

STORMWATER PHILOSOPHY

- ALL ROOFWATER FROM EACH UNIT IS TO BE DIRECTED TO THE UNDERGROUND OSD TANK.
- THE DRIVEWAY AREAS WILL BE DIRECTED TO UNDERGROUND OSD TANK.
- OVERFLOW FROM THE OSD TANK WILL BE DIRECTED TO BOUNDARY SURFACE INLET PITS. AN ORIFICE WILL RESTRICT DISCHARGE FROM THE TANK TO 32.6 L/s.
- ALL IMPERVIOUS AREAS WILL BE ALLOWED TO BYPASS THE STORMWATER DETENTION SYSTEM.
- DISCHARGE TO THE SURFACE INLET PITS IN ALL STORM EVENTS WILL BE LIMITED TO THE 1 IN 10 YEAR PRE-DEVELOPED FLOWS. STORM EVENTS GREATER THAN 1 IN 10 YEAR WILL BE SAFELY CONVEYED VIA SHEET FLOW DOWN THROUGH THE PROPOSED DRIVEWAY AND INTO WILLIAM STREET.
- THE OSD TANK WILL DISCHARGE FLOWS TO PIT 3. PIT 2 & PIT 3 WILL BE SUMP PITS AND WILL BE JOINED WITH A Ø150 BALANCE PIPE. BOTH PITS WILL HAVE OUTLETS WHICH WILL DISCHARGE TO THE KERB. THE OUTLETS WILL BE AT THE SAME RL AND SPLIT THE DISCHARGE RATE AND BE CONNECTED TO THE DRAINAGE IN SWAN STREET IN TWO LOCATIONS.
- SUFFICIENT VOLUME HAS BEEN PROVIDED TO LIMIT THE POST-DEVELOPMENT DISCHARGE FROM ALL STORM EVENTS UP TO AND INCLUDING THE 1 IN 100 YEAR EVENT.

STORMWATER CALCULATIONS

SITE AREA	=	2713.00 m ²
AREA 1 ROOF AREA	=	1457.00 m ²
AREA 2 DRIVEWAY AREA	=	556.00 m ²
AREA 3 PERVIOUS AREA	=	700.00 m ²

Onsite Detention Calculations (OSD)

Q _{PRE(10Y)}	=	C I A (t _c = 5min)
	=	0.40 x 162 x 2713
	=	48.84 L/s
Q _{PRE(100Y)}	=	C I A (t _c = 5min)
	=	0.48 x 266 x 2713
	=	96.24 L/s

ROOF & DRIVEWAY AREA (AREA 1 & 2) WILL BE CAPTURED AND STORED WITHIN THE OSD TANK. ALL OTHER AREAS (PERVIOUS AREA) WILL BE ALLOWED TO BYPASS THE OSD TANK AND EXIT THE SITE INTO SWAN STREET.

Q _{AREA 1 (10 Y)}	=	C I A (t _c = 5min)
	=	0.90 x 162 x 1457
	=	59.00 L/s
Q _{AREA 2 (10 Y)}	=	C I A (t _c = 5min)
	=	0.90 x 162 x 556
	=	22.51 L/s
Q _{AREA 3 (10 Y)}	=	C I A (t _c = 5min)
	=	0.40 x 162 x 700
	=	12.30 L/s
Q _{AREA 1 (100 Y)}	=	C I A (t _c = 5min)
	=	1.0 x 266 x 1457
	=	107.65 L/s
Q _{AREA 2 (100 Y)}	=	C I A (t _c = 5min)
	=	1.0 x 266 x 556
	=	41.08 L/s
Q _{AREA 3 (100 Y)}	=	C I A (t _c = 5min)
	=	0.48 x 266 x 700
	=	24.83 L/s
Q _{DEV TOTAL (100 Y)}	=	Q _{AREA 1 (100 Y)} + Q _{AREA 2 (100 Y)} + Q _{AREA 3 (100 Y)}
	=	173.57 L/s

THEREFORE THE ALLOWABLE DISCHARGE FROM THE SITE IN THE 10 YEAR STORM EVENT IS

Q _{PRE(10 Y)}	+	Q _{AREA 1 (10 Y)}
48.84	+	59.00
	+	Q _{AREA 2 (10 Y)}
	+	22.51
	+	Q _{AREA 3 (10 Y)}
	+	12.30
	=	32.66 L/s

A 140mm ORIFICE WILL RESTRICT THE DISCHARGE FROM THE OSD TANK TO 32.66 L/s. IT IS NOTED THAT THIS RATE OF DISCHARGE TO BACK OF KERB IS HIGH. THIS FLOW WILL BE SPLIT BETWEEN TWO OUTLET POINTS. P2 & P3 WILL BE SUMP PITS CONNECTED BY A Ø150 SPREADER PIPE AND WILL HAVE OUTLETS TO BACK OF KERB AT THE SAME RL, SPLITTING THE DISCHARGE.

VOLUME FOR OSD	=	173.57 - 96.24
	=	77.33 L/s
	=	23.20 m ³ (t _c = 5min)

ALL SERVICES LIDS TO BE ALTERED TO MATCH PROPOSED LEVELS. DETAILS AT CC STAGE - TYP.

SURFACING TO EXTEND TO SANDSTONE KERB. TIE NEATLY TO EXISTING LEVELS.

V.O. SLAB V.O. SLAB BUILDING BUILDING

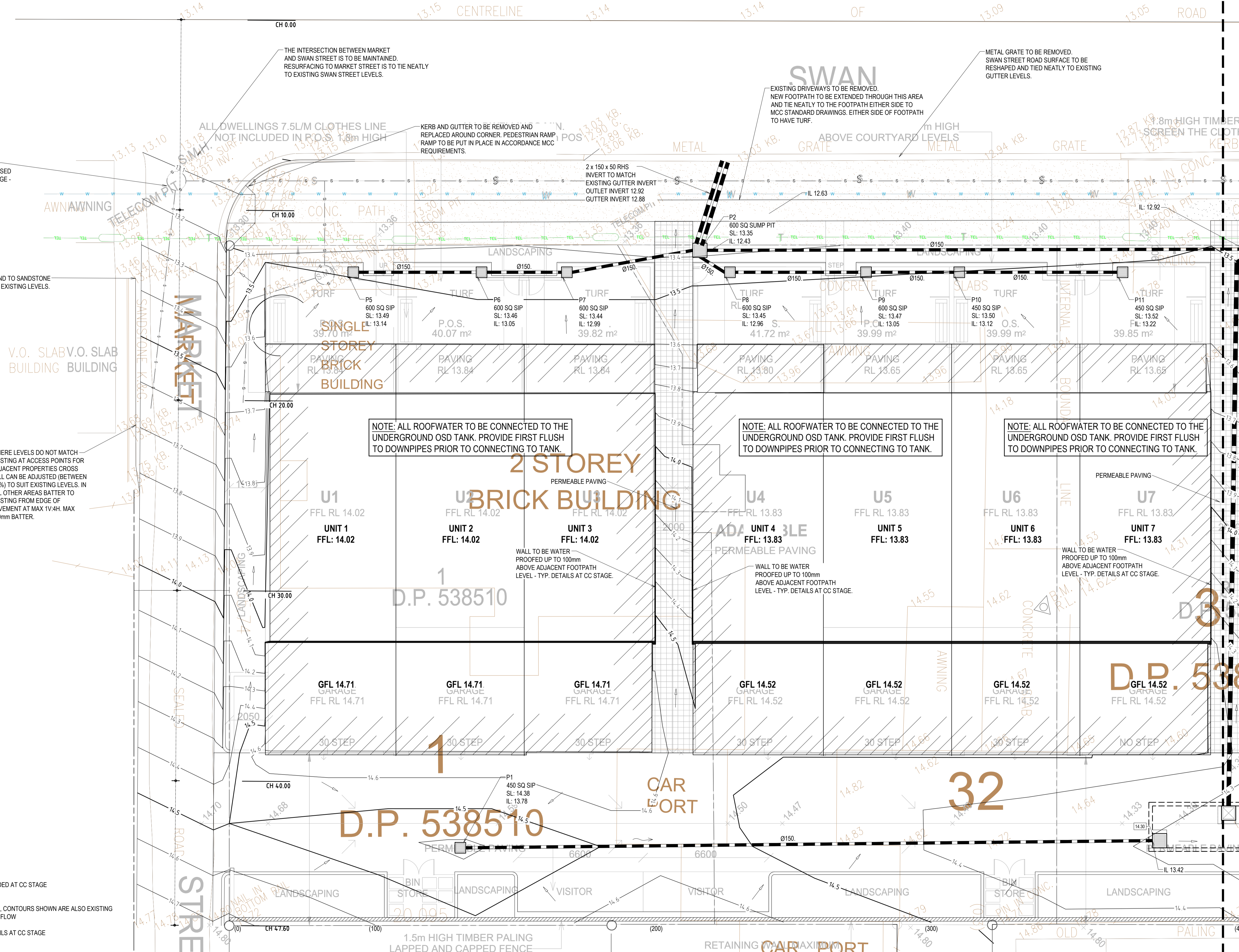
WHERE LEVELS DO NOT MATCH - EXISTING AT ACCESS POINTS FOR ADJACENT PROPERTIES CROSS FALL CAN BE ADJUSTED (BETWEEN 1-4%) TO SUIT EXISTING LEVELS. IN ALL OTHER AREAS BATTER TO EXISTING FROM EDGE OF PAVEMENT AT MAX 1V:4H. MAX 200mm BATTER.

LEGEND

- SL SURFACE LEVEL
- IL INVERT LEVEL
- SURFACE INLET PIT DETAILS PROVIDED AT CC STAGE
- uPVC STORMWATER PIPE
- DESIGN FINISHED SURFACE LEVEL
- EXISTING FINISHED SURFACE LEVEL, CONTOURS SHOWN ARE ALSO EXISTING
- INDICATES DIRECTION OF SURFACE FLOW
- OVERLAND FLOW PATH
- PROPOSED RETAINING WALL - DETAILS AT CC STAGE
- APPROXIMATE HEIGHT OF WALL
- PROPOSED CONTOUR LEVEL

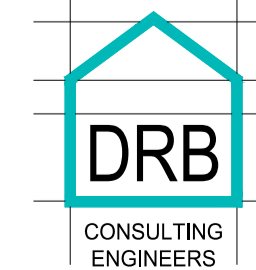
IT IS THE BUILDERS RESPONSIBILITY TO CONFIRM DEPTH & LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION AS THIS MAY AFFECT THE DESIGN.

NOTE: IT IS THE BUILDERS RESPONSIBILITY TO CONFIRM ALL SETOUT, RL'S, SETOUTS & DIMENSIONS WITH THE CONTRACT ARCHITECTURAL PLANS PRIOR TO COMMENCING ON SITE. ANY DISCREPANCY SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION PRIOR TO CONTINUING WORKS. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING DRAWINGS.



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CLIENT
GHT HOLDINGS

TITLE
STORMWATER MANAGEMENT PLAN SHEET 1

PROJECT
PROPOSED UNIT DEVELOPMENT NO. 107-117 SWAN STREET MORPETH

DRAWING STATUS
NOT FOR CONSTRUCTION

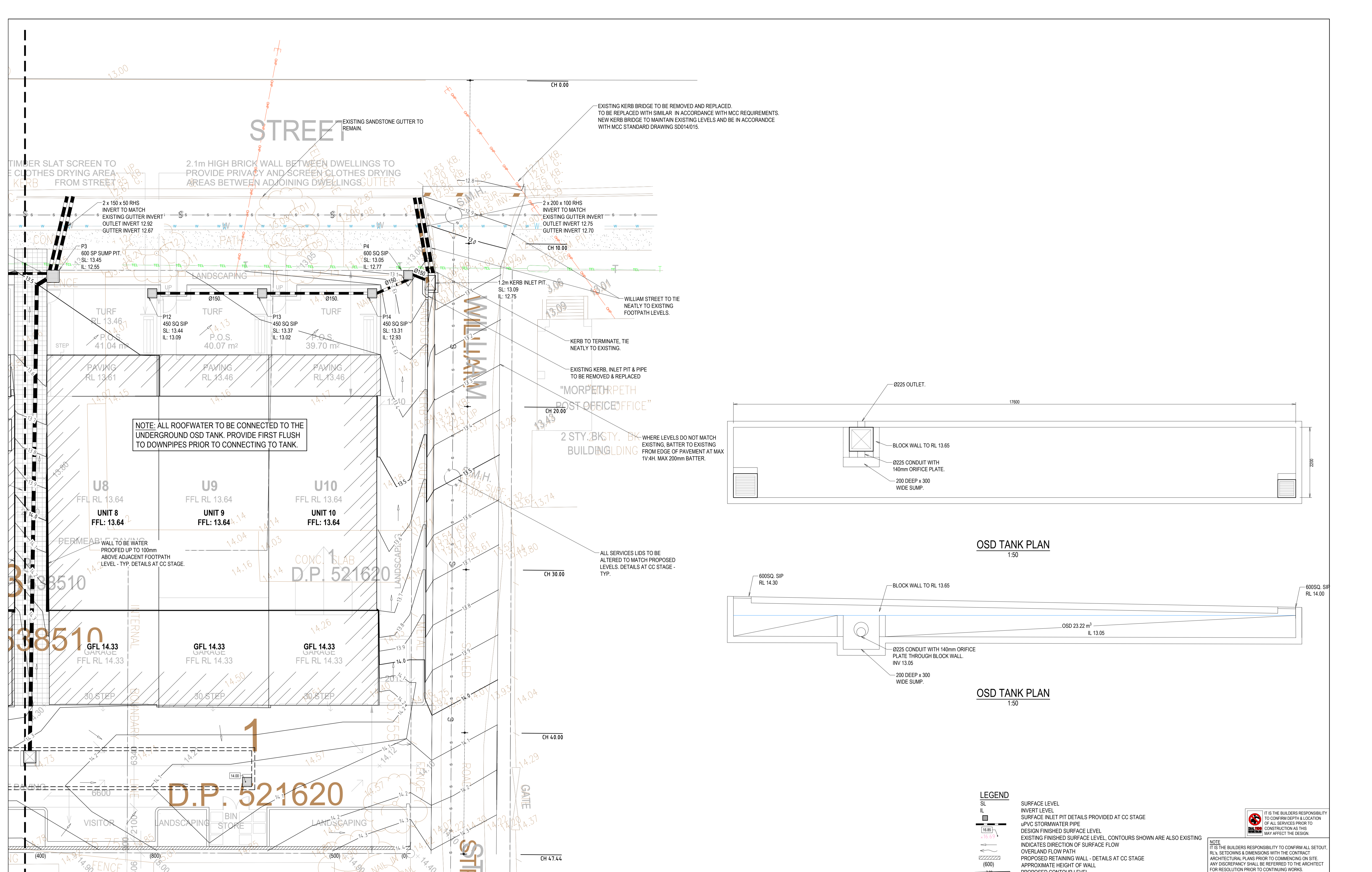
PROJECT REF No. **211109**

DRAWING No. **CIV001**

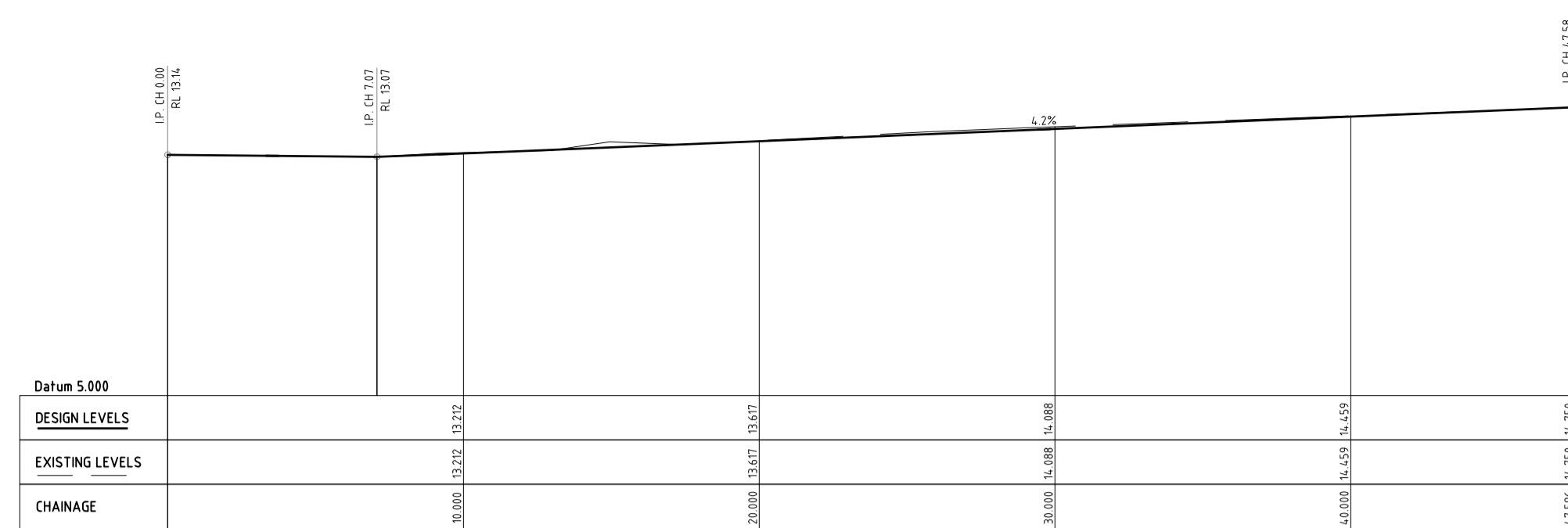
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A1

SCALE
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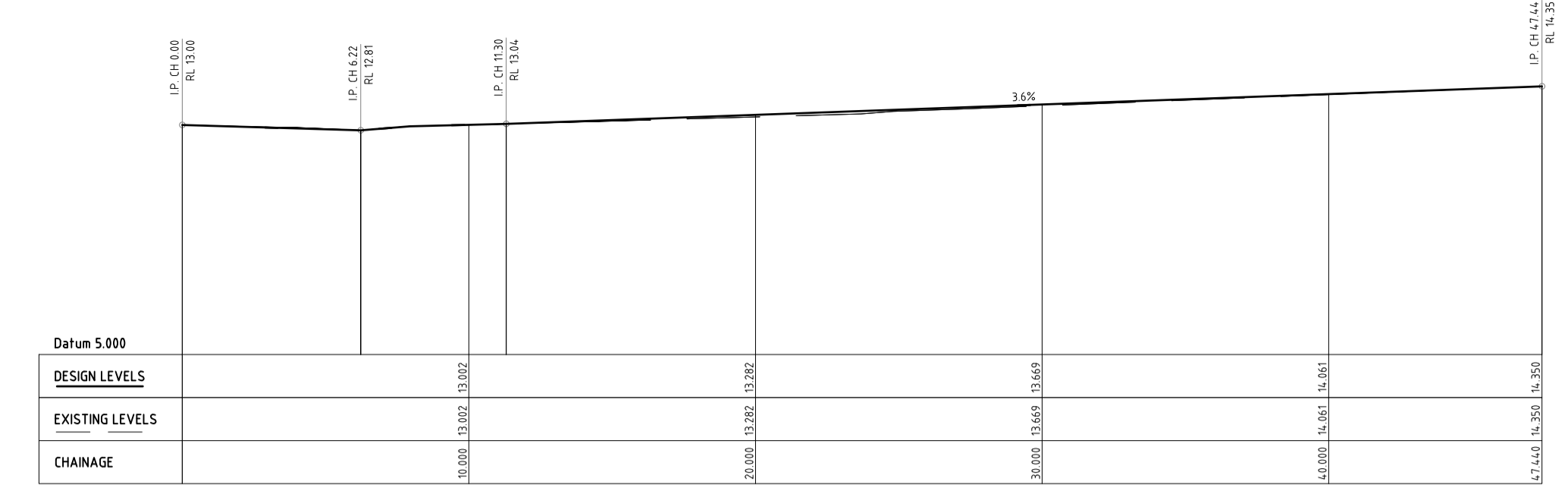
REVISION
A



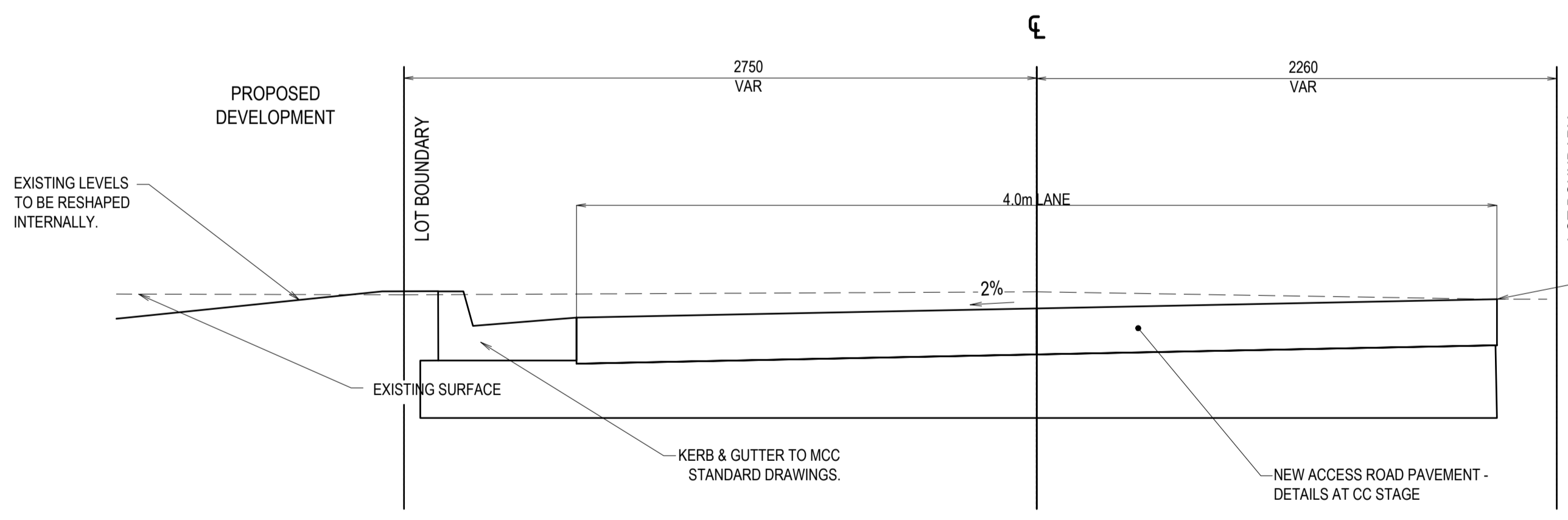
This drawing is <u>not</u> approved for construction unless signed.						260 MAITLAND ROAD, MAYFIELD PO BOX 4105 KOTARA EAST 2305 0402 915 549 hello@drbengineering.com.au ABN 64 625 755 482	CLIENT GHT HOLDINGS TITLE STORMWATER MANAGEMENT PLAN SHEET 2	PROJECT PROPOSED UNIT DEVELOPMENT NO. 107-117 SWAN STREET MORPETH	DRAWING STATUS		SHEET SIZE
NOT FOR CONSTRUCTION		PROJECT REF No. 211109	DRAWING No. CIV002	REVISION A							
REVISIONS A 17.12.21 J.T. J.T. M.M. ISSUED FOR DEVELOPEMENT APPLICATION B 20.12.21 J.T. J.T. M.M. RE-ISSUED FOR DEVELOPEMENT APPLICATION	REV DATE DRN CHK APP DRAWING STATUS	COPYRIGHT - This drawing and the information provided shall remain the property of DRB Consulting Engineers Pty Ltd (DRB) and may not be used, copied or reproduced, in whole or part, for any purpose other than that for which it was supplied without the prior consent of DRB.					DRAWING STATUS NOT FOR CONSTRUCTION		PROJECT REF No. 211109	DRAWING No. CIV002	REVISION A



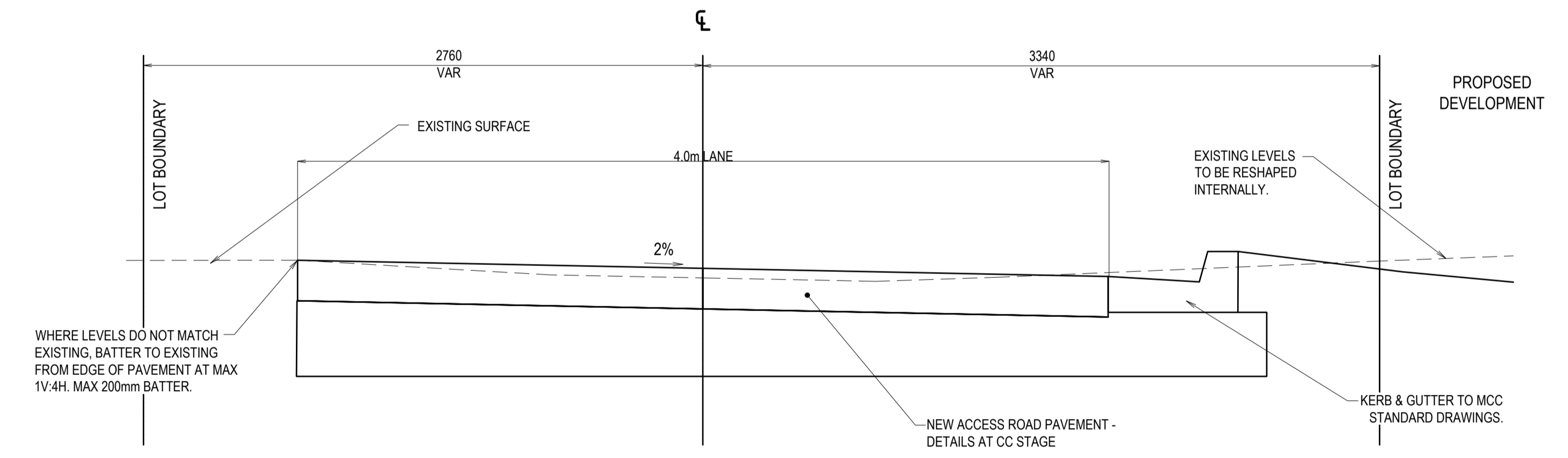
MARKET STREET LONG SECTION
1:200 VERTICAL
1:200 HORIZONTAL



WILLIAM STREET LONG SECTION
1:200 VERTICAL
1:200 HORIZONTAL



MARKET STREET TYPICAL CROSS SECTION
1:20

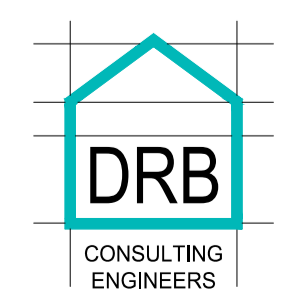


WILLIAM STREET TYPICAL CROSS SECTION
1:20

REV	DATE	DRN	CHK	APP	DRAWING STATUS
A	17.12.21	J.T.	J.T.	M.M	ISSUED FOR DEVELOPMENT APPLICATION

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TITLE
LONG SECTIONS & TYPICAL CROSS SECTIONS - SIDE STREETS

PROJECT
PROPOSED UNIT DEVELOPMENT NO. 107-117 SWAN STREET MORPETH

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

DRAWING No. **CIV003**

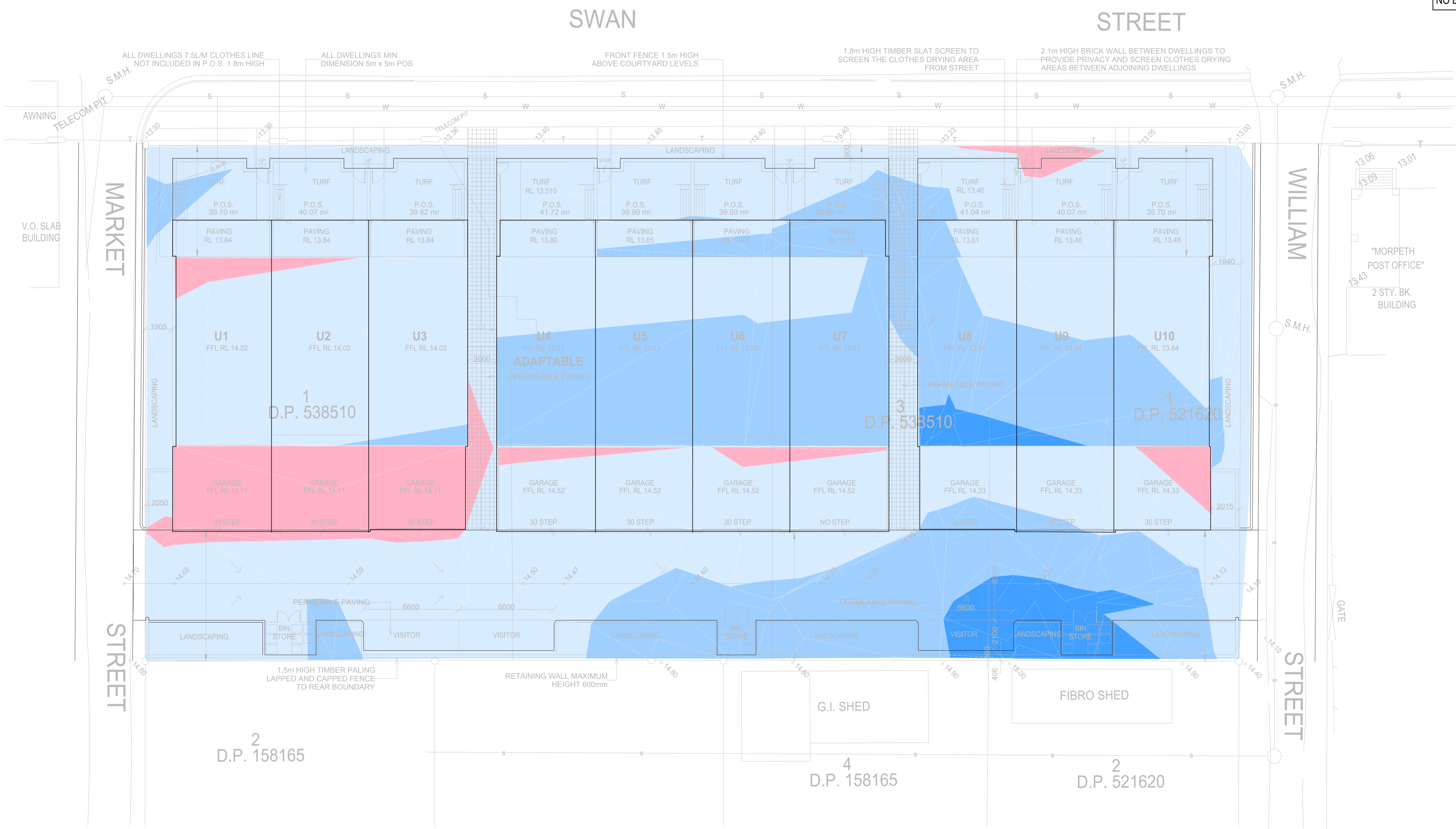
SHEET SIZE
A1

SCALE
-

REVISION
A

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-1.000	-0.600	■
2	-0.600	-0.200	■
3	-0.200	0.200	■
4	0.200	0.600	■

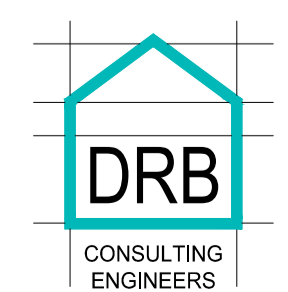
CUT	FILL
431.0m³	123.3m³
NOTE: NO STRIPPING NO BULKING FACTORS APPLIED	



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CLIENT
GHT HOLDINGS

TITLE
CUT & FILL PLAN

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

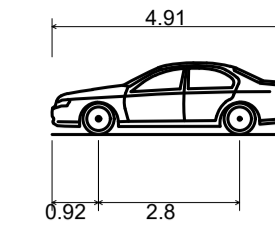
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SHEET SIZE
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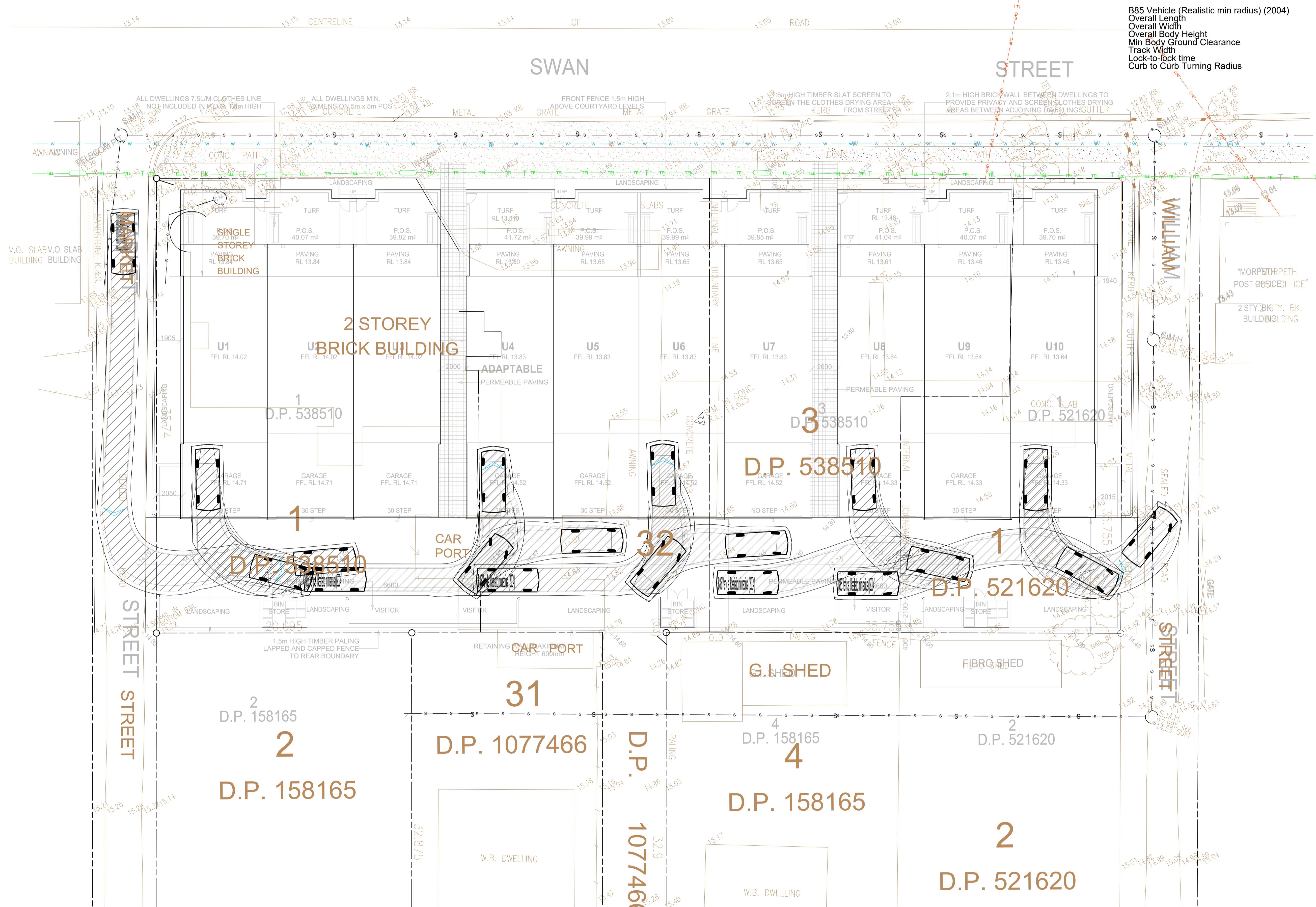
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REVISION
A

SWAN STREET



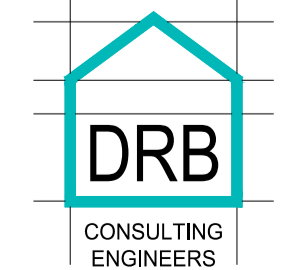
B85 Vehicle (Realistic min radius) (2004)
 Overall Length 4.910m
 Overall Width 1.870m
 Overall Body Height 1.421m
 Min Body Ground Clearance 0.159m
 Track Width 1.770m
 Lock-to-lock time 4.00s
 Curb to Curb Turning Radius 5.750m



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TITLE
VEHICLE SWEEP PATH - SHEET 1

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

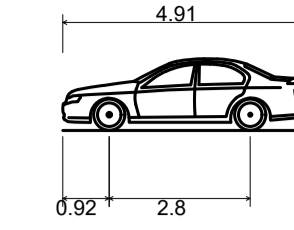
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SHEET SIZE
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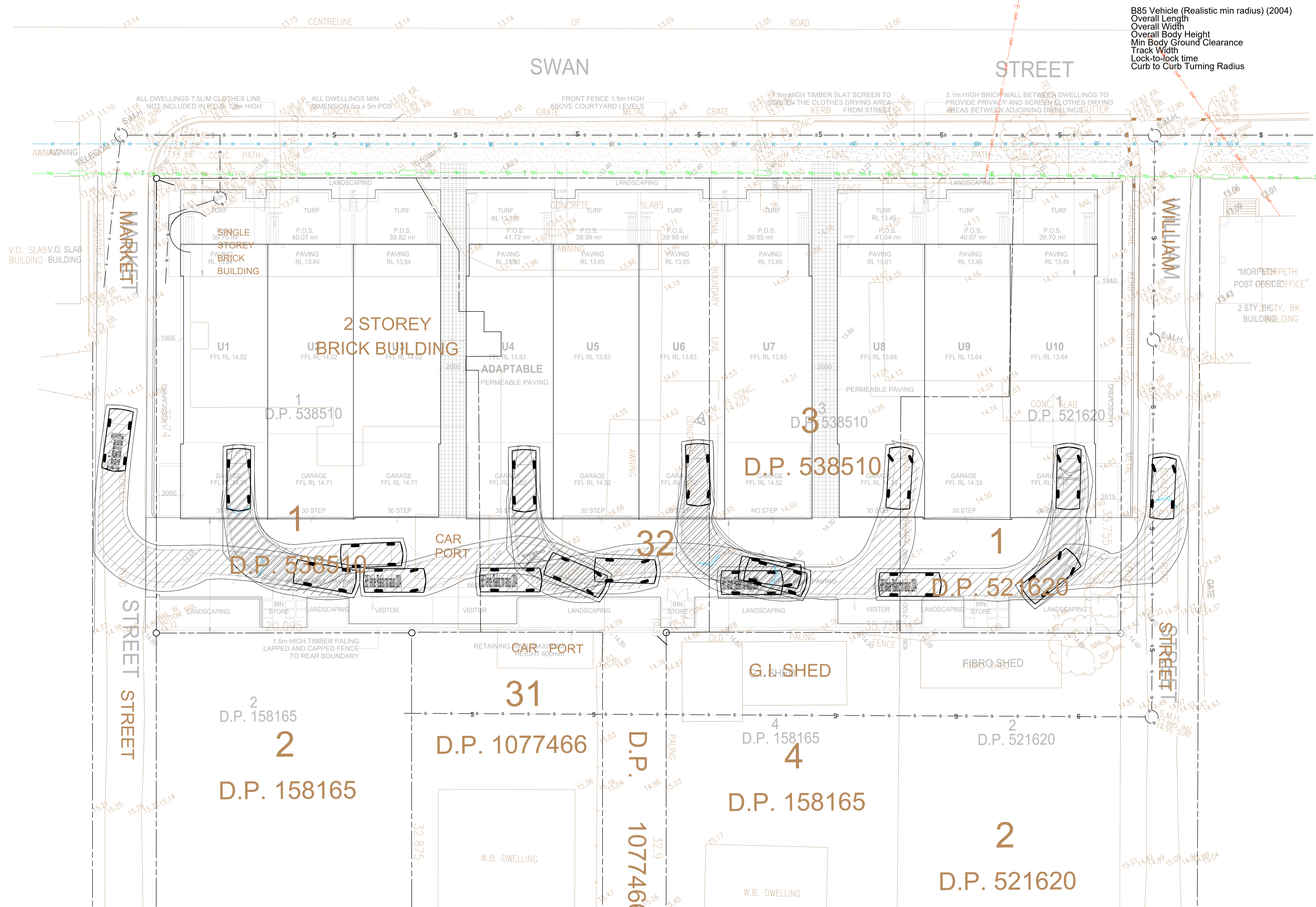
SCALE
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REVISION
A

SWAN STREET



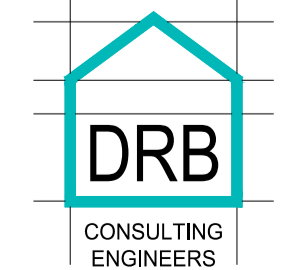
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TITLE
VEHICLE SWEEP PATH - SHEET 1

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

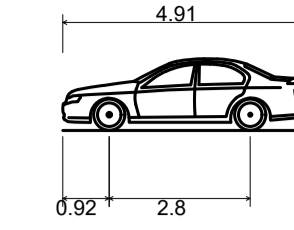
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SHEET SIZE
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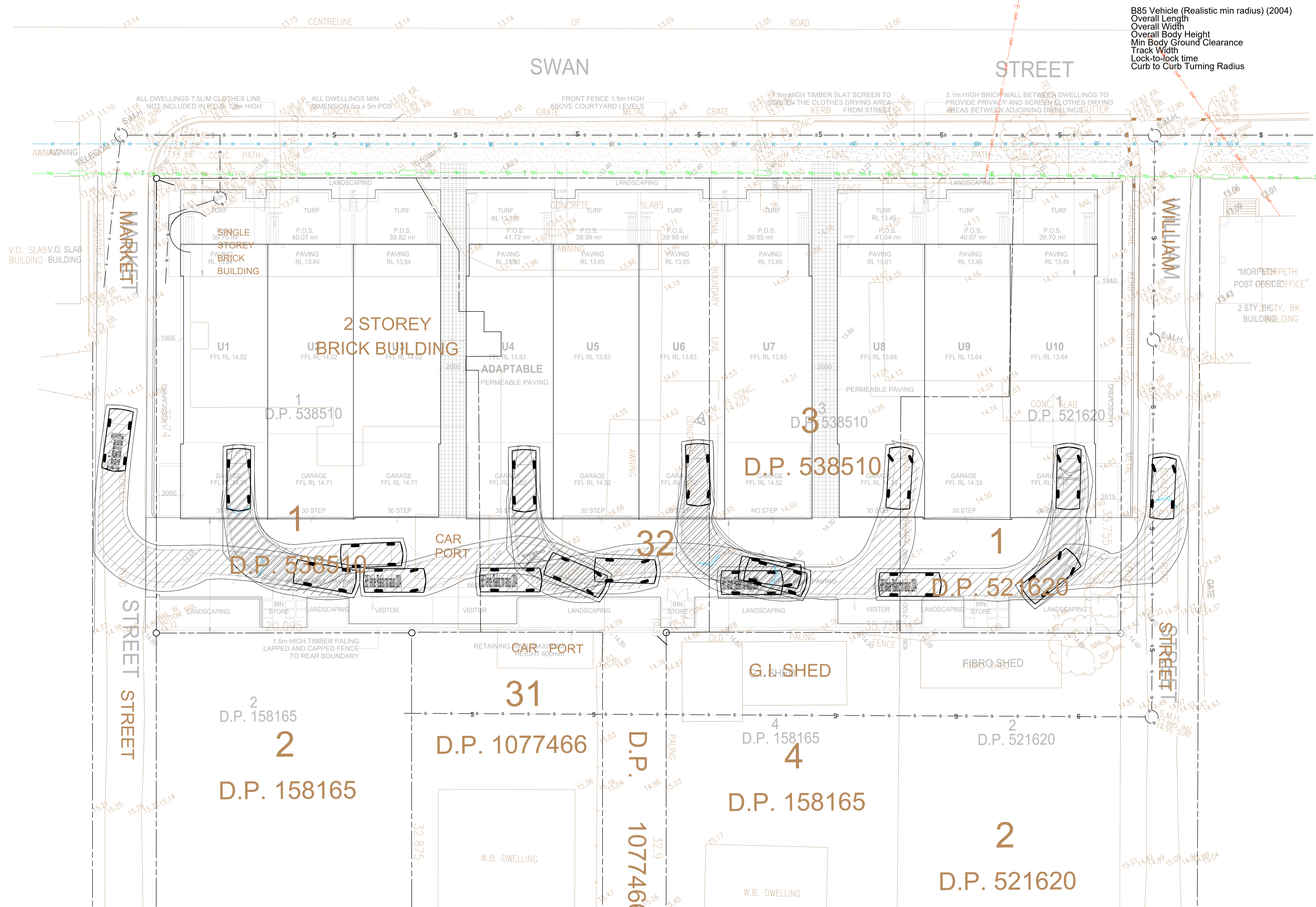
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REVISION
A

SWAN STREET



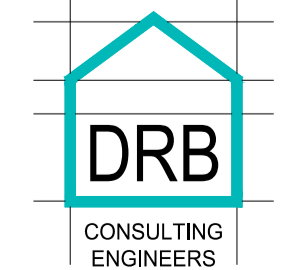
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TITLE
VEHICLE SWEEP PATH - SHEET 2

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

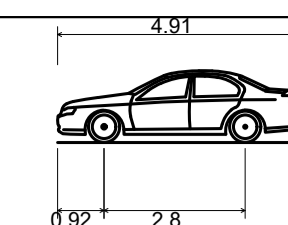
DRAWING No. **CIV007**

SHEET SIZE
A1

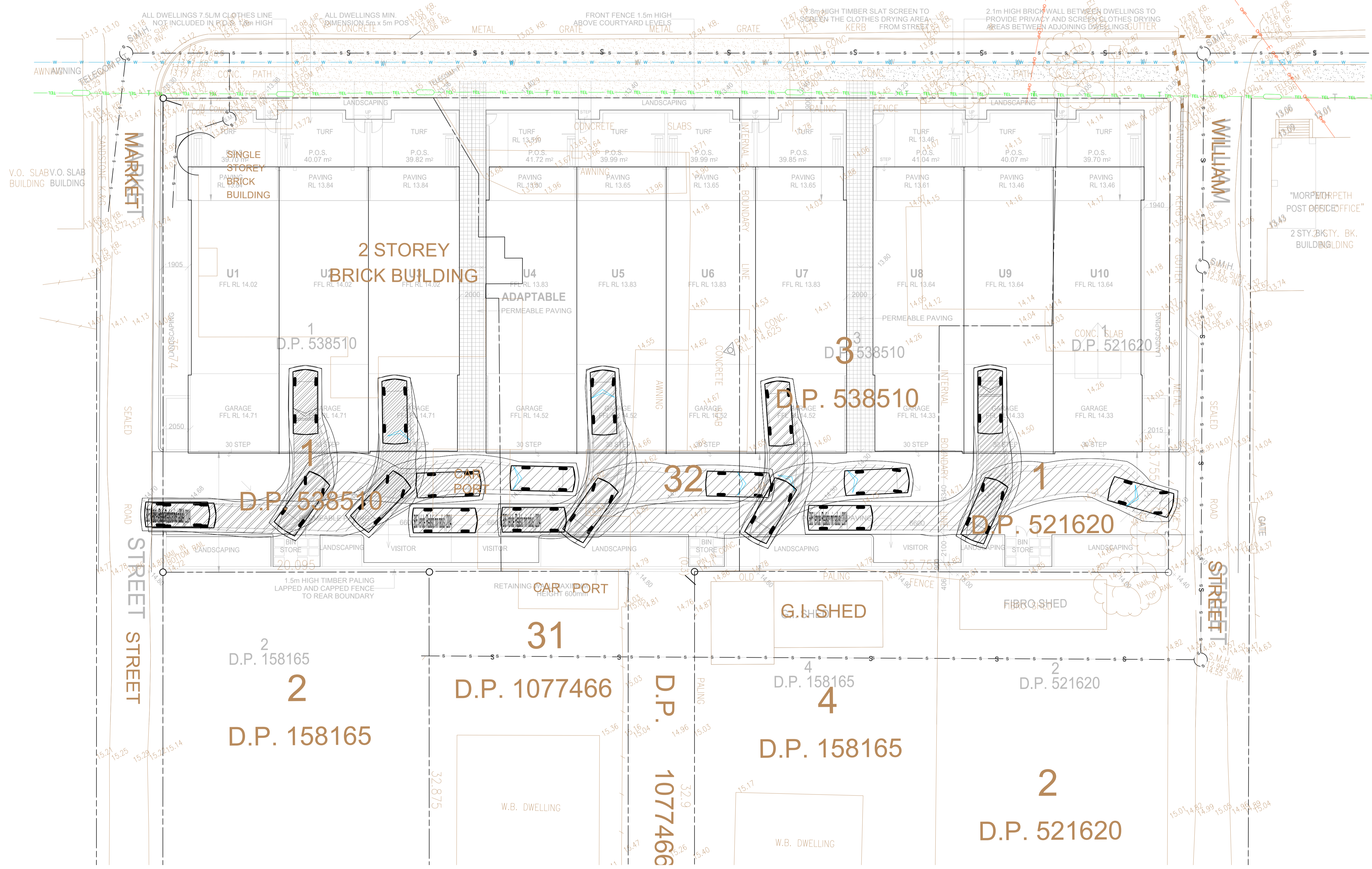
SCALE
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REVISION
A

SWAN STREET



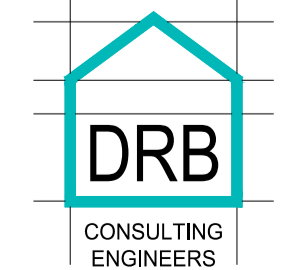
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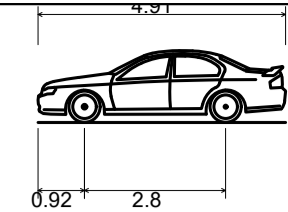
CLIENT
GHT HOLDINGS

TITLE
VEHICLE SWEEP PATH - SHEET 3

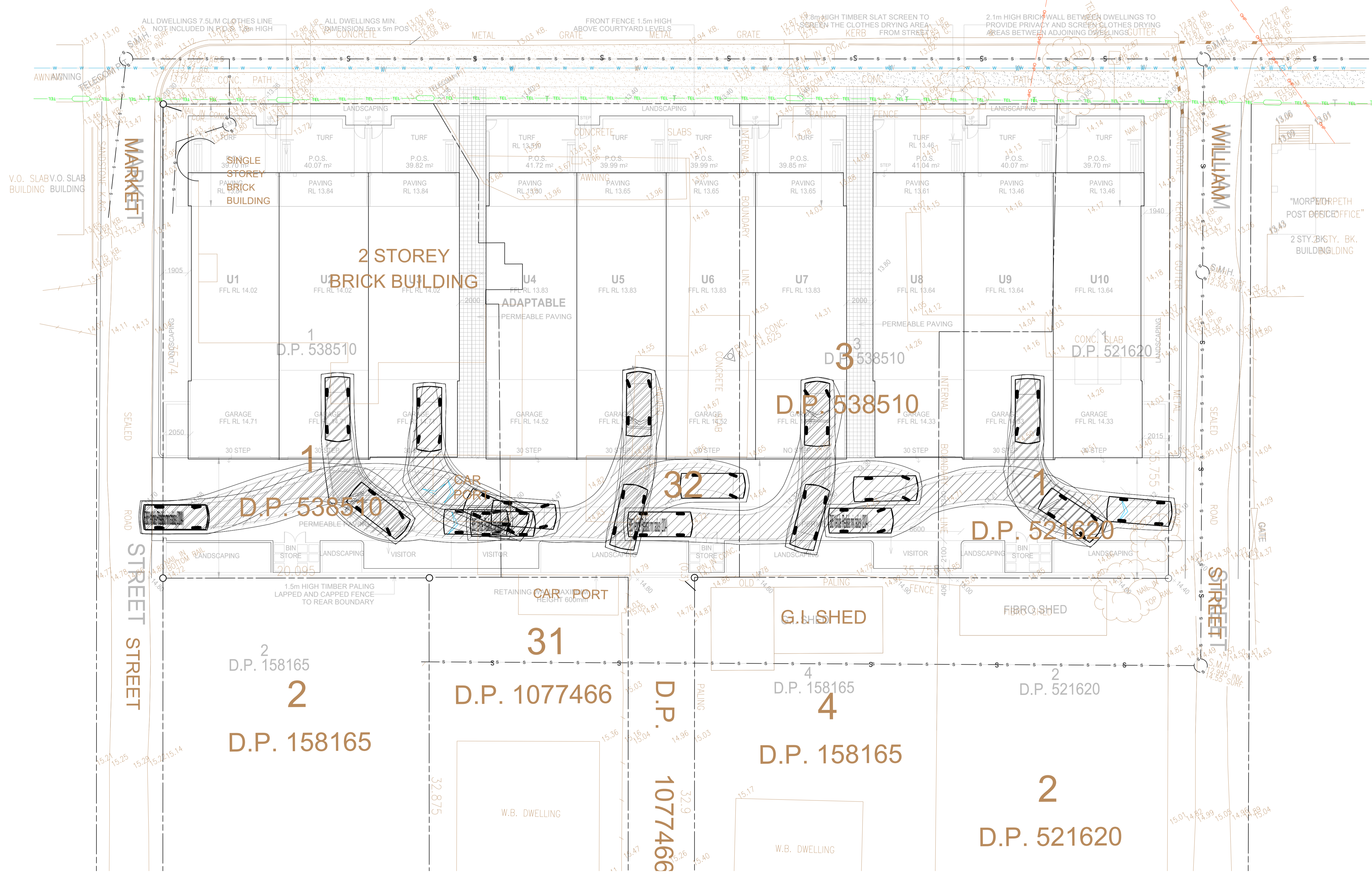
PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS		SHEET SIZE
NOT FOR CONSTRUCTION		A1
PROJECT REF No.	DRAWING No.	SCALE
211109	CIV008	1:150
REVISION		REVISION
		A

SWAN STREET



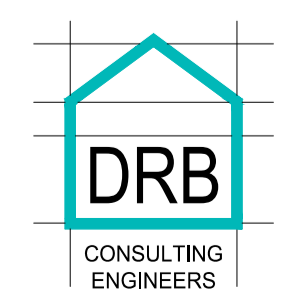
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CLIENT
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TITLE
VEHICLE SWEEP PATH - SHEET 4

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS
NOT FOR CONSTRUCTION

PROJECT REF No. **211109**

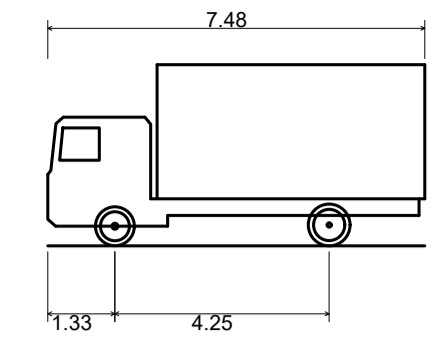
DRAWING No. **CIV009**

SHEET SIZE
A1

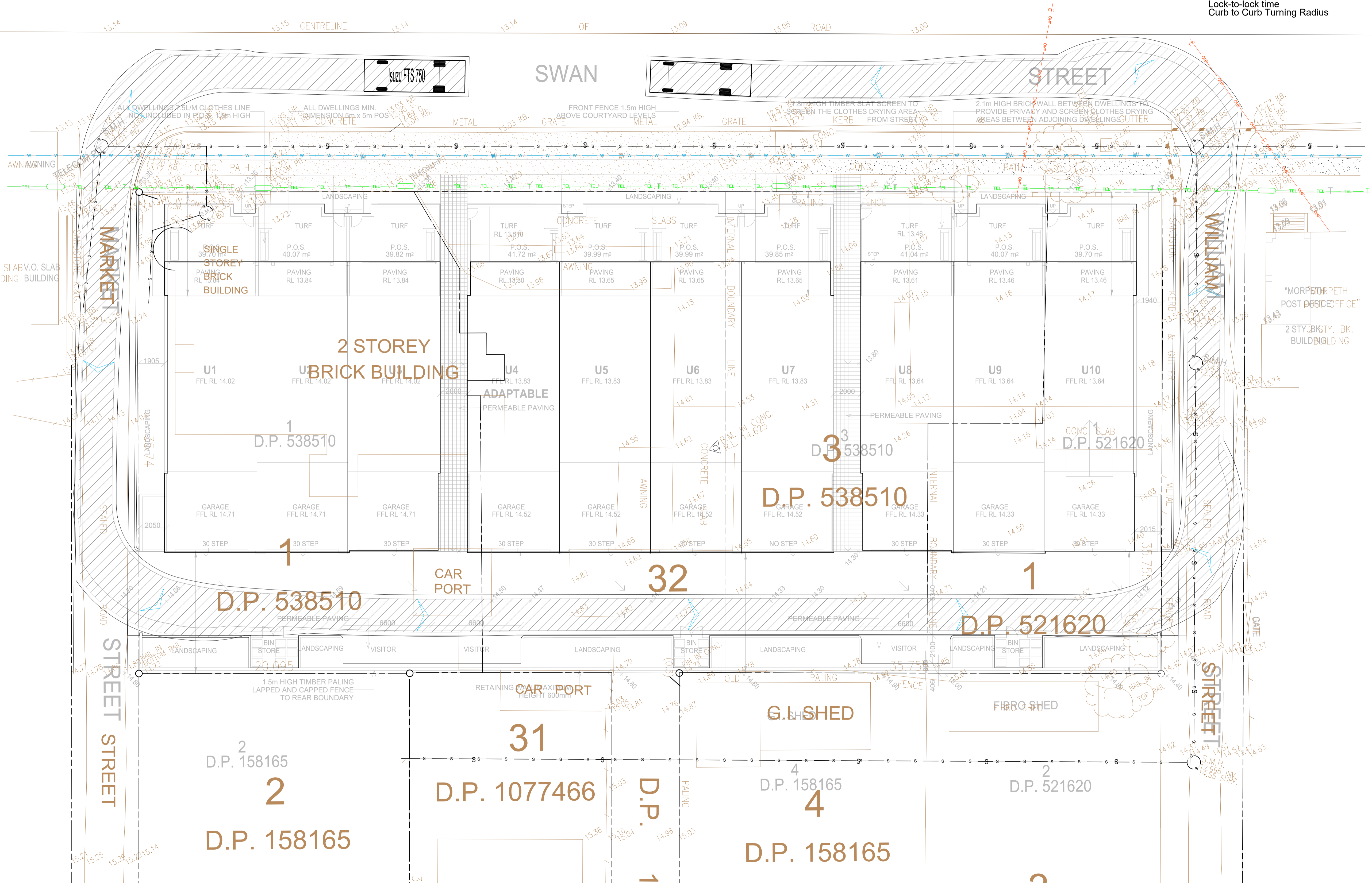
SCALE
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REVISION
A

SWAN STREET



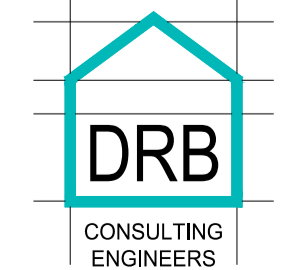
Isuzu FTS 750
 Overall Length 7.480m
 Overall Width 1.330m
 Overall Body Height 4.250m
 Min Body Ground Clearance 0.389m
 Max Track Width 2.360m
 Lock-to-lock time 3.50s
 Curb to Curb Turning Radius 8.850m



REV	DATE	DRN	CHK	APP	DRAWING STATUS
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GHT HOLDINGS

TITLE
VEHICLE SWEPT PATH - SHEET 4

PROJECT
**PROPOSED UNIT DEVELOPMENT
 NO. 107-117 SWAN STREET
 MORPETH**

DRAWING STATUS		SHEET SIZE
NOT FOR CONSTRUCTION		A1
PROJECT REF No. 211109		SCALE 1:150
DRAWING No. CIV010	REVISION	A