



EXISTING SERVICES ASSESSMENT REPORT

EXTERNAL TRUNK GRAVITY SEWER MAIN XGMA21

60 Staplyton Jacobs Well Road, Yatala, QLD 4207
Lot 501 on SP295994

Prepared for Frasers Property (Australia) Pty Ltd.
May 2020

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Revision / Checking History

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Approval for Issue

Rev. No.	Name	Position	Signature	Date
1.	Mitchell Gassman	Civil Project Engineer R.P.E.Q 16939		08 May 2020

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1.0 INTRODUCTION

Frasers Property's Vantage Yatala is a future industrial development, located at 60 Stapylton Jacobs Well Road, Stapylton. In order for the sewage to be discharged from the development, a gravity sewage pipe measuring approximately 770m is required to be constructed from the development and will run under Stapylton Jacobs Well Road to the Northern side of road and continue on the northern side Stapylton Jacobs Well Road. The proposed main will tie in to the existing 600mm diameter sewer gravity main located at the western side of the old Pacific motorway.

During the sewage gravity main construction, depth of up to seven meters will be required with the methodology comprising of both open cut and tunnel boring techniques. The tunnel boring option is required due to the necessity of the main to go underneath the Pacific Motorway and each interchange on the western and eastern sides of the motorway.

As part of the design investigation process, detailed potholing was undertaken using vacuum excavation and recording of existing services was undertaken by land surveyors.

In order to assess the current ground conditions, Douglas Partners undertook 10 boreholes. A map of these locations along are shown for information purposes within Appendix A.

1.1 Objectives

The objective of the report is to demonstrate the result of the location of the existing services and compare as to whether these services effect the alignment and level of the proposed gravity main and the proposed tunnelling.

The report also identifies the methodology of construction along with the depths of tunnel shafts to ensure the gravity sewer trench and shaft width and depth will not affect existing services.

1.2 Scope

The document will detail each location of service investigation and compare it with the design snapshot, describing the risk of the sewer gravity main construction interfering with the existing service.

The service identification will commence from the down stream end of the sewer gravity main and report a new section for each service identified.

1.3 Methodology

The pipe size between shafts S1 and S3 is DN560. This will require an enveloper pipe of 797mm ID GRP to be micro tunnelled with the DN560 pipe to be installed internally.

The longest length between shafts is between S3 and S4 at 209m. Our correspondence with tunnelling experts has confirmed that there is an extreme likelihood that the disk cutters over this distance will require repair during the operation. Therefore, the tunnelling expert has requested for a 1200mm id enveloper in order to obtain access to the disk cutters.

The pipe size between shafts S4 and S5 is DN560. This will require an enveloper pipe of to 797mm ID GRP be micro tunnelled with the DN560 pipe to be installed internally.

Open Cut installation will be then undertaken between S5 and S8. Micro tunnelling will then be adopted to return from the north side to the development side of Staplyton-Jacobs Well Road.

The entry shafts for the micro tunnel machine are expected to be approximately 8 meters long by 5 meters wide with the exit shaft measuring approximately 5 meters long by 3 meters wide.

2.0 SERVICE INVESTIGATION FINDINGS

2.1 Services – Chainage 11.353m to Chainage 27.045m

An existing 500mm sewer main was discovered at 2.23m above the GRP enveloper pipe. The shaft construction is foreseen to be undertaken between chainage 13m and 20m with micro tunnelling to occur in both directions towards S1 and S3. The design and assessment confirm that the shaft construction is outside of the existing service extent and the clearance from the drill to micro tunnel is over 2m.

The existing sewer main located at chainage 25.057m will be connected to the new manhole S2. It is noted that there is just 160mm cover between the underside of the existing pipe and the top of the enveloper pipe. It is recommended the area beside the pipe to be open cut and vacuum excavated with protection measures put to its underside prior to tunnelling commencing.

The underground communication conduit located at chainage 27.049m has no bearing on the construction of the sewer underbore. This communications conduit is located over 3.2m from the top of the proposed enveloper pipe.

2.2 Existing Stormwater – Chainage 84.32m

An existing 450mm stormwater pipe was discovered at 2.785m above the GRP enveloper pipe, located at chainage 84.32m. The retrieval pit for the micro tunnel is foreseen to be undertaken at the S3 reserve side between chainage 71m and 78m.

Neither the stormwater pipe nor the retrieval pit construction is located with the extent or level of the existing stormwater pipe.

2.3 Existing Stormwater – Chainage 330m

An existing 450mm stormwater pipe was discovered at 2.55m above the GRP enveloper pipe, located at chainage 330m. No retrieval pit is the vicinity. The existing stormwater pipe is not affected by the tunnelling operation.

Neither the proposed sewer pipe nor the retrieval pit construction is located within the extent or level of the existing stormwater pipe.

2.4 Existing Communications and existing Watermain – Chainage 370m and 371m

An existing communications conduit is present at 0.927m above the GRP enveloper pipe, located at chainage 370m. No retrieval or exit pit is in the vicinity. The existing communication conduit at this location is not affected by the tunnelling operation.

An existing 150mm watermain was discovered at 3.547m above the GRP enveloper pipe, located at chainage 371m. No retrieval or exit pit is the vicinity. The existing watermain at this location is not affected by the tunnelling operation.

Neither the retrieval pit or the proposed sewer pipe is located with the extent or level of the existing watermain or communications conduit.

2.6 Existing Sewer Rising Main – Chainage 431m

An existing sewer rising main is present at approximately 0.36m above the GRP enveloper, located at chainage 431m.

The exit/entry pit's location would be in the vicinity of the rising main. It is recommended the exit pit is constructed between chainage 423m and 428m. The remaining pipe is to be undertaken via open cut using mechanical and vacuum excavation. The new pipe can then be laid and connected into new manhole S1/5.

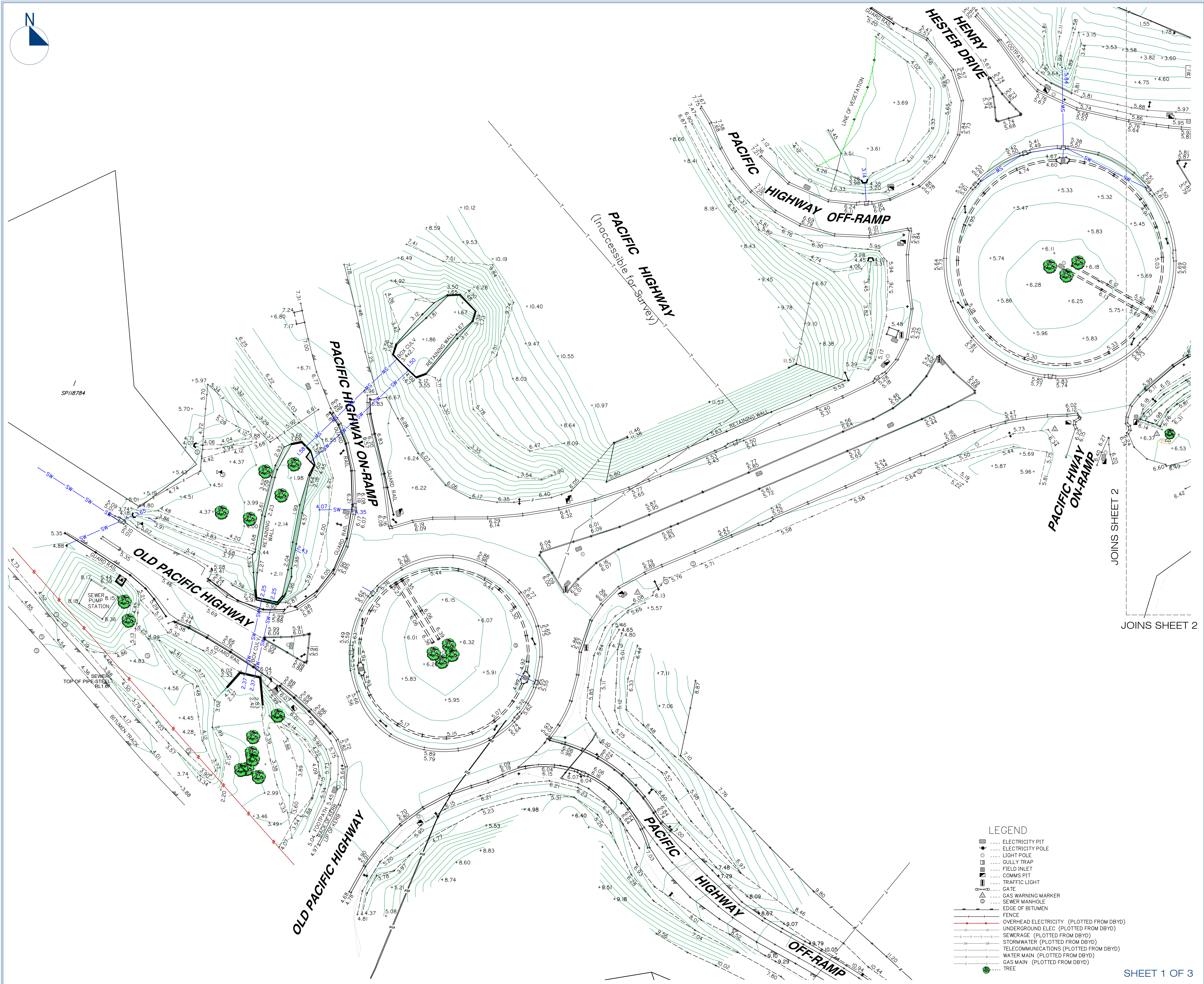
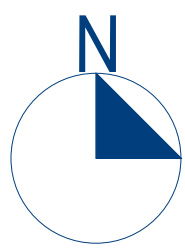
2.7 Existing Service – Chainage 768 and Chainage 772m

An existing watermain is present at approximately 1.022m above the GRP enveloper pipe, located at chainage 768m.

Existing communications and existing gas are located at chainage 772.496m and 772.78m. These are approximately 3.8m and 4.2m above the top of the enveloper pipe.

It is recommended that the exit pit after S10 is constructed within the development site and therefore avoiding the alignment of existing water, communications and gas services.

APPENDIX A – CONTOUR AND DETAIL PLAN INCLUSIVE OF EXISTING SERVICES



- LEGEND
- ELECTRICITY PIT
 - ELECTRICITY POLE
 - LIGHT POLE
 - GULLY TRAP
 - FIELD INLET
 - COMMS PIT
 - TRAFFIC LIGHT
 - GATE
 - GAS WARNING MARKER
 - SEWER MANHOLE
 - EDGE OF BITUMEN
 - FENCE
 - OVERHEAD ELECTRICITY (PLOTTED FROM DBYD)
 - UNDERGROUND ELEC (PLOTTED FROM DBYD)
 - SEWERAGE (PLOTTED FROM DBYD)
 - STORMWATER (PLOTTED FROM DBYD)
 - TELECOMMUNICATIONS (PLOTTED FROM DBYD)
 - WATER MAIN (PLOTTED FROM DBYD)
 - GAS MAIN (PLOTTED FROM DBYD)
 - TREE

SHEET 1 OF 3



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Client:

FRASERS PROPERTY
AUSTRALIA

Project:

VANTAGE
YATALA

Site Address:

STAPYLTON JACOBS
WELL ROAD, YATALA

THIS DRAWING IS INTENDED TO BE
PRINTED IN COLOUR

RPD:

Lot:

Plan:

Local Authority:

GOLD COAST CITY
COUNCIL

Level Datum:

Meridian:

Contour Interval:

PSM:

RL:

AHD

MGA

0.5m

133471

22.169m

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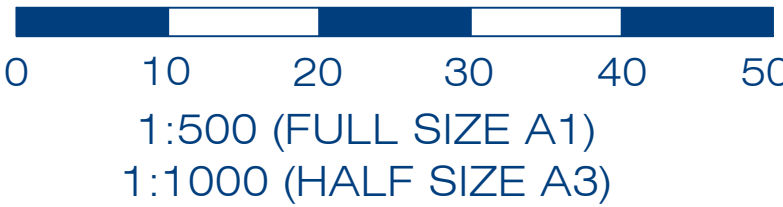
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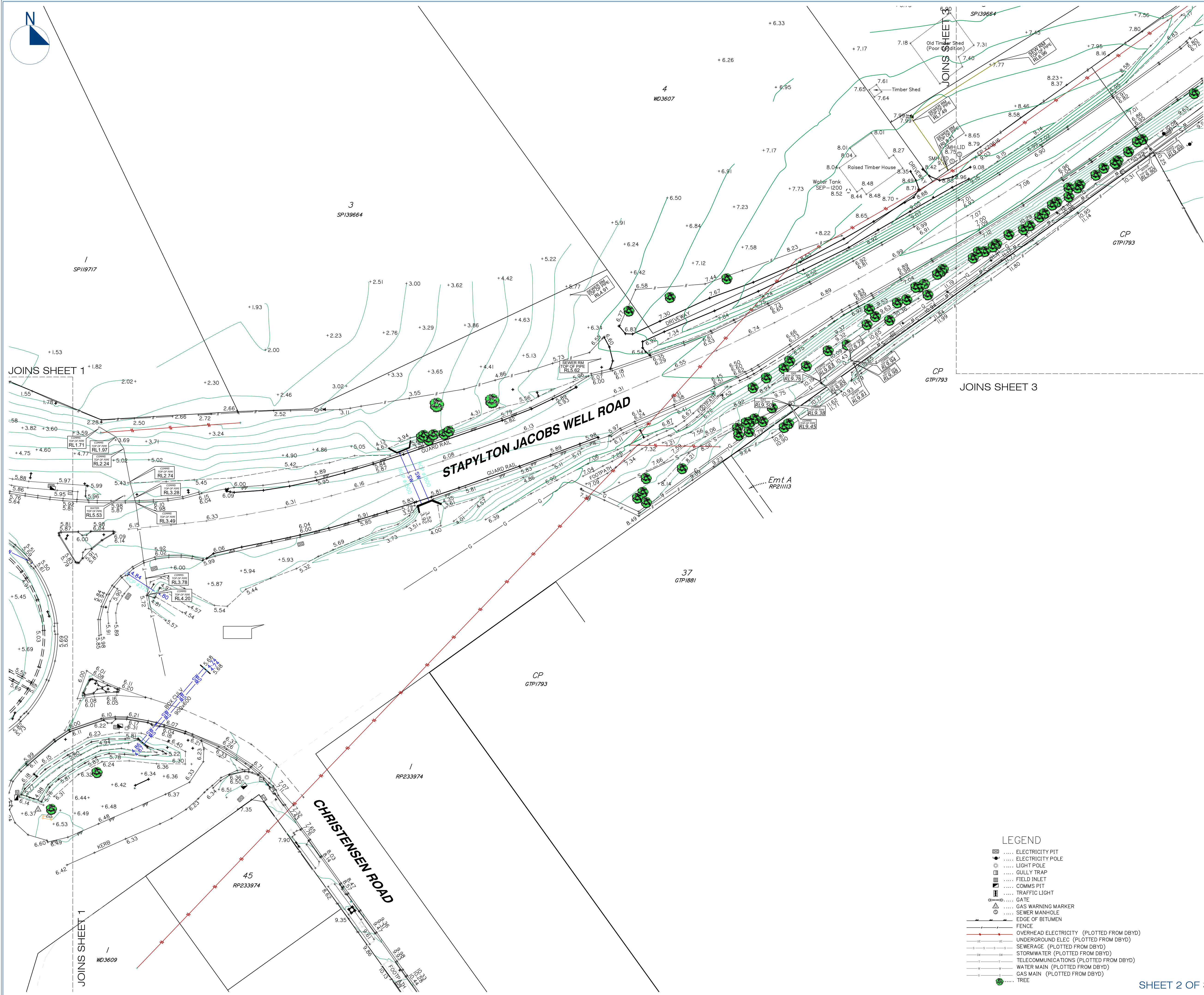
CONTOUR AND DETAIL PLAN
OVER STAPYLTON JACOBS
WELL ROAD AND HIGHWAY
INTERCHANGE ROUNDABOUTS

A	08/05/2020	ADDITIONAL POT HEDGING DATA	SJH	TH
Issue	Date	Description	SJH	TH
			DRN	CHK

SCALE IN METRES



Scale at A1:	1:500
Surveyed:	T. Herbert
Date:	06-09-19
Drafted:	S. Holt
Date:	08-05-20
Drawing No:	5941 S CD 01 A
Rev. No:	



FRASERS PROPERTY
AUSTRALIA

VANTAGE
YATALA

STAPYLTON JACOBS
WELL ROAD, YATALA

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Lot:
Plan:
Local Authority: GOLD COAST CITY COUNCIL

Level Datum: AHD
Meridian: MGA
Contour Interval: 0.5m
PSM: 133471
RL: 22.169m

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CONTOUR AND DETAIL PLAN
OVER STAPYLTON JACOBS
WELL ROAD AND HIGHWAY
INTERCHANGE ROUNDABOUTS

A	08/05/2020	ADDITIONAL POT HOLING DATA			SJH TH
-	11/09/2019	ORIGINAL ISSUE			SJH TH
Issue	Date	Description			DRN CHK

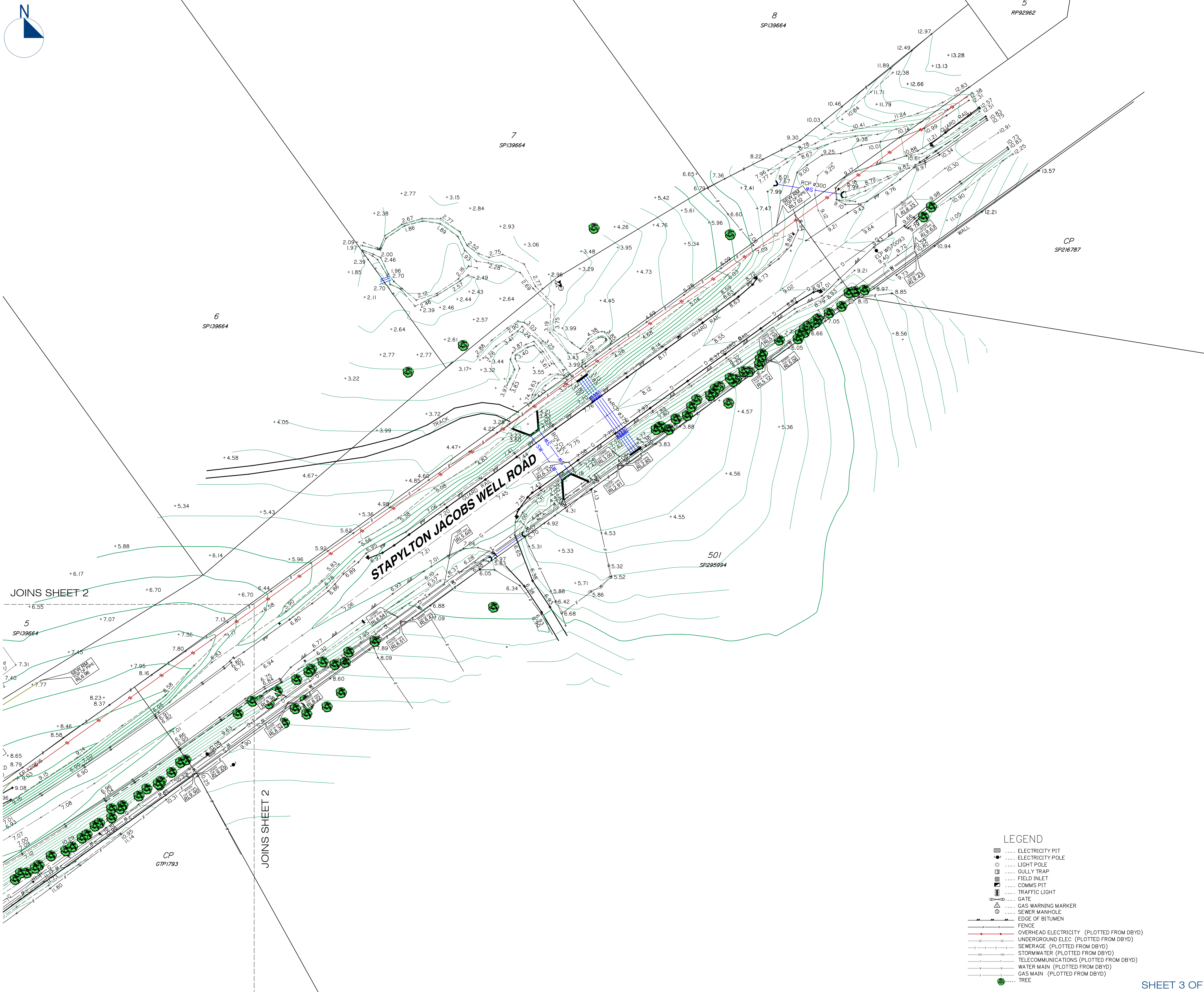
0 10 20 30 40 50

1:500 (FULL SIZE A1)

1:1000 (HALF SIZE A3)

Scale at A1:	1:500
Surveyed:	T. Herbert
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5941 S CD 01 A	



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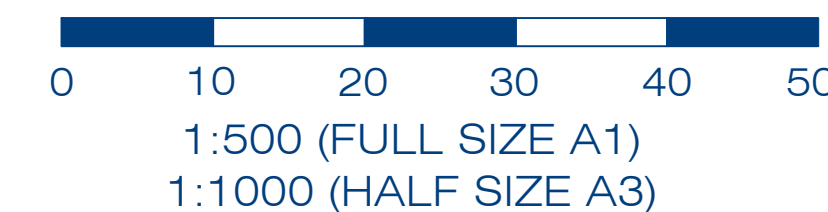
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CONTOUR AND DETAIL PLAN OVER STAPYLTON JACOBS WELL ROAD AND HIGHWAY INTERCHANGE ROUNDABOUTS

A	08/05/2020	ADDITIONAL POT HOLING DATA			SJH TH
-	11/09/2019	ORIGINAL ISSUE			SJH TH
Issue	Date	Description			DRN CHK

SCALE IN METRES



Scale at A1:	1:500
Surveyed:	T. Herbert
Date:	06-09-19
Drafted:	S. Holt
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Drawing No:	Rev. No:
5941 S CD 01 A	

APPENDIX B – SEWER LONGTIDUNAL SECTIONS

MAINTENANCE HOLE / SHAFT NAME

S1/1

S2/1

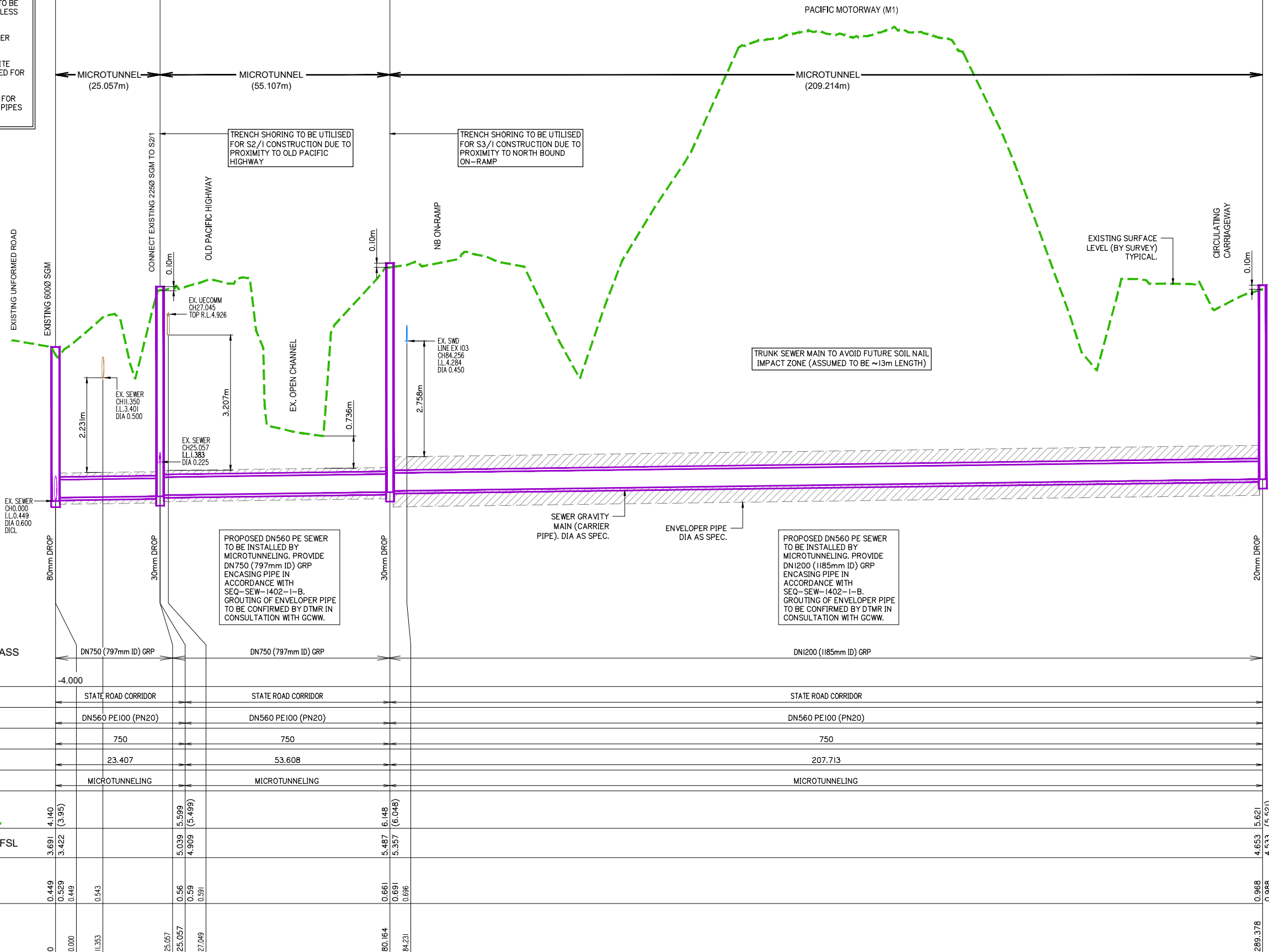
S3/1

S4/1

MH / MS COVER TYPE	D	D	D	D
MH / MS TYPE	MH1800 (P2)	MH1500 (P2)	MH1500 (P2)	MH1500 (P2)
DS MH / MS DROP TYPE	V	V	V	V
LINE DEFLECTION & BRANCHES	EX. 600	EX. 300	EX. 180	EX. 180
PE LINING CORROSION PROTECTION?	Y	Y	Y	Y

NOTES:

- PE PIPES USED FOR MICROTUNNELING TO BE MINIMUM SDR 9, CLASS PN20 PE100 UNLESS SPECIFIED OTHERWISE.
- ALL PIPES TO BE INSTALLED WITH TRACER WIRE.
- PN20 PE100 PIPES TO BE INTERNAL WHITE WALLED WITH WALL THICKNESS DESIGNED FOR INSTALLATION FORCES.
- BUTT WELDED JOINTS ARE MANDATORY FOR MICROTUNNELING WHERE CONTINUOUS PIPES ON COIL ARE NOT AVAILABLE



ENVELOPER PIPE SIZE (mm), CLASS

DATUM RL

PROPERTY DESCRIPTION

PIPE SIZE (mm), CLASS

GRADE (1 IN X)

PIPE LENGTH (END TO END)

EMBEDMENT TYPE

FINISHED (& EXISTING) SURFACE LEVEL

DEPTH OF PIPE INVERT BELOW FSL

PIPE INVERT LEVEL

CHAINAGE

LINE

SEWER LONGITUDINAL SECTIONS – SHEET 1 OF 4



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(AUSTRALIA) PTY. LTD.

Project: VANTAGE YATALA
EXTERNAL TRUNK GRAVITY SEWER
(City of Gold Coast: Stapylton XGMA21)

Site Address:

STAPYLTON JACOBS WELL
ROAD, STAPYLTON QLD 4207

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Contour Interval: -
PSM: -
RL: -

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DRAWING TITLE

SEWER LONGITUDINAL
SECTIONS
SHEET 1 OF 4

Issue	Date	Original Issue Description	IG	MD
A	11-05-20	ORIGINAL ISSUE	IG	MD

Scale 1:500 - Lengths are in Metres.

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Scale 1:50 - Lengths are in Metres.

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Scale at A1:

1:500 (H) 1:50 (V)

Designed:

IG

Drafted:

IG

Approved:

MG

RPEQ:

Signed:

Date:

1/05/20

Drawing No:

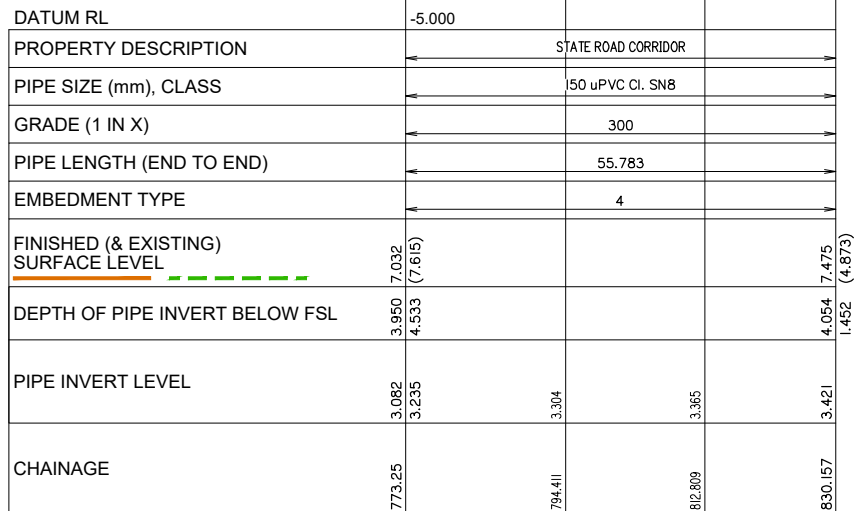
5941 ENG EXTSEW 610

Rev. No:

A

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1

