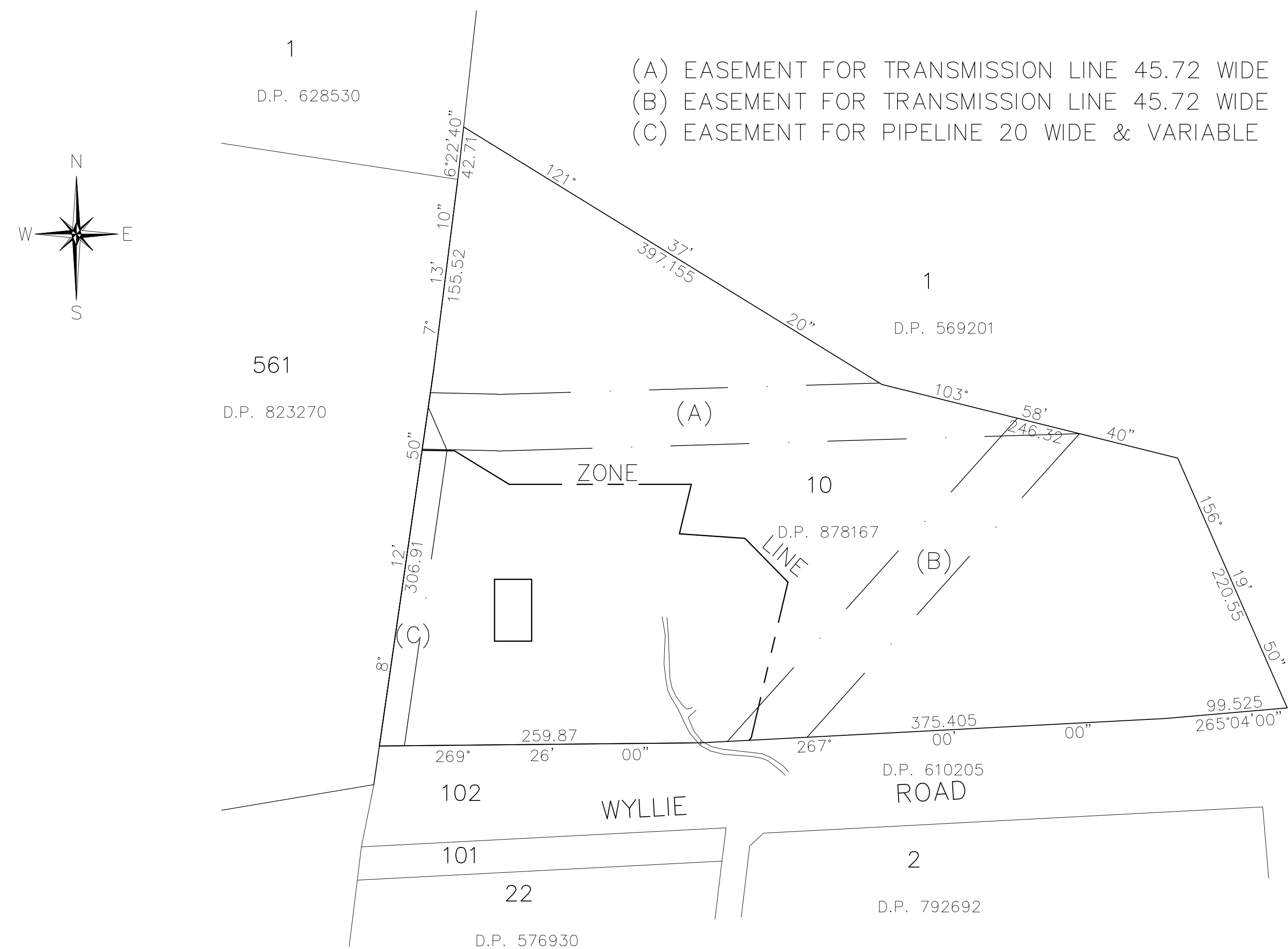


C10A	COVER SHEET
C10	OVERALL PLAN – REV.R
C11	SITE SECTIONS – REV.F
C12	POND DETAILS – REV.G
C13	SOIL WATER MANAGEMENT PLAN – REV.N
C14	SOIL AND WATER MANAGEMENT DETAILS – REV.C
C15	SURFACES PLAN – REV.I
C16	OSD BASIN B – REV.D
C17	SHREDDING AREA DETAIL – REV.C
C18	SWEPT PATH AND CARPARKING DETAIL – REV.I
C19	EXISTING SITE PLAN–SURVEY DATED OCTOBER 2018
C20–C26	NOT IN THIS SET OF DRAWINGS
C27	PROPOSED LAYOUT – REV.F
C28	CUT AND FILL PLAN – REV.F
C29	SITE PLAN – USAGE AREAS – REV.F
C30	SITE PLAN – PROPOSED LAYOUT – PMF FLOOD LINES – REV.F
C31	RAINWATER HARVESTING PLAN – REV.F
C32	LEACHATE CONTROL PLAN – REV.H
C33	SITE PLAN – PROPOSED LAYOUT – Q100 FLOOD LINES –
REV.E	
C34	OPERATIONAL PLAN – LAYOUT VERSION 1 – REV.D

NOTE:
DRAWINGS C19–C32 (EXCLUDING C20–C26) HAVE BEEN ADDED TO THE
DOCUMENTATION AT THE REQUEST OF THE DEPARTMENT OF PLANNING



SITE PLAN

Surveyor DENNIS SMITH	Date MAY 2012	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE COVER PAGE		Project No. KF110816	
Date of Survey	Drawn A PROUDLOVE			Drawing No. C00	
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng			Sheet 1 Of 18	
Origin	Checked			Revision -	
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION		

DRAINAGE NOTES

1. RAINWATER TANKS TO 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 ENCRDACHING ONTO THE GAS PIPELINE EASEMENT, THE OWNER/CONTRACTOR SHALL INSTALL A HIGH VISIBILITY ORANGE PARA-WEB FENCING OR 1.8M HIGH CHAINWIRE FENCE TO CLEARLY DELINEATE THE LIMIT OF WORK. THE FENCE SHALL NOT ENCRDACH 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 220 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. OSD BASIN B TO HAVE VOLUME OF 235m³. OUTLET TO BE 500m DIA ORIFICE OVER 600ø PIPE. WEIR RL @ APPROX. 20.35m CONSTRUCT IN STAGE 2
12. NO STORAGE OF BUOYANT MATERIAL IN PMF INUNDATION AREA. MINIMUM CRUSHED AGGREGATE SIZE IN PMF INUNDATION AREA TO BE 75mm
13. GREEN WASTE TO BE COVERED BY TARPULIN TO PREVENT INFILTRATION OF RAINWATER WHEN STOCKPILE TO BE IN PLACE LONGER THAN 21 DAYS.
14. SEPTIC TANK SERVICING OFFICE COMPLEX SHALL BE SERVICED/PUMPED OUT WEEKLY

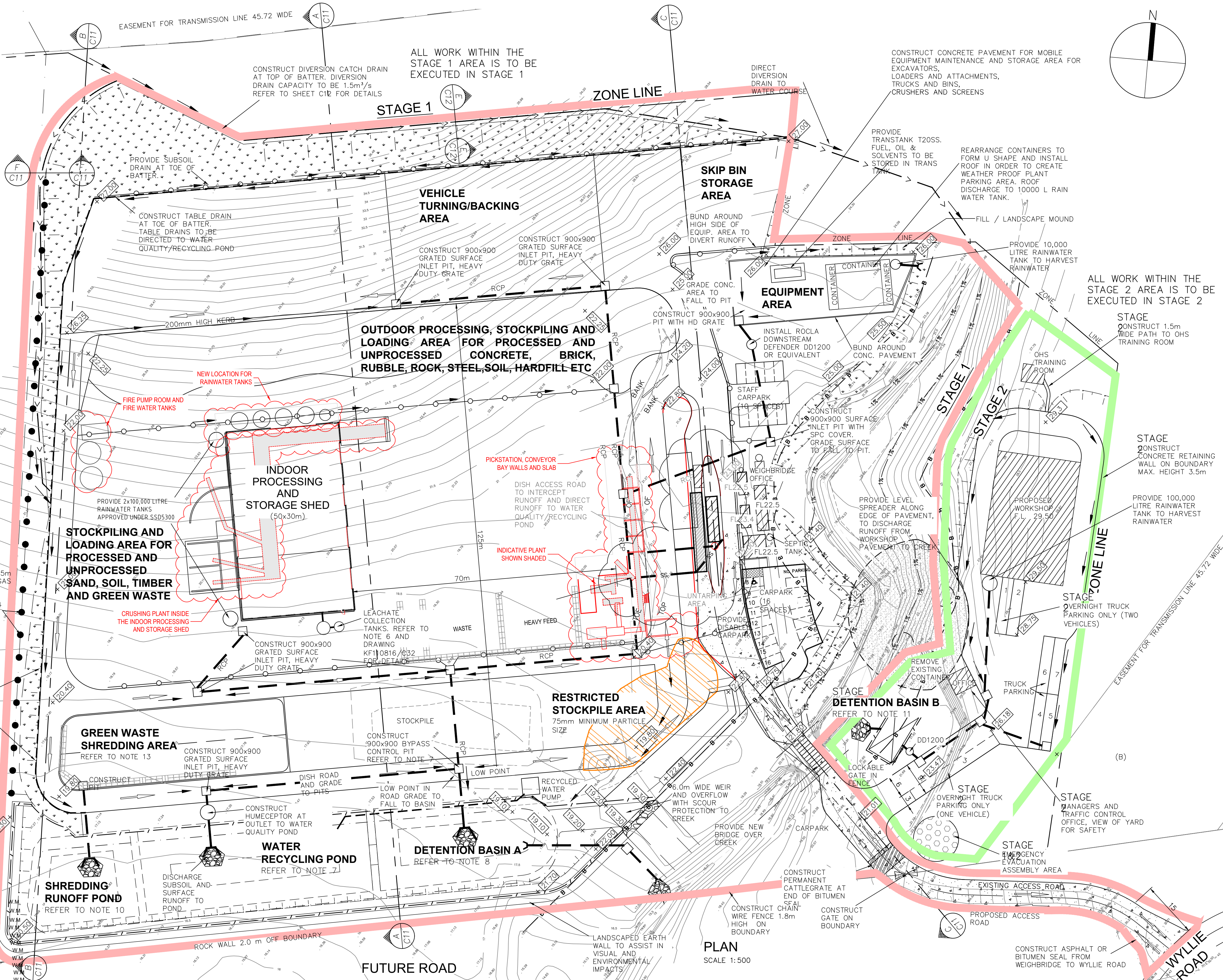
LEGEND

- DENOTES PROPOSED BUILDING
- DENOTES EXISTING CONTOURS
- +1.80 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
- DD DENOTES STORMWATER FLOW
- DENOTES HUMCEPTOR DOWNSTREAM DEFENDER
- DENOTES BOLLARD & SIGNAGE
- DENOTES STORMWATER PITS AND PIPE
- DENOTES STAGE 1 LIMITS
- DENOTES STAGE 2 LIMITS



SIGN - ARR-104

R	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
Q	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
P	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
O	PROCESSING AREA NOTES ADDED. CARPARK LAYOUT MODIFIED NOW SHEET 1 OF 18	8-05-201	W.M.	W.M.
N	STAGE LINES, NOTE 14 ADDED	21-04-2015	A.P.	W.M.
M	NOTE 13 ADDED RE GREEN WASTE	30-01-2015	A.P.	W.M.
L	SEAL FROM ENTRY TO WEIGHBRIDGE	30-06-2014	A.P.	W.M.
K	AMENDED TO DEPT OF PLANNING AND COUNCIL COMMENTS	10-06-2014	A.P.	W.M.
J	AMENDED TO DEPT OF PLANNING COMMENTS	28-02-2014	A.P.	W.M.
I	CARPARKING ADDED	18.10.2013	B.P.	W.M.
H	FILL / LANDSCAPE MOUND AMENDED	09.10.2013	B.P.	W.M.
G	AMENDMENTS AS PER COMMENTS 1-08-2013 AND LANDSCAPE ARCHITECT 08.08.2013	8-08-2013	B.P.	W.M.
F	AMENDED AS PER COMMENTS	25.07.2013	B.P.	W.M.
E	TRUCK PARKIN, STORMWATER FLOW AND NOTES ADDED	09-04-2013	B.P.	W.M.
D	TPZ AMENDED AS PER ARBORIST REQUIREMENTS, OFFICE MOVED TO THE SOUTH	18-12-2012	A.P.	W.M.
C	TREES ADDED FROM LANDSCAPE DWGS, BLDGS RELOCATED OUT OF RIPARIAN AND FIG TREE	13-12-2012	A.P.	W.M.
B	SIX CAR SPACES ADDED	06-12-2012	A.P.	W.M.
A	AMENDED AT CLIENTS REQUEST	07-11-2012	A.P.	W.M.
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



PLAN

SCALE 1:500

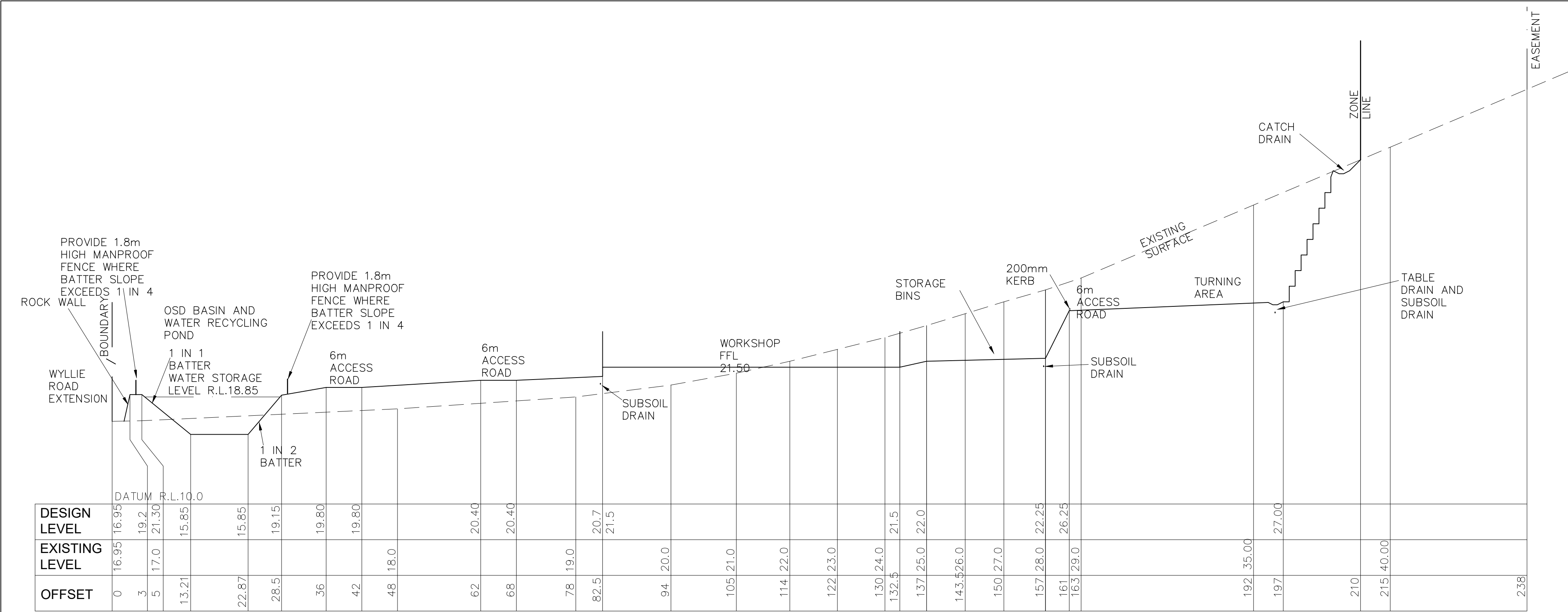


K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor DENNIS SMITH	Date MAY 2012	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN	Project No. KF110816
Date of Survey	Drawn A PROUDLOVE	Scale 1:500 @ A1 1:1000 @ A3	Drawing No. C10
Height Datum AHD	Designed M.I.E Aust. C.P.Eng	Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION	Sheet 1 Of 18
Origin Checked	Approved		Revision R
Horiz. Datum			

FILENAME: X:\KF110816\Civil Drawings\EIS Sect. 96_Oct2018_DA\KF110816_EIS Sect. 96_Sep. 2018.dwg
PLOTTED BY: Jdo

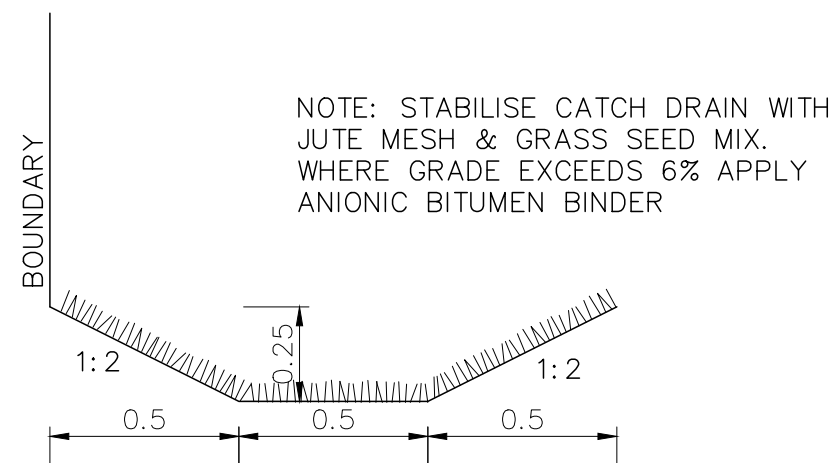


NOTES

1. CONSTRUCT STACKED ROCK WALL WHERE BATTER SLOPE IS STEEPER THAN 1V:2h. TOP OF RETAINING WALL TO BE WHOLLY WITHIN THE ZONE BOUNDARY.
2. RETAINING WALL TO BE GENERALLY HAVE A 1m RISE AND 1m STEP.
3. CONSTRUCT CATCH DRAIN AT TOP OF RETAINING WALL.
4. CATCH DRAIN TO INTERCEPT Q_{100} AND DIVERT TO EXISTING WATER COURSE. REFER SHEET C12 FOR CATCH DRAIN DETAIL

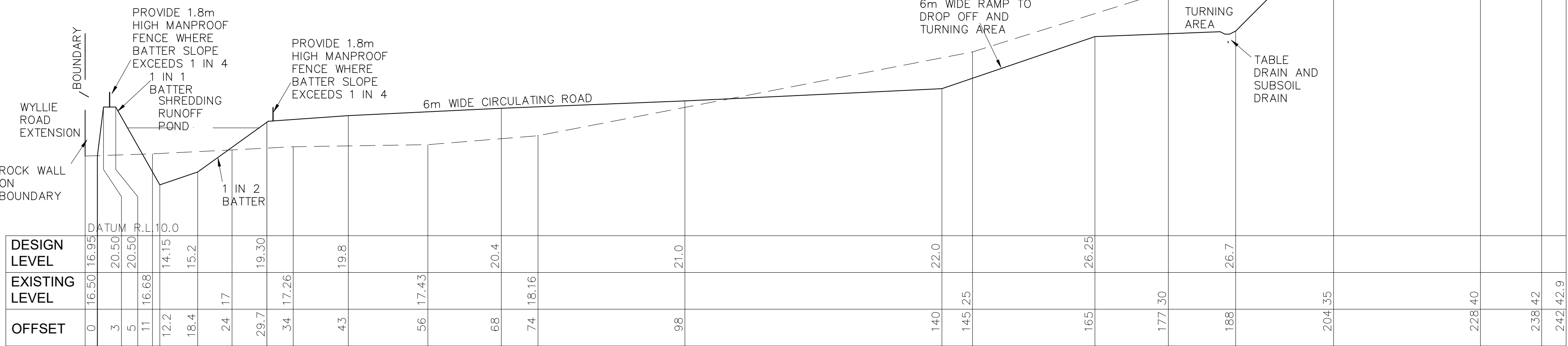
SECTION A-A / C10

SCALE H=1:500
V=1:250



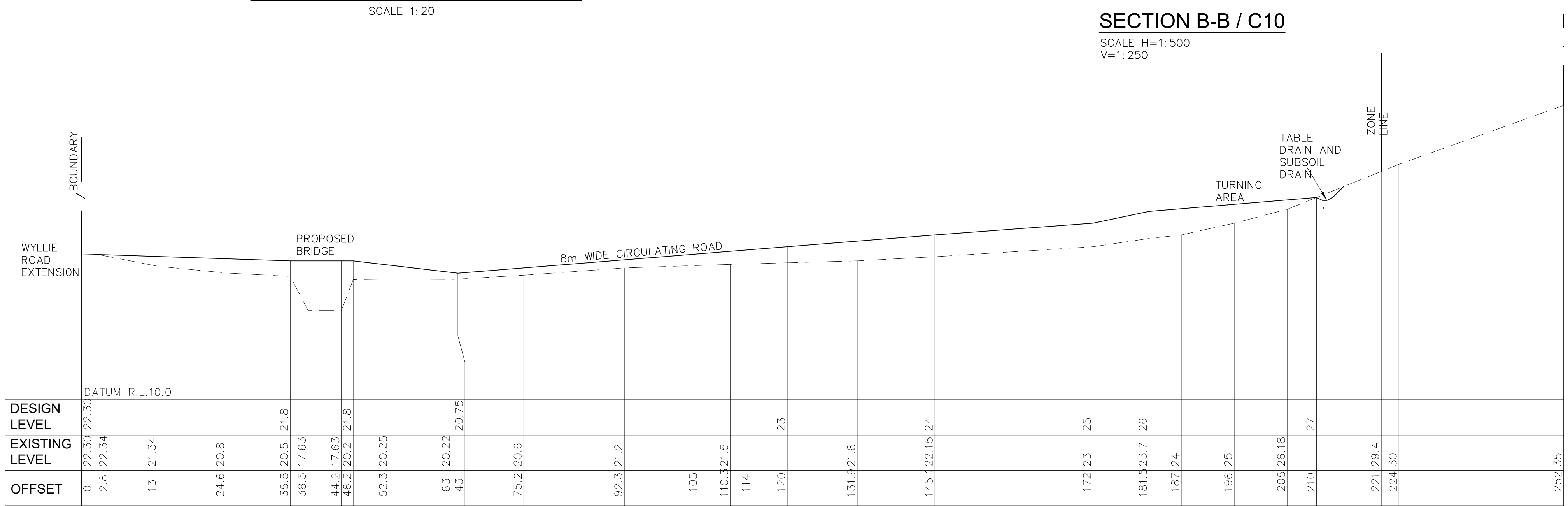
SECTION F-F/C10 - CATCH DRAIN

SCALE 1:20



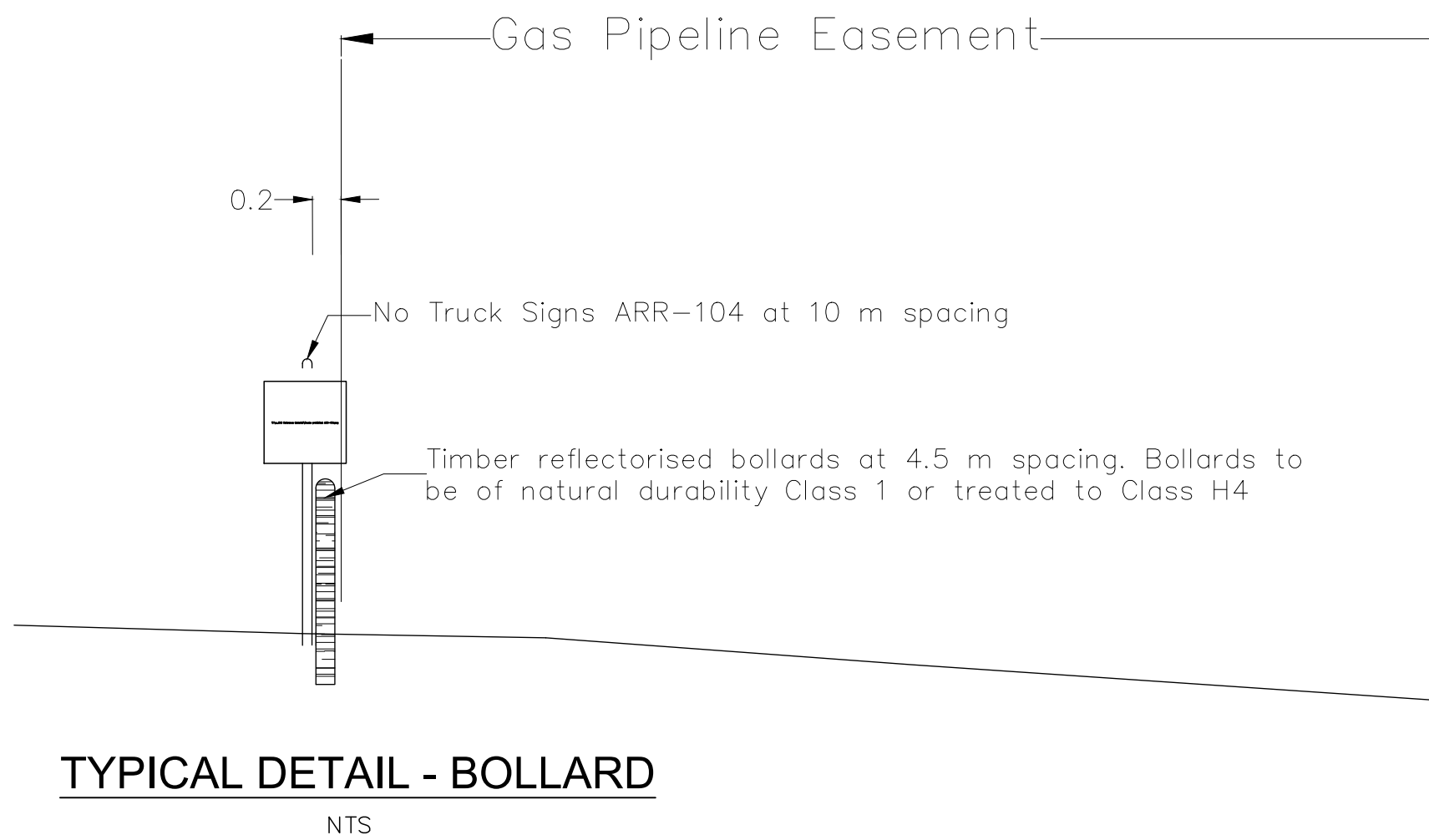
SECTION B-B / C10

SCALE H=1:500
V=1:250



SECTION C-C / C10 ACCESS ROAD

SCALE H=1:500
V=1:250



TYPICAL DETAIL - BOLLARD

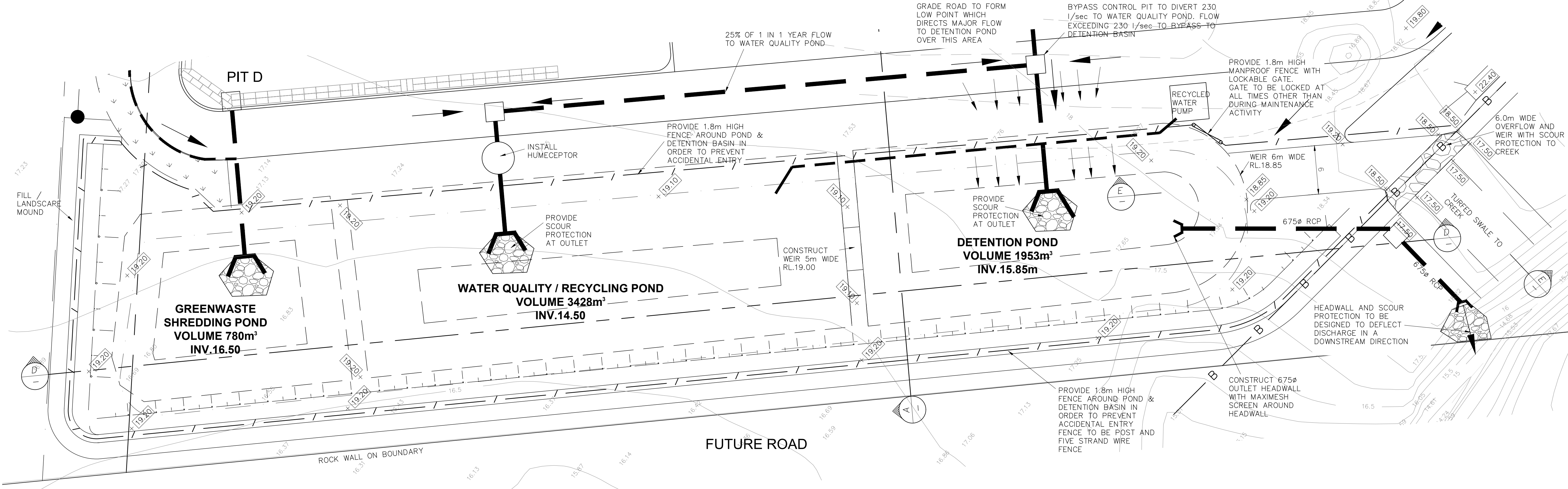
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
F	NOW SHEET 2 OF 18	8 MAY 2015	WM	WM
E	FENCE CHANGED TO MANPROOF FENCE AS PER COUNCIL REQUEST	10-06-2014	A.P.	W.M.
D	EXTRA NOTE RE FENCES	20-03-2014	A.P.	W.M.
C	AMENDED AS PER LANDSCAPE ARCHITECTS COMMENTS 08.08.2013	8.08.13	B.P	
B	AMENDED AS PER COMMENTS	25.07.2013	B.P	
A	SECTIONS B AND C ADDED	08-11-2012	A.P.	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

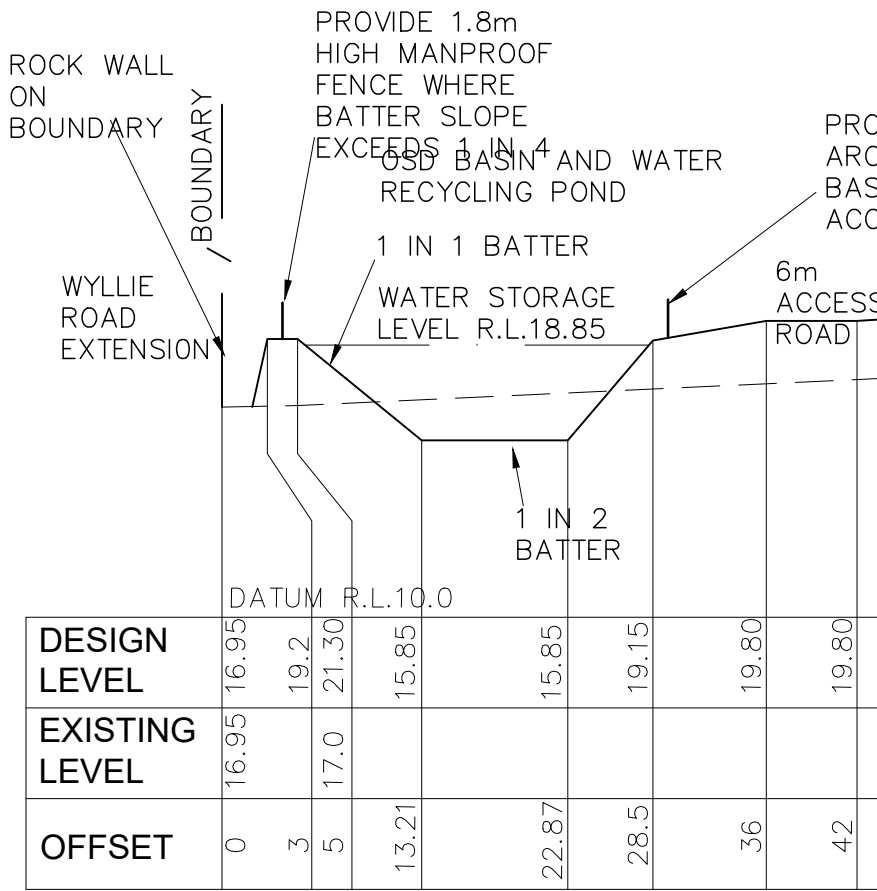
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor DENNIS SMITH	Date MAY 2012	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE SECTIONS	Project No. KF110816	
Date of Survey	Drawn A PROUDLOVE		Drawing No. C11	
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng		Sheet 2 of 18	Revision F
Origin	Checked		ISSUED FOR SSD5300 MOD2 APPLICATION	
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status	



PLAN WATER QUALITY/RECYCLING POND

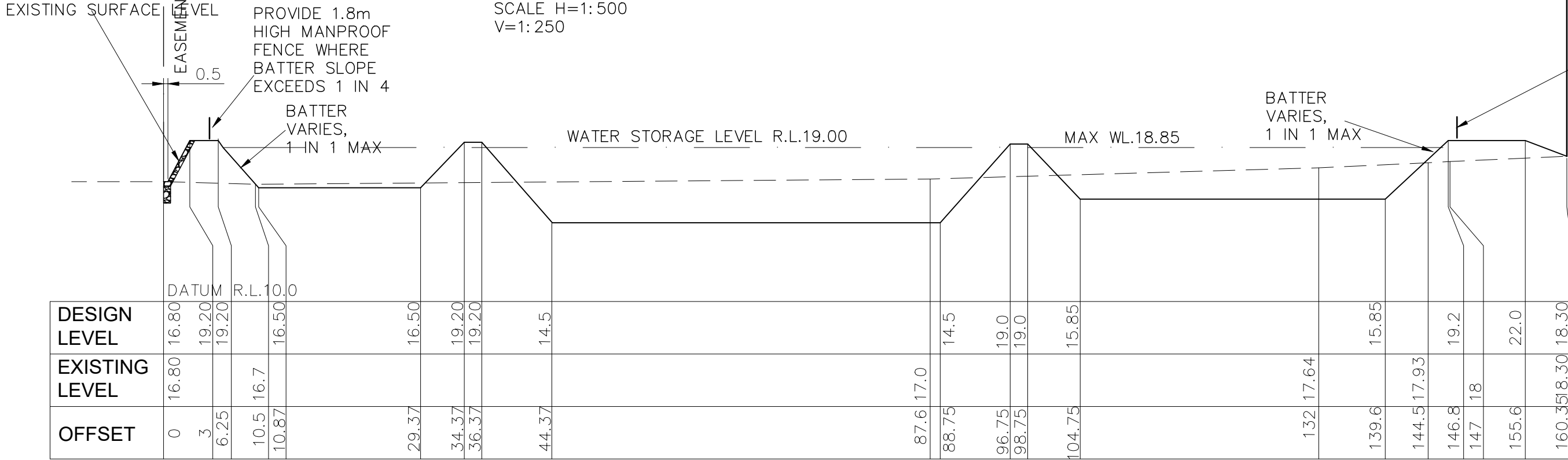
SCALE 1:250



PART OF SECTION A-A

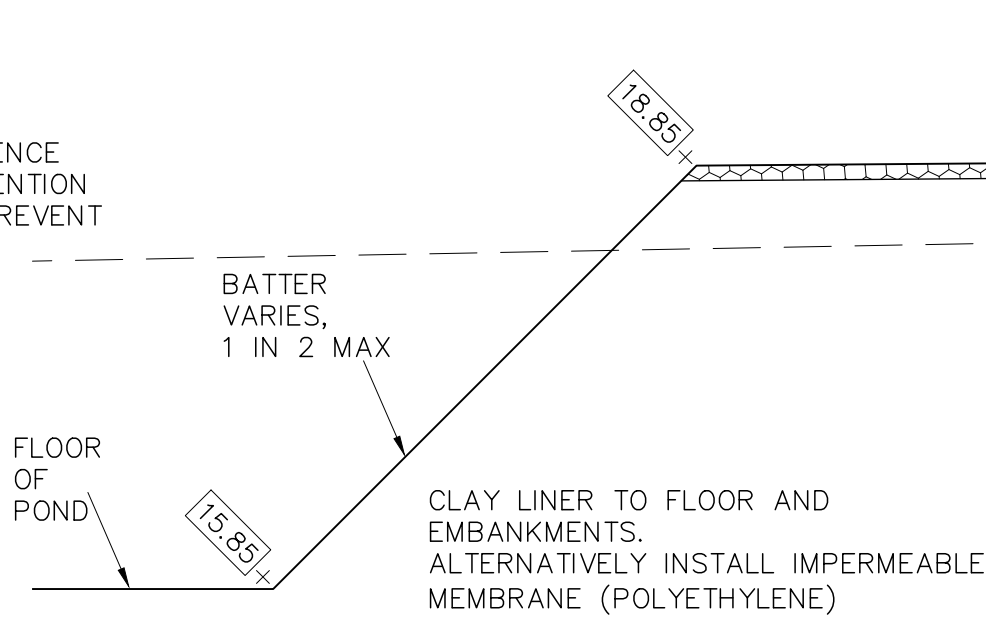
SCALE H=1:500
V=1:250

RETAINING WALL TO BE CONSTRUCTED TO ENSURE FOUNDATION & WALL DO NOT ENCRONCH UPON THE EASEMENT FOUNDATION DEPTH APPROX. 1m BELOW EXISTING SURFACE LEVEL



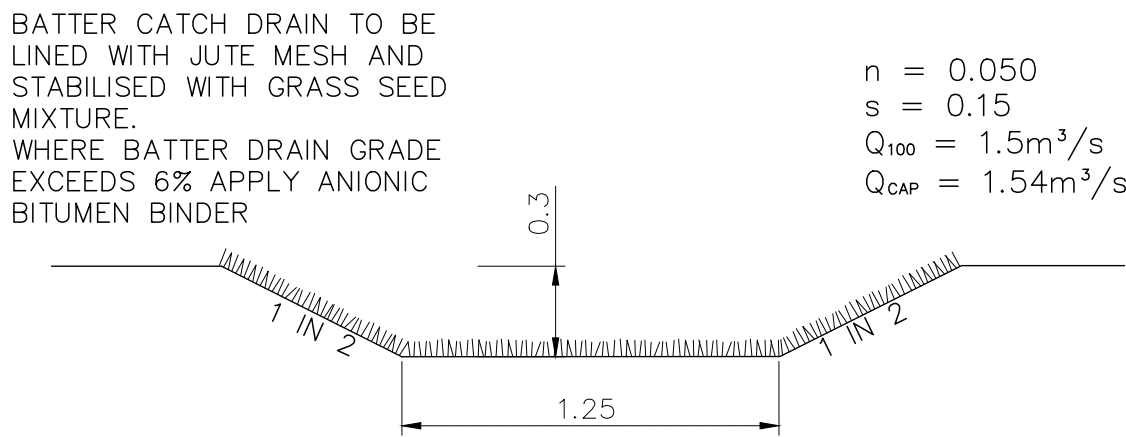
SECTION D-D

SCALE H=1:500
V=1:250



SECTION E-E OUTLET OF POND

SCALE 1:100

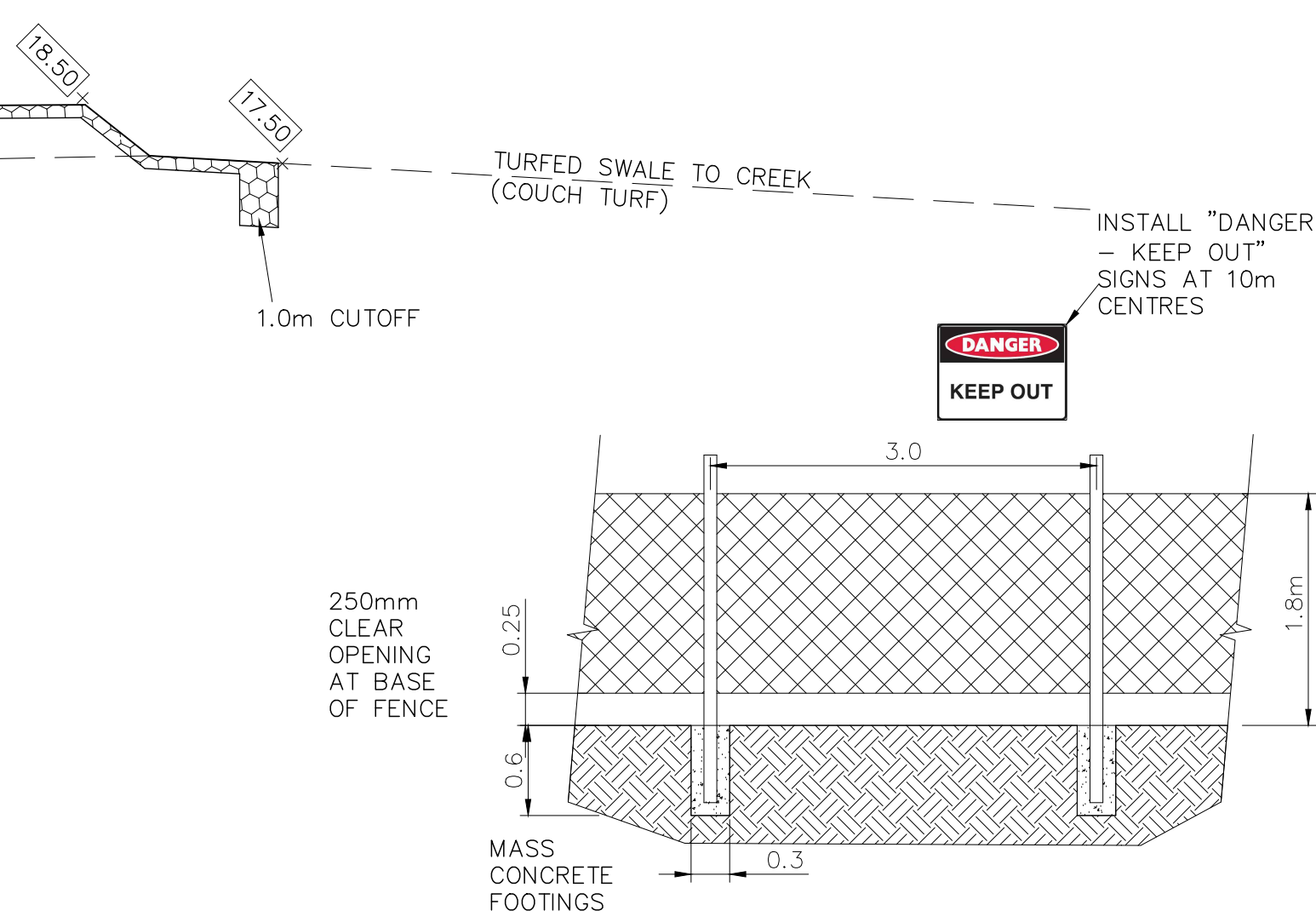


SECTION E-E/C10 CATCH DRAIN

TABLE DRAIN SIMILAR
SCALE 1:25

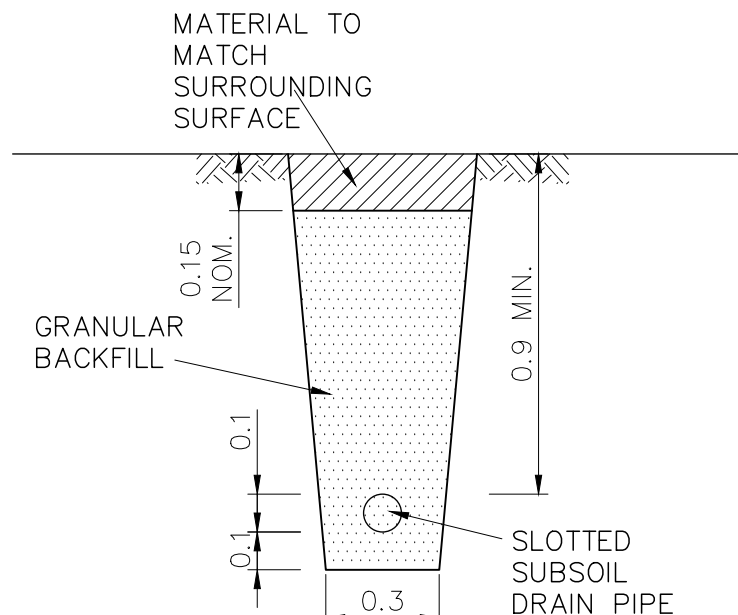
SCALE REDUCTION

SCALE 1:1000 @ A3 = SCALE 1:500 @ A1
SCALE 1:500 @ A3 = SCALE 1:250 @ A1
SCALE 1:50 @ A3 = SCALE 1:25 @ A1
SCALE 1:40 @ A3 = SCALE 1:20 @ A1



TYPICAL FENCE DETAIL

SCALE 1:50



TYPICAL SECTION SUBSOIL DRAIN

SCALE 1:20

SUBSOIL NOTES

- 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
- TRENCH TO BE MINIMUM 300mm WIDE
- BACKFILL TO BE CLEAN GRANULAR MATERIAL COMPACTED TO DI 80
- MINIMUM GRADE OF TRENCH/SUBSOIL DRAIN PIPE IS TO BE 0.5%

G	NOW SHEET 3 OF 18	8 MAY 2015	WM	WM
F	AMENDED AS PER COUNCIL COMMENTS	10-06-2014	A.P.	W.M.
E	EXTRA NOTES RE FENCES	20-03-2014	A.P.	W.M.
D	AMENDED TO DEPT OF PLANNING COMMENTS	26-02-2014	A.P.	W.M.
C	AMENDED AS PER LANDSCAPE ARCHITECTS COMMENTS 08.08.2013	08.08.2013	B.P	
B	AMENDED AS PER COMMENTS	25.07.2013	B.P	
A	NOTE ADDED	08-04-2013	B.P	
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	NOV 2012
Date of Survey		Drawn	A'PROUDLOVE
Height Datum	AHD	Designed	M.I.E.Aust. C.P.Eng
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE POND DETAILS	
Scale	1:250 @ A1 1:500 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

Project No.	KF110816
Drawing No.	C12
Sheet	3 Of 18
Revision	G

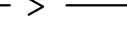
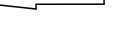
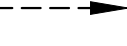
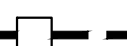
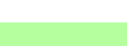
NOTE:

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

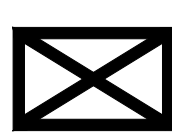
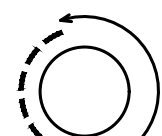
SITE WATER STORAGE

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 1% AEP FLOOD LIMIT
-  DENOTES SUBSOIL DRAINAGE
-  DENOTES CATCH DRAIN
-  DENOTES DIRECTION OF TRAFFIC FLOW
-  DENOTES STORMWATER SURFACE FLOW
-  DENOTES HUMCEPTOR DOWNSTREAM DEFENDER
-  DENOTES BOLLARD & SIGNAGE
-  DENOTES STORMWATER PIPES AND PITS
-  DENOTES STAGE 1 LIMITS
-  DENOTES STAGE 2 LIMITS

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

PLAN
SCALE 1:500

N	ISSUED FOR EIS MODIFICATION - 2
M	ISSUED FOR EIS MODIFICATION
L	STAGE 1 EXTENDED TO MEET STAGE 2
K	CARPARK MODIFIED
J	STAGE LIMITS & GREEN WASTE NOTE ADDED, NOW SHEET 4 OF 18
H	NOTE RE TEMPORARY VEGETATION ADDED

31.10.2018	J.D.	W.M.
10-05-2017	B.M.	W.M.
17-11-2015	A.P.	W.M.
18 MAY 2015	W.M.	W.M.
21-04-2015	A.P.	W.M.
30-01-2015	A.P.	W.M.

G	GENERAL AMENDMENTS FOR DA, 4 JULY 14	4 JULY 14	WM	WM
F	AMENDED TO COUNCIL COMMENTS	10-06-2014	A.P.	W.M.
E	AMENDED TO DEPT OF PLANNING COMMENTS	26-02-2014	A.P.	W.M.
D	CARPARKING ADDED	18-10-2013	B.P.	
C	FILL / LANDSCAPE MOUND AMENDED	9-10-2013	B.P.	W.M.
B	AMENDED AS PER LANDSCAPE ARCHITECTS COMMENTS 08.08.2013	08.08.2013	B.P.	
A	AMENDED AS PER COMMENTS	15.07.2013	B.P.	
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised

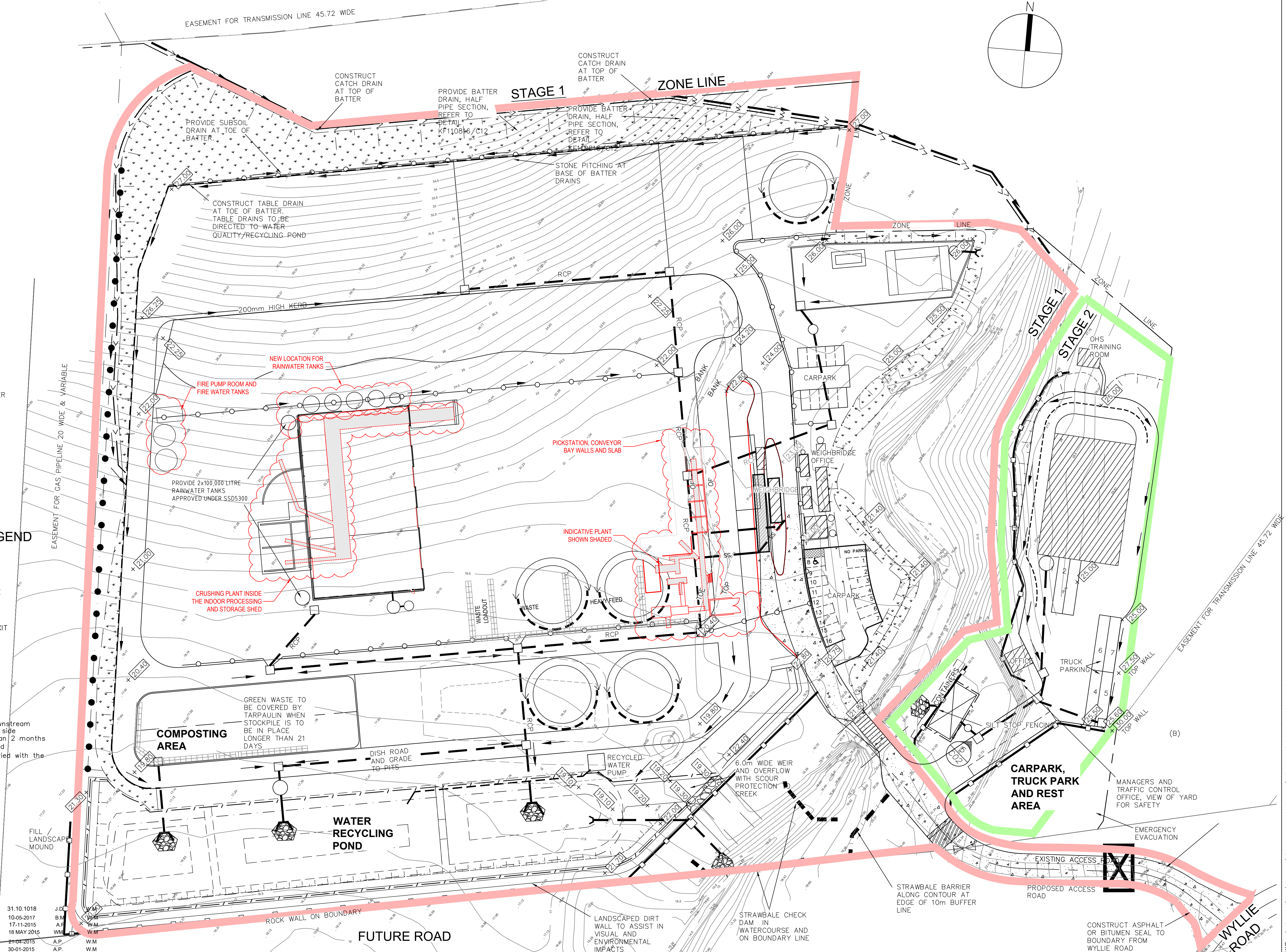
KFW
INFRASTRUCTURE PROFESSIONALS

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 2013
Date of Survey	Drawn B.PURNELL
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. C13
Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION	Sheet 4 Of 18
	Revision N



SEQUENCE OF OPERATIONS

STEP 1
PROVIDE TEMPORARY CONSTRUCTION ENTRY/EXIST SHAKER PAD AND SILT STOP FENCING ALONG BOUNDARY AS SHOWN. INSTALL STRAWBALE CHECK DAMS IN THE WATERCOURSE BELOW THE BRIDGE AS SHOWN. INSTALL STRAWBALE BARRIERS ON THE EASTERN SIDE OF THE WATERCOURSE ADJACENT TO THE BRIDGE AS SHOWN

STEP 2
CONSTRUCT CLEAN WATER DIVERSION DRAIN AT THE NORTHERN END OF THE SITE ABOVE THE PROPOSED BATTER. DRAIN TO THE NEAREST SECTION OF THE WATERCOURSE

STEP 3
CONSTRUCT THE PROPOSED OSD, WATER QUALITY POND, SHREDDING AREA RUNOFF POND AND LANDSCAPING MOUND. THE PONDS WILL BE TEMPORARY SEDIMENT PONDS DURING CONSTRUCTION, UNTIL SITE IS STABILISED, AND THE MOUND WILL DIVERT DIRTY WATER TO THE PONDS

STEP 4
EXCAVATE FOR BULK EARTHWORKS AND REVEGETATE BATTERS

STEP 5
CONSTRUCT BUILDINGS, ROADS AND DRAINAGE LINES

STEP 6
CONSTRUCT BRIDGE WORKS

STEP 7
MAINTAIN SOIL AND WATER MANAGEMENT FEATURES THROUGH OUT THE CONSTRUCTION PERIOD.

STEP 8
DUST SUPPRESSION TO BE CONDUCTED THROUGHOUT CONSTRUCTION PHASE. A WATER CART TO BE ON SITE AND AVAILABLE AT ALL TIMES, APPROX. 40,000 LITRES/DAY.

STEP 9
CLEAR OUT ALL PIPEWORK PRIOR TO REMOVAL OF SOIL AND WATER MANAGEMENT DEVICES

STEP 10
CLEAR OUT OSD BASIN AND COMPLETE CONSTRUCTION OF BASIN INFRASTRUCTURE.

STATEMENT OF SOIL MANAGEMENT

- ALL TOPSOIL IS TO BE STOCKPILED IN AREAS DESIGNATED ON PLAN.
- ALL FORMED EMBANKMENTS (CUT & FILL) ARE TO BE LANDSCAPED WITHIN 7 DAYS.
- ALL DISTURBED AREAS, INCLUDING ANY CONTROLLED FILL ARE TO BE TOPSOILED & SEEDED PRIOR TO COMPLETION OF WORKS. ALL DISTURBED AREAS THAT WILL NOT BE STABILIZED WITHIN 2 MONTHS MUST BE TEMPORARILY REVEGETATED WITHIN 7 DAYS OF CLEARING. AREAS THAT FAIL TO ESTABLISH MUST BE RESOWN IMMEDIATELY.
- THE GROUND SHALL BE TYNED / SCARIFIED TO A MIN DEPTH 100mm PRIOR TO SEEDING.
- ANY SEEDED AREAS WHICH FAIL TO GERMINATE OR WHERE GERMINATION IS SPARSE AFTER 21 DAYS FROM INITIAL SEEDING AREA MUST BE RESEEDED.
- FOR TEMPORARY REVEGETATION PURPOSES, THE REVEGETATION MIXTURE SHOULD INCLUDE THE FOLLOWING SPECIES FOR BOTH AUTUMN & SPRING SOWINGS – DURATURF PARK BLEND (Wright Stephenson Seed Mix) THOROUGHbred TURF TALL FESCUE (15kg/ha) UNHULLED COUCH (4kg/ha) PERENNIAL RYEGRASS (37kg/ha) CHEWINGS FESCUE (5kg/ha) MULTIGROW / ENRICH FERTILIZER AT 500kg/ha
- REVEGETATION AND STABILIZATION WILL NOT BE CONSIDERED SATISFACTORY UNLESS A MIN 70% GROUND COVER, AT LEAST 100mm HIGH IS ACHIEVED OVER ALL DISTURBED AREAS
- ALL GULLY PITS ARE TO BE PROVIDED WITH SEDIMENT FILTER BARRIERS SUCH AS SANDBAGS OR FILTER SOCKS.
- TRENCHES FOR DRAINAGE LINES ARE TO BE REINSTATED WITH TOPSOIL FOLLOWING PIPE INSTALLATION & BACKFILLING & IMMEDIATELY SEEDED/FERTILIZED.
- DESIGNATED PLANT AND MACHINERY ACCESSWAYS TO BE DEFINED ONSITE BY THE INSTALLATION OF PARAWEBBING FENCING TO MINIMIZE UNNECESSARY SITE DISTURBANCE.

MAINTENANCE PROCEDURES DURING CONSTRUCTION

- ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED AT ALL TIMES SO THAT THOSE MEASURES ARE FULLY FUNCTIONAL / OPERATIONAL DURING THE CURRENCY OF WORKS. ALL SUCH CONTROLS MUST ALSO BE FULLY FUNCTIONAL / OPERATIONAL SHOULD WORK OPERATIONS CEASE TEMPORARILY, (e.g WEEKENDS, ROSTERED DAYS OFF, etc.)
- RESREAD MATERIAL GAINED DURING MAINTENANCE OPERATION OR ALTERNATIVELY PLACE ON STOCKPILES.

SITE MANAGEMENT DETAILS

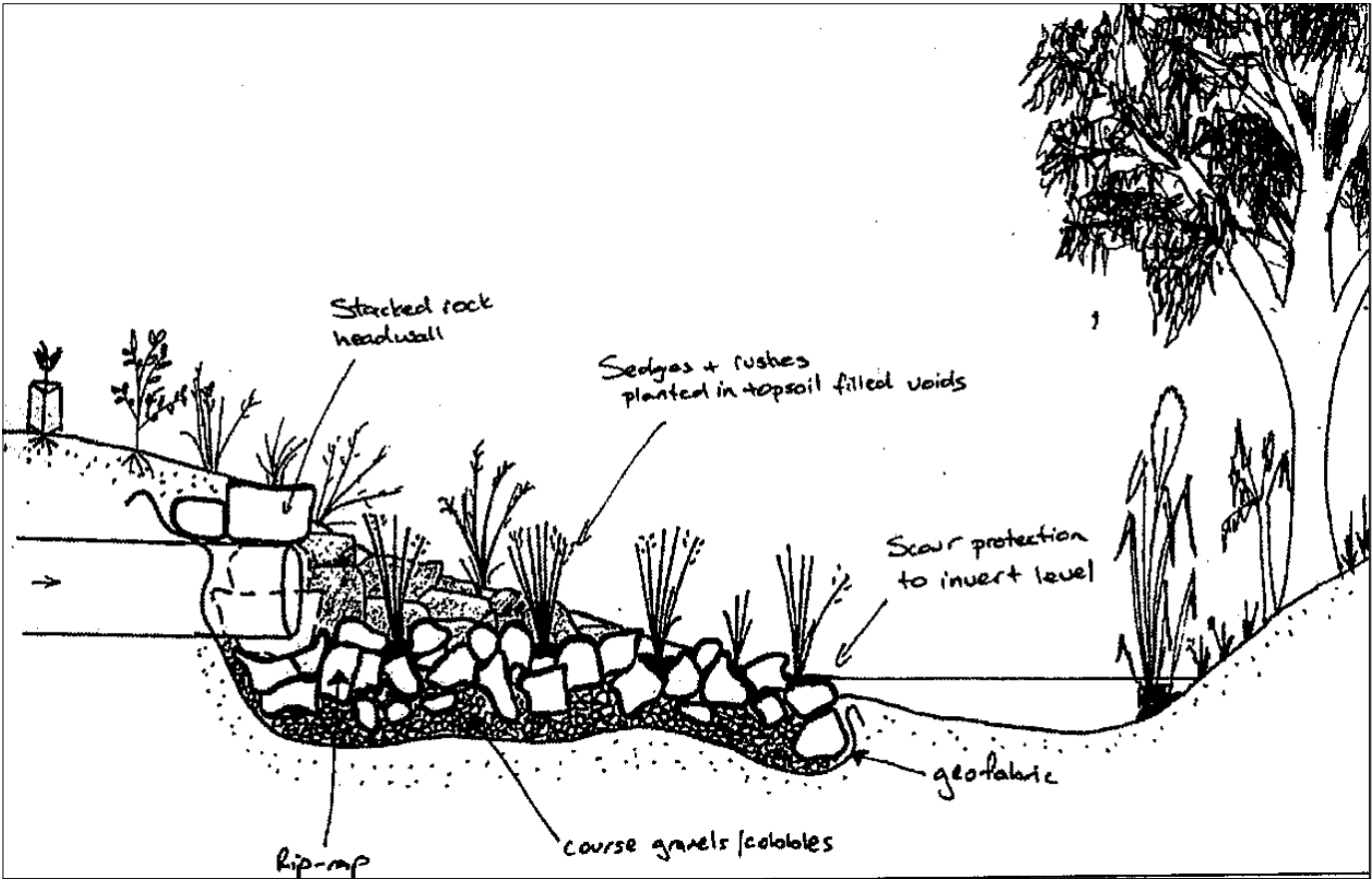
THE MAJORITY OF SITE MANAGEMENT DETAILS ARE SHOWN ON THE SOIL AND EROSION CONTROL MANAGEMENT PLAN. PLEASE NOTE:

- ACCESS TO THE SITE WILL BE VIA WYLLIE ROAD. ANY DAMAGE TO THIS ROADWAY IS TO BE RESTORED.
- CONSTRUCTION MACHINERY & MATERIALS ARE TO BE LOADED AND UNLOADED WITHIN THE SITE.
- STORAGE AREAS ARE INDICATED ON THE SOIL & EROSION CONTROL PLAN.
- SOIL AND EROSION CONTROL PLAN ALSO INDICATED THE PROPOSED EXIT CONTROL DEVICES.

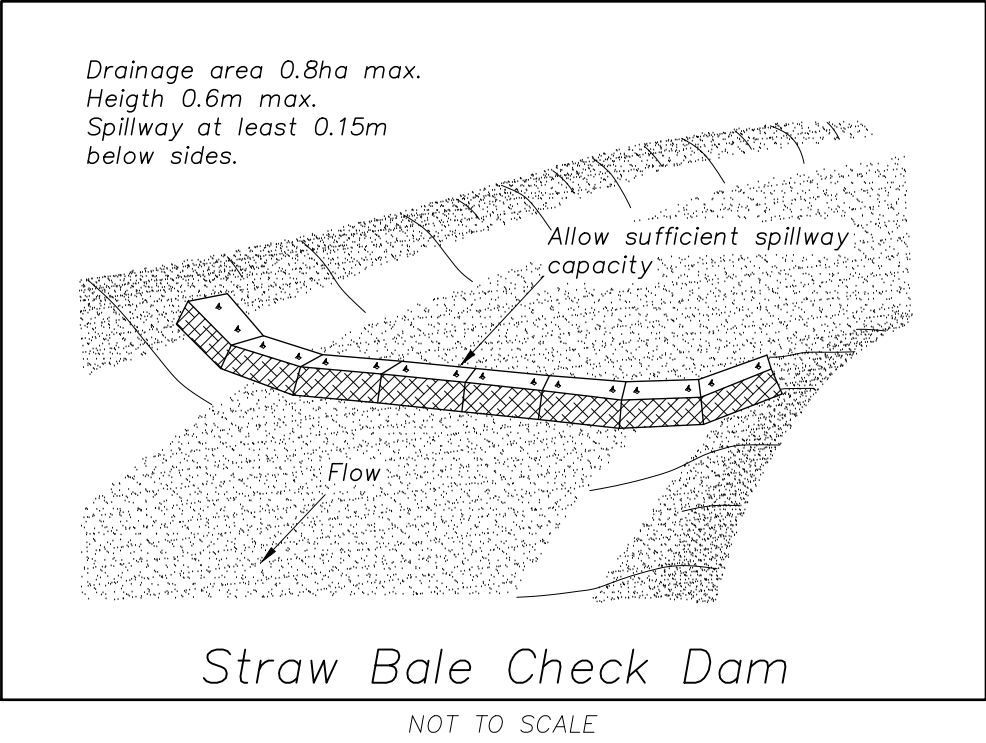
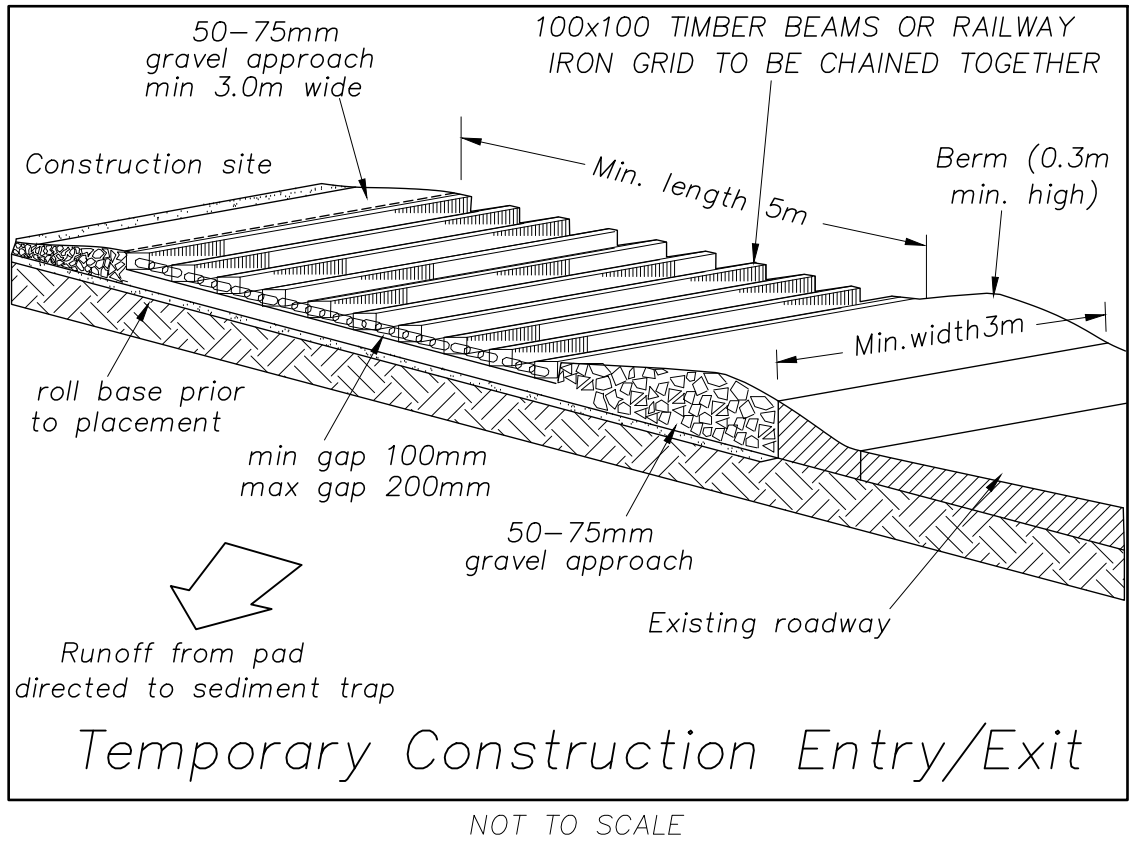
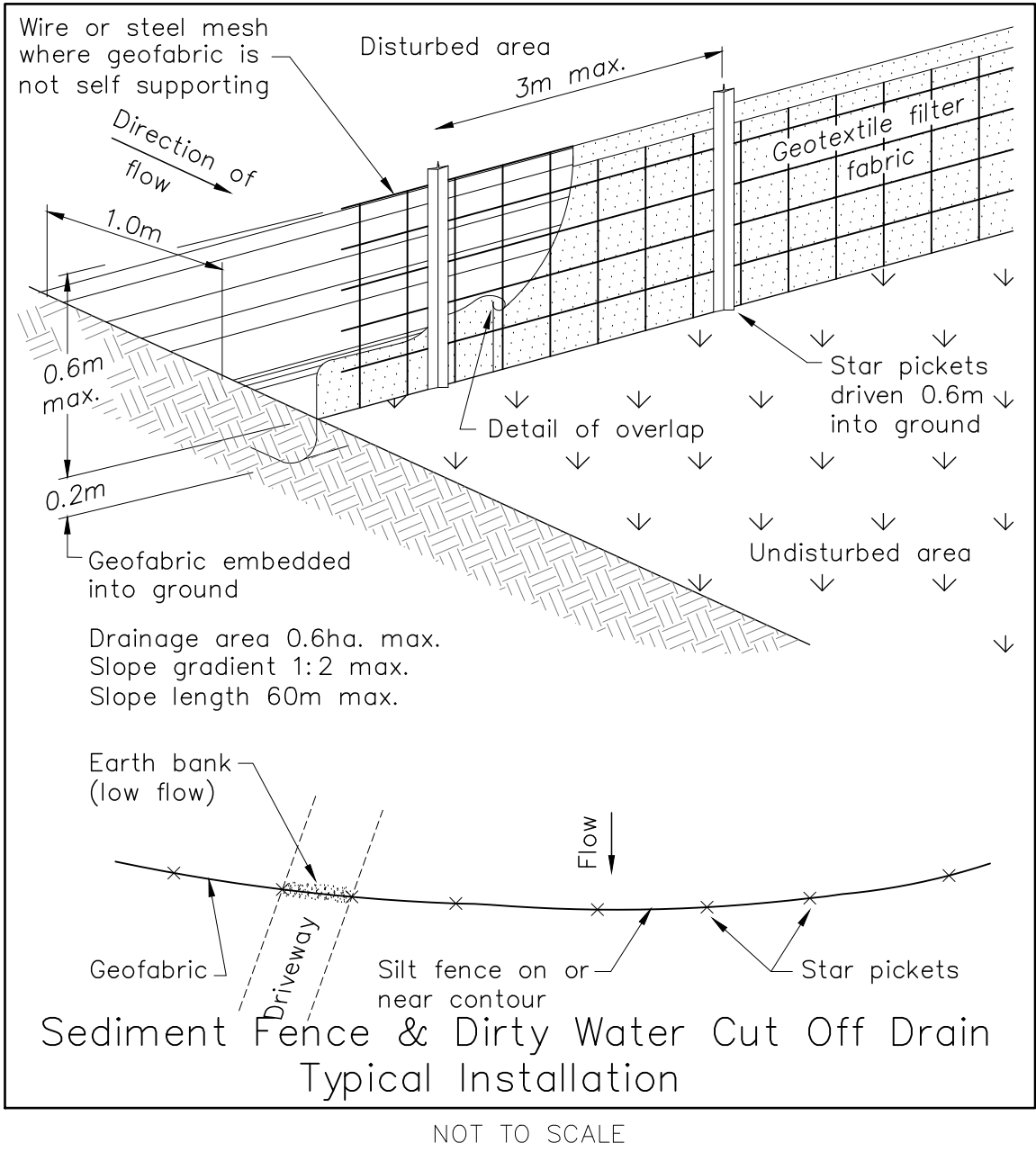
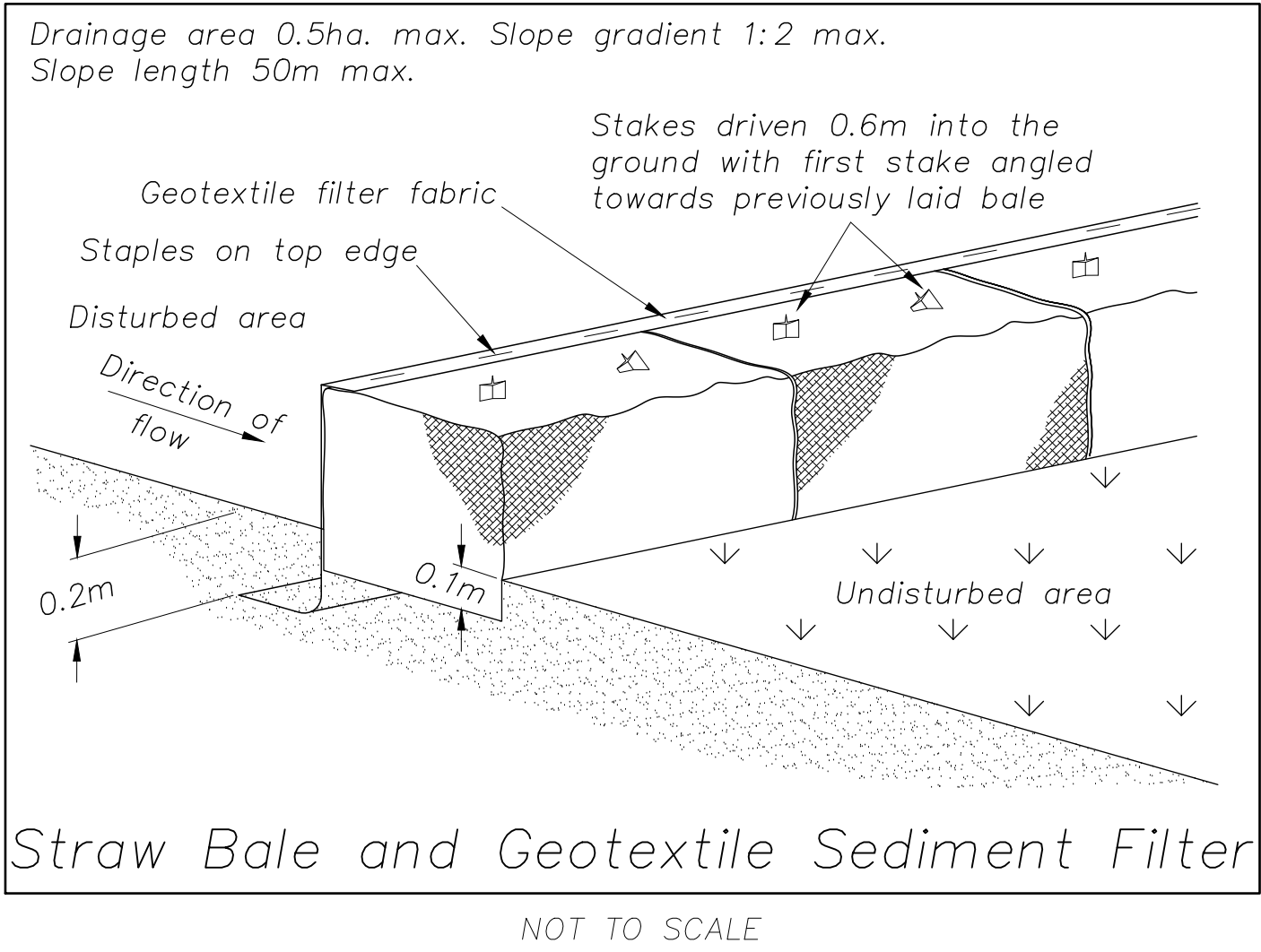
MATERIAL STORAGE VOLUMES

Material	Volume Stored on Site (litre)	Method of Storage	Spill Tray Volume (litre)	Spill Tray Type	Comments
Petrol	20	20 Litre Drum	22	Steel Tray	Transtank T 20 SS
Diesel	9,000	On site tank bulk tank	9,900	Steel Tray	Transtank T 20 SS
Libricants	1,000	5 x 200 litre drum	500	Steel Tray	Transtank T 20 SS
Solvents	100	5 x 20 litre drum	25	Steel Tray	Transtank T 20 SS
Liquid Waste	0	N/A	N/A	N/A	N/A
	10120				

Notes:
Oils, Fuel and Solvents will be stored in a Transtank T 20 SS



SCOUR PROTECTION HEADWALL



C	NOW SHEET 5 OF 18	8 MAY 2015	WM	WM
B	AMENDED TO DEPT OF PLANNING COMMENTS	26-02-2014	A.P.	W.M.
A	AMENDED AS PER COMMENTS	15.07.2013	B.P	
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 2013
Date of Survey		Drawn	B.PURNELL
Height Datum	AHD	Designed	W.MULLANY BE Grad Dip LGE (M) (Hons) MBE Aust CP Eng RPD
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SOIL AND WATER MANAGEMENT DETAILS	
Scale	1:500 @ A1 1:1000@ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

Project No.	KF110816
Drawing No.	C14
Sheet	5 Of 18
Revision	C

LEGEND:

- DENOTES CONCRETE SLAB
- DENOTES RECYCLED CRUSHED CONCRETE PAVEMENT ACCESS
- DENOTES BITUMEN SEAL
- DENOTES RECYCLED CRUSHED CONCRETE WORKS AREA
- DENOTES GRASS AREA
- DENOTES RIPARIAN AREA
- DENOTES PONDS
- DENOTES STAGE 1 LIMITS
- DENOTES STAGE 2 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).

I	ISSUED FOR EIS MODIFICATION-2	25.10.2018	J.D.	W.M.
H	ISSUED FOR EIS MODIFICATION	10-05-2017	B.M.	W.M.
G	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
F	PAVEMENT NOTES ADDED IN RESPONSE TO WCC LETTER DE-2012/84 DATED 2/7/15	2 JULY 2015	WM	WM
E	NOW SHEET 6 OF 18, CAR PARK MODIFIED	8 MAY 2015	WM	WM
D	STAGE LIMITS ADDED	21-04-2015	A.P.	W.M.
C	CARPARKING ADDED	18-10-2013	B.P	
B	FILL / LANDSCAPE MOUND AMENDED	09-10-2013	B.P	W.M
A	AMENDED AS PER LANDSCAPE ARCHITECTS COMMENTS 08.08.2013	08.08.2013	B.P	
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised



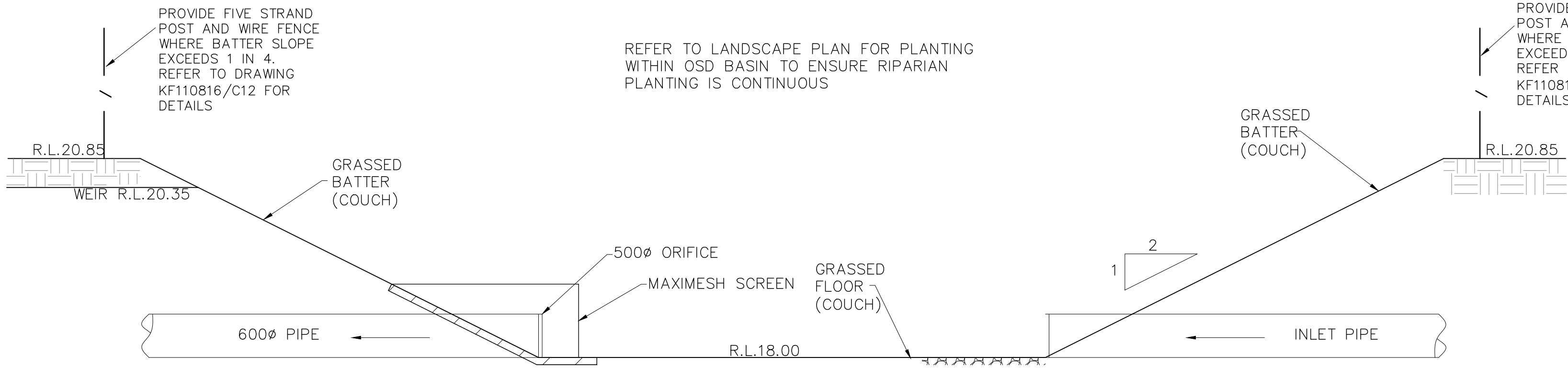
K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor	DENNIS SMITH	Date	JULY 2013
Date of Survey		Drawn	B.PURNELL
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

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

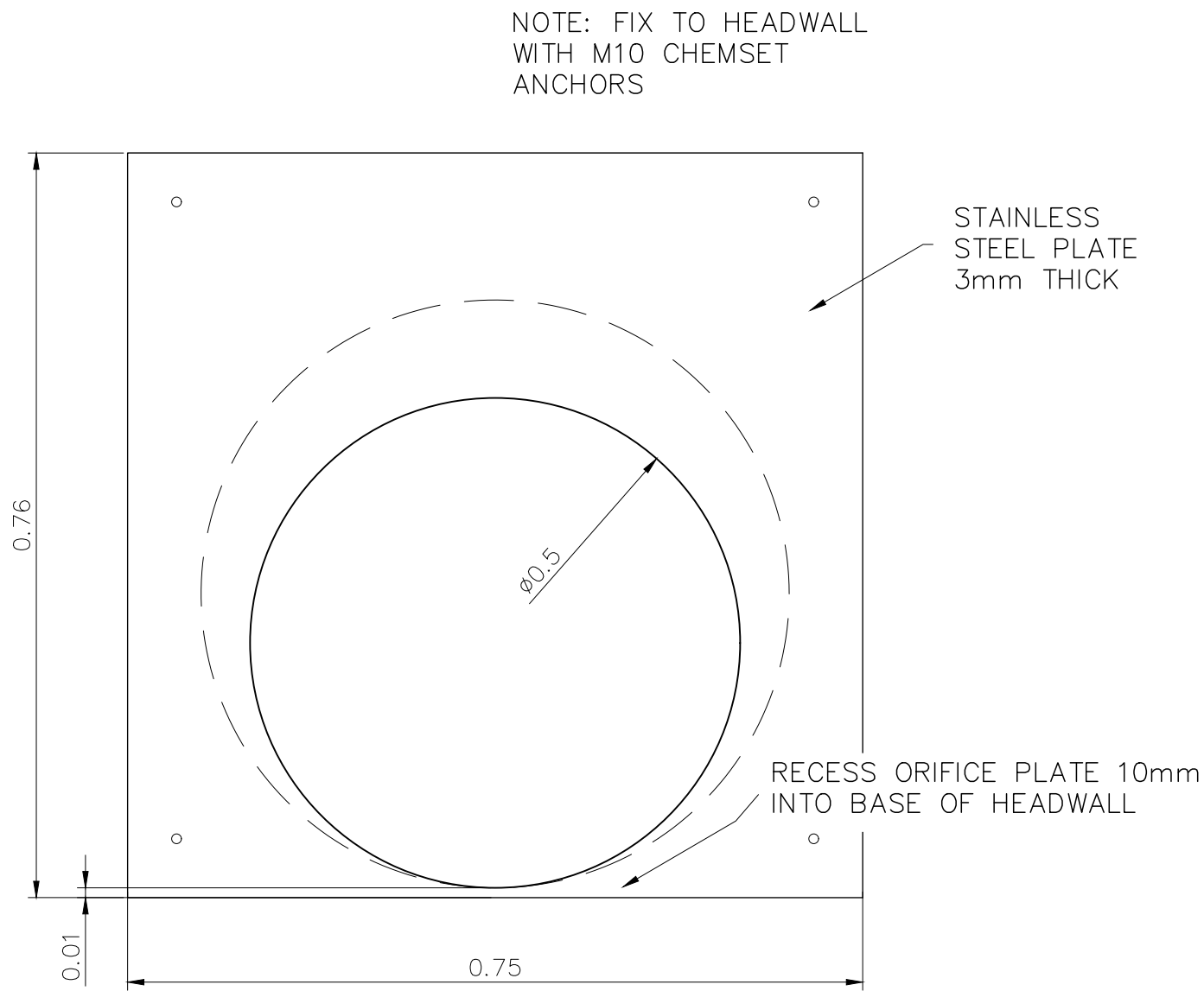
Project No.	
KF110816	
Drawing No.	
C15	
Sheet	Revision
6 Of 18	I



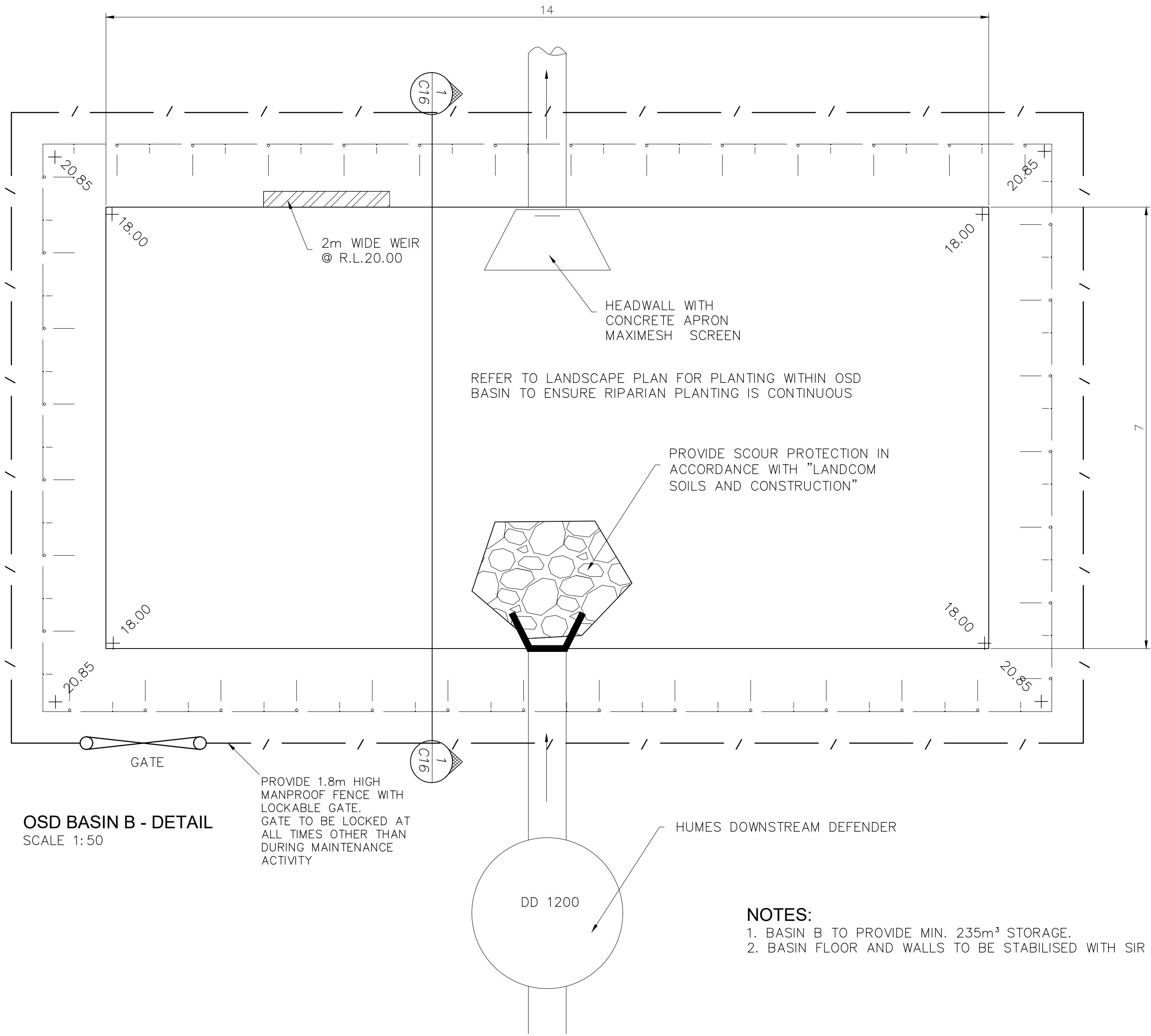
SECTION 1-1 THROUGH OSD BASIN B
SCALE 1:50

OSD BASIN B DETAILS

VOLUME @ MWL = 235m³
Q_s = 0.41 m³/s
Q₁₀ = 0.51 m³/s
Q₁₀₀ = 0.77 m³/s



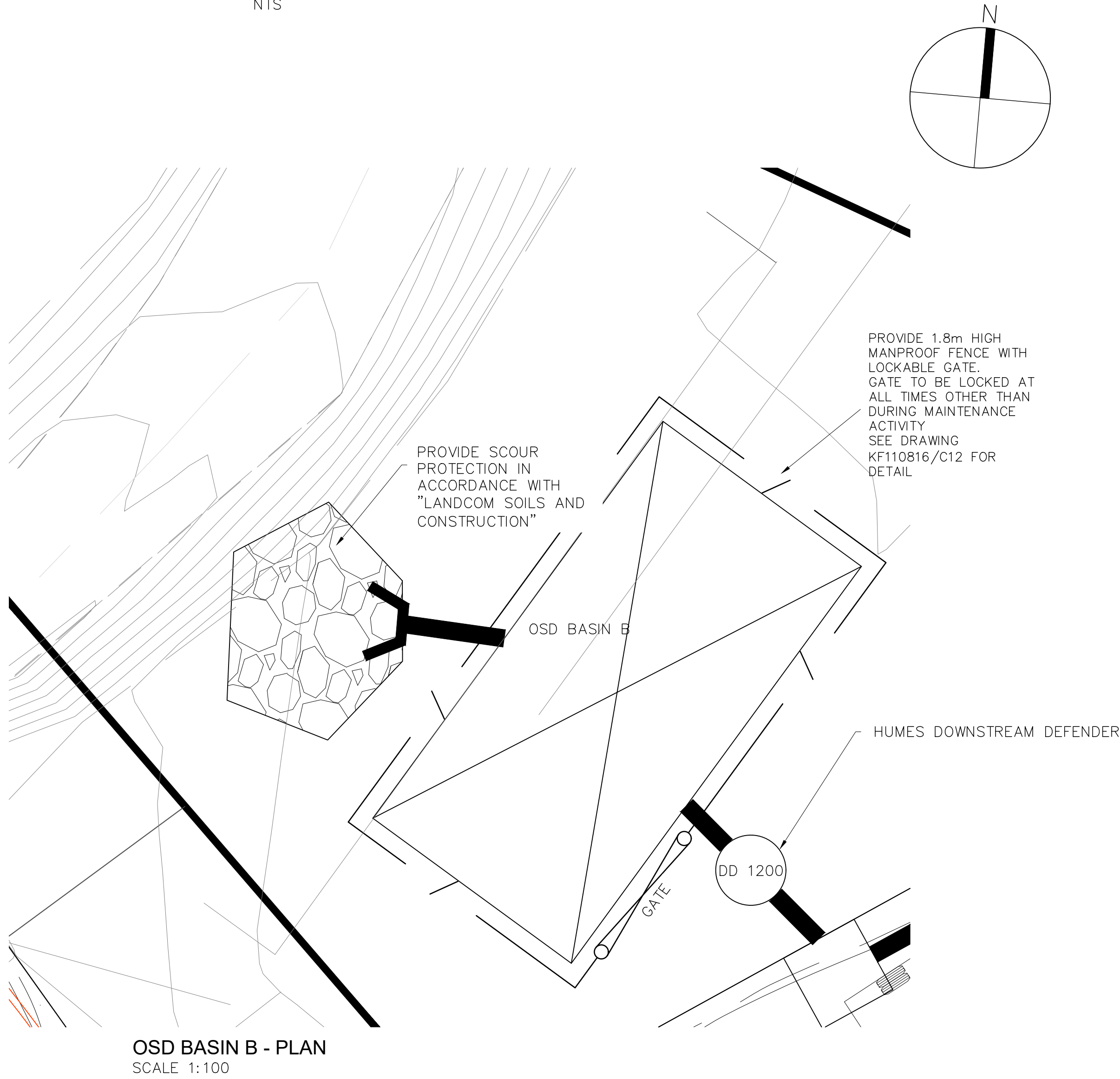
ORIFICE PLATE DETAIL
NTS



OSD BASIN B - DETAIL
SCALE 1:50

NOTES:

1. BASIN B TO PROVIDE MIN. 235m³ STORAGE.
2. BASIN FLOOR AND WALLS TO BE STABILISED WITH SIR WALTER TURF



OSD BASIN B - PLAN
SCALE 1:100

NOTE:
OSD BASIN B IS PART
OF STAGE 2 WORKS

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
D	NOW SHEET 7 OF 18, FIX TYPOGRAPHIC ERROR	8 MAY 2015	WM	WM
C	NOTE RE STAGE 2 ADDED	21-04-2015	A.P.	W.M.
B	FENCE AND LOCKABLE GATE ADDED	10-06-2014	A.P.	W.M.
A	FENCE ADDED	20-03-2014	A.P.	W.M.



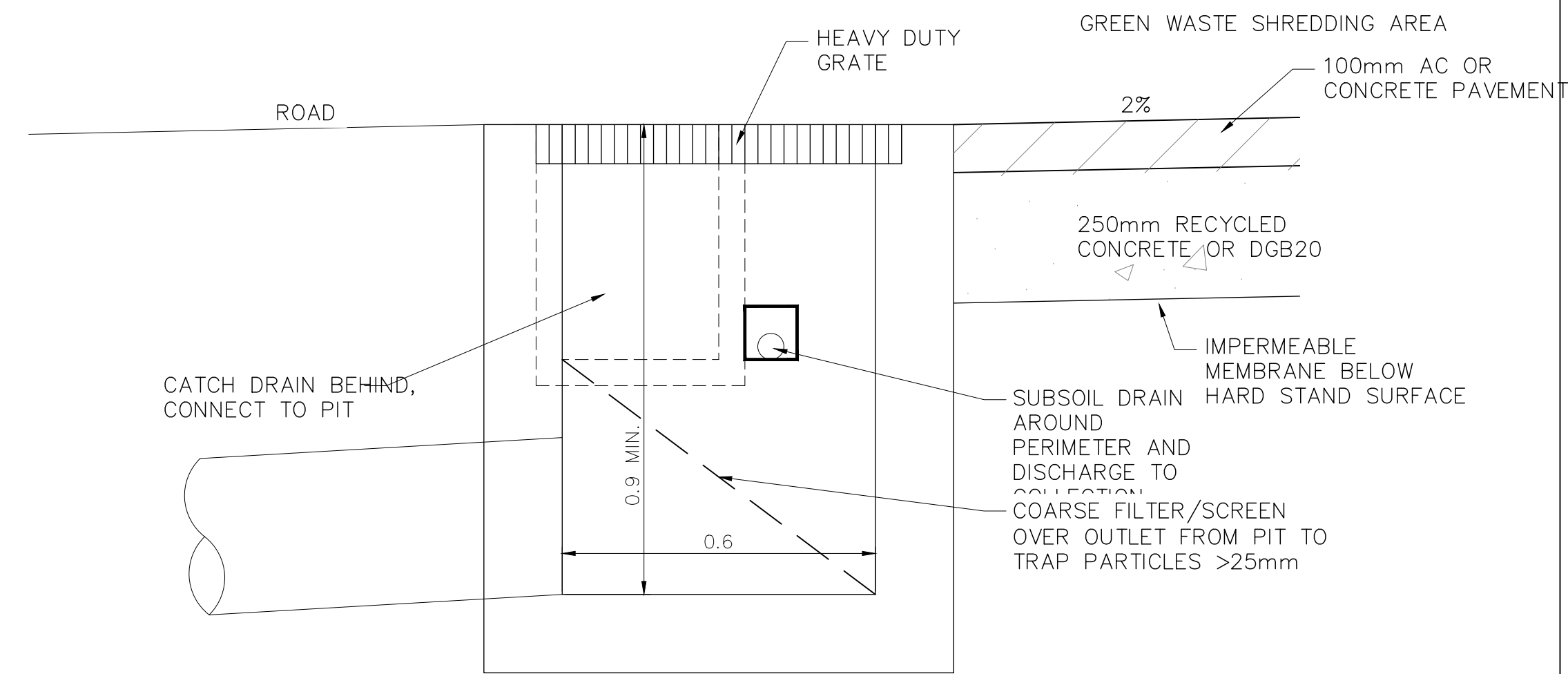
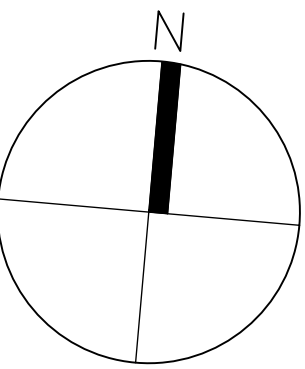
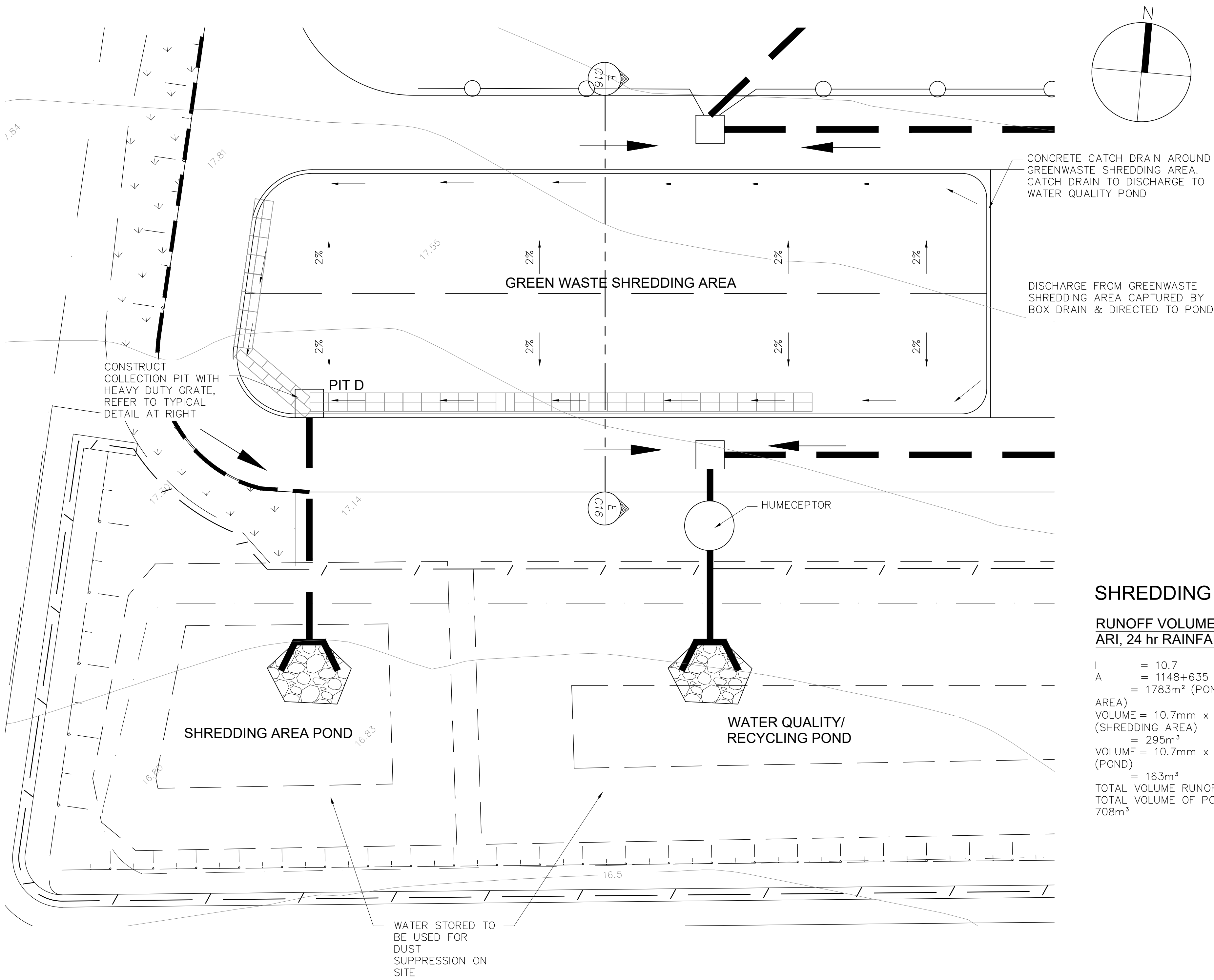
K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor	DENNIS SMITH	Date	JULY 2013
Date of Survey		Drawn	B.PURNELL
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title		Project No.
PROPOSED INDUSTRIAL DEVELOPMENT		KF110816
LOT 10 DP 878167		Drawing No.
WYLLIE ROAD, KEMBLA GRANGE		C16
OSD BASIN B - STAGE 2		Sheet
ISSUED FOR SSD5300 MOD2 APPLICATION		7 Of 18
Scale		Revision
@ A1 @ A3		D
Drawing Status		

- 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.



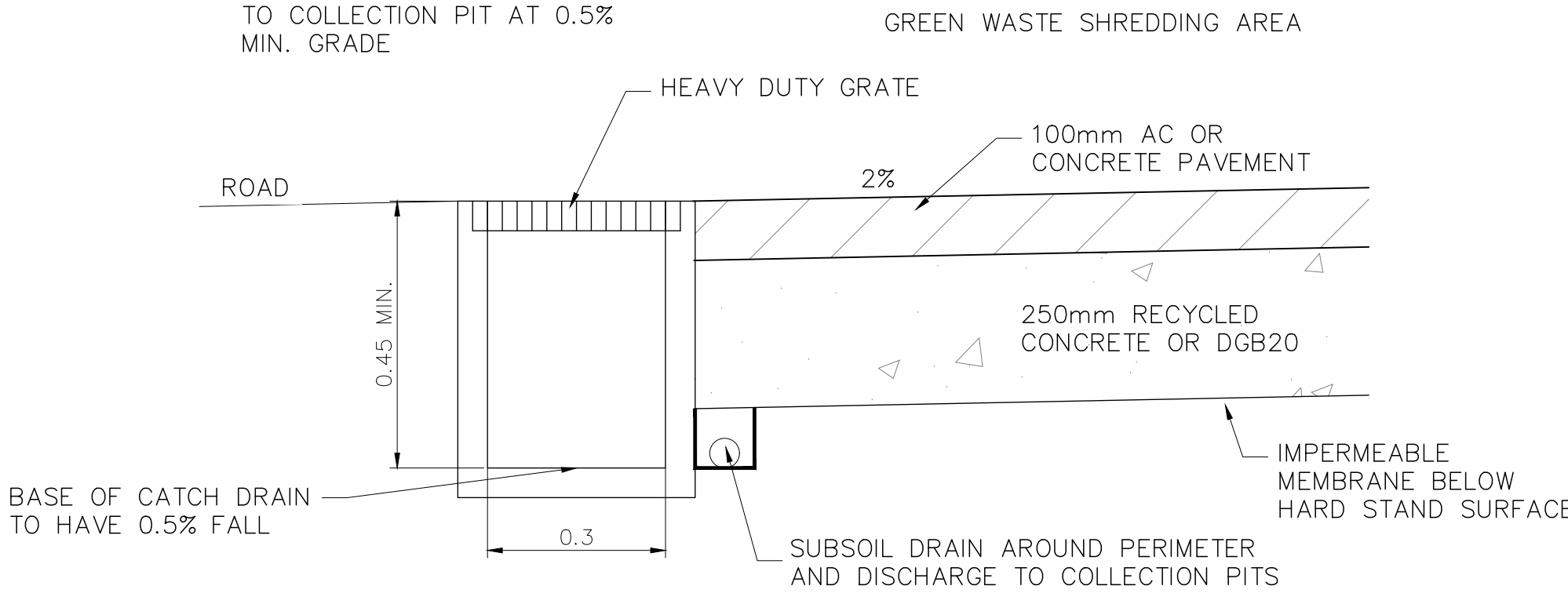
COLLECTION PIT D
SCALE 1:10

SHREDDING POND VOLUME

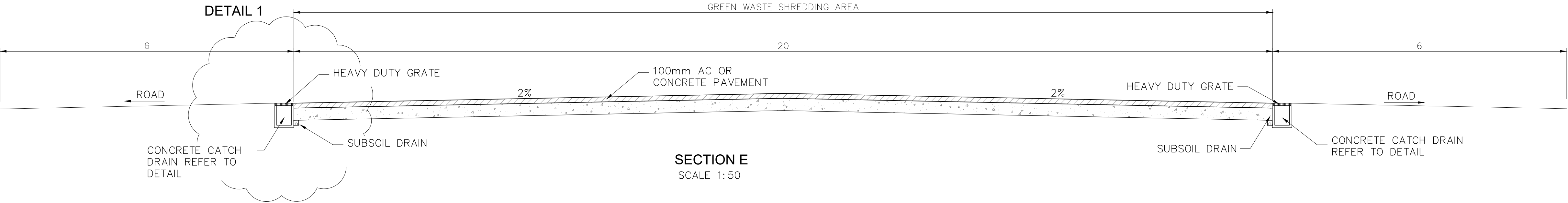
RUNOFF VOLUME FROM 1 IN 10_{YR}
ARI, 24 hr RAINFALL BURST

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 FALL TO COLLECTION PIT AT 0.5% MIN. GRADE



DETAIL 1
SCALE 1:10



DETAIL 1

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
C	NOW SHEET 8 OF 18	8 MAY 2015	WM	WM
B	AMENDED AS PER DEPT OF PLANNING COMMENTS	26-02-2014	A.P.	W.M.
A	AMENDED AS PER LANDSCAPE ARCHITECTS COMMENTS 08.08.2013	08.08.2013	B.P	



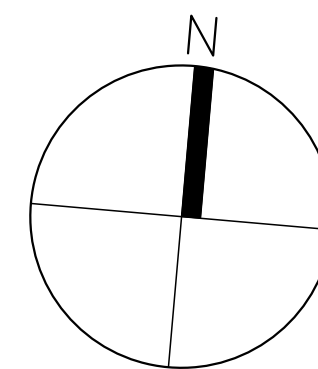
K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor	DENNIS SMITH	Date	JULY 2013
Date of Survey		Drawn	B.PURNELL
Height Datum	AHD	Designed	W.MULLANY
Origin		Checked	
Horiz. Datum		Approved	

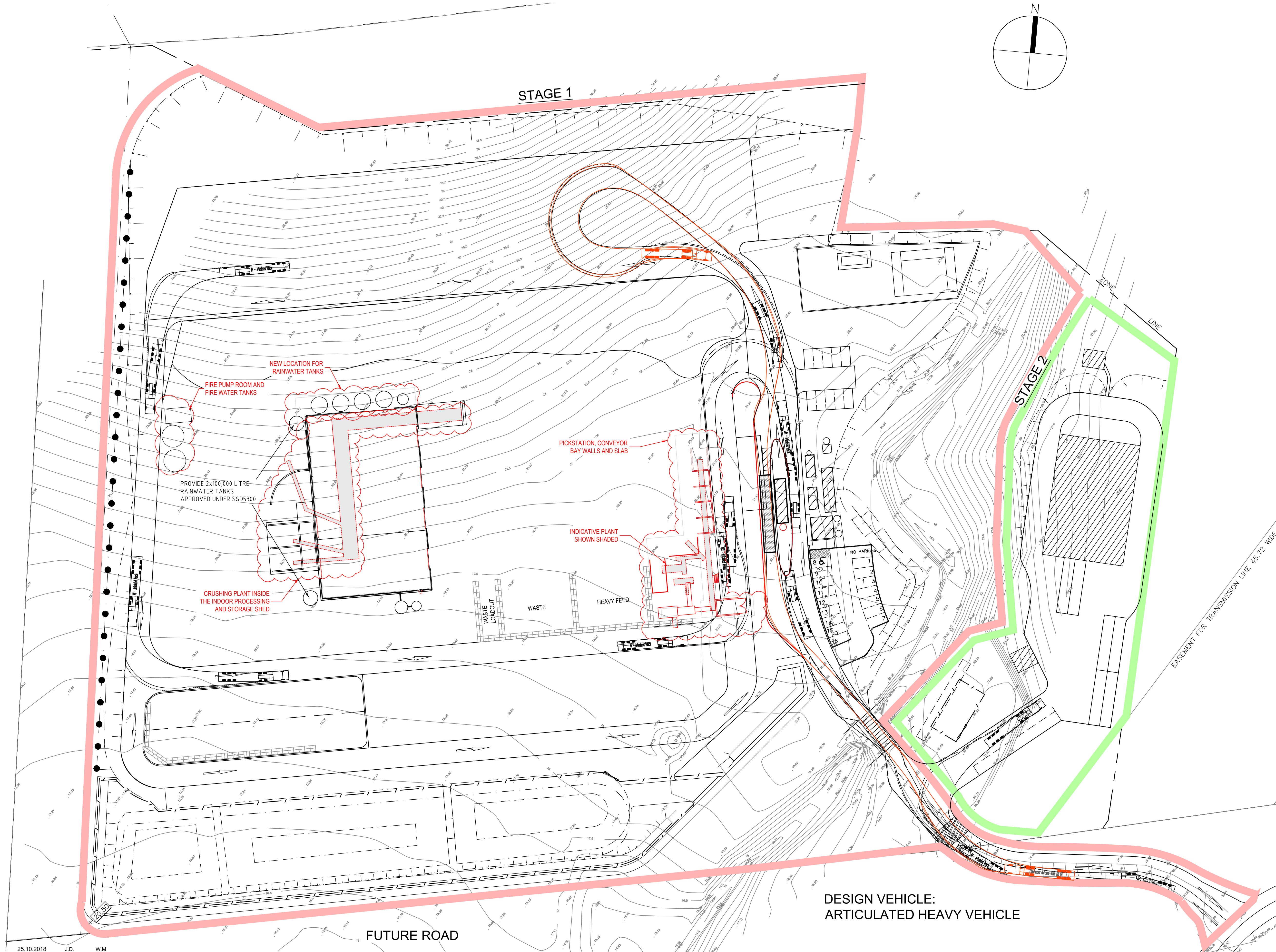
Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SHREDDING AREA DETAIL	
Scale	@ A1 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

Project No.	KF110816
Drawing No.	C17
Sheet	8 Of 18
Revision	C



LEGEND:

- DENOTES STAGE 1 LIMITS
- DENOTES STAGE 2 LIMITS



PLAN
SCALE 1:500

I	ISSUED FOR EIS MODIFICATION-2	25.10.2018	J.D.	WM
G	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
F	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
E	NOW SHEET 9 OF 18, CAR PARK MODIFIED	8 MAY 2015	WM	WM
D	STAGE LIMITS ADDED	21-04-2015	A.P.	W.M.
C	ADDITIONAL TURNING PATHS	26-02-2014	A.P.	W.M.
B	CARPARKING ADDED	18-10-2013	B.P.	
A	FILL / LANDSCAPE MOUND AMENDED	09-10-2013	B.P.	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 05.08.2013	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SWEPT PATH AND CARPARKING PLAN		Project No. KF110816	
Date of Survey	Drawn B.PURNELL			Drawing No. C18	
Height Datum AHD	Designed W.MULLANY (EE Grad Dip LGE ME(Hons) MIE(Aust) CPEng RPD)			Sheet 9 Of 18	
Origin	Checked				
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000@ A3	Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION		

DRAINAGE NOTES

1. RAINWATER TANKS TO 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 ENCROACHING ONTO THE GAS PIPELINE EASEMENT, THE OWNER/CONTRACTOR SHALL INSTALL A HIGH VISIBILITY ORANGE PARA-WEB FENCING OR 1.8M HIGH CHAINWIRE FENCE TO CLEARLY DELINEATE THE LIMIT OF WORK. THE FENCE SHALL NOT ENCROACH 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 220 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. OSD BASIN B TO HAVE VOLUME OF 235m³. OUTLET TO BE 500m DIA ORIFICE OVER 6000 PIPE. WEIR RL @ APPROX. 20.35m CONSTRUCT IN STAGE 2
12. NO STORAGE OF BUOYANT MATERIAL IN PMF INUNDATION AREA. MINIMUM CRUSHED AGGREGATE SIZE IN PMF INUNDATION AREA TO BE 75mm
13. GREEN WASTE TO BE COVERED BY TARPAULIN TO PREVENT INFILTRATION OF RAINWATER WHEN STOCKPILE TO BE IN PLACE LONGER THAN 21 DAYS.
14. SEPTIC TANK SERVICING OFFICE COMPLEX SHALL BE SERVICED/PUMPED OUT WEEKLY

LEGEND

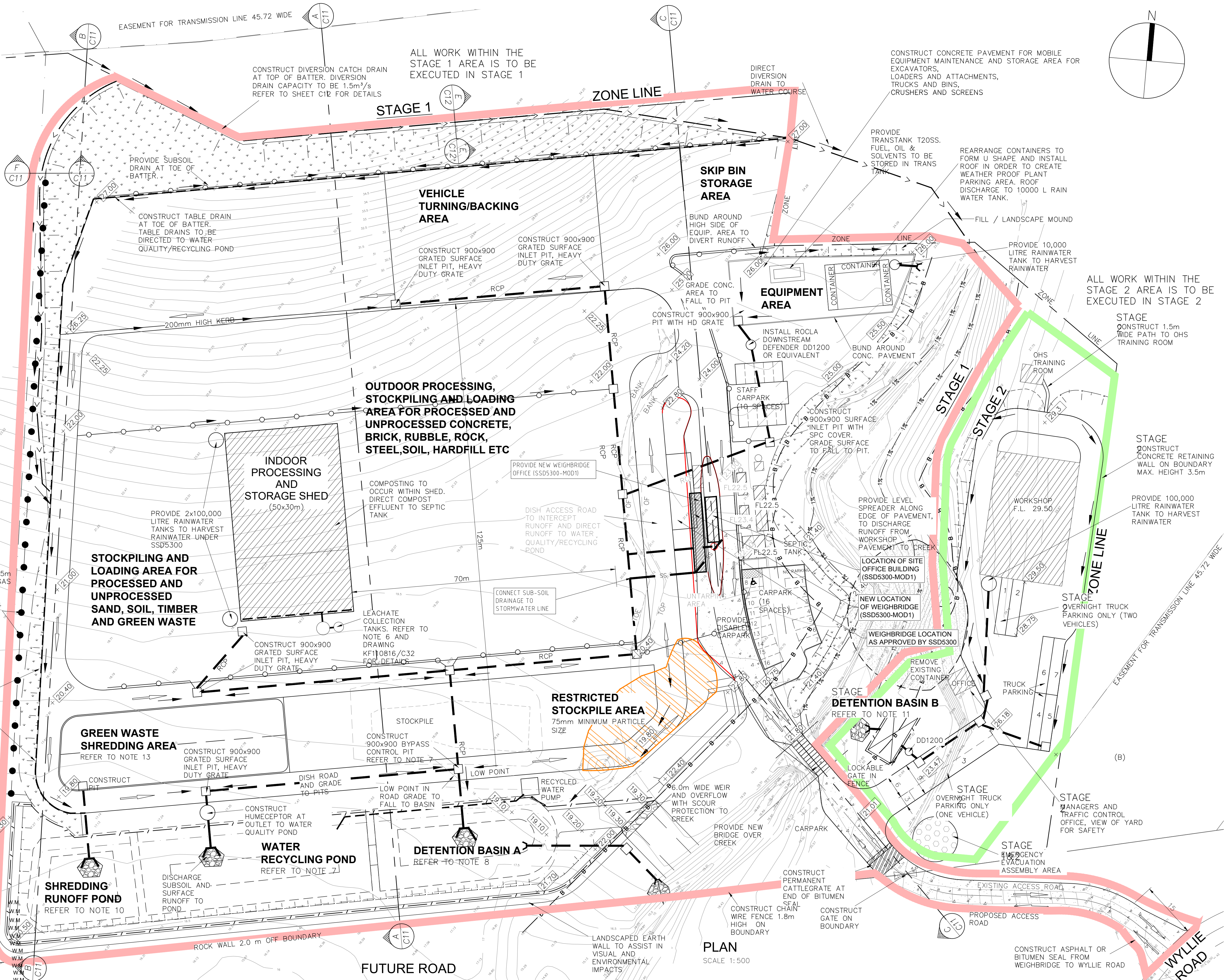
- DENOTES PROPOSED BUILDING
- DENOTES EXISTING CONTOURS
- DENOTES PROPOSED SURFACE LEVELS
- DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
- DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
- DENOTES 10m BUFFER LINE FROM TOP BANK
- DENOTES 1% AEP FLOOD LIMIT
- DENOTES SUBSOIL DRAINAGE
- DENOTES CATCH 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 STAGE 2 LIMITS



SIGN - ARR-104

R	ISSUED FOR EIS MODIFICATION - 2	12.11.2018	J.D.	W.M.	
Q	ISSUED FOR EIS MODIFICATION	10-05-2017	B.M.	W.M.	
P	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.	
O	PROCESSING AREA NOTES ADDED, CARPARK LAYOUT MODIFIED NOW SHEET 1 OF 18	8-05-2011	W.M.	W.M.	
N	STAGE LINES, NOTE 14 ADDED	21-04-2015	A.P.	W.M.	
M	NOTE 13 ADDED RE GREEN WASTE	30-01-2015	A.P.	W.M.	
L	SEAL FROM ENTRY TO WEIGHBRIDGE	30-06-2014	W.M.	W.M.	
K	AMENDED TO DEPT OF PLANNING AND COUNCIL COMMENTS	10-06-2014	A.P.	W.M.	
J	AMENDED TO DEPT OF PLANNING COMMENTS	26-02-2014	A.P.	W.M.	
I	CARPARKING ADDED	18-10-2013	B.P.	W.M.	
H	FILL / LANDSCAPE MOUND AMENDED	09-10-2013	B.P.	W.M.	
G	AMENDMENTS AS PER COMMENTS 1-08-2013 AND LANDSCAPE ARCHITECT 08.08.2013	8-08-2013	B.P.	W.M.	
F	AMENDED AS PER COMMENTS	25-07-2013	B.P.	W.M.	
E	TRUCK PARKING, STORMWATER FLOW AND NOTES ADDED	09-04-2013	B.P.	W.M.	
D	TYPED AMENDED AS PER ARBORIST REQUIREMENTS, OFFICE MOVED TO THE SOUTH	18-12-2012	A.P.	W.M.	
C	TREES ADDED FROM LANDSCAPE DWGS, BLDGS RELOCATED OUT OF RIPARIAN AND FIG TREE	13-12-2012	A.P.	W.M.	
B	SIX CAR SPACES ADDED	06-12-2012	A.P.	W.M.	
A	AMENDED AT CLIENTS REQUEST	07-11-2012	A.P.	W.M.	

Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised
----------	-------------------------------	------------	----------	------------

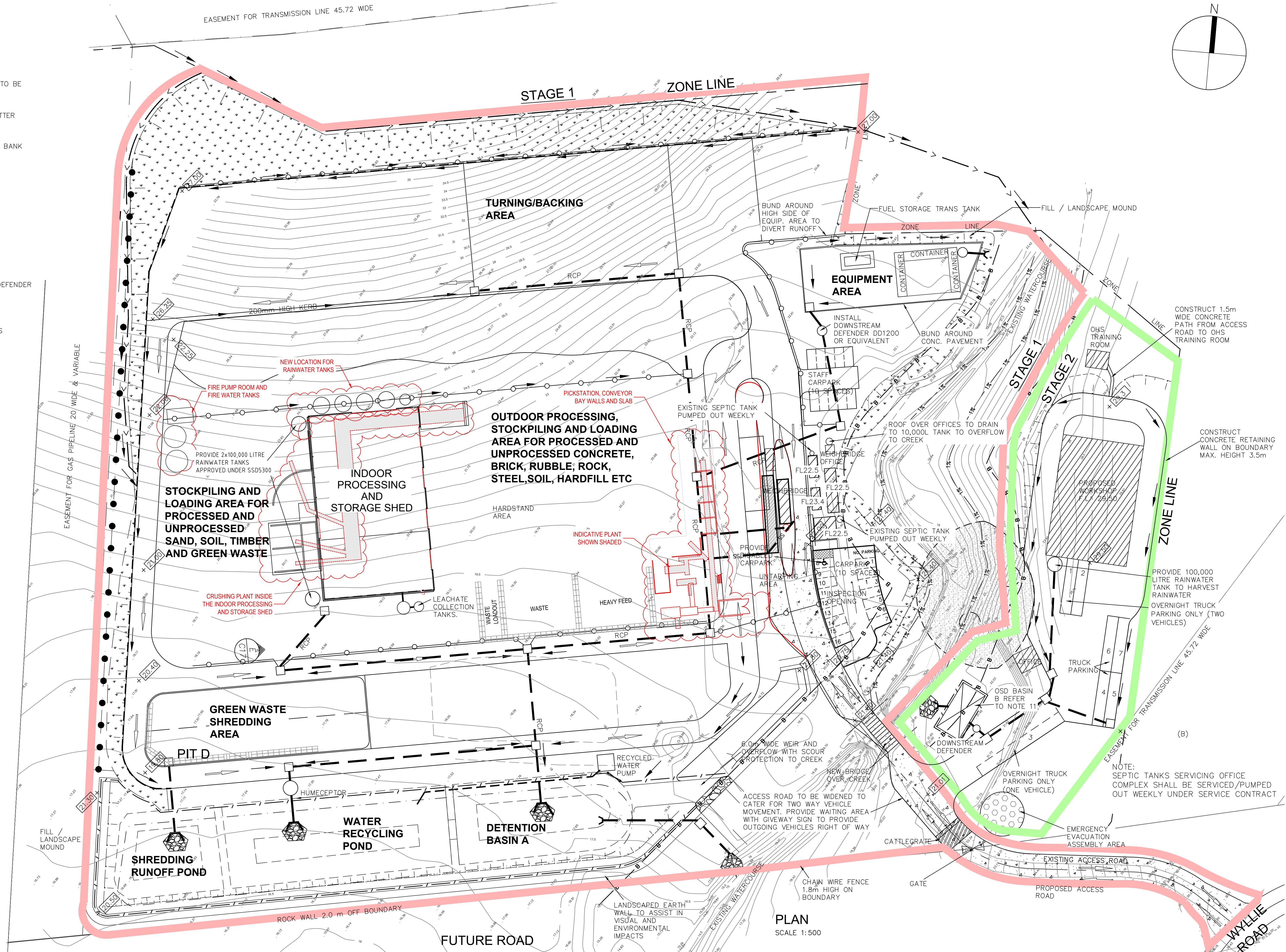


K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor DENNIS SMITH	Date MAY 2012	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN AS APPROVED UNDER SSD-MOD1	Project No. KF110816
Date of Survey	Drawn A PROUDLOVE	Scale 1:500 @ A1 1:1000 @ A3	Drawing No. C19
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng	Drawing Status ISSUED FOR DA SSD5300 MOD2 APPLICATION	Sheet Of 18
Origin	Checked		Revision R
Horiz. Datum	Approved		

	Denotes Proposed Building
	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 Surface Flow
	Denotes Humeceptor Downstream Defender
	Denotes Bollard & Signage
	Denotes Stormwater Pits and Pipes
	Denotes Stage 1 Limits
	Denotes Stage 2 Limits



F	AMENDED SITE LAY OUT AS PER DOWSCAPE	09.10.2018	J.D.	W.M.
E	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M	W.M
D	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
C	CONT BINS DELETED,PROCESING NOTES UPDATED,CAR PARK UPDATED,NOW SHEET 11 OF 18	8 MAY 2015	WM	WM
B	STAGE LIMITS, SEPTIC TANK ADDED	21-04-2015	A.P.	W.M
A	PATH TO GHS TRAINING ROOM ADDED	10-06-2014	A.P.	W.M.
Revision	Amendment or reason for issue	Issue date	Drawn by	Authorised

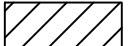
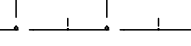
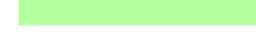


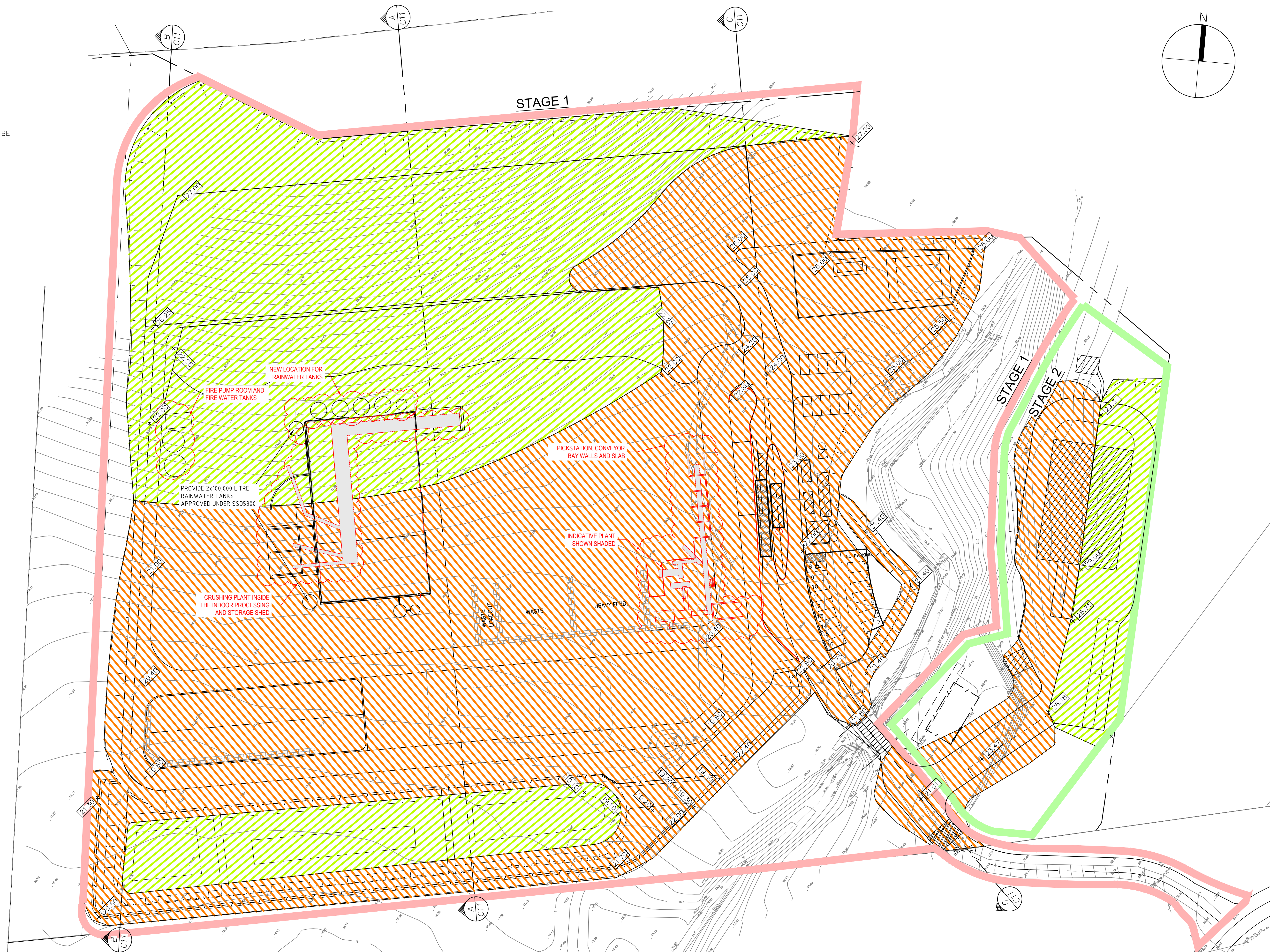
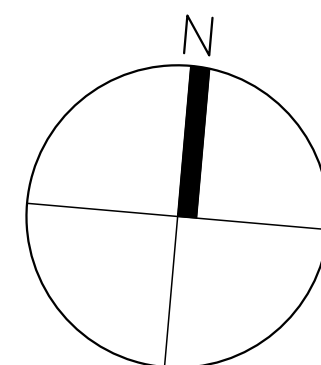
K.F. Williams & Associates Pty Ltd
28 Auburn Street
Wollongong NSW 2500
A.C.N 008 664 417
Project Management, Surveying,
Civil, Structural, Water & Sewer

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

Surveyor DENNIS SMITH	Date FEB 2014	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN - PROPOSED LAYOUT		Project No. KF110816
Date of Survey	Drawn A PROUDLOVE			Drawing No. C27
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng			Sheet 11 Of 18
Origin	Checked			Revision F
Horiz. Datum	Approved	Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION	

LEGEND

-  DENOTES PROPOSED BUILDING
-  DENOTES EXISTING CONTOURS
-  DENOTES PROPOSED SURFACE LEVELS
-  DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
-  DENOTES AREA OF CUT
-  DENOTES AREA OF FILL
-  DENOTES STAGE 1 LIMITS
-  DENOTES STAGE 2 LIMITS



F	ISSUED FOR EIS MODIFICATION - 2	25.10.2018	J.D.	W.M.
E	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
D	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
C	CARPARK MODIFIED	8 MAY 2015	WM	WM
B	STAGE LIMITS ADDED, NOW SHEET 12 OF 18	21-04-2015	A.P.	W.M.
A	HATCH ALTERED FOR CLARITY	30-01-2015	A.P.	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

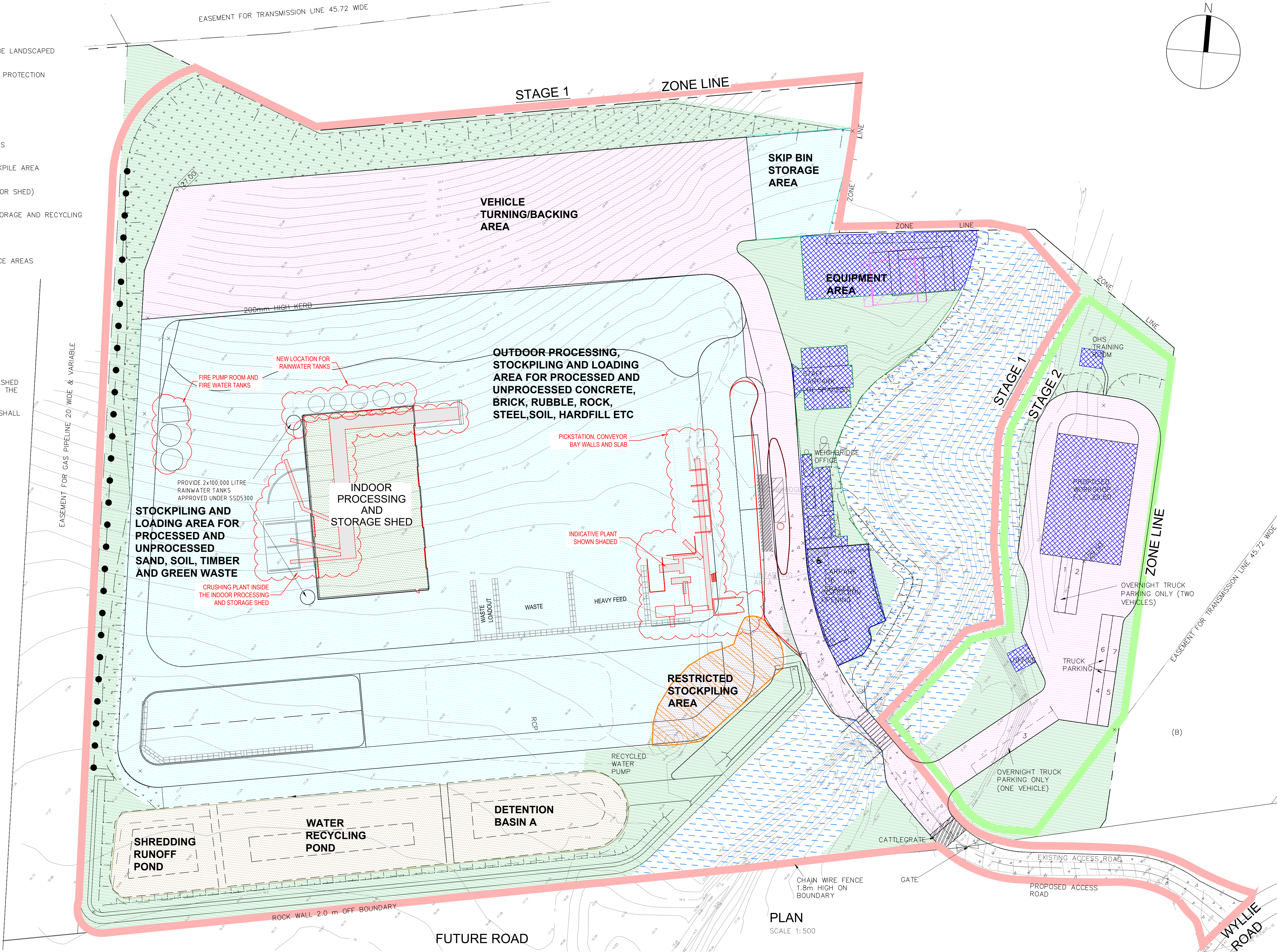
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor	Date FEB 2014	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE CUT AND FILL PLAN		Project No. KF110816	
Date of Survey	Drawn A PROUDLOVE			Drawing No. C28	
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng				
Origin	Checked				
Horiz. Datum	Approved			Scale 1:500 @ A1 1:1000 @ A3	Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION

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 STAGE 2 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



F	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
E	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
D	STAGE 1 EXTENDED TO MEET STAGE2	17-11-2015	A.P.	W.M.
C	CARPARK MODIFIED	8 MAY 2015	WM	WM
B	STAGE LIMITS ADDED	21-04-2015	A.P.	W.M.
A	AREAS AMENDED, BINS DELETED	02-07-2014	A.P.	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

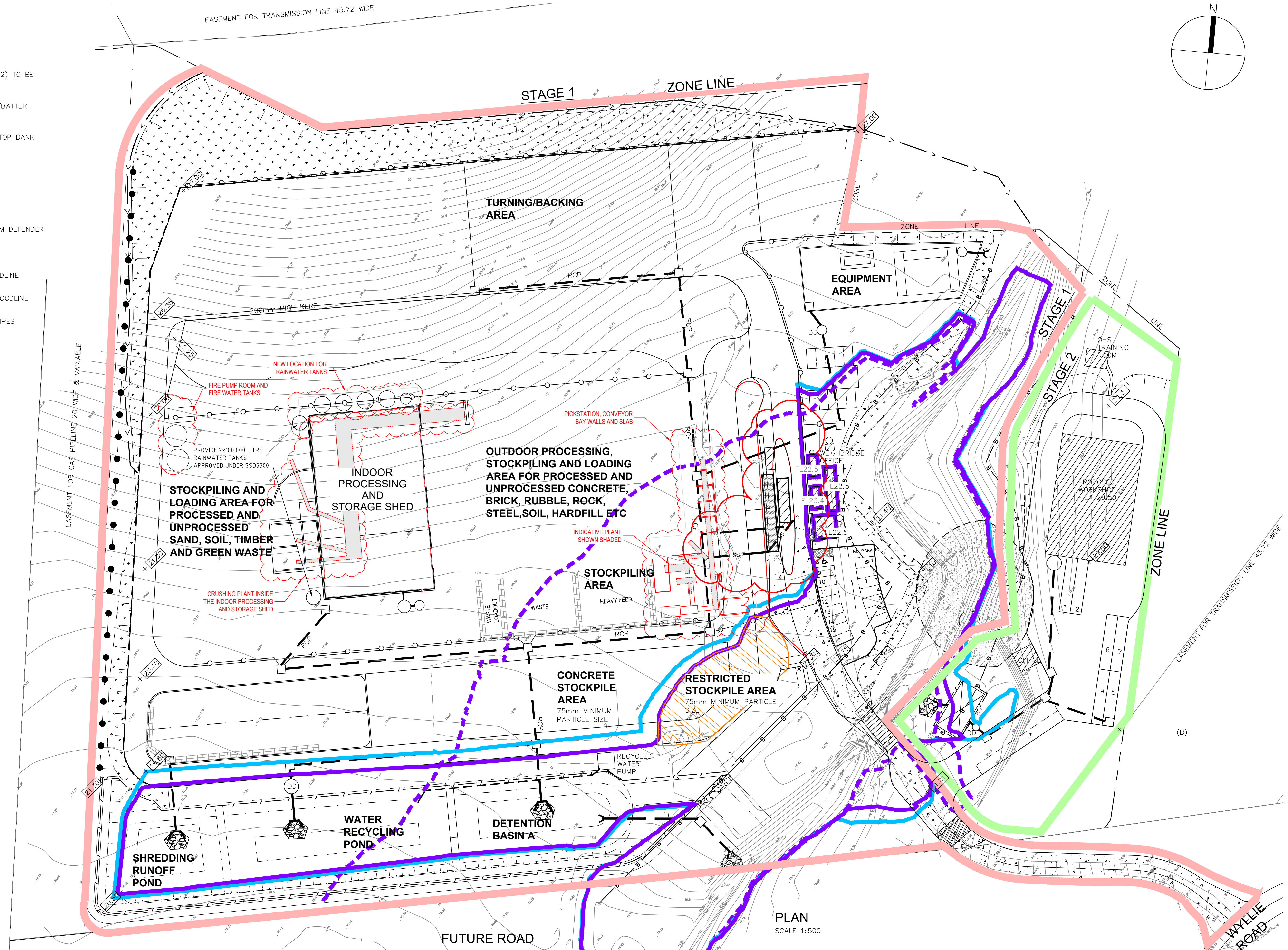
p (02) 4228 7044
f (02) 4226 2004
e mail@kfw.net.au
www.kfw.net.au

Surveyor	DENNIS SMITH	Date	FEB 2014
Date of Survey		Drawn	A PROUDLOVE
Height Datum	AHD	Designed	M.I.E.Aust. C.P.Eng
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 APPLICATION

Project No.	KF110816
Drawing No.	C29
Sheet	13 Of 18
Revision	F

	DENOTES PROPOSED BUILDING
	DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
	DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
	DENOTES 10m BUFFER LINE FROM TOP BANK
	DENOTES SUBSOIL DRAINAGE
	DENOTES CATCH DRAIN
	DENOTES STORMWATER FLOW
	DENOTES HUMECCEPTOR DOWNSTREAM DEFENDER
	DENOTES PMF FLOODLINE
	DENOTES PMF 100% BLOCKED FLOODLINE
	DENOTES PMF PRE DEVELOPMENT FLOODLINE
	DENOTES STORMWATER PITS AND PIPES
	DENOTES STAGE 1 LIMITS
	DENOTES STAGE 2 LIMITS



PLAN
SCALE 1:500

F	ISSUED FOR EIS MODIFICATION - 2	25.10.2018	J.D.	W.M.
E	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M	W.M
D	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
C	PROCESSING AREA NOTES UPDATED, CONTAINER BINS DELETED, NOW SHEET 14 OF 18	8 MAY 2015	W.M	W.M
B	STAGE LIMITS ADDED	21-04-2015	A.P.	W.M
A	FLOODLINES AMENDED TO COUNCIL REQUIREMENTS	11-06-2014	A.P.	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 FEB 2014
Date of Survey	Drawn A PROUDLOVE
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng
Origin	Checked
Horiz. Datum	Approved

Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN - PROPOSED LAYOUT - PMF FLOOD LINES	
Scale	1:500 @ A1 1:1000 @ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

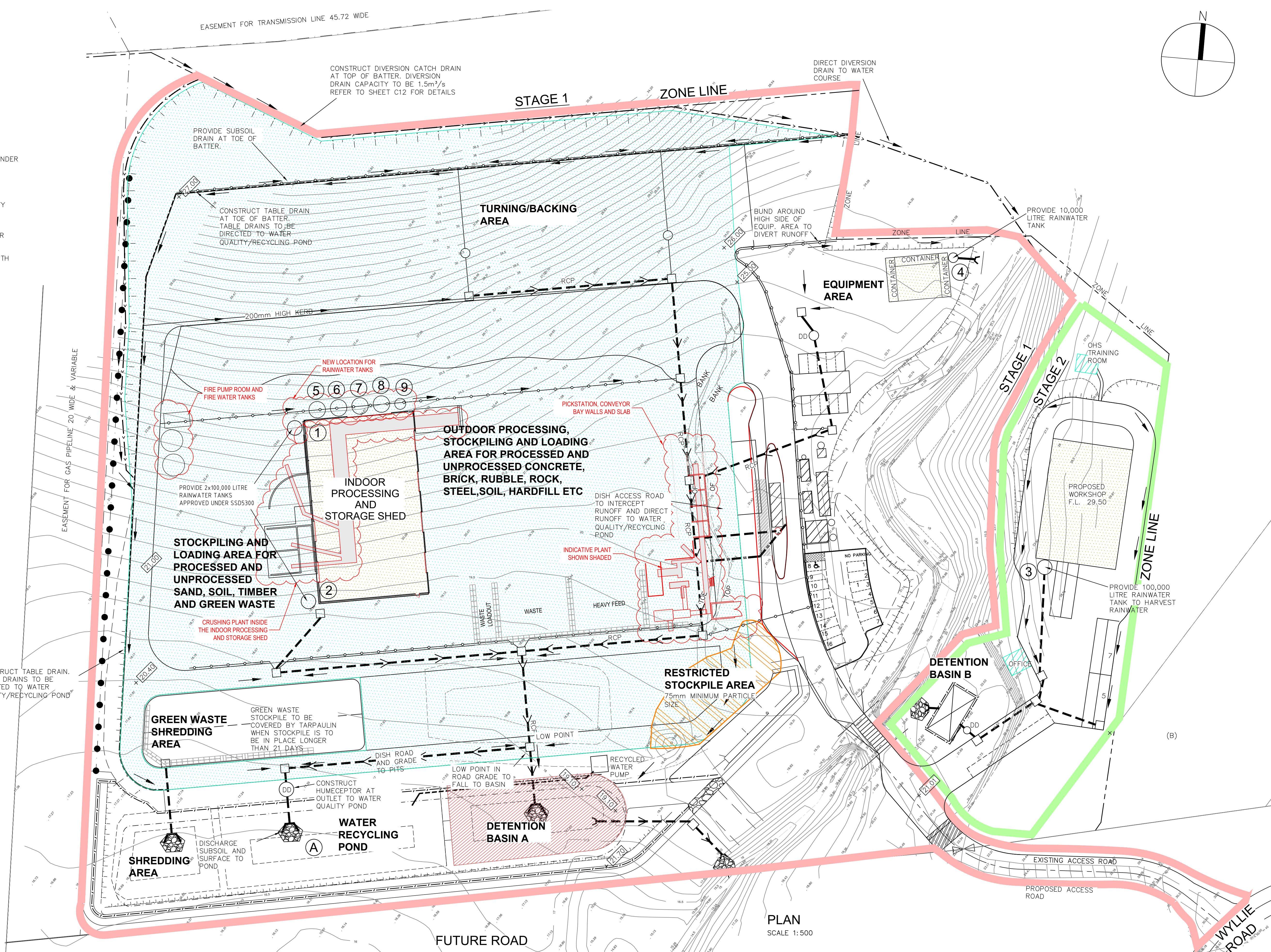
Project No. KF110816	
Drawing No. C30	
Sheet 4 Of 18	Revision F

	DENOTES EXISTING CONTOURS
	DENOTES PROPOSED SURFACE LEVELS
	DENOTES STORMWATER SURFACE FLOW/DIRECTION OF V DRAINS
	DENOTES HUMCEPTOR DOWNSTREAM DEFENDER
	ROOF AREAS TO RAINWATER TANKS
	SURFACE AREA RUNOFF TO WATER QUALITY POND THROUGH HUMCEPTOR
	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

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

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



PLAN
SCALE 1:500

F	ISSUED FOR EIS MODIFICATION - 2	25.10.2018	J.D.	W.M.
E	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M	W.M
D	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
C	PROCESSING NOTES UPDATED, CARPARK MOD, CONTAINER BINS DEL NOW SHEET 15 OF 18	8 MAY 2015	WM	WM
B	STAGE LIMITS ADDED, NOTE RE GREEN WASTE ADDED	21-04-2015	A.P.	W.M.
A	PATH TO OHS TRAINING ROOM ADDED AND NOTE RE DETENTION BASIN B	10-06-2014	A.P.	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 MAR 2014
Date of Survey	Drawn A PROUDLOVE
Height Datum AHD	Designed M.I.E.Aust. C.P.Eng
Origin	Checked
Horiz. Datum	Approved

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

Project No. KF110816	
Drawing No. C31	
Sheet 15 Of 18	Revision F

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 perimeter 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 ESA. 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

- NOTE:
COMPOSTING OPERATIONS APPROVED UNDER SSD5300 IN SHED ARE TO BE REPLACED BY PROPOSED SORTING AND CRUSHING PLANT.
- DENOTES PROPOSED BUILDING
 - DENOTES EXISTING CONTOURS
 - DENOTES PROPOSED SURFACE LEVELS
 - DENOTES HUMECEPTOR DOWNSIDE 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
 - DENOTES DETENTION POND
 - DENOTES STORMWATER PITS AND PIPES
 - DENOTES STAGE 1 LIMITS
 - DENOTES STAGE 2 LIMITS

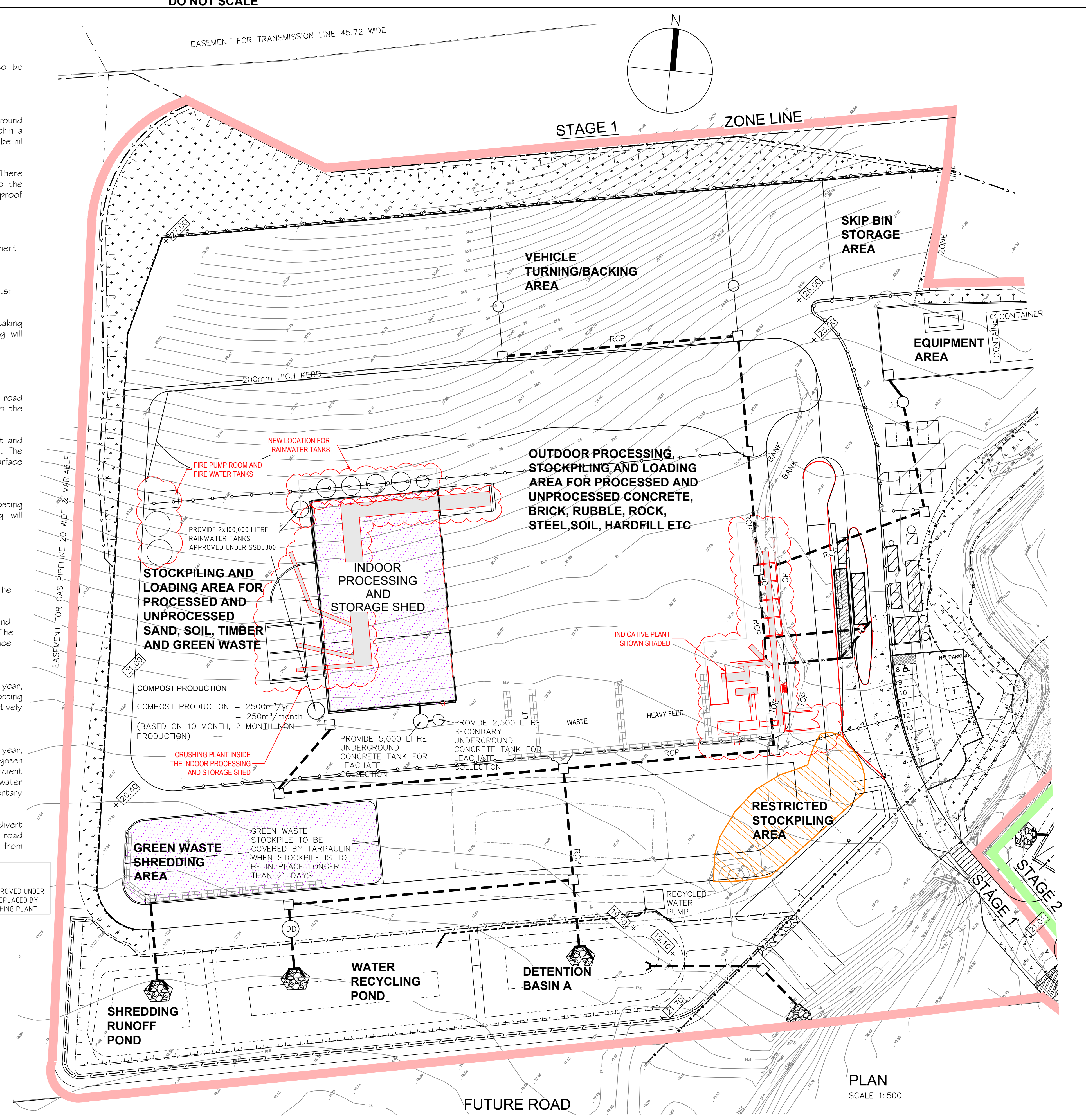
I	ISSUED FOR EIS MODIFICATION-2	25.10.2018	J.D.	W.M
G	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M	W.M
F	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
E	CAR PARK MODIFIED, NOW SHEET 16 OF 18	8 MAY 2015	WM	WM
D	STAGE LIMITS & NOTES RE PROCESSING SHED ADDED	22-04-2015	A.P.	W.M.
C	NOTE RE GREEN WASTE STOCKPILE ADDED	30-01-2015	A.P.	W.M.
B	LEACHATE NOTES UPDATED	17 JUNE 14	WM	WM
A	SHED SEPARATED INTO TWO AREAS, COMPOST PROD VOLUME ADDED	20-03-2014	A.P.	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

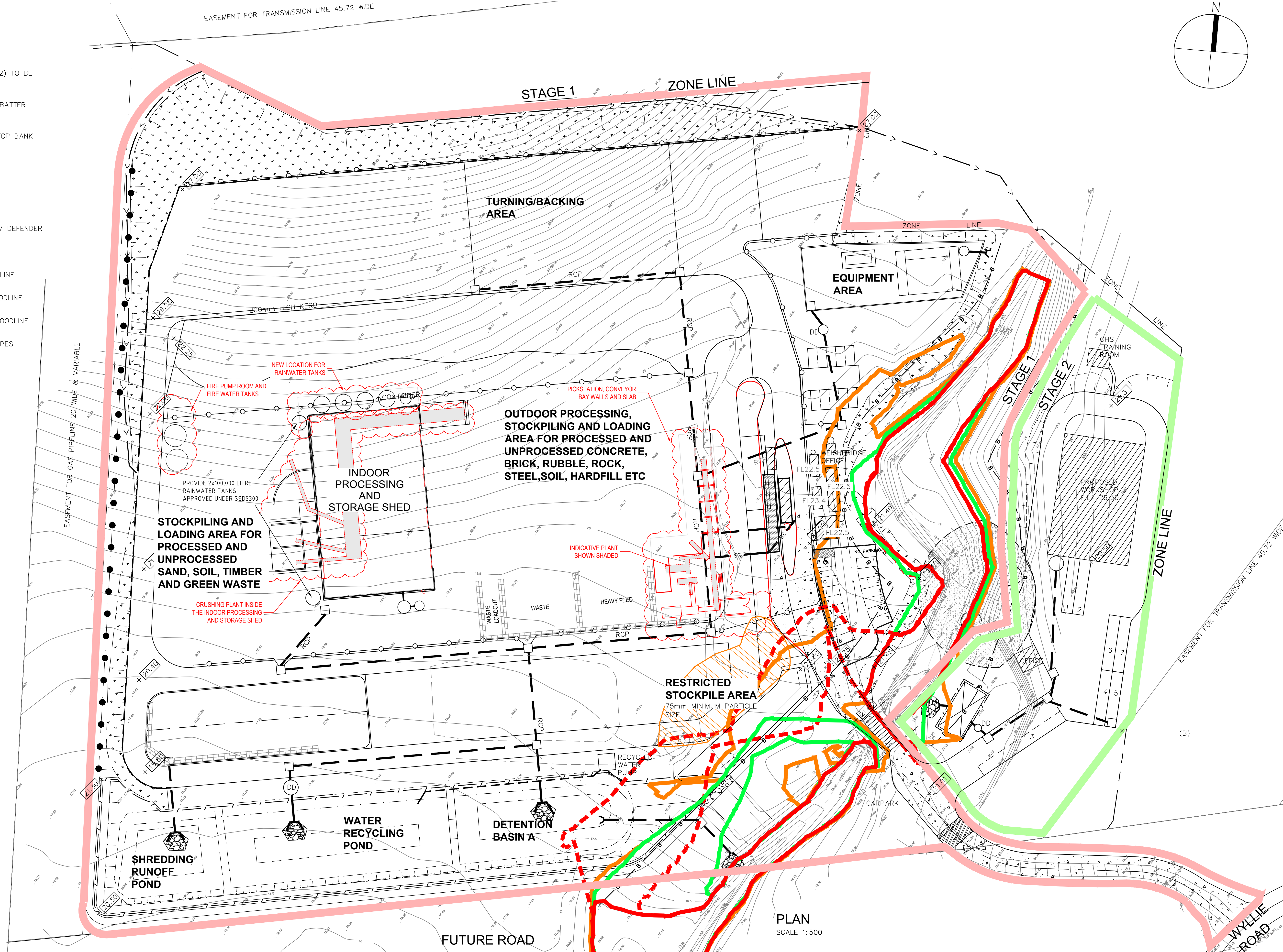
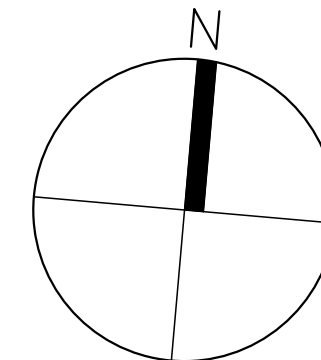
Surveyor DENNIS SMITH	Date MAR 2014	Drawing Title PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE LEACHATE CONTROL PLAN	Project No. KF110816
Date of Survey	Drawn A PROUDLOVE		Drawing No. C32
Height Datum AHD	Designed M.I.E Aust. C.P.Eng		Sheet 16 Of 18
Origin Checked	Approved	Scale 1:500 @ A1 1:1000 @ A3	Revision H
Horiz. Datum		Drawing Status ISSUED FOR SSD5300 MOD2 APPLICATION	



FILENAME: x:\KF110816\Civil\Drawings\EIS Sect. 96_Oct2018_DA\KF110816_EIS Sect. 96_Sep. 2018.dwg
PLOTTED BY: Jdo

LEGEND

- DENOTES PROPOSED BUILDING
- DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
- DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
- DENOTES 10m BUFFER LINE FROM TOP BANK
- DENOTES SUBSOIL DRAINAGE
- DENOTES CATCH DRAIN
- DENOTES STORMWATER FLOW
- DENOTES HUMECEPTOR DOWNSTREAM DEFENDER
- DENOTES Q₁₀₀ FLOODLINE
- DENOTES Q₁₀₀ 100% BLOCKED FLOODLINE
- DENOTES Q₁₀₀ CLIMATE CHANGE FLOODLINE
- DENOTES Q₁₀₀ PRE DEVELOPMENT FLOODLINE
- DENOTES STORMWATER PITS AND PIPES
- DENOTES STAGE 1 LIMITS
- DENOTES STAGE 2 LIMITS



E	ISSUED FOR EIS MODIFICATION - 2	25.10.2018	J.D.	W.M.
D	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
C	STAGE 1 EXTENDED TO MEET STAGE 2	17-11-2015	A.P.	W.M.
B	NOW SHEET 17 OF 18, CAR PARK MODIFIED	8 MAY 2015	WM	WM
A	STAGE LIMITS ADDED	22-04-2015	A.P.	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	FEB 2014
Date of Survey		Drawn	A PROUDLOVE
Height Datum	AHD	Designed	M.I.E.Aust. C.P.Eng
Origin		Checked	
Horiz. Datum		Approved	

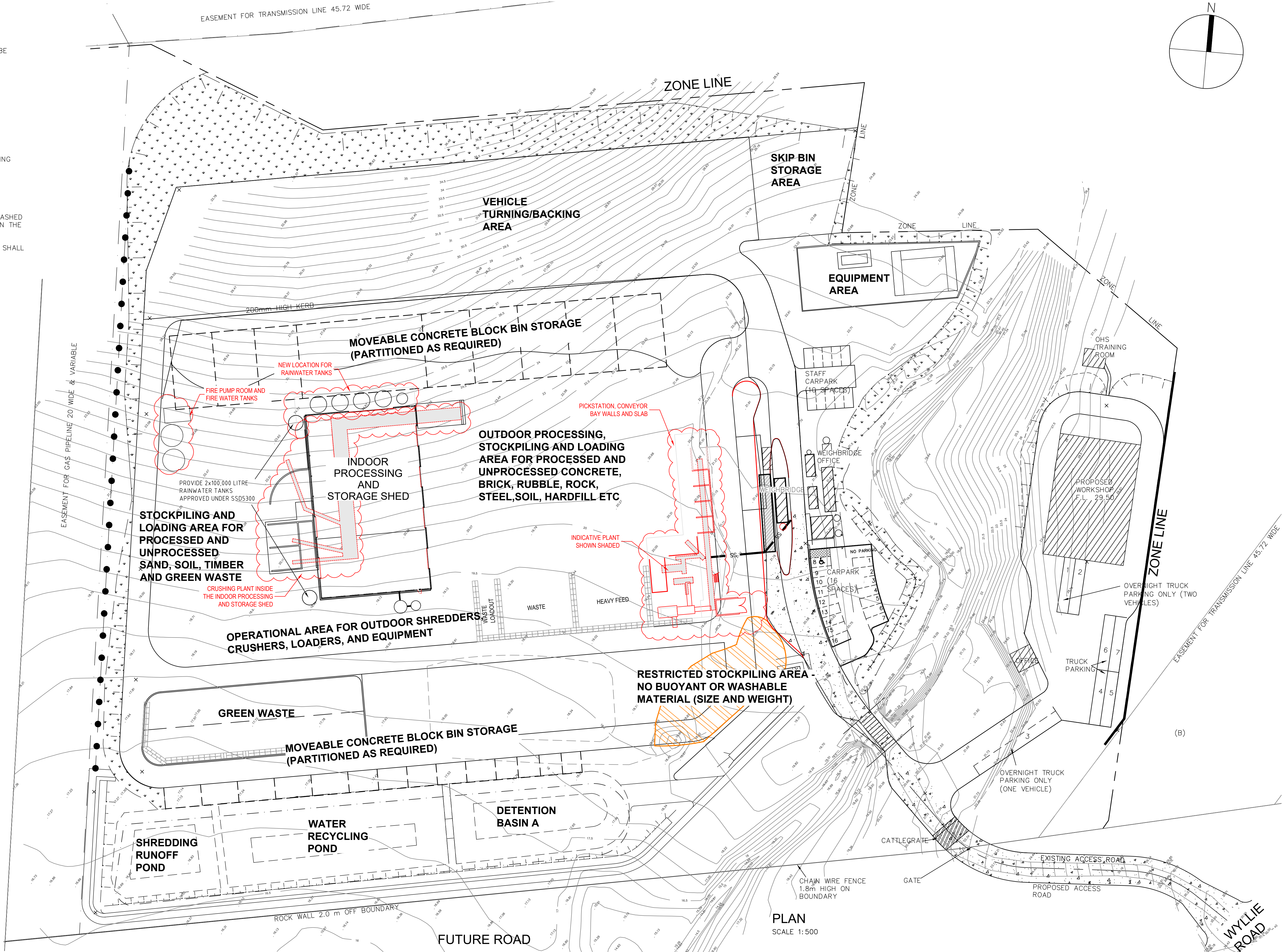
Drawing Title		PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE SITE PLAN - PROPOSED LAYOUT - Q100 FLOOD LINES	
Scale	1:500 @ A1 1:1000@ A3	Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

Project No.	
KF110816	
Drawing No.	
C33	
Sheet	Revision
17 Of 18	E

LEGEND

- DENOTES PROPOSED BATTER (1 IN 2) TO BE LANDSCAPED
- DENOTES PROPOSED LANDSCAPING/BATTER PROTECTION
- DENOTES RIPARIAN CORRIDOR
- DENOTES PROPOSED ROAD UPGRADING
- DENOTES PROPOSED RESTRICTED STOCKPILING AREA

- 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



D	SITE LAYOUT AMENDED AS PER DEWCAPE	09.10.2018	J.D.	W.M.
C	ISSUED FOR EIS MODIFICATION	10.05.2017	B.M.	W.M.
B	CARPARK MODIFIED, NOW SHEET 18 OF 18	8 MAY 2015	WM	WM
A	NOTES RE STOCKPILING AND LOADING AREAS AMENDED	01-05-2015	A.P.	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	FEB 2014
Date of Survey		Drawn	A PROUDLOVE
Height Datum	AHD	Designed	M.I.E Aust. C.P.Eng
Origin		Checked	
Horiz. Datum		Approved	

Drawing Title	PROPOSED INDUSTRIAL DEVELOPMENT LOT 10 DP 878167 WYLLIE ROAD, KEMBLA GRANGE OPERATIONAL PLAN- LAYOUT VERSION 1
Scale	1:500 @ A1 1:1000 @ A3
Drawing Status	ISSUED FOR SSD5300 MOD2 APPLICATION

Project No.	KF110816
Drawing No.	C34
Sheet	18 Of 18
Revision	D