GIDEON TOWN PLANNING

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/50-2022

Dated: 1 February 2023

N

Legend

- Subject Site
- Proposed NRSTP Extension
- Treated Effluent Release Pipeline
- Access Chambers
- Easement

Client:

ROCKHAMPTON REGIONAL COUNCIL

Contains:

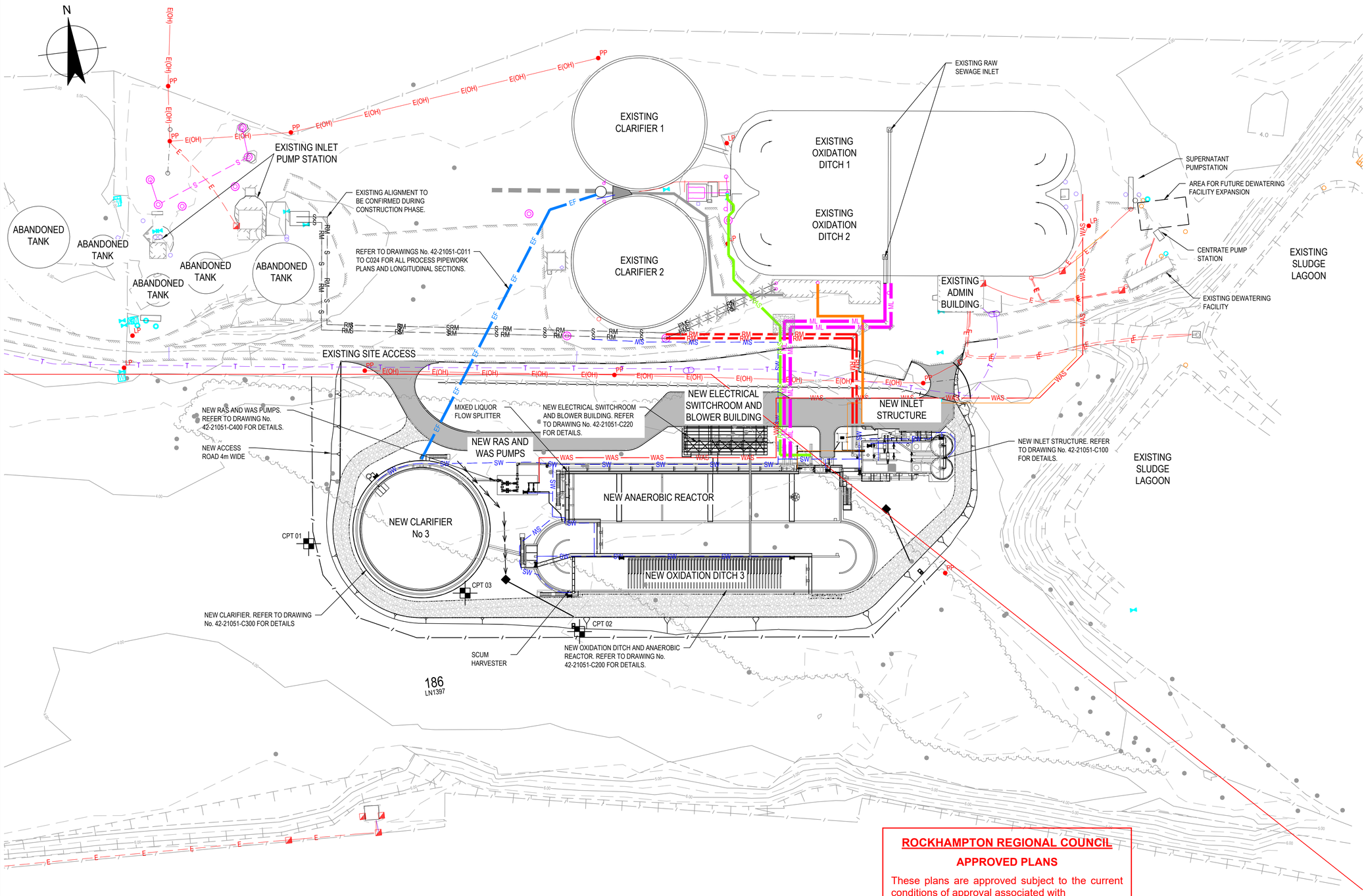
LOCALITY PLAN

Project Ref No:

GTP_ 2106

Date:

APRIL 2022



LEGEND:

- NEW DN600 EFFLUENT
- NEW DN500 SEWER RISING MAIN
- NEW DN600 RAS
- NEW DN750 MIXED LIQUOR
- NEW DN600 BYPASS PIPELINE
- NEW DN100 WAS
- NEW SERVICE WATER
- NEW PE100 OD125 SDR26 SUPERNATANT PIPELINE
- EXISTING RISING MAIN
- EXISTING TELECOM
- EXISTING ELECTRICAL OVERHEAD
- EXISTING ELECTRICAL
- NEW HOSE REEL
- CPT TESTING LOCATION

LEGEND - SURVEY

- PROPERTY BOUNDARY
- EASEMENT BOUNDARY
- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING ELECTRICAL OVERHEAD
- EXISTING UNDERGROUND ELECTRICAL
- EXISTING POWER POLE STAY WIRE
- EXISTING BUILDING OUTLINE
- EXISTING ROAD CENTRELINE
- EXISTING TRACK
- EXISTING FENCE
- EXISTING CHANGE OF GRADE
- EXISTING EDGE OF BITUMEN
- EXISTING RETAINING WALL
- BANK TOE
- TOP OF BANK
- VEGETATION
- EXISTING SEWER
- EXISTING UNKNOWN SERVICE
- EXITING STORMWATER
- EXISTING TELECOMMUNICATIONS
- EXISTING POTABLE WATER
- EXISTING WATER METER
- EXISTING IRRIGATION
- EXISTING WATER VALVE
- EXISTING SEWER MAINTENANCE HOLE
- EXISTING LIGHTPOLE
- EXISTING POWER POLE
- EXISTING ELECTRICAL BOX
- EXISTING ELECTRICAL PIT
- EXISTING TELECOMMUNICATIONS PIT

SURVEY NOTES

1. CONTRACTOR TO LOCATE ALL LEVELS FROM ESTABLISHED PERMANENT SURVEY MARKS.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE RELEVANT AUTHORITIES TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS.
3. SURVEY SUPPLIED BY VISION SURVEYS QLD.
4. DATE: 26.08.19
5. COORDINATE DATUM MGA94
6. LEVEL DATUM: AHD VIDE ORIGIN OF LEVELS: PSM206894 RL 5.794
7. CONTOUR INTIVAL: 0.5m

NOTE:

1. DRAWINGS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.

ROCKHAMPTON REGIONAL COUNCIL

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SITE GENERAL ARRANGEMENT

SCALE 1:500

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
0	ISSUED FOR TENDER		EDJ	GG*	TMB*	05.06.20

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

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Drawn	E.JOHNSON	Designer	M.NISSEN
Drafting Check	S.WOOD*	Design Check	T.BOLAND*
Approved (Project Director)	T.BOLAND*		
Date	05.06.2020		
Scale	AS SHOWN	This Drawing must not be used for Construction unless signed as Approved	

Client: ROCKHAMPTON REGIONAL COUNCIL
Project: NORTH ROCKHAMPTON SEWAGE TREATMENT PLANT
Title: SITE GENERAL ARRANGEMENT

Original Size: A1
Drawing No: 42-21051-G003
Rev: 0

Plot Date: 5 June 2020 - 2:51 PM Plotted by: Evan Johnson Cad File No: G:\42\21051\CADD\Drawings\42-21051-G003.dwg

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5 August 2021

ROCKHAMPTON REGIONAL COUNCIL

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Dated: 1 February 2023

Ashok Verma
c/o Rockhampton Regional Council
PO Box 1680
Rockhampton, QLD, 4700.

Dear Ashok,

North Rockhampton Sewage Treatment Plant Upgrade - Flood Impact Assessment

1.0 Background

AECOM was engaged by Rockhampton Regional Council (Council) to undertake a Flood Impact Assessment (FIA) of the proposed North Rockhampton Sewage Treatment Plan (NRSTP) upgrade project. The aim of the FIA was to undertake flood modelling to assess hydraulic impacts during a Fitzroy River flood event, as a resulting from the NRSTP works.

2.0 Methodology

The existing Council FR18 Fitzroy River TUFLOW Hydraulic Model, developed for the North Rockhampton Flood Management Area (NRFMA, 2021) project, was adopted for the assessment. It is noted that the NRFMA Stage 1 and South Rockhampton Flood Levee (SRFL) works were included within the Baseline Model setup to represent a worst-case Baseline scenario at the NRSTP site.

To assess hydraulic impacts, the Baseline hydraulic TUFLOW model was updated to represent the NRSTP upgrade design as follows:

- The NRSTP upgrade earthworks extent was raised to an elevation of 4.35 mAHD to represent bulk filling of the site.
- The clarifier, oxidization ditch, anaerobic reactor, electrical switch board and inlet area were all glass walled above the 1% AEP flood level, representing full blockage of the major event flows.
- Manning's roughness across the extent of works was set at 0.02, representing an unsealed road.

Figure 1 summarises the topographic modifications adopted within the Developed TUFLOW scenario.

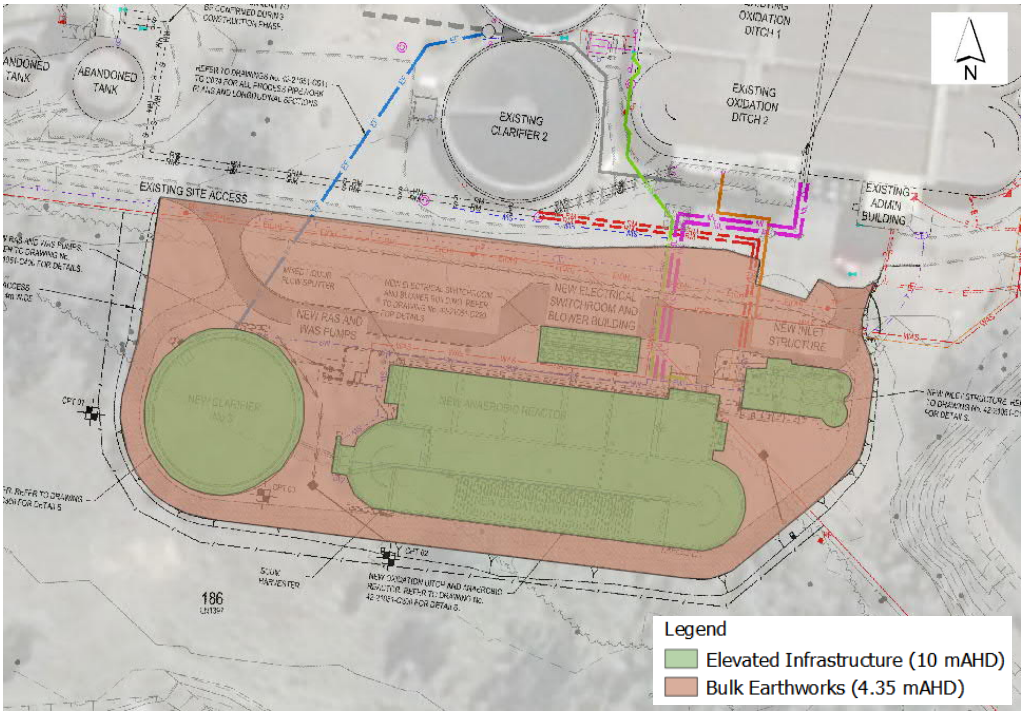

Figure 1 NRSTP – Developed Scenario - TUFLOW Topographic Modifications

3.0 Flood Impact Assessment

The TUFLOW model was simulated for the 5% Annual Exceedance Probability (AEP, minor) and 1% AEP (major) flood events.

- Difference in Peak Water Surface Elevation (PWSE) mapping has been provided for the 5% AEP and 1% AEP flood events within Figure 2 and Figure 3.
- Difference in Peak Depth Averaged Velocity (PDAV) mapping has been provided for the 5% AEP and 1% AEP flood events within Figure 4 and Figure 5.

The Difference in PWSE mapping demonstrates the proposed NRSTP upgrade works result in negligible increases in PWSE (<10mm) in both the 5% AEP and 1% AEP events.

The Difference in PDAV mapping demonstrates the proposed NRSTP upgrade works result in only localised increases to depth averaged velocities in both the 5% AEP and 1% AEP events. These increases do not raise the PDAV to a point where increased scour potential is predicted.

Figure 2 5% AEP Minor Flood Event - Difference in PWSE

Figure 3 1% AEP Major Flood Event - Difference in PWSE

Figure 4 5% AEP Minor Flood Event - Difference in PDAV

Figure 5 1% AEP Major Flood Event - Difference in PDAV

4.0 Summary

AECOM was engaged by Council to undertake an FIA of the proposed NRSTP upgrade project. The existing Council FR18 Fitzroy River TUFLOW Hydraulic Model was updated to represent the proposed NRSTP upgrade design.

The TUFLOW model was simulated for the 5% AEP (minor) and 1% AEP (major) Fitzroy River flood events. The Difference in PWSE and PDAV mapping demonstrates the proposed NRSTP upgrade works result in negligible hydraulic impacts (changes in PWSE and PDAV) in both the 5% AEP and 1% AEP events.

Yours faithfully

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