

**DELEGATED REPORT****TO:** SENIOR PLANNER**FROM:** Planning Officer**FILE:** OPW/18/0014**DATE:** 4 December 2018**APPLICATION DETAILS**

<b>APPLICATION</b>		<b>PREMISES</b>	
<b>FILE NO:</b>	OPW/18/0014	<b>ADDRESS:</b>	Hilltop Close, Kuranda
<b>APPLICANT:</b>	C Emery	<b>RPD:</b>	Lot 84 on SP237138
<b>LODGED BY:</b>	Cardno	<b>AREA:</b>	4.475 ha
<b>DATE LODGED:</b>	5 November 2018	<b>OWNER:</b>	C Emery
<b>TYPE OF APPROVAL:</b>	Development Permit		
<b>PROPOSED DEVELOPMENT:</b>	Operational Works (Roadworks, Stormwater, Water Infrastructure, Drainage and Earthworks) for Development Permit REC/06/0108		
<b>PLANNING SCHEME:</b>	Mareeba Shire Council Planning Scheme 2016		
<b>ZONE:</b>	Rural Residential		
<b>LEVEL OF ASSESSMENT:</b>	Code Assessment		

Attachments: 1. Approved Plan/s  
2. Confirmation of Design Obligations/Required Plan Amendments

**PREVIOUS APPLICATIONS & APPROVALS**

REC/06/0108

**DESCRIPTION OF PROPOSED DEVELOPMENT**

The development application seeks a Development Permit for Operational Works (Roadworks, Stormwater, Water Infrastructure, Drainage and Earthworks) for Development Permit REC/06/0108.

**ASSESSMENT****State Planning Policy**

Separate assessment against the State Planning Policy (SPP) is not required because the Mareeba Shire Council Planning Scheme appropriately integrates all relevant aspects of the SPP.

**Relevant Development Codes**

The following Development Codes are considered to be applicable to the assessment of the application:

- 6.2.10 Rural Residential zone code
- 9.4.4 Reconfiguring a lot code
- 9.4.5 Works, services and infrastructure code

The application did not include a planning report and assessment against the planning scheme. An officer assessment has found that the application satisfies the relevant acceptable solutions (or probable solutions/performance criteria where no acceptable solution applies) of the relevant codes set out below.

Relevant Codes	Comments
Rural residential zone code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.
Reconfiguring a lot code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.
Works, services and infrastructure code	The application can be conditioned to comply with the relevant acceptable outcomes contained within the code.

### Compliance with conditions of earlier related approval

#### REC/06/0108 - Reconfiguring a Lot - Subdivision (1 into 5 Lots)

1. Development must be carried out substantially in accordance with the approved plans and the facts and circumstances of the use as submitted with the application, and subject to any alterations:
  - found necessary by Council's delegated officer at the time of examination of the engineering plans or during construction of the development because of particular engineering requirements; and
  - to ensure compliance with the following conditions of approval.
  
2. Timing of Effect
 

The conditions of the development permit must be complied with to the satisfaction of Council's delegated officer prior to the endorsement of the plan of survey, except where specified otherwise in these conditions of approval.
  
3. General
  - 3.1 The applicant/developer is responsible for the cost of necessary alterations to existing public utility mains, services or installations required by works in relation to the proposed development or any works required by condition(s) of this approval.
  - 3.2 All payments required to be made to the Council (including contributions, charges and bonds) pursuant to any condition of this approval must be made prior the endorsement of the plan of survey and at the rate applicable at the time of payment.
  - 3.3 The developer must relocate (in accordance with FNQROC standards) any services such as water, sewer, drainage, telecommunications and electricity that are not wholly located within the lots that are being created/serviced where required by the relevant authority, unless approved by Council's delegated officer.

Where utilities (such as sewers on non-standard alignments) traverse lots to service another lot, easements must be created in favour of Council for access and maintenance purposes. The developer is to pay all costs (including Council's legal expenses) to prepare and register the easement documents.

- 3.4 Where approved existing buildings and structures are to be retained, setbacks to property boundaries are to be in accordance with Planning Scheme requirements for the relevant structure and/or Queensland Development Code. A plan demonstrating compliance must be submitted prior to endorsement of the plan of survey.
- 3.5 All works must be designed, constructed and carried out in accordance with FNQROC Development Manual (as amended) and to the satisfaction of Council's delegated officer.
- 3.6 Environmental Covenant - Proposed Lots 1 to 5 only

The applicant shall be responsible for the preparation and registration of a statutory covenant with Council pursuant to S97A of the Land Title Act for the purposes of native vegetation and habitat preservation including the preservation, protection and maintenance of regrowth vegetation.

The covenant will be of a form that is acceptable to the Registrar of Titles and will apply to all areas of High Value Regrowth Vegetation. The covenant location and the covenant document provisions will be to the satisfaction of Council's delegated officer.

The covenant agreement shall be signed by the registered owner prior to endorsement of the survey plan by Council and the signed covenant shall be jointly lodged for registration with the survey plan, in the Department of Environment and Resource Management.

The covenant shall require the registered owners of the site to obtain approval of the Council prior to undertaking any earthworks, clearing of vegetation, fencing or placement of water pumps and pipelines within or across the area of the Covenant. The maintenance of the area of the Covenant shall be the responsibility of the owner of the land.

Each Covenant must stipulate:

- (i) That it is for the express purpose of vegetation and habitat preservation, including the preservation of plants and the natural features of the lot;
- (ii) A building envelope of no more than 1,500 square metres can be cleared to accommodate a dwelling house and associated infrastructure. All buildings must be located within the 1,500 square metre envelope;
- (iii) No construction to take place outside the 1,500 square metre building envelope with the exception of a single access driveway to each dwelling, where construction of the driveway within the 1,500 square metre envelope is not possible;
- (v) No fences permitted on site, with the exception of a small domestic fence which does not exceed the building envelope;

(vi) Any maintenance required to be performed in respect of the Covenant Area shall be the responsibility of the lot owner.

The covenant shall be to the satisfaction of Council's delegated officer, and the applicant shall be responsible for the cost of preparation and registration of the Covenant.

### 3.7 Building Envelope

- (a) Prior to the issue of a development permit for building works, a plan to scale which designates a 1,500 square metre building envelope on the respective lot, must be submitted to Council for approval.
- (b) Unless the owner can demonstrate that the overall outcome is better, the building envelope should be located on the area of least slope within the allotment.
- (c) The building envelope must be selected to minimise the need for cut and fill earthworks and to ensure no batter height exceeds two (2) metres.
- (e) A driveway is to be constructed from the edge of the new road to the building envelope generally in accordance with the requirements of the FNQROC Development Manual and to the satisfaction of Council's delegated officer.
- (f) Prior to issue of a development permit for building works, the approved building envelope must be defined by survey markers set at each corner, to the satisfaction of Council's delegated officer.

### 3.8 Bushfire Management

Buildings and Structures (Lots greater than 2, 500m<sup>2</sup>):

- are sited within approved building envelopes;
- achieve setbacks from hazardous vegetation of 1.5 times the predominant mature canopy tree height or 10 metres, whichever is the greater or in accordance with an approved Bushfire Management Plan;
- are 10 metres from any retained vegetation strips or small areas of vegetation or in accordance with an approved Bushfire Management Plan;
- are sited so that elements of the development least susceptible to fire are sited closest to the bushfire hazard; and
- are connected to a reticulated water supply with a minimum flow and pressure of 10 litres a second and 200kPa.

### 3.9 Landslide

- (i) All development and works on the subject land must be carried out in accordance with the engineering comments outlined in the report titled Geotechnical Investigation Proposed Subdivision Lots 83 and 84, Hilltop Close Kuranda (Report - J090502), specifically:

(a) Drainage

- Provision of concrete lined cut-off drains (or similarly lined drains) to intercept run-off on the uphill side of retaining walls and unsupported batters greater than 1.5 m high.
- Provision of subsurface drainage behind retaining walls.
- Provision of kerbing on any new access driveways.

All stormwater must be collected and discharged from the site via pipes into designated drainage paths and not allowed to flow on to the ground.

(b) Cut and Fill Earthworks

Any new permanently unsupported cut batters formed predominantly in the overlying colluvial soils must be limited to 2.5 m in height at 1V:1.5H. Proposed new unsupported cut batters formed within weathered rock may be formed up to a maximum height of 3 m at 1V:1H. Higher or steeper cut batters must be supported by engineer designed retaining walls.

Areas of new filling should be limited. If required, new fill batters must be limited to a maximum of 2.0 m in height at no steeper than 1V:1.5H. Higher or steeper fill batters, or filling proposed in areas steeper than 25 degrees must be supported by engineer designed retaining walls.

All loose uncontrolled filling must be removed from the site and replaced with engineered fill in accordance with the following procedures, particularly in areas of proposed residential construction or adjacent to roads/driveways.

Where filling is required, site preparation and earthworks procedures must involve the following:

- Strip and remove topsoil and soil containing significant amounts of organic materials;
- Compact the subgrade with a heavy roller to reveal soft or loose materials. Soft or loose material that can not be improved by compaction must be removed and replaced with engineered fill;
- Place fill where required in uniform horizontal layers not exceeding 200 mm loose thickness and compact to achieve a density ratio of at least 95% using Standard Compaction. Each layer of filling must be keyed into natural ground. Filling must be placed at least 2 m beyond the design profile and then trimmed to the design profile.

It is considered that the material generated from cut earthworks at the site should comprise material similar to sandy gravelly clay. This material may be suitable for use as engineered fill subject to the

removal of any organic material and material greater than 150 mm in size. If required, imported fill must have a Plasticity Index less than 20. Compaction levels must be checked by field density testing during filling.

(c) Retaining Structures

Where retaining walls form part of a residence or other structure such as swimming pools or access roads, the retaining wall must be designed using an earth pressure coefficient of 0.6, plus surcharge loads imposed on the wall. Other stand alone retaining walls where they form a boundary or for landscape purposes must be designed using an earth pressure coefficient of 0.4, plus surcharge loads imposed on the walls. Footings for retaining walls must be founded at least 0.5 m into the highly weathered argillite/greywacke rock unless otherwise approved by a geotechnical engineer.

Footings for retaining walls founded in this manner must be designed using allowable bearing pressures up to 250 kPa. All retaining walls must be engineer designed structures.

(d) Footings

Portions of any proposed buildings located over the natural slopes or cut/fill batters, must be supported on bored pier footings. Bored pier footings must extend at least three times their diameter into the very low strength or stronger rock. Bored pier footings constructed in this manner must be designed using an allowable end bearing pressure of 400 kPa and an allowable shaft adhesion of up to 40 kPa, neglecting the contribution of the upper 1.0 m of the shaft.

Continuous footings must not span the transition between differing founding material unless the potential for differential settlement is considered in the footing and structural design.

- (ii) A site specific geotechnical investigation must be carried out for each allotment upon completion of building construction design and planning and prior to the issue of a Development Permit for Building Works.

### 3.10 Charges

All outstanding rates, charges and expenses pertaining to the land are to be paid in full.

## 4. Infrastructure Services and Standards

### 4.1 Access

Access to each proposed allotment must be provided at the building stage (from the edge of the road pavement to the property boundary of each proposed allotment) generally in accordance with FNQROC Development Manual, to the satisfaction of Council's delegated officer.

## 4.2 Earthworks

As part of a subsequent application for Operational Works, an earthworks plan is to be submitted, prepared by a suitably qualified RPEQ demonstrating compliance with the Filling and Excavation Code including the following detail:

- Maintenance of access roads to and from the site such that they remain free of all fill material and are cleaned as necessary;
- Preservation of all drainage structures from the effects of structural loading generated by the earthworks;
- Protection of adjoining properties and roads from ponding or nuisance from stormwater.

All site earthworks, drainage and pavement construction are to be designed and supervised by a RPEQ. Testing is to be carried out by NATA Registered Laboratories and results submitted as part of the As Constructed information. The Supervising Engineer must submit a certificate demonstrating that all work has been satisfactorily completed to the quality control criteria for the site and in accordance with AS3798 (as amended).

## 4.3 Stormwater Drainage

- (i) The design and construction of stormwater drainage for the proposed subdivision is to be in accordance with the requirements of the Queensland Urban Drainage Manual (QUDM) 1992 (or as amended) and the FNQROC Development Manual. A Stormwater Management Plan, prepared and certified by a suitably qualified person, including an erosion and sediment control plan satisfying these requirements must be lodged with Council prior to the issue of a development permit for operational works and is to be to the satisfaction of Council's Delegated Officer.
- (ii) No net increase in stormwater discharge rate will be permitted from the Development. Where appropriate the applicant must use Water Sensitive Urban Design solutions for the management of stormwater within the subject-site.
- (iii) Any minor stormwater drainage corridors not part of open space areas will be required to be incorporated into the individual allotments and restricted from development by way of easements/statutory covenants.
- (v) Where Council is party to a proposed easement and/or if the proposed easement is in favour of Council the applicant/developer is to pay all costs (including Council's legal expenses) to prepare and register the easement documents, using Council's standard form of easement. The approved easement documents must be submitted at the same time the applicant/developer seeks endorsement of the plan of survey and must be lodged and registered in the Department of Environment and Resource Management in conjunction with the plan of survey.

## 4.4 ~~Frontage Works~~

~~4.4.1 The developer is required to upgrade the existing Hilltop Close cul-de-sac head to include an asphalt overlay for the full width of the Hilltop Close cul-de-sac head in accordance with the FNQROC Development Manual and to the satisfaction of Council's delegated officer. Deleted~~

4.4.2 ~~Prior to works commencing, plans for the works described above must be approved as part of an Operational Works application.~~

#### 4.5 Roadworks – Internal

4.5.1 The internal road must be constructed to Residential Street standard in accordance with FNQROC Development Manual standards (as amended) for the applicable planning scheme area to the satisfaction of Council's delegated officer.

4.5.2 Prior to works commencing, plans for the works described above must be approved as part of an Operational Works application.

#### 4.6 Water Supply

4.6.1 The developer must connect each proposed lot to the Council's reticulated water supply system in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

4.6.2 Where the existing reticulated water supply does not currently service the site or is not at an adequate capacity, the developer is required to extend the reticulated water supply infrastructure (including additional fire hydrants where required) to connect the site to Council's existing infrastructure at a point that has sufficient capacity to service the development in accordance with FNQROC Development Manual standards (as amended).

4.6.3 Each lot is required to be separately metered.

#### 4.7 On-Site Wastewater Management

The on-site effluent disposal system for the proposed lots must be designed and constructed generally in accordance with the latest version On-Site Domestic Wastewater Management Standard (AS/NZS 1547) to the satisfaction of Council's delegated officer.

#### 4.8 Electricity provision/supply

The applicant/developer must ensure that an appropriate level of electricity supply is provided to each allotment in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

Written advice from an electricity service provider is to be provided to Council indicating that an agreement has been made for the provision of underground power reticulation.

#### 4.9 Telecommunications

The applicant/developer must enter into an agreement with a telecommunication carrier to provide telecommunication services to each allotment and arrange provision of necessary conduits and enveloping pipes.



## 5. Contributions/Headworks

### 5.1 Roadworks Contribution

The developer must pay a contribution for roadworks to Council in accordance with Mareeba Shire Transitional Planning Scheme for the equivalent of four (4) additional lots at the rate applicable at time of payment.

### 5.2 Water Headworks

The developer must pay a contribution for four (4) additional lots for water supply headworks to Council in accordance with Mareeba Shire Transitional Planning Scheme at the rate applicable at time of payment.

### 5.3 Open Space/Parks Contribution

The developer must pay a contribution for four (4) additional lots for open space/park to Council in accordance with Mareeba Shire Transitional Planning Scheme at the rate applicable at time of payment.

### 5.4 Street Lighting Contribution

A monetary contribution must be made to Council equal to the tariff charge of two (2) years provision of street lighting for each street with the number of lights being as per the recommendation of the Electricity Service Provider.

## **FNQROC Regional Development Manual**

Submitted plans were checked against the FNQROC Development Manual and have been amended to achieve compliance.

## **REFERRALS**

### **Internal Consultation**

Technical Services

## **OFFICER'S RECOMMENDATION**

1. That in relation to this operational works development application:

<b>APPLICATION</b>		<b>PREMISES</b>	
<b>APPLICANT:</b>	C Emery	<b>ADDRESS:</b>	3 Hilltop Close, Kuranda
<b>DATE LODGED</b>	25 October 2018	<b>RPD:</b>	Lot 84 on SP237138
<b>TYPE OF APPROVAL</b>	Development Permit		
<b>PROPOSED DEVELOPMENT</b>	Operational Works (Roadworks, Stormwater, Water Infrastructure, Drainage and Earthworks) for Development Permit REC/06/0108		

and in accordance with the Planning Act 2016, as amended, the applicant be notified that the application for operational works is:

Approved subject to the following assessment manager conditions:

(A) APPROVED DEVELOPMENT: Operational Works (Roadworks, Stormwater, Water Infrastructure, Drainage and Earthworks) for Development Permit REC/06/0108

(B) APPROVED PLANS:

Plan/Document Number	Plan/Document Title	Prepared by	Dated
Q174188-CI-1001 Rev 03	Cover Page	Cardno (QLD) Pty Ltd	18/10/18
Q174188-CI-1002 Rev 03	Notes	Cardno (QLD) Pty Ltd	19/10/18
Q174188-CI-1003 Rev 05	Site Plan	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1004 Rev 04	Roadworks and Stormwater Longitudinal Sections and Details	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1005 Rev 04	Roadworks Typical Cross Sections	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1006 Rev 04	Roadworks Cross Sections Sheet 1 of 3	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1007 Rev 04	Roadworks Cross Sections Sheet 2 of 3	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1008 Rev 04	Roadworks Cross Sections Sheet 3 of 3	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1009 Rev 02	Roadworks Cul-De-Sac-Details	Cardno (QLD) Pty Ltd	24/10/18
Q174188-CI-1010 Rev 01	Erosion and Sediment Control Strategy	Cardno (QLD) Pty Ltd	24/10/18

(C) ASSESSMENT MANAGER'S CONDITIONS (COUNCIL)

**(a) Design Obligations & Required Amendments to Approved Plan/s**

All developer obligations and required amendments to the approved plans included in the email from Cardno's Senior Engineer dated 19 November 2018 (**Attachment 2**) must be carried out prior to the applicable timing mentioned in the email advice, to the satisfaction of Council's delegated officer.

**(b) General**

- (i) All operational works must be designed and constructed in accordance with the procedures as set out in the FNQROC Development Manual.
- (ii) Development must be carried out substantially in accordance with the approved plans and the facts and circumstances of the use as submitted with the application, and subject to any alterations:
  - found necessary by the Council's Delegated Officer at the time of examination of the engineering plans or during construction of the development because of particular engineering requirements;
  - to ensure the works comply in all respects with the requirements and procedures of the FNQROC Development Manual and good engineering practice; and
  - to ensure compliance with the following conditions of approval.
- (iii) Council's examination of the documents should not be taken to mean that the documents have been checked in detail and Council takes no responsibility for their accuracy. If during construction, inadequacies of the design are

discovered, it is the responsibility of the Principal Consulting Engineer to resubmit amended plans to Council for approval and rectify works accordingly.

**(c) Pre-start Meeting**

- (i) In addition to the requirements of Clause CP1.07 and CP1.08 of the FNQROC Development Manual; after documentation has been approved by Council, a pre-start meeting is to be held on site prior to the commencement of work. Part 1 of the **attached** pre-start meeting pro-forma is to be completed and returned prior to the meeting including clause 1.u 'Request for Meeting' together with the prescribed Construction Monitoring Fee as set out in Council's Schedule of Fees.

**(d) Inspections**

- (i) Inspections are to be carried out as detailed in the FNQROC Manual unless advised otherwise at the pre-start meeting.

**(e) Construction Security Bond and Defects Liability Bond**

- (i) In addition to Clauses CP1.06 and CP1.20 of the FNQROC Development Manual; the Construction Security Bond and Defects Liability Bond shall each be a minimum of \$1000 and Bank Guarantees shall have no termination date.
- (ii) During the Defects Liability period, it is the responsibility of the developer to rectify any works found to be defective due to design faults and or found to exhibit faults attributed to the performance of the construction activities in terms of quality and conformance with design and specifications. The bond will be returned on satisfactory correction of any defective work and after expiration of the maintenance period. Failure to comply with a Council issued instruction to correct defective work may result in the call up of the bond to have the work completed.

**(f) Hours of Work**

- (i) Work involving the operation of construction plant and equipment of any description, shall only be carried out on site during the following times:
  - 7.00am to 6.00pm, Monday to Friday;
  - 7.00am to 1.00pm Saturdays;
  - No work is permitted on Sundays or Public Holidays.
- (ii) No variation to the above working hours is allowed unless otherwise agreed in writing by Council.

**(g) Transportation of Soil**

- (i) All soil transported to or from the site must be covered to prevent dust or spillage during transport. If soil is tracked or spilt onto the road pavement from works on the subject land, it must be removed no later than at the end of each working day. Sediment must not enter Council's stormwater drainage network.

**(D) RELEVANT PERIOD**

When approval lapses if development not started (s.85)

- Two (2) years (starting the day the approval takes effect).

(E) OTHER NECESSARY DEVELOPMENT PERMITS AND/OR COMPLIANCE PERMITS

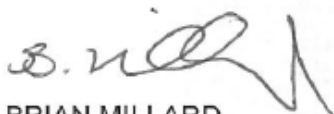
- Nil

## DECISION BY DELEGATE

## DECISION

Having considered the Planning Officer's report detailed above, I approve, as delegate of Council, the application subject to the conditions listed in the report.

Dated the 4TH day of DECEMBER 2018



BRIAN MILLARD  
SENIOR PLANNER

MAREEBA SHIRE  
AS DELEGATE OF THE COUNCIL

ATTACHMENT 1



Cardno (QLD) Pty Ltd | ABN 57 051 074 992  
 15 Scott Street, Paramatta Park  
 Calina QLD 4870  
 Tel: 07 4034 0500 Fax: 07 4051 0133  
 Web: [www.cardno.com.au](http://www.cardno.com.au)

Cardno Limited (Incorporated in Queensland, Australia) is a public company listed on the Australian Securities Exchange (ASX) under the name of Cardno Limited. Cardno Limited is a company limited by guarantee and is not a company limited by shares. Cardno Limited is a company limited by guarantee and is not a company limited by shares.

COLIN EMERY  
 HILLTOP CLOSE SUBDIVISION  
 KURANDA LOT 84 ON SP237138  
 SUBDIVISION WORKS

DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION
Q174188-01	EXEMPTION
Q174188-02	NOTES
Q174188-03	SITE PLAN
Q174188-04	ROADWORKS AND EROSION CONTROL, LANDSCAPE, SIGNAGE AND DETAILS
Q174188-05	ROADWORKS, EROSION CONTROL, SIGNAGE
Q174188-06	ROADWORKS, EROSION CONTROL, SIGNAGE
Q174188-07	ROADWORKS, EROSION CONTROL, SIGNAGE
Q174188-08	ROADWORKS, EROSION CONTROL, SIGNAGE
Q174188-09	ROADWORKS, EROSION CONTROL, SIGNAGE
Q174188-10	ROADWORKS, EROSION CONTROL, SIGNAGE

DATE PLOTTED: 18 October 2018 2:38 PM BY: ANDREW HOPE  
 CAD File: H:\0217\14188-10\p10 - Subdivision\05 - Civil Engineering\Drawings\CAD & Model\Acad\CAD\02171888-0101.dwg

Drawing Set ID: 3477359  
 Version: 1, Version Date: 05/12/2018

Q174188-CI-1001  
 Drawing Title

03  
 Number

NO.	DATE	DESCRIPTION	BY	CHKD
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

<p><b>GENERAL</b></p> <ol style="list-style-type: none"> <li>C1. FINISHES SHALL BE ON A CONSTRUCTION WITH THE SPECIFICATIONS AND UNIFORM FINISHES AND ALL INFORMATION ISSUED BY THE ARCHITECT DURING THE COURSE OF THE CONTRACT AND LIES THE ARCHITECT'S SOLE RESPONSIBILITY.</li> <li>C2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C3. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C4. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C5. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C6. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C7. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C8. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C9. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C10. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C11. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C12. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C13. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>C14. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> </ol>	<p><b>SEWERAGE</b></p> <ol style="list-style-type: none"> <li>S1. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S2. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S3. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S4. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S5. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S6. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S7. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S8. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S9. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>S10. ALL SEWER LINES SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> </ol>	<p><b>DRAINAGE</b></p> <ol style="list-style-type: none"> <li>D1. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D2. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D3. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D4. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D5. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D6. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D7. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D8. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D9. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D10. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D11. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D12. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D13. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D14. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> <li>D15. ALL DRAINAGE SYSTEMS SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON AND THE MASSACHUSETTS DEPARTMENT OF CONSTRUCTION.</li> </ol>
--	--	--

**FOR APPROVAL**

DATE:                     

SIGNATURE:                     

TITLE:                     

COMPANY:                     

**NOT TO BE USED FOR ANY CONTRACT DOCUMENTS**

DATE:                     

SIGNATURE:                     

TITLE:                     

COMPANY:                     

**NOT TO BE USED FOR ANY CONTRACT DOCUMENTS**

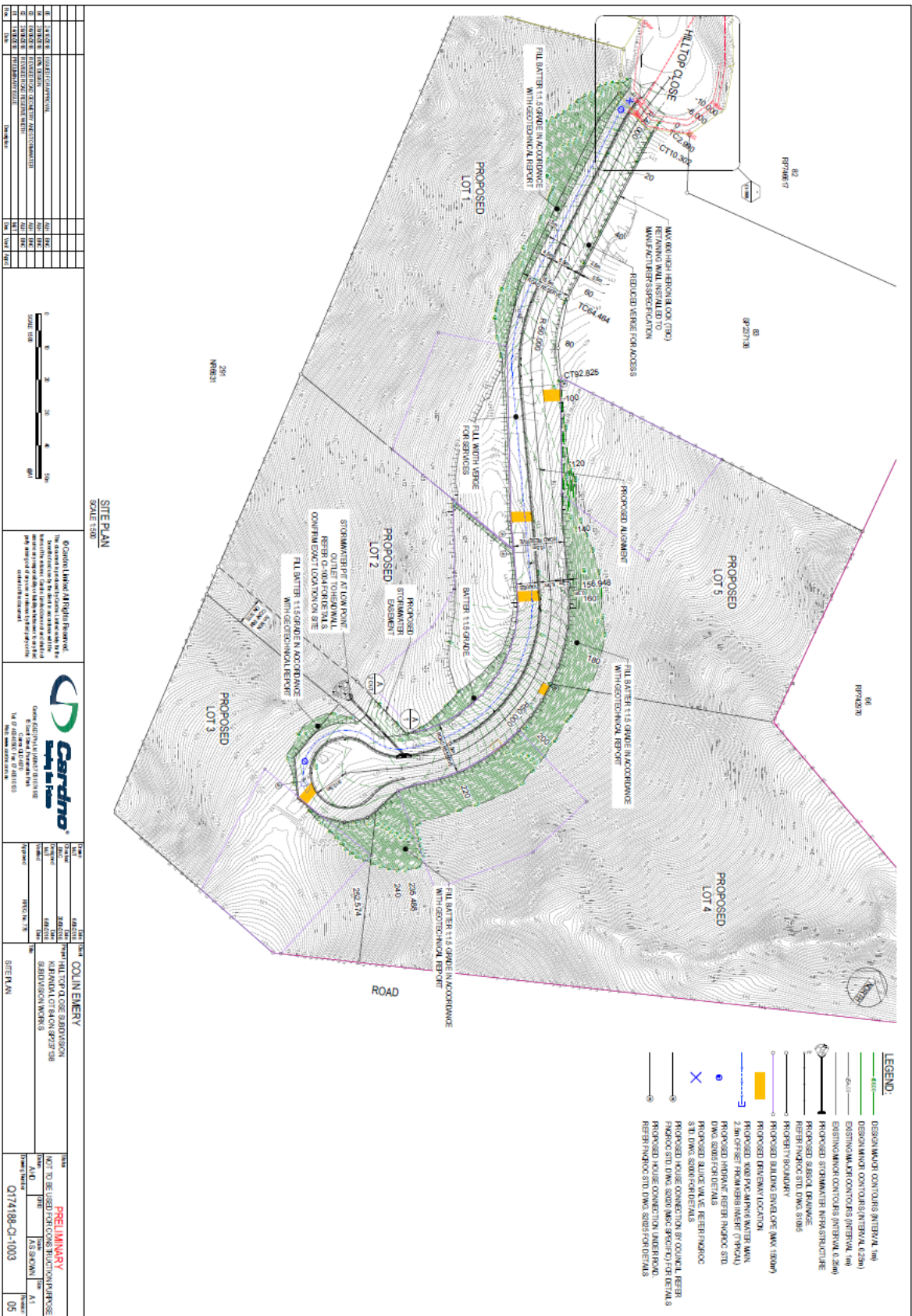
DATE:                     

SIGNATURE:                     

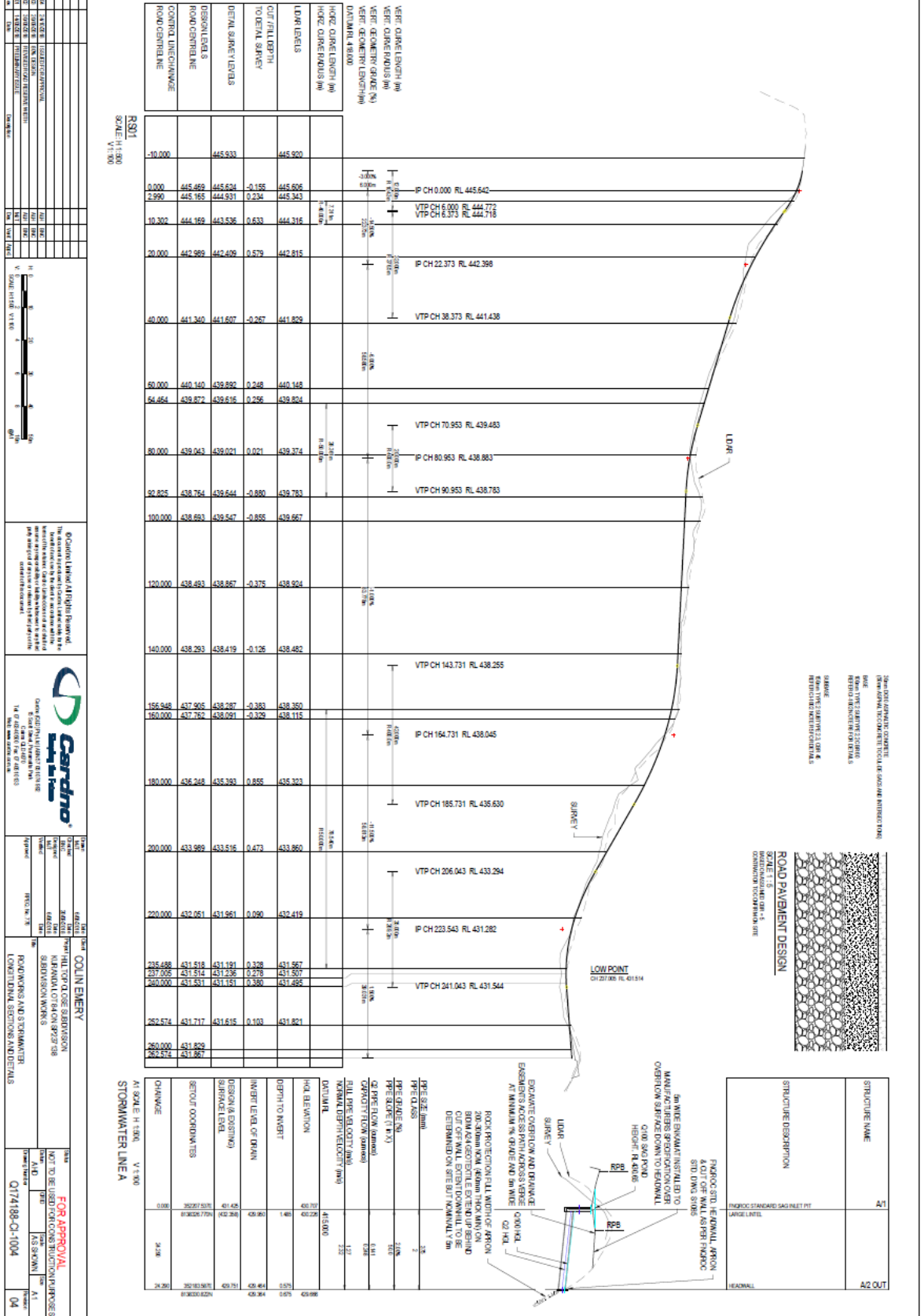
TITLE:                     

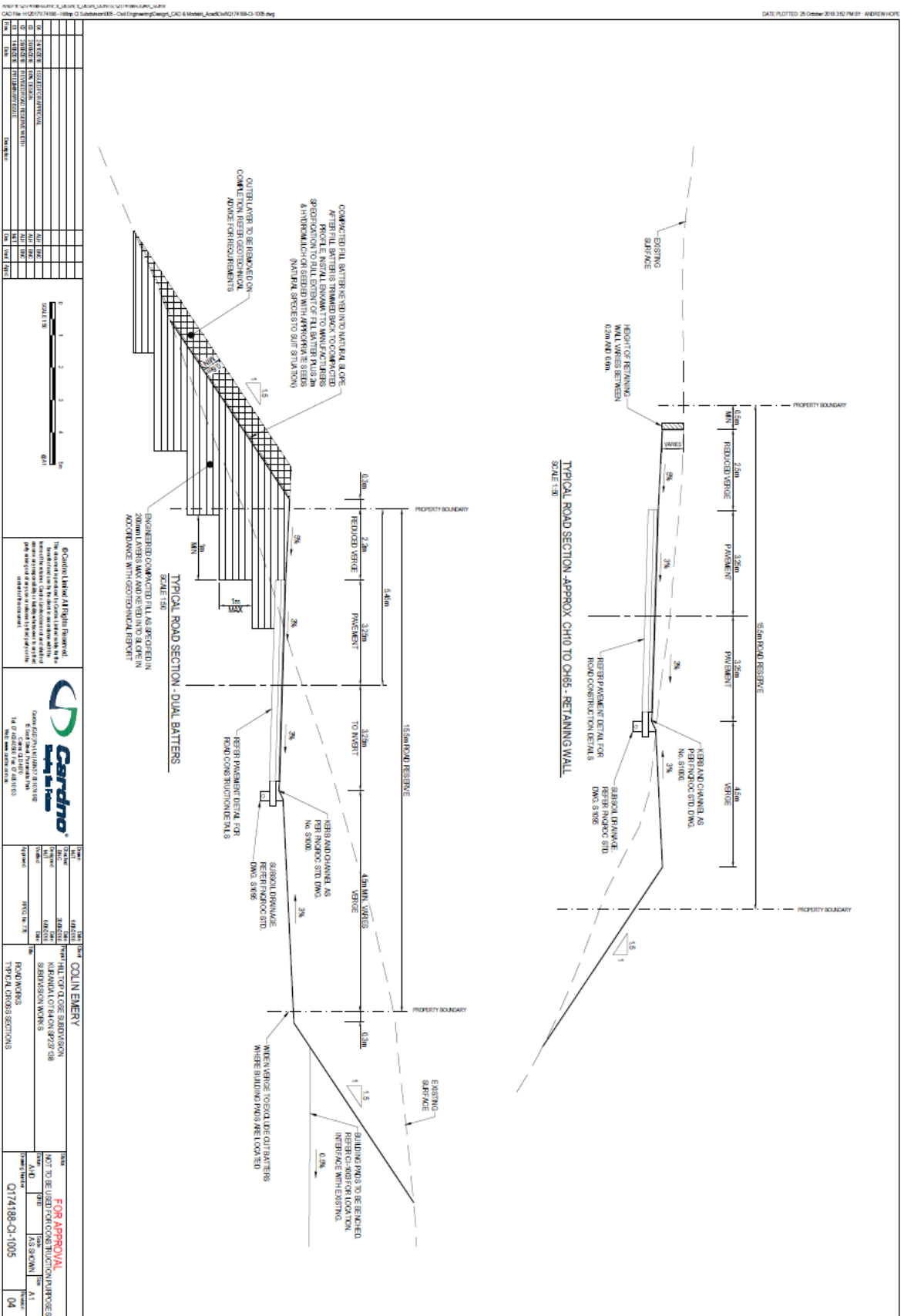
COMPANY:





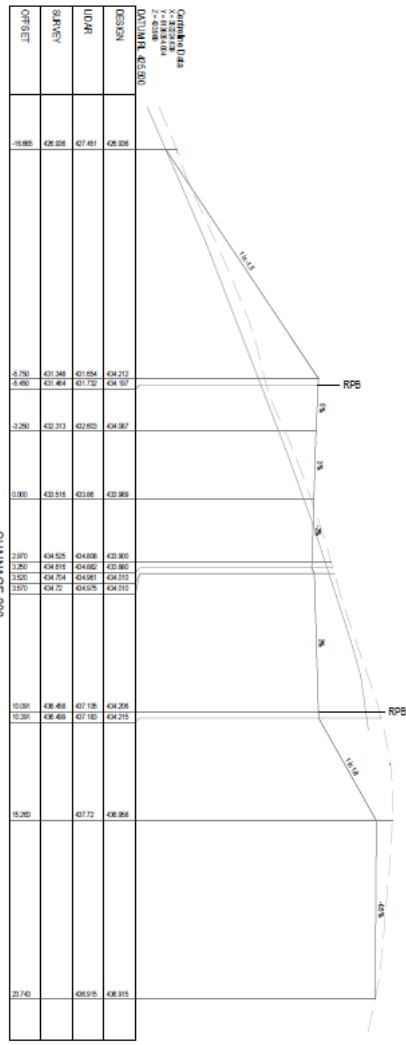




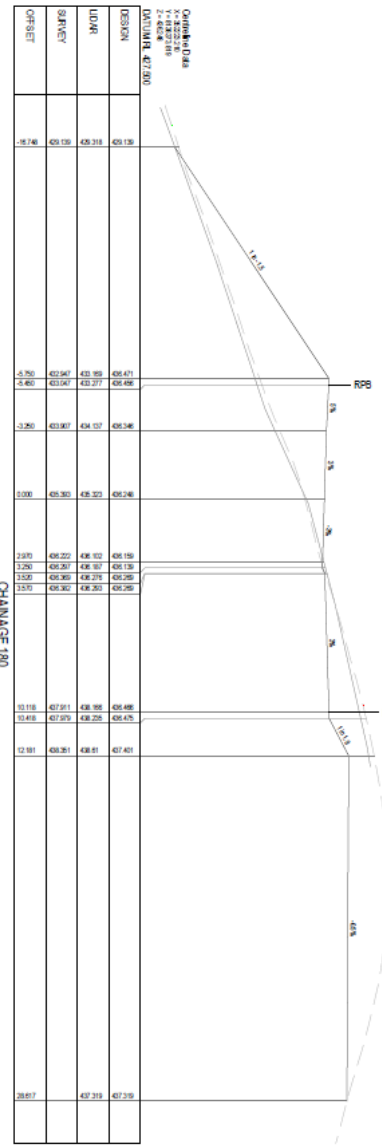




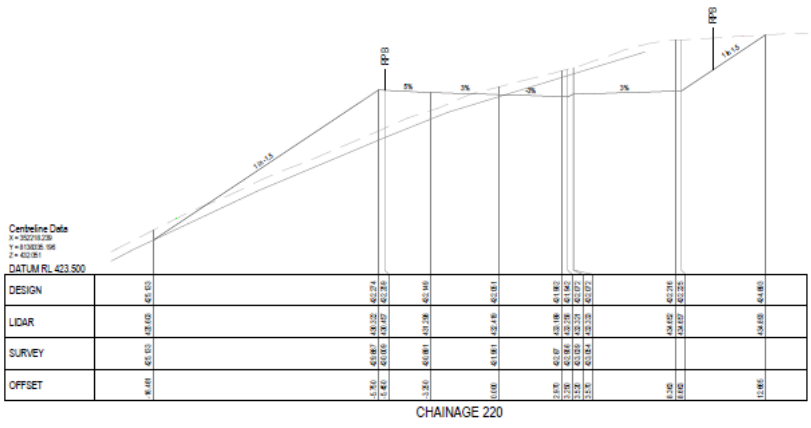




CHAINAGE 200

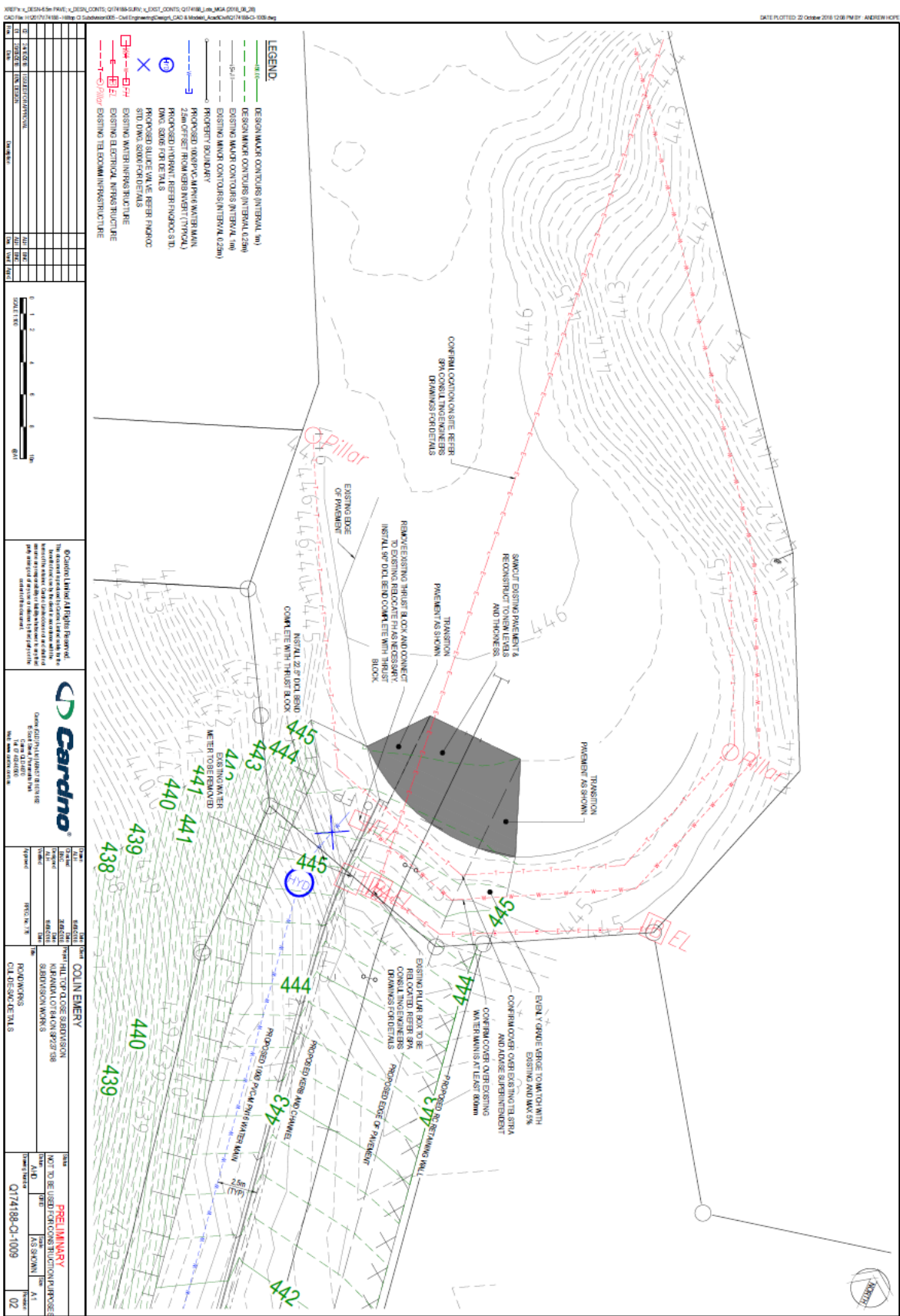


CHAINAGE 190

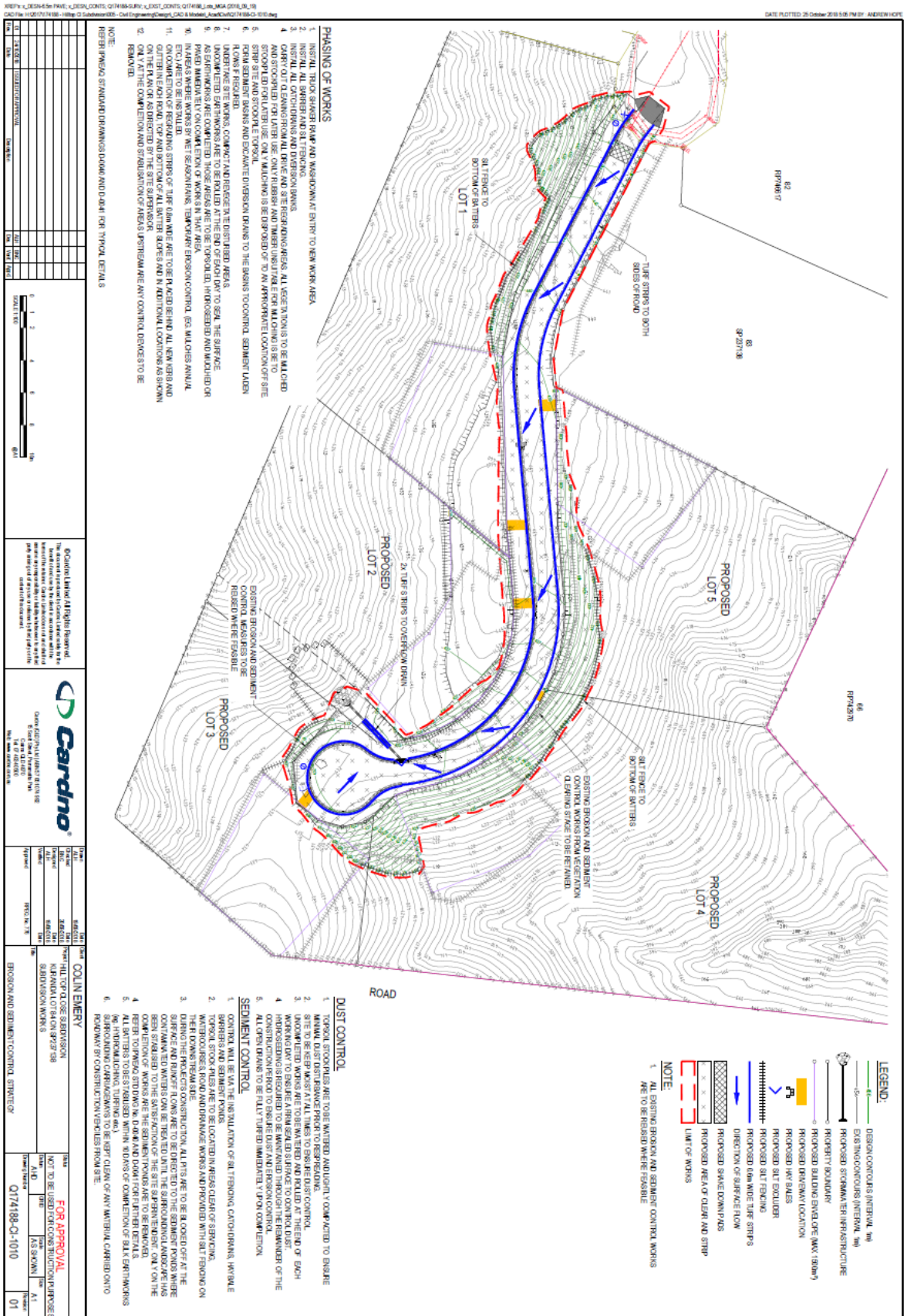


CHAINAGE 220

<p><b>Coordinate Data</b>                  X = 423216                  Y = 7143864                  Z = 42.8</p>		<p><b>Coordinate Data</b>                  X = 423216                  Y = 7143864                  Z = 42.8</p>																																	
<p><b>DATUM RL 427.80</b></p> <table border="1"> <tr><td>DESIGN</td><td>427.80</td><td>427.80</td><td>427.80</td></tr> <tr><td>LICAR</td><td>427.80</td><td>427.80</td><td>427.80</td></tr> <tr><td>SURVEY</td><td>427.80</td><td>427.80</td><td>427.80</td></tr> <tr><td>OFFSET</td><td>427.80</td><td>427.80</td><td>427.80</td></tr> </table>		DESIGN	427.80	427.80	427.80	LICAR	427.80	427.80	427.80	SURVEY	427.80	427.80	427.80	OFFSET	427.80	427.80	427.80	<p><b>DATUM RL 423.500</b></p> <table border="1"> <tr><td>DESIGN</td><td>423.50</td><td>423.50</td><td>423.50</td></tr> <tr><td>LICAR</td><td>423.50</td><td>423.50</td><td>423.50</td></tr> <tr><td>SURVEY</td><td>423.50</td><td>423.50</td><td>423.50</td></tr> <tr><td>OFFSET</td><td>423.50</td><td>423.50</td><td>423.50</td></tr> </table>		DESIGN	423.50	423.50	423.50	LICAR	423.50	423.50	423.50	SURVEY	423.50	423.50	423.50	OFFSET	423.50	423.50	423.50
DESIGN	427.80	427.80	427.80																																
LICAR	427.80	427.80	427.80																																
SURVEY	427.80	427.80	427.80																																
OFFSET	427.80	427.80	427.80																																
DESIGN	423.50	423.50	423.50																																
LICAR	423.50	423.50	423.50																																
SURVEY	423.50	423.50	423.50																																
OFFSET	423.50	423.50	423.50																																
<p><b>Scale</b>                  1:1000</p>																																			
<p><b>Client: COJIN ENERGY</b></p>																																			
<p><b>Project: ROADWORKS SUBMISSION WORKS</b></p>																																			
<p><b>Sheet: CROSS SECTIONS SHEET 3 OF 3</b></p>																																			
<p><b>FOR APPROVAL</b></p>																																			
<p><b>DATE: 07/11/2018</b></p>																																			







DATE PLOTTED: 25/05/2018 10:58:58 AM BY: ABERDEEN

PROJECT: C174188-CH-1010

CLIENT: COLIN EMERY

DESIGNER: COLIN EMERY

DATE: 25/05/2018

FOR APPROVAL: COLIN EMERY

SCALE: 1:1000

01

## ATTACHMENT 2

**From:** Michael Lancini  
**Sent:** Monday, 19 November 2018 5:58 PM  
**To:** Carl Ewin <CarlE@msc.qld.gov.au>  
**Cc:** Roger McLeod <rog@pottsvillebeachrealestate.com.au>; Bob Pentecost <Bob.Pentecost@cardno.com.au>; Sam Wakeford <SamW@msc.qld.gov.au>; Victor Madrid <VictorM@msc.qld.gov.au>  
**Subject:** RE: Hilltop Close / Hastie Road Operational Works Application

Hi Carl

Please see below my response to the queries raised by Sam and Victor.  
 I will call Sam tomorrow to discuss further.

General Queries:

1. Access to neighbouring property – what arrangements are being made to access the property ? will the neighbour need access from this new road, if so the retaining wall will negate that option? **The existing property (Lot 82 on RP746617) has an existing point of access from Hilltop close and it is not intended to provide an additional access along the proposed Hilltop Close extension.**
2. Geotech Report:
  - a. Page 2 dot point 6 – All stormwater from the road should be collected and discharged to designated drainage paths and not allowed to flow directly on to the batter. **The design of the earthworks has been completed to ensure that the water in both the roadway and verges fall towards the kerb and channel and is collected and directed to the underground pipe and outlet.**
  - b. Page 2 dot point 7 – Provision of flow spreaders or dissipation structures at drain outlets.
    - i. Combination of these two should be considered when assessing the Stormwater Outlet. **The rock protection is proposed to act as both a flow spreader and flow dissipation. The flows are not significant and from previous experience rock protection has proved adequate.**
3. Chainage 0 to 80 – RHS Batter is within Road Reserve, anyway to put in protections for council on its long term maintenance ? **The batter will be constructed with the Enkamat and hydromulched as per the “Typical Road Section – Dual Batters” on drawings CL-1005.**

Document Set ID: 3476432  
 Version: 1, Version Date: 30/11/2018



- a. Similar query to retaining wall. The retaining wall will be an RPEQ certified design. The construction of the wall will be certified by an RPEQ engineer, to ensure that the wall has been constructed in accordance with the design. This certification will ensure that the wall has been both adequately designed and constructed.

Additional comments on plans.

Plan 1002 – Notes:

- General:
  - change references from CRC to MSC. **Noted. This change will be made prior to the pre-start meeting.**
- Water:
  - FNQROC MSC Specific Drawings and Design Guidelines to be used. **Noted. This change will be made prior to the pre-start meeting.**

Plan 1003 – Site Plan:

- All Cut batters to be constrained within the lot, not to extend into road reserve. **The verges will be increased in width to ensure that the cut batters are not in the road reserve.**

Plan 1004 – Long Section:

- Stormwater concerns – agree with victor.
  - Outlet protection / investigation is to be extended to a point of discharge which will not result in long term scouring. The outlet protection will be provided to a length such that it minimises any potential long term scour. It is proposed to monitor the scour protection during the maintenance period to determine its adequacy.
  - Maintenance methodology showing how the outlet structure and rock protection will be inspected and maintained into the future is required to be supplied. **Attached is a proposed draft maintenance methodology. Once reviewed by the maintenance team we will update to reflect their comments. The finalised methodology would be provided prior to works acceptance.**
    - We will have our Maintenance team review on receipt.
  - Not happy with the termination location of the Stormwater Outlet & Rock Protections. **The location of the stormwater outlet has been chosen as it is placed on the flatter section of the slope. This was chosen to:**
    - Reduce potential erosion
    - Reduce the amount of clearing required
    - For ease of maintenance
      - As it is located close to the road, the maintenance crew does not need to travel down the slope through thick vegetation to monitor/inspect the outlet.
- Road Pavement Design –
  - Notes on starting page indicate a primer seal to be applied prior to Asphalt – 10mm Primer Seal to be applied. **Noted. This will be updated prior to prestart.**
  - As per FNQROC Manual D3.14 Asphalt – 50mm layer in Cul-de-sac head to be DG14 **Noted. This will be updated prior to prestart.**

Plan 1005 – Roadworks:

- Retaining Wall:
  - subsoils to be included as per DA 3.9 (A) Drainage, item 2. **Noted, the retaining wall is proposed to be a proprietary link block wall and the need for subsoil drainage will be specified.**
  - Footing and Retaining Wall details to be engineered and provided prior to commencement of works – as per Geotechnical Report. **Noted.**
  - 2m Footpath to be constructed to RHS as per FNQROC requirements. **It is proposed to not construct a new footpath. No footpath is present to the existing Hilltop close.**

Regards  
Michael Lancini  
SENIOR ENGINEER  
CARDNO



Phone +61 7 4034 0500 Fax +61 7 4051 0133 Direct +61 7 3310 2377  
Address 15 Scott Street, Parramatta Park, Cairns, Queensland 4870 Australia

Email [michael.lancini@cardno.com.au](mailto:michael.lancini@cardno.com.au) Web [www.cardno.com](http://www.cardno.com)

CONNECT WITH CARDNO



Cardno's management systems are certified to ISO9001 (quality) and AS4801/OHSAS18001 (occupational health and safety)

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please email the sender by replying to this message and immediately delete and destroy any copies of this email and any attachments. The views or opinions expressed are the author's own and may not reflect the views or opinions of Cardno.