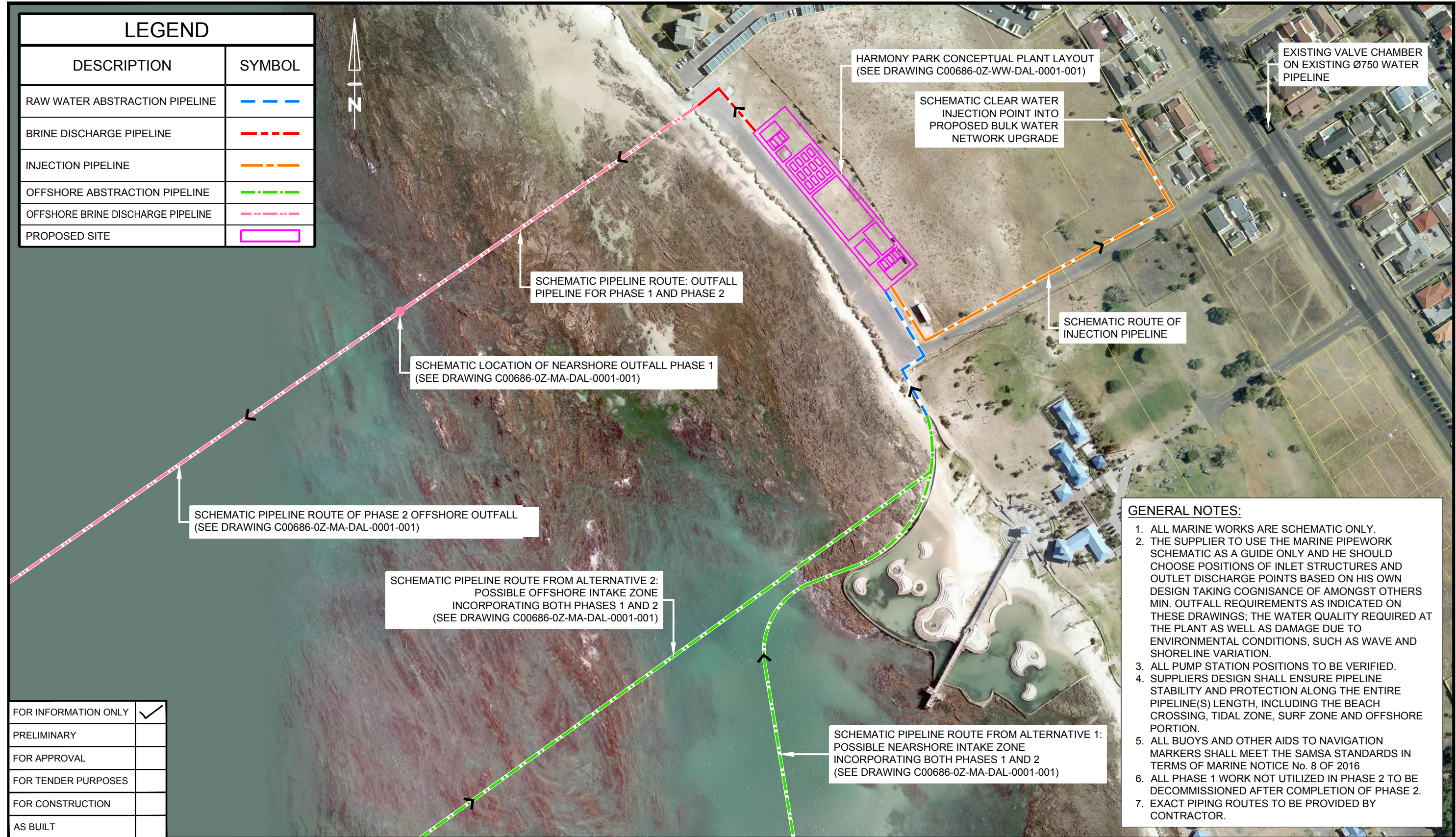


LEGEND	
DESCRIPTION	SYMBOL
RAW WATER ABSTRACTION PIPELINE	
BRINE DISCHARGE PIPELINE	
INJECTION PIPELINE	
OFFSHORE ABSTRACTION PIPELINE	
OFFSHORE BRINE DISCHARGE PIPELINE	
PROPOSED SITE	



SCHEMATIC PIPELINE ROUTE: OUTFALL PIPELINE FOR PHASE 1 AND PHASE 2

SCHEMATIC LOCATION OF NEARSHORE OUTFALL PHASE 1 (SEE DRAWING C00686-OZ-MA-DAL-0001-001)

SCHEMATIC PIPELINE ROUTE OF PHASE 2 OFFSHORE OUTFALL (SEE DRAWING C00686-OZ-MA-DAL-0001-001)

SCHEMATIC PIPELINE ROUTE FROM ALTERNATIVE 2: POSSIBLE OFFSHORE INTAKE ZONE INCORPORATING BOTH PHASES 1 AND 2 (SEE DRAWING C00686-OZ-MA-DAL-0001-001)

SCHEMATIC PIPELINE ROUTE FROM ALTERNATIVE 1: POSSIBLE NEARSHORE INTAKE ZONE INCORPORATING BOTH PHASES 1 AND 2 (SEE DRAWING C00686-OZ-MA-DAL-0001-001)

HARMONY PARK CONCEPTUAL PLANT LAYOUT (SEE DRAWING C00686-OZ-WW-DAL-0001-001)

SCHEMATIC CLEAR WATER INJECTION POINT INTO PROPOSED BULK WATER NETWORK UPGRADE

SCHEMATIC ROUTE OF INJECTION PIPELINE

EXISTING VALVE CHAMBER ON EXISTING Ø750 WATER PIPELINE

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE AND SHORELINE VARIATION.
  3. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  4. SUPPLIERS DESIGN SHALL ENSURE PIPELINE STABILITY AND PROTECTION ALONG THE ENTIRE PIPELINE(S) LENGTH, INCLUDING THE BEACH CROSSING, TIDAL ZONE, SURF ZONE AND OFFSHORE PORTION.
  5. ALL BUOYS AND OTHER AIDS TO NAVIGATION MARKERS SHALL MEET THE SAMSA STANDARDS IN TERMS OF MARINE NOTICE No. 8 OF 2016
  6. ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  7. EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	DS	VJ	WPRSA

**OneWay**<sup>TM</sup>  
to zero harm

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD


PROJECT

**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION

**HARMONY PARK CONCEPTUAL GENERAL ARRANGEMENT LAYOUT**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

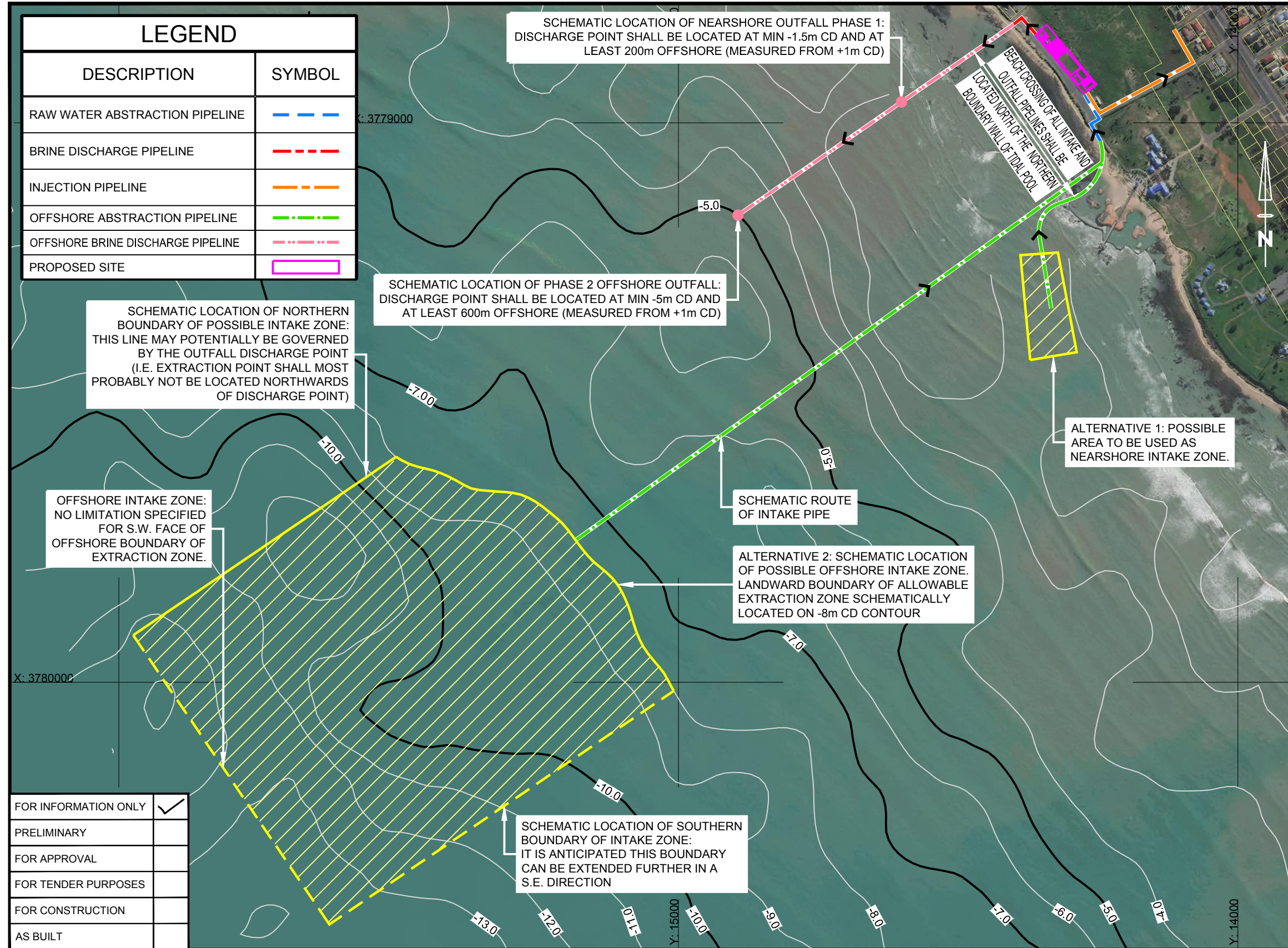


**WorleyParsons**  
resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE	SCALE: (ORIGINAL A3)
AUGUST 2017	1:2500
DRG No.	REV.
C00686-OZ-WW-DGA-0001-001	A

LEGEND	
DESCRIPTION	SYMBOL
RAW WATER ABSTRACTION PIPELINE	
BRINE DISCHARGE PIPELINE	
INJECTION PIPELINE	
OFFSHORE ABSTRACTION PIPELINE	
OFFSHORE BRINE DISCHARGE PIPELINE	
PROPOSED SITE	

SIMON'S TOWN (SANHO, 2017)		
TIDAL LEVELS	CHART DATUM (m CD)	LAND LEVELING DATUM (m LLD)
HAT	2.09	1.247
MHWS	1.79	0.947
MHWN	1.29	0.447
ML	1.00	0.157
MLWN	0.73	-0.113
MLWS	0.24	-0.603
LAT	0.00	-0.843



- GENERAL NOTES:**
- COORDINATE SYSTEM WGS 84 Lo.19
  - ALL DEPTHS RELATIVE TO CHART DATUM (CD)
  - BATHYMETRIC SURVEY: SURVEYED BY COUNCIL OF GEOSCIENCE, DATE 31-08-2017
  - CONTRACTOR SHALL SPECIFY EXACT ABSTRACTION LOCATIONS FOR PHASES 1 AND 2.
  - CONTRACTOR SHALL ENSURE ABSTRACTION LOCATIONS FOR BOTH PHASES 1 AND 2 SHALL POSSIBLY BE LOCATED WITHIN ALTERNATIVE 1 AND/OR ALTERNATIVE 2 INTAKE ZONES.
  - ALL MARINE WORKS ARE SCHEMATIC ONLY.
  - THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE AND SHORELINE VARIATION.
  - ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  - ALL PUMP STATION POSITIONS TO BE VERIFIED.
  - ALTHOUGH THE DRAWING ARE INDICATIVE ONLY THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:
    - PHASE 1: THE SUPPLIER SHALL DISCHARGE THE BRINE AT A MINIMUM DEPTH OF -1.5m CD AND A MINIMUM DISTANCE OF 200m FROM THE COASTLINE (MEASURED FROM THE +1m CD DEPTH CONTOUR AND INDICATED ON THE DRAWINGS).
    - PHASE 2: THE DISCHARGE LOCATION OF THE BRINE OUTFALL FOR PHASE 2 SHALL BE AT A MINIMUM DEPTH CONTOUR OF -5.0 mCD AND A DISTANCE OF 600m FROM THE COASTLINE (MEASURED FROM +1m CD).
    - THE BEACH CROSSING OF ALL INTAKE AND OUTFALL PIPES SHALL BE AS INDICATED ON DRAWING NO. C00686-0Z-MA-DAL-0001-001.
  - EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	MLR	MC	WPRSA

**OneWay**  
to zero harm

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT

CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT

**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION

**HARMONY PARK: OVERVIEW OF ABSTRACTION AND DISCHARGE LOCATIONS**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: AUGUST 2017

SCALE: (ORIGINAL A3) 1:7500

DRG No. C00686-0Z-MA-DAL-0001-001

REV. A

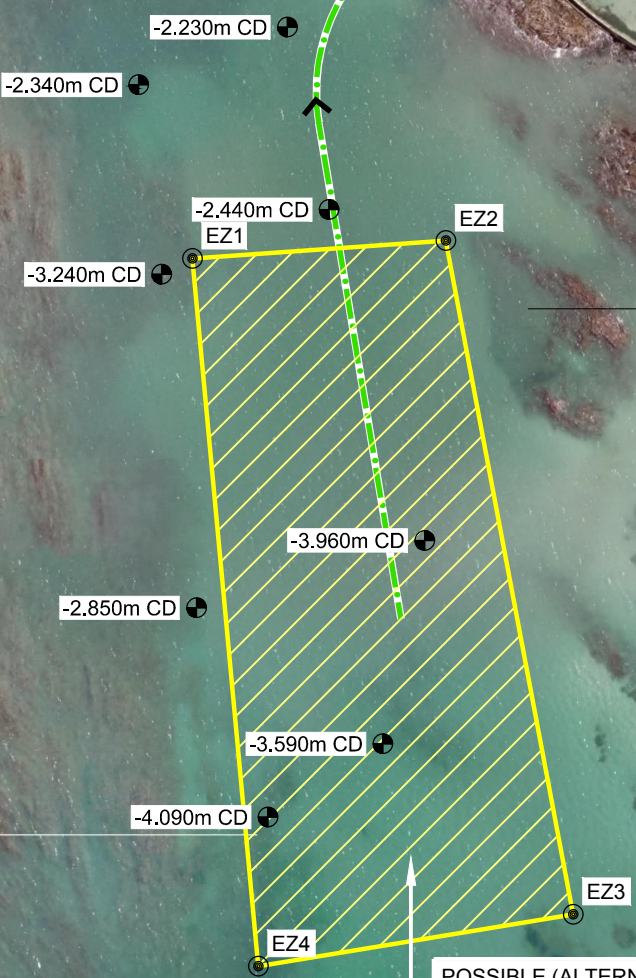
LEGEND	
DESCRIPTION	SYMBOL
OFFSHORE ABSTRACTION PIPELINE	

SIMON'S TOWN (SANHO, 2017)		
TIDAL LEVELS	CHART DATUM (m CD)	LAND LEVELING DATUM (m LLD)
HAT	2.09	1.247
MHWS	1.79	0.947
MHWN	1.29	0.447
ML	1.00	0.157
MLWN	0.73	-0.113
MLWS	0.24	-0.603
LAT	0.00	-0.843

X: 3779250

BOUNDARY COORDINATES OF POSSIBLE EXTRACTION ZONE		
POINT	Y (m)	X (m)
EZ1	14388.756	3779236.676
EZ2	14321.677	3779231.959
EZ3	14287.956	3779410.110
EZ4	14371.322	3779423.828

SCHEMATIC LOCATION OF PIPE ROUTE TO THE INTAKE. FINAL ROUTE TO BE SPECIFIED BY SUPPLIER



POSSIBLE (ALTERNATIVE 1) AREA TO BE UTILIZED FOR EXTRACTION PURPOSES. AREA SUITABLE (FROM DEPTH PERSPECTIVE) TO PLACE INTAKE AT MIN -3m CD. SUPPLIER TO VERIFY DEPTH AND WATER QUALITY AT EXACT LOCATION SHOULD HE DECIDE TO USE THIS AREA FOR EXTRACTION PURPOSES

- GENERAL NOTES:**
- COORDINATE SYSTEM WGS84 Lo.19
  - ALL DEPTHS RELATIVE TO CHART DATUM (CD)
  - SOUNDINGS: WATER DEPTHS MEASURED ON 31-08-2017 (ASSUMED +300mm ACCURACY)
  - ALL MARINE WORKS ARE SCHEMATIC ONLY.
  - THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE AND SHORELINE VARIATION.
  - ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  - ALL PUMP STATION POSITIONS TO BE VERIFIED.
  - ALTHOUGH THE DRAWING ARE INDICATIVE ONLY THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:
    - PHASE 1: THE SUPPLIER SHALL DISCHARGE THE BRINE AT A MINIMUM DEPTH OF -1.5m CD AND A MINIMUM DISTANCE OF 200m FROM THE COASTLINE (MEASURED FROM THE +1m CD DEPTH CONTOUR AND INDICATED ON THE DRAWINGS).
    - PHASE 2: THE DISCHARGE LOCATION OF THE BRINE OUTFALL FOR PHASE 2 SHALL BE AT A MINIMUM DEPTH CONTOUR OF -5.0 mCD AND A DISTANCE OF 600m FROM THE COASTLINE (MEASURED FROM +1m CD).
    - THE BEACH CROSSING OF ALL INTAKE AND OUTFALL PIPES SHALL BE AS INDICATED ON DRAWING NO. C00686-OZ-MA-DAL-0001-001.
  - EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

FOR INFORMATION ONLY	✓
PRELIMINARY	
FOR APPROVAL	
FOR TENDER PURPOSES	
FOR CONSTRUCTION	
AS BUILT	

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	MLR	MC	WPRSA

**OneWay**  
to zero harm

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT

CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT

**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION

**HARMONY PARK: POSSIBLE NEARSHORE ZONE ABSTRACTION ZONE**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: AUGUST 2017

SCALE: (ORIGINAL A3) 1:2000

DRG No. C00686-OZ-MA-DAL-0002-001

REV. A

LEGEND	
DESCRIPTION	SYMBOL
HDPE PE100 PN10 RAW WATER ABSTRACTION PIPELINE	
OFFSHORE ABSTRACTION PIPELINE	

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  3. ALL LEVELS ARE IN METRES AND ARE REFERENCED TO LAND LEVELING DATUM.
  4. COORDINATE SYSTEM: WGS84/Lo19
  5. SUPPLIER TO VERIFY LEVELS ON SITE.
  6. SPOT LEVEL SURVEY PERFORMED ON 30 AUGUST 2017 (PRISM AND TOTAL STATION).
  7. LIDAR SURVEY PERFORMED ON 6 SEPTEMBER 2017

SIMON'S TOWN (SANHO, 2017)		
TIDAL LEVELS	CHART DATUM (CD)	LAND LEVELING DATUM (LLD)
HAT	2.09	1.247
MHWS	1.79	0.947
MHWN	1.29	0.447
ML	1.00	0.157
MLWN	0.73	-0.113
MLWS	0.24	-0.603
LAT	0.00	-0.843



FOR INFORMATION ONLY	✓
PRELIMINARY	
FOR APPROVAL	
FOR TENDER PURPOSES	
FOR CONSTRUCTION	
AS BUILT	

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	SR	MC	WPRSA

**OneWay**  
to zero harm

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT

CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT

**WATER RESILIENCE PROJECT**

**WorleyParsons**  
resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: SEPTEMBER 2017

SCALE: (ORIGINAL A3) 1:750

DRG No. C00686-0Z-GE-DAL-0001-001

REV. A

DRAWING DESCRIPTION

**HARMONY PARK: TIDAL POOL TOPOGRAPHICAL LAYOUT**

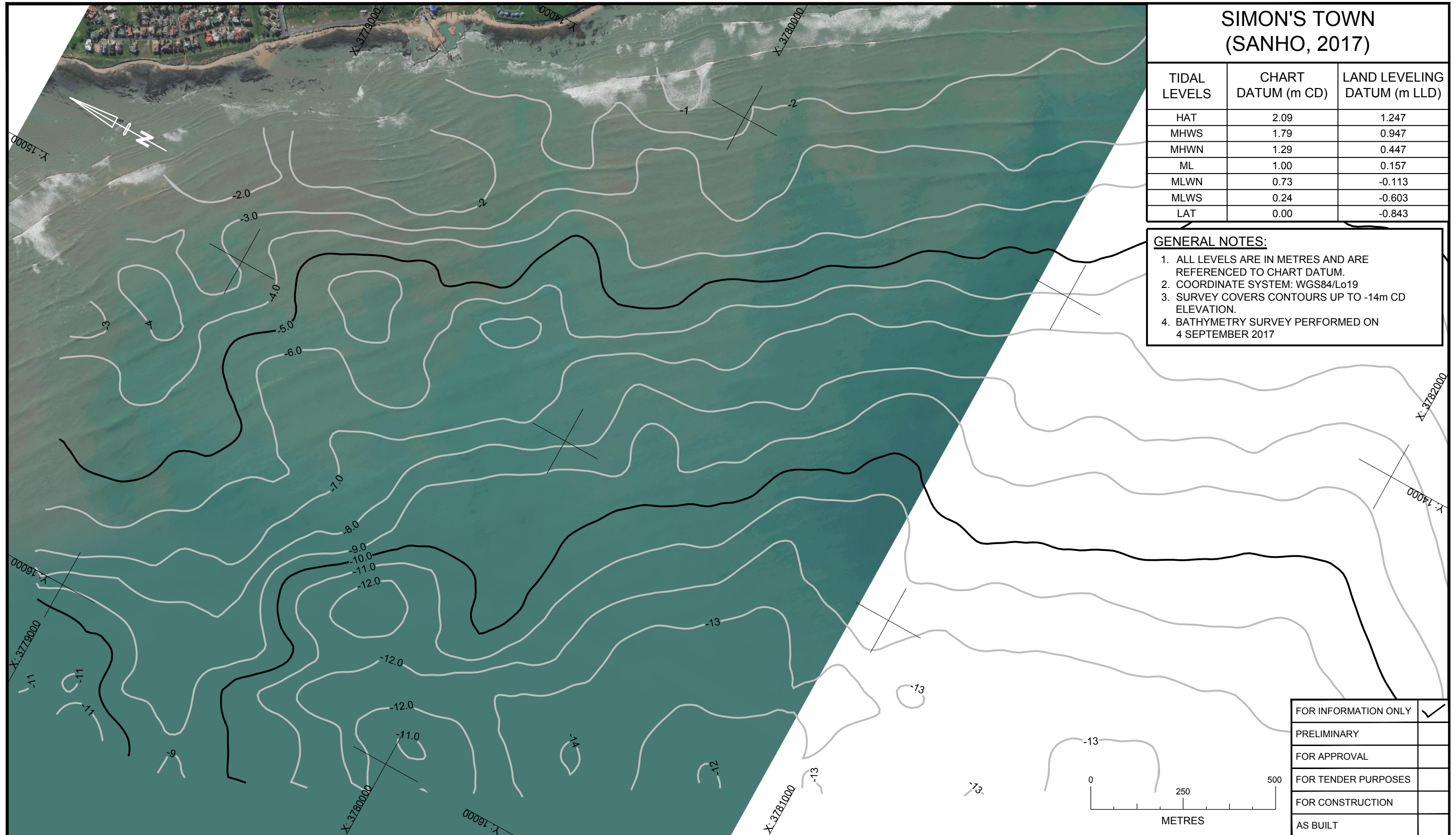
"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

# SIMON'S TOWN (SANHO, 2017)

TIDAL LEVELS	CHART DATUM (m CD)	LAND LEVELING DATUM (m LLD)
HAT	2.09	1.247
MHWS	1.79	0.947
MHWN	1.29	0.447
ML	1.00	0.157
MLWN	0.73	-0.113
MLWS	0.24	-0.603
LAT	0.00	-0.843

### GENERAL NOTES:

1. ALL LEVELS ARE IN METRES AND ARE REFERENCED TO CHART DATUM.
2. COORDINATE SYSTEM: WGS84/Lo19
3. SURVEY COVERS CONTOURS UP TO -14m CD ELEVATION.
4. BATHYMETRY SURVEY PERFORMED ON 4 SEPTEMBER 2017



FOR INFORMATION ONLY	✓
PRELIMINARY	
FOR APPROVAL	
FOR TENDER PURPOSES	
FOR CONSTRUCTION	
AS BUILT	

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	SR	MC	WPRSA

**OneWay**<sup>TM</sup>  
to zero harm

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT

**WATER RESILIENCE  
PROJECT**



**WorleyParsons**  
resources & energy

P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE	SCALE: (ORIGINAL A3)
SEPTEMBER 2017	1:10000
DRG No.	REV.
C00686-OZ-MA-DAL-0003-001	A

DRAWING DESCRIPTION

**HARMONY PARK: BATHYMETRY LAYOUT**

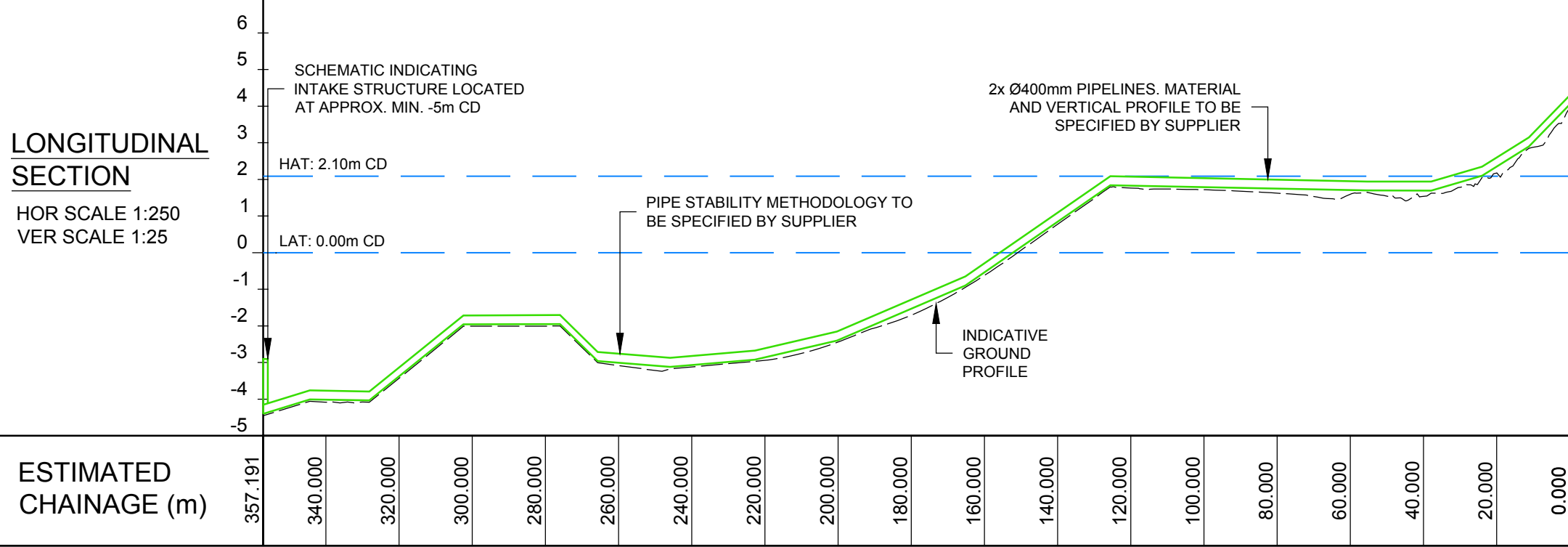
"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

LEGEND	
DESCRIPTION	SYMBOL
RAW WATER ABSTRACTION PIPELINE	
INJECTION PIPELINE	
OFFSHORE ABSTRACTION PIPELINE	
PROPOSED SITE	



**PLAN LAYOUT**  
SCALE 1:1500

FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>



THIS DRAWING IS PREPARED SOLELY FOR INFORMATION PURPOSES TO CONVEY TO TENDERERS A NON-VERIFIED CONCEPT ENVISAGED BY THE COCT FOR THE DESALINATION WORKS AT HARMONY PARK. SHOULD TENDERERS CHOOSE THIS OPTION THEN THEY ARE TO VERIFY THE CONCEPT PRIOR TO PERFORMING DESIGN THEREOF.

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE CONDITIONS.
  3. ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  4. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  5. EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	MLR	MC	WPRSA

Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT

CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT

**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION

**HARMONY PARK: PHASE 1 AND/OR 2 CONCEPTUAL NEARSHORE ZONE INTAKE PIPELINE**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

resources & energy

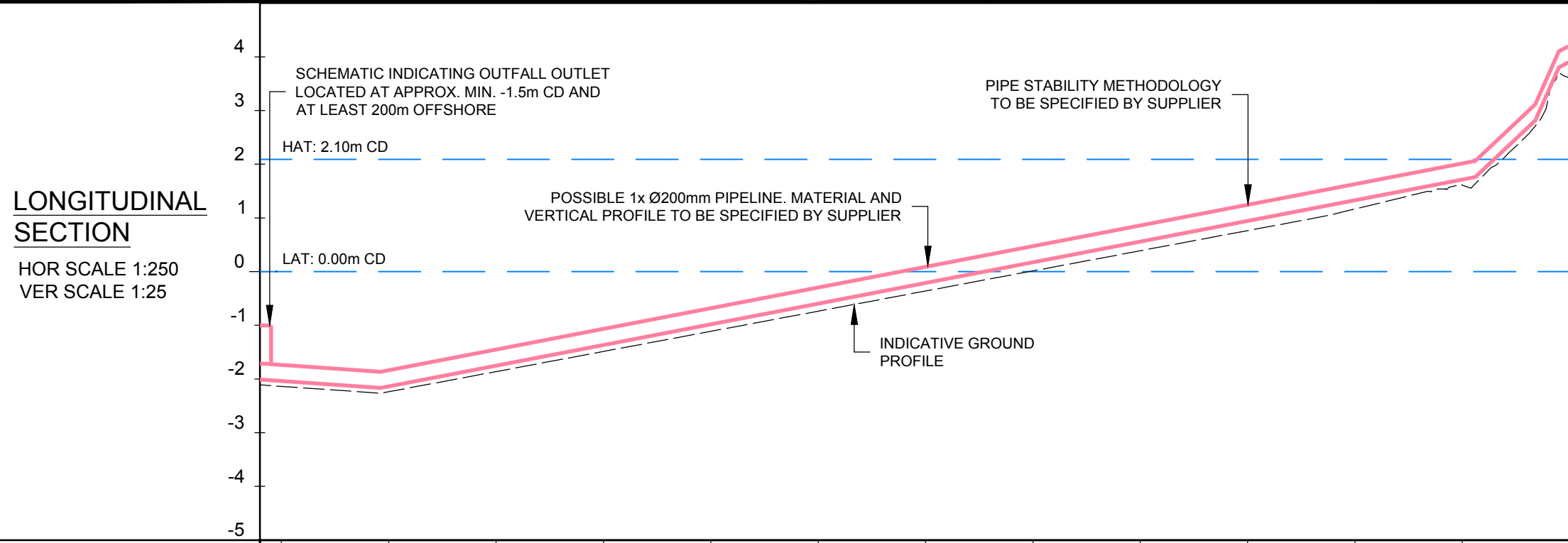
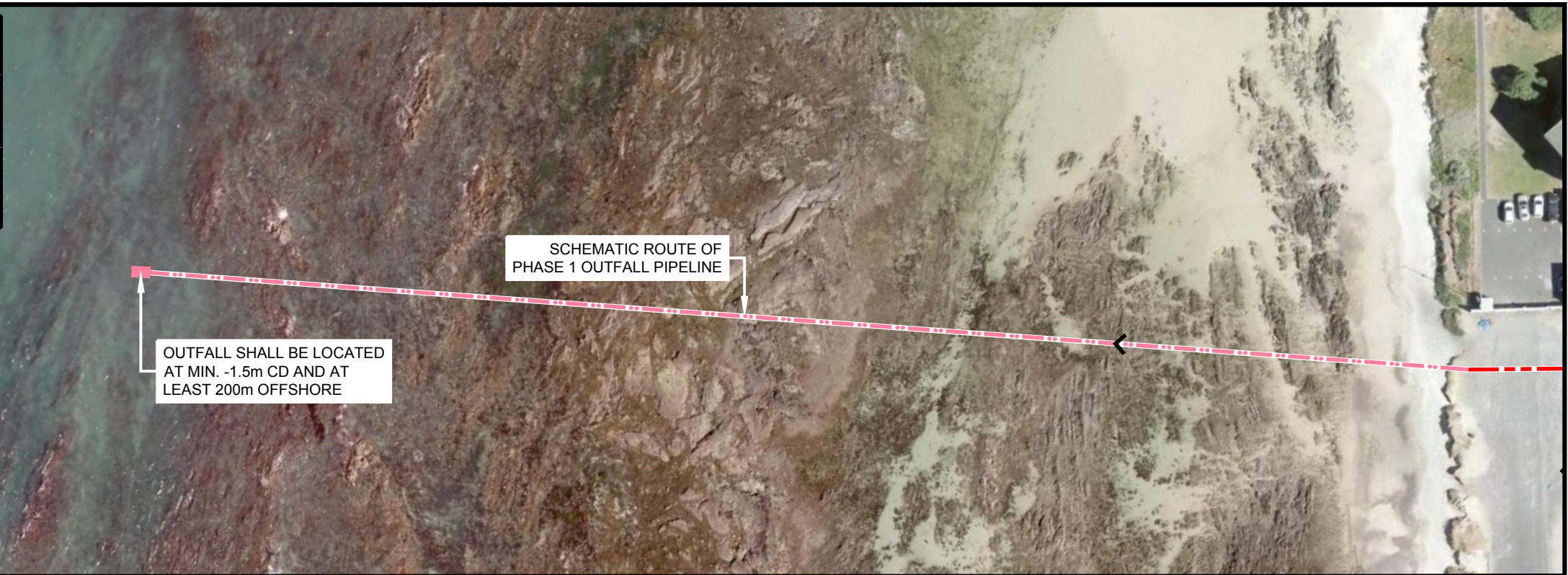
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE	SCALE: (ORIGINAL A3)
AUGUST 2017	AS SHOWN
DRG No.	REV.
C00686-0Z-MA-DSE-0001-001	A

LEGEND	
DESCRIPTION	SYMBOL
BRINE DISCHARGE PIPELINE	
OFFSHORE BRINE DISCHARGE PIPELINE	



**PLAN LAYOUT**  
SCALE 1:1000



THIS DRAWING IS PREPARED SOLELY FOR INFORMATION PURPOSES TO CONVEY TO TENDERERS A NON-VERIFIED CONCEPT ENVISAGED BY THE COCT FOR THE DESALINATION WORKS AT HARMONY PARK. SHOULD TENDERERS CHOOSE THIS OPTION THEN THEY ARE TO VERIFY THE CONCEPT PRIOR TO PERFORMING DESIGN THEREOF.

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE CONDITIONS.
  3. ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  4. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  5. EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

ESTIMATED CHAINAGE (m)	244.000	240.000	220.000	200.000	180.000	160.000	140.000	120.000	100.000	80.000	60.000	40.000	20.000	0.000
------------------------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------	--------	--------	--------	-------

FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	MLR	MC	WPRSA

**OneWay**  
to zero harm  
Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT  
 CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT  
**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION  
**HARMONY PARK: PHASE 1 CONCEPTUAL NEARSHORE ZONE OUTFALL PIPELINE**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

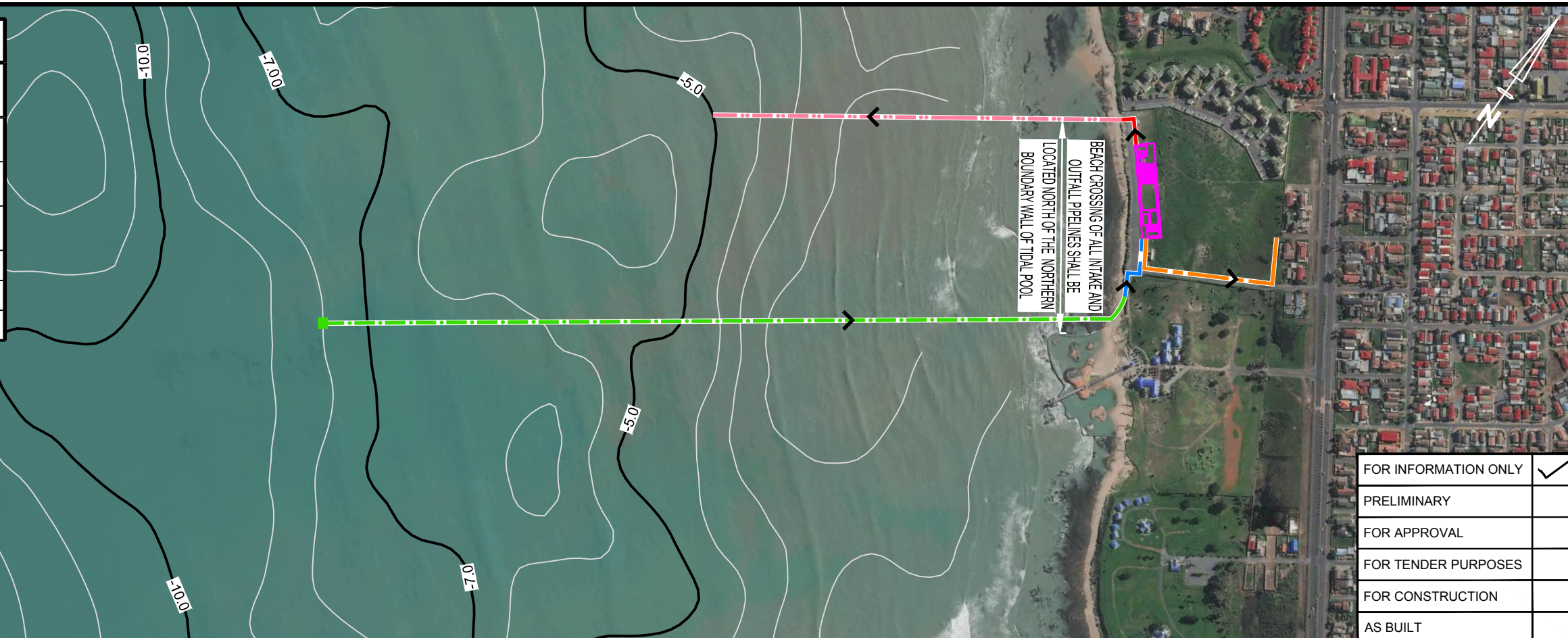
**WorleyParsons**  
resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: AUGUST 2017  
SCALE: (ORIGINAL A3) AS SHOWN

DRG No. C00686-0Z-MA-DSE-0003-001  
REV. A

LEGEND	
DESCRIPTION	SYMBOL
RAW WATER ABSTRACTION PIPELINE	
BRINE DISCHARGE PIPELINE	
INJECTION PIPELINE	
OFFSHORE ABSTRACTION PIPELINE	
OFFSHORE BRINE DISCHARGE PIPELINE	
PROPOSED SITE	

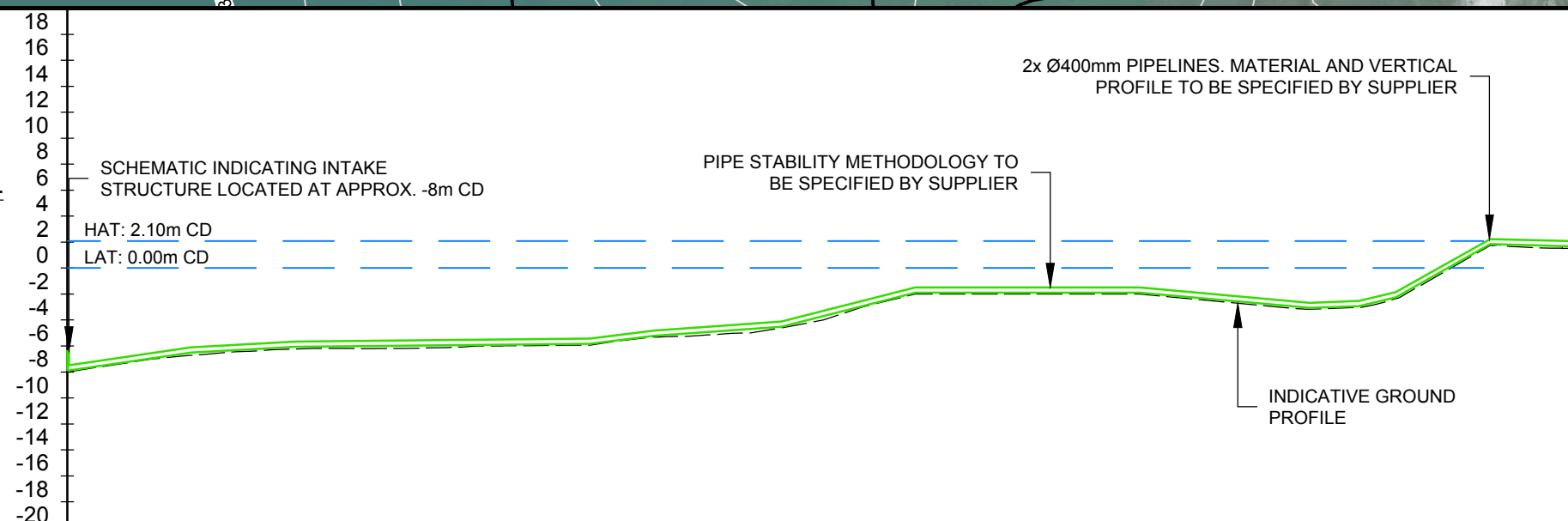
**PLAN LAYOUT**  
SCALE 1:7500



FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>

**LONGITUDINAL SECTION**

HOR SCALE 1:250  
VER SCALE 1:25



THIS DRAWING IS PREPARED SOLELY FOR INFORMATION PURPOSES TO CONVEY TO TENDERERS A NON-VERIFIED CONCEPT ENVISAGED BY THE COCT FOR THE DESALINATION WORKS AT HARMONY PARK. SHOULD TENDERERS CHOOSE THIS OPTION THEN THEY ARE TO VERIFY THE CONCEPT PRIOR TO PERFORMING DESIGN THEREOF.

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE CONDITIONS.
  3. ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  4. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  5. EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

ESTIMATED CHAINAGE (m)	1091.844	1050.000	1000.000	950.000	900.000	850.000	800.000	750.000	700.000	650.000	600.000	550.000	500.000	450.000	400.000	350.000	300.000	250.000	200.000	150.000	100.000	50.000	0.000	50.000	65.648
------------------------	----------	----------	----------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------	-------	--------	--------

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY	KL	MLR	MC	WPRSA

**OneWay**  
to zero harm  
Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT: CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT: WATER RESILIENCE PROJECT

DRAWING DESCRIPTION: HARMONY PARK: PHASE 2 CONCEPTUAL OFFSHORE ZONE INTAKE PIPELINE

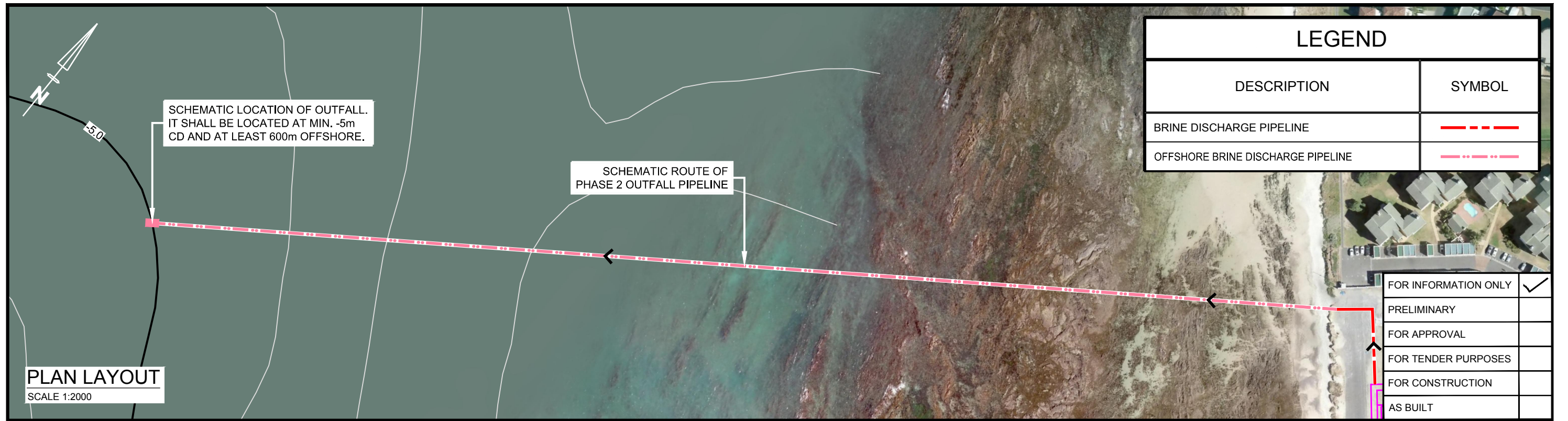
"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

**WorleyParsons**  
resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: AUGUST 2017  
SCALE: (ORIGINAL A3)  
AS SHOWN

DRG No. C00686-0Z-MA-DSE-0002-001  
REV. A

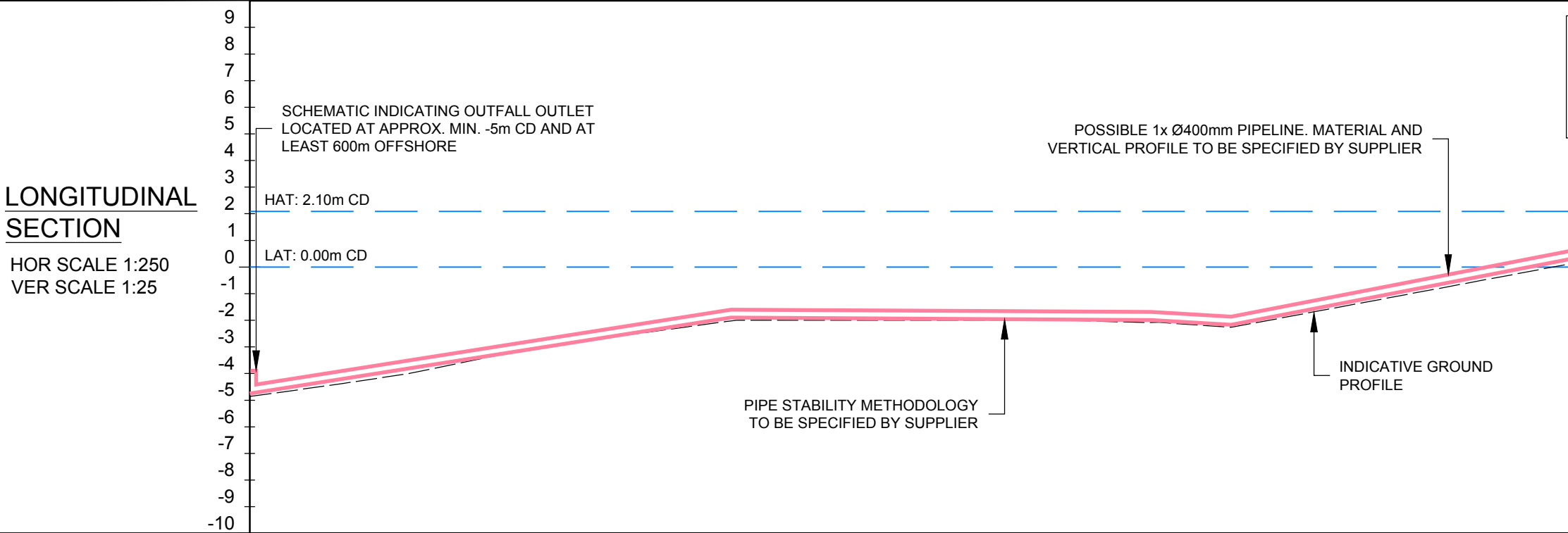




LEGEND	
DESCRIPTION	SYMBOL
BRINE DISCHARGE PIPELINE	
OFFSHORE BRINE DISCHARGE PIPELINE	

FOR INFORMATION ONLY	<input checked="" type="checkbox"/>
PRELIMINARY	<input type="checkbox"/>
FOR APPROVAL	<input type="checkbox"/>
FOR TENDER PURPOSES	<input type="checkbox"/>
FOR CONSTRUCTION	<input type="checkbox"/>
AS BUILT	<input type="checkbox"/>

**PLAN LAYOUT**  
SCALE 1:2000



THIS DRAWING IS PREPARED SOLELY FOR INFORMATION PURPOSES TO CONVEY TO TENDERERS A NON-VERIFIED CONCEPT ENVISAGED BY THE COCT FOR THE DESALINATION WORKS AT HARMONY PARK. SHOULD TENDERERS CHOOSE THIS OPTION THEN THEY ARE TO VERIFY THE CONCEPT PRIOR TO PERFORMING DESIGN THEREOF.

- GENERAL NOTES:**
1. ALL MARINE WORKS ARE SCHEMATIC ONLY.
  2. THE SUPPLIER TO USE THE MARINE PIPEWORK SCHEMATIC AS A GUIDE ONLY AND HE SHOULD CHOOSE POSITIONS OF INLET STRUCTURES AND OUTLET DISCHARGE POINTS BASED ON HIS OWN DESIGN TAKING COGNISANCE OF AMONGST OTHERS MIN. OUTFALL REQUIREMENTS AS INDICATED ON THESE DRAWINGS; THE WATER QUALITY REQUIRED AT THE PLANT AS WELL AS DAMAGE DUE TO ENVIRONMENTAL CONDITIONS, SUCH AS WAVE CONDITIONS.
  3. ALL PHASE 1 WORK NOT UTILIZED IN PHASE 2 TO BE DECOMMISSIONED AFTER COMPLETION OF PHASE 2.
  4. ALL PUMP STATION POSITIONS TO BE VERIFIED.
  5. EXACT PIPING ROUTES TO BE PROVIDED BY CONTRACTOR.

ESTIMATED CHAINAGE (m)	590.000	580.000	560.000	540.000	520.000	500.000	480.000	460.000	440.000	420.000	400.000	380.000	360.000	340.000	320.000	300.000	280.000	260.000	240.000	220.000	200.000	180.000	160.000	140.000	120.000	100.000	80.000
------------------------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	---------	--------

REV	DATE	REVISION DESCRIPTION	DRAWN	DESIGNED	REV ENGINEER	CONSULTING ENGINEER
A	15/09/17	FOR INFORMATION ONLY		MLR	MC	WPRSA

**OneWay**  
to zero harm  
Copyright ©  
WorleyParsons Services Pty Ltd  
ABN 61 001 279 812

CLIENT  
 CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

PROJECT  
**WATER RESILIENCE PROJECT**

DRAWING DESCRIPTION  
**HARMONY PARK: PHASE 2 CONCEPTUAL OFFSHORE ZONE OUTFALL PIPELINE**

"This drawing is prepared solely for the use of the contractual customer of WorleyParsons and WorleyParsons assumes no liability to any other party for any representations contained in this drawing."

**WorleyParsons**  
resources & energy  
P.O.Box 398  
BELLVILLE 7535  
TEL:+27 21912 3000  
FAX:+27 21912 3222  
e-mail: capetown.office@worleyparsons.com

DATE: AUGUST 2017  
SCALE: (ORIGINAL A3) AS SHOWN

DRG No. C00686-0Z-MA-DSE-0004-001  
REV. A