PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA

MCU
APPLICATION
09/01/20

1 3D View 2

Sheet List	
Sheet Number	Sheet Name
00	Cover Sheet
01	Surveyor's Plan
02	Site Plan
03	Floor Plan
04	Mezzanine Floor Plan
05	Elevations
06	Landscape Plan & Vehicle Swept Path Plan
07	Site Existing
EL	Electrical Plan

General Notes

CONST. TO BE IN ACCORD. WITH THE QLD. BUILDING ACT 1975-1998 & THE STANDARD BUILDING REGULATION 1993 AND SHALL COMPLY WITH ALL LOCAL AUTHORITY REGULATIONS AND REQUIREMENTS.

DO NOT SCALE

ALL WALL DIMENSIONS ARE TO STRUCTURAL COMPONENTS - NOT TO THE FACE OF LININGS/FINISHES

VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE STARTING WORK.

TOILET DOORS MUST OPEN OUTWARDS, SLIDE OR BE FITTED WITH REMOVEABLE HINGES IF THE DISTANCE BETWEEN THE PAN AND NEAREST PART OF THE DOORWAY IS LESS THAN 1200mm.

Site Details

REFER TO SITE DEVELOPMENT PLAN BY CIVIL ENGINEER.

SITE LEVELS AND FINISHED FLOOR LEVELS ARE TO BE VERIFIED BY THE BUILDER BEFORE STARTING WORK.

ALL CUT & FILLED EARTH EMBANKMENTS ARE TO BE MAX. SLOPE OF 1 IN 3 UNO ON CIVIL ENGINEER'S PLAN. BANKS TO BE GRASSED UNO.

Stormwater Drainage

ALL STORM WATER DRAINAGE WORK TO BE IN ACCORDANCE WITH AS 3500.

REFER TO HYDRAULIC ENGINEERS PLANS FOR DOWN PIPES AND ROOF GUTTER DETAILS.

Sewer Drainage

ALL PLUMBING & DRAINAGE WORK TO BE IN ACCORDANCE WITH WATER & SEWERAGE SUPPLY ACT AND AS 3500.

REFER TO HYDRAULIC ENGINEER'S PLANS FOR ALL SEWER DRAINAGE DETAILS.

THE LOCATION OF THE SEWER MAIN HAS BEEN SCALED FROM COUNCIL PLANS, WHERE THE SEWER LINE IS 2m OR LESS FROM THE BUILDING STRUCTURE IT IS THE RESPONSIBILITY OF THE BUILDER TO PHYSICALLY LOCATE THE SEWER MAIN BEFORE STARTING WORK.

Working At Heights

FOR CONSTRUCTION, CLEANING AND MAINTENANCE PROCEDURES WHERE THERE IS A RISK OF FALLING, COMPLY WITH THE FOLLOWING CLAUSE FROM DIV. 4 OF PART 15 OF THE "WORKPLACE HEALTH AND SAFETY REGULATION".
(CLASS 1&5 - FALL ARREST HARNESS SYSTEM)

Stair Treads, Landings & Ramps

TREADS MUST HAVE A SLIP-RESISTANT FINISH OR A SUITABLE NON-SKID STRIP NEAR THE EDGE OF THE NOSINGS AND EDGE OF LANDINGS IN ACCORD. WITH NCC VOL. 2 PART 3.9.1.4 SLIP-RESISTANCE.

APPLICATION	SURFACE CONDITIONS	
	DRY	WET
RAMP NOT STEEPER THAN 1:8	P4 or R10	P5 or R12
TREAD SURFACE	P3 or R10	P4 or R11
NOSING OR LANDING EDGE STRIP	P3	P4

Timber Framing

ALL TIMBER SIZES AND CONNECTIONS NOT SHOWN TO BE IN ACCORDANCE WITH AS 1684.2 OR AS 1684.3 (DEPENDING ON WIND SPEED)

EXTERNAL TIMBER MEMBERS TO BE DURABILITY CLASS 1 OR 2 WITH SAPWOOD REMOVED OR PRESERVATIVE TREATED TO H3 UNLESS STATED OTHERWISE. ALL END TO BE LOSP TREATED TO H3 LEVEL.

WALL FRAMES - TO BE DESIGNED, CERTIFIED & SUPPLIED BY WALL FRAME MANUFACTURER UNLESS DETAILED ON PLAN.

Termite Protection

PROVIDE PROTECTION FOR NEW BUILDINGS IN ACCORD. WITH THE B.C.A. - QUEENSLAND AMENDMENTS AND AS 3660.1 - 2000. "TERMITE MANAGEMENT - NEW BUILDING WORK".

PROVIDE PROTECTION FOR EXISTING BUILDINGS IN ACCORD. WITH THE B.C.A. - QUEENSLAND AMENDMENTS AND AS 3660.2 - 2000. "TERMITE MANAGEMENT - IN AND AROUND EXISTING BUILDINGS AND STRUCTURES".

OPTION SELECTED:-

- ☐ GRADED STONE BARRIERS
- ☐ CHEMICAL IMPREGNATED PLASTIC SHEET
- ☐ STAINLESS STEEL MESH SHIELDING
- ☐ MONOLITHIC CONCRETE SLAB
- ☐ METAL TERMITE CAP/STRIP SHIELDING
- ☐ MINIMUM 75mm SLAB EDGE EXPOSURE
- ☐ CHEMICAL RETICULATION SYSTEMS
- ☐ CHEMICAL PERIMETER & PENETRATIONS SYSTEM
- ☐ ALL PRIMARY BUILDING ELEMENTS OF TERMITE RESISTANT MATERIALS

OTHER: _____

SUBSEQUENT INSPECTIONS ARE TO BE CARRIED OUT TO INSTALLERS REQUIREMENTS

Slab & Footings

CONCRETE WORK TO BE IN ACCORDANCE WITH AS 3600.

Roofing

METAL ROOFING TO BE IN ACCORDANCE WITH AS 1562.1 AND FIXED TO MANUFACTURERS SPECIFICATIONS.

Wall Cladding

WALL CLADDING TO BE FIXED TO MANUFACTURERS SPECIFICATIONS.

Aluminium Windows & Doors

ALUMINIUM WINDOWS AND DOORS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH AS 2047/48.

Structural Steel

RHS & SHS STEEL SECTIONS TO BE FIRST GRADE STEEL COMPLYING WITH AS 1163 AND HOT ROLLED SECTIONS TO COMPLY WITH AS 3679.

ALL STRUCTURAL STEEL MATERIALS, WORKMANSHIP, FABRICATION & ERECTION SHALL COMPLY WITH THE REQUIREMENTS OF AS 4100, AS 1530, AS 1554 AND ANY OTHER RELEVANT SPECIFICATIONS.

Wet Areas

WATER PROOFING OF WET AREAS IS TO BE CARRIED OUT IN ACCORDANCE WITH THE BCA AND AS 3740.

FLOORS TO WET AREAS - CERAMIC TILES OR OTHER APPROVED MATERIALS.

SPLASH BACKS-

MIN. HEIGHT	FIXTURE	MATERIAL
150mm	BASINS & SINKS	CERAMIC TILES*

* OR OTHER APPROVED MATERIAL

Insulation

- REFER TO THE ATTACHED ENERGY EFFICIENCY REPORT FOR DETAIL.

Other Consultants

REFER TO DETAILS BY OTHER CONSULTANTS FOR:

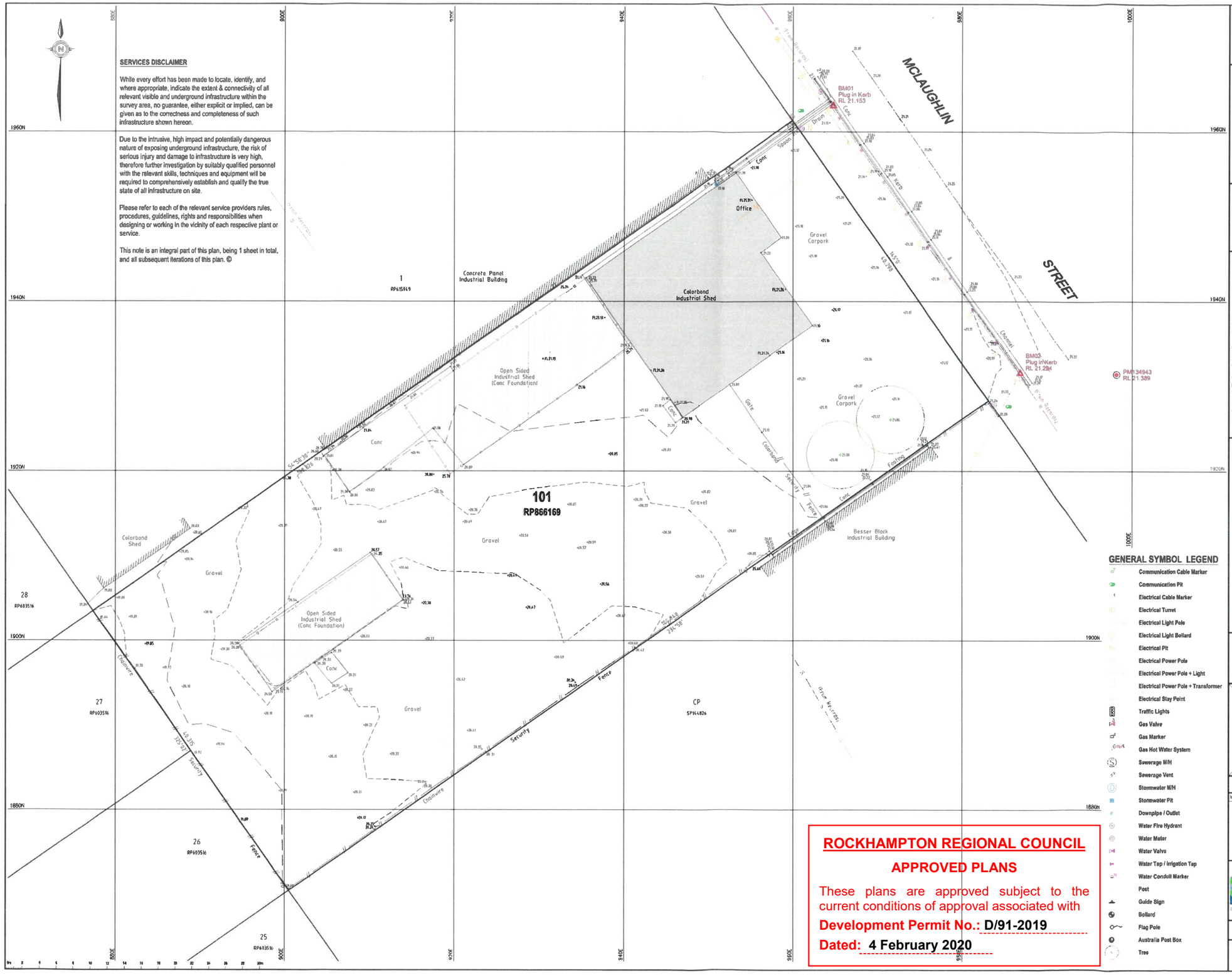
- SLAB & FOOTING DESIGN
- SOIL TEST
- SITE CONTOURS
- CONCRETE DRIVEWAY INCLUDING FALLS
- ALL STRUCTURAL DETAILS
- ROOF & SITE DRAINAGE DESIGN
- WATER RETICULATION & SEWER DRAINAGE DESIGN
- ENERGY EFFICIENCY REPORT

Rufus Design Group
STYLE • QUALITY • INNOVATION

Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

Project No: 190609

Plan Set Revision :



MCU
APPLICATION
09/01/20

PRINCIPAL

PEFF SUPER PTY LTD

DESCRIPTION

DETAIL SURVEY OF LOT 101 ON RP866169

9 MCLAUGHLIN STREET, KAWANA

REAL PROPERTY DESCRIPTION

Lot/Plan :	Lot 101 on RP866169
Area :	4064m² (Deed)
Parish :	-
County :	-
Locality :	Kawana
Local Authority :	Rockhampton Regional Council

NOTES

This plan was prepared for PEFF SUPER PTY LTD from field survey for the purpose of designing new constructions on the subject land and should not be used by any other persons for any other purpose.

Property boundaries have not been reinstated or marked at the time of survey and are approximate only, based on appropriate boundary connections.

Where possible underground services have been located by field survey. Some services shown hereon are compiled from local authority and service provider plans and/or plans provided by the client and are noted accordingly on the plan.

Prior to any design, excavation or construction on site, the relevant authorities, and a qualified service locator should be engaged to ensure all services that may be affected by any future works have been located.

These plans have been prepared as verification plots only. Some txt RL's have been omitted for clarity. Please refer to the relevant 3D data files for any spatial interrogation requirements.

Any discrepancies should be verified in writing with Capricorn Survey Group (CQ) Pty Ltd.

This note is an integral part of this plan.

LEGEND

SERVICES LEGEND

- S — UG Sewerage Line
- SW — UG Stormwater Line
- Overland Flow Direction
- UG Electrical Line
- OH Electrical Line
- T — UG Communication Line
- W — UG Water Line
- W — AG Water Line
- G — UG Gas Line
- Top of Bank
- Toe of Bank
- C/L of Bitumen
- Edge of Bitumen
- Retaining Wall
- Line Marking
- Fence Line
- Roof / Guttering
- Eaves

CONTOUR LEGEND

- 0.25m Interval
- 1.00m Interval

GENERAL SYMBOL LEGEND

- Communication Cable Marker
- Communication Pit
- Electrical Cable Marker
- Electrical Turret
- Electrical Light Pole
- Electrical Light Bollard
- Electrical Pit
- Electrical Power Pole
- Electrical Power Pole + Light
- Electrical Power Pole + Transformer
- Electrical Stay Point
- Traffic Lights
- Gas Valve
- Gas Marker
- Gas Hot Water System
- Sewerage M/H
- Sewerage Vent
- Stormwater M/H
- Stormwater Pit
- Downpipe / Outlet
- Water Fire Hydrant
- Water Meter
- Water Valve
- Water Tap / Irrigation Tap
- Water Conduit Marker
- Post
- Guide Sign
- Bollard
- Flag Pole
- Australia Post Box
- Tree

DATUM

Vertical Datum :	AHD Vide PM134943 RL 21.389m
Horizontal Datum :	Cadastral Vide RP866169
Contour Interval :	0.25m, 1.0m Index
Co-ord System :	Arbitrary

WARNING

LOCATION AND CONNECTIVITY OF U/G SERVICES SHOWN HEREON HAVE BEEN DETERMINED BY DIRECT ACCESS OR COMPILED FROM LOCAL AUTHORITY SERVICE PLANS ONLY. FURTHER INVESTIGATION MAY BE REQUIRED TO DETERMINE LOCATIONS OF ALL INACCESSIBLE SERVICES.

REVISION

Issue	Date	Details	Authorised
A	20-08-2019	Initial Issue	RJKF

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

CREATED

capricornsurveygroupcq
SURVEYING & PLANNING SOLUTIONS
07 4927 5188 | reception@capricornsurveygroup.com.au | 122 Victoria Parade Rockhampton QLD 4700

SCALE 1:200 @ A1

DRAWING NUMBER 7463-01-DTL (1/1) ISSUE A

REVISIONS

No.	DESCRIPTION	DATE

PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA

this drawing: Surveyor's Plan

Rufus Design Group — STYLE · QUALITY · INNOVATION

MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC. Licenced under the QBSA Act Lic No. 1180286

Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER: DPW
DRAWN: DPW
CHKD :
PLAN SIZE: A1
WIND SPEED C1
PROJECT NUMBER 190609 - 01
SHEET 01 OF 01 SHEETS
REVISION

PRINT DATE : 9/01/2020 3:09:16 PM

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

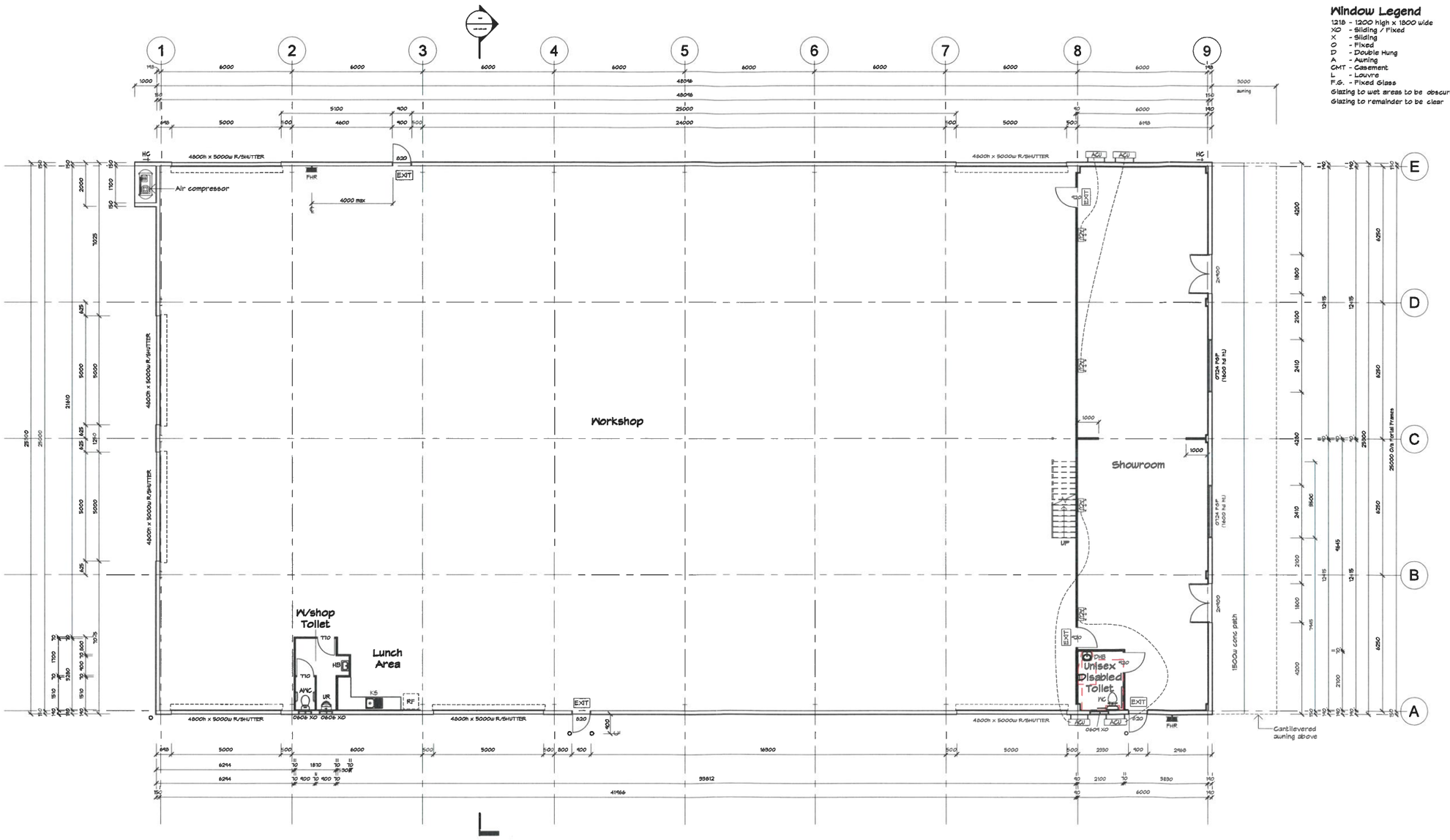
Development Permit No.: D/91-2019

Dated: 4 February 2020

MCU APPLICATION 09/01/20

Window Legend

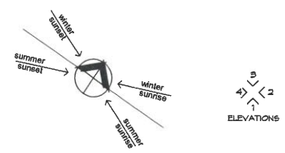
1218 - 1200 high x 1800 wide
XO - Sliding / Fixed
X - Sliding
O - Fixed
D - Double Hung
A - Awning
CMT - Casement
L - Louvre
F.G. - Fixed Glass
Glazing to wet areas to be obscure
Glazing to remainder to be clear



1 Floor Plan
1 : 100

Plan Legend	
ACU	Air Conditioner Unit
AWC	Ambulant Toilet complying with AS1428.1
DHB	Disabled Hand Basin complying with AS1428.1
DP	Down Pipe
FHR	36m Fire Hose Reel in accord. with AS 1221 and AS 2441 (for fire fighting purposes)
HB	Hand Basin
HC	Hose Cock
KS	Kitchen Sink
RF	Refrigerator
UR	Urinal
WC	Disabled Toilet complying with AS1428.1

Floor Areas	
Mezzanine	153,3 m²
Showroom	156,6 m²
Workshop	1067.8 m²
Grand total	1377.7 m²



REVISIONS

No.	DESCRIPTION	DATE

PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA

this drawing: Floor Plan

Rufus Design Group
STYLE · QUALITY · INNOVATION
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC. Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER: DJW
DRAWN: DJW
CHKD:
PLAN SIZE: A1
WIND SPEED C1
PROJECT NUMBER 190609 - 03
SHEET 03 OF 07 SHEETS
REVISION

PRINT DATE: 9/01/2020 3:09:19 PM

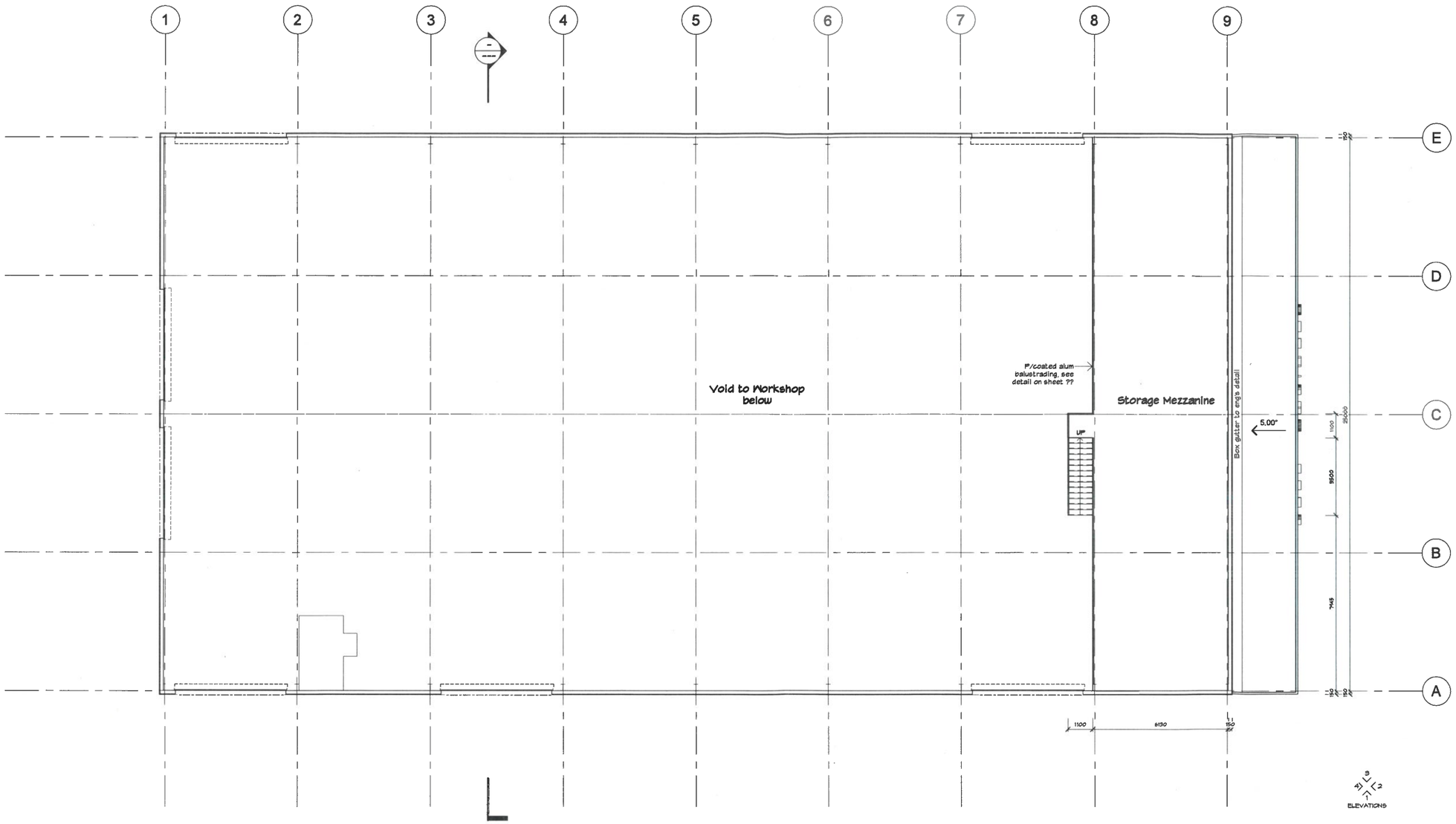
ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

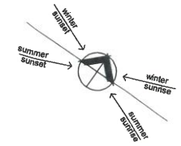
Dated: 4 February 2020



Plan Legend	
ACU	Air Conditioner Unit
AWC	Ambulant Toilet complying with AS1428.1
DHB	Disabled Hand Basin complying with AS1428.1
DP	Down Pipe
FHR	36m Fire Hose Reel in accord. with AS 1221 and AS 2441 (for fire fighting purposes)
HB	Hand Basin
HC	Hose Cock
KS	Kitchen Sink
RF	Refrigerator
UR	Urinal
WC	Disabled Toilet complying with AS1428.1

1 Mezzanine Floor Plan
1 : 100

Floor Areas	
Mezzanine	153.3 m²
Showroom	156.6 m²
Workshop	1067.8 m²
Grand total	1377.7 m²



MCU APPLICATION 09/01/20

REVISIONS

No.	DESCRIPTION	DATE

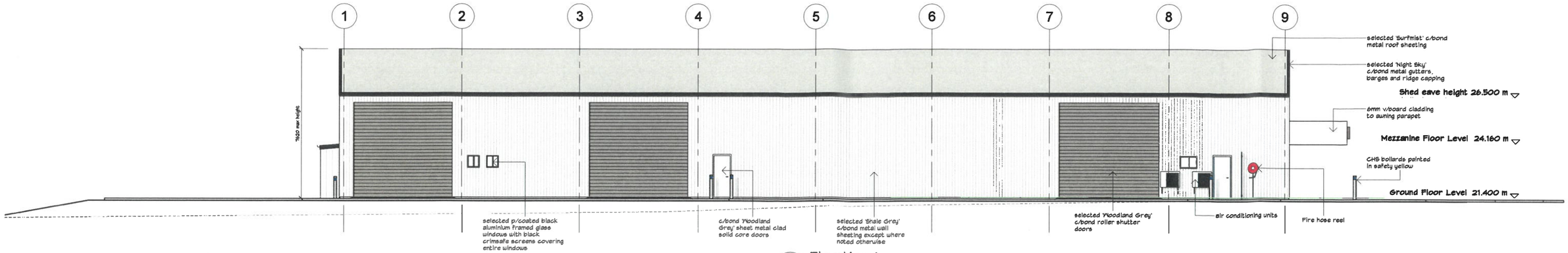
PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA

this drawing: Mezzanine Floor Plan

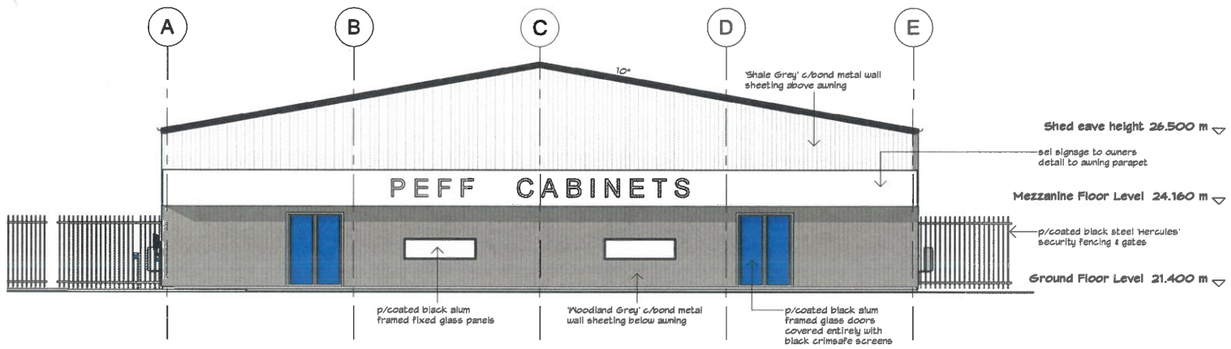
Rufus Design Group
STYLE · QUALITY · INNOVATION
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC.
Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER: DAW
DRAWN: DAW
CHK'D :
WIND SPEED C1
PLAN SIZE: A1
PROJECT NUMBER 190609 - 04
SHEET 04 OF 07 SHEETS
REVISION

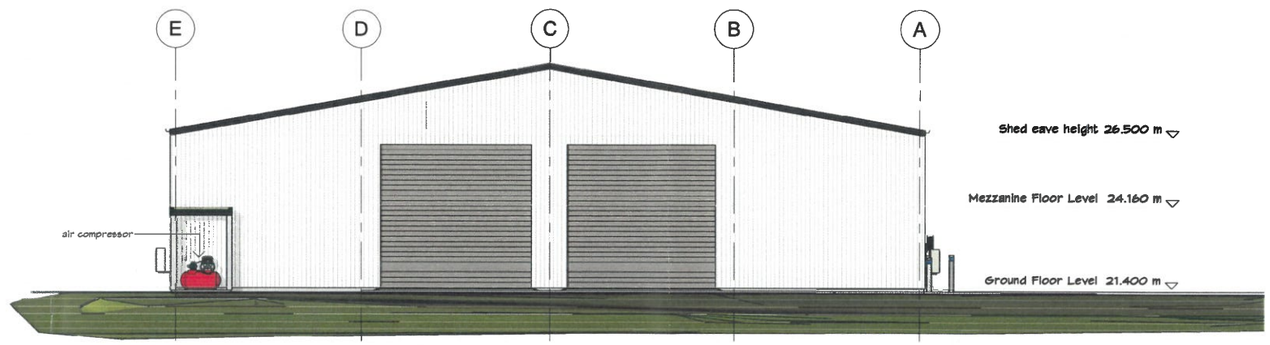
PRINT DATE : 9/01/2020 3:09:20 PM



1 Elevation 1
1 : 100

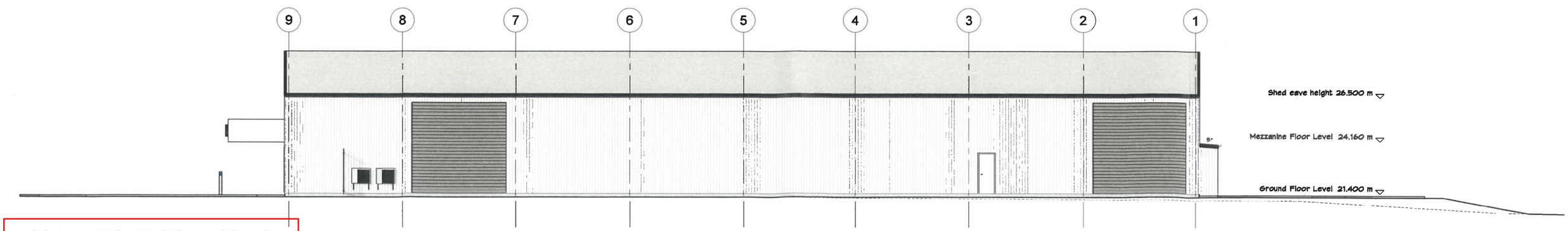


2 Elevation 2
1 : 100



4 Elevation 4
1 : 100

MCU
APPLICATION
09/01/20



3 Elevation 3
1 : 100

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

REVISIONS

No.	DESCRIPTION	DATE

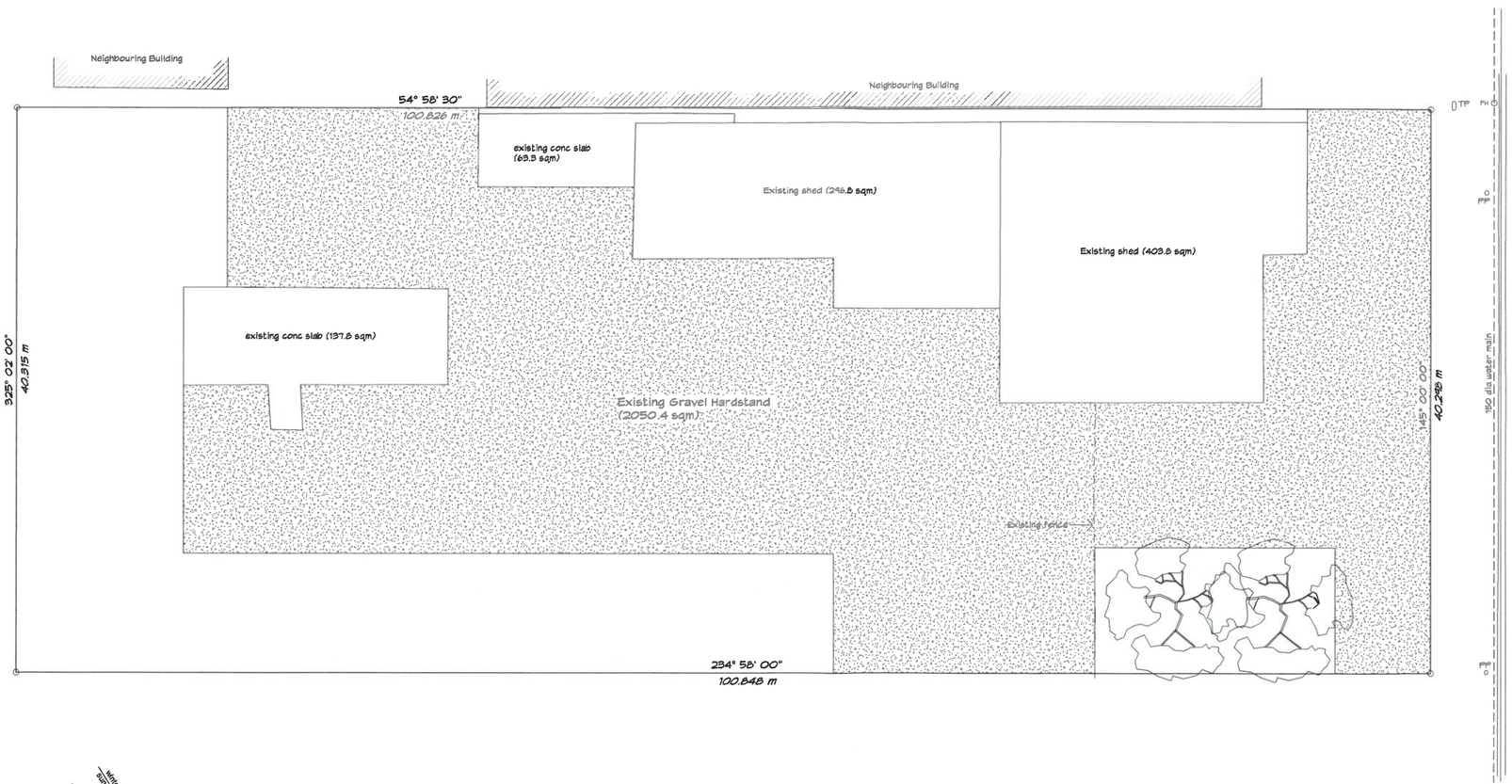
PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA

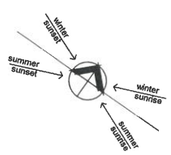
this drawing: Elevations

Rufus Design Group
STYLE • QUALITY • INNOVATION
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC.
Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER: DJW
DRAWN: DJW
CHKD :
WIND SPEED C1
PLAN SIZE: A1
PROJECT NUMBER 190609 - 05
SHEET 05 OF 07 SHEETS
REVISION

PRINT DATE : 9/01/2020 3:09:29 PM





R.P.D.

Lot Number :	101
Reg./Survey Plan Number :	RP866169
Parish :	Murchison
County :	Livingstone
Area :	4064 sqm

Sewer Line

1 Site Existing
1 : 200

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

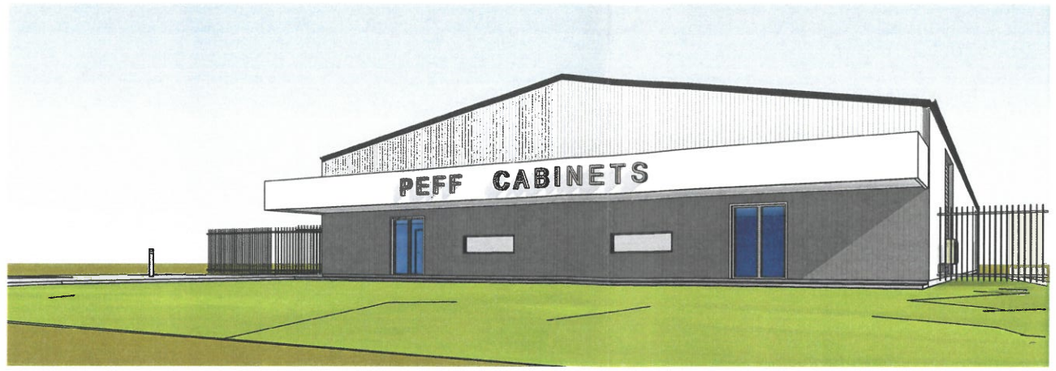
MCU APPLICATION 09/01/20

REVISIONS				
No.	DESCRIPTION	DATE	PROPOSED MEDIUM IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA	this drawing: Site Existing

Rufus Design Group
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC.
Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

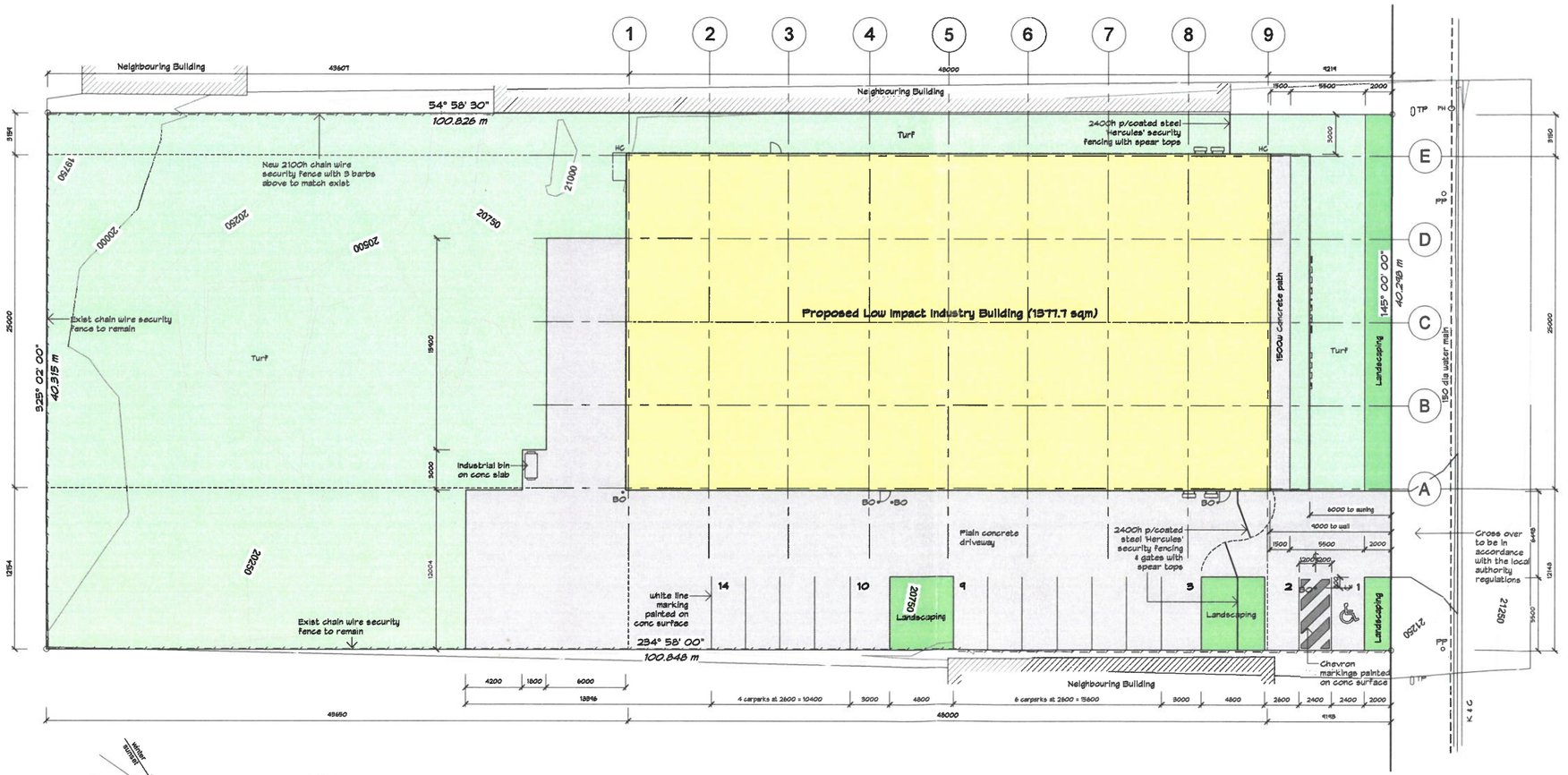
PROJECT MANAGER: DBW
DRAWN: DBW
CHKD :
WIND SPEED C1
PLAN SIZE: A1
PROJECT NUMBER 190609 - 07
SHEET 07 OF 07 SHEETS
REVISION

PRINT DATE : 9/01/2020 3:09:30 PM



2 3D View 1

PRELIM 02
DATE: 21/08/19
NOT FOR CONSTRUCTION



winter sunset
summer sunset
winter sunrise
summer sunrise

R.P.D.
Lot Number : 101
Reg/Survey Plan Number : RP866169
Parish : Murchison
County : Livingstone
Area : 4064 sqm

1 Site Plan
1 : 200

Sewer Line

Site Analysis

Existing Floor Area	= 788.5 sqm Demolished
Proposed Floor Area	= 1377.7 sqm
Total Building Footprint Area	= 1224.4 sqm
Total Site Coverage	= 2130.1 sqm, 52.4%
Total Landscaped Area Required	= 2m to frontage
Total Landscaped Area Provided	= 1933.9 sqm, 47.6%
Total Site Area	= 4064 sqm

Car Parking

Car parking spaces required	= 14
Total car spaces provided	= 14

Driveways

Existing concrete driveway area	= 61.6 sqm Removed
New concrete driveway area	= 905.7 sqm
Total driveway area	= 905.7 sqm

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

REVISIONS				
No.	DESCRIPTION	DATE	PROPOSED LOW IMPACT INDUSTRY FOR PEFF SUPER P/L AT 9 McLAUGHLIN STREET KAWANA	this drawing: Site Plan

Rufus Design Group
STYLE · QUALITY · ECONOMY
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC. Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER: DAW
DRAWN: DAW
CHKD:
PLAN SIZE: A1
WIND SPEED C1
PROJECT NUMBER 190609 - 02
SHEET 02OF 06 SHEETS
REVISION

PRINT DATE : 21/08/2019 2:17:05 PM

Landscaping

Species:

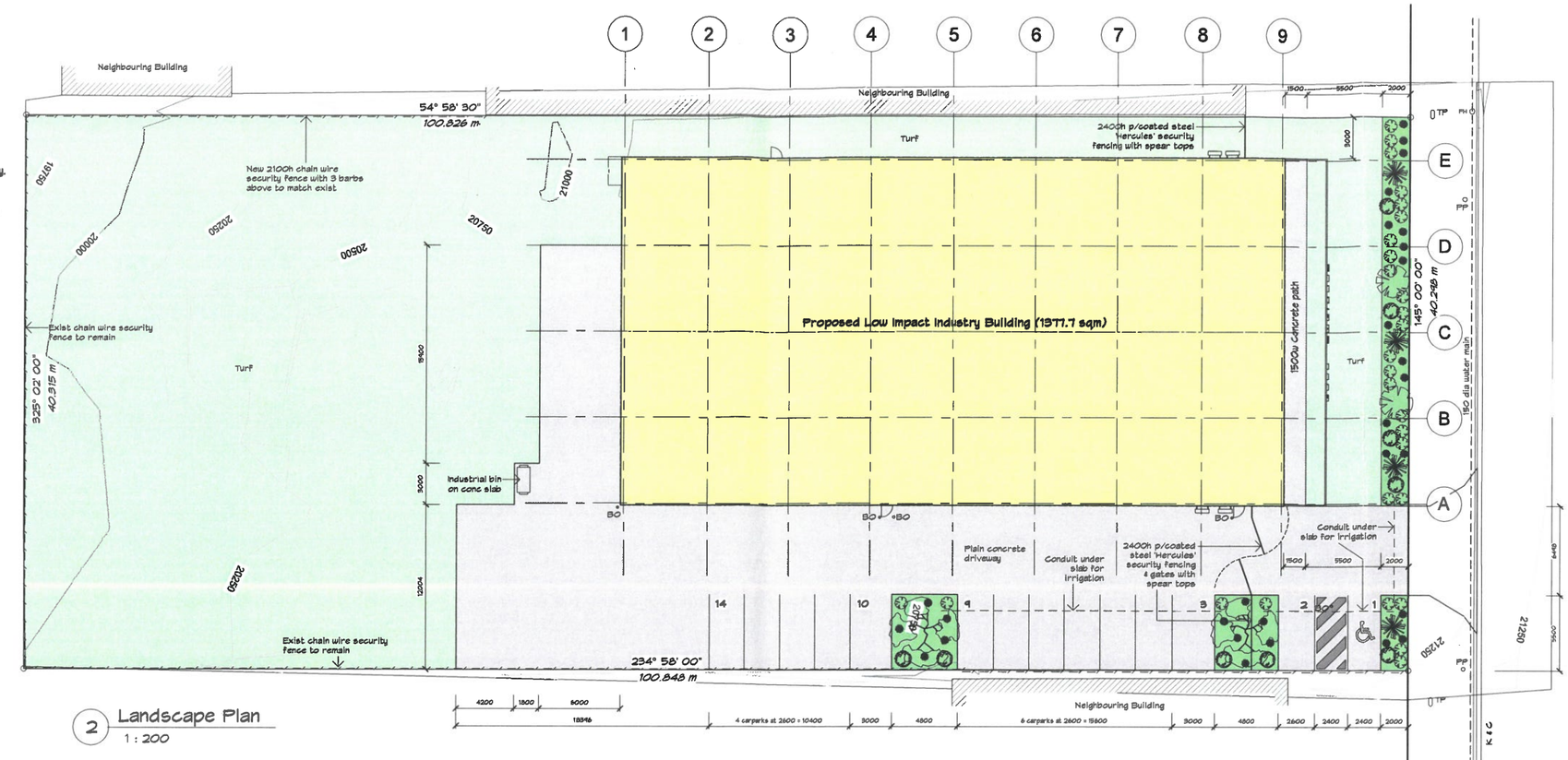
Planting to landscaped areas is to be selected from the following species. Other species may be used subject to availability.

Code	Botanical/Common Names	Native/Exotic	Mature Ht	Qty.
	Groundcovers and Creepers (200Φ min pot size)			
	Bracteantha Bracteata/Everlasting Daisy	Native	600mm	9
	Leptospermum Flavescens/Pacific Beauty	Native	300mm	28
	Clumping and Tussock plants (200Φ min pot size)			
	Lomandra Longifolia/Spinyhead Mat rush	Native	1000mm	4
	Shrubs (200Φ min pot size)			
	Melaleuca / Golden Gem	Native	400mm	27
	Syzygium / Northern Gem	Native	1200mm	2
	Trees (45 L min pot size)			
	Xanthostemon Chrysanthus/Golden Penda	Native	6000mm	2

Details:

Top Soil _____ 100mm organic loam
Mounding (Clean topsoil)_____ 100mm min
Existing Trees NIL.
Mulch beds with wood chips, wood chip depth _____ 100mm
Maintenance program
- Watering _____ Automatic Sprinkler system with timer
  Hedging/shrubs_____ drippers
  Lawn/trees___ underturf drip system
- Maintenance _____ Local Lawn Care Business employed permanently for fortnightly visits

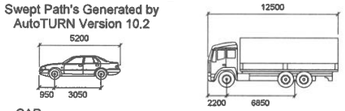
Planting
- Garden Beds_____ Cultivate exist soil to 300mm min depth. If clay is encountered break up & mix with gypsum 1kg/sqm. Import clean topsoil over. Fertilize with 'Agriform' plant pills as directed
- Lawn _____ Cultivate area to 150mm min depth. Spread 50mm min clean topsoil over. Fertilize prior to laying turf with N.P.K. 14:15:10 40g/sqm. Fertilize after turf laid with sulphate of ammonia 10g/sqm
- Shade/Street Trees. New trees to be double staddled, mulched & watered in. Use of water crystals is recommended. New trees to be watered with automatic sprinkler system



2 Landscape Plan
1 : 200

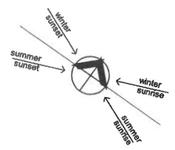
VEHICLE SWEPT PATH'S

Swept Path's Generated by AutoTURN Version 10.2



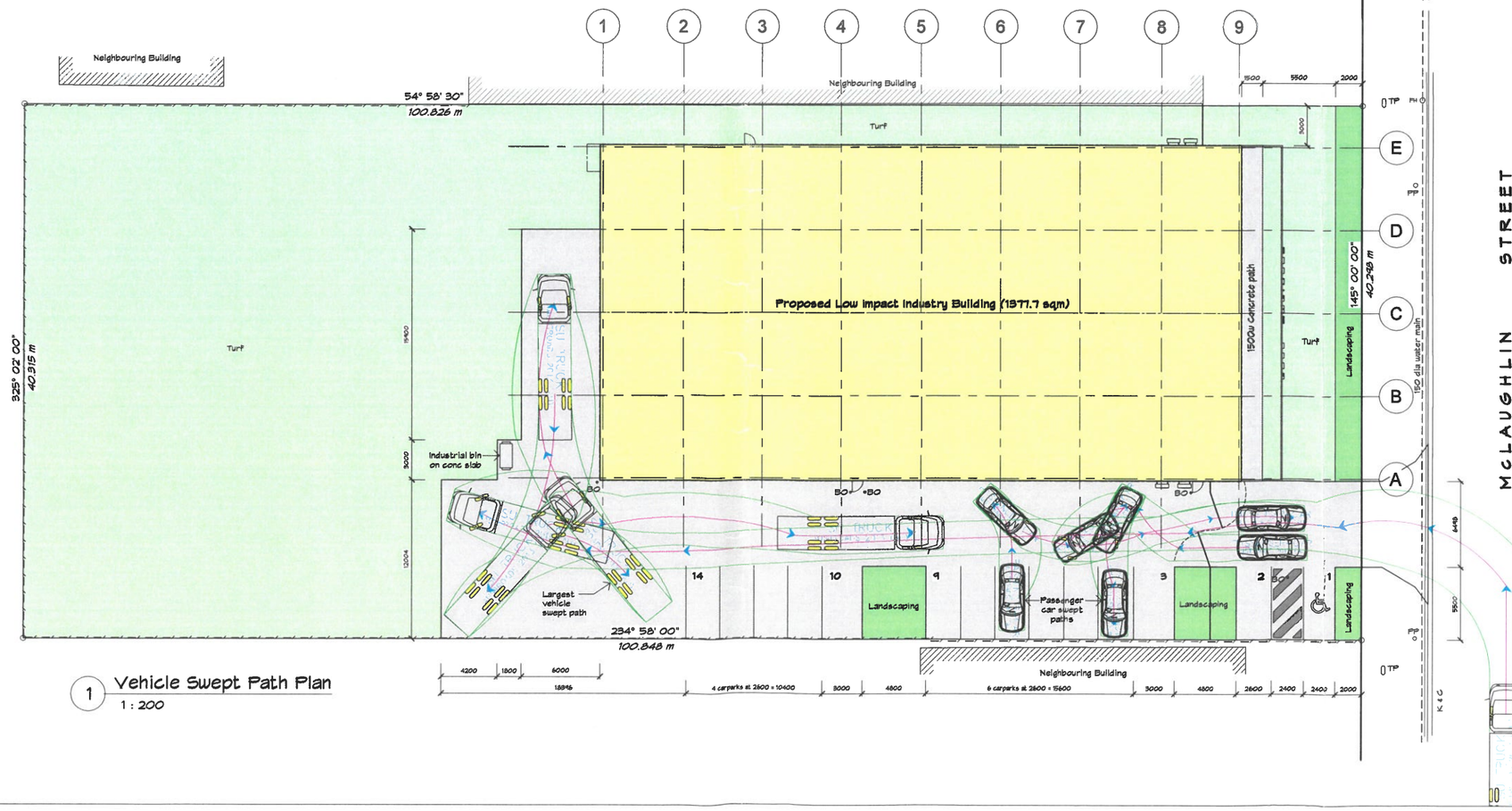
CAR	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.5

SU TRUCK	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 36.6



R.P.D.

Lot Number :	101
Reg./Survey Plan Number :	RP866164
Parish :	Murchison
County :	Livingstone
Area :	4064 sqm



1 Vehicle Swept Path Plan
1 : 200

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

REVISIONS			
	No.	DESCRIPTION	DATE

PRELIM 02
DATE: 21/08/19
NOT FOR CONSTRUCTION

PROPOSED LOW IMPACT INDUSTRY FOR PEFF SUPER
AT 9 McLAUGHLIN STREET
KAWANA

Rufus Design Group
STYLE · QUALITY · INNOVATION
MEMBER BUILDING DESIGNERS ASSOC. OF QLD INC.
Licenced under the QBSA Act Lic No. 1180286
Telephone 61 7 49288011
Facsimile 61 7 49266579
E-mail mailbox@rufusdesigngroup.com

this drawing
Landscape Plan & Vehicle Swept Path Plan

PROJECT MANAGER : DAW	WIND SPEED C1	PROJECT NUMBER 190609-06	
DRAWN : DAW	PLAN SIZE: A1	SHEET 06 OF 06 SHEETS	
CHKD :		REVISION	

PRINT DATE : 21/08/2019 2:17:16 PM

2019

DILEIGH

CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT

STORMWATER MANAGEMENT REPORT FOR MCU
PROPOSED LOW IMPACT INDUSTRY BUILDING
LOT 101 ON RP866169
9 MCLAUGHLIN STREET, KAWANA

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

Table of Contents

Document Status					
Rev No.	Author	Reviewer	Approved For Issue		
			Name	Signature	Date
01	A Doherty	G Brown	GLENN BROWN (RPEQ)		05.11.19

1. Introduction

This report was prepared for PEFF Super Pty Ltd in support of a proposed development to the subject site at 9 McLaughlin Street, Kawana. This report should be read in conjunction with the overall application relating to this project. The proponent is seeking approval to redevelop the existing industrial site with a low-impact industry building and concrete carpark.

The land subject to this application is described as Lot 5 on SP285453, which has an area of 3700m^2, with frontage to Pineapple Drive, Yeppoon.

2. Existing Stormwater Conditions

Lot 101 is currently developed and consists of three existing industry sheds and concrete slabs on compacted hardstand, with vegetation along the rear boundary. Water is discharged from site as overland flow both to the rear adjacent allotments and to the kerb and channel in McLaughlin Street.

Based on the compacted nature of the gravel hardstand site and the existing buildings/sheds, an overall time of concentration (Tc) of 5 minutes has been adopted in accordance with QUDM Figure 4.4, with a C_{10} value of 0.874 in accordance with QUDM Table 4.5.4 based on an equivalent fraction impervious value of 0.880.

Utilising a Tc of 5 minutes and the relevant rainfall intensities, the following discharges for a range of events were calculated using the C_{10} value of 0.874 where Qy=F*Cy*Iy*A for the existing industrial site.

PRE-DEVELOPED SITE TC= 5 min

Development Area 0.4064 ha

	F sq kms	C co eff	I mm/hr	A sq kms	Q m3/sec
Q1	0.278	0.699	115.0	0.00406	0.0908
Q2	0.278	0.743	128.0	0.00406	0.1074
Q5	0.278	0.830	170.0	0.00406	0.1595
Q10	0.278	0.874	200.0	0.00406	0.1975
Q20	0.278	0.918	229.0	0.00406	0.2374
Q50	0.278	1.000	268.0	0.00406	0.3028
Q100	0.278	1.000	300.0	0.00406	0.3389

Fi	0.880	
$^1I_{10}$	65.10	mm/hr
C_{10}	0.874	

From QUDM T4.5.3

3. Post Developed Site Flows and Management

3.1 Post Developed Flows – Stage 1

The proposed development of the site reduces the existing fraction impervious value indicated to a fraction impervious value of 0.53 as per the table below. Based on this value, a C_{10} value of 0.786 (From QUDM Table 4.5.3) was adopted.

Total Site Area	0.4064 ha
Proposed Building	0.1377 ha
Proposed Concrete	0.0923 ha
Total Impervious Area	**0.2126 ha**
Fraction Impervious (Total / Site Area)	**0.53**

Using standard inlet times (From QUDM Table 4.6.2) gives a Time of Concentration of 5 minutes.

Rainfall intensities were reviewed and adjusted in line with the post-development time of concentration.

Based on these revised figures, the following discharges from site were calculated:

POST-DEVELOPED SITE TC= 5 min

Development Area 0.4064 ha

	F sq kms	C co eff	I mm/hr	A sq kms	Q m3/sec
Q1	0.278	0.629	115.0	0.00406	0.0817
Q2	0.278	0.668	128.0	0.00406	0.0966
Q5	0.278	0.747	170.0	0.00406	0.1434
Q10	0.278	0.786	200.0	0.00406	0.1776
Q20	0.278	0.825	229.0	0.00406	0.2135
Q50	0.278	0.904	268.0	0.00406	0.2737
Q100	0.278	0.943	300.0	0.00406	0.3197

Fi	0.530	
$^1I_{10}$	65.10	mm/hr
C_{10}	0.786	

From QUDM T4.5.3

When compared with the pre-developed site discharge rate, we note a minor decrease in flow for all recurrence intervals. Refer table below:

COMPARING PRE-TREATMENT FLOWS			
EVENT ARI	**PRE-DEV (m3/sec)**	**POST -DEV (m3/sec)**	**CHANGE**
Q1	0.0908	0.0817	-10.07%
Q2	0.1074	0.0966	-10.07%
Q5	0.1595	0.1434	-10.07%
Q10	0.1975	0.1776	-10.07%
Q20	0.2374	0.2135	-10.07%
Q50	0.3028	0.2737	-9.61%
Q100	0.3389	0.3197	-5.68%

3.2 Post Developed Flows – Stage 2

Stage 2 of the development proposes to introduce a shed adjacent to the rear boundary. A shed and associated hardstand area of 1423m^2 can be tolerated on site without impacting on the quantity of stormwater produced by the site when compared to the pre-developed site scenario. Refer calculation below.

$$Pre - development\ f_i = 0.88\ (i.e.\ 0.3576\ ha\ impervious\ area)$$
$$Post - development\ Stage\ 1\ f_i = 0.53\ (i.e.\ 0.2153\ ha\ impervious\ area)$$
$$Stage\ 2\ allowable\ to\ not\ exceed\ pre - development\ flow = 0.3576 - 0.2153 = 0.1423\ ha$$

Once this area is exceeded, stormwater quality mitigation strategies will be required to reduce post-development flows to the pre-development levels. These strategies will be discussed in a separate document at the time of application for the Stage 2 works.

3.3 Discharge Flow Management

As the post development flows are lower than those for the existing developed site, no mitigation of flows is considered necessary at this time.

3.4 Stormwater Quality Management

Due to the size of the development (>2500m^2), State Planning Policy Healthy Water is triggered. A minimum 61m^2 – being 1.5% of the overall site area – bioretention basin must be provided to ensure water quality discharging from site meets the prescribed standard.

However, due to the site levels at existing points of discharge, a full-depth bio-retention basin is not feasible. As such, additional stormwater quality treatment must be applied as detailed in the following sections in order to ensure adequate water quality. Refer Appendix A for the location of catchments 1 to 4.

3.3.1 Catchment 1

Flows from Catchment 1 consist of roof-water and overland flows from a grassed area and paved area to discharge to a shallow bioretention basin, which in turn discharges to a wide grassed swale via a sloped headwall to the existing point of discharge at the rear of the site. Overflow from the bioretention basin will discharge directly to the grassed area between the basin and the rear boundary.

3.3.2 Catchment 2

Flows from Catchment 2 consist of roof-water and overland flows from the paved driveway and grass buffer to discharge to a grassed area, which directs flow to the existing point of discharge at the rear of the site.

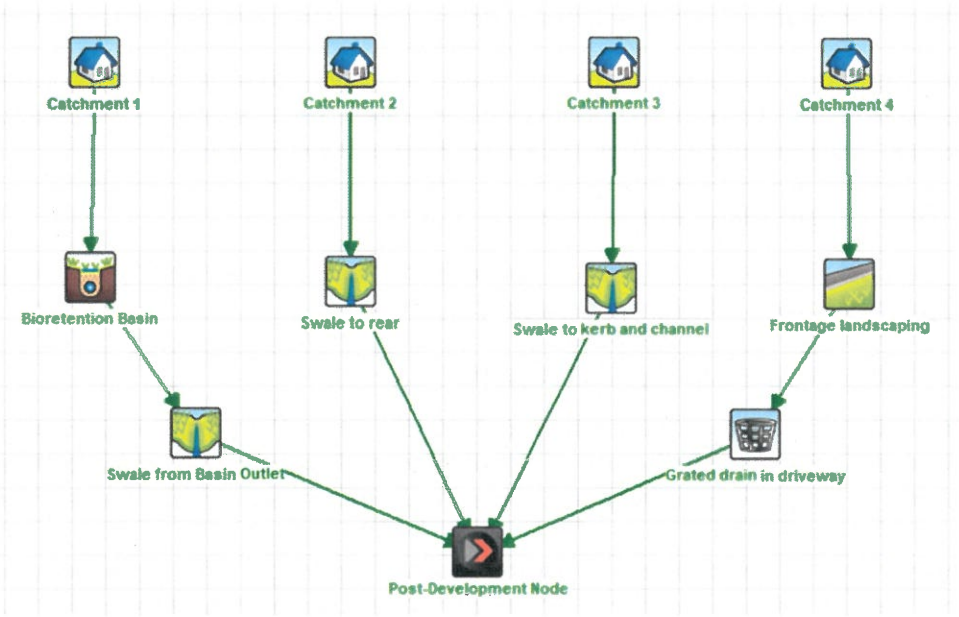
3.3.3 Catchment 3

Flows from Catchment 3 consist predominantly of roof-water which discharge to the kerb and channel in McLaughlin Street at the front of the site via a grassed swale along the north-western boundary to a field inlet, which outlets to the back of kerb.

3.3.4 Catchment 4

Flows from Catchment 4 consist of roof-water and overland flows from the paved driveway and landscaped areas which discharge to the kerb and channel in McLaughlin Street at the front of the site. The proposed landscaped areas within the catchment provide a marginal improvement in water quality. In order to manage gross pollutants, it is proposed to install a grated drain across the driveway, which discharges flows to the back of kerb and channel.

The MUSIC model of the described stormwater treatments is shown on the following diagram.



The site treatment train results in a reduction in residual pollutants which exceeds the requirements prescribed by State Planning Policy Healthy Water as per the table below.

TREATMENT TRAIN EFFECTIVENESS				
	Sources	Residual	Reduction	SPP Target
Total Suspended Solids (kg/yr)	408	55.2	87%	80%
Total Phosphorus (kg/yr)	1.23	0.344	72%	70%
Total Nitrogen (kg/yr)	8.52	3.22	62%	45%
Gross Pollutants (kg/yr)	76.7	1.68	98%	90%

4. Conclusion

The proposed development for Stage 1 has a lower impervious area than the existing developed site and will only require quality management of the stormwater discharge. It is proposed to manage this by discharging flows to a bioretention basin, grassed areas and a grated drain as detailed in sections 3.3.1 to 3.3.4 and drawings in Appendix A.

Ashleigh Doherty

For and On Behalf of

Dileigh Consulting Engineers Pty Ltd

Appendix A – Stormwater Management Strategy Drawings

STORMWATER MANAGEMENT PLAN FOR MCU

9 MCLAUGHLIN STREET, KAWANA

PEFF SUPER PTY LTD

LOT 101 ON RP866169

D19.190

LOCALITY PLAN
(Not To Scale)

EXISTING LEVELS AND SERVICES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND LEVELS OF ALL EXISTING SERVICES WITH THE RELEVANT AUTHORITIES INCLUDING "DIAL BEFORE YOU DIG" PRIOR TO COMMENCING CONSTRUCTION.
2. ANY COSTS ASSOCIATED WITH REPAIRING DAMAGE TO EXISTING SERVICES SHALL BE PAID FOR BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING LEVELS ARE AS PER THIS DESIGN WHERE CONNECTIONS TO EXISTING INFRASTRUCTURE ARE REQUIRED. ANY DIFFERENCES TO BE NOTIFIED TO THE ENGINEER PRIOR TO ORDERING MATERIALS OR COMMENCING ANY WORKS.
4. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CLASHES BETWEEN ANY CROSSING SERVICE OR PIPELINE. ANY CLASHES TO BE NOTIFIED TO THE ENGINEER PRIOR TO WORKS COMMENCING.
5. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHALL VERIFY LOCATION AND DETAILS OF ALL EXISTING SERVICE CONNECTIONS TO NEW ALLOTMENTS PREVIOUSLY INSTALLED

CIVIL WORKS DRAWING INDEX

SH.	DWG. No.	DRAWING TITLE
-	D19.190-00	TITLE SHEET
1	D19.190-01	EXISTING SITE PLAN
2	D19.190-02	PROPOSED STORMWATER MANAGEMENT AND CATCHMENT PLAN
3	D19.190-03	SUB-SOIL AND BIO-RETENTION DETAILS

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

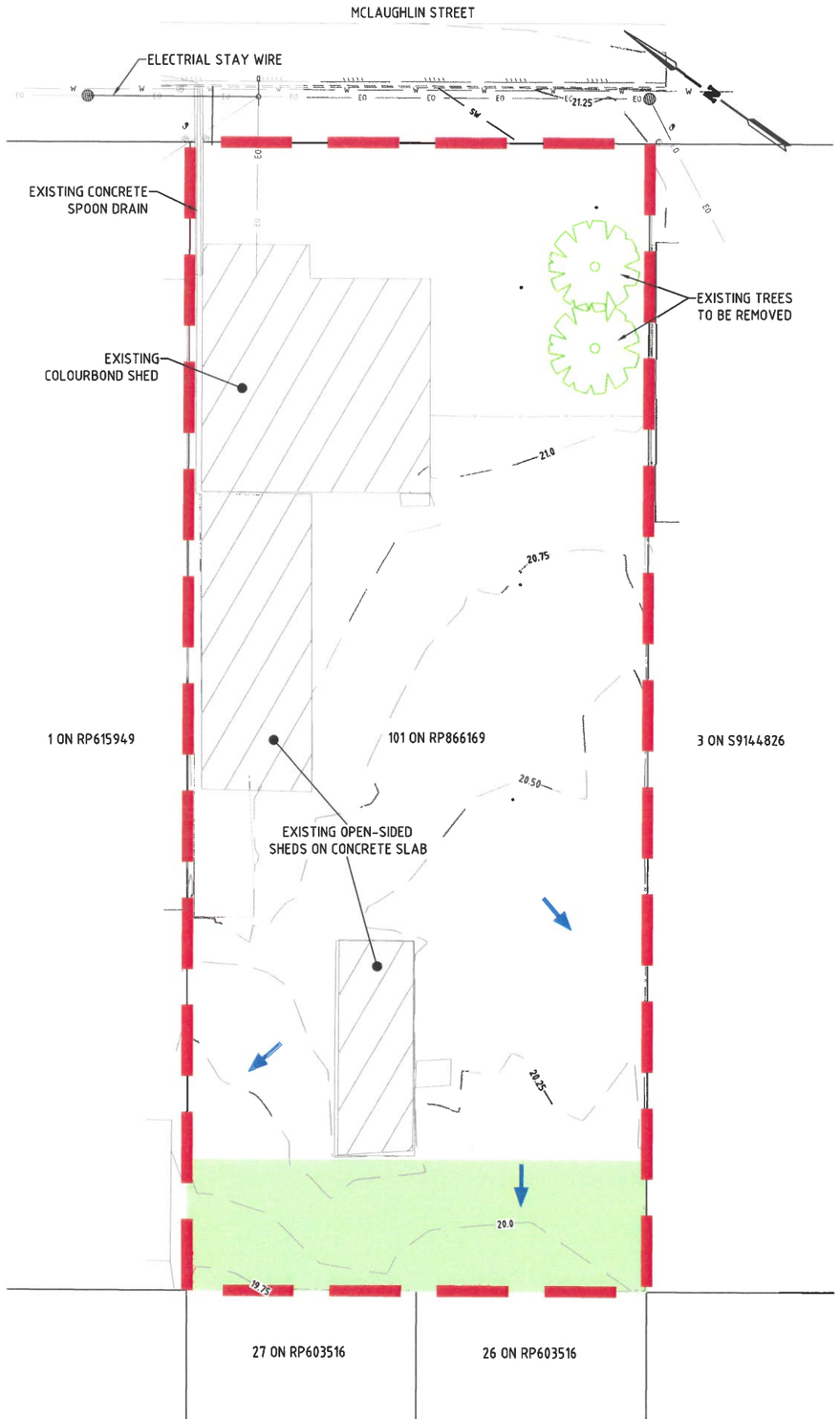
Development Permit No.: D/91-2019

Dated: 4 February 2020

DILEIGH
CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT

ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703

Phone: 07 49112553
Fax: 07 49383660
Email: admin@dileigh.com.au



LEGEND

- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING WATER MAIN (INDICATIVE)
- EXISTING WATER METER
- EXISTING TELECOMMUNICATIONS PIT
- EXISTING POWER POLE
- EXISTING FENCE
- 63.00 EXISTING SURFACE CONTOUR
- CATCHMENT AREA
- EXISTING ROOF AREA
- EXISTING CONCRETE SLAB
- EXISTING VEGETATION
- PRE-DEVELOPED OVERLAND FLOW PATH

STORMWATER MANAGEMENT NOTES

1. ALL CALCULATIONS CARRIED OUT IN ACCORDANCE WITH THE QUEENSLAND URBAN DRAINAGE MANUAL
2. TIME OF CONCENTRATION FOR UNTREATED FLOW TAKEN AS 5 MINUTES FROM QUDM FIGURE 4.4 USING SHALLOW OVERLAND FLOW ON A PAVED SURFACE TO EXISTING POINT OF DISCHARGE

Q= **F*C*I*A**

PRE DEVELOPED TC= 5 min

Development Area **0.4064** ha

	F sq kms	C co eff	I mm/hr	A sq kms	Q m3/sec
Q1	0.278	0.699	115.0	0.00406	0.0908
Q2	0.278	0.743	128.0	0.00406	0.1074
Q5	0.278	0.830	170.0	0.00406	0.1595
Q10	0.278	0.874	200.0	0.00406	0.1975
Q20	0.278	0.918	229.0	0.00406	0.2374
Q50	0.278	1.000	268.0	0.00406	0.3028
Q100	0.278	1.000	300.0	0.00406	0.3389

Fi	0.880	
$^1I_{10}$	65.10	mm/hr
C_{10}	0.874	

From QUDM T4.5.3

PRE-DEVELOPED SITE HYDROLOGY

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

DRAFT ISSUE
NOT FOR CONSTRUCTION

SCALE
0 2.5 5 7.5 10 1:500
DESCRIPTION

REV	REVISION	DATE
A	FOR APPROVAL	31/10/2019

DILEIGH
CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT
ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703
Phone: 07 49112553
Fax: 07 49383660
Email: admin@dileigh.com.au

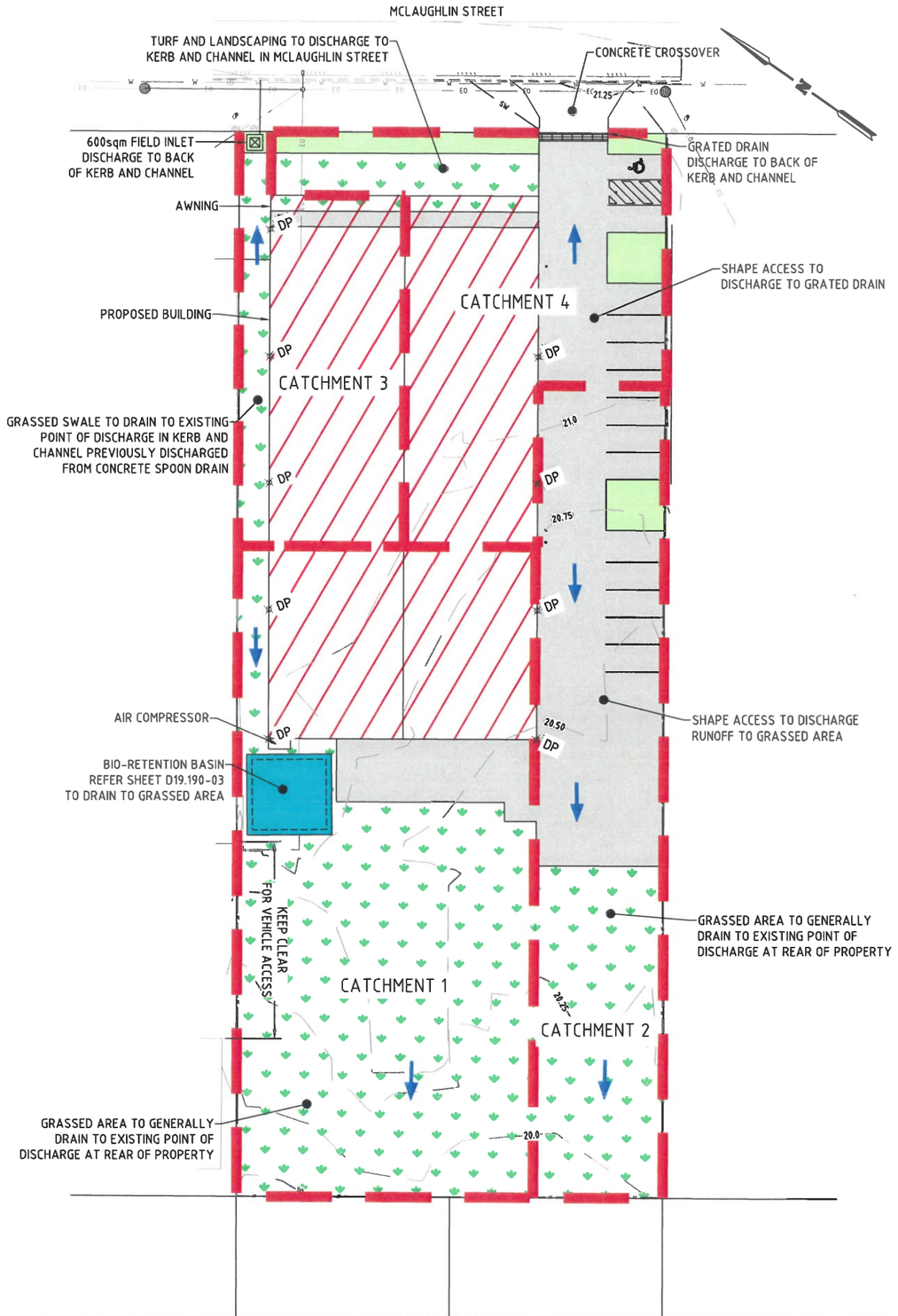
Drawn by	AMD
Checked by	ACD
Approved	G.J.BROWN
RPEQ	7682
Sign	
Date	

PEFF SUPER PTY LTD
STORMWATER MANAGEMENT PLAN FOR MCU
9 MCLAUGHLIN STREET, KAWANA
EXISTING SITE PLAN

D19.190-01

SHEET 01 OF 03

A



LEGEND

- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING WATER MAIN (INDICATIVE)
- EXISTING WATER METER
- EXISTING TELECOMMUNICATIONS PIT
- EXISTING POWER POLE
- EXISTING FENCE
- 63.00 EXISTING SURFACE CONTOUR
- SW PROPOSED STORMWATER PIPE
- CATCHMENT AREA
- PROPOSED ROOF AREA
- PROPOSED CONCRETE SLAB
- PROPOSED LANDSCAPING
- PROPOSED TURF
- PROPOSED BIO-RETENTION BASIN (61m²)
- POST-DEVELOPED FLOW PATH
- DP DOWNPIPE

STORMWATER MANAGEMENT NOTES

1. ALL CALCULATIONS CARRIED OUT IN ACCORDANCE WITH THE QUEENSLAND URBAN DRAINAGE MANUAL
2. TIME OF CONCENTRATION FOR UNTREATED FLOW TAKEN AS 5 MINUTES FROM QUDM TABLE 4.6.3 USING STANDARD INLET TIMES

COMPARING PRE-TREATMENT FLOWS			
EVENT ARI	PRE-DEV	POST -DEV	CHANGE
Q1	0.0908	0.0817	-10.07%
Q2	0.1074	0.0966	-10.07%
Q5	0.1595	0.1434	-10.07%
Q10	0.1975	0.1776	-10.07%
Q20	0.2374	0.2135	-10.07%
Q50	0.3028	0.2737	-9.61%
Q100	0.3389	0.3197	-5.68%

Q= F*C*I*A

POST DEVELOPED (ENTIRE SITE) TC= 5 min

Development Area **0.4064** ha

	F sq kms	C co eff	I mm/hr	A sq kms	Q m3/sec
Q1	0.278	0.629	115.0	0.00406	0.0817
Q2	0.278	0.668	128.0	0.00406	0.0966
Q5	0.278	0.747	170.0	0.00406	0.1434
Q10	0.278	0.786	200.0	0.00406	0.1776
Q20	0.278	0.825	229.0	0.00406	0.2135
Q50	0.278	0.904	268.0	0.00406	0.2737
Q100	0.278	0.943	300.0	0.00406	0.3197

Fi	0.530	
$^1I_{10}$	65.10	mm/hr
C_{10}	0.786	

From QUDM T4.5.3

POST-DEVELOPED SITE HYDROLOGY

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/91-2019

Dated: 4 February 2020

DRAFT ISSUE
NOT FOR CONSTRUCTION

SCALE
0 2.5 5 7.5 10 DESCRIPTION 1:500

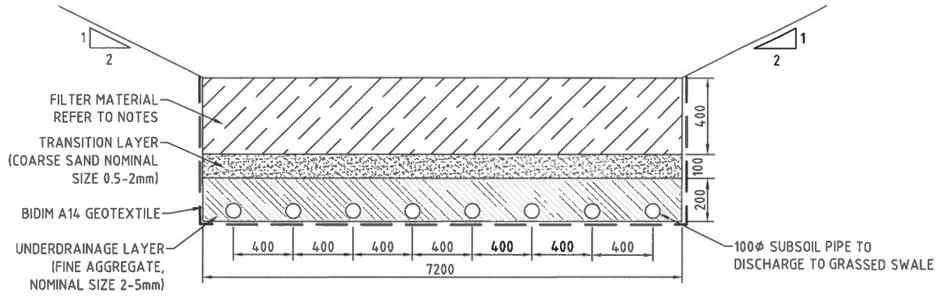
REV	REVISION	DATE
A	FOR APPROVAL	31/10/2019

DILEIGH
CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT
ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703
Phone: 07 49112553
Fax: 07 49383660
Email: admin@dileigh.com.au

Drawn by	AMD
Checked by	ACD
Approved	G.J.BROWN
RPEQ	7682
Sign	
Date	

PEFF SUPER PTY LTD
STORMWATER MANAGEMENT PLAN FOR MCU
9 MCLAUGHLIN STREET, KAWANA
PROPOSED STORMWATER MANAGEMENT AND CATCHMENT PLAN

D19.190-02
SHEET 02 OF 03
A

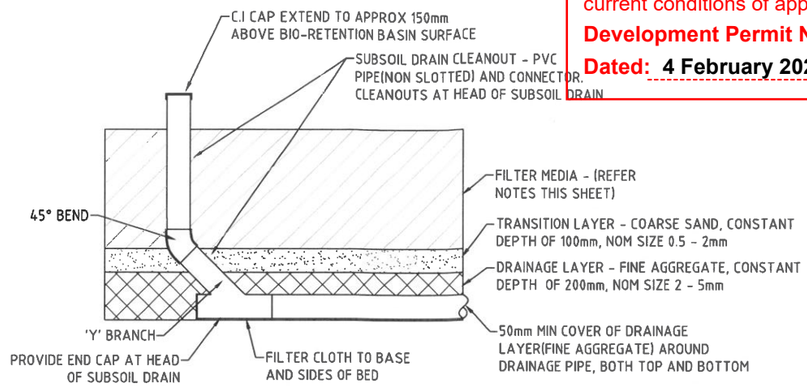


BIO-RETENTION FILTER DETAIL

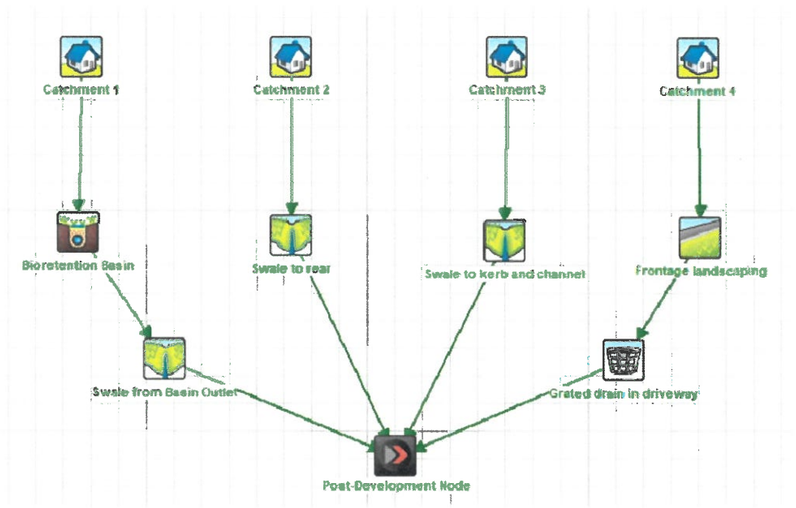
(N.T.S.)

NOTES:

1. SUBSOIL PIPE TO BE POLYETHYLENE CORRUGATED SLOTTED PIPE TO AS2439.1 (PIPE NOT TO BE WRAPPED IN FILTER SOCK)



SUBSOIL CLEANOUT DETAIL
SCALE 1:25



STORMWATER TREATMENT PLAN

Table 1. Recipe for ameliorating the top 100 mm of sand filter media

Constituent	Quantity (kg/100 m^2 filter area)
Granulated poultry manure fines	50
Superphosphate	2
Magnesium sulphate	3
Potassium sulphate	2
Trace Element Mix	1
Fertilizer NPK (16.4.14)	4
Lime	20

NOTES:

1. BIO RETENTION SWALE BED TO BE VEGETATED WITH AT LEAST 2 SPECIES OF GROUNDCOVER FROM APPROVED BIORETENTION SPECIES LIST AT A RATE OF 6 PLANTS/m^2 AND DRESSED WITH 50mm OF MULCH.
2. FILTER MEDIA TO BE EITHER:-
   a) SOIL BASED FILTER MEDIA TO BE LOAMY SAND WITH THE FOLLOWING PROPERTIES:
      - MINIMUM HYDRAULIC CONDUCTIVITY OF 100mm/hr MEASURED IN ACCORDANCE WITH ASTM F1815-06.
      - CLAY AND SILT FRACTION (<0.05mm) LESS THAN 3%
      - TOTAL NITROGEN < 1000 mg/kg
      - ORTHOPHOSPHATE < 80mg/kg
      - ORGANIC MATTER CONTENT AT LEAST 3% (W/W)
      - PH BETWEEN 5.5 AND 7.5 (PH1:5 IN WATER)
      - ELECTRICAL CONDUCTIVITY E.C. < 1.2 dS/M

   b) ENGINEERED FILTER MEDIA TO BE WASHED WELL GRADED SAND WITH A MINIMUM HYDRAULIC CONDUCTIVITY OF 100mm/hr WITH THE TOP 100mm LAYER TREATED WITH ORGANIC MATTER, FERTILIZER AND TRACE ELEMENTS TO SUPPORT PLANT ESTABLISHMENT IN ACCORDANCE WITH TABLE 1 THIS SHEET:
3. BIO-RETENTION AREA SIZED @ 1.5% OF DEVELOPMENT AREA IN ACCORDANCE WITH STATE PLANNING POLICY (JULY 2017) APPENDIX 2 TABLE.B

Species Name	Common Name	Type
Carex appressa	Tall sedge	Groundcover - sedge
Ficinia nodosa	Knobby club-sedge	Groundcover - sedge
Gahnia sieberiana	Red-fruit saw-sedge	Groundcover – sedge
Imperata cylindrica	Blady grass	**Groundcover – grass**
Lepidosperma laterale	Variable sword-sedge	**Groundcover – sedge**
Lomandra hystrix	Green mat-rush	Groundcover – herb
Lomandra longifolia	Spiny-headed mat-rush	Groundcover – herb
Pennisetum alopecuroides	Swamp foxtail grass	Groundcover – grass
Poa labillardieri	Common tussock grass	Groundcover – grass
Themeda australis	Kangaroo grass	Groundcover – grass
Callistemon sieberi	River bottlebrush	Shrub
Leptospermum liversidgei	Olive tea-tree	Shrub
Banksia robur	Swamp banksia	Small tree
Melaleuca linariifolia	Flax-leaved paperbark	Small tree
Melaleuca viridiflora	Broad leaved tea-tree	Small tree
Casuarina glauca	Swamp oak	Tree
Casuarina cunninghamiana	River sheoak	Tree
Lophostemon suaveolens	Swamp mahogany	Tree
Melaleuca bracteata	Black tea-tree	Tree
Melaleuca quinquenervia	Broad-leaved paper bark	Tree

× ADDITIONAL SPECIES MAY INCLUDE MORE COMMERCIALLY AVAILABLE VARIETIES OF THE ABOVE SPECIES

APPROVED BIO-RETENTION SPECIES LIST
FROM "BIORETENTION TECHNICAL GUIDELINES" - WATER BY DESIGN, OCTOBER 2012

TREATMENT TRAIN EFFECTIVENESS				
	Sources	Residual	Reduction	SPP Target
Total Suspended Solids (kg/yr)	408	55.2	87%	80%
Total Phosphorus (kg/yr)	1.23	0.344	72%	70%
Total Nitrogen (kg/yr)	8.52	3.22	62%	45%
Gross Pollutants (kg/yr)	76.7	1.68	98%	90%

DRAFT ISSUE
NOT FOR CONSTRUCTION

SCALE
0 2.5 5 7.5 10
DESCRIPTION
1:500

REV	REVISION	DATE
A	FOR APPROVAL	31/10/2019

DILEIGH
CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT
ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703
Phone: 07 49112553
Fax: 07 49383660
Email: admin@dileigh.com.au

Drawn by	AMD
Checked by	ACD
Approved	G.J.BROWN
RPEQ	7682
Sign	
Date	

PEFF SUPER PTY LTD
STORMWATER MANAGEMENT PLAN FOR MCU
9 MCLAUGHLIN STREET, KAWANA
SUB-SOIL AND BIO-RETENTION DETAILS

D19.190-03

SHEET 03 OF 03

A