TILLERMAN
PARK RIDGE

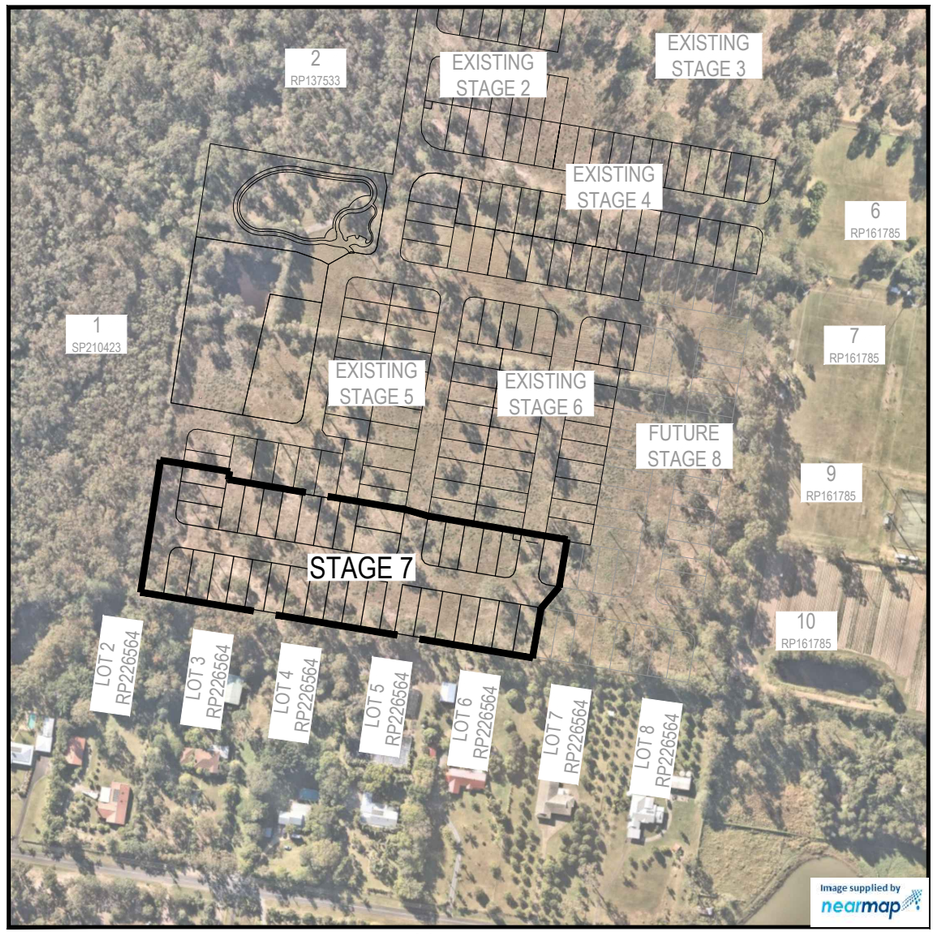
PROPOSED RESIDENTIAL DEVELOPMENT

STAGE 7 OPERATIONAL WORKS
133-159 PARK RIDGE ROAD, PARK RIDGE
FOR 'HB PARK RIDGE'

DRAWING LIST

EARTHWORKS, ROADWORKS AND DRAINAGE

SEWERAGE AND WATER RETICULATION



LOCALITY PLAN
SCALE 1:2000 (A1)
SCALE 1:4000 (A3)

N

PROJECT INFORMATION SUMMARY:
STAGE 7 WORKS
No. OF LOTS = 36
AREA OF STAGE 7 SITE = 2.10 ha
RP DESCRIPTION LOT 3 ON RP137533
LOCAL AUTHORITY: LOGAN CITY COUNCIL
COUNCIL REFERENCE NUMBER: COM/36/2021

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 REPORT
- SAFETY IN DESIGN REPORT
- COLLIERS STANDARD DRAWINGS FOR BRIDGING STRUCTURE
- 22-0447 - STAGE 6 ENGINEERING DRAWINGS
- 22-0447 - STAGE 6 TO 8 BULK EARTHWORKS DRAWINGS
- 22-0446 - STAGE 5 ENGINEERING DRAWINGS

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: 17/03/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

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

CLIENT: HB Land
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: COVER PLAN

PROJECT No.	DRAWING No.	REVISION
22-0448	100	1

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.
7. ALLOTMENT FINISHED SURFACE LEVELS, SHOWN ON THE LAYOUT PLAN, INDICATE THE FINISHED SURFACE LEVEL AFTER TOPSOIL PLACEMENT.

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, STORMWATER DRAINAGE STRUCTURES OR KERB SUBSOIL DRAINS. 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 AUTHORITIES 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 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.

ENGINEER'S CERTIFICATION

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RPEQ (signature) RPEQ No. 18631 Date: 17/03/25

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DRAWN

DESIGN

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APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

SCALE

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

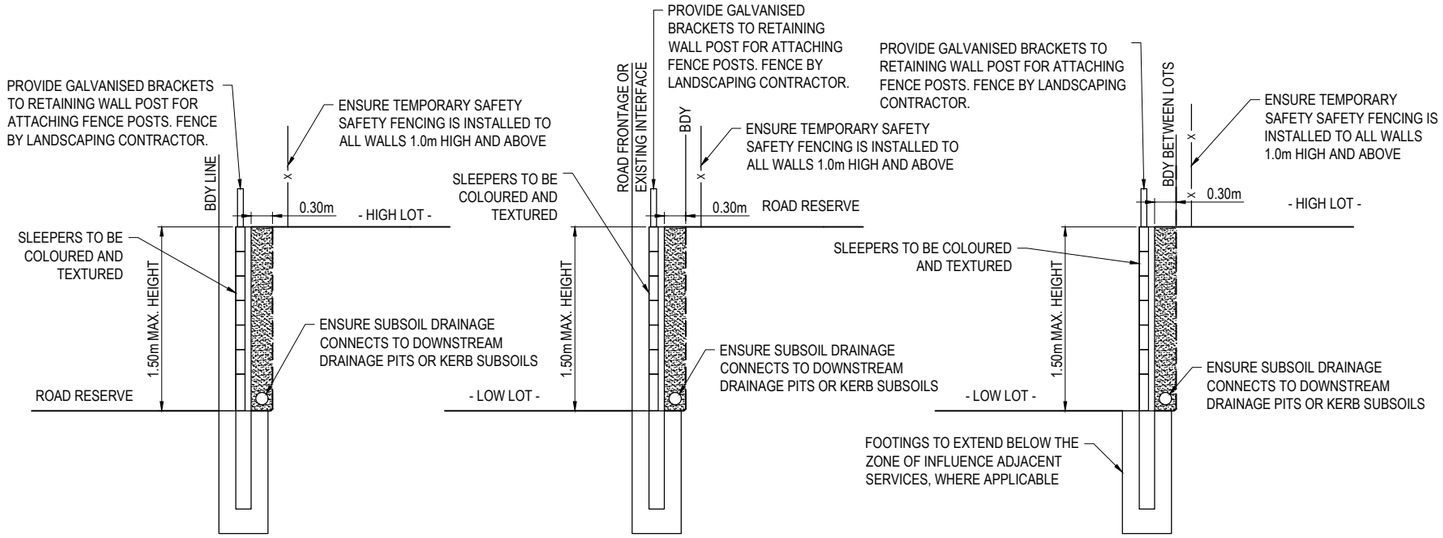
PROJECT NAME: TILLERMAN PARK RIDGE

STAGE 7

133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: GENERAL NOTES

PROJECT No.	DRAWING No.	REVISION
22-0448	101	1



TYPICAL RETAINING DETAIL (HIGHER LOT FRONTING ROAD RESERVE OR EXISTING)

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

TYPICAL RETAINING DETAIL (LOWER LOT FRONTING ROAD RESERVE OR EXISTING)

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

TYPICAL RETAINING DETAIL (BETWEEN LOTS)

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

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED SURFACE CONTOUR (24.0)
- EXISTING SURFACE CONTOUR (24.0)
- PROPOSED EARTHWORKS PAD SETBACK LINE
- CONCRETE SLEEPER RETAINING WALL HEIGHT RANGE 0.50m-1.50m MAX
- CONCRETE SLEEPER RETAINING WALL (MIN. 0.200m RAISED ABOVE DESIGN)
- CONCRETE SLEEPER RETAINING WALL (MIN. 0.250m RAISED ABOVE DESIGN)
- EXISTING CONCRETE SLEEPER RETAINING WALL
- PROPOSED CUT-OFF DRAIN
- RETAINING WALL SUBSOIL PIPE EXTENSION
- 24.60 PROPOSED FINISHED SURFACE LEVEL (FSL) (AFTER TOPSOIL PLACEMENT)
- 24.60 FUTURE STAGE FINISHED
- 24.60 EXISTING SURFACE LEVEL (ESL)
- PROPOSED AREA OF CUT
- PROPOSED AREA OF FILL
- INDICATIVE DRIVEWAY LOCATIONS
- ZERO LOT BOUNDARY
- EXISTING STORMWATER DRAINAGE PIPE
- EXISTING ROOFWATER DRAINAGE PIPE
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G
- EXISTING ELECTRICAL CABLE O/H
- EXISTING TELECOMMUNICATION CABLE U/G
- EXISTING FIBRE OPTIC CABLE U/G
- EXISTING GAS MAIN
- EXISTING DRAIN

EARTHWORKS VOLUMES	
CUT:	6,704m³
FILL:	1,317m³
EXPORT:	5,386m³ (SURPLUS)

NOTE:

1. VOLUMES SHOWN ARE SOLID VALUES ONLY. NO ALLOWANCES FOR BULKING, COMPACTION, ROAD BOXING, UNSUITABLE MATERIALS.

ASCON LEGEND

- AS CONSTRUCTED CONTOUR

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:

PLAN TO BE READ IN CONJUNCTION WITH APPROVED OVERALL BULK EARTHWORK PLANS. REFER DRG 22-447-400 SERIES

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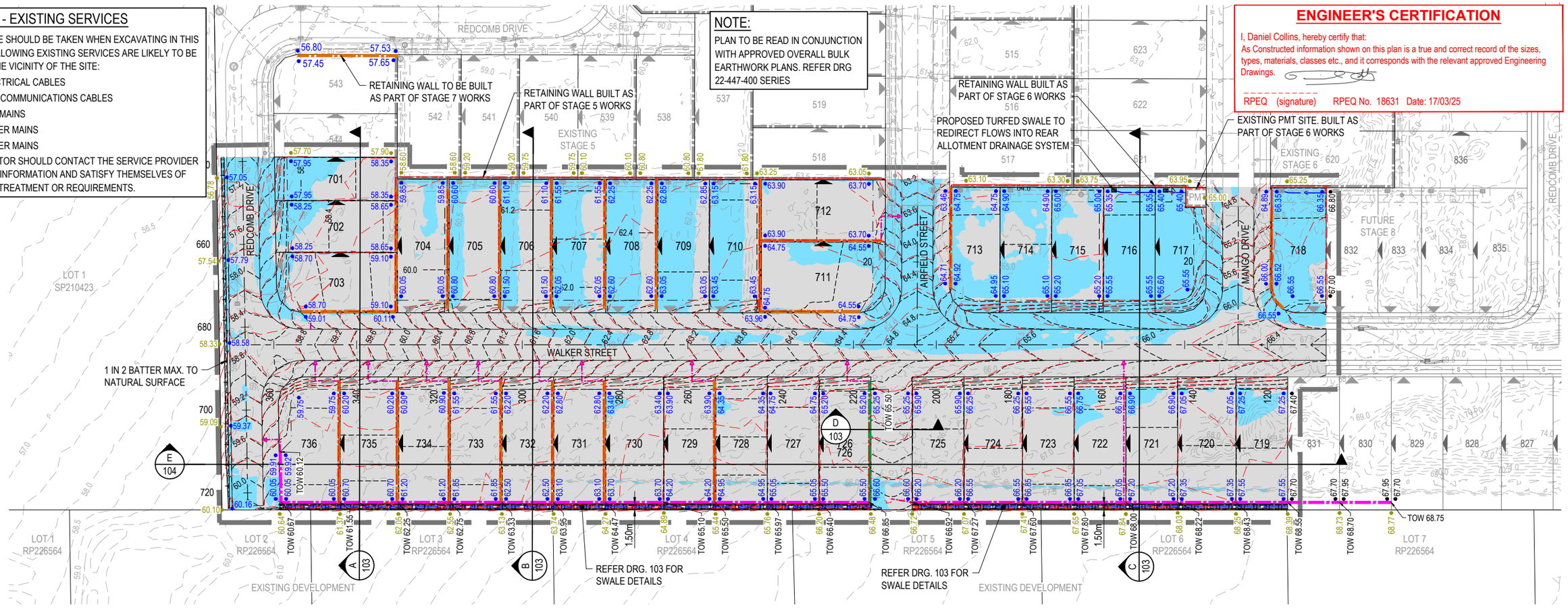

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DRAWN
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APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

Colliers

SCALE
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1:1000 A3
1:50 1 0.5 0 1 2 A1
1:100 A3

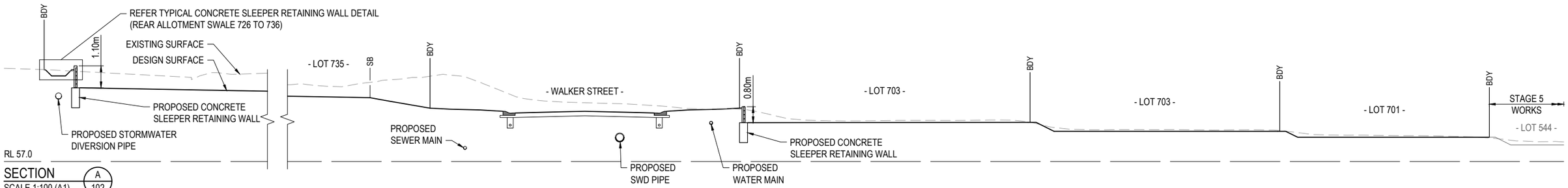
CLIENT: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **BULK EARTHWORKS LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
22-0448	102	1



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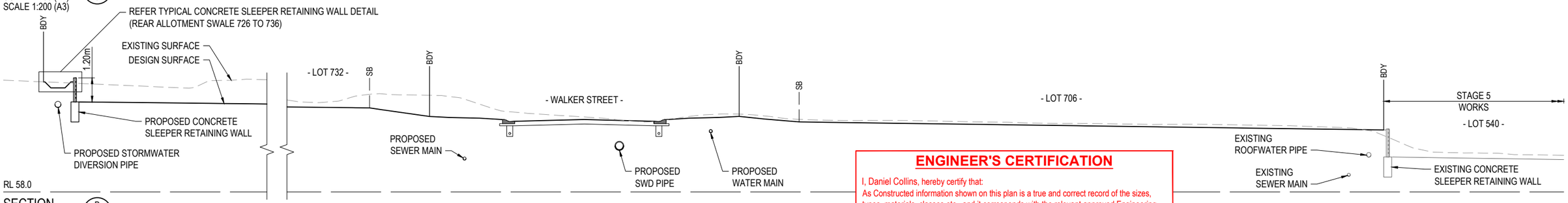

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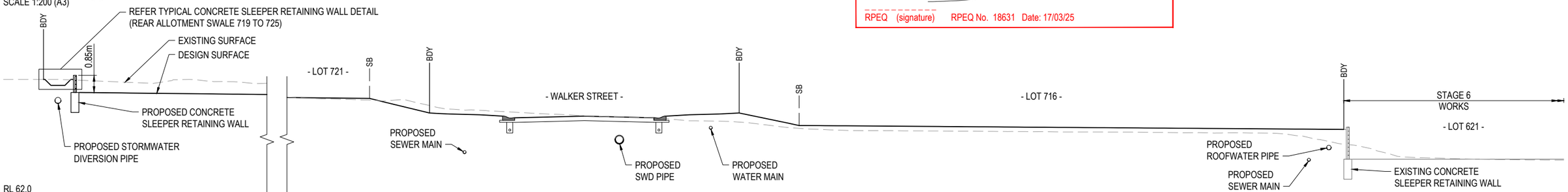

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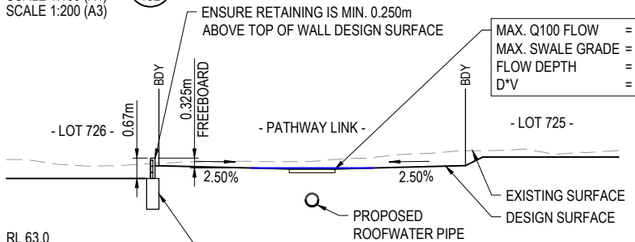

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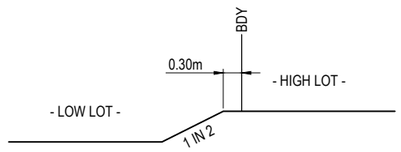
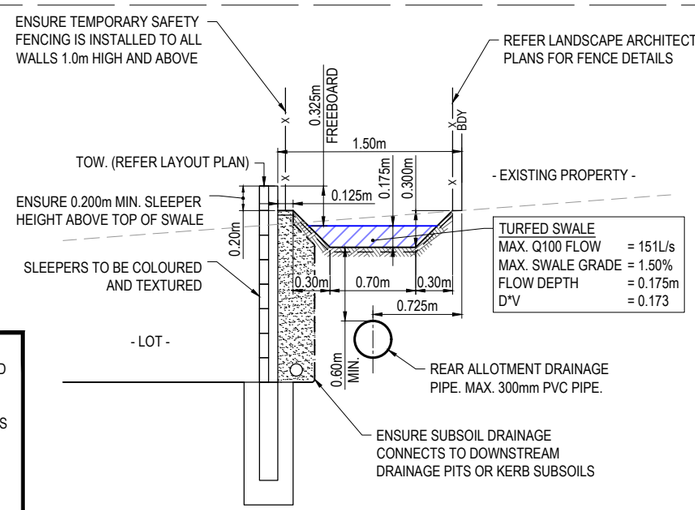
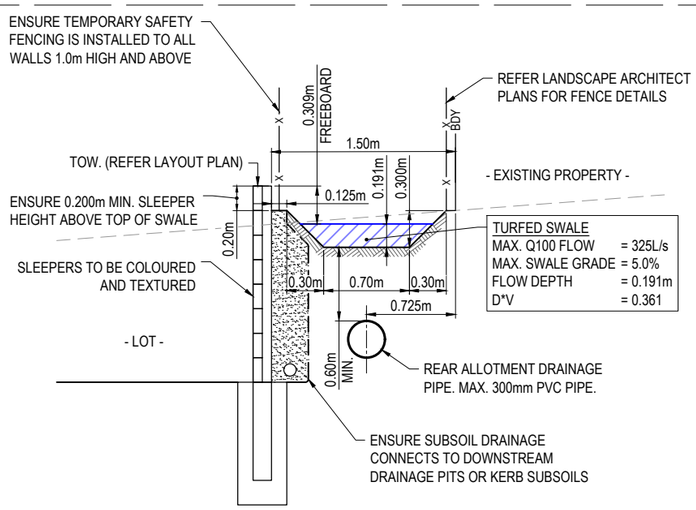


TYPICAL STEP BETWEEN LOTS DETAIL
SCALE 1:50 (A1)
SCALE 1:100 (A3)

RETAINING WALL NOTES:
1. ALL RETAINING WALLS ARE TO BE DELIVERED UNDER DESIGN AND CONSTRUCTION ARRANGEMENT - FORMS 15 AND 12 CERTIFICATIONS ARE TO BE PROVIDED BY THE CONTRACTOR.
2. 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.
3. GEOTECHNICAL CONDITIONS ARE TO BE CONFIRMED AND APPROPRIATELY CONSIDERED FOR ALL WALLS.
4. REFER LANDSCAPE DRAWINGS FOR FURTHER INFORMATION ON RETAINING WALLS, PARTICULARLY RELATING TO FINISHES.
5. TEMPORARY SAFETY FENCING TO BE INSTALLED BEHIND ALL WALLS 1.0m HIGH AND GREATER.



TYPICAL CONCRETE SLEEPER RETAINING WALL DETAIL
(REAR ALLOTMENT SWALE LOTS 719 TO 725)
SCALE 1:25 (A1)
SCALE 1:50 (A3)



TYPICAL CONCRETE SLEEPER RETAINING WALL DETAIL
(REAR ALLOTMENT SWALE LOTS 726 TO 736)
SCALE 1:25 (A1)
SCALE 1:50 (A3)

ENGINEER'S CERTIFICATION

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

Colliers

SCALE
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1:50 A3

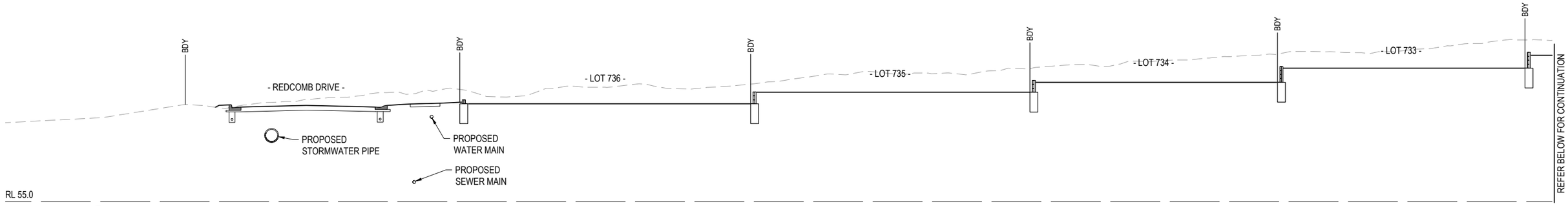
CLIENT: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **BULK EARTHWORKS TYPICAL SECTIONS SHEET 1 OF 2**

PROJECT No.	DRAWING No.	REVISION
22-0448	103	1



SECTION E
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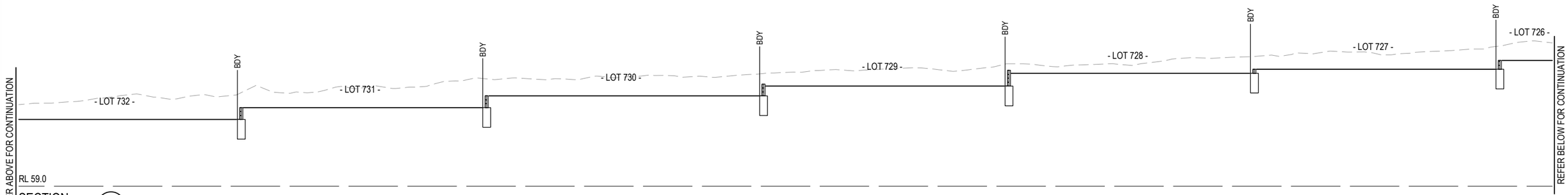

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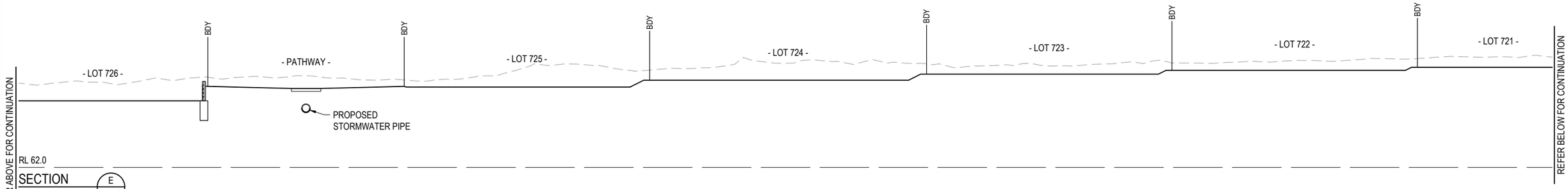

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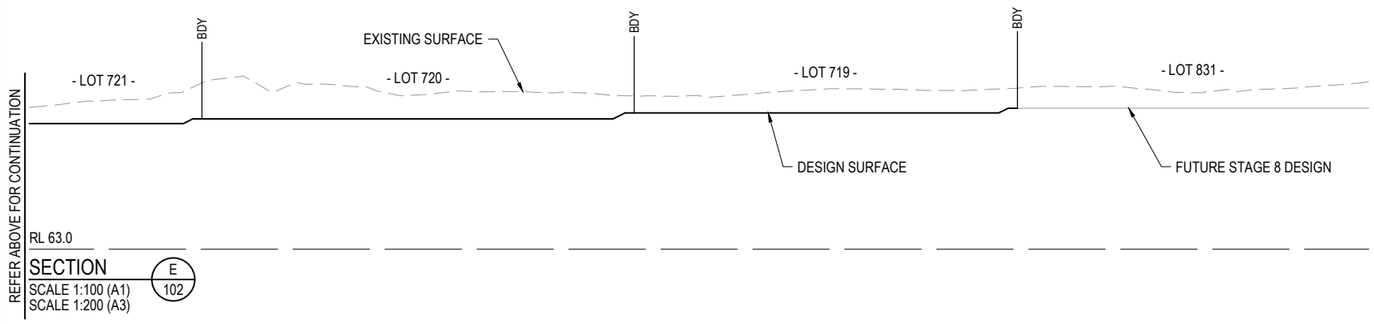

SECTION E
SCALE 1:100 (A1)
SCALE 1:200 (A3)
102

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SCALE
1:100 1 0 1 2 3 4 5 A1
1:200 A3
1:25 0.25 0 0.25 0.5 0.75 1.0 1.25 A1
1:50 A3

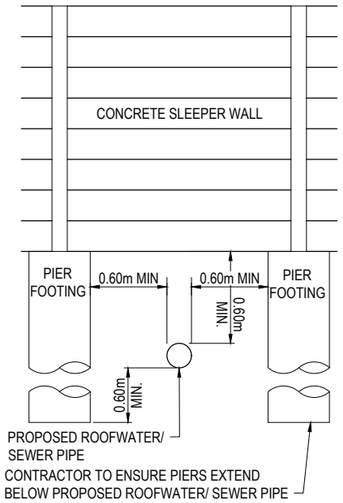
CLIENT: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE
BULK EARTHWORKS TYPICAL SECTIONS SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-0448	104	1



TYPICAL CONCRETE SLEEPER WALL OVER ROOFWATER OR SEWER DETAIL

N.T.S

ROOFWATER CONNECTION NOTE:

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

METHOD 1:

ONE ROOFWATER KERB ADAPTOR 500mm FROM THE DOWNSTREAM BOUNDARY PLUS ONE ROOFWATER KERB ADAPTOR 6.0m FROM DOWNSTREAM BOUNDARY.

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.

METHOD 2:

ONE 150Ø ROOFWATER PIPE CONNECTED TO PROPOSED STORMWATER GULLY PIT OR MANHOLE AT MINIMUM 1.0% GRADE WITH 1.0m COVER.

ASCON LEGEND

- STORMWATER DRAINAGE PIPE
- STORMWATER MANHOLE
- STORMWATER PIT
- EDGE OF ROAD
- FOOTPATH

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.

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.

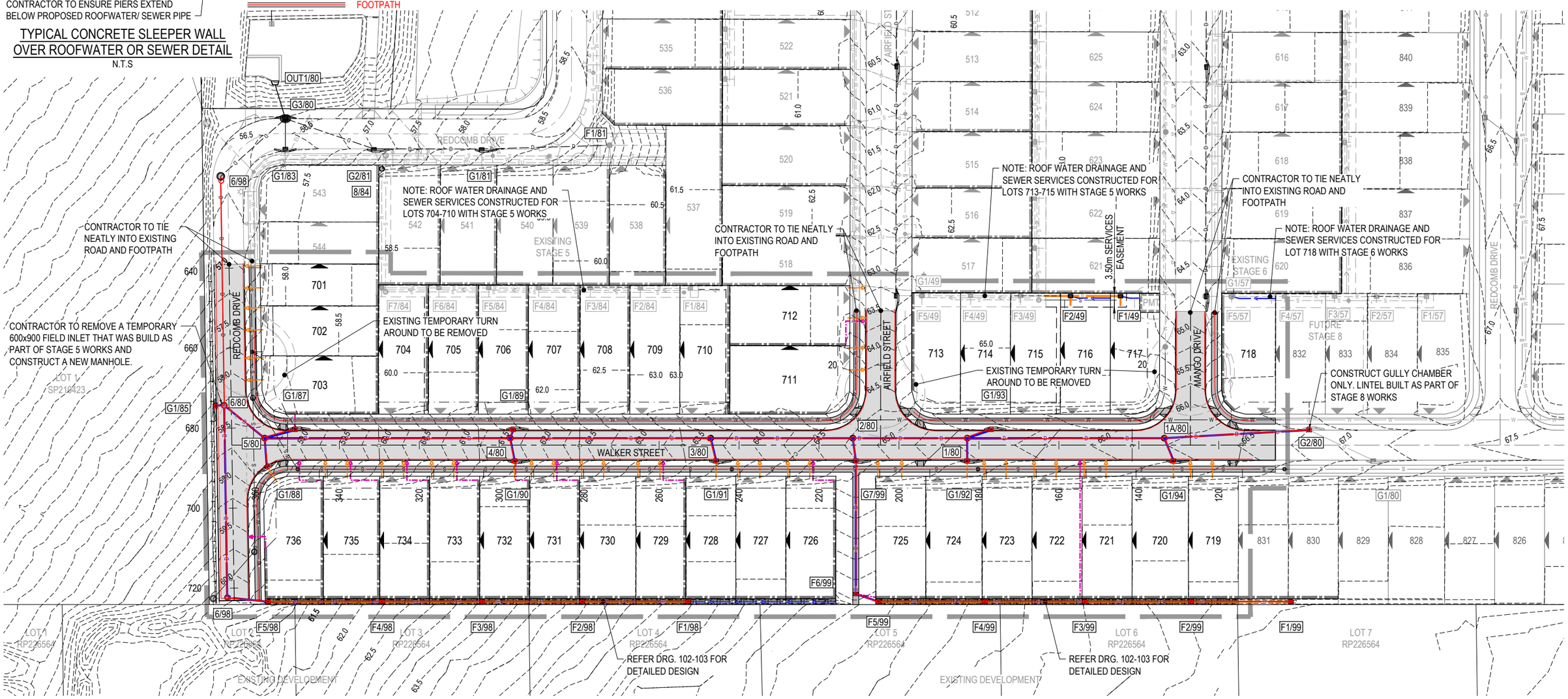
RPEQ (signature) RPEQ No. 18631 Date: 17/03/25

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED ROAD CONTROL LINE
- EXISTING ROAD CROWN
- PROPOSED KERB INVERT LINE
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- FINISHED SURFACE CONTOUR
- RETAINING WALL SUBSOIL PIPE EXTENSION
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- EXISTING ROOFWATER DRAINAGE PIPE
- EXISTING DRAIN
- PROPOSED ROOFWATER KERB ADAPTOR
- PROPOSED ROOFWATER KERB ADAPTOR WITH PIPE CONNECTION TO ALLOTMENT
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- EXISTING CONCRETE SLEEPER RETAINING WALL
- PROPOSED SEWERAGE MAIN
- EXISTING SEWERAGE MAIN
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED WATER CONDUIT
- EXISTING WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G

KERB TYPES NOTE:

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



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE — STAGE 7 — 133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **ROADWORKS AND DRAINAGE LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
22-0448	105	1

CONTROL LINE SETOUT AIRFIELD STREET

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	505139.692	935373.758	64.939	9°38'00.23"
IP 2	192.775	505171.952	935563.814	59.697	9°38'00.23"

CONTROL LINE SETOUT MANGO DRIVE

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	505216.126	935360.945	65.893	9°38'00.23"
IP 2	192.617	505248.359	935550.845	62.563	9°38'00.23"

CONTROL LINE SETOUT WALKER STREET

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	505341.487	935339.929	68.080	279°31'00.15"
IP 2	366.886	504979.650	935400.588	58.723	279°31'00.15"

CONTROL LINE SETOUT REDCOMB DRIVE

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	505292.559	935348.131		9°38'00.23"			
TC	182.459	505323.092	935528.017	64.545	9°38'00.23"			
IP 2	190.313	505324.766	935537.876	64.439		R = -10.000	15.708	90°00'00.00"
CT	198.167	505314.907	935539.550	64.334	279°38'00.23"			
TC	408.667	505107.375	935574.775	57.331	279°38'00.23"			
IP 3	418.092	505095.544	935576.783	57.143		R = -12.000	18.850	90°00'00.00"
CT	427.516	505093.536	935564.953	57.059	189°38'00.23"			
TC	518.716	505078.275	935475.039	58.607	189°38'00.23"			
IP 4	528.141	505076.266	935463.208	58.593		R = 12.000	18.850	90°00'00.00"
CT	537.566	505064.436	935465.216	58.467	279°38'00.23"			
TC	599.494	505003.381	935475.579	56.485	279°38'00.23"			
IP 5	609.024	504991.341	935477.623	56.581		R = -12.000	19.060	91°00'16.00"
CT	618.554	504989.509	935465.549	56.715	188°37'44.23"			
IP 6	724.234	504973.653	935361.066		188°37'44.23"			

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED NEW ROAD PAVEMENT
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED ROAD CONTROL LINE
- MKC — PROPOSED MOUNTABLE KERB AND CHANNEL 'TYPE M3'
- BKC — PROPOSED BARRIER KERB AND CHANNEL 'TYPE B1'
- ER — PROPOSED EDGE OF RESTRAINT
- PROPOSED CONCRETE PATH (FINISHED AS PER LANDSCAPE ARCHITECT PLANS)
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY

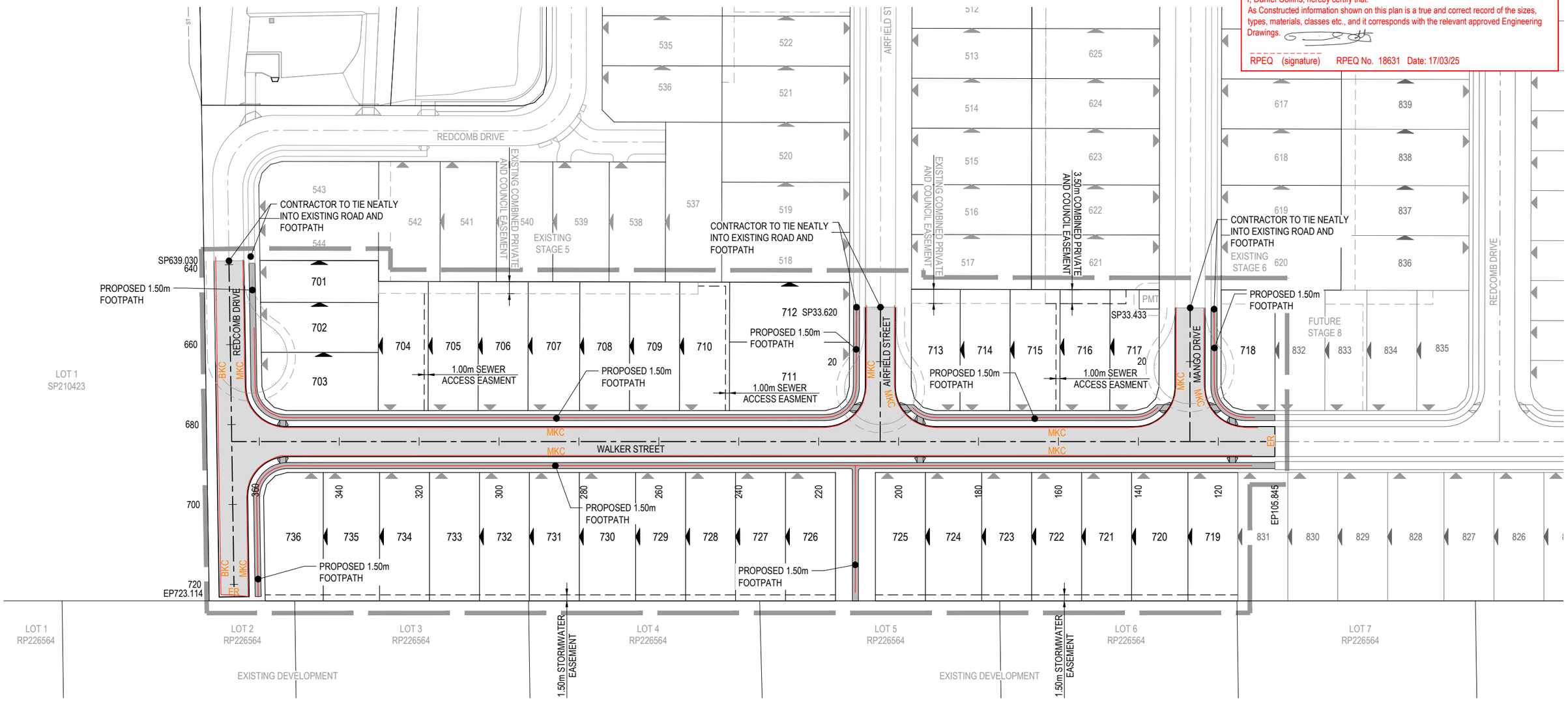
ASCON LEGEND

- EDGE OF ROAD
- FOOTPATH

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: 17/03/25



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE — STAGE 7 — 133-159 PARK RIDGE ROAD, PARK RIDGE

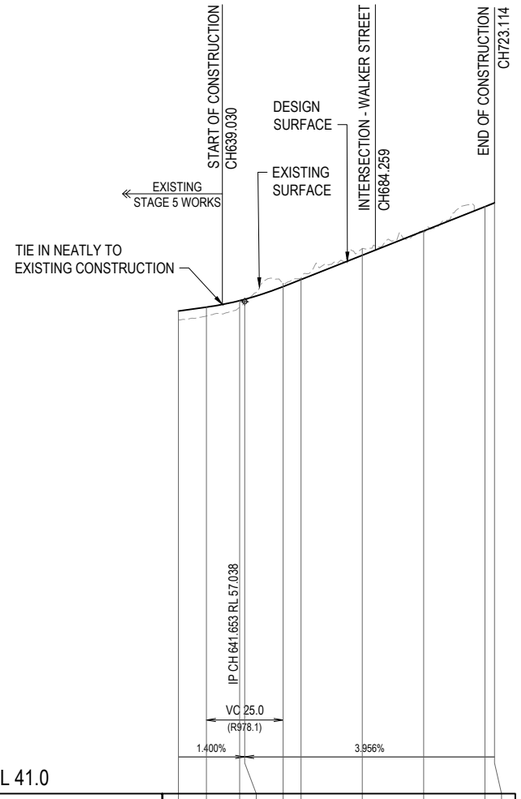
DRAWING TITLE: **SURVEY SETOUT AND KERB TYPES LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
22-0448	106	1

ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)

ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
REDCOMB DRIVE	URBAN ACCESS ROAD	5.9 x 10^5	3	35mm	150mm	150mm	200mm	535mm

NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN. THE PAVEMENT DESIGN IS SUBJECT TO A SEPARATE PAVEMENT DESIGN APPROVAL BY COUNCIL.



DATUM RL 41.0

CUT (-) / FILL	0.287	0.289	0.217	0.075	-0.110	-0.042	-0.216	0.029	-0.011	-0.019			
LHS LIP LEVEL	56.647	56.776	56.988	57.031	57.446	57.677	#		60.050				
RHS LIP LEVEL	56.652	56.780	56.993	57.036	57.450	57.681	58.555	59.264	60.055	67.509			
DESIGN SURFACE	56.735	56.863	57.075	57.118	57.532	57.764	58.555	59.346	60.137	60.261			
EXISTING SURFACE	56.447	56.574	56.858	57.043	57.642	57.805	58.771	59.318	60.148	60.260			
CHAINAGES	620.000	629.153	640.000	641.653	654.153	660.000	680.000	700.000	720.000	723.114			
HORIZONTAL CURVES													

REFER INTERSECTION DETAILS PLAN FOR KERB RETURN LONGITUDINAL SECTIONS

REDCOMB DRIVE

ENGINEER'S CERTIFICATION

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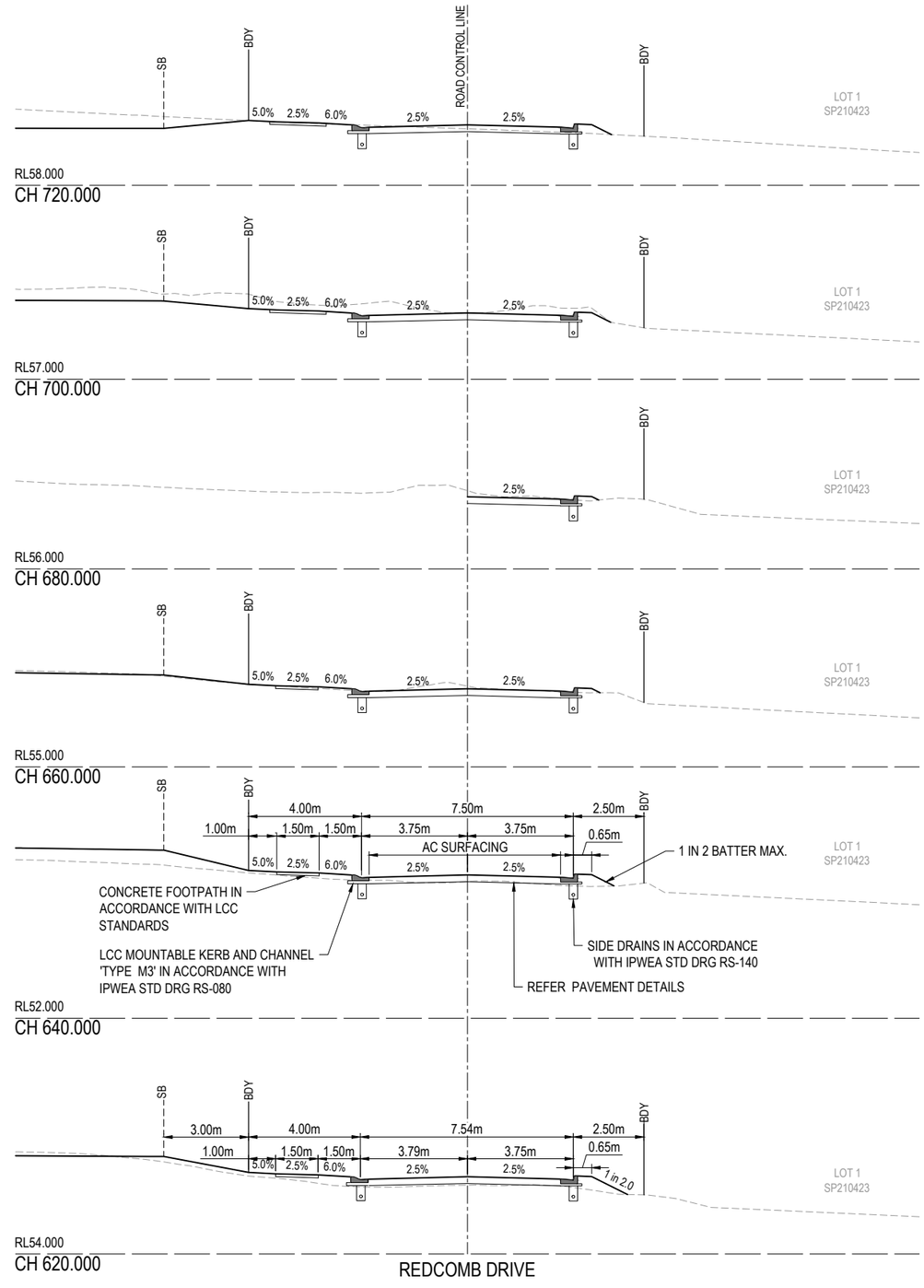
RPEQ (signature) RPEQ No. 18631 Date: 17/03/25

AS-CONSTRUCTED PAVEMENT DETAILS

LOCATION	SECTION	ESA	DESIGN CBR	TOTAL PAVEMENT DEPTH	A C	BASE COURSE CLASS (1)	UPPER SUB-BASE CLASS (2)	BLANKET COURSE TYPE (3)	SUBGRADE TREATEMENT
REDCOMB DRIVE	CH639.030 - CH723.114	5.9 x 10^5 UAR	10%	335mm	35mm	150mm	150mm		-



REDCOMB DRIVE

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: AS CONSTRUCTED

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

Colliers

SCALE
1:100 / 1:200 A1 / A3 — CROSS SECTIONS (1 0 1 2 3 4 5)
1:1000 / 1:2000 A1 / A3 — HORIZONTAL (10 0 10 20 30 40 50)
1:100 / 1:200 A1 / A3 — VERTICAL (1 0 1 2 3 4 5)

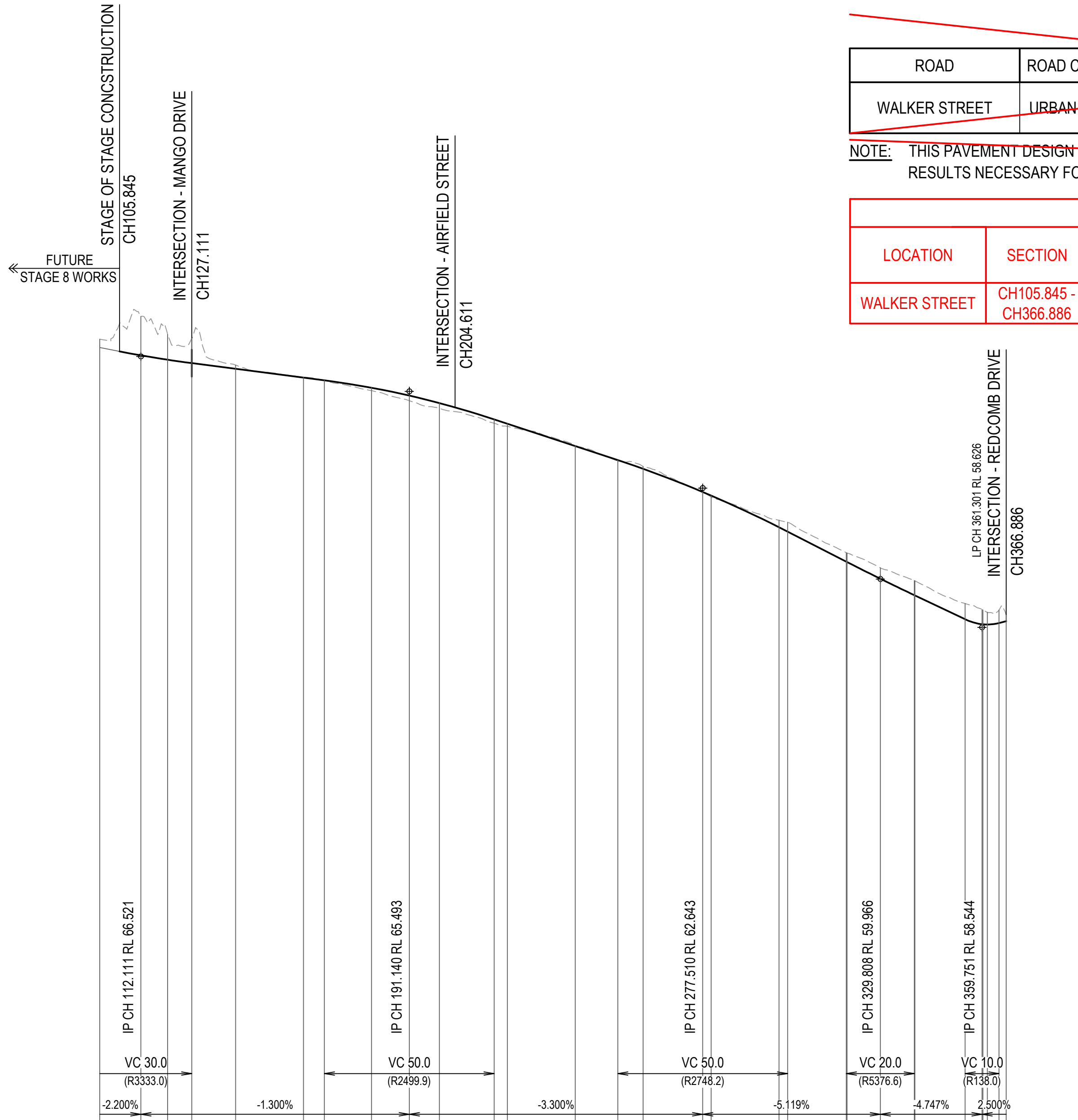
CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: REDCOMB DRIVE LONGITUDINAL SECTION AND CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
22-0448	107	1



ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)

ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
WALKER STREET	URBAN ACCESS ROAD	5.9 x 10^5	3	35mm	150mm	150mm	200mm	535mm

NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN. THE PAVEMENT DESIGN IS SUBJECT TO A SEPARATE PAVEMENT DESIGN APPROVAL BY COUNCIL.

AS-CONSTRUCTED PAVEMENT DETAILS

LOCATION	SECTION	ESA	DESIGN CBR	TOTAL PAVEMENT DEPTH	A C	BASE COURSE CLASS (1)	UPPER SUB-BASE CLASS (2)	BLANKET COURSE TYPE (3)	SUBGRADE TREATEMENT
WALKER STREET	CH105.845 - CH366.886	5.9 x 10^5 UAR	10%	335mm	35mm	150mm	150mm		-

DATUM RL 43.0

CHAINAGES	CUT (-) / FILL	LHS LIP LEVEL	RHS LIP LEVEL	DESIGN SURFACE	EXISTING SURFACE	HORIZONTAL CURVES
100.000	-0.242	66.701	66.701	66.788	67.030	
112.111	-1.146	66.467	66.467	66.554	67.701	
120.000	-0.750	66.339	#	66.426	67.176	
127.111	-0.723	66.239	#	66.326	67.049	
140.000	-0.111	66.071	#	66.158	66.269	
160.000	-0.008	65.811	65.811	65.898	65.906	
166.140	0.006	65.731	65.731	65.818	65.813	
180.000	0.083	65.513	65.513	65.600	65.517	
191.140	0.147	65.281	#	65.368	65.222	
200.000	0.155	65.062	#	65.149	64.994	
216.140	0.114	64.581	#	64.668	64.554	
220.000	0.079	64.454	64.454	64.541	64.462	
240.000	-0.012	63.794	63.794	63.881	63.893	
252.510	0.017	63.381	63.381	63.468	63.451	
260.000	-0.072	63.124	63.124	63.211	63.282	
277.510	0.008	62.442	62.442	62.529	62.521	
280.000	0.041	62.337	62.337	62.424	62.382	
300.000	-0.205	61.404	61.404	61.491	61.696	
302.510	-0.276	61.276	61.276	61.363	61.639	
319.808	-0.260	60.391	60.391	60.478	60.738	
320.000	-0.262	60.381	60.381	60.468	60.730	
329.808	-0.321	59.888	59.888	59.975	60.296	
339.808	-0.430	59.404	59.404	59.491	59.921	
340.000	-0.431	59.395	59.395	59.482	59.913	
354.751	-0.463	#	#	58.782	59.245	
359.751	-0.434	#	#	58.635	59.069	
360.000	-0.422	#	#	58.632	59.054	
361.301	-0.361	#	#	58.626	58.987	
364.751	-0.383	#	#	58.669	59.053	
366.886	-0.173	#	#	58.723	58.896	

\# REFER INTERSECTION DETAILS PLAN FOR KERB RETURN LONGITUDINAL SECTIONS

WALKER STREET

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: 17/03/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **WALKER STREET LONGITUDINAL SECTION**

PROJECT No.	DRAWING No.	REVISION
22-0448	108	1

ENGINEER'S CERTIFICATION

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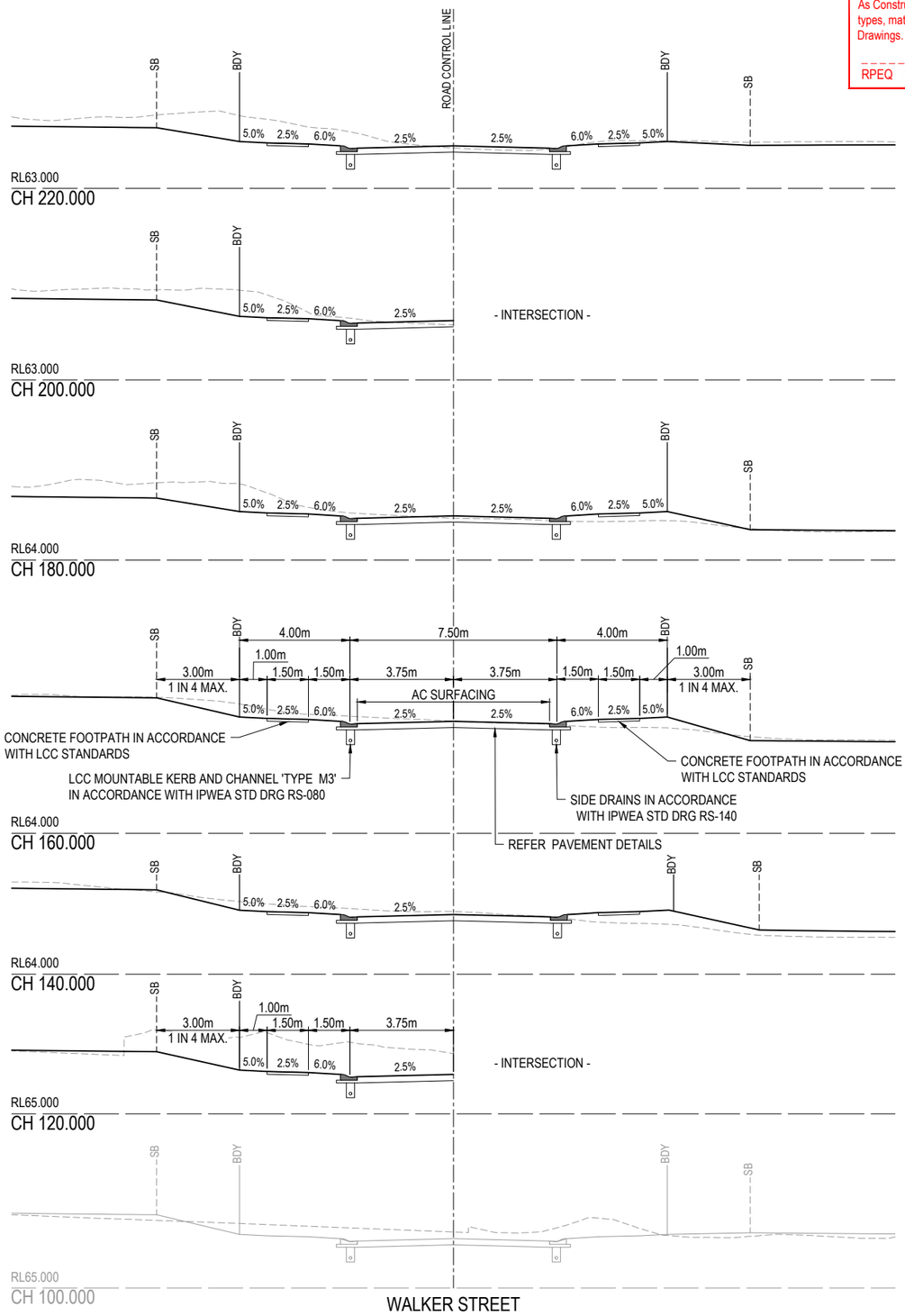
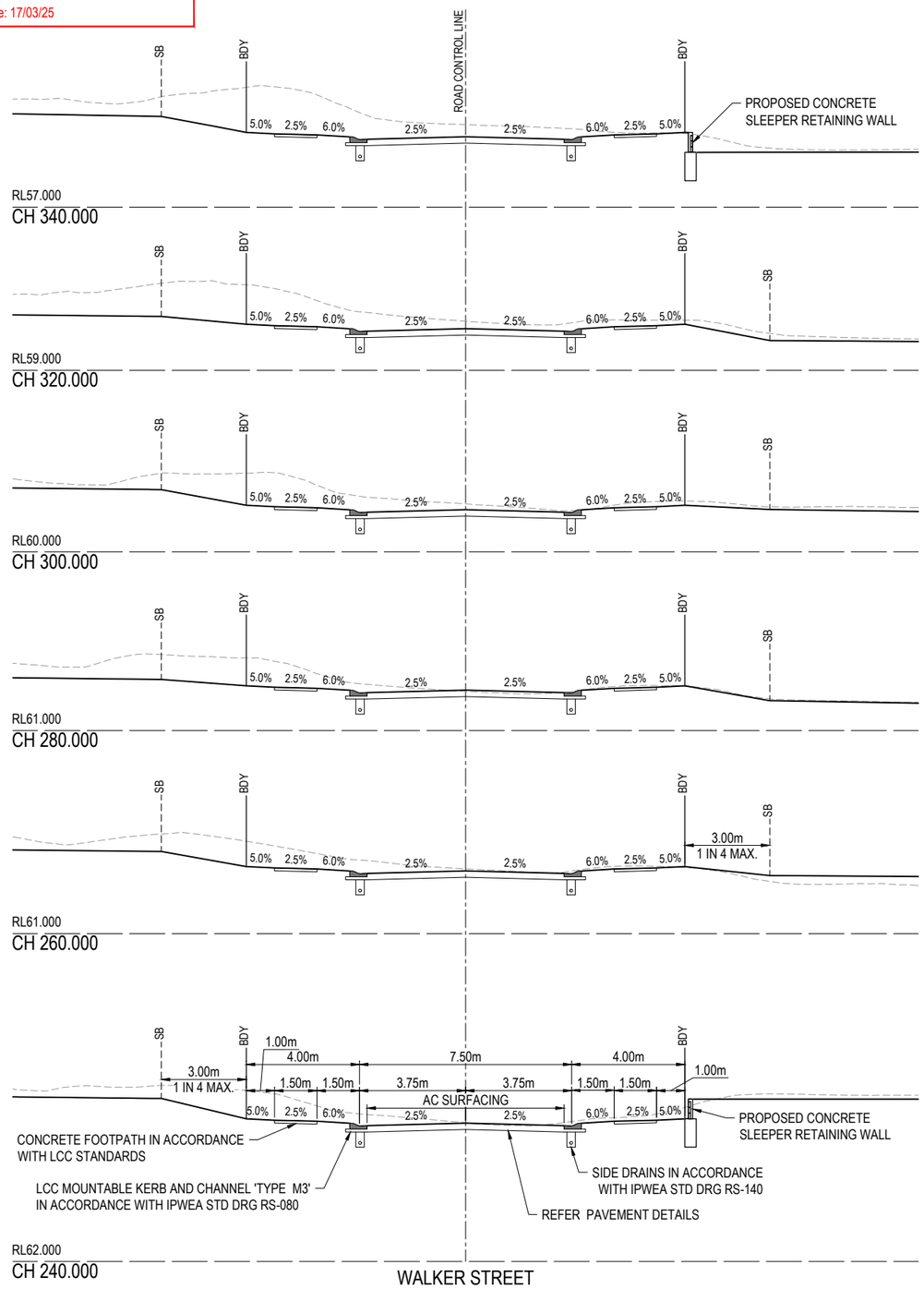
RPEQ (signature) RPEQ No. 18631 Date: 17/03/25





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DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

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

CLIENT: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **WALKER STREET CROSS SECTIONS**

PROJECT No.	DRAWING No.	REVISION
22-0448	109	1

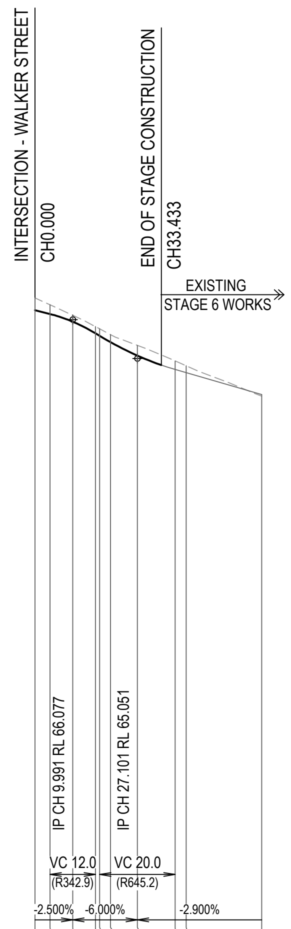
~~ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)~~

ROAD	ROAD CLASSIFICATION	DESIGN ESAs	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
MANGO DRIVE	URBAN ACCESS ROAD	5.9×10^5	3	35mm	150mm	150mm	200mm	535mm

~~NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN. THE PAVEMENT DESIGN IS SUBJECT TO A SEPARATE PAVEMENT DESIGN APPROVAL BY COUNCIL.~~

AS-CONSTRUCTED PAVEMENT DETAILS

LOCATION	SECTION	ESA	DESIGN CBR	TOTAL PAVEMENT DEPTH	A C	BASE COURSE CLASS (1)	UPPER SUB-BASE CLASS (2)	BLANKET COURSE TYPE (3)	SUBGRADE TREATEMENT
MANGO DRIVE	CH0.00 - CH33.433	5.9×10^5 UAR	9%	335mm	35mm	150mm	150mm		-



DATUM RL 49.0

CUT (-) / FILL	-0.327	-0.245	-0.169	-0.178	-0.187	-0.201	-0.271	-0.227	-0.182	0.039
LHS LIP LEVEL	#			65.630	65.564	65.396	65.042	64.674	64.590	64.010
RHS LIP LEVEL				65.630	65.564	65.396	65.042	64.674	64.590	64.010
DESIGN SURFACE	66.327	66.227	66.025	65.717	65.651	65.483	65.128	64.761	64.677	64.097
EXISTING SURFACE	66.654	66.472	66.194	65.896	65.837	65.685	65.399	64.988	64.858	64.057
CHAINAGES	0.000	3.991	9.991	15.991	17.101	20.000	27.101	37.101	40.000	60.000
HORIZONTAL CURVES										

REFER INTERSECTION DETAILS PLAN FOR KERB RETURN LONGITUDINAL SECTIONS

MANGO DRIVE

ENGINEER'S CERTIFICATION

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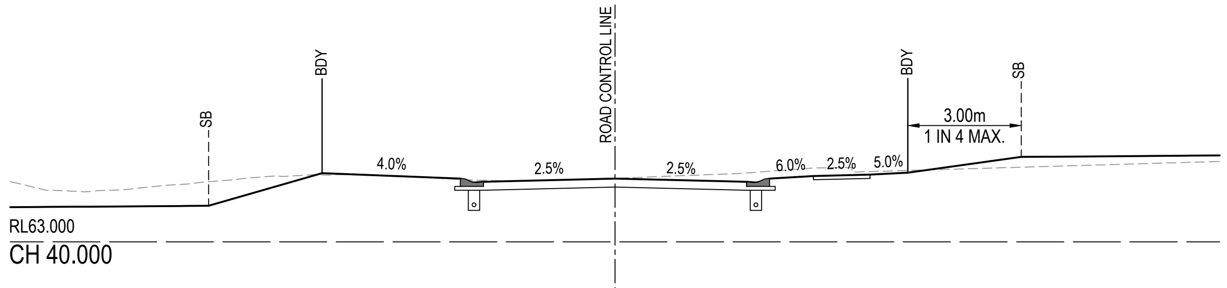
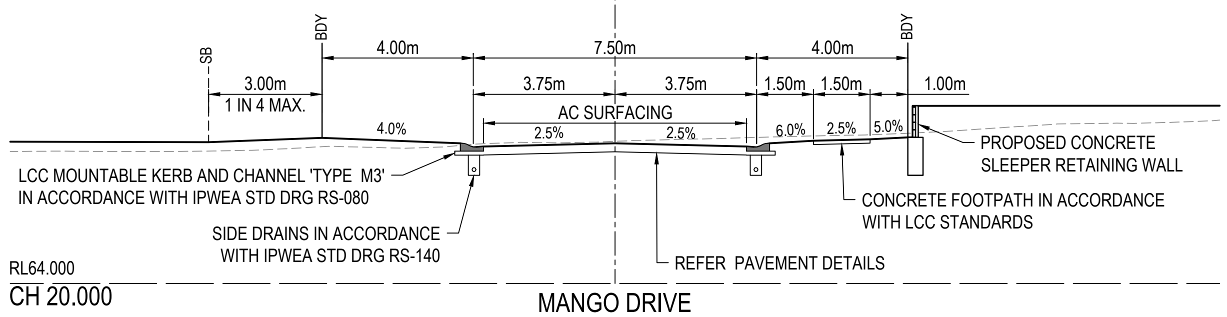
RPEQ (signature) RPEQ No. 18631 Date: 17/03/25





MANGO DRIVE

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

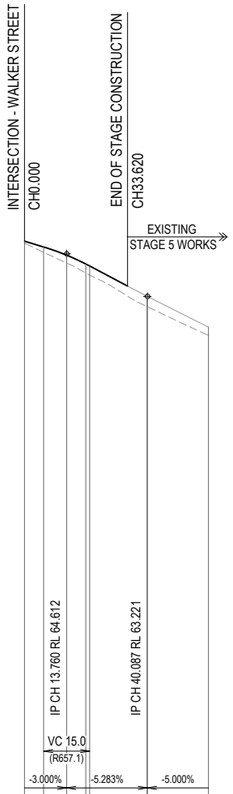
DRAWING TITLE: **MANGO DRIVE LONGITUDINAL SECTION AND CROSS SECTIONS**

PROJECT No. 22-0448 | DRAWING No. 110 | REVISION 1

ASSUMED PAVEMENT DETAILS (SUBJECT TO CBR TESTING)

ROAD	ROAD CLASSIFICATION	DESIGN ESAS	ASSUMED CBR	SURFACING	BASE	SUB BASE	LOWER SUB BASE	TOTAL DEPTH
AIRFIELD STREET	URBAN ACCESS ROAD	5.9 x 10^5	3	35mm	150mm	150mm	200mm	535mm

NOTE: THIS PAVEMENT DESIGN IS PRELIMINARY ONLY BASED ON ASSUMED CBR. THE CONTRACTOR SHALL SUPPLY THE SUPERINTENDENT WITH SUBGRADE TEST RESULTS NECESSARY FOR FINAL PAVEMENT DESIGN. THE PAVEMENT DESIGN IS SUBJECT TO A SEPARATE PAVEMENT DESIGN APPROVAL BY COUNCIL.



DATUM RL 46.0

CUT (-) / FILL	0.057	0.177	0.255	0.291	0.295	0.333	0.332	0.269			
LHS LIP LEVEL	#			64.194	64.129	63.139	63.134	62.139			
RHS LIP LEVEL				64.194	64.129	63.139	63.134	62.139			
DESIGN SURFACE	65.025	64.837	64.569	64.281	64.216	63.226	63.221	62.226			
EXISTING SURFACE	64.968	64.660	64.314	63.990	63.921	62.893	62.869	61.957			
CHAINAGES	0.000	6.260	13.760	20.000	21.260	40.000	40.087	60.000			
HORIZONTAL CURVES											

REFER INTERSECTION DETAILS PLAN FOR KERB RETURN LONGITUDINAL SECTIONS

AIRFIELD STREET

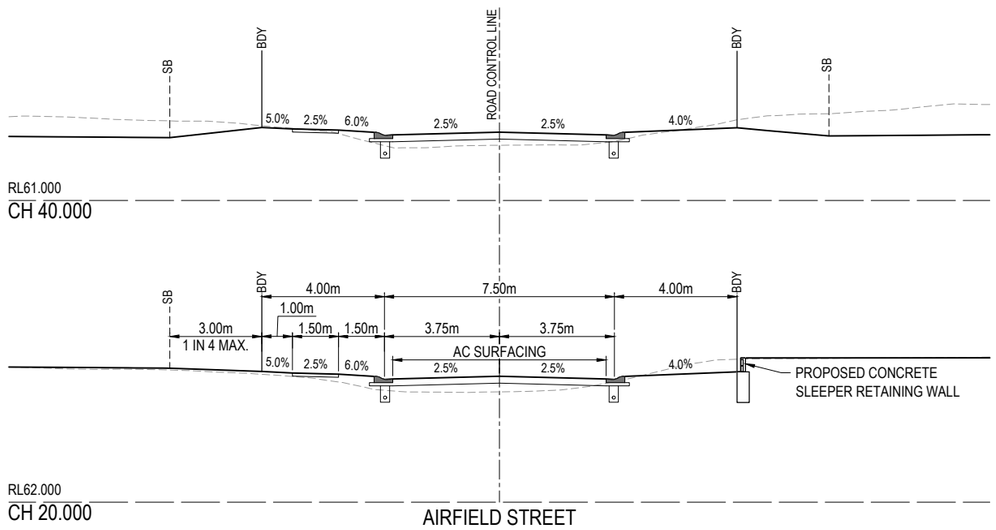
AS-CONSTRUCTED PAVEMENT DETAILS

LOCATION	SECTION	ESA	DESIGN CBR	TOTAL PAVEMENT DEPTH	A C	BASE COURSE CLASS (1)	UPPER SUB-BASE CLASS (2)	BLANKET COURSE TYPE (3)	SUBGRADE TREATEMENT
AIRFIELD STREET	CH0.00 - CH33.620	5.9 x 10^5 UAR	7%	385mm	35mm	150mm	200mm		-

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: 17/03/25



AIRFIELD STREET

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

Colliers

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: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE
AIRFIELD STREET LONGITUDINAL SECTION AND CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
22-0448	111	1

KERB TYPES NOTE:

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

ENGINEER'S CERTIFICATION

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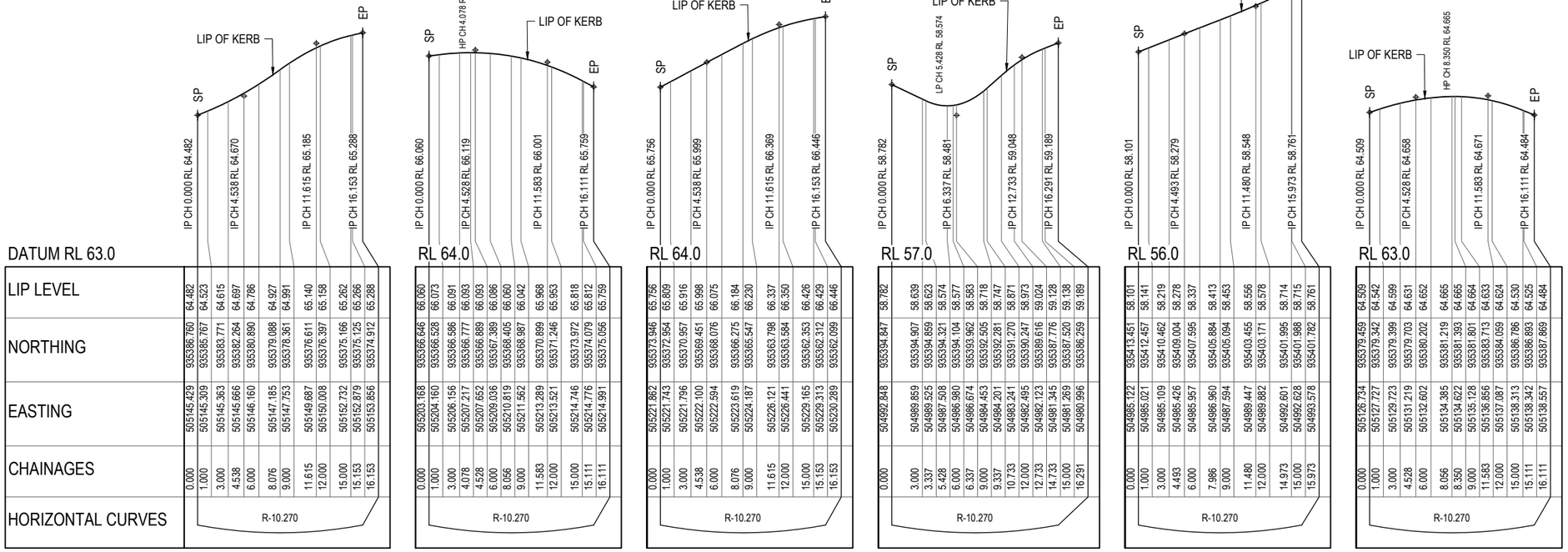
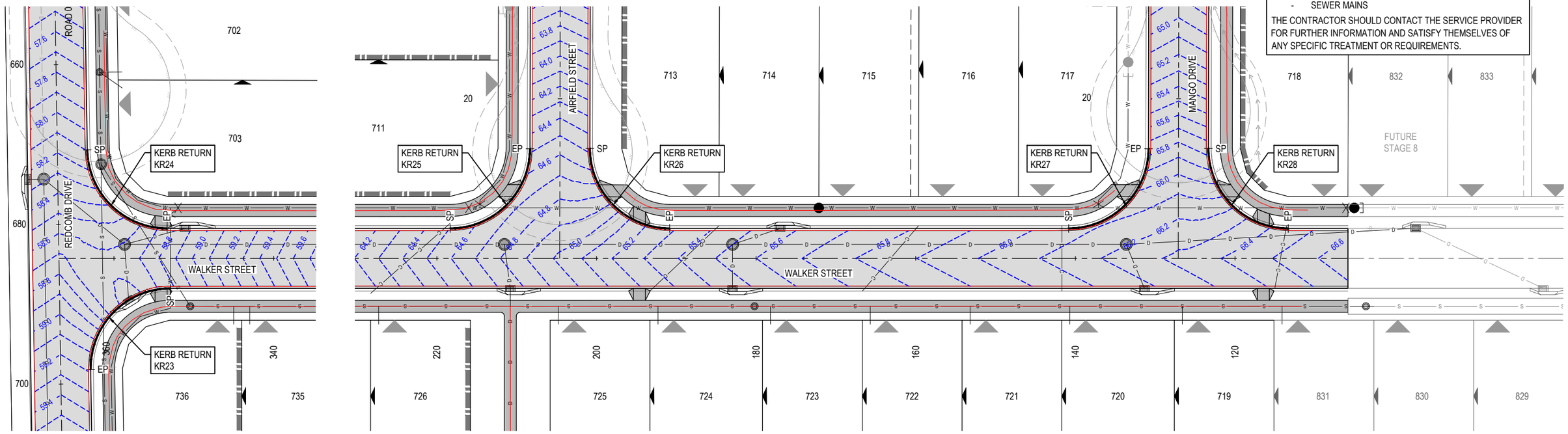
RPEQ (signature) RPEQ No. 18631 Date: 17/03/25





LEGEND

- PROPOSED ROAD CONTROL LINE
- PROPOSED KERB INVERT LINE
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED NEW ROAD PAVEMENT
- INDICATIVE DRIVEWAY LOCATION
- PROPOSED PAVEMENT CONTOUR (0.2m INTERVAL)
- PROPOSED KERB SETOUT LINE
- SP — PROPOSED KERB SETOUT START POINT
- TP — PROPOSED KERB SETOUT TANGENT POINT
- PROPOSED SLEEPER RETAINING WALL
- EXISTING DRAIN
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED SEWERAGE MAIN
- EXISTING SEWERAGE MAIN
- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED WATER CONDUIT
- EXISTING ELECTRICAL CABLE U/G

ASCON LEGEND

- EDGE OF ROAD
- FOOTPATH

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
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

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: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **INTERSECTION DETAILS LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
22-0448	112	1

LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED STREET NAME SIGN
- PROPOSED ROAD SIGN
- PROPOSED END OF ROAD SIGN
- EXISTING STREET NAME SIGN
- EXISTING ROAD SIGN
- EXISTING END OF ROAD SIGN
- GL — PROPOSED GIVE WAY LINE
- LL-C — PROPOSED LANE LINE - CONTINUOUS
- EXISTING LINEMARKING (LINETYPES AS PER PROPOSED)

ASCON LEGEND

- EDGE OF ROAD
- FOOTPATH

NOTES:

1. ALL SIGNS AND LINEMARKING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND (L.C.C) STANDARDS.
2. TRAFFIC SIGN POSTS SHALL BE IN ACCORDANCE WITH (IPWEA RS-131) STANDARD DRAWINGS.
3. STREET NAME SIGN SHALL BE IN ACCORDANCE WITH (IPWEA RS-130) STANDARD DRAWINGS.
4. CONTRACTOR TO ENSURE SIGN LOCATIONS ARE CLEAR OF FUTURE DRIVEWAY LOCATIONS - LOCATE ON PB OR MID BLOCK.
5. RRPM'S TO BE INSTALLED / REMOVED AND REINSTATED TO SUIT NEW CHEVRON, MEDIAN AND EDGE LINE IN ACCORDANCE WITH M.U.T.C.D. REQUIREMENTS

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: 17/03/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED DATE 17.03.25

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

Colliers

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

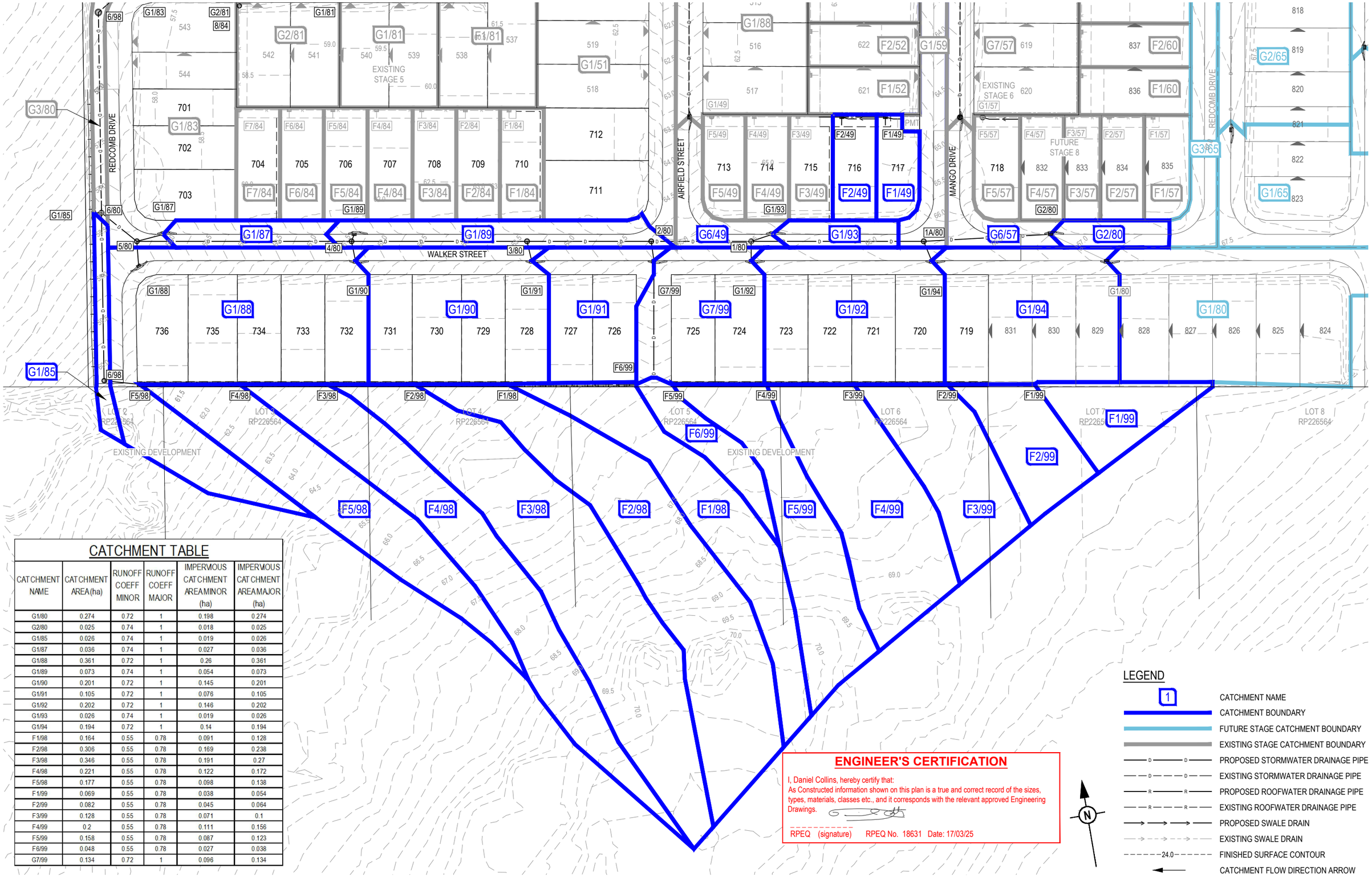
CLIENT: HB Land

ASSOCIATED CONSULTANT
SAUNDERS HAVILL GROUP
PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **SIGNS AND LINEMARKING LAYOUT PLAN**

PROJECT No.	DRAWING No.	REVISION
22-0448	113	1



CATCHMENT TABLE

CATCHMENT NAME	CATCHMENT AREA (ha)	RUNOFF COEFF MINOR	RUNOFF COEFF MAJOR	IMPERVIOUS CATCHMENT AREA MINOR (ha)	IMPERVIOUS CATCHMENT AREA MAJOR (ha)
G1/80	0.274	0.72	1	0.198	0.274
G2/80	0.025	0.74	1	0.018	0.025
G1/85	0.026	0.74	1	0.019	0.026
G1/87	0.036	0.74	1	0.027	0.036
G1/88	0.361	0.72	1	0.26	0.361
G1/89	0.073	0.74	1	0.054	0.073
G1/90	0.201	0.72	1	0.145	0.201
G1/91	0.105	0.72	1	0.076	0.105
G1/92	0.202	0.72	1	0.146	0.202
G1/93	0.026	0.74	1	0.019	0.026
G1/94	0.194	0.72	1	0.14	0.194
F1/98	0.164	0.55	0.78	0.091	0.128
F2/98	0.306	0.55	0.78	0.169	0.238
F3/98	0.346	0.55	0.78	0.191	0.27
F4/98	0.221	0.55	0.78	0.122	0.172
F5/98	0.177	0.55	0.78	0.098	0.138
F1/99	0.069	0.55	0.78	0.038	0.054
F2/99	0.082	0.55	0.78	0.045	0.064
F3/99	0.128	0.55	0.78	0.071	0.1
F4/99	0.2	0.55	0.78	0.111	0.156
F5/99	0.158	0.55	0.78	0.087	0.123
F6/99	0.048	0.55	0.78	0.027	0.038
G7/99	0.134	0.72	1	0.096	0.134

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RPEQ (signature) RPEQ No. 18631 Date: 17/03/25

LEGEND

- 1 — CATCHMENT NAME
- CATCHMENT BOUNDARY
- FUTURE STAGE CATCHMENT BOUNDARY
- EXISTING STAGE CATCHMENT BOUNDARY
- PROPOSED STORMWATER DRAINAGE PIPE
- EXISTING STORMWATER DRAINAGE PIPE
- PROPOSED ROOFWATER DRAINAGE PIPE
- EXISTING ROOFWATER DRAINAGE PIPE
- PROPOSED SWALE DRAIN
- EXISTING SWALE DRAIN
- 24.0 — FINISHED SURFACE CONTOUR
- CATCHMENT FLOW DIRECTION ARROW

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 17.03.25

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

Colliers

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE — STAGE 7 — 133-159 PARK RIDGE ROAD, PARK RIDGE

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

PROJECT No.	DRAWING No.	REVISION
22-0448	114	1

STRUCTURE NAME / STRUCTURE DESCRIPTION

Line	Structure name	Structure description
80	G1/80	STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C
80	G2/80	CHAMBER ONLY WITHOUT LINTEL; STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C
80	1A/80	STD MANHOLE 1200mm DIA
80	1/80	STD MANHOLE 1200mm DIA REFER DETAIL
80	2/80	STD MANHOLE 1050mm DIA
80	3/80	STD MANHOLE 1200mm DIA
80	4/80	STD MANHOLE 1200mm DIA
80	5/80	STD MANHOLE 1200mm DIA REFER DETAIL
80	6/80	STD MANHOLE 1200mm DIA REFER DETAIL
80	7/80	STD MANHOLE 1200mm DIA
80	G3/80	STD TYPE A GULLY (SAG) L.I.L; 2.4m Lintel; TYPE M K&C ON 1500Ø MH
80	OUT1/80	HEADWALL
85	G1/85	STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C
85	6/80	STD MANHOLE 1200mm DIA REFER DETAIL
87	G1/87	STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C REFER DETAIL
87	5/80	STD MANHOLE 1200mm DIA REFER DETAIL
88	G1/88	STD TYPE A GULLY (SAG) L.I.L; 2.4m Lintel; TYPE M K&C
88	5/80	STD MANHOLE 1200mm DIA REFER DETAIL
89	G1/89	STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C
89	4/80	STD MANHOLE 1200mm DIA
90	G1/90	STD TYPE A GULLY L.I.L; 3.6m Lintel; TYPE M K&C
90	4/80	STD MANHOLE 1200mm DIA

STORMWATER STRUCTURE NOTE:

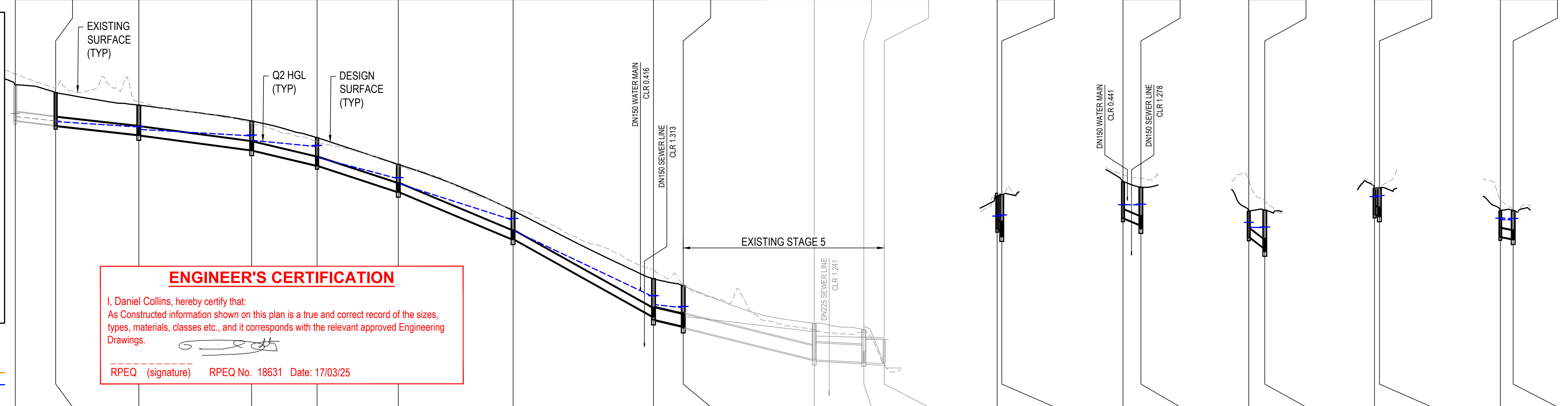
STANDARD ROUND MANHOLES LESS THAN 3.0m DEEP:
CONSTRUCT IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.

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 COLLIERS STD DRAWINGS S-101 & S-102.

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



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RPEQ (signature) RPEQ No. 18631 Date: 17/03/25

HGL EVENT
Q100 — — — —
Q2 — — — —

LINE 80

Reach	PIPE SIZE (mm)	PIPE CLASS	PIPE GRADE (%)	PIPE SLOPE (1 in X)	FULL PIPE VELOCITY (m/s)	PART FULL VELOCITY (m/s)	DATUM RL	H.G.L IN PIPE & W.S.E IN STRUCTURE	PIPE FLOW (Cumecs)	PIPE CAPACITY AT GRADE (Cumecs)	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT COORDINATES	RUNNING CHAINAGE
G1/80 – G2/80	375	3	1.15%	86.64	0.53	1.50	48.0	65.828; 65.691; 65.507 / 65.514	0.058	0.188	1.563; ~~1.429~~	65.516; ~~65.312~~	67.079	E 505260.629, N 935349.672; E 505246.098	0.000; 17.674
G2/80 – 1A/80	375	3	1.08% ~~1.08%~~	~~92.20~~ 92.56	0.58	1.51		65.476; 65.242 / 65.262	0.064	0.183	~~1.449~~ 1.45; 1.34 ~~1.297~~	~~65.292~~ 65.29; 64.90 ~~64.898~~	~~66.741~~ 66.74	N 935359.732; E 505209.993	17.674; 36.10 ~~36.328~~
1A/80 – 1/80	375	3	1.27% ~~1.30%~~	~~76.72~~ 78.60	1.07	1.89		65.131; 64.855 / 64.887	0.118	0.200	~~1.317~~ 1.37; 1.29 ~~1.264~~	~~64.878~~ 64.87; 64.24 ~~64.235~~	~~66.195~~ 66.24	N 935363.747; E 505161.338	54.002; 49.52 ~~49.334~~
1/80 – 2/80	375	3	2.21% ~~2.28%~~	~~43.92~~ 45.21	1.53	2.54		64.652; 64.386 / 64.435	0.169	0.265	~~1.284~~ 1.32; 1.22 ~~1.208~~	~~64.215~~ 64.21; 63.58 ~~63.564~~	~~65.499~~ 65.53	N 935371.904; E 505133.137	103.335; 28.48 ~~28.595~~
2/80 – 3/80	375	3	3.06% ~~3.18%~~	~~31.45~~ 32.65	2.49	3.19		63.900; 62.994 / 63.028	0.275	0.313	~~1.228~~ 1.26; 1.18 ~~1.189~~	~~63.544~~ 63.54; 62.44 ~~62.414~~	~~64.772~~ 64.80	N 935376.632; E 505098.089	131.930; 35.91 ~~35.537~~
3/80 – 4/80	375	3	4.15% ~~4.08%~~	~~24.49~~ 24.11	2.69	3.59		62.755; 61.182 / 61.244	0.297	0.354	~~1.209~~ 1.25; 1.26 ~~1.237~~	~~62.394~~ 62.37; 60.35 ~~60.345~~	~~63.603~~ 63.62	N 935382.507; E 505048.597	167.467; 49.90 ~~50.182~~
4/80 – 5/80	375	3	5.35% ~~5.48%~~	~~18.25~~ 18.70	3.21	4.18		60.693; 57.839 / 57.866	0.355	0.411	~~1.257~~ 1.32; 1.66 ~~1.646~~	~~60.325~~ 60.29; 57.01 ~~56.961~~	~~61.582~~ 61.61	N 935390.804; E 504988.033	217.650; 61.32 ~~61.409~~
5/80 – 6/80	525	3	1.83% ~~2.12%~~	~~47.28~~ 54.50	1.99	3.11		57.471; 57.341 / 57.394	0.430	0.626	~~1.796~~ 1.86; 1.72 ~~1.750~~	~~56.811~~ 56.81; 56.57 ~~56.536~~	~~58.607~~ 58.67	N 935400.957; E 504979.414	279.059; 13.08 ~~13.002~~
6/80 – 7/80	600	3	2.42%	41.33	2.02	3.53		56.953; 56.296 / 56.306	0.571	0.956	~~1.825~~ 1.86; 1.574	~~56.461~~ 56.43; 55.075	~~58.286~~ 58.29	N 935410.692; E 504988.007	292.061; ~~57.277~~
7/80 – G3/80	750	3	0.50%	200.00	1.27	1.94	42.0	56.099; 56.043 / 56.052	0.563	0.788	1.594; 1.419	55.055; 54.947	56.649	N 935467.321; E 505006.359	349.338; 21.688
G3/80 – OUT1/80	1050	3	0.30%	333.33	0.84	1.72		55.954; 55.950 / 55.950; 55.950	0.729	1.515	1.439; 1.049; 1.049	54.927; 54.900; 54.900	56.366; 55.949	N 935478.877; E 505005.233; N 935487.684	371.026; 8.879; 379.905

LINES 85, 87, 88, 89, 90

Line	PIPE SIZE (mm)	PIPE CLASS	PIPE GRADE (%)	PIPE SLOPE (1 in X)	FULL PIPE VELOCITY (m/s)	PART FULL VELOCITY (m/s)	DATUM RL	H.G.L IN PIPE & W.S.E IN STRUCTURE	PIPE FLOW (Cumecs)	PIPE CAPACITY AT GRADE (Cumecs)	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT COORDINATES	RUNNING CHAINAGE
85 (G1/85 – 6/80)	375	3	3.77% ~~5.10%~~	~~19.61~~ 26.50	0.06	1.35	44.0	57.343; 57.342; 57.342 / 57.394; 56.953	0.007	0.396	~~1.419~~ 1.49; 1.60 ~~1.600~~; ~~1.825~~ 1.86	~~56.788~~ 56.77; 56.69 ~~56.686~~; ~~56.461~~ 56.43	~~58.207~~ 58.26; ~~58.286~~ 58.29	E 504977.436, N 935410.992; E 504979.414; N 935410.692	0.000; 2.12 ~~2.000~~; 2.000
87 (G1/87 – 5/80)	375	3	3.13% ~~3.64%~~	~~27.50~~ 31.92	0.09	1.34	44.0	57.842; 57.840; 57.839 / 57.866; 57.471	0.010	0.334	~~1.601~~ 1.63; 1.68 ~~1.646~~; ~~1.796~~ 1.86	~~57.246~~ 57.24; 56.99 ~~56.961~~; ~~56.811~~ 56.81	~~58.847~~ 58.87; ~~58.607~~ 58.67	E 504995.837, N 935401.677; E 504988.033; N 935400.957	0.000; 7.98 ~~7.837~~; 7.837
88 (G1/88 – 5/80)	375	3	5.52% ~~6.50%~~	~~15.39~~ 18.13	0.71	3.04	45.0	58.068; 57.853; 57.839 / 57.866; 57.471	0.078	0.447	~~1.139~~ 1.22; 1.65 ~~1.646~~; ~~1.796~~ 1.86	~~57.416~~ 57.41; 57.02 ~~56.961~~; ~~56.811~~ 56.81	~~58.555~~ 58.63; ~~58.607~~ 58.67	E 504987.392, N 935393.985; E 504988.033; N 935400.957	0.000; 7.07 ~~7.001~~; 7.001
89 (G1/89 – 4/80)	375	3	1.65% ~~3.14%~~	~~31.88~~ 60.75	0.17	1.55	47.0	61.193; 61.183; 61.182 / 61.244; 60.693	0.019	0.311	~~1.144~~ 0.00; 0.00 ~~1.237~~; ~~1.257~~ 0.00	~~60.412~~ 60.39; 60.35 ~~60.345~~; ~~60.325~~ 60.29	~~61.556~~ 61.57; ~~61.582~~ 61.61	E 505049.668, N 935392.652; E 505048.597; N 935390.804	0.000; 2.43 ~~2.136~~; 2.136
90 (G1/90 – 4/80)	375	3	1.71% ~~1.57%~~	~~63.77~~ 58.40	0.46	1.61	48.0	61.253; 61.187; 61.182 / 61.244; 60.693	0.050	0.220	~~1.141~~ 1.15; 1.27 ~~1.237~~; ~~1.257~~ 1.32	~~60.433~~ 60.44; 60.34 ~~60.345~~; ~~60.325~~ 60.29	~~61.574~~ 61.59; ~~61.582~~ 61.61	E 505048.787, N 935385.195; E 505048.597; N 935390.804	0.000; 5.84 ~~5.612~~; 5.612

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

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

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE — STAGE 7, 133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 1 OF 3

PROJECT No. 22-0448 | DRAWING No. 115 | REVISION 1

STRUCTURE NAME	G1/91		G1/92		G1/93		G1/94	
	3/80		1/80		1/80		1A/80	
STRUCTURE DESCRIPTION	STD TYPE A GULLY L.I.L.; 3.6m Lintel; TYPE M K&C	STD MANHOLE 1200mm D/A	STD TYPE A GULLY L.I.L.; 2.4m Lintel; TYPE M K&C	STD MANHOLE 1200mm D/A REFER DETAIL	STD TYPE A GULLY L.I.L.; 2.4m Lintel; TYPE M K&C REFER DETAIL	STD MANHOLE 1200mm D/A REFER DETAIL	STD TYPE A GULLY L.I.L.; 2.4m Lintel; TYPE M K&C	STD MANHOLE 1200mm D/A
PIPE SIZE (mm)	375		375		375		375	
PIPE CLASS	3		3		3		3	
PIPE GRADE (%)	0.85%	0.53%	0.69%	0.51%	1.54%	1.73%	0.41%	0.50%
PIPE SLOPE (1 in X)		188.96		196.43		57.64		199.23
FULL PIPE VELOCITY (m/s)		118.20		144.00		65.10		244.40
PART FULL VELOCITY (m/s)	0.25	0.92	0.45	1.07	0.06	0.94	0.52	1.10
DATUM RL	50.0		51.0		51.0		52.0	
H.G.L IN PIPE & W.S.E IN STRUCTURE	63.024	62.995 62.994 63.028 62.755	64.943	64.859 64.855 64.887 64.652	64.857	64.855 64.855 64.887 64.652	65.378	65.246 65.242 65.262 65.131
PIPE FLOW (Cumecs)	0.027		0.050		0.007		0.057	
PIPE CAPACITY AT GRADE (Cumecs)	0.128		0.125		0.231		0.125	
DEPTH TO INVERT		~~1.143~~ 1.10 ~~1.20~~ 1.189 ~~1.209~~ 1.25		~~1.173~~ 1.17 ~~1.30~~ 1.264 ~~1.284~~ 1.32		~~1.202~~ 1.23 ~~1.29~~ 1.264 ~~1.284~~ 1.32		~~1.235~~ 1.265 ~~1.35~~ 1.297 ~~1.317~~ 1.37
INVERT LEVEL OF DRAIN		~~62.444~~ 62.47 62.42 ~~62.414~~ ~~62.394~~ 62.37		~~64.263~~ 64.27 64.23 64.235 ~~64.215~~ 64.21		~~64.344~~ 64.34 64.24 64.235 ~~64.215~~ 64.21		~~64.028~~ 64.015 64.89 64.090 ~~64.378~~ 64.87
DESIGN SURFACE LEVEL		~~63.587~~ 63.57 ~~63.603~~ 63.62		~~65.436~~ 65.44 ~~65.499~~ 65.53		~~65.546~~ 65.57 ~~65.499~~ 65.53		~~66.162~~ 66.18 ~~66.195~~ 66.24
SETOUT COORDINATES	E 505098.492 N 935376.853	E 505098.089 N 935382.507	E 505160.429 N 935366.479	E 505161.338 N 935371.904	E 505167.543 N 935372.892	E 505161.338 N 935371.904	E 505211.319 N 935357.948	E 505209.993 N 935363.747
RUNNING CHAINAGE	0.000	5.91 ~~5.669~~ 5.669	0.000	5.76 ~~5.500~~ 5.500	0.000	6.51 ~~6.283~~ 6.283	0.000	6.11 ~~5.949~~ 5.949
LINE	91		92		93		94	

STORMWATER STRUCTURE NOTE:

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

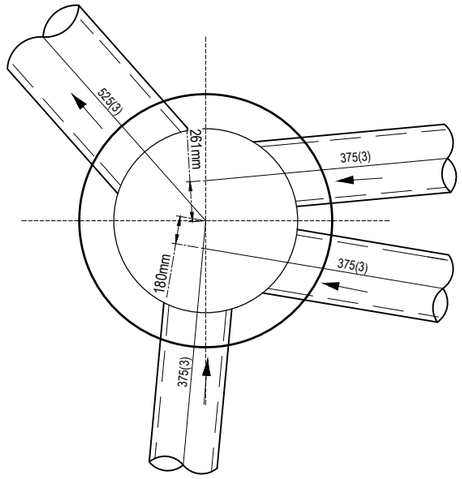
STANDARD ROUND MANHOLES 3.0m > 5.3m DEEP:
CONSTRUCT IN ACCORDANCE WITH TMR STD DRAWINGS 1307 AND 1308.

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

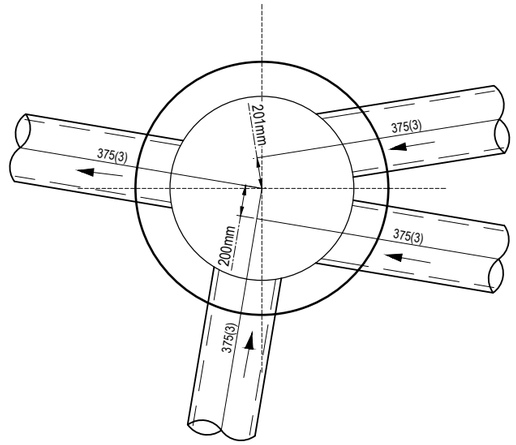
ROUND EXTENDED (900mm MAX) MANHOLES:
CONSTRUCT IN ACCORDANCE WITH COLLIERS STD DRAWINGS S-101 & S-102.

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

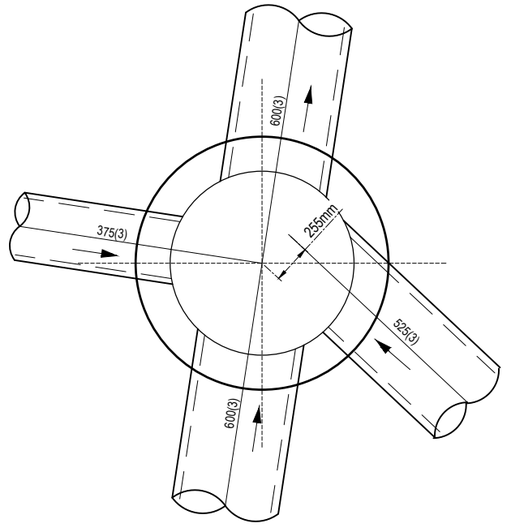
HGL EVENT
Q100
Q2



5/80 - STD. 1200mm MANHOLE
1:20 (A1)
1:40 (A3)



1/80 - STD. 1200mm MANHOLE
1:20 (A1)
1:40 (A3)



6/80 - STD. 1200mm MANHOLE
1:20 (A1)
1:40 (A3)

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: 17/03/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN
DESIGN
STATUS: AS CONSTRUCTED
APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:20 0.2 0 0.2 0.4 0.6 0.8 1 A1
1:40 A3
DETAIL
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: HB Land
ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 2 OF 3

PROJECT No.	DRAWING No.	REVISION
22-0448	116	1

LINE 98

STRUCTURE NAME	F1/98	F2/98	F3/98	F4/98	F5/98	6/98	6/80
STRUCTURE DESCRIPTION	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD MANHOLE 1050mm DIA	STD MANHOLE 1200mm DIA REFER DETAIL

STORMWATER STRUCTURE NOTE:

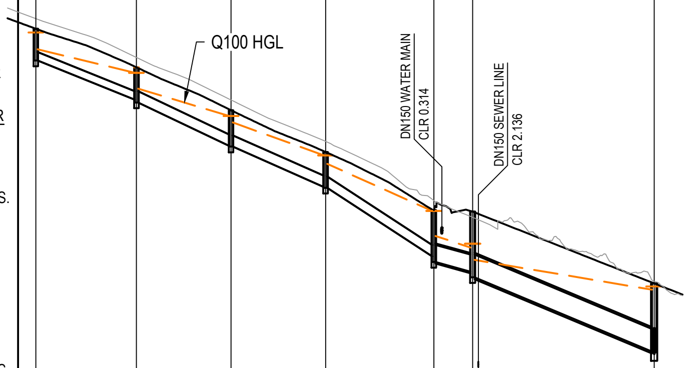
STANDARD ROUND MANHOLES LESS THAN 3.0m DEEP:
CONSTRUCT IN ACCORDANCE WITH THE LOCAL AUTHORITY STANDARDS.

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 COLLIERS STD DRAWINGS S-101 & S-102.

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



HGL EVENT
Q100 – – – – –
Q2 – – – – –

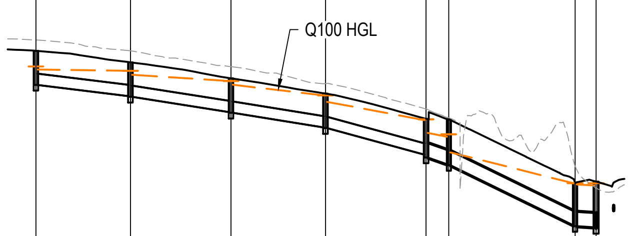
PIPE	F1/98–F2/98	F2/98–F3/98	F3/98–F4/98	F4/98–F5/98	F5/98–6/98	6/98–6/80
PIPE SIZE (mm)	225	300	300	300	450	600
PIPE CLASS	PVC	PVC	PVC	PVC	3	3
PIPE GRADE (%)	3.84% ~~3.89%~~	4.44% ~~4.59%~~	4.11% ~~4.28%~~	6.07% ~~6.34%~~	2.42% ~~2.48%~~	3.94% ~~4.10%~~
PIPE SLOPE (1 in X)	~~25.70~~ 26.03	~~21.80~~ 22.50	~~23.39~~ 24.31	~~15.78~~ 16.47	~~40.27~~ 41.24	~~24.42~~ 25.40
FULL PIPE VELOCITY (m/s)	1.73	2.33	2.56	2.85	3.11	1.75
PART FULL VELOCITY (m/s)	2.46	3.25	3.20	3.85	3.11	4.14
H.G.L IN PIPE (upstream / downstream)	64.479 / 63.858 63.858	63.438 / 62.713 62.713	62.545 / 61.672 61.672	61.447 / 60.203 60.205	59.541 / 59.233 59.335	58.907 / 58.119 58.207
PIPE FLOW (Cumecs)	0.069	0.165	0.181	0.202	0.495	0.494
PIPE CAPACITY AT GRADE (Cumecs)	0.089	0.207	0.200	0.244	0.449	1.243
LENGTH	26.55 ~~26.600~~	24.98 ~~25.000~~	25.04 ~~25.000~~	28.50 ~~28.615~~	10.31 ~~10.258~~	48.00 ~~48.006~~

DATUM RL 47.0

STRUCTURE	W.S.E IN STRUCTURE	DEPTH TO INVERT (in / out)	INVERT LEVEL OF DRAIN (in / out)	DESIGN SURFACE LEVEL	SETOUT COORDINATES	RUNNING CHAINAGE
F1/98	64.925	– / ~~0.842~~ 0.87	– / ~~64.181~~ 64.18	~~65.023~~ 65.05	E 505085.867 N 935343.111	0.000
F2/98	63.858 63.858	0.84 ~~0.856~~ / ~~0.931~~ 0.93	63.16 ~~63.146~~ / ~~63.071~~ 63.07	~~64.002~~ 64.00	E 505059.633 N 935347.508	26.600
F3/98	62.713 62.713	0.92 ~~0.943~~ / ~~0.963~~ 1.00	61.96 ~~61.924~~ / ~~61.904~~ 61.88	~~62.867~~ 62.88	E 505034.977 N 935351.642	51.600
F4/98	61.672 61.672	0.91 ~~0.927~~ / ~~0.947~~ 0.97	60.85 ~~60.835~~ / ~~60.815~~ 60.79	~~61.762~~ 61.76	E 505010.321 N 935355.775	76.600
F5/98	60.203 60.205	1.17 ~~1.224~~ / ~~1.374~~ 1.37	59.06 ~~59.002~~ / ~~58.852~~ 58.86	~~60.226~~ 60.23	E 504982.101 N 935360.506	105.215
6/98	59.233 59.335	1.57 ~~1.588~~ / ~~1.738~~ 1.77	58.61 ~~58.597~~ / ~~58.447~~ 58.41	~~60.185~~ 60.18	E 504972.211 N 935363.229	115.472
6/80	58.119 58.207 / 57.595	1.77 ~~1.805~~ / ~~1.825~~ 1.86	56.52 ~~56.481~~ / ~~56.461~~ 56.43	~~58.286~~ 58.29	E 504979.414 N 935410.692	163.478

LINE 99

STRUCTURE NAME	F1/99	F2/99	F3/99	F4/99	F5/99	F6/99	G7/99	2/80
STRUCTURE DESCRIPTION	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD FIELD INLET TYPE 2 900x600	STD TYPE A GULLY L.I.L; 2.4m Lintel; TYPE M K&C	STD MANHOLE 1050mm DIA



PIPE	F1/99–F2/99	F2/99–F3/99	F3/99–F4/99	F4/99–F5/99	F5/99–F6/99	F6/99–G7/99	G7/99–2/80
PIPE SIZE (mm)	300	300	300	300	375	375	375
PIPE CLASS	PVC	PVC	PVC	PVC	3	3	3
PIPE GRADE (%)	1.16% ~~1.19%~~	1.58% ~~1.52%~~	1.48% ~~1.54%~~	2.59% ~~2.64%~~	2.18% ~~3.02%~~	4.70% ~~4.78%~~	0.52% ~~0.52%~~
PIPE SLOPE (1 in X)	~~84.18~~ 86.10	~~66.00~~ 63.26	~~64.77~~ 67.65	~~37.84~~ 38.57	~~33.15~~ 45.77	~~20.93~~ 21.28	~~191.40~~ 194.00
FULL PIPE VELOCITY (m/s)	0.50	1.08	1.45	1.84	2.11	2.03	1.04
PART FULL VELOCITY (m/s)	1.34	1.79	1.91	2.49	3.04	3.60	1.30
H.G.L IN PIPE (upstream / downstream)	67.744 / 67.711 67.711	67.605 / 67.440 67.440	67.340 / 67.060 67.060	66.886 / 66.404 66.422	66.066 / 65.961 66.028	65.549 / 64.730 64.729	64.696 / 64.672 64.730
PIPE FLOW (Cumecs)	0.035	0.076	0.102	0.130	0.233	0.224	0.115
PIPE CAPACITY AT GRADE (Cumecs)	0.105	0.119	0.120	0.157	0.305	0.383	0.127
LENGTH	24.97 ~~25.000~~	26.57 ~~26.600~~	25.03 ~~25.000~~	26.61 ~~26.600~~	5.95 ~~6.001~~	33.20 ~~33.450~~	5.82 ~~5.551~~

DATUM RL 53.0

STRUCTURE	W.S.E IN STRUCTURE	DEPTH TO INVERT (in / out)	INVERT LEVEL OF DRAIN (in / out)	DESIGN SURFACE LEVEL	SETOUT COORDINATES	RUNNING CHAINAGE
F1/99	67.825	– / ~~0.904~~ 0.91	– / ~~67.336~~ 67.34	~~68.240~~ 68.25	E 505234.495 N 935318.194	0.000
F2/99	67.711 67.711	0.89 ~~0.895~~ / ~~0.915~~ 0.89	67.05 ~~67.039~~ / ~~67.019~~ 67.05	~~67.934~~ 67.94	E 505209.839 N 935322.328	25.000
F3/99	67.440 67.440	0.87 ~~0.895~~ / ~~0.915~~ 0.91	66.63 ~~66.616~~ / ~~66.596~~ 66.59	~~67.511~~ 67.50	E 505183.605 N 935326.725	51.600
F4/99	67.060 67.060	0.89 ~~0.896~~ / ~~0.916~~ 0.92	66.22 ~~66.210~~ / ~~66.190~~ 66.19	~~67.106~~ 67.11	E 505158.949 N 935330.859	76.600
F5/99	66.404 66.422	0.93 ~~0.947~~ / ~~1.022~~ 1.02	65.50 ~~65.487~~ / ~~65.412~~ 65.41	~~66.434~~ 66.43	E 505132.715 N 935335.257	103.200
F6/99	65.961 66.028	1.12 ~~1.106~~ / ~~1.216~~ 1.20	65.28 ~~65.231~~ / ~~65.211~~ 65.20	~~66.427~~ 66.40	E 505127.428 N 935338.095	109.201
G7/99	64.730 64.729	1.11 ~~1.118~~ / ~~1.138~~ 1.155	63.64 ~~63.613~~ / ~~63.593~~ 63.595	~~64.731~~ 64.75	E 505132.966 N 935371.083	142.651
2/80	64.672 64.730 / 64.326	1.235 ~~1.208~~ / ~~1.228~~ 1.26	63.565 ~~63.564~~ / ~~63.544~~ 63.54	64.772 64.80	E 505133.137 N 935376.632	148.202

STRUCTURE SETOUT REFERENCE POINT

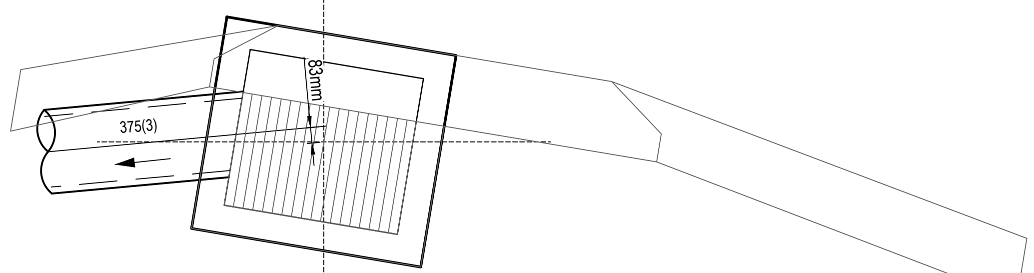
STRUCTURE TYPE	HORIZONTAL	VERTICAL
MANHOLE	℄ MAIN SHAFT	FINISHED SURFACE LEVEL
GULLY PIT	INTERSECTION OF ℄ PIT AND KERB INVERT LNE # (INCLUDING MANHOLES UNDER GULLIES)	KERB INVERT LEVEL
HEADWALL	INTERSECTION OF HEADWALL FACE & PIPE CENTRE LINE	TOP OF HEADWALL

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

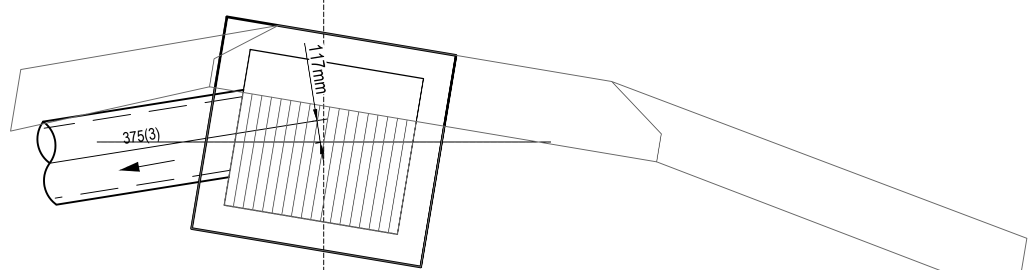
ENGINEER'S CERTIFICATION

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: 17/03/25



G1/87 - STD. TYPE A GULLY
2.40m LINTEL TYPE M K&C
1:20 (A1)
1:40 (A3)



G1/93 - STD. TYPE A GULLY
2.40m LINTEL TYPE M K&C
1:20 (A1)
1:40 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN | DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

Colliers

SCALE
1:20 / 1:40 DETAIL (A1 / A3): 0.2 0 0.2 0.4 0.6 0.8 1
1:1000 / 1:2000 HORIZONTAL (A1 / A3): 10 0 10 20 30 40 50
1:100 / 1:200 VERTICAL (A1 / A3): 2 1 0 2 4

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: STORMWATER DRAINAGE LONGITUDINAL SECTIONS SHEET 3 OF 3

PROJECT No. 22-0448 | DRAWING No. 117 | REVISION 1

Q2 STORMWATER EVENT

LOCATION (1–4) · TIME (5–7) · SUBCATCHMENT RUNOFF (8–14) · INLET DESIGN (15–26)

1 Design ARI Minor (Yrs)	1 Design ARI Major (Yrs)	2 Structure No.	3 Drain Section	4 Sub-catchments Contributing	5 Surface Conditions (Land Use)	6 Slope of Catchment (%)	7 tc Sub-catchment Time of Concentration (min.)	8 I Rainfall Intensity (From Intensity Chart) Minor (mm/hr)	8 I Major (mm/hr)	9 C Coefficient of Runoff Minor	9 C Major	10 A Sub-catchment Area (Ha)	11 (CxA) Equivalent Area 9 x 10 Minor (Ha)	11 (CxA) 9 x 10 Major (Ha)	12 Σ(CxA) Sum of Contributing Equivalent Areas Σ11 Minor (Ha)	12 Σ11 Major (Ha)	13 Q Sub-catchment Discharge (8 x 12)/360 Minor (m³/s)	13 Q (8 x 12)/360 Major (m³/s)	14 Flow Past Previous Gullies Σ25 (m³/s)	15 Flow in K&C (Including Bypass) 13 + 14 (m³/s)	16 Road Grade at Inlet (%)	17 K - K Width (m)	18 Wf Flow Width (m)	19 dg Flow Depth at Invert (m)	20 Vg Gutter Flow Velocity (m/s)	21 dg x Vg 20 x 19 (m²/s)	22 Inlet Number	23 Inlet Type (Refer Legend)	24 Qg Flow into Inlet (From Charts) (m³/s)	25 Bypass Flow 15 - 24 (m³/s)	26 Bypass Pit
2	100	1A/80	3/80 to 4/80	3		2.5								0.493							1						1A/80	MH1200			
2	100	1/80	4/80 to 5/80	5		2.5								0.722							1						1/80	MH1200			
2	100	2/80	5/80 to 6/80	12		2.5								1.19							1						2/80	MH1050			
2	100	3/80	6/80 to 7/80	13		2.5								1.295							1						3/80	MH1200			
2	100	4/80	7/80 to 8/80	15		2.5								1.569							1						4/80	MH1200			
2	100	5/80	8/80 to 9/80	17		2.5								1.94							1						5/80	MH1200			
2	100	6/80	9/80 to 10/80	23		2.5								2.847							1						6/80	MH1200			
2	100	G1/85	G1/85 to 9/80	1		2.5	6	125.6	281.2	0.74	1	0.026	0.019	0.026	0.019	0.026	0.007	0.02		0.007	3.96	7	0.42	0.036	0.877	0.032	G1/85	AL2D	0.007		G3/80
2	100	G1/87	G1/87 to 8/80	1		2.5	5	130	293	0.74	1	0.036	0.027	0.036	0.027	0.036	0.01	0.029		0.01	4.75	7	0.932	0.034	0.799	0.027	G1/87	AL2D	0.01		G1/83
2	100	G1/88	G1/88 to 8/80	1		2.5	10	108	234	0.72	1	0.361	0.26	0.361	0.26	0.361	0.078	0.235		0.078	3.28			0.058			G1/88	SAL2D	0.078		G1/83
2	100	G1/89	G1/89 to 7/80	1		2.5	6	125.6	281.2	0.74	1	0.073	0.054	0.073	0.054	0.073	0.019	0.057		0.019	4.85	7	1.247	0.041	0.938	0.039	G1/89	AL2D	0.019		G1/87
2	100	G1/90	G1/90 to 7/80	1		2.5	6	125.6	281.2	0.72	1	0.201	0.145	0.201	0.145	0.201	0.051	0.157		0.051	4.85	7	1.875	0.056	1.184	0.066	G1/90	AL3D	0.05		G1/88
2	100	G1/91	G1/91 to 6/80	1		2.5	7	121.2	269.4	0.72	1	0.105	0.076	0.105	0.076	0.105	0.026	0.079	0.001	0.027	3.3	7	1.58	0.049	0.876	0.043	G1/91	AL3D	0.027		G1/90
2	100	G1/92	G1/92 to 4/80	1		2.5	6	125.6	281.2	0.72	1	0.202	0.146	0.202	0.146	0.202	0.051	0.158		0.051	1.89	7	2.249	0.064	0.839	0.054	G1/92	AL2D	0.05	0.001	G7/99
2	100	G1/93	G1/93 to 4/80	1		2.5	5	130	293	0.74	1	0.026	0.019	0.026	0.019	0.026	0.007	0.021		0.007	1.65	7	1.013	0.036	0.502	0.018	G1/93	AL2D	0.007		G1/49
2	100	G1/94	G1/94 to 3/80	1		2.5	6	125.6	281.2	0.72	1	0.194	0.14	0.194	0.14	0.194	0.049	0.152	0.008	0.057	1.3	7	2.553	0.071	0.737	0.053	G1/94	AL2D	0.057		G1/92
2	100	G7/99	G7/99 to 5/80	7		2.5	6	125.6	281.2	0.72	1	0.134	0.096	0.666	0.096	0.134	0.034	0.104	0.01	0.044	3.01	7	1.942	0.057	0.959	0.055	G7/99	AL2D	0.042	0.002	G1/91

DRAIN DESIGN (27–38) · HEADLOSSES (39–49) · PART FULL (50–51) · DESIGN LEVELS (52–59)

2 Structure No.	27 tc Critical Time of Conc. (min)	28 I Rainfall Intensity Minor (mm/hr)	28 I Major (mm/hr)	29 Σ(CxA) Total Contributing Equivalent Area Σ12 (U/S) Minor (Ha)	29 Major (Ha)	30 Qt Major Total Flow (28 x 29)/360 (m³/s)	31 Qm Major Surface Flow Capacity (m³/s)	32 Qs Major Surface Flow (m³/s)	33 Qo Flow in Pipe Minor (m³/s)	33 Qo Major (m³/s)	34 L Reach Length (m)	35 S Pipe Grade (%)	36 Pipe/Box Dimensions (mm)	37 V Flow Velocity 33/Area of Sect. (m/s)	38 T Time of Flow in Reach 34/(37 x 60) (min)	39 Ku Method	40 Ku Chart	41 $V^2/2g$ Velocity Head (37 x 37)/2g (m)	42 Ku U/S Headloss Coeff. (From QUDM Vol. 2)	43 hu U/S Pipe Structure Headloss 41 x 42 (m)	44 K_L Lat. Headloss Coefficient (From QUDM Vol. 2)	45 h_L Lat. Pipe Structure Headloss (m)	46 Kw W.S.E. Coefficient (From QUDM Vol. 2)	47 hw Change in W.S.E. (m)	48 Sf Friction Slope (From Sect. 14.5.7 A.R.R. Vol. 1 1987) (%)	49 hf Pipe Friction Headloss (m)	50 Depth (m)	51 Vp Velocity (m/s)	52 Obvert Levels U/S (m)	52 Obvert Levels D/S (m)	53 Drain Section HGL U/S (m)	53 Drain Section HGL D/S (m)	54 U/S HGL (m)	55 Lateral HGL (m)	56 WSE (m)	57 Surface or K&C Invert Level (m)	58 Freeboard (m)	59 Structure No.
1A/80	7.45	119.22	264.09	0.356	0.493				0.118	0.184	49.334	1.3	375	1.07	0.768442	Ku,Kw - Missouri/Hare Charts	T3/T6	0.06	1.91	0.11			2.26	0.131	0.56	0.331	0.207	1.886	65.253	64.61	65.131	64.855	65.262	65.262	65.262	66.195	0.933	1A/80
1/80	7.86	117.41	259.24	0.521	0.722				0.169	0.234	28.595	2.28	375	1.53	0.311492	Ku,Kw - Missouri/Hare Charts	T3/T6	0.12	1.7	0.2			1.97	0.235	0.93	0.265	0.218	2.54	64.59	63.939	64.652	64.386	64.887	64.887	64.887	65.499	0.611	1/80
2/80	8.1	116.36	256.43	0.854	1.19				0.275	0.304	35.537	3.18	375	2.49	0.237865	Ku,Kw - Missouri/Hare Charts	T3/T6	0.32	1.54	0.49			1.7	0.535	2.55	0.918	0.273	3.193	63.919	62.789	63.9	62.994	64.435	64.435	64.435	64.772	0.337	2/80
3/80	8.4	115.06	252.93	0.93	1.295				0.297	0.346	50.182	4.08	375	2.69	0.310917	Ku,Kw - Missouri/Hare Charts	T1/T3	0.37	0.65	0.24			0.74	0.273	3.13	1.582	0.263	3.593	62.769	60.72	62.755	61.182	63.028	63.028	63.028	63.603	0.575	3/80
4/80	8.81	113.22	248	1.129	1.569				0.355	0.439	61.409	5.48	375	3.21	0.318842	Ku,Kw - Missouri/Hare Charts	T1/T3	0.53	0.93	0.49			1.05	0.551	4.46	2.746	0.269	4.182	60.7	57.336	60.693	57.952	61.244	61.244	61.244	61.582	0.338	4/80
5/80	9.33	110.97	241.96	1.396	1.94				0.43	0.46	13.002	2.12	525	1.99	0.108894	Ku,Kw - Missouri/Hare Charts	T3/T6	0.2	1.73	0.35			1.86	0.376	1	0.13	0.32	3.115	57.336	57.061	57.603	57.473	57.979	57.979	57.979	58.607	0.628	5/80
6/80	12.57	100.68	218.33	2.04	2.847				0.571	0.878	57.277	2.42	600	2.02	0.472583	Ku,Kw - Missouri/Hare Charts	T3/T6	0.21	1.86	0.39			2.09	0.435	0.86	0.494	0.334	3.527	57.061	55.675	57.088	56.594	57.523	57.523	57.523	58.286	0.763	6/80
G1/85	6	125.6	281.2	0.019	0.026	0.02	3.184	0.054	0.007	0.02	2.04	5	375	0.06	0.566667	Ku,Kw - Missouri/Hare Charts	G2		7.91					0.001			0.034	1.341	57.163	57.061	57.473	57.473	57.475	57.475	57.475	58.357	0.882	G1/85
G1/87	5	130	293	0.027	0.036	0.029	3.487	0.876	0.01	0.036	7.837	3.64	375	0.09	1.451296	Ku,Kw - Missouri/Hare Charts	G1		5.29					0.002			0.044	1.339	57.621	57.336	57.952	57.952	57.954	57.954	57.954	58.847	0.893	G1/87
G1/88	10	108	234	0.26	0.361	0.235			0.078	0.026	7.001	6.5	375	0.71	0.164343	Ku,Kw - Missouri/Hare Charts	G2	0.03	7.23	0.18				0.184	0.2	0.014	0.106	3.041	57.791	57.336	57.966	57.952	58.15	58.15	58.15	58.555	0.405	G1/88
G1/89	6	125.6	281.2	0.054	0.073	0.057	3.524	0.777	0.019	0.05	2.136	3.14	375	0.17	0.209412	Ku,Kw - Missouri/Hare Charts	G2		6.66	0.01				0.01	0.01		0.063	1.55	60.787	60.72	61.183	61.182	61.193	61.193	61.193	61.556	0.363	G1/89
G1/90	6	125.6	281.2	0.145	0.201	0.157	3.524	0.777	0.05	0.087	5.612	1.57	375	0.46	0.203333	Ku,Kw - Missouri/Hare Charts	G2	0.01	6.22	0.07				0.066	0.08	0.005	0.122	1.613	60.808	60.72	61.187	61.182	61.253	61.253	61.253	61.574	0.321	G1/90
G1/91	7	121.2	269.4	0.076	0.105	0.079	2.907	0.644	0.027	0.058	5.669	0.53	375	0.25	0.377933	Ku,Kw - Missouri/Hare Charts	G2		9.44	0.03				0.029	0.02	0.001	0.117	0.917	62.819	62.789	62.995	62.994	63.024	63.024	63.024	63.587	0.563	G1/91
G1/92	6	125.6	281.2	0.146	0.202	0.158	2.2	0.356	0.05	0.05	5.5	0.51	375	0.45	0.203704	Ku,Kw - Missouri/Hare Charts	G2	0.01	8.01	0.08				0.084	0.08	0.004	0.165	1.069	64.638	64.61	64.859	64.855	64.943	64.943	64.943	65.436	0.493	G1/92
G1/93	5	130	293	0.019	0.026	0.021	2.055	0.356	0.007	0.021	6.283	1.73	375	0.06	1.745278	Ku,Kw - Missouri/Hare Charts	G2		9.7					0.002			0.045	0.938	64.719	64.61	64.855	64.855	64.857	64.857	64.857	65.546	0.689	G1/93
G1/94	6	125.6	281.2	0.14	0.194	0.152	1.824	0.228	0.057	0.051	5.949	0.5	375	0.52	0.190673	Ku,Kw - Missouri/Hare Charts	G2	0.01	9.7	0.13				0.132	0.06	0.006	0.178	1.103	65.303	65.273	65.246	65.242	65.378	65.378	65.378	66.163	0.785	G1/94
G7/99	15.33	92.81	201.49	0.474	0.666	0.104	2.776	0.466	0.122	0.115	5.551	0.52	375	1.1	0.084106	Ku,Kw - Missouri/Hare Charts	T1/T3	0.06	1.28	0.08			1.38	0.085	0.48	0.027	0.294	1.307	63.968	63.939	64.413	64.386	64.498	64.498	64.498	64.731	0.232	G7/99

Q100 STORMWATER EVENT

LOCATION (1–4) · TIME (5–7) · SUBCATCHMENT RUNOFF (8–14) · INLET DESIGN (15–26)

1 Design ARI Minor (Yrs)	1 Design ARI Major (Yrs)	2 Structure No.	3 Drain Section	4 Sub-catchments Contributing	5 Surface Conditions (Land Use)	6 Slope of Catchment (%)	7 tc Sub-catchment Time of Concentration (min.)	8 I Rainfall Intensity (From Intensity Chart) Minor (mm/hr)	8 I Major (mm/hr)	9 C Coefficient of Runoff Minor	9 C Major	10 A Sub-catchment Area (Ha)	11 (CxA) Equivalent Area 9 x 10 Minor (Ha)	11 (CxA) 9 x 10 Major (Ha)	12 Σ(CxA) Sum of Contributing Equivalent Areas Σ11 Minor (Ha)	12 Σ11 Major (Ha)	13 Q Sub-catchment Discharge (8 x 12)/360 Minor (m³/s)	13 Q (8 x 12)/360 Major (m³/s)	14 Flow Past Previous Gullies Σ25 (m³/s)	15 Flow in K&C (Including Bypass) 13 + 14 (m³/s)	16 Road Grade at Inlet (%)	17 K - K Width (m)	18 Wf Flow Width (m)	19 dg Flow Depth at Invert (m)	20 Vg Gutter Flow Velocity (m/s)	21 dg x Vg 20 x 19 (m²/s)	22 Inlet Number	23 Inlet Type (Refer Legend)	24 Qg Flow into Inlet (From Charts) (m³/s)	25 Bypass Flow 15 - 24 (m³/s)	26 Bypass Pit
100	100	F1/98	F1/98 to F2/98	1		2.5	15	203.5	203.5	0.78	0.78	0.164	0.128	0.128	0.128	0.164	0.072	0.072		0.072	1			0.3			F1/98	SF2 600x900	0.069	0.004	F2/98
100	100	F2/98	F2/98 to F3/98	2		2.5	15	203.5	203.5	0.78	0.78	0.306	0.238	0.364	0.238	0.306	0.135	0.135	0.003	0.138	1			0.3			F2/98	SF2 600x900	0.097	0.041	F3/98
100	100	F3/98	F3/98 to F4/98	3		2.5	15	203.5	203.5	0.78	0.78	0.346	0.27	0.634	0.27	0.346	0.152	0.152	0.042	0.194	1			0.3			F3/98	SF2 600x900	0.021	0.173	F4/98
100	100	F4/98	F4/98 to F5/98	4		2.5	15	203.5	203.5	0.78	0.78	0.221	0.172	0.806	0.172	0.221	0.097	0.097	0.173	0.27	1			0.3			F4/98	SF2 600x900	0.023	0.247	F5/98
100	100	F5/98	F5/98 to 6/98	5		2.5	15	203.5	203.5	0.78	0.78	0.177	0.138	0.939	0.138	0.177	0.078	0.078	0.247	0.325	1			0.3			F5/98	SF2 600x900	0.32	0.005	G1/88
100	100	6/98	6/98 to 9/80	5		2.5								0.939							1						6/98	MH1050			
100	100	F1/99	F1/99 to F2/99	1		2.5	10	234	234	0.78	0.78	0.069	0.054	0.054	0.054	0.069	0.035	0.035		0.035	1			0.057			F1/99	SF2 600x900	0.035		F2/99
100	100	F2/99	F2/99 to F3/99	2		2.5	10	234	234	0.78	0.78	0.082	0.064	0.118	0.064	0.082	0.042	0.042		0.042	1			0.063			F2/99	SF2 600x900	0.042		F3/99
100	100	F3/99	F3/99 to F4/99	3		2.5	10	234	234	0.78	0.78	0.128	0.1	0.217	0.1	0.128	0.065	0.065		0.065	1			0.3			F3/99	SF2 600x900	0.027	0.038	F4/99
100	100	F4/99	F4/99 to F5/99	4		2.5	15	203.5	203.5	0.78	0.78	0.2	0.156	0.374	0.156	0.2	0.088	0.088	0.038	0.126	1			0.3			F4/99	SF2 600x900	0.045	0.081	F5/99
100	100	F5/99	F5/99 to F6/99	5		2.5	15	203.5	203.5	0.78	0.78	0.158	0.123	0.495	0.123	0.158	0.07	0.07	0.081	0.151	1			0.3			F5/99	SF2 600x900	0.104	0.047	F6/99
100	100	F6/99	F6/99 to G7/99	6		2.5	6	281.2	281.2	0.78	0.78	0.048	0.038	0.533	0.038	0.048	0.029	0.029	0.048	0.077	1						F6/99	SF2 600x900		0.077	G7/99

DRAIN DESIGN (27–38) · HEADLOSSES (39–49) · PART FULL (50–51) · DESIGN LEVELS (52–59)

2 Structure No.	27 tc Critical Time of Conc. (min)	28 I Rainfall Intensity Minor (mm/hr)	28 I Major (mm/hr)	29 Σ(CxA) Total Contributing Equivalent Area Σ12 (U/S) Minor (Ha)	29 Major (Ha)	30 Qt Major Total Flow (28 x 29)/360 (m³/s)	31 Qm Major Surface Flow Capacity (m³/s)	32 Qs Major Surface Flow (m³/s)	33 Qo Flow in Pipe Minor (m³/s)	33 Qo Major (m³/s)	34 L Reach Length (m)	35 S Pipe Grade (%)	36 Pipe/Box Dimensions (mm)	37 V Flow Velocity 33/Area of Sect. (m/s)	38 T Time of Flow in Reach 34/(37 x 60) (min)	39 Ku Method	40 Ku Chart	41 $V^2/2g$ Velocity Head (37 x 37)/2g (m)	42 Ku U/S Headloss Coeff. (From QUDM Vol. 2)	43 hu U/S Pipe Structure Headloss 41 x 42 (m)	44 K_L Lat. Headloss Coefficient (From QUDM Vol. 2)	45 h_L Lat. Pipe Structure Headloss (m)	46 Kw W.S.E. Coefficient (From QUDM Vol. 2)	47 hw Change in W.S.E. (m)	48 Sf Friction Slope (From Sect. 14.5.7 A.R.R. Vol. 1 1987) (%)	49 hf Pipe Friction Headloss (m)	50 Depth (m)	51 Vp Velocity (m/s)	52 Obvert Levels U/S (m)	52 Obvert Levels D/S (m)	53 Drain Section HGL U/S (m)	53 Drain Section HGL D/S (m)	54 U/S HGL (m)	55 Lateral HGL (m)	56 WSE (m)	57 Surface or K&C Invert Level (m)	58 Freeboard (m)	59 Structure No.
F1/98	15	203.5	203.5	0.128	0.128	0.072			0.069	0.069	26.6	3.89	225	1.73	0.256262	Ku, Kw - Missouri/Hare Charts	G1	0.15	2.77	0.42				0.421	2.33	0.621	0.149	2.46	64.406	63.371	64.557	63.936	64.978	64.978	64.978	65.023	0.044	F1/98
F2/98	15	203.5	203.5	0.364	0.364	0.135			0.165	0.165	25	4.59	300	2.33	0.178827	Ku, Kw - Missouri/Hare Charts	G1/T1	0.28	1.4	0.39				0.387	2.9	0.724	0.202	3.252	63.371	62.224	63.55	62.826	63.936	63.936	63.936	64.002	0.065	F2/98
F3/98	15.21	202.23	202.23	0.634	0.634	0.152			0.183	0.183	25	4.28	300	2.59	0.160875	Ku, Kw - Missouri/Hare Charts	T1	0.34	0.52	0.18				0.18	3.59	0.899	0.226	3.209	62.204	61.135	62.646	61.747	62.826	62.826	62.826	62.867	0.041	F3/98
F4/98	15.42	200.96	200.96	0.806	0.806	0.097			0.203	0.203	28.615	6.34	300	2.88	0.165596	Ku, Kw - Missouri/Hare Charts	T1	0.42	0.52	0.22				0.22	4.42	1.264	0.21	3.855	61.115	59.302	61.527	60.264	61.747	61.747	61.747	61.762	0.015	F4/98
F5/98	15.45	200.77	200.77	0.939	0.939	0.078			0.519	0.519	10.188	2.5	450	3.26	0.052086	Ku, Kw - Missouri/Hare Charts	G1/T1	0.54	1.23	0.67				0.666	3.31	0.337	0.45	3.263	59.302	59.047	59.598	59.26	60.264	60.264	60.264	60.293	0.029	F5/98
6/98	15.53	200.26	200.26	0.939	0.939				0.518	0.518	49.032	4.01	600	1.83	0.446557	Ku, Kw - Missouri/Hare Charts	T9/T10	0.17	2	0.34			2.66	0.455	1.5	0.804	0.272	4.162	59.047	57.081	58.918	58.184	59.373	59.373	59.373	60.225	0.554	6/98
F1/99	10	234	234	0.054	0.054	0.035			0.035	0.035	25	1.19	300	0.5	0.833333	Ku, Kw - Missouri/Hare Charts	G1	0.01	6.43	0.08				0.081	0.13	0.033	0.119	1.34	67.636	67.339	67.744	67.711	67.825	67.825	67.825	68.24	0.415	F1/99
F2/99	10.21	232.73	232.73	0.118	0.118	0.042			0.076	0.076	26.6	1.52	300	1.08	0.410494	Ku, Kw - Missouri/Hare Charts	G1/T1	0.06	1.79	0.11				0.106	0.62	0.165	0.174	1.787	67.319	66.916	67.605	67.44	67.711	67.711	67.711	67.934	0.223	F2/99
F3/99	10.22	232.65	232.65	0.217	0.217	0.065			0.102	0.102	25	1.54	300	1.45	0.287356	Ku, Kw - Missouri/Hare Charts	T1	0.11	0.93	0.1				0.1	1.12	0.28	0.213	1.909	66.896	66.51	67.34	67.06	67.44	67.44	67.44	67.511	0.071	F3/99
F4/99	15	203.5	203.5	0.374	0.374	0.088			0.13	0.13	26.6	2.64	300	1.84	0.240942	Ku, Kw - Missouri/Hare Charts	T1	0.17	1	0.17				0.174	1.81	0.482	0.208	2.486	66.49	65.787	66.886	66.404	67.06	67.06	67.06	67.106	0.046	F4/99
F5/99	15	203.5	203.5	0.495	0.495	0.07			0.233	0.233	6.001	3.02	375	2.11	0.047401	Ku, Kw - Missouri/Hare Charts	T1/T3	0.23	1.49	0.34			1.57	0.356	1.76	0.106	0.245	3.036	65.787	65.606	66.066	65.961	66.422	66.422	66.422	66.434	0.012	F5/99
F6/99	15.05	203.19	203.19	0.533	0.533	0.029			0.224	0.224	33.45	4.78	375	2.03	0.274631	Ku, Kw - Missouri/Hare Charts	T9/T10	0.21	1.96	0.41			2.28	0.479	2.45	0.842	0.206	3.604	65.586	63.988	65.549	64.73	66.028	66.028	66.028	66.427	0.399	F6/99

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: 17/03/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
0	26.08.24	CL	AK	ISSUED FOR CONSTRUCTION
1	17.03.25	CL	BP	AS CONSTRUCTED

DRAWN

DESIGN

STATUS: **AS CONSTRUCTED**

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 17.03.25

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

Colliers

SCALE

CLIENT: HB Land

ASSOCIATED CONSULTANT: SAUNDERS HAVILL GROUP PH: 1300 123 744

PROJECT NAME: TILLERMAN PARK RIDGE
STAGE 7
133-159 PARK RIDGE ROAD, PARK RIDGE

DRAWING TITLE: **STORMWATER DRAINAGE CALCULATIONS TABLE**

PROJECT No. 22-0448 | DRAWING No. 118 | REVISION 1