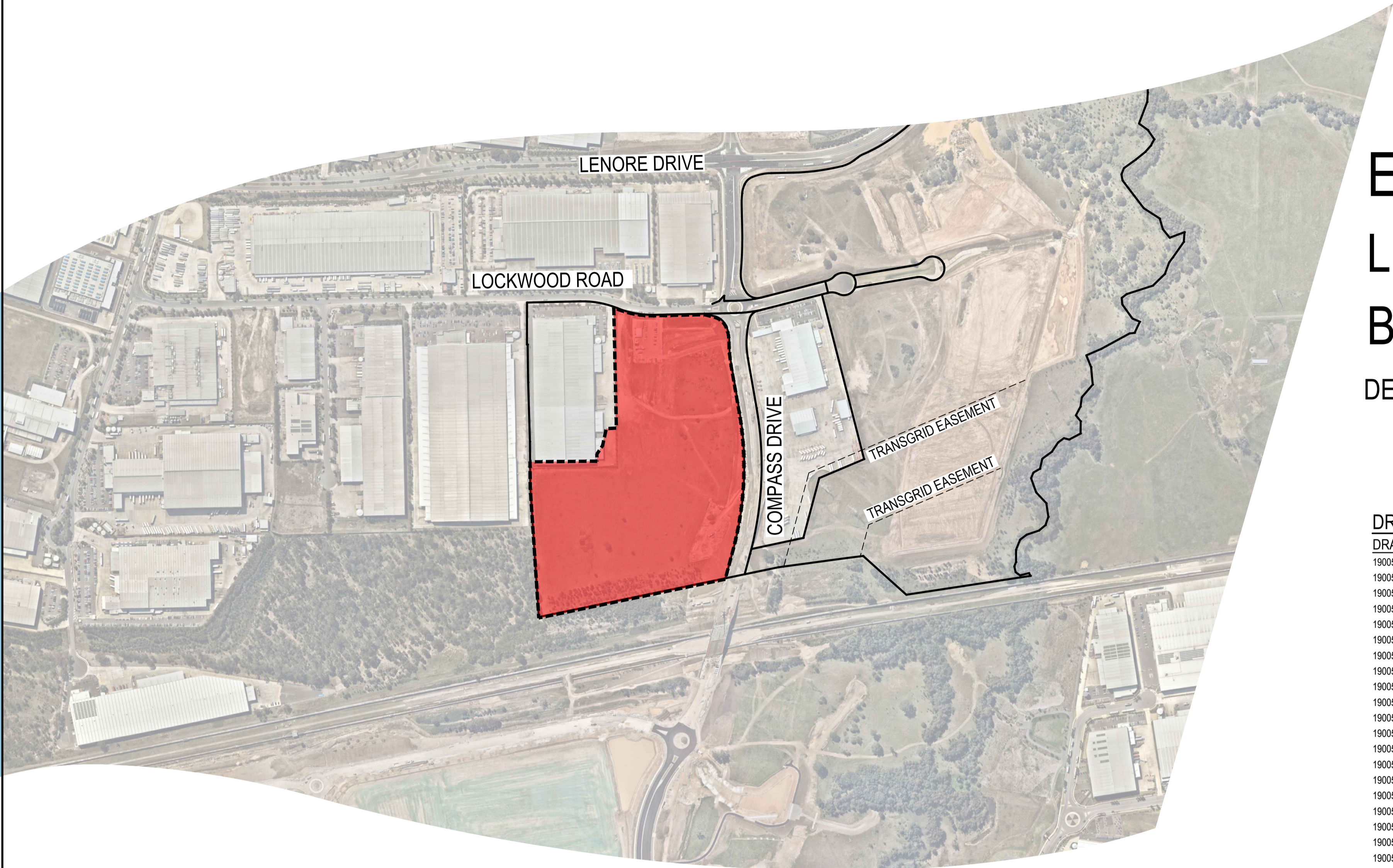


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ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1
DEVELOPMENT APPLICATION No.1



DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION
190050-05-DA1-C01.01	COVER SHEET AND DRAWING SCHEDULE
190050-05-DA1-C01.21	GENERAL NOTES
190050-05-DA1-C01.41	GENERAL ARRANGEMENT PLAN
190050-05-DA1-C03.01	EROSION AND SEDIMENTATION CONTROL PLAN - SHEET 01
190050-05-DA1-C03.02	EROSION AND SEDIMENTATION CONTROL PLAN - SHEET 02
190050-05-DA1-C03.03	EROSION AND SEDIMENTATION CONTROL PLAN - SHEET 03
190050-05-DA1-C03.21	EROSION AND SEDIMENTATION CONTROL DETAILS
190050-05-DA1-C03.31	SEDIMENT BASIN PLAN AND SECTION
190050-05-DA1-C04.01	BULK EARTHWORKS - CUT AND FILL PLAN
190050-05-DA1-C05.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 01
190050-05-DA1-C05.02	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 02
190050-05-DA1-C05.03	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 03
190050-05-DA1-C07.01	TYPICAL ROAD CROSS SECTION AND ROAD LONGITUDINAL SECTIONS
190050-05-DA1-C11.01	PAVEMENT, SIGNAGE AND LINE MARKING PLAN - SHEET 01
190050-05-DA1-C11.02	PAVEMENT, SIGNAGE AND LINE MARKING PLAN - SHEET 02
190050-05-DA1-C11.03	PAVEMENT, SIGNAGE AND LINE MARKING PLAN - SHEET 03
190050-05-DA1-C14.01	SITEWORKS DETAILS
190050-05-DA1-C20.01	PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN
190050-05-DA1-C20.21	POST-DEVELOPMENT STORMWATER CATCHMENT PLAN
190050-05-DA1-C22.01	TURNING PATH PLAN - SHEET 01
190050-05-DA1-C22.02	TURNING PATH PLAN - SHEET 02
190050-05-DA1-C23.01	SAFETY IN DESIGN

REV	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION	MDH	DL	MKH	MKH

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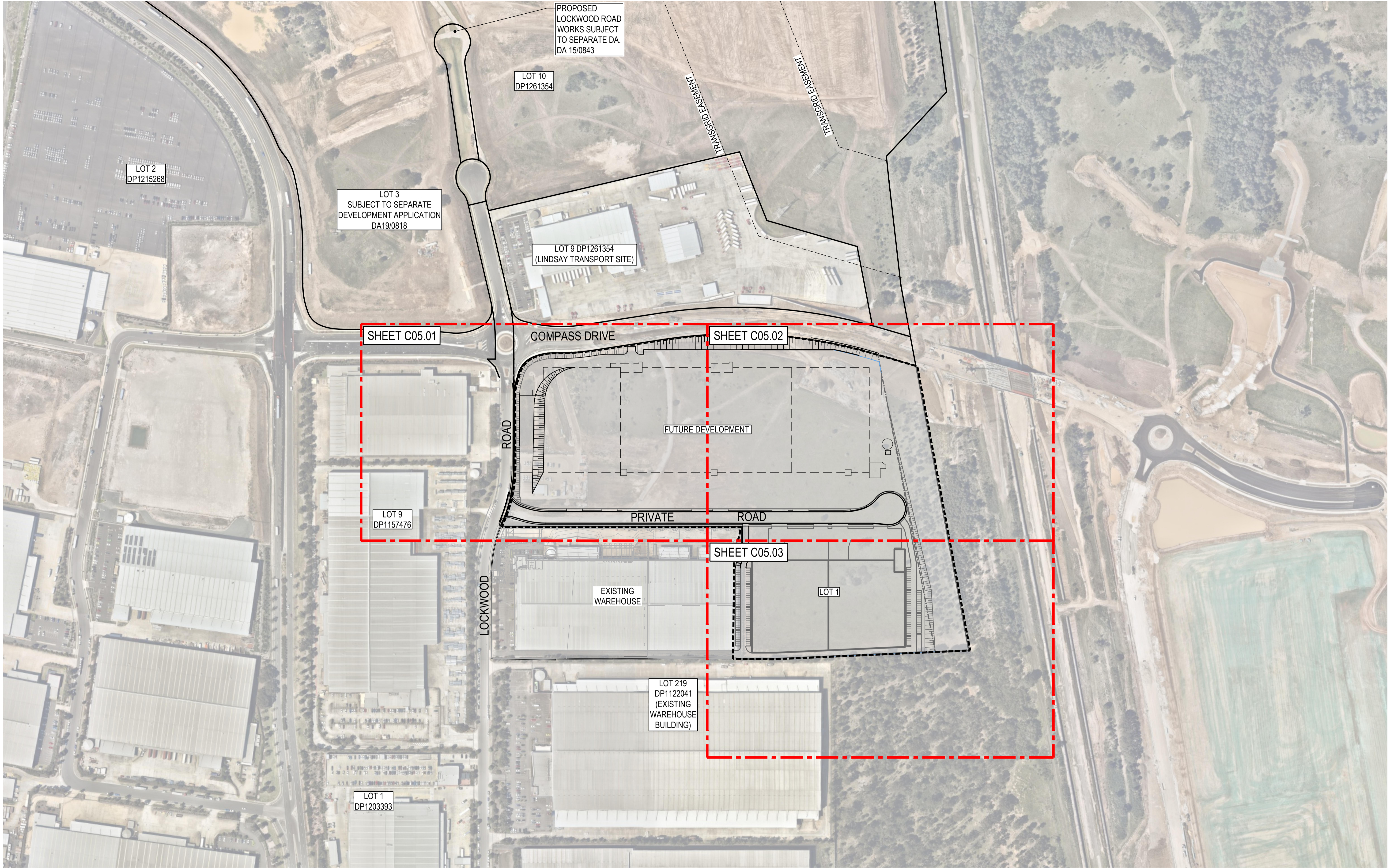
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Scale 1:5000	Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION
Date 19/04/2021	Project Number/Drawing Number 190050-05-DA1-C01.01
Size A1	Revision 1
Datum MGA2020	



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1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				

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Project

ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title

GENERAL ARRANGEMENT PLAN

Scale

1:2000

Date

19/04/2021

Size

A1

Datum

MGA2020

Status

FOR APPROVAL
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Project Number/Drawing Number

190050-05-DA1-C01.41

Revision

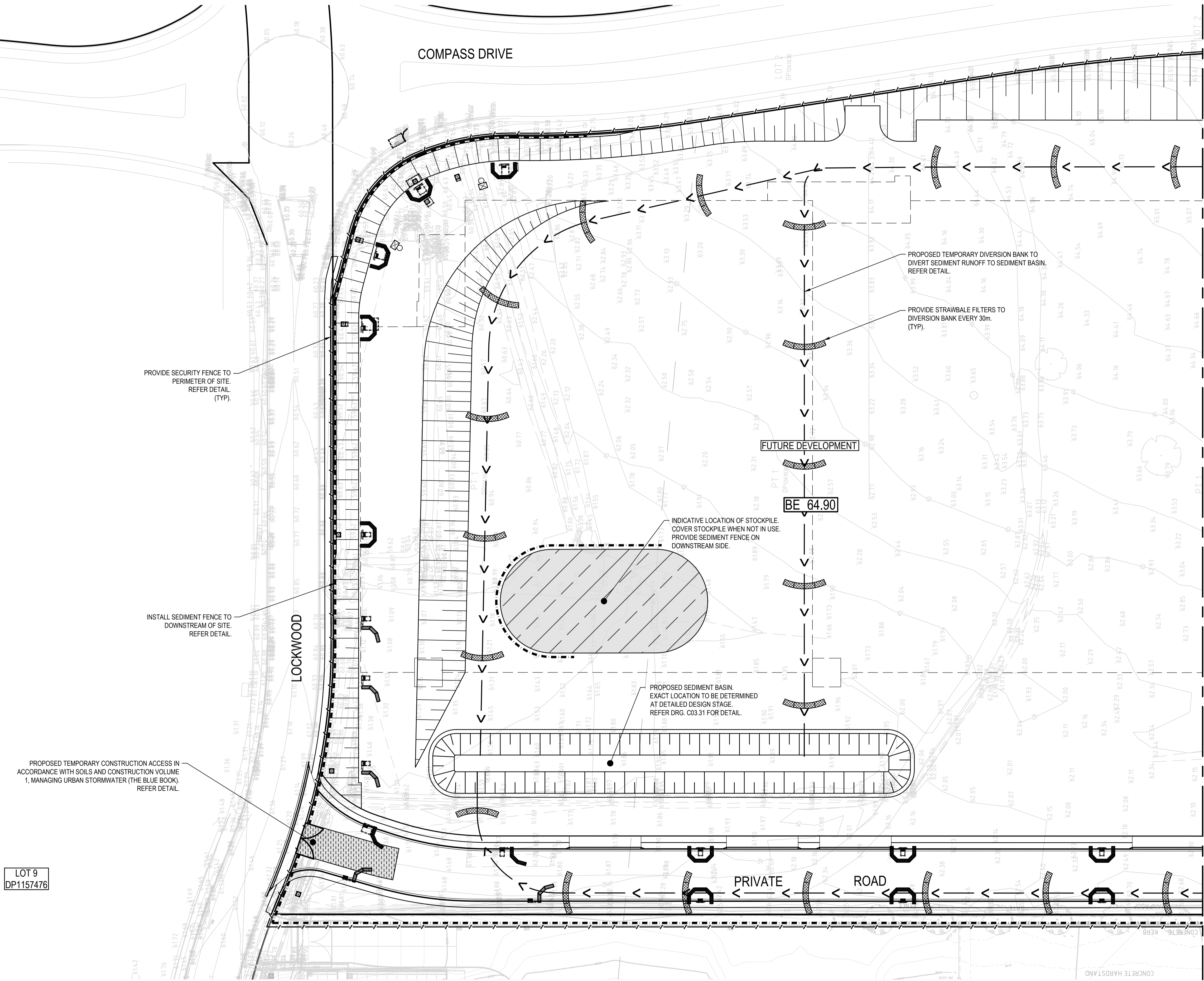
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LEGEND

- TEMPORARY CONSTRUCTION ACCESS (SD 6-14)
- STOCKPILES (SD 4-1)
- SEDIMENT FENCE (SD 6-8)
- DIVERSION BANK (WITH CHANNEL)
- SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG)
- SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG)
- GEOTEXTILE INLET FILTER (SD 6-12)
- STRAWBALE SEDIMENT FILTER (SD 6-7)

NOTE

1. SECURITY FENCE TO BE RELOCATED DURING CONSTRUCTION WORKS TO TOP OF BATTER TO FACILITATE EMBANKMENT WORKS. FENCE TO BE RELOCATED TO BOUNDARY OF CONSERVATION ZONE AT COMPLETION OF CONSTRUCTION WORKS.



REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION	MDH	DL	MKH	MKH

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Scale

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Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
EROSION AND SEDIMENTATION
CONTROL PLAN
SHEET 01

Scale
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Date
19/04/2021

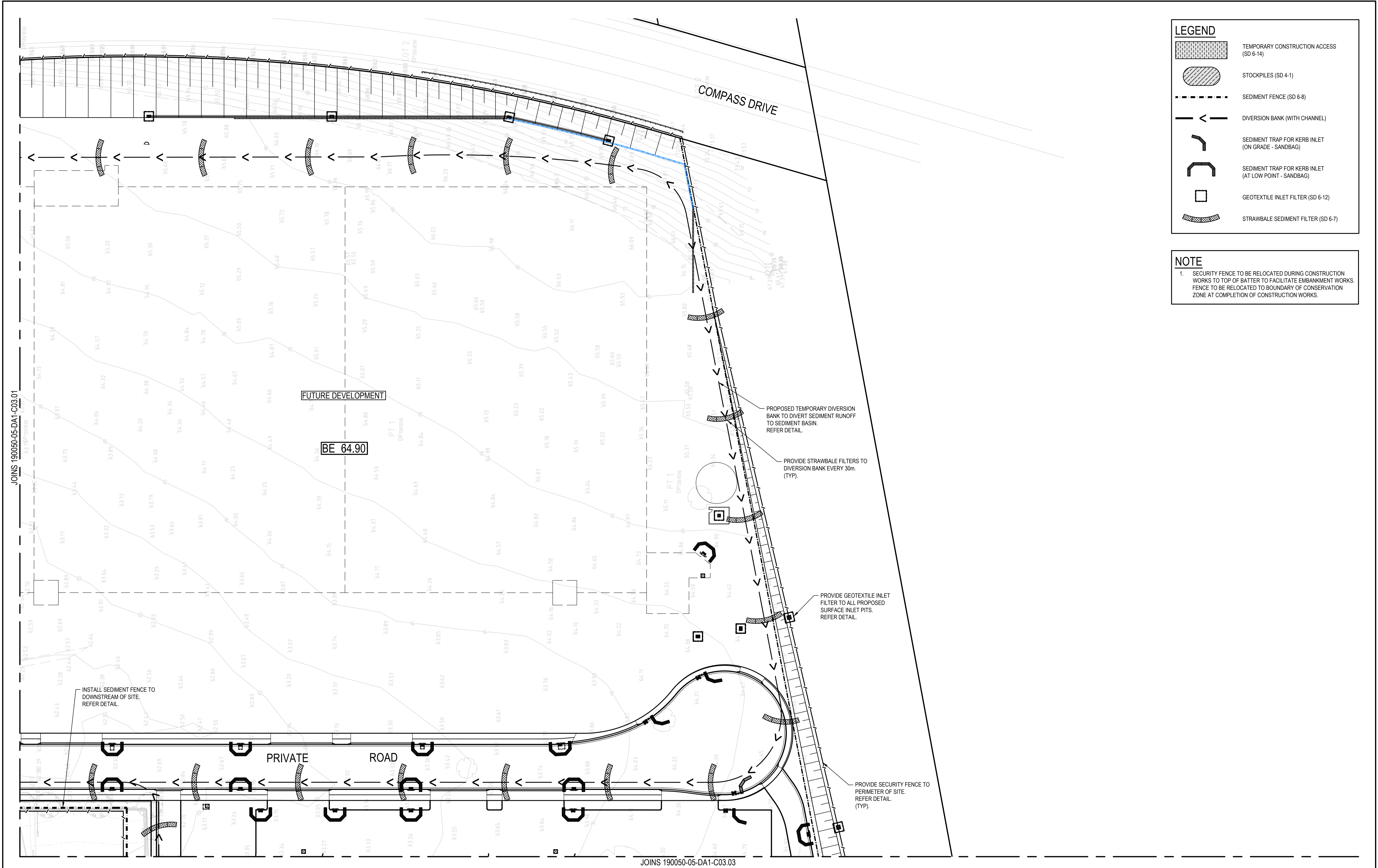
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Datum
MGA2020

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Project Number/Drawing Number
190050-05-DA1-C03.01

Revision
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LEGEND

TEMPORARY CONSTRUCTION ACCESS
(SD 6-14)

STOCKPILES (SD 4-1)

SEDIMENT FENCE (SD 6-8)

DIVERSION BANK (WITH CHANNEL)

SEDIMENT TRAP FOR KERB INLET
(ON GRADE - SANDBAG)

SEDIMENT TRAP FOR KERB INLET
(AT LOW POINT - SANDBAG)

GEOTEXTILE INLET FILTER (SD 6-12)

STRAWBALE SEDIMENT FILTER (SD 6-7)

NOTE

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Project
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LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
EROSION AND SEDIMENTATION
CONTROL PLAN
SHEET 02

Scale
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Date
19/04/2021

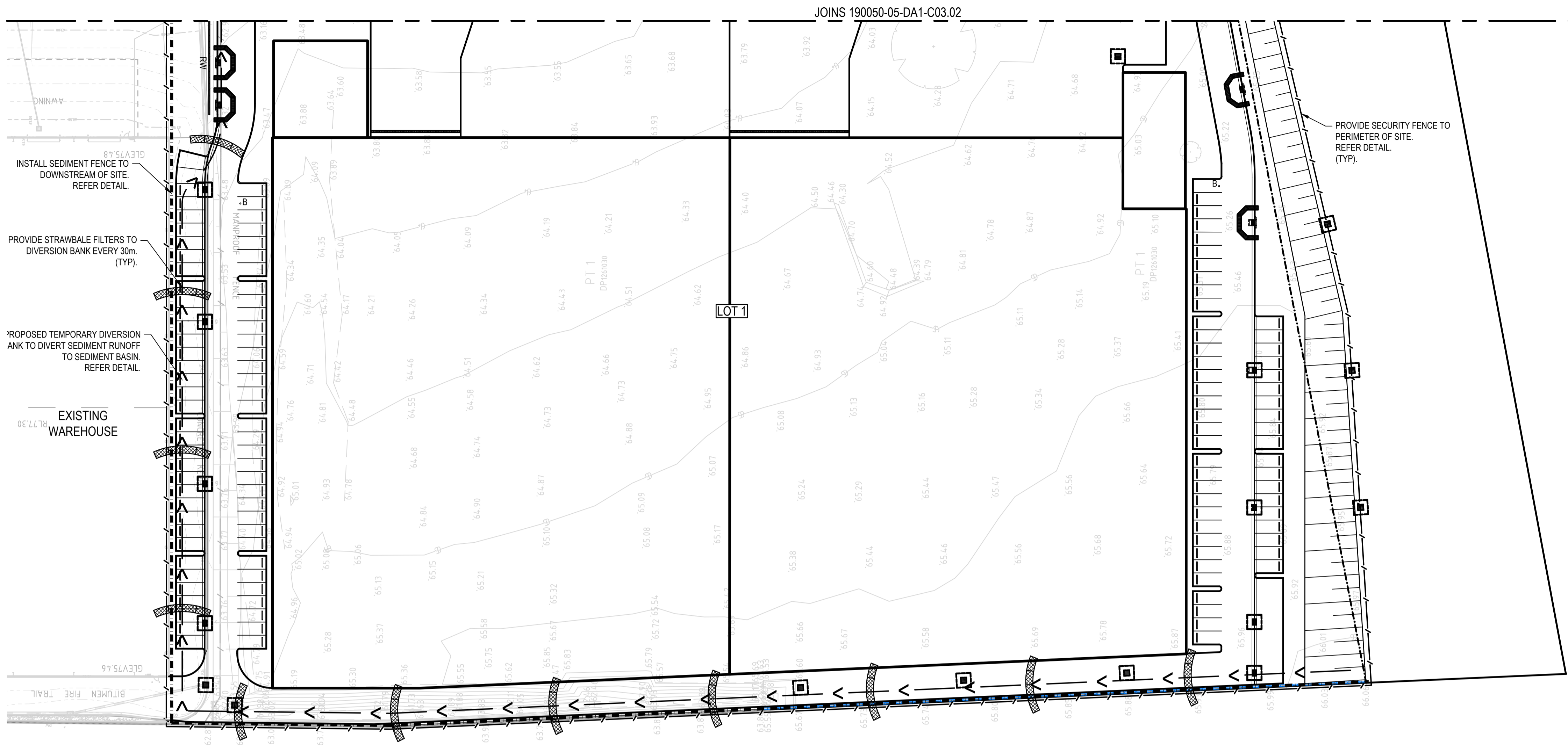
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Status
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Project Number/Drawing Number
190050-05-DA1-C03.02

Revision
1



LEGEND

TEMPORARY CONSTRUCTION ACCESS (SD 6-14)

STOCKPILES (SD 4-1)

SEDIMENT FENCE (SD 6-8)

DIVERSION BANK (WITH CHANNEL)

SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG)

SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG)

GEOTEXTILE INLET FILTER (SD 6-12)

STRAWBALE SEDIMENT FILTER (SD 6-7)

NOTE

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Project
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LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
EROSION AND SEDIMENTATION
CONTROL PLAN
SHEET 03

Scale
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Date
19/04/2021

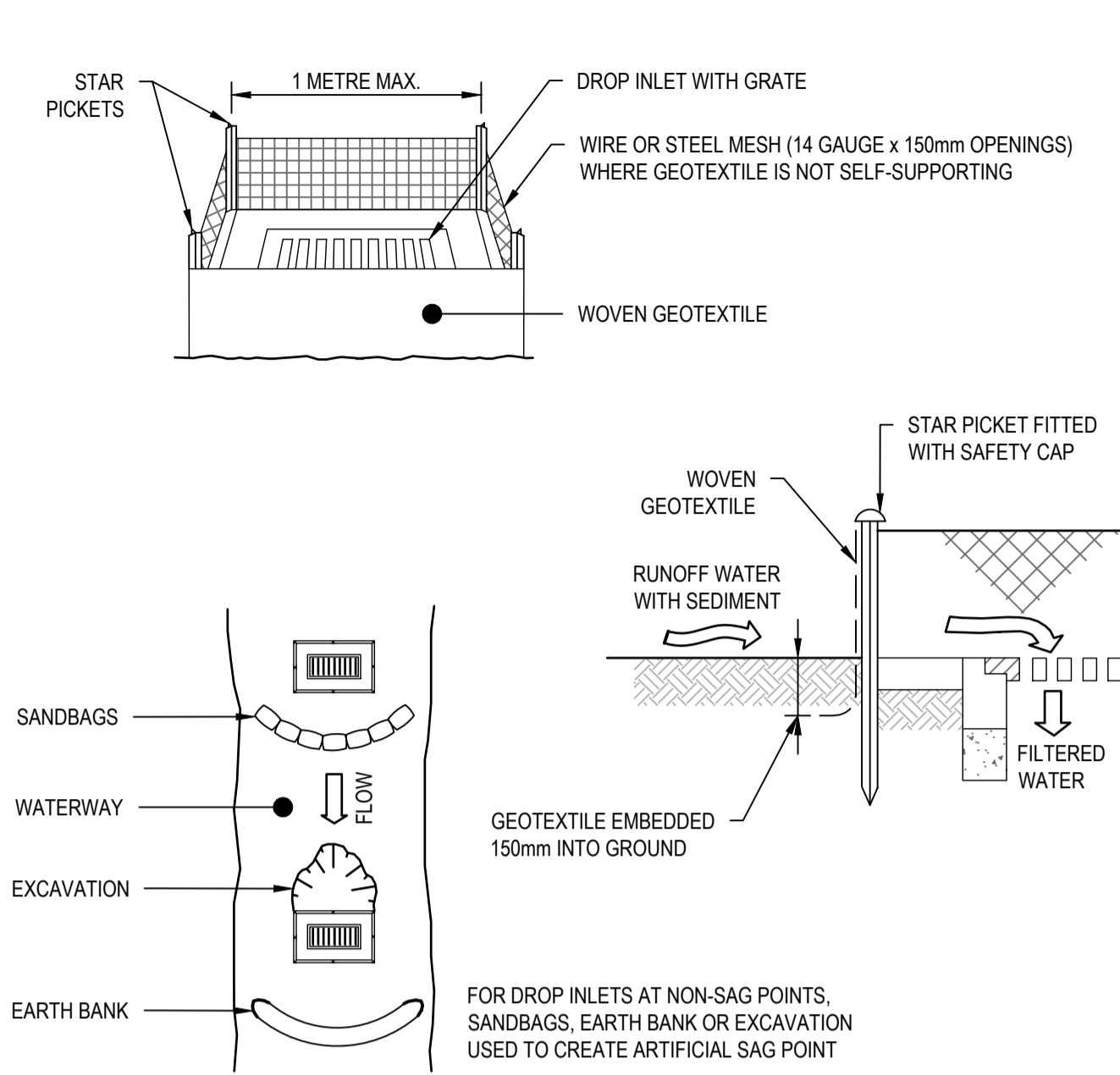
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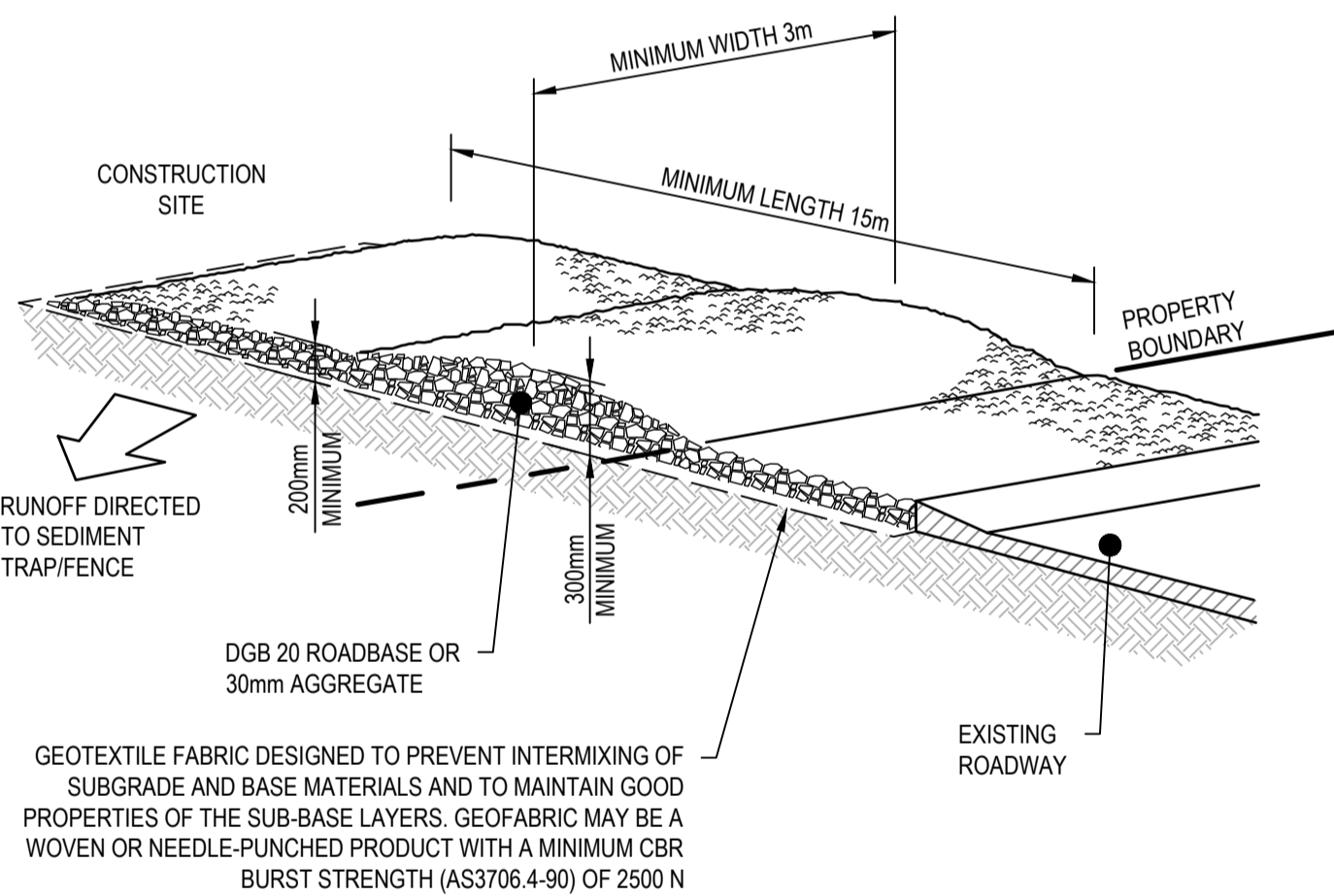
Revision
1



CONSTRUCTION NOTES

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

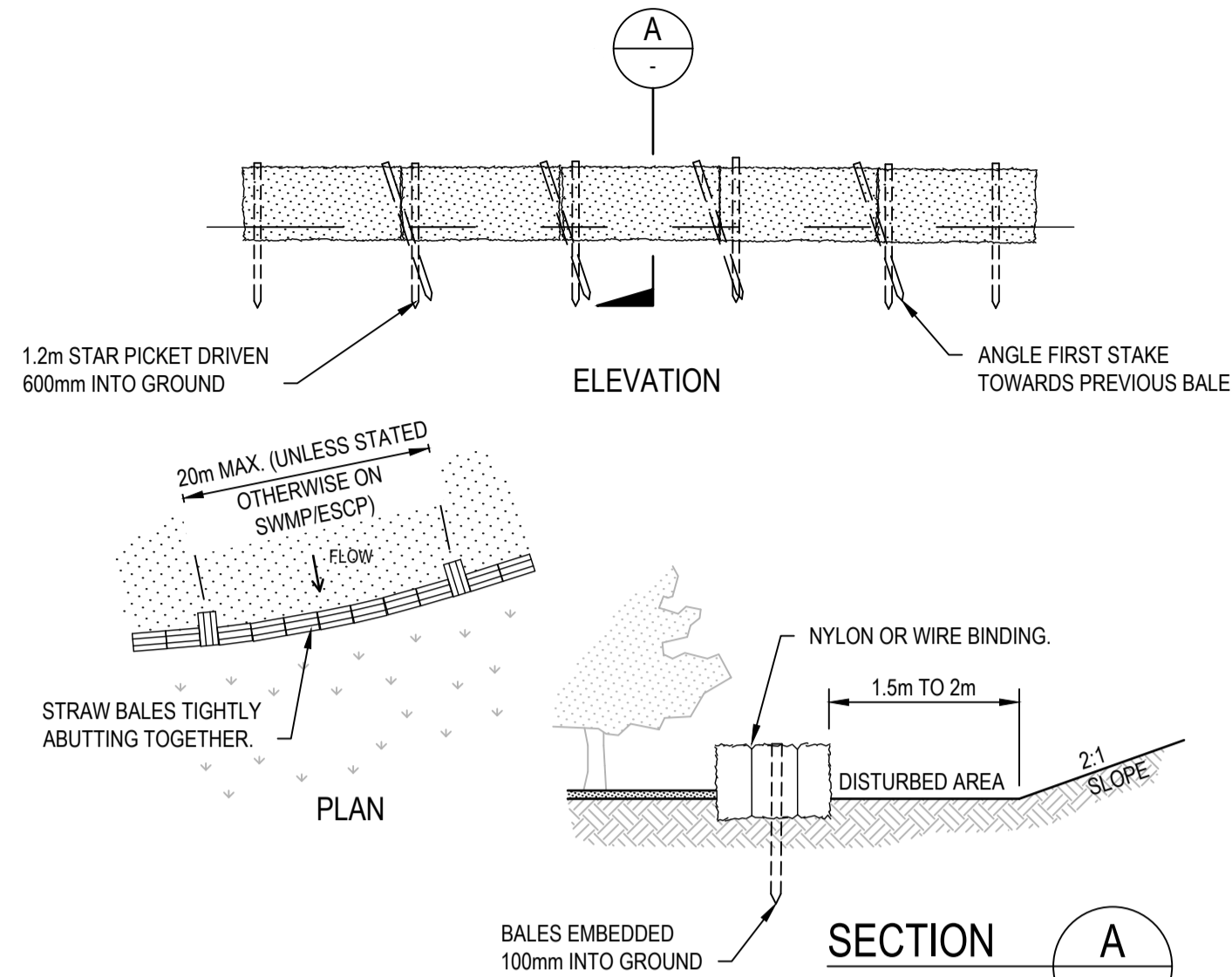
GEOTEXTILE INLET FILTER (SD 6-12)



CONSTRUCTION NOTES

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

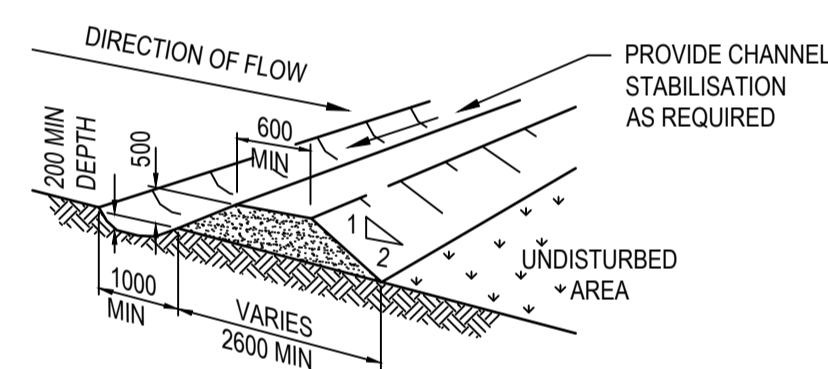
TEMPORARY CONSTRUCTION ACCESS (SD 6-14)



CONSTRUCTION NOTES

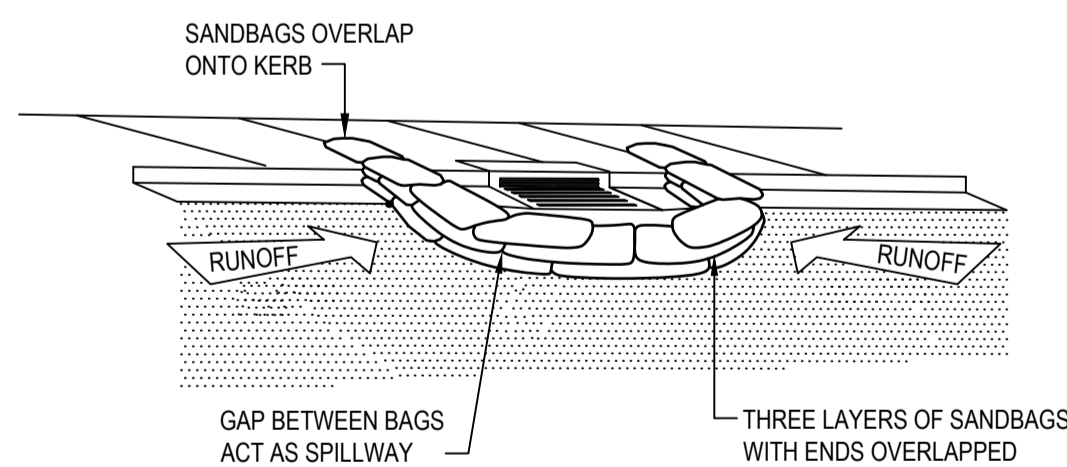
- CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
- PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
- ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
- EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 800mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
- WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
- ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER (SD 6-7)



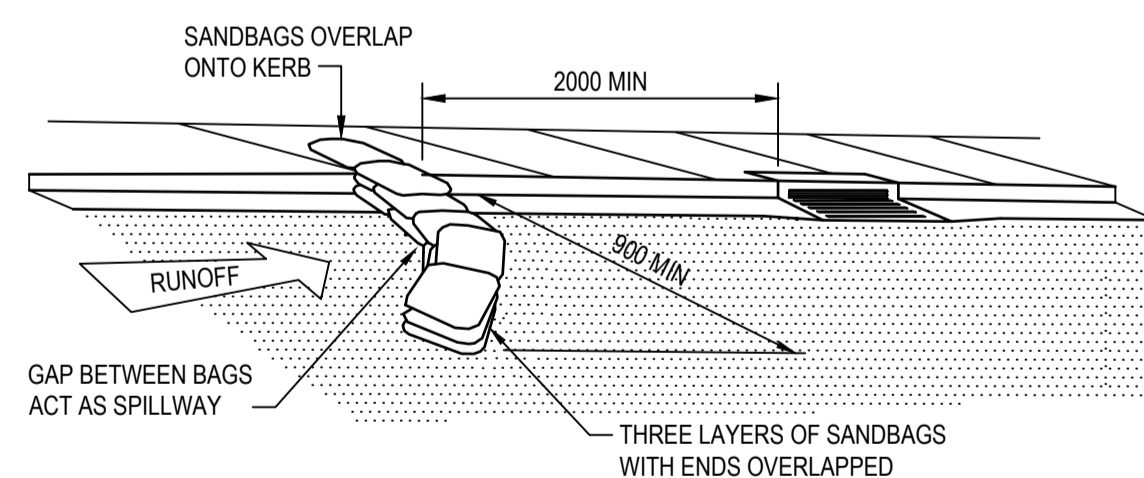
DIVERSION BANK (WITH CHANNEL)

NOT TO SCALE



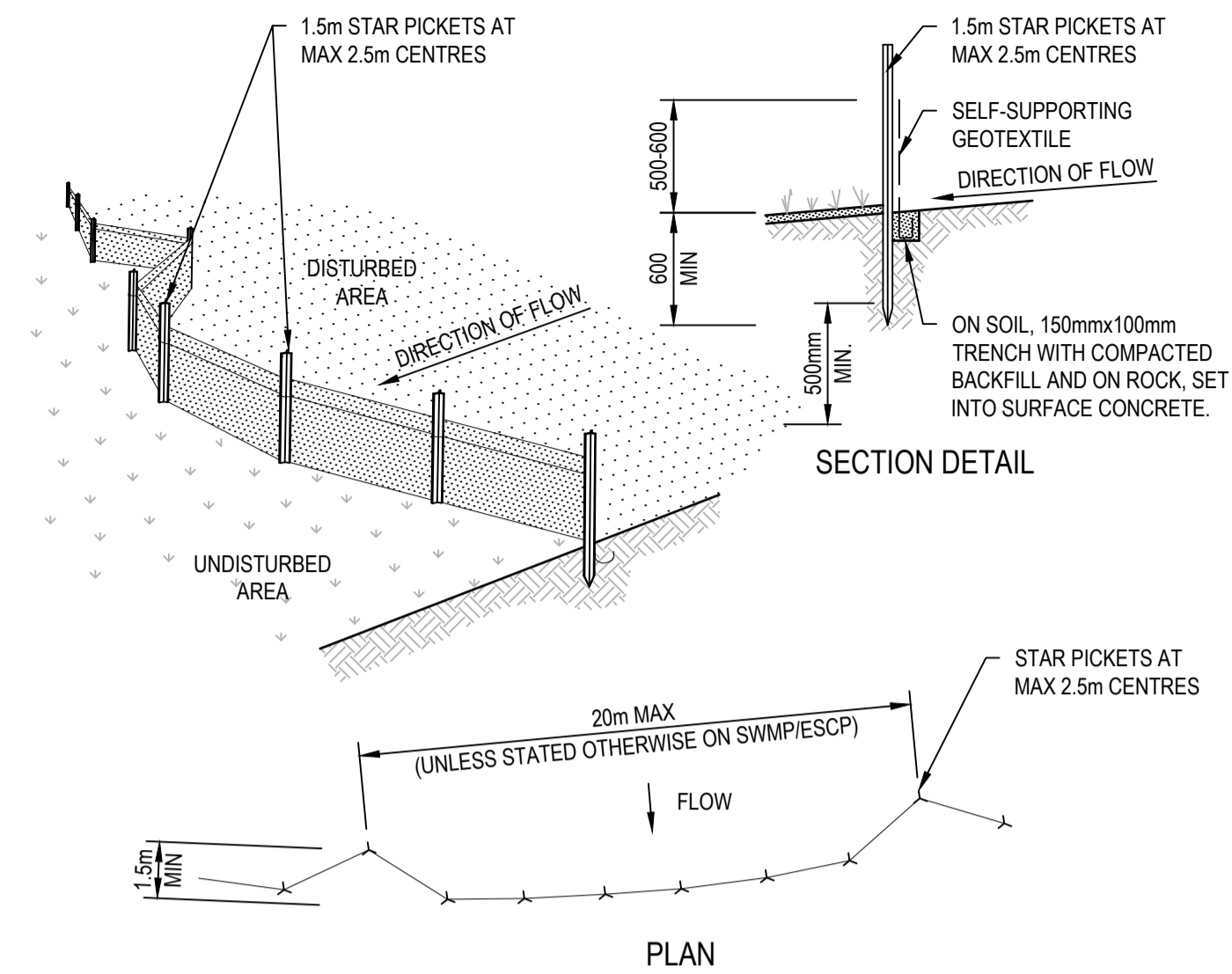
SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG)

NOT TO SCALE



SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG)

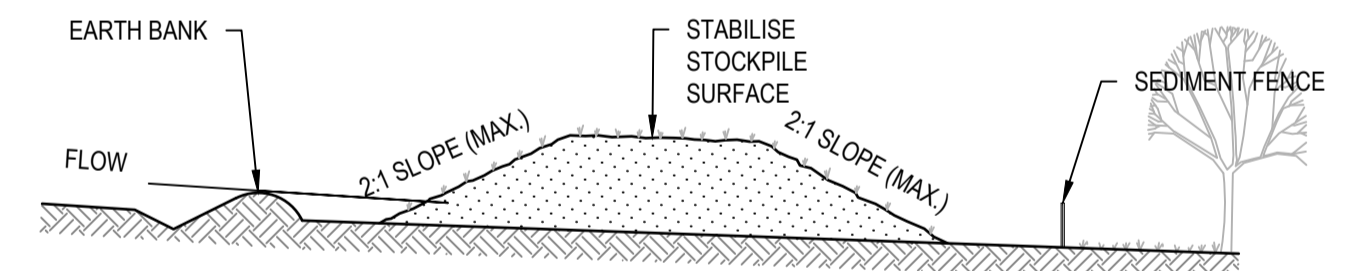
NOT TO SCALE



CONSTRUCTION NOTES

- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
- CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
- FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
- JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
- BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE (SD 6-8)



CONSTRUCTION NOTES

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

STOCKPILES (SD 4-1)

REV	DATE	ISSUED FOR DEVELOPMENT APPLICATION	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION					

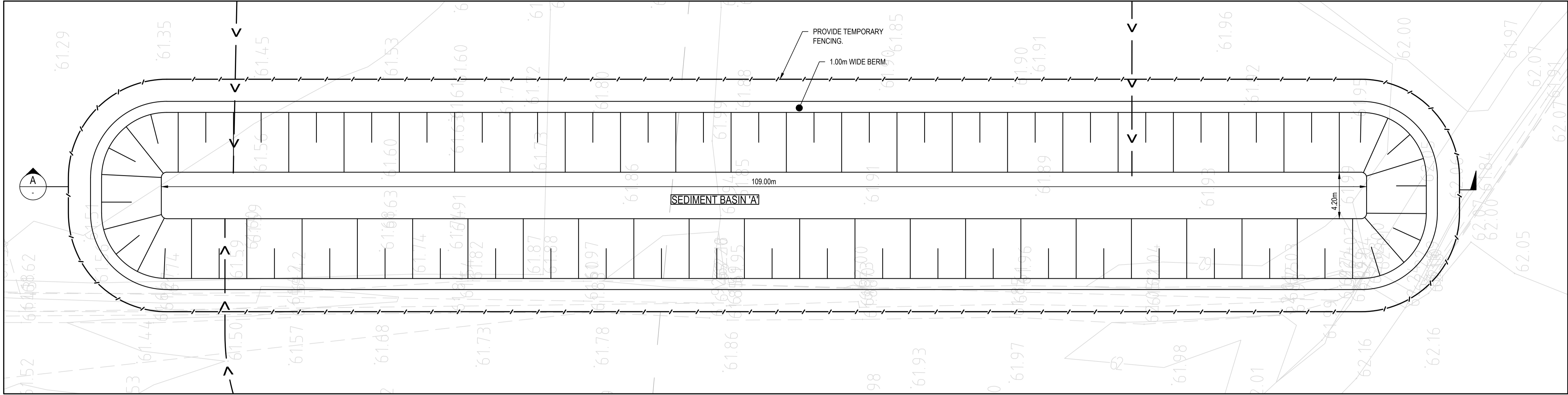
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Project	ERSKINE PARK INDUSTRIAL ESTATE LOCKWOOD ROAD, ERSKINE PARK BULK, PROPOSED PRIVATE ROAD AND LOT 1
Title	EROSION AND SEDIMENTATION CONTROL DETAILS

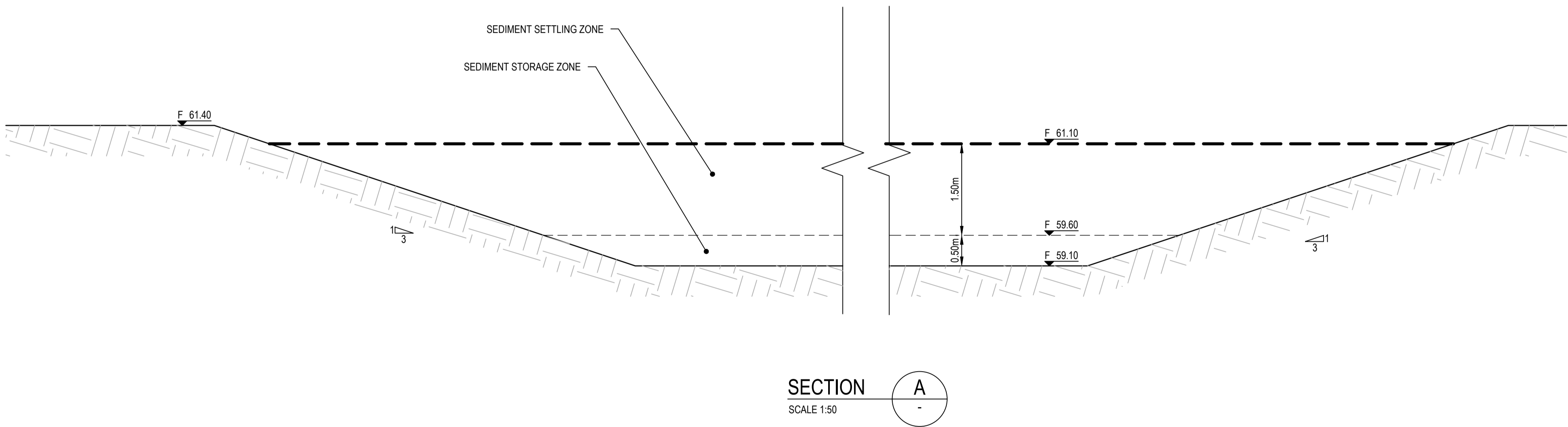
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Date	19/04/2021	Project Number/Drawing Number	190050-05-DA1-C03.21
Size	A1	Revision	1
Datum	MGA2020		



SEDIMENT BASIN 'A' PLAN
SCALE 1:200

CONSTRUCTION NOTES:

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



SECTION A
SCALE 1:50

1. Erosion Hazard and Sediment Basins

Site Name:	Erskine Park Industrial Estate - 13 Distribution Drive
Site Location:	Erskine Park
Princt/Sta	Development Application
Other Details:	CI soil

Site area	Sub-catchment or Name of Structure	Notes
Total catchment area (ha)	SB01	
Disturbed catchment area (ha)	11.98	
	12.16	

Soil analysis (enter sediment type if known, or laboratory particle size data)

Sediment Type (C, F or D) if known:	D									From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)	30									Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)	30									
% clay (fraction finer than 0.002 mm)	30									
Dispersion percentage	10.0									E.g. enter 10 for dispersion of 10%
% of whole soil dispersible	4.5									See Section 6.3.3(e). Auto-calculated
Soil Texture Group	D									Automatic calculation from above

Rainfall data

Design rainfall depth (no of days)	5									See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	75									
x-day, y-percentile rainfall event (mm)	21.8									
Rainfall R-factor (if known)										Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)	8.7									

RUSLE Factors

Rainfall erosivity (R-factor)	1750									Auto-filled from above
Soil erodibility (K-factor)	0.075									RUSLE LS factor calculated for a high rill/interrill ratio.
Slope length (m)	300									
Slope gradient (%)	1.6									
Length/gradient (LS-factor)	0.50									
Erosion control practice (P-factor)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (C-factor)	1	1	1	1	1	1	1	1	1	

Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)

Storage (soil) zone design (no of months)	2									Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.79									See Table F2, page F-4 in Appendix F

Calculations and Type D/F Sediment Basin Volumes

Soil loss (t/ha/yr)	86									
Soil Loss Class	1									See Table 4.2, page 4-13
Soil loss (m ³ /ha/yr)	66									Conversion to cubic metres
Sediment basin storage (soil) volume (m ³)	133									See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m ³)	2064									See Sections 6.3.4(i) for calculations
Sediment basin total volume (m ³)	2197									

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				

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Scale

0 1 2 3 4 5m

SCALE 1:50

0 5 10 15 20m

SCALE 1:200

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Project

ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title

SEDIMENT BASIN
PLAN AND SECTION

Scale

AS SHOWN

Date

19/04/2021

Size

A1

Datum

MGA2020

Status

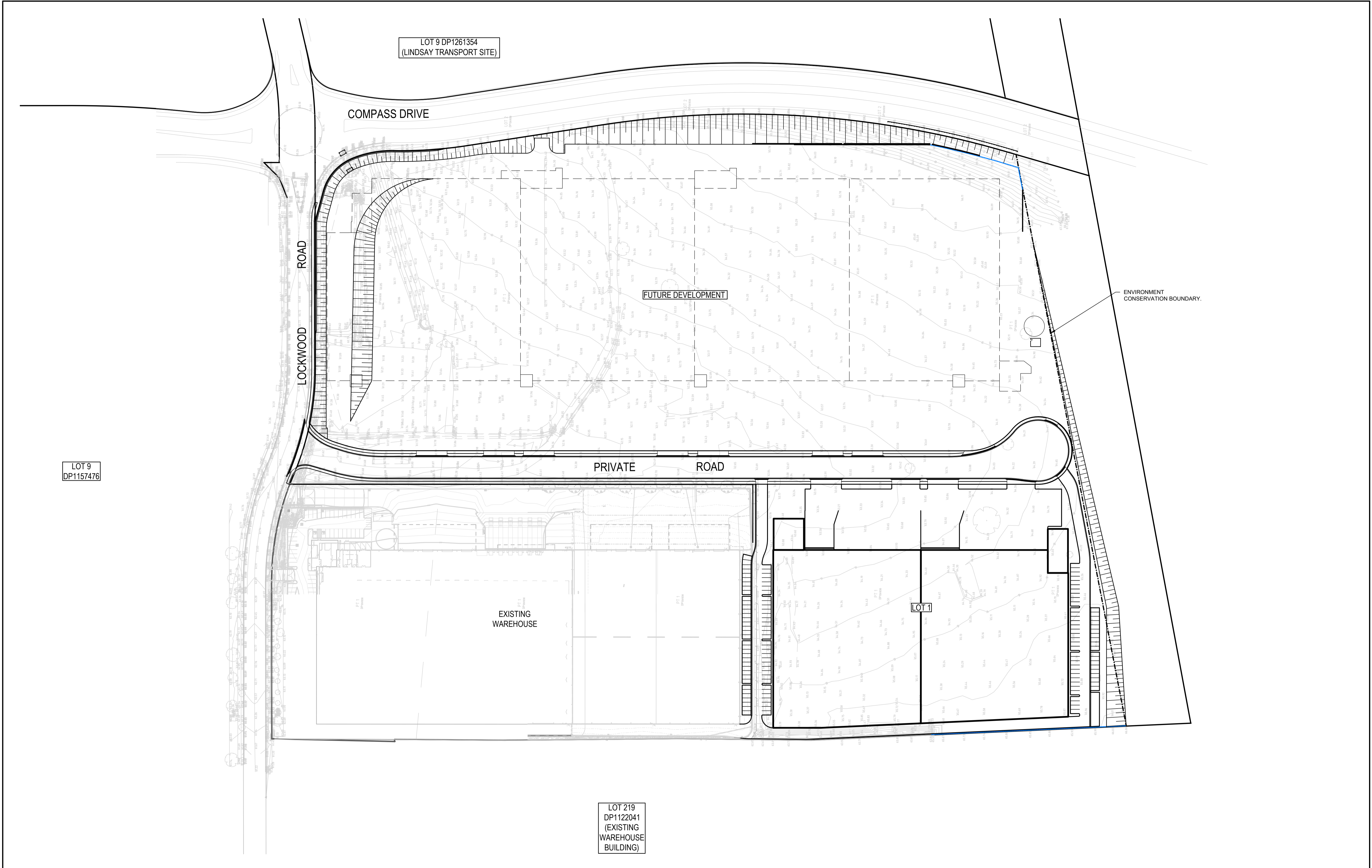
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Revision

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Scale

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Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
BULK EARTHWORKS
CUT AND FILL PLAN

Scale
1:1000

Date
19/04/2021

Size
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Datum
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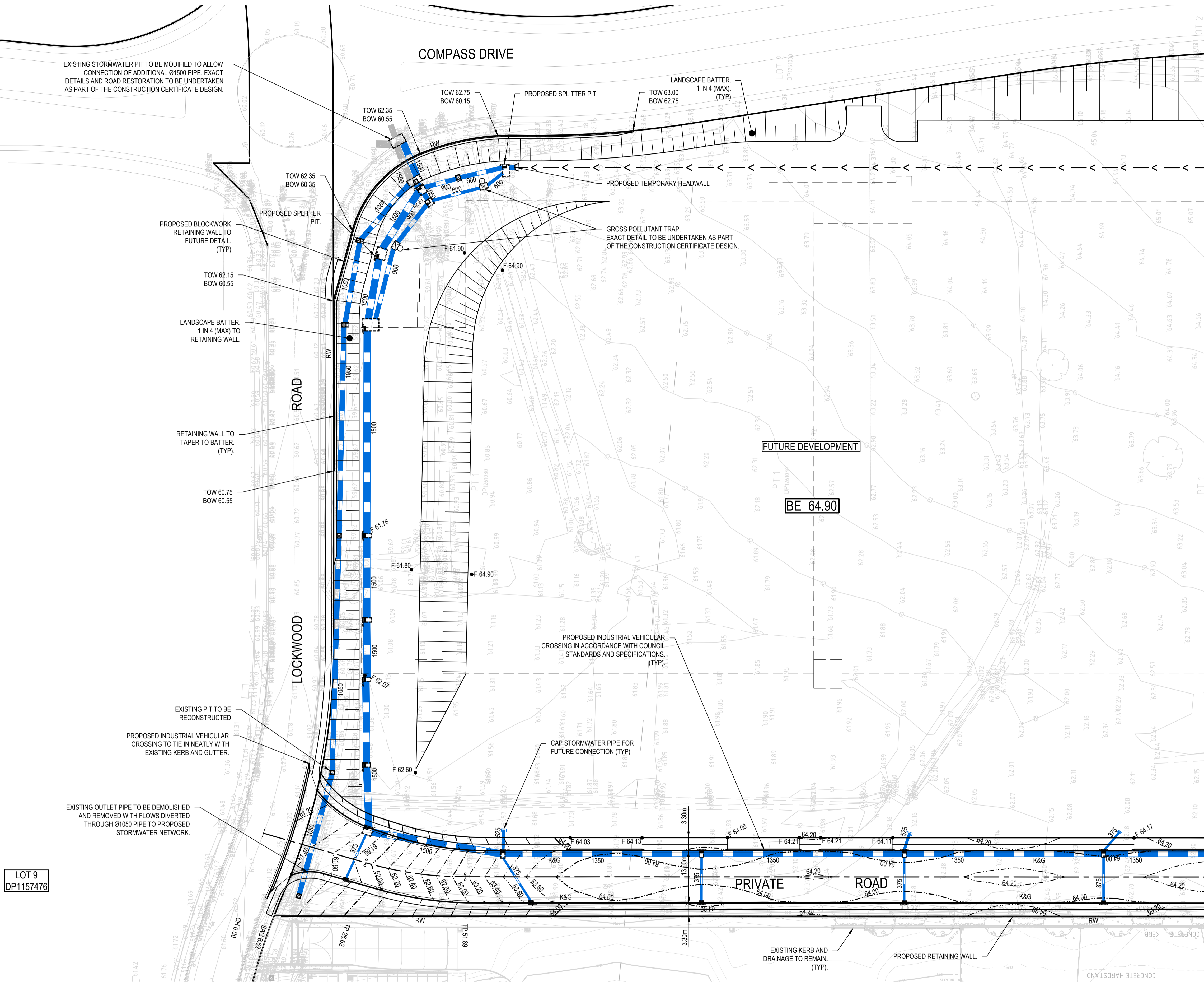
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NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C04.01

Revision
1

LEGEND

- SITE BOUNDARY
- CONTOUR
- BATTER
- BLOCKWORK RETAINING WALL
- CONTIGUOUS PILE RETAINING WALL
- K&G
- KERB AND GUTTER
- DD
- DISH DRAIN
- LAYBACK
- FFL 98.00
- FINISHED FLOOR LEVEL
- FINISHED LEVEL
- SWALE DRAIN
- PIPE SIZE
- STORMWATER DRAINAGE LINE
- FLOW DIRECTION
- STORMWATER LINE/PIT NUMBER
- KERB INLET PIT
- SURFACE INLET PIT/JUNCTION PIT
- GTD
- GRATED TRENCH DRAIN



REV.	DATE	ISSUED FOR DEVELOPMENT APPLICATION	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION		MDH	DL	MKH	MKH

Client

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Scale

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Project

ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title

SITWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 01

Scale

1:500

Date

19/04/2021

Size

A1

Datum

MGA2020

Status

FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

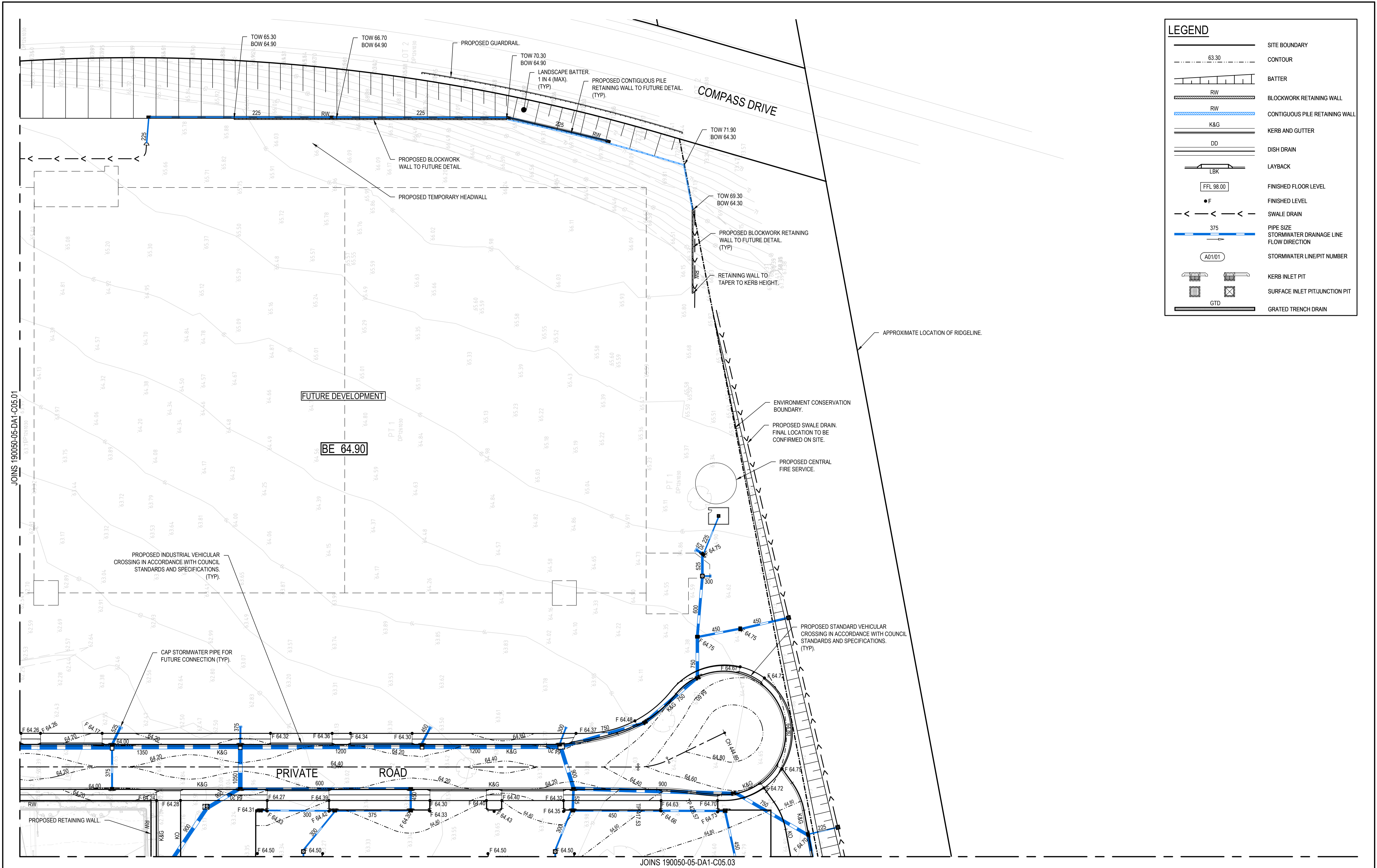
Project Number/Drawing Number

190050-05-DA1-C05.01

Revision

1

CAD FILE: P:\190050 ErskinePark\ID-Civil\05-Grady Crescent\Drawings\6-DACCI\01-DA1\190050-05-DA1-C05.01-C05.03 SITWORKS AND STORMWATER MANAGEMENT.dwg



122/10/2021ISSUED FOR DEVELOPMENT APPLICATIONMDHDLMKHMKH				Client		Fitzpatrick Investments		Scale		North		Project		Scale		Status	
REV. DATE DESCRIPTION				DRN. DES. VERIF. APPD.				0 10 20 30 40 50m SCALE 1:500 @A1		enspire		ERSKINE PARK INDUSTRIAL ESTATE LOCKWOOD ROAD, ERSKINE PARK BULK, PROPOSED PRIVATE ROAD AND LOT 1		Date 19/04/2021		FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION	
								The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.		Enspire Solutions Pty Ltd 205/275 Alfred Street N, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135		Title SITWORKS AND STORMWATER MANAGEMENT PLAN		Size A1		Project Number/Drawing Number	
												SHEET 02		Datum MGA2020		190050-05-DA1-C05.02	
																Revision	
																1	



Scale AS SHOWN	<div style="text-align: center;"> FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION </div>	
Date 19/04/2021		
Size A1	Project Number/Drawing Number <div style="font-size: 24pt; font-weight: bold;">190050-05-DA1-C07.01</div>	Revision <div style="font-size: 24pt; font-weight: bold;">1</div>
Datum MGA2020		

LEGEND

LOCAL ROAD

COLLECTOR ROAD

FOOTPATH

CONCRETE HARDSTAND

NOTE:

REFER DRG: C14.01 FOR PAVEMENT DETAILS

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				

Client

Fitzpatrick

Investments

Scale

0

10

20

30

40

50m

SCALE 1:500

@A1

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North

N

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Enspire Solutions Pty Ltd

205/275 Alfred Street N, North Sydney NSW 2060

ABN: 71 624 801 690

Phone: 02 9922 6135

Project

ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title

PAVEMENT, SIGNAGE AND LINEMARKING PLAN

SHEET 01

Scale

1:500

Date

19/04/2021

Size

A1

Datum

MGA2020

Status

FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number

190050-05-DA1-C11.01

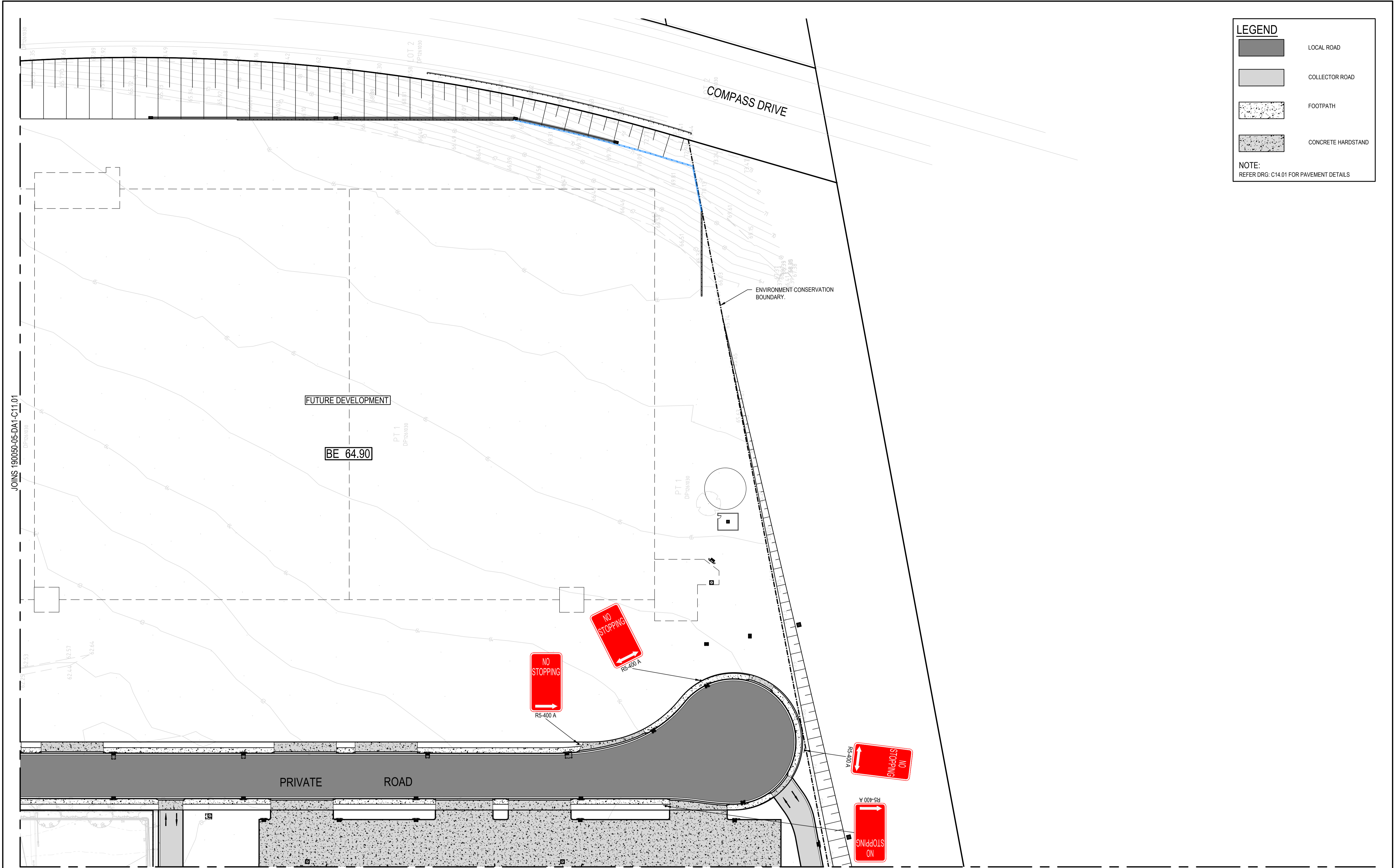
Revision

1

CAD File: P:\190050 ErskinePark\Civil\05-Grady Crescent\Drawings\6-DAC\01-DA1\190050-05-DA1-C11.01-C11.03 PAVEMENT, SIGNAGE AND LINEMARKING PLAN.dwg

Document Set ID: 9789132
Version: 1, Version Date: 01/11/2021

DATE PLOTTED: 22 October 2021 1:35 PM BY: GEORGE IZAIT



LEGEND

- LOCAL ROAD
- COLLECTOR ROAD
- FOOTPATH
- CONCRETE HARDSTAND

NOTE:
REFER DRG: C14.01 FOR PAVEMENT DETAILS

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				
			DRN	DES	VERIF	APPD

Client

Fitzpatrick Investments

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

North

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205/275 Alfred Street N, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
PAVEMENT, SIGNAGE AND LINEMARKING PLAN

SHEET 02

Scale
1:500

Date
19/04/2021

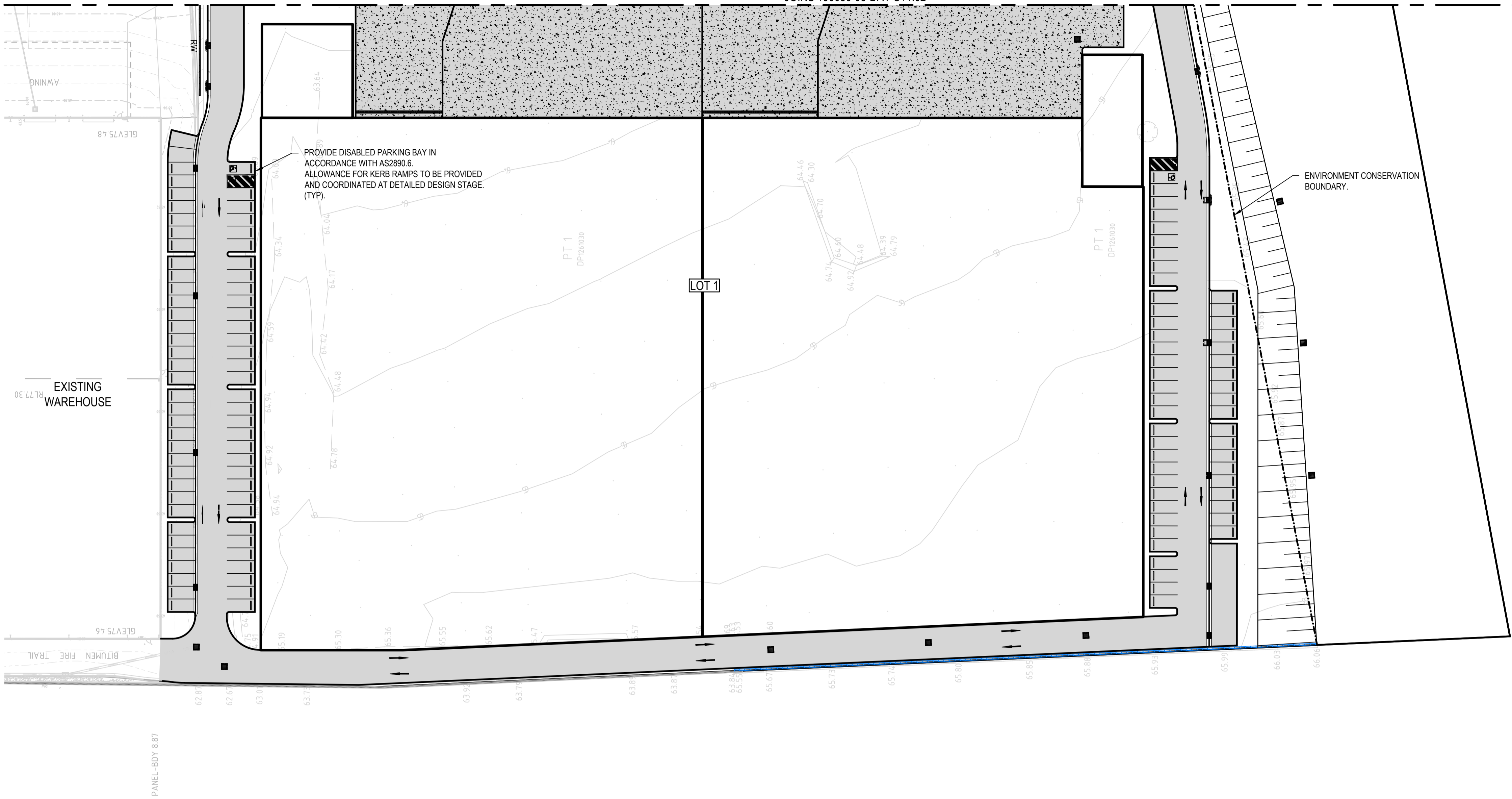
Size
A1

Datum
MGA2020

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C11.02

Revision
1



LEGEND

- LOCAL ROAD
- COLLECTOR ROAD
- FOOTPATH
- CONCRETE HARDSTAND

NOTE:
REFER DRG: C14.01 FOR PAVEMENT DETAILS

LOT 219
DP1122041
(EXISTING
WAREHOUSE
BUILDING)

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION	MDH	DL	MKH	MKH

Client

Fitzpatrick Investments

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

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North

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Phone: 02 9922 6135

Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
PAVEMENT, SIGNAGE AND LINEMARKING PLAN

SHEET 03

Scale
1:500

Date
19/04/2021

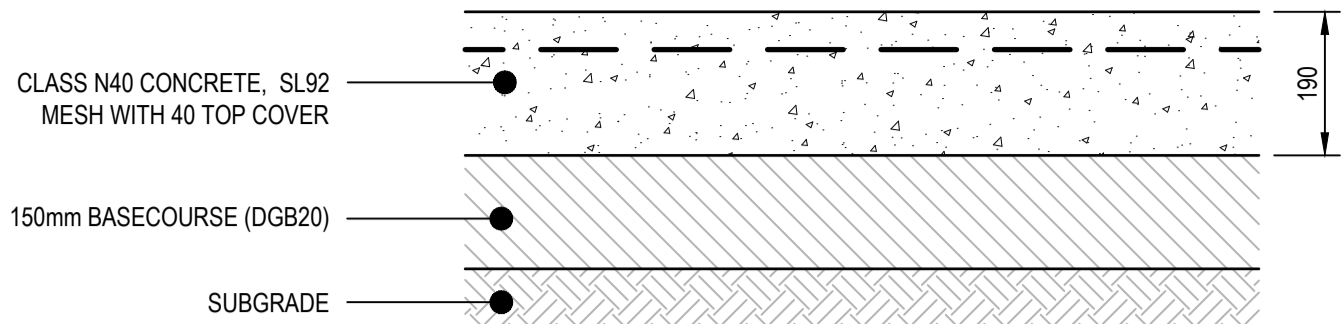
Size
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Datum
MGA2020

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C11.03

Revision
1

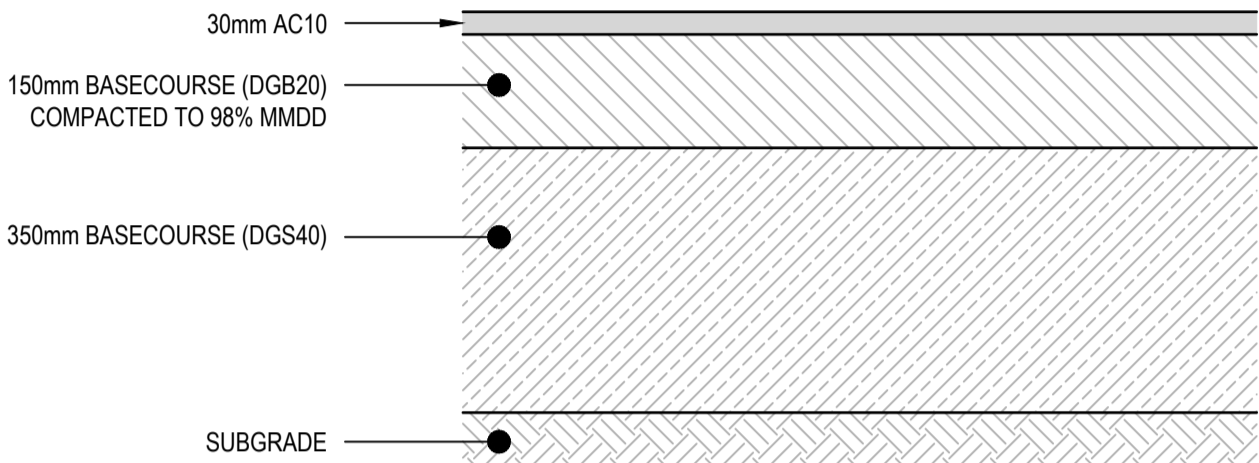


HARDSTAND RIGID PAVEMENT

SCALE 1:10

NOTES:

1. MIN CBR 3.0% (CONTRACTOR TO CONFIRM ONSITE).
2. DESIGN LOADING = 1x10⁶ ESA's
3. PRIME AND TACK COAT BASECOURSE SURFACE PRIOR TO PLACEMENT OF AC WEARING COURSE.

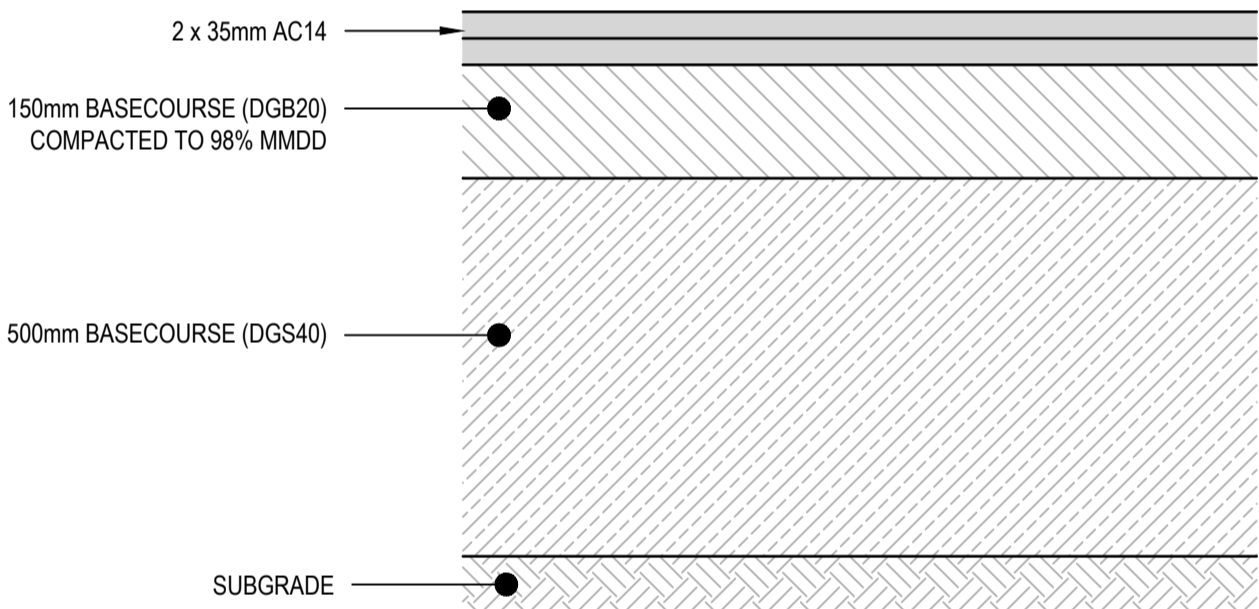


CARPARK FLEXIBLE PAVEMENT

SCALE 1:10

NOTES:

1. MIN CBR 3.0% (CONTRACTOR TO CONFIRM ONSITE).
2. DESIGN LOADING = 5x10⁶ ESA's
3. PRIME AND TACK COAT BASECOURSE SURFACE PRIOR TO PLACEMENT OF AC WEARING COURSE.

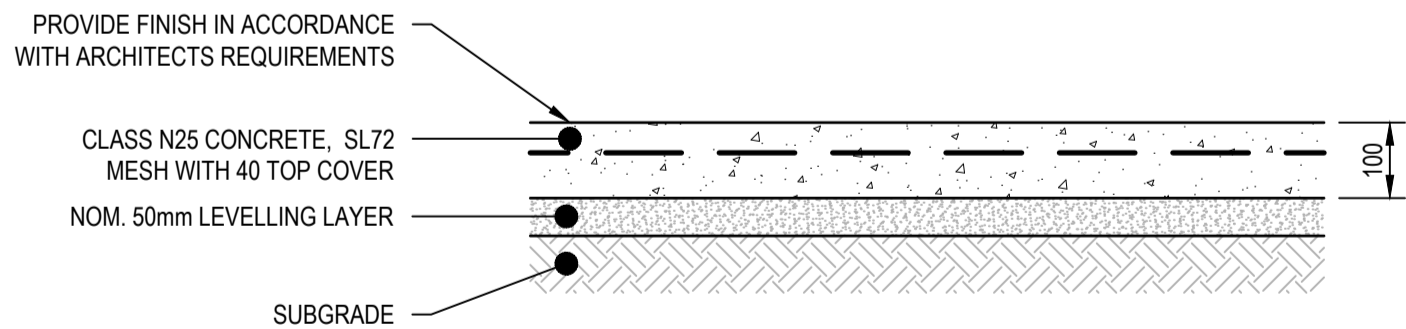


ROAD FLEXIBLE PAVEMENT

SCALE 1:10

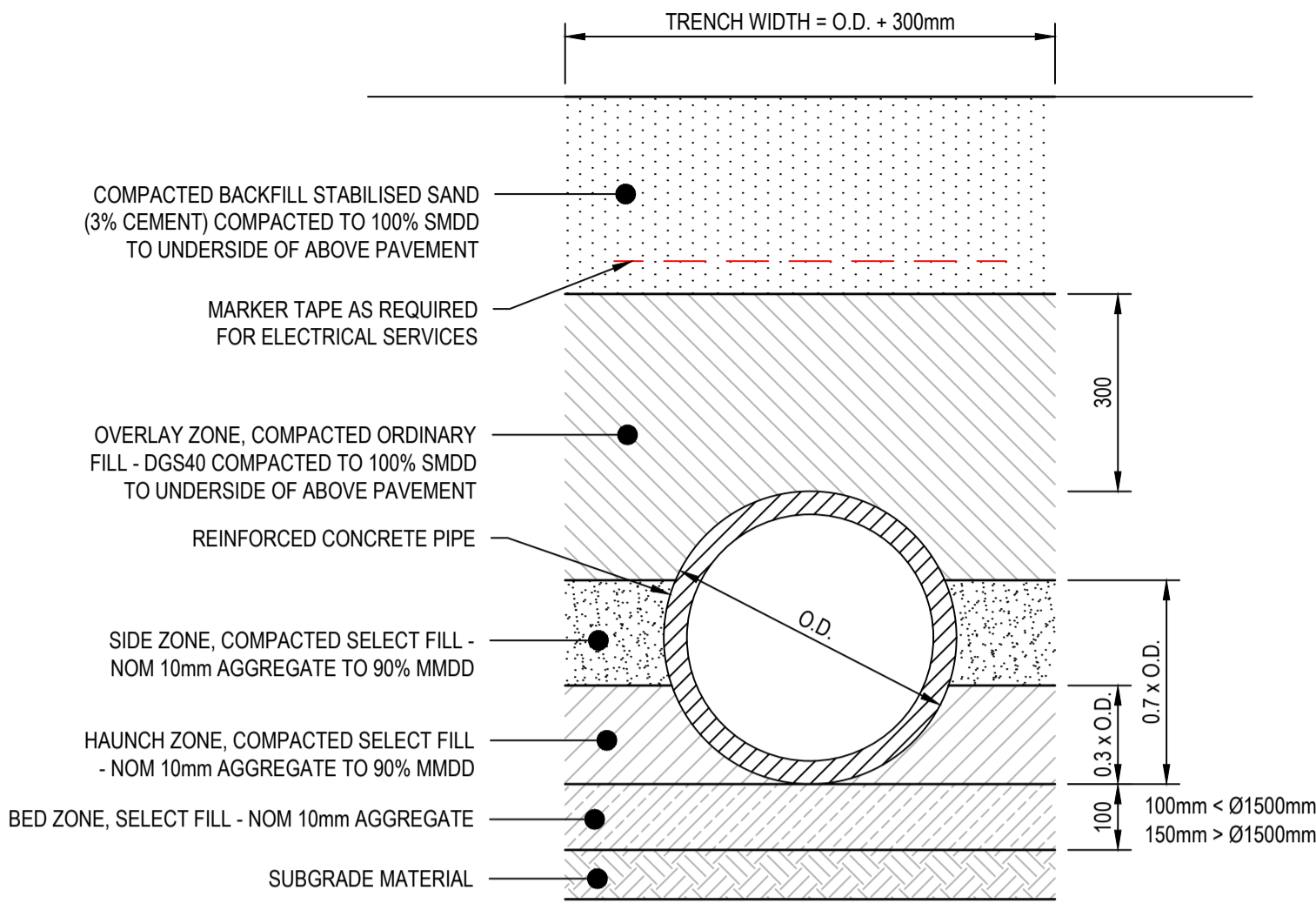
NOTES:

1. MIN CBR 3.0% (CONTRACTOR TO CONFIRM ONSITE).
2. DESIGN LOADING = 1x10⁶ ESA's
3. PRIME AND TACK COAT BASECOURSE SURFACE PRIOR TO PLACEMENT OF AC WEARING COURSE.



CONCRETE FOOTPATH

SCALE 1:10

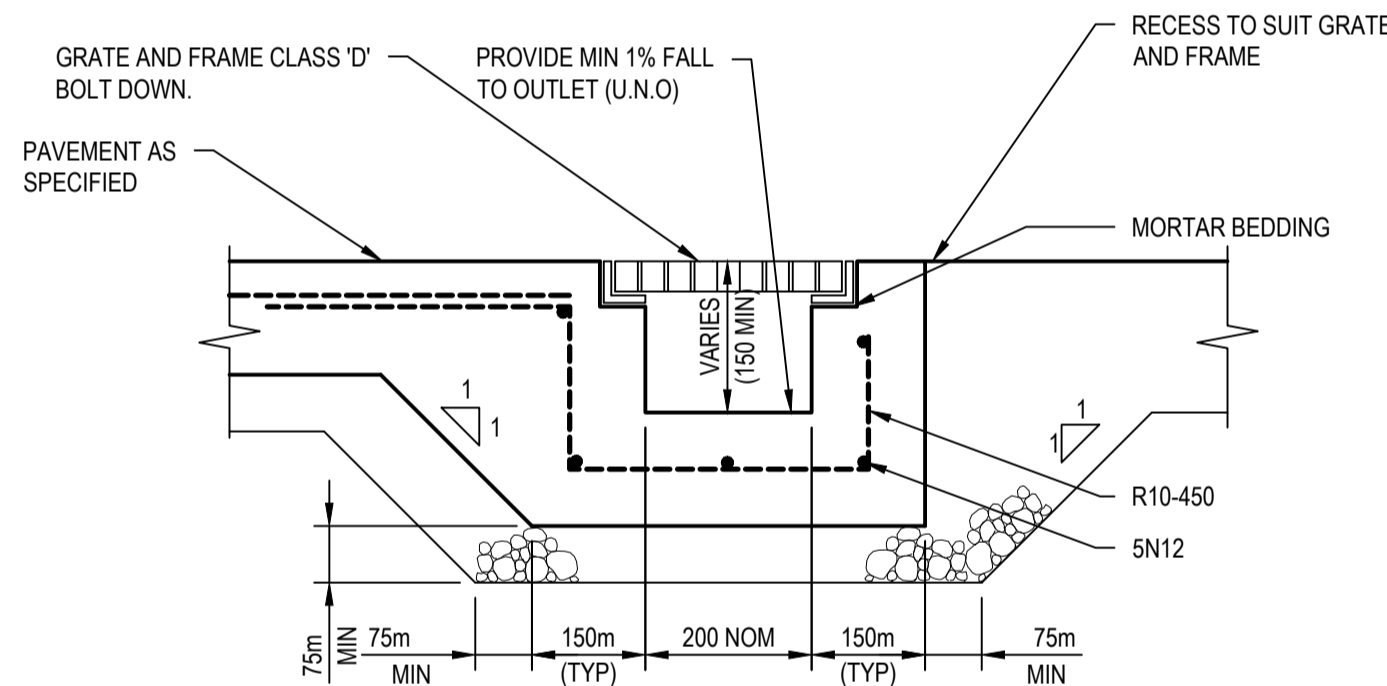


TYPICAL PIPE TRENCH - UNDER ROADS

SCALE 1:10

NOTES:

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING COMPACTION. ENSURE MINIMUM 300mm CLEARANCE BETWEEN, WHEN USING MULTIPLE PIPES TO ACHIEVE ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER UNDER ROADS TO BE 600mm U.N.O. FOR CLASS '2' PIPES.
3. THE CONTRACTOR SHALL ENSURE THAT SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS:
 - 4.1 TRENCHES UNDER PAVED AREAS / BUILDING - 100% SMDD



GRADED TRENCH DRAIN (GTD)

SCALE 1:10

NOTE:

1. COUNCIL'S STANDARDS SHOWN ON PENRITH CITY COUNCIL STANDARD DRAWINGS SD1001, SD1002, SD1003/1, SD1003/2, SD1004, SD2001/1, SD2001/2, SD2001/3, SD2003 AND SD2004 ARE TO BE USED UNLESS NOTED OTHERWISE.

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION	MDH	DL	MKH	MKH

Client	Fitzpatrick Investments
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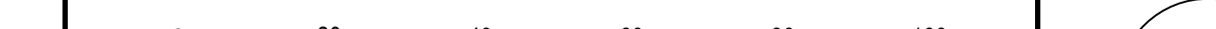


Scale	0 200 400 600 800 1000mm SCALE 1:10 @A1 0 500 1000 1500 2000mm SCALE 1:20 @A1	North
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Enspire Solutions Pty Ltd 205/275 Alfred Street N, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135

Project	ERSKINE PARK INDUSTRIAL ESTATE LOCKWOOD ROAD, ERSKINE PARK BULK, PROPOSED PRIVATE ROAD AND LOT 1
Title	SITEWORKS DETAILS

Scale	AS SHOWN	Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION
Date	19/04/2021	Project Number/Drawing Number	190050-05-DA1-C14.01
Size	A1	Revision	1
Datum	MGA2020		



										Client																																								 Enspire Solutions Pty Ltd 205/275 Alfred Street N, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135										Project ERSKINE PARK INDUSTRIAL ESTATE LOCKWOOD ROAD, ERSKINE PARK BULK, PROPOSED PRIVATE ROAD AND LOT 1										Scale 1:1000 Date 19/04/2021										Status FOR APPROVAL NOT TO BE USED FOR 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REV	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				

Client

Fitzpatrick Investments

Scale

0 20 40 60 80 100m

SCALE 1:1000 @A1

North

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Ensfire Solutions Pty Ltd
205/275 Alfred Street N, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
POST-DEVELOPMENT STORMWATER
CATCHMENT PLAN

Scale
1:1000

Date
19/04/2021

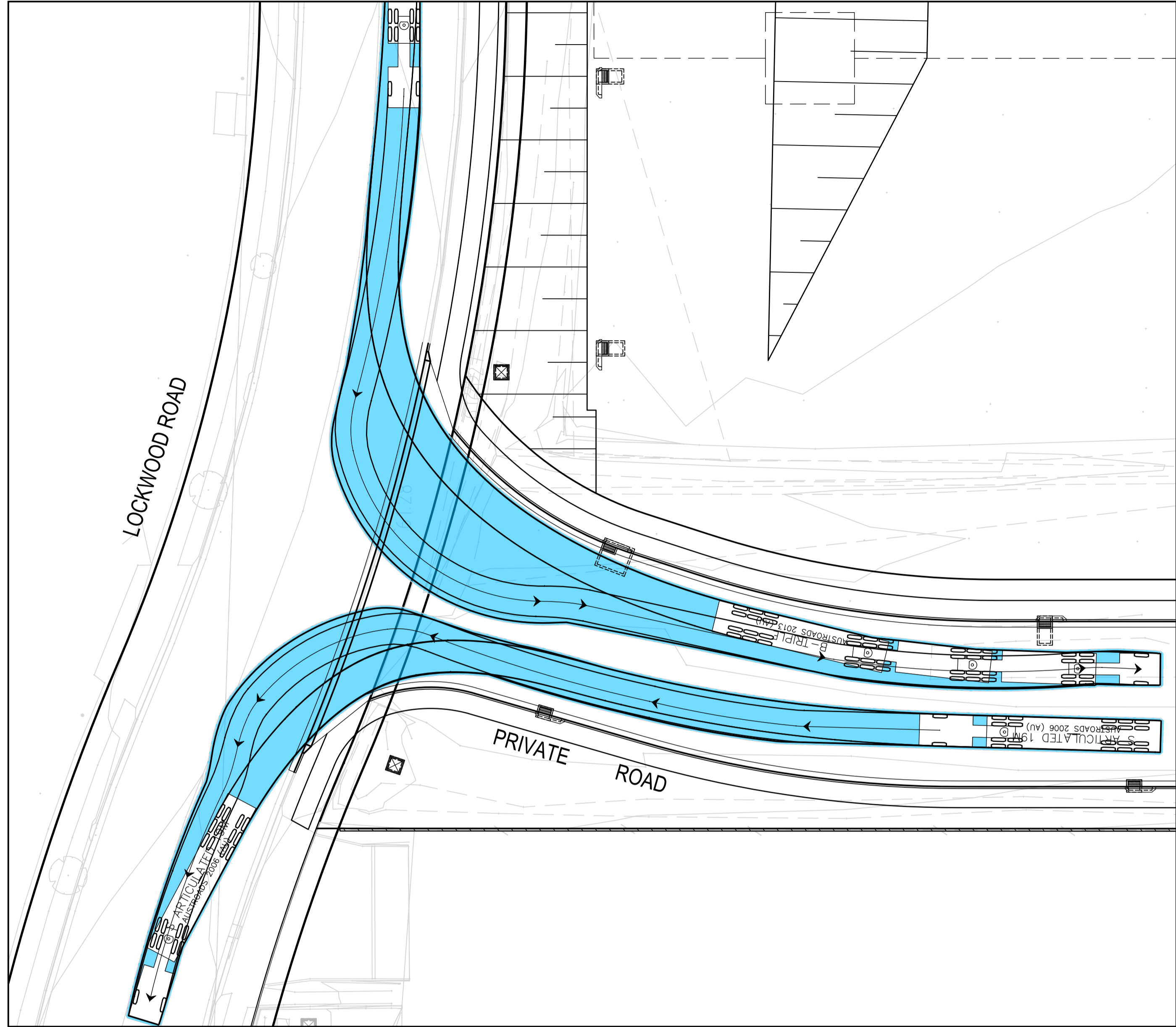
Size
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Datum
MGA2020

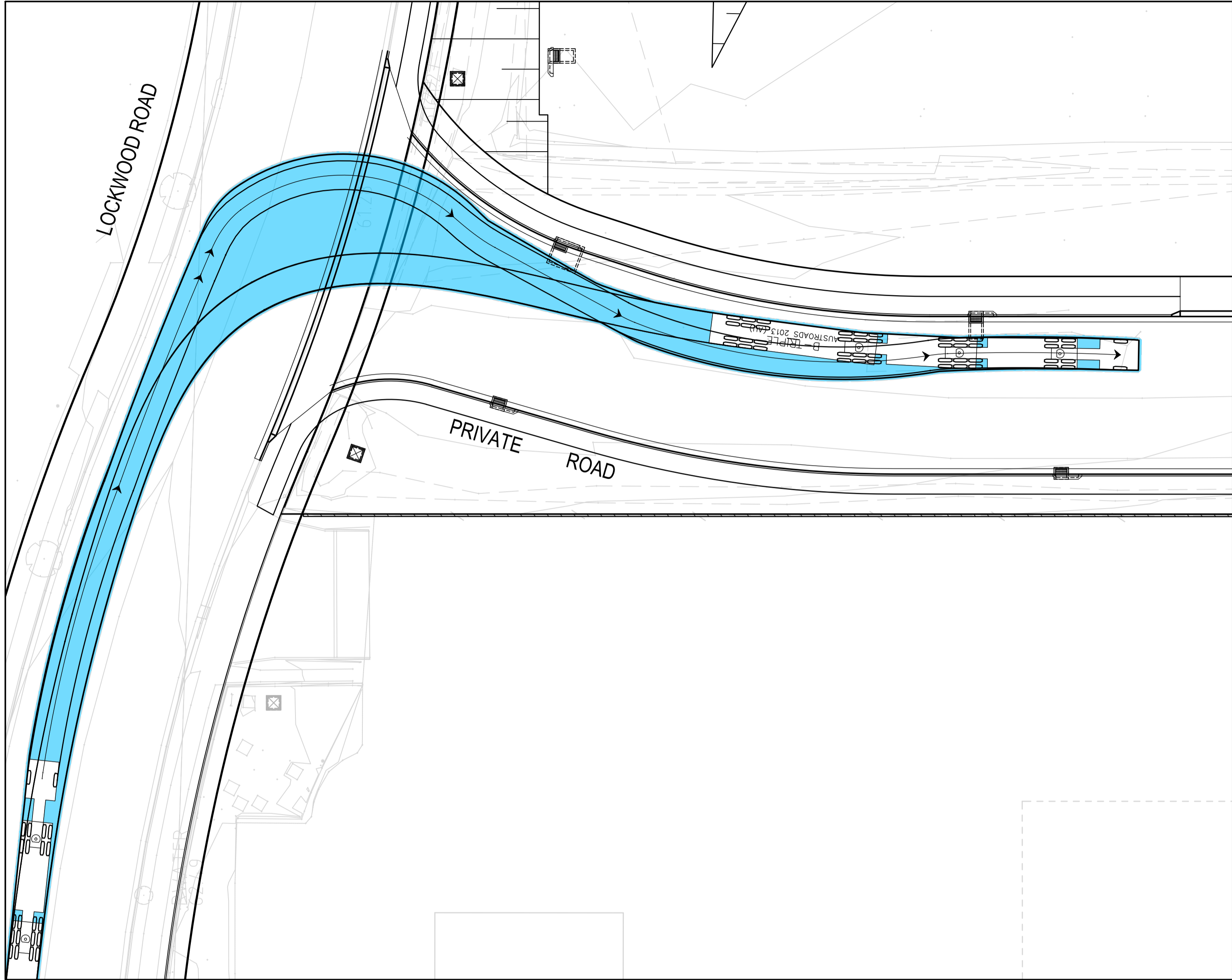
Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C20.21

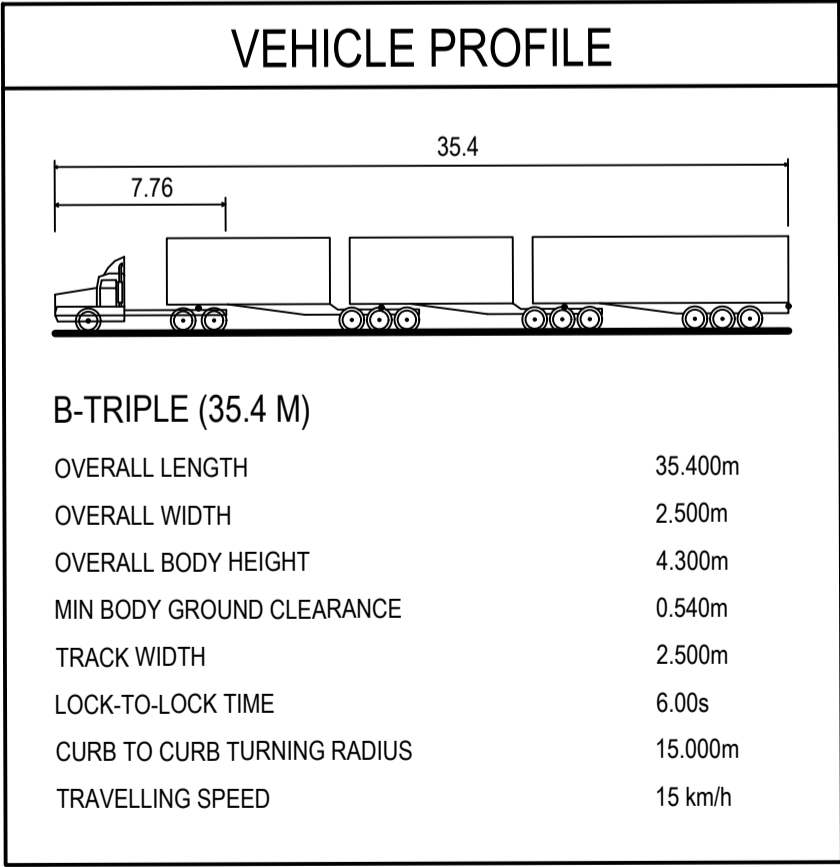
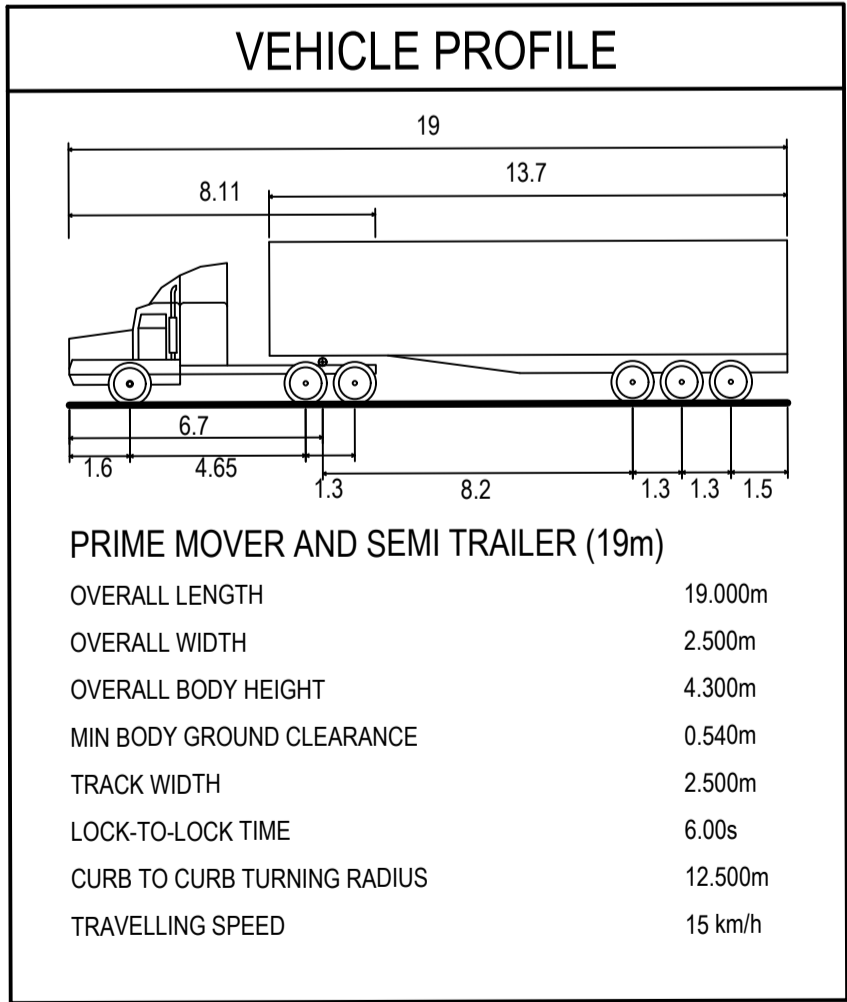
Revision
1



TURN 1
SCALE 1:250
35.4m B-TRIPLE ENTERING SITE AND
19.0m SEMI-TRAILER EXISTING SITE



TURN 1
SCALE 1:250
35.4m B-TRIPLE ENTERING SITE



REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION	MDH	DL	MKH	MKH

Client

Fitzpatrick Investments

Scale

0 5 10 15 20 25m

SCALE 1:250 @A1

North

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Enspire Solutions Pty Ltd
205/275 Alfred Street N, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
TURNING PATH PLAN

SHEET 01

Scale
1:250

Date
19/04/2021

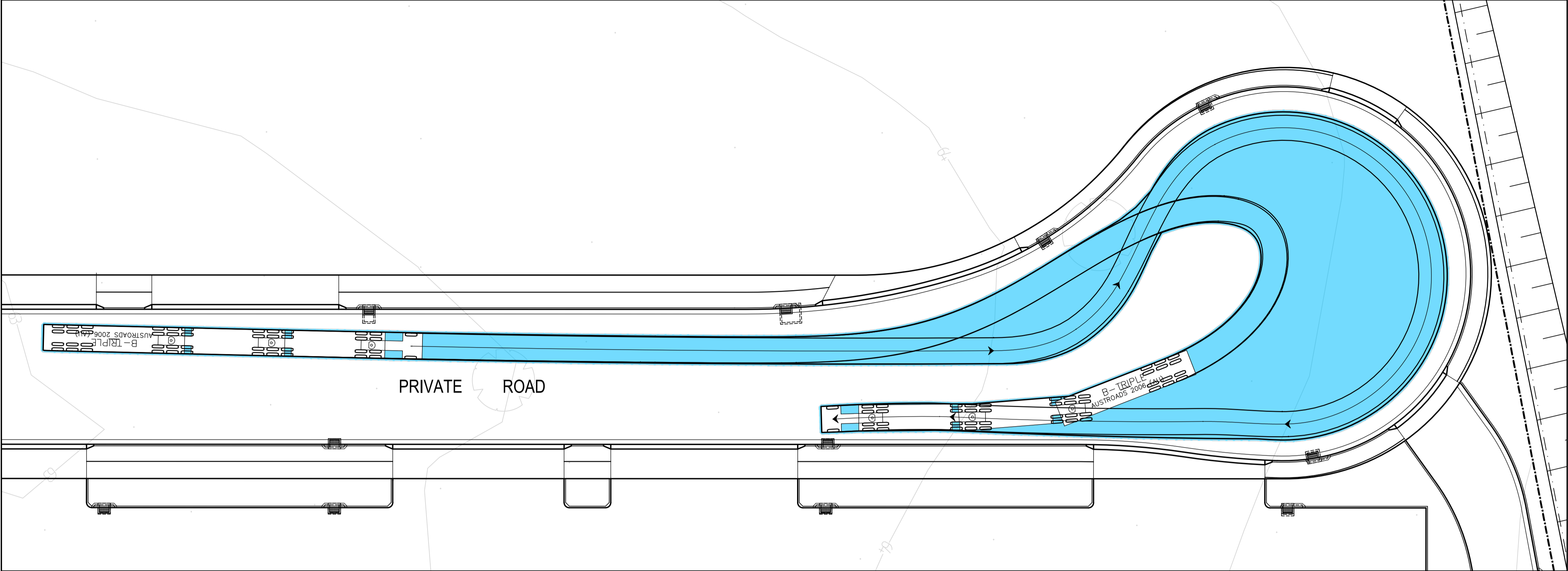
Size
A1

Datum
MGA2020

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C22.01

Revision
1



PRIVATE ROAD CUL-DE-SAC TURNPATH

SCALE 1:250
35.4m B-TRIPLE

VEHICLE PROFILE

B-TRIPLE (35.4 M)

OVERALL LENGTH	35.400m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	15.000m
TRAVELLING SPEED	15 km/h

REV.	DATE	DESCRIPTION	MDH	DL	MKH	MKH
1	22/10/2021	ISSUED FOR DEVELOPMENT APPLICATION				

Client

Scale

SCALE 1:250 @A1

North

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205/275 Alfred Street N, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project
ERSKINE PARK INDUSTRIAL ESTATE
LOCKWOOD ROAD, ERSKINE PARK
BULK, PROPOSED PRIVATE ROAD AND LOT 1

Title
TURNING PATH PLAN
SHEET 02

Scale
1:250
Date
19/04/2021
Size
A1
Datum
MGA2020

Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number
190050-05-DA1-C22.02

Revision
1

INTRODUCTION

THIS SAFETY IN DESIGN REPORT HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK HEALTH AND SAFETY ACT 2011 AND THE WORK HEALTH AND SAFETY REGULATION PART 6.2 CLAUSE 295. UNDER THE WORK HEALTH AND SAFETY ACT DESIGNERS HAVE THE RESPONSIBILITY TO ENSURE THEIR DESIGN ELIMINATES OR MINIMISES RISKS TO HEALTH AND SAFETY AND GIVE ADEQUATE INFORMATION TO PEOPLE COMMISSIONING THE DESIGN AND UNDERTAKING CONSTRUCTION OPERATION AND MAINTENANCE ACTIVITIES BASED ON THE DESIGN.

THIS REPORT SPECIFICALLY IDENTIFIES AND ASSESSES THE RISKS AND HAZARDS ASSOCIATED WITH THE DESIGN ELEMENTS DOCUMENTED IN THIS DRAWING PACKAGE TO RELEVANT PERSONNEL DURING THE DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE PROCESS AND ASSESSES THEIR LIKELIHOOD AND CONSEQUENCES. THIS REPORT PROPOSES ACTIONS AND STRATEGIES AGAINST RISKS IDENTIFIED TO ACHIEVE EFFECTIVE MITIGATION OF THE RISKS AND HAZARDS, AND ASSESSES RESIDUAL RISKS BASED ON CONTROL MEASURES BEING IMPLEMENTED. ANY SAFETY ISSUES UNRESOLVED THROUGH DESIGN ARE ALSO IDENTIFIED FOR THEIR APPROPRIATE MANAGEMENT.

THE RISKS IDENTIFIED IN THIS SAFETY IN DESIGN REPORT ARE PROJECT AND DESIGN SPECIFIC RISKS WHICH WOULD NOT BE EASILY RECOGNIZED BY A REASONABLY COMPETENT STAKEHOLDER. IT DOES NOT ADDRESS THE COMMON-PLACE HAZARDS OR HAZARDS WHERE KNOWN SOLUTIONS APPLY, AND WHICH ARE ASSOCIATED WITH CONSTRUCTION, OPERATION AND MAINTENANCE GENERALLY. THESE COMMON-PLACE HAZARDS MUST BE CONTROLLED BY THE APPLICATION OF NORMAL GOOD MANAGEMENT PRACTICES.

THIS DESIGN REPORT ASSUMES THAT DURING CONSTRUCTION, OPERATION AND MAINTENANCE OF THE DEVELOPMENT, THE PRINCIPAL WILL ENGAGE EXPERIENCED AND COMPETENT PERSONNEL AS PART OF THE RESPECTIVE TENDER EVALUATION PROCESS. IT IS THE HEAD CONTRACTOR'S OBLIGATION TO PREPARE AND IMPLEMENT SITE SPECIFIC WORK HEALTH AND SAFETY MANAGEMENT PLANS TO MITIGATE COMMON RISKS ASSOCIATED WITH GENERAL CONSTRUCTION AND OPERATION ACTIVITIES IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY ACT 2011.

THE SCOPE OF THE MAIN ACTIVITIES INVOLVED IN THESE WORKS ARE:

- DESIGN OF ROADS, STORMWATER INFRASTRUCTURE AND SERVICES;
- CONSTRUCTION OF ROADS, STORMWATER INFRASTRUCTURE AND SERVICES;
- SITE VISITS AND INSPECTIONS;
- POST CONSTRUCTION OPERATION AND MAINTENANCE.

SAFETY IN DESIGN RELIES ON EFFECTIVE DOCUMENTATION AND COMMUNICATION BETWEEN EVERYONE INVOLVED IN THE LIFE CYCLE OF THE DESIGN ELEMENTS. IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY REGULATION 2017, THE DESIGNER MUST PROVIDE A COPY OF THIS SAFETY IN DESIGN REPORT TO THE PRINCIPAL CONTRACTOR IN PARALLEL WITH THE COMPLETED DESIGN DOCUMENTATION AND ENSURE THAT THE FOLLOWING ACTIONS ARE UNDERTAKEN:

- ONSITE SAFETY INDUCTIONS, INCLUDING HAZARDS IDENTIFIED IN THIS REPORT, SHOULD BE CONDUCTED FOR ALL STAFF;
- SAFETY MANAGEMENT PLANS SHOULD BE PREPARED FOR THE HAZARDS IDENTIFIED IN THIS REPORT;
- THERE SHOULD BE NO VARIATION ON DESIGN REQUIREMENTS WITHOUT CONSULTATION WITH THE ORIGINAL DESIGNERS;
- ONSITE MANAGEMENT OF CONTRACTORS TO ENSURE THAT HAZARDS THAT ARISE THROUGH STARTING/COMPLETION OF JOBS DOES NOT OCCUR; AND
- THIS DESIGN MAY INTERFACE WITH OTHER PLANS AND ACCOUNT SHOULD BE TAKEN OF ANY INTERFACE ISSUES.

IT IS RECOMMENDED THAT THIS SAFETY IN DESIGN REPORT BE PASSED ONTO ANY PARTICIPANT IN THE PROJECT WHO MAY EXTEND THE DESIGN OR FURTHER DEVELOP THE DESIGN.

A SAFE DESIGN PROCESS SHOULD BE ENGAGED EARLY IN THE DEVELOPMENT OF THE DESIGN TO IDENTIFY ALL CONCEIVABLE RISKS AND HAZARDS THAT MAY AFFECT THE FUNDAMENTALS OF THE DESIGN AND AVOID UNNECESSARY REWORK. IT SHOULD BE IMPLEMENTED THROUGH A STRUCTURED APPROACH ACROSS EACH PHASE OF THE DESIGN PROCESS.

DELIVERY OF SAFE DESIGN FOR EACH DESIGN PHASE OF THE PROJECT HAS BEEN CARRIED OUT FOLLOWING THE STEPS BELOW:

- STEP 1: PRELIMINARY RISK IDENTIFICATION
- THE DESIGNER/DESIGN TEAM TO CONDUCT A PRELIMINARY ASSESSMENT AND IDENTIFY ANY POTENTIAL RISKS RELEVANT TO THE SCOPE OF DESIGN WORKS. WITH PROJECTS INVOLVING MULTIPLE DISCIPLINES, THE DESIGNER/DESIGN TEAM TO ATTEND SAFETY IN DESIGN WORKSHOP AND IDENTIFY RISKS IN CONSULTATION WITH OTHER KEY PROJECT STAKEHOLDERS.
- STEP 2: RISK ASSESSMENT AND MITIGATION
- THE DESIGNER/DESIGN TEAM TO ASSESS THE LIKELIHOOD AND SEVERITY OF EACH HAZARD AND DEVELOP CONTROLS AND MEASURES TO ELIMINATE OR MINIMISE THE CONSEQUENCES OF THE HAZARD.
- STEP 3: VERIFICATION
- ENSURE TO PERFORM INTERNAL VERIFICATION ON THE SAFE DESIGN RISK REGISTER PRIOR TO ISSUING TO THE CONTRACTOR AND CLIENT.
- STEP 4: REVIEW DESIGN
- THE DESIGNER/DESIGN TEAM TO IDENTIFY ANY ALTERATIONS IN DESIGN AND REVIEW AND UPDATE RISK REGISTER ACCORDINGLY.



ORGANISATION	PROJECT ROLE	MAIN CONTACT	CONTACT DETAILS
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QUALITATIVE MEASURES OF LIKELIHOOD OR FREQUENCY		
LEVEL	MEASURE	CRITERIA
1	RARE	WOULD ONLY OCCUR IN HIGHLY EXCEPTIONAL CIRCUMSTANCES THAT ARE UNLIKELY TO EXIST IN ANY PHASE OF THE DEVELOPMENT'S LIFECYCLE PERIOD. EXTREMELY REMOTE CHANCE OF OCCURRENCE IN DEVELOPMENT'S LIFECYCLE PERIOD. 'ONCE IN A LIFETIME' EVENT.
2	UNLIKELY	NOT LIKELY TO OCCUR IN THE DEVELOPMENT'S LIFECYCLE PERIOD. A SMALL, BUT REMOTE CHANCE OF OCCURRENCE DUE TO CIRCUMSTANCES / SITUATIONS THAT COULD ARISE.
3	POSSIBLE	LIKELY TO OCCUR AT LEAST ONCE BUT NOT EXPECTED TO OCCUR MUCH MORE THAN THIS IN THE DEVELOPMENT'S LIFECYCLE PERIOD.
4	LIKELY	LIKELY TO OCCUR MORE THAN ONCE IN THE DEVELOPMENT'S LIFECYCLE PERIOD BUT NOT AN 'EVERYDAY' OCCURRENCE. PRECONDITIONS WILL ARISE AT TIMES THROUGHOUT THE PERIOD.
5	ALMOST CERTAIN	WILL OCCUR. CIRCUMSTANCES OR SITUATIONS ARE LIKELY TO ARISE OFTEN THROUGHOUT THE DEVELOPMENT'S LIFECYCLE PERIOD WHICH PROVIDES THE OPPORTUNITY FOR CRYSTALLISATION OF RISK. EXPECT FREQUENT, REGULAR OCCURRENCES.

LEVEL	MEASURE	CRITERIA
1	INSIGNIFICANT	NO INJURIES; NO ENVIRONMENTAL IMPACT.
2	MINOR	FIRST AID; ENVIRONMENTAL RELEASE IMMEDIATELY CONTAINED.
3	MODERATE	MEDICAL TREATMENT; ENVIRONMENTAL RELEASE NOT IMMEDIATELY CONTAINED WITH NO DETRIMENTAL EFFECTS.
4	MAJOR	LOST TIME AND/OR LONG-TERM INJURY/ILLNESS; ENVIRONMENTAL RELEASE NOT IMMEDIATELY CONTAINED WITH TOXIC EFFECTS.
5	CATASTROPHIC	FATALITY; RELEASE TO THE ENVIRONMENT WITH LONG TERM OR PERMANENT TOXIC EFFECTS.

CONSEQUENCE	CATASTROPHIC	(5)	HIGH	VERY HIGH	VERY HIGH	VERY HIGH	VERY HIGH
	MAJOR	(4)	HIGH	HIGH	VERY HIGH	VERY HIGH	VERY HIGH
	MODERATE	(3)	MODERATE	MODERATE	HIGH	HIGH	VERY HIGH
	MINOR	(2)	LOW	LOW	MODERATE	HIGH	VERY HIGH
	INSIGNIFICANT	(1)	LOW	LOW	LOW	MODERATE	HIGH
		RARE (1)	UNLIKELY (2)	POSSIBLE (3)	LIKELY (4)	ALMOST CERTAIN (5)	
		LIKELIHOOD					

ITEM	ACTIVITY	HAZARD	STAGE	INITIAL RISK			DESIGN ACTION	RESIDUAL RISK			PERSON RESPONSIBLE FOR CONTROLS	STATUS
				LIKELIHOOD	CONSEQUENCE	RISK LEVEL		LIKELIHOOD	CONSEQUENCE	RISK LEVEL		
1	SEDIMENT BASIN OPERATION	FALLING INTO BASIN WHICH HOLDS WATER	CONSTRUCTION	2	5	VERY HIGH	- PROVIDE MAN-PROOF FENCE TO PERIMETER. - MAINTAIN WATER LEVELS IN BASIN. - MINIMISE PERMANENT WATER DEPTH.	2	3	MODERATE	CONTRACTOR	ACTION ASSIGNED
2	TREE REMOVAL	- FALL FROM HEIGHT - CRUSH INJURY FROM FALLING TREE	CONSTRUCTION	2	5	VERY HIGH	- CERTIFIED ARBORIST USING BEST PRACTICES RESPONSIBLE FOR TREE REMOVAL.	2	3	MODERATE	CONTRACTOR	ACTION ASSIGNED
3	PIPE TRENCHING	FALL INTO DEEP EXCAVATIONS	CONSTRUCTION	1	4	HIGH	- PROVIDE SAFETY BARRIERS - PROVIDE BENCHING	1	2	LOW	CONTRACTOR	ACTION ASSIGNED
4	RETAINING WALL CONSTRUCTION	CRUSHING INJURY	CONSTRUCTION	2	5	VERY HIGH	- APPROPRIATE RETAINING WALL SYSTEM SPECIFIED TO MINIMISE HANDLING. - RETAINED HEIGHT ASSUMES NO LATERAL RESTRAINT AT LOW SIDE OF WALL PRIOR TO FORMATION OF FINISHED SURFACE LEVEL.	1	3	MODERATE	CONTRACTOR	ACTION ASSIGNED
5	WORKING ADJACENT TO EXISTING LOCKWOOD ROAD AND COMPASS DRIVE	COLLISION WITH ONGOING TRAFFIC	CONSTRUCTION	3	5	VERY HIGH	- APPLY WORK BARRICADES/TRAFFIC MANAGEMENT CONTROLS AT LOCKWOOD ROAD INTERSECTION WITH DISTRIBUTION DRIVE. - WHEN AVAILABLE, WORK DURING LOW TRAFFIC TIMES. - CONTRACTOR TO OBTAIN AND CARRY OUT APPROVED TRAFFIC MANAGEMENT CONTROLS AS NOTED IN ENSPIRE'S GENERAL NOTES AND LEGENDS 190050-05-DA-C01.21. - INSTALL TRAFFIC BARRIER TO COMPASS DRIVE (WEST SIDE).	1	4	HIGH	CONTRACTOR	ACTION ASSIGNED

										Client				Scale				North				 Enspire Solutions Pty Ltd 205/275 Alfred Street N, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135				Project ERSKINE PARK INDUSTRIAL ESTATE LOCKWOOD ROAD, ERSKINE PARK BULK, PROPOSED PRIVATE ROAD AND LOT 1				Scale N.T.S. Date 19/04/2021		Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION									
																										Title SAFETY IN DESIGN				Size A1 Datum MGA2020		Project Number/Drawing Number 190050-05-DA1-C23.01				Revision 1					
1 22/10/2021 ISSUED FOR DEVELOPMENT APPLICATION										MDH DL MKH MKH				The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.																											
REV. DATE DESCRIPTION										DRN. DES. VERIF. APPD.																															