WOODLINKS VILLAGE - STAGE 9A

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 = 19
AREA OF SITE = 2.75 ha
RP DESCRIPTION LOT 1 ON SP 266990
DATUM LEVEL AND LOCATION P.M. 110122 RL 40.320 AHD
LOCAL AUTHORITY: IPSWICH CITY COUNCIL
COUNCIL REFERENCE NUMBER: 2558/2014/MAMC/C

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: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

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

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

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: COVER PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	100	C

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 150Ø DESIGNER TO SPECIFY 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: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

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A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
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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 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: GENERAL NOTES

PROJECT No.	DRAWING No.	REVISION
18-0175	101	C

NOTE:
CONTRACTOR TO INSTALL FENCE BRACKETS TO ALL SLEEPER RETAINING WALLS OTHER THAN THE LAST 3 POSTS ON SIDE BOUNDARIES TO LOTS 75 - 85.

NOTE:
REFER TO SURVEYORS AS CONSTRUCTED DRAWINGS PREPARED BY SUANDERS HAVILL FOR EARTHWORKS LEVELS

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.

AS-CONSTRUCTED CERTIFICATION

Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

TOE OF RETAINING WALL TO BE CONSTRUCTED +100mm FROM FSL. CONTRACTOR TO PLACE COMPACTED MATERIAL OVER FOOTING AND MAKE NEAT.

CONTRACTOR TO INSTALL TEXTURED AND COLOURED SLEEPERS TO LOT 214 RETAINING WALL.

CONTRACTOR TO INSTALL TEXTURED AND COLOURED SLEEPERS TO LOT 74 RETAINING WALL.

NOTE:
CONTRACTOR TO OBTAIN CONSENT FROM POWERLINK PRIOR TO COMMENCEMENT OF ANY WORKS WITHIN POWERLINK EASEMENT.

LEGEND

- PROPOSED AREA OF WORKS/STAGE BOUNDARY
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED EARTHWORKS PAD SETBACK LINE
- PROPOSED SLEEPER RETAINING WALL
- FUTURE SLEEPER RETAINING WALL
- EXISTING SLEEPER RETAINING WALL
- 24.60 PROPOSED FINISHED SURFACE LEVEL (FSL) (INCLUDES TOPSOIL PLACEMENT)
- 24.60 EXISTING SURFACE LEVEL
- PROPOSED AREA OF CUT
- PROPOSED AREA OF FILL
- INDICATIVE DRIVEWAY LOCATIONS
- ZERO LOT BOUNDARY
- EXISTING STORMWATER DRAINAGE PIPE
- EXISTING SEWERAGE MAIN
- EXISTING WATER MAIN
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G
- EXISTING ELECTRICAL CABLE O/H
- EXISTING GAS MAIN
- EXISTING DRAIN
- EXISTING TREE TO BE RETAINED - REFER VMP
- EXISTING TREE TO BE REMOVED - REFER VMP

AS CONSTRUCTED LEGEND

- 80.00 FINISHED SURFACE LEVEL
- CONCRETE SLEEPER RETAINING WALL

REFER SHEET 2 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.09.20	MG	MG	T.O.W. LEVELS ADDED TO INTERALLOTMENT SIDE WALLS AND PAD LEVELS AMENDED
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
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FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
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SCALE
1:500 1:1000 10 5 0 10 20 A1 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

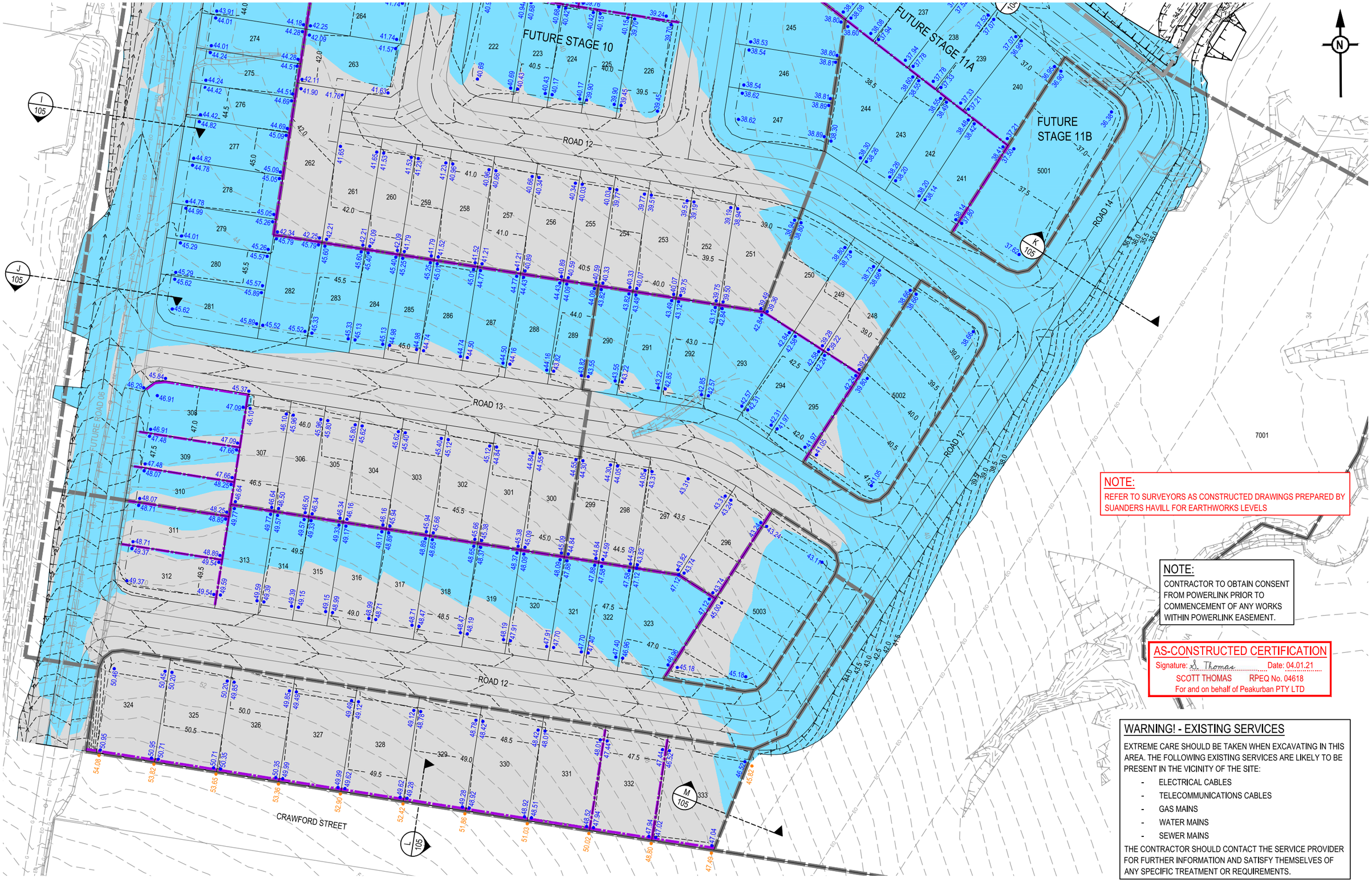
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
18-0175	102	D

REFER SHEET 1 FOR CONTINUATION



NOTE:
REFER TO SURVEYORS AS CONSTRUCTED DRAWINGS PREPARED BY SUANDERS HAVILL FOR EARTHWORKS LEVELS

NOTE:
CONTRACTOR TO OBTAIN CONSENT FROM POWERLINK PRIOR TO COMMENCEMENT OF ANY WORKS WITHIN POWERLINK EASEMENT.

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

WARNING! - EXISTING SERVICES

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- 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.

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DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

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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

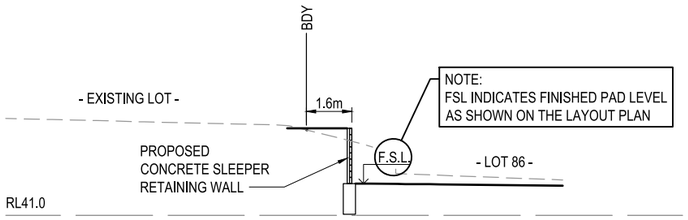
CLIENT: **CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED**

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2**

PROJECT No.	DRAWING No.	REVISION
18-0175	103	C



SECTION A
SCALE 1:100 (A1)
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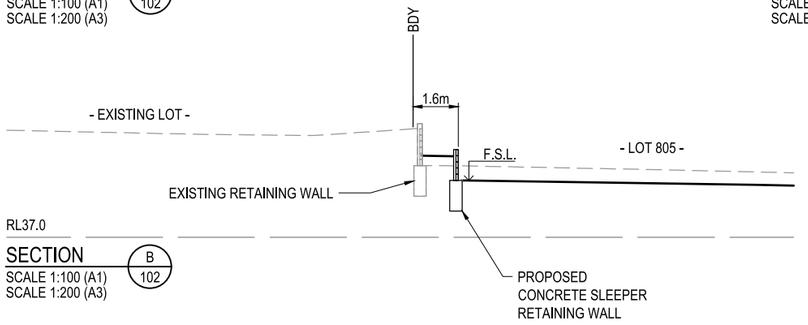
102



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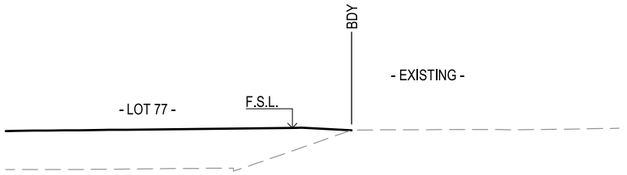

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SECTION C
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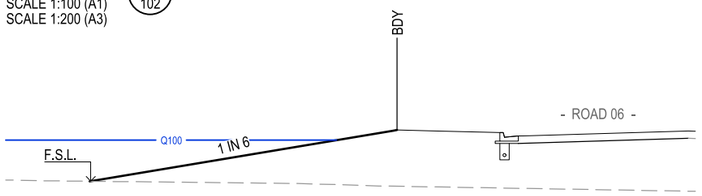

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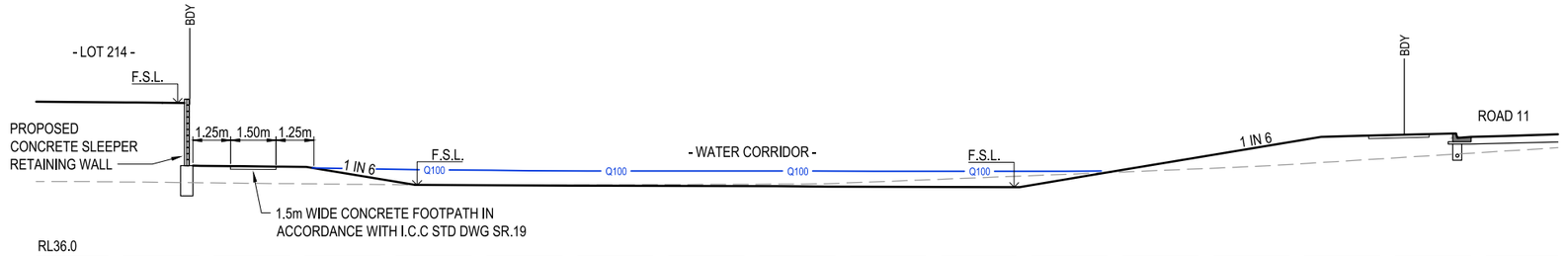
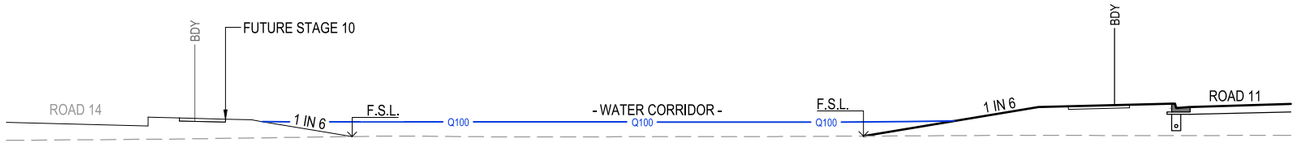


SECTION E
SCALE 1:100 (A1)
SCALE 1:200 (A3)
102



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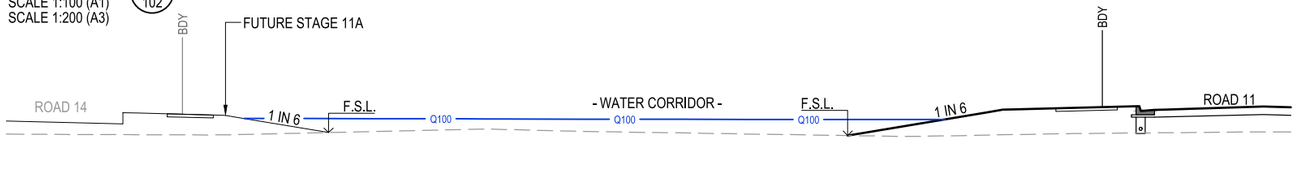
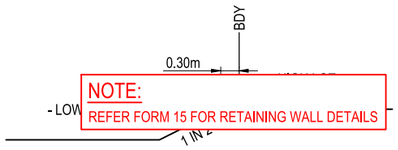
102



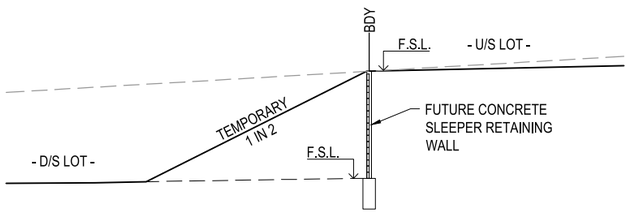
SECTION G
SCALE 1:100 (A1)
SCALE 1:200 (A3)
102

RETAINING WALL NOTES:

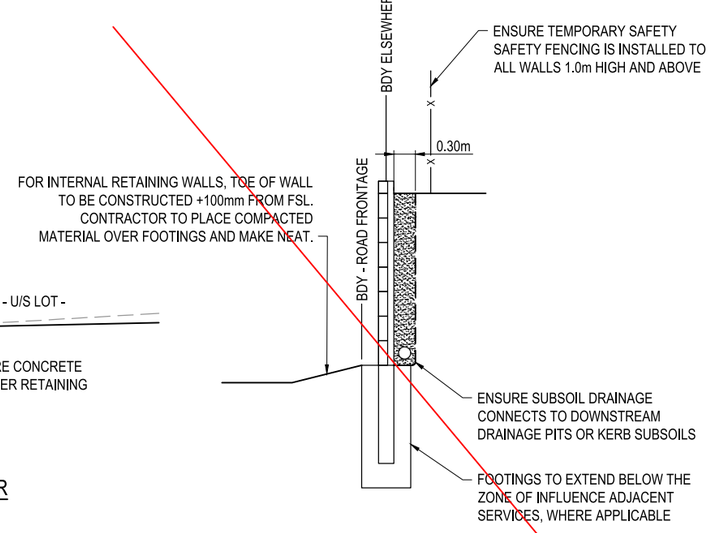
1. ALL RETAINING WALLS ARE TO BE STRUCTURALLY DESIGNED AND CERTIFIED. FORMS 15 AND 16 ARE TO BE PROVIDED.
2. DESIGN OF WALLS TO CONSIDER ALL LOADS (FENCES, DWELLINGS ETC) AND ASSOCIATED IMPACTS FROM ANY ADJACENT SERVICES - FOOTING DEPTHS TO BE EXTENDED AS REQUIRED.
3. GEOTECHNICAL CONDITIONS ARE TO BE CONFIRMED AND APPROPRIATELY CONSIDERED FOR ALL WALLS.
3. REFER LANDSCAPE DRAWINGS FOR FURTHER INFORMATION ON RETAINING WALLS, PARTICULARLY RELATING TO FINISHES.
4. TEMPORARY SAFETY FENCING TO BE INSTALLED BEHIND ALL WALLS 1.0m HIGH AND GREATER.
5. WALLS TO BE DESIGNED TO ACCOMMODATE A SURCHARGE SUITABLE FOR A RESIDENTIAL HOUSE IMMEDIATELY BEHIND THE WALL. REFER TYPICAL DETAIL.
6. STRUCTURAL CERTIFICATION TO BE PROVIDED FOR ALL RETAINING WALLS PRIOR TO CONSTRUCTION



TYPICAL STEP BETWEEN LOTS DETAIL
SCALE 1:50 (A1)
SCALE 1:100 (A3)



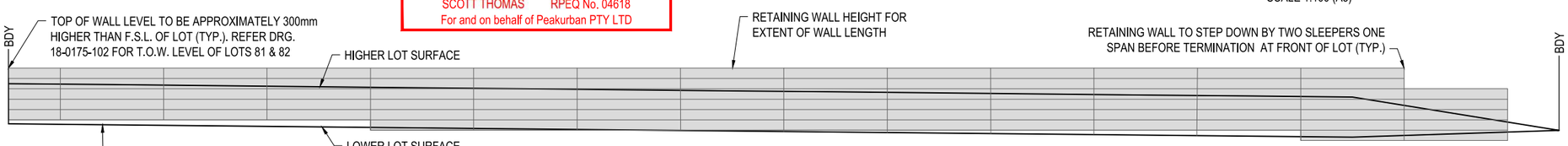
INTERIM EARTHWORKS BATTER
SCALE 1:50 (A1)
SCALE 1:100 (A3)



CONCRETE SLEEPER RETAINING WALL
TYPICAL DETAIL
SCALE 1:25 (A1)

TOE OF RETAINING WALL
TO BE CONSTRUCTED +100mm FROM FSL.
CONTRACTOR TO PLACE TOPSOIL OVER
FOOTING AND MAKE NEAT.

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD



TYPICAL INTER-ALLOTMENT WALL HEIGHT DETAIL OF LOT 81 & 82
SCALE 1:50 (A1)
SCALE 1:100 (A3)

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B	04.09.20	MG	MG	TYPICAL INTER-ALLOTMENT WALL HEIGHT DETAIL ADDED
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APPROVED: SCOTT THOMAS RPEQ 04618
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SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

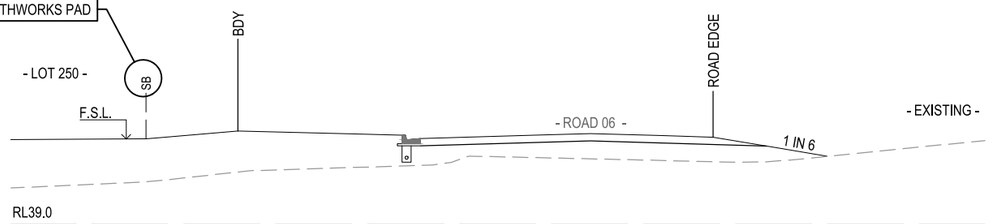
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: BULK EARTHWORKS SECTION PLAN SHEET 1 OF 2

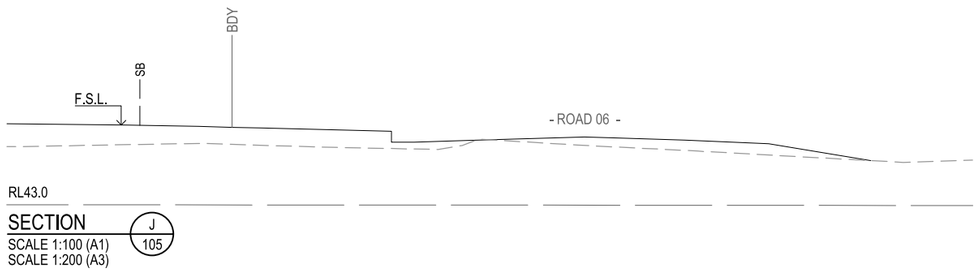
PROJECT No.	DRAWING No.	REVISION
18-0175	104	D

NOTE:
SB INDICATES SETBACK
FOR EARTHWORKS PAD

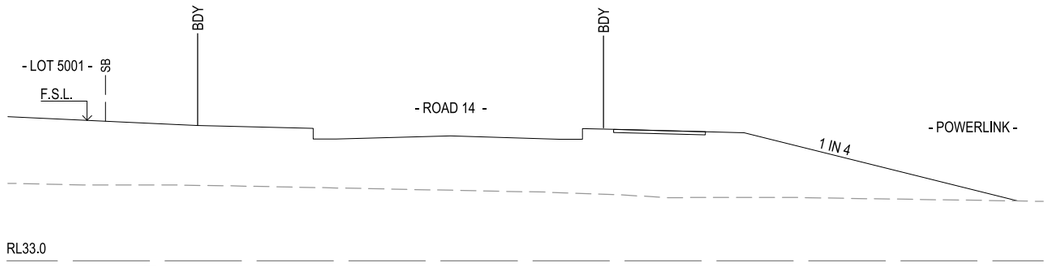


SECTION H 105
SCALE 1:100 (A1)
SCALE 1:200 (A3)

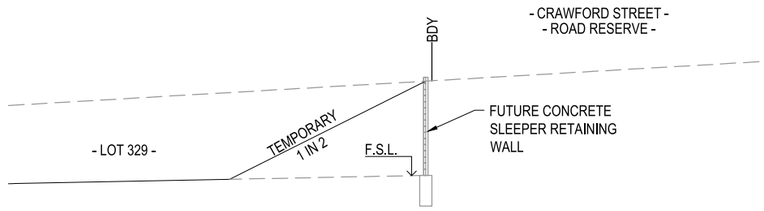
SECTION I 103
SCALE 1:100 (A1)
SCALE 1:200 (A3)



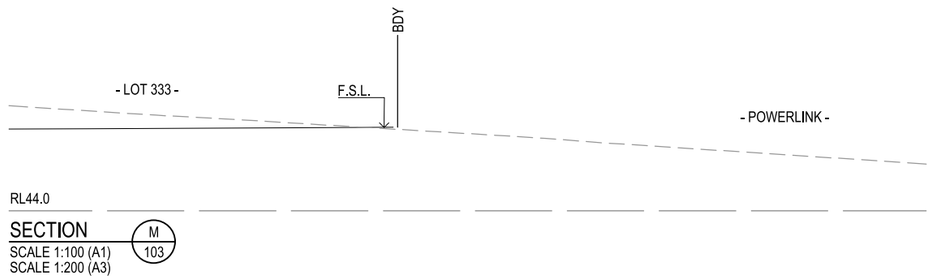
SECTION J 105
SCALE 1:100 (A1)
SCALE 1:200 (A3)



SECTION K 103
SCALE 1:100 (A1)
SCALE 1:200 (A3)



SECTION L 103
SCALE 1:100 (A1)
SCALE 1:200 (A3)



SECTION M 103
SCALE 1:100 (A1)
SCALE 1:200 (A3)

AS-CONSTRUCTED CERTIFICATION
Signature S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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

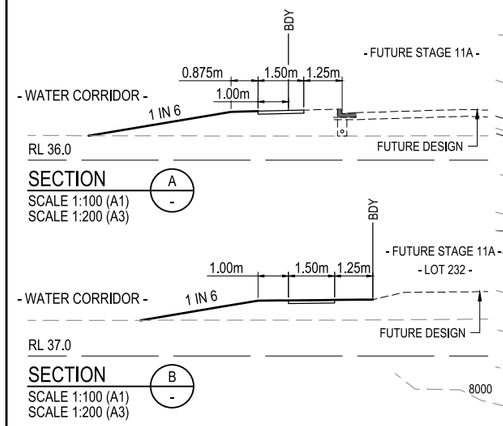
CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: BULK EARTHWORKS SECTION PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
18-0175	105	C



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

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

AS-CONSTRUCTED CERTIFICATION

Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED ROAD CONTROL LINE
- PROPOSED KERB INVERT LINE
- PROPOSED KERB TRANSITION LOCATION
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- PROPOSED TEMPORARY TURN AROUND
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- FUTURE STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- EXISTING ROOFWATER DRAINAGE PIPE
- PROPOSED DRAINAGE SWALE
- PROPOSED ROOFWATER KERB ADAPTOR
- PROPOSED ROOFWATER KERB ADAPTOR WITH PIPE CONNECTION TO ALLOTMENT
- PROPOSED SLEEPER RETAINING WALL
- EXISTING SLEEPER RETAINING WALL
- PROPOSED SEWERAGE MAIN
- EXISTING SEWERAGE MAIN
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED WATER CONDUIT
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE O/H
- EXISTING GAS MAIN
- PROPOSED SLEEPER RETAINING WALL
- EXISTING SLEEPER RETAINING WALL
- FUTURE SLEEPER RETAINING WALL
- PROPOSED FINISHED SURFACE LEVEL (FSL)
- EXISTING TREE TO BE RETAINED - REFER VMP
- EXISTING TREE TO BE REMOVED - REFER VMP

AS CONSTRUCTED LEGEND

STORMWATER DRAINAGE PIPE

KERB TYPES NOTE:

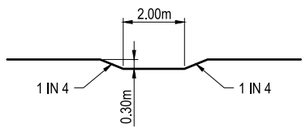
REFER TO THE SURVEY SETOUT ENGINEERING DRAWING FOR KERB TYPES AND TRANSITION LOCATIONS

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.

PROPOSED FOOTPATHS TO TIE NEATLY INTO EXISTING
2.0m CONCRETE FOOTPATH
EXISTING PMT
EXISTING FOOTPATH TO BE CUT BACK 2.5m & JOINED NEATLY TO NEW 2.0m FOOTPATH
EXISTING STAGES
ROAD 06
STORMWATER GULLY BOX TO BE CONSTRUCTED WITH FUTURE PIPE CONNECTION. LINTEL TO BE CONSTRUCTED AS PART OF FUTURE WORKS. CONTRACTOR TO INSTALL TEMPORARY GRATE.
REFER DRAWING 18-0175-119 FOR CULVERT DETAILS
G6/5
G5/5
G12/10
OUT/5
OUT/10
G11/10
G13/10
G18/11
G14/10
2.0m CONCRETE FOOTPATH
300mm STUB CONNECTION
FUTURE ROAD 06
ROAD 12
G10/10
OUT/30
R31/30
R32/30
R33/30
R34/30
R35/30
R36/30
1.25m
WATER CORRIDOR
ROAD 11
G3/1
G4/1
R5/3
R4/3
R3/3
R2/3
R1/3
G2/1
G1/1
G3/2
OUT/1
38.62
37.65
38.41
37.55
38.20
37.73
36.68
35.60
35.91
FUTURE STAGES
FOOTPATH TO BE CONSTRUCTED AS PART OF STAGE 9 WORKS
PROPOSED FOOTPATH TO TIE NEATLY INTO EXISTING
ROCK ARMORING SCOUR PROTECTION TO OUTLET LAYED OVER GEOFABRIC. D_{50} 300mm (450mm THICK) EXTEND TO LOW FLOW CHANNEL
EXISTING BASIN
FOR CULVERT AND PATHWAY CROSSING DETAILS, REFER 18-0175-120



TPYICAL SWALE SECTION
SCALE - 1:100 (A1)
SCALE - 1:200 (A3)

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.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.09.20	MG	MG	REAR LOT ROOFWATER LINE 30 ADDED
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

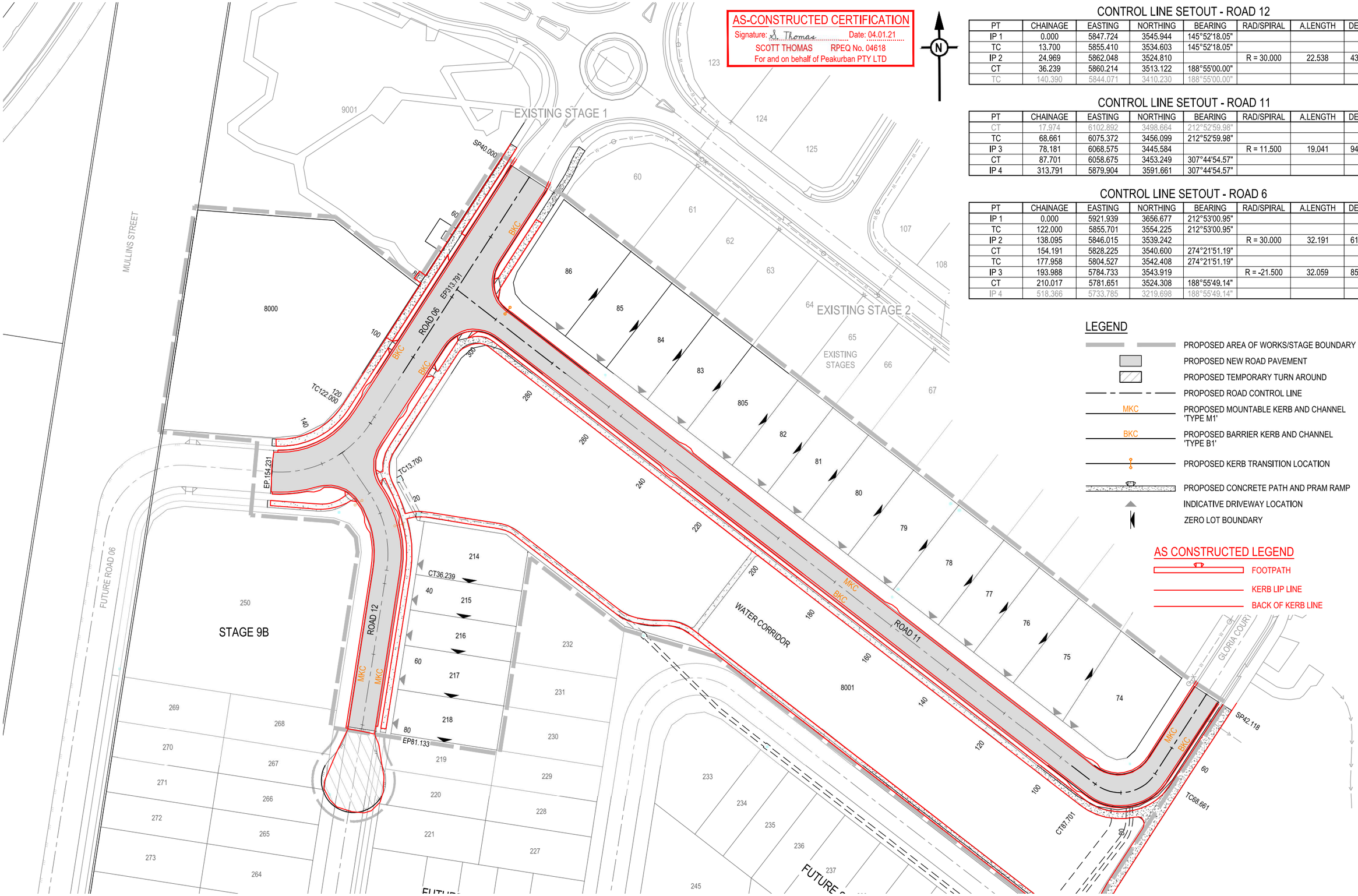
SCALE
1:500 1:1000 10 5 0 10 20 A1 A3

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

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	106	D



CONTROL LINE SETOUT - ROAD 12

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	5847.724	3545.944	145°52'18.05"			
TC	13.700	5855.410	3534.603	145°52'18.05"			
IP 2	24.969	5862.048	3524.810		R = 30.000	22.538	43°02'41.95"
CT	36.239	5860.214	3513.122	188°55'00.00"			
TC	140.390	5844.071	3410.230	188°55'00.00"			

CONTROL LINE SETOUT - ROAD 11

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
CT	17.974	6102.892	3498.664	212°52'59.98"			
TC	68.661	6075.372	3456.099	212°52'59.98"			
IP 3	78.181	6068.575	3445.584		R = 11.500	19.041	94°51'54.60"
CT	87.701	6058.675	3453.249	307°44'54.57"			
IP 4	313.791	5879.904	3591.661	307°44'54.57"			

CONTROL LINE SETOUT - ROAD 6

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	5921.939	3656.677	212°53'00.95"			
TC	122.000	5855.701	3554.225	212°53'00.95"			
IP 2	138.095	5846.015	3539.242		R = 30.000	32.191	61°28'50.24"
CT	154.191	5828.225	3540.600	274°21'51.19"			
TC	177.958	5804.527	3542.408	274°21'51.19"			
IP 3	193.988	5784.733	3543.919		R = -21.500	32.059	85°26'02.05"
CT	210.017	5781.651	3524.308	188°55'49.14"			
IP 4	518.366	5733.785	3219.698	188°55'49.14"			

LEGEND

- PROPOSED AREA OF WORKS/STAGE BOUNDARY
- PROPOSED NEW ROAD PAVEMENT
- PROPOSED TEMPORARY TURN AROUND
- PROPOSED ROAD CONTROL LINE
- MKC — PROPOSED MOUNTABLE KERB AND CHANNEL 'TYPE M1'
- BKC — PROPOSED BARRIER KERB AND CHANNEL 'TYPE B1'
- PROPOSED KERB TRANSITION LOCATION
- PROPOSED CONCRETE PATH AND PRAM RAMP
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY

AS CONSTRUCTED LEGEND

- FOOTPATH
- KERB LIP LINE
- BACK OF KERB LINE

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: SCOTT THOMAS RPEQ 04618

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 1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**

COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **SURVEY SETOUT AND KERB TYPES LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
18-0175	107	C

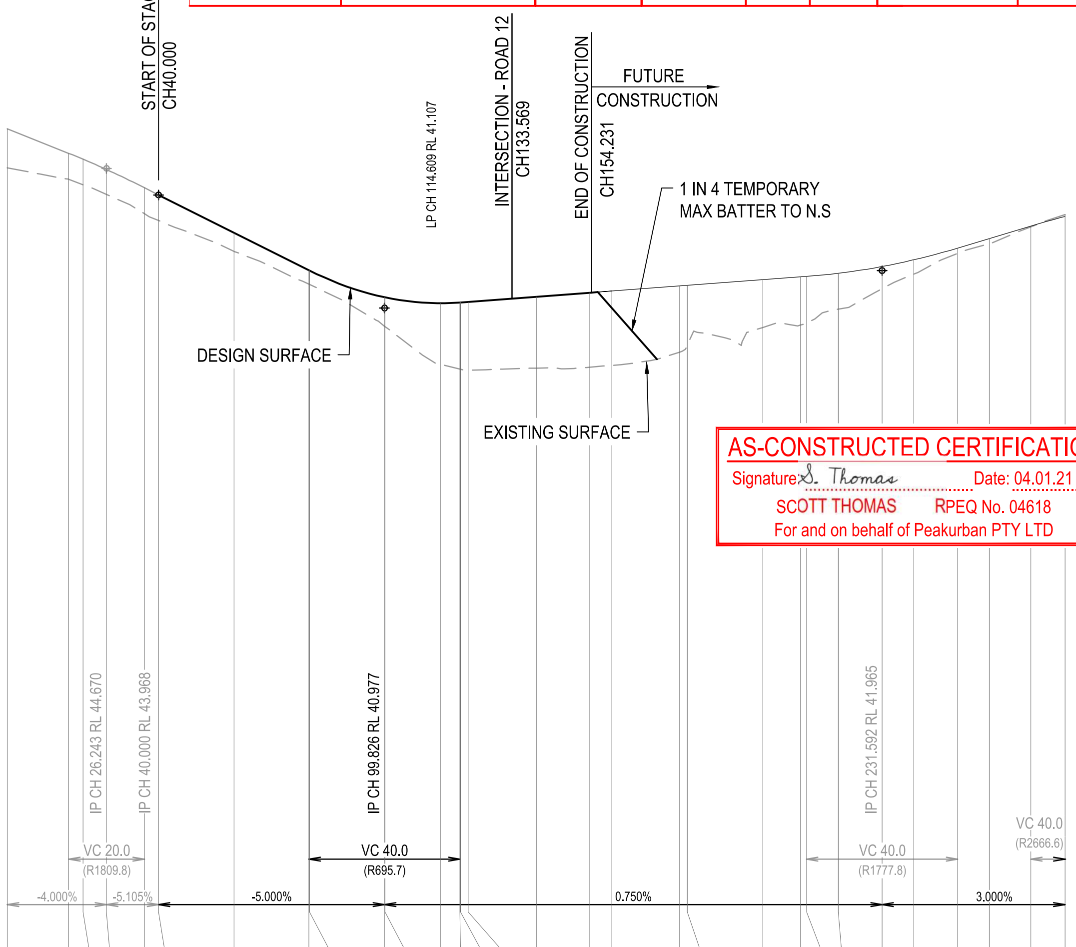
ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)

ROAD	ROAD CLASSIFICATION	DESIGN ESAS	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
ROAD 06	MAJOR COLLECTOR STREET	$1x10^6$	3	50mm	125mm	100mm	250mm	525mm

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

AS-CONSTRUCTED PAVEMENT DETAILS

ROAD	ROAD CLASSIFICATION	ROAD CLASS	DESIGN CBR	AC	BASE	UPPER SUB BASE	START CHAINAGE	END CHAINAGE
MULLINS STREET	MAJOR COLLECTOR STREET	CLASS C	10	50mm	125mm	135mm	42m	314m



NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS FOR FINISHED SURFACE LEVELS

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

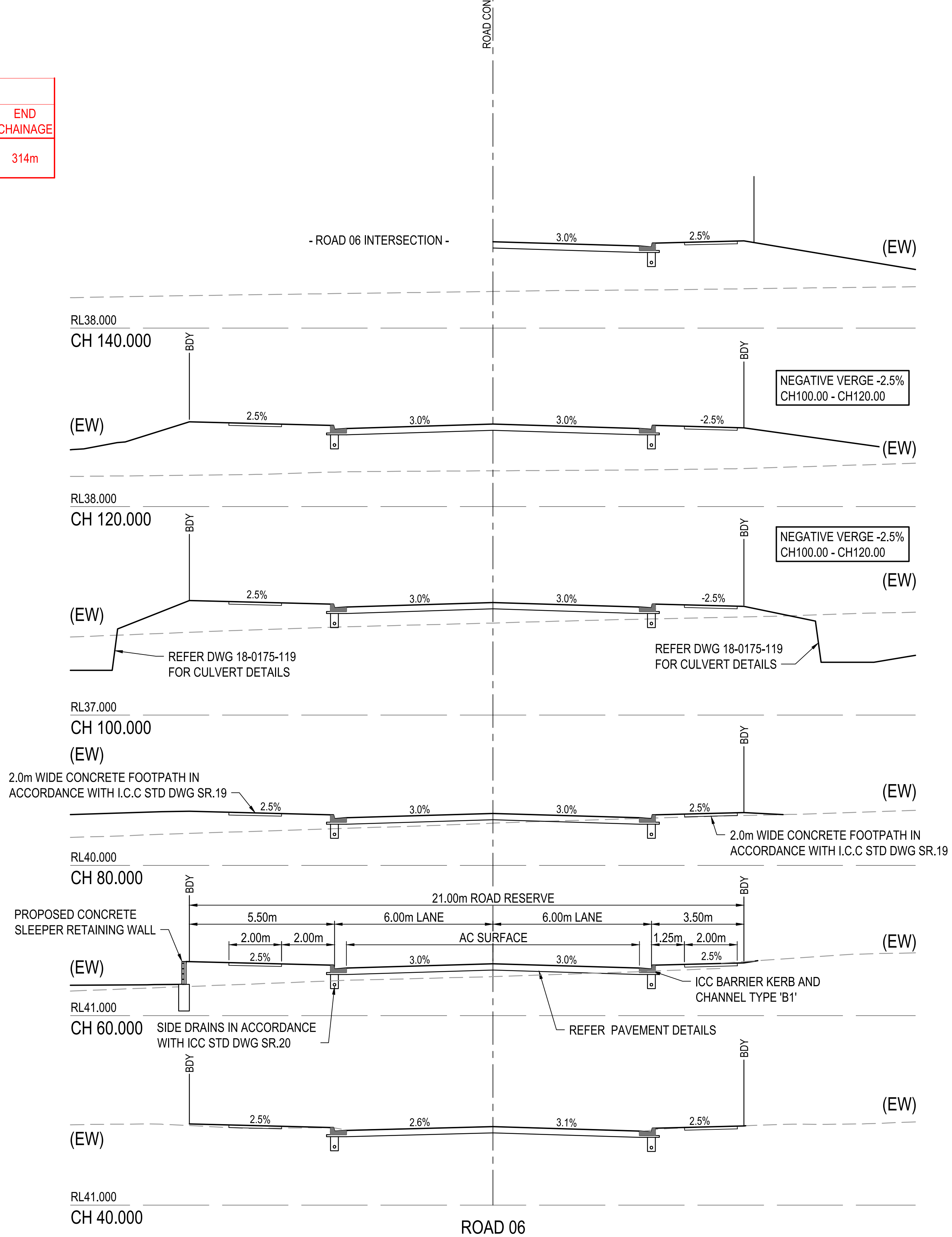
DATUM RL 24.0

CUT (-) / FILL	1.031	0.690	0.675	0.658	0.682	0.676	0.489	0.370	0.369	0.764	0.773	1.616	1.764	1.770	1.810
LHS LIP LEVEL						43.825	42.801	41.810	41.802	41.098	41.094	40.941	40.960	40.961	40.976
RHS LIP LEVEL						43.795	42.801	41.810	41.802	41.098	41.094	40.941	40.960	40.961	40.976
DESIGN SURFACE	45.720	45.070	44.916	44.643	44.160	43.968	42.968	41.977	41.968	41.264	41.261	41.107	41.127	41.128	41.143
EXISTING SURFACE	44.689	44.380	44.241	43.984	43.478	43.292	42.479	41.607	41.599	40.500	40.487	39.491	39.363	39.358	39.333
CHAINAGES	0.000	16.243	20.000	26.243	36.243	40.000	60.000	79.826	80.000	99.826	100.000	114.609	119.826	120.000	122.000
HORIZONTAL CURVES															

CUT (-) / FILL	1.889	1.973	1.968	1.752	1.580	1.265	1.275	1.239	0.951	0.587	0.379	0.141	0.137	0.018	-0.049
LHS LIP LEVEL	41.111	41.218	41.261	41.396	41.411	41.561	41.637	41.648	41.731	41.911	42.088	42.398	42.651	42.978	43.235
RHS LIP LEVEL	41.111	41.218	41.261	41.383	41.398	41.580	41.713	41.725	41.808	41.988	42.165	42.475	42.727	43.055	43.312
DESIGN SURFACE	41.278	41.384	41.428	41.563	41.578	41.728	41.803	41.815	41.898	42.077	42.255	42.565	42.817	43.145	43.402
EXISTING SURFACE	39.389	39.412	39.460	39.811	39.998	40.463	40.528	40.576	40.947	41.490	41.876	42.424	42.680	43.127	43.451
CHAINAGES	140.000	154.191	160.000	177.958	180.000	200.000	210.017	211.592	220.000	231.592	240.000	251.592	260.000	270.927	280.000
HORIZONTAL CURVES	R30.000					R-21.500									

ROAD 06

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



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

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

CLIENT: **CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED**

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP
1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE,
COLLINGWOOD PARK

DRAWING TITLE: **ROAD 06 LONGITUDINAL AND CROSS SECTIONS**

PROJECT No.	DRAWING No.	REVISION
18-0175	108	C

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

ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
~~ROAD 11~~	~~ACCESS STREET~~	~~1.0 x 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

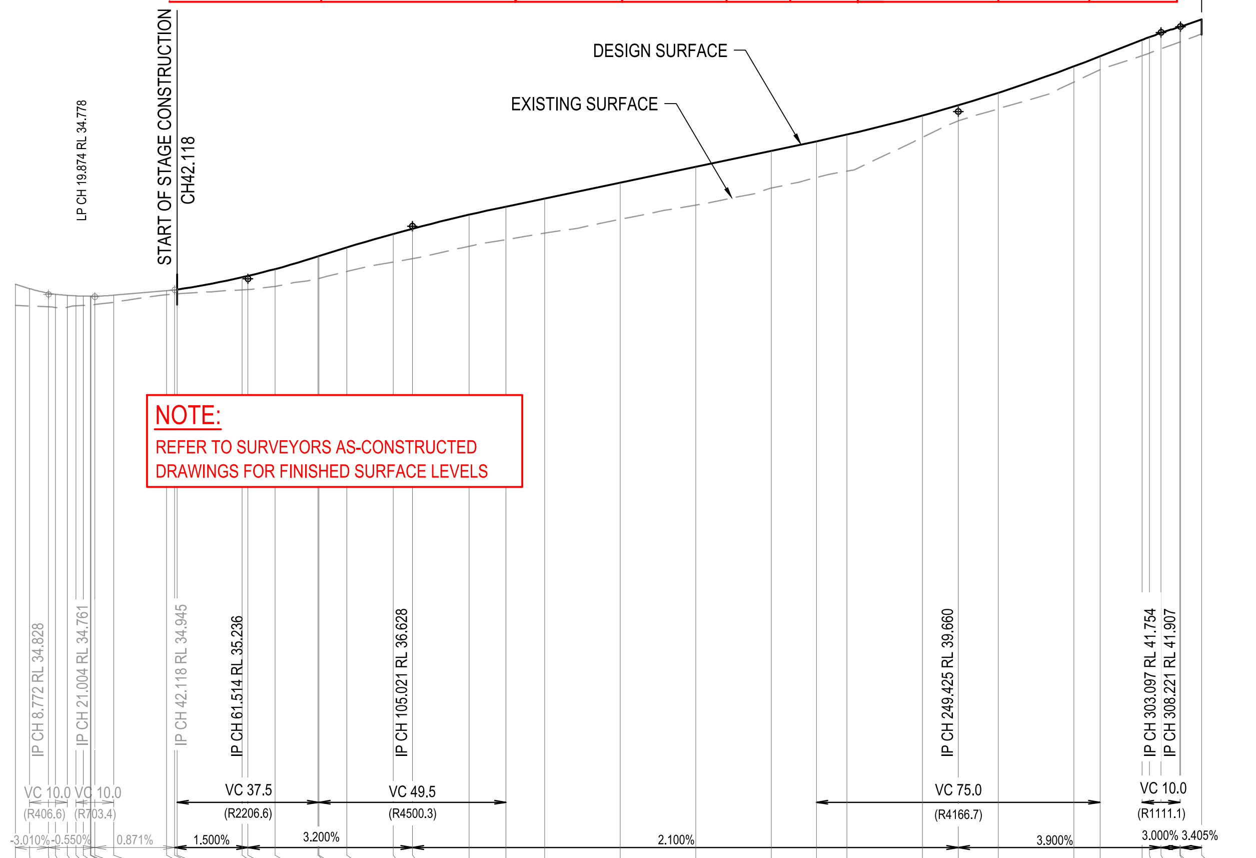
AS-CONSTRUCTED PAVEMENT DETAILS

ROAD	ROAD CLASSIFICATION	ROAD CLASS	DESIGN CBR	AC	BASE	UPPER SUB BASE	START CHAINAGE	END CHAINAGE
GLORIA STREET	ACCESS STREET	CLASS A1	10	35mm	125mm	100mm	40m	180m

AS-CONSTRUCTED CERTIFICATION

Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

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



NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS FOR FINISHED SURFACE LEVELS

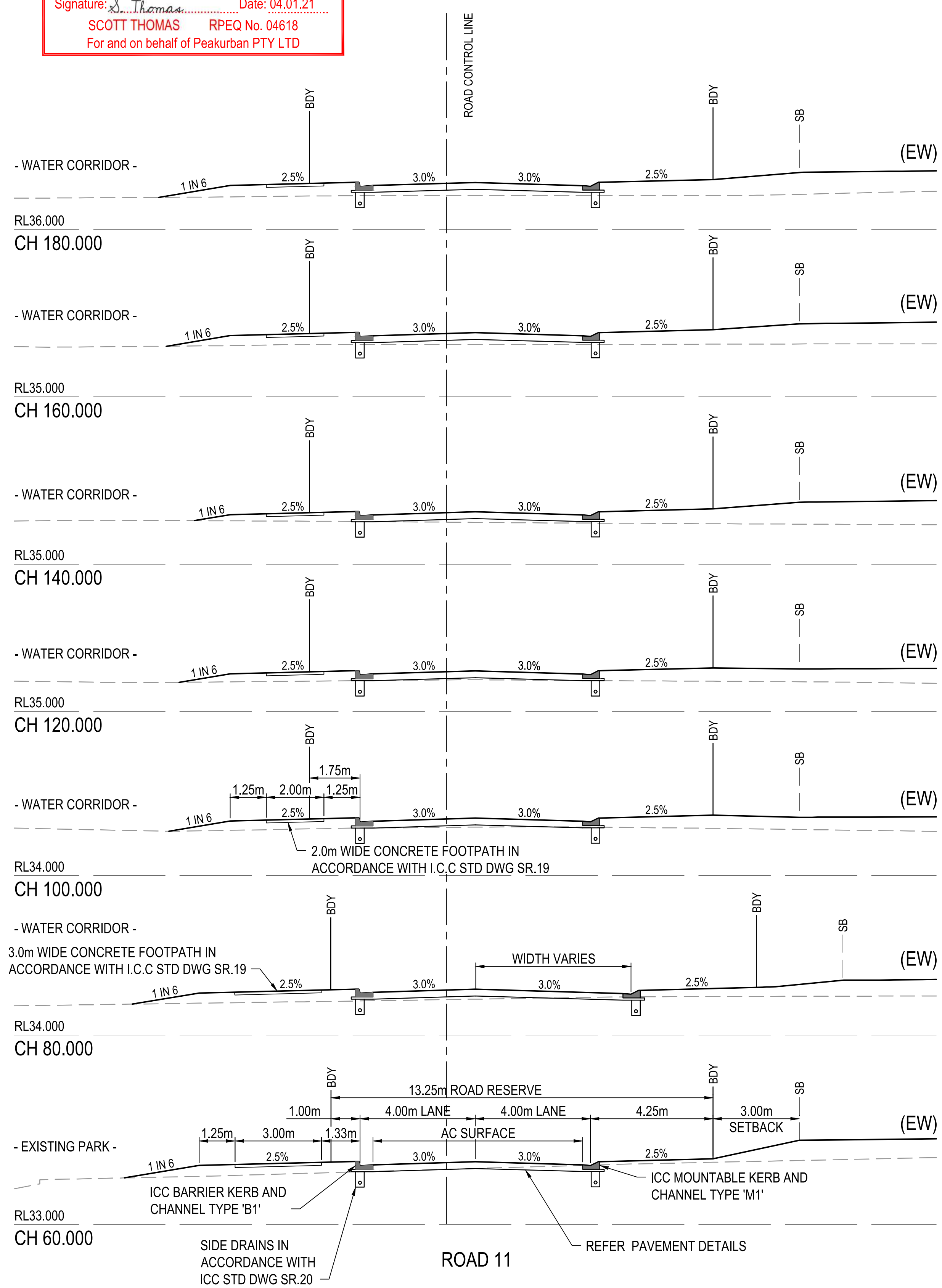
DATUM RL 19.0

CUT (-) / FILL	0.554	0.458	0.361	0.352	0.318	0.264	0.244	0.229	0.228	0.222	0.187	0.110	0.111	0.116
LHS LIP LEVEL	EXISTING												34.838	34.848
RHS LIP LEVEL													34.860	34.868
DESIGN SURFACE	35.092	34.978	34.859	34.830	34.800	34.788	34.780	34.778	34.778	34.778	34.804	34.926	34.945	34.954
EXISTING SURFACE	34.538	34.521	34.498	34.478	34.482	34.524	34.536	34.549	34.550	34.557	34.617	34.817	34.834	34.839
CHAINAGES	0.000	3.772	8.772	10.604	13.772	16.004	17.974	19.874	20.000	21.004	26.004	40.000	42.118	42.757
HORIZONTAL CURVES				R14.750										

CUT (-) / FILL	0.333	0.361	0.455	0.585	0.587	0.637	0.742	0.787	0.832	0.874	0.915	0.972	1.014	0.986
LHS LIP LEVEL	35.174	35.209	35.388	35.721	35.729	35.961	36.317	36.453	36.825	37.041	37.256	37.676	38.096	38.516
RHS LIP LEVEL	35.169	35.204	35.368	#			36.312	36.448	36.820	37.036	37.251	37.671	38.091	38.511
DESIGN SURFACE	35.280	35.315	35.495	35.827	35.836	36.068	36.424	36.560	36.932	37.148	37.362	37.782	38.202	38.622
EXISTING SURFACE	34.947	34.954	35.040	35.242	35.249	35.430	35.682	35.773	36.099	36.274	36.448	36.810	37.189	37.636
CHAINAGES	60.000	61.514	68.661	80.000	80.270	87.701	100.000	105.021	120.000	129.773	140.000	160.000	180.000	200.000
HORIZONTAL CURVES		R11.500												

CUT (-) / FILL	0.958	0.963	0.579	0.413	0.427	0.414	0.352	0.416	0.425	0.421	0.400	0.400	0.382
LHS LIP LEVEL	38.766	38.944	39.451	39.723	40.053	40.752	41.016	#					
RHS LIP LEVEL	38.761	38.939	39.445	39.717	40.048	40.747	41.011						
DESIGN SURFACE	38.873	39.050	39.557	39.829	40.160	40.859	41.123	41.559	41.631	41.742	41.904	41.907	42.097
EXISTING SURFACE	37.915	38.087	38.978	39.416	39.733	40.444	40.771	41.142	41.207	41.321	41.503	41.508	41.715
CHAINAGES	211.925	220.000	240.000	249.425	260.000	280.000	286.925	298.097	300.000	303.097	308.097	308.221	313.791
HORIZONTAL CURVES													

ROAD 11



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: SCOTT THOMAS RPEQ 04618
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 — CROSS SECTIONS
1:1000 / 1:2000 — 10 0 10 20 30 40 50 — A1 / A3 — HORIZONTAL
1:100 / 1:200 — 1 0 1 2 3 4 5 — A1 / A3 — VERTICAL

CLIENT: **CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED**

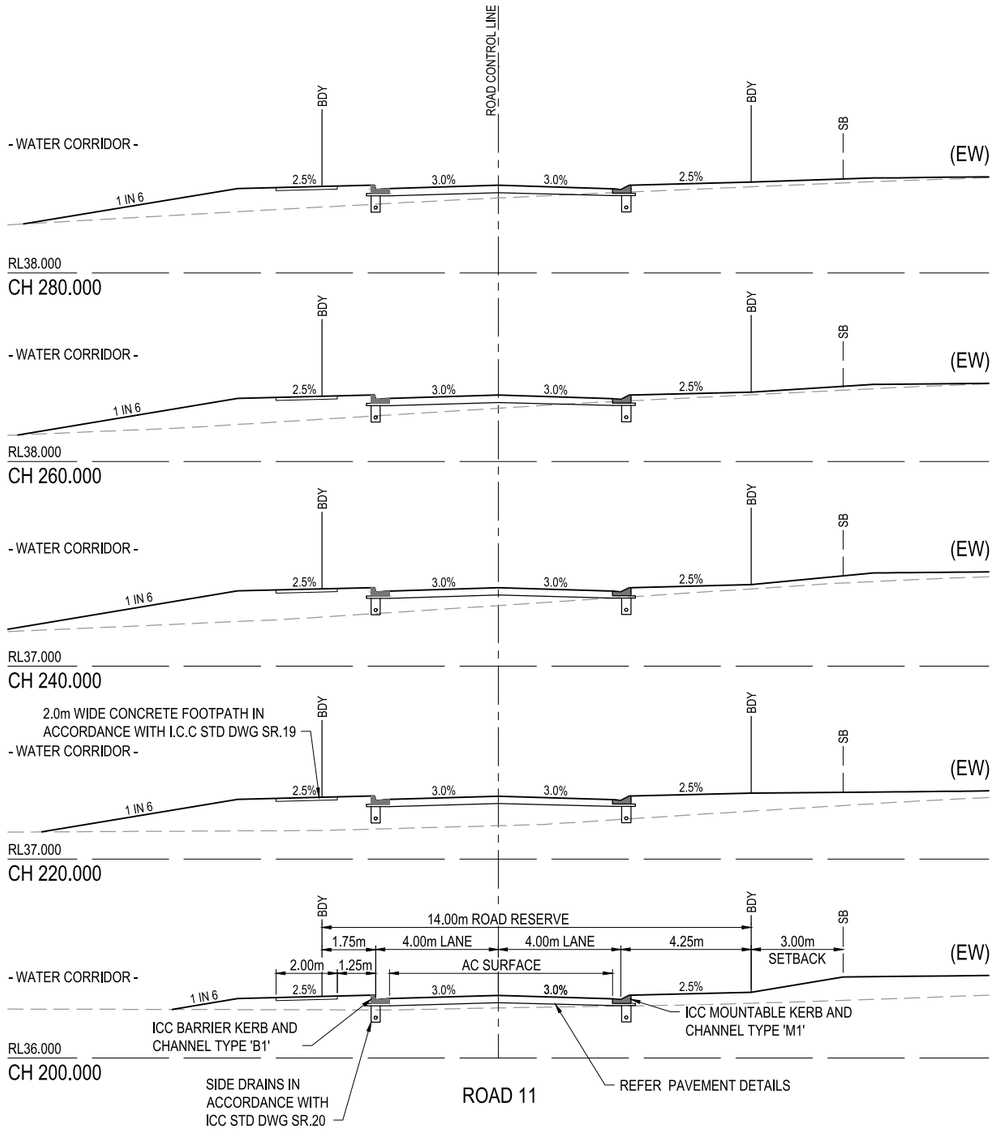
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **ROAD 11 LONGITUDINAL AND CROSS SECTIONS**

PROJECT No.	DRAWING No.	REVISION
18-0175	109	C

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



AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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
CROSS SECTIONS
1:1000 10 0 10 20 30 40 50 A1
1:2000 A3
HORIZONTAL
1:100 1 0 1 2 3 4 5 A1
1:200 A3
VERTICAL

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: ROAD 11 CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
18-0175	110	C

ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)

ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACE	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
ROAD 12	ACCESS STREET	1.0×10^5	3	35mm	125mm	100mm	160mm	420mm

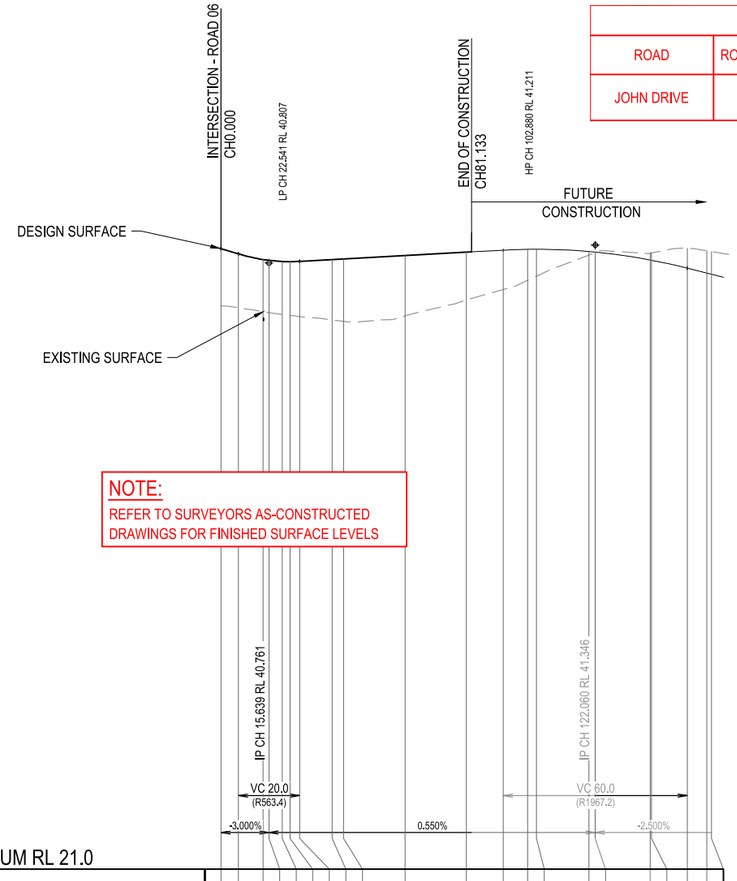
NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON AN ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

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

AS-CONSTRUCTED PAVEMENT DETAILS

ROAD	ROAD CLASSIFICATION	ROAD CLASS	DESIGN CBR	AC	BASE	UPPER SUB BASE	START CHAINAGE	END CHAINAGE
JOHN DRIVE	ACCESS STREET	CLASS A1	10	35mm	125mm	100mm	0m	81.5m



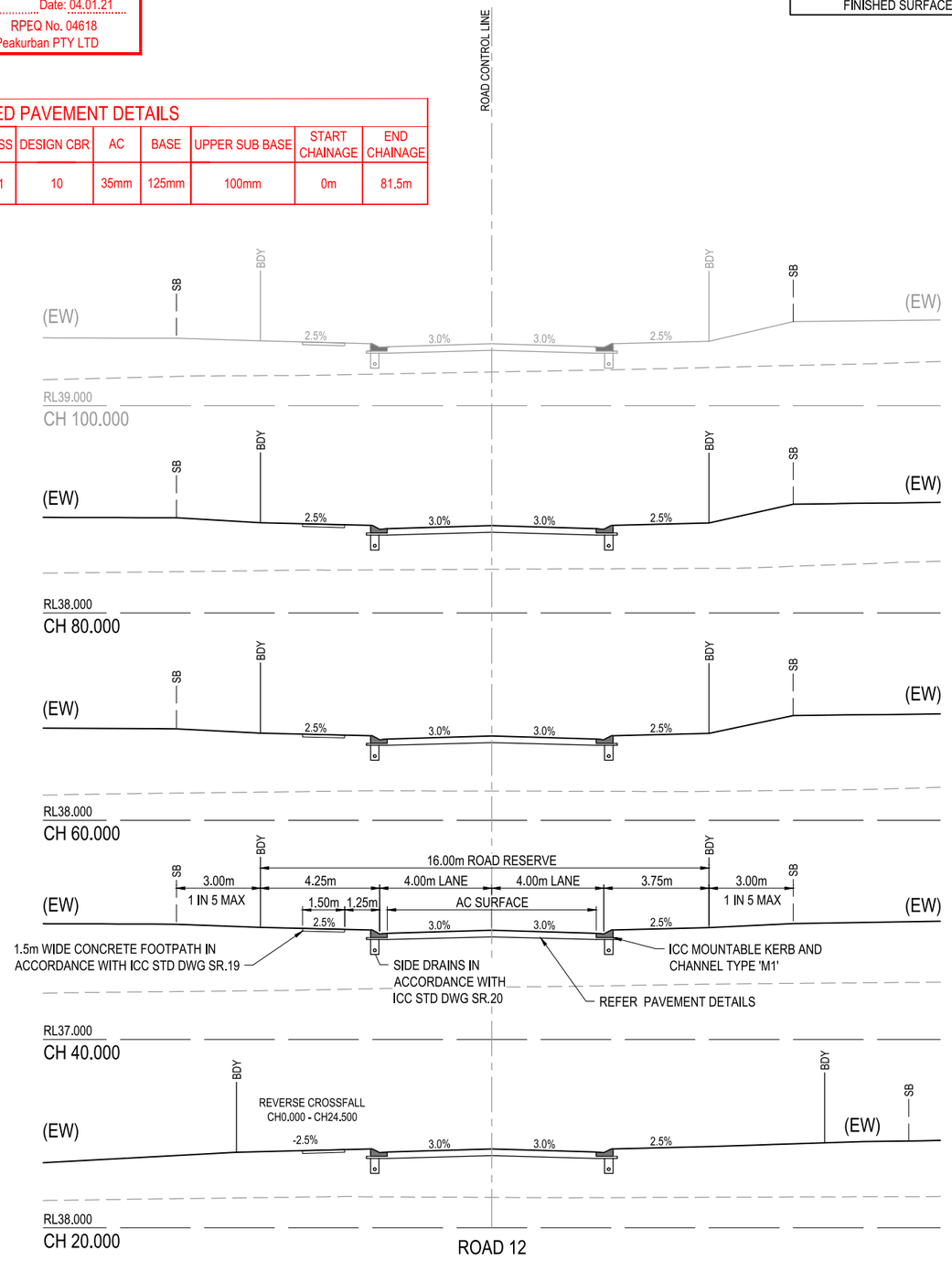
NOTE:
REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS FOR FINISHED SURFACE LEVELS

DATUM RL 21.0

CUT (-) / FILL	1.859	1.757	1.700	1.708	1.726	1.752	1.798	1.967	2.035	1.967	1.557	1.279	1.009	0.877	0.113	0.017	-0.225	-0.241	-0.651	-0.729	-0.741
LHS LIP LEVEL	#			40.738	40.701	40.695	40.704	40.762	40.783	40.893	41.003	41.069	41.097	41.099	41.024	41.005					40.987
RHS LIP LEVEL				40.738	40.701	40.695	40.704	40.762	40.783	40.893	41.003	41.069	41.097	41.099	41.024	41.005	40.749	40.741	40.484	40.323	40.266
DESIGN SURFACE	41.230	41.061	40.876	40.849	40.813	40.807	40.816	40.874	40.894	41.004	41.114	41.181	41.208	41.211	41.136	41.117	40.860	40.852	40.596	40.435	40.397
EXISTING SURFACE	39.371	39.303	39.176	39.141	39.086	39.055	39.017	38.907	38.859	39.037	39.557	39.902	40.199	40.334	41.023	41.100	41.085	41.094	41.246	41.164	41.138
CHAINAGES	0.000	5.639	13.713	15.639	20.000	22.541	25.639	36.263	40.000	60.000	80.000	92.060	100.000	102.880	120.000	122.060	140.000	140.420	152.060	158.484	160.000
HORIZONTAL CURVES			R30.000																R-11.500		

ROAD 12

\# REFER INTERSECTION DRAWINGS FOR LIP LEVELS



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

SCALE
1:100 A1
1:200 A3
CROSS SECTIONS
1:1000 A1
1:2000 A3
HORIZONTAL
1:100 A1
1:200 A3
VERTICAL

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

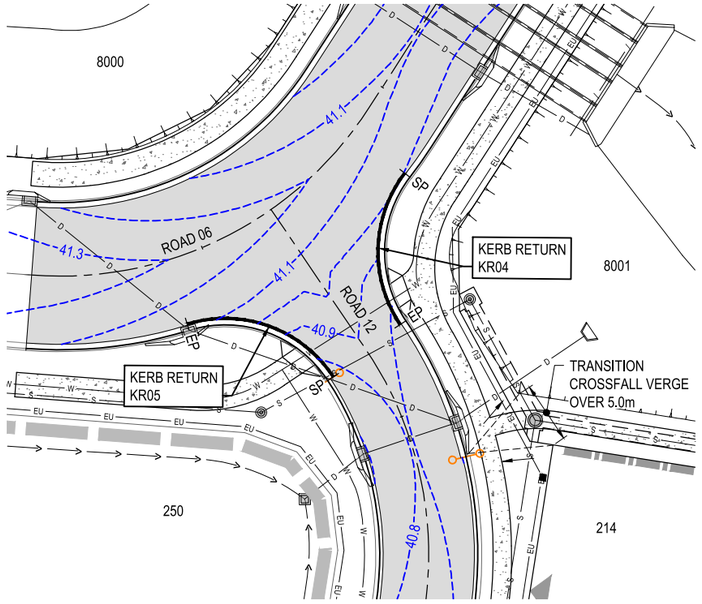
PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

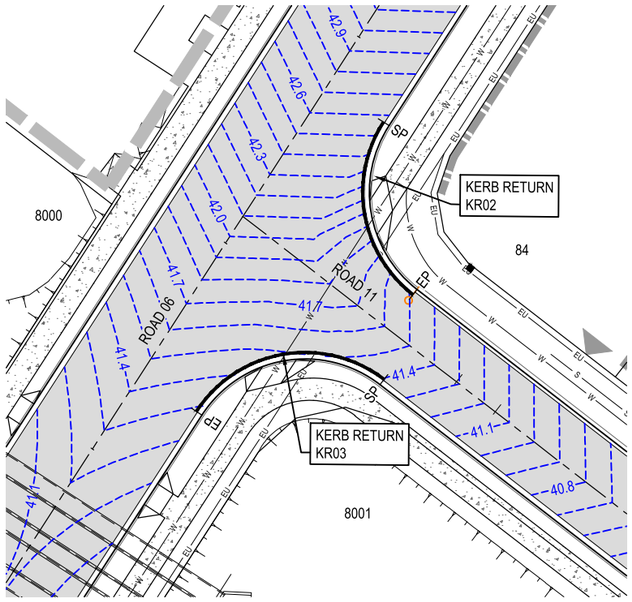
DRAWING TITLE: ROAD 12 LONGITUDINAL AND CROSS SECTIONS

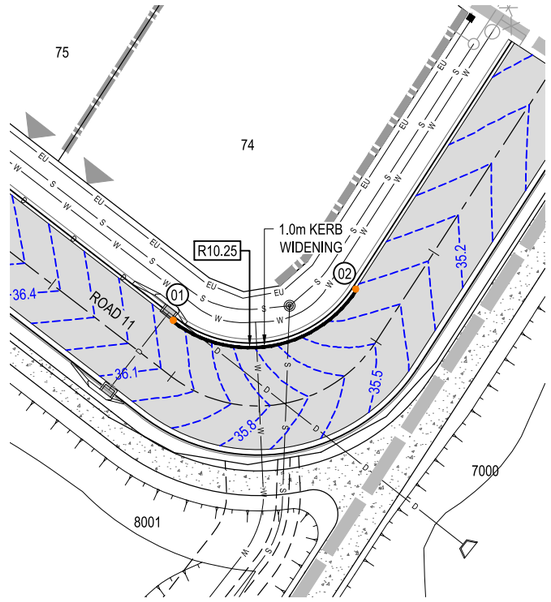
PROJECT No.	DRAWING No.	REVISION
18-0175	111	C

LEGEND

- PROPOSED ROAD CONTROL LINE
- PROPOSED KERB INVERT LINE
- PROPOSED KERB TRANSITION LOCATION
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- 41.1 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
- TP PROPOSED KERB SETOUT TANGENT POINT







KERB WIDENING SETOUT

NUMBER	EASTING	NORTHING
01	6058.824	3457.844
02	6073.707	3460.384

WARNING! - EXISTING SERVICES

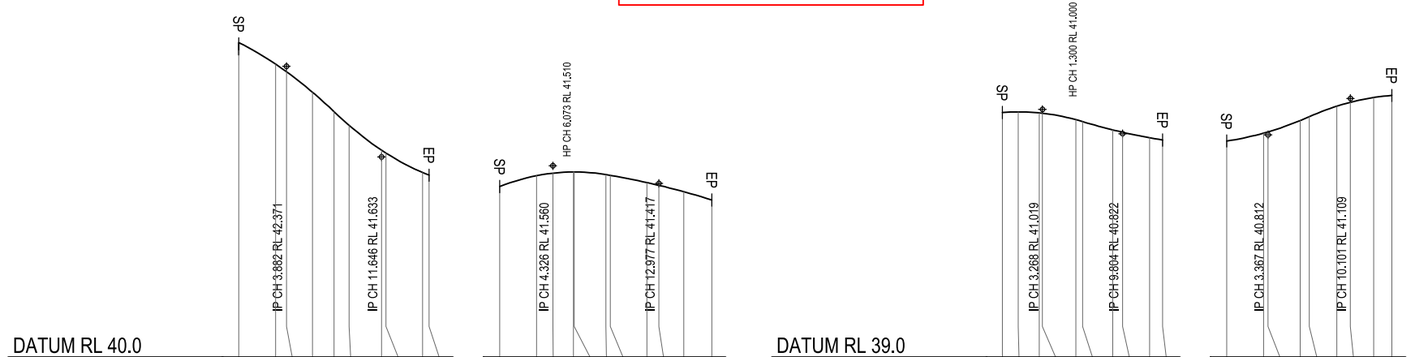
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- 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 FOR FINISHED SURFACE LEVELS



DATUM RL 40.0

LIP LEVEL	42.565	42.389	42.327	42.160	42.002	41.890	41.688	41.665	41.505	41.484
NORTHING	3599.303	3596.586	3595.731	3593.627	3591.872	3590.668	3588.252	3587.952	3585.700	3585.367
EASTING	5891.454	5890.207	5889.993	5889.780	5889.929	5890.208	5891.270	5891.457	5893.424	5893.833
CHAINAGES	0.000	3.000	3.882	6.000	7.764	9.000	11.646	12.000	15.000	15.528
HORIZONTAL CURVES	R-10.450									

KR02

LIP LEVEL	41.391	41.479	41.500	41.510	41.510	41.488	41.483	41.423	41.401	41.349	41.281	
NORTHING	3578.294	3579.767	3580.169	3580.443	3580.449	3580.332	3580.267	3579.254	3578.755	3577.485	3575.704	
EASTING	5891.370	5888.769	5887.507	5885.857	5885.784	5883.215	5882.872	5880.060	5879.220	5877.649	5876.197	
CHAINAGES	0.000	3.000	4.326	6.000	6.073	8.651	9.000	12.000	12.977	15.000	17.302	
HORIZONTAL CURVES	R-10.450											

KR03

DATUM RL 39.0

LIP LEVEL	40.995	41.000	40.991	40.988	40.936	40.921	40.853	40.834	40.788	40.770		
NORTHING	3548.851	3547.774	3546.244	3545.993	3543.329	3542.795	3540.346	3539.566	3537.537	3536.620		
EASTING	5856.696	5857.970	5857.232	5857.139	5856.566	5856.537	5856.753	5856.947	5857.777	5858.332		
CHAINAGES	0.000	1.300	3.000	3.268	6.000	6.536	9.000	9.804	12.000	13.072		
HORIZONTAL CURVES	R-10.450											

KR04

LIP LEVEL	40.762	40.826	40.837	40.929	40.960	41.046	41.078	41.117	41.134			
NORTHING	3532.244	3534.487	3534.720	3536.078	3536.352	3536.888	3536.973	3536.849	3536.519			
EASTING	5852.716	5850.739	5850.455	5848.208	5847.527	5845.330	5844.233	5842.340	5840.911			
CHAINAGES	0.000	3.000	3.367	6.000	6.734	9.000	10.101	12.000	13.468			
HORIZONTAL CURVES	R-10.450											

KR05

AS-CONSTRUCTED CERTIFICATION

Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	19.08.20	AC	SC	AMENDED KERB WIDENING SETOUT
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

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

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744
PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK
DRAWING TITLE: INTERSECTION DETAILS LAYOUT PLAN
PROJECT No. 18-0175
DRAWING No. 112
REVISION D

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

LEGEND
- PROPOSED AREA OF WORKS/STAGE BOUNDARY
- PROPOSED STREET NAME SIGN
- PROPOSED ROAD SIGN
- GL — PROPOSED GIVE WAY LINE
- EL — PROPOSED EDGE LINE
- CL — PROPOSED CONTINUITY LINE
- PROPOSED TEMPORARY TURN AROUND
- PROPOSED GREEN HIGH FRICTION BICYCLE TREATMENT
- PROPOSED BICYCLE LANE

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.

EXISTING STAGE 1
EXISTING STAGE 2
EXISTING STAGE 7
STAGE 9B
FUTURE STAGE 10
FUTURE STAGES
FUTURE ROAD 06
ROAD 06
ROAD 11
ROAD 12
WATER CORRIDOR
8000
8001
2.50m
2.50m
GIVE WAY
R1-2A
D4-5
GIVE WAY
R1-2A
D4-5
EXISTING D4-5 TO BE REMOVED AND RELOCATED
86
85
84
83
805
82
81
80
79
78
77
76
75
74
214
215
216
217
218
232
231
230
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229
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225
250
269
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238
239
245

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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

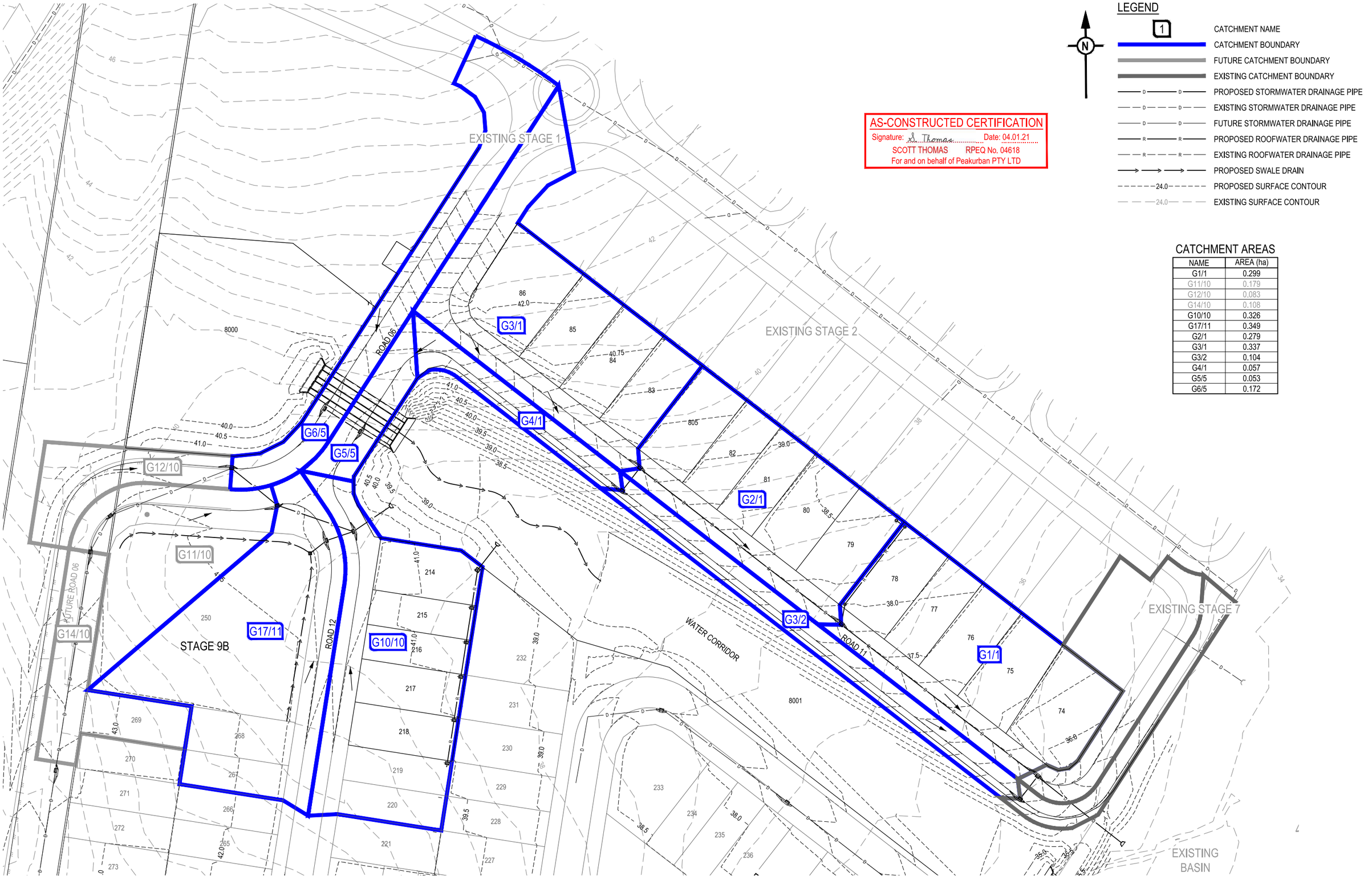
CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SIGNS AND LINEMARKING LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	113	C



LEGEND

- CATCHMENT NAME
- CATCHMENT BOUNDARY
- FUTURE CATCHMENT BOUNDARY
- EXISTING CATCHMENT BOUNDARY
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- FUTURE STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- EXISTING ROOFWATER DRAINAGE PIPE
- PROPOSED SWALE DRAIN
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

CATCHMENT AREAS

NAME	AREA (ha)
G1/1	0.299
G11/10	0.179
G12/10	0.083
G14/10	0.108
G10/10	0.326
G17/11	0.349
G2/1	0.279
G3/1	0.337
G3/2	0.104
G4/1	0.057
G5/5	0.053
G6/5	0.172

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: SCOTT THOMAS RPEQ 04618
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 1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **STORMWATER DRAINAGE CATCHMENT LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
18-0175	114	C

STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 2

STORMWATER STRUCTURE NOTE:

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

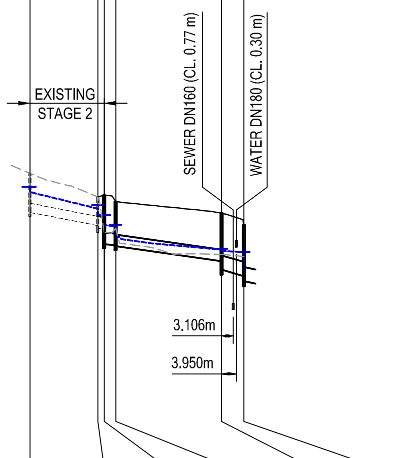
STANDARD ROUND MANHOLES 3.0m > 5.3m DEEP:
CONSTRUCT IN ACCORDANCE WITH TMR STD DRAWINGS 1307 AND 1308.

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.

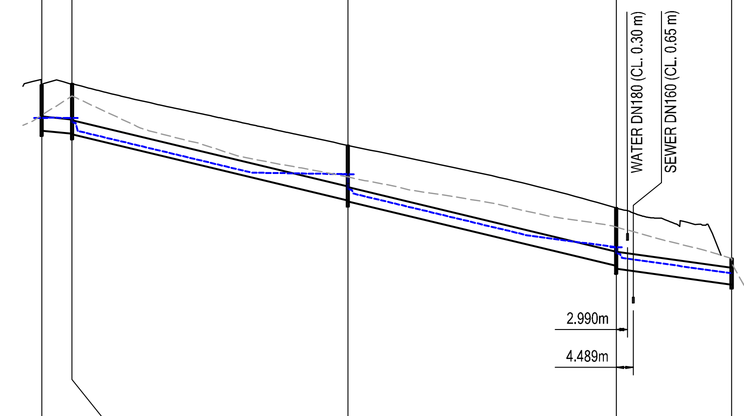
LINE 3 (DATUM RL 26.0)



Structure Name	Structure Description	Water Level in Structure	Hydraulic Grade Level	Design Surface Level	Setout	Running Chainage
R5/3	STD FIELD INLET (NO APRON) TYPE 2 - 900mm x 600mm	38.690	38.690	39.045	E: 6004.925 N: 3543.998	0.000
R4/3	STD FIELD INLET (NO APRON) TYPE 2 - 900mm x 600mm	38.214		38.430	E: 6019.175 N: 3533.095	17.943
R3/3	STD ROOFWATER MANHOLE 900mm DIAMETER	37.947		38.42 ~~38.477~~	E: 6018.156 N: 3531.731	19.646
R2/3	STD ROOFWATER MANHOLE 900mm DIAMETER	37.696		38.39 ~~38.301~~	E: 6020.548 N: 3529.878	22.672
R1/3	STD ROOFWATER MANHOLE 900mm DIAMETER	37.062		38.06 ~~37.999~~	E: 6003.407 N: 3507.738	50.672
G2/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	36.973	36.580	37.72 ~~37.688~~	E: 6002.371 N: 3501.900	56.601

Pipe	Pipe Size mm (Class)	Pipe Grade %	Pipe Slope 1 in X	Full Pipe Flow Velocity (m/s)	Part Full Flow Velocity (m/s)	Pipe Flow (Cumecs)	Hydraulic Grade Level (US / DS)	Depth to Invert (US / DS)	Invert Level of Drain (US / DS)	Length
R5/3 – R4/3	225(U)	1.95%	51.27	2.18		0.100	38.557 / 38.118	1.025 / 0.760	38.020 / 37.670	17.943
R4/3 – R3/3	300(U)	0.61 ~~1.94%~~	~~51.61~~ 1 in 164	1.56		0.113	37.924 / 37.908	0.830 / 0.830 ~~0.910~~	37.600 / 37.59 ~~37.567~~	~~1.703~~ 1.64
R3/3 – R2/3	300(U)	0.97 ~~0.93%~~	~~108.07~~ 1 in 103	1.56		0.113	37.685 / 37.657	~~1.299~~ 1.250 / 1.250 ~~1.151~~	~~37.178~~ 37.17 / 37.14 ~~37.150~~	~~3.026~~ 3.10
R2/3 – R1/3	300(U)	1.47 ~~1.43%~~	~~70.00~~ 1 in 68		2.16	0.113	37.434 / 37.033	~~1.171~~ 1.270 / 0.350 ~~1.269~~	~~37.130~~ 37.12 / 36.71 ~~36.730~~	~~28.000~~ 27.98
R1/3 – G2/1	375(3)	2.14 ~~2.93%~~	~~34.07~~ 1 in 47	1.02		0.113	36.998 / 36.973	~~1.490~~ 1.580 / 1.360 ~~1.353~~	~~36.509~~ 36.48 / 36.36 ~~36.335~~	~~5.929~~ 5.61

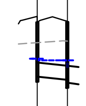
LINE 1 (DATUM RL 25.0)



Structure Name	Structure Description	Water Level in Structure	Hydraulic Grade Level	Design Surface Level	Setout	Running Chainage
G4/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	38.411	38.411	39.32 ~~39.286~~	E: 5939.817 N: 3540.342	0.000
G3/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	38.409		39.30 ~~39.323~~	E: 5944.696 N: 3546.650	7.975
G2/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	36.926		37.72 ~~37.688~~	E: 6002.371 N: 3501.900	80.975
G1/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE OVER 1050⌀ MANHOLE	34.994		36.06 ~~36.032~~	E: 6058.461 N: 3458.473	151.911
OUT/1	CONCRETE HEADWALL	34.305		34.55 ~~34.692~~	E: 6082.465 N: 3439.593	182.451

Pipe	Pipe Size mm (Class)	Pipe Grade %	Pipe Slope 1 in X	Full Pipe Flow Velocity (m/s)	Part Full Flow Velocity (m/s)	Pipe Flow (Cumecs)	Hydraulic Grade Level (US / DS)	Depth to Invert (US / DS)	Invert Level of Drain (US / DS)	Length
G4/1 – G3/1	375(3)	1.07 ~~1.00%~~	~~100.00~~ 1 in 94	0.15(0.12 1y)	1.01 (0.94 1y)	0.017	38.410 / 38.409	~~1.209~~ 1.240 / 1.310 ~~1.326~~	~~38.077~~ 38.08 / 37.99 ~~37.997~~	~~7.975~~ 8.45
G3/1 – G2/1	375(3)	2.39 ~~2.40%~~	~~41.67~~ 1 in 42	0.64(0.54 1y)	2.06 (1.96 1y)	0.071	38.352 / 36.926	~~1.346~~ 1.320 / 1.480 ~~1.463~~	~~37.977~~ 37.98 / 36.24 ~~36.225~~	~~73.000~~ 72.91
G2/1 – G1/1	375(3)	2.34 ~~2.40%~~	~~41.67~~ 1 in 43	1.83(1.62 1y)	2.70 (2.63 1y)	0.202	36.580 / 34.994	~~1.483~~ 1.530 / 1.530 ~~1.529~~	~~36.205~~ 36.19 / 34.53 ~~34.503~~	~~70.936~~ 71.00
G1/1 – OUT/1	450(3)	1.25 ~~1.40%~~	~~71.43~~ 1 in 80		2.36 (2.28 1y)	0.271	34.878 / 34.305	~~1.604~~ 1.630 / 0.500 ~~0.692~~	~~34.428~~ 34.43 / 34.05 ~~34.000~~	~~30.540~~ 30.41

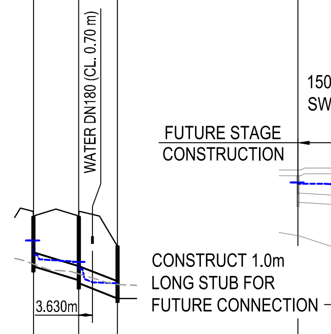
LINE 2



Structure Name	Structure Description	Water Level in Structure	Hydraulic Grade Level	Design Surface Level	Setout	Running Chainage
G3/2	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	35.064	35.064	36.06 ~~36.025~~	E: 6053.564 N: 3452.148	0.000
G1/1	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE OVER 1050⌀ MANHOLE	35.019	34.878	36.06 ~~36.032~~	E: 6058.461 N: 3458.473	8.000

Pipe	Pipe Size mm (Class)	Pipe Grade %	Pipe Slope 1 in X	Full Pipe Flow Velocity (m/s)	Part Full Flow Velocity (m/s)	Pipe Flow (Cumecs)	Hydraulic Grade Level (US / DS)	Depth to Invert (US / DS)	Invert Level of Drain (US / DS)	Length
G3/2 – G1/1	375(3)	0.87 ~~1.00%~~	~~100.00~~ 1 in 116	0.29(0.211y)		0.032	35.022 / 35.019	~~1.442~~ 1.480 / 1.550 ~~1.529~~	~~34.583~~ 34.58 / 34.51 ~~34.503~~	~~8.000~~ 8.09

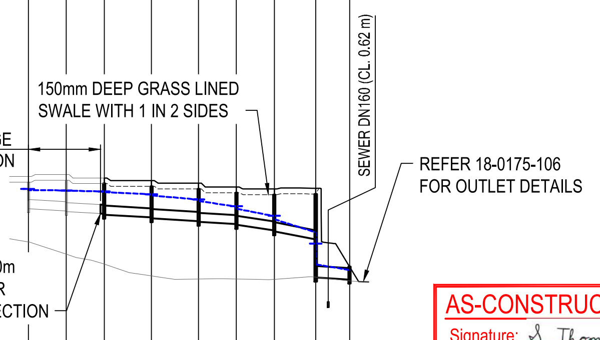
LINE 5



Structure Name	Structure Description	Water Level in Structure	Hydraulic Grade Level	Design Surface Level	Setout	Running Chainage
G6/5	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG	40.282	40.282	40.98 ~~40.903~~	E: 5854.675 N: 3563.689	0.000
G5/5	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG OVER 1050mm MANHOLE	39.710		40.96 ~~40.903~~	E: 5864.753 N: 3557.174	12.000
OUT/5	CULVERT WINGWALL	39.150		40.22 ~~40.126~~	E: 5873.661 N: 3552.057	22.273

Pipe	Pipe Size mm (Class)	Pipe Grade %	Pipe Slope 1 in X	Full Pipe Flow Velocity (m/s)	Part Full Flow Velocity (m/s)	Pipe Flow (Cumecs)	Hydraulic Grade Level (US / DS)	Depth to Invert (US / DS)	Invert Level of Drain (US / DS)	Length
G6/5 – G5/5	375(3)	2.97 ~~3.04%~~	~~32.88~~ 1 in 34	0.89	2.47	0.098	39.968 / 39.710	~~1.310~~ 1.830 / 1.720 ~~1.675~~	~~39.593~~ 39.60 / 39.24 ~~39.228~~	~~12.000~~ 12.14
G5/5 – OUT/5	450(3)	3.77 ~~3.92%~~	~~25.49~~ 1 in 27		3.12	0.172	39.603 / 39.150	~~1.750~~ 1.820 / 1.470 ~~1.376~~	~~39.153~~ 39.14 / 38.75 ~~38.750~~	~~10.273~~ 10.34

LINE 30 (DATUM RL 28.0)



Structure Name	Structure Description	Water Level in Structure	Hydraulic Grade Level	Design Surface Level	Setout	Running Chainage
R38/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 600mm	40.811	40.811	40.992	E: 5886.591 N: 3442.529	0.000
R37/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.772		41.042	E: 5888.141 N: 3452.409	10.000
R36/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.744		41.04 ~~40.952~~	E: 5889.691 N: 3462.288	20.000
R35/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.669		40.99 ~~40.882~~	E: 5891.628 N: 3474.637	32.500
R34/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.535		40.92 ~~40.812~~	E: 5893.566 N: 3486.986	45.000
R33/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.358		40.82 ~~40.712~~	E: 5895.116 N: 3496.865	55.000
R32/30	STD FIELD INLET (NO APRON) TYPE 2 - 600mm x 900mm	40.103		40.77 ~~40.662~~	E: 5896.666 N: 3506.744	65.000
R31/30	900mm x 900mm TYPE 1 FIELD INLET REFER PEAKURBAN STD. DRG. S-103 AND AND STRUCTURE DETAIL FOR DETAILS	39.365		40.80 ~~40.679~~	E: 5898.365 N: 3517.573	75.961
OUT/30	CONCRETE HEADWALL	38.714		38.70 ~~38.755~~	E: 5903.854 N: 3524.662	84.927

Pipe	Pipe Size mm (Class)	Pipe Grade %	Pipe Slope 1 in X	Full Pipe Flow Velocity (m/s)	Pipe Flow (Cumecs)	Hydraulic Grade Level (US / DS)	Depth to Invert (US / DS)	Invert Level of Drain (US / DS)	Length
R38/30 – R37/30	225(U)	0.60%	166.66	0.33(0.33 1y)	0.015	40.778 / 40.772	0.703 / 0.813	40.289 / 40.229	10.000
R37/30 – R36/30	225(U)	0.60%	166.66	0.66(0.66 1y)	0.030	40.765 / 40.743	0.833 / 0.803	40.209 / 40.149	10.000
R36/30 – R35/30	225(U)	0.56 ~~0.60%~~	~~166.67~~ 1 in179	0.98(0.98 1y)	0.045	40.728 / 40.666	~~0.823~~ 0.900 / 0.920 ~~0.828~~	~~40.129~~ 40.14 / 40.07 ~~40.054~~	~~12.500~~ 12.51
R35/30 – R34/30	225(U)	0.56 ~~0.60%~~	~~166.67~~ 1 in 180	1.31(1.31 1y)	0.060	40.639 / 40.529	~~0.848~~ 0.940 / 0.940 ~~0.853~~	~~40.034~~ 40.05 / 39.98 ~~39.959~~	~~12.500~~ 12.58
R34/30 – R33/30	225(U)	0.70 ~~0.60%~~	~~166.66~~ 1 in 143	1.64(1.64 1y)	0.075	40.487 / 40.349	~~0.873~~ 0.960 / 0.930 ~~0.833~~	~~39.939~~ 39.96 / 39.89 ~~39.879~~	~~10.000~~ 10.04
R33/30 – R32/30	225(U)	2.64 ~~1.50%~~	~~66.67~~ 1 in 38	1.97(1.97 1y)	0.090	40.288 / 40.090	~~0.853~~ 0.950 / 1.160 ~~0.953~~	~~39.859~~ 39.87 / 39.61 ~~39.709~~	~~10.000~~ 9.85
R32/30 – R31/30	225(U)	0.99 ~~2.00%~~	~~50.00~~ 1 in 101	2.29(2.29 1y)	0.105	40.007 / 39.365	~~0.973~~ 1.190 / 1.330 ~~1.209~~	~~39.689~~ 39.58 / 39.47 ~~39.470~~	~~10.961~~ 11.12
R31/30 – OUT/30	300(U)	0.85 ~~0.61%~~	~~163.02~~ 1 in 117	1.69(1.69 1y)	0.123	38.811 / 38.714	~~2.214~~ 2.330 / 0.300 ~~0.345~~	~~38.465~~ 38.47 / 38.40 ~~38.410~~	~~8.966~~ 8.22

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	19.08.20	AC	SC	AMENDED OUT/5 LOCATION
C	04.09.20	MG	MG	LINE 30 ADDED
D	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
E	15.12.20	TD	SC	AS CONTRUCTED

DRAWN / DESIGN
STATUS: **AS CONSTRUCTED**
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

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

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

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 2**
PROJECT No. **18-0175** | DRAWING No. **115** | REVISION **E**

STORMWATER STRUCTURE NOTE:

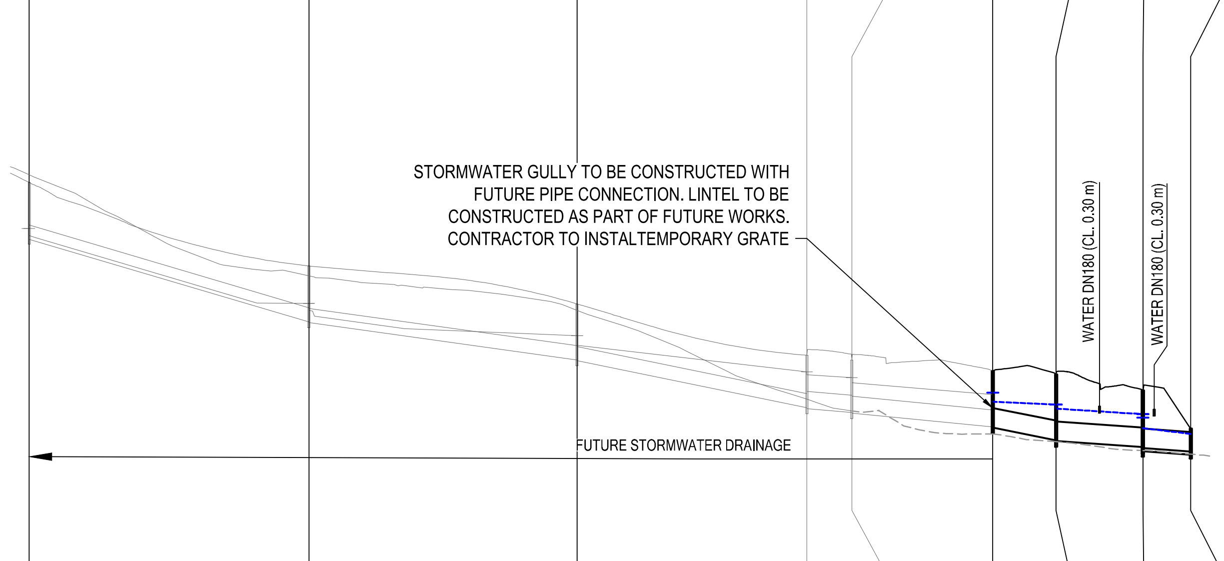
STANDARD ROUND MANHOLES LESS THAN 3.0m DEEP:
CONSTRUCT IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.

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 10

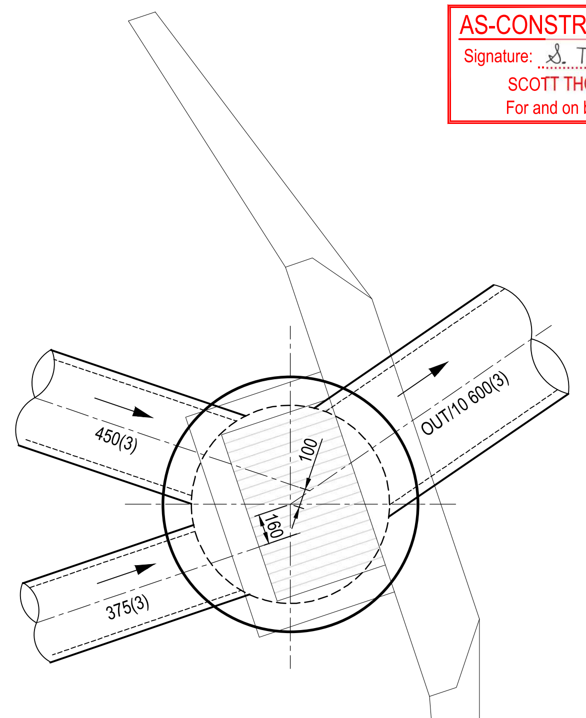
STRUCTURE NAME	STRUCTURE DESCRIPTION	WATER LEVEL IN STRUCTURE	HYDRAULIC GRADE LEVEL	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT	RUNNING CHAINAGE
G17/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	44.951	44.951 / 44.765	1.500	44.671	46.171	E: 5755.519 N: 3319.357	0.000
G16/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	42.975	42.975 / 42.837	1.480 / 1.500	42.482 / 42.462	43.962	E: 5767.005 N: 3392.467	74.007
G15/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	42.121	42.121 / 41.867	1.480 / 1.500	41.479 / 41.459	42.959	E: 5778.027 N: 3462.606	145.007
G14/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	41.162	41.162 / 41.087	1.392 / 1.412	40.212 / 40.192	41.604	E: 5787.478 N: 3522.740	205.879
G13/10	STD TYPE A GULLY - LIP IN LINE ANTI-POUNDING	41.006	41.006 / 40.872	1.389 / 1.409	40.090 / 40.070	41.479	E: 5793.273 N: 3533.126	217.772
G12/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE	40.614	40.560 / 40.375	1.480 / 1.500	39.705 / 39.685	41.185	E: 5828.039 N: 3546.632	255.069
G11/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - ON GRADE OVER 1050mm MANHOLE	40.298	40.298 / 40.190	1.743 / ~~1.763~~ 1.810	39.353 / ~~39.333~~ 39.32	41.13 ~~41.096~~	E: 5841.043 N: 3536.089	271.810
G10/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG - OVER 1050mm MANHOLE REFER DETAIL	39.953	39.953 / 39.673	1.500 ~~1.502~~ / ~~1.607~~ 1.600	39.18 ~~39.170~~ / ~~39.065~~ 39.08	40.68 ~~40.672~~	E: 5862.822 N: 3528.563	294.853
OUT/10	CONCRETE HEADWALL	39.570	39.570	0.940 ~~1.030~~	38.96 ~~38.970~~	39.90 ~~40.000~~	E: 5873.297 N: 3535.663	307.507

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
G17/10 – G16/10	375(3)	2.96%	33.81	0.38(0.221y)	1.91 (1.611y)	0.041	74.007
G16/10 – G15/10	375(3)	1.38%	72.23	1.02(0.541y)	1.91 (1.611y)	0.112	71.000
G15/10 – G14/10	375(3)	2.05%	48.81	1.71(0.891y)		0.189	60.872
G14/10 – G13/10	450(3)	0.86%	116.21	1.48(0.731y)		0.235	11.893
G13/10 – G12/10	450(3)	0.98%	102.29	1.64(0.741y)		0.260	37.297
G12/10 – G11/10	525(3)	2.14 ~~1.98%~~	~~50.40~~ 1 in 47	1.33(0.601y)		0.281	16.741
G11/10 – G10/10	525(3)	0.61 ~~0.71%~~	~~141.47~~ 1 in 164	1.57(0.731y)		0.331	~~23.043~~ 22.99
G10/10 – OUT/10	600(3)	0.95 ~~0.75%~~	~~133.20~~ 1 in 105	1.96(0.851y)		0.554	~~12.654~~ 12.62

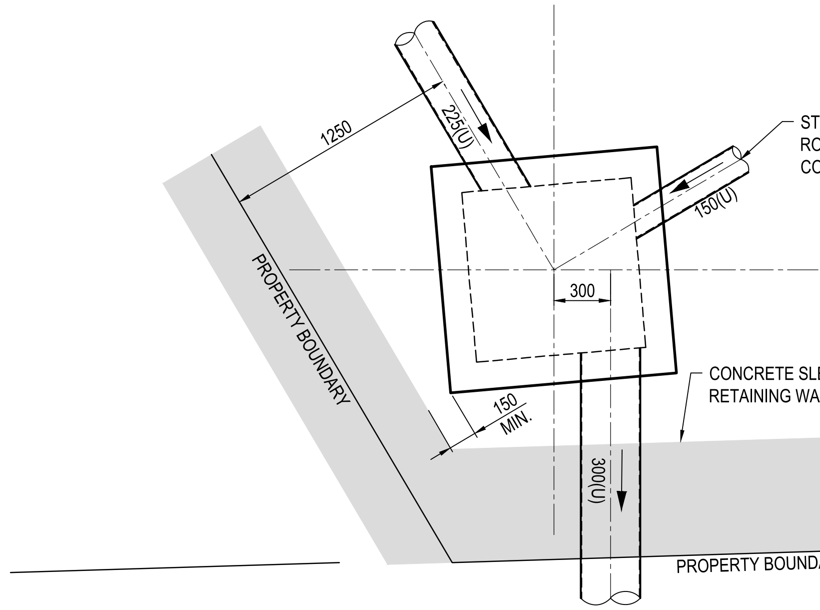
LINE 11

STRUCTURE NAME	STRUCTURE DESCRIPTION	WATER LEVEL IN STRUCTURE	HYDRAULIC GRADE LEVEL	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT	RUNNING CHAINAGE
G18/11	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG	40.405	40.405 / 40.090	~~1.310~~ 1.340	~~39.361~~ 39.35	40.69 ~~40.671~~	E: 5855.237 N: 3526.021	0.000
G10/10	STD TYPE A GULLY - LIP IN LINE 2.4m LINTEL - SAG - OVER 1050mm MANHOLE REFER DETAIL	40.043	40.043 / 39.763	1.380 ~~1.357~~	39.30 ~~39.315~~	40.68 ~~40.672~~	E: 5862.822 N: 3528.563	8.000

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
G18/11 – G10/10	375(3)	0.60 ~~0.57%~~	~~174.31~~ 1 in 167	1.22(0.451y)		0.135	~~8.000~~ 8.33



G10/10 - GULLY (SAG) OVER 1050mm MANHOLE
1:20 (A1)
1:40 (A3)



R31/30 - 900mm x 900mm
1:20 (A1)
1:40 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	19.08.20	AC	SC	AMENDED OUT/6 LOCATION
C	04.09.20	MG	MG	STRUCTURE DETAIL FOR R31/30 ADDED AND PIPE OFFSETS FOR STRUCTURE G10/10 AMENDED
D	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
E	15.12.20	TD	SC	AS CONTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

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

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

PROJECT NAME: **WOODLINKS STAGE 9A**
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 2**

PROJECT No. **18-0175** DRAWING No. **116** REVISION **E**

LOCATION					TIME			SUB-CATCHMENT RUNOFF						INLET DESIGN						
						tc	I	C10	C	A	C×A	+CA	Q					Qg	Qb	
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 × 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.
yrs					%	min	mm/h			ha	ha	ha	l/s	l/s	%	l/s		l/s	l/s	
2 100	R5/3	R5/3 to R4/3															24			
2 100	R4/3	R4/3 to R3/3															24			
2 100	R3/3	R3/3 to R2/3															24			
2 100	R2/3	R2/3 to R1/3															24			
2 100	R1/3	R1/3 to G2/1															24			
2 100	G4/1	G4/1 to G3/1	G4/1			5.00 5.00	146 325		0.74 1.00	0.057 0.057	0.042 0.057	0.042 0.057	17 51	17 FLOW WIDTH 0.678 m	2.65	498	1	17 (UNLOCKED 0)	0	G3/2
2 100	G3/1	G3/1 to G2/1	G4/1;G3/1			13.00 13.00	100 230		0.74 1.00	0.337 0.337	0.249 0.337	0.249 0.337	69 215	69 FLOW WIDTH 1.533 m DOWNSTREAM 0.446m	2.65	498	1	59 (UNLOCKED 0)	10	G2/1
2 100	G2/1	G2/1 to G1/1	G4/1;G3/1;G2			10.00 10.00	112 255	0.82 0.82	0.70 0.98	0.279 0.279	0.195 0.273	0.195 0.273	61 194	71 FLOW WIDTH 1.643 m DOWNSTREAM 0.503m	2.10	444	1	60 (UNLOCKED 0)	10	G1/1
2 100	G3/2	G3/2 to G1/1	G3			5.00 5.00	146 325	0.88 0.88	0.75 1.00	0.104 0.104	0.078 0.104	0.078 0.104	32 94	32 FLOW WIDTH 0.977 m	2.95	526	4	32 (UNLOCKED 0)	0	EX PIT
2 100	G1/1	G1/1 to OUT/1	G4/1;G3/1;G2;G3;G1			10.00 10.00	112 255	0.82 0.82	0.70 0.98	0.298 0.298	0.209 0.292	0.209 0.292	65 207	75 FLOW WIDTH 1.559 m DOWNSTREAM 0.529m	2.95	526	1	62 (UNLOCKED 0)	13	EX PIT
10 100	G2/06	G2/06 to G1/06	G2/06			5.00 5.00	211 325		0.88 1.00	0.068 0.068	0.060 0.068	0.060 0.068	35 61	35 FLOW WIDTH 0.889 m	5.00	685	4	35 (UNLOCKED 0)	1	
10 100	G1/06	G1/06 to OUT/06	G2/06;G1/06			5.00 5.00	211 325		0.88 1.00	0.010 0.010	0.009 0.010	0.009 0.010	5 9	5 FLOW WIDTH 0.183 m	2.82	514	4	5 (UNLOCKED 0)	0	

STRUCTURE No.	DRAIN DESIGN													
	tc	I	+CA	Qt	Qm	Qs	Qp	L	S		V	T		
STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C × 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
	min	mm/h	ha	l/s	l/s	l/s	l/s	m	%	mm	m/s	min		
R5/3	6.31 6.31	135 303	0.119 0.119	100	1920	0 (Pipe flow set by user)	100	17.943	1.95	225(U)	2.18(2.181y) (1.95)	0.14		
R4/3	6.45 6.45	134 301	0.119 0.134	112	1920	12 Additional flow: 0.013 cumecs (Pipe flow= Sum upstr atten flows)	113	1.703	1.94	300(U)	1.56(1.561y) (2.27)	0.02		Qo 0.113 Do 300 CHART 50 Du/Do0.75 alpha 90 K'w 0.30 Vu 2.50 WSE 0.29 Ku 1.57 Kw 2.34
R3/3	6.47 6.47	134 301	0.134 0.134	112	1920	0 (Pipe flow= Sum upstr atten flows)	113	3.026	0.93	300(U)	1.56(1.561y) (1.57)	0.03		Qo 0.113 Do 300 Flow R4/3 made eqv grate flow CHRT 32: Vo2/2gDo 0.41 H/Do 0.67 Kg side flow 3.52 end flow 3.13 K vals above for stepped pipes as grate flow grate flow decreased by 0.113 from R4/3
R2/3	6.50 6.50	134 300	0.134 0.134	112	1920	0 (Pipe flow= Sum upstr atten flows)	113	28.000	1.43	300(U)	1.56(1.561y) (1.95)	0.30		Qo 0.113 Do 300 CHART 50 Du/Do1.00 alpha 90 K'w 0.30 Vu 1.60 WSE 0.26 Ku 1.80 Kw 2.12
R1/3	6.80 6.80	131 296	0.134 0.134	110	3516	0 (Pipe flow= Sum upstr atten flows)	113	5.929	2.01	375(3)	1.02(1.021y) (2.25)	0.10		Qo 0.113 Do 375 Flow R2/3 made eqv grate flow CHRT 32: Vo2/2gDo 0.14 H/Do 0.41 Kg side flow 6.01 end flow 4.73 K vals above for stepped pipes as grate flow grate flow decreased by 0.113 from R2/3
G4/1	5.00 5.00	146 325	0.042 0.057	51	3381	34 (Pipe flow= Grate flow)	17	7.975	1.00	375(3)	0.15(0.12 1y) (1.59)	0.13		Qg 0.017 Qo 0.017 Do 375 CHRT 32: Vo2/2gDo 0.00 H/Do 0.00 Kg side flow 10.79 end flow 7.53 Part full downstream pipe
G3/1	13.00 13.00	100 230	0.291 0.394	252	3381	181 (Pipe flow= Sum upstr atten flows)	71	73.000	2.40	375(3)	0.64(0.54 1y) (2.46)	1.22		Qg 0.059 Qo 0.071 Do 375 Angle 90 Chart 47 S/Do 2.5 chartdeg Du/Do 1.00 K0 1.92 K0.5 2.12 Qu/Qo 0.17 Cg 1.29 K 2.18 S/Do 2.0 K0 2.44 K0.5 2.40 K 2.39 S/Do 1.5 K0 2.67 K0.5 2.58 K 2.56
G2/1	14.22 14.22	96 222	0.620 0.801	494	3516	292 (Pipe flow= Sum upstr atten flows)	202	70.936	2.40	375(3)	1.83(1.62 1y) (2.46)	0.65		Qg 0.052 Qo 0.202 Do 375 Flow R1/3 made eqv grate flow CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.67 K 1.81 S/Do 1.97 cor 0.31 Ku 2.12 Kw 2.12 K vals above for stepped pipes as grate flow grate flow decreased by 0.083 from R1/3 Routine 2.1 CHART 48 Du/Do 1.00 Qu/Qo 0.33 K 1.79 d/Do 2.0 chrt Qg/Qo 0.26 Kg 0.44 d/Do 1.5 chrt Qg/Qo 0.26 Kg 0.52 d/Do 1.00 Interp value Kg 0.59
G3/2	5.00 5.00	146 325	0.078 0.104	94	3325	62 (Pipe flow= Grate flow)	32	8.000	1.00	375(3)	0.29(0.21 1y) (1.59)	0.13		Qg 0.032 Qo 0.032 Do 375 CHRT 32: Vo2/2gDo 0.01 H/Do 0.10 Kg side flow 10.11 end flow 7.09
G1/1	14.87 14.87	94 218	0.907 1.197	725	3325	454 (Pipe flow= Sum upstr atten flows)	271	30.540	1.40	450(3)	1.70(1.43 1y) (2.12)	0.30		Qg 0.052 Qo 0.271 Do 450 Routine 2.1 CHART 48 Du/Do 0.83 Qu/Qo 0.73 K 0.48 d/Do 2.0 chrt Qg/Qo 0.19 Kg 0.24 d/Do 1.5 chrt Qg/Qo 0.19 Kg 0.27 d/Do 1.00 Interp value Kg 0.31 Ku=Kw= 0.79 Combined pipes in line case Join Pipes:
G2/06	5.00 5.00	211 325	0.060 0.068	61		(Pipe flow= Grate flow)	35	32.729	5.00	375(3)	0.31(0.171y) (3.55)	0.55		Qg 0.035 Qo 0.035 Do 375 CHRT 32: Vo2/2gDo 0.01 H/Do 0.00 Kg side flow 10.48 end flow 7.37 Part full downstream pipe
G1/06	5.55 5.55	205 316	0.069 0.078	68		(Pipe flow= Sum upstr atten flows)	39	9.884	5.00	375(3)	0.35(0.191y) (3.55)	0.16		Qg 0.005 Qo 0.039 Do 375 Angle 70 Chart 45 S/Do 2.5 chartdeg Du/Do 1.00 K0 2.16 K0.5 1.81 Qu/Qo 0.87 Cg 0.33 K 2.05 S/Do 2.0 K0 2.47 K0.5 2.34 K 2.43 S/Do 1.5 K0 2.74 K0.5 2.80 K 2.76 Interp val for S/Do 1.05 Kw 3.06 CHART 44

HEADLOSSES									PART FULL		DESIGN LEVELS						
V2/2g	Ku	hu	Kl	hl	Kw	hw	Sf	hf		Vp							
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 × 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.
m		m		m		m	%	m	m	m/s	m	m	m	m	m	m	
0.242	0.55	0.133			0.55	0.133	2.44	0.439			38.261 37.911	38.557 38.118	38.690		38.690	39.045	R5/3
0.124	1.57	0.194			2.34	0.290	0.91	0.016			37.904 37.871	37.924 37.908	38.118		38.214	38.347	R4/3
0.124	1.80	0.223	CHART 51 ti 389 Do 300 theta 89 r/Do 2.00 Du 300 Du/Do 1.00 Kd 1.80 K'w 0.30 Vu 1.60 WSE 0.26 Ku 1.80 Kw 2.11 K vals step pipes as pipe flow Ku 1.80 Kw 2.11		2.11	0.262	0.91	0.028			37.482 37.454	37.685 37.657	37.908		37.947	38.358	R3/3
0.124	1.80	0.223			2.12	0.262	0.91	0.255	0.206 (0.2061y)	2.16 (2.161y)	37.434 37.034	37.434 37.044	37.657		37.696	38.160	R2/3
0.053	0.86	0.045	CHART 51 ti 260 Do 375 theta 28 r/Do 0.85 Du 300 Du/Do 0.80 Kd 0.86 K'w 0.23 Vu 1.60 WSE 0.08 Ku 0.86 Kw 1.42 K vals step pipes as pipe flow Ku 0.86 Kw 1.42		1.42	0.075	0.42	0.025			36.845 36.726	36.999 36.974	37.044		37.074	37.963	R1/3
0.001	1.00	0.001	Upstream HGL 38.411 below outlet pipe obv 38.452 Set Kp to 1		1.00	0.001	0.01	0.001	0.079 (0.070 1y)	1.01 (0.94 1y)	38.452 38.372	38.410 38.409	38.411		38.411	39.286	G4/1
0.021	2.71	0.057	Interp val for S/Do 1.15 Kw 2.68 CHART 46 S/Do 2.0 K0 2.04 K0.5 1.92 K 1.88 S/Do 1.5 K0 2.09 K0.5 2.31 K 2.37 Interp val for S/Do 1.15 Ku 2.71		2.71	0.057	0.16	0.118	0.130 (0.119 1y)	2.06 (1.96 1y)	38.352 36.600	38.352 36.926	38.409		38.409	39.323	G3/1
0.171	2.03	0.346	Ku=Kw= 2.38 Combined pipes in line case Join Pipes: G3/1 and R1/3 Vel1 0.613 Vel2 0.750 Eq Dia 527 Angle 214 Flow 0.151 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.41 Qg/Qo 0.26 K 0.97 S/Do 1.56 cor 0.26 Ku 1.23 Kw 1.23 Interpolated Ku= 2.02 Kw= 2.02 K vals step pipes as pipe flow Ku 2.02 Kw 2.02 Averaged Ku 2.03 Kw 2.03		2.03	0.346	1.33	0.947	0.242 (0.223 1y)	2.70 (2.63 1y)	36.580 34.878	36.580 34.994	36.926		36.926	37.688	G2/1
0.004	10.11	0.043			10.11	0.043	0.03	0.003			34.958 34.878	34.997 34.994	35.040		35.040	36.025	G3/2
0.147	0.79	0.116	G2/1 and G3/2 Vel1 1.794 Vel2 0.184 Eq Dia 411 Angle 171 Flow 0.219 CHART 33 Angle 0 S/Do 2.5 Du/Do 0.91 Qg/Qo 0.19 K 0.69 S/Do 1.31 cor 0.26 Ku 0.95 Kw 0.95 Interpolated Ku= 0.79 Kw= 0.79		0.79	0.116	0.90	0.276	0.305 (0.271 1y)	2.36 (2.28 1y)	34.878 34.450	34.878 34.305	34.994		34.994	36.032	G1/1
0.005	1.00	0.244	Upstream HGL 41.620 below outlet pipe obv 41.676 Set Kp to 1		1.00	0.244	0.04	0.013	0.075 (0.0561y)	2.19 (1.821y)	41.676 40.039	41.376 39.985	41.620		41.620	42.638	G2/06
0.006	1.00	0.261	S/Do 2.0 K0 1.99 K0.5 2.11 K 2.03 S/Do 1.5 K0 2.12 K0.5 2.17 K 2.14 Interp val for S/Do 1.05 Ku 2.23 Part full downstream pipe Upstream HGL 39.985 below outlet pipe obv 40.019 Set Kp to 1		1.00	0.261	0.05	0.005	0.080 (0.0591y)	2.26 (1.881y)	40.019 39.525	39.724 39.230	39.985		39.985	41.176	G1/06

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.09.20	MG	MG	LINE 6 ADDED FROM SHEET 2
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	15.12.20	TD	SC	AS CONTRUCTED

DRAWN
DESIGN
STATUS
AS CONSTRUCTED
APPROVED
SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

ENQUIRIES@PEAKURBAN.COM.AU

SCALE

CLIENT
CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
1300 123 744

PROJECT NAME
WOODLINKS STAGE 9A
COLLINGWOOD DRIVE,
COLLINGWOOD PARK

DRAWING TITLE
STORMWATER DRAINAGE CALCULATIONS TABLE SHEET 1 OF 2

PROJECT No. **18-0175**
DRAWING No. **117**
REVISION **D**

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)
10 100	G17/10	G17/10 to G16/10	G16			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.164 0.164	0.134 0.161	0.134 0.161	61 114
10 100	G16/10	G16/10 to G15/10	G16;G15			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.249 0.249	0.204 0.244	0.204 0.244	93 173
10 100	G15/10	G15/10 to G14/10	G16;G15;G14			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.295 0.295	0.242 0.289	0.242 0.289	110 205
10 100	G14/10	G14/10 to G13/10	G16;G15;G14;G13			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.159 0.159	0.130 0.156	0.130 0.156	59 110
10 100	G13/10	G13/10 to G12/10	G16;G15;G14;G13;G12			5.00 5.00	211 325	0.82 0.82	0.82 0.98	0.001 0.001	0.001 0.001	0.001 0.001	1 1
10 100	G12/10	G12/10 to G11/10	G16;G15;G14;G13;G12; G18			5.00 5.00	211 325	0.88 0.88	0.88 1.00	0.083 0.083	0.073 0.083	0.073 0.083	43 75
10 100	G11/10	G11/10 to G10/10	G16;G15;G14;G13;G12; G18;G11			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.208 0.208	0.171 0.204	0.171 0.204	78 144
10 100	G18/11	G18/11 to G10/10	G17			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.276 0.276	0.226 0.270	0.226 0.270	103 192
10 100	G10/10	G10/10 to OUT/10	G16;G15;G14;G13;G12; G18;G11;G17;G10			10.00 10.00	164 255	0.82 0.82	0.82 0.98	0.332 0.332	0.272 0.325	0.272 0.325	124 230
10 100	G6/5	G6/5 to G5/5	G6			5.00 5.00	211 325	0.88 0.88	0.88 1.00	0.172 0.172	0.151 0.172	0.151 0.172	89 155
10 100	G5/5	G5/5 to OUT/5	G6;G5			5.00 5.00	211 325	0.88 0.88	0.88 1.00	0.147 0.147	0.129 0.147	0.129 0.147	76 133
2 100	R38/30	R38/30 to R37/30											
2 100	R37/30	R37/30 to R36/30											
2 100	R36/30	R36/30 to R35/30											
2 100	R35/30	R35/30 to R34/30											
2 100	R34/30	R34/30 to R33/30											
2 100	R33/30	R33/30 to R32/30											
2 100	R32/30	R32/30 to R31/30											
2 100	R31/30	R31/30 to OUT/30											

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.
G17/10	61 FLOW WIDTH 0.553 m DOWNSTREAM 0.110m	58.21	2336	4	41 (UNLOCKED 0)	20	
G16/10	93 FLOW WIDTH 3.162 m DOWNSTREAM 1.418m	0.20	137	4	77 (UNLOCKED 0)	16	G15/10
G15/10	127 FLOW WIDTH 2.284 m DOWNSTREAM 1.283m	1.64	392	4	88 (UNLOCKED 0)	38	G14/10
G14/10	98 FLOW WIDTH 0.775 m DOWNSTREAM 0.386m	58.95	2351	4	56 (UNLOCKED 0)	42	G13/10
G13/10	42 FLOW WIDTH 0.939 m	6.01	751	4	39 (UNLOCKED 0)	3	G11/10
G12/10	43 FLOW WIDTH 0.058 m	373.97	5922	4	33 (UNLOCKED 0)	10	G6/5
G11/10	81	189199.80	133199	4	49 (UNLOCKED 0)	32	G18/11
G18/11	135 FLOW WIDTH 2.077 m	3.20	260	13S.1	135 (UNLOCKED 0)	0	G10/10
G10/10	124 FLOW WIDTH 1.899 m	16.95	260	13S.1	124 (UNLOCKED 0)	0	OUT
G6/5	98 FLOW WIDTH 1.363 m	0.50	236	16S.1	98 (UNLOCKED 0)	0	G5/5
G5/5	76 FLOW WIDTH 0.763 m	7.09	236	16S.1	76 (UNLOCKED 0)	0	OUT
R38/30				24			
R37/30				24			
R36/30				24			
R35/30				24			
R34/30				24			
R33/30				24			
R32/30				24			
R31/30				24			

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.
G17/10	10.00 10.00	164 255	0.134 0.161	114	1341	73 (Pipe flow= Grate flow)	41	74.007	2.96	375(3)	0.38(0.221y) (2.73)	1.23	
G16/10	11.23 11.23	156 244	0.338 0.405	275	1215	162 (Pipe flow= Sum upstr atten flows)	112	71.000	1.38	375(3)	1.02(0.541y) (1.87)	1.16	
G15/10	12.39 12.39	150 234	0.580 0.694	451	3478	263 (Pipe flow= Sum upstr atten flows)	189	60.872	2.05	375(3)	1.71(0.891y) (2.27)	0.59	
G14/10	12.98 12.98	147 230	0.710 0.850	543	1332	308 (Pipe flow= Sum upstr atten flows)	235	11.893	0.86	450(3)	1.48(0.731y) (1.66)	0.13	
G13/10	13.11 13.11	146 229	0.711 0.851	541	2918	281 (Pipe flow= Sum upstr atten flows)	260	37.297	0.98	450(3)	1.64(0.741y) (1.77)	0.38	
G12/10	13.49 13.49	145 226	0.784 0.934	586	580	305 (Pipe flow= Sum upstr atten flows)	281	16.741	1.98	525(3)	1.33(0.601y) (2.77)	0.21	
G11/10	13.70 13.70	144 225	0.955 1.138	711	56	381 (Pipe flow= Sum upstream flows)	331	23.043	0.71	525(3)	1.57(0.731y) (1.65)	0.24	
G18/11	10.00 10.00	164 255	0.226 0.270	191	3278	57 (Pipe flow= Grate flow)	135	8.000	0.57	375(3)	1.22(0.451y) (1.20)	0.11	
G10/10	13.94 13.94	143 223	1.453 1.733	1073	2161	520 (Pipe flow= Sum upstr atten flows)	554	19.996	0.75	600(3)	1.96(0.851y) (1.88)	0.17	
G6/5	5.00 5.00	211 325	0.151 0.172	155	1920	57 (Pipe flow= Grate flow)	98	12.000	3.04	375(3)	0.89(0.341y) (2.77)	0.20	
G5/5	5.20 5.20	209 322	0.280 0.319	285	2812	113 (Pipe flow= Sum upstr atten flows)	172	10.715	3.76	450(3)	1.08(0.431y) (3.47)	0.17	
R38/30	5.00 5.00	146 325	0.017 0.017	15	1920	15 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	15	10.000	0.60	225(U)	0.33(0.33 1y) (1.08)	0.17	
R37/30	5.17 5.17	144 322	0.017 0.033	30	1920	15 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	30	10.000	0.60	225(U)	0.66(0.66 1y) (1.08)	0.17	
R36/30	5.34 5.34	143 319	0.033 0.050	44	1920	14 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	45	12.500	0.60	225(U)	0.98(0.98 1y) (1.08)	0.21	
R35/30	5.55 5.55	141 316	0.050 0.067	59	1920	14 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	60	12.500	0.60	225(U)	1.31(1.31 1y) (1.08)	0.16	
R34/30	5.71 5.71	140 313	0.067 0.085	74	1920	14 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	75	10.000	0.60	225(U)	1.64(1.64 1y) (1.08)	0.10	
R33/30	5.81 5.81	139 312	0.085 0.102	88	1920	13 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	90	10.000	1.50	225(U)	1.97(1.97 1y) (1.71)	0.08	
R32/30	5.89 5.89	138 310	0.102 0.119	102	1920	12 Additional flow: 0.015 cumecs (Pipe flow= Sum upstr atten flows)	105	10.961	2.00	225(U)	2.29(2.29 1y) (1.98)	0.08	
R31/30	5.97 5.97	138 309	0.119 0.140	120	1920	15 Additional flow: 0.018 cumecs (Pipe flow= Sum upstr atten flows)	123	8.966	0.61	300(U)	1.69(1.69 1y) (1.28)	0.09	

STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS

STRUCTURE No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS
G17/10	Qg 0.041 Qo 0.041 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
G16/10	Qg 0.073 Qo 0.112 Do 375 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.65 K 1.78 S/Do 1.37 cor 0.83 Ku 2.61 Kw 2.61
G15/10	Qg 0.081 Qo 0.189 Do 375 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.43 K 1.38 S/Do 1.76 cor 0.32 Ku 1.70 Kw 1.70
G14/10	Qg 0.050 Qo 0.235 Do 450 CHART 34 Angle 20 Case3 S/Do 2.5 Du/Do 0.83 Qg/Qo 0.21 K 0.61 S/Do 2.16 cor 0.06 Ku 0.67 Kw 0.67
G13/10	Qg 0.027 Qo 0.260 Do 450 CHART 37 Angle 40 Case3 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.10 K 0.95 S/Do 2.08 cor 0.03 Ku 0.98 Kw 0.98
G12/10	Qg 0.023 Qo 0.281 Do 525 Angle 60 Chart 45 S/Do 2.5 chartdeg Du/Do 0.86 K0 2.28 K0.5 1.83 Qu/Qo 0.92 Cg 0.21 K 2.18 S/Do 2.0 K0 2.54 K0.5 2.39 K 2.51 S/Do 1.5 K0 2.87 K0.5 2.70 K 2.84
G11/10	Qg 0.049 Qo 0.331 Do 525 CHART 34 Angle 20 Case3 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.15 K 0.77 S/Do 1.86 cor 0.09 Ku 0.86 Kw 0.86
G18/11	Qg 0.135 Qo 0.135 Do 375 CHRT 32: Vo2/2gDo 0.20 H/Do 0.95 Kg side flow 4.15 end flow 3.49
G10/10	Qg 0.108 Qo 0.554 Do 600 Routine 2.15 Join Pipes: G11/10 and G18/11 Vel1 1.517 Vel2 1.063 Eq Dia 637 Angle 222 Flow 0.446
G6/5	Qg 0.098 Qo 0.098 Do 375 CHRT 32: Vo2/2gDo 0.11 H/Do 0.00 Kg side flow 7.77 end flow 5.95
G5/5	Qg 0.075 Qo 0.172 Do 450 CHART 34 Angle 29 Case3 S/Do 2.5 Du/Do 0.83 Qg/Qo 0.43 K 1.34 S/Do 1.26 cor 0.62 Ku 1.96 Kw 1.96
R38/30	Qo 0.015 Do 225 CHRT 32: Vo2/2gDo 0.02 H/Do 1.02 Kg side flow 6.11 end flow 4.50
R37/30	Qo 0.030 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 0.37 WSE 0.01 Ku 0.31 Kw 0.33
R36/30	Qo 0.045 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 0.75 WSE 0.02 Ku 0.31 Kw 0.34
R35/30	Qo 0.060 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 1.12 WSE 0.03 Ku 0.31 Kw 0.35
R34/30	Qo 0.075 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 1.50 WSE 0.05 Ku 0.31 Kw 0.35
R33/30	Qo 0.090 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 1.87 WSE 0.07 Ku 0.31 Kw 0.36
R32/30	Qo 0.105 Do 225 CHART 50 Du/Do1.00 alpha 0 K'w 0.05 Vu 2.25 WSE 0.10 Ku 0.31 Kw 0.36
R31/30	Qo 0.123 Do 300 Flow R32/30 made eqv grate flow CHRT 32: Vo2/2gDo 0.48 H/Do 0.14 Kg side flow 3.81 end flow 3.37 K vals above for stepped pipes as grate flow

HEADLOSSES / PART FULL / DESIGN LEVELS

STRUCTURE No.	V2/2g VELOCITY HEAD (m)	Ku U/S HEADLOSS COEFFICIENT	hu U/S PIPE STRUCT. HEADLOSS (m)	Kl LAT. HEADLOSS CO-EFFICIENT	hl LAT. 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.
G17/10	0.007	1.00	0.186	Upstream HGL 44.951 below outlet pipe obv 45.046 Set Kp to 1		1.00	0.186	0.06	0.041	0.094 (0.0701y)	1.91 (1.611y)	45.046 42.857	44.765 42.975	44.951		44.951	46.171	G17/10
G16/10	0.053	2.61	0.138			2.61	0.138	0.41	0.292	0.198 (0.1381y)	1.91 (1.611y)	42.837 41.854	42.837 42.121	42.975		42.975	43.962	G16/10
G15/10	0.149	1.70	0.254			1.70	0.254	1.16	0.705			41.834 40.587	41.867 41.162	42.121		42.121	42.959	G15/10
G14/10	0.112	0.67	0.075			0.67	0.075	0.68	0.081			40.642 40.540	41.087 41.006	41.162		41.162	41.604	G14/10
G13/10	0.137	0.98	0.134			0.98	0.134	0.84	0.312			40.520 40.155	40.872 40.560	41.006		41.006	41.479	G13/10
G12/10	0.090	2.05	0.185	Interp val for S/Do 1.79 Kw 2.65 CHART 44 S/Do 2.0 K0 1.99 K0.5 2.03 K 2.00 S/Do 1.5 K0 2.12 K0.5 2.15 K 2.13 Interp val for S/Do 1.79 Ku 2.05		2.65	0.239	0.46	0.077			40.203 39.871	40.375 40.298	40.560		40.614	41.185	G12/10
G11/10	0.126	0.86	0.108			0.86	0.108	0.64	0.147			39.851 39.688	40.190 40.043	40.298		40.298	41.096	G11/10
G18/11	0.076	4.15	0.315			4.15	0.315	0.59	0.047			39.736 39.690	40.090 40.043	40.405		40.405	40.671	G18/11
G10/10	0.196	1.43	0.280	CHART 37 Angle 42 Case3 S/Do 2.5 Du/Do 1.06 Qg/Qo 0.20 K 1.21 S/Do 1.49 cor 0.22 Ku 1.43 Kw 1.43		1.43	0.280	0.81	0.163			39.750 39.600	39.763 39.600	40.043		40.043	40.672	G10/10
G6/5	0.040	7.77	0.314			7.77	0.314	0.32	0.038	0.146 (0.0891y)	2.47 (1.891y)	39.968 39.603	39.968 39.720	40.282		40.282	40.903	G6/5
G5/5	0.059	1.96	0.117			1.96	0.117	0.37	0.039	0.173 (0.1081y)	3.07 (2.371y)	39.603 39.200	39.603 39.150	39.720		39.720	40.903	G5/5
R38/30	0.006	6.11	0.034			6.11	0.034	0.06	0.006			40.531 40.471	40.778 40.772	40.811		40.811	40.992	R38/30
R37/30	0.022	0.31	0.007			0.33	0.007	0.22	0.022			40.451 40.391	40.765 40.743	40.772		40.772	41.042	R37/30
R36/30	0.049	0.31	0.015			0.34	0.016	0.50	0.062			40.371 40.296	40.728 40.666	40.743		40.744	40.952	R36/30
R35/30	0.087	0.31	0.027			0.35	0.030	0.88	0.110			40.276 40.201	40.639 40.529	40.666		40.669	40.882	R35/30
R34/30	0.137	0.31	0.042			0.35	0.048	1.38	0.138			40.181 40.121	40.487 40.349	40.529		40.535	40.812	R34/30
R33/30	0.198	0.31	0.061			0.36	0.070	1.98	0.198			40.101 39.951	40.288 40.090	40.349		40.358	40.712	R33/30
R32/30	0.267	0.31	0.083			0.36	0.096	2.70	0.295			39.931 39.711	40.007 39.711	40.090		40.103	40.662	R32/30
R31/30	0.146	3.81	0.554			3.81	0.554	1.08	0.097			38.769 38.714	38.811 38.714	39.365		39.365	40.679	R31/30

AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.09.20	MG	MG	LINE 30 AMENDED AND LINE 6 MOVED TO SHEET 1
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	15.12.20	TD	SC	AS CONTRUCTED

DRAWN
DESIGN

STATUS
AS CONSTRUCTED

APPROVED
SCOTT THOMAS RPEQ 04618
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

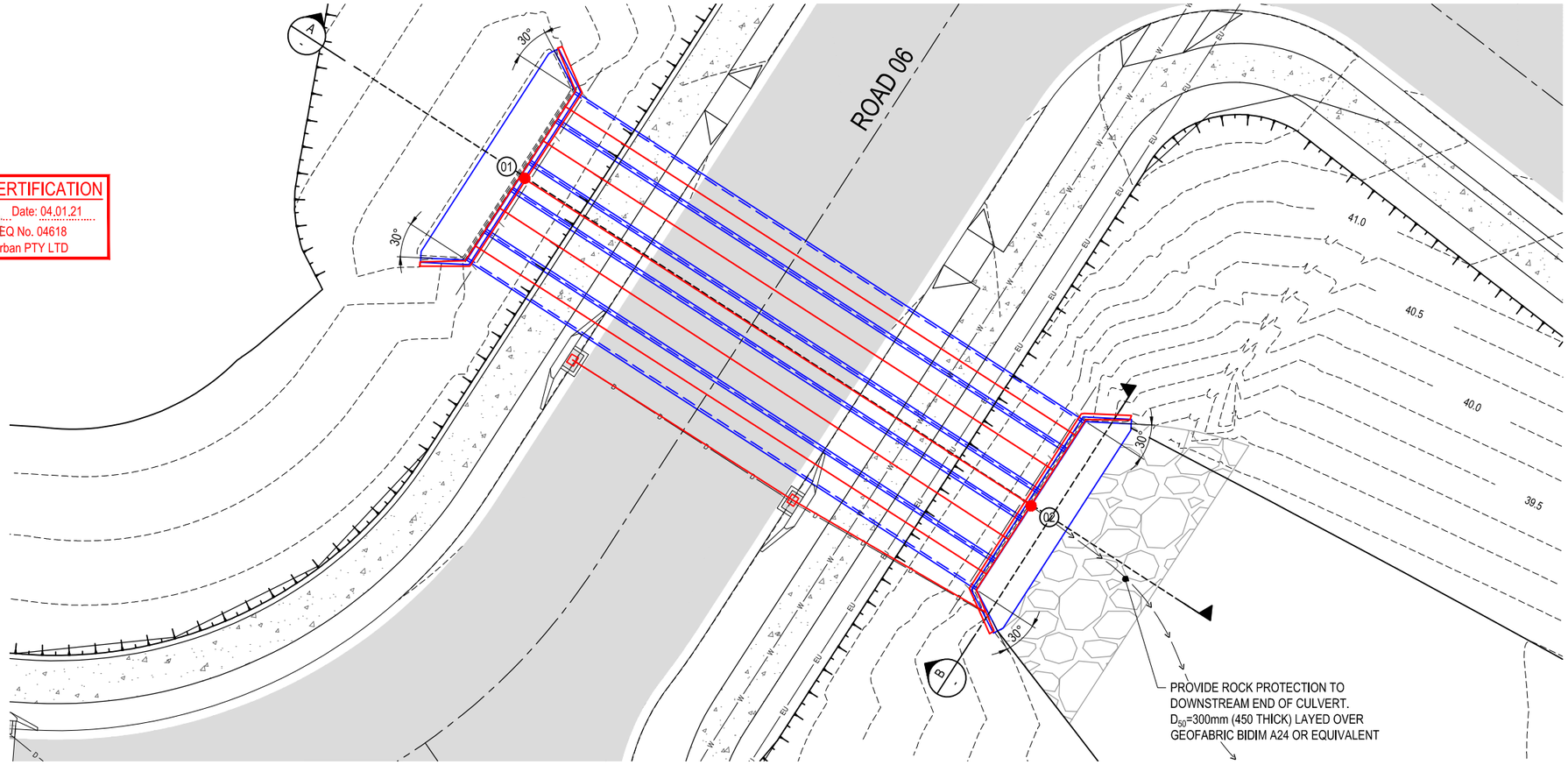
ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
1300 123 744

PROJECT NAME
WOODLINKS STAGE 9A
COLLINGWOOD DRIVE,
COLLINGWOOD PARK

DRAWING TITLE
STORMWATER DRAINAGE CALCULATIONS TABLE SHEET 2 OF 2

PROJECT No. 18-0175
DRAWING No. 118
REVISION D

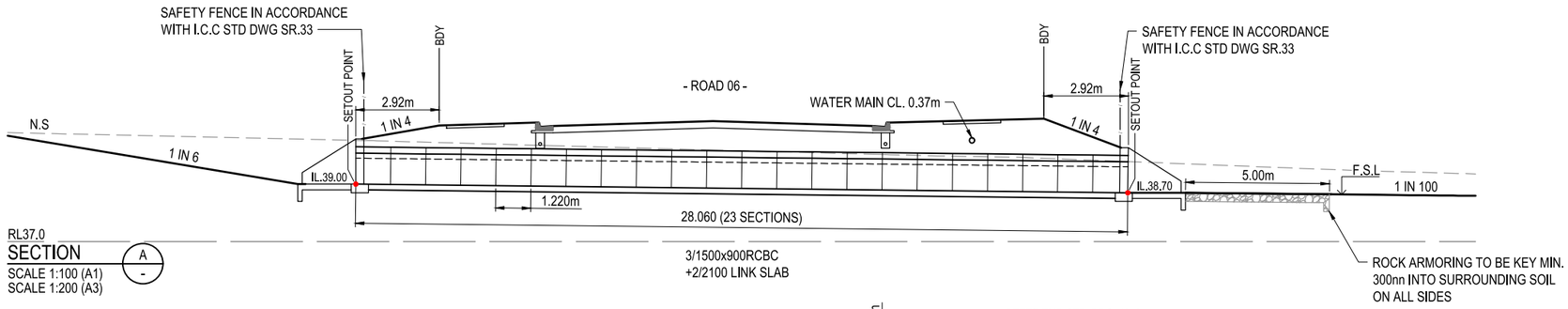
AS-CONSTRUCTED CERTIFICATION
Signature: S. Thomas Date: 04.01.21
SCOTT THOMAS RPEQ No. 04618
For and on behalf of Peakurban PTY LTD



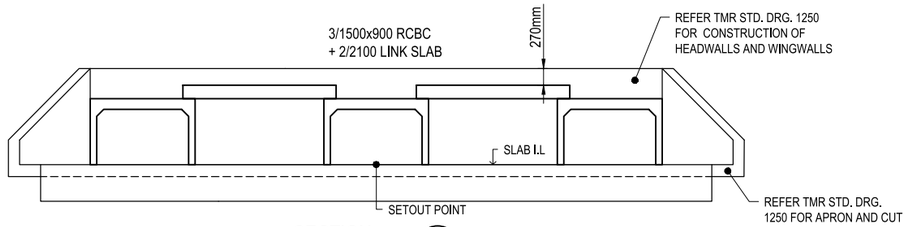
CULVERT SETOUT

NUMBER	EASTING	NORTHING
01	5852.357	3572.202
02	5875.921	3556.967

CULVERT LAYOUT DETAIL
SCALE 1:125 (A1)
SCALE 1:250 (A3)



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



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

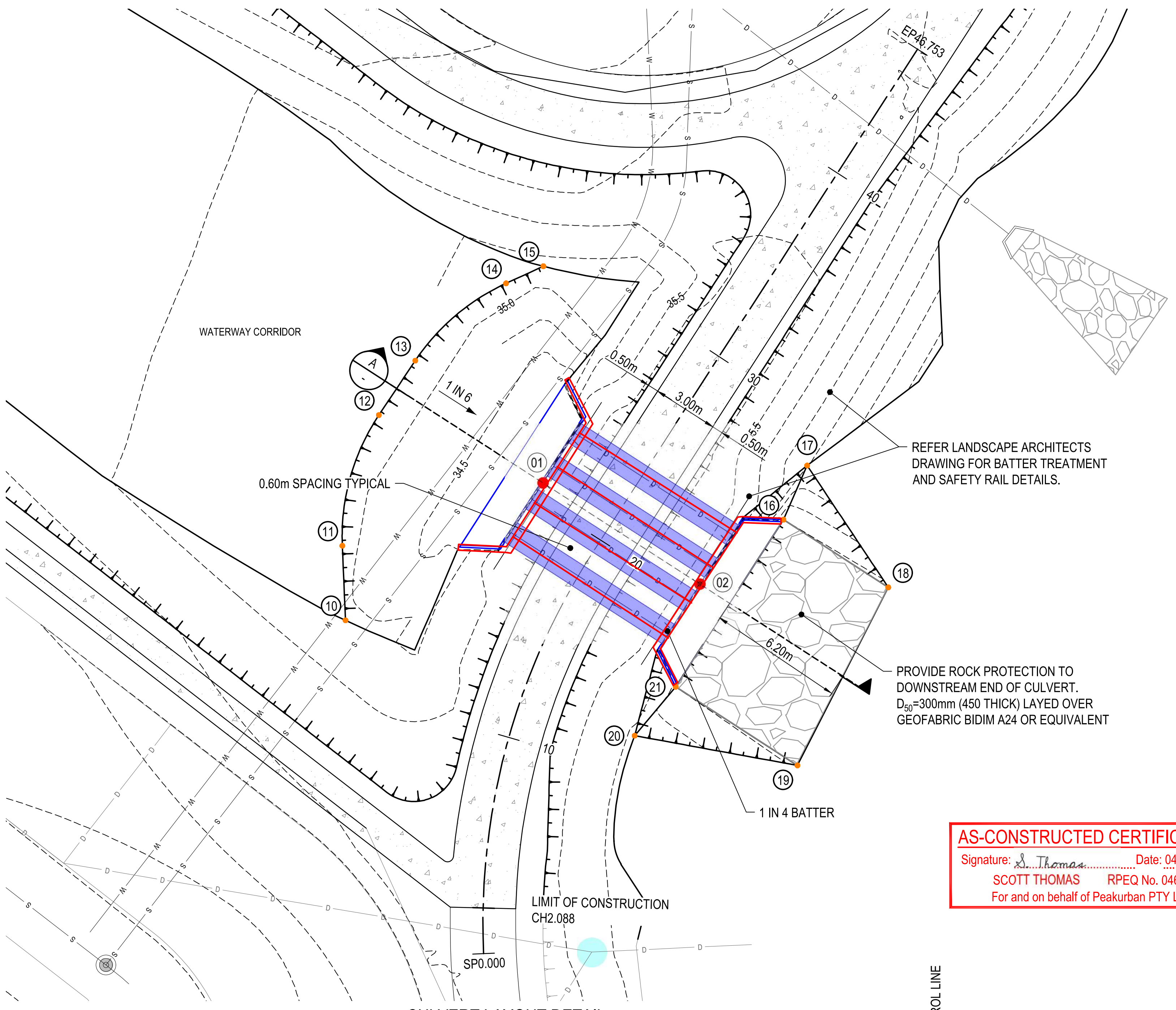
REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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

SCALE
1:50 1 0.5 0 1 2 A1
1:100 A3
1:100 1 0 1 2 3 4 5 A1
1:200 A3
1:125 2.5 0 2.5 5 A1
1:250 A3

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744
PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK
DRAWING TITLE: CULVERT DETAILS LAYOUT PLAN
PROJECT No. 18-0175
DRAWING No. 119
REVISION C



CULVERT LAYOUT DETAIL

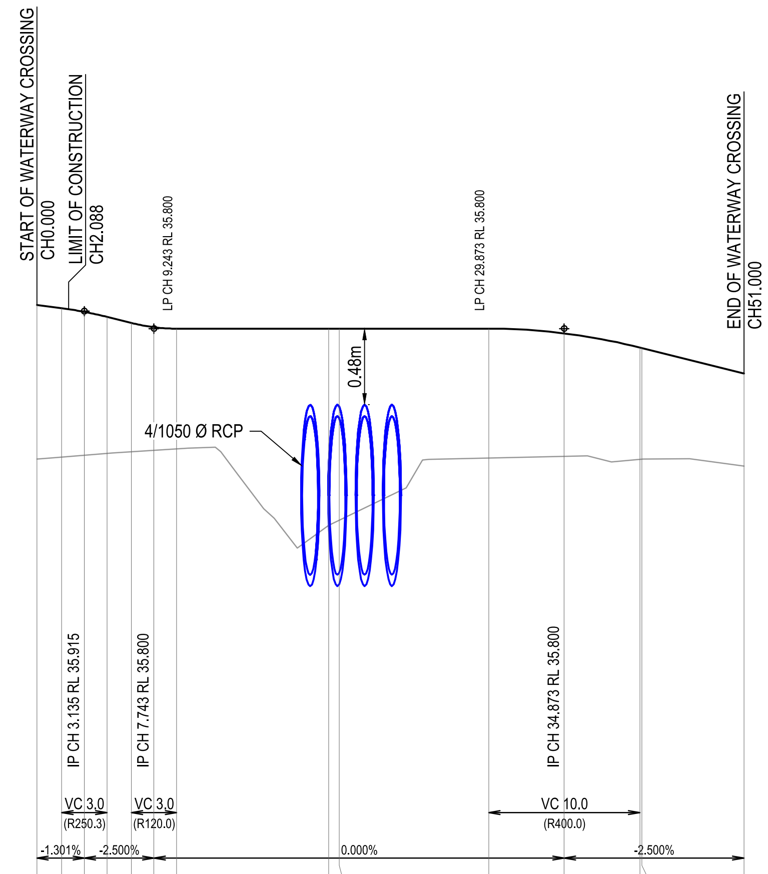
SCALE 1:100 (A1)
SCALE 1:200 (A3)

BATTER SETOUT

NUMBER	EASTING	NORTHING
10	6052.110	3421.897
11	6051.964	3425.309
12	6053.638	3431.292
13	6055.301	3433.782
14	6059.460	3437.323
15	6061.171	3438.105
16	6072.159	3426.503
17	6073.246	3428.981
18	6076.959	3423.404
19	6072.802	3415.256
20	6065.347	3416.616
21	6067.224	3418.857

CULVERT SETOUT

NUMBER	EASTING	NORTHING
01	6061.153	3428.186
02	6068.330	3423.559



DATUM RL 32.0

DESIGN SURFACE	35.956	35.935	35.911	35.878	35.838	35.809	35.800	35.800	35.800	35.800	35.769	35.675	35.672	35.503
EXISTING SURFACE	34.939	34.952	34.965	34.976	34.988	34.997	35.006	34.499	34.533	34.945	34.956	34.937	34.938	34.891
CHAINAGES	0.000	1.635	3.135	4.635	6.243	7.743	9.243	19.300	20.000	29.873	34.873	39.873	40.000	46.753

BIKE PATH

AS-CONSTRUCTED CERTIFICATION

Signature: S. Thomas .... Date: 04.01.21

SCOTT THOMAS RPEQ No. 04618

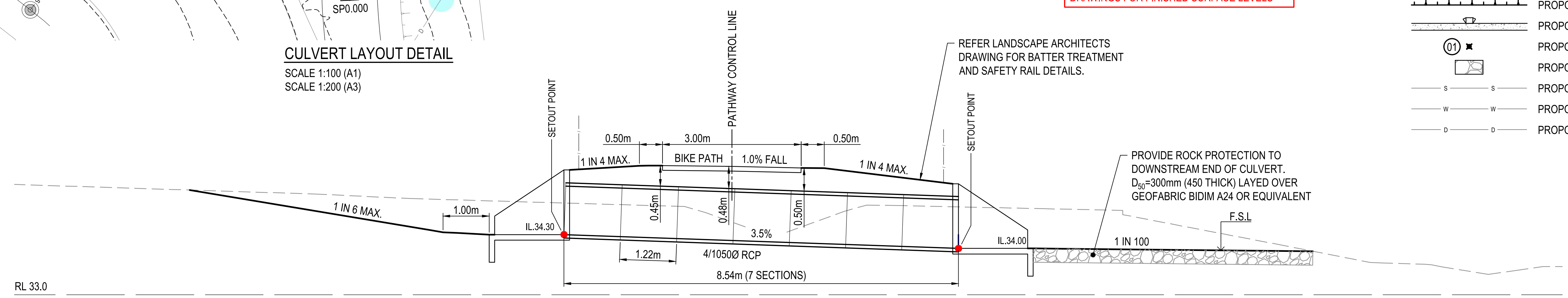
For and on behalf of Peakurban PTY LTD

NOTE:

REFER TO SURVEYORS AS-CONSTRUCTED DRAWINGS FOR FINISHED SURFACE LEVELS

LEGEND

- PROPOSED PATHWAY CONTROL LINE
- PROPOSED TOP OF BATTER
- PROPOSED CONCRETE PATH AND PRAM RAMP
- (01) PROPOSED KERB SETOUT NODE
- PROPOSED ROCK ARMORING
- S — S PROPOSED SEWERAGE MAIN
- W — W PROPOSED WATER MAIN
- D — D PROPOSED STORMWATER DRAINAGE PIPE



SECTION A

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

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	04.01.21	TD	JW	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: SCOTT THOMAS RPEQ 04618

FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN DEVELOPMENT ENGINEERS + ADVISORS

ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:50 / 1:100 (1, 0.5, 0, 1, 2) A1 / A3; 1:100 / 1:200 (1, 0, 1, 2, 3, 4, 5) A1 / A3

CLIENT: **CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED**

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: **WOODLINKS STAGE 9A**

COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: **BIKE PATH CULVERT DETAILS LAYOUT PLAN**

PROJECT No.: 18-0175

DRAWING No.: 120

REVISION: C

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

NAME OF ESTATE		WOODLINKS VILLAGE - STAGE 9A
SUBDIVIDER		CANBERRA ESTATES
Q.U.U. APPLICATION No.		18-PNT-37793
Q.U.U. DELEGATE APPROVAL DATE		11.12.2019
DRAWING/PLAN No.		18-0175-300-303
No. OF ALLOTMENTS		19
AREA		2.75 ha
LENGTH OF SEWERS	DN160 PE100	~~619m~~ 597m
	DN110 PE100	~~70m~~ 71m

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.

SEWER RETICULATION 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, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CLAUSE 9.10 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), 1301-26, 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)	0.50m FROM EXISTING STUB, CONSTRUCTOR,TO LAY NEW SEWERS. AFTER CLEANSING, TESTING AND INSPECTION, NOTIFY Q.U.U.	DN160	MH562 872	G	D		35.070	35.070	32.710	2.360	Y
1 (B)	CONSTRUCTOR, UNDER Q.U.U. SUPERVISION, TO REMOVE TEMPORARY END CAP ON EXISTING STUB AND MAKE LIVE CONNECTION AFTER SUCCESSFUL 'ON MAINTENANCE' INSPECTION.										

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.

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RPEQ (signature) RPEQ No. 04618 Date: 7/01/21

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	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE COVER PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	300	C

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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.

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED EASEMENT
- PROPOSED SEWERAGE MAIN
- EXISTING SEWERAGE MAIN
- FUTURE SEWERAGE MAIN
- 24.60 SEWER LOT CONTROL SURFACE LEVEL
- 24.60 FUTURE SEWER LOT CONTROL SURFACE LEVEL
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- PROPOSED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED RETAINING WALL
- EXISTING ELECTRICAL CABLE O/H
- EXISTING GAS MAIN

E:5824.846 N:3531.076

E:5863.923 N:3538.624

E:5894.364 N:3524.819

E:5928.731 N:3498.210

E:5932.144 N:3494.872

E:5953.563 N:3473.926

E:5966.759 N:3463.709

E:6067.628 N:3440.329

E:6041.141 N:3406.119

E:5846.909 N:3529.396

PROPOSED CHILDCARE SITE. CONNECTION TO BE DN160 PE100. REFER 18-0175-302 FOR DETAILS

STAGE 9B

PROVIDE STUB FOR FUTURE CONNECTION

PROVIDE STUB FOR FUTURE CONNECTION

PROPOSED SEWER EASEMENT IN FAVOUR OF QUU

PROVIDE NEW HOUSE CONNECTION

EXISTING HOUSE CONNECTION TO BE GROUT FILLED AND DISUSED.

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

LIVE CONNECTION 1 REFER LIVE WORKS TABLE FOR DETAILS

HOUSE CONNECTIONS FOR FUTURE LOTS 233-241 ARE TO BE CONSTRUCTED AS PART OF STAGE 9 WORKS.

EXISTING STAGE 2

EXISTING STAGE QUU APPROVAL REF : 17-PNT-25427

EXISTING STAGE

FUTURE STAGE 10

FUTURE STAGE 11A

FUTURE STAGE 11B

ROAD 06

ROAD 11

ROAD 12

FUTURE ROAD 06

GLORIA COURT

WATER CORRIDOR

8001

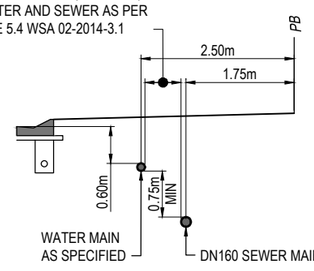
EX DN160 PE100 LINE 32.71

MH562872

5.00m TYP

1.00m ACCESS EASEMENT

HORIZONTAL CLEARANCE (MIN 0.60m) BETWEEN WATER AND SEWER AS PER NOTE 6, TABLE 5.4 WSA 02-2014-3.1



WATER AND SEWER DEPTH AND HORIZONTAL RELATIONSHIP (WHERE LESS THAN 1.0m HORIZONTAL CLEARANCE)

SCALE 1:50 (A1)

RP DESCRIPTION
LOT 1 ON SP 266990

DATUM LEVEL AND LOCATION
P.M. 110122
RL 40.320 AHD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.08.20	MG	MG	STRUCTURES 1/2 AND 3/1 AND HC TO LOT 250 MOVED AND HB2A/1 ADDED.
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: AS CONSTRUCTED

APPROVED: SCOTT THOMAS RPEQ 04618

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 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A

COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	301	D

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

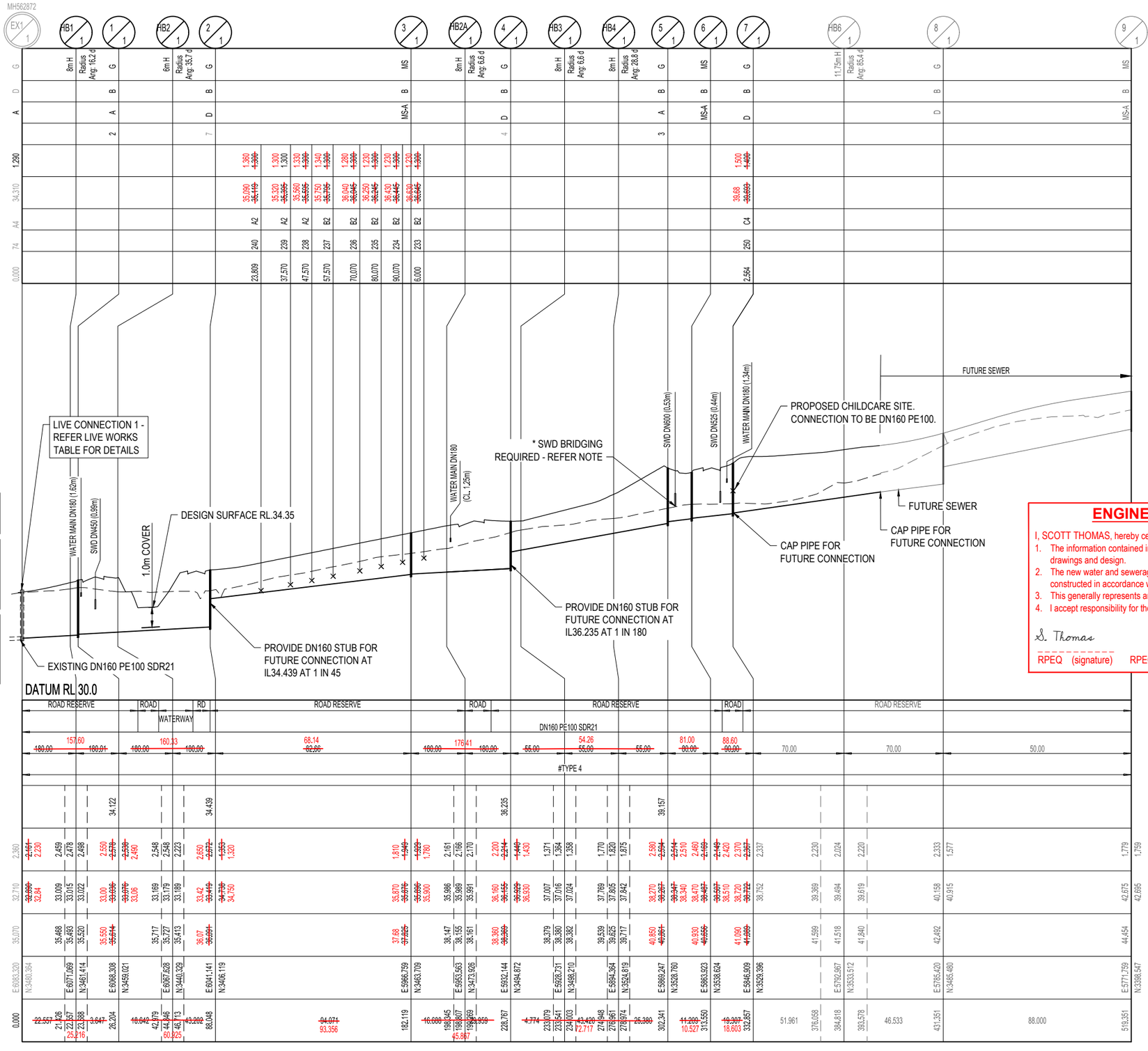
NOTE: PE LINING OF MANHOLES:
MAINTENANCE HOLES ≥ 1500Ø IN DIA OR ≥ 4.0m IN DEPTH, REQUIRE PE LINED PROTECTIVE COATING

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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S. Thomas
RPEQ (signature) RPEQ No. 04618 Date: 7/01/21

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.08.20	MG	MG	LINE 2 AMENDED BETWEEN STRUCTURES 2/1 AND 4/1. HOUSE CONNECTION 250 AMENDED
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
18-0175	302	D

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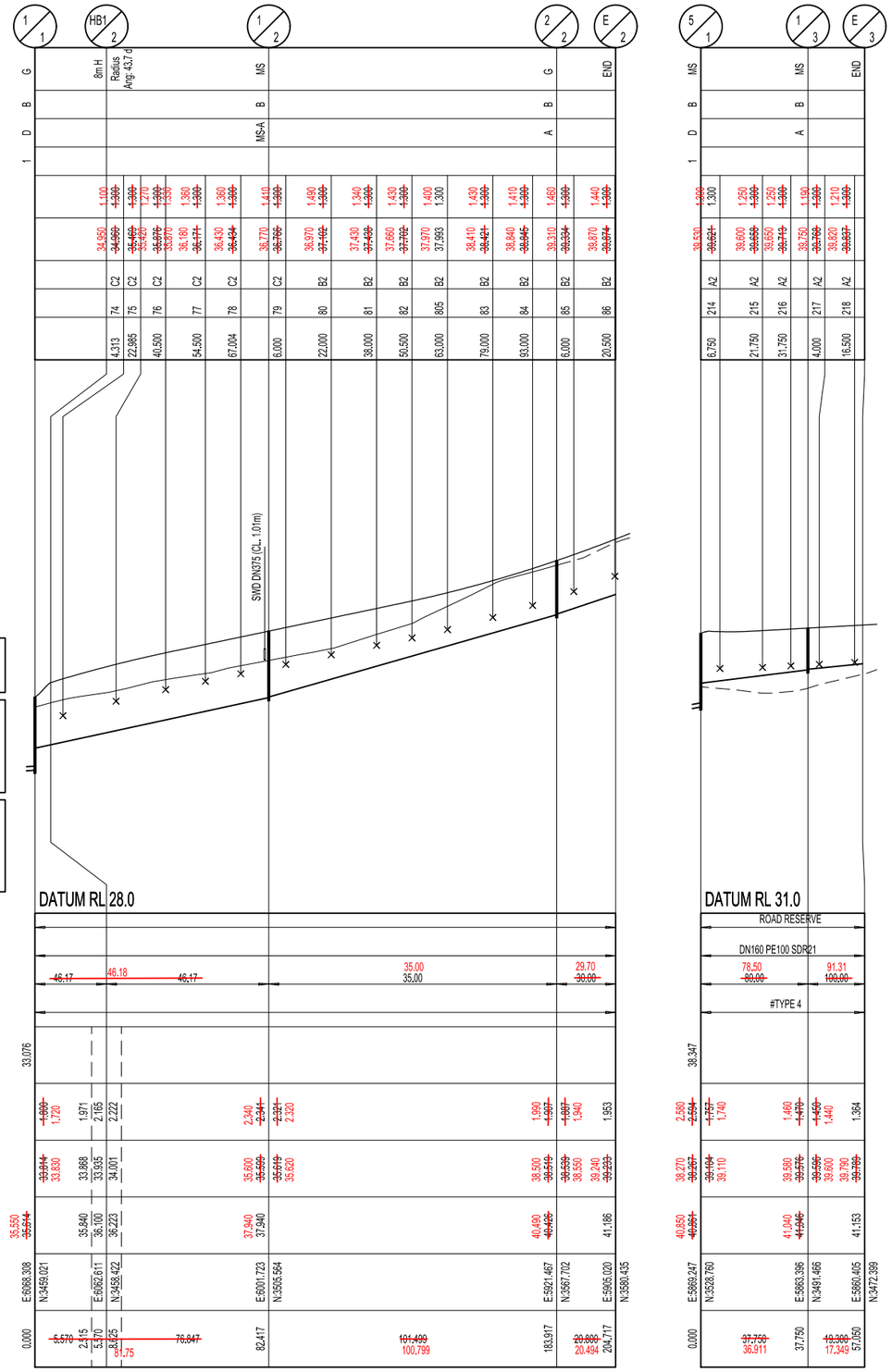
LAND USE
DIAMETER
GRADE
EMBEDMENT
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
SETOUT
RUNNING CHAINAGE



LINE 2 3

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REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.08.20	MG	MG	LINE 2 AMENDED
C	05.08.20	MG	MG	INCORRECT HOUSE CONNECTION REMOVED
D	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
E	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: AS CONSTRUCTED

APPROVED: SCOTT THOMAS RPEQ 04618
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

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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

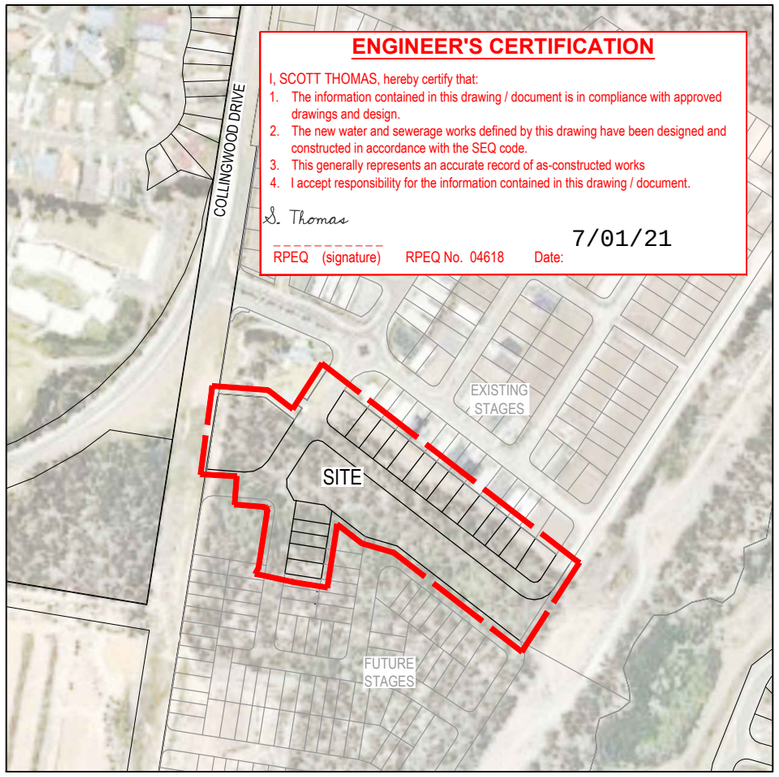
CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LIMITED

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: SEWERAGE LONGITUDINAL SECTIONS SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
18-0175	303	E



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RPEQ (signature) RPEQ No. 04618 Date: 7/01/21

LOCALITY PLAN

1:2500 (A1)
1:5000 (A3)

ASSET REGISTER - WATER RETICULATION						
ESTATE/STAGE	WOODLINKS VILLAGE - STAGE 9A					
SITE ADDRESS	LOT 1 ON SP 266990					
SP FILE/APPLICATION	18-PNT-37793					
Q.U.U. DELEGATES APPROVAL DATE	11.12.2019					
CLIENT	CANBERRA ESTATES					
DRAWING/PLAN No.	18-0175-304-305					
	DIAMETER	MATERIAL		LENGTH		
		DESIGN	CONST	DESIGN	CONST	
MAINS	DN180	PE100 PN16	PE100 PN16	~~194~~	189	
	DN125	PE100 PN16	PE100 PN16	~~313~~	311	
	DIAMETER	MATERIAL		LENGTH		
		DESIGN	CONST	DESIGN	CONST	
SERVICES	DN25	PE100 PN16	PE100 PN16	~~37~~	34	
	DN32	PE100 PN16	PE100 PN16	~~11~~	13	
	DN40	PE100 PN16	PE100 PN16	~~38~~	27	
	DIAMETER	NUMBER				
METERS	20Ø	19	19			
	25Ø	1	1			
	32Ø					

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 CONNECTIONS

CONNECTION 1			
STREET	ROAD 6		
LOCATION	ADJACENT LOT 86 NORTHERN SIDE		
LENGTH	3.00m	TYPE OF MAIN	DN180 PE
DATE COMMENCED		DATE COMPLETED	
SIGNATURE			

CONNECTION 2			
STREET	ROAD 11		
LOCATION	ADJACENT LOT 74 NORTHERN SIDE		
LENGTH	3.00m	TYPE OF MAIN	DN125 PE
DATE COMMENCED		DATE COMPLETED	
SIGNATURE			

SERVICE DETAILS

NO	SIZE	LOT NUMBERS
15	DN25PE	74-86, 250, 805
5	DN32PE	214-218

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.

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

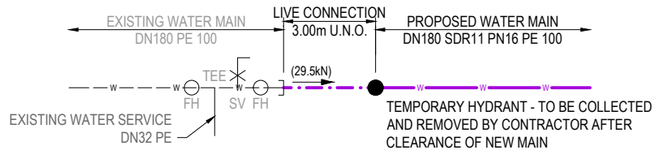
A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHALL BE STOCKPILED WITHIN 5m OF THE CREEK.

REHABILITATION

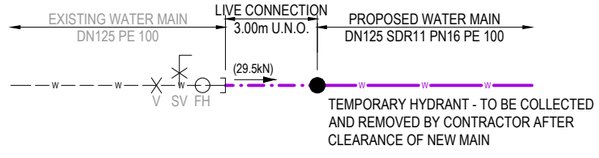
A. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

WATER RETICULATION NOTES

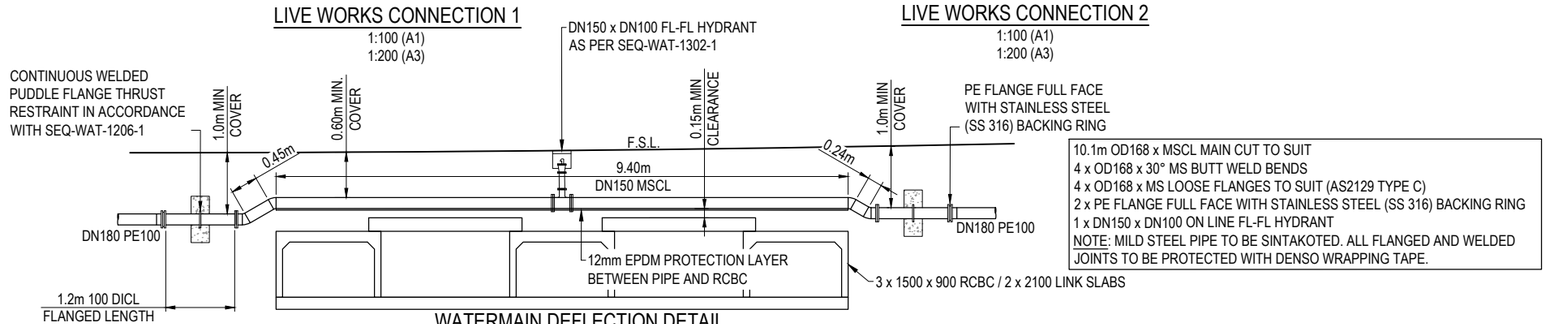
1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND WATER SUPPLY CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
4. 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.



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



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



WATERMAIN DEFLECTION DETAIL
1:50 (A1)
1:100 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
C	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: SCOTT THOMAS RPEQ 04618
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 1300 123 744

PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: WATER RETICULATION COVER PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	304	C

ENGINEER'S CERTIFICATION

I, SCOTT THOMAS, 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.

S. Thomas

RPEQ (signature) RPEQ No. 04618 Date: 7/01/21

LIVE WORKS CONNECTION 1
(AFTER CLEARANCE ON NEW MAIN):
3m CONNECTION TO EXISTING MAIN

LIVE WORKS CONNECTION 2
(AFTER CLEARANCE ON NEW MAIN):
3m CONNECTION TO EXISTING MAIN

EXISTING STAGE QUU
APPROVAL REF : 15-PNT-12779

EXISTING STAGE QUU
APPROVAL REF : 17-PNT-25427

EXISTING STAGE 2

EXISTING STAGE 7

STAGE 9B

FUTURE STAGE 10

FUTURE STAGE 11A

FUTURE STAGE 11B

WATER CORRIDOR

PALASZCZUK AVENUE

GLORIA COURT

ROAD 06

ROAD 11

ROAD 12

FUTURE ROAD 06

DN180 VALVE
DN180 x DN125 TEE (29.5kN)

DN125 VALVE
DN125 45° BEND

DN180 PE100 SDR11 PN16

DN125 PE100 SDR11 PN16

SWD C.L. 0.59m

SWD C.L. 0.15m
REFER DEFLECTION DETAIL
DRG 18-0175-304

DN180 VALVE
DN180 x DN180 TEE (29.5kN)
DN180 VALVE

DN180 VALVE
DN180 END CAP (29.5kN)

DN180 45° BEND

SWD C.L. 0.43m

SEW C.L. 0.58m

SWD C.L. 0.32m

DN40 PE

DN180 VALVE
DN180 END CAP (29.5kN)

REFER SEQ-WAT-1303-2,
FOR END OF LINE DETAILS
'CASE 1'

SWD C.L. 0.34m

SEW C.L. 1.87m

SWD C.L. 0.30m

DN125 VALVE
DN125 x DN125 TEE (29.5kN)
DN125 VALVE

TOE OF BATTER

PROPOSED 6.00m
WATER EASEMENT
IN FAVOUR OF QUU

E:6066.311
N:3441.078

REFER DETAIL B

6.00m
EASEMENT

REFER SEQ-WAT-1303-2,
FOR END OF LINE DETAILS
'CASE 1'

DN125 VALVE
DN125 END CAP (29.5kN)

VERT BEND

E:6040.414
N:3407.630

EX.DN125 PE

EX.DN180 PE

WARNING EXISTING GAS MAIN IN THIS VICINITY.
CONTRACTOR TO CONFIRM LEVELS PRIOR TO COMMENCEMENT OF WORKS

WATER FITTINGS LEGEND

PROPOSED:

- FH — FIRE HYDRANT
- ISOLATION VALVE
- DEAD END

EXISTING:

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

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED WATER MAIN (DN125 PE)
- PROPOSED WATER MAIN (DN180 PE)
- EXISTING WATER MAIN
- FUTURE 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 ROOFWATER DRAINAGE PIPE
- PROPOSED SEWER MAIN
- EXISTING SEWER MAIN
- EXISTING ELECTRICAL CABLE U/G
- EXISTING GAS MAIN

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

WARNING! - EXISTING SERVICES

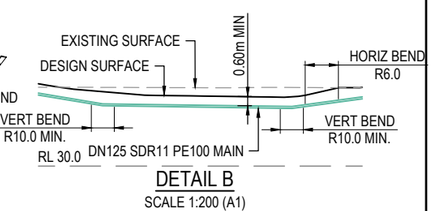
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- 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.

WATERMAINS COVER NOTE:
MINIMUM COVER TO WATERMAINS (FROM PERMANENT LEVEL) TO BE :

- ROADS 11 AND 12 = 600mm
- ROAD 06 = 1000mm



DETAIL B
SCALE 1:200 (A1)

RP DESCRIPTION
LOT 1 ON SP 266990

DATUM LEVEL AND LOCATION
P.M. 110122
RL 40.320 AHD

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	29.07.20	AC	JW	ISSUED FOR CONSTRUCTION
B	04.08.20	MG	MG	FIRE HYDRANT LOCATIONS AMENDED
C	29.09.20	AC	SC	ROAD 6 CUTBACK, DRAINAGE LINE UPDATED & STAGE NAME CHANGED
D	15.12.20	TD	SC	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: AS CONSTRUCTED

APPROVED: SCOTT THOMAS RPEQ 04618

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 1300 123 744

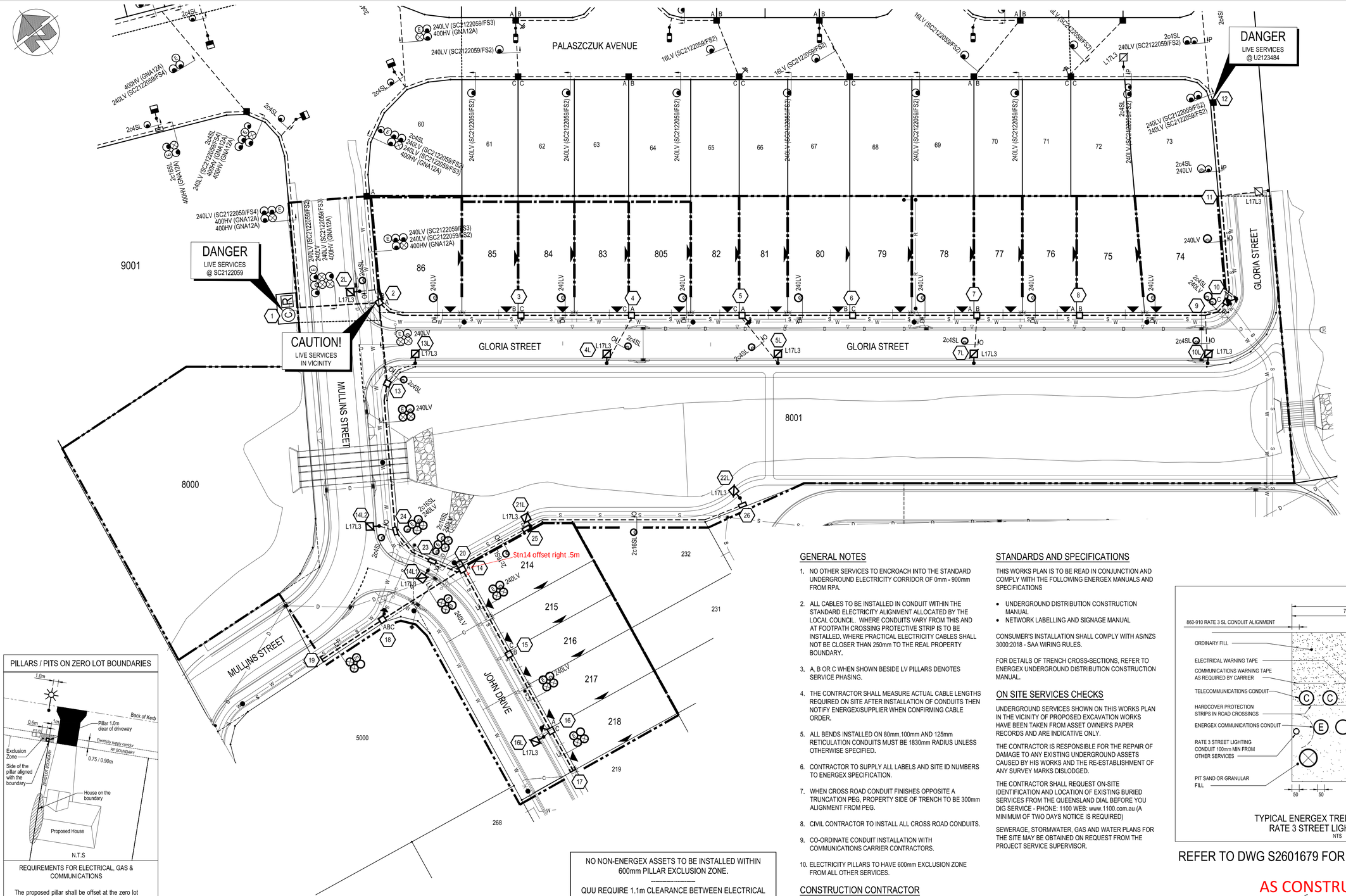
PROJECT NAME: WOODLINKS STAGE 9A
COLLINGWOOD DRIVE, COLLINGWOOD PARK

DRAWING TITLE: WATER RETICULATION LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
18-0175	305	D

LEGEND

- EXISTING OVERHEAD CABLE
- PROPOSED OVERHEAD CABLE
- EXISTING UNDERGROUND CABLE
- PROPOSED UNDERGROUND CABLE
- E — PROPOSED ELECTRICAL SERVICE CONDUIT
- ET — 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
- LINK PILLAR
- 240LV D — CONDUIT / CABLE CROSS-SECTION
- EXISTING STREET LIGHT
- WM X — WATER METER (BY OTHERS)
- WM X — WATER METER (EXISTING)



10 0 10 20 30 40 50 METRES

SCALE 1:500 (BEFORE REDUCTION)

PILLARS / PITS ON ZERO LOT BOUNDARIES

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 1.0m from the boundary peg to centre of pole.

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

NO NON-ENERGEX ASSETS TO BE INSTALLED WITHIN 600mm PILLAR EXCLUSION ZONE.

QUU REQUIRE 1.1m CLEARANCE BETWEEN ELECTRICAL PILLARS AND WATER METERS. INSTALL WATER METERS MINIMUM 1.5m FROM BOUNDARY PEG WHERE WATER METERS SHARE A COMMON BOUNDARY WITH ELECTRICAL PILLARS.

ENERGEX REQUIRE 1.0m CLEARANCE BETWEEN SERVICE PILLARS AND DRIVEWAYS. IF LESS THAN 1.0m SEPARATION THEN PROTECTIVE BOLLARDS MUST BE INSTALLED.

GENERAL NOTES

1. NO OTHER SERVICES TO ENCROACH INTO THE STANDARD UNDERGROUND ELECTRICITY CORRIDOR OF 0mm - 900mm FROM RPA.
2. ALL CABLES TO BE INSTALLED IN CONDUIT WITHIN THE STANDARD ELECTRICITY ALIGNMENT ALLOCATED BY THE LOCAL COUNCIL. WHERE CONDUITS VARY FROM THIS AND AT FOOTPATH CROSSING PROTECTIVE STRIP IS TO BE INSTALLED, WHERE PRACTICAL ELECTRICITY CABLES SHALL NOT BE CLOSER THAN 250mm TO THE REAL PROPERTY BOUNDARY.
3. A, B OR C WHEN SHOWN BESIDE LV PILLARS DENOTES SERVICE PHASING.
4. THE CONTRACTOR SHALL MEASURE ACTUAL CABLE LENGTHS REQUIRED ON SITE AFTER INSTALLATION OF CONDUITS THEN NOTIFY ENERGEX/SUPPLIER WHEN CONFIRMING CABLE ORDER.
5. ALL BENDS INSTALLED ON 80mm,100mm AND 125mm RETICULATION CONDUITS MUST BE 1830mm RADIUS UNLESS OTHERWISE SPECIFIED.
6. CONTRACTOR TO SUPPLY ALL LABELS AND SITE ID NUMBERS TO ENERGEX SPECIFICATION.
7. WHEN CROSS ROAD CONDUIT FINISHES OPPOSITE A TRUNCATION PEG, PROPERTY SIDE OF TRENCH TO BE 300mm ALIGNMENT FROM PEG.
8. CIVIL CONTRACTOR TO INSTALL ALL CROSS ROAD CONDUITS.
9. CO-ORDINATE CONDUIT INSTALLATION WITH COMMUNICATIONS CARRIER CONTRACTORS.
10. ELECTRICITY PILLARS TO HAVE 600mm EXCLUSION ZONE FROM ALL OTHER SERVICES.

CONSTRUCTION CONTRACTOR

THE CONTRACTOR SHALL BE RATED BY ENERGEX FOR THE FOLLOWING PROCESS.
WCS 2 - UNDERGROUND CONSTRUCTION
WCS 31 - COMMISSIONING AND OPERATION OF THE NETWORK
WCS 34 - EARTHING SYSTEMS
WCS 61 - UNDERGROUND CIVIL CONSTRUCTION

STANDARDS AND SPECIFICATIONS

THIS WORKS PLAN IS TO BE READ IN CONJUNCTION AND COMPLY WITH THE FOLLOWING ENERGEX MANUALS AND SPECIFICATIONS

- UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL
- NETWORK LABELLING AND SIGNAGE MANUAL

CONSUMER'S INSTALLATION SHALL COMPLY WITH AS/NZS 3000:2018 - SAA WIRING RULES.

FOR DETAILS OF TRENCH CROSS-SECTIONS, REFER TO ENERGEX UNDERGROUND DISTRIBUTION CONSTRUCTION MANUAL.

ON SITE SERVICES CHECKS

UNDERGROUND SERVICES SHOWN ON THIS WORKS PLAN IN THE VICINITY OF PROPOSED EXCAVATION WORKS HAVE BEEN TAKEN FROM ASSET OWNER'S PAPER RECORDS AND ARE INDICATIVE ONLY.

THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OF DAMAGE TO ANY EXISTING UNDERGROUND ASSETS CAUSED BY HIS WORKS AND THE RE-ESTABLISHMENT OF ANY SURVEY MARKS DISLODGED.

THE CONTRACTOR SHALL REQUEST ON-SITE IDENTIFICATION AND LOCATION OF EXISTING BURIED SERVICES FROM THE QUEENSLAND DIAL BEFORE YOU DIG SERVICE - PHONE: 1100 WEB: www.1100.com.au (A MINIMUM OF TWO DAYS NOTICE IS REQUIRED)

SEWERAGE, STORMWATER, GAS AND WATER PLANS FOR THE SITE MAY BE OBTAINED ON REQUEST FROM THE PROJECT SERVICE SUPERVISOR.

TYPICAL ENERGEX TRENCH SECTION WITH RATE 3 STREET LIGHTING CONDUIT
NTS

REFER TO DWG S2601679 FOR RATE 3 STREET LIGHTING.

Fire Ant Biosecurity Caution Zone 1 For Info Call 13 25 23

ALL KERB OUTLET PIPES TO BE 600mm CLEAR OF THE PROPOSED ELECTRICAL PILLARS

WHERE CROSS-ROAD ELECTRICITY CONDUITS RUN PARALLEL TO OTHER SERVICES OR CONDUITS, A MINIMUM SEPARATION OF 1.0m MUST BE MAINTAINED.

DO NOT CONSTRUCT DRIVEWAYS/CROSSOVERS UNTIL ELECTRICAL WORKS ARE COMPLETED.

FOR CONSTRUCTION

03/03/2021 9:25 AM

AS CONSTRUCTED
Garry Edwards Date: 25/01/21
INZ ELECTRICAL SERVICES PTY LTD
97 ZILLMERE ROAD
BOONDALL 4034 QLD
PH 3865 2122 FAX 3865 4475

TO BE BUILT IN CONJUNCTION WITH TELECOMMUNICATIONS CABLE PROVISIONING AND JOINT USE GAS

Woodlinks Village

REV	DATE	DETAILS	DRAWN	CHECKED	APPRVD
E	27.08.20	PATHWAY LIGHTING ADDED AS PER ICC DEMAND	BH	BK	BK
D	25.08.20	REVISED TO CORRECT WORKSPLAN NUMBER	BH	BK	BK
C	13.08.20	ISSUED FOR CONSTRUCTION	BH	BK	BK
B	13.08.20	ISSUED FOR APPROVAL	BH	BK	BK
A	24.07.20	PRELIMINARY ISSUE	BH	ST	CR

NOTES LEGEND

NOTES FOR DEVELOPERS ATTENTION

NOTES FOR ELECTRICAL CONTRACTORS ATTENTION

NOTES FOR CIVIL CONTRACTORS ATTENTION

SITE CONTACT DETAILS	
NAME	REBECCA DELAY
COMPANY	CANBERRA ESTATES
PHONE	-
MOBILE	0421 078 630
FAX	-

ALIGNMENTS		
ENERGEX OH	0.7 FR KI	
ENERGEX UG	0-0.91	
TELSTRA	0.91-1.3	
GAS	3.41-3.81	
HP GAS	3.41-3.81	
WATER	2.21-2.81	
STORMWATER	IN ROAD	
SEWERAGE	1.3-2.21	

PROJECT / SUB PROJECT NO.	S2601678
PARENT PROJECT NO.	
WORK REQUEST NO.	
PLANNER & PHONE	SUBDIVISIONS
LOTS	LOTS 74-86, 805, 214-218
CANCELLING LOTS	PART LOT 5007 ON SP317659
LOCAL AUTHORITY	IPSWICH CITY COUNCIL
PEGGED?	ON REQUEST

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

CERTIFICATION:
APPROVED: Brad Kunde
RPEQ No: 16286
DATE: 3/03/2021

CHECKED: S.THOMPSON
DESIGNER: B.HYLAND
ISSUE DATE: 27.08.20

PROJECT
WOODLINKS VILLAGE STAGE 9
MULLINS STREET, COLLINGWOOD PARK
ELECTRICAL RETICULATION PLAN
LEGEND AND NOTES

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LTD
DRAWING: A201339
PROJECT: 201339 SHEET 1 OF 2
ISSUE: E

FILE: P:\201339\01 WORKING DRAWINGS\A201339E
PLOT: 3/03/2021 9:25:08 AM

CIVIL WORKS SCHEDULE - ROAD CROSSINGS

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40 HD		100		125		P100 COMMS	X-SECTION (m) EXCAV	TRENCH	DRAW WIRE	KERB MARK	REMARKS
		No.	m	No.	m	No.	m	m	/TAPE	DETAIL			
MULLINS STREET	1 - 2												EXISTING CONDUITS
GLORIA STREET	2 - 13												EXISTING CONDUITS
JOHN DRIVE	14 - 18			1	25	2	25	25	25	L	108	2	
TOTAL				25m		50m		25m	25		108	2	

RATE 3 CIVIL WORKS SCHEDULE - ROAD CROSSINGS

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40 HD		100		125		P100 COMMS	X-SECTION (m) EXCAV	TRENCH	DRAW WIRE	KERB MARK	REMARKS
		No.	m	No.	m	No.	m	m	/TAPE	DETAIL			
GLORIA STREET	4 - 4L	1	16						16	O	18	2	
	5 - 5L	1	17						17	O	19	2	
	7 - 7L	1	14						14	O	16	2	
	9 - 10L	1	15						15	O	17	2	
TOTAL		62m							62		70	8	

URD CIVIL WORKS SCHEDULE

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40 HD		100mm		125mm		P100 COMMS	X-SECTION (m) EXCAV /TAPE	TRENCH DETAIL	DRAW WIRE	KERB MARK	REMARKS
		No.	m	No.	m	No.	m	m					
GLORIA STREET	2 - 3			1	39				39	D	41		
	3 - 4			1	29				29	D	31		
	4 - 5			1	30				30	D	32		
	5 - 6			1	29				29	D	31		
	6 - 7			1	33				33	D	35		
	7 - 8			1	27				27	D	29		
	8 - 9			1	34				34	D	36		
	9 - 10			1	8				8	P	10		REFER TO RATE 3 SCHEDULE
	10 - 11			1	29				29	D	31		
	11 - 12												EXISTING CONDUITS
MULLINS STREET	13 - 14			1	60	2	60	60	60	L	248		
JOHN DRIVE	14 - 15			1	26	2	26	26	26	L	112		
	15 - 16			1	23	2	23	23	23	L	100		
	16 - 17			1	14	2	14	14	14	L	64		
MULLINS STREET	18 - 19			1	20	2	20	20	20	L	88		
TOTAL				401m		286m		143m	401		888		

RATE 3 URD CIVIL WORKS SCHEDULE

LOCATION	STATIONS FROM - TO	CONDUIT LENGTH (m) 40 HD		100		125		P100 COMMS	X-SECTION (m) EXCAV	TRENCH	DRAW WIRE	KERB MARK	REMARKS
		No.	m	No.	m	No.	m	m	/TAPE	DETAIL			
MULLINS STREET	2 - 2L	1	9						9	O	11		
GLORIA STREET	9 - 10	1	8							P	10		
	13 - 13L	1	11						11	O	13		
JOHN DRIVE	14 - 20	1	6						6	O	8		
	20 - 14L1	1	13						6	X+O	15		
	14L1 - 14L2	1	22						6	X+O	24		
	16 - 16L	1	4						4	O	6		
PATHWAY	20 - 21L	1	25						25	O	27		
	21L - 22L	1	62						62	O	64		
TOTAL		160m							129		178		

UNDERGROUND CABLE SCHEDULE

LOCATION	STATIONS FROM - TO	EX	REC	IN	11kV CABLE 240mm AL TRIPLEX 11AT240XSH	415 VOLT 240mm AL XLPE LVA4240XPV	415 VOLT 16mm 4C LVC416XPV	240 VOLT 16mm 2C LVC216PVPV	240 VOLT 4mm 2C LVC24PVPV	REMARKS
MULLINS STREET	1 - 2			*		30				
GLORIA STREET	2 - 3			*		43				
	2 - 13			*		26				
	3 - 4			*		33				
	4 - 5			*		34				
	5 - 6			*		33				
	6 - 7			*		37				
	7 - 8			*		31				
	8 - 10			*		46				
	10 - 12			*		57				
MULLINS STREET	13 - 14			*		64				
JOHN DRIVE	14 - 15			*		30				
	14 - 18			*		29				
	15 - 16			*		27				
TOTAL						520				

EQUIPMENT SCHEDULE

LOCATION	STN NO	SITE ID	EXIST	REC	INSTALL	SIZE AND DESCRIPTION	IIN	COMP ID	PLANT No.	MODEL ID	QTY	LCC	REMARKS
MULLINS STREET	1	SC2122059	*			EXISTING TRANSFORMER TO REMAIN							
					*	315A LV FUSE LINK FOR LV BOARD				DSLVF31	1		
					*	LV TERMINATION				LVPT4C240	1		
	2	U2232803			*	SERVICE PILLAR 3 WAY + SL		PI1		LVSP9-6SL	1		3x240LV 1x4SL
GLORIA STREET	3	U2232804			*	SERVICE PILLAR 2 WAY		PI1		LVSP4-6	1		2x240LV
	4	U2232805			*	SERVICE PILLAR 2 WAY + SL		PI1		LVSP4-6SL	1		2x240LV 1x4SL
	5	U2232806			*	SERVICE PILLAR 2 WAY + SL		PI1		LVSP4-6SL	1		2x240LV 1x4SL
					*	MEN PILLAR EARTHING				LV4CMEN	1		
	6	U2232807			*	SERVICE PILLAR 2 WAY		PI1		LVSP4-6	1		2x240LV
	7	U2232808			*	SERVICE PILLAR 2 WAY + SL		PI1		LVSP4-6SL	1		2x240LV 1x4SL
	8	U2232809			*	SERVICE PILLAR 2 WAY		PI1		LVSP4-6	1		2x240LV
	10	LP2232810			*	LINK PILLAR + SL		PI3		LVSP14-6SL	1		2x240LV 1x4SL
					*	MEN PILLAR EARTHING				LV4CMEN	1		
	12	U2123484	*			CONVERT 2 WAY PILLAR TO 3 WAY				LVSPC2W3	1		2x240LV
					*	240mm 4 CORE CABLE LV LUG SET				LVSPL240	1		1x240LV
MULLINS STREET	13	U2232811			*	SERVICE PILLAR 2 WAY + SL		PI1		LVSP4-6SL	1		2x240LV 1x4SL
JOHN DRIVE	14	U2232812			*	SERVICE PILLAR 3 WAY + SL		PI1		LVSP9-6SL	1		3x240LV 1x4SL
	15	U2232813			*	SERVICE PILLAR 2 WAY		PI1		LVSP4-6	1		2x240LV
	16	U2232814			*	SERVICE PILLAR 1 WAY + SL		PI1		LVSP2-6SL	1		1x240LV 1x4SL
					*	MEN PILLAR EARTHING				LV4CMEN	1		
	18	U2232815			*	SERVICE PILLAR 1 WAY		PI1		LVSP2-6	1		1x240LV
					*	MEN PILLAR EARTHING				LV4CMEN	1		

SUMMARY SHEET - S02601678

UNDERGROUND MATERIALS

(Supplied by the URD Contractor) MODEL No.	No. OFF	(Supplied by the URD Contractor) MODEL No.	No. OFF
LVSP2-6	1	S25117	
LVSP2-6SL	1	S25118	
LVSP4-6	4	SC34141	
LVSP4-6SL	4	SC34142	
LVSP9-6		DSHVF3SLK	
LVSP9-6SL	2	DSHVF5SLK	
LVSP12-6		DSLVF31	1
LVSP12-6SL		DSLVF51	
LVSP14-6		2DBSTA24D	
LVSP14-6SL	1	1CFC9524XLG	
LVSP21-6		1SGTPM9524XG	
LVSP21-SL		DSSQPMEG	
LVSPL016			
LVSPL240	1		
LVSP4CCB1			
LVSPH11		SC0008351	
LVPT4C240	1	11AT240XSH	
LV4CMEN	4	11CT240XSH	
LVSPC2W3	1		
		LVA4240XPV	520
TOTAL		LVA4240XH	
TRENCH LENGTH	401	LVC416XPV	

STREET LIGHTING (Supplied by the URD Contractor)

MODEL No.	No. OFF
LVC24PVPV	
LVC216PVPV	
ASSY801-1	8

OVERHEAD MATERIALS (Supplied by the URD Contractor)

MODEL No.	No. OFF

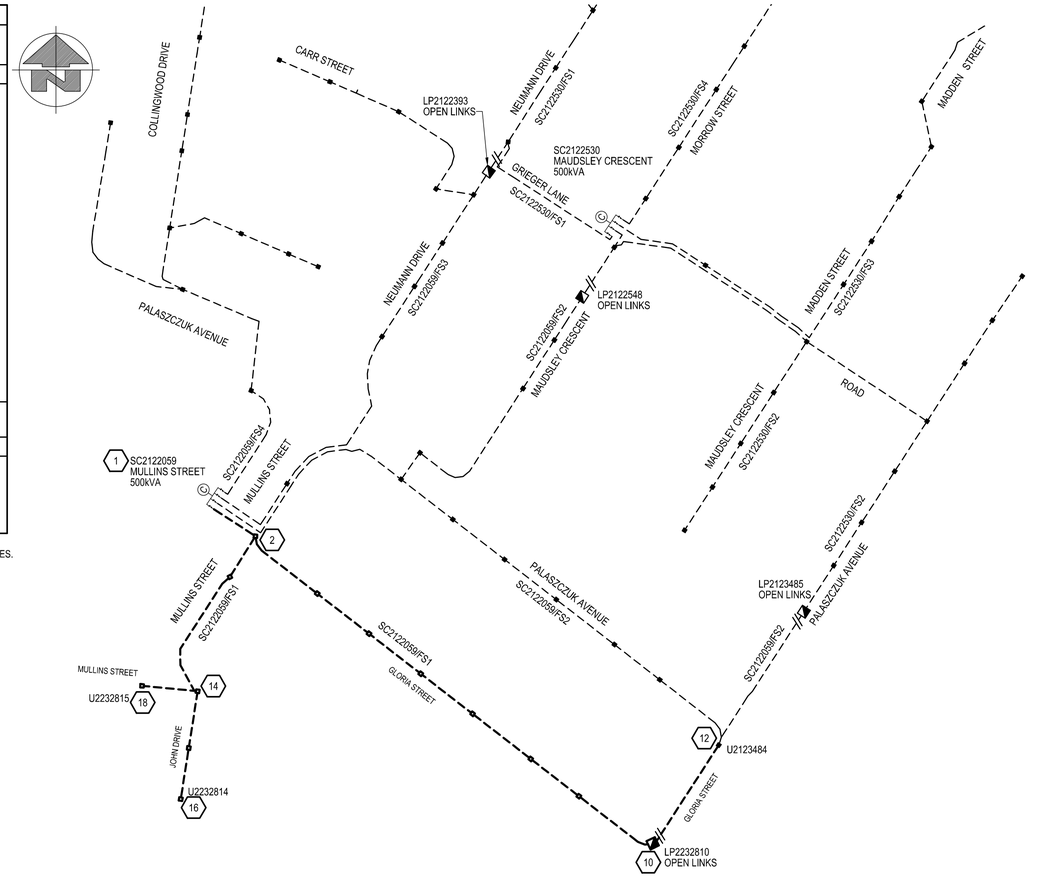
URD CONTRACTOR SHALL NOTE THAT THIS SUMMARY SHEET MUST NOT BE USED FOR TENDER PURPOSES. THE CONTRACTOR SHALL CHECK QUANTITIES AGAINST ACTUAL SCHEDULES ON THESE DRAWINGS.

SWITCHING & COMMISSIONING PLAN - LV

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

SWITCHING

1. INSTALL PROPOSED UG NETWORK AS PER PLANS
2. OPEN SC2122059 SWITCHFUSE 2
3. MAKE NEW CONNECTIONS AT U2123484 (STN 12)
4. CLOSE SC2122059 SWITCHFUSE 5 & 2
5. TEST AND COMMISSION
6. PERFORM POST COMMISSIONING CHECKS



EXISTING & PROPOSED LV SCHEMATIC DIAGRAM

SCALE 1:1500

ALL NEW LV CABLES TO BE 4c 240mm Al XLPE UNO

LP2123485 - PALASZCZUK AVENUE

CABLE No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
1	150x50	WB	5mm	TO MULLINS STREET SC2122059 / MAUDSLEY CRESCENT LP2122548 / GLORIA STREET LP2232810 AND SERVICES
2	150x50	WB	5mm	EXISTING LABEL

LP2122548 - MAUDSLEY CRESCENT

CABLE No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
1	150x50	WB	5mm	TO MULLINS STREET SC2122059 / PALASZCZUK AVENUE LP2123485 / GLORIA STREET LP2232810 AND SERVICES
2	150x50	WB	5mm	EXISTING LABEL

LP2232810 - GLORIA STREET

CABLE No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
1	150x50	WB	5mm	TO MULLINS STREET SC2122059 / MAUDSLEY CRESCENT LP2122548 / PALASZCZUK AVENUE LP2123485 AND SERVICES
2	150x50	WB	5mm	TO MULLINS STREET SC2122059 AND SERVICES

SC2122059 - MULLINS STREET

CCT No.	LABEL SIZE	LABEL COLOUR	LETTER SIZE	LABEL INFORMATION
TFMR ISOLATOR	80x35	WB	6mm	TRANSFORMER ISOLATOR
1	80x35	WB	5mm	TO GLORIA STREET LP2232810 / TO MULLINS STREET U2232815 / JOHN DRIVE U2232814 AND SERVICES
2	80x35	WB	5mm	TO MAUDSLEY CRESCENT LP2122548 / PALASZCZUK AVENUE LP2123485 / GLORIA STREET LP2232810 AND SERVICES
3	80x35	WB	5mm	EXISTING LABEL
4	80x35	WB	5mm	EXISTING LABEL

AS CONSTRUCTED
Garry Edwards Date: 25/01/21
INZ ELECTRICAL SERVICES PTY LTD
97 ZILLMERE ROAD
BOONDALL 4034 QLD
PH 3865 2122 FAX 3865 4475

FOR CONSTRUCTION
03/03/2021 9:25 AM

Woodlinks Village

REV	DATE	DETAILS	DRAWN	CHECKED	APPRVD
E	27.08.20	PATHWAY LIGHTING ADDED AS PER ICC DEMAND	BH	BK	BK
D	25.08.20	REVISED TO CORRECT WORKSPLAN NUMBER	BH	BK	BK
C	13.08.20	ISSUED FOR CONSTRUCTION	BH	BK	BK
B	13.08.20	ISSUED FOR APPROVAL	BH	BK	BK
A	24.07.20	PRELIMINARY ISSUE	BH	ST	CR

NOTES LEGEND

NOTES FOR DEVELOPERS ATTENTION

NOTES FOR ELECTRICAL CONTRACTORS ATTENTION

NOTES FOR CIVIL CONTRACTORS ATTENTION

SITE CONTACT DETAILS		ALIGNMENTS		PROJECT / SUB PROJECT NO.	S2601678
NAME		ENERGEX OH	0.7 FR KI		
REBECCA DELAY		ENERGEX UG	0-0.91	PARENT PROJECT NO.	
COMPANY		TELSTRA	0.91-1.3	WORK REQUEST NO.	
CANBERRA ESTATES		GAS	3.41-3.81	PLANNER & PHONE	SUBDIVISIONS
PHONE	-	HP GAS	3.41-3.81	LOTS	LOTS 74-86, 805, 214-218
MOBILE	0421 078 630	WATER	2.21-2.81	CANCELLING LOTS	PART LOT 5007 ON SP317659
FAX	-	STORMWATER	IN ROAD	LOCAL AUTHORITY	IPSWICH CITY COUNCIL
		SEWERAGE	1.3-2.21	PEGGED?	ON REQUEST

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

CERTIFICATION:
APPROVED: Brad Kunde
RPEQ No: 16286
DATE: 3/03/2021

CHECKED: S.THOMPSON
DESIGNER: B.HYLAND
ISSUE DATE: 27.08.20

PROJECT
WOODLINKS VILLAGE STAGE 9
MULLINS STREET, COLLINGWOOD PARK
SCHEDULES, SCHEMATIC AND LABELS

CLIENT: CANBERRA ESTATES CONSORTIUM NO.36 PTY LTD
DRAWING: A201339
PROJECT: 201339 SHEET 2 OF 2
ISSUE E

P:\E P-201339\01 WORKING DRAWINGS\A201339E
PLOT: 3/03/2021 9:25:08 AM

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.

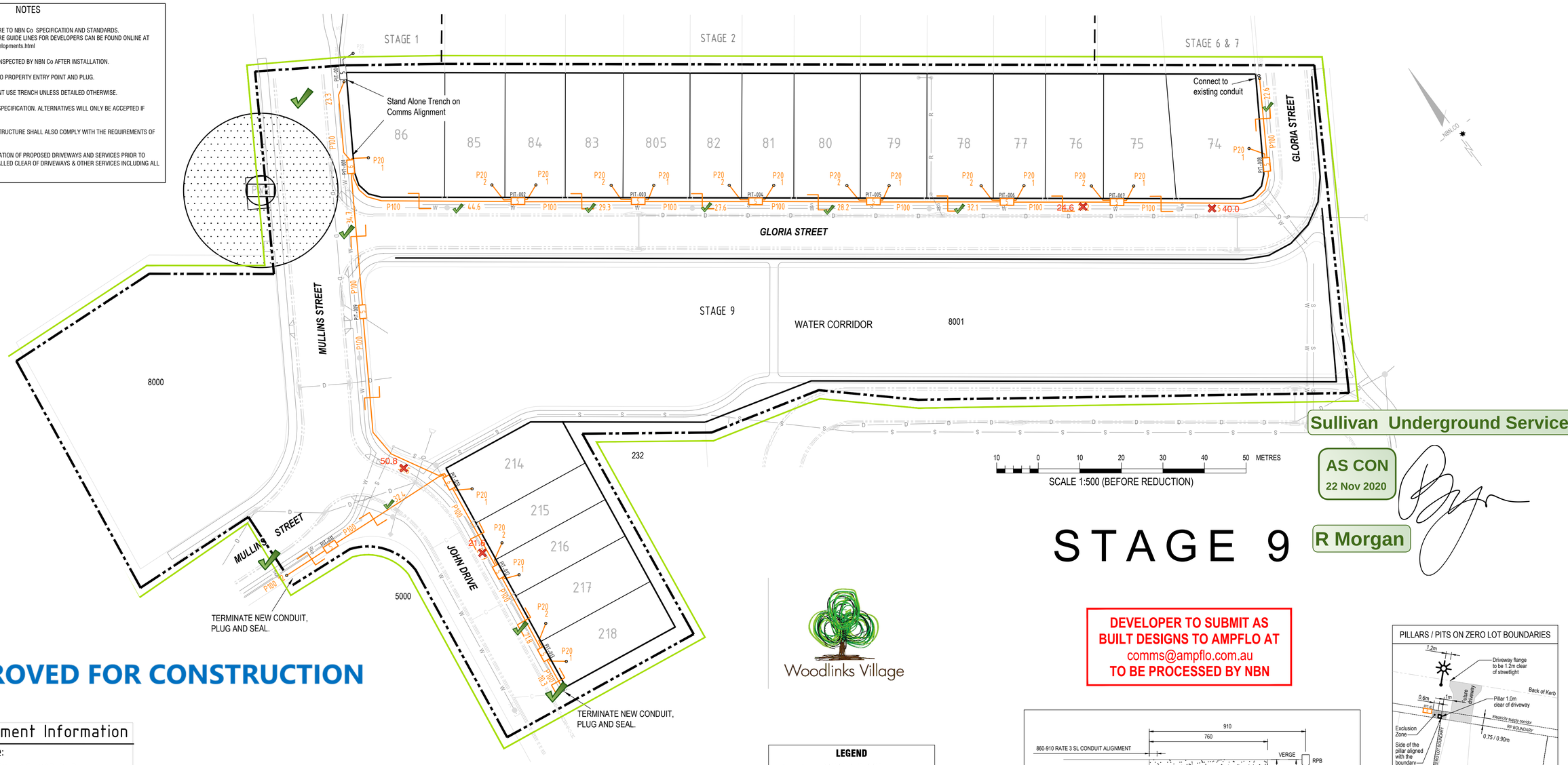
3. INSTALL P23 LEAD-IN PIPES FROM PIT TO PROPERTY ENTRY POINT AND PLUG.

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.



Sullivan Underground Services

AS CON
22 Nov 2020

R Morgan

STAGE 9

APPROVED FOR CONSTRUCTION

Woodlinks Village

DEVELOPER TO SUBMIT AS BUILT DESIGNS TO AMPFLO AT comms@ampflo.com.au TO BE PROCESSED BY NBN

SDU Development Information

Development Name: 246 Collingwood Dr COLLINGWOOD PARK	
Developer Company: Canberra Estates Consortium NO 36 Pty Limited	
Development Address: 246 Collingwood Dr COLLINGWOOD PARK	
Authorised Rep: Ampflo Pty Ltd Phone: 07 3372 9280 E-Mail: comms@ampflo.com.au	
nbn Reference Number: STG	Stage Number: 9 Design Revision: A

BILL OF MATERIAL

NO OF LOTS: 19

PITS		DUCTS		
SIZE	QTY	SIZE	QTY	MTRS
2	0	P100	16	465.8
5	11	P50	0	0
6	2	P20	19	27
8	0			
9	0			

TOTAL NUMBER OF PITS: 13
TOTAL NUMBER OF MANHOLES: 0
TOTAL NUMBER OF CONDUITS: 35
TOTAL LENGTH OF CONDUITS: 492.8

STAND ALONE TRENCHING : 25m

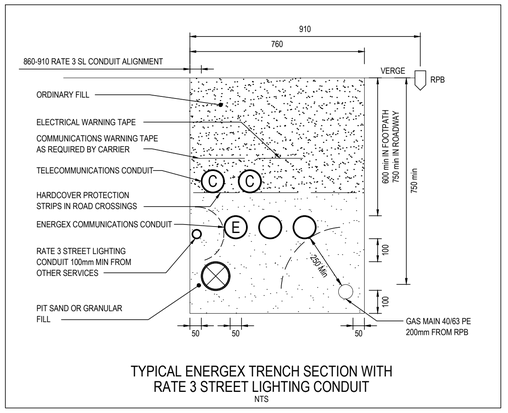
Rod and Roping- 455.9mtrs

Fire Ant Biosecurity Caution Zone 1 For Info Call 13 25 23

DO NOT CONSTRUCT DRIVEWAYS/CROSSOVERS UNTIL ELECTRICAL WORKS ARE COMPLETED.

LEGEND

- EXISTING TELSTRA UG CABLE
- EXISTING AERIAL CABLE
- TELSTRA PLANT IN SHARED UTILITY TRENCH
- PROPOSED NBN UNDERGROUND CONDUIT IN SHARED UTILITY TRENCH
- PIT-ID 2 — Service Drop Access Pit (650mmX280mmX565mm)
- PIT-ID 5 — Network Boundary/Local Network Pit (Single Lid) (700mmX450mmX650mm)
- PIT-ID 8 — Distribution/Local Network Connection Pit (1360mmX555mmX860mm)
- PIT-ID 9 — Fibre Distribution Hub (FDH) Pit (2000mmX555mmX900mm)
- Existing Telstra manhole
- (S) 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)



TYPICAL ENERGEX TRENCH SECTION WITH RATE 3 STREET LIGHTING CONDUIT
NTS

REFER TO DWG S2601679 FOR RATE 3 STREET LIGHTING.

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

DIAL BEFORE YOU DIG www.1100.com.au

REV	DATE	DRAFTER	DESCRIPTION	APPROVED
-				
-				
-				
-				
-				
-				
A	17.08.20	JB	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

N KEY PLAN

DRAWING TITLE:
246 Collingwood Dr
COLLINGWOOD PARK

ENABLE#: 280530		
STATE:	REGION:	
FSA:	SAM:	ADA:
PROJECT No: 201339		
CADREF No: T201339		
SCALE 1:500	SHEET No. 1 OF 1	REV. A