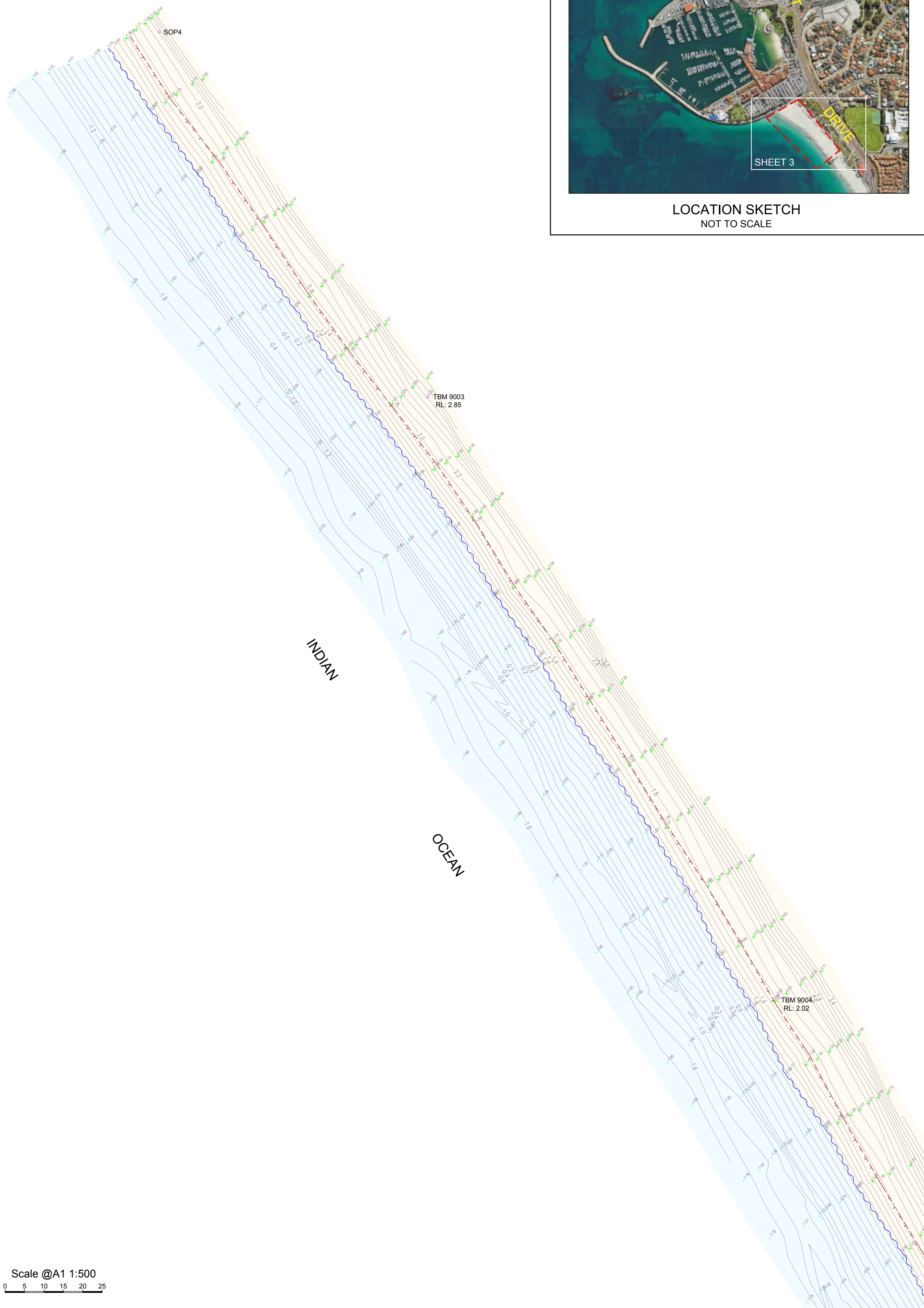


Appendix E 2020 Sand Bypassing Surveys (JBA Surveys)

LEVEL SURVEY PRIOR TO EARTHWORKS (12.03.2020)



LOCATION SKETCH
NOT TO SCALE



Legend

- Contour Major 1.0m Intervals
- Contour Minor 0.1m Intervals
- Building
- Steps
- Bottom of Bank
- Top of Bank
- Water Level
- Fence Line
- Litter Bin
- Setout Point
- Natural Surface
- Survey Control Mark

Control & Setout Point Schedule

Point	Easting	Northing	Elevation
9000	381089.647	6478031.033	6.78
9001	381121.863	6477848.098	1.75
9002	380848.943	6479099.889	2.36
9003	380201.983	6479341.029	2.85
9004	380291.957	6479185.941	2.02
9005	380432.233	6478921.352	3.77
SOP3	380431.000	6478915.000	N/A
SOP4	380133.000	6479435.000	N/A

Scale @A1 1:500
0 5 10 15 20 25

18147-F03-1.0.dwg		<p>Notes:</p> <ol style="list-style-type: none"> Heights established from VRS via GPS connection. Setout Points Derived from Client DWG : D1540-01-01 		<p>120 Pepler Ave. Satter Point WA 6152 Ph: 9450 7188 email: admin@jbasurveys.com.au web: www.jbasurveys.com.au</p>		<p>CLIENT:</p> <p>creating better coasts and ports</p>		<p>JOB NO: 18147 TITLE: PRE-WORKS SURVEY</p> <p>PROJECT: HILLARYS SAND BYPASS SURVEYS WEST COAST DRIVE HILLARYS, WA, 6025</p>		<p>DATUM</p> <p>VERT: AHD HORIZ: MGA94 Z50 SCALE: 1:500</p>		<p>VER: 1.0</p>	
						<p>DWG NO: 18147-F03</p>		<p>SHEET NO: 1 OF 3</p>		<p>A1</p>			
						<p>SURVEYOR: SW DATE OF SURVEY: 12.03.2020 DRAWN BY: SF APPROVED BY: NRW</p>							

LEVEL SURVEY PRIOR TO EARTHWORKS (12.03.2020)



LOCATION SKETCH
NOT TO SCALE

INDIAN

OCEAN

Legend

- Contour Major 1.0m Intervals
- Contour Minor 0.1m Intervals
- Building
- Steps
- Bottom of Bank
- Top of Bank
- Water Level
- Fence Line
- Litter Bin
- Setout Point
- Natural Surface
- Survey Control Mark

Control & Setout Point Schedule

Point	Easting	Northing	Elevation
9000	381089.647	6478031.033	6.78
9001	381121.863	6477848.098	1.75
9002	380848.943	6479099.889	2.36
9003	380201.983	6479341.029	2.85
9004	380291.957	6479185.941	2.02
9005	380432.233	6478921.352	3.77
SDP3	380431.000	6478915.000	N/A
SDP4	380133.000	6479435.000	N/A

Scale @A1 1:500

TBM 9005
RL: 3.77

SOP3

18147-F03-1.0.dwg

VER.	DATE	BY	AMENDMENTS	FILE SOURCE
1.0	16.03.2020	SF	Issued for Information	18147-3.0-12032020-MGA94-F

Notes:
1. Heights established from VRS via GPS connection.
2. Setout Points Derived from Client DWG : D1540-01-01

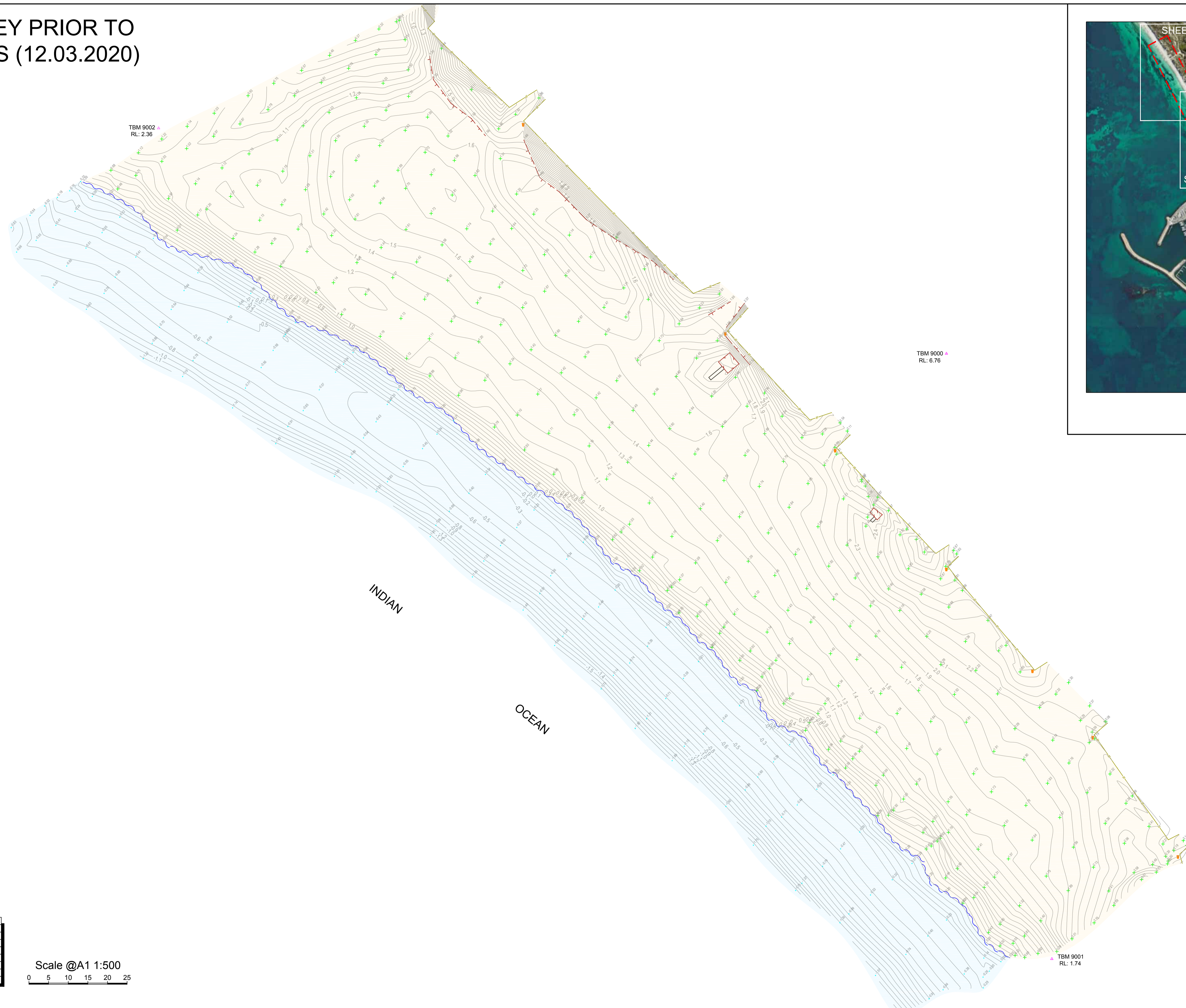
120 Pepler Ave. Satter Point WA 6152
Ph: 9450 7188
email: admin@jbasurveys.com.au
web: www.jbasurveys.com.au

CLIENT:

m p rogers & associates pl
creating better coasts and ports

JOB NO: 18147	TITLE: PRE-WORKS SURVEY	DATUM	N
PROJECT:	HILLARYS SAND BYPASS SURVEYS WEST COAST DRIVE HILLARYS, WA, 6025	VERT: AHD HORIZ: MGA94 Z50 SCALE: 1:500	
SURVEYOR: SW		DATE OF SURVEY: 12.03.2020	DRAWN BY: SF
APPROVED BY: NRW		DWG NO: 18147-F03	
SHEET NO: 2 OF 3		VER: 1.0	

LEVEL SURVEY PRIOR TO EARTHWORKS (12.03.2020)



LOCATION SKETCH
NOT TO SCALE

Legend

- Contour Major 1.0m Intervals
- Contour Minor 0.1m Intervals
- Building
- Steps
- Bottom of Bank
- Top of Bank
- Water Level
- Fence Line
- Litter Bin
- Setout Point
- Natural Surface
- Survey Control Mark

Control & Setout Point Schedule

Point	Easting	Northing	Elevation
9000	381089.647	6478031.033	6.76
9001	381121.863	6477846.098	1.75
9002	380848.943	6479099.889	2.36
9003	380201.983	6479341.029	2.85
9004	380291.957	6479186.941	2.02
9005	380432.233	6478921.352	3.77
SCP3	380431.000	6478915.000	N/A
SCP4	380133.000	6479435.000	N/A

Scale @A1 1:500

Scale @A1 1:600

18147-F03-1.0.dwg

VER.	DATE	BY	AMENDMENTS	FILE SOURCE
1.0	16.03.2020	SF	Issued for Information	18147-13.0-12032020-MGA94-F

Notes:
 1. Heights established from VRS via GPS connection.
 2. Setout Points Derived from Client DWG : D1540-01-01

JBA SURVEYS
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 web: www.jbasurveys.com.au

CLIENT:
m p rogers & associates pl
 creating better coasts and ports

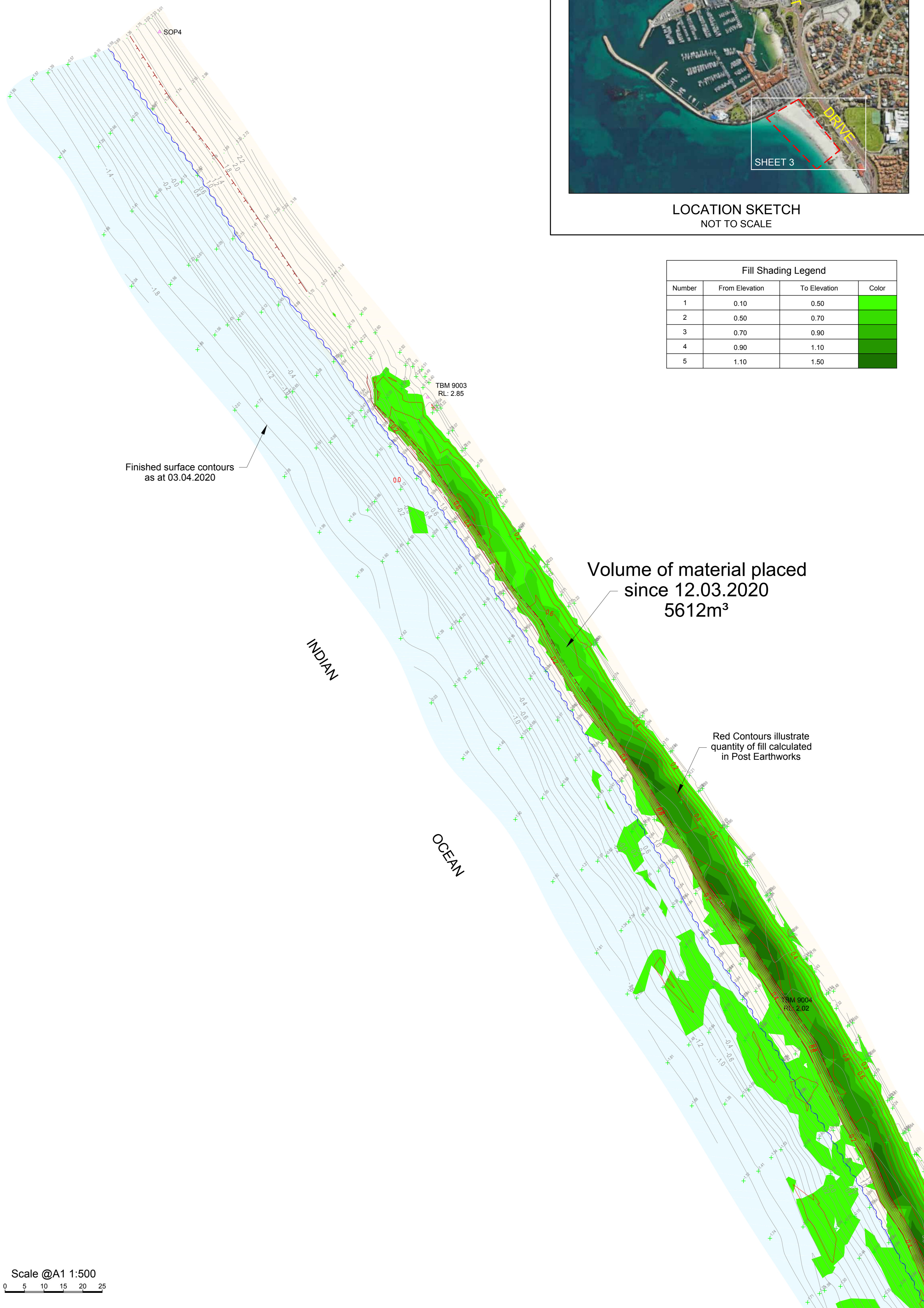
JOB NO: 18147	TITLE: PRE-WORKS SURVEY	DATUM	N
PROJECT: HILLARYS SAND BYPASS SURVEYS WEST COAST DRIVE HILLARYS, WA, 6025		VERT: AHD HORIZ: MGA94 Z50 SCALE: 1:600	
SURVEYOR: SW		DATE OF SURVEY: 12.03.2020	VER: 1.0
DRAWN BY: SF		APPROVED BY: NRW	DWG NO: 18147-F03
SHEET NO: 3 OF 3			A1

LEVEL SURVEY POST EARTHWORKS (03.04.2020)



LOCATION SKETCH
NOT TO SCALE

Fill Shading Legend			
Number	From Elevation	To Elevation	Color
1	0.10	0.50	Light Green
2	0.50	0.70	Medium Green
3	0.70	0.90	Dark Green
4	0.90	1.10	Very Dark Green
5	1.10	1.50	Black



Finished surface contours
as at 03.04.2020

Volume of material placed
since 12.03.2020
5612m³

Red Contours illustrate
quantity of fill calculated
in Post Earthworks

INDIAN

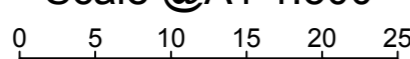
OCEAN

Legend	
	Contour Major 1.0m Intervals
	Volume Contour
	Building
	Steps
	Bottom of Bank
	Top of Bank
	Water Level
	Fence Line
	Litter Bin
	Setout Point
	Natural Surface
	Survey Control Mark

Control & Setout Point Schedule

Point	Easting	Northing	Elevation
9000	381089.647	6478031.033	6.78
9001	381121.863	6477848.098	1.75
9002	380848.943	6479099.889	2.36
9003	380201.983	6479341.029	2.85
9004	380291.957	6479185.941	2.02
9005	380432.233	6478921.352	3.77
SOP3	380431.000	6478915.000	N/A
SOP4	380133.000	6479435.000	N/A

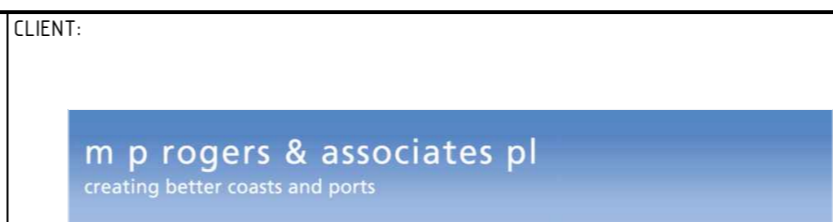
Scale @A1 1:500



18147-F04-1.0.dwg

VER.	DATE	BY	AMENDMENTS	FILE SOURCE
1.0	07.04.2020	SF	Issued for Information	18147-4.0-03042020-MGA94-F

Notes:
1. Heights established from VRS via GPS connection.
2. Setout Points Derived from Client DWG : D1540-01-01



JOB NO: 18147	TITLE: POST-WORKS SURVEY	DATUM
PROJECT:	HILLARYS SAND BYPASS SURVEYS WEST COAST DRIVE HILLARYS, WA, 6025	VERT: AHD HORIZ: MGA94 Z50 SCALE: 1:500
SURVEYOR: SW	DATE OF SURVEY: 03.04.2020	DRAWN BY: SF
APPROVED BY: NRW		

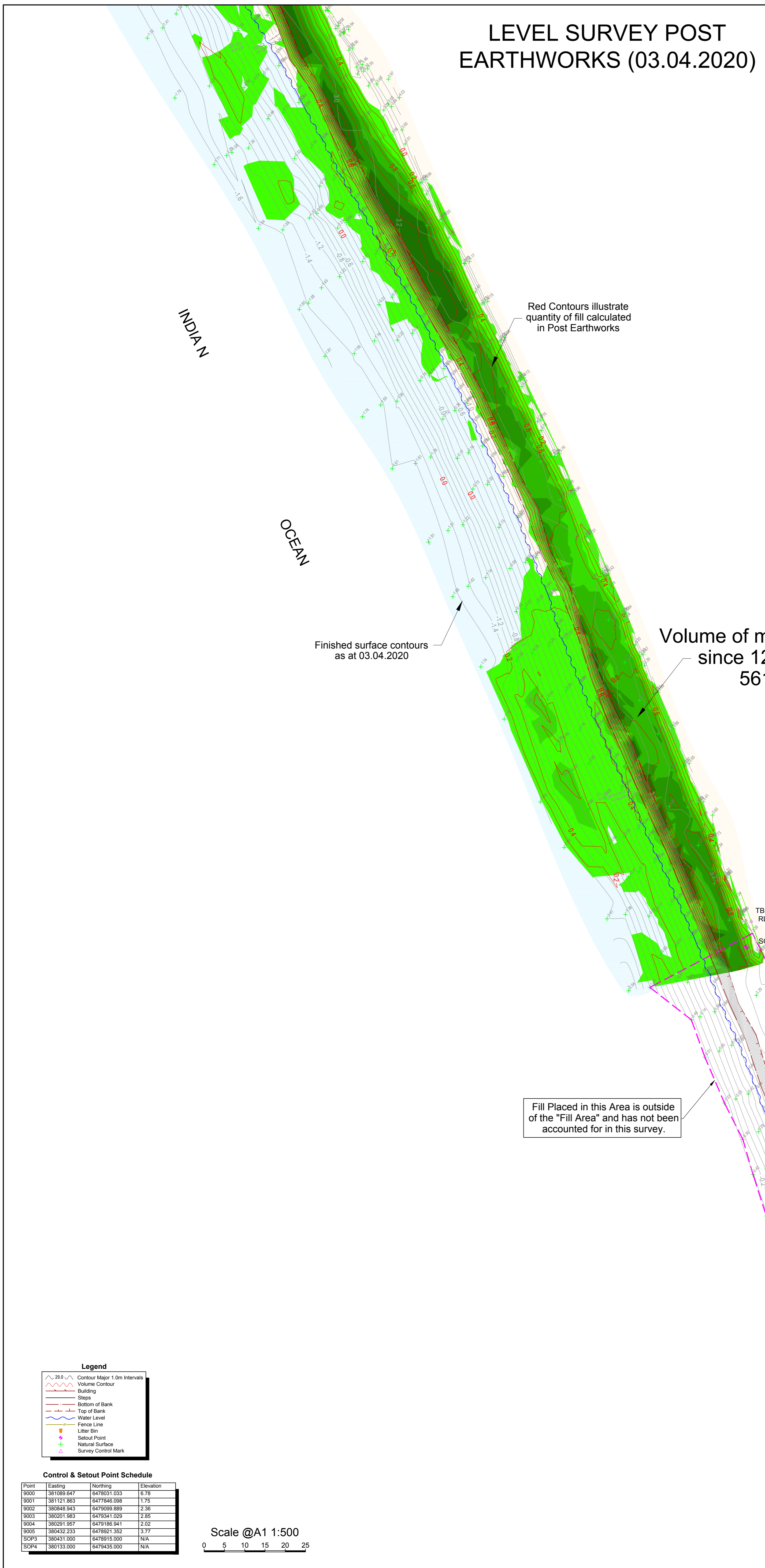
DWG NO: 18147-F04	VER: 1.0
SHEET NO: 1 OF 3	A1

LEVEL SURVEY POST EARTHWORKS (03.04.2020)



LOCATION SKETCH
NOT TO SCALE

Fill Shading Legend			
Number	From Elevation	To Elevation	Color
1	0.10	0.50	Light Green
2	0.50	0.70	Medium Green
3	0.70	0.90	Dark Green
4	0.90	1.10	Very Dark Green
5	1.10	1.50	Black

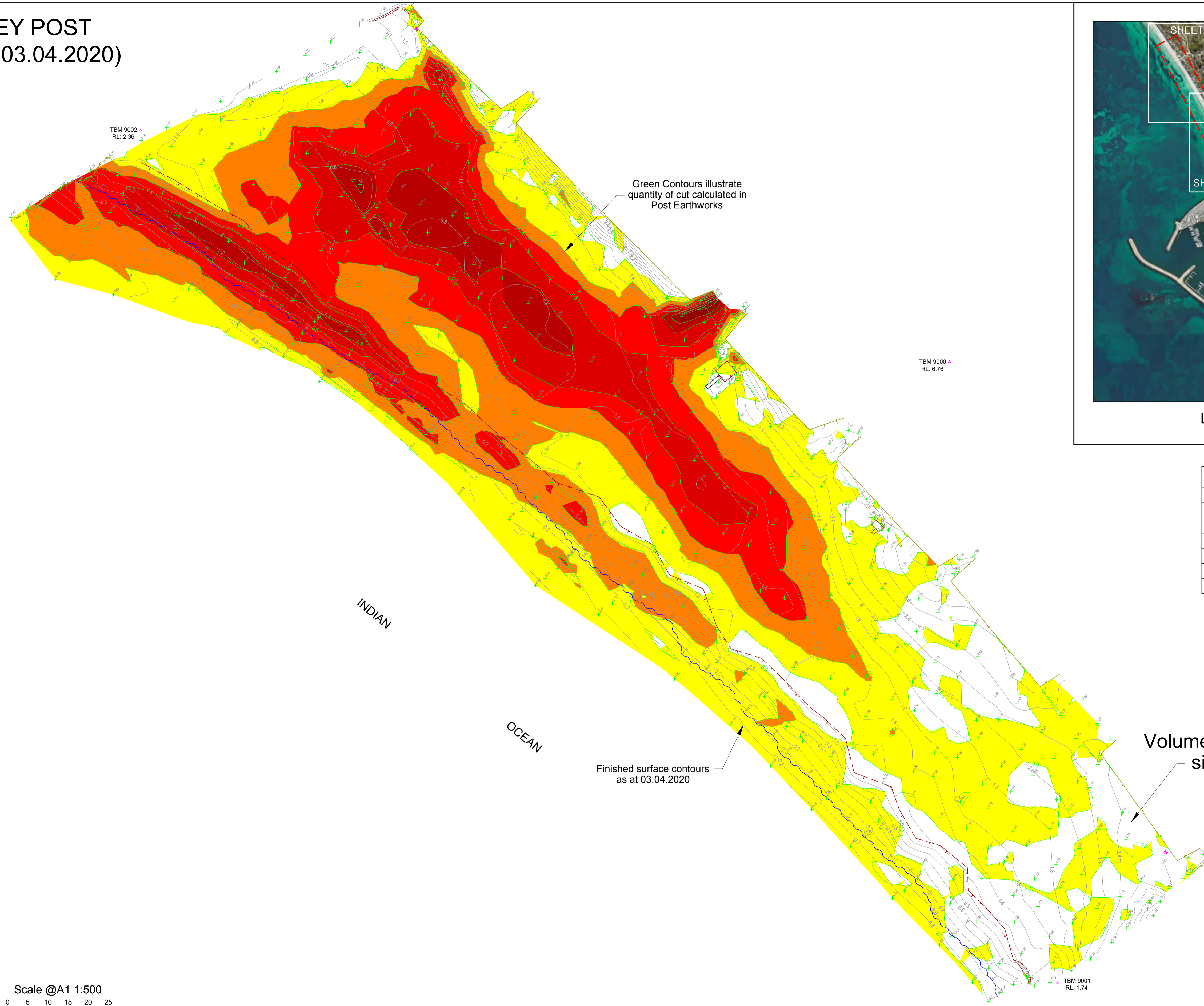


Legend	
	Contour Major 1.0m Intervals
	Volume Contour
	Building
	Steps
	Bottom of Bank
	Top of Bank
	Water Level
	Fence Line
	Litter Bin
	Setout Point
	Natural Surface
	Survey Control Mark

Control & Setout Point Schedule		
Point	Easting	Northing
9000	381089.647	6478031.033
9001	381121.863	6477848.098
9002	380848.943	6479099.889
9003	380201.983	6479341.029
9004	380291.957	6479185.941
9005	380432.233	6478921.352
SOP3	380431.000	6478915.000
SOP4	380133.000	6479435.000

Scale @A1 1:500
0 5 10 15 20 25

LEVEL SURVEY POST EARTHWORKS (03.04.2020)



LOCATION SKETCH
NOT TO SCALE

Number	From Elevation	To Elevation	Color
1	-1.30	-1.00	Dark Red
2	-1.00	-0.80	Red
3	-0.80	-0.60	Orange-Red
4	-0.60	-0.40	Orange
5	-0.40	-0.20	Light Orange
6	-0.20	0.00	Yellow

Volume of material removed since 12.03.2020
8731m³

~ 20.0	Contour Major 1.0m Intervals
~ 20.0	Volume Contour
—	Building
—	Steps
—	Bottom of Bank
—	Top of Bank
—	Water Level
—	Fence Line
+	Liter Bin
+	Setout Point
+	Natural Surface
+	Survey Control Mark

Point	Easting	Northing	Elevation
9000	381089.647	6478031.033	6.76
9001	381121.863	6477846.098	1.75
9002	380848.943	6479099.889	2.36
9003	380201.983	6479341.029	2.85
9004	380291.957	6479186.941	2.02
9005	380432.233	6478921.352	3.77
SCOP3	380431.000	6478915.000	N/A
SCOP4	380133.000	6479435.000	N/A

Scale @A1 1:500
0 5 10 15 20 25

Scale @A1 1:600
0 6 12 18 24 30

18147-F04-1.0.dwg

VER.	DATE	BY	AMENDMENTS	FILE SOURCE
1.0	07.04.2020	SF	Issued for Information	18147-4.0-03042020-MGA94-F

Notes:
1. Heights established from VRS via GPS connection.
2. Setout Points Derived from Client DWG : D1540-01-01

JBA SURVEYS
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Ph: 9450 7188
email: admin@jbasurveys.com.au
web: www.jbasurveys.com.au

CLIENT:
m p rogers & associates pl
creating better coasts and ports

JOB NO: 18147	TITLE: POST-WORKS SURVEY	DATUM	N
PROJECT:	HILLARYS SAND BYPASS SURVEYS WEST COAST DRIVE HILLARYS, WA, 6025	VERT: AHD HORIZ: MGA94 Z50 SCALE: 1:600	
SURVEYOR: SW	DATE OF SURVEY: 03.04.2020	DRAWN BY: SF	VER: 1.0
APPROVED BY: NRW	SHEET NO: 3 OF 3	A1	