G), 1301-8 TO 1301-13 (TYPE F), 1301-14 TO 1301-25 (TYPE X), 1304-1, 1305-1, 1307-4 (STUB CUT IN), 1313-1 (CONNECTION) AND 1502-1 (INSERTION MH AND REPAIR SYSTEM), 1301-27 (LADDERS).
18. CONSTRUCT MAINTENANCE SHAFTS AND TERMINAL ENTRY POINTS TO SEQ-SEW 1315-1, 1316-1 AND 1502-1 (INSERT MS).
19. INSTALL MH/MS TYPE B COVERS TO SEQ-SEW-1308-2 TO 1308-7.
20. INSTALL MH/MS TYPE D COVERS TO SEQ-SEW-1308-8 TO 1308-11.
21. INSTALL DETECTABLE MARKER TAPE ON ALL SEWER MAINS AND PROPERTY CONNECTIONS.

LIVE SEWER WORKS

No.	DESCRIPTION	DIA. SEWER	EXISTING ASSET ID AT CONNECTION	MH/MS TYPE	COVER TYPE	LOT & PLAN No.	F.S.L.	E.S.L.	CONNECTION I.L.	CONNECTION DEPTH TO INVERT	ALTERATION TO EXISTING MH BENCHING REQUIRED (Y/N)
1 (A)	CONSTRUCTOR TO CONSTRUCT NEW MAINTENANCE HOLE 1/1 OVER EXISTING DN300 SEWER AND BENCH AND RENDER UP TO PIPE BUT NOT REMOVE CROWN OF PIPE.	DN160	1/1	X	D(BD)	PLAN 302	~~23.91~~ 23.92	23.76	~~20.837~~ 20.82	~~3.073~~ 3.100	N
1 (B)	CONSTRUCTOR TO LAY LINE 1.	DN160	1/1	X	D(BD)	PLAN 302	~~23.91~~ 23.92	23.76	~~22.108~~ 21.93	~~1.802~~ 1.990	
1 (C)	CONSTRUCTOR, UNDER Q.U.U. SUPERVISION, TO REMOVE CROWN OF PIPE AND COMPLETE BENCHING AFTER SUCCESSFUL 'ON MAINTENANCE' INSPECTION OF LINE 1	DN160				PLAN 302	~~23.91~~ 23.92	23.76	~~20.837~~ 20.82	~~3.073~~ 3.100	

LIVE WORKS NOTES:

1. ALL WORK ON EXISTING SEWERS TO BE CARRIED OUT BY THE CONTRACTOR (IN ACCORDANCE WITH AN APPROVED NETWORKS ACCESS PERMIT) UNDER Q.U.U. SUPERVISION, AT THE DEVELOPERS EXPENSE.
2. LIVE WORKS CANNOT COMMENCE UNTIL ALL RELEVANT TEST CERTIFICATES HAVE BEEN PROVIDED AND ACCEPTED BY Q.U.U.

DETAILS OF PROPOSED SEQ CODE VARIATIONS

No.	SEQ CODE CLAUSE	DETAILS FOR PROPOSED VARIATION	REASONS OF PROPOSED VARIATION
1	6.5.2	PROPERTY CONNECTIONS AT LOT 450 PROVIDED AT 8.0m OFFSET FROM LOW SIDE, SIDE BOUNDARY	DRIVEWAY LOCATIONS KNOWN, CONNECTIONS LOCATED TO BE CLEAR OF DRIVEWAYS
2	5.3.2	DUAL SEWERAGE ALIGNMENT	IPSWICH CITY COUNCIL HAVE CONFIRMED THEY HAVE NO OBJECTIONS TO THE DUAL SIDED SEWER PROPOSAL AS DETAILED IN THE CORRESPONDENCE PROVIDED TO QUU ON 15 AUGUST 2019.

PROPERTY CONNECTIONS HAVE BEEN DESIGNED TO CONTROL THE REQUIRED SERVICE AREA OF EACH LOT AT A GRADE OF 1:60 AND A MAXIMUM DEPTH OF PROPERTY CONNECTION AT 1.5m UNLESS OTHERWISE STATED. FOR JUNCTION DETAILS REFER SEQ-SEW-1106-1 TO SEQ-SEW-1106-6.

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

ALL WATER AND SEWERAGE CONSTRUCTION SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	12.12.19	RD	RD	LIVE WORKS TABLE AMENDED
C	23.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: AS SHOWN

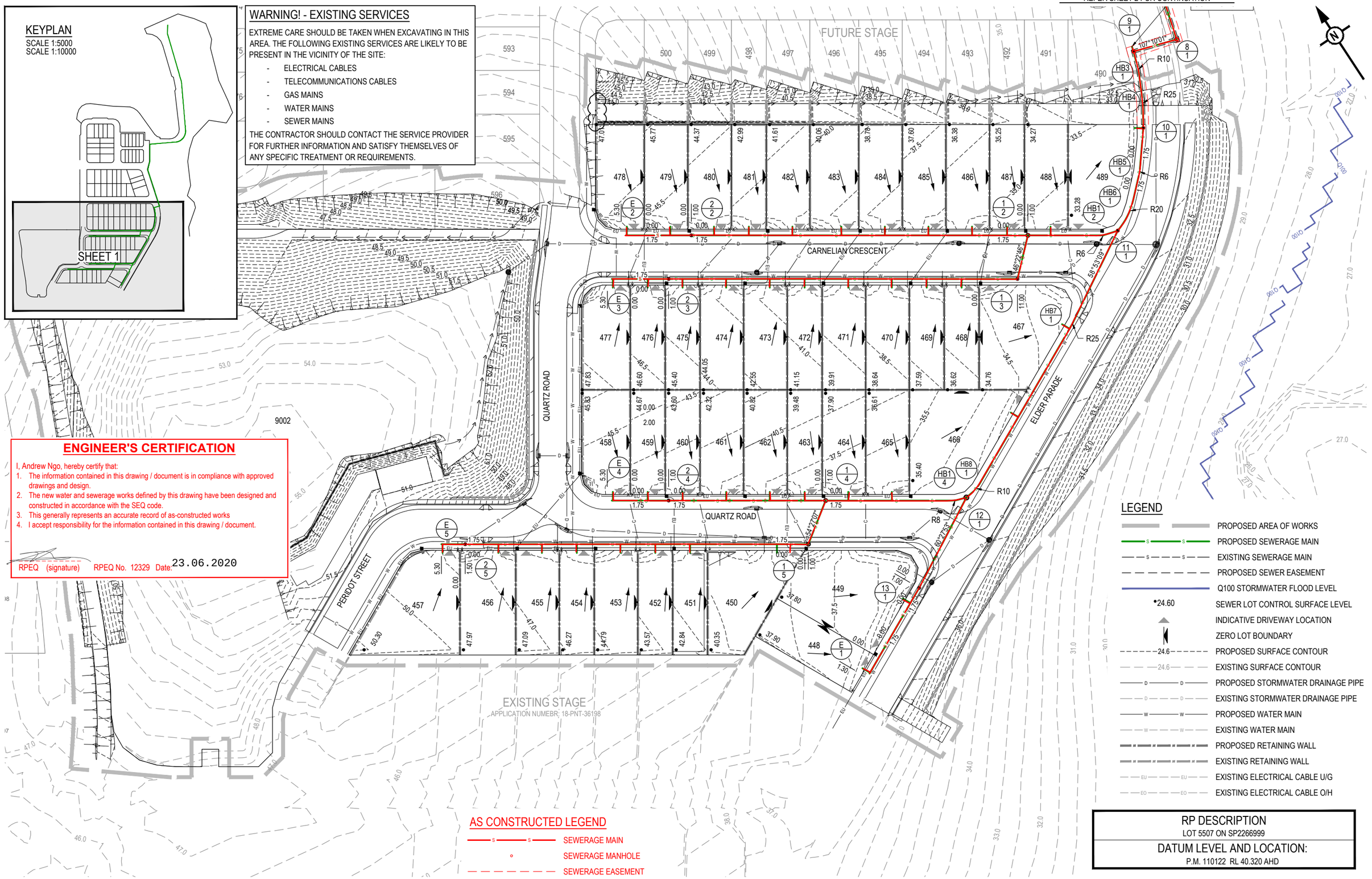
CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE COVER PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	300	C



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	10.03.20	AC	CL	SANDSTONE BOULDER WALL AMENDED, RETAINING WALL ADDED TO LOT 501
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE LAYOUT SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
19-0023	301	C

Xref ..\19-0023_X_TITLE.dwg

REFER INSET B FOR CONTINUATION

EXISTING REGIONAL BASIN

FUTURE STAGE

160 Ø STUB FOR FUTURE STAGE CONNECTION

NOTE: EXCAVATION ADJACENT TO EXISTING DETENTION BASIN TO BE UNDERTAKEN UNDER SUPERVISION OF GEOTECHNICAL ENGINEER TO ENSURE THERE NO ADVERSE EFFECTS ON SLOPE STABILITY

PROPOSED SEWER EASEMENT IN FAVOUR OF QUU

R25.0

R10.0

R10

R25

R6

118°11'35"

107°10'01"

1.00m

HB0 HB1 HB2 HB3 HB4 HB5

1/1 2/1 4/1 5/1 6/1 7/1 8/1 9/1 10/1

ENGINEER'S CERTIFICATION

I, Andrew Ngo, hereby certify that:

1. The information contained in this drawing / document is in compliance with approved drawings and design.
2. The new water and sewerage works defined by this drawing have been designed and constructed in accordance with the SEQ code.
3. This generally represents an accurate record of as-constructed works
4. I accept responsibility for the information contained in this drawing / document.

RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

AS CONSTRUCTED LEGEND

- SEWERAGE MAIN
- SEWERAGE MANHOLE
- SEWERAGE EASEMENT

REFER INSET B FOR CONTINUATION

NOTE: EXCAVATION ADJACENT TO EXISTING DETENTION BASIN TO BE UNDERTAKEN UNDER SUPERVISION OF GEOTECHNICAL ENGINEER TO ENSURE THERE NO ADVERSE EFFECTS ON SLOPE STABILITY

PROPOSED SEWER EASEMENT IN FAVOUR OF QUU

28°11'35"

28°14'09"

1.00m

EXISTING REGIONAL BASIN

NOTE: EXCAVATION ADJACENT TO EXISTING DETENTION BASIN TO BE UNDERTAKEN UNDER SUPERVISION OF GEOTECHNICAL ENGINEER TO ENSURE THERE NO ADVERSE EFFECTS ON SLOPE STABILITY

REFER SHEET 1 FOR CONTINUATION

REFER SHEET FOR CONTINUATION

LIVE CONNECTION 1
REFER LIVE WORKS TABLE FOR DETAILS

CONTRACTOR CONFIRM LOCATIONS AND INVERT LEVELS OF EXISTING SEWER PRIOR TO CONSTRUCTION

MH406113

IL20.58

IL20.69

IL21.36

3750 uPVC

3000 uPVC

EXISTING REGIONAL BASIN

REFER SHEET FOR CONTINUATION

WARNING! - EXISTING SERVICES

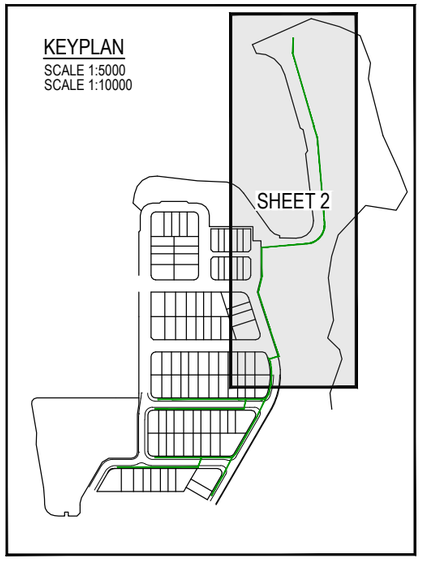
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

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

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

KEYPLAN

SCALE 1:5000
SCALE 1:10000



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	12.12.19	RD	RD	LINE 1 OUTLET
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE LAYOUT SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
19-0023	302	C

Xref ..\19-0023_X_TITLE.dwg

STRUCTURE / BEND / END NAME
STRUCTURE TYPE
STRUCTURE LID TYPE
STRUCTURE DROP TYPE
JUNCTION LINE
DEPTH TO HC
HC INVERT LEVEL
HC TYPE
HC LOT No
CH. FROM D/S STRUC / BEND

STRUCTURE TYPES
G = CONCRETE 0.900Ø
F = CONCRETE 1.200Ø
X = CONCRETE 1.200Ø
MS = PE 0.600Ø
MH DROP TYPES:
AS PER SEQ STD DRG SEQ-SEW-1303-1
MS DROP TYPES:
MS-A = 20mm DROP THROUGH BULB
MS-B = >750mm DROP INTO RISER
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT DOWN

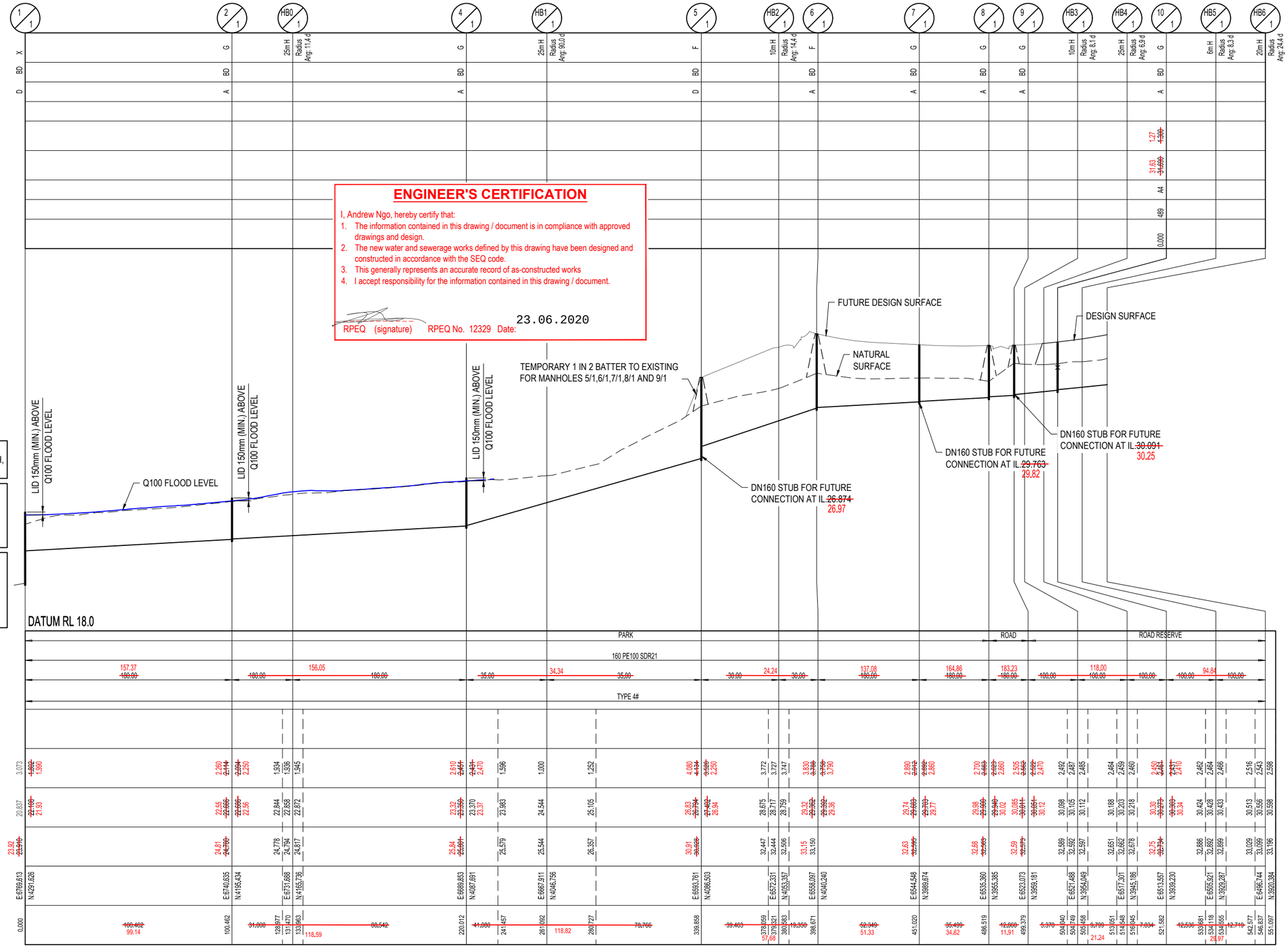
NOTE: PE LINING OF MANHOLES:
MAINTENANCE HOLES ≥ 1500Ø IN DIA OR ≥ 4.0m IN DEPTH, REQUIRE PE LINED PROTECTIVE COATING

EMBEDMENT NOTE:
EMBEDMENT TYPE IS PRELIMINARY ONLY AND IS TO BE CONFIRMED AFTER GEOTECHNICAL INVESTIGATION AND ADJUSTED IF NECESSARY IN ACCORDANCE WITH SEQ STD DRGS SEQ-SEW-1201-1 TO 1205-1

* STORMWATER BRIDGING NOTE:
WHERE A STORMWATER PIPE >= 600mm DIA CROSSES OVER A SEWER, THE STORMWATER PIPE SHALL BE SUPPORTED BY A BRIDGE STRUCTURE THAT SPANS THE SEWER TRENCH. REFER DETAIL ON PEAK URBAN STD DRG S-100.

LAND USE
DIAMETER
GRADE
EMBEDMENT
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
SETOUT
RUNNING CHAINAGE

LINE



1

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	12.12.19	RD	RD	LONGSECTION AMENDED
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:1000 10 0 10 20 30 40 50 A1
1:2000 HORIZONTAL A3
1:100 2 1 0 2 4 A1
1:200 VERTICAL A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWER LONGITUDINAL SECTION SHEET 1 OF 3

PROJECT No.	DRAWING No.	REVISION
19-0023	303	C

Xref .\19-0023_X_TITLE.dwg

STRUCTURE / BEND / END NAME
STRUCTURE TYPE
STRUCTURE LID TYPE
STRUCTURE DROP TYPE
JUNCTION LINE
DEPTH TO HC
HC INVERT LEVEL
HC TYPE
HC LOT No
CH. FROM D/S STRUC / BEND

STRUCTURE TYPES
G = CONCRETE 0.900Ø
F = CONCRETE 1.200Ø
X = CONCRETE 1.200Ø
MS = PE 0.600Ø
MH DROP TYPES:
AS PER SEQ STD DRG SEQ-SEW-1303-1
MS DROP TYPES:
MS-A = 20mm DROP THROUGH BULB
MS-B = >750mm DROP INTO RISER
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT DOWN

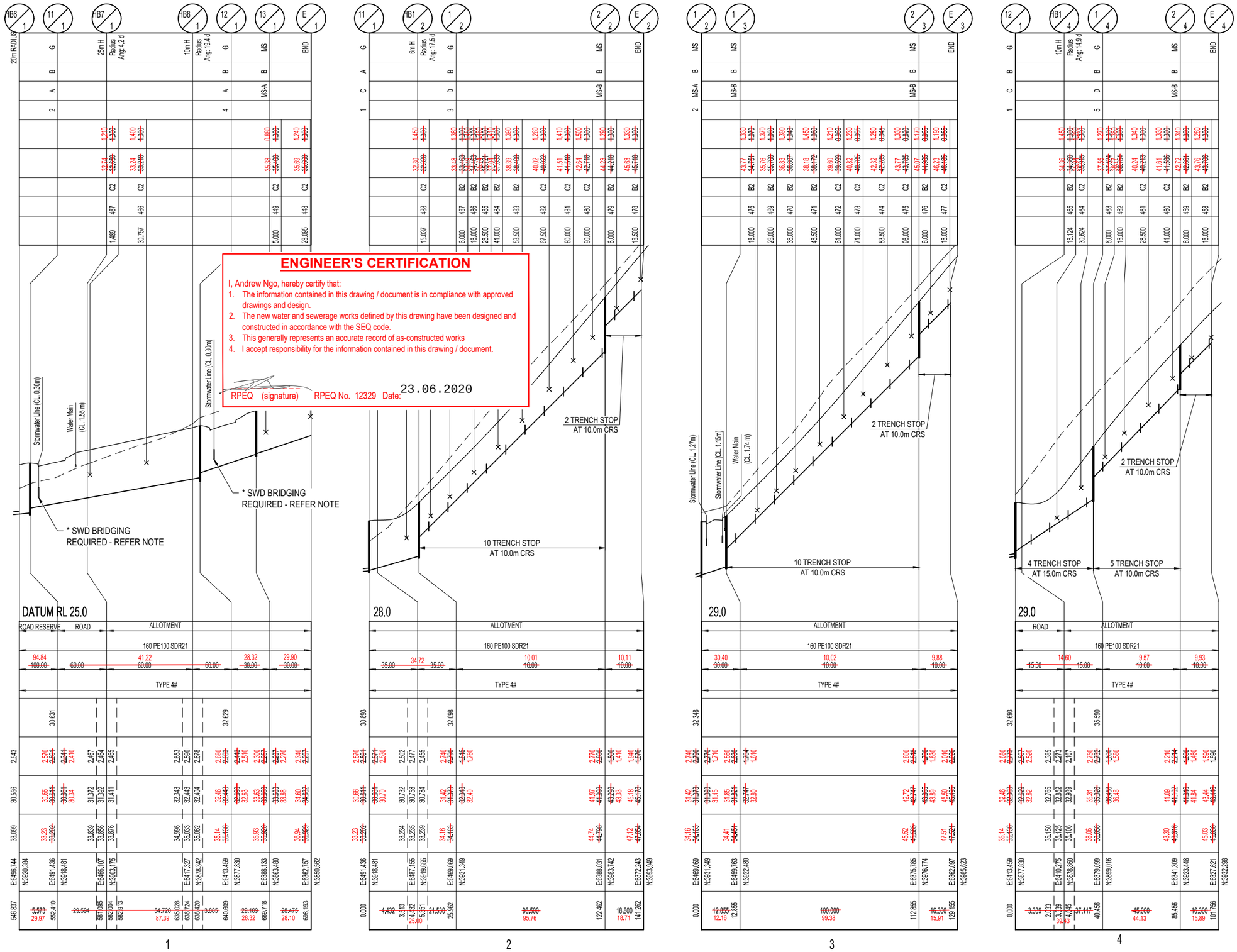
NOTE: PE LINING OF MANHOLES:
MAINTENANCE HOLES ≥ 1500Ø IN DIA OR ≥ 4.0m IN DEPTH, REQUIRE PE LINED PROTECTIVE COATING

EMBEDMENT NOTE:
EMBEDMENT TYPE IS PRELIMINARY ONLY AND IS TO BE CONFIRMED AFTER GEOTECHNICAL INVESTIGATION AND ADJUSTED IF NECESSARY IN ACCORDANCE WITH SEQ STD DRGS SEQ-SEW-1201-1 TO 1205-1

* STORMWATER BRIDGING NOTE:
WHERE A STORMWATER PIPE >= 600mm DIA CROSSES OVER A SEWER, THE STORMWATER PIPE SHALL BE SUPPORTED BY A BRIDGE STRUCTURE THAT SPANS THE SEWER TRENCH. REFER DETAIL ON PEAK URBAN STD DRG S-100.

LAND USE
DIAMETER
GRADE
EMBEDMENT
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
SETOUT
RUNNING CHAINAGE

LINE



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RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

LINE 1 2 3 4

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	12.12.19	RD	RD	LINE 1 AMENDED
C	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:1000 10 0 10 20 30 40 50 A1
1:2000 HORIZONTAL A3
1:100 2 1 0 2 4 A1
1:200 VERTICAL A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWER LONGITUDINALSECTION SHEET 2 OF 3

PROJECT No.	DRAWING No.	REVISION
19-0023	304	C

Xref: \19-0023_X_TITLE.dwg

STRUCTURE / BEND / END NAME
STRUCTURE TYPE
STRUCTURE LID TYPE
STRUCTURE DROP TYPE
JUNCTION LINE
DEPTH TO HC
HC INVERT LEVEL
HC TYPE
HC LOT No
CH. FROM D/S STRUC / BEND

STRUCTURE TYPES
G = CONCRETE 0.900Ø
F = CONCRETE 1.200Ø
X = CONCRETE 1.200Ø
MS = PE 0.600Ø
MH DROP TYPES:
AS PER SEQ STD DRG SEQ-SEW-1303-1
MS DROP TYPES:
MS-A = 20mm DROP THROUGH BULB
MS-B = >750mm DROP INTO RISER
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT DOWN

NOTE: PE LINING OF MANHOLES:
MAINTENANCE HOLES ≥ 1500Ø IN DIA OR ≥ 4.0m IN DEPTH, REQUIRE PE LINED PROTECTIVE COATING

EMBEDMENT NOTE:
EMBEDMENT TYPE IS PRELIMINARY ONLY AND IS TO BE CONFIRMED AFTER GEOTECHNICAL INVESTIGATION AND ADJUSTED IF NECESSARY IN ACCORDANCE WITH SEQ STD DRGS SEQ-SEW-1201-1 TO 1205-1

* STORMWATER BRIDGING NOTE:
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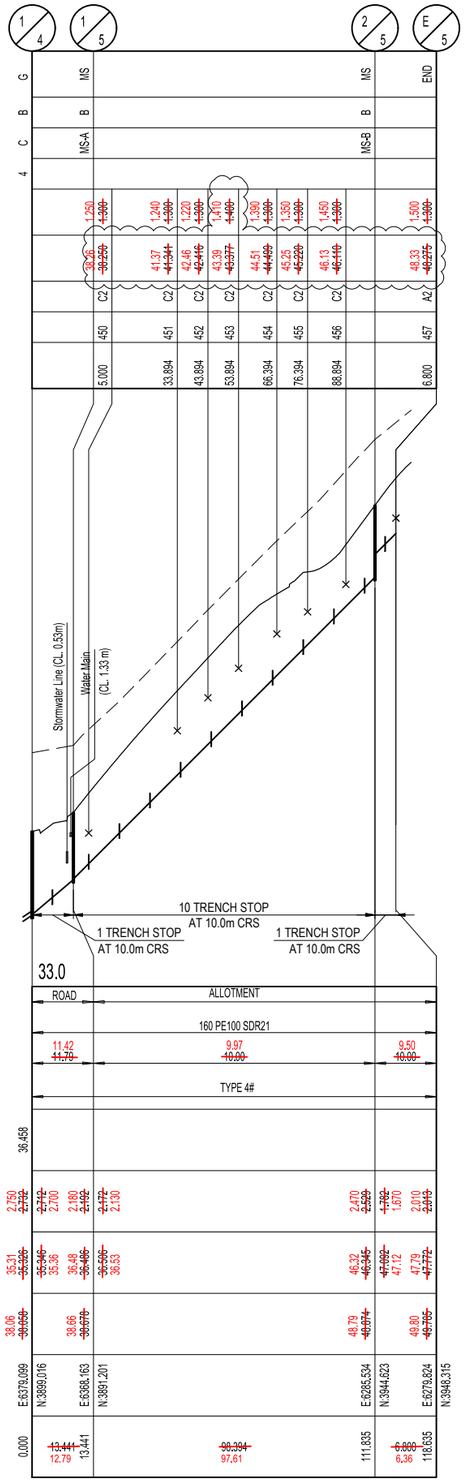
LAND USE
DIAMETER
GRADE
EMBEDMENT
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
SETOUT
RUNNING CHAINAGE

LINE 5



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4. I accept responsibility for the information contained in this drawing / document.

RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	22.01.20	AC	CL	2/5 , E/5 SURFACE LEVEL UPDATED, LOT 457 HC UPDATED
C	21.02.20	AC	CL	HC INVERT LEVELS AMENDED - LOT 450-457
D	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE
1:1000 10 0 10 20 30 40 50 A1
1:2000 A3
HORIZONTAL
1:100 2 1 0 2 4 A1
1:200 A3
VERTICAL

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

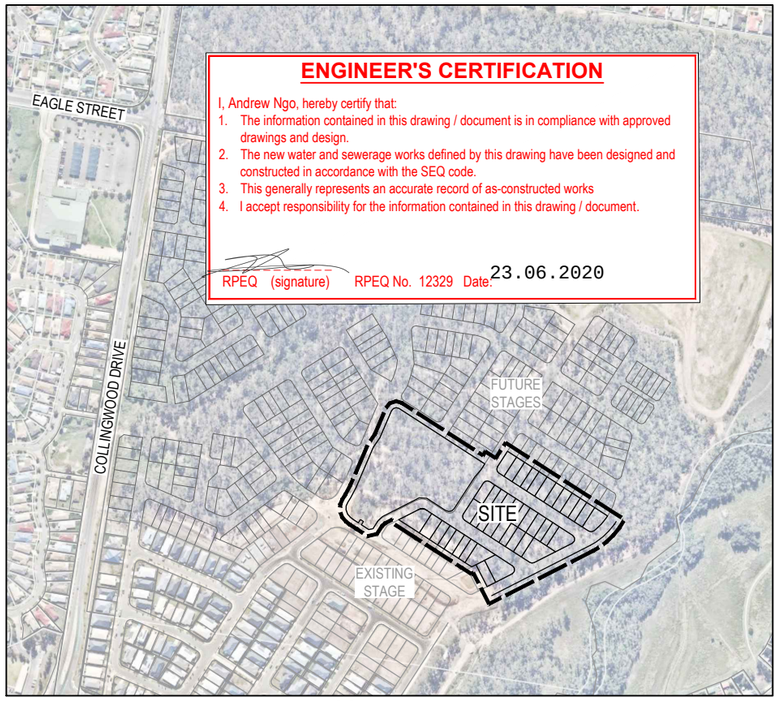
ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWER LONGITUDINAL SECTION SHEET 3 OF 3

PROJECT No.	DRAWING No.	REVISION
19-0023	305	D

Ref: ..\19-0023_X_TITLE.dwg



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4. I accept responsibility for the information contained in this drawing / document.

RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

LOCALITY PLAN
1:4000 (A1)
1:8000 (A3)

ASSET REGISTER - WATER RETICULATION					
ESTATE/STAGE	WOODLINKS STAGE 16				
SITE ADDRESS	COLLINGWOOD DRIVE				
SP FILE/APPLICATION	19PNT-40253				
Q.U.U. DELEGATES APPROVAL DATE	23.08.2018				
CLIENT	CANBERRA ESTATES				
DRAWING/PLAN No.	19-0023-303-304				
	DIAMETER	MATERIAL		LENGTH	
		DESIGN	CONST	DESIGN	CONST
MAINS	DN125	PE100 PN16	PE100 PN16	463	458
	DN180	PE100 PN16	PE100 PN16	185	185
	DIAMETER	MATERIAL		LENGTH	
		DESIGN	CONST	DESIGN	CONST
SERVICES	DN25	PE100 PN16	PE100 PN16	52	46
	DN32	PE100 PN16	PE100 PN16	49	57
	DN40	PE100 PN16	PE100 PN16	138	131
	DIAMETER	NUMBER			
METERS	20Ø	43	43		

SERVICE DETAILS		
NO	SIZE	LOT NUMBERS
22	DN25PE	448-457,446-477
21	DN32PE	◯ 458-465,478-489,900
-	DN40PE	△ -

NOTE:
SERVICE AND METER TO LOT 448 WILL CONNECT TO EXISTING WATER MAIN AND SHALL BE INSTALLED AS LIVE WORKS

LIVE CONNECTIONS

CONNECTION 1			
STREET	PERIDOT STREET		
LOCATION	CH0.00 RIGHT SIDE		
LENGTH	3.00m	TYPE OF MAIN	DN160 PE
DATE COMMENCED		DATE COMPLETED	
SIGNATURE			

CONNECTION 2			
STREET	ELDER PARADE		
LOCATION	CH0.00 LEFT SIDE		
LENGTH	3.00m	TYPE OF MAIN	DN160 PE
DATE COMMENCED		DATE COMPLETED	
SIGNATURE			

DETAILS OF PROPOSED SEQ CODE VARIATIONS

No.	SEQ CODE CLAUSE	DETAILS FOR PROPOSED VARIATION	REASONS OF PROPOSED VARIATION
1	5.11.5	LOT 449 PROPERTY SERVICE PROVIDED 3.60m FROM SIDE BOUNDARY.	PROPERTY SERVICE LOCATED TO BE CLEAR OF KNOWN LOCATION OF ELECTRICAL PILLAR AND RETAINING WALL

GENERAL NOTES:

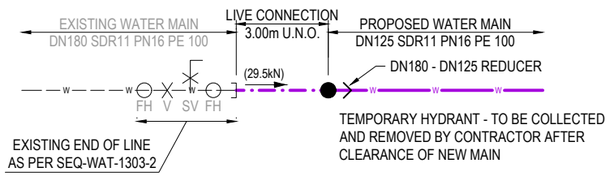
1. THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, PLANT AND EQUIPMENT TO CONSTRUCT THE WORKS AS DOCUMENTED AND STRICTLY IN ACCORDANCE WITH THE RELEVANT AUTHORITY STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
2. THE EXISTING SERVICES THAT ARE SHOWN ON THE DRAWINGS ARE PROVIDED FOR INFORMATION PURPOSES ONLY. NO RESPONSIBILITY IS TAKEN BY THE SUPERINTENDENT OR THE PRINCIPAL FOR INFORMATION THAT HAS BEEN SUPPLIED BY OTHERS, OR ANY EXISTING SERVICES THAT MAY BE PRESENT NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE POSITION OF ANY UNDERGROUND SERVICES WITHIN THE AREAS OF WORKS AND SHALL BE RESPONSIBLE FOR MAKING GOOD ANY DAMAGE THERETO. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT ONLY BY THE SERVICE OWNER AUTHORITY UNLESS APPROVED OTHERWISE.
3. ALL DESIGN AND CONSTRUCTION ACTIVITIES UNDERTAKEN SHALL COMPLY WITH CURRENT WORKPLACE HEALTH AND SAFETY REQUIREMENTS AND LEGISLATION.
4. PRIOR TO COMMENCING WORK, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL RELEVANT LOCAL AUTHORITY PERMITS.
5. THE CONTRACTOR SHALL NOT COMMENCE THE DEMOLITION OF ANY EXISTING BUILDINGS AND/OR STRUCTURES WITHOUT APPROVAL FROM THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL APPLY INDUSTRY BEST PRACTICE SO WORKS SHALL NOT DISTURB OR AFFECT NEARBY RESIDENTS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES. CONTRACTOR TO ENSURE THAT ACCESS AND SERVICES TO EXISTING PROPERTIES ARE AVAILABLE AT ALL TIMES.
7. THE CONTRACTOR SHALL VERIFY LEVELS OF EXISTING SERVICE CROSSINGS AND CONNECTION POINTS PRIOR TO COMMENCEMENT OF WORKS AND NOTIFY SUPERINTENDENT OF ANY DISCREPANCIES BETWEEN ACTUAL AND PROPOSED DESIGN LEVELS.
8. THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE APPROVED VEGETATION MANAGEMENT PLAN, WHERE APPLICABLE. WHEN IN DOUBT, ALL EXISTING TREES ARE TO REMAIN UNLESS DIRECTED OTHERWISE.
9. THE CONTRACTOR SHALL NOTE DURING THE COURSE OF THE WORKS WHEN JOINT INSPECTIONS WITH THE AUTHORITY AND THE SUPERINTENDENT ARE REQUIRED. THESE INCLUDE PRE-STARTS, SUBGRADES, PRE-SEALS, CLEARING, AND OTHER SUCH INSPECTIONS AS NOMINATED DURING THE PRE-START, IN THE APPROVAL AND THE SPECIFICATIONS. THE CONTRACTOR SHALL ENSURE NO WORKS PROCEED PAST THE INSPECTION POINT UNTIL THE JOINT INSPECTION HAS BEEN SUCCESSFULLY COMPLETED.

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

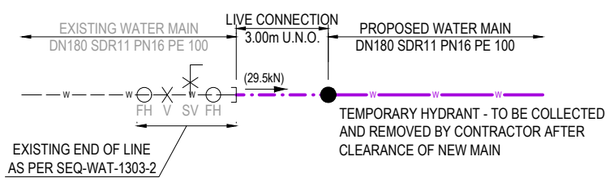
ALL WATER AND SEWERAGE CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORK HEALTH AND SAFETY ACT 2011. CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION. PHONE 1300 362 128

LIVE WORKS NOTES:

1. ALL WORK ON EXISTING WATER TO BE CARRIED OUT BY THE CONTRACTOR (IN ACCORDANCE WITH AN APPROVED NETWORKS ACCESS PERMIT) UNDER QUU SUPERVISION, AT THE DEVELOPERS EXPENSE.
2. PRE-CHLORINATED FITTINGS SHALL BE USED FOR ALL DRINKING WATER LIVE WORKS CONNECTIONS.



LIVE WORKS CONNECTION 1
1:100 (A1)
1:200 (A3)



LIVE WORKS CONNECTION 2
1:100 (A1)
1:200 (A3)

WATER RETICULATION NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND 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 AND MATERIALS LIST OR BE APPROPRIATELY SHOWN, LISTED AND DEFINED IN THE ENGINEERING SUBMISSION SO THAT THE ALTERNATIVE PRODUCT OR MATERIAL CAN BE ASSESSED AND IF APPROPRIATE, APPROVED BY THE SEQ-SP.
8. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING No. SEQ-WAT-1410-1.
9. 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.
10. THE DESIGN HAS BEEN UNDERTAKEN TO COMPLY WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE AND QUU STANDARDS.
11. CONSTRUCT EMBEDMENT AND TRENCHFILL TO SEQ-WAT-1200-2, 1201-1 TO SEQ-WAT-1204-1 ANS COUNCIL STANDARDS FOR ROADWAY CROSSINGS, WHICHEVER IS MORE ONEROUS.
12. PROVIDE BULKHEADS/TRENCHSTOPS IN ACCORDANCE WITH SEQ WATER SUPPLY CODE TABLE 7.5 AND SEQ-WAT-1209-1 AND 1210-1.
13. CONSTRUCT THRUST BLOCKS ON ALL VALVES, BENDS, TEES, TAPERS, DEAD ENDS, AND TRANSITIONS TO UNRESTRAINED PIPEWORK TO SEQ-WAT-1205-1 AND 1206-1.
14. CONSTRUCT SMALL DIAMETER PROPERTY SERVICES TO SEQ-WAT-1107-1 AND 1107-3.
15. INSTALL DETECTABLE MARKER TAPE ON ALL WATER MAINS AND PROPERTY SERVICES.
16. CONSTRUCT FIRE HYDRANTS AND STOP VALVES TO SEQ-WAT-1301-1, 1302-1, 1303-2, 1305-1, 1306-1 AND 1409-1.
17. CONSTRUCT SCOURS TO SEQ-WAT-1307-2 WHERE NECESSARY. SCOURS WITHIN IPSWICH CITY COUNCIL REGION MUST DISCHARGE INTO AN OPEN STORMWATER GULLY PIT, NOT TO THE INVERT OF KERB AND CHANNEL. DISCHARGE TO KERB AND CHANNEL VIA A STANDARD KERB ADAPTOR THROUGH THE FACE OF THE KERB IS NOT ACCEPTED BY QUEENSLAND URBAN UTILITIES.
18. INSTALL PAVEMENT MARKERS TO SEQ-WAT-1300-1 AND 1300-2.
19. CONSTRUCT TEST POINTS TO SEQ-WAT-1410-1 AT THE ENDS OF ALL NEW MAINS BEFORE THE SCOUR AND WHERE REQUIRED FOR COMMISSIONING PURPOSES. QUEENSLAND URBAN UTILITIES PREFERENCE IS TO AVOID TAPPING BANDS FOR TEST POINTS AND PROVIDE EITHER A TEMPORARY DUCKFOOT HYDRANT ORFLANGED SHORT PIPE WITH A TEMPORARY TAPPED BLANK FLANGE. TESTING AGAINST LIVE MAINS AND VALVES IS NOT PERMITTED.
20. TESTING LOCATIONS AND TEMPORARY FITTINGS ARE REQUIRED ON SERVICES OVER 10M LONG UNLESS APPROVED IN WRITING FOR WORKS TO BE UNDERTAKEN AS LIVE WORKS. TESTING AND AS -CONSTRUCTED REQUIREMENTS TO BE DOCUMENTED ON DRAWINGS.
21. 316SS BACKING RINGS SHALL BE USED WITH FULL-FACE PE FLANGES. PE STUB-FLANGES ARE NOT ACCEPTED.WHEN JOINING TO EXISTING UNRESTRAINED PIPELINES, PROVIDE A DICL SHORT PIPE WITH THRUST FLANGE AND THRUST BLOCK. BOLT ON UNI FLANGES SHALL NOT BE USED AS THRUST FLANGES. THRUST (PUDDLE) FLANGES SHALL BE AN APPROVED PREFABRICATED DICL/MSCL SHORT PIPE WITH PREFABRICATED THRUST FLANGE.
22. AC MAINS SHALL BE REPLACED COLLAR-COLLAR.
23. ALL DISUSED SERVICES SHALL BE PLUGGED AT THE MAIN AND FERRULE CLOSED OR TAPPING BAND REMOVED AND SECTION OF MAIN SUBSTITUTED AS LIVE WORKS. LARGE DIAMETER SERVICES SHALL BE DISUSED BY REMOVING ANY PROPERTY SERVICE PIPEWORK AT THE POINT OF CONNECTION TO THE MAIN, AND INSTALLING A BLANK FLANGE DIRECTLY ON THE TEE.
24. PROVIDE DN40PE (OR DN32 CU) WATER SERVICES FOR ROAD CROSSINGS SERVICING TWO DWELLINGS. PROVIDE DN32PE (OR DN25 CU) WATER SERVICES FOR ROAD CROSSINGS SERVICING A SINGLE DWELLING. IF THE LONG TERM STATIC HEAD OF THE PROPERTY SERVICE IS LESS THAN 350 kPA (35m) OR IF PRIVATE BOOSTER IS REQUIRED, THE MINIMUM SIZE OF PROPERTY SERVICE SHALL BE 32mm ID.

ENVIRONMENTAL CONDITIONS

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 AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
C. TREE ROOTS SHALL BE TUNNELED 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 AND 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.

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 AND COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:2000 / 1:4000 — 20 0 20 40 60 80 100 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744
PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK
DRAWING TITLE: WATER RETICULATION COVER PLAN
PROJECT No.: 19-0023
DRAWING No.: 306
REVISION: B

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED WATER CONDUIT
- EXISTING WATER CONDUIT
- HIGH POINT / LOW POINT
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- EXISTING TELECOMMUNICATION CABLE U/G
- EXISTING TELECOMMUNICATION CABLE O/H
- EXISTING FIBRE OPTIC CABLE U/G
- EXISTING GAS MAIN
- EXISTING ROOFWATER DRAINAGE PIPE
- PROPOSED SEWER MAIN
- EXISTING SEWER MAIN
- EXISTING ELECTRICAL CABLE U/G
- EXISTING ELECTRICAL CABLE O/H

WARNING! - EXISTING SERVICES

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

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

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

WATER FITTINGS LEGEND

PROPOSED:

- FIRE HYDRANT
- ISOLATION VALVE
- DEAD END

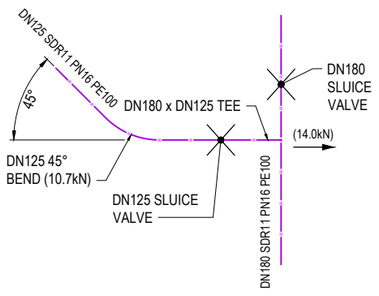
EXISTING:

- FIRE HYDRANT
- ISOLATION VALVE
- DEAD END
- REDUCER
- SCOUR VALVE AND ASSEMBLY
- TEST POINT

NOTE:
MARKERS FOR PROPERTY SERVICES SHALL BE IN ACCORDANCE WITH SEQ-WAT-1106-1108. MARKERS FOR WATER MAIN CROSSINGS, HYDRANTS AND VALVES SHALL BE IN ACCORDANCE WITH SEQ-WAT-1300-1

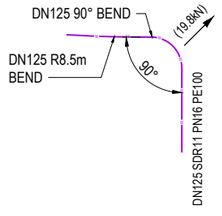
AS CONSTRUCTED LEGEND

- WATER MAIN
- WATER CONDUIT
- FIRE HYDRANT
- ISOLATION VALVE
- WATER METER
- DEAD END



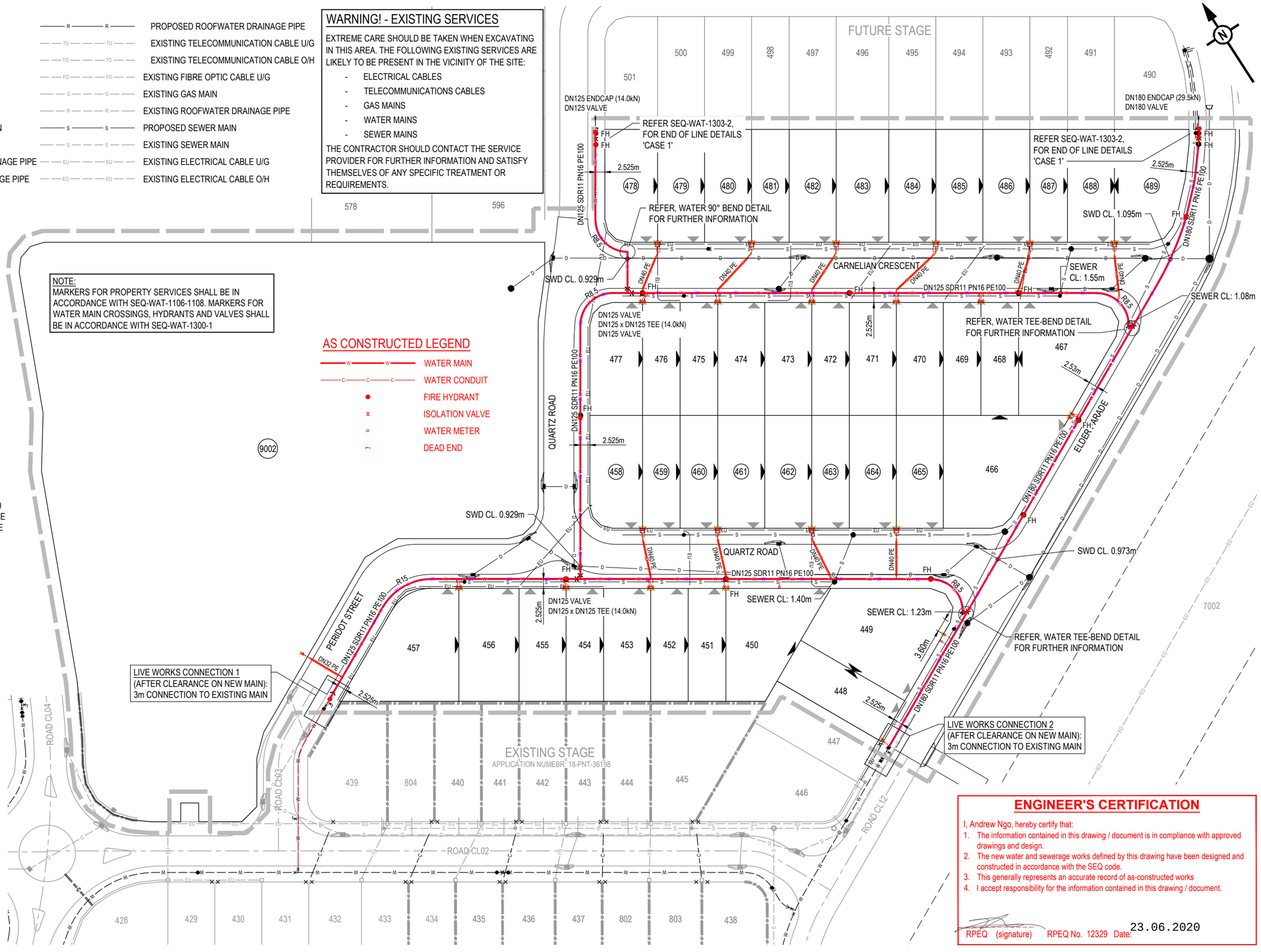
WATER TEE-BEND DETAIL

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



WATER 90° BEND DETAIL

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



ENGINEER'S CERTIFICATION

I, Andrew Ngo, hereby certify that:

1. The information contained in this drawing / document is in compliance with approved drawings and design.
2. The new water and sewerage works defined by this drawing have been designed and constructed in accordance with the SEQ code.
3. This generally represents an accurate record of as-constructed works
4. I accept responsibility for the information contained in this drawing / document.

RPEQ (signature) RPEQ No. 12329 Date: 23.06.2020

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	05.12.19	AC	SC	ISSUED FOR CONSTRUCTION
B	05.06.20	TD	SC	AS CONSTRUCTED

DRAWN: SC
DESIGN: TD
STATUS: AS CONSTRUCTED
APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO. 36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: WOODLINKS VILLAGE - STAGE 16
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: WATER RETICULATION LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
19-0023	307	B

NOTES

1. INSTALL PIT AND PIPE INFRASTRUCTURE TO NBN Co SPECIFICATION AND STANDARDS. NBN Co PIT AND CONDUIT INFRASTRUCTURE GUIDE LINES FOR DEVELOPERS CAN BE FOUND ONLINE AT http://www.nbnco.com.au/industry/new-developments.html

2. PIT AND PIPE INFRASTRUCTURE TO BE INSPECTED BY NBN Co AFTER INSTALLATION.

3. INSTALL P23 LEAD-IN PIPES FROM PIT TO PROPERTY ENTRY POINT AND PLUG.

4. ALL CONDUITS TO BE INSTALLED IN JOINT USE TRENCH UNLESS DETAILED OTHERWISE.

5. ALL MATERIALS SHALL BE TO NBN Co SPECIFICATION. ALTERNATIVES WILL ONLY BE ACCEPTED IF AGREED TO IN WRITING BY NBN Co.

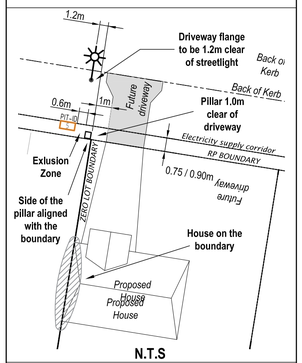
6. THE LOCATION OF PIT AND PIPE INFRASTRUCTURE SHALL ALSO COMPLY WITH THE REQUIREMENTS OF ENERGEX.

7. CONSTRUCTOR TO CONFIRM FINAL LOCATION OF PROPOSED DRIVEWAYS AND SERVICES PRIOR TO CONSTRUCTION. NBN Co PITS TO BE INSTALLED CLEAR OF DRIVEWAYS & OTHER SERVICES INCLUDING ALL PROPOSED.

LEGEND

- EXISTING TELSTRA UG CABLE
- EXISTING AERIAL CABLE
- TELSTRA PLANT IN SHARED UTILITY TRENCH
- PROPOSED NBN UNDERGROUND CONDUIT IN SHARED UTILITY TRENCH
- PIT-ID 7 — Service Drop Access Pit (650mmX280mmX565mm)
- PIT-ID 5 — Network Boundary/Local Network Pit (Single Lid) (700mmX450mmX650mm)
- PIT-ID 2 — Distribution/Local Network Connection Pit (1360mmX555mmX860mm)
- PIT-ID 1 — Fibre Distribution Hub (FDH) Pit (2000mmX555mmX900mm)
- Existing Telstra manhole
- Existing Telstra Pit (2,3,4,5,6,7,8,9)
- Telstra exchange
- Example of Telstra Major Conduit Layout with Proposed duct marked to be used by NBN
- PCD — Premise Connection Device (PCD)
- FAN — Fan Access Node site (FAN)
- 138A — Multi Dwelling Unit (MDU)

PILLARS / PITS ON ZERO LOT BOUNDARIES



N.T.S

REQUIREMENTS FOR ELECTRICAL, GAS & COMMUNICATIONS

The proposed pillar shall be offset at the zero lot boundary with the side of the pillar being aligned with the lot boundary in order to provide a 1.0m minimum clearance from the future driveway.

A proposed streetlight shall be offset 1.2m from the flange of the future driveway.

COMMUNICATIONS PITS are to remain outside 600mm pillar exclusion zone shall not clash with future driveways

GAS SERVICE TEE-OFFS are to remain outside 600mm pillar exclusion zone where a pillar is offset to align on one side with the boundary peg

DO NOT CONSTRUCT ANY CONCRETE DRIVEWAYS OR CROSSOVERS UNTIL ELECTRICAL & COMMUNICATIONS WORKS ARE COMPLETED

Told to install at 2% and that the retaining wall was getting lifted

SDU Development Information	
Development Name: 246 Collingwood Dr, Collingwood Park QLD 4301	
Developer Company: Camberra Estates Consortium No. 36	
Development Address: 246 Collingwood Dr, Collingwood Park QLD 4301	
Authorised Rep: Ampflo Pty Ltd Phone: 0733729280 E-Mail: comms@ampflo.com.au	
nbn Reference Number: STG	Stage Number: 16 Design Revision: C

STAGE 16

PREFERRED GARAGE LOCATION

ALTERNATIVE GARAGE LOCATION

GENERAL NOTES

1. PATHWAYS TO BE NBN FIBRE READY.
2. PITS AND CONDUITS INDICATIVE LOCATIONS.
3. CIVIL CONTRACTOR TO ARRANGE INSTALLATION OF JOINT USE TRENCH CONDUITS FOR ROAD CROSSINGS.
4. ELECTRICAL CONTRACTOR TO ARRANGE INSTALLATION OF JOINT USE TRENCH CONDUITS, PITS AND LEAD-INS.
5. PITS ARE NOT TO BE INSTALLED IN VEHICULAR DRIVEWAYS.

AS CON
8 Apr 2020
Sullivan Underground Services
Aiden Harte

BILL OF MATERIAL

NO OF LOTS: 46

PITS SIZE	PITS QTY	DUCTS SIZE	DUCTS QTY	DUCTS MTRS
2	0	P100	16	450.4
5	22 ✓	P50	9	257.1
6	✗ 1	P20	46	461.3
8	✗ 1			
9	0			

TOTAL NUMBER OF PITS: 24 ✓
TOTAL NUMBER OF MANHOLES: 0
TOTAL NUMBER OF CONDUITS: 71
TOTAL LENGTH OF CONDUITS: 1168.8

Total rod & rope - 746.5

TO BE BUILT IN CONJUNCTION WITH ELECTRICAL DESIGN A191623

DIAL BEFORE YOU DIG www.1100.com.au

REV	DATE	DRAFTER	DESCRIPTION	APPROVED
-				
-				
-				
-				
-				
C	14.11.19	JB	Additional duplex added	CR
B	22.10.19	JB	Revised design due to changes in electrical plan affecting road crossings	CR
A	30.08.19	MS	Initial Design	CR

STRICTLY CONFIDENTIAL

NBNCO APPROVAL RECORD:

	SIGNATURE	DATE
DD		
WD		
AB		

QUALITY RECORD :

NBNCO DISCLAIMER

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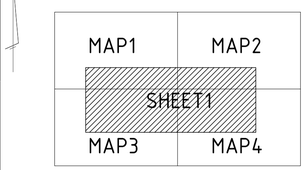
Australia's broadband network

ampflo
ABN 28 111 423 842
Electrical and Telecommunications Consultants
07 3372 9280 · projects@ampflo.com.au
ampflo.com.au

KEY PLAN



DRAWING TITLE:
NATIONAL BROADBAND NETWORK
246 Collingwood Dr
Collingwood Park
QLD 4301

ENABLE#:		
STATE:	REGION:	
FSA:	SAM:	ADA:
PROJECT No:	191623	
CADREF No:	T191623	
SCALE 1:400	SHEET No. 1 OF 1	REV. C

LEGEND

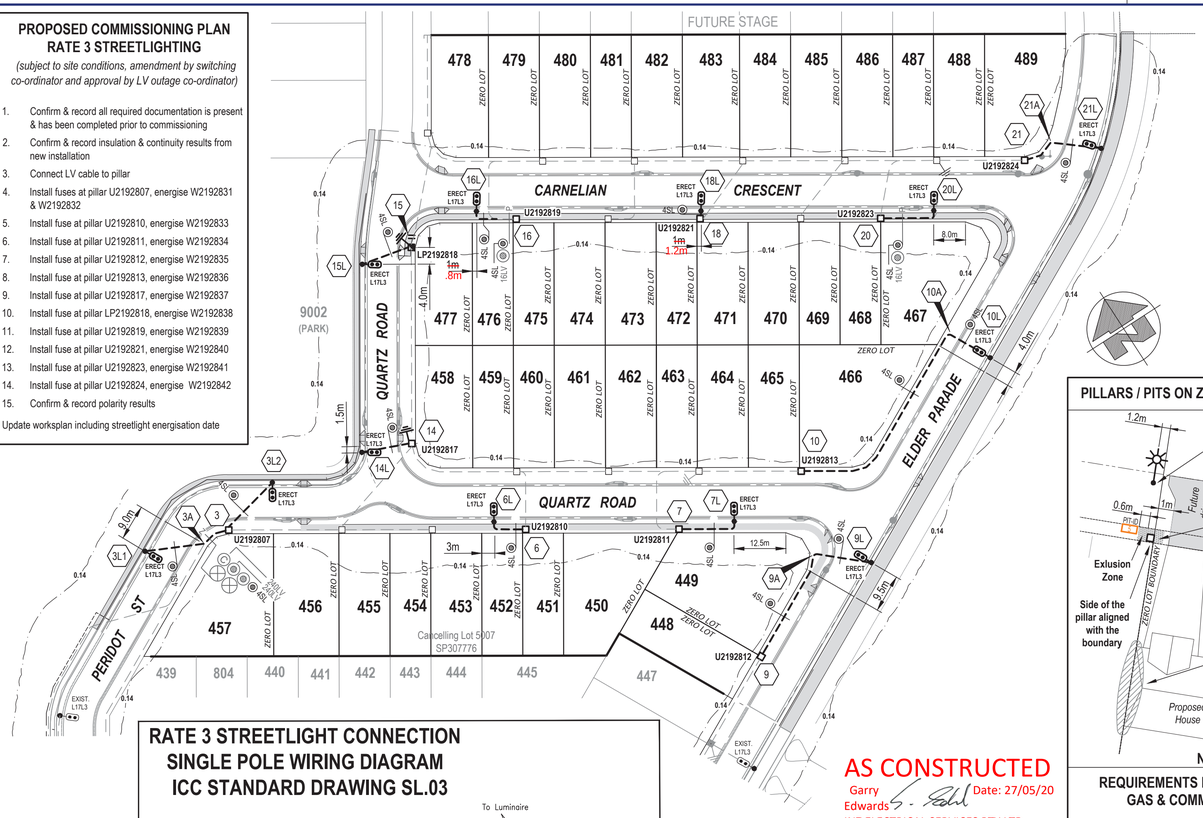
EXISTING OVERHEAD CABLE
PROPOSED OVERHEAD CABLE
EXISTING UNDERGROUND CABLE
PROPOSED UNDERGROUND CABLE
PROPOSED ELECTRICAL SERVICE CONDUIT
PROPOSED ELECTRICAL & COMMUNICATION SERVICE CONDUITS
POLE TRANSFORMER
PADMOUNT TRANSFORMER
HV POLE
HV / LV POLE
LV POLE
HV UNDERGROUND POLE TERMINATION
LV UNDERGROUND POLE TERMINATION
AERIAL STAY
GROUND STAY
EARTH
EXISTING PILLAR
PROPOSED PILLAR
COMMERCIAL PILLAR
LINK PILLAR
CONDUIT / CABLE CROSS-SECTION
EXISTING L17 STREET LIGHT
PROPOSED L17 STREET LIGHT
ISOLUX LINE

PROPOSED COMMISSIONING PLAN
RATE 3 STREETLIGHTING

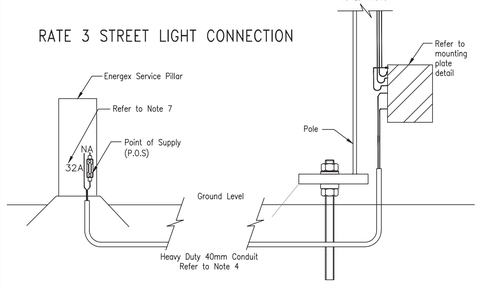
(subject to site conditions, amendment by switching co-ordinator and approval by LV outage co-ordinator)

1. Confirm & record all required documentation is present & has been completed prior to commissioning
2. Confirm & record insulation & continuity results from new installation
3. Connect LV cable to pillar
4. Install fuses at pillar U2192807, energise W2192831 & W2192832
5. Install fuse at pillar U2192810, energise W2192833
6. Install fuse at pillar U2192811, energise W2192834
7. Install fuse at pillar U2192812, energise W2192835
8. Install fuse at pillar U2192813, energise W2192836
9. Install fuse at pillar U2192817, energise W2192837
10. Install fuse at pillar LP192818, energise W2192838
11. Install fuse at pillar U2192819, energise W2192839
12. Install fuse at pillar U2192821, energise W2192840
13. Install fuse at pillar U2192823, energise W2192841
14. Install fuse at pillar U2192824, energise W2192842
15. Confirm & record polarity results

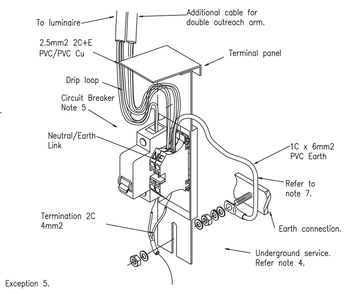
Update workplan including streetlight energisation date



RATE 3 STREETLIGHT CONNECTION
SINGLE POLE WIRING DIAGRAM
ICC STANDARD DRAWING SL.03



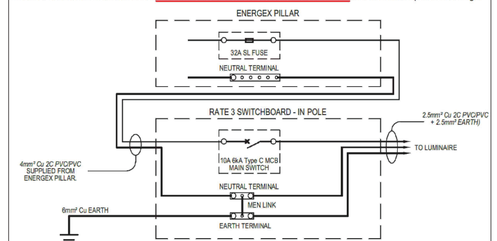
CROSS SECTION
(N.T.S)



MOUNTING PLATE DETAIL
(N.T.S)

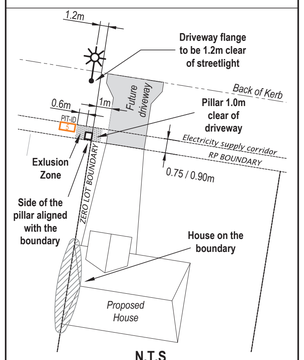
NOTES
1. All dimensions shown are in mm.
2. Dimensions shown are minimum only.
3. RCD protection on lighting final subcircuit not required as per Ipswich City Council risk assessment and AS3000 2.6.3.2.1 Exception 5.
4. Cable shall be a minimum of 4sqmm XLPE/TPE Cu and suitable for underground installation.
5. Circuit breaker type and rating shall be determined by the designer. Circuit breaker ratings depicted on the drawings are indicative only. To be labelled as "MAIN SWITCH".
6. Include drip loops of nominal 100mm radius.
7. Provide tag 'MAIN EARTH – DO NOT DISCONNECT".
8. Fuse rating indicative only.
9. Provide drip plate above the circuit breaker in the pole.
10. Use conductivity grease for screwed and bolted electrical connections.

Electrical Contractor is to label the MCB in each minor road terminal panel as **"Main Switch"**
Electrical Contractor is to install a label **"WARNING RCD PROTECTION NOT INSTALLED"** near the terminal panel at each light



RATE 3 SINGLE LIGHT SWITCHBOARD FROM PILLAR DIRECT - TYPICAL DETAIL
STATIONS: 3L1, 3L2, 6L, 7L, 9L, 10L, 14L, 15L, 16L, 18L, 20L & 21L

PILLARS / PITS ON ZERO LOT BOUNDARIES



N.T.S

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COMMUNICATIONS PITS
are to remain outside 600mm pillar exclusion zone
shall not clash with future driveways

GAS SERVICE TEE-OFFS
are to remain outside 600mm pillar exclusion zone where a pillar is offset to align on one side with the boundary peg

STREET LIGHTING CERTIFICATION
PERIDOT ST, QUARTZ RD, ELDER PDE & CARNELIAN CRES - P4

1. THE ILLUMINANCE LIGHT TECHNICAL PARAMETERS COMPLY WITH THE RECOMMENDATIONS OF AS/NZS 1158.3.1 CAT P4 ROADWAYS & PATHWAYS
2. THE LIGHT LOSS FACTOR OF 0.75 FOR MINOR ROADWAY LUMINAIRES IS BASED ON THE CLIENTS CURRENT PRACTICE & IS IN ACCORDANCE WITH AS/NZS1158
3. PHOTOMETRIC DATA WAS PROVIDED BY MANUFACTURER. SOFTWARE USED FOR CALCULATIONS IS PERFECT LITE
4. CALCULATIONS ARE SUBJECT TO ACCURACIES AND TOLERANCES NOMINATED IN AUSTRALIAN AND NEW ZEALAND STANDARDS AS/NZS 3827.1:1998 AND AS/NZS 3827.2:1998.

Cornel Radu
RPEQ 17404
2019.10.24 15:02:20 +10'00'
RPEQ

APPROVED FOR CONSTRUCTION

URD CIVIL WORKS SCHEDULE - ROADWAYS
(BY CIVIL CONTRACTOR)

LOCATION	STATIONS FROM-TO	NUMBER OF CONDUITS x CONDUIT LENGTH (m)	PVC CABLE PROTECTION (m)			X-SECTION (m)			KERB MARK	REMARKS
		40mm HD	150mm	200mm	300mm	EXCAV TAPE	TRENCH DETAIL	MIN. COVER		
PERIDOT STREET	3A - 3L1	15	15			15		0.75	2	
	3 - 3L2	15	15			15		0.75	2	
ELDER PARADE	9A - 9L	15	15			15		0.75	2	
	10A - 10L	13	13			13		0.75	2	
QUARTZ ROAD	14 - 14L	14	14			14		0.75	2	
	15 - 15L	14	14			15		0.75	2	
ELDER PARADE	21A - 21L	13	13			13		0.75	2	
TOTALS		99	99			100			14	

(C) = COMMUNICATIONS CONDUIT: WHITE MEDIUM DUTY PVC

URD CIVIL WORKS SCHEDULE - FOOTPATHS
(BY ELECTRICAL CONTRACTOR)

LOCATION	STATIONS FROM-TO	NUMBER OF CONDUITS x CONDUIT LENGTH (m)	PVC CABLE PROTECTION (m)			X-SECTION (m)			KERB MARK	REMARKS
		40mm HD	150mm	200mm	300mm	EXCAV TAPE	TRENCH DETAIL	MIN. COVER		
PERIDOT STREET	3A - 3	6				6		0.6		
QUARTZ ROAD	6 - 6L	9	3			9		0.6		
	7 - 7L	14	3			14		0.6		
ELDER PARADE	9 - 9A	28				28		0.6		
	10 - 10A	49				49		0.6		
CARNELIAN CRES.	16 - 16L	11	3			11		0.6		
	18 - 18L	3	3			3		0.6		
	20 - 20L	14	3			14		0.6		
ELDER PARADE	21 - 21A	6				6		0.6		
TOTALS		140	15			140				

(C) = COMMUNICATIONS CONDUIT: WHITE MEDIUM DUTY PVC

UNDERGROUND CABLE SCHEDULE

LOCATION	STATIONS FROM-TO	EXIST	REC	INSTALL	STREET LIGHT 16mm² TWIN + EARTH	STREET LIGHT 4mm² TWIN + EARTH	REMARKS
PERIDOT STREET	3 - 3L1			✓		26	
	3 - 3L2			✓		20	
QUARTZ ROAD	6 - 6L			✓		14	
	7 - 7L			✓		18	
ELDER PARADE	9 - 9L			✓		48	
QUARTZ ROAD	10 - 10L			✓		65	
	14 - 14L			✓		19	
	15 - 15L			✓		19	
CARNELIAN CRES.	16 - 16L			✓		16	
	18 - 18L			✓		8	
	20 - 20L			✓		18	
ELDER PARADE	21 - 21L			✓		25	
TOTALS						296	

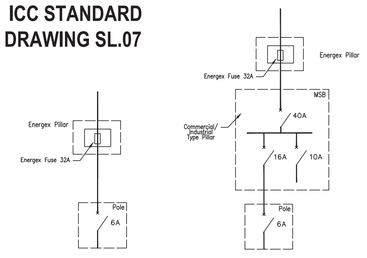
CONTRACTOR TO CONFIRM ACTUAL CABLE LENGTHS ON SITE BEFORE ORDERING

STREET LIGHT SCHEDULE - RATE 3

LOCATION	STN NO.	POLE I.D.	POLE OR COMPONENTS: COMP I.D.	EXIST	REC	ERECT	STOCK CODE	ALIGN	LUMINAIRE: COMP I.D.	DATE DE-ENERG	ERECT: LUMIN	ERECT: CUST	DATE ENERGISED	STOCK CODE	OUTREACH BRACKET: EXIST (m)	REC (m)	ERECT (m)	STOCK CODE	MOUNT HEIGHT (m)	REMARKS
PERIDOT STREET	3L1	W2192831	P01			4.5m EST	SLNOS3CI 1.02	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	3L2	W2192832	P01			4.5m EST	SLNOS3CI	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
QUARTZ ROAD	6L	W2192833	P01			4.5m EST	SLNOS3CI .83	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	7L	W2192834	P01			4.5m EST	SLNOS3CI	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
ELDER PARADE	9L	W2192835	P01			4.5m EST	SLNOS3CI .94	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	10L	W2192836	P01			4.5m EST	SLNOS3CI .95	0.85 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
QUARTZ ROAD	14L	W2192837	P01			4.5m EST	SLNOS3CI .87	0.85 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	15L	W2192838	P01			4.5m EST	SLNOS3CI	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
CARNELIAN CRESCENT	16L	W2192839	P01			4.5m EST	SLNOS3CI	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	18L	W2192840	P01			4.5m EST	SLNOS3CI	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
	20L	W2192841	P01			4.5m EST	SLNOS3CI .87	0.95 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE
ELDER PARADE	21L	W2192842	P01			4.5m EST	SLNOS3CI .93	0.85 IOK	SL1		L17L3	IPSW		SLEDGL01715			0.5		5.1	BLACK AVENUE

IOK = INVERT OF KERB

ICC STANDARD DRAWING SL.07



SINGLE LINE DIAGRAM SINGLE POLE INSTALLATION (N.T.S)

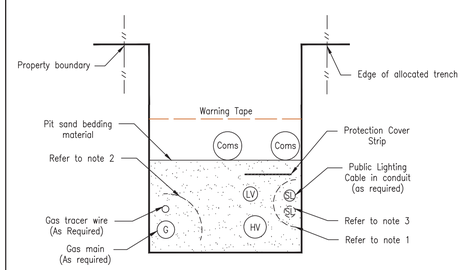
SINGLE LINE DIAGRAM MAIN SWITCHBOARD AND MULTIPLE POLES INSTALLATION (N.T.S)

BILL OF MATERIALS

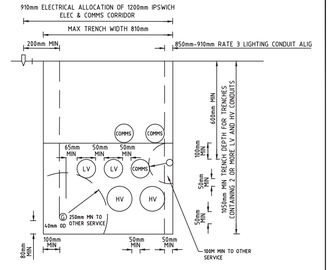
RATE 3 LIGHTING

DESCRIPTION	QTY	MTRS	REMARKS
40mm HD electrical conduit	1	210	
4mm² twin + earth	N/A	296	
AVENUE + L17 LUMINAIRE	12	N/A	BLACK
INSTALL IN COMMON TRENCH WITH ELECTRICAL			
ADDITIONAL STAND ALONE TRENCHING = 85m			

ICC STANDARD DRAWING SL.08



TYPICAL TRENCH CROSS SECTION
(N.T.S)



TYPICAL RATE 3 PIT SERVICES COORDINATION DETAIL (N.T.S)

NOTES
1. Minimum of 100mm separation to be maintained between street light conduits and other services.
2. Minimum of 250mm separation to be maintained between Gas Pipes and other services.
3. Additional 100mm street light conduit to be installed where required.
4. Circuit breaker type and rating shall be determined by the designer. Circuit breaker ratings depicted on the drawings are indicative only.
5. Number of circuits as required for project plus 50% spare for each switchboard
6. Fuse rating indicative only.

DRAWING INDEX

Woodlinks Village

ISSUE	REVISION	BY	DATE
A	Initial Design	av	30.08.19
B	Streetlights relocated due to new civils	av	08.11.19
C	Amendments as per ICC	av	21.01.20

NOTES

This Works Plan is to be constructed in compliance with Energex documents:
- Overhead Construction Manual
- Underground Distribution Construction Manual
- Public Lighting Construction Manual
- Network Labelling and Signage Manual

The Construction Contractor is to manage this project and submit 'As Constructed' drawings and the Certificate of Completion to Energex.

CROSS ROAD CONDUITS
Unless specified the Civil Contractor will install all cross road conduits.

EARTHING
Earthing is to be carried out in accordance with Energex requirements.

TELECOMMUNICATION INSTALLATION
Telecommunication conduits to be laid in shared trenches with electricity conduits. The Civil/ Electrical Construction Contractor is to notify the Telstra Contractor one week prior to installation of cross road conduits and two days prior to installation of footpath conduits for Telstra Pit and Pipe designs.

FIRE ANTS
The Construction Contractor is to confirm if this work site is within a Fire Ant Restricted Area. For work sites within a Fire Ant Restricted area the Contractor must comply with a DPI Approved Risk Management Plan.

UNDERGROUND SERVICES IDENTIFICATION
WORK CREWS TO CONFIRM LOCATION OF ALL EXISTING SERVICES PRIOR TO EXCAVATION - ANY SERVICES SHOWN ARE INDICATIVE ONLY

ALIGNMENTS	
ENERGEX OH	EXISTING
ENERGEX UG	0 - 0.9m
STREET LIGHTS	0.85 & 0.95 IOK
DESIGNED	A. Vihnal
CHECKED	C. Radu
DATE	August 2019

APPROVED ON BEHALF OF AMPFLO PTY LTD
Cornel Radu
RPEQ 17404
2019.10.24 15:01:49 +10'00'

SCALE
-15 -7.5 0 7.5 15 22.5 30 37.5m
1 : 750 (A1)
Do not scale from this drawing - use only the dimensions provided

COUNCIL REFERENCE
IPSWICH CITY COUNCIL: 4208/2015/CA

CIVIL ENGINEER
Peak Urban
Ph. 5413 5300

SURVEYOR
SAUNDERS HAVILL GROUP
1300 123 744

ampflo
ABN 28 111 423 842
Electrical and Telecommunications Consultants
07 3372 9280 · projects@ampflo.com.au
ampflo.com.au

PROJECT
WOODLINKS VILLAGE - STAGE 16
246 COLLINGWOOD DR, COLLINGWOOD PARK 4301
Lots 448 - 489 (42 lots) & 5007
Cancelling Lot 5007 on SP307776

CLIENT
Canberra Estates Consortium No 36 Pty Ltd

ampflo

RATE 3 STREETLIGHTING

ENERGEX NO
S2601534

DRAWING NO
R191623 1 OF 2

ISSUE
C

LEGEND

EXISTING OVERHEAD CABLE

PROPOSED OVERHEAD CABLE

EXISTING UNDERGROUND CABLE

PROPOSED UNDERGROUND CABLE

E — PROPOSED ELECTRICAL SERVICE CONDUIT

E T — PROPOSED ELECTRICAL & COMMUNICATION SERVICE CONDUITS

POLE TRANSFORMER

C — PADMOUNT TRANSFORMER

HV POLE

HV / LV POLE

LV POLE

HV UNDERGROUND POLE TERMINATION

LV UNDERGROUND POLE TERMINATION

AERIAL STAY

GROUND STAY

EARTH

EXISTING PILLAR

PROPOSED PILLAR

COMMERCIAL PILLAR

LINK PILLAR

16LV — CONDUIT / CABLE CROSS-SECTION

EXISTING L17 STREET LIGHT

PROPOSED L17 STREET LIGHT

"0.14" — ISOLUX LINE

LIST OF STANDARD DRAWINGS

SL.01 List of Standard Drawings and Equipment Requirements

SL.02 Electrical, Project Documentation & Design Requirements

SL.03 Single Pole Wiring Diagram

~~SL.04 Two Pole Wiring Diagram - DELETED~~

SL.05 Multiple Pole Installation with Unmetered 3 Phase Supply

~~SL.06 Multiple Pole Installation with Metered 3 Phase Supply - DELETED~~

SL.07 Single Line Diagram & Conduit Installation Details

SL.08 Streetlight Reticulation Details

ABBREVIATIONS

NTS - not to scale

POS - point of supply

MCB - miniature circuit breaker

EQUIPMENT REQUIREMENTS

All streetlight and associated works are to be carried out in accordance with all legislative requirements and Australian Standards. The standards that will apply shall include but not be limited to:

- AS/NZS 1158
- AS/NZS 2053
- AS/NZS 3000
- AS/NZS 3008
- QLD Electrical Safety Act

The details contained within the standard drawings are to be read in conjunction with the Ipswich City Council (ICC) policy documents; Planning Scheme Policy 3 - General Works, and Planning Scheme Policy 2. Where there is a conflict of requirements then the Planning Scheme Policy documents shall take precedence over the drawings. All equipment shall be selected from ENERGEX or Department of Transport and Main Roads (DTMR) standard equipment.

Warranty for rate 3 streetlight equipment shall be vested with Ipswich City Council at the start of Off Maintenance period.

Ipswich City Council has mandated the use of the Light Emitting Diode (LED) luminaires. The LED luminaire type and associated street light equipment shall be installed as an Energex unmetered rate 3 type. Any luminaire approved for use must be fitted with a NEMA 7 pin socket and associated wiring. Terminal numbers 1 to 5 inclusive of the NEMA 7 pin socket are to have their respective connections made prior to installation. Terminals 6 and 7 of the NEMA 7 pin socket are to have fly leads connected prior to installation. The fly leads are to be 150 mm in length, matching existing wire type, different external colour and terminated with insulated end caps. All luminaires must be operated using a photoelectric (P.E.) cell installed on the luminaire. The external NEMA 7 pin socket must be installed to allow the matching P.E. cell plug connection. Where the NEMA 7 pin socket is not used for a P.E. connection it must be capped with a shorting cap to prevent material ingress.

AS CONSTRUCTED
Garry Edwards Date: 27/05/20
INZ ELECTRICAL SERVICES PTY LTD
97 ZILLMERE ROAD
BOONDALL 4034 QLD
PH 3865 2122 FAX 3865 4475

ELECTRICAL REQUIREMENTS

Any calculations shall use the nominal voltage value of 230/400 volts. All street light connections shall be balanced across the phases of the supply network.

The value of current draw to be used for cable size calculations and selection of circuit protection devices is to be based on the total rated load of each luminaire installed, including electronic losses, power factor, harmonics and inrush current.

Minimum cable sizes and insulation types are indicated in the drawings SL03 and SL05.

Provide larger separate earth cables where the integral earth conductor is not sufficient size to meet earth fault loop impedance requirements.

Preferred types and values of protection equipment are shown on associated standard drawings. cable sizes shall be checked for each proposed project for the following criteria:

1. Continuous current rating as per section 3 of AS 3008.
2. Limitation of voltage drop as per section 4 of AS 3008.
3. Short circuit performance as per section 5 of AS 3008.
4. Earth loop impedance as per appendix B of AS 3000.

Residual current devices (RCDs) shall not be installed for streetlight final subcircuits, in accordance with AS3000 2.6.3.2.1 exception 5 and Ipswich City Council risk assessment.

Select overcurrent/short circuit protective devices in accordance with as3000 to suit electrical load, prospective short circuit current and earth fault loop impedance.

Any changes in direction of conduit shall use a sweeping bend.

Provide pits for reticulation of electrical services as necessary. Pits shall be provided adjacent to poles to provide cable tee-off joints and at junctions and where conduit reticulation change direction. Generally, space the pits at maximum 50m intervals in local roads. This spacing may be greater in outer urban or rural subdivisions. Provide pit drainage to stormwater system or where not practicable to rubble pits.

ELECTRICAL ENERGISATION REQUIREMENTS

The Ipswich City Council as of July 2017 uses the Stanwell Corporation as the electricity retailer. Queries regarding connection of street light should be directed to the following email address:

Rate3StreetLights@ipswich.qld.gov.au

PROJECT DESIGN REQUIREMENTS

4.5m outreach arms size shall not be used for minor road installation. 4.5m outreach arms shall be permitted for major road lighting installation.

Where a project is to be constructed in more than one stage then the same style of equipment must be installed across all stages of the same project.

Where a project has been constructed then the same style of equipment must be installed across all subsequent stages of the same constructed project.

In urban developments, each street light shall be supplied directly from the nearest energex point of supply (i.e. LV pillar) unless approved by ICC. Multiple street lights fed from one supply will only be considered where there are no LV pillars. The number of street lights connected to a point of supply shall be determined by the designer based on the unique installation conditions that may be present.

ICC preference for developments with large frontages and significant distance between service pillar & streetlight locations is to supply multiple street lights from a main switchboard. Where an ICC MSB is utilized, a No.4 cable pit (with junction box, unfused) shall be located within 3mtrs of the base of each streetlight. Pits shall be aligned 125mm from property alignment (to ensure footpaths are not impacted).

HD conduits to be aligned at 870mm from property alignment. A maximum of 3 x 90 degree large radius sweep bends shall be used.

Provide durable and clearly visible permanently fixed weather proof Energex label to all rate 3 streetlights. Label shall be green back with white lettering "ICC3" to indicate a rate 3 Ipswich City Council site. Label shall be affixed on the light pole above the Energex site ID label. Refer Energex Public Lighting Manual for ID location.

Provide durable traffolyte label inside pole access hatch with words to the effect of: "WARNING RCD PROTECTION NOT INSTALLED".

Provide durable Energex type weather resistant permanently fixed 50mm high label to all ICC MSBs. Label shall be green back with white lettering with the MSB asset number, e.g. "ICC MSB XXXXXXXX" where XXXXXXXX is the service pillar supplying the MSB. Confirm asset numbering with ICC prior to installation.

Lighting supplied directly from the overhead network shall remain Rate 2.

PROJECT DOCUMENTATION REQUIREMENTS

Update all project documentation to be accurate and up to date for the as built installation.

All street light project documentation shall be provided in an agreed electronic format. The agreed electronic format shall allow the electronic transfer of all geospatial and all database information to the Ipswich City Council.

The unmetered rate 3 street light information shall also be made available to the distribution network service provider.

Provide full tabulated equipment schedules for streetlights, cables and equipment for the project.

All project documentation shall reference the following:

- ICC Public Lighting Standard Drawings (SL series)
- ICC Planning Scheme Policy
- Energex Public Lighting: Standard Conditions for Public Lighting Services
- Qld Public Lighting Design Manual (RED00767)
- Qld Public Lighting Construction Manual (RED00796)
- AS/NZS3000 Wiring Rules
- AS/NZS1158 Lighting for Roads & Public Spaces
- Manufacturer's installation requirements

Completion of the construction certificate for streetlights is required for the Ipswich City Council.

ENERGEX NOTES

1. Green 3" and "W" Site Identification Numbers (stickers), as per Energex drawings 1-3-6.1 and 1-3-62.2 for the Rate 3 Streetlight Poles, will be allocated upon written request to Energex. Please contact the Energex Subdivision and Street Lighting Department to arrange for collection of the stickers. Please email a request to subdivision@energex.com.au
2. An EWR is required for each Rate 3 supply point to advise Energex that the project is ready for connection to supply or alteration to a Point of Supply. The Rate 3 lighting shall not be connected to supply by the electrical contractor.
3. The Electrical contractor shall forward a full set of "As Constructed" drawings (signed & dated by the Electrical Contractor) to Energex's Subdivision & Streetlight Department when construction of the Rate 3 installation is completed. A copy of these "As Constructed" drawings is required to be located onsite in each switchboard for collection by Energex or the Rate 3 Installation will not be connected to supply.
4. Energex will commence billing for all the Rate 3 lights, shown on the works plan as connected to the switchboard, from the date that the switchboard is connected to supply.

APPROVED FOR CONSTRUCTION

DRAWING INDEX	
A191623-1	ELECTRICAL RETICULATION SITE PLAN
A191623-2	SCHEDULES
A191623-3	ELECTRICAL SCHEMATICS & LABELS
R191623-1	RATE 3 STREETLIGHTING - SITE PLAN
R191623-2	RATE 3 STREETLIGHTING - NOTES
T191623-1	TELECOMMUNICATION CABLE PROVISIONING SHEET 1

Woodlinks Village

ampflo

RATE 3 STREETLIGHTING GENERAL NOTES

ENERGEX NO S2601534

DRAWING NO R191623 2 OF 2

ISSUE C

ISSUE	REVISION	BY	DATE
A	Initial Design	av	18.12.18
B	Streetlights relocated due to new civils	av	08.11.19
C	Amendments as per ICC	av	21.01.20

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ALIGNMENTS	
ENERGEX OH	N/A
ENERGEX UG	0 - 0.9m
STREET LIGHTS	0.85 & 0.95 IOK
DESIGNED	A. Vihnal
CHECKED	C. Radu
DATE	December 2018

APPROVED ON BEHALF OF AMPFLO PTY LTD
Cornel Radu
RPEQ 17404
2019.10.24 15:01:49 +10'00'

SCALE
-15 -7.5 0 7.5 15 22.5 30 37.5m
1 : 750 (A1)
Do not scale from this drawing - use only the dimensions provided

COUNCIL REFERENCE
IPSWICH CITY COUNCIL:
4280/2015/CA

CIVIL ENGINEER
Peak Urban
Ph. 5413 5300

SURVEYOR
SAUNDERS HAVILL GROUP
1300 123 744

ampflo
ABN 28 111 423 842
Electrical and Telecommunications Consultants
07 3372 9280 · projects@ampflo.com.au
ampflo.com.au

PROJECT
WOODLINKS VILLAGE - STAGE 16
246 COLLINGWOOD DR, COLLINGWOOD PARK 4301
Lots 448 - 489 (42 lots) & 5007
Cancelling Lot 5007 on SP307776

CLIENT
Canberra Estates Consortium No 36 Pty Ltd