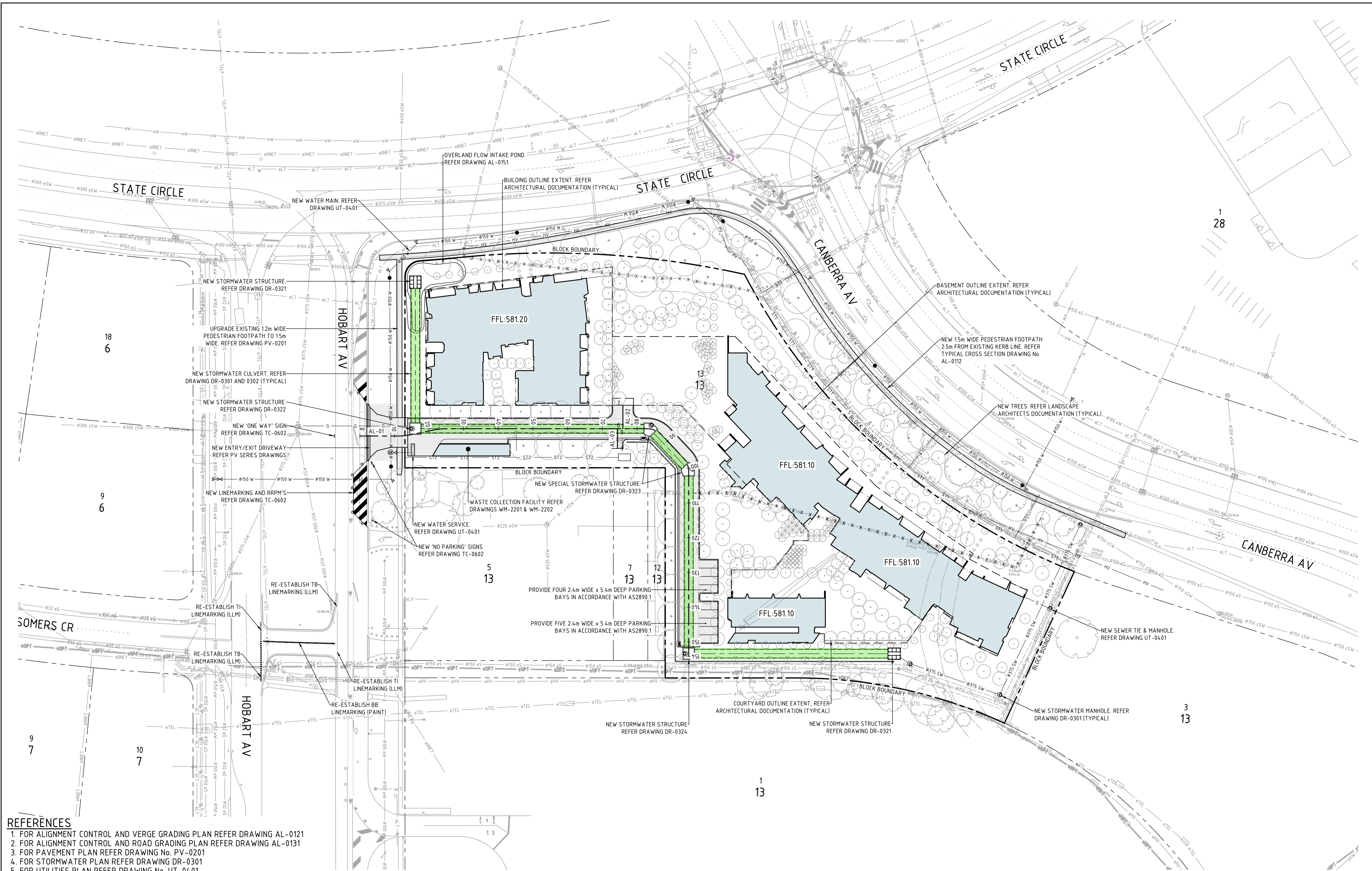


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- REFERENCES**
1. FOR ALIGNMENT CONTROL AND VERGE GRADING PLAN REFER DRAWING AL-0121
 2. FOR ALIGNMENT CONTROL AND ROAD GRADING PLAN REFER DRAWING AL-0131
 3. FOR PAVEMENT PLAN REFER DRAWING No. PV-0201
 4. FOR STORMWATER PLAN REFER DRAWING DR-0301
 5. FOR UTILITIES PLAN REFER DRAWING No. UT-0401

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	02.05.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 10 15 20 25m

1:500 @ A1

North

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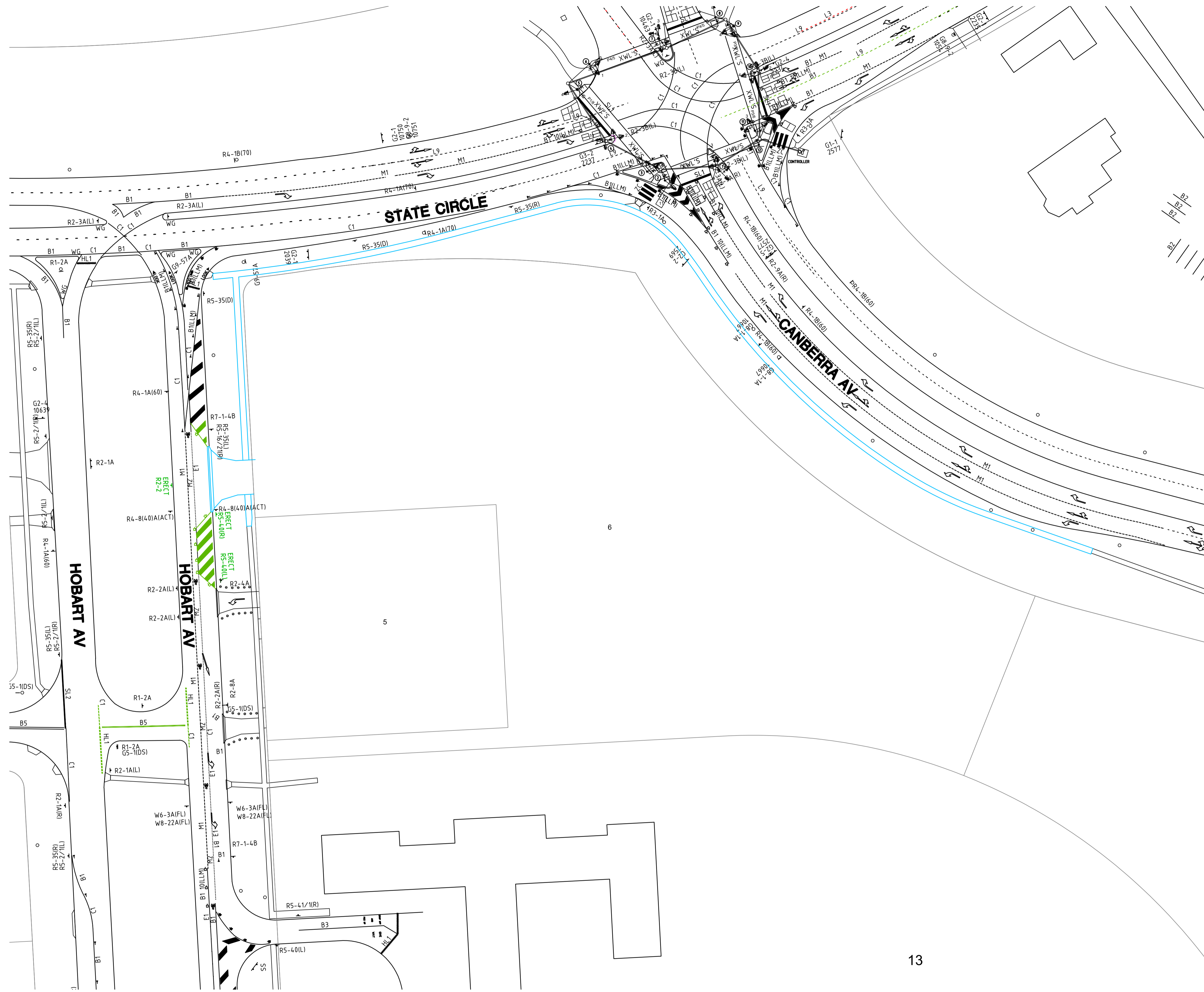
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Status			
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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
GENERAL ARRANGEMENT PLAN					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	AL	0101	C

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DATE: CONSULTANT SELICK CONSULTANTS	DRAWING NAME TRAFFIC CONTROL DEVICE PLAN	AUTHORISING SIGNATURE DATE:
SIGNATURE	SCALE: 1:500	DOCUMENT NUMBER
DATE:		

R2-2	ONE WAY	L	A	1
R5-40	NO PARKING	L/R	1	2
SIGN	DESCRIPTION	HAND	SIZE	QTY

SIGNS TO BE ERECTED

Rev	Description	Date	Approved
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Scales
0 10 15 20 25m
1:500 @ A1

North

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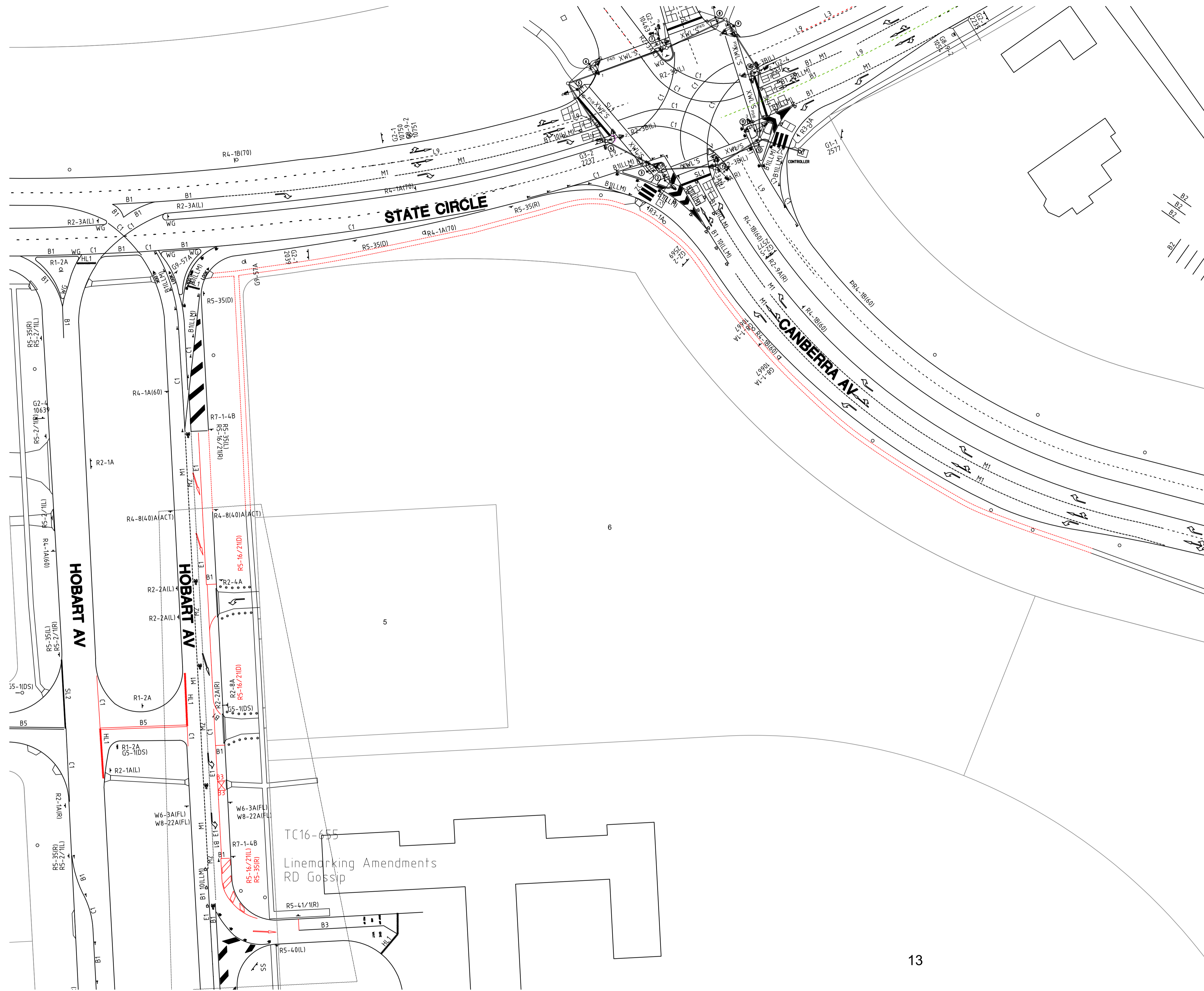
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Height Datum: AHD

Drawn By: RT
Designed By: LT
Approved: CO
Approved Signature:

Drafting Check: DA
Design Check: CO
Approved Date: 23.08.2018

Project Name and Location MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST					
Drawing Title TCD PLAN NEW WORKS					
Project Number 170324	Type DRG	Discipline CIV	Sub-Discipline TC	Drg No. 0602	Rev C

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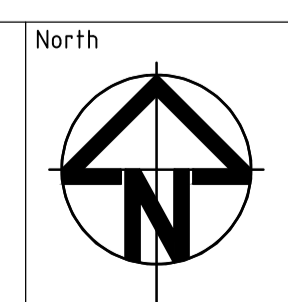
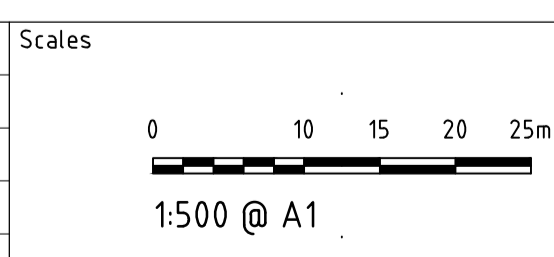
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DATE:	DRAWING NAME	AUTHORISING SIGNATURE
CONSULTANT	TRAFFIC CONTROL	DATE:
NAME	DEVICE PLAN	DOCUMENT NUMBER
SIGNATURE	SCALE:	
DATE:	1500	

REFER RD GOSSIP TCD FOR REMOVAL OF SIGNS

SIGN	DESCRIPTION	HAND	SIZE	QTY
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SIGNS TO BE REMOVED

Rev	Description	Date	Approved
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B	FOR DESIGN ACCEPTANCE	02.05.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO



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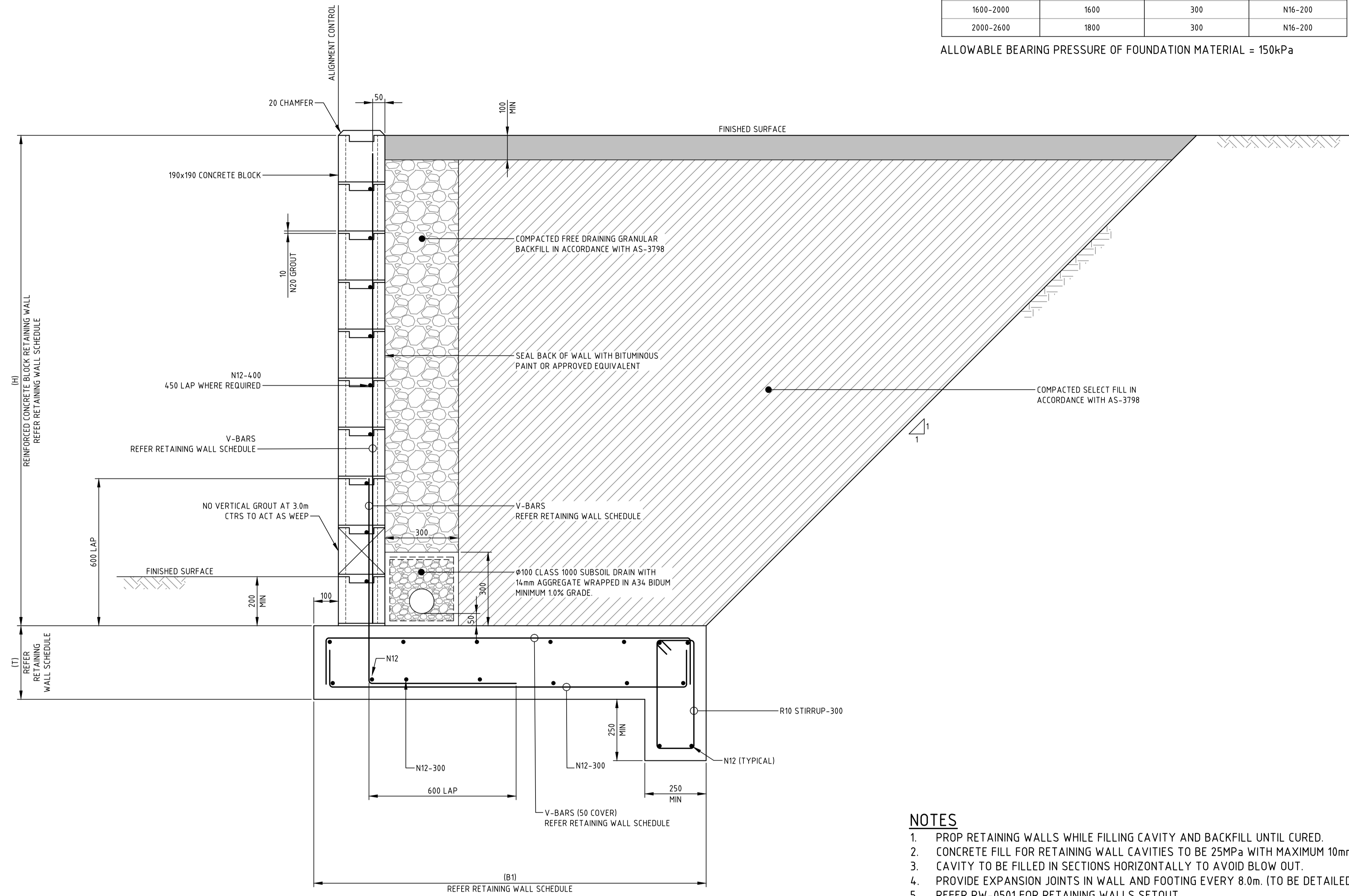
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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
TCD PLAN REMOVE WORKS					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	TC	0601	C

File Name: P:\2017\170324_B13-S13-F Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-rw-0521.dwg

RETAINING WALL SCHEDULE			
(H)HEIGHT	(B1)	(T)	V-BARS
0-800	800	250	N12-400
800-1200	1000	250	N16-400
1200-1600	1200	300	N16-200
1600-2000	1600	300	N16-200
2000-2600	1800	300	N16-200

ALLOWABLE BEARING PRESSURE OF FOUNDATION MATERIAL = 150kPa

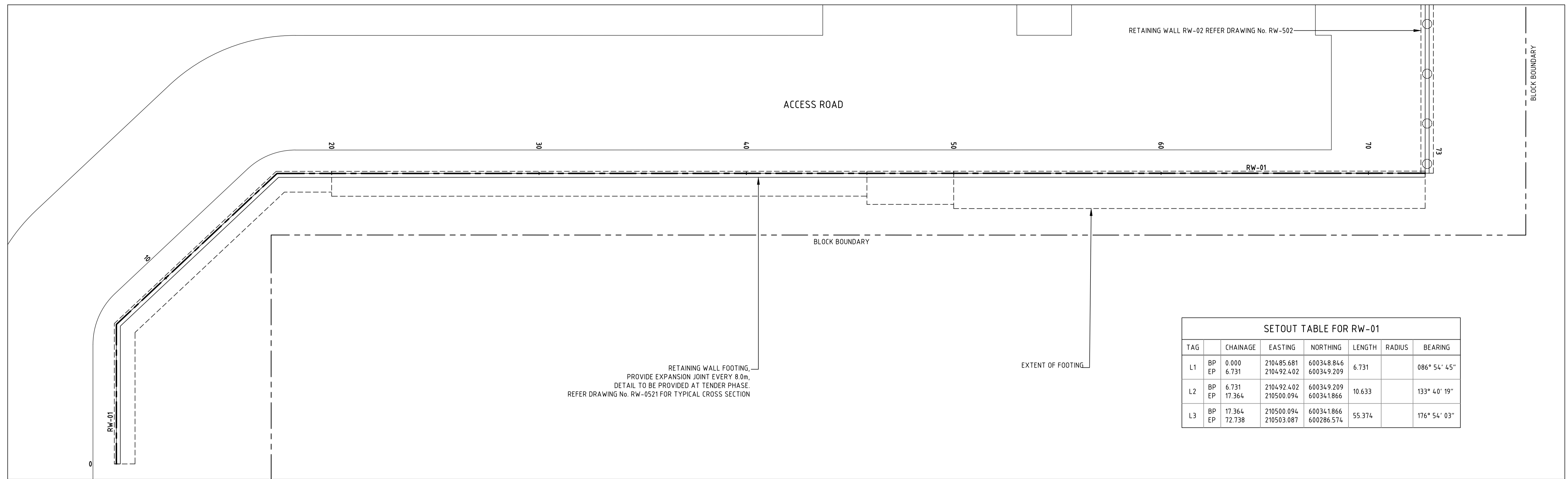


TYPICAL CANTILEVER RETAINING WALL SECTION
SCALE 1:10

NOTES

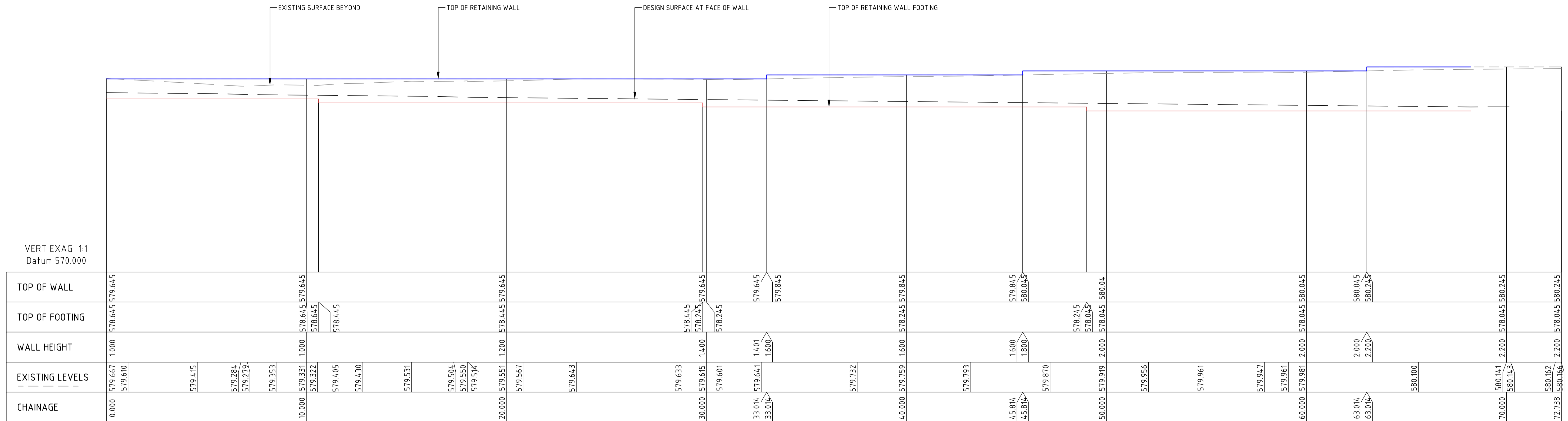
- PROP RETAINING WALLS WHILE FILLING CAVITY AND BACKFILL UNTIL CURED.
- CONCRETE FILL FOR RETAINING WALL CAVITIES TO BE 25MPa WITH MAXIMUM 10mm AGGREGATE.
- CAVITY TO BE FILLED IN SECTIONS HORIZONTALLY TO AVOID BLOW OUT.
- PROVIDE EXPANSION JOINTS IN WALL AND FOOTING EVERY 8.0m. (TO BE DETAILED AT TENDER PHASE)
- REFER RW-0501 FOR RETAINING WALLS SETOUT.
- ALLOW FOR CLEAN OUT OPENING AT BASE OF BLOCK WALLS. (NOT SHOWN FOR CLARITY)

Scales		North		Status		Project Name and Location									
0 100 200 300 400 500mm 1:10 @ A1		North		NOT FOR CONSTRUCTION		MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST									
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B	FOR DESIGN ACCEPTANCE	21.06.18	CO	Original Size	A1	Drawn By	RT	Drafting Check	DA	Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO	Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO	170324	DRG	CIV	RW	0521	B
Rev	Description	Date	Approved	Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018	Height Datum	AHD	Approved Signature			



TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L1	BP 0.000 EP 6.731	210485.681 210492.402	600348.846 600349.209	6.731		086° 54' 45"
L2	BP 6.731 EP 17.364	210492.402 210500.094	600349.209 600341.866	10.633		133° 40' 19"
L3	BP 17.364 EP 72.738	210500.094 210503.087	600341.866 600286.574	55.374		176° 54' 03"

RETAINING WALL RW-01 PLAN
SCALE 1: 100

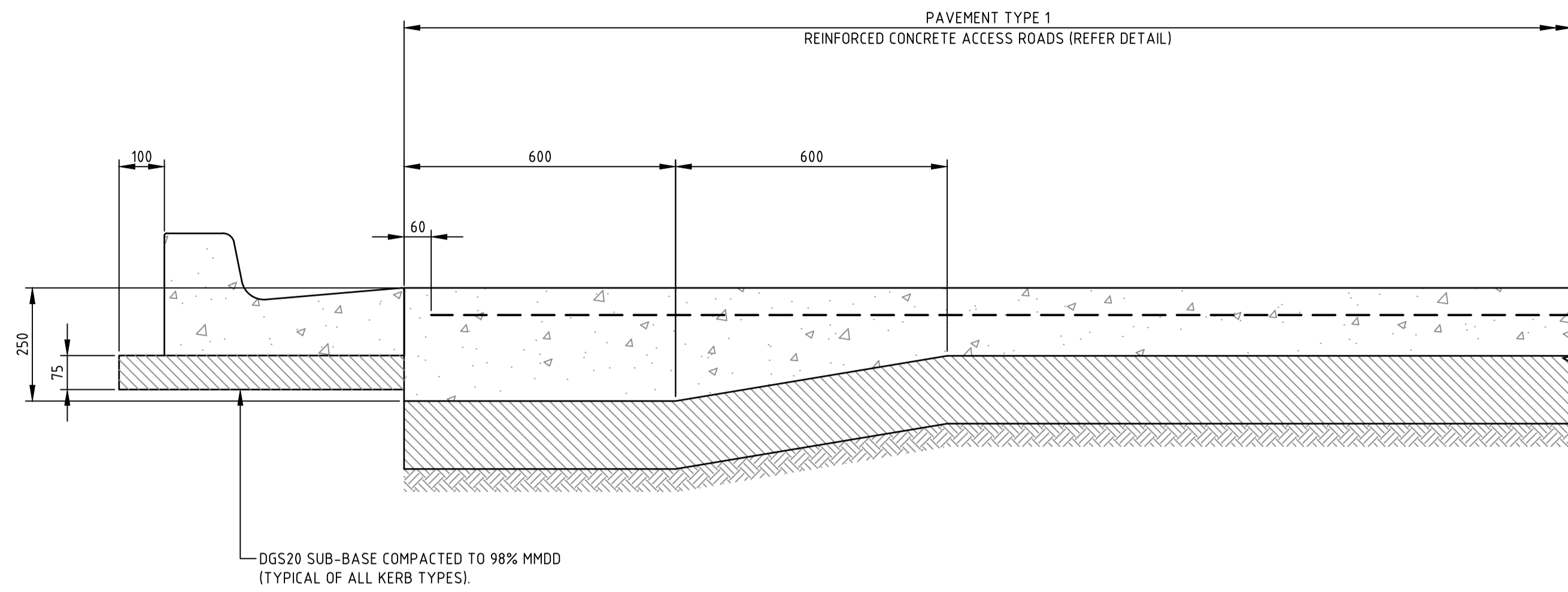


RW-01 LONG SECTION

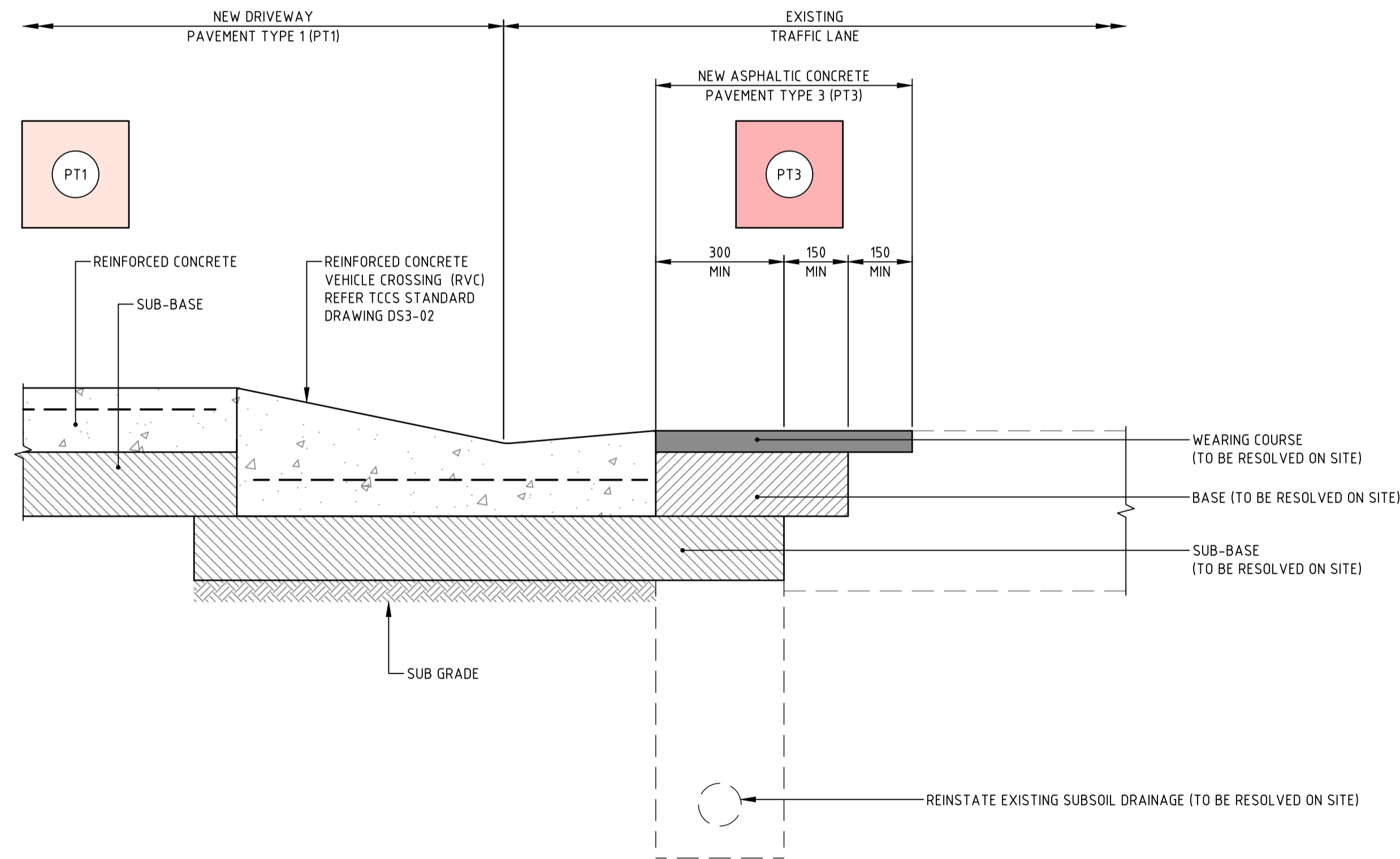
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								NOT FOR CONSTRUCTION		Project Name and Location MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST											
B FOR DESIGN ACCEPTANCE 21.06.18 CO		A FOR DESIGN ACCEPTANCE 23.03.2018 CO		DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK. COPYRIGHT: The contents and information contained in this document are copyright of Sellick Consultants, Use or copy of this document in whole or part without written permission constitutes an infringement of copyright.		www.sellickconsultants.com.au		Original Size: A1 Date Plotted: 21-Jun-18 Coordinate System: STROMLO GRID Height Datum: AHD		Drawn By: RT Designed By: LT Approved: CO Approved Date: 23.08.2018 Approved Signature:		Drafting Check: DA Design Check: CO		Drawing Title RETAINING WALLS ALIGNMENT CONTROL AND FOOTING PLAN SHEET 1							
Rev Description Date Approved										Project Number: 170324		Type: DRG		Discipline: CIV		Sub-Discipline: RW		Drg No.: 0501		Rev: B	

File Name: P:\2017\170324_813-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-civ-pv-0222.dwg



PAVEMENT TYPE 1
CONCRETE EDGE THICKENING DETAIL
SCALE 1:10



PAVEMENT TYPE 1 (PT1) TO PAVEMENT TYPE 3 (PT3)
INTERFACE DETAIL
SCALE 1:10

B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO
Rev	Description	Date	Approved

Scales

0 100 200 300 400 500mm

1:10 @ A1

North

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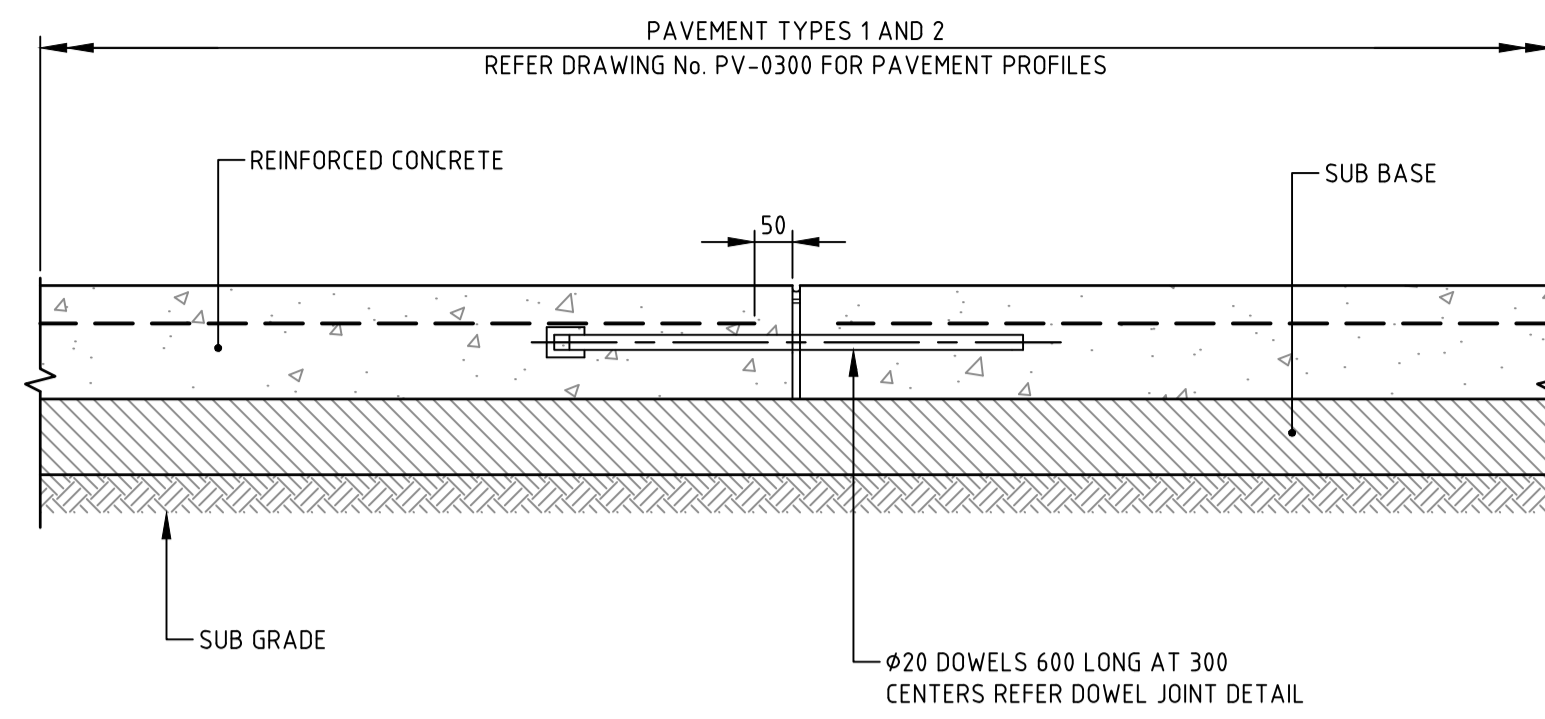
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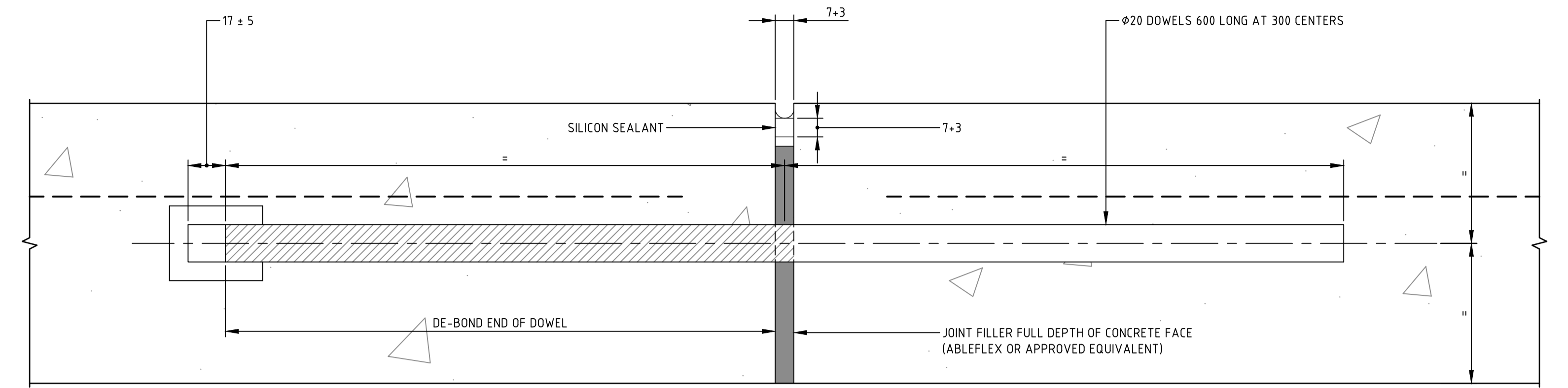
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Date Plotted	21-Jun-18	Designed By	LT
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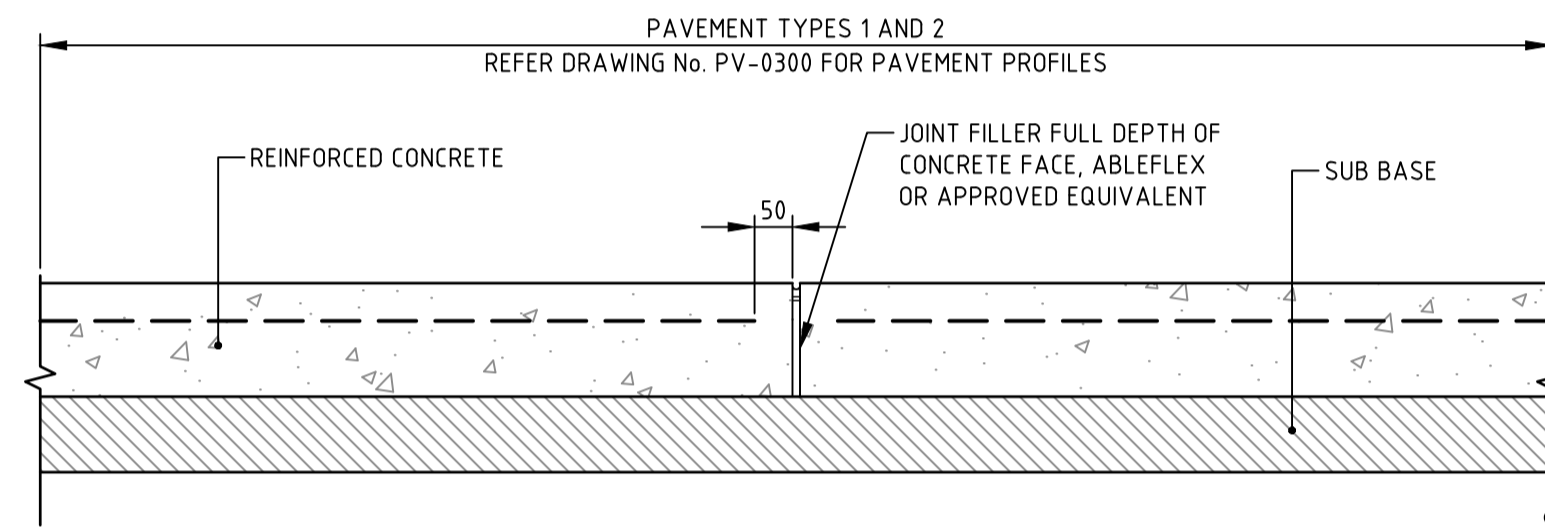
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MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
PAVEMENT EDGE & INTERFACE					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	PV	0222	B



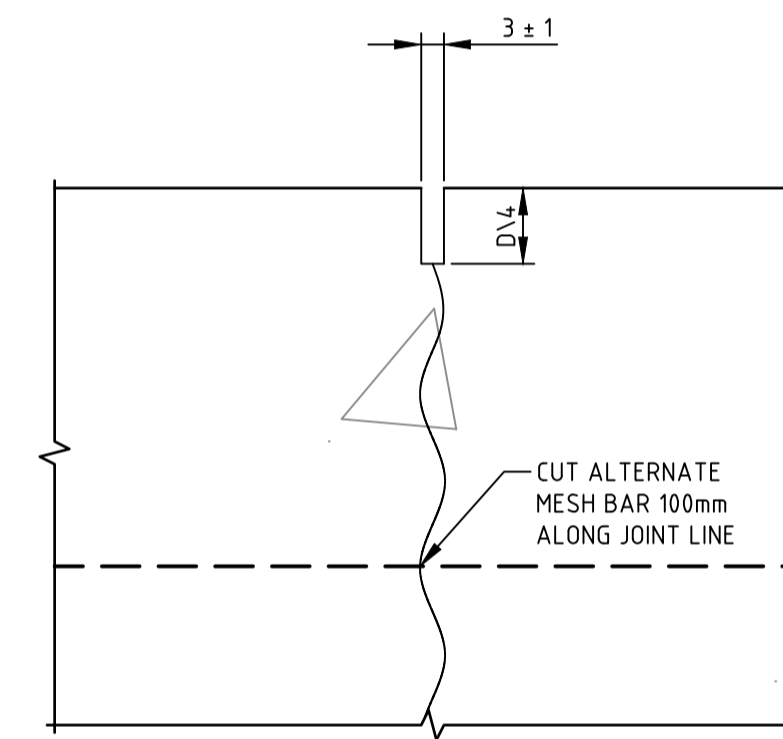
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SCALE 1:10



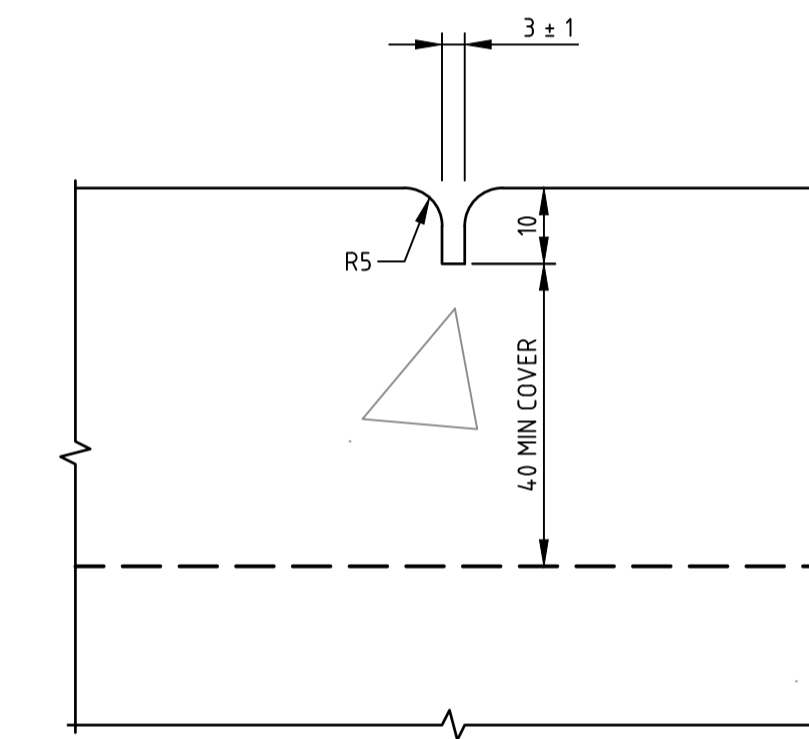
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SCALE 1:2



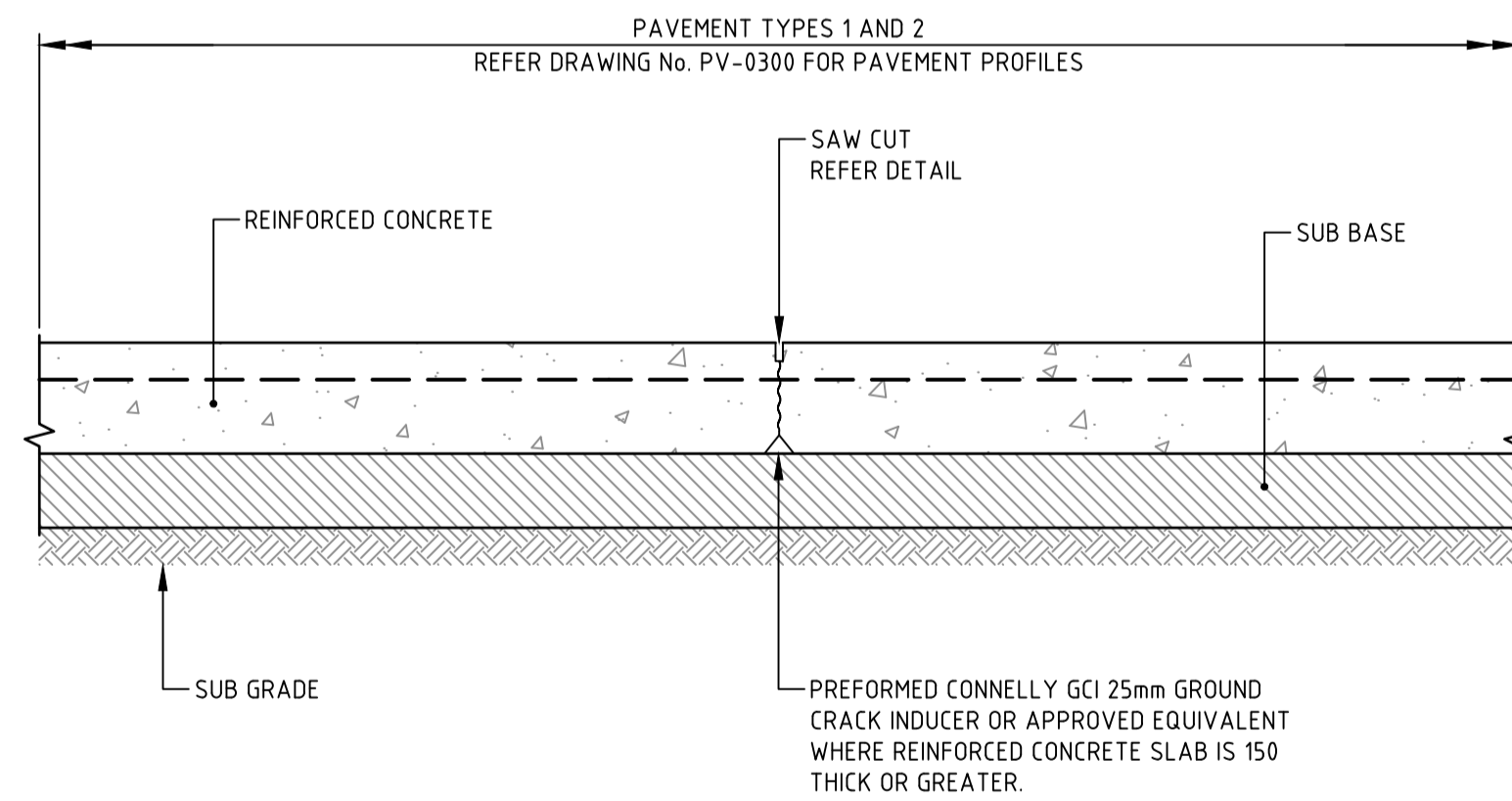
(J16A) EXPANSION JOINT- ACCESS ROAD
SCALE 1:10



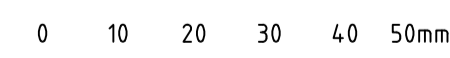
(J8) SAW CUT JOINT
SCALE 1:1



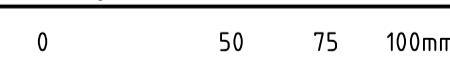
(B17) TOOL JOINT
SCALE 1:1



CONTRACTION JOINT (J8)
SCALE 1:10



1:1 @ A1



1:2 @ A1



1:10 @ A1

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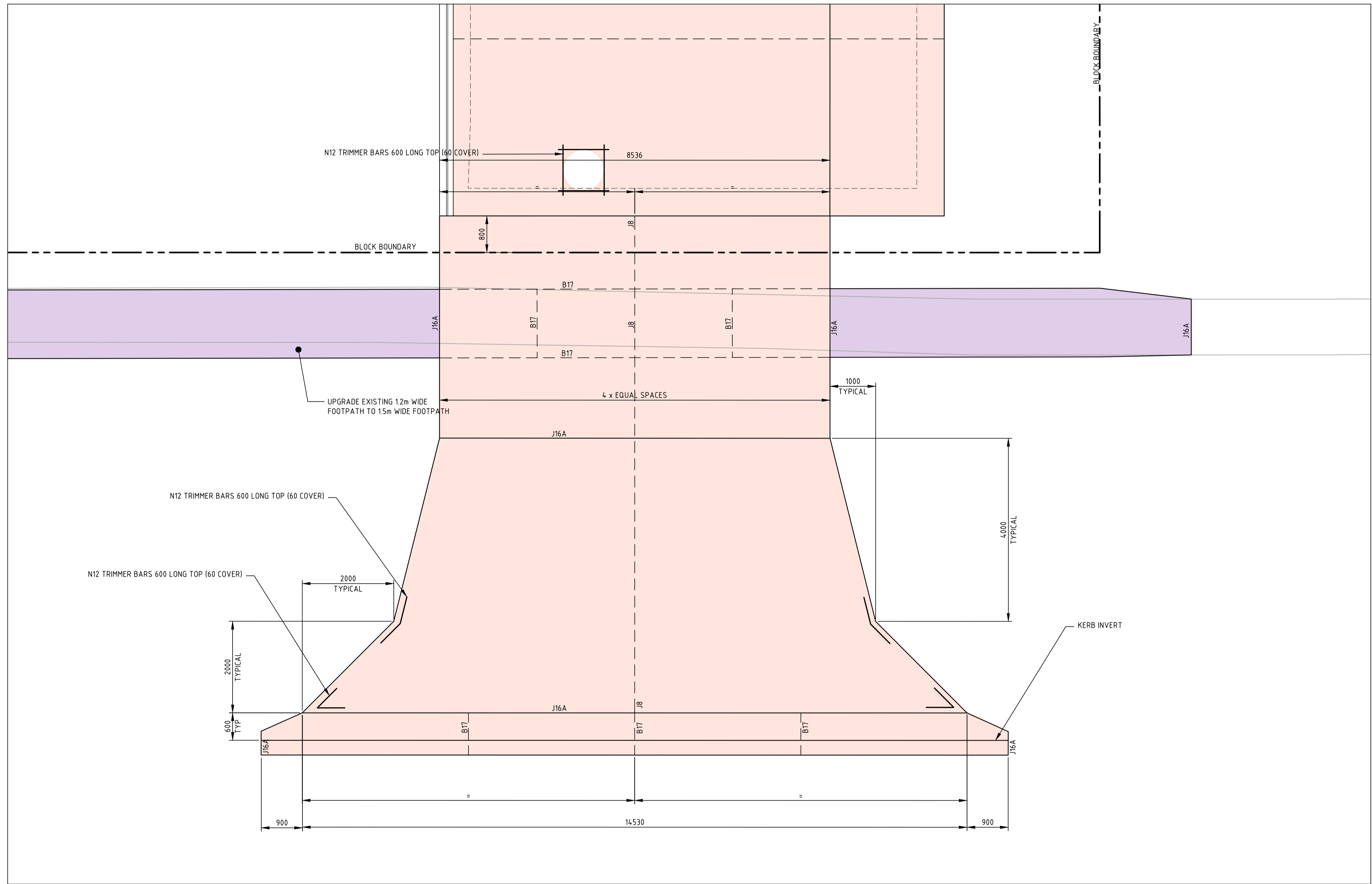


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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title PAVEMENT CONCRETE DETAILS					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	PV	0221	B

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

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DRIVEWAY DETAIL A
SCALE 1:50

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	02.05.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

1:50 @ A1

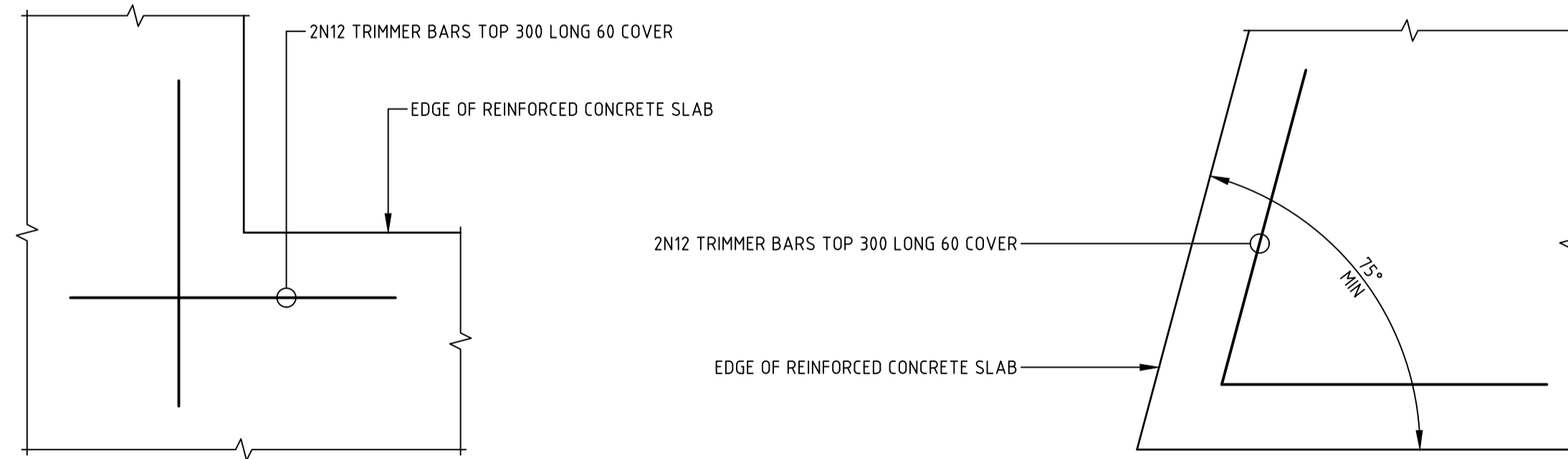
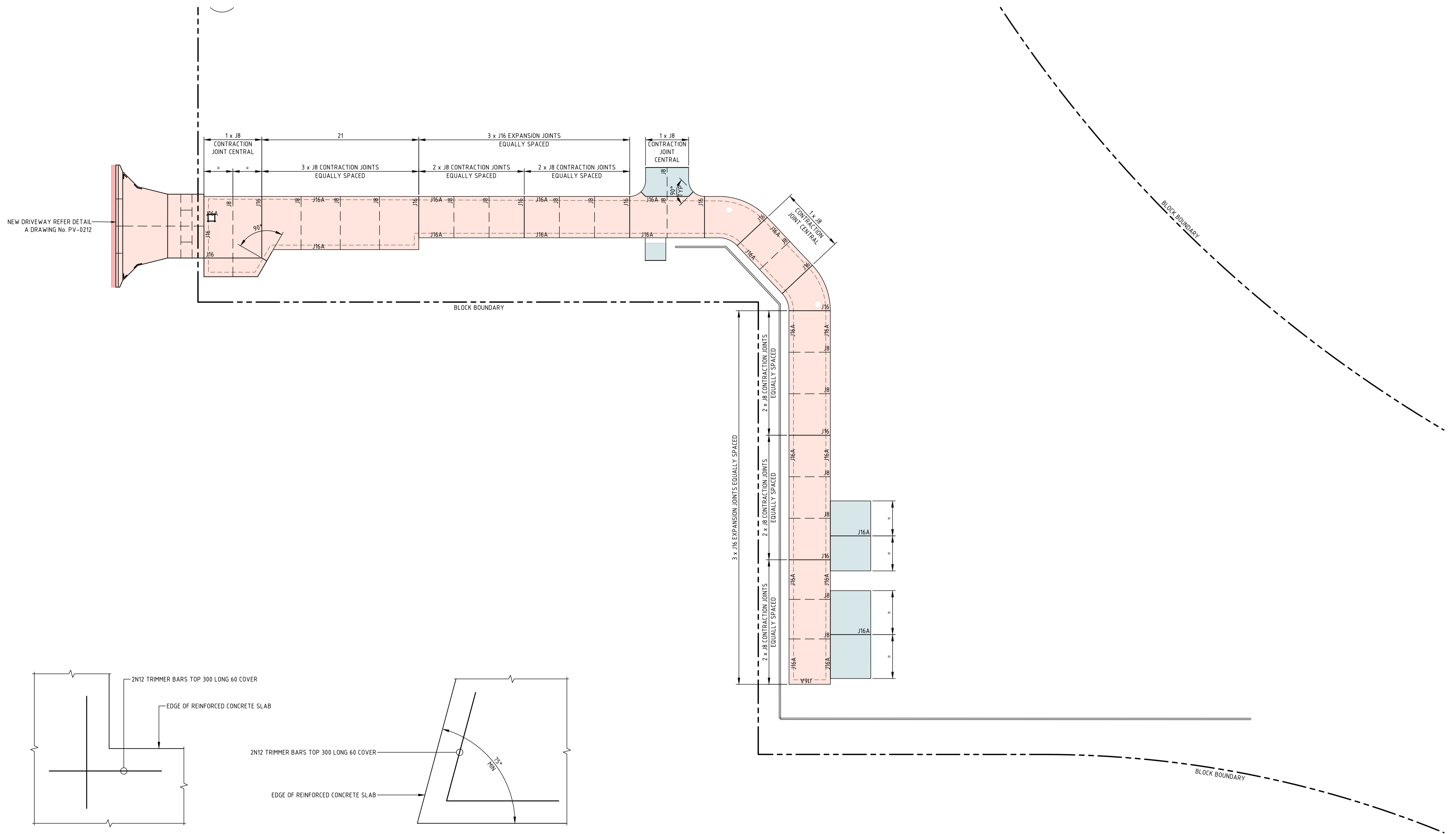
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Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
PAVEMENT CONCRETE						
JOINTING PLAN SHEET 2						
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
170324	DRG	CIV	PV	0212	C	

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**REINFORCED CONCRETE SLAB
ON GROUND TRIMMER BAR DETAILS**
SCALE 1:5

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
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Scales
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 1:5@A1
 0 5 7.5 10 12.5m
 1:250 @ A1

North

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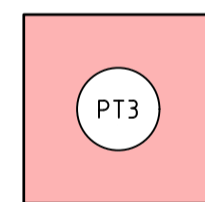
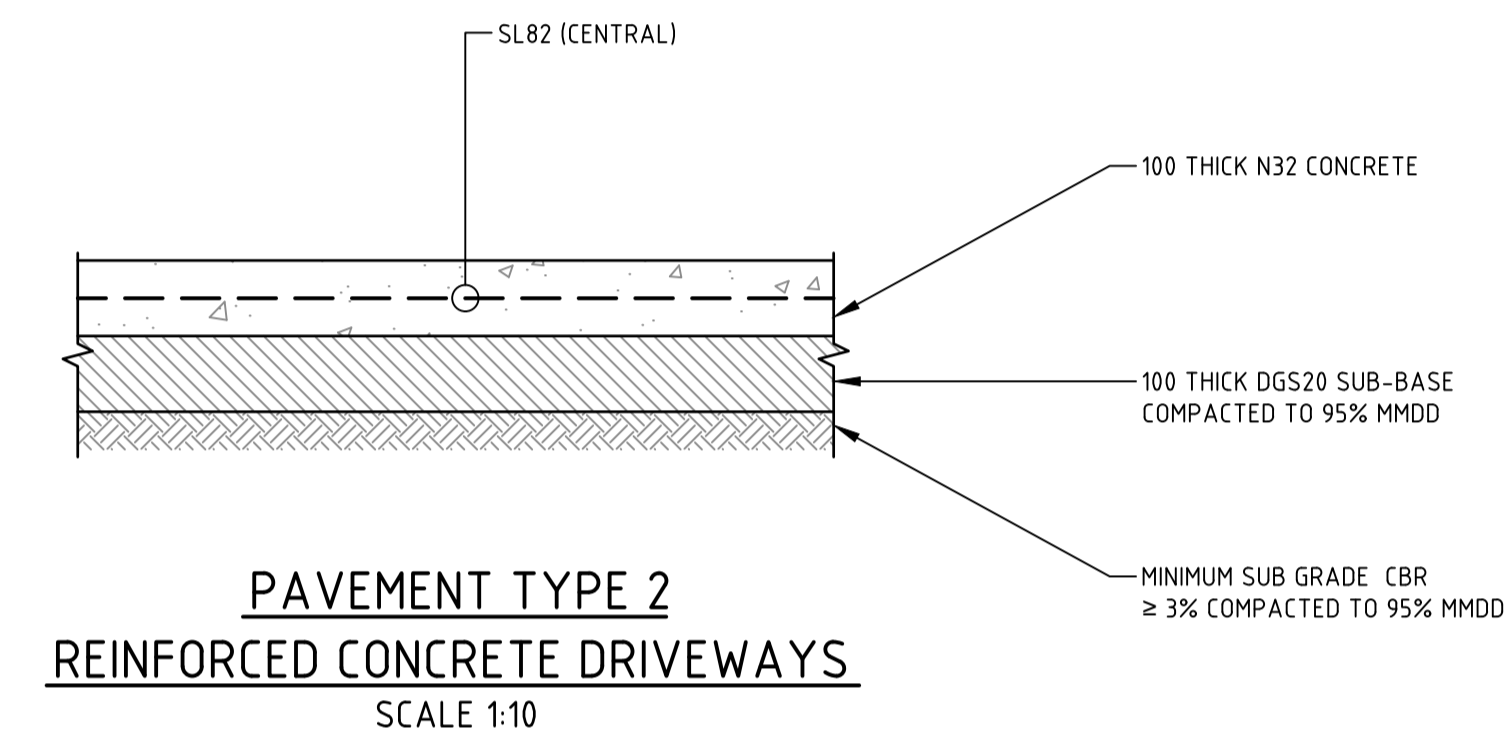
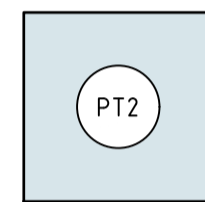
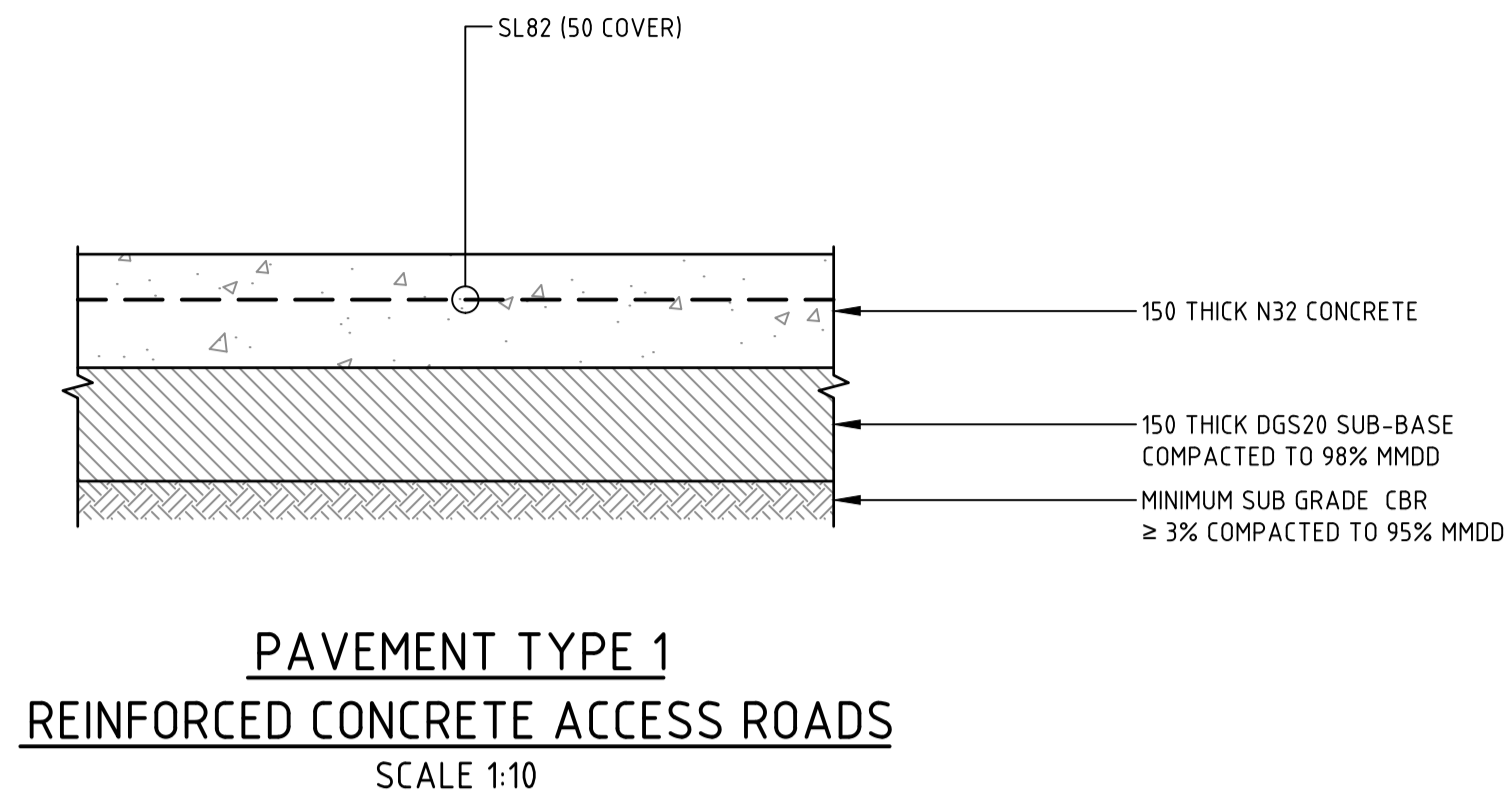
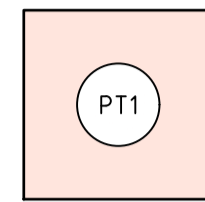
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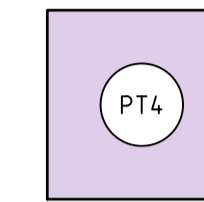
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BLOCK 13 SECTION 13, FORREST					
Drawing Title					
PAVEMENT CONCRETE					
JOINTING PLAN SHEET 1					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	PV	0211	B

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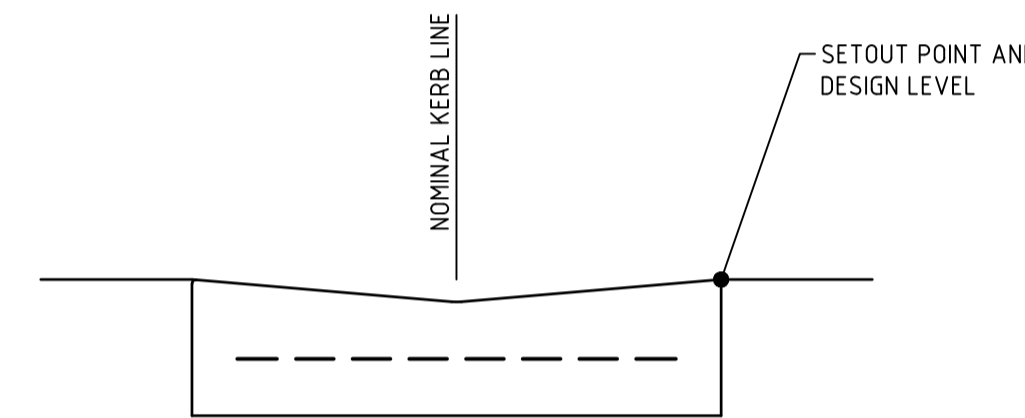
REINSTATE ASPHALTIC CONCRETE AS NECESSARY, MATCH SMOOTHLY TO EXISTING PAVEMENT LEVELS

PAVEMENT TYPE 3
REINSTATED ASPHALTIC CONCRETE
SCALE 1:10

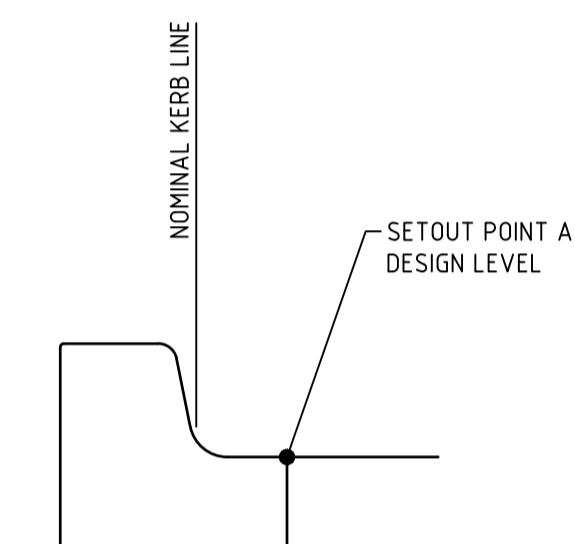


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CONCRETE PATH OPTION "C"

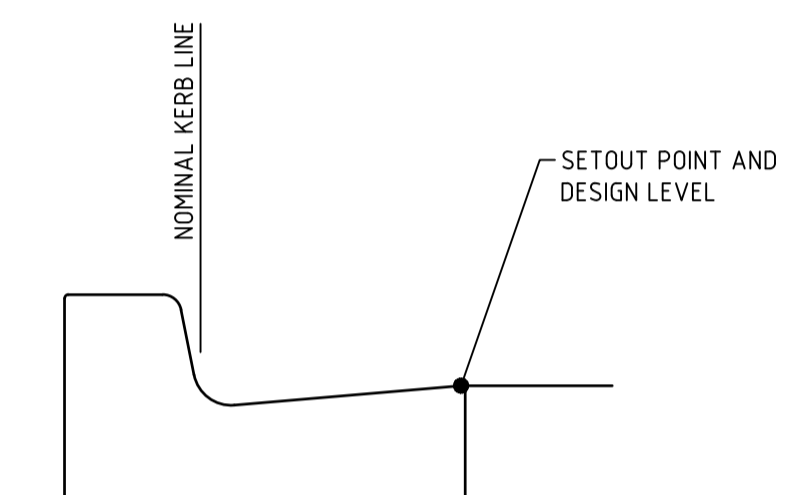
PEDESTRIAN FOOTPATH (EXTERNAL TO SITE BOUNDARY)



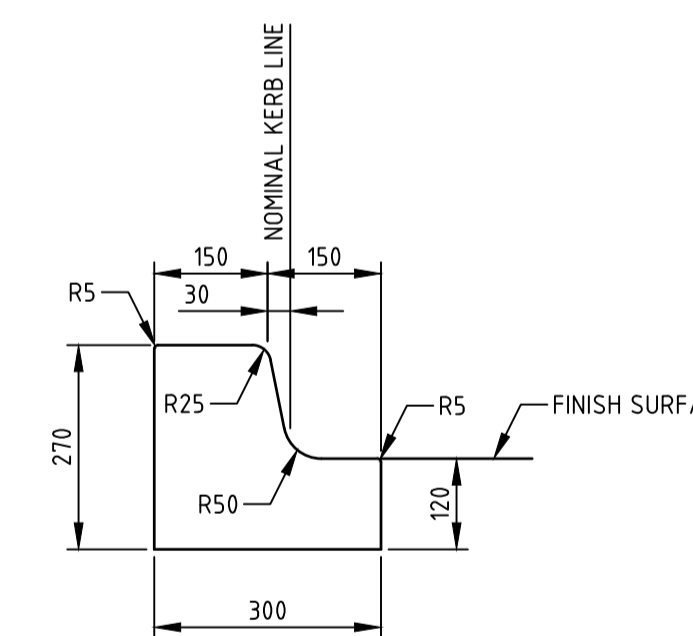
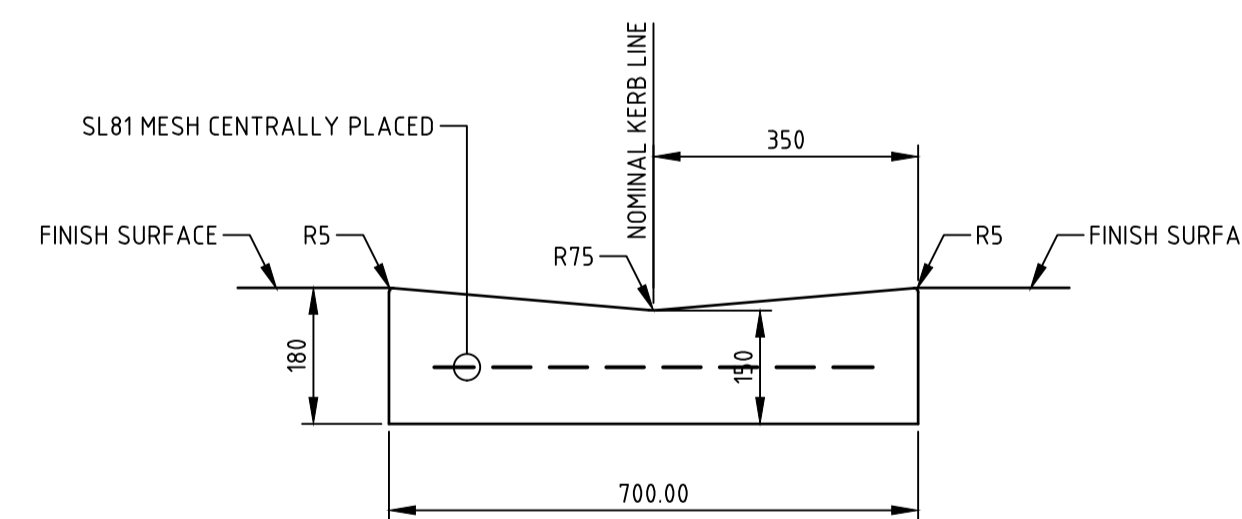
NOTE
FOR GENERAL NOTES REFER TCCS STANDARD DRAWINGS DS3-01 AND DS3-02



NOTE
FOR GENERAL NOTES REFER TCCS STANDARD DRAWINGS DS3-01 AND DS3-02



NOTE
FOR DIMENSIONS AND GENERAL NOTES REFER TCCS STANDARD DRAWINGS DS3-01 AND DS3-02



CONCRETE KERBS, FOOTPATHS AND MINOR WORKS

- CONSTRUCTION OF CONCRETE KERBS, FOOTPATHS AND MINOR WORKS SHALL BE IN ACCORDANCE WITH DESIGN STANDARD DRAWINGS DS3-01, DS3-02 AND DS13-01.
- ALL CONCRETE TO BE MINIMUM GRADE N25 (F_c=25MPa) UNLESS NOTED OTHERWISE. AGGREGATE SIZE TO BE 20mm MAXIMUM.
- JOINTING SHALL BE IN ACCORDANCE WITH DESIGN STANDARD DRAWINGS DS3-02 AND DS13-01.
- BROOMED FINISH TO BE APPLIED TO ALL VEHICULAR CROSSINGS, FOOTPATHS AND PRAM RAMPS. ALL OTHER EXPOSED SURFACES TO HAVE STEEL FLOAT FINISH.
- ALL CONCRETE TO BE CURED CONTINUOUSLY FOR THREE DAYS AFTER PLACING OR ALTERNATIVELY COATED WITH AN APPROVED CURING COMPOUND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.

CONCRETE PAVEMENT NOTES

- ALL CONCRETE SHALL BE MINIMUM GRADE N32 (F_c=32 MPa). AGGREGATE SIZE TO BE 20mm MAX.
- ALL PAVEMENT TO BE 150mm THICK AND REINFORCED WITH ONE LAYER OF SL82 FABRIC AT 50mm TOP COVER UNLESS SHOWN OTHERWISE.
- BROOMED FINISH TO BE APPLIED TO ALL CONCRETE SURFACES.
- ALL CONCRETE TO BE CURED CONTINUOUSLY FOR THREE DAYS AFTER PLACING.

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales
0 100 200 300 400 500mm
1:10 @ A1

North

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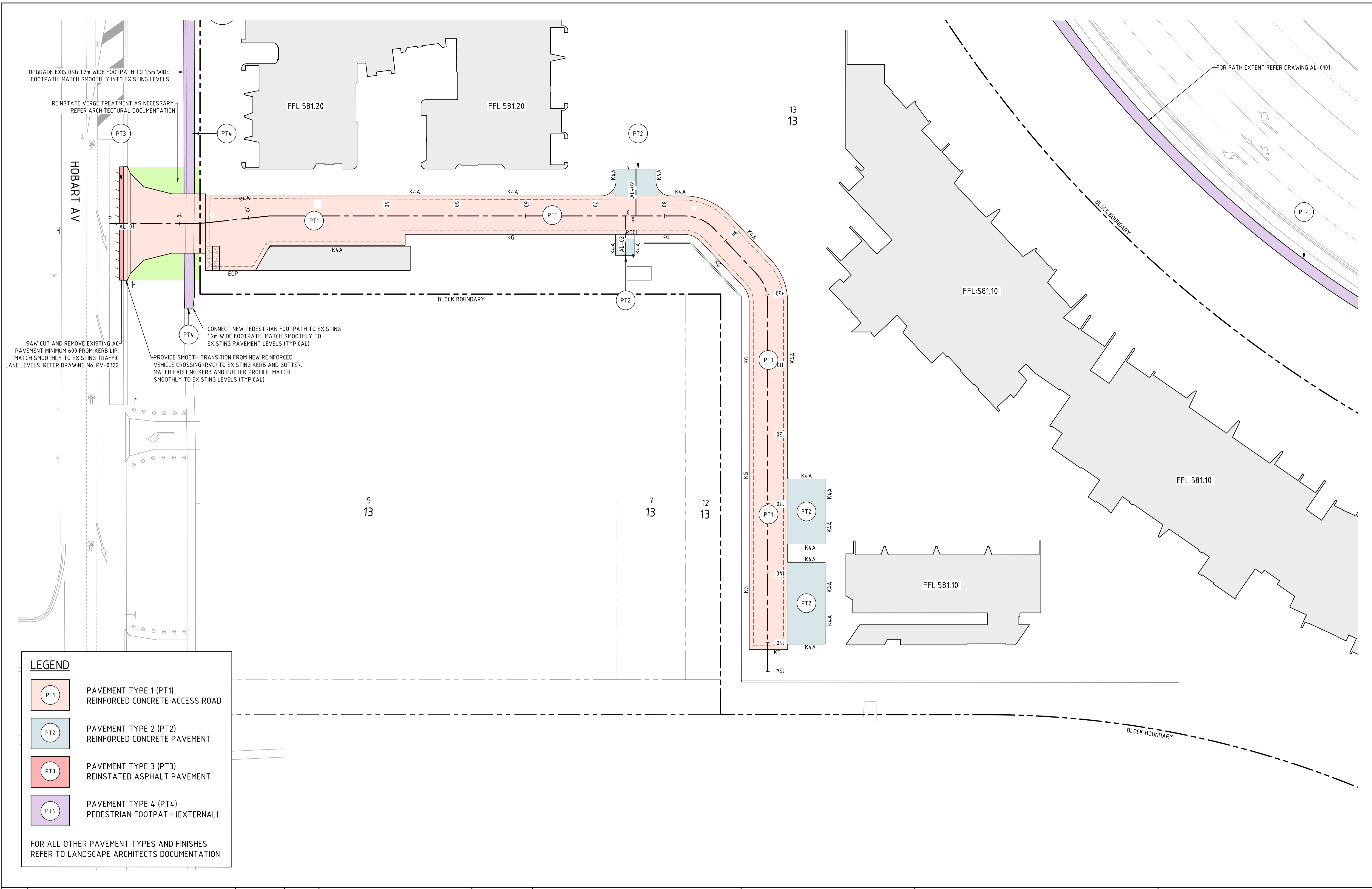
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collins caddaye architects

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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
PAVEMENT PROFILES						
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev	
170324	DRG	CIV	PV	0203	B	

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LEGEND

- PT1 PAVEMENT TYPE 1 (PT1)
REINFORCED CONCRETE ACCESS ROAD
- PT2 PAVEMENT TYPE 2 (PT2)
REINFORCED CONCRETE PAVEMENT
- PT3 PAVEMENT TYPE 3 (PT3)
REINSTATED ASPHALT PAVEMENT
- PT4 PAVEMENT TYPE 4 (PT4)
PEDESTRIAN FOOTPATH (EXTERNAL)

FOR ALL OTHER PAVEMENT TYPES AND FINISHES
REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	02.05.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 5 7.5 10 12.5m

1:250 @ A1

North

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Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
PAVEMENT PLAN					
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	PV	0201	C

PROJECT NAME:

STATE CIRCLE

JOB NUMBER:

170324

DISCIPLINE

CIVIL

PROJECT LOCATION:

BLOCK 13 SECTION 13 FORREST, ACT

SUBMISSION TYPE:

DESIGN ACCEPTANCE

CLIENT:

CCA

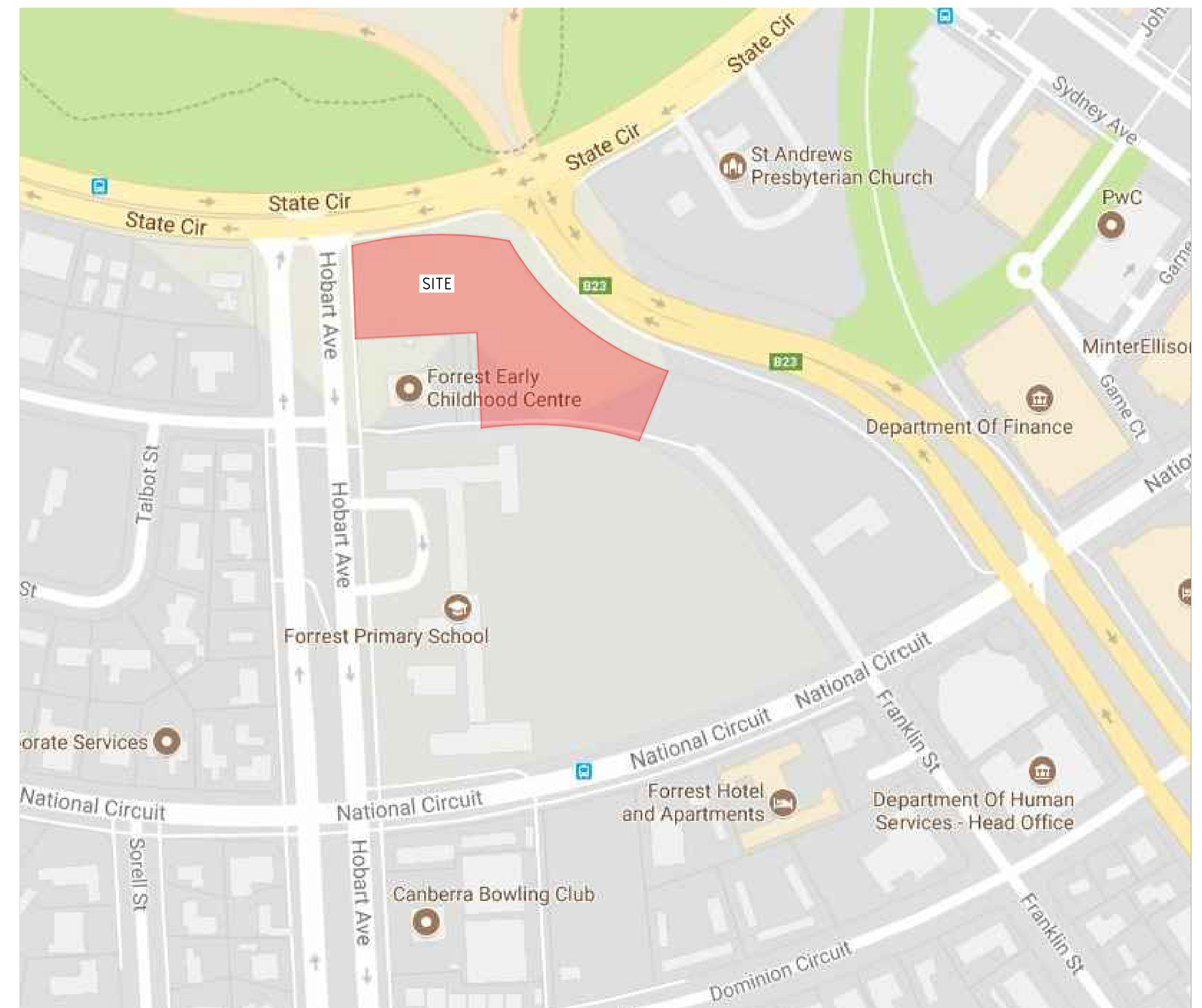
DRAWING INDEX:

GENERAL

GN-0001 COVER SHEET, DRAWING INDEX & LOCALITY PLAN
GN-0002 GENERAL NOTES & LEGEND

TO BE CONSTRUCTED DRAWINGS

AL-0101	GENERAL ARRANGEMENT PLAN	UT-0401	UTILITIES PLAN
AL-0111	TYPICAL CROSS SECTIONS SHEET 1	UT-0403	WATER CABINET DETAIL
AL-0112	TYPICAL CROSS SECTIONS SHEET 2		
AL-0121	ALIGNMENT CONTROL AND VERGE GRADING PLAN	RW-0501	RETAINING WALLS ALIGNMENT CONTROL AND FOOTING PLAN SHEET 1
AL-0122	ALIGNMENT CONTROL PLAN LONGITUDINAL SECTION SHEET 1	RW-0502	RETAINING WALLS ALIGNMENT CONTROL AND FOOTING PLAN SHEET 2
AL-0123	ALIGNMENT CONTROL PLAN LONGITUDINAL SECTION SHEET 2	RW-0521	RETAINING WALLS SECTIONS AND DETAILS SHEET 1
AL-0131	ALIGNMENT CONTROL AND ROAD GRADING PLAN	RW-0522	RETAINING WALLS SECTIONS AND DETAILS SHEET 2
AL-0132	ALIGNMENT CONTROL ROAD LONGITUDINAL SECTION		
AL-0141	ALIGNMENT CONTROL KERB SETOUT SHEET 1	TC-0601	TCD PLAN REMOVE WORKS
AL-0142	ALIGNMENT CONTROL KERB SETOUT SHEET 2	TC-0602	TCS PLAN NEW WORKS
AL-0151	ALIGNMENT CONTROL OVERLAND FLOW INTAKE POND		
SUPPORTING DESIGN DRAWINGS			
EW-0161	EARTHWORKS PLAN SHEET 1	TM-0901	TEMPORARY TRAFFIC MANAGEMENT PLAN
EW-0162	EARTHWORKS PLAN SHEET 2		
PV-0201	PAVEMENT PLAN	EV-1000	CONCEPT ENVIRONMENTAL MANAGEMENT DETAILS, NOTES & LEGEND
PV-0203	PAVEMENT PROFILES	EV-1001	CONCEPT ENVIRONMENTAL LANDSCAPE MANAGEMENT PLAN
PV-0211	PAVEMENT CONCRETE JOINTING PLAN SHEET 1	EV-1011	CONCEPT ENVIRONMENTAL SEDIMENT EROSION PLAN
PV-0212	PAVEMENT CONCRETE JOINTING PLAN SHEET 2	EV-1021	SITE MANAGEMENT PLAN STAGE 1
PV-0221	PAVEMENT CONCRETE DETAILS	EV-1022	SITE MANAGEMENT PLAN STAGE 2
PV-0222	PAVEMENT EDGE & INTERFACE	TP-2101	VEHICLE TURNING PATH PLAN
DR-0301	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 1	WM-2201	WASTE MANAGEMENT PLAN SHEET 1
DR-0302	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 2	WM-2202	WASTE MANAGEMENT PLAN SHEET 2
DR-0311	STORMWATER LONGITUDINAL SECTIONS SHEET 1		
DR-0312	STORMWATER LONGITUDINAL SECTIONS SHEET 2		
DR-0321	SPECIAL STORMWATER STRUCTURE SHEET 1		
DR-0322	SPECIAL STORMWATER STRUCTURE SHEET 2		
DR-0323	SPECIAL STORMWATER STRUCTURE SHEET 3		
DR-0324	SPECIAL STORMWATER STRUCTURE SHEET 4		



LOCALITY PLAN

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				Status			Project Name and Location								
				NOT FOR CONSTRUCTION			MULTI-UNIT DEVELOPMENT								
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				Date Plotted	26-Jun-18	Designed By	LT	Design Check	CO	Drawing Title					
				Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN					
				Height Datum	AHD	Approved Signature									
Rev	Description	Date	Approved	Project Number	170324	Type	DRG	Discipline	CIV	Sub-Discipline	GN	Dr No.	0001	Rev	B

PROJECT NAME:

STATE CIRCLE

JOB NUMBER:

170324

DISCIPLINE

CIVIL

PROJECT LOCATION:

BLOCK 13 SECTION 13 FORREST, ACT

SUBMISSION TYPE:

DESIGN ACCEPTANCE

CLIENT:

CCA

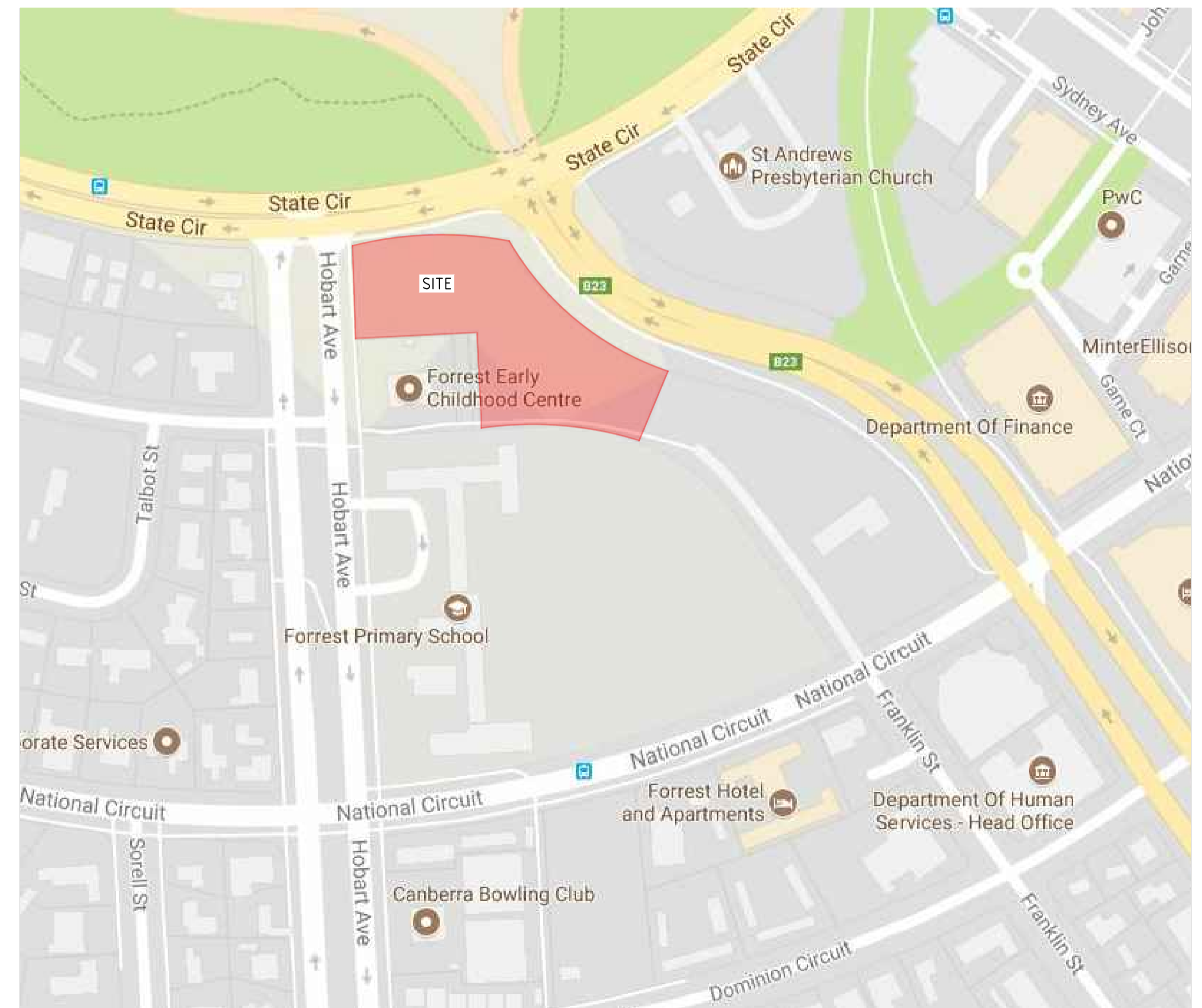
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SUPPORTING DESIGN DRAWINGS			
EW-0161	EARTHWORKS PLAN SHEET 1	TM-0901	TEMPORARY TRAFFIC MANAGEMENT PLAN
EW-0162	EARTHWORKS PLAN SHEET 2		
PV-0201	PAVEMENT PLAN	EV-1000	CONCEPT ENVIRONMENTAL MANAGEMENT DETAILS, NOTES & LEGEND
PV-0203	PAVEMENT PROFILES	EV-1001	CONCEPT ENVIRONMENTAL LANDSCAPE MANAGEMENT PLAN
PV-0211	PAVEMENT CONCRETE JOINTING PLAN SHEET 1	EV-1011	CONCEPT ENVIRONMENTAL SEDIMENT EROSION PLAN
PV-0212	PAVEMENT CONCRETE JOINTING PLAN SHEET 2	EV-1021	SITE MANAGEMENT PLAN STAGE 1
PV-0221	PAVEMENT CONCRETE DETAILS	EV-1022	SITE MANAGEMENT PLAN STAGE 2
PV-0222	PAVEMENT EDGE & INTERFACE	TP-2101	VEHICLE TURNING PATH PLAN
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DR-0323	SPECIAL STORMWATER STRUCTURE SHEET 3		
DR-0324	SPECIAL STORMWATER STRUCTURE SHEET 4		



LOCALITY PLAN

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				Status			Project Name and Location								
				NOT FOR CONSTRUCTION			MULTI-UNIT DEVELOPMENT								
				Original Size	A1	Drawn By	RT	Drafting Check	DA	BLOCK 13 SECTION 13, FORREST					
				Date Plotted	26-Jun-18	Designed By	LT	Design Check	CO	Drawing Title					
				Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN					
				Height Datum	AHD	Approved Signature									
Rev	Description	Date	Approved	Project Number	170324	Type	DRG	Discipline	CIV	Sub-Discipline	GN	Dr No.	0001	Rev	B

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-civ-ew-0162.dwg



BULK EARTHWORKS VOLUMES

CUT: 54m³
FILL: 7732m³

NOTE:

- ALL BULK VOLUMES ARE SOLID VOLUMES AND DO NOT TAKE INTO CONSIDERATION BULKING FACTORS
- ROAD BENCHING 300mm DEEP TO MATCH PAVEMENT DETAIL
- 100mm OVER EXCAVATION HAS BEEN ALLOWED FOR THROUGH LANDSCAPE ZONES
- NO ALLOWANCE HAS BEEN MADE FOR LANDSCAPE WALLS AND FEATURES. EXCAVATION FOR LANDSCAPE FEATURE TO BE PART OF DETAILED EXCAVATION.
- 200mm OVER EXCAVATION HAS BEEN ALLOWED FOR BELOW BASEMENT STRUCTURE. TO BE CONFIRMED BY STRUCTURAL ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
- 2:1 BATTER IS CUT ZONES AND 1:1 BATTER IN FILL ZONES HAVE BEEN USED. BATTER STABILITY TO BE CONFIRMED BY GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION
- NO TOP SOILING STRIPPING ALLOWANCE HAS BEEN MADE FOR IN THE BULK VOLUMES
- ALL EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AS3798
- ALL BUILDING SET OUT TO BE BASED ON ARCHITECTURAL DOCUMENTATION AND CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION

BULK EARTHWORK NOTES

STRIPPING

1. SITE SHOULD BE STRIPPED AND REINSTATED PROGRESSIVELY AS REQUIRED (MINIMISE EXPOSED SURFACES).
2. STRIP ALL GRASS COVER AND TOP SOIL TO EXPOSE UNDERLYING SOIL IN AREAS TO BE REGRADED.
3. TOP SOIL TO BE STOCKPILED FOR FUTURE USE IN LANDSCAPING.

FILL PLATFORMS

1. FOR STRIPPED SLOPES STEEPER THAN 12.5% OVER WHICH FILL PLATFORMS ARE TO BE CONSTRUCTED, PROVIDE BENCHING OF NOT MORE THAN 300mm DEPTH
2. FILL IS TO BE PLACED AND COMPACTED IN LEVEL 150MM LAYERS MAXIMUM COMPACTED THICKNESS.
3. STRUCTURAL FILL PLATFORMS TO BE COMPACTED TO 95% STANDARD DRY DENSITY (90% MDD). NON STRUCTURAL PLATFORMS TO BE COMPACTED TO 90% STANDARD DRY DENSITY.
4. FILL MATERIAL TO BE FREE OF ORGANICS, BUILDERS DEBRIS, OTHER DELETERIOUS MATERIAL AND SILT. MATERIAL TO BE UNIFORM MOISTURE CONDITION PRIOR TO PLACEMENT AND COMPACTION.
5. MAX ROCK FRAGMENT SIZE TO BE 75MM DIAMETER WITHIN FILL MATERIAL.
6. FILL PLATFORMS TO BE CONSTRUCTED WITH 1 VERTICAL TO 3 HORIZONTAL BATTER UNLESS SPECIFIED OTHERWISE.
7. TERRACED CUT AND FILL AREAS ARE TO BE CONSTRUCTED FROM LOWER LEVEL TO UPPER LEVEL WITH OVER FILLING. FOLLOWED BY CUTTING BACK AS NECESSARY.
8. ALL FILL SURFACES TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER.

CUT PLATFORMS

1. CUT FACES WITHIN SITE LESS THAN 2.5M IN HEIGHT TO BE VERTICAL IN ACCORDANCE WITH GEOTECHNICAL REPORT. BATTER BACK TOP 0.5m AT 1 VERTICAL TO 1 HORIZONTAL. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL UNLESS SHORING IS PROVIDED.
2. CUT FACES GREATER THAN 2.5M IN HEIGHT TO HAVE PORTION ABOVE 2.5M BATTERED BACK AT 1 VERTICAL TO 2 HORIZONTAL.
3. CUT PLATFORMS TO BE PROOF ROLLED. CUT PLATFORMS TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL.

TESTING

1. TESTING TO BE CARRIED OUT IN ACCORDANCE WITH AS3798 BY NATA REGISTERED LABORATORY.
2. TESTING TO BE UNDERTAKEN PROGRESSIVELY THROUGHOUT BULK EARTHWORKS.
3. TESTING TO BE DISTRIBUTED UNIFORMLY THROUGHOUT DEVELOPMENT ALLOW 1 TEST PER 50m³ FILL.
4. ANY PLATFORMS NOT ACHIEVING MINIMUM TEST RESULTS ARE TO BE STRIPPED BACK, RE-COMPACTED, AND RE-TESTED UNTIL REQUIRED COMPACTION LEVELS ACHIEVED.

Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Red	-1.000	-0.500
2	Light Red	-0.500	0.000
3	Light Green	0.000	0.500
4	Light Green	0.500	1.000
5	Light Green	1.000	1.500
6	Light Green	1.500	2.000
7	Light Green	2.000	2.500
8	Light Green	2.500	3.000
9	Light Green	3.000	3.500
10	Light Green	3.500	4.000
11	Light Green	4.000	4.500

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	04.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

North

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Date Plotted	21-Jun-18	Designing By	LT
Coordinate System	STROMLO GRID	Approved	CO
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		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
EARTHWORKS PLAN						
SHEET 2						
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev	
170324	DRG	CIV	EW	0162	C	

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-civ-ew-0162.dwg



BULK EARTHWORKS VOLUMES

CUT: 54m³
FILL: 7732m³

NOTE:

- ALL BULK VOLUMES ARE SOLID VOLUMES AND DO NOT TAKE INTO CONSIDERATION BULKING FACTORS
- ROAD BENCHING 300mm DEEP TO MATCH PAVEMENT DETAIL
- 100mm OVER EXCAVATION HAS BEEN ALLOWED FOR THROUGH LANDSCAPE ZONES
- NO ALLOWANCE HAS BEEN MADE FOR LANDSCAPE WALLS AND FEATURES. EXCAVATION FOR LANDSCAPE FEATURE TO BE PART OF DETAILED EXCAVATION.
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BULK EARTHWORK NOTES

STRIPPING

1. SITE SHOULD BE STRIPPED AND REINSTATED PROGRESSIVELY AS REQUIRED (MINIMISE EXPOSED SURFACES).
2. STRIP ALL GRASS COVER AND TOP SOIL TO EXPOSE UNDERLYING SOIL IN AREAS TO BE REGRADED.
3. TOP SOIL TO BE STOCKPILED FOR FUTURE USE IN LANDSCAPING.

FILL PLATFORMS

1. FOR STRIPPED SLOPES STEEPER THAN 12.5% OVER WHICH FILL PLATFORMS ARE TO BE CONSTRUCTED, PROVIDE BENCHING OF NOT MORE THAN 300mm DEPTH
2. FILL IS TO BE PLACED AND COMPACTED IN LEVEL 150MM LAYERS MAXIMUM COMPACTED THICKNESS.
3. STRUCTURAL FILL PLATFORMS TO BE COMPACTED TO 95% STANDARD DRY DENSITY (90% MDD). NON STRUCTURAL PLATFORMS TO BE COMPACTED TO 90% STANDARD DRY DENSITY.
4. FILL MATERIAL TO BE FREE OF ORGANICS, BUILDERS DEBRIS, OTHER DELETERIOUS MATERIAL AND SILT. MATERIAL TO BE UNIFORM MOISTURE CONDITION PRIOR TO PLACEMENT AND COMPACTION.
5. MAX ROCK FRAGMENT SIZE TO BE 75MM DIAMETER WITHIN FILL MATERIAL.
6. FILL PLATFORMS TO BE CONSTRUCTED WITH 1 VERTICAL TO 3 HORIZONTAL BATTER UNLESS SPECIFIED OTHERWISE.
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3. CUT PLATFORMS TO BE PROOF ROLLED. CUT PLATFORMS TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL.

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2	[Light Red]	-0.500	0.000
3	[Light Green]	0.000	0.500
4	[Green]	0.500	1.000
5	[Light Green]	1.000	1.500
6	[Green]	1.500	2.000
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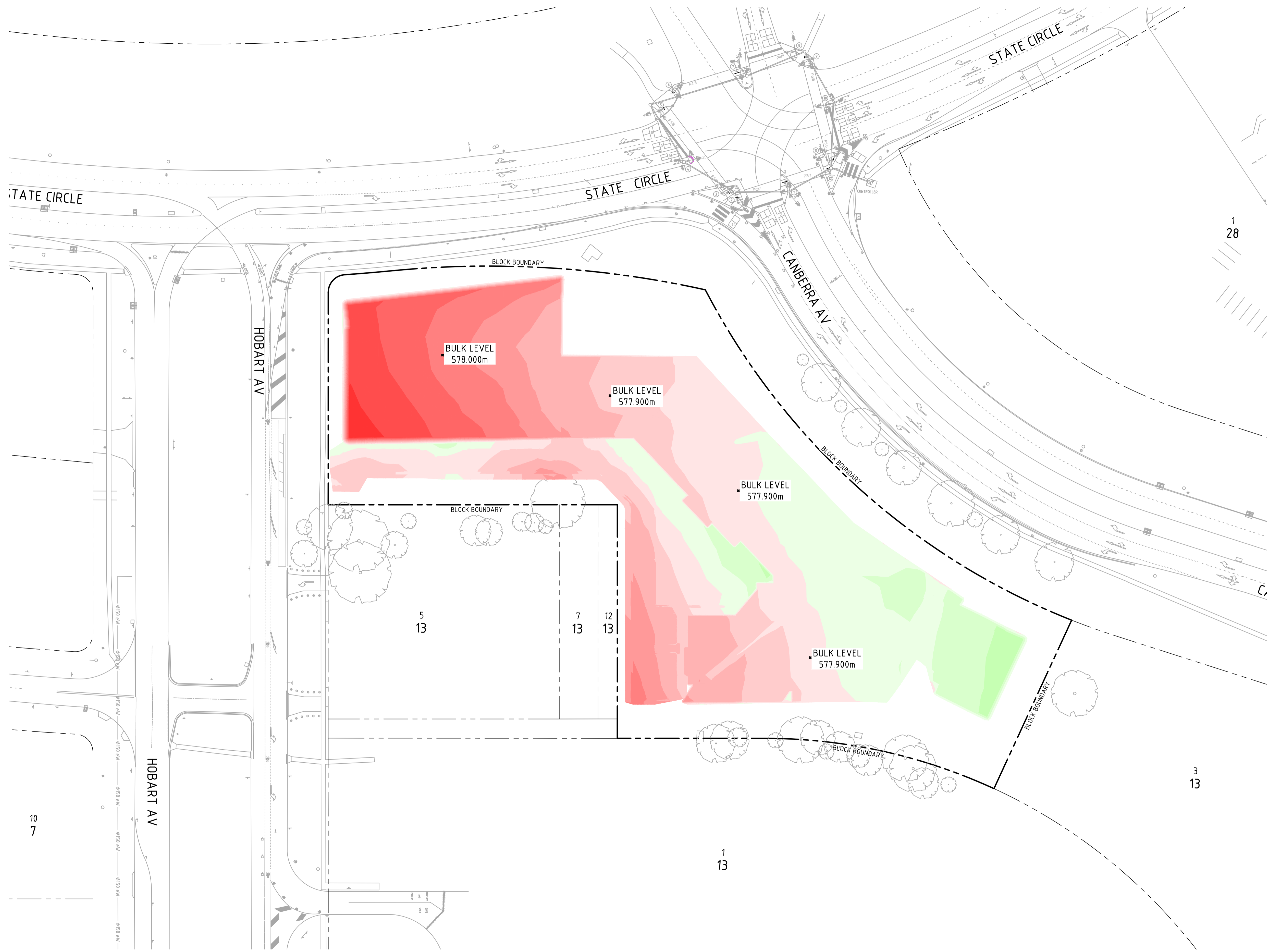
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SHEET 2						
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BULK EARTHWORKS VOLUMES

CUT: 8115m³
FILL: 1340m³

NOTE:

- ALL BULK VOLUMES ARE SOLID VOLUMES AND DO NOT TAKE INTO CONSIDERATION BULKING FACTORS
- ROAD BENCHING 300mm DEEP TO MATCH PAVEMENT DETAIL
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BULK EARTHWORK NOTES

STRIPPING

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3. TOP SOIL TO BE STOCKPILED FOR FUTURE USE IN LANDSCAPING.

FILL PLATFORMS

1. FOR STRIPPED SLOPES STEEPER THAN 12.5% OVER WHICH FILL PLATFORMS ARE TO BE CONSTRUCTED, PROVIDE BENCHING OF NOT MORE THAN 300mm DEPTH
2. FILL IS TO BE PLACED AND COMPACTED IN LEVEL 150MM LAYERS MAXIMUM COMPACTED THICKNESS.
3. STRUCTURAL FILL PLATFORMS TO BE COMPACTED TO 95% STANDARD DRY DENSITY (90% MDD). NON STRUCTURAL PLATFORMS TO BE COMPACTED TO 90% STANDARD DRY DENSITY.
4. FILL MATERIAL TO BE FREE OF ORGANICS, BUILDERS DEBRIS, OTHER DELETERIOUS MATERIAL AND SILT. MATERIAL TO BE UNIFORM MOISTURE CONDITION PRIOR TO PLACEMENT AND COMPACTION.
5. MAX ROCK FRAGMENT SIZE TO BE 75MM DIAMETER WITHIN FILL MATERIAL.
6. FILL PLATFORMS TO BE CONSTRUCTED WITH 1 VERTICAL TO 3 HORIZONTAL BATTER UNLESS SPECIFIED OTHERWISE.
7. TERRACED CUT AND FILL AREAS ARE TO BE CONSTRUCTED FROM LOWER LEVEL TO UPPER LEVEL WITH OVER FILLING, FOLLOWED BY CUTTING BACK AS NECESSARY.
8. ALL FILL SURFACES TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER.

CUT PLATFORMS

1. CUT FACES WITHIN SITE LESS THAN 2.5M IN HEIGHT TO BE VERTICAL IN ACCORDANCE WITH GEOTECHNICAL REPORT. BATTER BACK TOP 0.5m AT 1 VERTICAL TO 1 HORIZONTAL. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL UNLESS SHORING IS PROVIDED.
2. CUT FACES GREATER THAN 2.5M IN HEIGHT TO HAVE PORTION ABOVE 2.5M BATTERED BACK AT 1 VERTICAL TO 2 HORIZONTAL.
3. CUT PLATFORMS TO BE PROOF ROLLED. CUT PLATFORMS TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL.

TESTING

1. TESTING TO BE CARRIED OUT IN ACCORDANCE WITH AS3798 BY NATA REGISTERED LABORATORY.
2. TESTING TO BE UNDERTAKEN PROGRESSIVELY THROUGHOUT BULK EARTHWORKS.
3. TESTING TO BE DISTRIBUTED UNIFORMLY THROUGHOUT DEVELOPMENT ALLOW 1 TEST PER 50m³ FILL.
4. ANY PLATFORMS NOT ACHIEVING MINIMUM TEST RESULTS ARE TO BE STRIPPED BACK, RE-COMPACTED, AND RE-TESTED UNTIL REQUIRED COMPACTION LEVELS ACHIEVED.

Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Red	-4.000	-3.500
2	Red	-3.500	-3.000
3	Red	-3.000	-2.500
4	Red	-2.500	-2.000
5	Red	-2.000	-1.500
6	Red	-1.500	-1.000
7	Red	-1.000	-0.500
8	Red	-0.500	0.000
9	Light Green	0.000	0.500
10	Light Green	0.500	1.000
11	Light Green	1.000	1.500

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

1:500 @ A1

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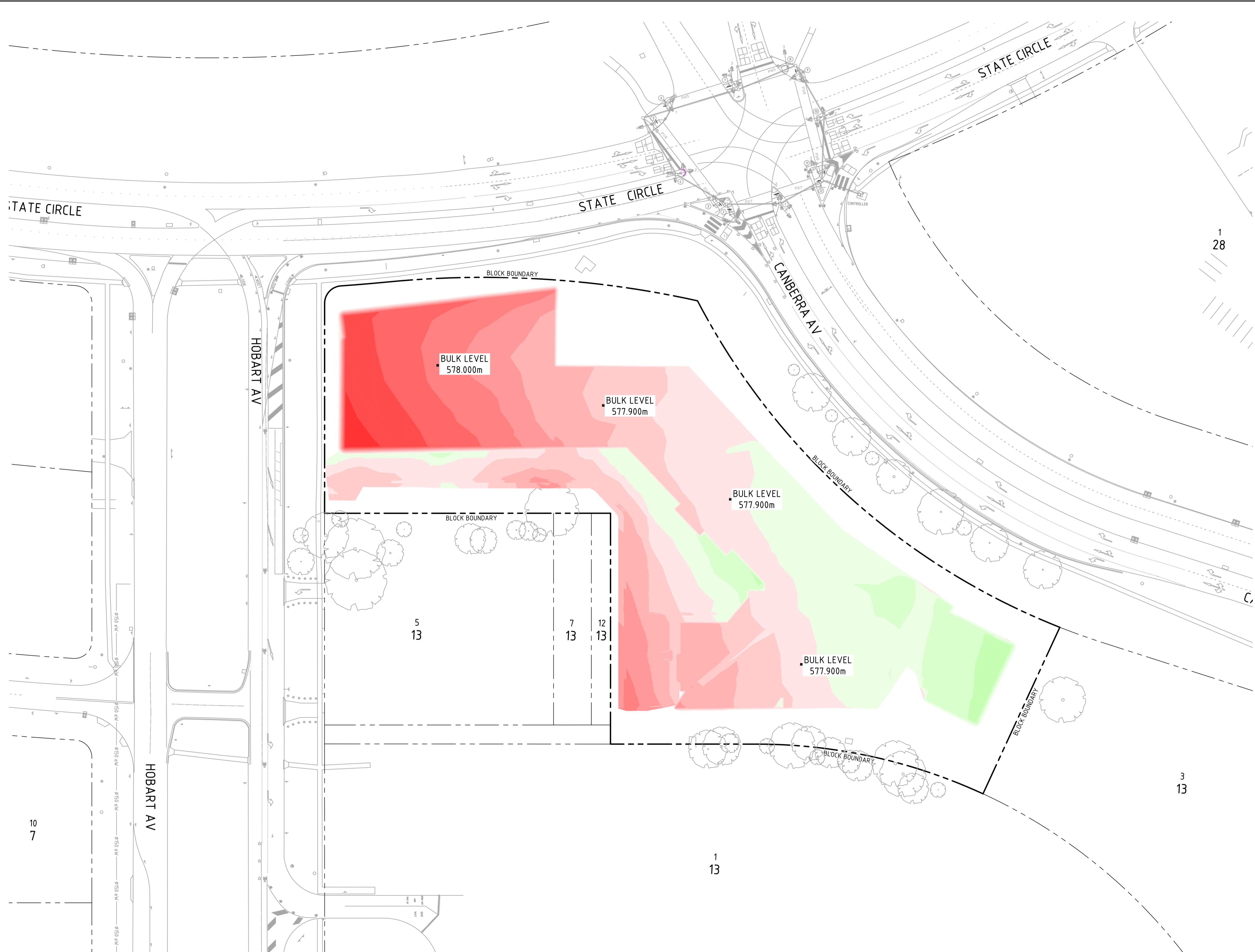
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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location		MULTI-UNIT DEVELOPMENT				
		BLOCK 13 SECTION 13, FORREST				
Drawing Title		EARTHWORKS PLAN				
Sheet Title		SHEET 1				
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
170324	DRG	CIV	EW	0161	B	

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-civ-ew-0161.dwg



BULK EARTHWORKS VOLUMES

CUT: 8115m³
 FILL: 1340m³

NOTE:

- ALL BULK VOLUMES ARE SOLID VOLUMES AND DO NOT TAKE INTO CONSIDERATION BULKING FACTORS
- ROAD BENCHING 300mm DEEP TO MATCH PAVEMENT DETAIL
- 100mm OVER EXCAVATION HAS BEEN ALLOWED FOR THROUGH LANDSCAPE ZONES
- NO ALLOWANCE HAS BEEN MADE FOR LANDSCAPE WALLS AND FEATURES. EXCAVATION FOR LANDSCAPE FEATURE TO BE PART OF DETAILED EXCAVATION.
- 200mm OVER EXCAVATION HAS BEEN ALLOWED FOR BELOW BASEMENT STRUCTURE. TO BE CONFIRMED BY STRUCTURAL ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
- 2:1 BATTER IS CUT ZONES AND 1:1 BATTER IN FILL ZONES HAVE BEEN USED. BATTER STABILITY TO BE CONFIRMED BY GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION
- NO TOP SOILING STRIPPING ALLOWANCE HAS BEEN MADE FOR IN THE BULK VOLUMES
- ALL EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AS3798
- ALL BUILDING SET OUT TO BE BASED ON ARCHITECTURAL DOCUMENTATION AND CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION

BULK EARTHWORK NOTES

STRIPPING

1. SITE SHOULD BE STRIPPED AND REINSTATED PROGRESSIVELY AS REQUIRED (MINIMISE EXPOSED SURFACES).
2. STRIP ALL GRASS COVER AND TOP SOIL TO EXPOSE UNDERLYING SOIL IN AREAS TO BE REGRADED.
3. TOP SOIL TO BE STOCKPILED FOR FUTURE USE IN LANDSCAPING.

FILL PLATFORMS

1. FOR STRIPPED SLOPES STEEPER THAN 12.5% OVER WHICH FILL PLATFORMS ARE TO BE CONSTRUCTED, PROVIDE BENCHING OF NOT MORE THAN 300mm DEPTH
2. FILL IS TO BE PLACED AND COMPACTED IN LEVEL 150MM LAYERS MAXIMUM COMPACTED THICKNESS.
3. STRUCTURAL FILL PLATFORMS TO BE COMPACTED TO 95% STANDARD DRY DENSITY (90% MDD). NON STRUCTURAL PLATFORMS TO BE COMPACTED TO 90% STANDARD DRY DENSITY.
4. FILL MATERIAL TO BE FREE OF ORGANICS, BUILDERS DEBRIS, OTHER DELETERIOUS MATERIAL AND SILT. MATERIAL TO BE UNIFORM MOISTURE CONDITION PRIOR TO PLACEMENT AND COMPACTION.
5. MAX ROCK FRAGMENT SIZE TO BE 75MM DIAMETER WITHIN FILL MATERIAL.
6. FILL PLATFORMS TO BE CONSTRUCTED WITH 1 VERTICAL TO 3 HORIZONTAL BATTER UNLESS SPECIFIED OTHERWISE.
7. TERRACED CUT AND FILL AREAS ARE TO BE CONSTRUCTED FROM LOWER LEVEL TO UPPER LEVEL WITH OVER FILLING, FOLLOWED BY CUTTING BACK AS NECESSARY.
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CUT PLATFORMS

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TESTING

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2. TESTING TO BE UNDERTAKEN PROGRESSIVELY THROUGHOUT BULK EARTHWORKS.
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Surface Analysis: Elevation Ranges			
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Red	-4.000	-3.500
2	Red	-3.500	-3.000
3	Red	-3.000	-2.500
4	Red	-2.500	-2.000
5	Red	-2.000	-1.500
6	Red	-1.500	-1.000
7	Red	-1.000	-0.500
8	Red	-0.500	0.000
9	Light Green	0.000	0.500
10	Light Green	0.500	1.000
11	Light Green	1.000	1.500

B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO
Rev	Description	Date	Approved

Scales
 0 10 15 20 25m
 1:500 @ A1

North

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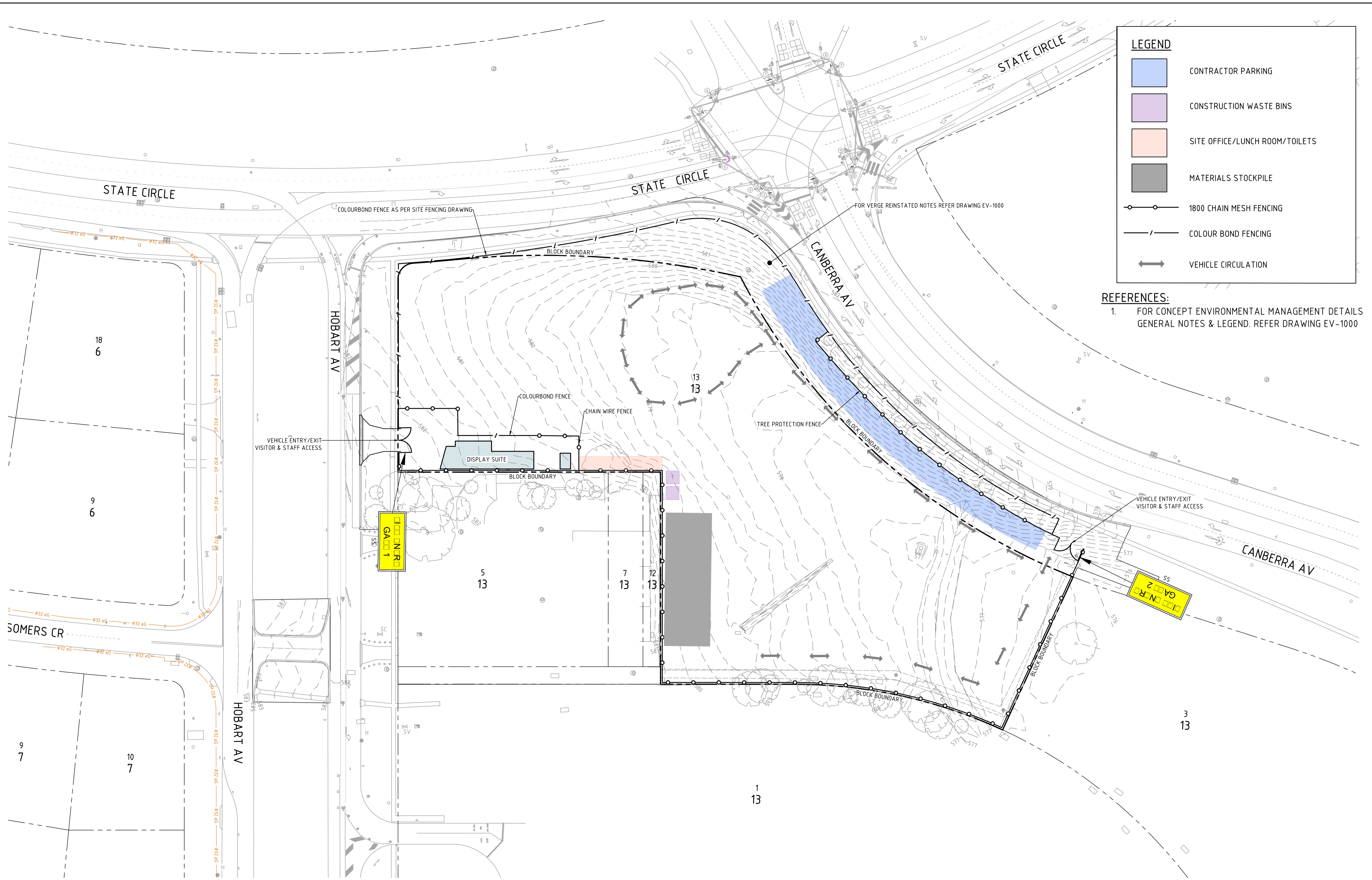
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Date Plotted	21-Jun-18	Drafting Check	DA
Coordinate System	STROMLO GRID	Designed By	LT
Height Datum	AHD	Design Check	CO
		Approved	CO
		Approved Date	23.08.2018
		Approved Signature	

Project Name and Location MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title EARTHWORKS PLAN					
SHEET 1					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	EW	0161	B

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-ev-1022.dwg



LEGEND

- CONTRACTOR PARKING
- CONSTRUCTION WASTE BINS
- SITE OFFICE/LUNCH ROOM/TOILETS
- MATERIALS STOCKPILE
- 1800 CHAIN MESH FENCING
- COLOUR BOND FENCING
- VEHICLE CIRCULATION

REFERENCES:
 1. FOR CONCEPT ENVIRONMENTAL MANAGEMENT DETAILS
 GENERAL NOTES & LEGEND. REFER DRAWING EV-1000

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	19.04.18	CO
A	FOR DESIGN ACCEPTANCE	18.04.18	CO

Scales

0 10 15 20 25m

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Date Plotted	21-Jun-18	Designed By	RT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

Project Name and Location

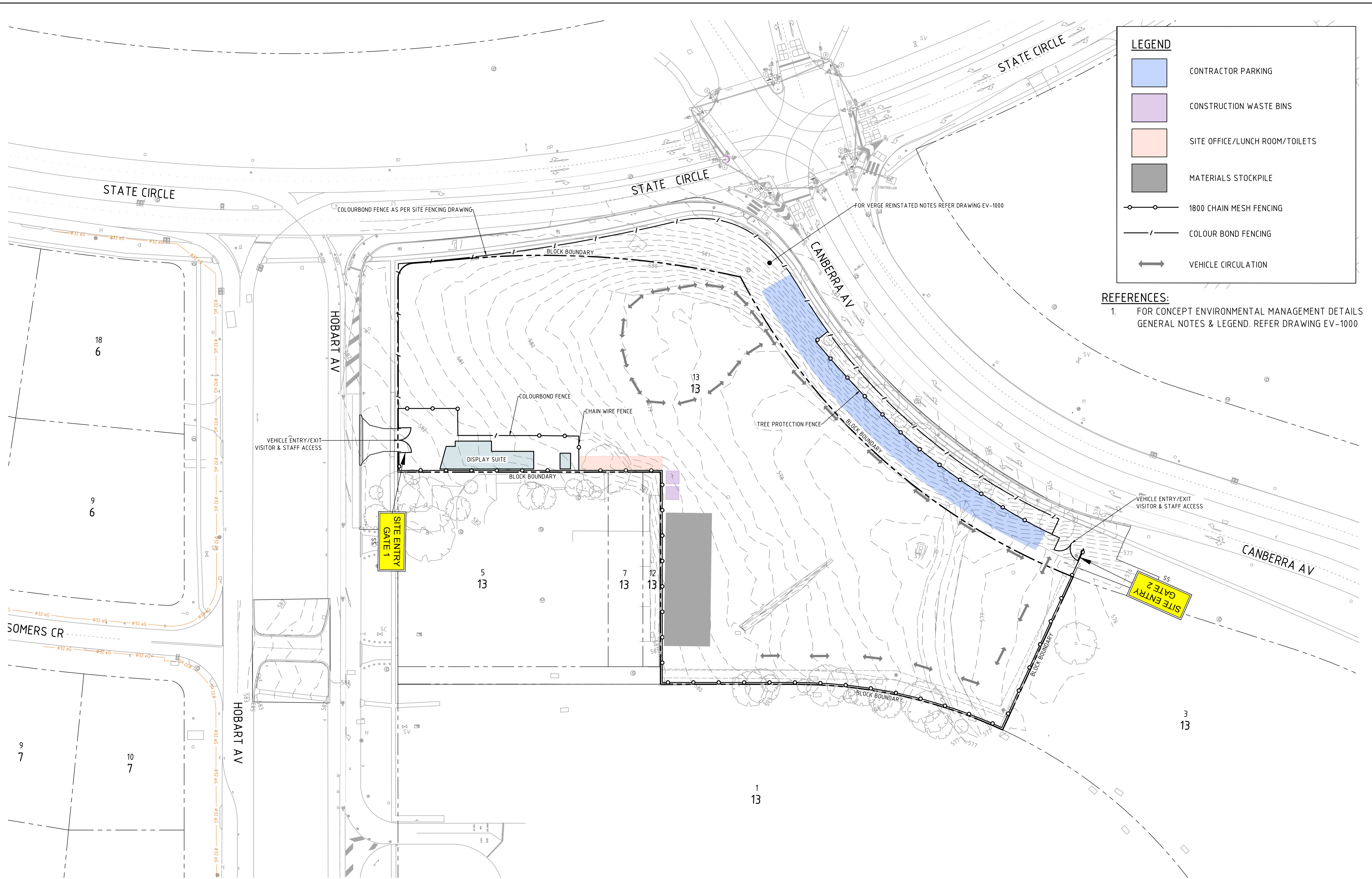
MULTI-UNIT DEVELOPMENT
BLOCK 13 SECTION 13, FORREST

Drawing Title

SITE MANAGEMENT PLAN
STAGE 2

Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	EV	1022	C

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-ev-1022.dwg



LEGEND

- CONTRACTOR PARKING
- CONSTRUCTION WASTE BINS
- SITE OFFICE/LUNCH ROOM/TOILETS
- MATERIALS STOCKPILE
- 1800 CHAIN MESH FENCING
- COLOUR BOND FENCING
- VEHICLE CIRCULATION

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Rev	Description	Date	Approved
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A	FOR DESIGN ACCEPTANCE	18.04.18	CO

Scales

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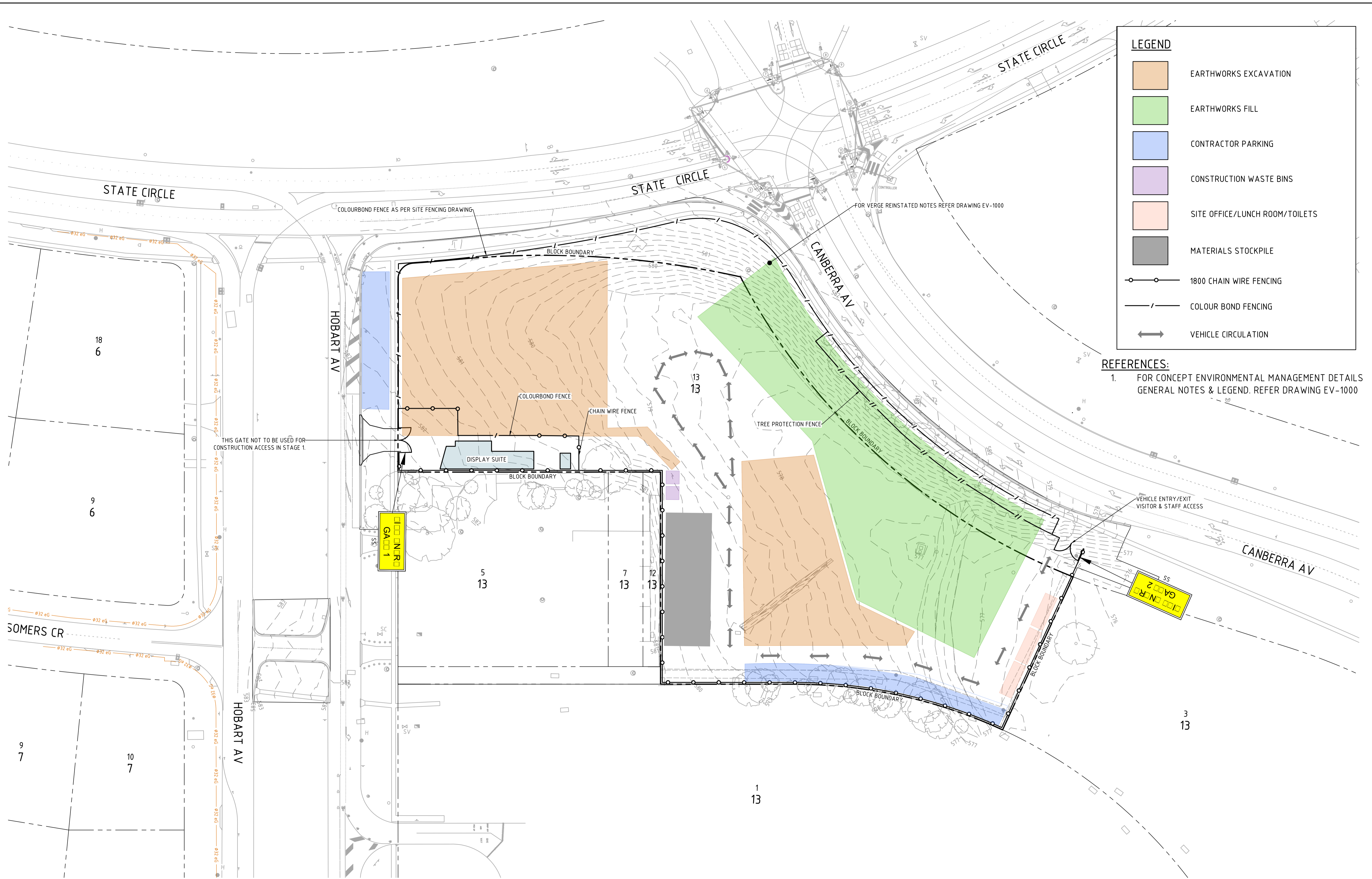
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Height Datum	AHD	Approved Date	23.08.2018
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Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
SITE MANAGEMENT PLAN					
STAGE 2					
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	EV	1022	B

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LEGEND

- EARTHWORKS EXCAVATION
- EARTHWORKS FILL
- CONTRACTOR PARKING
- CONSTRUCTION WASTE BINS
- SITE OFFICE/LUNCH ROOM/TOILETS
- MATERIALS STOCKPILE
- 1800 CHAIN WIRE FENCING
- COLOUR BOND FENCING
- VEHICLE CIRCULATION

REFERENCES:
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B	FOR DESIGN ACCEPTANCE	19.04.18	CO
A	FOR DESIGN ACCEPTANCE	18.04.18	CO

Scales

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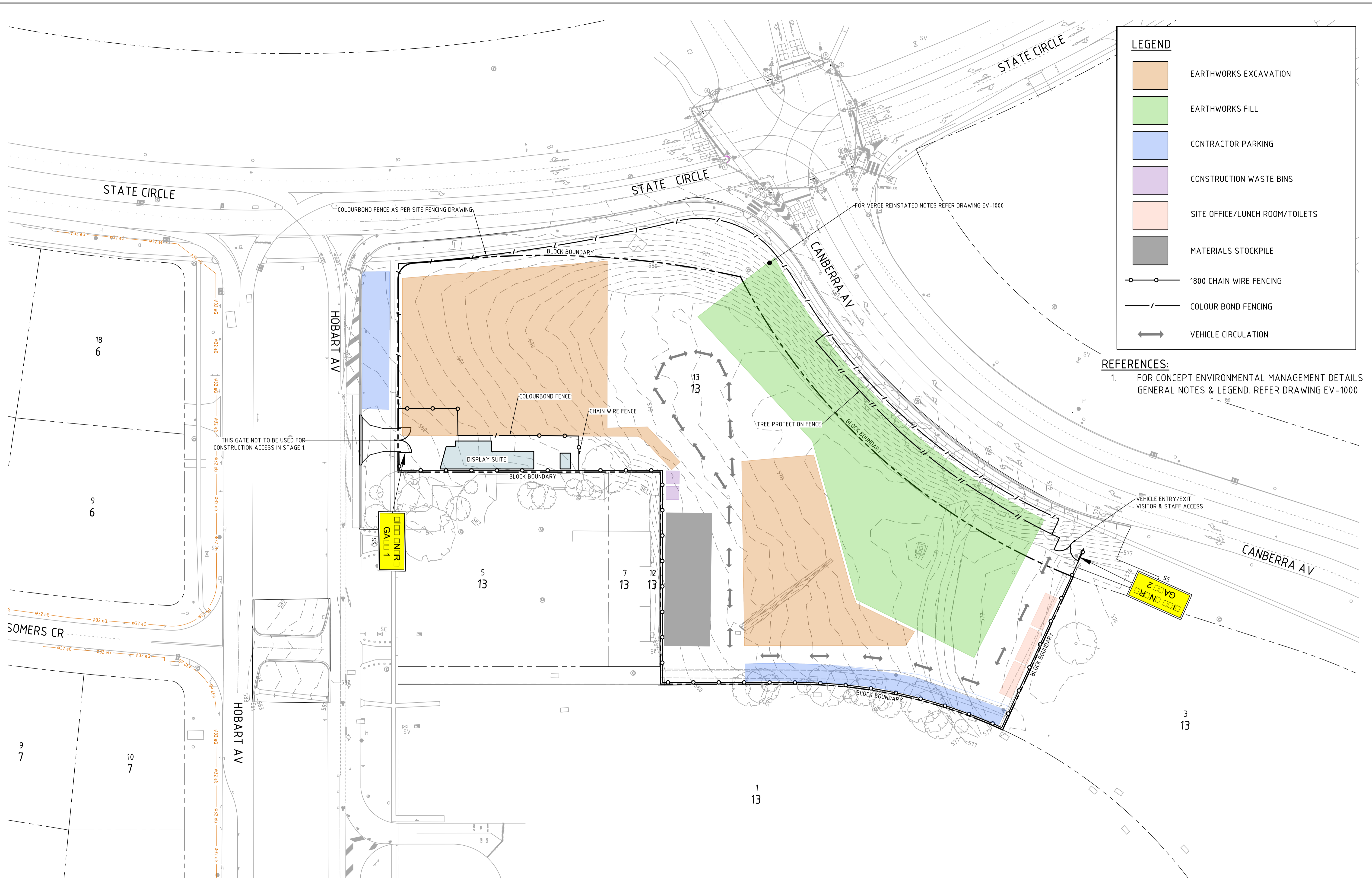
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Status			
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Date Plotted	21-Jun-18	Designed By	RT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
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Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
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STAGE 1						
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev	
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LEGEND

- EARTHWORKS EXCAVATION
- EARTHWORKS FILL
- CONTRACTOR PARKING
- CONSTRUCTION WASTE BINS
- SITE OFFICE/LUNCH ROOM/TOILETS
- MATERIALS STOCKPILE
- 1800 CHAIN WIRE FENCING
- COLOUR BOND FENCING
- VEHICLE CIRCULATION

REFERENCES:
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 GENERAL NOTES & LEGEND. REFER DRAWING EV-1000

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B	FOR DESIGN ACCEPTANCE	19.04.18	CO
A	FOR DESIGN ACCEPTANCE	18.04.18	CO

Scales

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1:500 @ A1

North

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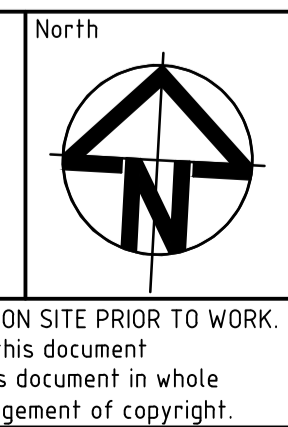
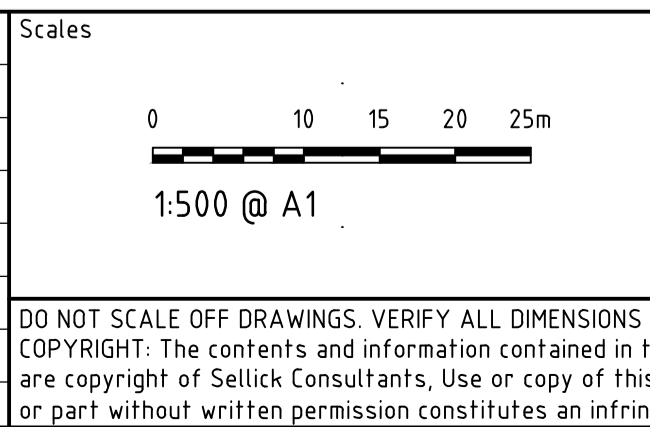
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Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
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STAGE 1					
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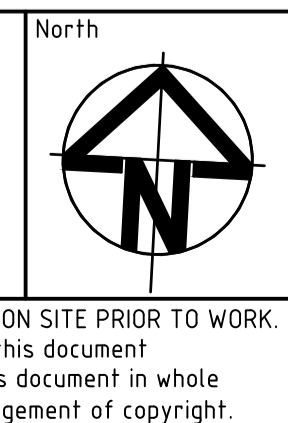
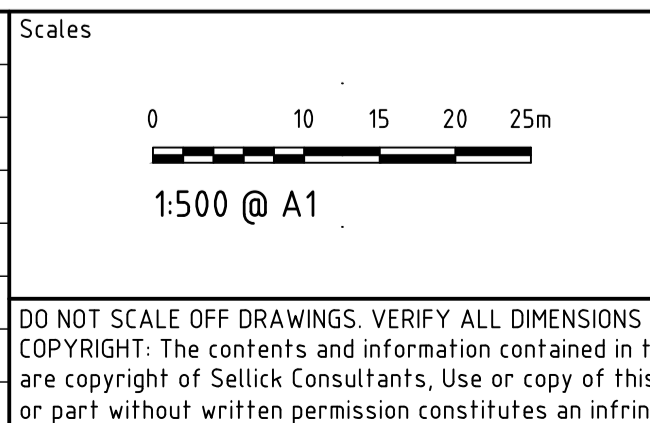
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		Approved Signature	

Project Name and Location						
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BLOCK 13 SECTION 13, FORREST						
Drawing Title						
CONCEPT ENVIRONMENTAL						
SEDIMENT EROSION PLAN SHEET 1						
Project Number	Type	Discipline	Sub-Discipline	Dwg No.	Rev	
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A	FOR DESIGN ACCEPTANCE	23.03.2018	CO



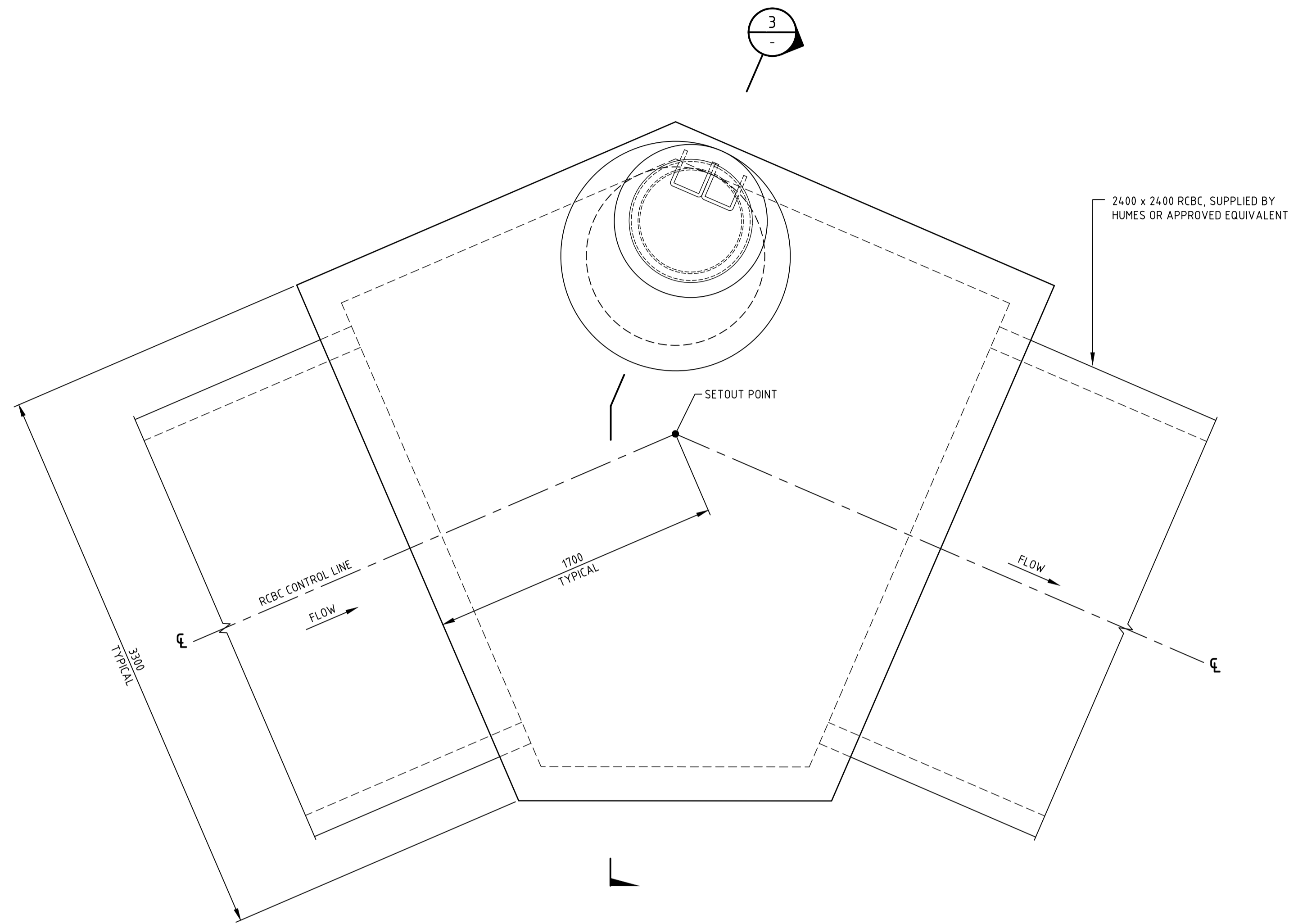
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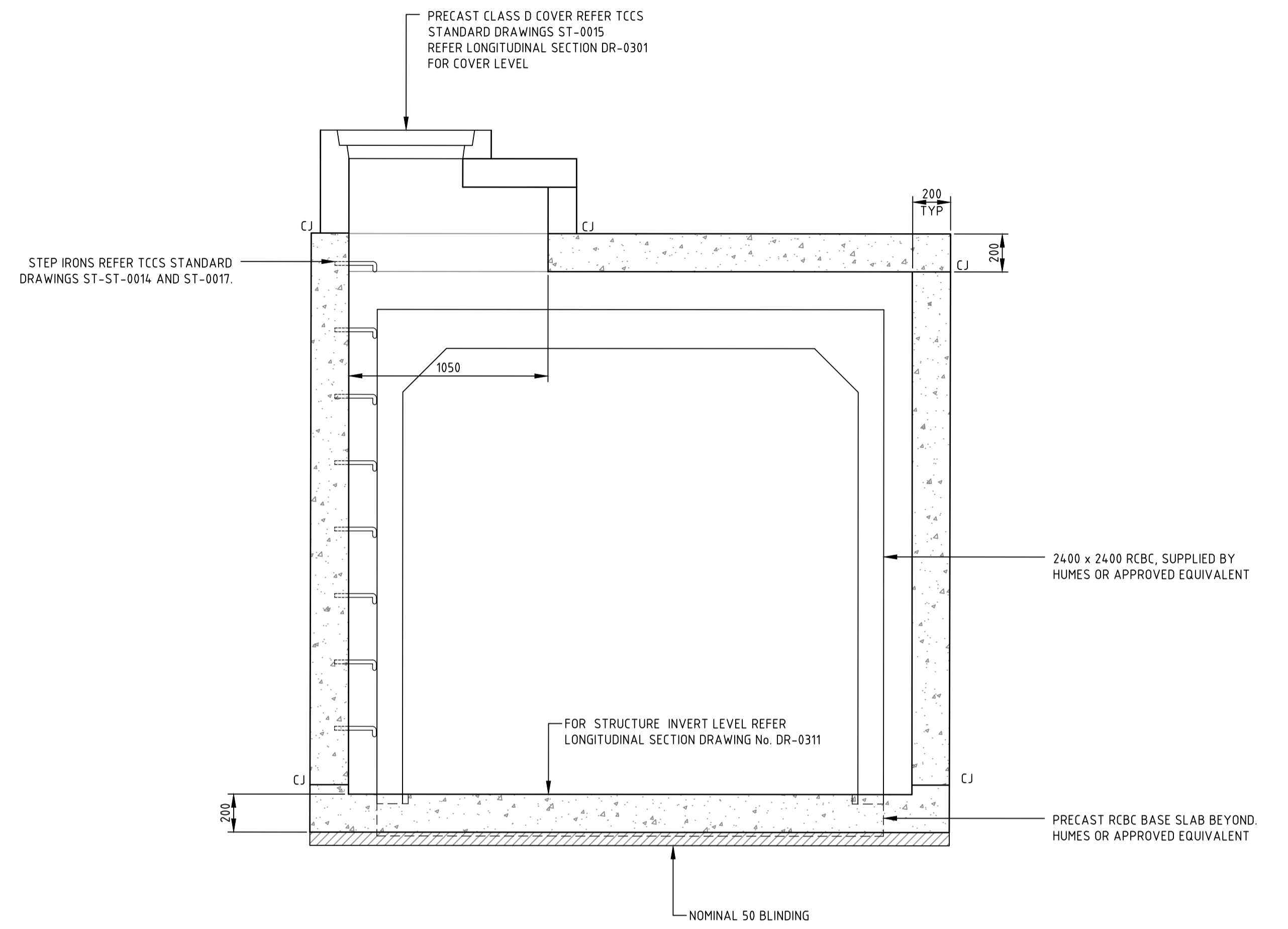
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Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
CONCEPT ENVIRONMENTAL						
LANDSCAPE MANAGEMENT PLAN SHEET 1						
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev	
170324	DRG	CIV	EV	1001	B	

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PLAN
1:20



NOTES:

1. CONCRETE REINFORCEMENT AND NOTES TO BE DOCUMENTED AT TENDER PHASE.

SECTION **3**
SCALE 1:20

SPECIAL STORMWATER STRUCTURE SWN3
SPECIAL STRUCTURE SWN4 SIMILAR

1:20

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

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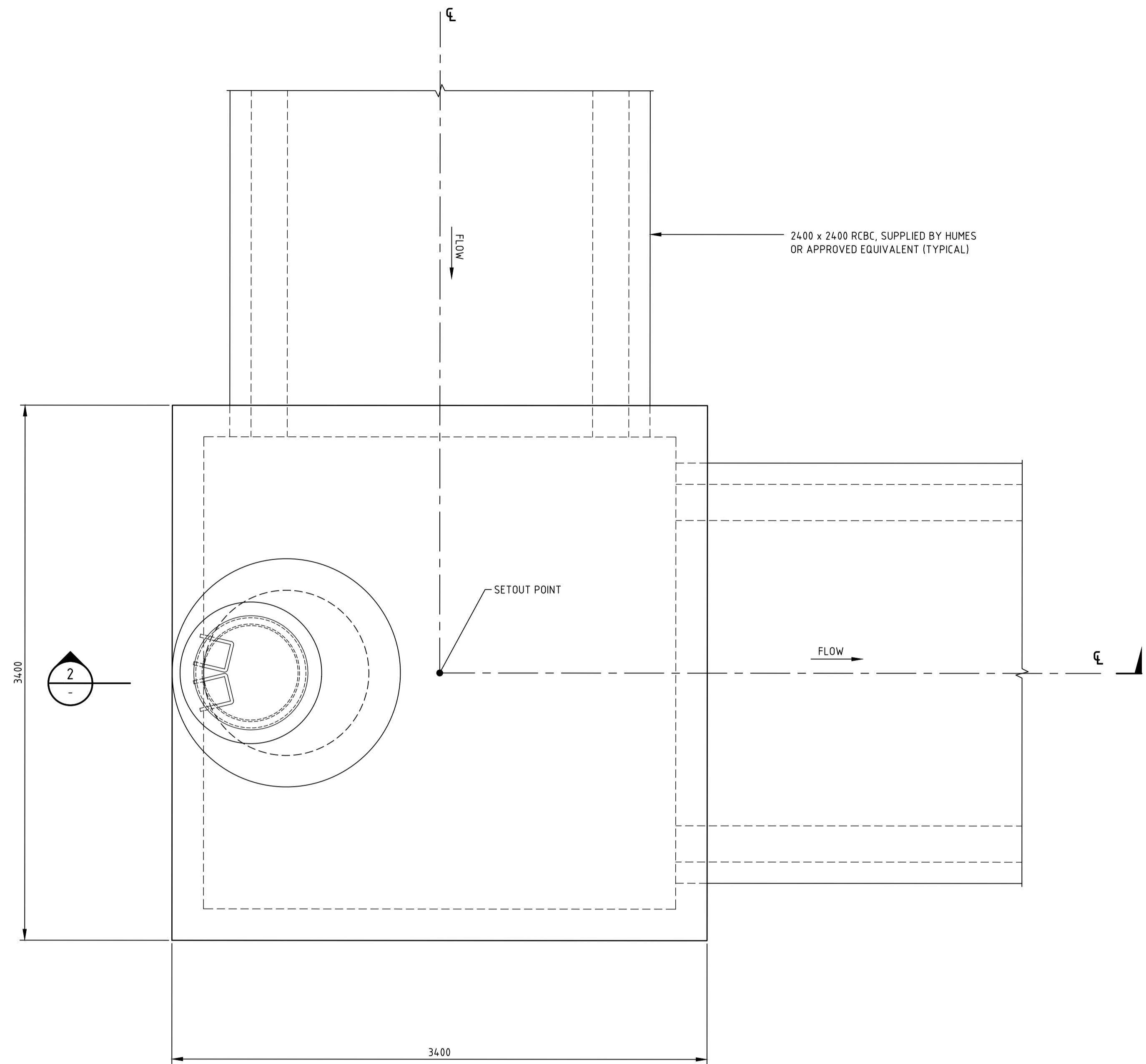
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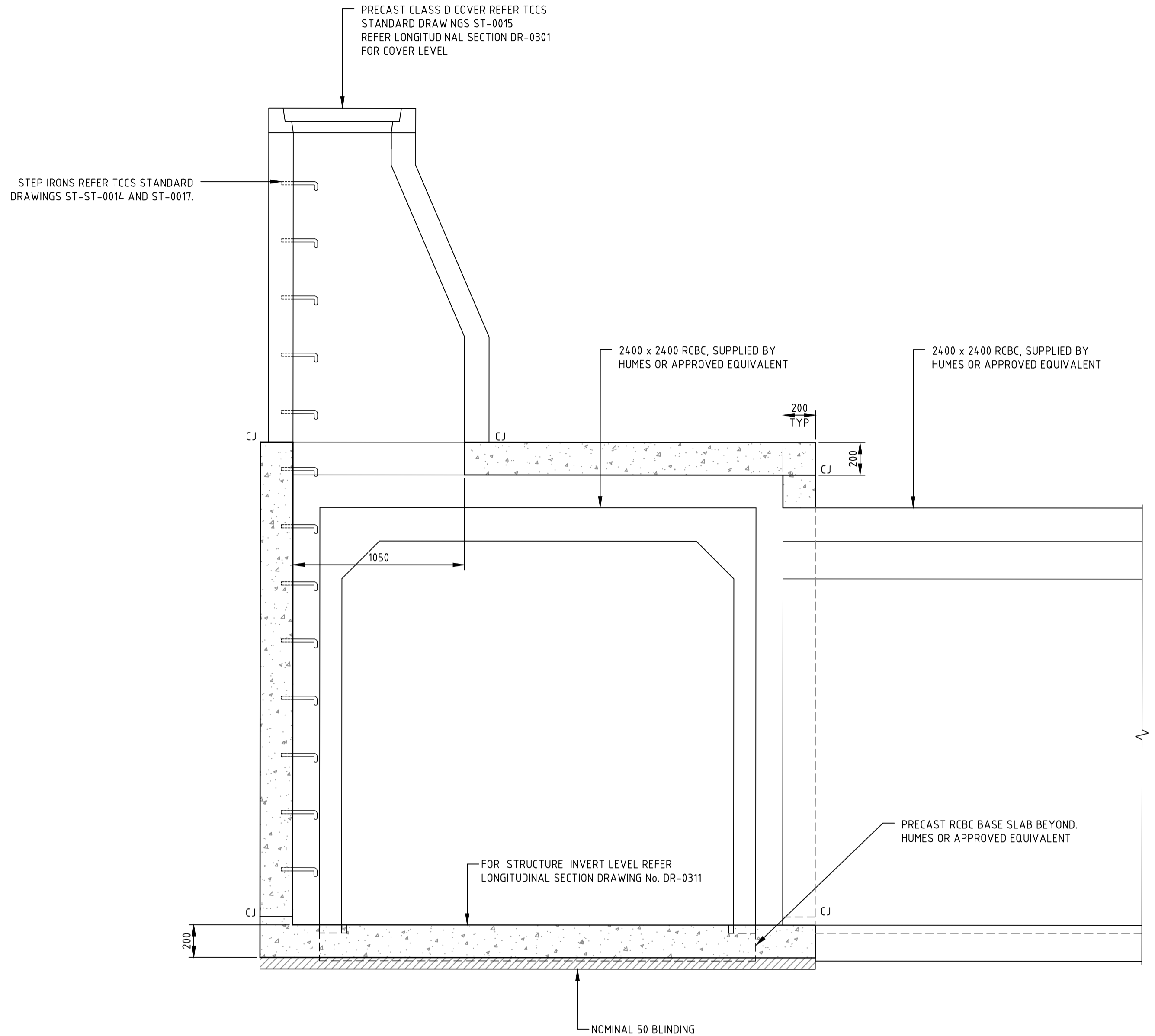
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Date Plotted	21-Jun-18	Designed By	LT
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Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
SPECIAL STORMWATER STRUCTURE						
SHEET 3						
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
170324	DRG	CIV	DR	0323	B	

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PLAN
1:20



NOTES:

1. CONCRETE REINFORCEMENT AND NOTES TO BE DOCUMENTED AT TENDER PHASE.

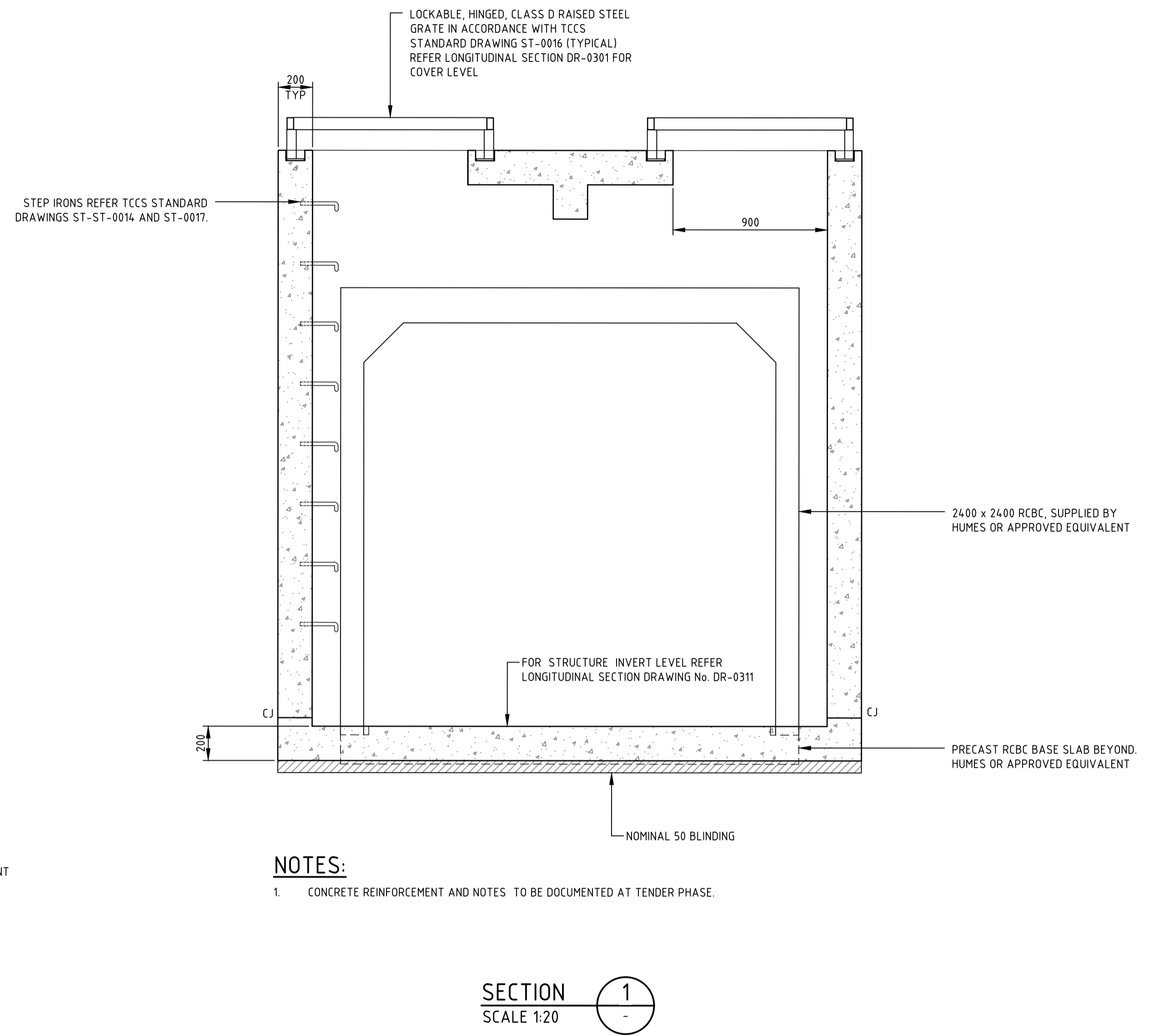
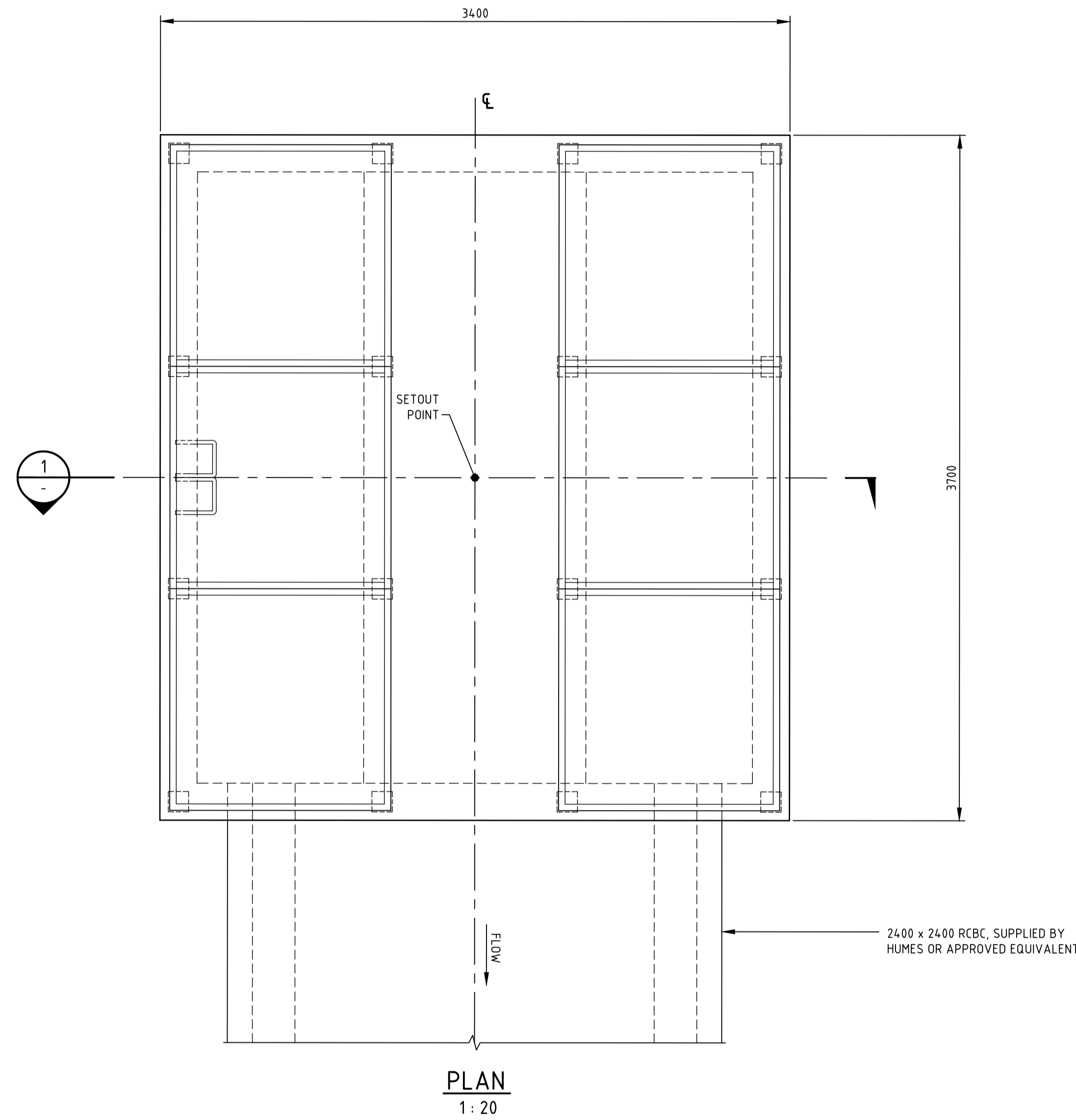
SECTION
SCALE 1:20

SPECIAL STORMWATER STRUCTURE SWN2

1:20

		Scales 0 500 750 1000mm 1:20 @ A1		North		Client Logo CCA collins caddaye architects		Status NOT FOR CONSTRUCTION		Project Name and Location MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST					
		DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK. COPYRIGHT: The contents and information contained in this document are copyright of Sellick Consultants, Use or copy of this document in whole or part without written permission constitutes an infringement of copyright.		www.sellickconsultants.com.au				Original Size A1		Drawn By RT		Drafting Check DA		Drawing Title SPECIAL STORMWATER STRUCTURE SHEET 2	
B		FOR DESIGN ACCEPTANCE		21.06.18		CO		Date Plotted 21-Jun-18		Designed By LT		Design Check CO		Project Number 170324	
A		FOR DESIGN ACCEPTANCE		23.03.2018		CO		Coordinate System STROMLO GRID		Approved CO		Approved Date 23.08.2018		Type DRG	
Rev		Description		Date		Approved		Height Datum AHD		Approved Signature		Discipline CIV		Sub-Discipline DR	
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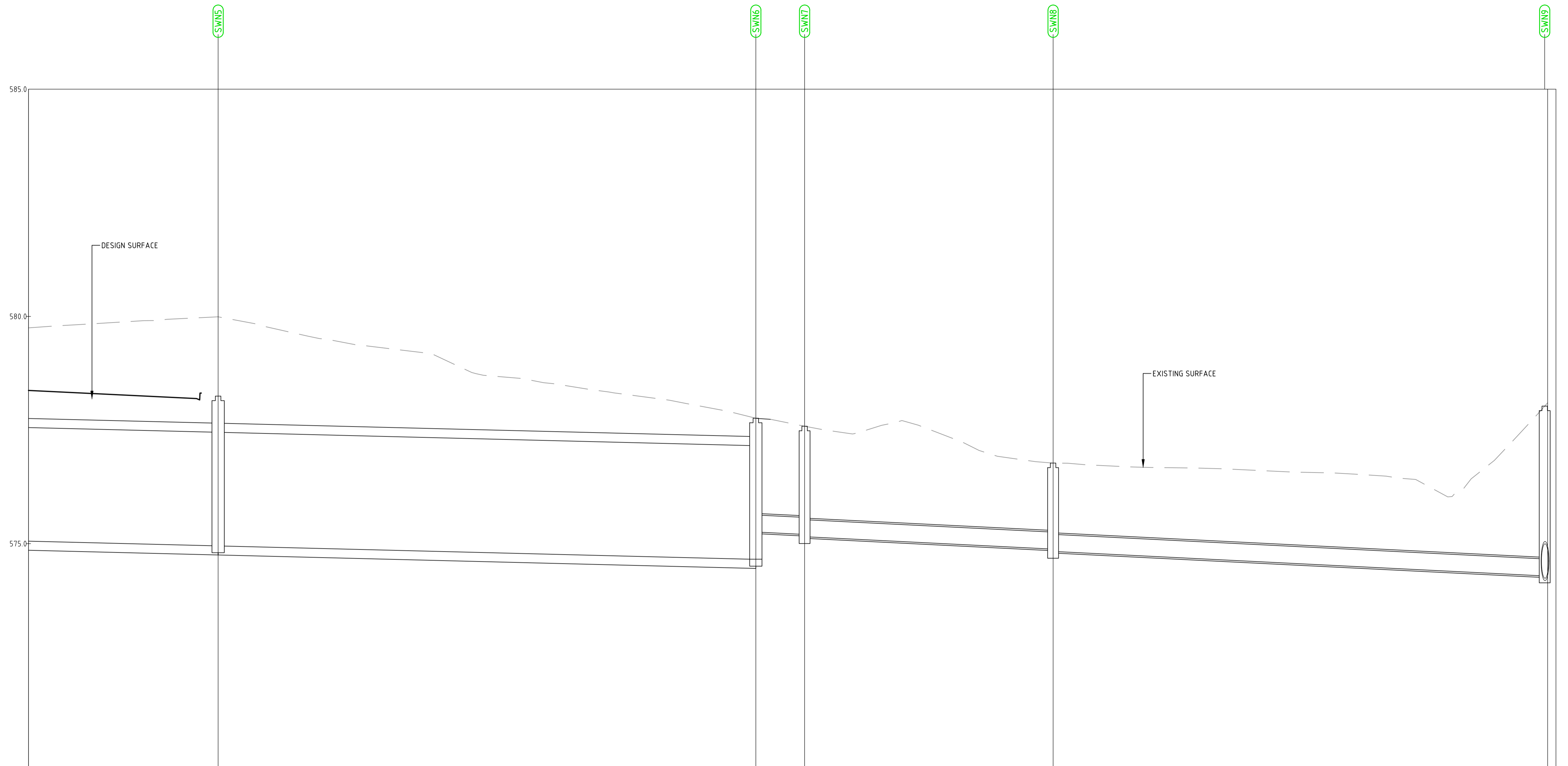


NOTES:
1. CONCRETE REINFORCEMENT AND NOTES TO BE DOCUMENTED AT TENDER PHASE.

SPECIAL STORMWATER STRUCTURE SWN1
SPECIAL STRUCTURE SWN6 SIMILAR
1:20

		Scales  1:20 @ A1		North 		 				Status NOT FOR CONSTRUCTION				Project Name and Location MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST							
										Original Size A1		Drawn By RT		Drafting Check DA		Drawing Title SPECIAL STORMWATER STRUCTURE SHEET 1					
Date Plotted 21-Jun-18		Designed By LT		Design Check CO		Approved Date 23.08.2018				Project Number 170324		Type DRG		Discipline CIV		Sub-Discipline DR		Drg No. 0321		Rev B	
B FOR DESIGN ACCEPTANCE 21.06.18 CO		A FOR DESIGN ACCEPTANCE 23.03.2018 CO		DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK. COPYRIGHT: The contents and information contained in this document are copyright of Sellick Consultants, Use or copy of this document in whole or part without written permission constitutes an infringement of copyright.		Approved Signature															
Rev Description		Date		Approved																	

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GRADE %		0.50%	0.50%	1.00%	1.00%	1.00%
PIPE DETAILS (CL to CL LENGTHS)		2400 x 2400 RCBC 20.860	2400 x 2400 RCBC 59.140	Ø375 RCP CLASS 2 5.364	Ø375 RCP CLASS 2 27.331	Ø375 RCP CLASS 2 53.881
DESIGN LEVEL AT MH CL		180.860	180.860	245.364	272.695	326.763
INVERT LEVEL		180.860	180.860	245.364	272.695	326.763
COVER		0.000	0.000	0.000	0.000	0.000
CHAINAGE	160.000	180.860	245.364	272.695	326.763	

STORMWATER LONGITUDINAL SECTION
SCALE 1: 250 (H) 1: 50 (V)

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
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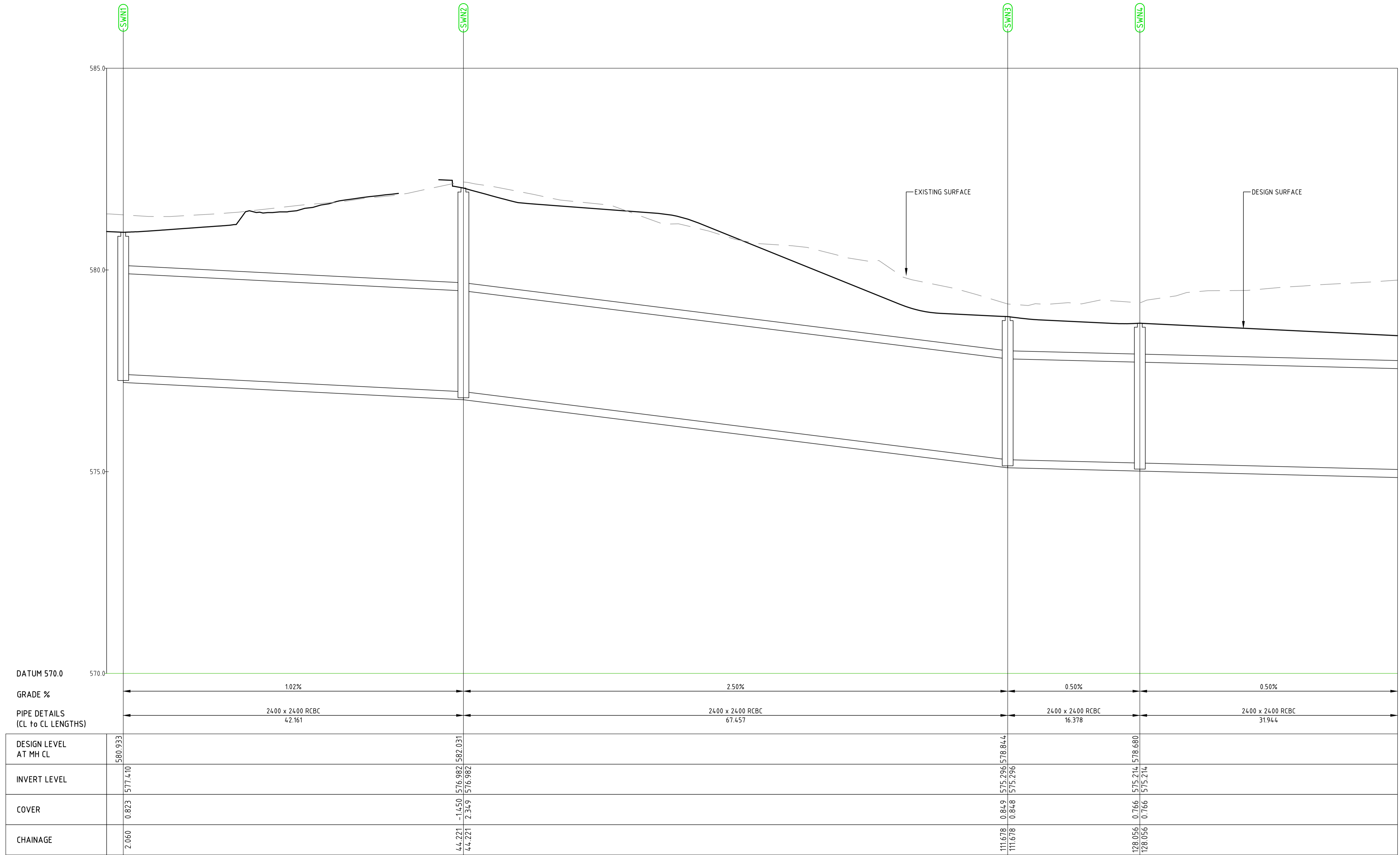
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Status			
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Original Size	A1	Drawn By	RT
Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
STORMWATER LONGITUDINAL SECTIONS					
SHEET 2					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	DR	0312	B

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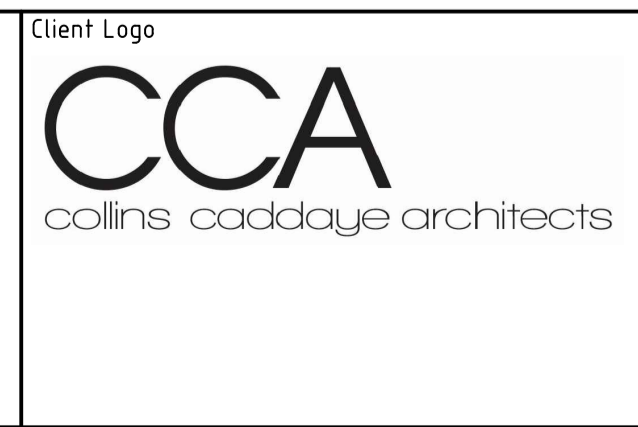
STORMWATER LONGITUDINAL SECTION
SCALE 1: 250 (H) 1: 50 (V)

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales
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1:250 @ A1

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Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title STORMWATER LONGITUDINAL SECTIONS					
SHEET 1					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	DR	0311	B

File Name: P:\2017\170324_813-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-dr-0302.dwg



REFERENCES

1. FOR UTILITY LEGEND REFER DRAWING No. GN-0002

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STORMWATER STRUCTURE SCHEDULE						
NAME	TYPE	SETOUT COORDS	COVER LEVEL	PIT DEPTH (m)	COVER TYPE	REMARKS
SWN1	1,200 DIA CONCRETE MANHOLE	E: 2104.22.411 N: 600391.470	580.933	3.523	TBC	SPECIAL STRUCTURE
SWN2	1,200 DIA CONCRETE MANHOLE	E: 2104.24.677 N: 600349.371	582.031	5.049	CLASS D	SPECIAL STRUCTURE
SWN3	1,200 DIA CONCRETE MANHOLE	E: 2104.92.039 N: 600352.952	578.844	3.549	CLASS D	SPECIAL STRUCTURE
SWN4	1,200 DIA CONCRETE MANHOLE	E: 210503.891 N: 60034.1649	578.680	3.466	CLASS D	SPECIAL STRUCTURE
SWN5	1,200 DIA CONCRETE MANHOLE	E: 210506.746 N: 600288.922	578.247	3.297	CLASS D	SPECIAL STRUCTURE
SWN6	1,200 DIA CONCRETE MANHOLE	E: 210565.801 N: 600292.092	577.760	3.105	TBC	SPECIAL STRUCTURE
SWN7	1,050 DIA CONCRETE MANHOLE	E: 210570.471 N: 600289.452	577.584	2.431	STANDARD	
SWN8	1,050 DIA CONCRETE MANHOLE	E: 210596.750 N: 600281.944	576.773	1.944	STANDARD	
SWN9	1,200 DIA CONCRETE MANHOLE	E: 210617.253 N: 600331.975	578.026	3.738	STANDARD	SPECIAL MH
SWN12	KIS 1200	E: 210503.599 N: 600291.550	577.676	0.635	STANDARD	
SWN13	KIS 1200	E: 210490.432 N: 600349.884	578.024	0.635	STANDARD	

B	FOR DESIGN ACCEPTANCE	21.06.18	CO
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Rev	Description	Date	Approved

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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

Project Name and Location: **MULTI-UNIT DEVELOPMENT**
BLOCK 13 SECTION 13, FORREST

Drawing Title: **STORMWATER AND SUBSOIL DRAINAGE**
PLAN SHEET 2

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	DR	0302	B

File Name: P:\2017\170324_813-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-dr-0302.dwg



REFERENCES

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STORMWATER STRUCTURE SCHEDULE						
NAME	TYPE	SETOUT COORDS	COVER LEVEL	PIT DEPTH (m)	COVER TYPE	REMARKS
SWN1	1,200 DIA CONCRETE MANHOLE	E: 2104.22.411 N: 600391.470	580.933	3.523	TBC	SPECIAL STRUCTURE
SWN2	1,200 DIA CONCRETE MANHOLE	E: 2104.24.677 N: 600349.371	582.031	5.049	CLASS D	SPECIAL STRUCTURE
SWN3	1,200 DIA CONCRETE MANHOLE	E: 2104.92.039 N: 600352.952	578.844	3.549	CLASS D	SPECIAL STRUCTURE
SWN4	1,200 DIA CONCRETE MANHOLE	E: 210503.891 N: 60034.1649	578.680	3.466	CLASS D	SPECIAL STRUCTURE
SWN5	1,200 DIA CONCRETE MANHOLE	E: 210506.746 N: 600288.922	578.247	3.297	CLASS D	SPECIAL STRUCTURE
SWN6	1,200 DIA CONCRETE MANHOLE	E: 210565.801 N: 600292.092	577.760	3.105	TBC	SPECIAL STRUCTURE
SWN7	1,050 DIA CONCRETE MANHOLE	E: 210570.471 N: 600289.452	577.584	2.431	STANDARD	
SWN8	1,050 DIA CONCRETE MANHOLE	E: 210596.750 N: 600281.944	576.773	1.944	STANDARD	
SWN9	1,200 DIA CONCRETE MANHOLE	E: 210617.253 N: 600331.975	578.026	3.738	STANDARD	SPECIAL MH
SWN12	KIS 1200	E: 210503.599 N: 600291.550	577.676	0.635	STANDARD	
SWN13	KIS 1200	E: 210490.432 N: 600349.884	578.024	0.635	STANDARD	

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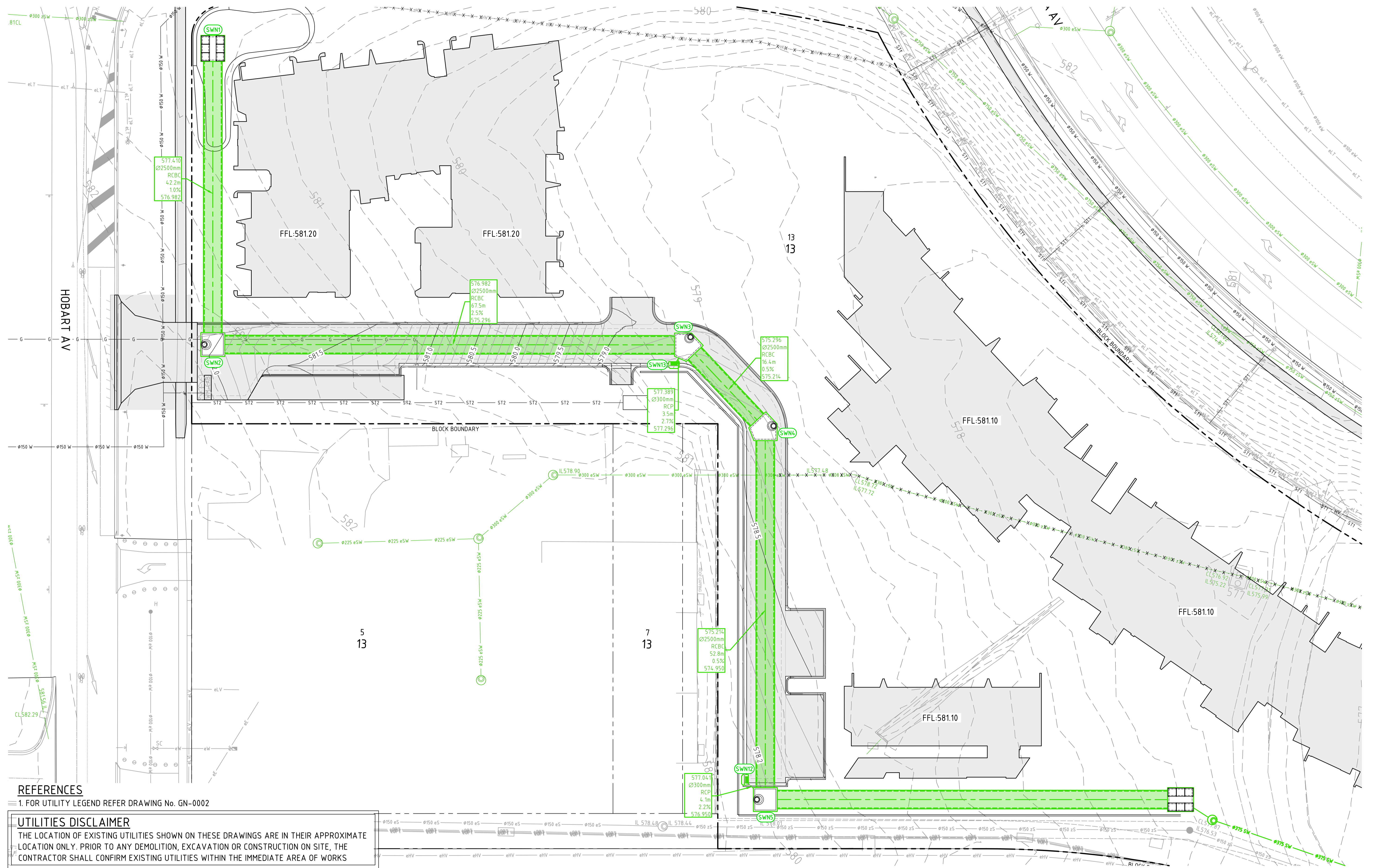
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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

Project Name and Location: **MULTI-UNIT DEVELOPMENT**
BLOCK 13 SECTION 13, FORREST

Drawing Title: **STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 2**

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	DR	0302	B

File Name: P:\2017\170324_813-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-dr-0301.dwg



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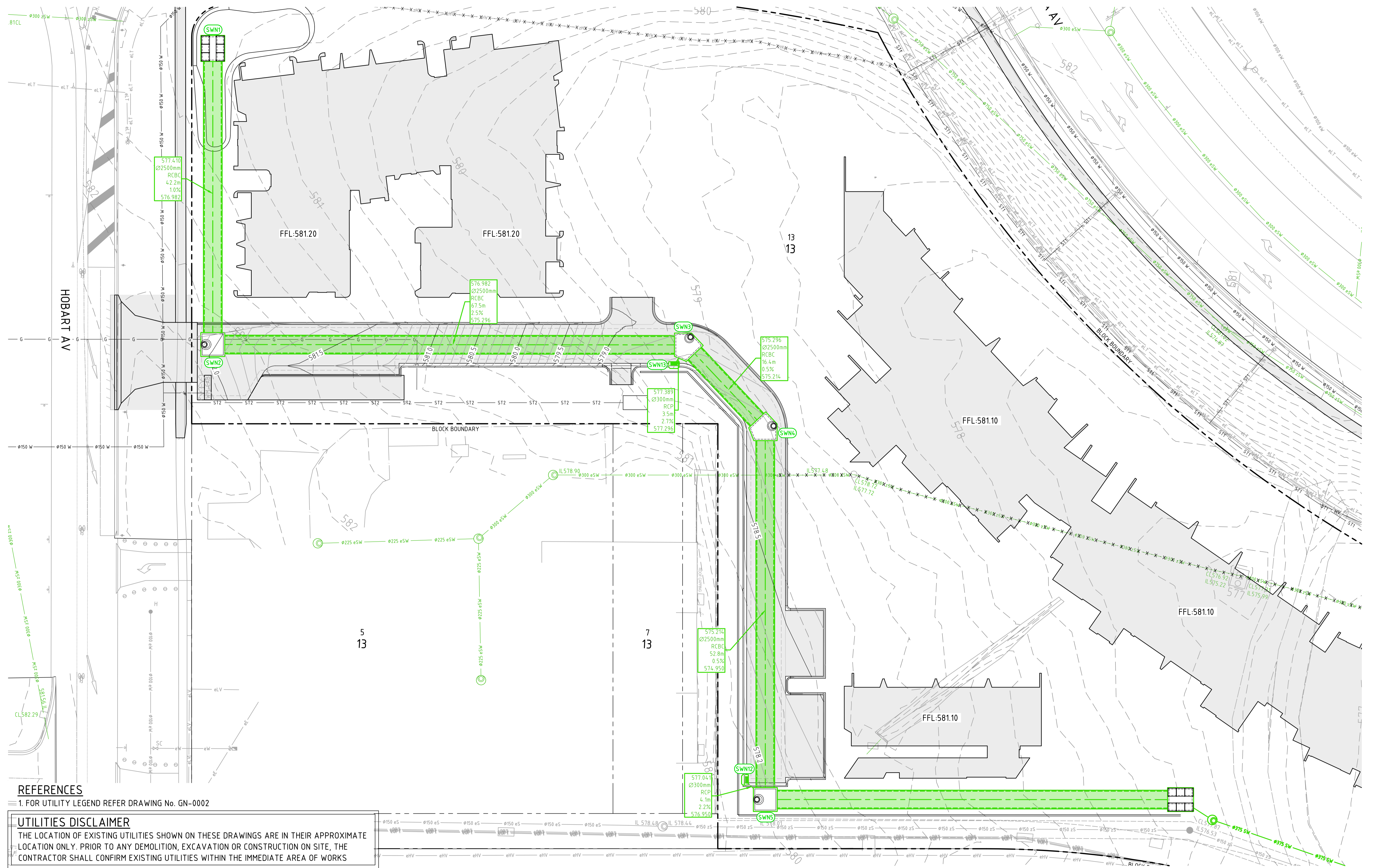
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Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
STORMWATER AND SUBSOIL DRAINAGE					
PLAN SHEET 1					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	DR	0301	B

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Rev	Description	Date	Approved
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Scales

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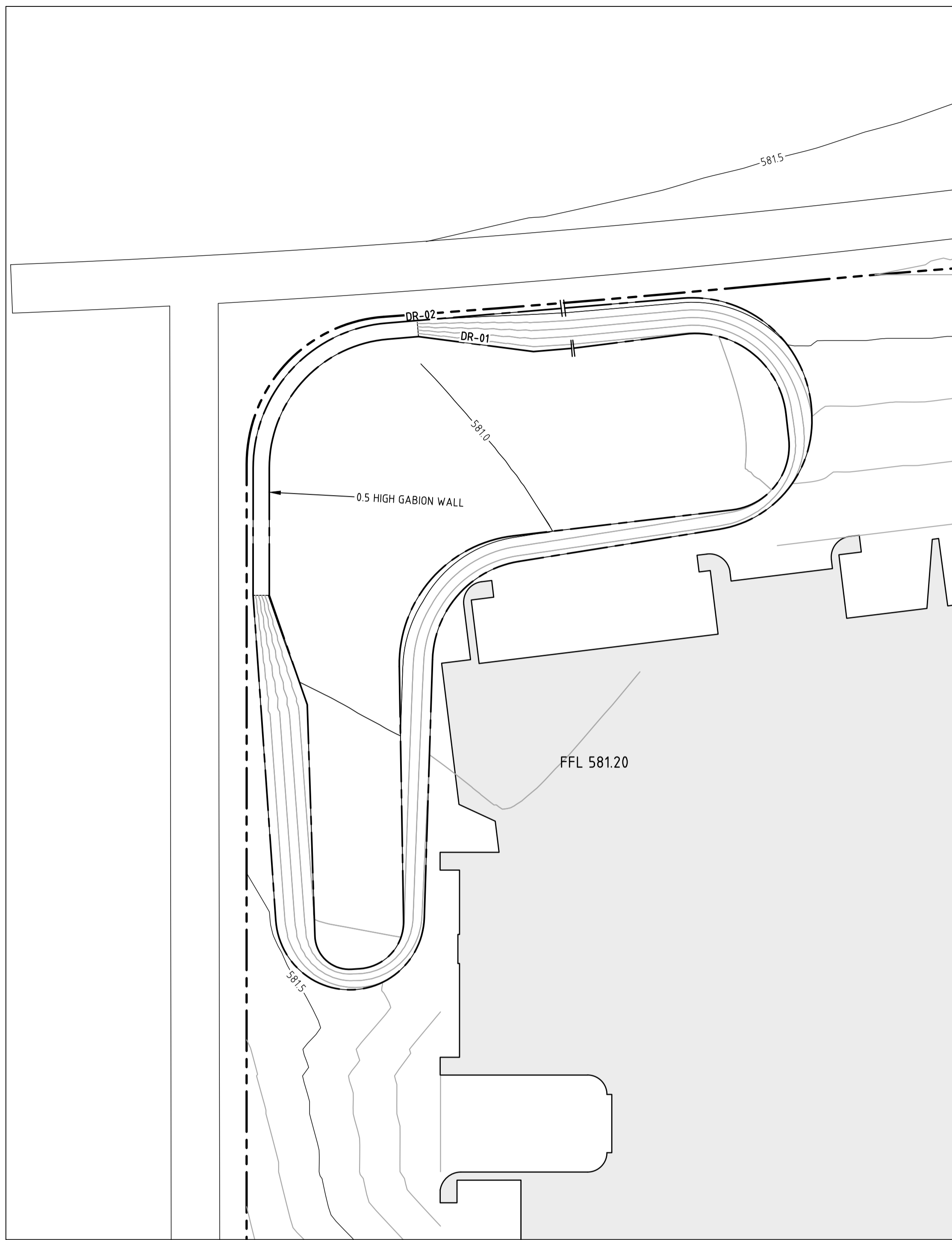


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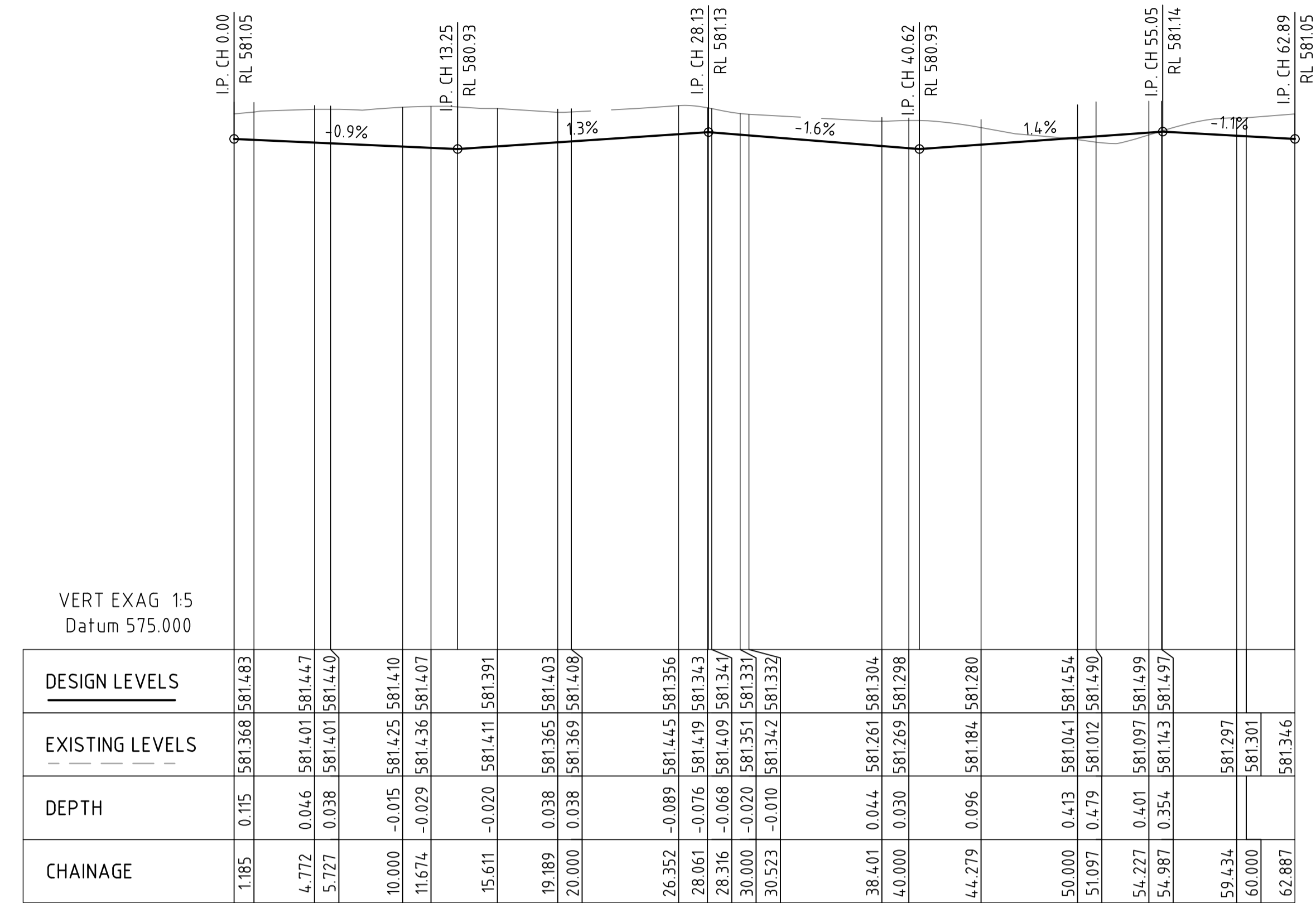


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Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
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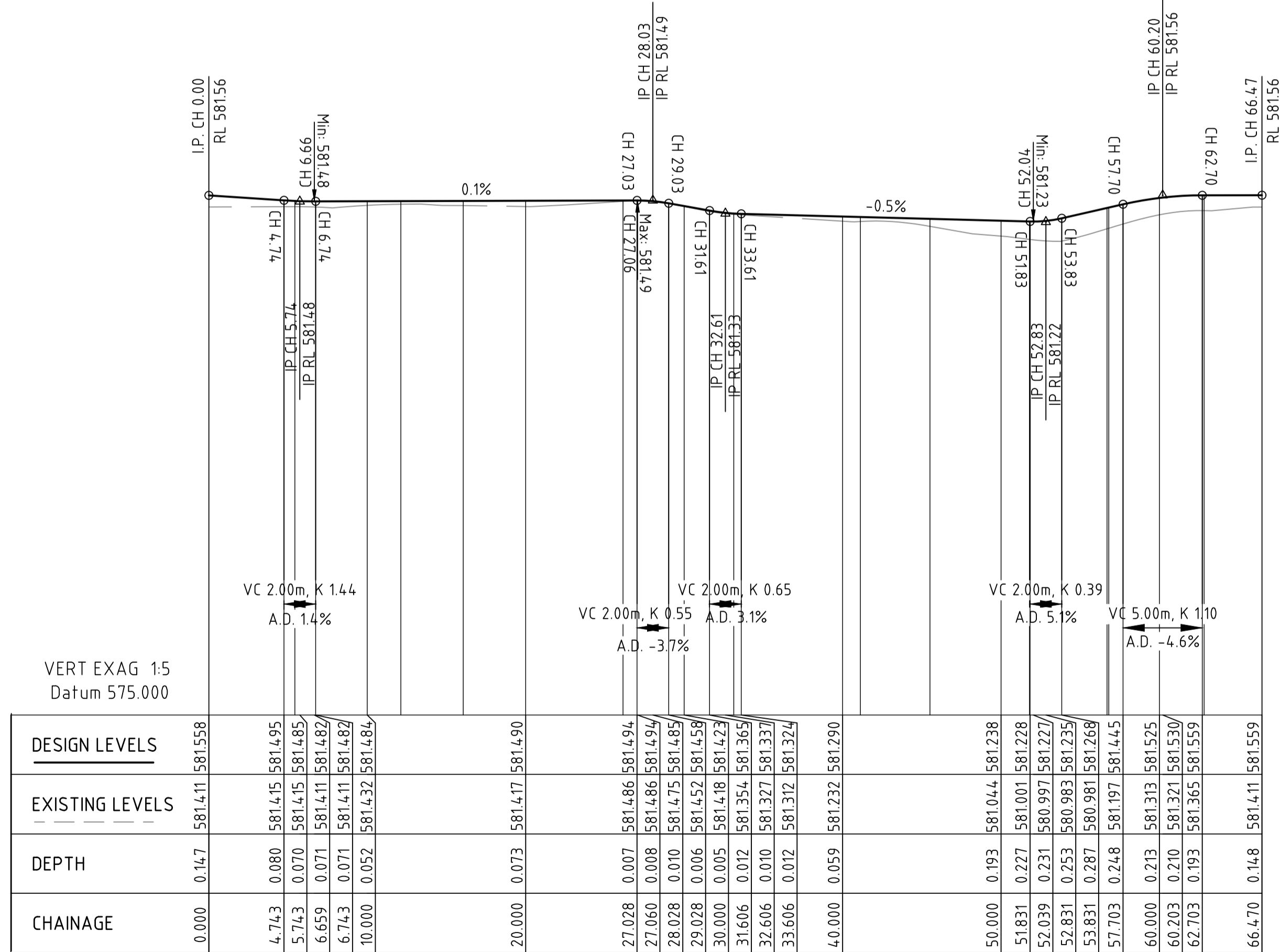
Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
STORMWATER AND SUBSOIL DRAINAGE						
PLAN SHEET 1						
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
170324	DRG	CIV	DR	0301	B	



PLAN
SCALE 1:100



DR-01 LONG SECTION



DR-02 LONG SECTION

SETOUT TABLE FOR DR-01

TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
C31	TP 5.727	210423.480	600397.002			
	IP 9.405	210419.838	600396.497	5.947	4.0	219° 30' 46.54"
	TP 11.674	210420.035	600392.825			
C32	TP 26.352	210422.224	600378.447			
	IP 27.454	210422.320	600377.349	1.709	1.1	129° 03' 33.01"
	TP 28.061	210423.414	600377.482			
L47	BP 28.061	210423.414	600377.482			
	EP 28.316	210423.667	600377.512	0.255		083° 06' 05"
C33	TP 28.316	210423.667	600377.512			
	IP 29.697	210425.037	600377.678	2.207	1.5	039° 31' 31.29"
	TP 30.523	210424.940	600379.055			
L48	BP 30.523	210424.940	600379.055			
	EP 38.401	210424.383	600386.914	7.878		355° 56' 58"
C34	TP 38.401	210424.383	600386.914			
	IP 42.015	210424.128	600390.519	5.878	4.0	038° 03' 01.29"
	TP 44.279	210423.689	600391.137			
L49	BP 44.279	210423.689	600391.137			
	EP 51.097	210434.406	600392.303	6.818		080° 09' 05"
C35	TP 51.097	210434.406	600392.303			
	IP 53.085	210436.365	600392.643	3.129	2.0	035° 19' 43.95"
	TP 54.227	210436.037	600394.604			
L50	BP 54.227	210436.037	600394.604			
	EP 54.987	210435.912	600395.354	0.761		350° 30' 23"
C36	TP 54.987	210435.912	600395.354			
	IP 57.833	210435.442	600398.161	4.447	2.8	305° 06' 09.95"
	TP 59.434	210432.642	600397.652			
L51	BP 59.434	210432.642	600397.652			
	EP 62.887	210429.245	600397.034	3.453		259° 41' 57"

SETOUT TABLE FOR DR-02

TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L53	BP 0.000	210428.789	600398.243			
	EP 5.429	210423.412	600397.497	5.429		262° 06' 23"
C38	TP 5.429	210423.412	600397.497			
	IP 9.566	210419.314	600396.929	6.691	4.5	219° 30' 46.54"
	TP 12.120	210419.536	600392.798			
C39	TP 26.143	210420.991	600378.858			
	IP 71.372	210426.569	600333.974	6.992	2.3	085° 49' 38.70"
	TP 33.135	210425.573	600379.192			
L55	BP 33.135	210425.573	600379.192			
	EP 41.124	210425.397	600387.180	7.989		358° 44' 19"
C40	TP 41.124	210425.397	600387.180			
	IP 43.748	210425.340	600389.803	4.388	3.2	038° 16' 08.37"
	TP 45.512	210427.905	600390.358			
L56	BP 45.512	210427.905	600390.358			
	EP 51.796	210434.047	600391.686	6.284		077° 47' 58"
C41	TP 51.796	210434.047	600391.686			
	IP 54.778	210436.961	600392.316	4.896	3.4	036° 33' 02.31"
	TP 56.692	210436.717	600395.288			
L57	BP 56.692	210436.717	600395.288			
	EP 56.802	210436.708	600395.397	0.110		355° 18' 07"
C42	TP 56.802	210436.708	600395.397			
	IP 60.714	210436.387	600399.256	6.018	3.7	308° 42' 14.95"
	TP 62.820	210432.512	600398.759			
L58	BP 62.820	210432.512	600398.759			
	EP 66.470	210428.897	600398.258	3.650		262° 06' 23"

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	04.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

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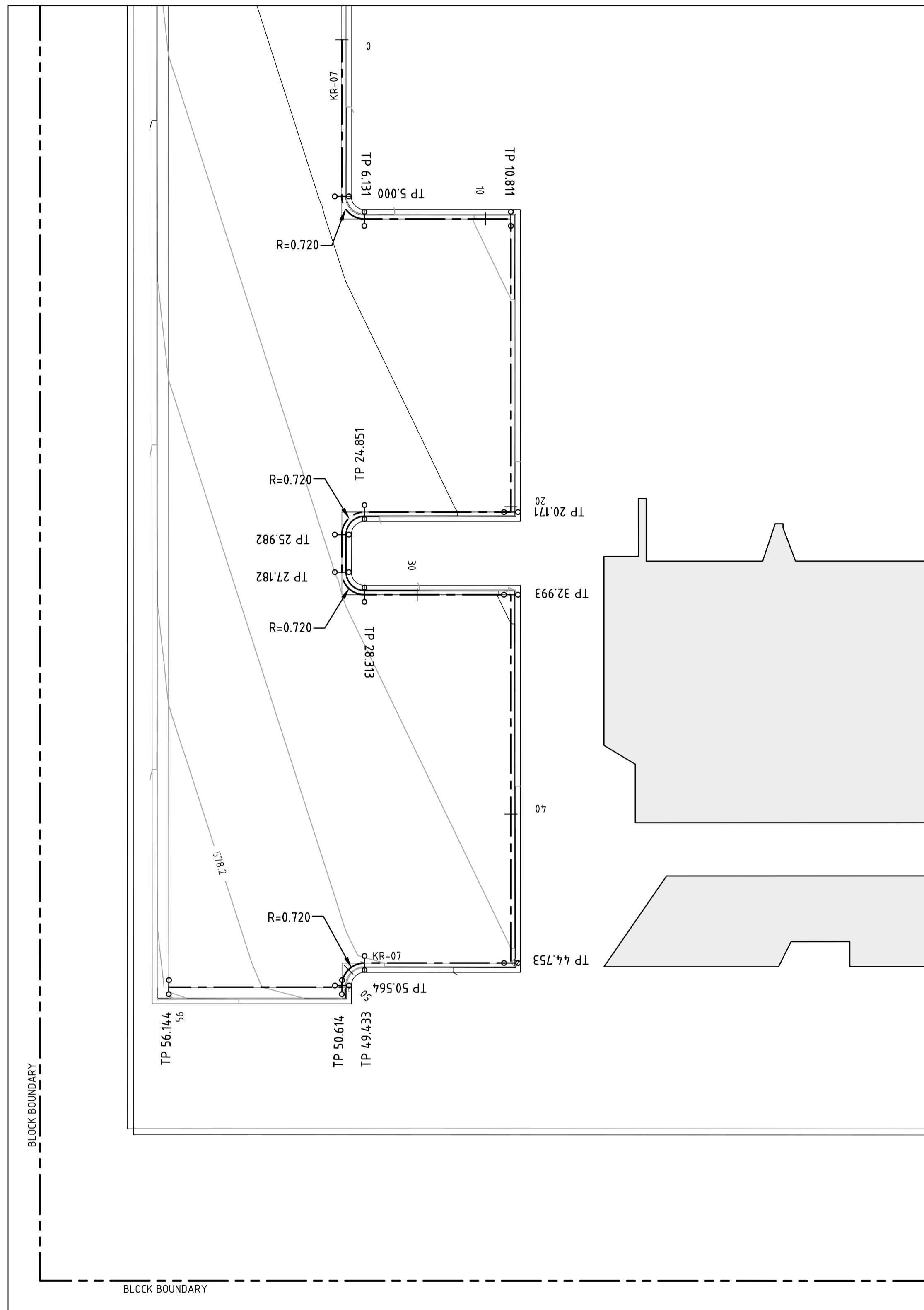
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Date Plotted	21-Jun-18	Designed By	LT
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Approved Signature			

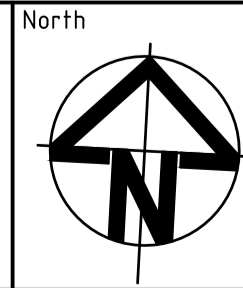
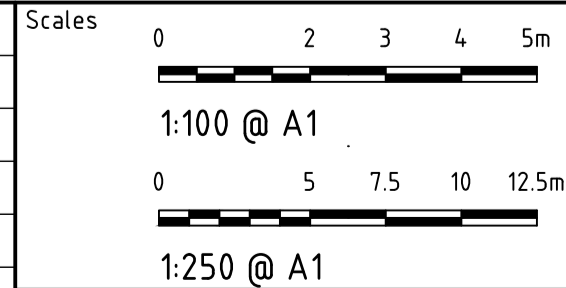
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MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
ALIGNMENT CONTROL OVERLAND					
FLOW INTAKE POND					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	AL	0151	C



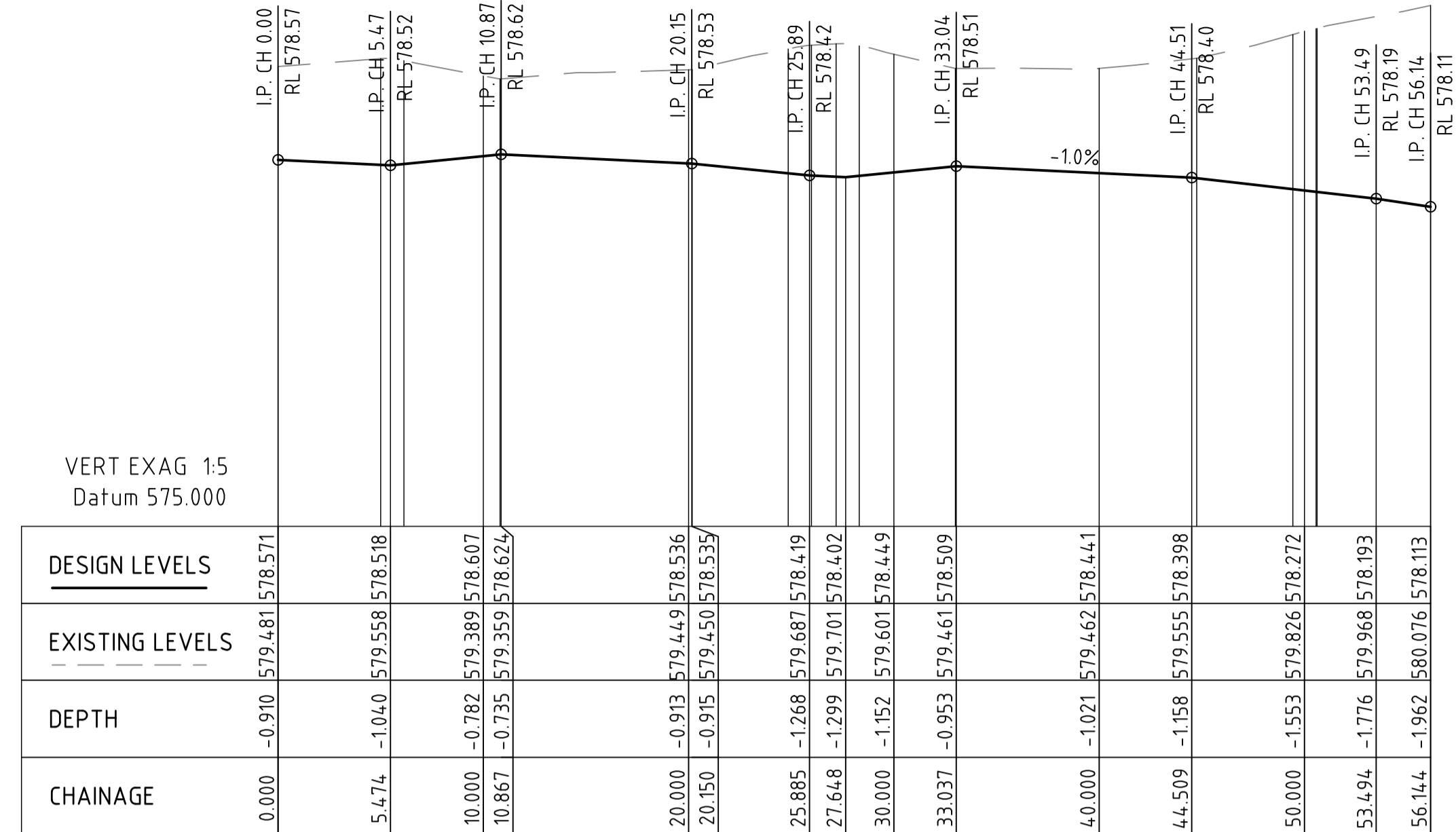
KR-07 PLAN
SCALE 1:100



1:50 @ A1



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KR-07 LONG SECTION

SETOUT TABLE FOR KR-07						
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	BEARING
L19	BP	0.000	210507.858	600321.655	5.000	176° 54' 01"
	EP	5.000	210508.128	600316.662		
C10	TP	5.000	210508.128	600316.662	1.131	131° 54' 01.34"
	IP	5.720	210508.167	600315.943		
	TP	6.131	210508.886	600315.982		
L20	BP	6.131	210508.886	600315.982	4.680	086° 54' 01"
	EP	10.811	210513.559	600316.235		
L21	BP	10.811	210513.559	600316.235	9.360	176° 54' 01"
	EP	20.171	210514.065	600306.889		
L22	BP	20.171	210514.065	600306.889	4.680	266° 54' 01"
	EP	24.851	210509.392	600306.636		
C11	TP	24.851	210509.392	600306.636	1.131	221° 54' 01.34"
	IP	25.571	210508.673	600306.597		
	TP	25.982	210508.712	600305.878		
L23	BP	25.982	210508.712	600305.878	1.200	176° 54' 01"
	EP	27.182	210508.777	600304.679		
C12	TP	27.182	210508.777	600304.679	1.131	131° 54' 01.34"
	IP	27.902	210508.816	600303.961		
	TP	28.313	210509.535	600303.999		
L24	BP	28.313	210509.535	600303.999	4.680	086° 54' 01"
	EP	32.993	210514.208	600304.252		
L25	BP	32.993	210514.208	600304.252	11.760	176° 54' 01"
	EP	44.753	210514.844	600292.510		
L26	BP	44.753	210514.844	600292.510	4.680	266° 54' 01"
	EP	49.433	210510.171	600292.257		
C13	TP	49.433	210510.171	600292.257	1.131	221° 54' 01.34"
	IP	50.153	210509.452	600292.218		
	TP	50.564	210509.491	600291.499		
L27	BP	50.564	210509.491	600291.499	0.050	176° 54' 01"
	EP	50.614	210509.494	600291.449		
L28	BP	50.614	210509.494	600291.449	5.530	266° 54' 01"
	EP	56.144	210503.972	600291.150		

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 2 3 4 5m

1:100 @ A1

0 5 7.5 10 12.5m

1:250 @ A1

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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

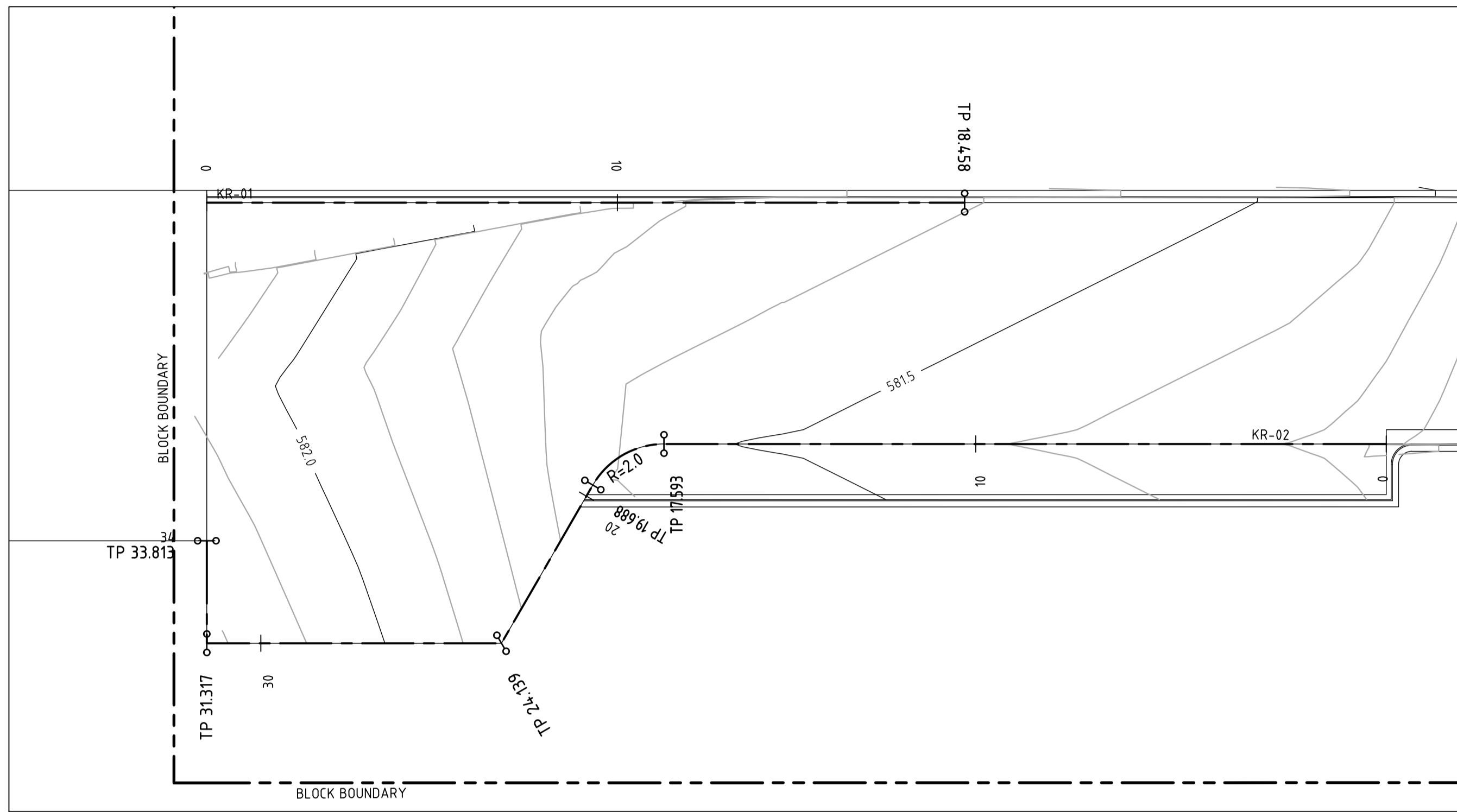
Project Name and Location

MULTI-UNIT DEVELOPMENT
BLOCK 13 SECTION 13, FORREST

Drawing Title

ALIGNMENT CONTROL AND KERB SETOUT SHEET 2

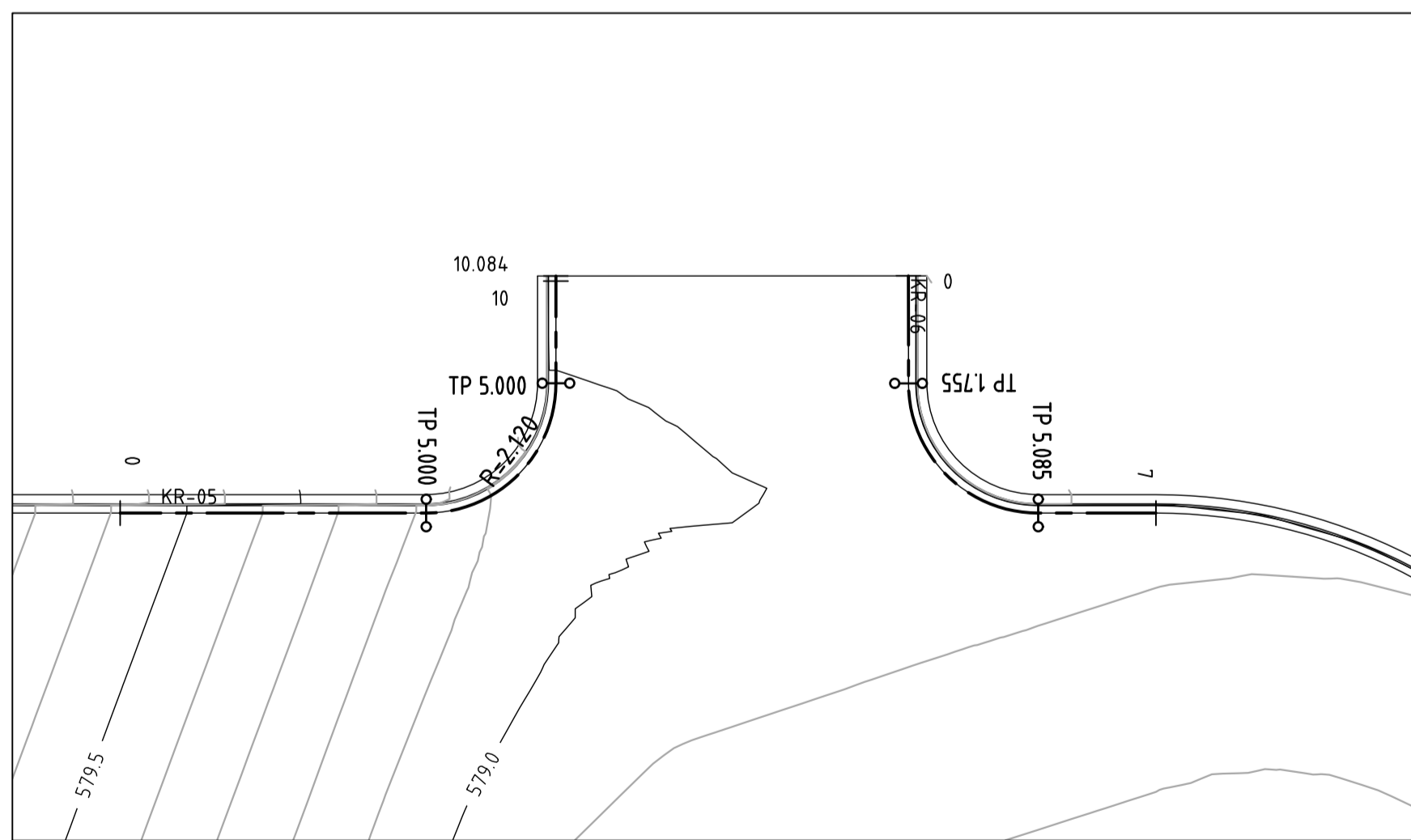
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	AL	0142	B



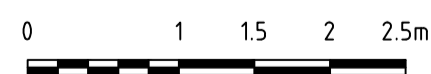
KR-01 & KR-02 PLAN
SCALE 1:100

SET OUT TABLE FOR KR-01						
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	EP 18.458	2104.40.758	600353.093			

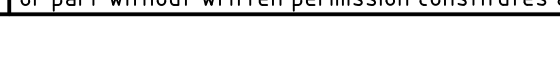
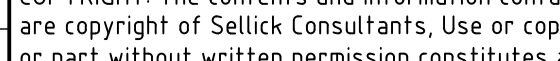
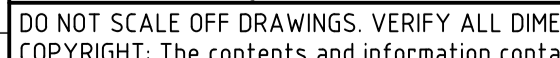
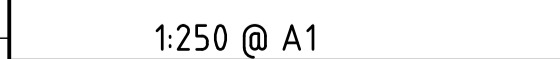
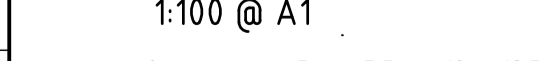
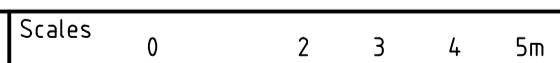
SET OUT TABLE FOR KR-02						
TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L6	BP 0.000	2104.51.329	600347.775	17.593		266° 54' 45"
	EP 17.593	2104.33.761	600346.827			
C5	TP 17.593	2104.33.761	600346.827	2.095	2.0	236° 54' 27.87"
	IP 18.748	2104.32.608	600346.765			
	TP 19.688	2104.32.085	600345.735			
L7	BP 19.688	2104.32.085	600345.735	4.451		206° 54' 10"
	EP 24.139	2104.30.072	600341.766			
L8	BP 24.139	2104.30.072	600341.766	7.178		266° 55' 10"
	EP 31.317	2104.22.904	600341.380			
L9	BP 31.317	2104.22.904	600341.380	2.496		356° 55' 10"
	EP 33.813	2104.22.770	600343.873			



KR-05 & KR-06 PLAN
SCALE 1:100

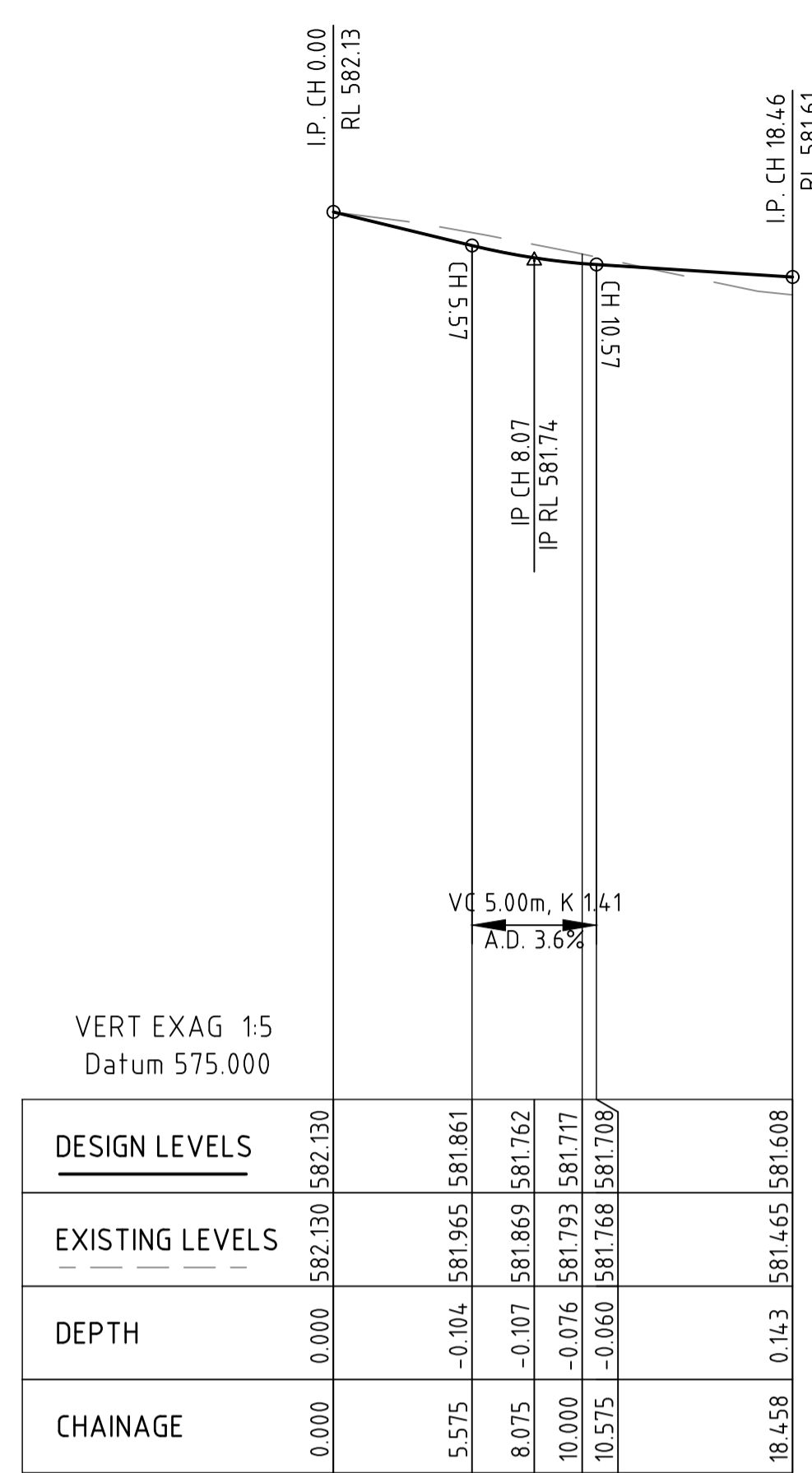


1:50 @ A1

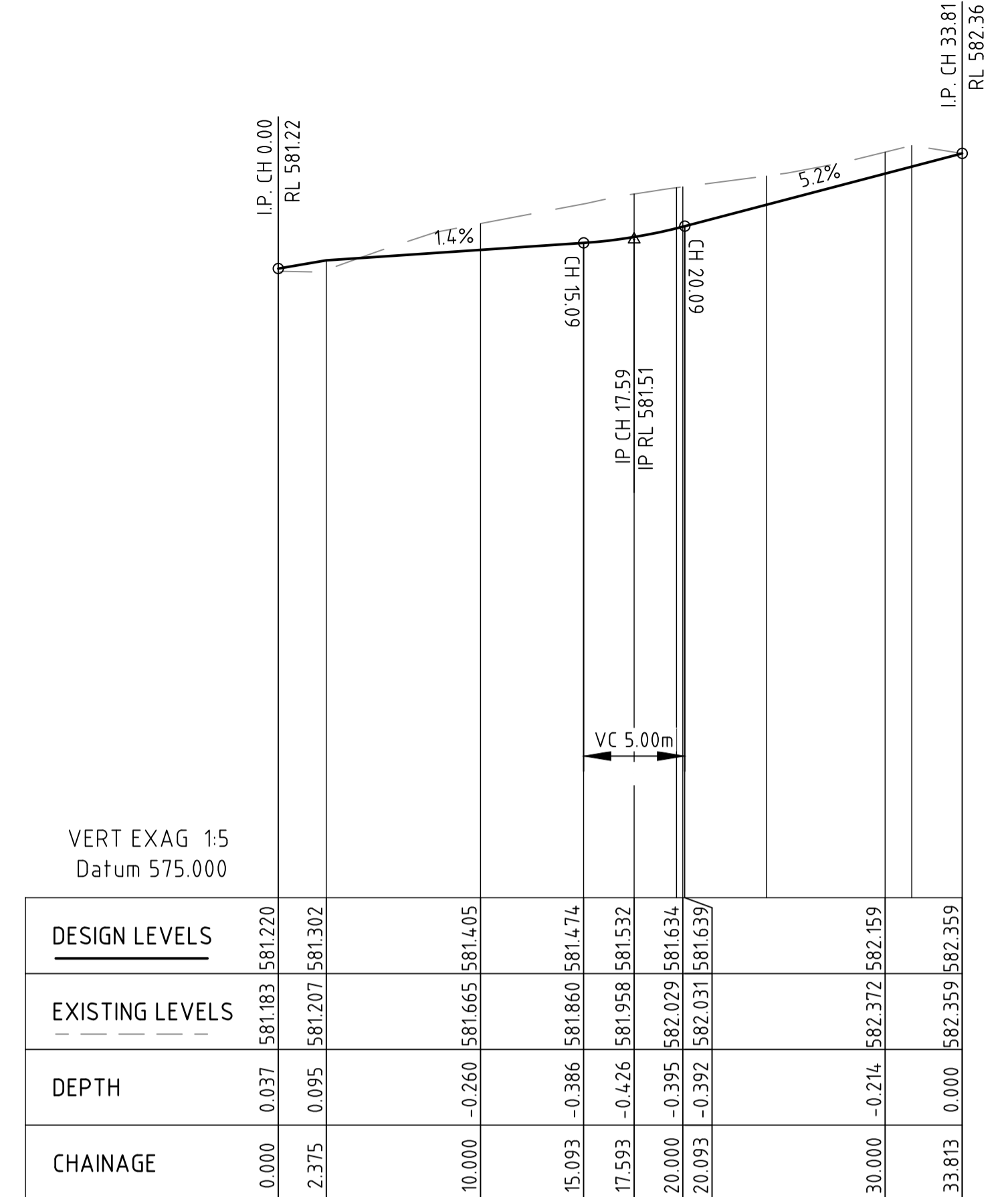


SET OUT TABLE FOR KR-05						
TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L15	BP 0.000	2104.74.187	600354.896	5.000		086° 54' 45"
	EP 5.000	2104.79.180	600355.165			
C8	TP 5.000	2104.79.180	600355.165	3.330	2.1	041° 54' 27.37"
	IP 7.120	2104.81.297	600355.280			
	TP 8.330	2104.81.183	600357.397			
L16	BP 8.330	2104.81.183	600357.397	1.754		356° 54' 09"
	EP 10.084	2104.81.088	600359.148			

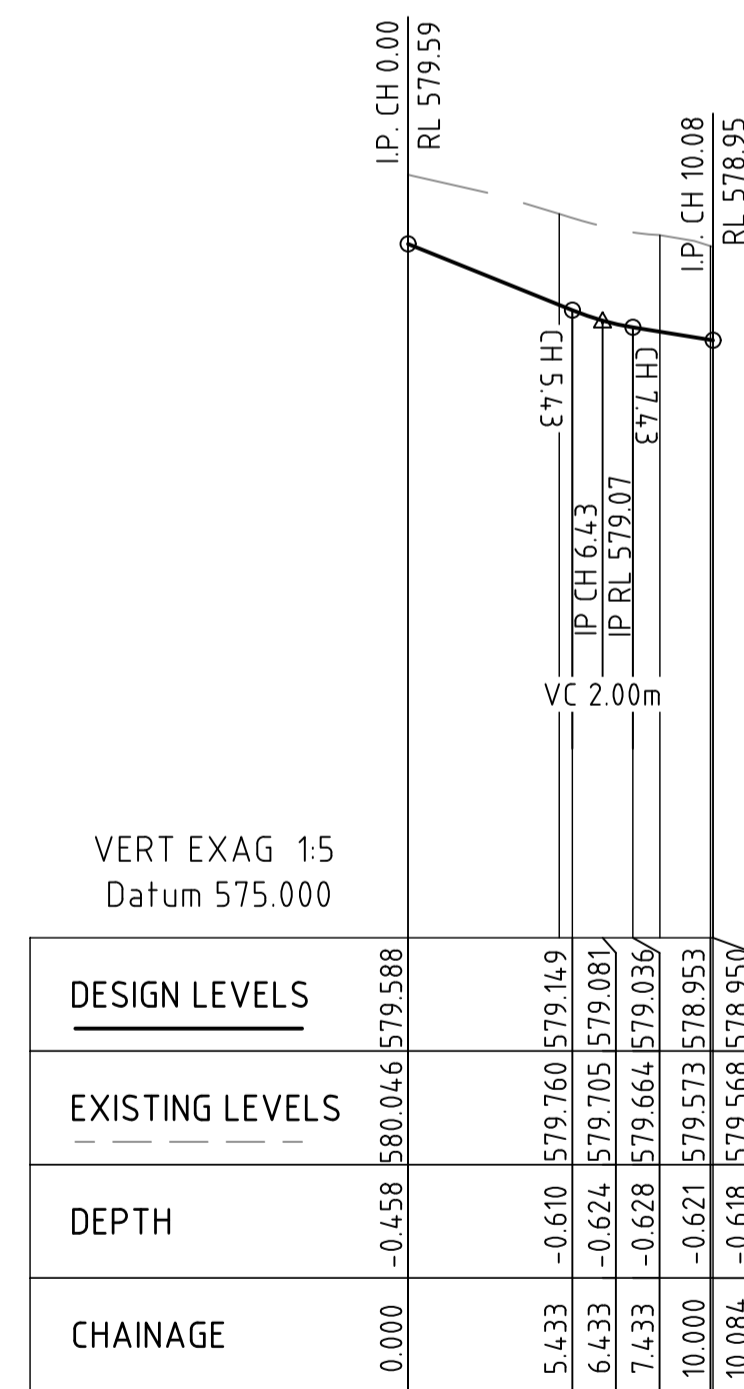
SET OUT TABLE FOR KR-06						
TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L17	BP 0.000	2104.86.840	600359.459	1.755		176° 54' 09"
	EP 1.755	2104.86.934	600357.706			
C9	TP 1.755	2104.86.934	600357.706	3.330	2.1	131° 54' 27.37"
	IP 3.875	2104.87.049	600355.590			
	TP 5.085	2104.89.166	600355.704			
L18	BP 5.085	2104.89.166	600355.704	1.923		086° 54' 45"
	EP 7.008	2104.91.085	600355.807			



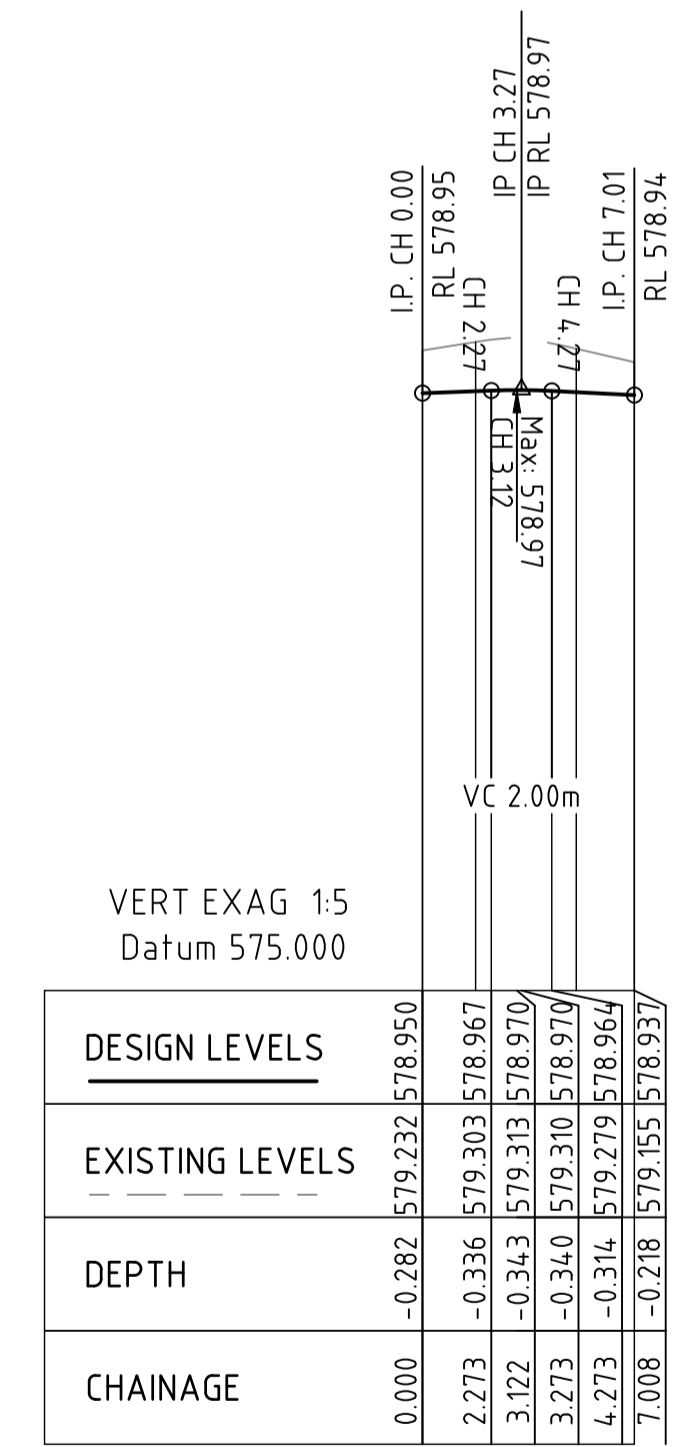
KR-01 LONG SECTION



KR-02 LONG SECTION



KR-05 LONG SECTION



KR-06 LONG SECTION

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 2 3 4 5m

1:100 @ A1

0 5 7.5 10 12.5m

1:250 @ A1

North

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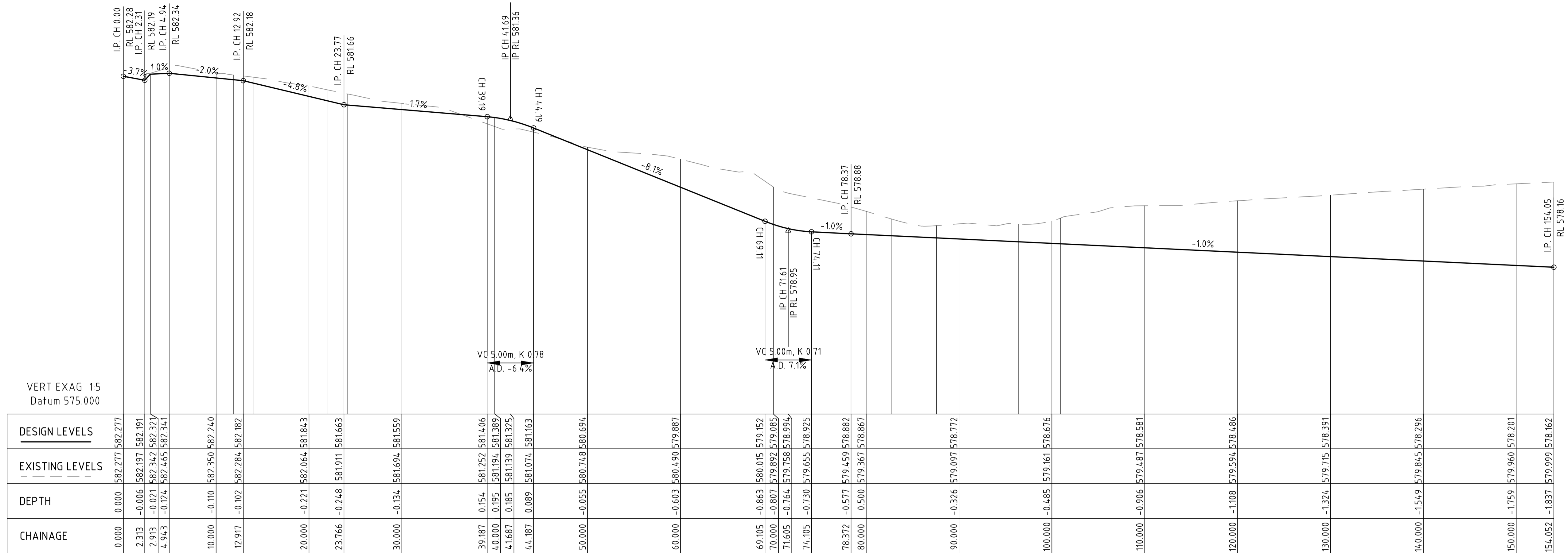
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Date Plotted: 21-Jun-18	Designed By: LT	Design Check: CO
Coordinate System: STROMLO GRID	Approved: CO	Approved Date: 23.08.2018
Height Datum: AHD	Approved Signature	

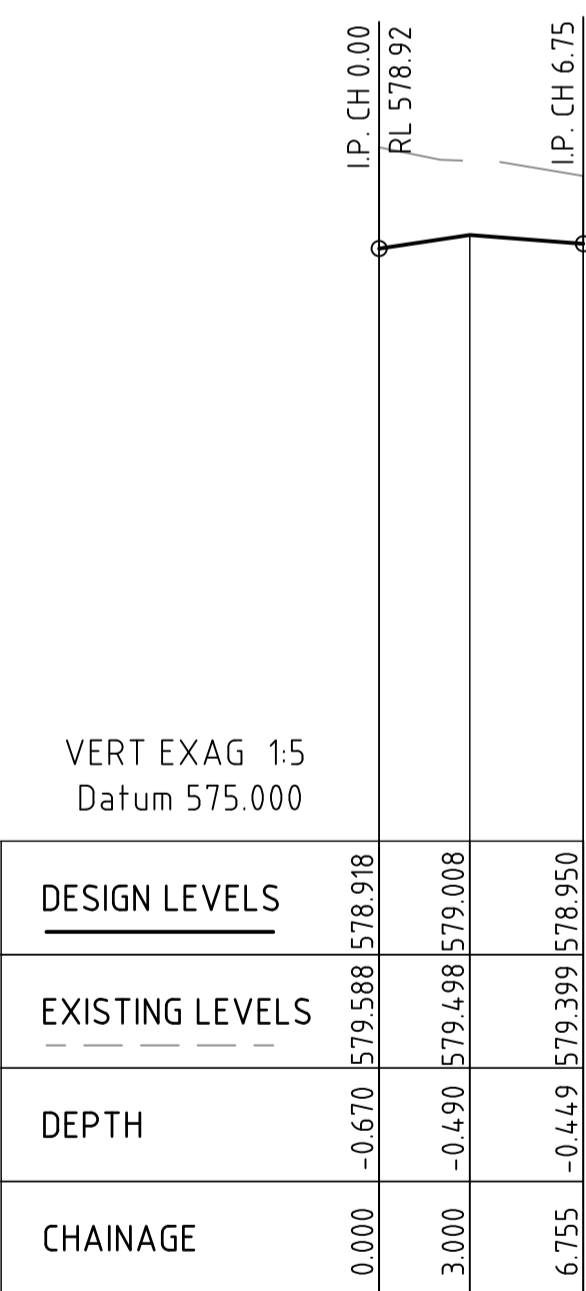
Project Name and Location: MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST

Drawing Title: ALIGNMENT CONTROL AND KERB SETOUT SHEET 1

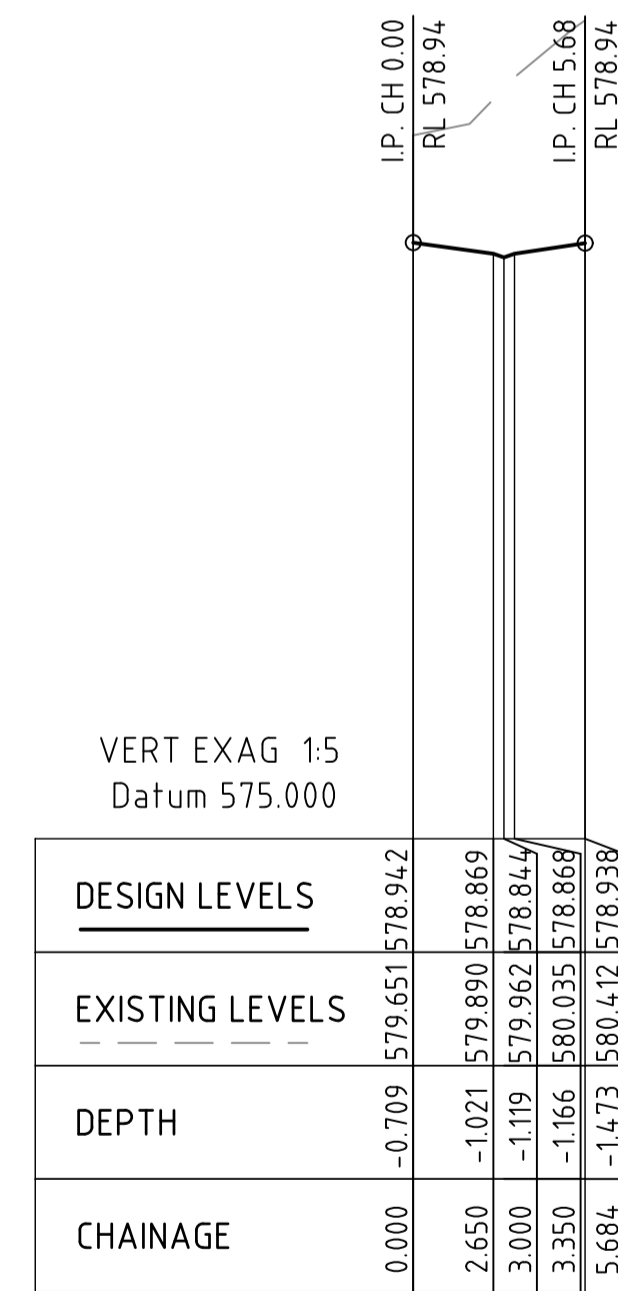
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	AL	0141	B



AL-01 LONG SECTION



AL-02 LONG SECTION



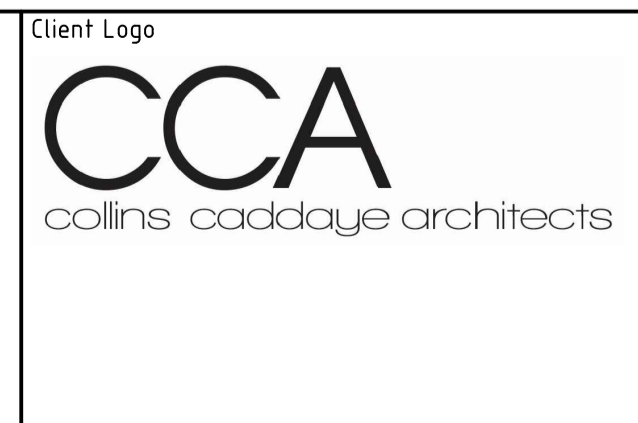
AL-03 LONG SECTION

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales
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 1:50 @ A1
 0 5 7.5 10 12.5m
 1:250 @ A1

North

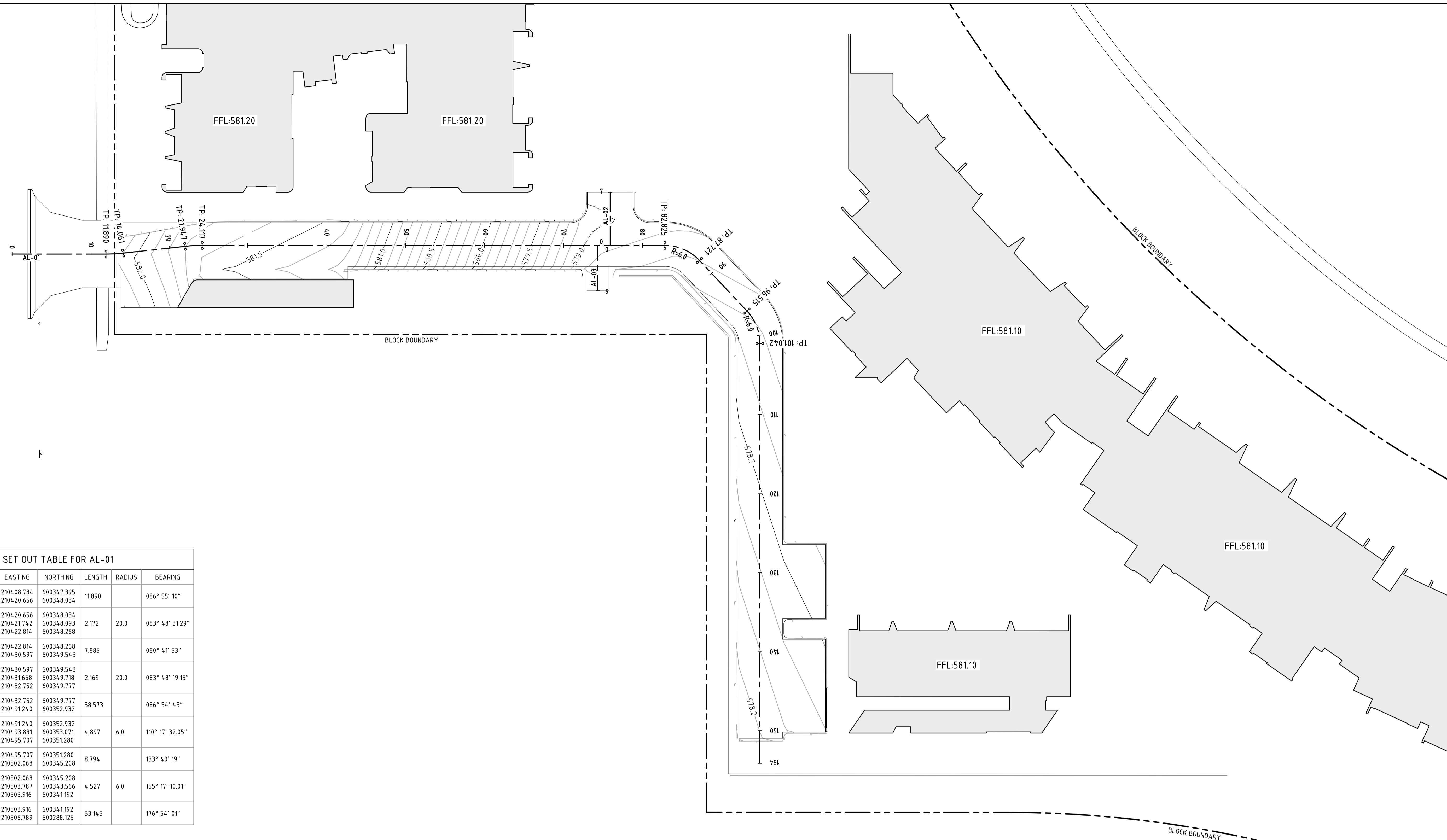
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Status NOT FOR CONSTRUCTION			
Original Size	A1	Drawn By	RT
Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title ALIGNMENT CONTROL ROAD					
LONGITUDINAL SECTION					
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	AL	0132	B

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-civ-al-0131.dwg



SET OUT TABLE FOR AL-01

TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L3	BP 0.000 EP 11.890	210408.784 210420.656	600347.395 600348.034	11.890		086° 55' 10"
C4	TP 11.890 IP 12.977 TP 14.061	210420.656 210421.742 210422.814	600348.034 600348.093 600348.268	2.172	20.0	083° 48' 31.29"
L4	BP 14.061 EP 21.947	210422.814 210430.597	600348.268 600349.543	7.886		080° 41' 53"
C3	TP 21.947 IP 23.033 TP 24.117	210430.597 210431.668 210432.752	600349.543 600349.718 600349.777	2.169	20.0	083° 48' 19.15"
L5	BP 24.117 EP 82.690	210432.752 210491.240	600349.777 600352.932	58.573		086° 54' 45"
C1	TP 82.690 IP 85.284 TP 87.587	210491.240 210493.831 210495.707	600352.932 600353.071 600351.280	4.897	6.0	110° 17' 32.05"
L1	BP 87.587 EP 96.381	210495.707 210502.068	600351.280 600345.208	8.794		133° 40' 19"
C2	TP 96.381 IP 98.758 TP 100.908	210502.068 210503.787 210503.916	600345.208 600343.566 600341.192	4.527	6.0	155° 17' 10.01"
L2	BP 100.908 EP 154.052	210503.916 210506.789	600341.192 600288.125	53.145		176° 54' 01"

SETOUT TABLE FOR AL-02

TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L14	BP 0.000 EP 6.755	210484.328 210483.964	600352.559 600359.304	6.755		356° 54' 29"

SETOUT TABLE FOR AL-03

TAG	CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L13	BP 0.000 EP 5.684	210482.780 210483.088	600352.475 600346.800	5.684		176° 53' 53"

REFERENCES

- FOR ROAD LONGITUDINAL SECTIONS REFER DRAWING AL-0132

B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO
Rev	Description	Date	Approved

Scales

North

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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

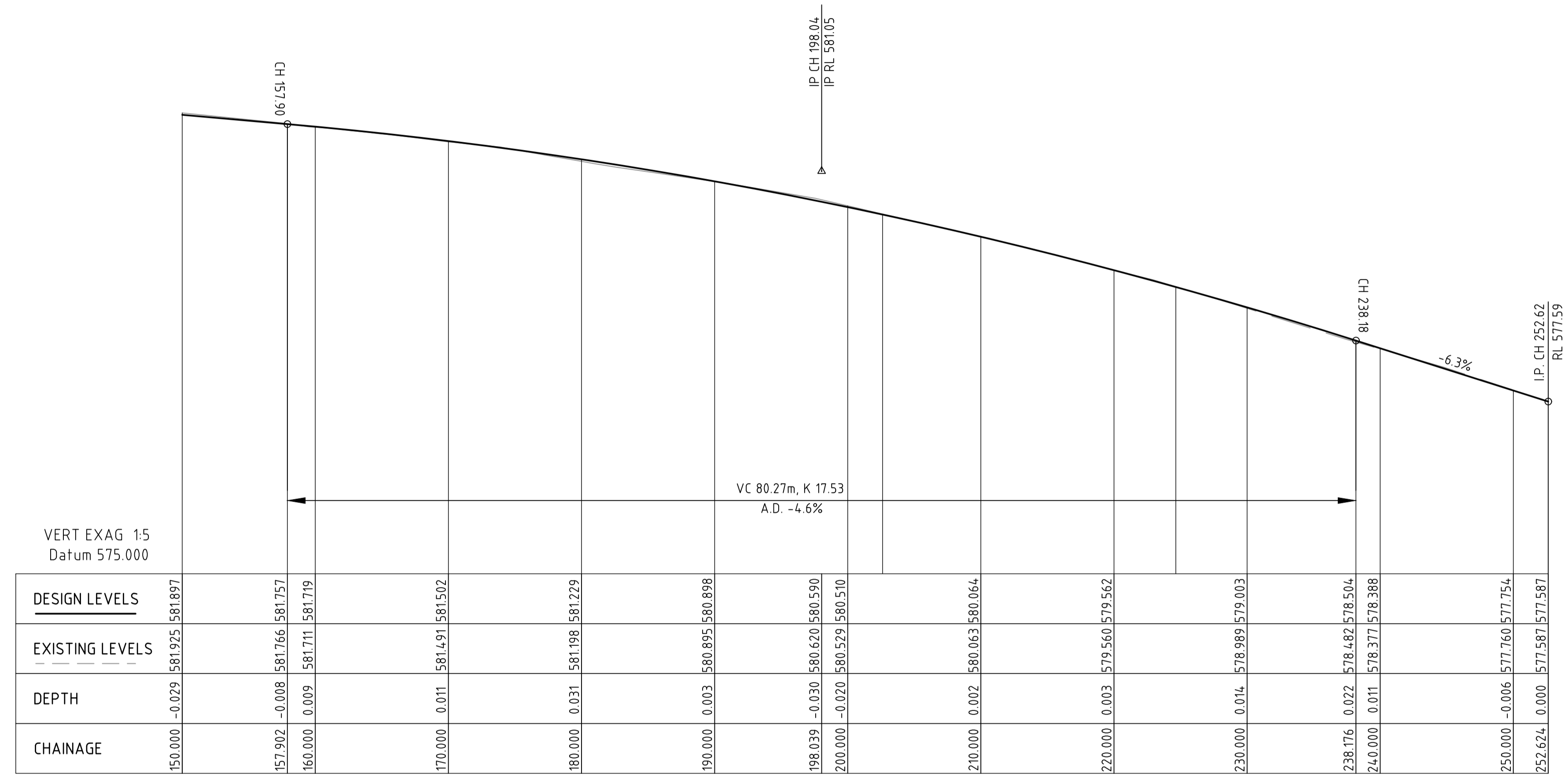
Project Name and Location

MULTI-UNIT DEVELOPMENT
BLOCK 13 SECTION 13, FORREST

Drawing Title

ALIGNMENT CONTROL AND ROAD GRADING PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	AL	0131	B



PA-01 LONG SECTION

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	04.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 1 1.5 2 2.5m

1:50 @ A1

0 5 7.5 10 12.5m

1:250 @ A1

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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

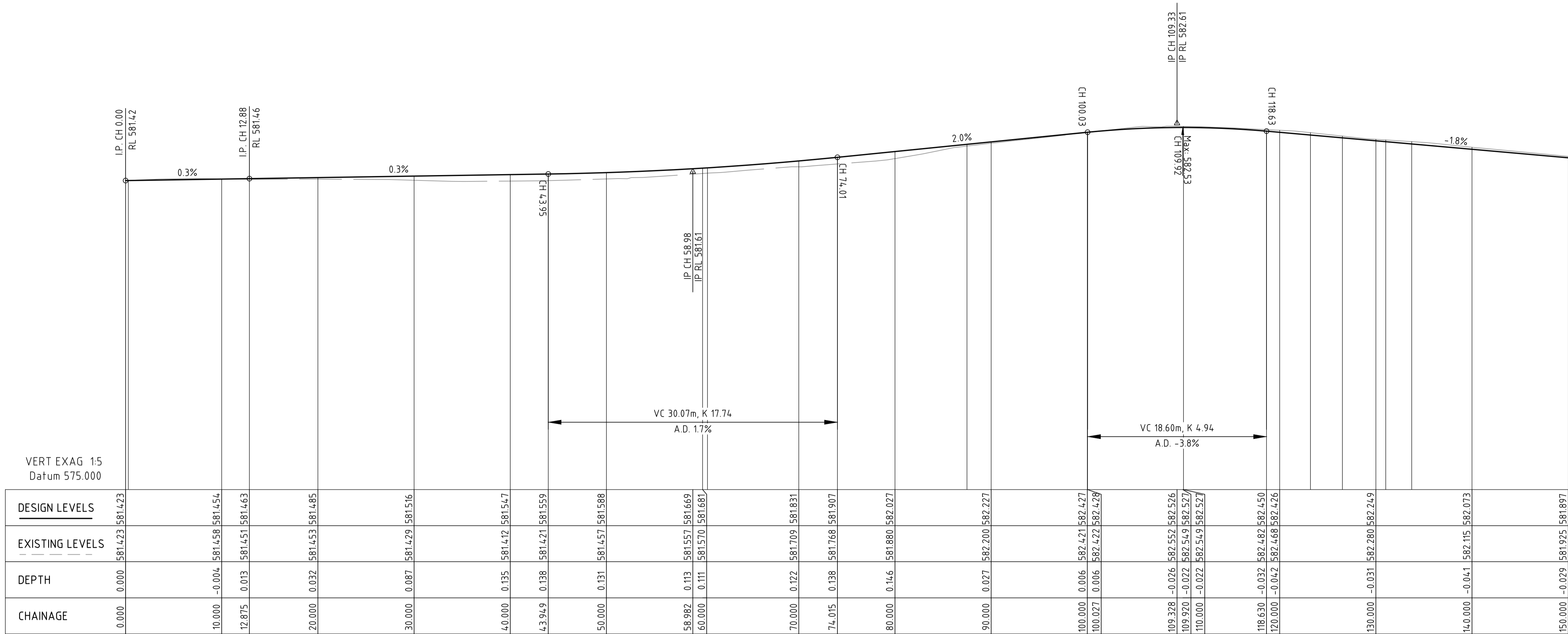
Project Name and Location

MULTI-UNIT DEVELOPMENT
BLOCK 13 SECTION 13, FORREST

Drawing Title

ALIGNMENT CONTROL PLAN
LONGITUDINAL SECTION SHEET 2

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	AL	0123	C



PA-01 LONG SECTION

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	04.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales
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 0 5 7.5 10 12.5m
 1:250 @ A1

North

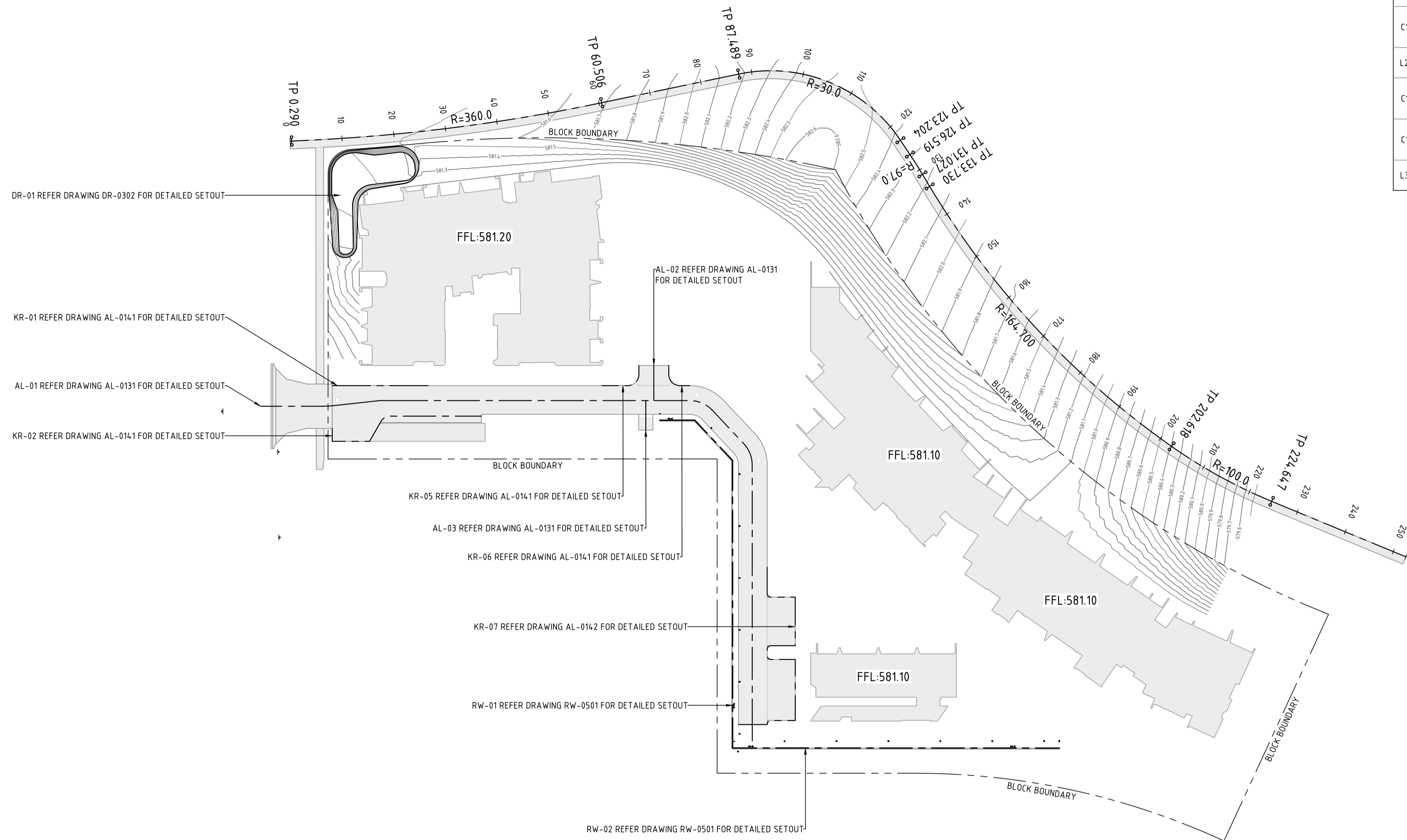
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Original Size A1	Drawn By RT	Drafting Check DA	
Date Plotted 21-Jun-18	Designed By LT	Design Check CO	
Coordinate System STROMLO GRID	Approved CO	Approved Date 23.08.2018	
Height Datum AHD	Approved Signature		

Project Name and Location MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title ALIGNMENT CONTROL PLAN						
LONGITUDINAL SECTION SHEET 1						
Project Number 170324	Type DRG	Discipline CIV	Sub-Discipline AL	Drg No. 0122	Rev C	

SETOUT TABLE FOR PA-01							
TAG		CHAINAGE	EASTING	NORTHING	LENGTH	RADIUS	BEARING
L26	BP	0.000	2104.11.704	600398.676	0.290		084° 39' 48"
	EP	0.290	2104.11.992	600398.703			
C14	TP	0.290	2104.11.992	600398.703			
	IP	30.468	2104.42.040	6004.01.509	60.216	360.0	079° 52' 17.50"
	TP	60.506	2104.71.201	6004.09.280			
L27	BP	60.506	2104.71.201	6004.09.280	26.983		075° 04' 47"
	EP	87.489	2104.97.274	6004.16.227			
C15	TP	87.489	2104.97.274	6004.16.227			
	IP	107.804	2105.16.905	6004.21.458	35.715	30.0	109° 11' 06.15"
	TP	123.204	2105.29.049	6004.05.171			
L28	BP	123.204	2105.29.049	6004.05.171	3.316		143° 17' 26"
	EP	126.519	2105.31.031	6004.02.513			
C16	TP	126.519	2105.31.031	6004.02.513			
	IP	128.774	2105.32.378	6004.00.706	4.508	97.0	144° 37' 18.40"
	TP	131.027	2105.33.640	600398.838			
L29	BP	131.027	2105.33.640	600398.838	2.703		145° 57' 11"
	EP	133.730	2105.35.154	600396.598			
C17	TP	133.730	2105.35.154	600396.598			
	IP	168.685	2105.54.724	600367.635	68.888	164.7	133° 58' 14.96"
	TP	202.618	2105.84.371	600349.118			
C18	TP	202.618	2105.84.371	600349.118			
	IP	213.677	2105.93.751	600343.259	22.029	100.0	115° 40' 39.57"
	TP	224.647	2106.04.185	600339.592			
L30	BP	224.647	2106.04.185	600339.592	27.977		109° 22' 00"
	EP	252.624	2106.30.579	600330.314			



- REFERENCES**
- FOR PATH LONGITUDINAL SECTIONS REFER DRAWING AL-0122 & AL-0123

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	04.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

0 30 45 60 75m

1:1500 @ A1

North

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Date Plotted	21-Jun-18	Designed By	LT	Design Check	CO
Coordinate System	STROMLO GRID	Approved	CO	Approved Date	23.08.2018
Height Datum	AHD	Approved Signature			

Project Name and Location

MULTI-UNIT DEVELOPMENT

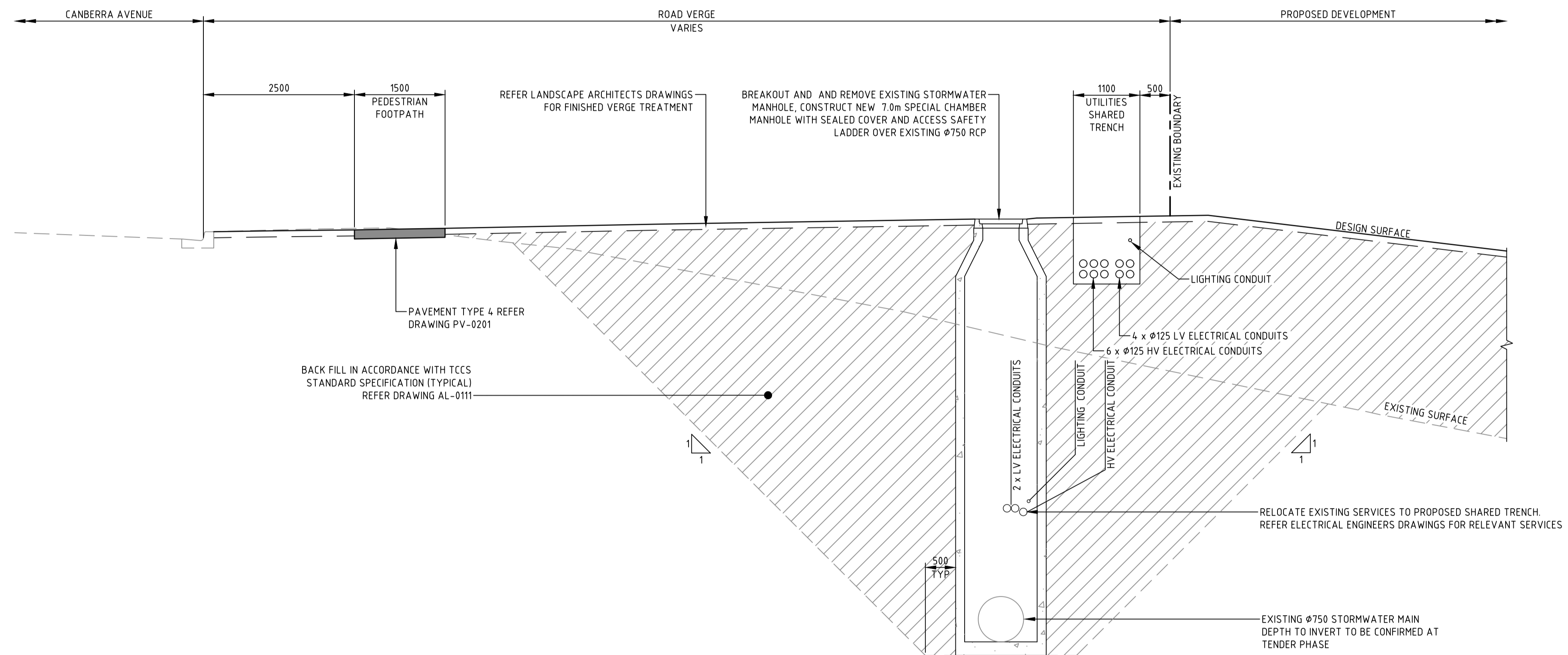
BLOCK 13 SECTION 13, FORREST

Drawing Title

ALIGNMENT CONTROL AND VERGE GRADING PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	AL	0121	C

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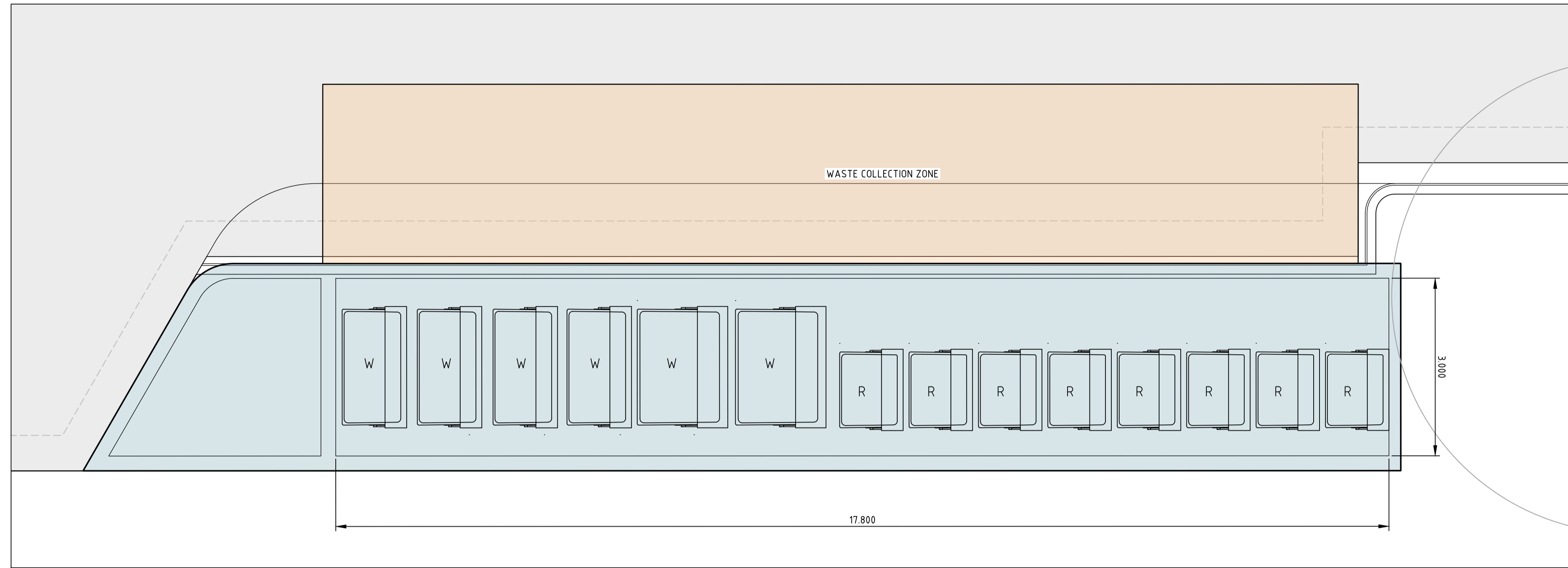
SECTION 2
SCALE 1:50
AL-0101

NOTE

1. THE LOCATION AND LEVELS OF THE EXISTING UTILITIES SHOWN ARE IN THEIR APPROXIMATE LOCATION ONLY, PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR SHALL ORGANISE UTILITY POT HOLE SURVEY WITHIN THE IMMEDIATE AREA OF WORK AT THEIR EXPENSE.
2. THIS SECTION IS TO READ IN CONJUNCTION WITH ELECTRICAL ENGINEERS DRAWINGS
3. TRENCH EXCAVATION/PREPARATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 3 TCCS STANDARD SPECIFICATION FOR URBAN INFRASTRUCTURE WORKS.
4. SHORING SHALL BE IN ACCORDANCE WITH THE SCAFFOLDING AND LIFT ACT, 1957 OR MOST CURRENT VERSION.

		Scales 0 1 1.5 2 2.5m 1:50 @ A1		North		Client Logo CCA collins caddaye architects		Status NOT FOR CONSTRUCTION		Project Name and Location MULTI-UNIT DEVELOPMENT BLOCK 13 SECTION 13, FORREST															
						www.sellickconsultants.com.au		Original Size A1		Drawn By RT		Drafting Check DA		Drawing Title TYPICAL CROSS SECTIONS SHEET 2											
B		FOR DESIGN ACCEPTANCE		21.06.18		CO		Date Plotted 21-Jun-18		Designed By LT		Design Check CO													
A		FOR DESIGN ACCEPTANCE		23.03.2018		CO		Coordinate System STROMLO GRID		Approved CO		Approved Date 23.08.2018													
Rev		Description		Date		Approved		Height Datum AHD		Approved Signature				Project Number 170324		Type DRG		Discipline CIV		Sub-Discipline AL		Drg No. 0112		Rev B	

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WASTE ENCLOSURE
SCALE 1:50

Rev	Description	Date	Approved
D	FOR DESIGN ACCEPTANCE	21.06.18	CO
C	FOR DESIGN ACCEPTANCE	05.04.18	CO
B	FOR DESIGN ACCEPTANCE	03.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

1:50 @ A1

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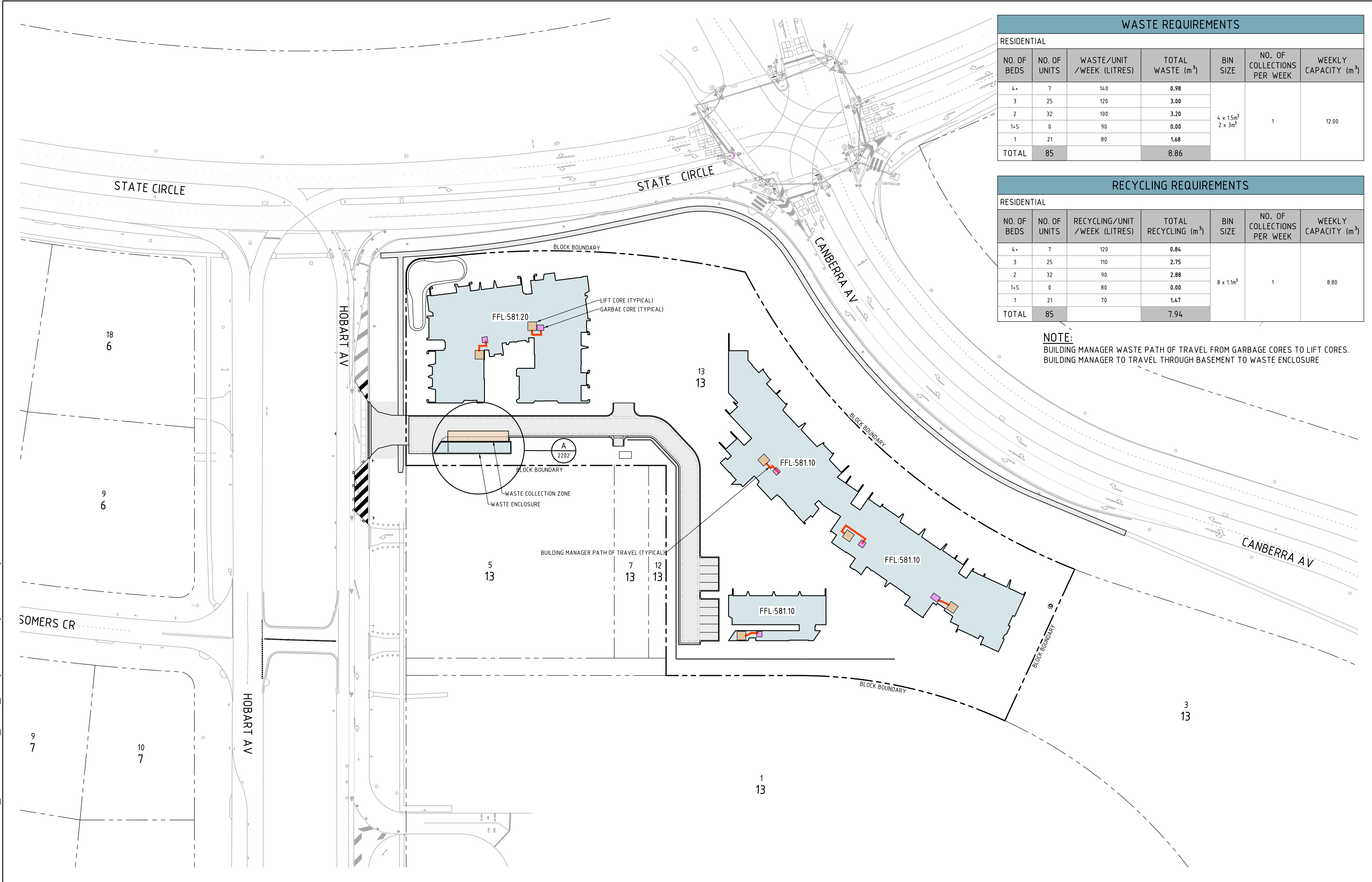
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Status NOT FOR CONSTRUCTION			
Original Size	A1	Drawn By	RT
Date Plotted	21-Jun-18	Designed By	LT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
WASTE MANAGEMENT					
PLAN SHEET 2					
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
170324	DRG	CIV	WM	2202	D

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-wm-2201.dwg



WASTE REQUIREMENTS						
RESIDENTIAL						
NO. OF BEDS	NO. OF UNITS	WASTE/UNIT /WEEK (LITRES)	TOTAL WASTE (m ³)	BIN SIZE	NO. OF COLLECTIONS PER WEEK	WEEKLY CAPACITY (m ³)
4+	7	140	0.98	4 x 1.5m ³ 2 x 3m ³	1	12.00
3	25	120	3.00			
2	32	100	3.20			
1+S	0	90	0.00			
1	21	80	1.68			
TOTAL	85		8.86			

RECYCLING REQUIREMENTS						
RESIDENTIAL						
NO. OF BEDS	NO. OF UNITS	RECYCLING/UNIT /WEEK (LITRES)	TOTAL RECYCLING (m ³)	BIN SIZE	NO. OF COLLECTIONS PER WEEK	WEEKLY CAPACITY (m ³)
4+	7	120	0.84	8 x 1.1m ³	1	8.80
3	25	110	2.75			
2	32	90	2.88			
1+S	0	80	0.00			
1	21	70	1.47			
TOTAL	85		7.94			

NOTE:
 BUILDING MANAGER WASTE PATH OF TRAVEL FROM GARBAGE CORES TO LIFT CORES.
 BUILDING MANAGER TO TRAVEL THROUGH BASEMENT TO WASTE ENCLOSURE

Rev	Description	Date	Approved
D	FOR DESIGN ACCEPTANCE	21.06.18	CO
C	FOR DESIGN ACCEPTANCE	05.04.18	CO
B	FOR DESIGN ACCEPTANCE	03.04.18	CO
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Scales

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1:500 @ A1

North

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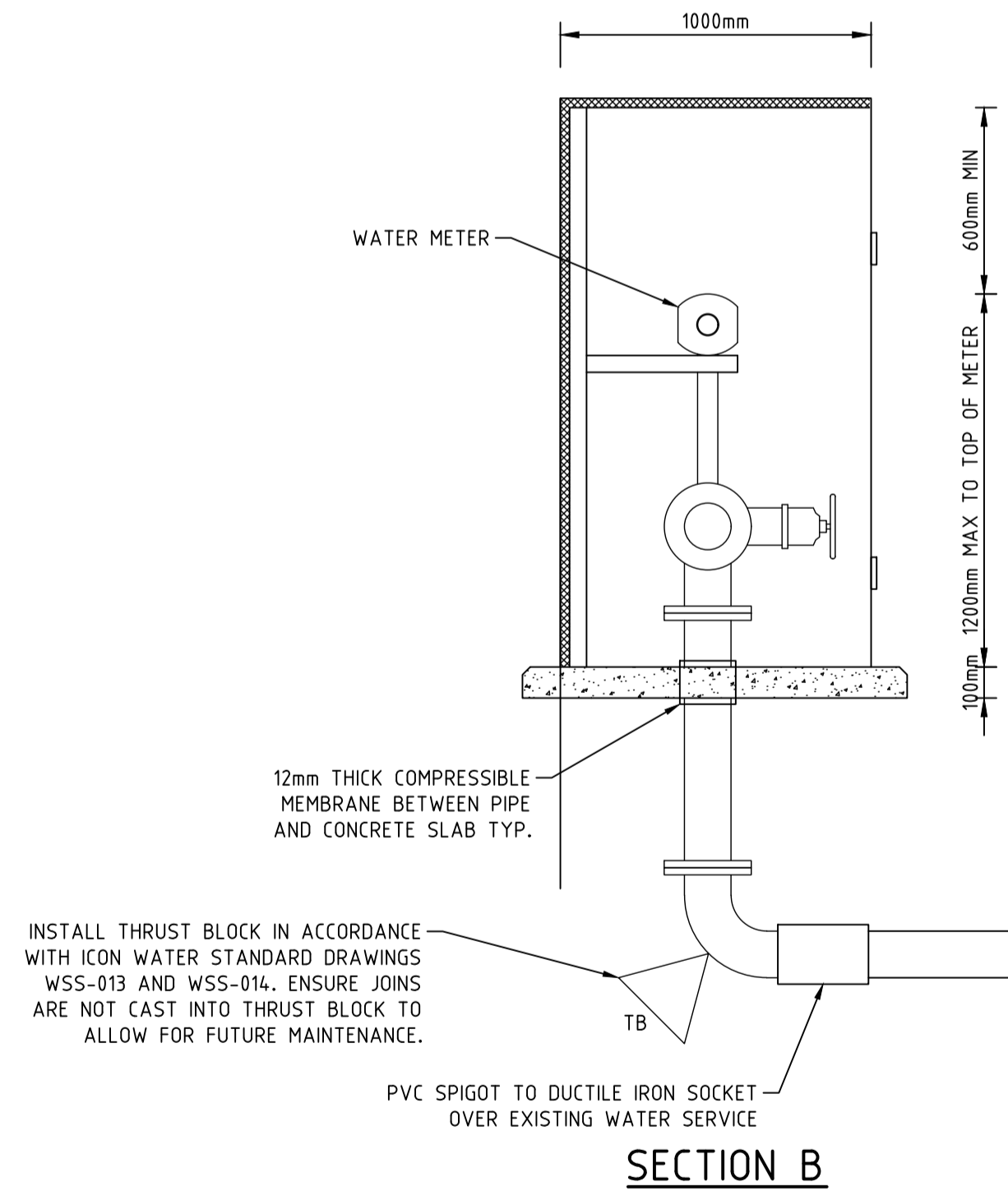
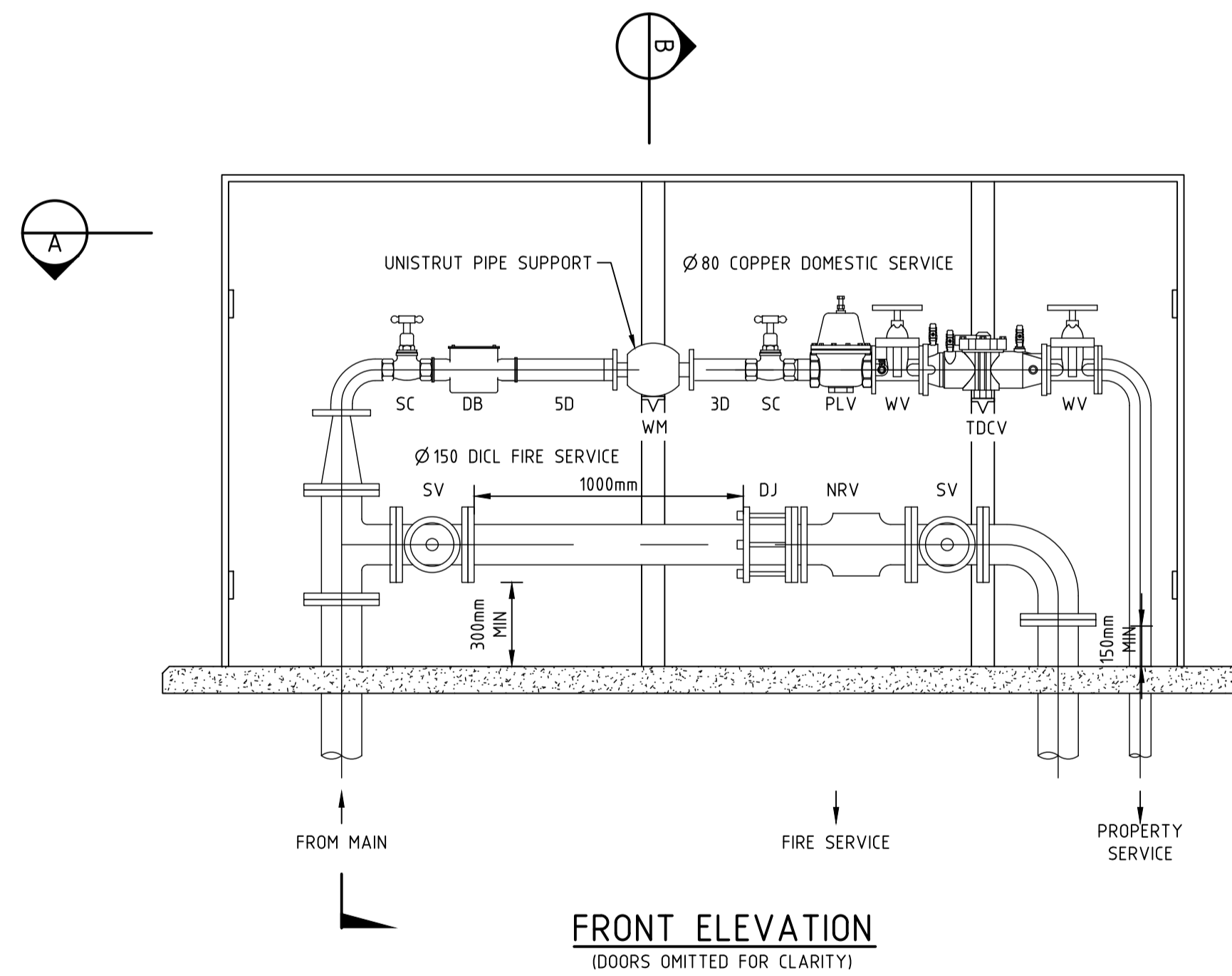
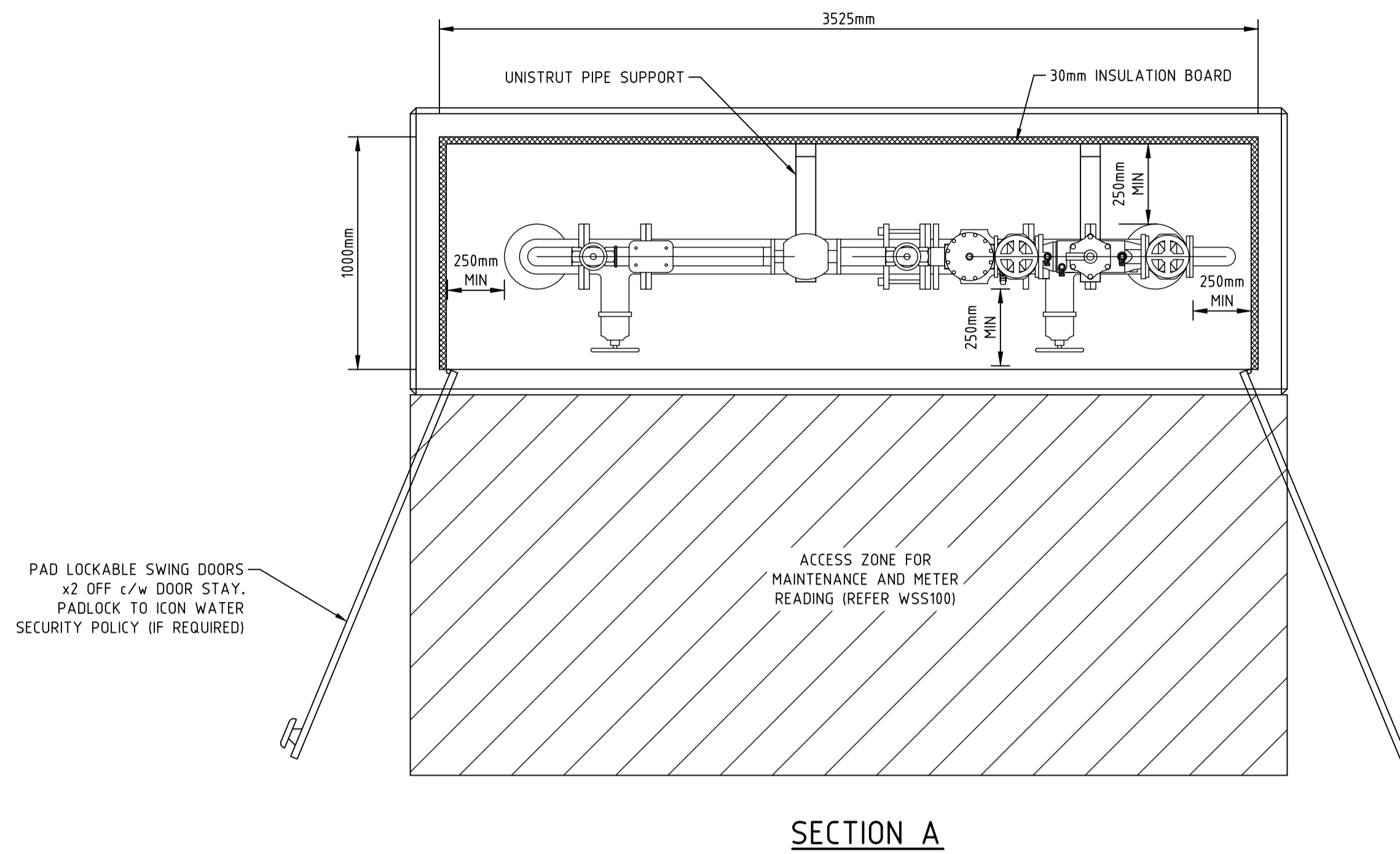
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		Approved Date	23.08.2018
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Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
WASTE MANAGEMENT						
PLAN SHEET 1						
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
170324	DRG	CIV	WM	2201	D	

File Name: P:\2017\170324_813-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dwg-civ-ut-0403.dwg



WATER METER PIT NOTES

- CLEARANCES FROM ELECTRICAL SERVICES TO BE 600mm MINIMUM HORIZONTALLY.
- FOR NONMETALLIC PIPE, 1mm PVC COATED TRACER WIRE IS TO BE TAPED TO THE PIPE AND WOUND 3 TIMES AROUND THE COPPER RISER, THEN ATTACHED BENEATH THE METER BALL VALVE USING A COPPER OR BRASS CLAMP. AT THE WATER MAIN A BARBED AND TWISTED TRACER WIRER CONNECTION IS TO BE MADE WITH THE WATER MAIN. TRACE WIRE ON NONMETALLIC MAINS, OR ON TO THE MAINS COCK ON METALLIC MAINS. ELECTRICAL CONDUCTIVITY MUST BE TESTED ENSURING LOCATION OF NONMETALLIC SERVICES USING A METAL DETECTOR.
- MARKING TAPE TO AS2648 TO BE LAID 150mm ABOVE THE WATER SERVICE AND BROUGHT TO THE SURFACE AND TIED BELOW THE METER BALL VALVE.
- BEFORE WATER IS DRAWN FROM THE NETWORK, THE WATER METER ASSEMBLY IS TO BE INSTALLED BY A LICENSED PLUMBER AND TESTED AT 1400kPa FOR 30 MINUTES WITH ZERO LOSS.
- THE OWNER IS TO SAFE GUARD THE WATER METER ENSURING UNOBSTRUCTED ACCESS AND HAVE AT LEAST 1 METRE CLARENCE FROM DRIVEWAYS, STRUCTURES, WALLS AND FENCING.
- ANY FENCE FOOTINGS SHALL INCORPORATE A SUITABLY SIZED CONDUIT AROUND THE WATER SERVICE.
- WHERE MAINS PRESSURE IS >500kPa THE INSTALLATION OF A 500kPa PRESSURE LIMITING VALVE MUST COMPLY WITH EPD PLUMBING NOTE 23 AND AS3500.
- WHERE A BUILDING IS TO BE INSTALLED WITH ONE OR MORE FIRE HOSE REELS, THE MINIMUM DIAMETER OF THE WATER SERVICE IS TO BE 25mm. ALL BASEMENT AND GROUND FLOOR FIRE HOSE REELS MUST BE CONNECTED TO THE METERED SERVICE.
- ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE.
- THRUST BLOCKS ARE TO BE INSTALLED IN ACCORDANCE WITH ICON WATER STANDARDS OR AS APPROVED BY ICON WATER.
- THE THRUST WALL IS TO BE STRUCTURALLY INDEPENDENT FROM THE METER PIT AND IS TO BE CAST AGAINST UNDISTURBED GROUND.
- ALL FIRE SERVICE VALVES TO BE LOCKED IN THE OPEN POSITION
- ALL VALVES TO BE LEFT TURNING ONLY ON ICON WATER MAINS IN GROUND. VALVES IN METER PIT TO BE CLOCKWISE.
- METER PIT ACCESS AND LADDER TO BE IN ACCORDANCE WITH AS1657-2013 INCLUSIVE OF MATERIALS AND FIXINGS.

LEGEND

- DB DIRT BOX
- DJ DISMANTLING JOINT
- NRV NON RETURN VALVE
- PLV PRESSURE LIMITING VALVE
- SC STOP COCK
- SV STOP VALVE
- TB CONCRETE THRUST BLOCK AS PER ICON WATER STANDARDS
- TDCV TESTABLE DOUBLE CHECK VALVE
- WM WATER METER TO ICON WATER REQUIREMENTS
- WV WHEEL VALVE
- 3D LENGTH OF PIPING 3xØ
- 5D LENGTH OF PIPING 5xØ

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B	FOR DESIGN ACCEPTANCE	21.06.18	CO
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Scales

North

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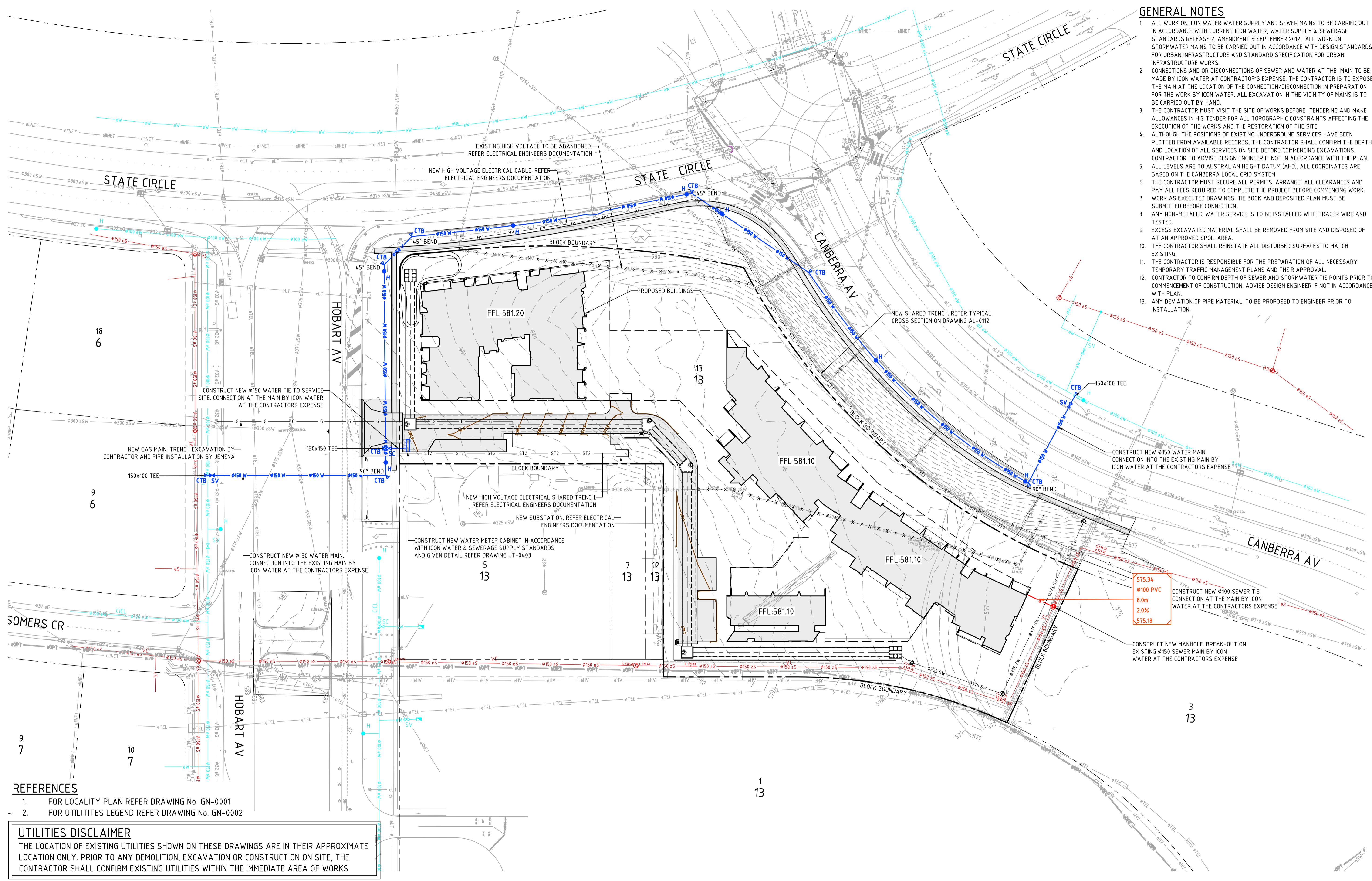
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Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
WATER CABINET DETAIL					
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	UT	0403	B

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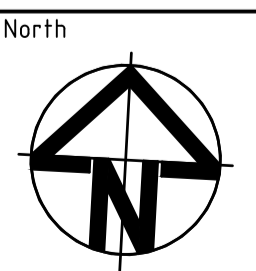
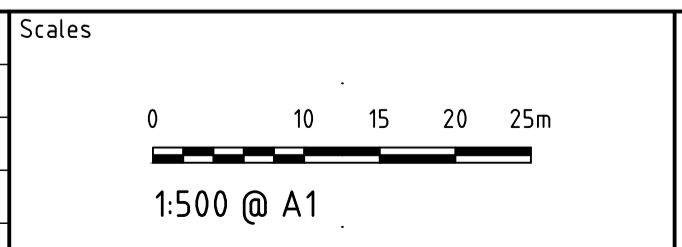


- ### GENERAL NOTES
- ALL WORK ON ICON WATER SUPPLY AND SEWER MAINS TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT ICON WATER, WATER SUPPLY & SEWERAGE STANDARDS RELEASE 2, AMENDMENT 5 SEPTEMBER 2012. ALL WORK ON STORMWATER MAINS TO BE CARRIED OUT IN ACCORDANCE WITH DESIGN STANDARDS FOR URBAN INFRASTRUCTURE AND STANDARD SPECIFICATION FOR URBAN INFRASTRUCTURE WORKS.
 - CONNECTIONS AND OR DISCONNECTIONS OF SEWER AND WATER AT THE MAIN TO BE MADE BY ICON WATER AT CONTRACTOR'S EXPENSE. THE CONTRACTOR IS TO EXPOSE THE MAIN AT THE LOCATION OF THE CONNECTION/DISCONNECTION IN PREPARATION FOR THE WORK BY ICON WATER. ALL EXCAVATION IN THE VICINITY OF MAINS IS TO BE CARRIED OUT BY HAND.
 - THE CONTRACTOR MUST VISIT THE SITE OF WORKS BEFORE TENDERING AND MAKE ALLOWANCES IN HIS TENDER FOR ALL TOPOGRAPHIC CONSTRAINTS AFFECTING THE EXECUTION OF THE WORKS AND THE RESTORATION OF THE SITE.
 - ALTHOUGH THE POSITIONS OF EXISTING UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS, THE CONTRACTOR SHALL CONFIRM THE DEPTH AND LOCATION OF ALL SERVICES ON SITE BEFORE COMMENCING EXCAVATIONS. CONTRACTOR TO ADVISE DESIGN ENGINEER IF NOT IN ACCORDANCE WITH THE PLAN.
 - ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD). ALL COORDINATES ARE BASED ON THE CANBERRA LOCAL GRID SYSTEM.
 - THE CONTRACTOR MUST SECURE ALL PERMITS, ARRANGE ALL CLEARANCES AND PAY ALL FEES REQUIRED TO COMPLETE THE PROJECT BEFORE COMMENCING WORK. WORK AS EXECUTED DRAWINGS, TIE BOOK AND DEPOSITED PLAN MUST BE SUBMITTED BEFORE CONNECTION.
 - ANY NON-METALLIC WATER SERVICE IS TO BE INSTALLED WITH TRACER WIRE AND TESTED.
 - EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SPOIL AREA.
 - THE CONTRACTOR SHALL REINSTATE ALL DISTURBED SURFACES TO MATCH EXISTING.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ALL NECESSARY TEMPORARY TRAFFIC MANAGEMENT PLANS AND THEIR APPROVAL.
 - CONTRACTOR TO CONFIRM DEPTH OF SEWER AND STORMWATER TIE POINTS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ADVISE DESIGN ENGINEER IF NOT IN ACCORDANCE WITH PLAN.
 - ANY DEVIATION OF PIPE MATERIAL, TO BE PROPOSED TO ENGINEER PRIOR TO INSTALLATION.

- ### REFERENCES
- FOR LOCALITY PLAN REFER DRAWING No. GN-0001
 - FOR UTILITIES LEGEND REFER DRAWING No. GN-0002

UTILITIES DISCLAIMER
 THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS ARE IN THEIR APPROXIMATE LOCATION ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE CONTRACTOR SHALL CONFIRM EXISTING UTILITIES WITHIN THE IMMEDIATE AREA OF WORKS

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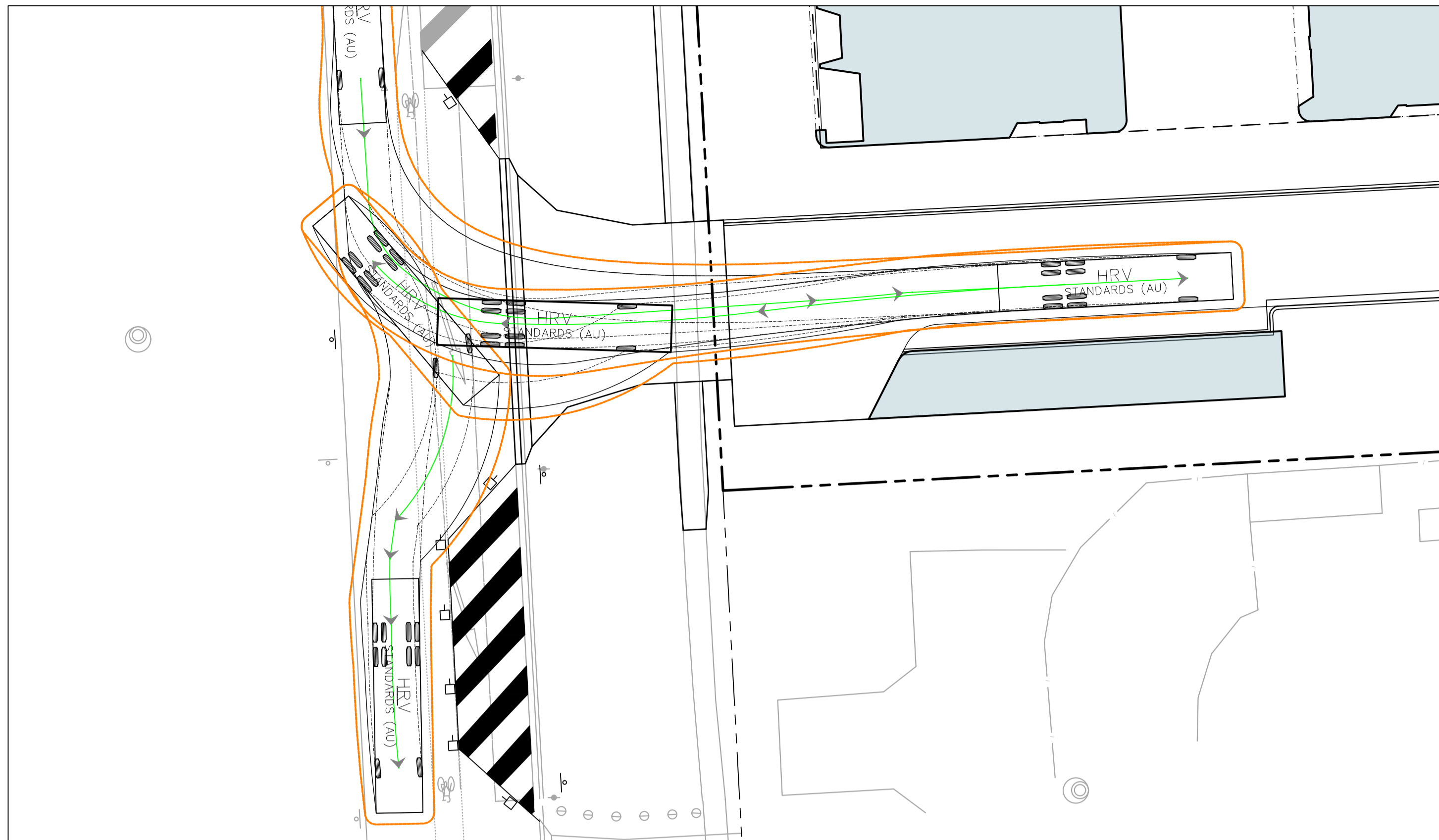
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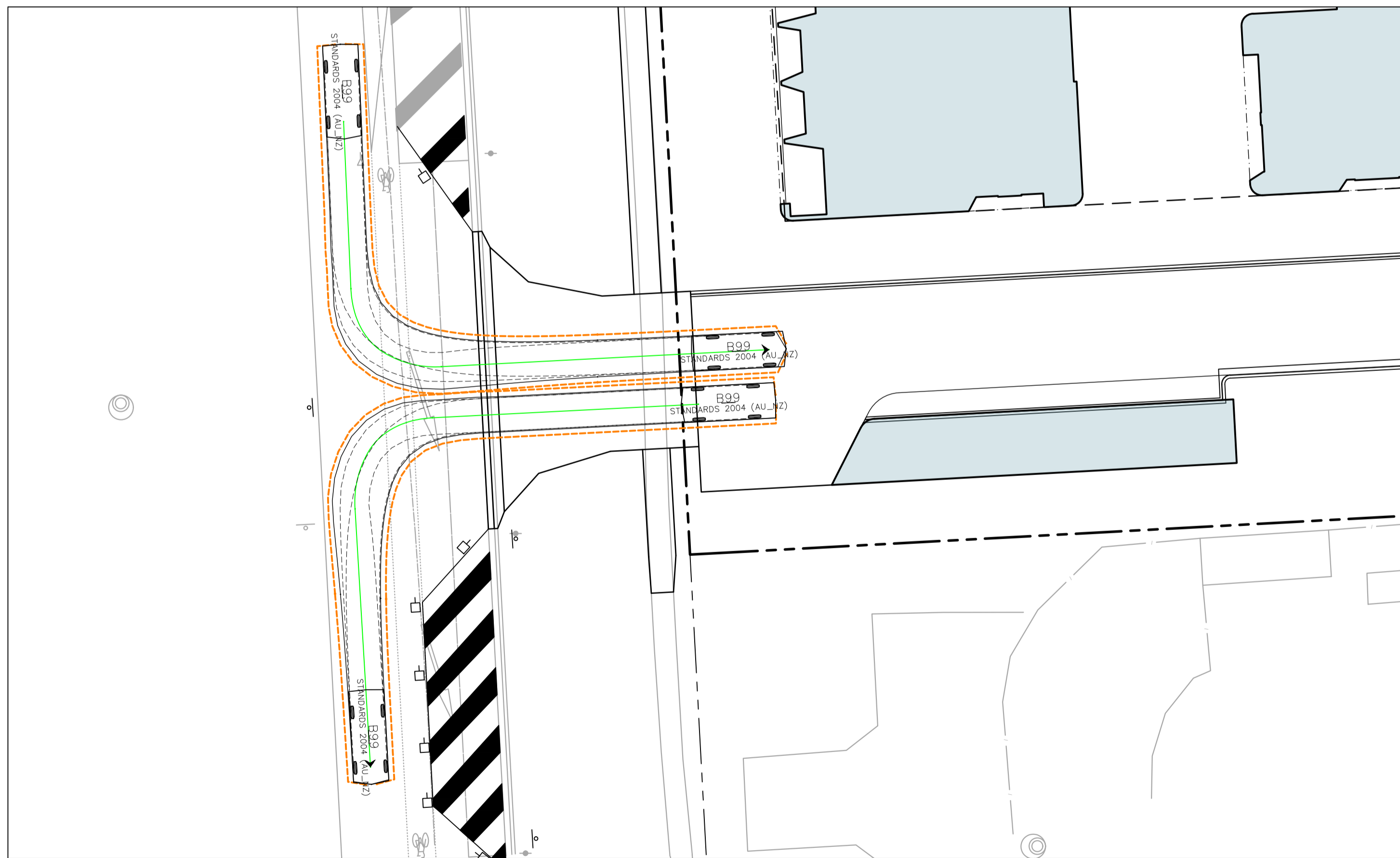
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		Approved Signature	

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
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Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
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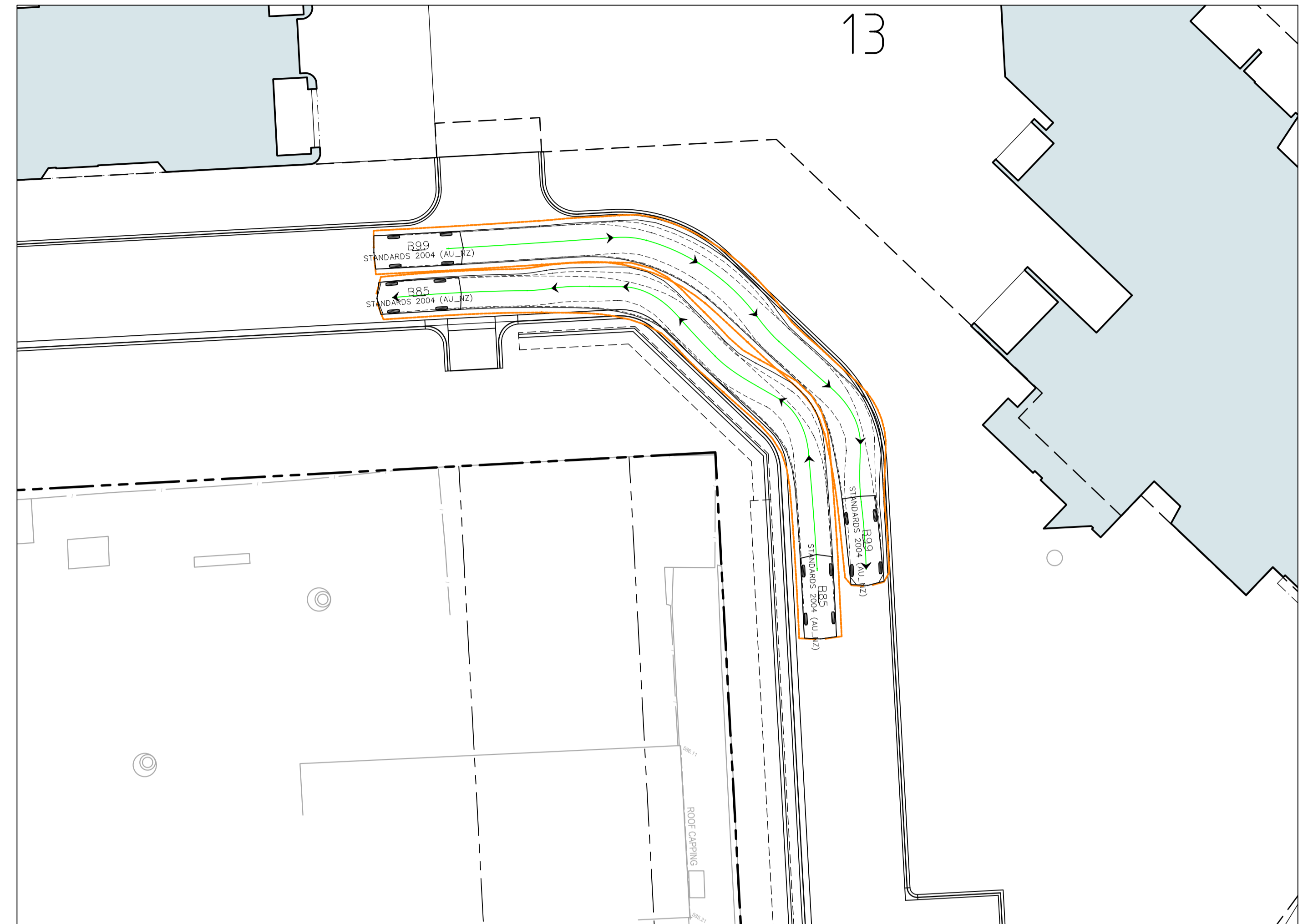
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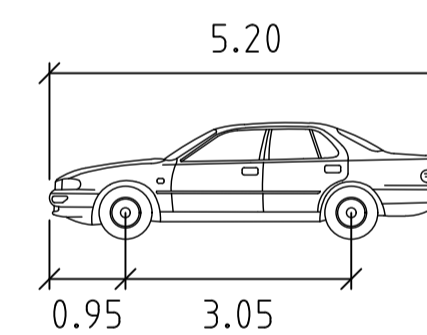
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DETAIL 2 - B99 ENTRY/EXIT
SCALE 1:200

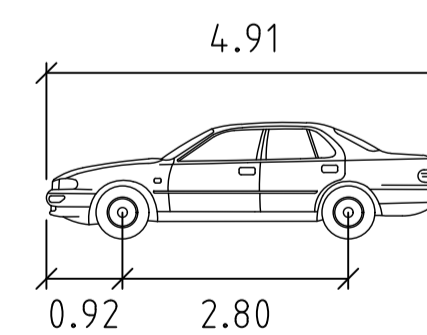


DETAIL 3 - B99 & B85
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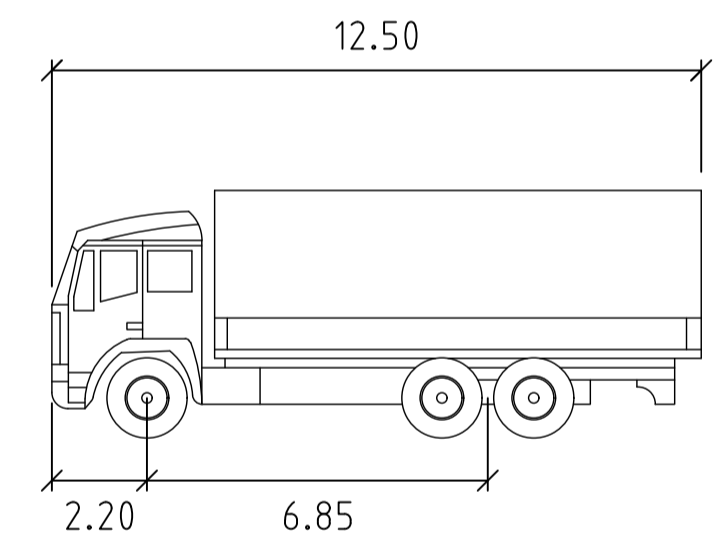
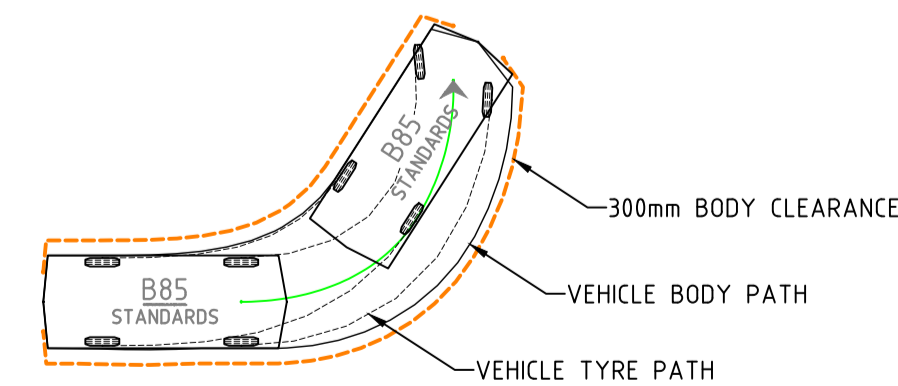
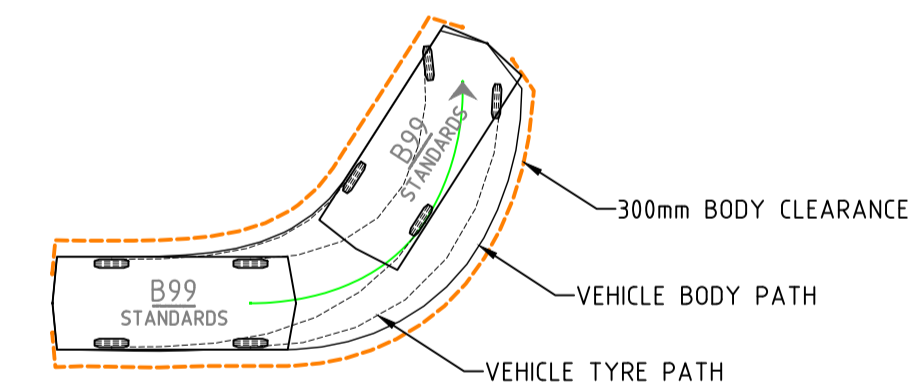
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Steering Angle : 38.00°



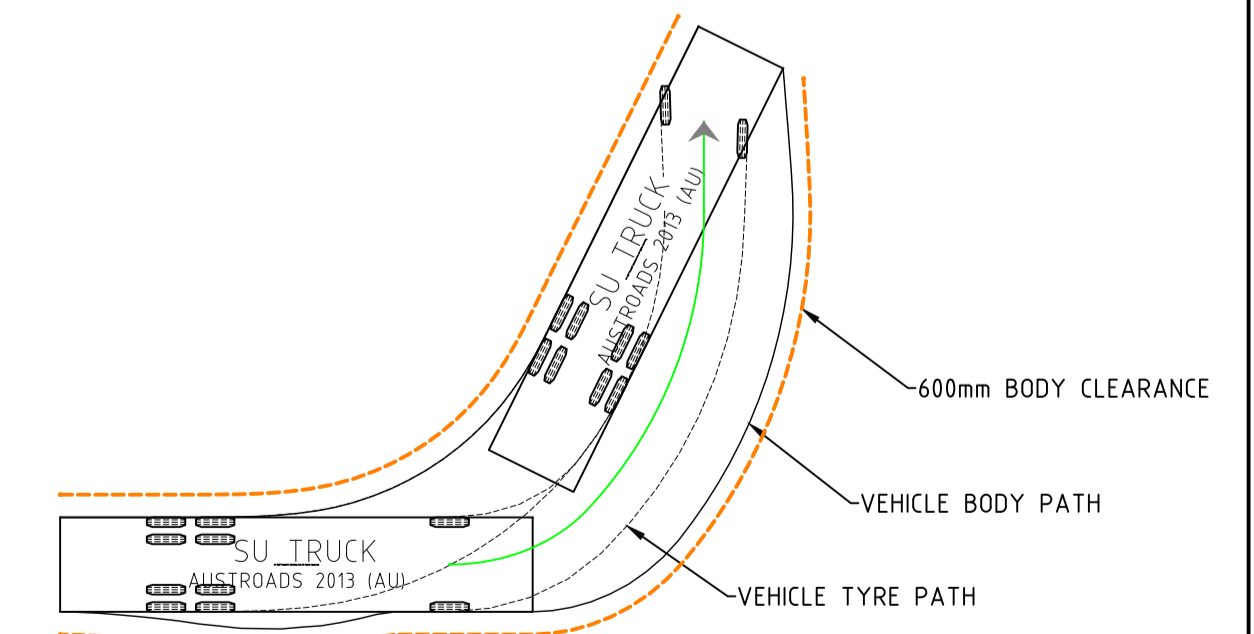
AS2890.1 B85

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Steering Angle : 38.00°

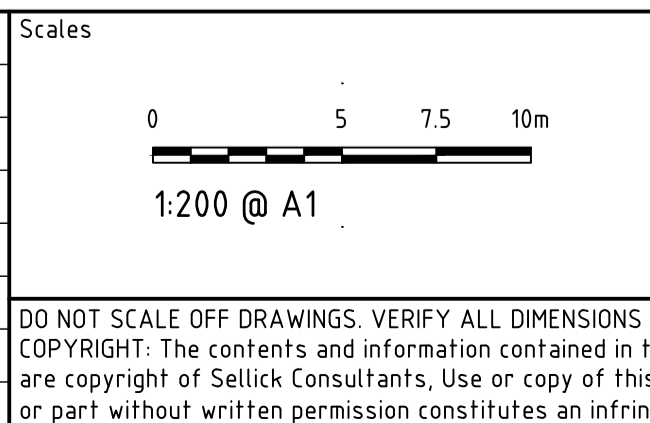


SINGLE UNIT TRUCK (HRV)

Width : 2.50m
Track : 2.50m
Lock to Lock Time : 6.00s
Steering Angle : 33.50°



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B	FOR DESIGN ACCEPTANCE	21.06.18	CO
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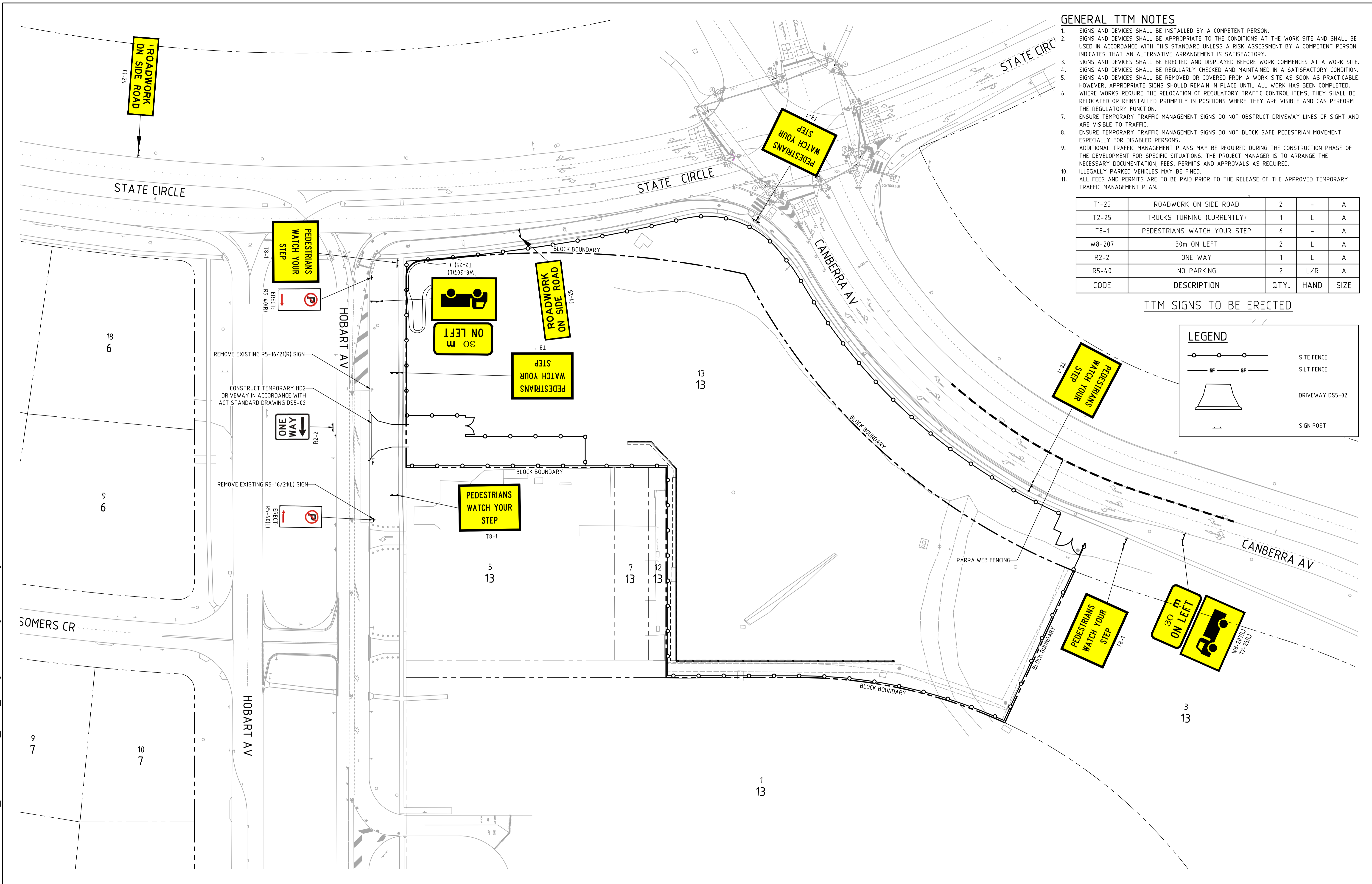
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MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
VEHICLE TURNING PATH						
PLAN						
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev	
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GENERAL TTM NOTES

- SIGNS AND DEVICES SHALL BE INSTALLED BY A COMPETENT PERSON.
- SIGNS AND DEVICES SHALL BE APPROPRIATE TO THE CONDITIONS AT THE WORK SITE AND SHALL BE USED IN ACCORDANCE WITH THIS STANDARD UNLESS A RISK ASSESSMENT BY A COMPETENT PERSON INDICATES THAT AN ALTERNATIVE ARRANGEMENT IS SATISFACTORY.
- SIGNS AND DEVICES SHALL BE ERECTED AND DISPLAYED BEFORE WORK COMMENCES AT A WORK SITE. SIGNS AND DEVICES SHALL BE REGULARLY CHECKED AND MAINTAINED IN A SATISFACTORY CONDITION. SIGNS AND DEVICES SHALL BE REMOVED OR COVERED FROM A WORK SITE AS SOON AS PRACTICABLE. HOWEVER, APPROPRIATE SIGNS SHOULD REMAIN IN PLACE UNTIL ALL WORK HAS BEEN COMPLETED.
- WHERE WORKS REQUIRE THE RELOCATION OF REGULATORY TRAFFIC CONTROL ITEMS, THEY SHALL BE RELOCATED OR REINSTALLED PROMPTLY IN POSITIONS WHERE THEY ARE VISIBLE AND CAN PERFORM THE REGULATORY FUNCTION.
- ENSURE TEMPORARY TRAFFIC MANAGEMENT SIGNS DO NOT OBSTRUCT DRIVEWAY LINES OF SIGHT AND ARE VISIBLE TO TRAFFIC.
- ENSURE TEMPORARY TRAFFIC MANAGEMENT SIGNS DO NOT BLOCK SAFE PEDESTRIAN MOVEMENT ESPECIALLY FOR DISABLED PERSONS.
- ADDITIONAL TRAFFIC MANAGEMENT PLANS MAY BE REQUIRED DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT FOR SPECIFIC SITUATIONS. THE PROJECT MANAGER IS TO ARRANGE THE NECESSARY DOCUMENTATION, FEES, PERMITS AND APPROVALS AS REQUIRED.
- ILLEGALLY PARKED VEHICLES MAY BE FINED.
- ALL FEES AND PERMITS ARE TO BE PAID PRIOR TO THE RELEASE OF THE APPROVED TEMPORARY TRAFFIC MANAGEMENT PLAN.

CODE	DESCRIPTION	QTY.	HAND	SIZE
T1-25	ROADWORK ON SIDE ROAD	2	-	A
T2-25	TRUCKS TURNING (CURRENTLY)	1	L	A
T8-1	PEDESTRIANS WATCH YOUR STEP	6	-	A
W8-207	30m ON LEFT	2	L	A
R2-2	ONE WAY	1	L	A
R5-4.0	NO PARKING	2	L/R	A

TTM SIGNS TO BE ERECTED

LEGEND

- SITE FENCE
- SILT FENCE
- DRIVEWAY D55-02
- SIGN POST

Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

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North

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Height Datum	AHD	Approved Signature			

Project Name and Location

MULTI-UNIT DEVELOPMENT
BLOCK 13 SECTION 13, FORREST

Drawing Title

TEMPORARY TRAFFIC MANAGEMENT
PLAN SHEET 1

Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	TM	0901	B



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**PROPOSED MULTI-RESIDENTIAL DEVELOPMENT
BLOCK 13 SECTION 13 FORREST**

OVERLAND FLOW REPORT

Prepared by Ross Costello
Reviewed by Alex McLennan and Bernie Cusack
Authorised by Andrew Easey

structural civil hydraulic façade engineers

CONTENTS

1. INTRODUCTION	1
2. CATCHMENT AREA	2
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Revision C

1. INTRODUCTION

This report details the initial design, overland flow study and redesign of the stormwater infrastructure proposed for Block 13 Section 13 Forrest.

The development site, upon which it is proposed to build a multi-storey apartment development with associated underground parking and landscaping areas, currently forms part of an overland flow path, refer to Figure 1 below. This overland flow path drains a sub-catchment between Red Hill and State Circle towards the Forrest Primary School ovals. An initial report prepared on the 31st May 2016 by Indesco estimated the peak overland flow to be 5.1 m³ during a 1% AEP event. This peak flow would need to be diverted around the site in order to prevent impact to the buildings during the 1% AEP event.

An initial design to convey this flow below ground via a box culvert (based on the Indesco report) was then submitted for Design Acceptance (refer Appendix A for design drawings), and subsequently received a Certificate of Design Review.

During a large storm event in February 2018 (1.7% AEP in Turner, as determined by Cardno report on the 26th of March 2018), it was observed that no overland flow occurred over the site. Sellick Consultants were then engaged to conduct a new study in order to reassess the catchment and determine the revised infrastructure requirements.

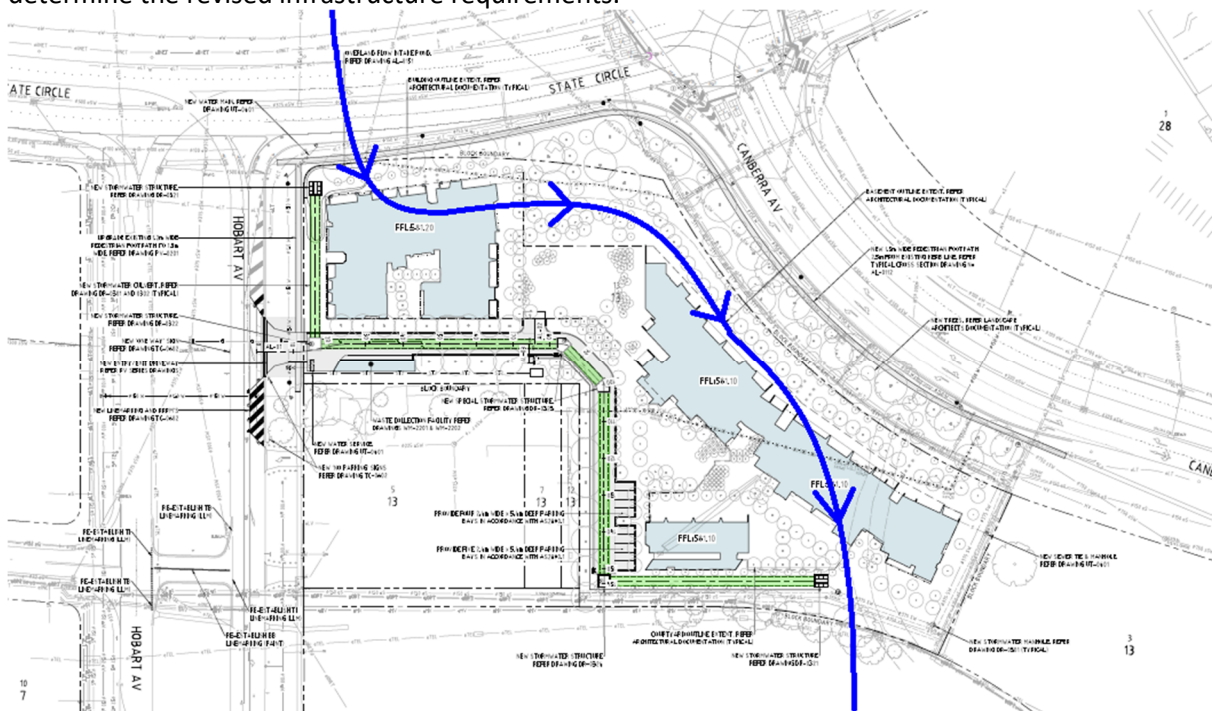


Figure 1 - Proposed Development and existing overland flow path

2. CATCHMENT AREA

The desktop study undertaken by Indesco was replicated using ACTmapi data, and a catchment area of 21.6ha falling between Red Hill to Capital Hill was determined (see Figure 2). The area in question is bounded by Melbourne Avenue, National Circle, Capital Hill and Canberra Avenue.

The catchment is divided into two main sub-catchments; north and south. The northern sub-catchment consists mainly of nature strip and roads around State Circle and generally drains outwards to State Circle. The southern sub-catchment consists of mainly residential blocks draining from National Circuit towards the corner of Hobart Avenue and State Circle. Both catchments were assumed to drain to a trapped low point on Capital Circle opposite to the proposed development.



Figure 2 - Catchment extents and existing trapped low point identified in Indesco study.

3. EXISTING FLOOD CONDITIONS

For the 1% AEP event it has been assumed that there is 100% blockage of the stormwater network. Following this assumption the trapped low point within State Circle would overtop and flow through the site to the Forrest Primary School ovals that act as a retardation basin during large storm events.

The flow enters the site at the north-west corner (intersection of State Circle and Hobart Avenue) and runs south eastward, following the depression in the land form, where it discharges at the south-east corner onto the Forrest Primary School Ovals (see Figure 3).

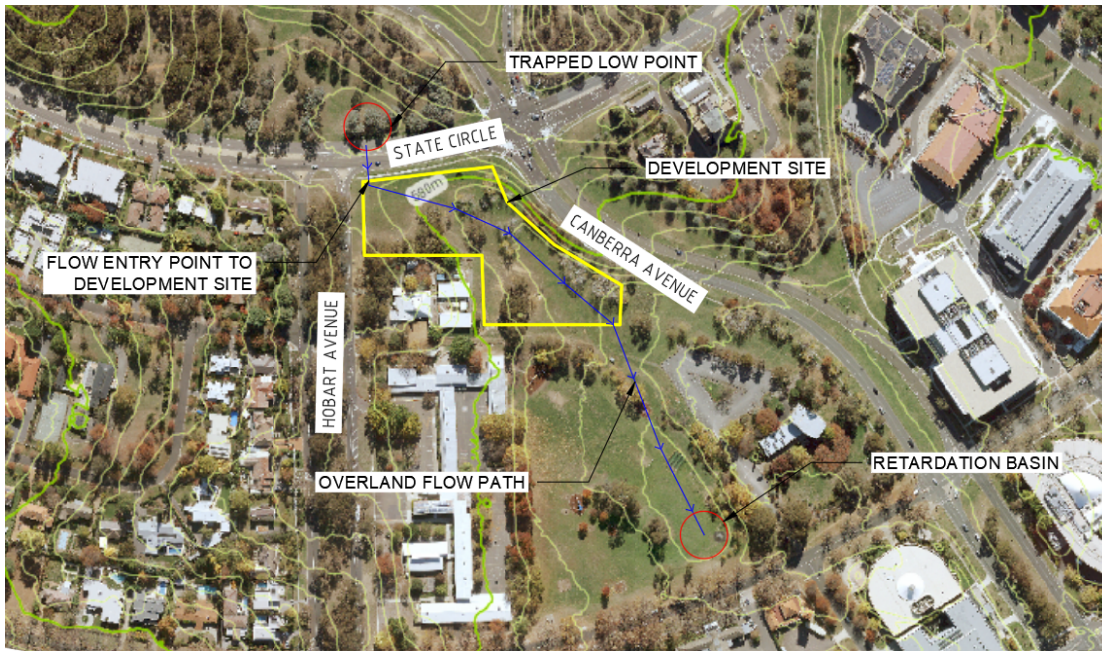


Figure 3 - Overland flow path through site

4. INITIAL DESIGN

Following the initial reported flow of 5.1m^3 , a 2.5m square box culvert was designed to divert the overland flow from the northern corner on the site, around the proposed development and surcharge safely downstream at the southern boundary. This design was to utilise the existing retarding basin on the ovals to the south of the development. See Figure 4 and design drawings within Appendix A.

The inlet structure (SWN1), sized to allow the overland flows for the 1% AEP event to enter the square box culvert, is located in an artificial basin. This basin is designed to contain overland flows and allow time for it to drain through the inlet structure.

A similar structure is located at the downstream end to allow for the flows to surcharge into the overland flow path on the southern boundary.

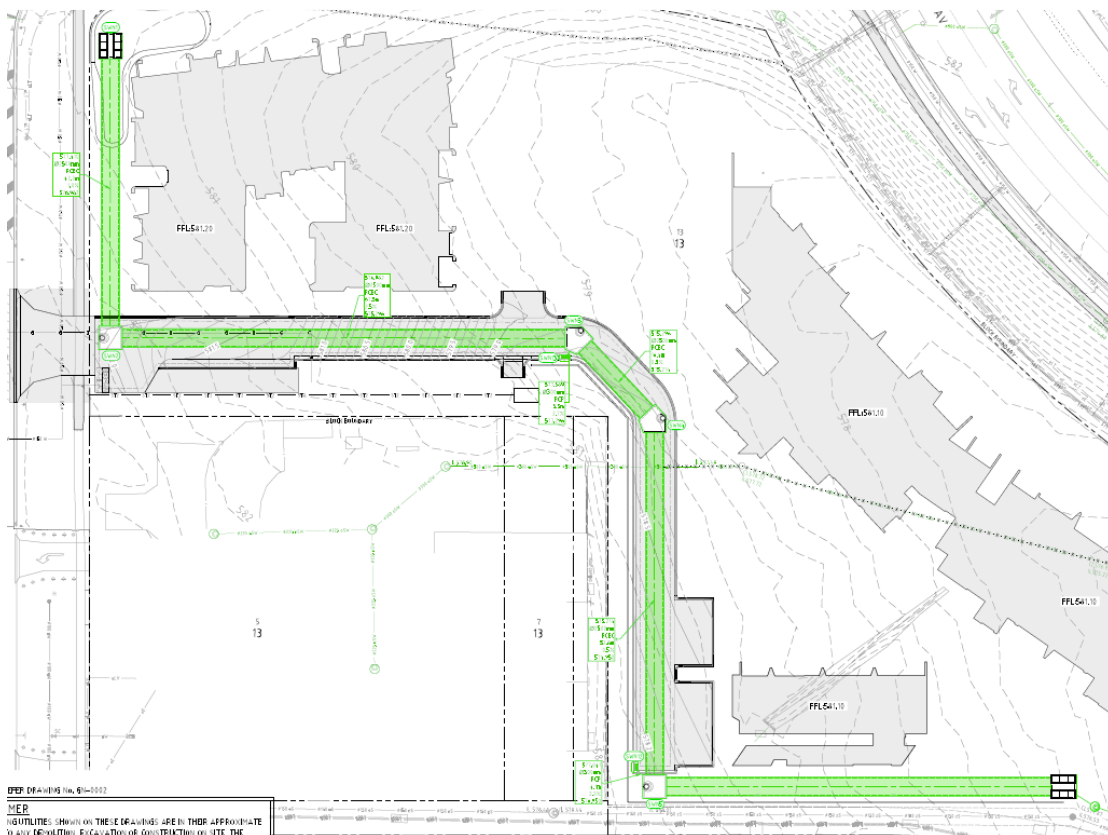


Figure 4 - Initial Design

5. REVISION OF CATCHMENT AREA

Following observation of a large storm event in February 2018 not impacting upon the site, the stormwater management plan of the site was revisited. Site inspection revealed that the catchment area was less than half the original desktop assessment, dropping the area from 21.6ha to 8.1ha. This reduction was partially due to the determination that a large amount of the catchment area south of State Circle drains to a low point at the front of Forrest Primary School, rather than down Hobart Avenue to State Circle as was previously allowed for. This effectively diverts the majority of the previously identified southern sub-catchment away from the development (see Figure 5). It was also observed that all the area in the northern sub-catchment, north of Capital Circle also drained away from the development site, flowing west along Capital Circle past Melbourne Avenue.



Figure 5 - Revised catchment extents and flow paths

6. REVISED FLOOD MODELLING

Using this revised catchment, a drains model for the overland flow was produced. A minor design ARI for Urban Neighbourhood Development of 5 years was adopted (20% AEP), as per Transport Canberra and City Services' (TCCS) Design Standards for Urban Infrastructure DS-01.

The drains model developed was then used to predict the peak runoff from the revised catchment area ($0.69 \text{ m}^3/\text{s}$ for 20% AEP and $1.74 \text{ m}^3/\text{s}$ for 1% AEP).

The 20% AEP was taken as the design capacity for the stormwater network, and a blockage factor of 0.5 for the 5 year ARI was assumed as per TCCS DS-01 Table 1.29.

The diameter of the stormwater pipe at the point of overtopping at the development was confirmed on site to be $\text{Ø}300$. Assumed at a 1% grade, the capacity of the pipe is determined to be $0.122 \text{ m}^3/\text{s}$. Using the equation from TCCS DS-01 Clause 1.7.3, the gap flow at the site was calculated to be $1.68 \text{ m}^3/\text{s}$ (See Appendix B for calculations).

A drains model was used to determine the diameter of pipe that would convey the 1% AEP storm event flows past the site. The site catchment was broken up into sub-catchments and the overland flow paths were mapped as determined on site (see Figure 6). The areas of these sub-catchments and length of overland flow path were determined and used to find the peak overland flow for the 20% AEP and 1% AEP events as shown in table 1.

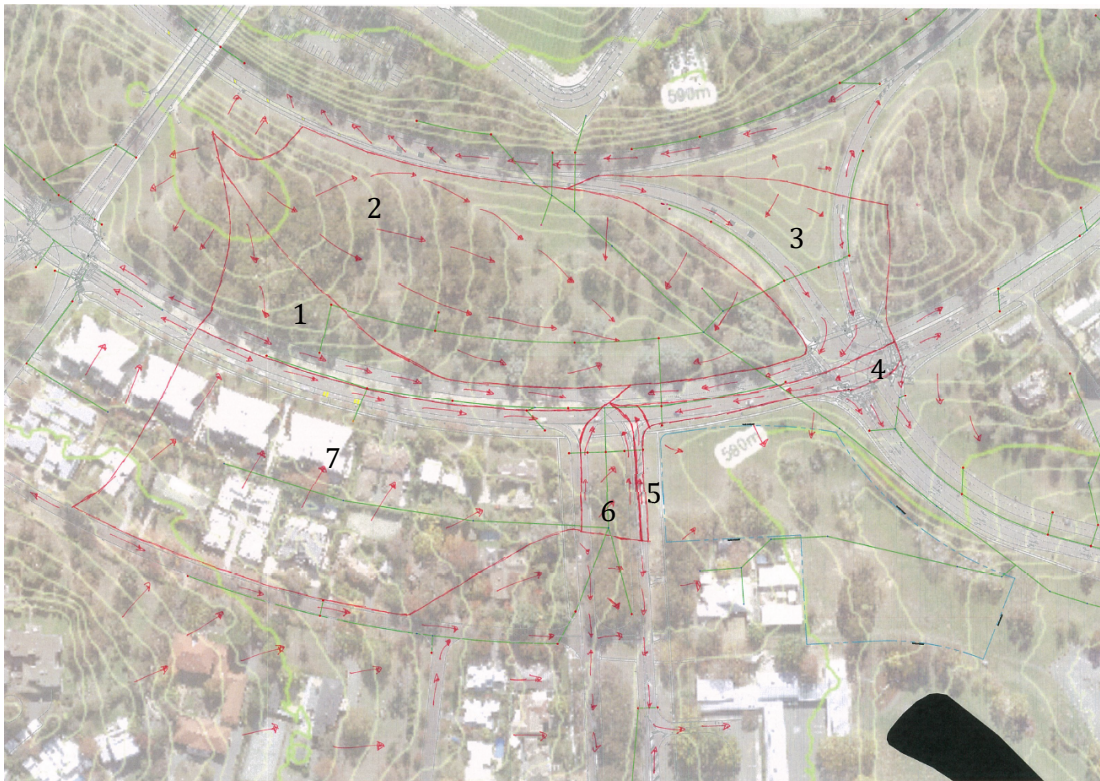


Figure 6 - New sub-catchment and overland flow paths

Number	Sub-Catchment	Area (ha)	5 year ARI Peak Runoff (cu.m.s ⁻¹)	100 year ARI Peak Runoff (cu.m.s ⁻¹)
1	Embankment	0.62	0.06	0.17
2	Capital Hill	3.05	0.18	0.64
3	Capital Circle	0.89	0.12	0.31
4	Canberra Avenue Junction	0.14	0.03	0.06
5	Hobart Avenue Southbound	0.04	0.01	0.02
6	Hobart Avenue Northbound	0.65	0.10	0.23
7	State Circle	2.72	0.43	0.86
	Total	8.11		

Table 1 - Catchment Table

7. REVISED DESIGN

With the revised overland flow to the site, the initial design was also revised. It was determined that the 2.5m squared culvert was now in excess of what was required. Resizing of the pipe established that a Ø900 stormwater pipe at 1% grade would successfully convey the 1% AEP event flow around the development site.

The design of the inlet structure and surcharge structure have also been resized. Both structures are now double surcharge structures as in TCCS Standard Drawing ST-0016.

The basin structure has not changed and will be able to cope with the peak flows as it was sized to the original 5.1m³/s peak flow.

An additional check was conducted on the resultant flow that would be entering the Forrest Primary School oval retarding basin post development and comparing it to the predevelopment condition. Assuming worst case scenario a total predevelopment flow of 2.27 cu.m.s⁻¹ enters the retarding basin. This is based off the combination of the 1.74 cu.m.s⁻¹ and the predevelopment site flow of 0.53 cu.m.s⁻¹.

The post development scenario has a total flow entering the retarding basin of 2.00 cu.m.s⁻¹. This is based off the combination of the 1.74 cu.m.s⁻¹, the post development site flow of 0.62 cu.m.s⁻¹ (increased flow is due to the proposed hardstand area) and the 375mm stormwater tie for the proposed development that will direct part of the former overland flow into the pipe system and away from the retarding basin.

8. CONCLUSION

Physical inspection of the site has determined that the initial desktop study overestimated the effective catchment. The amended catchment is 8.1ha resulting in a gap flow of 1.68 m³/s, which can be conveyed in a Ø900 pipe graded at 1.0%.

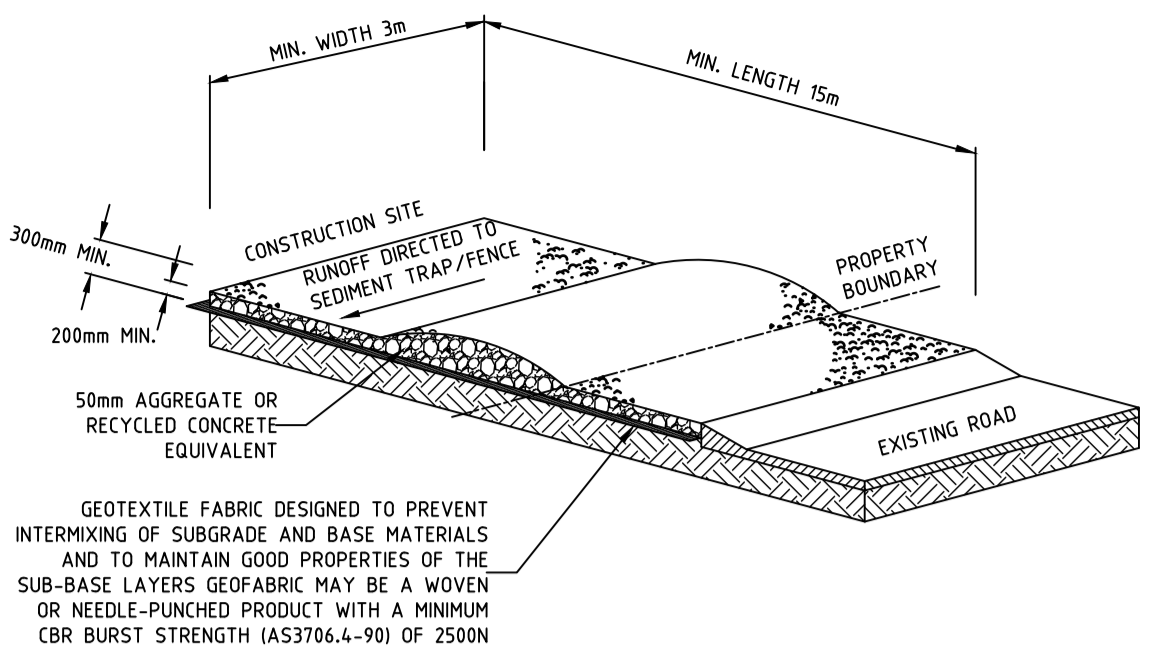
The revised design in Appendix C allows for the amended gap flow and design acceptance for the revised design is recommended.

The design proposal maintains the existing topographic features along the southern boundary with regard to the overland flow path. The resultant flows entering the existing retarding basin, within Forrest Primary School's oval, has been reduced due to the proposed development infrastructure from 2.27 cu.m.s⁻¹ down to 2.00 cu.m.s⁻¹. With the reduction in overland flow there will not be an increase in velocity, depth or extent of detention within the retarding basin.

APPENDIX A – INITIAL DESIGN DOCUMENTATION

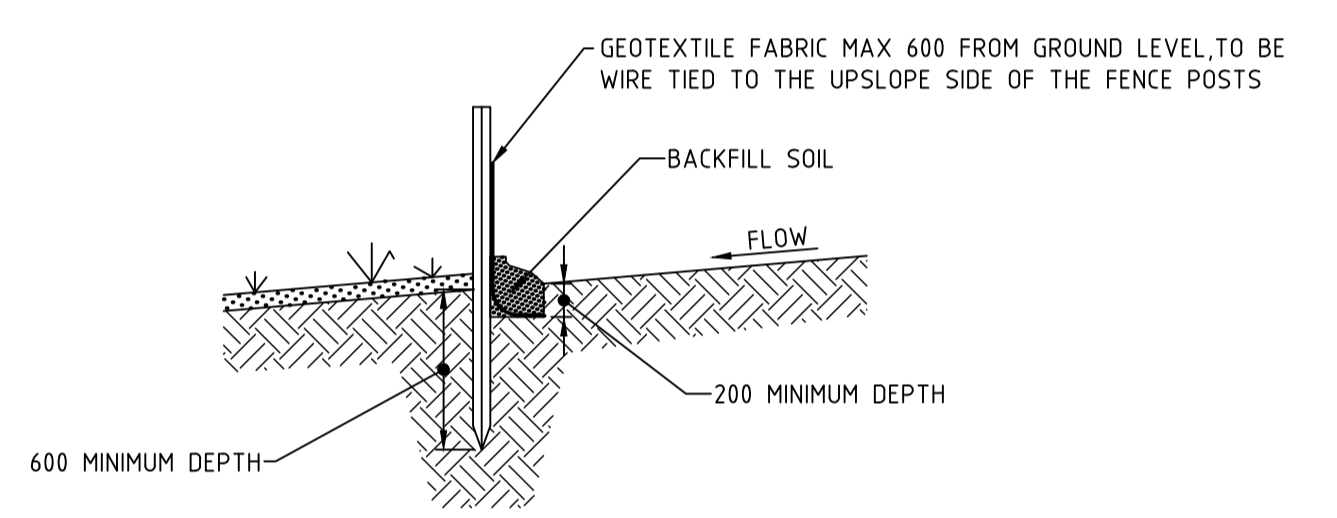
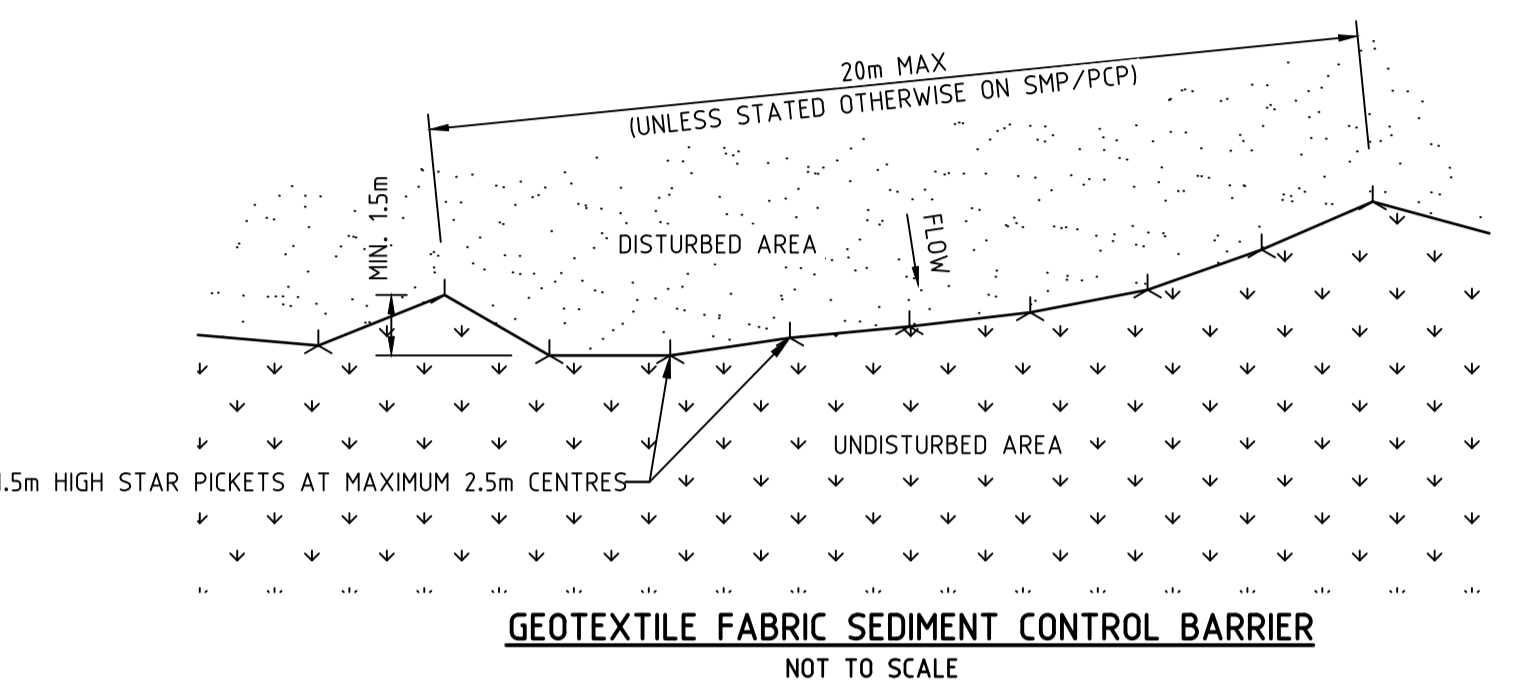
APPENDIX B – CALCULATIONS

APPENDIX C – REVISED DESIGN DRAWINGS



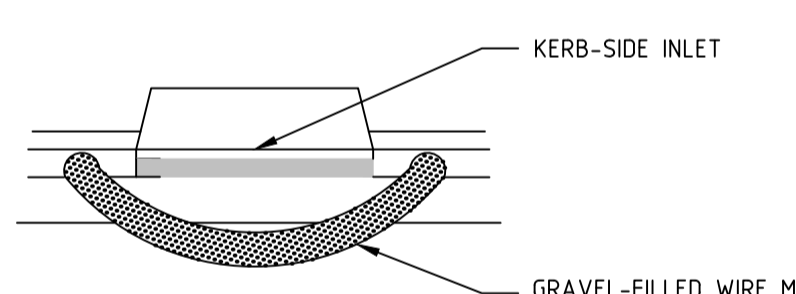
STABILISED CONSTRUCTION ENTRANCE

NOT TO SCALE



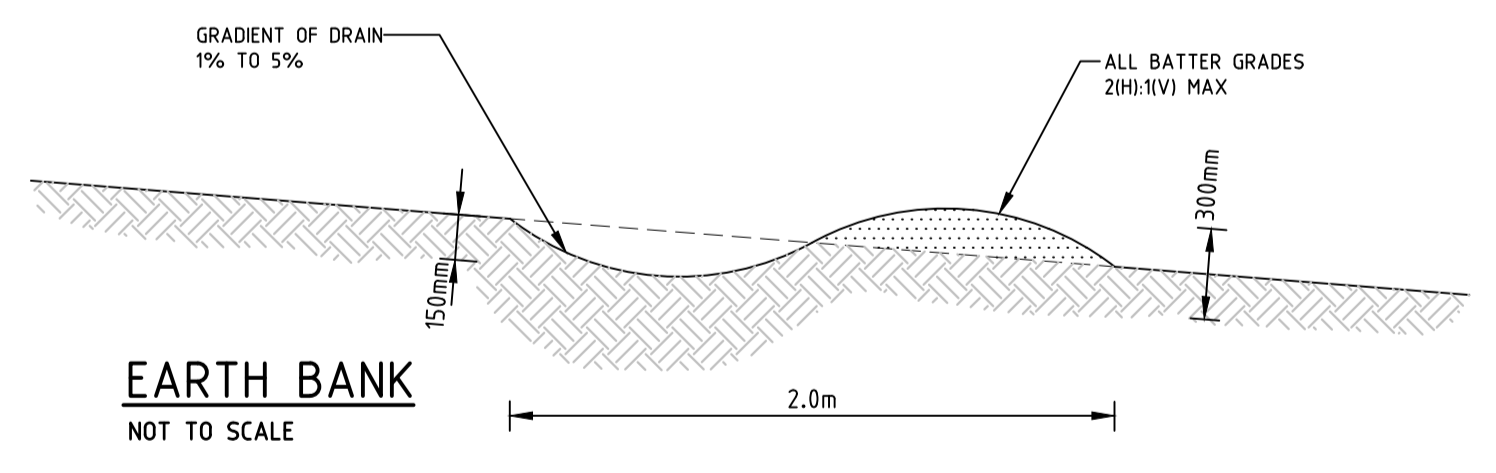
GEOTEXTILE FABRIC SEDIMENT CONTROL BARRIER SECTION

NOT TO SCALE



KERB INLET FILTER

NOT TO SCALE



CONTACT DETAILS

PROJECT MANAGER: GAVIN MURPHY - 0418 949 289
 SITE MANAGER: GAVIN MURPHY - 0418 949 289

HOURS OF OPERATION

SITE WORKS TO BE CONDUCTED ONLY BETWEEN THE FOLLOWING HOURS:

- WEEKDAYS 7:00AM TO 6:00PM.
- SATURDAYS 7:00AM TO 6:00PM.
- SUNDAYS BUILDING WORK MUST NOT EXCEED NOISE STANDARD

WASTE NOTES

1. WASTE ENCLOSURE(S) ARE TO BE USED FOR ALL RUBBISH ON SITE AND RUBBISH REMOVED FROM ENCLOSURE(S) WHEN REQUIRED OR FULL.

CUT AND FILL VOLUMES

CUT 8164.5m³
 FILL 9879.3m³

EXCESS SOIL TO BE DISPOSED OF AT AN ENVIRONMENT PROTECTION AUTHORITY APPROVED LOCATION.

NOISE

ENSURE ALL BUILDING WORK THAT GENERATES NOISE IS CONDUCTED WITHIN THE TIME PERIODS DETAILED IN SCHEDULE 2 OF THE ENVIRONMENT PROTECTION REGULATIONS 2005.

BUILDING WORK DETAILS	MONDAY TO SATURDAY	SUNDAY AND PUBLIC HOLIDAYS
INDUSTRIAL, CITY AND TOWN CENTRE AREAS	6AM TO 8PM	6AM TO 8PM
ANY OTHER AREA WHEN WORK COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	8AM TO 8PM
ANY OTHER AREA WHEN WORK NOT COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	BUILDING WORK MUST NOT EXCEED NOISE STANDARD

- IN ADDITION:
- SCHEDULE NOISY ACTIVITIES FOR THE LEAST SENSITIVE TIMES OF THE DAY SUCH AS MID-MORNING AND MID-AFTERNOON.
 - SELECT MACHINERY THAT PRODUCE LESS NOISE, AND ENSURE MACHINERY IS WELL MAINTAINED.

SEDIMENT CONTROL POND NOTES

- DISCHARGE FROM THE POND IS PERMISSIBLE WHEN THE WATER pH IS 6.5-8.5 AND IS CLARIFIED TO OR AT BELOW 60mg/L (50NTU). IF SEDIMENT LEVEL IS GREATER, THEN PRIOR TO DISCHARGE, THE DAM MUST BE DOSED WITH EITHER ALUM OR GYPSUM AND ALLOWED TO SETTLE UNTIL THE SEDIMENT IS LESS THAN 60mg/L (50NTU).
- WATER LEVEL TO BE MAINTAINED AT LESS THAN 20% OF CAPACITY TO ALLOW RUNOFF STORAGE DURING A RAIN EVENT.
- REGULAR DREDGING OF THE DAM MUST BE CARRIED OUT TO REMOVE SILT.
- SITE DRAWING AND DETAILS MUST BE PROVIDED TO ENVIRONMENT PROTECTION AUTHORITY, FOR APPROVAL PRIOR TO WORKS COMMENCING.

NOTE

ALL WORK IS TO COMPLY WITH ENVIRONMENT PROTECTION GUIDELINES FOR CONSTRUCTION AND LAND DEVELOPMENT IN THE ACT 2011

FIRE

BURNING OF WASTE MATERIALS ON THE SITE, SUCH AS PLASTICS, CHEMICALS OR WOOD THAT MAY BE PAINTED, CHEMICALLY TREATED OR CONTAMINATED WITH CHEMICALS IS ILLEGAL. A FIRE MAY BE PERMITTED FOR HEATING PURPOSES PROVIDED IT IS IN A BRAZIER OR CONSTRUCTED FIREPLACE. ONLY SEASONED, UNTREATED TIMBER CAN BE BURNED FOR HEATING PURPOSES.

SEDIMENT CONTROL NOTES

- SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH "ENVIRONMENT PROTECTION GUIDELINES FOR CONSTRUCTION AND LAND DEVELOPMENT IN THE ACT" (ENVIRONMENT PROTECTION AUTHORITY MARCH 2011) AND FULLY OPERATIONAL PRIOR TO STRIPPING OF SITE TOP SOIL.
- STOCK PILES/S TO BE LOCATED AWAY FROM DRAINAGE LINES AND SURFACE FLOW PATHS. CONTOURED STRIATIONS OR FURROWS TO BE PROVIDED TO STOCK PILES TO MINIMISE EROSION.
- STABILISED CONSTRUCTION ENTRANCE TO BE CONSTRUCTED PRIOR TO ACCESS TO SITE BY CONSTRUCTION VEHICLES. AGGREGATE TO BE TURNED WHEN SEDIMENT BUILDS UP AND RENEWED WHEN REQUIRED.
- WHERE UNDERGROUND STORMWATER DRAINAGE IS INSTALLED TO INTERNAL ROADWORKS, PROVIDE INLET FILTER IN ACCORDANCE WITH GIVEN DETAIL.
- AVERAGE EXISTING SITE SLOPE: 9% APPROX.
- TOTAL SITE AREA: 13318m²
- ENVIRONMENT PROTECTION AGREEMENT TO BE TAKEN OUT BY BUILDING CONTRACTOR WITH ENVIRONMENT PROTECTION AUTHORITY. (TELEPHONE 132281)
- ALL NEW CONSTRUCTION WORK MUST BE CONTAINED WITHIN THE SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS AND ROADWORKS.
- LIMIT ACCESS TO SITE DURING AND IMMEDIATELY AFTER WET WEATHER.
- REGULARLY REMOVE ANY SOIL FROM ROADS ADJACENT TO THE SITE.
- NO STORAGE OF CONSTRUCTION MATERIALS, PARKING OF VEHICLES NOR EQUIPMENT PERMITTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
- NO SITE SHEDS, STORAGE SHEDS OR SITE AMENITIES TO BE ERECTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
- PROVIDE KERBSIDE FILTER ROLL TO EXISTING SUMPS WHERE INDICATED, REFER TO GIVEN DETAIL.
- KERBSIDE FILTER ROLLS TO BE REMOVED, CLEANED AND REINSTATED ON A WEEKLY BASIS AT A MINIMUM. TRAPPED SEDIMENT ABOUT SUMPS ALSO TO BE REMOVED. CLEANING IS ALSO TO TAKE PLACE IMMEDIATELY AFTER PERIODS OF RAINFALL DURING CONSTRUCTION.
- ALL SERVICE TRENCHES TO BE BACK FILLED WITHIN 24 HOURS OF INSPECTION.
- EXCESS SOIL IS TO BE DISPOSED AT AN ENVIRONMENT PROTECTION AUTHORITY APPROVED LOCATION.
- THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO ARRANGE A SITE INSPECTION AND ENDORSEMENT OF SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO WORKS COMMENCING.
- THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO DISCUSS ANY PROPOSED MAJOR CHANGES TO SEDIMENT AND EROSION CONTROLS ON SITE PRIOR TO IMPLEMENTING THE CHANGES.
- THE SITE FOREMAN IS TO ENSURE CONTRACTOR'S ACCESS AND EXIT THE SITE USING ONLY ENVIRONMENT PROTECTION AUTHORITY APPROVED STABILISED ACCESS/EXIT POINTS AS DETAILED ON ENDORSED SEDIMENT AND EROSION CONTROL PLANS.

MAINTENANCE SCHEDULE

WEEKLY:

CHECK AND REINSTATE SILT CONTROL FENCES.

DAILY:

SWEEP AND REMOVE DIRT AND ANY OTHER BUILDING MATERIAL FROM GUTTERS, FOOTPATHS AND ROADWAYS ADJACENT TO THE SITE BY CLOSE OF BUSINESS AND PRIOR TO RAIN AND AS REQUIRED. ALL NECESSARY STEPS SHOULD BE TAKEN THAT ARE PRACTICAL AND REASONABLE TO MINIMISE DUST POLLUTION.

DURING/AFTER WET WEATHER:

LIMIT CONSTRUCTION VEHICLE ACCESS TO SITE DURING AND IMMEDIATELY FOLLOWING WET WEATHER CHECK AND REINSTATE SEDIMENT EROSION CONTROL MEASURES AND CHECK ROAD.

DUST MANAGEMENT

WHERE BUILDING WORK GENERATES DUST, ALL REASONABLE AND PRACTICABLE MEASURES SHOULD BE TAKEN TO MINIMISE THAT DUST.

- THIS CAN OFTEN BE ACHIEVED BY
- RETAINING EXISTING VEGETATION WHERE POSSIBLE
 - STRIPPING AREAS PROGRESSIVELY AND ONLY WHERE IT IS NECESSARY FOR WORKS TO OCCUR
 - EMPLOYING STABILISING METHODS SUCH AS MATTING, GRASSING OR MULCH
 - DAMPENING THE GROUND WITH A LIGHT WATER SPRAY (CONTACT THE ENVIRONMENT PROTECTION AUTHORITY FOR REQUIREMENTS DURING EXTREME DROUGHT CONDITIONS)
 - ROUGHENING SURFACE OF EXPOSED SOIL
 - COVERING STOCKPILES AND LOCATING THEM WHERE THEY ARE PROTECTED FROM THE WIND
 - RESTRICTING VEHICLE MOVEMENTS
 - COVERING THE LOAD WHEN TRANSPORTING MATERIAL
 - CONSTRUCTING WIND BREAKS SUCH AS WIND FENCES IN ACCORDANCE WITH THE BLUE BOOK
 - A WATER CART OR SUFFICIENT WATER SPRAYS SHALL BE MADE AVAILABLE AT ALL TIMES, IN ADVERSE CONDITIONS WHEN DUST CANNOT BE ADEQUATELY CONTROLLED WHEN WORKS ARE BEING UNDERTAKEN. WORKS WILL CEASE IN THESE AREAS UNTIL CONDITIONS IMPROVE.
 - WATER SHALL BE APPLIED TO SUPPRESS DUST FROM OPEN EARTHWORKS AS WELL AS UNPROTECTED STOCKPILES
 - AREAS OF COMPLETED EARTHWORKS SHALL BE PROGRESSIVELY REHABILITATED WITH DRYLAND GRASS AND FENCED OFF AS SOON AS PRACTICABLE TO PREVENT FURTHER EROSION
 - THE CONTRACTOR SHALL CONTACT ICON WATER TO OBTAIN RECYCLED WATER FROM THE LOWER MOLONGLO
 - THE CONTRACTOR IS TO CONTACT THE WATER RESOURCES UNIT TO OBTAIN AN EXEMPTION TO USE NON-POTABLE WATER FROM ON OR OFF THE SITE IF REQUIRED
 - DURING WINDY CONDITIONS, THE CONTRACTOR IS TO MINIMISE DUST GENERATING ACTIVITIES AND REGULARLY APPLY DUST SUPPRESSING MEASURES. IF DUST SUPPRESSION MEASURES FAIL THE CONTRACTOR IS TO CEASE DUST GENERATING ACTIVITIES

DISPOSAL OF SPOIL

PRIOR TO ANY WORKS COMMENCING INVOLVING EXPORT OF SPOIL GREATER THAN 100m³, THE FOLLOWING INFORMATION MUST BE PROVIDED TO THE ENVIRONMENT PROTECTION AUTHORITY VIA EMAIL (environment.protection@act.gov.au):

- WHERE THE SPOIL WILL ORIGINATE FROM: WHO IS DISPOSING OF THE SPOIL: WHERE THE SPOIL WILL BE TAKEN: THE AMOUNT OF SPOIL TO BE TAKEN AWAY
- MOVEMENT DATES AND CONTACT DETAILS: DESCRIPTION OF THE TYPE OF SPOIL TAKEN AWAY: DETAILS OF HOW RECORDS WILL BE KEPT; AND
- TIME FRAME TO COMPLETE THE WORKS TO THE SATISFACTION OF THE ENVIRONMENT PROTECTION AUTHORITY.

SPOIL MAY BE TAKEN TO AN APPROVED LANDFILL SITE WITHOUT APPROVAL. IF THE SPOIL IS TO BE TAKEN TO AN AREA OTHER THAN APPROVED LANDFILL SITE, ENSURE THE ACCEPTOR OF THE SPOIL IS AWARE OF THE REQUIREMENTS SET OUT IN SECTION 8.2 OF THE ENVIRONMENT PROTECTION GUIDELINES FOR CONSTRUCTION AND LAND DEVELOPMENT IN THE ACT.

ON-SITE MANAGEMENT OF VERGES AND OPEN SPACE

1 GENERAL

- BEFORE COMMENCING WORKS, THE COORDINATOR SHALL ADVISE DEVELOPMENT, REVIEW AND COORDINATION (DRCI) IN WRITING THAT THE PROTECTIVE MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED LANDSCAPE MANAGEMENT PROTECTION PLAN (LMPP). RANDOM AUDITS WILL BE UNDERTAKEN BY DRC TO ENSURE COMPLIANCE. FAILURE TO COMPLY MAY INCUR THE ISSUE OF A STOP WORK NOTICE
- ALL WORKS SHALL BE INSTALLED WITHIN THE AUTHORISED SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS IN THE VERGE OR OTHER APPROVED EXCEPTIONS DURING THE PROGRESS OF THE WORKS ALL EXISTING VERGE GRASS COVER SHALL BE MAINTAINED IN ITS PRE-EXISTING CONDITION. PROTECTIVE MEASURES SHALL INCLUDE REGULAR WATERING TO MAINTAIN GRASS AND TREES IN GOOD CONDITION.
- WHERE THE SURFACE IS GRASS OR BARE SOIL WITHOUT TREES, NO PROTECTION IS REQUIRED. WHERE TOPSOIL AND GRASS OR OTHER APPROVED SURFACES, ARE INSTALLED AT THE COMPLETION OF THE WORKS IN ACCORDANCE WITH THE "STANDARD SPECIFICATION FOR URBAN INFRASTRUCTURE WORKS".

2 SUPERVISION

- FOR ALL WORKS, OTHER THAN MINOR WORKS (I.E. MINOR IN COMPLEXITY AND/OR SCOPE OF WORKS AND CONFIRMED AS MINOR WORKS BY DRC), AND UNLESS OTHERWISE APPROVED BY DRC, A SUITABLY QUALIFIED LANDSCAPE ARCHITECT OR HORTICULTURIST SHALL BE EMPLOYED TO ENSURE THAT THE WORK IN THE VERGE MEETS THE REQUIREMENTS. THE ARCHITECT/HORTICULTURIST SHALL ALSO BE PRESENT DURING ANY CULTIVATION OR RESTORATION OF THE VERGE WHICH AFFECTS PLANT MATERIAL AND SHALL PROVIDE CERTIFICATION, ENDORSED BY THE COORDINATOR, THAT ALL WORK, CULTIVATION AND RESTORATION HAVE BEEN PERFORMED TO INDUSTRY STANDARDS.

3 STORAGE OF CONSTRUCTION MATERIALS

- THE STORAGE OF CONSTRUCTION MATERIALS AND THE PARKING OF VEHICLES OR EQUIPMENT ON VERGES OR ADJACENT PUBLIC OPEN SPACES ARE NOT PERMITTED WITHOUT PRIOR APPROVAL FROM TCCS. WHERE THERE IS NO ALTERNATIVE AVAILABLE OTHER THAN TO USE THESE AREAS FOR STORAGE AND/OR PARKING, THE COORDINATOR MAY LODGE AN APPLICATION WITH THE LMPP REQUESTING APPROVAL FOR THE USE OF THESE AREAS FOR THE DESIGNATED PURPOSES. APPROVAL MAY BE GIVEN BY TCCS SUBJECT TO CERTAIN TERMS AND CONDITIONS OF USE.

4 SITE ACCOMMODATION

- GENERALLY, SITE SHEDS, STORAGE SHEDS, SITE AMENITIES OR BILLBOARDS ARE NOT TO BE ERECTED ON VERGES OR PUBLIC OPEN SPACES WITHOUT PRIOR APPROVAL. SHOULD THERE BE NO ALTERNATIVE, THE COORDINATOR MAY LODGE AN APPLICATION WITH THE LMPP REQUESTING APPROVAL TO ERECT SUCH A STRUCTURE ON THE AREA. THE ERECTION OF SITE ACCOMMODATION MAY BE APPROVED SUBJECT TO THE COORDINATOR'S AGREEMENT TO COMPLY WITH THE TERMS AND CONDITIONS SPECIFIED BY DRC AND OBTAINING A PERMIT UNDER THE ROADS AND PUBLIC PLACES ACT 1937 FROM TCCS PCL.

5 PROTECTIVE FENCING

5.1 EXTENT

- ALL TEMPORARY PROTECTIVE FENCES ERECTED TO PROTECT EXISTING ASSETS SHALL BE IN ACCORDANCE WITH THE APPROVED LMPP DRAWING. FENCING SHALL BE ERECTED BEFORE THE COMMENCEMENT OF ANY SITE WORKS AND REMOVED AT THE COMPLETION OF ALL CONSTRUCTION ACTIVITY EXCEPT DURING VERGE RESTORATION. THE FENCE SHALL REMAIN IN PLACE THROUGHOUT THE CONSTRUCTION PERIOD.
- EXISTING TREES, PLANTINGS AND GRASS SHALL BE FENCED OFF TO ENCLOSE THE STREET VERGE, PUBLIC OPEN SPACE OR UNLEASED TERRITORY LAND AREA. UNLESS OTHERWISE APPROVED BY DRC, PROTECTIVE FENCING SHALL BE LOCATED:
 - ALONG THE DRIP-LINE OF EACH TREE (AS A MINIMUM), AND
 - 1.2M FROM THE BACK OF THE KERB FOR THE FULL FRONTAGE OF THE LEASE, ALONG THE PROPERTY BOUNDARY AND ALONG THE APPROVED DRIVEWAY ACCESS TO ENSURE THAT THE VERGE IS COMPLETELY ENCLOSED

5.2 MATERIALS

- USE OF TEMPORARY 1800MM TALL CONTINUOUS MESH FENCE SUPPORTED BY STEEL POSTS WITH CONCRETE BASES, OR PREFABRICATED FENCING PANELS WITH CONCRETE BASES, IS MANDATORY. ANY VARIATION FROM THIS REQUIREMENT SHALL BE ACCOMPANIED BY WRITTEN APPROVAL FROM DRC.

5.3 PEDESTRIAN AND TRAFFIC CONSIDERATIONS

- EXISTING VERGE FOOTPATHS SHALL BE MAINTAINED. ALL EXISTING VERGE FOOTPATHS AND DRIVEWAYS SHALL REMAIN UNOBSTRUCTED THROUGHOUT THE CONSTRUCTION PERIOD TO PROVIDE SAFE PEDESTRIAN MOVEMENT AT ALL TIMES UNLESS AN ALTERNATIVE IS APPROVED BY TCCS.
- WHERE A CONSTRUCTED FOOTPATH OR CYCLEWAY EXISTS WITHIN THE VERGE, PROTECTIVE FENCING INCLUDING THE CONCRETE PEDESTALS SHALL BE ERECTED TO PROVIDE A CLEAR AND UNOBSTRUCTED SET BACK OF 0.6M FROM EACH SIDE OF THE FOOTPATH/CYCLEWAY IN ALL CASES TO ENSURE SAFE PASSAGE FOR CYCLISTS AND PEDESTRIANS.
- IF THERE IS NO CONSTRUCTED PUBLIC FOOTPATH ON THE VERGE A FENCED CLEARWAY OF 1.8M IN WIDTH SHALL BE MAINTAINED FOR THE ENTIRE FRONTAGE OF THE LEASE TO ALLOW FOR CYCLISTS AND PEDESTRIANS.
- ANY DEVIATIONS FROM THE DISTANCES SPECIFIED IN THIS CLAUSE DEEMED NECESSARY BECAUSE OF LOCAL RESTRAINTS REQUIRE PRIOR APPROVAL FROM DRC.
- ACCESS GATES INTO THE SITE SHALL SWING INTO THE SITE AND NOT BE CAPABLE OF BLOCKING PEDESTRIAN ACCESS ALONG THE VERGE OR VEHICULAR TRAFFIC ON THE ROAD.

5.4 ACCESS FOR SERVICE INSTALLATIONS

- FENCING SHALL NOT BE REMOVED FOR SERVICE INSTALLATION ACROSS THE VERGE WITHOUT PRIOR APPROVAL FROM DRC FOR THE SERVICE INSTALLATION.
- WHERE APPROVAL HAS BEEN GRANTED, THE FENCE SHALL BE REALIGNED TO PROVIDE A LANE FOR SERVICE TRENCHING BUT FENCES SHALL BE RE-ERECT TO ENCLOSE TREES BEFORE TRENCHING COMMENCES. UPON COMPLETION OF TRENCHING, THE FENCE SHALL BE RETURNED TO ITS ORIGINAL ALIGNMENT.

6 EXISTING TREES

6.1 GENERAL

- ALL TREES LOCATED IN THE ROAD RESERVE, VERGE, PUBLIC OPEN SPACE AND ON UNLEASED TERRITORY LAND, SHALL BE RETAINED AND MUST REMAIN UNDAMAGED THE LMPP PROCESS REQUIRES THE COORDINATOR TO IDENTIFY ANY TREES THAT MAY BE AFFECTED BY THE WORKS AND TO SUBMIT A REQUEST FOR APPROVAL TO PROCEED WITH THE WORK CLEARLY IDENTIFYING THE NATURE OF THE WORK AFFECTING THE TREE AND PROTECTIVE MEASURES PROPOSED TO MINIMISE DAMAGE TO THE TREE. WRITTEN AUTHORISATION FROM DRC IS REQUIRED PRIOR TO ANY WORK AFFECTING THE TREE TAKING PLACE. AUTHORISATION WILL BE SUBJECT TO:
 - EXISTING CANOPY CLEARANCE NOT BEING ALTERED;
 - CROWNS AND APEX OF CANOPIES NOT BEING ALTERED OR REDUCED;
 - LIFTING EQUIPMENT AND LOAD CAPABLE OF OPERATING IN A MANNER THAT IT CLEARS THE HEIGHT AND WIDTH OF THE TREE CANOPY WITHOUT DAMAGING THE CROWN, AND;
 - CONSTRUCTION EQUIPMENT CAN PASS BENEATH THE TREES' LOWEST LIMB THROUGH THE DESIGNATED DRIVEWAY ACCESS ROUTE.

6.2 TREE ROOT PROTECTION

- THE MAJORITY OF TREE ROOTS GROW IN THE TOP 300MM OF SOIL. THESE ARE THE FEEDER ROOTS, OFTEN VERY FINE ROOTS THAT PROVIDE THE TREE WITH WATER, OXYGEN AND NUTRIENTS. THESE ROOTS TYPICALLY GROW FROM THE TRUNK OF THE TREE TO WELL BEYOND ITS 'DRIP-LINE' (THE CANOPY EDGE).
- EXCAVATION WITHIN THE DRIP ZONE OF A TREE DOES CONSIDERABLE DAMAGE TO ITS ROOT SYSTEM. IT CAN AFFECT TREE STABILITY AND TREE HEALTH TO SUCH AN EXTENT THAT IT WILL LEAD TO THE DECLINE AND POSSIBLE DEATH OF THE TREE OVER A PERIOD OF YEARS.
- EXCAVATION THAT OCCURS WITHIN THE DRIP ZONE OF A TREE SHALL BE RESTRICTED TO ONE SIDE OF THE TREE ONLY AND SHALL HAVE PRIOR APPROVAL FROM DRC.
- WHERE EXCAVATION IS APPROVED, THE FOLLOWING MEASURES SHALL BE ADOPTED FOR TREE PROTECTION:
 - DO NOT SEVER LARGE ROOTS (>30MM DIAMETER) CLOSER THAN HALFWAY FROM THE DRIP-LINE TO THE TRUNK;
 - LOCATE THESE ROOTS BY HAND TRENCHING TO A DEPTH OF 300MM BEFORE ANY MECHANICAL TRENCHING IS UNDERTAKEN;
 - CUT ALL ROOTS CLEANLY WITH EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE OR BY SUITABLE PRUNING EQUIPMENT;
 - PROTECT ROOTS EXPOSED FROM DESICCATION BY LIGHTLY WATERED OR COVERED WITH Hessian, WHICH MUST BE KEPT MOIST; AND
 - MAINTAIN THE GOOD HEALTH OF THE TREES THAT HAVE HAD DISTURBANCE IN THEIR ROOT ZONE BY CONTINUAL WATERING, AT NO TIME SHALL THE DISTURBED AREA BE ALLOWED TO DRY OUT TO THE DETRIMENT OF THE TREES' HEALTH.

7 SITE ACCESS

- SITE ACCESS SHALL BE BY THE EXISTING DRIVEWAY ACCESS POINTS FOR THE WORKS.
- IN SOME CASES CONSIDERATION MAY BE GIVEN TO ALLOWING NEW ACCESS POINTS ACROSS PUBLIC LAND, HOWEVER, ALTERNATIVE OR ADDITIONAL ACCESS POINTS REQUIRE APPROVAL FROM DRC. WHERE APPROVAL HAS BEEN GRANTED, THE SITE ACCESS SHALL BE POSITIONED MIDWAY BETWEEN TWO EXISTING TREE TRUNKS DEPENDENT ON THE DISTANCE BETWEEN TREES. ACCESS SHALL NOT OCCUR ON TWO SIDES OF A TREE WITHIN THE APPROVED CLEARANCE DIMENSION.
- CONSTRUCTION TECHNIQUES SHALL MINIMISE THE NEED FOR EXCAVATION ACROSS THE VERGE.
- ACCESS ACROSS ADJOINING PUBLIC OPEN SPACES, PARKS, RECREATIONAL RESERVES, ADJOINING RESERVES E.G. SCHOOL PLAYGROUNDS, COMMUNITY HALLS ETC, IS PROHIBITED WITHOUT PRIOR WRITTEN AUTHORISATION FROM TCCS, AND ANY OTHER ASSET OWNER WHERE APPLICABLE.

8 SERVICES AND UTILITIES

8.1 SERVICE CONNECTION TO SITE

- THE COORDINATOR SHALL COORDINATE AND COLLATE ALL APPROVALS FOR PROPOSED SERVICES WITHIN THE AREA.
- APPROVAL FOR TRENCH LOCATIONS AND EXCAVATIONS WITHIN THE VERGE SHALL BE OBTAINED THROUGH THE RELEVANT TCCS AGENCIES AT THE PLANNING AND DESIGN STAGES. APPROVAL IS SUBJECT TO THE FOLLOWING REQUIREMENTS:
 - IF THE PROPOSED EXCAVATION IS WITHIN THE CANOPY SPREAD OF ANY TREE, BORING OR TUNNELING BELOW THE ROOT ZONE MUST BE UNDERTAKEN;
 - SHED TRENCHING FOR SERVICES IS MANDATORY;
 - THE NUMBER OF VERGE CROSSINGS SHALL BE MINIMISED;
 - EXCAVATION FOR SERVICES ACROSS VERGE (I.E. AT RIGHT ANGLES TO KERB OR PROPERTY LINE) SHALL BE MIDWAY BETWEEN THE TREE TRUNKS
 - ANY SERVICE INSTALLATION WITHIN 5.0M OF AN EXISTING TREE TRUNK, OR WITHIN THE TREE CANOPY, REQUIRES PRIOR APPROVAL.

8.2 SERVICES AND UTILITIES ALONG ROAD RESERVES

- THE COORDINATOR SHALL COORDINATE ALL SERVICE APPROVALS: APPROVAL BY DRC FOR TRENCH LOCATIONS SHALL BE OBTAINED AS PART OF THE LMPP PROCESS.
- TO MINIMISE DAMAGE AND/OR DISTURBANCES TO THE ROOTS OR ROOT ZONE AND SUBJECT TO APPROVAL BY DRC, ANY NEW OR UPGRADED SERVICES PARALLEL TO THE KERB OR PROPERTY LINE SHALL BE INSTALLED ON THE FOLLOWING ALIGNMENTS:
 - WITHIN ROAD PAVED AREA;
 - BELOW THE ROOT ZONE IF THE EXCAVATION REQUIRED IS WITHIN THE CANOPY SPREAD OF ANY TREE;
 - BELOW THE EXISTING FOOTPATH ON THE PROPERTY LINE, AND
 - IMMEDIATELY BEHIND THE KERB.

9 IRRIGATION

- PARKS CONSERVATION AND LANDS (PCL) ACTIVELY DISCOURAGES THE USE OF IN-GROUND IRRIGATION SYSTEMS AND GENERALLY DOES NOT ENDORSE THEIR INSTALLATION IN THE VERGE. HOWEVER, A SYSTEM OF QUICK-COUPERS AT THE LEASE EDGE OF THE VERGE MAY BE INSTALLED SUBJECT TO APPROVAL OF THE IRRIGATION PLAN BY PCL. A PREFERRED ALTERNATIVE IS THE PLANTING OF DROUGHT TOLERANT GRASSES AND SHRUBS THAT ARE NOT RELIANT ON WATERING TO SURVIVE.

10 VERGE INFRASTRUCTURE CONDITION AND RESTORATION

- THE COORDINATOR SHALL NOTIFY DRC AT THE COMPLETION OF WORK AND OBTAIN APPROVAL PRIOR TO COMMENCEMENT OF ANY VERGE RESTORATION. DURING VERGE RESTORATION, TOPSOIL SHALL NOT BE REMOVED AND THE SOIL LEVEL SHALL NOT BE CHANGED WITHIN THE DRIP ZONE OF TREES OR AS OTHERWISE APPROVED AND, UPON COMPLETION OF THE WORKS, VERGES SHALL HAVE ESTABLISHED APPROPRIATE GRASS COVER AS APPROVED BY PCL, E.G. DRYLAND GRASS, NATIVE GRASS OR COUCH.
- IF THE STANDARD OF GRASS COVER ON THE VERGE NEEDS TO BE IMPROVED, THE FOLLOWING REQUIREMENTS SHALL APPLY:
 - WITHIN THE ROOT ZONE OF TREES, LIGHTLY CULTIVATE THE SOIL IN ONE DIRECTION ONLY TO BEETWEEN 25MM TO 50MM DEPTH (50MM MAXIMUM TO MINIMISE DAMAGE TO TREE ROOTS). AVOID MAJOR ROOTS AND KEEP A MINIMUM OF 1M AWAY FROM TREE TRUNKS;
 - OUTSIDE THE ROOT ZONE OF TREES NORMAL CULTIVATION PRACTICE APPLIES;
 - ADD 'B' TYPE TOPSOIL AT 25MM TO 50MM DEPTH. LEVEL THE TOPSOIL AND ADD NPK FERTILISER (EQUIVALENT TO MULTIGRO) AT 40G/M², AND
 - LAY TURF OR SOW SEED OF SUITABLE DROUGHT TOLERANT SPECIES AS SPECIFIED IN THE STANDARD SPECIFICATION FOR URBAN INFRASTRUCTURE WORKS. KEEP MOIST DURING ESTABLISHMENT.

ALL RESTORATION WORK SHALL BE APPROVED BY DEVELOPMENT, REVIEW AND COORDINATION (DRCI) AND CARRIED OUT BY APPROVED OPERATORS.

File Name: P:\2017\170324_813_S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-dfg-city-ev-1000.dwg

Rev	Description	Date	Approved
C	FOR DESIGN ACCEPTANCE	21.06.18	CO
B	FOR DESIGN ACCEPTANCE	19.04.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO

Scales

North

DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK. COPYRIGHT: The contents and information contained in this document are copyright of Sellick Consultants, Use or copy of this document in whole or part without written permission constitutes an infringement of copyright.

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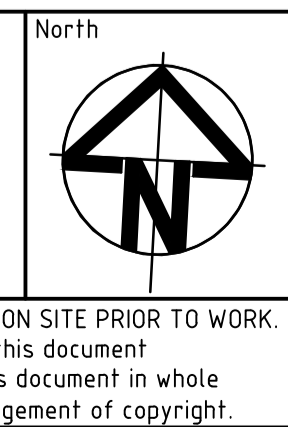
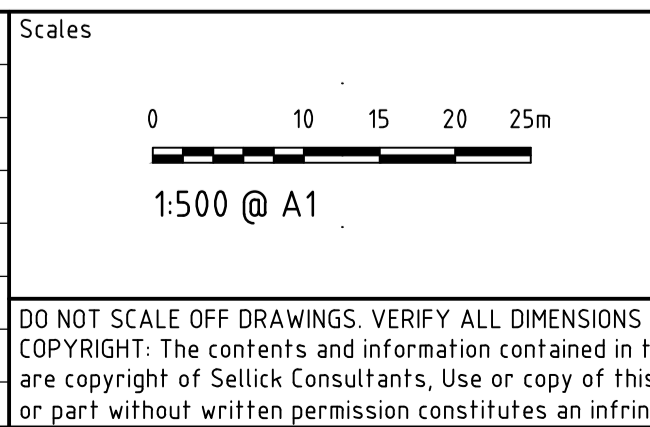
NOT FOR CONSTRUCTION			
Original Size	A1	Drawn By	RT
Date Plotted	21-Jun-18	Designed By	RT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Signature	23.08.2018

Project Name and Location					
MULTI-UNIT DEVELOPMENT					
BLOCK 13 SECTION 13, FORREST					
Drawing Title					
CONCEPT ENVIRONMENTAL MANAGEMENT					
DETAILS, GENERAL NOTES AND LEGEND					
Project Number	Type	Discipline	Sub-Discipline	Drw No.	Rev
170324	DRG	CIV	EV	1000	C

File Name: P:\2017\170324_B13-S13-Forrest\04_CAD\4_2_Drawings\CIV\170324-drg-civ-ev-1011.dwg



Rev	Description	Date	Approved
B	FOR DESIGN ACCEPTANCE	21.06.18	CO
A	FOR DESIGN ACCEPTANCE	23.03.2018	CO



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Status			
NOT FOR CONSTRUCTION			
Original Size	A1	Drawn By	RT
Date Plotted	26-Jun-18	Designed By	RT
Coordinate System	STROMLO GRID	Approved	CO
Height Datum	AHD	Approved Date	23.08.2018
		Approved Signature	

Project Name and Location						
MULTI-UNIT DEVELOPMENT						
BLOCK 13 SECTION 13, FORREST						
Drawing Title						
CONCEPT ENVIRONMENTAL						
SEDIMENT EROSION PLAN SHEET 1						
Project Number	Type	Discipline	Sub-Discipline	Dwg No.	Rev	
170324	DRG	CIV	EV	1011	B	