

# PENRITH CITY PARK

## 114-146 HENRY STREET, 42-50 STATION STREET AND ALLEN PLACE CARPARK CIVIL ENGINEERING PACKAGE



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LOCALITY PLAN

### CIVIL DRAWING SCHEDULE

DWG No.	DRAWING TITLE
DAC01.01	COVER SHEET
DAC01.11	SPECIFICATION NOTES
DAC02.01	CONCEPT SEDIMENT AND EROSION CONTROL PLAN
DAC02.11	SEDIMENT AND EROSION CONTROL DETAILS
DAC03.01	BULK EARTHWORKS CUT FILL PLAN
DAC04.01	SITWORKS AND STORMWATER MANAGEMENT PLAN
DAC04.21	STORMWATER LONGITUDINAL SECTIONS - SHEET 01
DAC04.22	STORMWATER LONGITUDINAL SECTIONS - SHEET 02
DAC04.23	STORMWATER LONGITUDINAL SECTIONS - SHEET 03
DAC05.00	TYPICAL ROAD CROSS SECTIONS
DAC05.01	ROAD LONGITUDINAL SECTIONS
DAC05.11	ROAD CROSS SECTIONS - SHEET 01
DAC05.12	ROAD CROSS SECTIONS - SHEET 02
DAC06.01	STORMWATER DETAILS
DAC09.01	DETAILS - SHEET 01
DAC09.02	DETAILS - SHEET 02
DAC10.01	SIGNAGE AND LINEMARKING PLAN
DAC11.01	TURNING PATH PLAN - SHEET 01
DAC11.02	TURNING PATH PLAN - SHEET 02
DAC12.01	CATCHMENT PLAN

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES JOB MANAGER: A.CARVALHAES VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	CP		AC	25.09.20
02	ISSUED FOR INFORMATION	AS		SN	08.01.21
03	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
04	ISSUED FOR INFORMATION	AS		SN	23.04.21
05	ISSUED FOR INFORMATION	AS		SN	18.05.21

CLIENT

PENRITH CITY COUNCIL

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT

JMD design

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SCALE 1:1000 @ A1

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PROJECT

**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

COVER SHEET

JOB NUMBER

**192968**

DRAWING NUMBER	REVISION
<b>DAC01.01</b>	<b>05</b>

DRAWING SHEET SIZE = A1

**NOT FOR CONSTRUCTION**

NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL DEVELOPMENT GUIDELINES .THE AFOREMENTIONED GUIDELINES INCLUSIVE OF ALL SPECIFICATIONS TAKE PRECEDENCE OVER NOTES PROVIDED BELOW.

### STORMWATER DRAINAGE

- ALL PVC PIPES SHALL BE CLASS SN8 UNLESS OTHERWISE SPECIFIED
- ALL PIPES IN THE ROAD RESERVE MUST BE RCP CLASS 2 WHERE MINIMUM 600mm COVER IS ACHIEVED. WHERE LESS THAN 600mm COVER, PIPES CLASS TO BE AS SPECIFIED ON THE LONG SECTIONS.
- ALL DRAINAGE LINES LESS THAN Ø225 SHALL BE LAID AT 1% MIN. FALL. PIPES Ø225 OR GREATER TO BE 0.5% MIN FALL. UNO.
- ALL LEVELS ARE AUSTRALIAN HEIGHT DATUM (AHD).
- ALL DOWNPIPES GUTTERS TO BE DESIGNED IN ACCORDANCE WITH AS/NZS 3500.3.2 - 2003 'STORMWATER' DRAINAGE.
- THE STORMWATER DRAINAGE DESIGN HAS BEEN CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500.3.2-2003 'STORMWATER' DRAINAGE.
- ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.
- SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH THE LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.
- ALL GRATES TO BE GALVANISED STEEL WITH HINGES AND CHILD PROOF LOCK.
- ALL GRATES TO BE HEEL SAFE WITHIN AGED CARE DEVELOPMENTS.
- THE STORMWATER DRAINAGE IS DESIGNED IN ACCORDANCE WITH COUNCIL'S STORMWATER CODE.

### RAINWATER RE-USE

- PROVIDE RAINWATER RE-USE SYSTEM TO SUPPLY WATER FOR TOILET FLUSHING.
- GUTTER GUARD TO BE INSTALLED ON ALL EAVES GUTTERS.
- A PERMANENT SIGN IS TO BE LOCATED IN THE VICINITY OF THE TANK STATING THE WATER IS "NON POTABLE WATER" WITH APPROPRIATE HAZARD IDENTIFICATION.
- PIPEWORK USED FOR RAINWATER SERVICES SHALL BE COLOURED LILAC IN ACCORDANCE WITH AS1345.
- ALL VALVES AND APERTURES SHALL BE CLEARLY AND PERMANENTLY LABELLED WITH SAFETY SIGNS TO COMPLY WITH AS1319.
- RAINWATER TANK RETICULATION SYSTEM AND MAINS WATER BYPASS ARRANGEMENT TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3500.12-2003 AND THE NSW CODE OF PRACTICE : PLUMBING AND DRAINING.
- A FIRST FLUSH FILTRATION DEVICE IS TO BE PROVIDED AT RAINWATER TANK.
- FOR PUMPING AND TREATMENT SYSTEM, REFER TO HYDRAULIC ENGINEER'S SPECIFICATION

### GENERAL NOTES

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS ARE IN MILLIMETRES & ALL LEVELS ARE IN METRES, UNO (UNLESS NOTED OTHERWISE).

NO DIMENSION SHALL BE OBTAINED BY SCALING THE DRAWINGS.

ALL LEVELS AND SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORK.

DETAIL SURVEY DATA WAS SUPPLIED BY PENRITH CITY COUNCIL, HEADING : DETAIL SURVEY OVER FOLIO IDENTIFIES 1/526304, E/163176, 3/1200790, 2/556075, 10/553665, 11/553665, 1/164798 & 1/252457 & CARPARK LOCATED WITHIN ALLEN PLACE PENRITH  
DRAWING DATED : 10.12.2019  
REV : 00  
JOB REFERENCE : 004  
MGA : 2020  
DATE OF SURVEY : 02.12.2019

EXISTING SERVICES WHERE SHOWN HAVE BEEN PLOTTED FROM SUPPLIED DATA AND SUCH THEIR ACCURACY CAN NOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF WORK.

ON COMPLETION OF STORMWATER INSTALLATION, ALL DISTURBED AREAS MUST BE RESTORED TO ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AND GRASSED AREAS AND ROAD PAVEMENTS, UNLESS DIRECTED OTHERWISE.

ALL STORMWATER MANAGEMENT MEASURES SHOWN ON THIS DRAWING HAVE BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES TO DEMONSTRATE FEASIBILITY. ALL MEASURES WILL BE SUBJECT TO DETAIL DESIGN AT THE CONSTRUCTION CERTIFICATE STAGE AND MAY BE SUBJECT TO VARIATION PROVIDED THAT THE DESIGN INTENT IS MAINTAINED.

### DESIGN SUMMARY

COUNCIL: PENRITH CITY COUNCIL

#### CATCHMENT CALCULATIONS:

	PRE-DEVELOPMENT	POST-DEVELOPMENT
TOTAL AREA*	7517m <sup>2</sup>	7517m <sup>2</sup>
IMPERVIOUS AREA	7123m <sup>2</sup> (94.76%)	3378m <sup>2</sup> (44.94%)
PERVIOUS AREA	394m <sup>2</sup> (5.24%)	4139m <sup>2</sup> (55.06%)

\* AREAS IN TABLE PERTAIN TO THE PARK AREA ONLY (EXCLUDING SURROUNDING CATCHMENTS AND ROADS). REFER TO SHEET DAC12.01 FOR CATCHMENT PLAN, INCLUDING ROAD AREAS AND EXTERNAL CATCHMENTS RAINWATER RE-USE:

IN ACCORDANCE WITH COUNCIL REQUIREMENTS.  
RAINWATER RE-USE STORAGE PROVIDED = 25kL  
PERCENTAGE OF DEMAND MET = 90%

RAINWATER RE-USE TO BE USED FOR THE FOLLOWING:

- TOILET FLUSHING, IN AMENITIES BUILDING (5 TOILETS WITH ASSUMED DEMAND OF 100L/DAY)

#### WATER QUALITY TREATMENT MEASURES:

- 383m<sup>2</sup> RAINGARDEN TO TREAT SOME ROAD RUNOFF FROM HENRY ST AND INTERNAL PARK AREA
- 150m<sup>2</sup> PASSIVE IRRIGATION TO TREAT SOME ROAD RUNOFF FROM PROPOSED GAYMARK LANE, EASTERN CARPARK AND INTERNAL PARK AREAS.
- RAINWATER TANK




#### WATER QUALITY OUTCOMES:

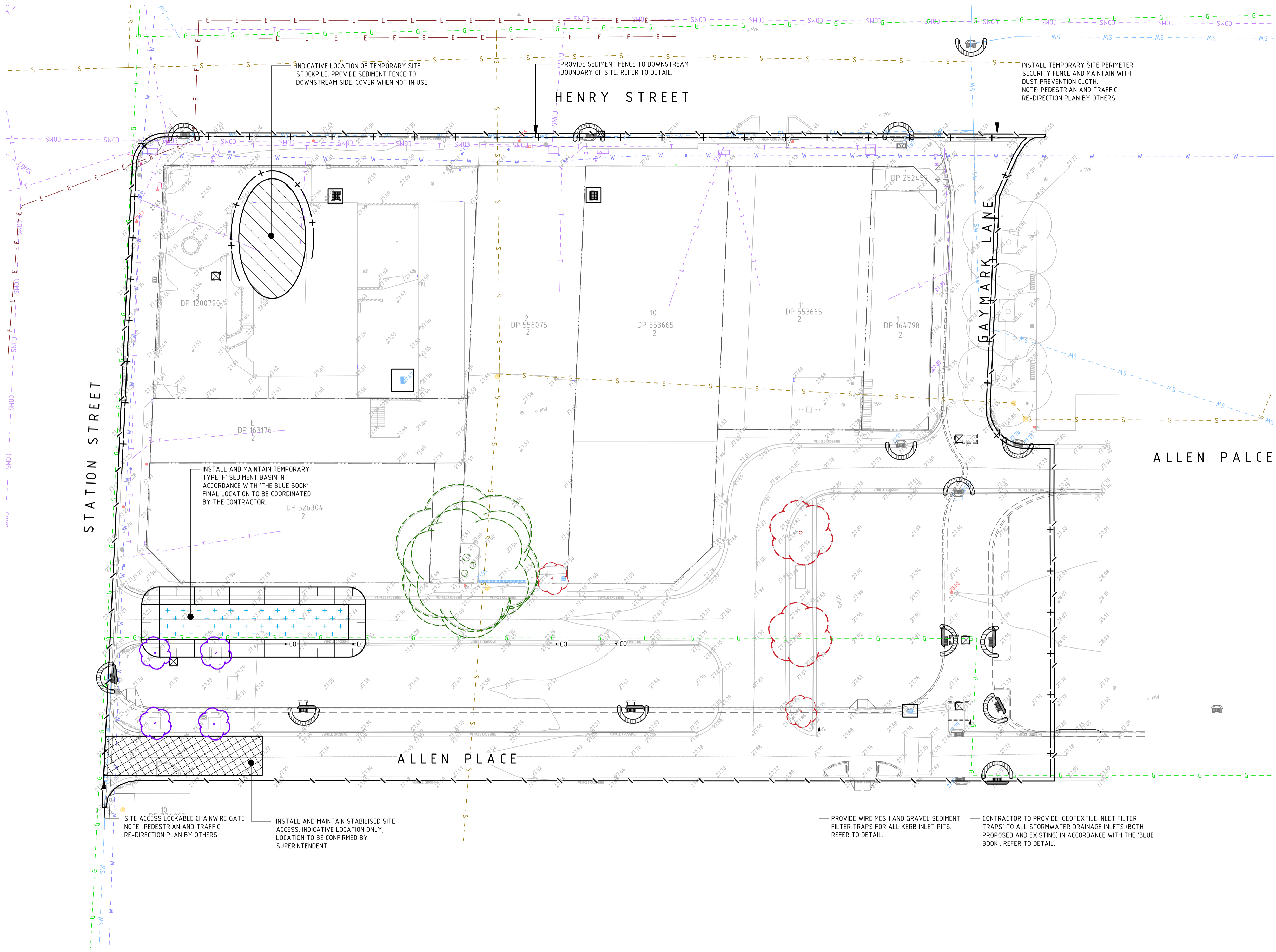
	PRE-DEVELOPMENT	POST-DEVELOPMENT	%REDUCTION PRE TO POST	TREATMENT TRAIN EFFECTIVENESS*
TOTAL SUSPENDED SOLIDS (TSS) (kg/yr)	1260	98.2	92	87
TOTAL NITROGEN (TN) (kg/yr)	2.12	0.415	80	66
TOTAL PHOSPHORUS (TP) (kg/yr)	14	3.28	77	55
GROSS POLLUTANTS (GP) (kg/yr)	171	8.95	95	89

\*NOTE: ONLY ROAD AREAS THAT FALL TO TREATMENT (RAINGARDEN OR PASSIVE IRRIGATION) ARE INCLUDED IN CATCHMENT CALCULATIONS (FOR BOTH PRE AND POST DEVELOPMENT). ALL OTHER ROAD AREAS (INCLUDING WHERE CHANGES ARE PROPOSED) HAVE BEEN EXCLUDED FROM THE MODELLING AS THEY ARE OUTSIDE THE PARK BOUNDARY.

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES JOB MANAGER: A. CARVALHAES VERIFIER:

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER	
01	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	CP		AC	25.09.20			 Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	<b>PENRITH CITY PARK 114-146 HENRY STREET, 42-50 STATION STREET AND ALLEN PLACE CARPARK</b>	<b>CIVIL ENGINEERING PACKAGE</b>  <b>SPECIFICATION NOTES</b>	<b>192968</b>
02	ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	13.01.21							
03	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	18.01.21							
04	ISSUED FOR INFORMATION	AS	SN	23.04.21							
05	ISSUED FOR INFORMATION	AS	SN	21.05.21							
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										DRAWING SHEET SIZE = A1	



### LEGEND

- EXISTING BOUNDARY LINE
- EXISTING KERB
- PROPOSED KERB
- EXISTING ELECTRICITY
- EXISTING GAS
- EXISTING TELECOMMUNICATIONS
- EXISTING TELSTRA
- EXISTING OPTUS
- EXISTING WATER
- EXISTING STORMWATER
- EXISTING SEWER
- GRATED INLET PIT (NEW / EXTG)
- KERB INLET PIT (NEW / EXTG)
- EXISTING CONTOURS
- SEDIMENT FENCE
- SECURITY FENCE
- WIRE MESH AND GRAVEL SEDIMENT FILTER
- GEOTEXTILE INLET FILTER TRAPS
- SITE ACCESS GATE
- STABILISED SITE ACCESS
- STOCKPILE
- SEDIMENT BASIN
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE RELOCATED (TBC)

- ### GENERAL NOTES:
- REFER SPECIFICATIONS NOTES FOR SEDIMENT AND SOIL EROSION CONTROL GENERAL REQUIREMENTS.
  - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  - ALL SEDIMENT AND SOIL EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH THE 'BLUE BOOK'. CONTRACTOR TO ENSURE THESE MEASURES ARE IN PLACE AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION WORKS.
  - CONTRACTOR TO PROVIDE 'WIRE MESH AND GRAVEL SEDIMENT FILTER' TO ALL PAVED / ROAD AREAS (BOTH PROPOSED AND EXISTING) IN ACCORDANCE WITH THE 'BLUE BOOK'.
  - CONTRACTOR TO PROVIDE 'GEOTEXTILE INLET FILTER TRAPS' TO ALL STORMWATER DRAINAGE INLETS (BOTH PROPOSED AND EXISTING) IN ACCORDANCE WITH THE 'BLUE BOOK'.

PARAMETER	ADOPTED VALUE
TOTAL AREA (Ha)	0.9141
SOIL TEXTURE GROUP	F
DESIGN RAINFALL DEPTH (DAYS)	5
DESIGN RAINFALL DEPTH (PERCENTILLE)	80
X-DAY, Y-PERCENTILE RAINFALL EVENT	27.4
CV	0.560
SETTLING ZONE VOLUME (m <sup>3</sup> )	140.26
SEDIMENT STORAGE VOLUME (m <sup>3</sup> )	70.130
TOTAL BASIN VOLUME (m <sup>3</sup> )	210.389

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SCALE 1:250@A1

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PROJECT

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114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**CONCEPT SEDIMENT AND EROSION CONTROL PLAN**

JOB NUMBER

**192968**

DRAWING NUMBER

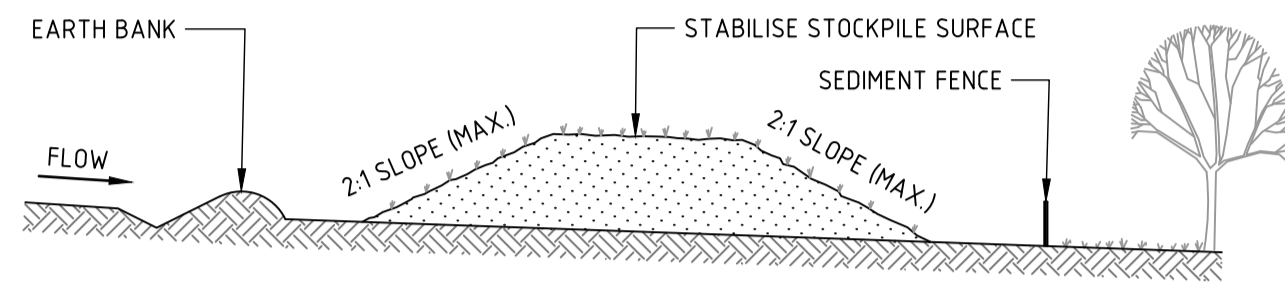
**DAC02.01**

REVISION

**05**

DRAWING SHEET SIZE = A1

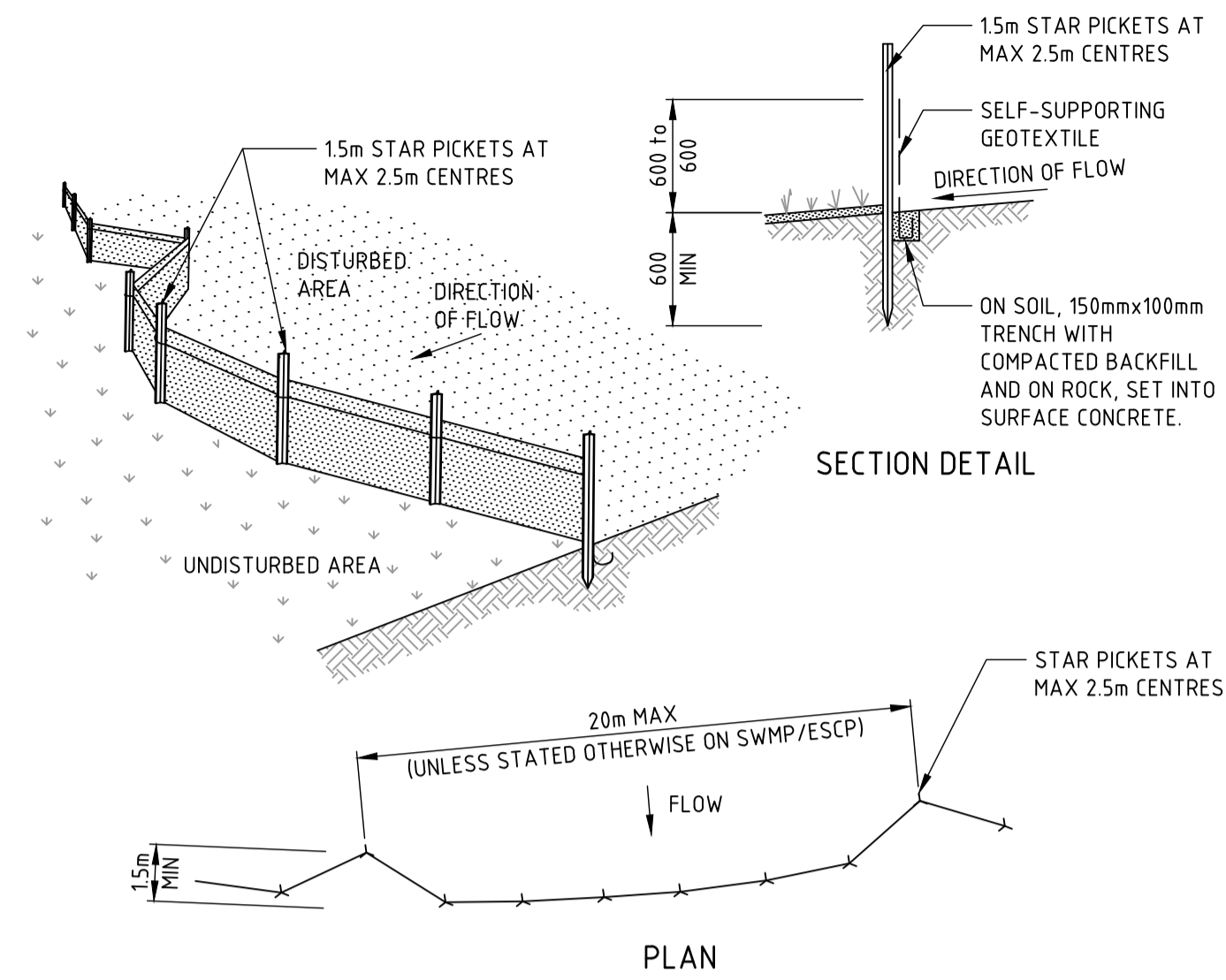
**NOT FOR CONSTRUCTION**



**CONSTRUCTION NOTES**

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

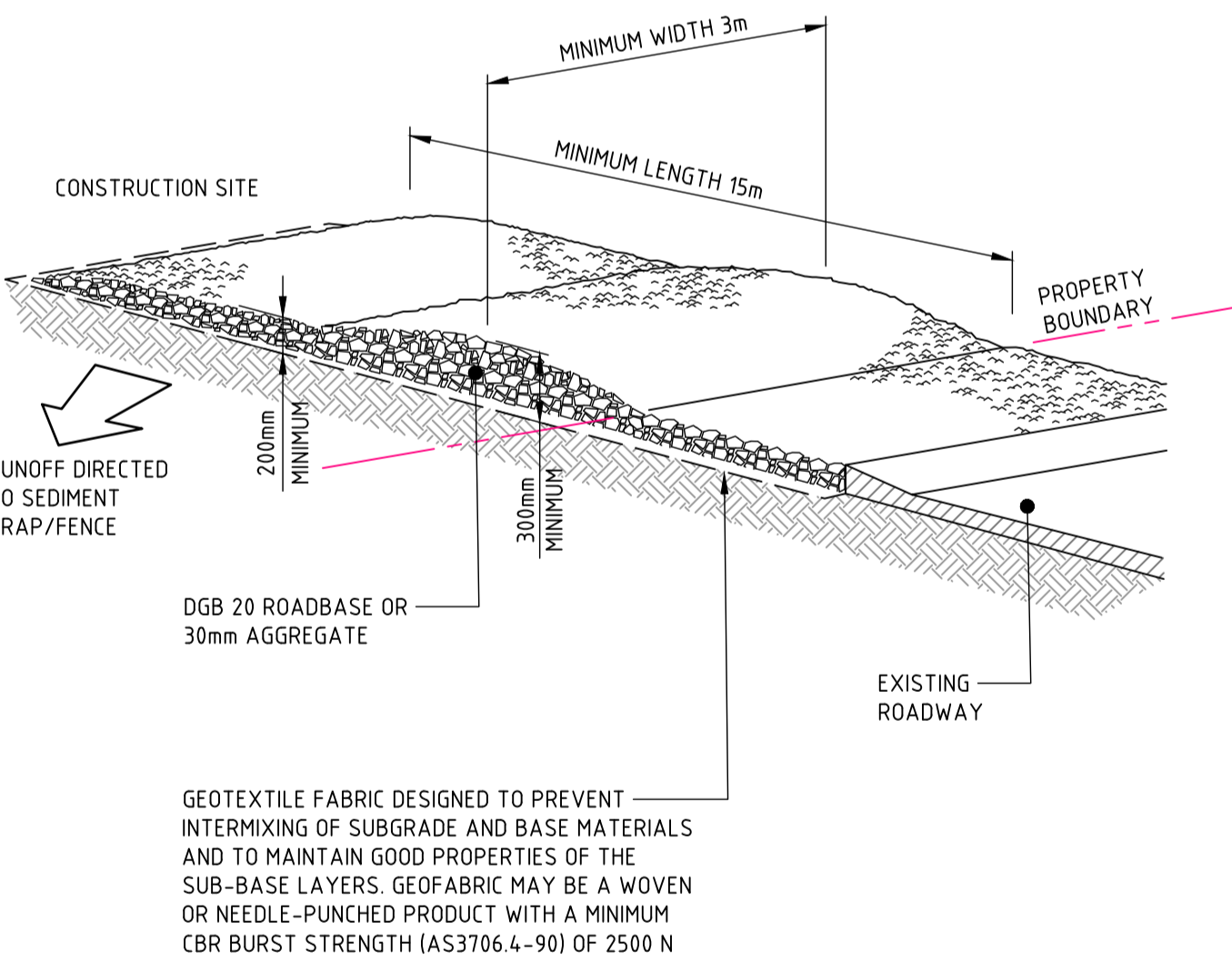
**STOCKPILES**



**CONSTRUCTION NOTES**

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 15 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

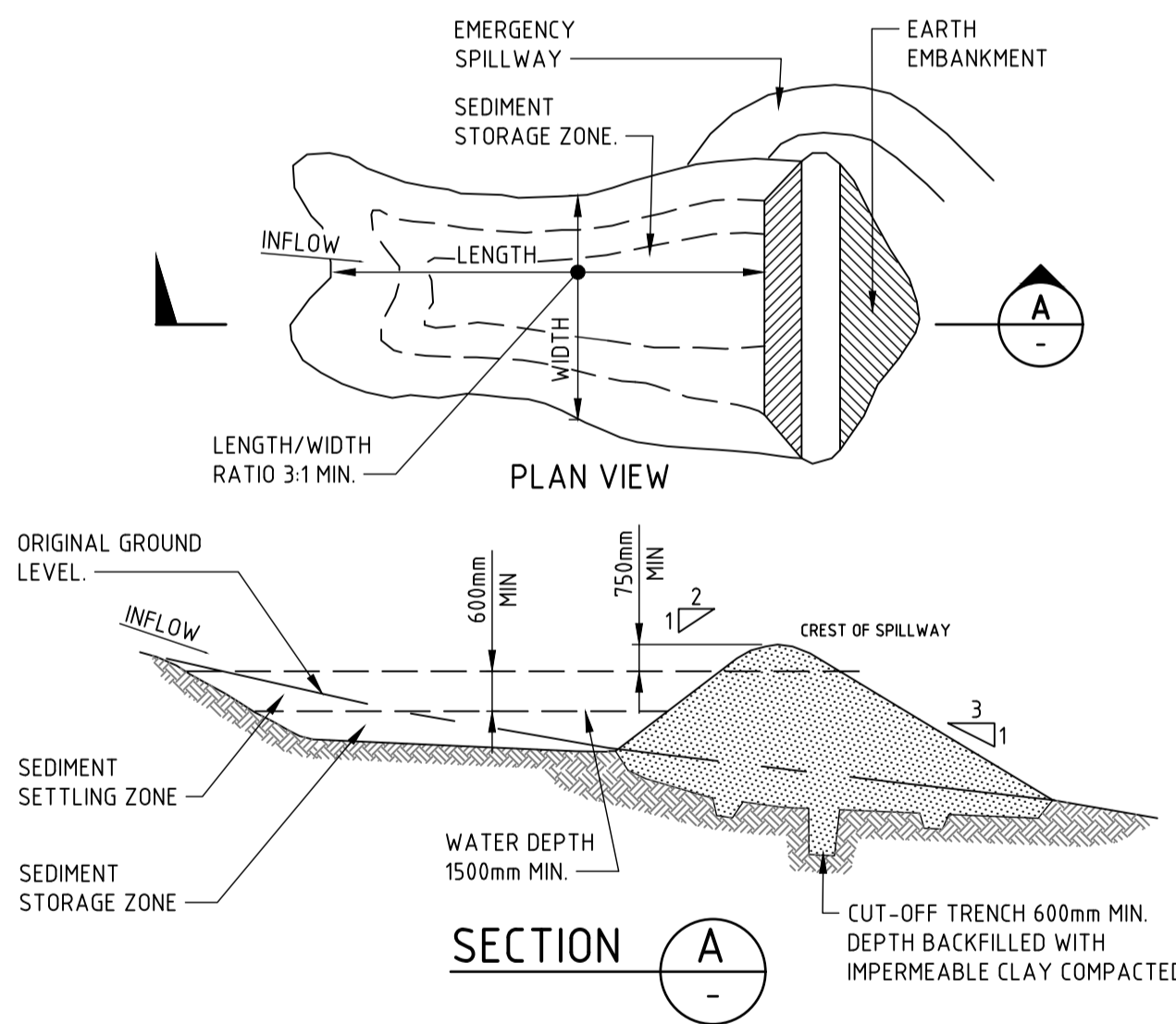
**SEDIMENT FENCE**



**CONSTRUCTION NOTES**

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

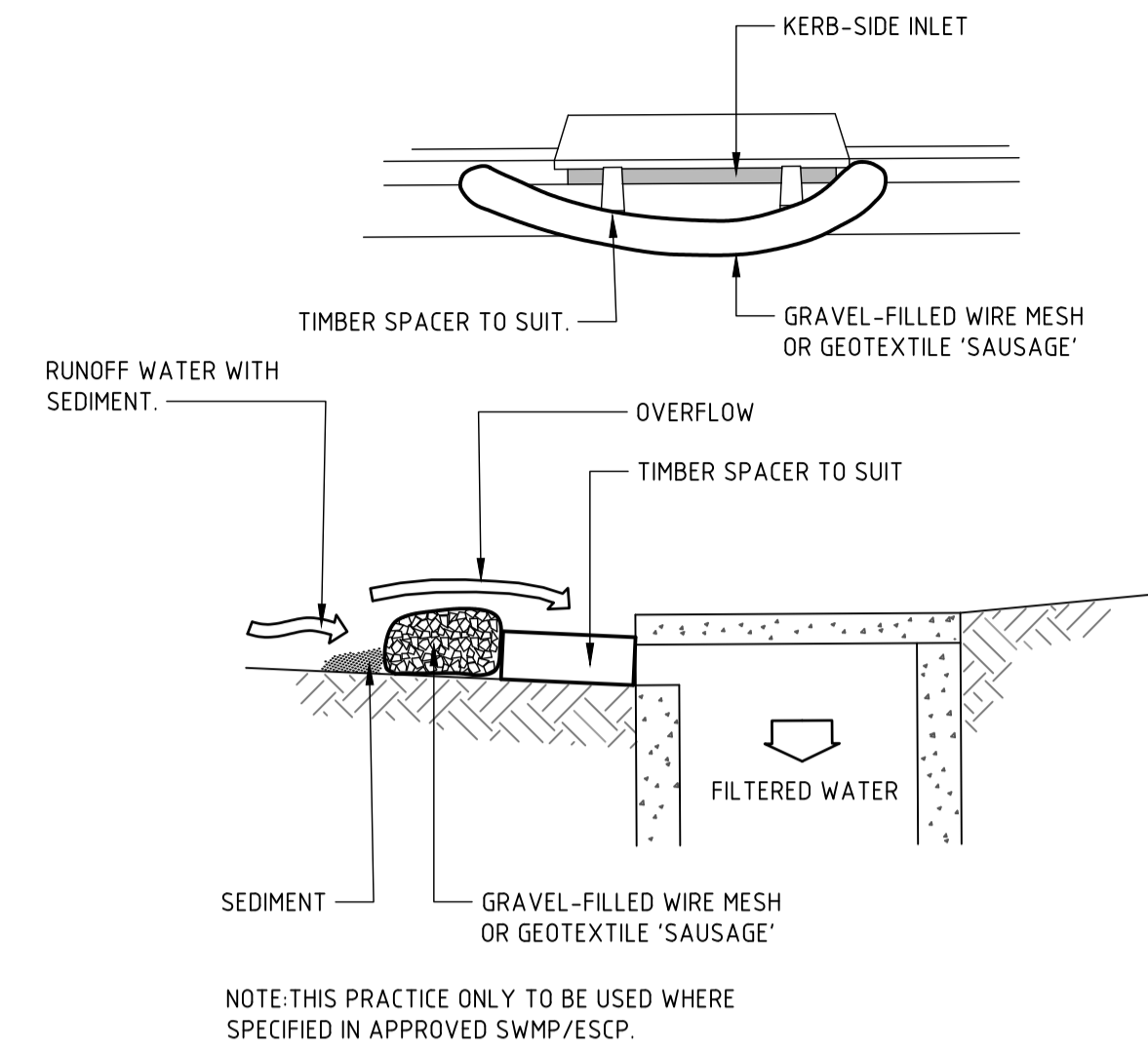
**STABILISED SITE ACCESS**



**CONSTRUCTION NOTES**

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

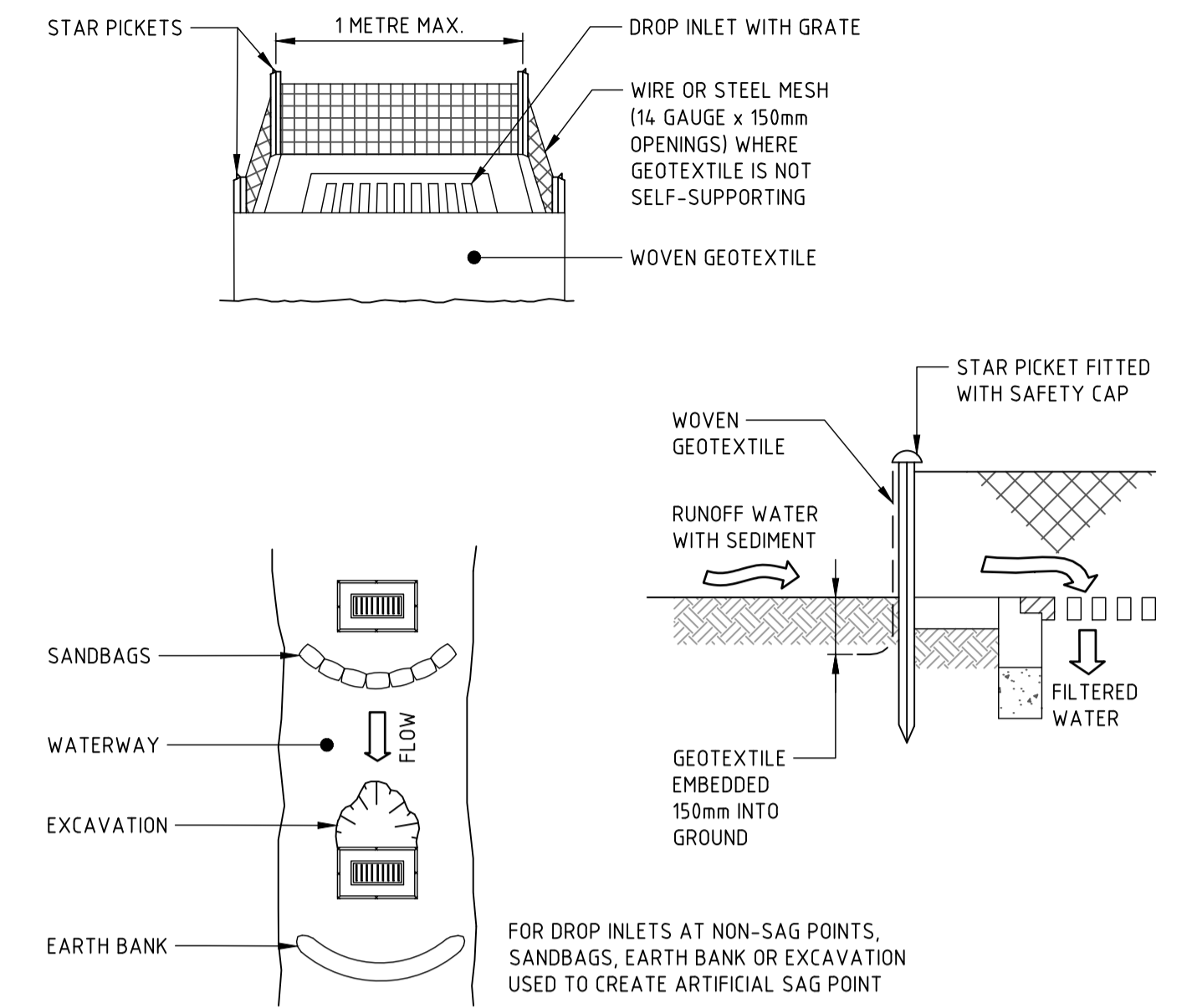
(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)  
**EARTH BASIN - WET**



**CONSTRUCTION NOTES**

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

**WIRE MESH AND GRAVEL SEDIMENT FILTER**



**CONSTRUCTION NOTES**

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

**GEOTEXTILE INLET FILTER TRAPS**

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES JOB MANAGER: A. CARVALHAES VERIFIER: A. CARVALHAES

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ARCHITECT  
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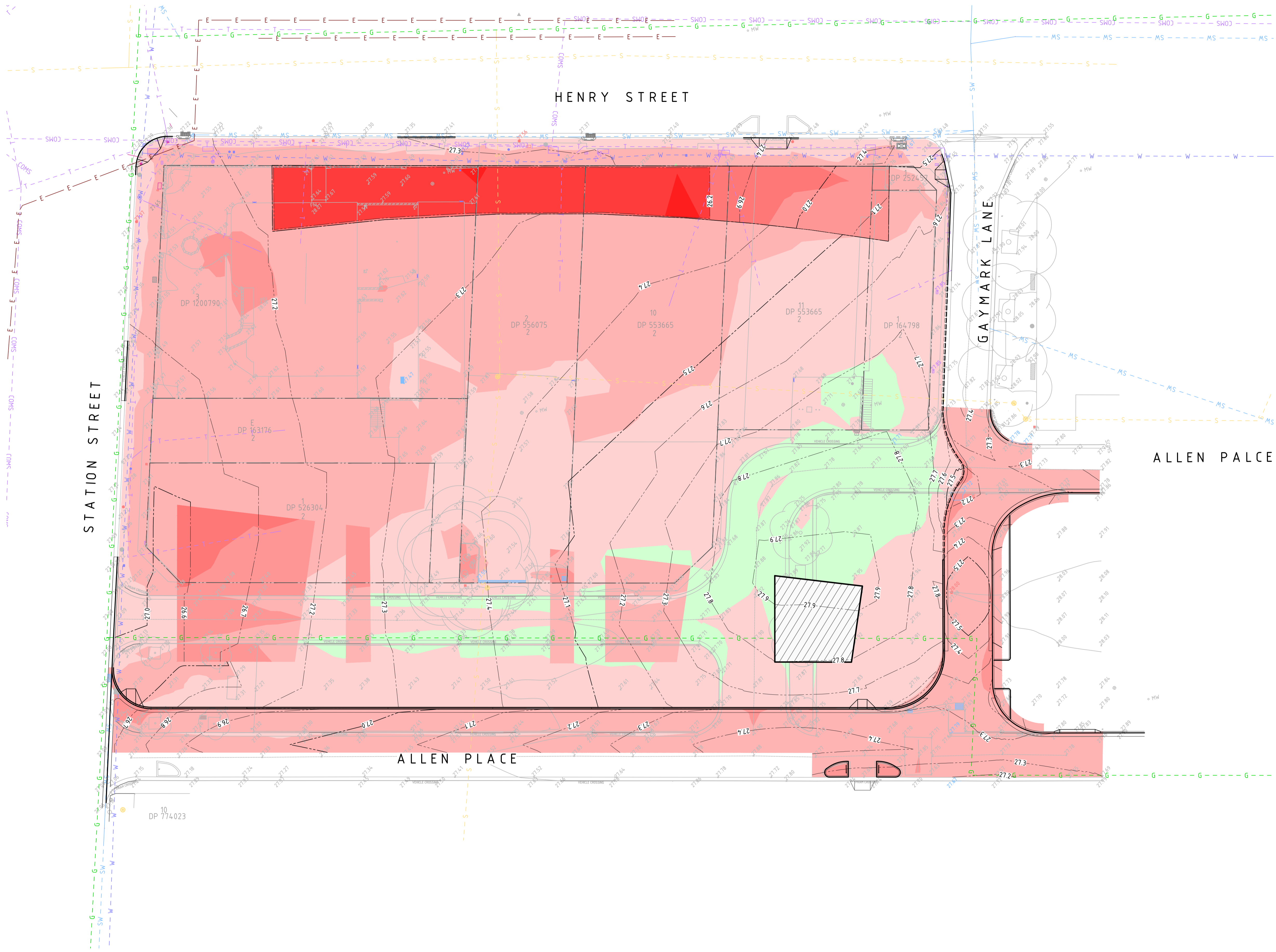
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**CIVIL ENGINEERING PACKAGE  
SEDIMENT AND EROSION  
CONTROL DETAILS**

JOB NUMBER <b>192968</b>	
DRAWING NUMBER <b>DAC02.11</b>	REVISION <b>03</b>
DRAWING SHEET SIZE = A1	

**NOT FOR CONSTRUCTION**



### LEGEND

- PROPOSED BOUNDARY LINE
- EXISTING BOUNDARY LINE
- CONTOURS
- EXISTING ELECTRICITY
- EXISTING GAS
- EXISTING TELECOMMUNICATIONS
- EXISTING TELSTRA
- EXISTING OPTUS
- EXISTING WATER
- EXISTING STORMWATER
- EXISTING SEWER

#### DEPTH OF CUT

- ABOVE TO - 2.0m
- 2.0m TO - 1.5m
- 1.5m TO - 1.25m
- 1.25m TO - 1.0m
- 1.0m TO - 0.75m
- 0.75m TO - 0.5m
- 0.5m TO - 0.25m
- 0.25m TO - 0.0m

#### DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 0.75m
- 0.75m TO 1.0m

EXISTING TREE

- ### GENERAL NOTES:
1. REFER SPECIFICATIONS NOTES FOR EARTHWORKS GENERAL REQUIREMENTS.
  2. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  3. CAD FILES / DTM FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
  4. STRIP EXISTING TOPSOIL IN CONSULTATION WITH THE GEOTECHNICAL ENGINEER / REPORT. NO ALLOWANCE HAS BEEN MADE FOR SITE STRIPPING IN THE VOLUMES.
  5. NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
  6. NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS; ie SERVICE TRENCHING, DETAILED EXCAVATION, FOOTINGS, RETAINING WALLS AND THE LIKE. CONTRACTOR IS TO ALLOW FOR REMOVAL OF ALL EXCESS MATERIAL GENERATED BY THE WORKS.
  7. THE CONTRACTOR SHALL USE FINAL SURFACE LEVELS AND TYPICAL PAVEMENT DETAILS FOR ACTUAL EARTHWORKS LEVELS.
  8. BULK EARTHWORKS ARE BASED ON THE FOLLOWING DEPTHS FROM FINISHED SURFACE LEVELS:
 

8.1. ASPHALT PAVEMENT	390mm
8.2. CONCRETE FOOTPATH PAVEMENT	200mm
8.3. BUILDING SLAB (STRUCTURAL DWGS)	200mm (REFER)
8.4. DRAINAGE CELL AREAS	600mm
8.5. BIO RETENTION BASIN	850mm
8.6. LANDSCAPE AREA	200mm
  9. APPROXIMATE BULK EARTHWORK VALUES AS FOLLOWS:
 

9.1. CUT	2,735 cu.m
9.2. FILL	50 cu.m
9.3. BALANCE	2,685 cu.m
  - 9.4. NOTE: SITE STRIPPING VOLUMES HAVE NOT BEEN INCLUDED IN ABOVE CALCULATIONS.

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES VERIFIER: A.CARVALHAES JOB MANAGER: A.CARVALHAES

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR INFORMATION	AS		SN	23.04.21	

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PENRITH CITY COUNCIL

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SCALE 1:250@A1

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Sydney

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PROJECT

**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE  
BULK EARTHWORKS CUT FILL  
PLAN**

JOB NUMBER

**192968**

DRAWING NUMBER

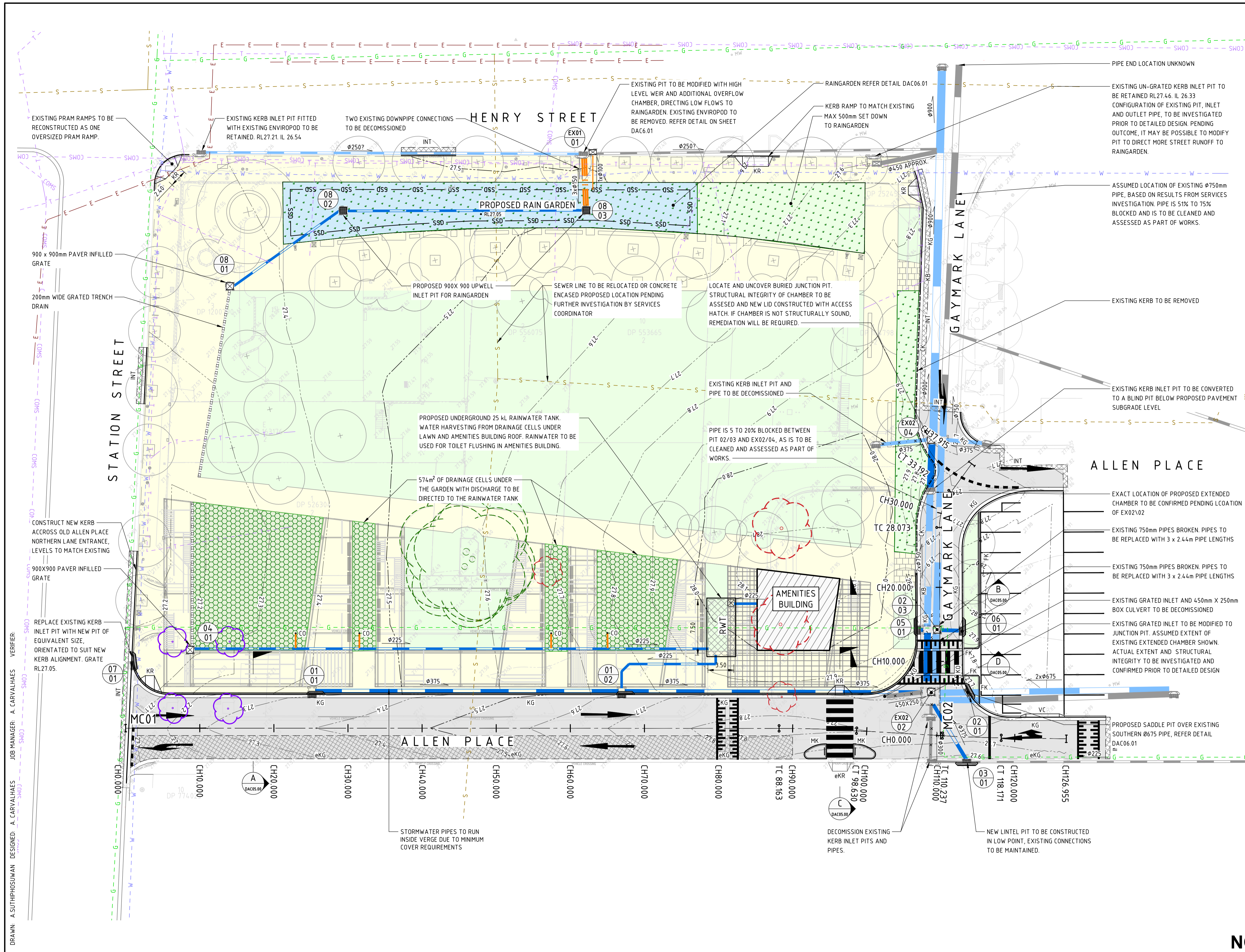
**DAC03.01**

REVISION

**01**

DRAWING SHEET SIZE = A1

**NOT FOR CONSTRUCTION**



### LEGEND

- EXISTING BOUNDARY LINE
- EXISTING KERB
- PROPOSED KERB
- EXISTING ELECTRICITY
- EXISTING GAS
- COMS
- EXISTING TELECOMMUNICATIONS
- EXISTING TELSTRA
- EXISTING OPTUS
- EXISTING WATER
- EXISTING SEWER
- EXISTING SERVICE TO BE REMOVED
- SAWCUT AND PAVEMENT INFILL
- EXISTING KERB 'TYPE AS BELOW'
- KERB AND GUTTER
- CASTELLATED KERB
- BRICK KERB AND GUTTER
- FLUSH KERB
- MOUNTABLE KERB
- KERB RAMP
- MTE
- MATCH TO EXISTING
- PROPOSED SPOT HEIGHT
- XX.XX---
- CONTOURS
- XX.XX---
- EXISTING CONTOURS
- DRAINAGE STRUCTURE WITH EXTENDED CHAMBER (NEW / EXTG)
- EXISTING DRAINAGE STRUCTURE
- NEW DRAINAGE STRUCTURE
- MC01
- CONTROL LINE
- SSD
- SUBSOIL DRAINAGE LINE
- PROPOSED STORMWATER PIPE, DIRECTION AND SIZE
- EXISTING STORMWATER PIPE (ASSUMED LOCATION)
- EXISTING STORMWATER PIPE, DIRECTION AND SIZE (WHERE KNOWN)
- GTD
- GRATED TRENCH DRAIN
- SUBSOIL DRAINAGE CLEAROUT
- 150mm PVC
- STORMWATER PIT TAG
- STRUCTURE NO / LINE ID
- RAINWATER TANK
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE RELOCATED (TBC)
- FOOTPATH
- BRICK PAVING TO LANDSCAPE ARCHITECT'S SPECIFICATION
- LANDSCAPING (REFER LANDSCAPE ARCHITECT'S SPECIFICATION)
- FLEXIBLE PAVEMENT (BUILD UP SUBJECT TO DETAILED DESIGN)
- PROPOSED PASSIVELY IRRIGATED LANDSCAPED AREA (REFER LANDSCAPE ARCHITECT'S SPECIFICATION)
- PROPOSED RAIN GARDEN REFER SHEET DAC06.01 FOR DETAIL
- DRAINAGE CELLS UNDER TURF REFER SHEET DAC09.01
- MILL AND RE-SHEET EXISTING PAVEMENT (DETAIL SUBJECT TO DETAILED DESIGN)

- ### GENERAL NOTES:
- REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITESWORKS GENERAL REQUIREMENTS.
  - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  - CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT CONTRACTOR TO ALLOW TO ADJUST AND LIAISE WITH RELEVANT SERVICE AUTHORITIES IN RELATION TO EXISTING SERVICE ADJUSTMENT AND MODIFICATIONS.
  - EXISTING STORMWATER ALIGNMENTS AND SIZES ARE DERIVED FROM A COMBINATION OF SURVEY INFORMATION, CCTV INVESTIGATION RESULTS, GIS DATA SUPPLIED BY COUNCIL, AND OTHER COUNCIL DRAINAGE MARKUPS SUPPLIED. ACCURACY IS TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
  - ALL EXISTING SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.
  - CONTRACTOR TO ALLOW TO ADJUST AND LIAISE WITH RELEVANT SERVICE AUTHORITIES IN RELATION TO EXISTING SERVICE ADJUSTMENT AND MODIFICATION.

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
04	ISSUED FOR INFORMATION	AS	SN		08.01.21	
05	ISSUED FOR DEVELOPMENT APPLICATION	AS	SN		13.01.21	
06	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN		18.01.21	
07	ISSUED FOR INFORMATION	AS	SN		23.04.21	
08	ISSUED FOR INFORMATION	AS	SN		18.05.21	
09	ISSUED FOR INFORMATION	AS	SN		21.05.21	

**PENRITH CITY COUNCIL**

**JMD design**

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PROJECT
   
**PENRITH CITY PARK**
  
**114-146 STATION STREET,**
  
**42-50 HENRY STREET AND**
  
**ALLEN PLACE CARPARK**

DRAWING TITLE
   
**CIVIL ENGINEERING PACKAGE**
  
**SITESWORKS AND STORMWATER**
  
**MANAGEMENT PLAN**

JOB NUMBER
   
**192968**

DRAWING NUMBER	REVISION
<b>DAC04.01</b>	<b>09</b>

DRAWING SHEET SIZE = A1

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES VERIFIER: A.CARVALHAES
   
 JOB MANAGER: A.CARVALHAES

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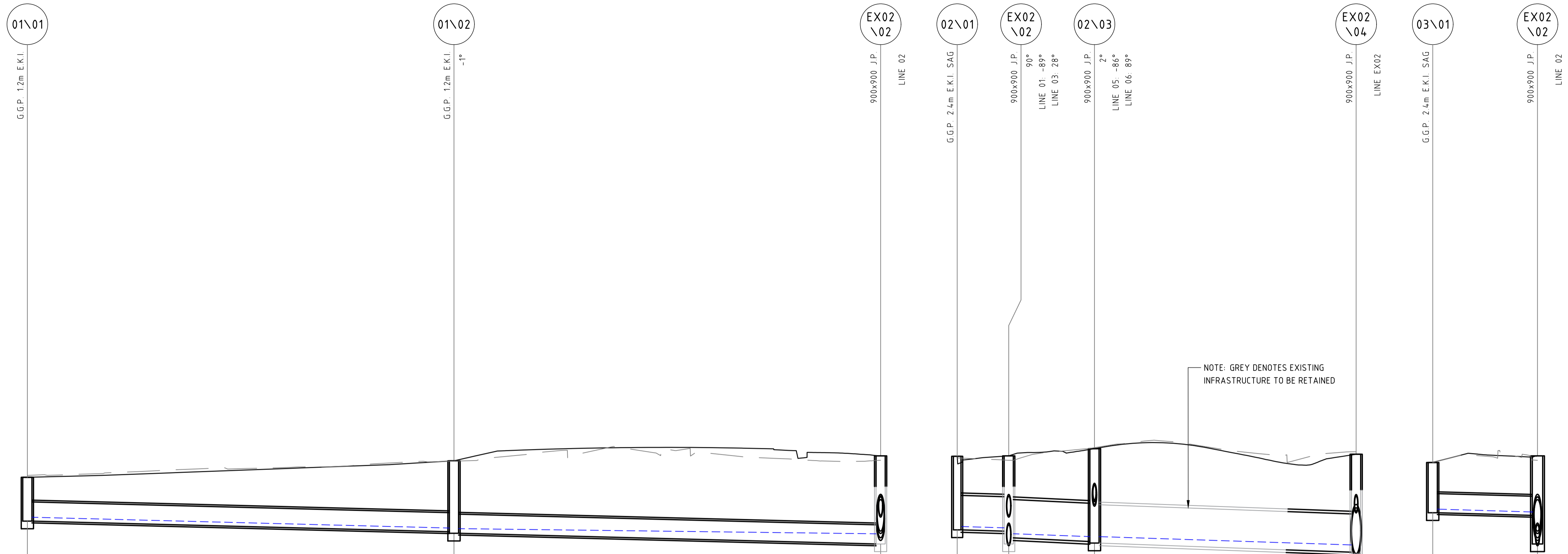
SCALE 1:250@A1

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DRAWING NUMBER
   
**DAC04.01**

REVISION
   
**09**

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES JOB MANAGER: A. CARVALHAES VERIFIER:



PIPE CLASS	RRJ4	RRJ2
PIPE GRADE (%)	0.5%	0.5%
PIPE SIZE (mm)	375	375
MINIMUM COVER (m)	0.45	1.03
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.75	Vf=0.49
Q - PIPE FLOW (L/s)	Q=12	Q=18

DATUM RL	20.0	
H.G.L. 20%AEP	26.494	26.170
FINISHED SURFACE	27.276	27.697
NATURAL SURFACE	27.314	27.610
PIPE INVERT LEVEL	26.419	25.971
DEPTH TO INVERT	0.858	1.726
CO-ORDINATED SETOUT	E286550.914 N6262890.293	E286632.228 N6262871.103
CHAINAGE	0.000	83.549

SCALE 1:250(H), 1:50(V) LINE 01

PIPE CLASS	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	0.5%	0.8%	0.7%
PIPE SIZE (mm)	(2x)675	(2x)750	750
MINIMUM COVER (m)	0.60	0.80	0.87
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.70	Vf=0.90	Vf=1.18
Q - PIPE FLOW (L/s)	Q=25	Q=53	Q=63

DATUM RL	20.0		
H.G.L. 20%AEP	26.312	26.171	25.952
FINISHED SURFACE	27.688	27.697	27.729
NATURAL SURFACE	27.655	27.610	27.778
PIPE INVERT LEVEL	26.247	26.090	25.809
DEPTH TO INVERT	1.442	1.475	1.919
CO-ORDINATED SETOUT	E286637.136 N6262869.926	E286632.228 N6262871.103	E286641.082 N6262903.944
CHAINAGE	0.000	5.047	39.063

LINE 02

PIPE CLASS	RRJ2
PIPE GRADE (%)	0.5%
PIPE SIZE (mm)	375
MINIMUM COVER (m)	0.60
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.66
Q - PIPE FLOW (L/s)	Q=9

DATUM RL	20.0	
H.G.L. 20%AEP	26.653	26.597
FINISHED SURFACE	27.567	27.697
NATURAL SURFACE	27.567	27.610
PIPE INVERT LEVEL	26.582	26.531
DEPTH TO INVERT	0.985	1.166
CO-ORDINATED SETOUT	E286634.758 N6262861.161	E286632.228 N6262871.103
CHAINAGE	0.000	10.258

LINE 03

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR INFORMATION	AS		SN	08.01.21
02	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
03	ISSUED FOR INFORMATION	AS		SN	23.04.21
04	ISSUED FOR INFORMATION	AS		SN	21.05.21

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ARCHITECT

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SCALE 1:250@A1

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PROJECT

**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**STORMWATER LONGITUDINAL  
SECTIONS - SHEET 01**

JOB NUMBER

**192968**

DRAWING NUMBER

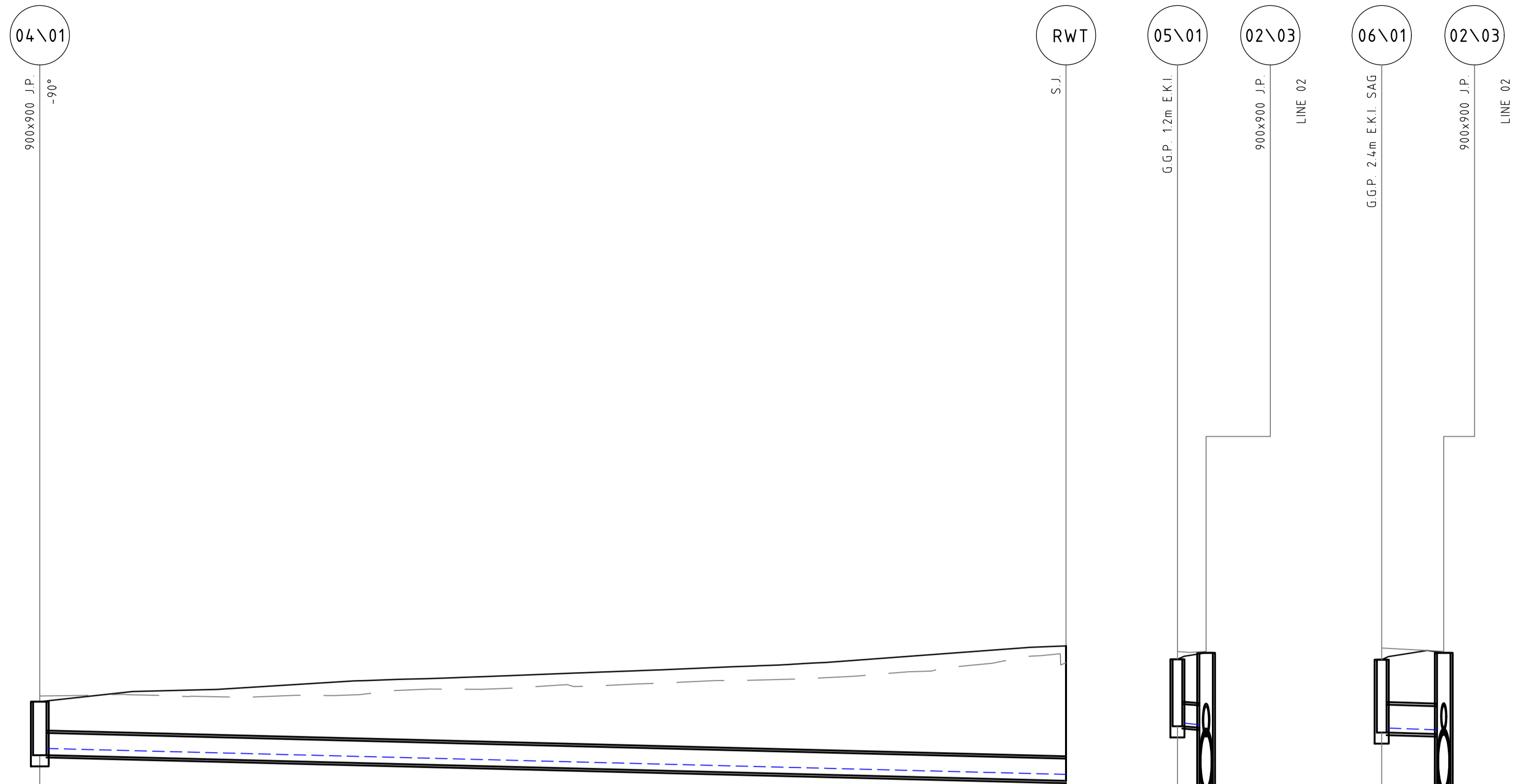
**DAC04.21**

REVISION

**04**

DRAWING SHEET SIZE = A1

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES JOB MANAGER: A.CARVALHAES VERIFIER:



PIPE CLASS	uPVC
PIPE GRADE (%)	0.5%
PIPE SIZE (mm)	300
MINIMUM COVER (m)	0.40
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.81
Q - PIPE FLOW (L/s)	Q=14

	0.000	89.016	26.550	26.201
DATUM RL			20.0	
H.G.L. 20%AEP			26.550	26.201
FINISHED SURFACE	27.181	27.930		
NATURAL SURFACE	27.406	27.705		
PIPE INVERT LEVEL	26.459	26.114		
DEPTH TO INVERT	0.721	1.816		
CO-ORDINATED SETOUT	E288541.444 N6262899.892	E2886603.875 N6262883.555		
CHAINAGE				

SCALE 1:250(H), 1:50(V) LINE 04

PIPE CLASS	RRJ2
PIPE GRADE (%)	10%
PIPE SIZE (mm)	300
MINIMUM COVER (m)	0.60
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.66
Q - PIPE FLOW (L/s)	Q=4

	0.000	1.931	26.891	26.869
DATUM RL			20.0	
H.G.L. 20%AEP			26.891	26.869
FINISHED SURFACE	27.750	27.837		
NATURAL SURFACE	27.854	27.857		
PIPE INVERT LEVEL	26.849	26.879		
DEPTH TO INVERT	0.902	1.008		
CO-ORDINATED SETOUT	E2886632.338 N6262879.624	E2886634.233 N6262879.254		
CHAINAGE				

SCALE 1:250(H), 1:50(V) LINE 05

PIPE CLASS	RRJ2
PIPE GRADE (%)	0.5%
PIPE SIZE (mm)	375
MINIMUM COVER (m)	0.60
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.59
Q - PIPE FLOW (L/s)	Q=7

	0.000	4.177	26.825	26.800
DATUM RL			20.0	
H.G.L. 20%AEP			26.825	26.800
FINISHED SURFACE	27.745	27.837		
NATURAL SURFACE	27.902	27.857		
PIPE INVERT LEVEL	26.745	26.744		
DEPTH TO INVERT	0.981	1.094		
CO-ORDINATED SETOUT	E2886638.239 N6262878.071	E2886634.233 N6262879.254		
CHAINAGE				

SCALE 1:250(H), 1:50(V) LINE 06

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR INFORMATION	AS		SN	08.01.21
02	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
03	ISSUED FOR INFORMATION	AS		SN	23.04.21
04	ISSUED FOR INFORMATION	AS		SN	21.05.21

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SCALE 1:50@A1  
SCALE 1:250@A1

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PROJECT

**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE  
STORMWATER LONGITUDINAL  
SECTIONS - SHEET 02**

JOB NUMBER

**192968**

DRAWING NUMBER

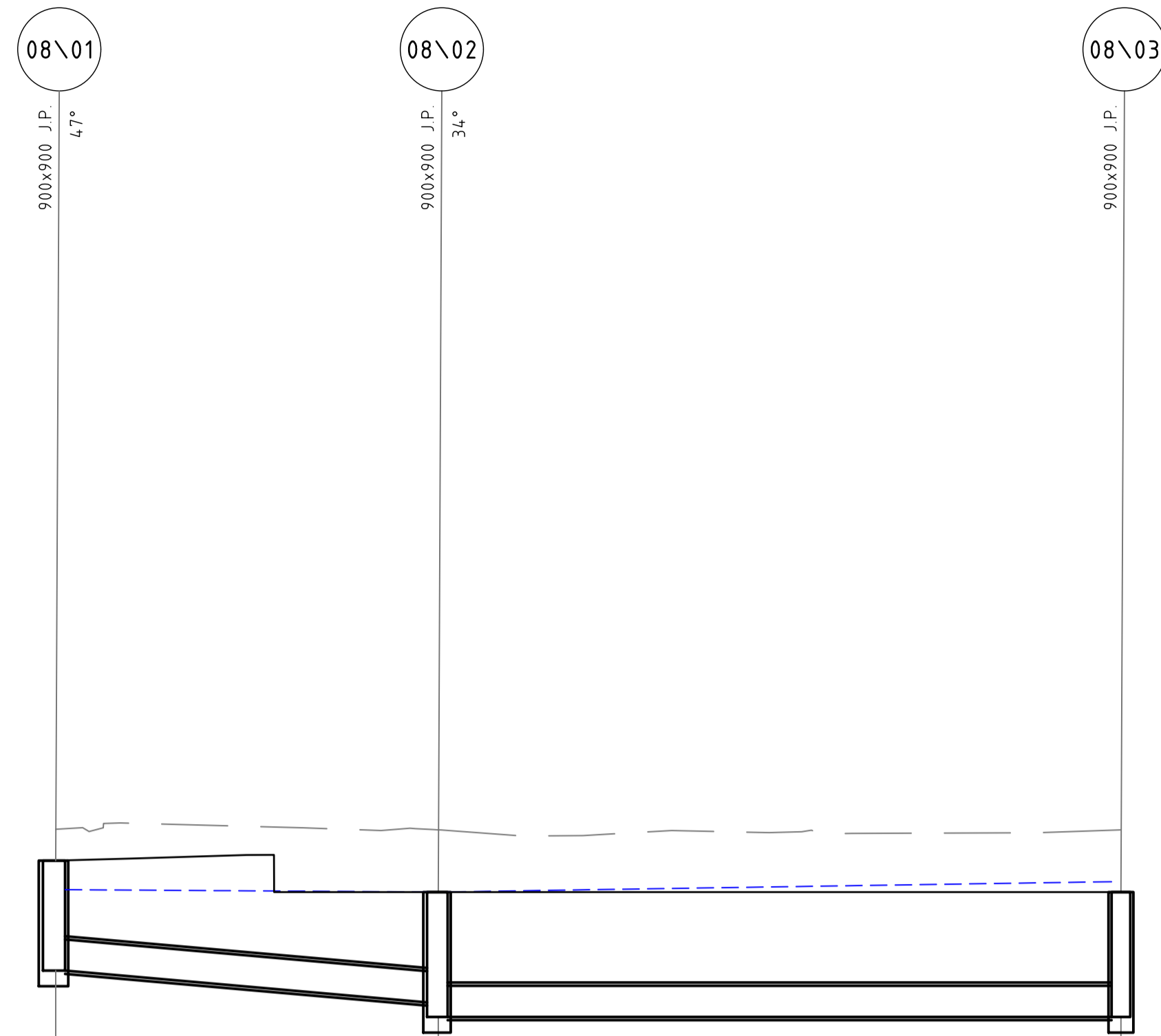
**DAC04.22**

REVISION

**04**

DRAWING SHEET SIZE = A1





PIPE CLASS	RRJ2	RRJ2
PIPE GRADE (%)	1.7%	-0.0%
PIPE SIZE (mm)	300	300
MINIMUM COVER (m)	0.60	0.87
Vf - FULL PIPE VELOCITY (m/s)	Vf=0.52	Vf=1.08
Q - PIPE FLOW (L/s)	Q=37	Q=-76

DATUM RL	19.0		
H.G.L. 20%AEP	27.131 27.073	27.052 27.052	27.150 27.150
FINISHED SURFACE	27.353	27.050	27.050
NATURAL SURFACE	27.653	27.648	27.648
PIPE INVERT LEVEL	26.358 26.395	25.990 25.850	25.850 25.850
DEPTH TO INVERT	0.995 1.058	1.060 1.200	1.200 1.200
CO-ORDINATED SETOUT	E2886553.013 N62862946.447	E2886570.263 N62862952.794	E2886602.162 N62862945.149
CHAINAGE	26.107	44.487	77.290

LINE 08

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES JOB MANAGER: A.CARVALHAES VERIFIER:

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
02	ISSUED FOR INFORMATION	AS		SN	23.04.21

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SCALE 1:50@A1

SCALE 1:250@A1

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PROJECT

**PENRITH CITY PARK**  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

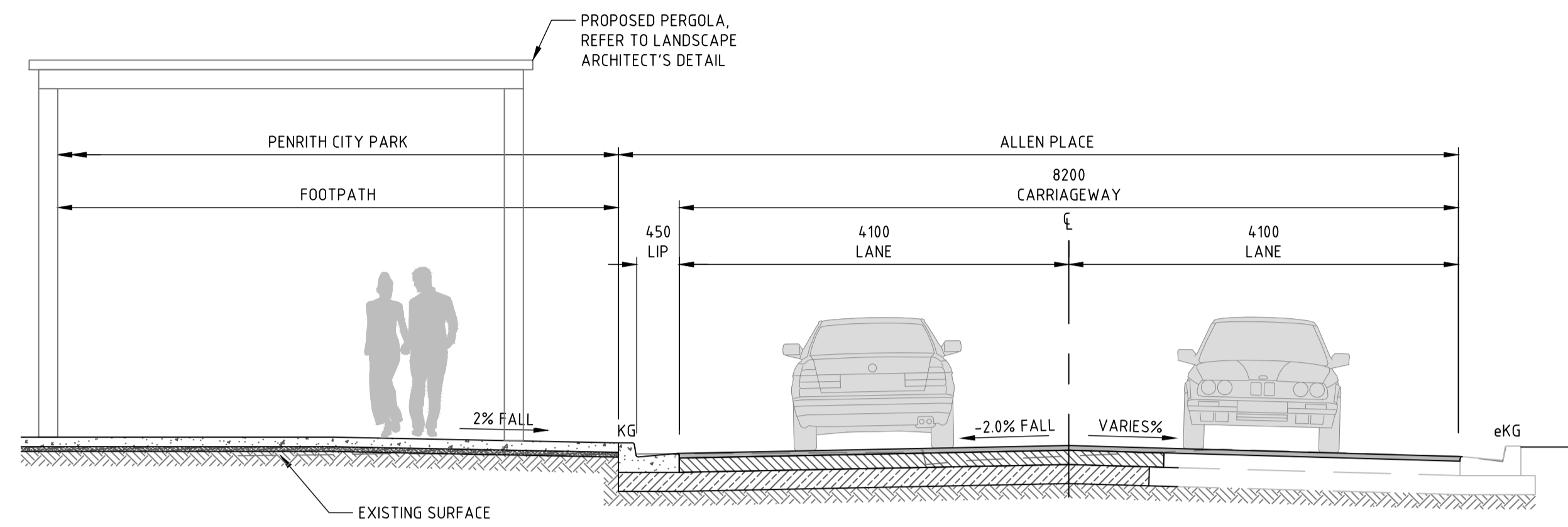
**STORMWATER LONGITUDINAL SECTIONS - SHEET 03**

JOB NUMBER

**192968**

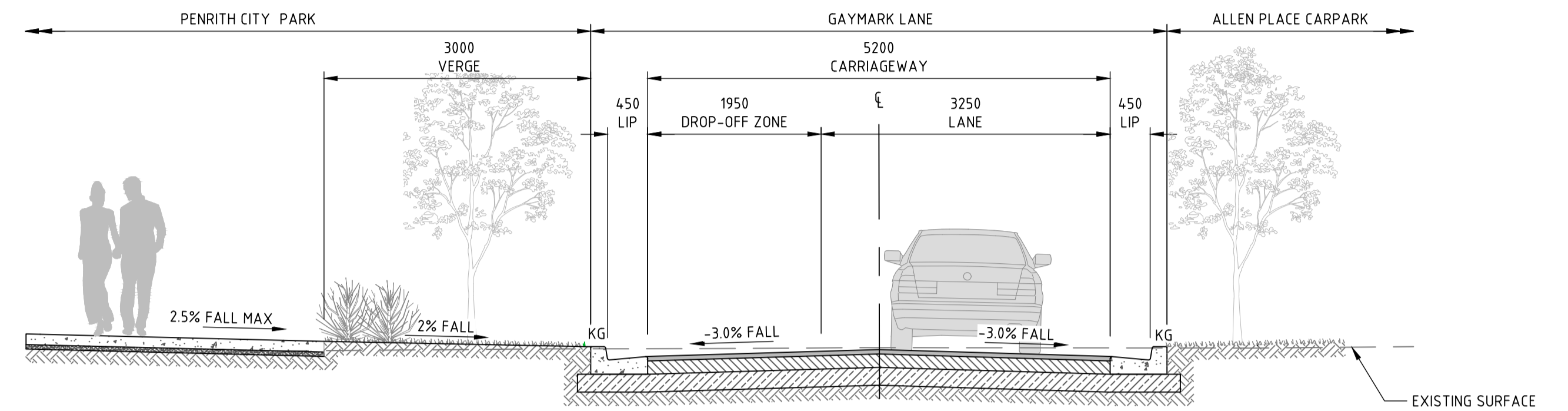
DRAWING NUMBER	REVISION
<b>DAC04.23</b>	<b>02</b>

DRAWING SHEET SIZE = A1



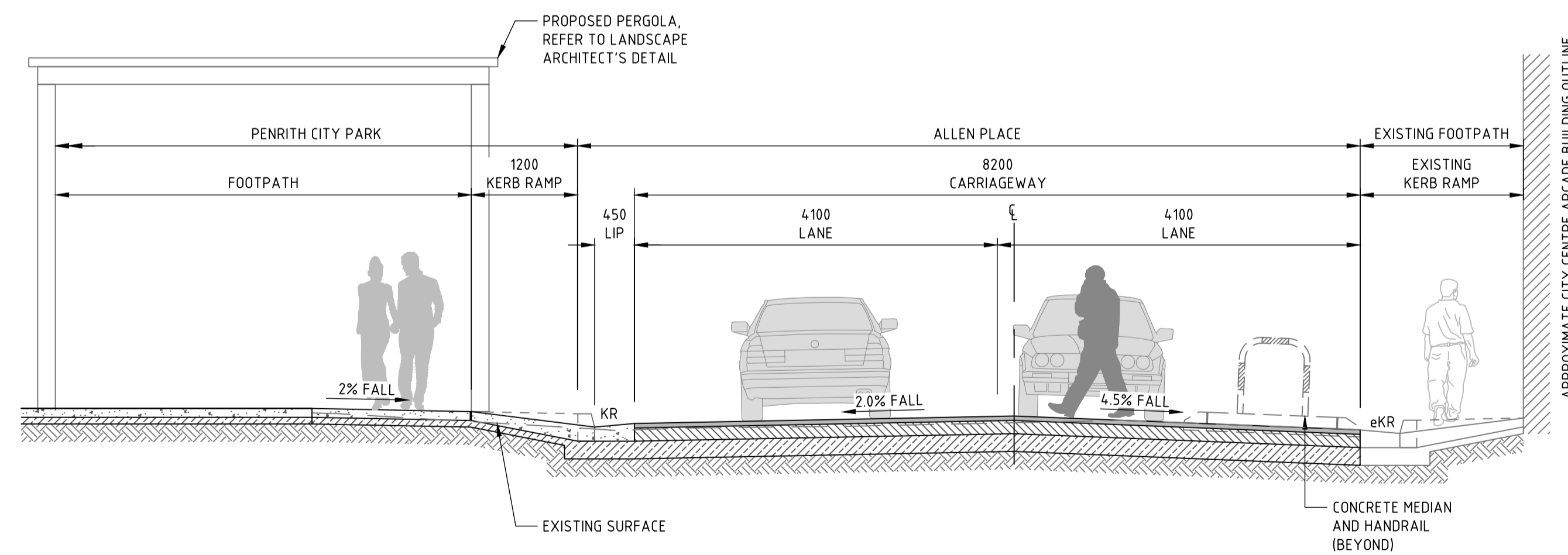
TYPICAL ROAD CROSS SECTION - MC01

SECTION **A**  
SCALE 1:50  
DAC04.01

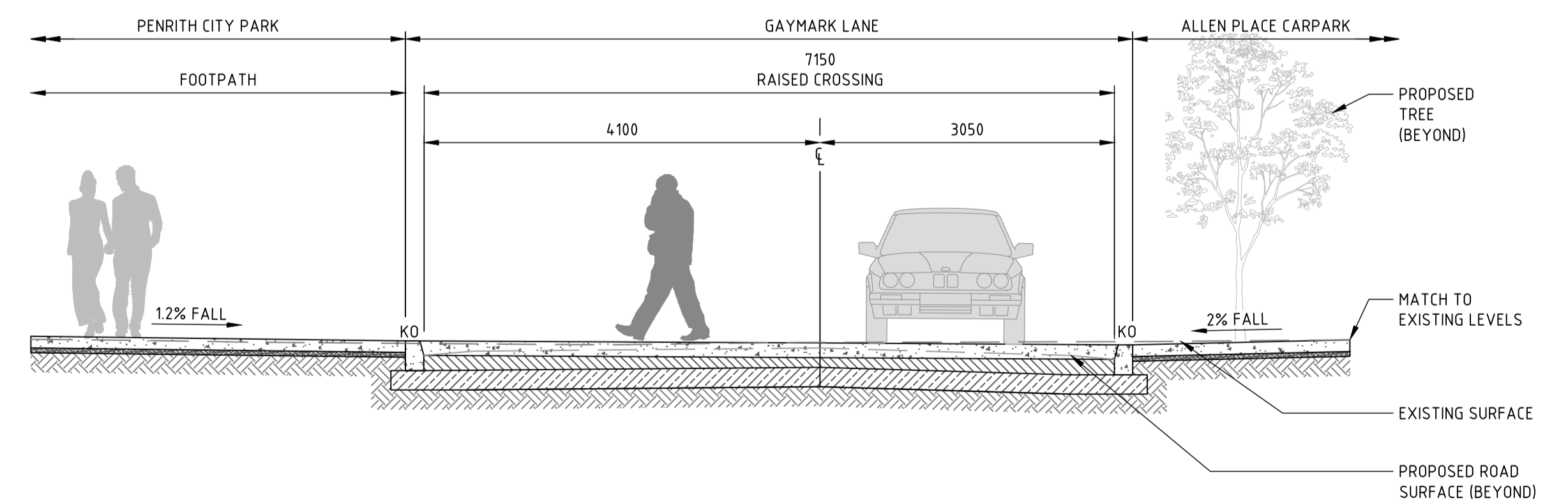


TYPICAL ROAD CROSS SECTION - MC02

SECTION **B**  
SCALE 1:50  
DAC04.01



SECTION **C**  
SCALE 1:50  
DAC04.01



SECTION **D**  
SCALE 1:50  
DAC04.01

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES VERIFIED: A.CARVALHAES

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR INFORMATION	AS		SN	08.01.21
02	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
03	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	18.01.21
04	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	20.01.21
05	ISSUED FOR INFORMATION	AS		SN	23.04.21

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NOT TO SCALE

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PROJECT  
**PENRITH CITY PARK**  
**114-146 HENRY STREET,**  
**42-50 STATION STREET AND**  
**ALLEN PLACE CARPARK**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE**  
**TYPICAL ROAD CROSS SECTIONS**

JOB NUMBER  
**192968**

DRAWING NUMBER  
**DAC05.00**

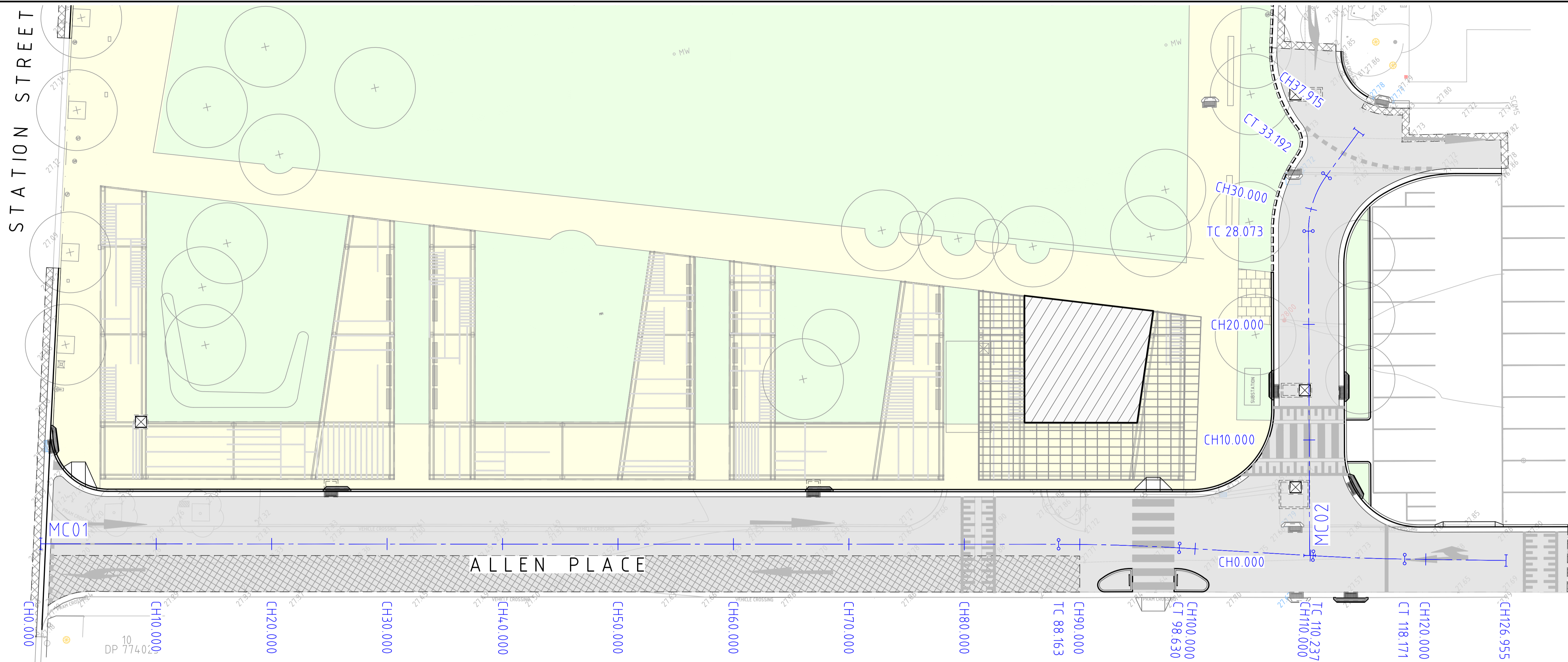
REVISION  
**05**

DRAWING SHEET SIZE = A1

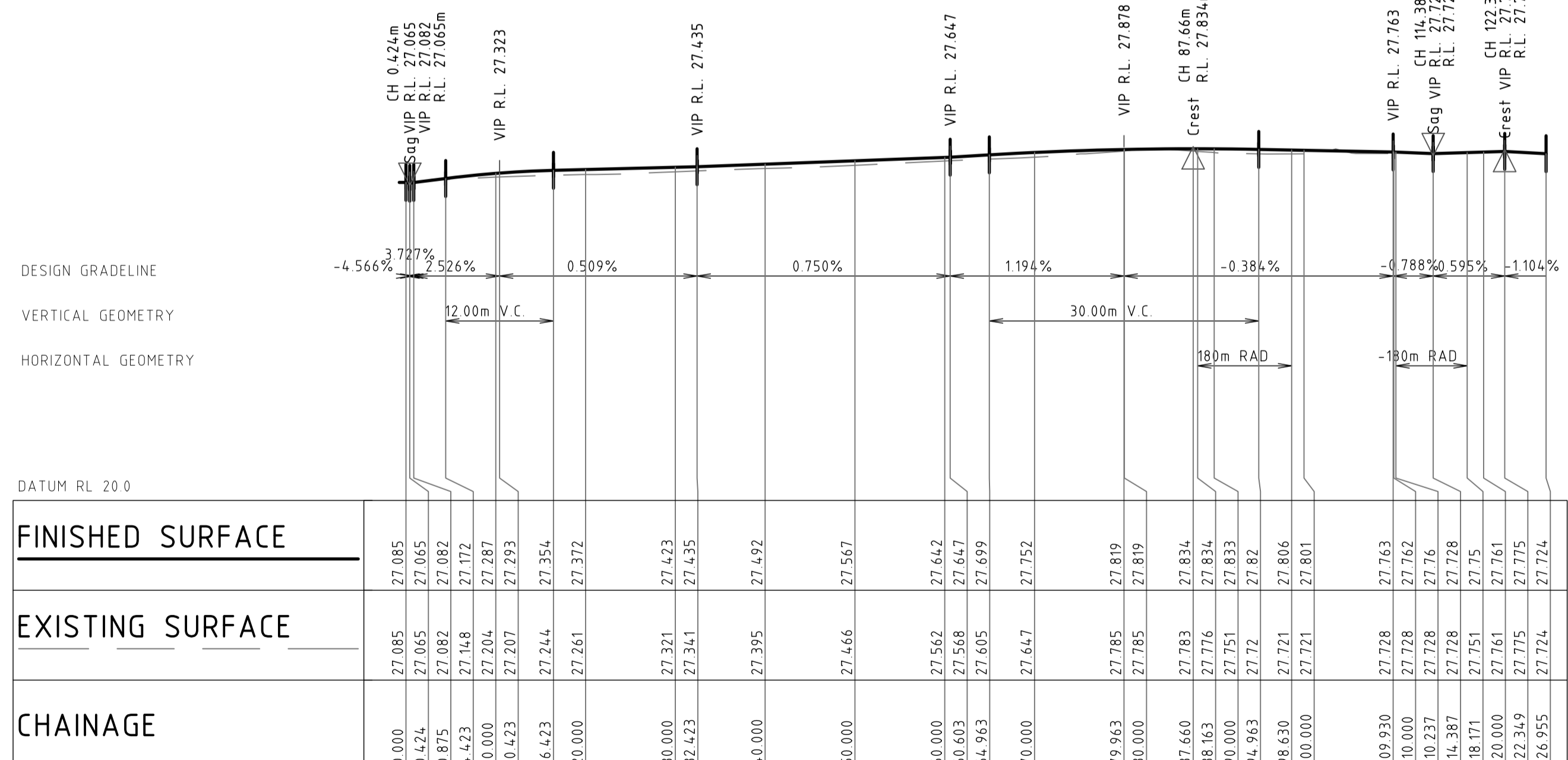
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STATION STREET

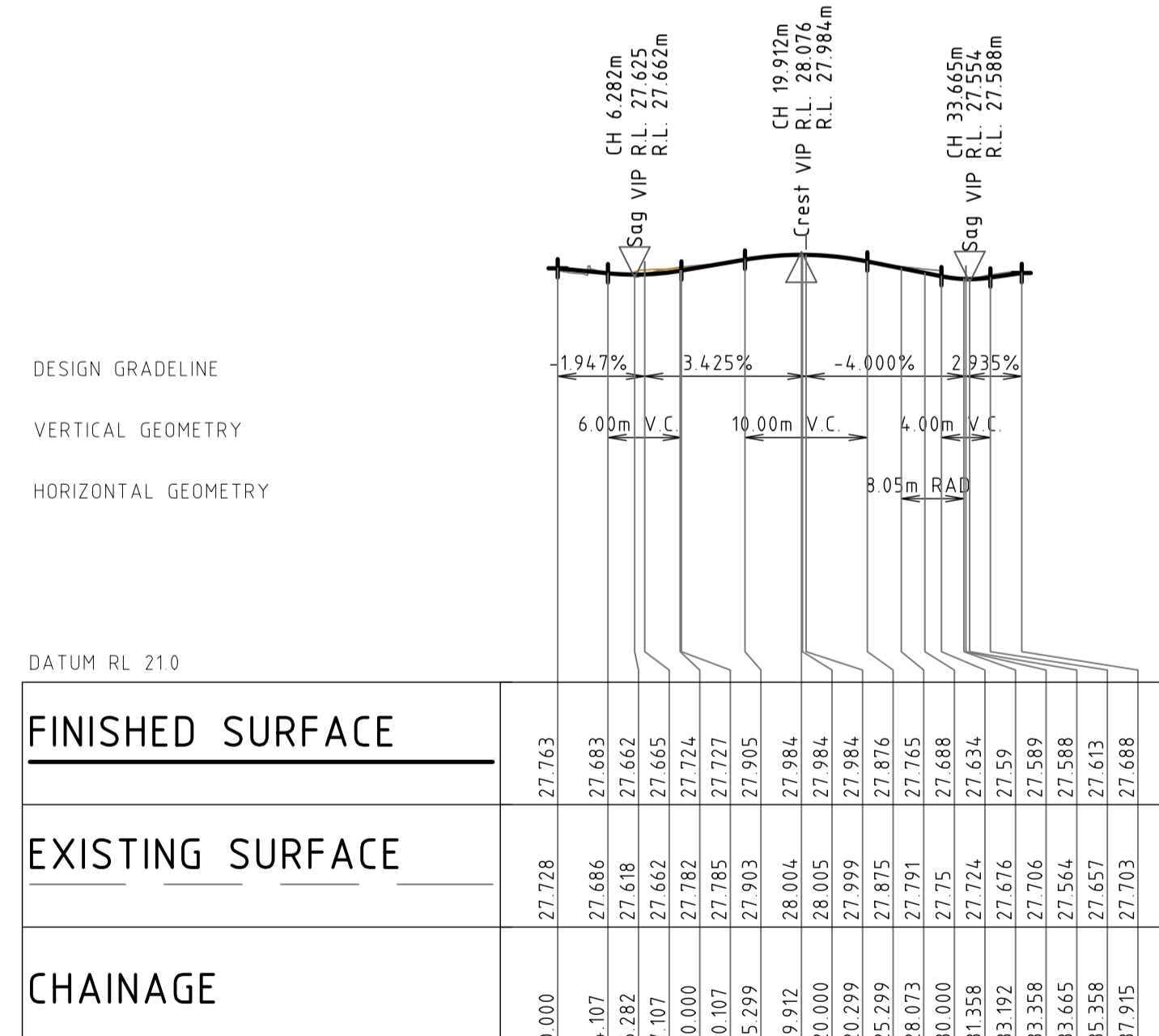
ALLEN PALCE



PLAN  
SCALE 1:200



LONGITUDINAL SECTION ALONG MC01  
HORIZONTAL SCALE 1:500@A1  
VERTICAL SCALE 1:100@A1



LONGITUDINAL SECTION ALONG MC02  
HORIZONTAL SCALE 1:500@A1  
VERTICAL SCALE 1:100@A1

LEGEND	
	EXISTING BOUNDARY LINE
	CONTROL LINE
	CHAINAGE
	TANGENT POINT

**NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	CP	AS	AC	25.09.20
02	ISSUED FOR INFORMATION	AS	SN	SN	08.01.21
03	ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	SN	13.01.21
04	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	SN	20.01.21
05	ISSUED FOR INFORMATION	AS	SN	SN	23.04.21

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**PENRITH CITY COUNCIL**

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PROJECT  
**PENRITH CITY PARK  
114-146 STATION STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE  
ROAD LONGITUDINAL SECTIONS**

JOB NUMBER  
**192968**

DRAWING NUMBER  
**DAC05.01**

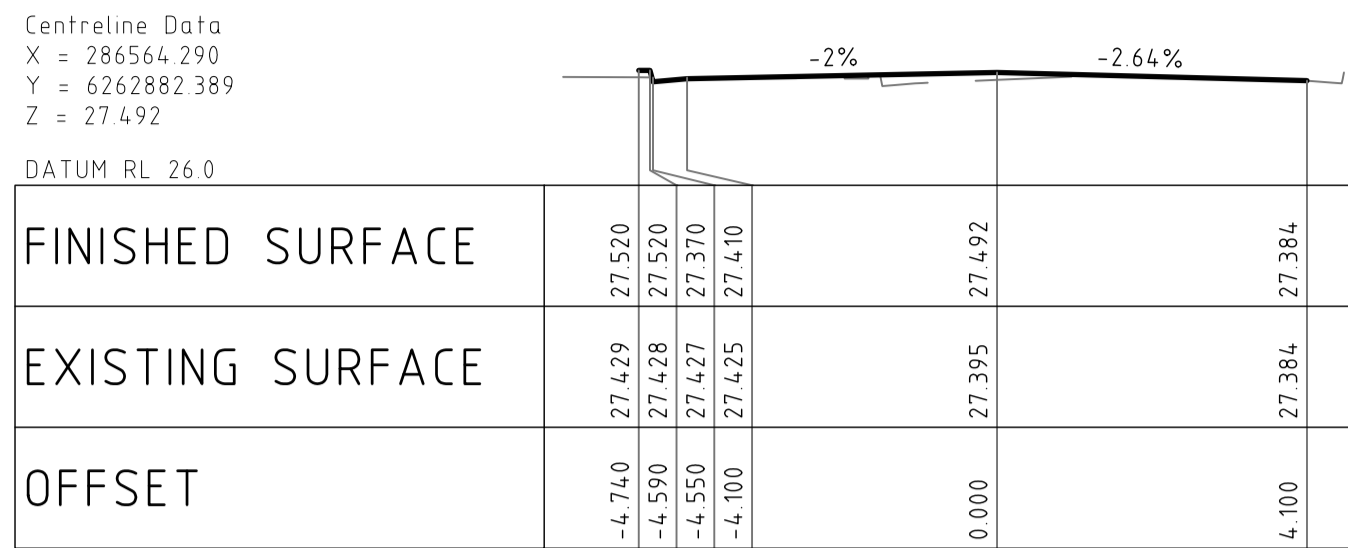
REVISION  
**05**

DRAWING SHEET SIZE = A1

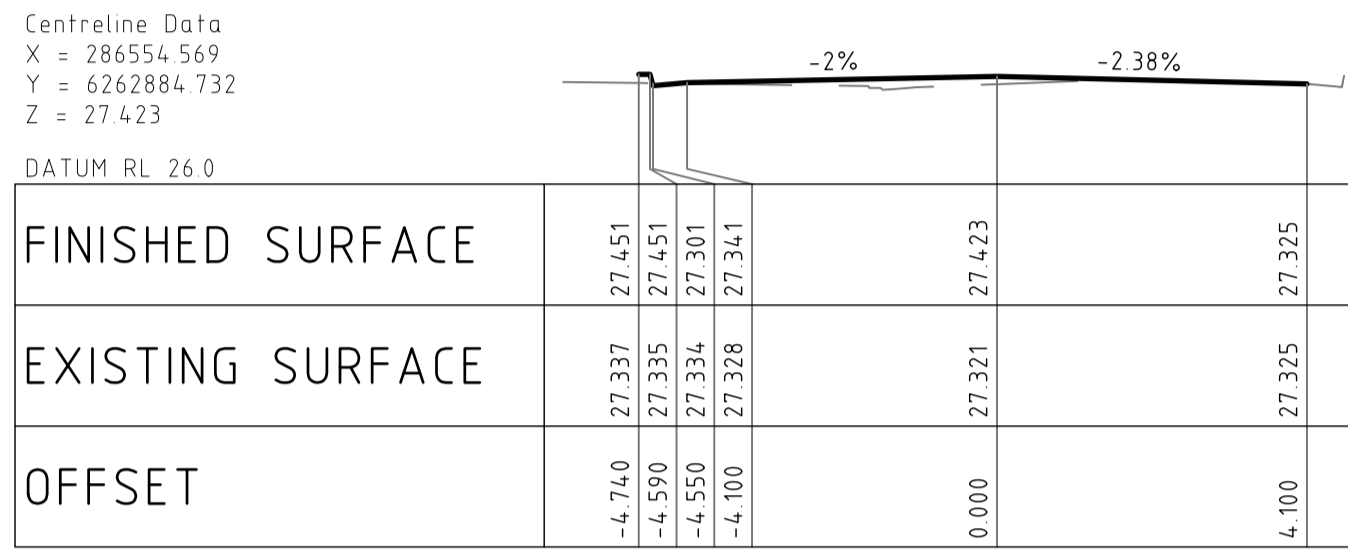
DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES VERIFIED: A.CARVALHAES

PENRITH CITY COUNCIL - CIVIL ENGINEERING PACKAGE - ROAD LONGITUDINAL SECTIONS - 192968 - 05

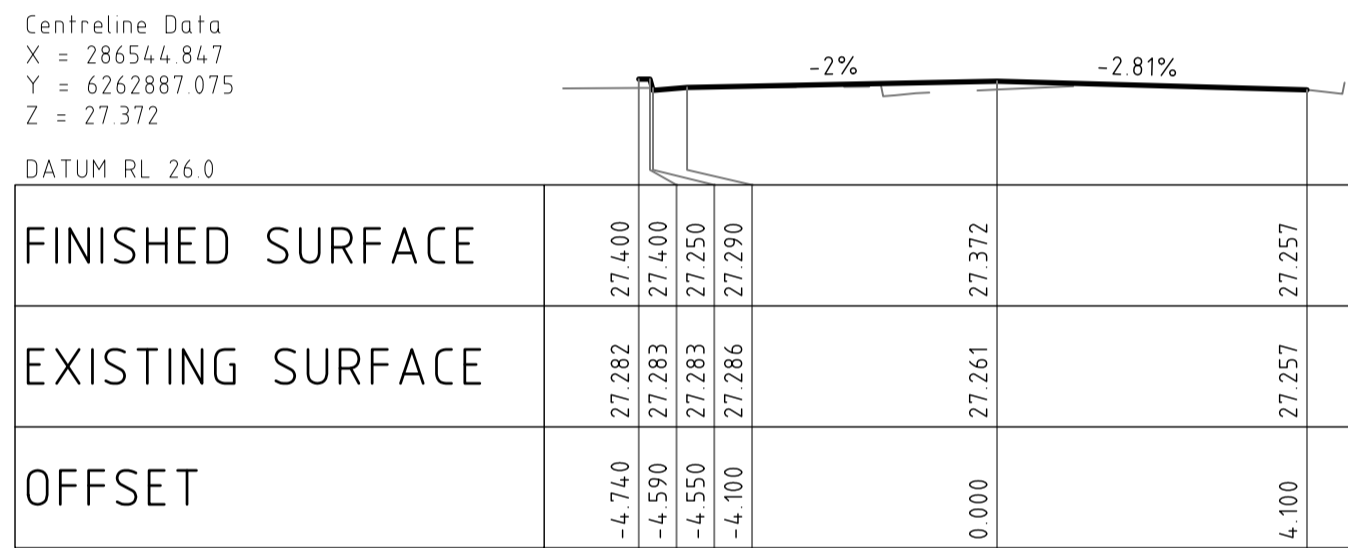
DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES VERIFIER: A. CARVALHAES JOB MANAGER: A. CARVALHAES



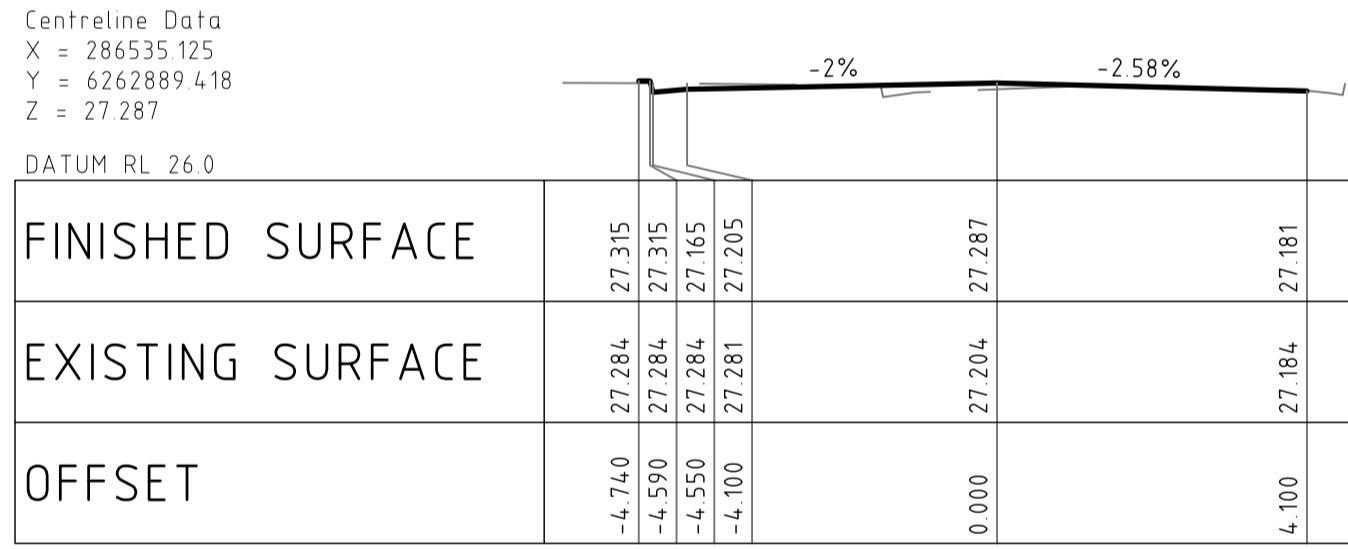
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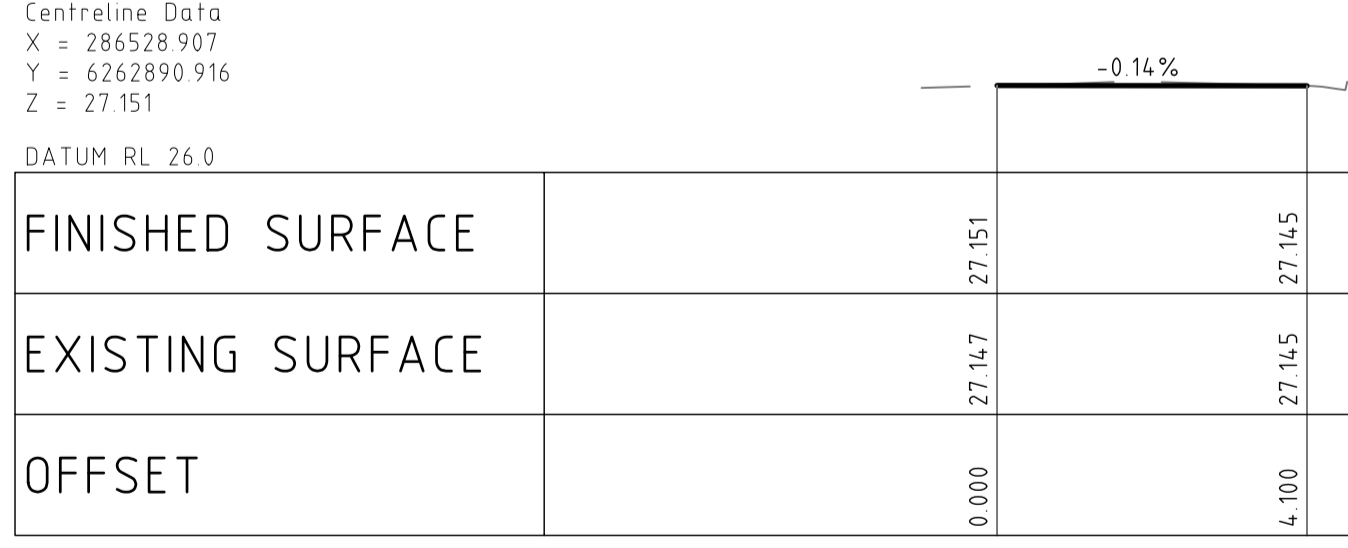
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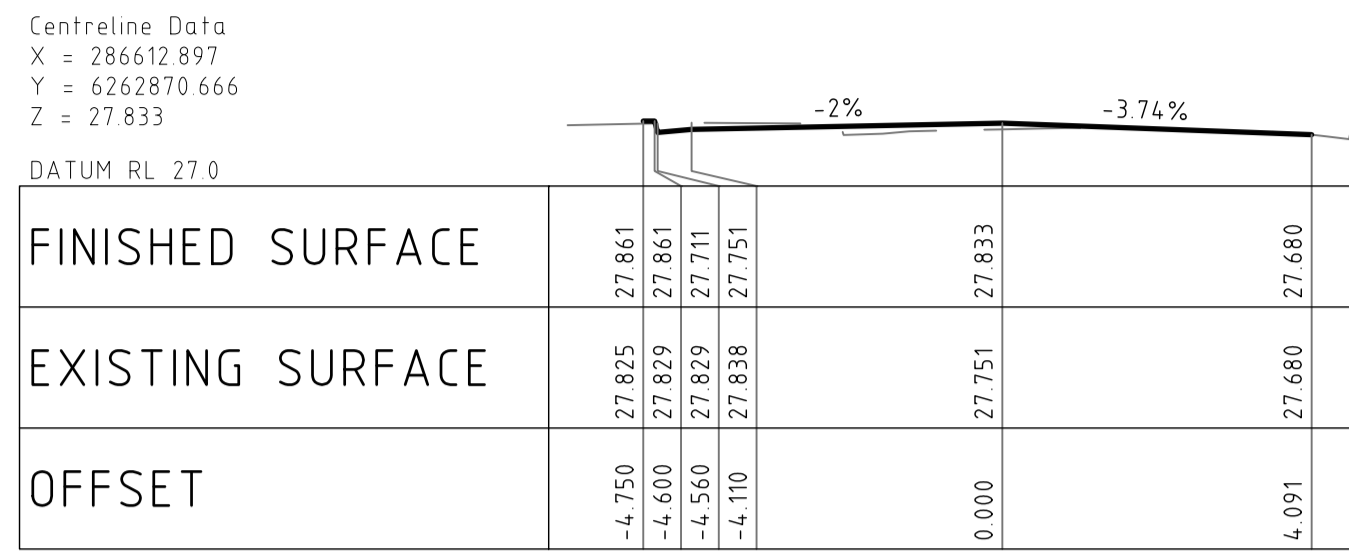
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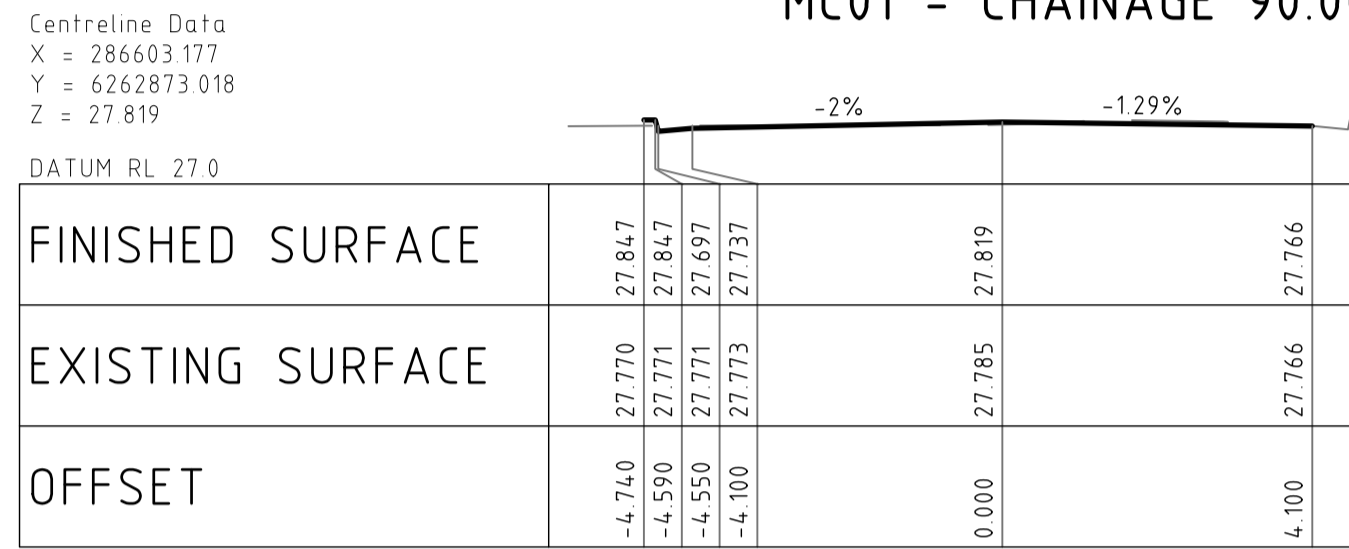
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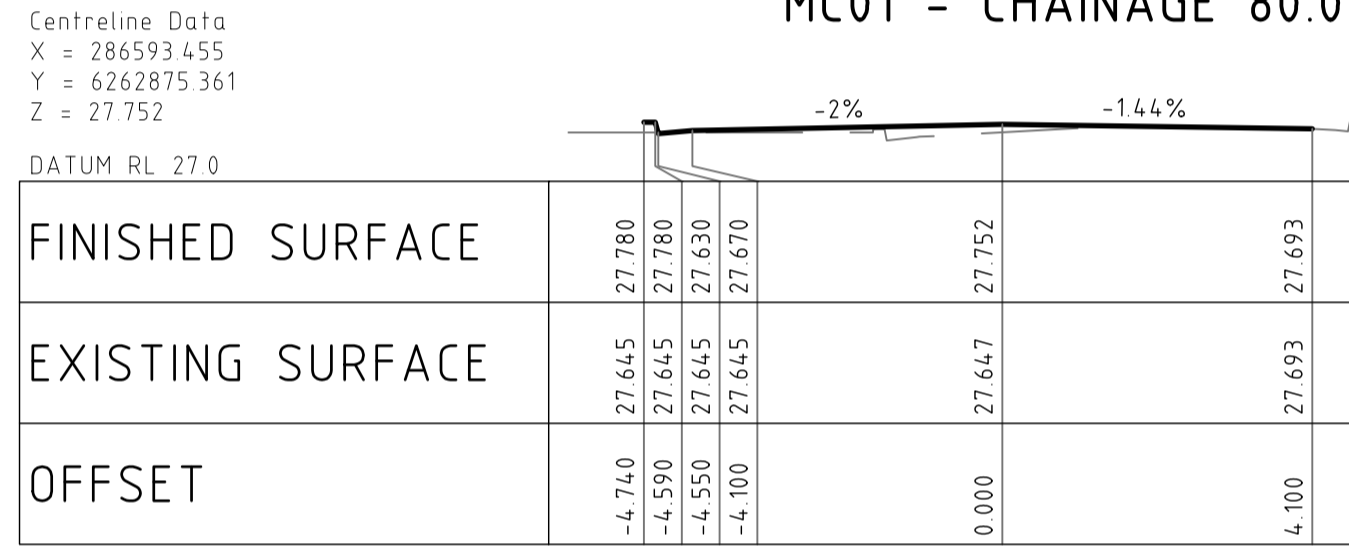
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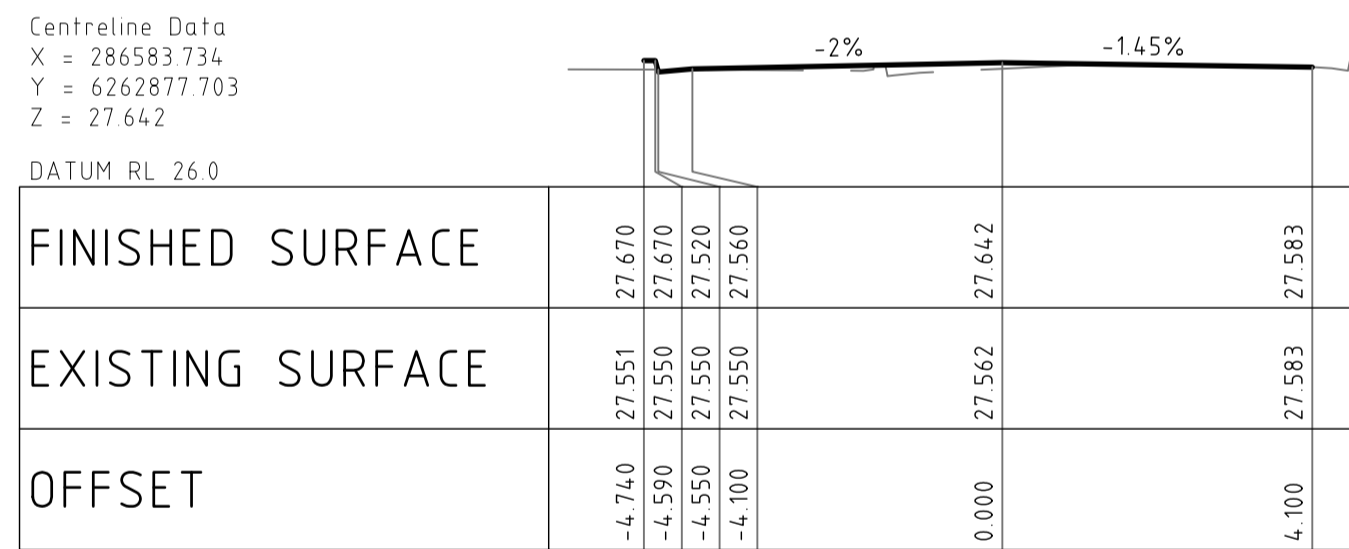
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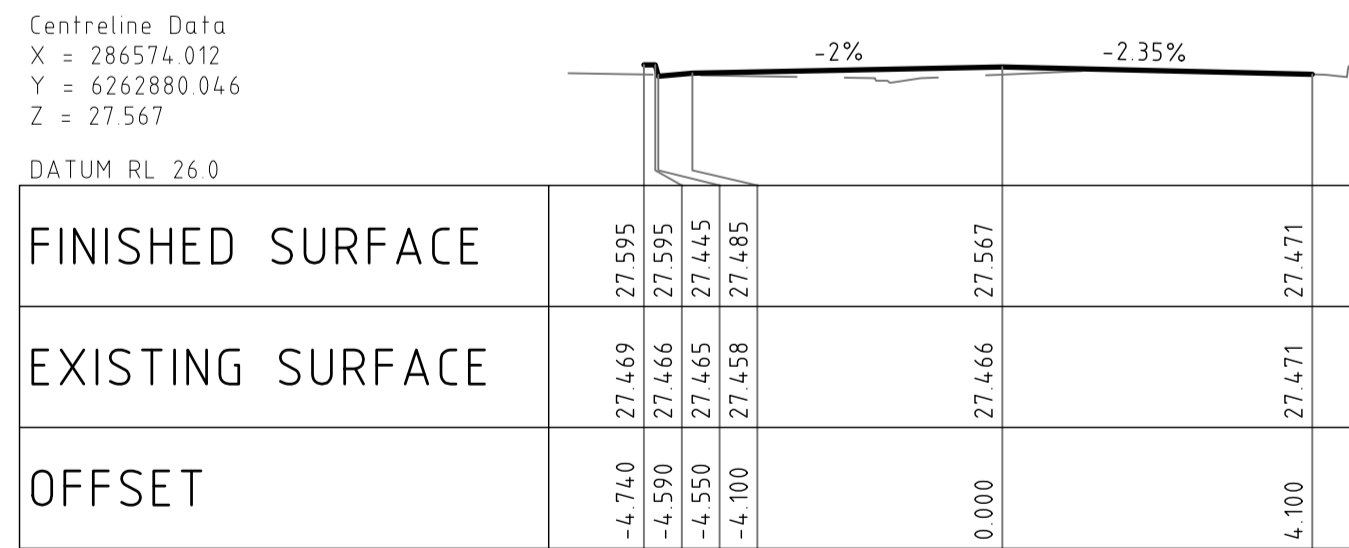
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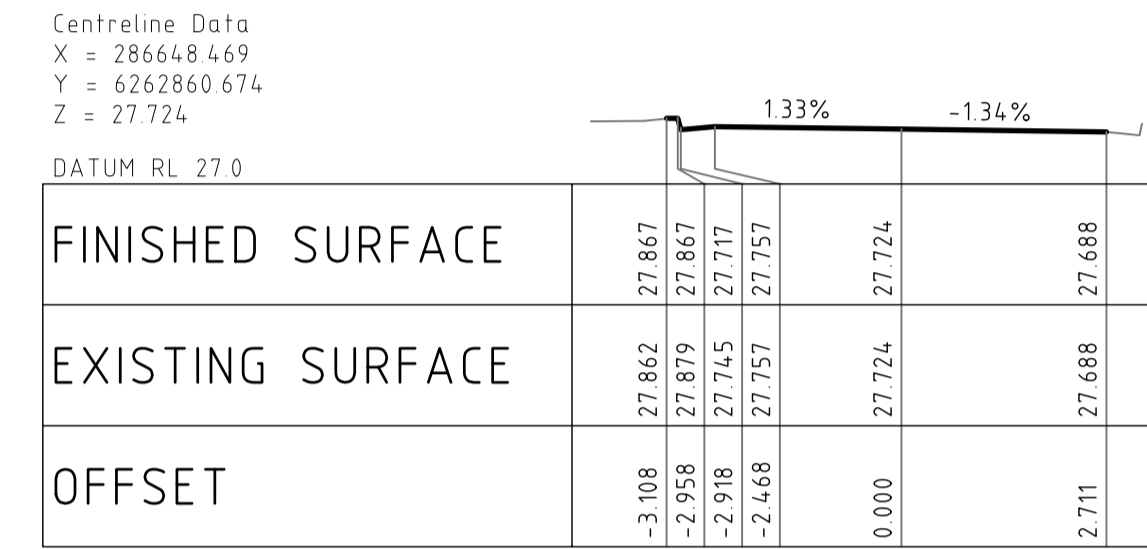
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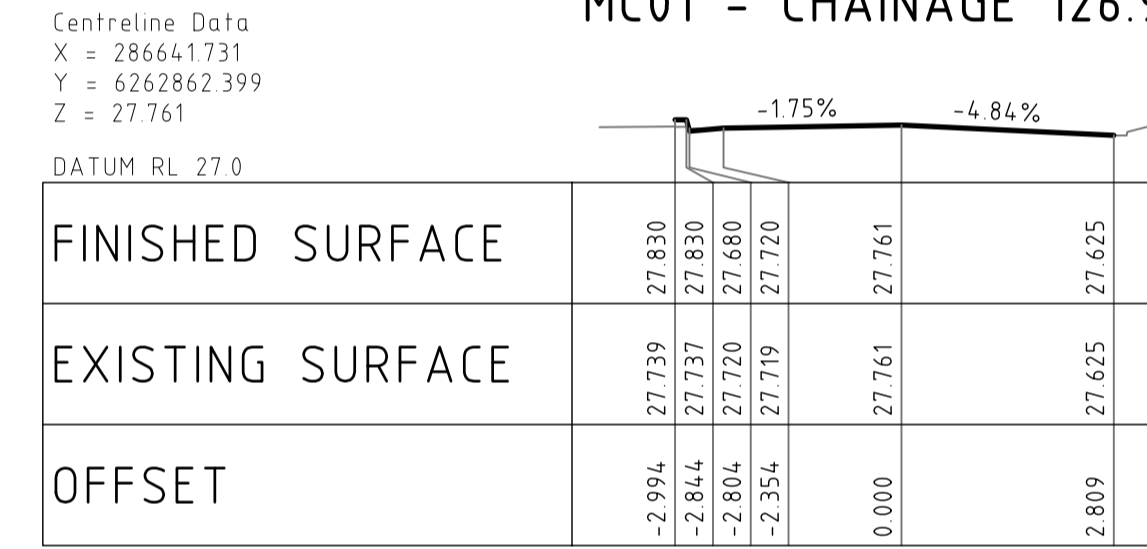
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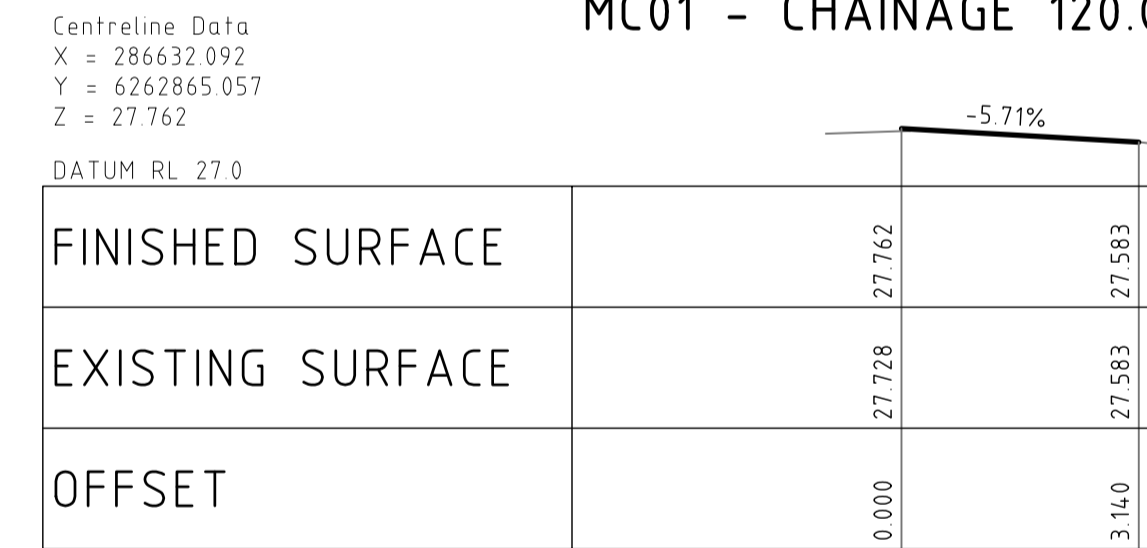
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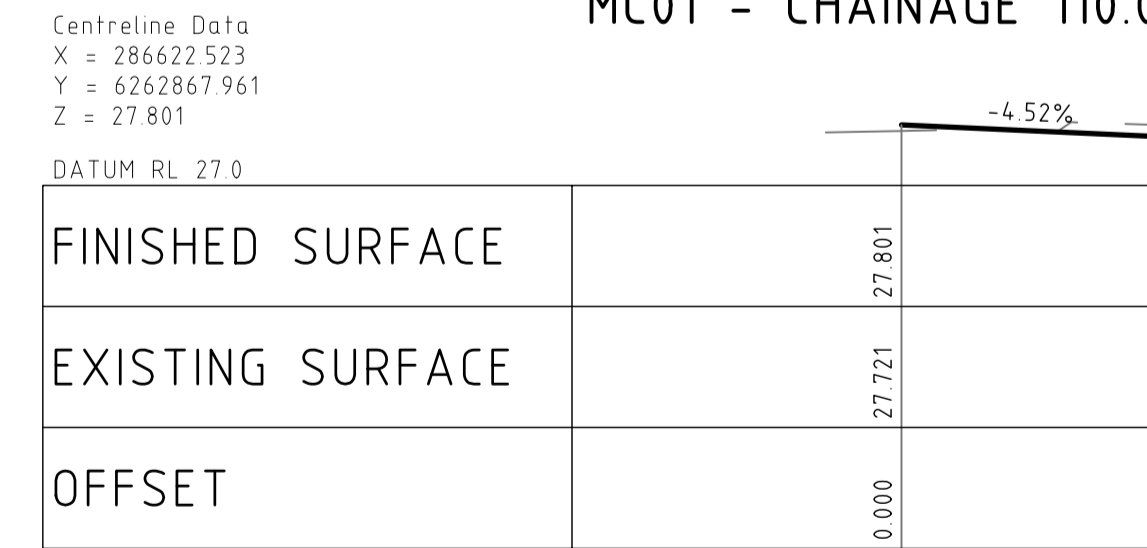
MC01 - CHAINAGE 126.955



MC01 - CHAINAGE 120.000



MC01 - CHAINAGE 110.000



MC01 - CHAINAGE 100.000

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR DRAFT DEVELOPMENT APPLICATION	CP		AC	25.09.20
02	ISSUED FOR INFORMATION	AS		SN	08.01.21
03	ISSUED FOR DEVELOPMENT APPLICATION	AS		SN	13.01.21
04	ISSUED FOR INFORMATION	AS		SN	23.04.21

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SCALE 1:100 @ A1

SCALE 1:100 @ A1

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PROJECT

**PENRITH CITY PARK**  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**  
ROAD CROSS SECTIONS - SHEET 01

JOB NUMBER

**192968**

DRAWING NUMBER

**DAC05.11**

REVISION

**04**

DRAWING SHEET SIZE = A1

REVISION

**04**

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES JOB MANAGER: A.CARVALHAES VERIFIER:

Centreline Data  
X = 286637.791  
Y = 6262889.403  
Z = 27.888

DATUM RL 27.0

FINISHED SURFACE	-3.240	27.884	27.920			
EXISTING SURFACE	-3.090	27.884	27.920			
OFFSET				0.000	27.885	27.888

MC02 - CHAINAGE 25.000

Centreline Data  
X = 286636.637  
Y = 6262884.538  
Z = 27.984

DATUM RL 27.0

FINISHED SURFACE	-3.240	27.992	28.016			
EXISTING SURFACE	-3.090	27.992	28.016			
OFFSET				0.000	28.005	27.984

MC02 - CHAINAGE 20.000

Centreline Data  
X = 286635.484  
Y = 6262879.673  
Z = 27.895

DATUM RL 27.0

FINISHED SURFACE	-3.240	27.882	27.927			
EXISTING SURFACE	-3.090	27.880	27.927			
OFFSET				0.000	27.893	27.895

MC02 - CHAINAGE 15.000

Centreline Data  
X = 286634.331  
Y = 6262874.807  
Z = 27.724

DATUM RL 27.0

FINISHED SURFACE				0.000	27.782	27.724
EXISTING SURFACE						
OFFSET				2.600	27.788	27.646

MC02 - CHAINAGE 10.000

Centreline Data  
X = 286634.086  
Y = 6262873.772  
Z = 27.693

DATUM RL 27.0

FINISHED SURFACE				0.000	27.749	27.693
EXISTING SURFACE						
OFFSET				2.600	27.755	27.615

MC02 - CHAINAGE 8.936

Centreline Data  
X = 286641.133  
Y = 6262894.682  
Z = 27.590

DATUM RL 26.0

FINISHED SURFACE	-3.240	27.649	27.622			
EXISTING SURFACE	-3.090	27.645	27.622			
OFFSET				0.000	27.676	27.590

MC02 - CHAINAGE 33.192

Centreline Data  
X = 286639.163  
Y = 6262894.197  
Z = 27.688

DATUM RL 27.0

FINISHED SURFACE	-3.240	27.745	27.720			
EXISTING SURFACE	-3.090	27.745	27.720			
OFFSET				0.000	27.750	27.688

MC02 - CHAINAGE 30.000

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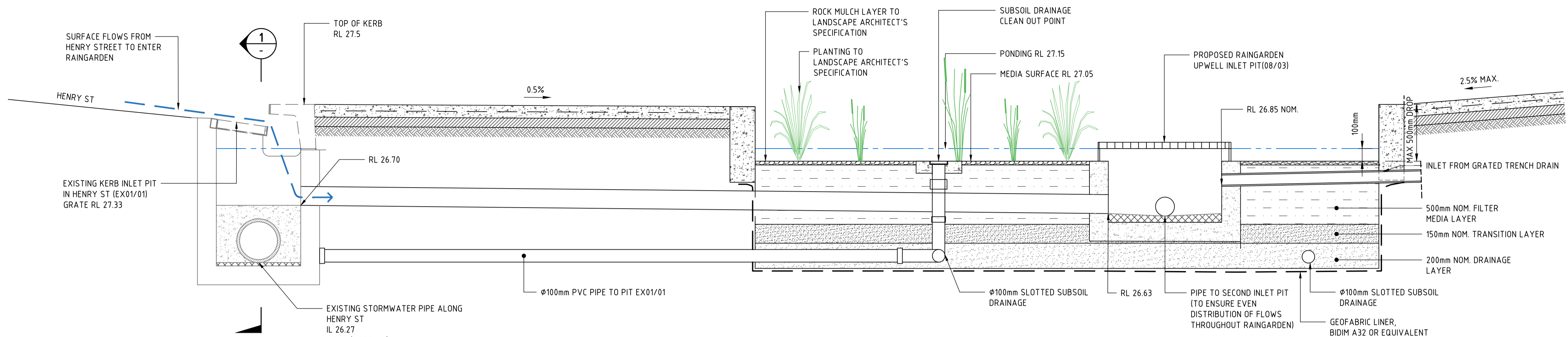
PROJECT  
**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE  
ROAD CROSS SECTIONS - SHEET 02**

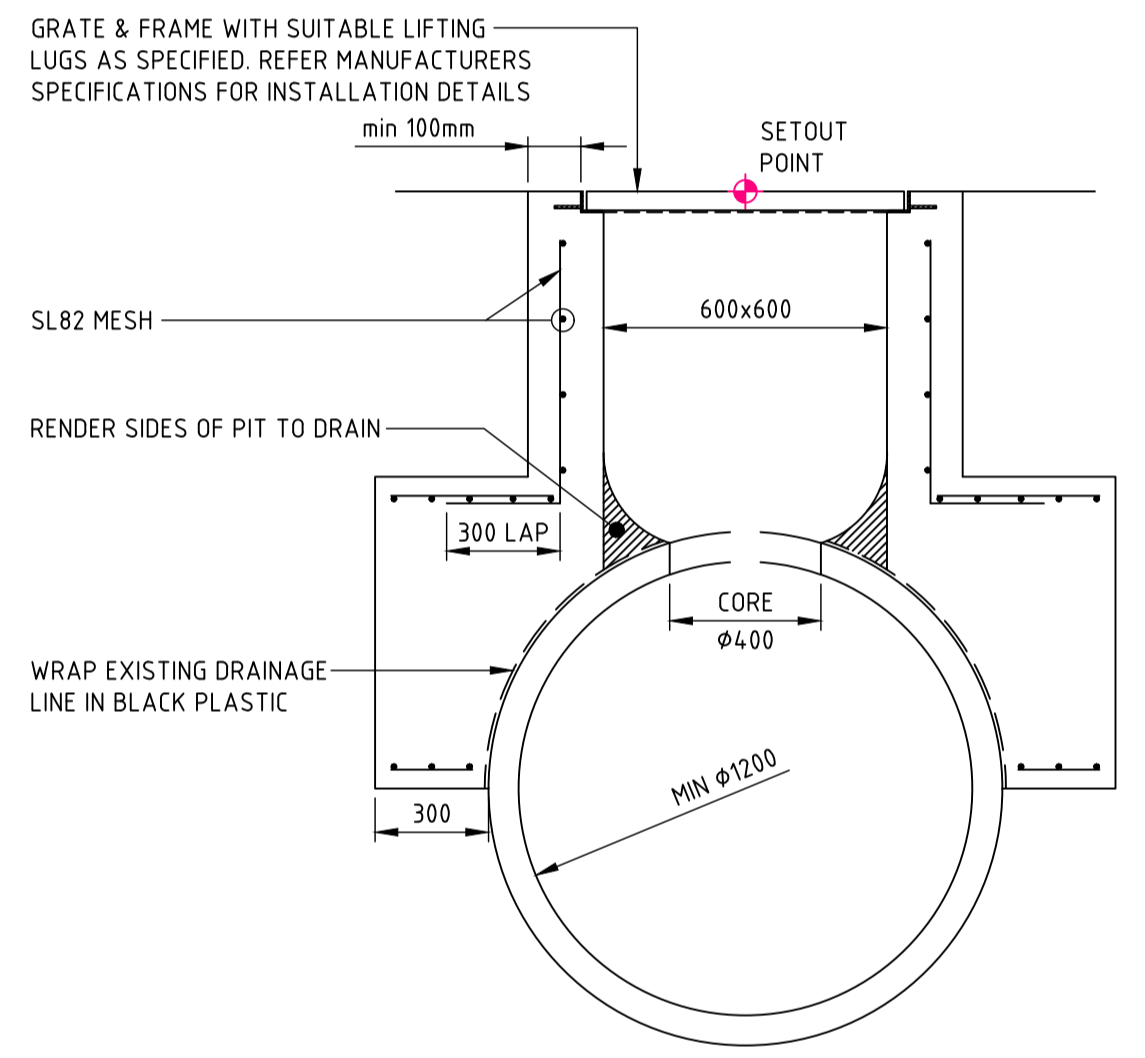
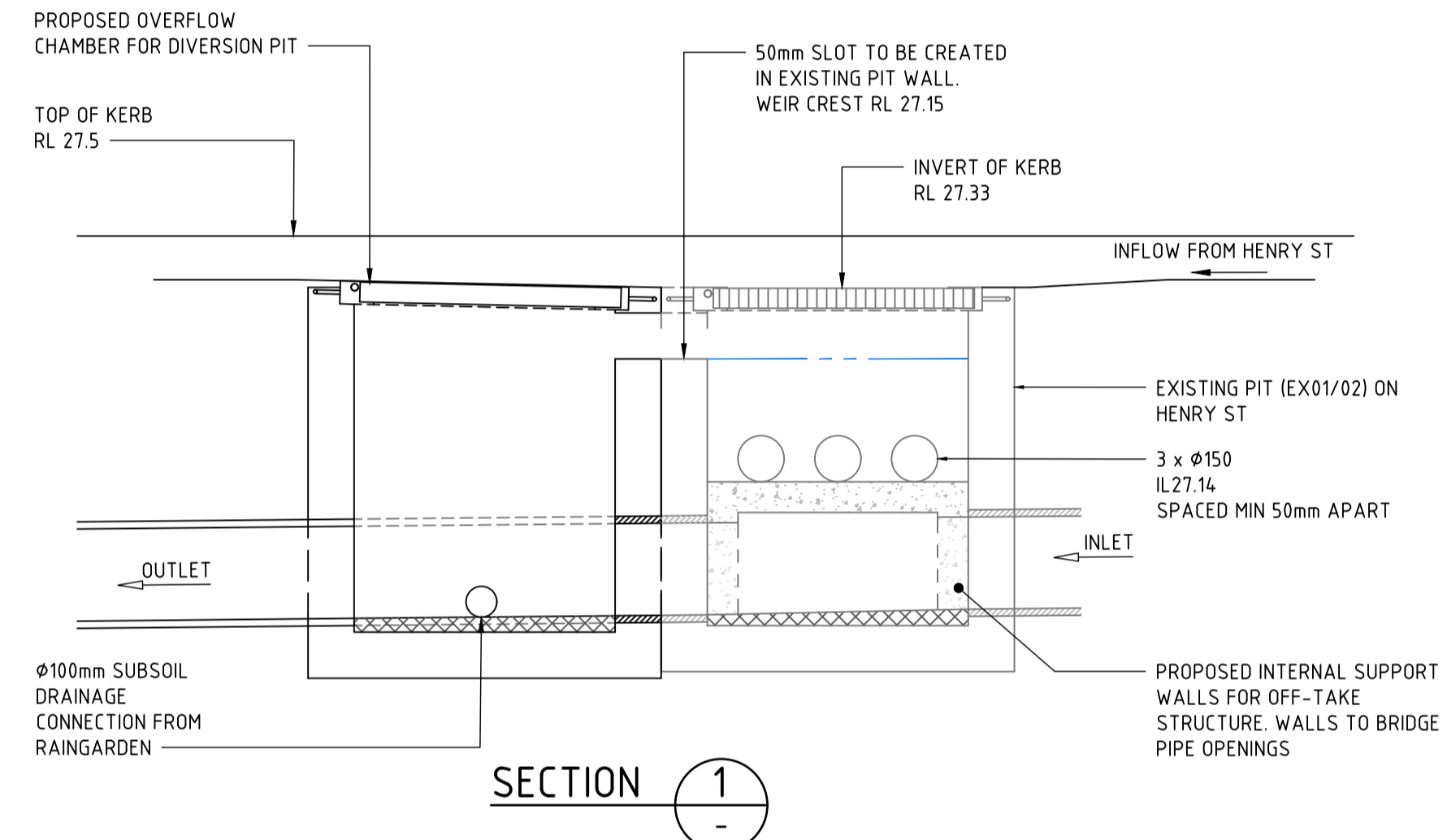
JOB NUMBER  
**192968**

DRAWING NUMBER	REVISION
<b>DAC05.12</b>	<b>04</b>

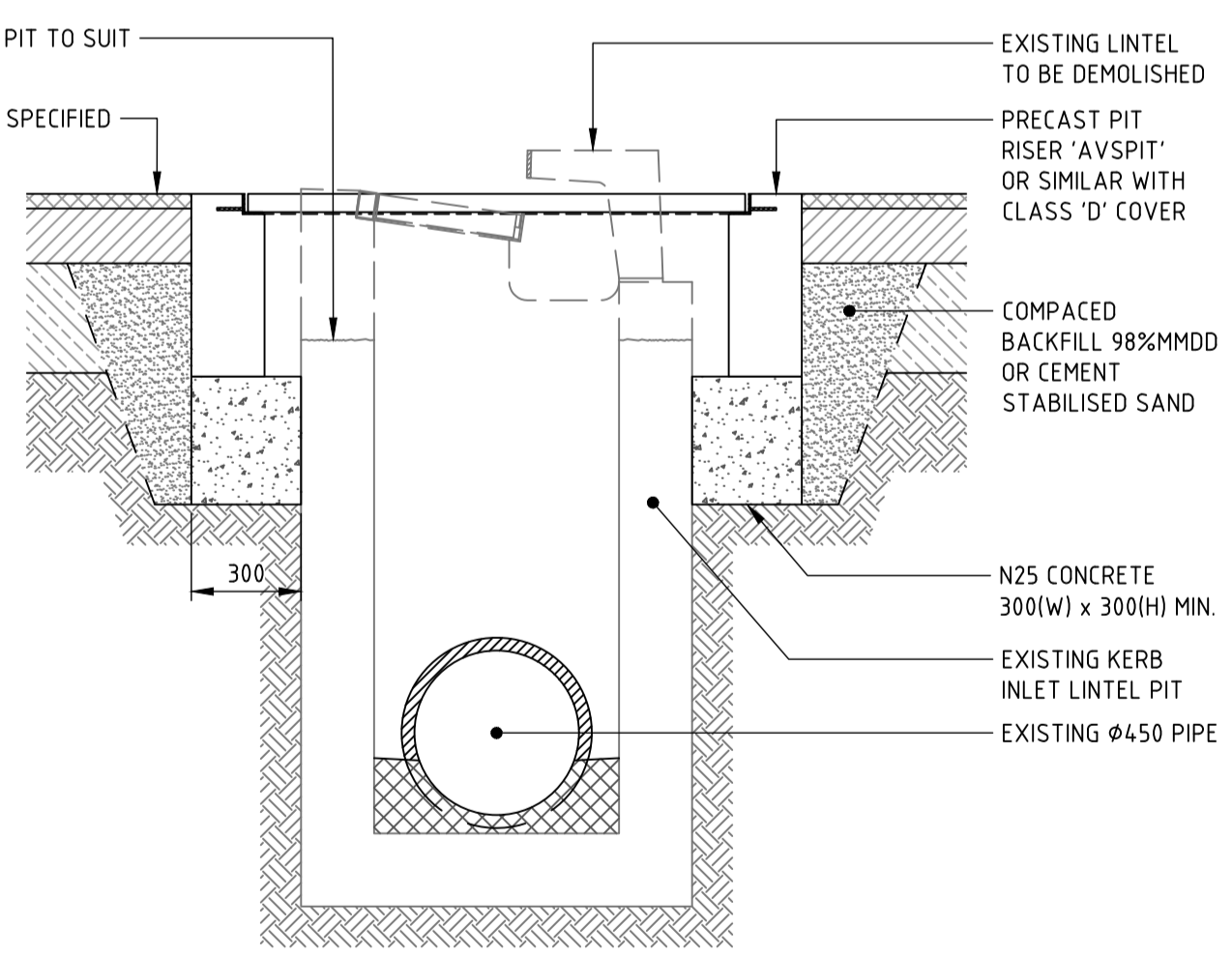
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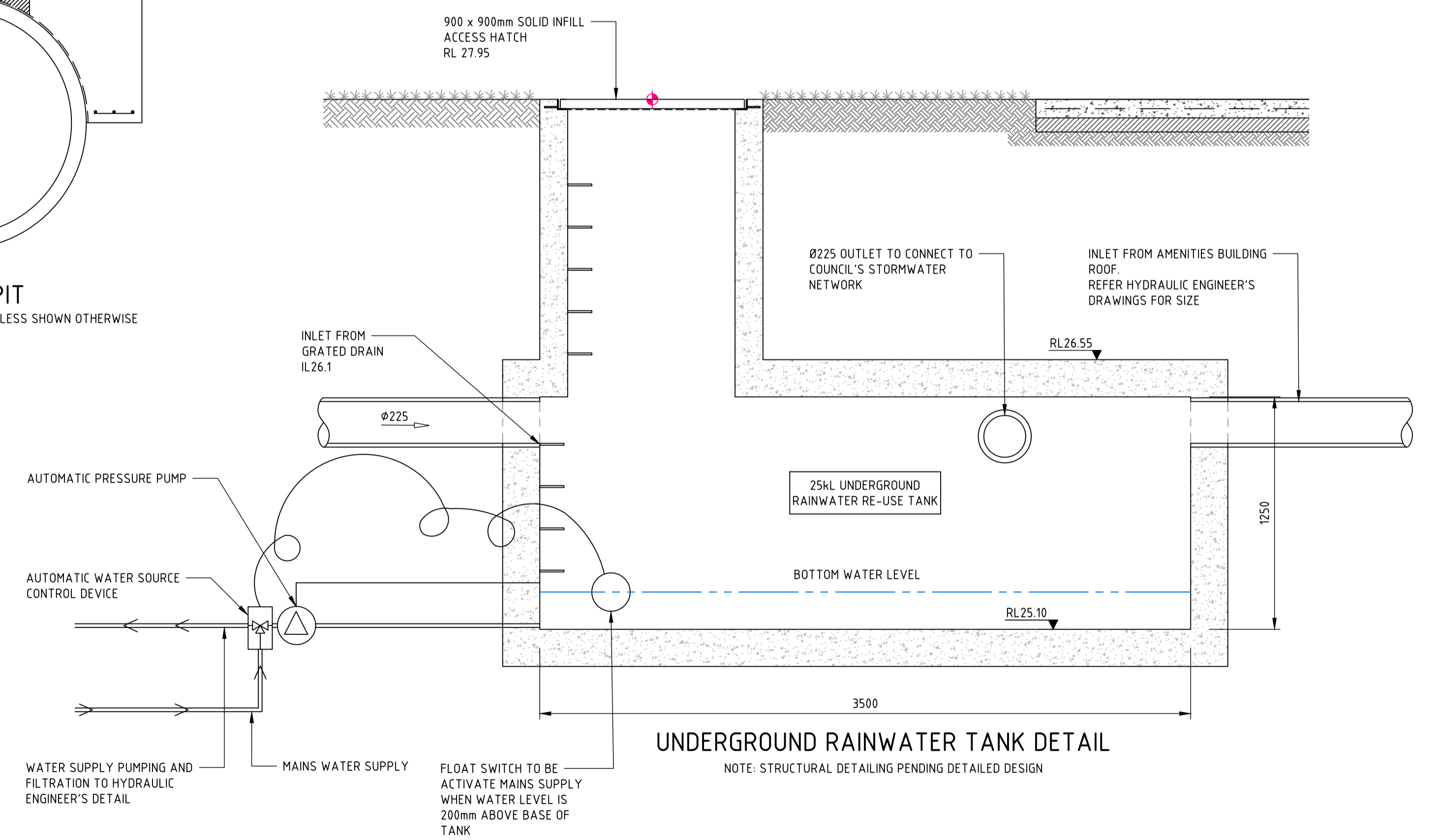
TYPICAL RAINGARDEN DETAIL,  
SHOWING STREET DRAINAGE DIVERSION  
SCALE 1:20



SADDLE PIT  
PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE



LINTEL PIT CONVERSION TO SOLID COVER DETAIL



UNDERGROUND RAINWATER TANK DETAIL  
NOTE: STRUCTURAL DETAILING PENDING DETAILED DESIGN

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01	ISSUED FOR INFORMATION	AS	SN	08.01.21		
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03	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	18.01.21		
04	ISSUED FOR INFORMATION	AS	SN	23.04.21		
05	ISSUED FOR INFORMATION	AS	SN	18.05.21		
06	ISSUED FOR INFORMATION	AS	SN	21.05.21		

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PROJECT
   
**PENRITH CITY PARK**
  
**114-146 HENRY STREET,**
  
**42-50 STATION STREET AND**
  
**ALLEN PLACE CARPARK**

DRAWING TITLE
   
**CIVIL ENGINEERING PACKAGE**
  
**STORMWATER DETAILS**

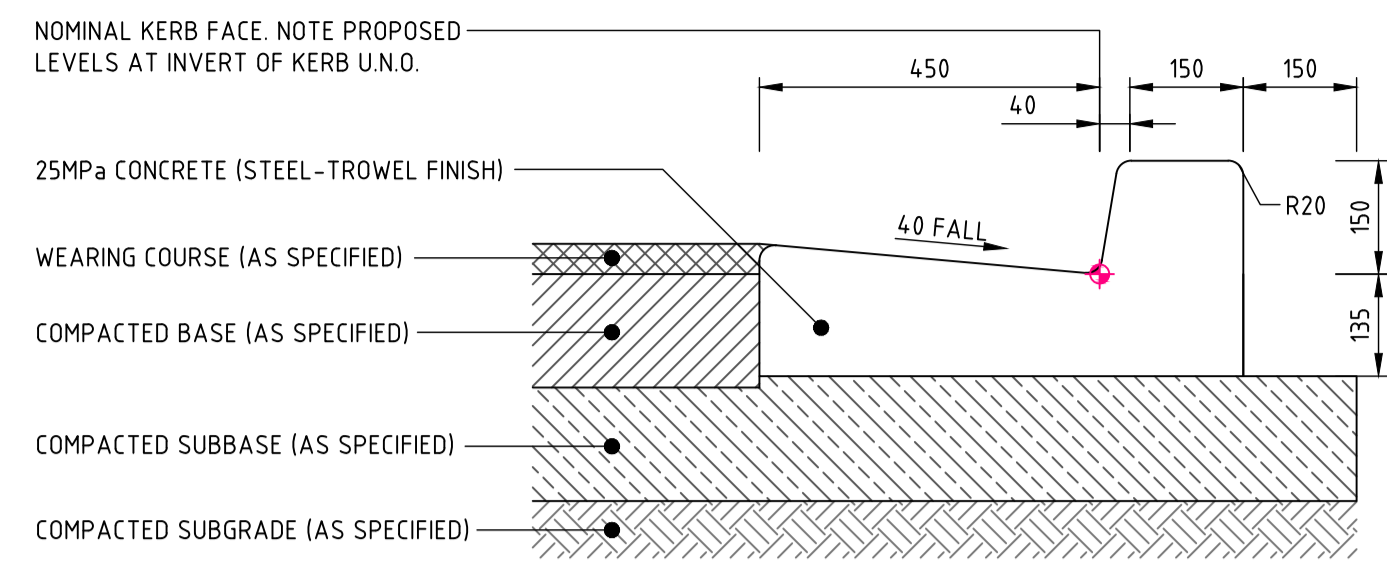
JOB NUMBER
   
**192968**

DRAWING NUMBER	REVISION
<b>DAC06.01</b>	<b>06</b>

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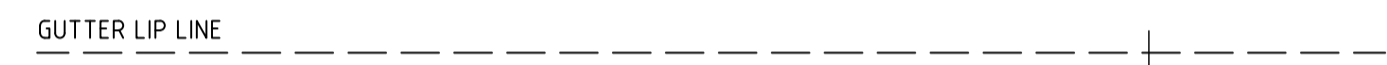
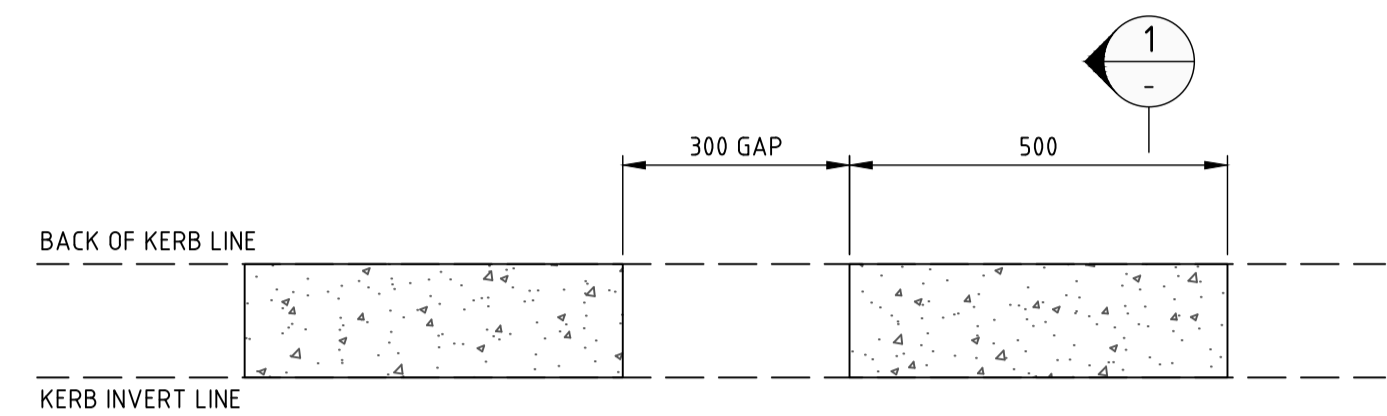
DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES VERIFIED: A. CARVALHAES JOB MANAGER: A. CARVALHAES

PENRITH CITY COUNCIL - CIVIL ENGINEERING PACKAGE - STORMWATER DETAILS - CIVIL ENGINEERING PACKAGE - STORMWATER DETAILS



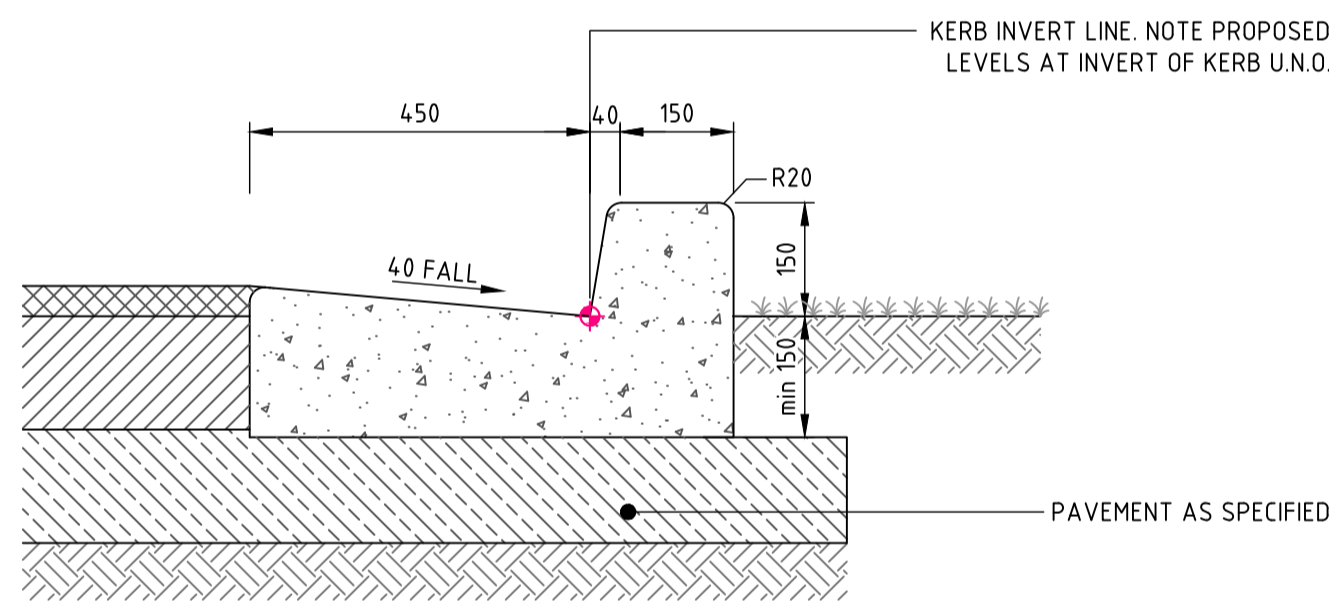
**KERB & GUTTER 'KG'**

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS  
ALL RADII TO BE 20mm U.N.O.

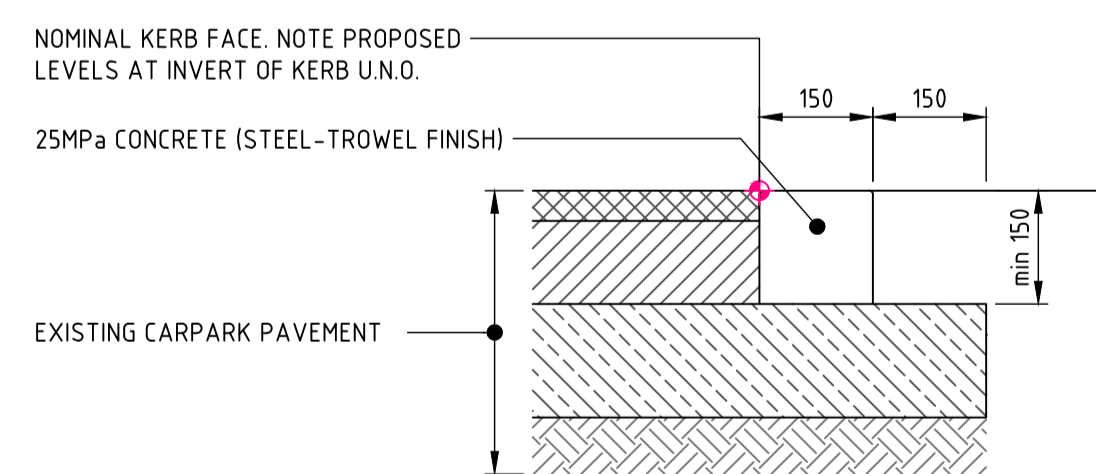
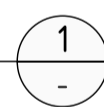


**PLAN CASTELLATED KERB 'CK'**

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS  
ALL RADII TO BE 20mm U.N.O.

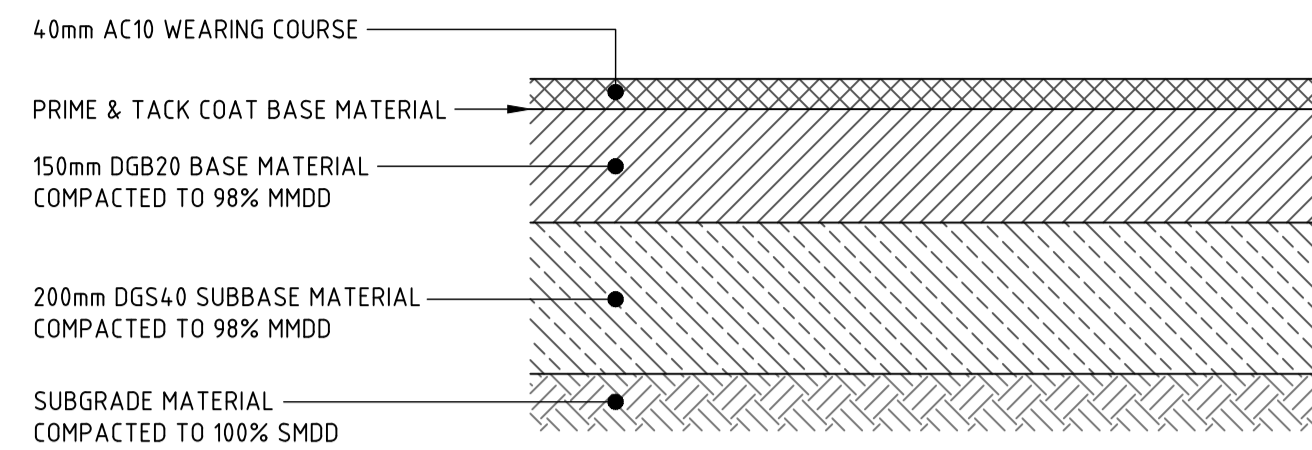


**SECTION**



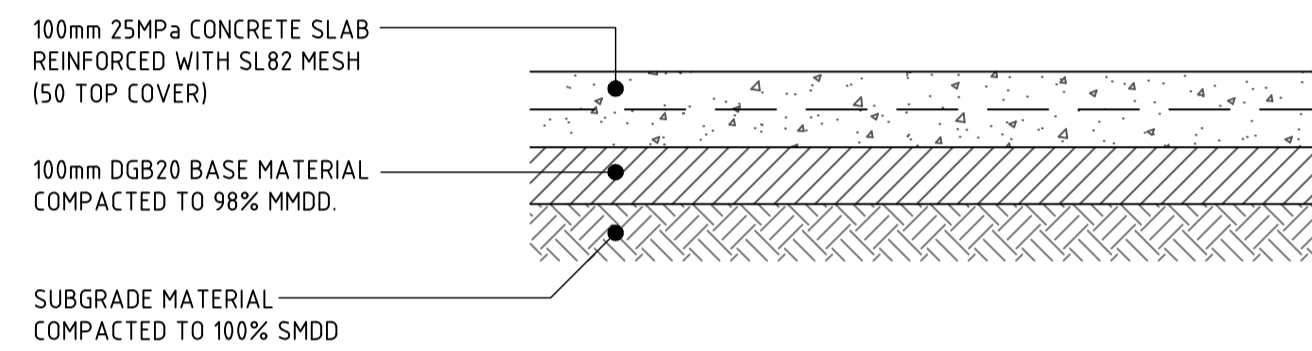
**FLUSH KERB 'FK'**

EXPANSION JOINTS @ MAX 12m CTRS / TOOL JOINTS @ MAX 3m CTRS  
ALL RADII TO BE 5mm U.N.O.



**FLEXIBLE PAVEMENT DETAIL**

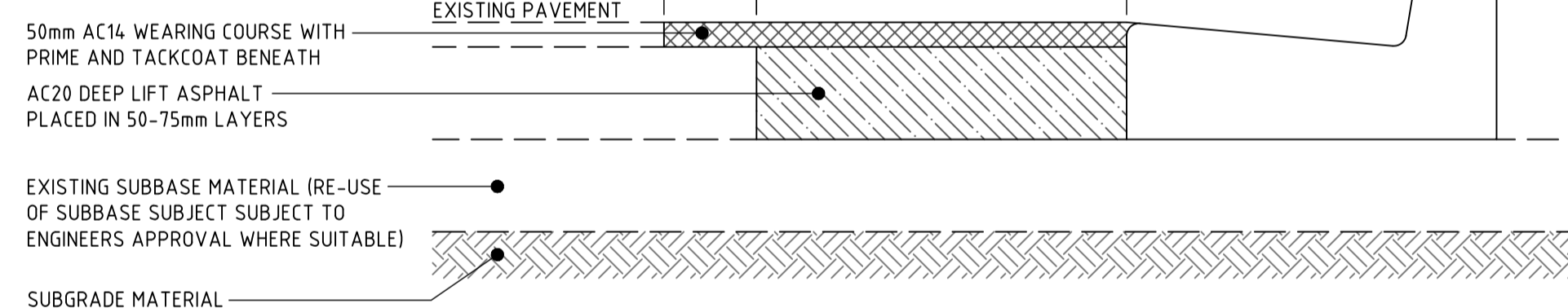
PAVEMENT BUILD UP SHOWN IS INDICATIVE AND SUBJECT TO DETAILED DESIGN



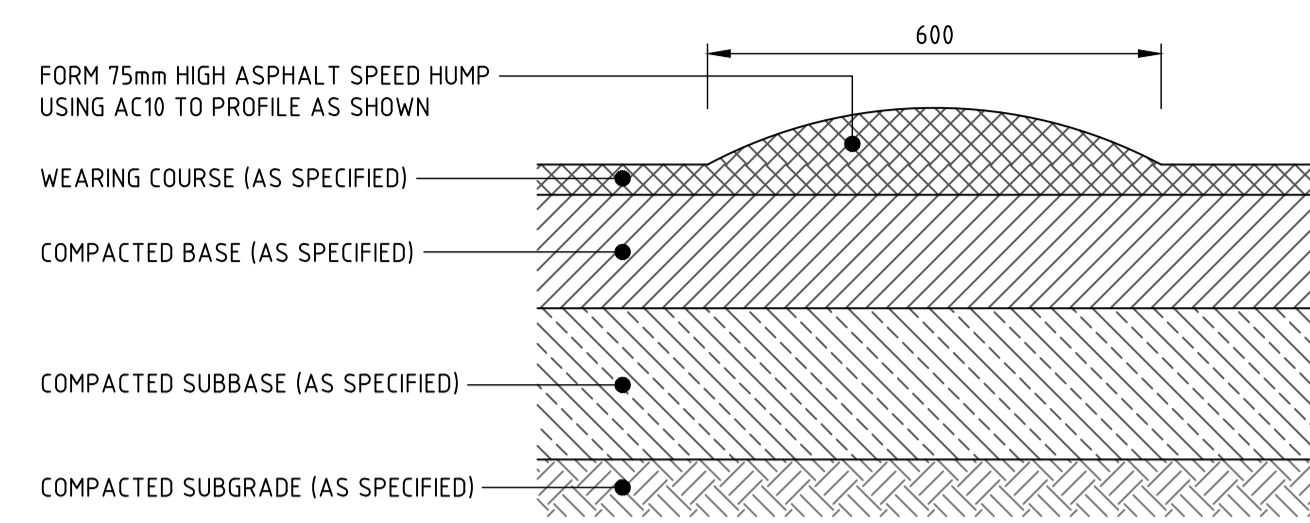
**FOOTPATH PAVEMENT DETAIL**

PAVEMENT BUILD UP SHOWN IS INDICATIVE AND SUBJECT TO DETAILED DESIGN

- NOTES:**
- MATCH ASPHALT NEATLY WITH EXISTING
  - FINAL SAWCUT TO BE UNDERTAKEN AT A TIME TO ENSURE MINIMAL DAMAGE / CHIPPING OCCURS TO EDGE OF EXISTING

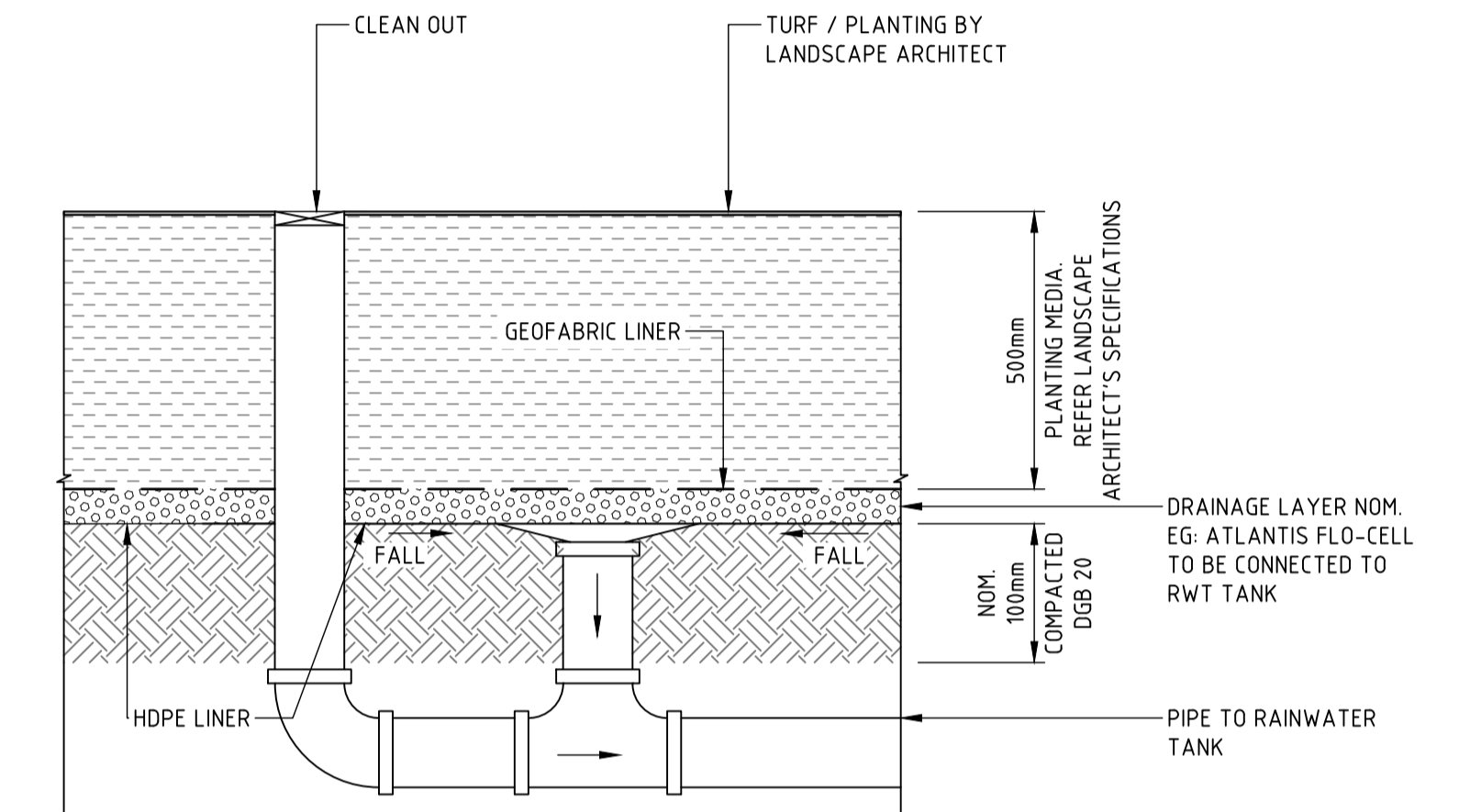


**SAW CUT AND PAVEMENT INFILL DETAIL 'INT'**



**SPEED HUMPS 'SH'**

ENSURE PLACEMENT OF SPEED HUMPS DO NOT DISRUPT SURFACE FLOWS  
PROVIDE SIGNAGE AND/OR PAINTED MARKINGS PROVIDING COLOUR  
CONTRAST TO ENSURE NO VISIBILITY ISSUES



**UNDER-TURF/MASS PLANTING DRAINAGE CELL DETAIL**

SCALE 1:10

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES JOB MANAGER: A. CARVALHAES VERIFIER: A. CARVALHAES

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03	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN	18.01.21	
04	ISSUED FOR INFORMATION	AS	SN	23.04.21	

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PROJECT  
**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE**

DETAILS - SHEET 01

JOB NUMBER  
**192968**

DRAWING NUMBER  
**DAC09.01**

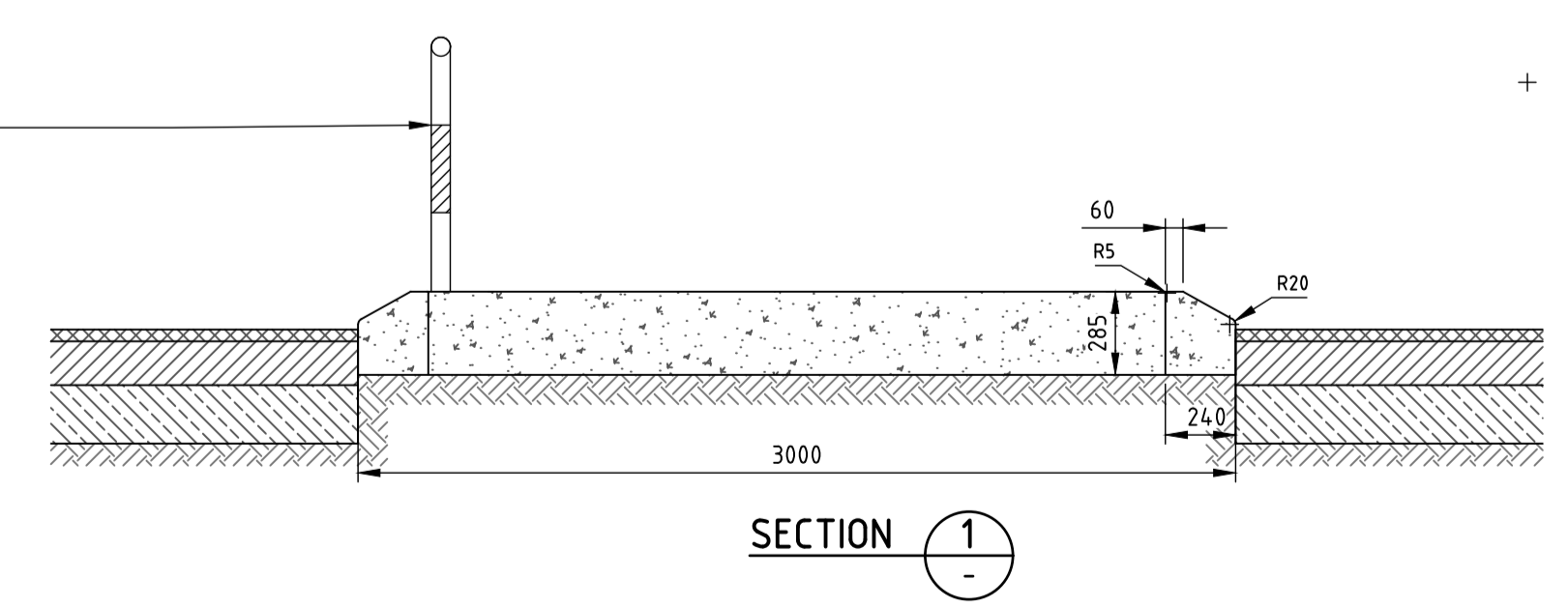
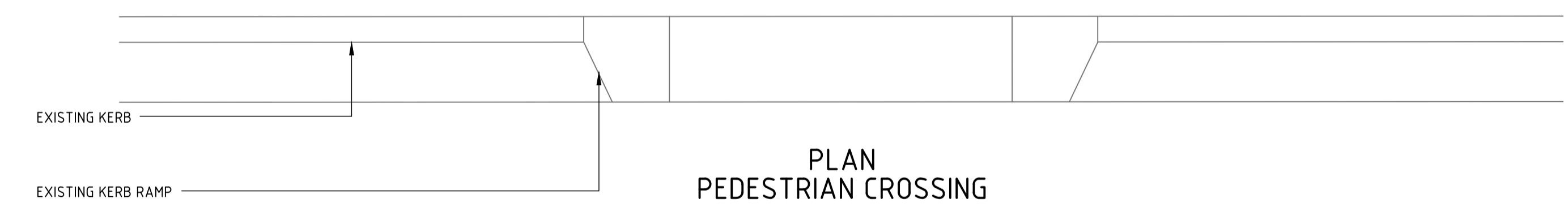
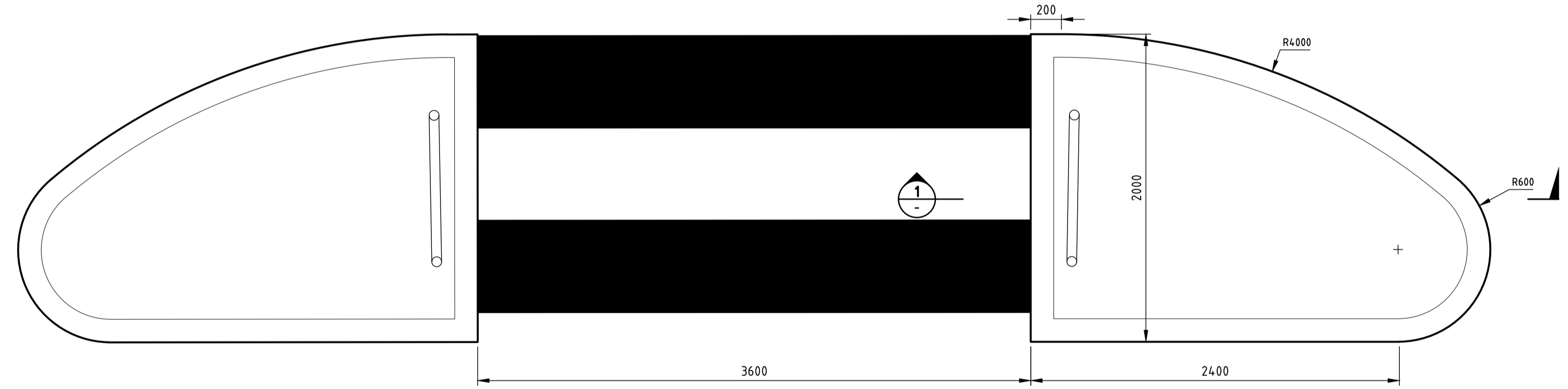
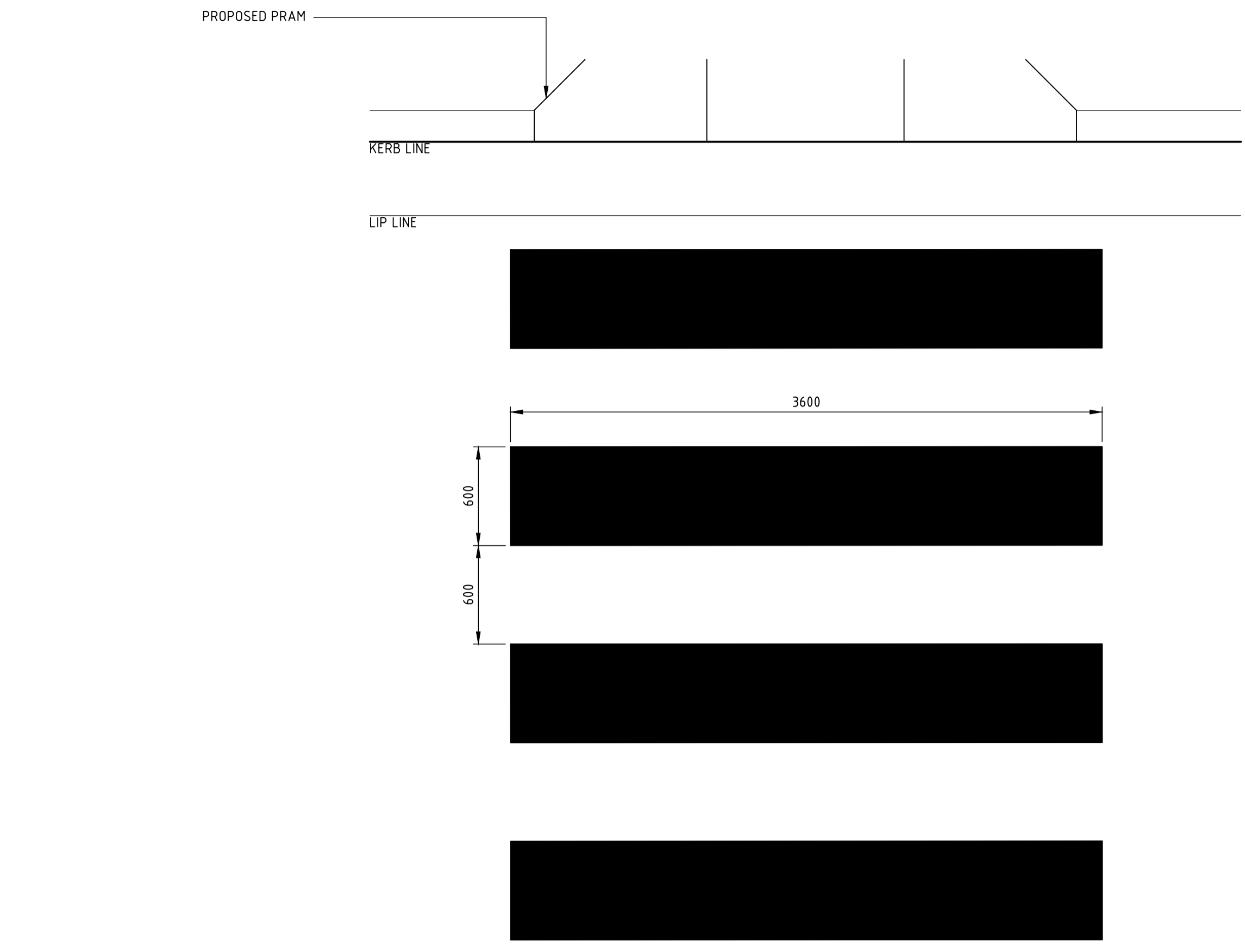
REVISION  
**04**

DRAWING SHEET SIZE = A1

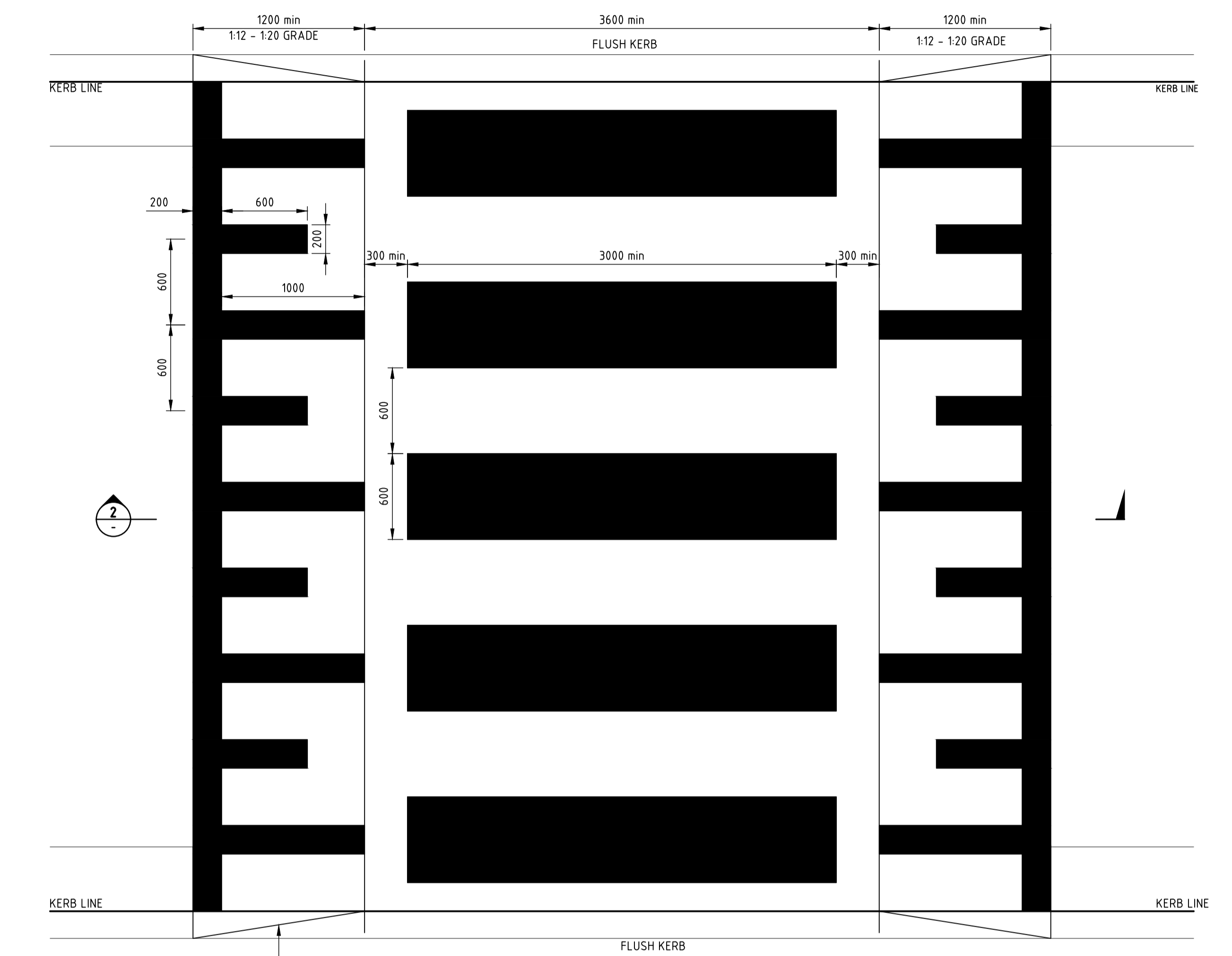
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DRAWN: A.SUTHIPHOSUWAN DESIGNED: A. CARVALHAES VERIFIED: A. CARVALHAES

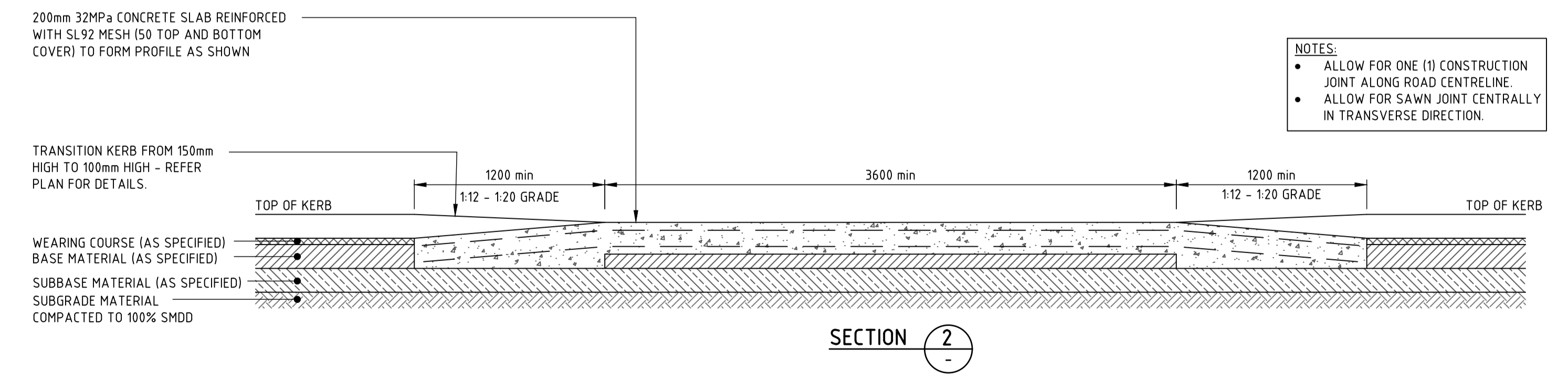


SECTION 1



SECTION 2

**PLAN WOMBAT / PEDESTRIAN CROSSING 'PX'**  
 ENSURE PLACEMENT OF THRESHOLDS DO NOT DISRUPT SURFACE FLOWS AND IS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS1742.10



- NOTES:**
- ALLOW FOR ONE (1) CONSTRUCTION JOINT ALONG ROAD CENTRELINE.
  - ALLOW FOR SAWN JOINT CENTRALLY IN TRANSVERSE DIRECTION.

**NOT FOR CONSTRUCTION**

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SCALE 1:25@A1

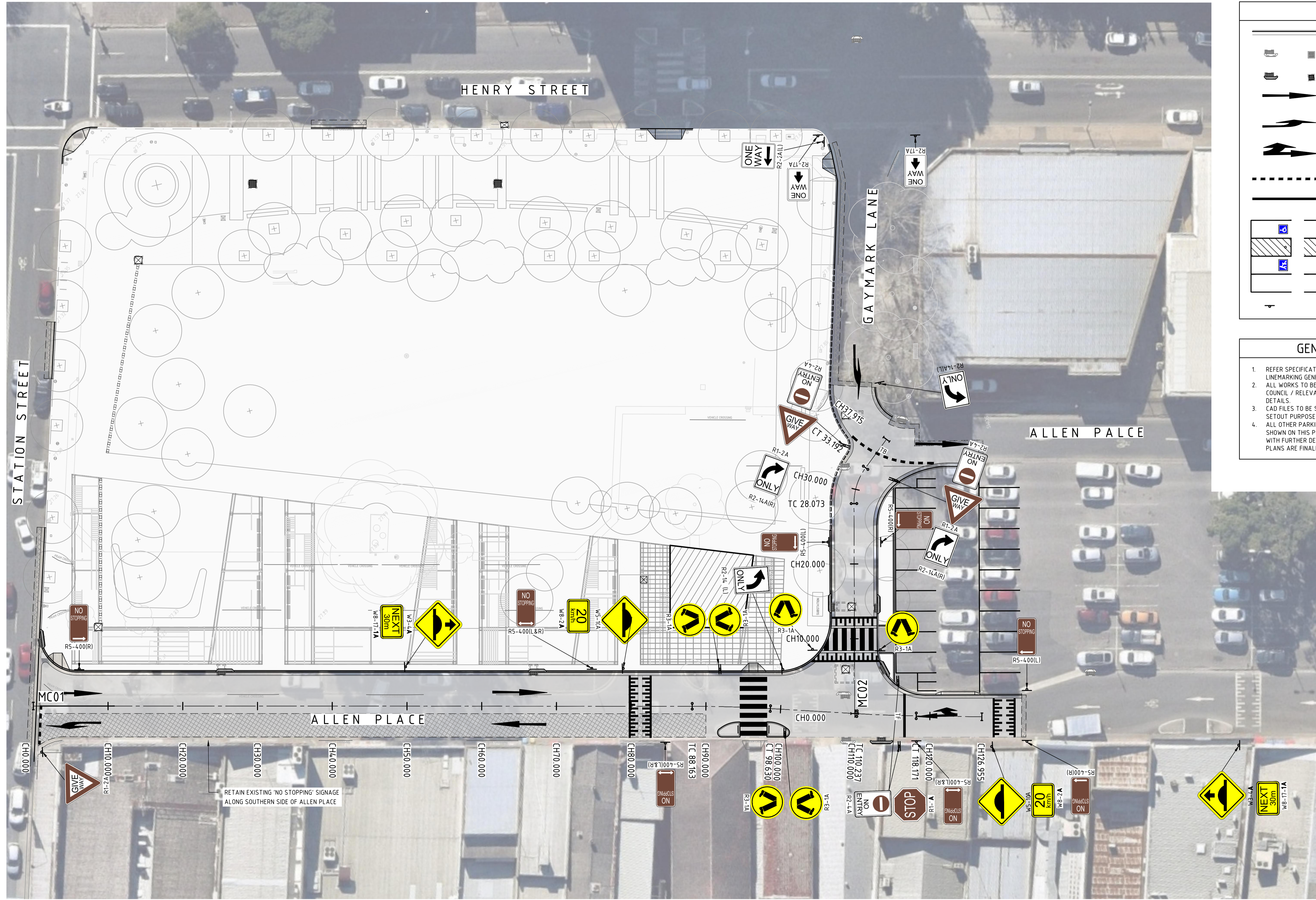
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PROJECT: **PENRITH CITY PARK 114-146 HENRY STREET, 42-50 STATION STREET AND ALLEN PLACE CARPARK**

DRAWING TITLE: **CIVIL ENGINEERING PACKAGE**  
 DETAILS - SHEET 02

JOB NUMBER: **192968**  
 DRAWING NUMBER: **DAC09.02** REVISION: **03**  
 DRAWING SHEET SIZE = A1





### LEGEND

- PROPOSED KERB
- EXISTING DRAINAGE STRUCTURE
- NEW DRAINAGE STRUCTURE
- RA1 - PAVEMENT MARKING
- RA2(L/R) - PAVEMENT MARKING
- (L/R) - PAVEMENT ARROW
- TB - GIVE WAY LINE
- TF - STOP LINE
- PARKING BAYS - PAVEMENT MARKING
- STREET SIGNS

- ### GENERAL NOTES:
- REFER SPECIFICATIONS NOTES FOR SIGNAGE AND LINEMARKING GENERAL REQUIREMENTS.
  - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
  - CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
  - ALL OTHER PARKING RESTRICTIONS (OTHER THAN THOSE SHOWN ON THIS PLAN) ARE TO REMAIN AS PER EXISTING WITH FURTHER DETAILS TO BE SHOWN ONCE DETAILED PLANS ARE FINALISED.

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES VERIFIED: A.CARVALHAES

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR INFORMATION	AS	SN		25.11.20
02	ISSUED FOR INFORMATION	AS	SN		08.01.21
03	ISSUED FOR DEVELOPMENT APPLICATION	AS	SN		13.01.21
04	RE-ISSUED FOR DEVELOPMENT APPLICATION	AS	SN		20.01.21
05	ISSUED FOR INFORMATION	AS	SN		23.04.21

CLIENT

Penrith City Council

ARCHITECT

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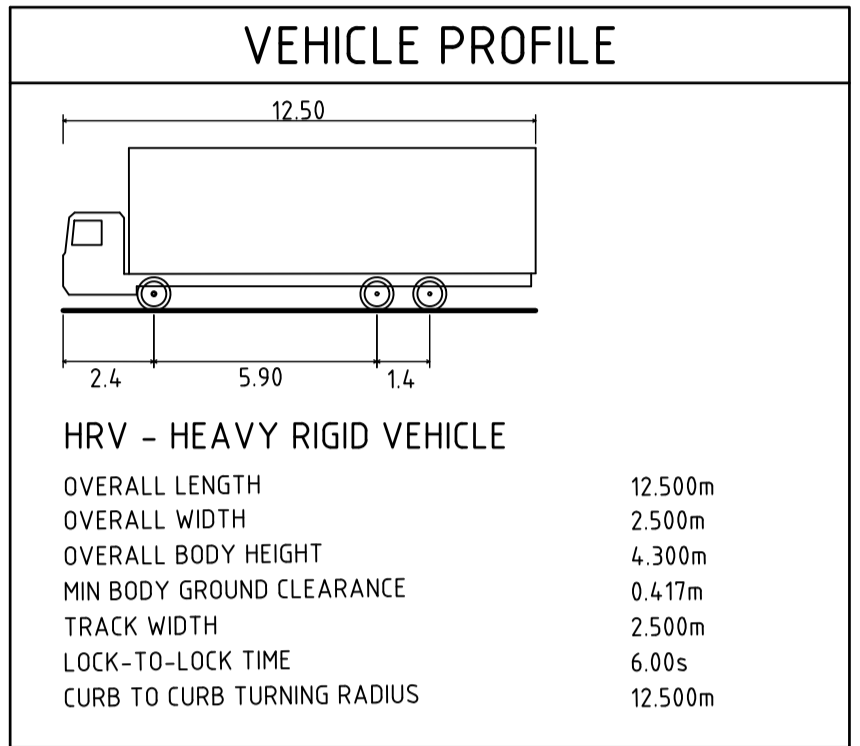
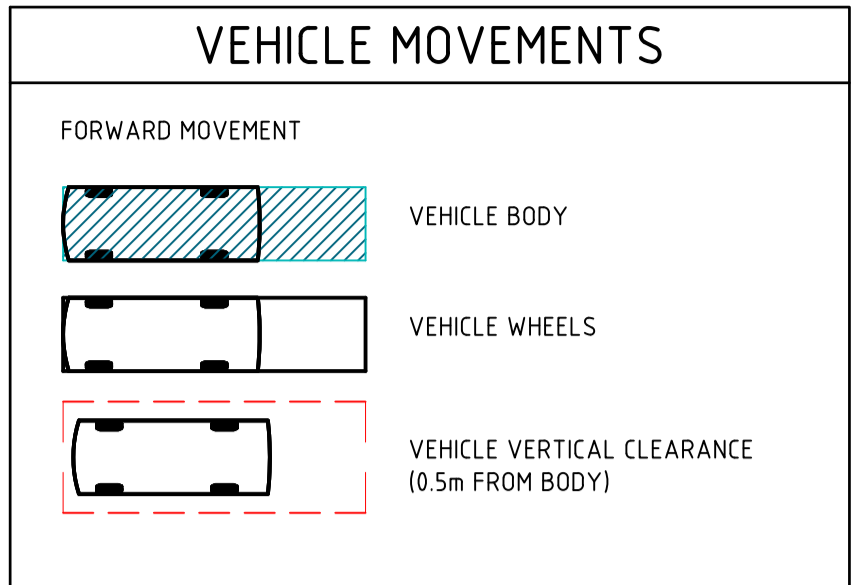
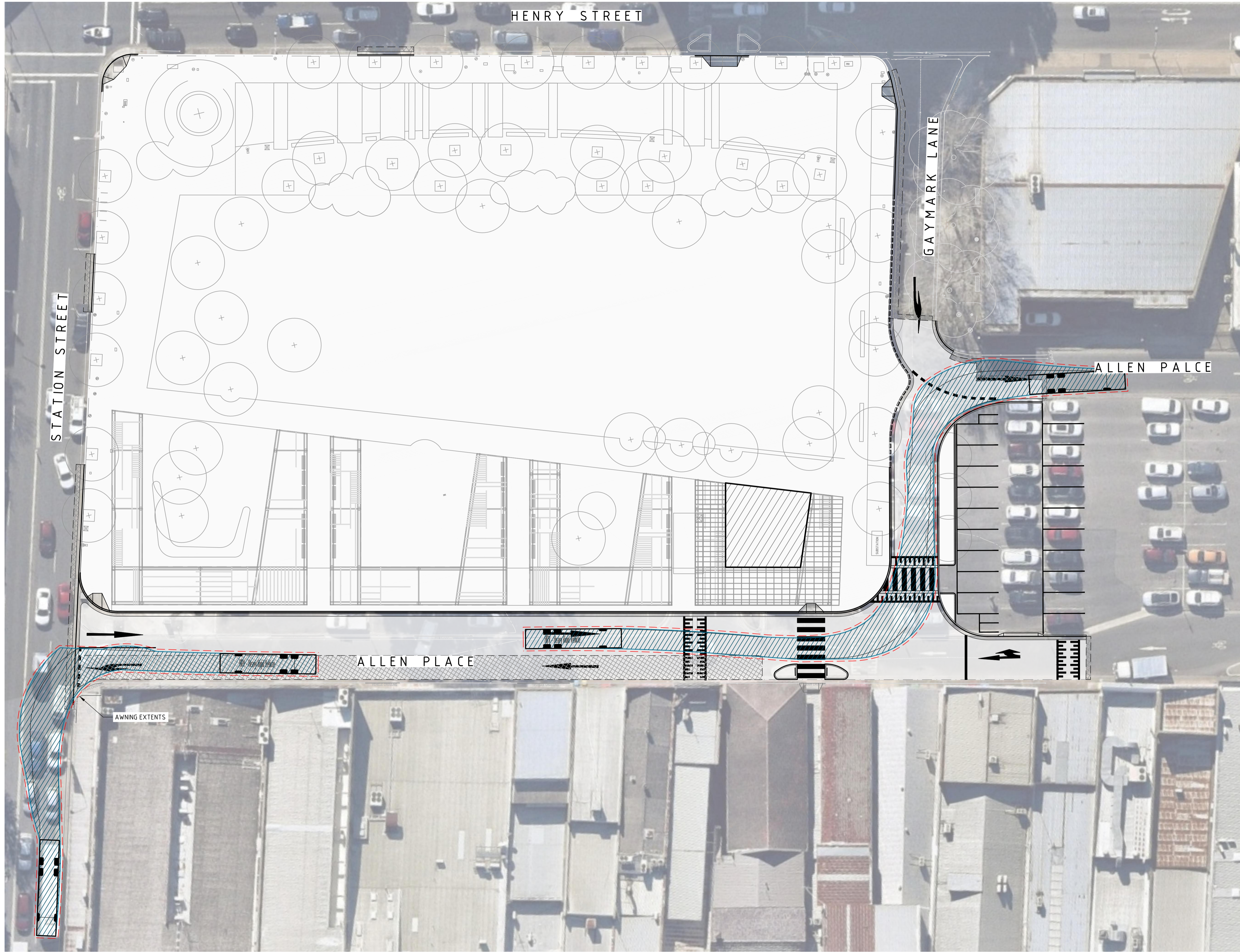
PROJECT

**PENRITH CITY PARK**  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
ALLEN PLACE CARPARK

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**  
  
**SIGNAGE AND LINEMARKING PLAN**

JOB NUMBER		<b>192968</b>
DRAWING NUMBER	REVISION	
<b>DAC10.01</b>	<b>05</b>	
DRAWING SHEET SIZE = A1		



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**PENRITH CITY PARK  
114-146 HENRY STREET,  
42-50 STATION STREET AND  
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DRAWING TITLE

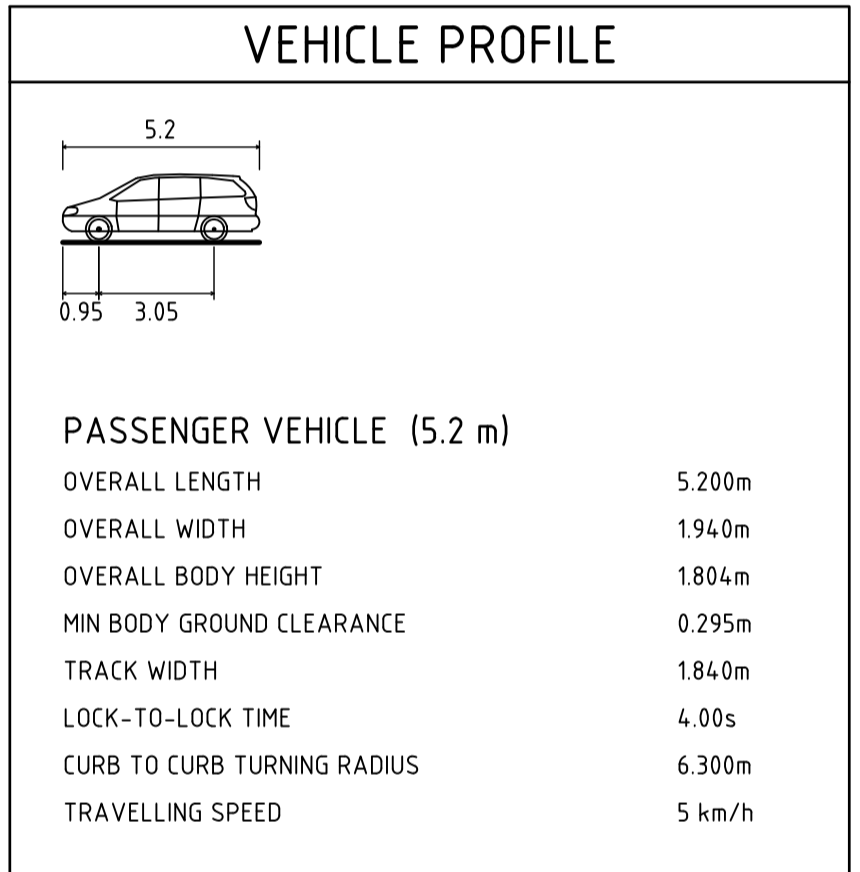
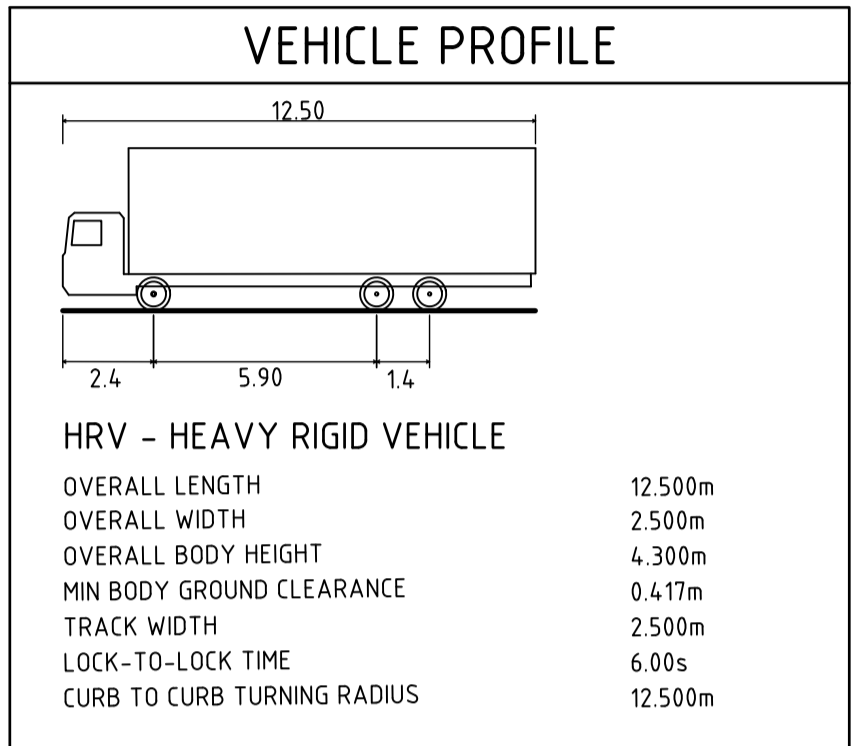
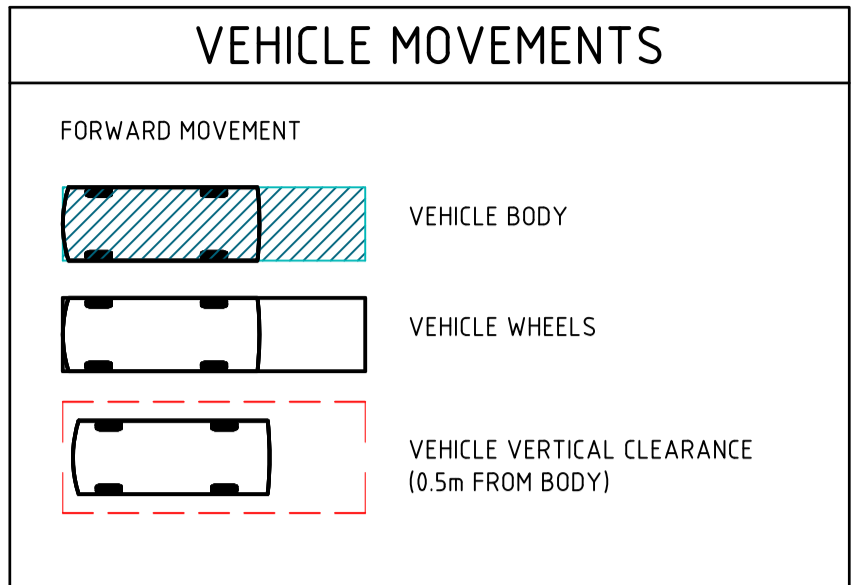
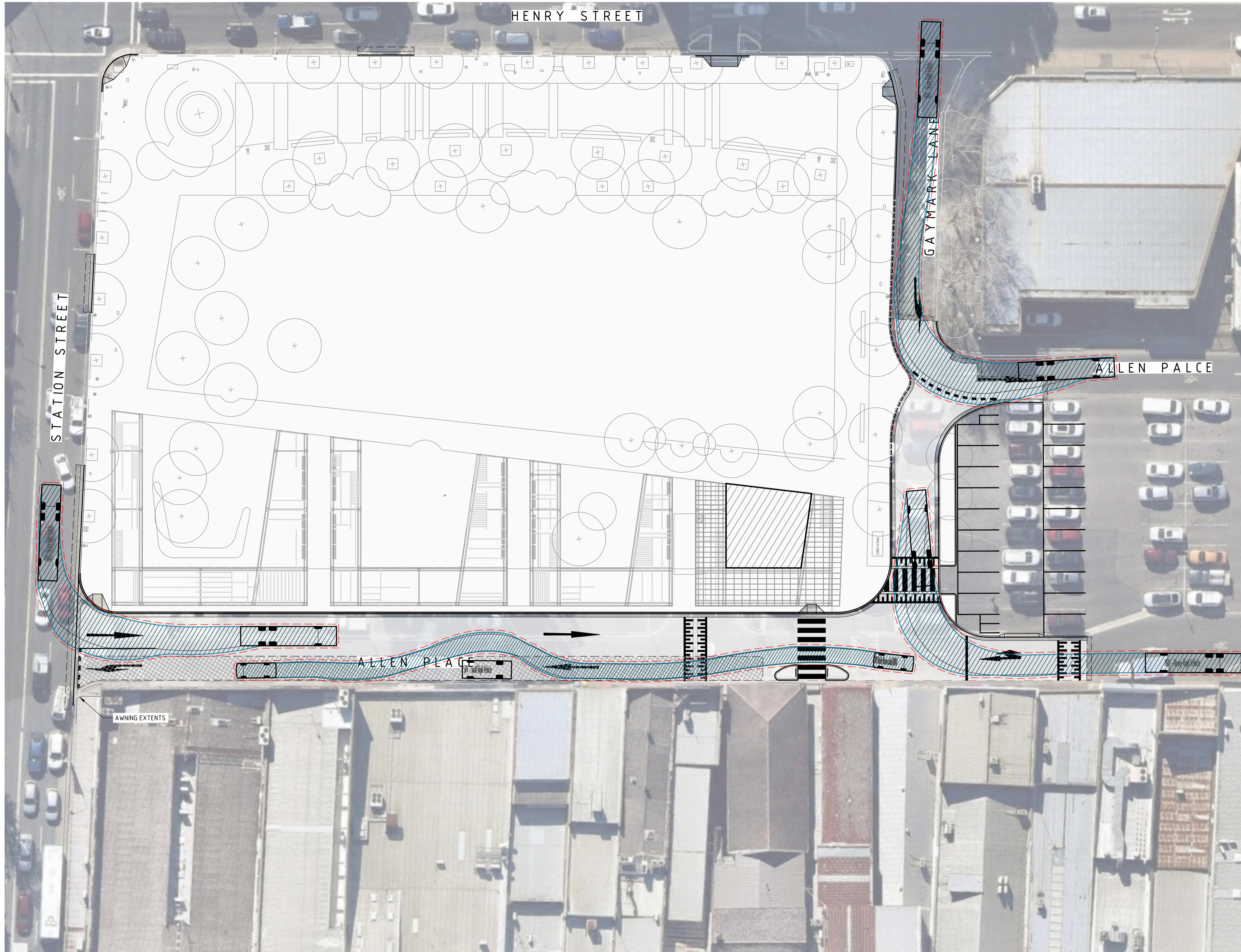
**CIVIL ENGINEERING PACKAGE  
TURNING PATH PLAN - SHEET 01**

JOB NUMBER

**192968**

DRAWING NUMBER	REVISION
<b>DAC11.01</b>	<b>05</b>

DRAWING SHEET SIZE = A1



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114-146 HENRY STREET,  
42-50 STATION STREET AND  
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DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

TURNING PATH PLAN - SHEET 02

JOB NUMBER

**192968**

DRAWING NUMBER	REVISION
<b>DAC11.02</b>	<b>01</b>

DRAWING SHEET SIZE = A1



LEGEND	
	EXISTING BOUNDARY LINE
	PROPOSED CONTOURS
	LANDSCAPE BYPASS TOTAL AREA = 223m <sup>2</sup>
	LANDSCAPE TO TREATMENT TOTAL AREA = 2,759m <sup>2</sup>
	LANDSCAPE TO RAINWATER TANK VIA DRAINAGE CELLS TOTAL AREA = 574m <sup>2</sup>
	ROAD TO TREATMENT TOTAL AREA = 1,619m <sup>2</sup>
	FOOTPATH BYPASS TOTAL AREA = 535m <sup>2</sup>
	FOOTPATH TO RAINWATER TANK TOTAL AREA = 670m <sup>2</sup>
	FOOTPATH TO TREATMENT TOTAL AREA = 1,665m <sup>2</sup>
	FOOTPATH TO RAINWATER TANK VIA DRAINAGE CELLS TOTAL AREA = 365m <sup>2</sup>
	ROOF TO RAINWATER TANK TOTAL AREA = 106m <sup>2</sup>
	STORMWATER PIT TAG CATCHMENT AREA (ha)
	CATCHMENT BOUNDARY
	OVERLAND FLOW
	EXISTING DRAINAGE STRUCTURE
	NEW DRAINAGE STRUCTURE

DRAWN: A.SUTHIPHOSUWAN DESIGNED: A.CARVALHAES JOB MANAGER: A.CARVALHAES VERIFIER:

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DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**CATCHMENT PLAN**

JOB NUMBER	
<b>192968</b>	
DRAWING NUMBER	REVISION
<b>DAC12.01</b>	<b>03</b>
DRAWING SHEET SIZE = A1	