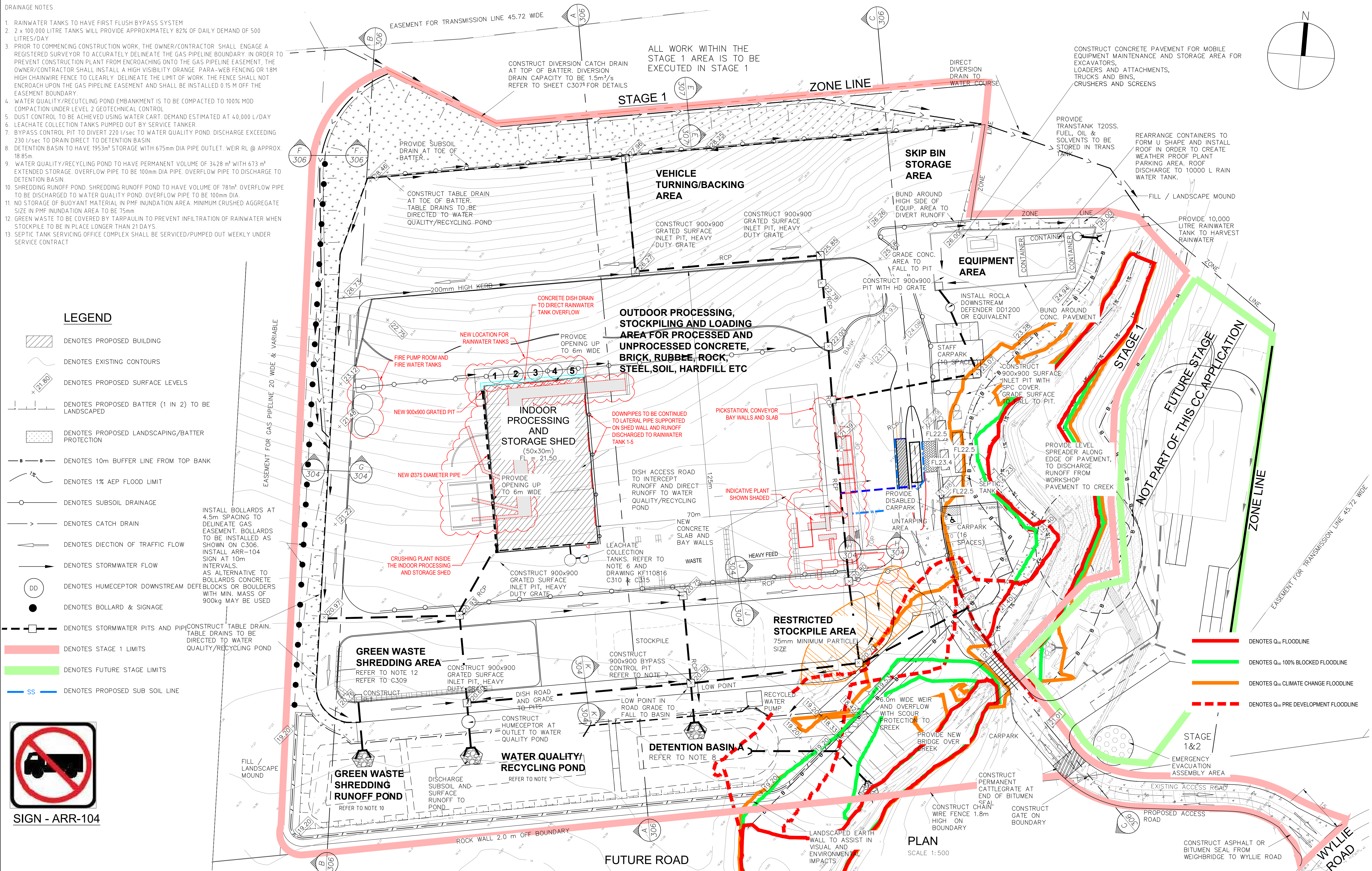


1. RAINWATER TANKS HAVE FIRST FLUSH BYPASS SYSTEM
2. 2 x 100 000 LITRE TANKS WILL PROVIDE APPROXIMATELY 82% OF DAILY DEMAND OF 500 LITRES/DAY
3. PRIOR TO COMMENCING CONSTRUCTION WORK, THE OWNER/CONTRACTOR SHALL ENGAGE A REGISTERED SURVEYOR TO ACCURATELY DELINEATE THE GAS PIPELINE BOUNDARY. IN ORDER TO PREVENT CONSTRUCTION PLANT FROM ENCRANCHING ONTO THE GAS PIPELINE EASEMENT, THE OWNER/CONTRACTOR SHALL INSTALL A HIGH VISIBILITY ORANGE PARA-WEB FENCING OR 18M HIGH CHAINWIRE FENCE TO CLEARLY DELINEATE THE LIMIT OF WORK. THE FENCE SHALL NOT ENCRANCH UPON THE GAS PIPELINE EASEMENT AND SHALL BE INSTALLED 0.15 M OFF THE EASEMENT BOUNDARY
4. WATER QUALITY/RECYCLING POND EMBANKMENT IS TO BE COMPACTED TO 100% MOD COMPACTION UNDER LEVEL 2 GEOTECHNICAL CONTROL
5. DUST CONTROL TO BE ACHIEVED USING WATER CART. DEMAND ESTIMATED AT 40,000 L/DAY
6. LEACHATE COLLECTION TANKS PUMPED OUT BY SERVICE TANKER
7. BYPASS CONTROL PIT TO DIVERT 230 l/sec TO WATER QUALITY POND. DISCHARGE EXCEEDING 230 l/sec TO DRAIN DIRECT TO DETENTION BASIN
8. DETENTION BASIN TO HAVE 1953m³ STORAGE WITH 675mm DIA PIPE OUTLET. WEIR RL @ APPROX. 18.85m.
9. WATER QUALITY/RECYCLING POND TO HAVE PERMANENT VOLUME OF 3428 m³ WITH 673 m³ EXTENDED STORAGE. OVERFLOW PIPE TO BE 100mm DIA PIPE. OVERFLOW PIPE TO DISCHARGE TO DETENTION BASIN.
10. SHREDDING RUNOFF POND. SHREDDING RUNOFF POND TO HAVE VOLUME OF 781m³ OVERFLOW PIPE TO BE DISCHARGED TO WATER QUALITY POND. OVERFLOW PIPE TO BE 100mm DIA.
11. NO STORAGE OF BUOYANT MATERIAL IN PMF INUNDATION AREA. MINIMUM CRUSHED AGGREGATE SIZE IN PMF INUNDATION AREA TO BE 75mm
12. GREEN WASTE TO BE COVERED BY TARPULIN TO PREVENT INFILTRATION OF RAINWATER WHEN STOCKPILE TO BE IN PLACE LONGER THAN 21 DAYS.
13. SEPTIC TANK SERVICING OFFICE COMPLEX SHALL BE SERVICED/PUMPED OUT WEEKLY UNDER SERVICE CONTRACT

	DENOTES PROPOSED BUILDING
	DENOTES EXISTING CONTOURS
	DENOTES PROPOSED SURFACE LEVELS
	DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
	DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
	DENOTES 10m BUFFER LINE FROM TOP BANK
	DENOTES 1% AEP FLOOD LIMIT
	DENOTES SUBSOIL DRAINAGE
	DENOTES CATCH DRAIN
	DENOTES DIRECTION OF TRAFFIC FLOW
	DENOTES STORMWATER FLOW
	DENOTES HUMECPTOR DOWNSTREAM DEFLECTOR
	DENOTES BOLLARD & SIGNAGE
	DENOTES STORMWATER PITS AND PIPE CONNECTIONS
	DENOTES STAGE 1 LIMITS
	DENOTES FUTURE STAGE LIMITS
	DENOTES PROPOSED SUB SOIL LINE



SIGN - ARR-104



F	LABELS FIXED	05.02.2019	J.D.	W.M.
E	AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
D	AMENDED AS PER CLOUDS	21/6/2018	AM	W.M.
C	1% AEP FLOOD EXTENT SHOWN	24 APRIL 2017	WM	WM
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	13.01.2017	B.M	W.M
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

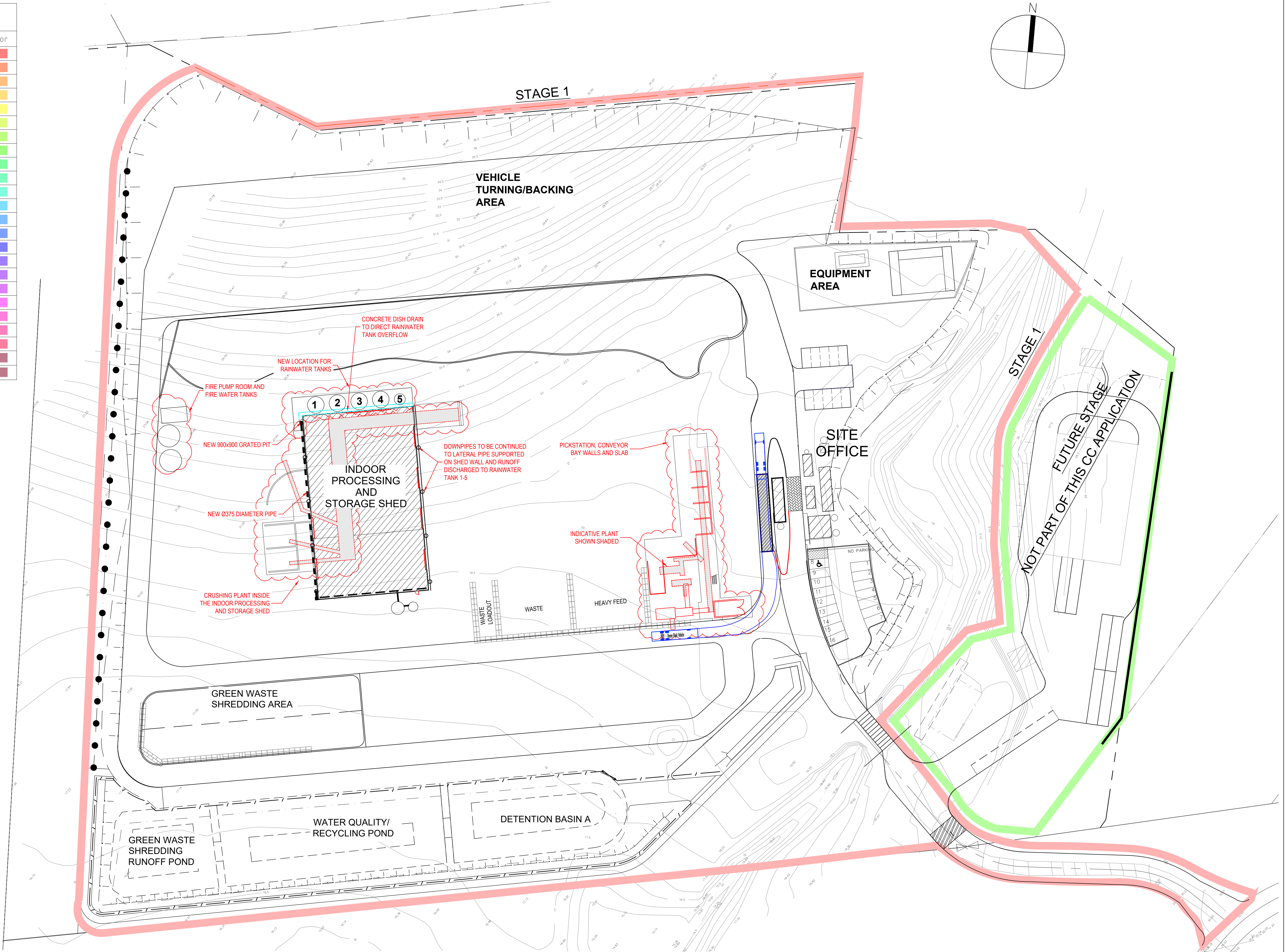
Surveyor DENNIS SMITH	Date APRIL 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN		Project No. KF110816	
Date of Survey	Drawn B.MIDDLETON			Drawing No. C301	
Height Datum AHD	Designed W.MULLANY (SE: Grad Dip LGEE MR(Honors) MBE(Aust) CP(Eng) RFD)			Sheet 2	Revision F
Origin	Checked			Of 20	
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000@ A3	Drawing Status ISSUED FOR SSD5300 MOD2 CC		

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-7.733	-7.500	
2	-7.500	-7.000	
3	-7.000	-6.500	
4	-6.500	-6.000	
5	-6.000	-5.500	
6	-5.500	-5.000	
7	-5.000	-4.500	
8	-4.500	-4.000	
9	-4.000	-3.500	
10	-3.500	-3.000	
11	-3.000	-2.500	
12	-2.500	-2.000	
13	-2.000	-1.500	
14	-1.500	-1.000	
15	-1.000	-0.500	
16	-0.500	0.000	
17	0.000	0.500	
18	0.500	1.000	
19	1.000	1.500	
20	1.500	2.000	
21	2.000	2.500	
22	2.500	3.000	
23	3.000	3.500	
24	3.500	3.922	

EARTHWORKS VOLUMES:

TOTAL CUT = 43228m³

TOTAL FILL = 43191m³



Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2017	B.M.	W.M.



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date APRIL 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE CUT AND FILL PLAN		Project No. KF110816	
Date of Survey	Drawn B.MIDDLETON				
Height Datum AHD	Designed W.MULLANY	Drawing No. C302		Sheet 3 Of 20	
Origin	Checked				
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 CC	Revision D	

LEGEND:

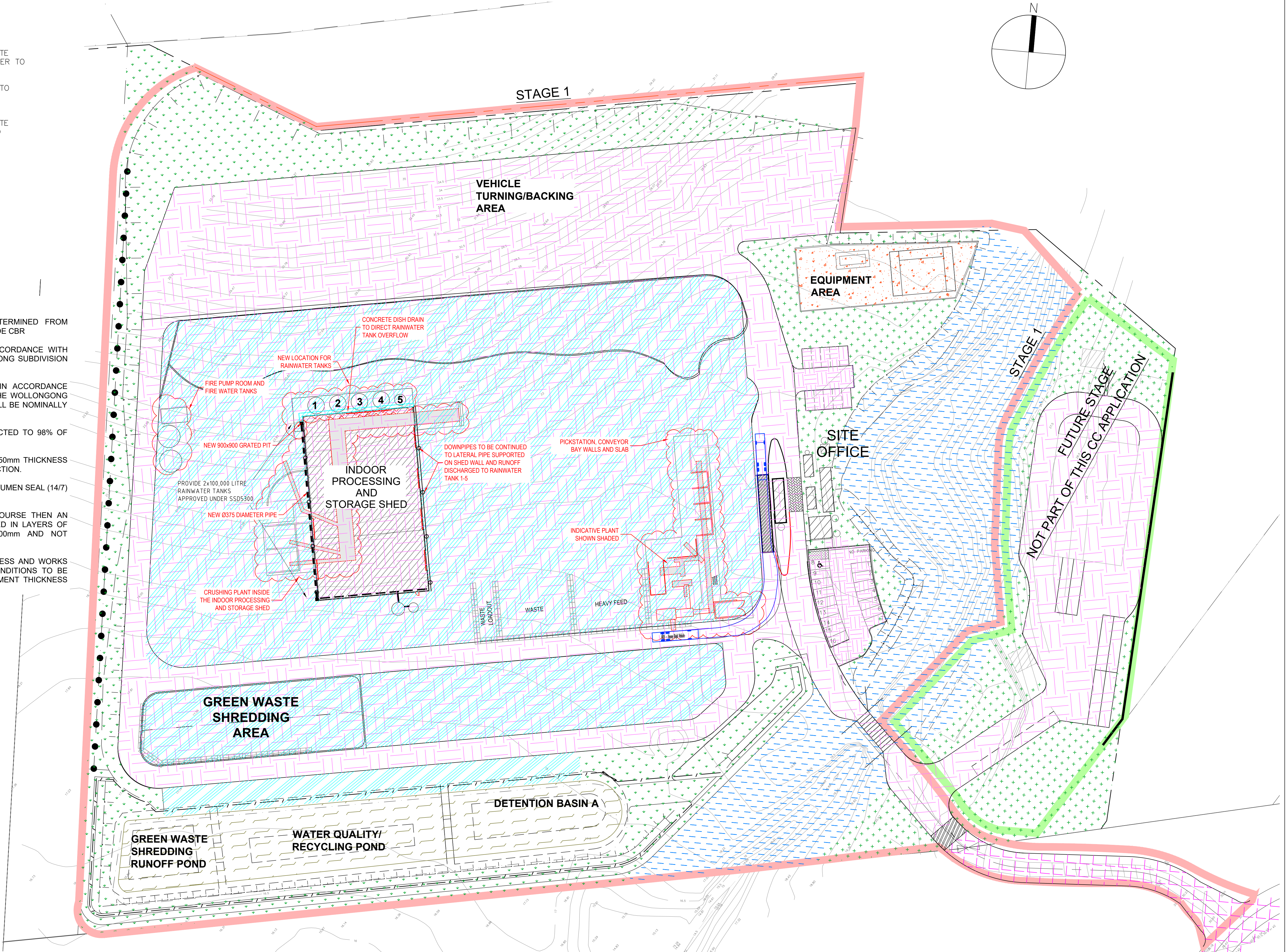
- DENOTES CONCRETE SLAB
- DENOTES RECYCLED CRUSHED CONCRETE PAVEMENT ACCESS 400mm THICK REFER TO DETAIL C304
- DENOTES BITUMEN SEAL AC40 REFER TO DETAIL C304
- DENOTES RECYCLED CRUSHED CONCRETE WORKS AREA 400mm THICK REFER TO DETAIL C304
- DENOTES GRASS AREA
- DENOTES RIPARIAN AREA
- DENOTES PONDS
- DENOTES STAGE 1 LIMITS
- DENOTES FUTURE STAGE LIMITS

PAVEMENT NOTES

1. THE FINAL PAVEMENT THICKNESS SHALL BE DETERMINED FROM GEOTECHNICAL TESTING TO ESTABLISH THE SUBGRADE CBR
2. PAVEMENT SHALL BE DESIGNED GENERALLY IN ACCORDANCE WITH SECTION D2 'PAVEMENT DESIGN' OF THE WOLLONGONG SUBDIVISION CODE 2008
3. PAVEMENT SHALL BE CONSTRUCTED GENERALLY IN ACCORDANCE WITH SECTION C242.27 'FLEXIBLE PAVEMENTS' OF THE WOLLONGONG SUBDIVISION CODE 2008. PAVEMENT THICKNESS SHALL BE NOMINALLY AS FOLLOWS:

a. BASE COURSE 150mm LAYER OF DGB20 COMPACTED TO 98% OF MODIFIED COMPACTION

b. SUB BASE COURSE SHALL BE NOT LESS THAN 150mm THICKNESS OF DGS40 COMPACTED TO 95% MODIFIED COMPACTION.
4. PAVEMENT SEAL SHALL BE EITHER TWO COAT HOT BITUMEN SEAL (14/7) OR 40mm THICKNESS OF AC14
5. IF CBR VALUES WARRANT A THICKER SUB-BASE COURSE THEN AN ADDITIONAL THICKNESS OF DGS40 SHALL BE PLACED IN LAYERS OF COMPACTED THICKNESS OF NOT LESS THAN 100mm AND NOT EXCEEDING 200mm THICKNESS (refer C242.27).
6. NOMINAL CRUSHED CONCRETE PAVEMENT FOR ACCESS AND WORKS AREA SHALL BE MIN. 400mm THICK. SUBGRADE CONDITIONS TO BE CONFIRMED BY GEOTECHNICAL TESTING AND PAVEMENT THICKNESS ADJUSTED ACCORDINGLY



E	LABELS FIXED	05.02.2019	J.D.	W.M.
D	AMENDED SITE LAYOUT AS PER DEWCAPE	09.10.2018	J.D.	W.M.
C	SURFACE PLAN UPDATED TO SUIT NEW WEIGH BRIDGE			
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE AMENDED	13.01.2017	B.M	W.M
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised

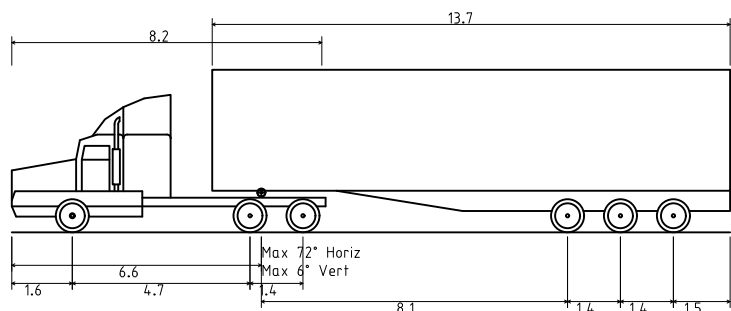
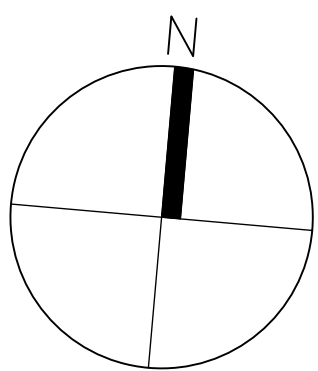


K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

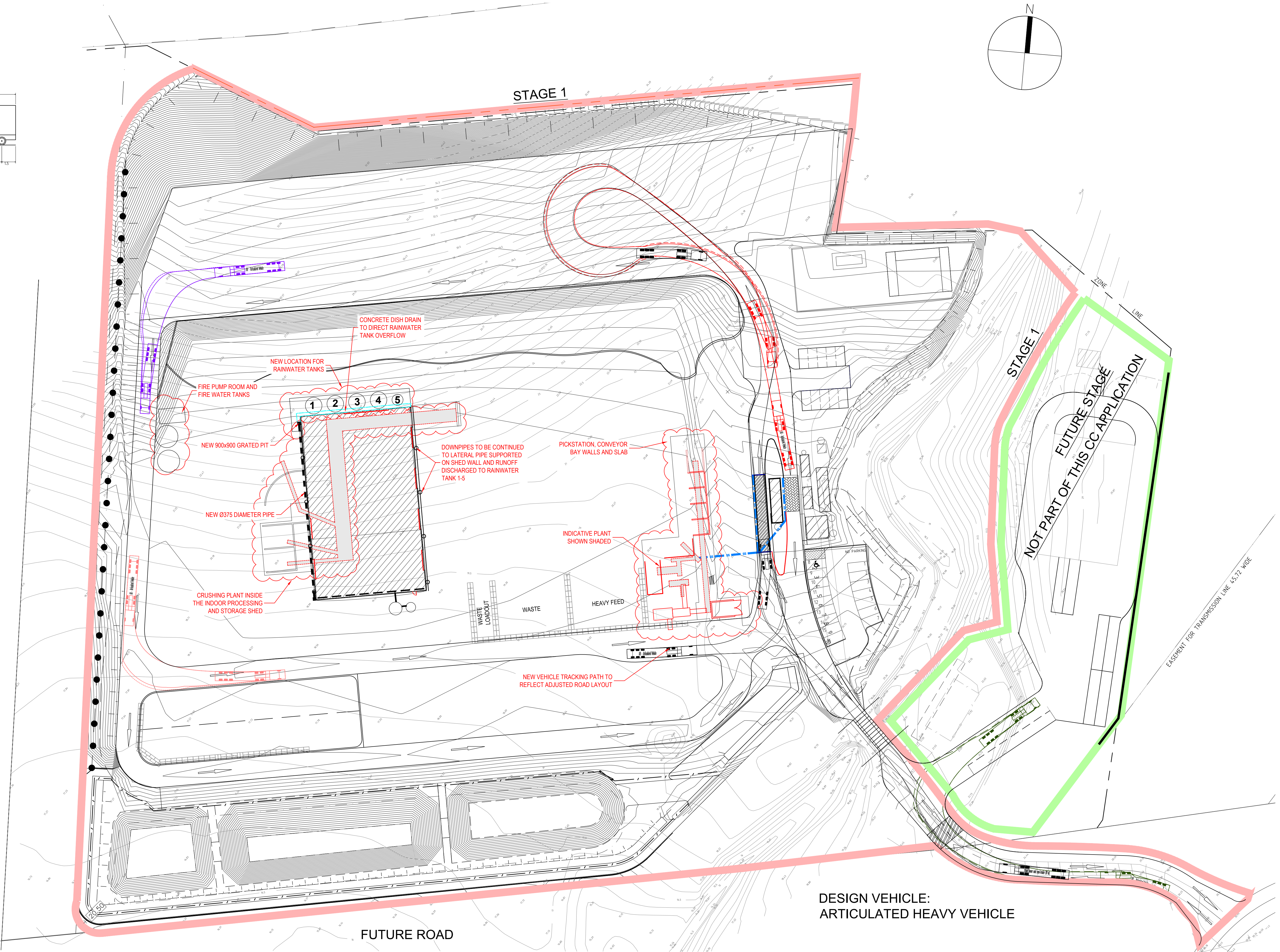
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor	DENNIS SMITH	Date	APRIL 2016
Date of Survey	24 APRIL 2017	Drawn	B.MIDDLETON
Height Datum	WM	Designed	W.MULLANY
Origin	WM	Checked	
Horiz. Datum		Approved	

Drawing Title	PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE PAVEMENT PLAN			Project No.	KF110816	
				Drawing No.	C303	
				Sheet	4 Of 20	Revision
						E
Scale	1:500 @ A1 1:1000 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 CC			



AV - Articulated Vehicle
Overall Length 19.000m
Overall Width 2.500m
Overall Body Height 4.301m
Min Body Ground Clearance 0.418m
Track Width 2.500m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 12.500m



DESIGN VEHICLE:
ARTICULATED HEAVY VEHICLE

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
E	TURNING SWEEP PATH FOR AV ADDED, ROAD ADJUSTED TO SUIT	1.08.2019	B.M	W.M
D	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
C	ADDITIONAL SWEEP PATH SHOWN FOR ENTRY ONTO NEW WEIGHBRIDGE	24 APRIL 2017	BM	WM
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2017	B.M	W.M



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

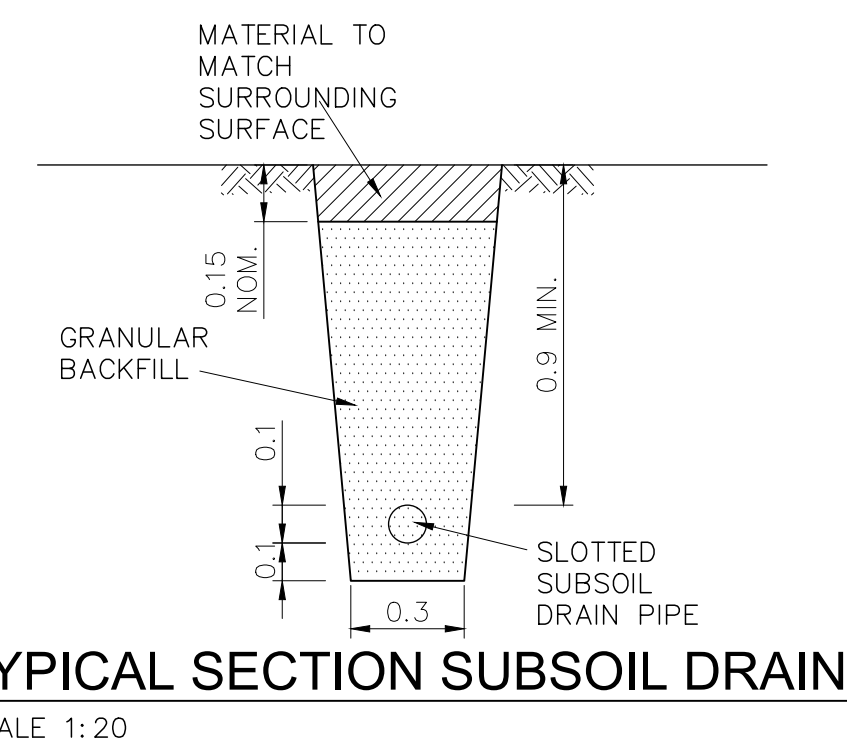
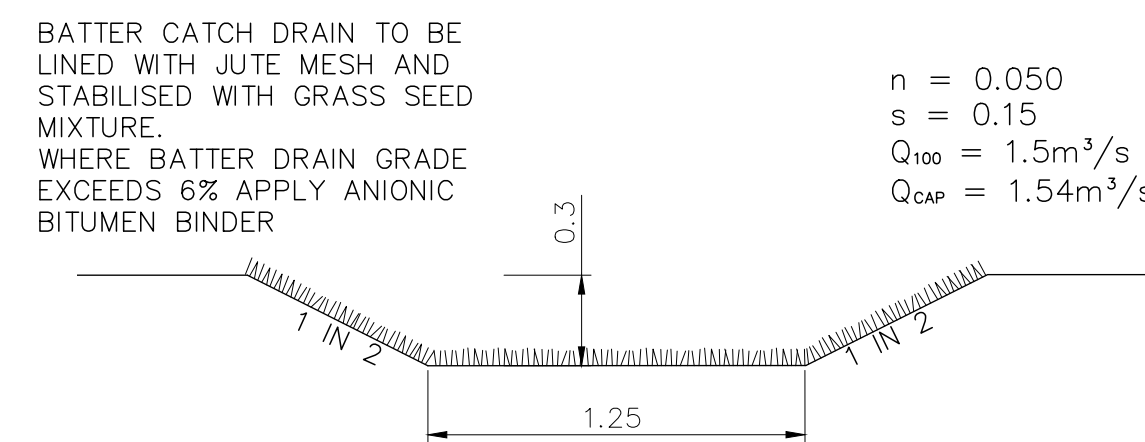
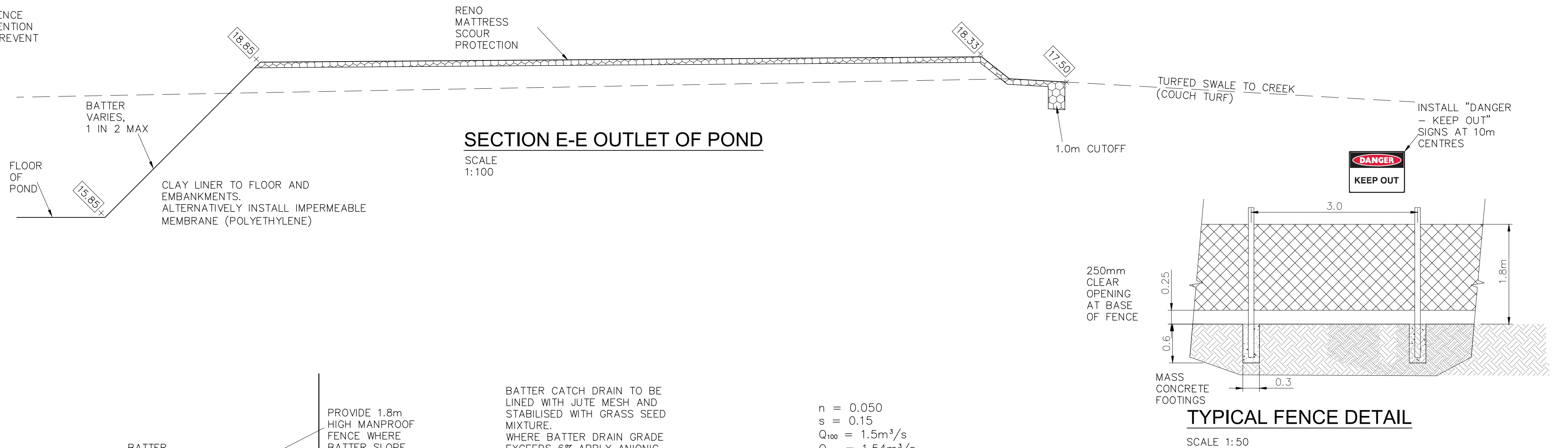
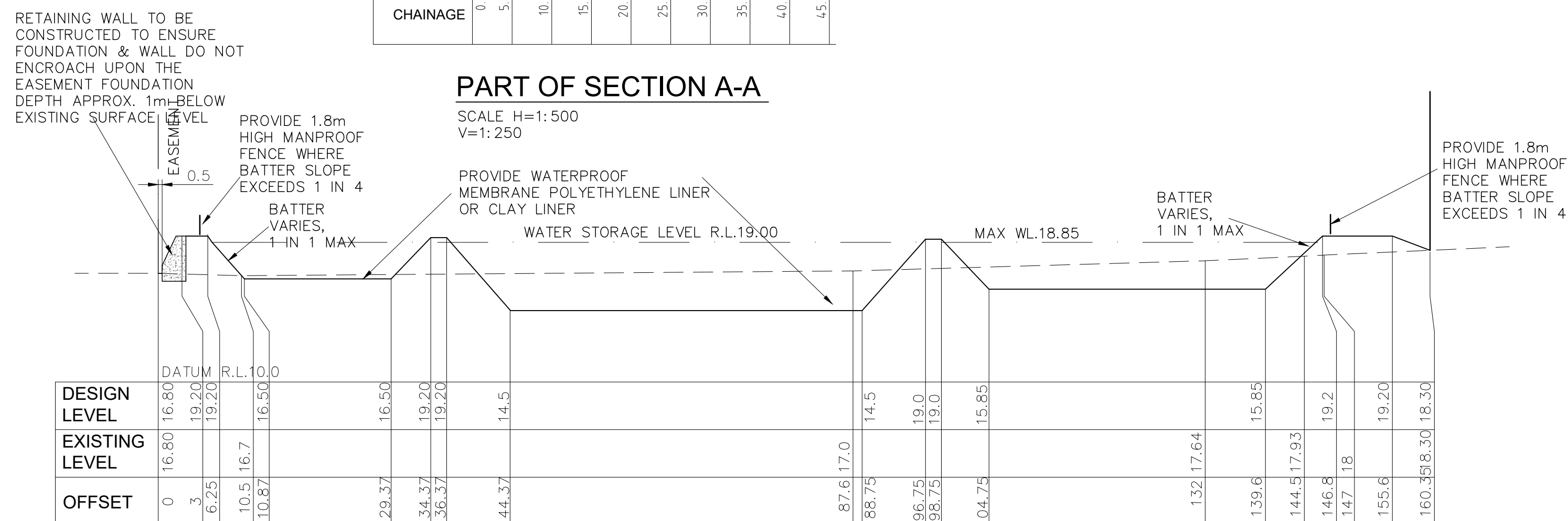
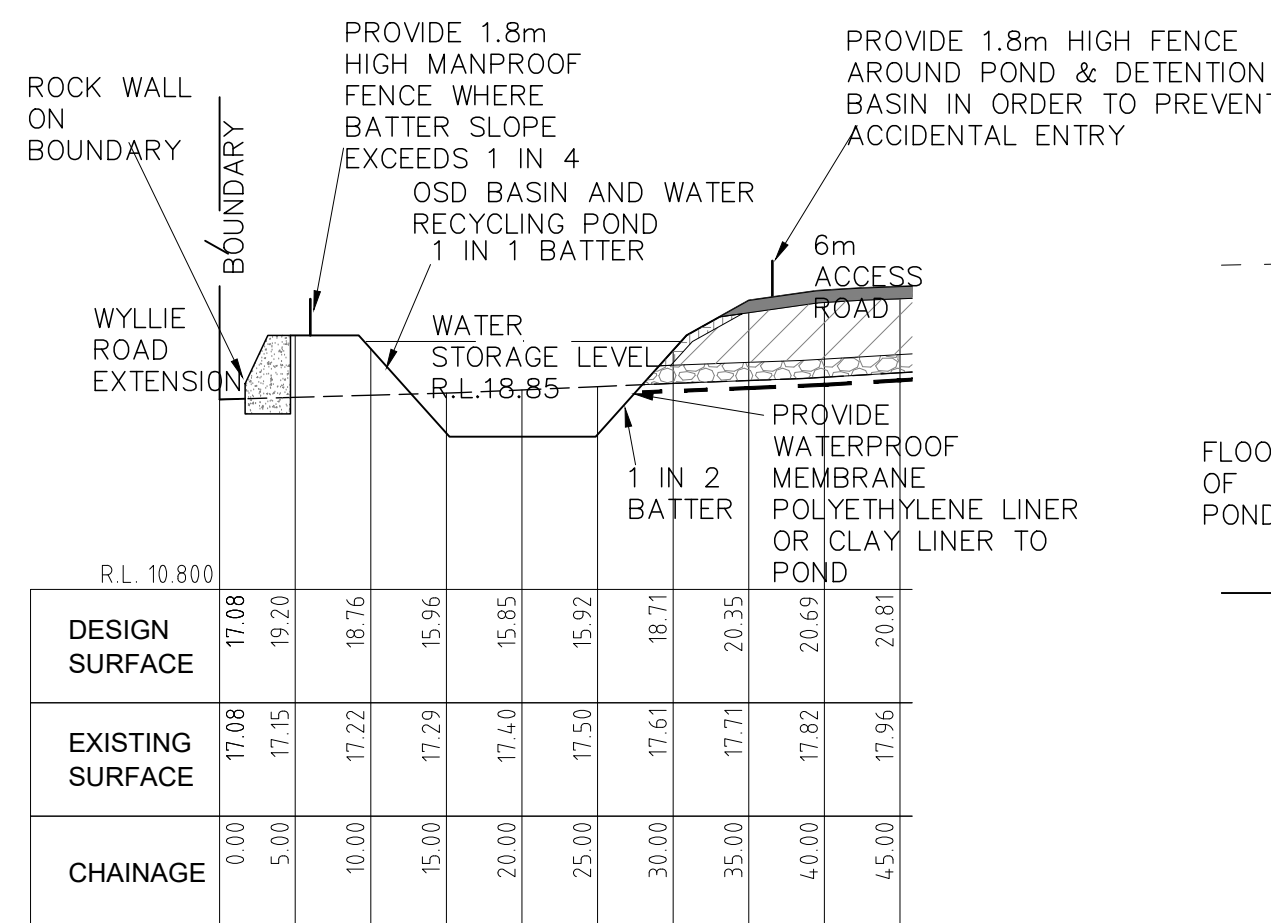
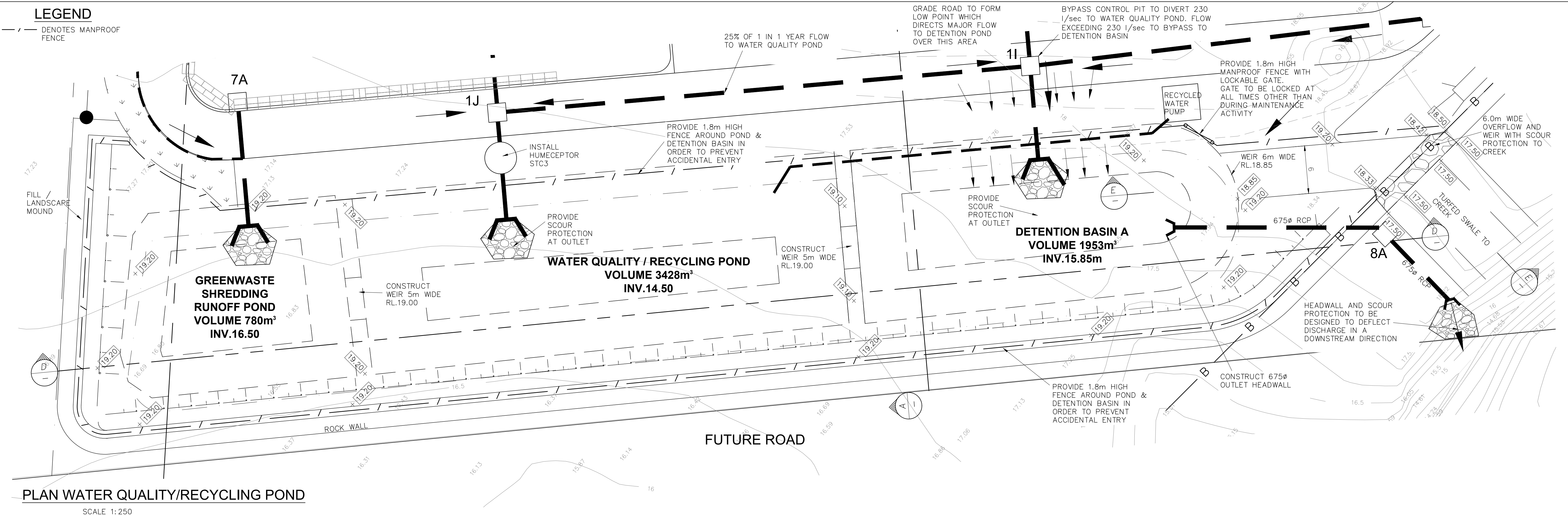
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date APRIL 2016
Date of Survey	Drawn B.MIDDLETON
Height Datum AHD	Designed W.MULLANY
Origin	Checked
Horiz. Datum	Approved

Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE TURNING SWEEP PATHS	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 CC
---	------------------------------------	--

Project No. KF110816	Sheet 6 Of 20
Drawing No. C305	Revision E

— / — DENOTES MANPROOF
FENCE



SUBSOIL NOTES

1. SUBSOIL DRAIN PIPE TO BE 100mm DIAM SLOTTED POLYETHYLENE FITTED WITH FILTER SOCK. UNDER HEAVILY TRAFFICKED AREA THE SUBSOIL DRAIN IS TO BE SLOTTED uPVC
2. TRENCH TO BE MINIMUM 300mm WIDE
3. BACKFILL TO BE CLEAN GRANULAR MATERIAL COMPACTED TO D1 80
4. MINIMUM GRADE OF TRENCH/SUBSOIL DRAIN PIPE IS TO BE 0.5%

		V=1:250			
C	LABELS FIXED	05.02.2019	J.D.	W.M.	
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.	
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised	



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

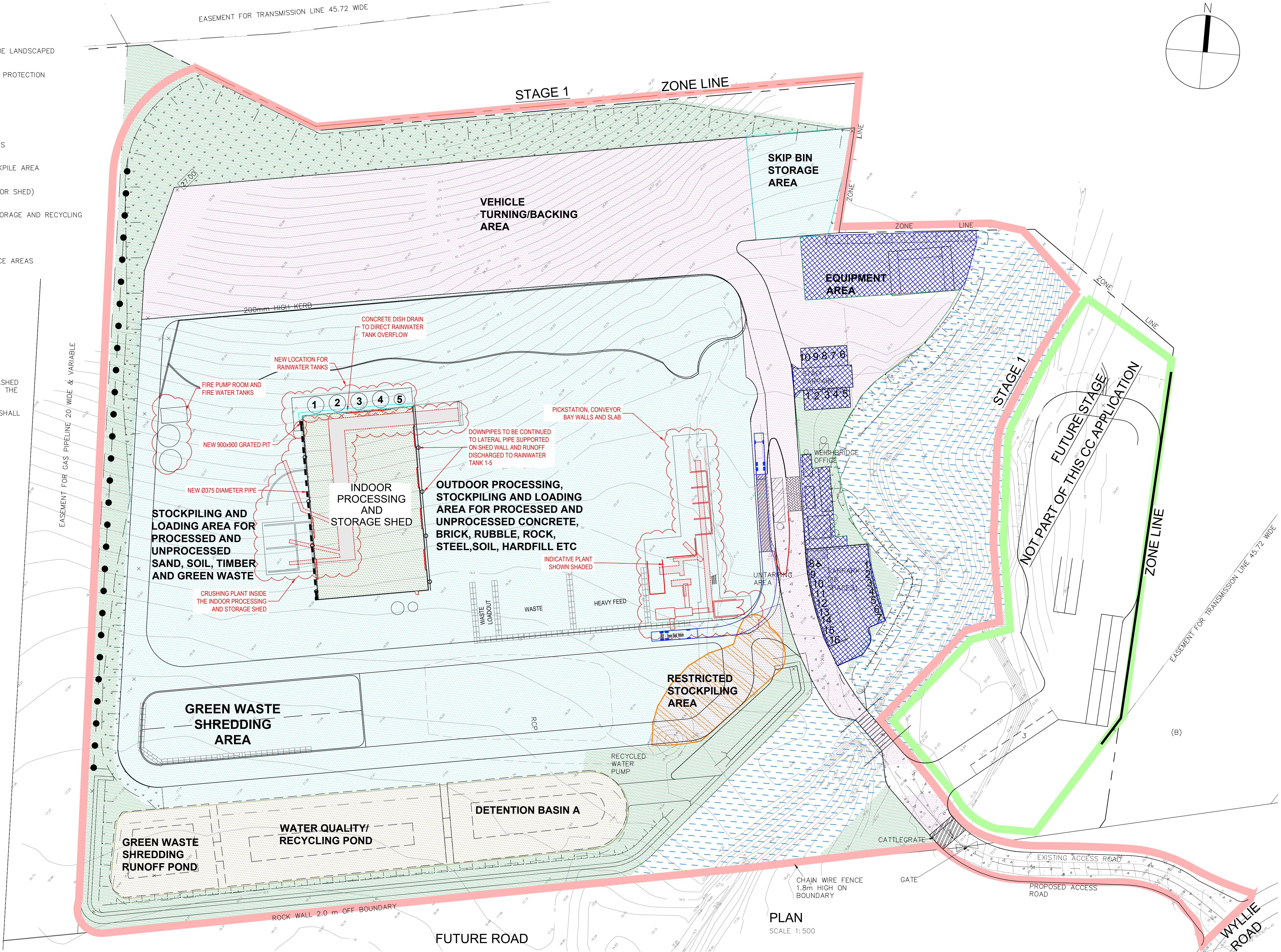
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date APRIL 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE POND DETAILS		Project No. KF110816	
Date of Survey	Drawn B.MIDDLETON			Drawing No. C307	
Height Datum AHD	Designed W.MULLANY SE: Grad De: LGE ME: Heavy ME: Asst CR: Eng RFO			Sheet 8 Of 20	Revision C
Origin	Checked				
Horiz. Datum	Approved	Scale 1:250 @ A1 1:500 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 CC		

LEGEND

- DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
- DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
- DENOTES RIPARIAN CORRIDOR
- DENOTES GRASSED/LANDSCAPED AREA
- DENOTES ACCESS AND MANOEUVRING AREAS
- DENOTES GENERAL PROCESSING AND STOCKPILE AREA
- DENOTES PROCESSING AND STORAGE (INDOOR SHED)
- DENOTES OSD STORAGE BASIN, RUNOFF STORAGE AND RECYCLING
- DENOTES RESTRICTED STOCKPILING AREAS
- DENOTES ADMINISTRATION AND MAINTENANCE AREAS
- DENOTES PROPOSED ROAD UPGRADING
- DENOTES STAGE 1 LIMITS
- DENOTES FUTURE STAGE LIMITS

NOTES:
1. MATERIALS WHICH ARE LIABLE TO BE BUOYANT AND WASHED OFF THE SITE DURING A PMF SHALL NOT BE STORED IN THE RESTRICTED STOCKPILING AREA.
2. ONLY NON-BUOYANT DURABLE AND DENSE MATERIALS SHALL BE STORED IN THE RESTRICTED STORAGE AREA



C	LABELS FIXED	05.02.2019	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2017	B.M	W.M
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



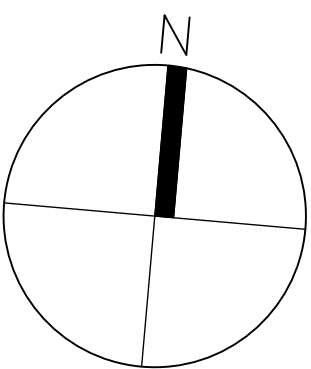
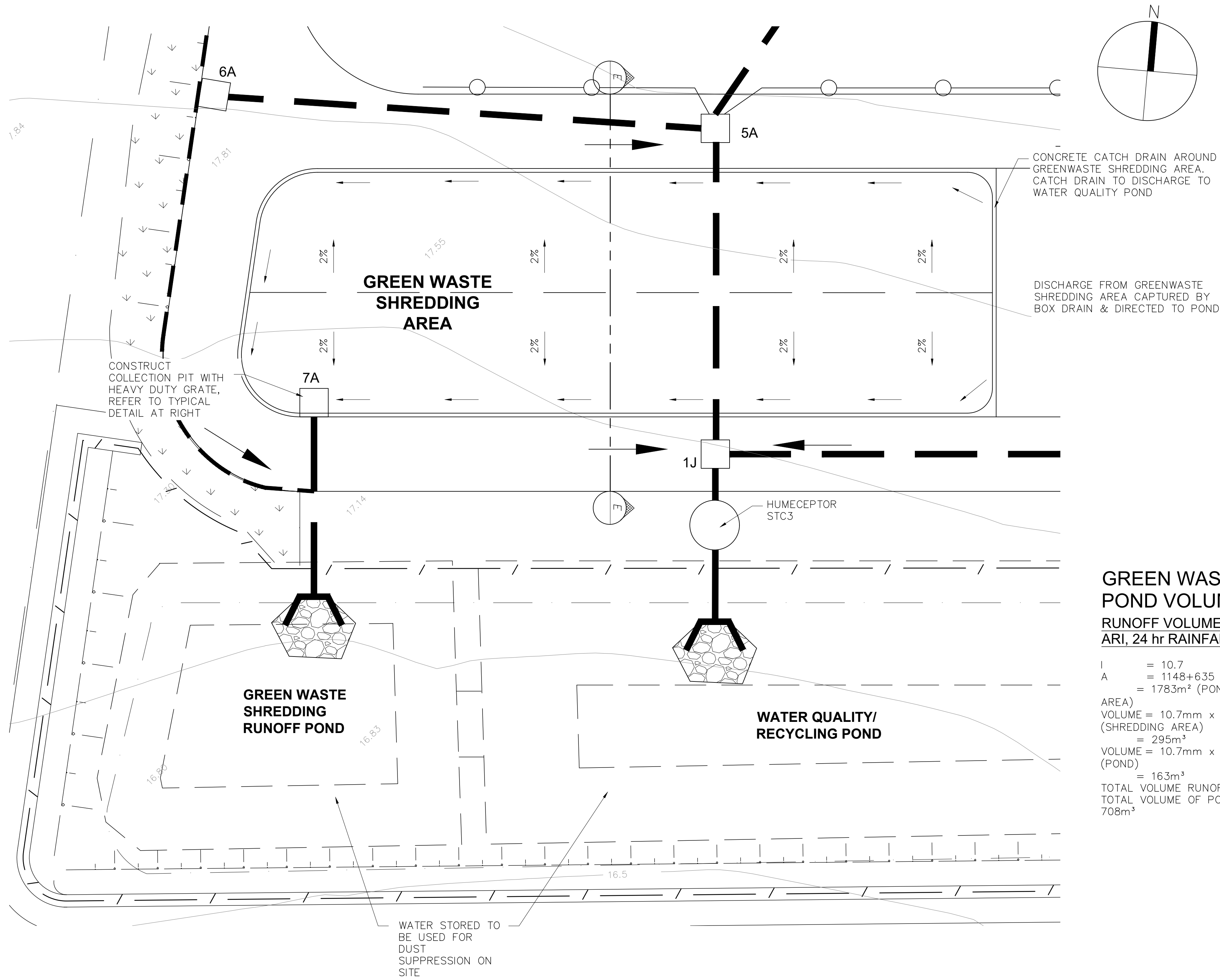
K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

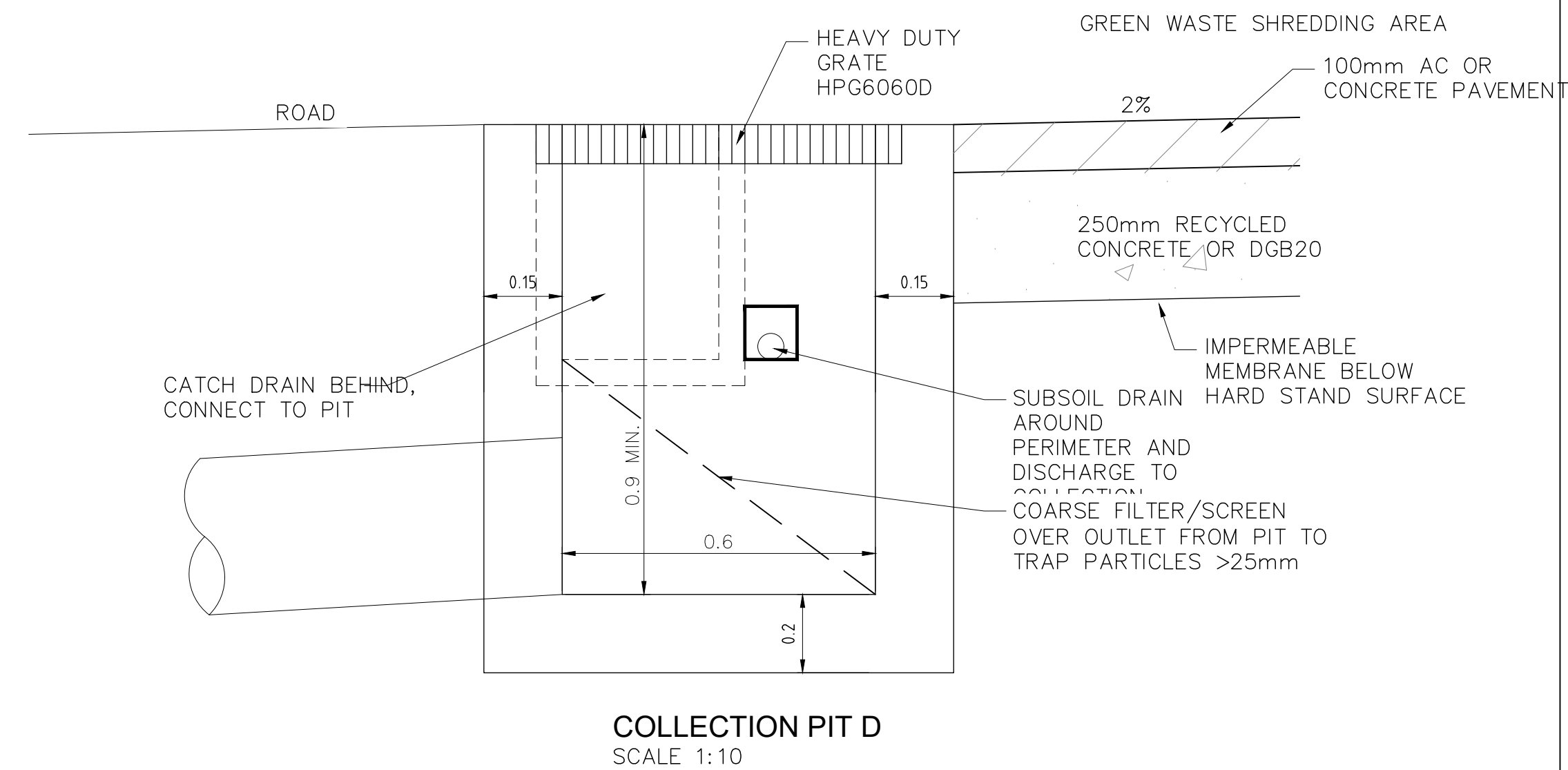
Surveyor	DENNIS SMITH	Date	APRIL 2016
Date of Survey		Drawn	B.MIDDLETON
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title	PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN - USAGE AREAS		
Scale	1:500 @ A1 1:1000 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 CC

Project No.	KF110816		
Drawing No.	C308		
Sheet	9 Of 20	Revision	C

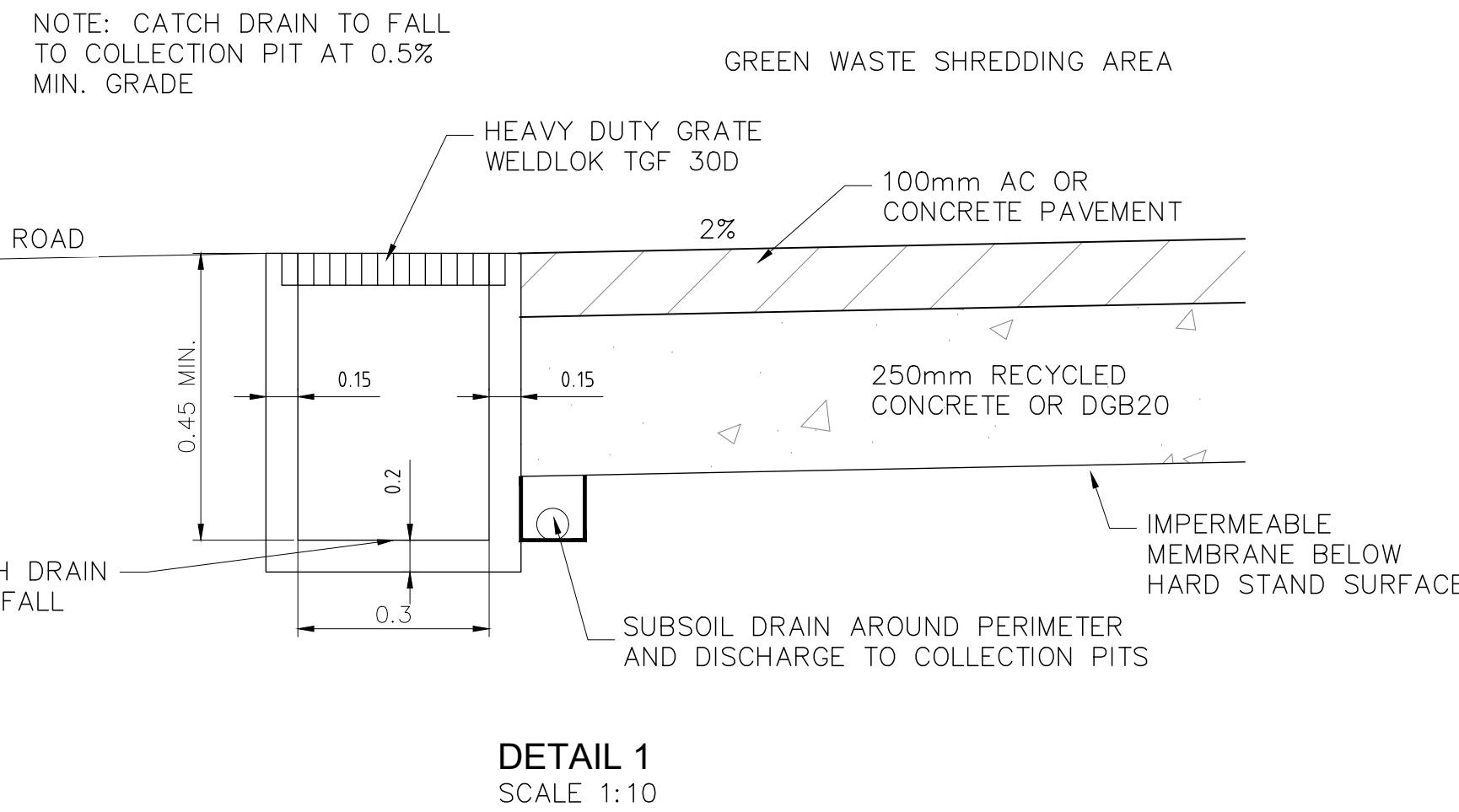


- NOTE:**
1. AFTER SHREDDING, GREEN WASTE IS TO BE MOVED TO PROCESSING SHED FOR COMPOSTING.
 2. COMPOSTING PROCESS TO BE UNDER COVER IN PROCESSING SHED.
 3. COMPOSTING EFFLUENT TO BE DRAINED TO SEPTIC TANK.
 4. WATER RETAINED IN SHREDDING POND TO BE USED FOR DUST SUPPRESSION ON SITE.
 5. PERIMETER GRATES AND DRAINS TO BE MAINTAINED IN SERVICEABLE CONDITION AT ALL TIMES. NO BUILD UP OF GREEN WASTE SHALL OCCUR.
 6. MAINTENANCE SHALL BE PERFORMED TWICE WEEKLY AS MINIMUM.

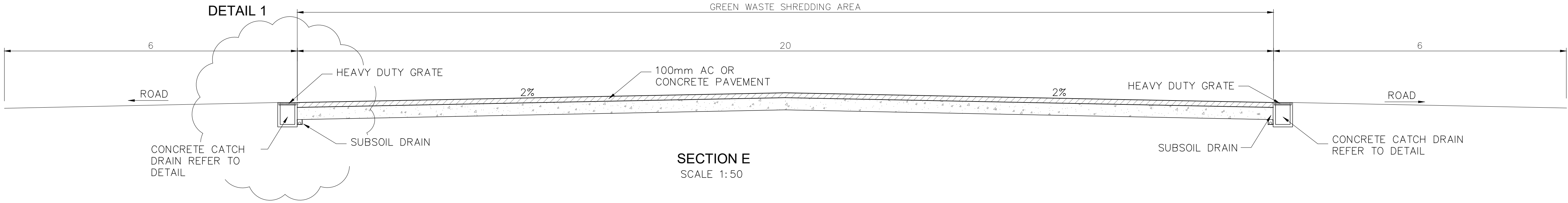


GREEN WASTE SHREDDING POND VOLUME
RUNOFF VOLUME FROM 1 IN 10_{yr} ARI, 24 hr RAINFALL BURST

I = 10.7
A = 1148+635
= 1783m² (POND + SHREDDING AREA)
VOLUME = 10.7mm x 24 hr x 1148m² (SHREDDING AREA)
= 295m³
VOLUME = 10.7mm x 24 hr x 635m² (POND)
= 163m³
TOTAL VOLUME RUNOFF = 458m³
TOTAL VOLUME OF POND STORAGE = 708m³



NOTE:
CATCH DRAIN TO BE REINFORCED WITH SL82 CENTRALLY PLACED IN FLOOR AND WALLS



C	LABELS FIXED	05.02.2019	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor	DENNIS SMITH	Date	May 2016
Date of Survey		Drawn	B.MIDDLETON
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title	PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SHREDDING AREA DETAIL		
Scale	AS @ A1 SHOW @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 CC

Project No.	KF110816	
Drawing No.	C309	
Sheet	10 Of 20	Revision
		C

LEACHATE CONTROL NOTES

1. Working surfaces
EPA Goal
To ensure storage areas, active composting surfaces, and associated access roads are constructed to prevent the pollution by leachate of subsoil, groundwater and surface water bodies and to allow all-weather vehicular access to any part of the processing site that needs to be reached by vehicles.

Minimum Design Requirement is met as follows:

The green waste shredding area will have an impervious concrete or asphalt concrete layer to prevent infiltration from the shredding surface.

The green waste shredding area has a penmeter drain to collect and direct runoff to the green waste runoff collection pond.

Composting and storage will be undertaken in a weatherproof shed which will have a concrete floor.

2. Leachate barrier system
EPA Goal
To prevent the pollution by leachate of subsoil, groundwater and surface water bodies over the period of time that raw organics or products remain on the premises, beyond the closure of the facility, and until the premises has ceased to pose potential environmental threats.

Minimum Design Requirement is met as follows:

The green waste shredding area has an impervious layer to prevent infiltration from the shredding surface. The impervious layer will be concrete or asphalt cement (AC) pad of a thickness of at least 100 mm is to be constructed

The concrete or AC pavement will be designed for a traffic loading of 1 x 105 E5A. Assuming a CBR of 5, the pavement thickness will be in the order of 340 mm including a minimum of 100 mm concrete of AC thickness.

A 100mm concrete or AC layer will withstand the loads from all machines, vehicles and equipment that are required to operate the facility.

3. Leachate collection system
EPA Goal
To ensure that leachate is collected efficiently at the composting and related processing facility for further management, thereby avoiding water pollution and/or odour problems.

Minimum Design Requirement is met as follows:

The composting process will occur under cover in a weather-proof building and will produce no or at worst a small volume of leachate.

The composting process shed will have a concrete floor underlain by a polyethylene membrane in order to prevent leachate infiltration into the groundwater.

The compost process leachate collection system will consist of the following:
• A primary concrete tank with a volume of 5,000 litres. The concrete tank will be fitted with a watertight lid and internally sealed with an epoxy coating to ensure watertightness.

• A secondary concrete tank with a volume of 2,500 litres. The concrete tank will be fitted with a watertight lid and internally sealed with an epoxy coating to ensure watertightness.

• The secondary tank will be connected to the primary tank at the level where the primary tank is at 4,000 litre storage (80%) capacity.

• The primary collection tank will be fitted with a sensor to indicate 75% capacity (ie 3,750 litres. At this point the site manager shall arrange to have the primary tank pumped out by a liquid waste tanker and disposed of at an appropriate treatment facility.

4. Leachate storage system
Goal
To ensure that leachate is stored efficiently at the composting and related processing facility for further management, thereby avoiding water pollution and/or odour problems.

Minimum Design Requirement is met as follows:

The compost process leachate collection and storage system will consist of the following:

• A primary concrete tank with a volume of 5,000 litres. The concrete tank will be fitted with a watertight lid and internally sealed with an epoxy coating to ensure watertightness.

• A secondary concrete tank with a volume of 2,500 litres. The concrete tank will be fitted with a watertight lid and internally sealed with an epoxy coating to ensure watertightness.

• The secondary tank will be connected to the primary tank at the level where the primary tank is at 4,000 litre storage (80%) capacity.

• The primary collection tank will be fitted with a storage level sensor to indicate 75% capacity (ie 3,750 litres. At this point the site manager shall arrange to have the primary tank pumped out by a liquid waste

tanker and disposed of at an appropriate treatment facility.

A weekly inspection of the level in the leachate storage tank is to be performed.

Six monthly testing of the storage level sensor is to be performed.

It is noted that above ground tanks are preferred, however underground tanks are proposed in this case because the composting area is within a weather proof shed which will mean that the generation of leachate will be nil or very small.

The composting process will be undertaken in a weatherproof shed. There will therefore be no need to make provision for rainwater inflow to the leachate storage system. It is noted that rainwater from the weatherproof shed will be harvested for use on site for dust suppression.

5. Surface water controls
Goal
To avoid the generation of excessive leachate and to prevent any sediment or pollutants from being carried off the premises.

Minimum Design Requirement is met as follows:
The surface water controls must at least meet the following requirements:

For composting and storage;
prevention of surface water mixing with organics will achieved by undertaking the composting process within a weatherproof building. The building will effectively prevent surface water mixing with the composting material.

For green waste shredding;
prevention of surface water mixing with organics will be achieved by:

- elevating the green waste shredding area above the internal road system in order to ensure that surface water does not run onto the green waste shredding area.
- the internal road and stormwater system is designed to collect and divert surface water away from the green waste shredding area. The internal road has a central V drain in order to ensure that surface water runs away from the shredding area.

For composting;
contamination of runoff will be prevented by undertaking the composting process and storage within a weatherproof building. The building will effectively prevent surface water mixing with the composting material.

For green waste shredding handling;
treatment of runoff from the shredding area will be achieved by:

- elevating the green waste shredding area above the internal road system in order to ensure that surface water does not run onto the green waste shredding area.
- the internal road and stormwater system is designed to collect and divert surface water away from the green waste shredding area. The internal road has a central dish-drain in order to ensure that surface water runs away from the shredding area.

For composting;
management of surface water generated from the design of a 1-in-10 year, 24-hour-period storm event will not be required because the composting operations are within a weatherproof building. The building will effectively prevent surface water mixing with the composting material.

For green waste shredding;
management of surface water generated from the design of a 1-in-10 year, 24-hour-period storm event will be achieved by minimising the area of green waste exposed to rainfall and ensuring the shredding pond has sufficient volume. As runoff will not be heavily loaded with organic matter, water retained in the green waste shredding pond may be used a supplementary supply for dust suppression on site.

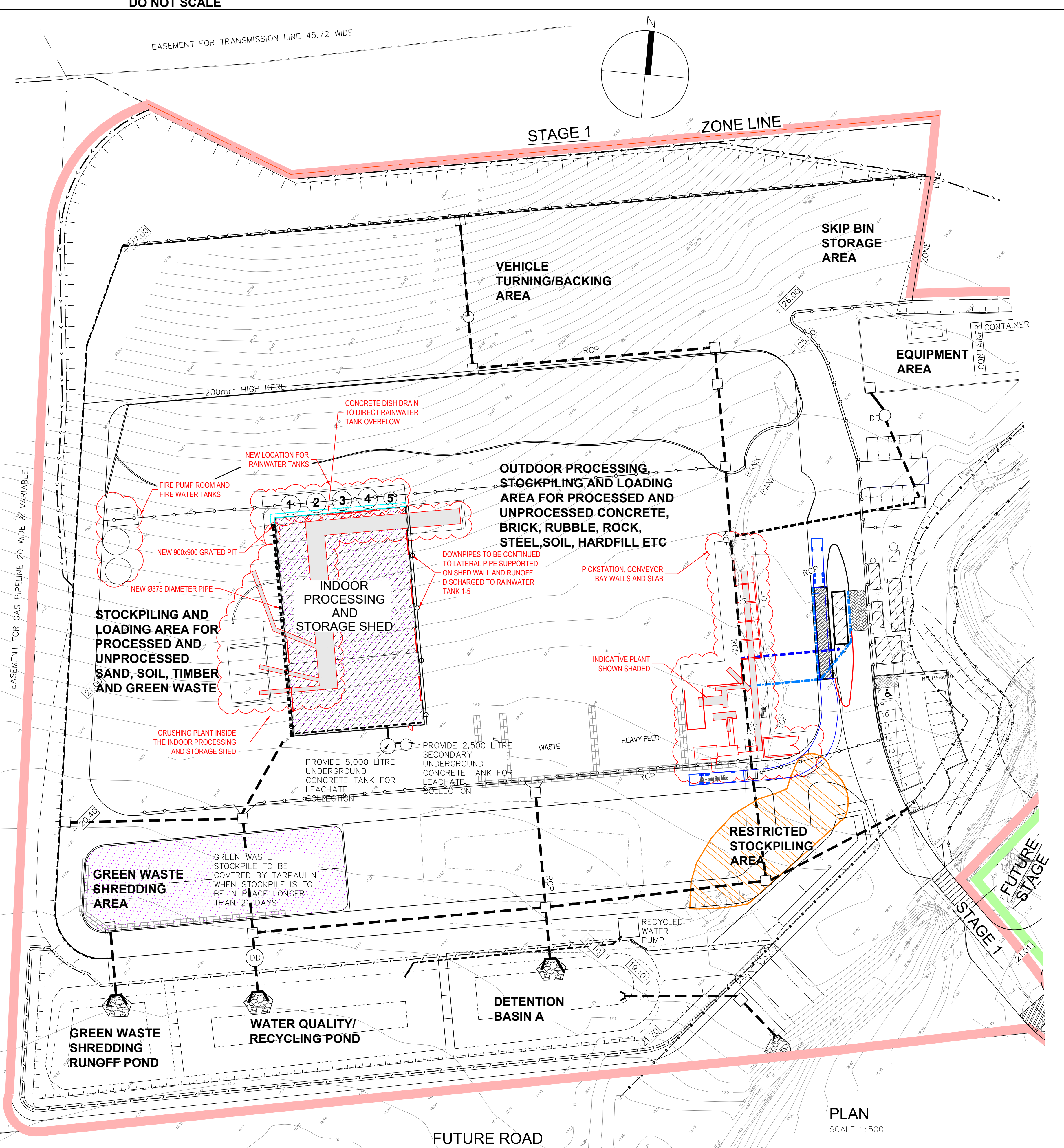
The internal road and stormwater system is designed to collect and divert surface water away from the green waste shredding area. The internal road has a central V drain in order to ensure that surface water runs away from the shredding area.

LEGEND

- DENOTES PROPOSED BUILDING
- DENOTES EXISTING CONTOURS
- DENOTES PROPOSED SURFACE LEVELS
- DENOTES HUMCEPTOR DOWNSTREAM DEFENDER
- COMPOSTING AND STORAGE SHED, CONCRETE FLOOR, DRAIN TO UNDERGROUND LEACHATE COLLECTION TANKS
- GREEN WASTE SHREDDING AREA, CONCRETE OR ASPHALT SURFACE, REFER TO DRAWING KF110816/C17
- DETENTION POND
- DENOTES STORMWATER PITS AND PIPES
- DENOTES STAGE 1 LIMITS
- DENOTES FUTURE STAGE LIMITS

NOTE:

COMPOSTING OPERATIONS APPROVED UNDER SSD5300 IN SHED ARE TO BE REPLACED BY PROPOSED SORTING AND CRUSHING PLANT.



D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor	DENNIS SMITH	Date	APRIL 2016
Date of Survey		Drawn	B.MIDDLETON
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE LEACHATE CONTROL PLAN	
Scale	1:500 @ A1 1:1000 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 CC

Project No.	
KF110816	
Drawing No.	
C310	
Sheet	Revision
11 Of 20	D

FILENAME: X:\KF110816\Civil\Drawings\CC\KF110816-C-CC.dwg
PLOTED BY: Jdo

LEGEND

- DENOTES EXISTING CONTOURS
 DENOTES PROPOSED SURFACE LEVELS
 DENOTES STORMWATER SURFACE FLOW/DIRECTION OF V DRAINS
 DD DENOTES HUMECEPTOR DOWNSTREAM DEFENDER
 ROOF AREAS TO RAINWATER TANKS
 SURFACE AREA RUNOFF TO WATER QUALITY POND THROUGH HUMECEPTOR
 DETENTION POND—DOES NOT RETAIN WATER
 DENOTES STORMWATER PITS AND PIPES WITH DIRECTION OF FLOW
 DENOTES STAGE 1 LIMIT
 DENOTES STAGE 2 LIMIT

RAINWATER HARVESTING TANK DETAILS

TANK	LOCATION	VOLUME (m ³)
1	INDOOR SHED	100
2	INDOOR SHED	100
3	WORKSHOP	100
4	EQUIPMENT AREA	10
5	INDOOR SHED	46.5
6	INDOOR SHED	46.5
7	INDOOR SHED	46.5
8	INDOOR SHED	46.5
9	INDOOR SHED	14
TOTAL		510

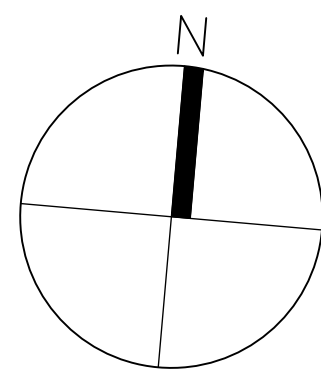
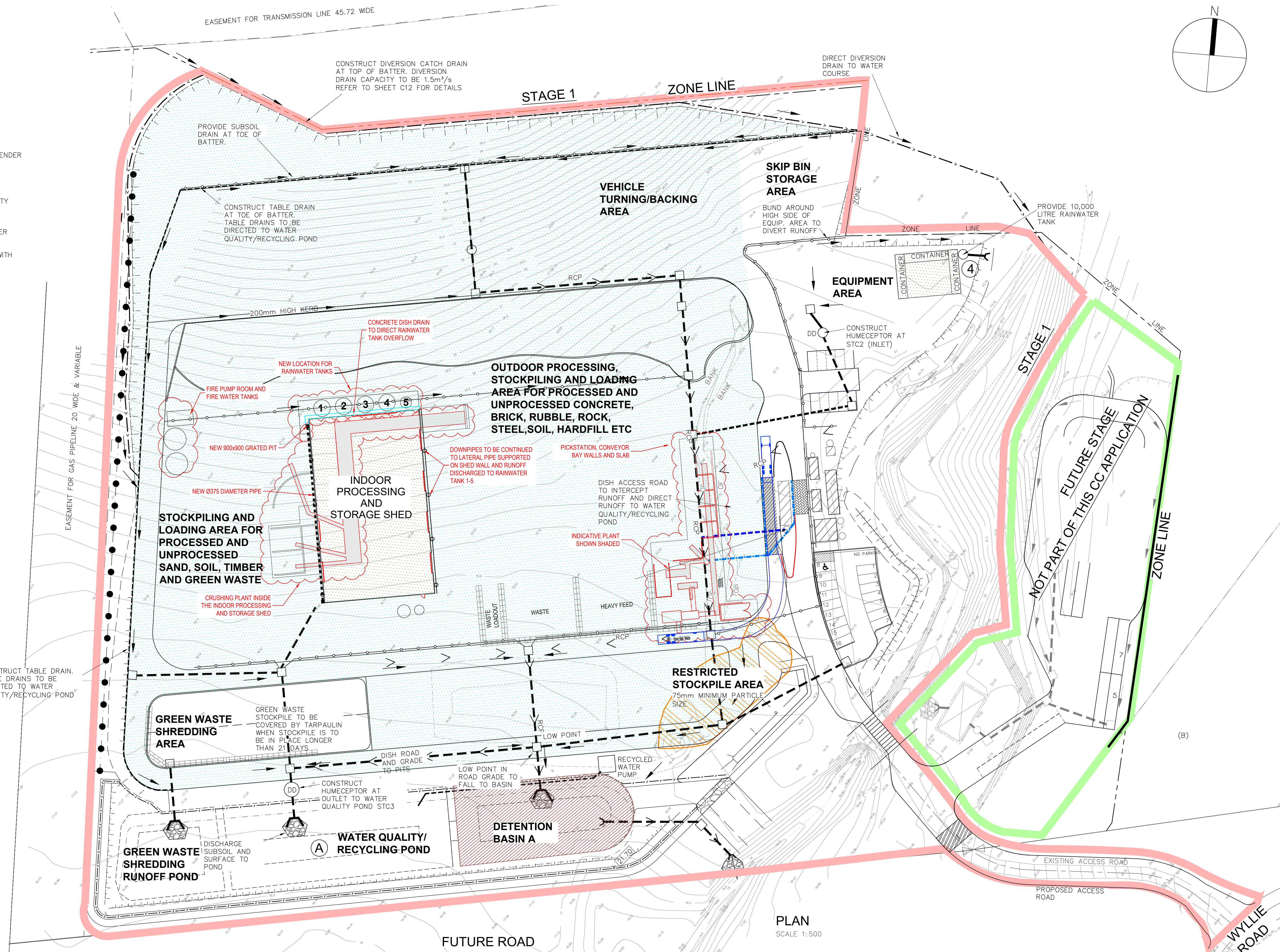
SURFACE RUNOFF HARVESTING

POND A	3428 m ³
--------	---------------------

TOTAL RAINWATER HARVEST

POND A + TANKS	3938 m ³
----------------	---------------------

CONSTRUCT TABLE DRAIN. TABLE DRAINS TO BE DIRECTED TO WATER QUALITY/RECYCLING POND



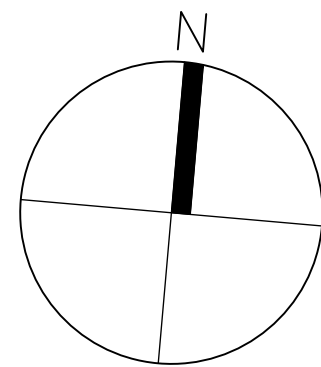
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2016	B.M.	W.M.



K.F. Williams & Associates Pty Ltd
 28 Auburn Street
 Wollongong NSW 2500
 A.C.N 008 664 417
 Project Management, Surveying,
 Civil, Structural, Water & Sewer

p (02) 4228 7044
 f (02) 4226 2004
 e mail@kfw.net.au
 www.kfw.net.au

Surveyor DENNIS SMITH	Date MAY 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE RAINWATER HARVESTING PLAN	Project No. KF110816
Date of Survey	Drawn B.MIDDLETON		Drawing No. C311
Height Datum AHD	Designed W.MULLANY		Sheet 12 Of 20
Origin	Checked		Revision D
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 CC



LEGEND

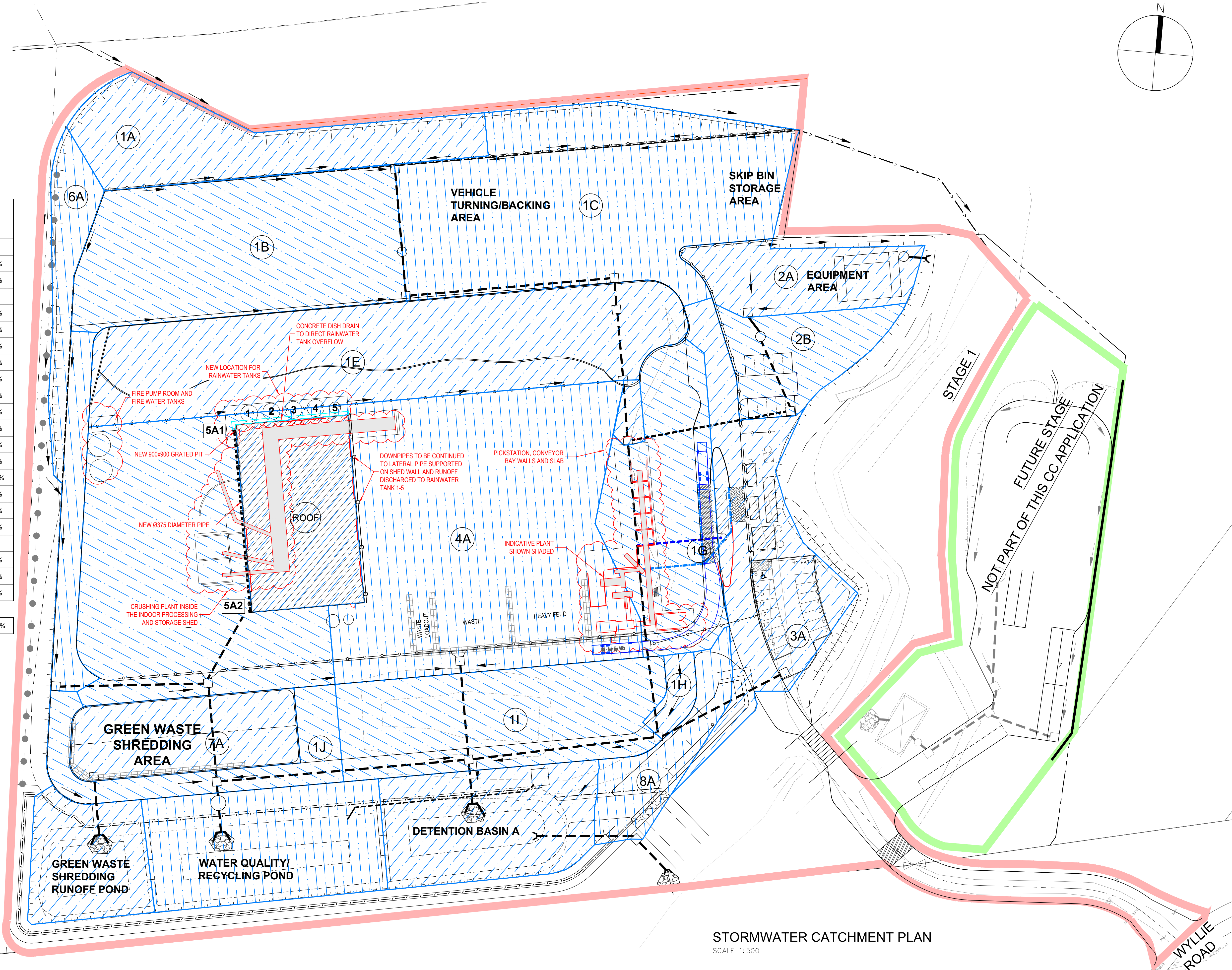
- > DENOTES STORMWATER SURFACE FLOW/DIRECTION OF V DRAINS
- DD DENOTES HUMECPTOR DOWNSTREAM
- >--> DENOTES STORMWATER PITS AND PIPES WITH DIRECTION OF FLOW

Catchment	Area		Non-Impervious	Impervious	
	(m ²)	(ha)	(m ²)	(m ²)	%
1A	1774.0	0.1774	1774.0	0.0	0%
1B	3077.0	0.3077	0.0	2615.5	85%
1C	4272.0	0.4272	675.0	3057.5	72%
1D	0.0	0.0000	0.0	0.0	0%
1E	3999.5	0.4000	0.0	3399.6	85%
1F	106.0	0.0106	0.0	90.1	85%
1G	1958.0	0.1958	470.1	1487.9	76%
1H	182.0	0.0182	0.0	154.7	85%
1I	2210.0	0.2210	200.0	1708.5	77%
1J	830.0	0.0830	0.0	705.5	85%
2A	997.0	0.0997	204.0	793.0	80%
2B	910.0	0.0910	225.0	685.0	75%
3A	2065.0	0.2065	340.0	1725.0	84%
4A	5313.0	0.5313	0.0	4516.1	85%
ROOF	1500.0	0.1500	0.0	1500.0	100%
5A	3691.6	0.3692	0.0	3137.9	85%
6A	1223.0	0.1223	570.0	555.1	45%
7A	1197.0	0.1197	0.0	1077.3	90%
8A	736.0	0.0736	736.0	0.0	0%
POND 1	988.8	0.0989	838.8	150.0	15%
POND 2	1872.9	0.1873	1602.9	270.0	14%
OSD	1633.3	0.1633	1443.3	190.0	12%
TOTAL	40536.1	4.054	9079.1	27818.4	
AVERAGE				68.6%	

TOTAL SITE AREA FOR STAGE 1 = 51 103m²

REMAINDER OF SITE CATCHMENT NOT ACCOUNTED FOR WITHIN STORMWATER DESIGN OCCURS OUTSIDE BOUNDS OF CONSTRUCTION/REGULAR PLANT USE AREAS AND IS GENERALLY PREVIOUS.

CATCHMENT 1G WAS 58% IMPERVIOUS NOW 76%. INCREASE OF 357m² AND AN OVERALL INCREASE OF 0.9%



STORMWATER CATCHMENT PLAN

SCALE 1: 500

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2017	B.M	W.M

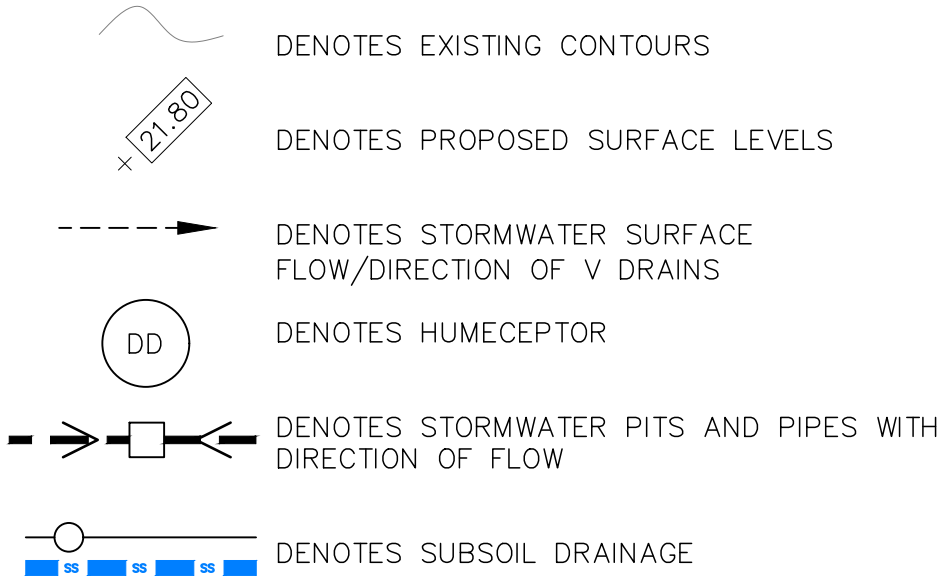


K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date April 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE STORMWATER CATCHMENT PLAN		Project No. KF110816	
Date of Survey	Drawn C. Roberts			Drawing No. C312	
Height Datum AHD	Designed C. Roberts BE(Civil) GradIEAust	Scale 1:500 @ A1 1:1000 @ A3		Sheet 13 Of 20	
Origin	Checked W. Mullany BE Civil Eng (SEI) (Hons) MEAust CP Eng WFD			Revision D	
Horiz. Datum	Approved	Drawing Status ISSUED FOR SSD5300 MOD2 CC			

LEGEND



SURFACE RUNOFF HARVESTING

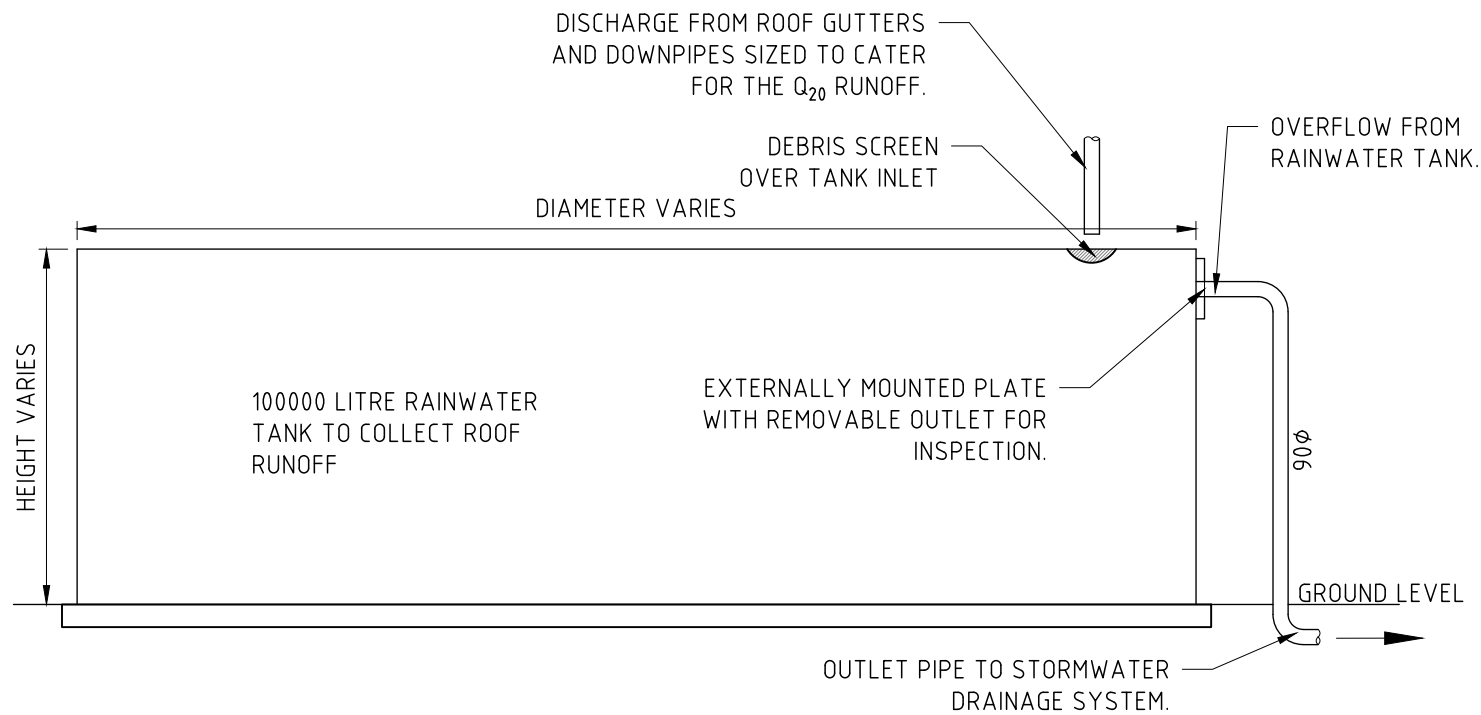
POND A	3428 m ³
--------	---------------------

TOTAL RAINWATER HARVEST

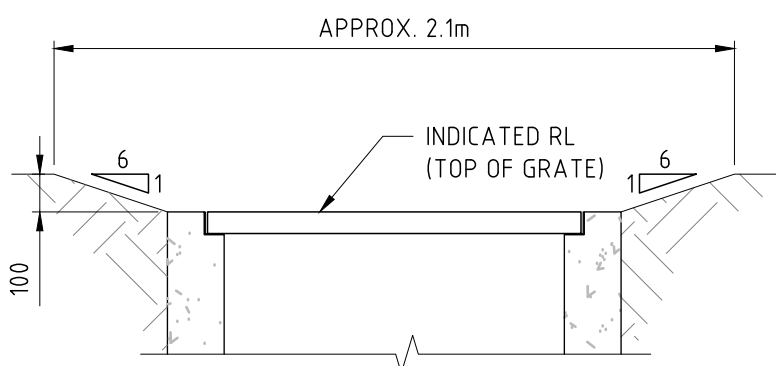
POND A + TANKS	3938 m ³
----------------	---------------------

RAINWATER HARVESTING TANK DETAILS

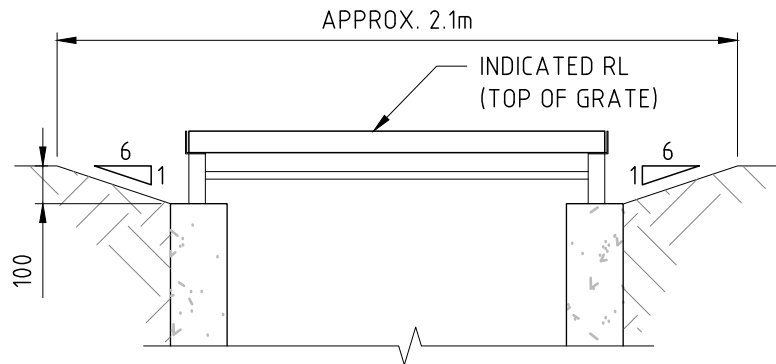
TANK	LOCATION	VOLUME (m ³)
1	INDOOR SHED	100
2	INDOOR SHED	100
3	WORKSHOP	100
4	EQUIPMENT AREA	10
5	INDOOR SHED	46.5
6	INDOOR SHED	46.5
7	INDOOR SHED	46.5
8	INDOOR SHED	46.5
9	INDOOR SHED	14
TOTAL		510



RESUSE RAINWATER TANK NTS



TYP. PIT GROUND BATTER - HPG9090D NTS



TYP. PIT GROUND BATTER - SPG99 NTS

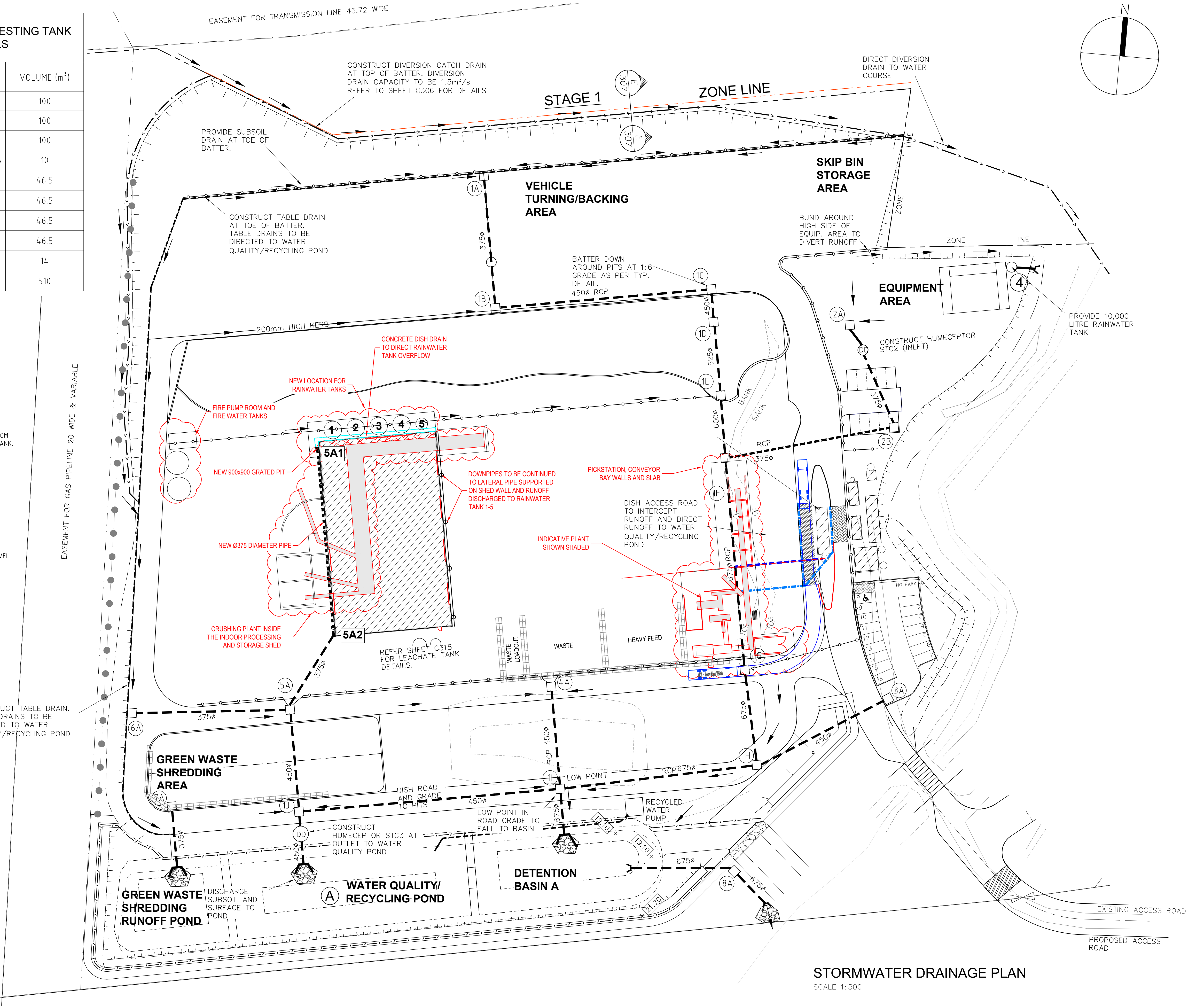
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.04.2017	B.M.	W.M.



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date April 2016	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE STORMWATER DRAINAGE PLAN		Project No. KF110816	
Date of Survey	Drawn C. Roberts			Drawing No. C313	
Height Datum AHD	Designed C. Roberts BEE(Civil) GradE Aust	Scale 1:500 @ A1 1:1000 @ A3		Sheet 14 Of 20	Revision D
Origin	Checked W. Mullany BEE Grad Eng (Civil) ME Aust CP Eng RFD			ISSUED FOR SSD5300 MOD2 CC	
Horiz. Datum	Approved	Drawing Status			



STORMWATER DRAINAGE PLAN
SCALE 1:500

NOTE:

DUST CONTROL TO BE ACHIEVED USING WATER CART. DEMAND ESTIMATED AT 40,000 L/DAY

SITE WATER STORAGE

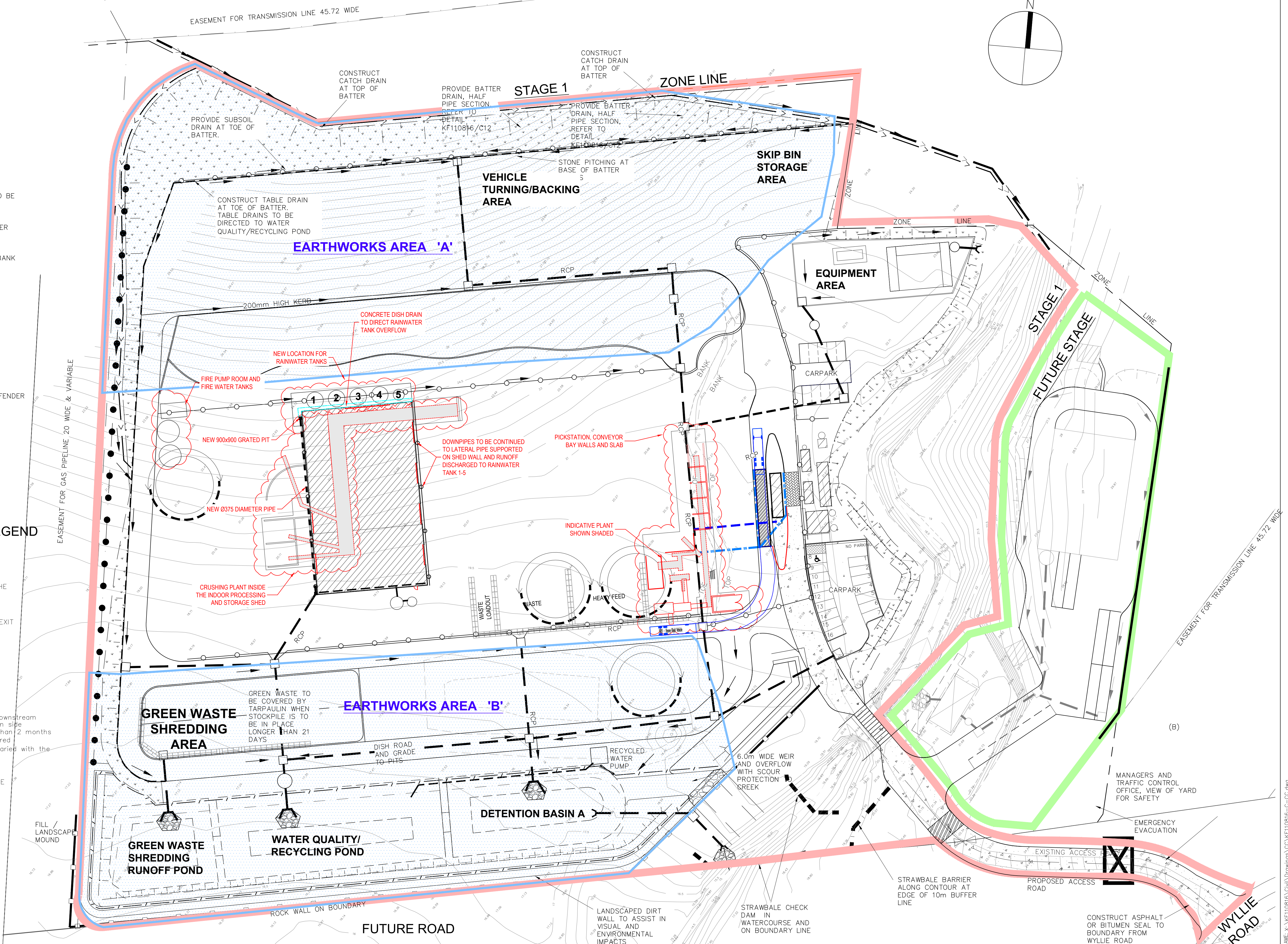
RAINWATER TANK = 300m³
POND = 5500
TOTAL = 5800m³

LEGEND

- DENOTES PROPOSED BUILDING
- DENOTES EXISTING CONTOURS
- DENOTES PROPOSED SURFACE LEVELS
- DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
- DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
- DENOTES 10m BUFFER LINE FROM TOP BANK
- DENOTES 1% AEP FLOOD LIMIT
- DENOTES SUBSOIL DRAINAGE
- DENOTES CATCH DRAIN
- DENOTES DIRECTION OF TRAFFIC FLOW
- DENOTES STORMWATER FLOW
- DENOTES HUMECPTOR DOWNSTREAM DEFENDER
- DENOTES BOLLARD & SIGNAGE
- DENOTES STORMWATER PITS AND PIPES
- DENOTES STAGE 1 LIMITS
- DENOTES FUTURE STAGE LIMITS
- DENOTES PROPOSED SUB SOIL LINE

SOL AND EROSION CONTROL LEGEND

- STRAW BALE DAMS
- SILT STOP FENCE AND DIVERSION DRAINS TO BE MAINTAINED UNTIL THE FINISH OF CONSTRUCTION.
- TEMPORARY CONSTRUCTION ENTRY/EXIT
- STRAW BALE CHECK BARRIER
- CLEAN WATER DIVERSION DRAIN
- TOPSOIL STOCKPILE AREA
Provide silt stop fence barrier on downstream side and diversion bank on upstream side. If stockpile is to be left for more than 2 months temporary revegetation will be required. NOTE Stockpile areas can only be varied with the approval of supervising engineer. REFER TO SHEET C14 FOR DETAILS OF TEMPORARY VEGETATION. ALTERNATIVELY, STOCKPILE SHALL BE COVERED BY TARPULINS



Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	LABELS FIXED	05.02.2019	J.D.	W.M.
C	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
B	ADDITIONAL WEIGHBRIDGE NOTATIONS ADDED	31.03.2017	C.R.	W.M.
A	WEIGHBRIDGE LOCATION AMENDED	24.01.2017	B.M.	W.M.



K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date APRIL 2016
Date of Survey	Drawn B.MIDDLETON
Height Datum AHD	Designed W.MULLANY
Origin	Checked
Horiz. Datum	Approved

Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SOIL AND WATER MANAGEMENT PLAN	Project No. KF110816
Scale 1:500 @ A1 1:1000 @ A3	Drawing No. C318
Drawing Status ISSUED FOR SSD5300 MOD2 CC	Sheet 19 Of 20
	Revision D