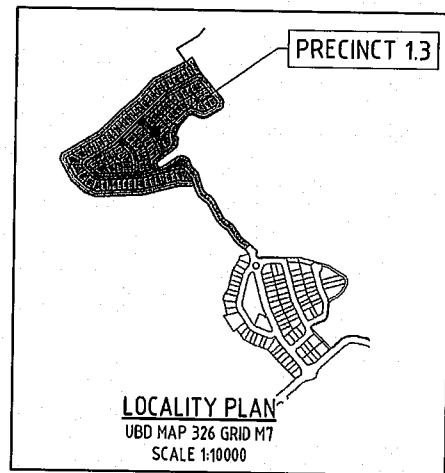
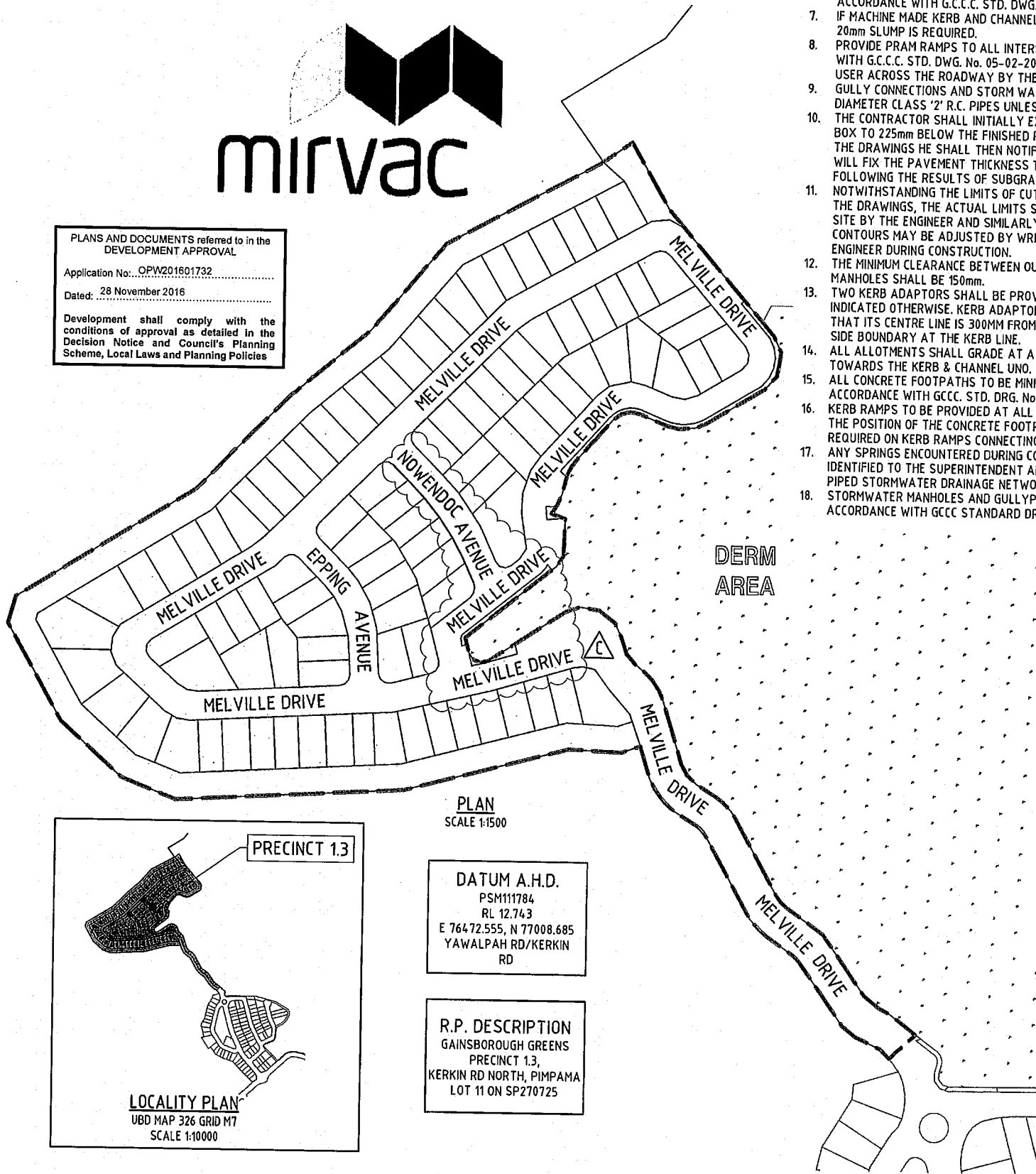


MIRVAC PACIFIC GAINSBOROUGH GREENS PRECINCTS 1.3



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



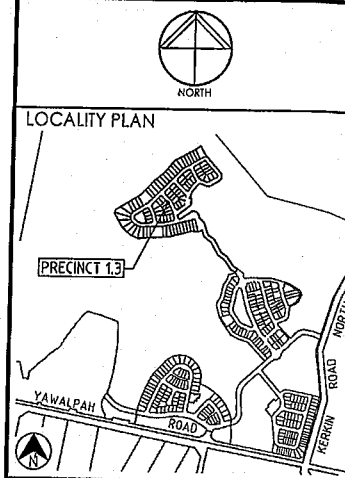
GENERAL NOTES

- ALL WORK SHALL BE JOINED NEATLY TO EXISTING CONSTRUCTION.
- WHERE REFERENCE IS MADE ON THESE DRAWINGS TO A KERB LINE, IT SHALL BE TAKEN TO MEAN THE KERB INVERT LINE.
- LEVELS FOR KERB AND CHANNEL CONSTRUCTION ARE SHOWN AT LIP OF CHANNEL UNLESS SHOWN OTHERWISE.
- RADIUS TO KERB INVERT LINE AT TURNOUTS OF ROADS SHALL BE 10.00m UNLESS OTHERWISE SHOWN.
- LIP LEVELS ARE AT QUARTER POINTS AT TURNOUTS AND AT EQUAL POINTS WHERE INDICATED (-) UNLESS NOTED OTHERWISE.
- KERBS, KERB AND CHANNEL SHALL BE CONSTRUCTED IN ACCORDANCE WITH G.C.C.C. STD. DWG. No 05-02-101 & 05-02-102.
- IF MACHINE MADE KERB AND CHANNEL IS USED, EXTRA FINES AND 20mm SLUMP IS REQUIRED.
- PROVIDE PRAM RAMP TO ALL INTERSECTIONS IN ACCORDANCE WITH G.C.C.C. STD. DWG. No. 05-02-202 AND ALIGN TO DIRECT THE USER ACROSS THE ROADWAY BY THE MOST DIRECT ROUTE.
- GULLY CONNECTIONS AND STORM WATER PIPES SHALL BE 375mm DIAMETER CLASS '2' R.C. PIPES UNLESS SHOWN OTHERWISE.
- THE CONTRACTOR SHALL INITIALLY EXCAVATE THE PAVEMENT BOX TO 225mm BELOW THE FINISHED PAVEMENT LEVEL SHOWN ON THE DRAWINGS HE SHALL THEN NOTIFY THE ENGINEER WHO WILL FIX THE PAVEMENT THICKNESS TO BE CONSTRUCTED FOLLOWING THE RESULTS OF SUBGRADE TESTING.
- NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE ENGINEER AND SIMILARLY THE FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE ENGINEER DURING CONSTRUCTION.
- THE MINIMUM CLEARANCE BETWEEN OUTER WALLS OF PIPES IN MANHOLES SHALL BE 150mm.
- TWO KERB ADAPTORS SHALL BE PROVIDED TO EACH LOT UNLESS INDICATED OTHERWISE. KERB ADAPTORS ARE TO BE LOCATED SO THAT ITS CENTRE LINE IS 300MM FROM THE PROJECTION OF THE SIDE BOUNDARY AT THE KERB LINE.
- ALL ALLOTMENTS SHALL GRADE AT A MINIMUM SLOPE OF 1 IN 150 TOWARDS THE KERB & CHANNEL UNO.
- ALL CONCRETE FOOTPATHS TO BE MINIMUM 100mm THICK IN ACCORDANCE WITH GCCC. STD. DRG. No. 05-02-201
- KERB RAMP TO BE PROVIDED AT ALL INTERSECTIONS IN LINE WITH THE POSITION OF THE CONCRETE FOOTPATH. TACTILE INDICATORS REQUIRED ON KERB RAMP CONNECTING TO PATHWAYS.
- ANY SPRINGS ENCOUNTERED DURING CONSTRUCTION ARE TO BE IDENTIFIED TO THE SUPERINTENDENT AND CONNECTED TO THE PIPED STORMWATER DRAINAGE NETWORKS.
- STORMWATER MANHOLES AND GULLYPITS ARE TO BE INSTALLED IN ACCORDANCE WITH GCCC STANDARD DRAWINGS.

DRAWING INDEX

DRAWING NO.	DRAWING TITLE
08-133-01	LOCALITY PLAN, DRAWING INDEX AND NOTES
08-133-02	SETOUT PLAN - SHEET 1
08-133-03	SETOUT PLAN - SHEET 2
08-133-04	SETOUT PLAN - SHEET 3
08-133-05	LAYOUT PLAN - SHEET 1
08-133-06	LAYOUT PLAN - SHEET 2
08-133-07	LAYOUT PLAN - SHEET 3
08-133-08	EARTHWORKS - CONTOUR PLAN - SHEET 1
08-133-09	EARTHWORKS - CONTOUR PLAN - SHEET 2
08-133-10	EARTHWORKS - CONTOUR PLAN - SHEET 3
08-133-11	EARTHWORKS - SPOT LEVELS PLAN - SHEET 1
08-133-12	EARTHWORKS - SPOT LEVELS PLAN - SHEET 2
08-133-13	EARTHWORKS - SPOT LEVELS PLAN - SHEET 3
08-133-14	EARTHWORKS - SPOT LEVELS PLAN - SHEET 4
08-133-15	EARTHWORKS - SPOT LEVELS PLAN - SHEET 5
08-133-16	EARTHWORKS - SPOT LEVELS PLAN - SHEET 6
08-133-17	EARTHWORKS - SPOT LEVELS PLAN - SHEET 7
08-133-18	EARTHWORKS - SPOT LEVELS PLAN - SHEET 8
08-133-19	EARTHWORKS - SPOT LEVELS PLAN - SHEET 9
08-133-20	EARTHWORKS - TYPICAL SECTIONS
08-133-21	ROADWORKS - LONGITUDINAL SECTION - MELVILLE DRIVE - SHEET 1
08-133-22	ROADWORKS - LONGITUDINAL SECTION - MELVILLE DRIVE - SHEET 2
08-133-23	ROADWORKS - LONGITUDINAL SECTION - MELVILLE DRIVE - SHEET 3
08-133-24	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 1
08-133-25	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 2
08-133-26	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 3
08-133-27	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 4
08-133-28	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 5
08-133-29	ROADWORKS - CROSS SECTIONS - MELVILLE DRIVE - SHEET 6
08-133-29A	ROADWORKS - LONG AND CROSS SECTIONS - EPPING AVENUE
08-133-29B	ROADWORKS - LONG AND CROSS SECTIONS - NOWENDOC AVENUE
08-133-30	ROADWORKS - INTERSECTION DETAILS - LOCATION PLAN
08-133-31	ROADWORKS - INTERSECTION DETAILS
08-133-32	ROADWORKS - INTERSECTION DETAILS - AND LINEMARKING PLAN
08-133-67	ROADWORKS - SIGNS AND LINEMARKING PLAN
08-133-33	STORMWATER - CATCHMENT PLAN
08-133-34	STORMWATER - CALCULATION TABLE - SHEET 1
08-133-35	STORMWATER - CALCULATION TABLE - SHEET 2
08-133-36	STORMWATER - CALCULATION TABLE - SHEET 3
08-133-37	STORMWATER - LONGITUDINAL SECTIONS - SHEET 1
08-133-38	STORMWATER - LONGITUDINAL SECTIONS - SHEET 2
08-133-39	STORMWATER - LONGITUDINAL SECTIONS - SHEET 3
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08-133-41	STORMWATER - MANHOLE DETAILS - SHEET 2
08-133-42	STORMWATER - PROPOSED CULVERT 1
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08-133-44	EROSION & SEDIMENT CONTROL - CONSTRUCTION PHASE - LAYOUT PLAN - SHEET 1
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08-133-46	EROSION & SEDIMENT CONTROL - CONSTRUCTION PHASE - LAYOUT PLAN - SHEET 3
08-133-47	EROSION & SEDIMENT CONTROL - POST CONSTRUCTION PHASE - LAYOUT PLAN - SHEET 1
08-133-48	EROSION & SEDIMENT CONTROL - POST CONSTRUCTION PHASE - LAYOUT PLAN - SHEET 2
08-133-49	EROSION & SEDIMENT CONTROL - POST CONSTRUCTION PHASE - LAYOUT PLAN - SHEET 3
08-133-50	EROSION & SEDIMENT CONTROL - NOTES
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08-133-52	EROSION & SEDIMENT CONTROL - BASIN NOTES AND DETAILS
08-133-53	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 1
08-133-54	SEWERAGE RETICULATION - LAYOUT PLAN - SHEET 2
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08-133-56	SEWERAGE RETICULATION - NOTES
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08-133-62	WATER RETICULATION - LAYOUT PLAN - SHEET 1
08-133-63	WATER RETICULATION - LAYOUT PLAN - SHEET 2
08-133-64	WATER RETICULATION - LAYOUT PLAN - SHEET 3
08-133-65	WATER RETICULATION - NOTES
08-133-66	SAFETY IN DESIGN ANALYSIS

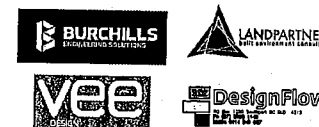
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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	EXTRA PAGE ADDED	20.10.16	RCT
C	EXTRA PAGE ADDED, REVISED LAYOUT	24.11.16	DES

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



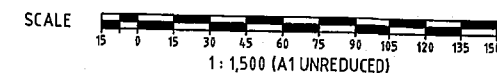
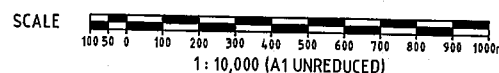
LEVEL 2 - 71 GREY STREET
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QUEENSLAND 4101
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FAX 07 3017 1911
EMAIL kng@knp.com.au
ABN 35 112 053 611

Approved for Approval

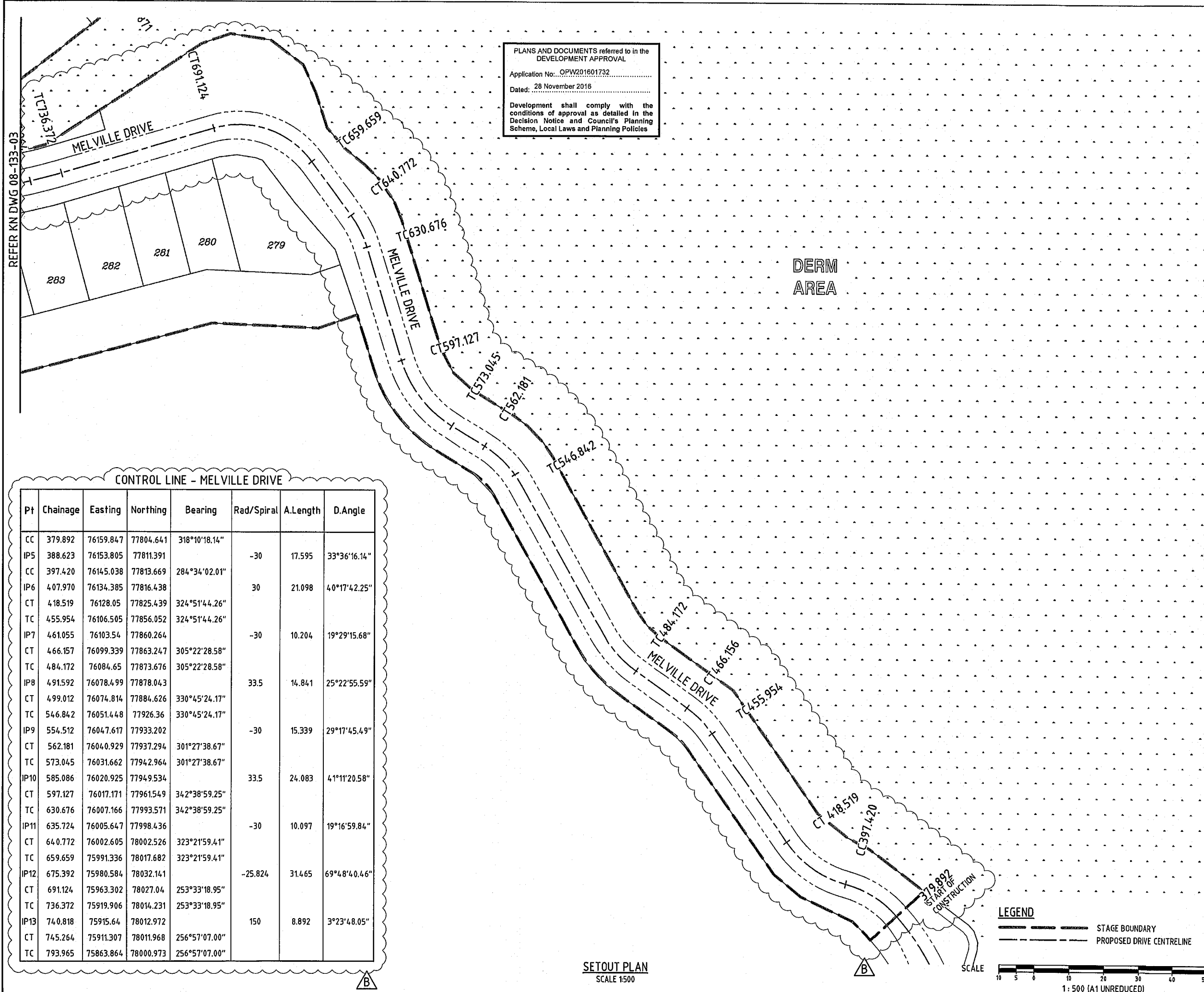
Mark J... 24.11.16

**LOCALITY PLAN,
DRAWING INDEX AND NOTES**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet 01 of 67
Drawing No	08-133-01		Revision C



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



CONTROL LINE - MELVILLE DRIVE

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
CC	379.892	76159.847	77804.641	318°10'18.14"			
IP5	388.623	76153.805	77811.391		-30	17.595	33°36'16.14"
CC	397.420	76145.038	77813.669	284°34'02.01"			
IP6	407.970	76134.385	77816.438		30	21.098	40°17'42.25"
CT	418.519	76128.05	77825.439	324°51'44.26"			
TC	455.954	76106.505	77856.052	324°51'44.26"			
IP7	461.055	76103.54	77860.264		-30	10.204	19°29'15.68"
CT	466.157	76099.339	77863.247	305°22'28.58"			
TC	484.172	76084.65	77873.676	305°22'28.58"			
IP8	491.592	76078.499	77878.043		33.5	14.841	25°22'55.59"
CT	499.012	76074.814	77884.626	330°45'24.17"			
TC	546.842	76051.448	77926.36	330°45'24.17"			
IP9	554.512	76047.617	77933.202		-30	15.339	29°17'45.49"
CT	562.181	76040.929	77937.294	301°27'38.67"			
TC	573.045	76031.662	77942.964	301°27'38.67"			
IP10	585.086	76020.925	77949.534		33.5	24.083	41°11'20.58"
CT	597.127	76017.171	77961.549	342°38'59.25"			
TC	630.676	76007.166	77993.571	342°38'59.25"			
IP11	635.724	76005.647	77998.436		-30	10.097	19°16'59.84"
CT	640.772	76002.605	78002.526	323°21'59.41"			
TC	659.659	75991.336	78017.682	323°21'59.41"			
IP12	675.392	75980.584	78032.141		-25.824	31.465	69°48'40.46"
CT	691.124	75963.302	78027.04	253°33'18.95"			
TC	736.372	75919.906	78014.231	253°33'18.95"			
IP13	740.818	75915.64	78012.972		150	8.892	3°23'48.05"
CT	745.264	75911.307	78011.968	256°57'07.00"			
TC	793.965	75863.864	78000.973	256°57'07.00"			

SETOUT PLAN
SCALE 1:500

LEGEND

----- STAGE BOUNDARY
 - - - - - PROPOSED DRIVE CENTRELINE

SCALE
 0 5 10 20 30 40 50m
 1:500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN

PRECINCT 1.3

YAWALPAH ROAD

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT

Associated Consultants

BURCHILLS LAND PARTNERS
 VEE DESIGNFLOW

Client

mirvac

Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

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EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved: [Signature] 21.10.16

Drawing Title

SETOUT PLAN
SHEET 1

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN

Sheet 02 of 67

Revision	Revision
A1	B

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CONTROL LINE - MELVILLE DRIVE

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
CT	691.124	75963.302	78027.040	253°33'18.95"			
TC	736.372	75919.906	78014.231	253°33'18.95"			
IP13	740.818	75915.640	78012.972		150	8.892	3°23'48.05"
CT	745.264	75911.307	78011.968	256°57'07.00"			
TC	793.965	75863.864	78000.973	256°57'07.00"			
IP14	798.258	75859.671	78000.001		49.75	8.587	9°53'21.06"
CT	802.551	75855.374	77999.764	266°50'28.06"			
IP15	813.761	75844.181	77999.146				
TC	913.019	75745.073	77993.677	266°50'29.17"			
IP16	920.383	75737.317	77993.249		18.709	14.726	45°05'49.71"
CT	927.746	75731.538	77998.441	311°56'18.88"			
TC	954.272	75711.806	78016.170	311°56'18.88"			
IP17	966.809	75698.346	78028.263		13.466	25.075	106°41'10.19"
CT	979.347	75713.795	78037.684	58°37'29.06"			
TC	1057.916	75780.875	78078.590	58°37'29.06"			
IP18	1063.879	75785.991	78081.709		-50.25	11.927	13°35'56.57"
CT	1069.842	75790.229	78085.944	45°01'32.49"			
IP19	1083.562	75799.935	78095.641				
IP20	1160.312	75854.230	78149.887				
TC	1256.683	75922.405	78218.002	45°01'32.28"			

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 28 November 2016

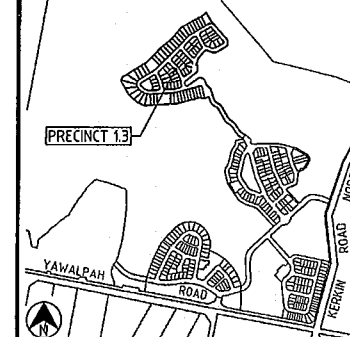
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

REFER KN DWG 08-133-04

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



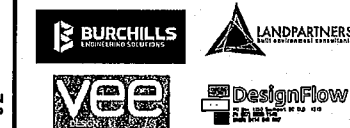
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	REVISED ROAD SETOUT	24.11.16	DES

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
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EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Date: 24/11/16

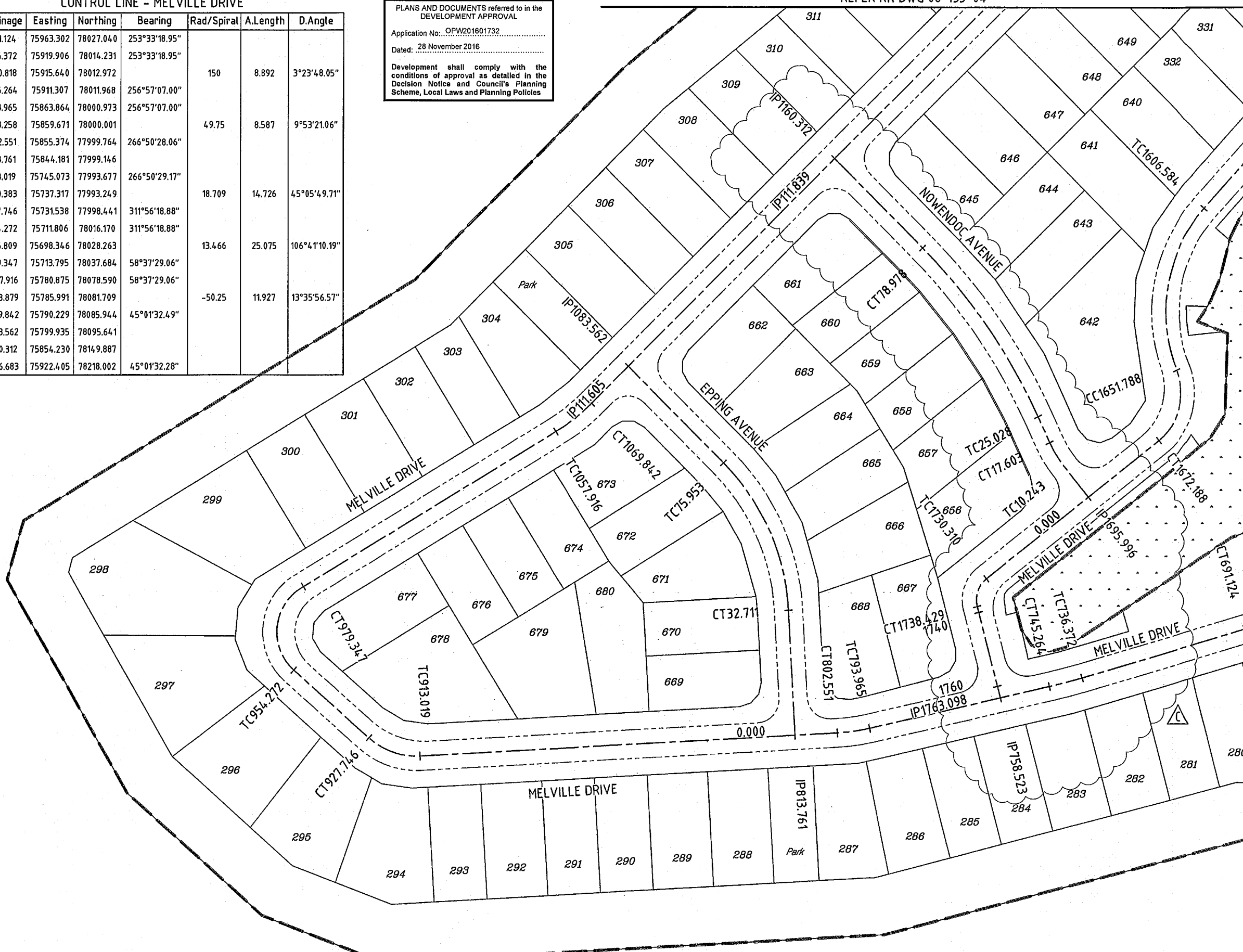
SETOUT PLAN
SHEET 2

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN

Scale	Sheet
A1	03 of 67

Drawing No	Revision
08-133-03	C



REFER KN DWG 08-133-02

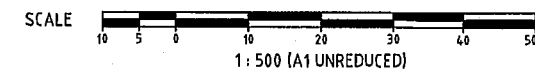
CONTROL LINE - EPPING AVENUE

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	75844.181	77999.146	356°50'29.00"			
TC	32.711	75842.379	78031.808	356°50'29.00"			
IP2	54.332	75841.131	78054.408		-59.25	43.242	41°48'56.67"
CT	75.953	75825.133	78070.420	315°01'32.33"			
IP3	111.605	75799.935	78095.641	315°01'32.33"			

SETOUT PLAN
SCALE 1:500

LEGEND

- STAGE BOUNDARY
- PROPOSED DRIVE CENTRELINE



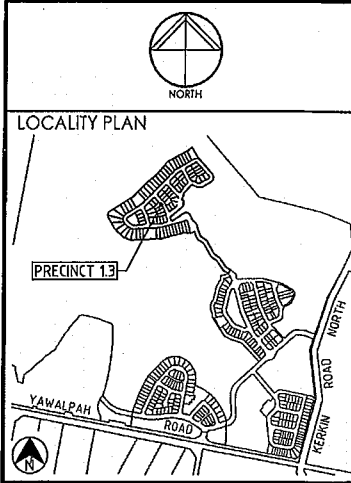
CONTROL LINE - MELVILLE DRIVE

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
CT	979.347	75713.795	78037.684	58°37'29.06"			
TC	1057.916	75780.875	78078.590	58°37'29.06"			
IP18	1063.879	75785.991	78081.709		-50.25	11.927	13°35'56.57"
CT	1069.842	75790.229	78085.944	45°01'32.49"			
IP19	1083.562	75799.935	78095.641				
IP20	1160.312	75854.230	78149.887				
TC	1256.683	75922.405	78218.002	45°01'32.28"			
IP21	1263.481	75927.244	78222.836		49.75	13.595	15°39'24.87"
CT	1270.278	75933.208	78226.185	60°40'57.15"			
TC	1353.740	76005.979	78267.052	60°40'57.15"			
IP22	1362.056	76014.621	78271.905		12.165	16.633	78°20'21.81"
CT	1370.372	76021.120	78264.423	139°01'18.96"			
TC	1443.658	76069.179	78209.095	139°01'18.96"			
IP23	1456.973	76081.097	78195.373		15.268	26.63	99°56'10.05"
CT	1470.288	76065.525	78186.001	238°57'29.01"			
TC	1503.832	76036.785	78168.704	238°57'29.01"			
IP24	1513.573	76027.773	78163.280		20.839	19.481	53°33'44.78"
CT	1523.313	76018.058	78167.309	292°31'13.80"			
TC	1539.573	76003.038	78173.536	292°31'13.80"			
IP25	1551.846	75990.025	78178.932		-20	24.546	70°19'04.78"
CT	1564.118	75980.562	78168.496	222°12'09.02"			
TC	1606.584	75952.036	78137.039	222°12'09.02"			
IP26	1629.186	75935.000	78118.253		-40	45.204	64°44'57.31"
IP27	1651.788	75944.724	78094.831				
IP28	1661.988	75949.287	78083.842		15.813	20.401	73°55'07.38"
CT	1672.188	75939.991	78076.415	231°22'19.08"			
TC	1730.310	75894.586	78040.131	231°22'19.08"			
IP29	1734.370	75891.010	78037.274		-7.05	8.119	68°59'24.76"
CT	1738.429	75892.165	78032.845	165°22'54.32"			
IP30	1763.098	75898.391	78008.975	165°22'54.32"			

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
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LEGEND
 - - - - - STAGE BOUNDARY
 - - - - - PROPOSED DRIVE CENTRELINE

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	REVISED ROAD SETOUT	24.11.16	DES

Associated Consultants:

Client:

Project:

**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved: [Signature] 24.11.16

Drawn: [Signature]

**SETOUT PLAN
 SHEET 3**

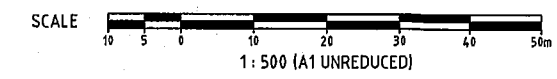
Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale: AS SHOWN

Sheet	Revision
04 of 67	C

CONTROL LINE - NOWENDOC DRIVE

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	75921.391	78061.552	321°22'19.00"			
TC	10.243	75914.997	78069.554	321°22'19.00"			
IP2	13.923	75912.688	78072.443		30	7.36	14°03'20.51"
CT	17.603	75911.150	78075.806	335°25'39.51"			
TC	25.028	75908.062	78082.560	335°25'39.51"			
IP3	52.003	75896.725	78107.354		-151.509	53.949	20°24'07.18"
CT	78.978	75877.456	78126.641	315°01'32.33"			
IP4	111.839	75854.230	78149.887	315°01'32.33"			



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REFER KN DWG 08-133-03

REFER KN DWG 08-133-03

SETOUT PLAN
 SCALE 1:500

DERM AREA

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

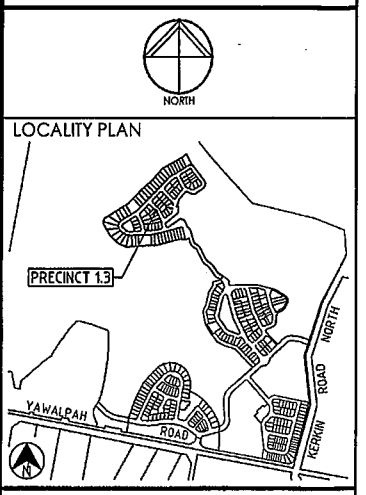
Application No: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

- LEGEND**
- STAGE BOUNDARY
 - PROPOSED ROAD CENTRELINE
 - BARRIER KERB & CHANNEL - B1
 - PROPOSED STORMWATER DRAINAGE
 - CONCRETE SLEEPER RETAINING WALL
 - ROCK BOULDER RETAINING WALL
 - SANDSTONE RETAINING WALL
 - S SEWER MAIN
 - W WATER MAIN
 - DESIGN SURFACE CONTOURS
 - 5A STORMWATER MANHOLE NUMBER
 - G101 STORMWATER GULLY NUMBER
 - ▲ DRIVEWAY POSITION
 - X 100Φ ROOFWATER CONNECTION TO GULLY PIT/MH
 - 100Φ ROOFWATER CONNECTION TO KERB ADAPTOR
 - X SUBSURFACE DRAIN CLEANING POINT
 - X KERB ADAPTOR LOCATION

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT / FOOTPATHS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL

Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

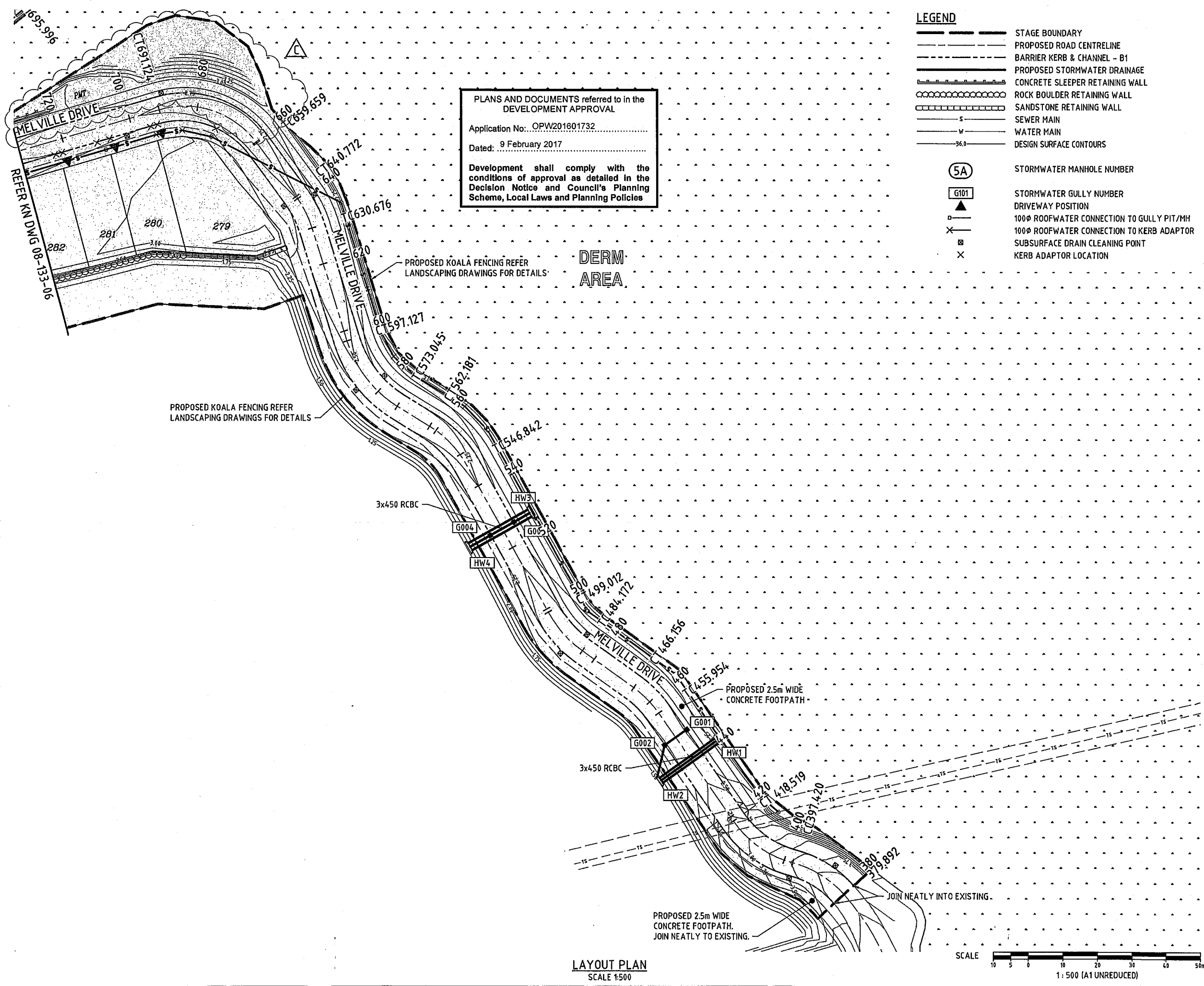
Approved Director - 1996 1998

[Signature] 27.1.17

Drawing Title

**LAYOUT PLAN
SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet 05 of 67
A1	Drawing No 08-133-05	Revision	C



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LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- BARRIER KERB & CHANNEL - B1
- PROPOSED STORMWATER DRAINAGE
- CONCRETE SLEEPER RETAINING WALL
- ROCK BOULDER RETAINING WALL
- SANDSTONE RETAINING WALL
- SEWER MAIN
- WATER MAIN
- DESIGN SURFACE CONTOURS

(5A) STORMWATER MANHOLE NUMBER

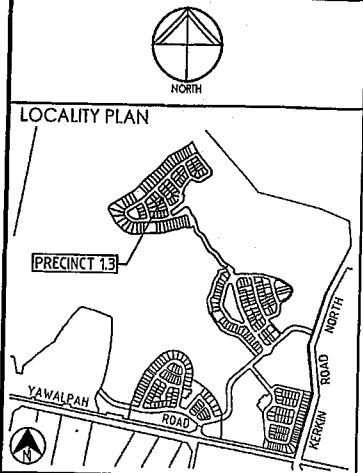
- STORMWATER GULLY NUMBER
- DRIVEWAY POSITION
- 100Ø ROOFWATER CONNECTION TO GULLY PIT/MH
- 100Ø ROOFWATER CONNECTION TO KERB ADAPTOR
- SUBSURFACE DRAIN CLEANING POINT
- KERB ADAPTOR LOCATION

ROCK SCOUR PROTECTION NOM.
5sq.m AREA. ROCK TO BE d50
=200mm, 350mm THICK OVER
LAYER OF APPROVED GEOTEXTILE.

ROCK SCOUR PROTECTION NOM.
5sq.m AREA. ROCK TO BE d50
=200mm, 350mm THICK OVER
LAYER OF APPROVED GEOTEXTILE.

REFER KN DWG 08-133-07

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	RD ALIGNMENT, FOOTPATHS & SW AMENDMENTS	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNI

Associated Consultants



Client



Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Drawing: *[Signature]* 27-1-17

Drawing Title

**LAYOUT PLAN
SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale			Sheet
AS SHOWN			06 of 67
Drawing No		Revision	
A1		D	

REFER KN DWG 08-133-07

PROPOSED KOALA FENCING REFER
LANDSCAPING DRAWINGS FOR DETAILS

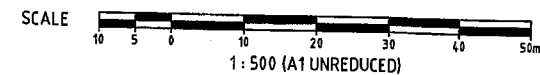
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No. OPW201601732

Dated: 9 February 2017

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

LAYOUT PLAN
SCALE 1:500



LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- BARRIER KERB & CHANNEL - B1
- PROPOSED STORMWATER DRAINAGE
- CONCRETE SLEEPER RETAINING WALL
- ROCK BOULDER RETAINING WALL
- SANDSTONE RETAINING WALL
- S SEWER MAIN
- W WATER MAIN
- 36.0 DESIGN SURFACE CONTOURS
- (5A) STORMWATER MANHOLE NUMBER
- (G101) STORMWATER GULLY NUMBER
- ▲ DRIVEWAY POSITION
- 100Ø ROOFWATER CONNECTION TO GULLY PIT/WH
- 100Ø ROOFWATER CONNECTION TO KERB ADAPTOR
- X SUBSURFACE DRAIN CLEANING POINT
- X KERB ADAPTOR LOCATION

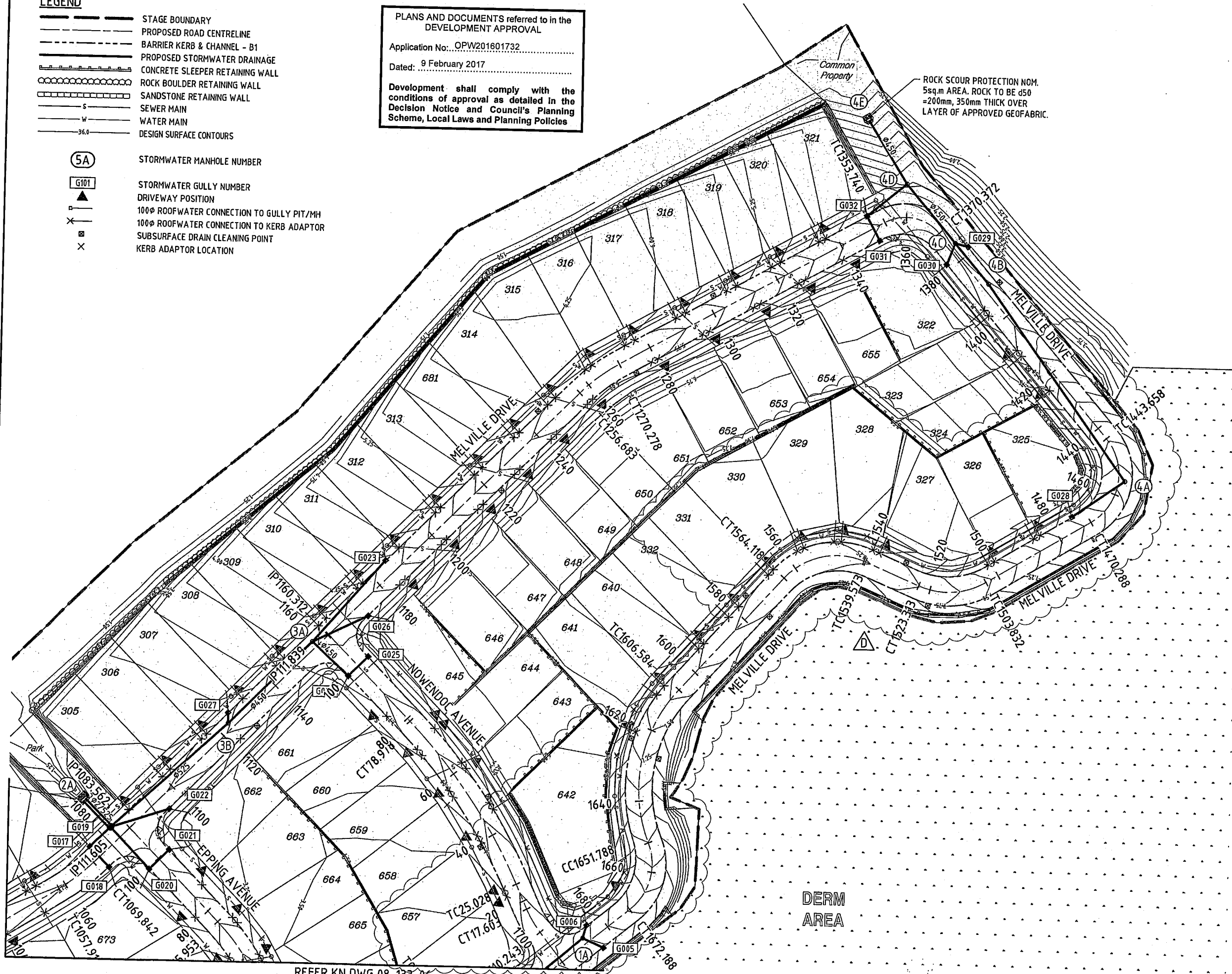
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No. OPW201601732

Dated: 9 February 2017

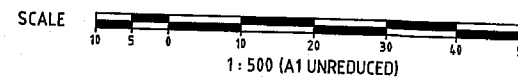
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

ROCK SCOUR PROTECTION NOM. 5sq.m AREA. ROCK TO BE d50 =200mm, 350mm THICK OVER LAYER OF APPROVED GEOFABRIC.

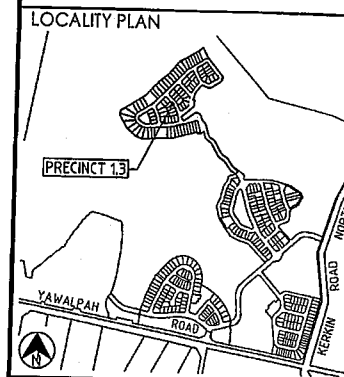


REFER KN DWG 08-133-06

LAYOUT PLAN
SCALE 1:500



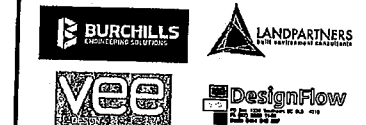
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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	RD ALIGNMENT, FOOTPATHS & SW AMEND	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved by: [Signature] 27-1-17

LAYOUT PLAN
SHEET 3

Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN			Sheet 07 of 67
A1	Drawing No 08-133-07	Revision D	

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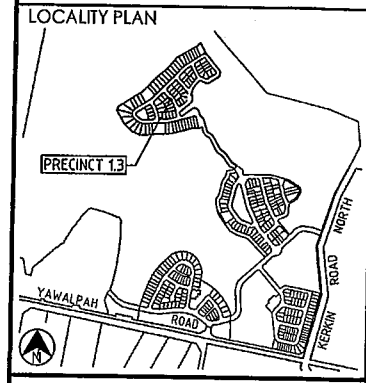


LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL - B1
- KERB AND CHANNEL - SM3
- DESIGN SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- BATTER LINE
- SLEEPER RETAINING WALL
- ROCK BOULDER WALL
- SANDSTONE RETAINING WALL

- EXTENT OF CUT
- EXTENT OF FILL

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	UPDATED CUT & FILL	24.01.17	MNL

Associated Consultants

Client

Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Director - RPEQ 27-1-17

Drawn by

**EARTHWORKS
CONTOUR PLAN
SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	08 of 67

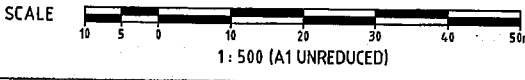
Drawing No	Revision
A1	08-133-08 C

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No... OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



LAYOUT PLAN
SCALE 1:500

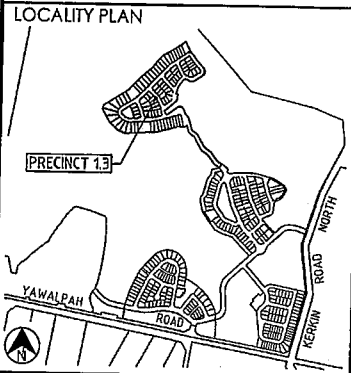
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LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL - B1
- KERB AND CHANNEL - SM3
- 37.0 — DESIGN SURFACE CONTOURS
- 36.0 — EXISTING SURFACE CONTOURS
- BATTER LINE
- SLEEPER RETAINING WALL
- ▬ ROCK BOULDER WALL
- ▬ SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL

REFER KN DWG 08-133-10

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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD, FOOTPATHS & RET WALLS AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	UPDATED CUT & FILL	24.01.17	MNL

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved by: *[Signature]* 27-1-17

Drawing title
**EARTHWORKS
CONTOUR PLAN
SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale
AS SHOWN

Sheet	Revision
09 of 67	
A1	D

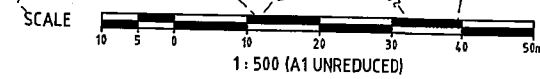
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017










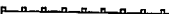


Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

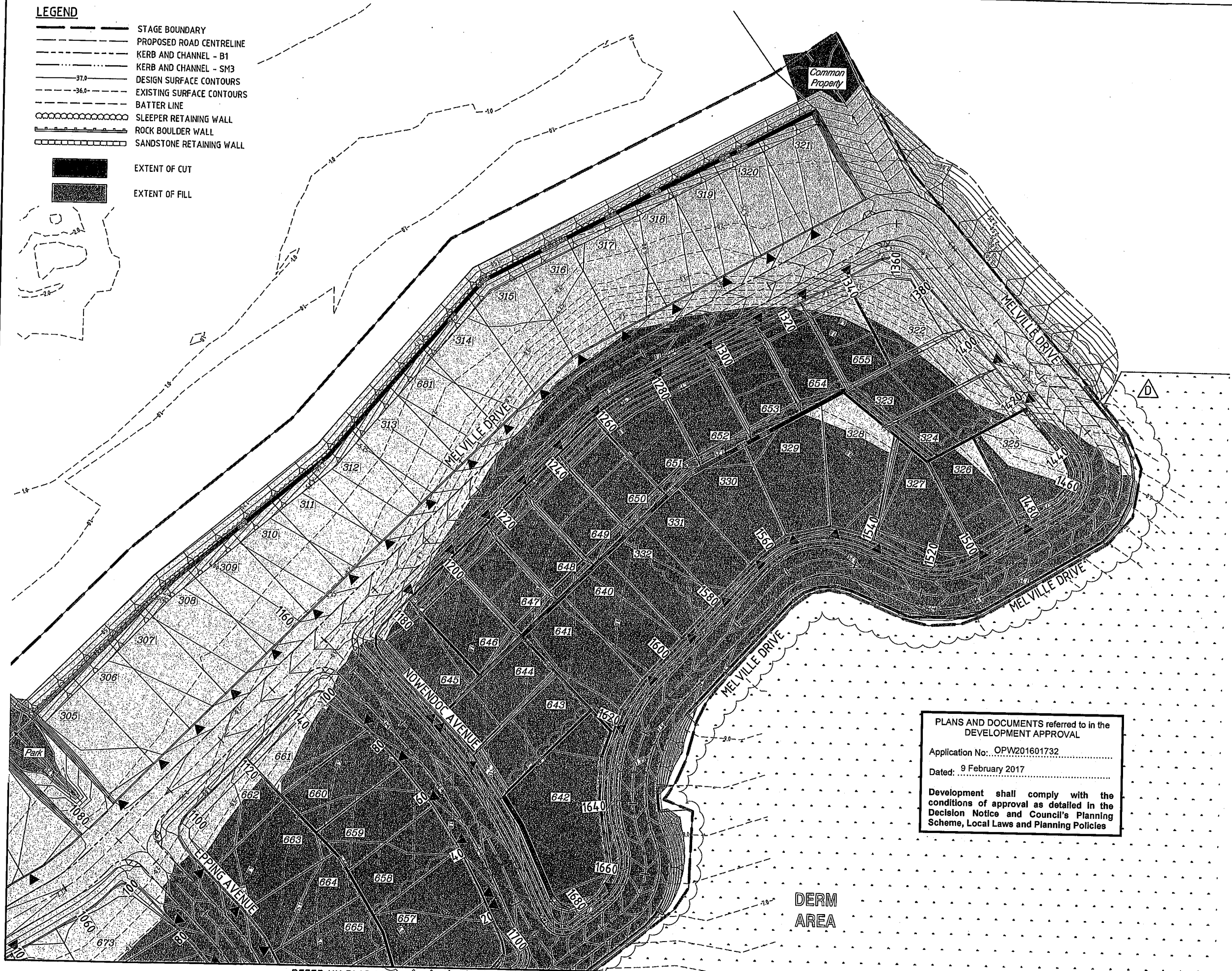
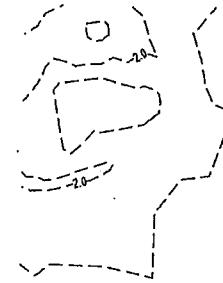
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LEGEND

-  STAGE BOUNDARY
-  PROPOSED ROAD CENTRELINE
-  KERB AND CHANNEL - B1
-  KERB AND CHANNEL - SM3
-  DESIGN SURFACE CONTOURS
-  EXISTING SURFACE CONTOURS
-  BATTER LINE
-  SLEEPER RETAINING WALL
-  ROCK BOULDER WALL
-  SANDSTONE RETAINING WALL
-  EXTENT OF CUT
-  EXTENT OF FILL

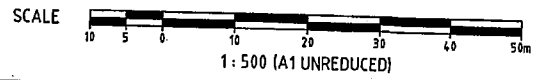


REFER KN DWG 08-133-09

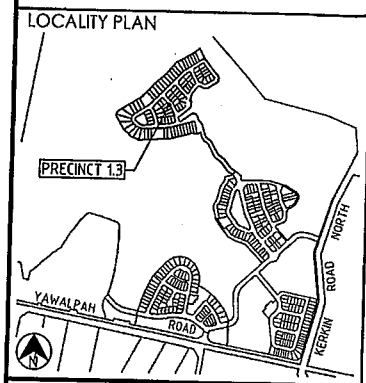
LAYOUT PLAN
SCALE 1:500

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DERM AREA



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD, FOOTPATHS & RET WALLS AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	UPDATED CUT & FILL	24.01.17	MNL

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved by: *[Signature]* R-1-17

Drawn by: *[Signature]*

**EARTHWORKS
 CONTOUR PLAN
 SHEET 3**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

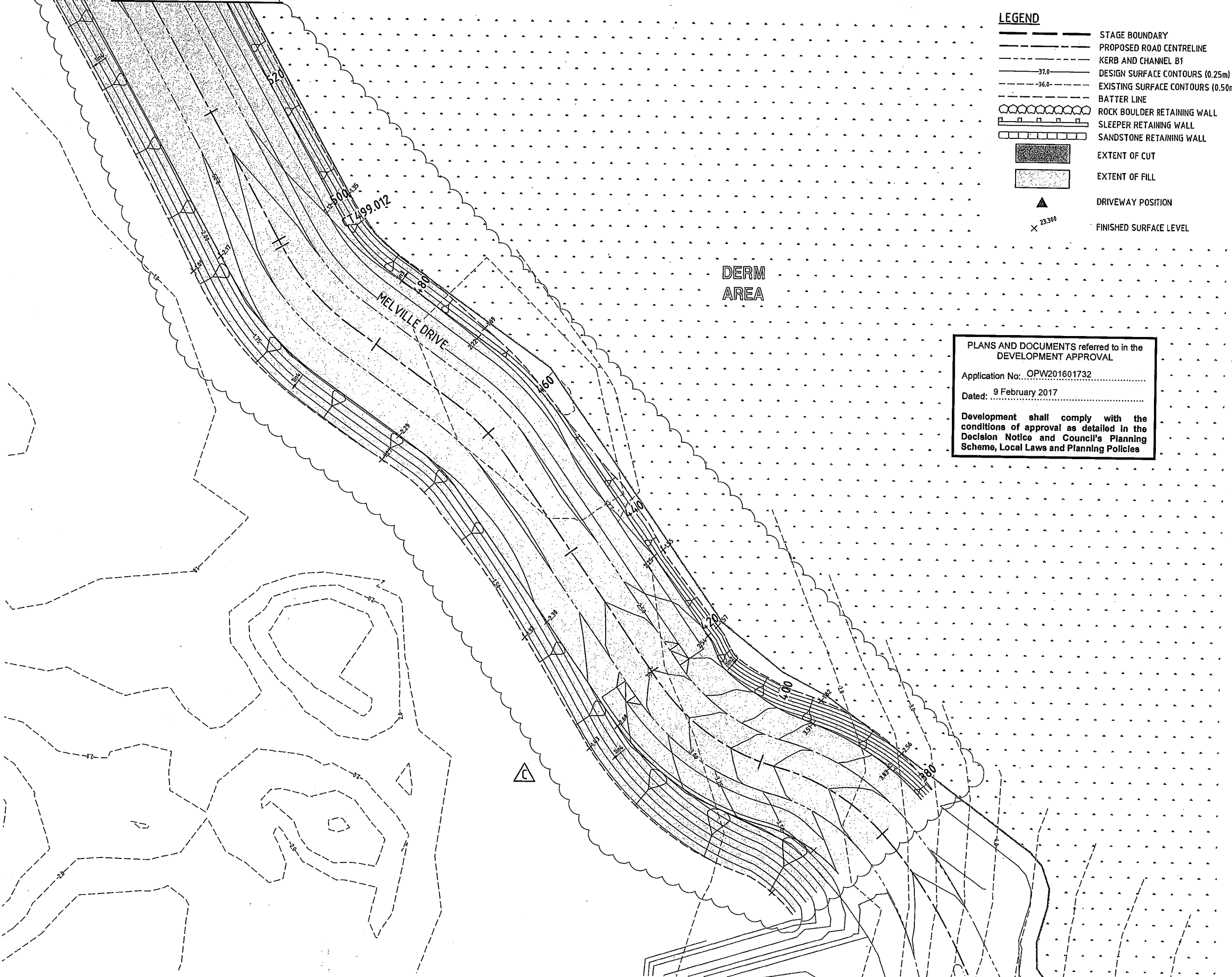
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Sheet	Revision
10 of 67	

Drawing No	Revision
A1	D

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REFER KN DWG 08-133-12



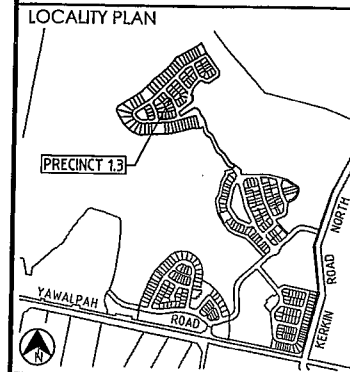
LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- DESIGN SURFACE CONTOURS (0.25m)
- EXISTING SURFACE CONTOURS (0.50m)
- BATTER LINE
- ROCK BOULDER RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- DRIVEWAY POSITION
- FINISHED SURFACE LEVEL

DERM
AREA

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

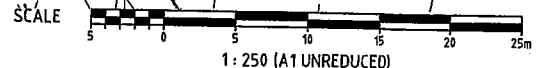
KN GROUP PTY LTD
 CONSULTING ENGINEERS
 LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL knp@knpl.com.au
 ABN 35 112 053 611

Approved Director - RPEQ 1998
 8-2-17

Drawing Title
**EARTHWORKS
 SPOT LEVELS PLAN
 SHEET 1**

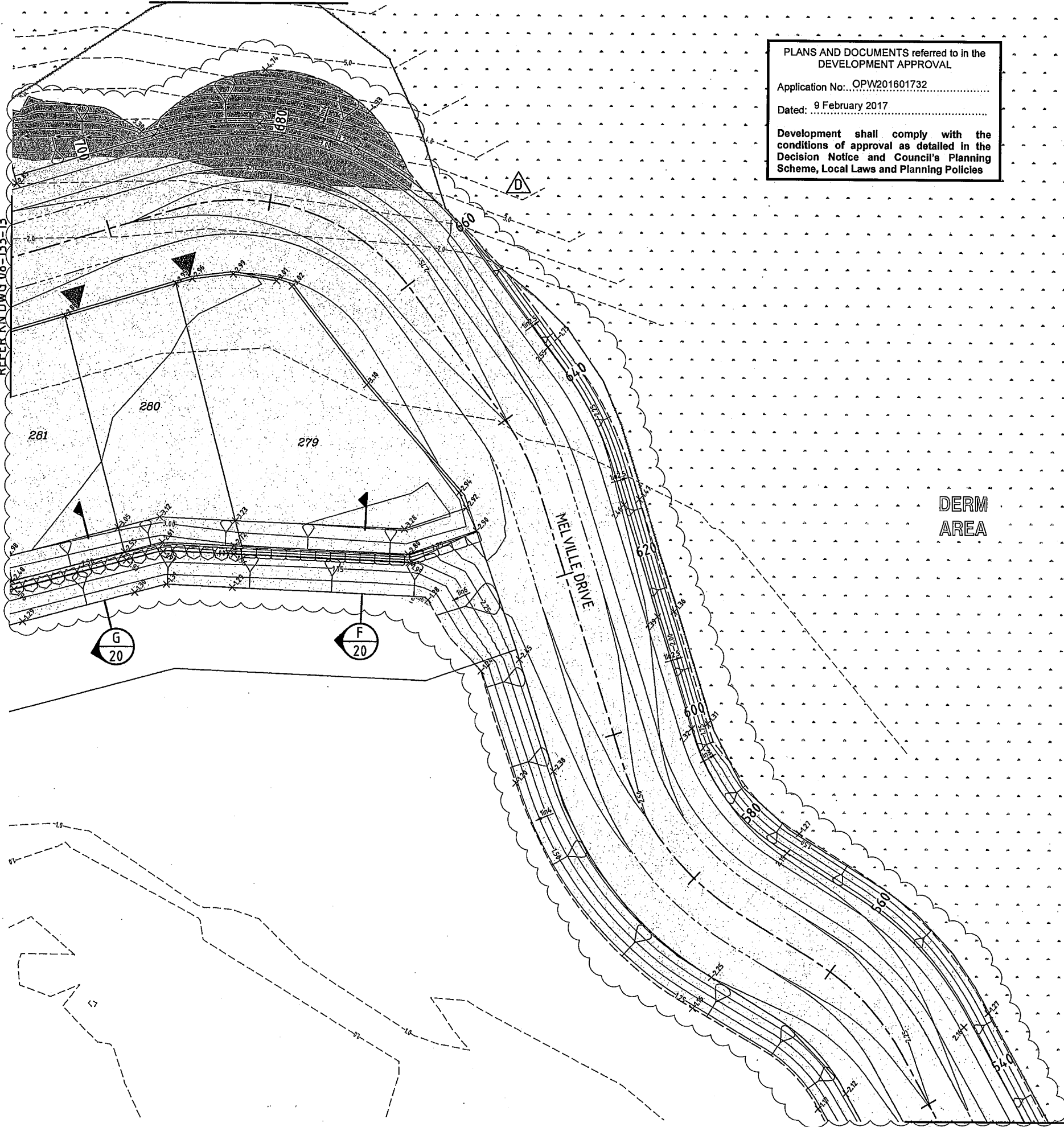
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Scale AS SHOWN			Sheet 11 of 67
Drawing No A1	Revision 08-133-11		C

LAYOUT PLAN
SCALE 1:250



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REFER KN DWG 08-133-16



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

- LEGEND**
- STAGE BOUNDARY
 - PROPOSED ROAD CENTRELINE
 - KERB AND CHANVEL B1
 - 37.0 — DESIGN SURFACE CONTOURS (0.25m)
 - 36.0 — EXISTING SURFACE CONTOURS (0.50m)
 - BATTER LINE
 - ROCK BOULDER RETAINING WALL
 - SLEEPER RETAINING WALL
 - SANDSTONE RETAINING WALL
 - EXTENT OF CUT
 - EXTENT OF FILL
 - ▲ DRIVEWAY POSITION
 - X 23.300 FINISHED SURFACE LEVEL

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

NORTH

LOCALITY PLAN

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL
D	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

Client

Project

GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved by: *[Signature]* B.2.17

Drawing title

EARTHWORKS
 SPOT LEVELS PLAN
 SHEET 2

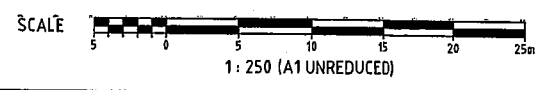
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NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	12 of 67

Drawing No	Revision
A1	D

LAYOUT PLAN
 SCALE 1:250

REFER KN DWG 08-133-11

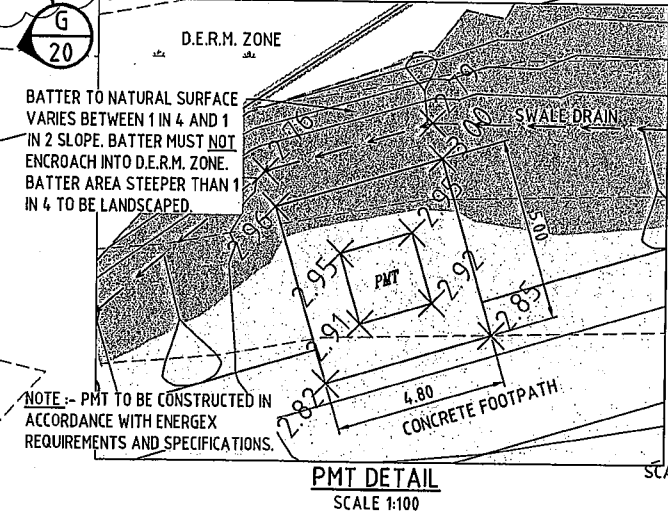
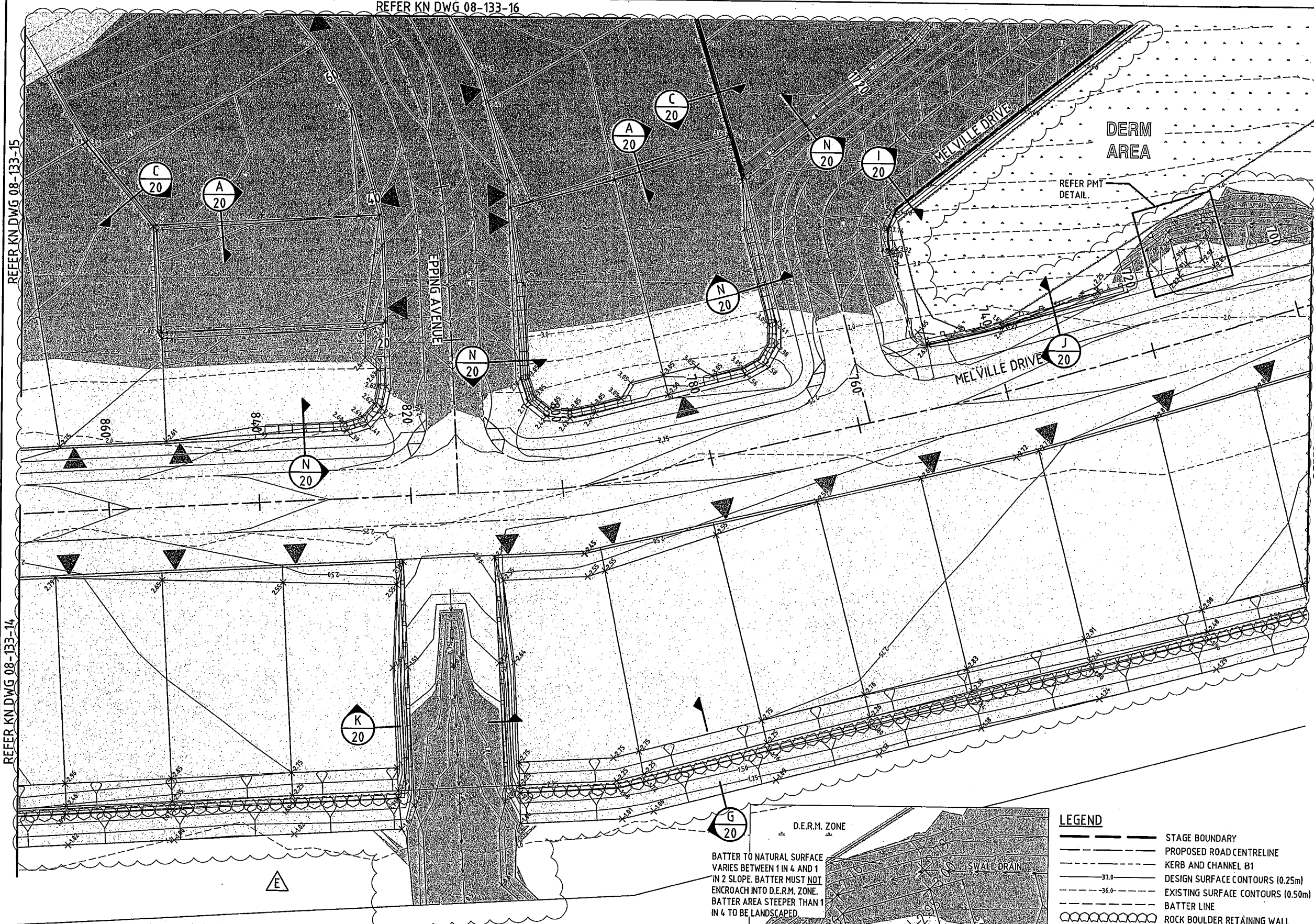


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LEGEND

- STAGE BOUNDARY
- - - PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- - - 37.0 DESIGN SURFACE CONTOURS (0.25m)
- - - 36.0 EXISTING SURFACE CONTOURS (0.50m)
- BATTER LINE
- ROCK BOULDER RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- ▲ DRIVEWAY POSITION
- FINISHED SURFACE LEVEL

SCALE 1:250 (A1 UNREDUCED)

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

NORTH

LOCALITY PLAN

PRECINCT 13

YAWAL PAH ROAD

KEEWEENAW ROAD

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL
E	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

BURCHILLS LANDPARTNERS

vee DesignFlow

Client

MIRVAC

Project

GAINSBOROUGH GREENS PRECINCT 1 STAGE 3

KN GROUP PTY LTD CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET SOUTH BRISBANE QUEENSLAND 4101 PHONE 07 3017 1900 FAX 07 3017 1911 EMAIL kng@knpl.com.au ABN 35 112 053 611

Approved Director - RPEQ 1988

Design Title

EARTHWORKS SPOT LEVELS PLAN SHEET 3

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN

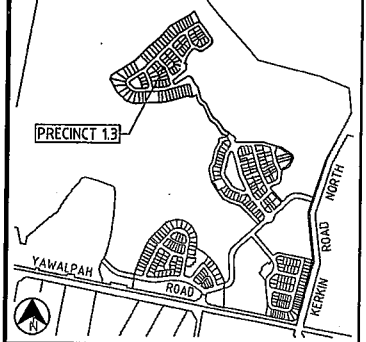
Revision	Revision
A1	08-133-13

Sheet 13 of 67

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IF IN DOUBT - ASK!



LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL
D	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

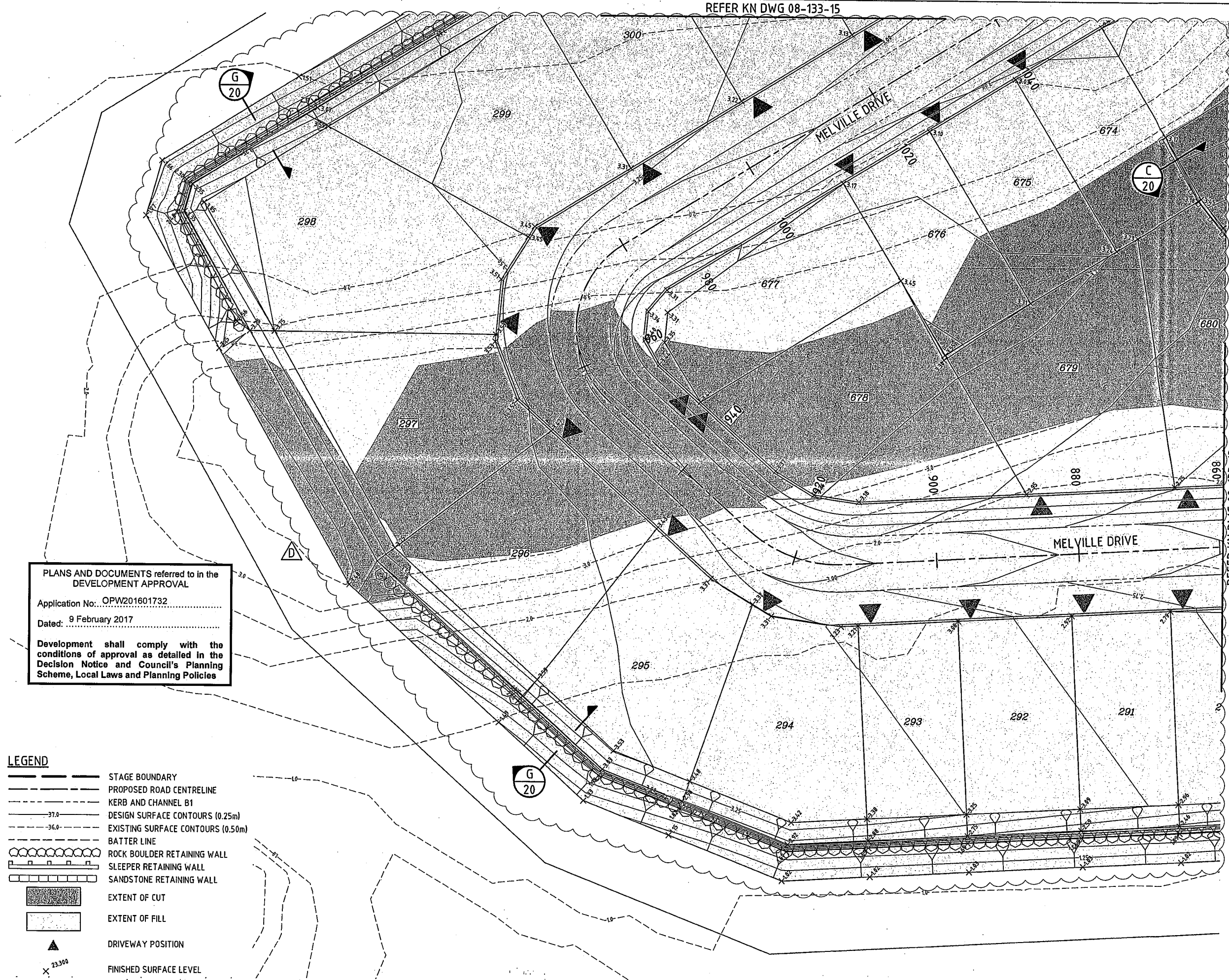
Approved by: *[Signature]* 8.2.17

EARTHWORKS
SPOT LEVELS PLAN
SHEET 4

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale: AS SHOWN Sheet: 14 of 67

Drawing No	Revision
A1	D



PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

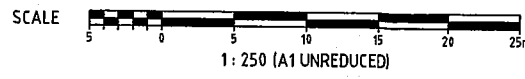
Application No: OPW201601732

Dated: 9 February 2017

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

- LEGEND**
- STAGE BOUNDARY
 - PROPOSED ROAD CENTRELINE
 - KERB AND CHANNEL B1
 - 37.0 — DESIGN SURFACE CONTOURS (0.25m)
 - 36.0 — EXISTING SURFACE CONTOURS (0.50m)
 - BATTER LINE
 - ROCK BOULDER RETAINING WALL
 - SLEEPER RETAINING WALL
 - SANDSTONE RETAINING WALL
 - EXTENT OF CUT
 - EXTENT OF FILL
 - ▲ DRIVEWAY POSITION
 - x 23.300 FINISHED SURFACE LEVEL

LAYOUT PLAN
SCALE 1:250



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LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- 37.0- DESIGN SURFACE CONTOURS (0.25m)
- 36.0- EXISTING SURFACE CONTOURS (0.50m)
- BATTER LINE
- ROCK BOULDER RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- ▲ DRIVEWAY POSITION
- x 23.300 FINISHED SURFACE LEVEL

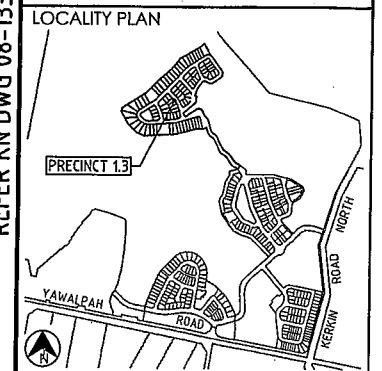
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL
D	CUT/FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved for: [Signature] 8-2-17

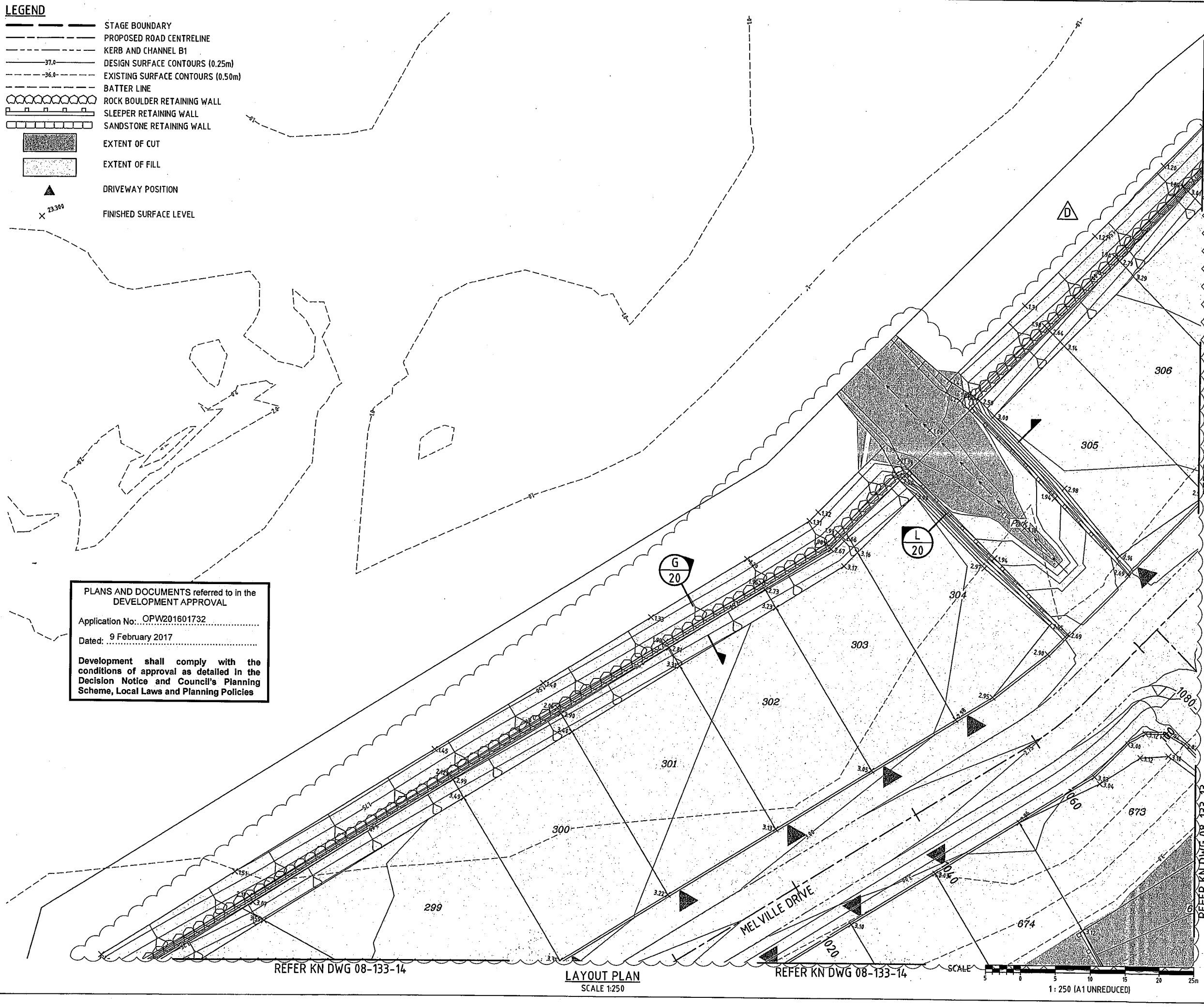
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**EARTHWORKS
SPOT LEVELS PLAN
SHEET 5**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN Sheet 15 of 67

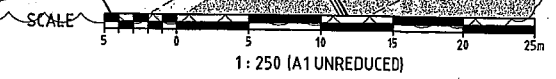
A1	Drawing No	Revision
A1	08-133-15	D



REFER KN DWG 08-133-14

LAYOUT PLAN
SCALE 1:250

REFER KN DWG 08-133-14



REFER KN DWG 08-133-17
REFER KN DWG 08-133-16
REFER KN DWG 08-133-15
REFER KN DWG 08-133-14

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REFER KN DWG 08-133-17

REFER KN DWG 08-133-18

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

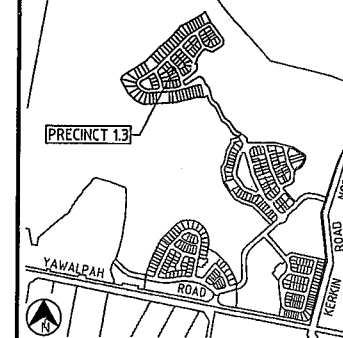
Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL
E	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Director: RPEQ 1988
[Signature] 8-2-17

Working Title
**EARTHWORKS
SPOT LEVELS PLAN
SHEET 6**

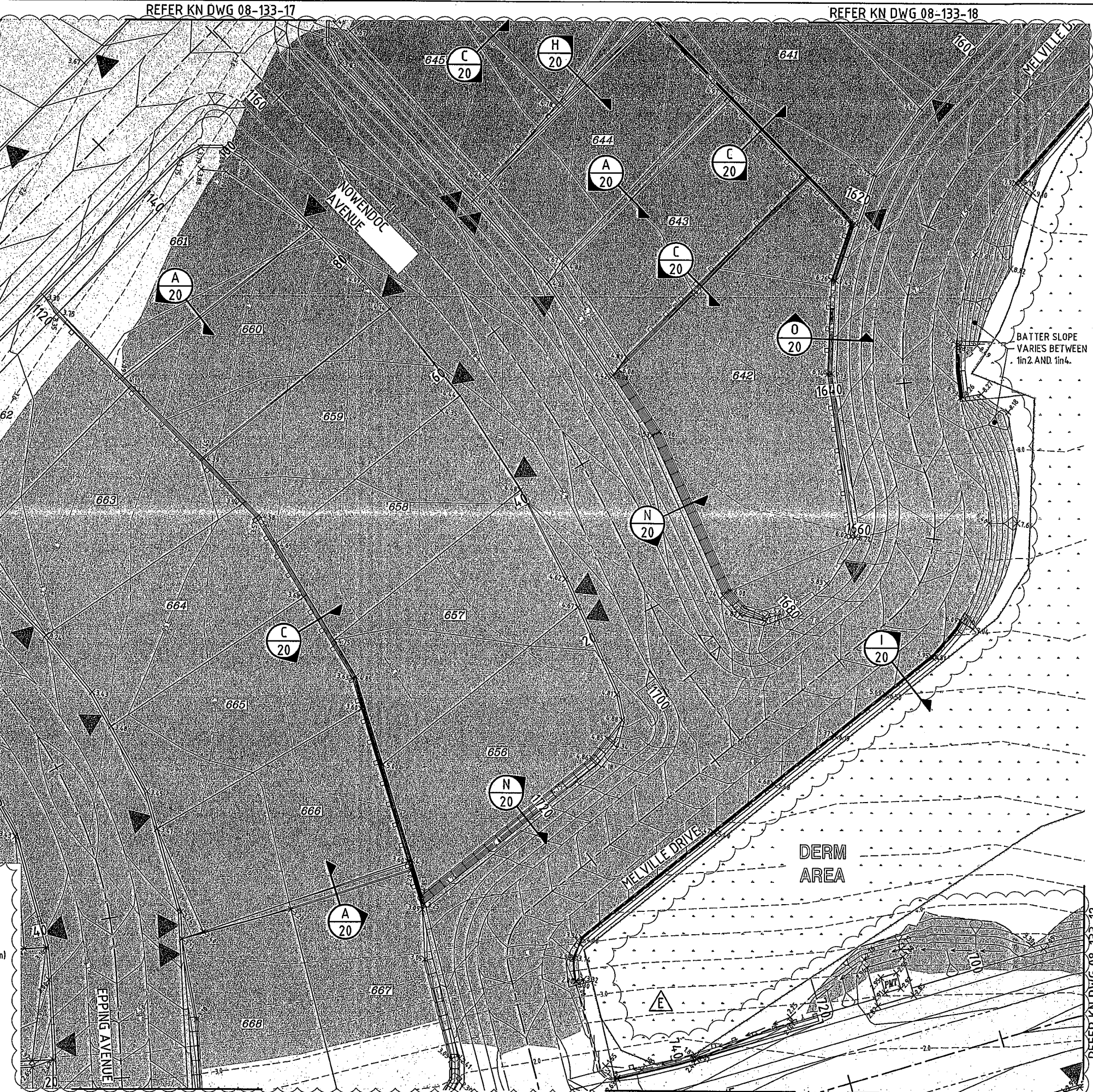
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NJS	CH	GBG	JUL 16
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Drawing No: A1		Revision: E	

REFER KN DWG 08-133-15

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LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- DESIGN SURFACE CONTOURS (0.25m)
- EXISTING SURFACE CONTOURS (0.50m)
- BATTER LINE
- ROCK BOULDER RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- DRIVEWAY POSITION
- FINISHED SURFACE LEVEL



REFER KN DWG 08-133-13


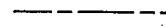
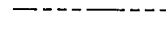


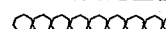
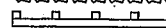
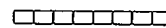
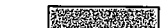
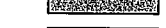

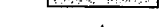

LAYOUT PLAN
SCALE 1:250

REFER KN DWG 08-133-13

SCALE 1:250 (A1 UNREDUCED)

REFER KN DWG 08-133-12

LEGEND

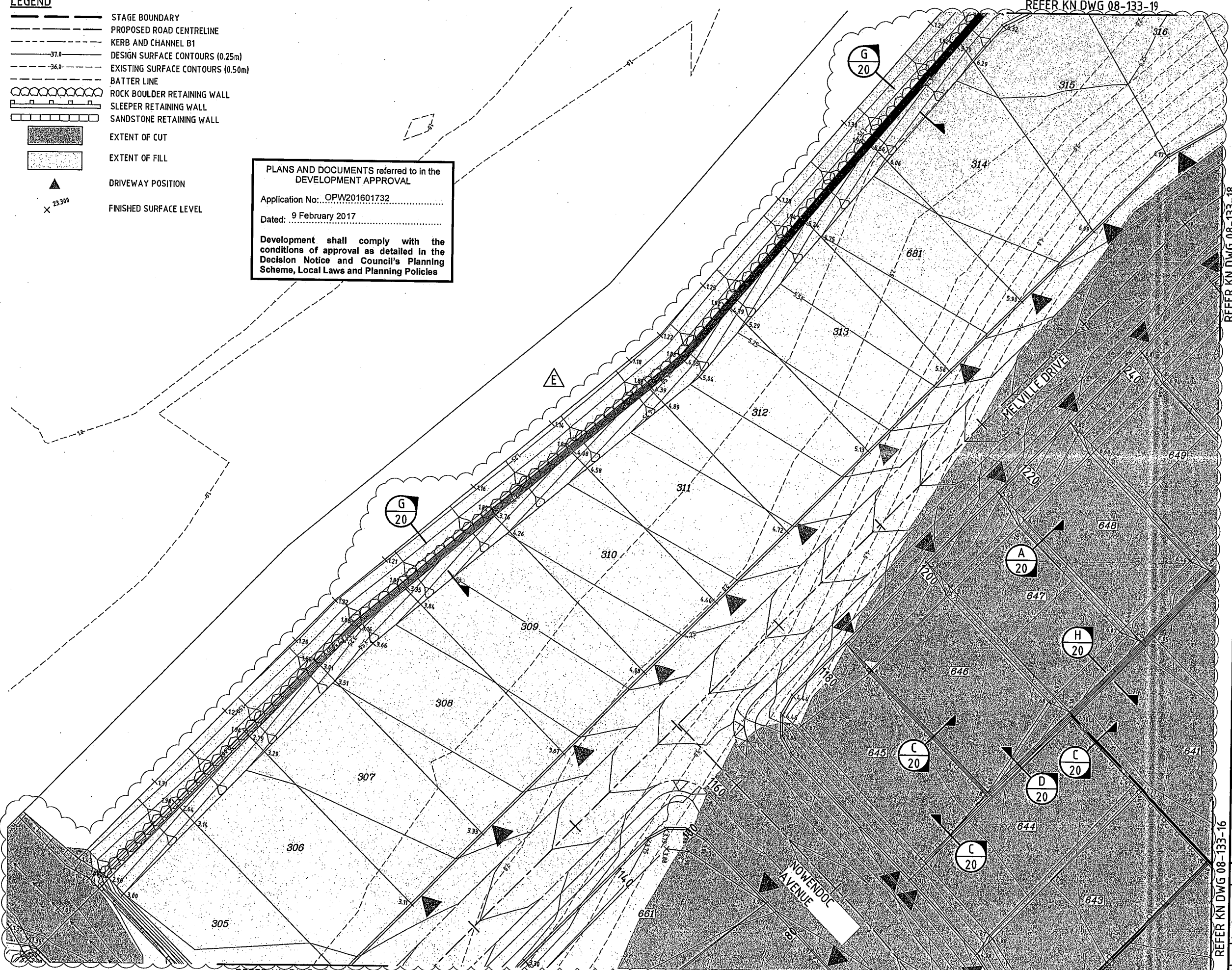
-  STAGE BOUNDARY
-  PROPOSED ROAD CENTRELINE
-  KERB AND CHANNEL B1
-  DESIGN SURFACE CONTOURS (0.25m)
-  EXISTING SURFACE CONTOURS (0.50m)
-  BATTER LINE
-  ROCK BOULDER RETAINING WALL
-  SLEEPER RETAINING WALL
-  SANDSTONE RETAINING WALL
-  EXTENT OF CUT
-  EXTENT OF FILL
-  DRIVEWAY POSITION
-  FINISHED SURFACE LEVEL

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



LAYOUT PLAN
SCALE 1:250

SCALE 1: 250 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN

PRECINCT 1

YAWALPAH ROAD

HERNIM ROAD NORTH

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	REVISED ROAD NAME	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL
E	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

BURCHILLS LANDPARTNERS VEE DesignFlow

Client

mirvac

Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved for Construction - RPSG 1988
Monika B. Zoff

Drawing Title

EARTHWORKS
SPOT LEVELS PLAN
SHEET 7

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN

Sheet	Revision
17 of 67	17 of 67

Drawing No

A1	08-133-17	E
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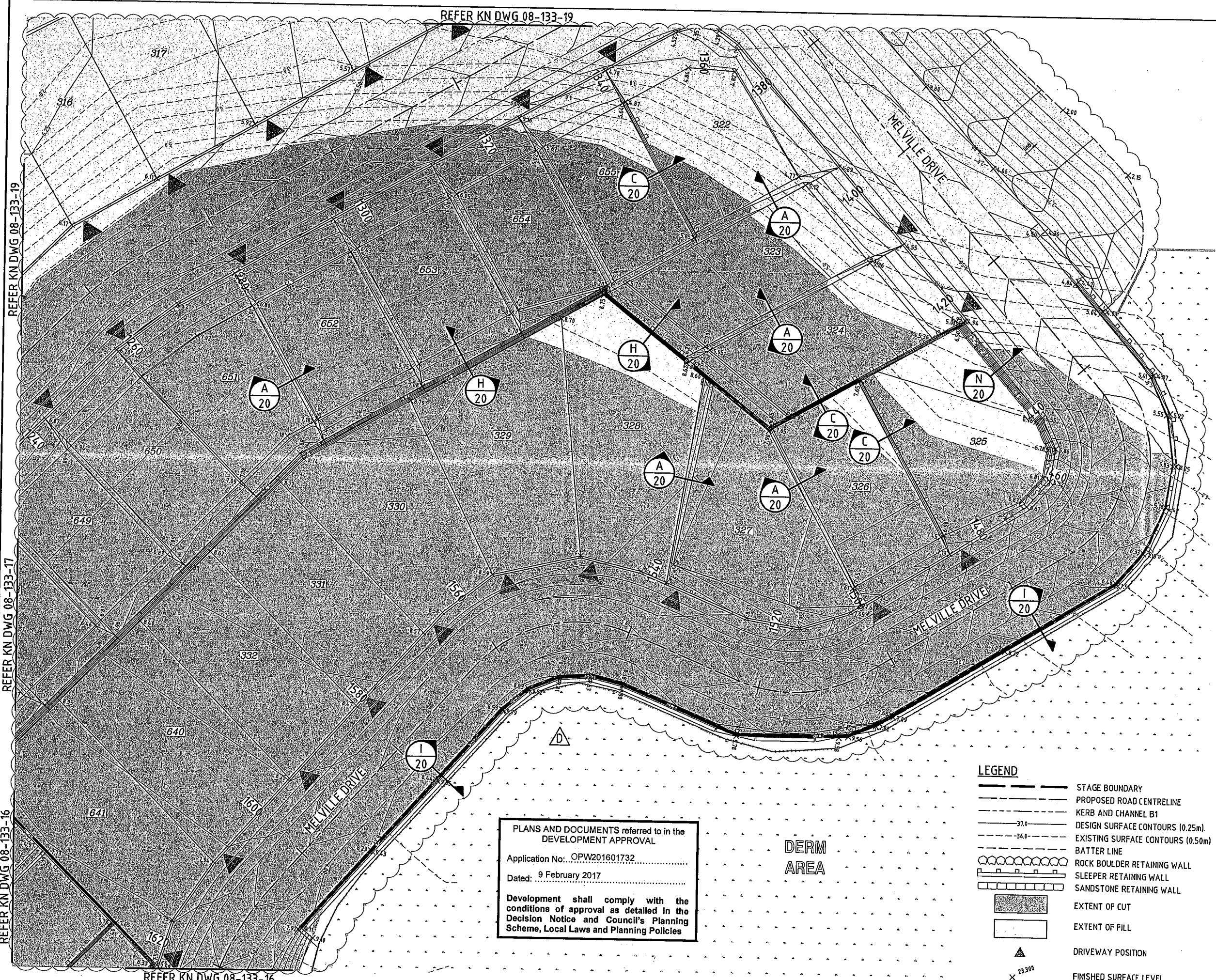
REFER KN DWG 08-133-19

REFER KN DWG 08-133-17

REFER KN DWG 08-133-16

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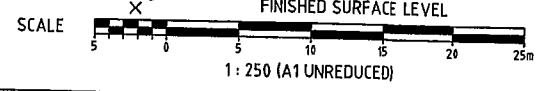
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DERM AREA

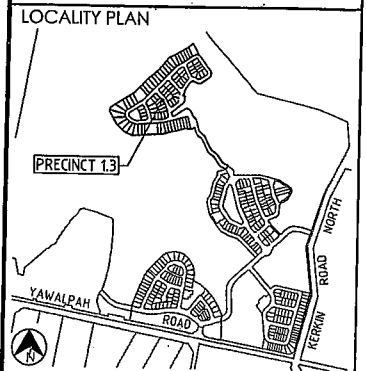
LAYOUT PLAN
SCALE 1:250

LEGEND

- STAGE BOUNDARY
- PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- 37.0 DESIGN SURFACE CONTOURS (0.25m)
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- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- DRIVEWAY POSITION
- FINISHED SURFACE LEVEL



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL
D	CUT FILL HATCH ADDED	08.02.17	CWH

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved Drawing - RPEP 1995

Drawn by: *[Signature]* 8-2-17

**EARTHWORKS
 SPOT LEVELS PLAN
 SHEET 8**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale: AS SHOWN

Sheet	Revision
18 of 67	

Drawing No	Revision
A1	D

LEGEND

- STAGE BOUNDARY
- - - PROPOSED ROAD CENTRELINE
- KERB AND CHANNEL B1
- - - 37.0 DESIGN SURFACE CONTOURS (0.25m)
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- BATTER LINE
- ROCK BOULDER RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- EXTENT OF CUT
- EXTENT OF FILL
- ▲ DRIVEWAY POSITION
- x 23.300 FINISHED SURFACE LEVEL

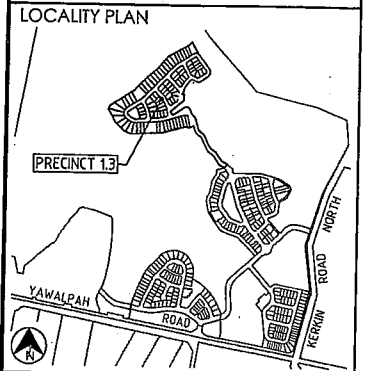
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017

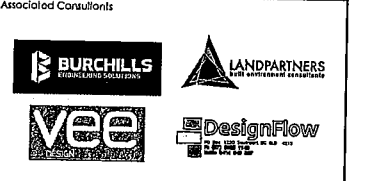
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS & SPOT LEVELS AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL
D	CUT FILL HAICH ADDED	08.02.17	CWH



Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved by: *[Signature]* 8-2-17

Drawn by: *[Signature]*

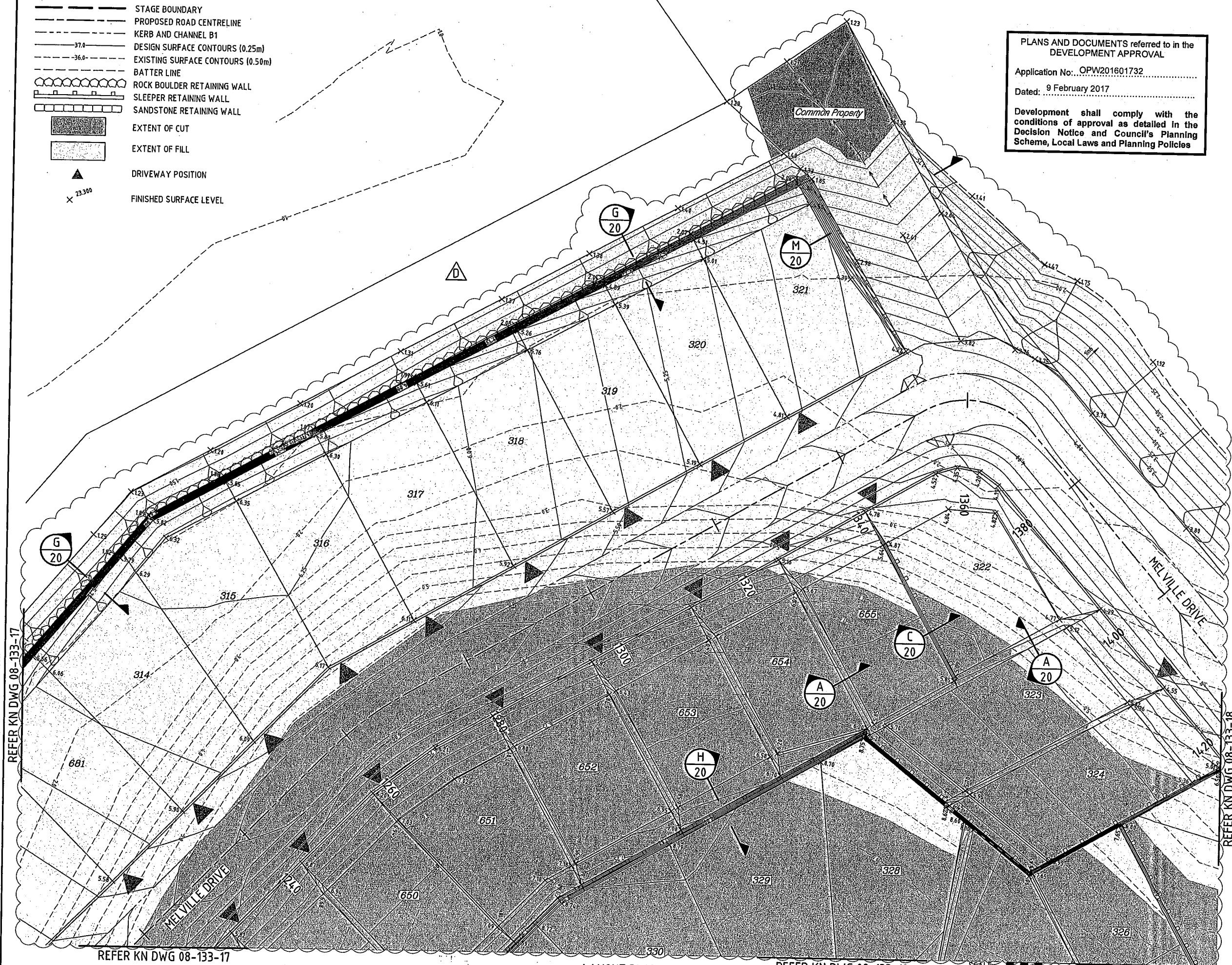
**EARTHWORKS
SPOT LEVELS PLAN
SHEET 9**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale: AS SHOWN

Sheet: 19 of 67

Drawing No	Revision
A1	D



LAYOUT PLAN
SCALE 1:250

SCALE 1: 250 (A1 UNREDUCED)

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REFER KN DWG 08-133-17

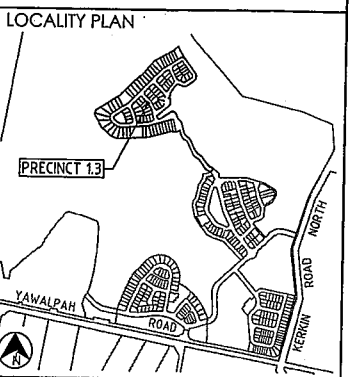
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	DETAILS REVISED	20.10.16	RCT
C	DETAILS AMENDED	27.01.17	DES
D	SECTION 'O' AMENDED	08.02.17	CWH



Project: GAINSBOROUGH GREENS PRECINCT 1 STAGE 3

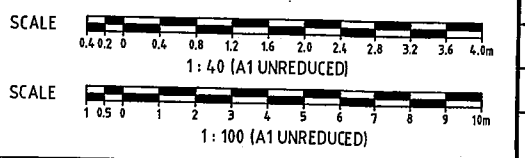
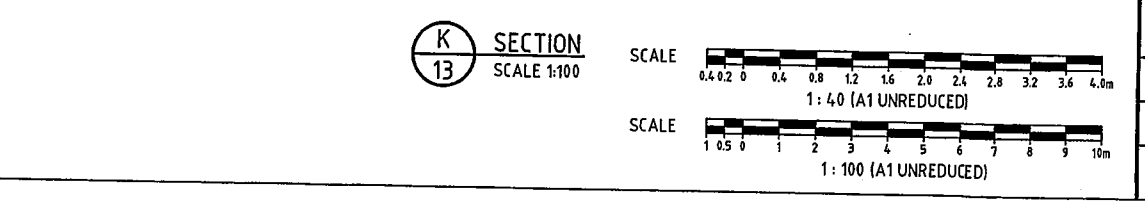
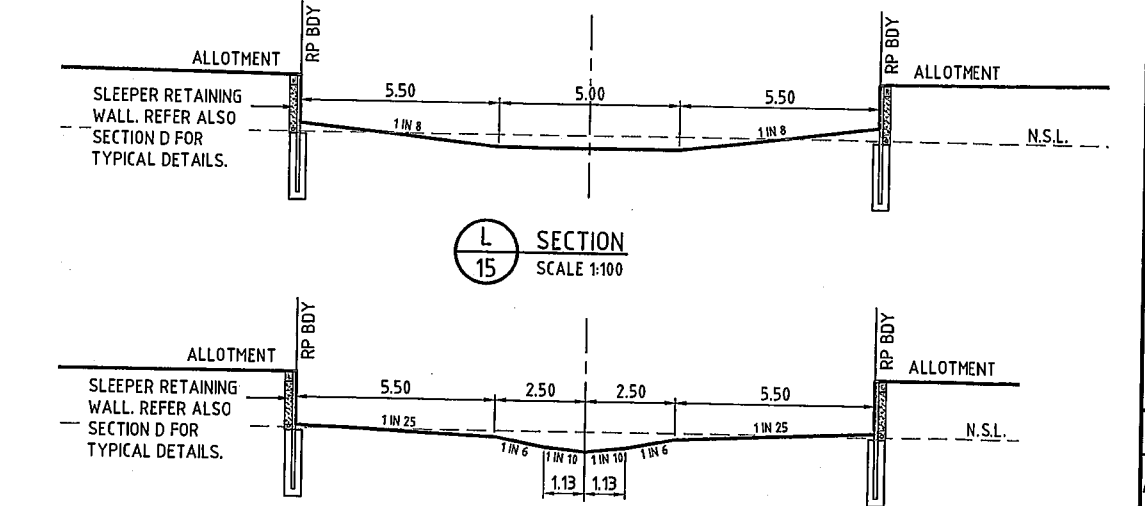
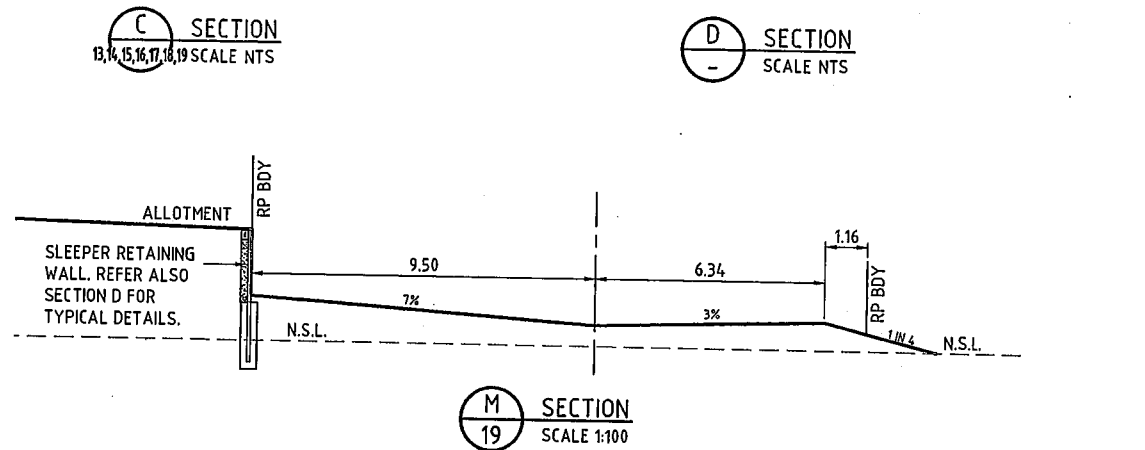
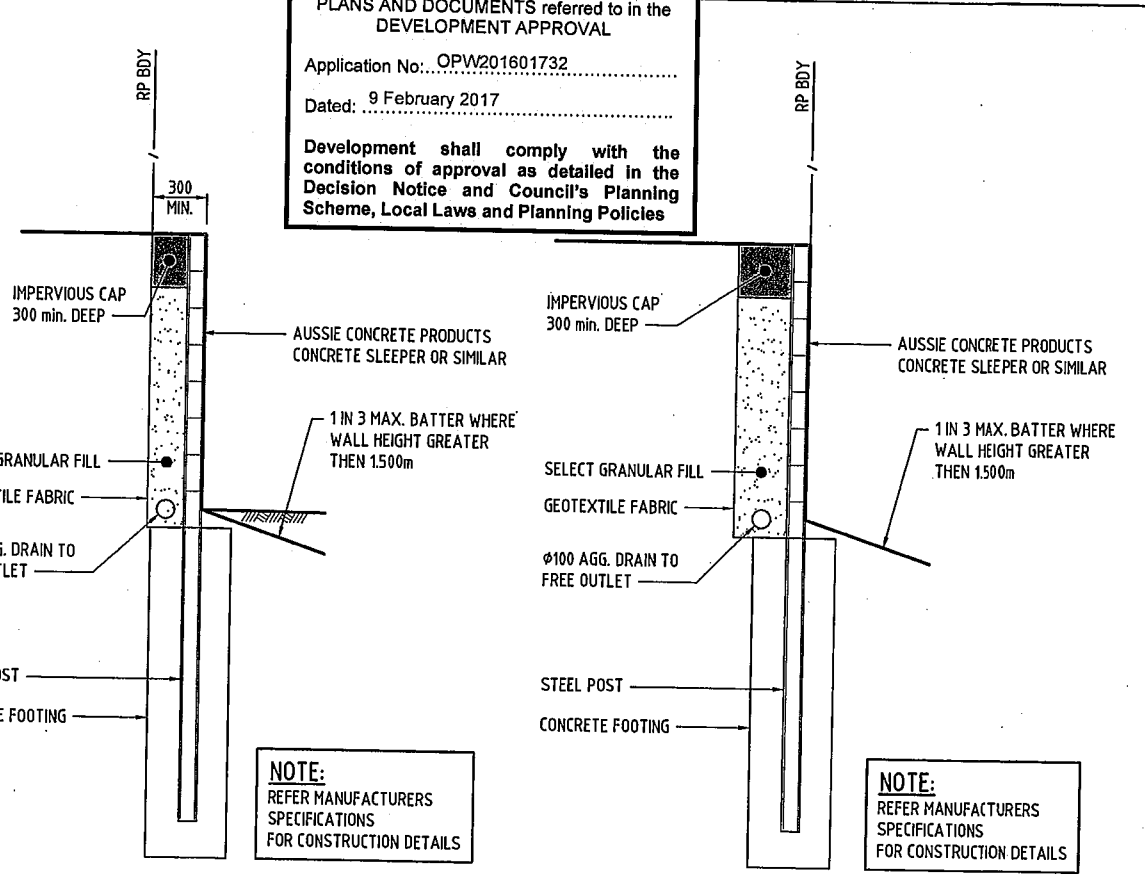
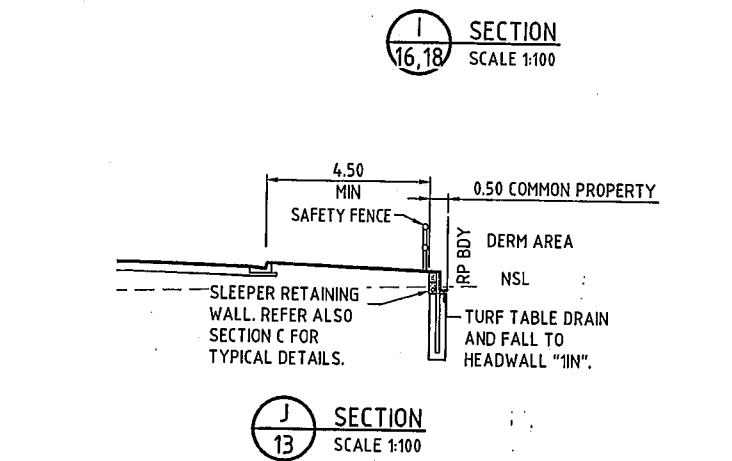
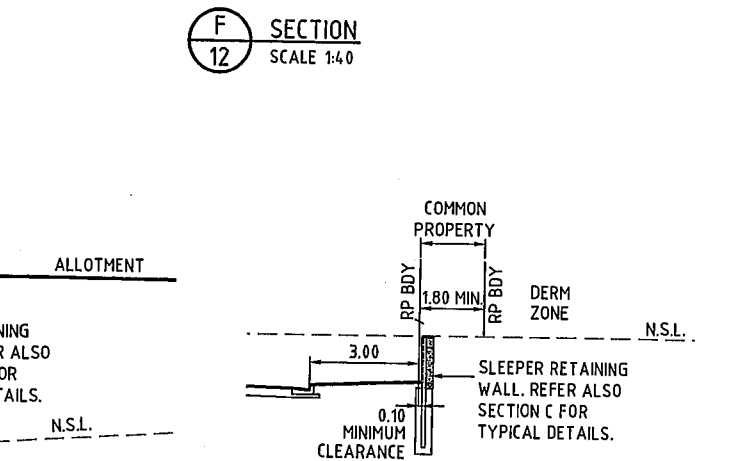
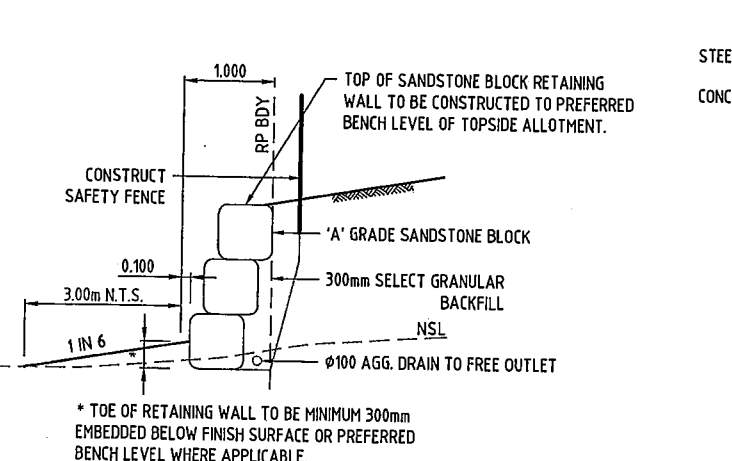
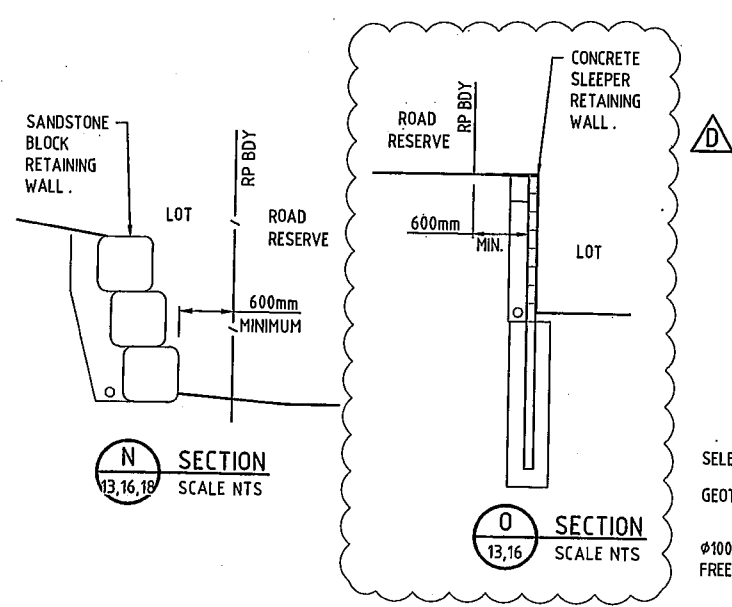
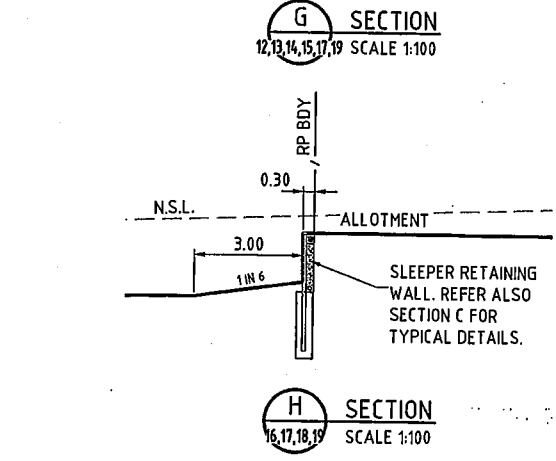
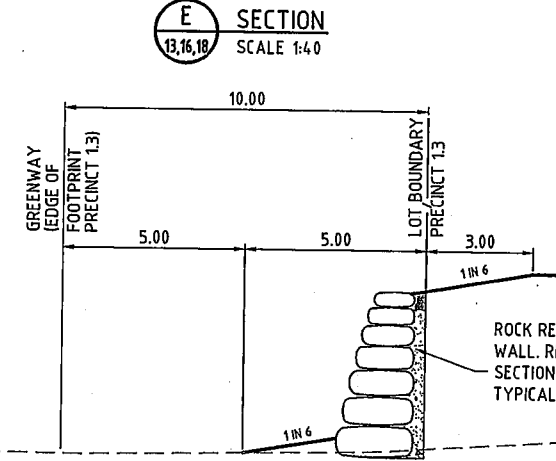
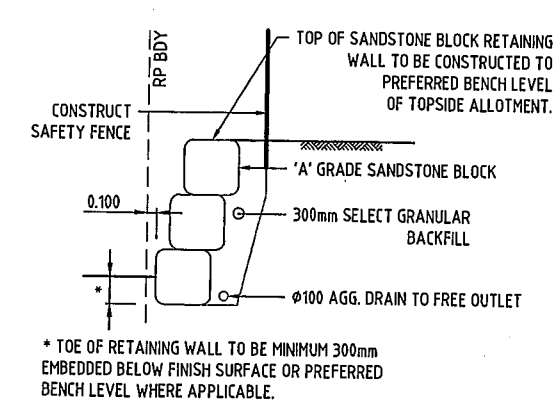
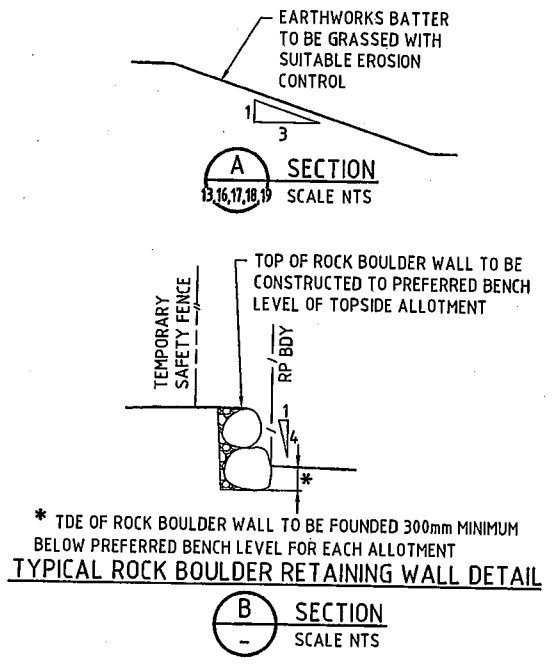
KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved Director: [Signature] B-2-17

EARTHWORKS TYPICAL SECTIONS

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
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A1	Drawing No: 08-133-20		Revision: D



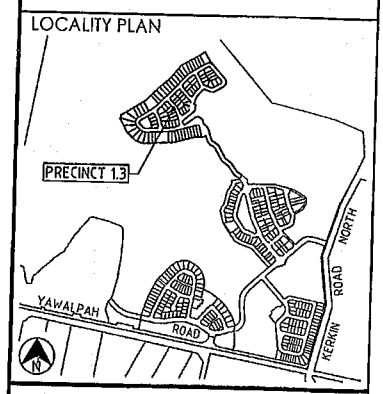
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NOMINAL PAVEMENT DETAILS
 G.C.C. RESIDENTIAL COLLECTOR STREET
 CH 379.892 - CH 767.569
 45mm SURFACING DG14
 10mm SEAL
 50mm BASE DG14
 PRIME & SEAL PRIME PLUS 10mm NOM. AGGREGATE
 150mm BASE COURSE (TYPE 2.1, CBR80)
 175mm SUB-BASE COURSE (TYPE 2.3, CBR45)
 SUBGRADE REPLACEMENT MIN. 500mm (TYPE 2.5, CBR 12)

NOMINAL PAVEMENT DETAILS
 G.C.C. RESIDENTIAL ACCESS STREET
 CH 767.569 - CH 1801.532
 25mm ASPHALTIC CONCRETE
 100mm BASE COURSE (TYPE 2.1, CBR 80)
 100mm UPPER SUB-BASE COURSE (TYPE 2.3, CBR 45)
 SUBGRADE REPLACEMENT AS REQUIRED (TYPE 2.5, CBR 15)

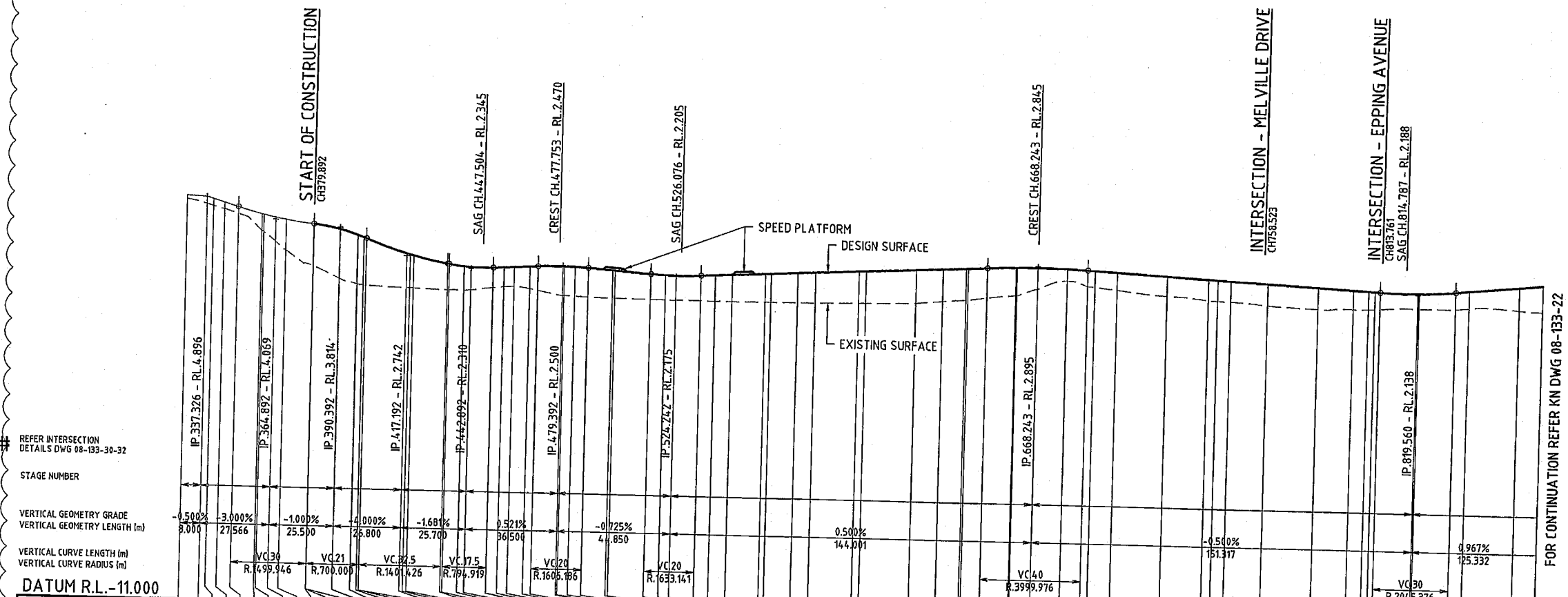
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONG SECTION AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES



VOLUMES	CUT		FILL	
	0	0	0	0
LIP OF KERB (LHS)	0	0	0	0
LIP OF KERB (RHS)	0	0	0	0
EXISTING SURFACE	0	0	0	0
CUT/FILL DEPTH	0	0	0	0
DESIGN SURFACE	0	0	0	0
PEGGED CHAINAGE	329.376	4.936	0.137	4.799
	337.326	4.896	0.277	4.619
	340.000	4.816	0.274	4.542
	344.403	4.684	0.260	4.424
	349.892	4.519	0.255	4.264
	359.392	4.264	0.652	3.612
	360.000	4.250	0.680	3.570
	364.892	4.144	0.949	3.195
	369.027	4.067	1.205	2.862
	379.892	3.970	1.651	2.269
	380.000	3.918	1.657	2.266
	390.392	3.735	1.941	1.794
	397.420	3.524	1.931	1.593
	400.000	3.429	1.870	1.559
	400.892	3.394	1.840	1.554
	400.942	3.392	1.838	1.554
	417.192	2.836	1.947	1.489
	418.519	2.799	1.313	1.486
	420.000	2.759	1.276	1.484
	433.442	2.469	1.021	1.447
	434.142	2.457	1.010	1.447
	440.000	2.380	0.933	1.447
	442.892	2.358	0.936	1.447
	451.662	2.356	0.793	1.563
	455.954	2.378	0.769	1.609
	460.000	2.399	0.753	1.646
	466.157	2.431	0.870	1.561
	469.392	2.448	0.950	1.498
	479.392	2.469	1.150	1.319
	480.000	2.468	1.151	1.318
	484.172	2.457	1.154	1.303
	489.392	2.428	1.152	1.276
	493.072	2.358	1.100	1.258
	500.000	2.351	1.092	1.258
	514.242	2.247	0.995	1.252
	520.000	2.216	0.974	1.242
	524.242	2.206	0.969	1.236
	534.242	2.225	0.983	1.242
	540.000	2.254	1.016	1.238
	546.842	2.288	1.055	1.233
	560.000	2.354	1.107	1.247
	562.181	2.365	1.117	1.248
	573.045	2.419	1.170	1.249
	580.000	2.454	1.202	1.252
	597.127	2.539	1.255	1.284
	600.000	2.554	1.263	1.291
	620.000	2.654	1.310	1.344
	630.676	2.707	1.265	1.442
	640.000	2.754	1.249	1.505
	648.772	2.758	1.243	1.515
	648.243	2.795	1.180	1.615
	659.659	2.836	1.102	1.734
	660.000	2.837	1.100	1.736
	668.243	2.845	0.828	2.017
	680.000	2.828	0.461	2.367
	688.243	2.795	0.629	2.166
	691.124	2.781	0.643	2.158
	700.000	2.736	0.695	2.041
	720.000	2.636	0.777	1.859
	736.372	2.554	0.828	1.726
	740.000	2.536	0.829	1.707
	745.264	2.510	0.820	1.690
	760.000	2.436	0.849	1.587
	780.000	2.336	0.846	1.491
	793.965	2.266	0.754	1.512
	800.000	2.236	0.716	1.520
	802.551	2.223	0.689	1.534
	804.560	2.213	0.666	1.548
	819.560	2.193	0.591	1.602
	820.000	2.194	0.593	1.602
	834.560	2.283	0.659	1.625
	840.000	2.336	0.664	1.672
	860.000	2.529	0.905	1.624
	869.326	2.619	1.032	1.588

Horiz Curve Data

R.-70	R.-70	R.-30	R.30	R.-30	R.33.5	R.-30	R.-25.82	R.150	R.49.75
14.989	9.635	17.595	21.098	10.204	14.841	15.339	31.465	8.892	8.587
	10.798								

LONGITUDINAL SECTION - MELVILLE
 SCALE - 1:100 (H)
 1:100 (V)

FOR CONTINUATION REFER KN DWG 08-133-22

Associated Consultants

Client

Project

GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
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 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved Drawing - RPEP 1998

Drawn by: *[Signature]* Date: 04-11-16

ROADWORKS
 LONGITUDINAL SECTION
 MELVILLE DRIVE - SHEET 1

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	21 of 67

Scale	Drawing No	Revision
A1	08-133-21	C

K12/2008/00133 Gainsborough Greens Precinct 13 Engineering Acad 08-133-21-29-RD-1-5-XS.dwg Plotted by: DS on 24/11/2016 5:53:34 PM

NOMINAL PAVEMENT DETAILS

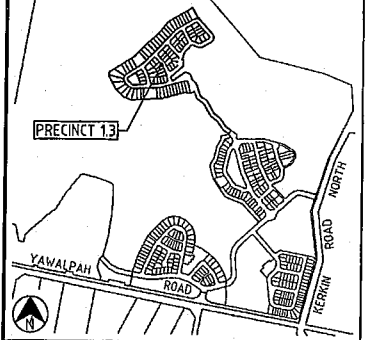
G.C.C.C. RESIDENTIAL ACCESS STREET
 CH 767.569 - CH 1801.532
 25mm ASPHALTIC CONCRETE
 100mm BASE COURSE (TYPE 2.1, CBR 80)
 100mm UPPER SUB-BASE COURSE (TYPE 2.3, CBR 45)
 SUBGRADE REPLACEMENT AS REQUIRED (TYPE 2.5, CBR 15)

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONG SECTION AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants



Client



Project

GAINSBOROUGH GREENS PRECINCT 1 STAGE 3

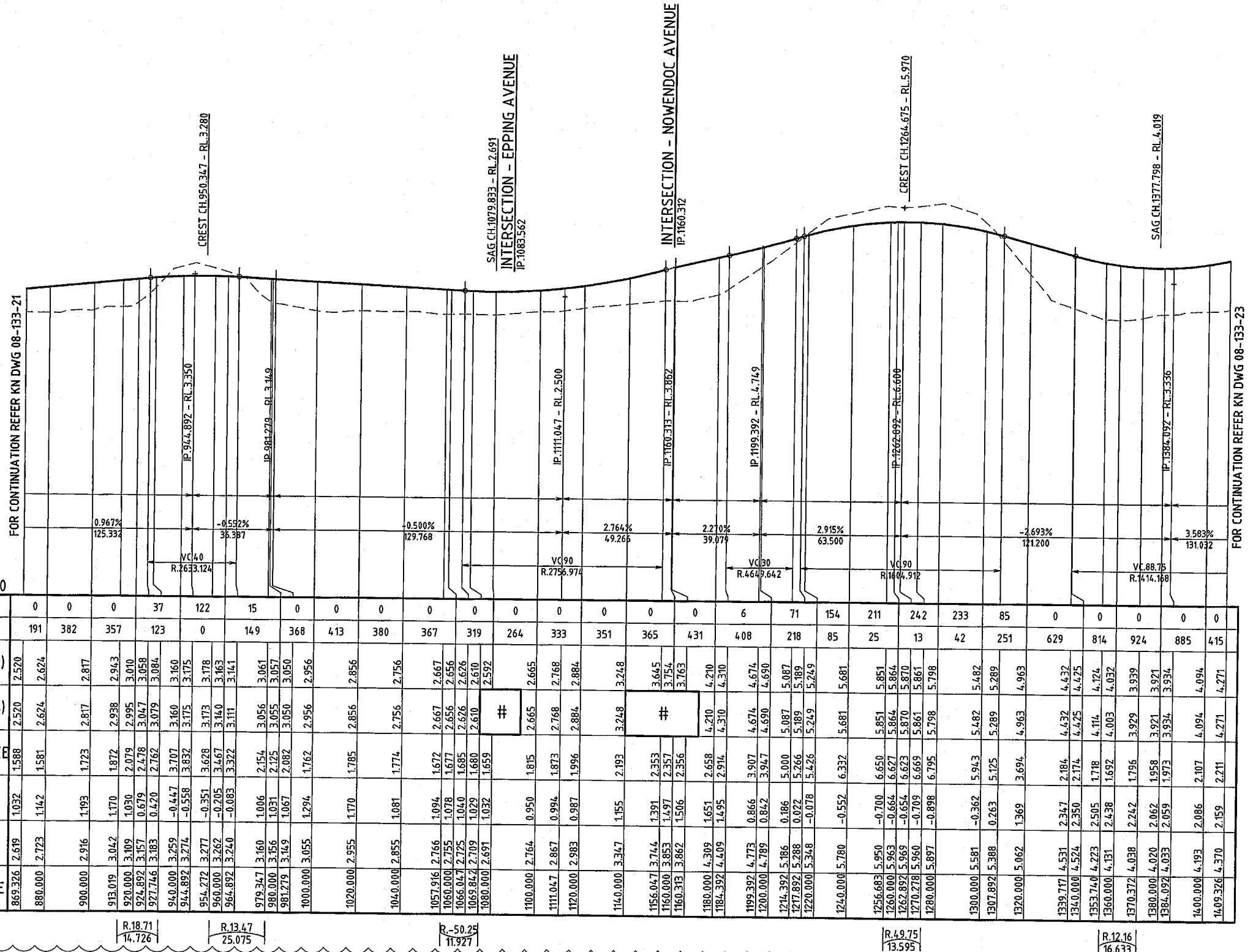


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 EMAIL knp@knpl.com.au
 ABN 35 112 053 611

Approved Director - RPECO/198
 24.11.16

ROADWORKS
 LONGITUDINAL SECTION
 MELVILLE DRIVE - SHEET 2

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale		Sheet	
AS SHOWN		22 of 67	
Drawing No		Revision	
A1		C	



LONGITUDINAL SECTION - Melville

SCALE - 1:1000 (H)
 1:100 (V)

REFER INTERSECTION DETAILS DWG 08-133-30-32

STAGE NUMBER

VERTICAL GEOMETRY GRADE
 VERTICAL GEOMETRY LENGTH (m)

VERTICAL CURVE LENGTH (m)
 VERTICAL CURVE RADIUS (m)

DATUM R.L. - 11.000

VOLUMES	CUT		FILL		LIP OF KERB (LHS)		LIP OF KERB (RHS)		EXISTING SURFACE	CUT/FILL DEPTH	DESIGN SURFACE	PEGGED CHAINAGE																																				
	0	37	122	15	0	0	0	0																																								
	191	382	357	123	0	149	368	413	380	367	319	264	333	351	365	431	408	218	85	154	211	242	233	85	0	0	0	0	0	415																		
	1.588	1.581	1.723	1.817	1.872	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079	2.079																
	1.032	1.142	1.193	1.173	1.872	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030																
	2.619	2.723	2.916	2.817	3.042	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109	3.109																
	869.326	880.000	900.000	913.019	920.000	924.892	927.746	940.000	944.892	954.272	960.000	964.892	979.347	980.000	981.279	1000.000	1020.000	1040.000	1057.916	1050.000	1056.047	1160.000	1160.313	1180.000	1184.392	1199.392	1200.000	1244.392	1217.892	1220.000	1240.000	1256.683	1260.000	1262.892	1270.278	1280.000	1300.000	1307.892	1320.000	1339.717	1340.000	1353.740	1360.000	1370.372	1380.000	1384.024	1400.000	1409.326

Horiz Curve Data

R.18.71 14.726
 R.13.47 25.075
 R.50.24 11.927
 R.49.75 13.595
 R.12.16 16.633

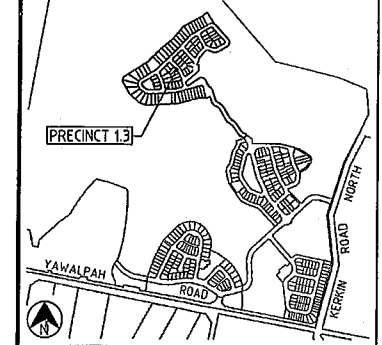
NOMINAL PAVEMENT DETAILS

G.C.C.C. RESIDENTIAL ACCESS STREET
 CH 767.569 - CH 1801.532
 25mm ASPHALTIC CONCRETE
 100mm BASE COURSE (TYPE 2.1, CBR 80)
 100mm UPPER SUB-BASE COURSE (TYPE 2.3, CBR 45)
 SUBGRADE REPLACEMENT AS REQUIRED (TYPE 2.5, CBR 15)

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING
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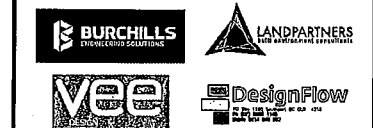
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONG SECTION AMENDED	29.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants



Client



Project

**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

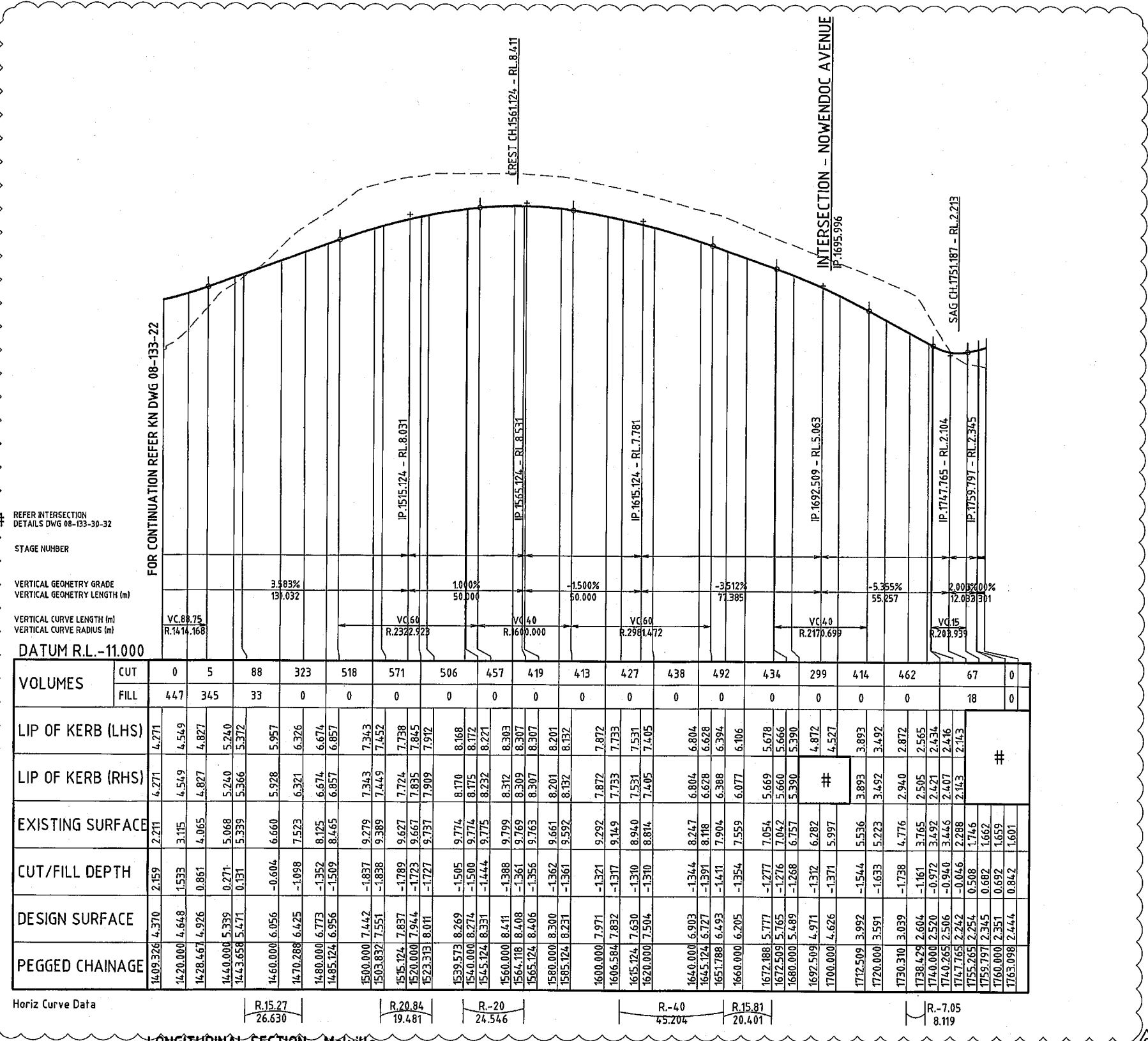


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Approved Director - 8860 1025
[Signature] 24.11.16

Drawing Title
**ROADWORKS
 LONGITUDINAL SECTION
 MELVILLE DRIVE - SHEET 3**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
AS SHOWN			Sheet 23 of 67
A1	08-133-23	C	Revision



FOR CONTINUATION REFER KN DWG 08-133-22
 REFER INTERSECTION DETAILS DWG 08-133-30-32
 STAGE NUMBER
 VERTICAL GEOMETRY GRADE
 VERTICAL GEOMETRY LENGTH (m)
 VERTICAL CURVE LENGTH (m)
 VERTICAL CURVE RADIUS (m)
 DATUM R.L. -11.000

VOLUMES	CUT																			FILL																													
	0	5	88	323	518	571	506	457	419	413	427	438	492	434	299	414	462	67	0	447	345	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0											
LIP OF KERB (LHS)	4.271	4.549	4.827	5.240	5.372	5.957	6.326	6.674	6.857	7.343	7.452	7.738	7.845	7.912	8.168	8.172	8.221	8.303	8.307	8.307	8.201	8.132	8.132	7.872	7.733	7.531	7.405	6.804	6.628	6.394	6.106	5.678	5.666	5.390	4.872	4.527	3.893	3.492	3.492	2.940	2.872	2.565	2.434	2.446	2.143	2.143			
LIP OF KERB (RHS)	4.271	4.549	4.827	5.240	5.372	5.957	6.326	6.674	6.857	7.343	7.452	7.738	7.845	7.912	8.168	8.172	8.221	8.303	8.307	8.307	8.201	8.132	8.132	7.872	7.733	7.531	7.405	6.804	6.628	6.394	6.106	5.678	5.666	5.390	4.872	4.527	3.893	3.492	3.492	2.940	2.872	2.565	2.434	2.446	2.143	2.143			
EXISTING SURFACE	2.211	3.115	4.065	5.068	5.339	5.366	5.928	6.321	6.674	6.857	7.343	7.452	7.738	7.845	7.912	8.168	8.172	8.221	8.303	8.307	8.307	8.201	8.132	8.132	7.872	7.733	7.531	7.405	6.804	6.628	6.394	6.106	5.678	5.666	5.390	4.872	4.527	3.893	3.492	3.492	2.940	2.872	2.565	2.434	2.446	2.143	2.143		
CUT/FILL DEPTH	2.159	1.533	0.861	0.271	0.131	0.339	-0.604	-1.098	-1.352	-1.509	-1.837	-1.838	-1.789	-1.723	-1.723	-1.505	-1.500	-1.444	-1.388	-1.356	-1.362	-1.361	-1.361	-1.371	-1.371	-1.310	-1.310	-1.310	-1.344	-1.391	-1.411	-1.354	-1.277	-1.276	-1.268	-1.312	-1.371	-1.544	-1.633	-1.738	-1.161	-0.972	-0.940	-0.046	0.508	0.682	0.692	0.842	1.601
DESIGN SURFACE	4.370	4.648	4.926	5.339	5.471	6.056	6.425	6.773	6.956	7.442	7.551	7.837	7.944	8.001	8.269	8.274	8.331	8.411	8.408	8.406	8.300	8.231	8.231	7.971	7.832	7.630	7.504	6.903	6.727	6.493	6.205	5.777	5.765	5.489	4.971	4.626	3.992	3.591	3.039	2.604	2.520	2.506	2.242	2.242	2.245	2.345	2.351	2.444	2.444
PEGGED CHAINAGE	14.09.326	14.20.000	14.28.467	14.40.000	14.43.658	14.60.000	14.70.288	14.80.000	14.85.124	15.00.000	15.03.832	15.15.124	15.20.000	15.23.373	15.39.573	15.40.000	15.45.124	15.60.000	15.64.118	15.65.124	15.80.000	15.85.124	16.00.000	16.06.584	16.15.124	16.20.000	16.40.000	16.60.000	16.72.188	16.72.509	16.80.000	16.92.509	17.00.000	17.12.509	17.20.000	17.30.310	17.38.429	17.40.000	17.40.265	17.47.765	17.55.265	17.59.797	17.60.000	17.63.098					

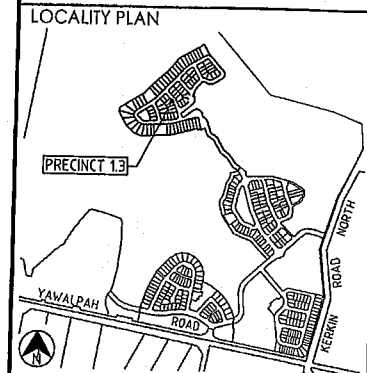
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LONGITUDINAL SECTION - Melville
 SCALE - 1:1000 (H)
 1:100 (V)

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

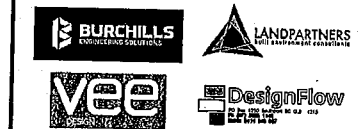
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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3

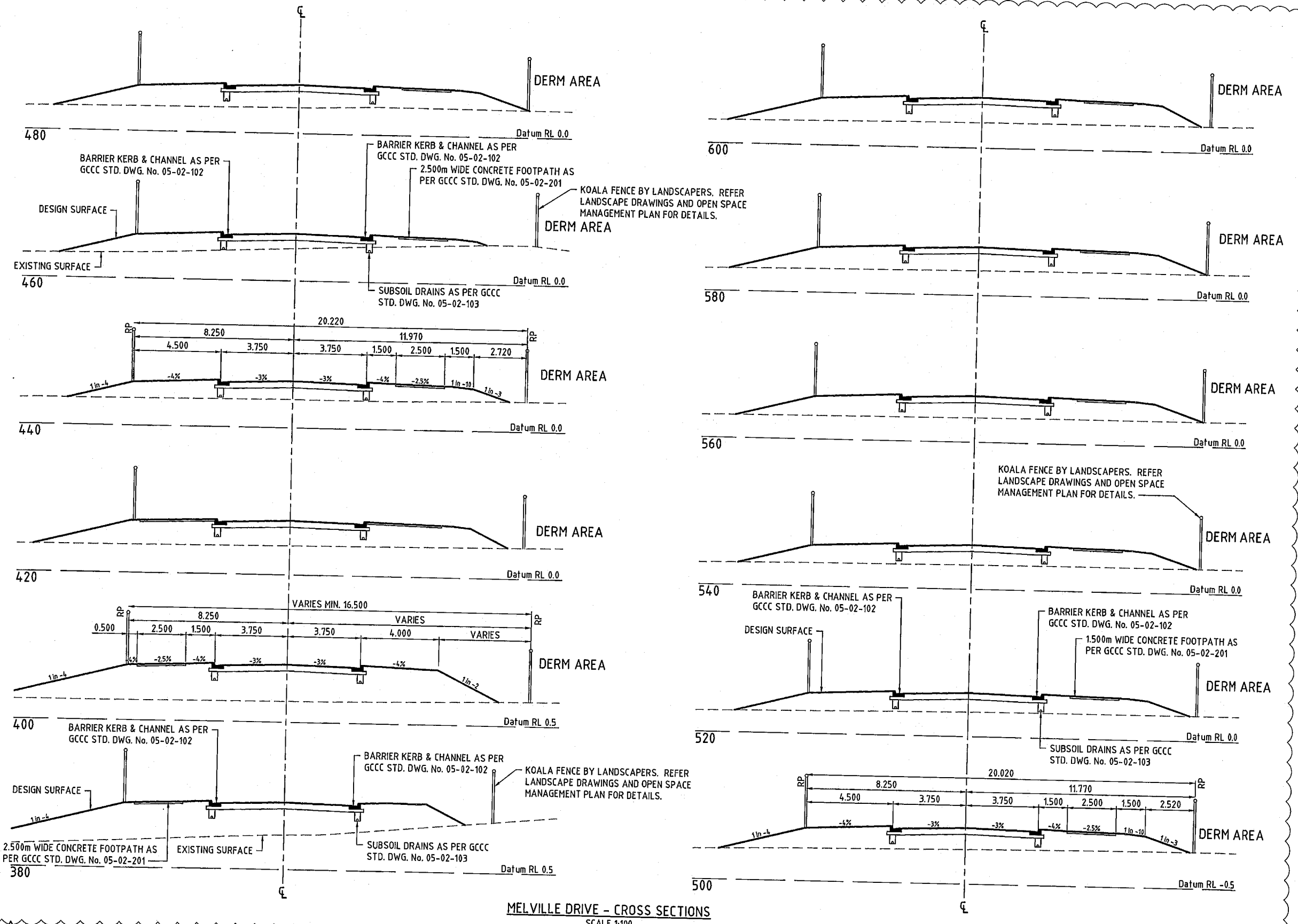


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Approved: *[Signature]* 21.10.16

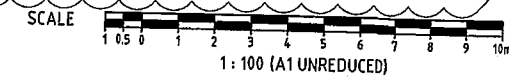
Drawn by: *[Signature]*
**ROADWORKS
 CROSS SECTIONS
 MELVILLE DRIVE - SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet 24 of 67
A1	Drawing No 08-133-24	Revision B	



MELVILLE DRIVE - CROSS SECTIONS

SCALE 1:100



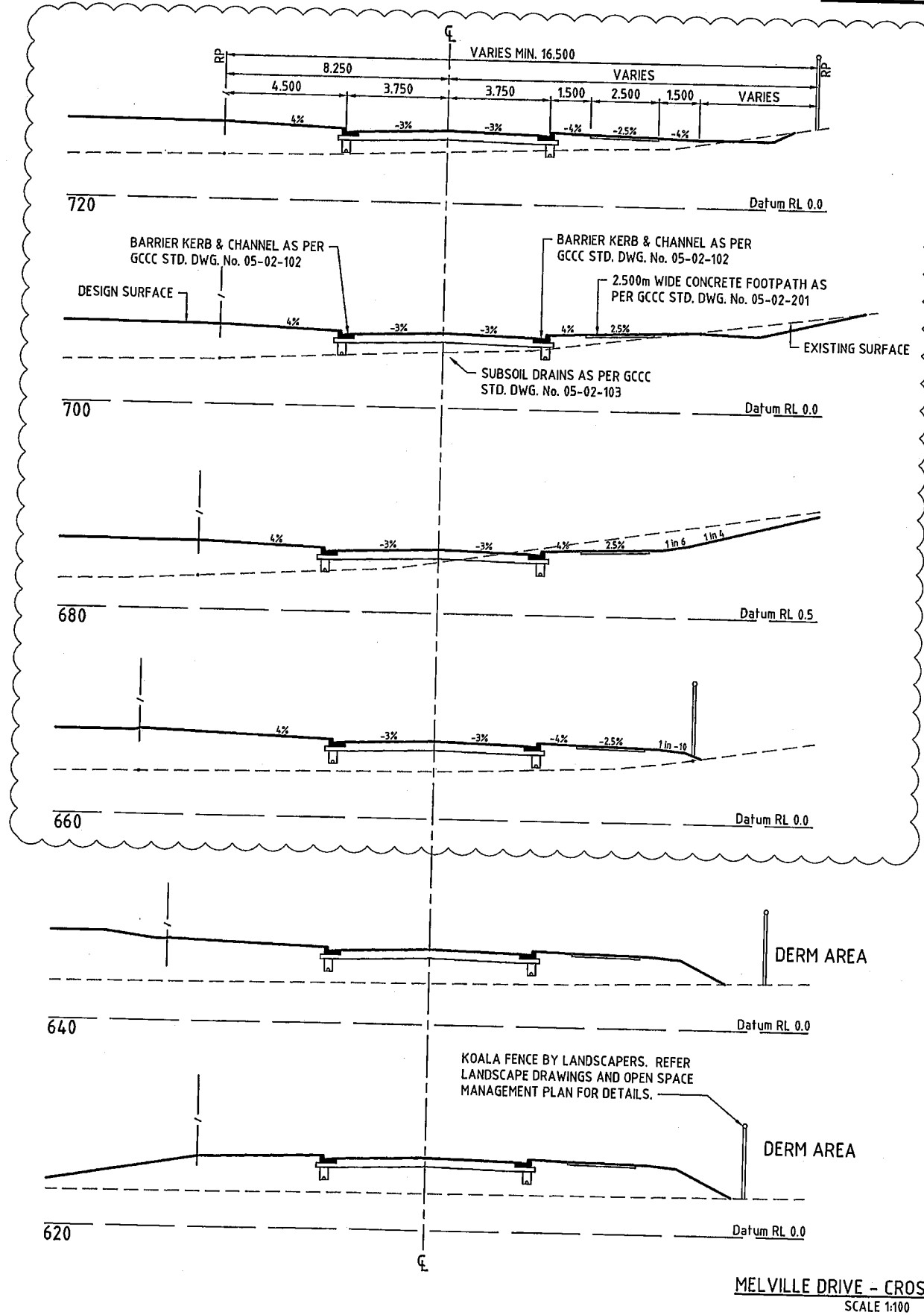
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

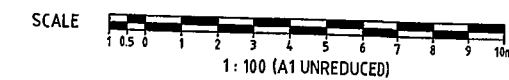
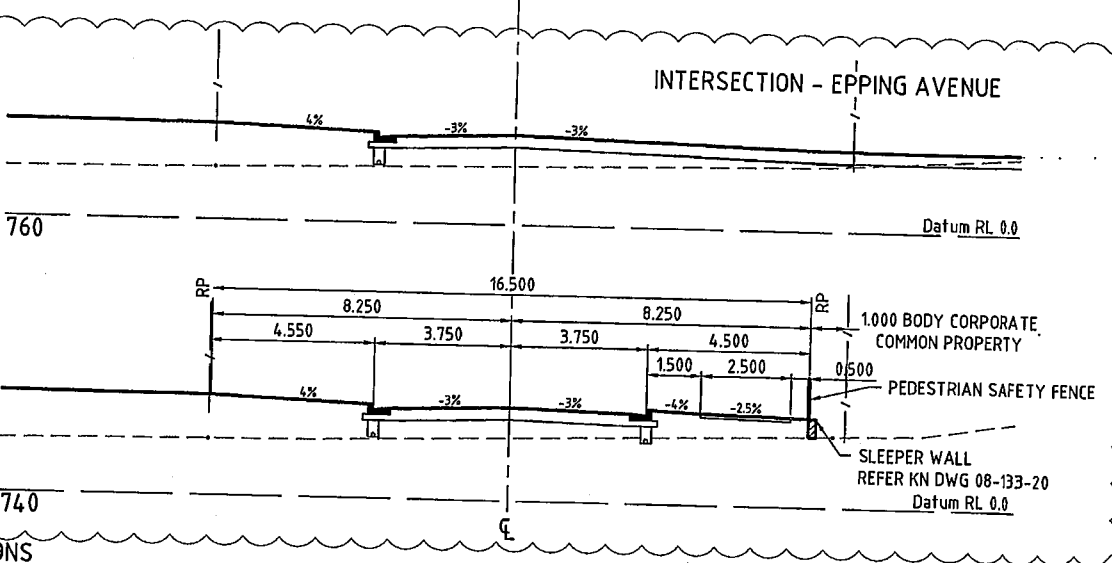
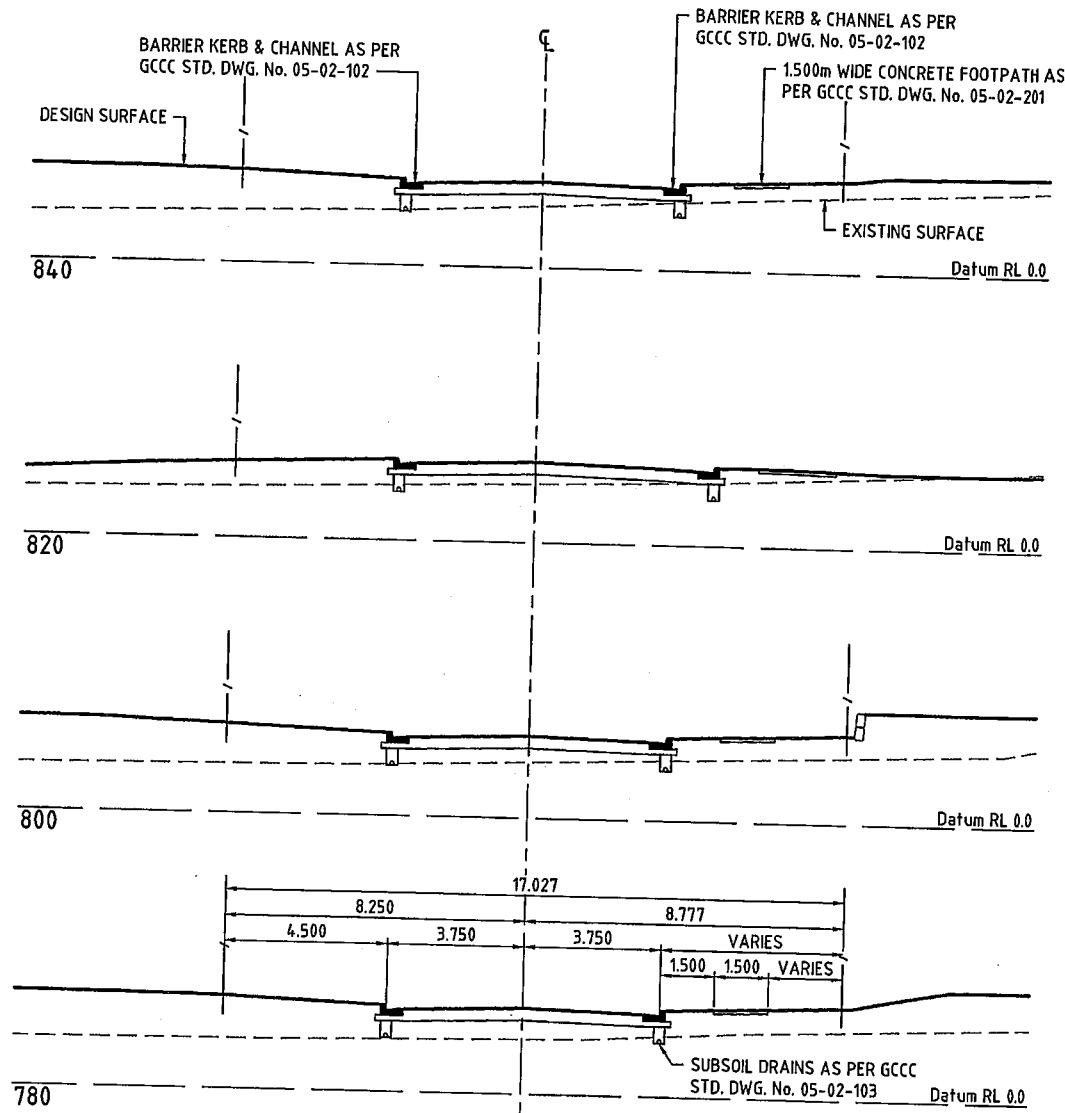
Application No: OPW201601732

Dated: 9 February 2017

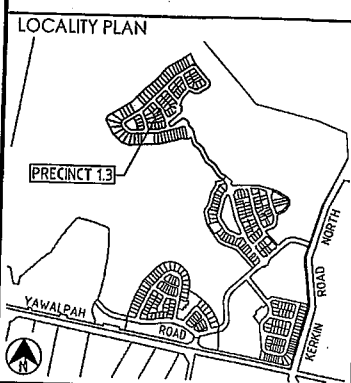
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



MELVILLE DRIVE - CROSS SECTIONS
SCALE 1:100



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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT
C	REVISED CROSS SECTION	24.11.16	DES
D	CROSS SECTIONS AMENDED	25.01.17	MNL



Project
GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



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ABN 35 112 053 611

Approved For - RPEO 1998
[Signature] 27-1-17

Drawn Title
ROADWORKS
CROSS SECTIONS
MELVILLE DRIVE - SHEET 2

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	25 of 67

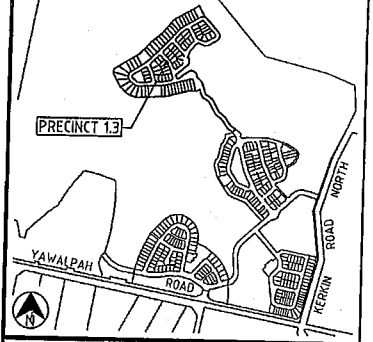
Drawing No	Revision
A1	D

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3



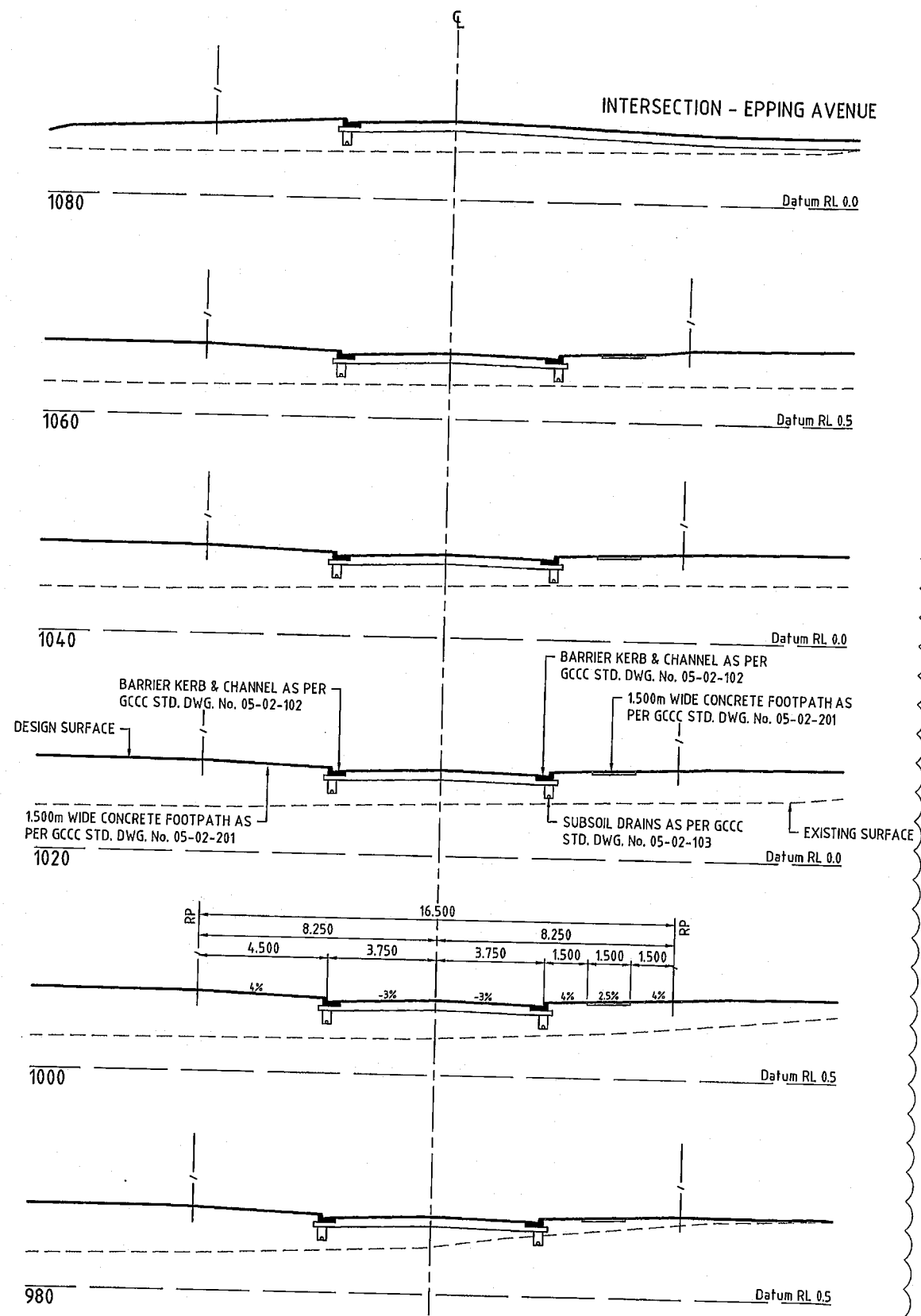
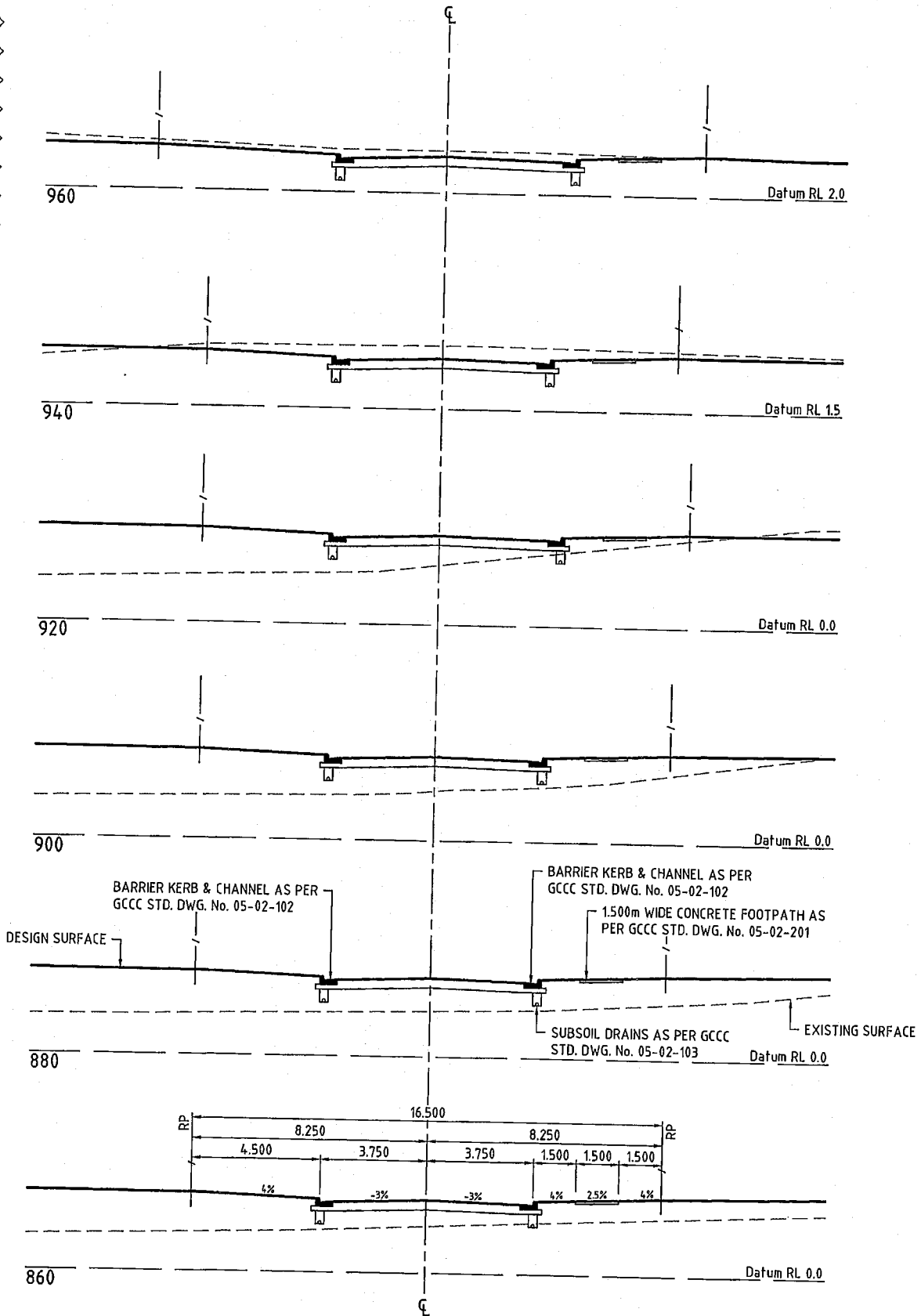
LEVEL 2 - 71 GREY STREET
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 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved Director - PREC 1988

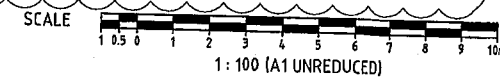
[Signature] 21/10/16

Drawing Title
**ROADWORKS
 CROSS SECTIONS
 MELVILLE DRIVE - SHEET 3**

Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN	Sheet 26 of 67		Revision
A1	Drawing No 08-133-26	Revision B	



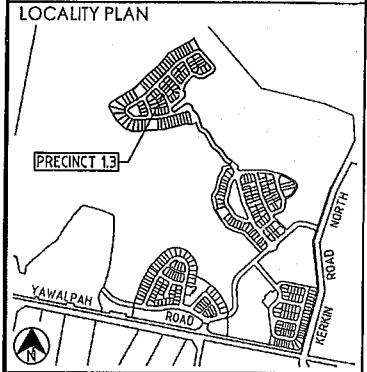
MELVILLE DRIVE - CROSS SECTIONS
 SCALE 1:100



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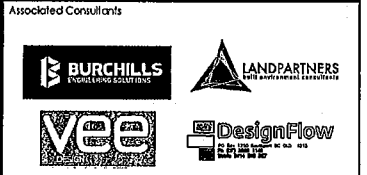
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING
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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT



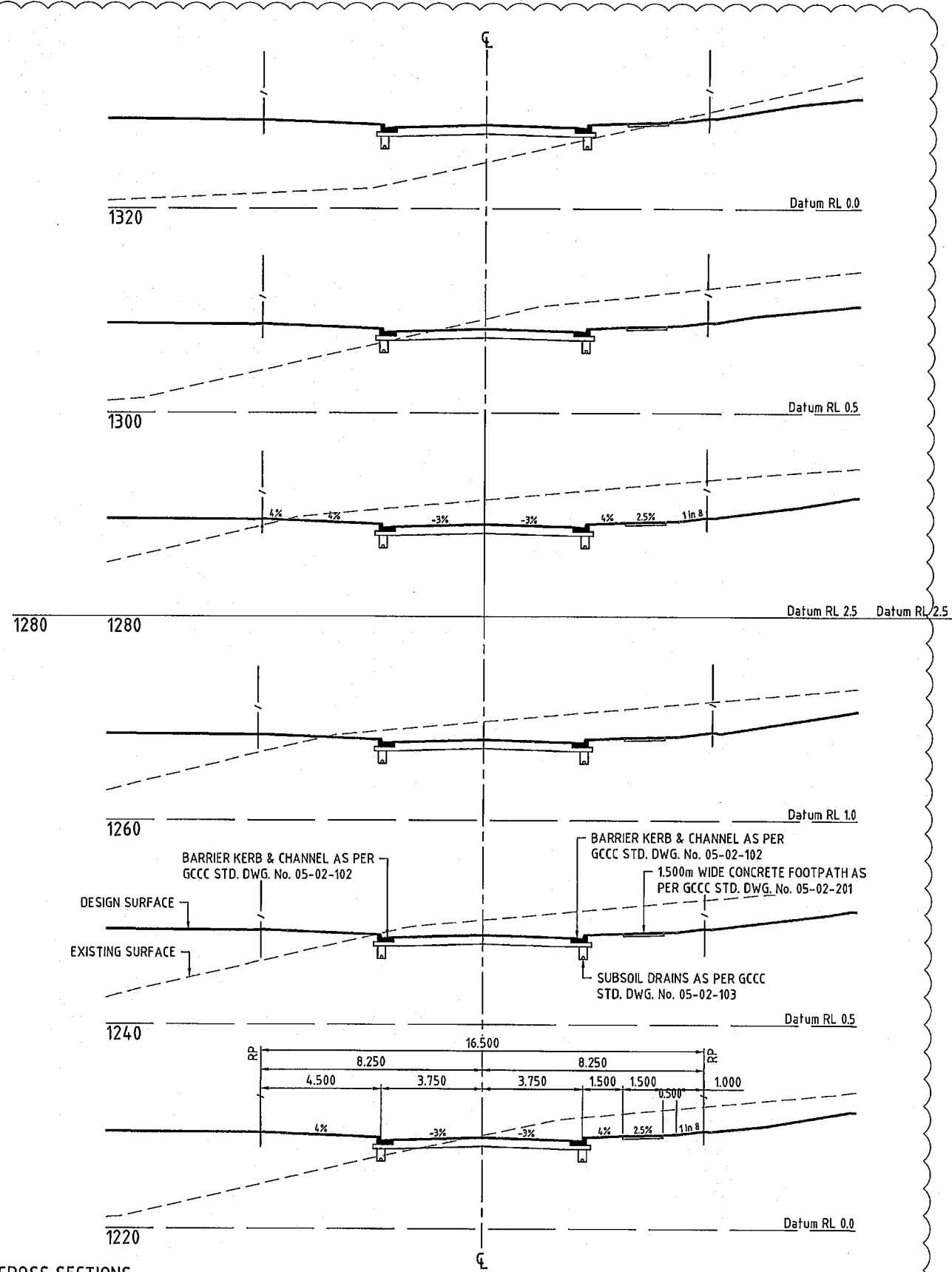
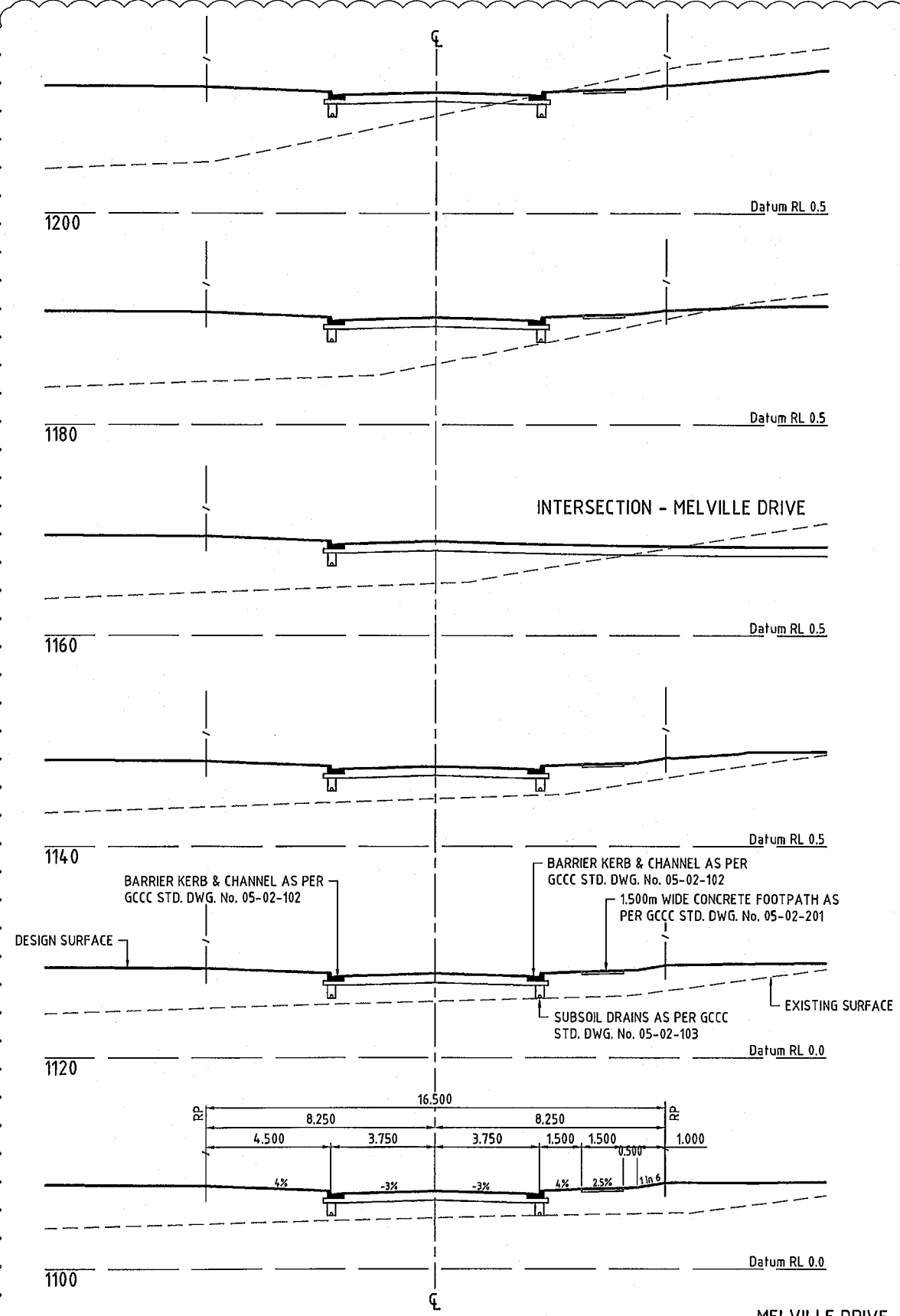
Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS
 LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved Director - RPE 1995
[Signature] 21.10.16

Drawn Title
**ROADWORKS
 CROSS SECTIONS
 MELVILLE DRIVE - SHEET 4**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	Sheet	Revision	
AS SHOWN	27 of 67		
A1	08-133-27	B	

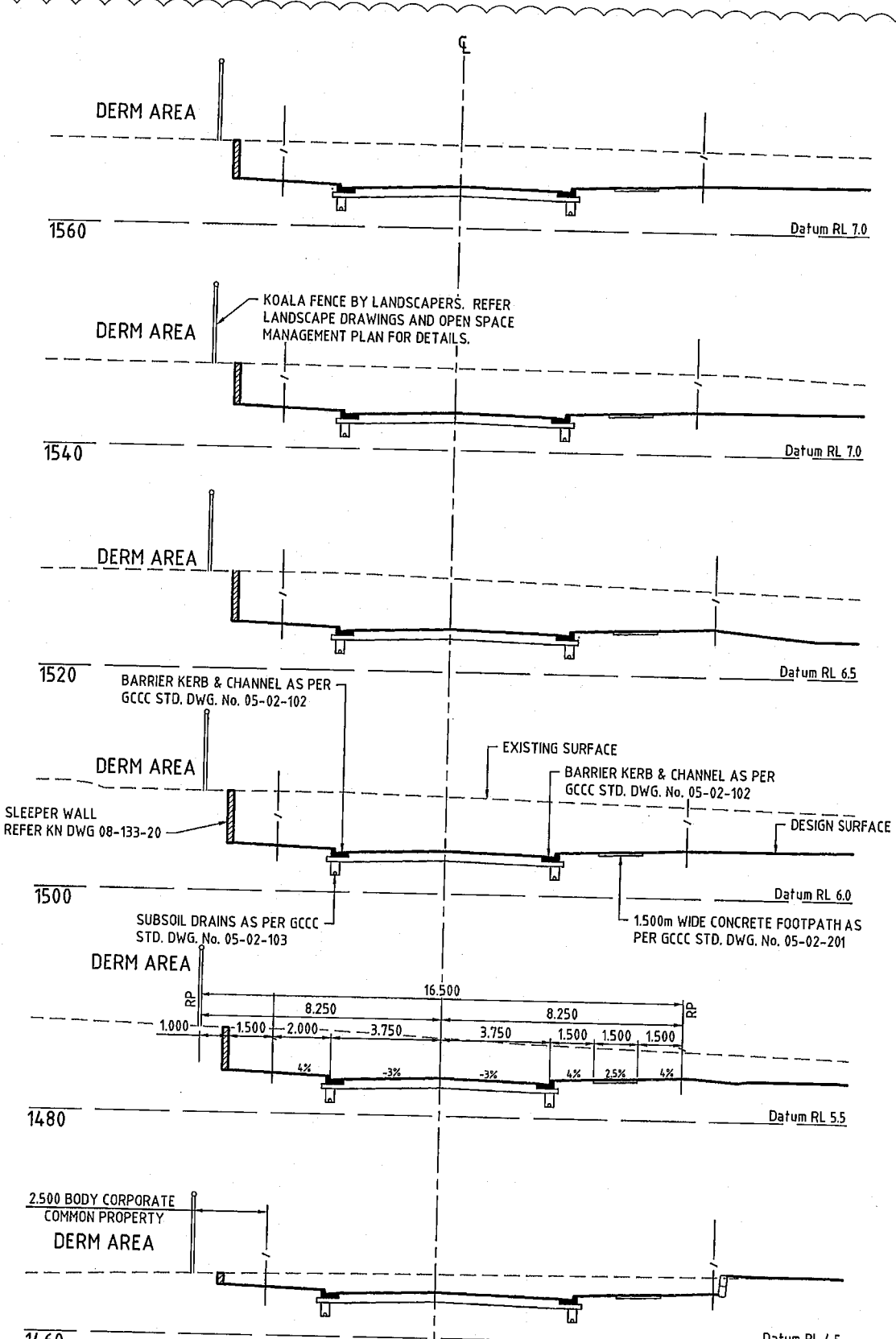
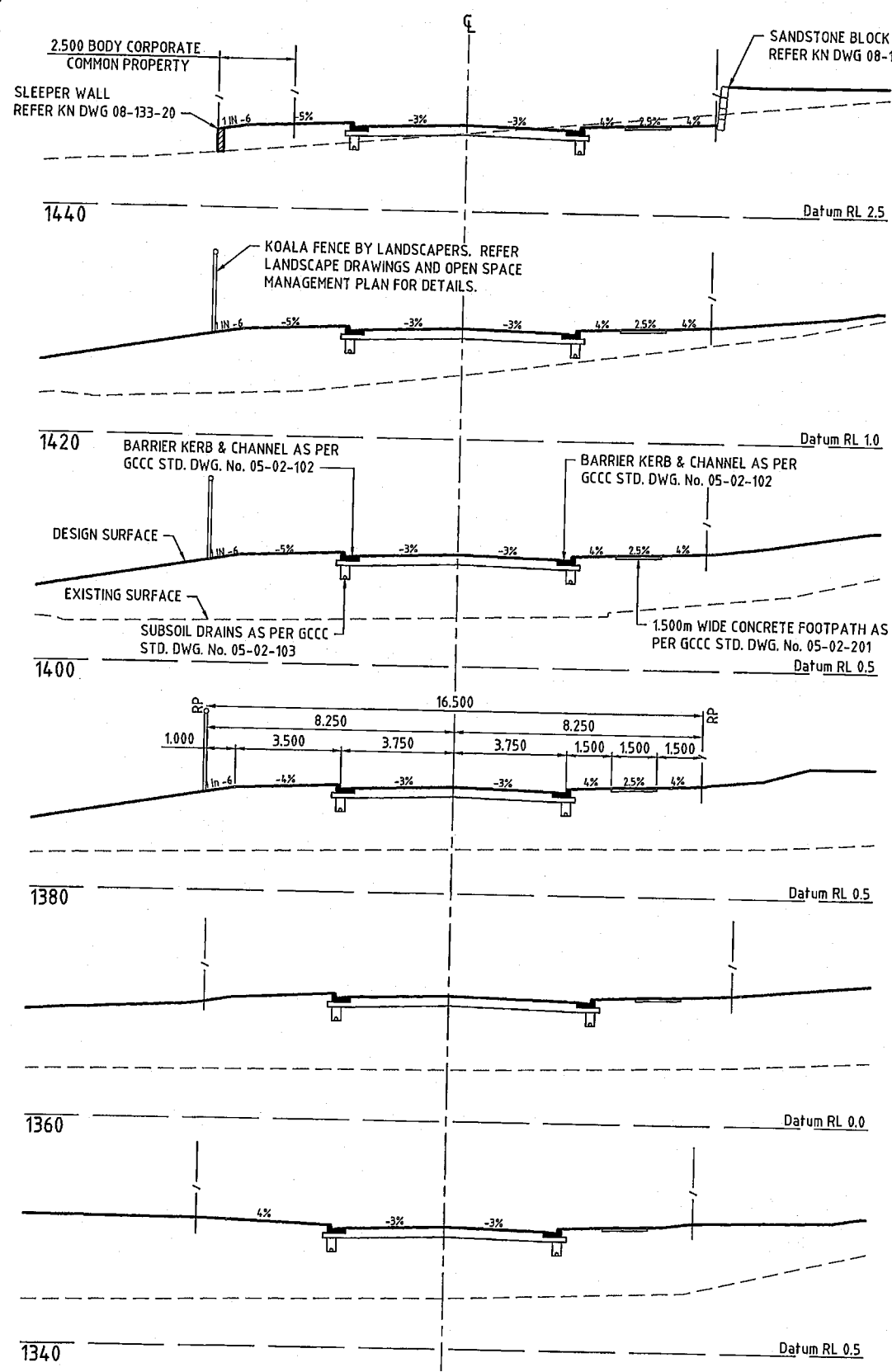


MELVILLE DRIVE - CROSS SECTIONS
 SCALE 1:100

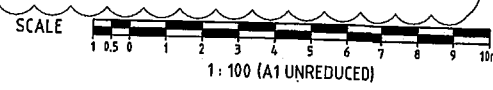


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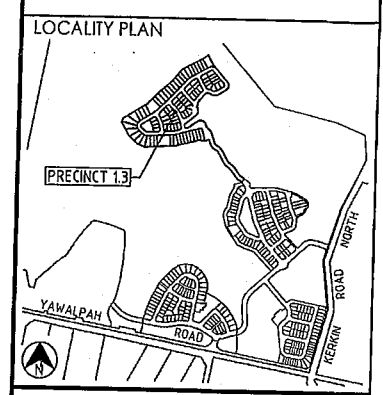
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



MELVILLE DRIVE - CROSS SECTIONS
 SCALE 1:100



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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT



Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS
 LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved Under: 21.10.16

Drawn: NJS
 Designed: CH
 Checked: GBG
 Date: JUL 16

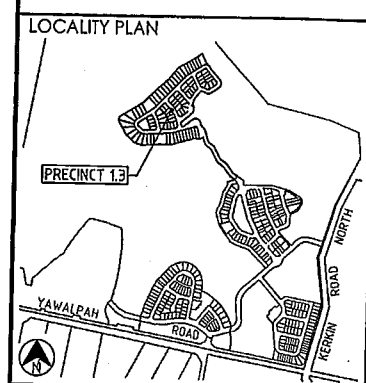
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 Sheet: 28 of 67

Revision: B

Drawing No: 08-133-28

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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CROSS SECTIONS AMENDED	20.10.16	RCT
C	REVISED CROSS SECTION	24.11.16	DES
D	CROSS SECTIONS AMENDED	25.01.17	MNL



Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS
LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Director - RPS 198
[Signature] 27-1-17

Drawing title
**ROADWORKS
CROSS SECTIONS
MELVILLE DRIVE - SHEET 6**

Drawn	Designed	Checked	Date
NJS	CH	GBC	JUL 16

Scale	Sheet
AS SHOWN	29 of 67

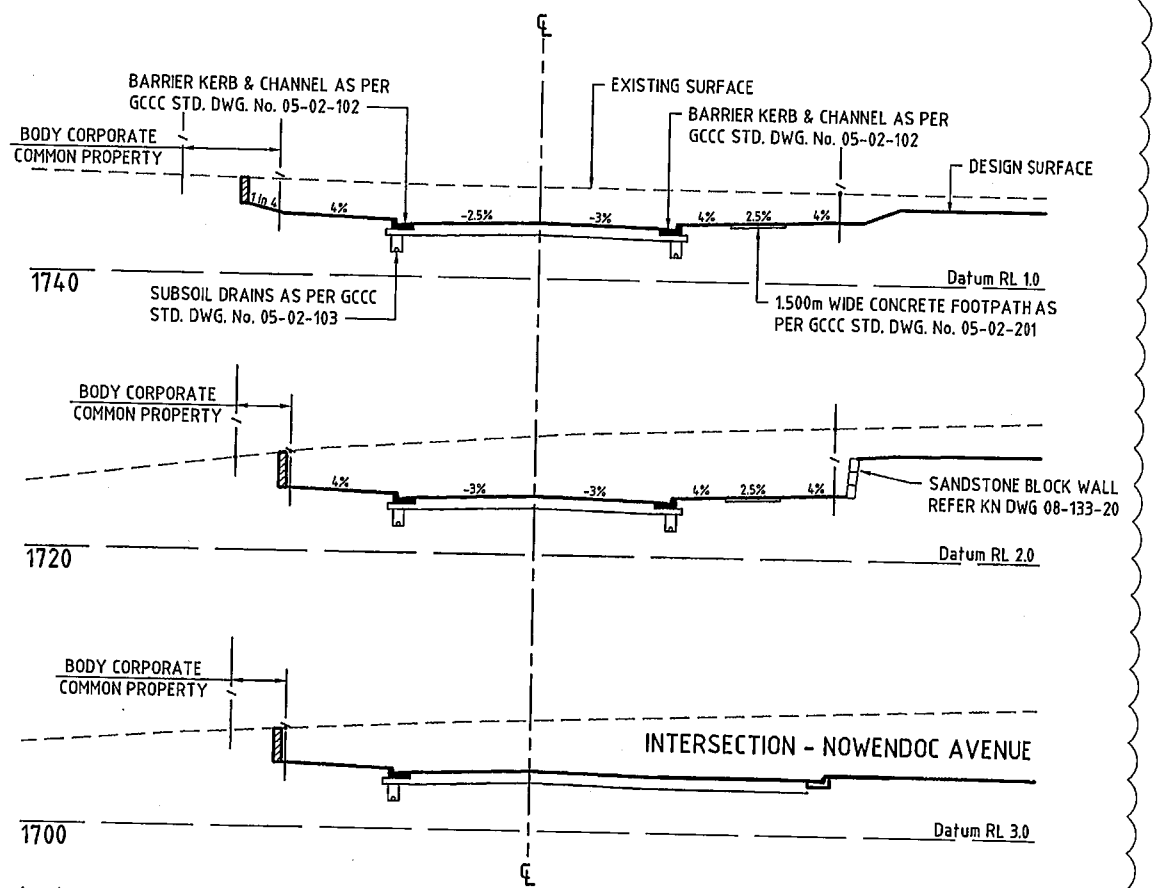
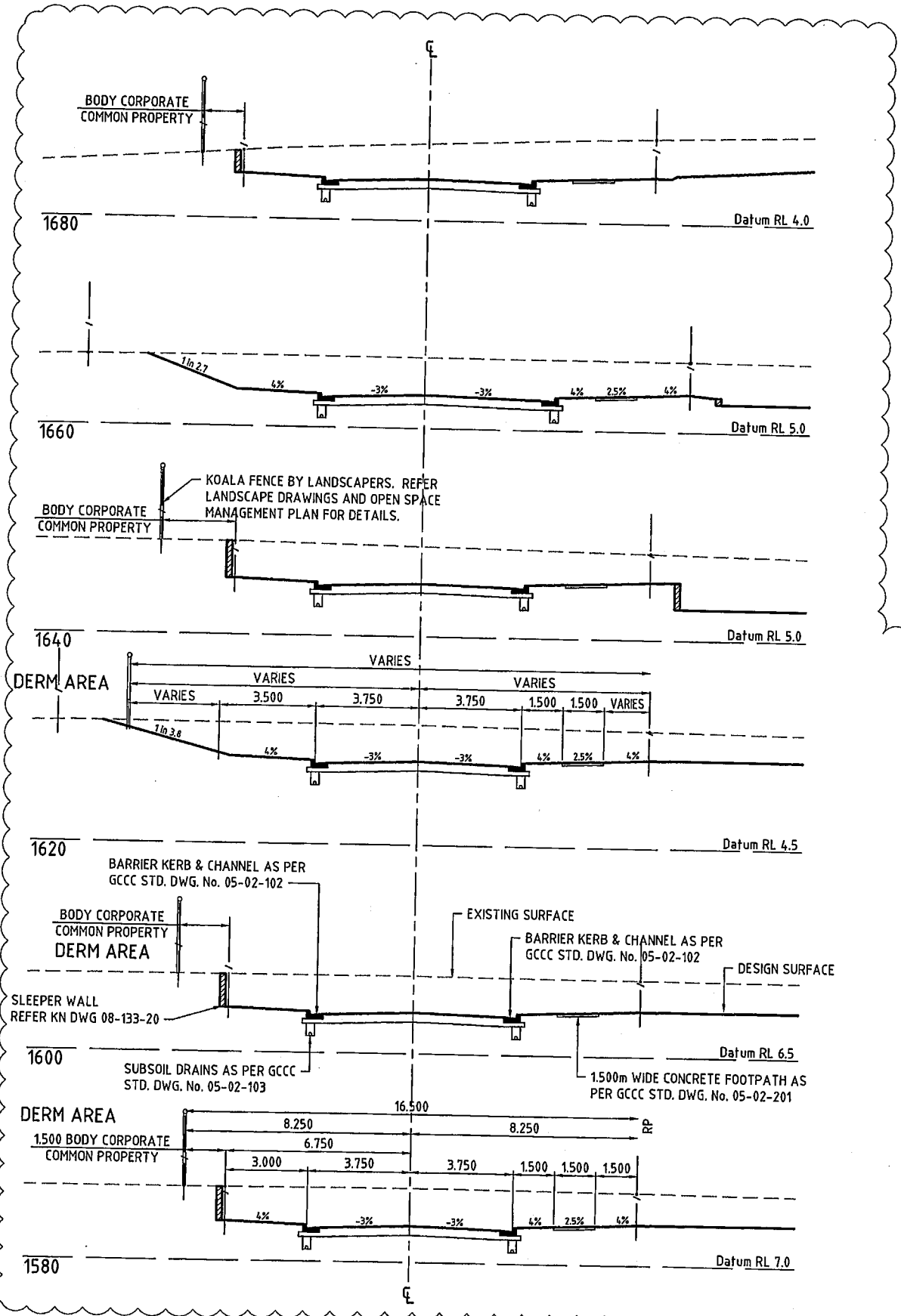
Revision	Drawing No	Revision
A1	08-133-29	D

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

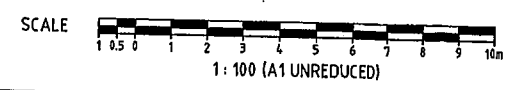
Application No... OPW201601732

Dated: 9 February 2017

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



MELVILLE DRIVE - CROSS SECTIONS
SCALE 1:100



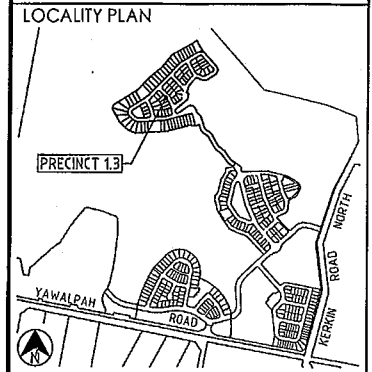
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NOMINAL PAVEMENT DETAILS

G.C.C.C. RESIDENTIAL COLLECTOR STREET
 25mm ASPHALTIC CONCRETE
 100mm BASE COURSE (TYPE 2.1, CBR 80)
 100mm UPPER SUB-BASE COURSE (TYPE 2.3, CBR 45)
 SUBGRADE REPLACEMENT AS REQUIRED (TYPE 2.5, CBR 15)

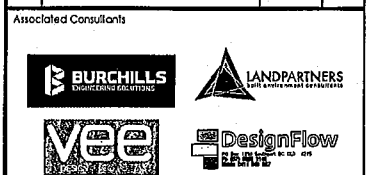
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	NOV'16	DES



Project: **GAINSBOROUGH GREENS PRECINCT 1 STAGE 3**



LEVEL 2-71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

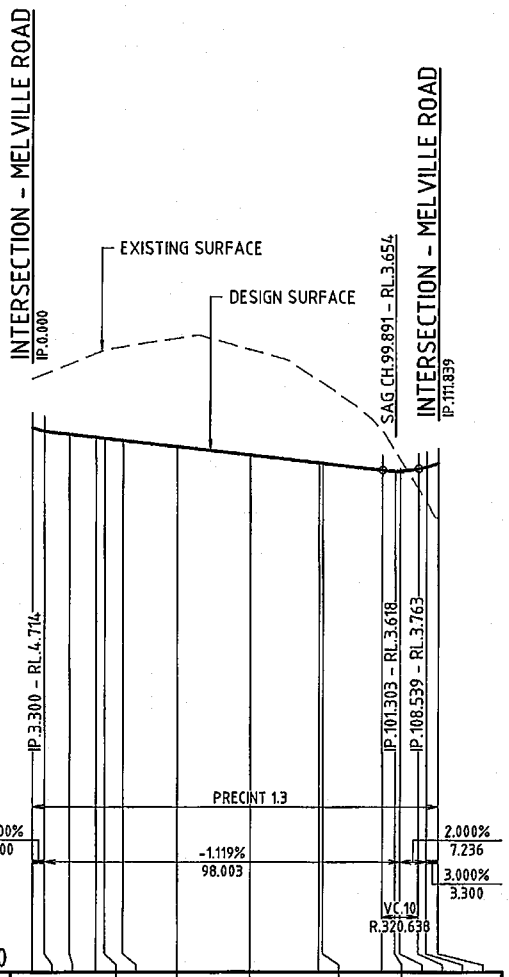
Approved Drawing: *[Signature]* 24/11/16

Drawn by: **ROADWORKS LONG AND CROSS SECTIONS NOWENDOC AVENUE**

Drawn	Designed	Checked	Date
DES	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	29B of 67

Revision	Revision
A1	A

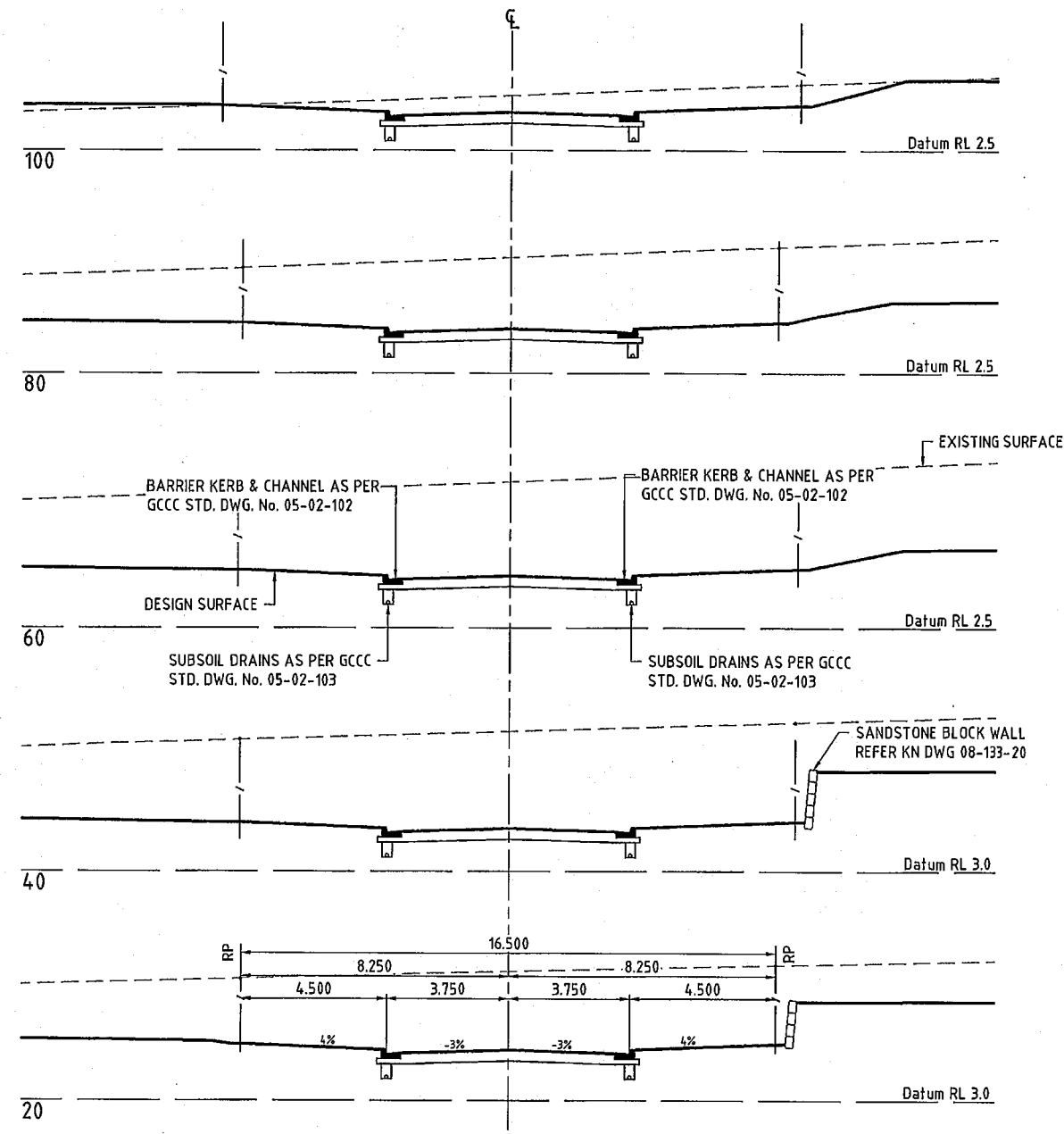


STAGE NUMBER	PRECINCT 1.3
VERTICAL GEOMETRY GRADE	-3.000%
VERTICAL GEOMETRY LENGTH (m)	3.300
VERTICAL CURVE LENGTH (m)	98.003
VERTICAL CURVE RADIUS (m)	7.236
DATUM R.L. -10.000	3.000%
	3.300

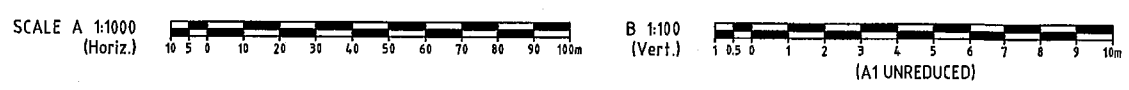
VOLUMES	CUT	FILL	Chainage						
			0.000	3.300	10.243	17.603	20.000	25.028	40.000
LIP OF KERB (LHS)	360	0	891	1010	873	494	11		
LIP OF KERB (RHS)									
EXISTING SURFACE									
CUT/FILL DEPTH									
DESIGN SURFACE									
PEGGED CHAINAGE									



LONGITUDINAL SECTION - NOWENDOC DRIVE
 SCALE - 1:1000 (H)
 1:100 (V)

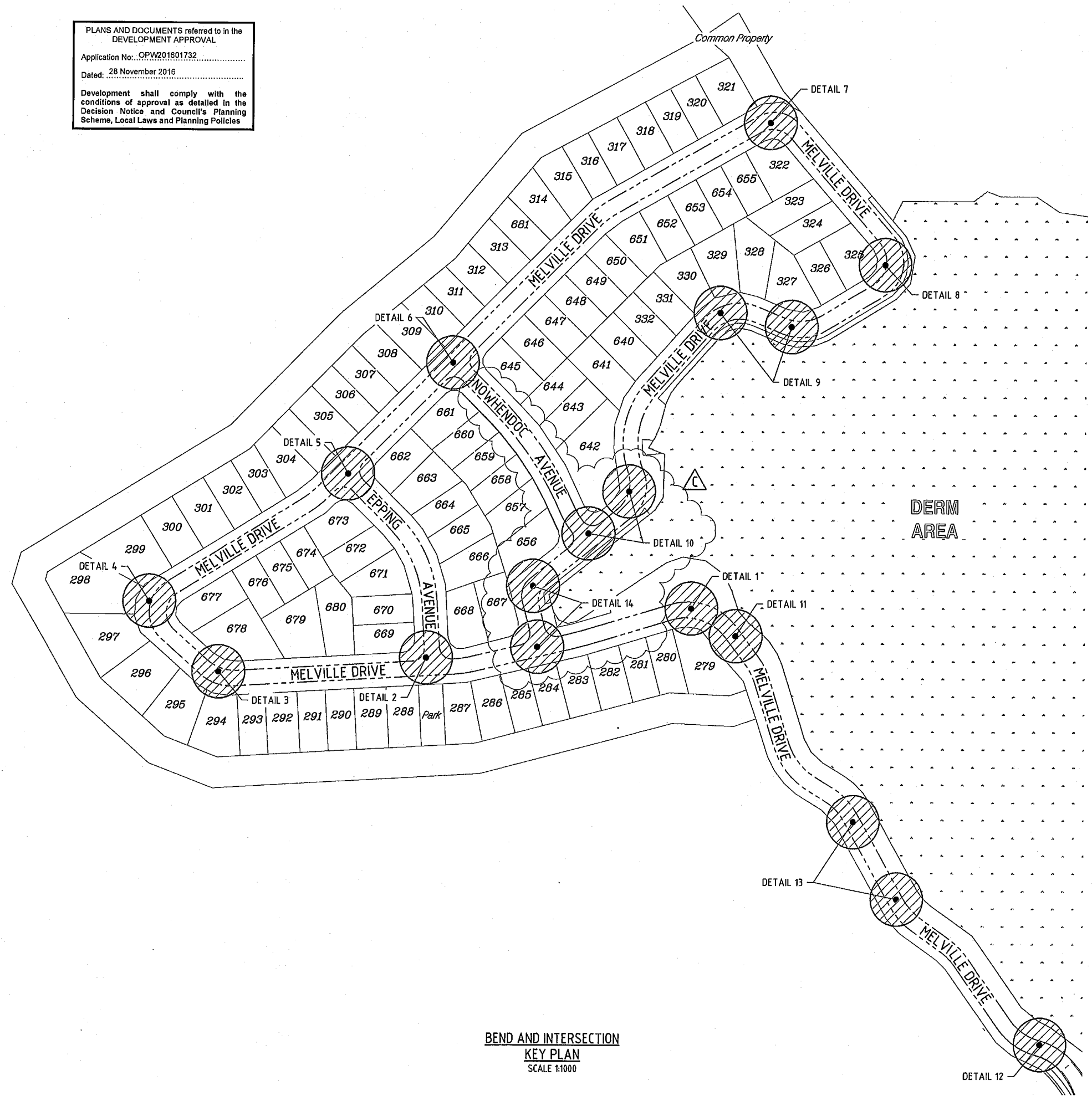


NOWENDOC DRIVE - CROSS SECTIONS
 SCALE 1:100

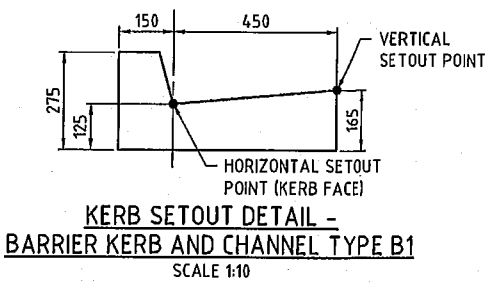


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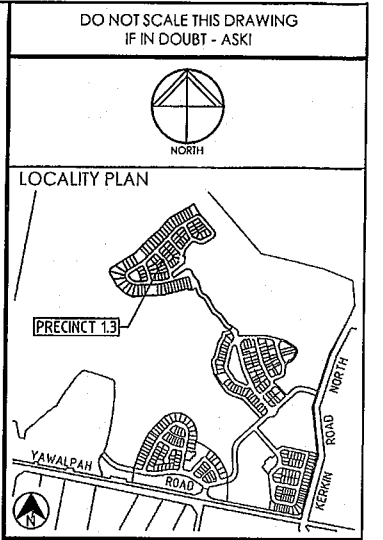
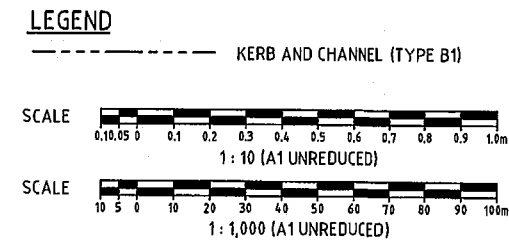
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



BEND AND INTERSECTION KEY PLAN
 SCALE 1:1000



- GENERAL NOTES**
1. SETOUT TABLES ARE GIVEN AT KERB LIP LEVELS.
 2. KERB LIP LEVELS ARE GIVEN AT QUARTER POINTS, TP'S AND EQUAL PARTS U.N.O.
 3. KERB RADII AND OFFSETS ARE GIVEN AT HORIZONTAL SETOUT POINT SHOWN ON KERB SETOUT DETAILS BELOW.
 4. EXTRA DETAIL FOR SETTING OUT IS AVAILABLE ON CAD FILE.



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112053 611

Approved 2016

Drawn by

**ROADWORKS
 INTERSECTION DETAILS
 LOCATION PLAN**

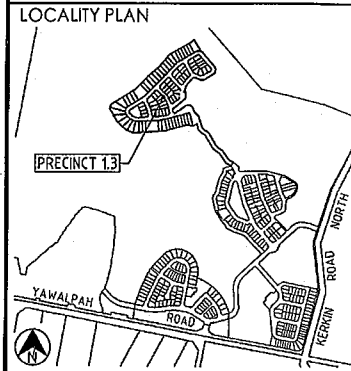
Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	30 of 67

Drawing No	Revision
A1	C

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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	INTERSECTION DETAILS AMENDED	20.10.16	RCT
C	ROAD NAME REVISED	24.11.16	DES



Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

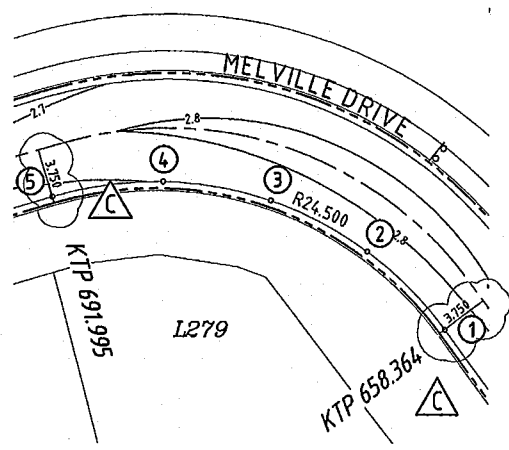
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Drawing title
**ROADWORKS
INTERSECTION DETAILS**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	31 of 67

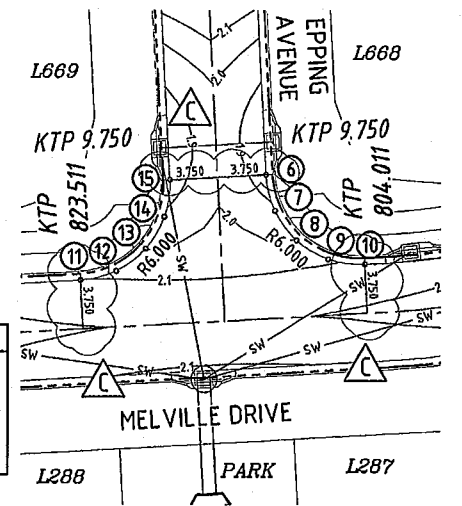
Revision	Date
A1	08-133-31



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
1	75989.593	78014.495	2.733
2	75984.261	78019.760	2.736
3	75977.594	78023.185	2.725
4	75970.207	78024.452	2.704
5	75962.782	78023.446	2.674

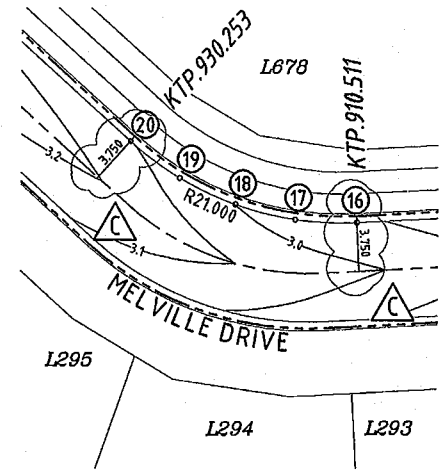
DETAIL 1
SCALE 1:250



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
6	75846.939	78009.062	1.865
7	75847.565	78006.626	1.917
8	75849.076	78004.613	2.003
9	75851.243	78003.333	2.085
10	75853.734	78002.979	2.120
11	75834.265	78001.904	2.105
12	75836.702	78002.530	2.073
13	75838.714	78004.042	1.997
14	75839.995	78006.208	1.915
15	75840.349	78008.699	1.865

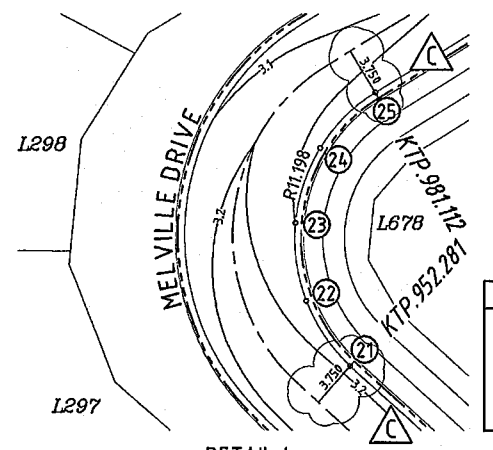
DETAIL 2
SCALE 1:250



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
16	75747.395	77997.110	2.913
17	75743.186	77997.293	2.948
18	75739.092	77998.295	2.993
19	75735.275	78000.077	3.050
20	75731.879	78002.571	3.099

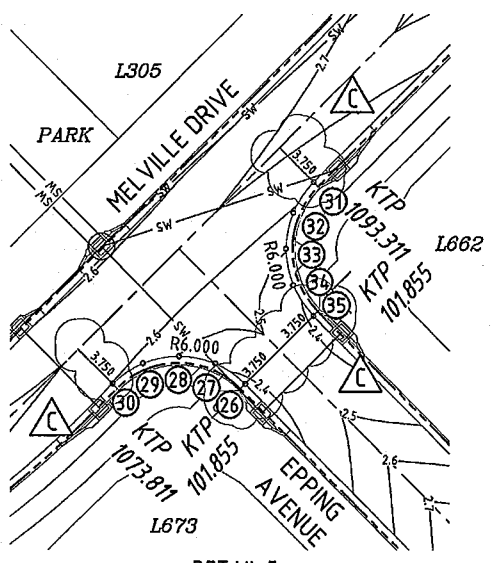
DETAIL 3
SCALE 1:250



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
21	75715.492	78017.295	3.180
22	75712.432	78021.710	3.147
23	75711.679	78027.030	3.100
24	75713.394	78032.122	3.067
25	75717.212	78035.903	3.050

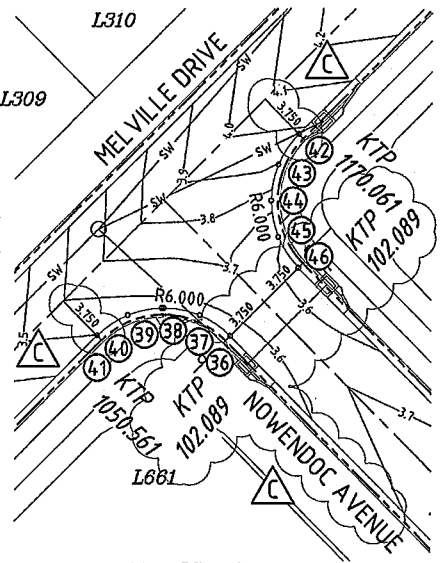
DETAIL 4
SCALE 1:250



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
26	75804.491	78086.412	2.384
27	75802.400	78087.811	2.424
28	75799.931	78088.303	2.499
29	75797.463	78087.813	2.571
30	75795.370	78086.416	2.598
31	75809.164	78100.197	2.624
32	75807.766	78098.106	2.589
33	75807.274	78095.638	2.509
34	75807.764	78093.169	2.426
35	75809.160	78091.077	2.384

DETAIL 5
SCALE 1:250

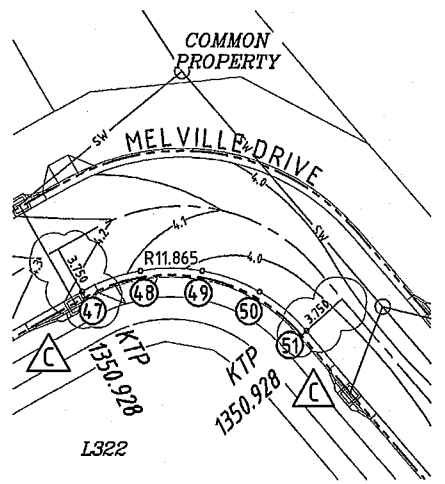


SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
36	75858.786	78140.658	3.573
37	75856.694	78142.057	3.582
38	75854.226	78142.549	3.577
39	75854.079	78142.547	3.576
40	75851.758	78142.059	3.551
41	75849.665	78140.662	3.499
42	75863.459	78154.443	3.984
43	75862.060	78152.352	3.899
44	75861.568	78149.884	3.758
45	75862.058	78147.415	3.627
46	75863.455	78145.323	3.573

DETAIL 6
SCALE 1:250

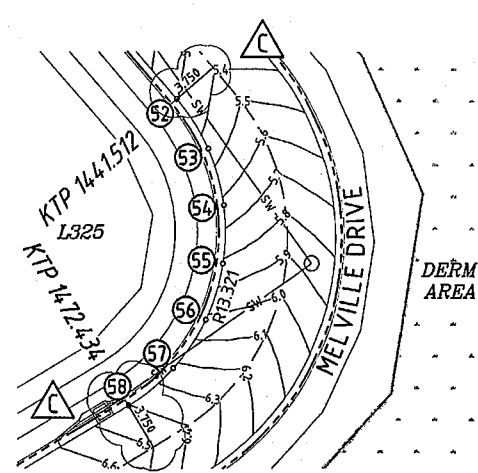
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No. OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
47	76005.145	78262.799	4.186
48	76009.092	78264.198	4.084
49	76013.282	78264.194	3.984
50	76017.226	78262.786	3.937
51	76020.471	78260.137	3.929

DETAIL 7
SCALE 1:250



SETOUT TABLE

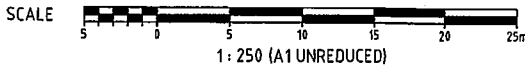
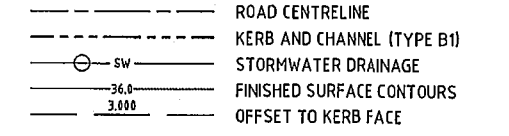
PT No.	EASTING	NORTHING	LEVEL
52	76065.281	78208.550	5.273
53	76067.432	78205.192	5.422
54	76068.531	78201.358	5.603
55	76068.485	78197.369	5.797
56	76067.298	78193.561	6.000
57	76065.068	78190.252	6.205
58	76061.985	78187.722	6.381

DETAIL 8
SCALE 1:250

GENERAL NOTES

- SETOUT TABLES ARE GIVEN AT KERB LIP LEVELS.
- KERB LIP LEVELS ARE GIVEN AT QUARTER POINTS, TP'S AND EQUAL PARTS U.M.O.
- KERB RADII AND OFFSETS ARE GIVEN AT HORIZONTAL SETOUT POINT SHOWN ON KERB SETOUT DETAILS BELOW.
- EXTRA DETAIL FOR SETTING OUT IS AVAILABLE ON CAD FILE.

LEGEND



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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No. OPW201601732

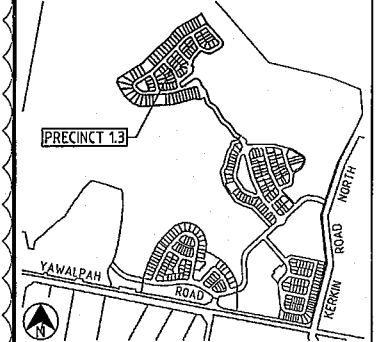
Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	INTERSECTION DETAILS AMENDED	20.10.16	RCT
C	REVISED SETOUT AND SIGNAGE	24.11.16	DES

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

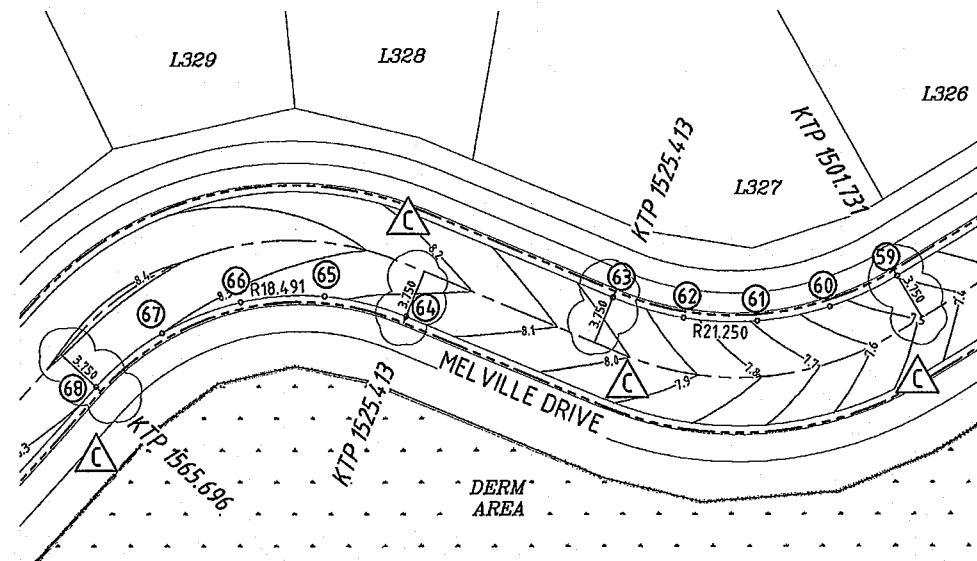


LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
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PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Drawing: RPEG 166
Drawing No: 08-133-32

ROADWORKS
INTERSECTION DETAILS
AND LINEMARKING PLAN

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN	Sheet	32 of 67
Drawing No	08-133-32	Revision	C

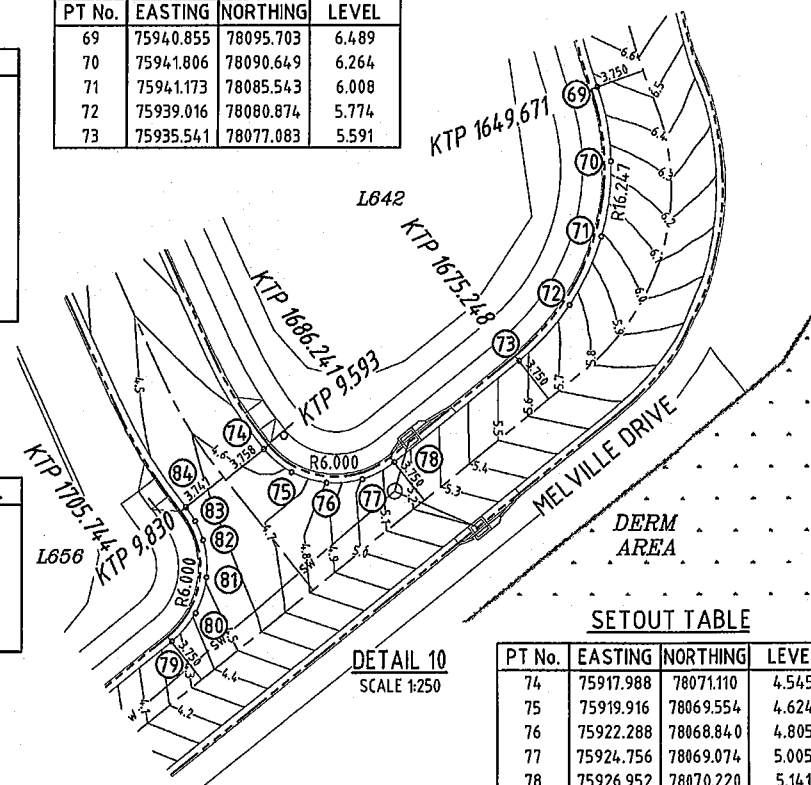


SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
59	76036.882	78172.614	7.375
60	76032.272	78170.528	7.522
61	76027.305	78169.567	7.673
62	76022.249	78169.782	7.817
63	76017.383	78171.161	7.940
64	76003.231	78169.884	8.142
65	75997.609	78171.257	8.211
66	75991.833	78170.869	8.267
67	75986.445	78168.754	8.299
68	75981.948	78165.112	8.307

SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
69	75940.855	78095.703	6.489
70	75941.806	78090.649	6.264
71	75941.173	78085.543	6.008
72	75939.016	78080.874	5.774
73	75935.541	78077.083	5.591



SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
79	75911.718	78058.046	4.245
80	75913.348	78059.987	4.366
81	75914.105	78062.408	4.472
82	75913.870	78064.933	4.539
83	75913.323	78066.227	4.549
84	75912.679	78067.172	4.542

SETOUT TABLE

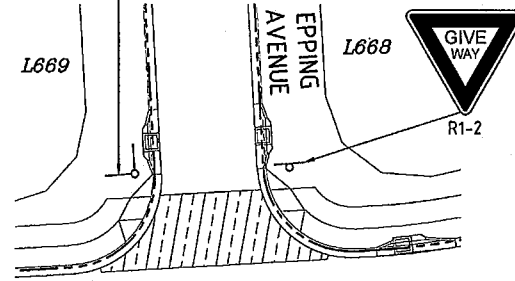
PT No.	EASTING	NORTHING	LEVEL
74	75917.988	78071.110	4.545
75	75919.916	78069.554	4.624
76	75922.288	78068.840	4.805
77	75924.756	78069.074	5.005
78	75926.952	78070.220	5.141

SETOUT TABLE

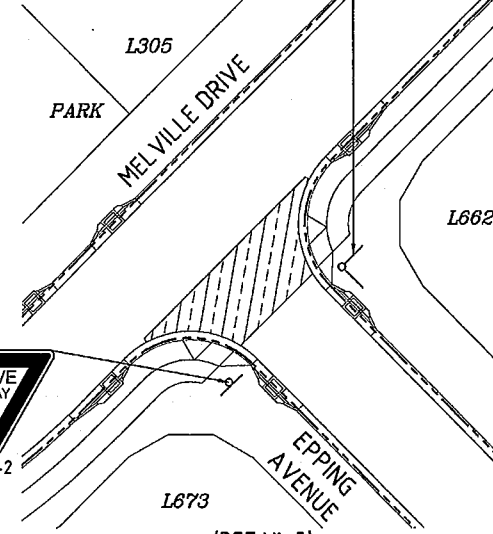
PT No.	EASTING	NORTHING	LEVEL
85	75899.283	78039.661	3.120
86	75897.528	78037.787	2.947
87	75896.377	78035.491	2.718
88	75895.926	78032.963	2.490
89	75896.210	78030.412	2.330

DETAIL 9
SCALE 1:250

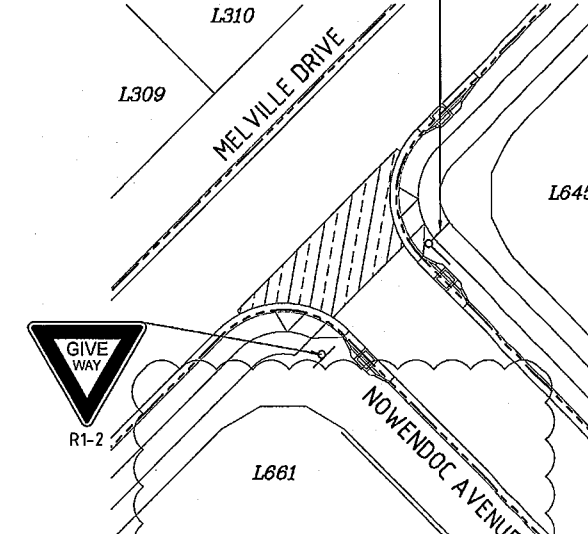
STREET NAME
27-45



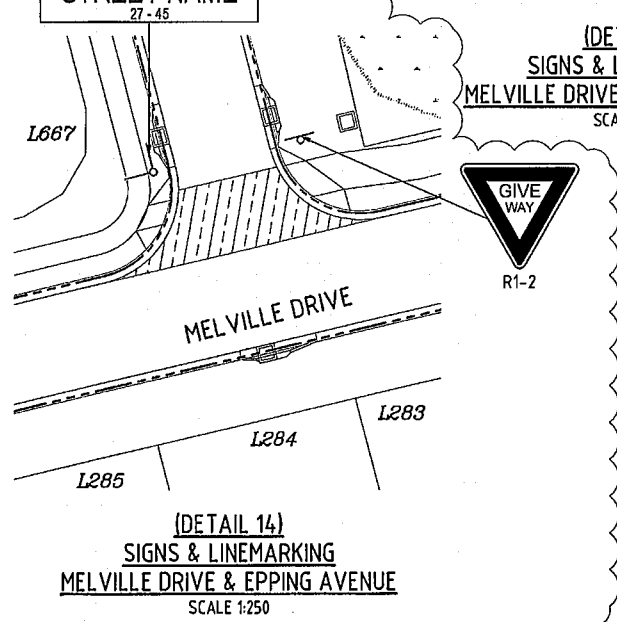
STREET NAME
27-45



STREET NAME
27-45



STREET NAME
27-45



(DETAIL 2)
SIGNS & LINEMARKING
MELVILLE DRIVE & EPPING AVENUE
SCALE 1:250

(DETAIL 5)
SIGNS & LINEMARKING
MELVILLE DRIVE & EPPING AVENUE
SCALE 1:250

(DETAIL 6)
SIGNS & LINEMARKING
MELVILLE DRIVE & NOWENDOC AVENUE
SCALE 1:250

SETOUT TABLE

PT No.	EASTING	NORTHING	LEVEL
95	75887.885	78009.927	2.294
96	75888.568	78010.126	2.296
97	75890.213	78010.988	2.284
98	75891.947	78012.872	2.227
99	75892.810	78015.282	2.161
100	75892.669	78017.837	2.123

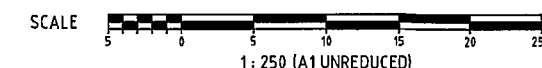
EXPOSED AGGREGATE TREATMENT

REFER LANDSCAPE DRAWINGS FOR AGGREGATE TYPE

EXPOSED AGGREGATE REINFORCED THRESHOLD
N4.0 CONCRETE - 180mm THICK SL82 FABRIC
40 COVER OVER 200mm CBR 4.5% SUBBASE.

LEGEND

- ROAD CENTRELINE
- KERB AND CHANNEL (TYPE B1)
- STORMWATER DRAINAGE
- FINISHED SURFACE CONTOURS
- OFFSET TO KERB FACE



GENERAL NOTES

- SETOUT TABLES ARE GIVEN AT KERB LIP LEVELS.
- KERB LIP LEVELS ARE GIVEN AT QUARTER POINTS, TP'S AND EQUAL PARTS U.N.O.
- KERB RADII AND OFFSETS ARE GIVEN AT HORIZONTAL SETOUT POINT SHOWN ON KERB SETOUT DETAILS BELOW.
- EXTRA DETAIL FOR SETTING OUT IS AVAILABLE ON CAD FILE.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No. OPW201601732

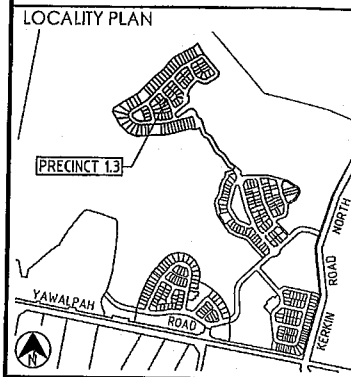
Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

LEGEND

- PROPOSED CATCHMENT BOUNDARY
- CATCHMENT NUMBER
- KERB AND CHANNEL
- BARRIER KERB ONLY
- PROPOSED STORMWATER DRAINAGE
- FINISHED SURFACE CONTOURS
- NATURAL SURFACE CONTOURS

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS AMENDED	20.10.16	RCT
C	REVISED CATCHMENT AREA	24.11.16	DES

CATCHMENT TABLE

CATCHMENT No.	AREA (ha)
001	0.126
002	0.146
003	0.195
004	0.155
005	0.125
006	0.414
11N	0.539
007	0.056
008	0.092
010	0.242
011	0.144
012	0.203
013	0.101
014	0.375
015	0.298
016	0.287
017	0.557
018	0.298
019	0.168
020	0.138
021	0.187
022	0.104
023	0.260
024	0.344
025	0.217
026	0.333
027	0.203
028	0.323
029	0.151
030	0.295
031	0.273
032	0.290

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

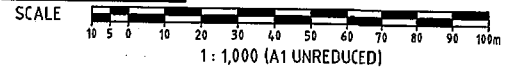
LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved for Release - RREC 100
[Signature] 24.11.16

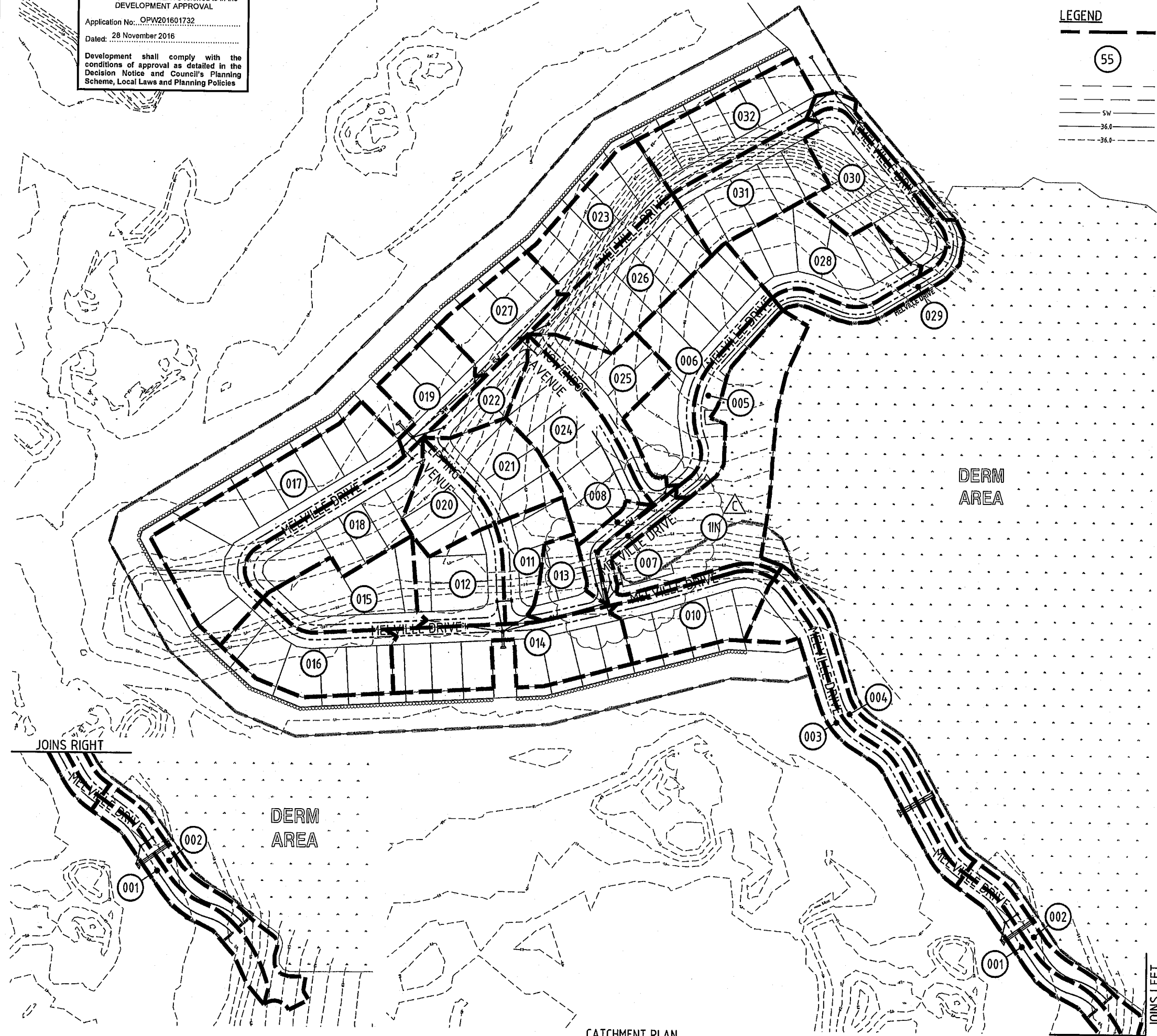
**STORMWATER
 CATCHMENT PLAN**

Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN	Drawing No 08-133-33		Sheet 33 of 67
A1		Revision C	

CATCHMENT PLAN
 SCALE 1:1000



M:\2016\08\13\Gainsborough_Greens_Precinct_13\Engineering\Acad\88-133-33_SW-CATCH.dwg Plotted by: DS on 24/11/2016 5:54:06 PM



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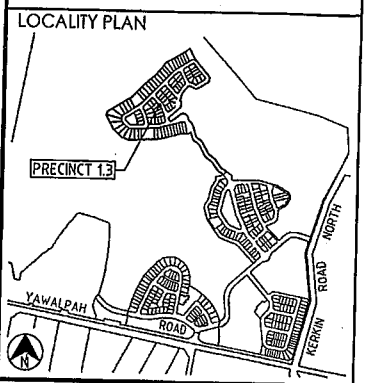
Table with columns: LOCATION, TIME, SUB-CATCHMENT RUNOFF, INLET DESIGN, DRAIN DESIGN, HEADLOSSES, PART FULL, DESIGN LEVELS. Includes rows for structures G005 to G026 with detailed runoff and flow data.

Q = 0.90 x 0.09 x 0.04 / 0.035 = 0.95m³/s

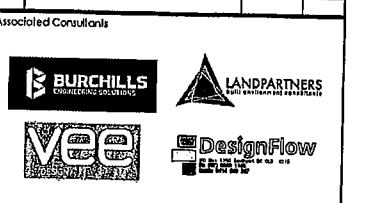
CALCULATIONS TABLE

PLANS AND DOCUMENTS referred to in the DESIGN APPROVAL
Application No.: OPW201601732
Dated: 9 February 2017
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS table with columns: No, Description, Date, By. Includes revisions A (FOR APPROVAL), B (TABLE AMENDED), C (TABLE AMENDED), D (IN TO ID UPDATED).



Project: GAINSBOROUGH GREENS PRECINCT 1 STAGE 3



LEVEL 2 - 71 GREY STREET SOUTH BRISBANE QUEENSLAND 4101 PHONE 07 3017 1900 FAX 07 3017 1911 EMAIL kn@kngpl.com.au ABN 35 112 053 611

Approved Director: [Signature] 27-1-17

Table with columns: Drawing Title, Design, Checked, Date, Scale, Sheet, Drawing No, Revision. Includes title STORMWATER CALCULATION TABLE SHEET 1 and drawing details.

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

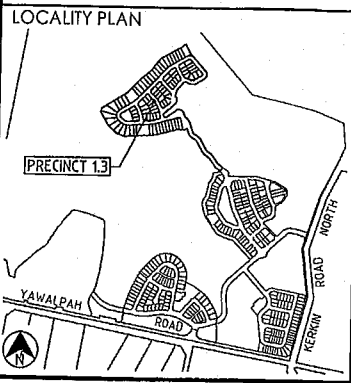
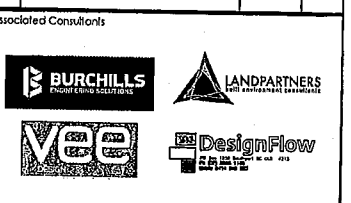


Table with 4 columns: No, Description, Date, By. Includes revision history for approval and amendments.



Project: GAINSBOROUGH GREENS PRECINCT 1 STAGE 3



LEVEL 2 - 71 GREY STREET SOUTH BRISBANE QUEENSLAND 4101 PHONE 07 3017 1900 FAX 07 3017 1911 EMAIL kn@knpl.com.au ABN 35 112 053 611

Approved Date: 24.11.16

STORMWATER CALCULATION TABLE SHEET 2

Table with columns: Drawn (NJS), Designed (CH), Checked (GBG), Date (JUL 16), Scale (AS SHOWN), Sheet (35 of 67), Drawing No (A1), Revision (08-133-35 C).

Main CALCULATIONS TABLE with columns for LOCATION, TIME, SUB-CATCHMENT RUNOFF, INLET DESIGN, DRAIN DESIGN, HEADLOSSES, PART FULL, and DESIGN LEVELS. Includes detailed flow and loss data for various pipe sections.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL Application No.: OPW201601732 Dated: 28 November 2016 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

All stormwater structures must have minimum of 150mm free board to comply with the Land Development Guidelines.

CALCULATIONS TABLE

Q = 0.90 x 0.09 x 0.04 / 0.035 = 0.95m³/s

Project: Gainsborough Greens Precinct 1, 31/10/2016 5:54:10 PM

DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	TIME		SUB-CATCHMENT RUNOFF					INLET DESIGN					DRAIN DESIGN										HEADLOSSES										PART FULL					DESIGN LEVELS				
					tc	I	C10	C	A	Cx-A	+CA	Q	Qg	Qb	tc	I	+CA	Qf	Qm	Qs	Qp	L	S	V	T	V2/2g	Ku	hu	Kl	hl	Kw	hw	Sf	hf	Yp	OBVERT LEVELS	DRAIN SECTION H.G.L.	UPSTREAM H.G.L.	LAT. H.G.L.	W.S.E.	SURFACE OR R&C INVERT LEVEL	STRUCTURE No.				
2	G032	G032 to 4D	031,032		15.00	110	0.72	0.290	0.299	0.299	64	64	0.80	1/5	50	16	G029	15.13	109	8.406	366	96	14.289	0.40	375128	870.69	11.000	0.24	0g 0.050 0o 0.096 0o 375	0.039	1.95	0.175	2.41	0.493	0.30	0.043	2.157	2.424	2.499	2.511	4.190	G032				
2	4D	4D to 4E	028,029,030,031,032		15.00	110	0.72	0.290	0.299	0.299	64	64	0.80	1/5	50	16	G029	15.13	109	8.406	366	96	14.289	0.40	375128	870.69	11.000	0.24	0g 0.050 0o 0.096 0o 375	0.039	1.95	0.175	2.41	0.493	0.30	0.043	2.157	2.424	2.499	2.511	4.190	G032				
2	G001	G001 to G002	001		15.00	110	0.72	0.126	0.091	0.091	28	28	0.50	1/87	1250.885	28	0	15.00	110	0.091	0.2	28	7.735	0.30	375128	250.19	11.000	0.13	0g 0.279 0o 0.450	0.083	9.64	0.031	1.18	0.186	0.96	0.155	2.155	2.195	2.381	2.381	3.736	4D				
2	G002	G002 to HW2	001,002		15.00	110	0.72	0.116	0.105	0.105	32	32	0.50	1/87	1250.885	32	0	15.13	109	0.106	0.261	50	9.888	0.30	375128	540.42	11.000	0.15	0g 0.432 0o 0.859 0o 375	0.015	1.85	0.028	2.62	0.039	0.12	0.010	1.448	1.540	1.538	1.549	2.246	G001				
2	HW3	HW3 to G003			15.00	110	0.72	0.195	0.140	0.140	43	43	0.50	1/87	1250.885	43	0	15.00	110	0.140	0.187	0	5.007	0.30	45102	0.00	10.980	0.00	0.00	0.28	0.000	0.00	0.000	1.374	1.507	1.507	1.507	2.017	HW3							
2	G003	G003 to G004	003		15.00	110	0.72	0.195	0.187	0.187	43	43	0.50	1/87	1250.885	43	0	15.00	110	0.140	0.187	43	7.735	0.30	45102	0.00	10.980	0.00	0.00	0.28	0.000	0.00	0.000	1.339	1.507	1.507	1.507	2.106	G003							
2	G004	G004 to HW4	003,004		15.00	110	0.72	0.155	0.112	0.112	34	34	0.50	1/87	1250.885	34	0	15.13	109	0.252	0.228	76	6.352	0.30	45102	0.00	10.980	0.00	0.00	0.28	0.000	0.01	0.001	1.256	1.501	1.503	1.503	2.106	G004							

CALCULATIONS TABLE

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

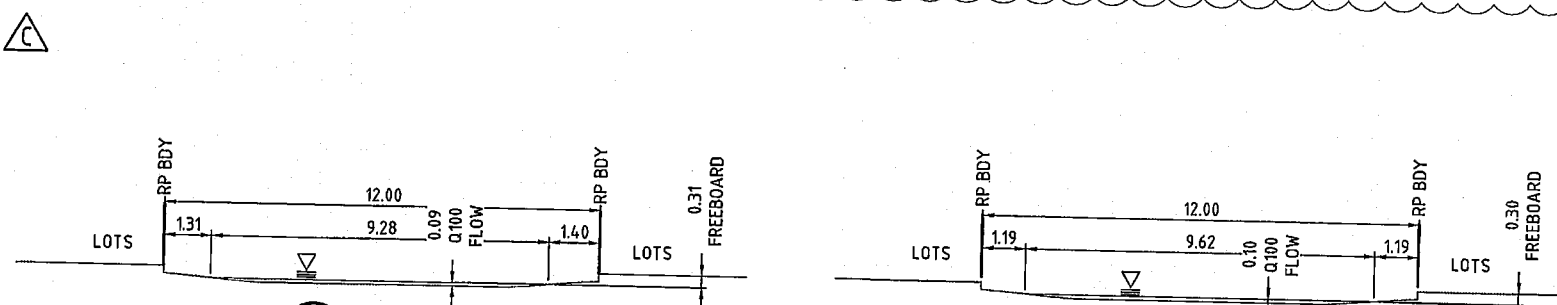
LOCALITY PLAN

PRECINCT 13

YAWALRAH ROAD

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	TABLE AMENDED	20.10.16	RCT
C	TABLE AMENDED	24.11.16	DES



$Q = \frac{A R^{2/3} S_0^{1/2}}{n}$

A = 0.78
P = 9.34
R = 0.084
n = 0.035
S₀ = 5%

Q CAPACITY = 0.95m³/s (REQ'D 0.898m³/s)
VELOCITY = 1.22m/s
dv = 0.097x1.212 = 0.12

$Q = \frac{A R^{2/3} S_0^{1/2}}{n}$

A = 0.89
P = 9.63
R = 0.092
n = 0.035
S₀ = 5%

Q CAPACITY = 1.15m³/s (REQ'D 1.15m³/s)
VELOCITY = 1.29m/s
dv = 0.11 x 1.29 = 0.14

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW201601732

Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

All stormwater structures must have minimum of 150mm free board to comply with the Land Development Guidelines.

Associated Consultants

BURCHILLS
LANDPARTNERS
VEE
DesignFlow

Client

mirvac

Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Drawing: [Signature]

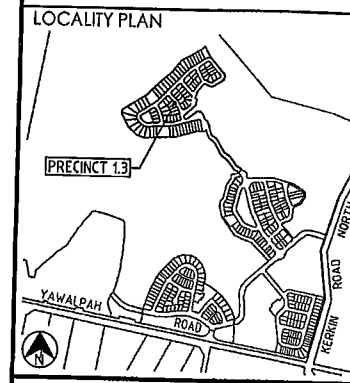
Drawn: [Signature]

STORMWATER
CALCULATION TABLE
SHEET 3

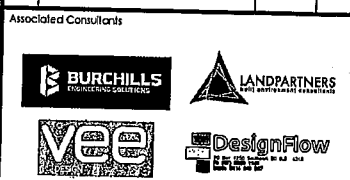
Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN	Sheet 36 of 67		Revision C
A1	Drawing No 08-133-36	Revision C	

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REVISIONS			
No	Description	Date	By
A	FOR APPROVAL	AUG 16	NJS
B	LONG SECTIONS AMENDED	20.10.16	RCT
C	REVISED SW DESIGN	24.11.16	DJS
D	1IN TO 1D UPDATED	24.11.17	MINL



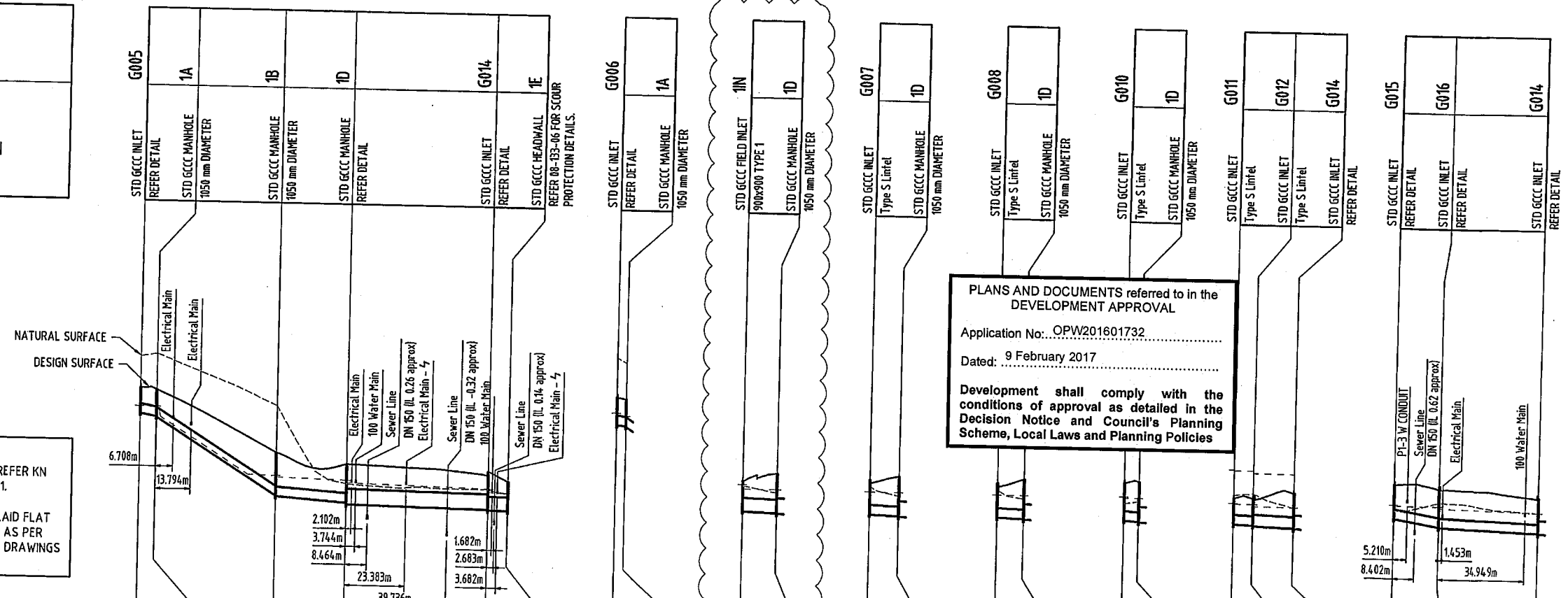
Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Drawing - R1999	<i>[Signature]</i> 27-1-17		
Drawing Title	STORMWATER LONGITUDINAL SECTIONS SHEET 1		
Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet
			37 of 67
Drawing No	Revision		
A1	08-133-37		D

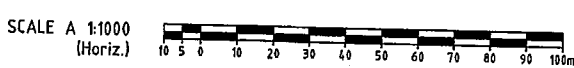
STRUCTURE NAME	STRUCTURE DESCRIPTION
----------------	-----------------------



NOTE
1. FOR MANHOLE DETAILS REFER KN DRAWING 08-133-40 & 41.
2. 4 - ELECTRICAL TO BE LAID FLAT AND CONCRETE ENCASED AS PER ROBIN RUSSELL PROJECT DRAWINGS

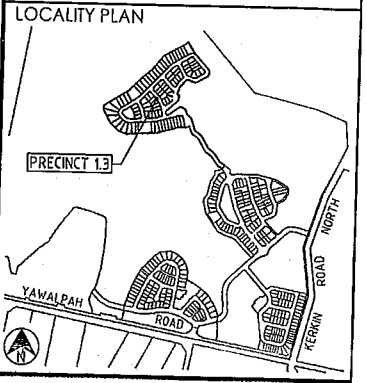
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No.: OPW201601732
Dated: 9 February 2017
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

STAGE	PIPE SIZE (mm Class)	PIPE GRADE %	PIPE SLOPE 1 in X	FULL PIPE FLOW VELOCITY (m/s)	PART FULL FLOW VELOCITY (m/s)	DATUM	WATER LEVEL IN STRUCTURE	HYDRAULIC GRADE LEVEL	PIPE FLOW (Cumecs)	PIPE CAPACITY AT GRADE (Cumecs)	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT CO-ORDINATE	RUNNING CHAINAGE
STAGE 13	375(2)	1.88%	53.32	0.22(0.17 ty)	1.39 (1.30 ty)	DATUM RL -10.0	4.492	4.492	0.024	0.240	1.012	4.202	5.214	E:75932.630	0.000
	375(2)	6.23%	16.05	0.82(0.67 ty)	3.13 (2.95 ty)		4.487	4.438	0.091	0.437	1.054	4.083	5.137	N:78065.74	6.369
	375(2)	0.73%	137.92	0.82(0.67 ty)			1.884	1.875	0.091	0.149	1.676	1.092	2.768	N:78068.25	4.717
	600(2)	0.18%	557.26	1.05(0.51 ty)			1.748	1.823	0.307	0.272	1.696	1.072	2.382	E:75890.636	54.046
	525(2) x 2	0.15%	666.67	1.32(1.10 ty)			1.522	1.522	0.591	0.348	1.382	0.871	2.089	N:78037.398	27.700
STAGE 13	375(2)	1.22%	81.80	0.61(0.50 ty)	1.59 (1.51 ty)		4.597	4.597	0.067	0.194	1.087	4.127	5.137	E:75926.278	3.672
	375(2)	0.40%	250.00	0.67(0.67 ty)			4.487	4.438	0.150	0.284	1.270	0.880	2.382	N:78068.257	13.478
	525(2)	0.40%	250.00	0.67(0.67 ty)			1.924	1.924	0.150	0.284	1.270	0.826	2.382	E:75896.189	13.478
	375(2)	0.40%	250.00	0.14(0.10 ty)			1.745	1.745	0.016	0.111	1.353	0.872	2.382	E:75896.189	11.399
	375(2)	0.40%	250.00	0.18(0.14 ty)			1.748	1.748	0.020	0.111	1.356	0.868	2.382	N:78010.260	10.523
STAGE 13	375(2)	0.63%	158.74	0.38(0.30 ty)			1.788	1.788	0.042	0.139	1.480	0.863	2.382	E:75898.959	5.825
	375(2)	0.40%	250.00	0.33(0.25 ty)			1.751	1.751	0.034	0.111	1.028	0.822	2.382	N:78005.134	7.735
	450(2)	0.40%	250.00	0.59(0.44 ty)			1.748	1.748	0.091	0.180	1.079	0.771	2.089	N:78010.865	15.979
	375(2)	1.69%	59.27	0.40(0.32 ty)			1.648	1.648	0.044	0.111	1.348	1.186	2.380	E:75842.751	17.672
	375(2)	0.40%	250.00	0.83(0.67 ty)			1.522	1.522	0.092	0.111	1.493	0.887	2.089	N:78000.746	40.158
STAGE 13	375(2)	0.40%	250.00	0.40(0.32 ty)			1.745	1.745	0.044	0.111	1.348	1.186	2.380	E:75842.751	57.830
	375(2)	0.40%	250.00	0.83(0.67 ty)			1.704	1.704	0.092	0.111	1.493	0.887	2.089	N:77995.194	
	375(2)	0.40%	250.00	0.40(0.32 ty)			1.693	1.693	0.044	0.111	1.348	1.186	2.380	E:75842.751	
	375(2)	0.40%	250.00	0.83(0.67 ty)			1.633	1.633	0.092	0.111	1.493	0.887	2.089	N:77995.194	
	375(2)	0.40%	250.00	0.83(0.67 ty)			1.522	1.522	0.092	0.111	1.493	0.887	2.089	N:77995.194	



M:\2008\08133 Gainsborough Greens Precinct 13\Engineering\1\cadd\108-133-37-39-SW-LS.dwg Plotted by: HL on 27/07/2017 8:33:33 AM

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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONG SECTIONS AMENDED	20.10.16	RCT
C	REVISED SW DESIGN	24.11.16	DES

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Drawing - RPP01 1998

Drawn by: *[Signature]* 24.11.16

**STORMWATER
LONGITUDINAL SECTIONS
SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	CBG	JUL 16

Scale	Sheet
AS SHOWN	38 of 67

Drawing No	Revision
A1	08-133-38 C

STRUCTURE NAME
STRUCTURE DESCRIPTION

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No... OPW201601732

Dated: 29 November 2016

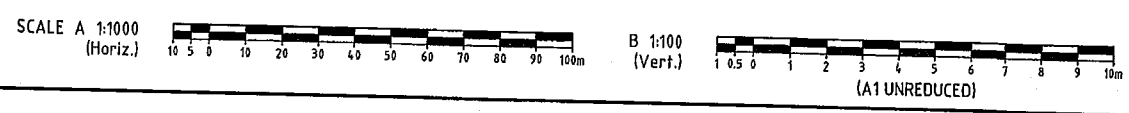
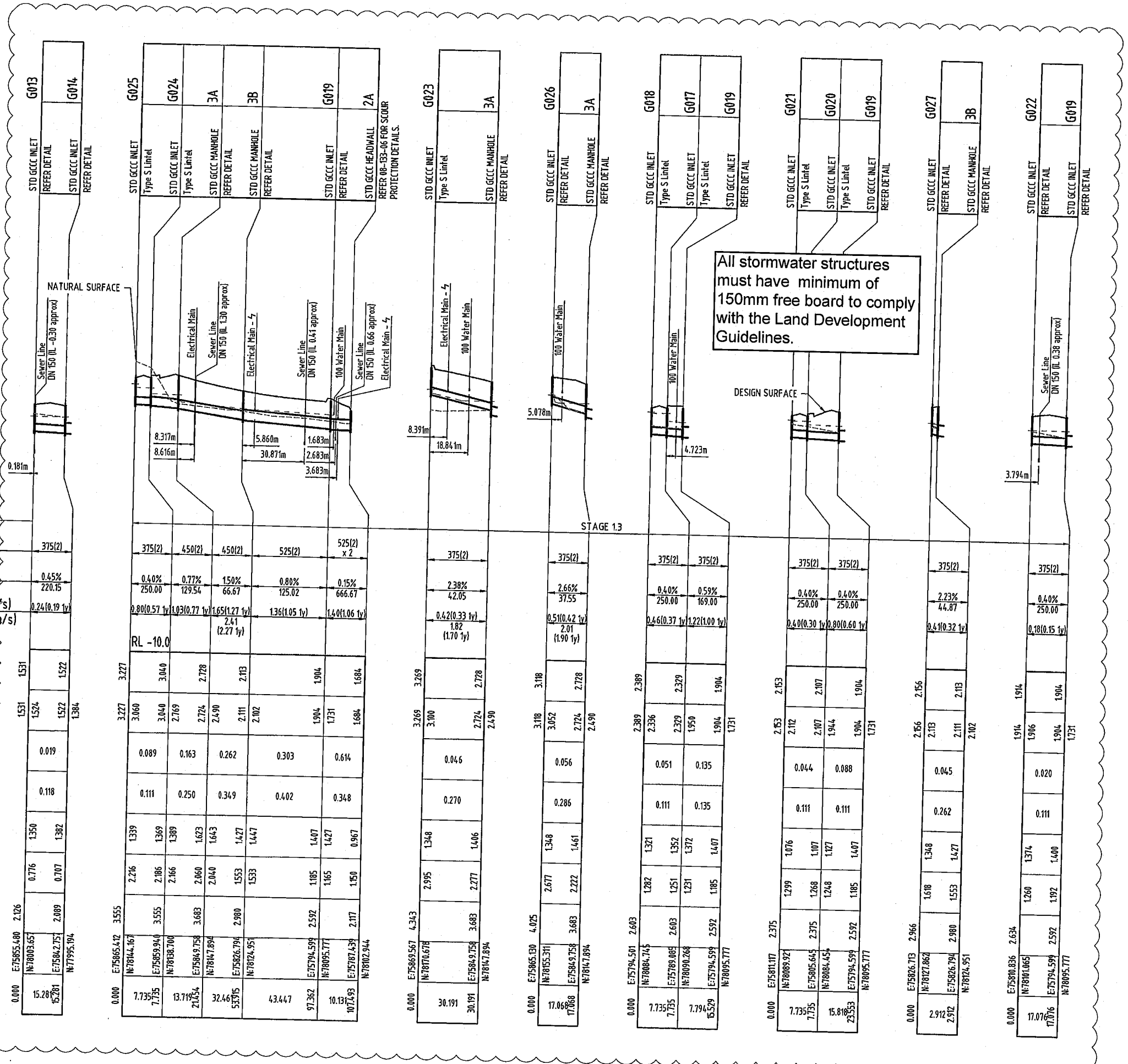
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

NOTE

- FOR MANHOLE DETAILS REFER KN DRAWING 08-133-40 & 41.
- 4 - ELECTRICAL TO BE LAID FLAT AND CONCRETE ENCASED AS PER ROBIN RUSSELL PROJECT DRAWINGS

STAGE

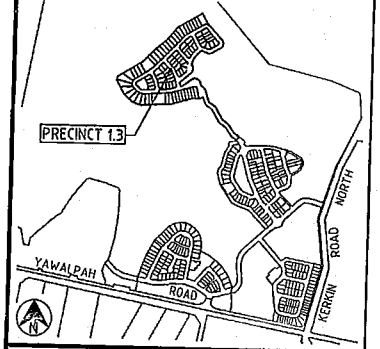
PIPE SIZE mm (Class)	PIPE GRADE %	PIPE SLOPE 1 in X	FULL PIPE FLOW VELOCITY (m/s)	PART FULL FLOW VELOCITY (m/s)	DATUM	WATER LEVEL IN STRUCTURE	HYDRAULIC GRADE LEVEL	PIPE FLOW (Cumecs)	PIPE CAPACITY AT GRADE (Cumecs)	DEPTH TO INVERT	INVERT LEVEL OF DRAIN	DESIGN SURFACE LEVEL	SETOUT CO-ORDINATE	RUNNING CHAINAGE
375(2)	0.45%	220.15	0.24(0.19 1v)		RL -10.0	1531	1531	0.019	0.118	1.350	0.776	2.126	E:75055.480 N:78003.65	0.000
375(2)	0.40%	250.00	0.80(0.57 1v)	0.80(0.57 1v)		1524	1524	0.089	0.111	1.382	0.707	2.089	E:75042.75 N:77995.194	15.281
450(2)	0.77%	129.54	1.03(0.77 1v)	1.03(0.77 1v)		1522	1522	0.163	0.250	1.382	0.707	2.089	E:75042.75 N:77995.194	15.281
450(2)	150%	66.67	1.65(1.27 1v)	1.65(1.27 1v)		1384	1384	0.262	0.349	1.382	0.707	2.089	E:75042.75 N:77995.194	15.281
525(2)	0.80%	125.02	1.36(1.05 1v)	1.36(1.05 1v)		3227	3227	0.303	0.402	1.382	0.707	2.089	E:75042.75 N:77995.194	15.281
525(2) x 2	0.15%	666.67	1.40(1.06 1v)	1.40(1.06 1v)		3060	3060	0.614	0.348	1.382	0.707	2.089	E:75042.75 N:77995.194	15.281



M:\2008\08133 Gainsborough Greens Precinct 1\3\Engineering\Acad\08-133-38-SW-LS.dwg Plotted by: DS on 24/10/2016 5:54:15 PM

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASKI

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONG SECTIONS AMENDED	20.10.16	RCT

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

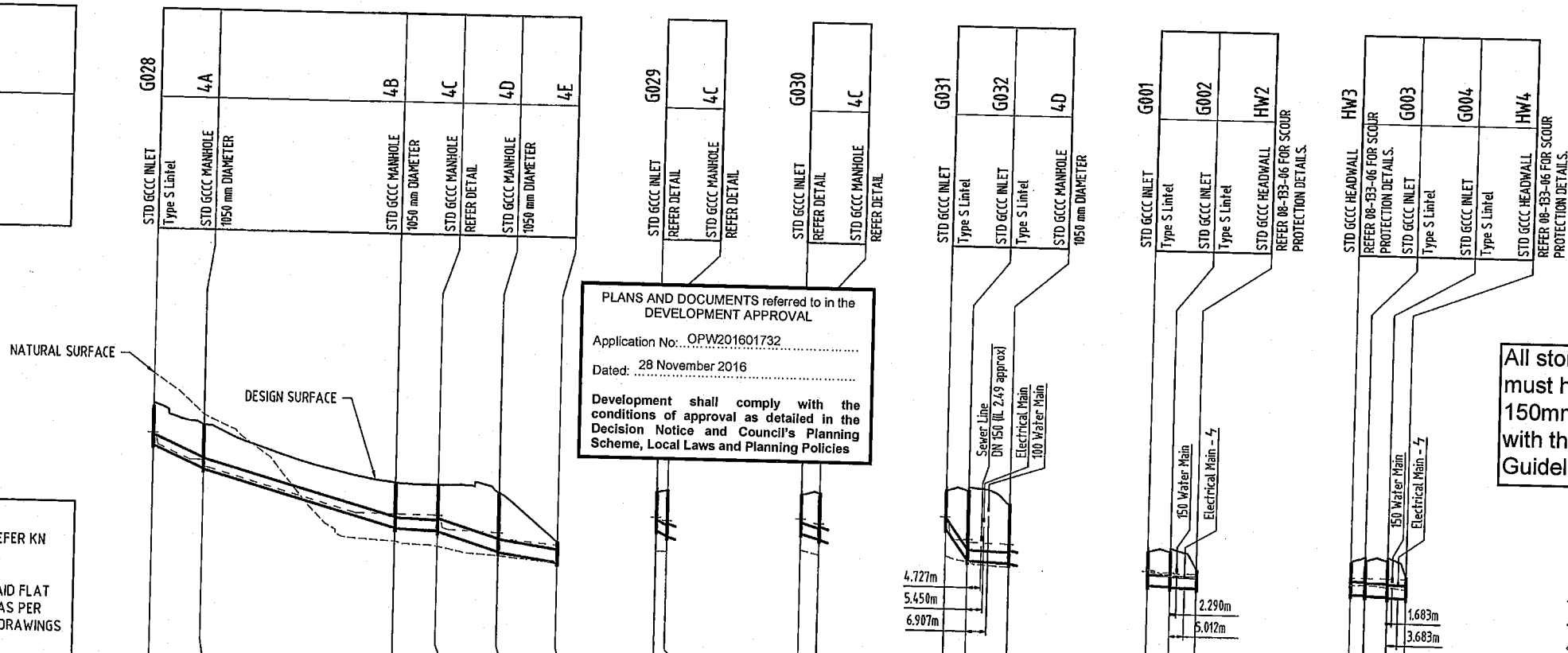
Approved Drawing: RPS 1998
Drawing Title: **STORMWATER
LONGITUDINAL SECTIONS
SHEET 3**

Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN			Sheet 39 of 67
Drawing No A1		Revision 08-133-39 B	

All stormwater structures must have minimum of 150mm free board to comply with the Land Development Guidelines.

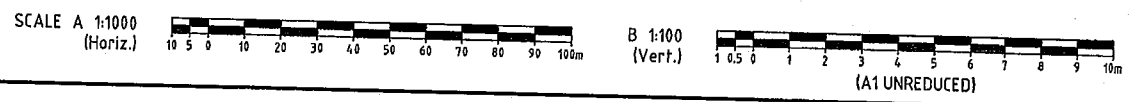
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No: OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

STRUCTURE NAME
STRUCTURE DESCRIPTION



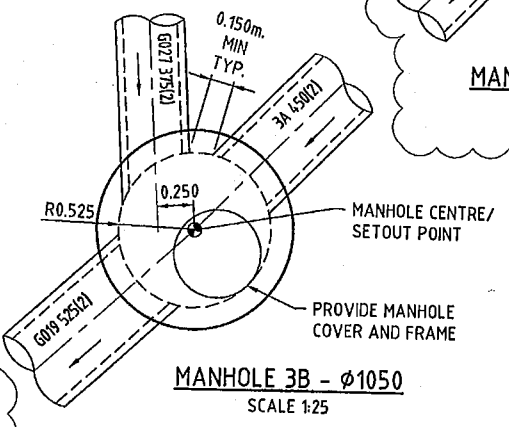
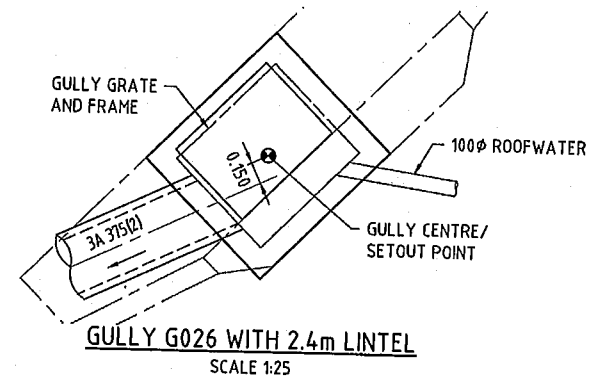
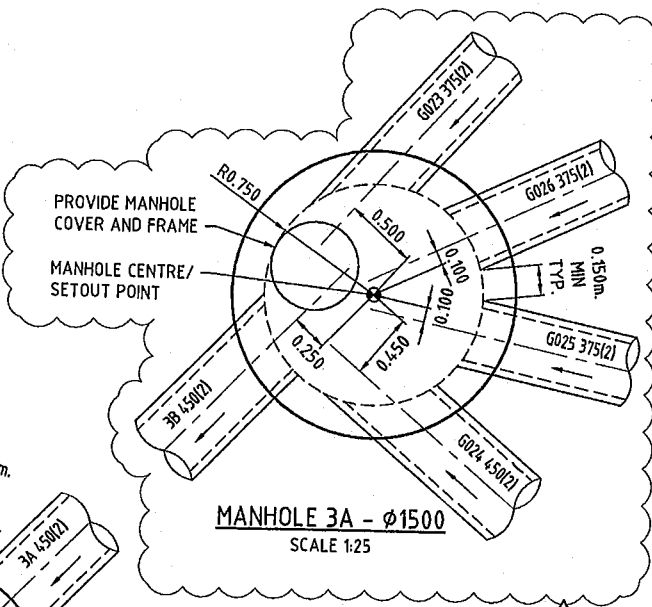
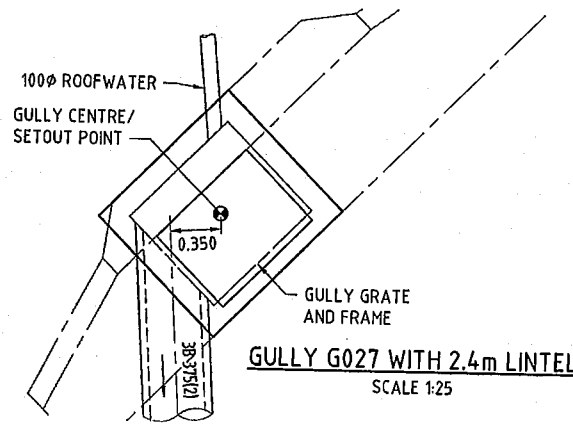
NOTE
1. FOR MANHOLE DETAILS REFER KN DRAWING 08-133-40 & 41.
2. 4 - ELECTRICAL TO BE LAID FLAT AND CONCRETE ENCASED AS PER ROBIN RUSSELL PROJECT DRAWINGS

STAGE	STAGE 1					STAGE 1.3					STAGE 2					STAGE 3				
PIPE SIZEmm (Class)	375(2)					375(2)					375(2)					375(2)				
PIPE GRADE %	4.35%					2.82%					13.64%					0.30%				
PIPE SLOPE 1 in X	22.96					35.52					7.33					333.33				
FULL PIPE FLOW VELOCITY (m/s)	2.38					0.50					0.43					0.25				
PART FULL FLOW VELOCITY (m/s)	(2.23 1y)					(1.91 1y)					(3.17 1y)					(0.54 0.42 1y)				
DATUM	RL -10.0					2.61					3.40					0.00				
WATER LEVEL IN STRUCTURE	5.564					3.038					3.279					1.571				
HYDRAULIC GRADE LEVEL	5.564					2.955					3.232					1.540				
PIPE FLOW (Cumecs)	0.055					0.063					0.047					0.028				
PIPE CAPACITY AT GRADE (Cumecs)	0.366					0.395					0.647					0.096				
DEPTH TO INVERT	1.342					1.340					1.333					1.093				
INVERT LEVEL OF DRAIN	5.125					2.580					2.957					0.924				
DESIGN SURFACE LEVEL	6.467					2.394					1.725					0.866				
SET OUT CO-ORDINATE	E:76060.854					E:76025.742					E:76004.729					E:76069.336				
RUNNING CHAINAGE	17.624					3.672					7.735					5.007				

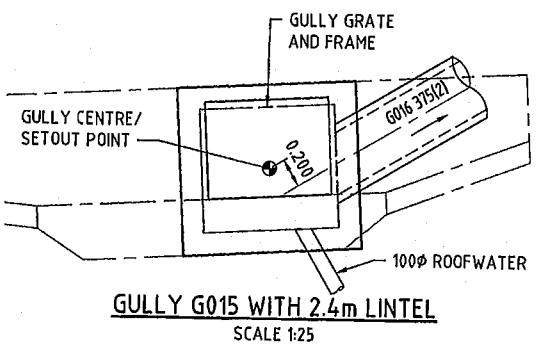
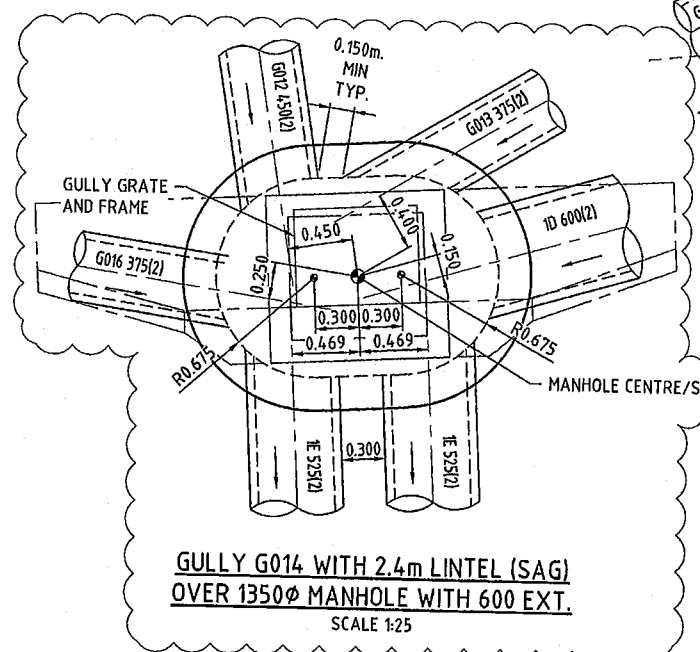
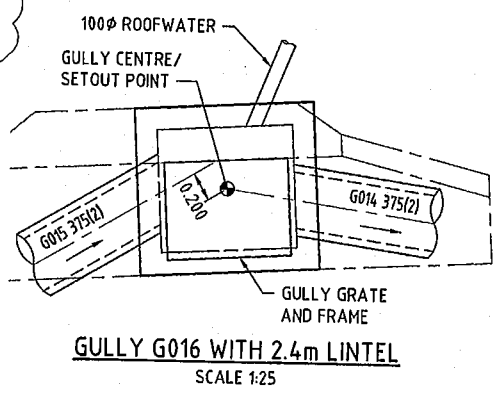
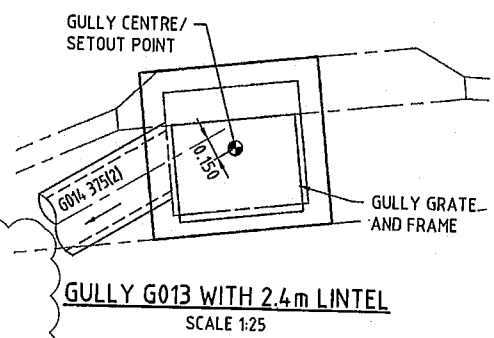
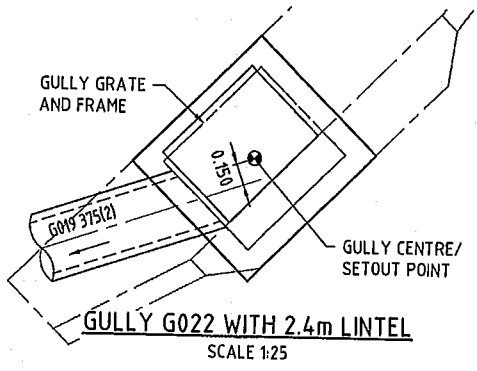
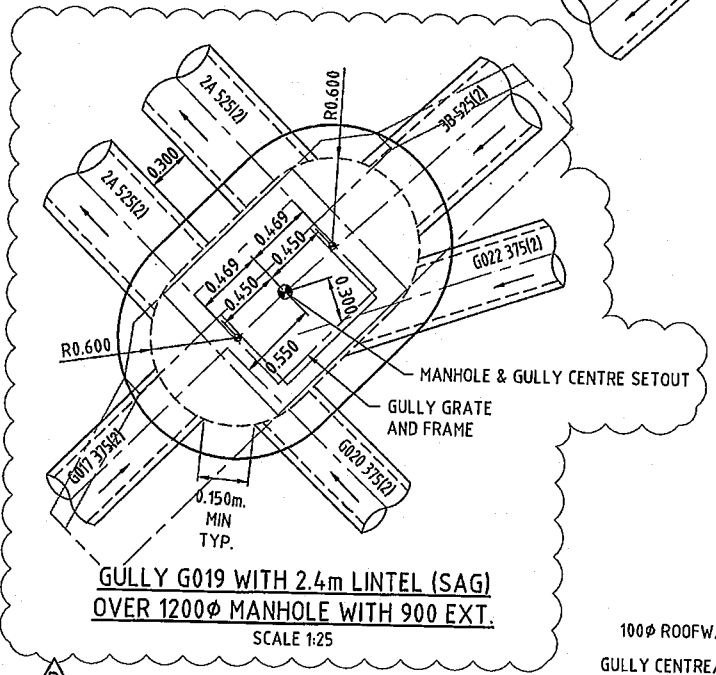


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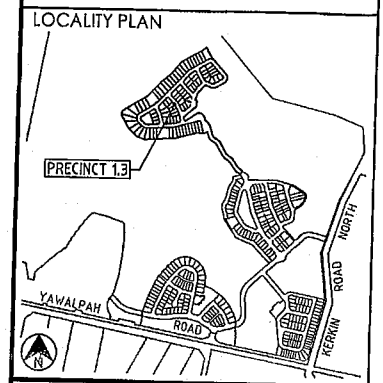
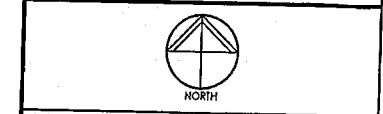
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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No.: OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

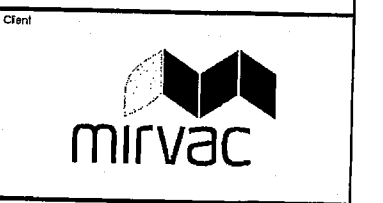
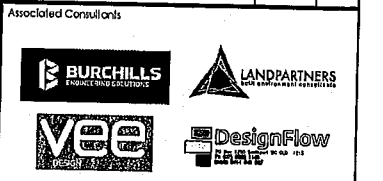


DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG 16	NJS
B	MANHOLE DETAILS AMENDED	20.10.16	RCT



**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS
LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved: *[Signature]*

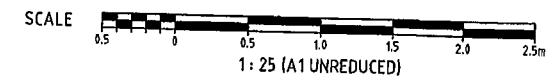
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**STORMWATER
MANHOLE DETAILS
SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	40 of 67

Revision No	Revision
A1	08-133-40 B



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

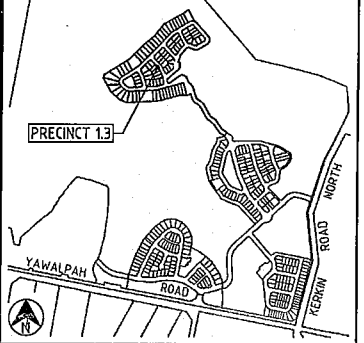
Application No.: OPW201601732
 Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	MANHOLE DETAILS AMENDED	24.11.16	DES

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3

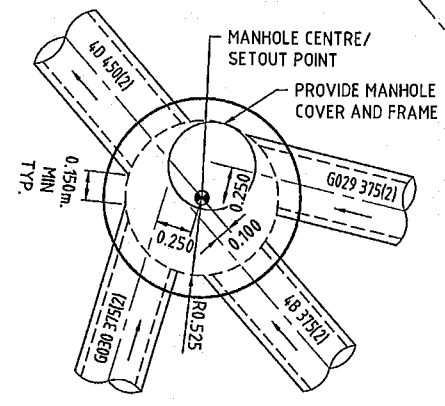


LEVEL 2 - 71 GREY STREET
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 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

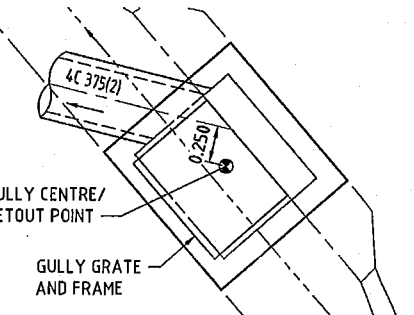
Approved Drawing No. 08-133-41

STORMWATER
 MANHOLE DETAILS
 SHEET 2

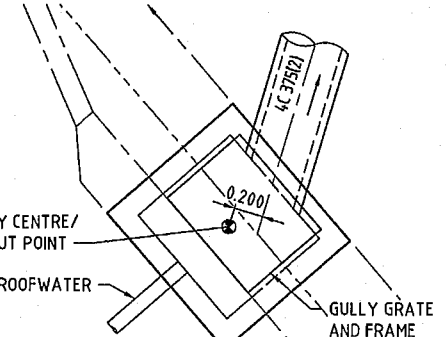
Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN	Drawing No. A1	Sheet 41 of 67	Revision B



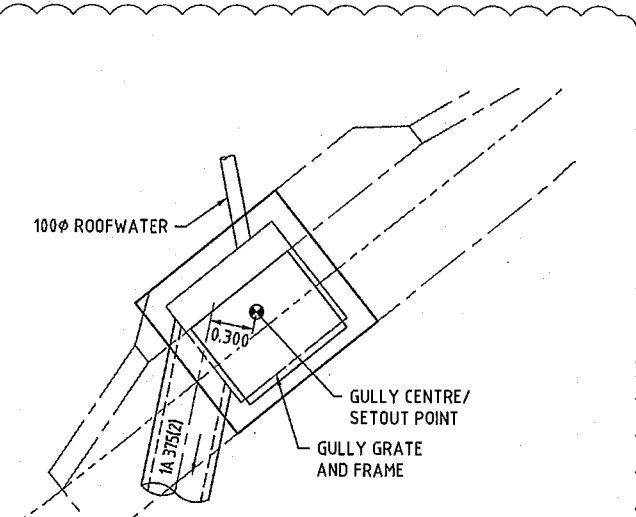
MANHOLE 4C - ϕ 1050
 SCALE 1:25



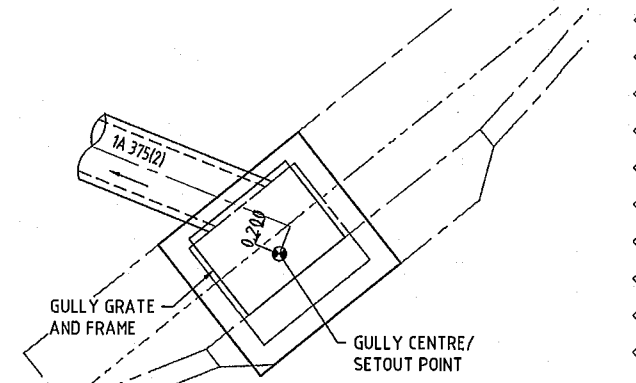
GULLY G029 WITH 2.4m LINTEL (SAG)
 SCALE 1:25



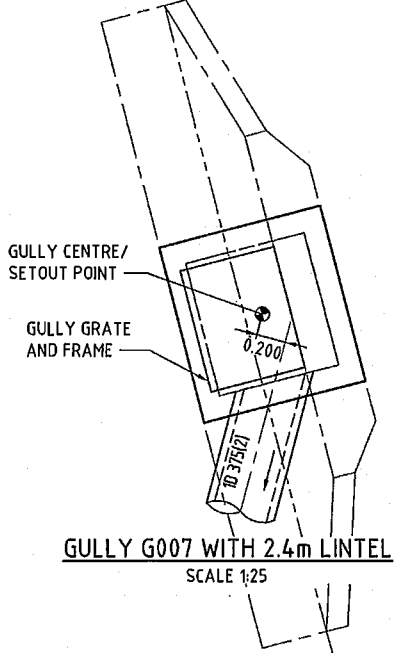
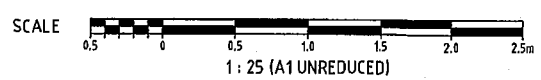
GULLY G030 WITH 2.4m LINTEL (SAG)
 SCALE 1:25



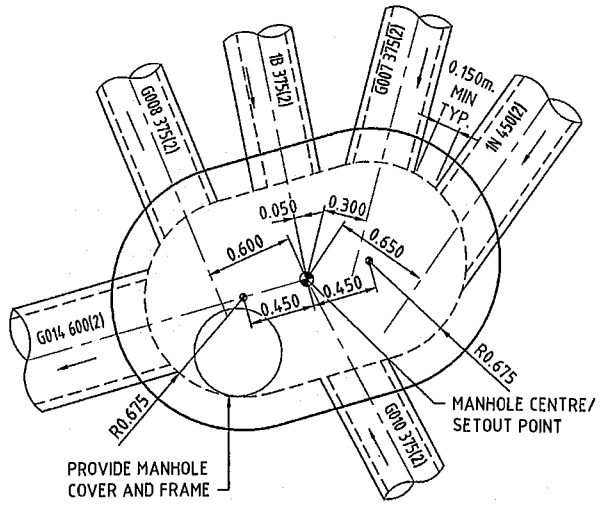
GULLY G006 WITH 2.4m LINTEL
 SCALE 1:25



GULLY G005 WITH 2.4m LINTEL
 SCALE 1:25

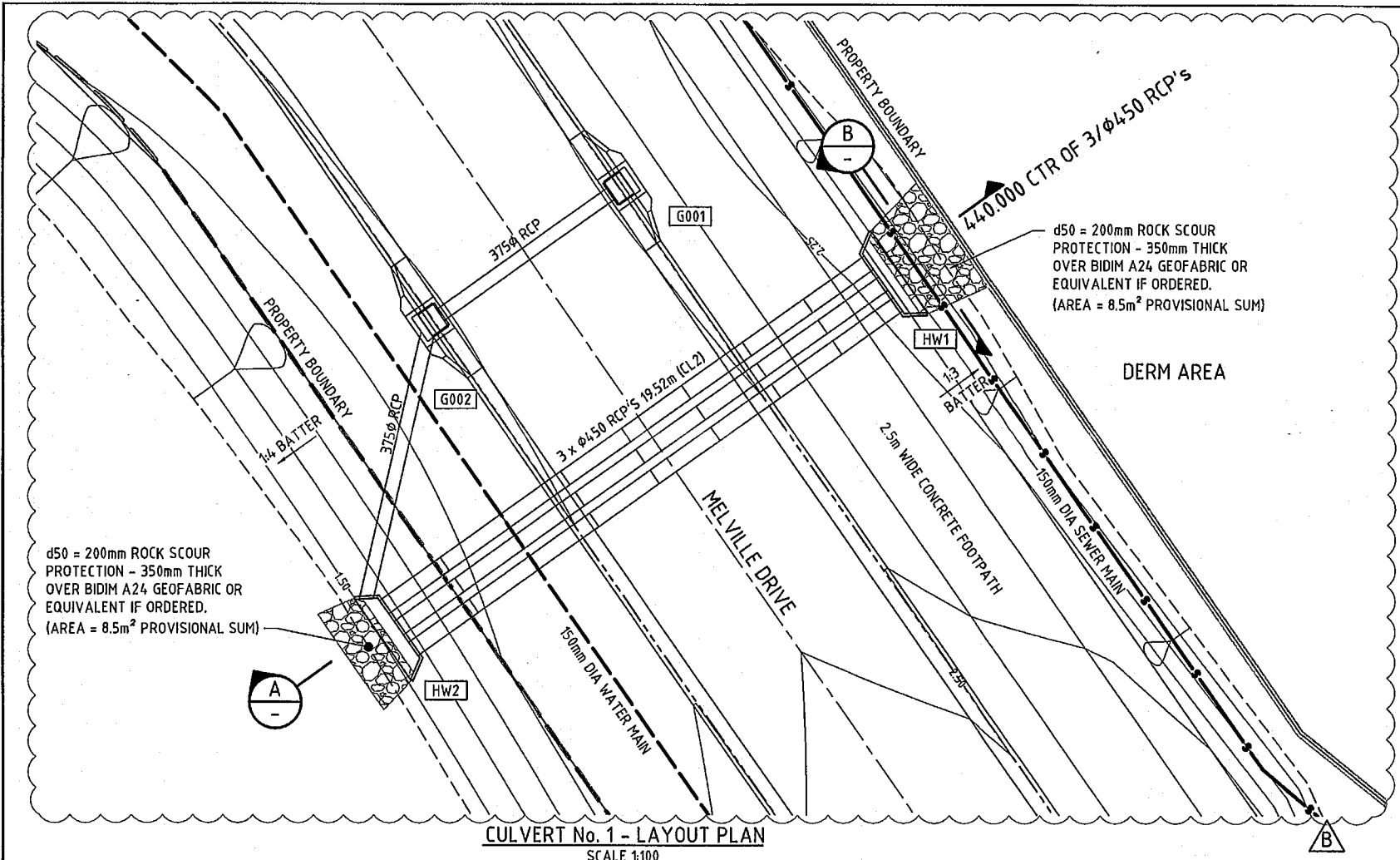


GULLY G007 WITH 2.4m LINTEL
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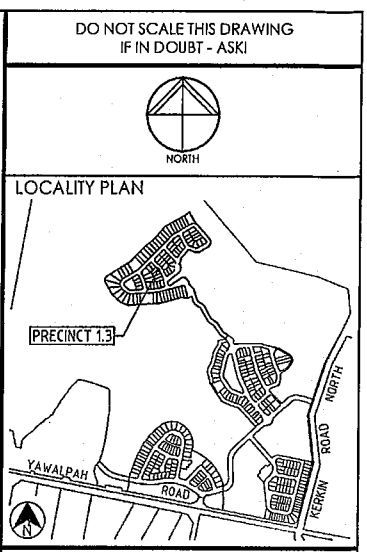


MANHOLE 1D - ϕ 1350 WITH 900 EXT
 SCALE 1:25

M:\2016\08133 Gainsborough Greens Precinct 1\3.Engineering\A\cad\08-133-44-1-SW-MH.dwg Plotted by: DS on 24/11/2016 5:54:19 PM



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CULVERT DETAIL AMENDED	20.10.16	RCT



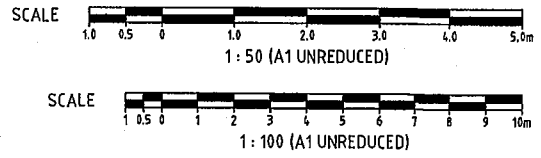
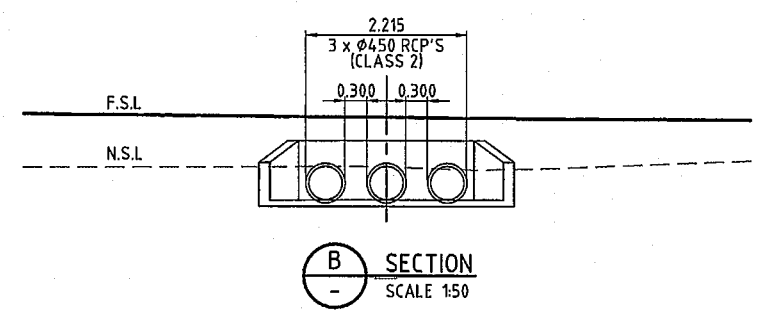
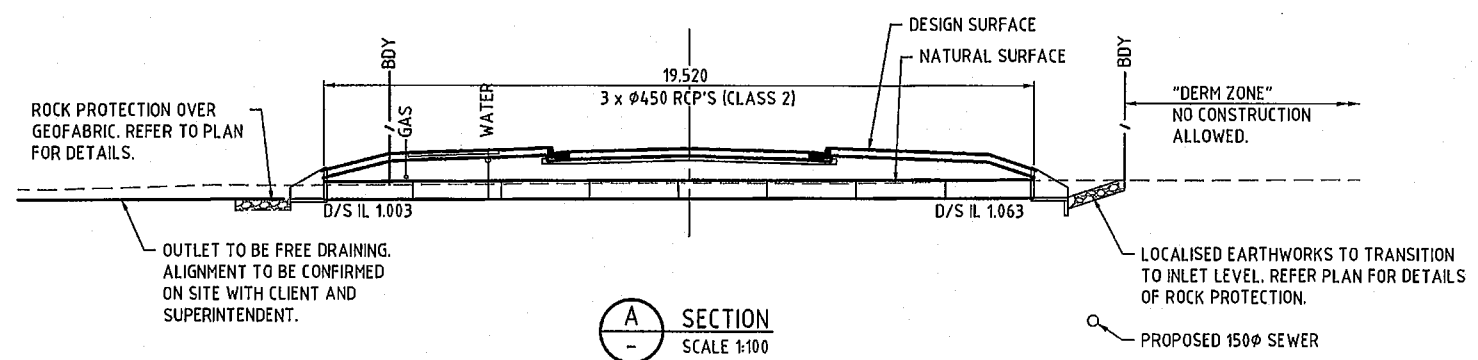
Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS
 LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved Director - RPS 1288
[Signature] 20.10.16

Drawing Title
**STORMWATER
 PROPOSED CULVERT 1**

Drawn NJS	Designed CH	Checked GBG	Date JUL 16
Scale AS SHOWN	Drawing No 08-133-42		Sheet 42 of 67
A1	Revision B		

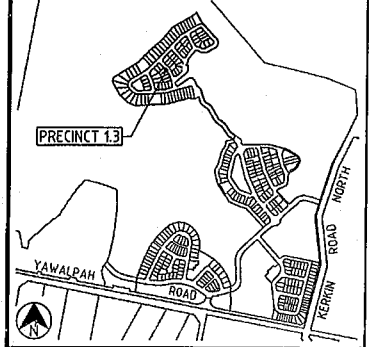


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DO NOT SCALE THIS DRAWING
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LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	CULVERT DETAIL AMENDED	29.10.16	RCT

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

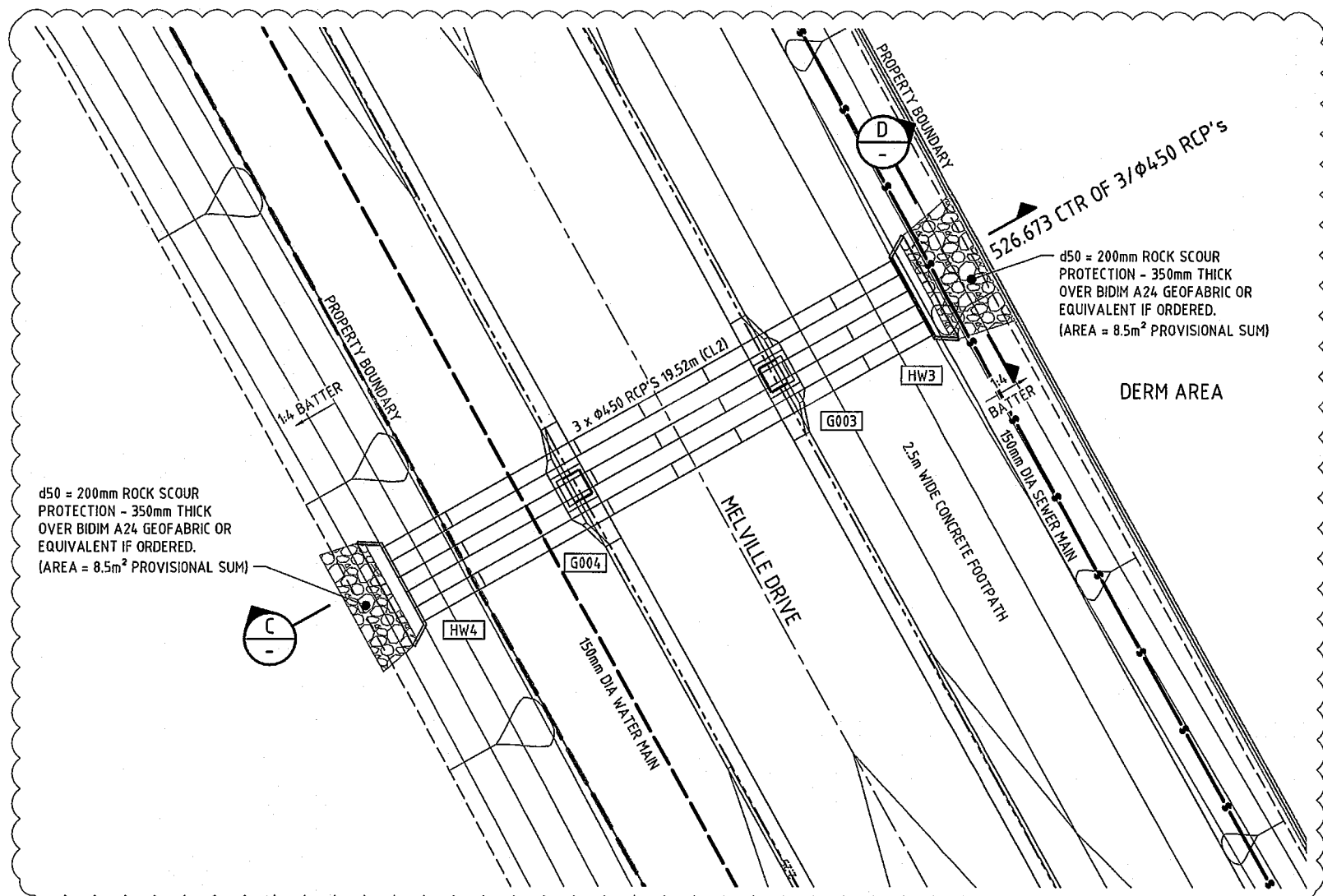
Approved Drawing - RPEP 1998
[Signature] 21.10.16

Drawn By

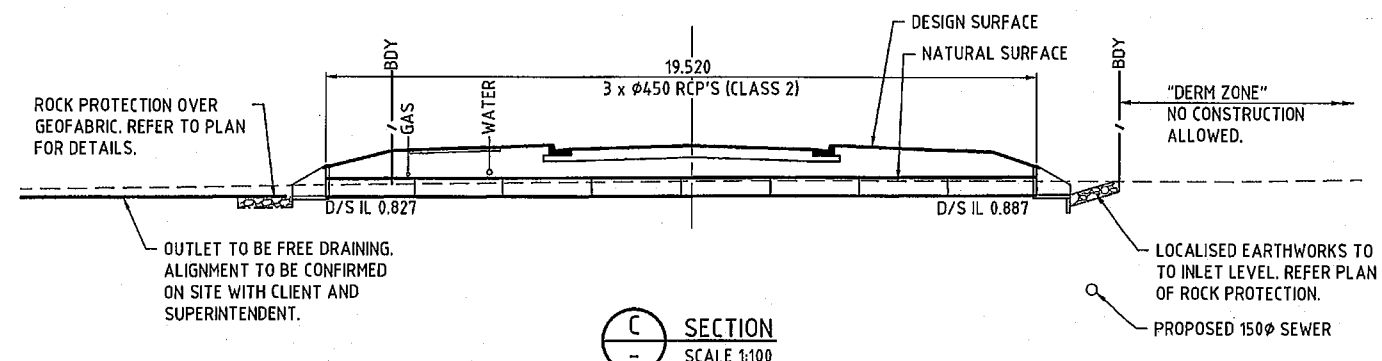
STORMWATER
PROPOSED CULVERT 2

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale AS SHOWN			Sheet 43 of 67
Drawing No			Revision
A1 08-133-43			B

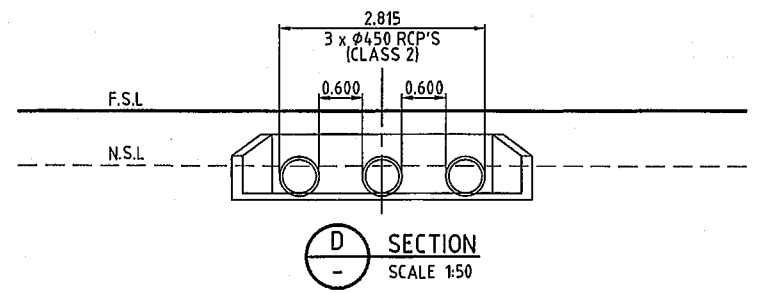
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No: OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



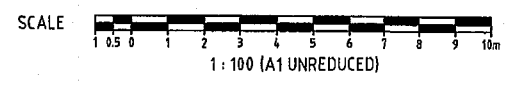
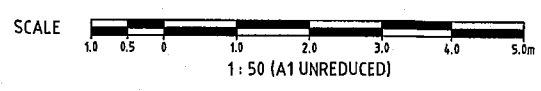
CULVERT No. 2 - LAYOUT PLAN
SCALE 1:100



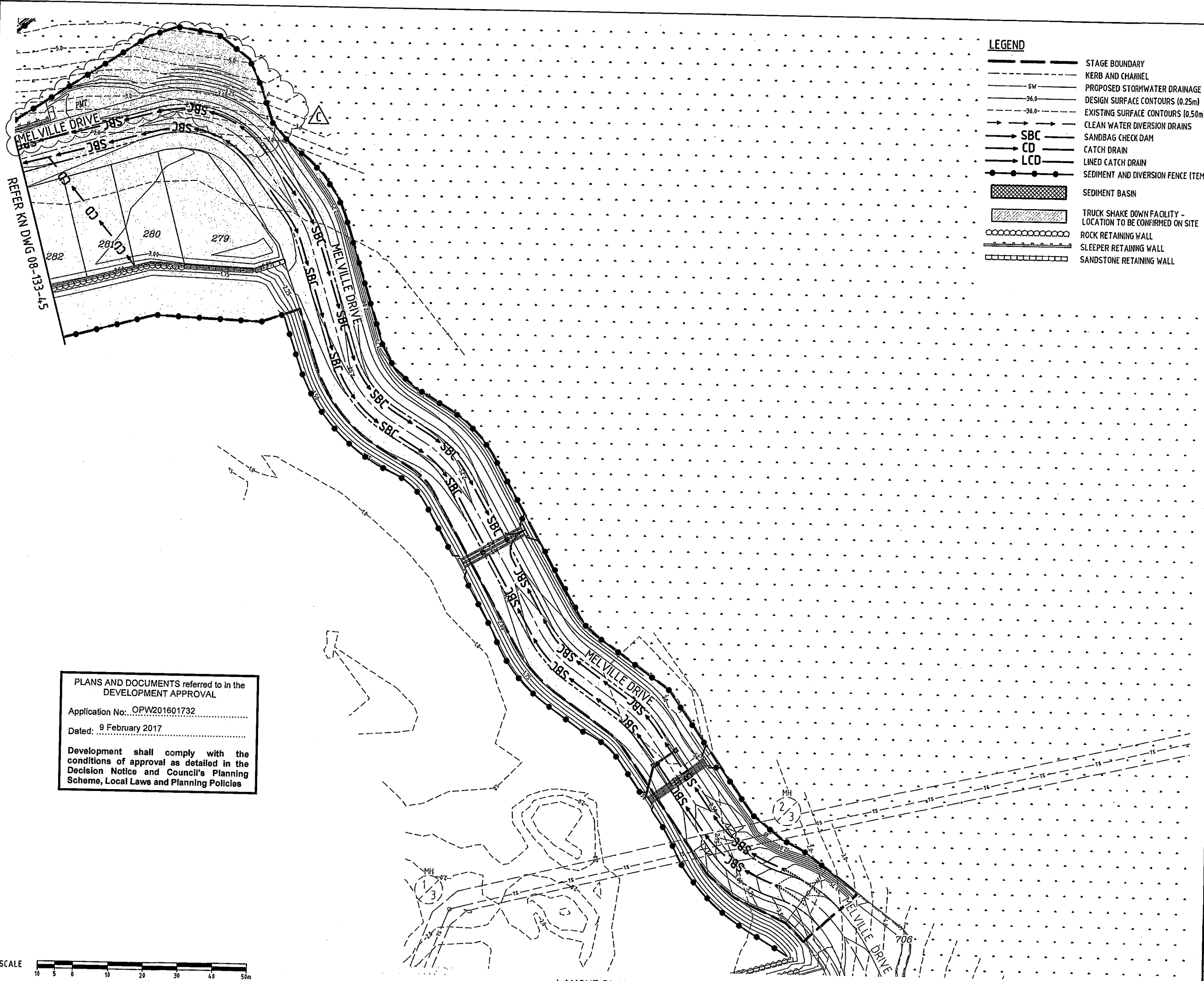
SECTION C
SCALE 1:100



SECTION D
SCALE 1:50

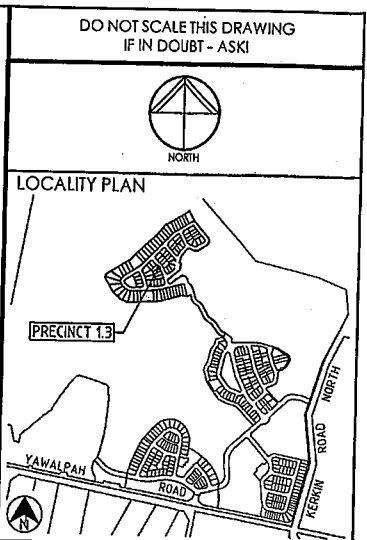


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LEGEND

- STAGE BOUNDARY
- KERB AND CHANNEL
- - - - - PROPOSED STORMWATER DRAINAGE
- - - - - DESIGN SURFACE CONTOURS (0.25m)
- - - - - EXISTING SURFACE CONTOURS (0.50m)
- CLEAN WATER DIVERSION DRAINS
- SBC SANDBAG CHECK DAM
- CD CATCH DRAIN
- LCD LINED CATCH DRAIN
- SEDIMENT AND DIVERSION FENCE (TEMP)
- SEDIMENT BASIN
- TRUCK SHAKE DOWN FACILITY - LOCATION TO BE CONFIRMED ON SITE
- ROCK RETAINING WALL
- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL

Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved for Release - RPS 1998

Drawing Title

**EROSION & SEDIMENT CONTROL
CONSTRUCTION PHASE
LAYOUT PLAN - SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	44 of 67

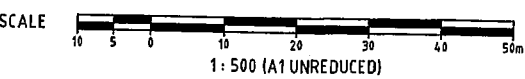
Drawing No	Revision
A1	C

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

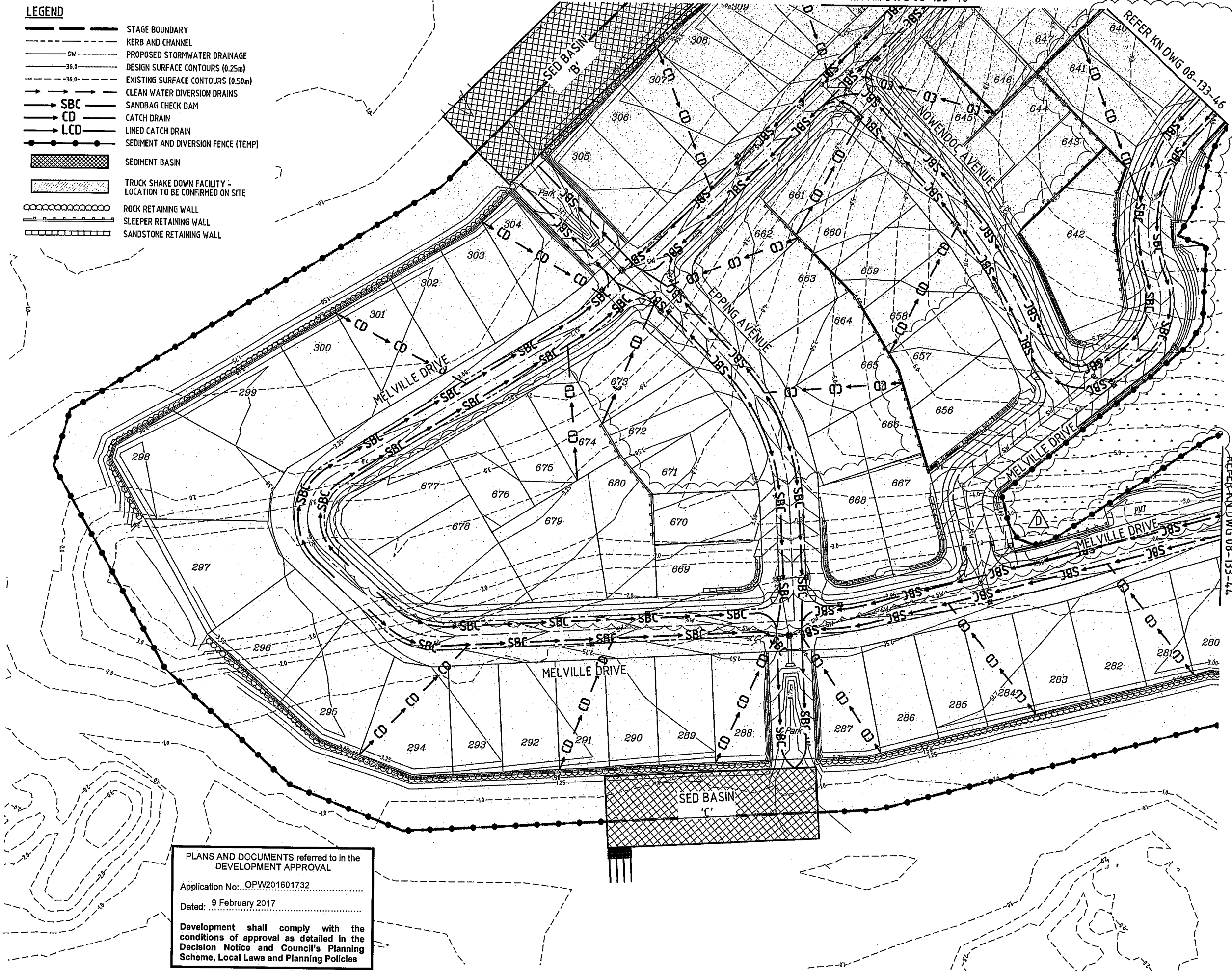


LAYOUT PLAN
SCALE 1:500

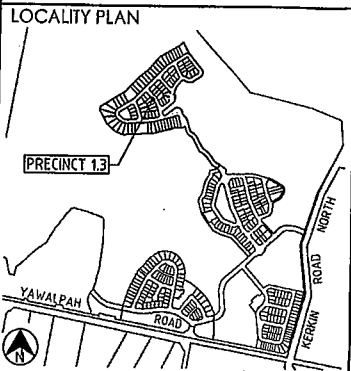
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REFER KN DWG 08-133-46

- LEGEND**
- STAGE BOUNDARY
 - KERB AND CHANNEL
 - SW PROPOSED STORMWATER DRAINAGE
 - - - 36.0 DESIGN SURFACE CONTOURS (0.25m)
 - - - 36.0 EXISTING SURFACE CONTOURS (0.50m)
 - CLEAN WATER DIVERSION DRAINS
 - SBC SANDBAG CHECK DAM
 - CD CATCH DRAIN
 - LCD LINED CATCH DRAIN
 - SEDIMENT AND DIVERSION FENCE (TEMP)
 - SEDIMENT BASIN
 - TRUCK SHAKE DOWN FACILITY - LOCATION TO BE CONFIRMED ON SITE
 - ROCK RETAINING WALL
 - SLEEPER RETAINING WALL
 - SANDSTONE RETAINING WALL



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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROAD ALIGNMENT AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
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 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved by: *[Signature]* 27-1-17

Drawing title
**EROSION & SEDIMENT CONTROL
 CONSTRUCTION PHASE
 LAYOUT PLAN - SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	45 of 67

Drawing No	Revision
A1	D

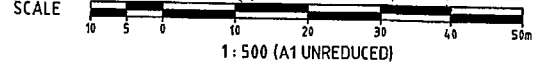
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW201601732

Dated: 9 February 2017

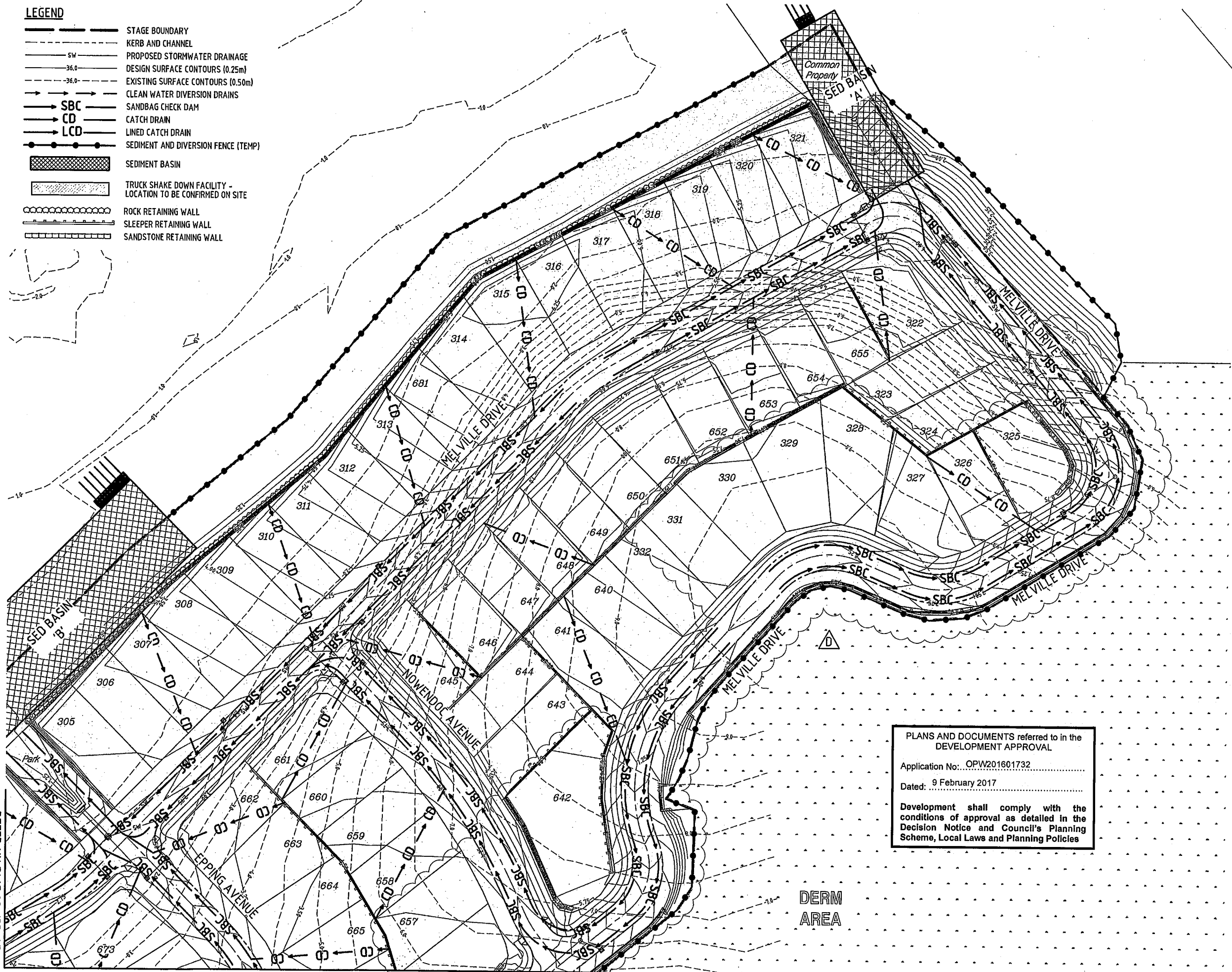
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

LAYOUT PLAN
 SCALE 1:500



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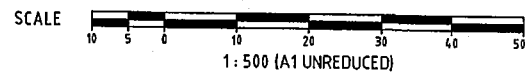
- LEGEND**
- STAGE BOUNDARY
 - - - - - KERB AND CHANNEL
 - SW PROPOSED STORMWATER DRAINAGE
 - - - - - 36.0 DESIGN SURFACE CONTOURS (0.25m)
 - - - - - 36.0 EXISTING SURFACE CONTOURS (0.50m)
 - CLEAN WATER DIVERSION DRAINS
 - SBC SANDBAG CHECK DAM
 - CD CATCH DRAIN
 - LCD LINED CATCH DRAIN
 - SEDIMENT AND DIVERSION FENCE (TEMP)
 - ▨ SEDIMENT BASIN
 - ▨ TRUCK SHAKE DOWN FACILITY - LOCATION TO BE CONFIRMED ON SITE
 - ROCK RETAINING WALL
 - SLEEPER RETAINING WALL
 - SANDSTONE RETAINING WALL



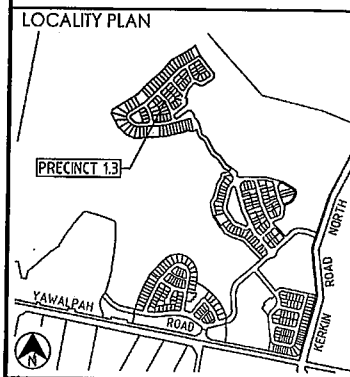
REFER KN DWG 08-133-45

LAYOUT PLAN
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Approved Drawing - RPSG 1988
[Signature] 27-1-17

Drawn by
**EROSION & SEDIMENT CONTROL
 CONSTRUCTION PHASE
 LAYOUT PLAN - SHEET 3**

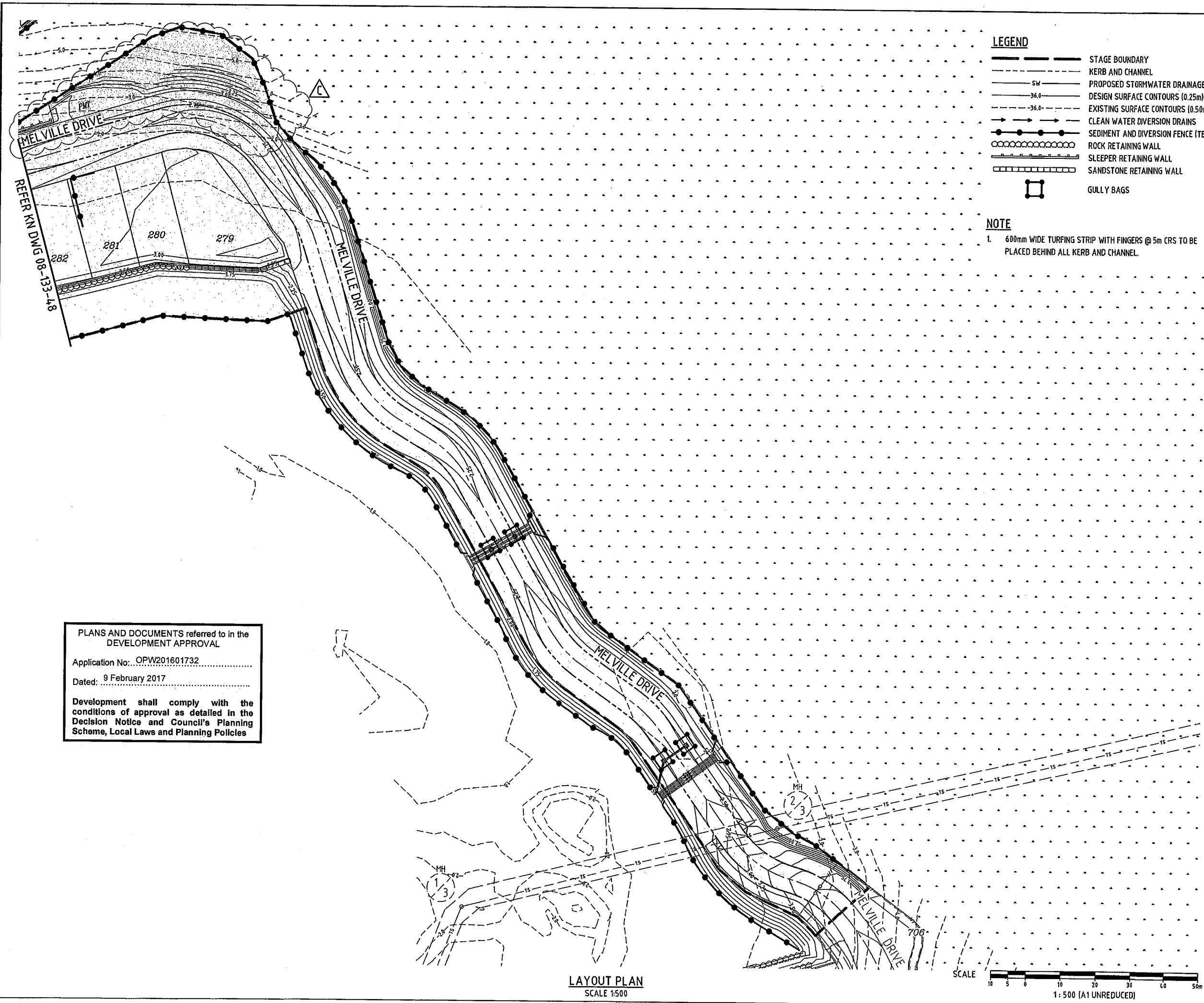
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NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	46 of 67

Drawing No	Revision
A1	D

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REFER KN DWG 08-133-45



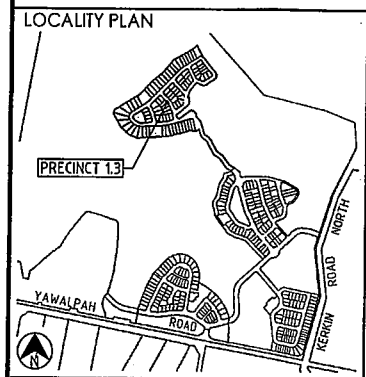
LEGEND

- STAGE BOUNDARY
- KERB AND CHANNEL
- PROPOSED STORMWATER DRAINAGE
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- SEDIMENT AND DIVERSION FENCE (TEMP)
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- SLEEPER RETAINING WALL
- SANDSTONE RETAINING WALL
- GULLY BAGS

NOTE

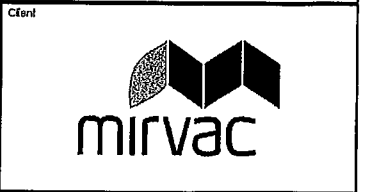
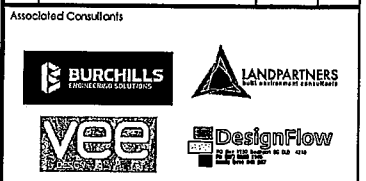
1. 600mm WIDE TURFING STRIP WITH FINGERS @ 5m CRS TO BE PLACED BEHIND ALL KERB AND CHANNEL.

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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
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Project

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PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

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ABN 35 112 053 611

Approved By: *[Signature]* **27-1-17**

Drawing Title

**EROSION & SEDIMENT CONTROL
POST CONSTRUCTION PHASE
LAYOUT PLAN - SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	Sheet	Revision	
AS SHOWN	47 of 67		
A1	Drawing No 08-133-47	Revision C	

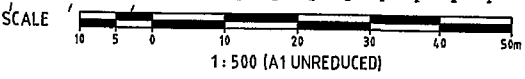
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW201601732

Dated: 9 February 2017

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LAYOUT PLAN
SCALE 1:500



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- LEGEND**
- STAGE BOUNDARY
 - - - KERB AND CHANNEL
 - SW - PROPOSED STORMWATER DRAINAGE
 - 36.0 - DESIGN SURFACE CONTOURS (0.25m)
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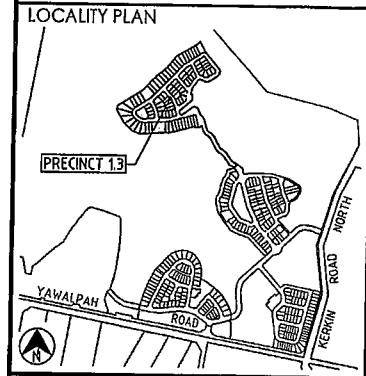
NOTE

1. 600mm WIDE TURFING STRIP WITH FINGERS @ 5m CRS TO BE PLACED BEHIND ALL KERB AND CHANNEL.

REFER KN DWG 08-133-49

REFER KN DWG 08-133-49

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Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

LEVEL 2 - 71 GREY STREET
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Approved for - RPS 1998

Drawn by: *[Signature]* 27-1-17

Project Title

**EROSION & SEDIMENT CONTROL
POST CONSTRUCTION PHASE
LAYOUT PLAN - SHEET 2**

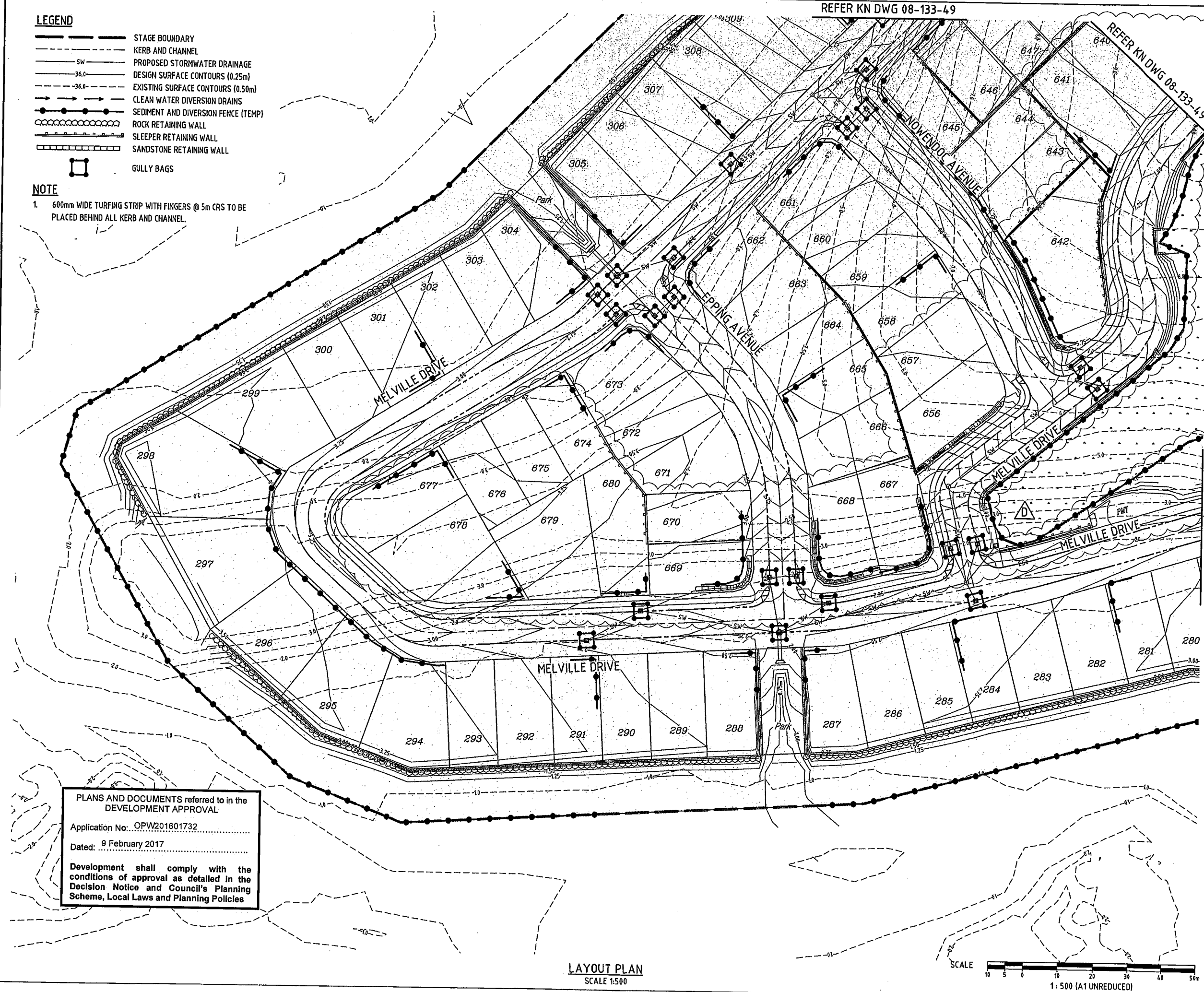
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NJS	CH	GBG	JUL 16

Scale

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Sheet	Revision
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Drawing No	Revision
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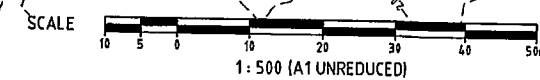
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LAYOUT PLAN
SCALE 1:500



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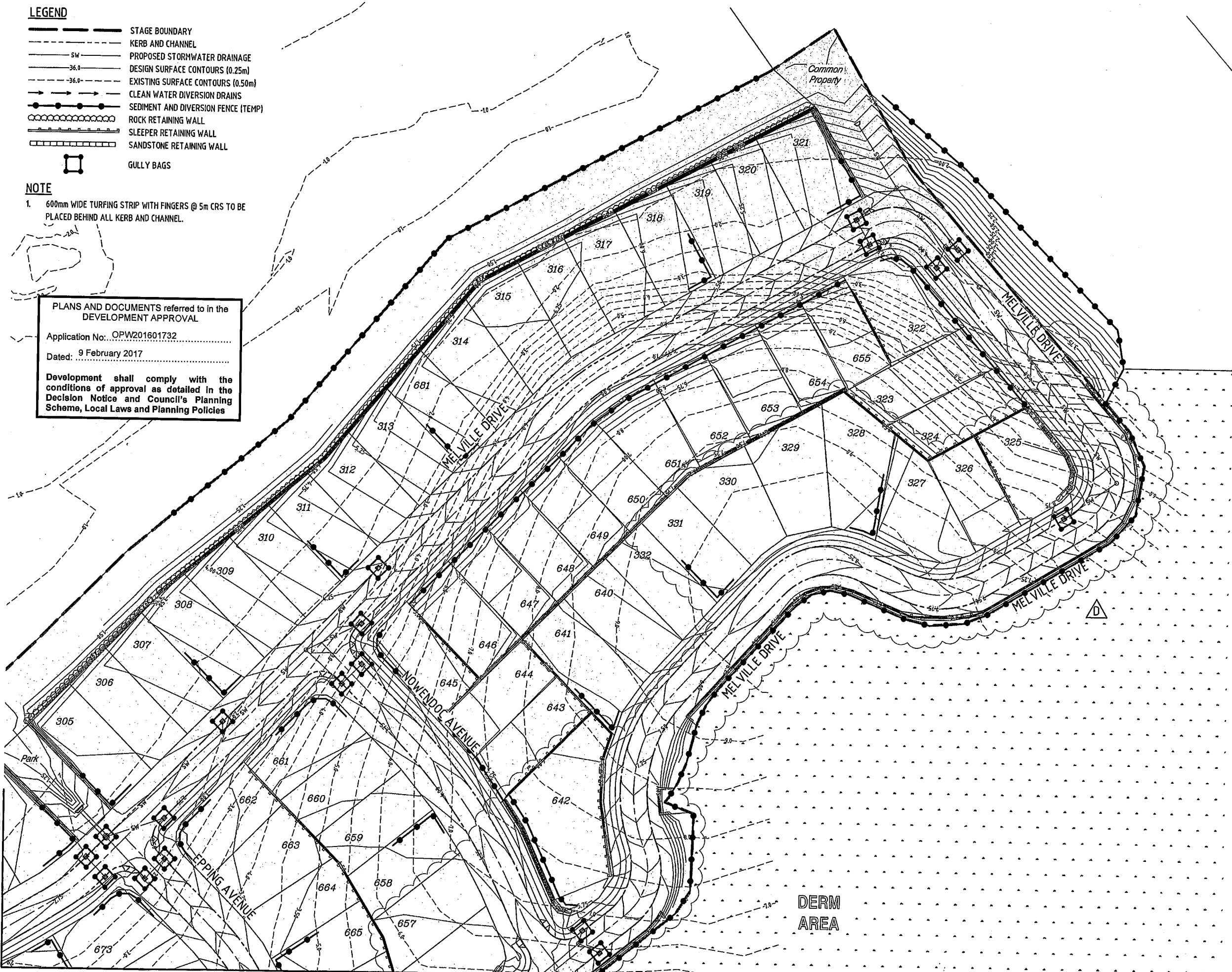
1. 600mm WIDE TURFING STRIP WITH FINGERS @ 5m CRS TO BE PLACED BEHIND ALL KERB AND CHANNEL.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

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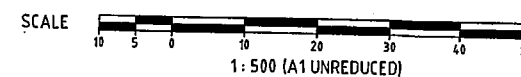
Dated: 9 February 2017

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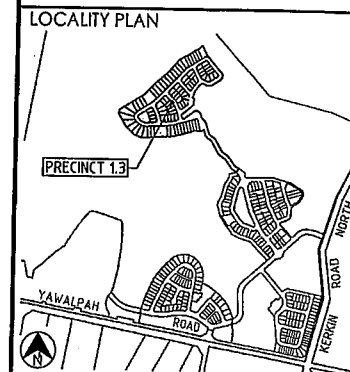


REFER KN DWG 08-133-48

LAYOUT PLAN
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REVISIONS

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A	FOR APPROVAL	AUG 16	NJS
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C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MINL

Associated Consultants



Client



Project

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PRECINCT 1
STAGE 3



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Approved by: [Signature]

Drawing Title
EROSION & SEDIMENT CONTROL
POST CONSTRUCTION PHASE
LAYOUT PLAN - SHEET 3

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale AS SHOWN			Sheet 49 of 67
Drawing No		Revision	
A1		08-133-49 D	

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REFER KN DWG 08-133-48

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EROSION AND SEDIMENT CONTROL PROGRAM

- THIS PROGRAM AND ASSOCIATED PLANS SHOULD BE READ IN CONJUNCTION WITH THE SITE MANAGEMENT SPECIFICATION INCORPORATED IN THE CONTRACT DOCUMENTS. THE PROVISIONS OF THE SPECIFICATION ARE TO BE STRICTLY ADHERED TO.
- THE BASIC OBJECTIVES OF THE EROSION AND SEDIMENT CONTROL ARE:
 - IDENTIFY CRITICAL AREAS AND PROVIDE APPROPRIATE ATTENTION TO THOSE AREAS.
 - PLAN SITE LAYOUTS SO THAT ACCESS TO ALL REQUIRED DRAINAGE EROSION AND SEDIMENT CONTROL MEASURE IS MAINTAINED.
 - LIMIT EXPOSURE TIME BY PROGRAMMING TO MINIMISE THE AREA OF LAND EXPOSED TO POTENTIALLY ADVERSE WEATHER CONDITIONS AT ANY ONE TIME. I.E. PROGRESSIVELY CLEAR AND REVEGETATE.
 - PROVIDE CONTROL MEASURES INCLUDING TEMPORARY AND PERMANENT DRAINAGE, EROSION AND SEDIMENT CONTROLS.
- THE EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH BEST PRACTICE FOR EROSION AND SEDIMENT CONTROL, THE POLLUTION CONTROL MANUAL FOR URBAN STORMWATER MANAGEMENT, THE QUEENSLAND URBAN DRAINAGE MANUAL, AND THE SOIL EROSION AND SEDIMENT CONTROL - ENGINEERING GUIDELINES FOR QUEENSLAND (CURRENT EDITIONS).
- CONSTRUCTION SEQUENCE THE CONSTRUCTION SEQUENCE WILL GENERALLY BE:
 - OBTAIN ALL NECESSARY PERMITS AND APPROVALS BEFORE SITE ESTABLISHMENTS.
 - HOLD A PRE-CONSTRUCTION CONFERENCE.
 - STABILISE ALL CONSTRUCTION ACCESS ROUTES AND ENTRY/EXIT POINTS.
 - ESTABLISH SEDIMENT CONTROL STRUCTURES AND TEMPORARY DRAINAGE CONTROL MEASURES AS NECESSARY.
 - CARRY OUT BULK EARTHWORKS.
 - MAINTAIN AND REPAIR DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES.
 - REMOVE SEDIMENT CONTROL MEASURES WHEN THE SITE IS STABILISED. I.E. >70% GROUND COVER
 - THE CONTRACTOR SHALL PREPARE A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO SUIT HIS/HER CONSTRUCTION METHODOLOGY, AND SUBMIT THIS PLAN FOR APPROVAL TO THE SUPERINTENDENT. IT SHOULD BE NOTED THAT ANY SIGNIFICANT VARIATION TO THIS PLAN MAY REQUIRE RESUBMISSION TO COUNCIL FOR APPROVAL. THE CLIENT SHALL NOT BE RESPONSIBLE FOR ANY SUCH ASSOCIATED DELAY.
- ALL ESC DEVICES ARE TO BE INSPECTED WEEKLY, PRIOR TO EXPECTED AND AFTER RAINFALL ANY DAMAGE IS TO BE REPAIRED AS REQUIRED TO MAINTAIN THEIR EFFICACY.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL (ESC) MEASURE TO BE MAINTAINED AND FULLY OPERATIONAL DURING THE MAINTENANCE PERIOD AND ARE TO BE REMOVED AFTER THE SATISFACTORY COMPLETION OF AN OFF-MAINTENANCE INSPECTION BY COUNCIL AND PRIOR TO FORMAL ACCEPTANCE "OFF MAINTENANCE" BY COUNCIL.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR IS TO PROVIDE A DETAILED PROGRAM TO THE SUPERINTENDENT SHOWING THE TIMING FOR ALL WORKS ASSOCIATED WITH THE PROJECT, NOMINATING, IN PARTICULAR, THE PROGRAM FOR INSTALLATION OF SOIL AND EROSION CONTROL SYSTEMS.
- EARTHWORKS SHALL BE CARRIED OUT IN SUCH A MANNER THAT THE SITE IS MAINTAINED IN A WELL DRAINED CONDITION, AREAS OF LOOSE SOIL ARE MINIMISED AND CONCENTRATIONS OF STORMWATER ARE MINIMISED. BULK EARTHWORKS WILL BE CARRIED OUT OVER THE ENTIRE SITE IN ONE STAGE.
- A SHAKE DOWN AS DETAILED ON THE PLAN COMPRISING FREE DRAINAGE GRAVEL SHALL BE LOCATED ADJACENT TO THE POINT OF ACCESS WHERE VEHICLES CAN BE WASHED DOWN PRIOR TO EXIT TO THE STREET SYSTEM IF REQUIRED. THE WASH DOWN AREA SHALL BE KEPT FREE OF MUD.
- FOR DETAILS OF ENTRY/EXIT SEDIMENT PAD REFER TO BEST PRACTICE EROSION & SEDIMENT CONTROL BOOK 1, PAGE 2.4.8, FIGURE 2.6.
- SUPPLEMENTARY EROSION AND SEDIMENT CONTROL DEVICES MAY BE REQUIRED AT THE DISCRETION OF THE SUPERINTENDENT.
- SEDIMENTATION FENCES TO BE PLACED AS SHOWN. FOR DETAILS OF SEDIMENT FENCE REFER BEST PRACTICE EROSION & SEDIMENT CONTROL BOOK 1, PAGE 2.50, FIGURE 2.8.
- WHERE SEDIMENT FENCES ARE SHOWN TO BE CONSTRUCTED IN AREAS OF SIGNIFICANT EARTHWORKS, ERECTION OF THE FENCE MAY BE DEFERRED UNTIL COMPLETION OF THE BULK EARTHWORKS, SUBJECT TO ABSENCE OF RAIN.

TREES

- ENSURE COMPLIANCE WITH THE REQUIREMENTS OF AS4970 - TREES ON CONSTRUCTION SITES. THIS MAY REQUIRE CONSULTATION AND GUIDANCE FROM A CLASS V CERTIFIED ARBORIST AS TREES OUTSIDE THE IMMEDIATE WORK AREA MAY BE AFFECTED.

EROSION AND SEDIMENT CONTROL NOTES

- NO DISTURBED AREA IS TO REMAIN DENUDE LONGER THAN 60 DAYS.
- ALL EROSION AND SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING AND GRUBBING OR ANY OTHER EARTHWORKS OR TRENCHING.
- ALL STORMWATER, SEWER LINE AND SERVICES TRENCHES NOT IN STREETS ARE TO BE MULCHED AND SEEDED WITHIN 15 DAYS AFTER BACKFILL, NO MORE THAN 150 METRES ARE TO BE OPEN AT ANY ONE TIME.
- ALL TEMPORARY EARTH BANKS, DIVERSIONS AND SEDIMENT DAM EMBANKMENTS ARE TO BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED.
- ALL FILL EMBANKMENTS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS OPERATION.
- ALL CUT AND FILL BATTERS ARE TO BE SEEDED AND MULCHED WITHIN 10 DAYS OF COMPLETION OF GRADING.
- ADDITIONAL SILT AND EROSION CONTROLS MAY BE REQUIRED AS ORDERED ON SITE BY THE SUPERVISING ENGINEER.
- ALL CONTROLS ARE TO BE INSPECTED AFTER EACH STORM EVENT AND MAINTAINED AS REQUIRED. CONTROLS ARE TO BE MAINTAINED UNTIL THE DISTURBED AREAS ARE PERMANENTLY STABILIZED OR UNTIL NO LONGER REQUIRED.

PHASE 1 - CLEARING AND BULK EARTHWORKS

CONSTRUCT AND MAINTAIN SILT FENCES, STRAW BALE TRAPS, ALLOTMENT DRAINAGE BANKS, CATCH DRAINS AND HYDROMULCHING WHICH CONTROL SEDIMENT AND EROSION DURING CLEARING AND BULK EARTHWORKS.

PHASE 2 - TRENCH EXCAVATION

CONSTRUCT AND MAINTAIN SILT FENCES, STRAW BALE TRAPS, ALLOTMENT DRAINAGE BANKS AND CATCH DRAINS WHICH CONTROL SEDIMENTATION AND EROSION DURING TRENCHING WORK.

PHASE 3 - PAVEMENT CONSTRUCTION

CONSTRUCT AND MAINTAIN SILT FENCES, STRAW BALE TRAPS, ALLOTMENT DRAINAGE BANKS, GULLY INLET PROTECTION, AND PIPE INLET/OUTLET PROTECTION WHICH CONTROL SEDIMENTATION AND EROSION DURING PAVEMENT CONSTRUCTION. SAND BAGGING TO BE PLACED ACROSS PAVEMENT TO CONTROL RUNOFF IN PAVEMENT BOXING AS DIRECTED ON SITE.

PHASE 4 - MAINTENANCE PERIOD

CONSTRUCT AND MAINTAIN CONTROLS AND VEGETATIVE TREATMENTS WHICH CONTROL SEDIMENTATION AND EROSION PRIOR TO THE ESTABLISHMENT OF GRASS COVER. PROVIDE 600mm WIDE GRASS FILTER STRIPS BEHIND KERB AND CHANNEL.

NOTE: TURF TREATMENT IN CERTAIN AREAS BY LANDSCAPER. REFER TO LANDSCAPE DRAWING.

NOTE

ALL VEHICLES EXITING FROM THE SITE ARE TO BE CLEANED AND TREATED TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ONTO PUBLIC ROADS. IF MATERIAL IS ACCIDENTLY DEPOSITED ONTO PUBLIC ROADS IT SHALL BE REMOVED WITHOUT DELAY. IF THE SHAKEDOWN DEVICE PROVES TO BE INEFFECTIVE THE CONTRACTOR IS TO USE OTHERS MEANS TO PREVENT MATERIAL BEING DEPOSITED ONTO PUBLIC ROADS.

TOPSOIL

- STRIP AND STOCKPILE AVAILABLE TOPSOIL (ASSUMED AVERAGE DEPTH 150mm) FROM ALL DISTURBED AREAS PRIOR TO BULK EARTHWORKS. GRADE EVENLY BETWEEN ALLOTMENT FINISHED SURFACE LEVELS AND ENSURE LOTS ARE FREE DRAINING.
- MINIMUM SLOPE ACROSS ALLOTMENTS TO BE 1%.
- ALL FOOTPATHS, BATTERS, AND EARTHWORKS AFFECTED ALLOTMENTS ARE TO BE TOPSOILED TO A MINIMUM DEPTH OF 150mm (LIGHTLY COMPACTED) AND TURFED WHERE SPECIFIED.

SEDIMENT FENCES

- SEDIMENT FENCES TO BE PLACED AS SHOWN. SEDIMENT FENCED TO BE REPAIRED AND EXCESSIVE SEDIMENT DEPOSITS SHALL BE REMOVED ONCE CAPACITY FALLS BELOW 75%.
- FOR DETAILS OF SEDIMENT FENCE REFER BEST PRACTICE EROSION & SEDIMENT CONTROL BOOK 1, PAGE 2.50, FIGURE 2.8.
- SEDIMENT FENCES TO BE REPAIRED AS REQUIRED AND EXCESSIVE SEDIMENT DEPOSITS SHOULD BE REMOVED.
- INSTALL KERB INLETS WITH GRAVEL RANGING FROM 50mm TO 75mm IN SIZE SHALL BE INSTALLED AT ALL COMPLETED INLETS. REFER IPWEAQ STANDARD DRAWING D-0041. THESE SHALL BE MAINTAINED IN A CLEAN CONDITION. IN THE EVENT OF HEAVY RAIN THEY SHALL BE REMOVED TO MINIMISE THE POTENTIAL FOR FLOODING.
- CHECKS OF SILT CONTROL DEVICES ARE TO BE MADE WEEKLY, OR AFTER ANY SIGNIFICANT STORM EVENT TO ENSURE INTEGRITY AND PERFORMANCE.

TURFING

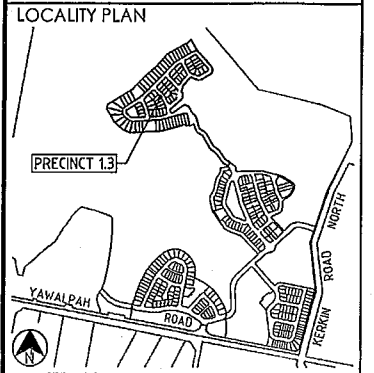
- PROVIDE TURFING TO ENTIRE WIDTH OF ALL SWALES, FOOTPATHS, AND 1 IN 4 CUT AND FILL BATTERS.
- FOOTPATH BATTERS ARE TO BE STABILISED WITH TOPSOIL (AND TURFED) AS SOON AS PRACTICAL AFTER THE BATTERS HAVE BEEN COMPLETED.

DURING CONSTRUCTION SEQUENCE:

- TOPSOIL STOCKPILES SHALL BE LESS THAN 1m DEEP AND UNCOMPACTED. A SEDIMENTATION FENCE SHALL BE CONSTRUCTED ON THE D/S SIDE, OR THE STOCKPILE STABILISED WITH VEGETATION, MULCH, OR A SOIL STABILISER.
- SEDIMENTATION FENCES TO BE PLACED AS SHOWN.
- REGULARLY INSPECT BANKS AND REPAIR ANY SLUMPS, WHEEL TRACK DAMAGE OR LOSS OF FREEBOARD.
- REMOVE SEDIMENT TO AVOID PONDING FROM CATCH DRAINS.
- REMOVE EXCESSIVE SEDIMENT FROM UPSTREAM OF CHECK DAM.
- ROAD RESERVE TO BE USED AS HAUL ROAD.
- A CATCH DRAIN OR DIVERSION BANK IS TO BE PROVIDED ON THE TOP SIDE OF ALL CUTS, WITH DISCHARGE EITHER TO UNDISTURBED GRASS LANDS OR TO THE CROSS ROAD DRAINAGE.
- SUPPLEMENTARY EROSION AND SEDIMENT CONTROL DEVICES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
- WATER QUALITY SAMPLES MUST BE TAKEN AND ANALYSED PRIOR TO THE RELEASE OF ANY WATER FROM THE SEDIMENT POND. WATER QUALITY MUST SATISFY THE FOLLOWING CRITERIA: TSS-50MG/L PH BETWEEN 6.5 AND 8.5.
- ALL WATER QUALITY DATA INCLUDING DATES OF RAINFALL, TESTING AND WATER RELEASE MUST BE MAINTAINED IN AN ON-SITE REGISTER. THIS REGISTER IS TO BE MAINTAINED FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON SITE FOR INSPECTION BY COUNCIL OFFICERS ON REQUEST.
- EXPOSED AREAS ON LOTS ARE TO BE SEEDED AND MULCHED (E.G. HYDROMULCHED). MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 2.5T/HA. ALTERNATIVELY THEY SHALL BE DRILL-SEEDED AND IRRIGATED SO AS TO ENSURE >70% GROUND COVER WITHIN 14 DAYS FROM NOVEMBER TO APRIL, OR 30 DAYS FROM MAY TO OCTOBER.

FOLLOWING CONSTRUCTION:

- SEDIMENTATION FENCES TO BE MAINTAINED UNTIL TURFING IS COMPLETED.
- SEDIMENT BASINS TO BE CHECKED AFTER EVERY SIGNIFICANT STORM AND DESILTED ONCE THE SETTLEMENT LIMIT HAS BEEN REACHED.



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL knp@knpl.com.au
ABN 35 112 053 611

Approved Drawings: *[Signature]* P.E.C.

EROSION & SEDIMENT CONTROL NOTES

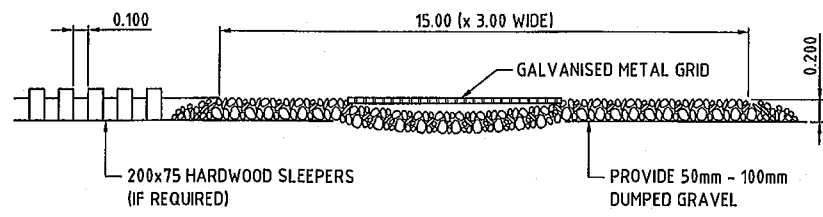
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Scale AS SHOWN		Sheet 50 of 66	
Drawing No A1		Revision A	

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

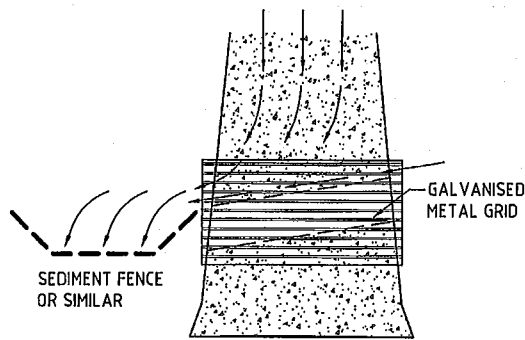
Application No.: OPW201601732

Dated: 28 November 2016

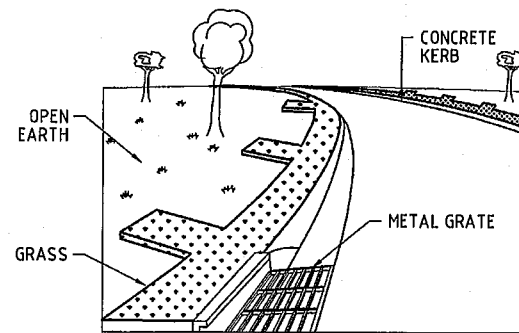
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



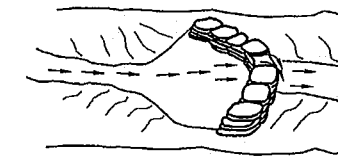
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N.T.S.



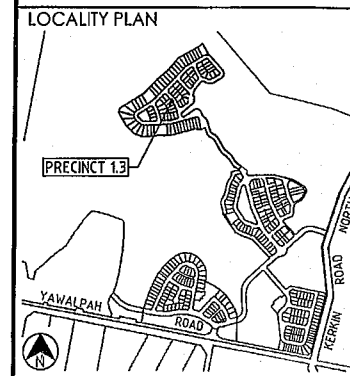
SITE ACCESS POINT ENTRY/EXIT PAD
N.T.S.



TURF STRIP DETAIL
N.T.S.

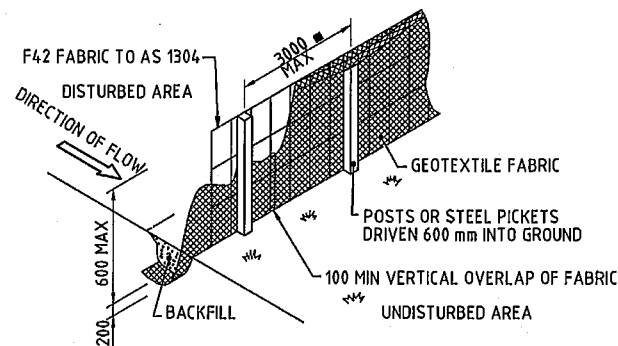


SANDBAG CHECK DAM
N.T.S.

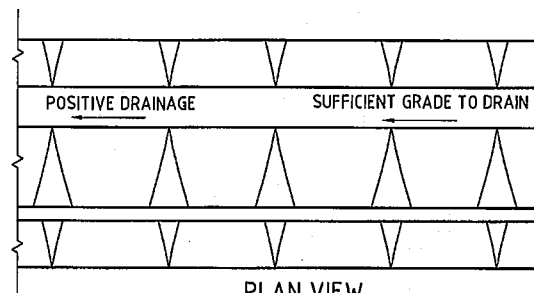


REVISIONS

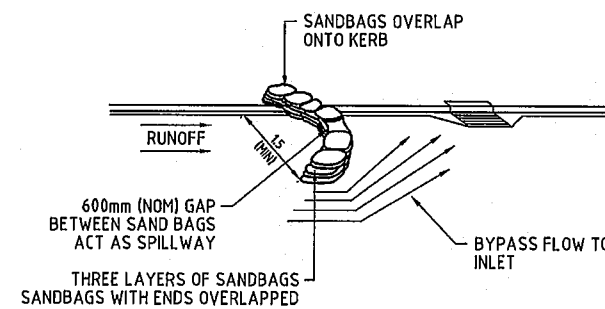
No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS



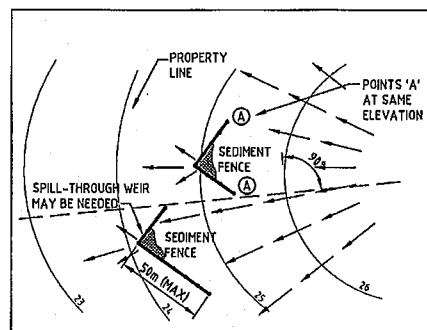
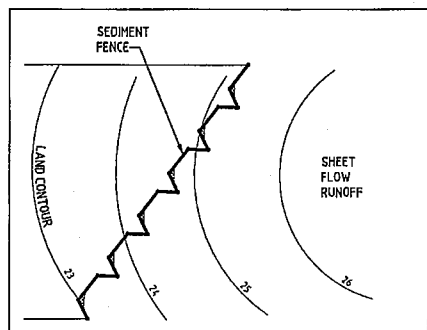
SEDIMENT FENCE
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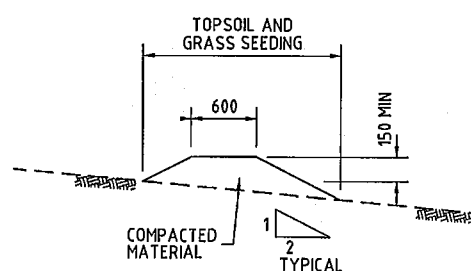
PLAN VIEW
N.T.S.



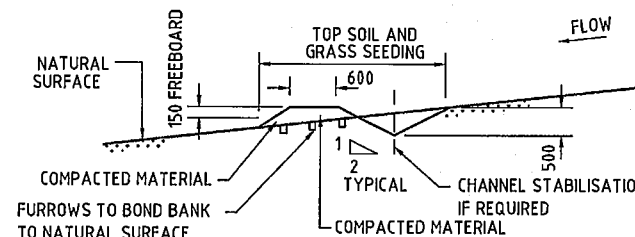
ON GRADE GULLY INLET
N.T.S.



SILT FENCE DETAILS
N.T.S.



DIVERSION DRAINAGE BANK
N.T.S.



PLACE FILTER FABRIC ACROSS DRAIN AT 30m MAXIMUM INTERVALS AND AT OUTLET OF DRAIN, OR AS REQUIRED TO CONTROL SEDIMENT MOVEMENT ALONG DRAIN.

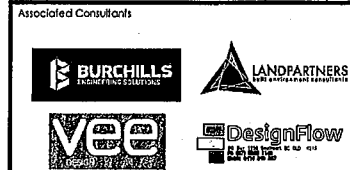
CATCHMENT DRAIN
N.T.S.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



Project
**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

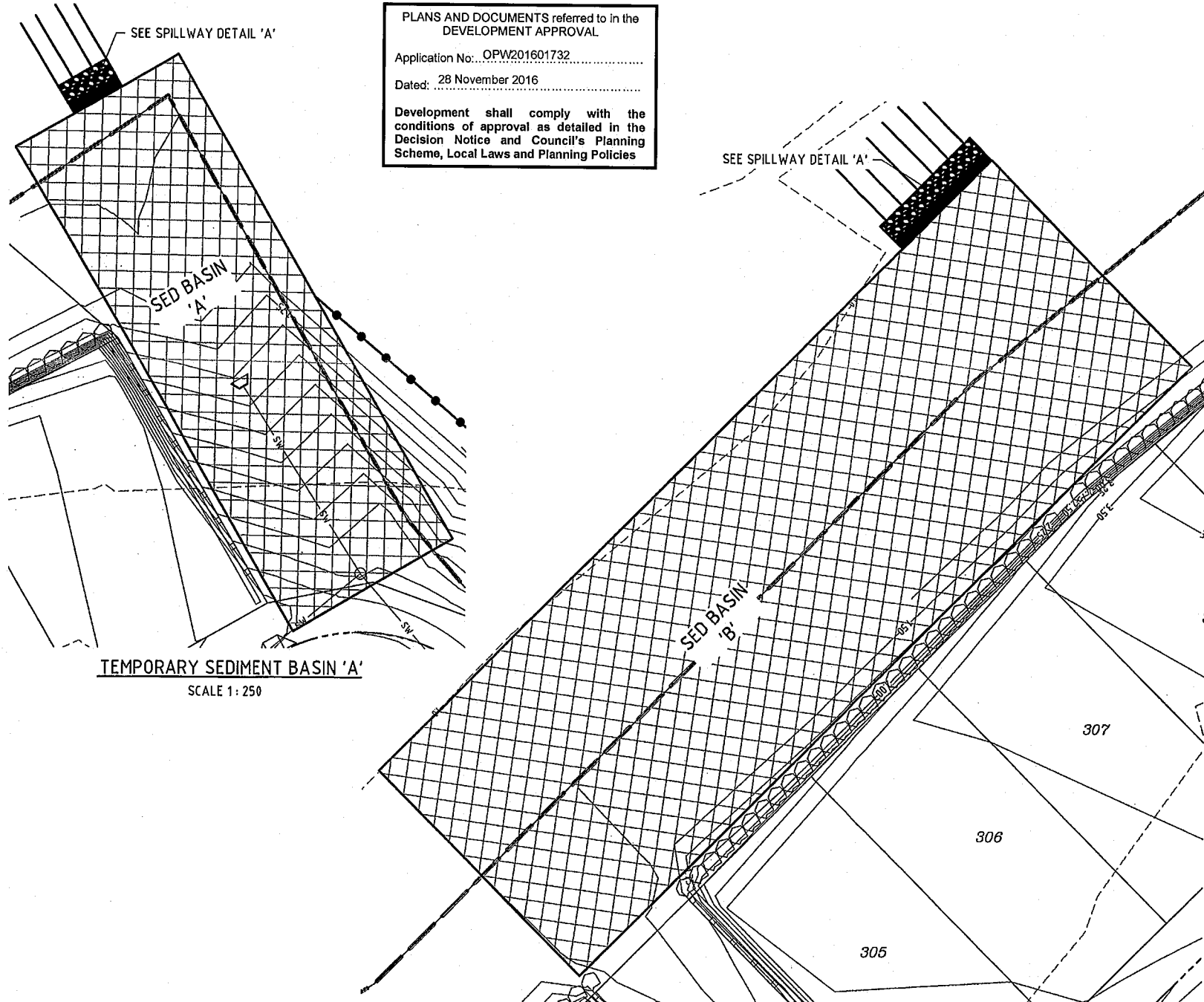
LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Design: *[Signature]*

Drawing No:
**EROSION & SEDIMENT CONTROL
DETAILS**

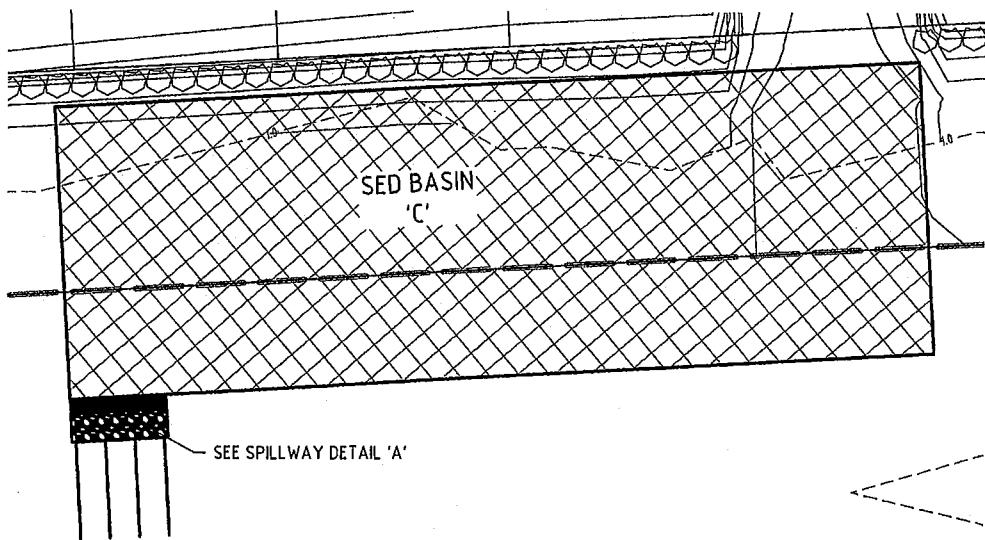
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NJS	CH	GBG	JUL 16
Scale	AS SHOWN	Sheet	51 of 66
Revision	A1	08-133-51	A

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



TEMPORARY SEDIMENT BASIN 'A'
SCALE 1: 250

TEMPORARY SEDIMENT BASIN 'B'
SCALE 1: 250

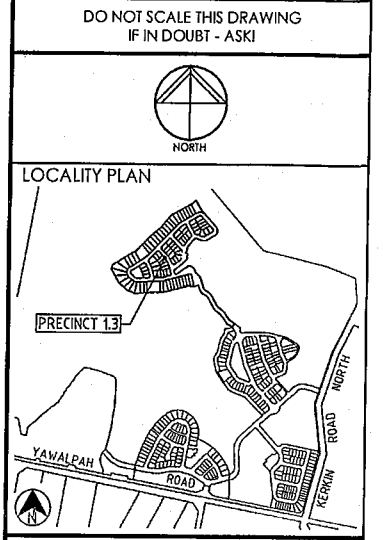
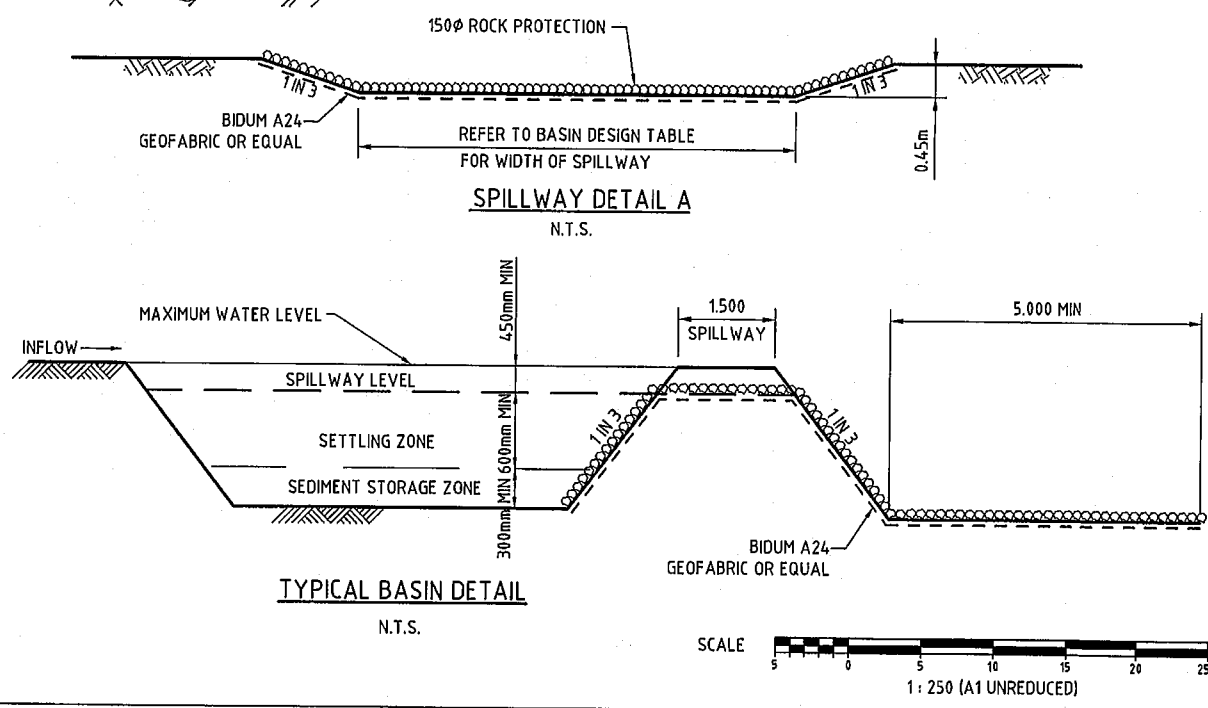
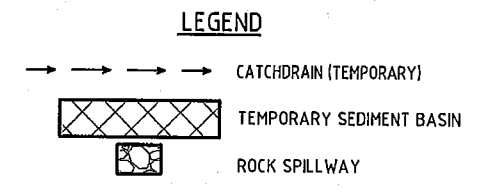


TEMPORARY SEDIMENT BASIN 'C'
SCALE 1: 250

Job No. 09-133
 Client: Mirvac
 Project: Gainsborough Greens Precinct 1.3

GAINSBOROUGH GREENS Precinct 1.3

Basin Design	Basin A	Basin B	Basin C	
Ry(5day)	48.8	48.8	48.8 mm	Table B5 (85th%)
Soil Type	Clay	Clay	Clay	Table B7 (Clay)
Effective catchment area (A)	1.33	3.22	1.81 Ha	Vs = 10.Ry(5day).CvA
Vs (volume of settling zone)	519.2	1257.1	706.6 m ³	
settling depth	0.6	0.6	0.6 m	
Area of basin	855.4	2095.1	1177.7 m ²	= required volume therefore ok
Base width	17.0	26.4	19.8 m	Volume matches ultimate volume for ultimate bio-basin
Base length	51.0	79.3	59.4 m	
settling zone Volume check	519.2	1257.1	706.6 m ³	
Spillway Design				
Less than 3month operation	Q10	Q10	Q10	
3-12month operation	Q20	Q20	Q20	
greater than 12 months	Q100	Q100	Q100	
Intensity for a 20 year, 6 min event	217.0	217.0	217.0 mm/hr	(GCCC)
C10 value	0.88	0.88	0.88	Factor by 1.05 for C20
Effective catchment area (a)	1.3	3.2	1.8 Ha	flow to design for
Q (flow rate)	0.7	1.8	1.0 m ³ /s	(velocity check for rock rip rap)
Q (flow rate)	0.025	0.025	0.025	(Maximum 0.45m, IECA 2008, Page B.35)
width of spillway	8.0	11.5	6.5 m	area (cross section) of spillway
depth of flow over spillway	0.13	0.13	0.13 m	wetted perimeter
gradient of spill way "wings"	2.0	2.0	2.0 :1	(area/wetted perimeter)
area spillway (using gradient 2:1)	0.70	1.57	0.90	
perimeter	5.6	12.1	7.1 m	
Spillway outlet slope (S)	0.33	0.33	0.33	
(R)	0.13	0.13	0.13 m	
Velocity (V)	5.8	5.0	6.8 m/s	V=R ^{2/3} * S ^{1/2} / n
Check against design flow (Q)	4.1	9.3	6.3 m ³ /s	OK
Bottom velocity (V)	4.0	4.1	4.1 m/s	
Weir Flow Calculation (H)	0.2	0.2	0.2 m	Maximum Depth above weir
Check on against design flow rate (Q)	0.8	1.8	1.0 m ³ /s	OK refer Table A21 IECA
Summary				
Basin A	Basin B	Basin C		
Depth of weir	0.35	0.35	0.35 m	
settling depth	0.60	0.60	0.60 m	
storage depth	0.3	0.3	0.3 m	
Total depth	1.25	1.25	1.25 m	
Base width	17.0	26.4	19.8 m	
Base Length	51.0	79.3	59.4 m	
Spillway width	5.0	11.6	6.5 m	
Weir Rock Diameter Size	400	400	400 mm	Sized using QUDM figure 8.13



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	REVISED BASIN DETAILS	20.10.16	RCT

Associated Consultants

BURCHILLS
LANDPARTNERS
VEE
DesignFlow

Client

mirvac

Project

**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
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 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved Director - 21.10.16

Drawing Title

**EROSION & SEDIMENT CONTROL
 BASIN NOTES AND DETAILS**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	52 of 67

Revision No	Revision
A1	08-133-52
B	

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PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

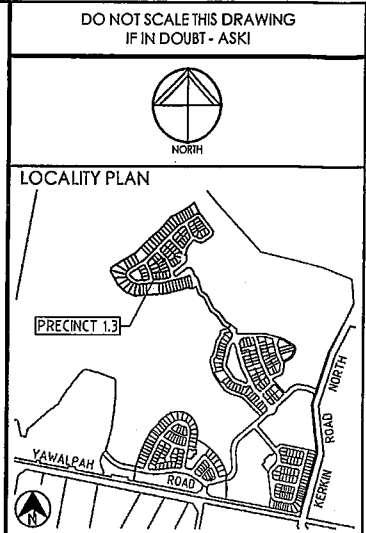
Application No.: OPW201601732

Dated: 9 February 2017

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

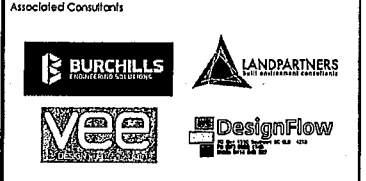
- LEGEND**
- CONSTRUCTION BOUNDARY
 - PROPOSED Ø150 SEWER MAIN
 - PROPOSED Ø225 SEWER MAIN
 - EXISTING TRUNK SEWER MAIN
 - STORMWATER MAIN
 - WATER MAIN
 - DRIVEWAY POSITION INDICATED
 - BATTER LINE
 - KERB AND CHANNEL
 - FINISHED SURFACE CONTOURS
 - SLEEPER RETAINING WALL
 - ROCK BOULDER WALL
 - SANDSTONE RETAINING WALL
 - DEFINES LIVE CONNECTION UNDER GOLD COAST WATER SUPERVISION AT DEVELOPER'S EXPENSE
 - CONTROL POINT
 - FLOW ARROW

- SEWER MANHOLE LEGEND**
- MH 1/26 MANHOLE
 - MS 1/26 MAINTENANCE SHAFT
 - E 2/26 END OF LINE
 - B 2/26 BEND



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS AND SEWER AMENDED	20.10.16	RCT
C	CONTOURS UPDATED	24.01.17	MNL



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved by: [Signature] 27-1-17

Design Title

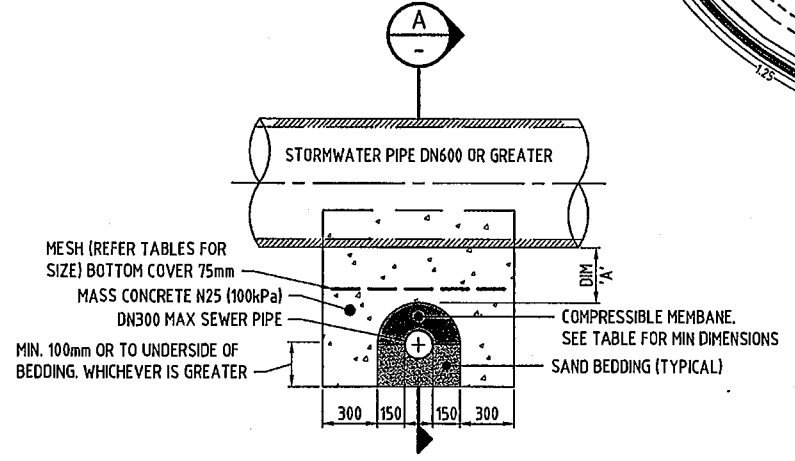
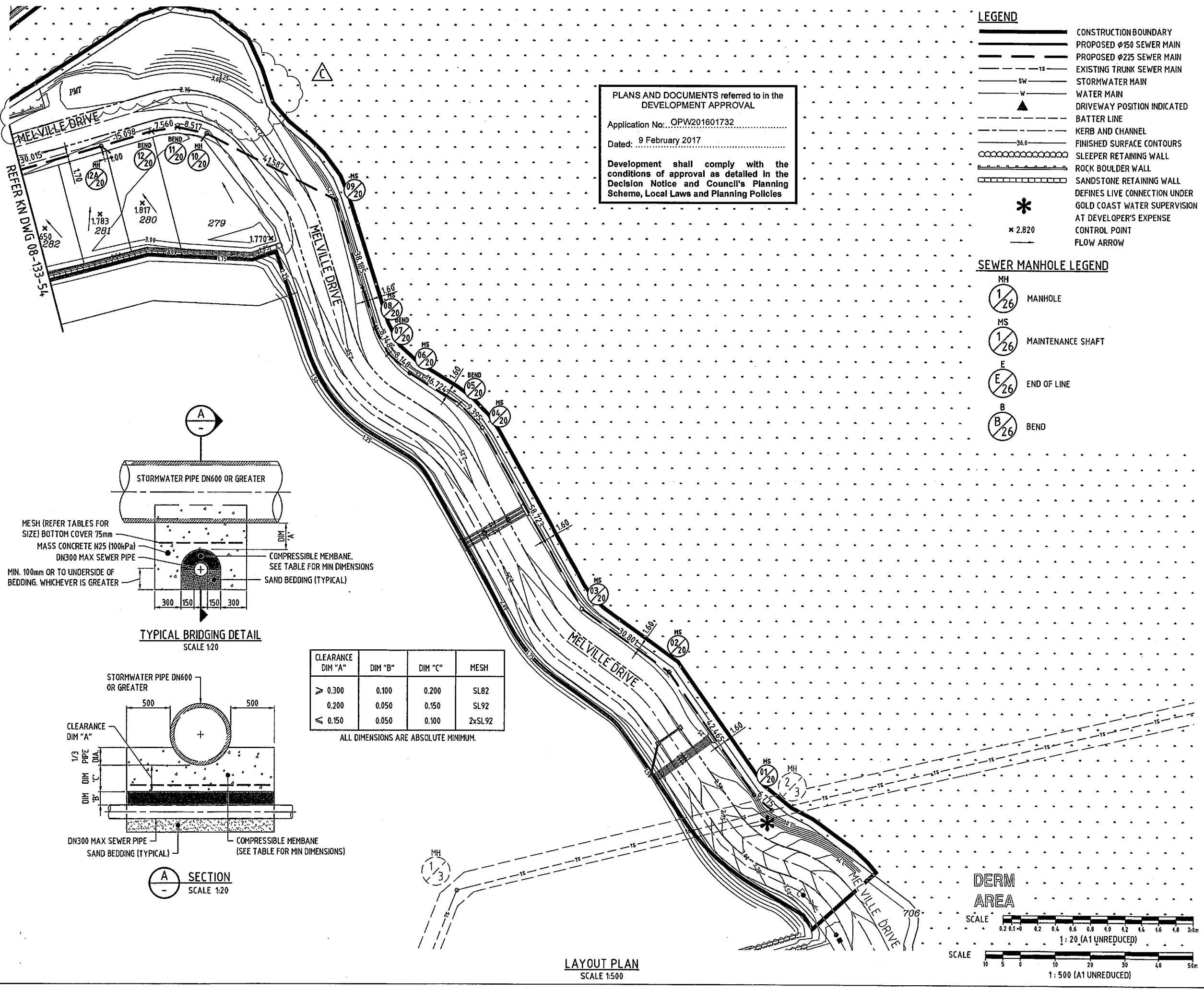
SEWERAGE RETICULATION
LAYOUT PLAN
SHEET 1

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale AS SHOWN

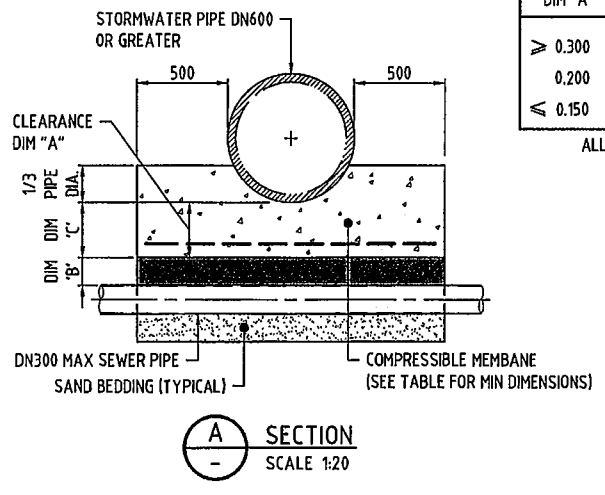
Sheet	Revision
53 of 67	

Drawing No	Revision
08-133-53	C

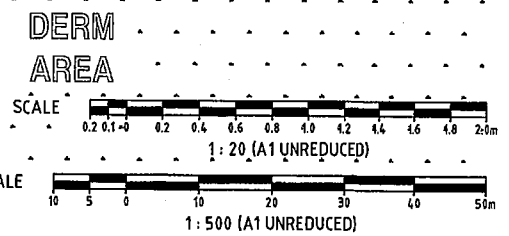


CLEARANCE DIM "A"	DIM "B"	DIM "C"	MESH
0.300	0.100	0.200	SL82
0.200	0.050	0.150	SL92
0.150	0.050	0.100	2xSL92

ALL DIMENSIONS ARE ABSOLUTE MINIMUM.



LAYOUT PLAN
SCALE 1:500



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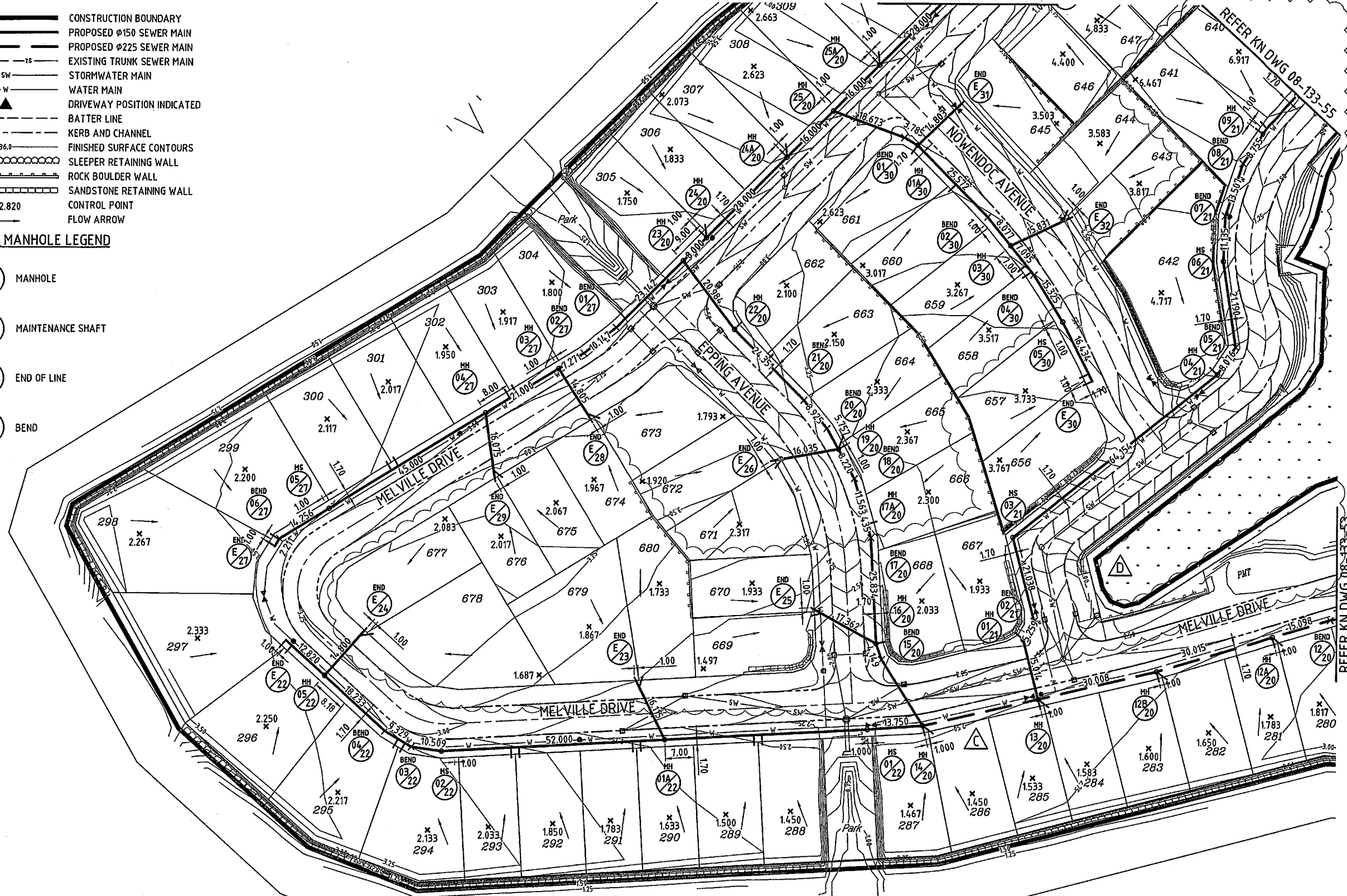
LEGEND

- CONSTRUCTION BOUNDARY
- PROPOSED Ø150 SEWER MAIN
- PROPOSED Ø225 SEWER MAIN
- EXISTING TRUNK SEWER MAIN
- STORMWATER MAIN
- WATER MAIN
- DRIVEWAY POSITION INDICATED
- BATTER LINE
- KERB AND CHANNEL
- FINISHED SURFACE CONTOURS
- SLEEPER RETAINING WALL
- ROCK BOULDER WALL
- SANDSTONE RETAINING WALL
- CONTROL POINT
- FLOW ARROW

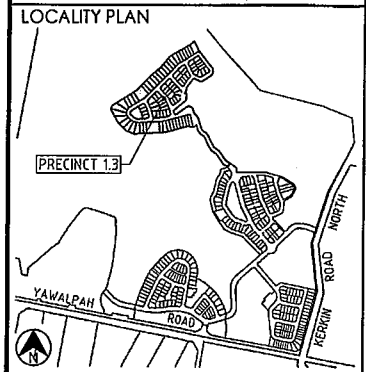
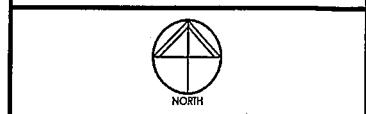
SEWER MANHOLE LEGEND

- MANHOLE
- MAINTENANCE SHAFT
- END OF LINE
- BEND

REFER KN DWG 08-133-55

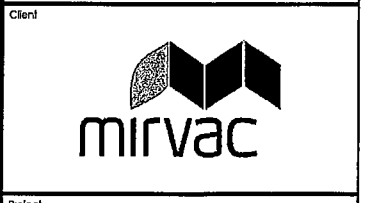
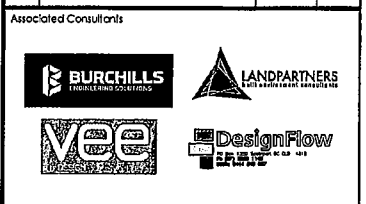


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REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS AND SEWER AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL



Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**



LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
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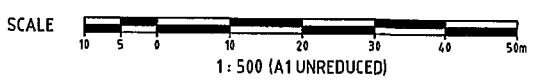
Approved Director: *[Signature]* REF: JF-1-17

**SEWERAGE RETICULATION
 LAYOUT PLAN
 SHEET 2**

Drawn NJS	Designed CH	Checked G8G	Date JUL 16
Scale AS SHOWN	Sheet 54 of 67	Revision	
A1	08-133-54	D	

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 9 February 2017
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

LAYOUT PLAN
 SCALE 1:500



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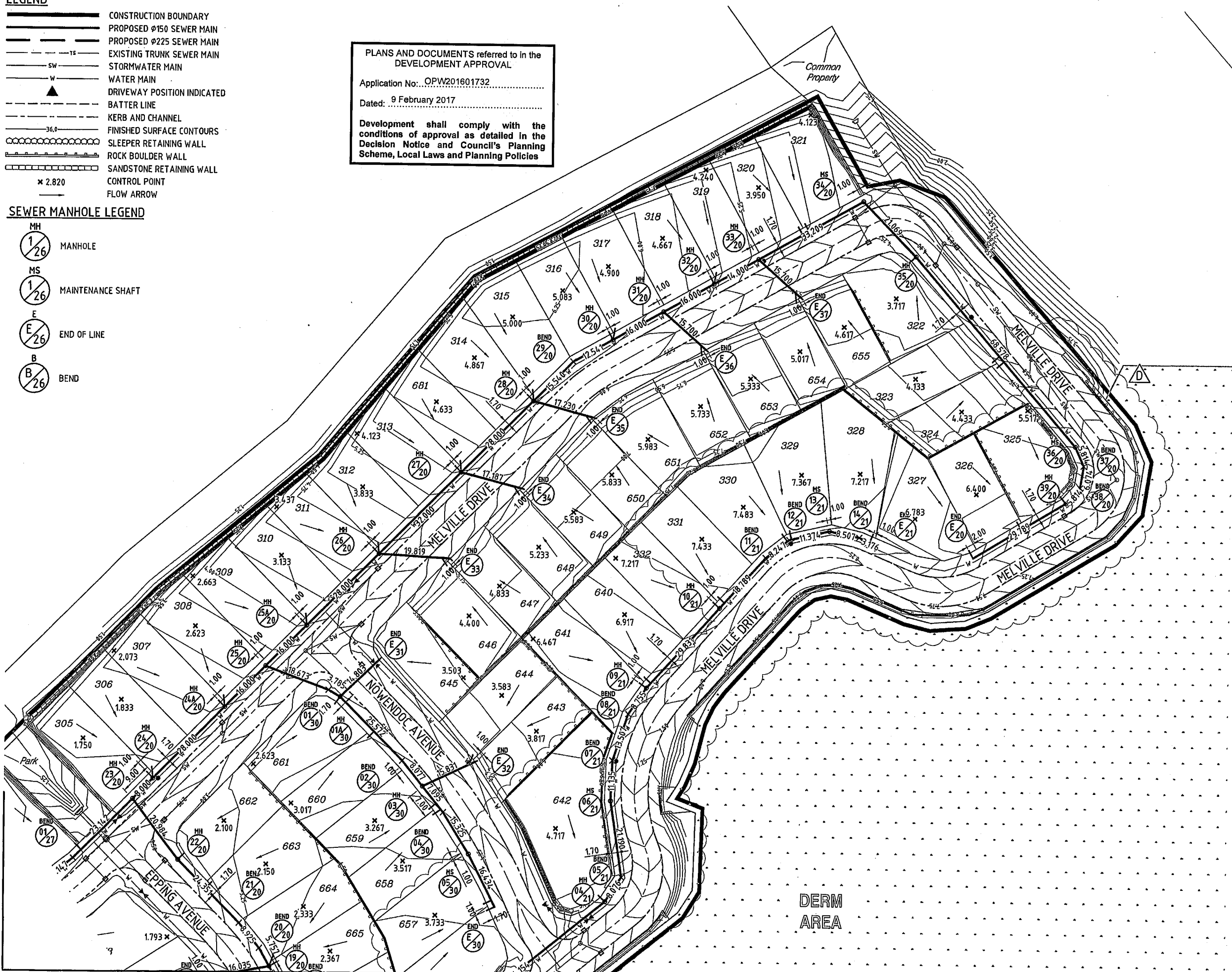
LEGEND

- CONSTRUCTION BOUNDARY
- PROPOSED Ø150 SEWER MAIN
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- TS EXISTING TRUNK SEWER MAIN
- SW STORMWATER MAIN
- W WATER MAIN
- ▲ DRIVEWAY POSITION INDICATED
- - - BATTER LINE
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- × 2.820 CONTROL POINT
- FLOW ARROW

SEWER MANHOLE LEGEND

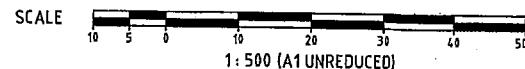
- MH 1/26 MANHOLE
- MS 1/26 MAINTENANCE SHAFT
- E 2/26 END OF LINE
- B 2/26 BEND

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REFER KN DWG 08-133-54

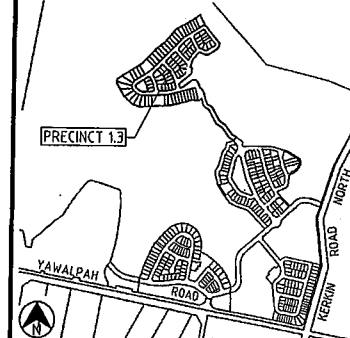
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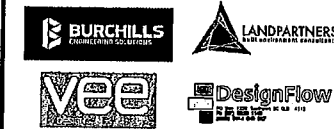
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS AND SEWER AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES
D	CONTOURS UPDATED	24.01.17	MNL

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



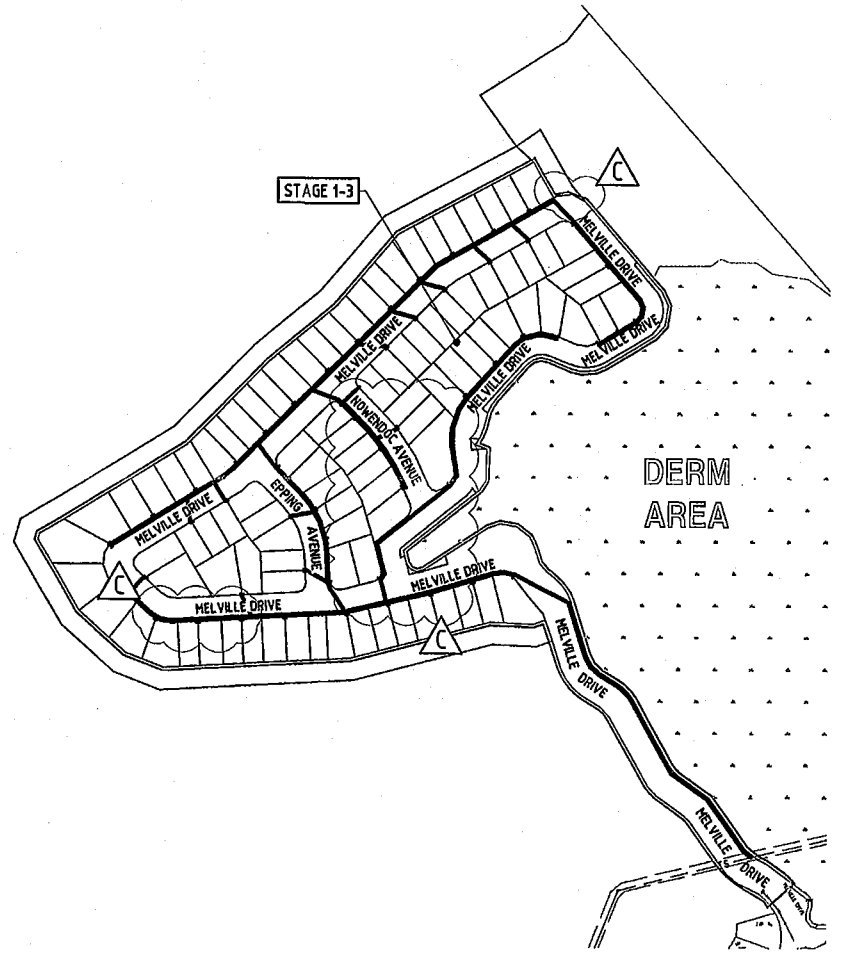
LEVEL 2-71 GREY STREET
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ABN 35 112 053 611

Approved By: *[Signature]* 27-1-17

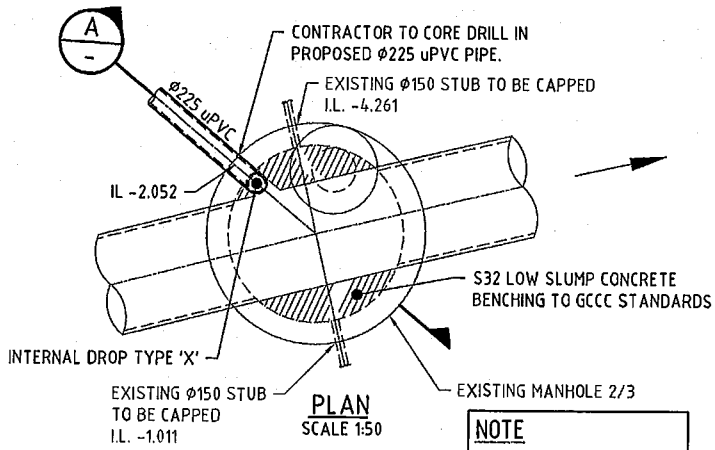
SEWERAGE RETICULATION
LAYOUT PLAN
SHEET 3

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale AS SHOWN			Sheet 55 of 67
A1	Drawing No 08-133-55	Revision D	

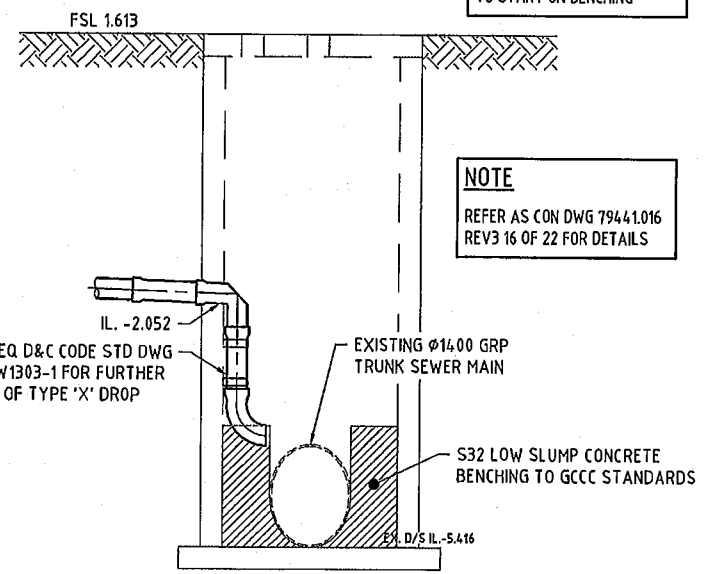
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REFER KN DWG 08-133-54



LOCALITY PLAN
SCALE 1:2500



PLAN
SCALE 1:50



SECTION
SCALE 1:50

EXISTING MANHOLE 2/3
CONNECTION DETAIL

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SOUTH EAST QUEENSLAND SEWERAGE CODE SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE SEQ SERVICE PROVIDER SEWERAGE SYSTEM.
- ALL WORKS ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY THE DEVELOPER/APPROVED CONTRACTOR UNDER GCW SUPERVISION AT THE DEVELOPER'S/CONTRACTOR'S EXPENSES.
- ALL PIPES AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE "ACCEPTED PRODUCTS AND MATERIALS" LIST.
- EACH ALLOTMENT SHALL BE SERVED BY A DN100 uPVC PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL, A DN150 uPVC PROPERTY CONNECTION SHALL BE PROVIDED.
- PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
- PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300mm AND A MAXIMUM OF 750mm.
- WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE SEQ SERVICE PROVIDER UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
- WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SEQ SEWER CODE.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
- SEWERS SHALL BE DISUSED / ABANDONED IN ACCORDANCE WITH PROCEDURES SET OUT IN THE SEQ SEWER CODE.
- BENCH MARK AND LEVELS TO AHD. REFER KN DWG 08-133-01 FOR DETAILS.
- EXISTING ALLOTMENTS REQUIRING A PROPERTY CONNECTION FROM EXISTING SEWERS SHALL BE PROVIDED BY THE SEQ SERVICE PROVIDER AT DEVELOPERS COST

VEGETATION PROTECTION (WHERE APPLICABLE)

- TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
- WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 18m BATTENS CLOSELY SPACED AND ARRANGEMENT VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTRACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL (WHERE APPLICABLE)

- TOPSOIL AND SUBSOIL SHALL BE STOCKPILED SEPARATELY.
- CARE SHOULD BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.

CREEK CROSSINGS (WHERE APPLICABLE)

- SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
- APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
- NO SOIL SHALL BE STOCKPILED WITHIN 5m OF CREEK.

REHABILITATION (WHERE APPLICABLE)

- PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS ARE TO BE REINSTATED.
- PREDISTURBANCE VEGETATION PATTERNS SHOULD BE RESTORED.

SAFETY

- THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION.

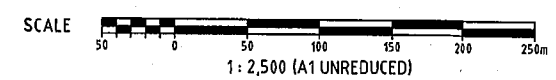
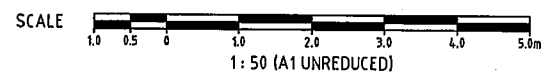
NAME OF ESTATE		GAINSBOROUGH GREENS - STAGE 1.3	
SUBDIVIDER		MIRVAC	
APPLICATION No.		-	
SP DELEGATE APPROVAL DATE		-	
DRAWING PLAN No.		-	
No. OF ALLOTMENTS		96	
AREA IN Ha.		9.056	
LENGTH OF SEWERS	150mm	1376.862m	
	225mm	381.324m	

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No... OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

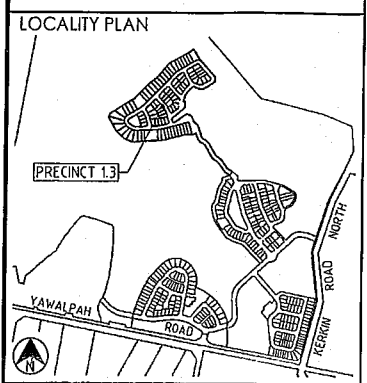
STAGE 1.3 - LIVE SEWER WORKS TABLE

No.	DESCRIPTION	DIA. SEWER	MH No.	MH/MS TYPE	COVER TYPE	LOT No.	F.S.L.	E.S.L.	IL.	DEPTH TO INVERT
1(A)	CONTRACTOR TO CORE DRILL INTO (UNDER GOLD COAST WATER SUPERVISION) EXISTING MANHOLE 2/3 AND CONSTRUCT A 225mm STUB (TEMPORARILY END CAP) PRIOR TO START OF CONSTRUCTION.	225	EX. 2/3	P	(B)	ROAD RESERVE	1.599	1.599	-2.052	3.651
1(B)	0.5m FROM STUB END CAP, CONTRACTOR TO LAY NEW LINE 20. AFTER CLEANSING, TESTING AND INSPECTING, NOTIFY GOLD COAST WATER.									
1(C)	CONTRACTOR TO REMOVE (UNDER GOLD COAST WATER SUPERVISION) TEMPORARY END CAPS ON STUB & LINE 20 AND MAKE LIVE CONNECTIONS AFTER SUCCESSFUL 'ON MAINTENANCE' INSPECTION.									

ALL ENVIRONMENT PROTECTION MEASURES SHOULD BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	SEWER, DETAILS & TABLES AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants

Client

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Director - RPEQ 1988

Drawn by: *[Signature]* 24.11.16

SEWERAGE RETICULATION NOTES

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	56 of 67

Revision No	Revision
A1	08-133-56 C

MA12008.00133 Gainsborough Greens Precinct 1.3 Engineering\Kca\08-133-56-SEW.dwg Plotted by: DS on 24/11/2016 6:04:36 PM

MAINTENANCE HOLE/SHAFT No.

MH/MS COVER TYPE
MH/MS TYPE
BRANCH LINE No.
BRANCH DROP TYPE
HC TYPE
HC DEPTH
HC CH. TO DS MH/MS
HC INVERT LEVEL
HC LOT No.

LEGEND:

MAINTENANCE HOLE TYPES

- A = CONCRETE 1000Ø
- B = CONCRETE 1200Ø
- C = CONCRETE 1500Ø
- P = TYPE 'P3' PRE-CAST CONCRETE
- MS = TYPE 'MS' MAINTENANCE SHAFT
- RE = RODDING END
- @ = 150Ø HCB FOR DUPLEX LOTS

- Ⓟ = CLASS B NON-TRAFFICABLE
- Ⓣ = CLASS D TRAFFICABLE

NOTES:

- PROPERTY CONNECTION TYPES REFER SEQ D&C CODE STD. DWGS No. SEQ-SEW-1104 & SEQ-SEW-1105.
ALLOWS FOR HV POWER SUPPLY & ALLOWS FOR HOUSE CONNECTION FROM MANHOLE
- MAINTENANCE STRUCTURE TYPES AND DROPS REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.
- MAINTENANCE STRUCTURE COVER TYPES REFER SEQ D&C CODE STD DWG SEQ-SEW-1308 SET.

DATUM

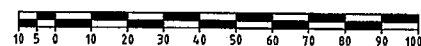
LOCATION	PIPE DIAMETER	GRADE	LENGTH	EMBEDMENT TYPE	JUNCTION INVERT LEVEL	DEPTH OF INVERT BELOW FSL	INVERT LEVEL (IL)	FINISHED SURFACE LEVEL (FSL) *	EXISTING SURFACE LEVEL (ESL)	CHAINAGE (CH)
ROAD RESERVE	225 S88 PVC	1:300.00	6.775							
ROAD	150 S88 PVC	1:300.00	4.2465							
ROAD RESERVE		1:300.00	30.801							
ROAD		1:300.00	58.723							
ROAD RESERVE		1:300.00	9.395							
ROAD		1:300.00	16.724							
ROAD RESERVE		1:300.00	8.148							
ROAD		1:300.00	38.185							
ROAD RESERVE		1:300.00	4.1587							
ROAD		1:300.00	8.517							
ROAD RESERVE		1:300.00	7.560							
ROAD		1:300.00	15.098							
ROAD RESERVE		1:300.00	30.015							
ROAD		1:300.00	30.008							
ROAD RESERVE		1:300.00	29.175							
ROAD		1:200.00	19.042							
ROAD RESERVE		1:200.00	4.149							
ROAD		1:200.00	25.834							
ROAD RESERVE		1:200.00	3.435							
ROAD		1:200.00	11.565							
ROAD RESERVE		1:200.00	8.220							
ROAD		1:200.00	5.757							
ROAD RESERVE		1:200.00	8.925							
ROAD		1:200.00	24.351							

LINE

* FINISHED SURFACE LEVELS ARE INDICATIVE ONLY. REFER 'DIMENSION H' TABLE AS PER STD. DWG. No. SEQ-SEW-1308-1

DENOTES BRIDGING STRUCTURE BETWEEN STORMWATER AND SEWER MAIN. REFER KNG DWG No. 08-133-53 FOR DETAIL.

SCALE A 1:1000 (Horiz.)

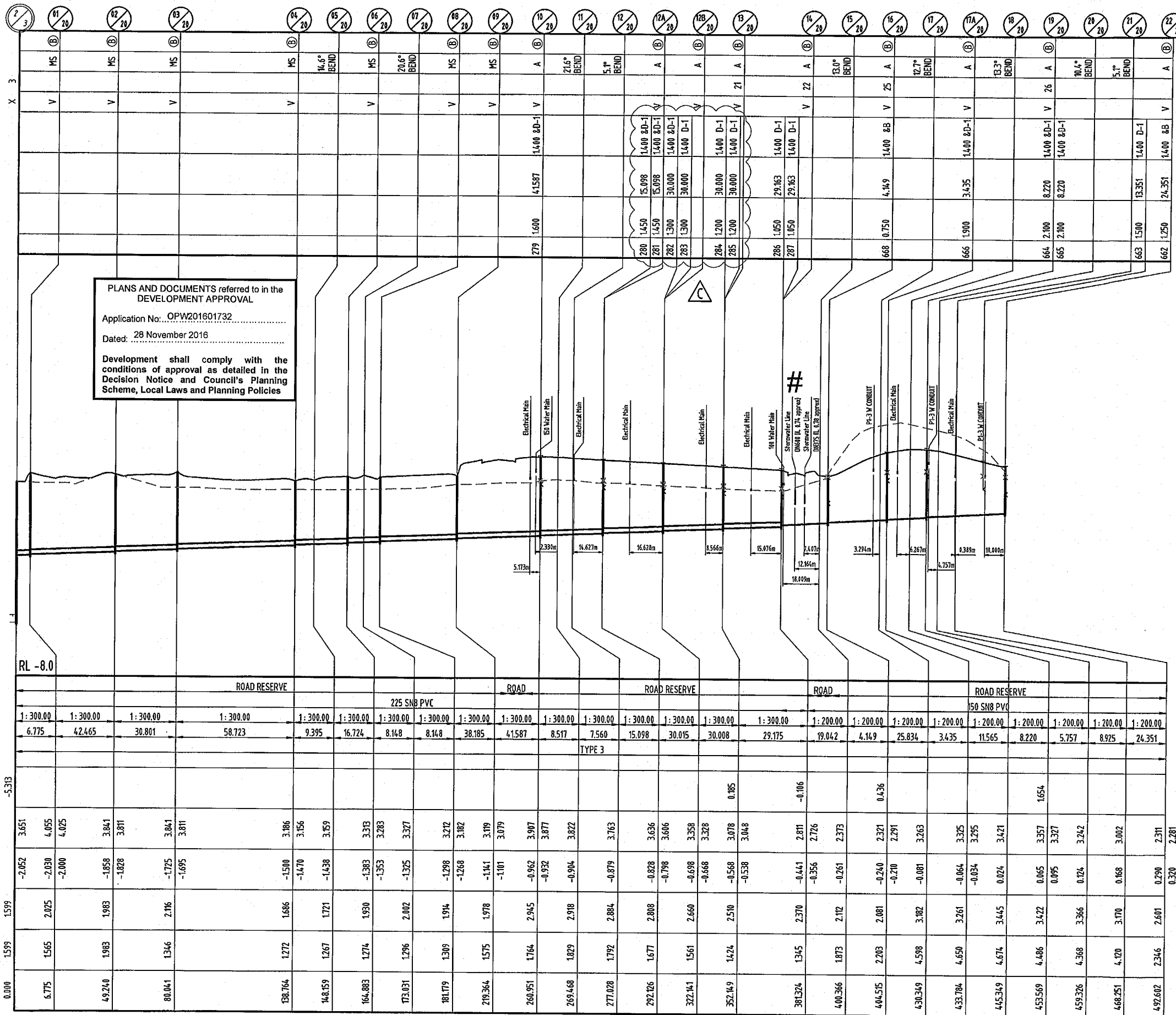


B 1:100 (Vert.)



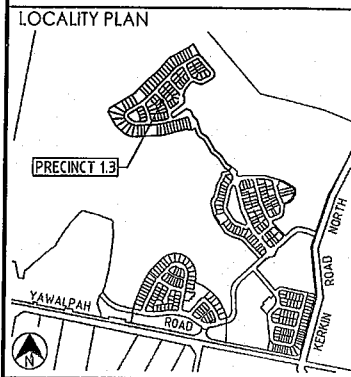
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(A1 UNREDUCED)



PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONGITUDINAL SECTIONS AMENDED	29.10.16	RCT
C	REVISED SEWER DESIGN	24.11.16	DES

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

KN GROUP PTY LTD
 CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved by: *[Signature]* 24.11.16

Project Title
**SEWERAGE RETICULATION
 LONGITUDINAL SECTIONS
 SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet
			57 of 67
Revision No	Drawing No		Revision
A1	08-133-57		C

M:\2008\08133 Gainsborough Greens Precinct 1\3-SEW-133-57-61-SEW-133-57.dwg Plotted by: DS on 24/11/2016 5:54:48 PM

DO NOT SCALE THIS DRAWING
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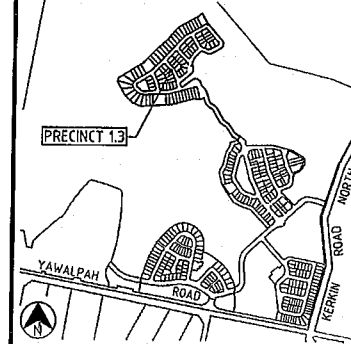
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW201601732

Dated: 28 November 2016

Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
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LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG'16	NJS
B	LONGITUDINAL SECTIONS AMENDED	20.10.16	RCT

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved Director - RPEQ 1998

[Signature] 20-10-16

Drawing Title
**SEWERAGE RETICULATION
LONGITUDINAL SECTIONS
SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	Sheet	Revision	
AS SHOWN	58 of 67		
A1	08-133-58	B	

MAINTENANCE HOLE/SHAFT No.

MH/MS COVER TYPE
MH/MS TYPE
BRANCH LINE No.
BRANCH DROP TYPE
HC TYPE
HC DEPTH
HC CH. TO DS MH/MS
HC INVERT LEVEL
HC LOT No.

LEGEND:

MAINTENANCE HOLE TYPES

- A = CONCRETE 1000φ
- B = CONCRETE 1200φ
- C = CONCRETE 1500φ
- P = TYPE 'P3' PRE-CAST CONCRETE
- MS = TYPE 'MS' MAINTENANCE SHAFT
- RE = RODDING END
- @ = 150φ HCB FOR DUPLEX LOTS

- Ⓟ = CLASS B NON-TRAFFICABLE
- Ⓛ = CLASS D TRAFFICABLE

NOTES:

- PROPERTY CONNECTION TYPES REFER SEQ D&C CODE STD. DWGS No. SEQ-SEW-1104 & SEQ-SEW-1105.
ALLOWS FOR HV POWER SUPPLY
& ALLOWS FOR HOUSE CONNECTION FROM MAINHOLE
- MAINTENANCE STRUCTURE TYPES AND DROPS REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.
- MAINTENANCE STRUCTURE COVER TYPES REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.

DATUM

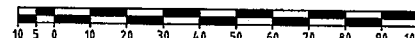
LOCATION	PIPE DIAMETER	GRADE	LENGTH	EMBEDMENT TYPE	JUNCTION INVERT LEVEL	DEPTH OF INVERT BELOW FSL	INVERT LEVEL (IL)	FINISHED SURFACE LEVEL (FSL) *	EXISTING SURFACE LEVEL (ESL)	CHAINAGE (CH)
RR ROAD	150 SN8 PVC	1:200.00	20.984				0.290	2.601	2.346	492.602
	150 SN8 PVC	1:200.00	8.000		0.575		0.320	2.839	1.626	513.586
	150 SN8 PVC	1:200.00	28.000				0.548	2.888	1.646	521.586
	150 SN8 PVC	1:200.00	16.000				0.618	3.244	1.865	549.586
	150 SN8 PVC	1:200.00	16.000		1.093		0.758	3.575	2.012	565.586
	150 SN8 PVC	1:200.00	28.000				0.898	3.992	2.102	581.586
	150 SN8 PVC	1:200.00	32.000		3.016		1.008	4.630	2.198	609.586
	150 SN8 PVC	1:200.00	28.000				1.148	5.490	4.087	641.586
	150 SN8 PVC	1:200.00	15.560		3.881		1.178	6.009	5.660	669.586
	150 SN8 PVC	1:200.00	12.541		4.327		1.338	6.108	5.745	685.126
	150 SN8 PVC	1:200.00	16.000		4.087		1.368	6.053	6.020	697.667
	150 SN8 PVC	1:200.00	14.000				1.488	5.870	5.952	713.667
	150 SN8 PVC	1:100.00	33.209				1.698	5.527	3.716	729.667
	150 SN8 PVC	1:100.00	21.069		3.334		1.928	5.150	2.590	743.667
	150 SN8 PVC	1:100.00	68.578				2.098	4.334	1.647	776.876
	150 SN8 PVC	1:47.95	5.814				2.430	4.024	1.952	797.945
	150 SN8 PVC	1:25.00	6.074				2.470	5.500	5.802	866.523
	150 SN8 PVC	1:25.00	5.814				2.810	5.804	6.301	872.337
	150 SN8 PVC	1:25.00	29.789				3.165	6.233	6.879	878.411
	150 SN8 PVC	1:25.35					4.882	6.590	7.308	884.225
	150 SN8 PVC	1:25.35					5.415	7.596	9.180	944.014

LINE

* FINISHED SURFACE LEVELS ARE INDICATIVE ONLY.
REFER 'DIMENSION H' TABLE AS PER STD. DWG. No. SEQ-SEW-1308-1

DENOTES BRIDGING STRUCTURE BETWEEN STORMWATER AND SEWER MAIN. REFER KNG DWG No. 08-133-53 FOR DETAIL.

SCALE A 1:1000
(Horiz.)



B

B 1:100
(Vert.)



(A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

MAINTENANCE HOLE/SHAFT No.

MH/MS COVER TYPE
MH/MS TYPE
BRANCH LINE No.
BRANCH DROP TYPE
HC TYPE
HC DEPTH
HC CH. TO DS MH/MS
HC INVERT LEVEL
HC LOT No.

LEGEND:

MAINTENANCE HOLE TYPES

- A = CONCRETE 1000Ø
- B = CONCRETE 1200Ø
- C = CONCRETE 1500Ø
- P = TYPE 'P3' PRE-CAST CONCRETE
- MS = TYPE 'MS' MAINTENANCE SHAFT
- RE = RODDING END
- @ = 150Ø HCB FOR DUPLEX LOTS

- Ⓟ = CLASS B NON-TRAFFICABLE
- Ⓣ = CLASS D TRAFFICABLE

NOTES:

- PROPERTY CONNECTION TYPES REFER SEQ D&C CODE STD. DWGS No. SEQ-SEW-1104 & SEQ-SEW-1105.
- MAINTENANCE STRUCTURE TYPES AND DROPS REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.
- MAINTENANCE STRUCTURE COVER TYPES REFER SEQ D&C CODE STD DWG SEQ-SEW-1308 SET.

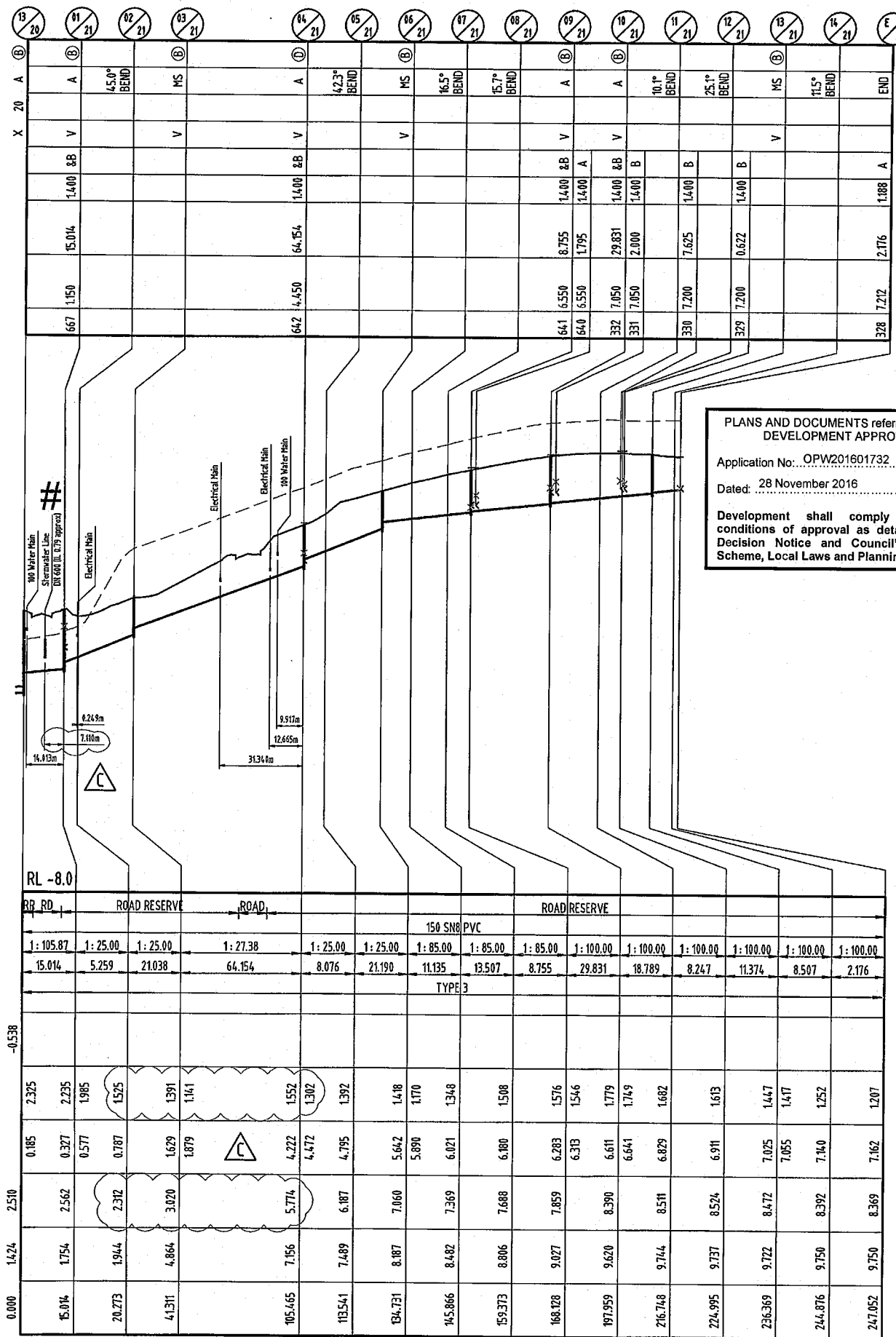
DATUM

LOCATION
PIPE DIAMETER
GRADE
LENGTH
EMBEDMENT TYPE
JUNCTION
INVERT LEVEL
DEPTH OF INVERT BELOW FSL
INVERT LEVEL (IL)
FINISHED SURFACE LEVEL (FSL) *
EXISTING SURFACE LEVEL (ESL)
CHAINAGE (CH)

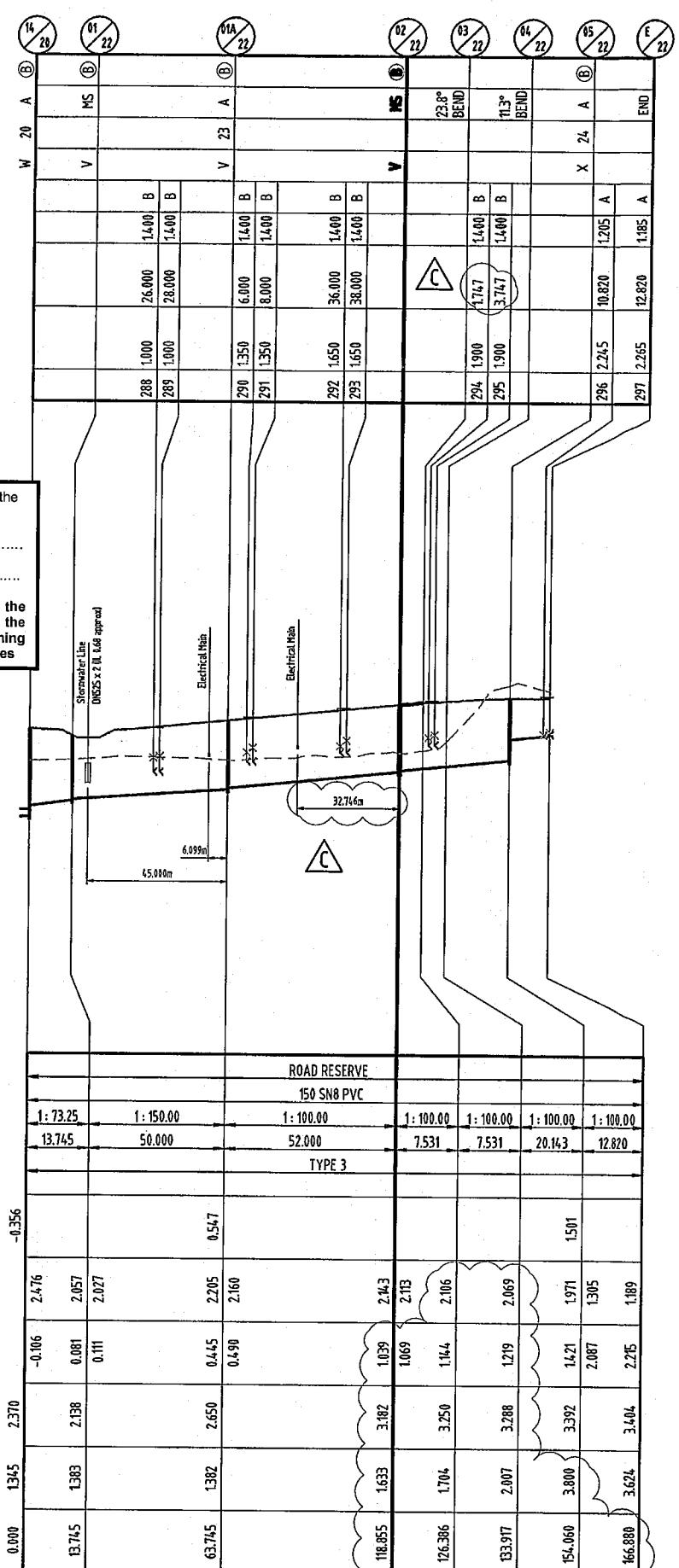
LINE

* FINISHED SURFACE NLS ARE INDICATIVE ONLY. REFER 'DIMENSION H' TABLE AS PER STD. DWG. No. SEQ-SEW-1308-1

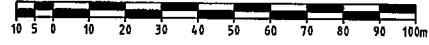
DENOTES BRIDGING STRUCTURE BETWEEN STORMWATER AND SEWER MAIN. REFER KNG DWG No. 08-133-53 FOR DETAIL.



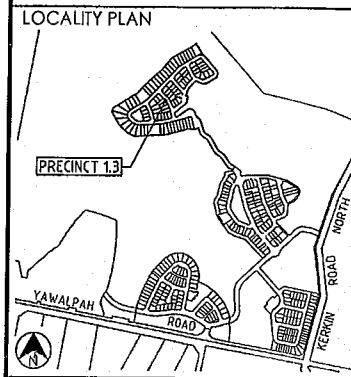
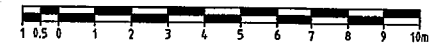
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No. OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



SCALE A 1:1000 (Horiz.)

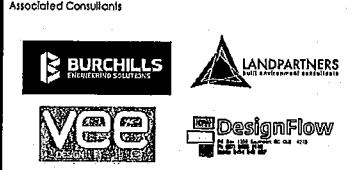


B 1:100 (Vert.)



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONGITUDINAL SECTIONS AMENDED	20.10.16	RCT
C	REVISED SEWER DESIGN	24.11.16	DES



Project: GAINSBOROUGH GREENS PRECINCT 1 STAGE 3



LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved: [Signature] 24.11.16

Drawing title: SEWERAGE RETICULATION LONGITUDINAL SECTIONS SHEET 3

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN.	Sheet	59 of 67
Revision	A1	Drawing No	08-133-59
		Revision	C

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DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

MAINTENANCE HOLE/SHAFT No.
MH/MS COVER TYPE
MH/MS TYPE
BRANCH LINE No.
BRANCH DROP TYPE
HC TYPE
HC DEPTH
HC CH. TO DS MH/MS
HC INVERT LEVEL
HC LOT No.

LEGEND:

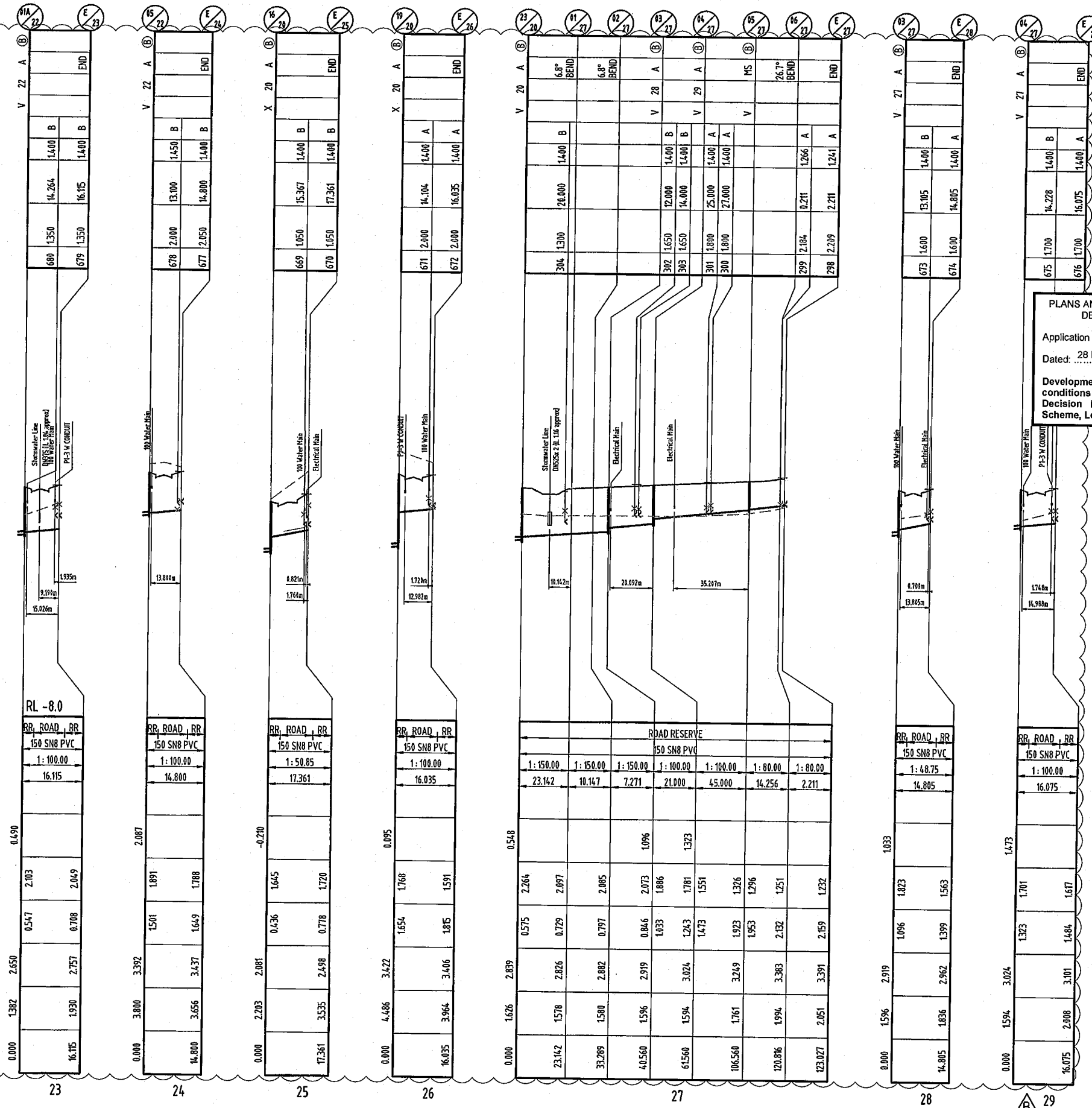
- MAINTENANCE HOLE TYPES**
- A = CONCRETE 1000Ø
 - B = CONCRETE 1200Ø
 - C = CONCRETE 1500Ø
 - P = TYPE 'P3' PRE-CAST CONCRETE
 - MS = TYPE 'MS' MAINTENANCE SHAFT
 - RE = RODDING END
 - @ = 150Ø HCB FOR DUPLEX LOTS
- CLASSIFICATION**
- Ⓟ = CLASS B NON-TRAFFICABLE
 - Ⓣ = CLASS D TRAFFICABLE

NOTES:

- PROPERTY CONNECTION TYPES REFER SEQ D&C CODE STD. DWGS No. SEQ-SEW-1104 & SEQ-SEW-1105.
- MAINTENANCE STRUCTURE TYPES AND DROPS REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.
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DATUM

LOCATION
PIPE DIAMETER
GRADE
LENGTH
EMBEDMENT TYPE
JUNCTION
INVERT LEVEL
DEPTH OF INVERT BELOW FSL
INVERT LEVEL (IL)
FINISHED SURFACE LEVEL (FSL) *
EXISTING SURFACE LEVEL (ESL)
CHAINAGE (CH)

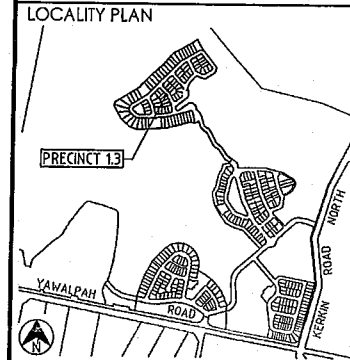


PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No.: OPW201601732

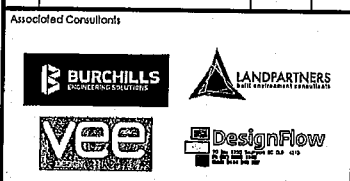
Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONGITUDINAL SECTIONS AMENDED	20.10.16	RCT



Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kn@knpl.com.au
ABN 35 112 053 611

Approved by: *[Signature]* 21.10.16

Drawn by: *[Signature]*

**SEWERAGE RETICULATION
LONGITUDINAL SECTIONS
SHEET 4**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN		Sheet
			60 of 67
A1	Drawing No	Revision	
	08-133-60	B	

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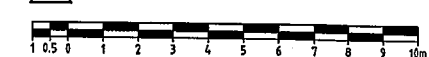
* FINISHED SURFACE LEVELS ARE INDICATIVE ONLY. REFER 'DIMENSION H' TABLE AS PER STD. DWG. No. SEQ-SEW-1308-1

DENOTES BRIDGING STRUCTURE BETWEEN STORMWATER AND SEWER MAIN. REFER KING DWG No. 08-133-53 FOR DETAIL.

SCALE A 1:1000
(Horiz.)



B 1:100
(Vert.)



(A1 UNREDUCED)

MAINTENANCE HOLE/SHAFT No.

MH/MS COVER TYPE
MH/MS TYPE
BRANCH LINE No.
BRANCH DROP TYPE
HC TYPE
HC DEPTH
HC CH. TO DS MH/MS
HC INVERT LEVEL
HC LOT No.

LEGEND:

MAINTENANCE HOLE TYPES

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- C = CONCRETE 1500Ø
- P = TYPE 'P3' PRE-CAST CONCRETE
- MS = TYPE 'MS' MAINTENANCE SHAFT
- RE = RODDING END
- @ = 150Ø HCB FOR DUPLEX LOTS

- ⓑ = CLASS B NON-TRAFFICABLE
- ⓓ = CLASS D TRAFFICABLE

NOTES:

- PROPERTY CONNECTION TYPES REFER SEQ D&C CODE STD. DWGS No. SEQ-SEW-1104 & SEQ-SEW-1105.
- ALLOWS FOR HV POWER SUPPLY & ALLOWS FOR HOUSE CONNECTION FROM MANHOLE
- MAINTENANCE STRUCTURE TYPES AND DROPS REFER SEQ D&C CODE STD DWG SEQ-SEW-1300 SET.
- MAINTENANCE STRUCTURE COVER TYPES REFER SEQ D&C CODE STD DWG SEQ-SEW-1308 SET.

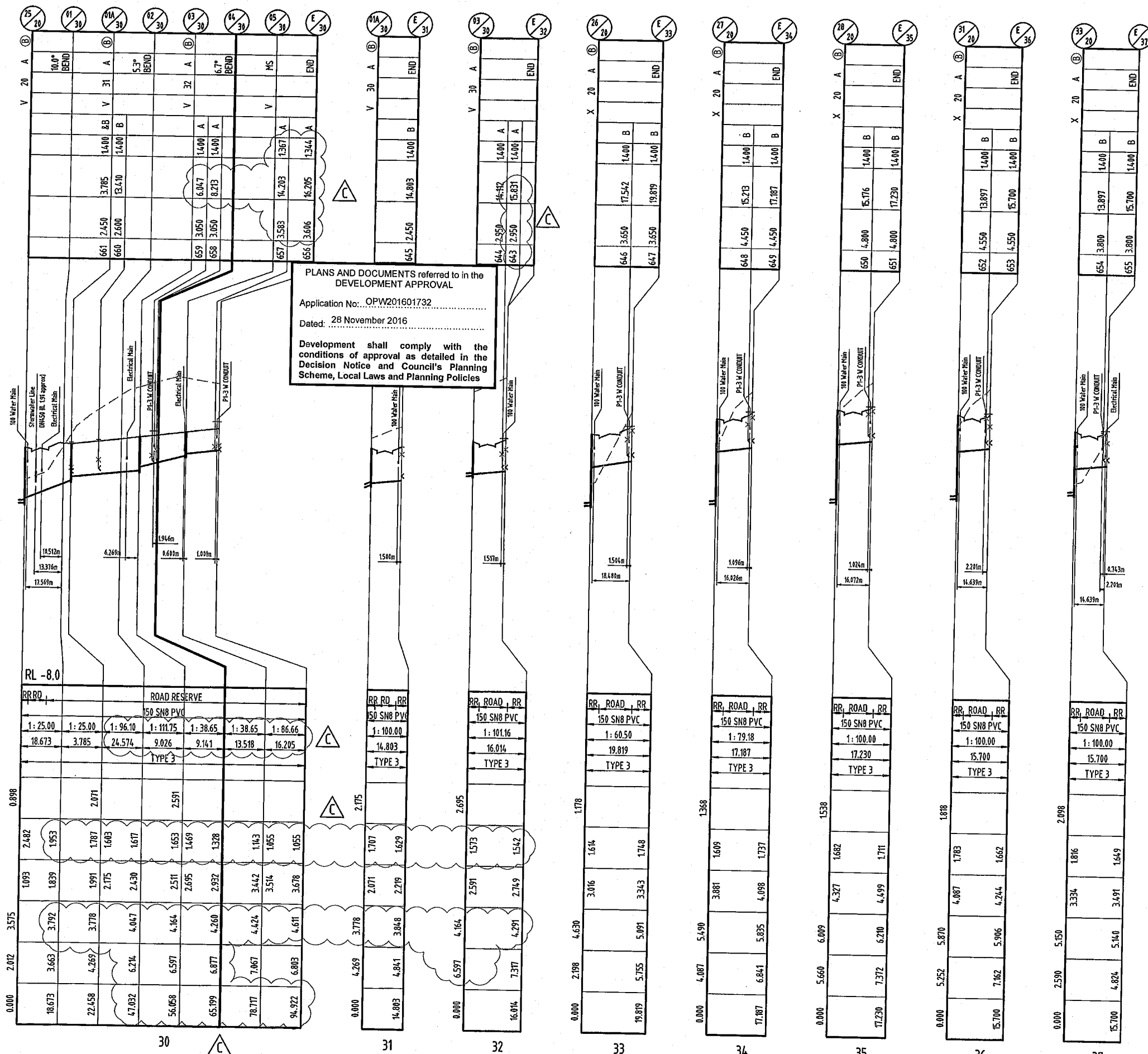
DATUM

LOCATION	PIPE DIAMETER	GRADE	LENGTH	EMBEDMENT TYPE
RR RD	150 S88 PVC	1:25.00	18.673	TYPE 3
RR RD	150 S88 PVC	1:25.00	3.785	TYPE 3
RR RD	150 S88 PVC	1:96.10	24.574	TYPE 3
RR RD	150 S88 PVC	1:111.75	9.026	TYPE 3
RR RD	150 S88 PVC	1:38.65	9.141	TYPE 3
RR RD	150 S88 PVC	1:38.65	13.518	TYPE 3
RR RD	150 S88 PVC	1:86.66	16.205	TYPE 3
RR RD	150 S88 PVC	1:100.00	14.803	TYPE 3
RR RD	150 S88 PVC	1:101.16	16.014	TYPE 3
RR RD	150 S88 PVC	1:60.50	19.819	TYPE 3
RR RD	150 S88 PVC	1:79.18	17.187	TYPE 3
RR RD	150 S88 PVC	1:100.00	17.230	TYPE 3
RR RD	150 S88 PVC	1:100.00	15.700	TYPE 3
RR RD	150 S88 PVC	1:100.00	15.700	TYPE 3

LINE

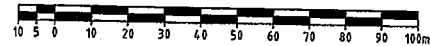
* FINISHED SURFACE LEVELS ARE INDICATIVE ONLY. REFER 'DIMENSION H' TABLE AS PER STD. DWG. No. SEQ-SEW-1308-1

DENOTES BRIDGING STRUCTURE BETWEEN STORMWATER AND SEWER MAIN. REFER KNG DWG No. 08-133-53 FOR DETAIL.

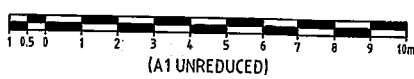


PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No. OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

SCALE A 1:1000 (Horiz.)



B 1:100 (Vert.)



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI

LOCALITY PLAN

PRECINCT 1-3

YAWALPAH ROAD

RENNIN ROAD NORTH

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	LONGITUDINAL SECTIONS AMENDED	20.10.16	RCT
C	REVISED SEWER DESIGN	24.11.16	DES

Associated Consultants

BURCHILLS
LANDPARTNERS
VCE
DesignFlow

Client

mirvac

Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved by: [Signature] 24.11.16

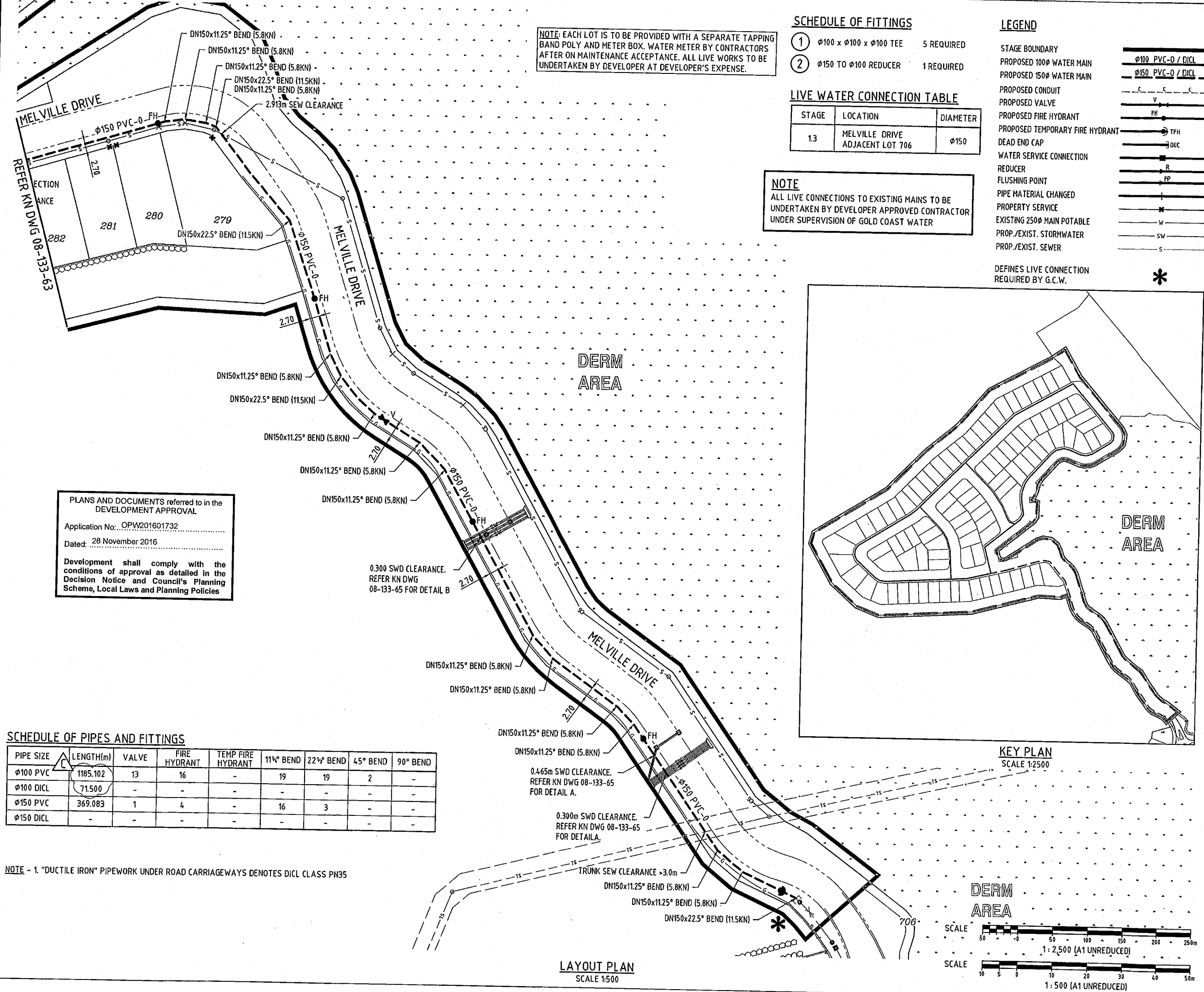
Drawing Title

SEWERAGE RETICULATION
LONGITUDINAL SECTIONS
SHEET 5

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	AS SHOWN	Sheet	61 of 67
A1	Drawing No	Revision	
	08-133-61	C	

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M:\2008\108133 Gainsborough Greens Precinct 1\3.Engineering\Acad\08-133-62-65-WAT.dwg Plotted by: DS on 24/11/2016 5:54:56 PM



NOTE: EACH LOT IS TO BE PROVIDED WITH A SEPARATE TAPPING BAND POLY AND METER BOX. WATER METER BY CONTRACTORS AFTER ON MAINTENANCE ACCEPTANCE. ALL LIVE WORKS TO BE UNDERTAKEN BY DEVELOPER AT DEVELOPER'S EXPENSE.

SCHEDULE OF FITTINGS

①	φ100 x φ100 x φ100 TEE	5 REQUIRED
②	φ150 TO φ100 REDUCER	1 REQUIRED

LIVE WATER CONNECTION TABLE

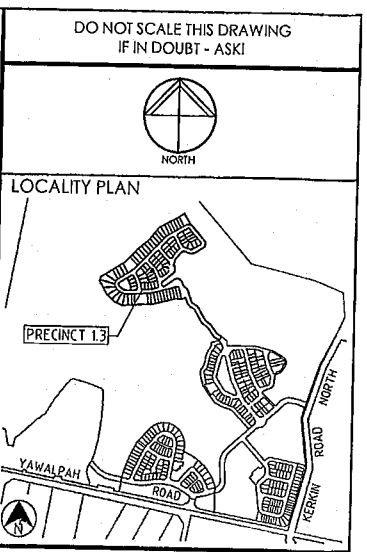
STAGE	LOCATION	DIAMETER
1.3	MELVILLE DRIVE ADJACENT LOT 706	φ150

NOTE
ALL LIVE CONNECTIONS TO EXISTING MAINS TO BE UNDERTAKEN BY DEVELOPER APPROVED CONTRACTOR UNDER SUPERVISION OF GOLD COAST WATER

LEGEND

- STAGE BOUNDARY
- PROPOSED 100φ WATER MAIN
- PROPOSED 150φ WATER MAIN
- PROPOSED CONDUIT
- PROPOSED VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED TEMPORARY FIRE HYDRANT
- DEAD END CAP
- WATER SERVICE CONNECTION
- REDUCER
- FLUSHING POINT
- PIPE MATERIAL CHANGED
- PROPERTY SERVICE
- EXISTING 250φ MAIN POTABLE
- PROP./EXIST. STORMWATER
- PROP./EXIST. SEWER

DEFINES LIVE CONNECTION REQUIRED BY G.C.W. *



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS, WATER MAIN, CLEARANCES AND SCHEDULE AMENDED	20.10.16	RCT
C	REVISED PIPE LENGTHS	24.11.16	DES

Associated Consultants

Client

Project

**GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3**

KN GROUP PTY LTD
CONSULTING ENGINEERS

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
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FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved [Signature] 24.11.16

Drawn Title

**WATER RETICULATION
LAYOUT PLAN
SHEET 1**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	62 of 67

Scale	Drawing No	Revision
A1	08-133-62	C

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No... OPW201601732

Dated: 28 November 2016

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

SCHEDULE OF PIPES AND FITTINGS

PIPE SIZE	LENGTH(m)	VALVE	FIRE HYDRANT	TEMP FIRE HYDRANT	11° BEND	22½° BEND	45° BEND	90° BEND
φ100 PVC	1185.102	13	16	-	19	19	2	-
φ100 DICL	71.500	-	-	-	-	-	-	-
φ150 PVC	369.083	1	4	-	16	3	-	-
φ150 DICL	-	-	-	-	-	-	-	-

NOTE - 1. "DUCTILE IRON" PIPEWORK UNDER ROAD CARRIAGEWAYS DENOTES DICL CLASS PN35

LAYOUT PLAN
SCALE 1:500

KEY PLAN
SCALE 1:2500

DERM AREA

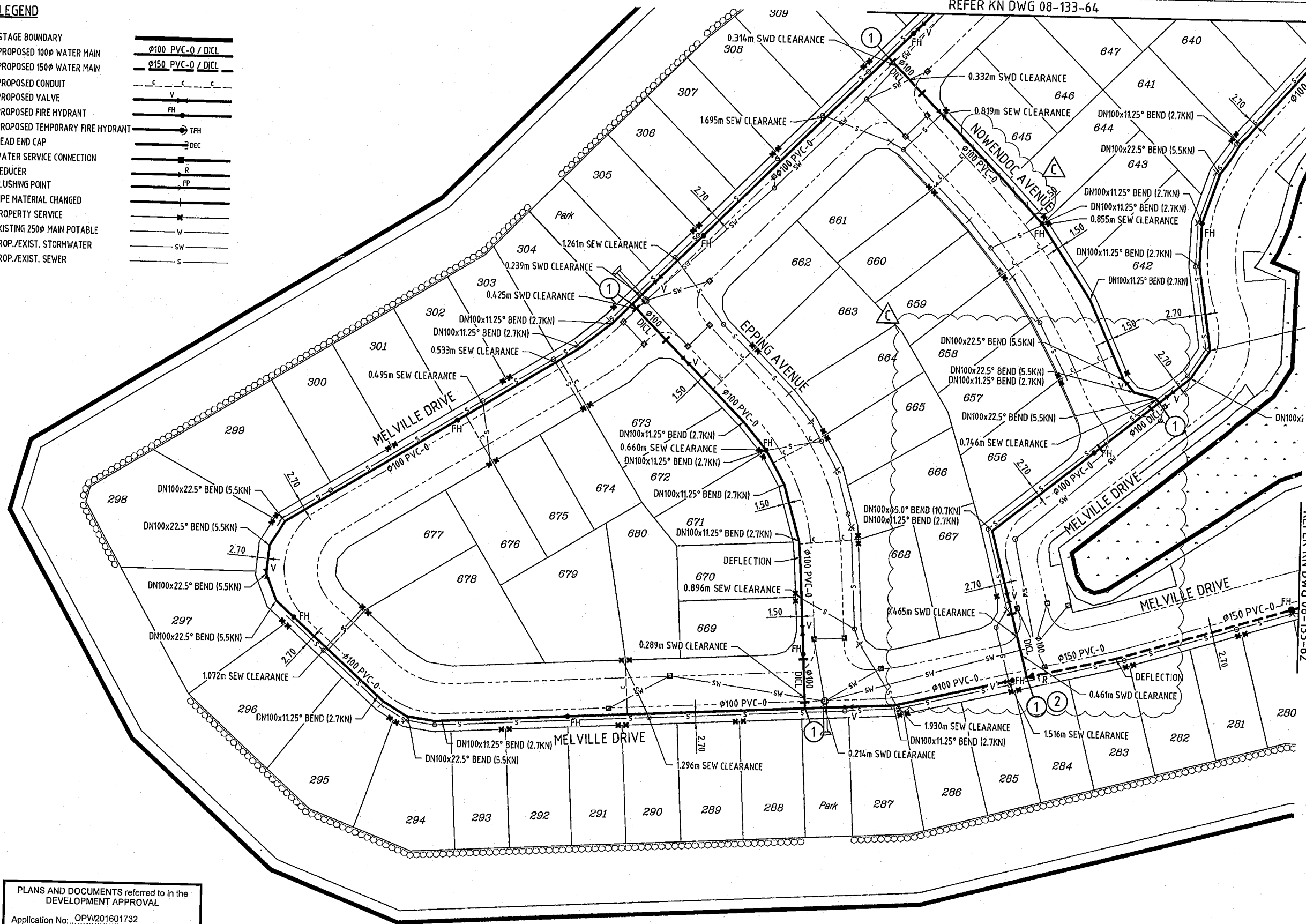
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SCALE 1:500 (A1 UNREDUCED)

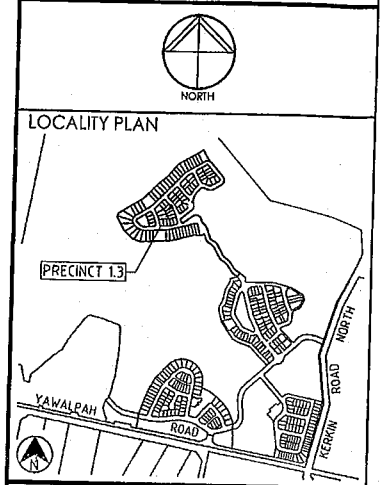
LEGEND

- STAGE BOUNDARY
- PROPOSED 100Ø WATER MAIN
- PROPOSED 150Ø WATER MAIN
- PROPOSED CONDUIT
- PROPOSED VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED TEMPORARY FIRE HYDRANT
- DEAD END CAP
- WATER SERVICE CONNECTION
- REDUCER
- FLUSHING POINT
- PIPE MATERIAL CHANGED
- PROPERTY SERVICE
- EXISTING 250Ø MAIN POTABLE
- PROP./EXIST. STORMWATER
- PROP./EXIST. SEWER

REFER KN DWG 08-133-64



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASKI



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS, WATER MAIN, CLEARANCES AND SCHEDULE AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kngrp@knpl.com.au
 ABN 35 112 053 611

Approved by: *[Signature]* 24.11.16

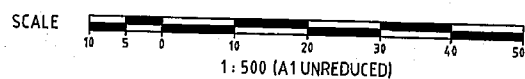
Drawn Title
**WATER RETICULATION
 LAYOUT PLAN
 SHEET 2**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	63 of 67

Drawing No	Revision
A1	C

NOTE: EACH LOT IS TO BE PROVIDED WITH A SEPARATE TAPPING BAND POLY AND METER BOX. WATER METER BY CONTRACTORS AFTER ON MAINTENANCE ACCEPTANCE. ALL LIVE WORKS TO BE UNDERTAKEN BY DEVELOPER AT DEVELOPER'S EXPENSE.



LAYOUT PLAN
 SCALE 1:500

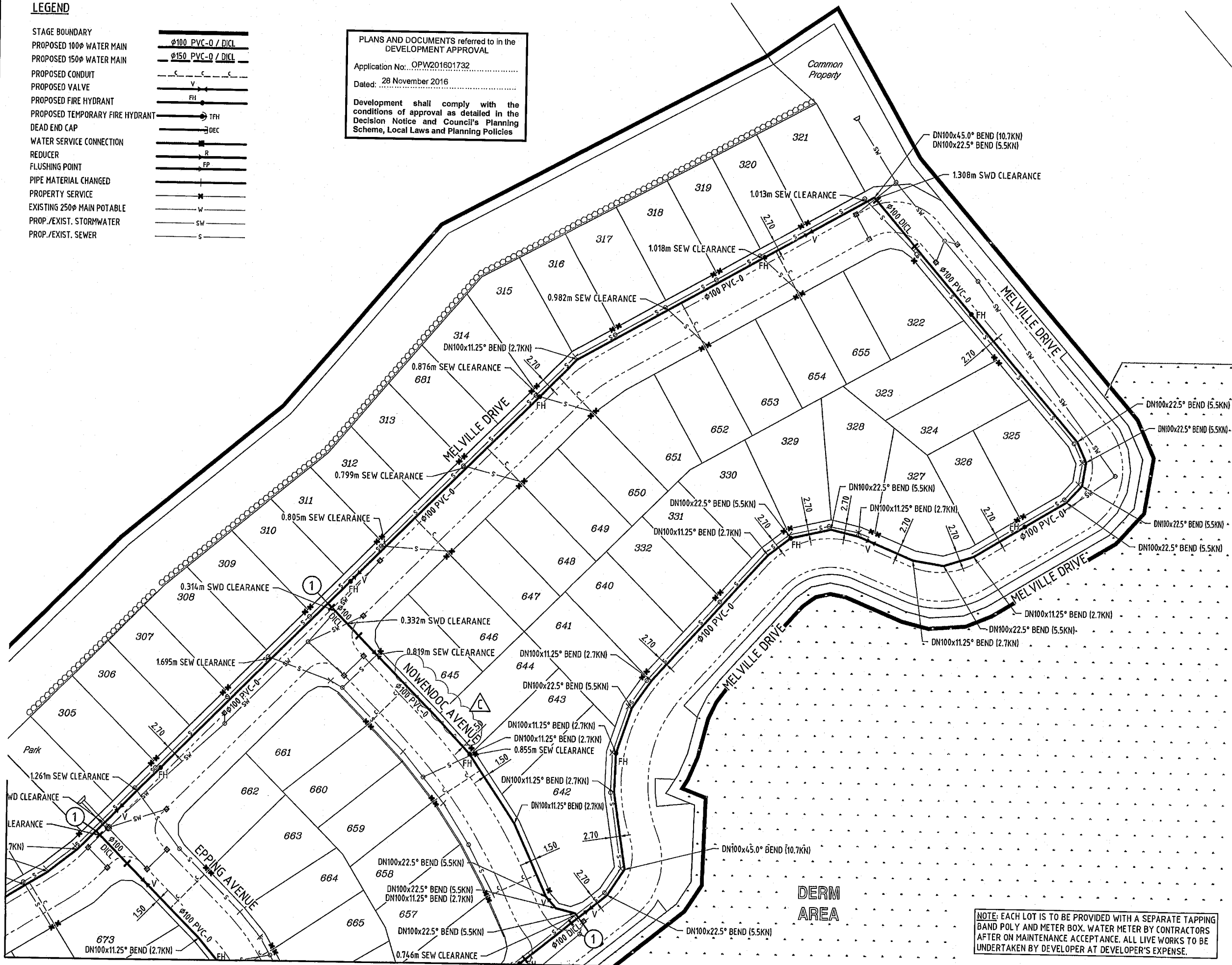
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No: OPW201601732
 Dated: 28 November 2016
 Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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LEGEND

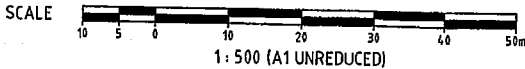
STAGE BOUNDARY	
PROPOSED 100Ø WATER MAIN	
PROPOSED 150Ø WATER MAIN	
PROPOSED CONDUIT	
PROPOSED VALVE	
PROPOSED FIRE HYDRANT	
PROPOSED TEMPORARY FIRE HYDRANT	
DEAD END CAP	
WATER SERVICE CONNECTION	
REDUCER	
FLUSHING POINT	
PIPE MATERIAL CHANGED	
PROPERTY SERVICE	
EXISTING 250Ø MAIN POTABLE	
PROP./EXIST. STORMWATER	
PROP./EXIST. SEWER	

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
 Application No.: OPW201601732
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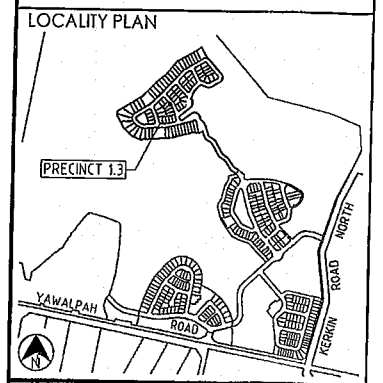


REFER KN DWG 08-133-63
LAYOUT PLAN
 SCALE 1:500

NOTE: EACH LOT IS TO BE PROVIDED WITH A SEPARATE TAPPING BAND POLY AND METER BOX. WATER METER BY CONTRACTORS AFTER ON MAINTENANCE ACCEPTANCE. ALL LIVE WORKS TO BE UNDERTAKEN BY DEVELOPER AT DEVELOPER'S EXPENSE.



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	ROADS, WATER MAIN, CLEARANCES AND SCHEDULE AMENDED	20.10.16	RCT
C	REVISED ROAD LAYOUT	24.11.16	DES

Associated Consultants

Client

Project
**GAINSBOROUGH GREENS
 PRECINCT 1
 STAGE 3**

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kng@knpl.com.au
 ABN 35 112 053 611

Approved Director: 24.11.16

Drawing Title
**WATER RETICULATION
 LAYOUT PLAN
 SHEET 3**

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale	Drawing No		Sheet
AS SHOWN	08-133-64		64 of 67
Revision		Revision	
A1		C	

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GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ WS&S CODE SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
- COVER OVER MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN STANDARD DRAWING No. SEQ-WAT-1200-2.
- MINIMUM EMBEDMENT SHALL BE IN ACCORDANCE WITH STANDARD DRAWING Nos. SEQ-WAT-1200-2 TO SEQ-WAT-1203-1.
- THRUST BLOCKS SHALL BE IN ACCORDANCE WITH AND PRESSURE TESTED TO 1200kPa AS PER STANDARD DRAWING No. SEQ-WAT-1205-1 AND SEQ-WAT-1206-1.
- CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWING No. SEQ-WAT-1107-2.
- A WATER METER IS TO BE INSTALLED AT THE RESIDENT'S COST, BY GOLD COAST WATER.
- ALL MATERIALS USED IN THE WORKS SHALL BE AS FOLLOWS:
 - ALL DUCTILE IRON FITTINGS SHALL BE MANUFACTURED TO AS/NZS 2280 WITH SOCKET ENDS (UNLESS NOTED) AND DESIGNED FOR USE WITH PVC OR DI PIPES AS APPLICABLE. ALL DI PIPES SHALL BE CEMENT LINED TO AS/NZS 2280.
 - DICL USED IN ROAD CROSSINGS WILL BE PN35 AS PER WATER AUTHORITY STANDARDS.
 - PRESSURE PIPES USED FOR WATER SUPPLY SHALL BE RRJ PIPES AND SHALL BE EITHER PVC CLASS PN16 (UNLESS NOTED OTHERWISE) MINIMUM AND MANUFACTURED TO (PVC AS/NZS 1477), (PVC-M AS/NZS 4765) (PVC-0 AS/NZS 4441) OR DICL PN 20, 35 OR FLANGED CLASS TO AS/NZS 2280.
 - DUCTILE IRON SLUICE AND SCOUR VALVES SHALL BE PN16 RESILIENT SEATED WITH DOUBLE "O" RING STEM SEALS MANUFACTURED TO AS 2638.
 - ALL VALVES, FITTINGS AND PIPE FITTINGS TO BE COATED INTERNALLY AND EXTERNALLY WITH FACTORY APPLIED THERMAL POLYMERIC CORROSION PROTECTION TO AS 4158.
 - ALL NUTS, BOLTS AND WASHERS, SHALL BE STAINLESS STEEL GRADE 316 CLASS 50, WITH AN ANTI-SEIZE APPLIED DURING ASSEMBLY.
 - ALL DUCTILE IRON FLANGES ARE TO COMPLY WITH AS/NZS 2280 AND SHALL BE RAISED FACE TO AS 4087.

- ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS (WHERE APPLICABLE).
- TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING No. SEQ-WAT-1410-1.
- MARKERS SHALL BE INSTALLED FOR ALL SERVICE CROSSINGS, HYDRANTS AND VALVES IN ACCORDANCE WITH STANDARD DRAWING Nos. SEQ-WAT-1107-1, SEQ-WAT-1300-1 AND SEQ-WAT-1300-2.
- THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS R.P.E.Q. REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.
- WATER MAIN SHALL BE LAID AT 1.425m ALIGNMENT FROM PROPERTY BOUNDARY UNLESS NOTES OTHERWISE.
- WHERE PERMANENT HYDRANTS ARE NOT INSTALLED AT END OF MAINS OF EACH STAGE, A TEMPORARY HYDRANT WILL BE INSTALLED INSTEAD.
- NO WORK SHALL BE BACKFILLED UNTIL PERMISSION IS GRANTED BY THE SUPERINTENDENT OR GOLD COAST WATER.
- NOT ALL SERVICES HAVE NECESSARILY BEEN SHOWN. THE LOCATION OF SERVICES ON THESE PLANS ARE APPROXIMATE ONLY. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION NO WORK IS TO BE UNDERTAKEN WITHOUT CONSULTING THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF THE WORK. DEPTH OF SERVICES AT POSSIBLE CONFLICT POINTS ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ABOVE GROUND SERVICES AS SHOWN ON THE DRGS HAVE BEEN LOCATED BY FIELD SURVEY. ALL UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM THE RELEVANT AUTHORITY'S RECORDS.
- ALL EXISTING FEATURES (eg. DRIVEWAYS, GARDENS, PATHS etc.) ARE TO BE REINSTATED WHERE DISTURBED BY THE WORKS. ALLOW FOR SUPPORT OF POWER POLES/STAYS, FENCES etc. ADJACENT TO TRENCHES.
- WHERE BEND FITTINGS ARE NOT SHOWN, MAKE CHANGES IN DIRECTION USING PIPE JOINT DEFLECTIONS. MAKE EQUAL NUMBER AND SIZE OF PIPE DEFLECTIONS EACH SIDE OF CHAINAGE SHOWN (MAX. DEFLECTION 3° PER JOINT). IL SHOWN ON LONG SECTIONS IS AT INTERSECTIONS POINT (IP). JOINT DEFLECTIONS MAY ALSO BE REQUIRED AT FITTINGS TO MEET ALIGNMENT AND LEVELS AS SPECIFIED.

PIPES, FITTINGS AND VALVES

- ALL DUCTILE IRON FITTINGS SHALL BE MANUFACTURED TO AS/NZS 2280 WITH SOCKET ENDS (UNLESS NOTED) AND DESIGNED FOR USE WITH PVC OR DI PIPES AS APPLICABLE. ALL DI PIPES SHALL BE CEMENT LINED TO AS/NZS 2280.
- DICL USED IN ROAD CROSSINGS WILL BE PN35 AS PER WATER AUTHORITY STANDARDS.
- PRESSURE PIPES USED FOR WATER SUPPLY SHALL BE RRJ PIPES AND SHALL BE EITHER PVC CLASS PN16 (UNLESS NOTED OTHERWISE) MINIMUM AND MANUFACTURED TO (PVC AS/NZS 1477), (PVC-M AS/NZS 4765) (PVC-0 AS/NZS 4441) OR DICL PN 20, 35 OR FLANGED CLASS TO AS/NZS 2280.
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- ALL VALVES, FITTINGS AND PIPE FITTINGS TO BE COATED INTERNALLY AND EXTERNALLY WITH FACTORY APPLIED THERMAL POLYMERIC CORROSION PROTECTION TO AS 4158.
- ALL NUTS, BOLTS AND WASHERS, SHALL BE STAINLESS STEEL GRADE 316 CLASS 50, WITH AN ANTI-SEIZE APPLIED DURING ASSEMBLY.
- ALL DUCTILE IRON FLANGES ARE TO COMPLY WITH AS/NZS 2280 AND SHALL BE RAISED FACE TO AS 4087.

VEGETATION PROTECTION (WHERE APPLICABLE)

- TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
- WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL (WHERE APPLICABLE)

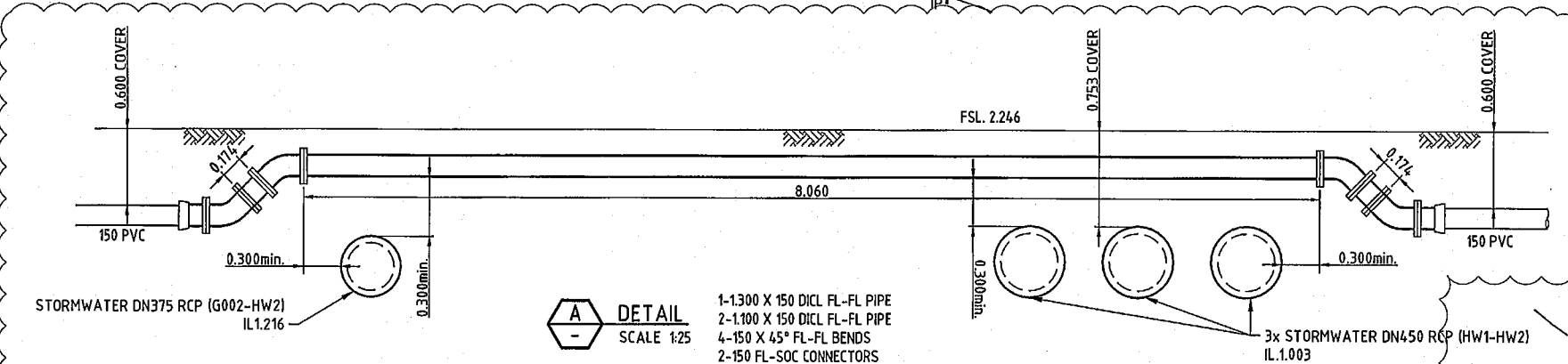
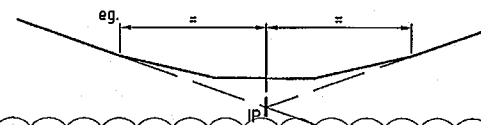
- TOPSOIL AND SUBSOIL SHOULD BE STOCKPILED SEPARATELY.
- CARE SHOULD BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROL AROUND STOCKPILES.

CREEK CROSSINGS (WHERE APPLICABLE)

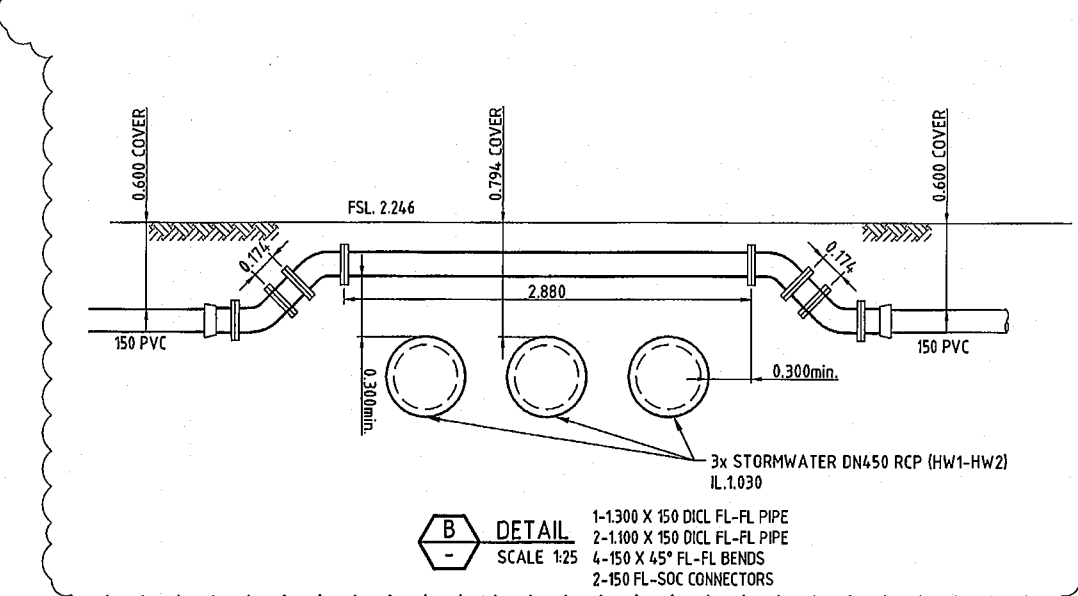
- SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
- APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
- NO SOIL SHOULD BE STOCKPILED WITHIN 5m OF CREEK.

REHABILITATION (WHERE APPLICABLE)

- PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
- PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

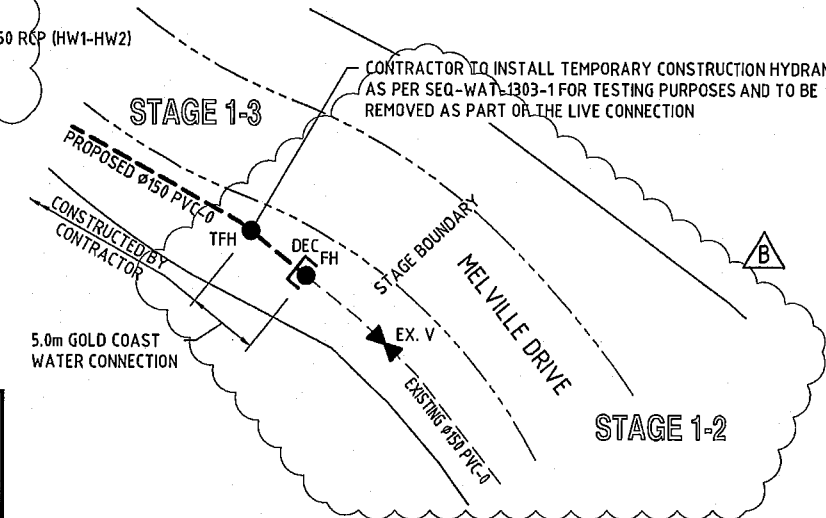


DETAIL A
SCALE 1:25
1-1.300 X 150 DICL FL-FL PIPE
2-1.100 X 150 DICL FL-FL PIPE
4-150 X 45° FL-FL BENDS
2-150 FL-SOC CONNECTORS

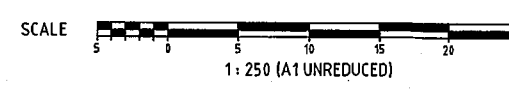


DETAIL B
SCALE 1:25
1-1.300 X 150 DICL FL-FL PIPE
2-1.100 X 150 DICL FL-FL PIPE
4-150 X 45° FL-FL BENDS
2-150 FL-SOC CONNECTORS

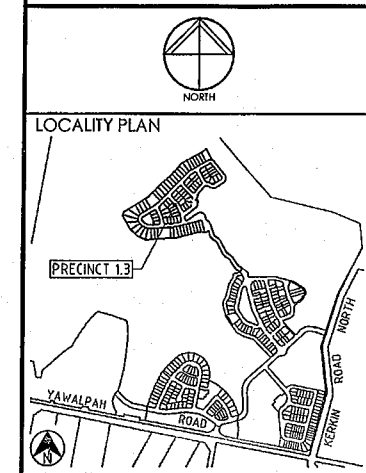
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL
Application No. OPW201601732
Dated: 28 November 2016
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



LIVE CONNECTION (IF REQUIRED) - MELVILLE DRIVE
ADJACENT LOT 706
SCALE 1:250



DO NOT SCALE THIS DRAWING IF IN DOUBT - ASK!



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG'16	NJS
B	LIVE CONNECTION DETAIL AMENDED TO REFLECT EXISTING WATER MAIN	20.10.16	RCT

Associated Consultants

Client

Project

GAINSBOROUGH GREENS PRECINCT 1 STAGE 3

LEVEL 2 - 71 GREY STREET
SOUTH BRISBANE
QUEENSLAND 4101
PHONE 07 3017 1900
FAX 07 3017 1911
EMAIL kng@knpl.com.au
ABN 35 112 053 611

Approved Drawings: RPEQ 1068

Drawn by: *[Signature]*

WATER RETICULATION NOTES

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16

Scale	Sheet
AS SHOWN	65 of 67

Drawn No	Revision
A1	B

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INFORMATION ONLY

Client: MIRVAC
 Project: GAINSBOROUGH GREENS PRECINCT 1.3
 Prepared By: John Sufficiency
 Reviewed By: Robert Mander
 Date: 20th October 2016
 Date: 20th October 2016

Safety in Design Analysis

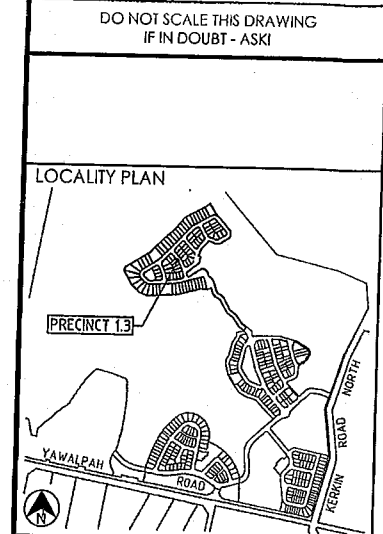
Complete Safety In Design Analysis by populating the table where applicable with all of the relevant safety issues for the project. For example:

<input checked="" type="checkbox"/> Positioning of new services adjacent to existing live services <input checked="" type="checkbox"/> Construction adjacent to existing road carriageways <input checked="" type="checkbox"/> Pedestrians <input checked="" type="checkbox"/> Civil Construction Workers <input checked="" type="checkbox"/> Maintenance Workers <input checked="" type="checkbox"/> Work Place Health and Safety Constraints <input type="checkbox"/> Unusual material handling <input checked="" type="checkbox"/> Falls from heights <input checked="" type="checkbox"/> Underground Services (existing) <input checked="" type="checkbox"/> Electrical Service Installation <input checked="" type="checkbox"/> Gas Service Installation <input checked="" type="checkbox"/> Communication Installation <input type="checkbox"/> Traffic Signal Installation <input checked="" type="checkbox"/> Landscape Workers <input checked="" type="checkbox"/> Line marking Workers <input checked="" type="checkbox"/> Excavation – open cut trenching - Trench excavation depths <input checked="" type="checkbox"/> Tunnel Boring <input checked="" type="checkbox"/> Confined Spaces <input checked="" type="checkbox"/> Lifting of loads <input checked="" type="checkbox"/> Unloading of materials and storage <input type="checkbox"/> Storage of hazardous materials <input checked="" type="checkbox"/> Geotechnical investigation – works <input checked="" type="checkbox"/> Bulk Earthworks	<input checked="" type="checkbox"/> Slope Stability <input checked="" type="checkbox"/> Dust Control <input checked="" type="checkbox"/> Erosion and Sediment Control/Management <input checked="" type="checkbox"/> Sediment Basin Construction <input checked="" type="checkbox"/> Wetland/Dam Construction <input checked="" type="checkbox"/> Working under traffic Project Specific Design Elements:
--	---

List all relevant safety studies

The following table summarises the safety in design issues considered.

Section of Works	Identify any Potential Incident or Hazard	Consequence	Likelihood	Risk Rating	Risk Control Measures	Consequence	Likelihood	Residual Risk Rating (after design applied)	Risk Manager
Earthworks Material Investigation	Geotechnical Investigation	C	3	S	SWMS required by Contractor	D	3	M	Contractor
Road/Earthworks Works	Pedestrians Injury	D	3	M	TMP to be provided by Contractor to exclude pedestrians from work site	E	3	L	Contractor
	Civil Construction Workers – Injury	A	4	H	TMP and SWMS required for all activities	C	2	S	Contractor
	Maintenance Workers	A	4	H	TMP and SWMS required for all activities	C	3	S	Contractor
	Underground Services (Existing)	A	3	H	DBYD (information to be sort prior to design. Existing to be located by survey if applicable to design. All existing services to be located and depths confirmed prior to commencement. SWMS to be provided by Contractor	C	2	S	Designer/ Contractor
Working adjacent to existing Infrastructure	Conflict between construction equipment / personnel and live Infrastructure in particular Power Lines	B	4	S	All existing services highlighted in the documentation. Contractor to complete DBYD search before commencing works. SWMS to be provided by Contractor	C	4	M	Designer/ Contractor
Service trench/ pipe installation	Location of all trenches to provide clearance to all other services and all structures or battered embankments	A	4	H	Mains located with safe working clearance to existing pressure mains, structures and battered embankments	C	4	M	Designer
	Trench depth	A	4	M	Depth of trenches minimized for both safety and cost efficiency	C	4	M	Designer
Works within Confined Spaces	Construction of stormwater, sewer, water and wetland structures	A	4	M	Contractor to ensure works undertaken in a manner complying with safe work method statements	D	5	L	Contractor
Silt and Erosion Control	Public access to water retaining temporary sediment basins	A	5	S	Protection measures – that is fencing of all water retaining structures with side slopes greater than 1 in 5 as described in International Erosion Control Association (Australasian) Table B9	C	4	M	Designer/ Contractor



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	AUG '16	NJS
B	REVISED DETAILS	20.10.16	RCT

Associated Consultants

RISK ASSESSMENT AND CONTROL

Risk Assessment

Select one category from each of the columns below that best represents the likely outcome if the potential hazard actually did occur. For each consequence consider the most likely outcome and not the 'absolute worst' case.

Consequence		Likelihood	
A	Death – major environmental damage	1	Certain
B	Permanent Disability – severe environmental damage	2	Probable
C	Lost Time Injury – moderate environmental damage	3	Possible
D	Medical Treatment Injury – minor environmental damage	4	Unlikely
E	First Aid Treatment	5	Very Unlikely

RISK RATING

Certain - means an event or situation that is happening more or less all the time, including continuous situations
Permanent Disability – means a disability, such as loss of a limb or eyesight, loss of hearing, chronic skin disorder, chronic back disorder, emphysema, and the like

H: High Risk S: Significant Risk
 M: Moderate Risk L: Low Risk

Read the Risk Rating from the matrix below:

Risk Assessment Matrix	A	B	C	D	E
1				S	S
2			S	S	M
3			S	M	L
4		S	M	L	L
5	S	S	M	L	L

Probable – means an event or situation that occurs or is likely to occur about ten times or more per year
Possible – means an event or situation that occurs or is likely to occur about once per year
Unlikely – means an event or situation that occurs or is likely to occur less frequently than once every ten years

Issued 20th October 2016 Rev - B

Client

Project

GAINSBOROUGH GREENS PRECINCT 1 STAGE 3

LEVEL 2 - 71 GREY STREET
 SOUTH BRISBANE
 QUEENSLAND 4101
 PHONE 07 3017 1900
 FAX 07 3017 1911
 EMAIL kn@knpl.com.au
 ABN 35 112 053 611

Approved Director - RPSG 1998
[Signature] 21.10.16

Drawn Title

SAFETY IN DESIGN ANALYSIS

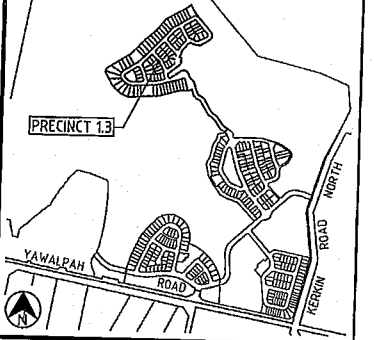
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NJS	CH	GBG	JUL 16
Scale	AS SHOWN	Sheet	66 of 67
A1	Drawing No 08-133-66	Revision	B

M:\2008\08133 Gainsborough Greens Precinct 1.3\Engineering\Arch\08-133-66-5 SAFETY.dwg Plotted by: DS on 21/10/2016 3:45:44 PM

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASKI



LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	OCT '16	RCT

Associated Consultants



Client



Project

GAINSBOROUGH GREENS
PRECINCT 1
STAGE 3

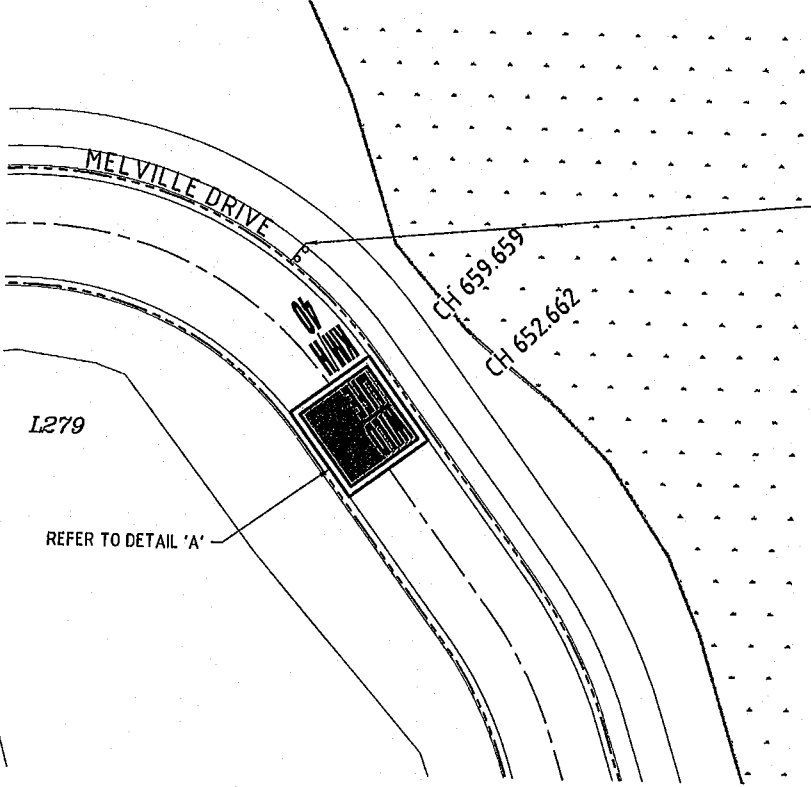


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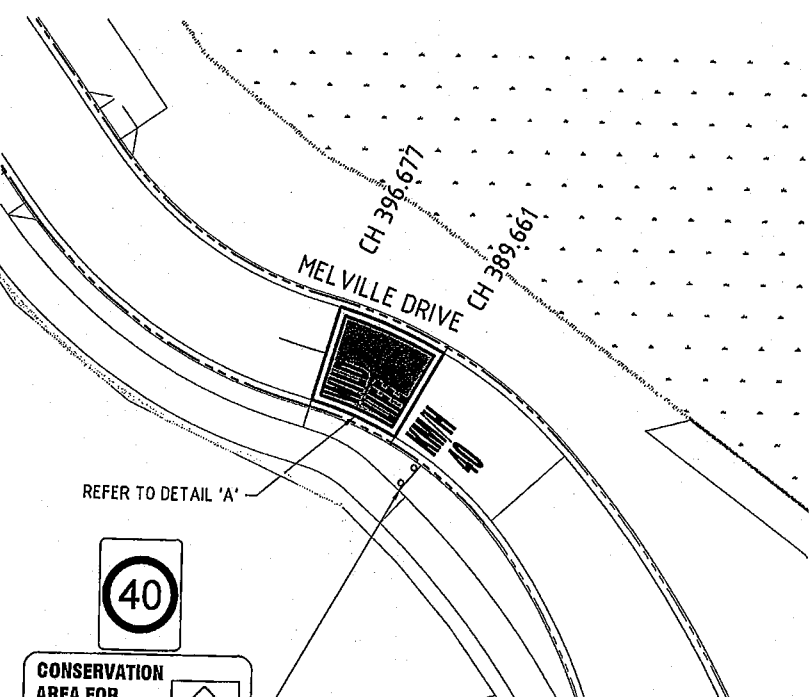
Approved Drawing - RPS 1988
[Signature] 21.10.16

Drawn by: *[Signature]*
ROADWORKS
SIGNS AND LINEMARKING PLAN

Drawn	Designed	Checked	Date
NJS	CH	GBG	JUL 16
Scale AS SHOWN			Sheet 67 of 67
A1	Drawing No 08-133-67	Revision A	



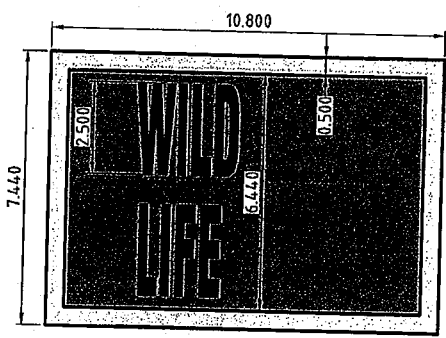
(DETAIL 11)
SIGNS & LINEMARKING
MELVILLE DRIVE
SCALE 1:250



(DETAIL 12)
SIGNS & LINEMARKING
MELVILLE DRIVE
SCALE 1:250



PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL
Application No.: OPW201601732
Dated: 28 November 2016
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies



10.800
7.440
2.500
0.500
5.740
KM/H
40

DETAIL 'A'
SCALE 1:100

