

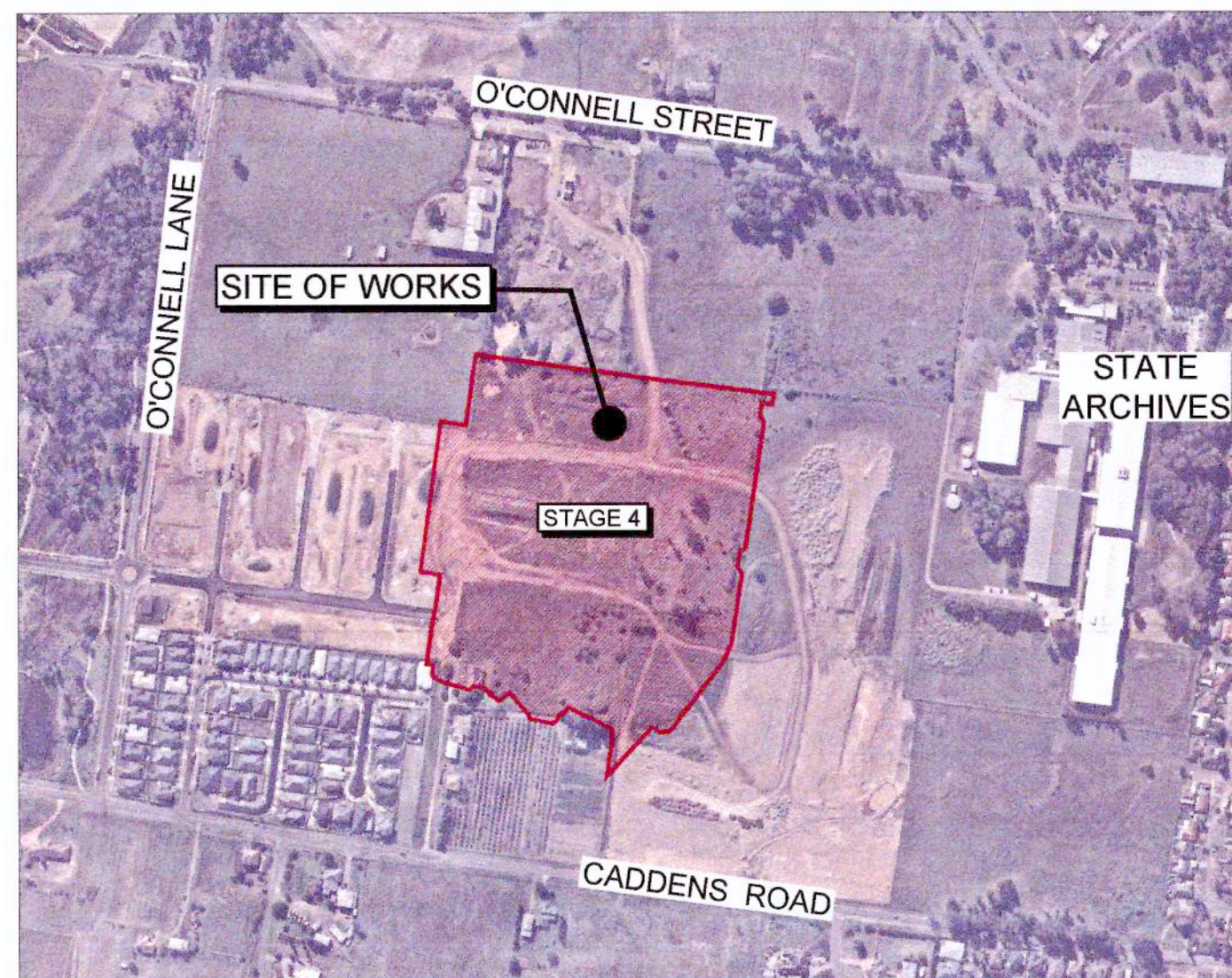


LEGACYPROPERTY

CADDENS HILL - STAGE 4 CONSTRUCTION CERTIFICATE

PROPOSED ROAD & DRAINAGE WORKS

DA 16/1166



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 F 02 4720 3399

W www.jwprince.com.au

E jwp@jwprince.com.au

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4

LDC These plans are referred to in certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No.
110358/CC400 **D**
FILE No. 110358CC400

LEGEND			
DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER			
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT			
DRAINAGE LINE & PIT			
HEADWALL			
GUIDE POSTS			
EXTENT OF FILL			
EXTENT OF CUT			
CONTOURS			
CATCH DRAIN			
KERB RETURN No			
ELECTRICITY, POWER POLE			
TELECOM, BOX			
WATER, STOP VALVE, HYDRANT			
SEWER, MANHOLE			
GAS			
TREES TO BE RETAINED			
TREES TO BE REMOVED			
STREET NAME SIGNS			
SURVEY MARKS - BENCH MARKS			
STATE SURVEY MARKS			
RECOVERY PEGS			
STAGE BOUNDARY			
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE			
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			

GENERAL NOTES:

- ALL WORKS ARE TO BE IN ACCORDANCE WITH PENRITH CITY COUNCILS "DESIGN GUIDELINES FOR ENGINEERING WORKS FOR SUBDIVISIONS AND DEVELOPMENTS" & "ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS".
- SURVEY MARKS:-
 - STATE SURVEY MARKS LOCATIONS TO BE FIXED BY PROJECT SURVEYOR DURING WORK AS EXECUTED SURVEY OF SUBDIVISION.
 - SURVEY MARKS SHOWN THUS ▲ SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
- THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
- THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
- THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
- NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
- TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
- THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
- EXISTING SEDIMENT BASINS SHALL BE DEWATERED AND DESILTED. LEVELS SHALL BE OBTAINED ON SOUND MATERIAL PRIOR TO FILLING.
- FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
- SITE FILL AREAS:- THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
- ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS".
- ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEERS' REQUIREMENTS.
- SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
- EASEMENT WIDTHS SHALL BE IN ACCORDANCE WITH 3.11 DRAINAGE EASEMENTS OF PENRITH CITY COUNCIL'S DESIGN GUIDELINES FOR ENGINEERING WORKS FOR SUBDIVISION AND DEVELOPMENTS.

PIPE DIA.	EASEMENT WIDTH
1500	1.5m
2250	2.0m
3000	2.0m
3750	2.5m
4500	2.5m
5450	2.5m
6000	2.5m
6750	3.0m
- DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. PIPE CLASS INDICATED ARE FOR REINFORCED CONCRETE PIPES (RCP). IF FIBRE REINFORCED CONCRETE PIPES (FRC) REFER TO PENRITH CITY COUNCIL "ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS"
- ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL ASPHALTIC CONCRETE SEAL.
- VEHICULAR CROSSINGS SHALL BE CONSTRUCTED IN KERB AND GUTTER WHERE SHOWN IN ACCORDANCE WITH PCC STANDARD DRAWING SD1004.
- PRAM CROSSINGS SHALL BE CONSTRUCTED IN KERB AND GUTTER IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWING SD1002.
- STREET NAME SIGNS SHALL BE ERECTED, WHERE SHOWN, IN ACCORDANCE WITH COUNCIL'S STANDARD SD1006/1 AND SD1006/2.
- ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
- ALL INTERALLOTMENT DRAINAGE LINES SHALL BE LAID AT A MINIMUM GRADE OF 1% UNLESS OTHERWISE INDICATED.
- DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
- DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
- ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS AND APPROVED BY PENRITH CITY COUNCIL THROUGH A S138 ROADS ACT APPROVAL.
- ALL LAND THAT HAS BEEN DISTURBED BY EARTHWORKS IS TO BE SPRAY GRASSED OR SIMILARLY TREATED TO ESTABLISH A GRASS COVER.
- NO FILL MATERIAL IS TO BE IMPORTED TO THE SITE WITHOUT THE PRIOR APPROVAL OF PCC IN ACCORDANCE WITH SYDNEY REGIONAL ENVIRONMENTAL PLAN No.20 (HAWKESBURY-NEPEAN RIVER) (No.2-1997). NO RECYCLING OF MATERIAL FOR USE OF FILL MATERIAL SHALL BE CARRIED OUT ON THE SITE WITHOUT THE PRIOR APPROVAL OF COUNCIL.
- ALL EARTHWORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS3798 AND PCC DESIGN GUIDELINES FOR ENGINEERING WORKS FOR SUBDIVISIONS AND DEVELOPMENTS AND ENGINEERING CONSTRUCTION SPECIFICATIONS FOR CIVIL WORKS.
- VEHICLE CROSSINGS TO BE LOCATED 1.0m CLEAR OF ANY LINTELS.
- ALL VERGE AREAS EXTEND FROM BACK OF KERB TO PROPERTY BOUNDARY TO BE TURFED.
- ALL STORMWATER PITS WITH DEPTHS GREATER THAN 1.0m TO HAVE GALVANISED OR OTHERWISE APPROVED STEP IRONS AT 300mm SPACING INSTALLED.
- KERB TYPES USED IN SITE ARE KERB AND GUTTER UNLESS OTHERWISE NOTED. FOR DETAILS REFER TO PENRITH CITY COUNCIL "ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS" STANDARD SD1003/1 & SD1003/2.
- KERB ADAPTORS SHALL BE PROVIDED FOR ALL LOTS DRAINING TO THE STREET. FOR DETAIL REFER TO PENRITH CITY COUNCIL "ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS"
- ALL WASTE MATERIAL STORED ON-SITE ARE TO BE CONTAINED WITHIN A DESIGNATED AREA SUCH AS A WASTE BAY OR BIN. CONTRACTOR TO ENSURE THAT NO WASTE MATERIALS ARE ALLOWED TO ENTER THE STORMWATER SYSTEM OR NEIGHBOURING PROPERTIES. THE DESIGNATED WASTE STORAGE AREAS SHALL PROVIDE AT LEAST TWO WASTE BAY/BINS SO AS TO ALLOW FOR THE SEPARATION OF WASTES, AND ARE TO BE FULLY ENCLOSED WHEN SITE IS UNATTENDED.
- AN APPROPRIATE QUALIFIED PERSON/S SHALL SUPERVISE ALL FILLING WORKS.

SURVEY SET OUT INFORMATION NOTES:

- ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
- THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
 - CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
 - 2D DRAFTING BASE (ELECTRONIC FILE)
 - 3D DTM (ELECTRONIC FILE)
- ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

LOT CALCULATIONS BY:

VINCE MORGAN (SURVEYORS) PTY. LTD.
CONSULTING SURVEYORS
P.O. Box 227, Penrith. 2751
Ph. (02) 4721 5293
FILE: 20467 - 4L DATE: 28/06/17

SURVEY BY:

SDG LAND DEVELOPMENT SOLUTIONS
UNIT 7 1B KLEINS ROAD
NORTHMEND 2152
Ph. (02) 9630 7955
FILE: 6072 CONTOUR ISSUE D.DWG DATE: 22/4/16

Survey By:

VINCE MORGAN (SURVEYORS) PTY. LTD.
CONSULTING SURVEYORS
P.O. Box 227, Penrith. 2751
Ph. (02) 4721 5293

Date: 21/09/16 File Name: 20467-L2.dwg
Date: 21/09/16 File Name: 210916topo.dxf

CUSTOM MADE PRECAST PIT NOTES:

- DESIGN DOCUMENTATION REFLECTS PRECAST DRAINAGE PITS BEING USED FOR THE SITE. UNLESS NOTED OTHERWISE.
- AUSPITS CUSTOM MADE PRECAST PITS TO BE USED.
- PITS TO COMPLY WITH THE FOLLOWING PARAMETERS:
 - ARE SPECIFICALLY MANUFACTURED FOR THE PROJECT.
 - EACH PIT IS ACCOMPANIED BY A CERTIFICATE OF STRUCTURAL ADEQUACY SIGNED BY A NPER ENGINEER (STRUCTURAL).
 - THE STRUCTURAL CERTIFICATION OF THE PITS SHOULD INCLUDE ANY ADDITIONAL PRECAST ELEMENTS REQUIRED TO BRING THE PIT UP TO FINAL LEVELS ON SITE.
 - PITS MUST BE FIRMLY BEDDED ON SOUND MATERIAL.
 - CONCRETE IS TO BE POURED AROUND THE BASE TO AID IN STABILISATION OF THE PIT.
 - PIT FLOORS ARE TO HAVE A 1% FALL TOWARDS THE OUTLET PIPE.
 - ANY PIT REQUIRING MODIFICATION AFTER IT HAS BEEN POURED IN THE FACTORY OR DAMAGED IN TRANSPORT CANNOT BE USED.
 - ALL WORK TO BE TO THE SATISFACTION OF COUNCIL'S DEVELOPMENT INSPECTORS.

IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE DETAILED PIT DRAWINGS AND STRUCTURAL CERTIFICATION IF INSITU PITS ARE TO BE CONSTRUCTED.



DRAWING INDEX

Drawing Number	Drawing Title	Revision Number
110358/CC400	COVER SHEET	D
110358/CC401	GENERAL NOTES, INDEX & LEGEND	H
110358/CC402	SITE LAYOUT PLAN	A
110358/CC403	ROAD SETOUT PLAN	B
110358/CC404	ENGINEERING PLAN SHEET 1 OF 2	E
110358/CC405	ENGINEERING PLAN SHEET 2 OF 2	C
110358/CC406	ROAD TYPICAL SECTIONS	C
110358/CC407	ROAD No.1 LONGITUDINAL SECTION	B
110358/CC408	ROAD No.6 LONGITUDINAL SECTION	C
110358/CC409	ROAD No.7, 9 & 17 LONGITUDINAL SECTION	C
110358/CC410	ROAD No.16 LONGITUDINAL SECTION	A
110358/CC411	ROAD No.20 LONGITUDINAL SECTION	B
110358/CC412	ROAD No.1 CROSS SECTIONS	B
110358/CC413	ROAD No.6 CROSS SECTIONS	A
110358/CC414	ROAD No. 6 & 7 CROSS SECTIONS	C
110358/CC415	ROAD No.16 CROSS SECTIONS	A
110358/CC416	ROAD No.17 & 20 CROSS SECTIONS	B
110358/CC417	KERB RETURNS	A
110358/CC418	KERB RETURNS	A
110358/CC419	KERB RETURNS	A
110358/CC420	KERB RETURNS	A
110358/CC421	KERB RETURNS	A
110358/CC422	CATCHMENT PLAN	C
110358/CC423	PIT DETAILS & PIT SCHEDULE	C
110358/CC424	DRAINAGE LONG SECTIONS	B
110358/CC425	DRAINAGE LONG SECTIONS	A
110358/CC426	DRAINAGE LONG SECTIONS	C
110358/CC427	DRAINAGE LONG SECTIONS	A
110358/CC428	DRAINAGE LONG SECTIONS	B
110358/CC429	DRAINAGE LONG SECTIONS	A
110358/CC430	DRAINAGE LONG SECTIONS	B
110358/CC431	DRAINAGE LONG SECTIONS	B
110358/CC432	DRAINAGE CALCULATIONS	C
110358/CC433	DRAINAGE CALCULATIONS	B
110358/CC434	DRAINAGE CALCULATIONS	C
110358/CC435	DRAINAGE CALCULATIONS	B
110358/CC436	DRAINAGE CALCULATIONS	C
110358/CC437	DRAINAGE CALCULATIONS	B
110358/CC438	DRAINAGE CALCULATIONS	C
110358/CC439	DRAINAGE CALCULATIONS	B
110358/CC440	SEDIMENT BASIN PLAN & SECTION	D
110358/CC441	SEDIMENT BASIN SECTIONS & DETAILS	A
110358/CC442	BASIN DETAILS	D
110358/CC443	RETAINING WALL PLAN	F
110358/CC444	RETAINING WALL SECTION	D
110358/CC445	RETAINING WALL SECTION	D
110358/CC446	RETAINING WALL SECTION	G
110358/CC447	SOIL AND WATER MANAGEMENT PLAN	D
110358/CC448	SOIL AND WATER MANAGEMENT PLAN NOTES	B
110358/CC449	JOINTING PLAN	B

SIGNATURE:
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16-07-18 REF: 20467-4



UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
GENERAL NOTES, INDEX & LEGEND

PLAN No:
110358/CC401
FILE No: 110358CC401
SHEET SIZE: A1 ORIGINAL

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au



ROAD 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A. LENGTH
0	290035.87	6260531.65	97°42'14.87"		
324.22	290357.16	6260488.18	97°42'14.87"		
350.48	290383.81	6260484.58		100	52.53
376.75	290405.05	6260468.1	127°48'05.94"		
605.89	290586.1	6260327.65	127°48'05.94"		
631.94	290607.17	6260311.31		-100	52.11
857.99	290533.57	6260307.63	97°56'49.70"		
686.02	290561.32	6260303.75	97°56'49.70"		
722.42	290599.06	6260298.49		100	72.81
758.82	290723.72	6260269.44	139°39'44.41"		
808.38	290755.8	6260231.67	139°39'44.41"		
841.23	290778.06	6260205.45		-90	65.71
874.08	290812.13	6260200.77	97°49'58.18"		
879.21	290817.21	6260200.07	97°49'58.18"		

ROAD 6					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A. LENGTH
0	290347.37	6260489.51	8°01'22.74"		
142.29	290367.23	6260530.41	8°01'22.74"		
151.29	290368.83	6260641.73		11.5	18
160.29	290380.16	6260640.2	97°40'44.60"		
243.12	290462.25	6260629.13	97°40'44.60"		
269.41	290488.92	6260625.53		100	52.57
295.7	290510.18	6260609.04	127°48'05.65"		
389.37	290584.2	6260551.63	127°48'05.65"		
399.62	290592.48	6260545.2		-40	20.5
409.87	290602.84	6260543.66	98°26'12.25"		
419.39	290612.26	6260542.27	98°26'12.25"		

ROAD 7			
CHAINAGE	EASTING	NORTHING	BEARING
0	290550.89	6260693.86	97°49'30.00"
234.8	290783.5	6260661.89	97°49'30.00"

ROAD 9					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A. LENGTH
0	290463.72	6260628.92	8°01'22.92"		
64.53	290472.73	6260692.82	8°01'22.92"		
75.72	290474.33	6260704.2		-40	22.39
86.91	290469.65	6260714.69	335°57'29.45"		
95.21	290466.27	6260722.27	335°57'29.45"		

ROAD 16					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A. LENGTH
0	290358.22	6260566.47	97°40'44.61"		
39.8	290397.67	6260561.15	97°40'44.61"		
60.83	290419	6260558.27		80	42.06
81.86	290436.01	6260545.08	127°48'05.88"		
317.78	290622.42	6260400.48	127°48'05.88"		
338.62	290639.27	6260387.41		-80	41.68
359.46	290660.39	6260384.46	97°56'49.87"		
440.75	290740.9	6260373.22	97°56'49.87"		

ROAD 17			
CHAINAGE	EASTING	NORTHING	BEARING
0	290506.78	6260490.18	37°48'05.98"
96	290565.62	6260566.04	37°48'05.98"

ROAD 20					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A. LENGTH
0	290466.16	6260521.69	37°48'06.09"		
93.95	290523.75	6260595.92	37°48'06.09"		
119.93	290540.04	6260616.93		-100	51.97
145.92	290543.75	6260643.25	8°01'23.02"		
427.25	290563.02	6260921.83	8°01'23.02"		

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20167-4

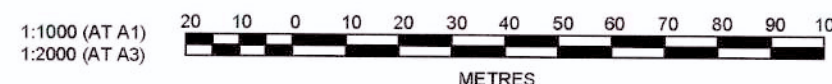
LDC These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1
Land Development Certificates
www.Ldcerts.com.au

WARNING!
UNDERGROUND SERVICE CABLES IN VICINITY. EXERCISE EXTREME CAUTION DURING EXCAVATION. CONTACT "DIAL BEFORE YOU DIG" PRIOR TO ANY CONSTRUCTION WORK

BENCH MARK LOCATION

△ SSM112646
E 290687.2140
N 6260213.3860

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY. CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS. NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT: **LEGACYPROPERTY**
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD SETOUT PLAN

PLAN No: 110358/CC403 **B**
FILE No: 110358CC403
SHEET SIZE: A1 ORIGINAL

B	CERTIFIER COMMENTS - LOT ANNOTATION ADDED	JT	JT	RT	MS	03/11/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

THE HISTORICAL RUINS AREA IS TO BE FENCED OFF IN ACCORDANCE WITH THE PLAN PREPARED BY VINCE MORGAN, REFERENCE 20467-L3, SHEETS 1 OF 1, DATED 05/09/2016. THIS CC DOES NOT APPROVE ANY WORKS WITHIN THE FENCED OFF AREA DEFINED AS HISTORICAL RUINS. A SEPARATE CC IS REQUIRED FOR THE APPROVAL OF WORKS WITHIN THE FENCED OFF HISTORICAL RUINS AREA. THE FENCE IS TO INCLUDE APPROPRIATE SIGNAGE WARNING OF THE RISK OF ASBESTOS WITHIN THE HISTORICAL RUINS AREA. THE HISTORICAL RUINS AREA IS TO BE MANAGED IN ACCORDANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN, PREPARED BY DLA ENVIRONMENTAL SERVICES, REFERENCE DL3991_S007289, VERSION 1.0, DATED 15TH AUGUST 2017.

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: 
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD
DATE: 16/07/18 REF: 20467-4

FUTURE
STAGE 6
SUBDIVISION

FUTURE
STAGE 5
SUBDIVISION

STAGE 1
SUBDIVISION

(REFER TO PLAN
PREPARED BY J
WYNDHAM PRINCE AS
APPROVED UNDER
STAGE 1 CC)

STAGE 3 SUBDIVISION

(REFER TO PLAN PREPARED BY J WYNDHAM
PRINCE AS APPROVED UNDER STAGE 3 CC)

FOR BIN PLACEMENT TO SERVICE
LOTS 400 & 401, PROVIDE 144m CONCRETE PAD,
MIN. 150mm THICK 32MPa CONCRETE WITH SL82
MESH ON 100mm COMPACTED SUBBASE
EXTENT/LOCATION OF CONCRETE PAD AS
DIRECTED ON-SITE BY COUNCIL ENGINEER

DETENTION BASIN
& RAINGARDEN B
REFER TO PLANS
CC440 TO CC442

PROVIDE GUIDEPOSTS
@ 1.5m CENTERS
LIMIT OF WORKS AT CH15.0

PROVIDE GUIDEPOSTS
@ 1.5m CENTERS
LIMIT OF WORKS CH209.567

REMOVE EXISTING PIPE END CAP
AND CONNECT TO EXISTING PIPE

REMOVE GUIDE POSTS
MAKE SMOOTH CONNECTION
LIMIT OF WORKS CH55.667

REMOVE EXISTING PIPE END CAP
AND CONNECT TO EXISTING PIPE

REMOVE EXISTING PIPE END CAP
AND CONNECT TO EXISTING PIPE

EXISTING TEMPORARY
1:3 BATTER

REMOVE GUIDEPOST
MAKE SMOOTH
CONNECTION
LIMIT OF WORKS
CH404.559

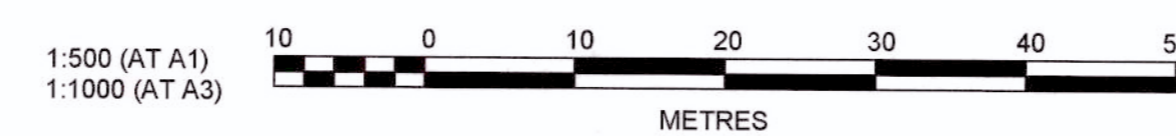
REMOVE EXISTING PIPE END CAP
AND CONNECT TO EXISTING PIPE

REFER TO DRAWING CC405 FOR CONTINUATION

PLAN
SCALE 1:500

- ALL VEHICULAR CROSSING (VC) WIDTHS ARE 4.5m WIDE UNLESS OTHERWISE NOTED ON PLAN
- VC MUST HAVE A MIN STRAIGHT OF 3m PER P.C.C. STANDARD DETAIL
- VC'S TO BE IN ACCORDANCE WITH SD1004 OF P.C.C. ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS

VEHICULAR CROSSING (VC)
SETOUT DETAIL
SCALE: N.T.S.



RETAINING WALL LOCATIONS ARE FOR INFORMATION ONLY AND ARE SUBJECT TO A SEPARATE APPROVAL

RETAINING WALL PLAN AND SECTIONS REFER TO PLANS CC443 - CC446

D	CERTIFIER COMMENTS - EXCLUDED WORK AREA	JT	JT	RT	MS	03/11/17
C	CERTIFIER COMMENTS	JT	JT	RT	MS	20/10/17
B	CERTIFIER COMMENTS	JT	NM	RT	MS	21/09/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:

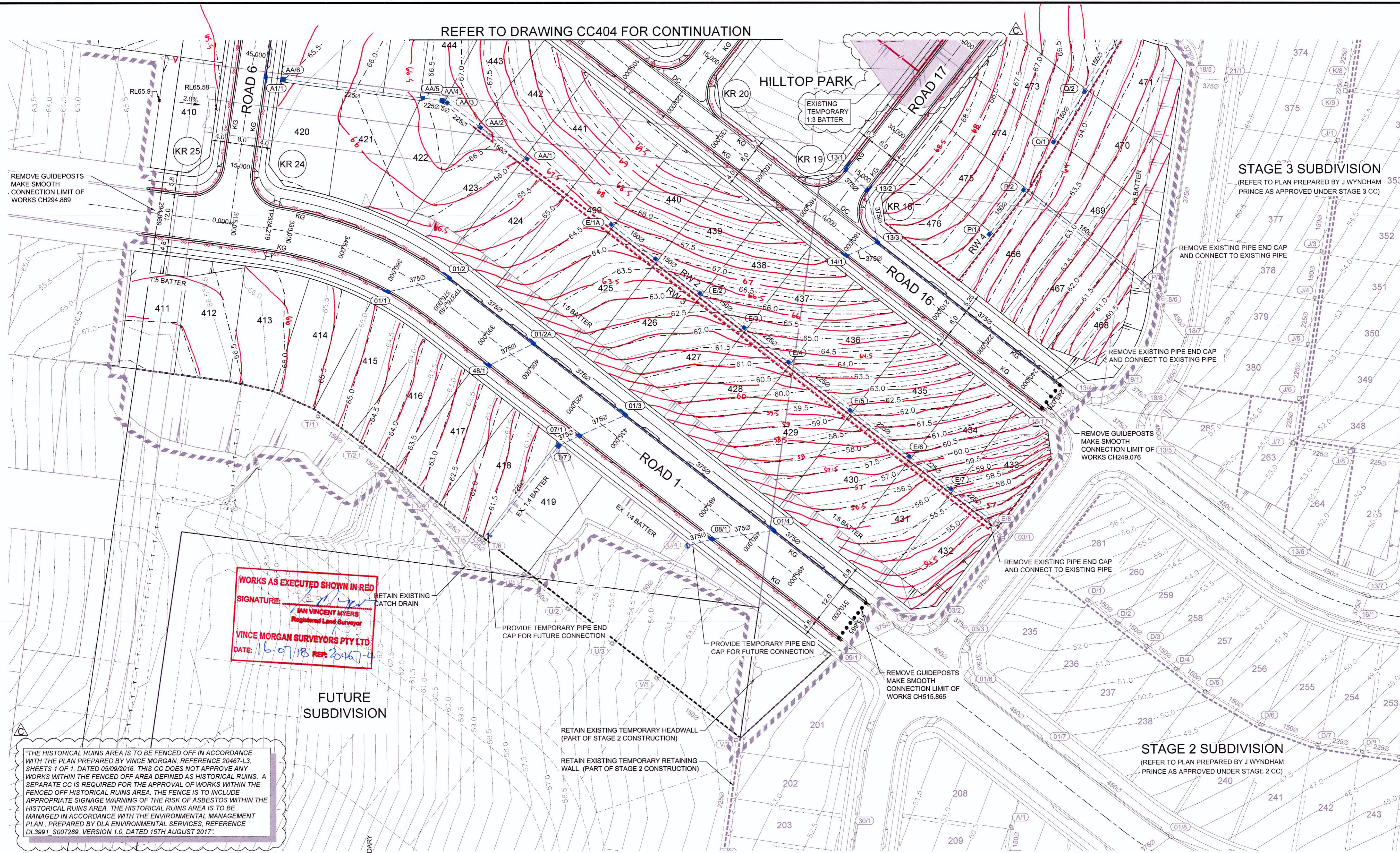
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ENGINEERING PLAN
SHEET 1 OF 2

PLAN No:
110358/CC404
FILE No: 110358CC404
SHEET SIZE: A1 ORIGINAL

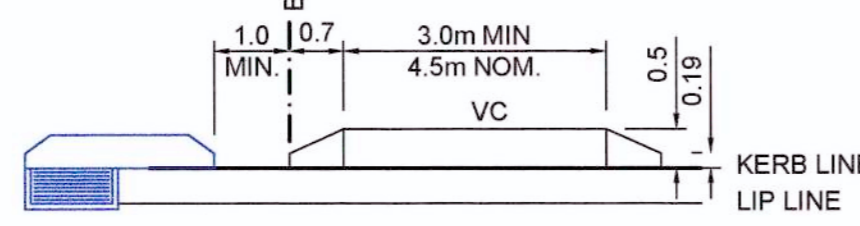
REFER TO DRAWING CC404 FOR CONTINUATION



WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 3467-4

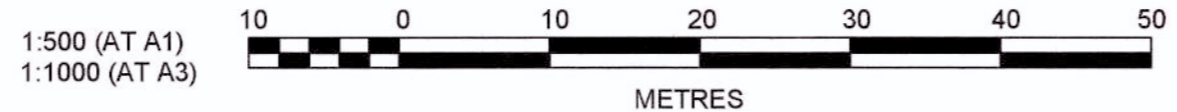
"THE HISTORICAL RUINS AREA IS TO BE FENCED OFF IN ACCORDANCE WITH THE PLAN PREPARED BY VINCE MORGAN, REFERENCE 20467-L3, SHEETS 1 OF 1, DATED 05/09/2016. THIS CC DOES NOT APPROVE ANY WORKS WITHIN THE FENCED OFF AREA DEFINED AS HISTORICAL RUINS. A SEPARATE CC IS REQUIRED FOR THE APPROVAL OF WORKS WITHIN THE FENCED OFF HISTORICAL RUINS AREA. THE FENCE IS TO INCLUDE APPROPRIATE SIGNAGE WARNING OF THE RISK OF ASBESTOS WITHIN THE HISTORICAL RUINS AREA. THE HISTORICAL RUINS AREA IS TO BE MANAGED IN ACCORDANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN, PREPARED BY DLA ENVIRONMENTAL SERVICES, REFERENCE DL3991_S007289, VERSION 1.0, DATED 15TH AUGUST 2017."

- ALL VEHICULAR CROSSING (VC) WIDTHS ARE 4.5m WIDE UNLESS OTHERWISE NOTED ON PLAN
- VC MUST HAVE A MIN STRAIGHT OF 3m PER P.C.C. STANDARD DETAIL
- VC'S TO BE IN ACCORDANCE WITH SD1004 OF P.C.C. ENGINEERING CONSTRUCTION SPECIFICATION FOR CIVIL WORKS



VEHICULAR CROSSING (VC) SETOUT DETAIL
SCALE: N.T.S.

PLAN
SCALE 1:500



RETAINING WALL LOCATIONS ARE FOR INFORMATION ONLY AND ARE SUBJECT TO A SEPARATE APPROVAL

RETAINING WALL PLAN AND SECTIONS REFER TO PLANS CC443 - CC446

Plotted: 3 November, 2017 4:04:43 PM File Name: J:\110358 - Oconnell Lane Caddens\03 - Stage 2\CC\STAGE 4\110358CC405.dwg

C	CERTIFIER COMMENTS - EXCLUDED WORK AREA	JT	JT	RT	MS	03/11/17
B	CERTIFIERS COMMENTS	JT	NM	RT	MS	21/09/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	OKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

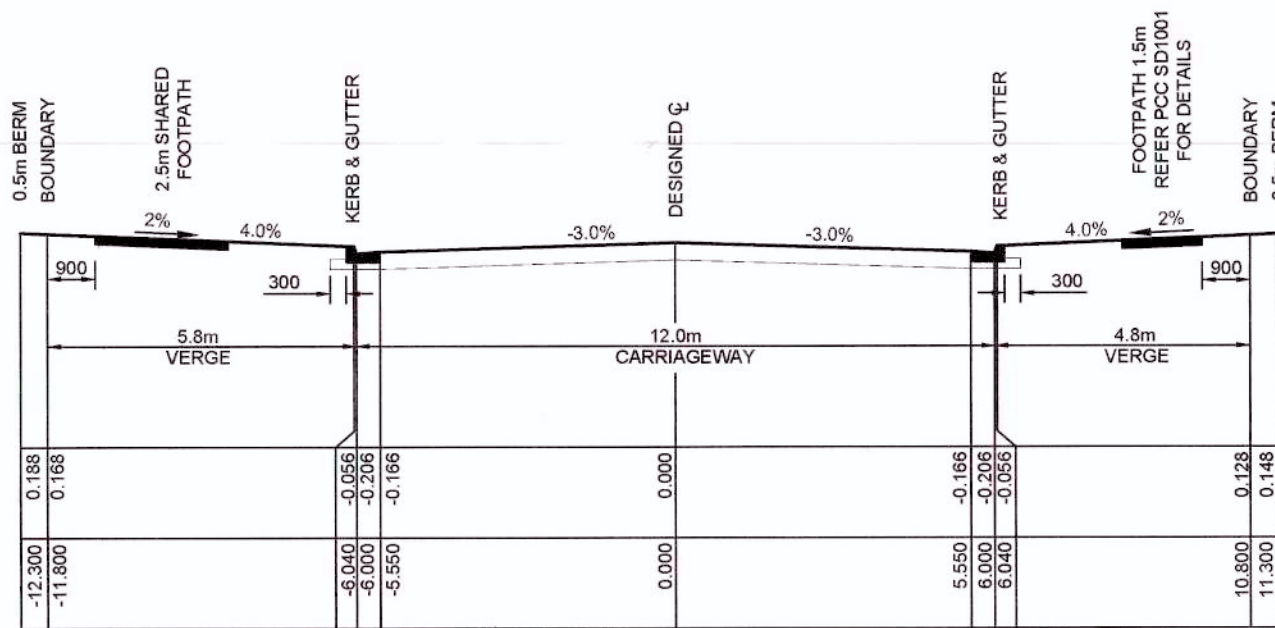
AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

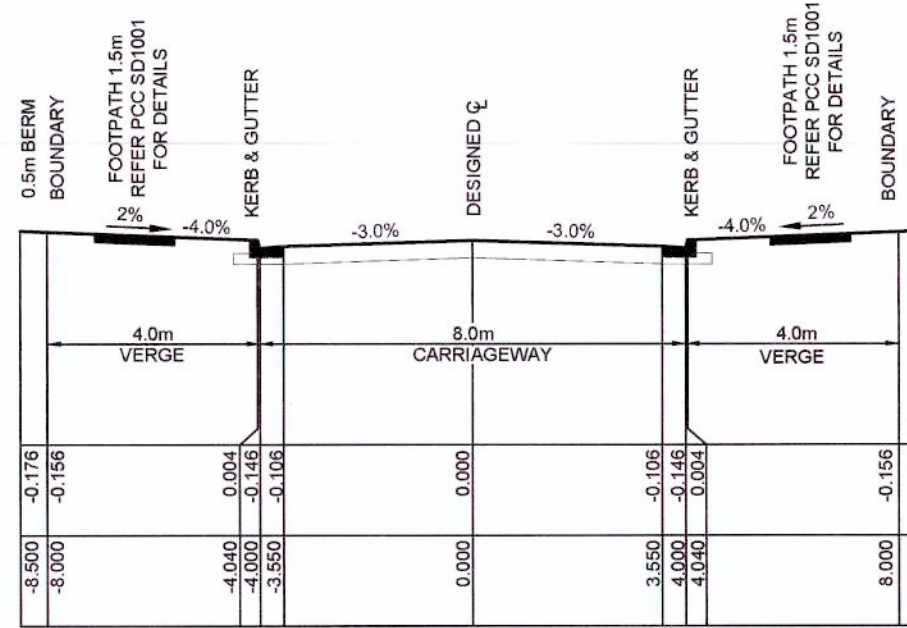
ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ENGINEERING PLAN
SHEET 2 OF 2

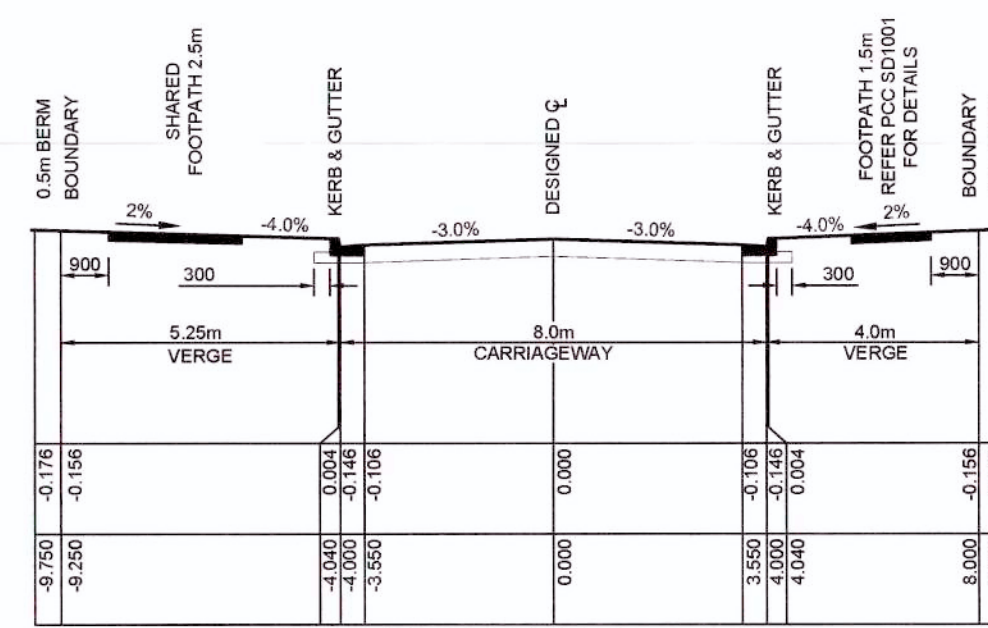
PLAN No: 110358/CC405 **C**
FILE No: 110358CC405
SHEET SIZE: A1 ORIGINAL



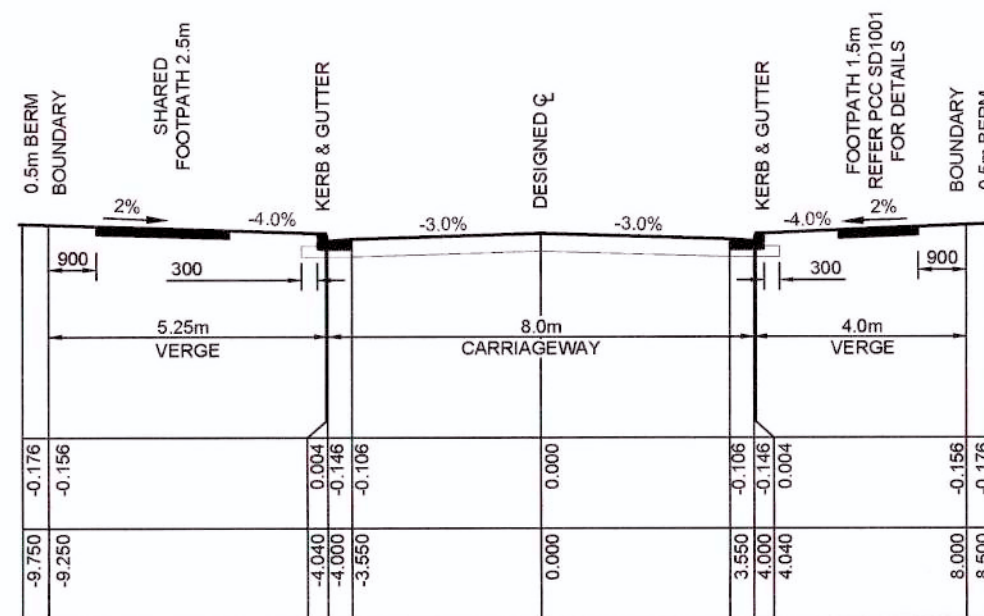
ROAD No.1 TYPICAL SECTION
CADDAS RIDGE DRIVE
(22.6m ROAD RESERVE)
1:100 NAT



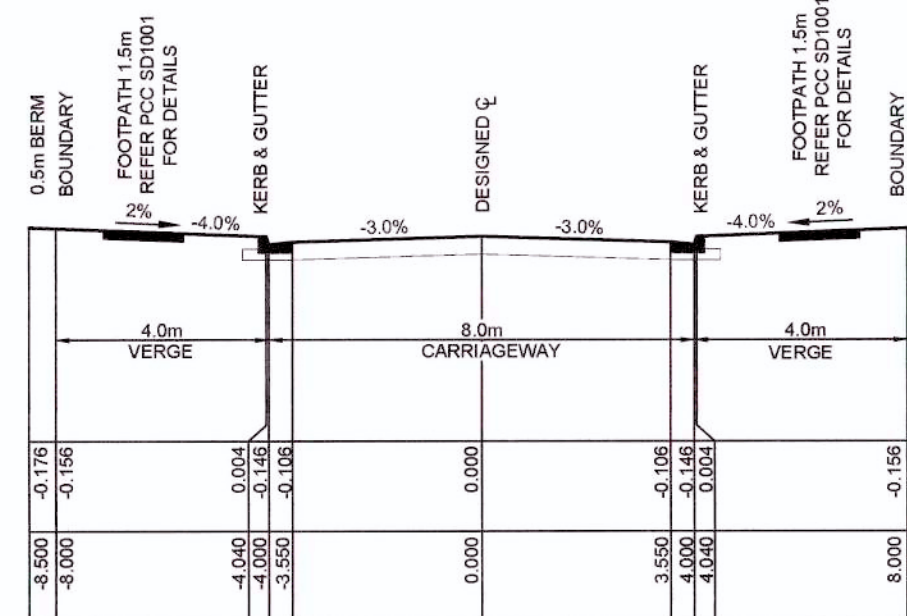
ROAD No.16 & 20 TYPICAL SECTION
DELAWARE STREET (CH0-CH120)
MIDNIGHT AVENUE (CH 90 - CH 209.567)
(16m ROAD RESERVE)
1:100 NAT



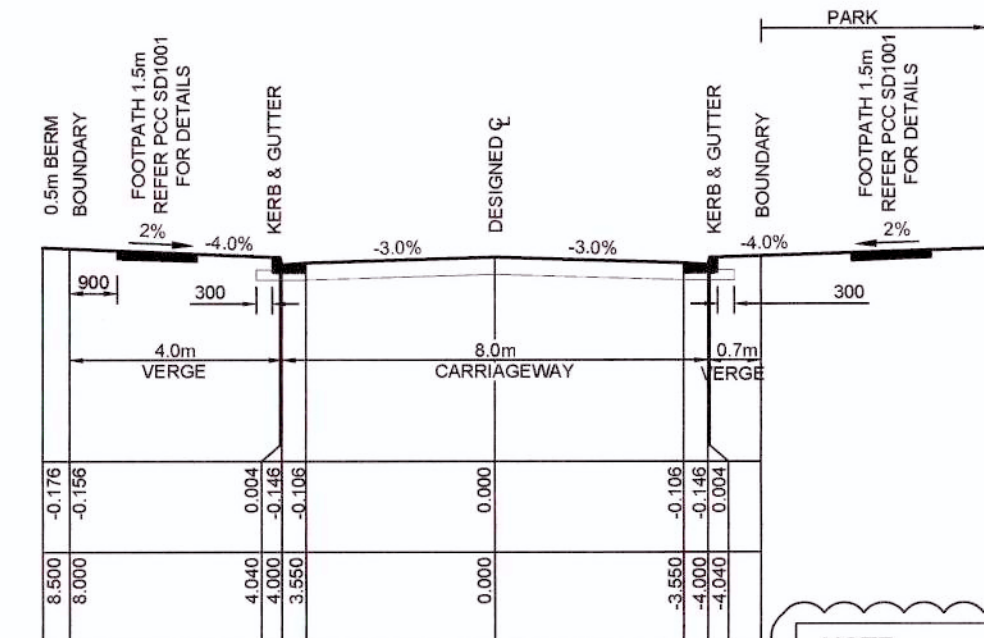
ROAD No.16 TYPICAL SECTION
DELAWARE AVENUE (CH171.42-CH249.076)
(17.25m ROAD RESERVE)
1:100 NAT



ROAD No.6 TYPICAL SECTION
SUNBURST DRIVE (CH243.124 TO CH315)
(17.25m ROAD RESERVE)
1:100 NAT

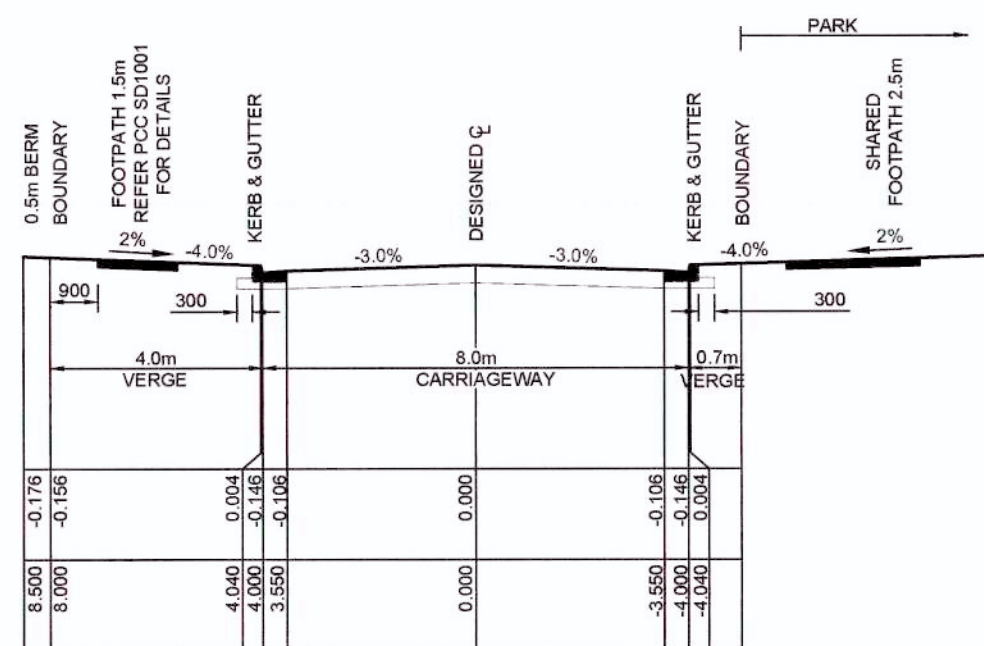


ROAD No. 6 & 7 TYPICAL SECTION
SUNBURST DRIVE (CH0-243.124 & CH370 - CH404.559),
HORTYARD DRIVE
(16m ROAD RESERVE)
1:100 NAT

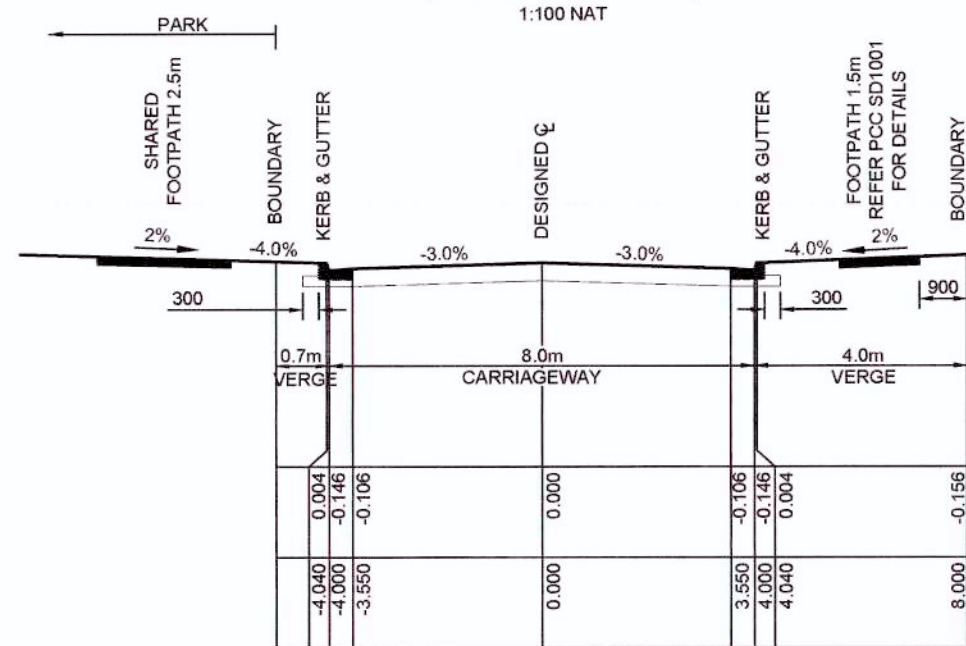


ROAD No. 6 TYPICAL SECTION
SUNBURST DRIVE (CH315 - CH370)
(12.7m ROAD RESERVE)
1:100 NAT

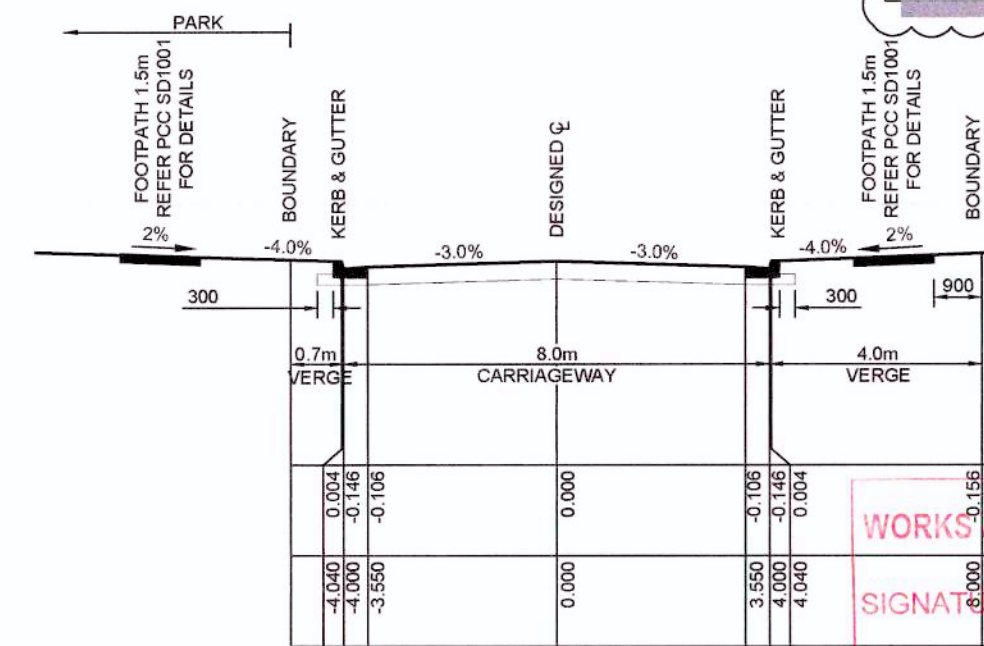
NOTE
FOR SHARED PATH/CYCLEWAY DETAILS REFER TO PENRITH CITY COUNCIL CONSTRUCTION SPECIFICATION FOR CIVIL WORKS - SECTION 7.5 CONCRETE FOOTPATH PAVING AND PATHWAYS - SHARED WAYS/CYCLEWAYS



ROAD No.20 TYPICAL SECTION
MIDNIGHT AVENUE (CH0 - CH90)
(12.7m ROAD RESERVE)
1:100 NAT



ROAD No.16 TYPICAL SECTION
DELAWARE AVENUE (CH120 TO CH171.42)
(12.7m ROAD RESERVE)
1:100 NAT

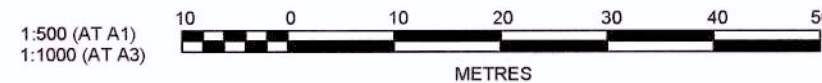


ROAD No. 17 TYPICAL SECTION
HARTLAND WAY (CH 0.0 - CH 96)
(12.7m ROAD RESERVE)
1:100 NAT

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4

LDC
These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

CLIENT:



THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

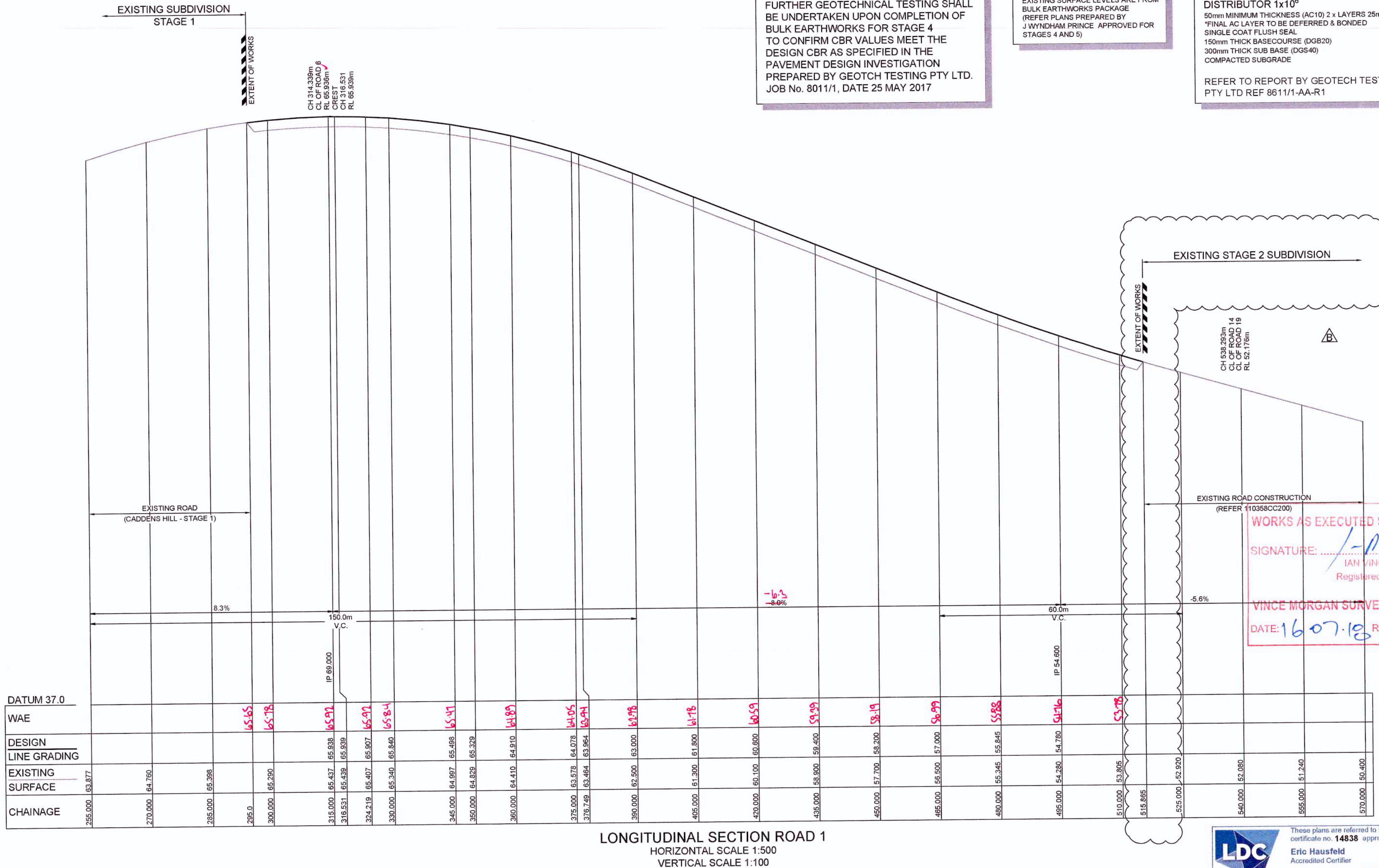
ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD TYPICAL SECTIONS

PLAN No: 110358/CC406
FILE No: 110358CC406
SHEET SIZE: A1 ORIGINAL

	DES	DRN	CKD	APR	DATE
C	JT	JT	RT	MS	20/10/17
B	JT	NM	RT	MS	21/09/17
A	JT	NM	RT	MS	03/08/17
AMENDMENT					

Plotted: 3 November 2017 4:05:07 PM File Name: J:\110358 - O'Connell Lane Caddens\03 - Stage 2\CD\CC\STAGE 4\110358CC407.dwg



NOTE
FURTHER GEOTECHNICAL TESTING SHALL BE UNDERTAKEN UPON COMPLETION OF BULK EARTHWORKS FOR STAGE 4 TO CONFIRM CBR VALUES MEET THE DESIGN CBR AS SPECIFIED IN THE PAVEMENT DESIGN INVESTIGATION PREPARED BY GEOTECH TESTING PTY LTD. JOB No. 8011/1, DATE 25 MAY 2017

NOTE
EXISTING SURFACE LEVELS ARE FROM BULK EARTHWORKS PACKAGE (REFER PLANS PREPARED BY J WYNDHAM PRINCE APPROVED FOR STAGES 4 AND 5)

PAVEMENT NOTES ROAD No.1
DISTRIBUTOR 1x10⁶
50mm MINIMUM THICKNESS (AC10) 2 x LAYERS 25mm (AC10)
*FINAL AC LAYER TO BE DEFERRED & BONDED
SINGLE COAT FLUSH SEAL
150mm THICK BASECOURSE (DGB20)
300mm THICK SUB BASE (DGS40)
COMPACTED SUBGRADE

REFER TO REPORT BY GEOTECH TESTING PTY LTD REF 8611/1-AA-R1

These plans are referred to in certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

1:100 (AT A1)
1:200 (AT A3)

2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

B	CERTIFIERS COMMENTS - LONGITUDINAL SECTION AMENDED	JT	NM	RT	MS	21/09/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT: 
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD No.1 LONGITUDINAL SECTION

PLAN No: 110358/CC407 **B**
FILE No: 110358CC407
SHEET SIZE: A1 ORIGINAL

NOTE
FURTHER GEOTECHNICAL TESTING SHALL
BE UNDERTAKEN UPON COMPLETION OF
BULK EARTHWORKS FOR STAGE 4
TO CONFIRM CBR VALUES MEET THE
DESIGN CBR AS SPECIFIED IN THE
PAVEMENT DESIGN INVESTIGATION
PREPARED BY GEOTECH TESTING PTY LTD.
JOB No. 8011/1. DATE 25 MAY 2017

NOTE
EXISTING SURFACE LEVELS ARE FROM
BULK EARTHWORKS PACKAGE
(REFER PLANS PREPARED BY
J WYNTHAM PRINCE APPROVED FOR
STAGES 4 AND 5)

ACCESS STREET 5x10⁴
50mm MINIMUM THICKNESS (AC10) 2 x LAYERS 25mm (AC10)
*FINAL AC LAYER TO BE DEFERRED & BONDED
SINGLE COAT FLUSH SEAL
150mm THICK BASECOURSE (DGB20)
175mm THICK SUB BASE (DGS40)
COMPACTED SUBGRADE

REFER TO REPORT BY GEOTECH TESTING PTY LTD REF 8611/1-AA-R1

IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

[illegible]

HISTORICAL RUIN AREA IS TO BE FENCED IN ACCORDANCE WITH THE PLAN PREPARED BY VINCE MORGAN, REFERENCE 20467-L3, SHEETS 1 OF 1, DATED 05/09/2016

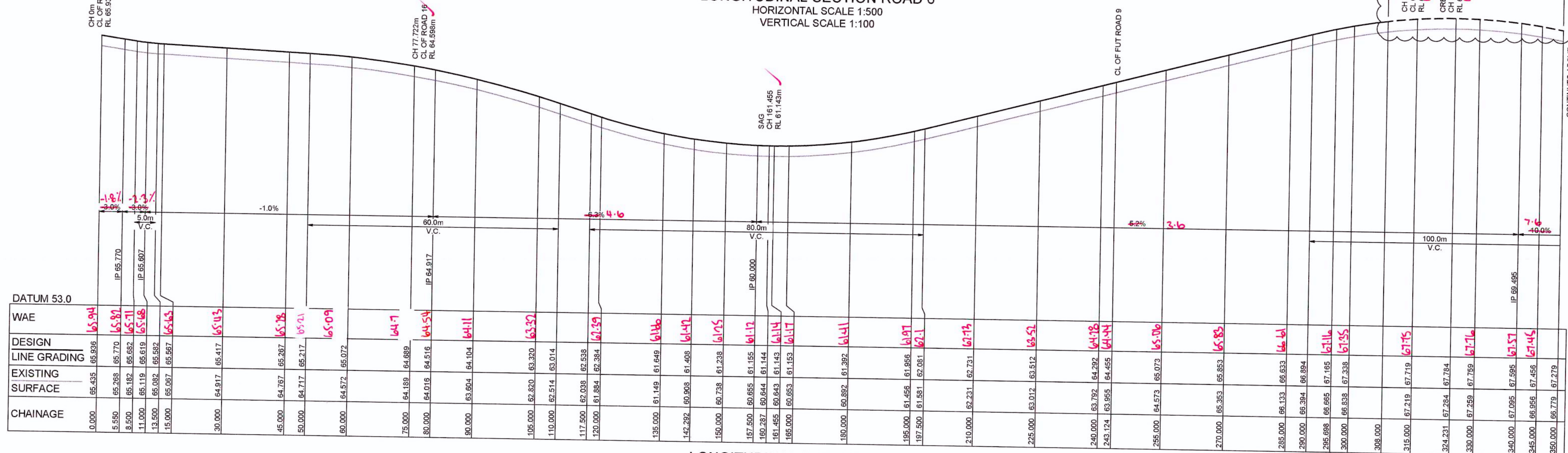
REFER NOTE ON CC404 (NO WORKS TO BE UNDERTAKEN IN HILLTOP PARK THROUGH THIS HISTORICAL RUINS AREA)

EXTENT OF TEMPORARY BATTER WORKS

CH 314.438m
CL OF ROAD 2
RL 67.711m
CREST
CH 324.231
RL 67.784m

CREST
CH 324
RL 67.7
67.7

LONGITUDINAL SECTION ROAD 6
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 6
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

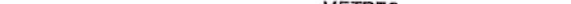


1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

1:100 (AT A1)
1:200 (AT A3)



A horizontal graphic scale bar with alternating black and white segments. Above the bar, numbers 2, 1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 1 are placed, representing decimetres. Below the bar, the word 'METRES' is centered.

CLIENT:



LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4

ROAD No.6 LONGITUDINAL SECTION

PLAN No:
110358/CC408

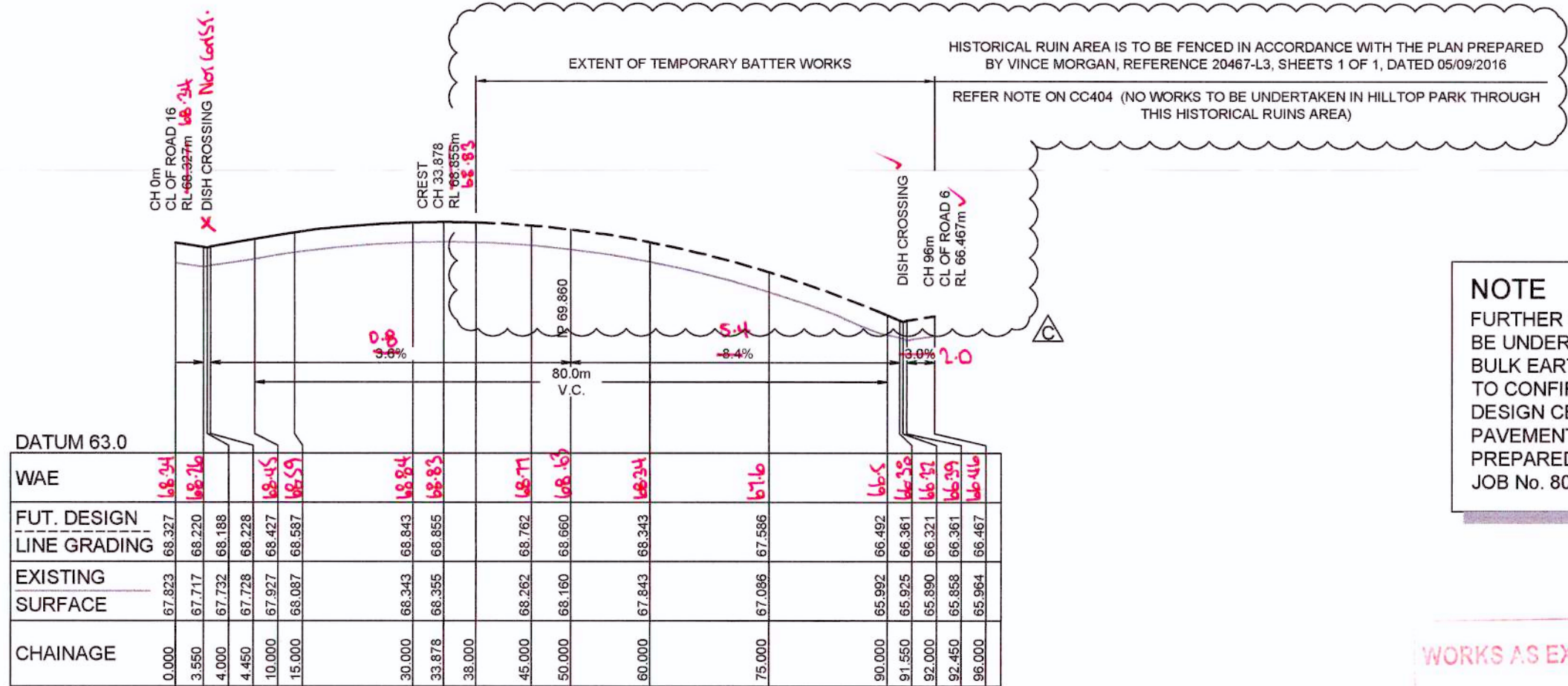
FILE No: 110358CC408

SHEET SIZE: A1 ORIGINAL

C	CERTIFIER COMMENTS - EXCLUDED WORK AREA	JT	JT	RT	MS			03/11/17	
B	CERTIFIERS COMMENTS - LONGITUDINAL SECTION AMENDED	JT	NM	RT	MS			21/09/17	
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS			03/08/17	
	AMENDMENT	DES	DRN	KCD	APR			DATE	

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au



NOTE

EXISTING SURFACE LEVELS ARE FROM BULK EARTHWORKS PACKAGE (REFER PLANS PREPARED BY J WYNDHAM PRINCE APPROVED FOR STAGES 4 AND 5)

NOTE

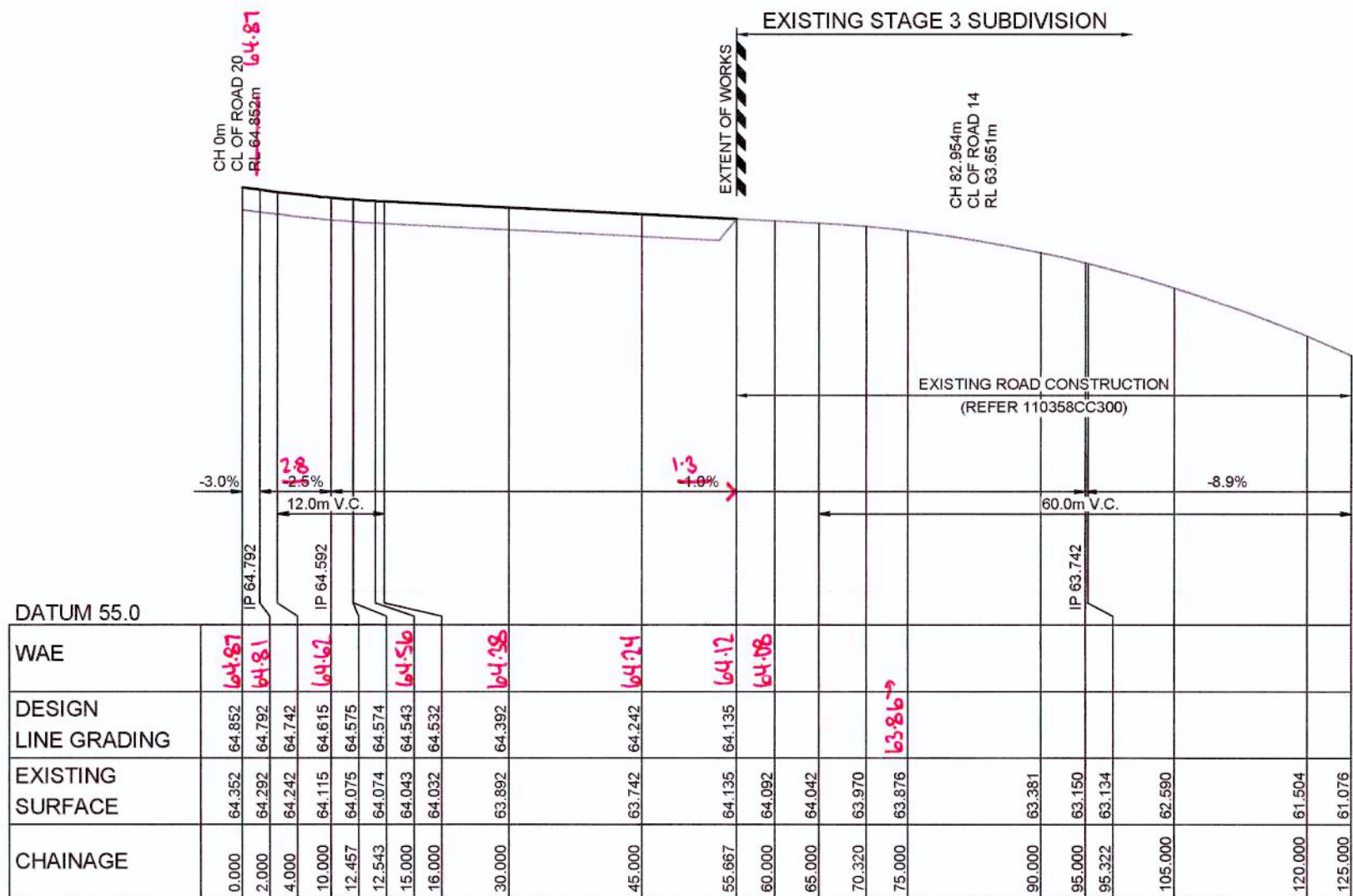
FURTHER GEOTECHNICAL TESTING SHALL BE UNDERTAKEN UPON COMPLETION OF BULK EARTHWORKS FOR STAGE 4 TO CONFIRM CBR VALUES MEET THE DESIGN CBR AS SPECIFIED IN THE PAVEMENT DESIGN INVESTIGATION PREPARED BY GEOTCH TESTING PTY LTD. JOB No. 8011/1, DATE 25 MAY 2017

WORKS AS EXECUTED SHOWN IN RED

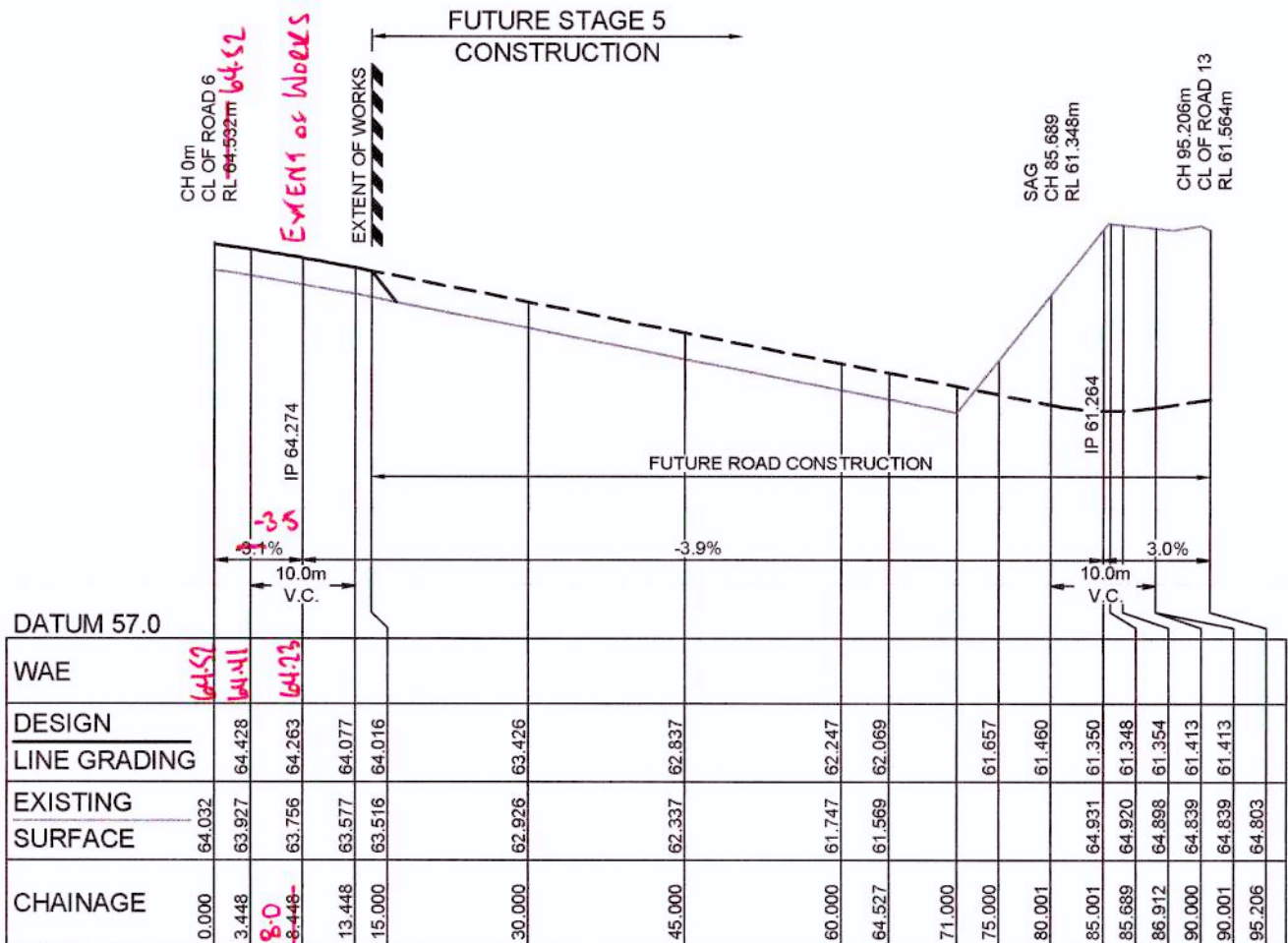
SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4



LONGITUDINAL SECTION ROAD 7
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100



LONGITUDINAL SECTION ROAD 9
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

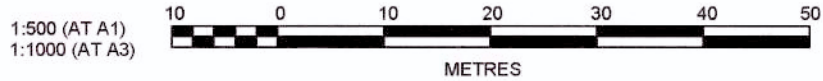
These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416

Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au



Plotted: 3 November, 2017 4:05:27 PM File Name: J1110358 - OConnell Lane Caddens03 - Stage 2/CD/CC/STAGE 4/110358CC409.dwg

AMENDMENT	DES	DRN	CKD	APR	DATE
C	JT	JT	RT	MS	03/11/17
B	JT	NM	RT	MS	21/09/17
A	JT	NM	RT	MS	03/08/17

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwvp@jwprince.com.au

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT:

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD No.7, 9 & 17 LONGITUDINAL SECTION

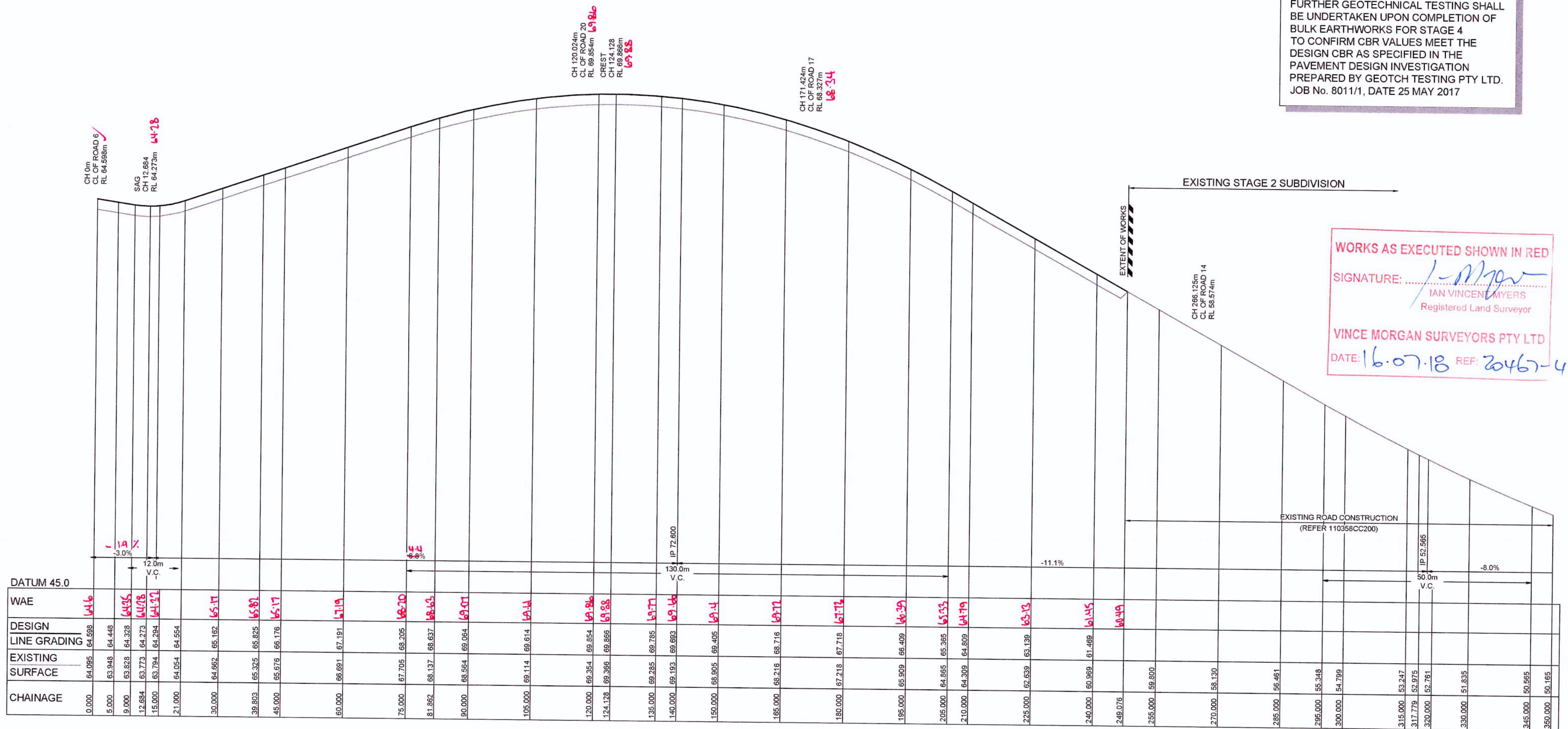
PLAN No:
110358/CC409 **C**

FILE No: 110358CC409

SHEET SIZE: A1 ORIGINAL

NOTE
EXISTING SURFACE LEVELS ARE FROM
BULK EARTHWORKS PACKAGE
(REFER PLANS PREPARED BY
J WYNDHAM PRINCE APPROVED FOR
STAGES 4 AND 5)

NOTE
FURTHER GEOTECHNICAL TESTING SHALL
BE UNDERTAKEN UPON COMPLETION OF
BULK EARTHWORKS FOR STAGE 4
TO CONFIRM CBR VALUES MEET THE
DESIGN CBR AS SPECIFIED IN THE
PAVEMENT DESIGN INVESTIGATION
PREPARED BY GEOTCH TESTING PTY LTD.
JOB No. 8011/1, DATE 25 MAY 2017



WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4

LDC
These plans are referred to in
certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1
Land Development Certificates
www.Ldcerts.com.au

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD No. 16 LONGITUDINAL SECTION

PLAN No:
110358/CC410
FILE No: 110358CC410
SHEET SIZE: A1 ORIGINAL

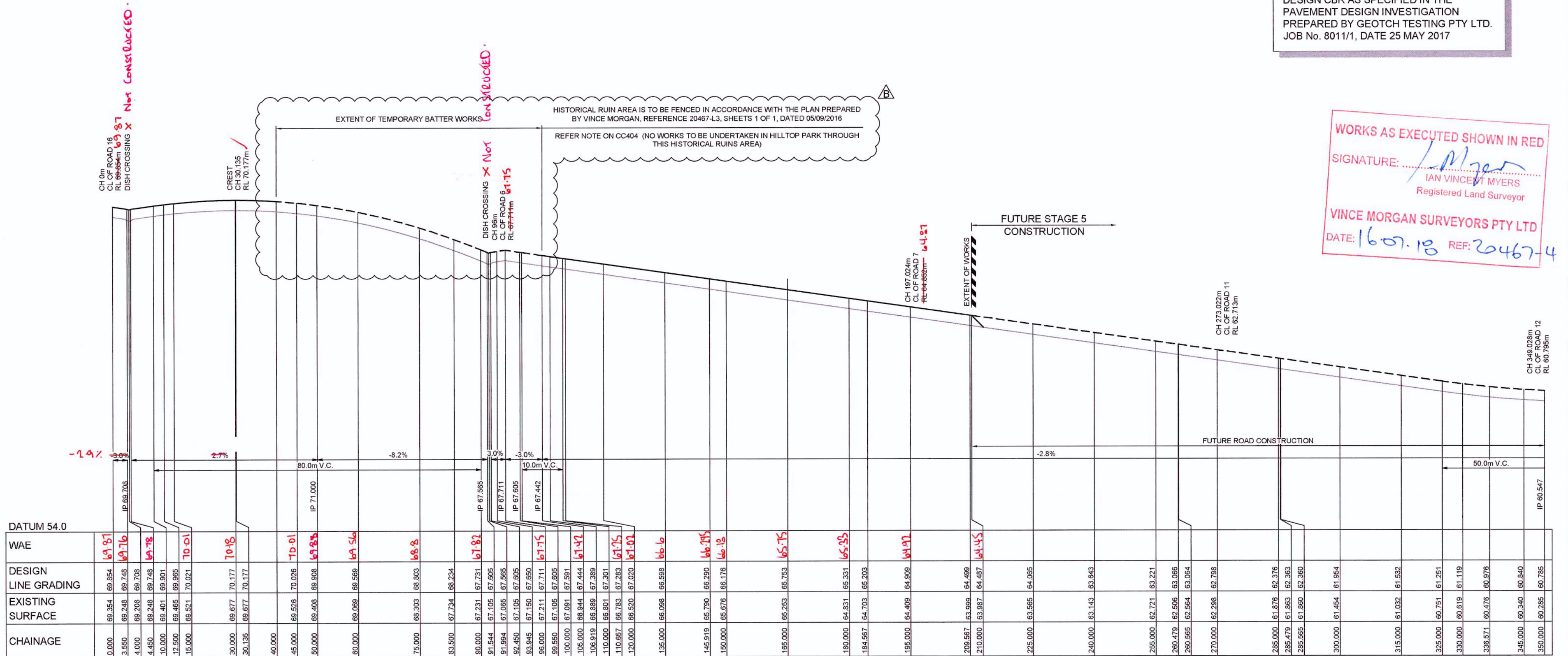
J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

NOTE
EXISTING SURFACE LEVELS ARE FROM
BULK EARTHWORKS PACKAGE
(REFER PLANS PREPARED BY
J WYNDHAM PRINCE APPROVED FOR
STAGES 4 AND 5)

NOTE
FURTHER GEOTECHNICAL TESTING SHALL
BE UNDERTAKEN UPON COMPLETION OF
BULK EARTHWORKS FOR STAGE 4
TO CONFIRM CBR VALUES MEET THE
DESIGN CBR AS SPECIFIED IN THE
PAVEMENT DESIGN INVESTIGATION
PREPARED BY GEOTCH TESTING PTY LTD.
JOB No. 80111/1, DATE 25 MAY 2017

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4



LONGITUDINAL SECTION ROAD 20
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:100

These plans are referred to in
certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

1:100 (AT A1)
1:200 (AT A3)

2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:



LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
ROAD No.20. LONGITUDINAL SECTION

PLAN No:
110358/CC411 B
FILE No: 110358CC411
SHEET SIZE: A1 ORIGINAL

DESIGN SURFACE LEVEL	66.01
WAE	66.01
EXISTING SURFACE LEVEL	66.01
OFFSET	66.01

These plans are referred to in
certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwprince@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

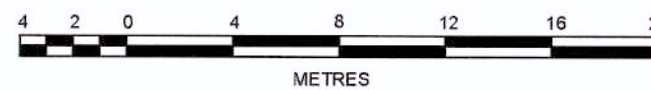
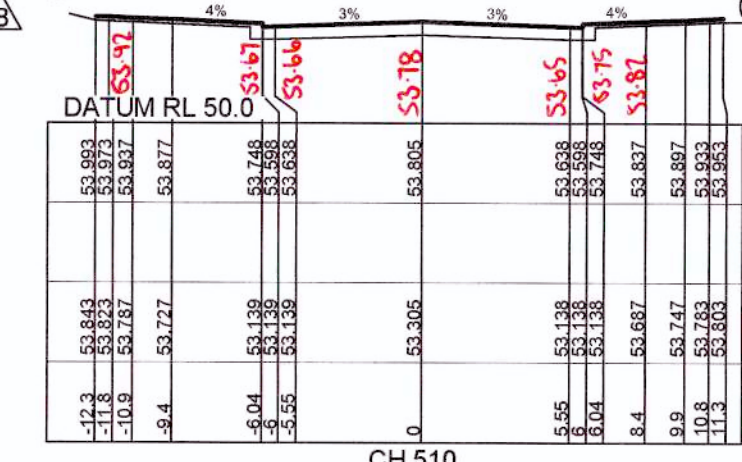
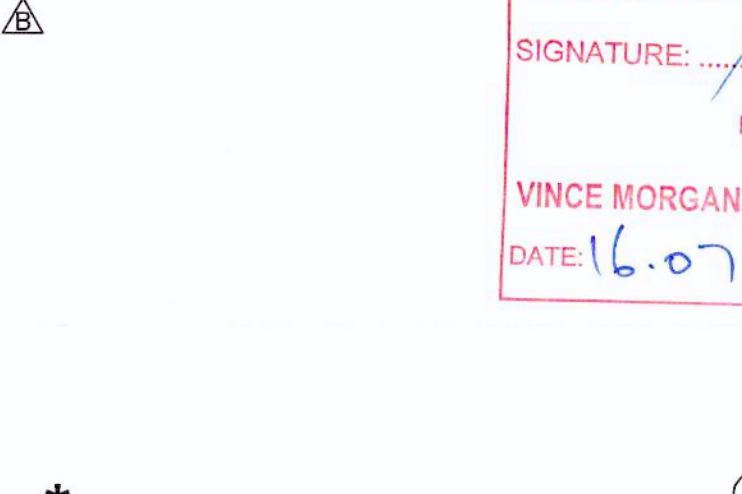
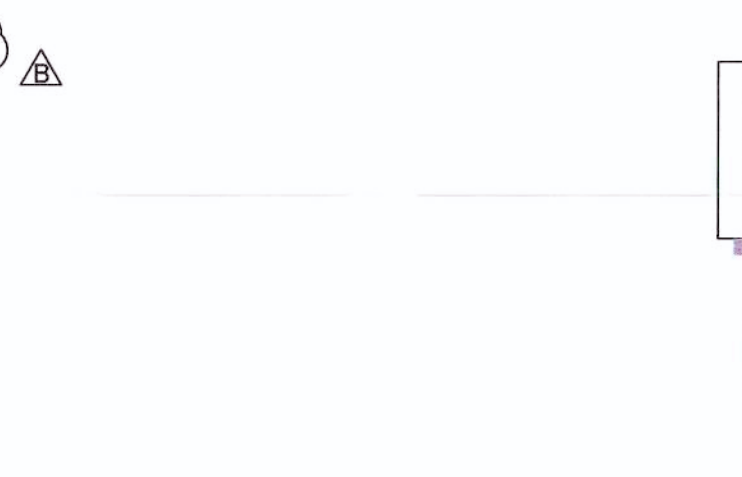
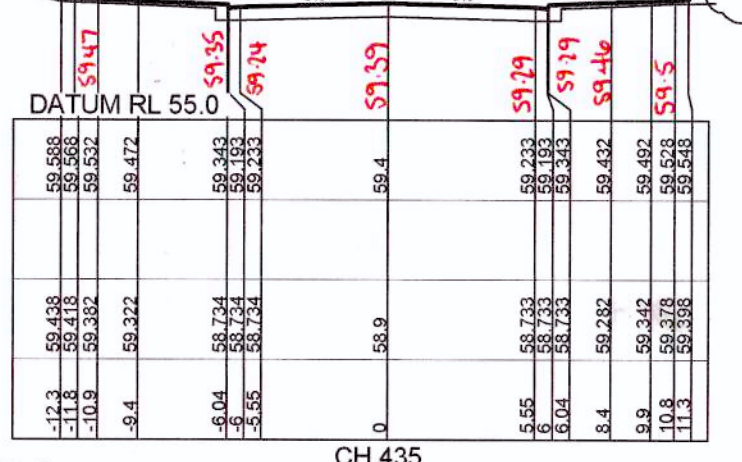
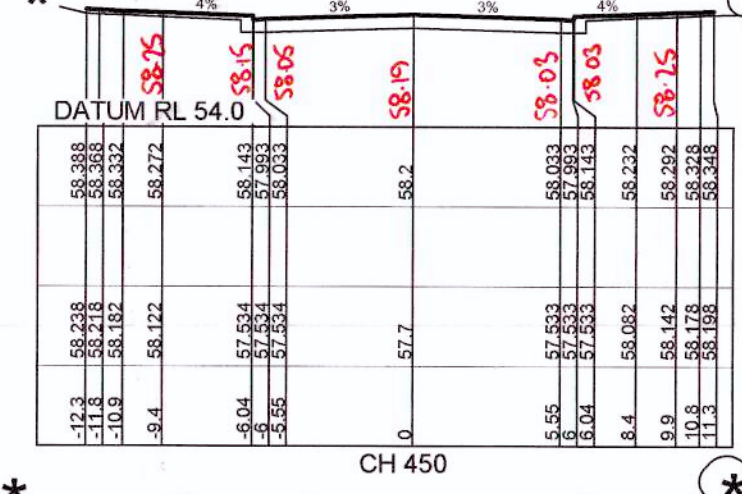
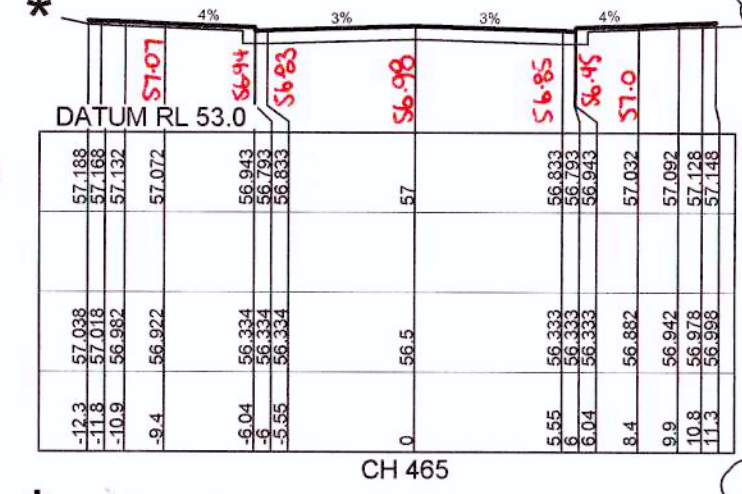
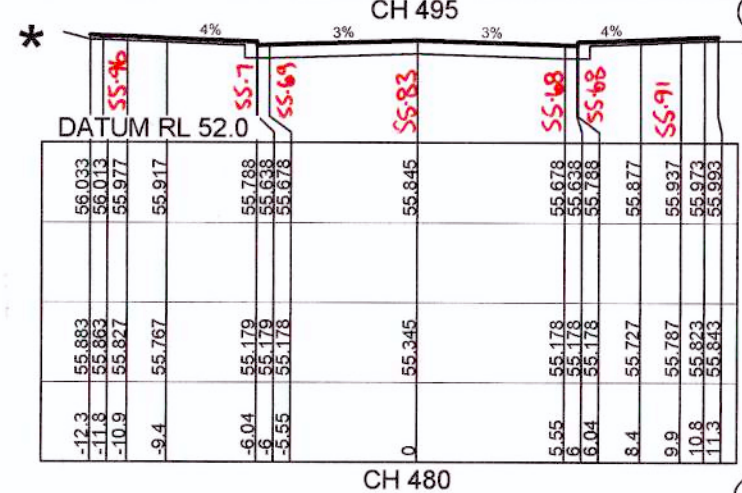
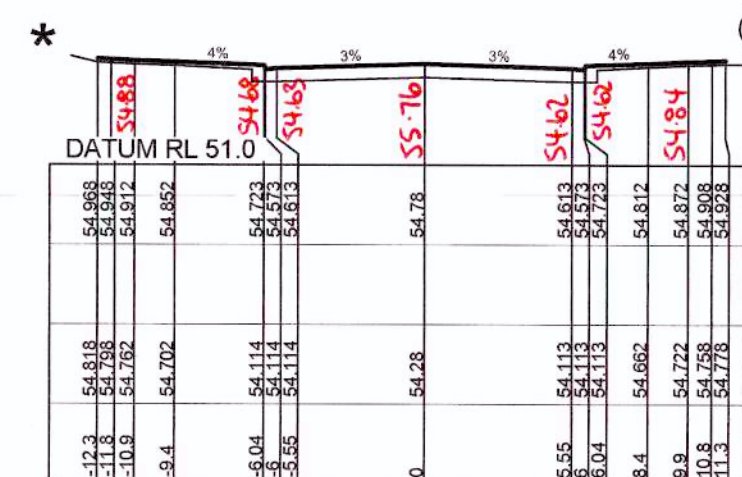
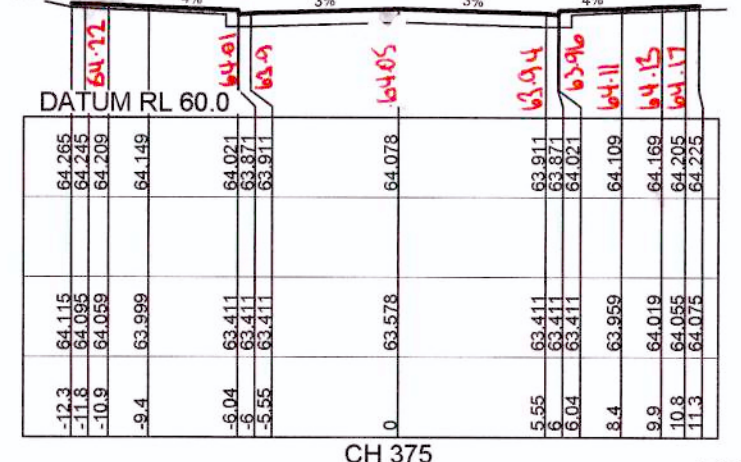
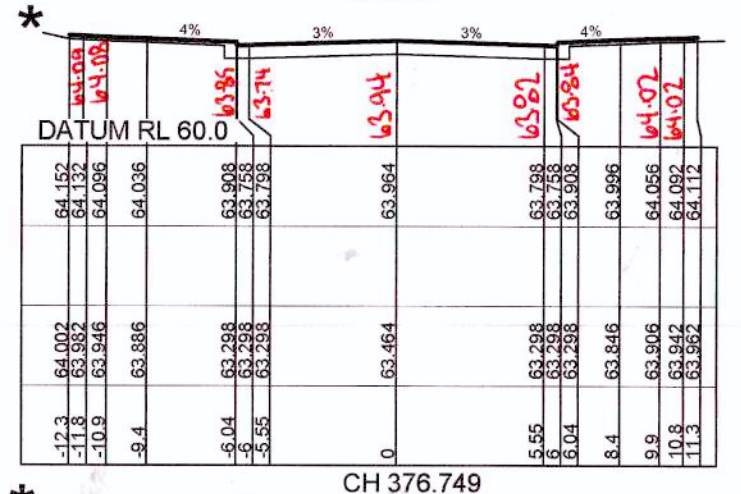
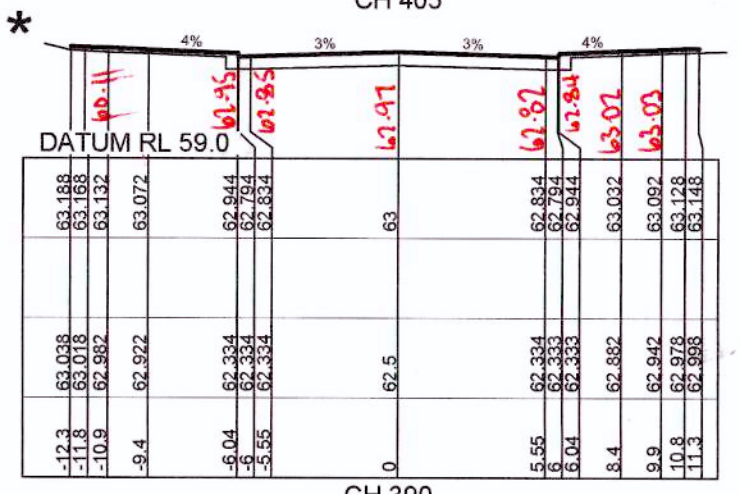
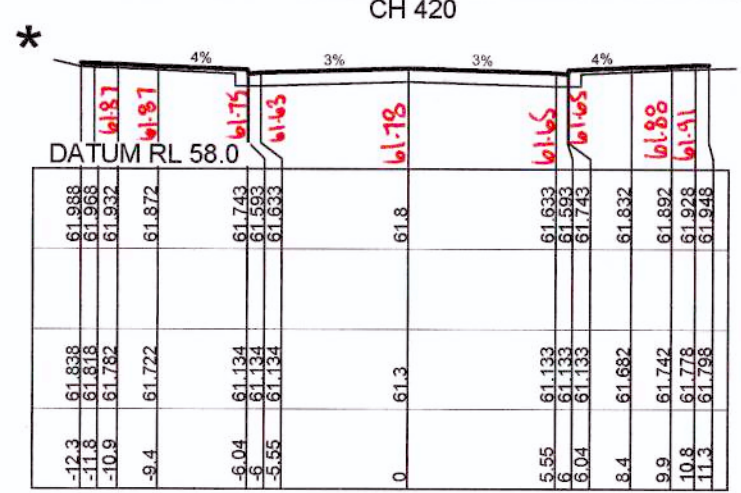
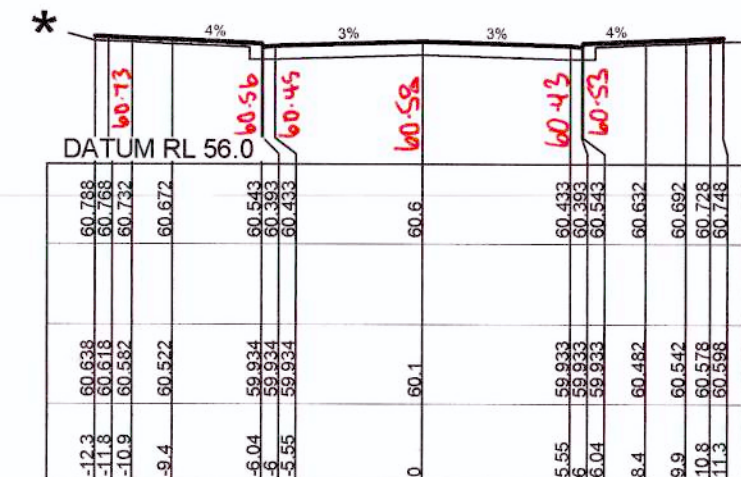
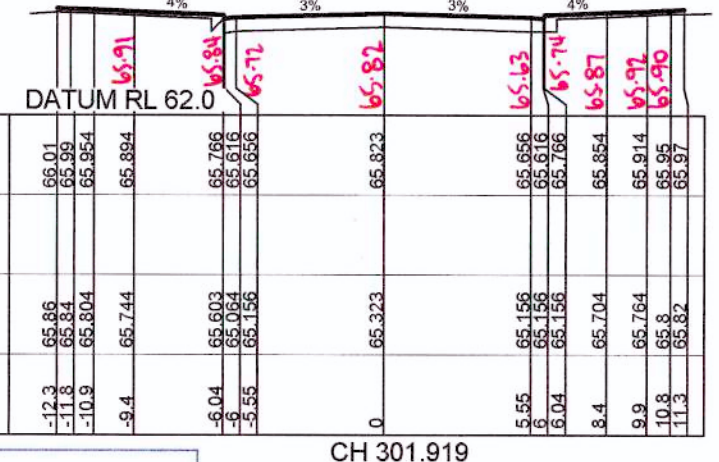
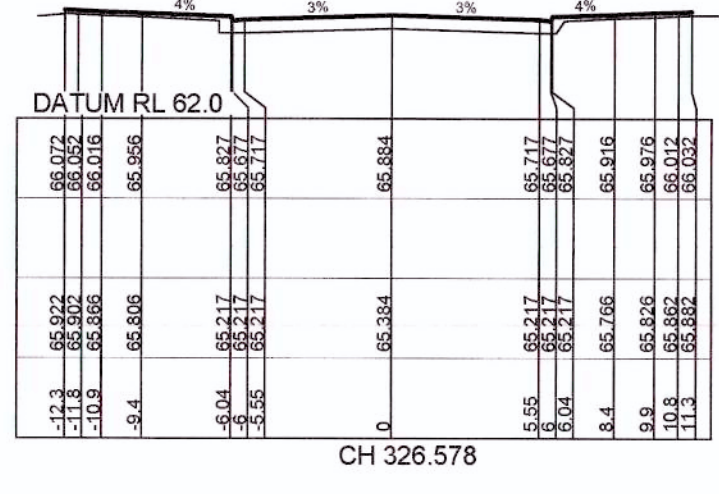
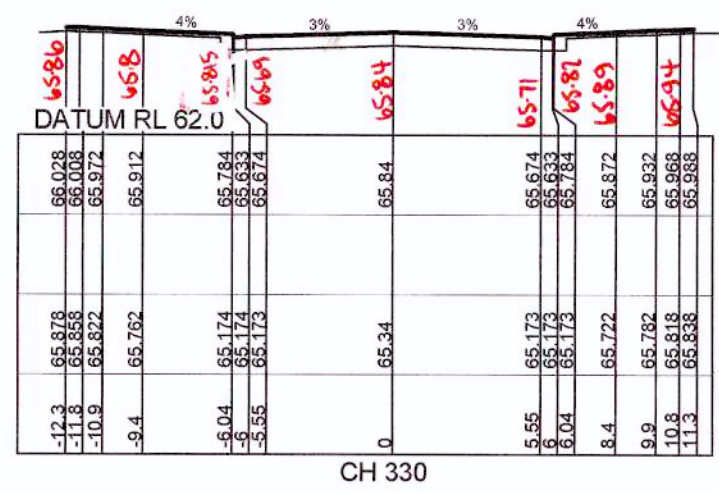
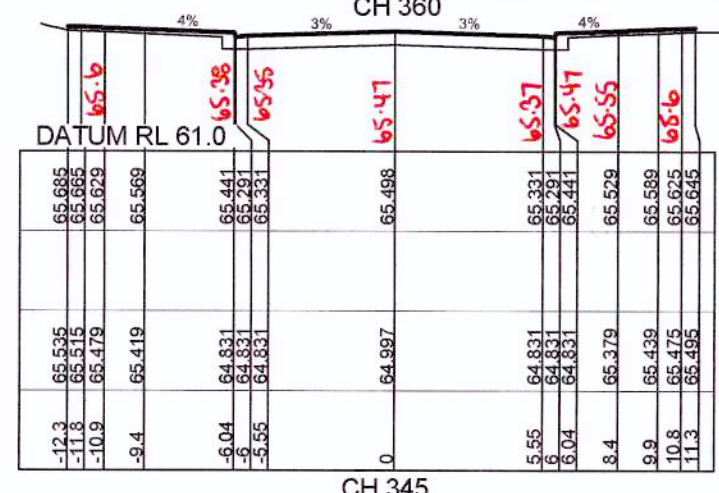
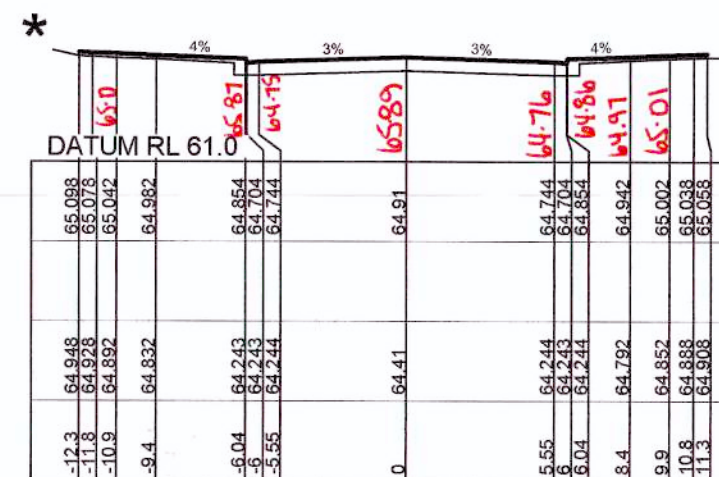
ISSUED FOR CONSTRUCTION APPROVAL

**CADDENS HILL
STAGE 4
ROAD No.1 CROSS SECTIONS**

PLAN No:
110358/CC412 **B**
FILE No: 110358CC412
SHEET SIZE: A1 ORIGINAL

NOTE
EXISTING SURFACE LEVELS ARE FROM
BULK EARTHWORKS PACKAGE
(REFER PLANS PREPARED BY
J WYNDHAM PRINCE APPROVED FOR
STAGES 4 AND 5)

*** NOTE**
FOR LOT GRADING
REFER TO PLANS CC404 - CC405



DESIGN SURFACE LEVEL	WAE	EXISTING SURFACE LEVEL	OFFSET
DATUM RL 61.0			
-8.5	65.598	65.748	-0.15
-7.1	65.542	65.692	-0.15
-5.6	65.482	65.632	-0.15
-4.04	64.984	65.575	-0.59
-3.55	64.956	65.465	-0.51
0	65.072	65.572	-0.50
3.55	64.965	65.465	-0.50
4.04	64.956	65.575	-0.62
5.6	65.482	65.632	-0.15
7.1	65.542	65.692	-0.15
8.5	65.598	65.748	-0.15

CH 14.538

-8.5	65.443	65.593	-0.15
-7.1	65.387	65.537	-0.15
-5.6	65.327	65.477	-0.15
-4.04	64.811	65.421	-0.61
-3.55	64.811	65.311	-0.50
0	64.917	65.417	-0.50
3.55	64.811	65.311	-0.50
4.04	64.811	65.421	-0.61
5.6	65.327	65.477	-0.15
7.1	65.387	65.537	-0.15
8.5	65.443	65.593	-0.15

CH 30

-8.5	65.293	65.443	-0.15
-7.1	65.237	65.387	-0.15
-5.6	65.177	65.327	-0.15
-4.04	64.66	65.271	-0.61
-3.55	64.66	65.161	-0.50
0	64.767	65.267	-0.50
3.55	64.661	65.161	-0.50
4.04	64.66	65.271	-0.61
5.6	65.177	65.327	-0.15
7.1	65.237	65.387	-0.15
8.5	65.293	65.443	-0.15

CH 45

-8.5	65.098	65.248	-0.15
-7.1	65.042	65.192	-0.15
-5.6	64.982	65.132	-0.15
-4.04	64.466	65.076	-0.61
-3.55	64.466	64.966	-0.50
0	64.572	65.072	-0.50
3.55	64.466	64.966	-0.50
4.04	64.466	65.076	-0.61
5.6	64.982	65.132	-0.15
7.1	65.042	65.192	-0.15
8.5	65.098	65.248	-0.15

CH 60

-8.5	64.986	65.136	-0.15
-7.1	64.93	65.08	-0.15
-5.6	64.87	65.02	-0.15
-4.04	64.353	64.963	-0.61
-3.55	64.353	64.853	-0.50
0	64.46	64.96	-0.50
3.55	64.353	64.853	-0.50

CH 65.297

-8.5	64.117	64.267	-0.15
-7.1	64.061	64.211	-0.15
-5.6	64.001	64.151	-0.15
-4.04	63.484	64.094	-0.61
-3.55	63.484	63.984	-0.50
0	63.591	64.091	-0.50
3.55	63.484	63.984	-0.50
4.04	63.484	64.094	-0.61
5.6	64.001	64.151	-0.15
7.1	64.061	64.211	-0.15
8.5	64.117	64.267	-0.15

CH 90.297

-8.5	63.346	63.496	-0.15
-7.1	63.29	63.44	-0.15
-5.6	63.23	63.38	-0.15
-4.04	62.713	63.323	-0.61
-3.55	62.713	63.213	-0.50
0	62.82	63.32	-0.50
3.55	62.713	63.213	-0.50
4.04	62.713	63.323	-0.61
5.6	63.23	63.38	-0.15
7.1	63.29	63.44	-0.15
8.5	63.346	63.496	-0.15

CH 105

-8.5	62.41	62.56	-0.15
-7.1	62.354	62.504	-0.15
-5.6	62.294	62.444	-0.15
-4.04	61.777	62.387	-0.61
-3.55	61.777	62.277	-0.50
0	61.884	62.384	-0.50
3.55	61.777	62.277	-0.50
4.04	61.777	62.387	-0.61
5.6	62.294	62.444	-0.15
7.1	62.354	62.504	-0.15
8.5	62.41	62.56	-0.15

CH 120

-8.5	61.674	61.824	-0.15
-7.1	61.618	61.768	-0.15
-5.6	61.558	61.708	-0.15
-4.04	61.042	61.652	-0.61
-3.55	61.042	61.542	-0.50
0	61.149	61.649	-0.50
3.55	61.042	61.542	-0.50
4.04	61.042	61.652	-0.61
5.6	61.558	61.708	-0.15
7.1	61.618	61.768	-0.15
8.5	61.674	61.824	-0.15

CH 135

-8.5	61.424	61.574	-0.15
-7.1	61.378	61.528	-0.15
-5.6	61.318	61.468	-0.15
-4.04	60.802	61.412	-0.61
-3.55	60.802	61.302	-0.50
0	60.908	61.408	-0.50
3.55	60.802	61.302	-0.50
4.04	60.802	61.412	-0.61
5.6	61.318	61.468	-0.15
7.1	61.378	61.528	-0.15
8.5	61.424	61.574	-0.15

CH 142.292

-10.006	61.137	61.366	-0.229
-8.5	61.177	61.346	-0.169
-7.1	61.121	61.31	-0.189
-5.6	61.15	61.193	-0.043
-4.04	60.538	61.148	-0.61
-3.55	60.538	61.038	-0.50
0	60.644	61.144	-0.50
3.55	60.538	61.038	-0.50
4.04	60.538	61.148	-0.61
5.6	61.15	61.193	-0.043
7.1	61.121	61.31	-0.189
8.5	61.177	61.346	-0.169

CH 150

-8.5	61.17	61.08	-0.09
-7.1	61.14	61.02	-0.12
-5.6	61.064	61.176	-0.112
-4.04	60.538	61.148	-0.61
-3.55	60.538	61.038	-0.50
0	60.644	61.144	-0.50
3.55	60.538	61.038	-0.50
4.04	60.538	61.148	-0.61
5.6	61.064	61.176	-0.112
7.1	61.12	61.264	-0.144
8.5	61.17	61.32	-0.15

CH 160.287

-8.5	61.178	61.139	-0.039
-7.1	61.15	61.141	-0.009
-5.6	61.062	61.15	-0.088
-4.04	60.546	61.156	-0.61
-3.55	60.546	61.046	-0.50
0	60.653	61.153	-0.50
3.55	60.546	61.046	-0.50
4.04	60.546	61.156	-0.61
5.6	61.062	61.15	-0.088
7.1	61.122	61.272	-0.15
8.5	61.178	61.328	-0.15

CH 180

-8.5	61.418	61.568	-0.15
-7.1	61.362	61.512	-0.15
-5.6	61.302	61.452	-0.15
-4.04	60.785	61.395	-0.61
-3.55	60.785	61.285	-0.50
0	60.892	61.392	-0.50
3.55	60.785	61.285	-0.50
4.04	60.785	61.395	-0.61
5.6	61.302	61.452	-0.15
7.1	61.362	61.512	-0.15
8.5	61.418	61.568	-0.15

CH 195

-8.5	61.981	62.131	-0.15
-7.1	61.925	62.075	-0.15
-5.6	61.865	62.015	-0.15
-4.04	61.349	61.959	-0.61
-3.55	61.349	61.849	-0.50
0	61.456	61.956	-0.50
3.55	61.349	61.849	-0.50
4.04	61.349	61.959	-0.61
5.6	61.865	62.015	-0.15
7.1	61.925	62.075	-0.15
8.5	61.981	62.131	-0.15

CH 210

-8.5	62.757	62.907	-0.15
-7.1	62.701	62.851	-0.15
-5.6	62.641	62.791	-0.15
-4.04	62.125	62.735	-0.61
-3.55	62.125	62.625	-0.50
0	62.231	62.731	-0.50
3.55	62.125	62.625	-0.50
4.04	62.125	62.735	-0.61
5.6	62.641	62.791	-0.15
7.1	62.701	62.851	-0.15
8.5	62.757	62.907	-0.15

CH 225

-8.5	63.538	63.688	-0.15
-7.1	63.482	63.632	-0.15
-5.6	63.422	63.572	-0.15
-4.04	62.905	63.515	-0.61
-3.55	62.905	63.405	-0.50
0	63.012	63.512	-0.50
3.55	62.905	63.405	-0.50
4.04	62.905	63.515	-0.61
5.6	63.422	63.572	-0.15
7.1	63.482	63.632	-0.15
8.5	63.538	63.688	-0.15

CH 232.182

-8.5	63.911	64.061	-0.15
-7.1	63.855	64.005	-0.15
-5.6	63.795	63.945	-0.15
-4.04	63.279	63.889	-0.61
-3.55	63.279	63.779	-0.50
0	63.386	63.886	-0.50
3.55	63.279	63.779	-0.50
4.04	63.279	63.889	-0.61
5.6	63.795	63.945	-0.15
7.1	63.855	64.005	-0.15
8.5	63.911	64.061	-0.15

CH 255.649

-8.5	65.182	65.332	-0.15
-7.1	65.126	65.276	-0.15
-5.6	65.026	65.176	-0.15
-4.04	64.503	65.11	-0.61
-3.55	64.5	65.0	-0.50
0	64.606	65.106	-0.50
3.55	64.5	65.0	-0.50
4.04	64.503	65.11	-0.61
5.6	65.026	65.176	-0.15
7.1	65.076	65.226	-0.15
8.5	65.126	65.276	-0.15

CH 270

-8.5	65.929	66.079	-0.15
-7.1	65.873	66.023	-0.15
-5.6	65.773	65.923	-0.15
-4.04	65.247	65.857	-0.61
-3.55	65.247	65.747	-0.50
0	65.353	65.853	-0.50
3.55	65.247	65.747	-0.50
4.04	65.247	65.857	-0.61
5.6	65.773	65.923	-0.15
7.1	65.823	65.973	-0.15
8.5	65.929	66.079	-0.15

CH 285

-8.5	66.709	66.859	-0.15
-7.1	66.653	66.803	-0.15
-5.6	66.553	66.703	-0.15
-4.04	66.027	66.637	-0.61
-3.55	66.027	66.527	-0.50
0	66.133	66.633	-0.50
3.55	66.027	66.527	-0.50
4.04	66.027	66.637	-0.61
5.6	66.553	66.703	-0.15
7.1	66.603	66.753	-0.15
8.5	66.709	66.859	-0.15

CH 295.698

-8.5	67.241	67.391	-0.15
-7.1	67.185	67.335	-0.15
-5.6	67.085	67.235	-0.15
-4.04	66.559	67.189	-0.61
-3.55	66.559	67.079	-0

-8.5	64.32	64.47	65.338	65.338	66.001	-8.5	66.202	66.332	66.332	66.217	67.387	67.24
-3	64.33	64.48	65.339	65.339	65.981	-3	66.192	66.322	66.322	67.197	67.337	67.24
-7.1	64.264	64.414	65.320	65.320	65.982	-7.1	66.186	66.316	66.316	67.191	67.331	67.24
-5.6	64.204	64.354	65.072	65.222	65.935	-5.6	66.086	66.236	66.236	67.101	67.251	67.24
-4.04	63.838	64.298	64.566	65.186	65.829	-4.04	65.57	66.18	66.18	66.584	67.194	67.18
-3.55	63.838	64.188	64.566	65.066	65.718	-3.55	65.57	66.07	66.07	66.584	67.044	67.08
0	63.794	64.294	64.562	65.162	65.825	0	65.676	66.176	66.176	66.691	67.191	67.19
3.55	63.838	64.188	64.566	65.066	65.718	3.55	65.57	66.07	66.07	66.584	67.084	67.12
4	63.838	64.188	64.566	65.066	65.718	4	65.57	66.07	66.07	66.584	67.044	67.08
5.6	64.204	64.354	65.072	65.222	65.935	5.6	66.086	66.236	66.236	67.101	67.251	67.24
7.1	64.264	64.414	65.320	65.320	65.982	7.1	66.186	66.316	66.316	67.191	67.331	67.3
8	64.3	64.45	65.168	65.318	65.981	8	66.192	66.322	66.322	67.197	67.337	67.3
8.5	64.32	64.47	65.338	65.338	66.001	8.5	66.202	66.332	66.332	67.217	67.367	67.3

CH 15

CH 30

CH 39.803

CH 45

CH 60

The figure displays five cross-section diagrams of a road, each showing the road profile and existing ground elevations. The diagrams are oriented with the road on the left and the datum on the right. The diagrams are labeled with 'CH' and a station number. The diagrams are oriented with the road on the left and the datum on the right. The diagrams are labeled with 'CH' and a station number.

CH 135

Station	Left Side Elevation	Right Side Elevation
8.5	69.64	69.79
8	69.62	69.77
7.1	69.584	69.734
5.6	69.524	69.674
4.04	69.008	69.614
4	69.008	69.614
3.55	69.008	69.508
0	69.114	69.614

CH 105

Station	Left Side Elevation	Right Side Elevation
8.5	69.09	69.24
8	69.07	69.22
7.1	69.034	69.184
5.6	69.974	69.124
4.04	68.458	69.068
4	68.458	69.068
3.55	68.458	68.958
0	68.564	69.064

CH 90

Station	Left Side Elevation	Right Side Elevation
8.5	68.662	68.812
8	68.642	68.792
7.1	68.606	68.756
5.6	68.546	68.696
4.04	68.03	68.64
4	68.03	68.64
3.55	68.03	68.53
0	68.137	68.637

CH 81.862

Station	Left Side Elevation	Right Side Elevation
8.5	68.231	68.381
8	68.211	68.361
7.1	68.175	68.325
5.6	68.115	68.265
4.04	67.598	68.208
4	67.598	68.208
3.55	67.598	68.088
0	67.705	68.205

ROAD 16 CH 75

Station	Left Side Elevation	Right Side Elevation
8.5	68.231	68.381
8	68.211	68.361
7.1	68.175	68.325
5.6	68.115	68.265
4.04	67.598	68.208
4	67.598	68.208
3.55	67.598	68.088
0	67.705	68.205

[illegible]

NOTE
DENOTES PARK

DATE: 16.07.18 REF: 20467-4



AZIMUTH:
MGA

DATUM:
AHD

ORIGIN:



THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

PLAN No:		A
110358/CC415		
FILE No: 110358CC415		
SHEET SIZE:		A1 ORIGINAL

DESIGN SURFACE LEVEL	WAE	EXISTING SURFACE LEVEL	OFFSET
68.566		68.406	-5.2
68.575		68.415	-4.04
68.584		68.424	-4.04
68.593		68.433	-4.04
68.602		68.442	-4.04
68.611		68.451	-4.04
68.620		68.460	-4.04
68.629		68.469	-4.04
68.638		68.478	-4.04
68.647		68.487	-4.04
68.656		68.496	-4.04
68.665		68.505	-4.04
68.674		68.514	-4.04
68.683		68.523	-4.04
68.692		68.532	-4.04
68.701		68.541	-4.04
68.710		68.550	-4.04
68.719		68.559	-4.04
68.728		68.568	-4.04
68.737		68.577	-4.04
68.746		68.586	-4.04
68.755		68.595	-4.04
68.764		68.604	-4.04
68.773		68.613	-4.04
68.782		68.622	-4.04
68.791		68.631	-4.04
68.800		68.640	-4.04
68.809		68.649	-4.04
68.818		68.658	-4.04
68.827		68.667	-4.04
68.836		68.676	-4.04
68.845		68.685	-4.04
68.854		68.694	-4.04
68.863		68.703	-4.04
68.872		68.712	-4.04
68.881		68.721	-4.04
68.890		68.730	-4.04
68.899		68.739	-4.04
68.908		68.748	-4.04
68.917		68.757	-4.04
68.926		68.766	-4.04
68.935		68.775	-4.04
68.944		68.784	-4.04
68.953		68.793	-4.04
68.962		68.802	-4.04
68.971		68.811	-4.04
68.980		68.820	-4.04
68.989		68.829	-4.04
68.998		68.838	-4.04
69.007		68.847	-4.04
69.016		68.856	-4.04
69.025		68.865	-4.04
69.034		68.874	-4.04
69.043		68.883	-4.04
69.052		68.892	-4.04
69.061		68.901	-4.04
69.070		68.910	-4.04
69.079		68.919	-4.04
69.088		68.928	-4.04
69.097		68.937	-4.04
69.106		68.946	-4.04
69.115		68.955	-4.04
69.124		68.964	-4.04
69.133		68.973	-4.04
69.142		68.982	-4.04
69.151		68.991	-4.04
69.160		69.000	-4.04
69.169		69.009	-4.04
69.178		69.018	-4.04
69.187		69.027	-4.04
69.196		69.036	-4.04
69.205		69.045	-4.04
69.214		69.054	-4.04
69.223		69.063	-4.04
69.232		69.072	-4.04
69.241		69.081	-4.04
69.250		69.090	-4.04
69.259		69.099	-4.04
69.268		69.108	-4.04
69.277		69.117	-4.04
69.286		69.126	-4.04
69.295		69.135	-4.04
69.304		69.144	-4.04
69.313		69.153	-4.04
69.322		69.162	-4.04
69.331		69.171	-4.04
69.340		69.180	-4.04
69.349		69.189	-4.04
69.358		69.198	-4.04
69.367		69.207	-4.04
69.376		69.216	-4.04
69.385		69.225	-4.04
69.394		69.234	-4.04
69.403		69.243	-4.04
69.412		69.252	-4.04
69.421		69.261	-4.04
69.430		69.270	-4.04
69.439		69.279	-4.04
69.448		69.288	-4.04
69.457		69.297	-4.04
69.466		69.306	-4.04
69.475		69.315	-4.04
69.484		69.324	-4.04
69.493		69.333	-4.04
69.502		69.342	-4.04
69.511		69.351	-4.04
69.520		69.360	-4.04
69.529		69.369	-4.04
69.538		69.378	-4.04
69.547		69.387	-4.04
69.556		69.396	-4.04
69.565		69.405	-4.04
69.574		69.414	-4.04
69.583		69.423	-4.04
69.592		69.432	-4.04
69.601		69.441	-4.04
69.610		69.450	-4.04
69.619		69.459	-4.04
69.628		69.468	-4.04
69.637		69.477	-4.04
69.646		69.486	-4.04
69.655		69.495	-4.04
69.664		69.504	-4.04
69.673		69.513	-4.04
69.682		69.522	-4.04
69.691		69.531	-4.04
69.700		69.540	-4.04
69.709		69.549	-4.04
69.718		69.558	-4.04
69.727		69.567	-4.04
69.736		69.576	-4.04
69.745		69.585	-4.04
69.754		69.594	-4.04
69.763		69.603	-4.04
69.772		69.612	-4.04
69.781		69.621	-4.04
69.790		69.630	-4.04
69.799		69.639	-4.04
69.808		69.648	-4.04
69.817		69.657	-4.04
69.826		69.666	-4.04
69.835		69.675	-4.04
69.844		69.684	-4.04
69.853		69.693	-4.04
69.862		69.702	-4.04
69.871		69.711	-4.04
69.880		69.720	-4.04
69.889		69.729	-4.04
69.898		69.738	-4.04
69.907		69.747	-4.04
69.916		69.756	-4.04
69.925		69.765	-4.04
69.934		69.774	-4.04
69.943		69.783	-4.04
69.952		69.792	-4.04
69.961		69.801	-4.04
69.970		69.810	-4.04
69.979		69.819	-4.04
69.988		69.828	-4.04
69.997		69.837	-4.04
70.006		69.846	-4.04
70.015		69.855	-4.04
70.024		69.864	-4.04
70.033		69.873	-4.04
70.042		69.882	-4.04
70.051		69.891	-4.04
70.060		69.900	-4.04
70.069		69.909	-4.04
70.078		69.918	-4.04
70.087		69.927	-4.04
70.096		69.936	-4.04
70.105		69.945	-4.04
70.114		69.954	-4.04
70.123		69.963	-4.04
70.132		69.972	-4.04
70.141		69.981	-4.04
70.150		69.990	-4.04
70.159		69.999	-4.04
70.168		70.008	-4.04
70.177		70.017	-4.04
70.186		70.026	-4.04
70.195		70.035	-4.04
70.204		70.044	-4.04
70.213		70.053	-4.04
70.222		70.062	-4.04
70.231		70.071	-4.04
70.240		70.080	-4.04
70.249		70.089	-4.04
70.258		70.098	-4.04
70.267		70.107	-4.04
70.276		70.116	-4.04
70.285		70.125	-4.04
70.294		70.134	-4.04
70.303		70.143	-4.04
70.312		70.152	-4.04
70.321		70.161	-4.04
70.330		70.170	-4.04
70.339		70.179	-4.04
70.348		70.188	-4.04
70.357		70.197	-4.04
70.366		70.206	-4.04
70.375		70.215	-4.04
70.384		70.224	-4.04
70.393		70.233	-4.04
70.402		70.242	-4.04
70.411		70.251	-4.04
70.420		70.260	-4.04
70.429		70.269	-4.04
70.438		70.278	-4.04
70.447		70.287	-4.04
70.456		70.296	-4.04
70.465		70.305	-4.04
70.474		70.314	-4.04
70.483		70.323	-4.04
70.492		70.332	-4.04
70.501		70.341	-4.04
70.510		70.350	-4.04
70.519		70.359	-4.04
70.528		70.368	-4.04
70.537		70.377	-4.04
70.546		70.386	-4.04
70.555		70.395	-4.04
70.564		70.404	-4.04
70.573		70.413	-4.04
70.582		70.422	-4.04
70.591		70.431	-4.04
70.600		70.440	-4.04
70.609		70.449	-4.04
70.618		70.458	-4.04
70.627		70.467	-4.04
70.636		70.476	-4.04
70.645		70.485	-4.04
70.654		70.494	-4.04
70.663		70.503	-4.04
70.672		70.512	-4.04
70.681		70.521	-4.04
70.690		70.530	-4.04
70.699		70.539	-4.04
70.708		70.548	-4.04
70.717		70.557	-4.04
70.726		70.566	-4.04
70.735		70.575	-4.04
70.744		70.584	-4.04
70.753		70.593	-4.04
70.762		70.602	-4.04
70.771		70.611	-4.04
70.780		70.620	-4.04
70.789		70.629	-4.04
70.798		70.638	-4.04
70.807		70.647	-4.04
70.816		70.656	-4.04
70.825		70.665	-4.04
70.834		70.674	-4.04
70.843		70.683	-4.04
70.852		70.692	-4.04
70.861		70.701	-4.04
70.870		70.710	-4.04
70.879		70.719	-4.04
70.888		70.728	-4.04
70.897		70.737	-4.04
70.906		70.746	-4.04
70.915		70.755	-4.04
70.924		70.764	-4.04
70.933		70.773	-4.04
70.942		70.782	-4.04
70.951		70.791	-4.04
70.960		70.800	-4.04
70.969		70.809	-4.04
70.978		70.818	-4.04
70.987		70.827	-4.04
70.996		70.836	-4.04
71.005		70.845	-4.04
71.014		70.854	-4.04
71.023		70.863	-4.04
71.032		70.872	-4.04
71.041		70.881	-4.04
71.050		70.890	-4.04
71.059		70.899	-4.04
71.068		70.908	-4.04
71.077		70.917	-4.04
71.086		70.926	-4.04
71.095		70.935	-4.04
71.104		70.944	-4.04
71.113		70.953	-4.04
71.122		70.962	-4.04
71.131		70.971	-4.04
71.140		70.980	-4.04
71.149		70.989	-4.04
71.158		70.998	-4.04
71.167		71.007	-4.04
71.176		71.016	-4.04
71.185		71.025	-4.04
71.194		71.034	-4.04
71.203		71.043	-4.04
71.212		71.052	-4.04
71.221		71.061	-4.04
71.230		71.070	-4.04
71.239		71.079	-4.04
71.248		71.088	-4.04
71.257		71.097	-4.04
71.266		71.106	-4.04
71.275		71.115	-4.04
71.284		71.124	-4.04
71.293		71.133	-4.04
71.302		71.142	-4.04
71.311		71.151	-4.04
71.320		71.160	-4.04
71.329		71.169	-4.04
71.338		71.178	-4.04
71.347		71.187	-4.04
71.356		71.196	-4.04
71.365		71.205	-4.04
71.374		71.214	-4.04
71.383		71.	

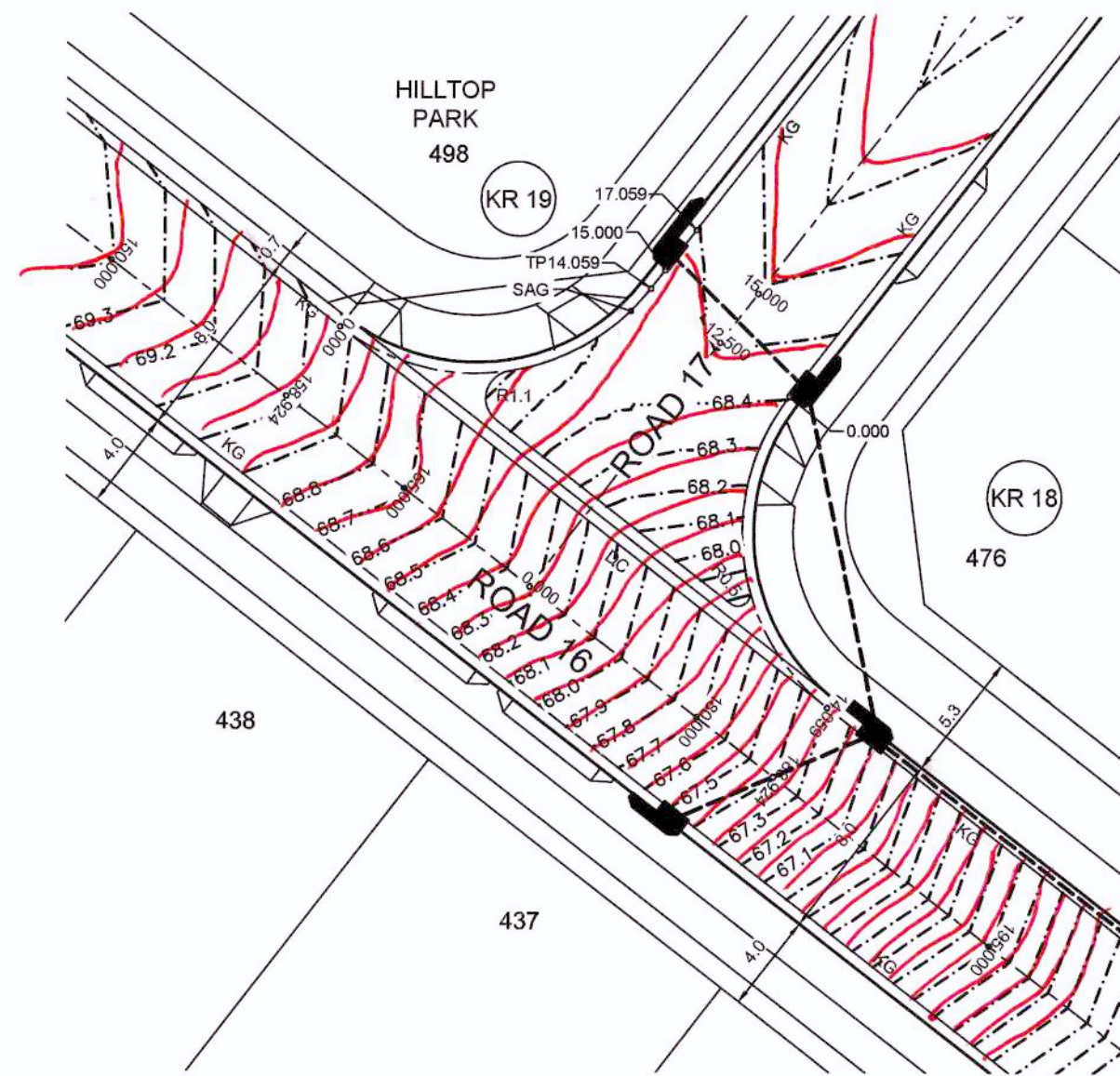
WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor

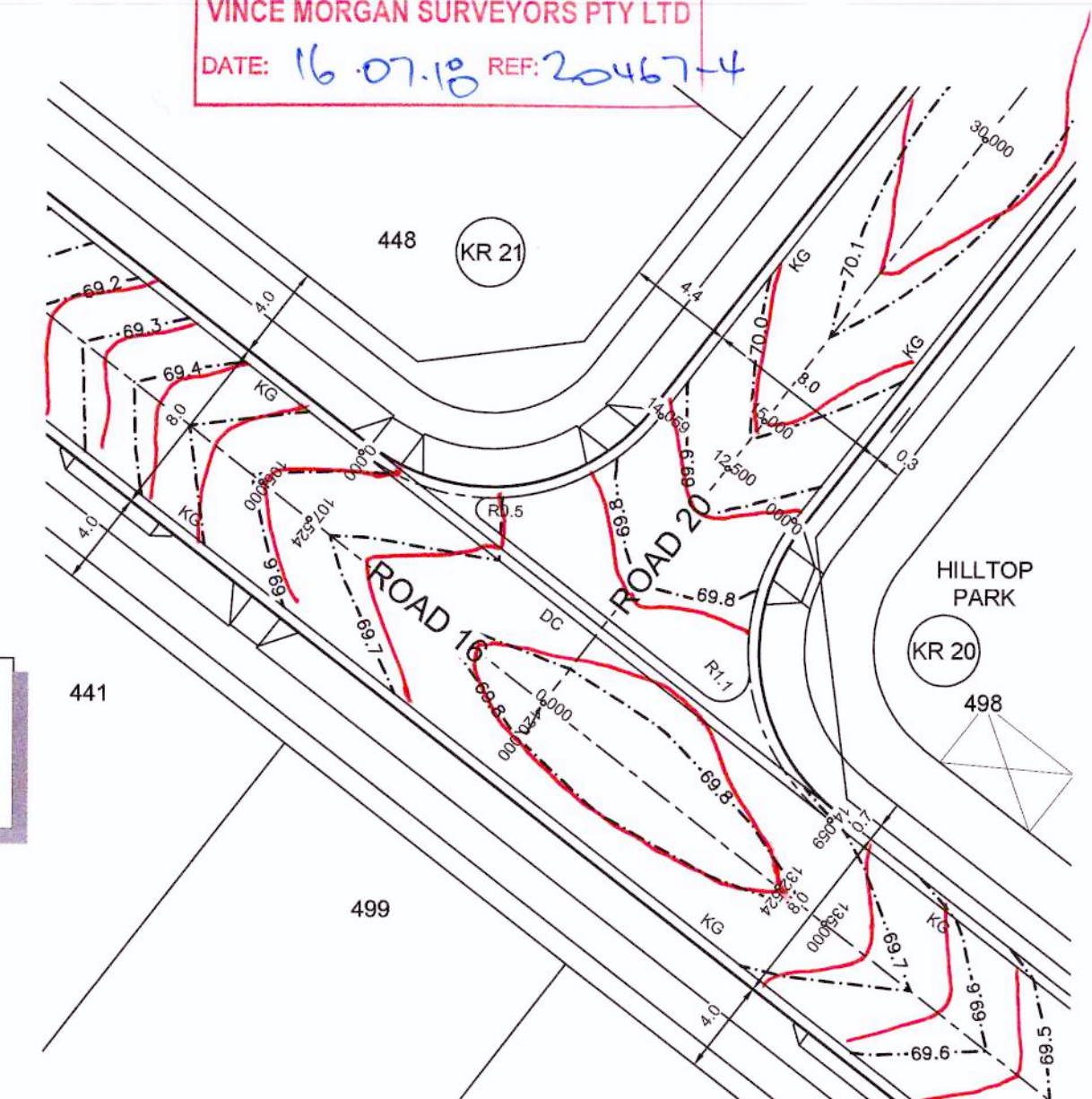
VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

DESIGN LEVELS AND SETOUT
ARE TO LIP OF GUTTER



PLAN
SCALE 1:200



PLAN
SCALE 1:200

DESIGN GRADELINE VERTICAL GEOMETRY					
DATUM 65.0					
DESIGN	68.41	68.24	67.95	67.61	67.32
LIP GRADING	68.405	68.233	67.94	67.604	67.289
ROAD CHAINAGE	12.5	3.515	7.029	10.544	14.059
CHAINAGE	0	3.515	7.029	10.544	14.059

KR 18
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

DESIGN GRADELINE VERTICAL GEOMETRY					
DATUM 66.0					
DESIGN	68.93	68.81	68.60	68.49	68.33
LIP GRADING	68.925	68.782	68.583	68.464	68.333
ROAD CHAINAGE	158.924	168.81	178.60	188.49	198.33
CHAINAGE	0	2.99	7.99	12.99	17.99

KR 19
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

DESIGN GRADELINE VERTICAL GEOMETRY					
DATUM 67.0					
DESIGN	69.81	69.65	69.48	69.31	69.14
LIP GRADING	69.803	69.657	69.512	69.367	69.222
ROAD CHAINAGE	12.500	0.084	2.484	4.884	14.059
CHAINAGE	0	0.084	2.484	4.884	14.059

KR 20
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

DESIGN GRADELINE VERTICAL GEOMETRY					
DATUM 67.0					
DESIGN	69.57	69.45	69.32	69.19	69.06
LIP GRADING	69.57	69.45	69.32	69.19	69.06
ROAD CHAINAGE	107.524	107.524	107.524	107.524	107.524
CHAINAGE	0	3.515	7.029	10.544	14.059

KR 21
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

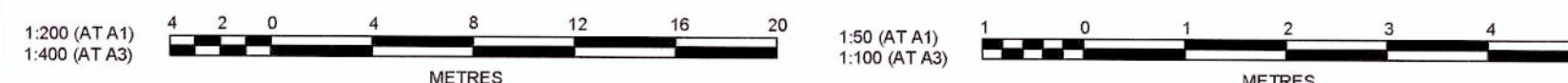
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290517.24	6260497.88	217°48'05.98"		
7.03	290511.76	6260490.81		-8.95	14.06
14.06	290518.83	6260485.33	127°48'05.88"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290499.08	6260500.65	127°48'05.88"		
7.03	290506.15	6260495.16		-8.95	14.06
14.06	290511.63	6260502.24	37°48'05.98"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290476.63	6260529.39	217°48'06.09"		
7.03	290471.15	6260522.32		-8.95	14.06
14.06	290478.22	6260516.83	127°48'05.88"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290458.46	6260532.15	127°48'05.88"		
7.03	290465.54	6260526.67		-8.95	14.06
14.06	290471.02	6260533.74	37°48'06.09"		

LDC Land Development Certificates
These plans are referred to in certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

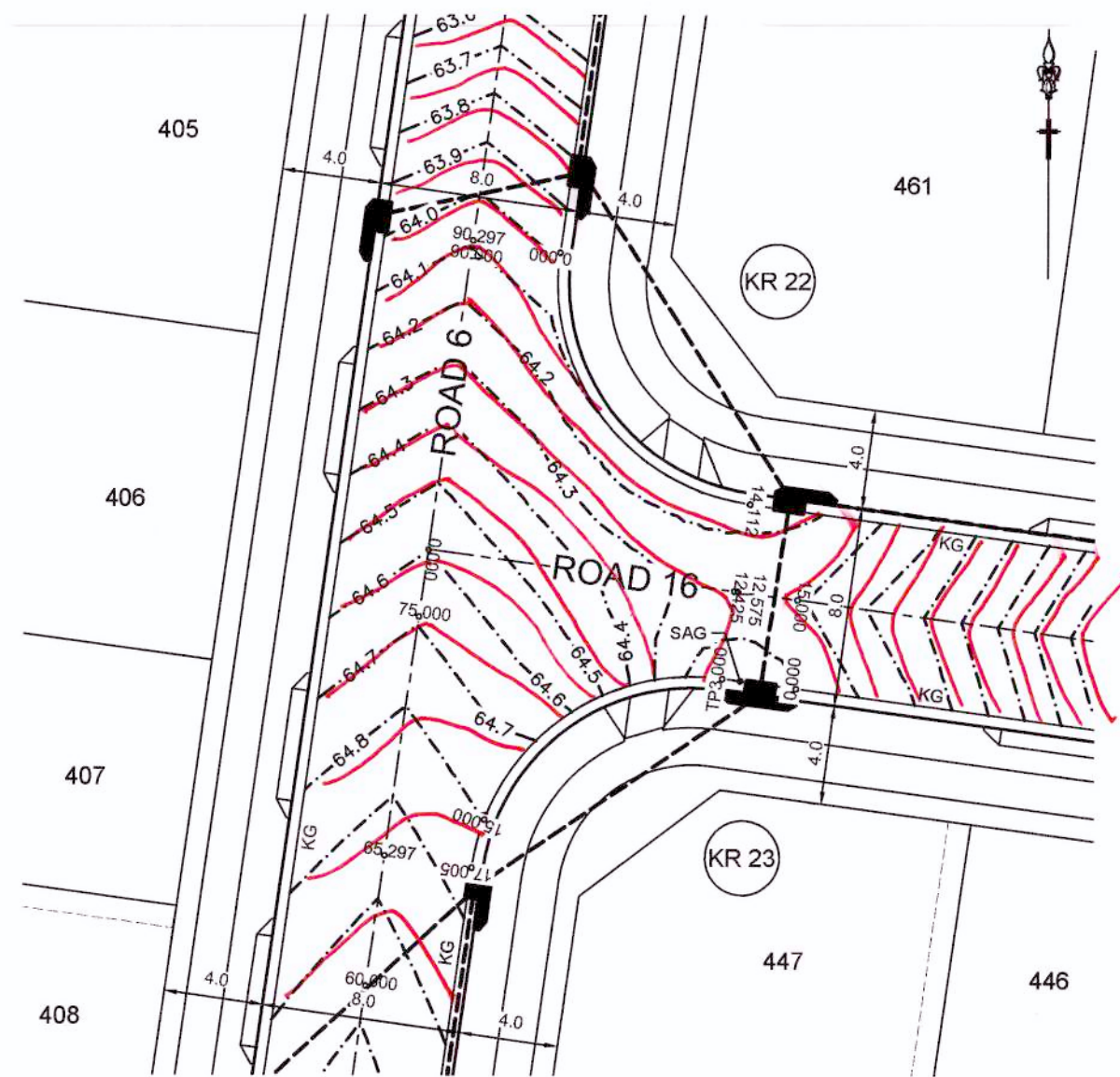
CLIENT: **LEGACYPROPERTY**
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
KERB RETURNS

PLAN No:
110358/CC417 A
FILE No: 110358CC417
SHEET SIZE: A1 ORIGINAL

DESIGN LEVELS AND SETOUT
ARE TO LIP OF GUTTER



PLAN
SCALE 1:200

DESIGN GRADELINE VERTICAL GEOMETRY	
DATUM 62.0	
DESIGN	2.98
LIP GRADING	0.99
ROAD CHAINAGE	0 90.297 14.112 12.575
CHAINAGE	0 0.112 2.112 4.112 14.112

KR 22

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

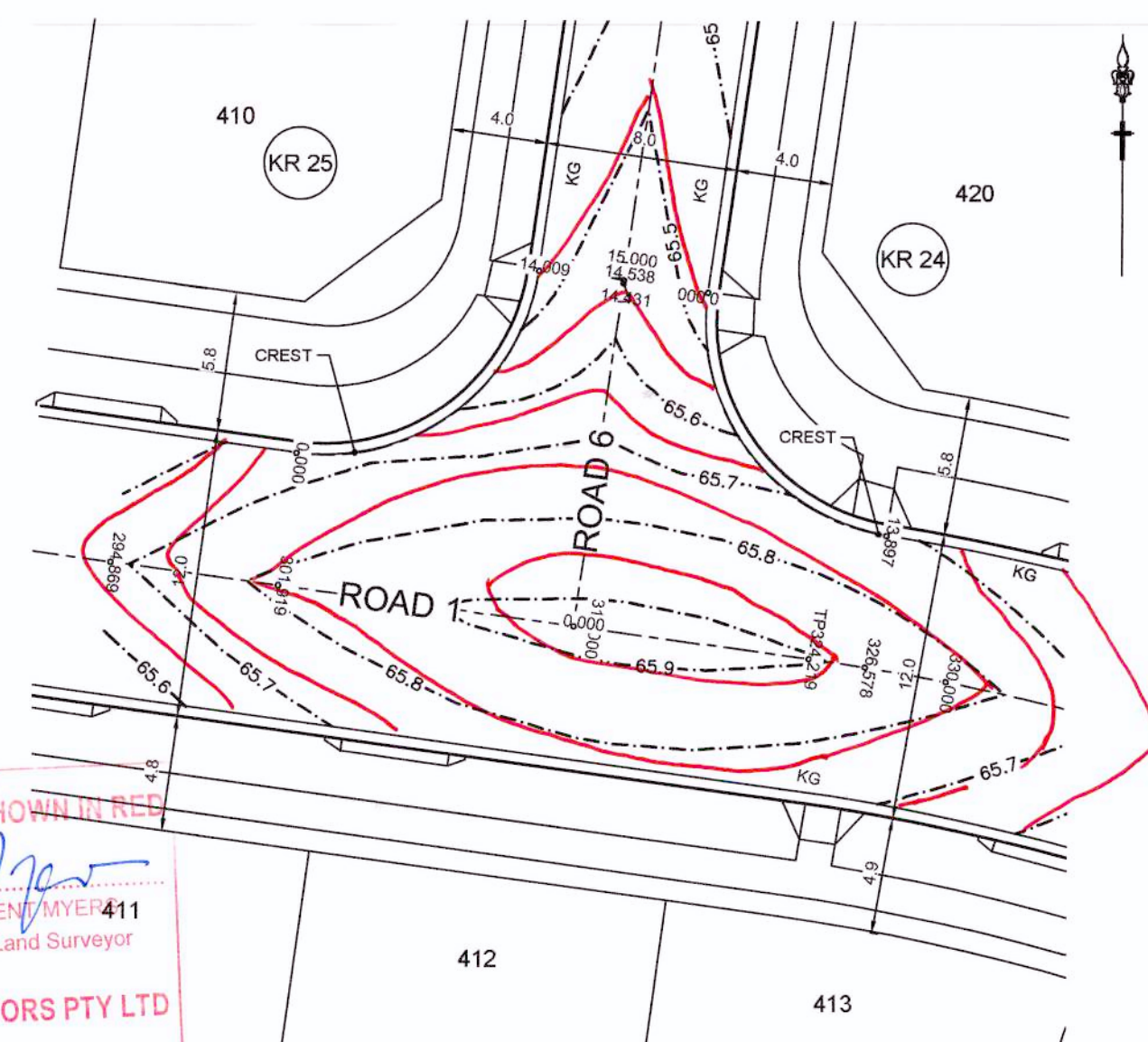
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290363.49	6260578.42	188°01'22.74"		
7.06	290362.23	6260569.51		-8.95	14.11
14.11	290371.16	6260568.31	97°40'44.61"		

DESIGN GRADELINE VERTICAL GEOMETRY	
DATUM 62.0	
DESIGN	3.5
LIP GRADING	7.3
ROAD CHAINAGE	0 12.425 17.005
CHAINAGE	0 0.854 3.354 5.854 5.951 9.451 12.951 15 17.005

KR 23

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290373.03	6260560.89	277°40'43.11"		
3	290370.06	6260561.29	277°40'43.11"		
10	290361.24	6260562.48		-8.95	14
17	290360	6260553.67	188°01'22.74"		



PLAN
SCALE 1:200

DESIGN GRADELINE VERTICAL GEOMETRY	
DATUM 63.0	
DESIGN	1.000
LIP GRADING	0.99
ROAD CHAINAGE	0 14.538 13.897 326.578 65.717
CHAINAGE	0 3.474 6.949 10.423 12.304 13.897

KR 24

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290352.92	6260503.41	188°01'22.74"		
6.95	290351.69	6260494.7		-8.95	13.9
13.9	290360.37	6260493.32	99°03'19.44"		

DESIGN GRADELINE VERTICAL GEOMETRY	
DATUM 63.0	
DESIGN	0.99
LIP GRADING	0.99
ROAD CHAINAGE	0 301.919 14.009 14.431
CHAINAGE	0 2.424 3.502 7.004 10.507 14.009

KR 25

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290335.81	6260496.67	97°42'14.87"		
7	290344.63	6260495.48		-8.95	14.01
14.01	290345.87	6260504.29	8°01'22.74"		

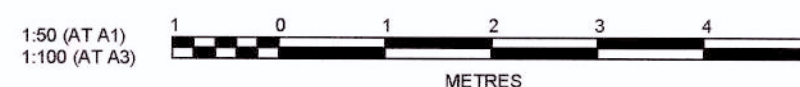
LDC

These plans are referred to in certificate no. **14838** approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

ISSUED FOR CONSTRUCTION APPROVAL

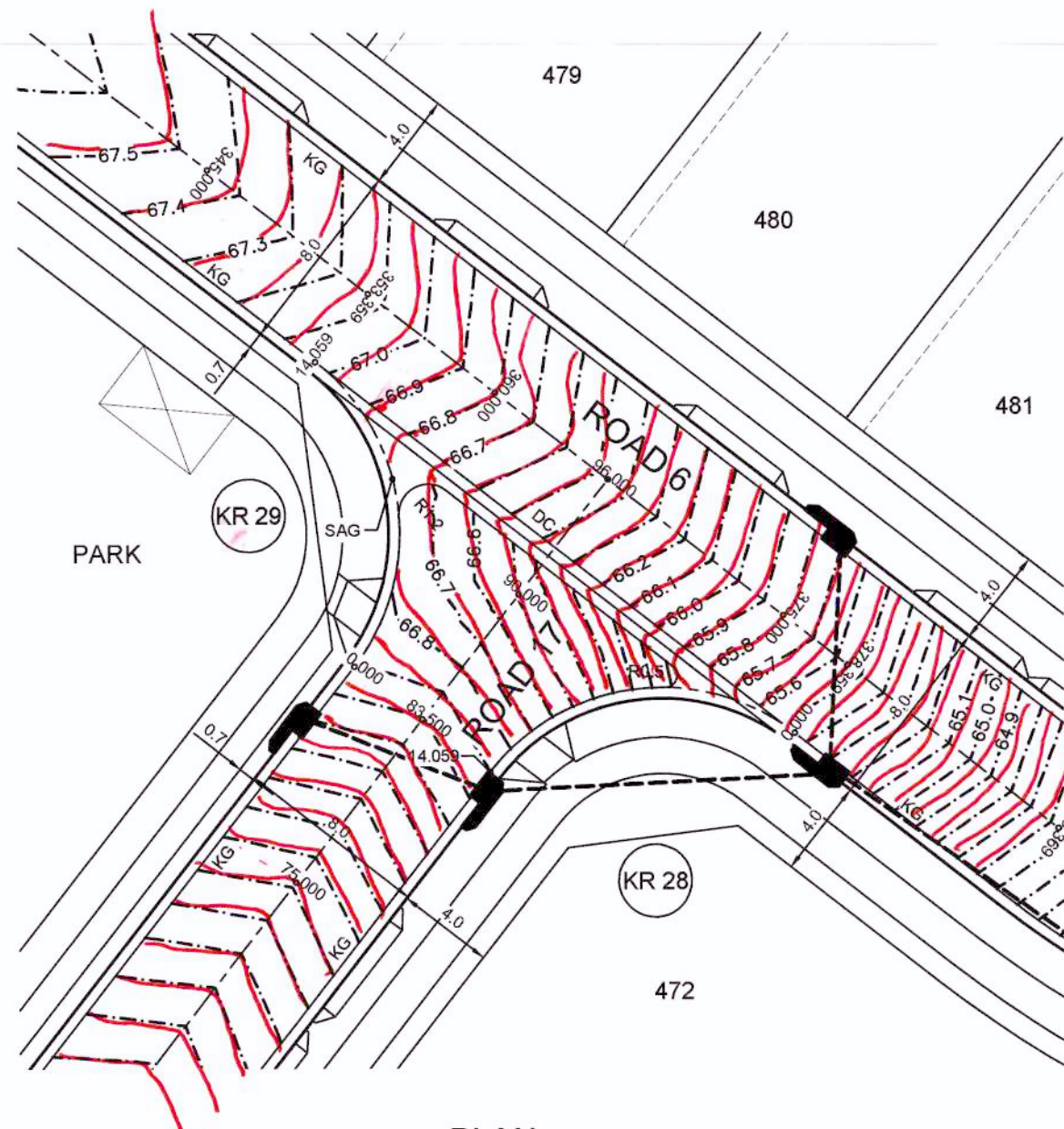
**CADDENS HILL
STAGE 4
KERB RETURNS**

PLAN No:
110358/CC418 **A**

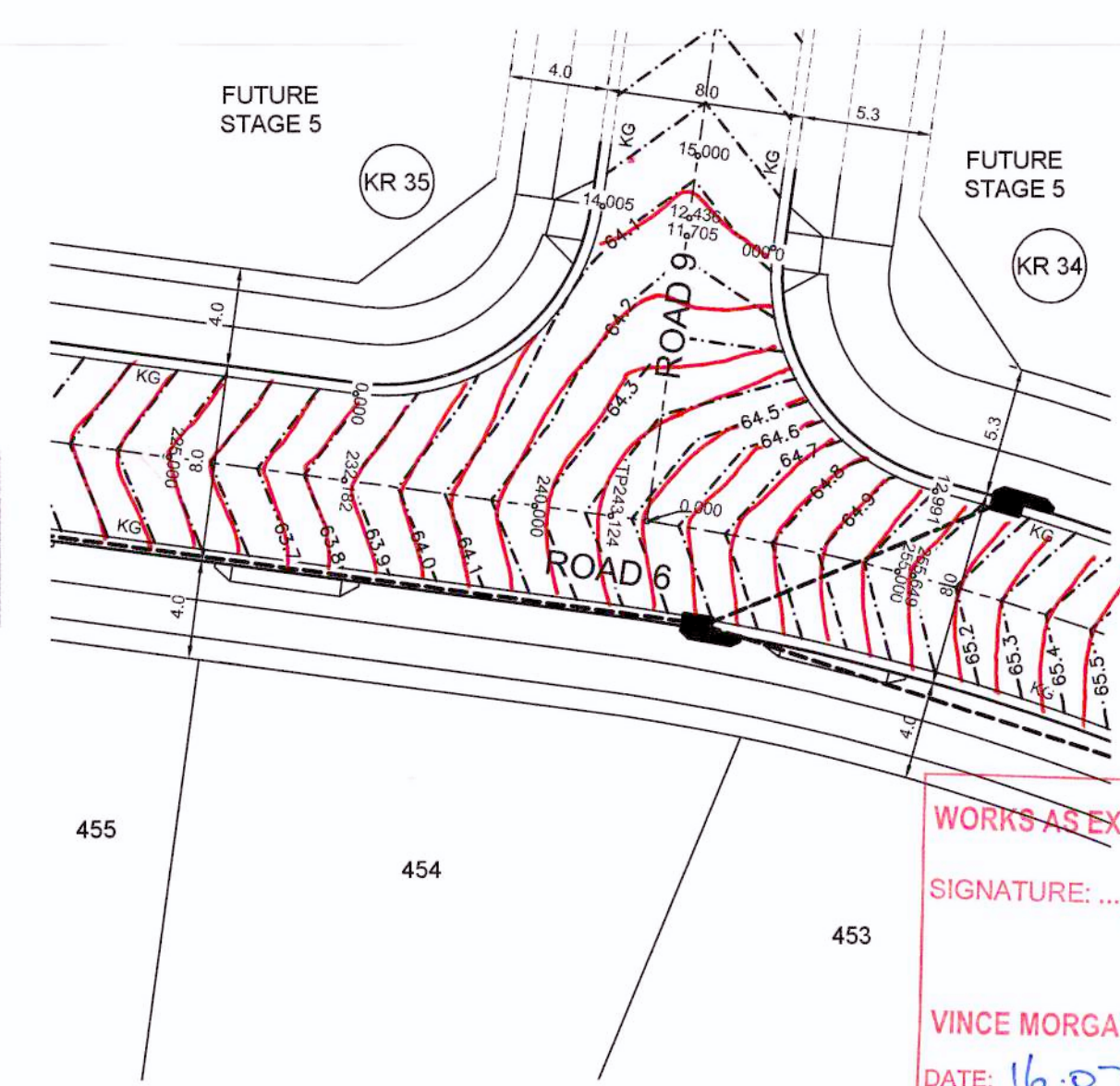
FILE No: 110358CC418

SHEET SIZE: A1 ORIGINAL

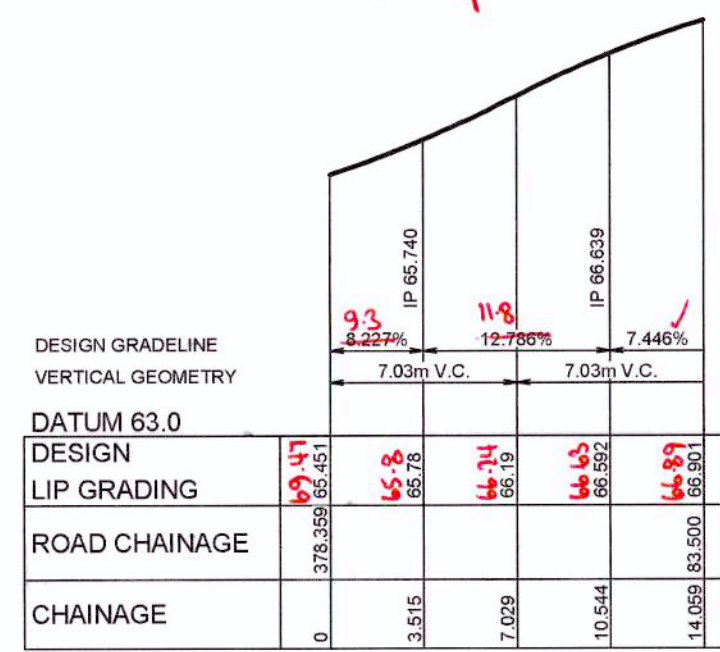
DESIGN LEVELS AND SETOUT
ARE TO LIP OF GUTTER



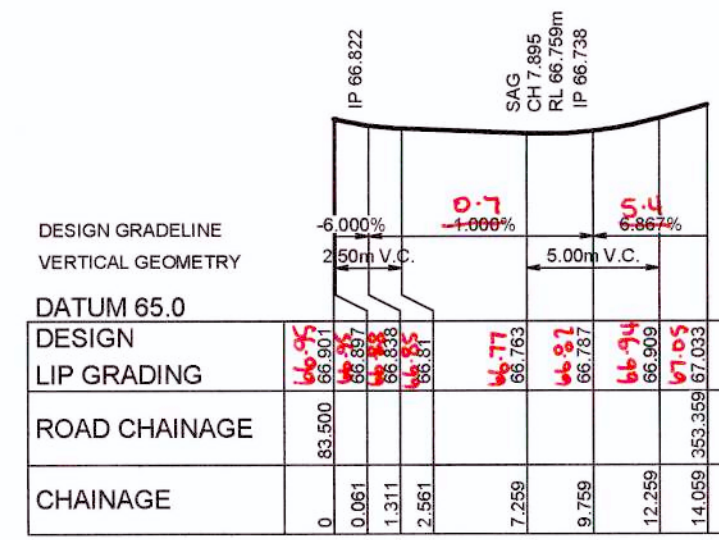
DISH CROSSING TO BE IN ACCORDANCE
WITH PCC CONSTRUCTION SPECIFICATION
STANDARD DRAWING SD1003/2 UNLESS
DIRECTED OTHERWISE BY COUNCIL
ENGINEER



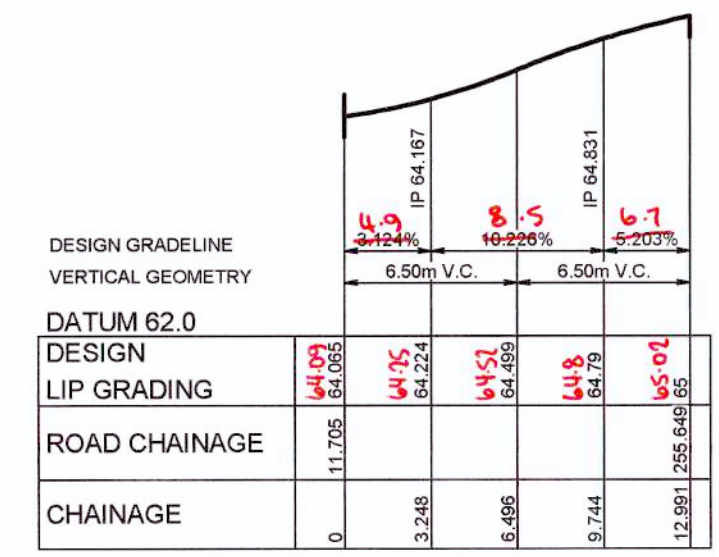
WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4



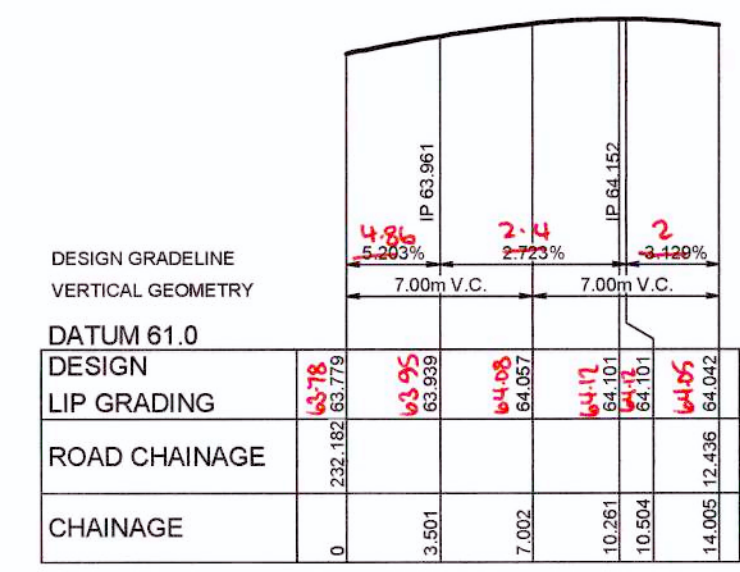
KR 28
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 29
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 34
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 35
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

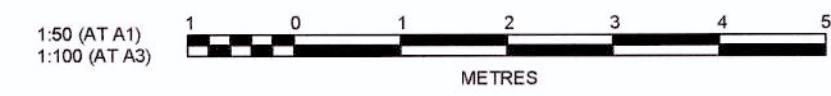
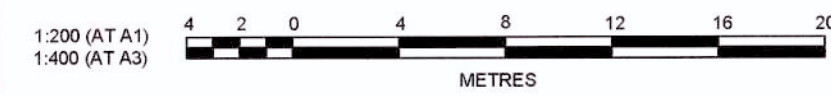
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPHAL	A LENGTH
0	290573.32	6260555.57	307°48'05.65"	-8.95	14.06
7.03	290566.25	6260561.06			
14.06	290560.76	6260553.98	217°48'05.98"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPHAL	A LENGTH
0	290555.15	6260558.34	37°48'05.98"	-8.95	14.06
7.03	290560.64	6260565.41			
14.06	290553.57	6260570.89	307°48'05.65"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPHAL	A LENGTH
0	290468.87	6260640.02	188°01'22.92"	-8.95	12.99
6.5	290467.76	6260632.15			
12.99	290475.44	6260630.12	104°51'18.30"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPHAL	A LENGTH
0	290451.88	6260634.11	97°40'44.60"	-8.95	14
7	290460.7	6260632.92			
14	290461.94	6260641.73	8°01'22.92"		

LDC These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

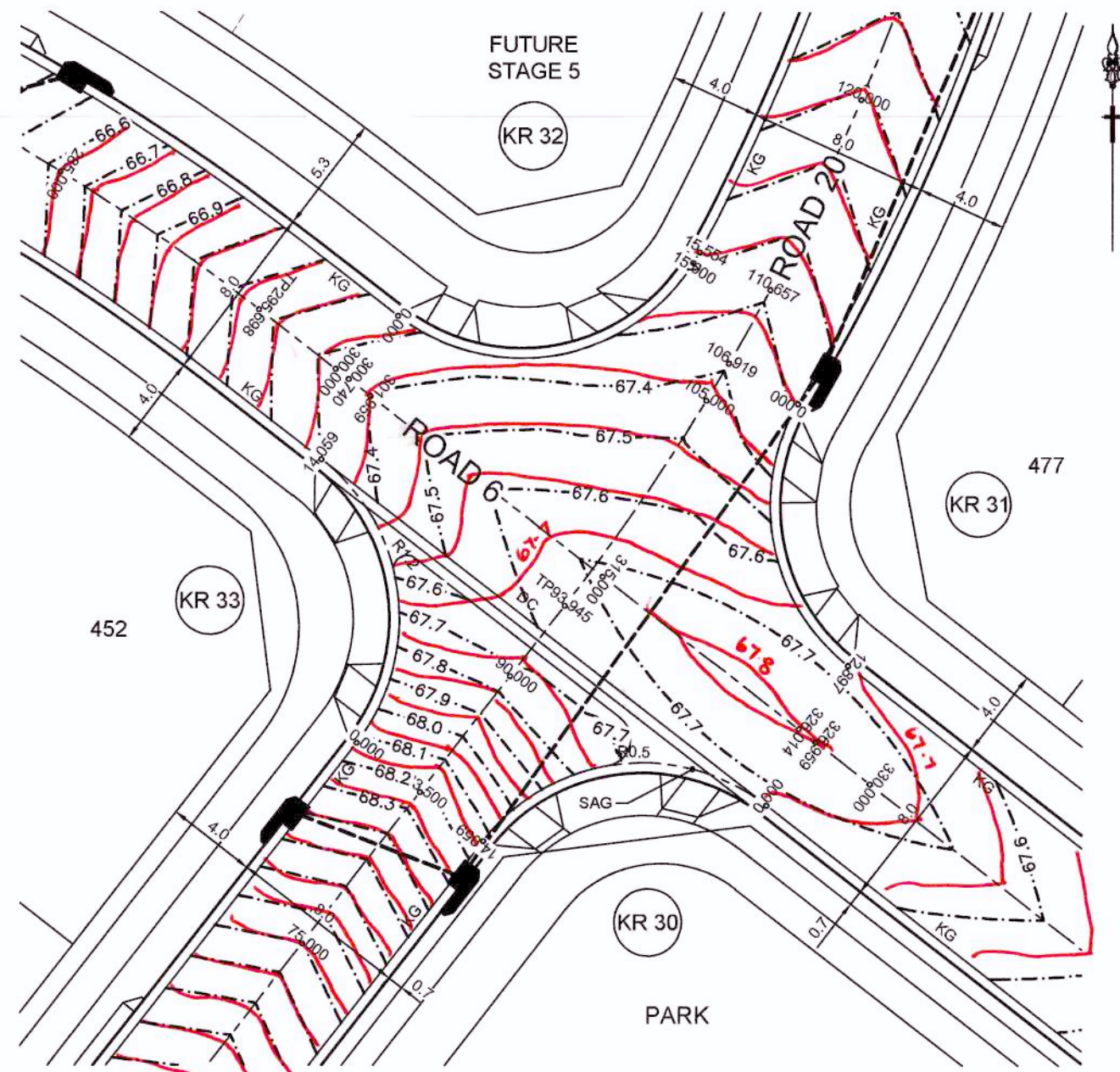
CLIENT: **LEGACYPROPERTY**
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
KERB RETURNS

PLAN No: **110358/CC419**
FILE No: 110358CC419
SHEET SIZE: A1 ORIGINAL

DESIGN LEVELS AND SETOUT
ARE TO LIP OF GUTTER



PLAN
SCALE 1:200

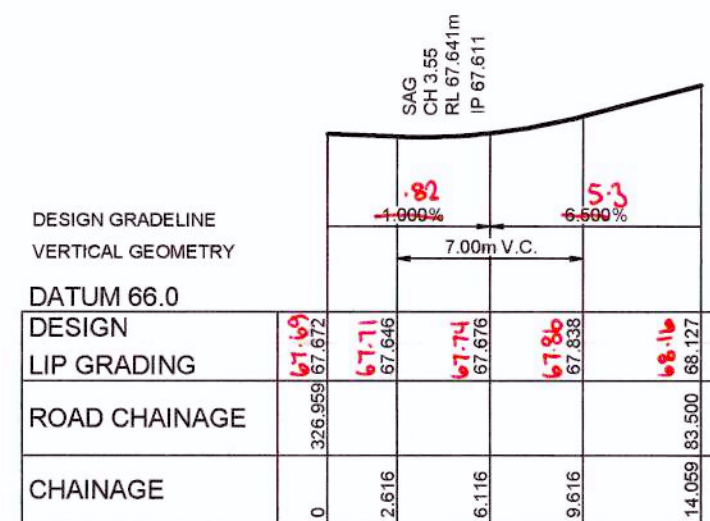
DISH CROSSING TO BE IN ACCORDANCE
WITH PCC CONSTRUCTION SPECIFICATION
STANDARD DRAWING SD1003/2 UNLESS
DIRECTED OTHERWISE BY COUNCIL
ENGINEER

WORKS AS EXECUTED SHOWN IN RED

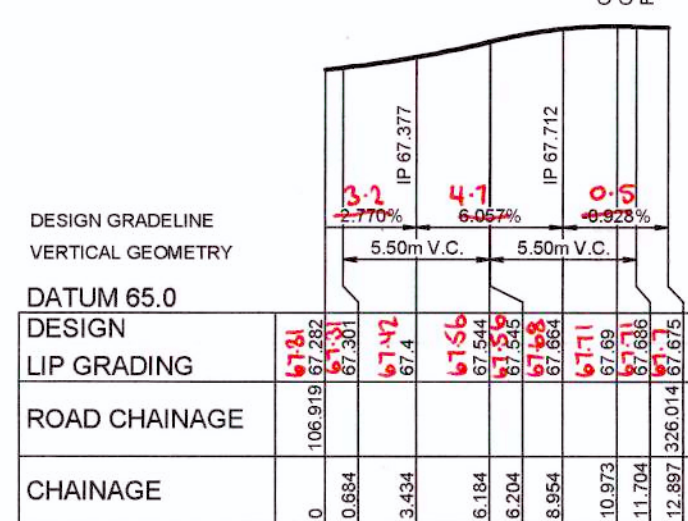
SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

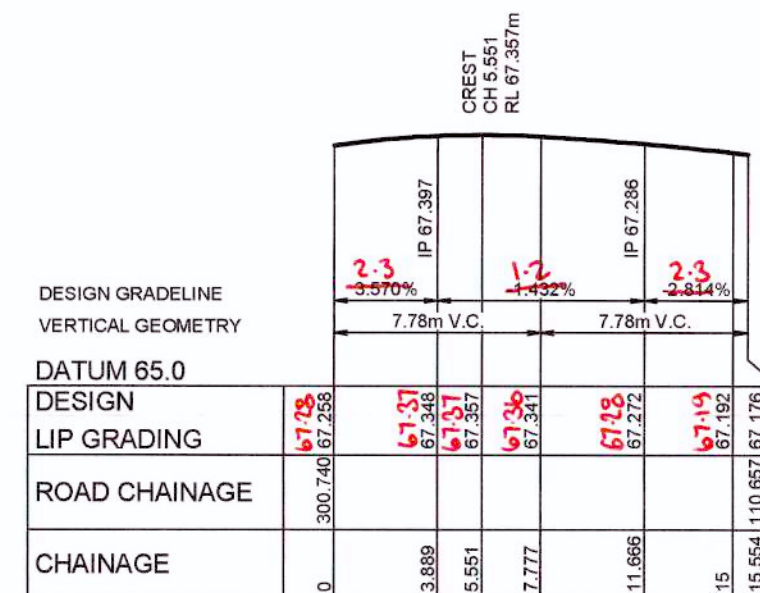
DATE: 16.07.18 REF: 20467-4



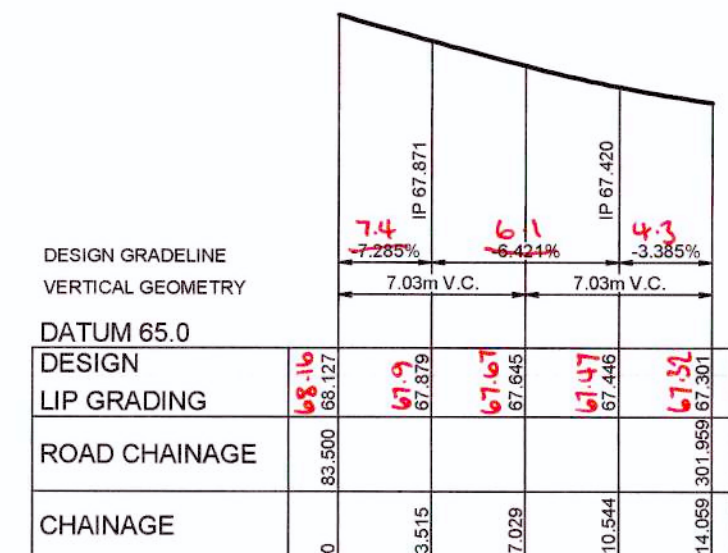
KR 30
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 31
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 32
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



KR 33
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

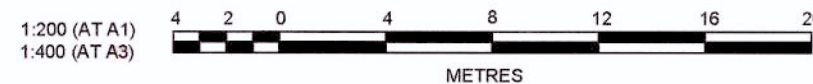
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290532.71	6260587.07	307°48'05.65"		
7.03	290525.63	6260592.56		-8.95	14.06
14.06	290520.15	6260585.49	217°48'06.09"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290534.08	6260604.86	210°22'05.68"		
6.45	290530.11	6260598.08		-8.95	12.9
12.9	290536.31	6260593.26	127°48'05.65"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290516.34	6260608.75	127°48'05.65"		
7.78	290524.71	6260602.27		-8.95	15.55
15.55	290529.71	6260611.59	28°13'36.20"		

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290514.54	6260589.84	37°48'06.09"		
7.03	290520.03	6260596.91		-8.95	14.06
14.06	290512.95	6260602.4	307°48'05.65"		

LDC These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwprince@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

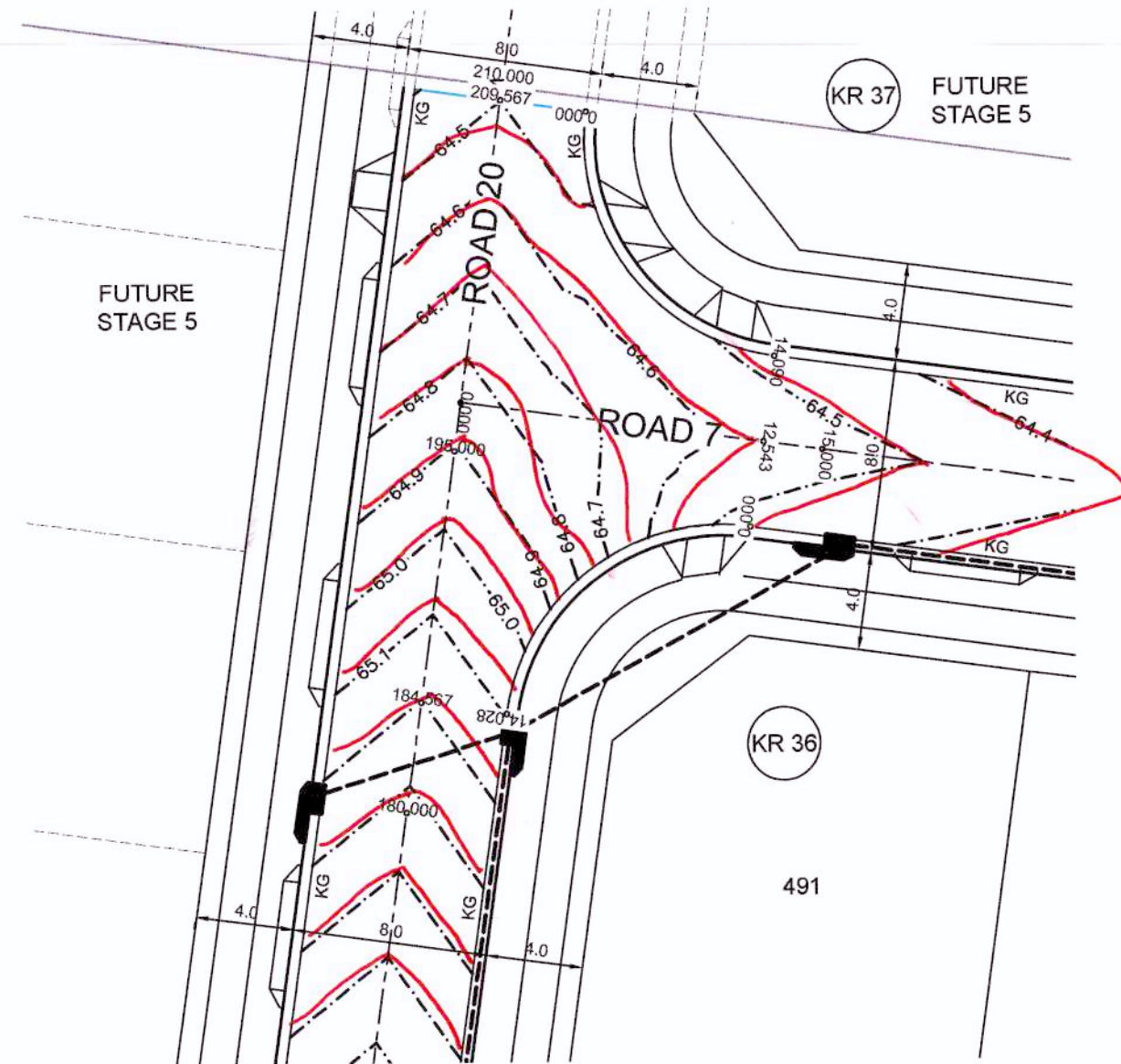
CLIENT: **LEGACYPROPERTY**
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

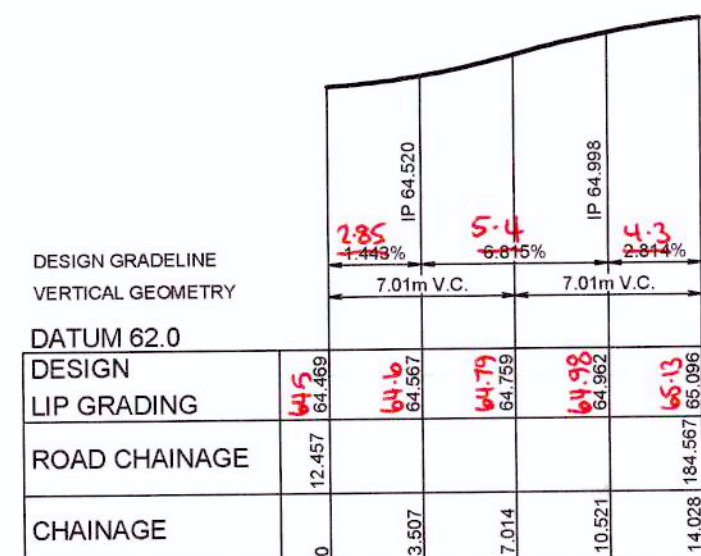
**CADDENS HILL
STAGE 4
KERB RETURNS**

PLAN No:
110358/CC420 **A**
FILE No: 110358CC420
SHEET SIZE: A1 ORIGINAL

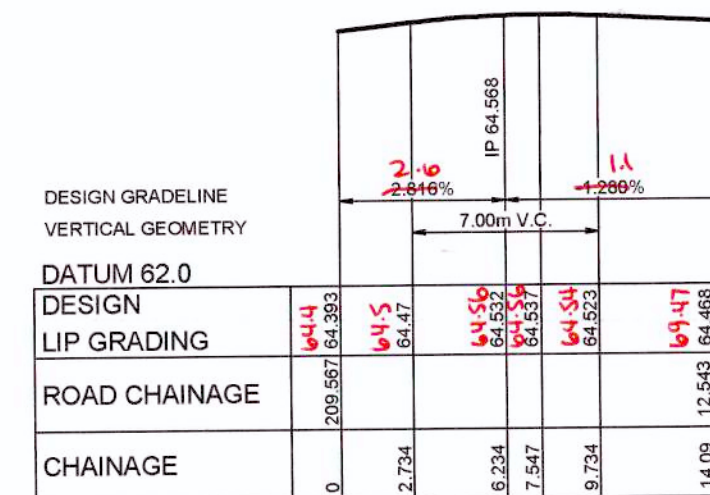
DESIGN LEVELS AND SETOUT
ARE TO LIP OF GUTTER



PLAN
SCALE 1:200



KR 36
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50



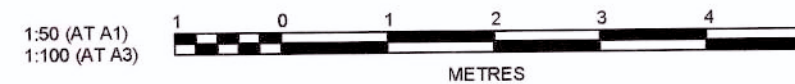
KR 37
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:50

KR 36					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290562.74	6260688.64	277°49'30.00"		
7.01	290553.91	6260689.86		-8.95	14.03
14.03	290552.66	6260681.03	188°01'23.02"		

KR 37					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPRAL	A LENGTH
0	290556.15	6260705.78	188°01'23.02"		
7.04	290554.9	6260696.89		-8.95	14.09
14.09	290563.8	6260695.67	97°49'30.00"		

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4

LDC These plans are referred to in certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH: MGA
DATUM: AHD
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
KERB RETURNS

PLAN No: 110358/CC421
FILE No: 110358CC421
SHEET SIZE: A1 ORIGINAL

Printed: 18 May, 2018 1:57:40 PM File Name: J:\110358 - OConnell Lane Caddens\03 - Stage 2\CD\CC422.dwg

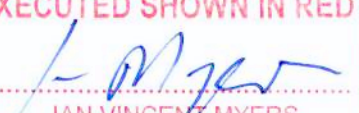


LEGEND

PROPOSED CATCHMENT

FUTURE CATCHMENT

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: 

IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

PLAN
SCALE 1:1000

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

CLIENT:



LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
CATCHMENT PLAN

PLAN No:
110358/CC422 **C**
FILE No: 110358CC422
SHEET SIZE: A1 ORIGINAL

AMENDMENT	DES	DRN	CKD	APR	DATE
C CERTIFIER COMMENTS - DRAINAGE & CATCHMENT AREA REVISED	JT	UF	MS	AM	18/05/18
B CERTIFIERS COMMENTS - CATCHMENT BOUNDARIES AREA REVISED	JT	NM	RT	MS	21/09/17
A ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

Plotted: 18 May, 2018 1:57:51 PM File Name: J:\110358 - Caddens Hill Stage 4\110358CC423.dwg

PIT SCHEDULE

PIT NAME	PIT TYPE	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
(-)	(-)				
01/1	1.8 m lintel	290389.6	6260471.15	1.507	
01/2	2.4 m lintel	290406.117	6260474.803	1.601	
01/2A	1.8 m lintel	290427.816	6260458.034	1.607	
01/3	2.4 m lintel	290453.32	6260438.255	1.673	
01/4	1.8 m lintel	290493.064	6260407.42	1.677	
01/5	1.8 m lintel	290526.114	6260381.782	1.665	EXISTING
07/1	2.4 m lintel	290440.918	6260432.683	1.5	
08/1	2.4 m lintel	290476.523	6260405.064	1.532	
13/1	2.4 m lintel	290512.283	6260503.806	1.445	
13/2	1.8 m lintel	290517.6	6260497.608	1.525	
13/3	1.8 m lintel	290520.847	6260484.331	1.616	
13/4	1.8 m lintel	290574.118	6260443.008	1.667	EXISTING
14/1	1.8 m lintel	290512.45	6260480.72	1.498	
15/1	1.8 m lintel	290567.507	6260438.011	1.484	
33/1	1.8 m lintel	290552.954	6260556.236	1.473	
33/2	1.8 m lintel	290560.719	6260553.193	1.475	
33/3	1.8 m lintel	290574.756	6260553.886	1.61	
33/4	1.8 m lintel	290588.647	6260544.073	1.609	
33/5	1.8 m lintel	290599.392	6260540.23	1.503	EXISTING
34/1	1.8 m lintel	290575.235	6260563.639	1.508	
35/1	1.8 m lintel	290511.62	6260586.811	1.472	
35/2	1.8 m lintel	290519.415	6260583.808	1.744	
35/3	1.8 m lintel	290535.424	6260606.307	1.672	
35/4	1.8 m lintel	290544.547	6260628.001	1.534	
35/5	1.8 m lintel	290549.942	6260658.497	1.544	
35/6	1.8 m lintel	290553.021	6260680.34	1.526	
35/7	1.8 m lintel	290566.383	6260687.691	1.522	
35/8	1.8 m lintel	290618.436	6260680.537	1.54	EXISTING
36/1	1.8 m lintel	290544.563	6260677.651	1.465	
37/1	1.8 m lintel	290609.384	6260689.856	1.471	
48/1	1.8 m lintel	290416.683	6260451.483	1.486	
E/1A	GSIP 600x600 IAD			0.768	
E/1	GSIP 600x600 IAD			0.773	
E/2	GSIP 600x600 IAD			0.778	
E/3	GSIP 600x600 IAD			0.857	
E/4	GSIP 600x600 IAD			0.865	
E/5	GSIP 600x600 IAD			0.872	
E/6	GSIP 600x600 IAD			0.868	
E/7	GSIP 600x600 IAD			0.895	
E/8	GSIP 900x900 IAD			3.284	EXISTING
M/1	GSIP 600x600 IAD			0.756	
M/2	GSIP 600x600 IAD			0.82	
P/1	GSIP 600x600 IAD			0.751	
P/2	GSIP 600x600 IAD			2.51	DROP UNDER PIT
P/3	JP			1.594	EXISTING
Q/1	GSIP 600x600 IAD			0.763	
Q/2	GSIP 600x600 IAD			0.774	
Q/3	JP			2.5	
R/1	GSIP 600x600 IAD			0.761	
R/2	GSIP 600x600 IAD			0.773	
R/3	GSIP 600x600 IAD			0.772	
R/4	GSIP 600x600 IAD			0.787	
R/5	GSIP 600x600 IAD			0.799	
R/6	JP			1.578	EXISTING
S/1	GSIP 600x600 IAD			0.783	
S/2	GSIP 600x600 IAD			0.862	
S/3	GSIP 600x900 IAD			0.907	
S/4	JP			0.932	
S/6	JP			1.578	EXISTING
T/6	JP			2.294	FUTURE
T/7	JP			1.782	
U/3	GSIP 900x900 IAD			2.644	
U/4	JP			1.569	

DRAINAGE SYSTEM A

PIT SCHEDULE

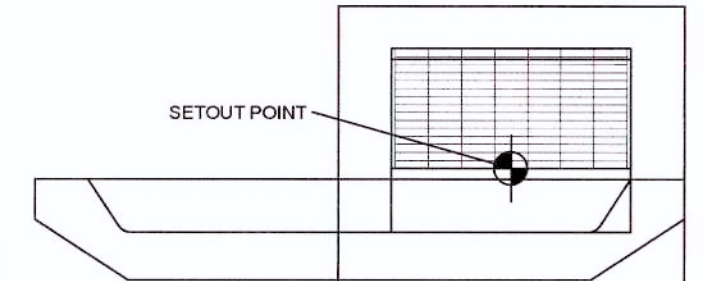
PIT NAME	PIT TYPE	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
(-)	(-)				
A1/1	1.8 m lintel	290356.916	6260528.552	1.522	
A1/2	1.8 m lintel	290360.363	6260553.007	1.533	
A1/3	2.4 m lintel sag	290371.562	6260560.633	1.43	
A1/4	1.8 m lintel	290372.779	6260568.542	1.64	
A1/5	1.8 m lintel	290364.402	6260581.66	1.57	
A1/6	1.8 m lintel	290367.385	6260602.822	1.684	
A1/7	1.8 m lintel	290370.972	6260628.27	1.62	
A1/8	2.4 m lintel sag	290382.169	6260635.891	1.763	
A1/9	3.0 m lintel sag	290383.238	6260643.819	1.893	
A1/10	GPT	290383.796	6260647.063	2.069	HUMEGARD HG18-MC-L
A1/11	JP	290385.021	6260654.185	2.22	
A1/12	H.W.	290386.36	6260661.967	0.6	
A18/1	1.8 m lintel	290478.411	6260629.748	1.51	
A2/1	1.8 m lintel	290351.078	6260544.45	1.474	
A3/1	1.8 m lintel	290356.075	6260579.898	1.469	
A4/1	2.4 m lintel	290361.677	6260619.648	1.506	
A5/1	1.8 m lintel	290416.826	6260551.76	1.466	
A5/2	1.8 m lintel	290418.39	6260559.772	1.579	
A5/3	1.8 m lintel	290399.394	6260564.944	1.691	
A6/1	1.8 m lintel	290502.029	6260619.425	1.501	
A6/2	1.8 m lintel	290490.753	6260616.417	1.46	
A6/3	1.8 m lintel	290465.72	6260624.539	1.459	
A6/4	1.8 m lintel	290418.581	6260630.981	1.782	
A7/1	1.8 m lintel	290429.288	6260637.61	1.509	
AA/1	GSIP 600x600 IAD			0.783	
AA/2	GSIP 600x600 IAD			0.841	
AA/3	GSIP 600x600 IAD			0.875	
AA/4	JP			0.88	
AA/5	GSIP 600x600 IAD			0.849	
AA/6	JP			1.527	
AB/1	GSIP 600x600 IAD			0.78	
AB/2	GSIP 600x600 IAD			0.775	
AB/3	GSIP 600x600 IAD			0.883	
AB/4	GSIP 600x900 IAD			0.9	
AB/5	GSIP 600x600 IAD			0.892	
AB/6	GSIP 600x600 IAD			0.843	
AB/7	JP			1.532	
AC/1	GSIP 600x600 IAD			0.763	
AC/2	GSIP 600x600 IAD			0.771	
AC/3	GSIP 600x600 IAD			0.847	
AC/4	GSIP 600x600 IAD			0.855	
AC/5	JP			1.576	
AN/1	GSIP 600x600 IAD			0.847	
AN/2	JP			1.617	

NOTES:
ALL GRATED PIT COVERS IN ROADS ARE TO BE BICYCLE SAFE.

ALL SAG PITS TO HAVE WELDLINK GGSB 94 5D GRATES

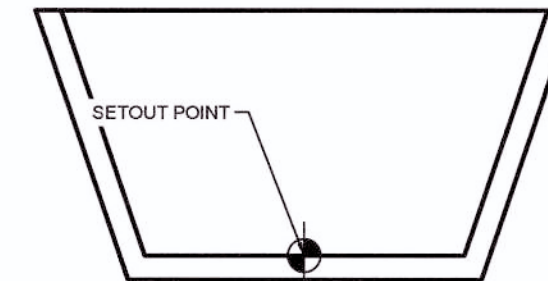
FOR ALL PITS <2m DEEP REFER TO PENRITH CITY COUNCIL STANDARD PIT DRAWINGS SD 2002.

ANY INTER-ALLOTMENT PIT GREATER THAN 900mm DEEP SHALL HAVE A CONCRETE LID REFER PCC CONSTRUCTION SPEC SECTION 6.7.

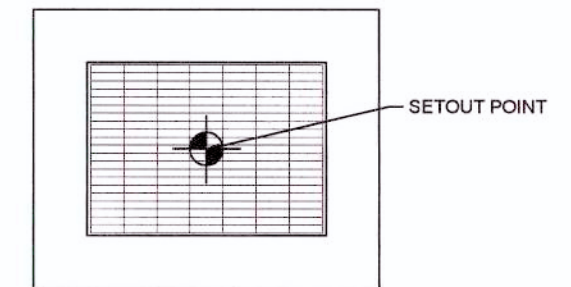


SETOUT DETAIL KERB INLET PIT (LINTEL)
SCALE 1:20

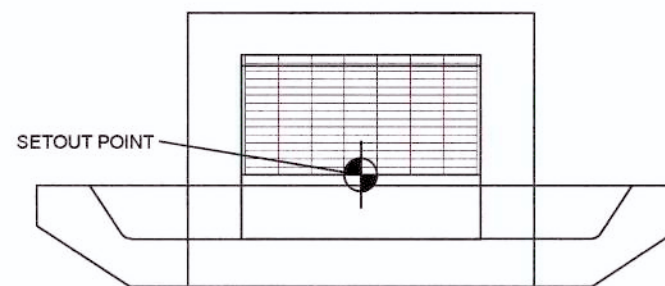
WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor
VINC MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 2467-4



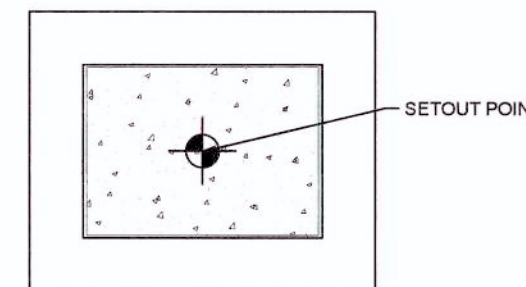
SETOUT DETAIL HEADWALL
SCALE 1:20



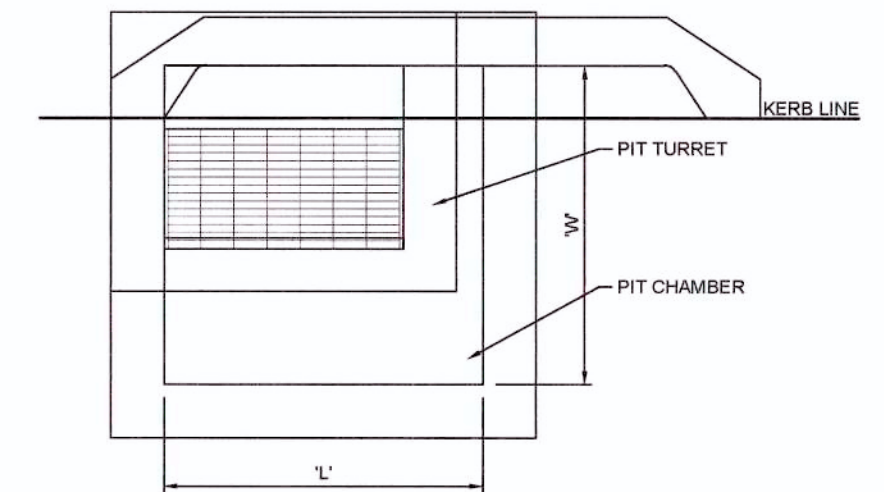
GRATED SURFACE INLET PIT (GSIP)
SCALE 1:20



SETOUT DETAIL KERB INLET PIT (SAG)
(LINTEL CENTERED UNLESS NOTED ON PLAN)
SCALE 1:20



IAD - JUNCTION PIT (JP)
SCALE 1:20



PIT CHAMBER DIMENSION (TYPICAL)
SCALE 1:20

These plans are referred to in certificate no. 14838 approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au

1:20 (AT A1)
400 200 0 400 800 1200 1600 2000
MILLIMETRES

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwprince@jwprince.com.au

AZIMUTH:
MGA:
DATUM:
AHD:
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

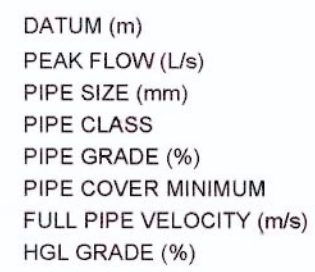
CADDENS HILL
STAGE 4
PIT DETAILS & PIT SCHEDULE

PLAN No:
110358/CC423

FILE No: 110358CC423

SHEET SIZE: A1 ORIGINAL

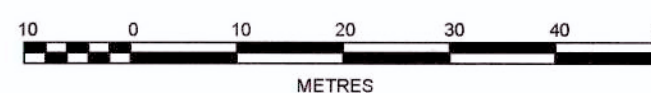
AMENDMENT	DES	DRN	CKD	APR	DATE
C CERTIFIERS COMMENTS - PIT SCHEDULE AMENDED	JT	UF	MS	AM	18/05/18
B CERTIFIERS COMMENTS - PIT SCHEDULE AMENDED	JT	NM	RT	MS	21/09/17
A ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17



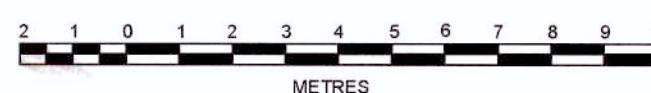
PIPE CHAINAGE	0	65.171 65.12	63.648	63.851	63.64	WAE
ROAD CHAINAGE	24.697	64.827 64.80	63.345 63.3	63.496 63.3	63.716 63.7	
	38.245	64.109 64.14	62.679	63.211	62.666 62.6	
	46.246	64.136 64.14	62.495	62.973	62.495 62.5	
	61.811	63.766 63.75	62.339	62.685	62.332 62.3	
	83.182	62.35 62.52	60.866	61.491	60.883 60.9	
	108.882	61.308 61.0	59.658	60.472	59.716 59.7	
	122.427	60.996 60.97	59.235	60.286	59.471 59.4	
	130.427	60.988 60.97	59.105	59.925	59.14 59.09	
	133.716	61.111 61.0	59.042	59.742	59.04 59.0	
	140.945	60.199 60.18	58.97	59.457	58.93 58.9	
	148.842	58.5 58.5	57.9	59.063	57.93 57.9	
	0	65.01 64.98	63.536	63.885	63.49 63.5	
	12.627	64.806 64.8	63.368	63.485	63.35 63.3	
	0	63.925 63.9	62.456	62.66	62.416 62.4	
	8.512	63.75 63.7	62.357	62.472	62.33 62.3	
	0	61.672 61.6	60.167	60.529	60.16 60.2	
	12.678	61.08 61.08	59.876	60.489	59.89 59.9	
	0	67.137 67.15	65.671	65.779	65.67 65.7	
	8.163	67.05 67.05	65.589	65.66	65.58 65.6	
	27.851	65.714 65.7	64.336	64.397	64.35 64.4	
		64.136 64.14	62.513	62.997	62.57 62.6	

LINE A5

1:500 (AT A1)
1:1000 (AT A3)



1:100 (AT A1)
1:200 (AT A3)



CLIENT:

LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

CADDENS HILL
STAGE 4
DRAINAGE LONG SECTIONS

PLAN No:
110358/CC424

FILE No: 110358CC424

SHEET SIZE: A1 ORIGINAL

SIGNATURE: 
IAN VINCENT MYERS
Registered Land Surveyor

DATE: 16.07.18 REF: 20467-4



These plans are referred to in certificate no. **14838** approved by:

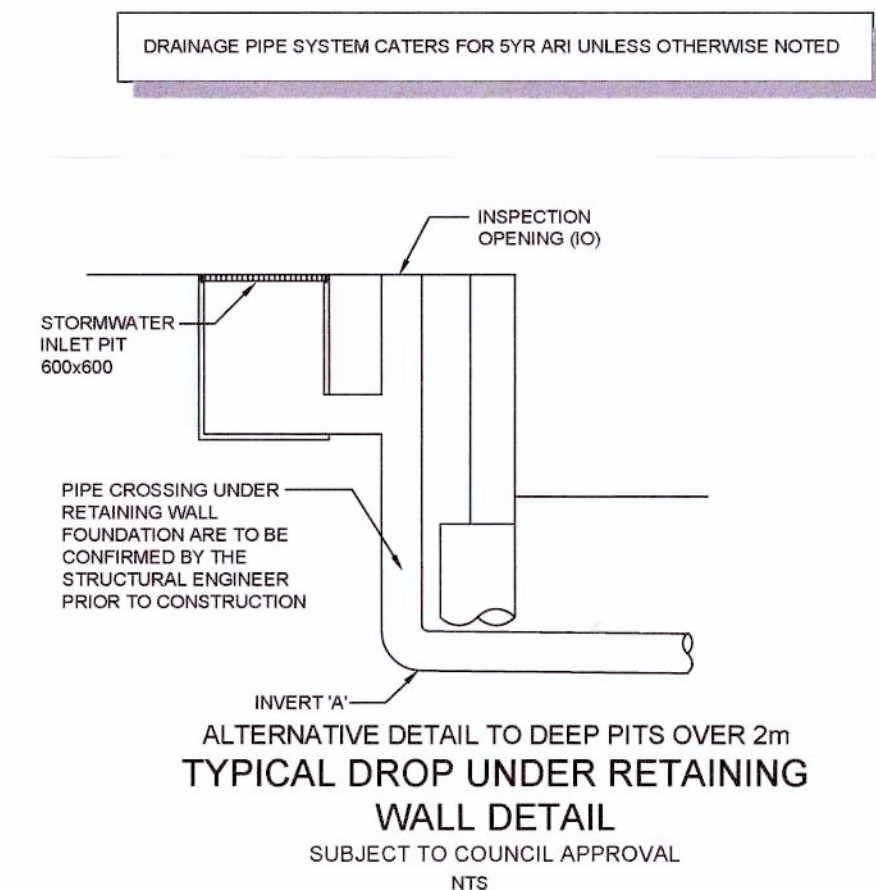
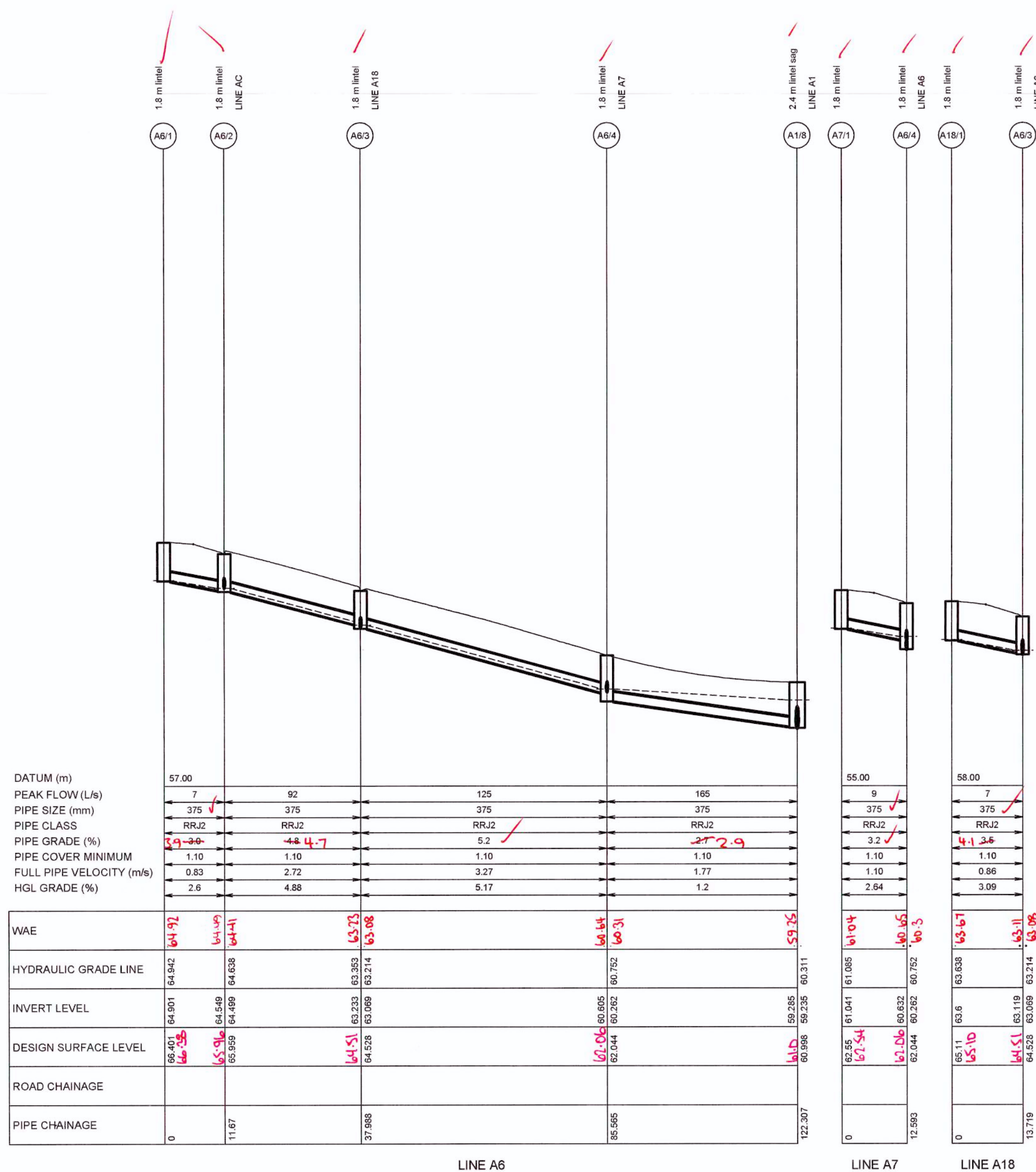
Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416

Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land and Development Certificates
www.Ldcerts.com.au

Plotted: 3 November, 2017 4:11:02 PM File Name: J:\110358 - OConnell Lane Caddens\03 - Stage 2\CD\CC\STAGE 4\110358CC425.dwg



WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

LDC

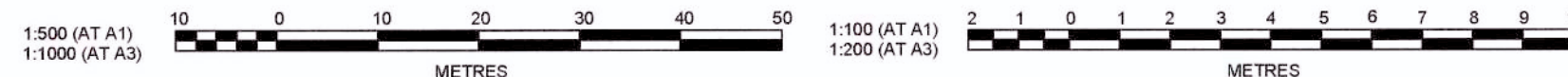
These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416

Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwvp@jwprince.com.au

AZIMUTH:
MGA

DATUM:
AHD

ORIGIN:

CLIENT:

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
DRAINAGE LONG SECTIONS

PLAN No:
110358/CC425

FILE No: 110358CC425

SHEET SIZE: A1 ORIGINAL

Plotted: 18 May, 2018 1:58:03 PM File Name: J:\110358 - OConnell Lane Caddens\03 - Stage 2\CDCCSTAGE A110358CC426.dwg

DATUM (m)
PEAK FLOW (L/s)
PIPE SIZE (mm)
PIPE CLASS
PIPE GRADE (%)
PIPE COVER MINIMUM
FULL PIPE VELOCITY (m/s)
HGL GRADE (%)

WAE	66.416	66.403	66.18	65.90	65.88	65.84	65.81	65.81	65.81
HYDRAULIC GRADE LINE	66.573	66.292	66.224	66.061	65.919	65.899	65.767	65.724	65.648
INVERT LEVEL	66.443	66.212	66.142	65.999	65.784	65.734	65.65	65.62	65.547
DESIGN SURFACE LEVEL	67.226	67.10	66.710	66.673	66.614	66.48	66.47	66.47	66.47
ROAD CHAINAGE									
PIPE CHAINAGE	0	15.033	26.125	27.629	32.547				

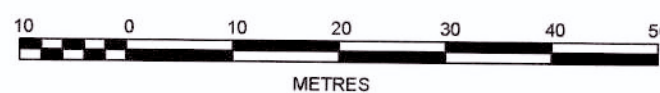
LINE AA

LINE AB
DRAINAGE SYSTEM A

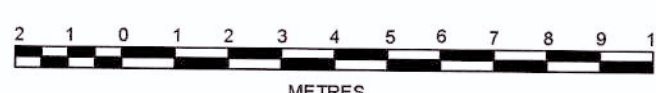
LINE AC

LINE AN

1:500 (AT A1)
1:1000 (AT A3)



1:100 (AT A1)
1:200 (AT A3)



DRAINAGE PIPE SYSTEM CATERERS FOR 5YR ARI UNLESS OTHERWISE NOTED

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwprince@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

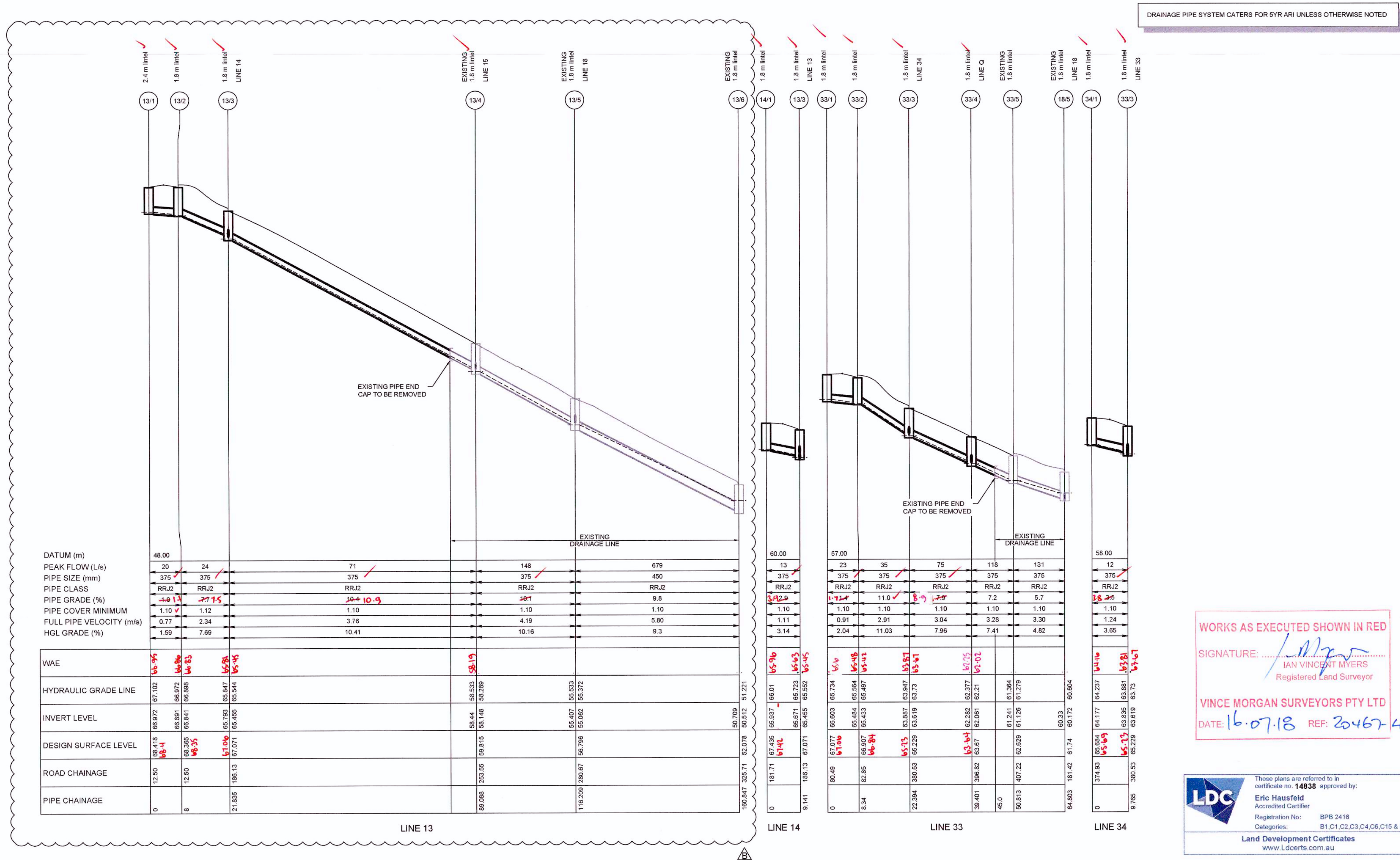


ISSUED FOR CONSTRUCTION APPROVAL


CADDENS HILL
STAGE 4
DRAINAGE LONG SECTIONS

PLAN No:
110358/CC426
FILE No: 110358CC426
SHEET SIZE: A1 ORIGINAL

Plotted: 3 November, 2017 4:11:46 PM File Name: J:\110358 - OConnell Lane Caddens03 - Stage 2\CD\CC\STAGE 4\110358CC428.dwg



WORKS AS EXECUTED SHOWN IN RED

SIGNATURE:  IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

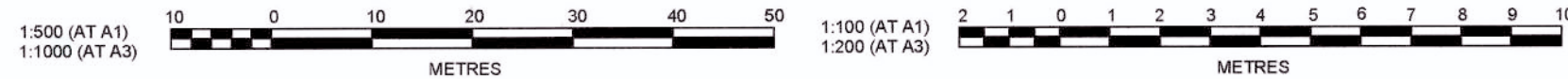
These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416

Categories: B1, C1, C2, C3, C4, C6, C15 & D1

Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT: 

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
DRAINAGE LONG SECTIONS

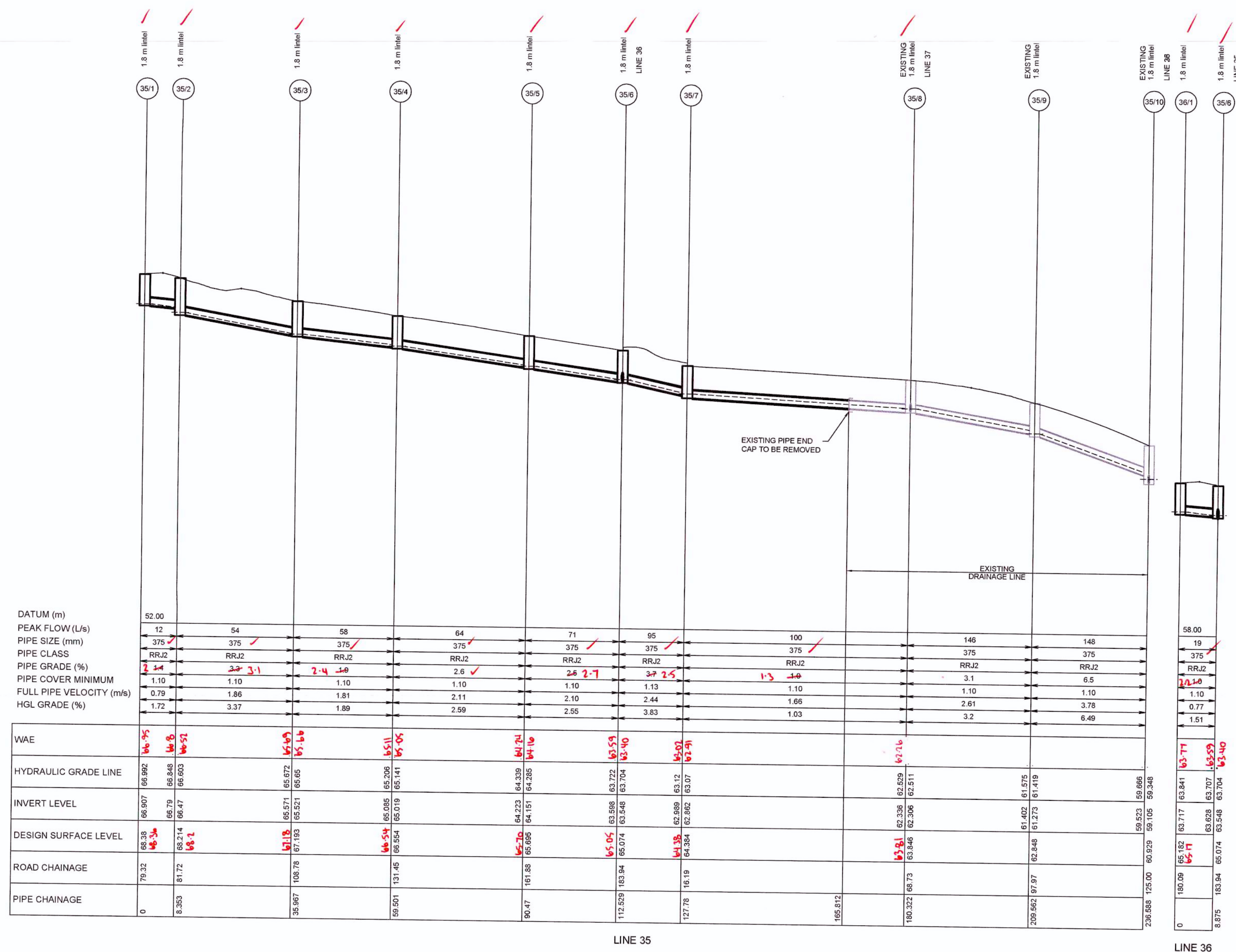
PLAN No: 110358/CC428 **B**

FILE No: 110358CC428

SHEET SIZE: A1 ORIGINAL

AMENDMENT	DES	DRN	CKD	APR	DATE
B CERTIFIERS COMMENTS - DRAINAGE PROFILE AMENDED	JT	NM	RT	MS	21/09/17
A ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17

DRAINAGE PIPE SYSTEM CATERS FOR 5YR ARI UNLESS OTHERWISE NOTED



WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: I. Morgan

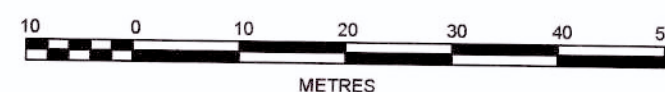
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4



1:500 (AT A1)
1:1000 (AT A3)



1:100 (AT A1)
1:200 (AT A2)



CLIENT



LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
DRAINAGE LONG SECTIONS

PLAN No:	110358/CC429	A
FILE No:	110358CC429	
SHEET SIZE:	A1 ORIGINAL	

Plotted: 3 November, 2017 4:12:01 PM File Name: J:\110358 - O'Connell Lane Caddens\03 - Stage 2\CD\CC\STAGE 4\110358CC429.dwg

A	ISSUE FOR CONSTRUCTION APPROVAL AMENDMENT	JT DEC	NM DEN	RT CYC	MS ARB	03/08/17 -03/37				

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

Plotted: 3 November, 2017 4:12:16 PM File Name: J:\110358 - OCConnell Lane Caddens\03 - Stage 2\CDCC\CC430.dwg

DATUM (m)
PEAK FLOW (L/s)
PIPE SIZE (mm)
PIPE CLASS
PIPE GRADE (%)
PIPE COVER MINIMUM
FULL PIPE VELOCITY (m/s)
HGL GRADE (%)

WAE		66.7	66.11	66.08	66.34	66.31	64.43	64.32	63.77	63.18	61.45	61.37	59.68	59.61	57.74	57.65	55.95	55.85	52.50
HYDRAULIC GRADE LINE		66.738		66.313	66.419	66.387		64.5	64.354	63.328	63.263	61.433	61.475	59.719	59.637	57.749	57.691	55.829	55.761
INVERT LEVEL		66.655	66.124	66.082	66.338	66.286		64.4	64.264	63.238	63.166	61.433	61.345	59.609	59.528	57.641	57.506	55.513	55.429
DESIGN SURFACE LEVEL		67.424	67.444	66.866	66.084	66.084	65.14	65.121	64.031	62.238	62.217	61.345	60.396	60.396	58.51	58.4	55.95	55.85	52.50
ROAD CHAINAGE																			
PIPE CHAINAGE	-15		0		15		30		45		65.952		85.952		100.152		115.342	43.80	120.354

LINE E

WAE	62.01	61.84	61.67	61.41	61.22	61.138
HYDRAULIC GRADE LINE	62.181	61.986	61.809	61.736	61.621	61.494
INVERT LEVEL	62.181	61.986	61.809	61.736	61.621	61.494
DESIGN SURFACE LEVEL	62.742	62.74	62.44	62.411	62.411	62.411
ROAD CHAINAGE	0	12.5	23	25	27.5	30
PIPE CHAINAGE	0	12.5	23	25	27.5	30

LINE M

	65.50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
--	-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

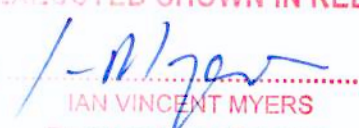
DRAINAGE SYSTEM A

DESIGN STORM 1:5yr ARI HYDROLOGIC RESULTS

PIT NAME	PIT TYPE	CATCHMENT AREA	PERCENT IMPERVIOUS	Tc IMP	Tc PERV	CRITICAL STORM	APPROACH FLOW	CAPTURED FLOW	UNCAPTURED FLOW	GRATE DEPTH	ROAD GRADE	ROAD CROSSFALL	BYPASS PIT	BYPASS CHANNEL FLOW	U/S FLOW WIDTH	U/S VxD	D/S FLOW WIDTH	D/S VxD	COMMENTS
(-)	(-)	(Ha)	(%)	(min)	(min)	(min)	(L/s)	(L/s)	(L/s)	(mm)	(%)	(%)	(-)	(L/s)	(m)	(m/s ²)	(m)	(m/s ²)	(-)
A1/1	1.8 m lintel		0	6	6	15	24	24	0	44	1	3	A1/2	6	0.61	0.02	0.7	0.02	
A1/2	1.8 m lintel	0.019	95	6	6	15	6	6	0	47	2.2	3	A1/3	13	0.7	0.05	1.02	0.03	
A1/3	2.4 m lintel sag	0.169	85	6	6	25	52	53	0	56	4	3.3	A1/4	0					
A1/4	1.8 m lintel	0.021	95	6	6	15	5	5	0	67	2.1	3	A1/5	5	0.42	0.02	0.77	0.02	
A1/5	1.8 m lintel	0.019	95	6	6	25	5	5	0	52	4.8	3	A1/6	20	0.9	0.06	0.9	0.06	
A1/6	1.8 m lintel	0.064	85	6	6	15	20	20	0	34	6.3	3	A1/7	6	0.4	0.03	1.1	0.02	
A1/7	1.8 m lintel	0.02	95	6	6	25	6	6	0	59	3.2	3	A1/8	17	1.1	0.04	1.23	0.04	
A1/8	2.4 m lintel sag	0.181	85	6	6	25	59	64	0	62	0.3	3	A1/9	0					
A1/9	3.0 m lintel sag	0.183	85	6	6		56	54	0	50	0.3	3	A1/10	0					
A1/10	GPT		0	6	6		0	0	0	0	0.4	0.8	A1/11	0					
A1/11	JP		0	6	6		0	0	0	0			LOST	0					
A1/12	H.W.						0	0	0	0									
A18/1	1.8 m lintel	0.024	95	6	6	25	7	7	0	60	5	3.1	A8/1	27	1.15	0.06	1.49	0.05	
A2/1	1.8 m lintel		0	6	6	25	33	30	3	74	1.3	3	A3/1	46	1.62	0.08	1.62	0.08	
A3/1	1.8 m lintel	0.14	85	6	6	25	46	42	4	71	4.5	3	A4/1	55	1.55	0.1	1.55	0.1	
AA/1	2.4 m lintel	0.167	85	6	6	25	55	49	5	70	4.6	3	A1/9	28	1.5	0.05	1.5	0.05	
AA/1	1.8 m lintel		0	6	6	25	15	15	0	63	7.1	2.9	A1/3	39	1.25	0.08	1.25	0.08	
AA/2	1.8 m lintel		0	6	6	15	12	12	0	30	6.4	3.1	A5/3	5	0.34	0.03	0.35	0.03	
AA/3	1.8 m lintel	0.016	95	6	6	15	5	5	0	31	6.4	3.1	A1/4	5	0.35	0.03	1.41	0.02	
AA/1	1.8 m lintel		0	6	6	25	8	8	0	37	5	3.1	A18/1	7	0.43	0.04	1.09	0.02	
AA/2	1.8 m lintel		0	6	6	25	34	32	2	57	5.4	2.9	A6/3	26	1.05	0.07	1.51	0.05	
AA/3	1.8 m lintel	0.078	85	6	6	25	26	25	1	71	5.4	2.9	A6/4	52	1.53	0.09	1.59	0.09	
AA/4	1.8 m lintel	0.168	85	6	6	25	52	47	5	73	5.2	3	A1/8	43	1.61	0.07	1.61	0.07	
A7/1	1.8 m lintel		0	6	6	25	8	8	0	63	5.2	3	A1/9	28	1.25	0.06	1.25	0.06	
AA/1	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AA/2	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AA/3	GSIP 600x600 IAD	0.04	75	6	6	25	12	12	0	0									
AA/4	JP		0	6	6		0	0	0	0									
AA/5	GSIP 600x600 IAD	0.033	85	6	6	15	10	10	0	0									
AA/6	JP		0	6	6		0	0	0	0									
AB/1	GSIP 600x600 IAD	0.06	75	6	6	25	18	18	0	0									
AB/2	GSIP 600x600 IAD	0.051	75	6	6	25	16	16	0	0									
AB/3	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AB/4	GSIP 600x900 IAD	0.031	75	6	6	15	9	9	0	0									
AB/5	GSIP 600x600 IAD	0.03	75	6	6	25	9	9	0	0									
AB/6	GSIP 600x600 IAD	0.03	75	6	6	25	9	9	0	0									
AB/7	JP		0	6	6		0	0	0	0									
AC/1	GSIP 600x600 IAD	0.046	75	6	6	25	14	14	0	0									
AC/2	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AC/3	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AC/4	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
AC/5	JP		0	6	6		0	0	0	0									
AN/1	GSIP 600x600 IAD	0.059	85	6	6	25	18	18	0	0									
AN/2	JP		0	6	6		0	0	0	0									
BPA1/1	BYPASS NODE	0.079	85	6	6	25	25	0	0	72	1	3	A1/1	24	1.59	0.04	1.59	0.04	
BPA1/2	BYPASS NODE						0	0	0	0									
BPA2/1	BYPASS NODE	0.106	85	6	6	25	33	0	0	77	1	3	A2/1	33	1.74	0.05	1.74	0.05	
BPA2/2	BYPASS NODE						0	0	0	0									
BPA3/1	BYRASS NODE	0.048	85	6	6	25	15	0	0	45	7.1	2.9	A5/1	15	0.64	0.06	1.25	0.03	
BPA3/2	BYPASS NODE						0	0	0	0									
BPA4/1	BYPASS NODE	0.038	85	6	6	25	12	0	0	42	6.4	3	A5/2	12	0.54	0.05	0.54	0.05	
BPA4/2	BYPASS NODE						0	0	0	0									
BPA5/1	BYPASS NODE	0.108	85	6	6	25	34	0	0	62	5.4	3	A6/2	34	1.22	0.08	1.22	0.08	
BPA5/2	BYPASS NODE						0	0	0	0									
BPA6/1	BYPASS NODE	0.024	85	6	6	25	8	0	0	37	4.8	3	A6/1	8	0.45	0.04	0.45	0.04	
BPA6/2	BYPASS NODE						0	0	0	0									
BPA7/1	BYPASS NODE	0.024	85	6	6	25	8	0	0	36	5.2	3	A7/1	8	0.45	0.04	1.25	0.02	
BPA7/2	BYPASS NODE						0	0	0	0									

- HYDROLOGY NOTES:
1. STORMWATER SYSTEM DESIGNED USING 12D DYNAMIC (LSAX) SYSTEM.
 2. BP LINES ARE DUMMY PITS AND ARE USED TO MORE ACCURATELY DETERMINE APPROACH FLOWS AT UPSTREAM PITS AND SAG LOCATIONS. RESULTS ON THESE DUMMY LINES MAY NOT BE VALID/RELEVANT.
 3. MAXIMUM FLOW WIDTHS OF 2.5m IN GUTTERS HAVE GENERALLY BEEN ADOPTED.
 4. CONTINUATION OF HYDROLOGIC TABLE REFER TO CC436

APP 8-13 EXECUTED SHOWN IN RED

SIGNATURE:  IAN VINCENT MYERS
Registered Land Surveyor

PRINCE MORGAN SURVEYORS PTY LTD

DATE 16.07.18 REF: 20467-4

These plans are referred to in certificate no. 14838 approved by:

 Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au

Plotted: 18 May, 2018 1:58:09 PM File Name: J:\110358 - CConnell Lane Caddens\03 - Stage 2\CD\CC\STAGE 4\110358CC432.dwg

C	CERTIFIERS COMMENTS - DRAINAGE CALCULATIONS AMENDED	JT	UF	MS	AM	18/05/18
B	CERTIFIERS COMMENTS - DRAINAGE CALCULATIONS AMENDED	JT	NM	RT	MS	21/09/18
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:


CLIENT:

 **LEGACYPROPERTY**

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
DRAINAGE CALCULATIONS

PLAN No:
110358/CC432 

FILE No: 110358CC432

SHEET SIZE: A1 ORIGINAL

Plotted: 3 November 2017 4:12:53 PM File Name: J:\10358 - OConnell Lane Caddens\03 - Stage 2\CDCCC-STAGE 4\10358CC433.dwg

DESIGN STORM 1:5yr ARI HYDROLOGIC RESULTS

PIT NAME	PIT TYPE	CATCHMENT AREA	PERCENT IMPERVIOUS	Tc IMP	Tc PERV	CRITICAL STORM	APPROACH FLOW	CAPTURED FLOW	UNCAPTURED FLOW	GRATE DEPTH	ROAD GRADE	ROAD CROSSFALL	BYPASS PIT	BYPASS CHANNEL FLOW	U/S FLOW WIDTH	U/S Vx/D	D/S FLOW WIDTH	D/S Vx/D	COMMENTS
(-)	(-)	(Ha)	(%)	(min)	(min)	(min)	(L/s)	(L/s)	(L/s)	(mm)	(%)	(%)	(-)	(L/s)	(m)	(m/s^2)	(m)	(m/s^2)	(-)
01/1	1.8 m lintel		0	6	6	25	43	34	10	68	5.1		48/1	52	1.44	0.1	1.44	0.1	
01/2	2.4 m lintel		0	6	6	25	62	49	13	68	5.8		01/2A	52	1.44	0.1	1.44	0.1	
01/2A	1.8 m lintel	0.127	85	6	6	25	52	38	14	67	8		01/3	54	1.39	0.1	1.63	0.09	
01/3	2.4 m lintel	0.13	85	6	6	25	54	44	10	74	8		01/4	76	1.63	0.12	1.68	0.12	
01/4	1.8 m lintel	0.217	85	6	6	25	76	48	27	76	7.3		01/5	74	1.69	0.12	1.69	0.12	
01/5	1.8 m lintel	0.155	85	6	6	25	74	48	26	61	5.7		03/2	36	1.21	0.08	1.21	0.08	
07/1	2.4 m lintel	0.13	85	6	6	25	53	44	9	72	8		08/1	69	1.55	0.12	1.68	0.11	
08/1	2.4 m lintel	0.195	85	6	6	25	69	52	16	76	7.7		09/1	76	1.69	0.12	1.82	0.11	
13/1	2.4 m lintel		0	6	6	25	20	20	0	58	3		13/3	27	1.08	0.07	1.3	0.06	
13/2	1.8 m lintel		0	6	6	15	5	5	0	45	3.1		13/3	16	0.64	0.06	1.3	0.03	
13/3	1.8 m lintel	0.14	85	6	6	25	43	34	10	65	8.7		13/4	55	1.3	0.11	1.3	0.11	
13/4	1.8 m lintel	0.152	85	6	6	25	55	40	16	50	11.1		19/1	25	0.81	0.08	1.06	0.07	
14/1	1.8 m lintel		0	6	6	25	14	14	0	44	8		15/1	17	0.6	0.07	0.6	0.07	
15/1	1.8 m lintel	0.056	95	6	6	25	17	17	0	35	11.1		03/1	12	0.42	0.06	0.69	0.04	
33/1	1.8 m lintel		0	6	6	15	23	21	2	32	6.5		33/3	6	0.38	0.03	0.42	0.03	
33/2	1.8 m lintel		0	6	6	10	12	12	0	19	7.2		33/3	2	0.26	0.02	0.42	0.01	
33/3	1.8 m lintel	0.077	85	6	6	10	37	30	7	36	8.4		33/4	10	0.44	0.05	0.44	0.05	
33/4	1.8 m lintel	0.014	95	6	6	10	10	10	0	23	9.1		33/5	3	0.26	0.02	0.29	0.02	
33/5	1.8 m lintel	0.009	95	6	6	15	3	3	0	25	9.1		18/5	3	0.29	0.02	1.72		
34/1	1.8 m lintel		0	6	6	25	12	12	0	39	7.5		18/5	10	0.48	0.05	1.72	0.02	
35/1	1.8 m lintel		0	6	6	15	12	12	0	43	6.6		33/3	10	0.57	0.04	0.57	0.04	
35/2	1.8 m lintel	0.156	85	6	6	25	48	36	12	54	6.9		33/3	19	1	0.05	1	0.05	
35/3	1.8 m lintel		0	6	6	15	4	4	0	37	2.7		35/4	6	0.45	0.03	0.52	0.02	
35/4	1.8 m lintel	0.019	95	6	6	20	6	6	0	41	2.7		35/5	8	0.52	0.03	0.52	0.03	
35/5	1.8 m lintel	0.024	95	6	6	15	8	8	0	36	2.8		35/6	6	0.45	0.03	0.45	0.03	
35/6	1.8 m lintel	0.018	95	6	6	15	6	6	0	35	2.8		35/7	6	0.41	0.03	2.26	0.01	
35/7	1.8 m lintel	0.019	95	6	6	25	6	6	0	93	1.1		35/8	59	2.26	0.07	2.26	0.07	
35/8	1.8 m lintel	0.194	85	6	6	25	59	42	18	76	1.3		18/1	42	1.69	0.07	1.91	0.06	
36/1	1.8 m lintel		0	6	6		19	18	1	16	2.8		LOST	0	0.19		0.18		
37/1	1.8 m lintel		0	6	6	15	13	13	0	50	1		38/1	15	0.81	0.05	0.81	0.05	
48/1	1.8 m lintel	0.133	85	6	6	25	52	38	14	67	8		07/1	53	1.37	0.1	1.55	0.09	
BP10/1	BYPASS NODE	0.075	85	6	6	25	23	0	0	54	5.8		33/1	23	0.99	0.06	0.99	0.06	
BP10/2	BYPASS NODE						0	0	0	0									
BP11/1	BYPASS NODE	0.038	85	6	6	25	12	0	0	41	5.8		33/2	12	0.52	0.05	0.52	0.05	
BP11/2	BYPASS NODE						0	0	0	0									
BP12/1	BYPASS NODE	0.038	85	6	6	25	12	0	0	41	6		34/1	12	0.51	0.05	0.51	0.05	
BP12/2	BYPASS NODE						0	0	0	0									
BP14/1	BYPASS NODE	0.043	85	6	6	15	13	0	0	60	1		37/1	13	1.15	0.03	1.15	0.03	
BP19/1	BYPASS NODE	0.201	85	6	6	25	63	0	0	75	4.5		01/2	62	1.63	0.1	1.63	0.1	
BP19/2	BYPASS NODE						0	0	0	0									
BP2/1	BYPASS NODE	0.138	85	6	6	25	43	0	0	68	3.9		01/1	43	1.42	0.08	1.42	0.08	
BP2/2	BYPASS NODE						0	0	0	0									
BP20/1	BYPASS NODE	0.014	85	6	6	15	4	0	0	31	5.8		35/3	4	0.37	0.02	0.43	0.02	
BP20/2	BYPASS NODE						0	0	0	0									
BP21/1	BYPASS NODE	0.038	85	6	6	25	12	0	0	42	5.8		35/1	12	0.53	0.05	0.57	0.05	
BP21/2	BYPASS NODE						0	0	0	0									
BP22/1	BYPASS NODE	0.061	85	6	6	25	19	0	0	57	2.8		36/1	19	1.05	0.05	1.05	0.05	
BP22/2	BYPASS NODE						0	0	0	0									
BP7/1	BYPASS NODE	0.044	85	6	6	25	14	0	0	44	5.3		14/1	14	0.58	0.05	0.6	0.05	
BP7/2	BYPASS NODE						0	0	0	0									
BP8/1	BYPASS NODE	0.016	85	6	6	15	5	0	0	35	1.7		13/2	5	0.42	0.02	0.64	0.02	
BP8/2	BYPASS NODE						0	0	0	0									
BP9/1	BYPASS NODE	0.065	85	6	6	25	20	0	0	61	1.7		13/1	20	1.16	0.05	1.16	0.05	
BP9/2	BYPASS NODE						0	0	0	0									
E/1A	GSIP 600x600 IAD	0.043	75	6	6	25	13	13	0	0									
E/1	GSIP 600x600 IAD	0.043	75	6	6	25	13	13	0	0									
E/2	GSIP 600x600 IAD	0.044	75	6	6	25	13	13	0	0									
E/3	GSIP 600x600 IAD	0.044	75	6	6	25	13	13	0	0									
E/4	GSIP 600x600 IAD	0.044	75	6	6	25	13	13	0	0									
E/5	GSIP 600x600 IAD	0.061	75	6	6	25	19	19	0	0									
E/6	GSIP 600x600 IAD	0.058	75	6	6	25	18	18	0	0									
E/7	GSIP 600x600 IAD	0.041	75	6	6	25	13	13	0	0									
E/8	GSIP 900x900 IAD	0.044	75	6	6	25	13	13	0	0									
M/1	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
M/2	GSIP 600x600 IAD	0.038	75	6	6	15	11	11	0	0									
P/1	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
P/2	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
P/3	JP		0	6	6		0	0	0	0									
Q/1	GSIP 600x600 IAD	0.044	75	6	6	25	13	13	0	0									
Q/2	GSIP 600x600 IAD	0.044	75	6	6	25	13	13	0	0									
Q/3	JP	0.045	75	6	6	25	14	14	0	0									
R/1	GSIP 600x600 IAD	0.045	75	6	6	25	14	14	0	0									
R/2	GSIP 600x600 IAD	0.037	75	6	6	15	11	11	0	0									
R/3	GSIP 600x600 IAD	0.037	75	6	6	15	11	11	0	0									
R/4	GSIP 600x600 IAD	0.037	75	6	6	15	11	11	0	0									
R/5	GSIP 600x600 IAD	0.037	75	6	6	15	11	11	0	0									
R/6	JP		0	6	6		0	0	0	0									
S/1	GSIP 600x600 IAD	0.058	75	6	6	25	18	18	0	0									
S/2	GSIP 600x600 IAD	0.038	75	6	6	25	12	12	0	0									
S/3	GSIP 600x900 IAD	0.035	75	6	6	25	11	11	0	0									
S/4	JP		0	6	6		0	0	0	0									
S/6	JP		0	6	6		0	0	0	0									
T/6	JP		0	6	6		0	0	0	0									
T/7	JP		0	6	6		0	0	0	0									
U/3	GSIP 900x900 IAD	0.046	75	6	6	25	14	14	0	0									
U/4	JP		0	6	6		0	0	0	0									

- HYDROLOGY NOTES:
1. STORMWATER SYSTEM DESIGNED USING 12D DYNAMIC (ILSAX) SYSTEM.
 2. BP LINES ARE DUMMY PITS AND ARE USED TO MORE ACCURATELY DETERMINE APPROACH FLOWS AT UPSTREAM PITS AND SAG LOCATIONS. RESULTS ON THESE DUMMY LINES MAY NOT BE VALID/RELEVANT.
 3. MAXIMUM FLOW WIDTHS OF 2.5m IN GUTTERS HAVE GENERALLY BEEN ADOPTED.
 4. SYSTEM A HYDROLOGIC TABLE REFER TO CC432

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *I. N. Myers*
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

These plans are referred to in certificate no. 14838 approved by:

LDC Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au

PIPE NAME	PIPE DIAMETER	PIPE TYPE	PIPE LENGTH	PIPE GRADE	CRITICAL STORM	PEAK FLOW	CAPACITY RATIO	PEAK VELOCITY	PIPE U/S IL	PIPE D/S IL	PIPE D/S DROP	U/S PIT Ku	D/S PIT Kw	PIT LOSS (Ku,V'head)	WSE LOSS (Kw,V'head)	U/S PIPE HGL	D/S PIPE HGL	HGL GRADE	MINIMUM COVER	MINIMUM FREEBOARD	COMMENTS
(-)	(mm)	(-)	(m)	(%)	(mm)	(L/s)	(-)	(m/s)	(m)	(m)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(%)	(m)	(m)	
A1/1 to A1/2	375	RRJ2	24.7	1.23	25	72	0.34	1.41	63.648	63.345	0.05	2.23	2.65	0.23	0.27	63.851	63.496	1.44	1.1	1.319	
A1/2 to A1/3	375	RRJ2	13.55	4.08	25	108	0.28	1.9	62.295	62.743	0.064	0.74	0.74	0.12	0.12	63.431	63.195	1.74	1.11	1.397	
A1/3 to A1/4	375	RRJ2	8	1	25	160	0.84	1.46	62.679	62.599	0.104	1.94	1.97	0.19	0.19	63.195	62.948	3.09	1.1	0.913	
A1/4 to A1/5	375	RRJ2	15.56	1	25	195	1.03	1.83	62.495	62.339	0.123	0.69	0.69	0.12	0.12	62.948	62.66	1.85	1.26	1.187	
A1/5 to A1/6	375	RRJ2	21.37	5.14	25	289	0.67	3.67	62.216	61.117	0.251	0.74	0.74	0.47	0.47	62.469	61.436	4.83	1.1	1.317	
A1/6 to A1/7	375	RRJ2	25.7	4.39	25	324	0.82	3.1	60.866	59.738	0.05	1.97	2.66	0.44	0.52	61.436	60.449	3.84	1.1	1.114	
A1/7 to A1/8	525	RRJ2	13.54	1.29	25	370	0.7	1.79	59.688	59.514	0.279	0.65	0.65	0.1	0.1	60.449	60.271	1.31	1.1	0.859	
A1/8 to A1/9	600	RRJ2	8	1	25	590	0.89	2.09	59.235	59.155	0.05	1.48	1.6	0.29	0.3	60.271	59.917	4.42	1.19	0.728	
A1/9 to A1/10	600	RRJ2	3.29	1	25	643	0.97	2.27	59.105	59.072	0.03	0.59	0.59	0.15	0.15	59.917	59.737	5.47	1.38	1.081	
A1/10 to A1/11	600	RRJ2	7.23	1	25	643	0.97	2.41	59.042	58.97	0.991	0.5	0.5	0.15	0.15	59.737	59.444	4.05	0.69	1.374	
A1/11 to A1/12	600	RRJ2	7.9	1	25	658	0.99	2.44	57.979	57.9		2.09	2.66	0.54	0.59	59.03	58.386	8.16	1.09	1.169	
A18/1 to A6/3	375	RRJ2	13.72	3.5	15	7	0.02	0.86	63.6	63.119	0.05	4.5	4.5	0.17	0.17	63.639	63.214	3.1	1.1	1.473	
A2/1 to A1/2	375	RRJ2	12.63	1.17	25	30	0.14	0.95	63.536	63.388	0.094	4.5	4.5	0.21	0.21	63.685	63.485	1.58	1.1	1.326	
A3/1 to A1/5	375	RRJ2	8.51	1.16	25	42	0.2	0.94	62.456	62.357	0.141	4.5	4.5	0.2	0.2	62.66	62.472	2.21	1.1	1.265	
A4/1 to A1/7	375	RRJ2	12.68	2.29	25	58	0.2	1.18	60.167	59.876	0.188	4.5	4.5	0.32	0.32	60.491	60.449	0.33	1.1	1.182	
A5/1 to A5/2	375	RRJ2	8.16	1	25	15	0.08	0.73	65.671	65.589	0.138	4.5	4.5	0.12	0.12	65.779	65.66	1.46	1.1	1.358	
A5/2 to A5/3	375	RRJ2	19.69	5.66	25	26	0.06	2.11	65.451	64.336	0.263	2.23	2.62	0.51	0.59	65.517	64.397	5.69	1.1	1.513	
A5/3 to A1/4	375	RRJ2	26.86	5.67	25	31	0.07	1.52	64.068	62.545	0.05	1.11	1.11	0.13	0.13	64.135	62.948	4.42	1.1	1.624	
A6/1 to A6/2	375	RRJ2	11.67	3.02	15	7	0.02	0.83	64.901	64.549	0.05	4.5	4.5	0.16	0.16	64.942	64.638	2.6	1.1	1.462	
A6/2 to A6/3	375	RRJ2	26.32	4.81	25	92	0.22	2.72	64.499	63.233	0.164	2.13	2.52	0.8	0.94	64.638	63.353	4.88	1.1	1.32	
A6/3 to A6/4	375	RRJ2	47.58	5.18	25	125	0.29	3.27	63.069	60.605	0.343	1.17	1.17	0.63	0.63	63.214	60.743	5.19	1.1	1.314	
A6/4 to A1/8	375	RRJ2	36.74	2.86	25	167	0.54	1.78	60.262	59.285	0.05	7	7	0.45	0.45	60.715	60.271	1.21	1.1	1.328	
A7/1 to A6/4	375	RRJ2	12.59	3.24	25	8	0.02	1.1	61.041	60.632	0.37	4.5	4.5	0.28	0.28	61.085	60.715	2.94	1.1	1.465	
AA/1 to AA/2	150	uPVC	15.03	1.53	25	14	0.55	1.02	66.443	66.212	0.071	4.5	4.5	0.24	0.24	66.573	66.292	1.87	0.6	0.652	
AA/2 to AA/3	225	uPVC	11.09	2.64	25	27	0.29	1.19	66.142	65.849	0.05	9.7	9.7	0.26	0.26	66.224	66.061	1.47	0.6	0.759	
AA/3 to AA/4	225	uPVC	1.5	1	25	39	0.68	1.15	65.799	65.784	0.05	1.59	1.59	0.11	0.11	66.061	65.919	9.44	0.62	0.613	
AA/4 to AA/5	225	uPVC	5.22	1.6	25	39	0.53	1.5	65.734	65.65	0.03	0.25	0.25	0.03	0.03	65.899	65.767	2.53	0.6	0.715	
AA/5 to AA/6	225	uPVC	37.7	2.51	25	49	0.53	2.23	65.62	64.673	0.704	1.18	1.18	0.28	0.28	65.749	64.789	2.55	0.6	0.721	
AA/6 to A1/1	375	RRJ2	4.75	2.47	25	49	0.17	1.27	63.969	63.851	0.203	2.09	3.24	0.17	0.27	64.152	63.955	4.15	1.1	1.344	
AB/1 to AB/2	150	uPVC	17.62	4.64	25	18	0.43	1.82	65.998	65.181	0.041	4.5	4.5	0.76	0.76	66.088	65.264	4.68	0.6	0.69	
AB/2 to AB/3	150	uPVC	17.11	5.54	25	34	0.72	2.44	65.139	64.191	0.163	1.95	1.95	0.49	0.49	65.264	64.285	5.72	0.6	0.651	
AB/3 to AB/4	225	uPVC	10	6.25	25	47	0.32	3.19	64.027	63.403	0.071	7	7	0.28	0.28	64.12	63.491	6.29	0.6	0.79	
AB/4 to AB/5	225	uPVC	10	4.98	25	57	0.43	2.25	63.331	62.833	0.03	0.97	0.97	0.25	0.25	63.435	63.02	4.15	0.6	0.796	
AB/5 to AB/6	225	uPVC	10	2.36	25	66	0.73	1.79	62.803	62.567	0.03	0.87	0.87	0.14	0.14	63.02	62.755	2.65	0.6	0.675	
AB/6 to AB/7	225	uPVC	15.65	2.98	25	74	0.74	2.24	62.537	62.071	0.724	0.8	0.8	0.2	0.2	62.755	62.215	3.45	0.6	0.625	
AB/7 to A1/6	375	RRJ2	4.75	2.45	25	74	0.25	1.37	61.347	61.231	0.365	2.09	3.24	0.2	0.31	61.588	61.436	3.2	1.1	1.291	
AC/1 to AC/2	150	uPVC	15	2.28	25	14	0.45	1.08	67.834	67.491	0.03	4.5	4.5	0.27	0.27	67.961	67.75	1.41	0.8	0.635	
AC/2 to AC/3	150	uPVC	15	2.23	25	27	0.91	1.64	67.461	67.127	0.106	9.7	9.7	0.27	0.27	67.75	67.239	3.41	0.6	0.482	
AC/3 to AC/4	225	uPVC	15	2.16	25	41	0.47	2	67.02	66.697	0.03	9.7	9.7	0.22	0.22	67.144	66.806	2.25	0.6	0.724	
AC/4 to AC/5	225	uPVC	17.36	5.94	25	54	0.38	2.95	66.667	65.636	0.859	1.33	1.33	0.57	0.57	66.782	65.732	6.05	0.6	0.74	
AC/5 to A6/2	375	RRJ2	4.77	2.77	25	54	0.17	1.33	64.777	64.645	0.146	2.09	3.24	0.19	0.29	64.968	64.75	4.57	1.1	1.386	
AN/1 to AN/2	150	uPVC	32.63	1	25	18	0.91	1.1	59.529	59.202	0.334	7	7	0.26	0.26	59.792	59.315	1.46	0.5	0.384	
AN/2 to A1/11	375	RRJ2	23.34	1.41	25	24	0.11	1.1	58.869	58.54	0.561	0	0	0	0	59.056	59.063	0.03	1.1	1.43	
BPA1/1 to BPA1/2	2	No Flow	5.12	1	10	0	0	0	64.776	64.725		0	0	0	0	64.776	64.725	1	0.6	0.448	
BPA2/1 to BPA2/2	2	No Flow	5.26	1	10	0	0	0	64.651	64.598		0	0	0	0	64.651	64.598	1.01	0.6	0.447	
BPA3/1 to BPA3/2	2	No Flow	5.64	1	10	0	0	0	67.358	67.302		0	0	0	0	67.358	67.302	0.99	0.8	0.445	
BPA4/1 to BPA4/2	2	No Flow	5.5	1	10	0	0	0	67.182	67.127		0	0	0	0	67.183	67.127	1.02	0.6	0.451	
BPA5/1 to BPA5/2	2	No Flow	5.57	1	10	0	0	0	65.964	65.908		0	0	0	0	65.964	65.908	1	0.6	0.448	
BPA6/1 to BPA6/2	2	No Flow	6.83	1	10	0	0	0	66.3	66.232		0	0	0	0	66.3	66.232	1	0.6	0.447	
BPA7/1 to BPA7/2	2	No Flow	5.31	1	10	0	0	0	62.431	62.377		0	0	0	0	62.431	62.377	1.02	0.6	0.448	

IAN VINCENT MYERS
Registered Land Surveyor

DATE: 16.07.12 REF: 20467-11



THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL STAGE 4 DRAINAGE CALCULATIONS

SHEET SIZE: A1 ORIGINAL

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

[illegible]

Printed: 3 November, 2017 4:13:15 PM File Name: J:\110358 - O'Connell Lane Caddens03 - Stage 2\CD\CC435.dwg

DESIGN STORM 1:5yr ARI HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V/head) (m)	WSE LOSS (Kw.V/head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
01/1 to 01/2	375	RRJ2	16.92	3.25	25	33	0.1	1.57	63.114	62.565	0.207	4.5	4.5	0.56	0.56	63.22	62.644	3.41	1.1	1.4	
01/2 to 01/2A	375	RRJ2	27.42	6.74	25	82	0.17	2.97	62.357	60.509	0.194	3.35	3.43	1.45	1.49	62.478	60.612	6.8	1.1	1.48	
01/2A to 01/3	375	RRJ2	32.28	7.28	25	157	0.31	3.82	60.314	57.964	0.284	1.36	1.36	1.02	1.02	60.471	58.107	7.32	1.1	1.45	
01/3 to 01/4	375	RRJ2	50.3	7.47	25	327	0.63	4.61	57.68	53.923	0.216	0.96	0.96	0.98	0.98	57.902	54.526	6.71	1.1	1.451	
01/4 to 01/5	375	RRJ2	41.83	6.05	25	430	0.92	4.28	53.707	51.177	0.146	7	7	0.86	0.86	54.526	51.461	7.33	1.1	0.858	
01/5 to 01/6	450	RRJ2	26.88	5.09	20	556	0.8	4.24	51.031	49.664	0.133	6.91	6.91	0.56	0.56	51.389	50.523	3.22	1.1	1.307	
07/1 to 01/3	375	RRJ2	13.6	2.91	25	104	0.32	1.92	58.349	57.953	0.273	9.7	9.7	0.47	0.47	58.573	58.1	3.48	1.1	1.276	
08/1 to 01/4	375	RRJ2	16.71	4.4	25	132	0.33	2.48	54.723	53.989	0.281	9.59	9.59	1	1	54.903	54.526	2.26	1.1	1.353	
13/1 to 13/2	375	RRJ2	8.17	1	25	20	0.1	0.77	66.972	66.891	0.05	4.5	4.5	0.13	0.13	67.102	66.972	1.59	1.1	1.315	
13/2 to 13/3	375	RRJ2	13.67	7.67	25	24	0.05	2.34	66.841	65.793	0.337	9.7	9.7	0.41	0.41	66.898	65.847	7.69	1.12	1.467	
13/3 to 13/4	375	RRJ2	67.42	10.4	25	71	0.12	3.64	65.455	58.44	0.292	5.27	5.39	1.53	1.67	65.544	58.527	10.41	1.1	1.528	
13/4 to 13/5	375	RRJ2	27.12	10.11	25	128	0.21	4.08	58.148	55.407	0.345	1.62	1.62	1.35	1.35	58.276	55.524	10.15	1.1	1.539	
14/1 to 13/3	375	RRJ2	9.14	2.91	15	13	0.04	1.11	65.937	65.671	0.216	4.5	4.5	0.28	0.28	66.01	65.723	3.14	1.1	1.425	
15/1 to 13/4	375	RRJ2	8.29	2.05	25	17	0.06	0.96	58.572	58.402	0.254	4.5	4.5	0.21	0.21	58.67	58.465	2.47	1.1	1.386	
33/1 to 33/2	375	RRJ2	8.34	1.44	25	21	0.09	0.89	65.603	65.484	0.051	4.5	4.5	0.18	0.18	65.727	65.561	1.99	1.1	1.35	
33/2 to 33/3	375	RRJ2	14.05	11	25	33	0.05	2.87	65.433	63.887	0.268	9.64	9.64	0.8	0.8	65.495	63.945	11.03	1.1	1.412	
33/3 to 33/4	375	RRJ2	17.01	7.86	25	75	0.14	3.03	63.619	62.282	0.221	2.13	2.13	0.99	0.99	63.73	62.377	7.96	1.1	1.499	
33/4 to 33/5	375	RRJ2	11.41	7.19	25	123	0.24	3.19	62.061	61.241	0.115	0.87	0.87	0.44	0.44	62.222	61.367	7.49	1.1	1.448	
33/5 to 18/5	375	RRJ2	13.99	5.69	25	138	0.3	3.34	61.126	60.33	0.159	0.66	0.66	0.37	0.37	61.285	60.609	4.83	1.1	1.344	
34/1 to 33/3	375	RRJ2	9.76	3.5	25	12	0.03	1.22	64.177	63.835	0.216	4.5	4.5	0.35	0.35	64.237	63.881	3.65	1.1	1.447	
35/1 to 35/2	375	RRJ2	8.35	1.4	25	12	0.05	0.79	66.907	66.79	0.32	4.5	4.5	0.14	0.14	66.992	66.848	1.72	1.1	1.387	
35/2 to 35/3	375	RRJ2	27.61	3.26	25	48	0.14	1.84	66.47	65.571	0.05	5.27	5.4	0.82	0.85	66.589	65.666	3.34	1.1	1.625	
35/3 to 35/4	375	RRJ2	23.53	1.85	25	52	0.2	1.75	65.521	65.085	0.066	0.64	0.64	0.1	0.1	65.642	65.199	1.88	1.1	1.551	
35/4 to 35/5	375	RRJ2	30.97	2.57	25	57	0.19	2.05	65.019	64.223	0.072	0.74	0.74	0.15	0.15	65.134	64.333	2.59	1.1	1.419	
35/5 to 35/6	375	RRJ2	22.06	2.5	25	64	0.21	2.05	64.151	63.598	0.05	0.76	0.76	0.16	0.16	64.278	63.716	2.55	1.1	1.417	
35/6 to 35/7	375	RRJ2	15.25	3.67	25	87	0.24	2.41	63.548	62.989	0.127	0.88	0.88	0.26	0.26	63.696	63.114	3.82	1.13	1.378	
35/7 to 35/8	375	RRJ2	52.54	1	25	93	0.49	1.63	62.862	62.336	0.03	0.78	0.78	0.1	0.1	63.06	62.521	1.03	1.1	1.324	
35/8 to 35/9	375	RRJ2	29.24	3.09	25	146	0.44	2.57	62.306	61.402	0.129	7	7	0.68	0.68	62.517	61.575	3.22	1.1	1.329	
36/1 to 35/6	375	RRJ2	8.88	1	25	18	0.09	0.77	63.717	63.628	0.08	4.5	4.5	0.13	0.13	63.838	63.706	1.49	1.1	1.345	
37/1 to 35/8	375	RRJ2	12.99	1	25	13	0.07	0.63	62.49	62.36	0.054	4.5	4.5	0.1	0.1	62.577	62.517	0.46	1.1	1.384	
48/1 to 01/2A	375	RRJ2	12.92	2.4	25	37	0.13	1.1	60.818	60.507	0.193	9.7	9.7	0.59	0.59	60.988	60.598	3.02	1.1	1.315	
BP10/1 to BP10/2	2	No Flow	2.6	1	10	0	0	0	67.155	67.129	0	0	0	0	0	67.155	67.129	1	0.6	0.448	
BP11/1 to BP11/2	2	No Flow	4.51	1	10	0	0	0	66.978	66.933	0	0	0	0	0	66.978	66.933	1	0.6	0.449	
BP12/1 to BP12/2	2	No Flow	5.38	1	10	0	0	0	65.957	65.903	0	0	0	0	0	65.957	65.903	1	0.6	0.447	
BP14/1 to BP14/2	2	No Flow	5.24	1	10	0	0	0	63.631	63.578	0	0	0	0	0	63.631	63.578	1.01	0.6	0.448	
BP19/1 to BP19/2	2	No Flow	7.49	1	10	0	0	0	64.174	64.099	0	0	0	0	0	64.174	64.099	1	0.6	0.449	
BP2/1 to BP2/2	2	No Flow	5.87	1	10	0	0	0	64.613	64.554	0	0	0	0	0	64.613	64.554	1	0.6	0.447	
BP20/1 to BP20/2	2	No Flow	5.17	1	10	0	0	0	66.944	66.892	0	0	0	0	0	66.944	66.892	1.01	0.6	0.449	
BP21/1 to BP21/2	2	No Flow	6.34	1	10	0	0	0	68.272	68.209	0	0	0	0	0	68.272	68.209	0.99	0.6	0.444	
BP22/1 to BP22/2	2	No Flow	5.34	1	10	0	0	0	64.922	64.868	0	0	0	0	0	64.922	64.868	1.01	0.6	0.447	
BP7/1 to BP7/2	2	No Flow	5.08	1	10	0	0	0	68.073	68.023	0	0	0	0	0	68.073	68.023	0.98	0.6	0.447	
BP8/1 to BP8/2	2	No Flow	5.22	1	10	0	0	0	68.168	68.116	0	0	0	0	0	68.168	68.116	1	0.6	0.448	
BP9/1 to BP9/2	2	No Flow	4.8	1	10	0	0	0	68.161	68.112	0	0	0	0	0	68.161	68.112	1.02	0.6	0.448	
E1A to E1	150	uPVC	15	3.54	25	14	0.37	1.23	66.655	66.124	0.042	9.7	9.7	0.68	0.68	66.738	66.313	2.83	0.6	0.686	
E1 to E/2	150	uPVC	15	4.96	25	25	0.57	1.81	66.082	65.338	0.052	4.5	4.5	0.75	0.75	66.313	65.419	5.96	0.6	0.542	
E/2 to E/3	150	uPVC	15	5.91	25	38	0.79	3.02	65.286	64.4	0.136	0	0	0	0	65.387	64.5	5.91	0.6	0.677	
E/3 to E/4	225	uPVC	15	6.84	25	51	0.33	3.46	64.264	63.238	0.072	9.7	9.7	0.43	0.43	64.354	63.328	6.84	0.6	0.768	
E/4 to E/5	225	uPVC	20.95	8.27	25	64	0.38	3.94	63.166	61.433	0.088	0	0	0	0	63.263	61.53	8.27	0.6	0.768	
E/5 to E/6	225	uPVC	20	8.68	25	83	0.48	3.84	61.345	59.609	0.081	1.21	1.21	0.78	0.78	61.475	59.719	8.78	0.6	0.742	
E/6 to E/7	225	uPVC	14.2	13.29	25	100	0.47	5.25	59.528	57.641	0.135	0	0	0	0	59.637	57.749	13.3	0.6	0.758	
E/7 to E/8	225	uPVC	15.19	13.12	25	112	0.53	4.69	57.506	55.513	2.678	0.73	0.73	0.74	0.74	57.651	55.629	13.31	0.47	0.749	
E/8 to 03/1	375	RRJ2	5.01	4.39	25	125	0.31	1.76	52.835	52.615	0.397	2.14	3.18	0.33	0.5	53.151	52.76	7.8	1.28	2.969	
M/1 to M/2	150	uPVC	12.5	1	25	13	0.67	0.83	61.986	61.861	0.05	4.5	4.5	0.16	0.16	62.181	61.993	1.5	0.6	0.562	
M/2 to M/3	150	uPVC	12.5	1.12	25	24	1.16	1.39	61.811	61.671	0.05	0	0	0	0	61.993	61.809	1.47	0.6	0.638	
P/1 to P/2	150	uPVC	15	1	25	13	0.67	0.88	65.452	65.302	1.684	4.5	4.5	0.18	0.18	65.636	65.392	1.63	0.6	0.567	
P/2 to P/3	150	uPVC	42.03	10.5	25	27	0.42	3.38	63.619	59.206	0.972	2.96	2.97	1.12	1.28	63.689	59.274	10.51	0.6	2.44	
P/3 to 18/6	375	RRJ2	7.09	4.44	25	32	0.08	1.54	58.234	57.919	0.303	2.09	3.24	0.25	0.39	58.377	58.363	0.2	1.1	1.45	
Q/1 to Q/2	150	uPVC	15.83	2.13	25	13	0.45	1.06	65.04	64.702	0.03	4.5	4.5	0.26	0.26	65.155	64.943	1.34	0.6	0.648	
Q/2 to Q/3	150	uPVC	18.16	2.08	25	26	0.9	1.58	64.672	64.295	1.758	9.63	9.63	0.27	0.27	64.943	64.406	2.96	0.6	0.503	
Q/3 to 33/4	375	RRJ2	5.04	4.9	25	39	0.09	1.55	62.537	62.29	0.229	2.24	3.07	0.27	0.37	62.669	62.367	5.99	1.1	2.368	
R/1 to R/2	150	uPVC	12.5	1.88	25	14	0.5	0.97	65.873	65.438	0.03	4.5	4.5	0.21	0.21						

DESIGN STORM 1:100yr ARI HYDROLOGIC RESULTS

HYDROLOGY NOTES:

1. STORMWATER SYSTEM DESIGNED USING 12D DYNAMIC (ILSAX) SYSTEM.
2. BP LINES ARE DUMMY PITS AND ARE USED TO MORE ACCURATELY DETERMINE APPROACH FLOWS AT UPSTREAM PITS AND SAG LOCATIONS. RESULTS ON THESE DUMMY LINES MAY NOT BE VALID/RELEVANT.
3. MAXIMUM FLOW WIDTHS OF 2.5m IN GUTTERS HAVE GENERALLY BEEN ADOPTED.

	<p>These plans are referred to in certificate no. 14838 approved by:</p> <p>Eric Hausfeld Accredited Certifier</p> <p>Registration No: BPB 2416</p> <p>Categories: B1,C1,C2,C3,C4,C6,C15 & D1</p>
<p align="center">Land Development Certificates www.Ldcerts.com.au</p>	

SHEET SIZE: A1 ORIGINAL

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:	MGA
DATUM:	AHD
ORIGIN:	

DESIGN STORM 1:100yr ARI HYDROLOGIC RESULTS

PIT NAME (-)	PIT TYPE (-)	CATCHMENT AREA (Ha)	PERCENT IMPERVIOUS (%)	Tc IMP (min)	Tc PERV (min)	CRITICAL STORM (min)	APPROACH FLOW (L/s)	CAPTURED FLOW (L/s)	UNCAPTURED FLOW (L/s)	GRATE DEPTH (mm)	ROAD GRADE (%)	ROAD CROSSFALL (%)	BYPASS PIT (-)	BYPASS CHANNEL FLOW (L/s)	U/S FLOW WIDTH (m)	U/S VxD (m/s ²)	D/S FLOW WIDTH (m)	D/S VxD (m/s ²)	COMMENTS (-)
01/1	1.8 m lintel		0	6	6	15	72	37	34	83	5.1		48/1	103	1.91	0.14	1.98	0.14	
01/2	2.4 m lintel		0	6	6	15	104	55	49	85	5.8		01/2A	114	1.97	0.15	2.04	0.15	
01/2A	1.8 m lintel	0.127	85	6	6	15	114	51	64	87	8		01/3	130	2.05	0.17	2.34	0.14	
01/3	2.4 m lintel	0.13	85	6	6	15	130	64	67	95	8		01/4	178	2.34	0.19	3.14	0.18	
01/4	1.8 m lintel	0.217	85	6	6	15	178	62	260	119	7.3		01/5	335	3.15	0.26	3.15	0.26	
01/5	1.8 m lintel	0.155	85	6	6	15	335	97	237	108	5.7		03/2	259	2.77	0.23	8.04	0.08	
07/1	2.4 m lintel	0.13	85	6	6	15	122	61	61	92	8		08/1	160	2.23	0.18	2.46	0.17	
08/1	2.4 m lintel	0.195	85	6	6	15	160	73	88	99	7.7		09/1	187	2.48	0.19	2.8	0.17	
13/1	2.4 m lintel		0	6	6	15	34	25	8	72	3		13/3	54	1.55	0.09	1.85	0.08	
13/2	1.8 m lintel		0	6	6	15	8	7	2	56	3.1		13/3	29	1	0.08	1.85	0.04	
13/3	1.8 m lintel	0.14	85	6	6	15	82	41	42	81	8.7		13/4	119	1.85	0.17	1.85	0.17	
13/4	1.8 m lintel	0.152	85	6	6	15	119	52	67	72	11.1		19/1	84	1.57	0.14	5.48	0.06	
14/1	1.8 m lintel		0	6	6	15	23	17	6	56	8		15/1	35	1.02	0.09	1.02	0.09	
15/1	1.8 m lintel	0.056	95	6	6	15	35	23	12	51	11.1		03/1	30	0.86	0.09	1.16	0.07	
33/1	1.8 m lintel		0	6	6	15	39	25	14	53	6.5		33/3	14	0.94	0.06	1.4	0.05	
33/2	1.8 m lintel		0	6	6	5	20	15	5	32	7.2		33/3	8	0.38	0.04	1.4	0.02	
33/3	1.8 m lintel	0.077	85	6	6	10	102	47	55	68	8.4		33/4	59	1.4	0.11	1.4	0.11	
33/4	1.8 m lintel	0.014	95	6	6	15	59	33	26	56	9.1		33/5	31	1	0.08	1	0.08	
33/5	1.8 m lintel	0.009	95	6	6	15	31	21	9	46	9.1		18/5	14	0.67	0.05	3.23	0.01	
34/1	1.8 m lintel		0	6	6	15	20	15	5	53	7.5		18/5	22	0.92	0.06	3.23	0.02	
35/1	1.8 m lintel		0	6	6	15	20	15	5	57	6.6		33/3	21	1.03	0.05	1.4	0.05	
35/2	1.8 m lintel	0.156	85	6	6	15	81	40	41	73	6.9		33/3	53	1.59	0.09	1.59	0.09	
35/3	1.8 m lintel		0	6	6	15	7	6	1	48	2.7		35/4	11	0.74	0.04	0.9	0.03	
35/4	1.8 m lintel	0.019	95	6	6	15	11	9	2	53	2.7		35/5	15	0.94	0.04	0.94	0.04	
35/5	1.8 m lintel	0.024	95	6	6	15	15	12	3	50	2.8		35/6	12	0.8	0.04	0.8	0.04	
35/6	1.8 m lintel	0.018	95	6	6	15	12	10	2	47	2.8		35/7	12	0.69	0.04	2.82	0.01	
35/7	1.8 m lintel	0.019	95	6	6	15	12	10	2	110	1.1		35/8	101	2.82	0.09	2.82	0.09	
35/8	1.8 m lintel	0.194	85	6	6	15	101	47	54	98	1.3		18/1	96	2.41	0.1	2.83	0.08	
36/1	1.8 m lintel		0	6	6		32	22	10	55	2.8		LOST	10	0.99	0.03	0.99	0.03	
37/1	1.8 m lintel		0	6	6	15	22	16	6	62	1		38/1	30	1.22	0.07	1.22	0.07	
48/1	1.8 m lintel	0.133	85	6	6	15	103	47	56	85	8		07/1	122	2	0.16	2.23	0.14	
BP10/1	BYPASS NODE	0.075	85	6	6	15	39	0	0	63	5.8		33/1	39	1.25	0.08	1.25	0.08	
BP10/2	BYPASS NODE						0	0	0	0									
BP11/1	BYPASS NODE	0.038	85	6	6	15	20	0	0	50	5.8		33/2	20	0.83	0.06	0.83	0.06	
BP11/2	BYPASS NODE						0	0	0	0									
BP12/1	BYPASS NODE	0.038	85	6	6	15	20	0	0	50	6		34/1	20	0.83	0.06	0.89	0.06	
BP12/2	BYPASS NODE						0	0	0	0									
BP14/1	BYPASS NODE	0.043	85	6	6	15	22	0	0	70	1		37/1	22	1.5	0.04	1.5	0.04	
BP19/1	BYPASS NODE	0.201	85	6	6	15	105	0	0	87	4.5		01/2	104	2.04	0.13	2.04	0.13	
BP19/2	BYPASS NODE						0	0	0	0									
BP2/1	BYPASS NODE	0.138	85	6	6	15	72	0	0	79	3.9		01/1	72	1.78	0.11	1.92	0.1	
BP2/2	BYPASS NODE						0	0	0	0									
BP20/1	BYPASS NODE	0.014	85	6	6	15	7	0	0	38	5.8		35/3	7	0.46	0.03	0.74	0.02	
BP20/2	BYPASS NODE						0	0	0	0									
BP21/1	BYPASS NODE	0.038	85	6	6	15	20	0	0	51	5.8		35/1	20	0.85	0.06	1.03	0.05	
BP21/2	BYPASS NODE						0	0	0	0									
BP22/1	BYPASS NODE	0.061	85	6	6	15	32	0	0	67	2.8		36/1	32	1.38	0.06	1.38	0.06	
BP22/2	BYPASS NODE						0	0	0	0									
BP7/1	BYPASS NODE	0.044	85	6	6	15	23	0	0	53	5.3		14/1	23	0.94	0.06	1.02	0.06	
BP7/2	BYPASS NODE						0	0	0	0									
BP8/1	BYPASS NODE	0.016	85	6	6	15	8	0	0	44	1.7		13/2	8	0.59	0.03	0.99	0.02	
BP8/2	BYPASS NODE						0	0	0	0									
BP9/1	BYPASS NODE	0.065	85	6	6	15	34	0	0	70	1.7		13/1	34	1.5	0.06	1.53	0.06	
BP9/2	BYPASS NODE						0	0	0	0									
E/1A	GSIP 600x600 IAD	0.043	75	6	6	15	22	22	0	0									
E/1	GSIP 600x600 IAD	0.043	75	6	6	15	22	22	0	0									
E/2	GSIP 600x600 IAD	0.044	75	6	6	15	22	22	0	0									
E/3	GSIP 600x600 IAD	0.044	75	6	6	15	22	22	0	0									
E/4	GSIP 600x600 IAD	0.044	75	6	6	15	22	22	0	0									
E/5	GSIP 600x600 IAD	0.061	75	6	6	15	31	31	0	0									
E/6	GSIP 600x600 IAD	0.058	75	6	6	15	30	30	0	0									
E/7	GSIP 600x600 IAD	0.041	75	6	6	15	21	21	0	0									
E/8	GSIP 900x900 IAD	0.044	75	6	6	15	22	22	0	0									
M/1	GSIP 600x600 IAD	0.045	75	6	6	15	23	23	0	0									
M/2	GSIP 600x600 IAD	0.038	75	6	6	15	19	19	0	0									
P/1	GSIP 600x600 IAD	0.045	75	6	6	15	23	23	0	0									
P/2	GSIP 600x600 IAD	0.045	75	6	6	15	23	23	0	0									
P/3	JP		0	6	6		0	0	0	0									
Q/1	GSIP 600x600 IAD	0.044	75	6	6	15	23	23	0	0									
Q/2	GSIP 600x600 IAD	0.044	75	6	6	15	22	22	0	0									
Q/3	JP	0.045	75	6	6	15	23	23	0	0									
R/1	GSIP 600x600 IAD	0.045	75	6	6	15	23	23	0	0									
R/2	GSIP 600x600 IAD	0.037	75	6	6	15	19	19	0	0									
R/3	GSIP 600x600 IAD	0.037	75	6	6	15	19	19	0	0									
R/4	GSIP 600x600 IAD	0.037	75	6	6	15	19	19	0	0									
R/5	GSIP 600x600 IAD	0.037	75	6	6	15	19	19	0	0									
R/6	JP		0	6	6		0	0	0	0									
S/1	GSIP 600x600 IAD	0.058	75	6	6	15	30	30	0	0									
S/2	GSIP 600x600 IAD	0.038	75	6	6	15	20	20	0	0									
S/3	GSIP 600x900 IAD	0.035	75	6	6	15	18	18	0	0									
S/4	JP		0	6	6		0	0	0	0									
S/6	JP		0	6	6		0	0	0	0									
T/6	JP		0	6	6		0	0	0	0									
T/7	JP		0	6	6		0	0	0	0									
U/3	GSIP 900x900 IAD	0.046	75	6	6	15	24	24	0	0									
U/4	JP		0	6	6		0	0	0	0									

HYDROLOGY NOTES:

1. STORMWATER SYSTEM DESIGNED USING 12D DYNAMIC (LSAX) SYSTEM.
2. BP LINES ARE DUMMY PITS AND ARE USED TO MORE ACCURATELY DETERMINE APPROACH FLOWS AT UPSTREAM PITS AND SAG LOCATIONS. RESULTS ON THESE DUMMY LINES MAY NOT BE VALID/RELEVANT.
3. MAXIMUM FLOW WIDTHS OF 2.5m IN GUTTERS HAVE GENERALLY BEEN ADOPTED.

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: 
IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4



These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4

DESIGN STORM 1:100yr ARI HYDRAULIC RESULTS

PIPE NAME	PIPE DIAMETER	PIPE TYPE	PIPE LENGTH	PIPE GRADE	CRITICAL STORM	PEAK FLOW	CAPACITY RATIO	PEAK VELOCITY	PIPE U/S IL	PIPE D/S IL	PIPE D/S DROP	U/S PIT	D/S PIT	PIT LOSS	WSE LOSS	U/S PIPE	D/S PIPE	HGL	MINIMUM COVER	MINIMUM FREEBOARD	COMMENTS
(-)	(mm)	(-)	(m)	(%)	(min)	(L/s)	(-)	(m/s)	(m)	(m)	(m)	Ku	Kw	(Ku,Vhead)	(Kw,Vhead)	HGL	HGL	GRADE	(m)	(m)	
A1/1 to A1/2	375	RRJ2	24.7	1.23	20	110	0.52	1.49	63.648	63.345	0.05	2.22	2.65	0.25	0.3	64.416	64.303	0.46	1.1	0.755	
A1/2 to A1/3	375	RRJ2	13.55	4.08	15	141	0.37	2.11	63.295	62.743	0.064	0.94	0.94	0.19	0.19	64.303	64.192	0.82	1.11	0.524	
A1/3 to A1/4	375	RRJ2	8	1	20	208	1.09	1.88	62.679	62.599	0.104	2.02	2.05	0.28	0.28	64.192	63.837	4.44	1.1	0.002	
A1/4 to A1/5	375	RRJ2	15.56	1	10	250	1.32	2.28	62.495	62.339	0.123	0.69	0.69	0.18	0.18	63.837	63.41	2.74	1.26	0.298	
A1/5 to A1/6	375	RRJ2	21.37	5.14	5	343	0.8	3.68	62.216	61.117	0.251	0.72	0.72	0.47	0.47	63.41	62.63	3.65	1.1	0.376	
A1/6 to A1/7	375	RRJ2	25.7	4.39	15	398	1	3.61	60.866	59.738	0.05	2.08	2.66	0.59	0.7	62.63	61.403	4.77	1.1	-0.08	
A1/7 to A1/8	525	RRJ2	13.54	1.29	15	479	0.91	2.21	59.688	59.514	0.279	0.8	0.8	0.18	0.18	61.403	61.12	2.09	1.1	-0.095	
A1/8 to A1/9	600	RRJ2	8	1	20	805	1.21	2.85	59.235	59.155	0.05	1.52	1.66	0.51	0.53	61.12	60.492	7.85	1.19	0.002	
A1/9 to A1/10	600	RRJ2	3.29	1	20	923	1.39	3.27	59.105	59.072	0.03	0.67	0.67	0.33	0.33	60.492	60.101	11.88	1.38	0.507	
A1/10 to A1/11	600	RRJ2	7.23	1	20	924	1.39	3.27	59.042	58.97	0.991	0.5	0.5	0.27	0.27	60.101	59.69	5.69	0.69	1.01	
A1/11 to A1/12	600	RRJ2	7.9	1	20	948	1.42	3.35	57.979	57.9		2.03	2.45	0.87	1.1	59.69	58.66	13.04	1.09	0.509	
A18/1 to A6/3	375	RRJ2	13.72	3.5	15	12	0.03	0.85	63.6	63.119	0.05	4.5	4.5	0.17	0.17	63.647	63.24	2.97	1.1	1.463	
A2/1 to A1/2	375	RRJ2	12.63	1.17	15	35	0.17	0.96	63.536	63.388	0.094	4.5	4.5	0.21	0.21	64.32	64.303	0.13	1.1	0.691	
A3/1 to A1/5	375	RRJ2	8.51	1.16	20	54	0.26	0.98	62.456	62.357	0.141	4.5	4.5	0.22	0.22	63.45	63.41	0.47	1.1	0.475	
A4/1 to A1/7	375	RRJ2	12.68	2.29	5	76	0.26	1.21	60.167	59.876	0.188	4.5	4.5	0.34	0.34	61.478	61.403	0.59	1.1	0.194	
A5/1 to A5/2	375	RRJ2	8.16	1	15	20	0.1	0.77	65.671	65.589	0.138	4.5	4.5	0.14	0.14	65.801	65.671	1.59	1.1	1.336	
A5/2 to A5/3	375	RRJ2	19.69	5.66	15	35	0.08	2.28	65.451	64.336	0.268	2.24	2.63	0.59	0.69	65.529	64.407	5.7	1.1	1.501	
A5/3 to A1/4	375	RRJ2	26.86	5.67	15	45	0.1	1.74	64.068	62.545	0.05	7	7	0.26	0.26	64.148	63.837	1.16	1.1	1.611	
A6/1 to A6/2	375	RRJ2	11.67	3.02	15	10	0.03	0.79	64.901	64.549	0.05	4.5	4.5	0.14	0.14	64.946	64.68	2.28	1.1	1.456	
A6/2 to A6/3	375	RRJ2	26.32	4.81	15	134	0.32	2.89	64.499	63.233	0.164	2.11	2.51	0.89	1.06	64.68	63.379	4.94	1.1	1.278	
A6/3 to A6/4	375	RRJ2	47.58	5.18	15	185	0.43	3.46	63.069	60.605	0.343	1.26	1.26	0.75	0.75	63.24	61.866	2.89	1.1	1.288	
A6/4 to A1/8	375	RRJ2	36.74	2.66	25	231	0.74	2.09	60.262	59.285	0.05	7	7	0.46	0.46	61.866	61.12	2.03	1.1	0.178	
A7/1 to A6/4	375	RRJ2	12.59	3.24	15	33	0.1	1.13	61.041	60.632	0.37	4.5	4.5	0.29	0.29	61.869	61.866	0.02	1.1	0.681	
AA/1 to AA/2	150	uPVC	15.03	1.53	15	23	0.92	1.34	66.443	66.212	0.071	4.5	4.5	0.41	0.41	66.915	66.367	3.65	0.6	0.31	
AA/2 to AA/3	225	uPVC	11.09	2.64	15	47	0.49	1.31	66.142	65.849	0.05	9.7	9.7	0.32	0.32	66.367	66.193	1.57	0.6	0.616	
AA/3 to AA/4	225	uPVC	1.5	1	15	67	1.16	1.72	65.799	65.784	0.05	1.56	1.56	0.17	0.17	66.193	66.015	11.84	0.62	0.48	
AA/4 to AA/5	225	uPVC	5.22	1.6	15	69	0.94	1.82	65.734	65.65	0.03	0.25	0.25	0.04	0.04	66.015	65.918	1.86	0.6	0.599	
AA/5 to AA/6	225	uPVC	37.7	2.51	15	82	0.89	2.35	65.62	64.673	0.704	7	7	0.34	0.34	65.918	64.837	2.87	0.6	0.552	
AA/6 to A1/1	375	RRJ2	4.75	2.47	15	82	0.28	1.4	63.969	63.851	0.203	2.09	3.24	0.21	0.32	64.459	64.416	0.91	1.1	1.037	
AB/1 to AB/2	150	uPVC	17.62	4.64	15	27	0.63	1.82	65.998	65.181	0.041	4.5	4.5	0.76	0.76	66.78	65.917	4.9	0.6	-0.002	
AB/2 to AB/3	150	uPVC	17.11	5.54	15	50	1.07	2.84	65.139	64.191	0.163	2.3	2.3	0.54	0.54	65.917	64.341	9.21	0.6	-0.002	
AB/3 to AB/4	225	uPVC	10	6.25	5	75	0.51	3.43	64.027	63.403	0.071	7	7	0.4	0.4	64.156	64.076	0.8	0.6	0.755	
AB/4 to AB/5	225	uPVC	10	4.98	15	87	0.67	2.6	63.331	62.833	0.03	0.97	0.97	0.31	0.31	64.076	63.697	3.79	0.6	0.155	
AB/5 to AB/6	225	uPVC	10	2.36	20	99	1.11	2.49	62.803	62.567	0.03	0.85	0.85	0.19	0.19	63.697	63.328	3.69	0.6	-0.002	
AB/6 to AB/7	225	uPVC	15.65	2.98	20	113	1.12	2.83	62.537	62.071	0.724	7	7	0.23	0.23	63.328	62.694	4.05	0.6	0.052	
AB/7 to A1/6	375	RRJ2	4.75	2.45	20	106	0.36	1.44	61.347	61.231	0.365	2.09	3.24	0.22	0.34	62.694	62.63	1.35	1.1	0.185	
AC/1 to AC/2	150	uPVC	15	2.28	10	20	0.66	1.12	67.834	67.491	0.03	4.5	4.5	0.29	0.29	68.599	68.234	2.43	0.6	-0.002	
AC/2 to AC/3	150	uPVC	15	2.23	15	40	1.36	2.27	67.461	67.127	0.106	9.27	9.27	0.35	0.35	68.234	67.276	6.39	0.6	-0.002	
AC/3 to AC/4	225	uPVC	15	2.16	15	64	0.74	2.25	67.02	66.697	0.03	9.7	9.7	0.29	0.29	67.218	66.844	2.49	0.6	0.65	
AC/4 to AC/5	225	uPVC	17.36	5.94	15	86	0.61	3.06	66.667	65.636	0.859	8.76	8.76	0.63	0.63	66.844	65.763	6.23	0.6	0.678	
AC/5 to A6/2	375	RRJ2	4.77	2.77	15	86	0.27	1.46	64.777	64.645	0.146	2.09	3.24	0.23	0.35	65.039	64.779	5.45	1.1	1.314	
AN/1 to AN/2	150	uPVC	32.63	1	10	27	1.35	1.52	59.529	59.202	0.334	7	7	0.26	0.26	60.178	59.696	1.48	0.5	-0.002	
AN/2 to A1/11	375	RRJ2	23.34	1.41	5	54	0.24	0.7	58.869	58.54	0.561	1.76	1.98	0	0	59.696	59.693	0.01	1.1	0.79	
BPA1/1 to BPA1/2	2	No Flow	5.12	1	5	0	0	0	64.776	64.725		0	0	0	0	64.776	64.725	1	0.6	0.448	
BPA2/1 to BPA2/2	2	No Flow	5.26	1	5	0	0	0	64.651	64.598		0	0	0	0	64.651	64.598	1.01	0.6	0.447	
BPA3/1 to BPA3/2	2	No Flow	5.64	1	5	0	0	0	67.358	67.302		0	0	0	0	67.358	67.302	0.99	0.6	0.445	
BPA4/1 to BPA4/2	2	No Flow	5.5	1	5	0	0	0	67.182	67.127		0	0	0	0	67.183	67.127	1.02	0.6	0.451	
BPA5/1 to BPA5/2	2	No Flow	5.57	1	5	0	0	0	65.964	65.908		0	0	0	0	65.964	65.908	1	0.6	0.448	
BPA6/1 to BPA6/2	2	No Flow	6.83	1	5	0	0	0	66.3	66.232		0	0	0	0	66.3	66.232	1	0.6	0.447	
BPA7/1 to BPA7/2	2	No Flow	5.31	1	5	0	0	0	62.431	62.377		0	0	0	0	62.431	62.377	1.02	0.6	0.448	

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *I-Morgan*

IAN VINCENT MYERS
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

	<p>These plans are referred to in certificate no. 14838 approved by:</p> <p>Eric Hausfeld Accredited Certifier</p> <p>Registration No: BPB 2416</p> <p>Categories: B1,C1,C2,C3,C4,C6,C15 & D1</p>
<p align="center">Land Development Certificates www.Ldcerts.com.au</p>	

C	CERTIFIERS COMMENTS - DRAINAGE CALCULATIONS AMENDED	JT	UF	MS	AM	18/05/16
B	CERTIFIERS COMMENTS - DRAINAGE CALCULATIONS AMENDED	JT	NM	RT	MS	21/09/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH:
MGA

DATUM:
AHD

ORIGIN:



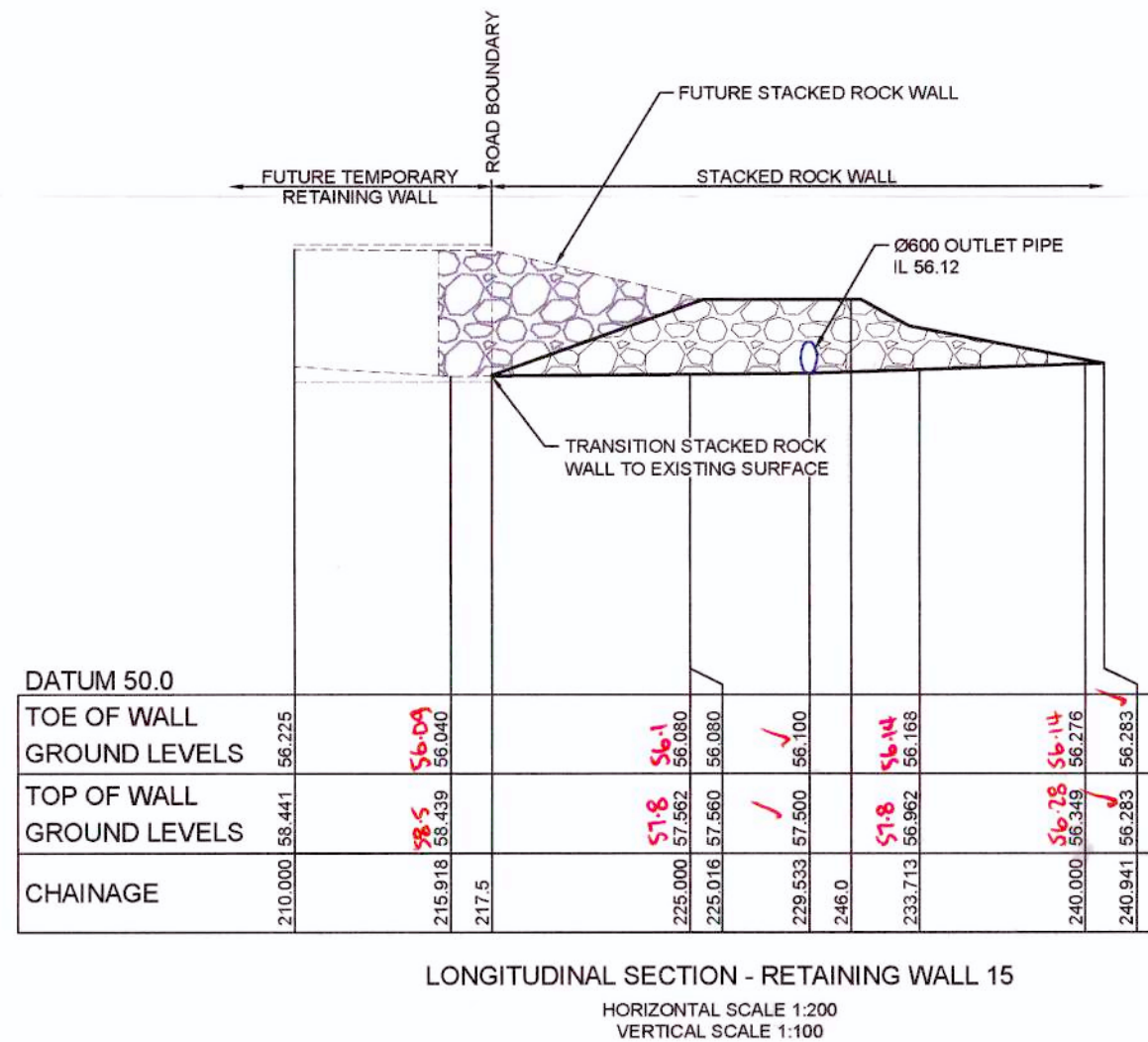
ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
DRAINAGE CALCULATIONS

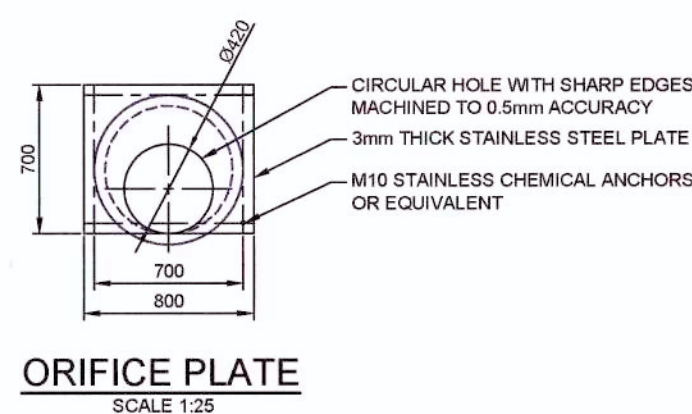
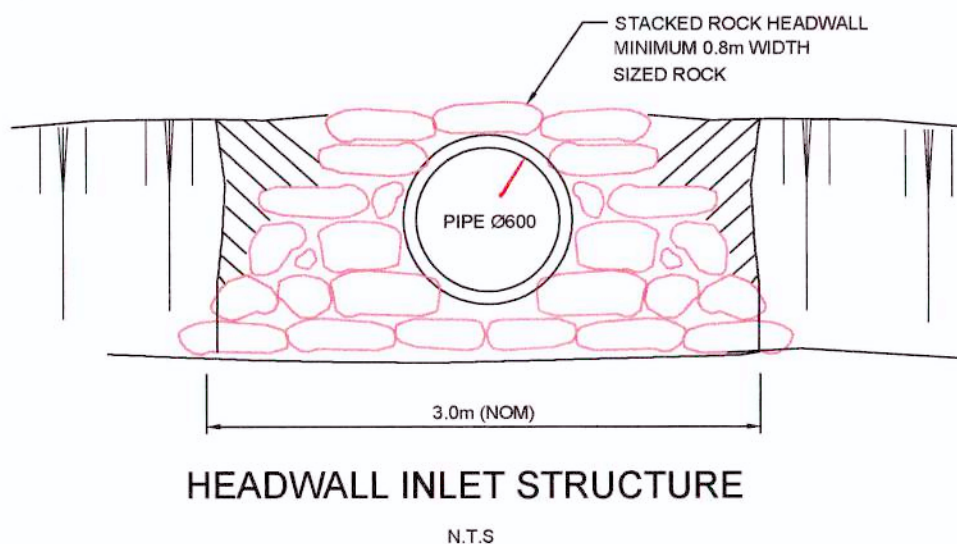
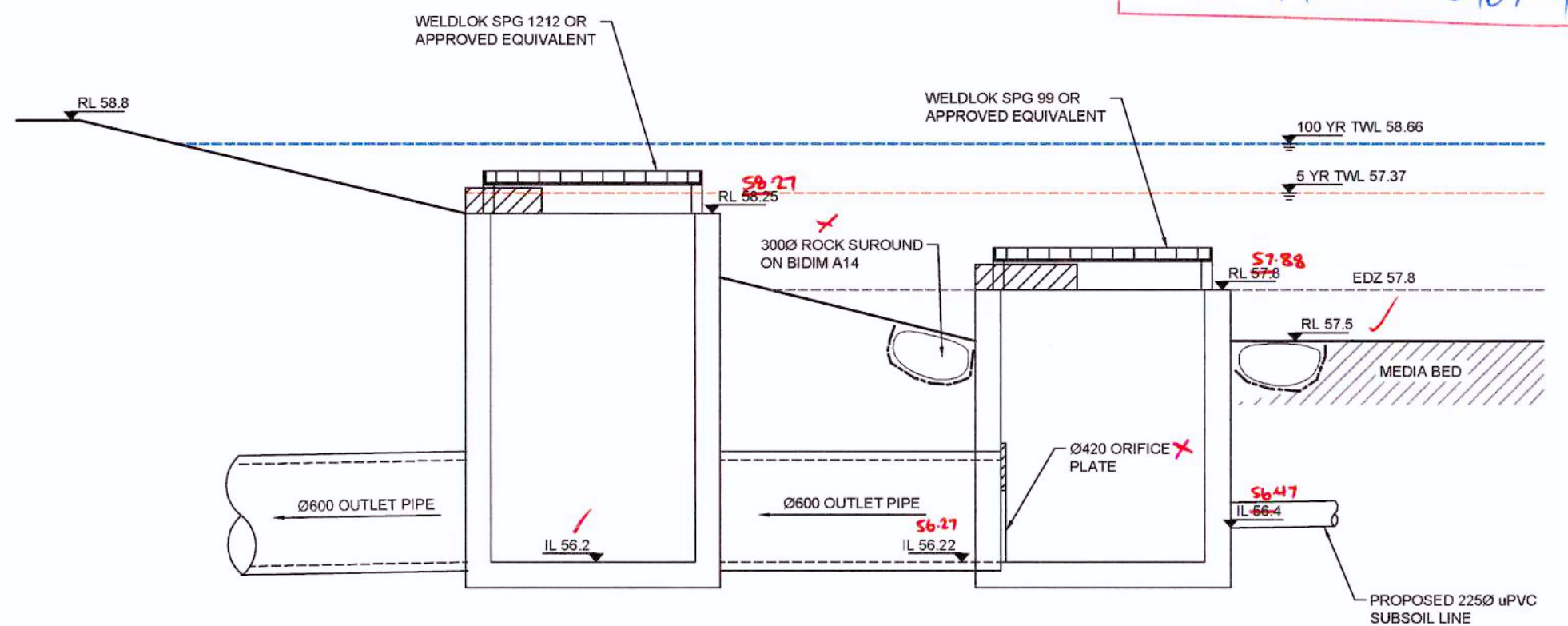
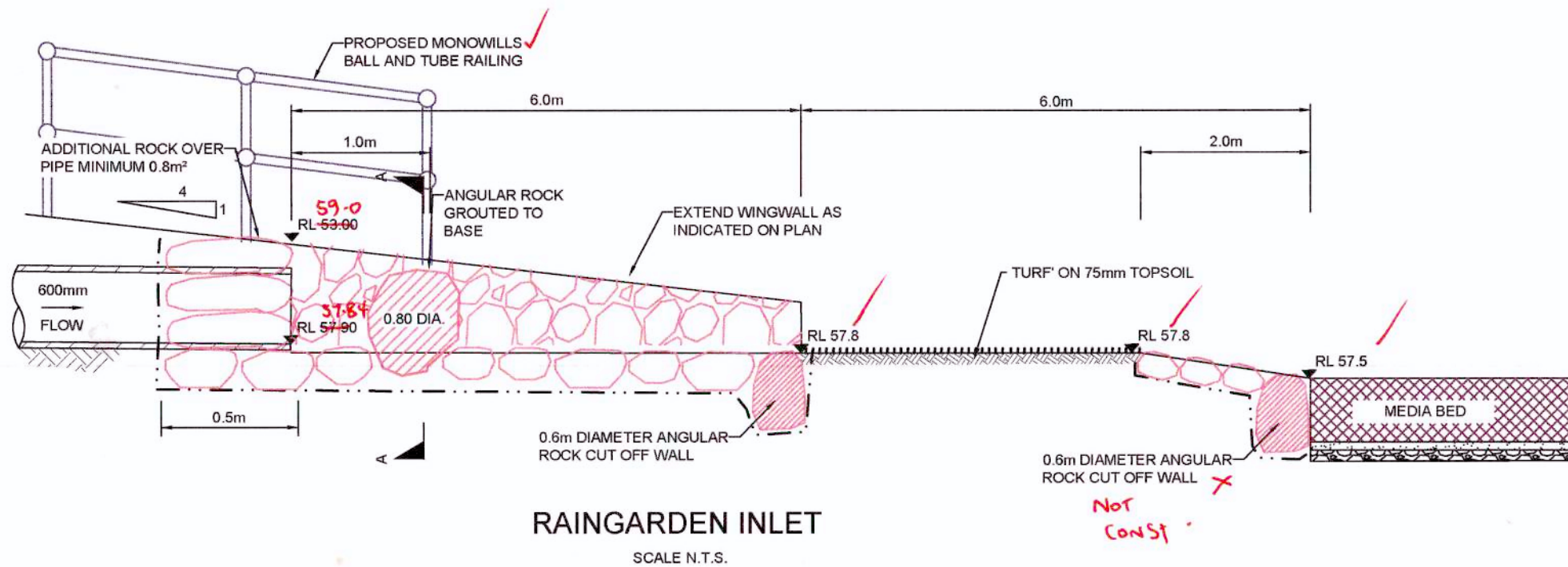
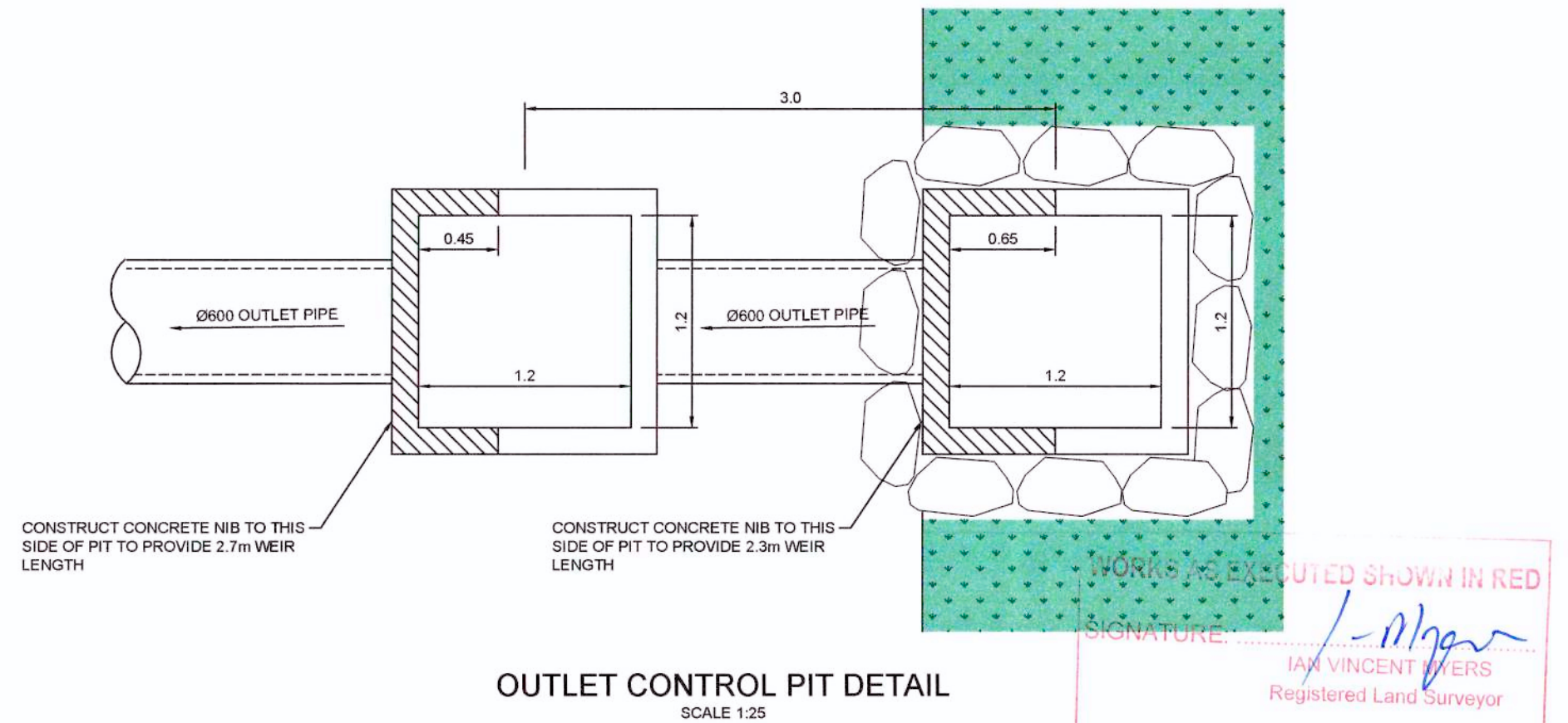
PLAN No:	110358/CC438	C
FILE No:	110358CC438	
SHEET SIZE:	A1 ORIGINAL	

DESIGN STORM 1:100yr ARI HYDRAULIC RESULTS

PIPE NAME	PIPE DIAMETER	PIPE TYPE	PIPE LENGTH	PIPE GRADE	CRITICAL STORM	PEAK FLOW	CAPACITY RATIO	PEAK VELOCITY	PIPE U/S IL	PIPE D/S IL	PIPE D/S DROP	U/S PIT	D/S PIT	PIT LOSS	WSE LOSS	U/S PIPE	D/S PIPE	HGL	MINIMUM COVER	MINIMUM FREEBOARD	COMMENTS
(-)	(mm)	(-)	(m)	(%)	(min)	(L/s)	(-)	(m/s)	(m)	(m)	(m)	(-)	(-)	(Ku.V'head)	(Kw.V'head)	(m)	(m)	(%)	(m)	(m)	
01/1 to 01/2	375	RRJ2	16.92	3.25	15	37	0.11	1.59	63.114	62.565	0.207	4.5	4.5	0.58	0.58	63.229	62.648	3.43	1.1	1.392	
01/2 to 01/2A	375	RRJ2	27.42	6.74	15	92	0.19	3.03	62.357	60.509	0.194	3.48	3.55	1.52	1.56	62.488	60.618	6.82	1.1	1.471	
01/2A to 01/3	375	RRJ2	32.28	7.28	15	195	0.38	3.94	60.314	57.964	0.284	1.47	1.47	1.14	1.14	60.494	58.187	7.15	1.1	1.427	
01/3 to 01/4	375	RRJ2	50.3	7.47	15	394	0.76	4.64	57.68	53.923	0.216	1.08	1.08	1.05	1.05	58.187	55.503	5.34	1.1	1.166	
01/4 to 01/5	375	RRJ2	41.83	6.05	5	490	1.05	4.43	53.707	51.177	0.146	7	7	0.91	0.91	55.503	52.804	6.45	1.1	-0.119	
01/5 to 01/6	450	RRJ2	26.88	5.09	90	616	0.88	4.21	51.031	49.664	0.133	7	7	0.62	0.62	52.804	51.331	5.48	1.1	-0.108	
07/1 to 01/3	375	RRJ2	13.6	2.91	15	165	0.51	2.04	58.349	57.953	0.273	9.7	9.7	0.5	0.5	58.672	58.187	3.57	1.1	1.178	
08/1 to 01/4	375	RRJ2	16.71	4.4	5	175	0.44	2.53	54.723	53.989	0.281	9.7	9.7	1.1	1.1	55.725	55.503	1.33	1.1	0.531	
13/1 to 13/2	375	RRJ2	8.17	1	15	25	0.13	0.8	66.972	66.891	0.05	4.5	4.5	0.15	0.15	67.123	66.982	1.73	1.1	1.294	
13/2 to 13/3	375	RRJ2	13.67	7.67	15	31	0.06	2.5	66.841	65.793	0.337	9.7	9.7	0.51	0.51	66.906	65.855	7.69	1.12	1.459	
13/3 to 13/4	375	RRJ2	67.42	10.4	15	89	0.14	3.87	65.455	58.44	0.292	6.72	6.74	1.97	1.98	65.554	58.536	10.41	1.1	1.517	
13/4 to 13/5	375	RRJ2	27.12	10.11	15	184	0.3	4.3	58.148	55.407	0.345	1.68	1.68	1.52	1.52	58.298	56.848	5.35	1.1	1.517	
14/1 to 13/3	375	RRJ2	9.14	2.91	15	17	0.05	1.14	65.937	65.671	0.216	4.5	4.5	0.3	0.3	66.021	65.729	3.19	1.1	1.414	
15/1 to 13/4	375	RRJ2	8.29	2.05	15	23	0.08	1.02	58.572	58.402	0.254	4.5	4.5	0.24	0.24	58.692	58.476	2.61	1.1	1.364	
33/1 to 33/2	375	RRJ2	8.34	1.44	15	25	0.11	0.92	65.603	65.484	0.051	4.5	4.5	0.19	0.19	65.741	65.568	2.07	1.1	1.336	
33/2 to 33/3	375	RRJ2	14.05	11	15	40	0.06	3	65.433	63.887	0.268	9.7	9.7	0.97	0.97	65.502	63.951	11.04	1.1	1.405	
33/3 to 33/4	375	RRJ2	17.01	7.86	25	113	0.21	3.2	63.619	62.282	0.221	2.31	2.31	1.15	1.15	63.758	62.459	7.64	1.1	1.471	
33/4 to 33/5	375	RRJ2	11.41	7.19	20	286	0.56	3.61	62.061	61.241	0.115	1.15	1.15	0.7	0.7	62.459	62.168	2.55	1.1	1.212	
33/5 to 18/5	375	RRJ2	13.99	5.69	5	219	0.48	3.49	61.126	60.33	0.159	0.79	0.79	0.49	0.49	62.168	61.861	2.19	1.1	0.461	
34/1 to 33/3	375	RRJ2	9.76	3.5	15	15	0.04	1.26	64.177	63.835	0.216	4.5	4.5	0.36	0.36	64.248	63.887	3.7	1.1	1.437	
35/1 to 35/2	375	RRJ2	8.35	1.4	15	15	0.07	0.82	66.907	66.79	0.32	4.5	4.5	0.16	0.16	67.007	66.856	1.81	1.1	1.373	
35/2 to 35/3	375	RRJ2	27.61	3.26	15	55	0.16	1.9	66.47	65.571	0.05	5.26	5.4	0.84	0.86	66.6	65.673	3.36	1.1	1.614	
35/3 to 35/4	375	RRJ2	23.53	1.85	15	60	0.23	1.81	65.521	65.085	0.066	0.71	0.71	0.11	0.11	65.654	65.209	1.89	1.1	1.539	
35/4 to 35/5	375	RRJ2	30.97	2.57	15	69	0.23	2.14	65.019	64.223	0.072	0.84	0.84	0.2	0.2	65.148	64.344	2.6	1.1	1.405	
35/5 to 35/6	375	RRJ2	22.06	2.5	15	80	0.27	2.13	64.151	63.598	0.05	0.88	0.88	0.2	0.2	64.299	63.731	2.57	1.1	1.396	
35/6 to 35/7	375	RRJ2	15.25	3.67	15	111	0.31	2.45	63.548	62.989	0.127	0.98	0.98	0.3	0.3	63.728	63.131	3.91	1.13	1.346	
35/7 to 35/8	375	RRJ2	52.54	1	15	120	0.63	1.7	62.862	62.336	0.03	0.87	0.87	0.13	0.13	63.1	62.556	1.04	1.1	1.284	
35/8 to 35/9	375	RRJ2	29.24	3.09	15	182	0.54	2.65	62.306	61.402	0.129	7	7	0.76	0.76	62.556	61.599	3.27	1.1	1.29	
36/1 to 35/6	375	RRJ2	8.88	1	15	21	0.11	0.78	63.717	63.628	0.08	4.5	4.5	0.14	0.14	63.853	63.728	1.41	1.1	1.329	
37/1 to 35/8	375	RRJ2	12.99	1	15	16	0.08	0.68	62.49	62.36	0.054	4.5	4.5	0.11	0.11	62.601	62.566	0.35	1.1	1.359	
48/1 to 01/2A	375	RRJ2	12.92	2.4	15	47	0.16	1.27	60.818	60.507	0.193	9.7	9.7	0.62	0.62	61.019	60.609	3.17	1.1	1.284	
BP10/1 to BP10/2	2	No Flow	2.6	1	5	0	0	0	67.155	67.129	0	0	0	0	0	67.155	67.129	1	0.6	0.448	
BP11/1 to BP11/2	2	No Flow	4.51	1	5	0	0	0	66.978	66.933	0	0	0	0	0	66.978	66.933	1	0.6	0.449	
BP12/1 to BP12/2	2	No Flow	5.38	1	5	0	0	0	65.957	65.903	0	0	0	0	0	65.957	65.903	1	0.6	0.447	
BP14/1 to BP14/2	2	No Flow	5.24	1	5	0	0	0	63.631	63.578	0	0	0	0	0	63.631	63.578	1.01	0.6	0.448	
BP19/1 to BP19/2	2	No Flow	7.49	1	5	0	0	0	64.174	64.099	0	0	0	0	0	64.174	64.099	1	0.6	0.449	
BP21/1 to BP21/2	2	No Flow	5.87	1	5	0	0	0	64.613	64.554	0	0	0	0	0	64.613	64.554	1	0.6	0.447	
BP20/1 to BP20/2	2	No Flow	5.17	1	5	0	0	0	66.944	66.892	0	0	0	0	0	66.944	66.892	1.01	0.6	0.449	
BP21/1 to BP21/2	2	No Flow	6.34	1	5	0	0	0	68.272	68.209	0	0	0	0	0	68.272	68.209	0.99	0.6	0.444	
BP22/1 to BP22/2	2	No Flow	5.34	1	5	0	0	0	64.922	64.868	0	0	0	0	0	64.922	64.868	1.01	0.6	0.447	
BP7/1 to BP7/2	2	No Flow	5.08	1	5	0	0	0	68.073	68.023	0	0	0	0	0	68.073	68.023	0.98	0.6	0.447	
BP8/1 to BP8/2	2	No Flow	5.22	1	5	0	0	0	68.168	68.116	0	0	0	0	0	68.168	68.116	1	0.6	0.448	
BP9/1 to BP9/2	2	No Flow	4.8	1	5	0	0	0	68.161	68.112	0	0	0	0	0	68.161	68.112	1.02	0.6	0.448	
E/1A to E/1	150	uPVC	15	3.54	15	22	0.59	1.25	66.655	66.124	0.042	9.7	9.7	0.69	0.69	67.22	66.857	2.42	0.6	0.204	
E/1 to E/2	150	uPVC	15	4.96	10	36	0.81	2.12	66.082	65.338	0.052	4.5	4.5	1.03	1.03	66.857	65.681	7.84	0.6	-0.002	
E/2 to E/3	150	uPVC	15	5.91	15	54	1.13	3.11	65.286	64.4	0.136	0	0	0	0	65.681	64.549	7.55	0.6	0.383	
E/3 to E/4	225	uPVC	15	6.84	15	77	0.5	3.81	64.264	63.238	0.072	9.7	9.7	0.66	0.66	64.383	63.351	6.88	0.6	0.738	
E/4 to E/5	225	uPVC	20.95	8.27	15	99	0.59	4.37	63.166	61.433	0.088	0	0	0	0	63.29	61.715	7.52	0.6	0.74	
E/5 to E/6	225	uPVC	20	8.68	15	128	0.74	3.92	61.345	59.609	0.081	9.55	9.55	0.99	0.99	61.715	59.753	9.81	0.6	0.502	
E/6 to E/7	225	uPVC	14.2	13.29	15	157	0.73	5.68	59.528	57.641	0.135	0	0	0	0	59.671	58.344	9.35	0.6	0.724	
E/7 to E/8	225	uPVC	15.19	13.12	15	177	0.83	4.92	57.506	55.513	2.678	9.7	9.7	0.82	0.82	58.344	55.67	17.6	0.47	0.056	
E/8 to 03/1	375	RRJ2	5.01	4.39	15	198	0.5	2.23	52.835	52.615	0.397	2.14	3.18	0.35	0.69	53.351	52.802	10.95	1.28	2.768	
M/1 to M/2	150	uPVC	12.5	1	10	18	0.91	1.02	61.986	61.861	0.05	4.5	4.5	0.24	0.24	62.744	62.524	1.76	0.6	-0.002	
M/2 to M/3	150	uPVC	12.5	1.12	10	33	1.59	1.88	61.811	61.671	0.05	0	0	0	0	62.524	62.172	2.82	0.6	0.107	
P/1 to P/2	150	uPVC	15	1	15	22	1.13	1.29	65.452	65.302	1.684	4.5	4.5	0.38	0.38	65.994	65.437	3.71	0.6	0.209	
P/2 to P/3	150	uPVC	42.03	10.5	25	48	0.74	3.74	63.619	59.206	0.972	4.67	4.25	1.37	1.46	63.72	59.343	10.41	0.6	2.409	
P/3 to 18/6	375	RRJ2	7.09	4.44	25	56	0.14	1.67	58.234	57.919	0.303	2.09	3.24	0.3	0.46	59.343	59.326	0.24	1.1	0.485	
Q/1 to Q/2	150	uPVC	15.83	2.13	10	19	0.66	1.07	65.04	64.702	0.03	4.5	4.5	0.26	0.26	65.805	65.448	2.25	0.6	-0.002	
Q/2 to Q/3	150	uPVC	18.16	2.08	15	39	1.35	2.18	64.672	64.295	1.758	9.7	9.7	0.35	0.35	65.448	64.445	5.52	0.6	-0.002	
Q/3 to 33/4	375	RRJ2	5.04	4.9	25	64	0.15	1.62	62.537	62.29	0.229	9.7	3.07	0.3	0.41	62.721	62.459	5.2	1.1	2.316	
R/1 to R/2	150	uPVC	12.5	1.88	5	15	0.57	0.97	65.673	65.438	0.03	4.5	4.5	0.21	0.21	66.436	66.183	2.02	0.6	-0.002	
R/2 to R/3	150	uPVC																			



FOR RW 15 REFER TO CC APPROVED
STRUCTURAL CERTIFIED PLANS PREPARED
BY WILLIAMS CONSULTING ENGINEERS
AUSTRALIA PTY LTD



These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1

Land Development Certificates
www.Ldcerts.com.au

Plotted: 6 March, 2018 12:42:50 PM File Name: J:\110358 - O'Connell Lane Caddens 103 - Stage 2\CD\CC\STAGE 4\110358CC442.dwg

AMENDMENT	DES	DRN	CKD	APR	DATE
D	JT	JT	RT	MS	05/03/18
C	JT	JT	RT	MS	03/11/17
B	JT	NM	RT	MS	21/09/17
A	JT	NM	RT	MS	03/08/17

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

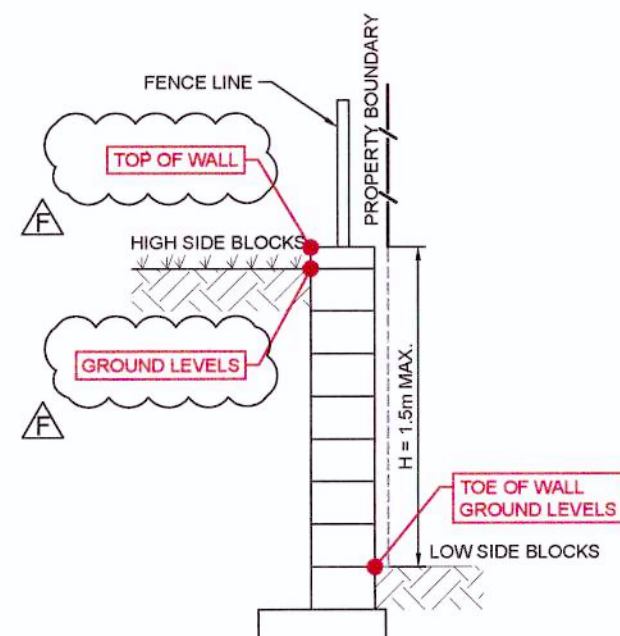
CADDENS HILL
STAGE 4
BASIN DETAILS

PLAN No:
110358/CC442 **D**

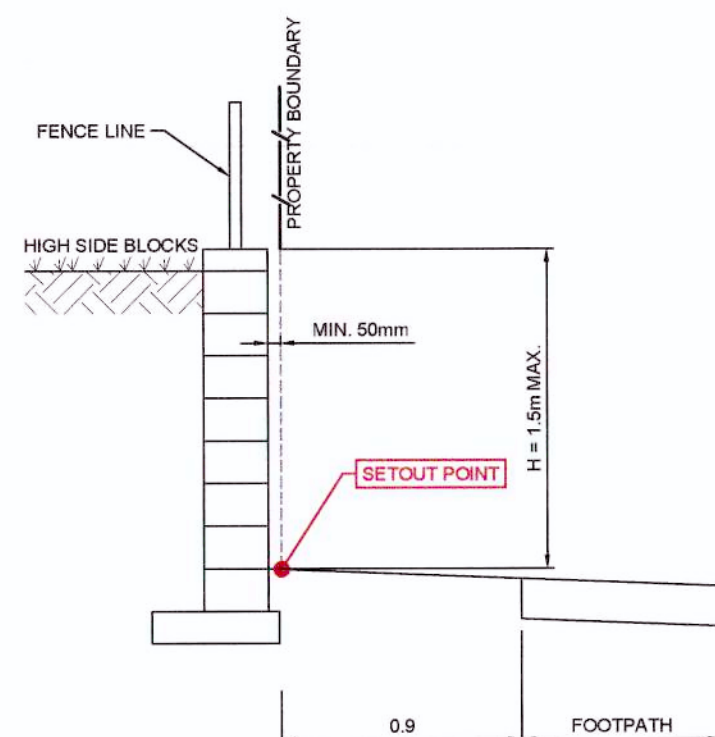
FILE No: 110358CC442

SHEET SIZE: A1 ORIGINAL

FOR RW 2, RW 3, RW 4, RW 10 AND RW 17
REFER TO CC APPROVED STRUCTURAL
CERTIFIED PLANS PREPARED BY UNITED
CRIB BLOCKS CONSTRUCTIONS PTY LTD



TYPICAL RETAINING WALL
DETAIL
(RW 4, RW 10 AND RW 17)
SCALE 1:20



TYPICAL DETAIL
RETAINING WALL - RW 4
(ADJACENT TO FOOTPATH)
SCALE 1:20



PLAN
SCALE 1:1000

LDC These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPS 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1
Land Development Certificates
www.Ldcerts.com.au

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

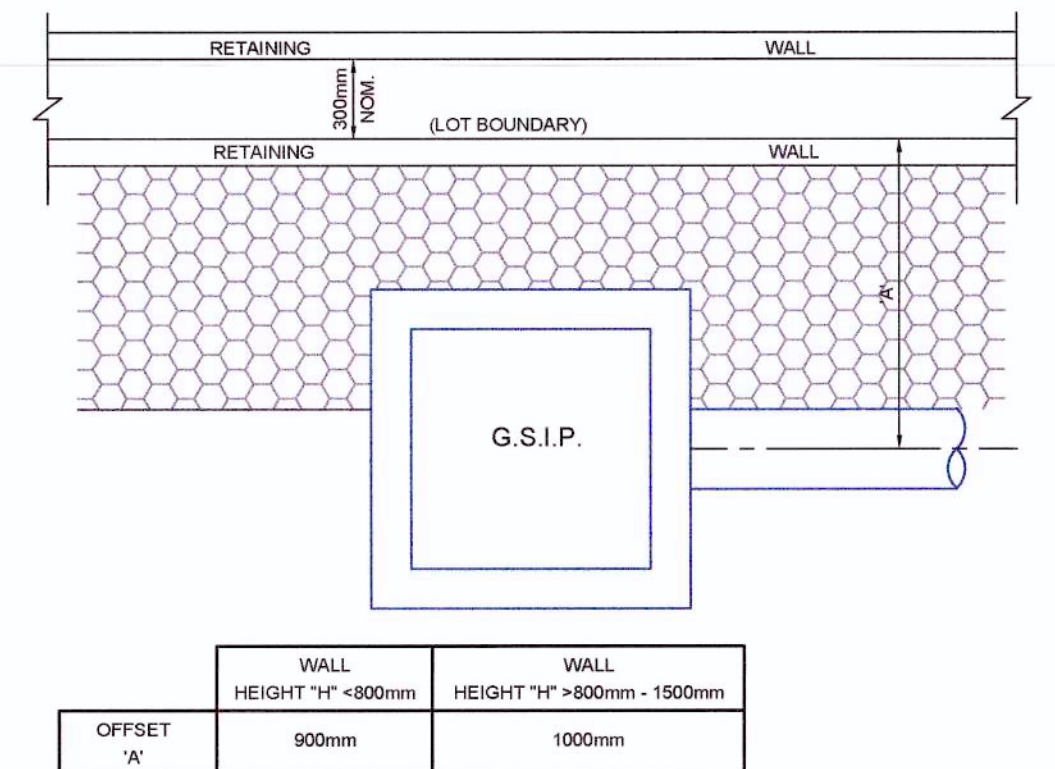
AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

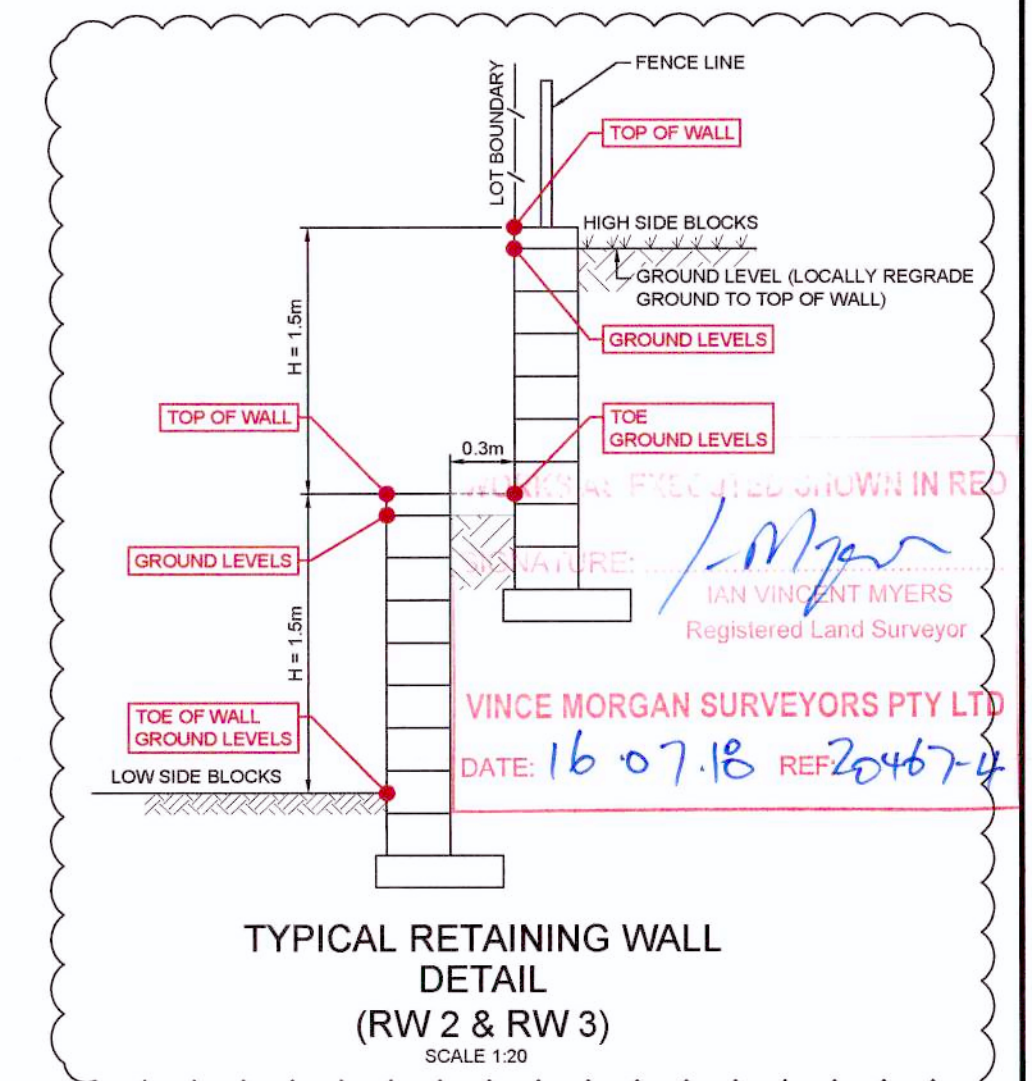
ISSUED FOR CONSTRUCTION APPROVAL

**CADDENS HILL
STAGE 4
RETAINING WALL PLAN**

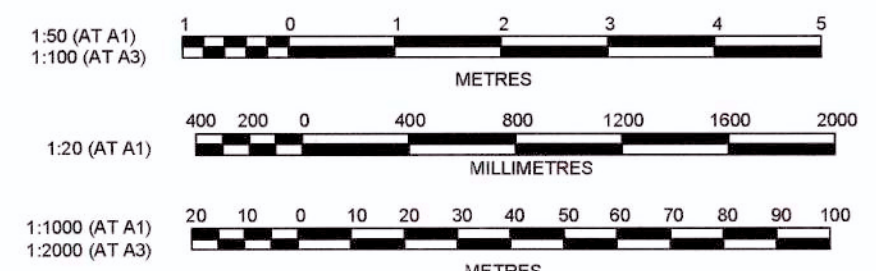
PLAN No:
110358/CC443 **F**
FILE No: 110358CC443
SHEET SIZE: A1 ORIGINAL



TYPICAL INTERALLOTMENT PIT SETBACK
SCALE 1:20

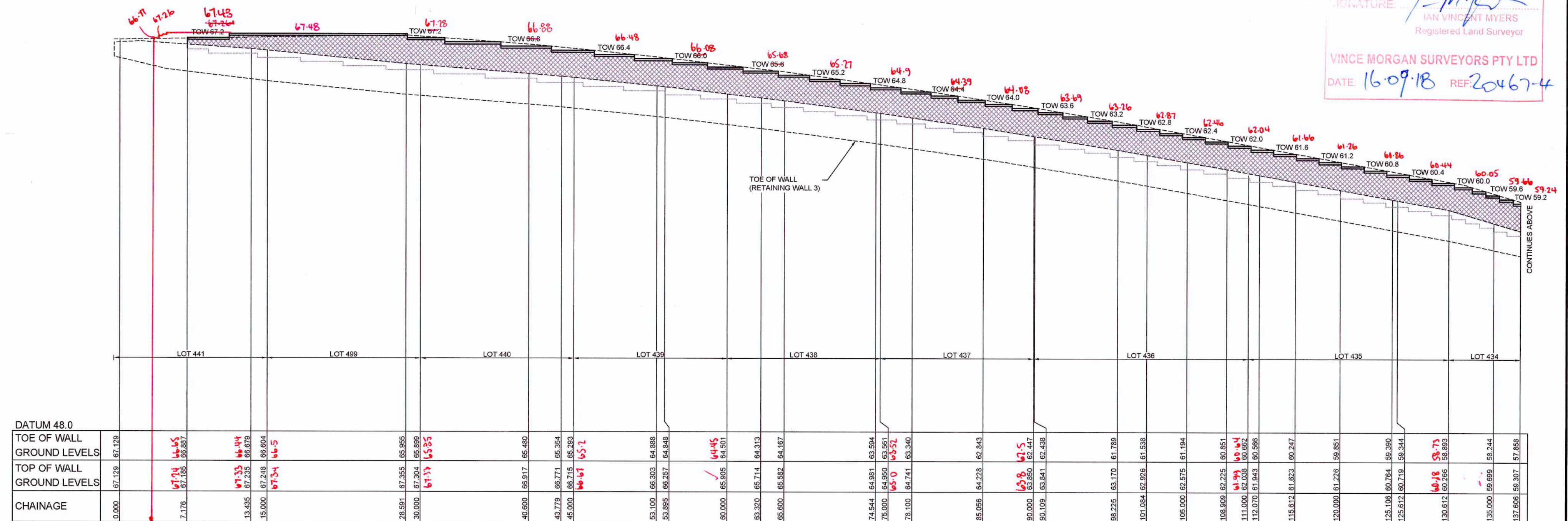
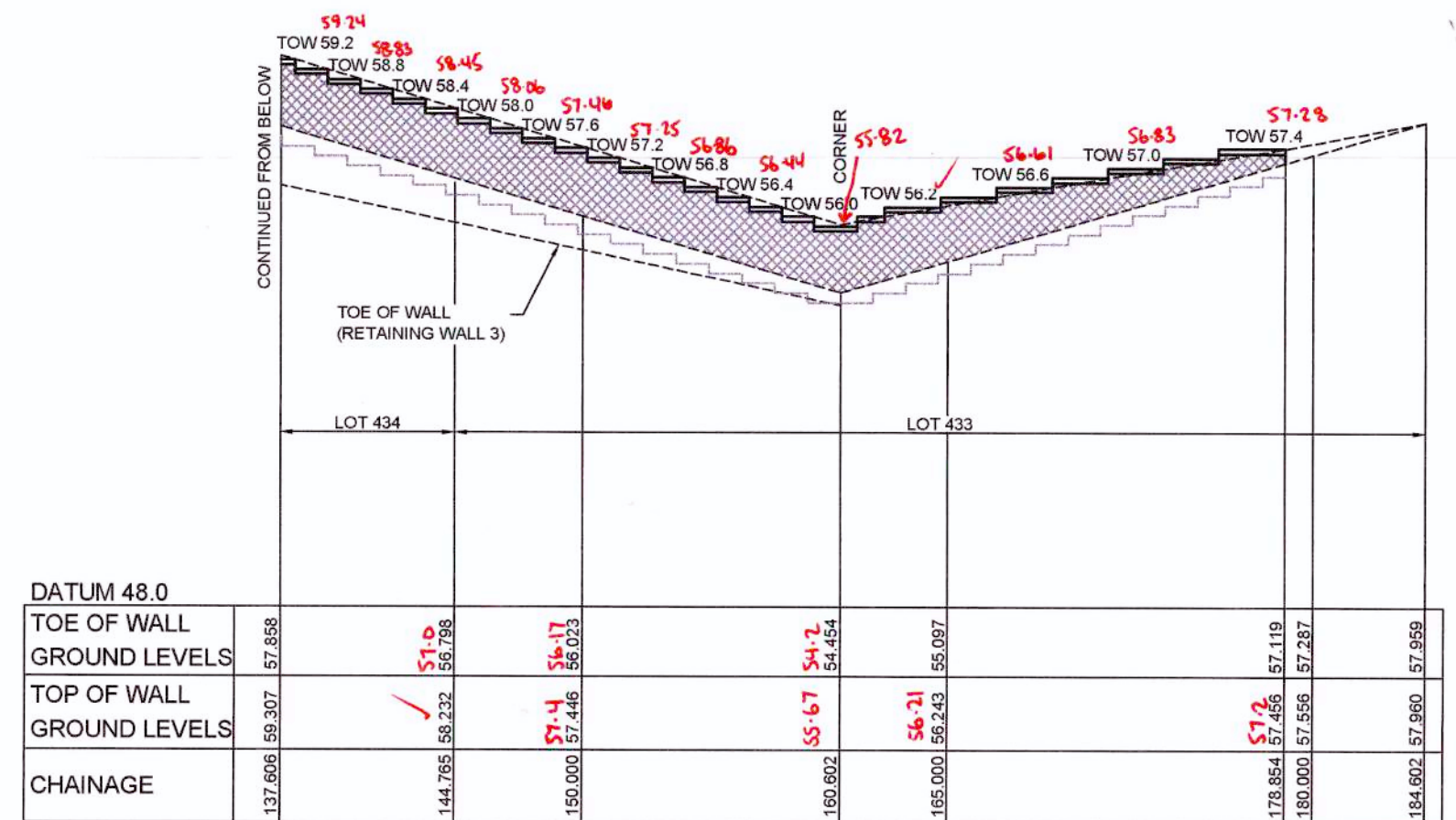


TYPICAL RETAINING WALL
DETAIL
(RW 2 & RW 3)
SCALE 1:20



F	CERTIFIER COMMENTS - RETAINING WALL AMENDMENTS	JT	TJ	MS	RO	23/04/18
E	CERTIFIER COMMENTS - RETAINING WALL AMENDMENTS	JT	JT	MS	RO	21/03/18
D	CERTIFIER COMMENTS - RETAINING WALL DETAILS AMENDED	JT	JT	RT	MS	05/03/18
C	CERTIFIER COMMENTS - TEMPORARY BATTER ANNOTATION	JT	JT	RT	MS	03/11/17
B	CERTIFIER COMMENTS	JT	JT	RT	MS	20/10/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17
	AMENDMENT	DES	DRN	CKD	APR	DATE

FOR RW 2, RW 3, RW 4, RW 10 AND RW 17
REFER TO CC APPROVED STRUCTURAL
CERTIFIED PLANS PREPARED BY UNITED
CRIB BLOCKS CONSTRUCTIONS PTY LTD



LONGITUDINAL SECTION - RETAINING WALL 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

LDC

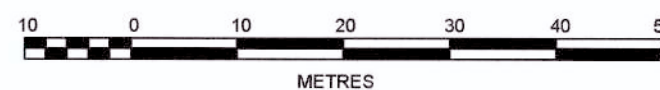
These plans are referred to in certificate no. **14838** approved by:

Eric Hausfeld
Accredited Certifier

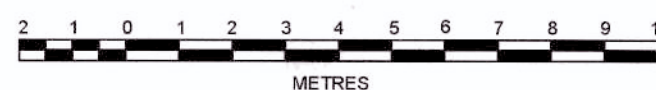
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au

1:500 (AT A1)
1:1000 (AT A3)



1:100 (AT A1)
1:200 (AT A3)



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:



LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE

ISSUED FOR CONSTRUCTION APPROVAL

**CADDENS HILL
STAGE 4
RETAINING WALL SECTION**

PLAN No:
110358/CC444

FILE No: 110358CC444

SHEET SIZE: A1 ORIGINAL

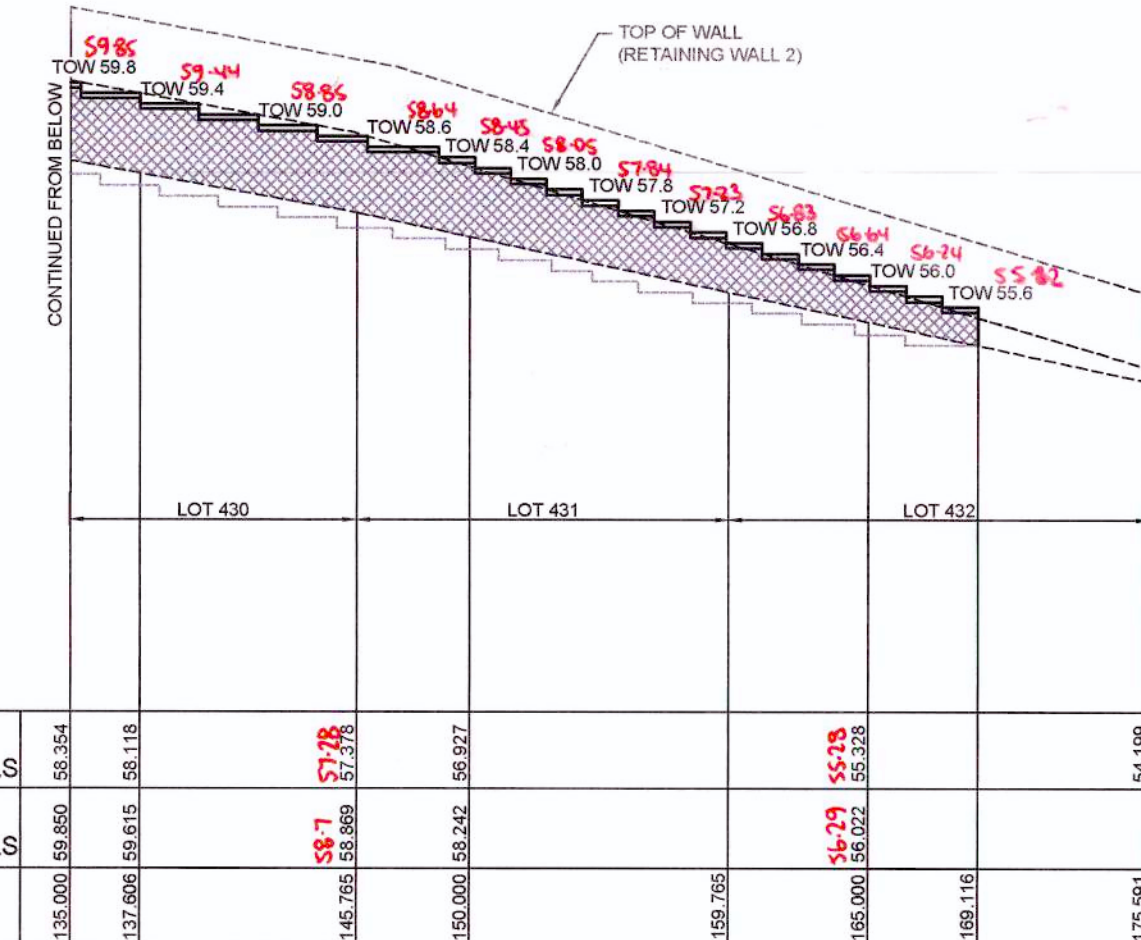
FOR RW 2, RW 3, RW 4, RW 10 AND RW 17
REFER TO CC APPROVED STRUCTURAL
CERTIFIED PLANS PREPARED BY UNITED
CRIB BLOCKS CONSTRUCTIONS PTY LTD

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *I. Morgan*
IAN VINCENT MYERS
Registered Land Surveyor

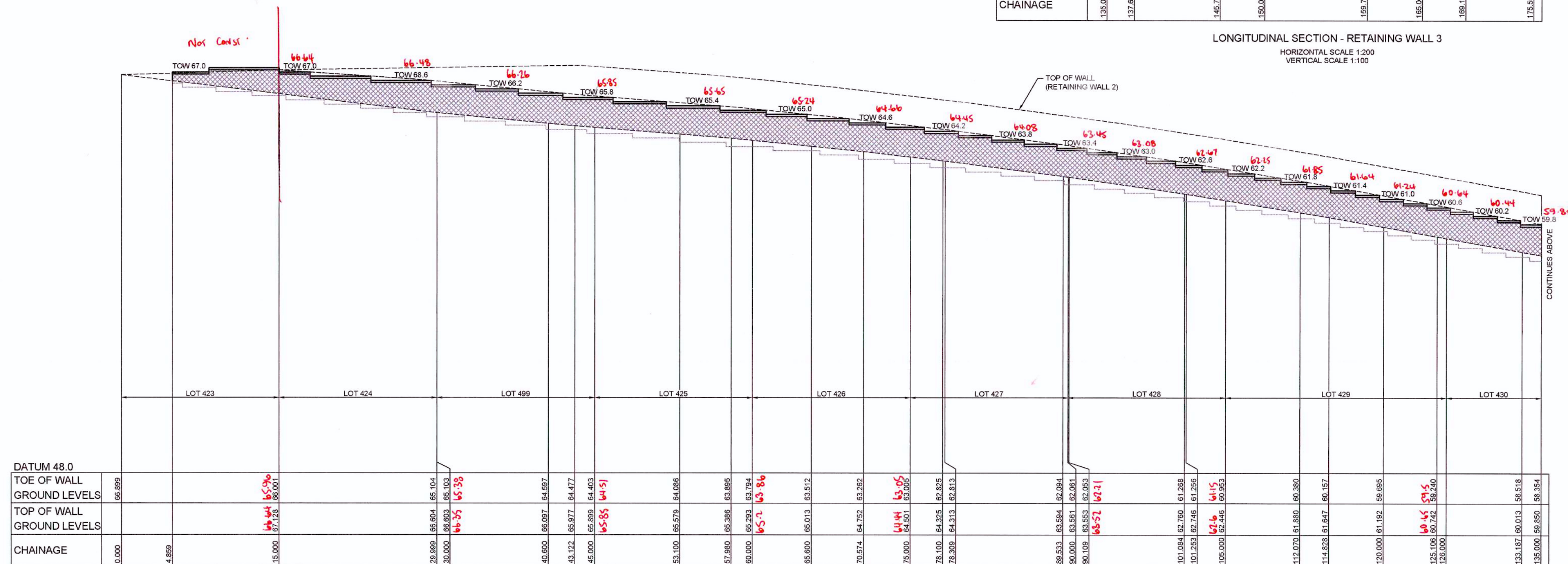
VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4



LONGITUDINAL SECTION - RETAINING WALL 3

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



LONGITUDINAL SECTION - RETAINING WALL 3

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

LDC

These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1

Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:



LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

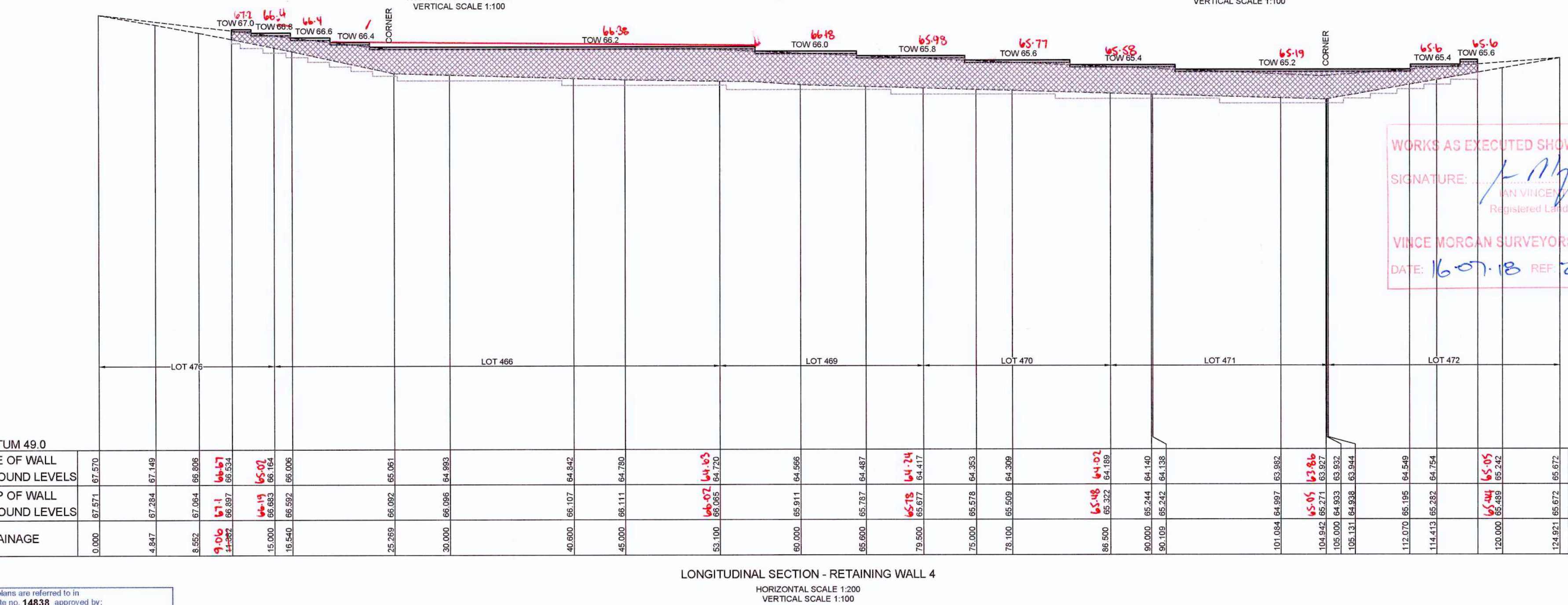
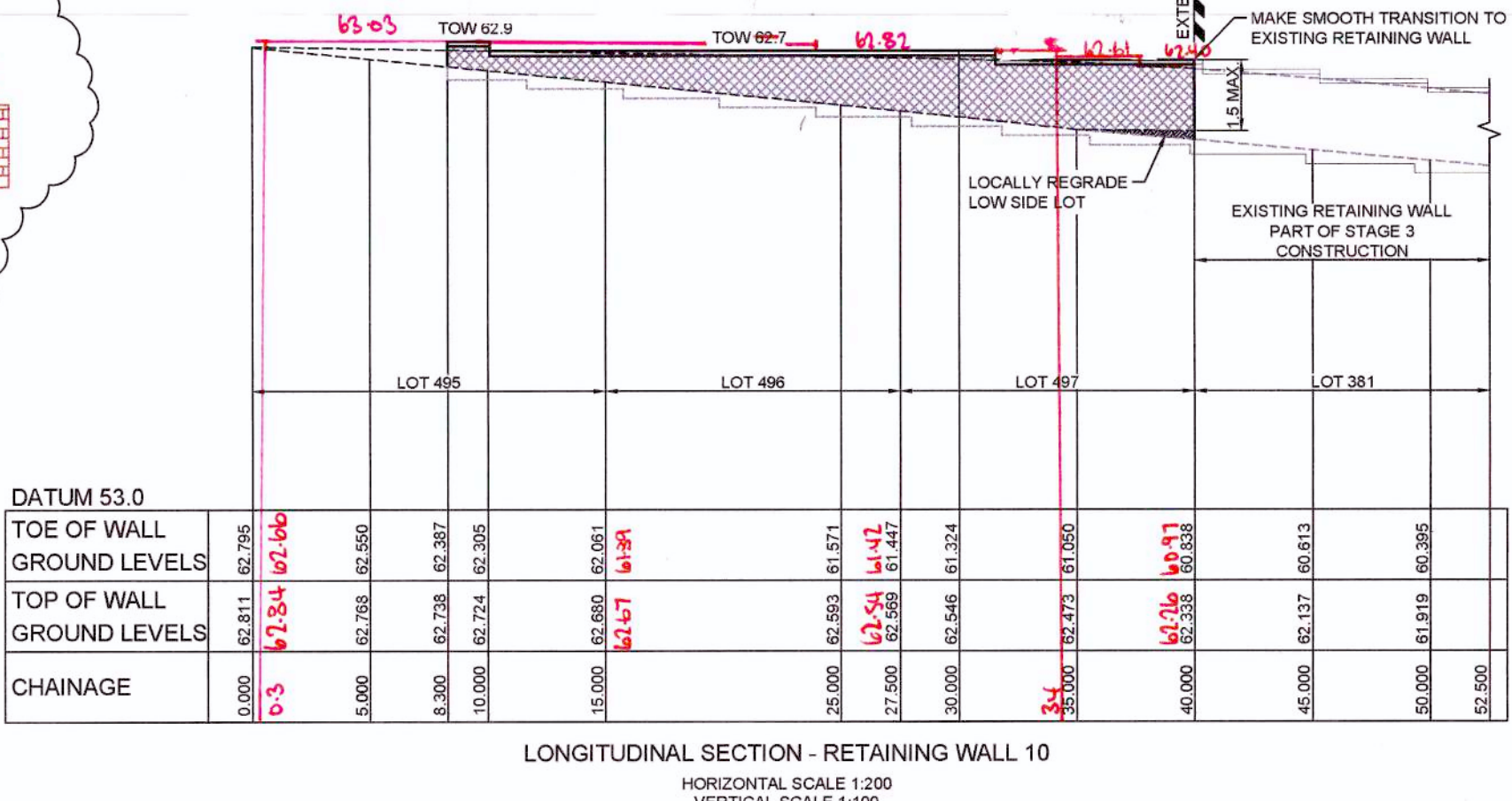
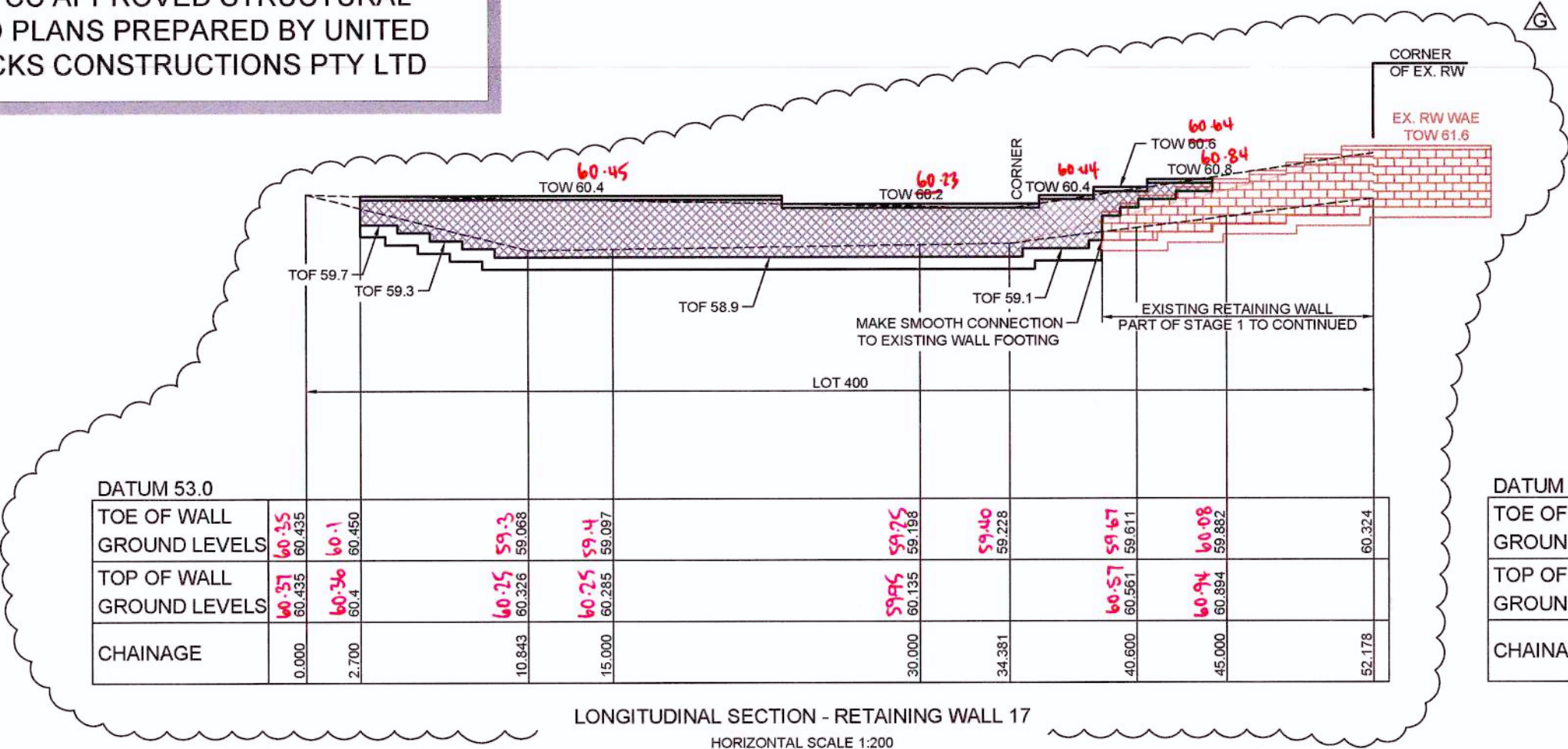
**CADDENS HILL
STAGE 4
RETAINING WALL SECTION**

PLAN No:
110358/CC445

FILE No: 110358CC445

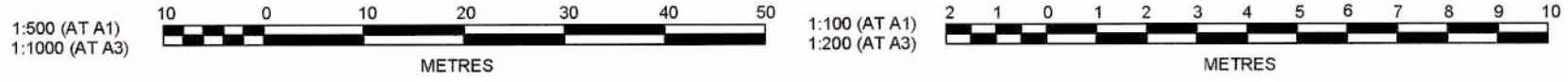
SHEET SIZE: A1 ORIGINAL

FOR RW 2, RW 3, RW 4, RW 10 AND RW 17
REFER TO CC APPROVED STRUCTURAL
CERTIFIED PLANS PREPARED BY UNITED
CRIB BLOCKS CONSTRUCTIONS PTY LTD



WORKS AS EXECUTED SHOWN IN RED
SIGNATURE: *[Signature]*
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE: 16.07.18 REF: 20467-4

These plans are referred to in
certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwpr@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:
LEGACYPROPERTY
THIS DRAWING MUST NOT BE USED FOR
CONSTRUCTION UNLESS SIGNED AS PART OF AN
APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
RETAINING WALL SECTION

PLAN No:
110358/CC446 **G**
FILE No: 110358CC446
SHEET SIZE: A1 ORIGINAL

Plotted: 18 May, 2018 1:59:13 PM File Name: J1110358 - OConnell Lane Caddens 03 - Stage 2 CDCC STAGE 4 110358CC447.dwg



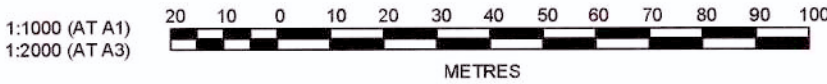
PLAN
SCALE 1:1000

THE HISTORICAL RUINS AREA IS TO BE FENCED OFF IN ACCORDANCE WITH THE PLAN PREPARED BY VINCE MORGAN, REFERENCE 20467-L3, SHEETS 1 OF 1, DATED 05/09/2016. THIS CC DOES NOT APPROVE ANY WORKS WITHIN THE FENCED OFF AREA DEFINED AS HISTORICAL RUINS. A SEPARATE CC IS REQUIRED FOR THE APPROVAL OF WORKS WITHIN THE FENCED OFF HISTORICAL RUINS AREA. THE FENCE IS TO INCLUDE APPROPRIATE SIGNAGE WARNING OF THE RISK OF ASBESTOS WITHIN THE HISTORICAL RUINS AREA. THE HISTORICAL RUINS AREA IS TO BE MANAGED IN ACCORDANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN, PREPARED BY DLA ENVIRONMENTAL SERVICES, REFERENCE DL3991_0007289, VERSION 1.0, DATED 15TH AUGUST 2017.

LEGEND	
STABILISED SITE ACCESS	
SEDIMENT FENCE	
MESH AND GRAVEL INLET FILTER	
GEOTEXTILE INLET FILTER	

WORKS AS EXECUTED SHOWN IN RED
SIGNATURE:
IAN VINCENT MYERS
Registered Land Surveyor
VINCE MORGAN SURVEYORS PTY LTD
DATE 16.07.18 REF 20467-4

These plans are referred to in certificate no. **14838** approved by:
Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1,C1,C2,C3,C4,C6,C15 & D1
Land Development Certificates
www.Ldcerts.com.au



AMENDMENT	DES	DRN	CKD	APR	DATE
D	CERTIFIER COMMENTS - DRAINAGE AMENDMENTS	JT	UF	MS	AM 18/05/18
C	CERTIFIER COMMENTS - EXCLUDED WORK AREA	JT	JT	RT	MS 03/11/17
B	CERTIFIERS COMMENTS	JT	NM	RT	MS 21/09/17
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS 03/08/17

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

CLIENT:

LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
SOIL AND WATER MANAGEMENT PLAN

PLAN No: 110358/CC447 **D**

FILE No: 110358CC447

SHEET SIZE: A1 ORIGINAL

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES AND STANDARD DRAWINGS, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE " SOILS AND CONSTRUCTION - VOLUME 1, 4TH EDITION, MARCH 2004 ".
2. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.
3. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
4. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.
5. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.
6. ROADS SHALL BE PAVED AS EARLY AS POSSIBLE AFTER FORMATION.
7. DISTURBANCE OF VEGETATION SHALL BE LIMITED TO FILL AREAS, ROADWAYS AND DRAINAGE LINES. NO LOT GRADING SHALL BE CARRIED OUT IN UNDISTURBED AREAS WITHOUT CONSULTATION WITH COUNCIL'S ENGINEER.
8. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.
9. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.
10. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.
11. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").
12. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.
13. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

14. WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-
- a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 6-8.
- b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE PLAN AND TO DETAIL (SD) 6-14.
- c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 5-5.
- d. PROVIDE TEMP. ACCESS TO THE SEDIMENT BASIN(S) AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-8 OR BARRIER FENCING AND EARTH BANKS (SD) 5-5.
- e. PLACE SEDIMENT FENCING (SD) 6-8 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
- f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
- g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
- h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE PLAN OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
- i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
- j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
- k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
15. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE
16. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-
- a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
- b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
- c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
- d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
- e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
- f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

17. PROTECTION FROM EROSION FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"
18. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS
19. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.
20. SEDIMENT FENCES (SD) 6-8 SHALL:-
- a. BE INSTALLED WHERE SHOWN ON THE PLAN AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
- b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m. AND A STORAGE DEPTH OF AT LEAST 0.6m.
- c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 50litres/sec IN A MAX. 10yr To DISCHARGE.
21. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.
22. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.
23. STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.
24. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-
- a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
- b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
- c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.
25. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-
- a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
- b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
- c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT DISCHARGING SEDIMENT FROM THE SITE.
26. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.
27. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-11 & 6-12.
28. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.
29. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.
2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.
3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATED.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 600mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELIN.
2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2.5m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG ITS LOWER EDGE.
3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A INSPECTION TEST PLAN (ITP) OR LOG BOOK. A SITE INSPECTION USING THE ITP SHALL BE MADE BY THE SITE MANAGER:-
- a. AT LEAST WEEKLY
- b. IMMEDIATELY BEFORE SITE CLOSURE
- c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.
- THE SELF AUDIT SHALL INCLUDE:-
- a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
- b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
- c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
- d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
- e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.
2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

- a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
- b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

- a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
- b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
- c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY. EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.
3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT
4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED, ESPECIALLY THAT:-
- a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
- b. AREAS OF EROSION ARE REPAIRED (eg LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
- c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)
5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.
6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.
7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.
8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-
- a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
- b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
- c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.
9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.
10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.
11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(S) SHALL BE:-
- a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
- b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.
12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

WORKS AS EXECUTED SHOWN IN RED

SIGNATURE: *[Signature]*

IAN VINCE MORGAN
Registered Land Surveyor

VINCE MORGAN SURVEYORS PTY LTD

DATE: 16.07.18 REF: 20467-4

B

SOIL AND WATER MANAGEMENT SHALL BE READ IN CONJUNCTION WITH CADDENS HILL STAGES 4 & 5 BULK EARTHWORKS CC APPROVAL



These plans are referred to in certificate no. **14838** approved by:

Eric Hausfeld
Accredited Certifier

Registration No: BPB 2416

Categories: B1,C1,C2,C3,C4,C6,C15 & D1

Land Development Certificates
www.Ldcerts.com.au

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH: MGA
DATUM: AHD
ORIGIN:



THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
SOIL AND WATER MANAGEMENT PLAN NOTES

PLAN No:
110358/CC448

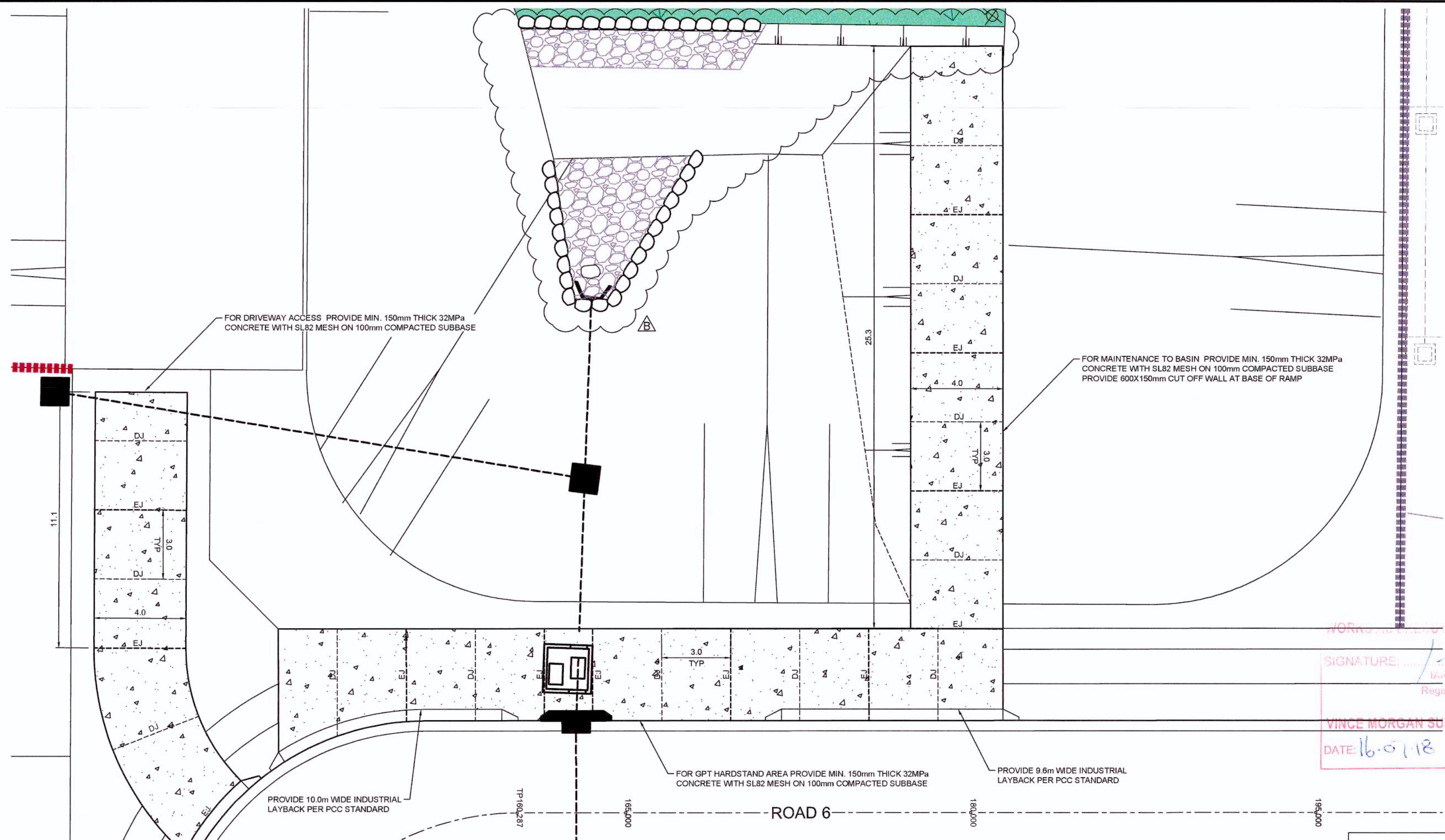
B

FILE No: 110358CC448

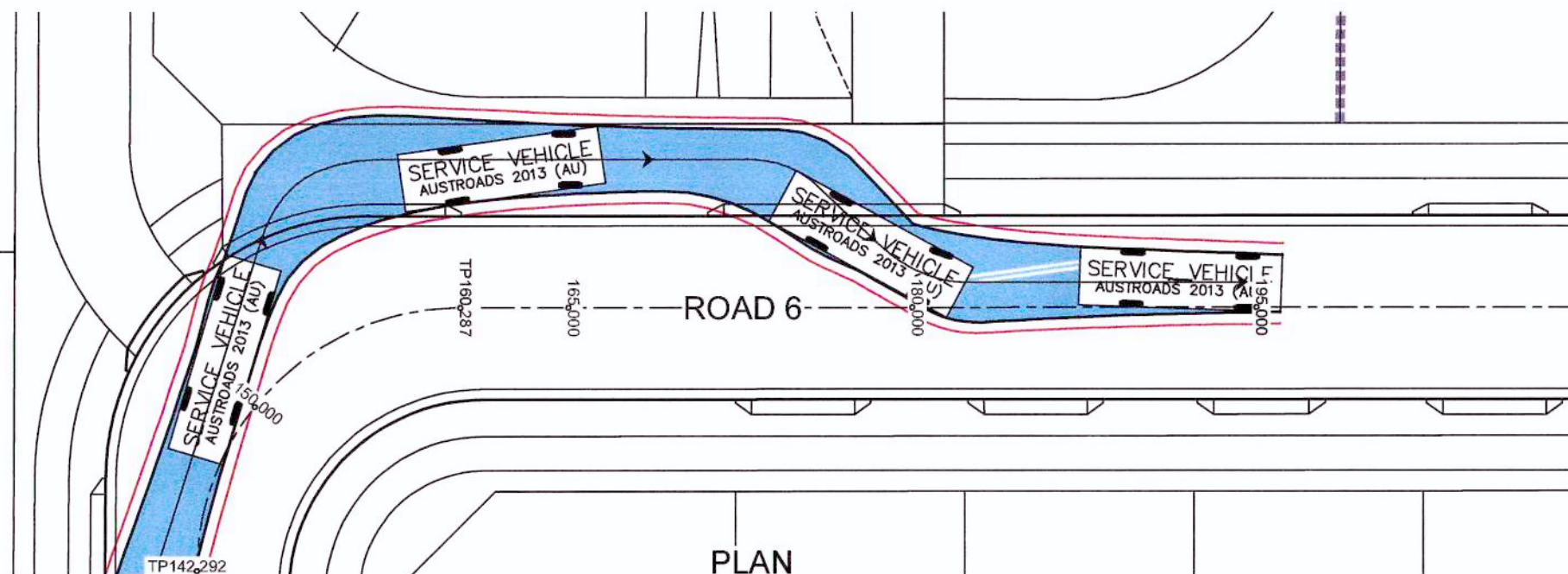
SHEET SIZE: A1 ORIGINAL

B	CERTIFIERS COMMENTS	JT	NM	RT	MS	21/09/17	
A	ISSUE FOR CONSTRUCTION APPROVAL	JT	NM	RT	MS	03/08/17	
	AMENDMENT	DES	DRN	CKD	APR	DATE	

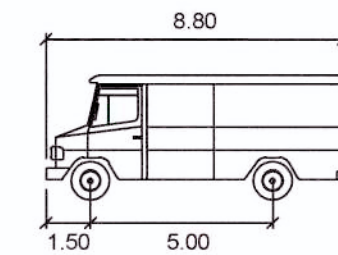
Plotted: 3 November, 2017 4:16:52 PM File Name: J:\110358 - OConnell Lane Caddens\03 - Stage 2\CD\CC\STAGE 4\110358CC449.dwg



PLAN
SCALE 1:100



PLAN
SCALE 1:200



SERVICE VEHICLE

Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 38.7

LEGEND

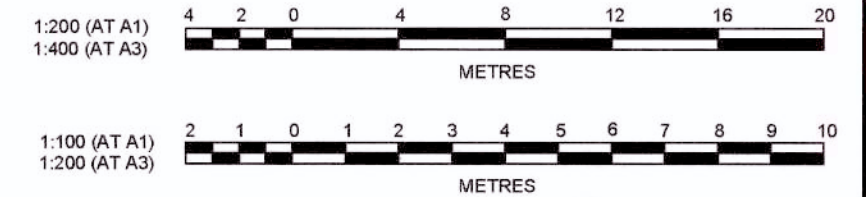
EJ = DENOTES EXPANSION KEY JOINTS
DJ = DENOTES DUMMY JOINTS



These plans are referred to in certificate no. 14838 approved by:

Eric Hausfeld
Accredited Certifier
Registration No: BPB 2416
Categories: B1, C1, C2, C3, C4, C6, C15 & D1

Land Development Certificates
www.Ldcerts.com.au



CLIENT:



LEGACYPROPERTY

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

CADDENS HILL
STAGE 4
JOINTING PLAN

PLAN No:
110358/CC449

B

FILE No: 110358CC449

SHEET SIZE: A1 ORIGINAL

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwvp@jwprince.com.au

AZIMUTH:
MGA
DATUM:
AHD
ORIGIN:

AMENDMENT	DES	DRN	CKD	APR	DATE
B					21/09/17
A					03/08/17