

## MEMO

### RESPONSE ON ENGINEERING MATTERS – MINUTE 5 SHELLY BAY

TO	Egmont Dixon	DATE	30 July 2019
PROJECT NAME	Shelly Bay	ENVELOPE REF	1098-01
ATTENTION	Will Dorset/ Earl Hope-Pearson	FROM	Alan Blyde
EMAIL ADDRESS	<a href="mailto:wdorset@egmontdixon.com">wdorset@egmontdixon.com</a> <a href="mailto:ehopepearson@egmontdixon.com">ehopepearson@egmontdixon.com</a>		

Dear Will

Please find our itemised response to the engineering matters/ queries posed within Minute 5 from the Commissioners. We have included the full wording of the Commissioners query from Minute 5 and then provided a response below that.

#### Section 42A Report – Objectives and Policies of the District Plan

*Request 1 – To be answered by Wellington City Council*

#### Public Infrastructure Upgrade Works

The Commissioners require clarification from the Applicant on the extent of public infrastructure upgrade works required to be done as part of, or prior to, development of the Shelly Bay site.

Specifically, we need to understand:

The consenting regime for required improvements on Shelly Bay Road in particular, necessitating works in the Coastal Marine Area such as earthworks, seawalls and reclamation to widen the road and provide additional lane capacity and recreational car parking etc as recommended in the Section 42A Report.

It is noted that the section 42A Report, in section 6.0, makes reference to Wellington Regional Council consents, in the context of not supporting a deferral to deal with those consents under section 91 of the RMA.

The Commissioners do not wish to defer consideration of the application but wish to more fully understand the scope and extent of the required works, and we may need to also consider the implications for the consent holder of a condition requiring these significant upgrade works to be implemented prior to development occurring on the site.

At what stage(s) of the development is it intended that the various upgrades to public roading beyond the site, public gravity stormwater networks, public gravity wastewater will be implemented.

The Commissioners may need to consider whether a 'condition precedent' for some or all of these works may be required, or whether conditions can be framed for each stage of the project as demand for those services increases.

**Request 2:**

That the Applicant respond to the above matters relating to public infrastructure upgrade works and the consenting framework for regional consents in particular.

**Response:**

With respect to proposed upgrade and improvement works to Shelly Bay Road, we have referred to the traffic engineer's report titled Transportation Assessment Report Shelly Bay Masterplan, dated 18 April 2019, prepared by Stantec.

Section 7.1 of the Stantec report details improvements to the intersection of Shelly Bay Road with Miramar Avenue which should be considered. The recommended improvements are detailed on Drawing No: 13725W1A entitled Indicative Design For Intersection Improvement, from Appendix B of the Stantec report. An image taken from the plan is included in Figure 1 below for ease.



**Figure 1 – Image taken from Stantec Drawing No: 13725W1A – Indicative Design For Intersection Improvement**

**(Ref: Stantec Transportation Assessment Report Shelly Bay Masterplan, 18 April 2019)**

The proposed improvements include a widened central median and right-hand turning lane on Miramar Ave. The wider central median is considered to provide protection for right-hand turners from Shelly Bay onto Miramar Ave. An additional improvement will be the inclusion of a short left-hand turning lane for vehicles exiting Shelly Bay Rd towards Miramar township.

**The intersection improvements recommended by Stantec as described above are proposed to be completed prior to the completion and occupation of any new commercial or residential units at Shelly Bay development.**

Section 7.4 of the Stantec report describes Shelly Bay Road improvement works for the section of road from the Miramar Ave intersection up to the Shelly Bay development area. The Stantec report references an earlier report entitled Shelly Bay, Wellington Servicing Feasibility dated 1 September 2016, prepared by Calibre Consulting. The Stantec report references earlier conclusions by Calibre, that some widening along the route to provide a 1.0-1.5m wide pedestrian and cycle path alongside a 6m wide carriageway “can be achieved that will, whilst not fully adhering to the Council’s Code of Practice, serve to adequately accommodate the development proposal demands. This assessment was subsequently accepted by Council and it is understood that a commitment has since been made (by Council) for these works to be undertaken.”

Based on the commentary by Stantec and earlier assessment and conclusions of Calibre, as well as Council’s acceptance of these, we have prepared drawings showing the 6m wide carriageway along with a pedestrian path of at least 1m wide at pinch points but generally 1.5m wide, overlaid over aerial photo and council GIS location of existing road carriageway. The drawings (included here as Attachment 1) replicate earlier hand marked-up annotated plans prepared by Calibre and included within the aforementioned 2016 Calibre Servicing Feasibility Report.



I have walked along the entire Shelly Bay Road route between Miramar Avenue intersection and the Shelly Bay development area to confirm that the recommended 6m wide carriageway and 1.0-1.5m wide path can be accommodated. I am satisfied that a road carriageway and path of these dimensions can be constructed without the need to undertake any construction works within the CMA and without the need for building any additional sea walls or retaining structures on the seaward side of Shelly Bay Road.

I identified a number of pinch points where achieving a minimum 1.0m wide path would require a maximum of 0.5m of realignment of road carriageway and carriageway widening towards the land side of Shelly Bay Road. In all cases this localised realignment and/ or road widening could be readily accommodated within the usable land space available without the need for retaining or significant excavation. The indicative plans in Attachment 1 identify the pinch point areas.

Detailed plans of the 6m carriageway (showing centreline and edge lines painted white) as well as the proposed 1.0-1.5m path would be provided at Engineering Approval stage. The final surface formation of the path would be agreed with Council at this time also. We understand that discussions to date indicate this would be a crushed gravel/ chip path. No kerb line is proposed to allow stormwater to continue to shed off the existing roadway as sheet flow.

**The Shelly Bay Road improvements to provide a 6.0m wide carriageway and a 1.0-1.5m wide pedestrian/ cycle path are proposed to be completed prior to the completion and occupation of any new commercial or residential units at Shelly Bay development.**

The proposed 3 waters infrastructure (stormwater, wastewater and water) as well as utility services (power and comms) to serve the development is shown on the previously submitted engineering plans, included here as Attachment 2. It is expected that services installation would be constructed in a staged fashion to suit the progress of individual building development, and that this detail would be confirmed with council at the time of applying for Subdivision Consents and Engineering Approval, however to provide a level of certainty, we are instructed to confirm the following general minimum level of servicing which will be provided at 3 distinct phases. For clarity, we also include the previously discussed roading improvement works in the summary below:

<b>Phase 1 – Prior to completion and occupation of any new commercial or residential units</b>
Intersection improvement works at Shelly Bay Road/ Miramar Avenue – As proposed (refer Figure 1 above)
Shelly Bay Road improvements to achieve 6m carriageway and 1.0-1.5m path (refer Attachment 1)
Main spine of proposed public wastewater/ stormwater and water supply fronting the proposed development at Shelly Bay (refer Attachment 2)
Connection of new public water supply at Shelly Bay to connect to existing network at Mt Crawford (this may include the construction of a temporary or permanent water reservoir to replace the redundant Shelly Bay Reservoir depending on Wellington Water programme – to be agreed at Engineering Approval stage).
Power and comms supply upgrades to Shelly Bay
<b>Phase 2 –After completion and occupation of the 120<sup>th</sup> new commercial or residential units</b>
Construction of the new wastewater pump station at Shelly Bay to replace the existing pump station (NB the existing pump station is assumed to be able to serve more than 120 units, based on previously serving a Defence Force Base with over 600 people. Any maintenance work will be carried out as required while the existing pump station is operational).
Construction of a new or re-lined wastewater rising main from Shelly Bay to the approved connection point to replace the existing rising main (NB the existing rising main is assumed to be able to serve more than 120 units. Any maintenance work will be undertaken as required while the existing rising main is operational.)
<b>Phase 3 –After completion and occupation of the 150<sup>th</sup> new commercial or residential units</b>
Any remaining public realm works: North and South Bay carparks; Village Green; and public toilets



## Minimum Building Level

The Commissioners have not seen detailed information on how the proposed minimum floor level has been determined. The Commissioners note that some of the proposed buildings and dwellings may be exposed to inundation from extreme sea level conditions resulting from extreme tides occurring during storm surge, waves and wave runup conditions. In addition, the allowance for sea level rise and free board to these storm situations, to determine the appropriate minimum building level are not clear.

### **Request 3:**

That the Applicant provides an assessment of an appropriate minimum floor level for both habitable buildings and non-habitable buildings on the site. The assessment should show the separate allowances to be added to the level datum for maximum probable high tide, storm surge, wave height, wave runup, future sea level rise and free board.

### **Response:**

We have consulted with Wellington City Council, Wellington Water and Greater Wellington Regional Council to determine appropriate levels of freeboard for flood risk and for appropriate levels of protection against coastal inundation.

Wellington City Council have provided a draft proposed condition (No: 7) of consent which stipulates:

#### **Minimum Floor Levels**

Any new residential building constructed on the site must have a minimum floor level of 2.09m RL (New Zealand Vertical Datum 2016) or 2.5m RL (WCC New City Datum).

In addition to complying with the above, Wellington Water provide the following guidance for designing in recognition of sea level rise

**Table 4.4 – Design Sea Levels Allowing for Climate Change**

	Wellington Harbour <sup>2</sup>	Porirua Harbour
<i>Mean high water springs (MSL)*</i>	<i>0.921</i>	<i>0.916</i>
<i>+ Projected sea level rise (m)</i>	<i>1.0</i>	<i>1.0</i>
<i>+ Barometric allowance (m)</i>	<i>0.25</i>	<i>0.25</i>
<b>= Design sea level (MSL)</b>	<b>2.17</b>	<b>2.17</b>

(NB: Above levels are in terms of Wellington Vertical Datum 1953)

And guidance on setting freeboard levels as below

#### **4.2.9 Freeboard**

Unless Wellington Water has undertaken a formal assessment of an appropriate freeboard allowance based on sensitivity testing in a validated hydraulic model, habitable building floors shall have a freeboard of 500 mm above the surface water of the secondary level of protection event. Commercial and industrial buildings shall have a freeboard of 300mm and all other building freeboards shall be 200 mm.

The minimum freeboard shall be measured from the top of the peak water level resulting from the design storm event, to the building platform level or underside of the floor joists or structural concrete slab of the building.

For open channels and streams, a minimum freeboard of 500 mm shall be adopted for the primary level of protection flow.



Based on the above, we recommend setting floor levels for new habitable buildings on site above the Wellington Harbour Design sea level (MSL) of RL 2.17, with an additional 500mm freeboard which therefore gives minimum design finished floor levels for new habitable buildings of **FFL 2.67**. This would therefore achieve compliance with the proposed condition set by Wellington City Council.

Attachment 3 of this memo provides details of the proposed design levels for all proposed buildings within the Shelly Bay Development.

The minimum **non-habitable** floor level set for new structures is generally RL 3.05.

The minimum **habitable** floor level for new structures is generally RL 3.6

The only variances to the above are SBW B3, B4 & B5 which have a floor level of RL 2.85 for **non-habitable** retail floor spaces and SBW B6 & B9 which have a floor level of RL 2.65 for **non-habitable** retail floor spaces. As these floor spaces are non-habitable, they are all in compliance with the requirements stated above

The other variances are for SBW B7 and SBW B8 which have floor levels of RL 2.65 and RL 2.20 respectively. It should be noted the reason for this is the buildings are existing and cannot be feasibly lifted. It should also be noted that the existing buildings are still elevated above the proposed required minimum level to be set by Wellington City Council of RL 2.09 and above the Design Sea Level (MSL) of RL 2.17 which has a 1.0m freeboard allowance for projected sea level rise and a 0.25m freeboard for barometric allowance (water level rise from changes in pressure).

Based on the above we can conclude that all proposed buildings have significant freeboard allowance designed for floor levels above Design Sea Level (MSL). Only existing buildings which are unable to be altered do not have similar freeboard but are still elevated above the WCC MFL and the Wellington Water MSL.

#### **Section 42A Report – Recommended Conditions**

*Request 4 – To be answered by the Applicant and Wellington City Council.*

I trust the above provides a suitable response to Request 2 and Request 3 of the Commissioner's Minute No 5.

Regards



**Alan Blyde**

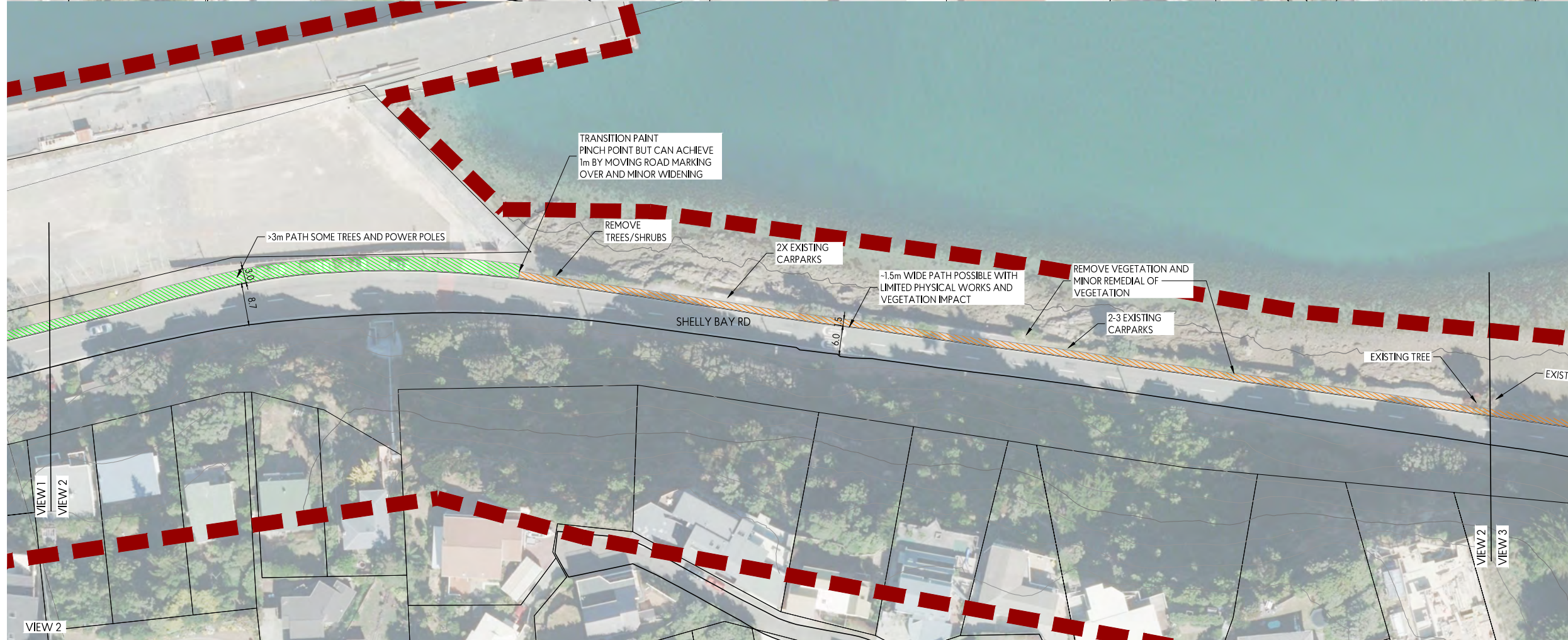
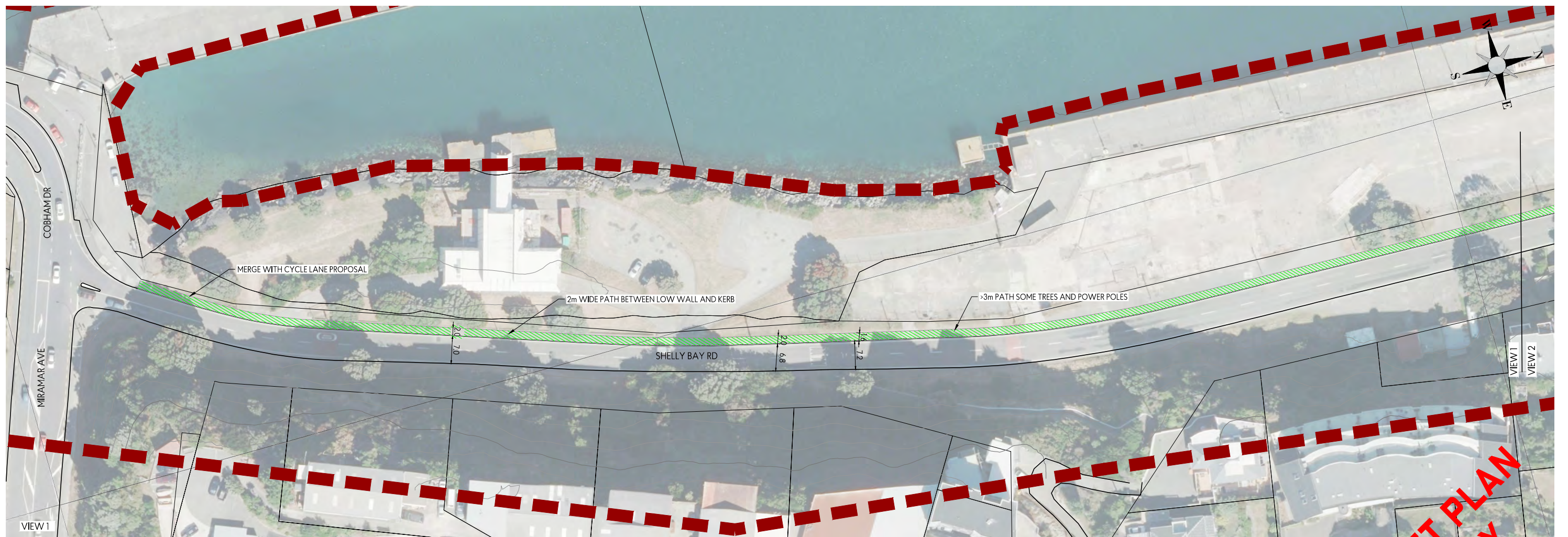
Director



**ATTACHMENT 1**

Shelly Bay Road plans





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REV	NOTES	BY	DATE
P1	PRELIMINARY	VJ	15/07/19

PROJECT:  
 THE WELLINGTON COMPANY  
 SHELLY BAY  
 WELLINGTON

TITLE:  
 ROADING LAYOUT PLANS  
 SHEET 1

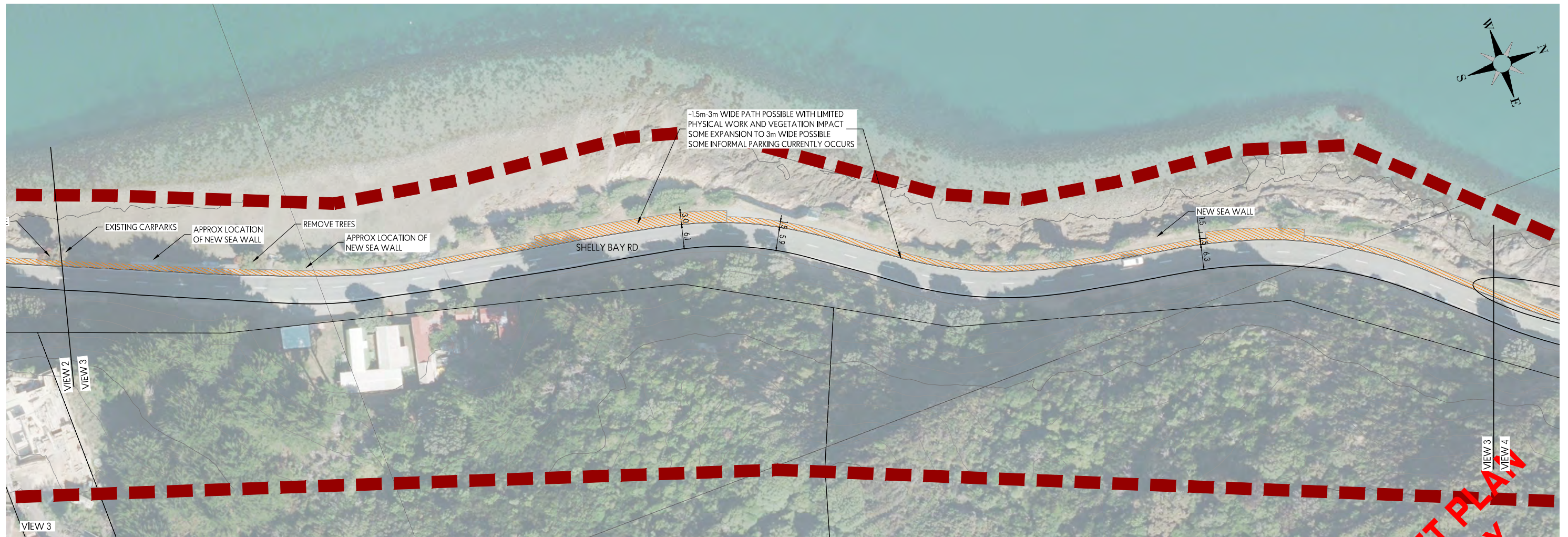
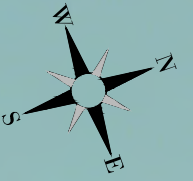
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 MANAGE

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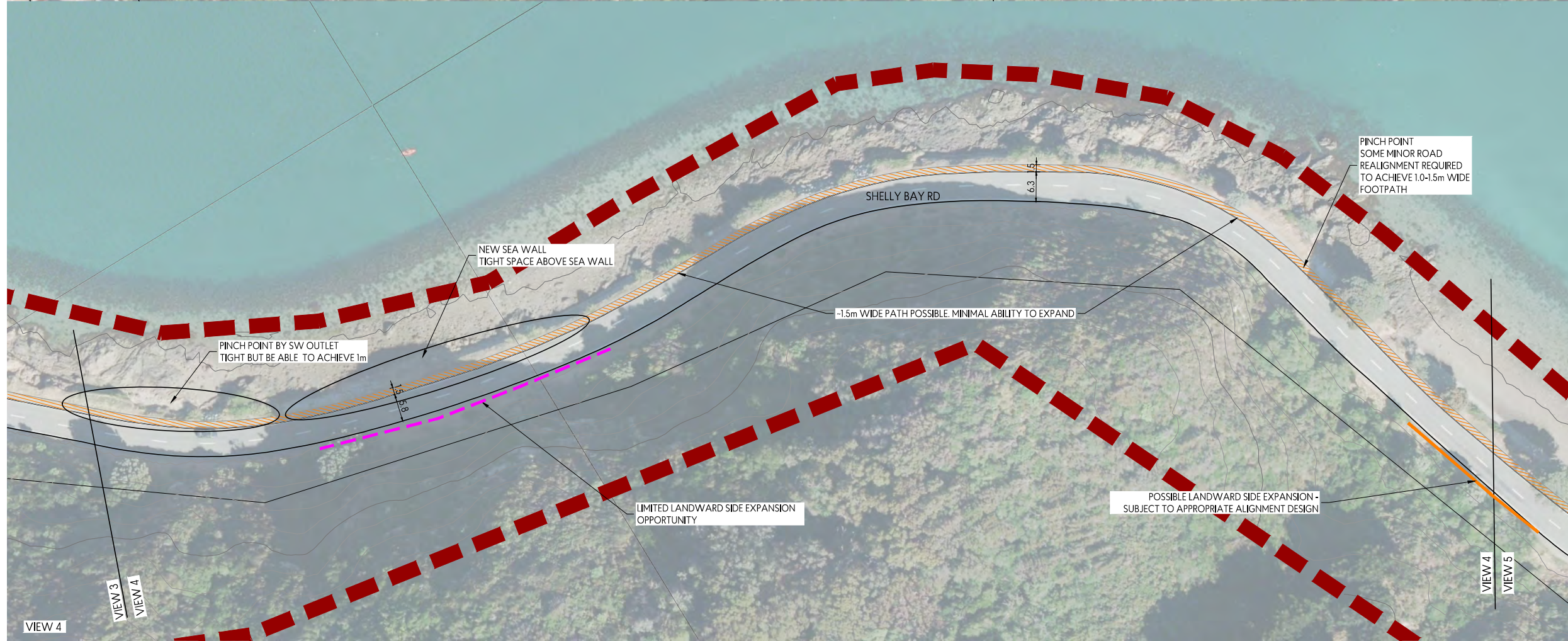
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REVISION:  
 P1



-1.5m-3m WIDE PATH POSSIBLE WITH LIMITED PHYSICAL WORK AND VEGETATION IMPACT  
SOME EXPANSION TO 3m WIDE POSSIBLE  
SOME INFORMAL PARKING CURRENTLY OCCURS

**DRAFT PLAN ONLY**



PINCH POINT  
SOME MINOR ROAD REALIGNMENT REQUIRED TO ACHIEVE 1.0-1.5m WIDE FOOTPATH

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TITLE:  
ROADING LAYOUT PLANS  
SHEET 2

**ENVELOPE ENGINEERING**  
LAND  
STRUCTURE  
MANAGE

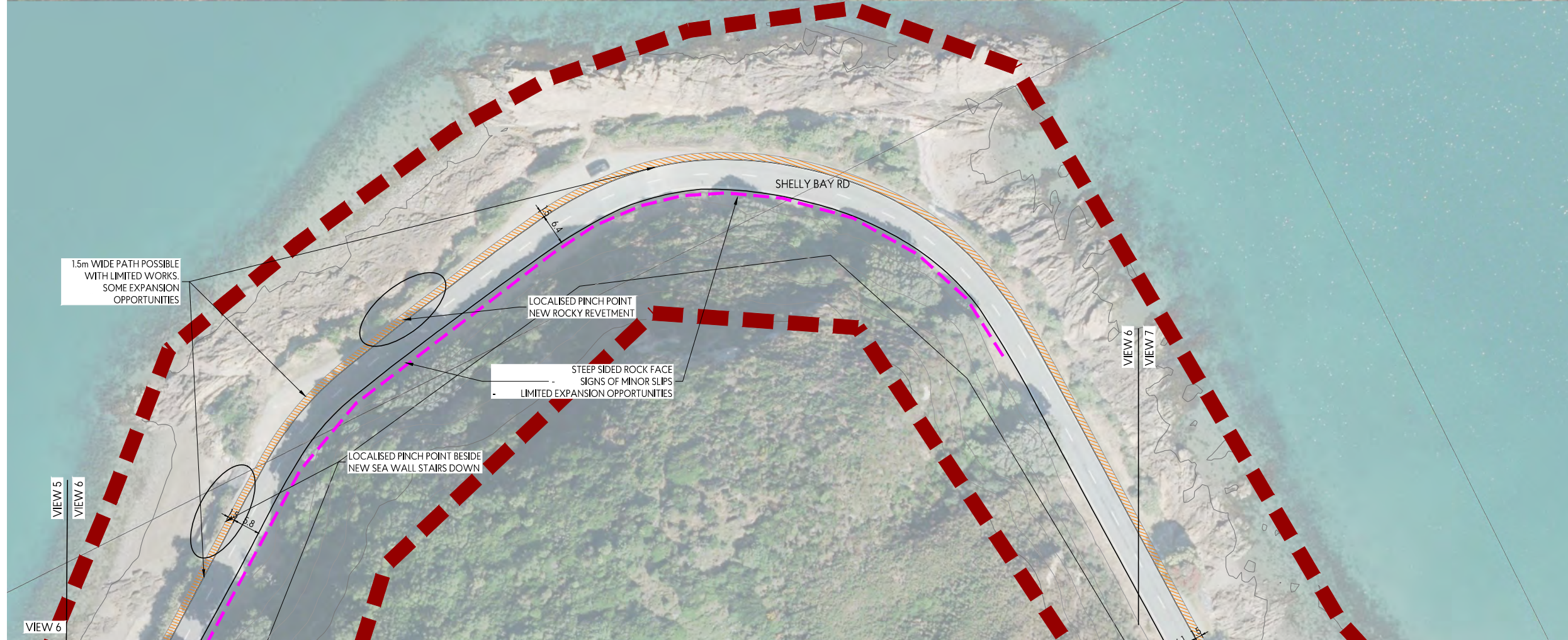
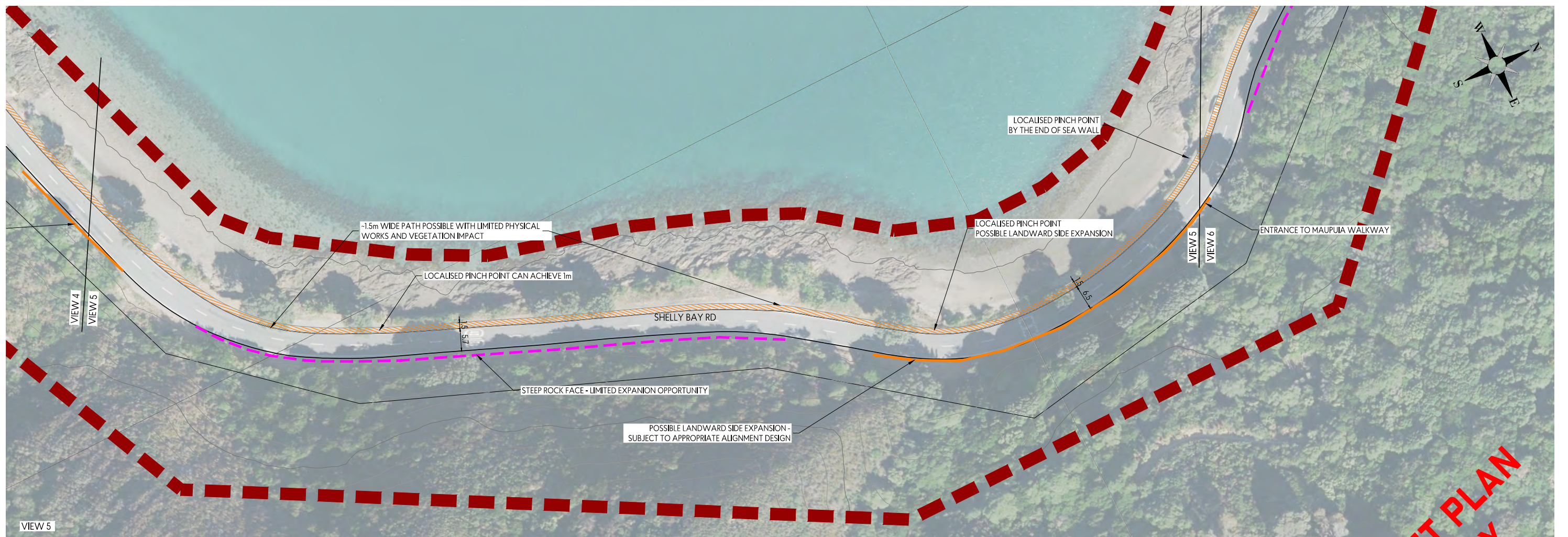
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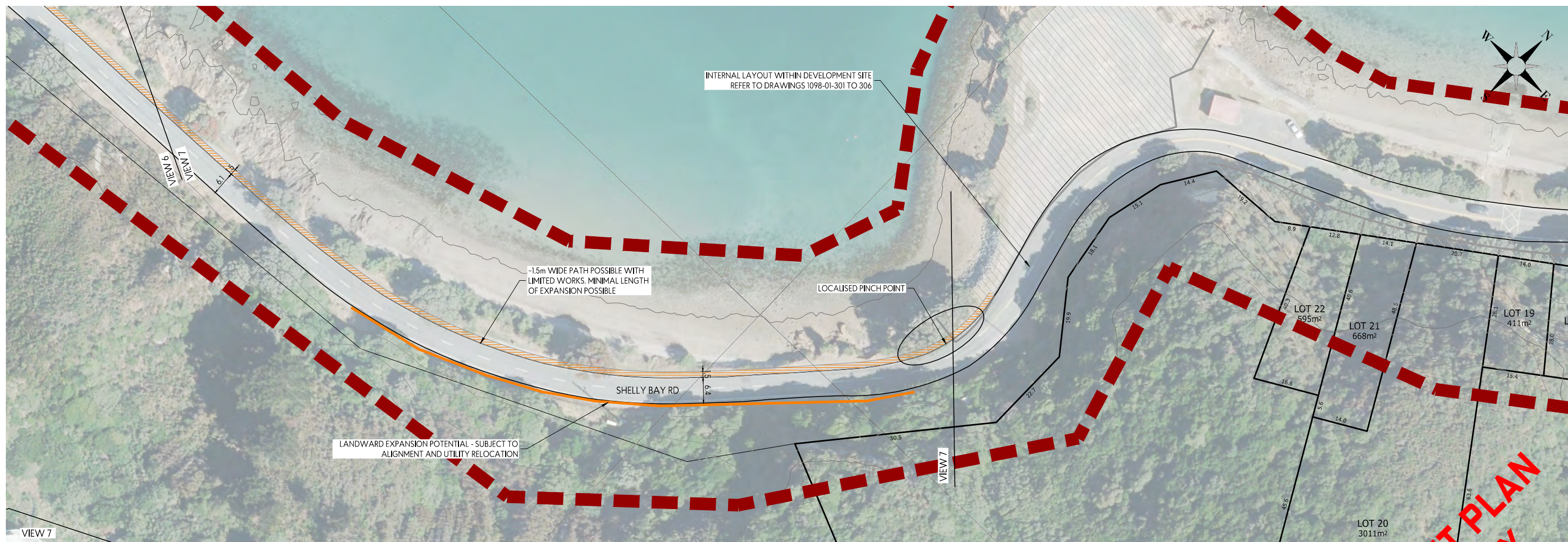
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TITLE:  
 ROADING LAYOUT PLANS  
 SHEET 3

**ENVELOPE ENGINEERING**  
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 SHELLY BAY  
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TITLE:  
 ROADING LAYOUT PLANS  
 SHEET 4

**ENVELOPE ENGINEERING**  
 LAND  
 STRUCTURE  
 MANAGE

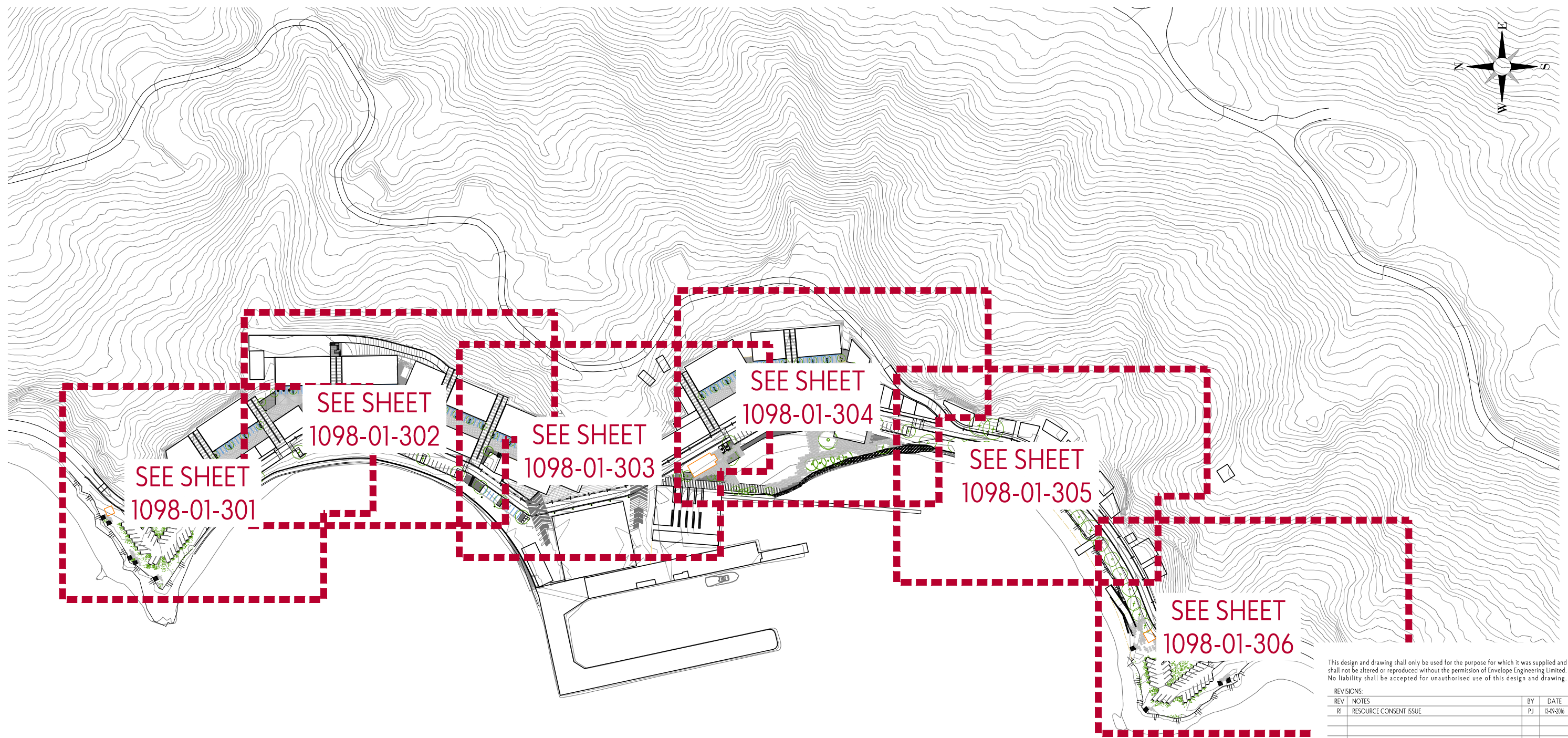
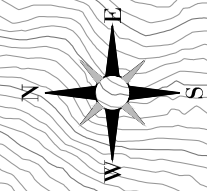
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**ATTACHMENT 2**

Envelope Engineering Resource Consent Civil Drawings





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PROJECT:  
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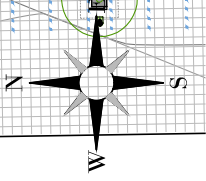
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 PROPOSED ROADING PLANS  
 OVERALL LAYOUT

**ENVELOPE**

**LAND  
 STRUCTURE  
 MANAGE**

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 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
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 CHECKED: AB                     DATE: 14-Sep-2016  
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 1098-01                              300                                      R1



- NOTES:**
1. CONTOURS SHOWN ARE FINISHED GROUND LEVELS AND ARE SHOWN AT 0.2m INTERVALS ON FLAT AREAS AND 2.0m INTERVALS ON STEEPER AREAS.
  2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m

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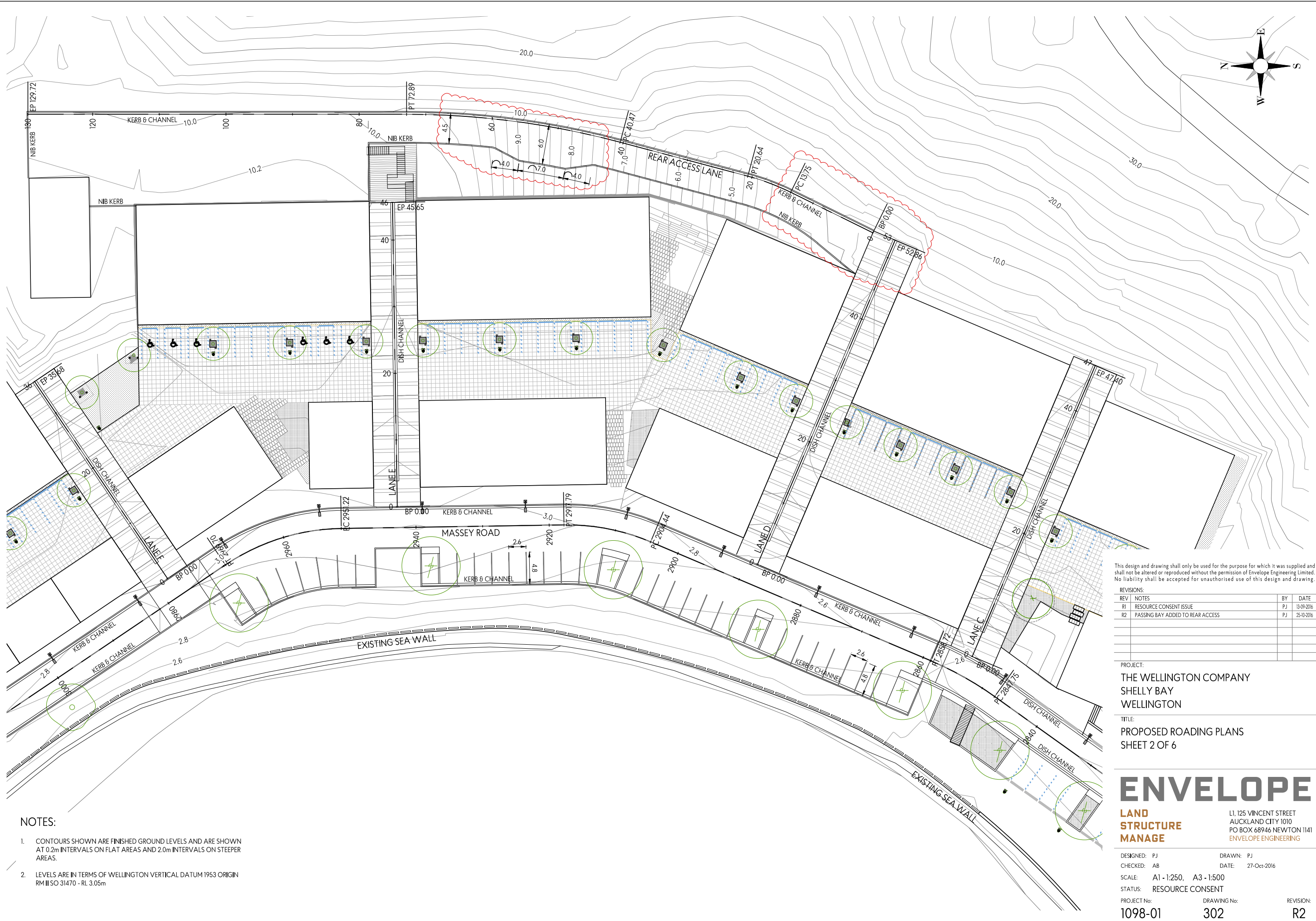
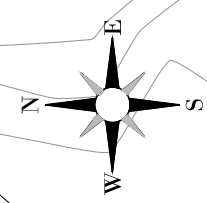
PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

TITLE:  
**PROPOSED ROADING PLANS**  
**SHEET 1 OF 6**

**ENVELOPE**  
**LAND**  
**STRUCTURE**  
**MANAGE**

L1, 125 VINCENT STREET  
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R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016
R2	PASSING BAY ADDED TO REAR ACCESS	PJ	25-10-2016

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**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

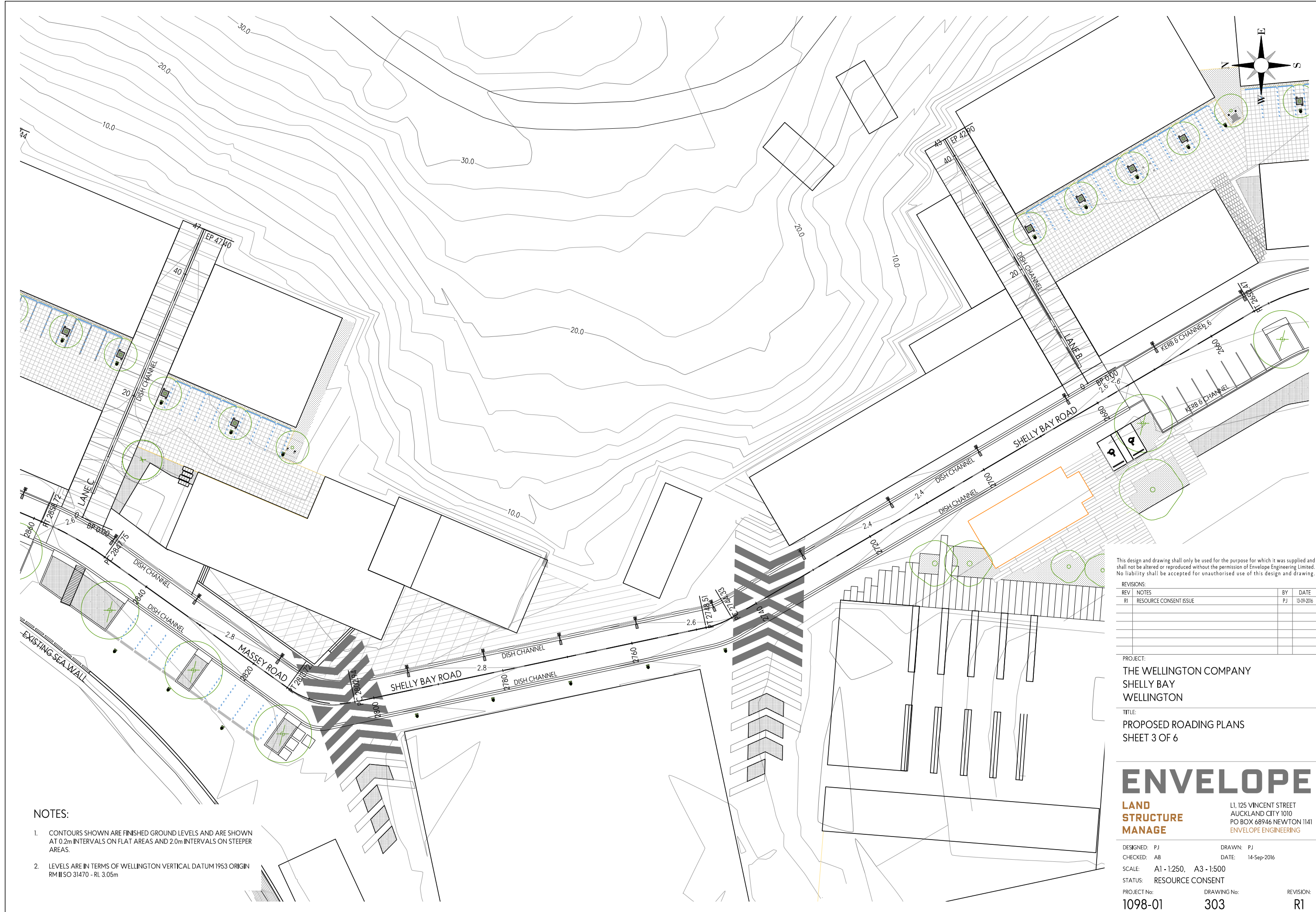
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**SHEET 2 OF 6**

**ENVELOPE**  
**LAND**  
**STRUCTURE**  
**MANAGE**

L1, 125 VINCENT STREET  
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DESIGNED: PJ  
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 PROJECT No: 1098-01  
 DRAWING No: 302  
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 DATE: 27-Oct-2016  
 REVISION: R2

- NOTES:**
- CONTOURS SHOWN ARE FINISHED GROUND LEVELS AND ARE SHOWN AT 0.2m INTERVALS ON FLAT AREAS AND 2.0m INTERVALS ON STEEPER AREAS.
  - LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II ISO 31470 - RL 3.05m



- NOTES:**
1. CONTOURS SHOWN ARE FINISHED GROUND LEVELS AND ARE SHOWN AT 0.2m INTERVALS ON FLAT AREAS AND 2.0m INTERVALS ON STEEPER AREAS.
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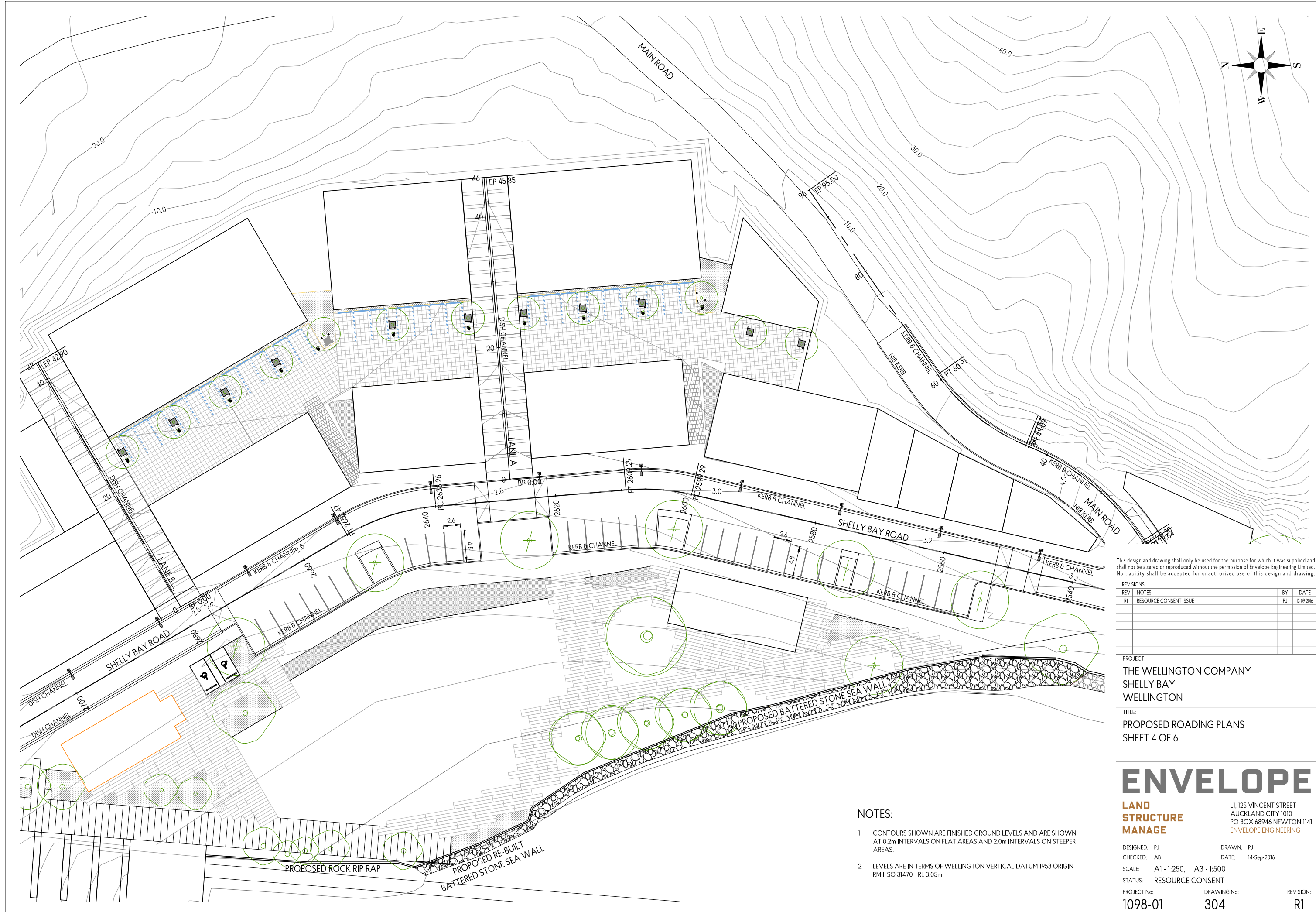
PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
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TITLE:  
**PROPOSED ROADING PLANS**  
 SHEET 3 OF 6

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
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 PO BOX 68946 NEWTON 1141  
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DESIGNED: PJ	DRAWN: PJ	REVISION:
CHECKED: AB	DATE: 14-Sep-2016	R1
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PROJECT No: 1098-01	DRAWING No: 303	



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PROJECT:  
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 SHELLY BAY  
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TITLE:  
 PROPOSED ROADING PLANS  
 SHEET 4 OF 6

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
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 ENVELOPE ENGINEERING

DESIGNED: PJ  
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 PROJECT No: 1098-01  
 DRAWING No: 304  
 REVISION: R1

DRAWN: PJ  
 DATE: 14-Sep-2016

- NOTES:
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  2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m

PROPOSED ROCK RIP RAP

PROPOSED RE-BUILT  
 BATTERED STONE SEA WALL

PROPOSED BATTERED STONE SEA WALL





- NOTES:**
- CONTOURS SHOWN ARE FINISHED GROUND LEVELS AND ARE SHOWN AT 0.2m INTERVALS ON FLAT AREAS AND 2.0m INTERVALS ON STEEPER AREAS.
  - LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II ISO 31470 - RL 3.05m

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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

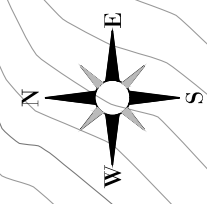
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**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
**PROPOSED ROADING PLANS**  
 SHEET 5 OF 6

**ENVELOPE**  
 LAND STRUCTURE MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ
CHECKED: AB	DATE: 14-Sep-2016
SCALE: A1 - 1:250, A3 - 1:500	
STATUS: RESOURCE CONSENT	
PROJECT No: 1098-01	DRAWING No: 305
	REVISION: R1



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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016
R2	LANDSCAPE REDUCED FOR CARPARK ACCESS	PJ	25-10-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

TITLE:  
**PROPOSED ROADING PLANS**  
**SHEET 6 OF 6**

**ENVELOPE**  
**LAND STRUCTURE MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

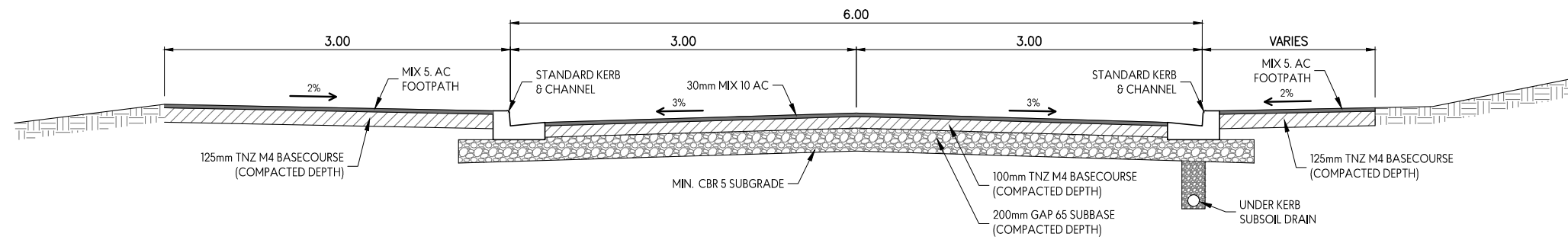
DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWING No: 306  
 REVISION: R2

DRAWN: PJ  
 DATE: 27-Oct-2016

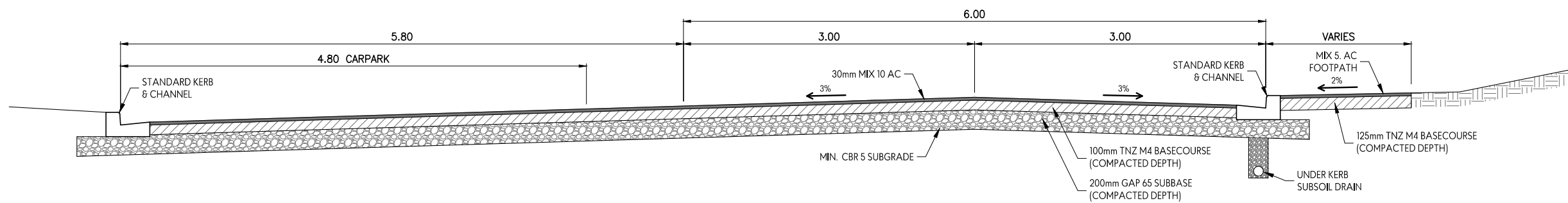
- NOTES:**
- CONTOURS SHOWN ARE FINISHED GROUND LEVELS AND ARE SHOWN AT 0.2m INTERVALS ON FLAT AREAS AND 2.0m INTERVALS ON STEEPER AREAS.
  - LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM IISO 31470 - RL 3.05m

NOTES:

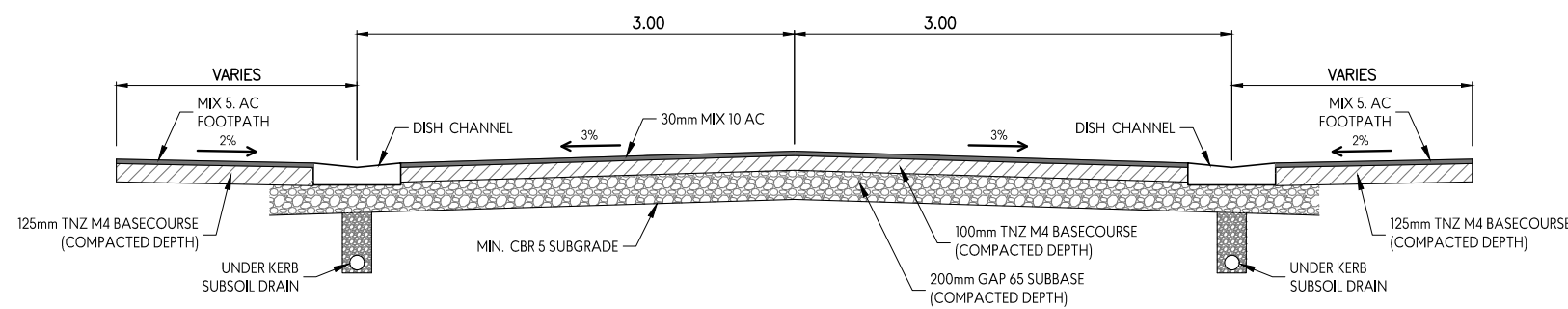
1. ALL METAL DEPTHS AND ROAD LAYERS TO BE CONFIRMED AT DETAIL DESIGN/ENGINEERING APPROVAL STAGE.



TYPICAL ROAD CROSS-SECTION  
ROAD 1 - SHELLY BAY ROAD



TYPICAL ROAD CROSS-SECTION  
ROAD 1 - SHELLY BAY ROAD  
WITH CARPARKING



TYPICAL ROAD CROSS-SECTION  
ROAD 1 - SHELLY BAY ROAD  
CH 2676.3m to 2856.9m

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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
THE WELLINGTON COMPANY  
SHELLY BAY  
WELLINGTON

TITLE:  
TYPICAL ROAD CROSS-SECTIONS  
SHEET 1 OF 2

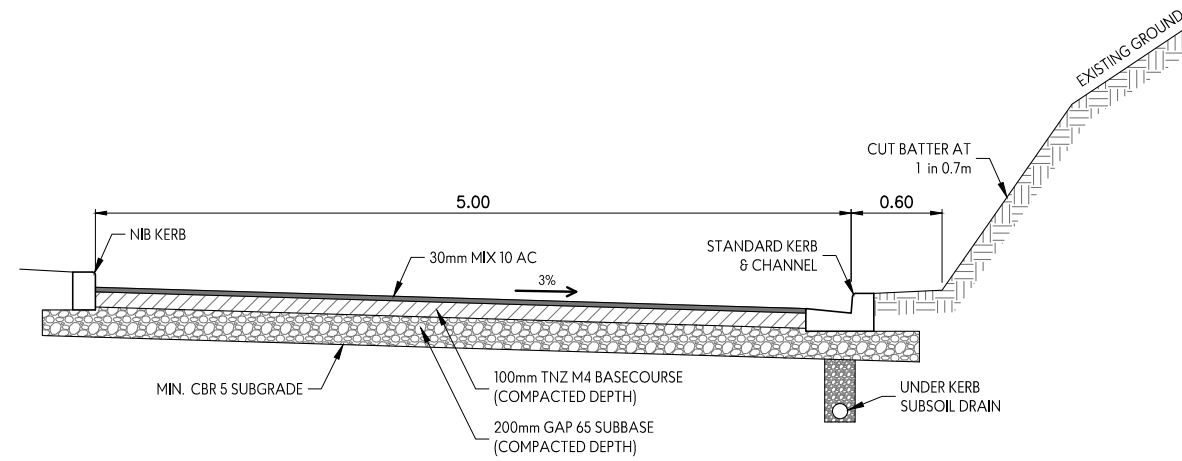
**ENVELOPE**  
LAND  
STRUCTURE  
MANAGE  
L1, 125 VINCENT STREET  
AUCKLAND CITY 1010  
PO BOX 68946 NEWTON 1141  
ENVELOPE ENGINEERING

DESIGNED: PJ  
CHECKED: AB  
SCALE: A1 - 1:25, A3 - 1:50  
STATUS: RESOURCE CONSENT  
PROJECT No: 1098-01  
DRAWING No: 330  
REVISION: R1

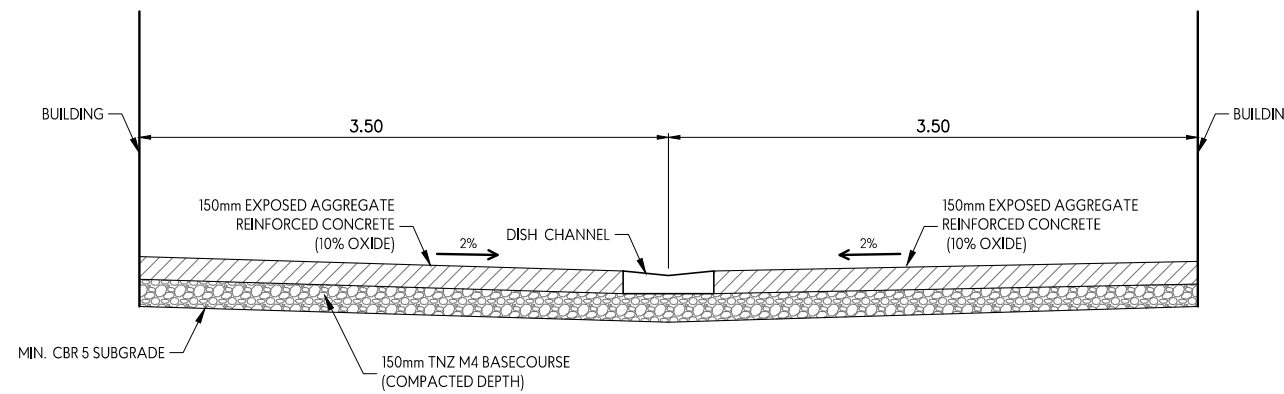
DRAWN: PJ  
DATE: 14-Sep-2016  
REVISION: R1

NOTES:

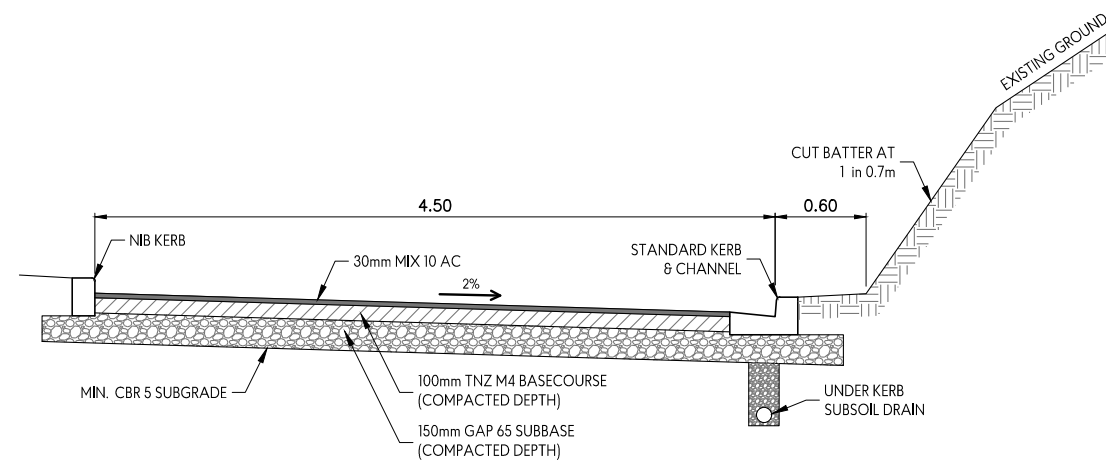
1. ALL METAL DEPTHS AND ROAD LAYERS TO BE CONFIRMED AT DETAIL DESIGN/ENGINEERING APPROVAL STAGE.



TYPICAL ROAD CROSS-SECTION  
ROAD 2 - MAIN ROAD



TYPICAL ROAD CROSS-SECTION  
SHARED LANES



TYPICAL ROAD CROSS-SECTION  
REAR ACCESS LANE

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
THE WELLINGTON COMPANY  
SHELLY BAY  
WELLINGTON

TITLE:  
TYPICAL ROAD CROSS-SECTIONS  
SHEET 2 OF 2

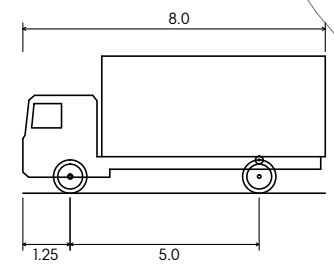
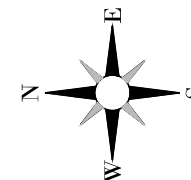
**ENVELOPE**  
LAND  
STRUCTURE  
MANAGE

L1, 125 VINCENT STREET  
AUCKLAND CITY 1010  
PO BOX 68946 NEWTON 1141  
ENVELOPE ENGINEERING

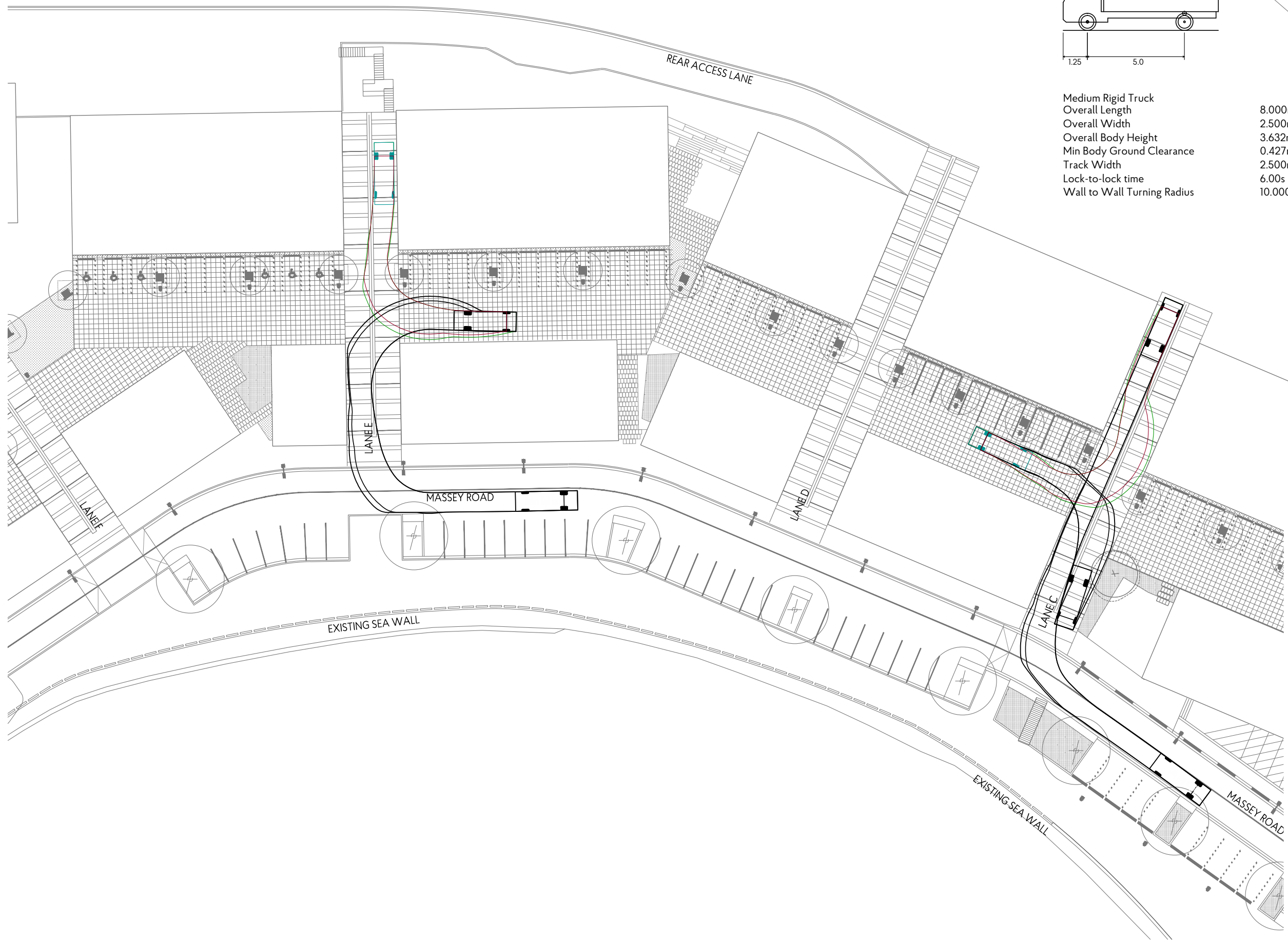
DESIGNED: PJ  
CHECKED: AB  
SCALE: A1 - 1:25, A3 - 1:50  
STATUS: RESOURCE CONSENT

DRAWN: PJ  
DATE: 14-Sep-2016

PROJECT No: 1098-01  
DRAWING No: 331  
REVISION: R1



Medium Rigid Truck  
 Overall Length 8.000m  
 Overall Width 2.500m  
 Overall Body Height 3.632m  
 Min Body Ground Clearance 0.427m  
 Track Width 2.500m  
 Lock-to-lock time 6.00s  
 Wall to Wall Turning Radius 10.000m



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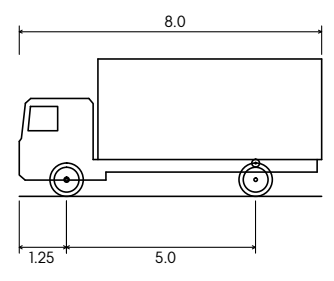
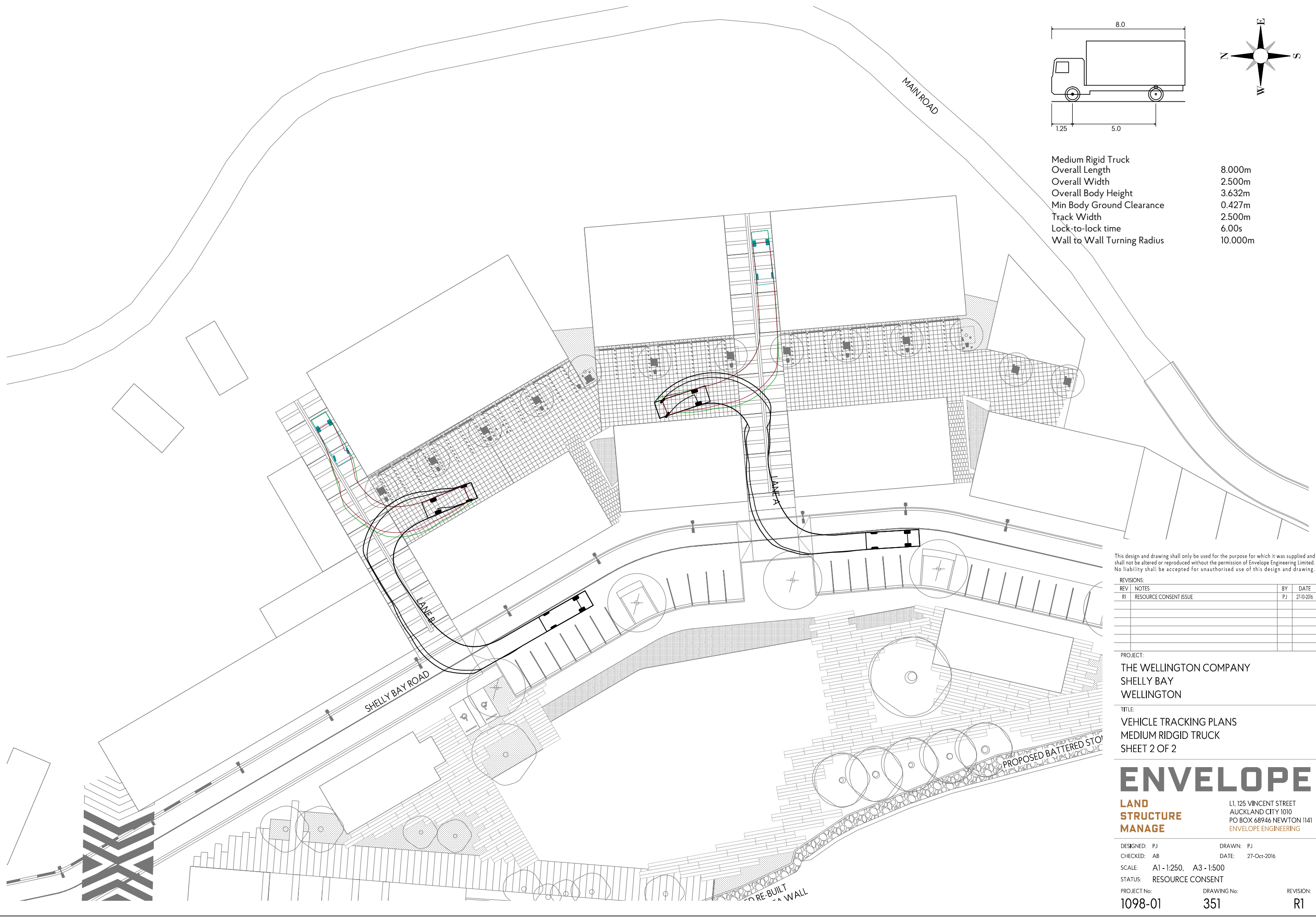
REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	27-10-2016

PROJECT:  
 THE WELLINGTON COMPANY  
 SHELLY BAY  
 WELLINGTON  
 TITLE:  
 VEHICLE TRACKING PLANS  
 MEDIUM RIGID TRUCK  
 SHEET 1 OF 2

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE  
 L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWING No: 350  
 DRAWN: PJ  
 DATE: 27-Oct-2016  
 REVISION: R1



Medium Rigid Truck	
Overall Length	8.000m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	10.000m

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	27-10-2016

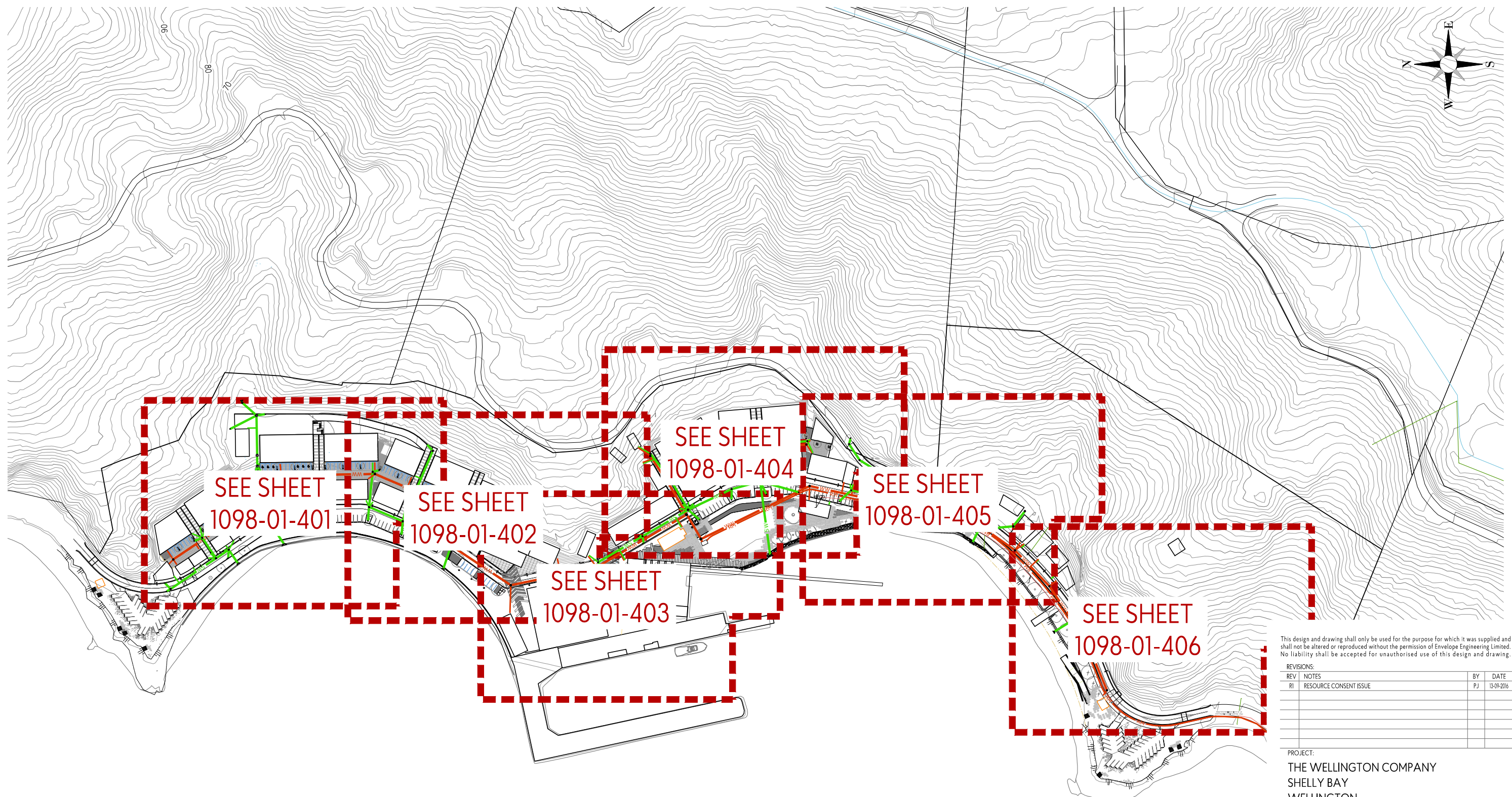
PROJECT:  
 THE WELLINGTON COMPANY  
 SHELLY BAY  
 WELLINGTON

TITLE:  
 VEHICLE TRACKING PLANS  
 MEDIUM RIDGID TRUCK  
 SHEET 2 OF 2

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ
CHECKED: AB	DATE: 27-Oct-2016
SCALE: A1 - 1:250, A3 - 1:500	
STATUS: RESOURCE CONSENT	
PROJECT No: 1098-01	DRAWING No: 351
	REVISION: R1



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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
 DRAINAGE PLANS  
 OVERALL LAYOUT

**ENVELOPE**

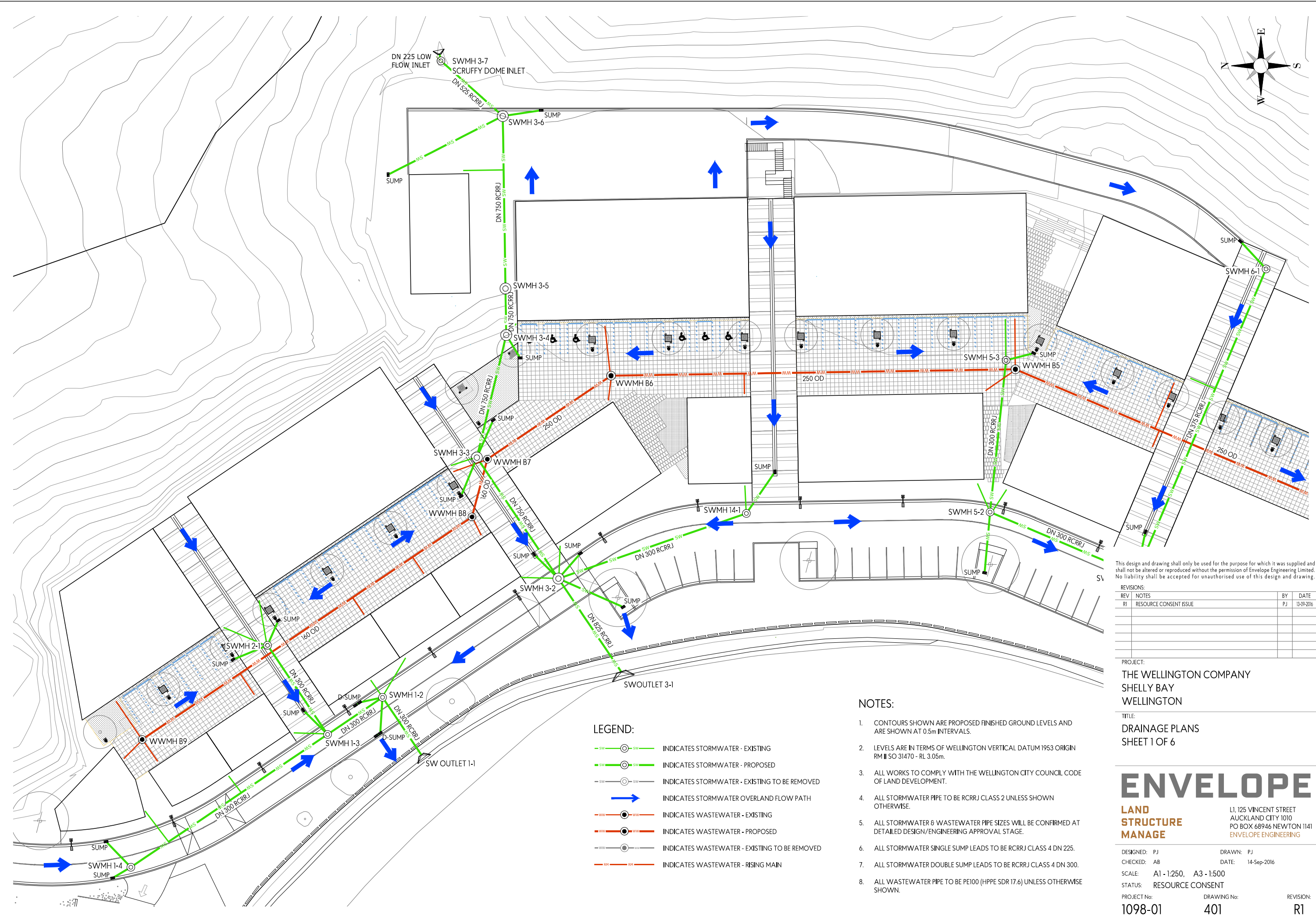
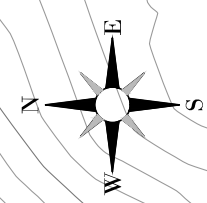
**LAND  
 STRUCTURE  
 MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:1250, A3 - 1:2500  
 PROJECT No: 1098-01

DRAWN: PJ  
 DATE: 14-Sep-2016  
 STATUS: RESOURCE CONSENT  
 DRAWING No: 400

REVISION:  
 R1



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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

TITLE:  
**DRAINAGE PLANS**  
**SHEET 1 OF 6**

**ENVELOPE**  
**LAND STRUCTURE MANAGE**

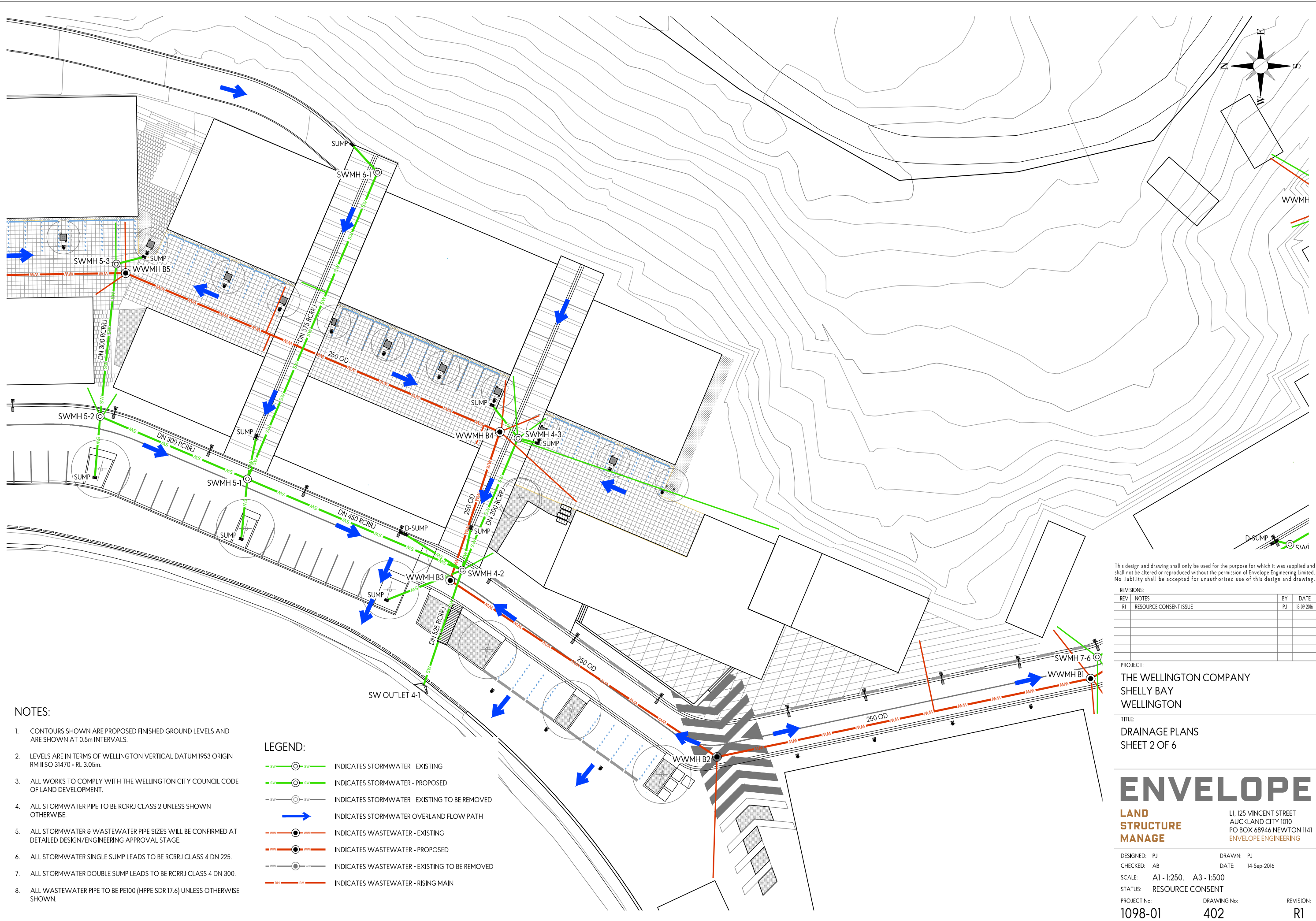
L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ
CHECKED: AB	DATE: 14-Sep-2016
SCALE: A1 - 1:250, A3 - 1:500	
STATUS: RESOURCE CONSENT	
PROJECT No: 1098-01	DRAWING No: 401
	REVISION: R1

- LEGEND:**
- INDICATES STORMWATER - EXISTING
  - INDICATES STORMWATER - PROPOSED
  - INDICATES STORMWATER - EXISTING TO BE REMOVED
  - INDICATES STORMWATER OVERLAND FLOW PATH
  - INDICATES WASTEWATER - EXISTING
  - INDICATES WASTEWATER - PROPOSED
  - INDICATES WASTEWATER - EXISTING TO BE REMOVED
  - INDICATES WASTEWATER - RISING MAIN

- NOTES:**
- CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 0.5m INTERVALS.
  - LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
  - ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  - ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
  - ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
  - ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
  - ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
  - ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.





- NOTES:**
1. CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 0.5m INTERVALS.
  2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
  3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  4. ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
  5. ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
  6. ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
  7. ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
  8. ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.

- LEGEND:**
- INDICATES STORMWATER - EXISTING
  - INDICATES STORMWATER - PROPOSED
  - INDICATES STORMWATER - EXISTING TO BE REMOVED
  - INDICATES STORMWATER OVERLAND FLOW PATH
  - INDICATES WASTEWATER - EXISTING
  - INDICATES WASTEWATER - PROPOSED
  - INDICATES WASTEWATER - EXISTING TO BE REMOVED
  - INDICATES WASTEWATER - RISING MAIN

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

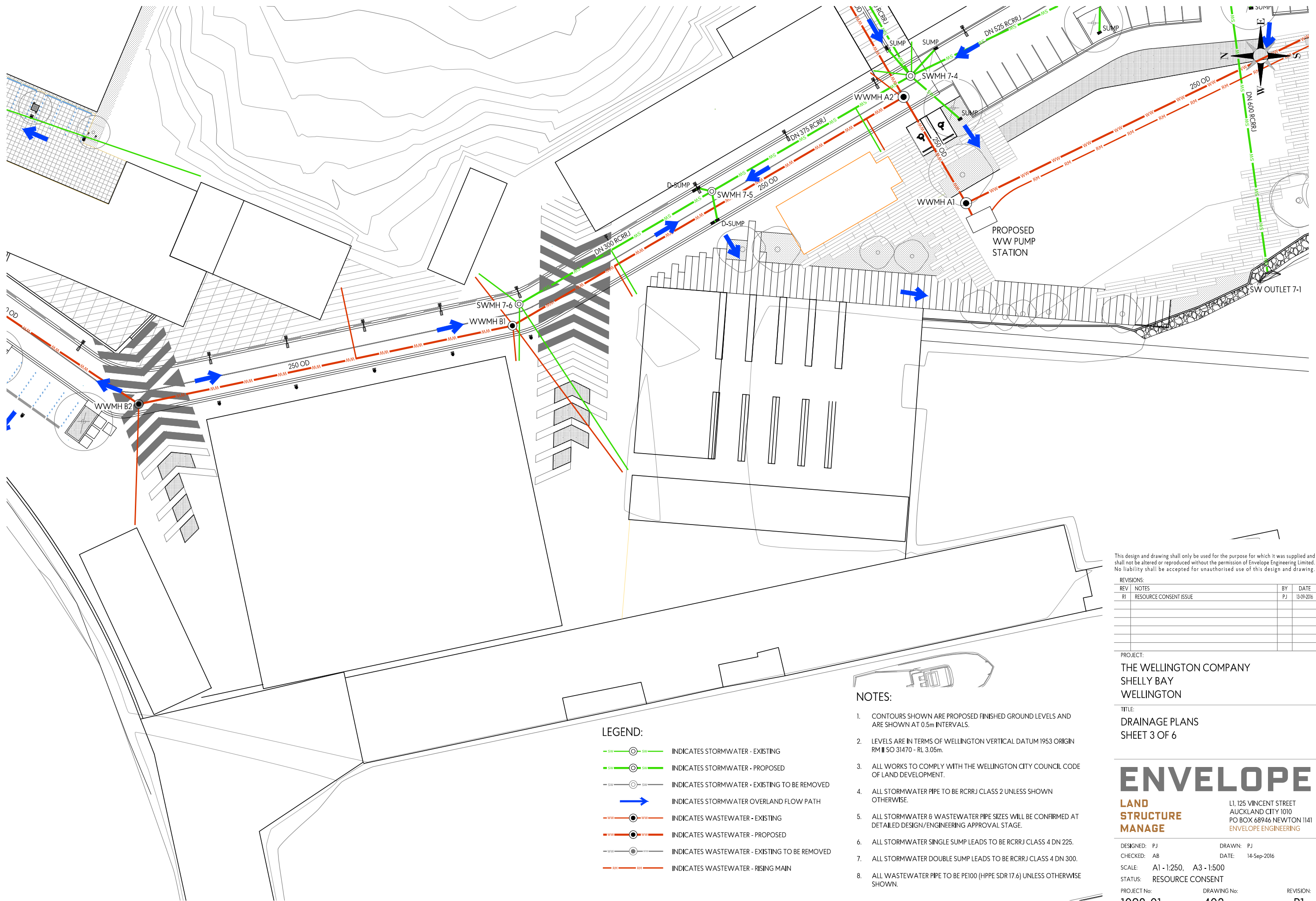
TITLE:  
**DRAINAGE PLANS**  
**SHEET 2 OF 6**

**ENVELOPE**  
**LAND**  
**STRUCTURE**  
**MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWING No: 402  
 REVISION: R1

DRAWN: PJ  
 DATE: 14-Sep-2016  
 REVISION: R1



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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
 THE WELLINGTON COMPANY  
 SHELLY BAY  
 WELLINGTON

TITLE:  
 DRAINAGE PLANS  
 SHEET 3 OF 6

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWN: PJ  
 DATE: 14-Sep-2016  
 DRAWING No: 403  
 REVISION: R1








- LEGEND:**
- INDICATES STORMWATER - EXISTING
  - INDICATES STORMWATER - PROPOSED
  - INDICATES STORMWATER - EXISTING TO BE REMOVED
  - INDICATES STORMWATER OVERLAND FLOW PATH
  - INDICATES WASTEWATER - EXISTING
  - INDICATES WASTEWATER - PROPOSED
  - INDICATES WASTEWATER - EXISTING TO BE REMOVED
  - INDICATES WASTEWATER - RISING MAIN

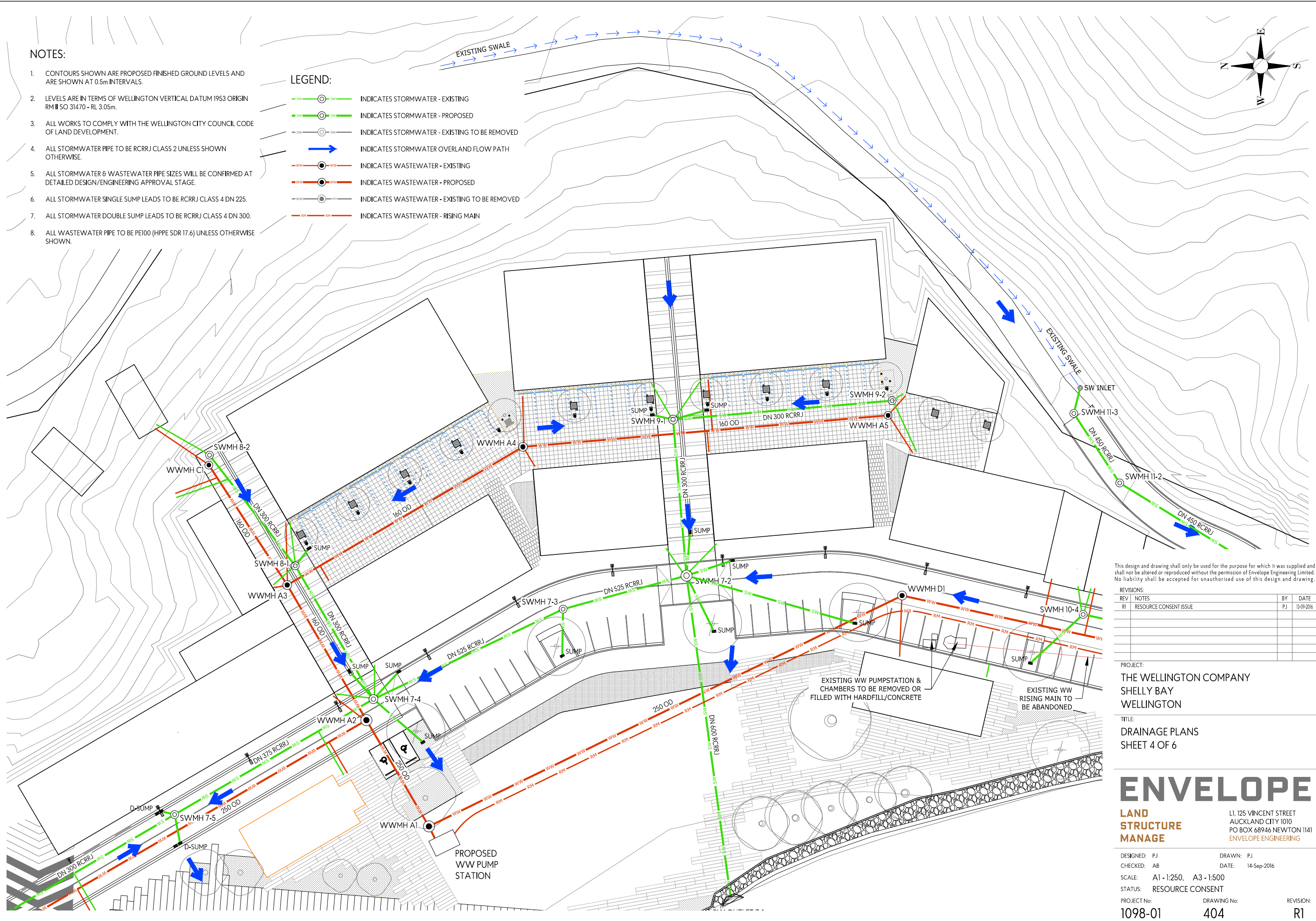
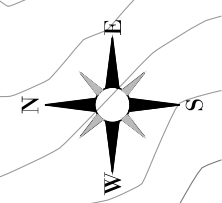
- NOTES:**
1. CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 0.5m INTERVALS.
  2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
  3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  4. ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
  5. ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
  6. ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
  7. ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
  8. ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.

**NOTES:**

1. CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 0.5m INTERVALS.
2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
4. ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
5. ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
6. ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
7. ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
8. ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.

**LEGEND:**

-  INDICATES STORMWATER - EXISTING
-  INDICATES STORMWATER - PROPOSED
-  INDICATES STORMWATER OVERLAND FLOW PATH
-  INDICATES WASTEWATER - EXISTING
-  INDICATES WASTEWATER - PROPOSED
-  INDICATES WASTEWATER - EXISTING TO BE REMOVED
-  INDICATES WASTEWATER - RISING MAIN



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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

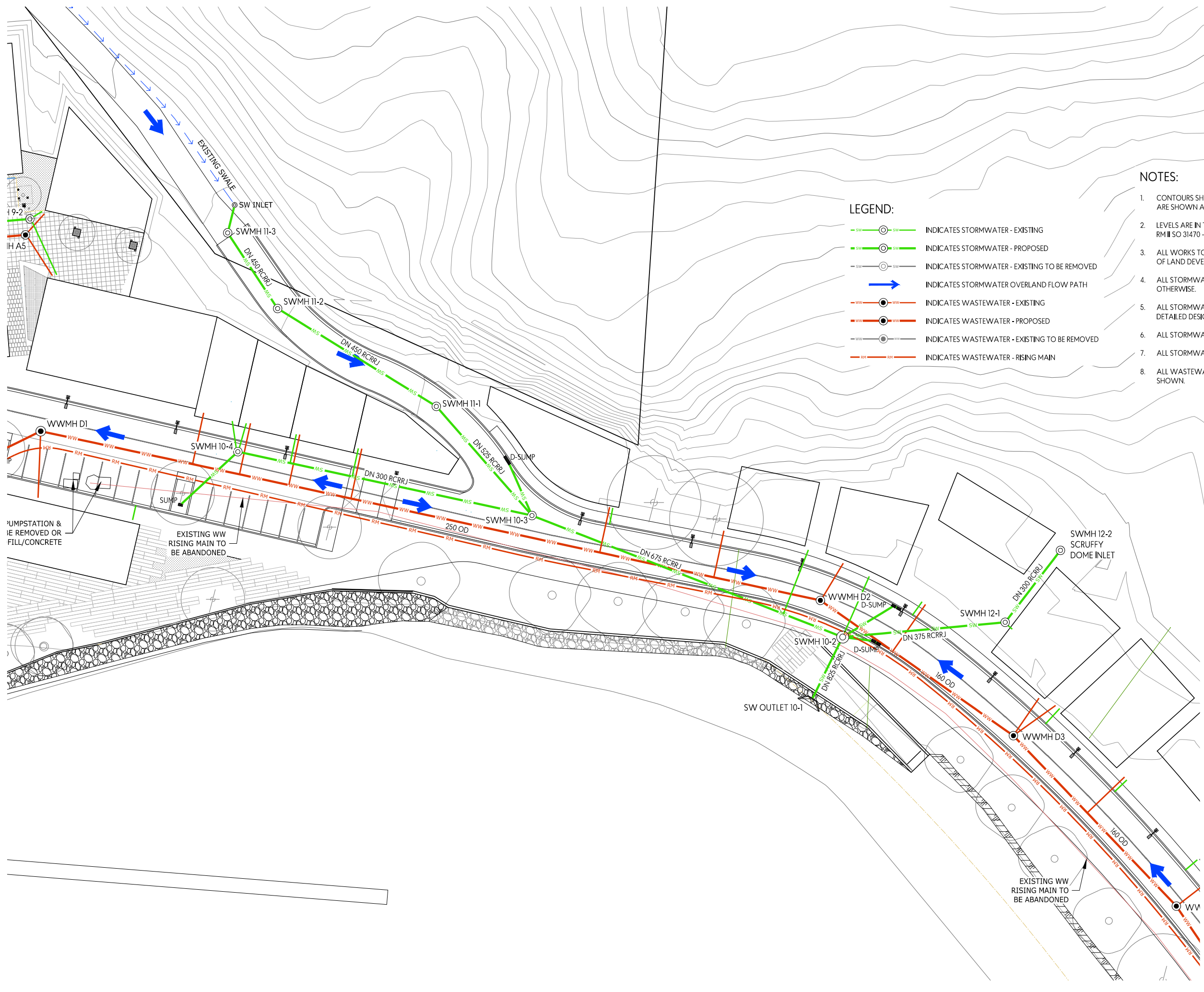
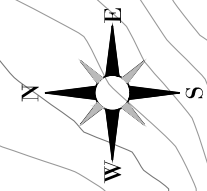
PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

TITLE:  
**DRAINAGE PLANS**  
**SHEET 4 OF 6**

**ENVELOPE**  
**LAND STRUCTURE MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ
CHECKED: AB	DATE: 14-Sep-2016
SCALE: A1 - 1:250, A3 - 1:500	
STATUS: RESOURCE CONSENT	
PROJECT No: 1098-01	DRAWING No: 404
	REVISION: R1



**LEGEND:**

- INDICATES STORMWATER - EXISTING
- INDICATES STORMWATER - PROPOSED
- INDICATES STORMWATER - EXISTING TO BE REMOVED
- INDICATES STORMWATER OVERLAND FLOW PATH
- INDICATES WASTEWATER - EXISTING
- INDICATES WASTEWATER - PROPOSED
- INDICATES WASTEWATER - EXISTING TO BE REMOVED
- INDICATES WASTEWATER - RISING MAIN

**NOTES:**

1. CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 0.5m INTERVALS.
2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
4. ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
5. ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
6. ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
7. ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
8. ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.

This design and drawing shall only be used for the purpose for which it was supplied and shall not be altered or reproduced without the permission of Envelope Engineering Limited. No liability shall be accepted for unauthorised use of this design and drawing.

REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

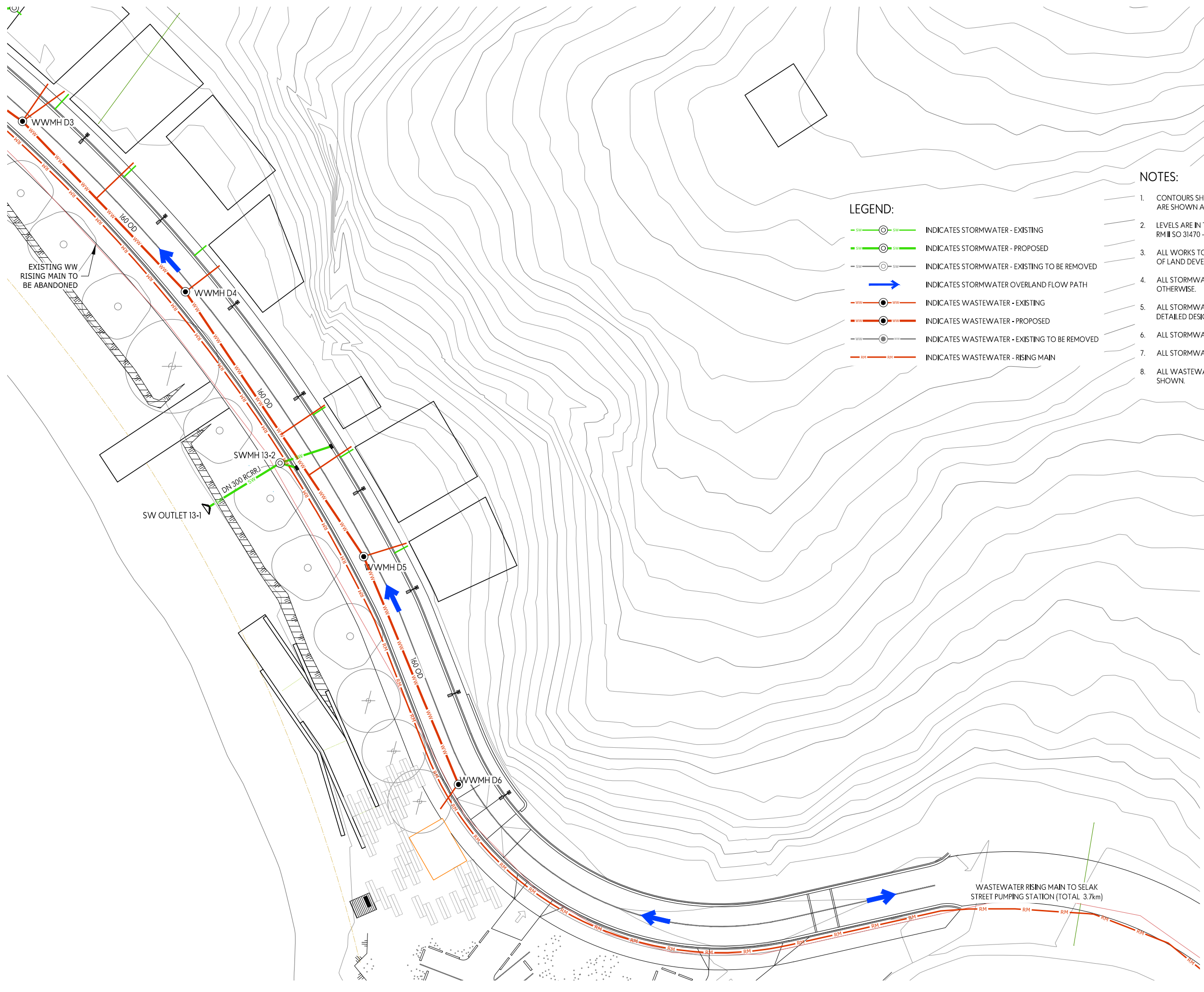
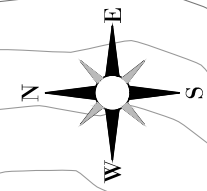
PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
**DRAINAGE PLANS**  
 SHEET 5 OF 6

**ENVELOPE**  
**LAND STRUCTURE MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ
CHECKED: AB	DATE: 14-Sep-2016
SCALE: A1 - 1:250, A3 - 1:500	
STATUS: RESOURCE CONSENT	
PROJECT No: 1098-01	DRAWING No: 405
	REVISION: R1



**LEGEND:**

- INDICATES STORMWATER - EXISTING
- INDICATES STORMWATER - PROPOSED
- INDICATES STORMWATER - EXISTING TO BE REMOVED
- INDICATES STORMWATER OVERLAND FLOW PATH
- INDICATES WASTEWATER - EXISTING
- INDICATES WASTEWATER - PROPOSED
- INDICATES WASTEWATER - EXISTING TO BE REMOVED
- INDICATES WASTEWATER - RISING MAIN

**NOTES:**

1. CONTOURS SHOWN ARE PROPOSED FINISHED GROUND LEVELS AND ARE SHOWN AT 2.0m INTERVALS.
2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
4. ALL STORMWATER PIPE TO BE RCRRJ CLASS 2 UNLESS SHOWN OTHERWISE.
5. ALL STORMWATER & WASTEWATER PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.
6. ALL STORMWATER SINGLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 225.
7. ALL STORMWATER DOUBLE SUMP LEADS TO BE RCRRJ CLASS 4 DN 300.
8. ALL WASTEWATER PIPE TO BE PE100 (HPPE SDR 17.6) UNLESS OTHERWISE SHOWN.

EXISTING WW RISING MAIN TO BE ABANDONED

SW OUTLET 13-1

WASTEWATER RISING MAIN TO SELAK STREET PUMPING STATION (TOTAL 3.7km)

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

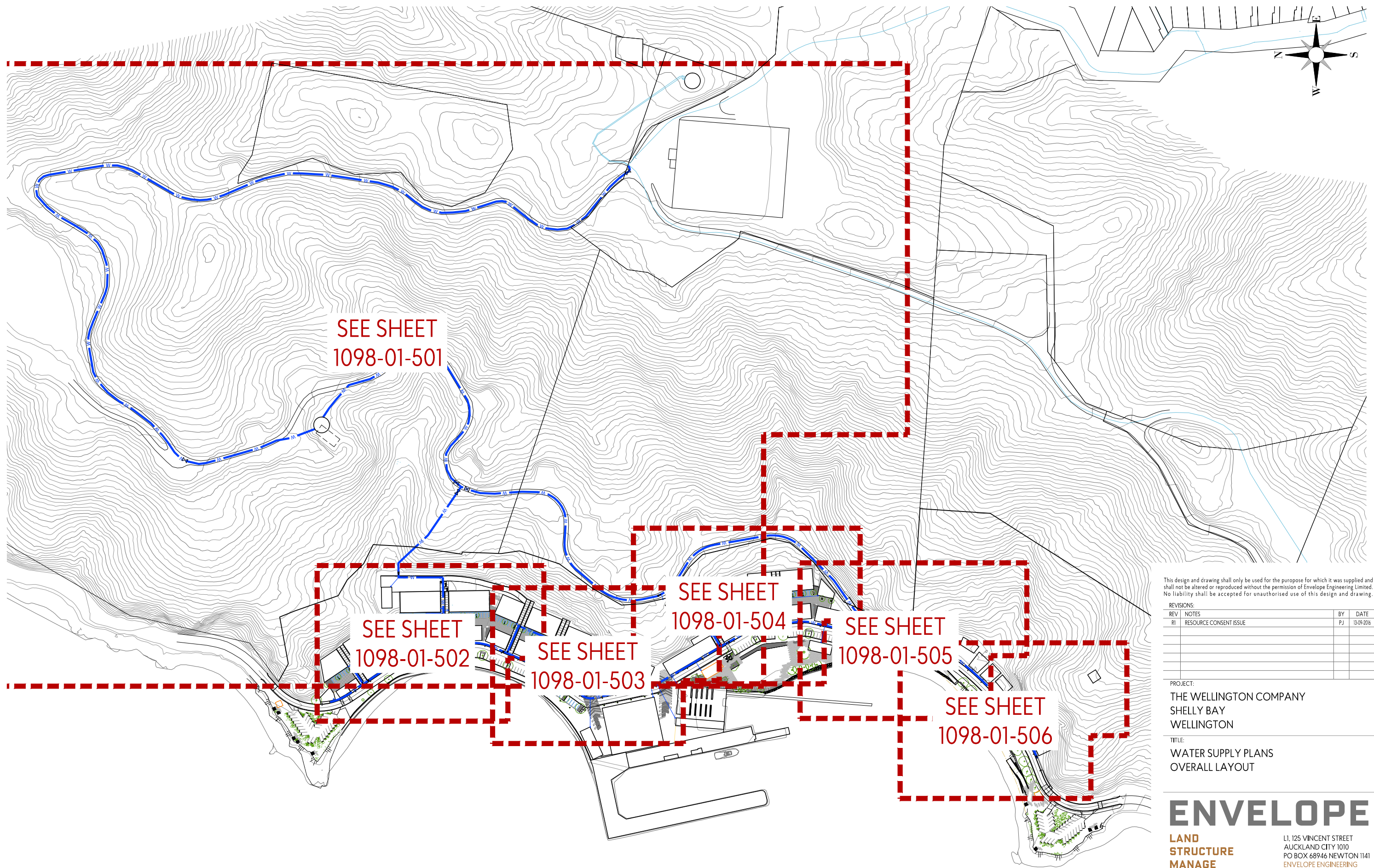
PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
**DRAINAGE PLANS**  
 SHEET 6 OF 6

**ENVELOPE**  
 LAND STRUCTURE MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWN: PJ  
 DATE: 14-Sep-2016  
 DRAWING No: 406  
 REVISION: R1



SEE SHEET  
1098-01-501

SEE SHEET  
1098-01-502

SEE SHEET  
1098-01-503

SEE SHEET  
1098-01-504

SEE SHEET  
1098-01-505

SEE SHEET  
1098-01-506

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
THE WELLINGTON COMPANY  
SHELLY BAY  
WELLINGTON

TITLE:  
WATER SUPPLY PLANS  
OVERALL LAYOUT

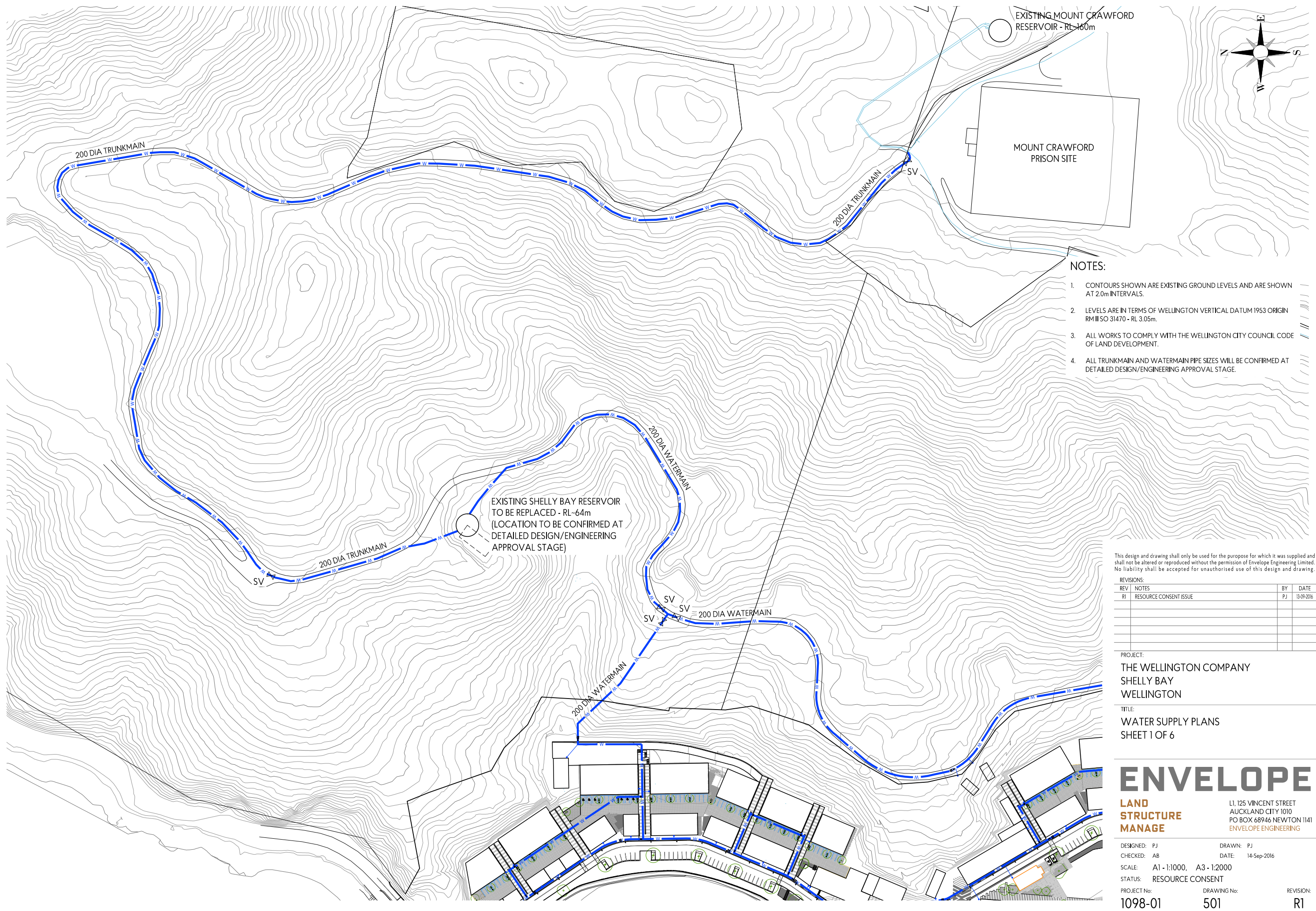
**ENVELOPE**

LAND  
STRUCTURE  
MANAGE

L1, 125 VINCENT STREET  
AUCKLAND CITY 1010  
PO BOX 68946 NEWTON 1141  
ENVELOPE ENGINEERING

DESIGNED: PJ  
CHECKED: AB  
SCALE: A1 - 1:1500, A3 - 1:3000  
STATUS: RESOURCE CONSENT  
PROJECT No: 1098-01  
DRAWING No: 500  
REVISION: R1

DRAWN: PJ  
DATE: 14-Sep-2016



- NOTES:**
1. CONTOURS SHOWN ARE EXISTING GROUND LEVELS AND ARE SHOWN AT 2.0m INTERVALS.
  2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATUM 1953 ORIGIN RM II SO 31470 - RL 3.05m.
  3. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  4. ALL TRUNKMAIN AND WATERMAIN PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

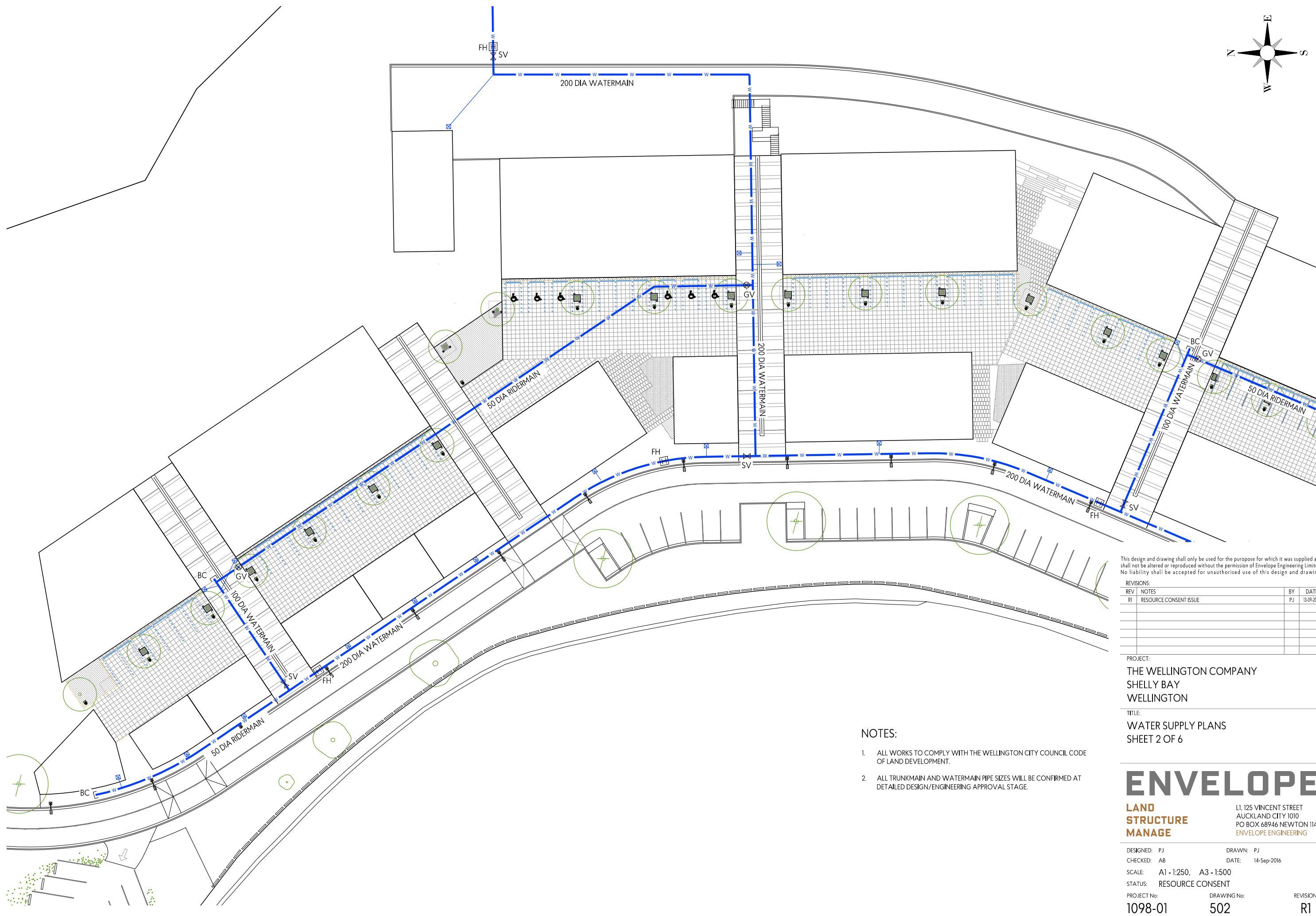
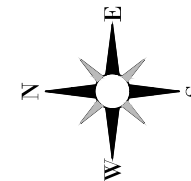
TITLE:  
**WATER SUPPLY PLANS**  
**SHEET 1 OF 6**

**ENVELOPE**

**LAND STRUCTURE MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ	REVISION:
CHECKED: AB	DATE: 14-Sep-2016	R1
SCALE: A1 - 1:1000, A3 - 1:2000		
STATUS: RESOURCE CONSENT		
PROJECT No: 1098-01	DRAWING No: 501	



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REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
**SHELLY BAY**  
**WELLINGTON**

TITLE:  
**WATER SUPPLY PLANS**  
**SHEET 2 OF 6**

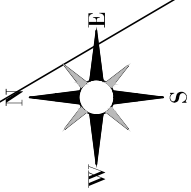
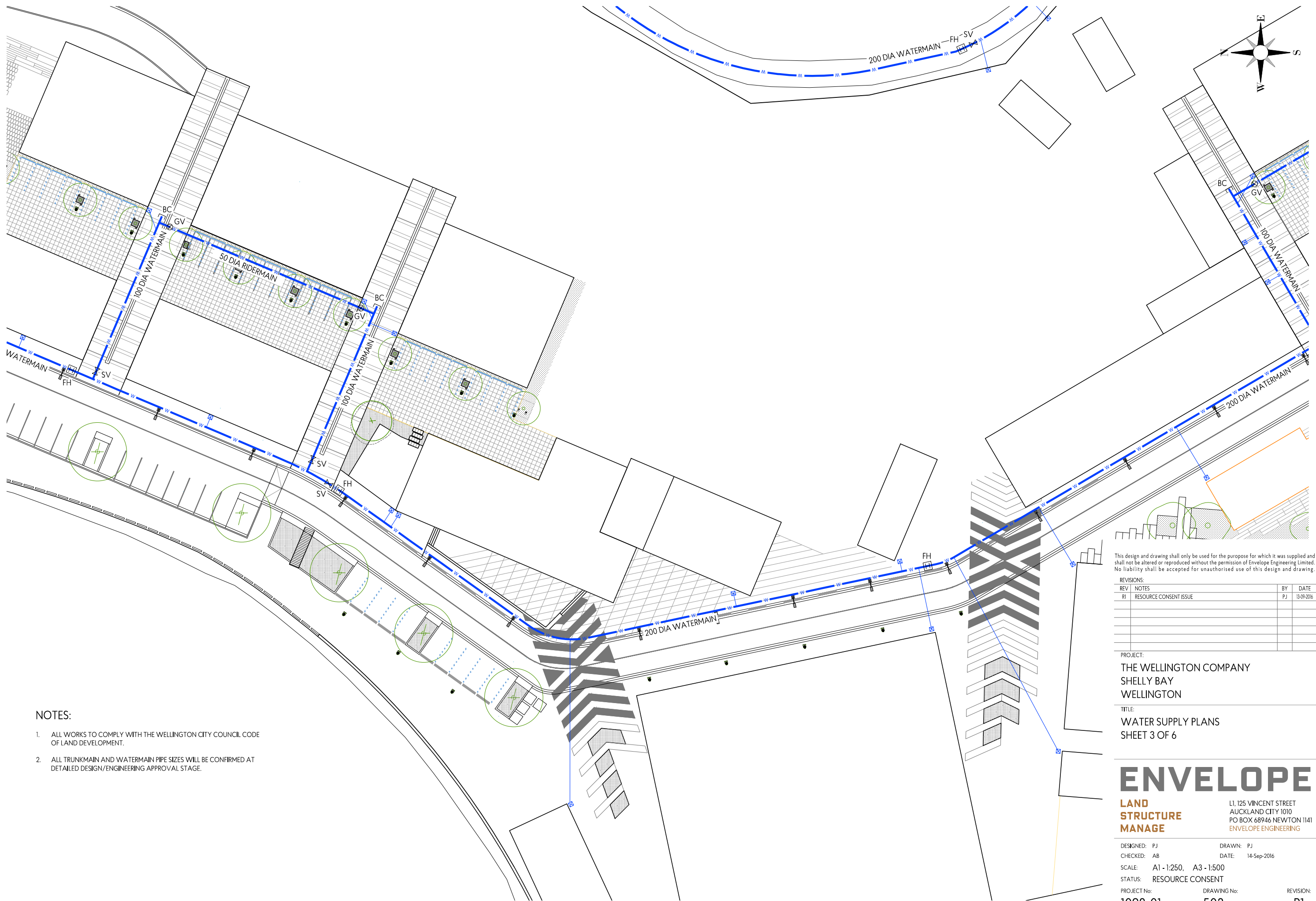
- NOTES:
1. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  2. ALL TRUNKMAIN AND WATERMAIN PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.

**ENVELOPE**  
**LAND**  
**STRUCTURE**  
**MANAGE**

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 STATUS: RESOURCE CONSENT  
 PROJECT No: 1098-01  
 DRAWN: PJ  
 DATE: 14-Sep-2016  
 DRAWING No: 502  
 REVISION: R1





- NOTES:**
1. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
  2. ALL TRUNKMAIN AND WATERMAIN PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.

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REVISIONS:

REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
**WATER SUPPLY PLANS**  
 SHEET 3 OF 6

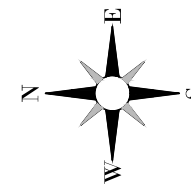
**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ  
 CHECKED: AB  
 SCALE: A1 - 1:250, A3 - 1:500  
 PROJECT No: 1098-01

DRAWN: PJ  
 DATE: 14-Sep-2016  
 STATUS: RESOURCE CONSENT  
 DRAWING No: 503

REVISION:  
 R1



**NOTES:**

1. ALL WORKS TO COMPLY WITH THE WELLINGTON CITY COUNCIL CODE OF LAND DEVELOPMENT.
2. ALL TRUNKMAIN AND WATERMAIN PIPE SIZES WILL BE CONFIRMED AT DETAILED DESIGN/ENGINEERING APPROVAL STAGE.

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REVISIONS:			
REV	NOTES	BY	DATE
R1	RESOURCE CONSENT ISSUE	PJ	13-09-2016

PROJECT:  
**THE WELLINGTON COMPANY**  
 SHELLY BAY  
 WELLINGTON

TITLE:  
**WATER SUPPLY PLANS**  
 SHEET 4 OF 6

**ENVELOPE**  
 LAND  
 STRUCTURE  
 MANAGE

L1, 125 VINCENT STREET  
 AUCKLAND CITY 1010  
 PO BOX 68946 NEWTON 1141  
 ENVELOPE ENGINEERING

DESIGNED: PJ	DRAWN: PJ	REVISION:
CHECKED: AB	DATE: 14-Sep-2016	R1
SCALE: A1 - 1:250, A3 - 1:500		
STATUS: RESOURCE CONSENT		
PROJECT No: 1098-01	DRAWING No: 504	





**ATTACHMENT 3**

Table of Proposed Floor Levels



# existing ground and proposed floor RLs

## shelly bay masterplan

dwelling type		NB H1	SBW H1	SBW H2	SB H1	SB H2	SB H3	SB H4	SB H5	SB H6
		detached house	detached house	detached house	detached house	detached house	detached house	detached house	detached house	detached house
existing ground RL	m AMSL	3.50	16.00	16.00	4.50	4.50	4.90	4.90	4.90	4.00
proposed footpath min. RL	m AMSL	3.00	n/a	n/a	3.00	3.00	3.00	3.00	3.00	3.00
proposed non habitable room min. RL	m AMSL	3.05	16.00	16.00	3.05	3.05	3.05	3.05	3.05	3.05
proposed habitable room min. RL	m AMSL	3.60	16.00	16.00	3.60	3.60	3.60	3.60	3.60	3.60

dwelling type		NB A1	NB A2	NB A3	NB A4	NB A5/6	NB A7	SBW A1	SB A1/2	SB A3
		apartment	apartment	apartment	apartment	apartment	apartment	apartment	apartment	apartment
existing ground RL	m AMSL	3.30	3.30	10.70	3.00	3.10	3.00	3.10	3.40	3.40
proposed footpath min. RL	m AMSL	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
proposed non habitable room min. RL	m AMSL	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
proposed habitable room min. RL	m AMSL	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60

dwelling type		NB TH1	NB TH2	NB TH3/4	NB TH5/6	NB TH7	SB TH1/2	SB TH3	SB TH4/5
		townhouse	townhouse	townhouse	townhouse	townhouse	townhouse	townhouse	townhouse
existing ground RL	m AMSL	3.30	3.20	3.10	2.90	3.00	2.80	2.90	2.90
proposed footpath min. RL	m AMSL	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
proposed non habitable room min. RL	m AMSL	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05
proposed habitable room min. RL	m AMSL	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60

building type		SBW B2	SBW B3	SBW B4	SBW B5	SBW B6	SBW B9
		special building	special building	special building	special building	special building	special building
existing ground RL	m AMSL	3.00	2.80	2.70	2.70	2.60	2.60
proposed footpath min. RL	m AMSL	3.00	2.80	2.80	2.80	2.60 (as existing)	2.60 (as existing)
proposed retail min. RL	m AMSL	3.05	2.85	2.85	2.85	2.65	2.65
proposed habitable room min. RL	m AMSL	3.60	n/a	8.85	n/a	n/a	8.65

building type		SBW B1	SBW B7	SBW B8	SBW B10	SB B1
		historic character	historic character	historic character	historic character	historic character
existing ground RL	m AMSL	3.00	2.60	2.00	2.50	2.70
proposed footpath min. RL	m AMSL	3.00	2.60 (as existing)	2.00 (as existing)	3.00	3.00
proposed retail min. RL	m AMSL	3.05	2.65	2.20	3.05	3.05
proposed habitable room min. RL	m AMSL	3.60	2.65	2.20	3.60	3.60



<b>SB H7</b>	<b>SB H8</b>	<b>SB H9</b>	<b>SB H10</b>	<b>SB H11</b>
detached house	detached house	detached house	detached house	detached house
3.50	4.00	4.00	17.00	5.00
3.00	3.00	3.00	3.00	3.00
3.05	3.05	3.05	3.05	3.05
3.60	3.60	3.60	17.00	3.60

<b>SB A4</b>
apartment

4.00  
3.00  
3.05  
3.60

