

PROPOSED RESIDENTIAL DEVELOPMENT

STAGE 4 OPERATIONAL WORKS 133-159 PARK RIDGE ROAD, PARK RIDGE FOR 'HB PARK RIDGE'

DRAWING LIST

EARTHWORKS, ROADWORKS AND DRAINAGE

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ENGINEER'S CERTIFICATION

PROJECT INFORMATION SUMMARY:

STAGE 4 WORKS

No. OF LOTS = 22

AREA OF STAGE 2 SITE = 1.870 ha

RP DESCRIPTION

LOT 3 ON RP137533

LOCAL AUTHORITY: LOGAN CITY COUNCIL

COUNCIL REFERENCE NUMBER: COM/36/2021

ELECTRICAL, COMMUNICATIONS AND GAS CONSULTANTS PLAN

NOTE: THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH:

SEDIMENT AND EROSION HAZARD ASSESSMENT

VEGETATION MANAGEMENT PLAN

LANDSCAPE ARCHITECTS PLAN

SAFETY IN DESIGN REPORT

I, Daniel Collins, hereby certify that:

As Constructed information shown on this plan is a true and correct record of the sizes, types, materials, classes etc., and it corresponds with the relevant approved Engineering

RPEQ (signature) RPEQ No. 18631 Date: 06/06/24

LOCALITY PLAN

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						FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD







SAUNDERS HAVILL GROUP



COVER PLAN

133-159 PARK RIDGE ROAD PARK RIDGE (STAGE 4)

22-0144

100

GENERAL NOTES:

- 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.
- 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

- 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.
- THE CONTRACTOR SHALL UNDERTAKE ALL EARTHWORKS IN ACCORDANCE WITH AS3798-2007 AND LOCAL AUTHORITY REQUIREMENTS. LEVEL 1 SUPERVISION IS REQUIRED.
- THE CONTRACTOR SHALL CONSIDER LOADS GENERATED BY THE EARTHWORKS OPERATIONS SO AS TO AVOID DAMAGE TO ALL PIPES, SERVICES AND STRUCTURES.
- 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.
- ALLOTMENT FINISHED SURFACE LEVELS, SHOWN ON THE LAYOUT PLAN, INDICATE THE FINISHED SURFACE LEVEL AFTER TOPSOIL PLACEMENT.

ROADWORKS AND DRAINAGE NOTES

- ALL WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S STANDARD DRAWINGS, METHODS AND SPECIFICATIONS.
- 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.
- THE CONTRACTOR SHALL UNDERTAKE ALL EARTHWORKS IN ACCORDANCE WITH AS3798-2007 AND LOCAL AUTHORITY REQUIREMENTS. LEVEL 1 SUPERVISION IS REQUIRED.
- THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH THE SUBGRADE TEST RESULTS NECESSARY FOR ALL PAVEMENT DESIGN.
- 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.
- THE CONTRACTOR SHALL INSTALL SUBSOIL DRAINS UNDER ALL KERBS AS REQUIRED BY THE LOCAL AUTHORITY'S STANDARDS.
- 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.
- 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

- . THE GEOMETRIC CENTRE SHALL BE TAKEN AS THE SETOUT POINT FOR ALL STRUCTURES, UNLESS DETAILED OTHERWISE.
- ROOFWATER ALIGNMENT, COVER, MATERIALS, BEDDING, JOINTING AND STEP IRON REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY'S STANDARD DRAWINGS, METHODS AND SPECIFICATIONS.
- 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.
- PROPERTY CONNECTIONS SHALL BE 150Ø 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 ADAPTORS 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.
- 8. GALVANISHED STEEL RHS ROOFWATER CONNECTIONS ARE REQUIRED UNDER FOOTPATHS.

ENGINEER'S CERTIFICATION

, Daniel Collins, hereby certify that:

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Diawings.

RPEQ (signature) RPEQ No. 18631 Date: 06/06/24

V DATE DESIGN DRAWN

03.1123 CL AK ISSUE FOR CONSTRUCTION

05.06.24 CL BP AS CONSTRUCTED

DESIGN APPROVED

DANIEL COLLINS RPEQ 18631

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTYLTD





SAUNDERS HAVILL GROUP

PH: 1300 123 744

TILLERMAN
PARK RIDGE

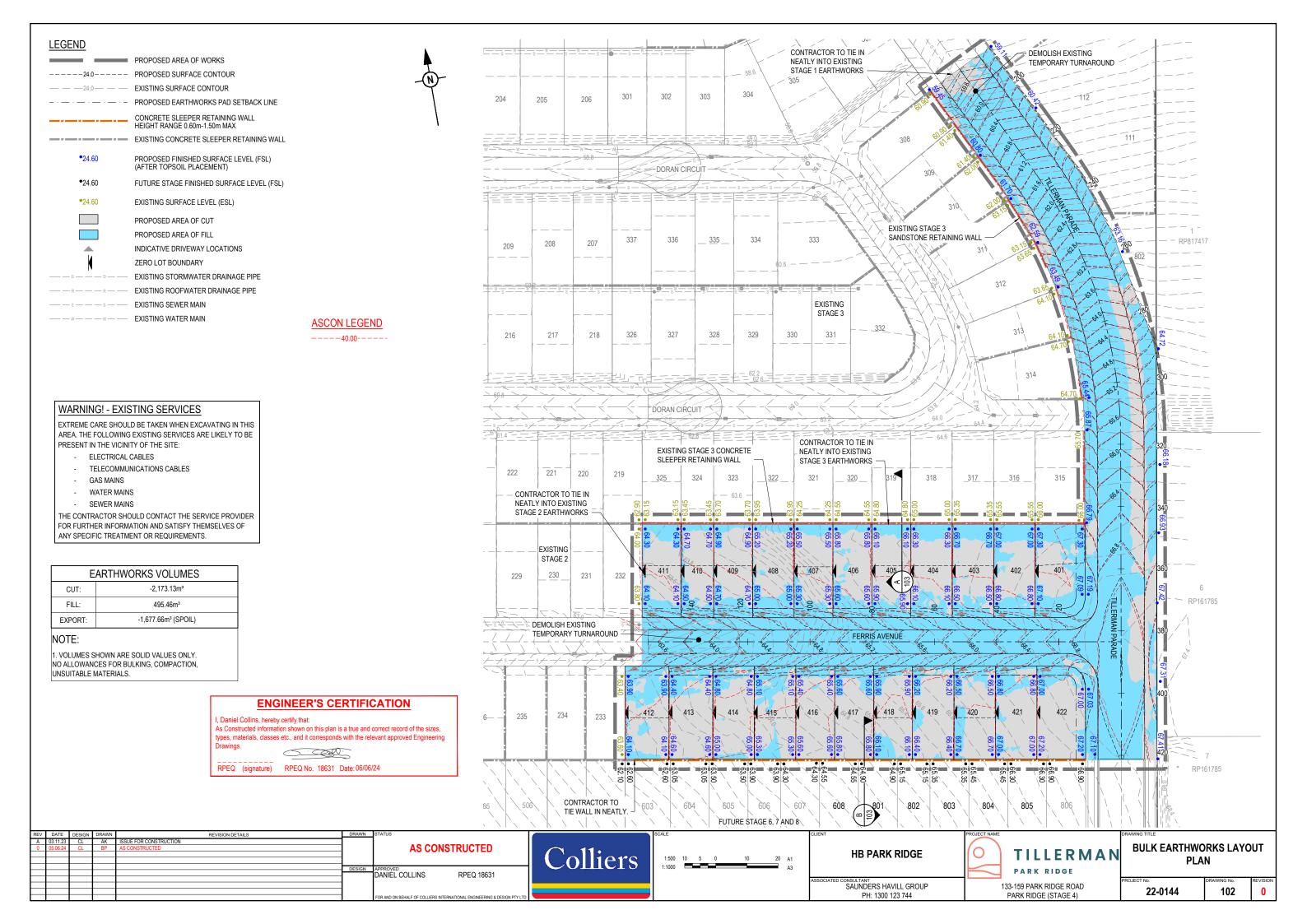
MAN GENERAL NOTES

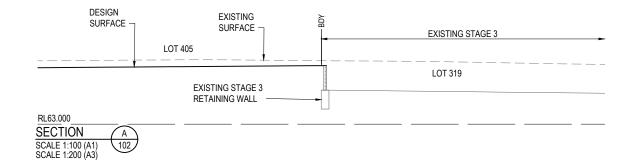
133-159 PARK RIDGE ROAD PARK RIDGE (STAGE 4)

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22-0144

101 REVISION

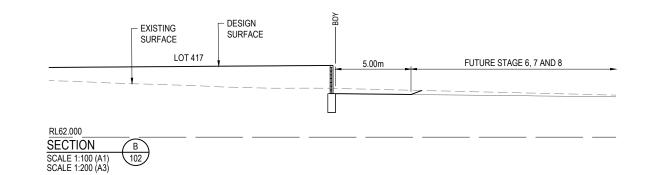


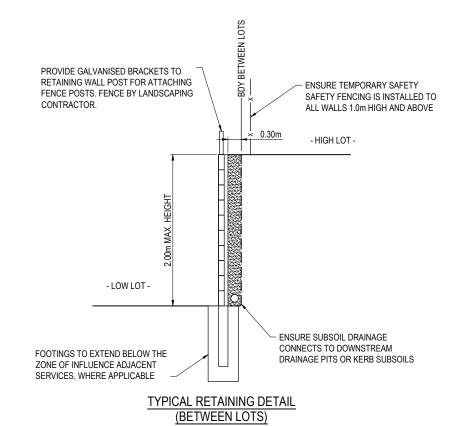


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RPEQ (signature) RPEQ No. 18631 Date: 06/06/24





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

RETAINING WALL NOTES:

- ALL RETAINING WALLS ARE TO BE DELIVERED UNDER DESIGN AND
- ALL RETAINING WALLS ARE TO BE DELIVERED UNDER DESIGN AND CONSTRUCTION ARRANGEMENT FORMS 15 AND 16 CERTIFICATIONS ARE TO BE PROVIDED BY THE CONTRACTOR.

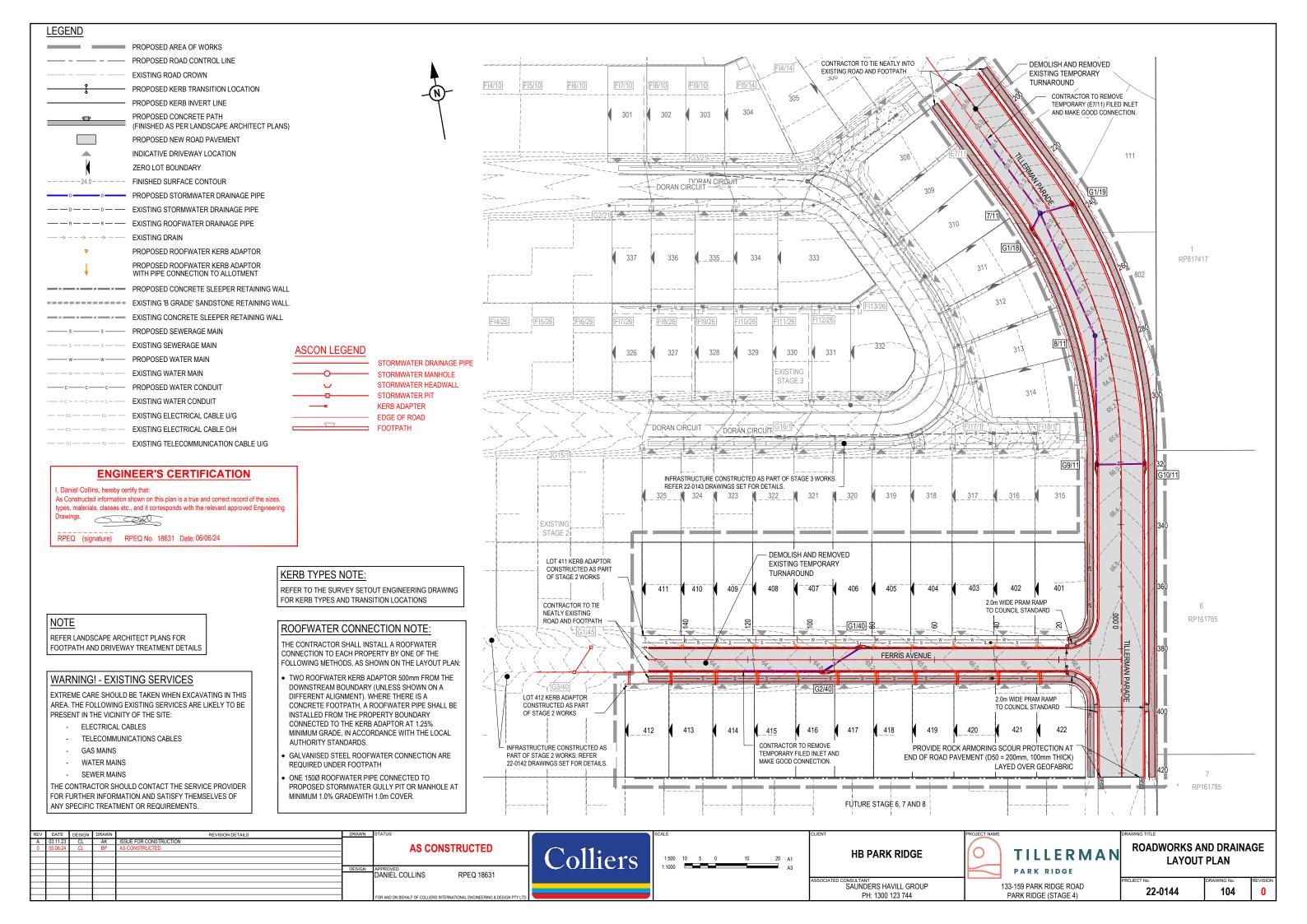
 DESIGN OF WALLS TO CONSIDER ALL LOADS (FENCES, DWELLINGS ETC) AS WELL AS ASSOCIATED IMPACTS FROM ANY ADJACENT SERVICES FOOTING DEPTHS TO BE EXTENDED AS REQUIRED.

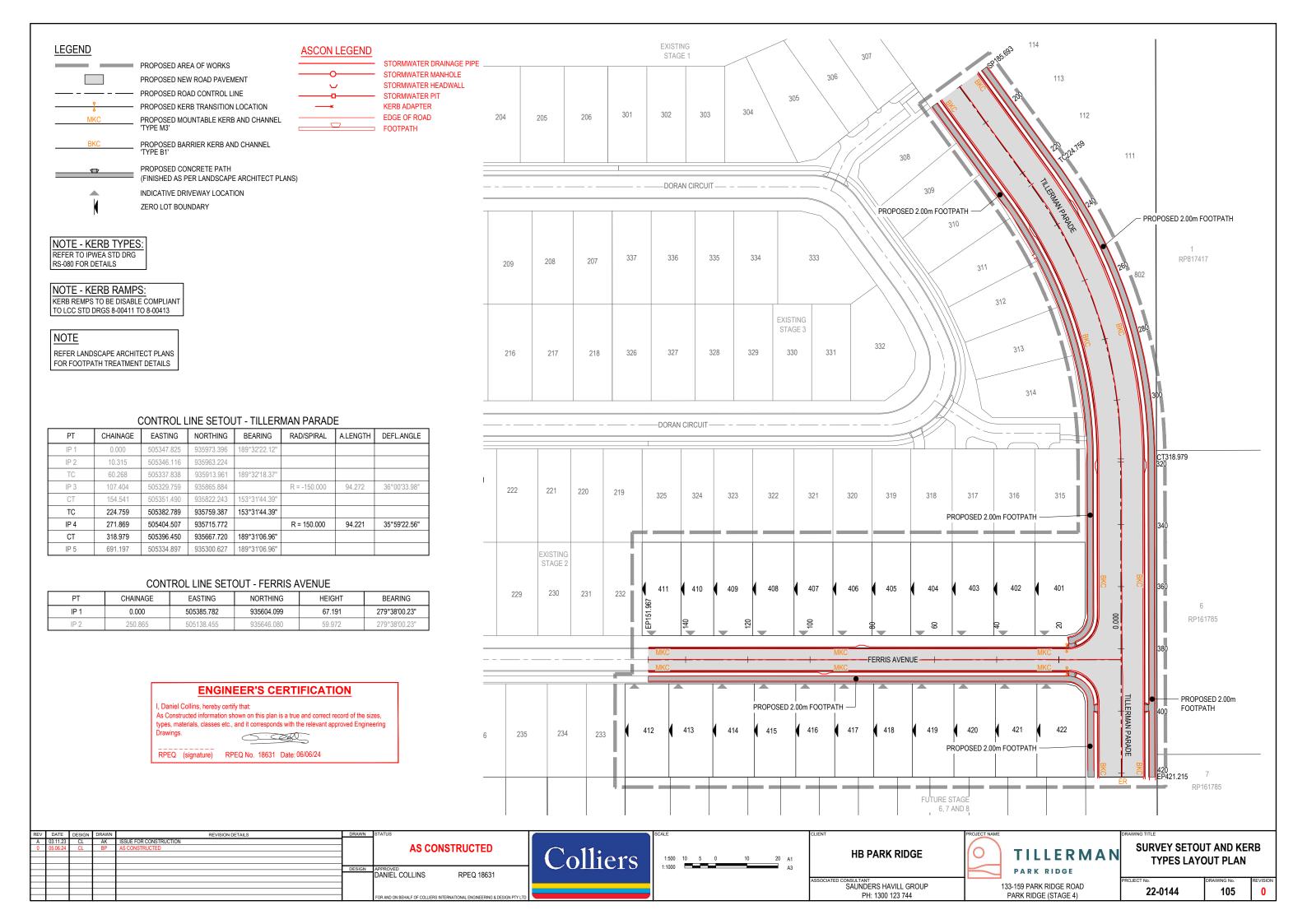
 GEOTECHNICAL CONDITIONS ARE TO BE CONFIRMED AND APPROPRIATELY CONSIDERED FOR ALL WALLS.

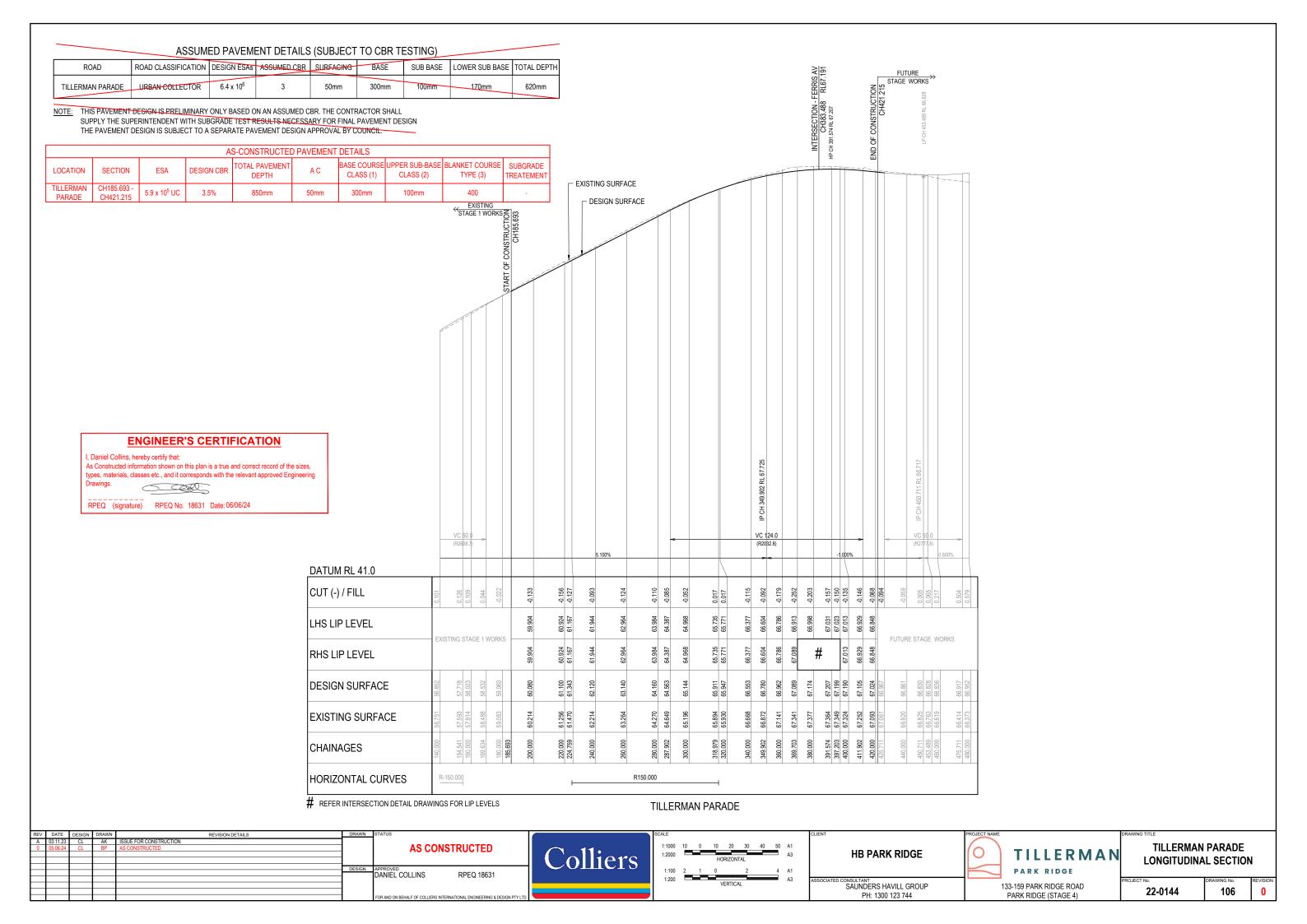
 REFER LANDSCAPE DRAWINGS FOR FURTHER INFORMATION ON RETAINING WALLS, PARTICULARLY RELATING TO FINISHES.

 TEMPORARY SAFETY FENCING TO BE INSTALLED BEHIND ALL WALLS 1.0m HIGH AND GREATER.

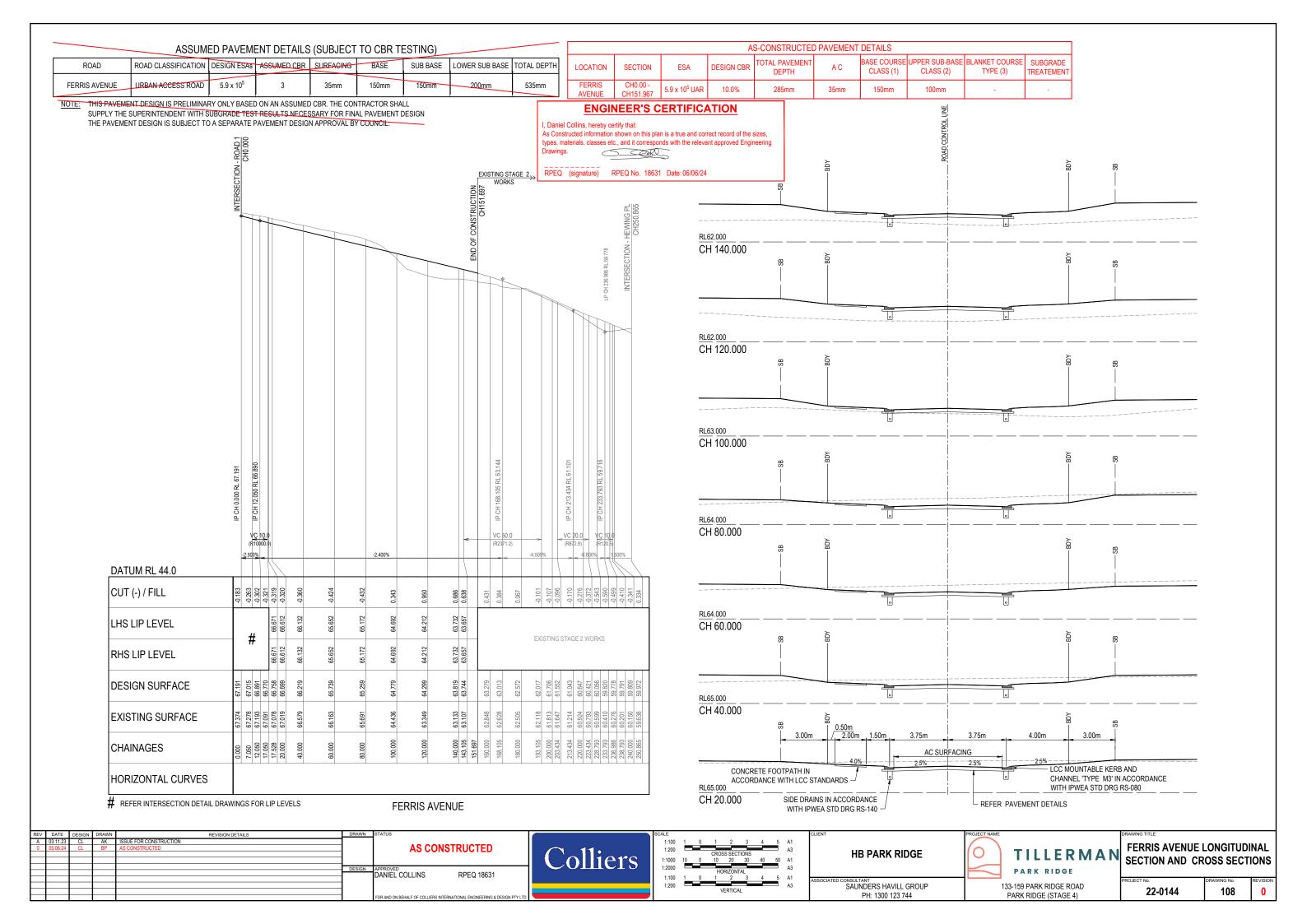
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A 03.11.23 0 05.06.24	CL CL	AK BP	ISSUE FOR CONSTRUCTION AS CONSTRUCTED		AS CONSTRUCTED	Colliers	1:100 1 0 1 2 3 4 5 A1	HB PARK RIDGE	TILLERMAN	BULK EARTHWO SECTI		CAL
				DESIGN	APPROVED DANIEL COLLINS RPEQ 18631		1:200 A3		PARK RIDGE			
				1				ASSOCIATED CONSULTANT SAUNDERS HAVILL GROUP	133-159 PARK RIDGE ROAD	PROJECT No.	DRAWING No.	REVISION
				1	FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD			PH: 1300 123 744	PARK RIDGE (STAGE 4)	22-0144	103	U







ENGINEER'S CERTIFICATION , Daniel Collins, hereby certify that: As Constructed information shown on this plan is a true and correct record of the sizes, types, materials, classes etc., and it corresponds with the relevant approved Engineering RPEQ (signature) RPEQ No. 18631 Date: 06/06/24 RP161785 3.00m RL65.000 CH 420.000 RL63.000 CH 300.000 3.00m RP161785 6.0% 2.5% 5.0% RL66.000 _2.5%__5.0% CH 400.000 RL63.000 CH 280.000 RP161785 - FERRIS AVENUE INTERSECTION -6.0% - 2.5% - 5.0% RL65.000 RL62.000 CH 380.000 CH 260.000 I IN 2 MAX. BATTER TO NATURAL SURFACE. CONTRACTOR TO ENSURE NO WORKS ARE - EXISTING SANDSTONE DONE IN NEIGHBOURING PROPERTY 3.00m RETAINING WALL RP161785 RL65.000 RL61.000 CH 360.000 CH 240.000 - EXISTING SLEEPER RETAINING WALL RP161785 6.0% -- 2.5% -- 5.0% RL65.000 RL60.000 CH 340.000 CH 220.000 23.00m ROAD RESERVE 23.00m ROAD RESERVE 1.50m 2.50m 1.25m 2.00m BIKE PARKING 2 50m 0.75m 2.50m PARKING 2.00m PARKING AC SURFACING RP161785 6.0% 2.5% CONCRETE FOOTPATH IN CONCRETE FOOTPATH IN - ACCORDANCE WITH LCC STANDARDS ACCORDANCE WITH LCC STANDARDS RL59.000 RL64.000 CH 200.000 CH 320.000 'TYPE B1' KERB AND CHANNEL 'TYPE B1' KERB AND CHANNEL SIDE DRAINS IN ACCORDANCE IN ACCORDANCE WITH IPWEA REFER PAVEMENT CONCRETE FOOTPATH IN CONCRETE FOOTPATH IN IN ACCORDANCE WITH IPWEA STD DRG RS-080 WITH IPWEA STD DRG RS-140 SIDE DRAINS IN ACCORDANCE STD DRG RS-080 DETAILS ACCORDANCE WITH LCC STANDARDS -ACCORDANCE WITH LCC STANDARDS REFER PAVEMENT WITH IPWEA STD DRG RS-140 DETAILS TILLERMAN PARADE **TILLERMAN PARADE CROSS AS CONSTRUCTED** Colliers **HB PARK RIDGE TILLER MAN** SECTIONS DANIEL COLLINS PARK RIDGE RPEQ 18631 SAUNDERS HAVILL GROUP 133-159 PARK RIDGE ROAD 107 22-0144 PH: 1300 123 744 PARK RIDGE (STAGE 4)



LEGEND — – — PROPOSED ROAD CONTROL LINE — PROPOSED KERB TRANSITION LOCATION PROPOSED KERB INVERT LINE PROPOSED CONCRETE PATH (FINISHED AS PER LANDSCAPE ARCHITECT PLANS) PROPOSED NEW ROAD PAVEMENT INDICATIVE DRIVEWAY LOCATION ----53.4---- PROPOSED PAVEMENT CONTOUR (0.2m INTERVAL) PROPOSED KERB SETOUT LINE PROPOSED KERB SETOUT START POINT SP — EP — PROPOSED KERB SETOUT END POINT EXISTING SLEEPER RETAINING WALL EXISTING 'B GRADE' SANDSTONE RETAINING WALL. PROPOSED STORMWATER DRAINAGE PIPE - s ----- s ----- PROPOSED SEWERAGE MAIN PROPOSED WATER CONDUIT

WARNING! - EXISTING SERVICES

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

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

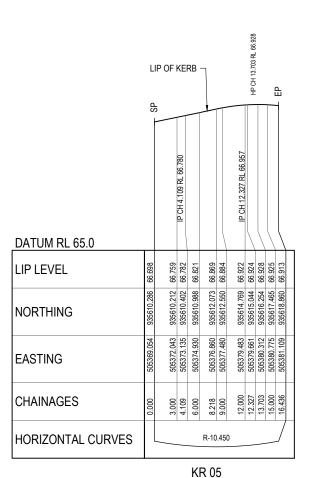
THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

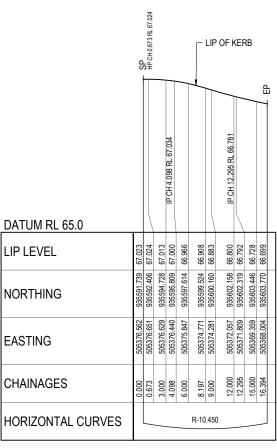
KERB TYPES NOTE:

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

NOTE

REFER LANDSCAPE ARCHITECTS PLANS FOR FOOTPATH TREATMENT DETAILS





KR 06

ASCON LEGEND

EDGE OF ROAD
FOOTPATH
PAVEMENT CONTOURS



ENGINEER'S CERTIFICATION

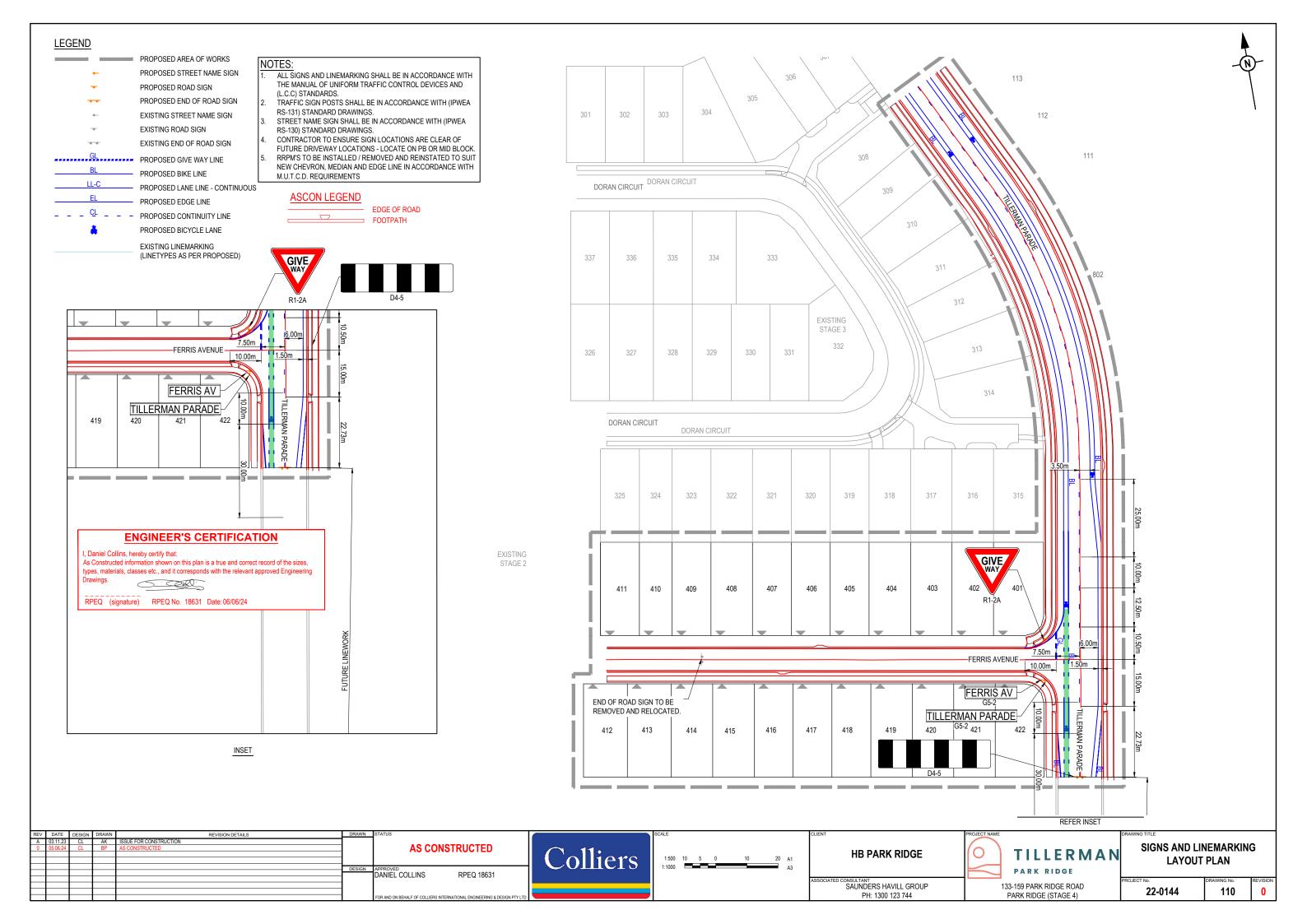
I, Daniel Collins, hereby certify that:

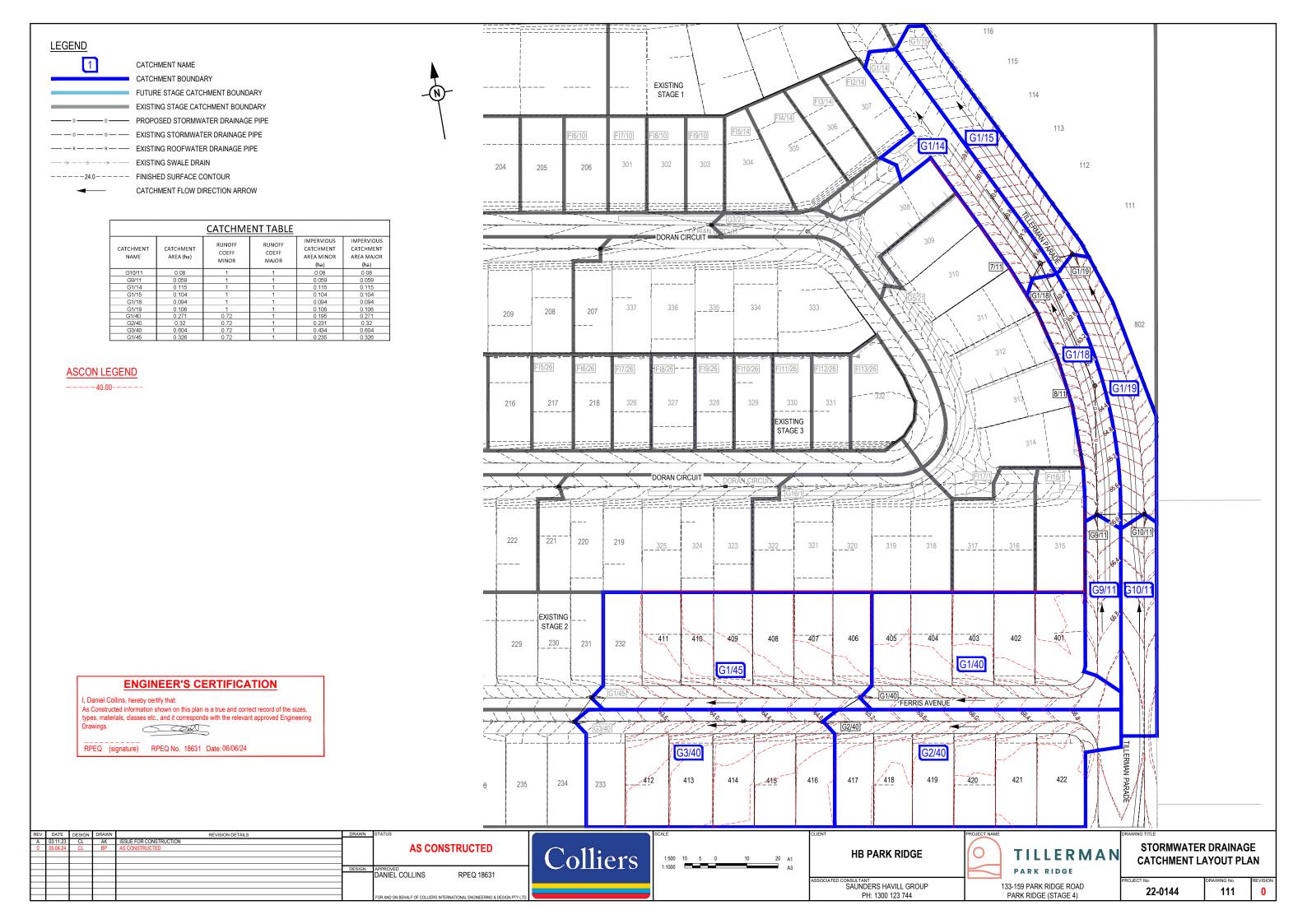
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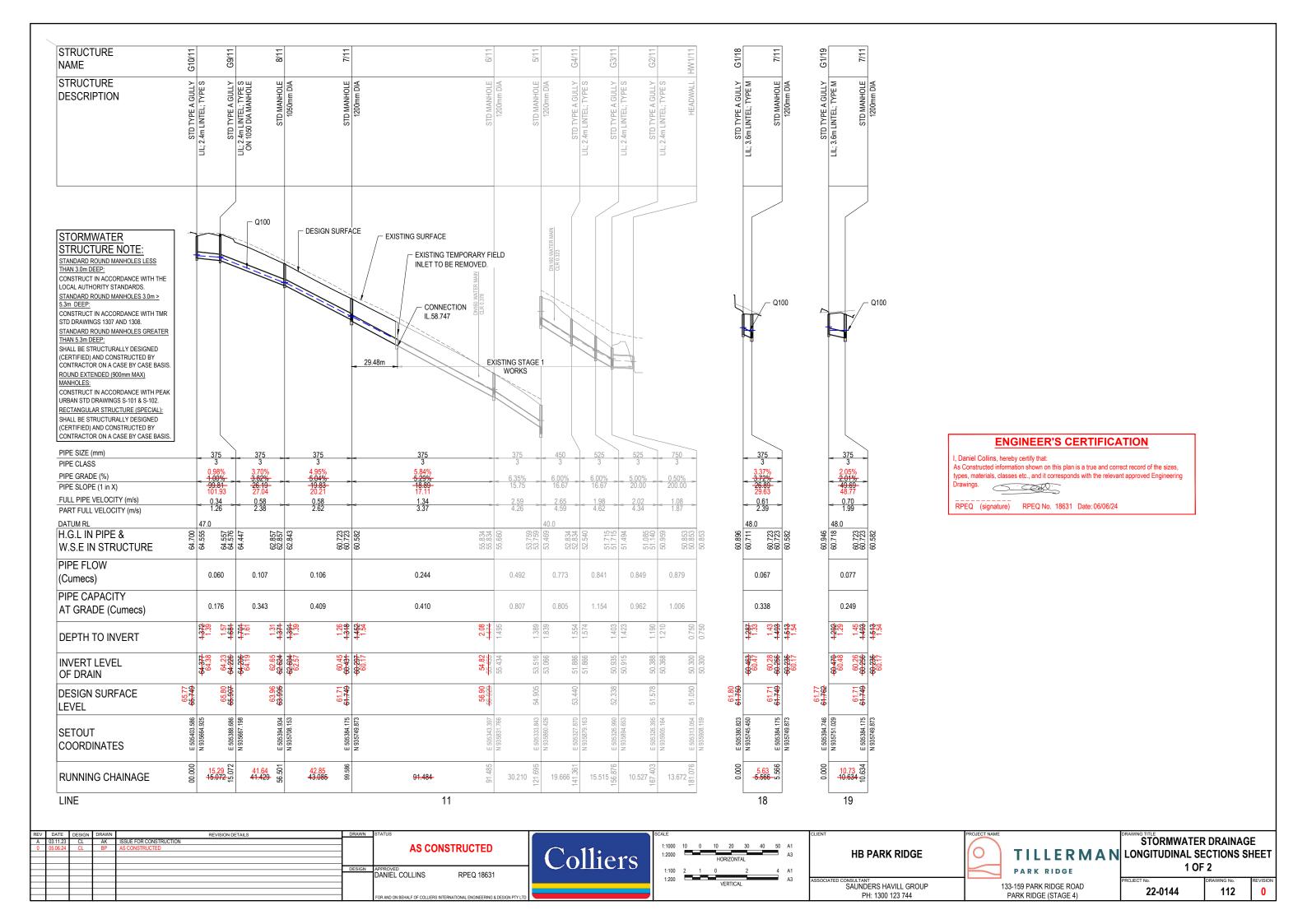
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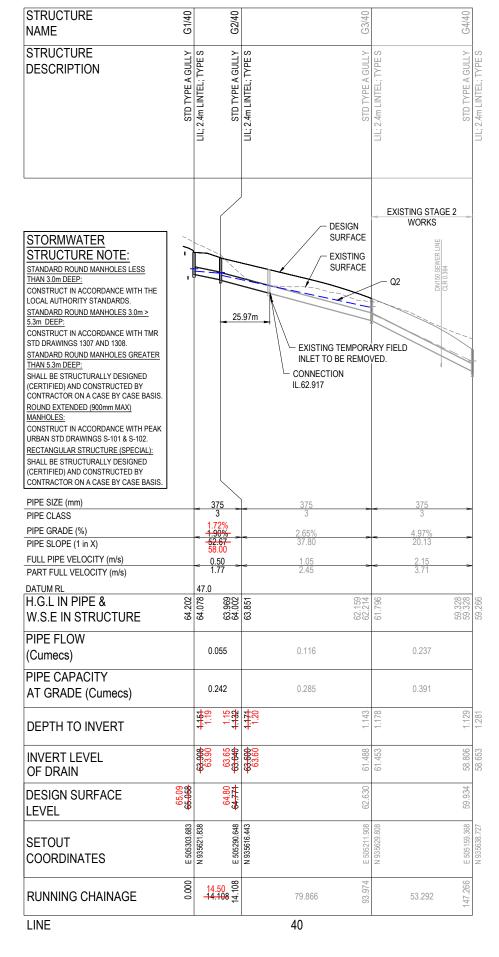
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				DESIGN	DANIEL COLLINS RPEQ 18631	Comers	1:25 0.25 0 0.25 0.5 0.75 1 1:25 A1 1:50 VERTICAL A3	ASSOCIATED CONSULTANT SAUNDERS HAVILL GROUP PH: 1300 123 744	PARK RIDGE 133-159 PARK RIDGE ROAD PARK RIDGE (STAGE 4)	PROJECT No. 22-0144	DRAWING No.	REVISION 0
	<u> </u>				FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD			111. 1300 123 744	TARRINDOL (STAGE 4)	ļ		





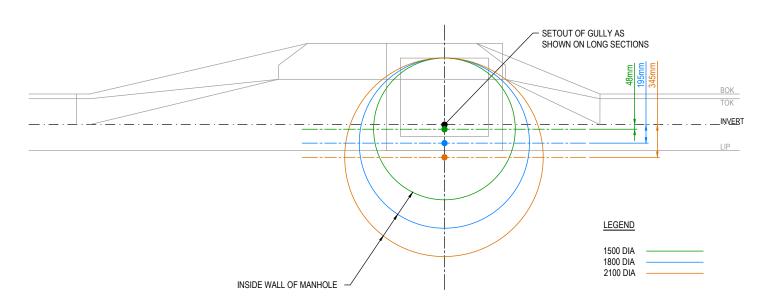




STRUCTURE SETOUT REFERENCE POINT

STRUCTURE TYPE	нс	DRIZONTAL	VERTICAL
MANHOLE	- •	€ MAIN SHAFT	FINISHED SURFACE LEVEL
GULLY PIT		INTERSECTION OF PIT AND KERB INVERT LNE # (INCLUDING MANHOLES UNDER GULLIES)	KERB INVERT LEVEL
HEADWALL		INTERSECTION OF HEADWALL FACE & PIPE CENTRE LINE	TOP OF HEADWALL

NOTE:
WITHIN GULLY PIT CHAMBER, CONTRACTOR TO ENSURE
STORMWATER PIPES ARE OFFSET AS REQUIRED SO
THAT PIPES ENTER WHOLLY WITHIN A SIDE WALL



TYPICAL MANHOLE UNDER GULLY SETOUT -MOUNTABLE K&C - STANDARD TYPE A GULLY

1:20 (A1) 1:40 (A3)

NOTE:

THE CENTRE OF 1050, 1200 & 1350 DIA MANHOLES ARE THE SAME SETOUT POINTS AS THEIR RESPECTIVE GULLY PITS.

ENGINEER'S CERTIFICATION

I, Daniel Collins, hereby certify that:
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Drawings.

RPEQ (signature) RPEQ No. 18631 Date: 06/06/24

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Ι	03.11.23	CL	AK	ISSUE FOR CONSTRUCTION		
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STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 2

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22-0144

133-159 PARK RIDGE ROAD PARK RIDGE (STAGE 4)

MINOR Q2 CALCULATION

	LOCATI	ION		TI	ME				S	UBCA	TCHN	MENT	RUNC)FF								INLE	T DESI	GN										DRAI	N DES	IGN										Н	EADLO	OSSES	;				F	PART F	ULL			DESI	IGN LE	.VELS			
1	2	3	4	5	6	•	8		9	10		11		12	1	.3	14	15	16	17	18	19	20 2	22	23	24	25	26	27		28		29 30	31		32	33	34	35	36	3	7	38	39	40	41	. 42	2 43	44	45	46	47	48	49	50	51	52		53 54	4 55	56	57	58
					t	:	I		С	Α	(0	CxA)	Σ	(CxA)		ς					Wf	dg	Vg			Qg		tc	I		Σ(CxA	4)	Qt Qr	n Qs	(Qo	L	S		V	T				v2/2	g Ku	ı hu	ı K _L	hլ	Kw	hw	Sf	hf	١ ا	Vp								
MINOR DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	SURFACE CONDITIONS (LAND USE)	SLOPE OF CATCHMENT SUB-CATCHMENT	TIME OF CONCENTRATION from intensity Chart	MINOR RAINFALL INTENSITY MAJOR	MINOR	COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	9 × 1D MINOR	9×10 MAJOR	MINOR	SUM OF CON KIBO ING EQUIVALENT AREAS MAJOR	(8 x 121/360 MINOR	(8 x 12)/360 SUB-CALCHIVIENT DISCHARGE	225 FLOW PAST PREVIOUS GULLIES	13+14 FLOW IN K&C (INCLUDING BYPASS)	ROAD GRADE AT INLET	K - K WIDTH	FLOWWIDTH	FLOW DEPTH AT INVERT	GUTTER FLOW VELOCITY April 1	INLET NUMBER	Refer Legend INLET TYPE	From Charts FLOW INTO INLET	15-24 BYPASS FLOW	CRITCAL TIME OF CONC.	MINOR RAINFALL INTENSITY	MAJOR	MINOR TOTAL CONTRIBUTING EQUIVALENT AREA	MAJOR	(27 x 28)/360 MAJOR TOTAL FLOW MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	MINOR	MAJOR FLOW IN PIPE	REACH LENGTH	PIPEGRADE	PIPE/BOX DIMENSIONS	32/Arre of Sert. FLOW VELOCITY	33/136.x 60) TIME OF FLOW IN REACH		Ки МЕТНОБ	Ku CHART	(36 x 36)/2g VELOCITY HEAD	FROM QUDM VOL. U/S HEADLOSS COEEFF.	40×41 U/S PIPE STRUCTURE HEADLOSS	FROM QUDM LAT. HEADLOSS COEEFFICIENT	LAT. PIPE STRUCTURE HEADLOSS	FROM QUDM W.S.E. COEEFICIENT	CHANGE IN W.S.E.	FROM SECT. 14.5.7 FRICTION SLOPE AAR. VOL. 11987	PIPE FRICTION HEADLOSS	ОЕРТН	VELOCITY	u/s OBVERT LEVELS 0/s	U/S DRAIN SECTION HGL 9/5	ch.	U/S HGL	WSE	SURFACE or K&C INVERT LEVEL	FREEBOARD	STRUCTURE No.
Yrs					% mi	n. r	nm/hr			На		Ha		На	n	³/s	m³/s	m³/s	%	m	m	m	m/s m ²	's		m³/s	m³/s	min	mm/l	ır	На	n	n³/s m³,	/s m³/s	n	n³/s	m	%	mm	m/s	mi	n			m		m		m		m	%	m	m r	m/s	m	m		m m	m m	m	m	
2 100	G1/40	G1/40 to G2/40	1		2.5 1		234	0.72	1	0.271	0.195	0.271	0.195	0.271	0.059	0.176		0.059	2.4	7.5				G1/4	0 AL2D				108	234	0.195	0.271 0.1	.76 3.20	0.378	0.059	0.176	14.108	1.9	375	0.53			Ku,Kw - Aissouri/Hare	G2	0.0	1 9.7	0.14	4			0.139	0.48	0.121	0.126 1.	.803 6	1.283 64.015	64.083 64.0	.015 64	4.222	64.222	65.058	0.836	G1/40
2 100		G2/40 to G3/40	2		2.5 1	108	234	0.72	1	0.32	0.231	0.32	0.231	0.32	0.069	0.208		0.069	2.4	7.5				G2/4	0 AL2D	0.069	,	10.12	107.66	233.28	0.426	0.591 0.3	183 3.20	0.378	0.127	0.383	79.866	2.65	375	1.15	1.15		Charts Ku,Kw - Alissouri/Hare Charts	G1/T3	0.0	7 2.2	4 0.1	5		2.8	0.19	2.07	1.703	0.176 2.	.509 6	3.975 61.863	63.863 62.2	.213 64	4.054	64.054	64.771	0.717	G2/40
2 100	G3/40	G3/40 to G4/40	4		2.5 1	108	234	0.72	1	0.302	0.217	0.302	0.217	0.302	0.065	0.196		0.065	3.75	7.5				G3/4	0 AL2D	0.065	5	10.67	106.1	229.94	0.875	1.216 0.7	777 3.3	82 0.40	0.258	0.777	53.292	4.97	375	2.34	0.37	957 N	Charts Ku,Kw - Alissouri/Hare	т1/т	3 0.28	B 1.4	7 0.4	1		1.7	0.475	4.88	2.618	0.222 3.	.779 6	1.828 59.181	61.804 59.2	.201 62	2.278	62.278	62.63	0.352	G3/40
2 100	G1/45	G1/45 to G3/40	1		2.5 1	108	234	0.72	1	0.326	0.235	0.326	0.235	0.326	0.07	0.212		0.07	3.49	7.5				G1/4	5 AL2D	0.07		10	108	234	0.235	0.326 0.2	12 3.3	82 0.40	0.07	0.212	9.29	1.94	375	0.64	0.24	193 N	Charts Ku,Kw - Alissouri/Hare	G2	0.02	2 7.6	7 0.10	6			0.159	0.16	0.015	0.138 1.	.913 6	2.059 61.878	62.228 62.2	.213 62	2.387	62.387	62.831	0.443	G1/45

MINOR Q100 CALCULATION

1	.OCAT	ION		TI	ME			-	SUBCA ⁻	тснм	FNT RI	INOFF							INI	ET DESI	GN								Г	OR AIN	DESIGN									HEADI	OSSES					РΔ	RT FULI			DESIG	GN LEVEI	ıs		$\overline{}$
1			4			Q		٥ ,	10	11	1	12		13	14	15	16 1	18		20 2	_	23	24	25 2	6	27	28	2	9 30	31	32	33	3/1	35	36	37	38	30	9 40	_	42	13 11	45	46	47 4	_	50	51	51		3 54		57	5.8
-	-		-	-	tc	i		c	A	(Cx	(A)	Σ(CxA)		Q			1.		dg				Qg		c	1	Σ(Cx		t Qm	Qs	Qo	L			V V	T	30	- 3.				K. h.		hw			Vp	- 31			,5 54	33 30		
DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	SURFACE CONDITIONS (LAND USE)	SLOPE OF CATCHMENT SUB-CATCHMENT TIME OF CONCENTRATION	RAINFALL INTENSITY		COEFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EOUIVALENT AREA		SUM OF CONTRIBUTING EQUIVALENT AREAS		SUB-CATCHMENT DISCHARGE	FLOW PAST PREVIOUS GULLIES	FLOW IN K&C (INCLUDING BYPASS)	ROAD GRADE AT INLET	FLOW WIDTH	FLOW DEPTH AT INVERT	GUTTER FLOW VELOCITY	INLET NUMBER	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	CKI LOAD CONC.	RAINFALL INTENSITY	TOTAL CONTRIBUTING	ANOTA REPORTED TO A PART OF THE PART OF TH	MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	FLOW IN PIPE	REACH LENGTH	PIPE GRADE	PIPE/BOX DIMENSIONS	FLOW VELOCITY	TIME OF FLOW IN REACH	ки МЕТНОВ	KII CHART	NU CHARLI	U/S HEADLOSS COEEFF.	U/S PIPE STRUCTURE HEADLOSS	LAT. HEADLOSS COEEFFICIENT LAT. PIPE STRUCTURE HEADLOSS	W.S.E. COEEFICIENT	CHANGE IN W.S.E.	FRICTION SLOPE	PIPE FRICTION HEADLOSS DEPTH	VELOCITY	OBVERT LEVELS	DRAIN SECTION HGL	מעשות פבר ווכוח חבר	U/S HGL LATERAL HGL	WSE SURFACE OF K&C INVERT LEVEL	FREEBOARD	STRUCTURE No.
MAJOR						From Intensity Chart MINOR	MINOR	MAJOR		9×10 MINOR	9×10 MAJOR	£11 MINOR 511	MAJOR (8 x 12)/360 MINOR	(8 x 12)/360 MAJOR	225	13+14				20		Refer Legend	From Charts	15 - 24	MINOR	MAJOR	\$12 (U/S) MINOR	MAJOR	nos/(s7 x /7)		MINOR				32/Area of Sect.	33/(36 × 60)			(36 × 36)/2g	FROM QUDM VOL.	40 × 41	FROM QUDM VOL 2	FROM QUDM VOL 2		FROM SECT. 14.5.7 A.R.R. VOL. 11987			s/a s/n	s/n	s/a				
Vrs					% min.	mm/hr			Ha	н		На		m³/s	m³/s	m³/s	a4 m			m/s m ²	/e		m³/s	m³/s m	in	mm/hr	Ha	m	3/s m3/s	m ³ /s	m³/s	m	96	mm	m/s	min			m		m	m		m	94.		m/s	m			m m	m m		
100 100 G	10/11	G10/11 to G9/11	1		2.5 5	293 29	3 1	1	0.08	0.08	0.08	0.08 0		5 0.065						1.132 0.0		L1 AL3I			5 293		0.08				0.06 0.06	15.072		375	0.54	0.46519	Ku,Kw - Missouri/Hare Charts	G	2 0.01	9.7	0.15			0.145				64.752 64.6	1 64.555			64.7 65.74		G10/11
100 100 0	59/11	G9/11 to 8/11	2		2.5 5	293 29	3 1	1	0.059	0.059	0.059	0.059 0.	059 0.04	8 0.048		0.048 3	.47 15	1.771	0.073	1.059 0.0	77 G9/1	1 AL3I	0.048	5.	13 291.5	52 291.52	0.139	0.139 0.11	13 3.2	0.113	0.107 0.107	41.429	3.82	375	0.97	0.71184	Ku,Kw - Missouri/Hare Charts	T1	10 0.05	2.27	0.11		2.66	0.129	3.84 1.	581 0.14	14 2.745	64.581 62.9	9 64.447	62.857 64.5	.576	64.576 65.90	07 1.331	G9/11
100 100	8/11	8/11 to 7/11	2		2.5												1				8/1	мн10	50	5.	47 287.4	44 287.44	0.139	0.139 0.11	11		0.106 0.106	43.085	5.45	375	0.96	0.748	Ku,Kw>0 - Missouri/Hard Charts	ет	2 0.05	0.28	0.01			0.013	4.92 2.	177 0.1	3 3.11	62.979 60.6	62.843	60.723 62.8	.857 (62.857 63.99	95 1.138	8/11
100 100	7/11	7/11 to 6/11	4		2.5												1				7/1	L MH12	00	5.	83 283.2	21 283.21	0.339	0.339 0.26	67		0.244 0.244	91.484	5.46	375	2.21	0.68992	Ku,Kw>0 - Missouri/Hare Charts	т2/	/T4 0.25	0.57	0.14			0.14	5.19 4.	767 0.20	3.868	60.611 55.6	2 60.582	55.834 60.3	.723	60.723 61.74	19 1.026	7/11
100 100	6/11	6/11 to 5/11	10		2.5												1				6/1	L MH12	00	6.	59 274.2	21 274.21	0.707	0.707 0.53	38		0.492 0.492	30.21	8	450	3.09	0.16294	Ku,Kw>0 - Missouri/Hare Charts	т2/	/T4 0.49	0.36	0.17			0.173	6.29 1.	911 0.2	54 5.32	55.675 53.2	8 55.66	53.759 55.1	.834	55.834 56.92	29 1.095	6/11
100 100 0	61/14	G1/14 to 6/11	5		2.5 5	293 29	3 1	1	0.14	0.14	0.14	0.14 0	.14 0.11	4 0.114	0.009	0.123	.68 15	2.365	0.088	1.59 0.:	4 G1/1	4 AL3I	0.096	0.027 10	.27 232.3	33 232.33	0.336	0.336 0.21	17 3.086	0.22	0.199 0.199	6.005	8.5	375	1.8	0.0556	Ku,Kw - Missouri/Hare Charts	T4/	/T8 0.17	1.98	0.33		2.01	0.332	4.08 0.	276 0.10	52 4.338	56.13 55.6	2 56.079	55.834 56.4	411 !	56.411 57.07	72 0.661	G1/14
100 100 0	61/15	G1/15 to 6/11	1		2.5 5	293 29	3 1	1	0.104	0.104	0.104	0.104 0.	104 0.08	5 0.085	0.014	0.099	.21 15	2.117	0.082	1.57 0.1	28 G1/1	5 AL3I	0.079	0.019	5 293	3 293	0.104	0.104 0.08	85 3.086	0.22	0.079 0.079	11.813	4.59	375	0.72	0.27345	Ku,Kw - Missouri/Hare Charts	G	2 0.03	9	0.24			0.236	1.35 0.	216 0.1	17 2.695	56.162 55.6	2 55.993	55.834 56.3	.229	56.229 57.0	6 0.831	G1/15
100 100 0	61/18	G1/18 to 7/11	1		2.5 5	293 29	3 1	1	0.094	0.094	0.094	0.094 0.	0.07	6 0.076		0.076	.37 15	1.992	0.077	1.385 0.1	07 G1/1	8 AL3I	0.067	0.009	5 293	3 293	0.094	0.094 0.07	76 2.846	0.167	0.067 0.067	5.566	3.72	375	0.61	0.15208	Ku,Kw - Missouri/Hare Charts	G	2 0.02	9.7	0.18			0.184	0.	008 0.1	14 2.388	60.838 60.6	60.711	60.723 60.1	.896	60.896 61.7	5 0.854	G1/18
100 100 0	51/19	G1/19 to 7/11	1		2.5 5	293 29	3 1	1	0.106	0.106	0.106	0.106 0.	106 0.08	0.086	0.005	0.091 4	.86 1	2.163	0.083	1.398 0.1	16 G1/1	9 AL3I	0.077	0.014	5 293	3 293	0.106	0.106 0.08	86 2.846	0.167	0.077 0.077	7 10.634	2.01	375	0.7	0.25319	Ku,Kw - Missouri/Hare Charts	G	2 0.02	9.12	0.23			0.228	0.	021 0.14	14 1.988	60.845 60.6	60.718	60.723 60.5	.946	60.946 61.76	ó2 0.816	G1/19

ENGINEER'S CERTIFICATION

I, Daniel Collins, hereby certify that:
As Constructed information shown on this plan is a true and correct record of the sizes, types, materials, classes etc., and it corresponds with the relevant approved Engineering Drawings.

RPEQ (signature) RPEQ No. 18631 Date: 06/06/24

DATE	DESIGN	DRAWN	REVISION DETAILS	DRAWN	STATUS		SCALE	CLIENT	PROJECT NAME	DRAWING TITLE		
03.11.23	CL	AK	ISSUE FOR CONSTRUCTION							07001044755		I
05.06.24	CL	BP	AS CONSTRUCTED		AS CONSTRUCTED	C 11.		UD DADIC DIDAE	(C) TILLEBAGAN	SIORMWAIER	R DRAINAG	<i>i</i> L
						011000		HB PARK RIDGE		041 0111 4710		-
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		\vdash		DESIGN	APPROVED				DADK DIDGE			
		-			DANIEL COLLINS RPEQ 18631				PARK KIDOL			
	_	_						ASSOCIATED CONSULTANT	100 150 DADY DIDOE DOAD	PROJECT No.	DRAWING No.	REVISION
	_	\vdash								22 0444	1 444	1 0
	 				FOR AND ON REHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD.			PH: 1300 123 744	PARK RIDGE (STAGE 4)	ZZ-U 144	114	U
	DATE 03.11.23 05.06.24	DATE DESIGN 03.11.23 CL 05.06.24 CL	DATE DESIGN DRAWN 03.11.23 C.L. AK 05.06.24 C.L. BP				COLIETS AS CONSTRUCTED AS CONSTRUCTED Design Approved DANIEL COLLINS RPEQ 18631	AS CONSTRUCTED AS CONSTRUCTED DESIGN APPROVED DANIEL COLLINS RPEQ 18631 COLUMN AS CONSTRUCTED AS CONSTRUCTED COLUMN AS CONSTRUCTED	AS CONSTRUCTED AS CONSTRUCTED DESIGN APPROVED DANIEL COLLINS RPEQ 18631 ASSOCIATED CONSULTANT SAUNDERS HAVILL GROUP DRI 120 120 744	AS CONSTRUCTED AS CONSTRUCTED	AS CONSTRUCTED AS CONSTRUCTED	AS CONSTRUCTED AS CONSTRUCTED AS CONSTRUCTED AS CONSTRUCTED DESIGN APPROVED DANIEL COLLINS RPEQ 18631 AS CONSTRUCTED TILLER MAN CALCULATIONS TABLE PROJECT NO. DRAWING NO. 22-0144 114