

**YOUR REF:** PDR 15510  
**OUR REF:** OP 3546/2009 (766701)

22 June 2016

PDR Engineers  
PO Box 2551  
**CAIRNS QLD 4870**

Attention: Mr Alan McPherson

Dear Sir

**DECISION NOTICE FOR OPERATIONAL WORKS  
STAGES 4B & 4C OCEAN BREEZE ESTATE  
905L COOYA BEACH ROAD, BONNIE DOON**

Please find attached the relevant Decision Notice for the above Operational Works. Also find attached a 'Pre-Start' meeting template, which identifies the information that must be provided for Council approval, prior to the commencement of works.

The template also provides the Consulting Engineer with a format for conducting the meeting. An invitation to attend the meeting must be sent to Council's representative Neil Beck on telephone number 07 4099 9451, giving at least five (5) working days notification if possible.

In addition to the Decision Notice, Council provides the following 'Advice Statement' which relates to issues that are relevant to the proposed works:

1. The design of landscape and lighting works are subject to separate agreement and must be submitted to Council, prior to the commencement of associated works; and
2. The Consulting Engineer is to present all contractors with a copy of this Decision Notice and the Council approved plans, prior to the commencement of works.

Should you require further information or assistance, please contact Neil Beck of Development Assessment and Coordination on telephone 07 4099 9451.

Yours faithfully

Paul Hoyer  
General Manager Operations

Att

**Copy To:** Manager Infrastructure – Michael Kreidemann  
Manager Water & Waster – Wouter Van der Marwe  
Project Engineer – Michael Mathews  
Coordinator Civil Works – Kim Armbrust  
Coordinator Public Spaces – Peter Logan  
GIS Support – Alistair Hart

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**DECISION NOTICE FOR OPERATIONAL WORKS  
STAGE 4B & 4C OCEAN BREEZE ESTATE  
905L COOYA BEACH ROAD, BONNIE DOON**

**PROPOSAL:**

Operational Works (Engineering) excluding Landscape and Lighting Works

**TYPE OF DEVELOPMENT:**

Operational Work

**REAL PROPERTY DESCRIPTION:**

Lot 905 on SP270331 & Lot 901 on SP274762

**REFERRAL AGENCY CONDITIONS:**

None applicable

**FURTHER DEVELOPMENT PERMITS OR APPROVALS REQUIRED:**

None applicable

**DECISION DATE:**

22 June 2016

**DECISION:**

Approved subject to conditions

**TYPE OF APPROVAL:**

Development Permit

## **ASSESSMENT MANAGER CONDITIONS – STANDARD:**

The standard conditions are shown in Appendix A and must be read in conjunction with any approved plans and project specific conditions identified below.

## **ASSESSMENT MANAGER CONDITIONS – PROJECT SPECIFIC:**

### **1. General**

- a. The conditions require amendments to the drawings. The revised drawings must be submitted “for construction” and must be certified as approved by a registered professional engineer of Queensland (RPEQ).
- b. An updated Statement of Compliance must be provided with the revised drawings required under the conditions of this approval.  
Reference is made to FNQROC Development Manual (refer Appendix A of Application Procedures (AP1)).

### **2. Earthworks**

- a. Earthworks (filling) within the Cooya Beach road reserve currently shown in front of Lot 04 appears to conflict with the location of the existing water meters. The proposed works are to be revised so that this infrastructure is not disturbed. The verge must remain free draining. Revised details of the verge profile are to be provided prior to the prestart meeting.
- b. The applicant is to ensure that the allotment earthworks levels are of sufficient elevation relative to the advised flood level such that the future house construction can readily achieve the 300mm freeboard required in FNQROC/QUDM. In particular, the applicant is to consider the fill level of the allotments adjacent the low point at stormwater pits C1 and C2 in Road I. Any amendments proposed to the lot earthworks are to be documented in revised drawings provided prior to the pre-start meeting.

### **3. Stormwater**

- a. Provide amended “for construction” drawings for an underground pipe system capable of conveying the 5 year ARI rainfall event and meeting the FNQROC/QUDM design requirements for the minor/major storm philosophy. The “for construction” drawings must document the underground pipe system generally in accordance with the design submitted to Council as “*Q5 brun 070616.pdf*” as emailed on 7 June 2016. The following additional amendment must be included:
  - i. a starting tail water level of 4.5m AHD is to be adopted to ensure that the water surface level and hydraulic grade line in all pits (and in particular at pits C1, C2, A2, D1) are compliant with the FNQROC/QUDM freeboard requirements.
  - ii. The future downstream system must be designed to achieve a hydraulic grade less than or equal to this maximum water level in order to maintain compliance of the upstream system.

Note the above starting tail water level is based on the design surface levels provided in the longitudinal section being correct. The applicant is to advise if any amendments are required to the information included in this longitudinal section. If

any design surface levels are amended, a lower revised starting water level may be required to achieve freeboard.

- b. Provide amended design drawings for Cooya Beach Road with the low point in the road lowered a further 150mm from that shown on PDR drawing 15510-C07 revision B.

The revised road level is required to limit ponding in Julaji Close to within the QUDM depth limits and to provide reduced risk of flooding to the new lots upstream from Cooya Beach Road in the event of pipe and/or inlet blockages.

The vertical curve radii and road cross fall are to be generally as per the current design but the overall road level at the low point is to be lowered. The new extent of upgrade works is to be documented on revised plans approved by Council prior to the pre-start meeting.

- c. The applicant shall provide revised drain and earthworks bund levels along Bonnie Doon Road to ensure that the external drain complies with the freeboard requirements of QUDM Section 9.3.4. Revised calculations and drawings demonstrating compliance with the freeboard requirements must be approved by Council prior to the pre-start meeting.
- d. Stormwater calculations are to be provided for the hydraulics of the "letterbox" opening at pit A1 to verify the inlet capture rate for this pit. PDR Engineers Drawing 15510-C17 advises the flow into inlet is 292L/s. The calculations must advise on the inlet capacity variance with ponding depth and confirm that the required capacity is achieved prior to the water level reaching the height that the flows tip out to the south.
- e. The tenure of the drainage corridor between lots 184 and 185 must be amended to road reserve. The minimum width of the corridor is to be 4m in accordance with the FNQROC Development Manual. The concrete pathway link is to be constructed in the corridor in accordance with the FNQROC Development Manual and to the revised levels to suit Cooya Beach road lowering to be documented per Condition b. above.
- f. Subject to the revised design of the underground pipe system in Condition a. above; a further width of easement must be granted in the adjacent lots 184 and 185 (if required) based on the zone of influence of the pipework, (as per the FNQROC Development Manual).
- g. The drawings are to be amended to address the anomalies in kerb lip levels, road design levels and stormwater pit design surface levels. This includes the applicant's advised level error for pit A1 per email 7 June 2016 wherein it was advised that the grate level is shown incorrectly and will be reduced to about 6.05m.
- h. Amended drawings confirming the final scope of works are to be provided prior to the pre-start meeting. The applicant must allow sufficient time for the revised scope and calculations to be assessed prior to the prestart meeting.
- i. No works are to commence on site until the revised drawing approval is received from Council.

#### **4. Water and Sewer**

- a. Existing water supply and sewerage infrastructure is present in Cooya Beach Road in the vicinity of proposed stormwater drainage reach A7-A10. The clearance to existing infrastructure is to be confirmed on site prior to commencement of works

in Cooya Beach Road. The information on clearances to other services and cover to the design surface is to be submitted to Council for approval prior to the commencement of work. Where the minimum vertical and horizontal clearances recommended by the Water Services Association of Australia cannot be achieved, additional works/treatments to existing services may be required at the applicant's expense.

- b. Where an existing main has inadequate cover under the proposed Cooya Beach Road works, the developer shall replace the main in a material approved by Council or relay the main at an adequate depth at the developers cost.
- c. Any incident involving damage to water and sewerage infrastructure must be reported to Council immediately. Damage resulting from an incident or any defect to water and sewerage infrastructure found to be caused by the works will be repaired by Council at the Developer's cost.
- d. Where concrete footpaths are proposed in the verge for existing and new roads, conduits are to be provided under the footpath for future water connections to the property. At a minimum of two (2) conduits must be provided per lot located at either side of the lot. Suitable locating markers are to be installed per FNQROC Development Manual requirements. Please include a detail showing these on the drawings.

## **5. Roads and Paths**

- a. For locations where the road is being proposed to be retained and widened, the existing pavement in Cooya Beach Road is to be replaced or overlayed with an asphalt layer (minimum 30mm thick) in accordance with Section D3 of the FNQROC Development Manual at the applicants expense. Replacement and or modification of the existing pavement in Cooya Beach Road is to be designed and certified by a registered professional engineer of Queensland (RPEQ) and submitted to Council for approval prior to the pre-start meeting.
- b. Additional detail is to be provided on the drawings to show how roof water pipes will be connected to the kerb where the verge at the lot frontage contains a concrete footpath. The additional detail must include conduits located at either side of each allotment suitable for connecting the roof water pipes to the kerb without disturbing the new footpath. Suitable locating markers are to be installed per FNQROC Development Manual requirements. Please include a detail showing these on the drawings.
- c. The proposed footpath alignment in front of lot 104 is to be reviewed to confirm minimum clearance is achieved between the road and pedestrians. A localised site plan providing detail of the footpath location, clearances to infrastructure and bollards, and filling in this area is to be submitted for approval prior to the pre-start meeting.
- d. Additional details of the vehicle barrier (removable bollards or similar approved treatment) and location of pedestrian ramps is to be provided for the pathway link between lots 184 and 185.

## **6. Erosion and Sediment Control**

- a. A copy of the Contractor's Erosion and Sediment Control (ESC) Plan is to be submitted to Council and endorsed by the Consulting Engineer, prior to commencement of any works. In particular, the ESC Plan must address the

Institution of Engineers Australia Guidelines for Soil Erosion and Sediment Control and the Environment Protection (Water) Policy and Clauses CP1.05, CP1.13 and D5.10 of Council's FNQROC Development Manual.

The ESC Plan must be relevant to all phases of the construction and be updated where necessary as works progress. Individual drawings showing the measures to be installed for each phase of the works is required.

#### **APPROVED PLANS AND SPECIFICATIONS:**

Generally in accordance with the following drawings submitted by PDR Engineers subject to any alterations made by conditions of Development Permit for Operational Work OP 3546/2009.

<b>Drawing No.</b>	<b>Title</b>	<b>Revision</b>
15510-C01	LOCALITY PLAN, DRAWING INDEX & TYPE SECTIONS	B
15510-C02	GENERAL NOTES	A
15510-C03	EXISTING SURVEY & DEMOLITION PLAN	A
15510-C04	ALLOTMENT GRADING & EARTHWORKS SETOUT PLAN	B
15510-C05	ROADWORKS & STORMWATER DRAINAGE PLAN	C
15510-C06	EARTHWORKS, ROADWORKS & STORMWATER SETOUT TABLES	B
15510-C07	COOYA BEACH ROAD LONGITUDINAL SECTION	B
15510-C08	COOYA BEACH ROAD CROSS SECTIONS - SHEET 1 OF 2	B
15510-C09	COOYA BEACH ROAD CROSS SECTIONS — SHEET 1 OF 2	B
15510-C10	JULAJI CLOSE & ROAD I LONGITUDINAL SECTIONS	B
15510-C11	JULAJI CLOSE CROSS SECTIONS - SHEET 1 OF 2	B
15510-C12	JULAJI CLOSE CROSS SECTIONS - SHEET 2 OF 2	B
15510-C13	ROAD "I" CROSS SECTIONS	A
15510-C14	INTERSECTION SETOUT PLAN	B
15510-C15	CATCHMENT PLAN	B
15510-C16	DRAINAGE LONGITUDINAL SECTIONS	B
15510-C17	DRAINAGE CALCULATION TABLE	B
15510-C18	EROSION SEDIMENT CONTROL PLAN	A
15510-C19	WATER RETICULATION PLAN	A
15510-C20	SEWERAGE PLAN	B
15510-C21	SEWER LONGITUDINAL SECTIONS — SHEET 1 OF 2	B
15510-C22	SEWER LONGITUDINAL SECTIONS - SHEET 1 OF 2	B
15510-C23	BONNIE DOON ROAD O100 ROADSIDE DRAINAGE	A

**Note** – The approved plans above will require amending to satisfy conditions of this Development Permit.

## EROSION AND SEDIMENT CONTROL DRAWINGS

The following drawings must form the basis of the contractor's Erosion and Sediment Control Plan in accordance with the *FNQROC Development Manual*, Clause CP1.06.

Drawing Description	No	Rev
EROSION SEDIMENT CONTROL PLAN	15510-C18	A

For information relating to the *Sustainable Planning Act 2009* log on to [www.dsdip.qld.gov.au](http://www.dsdip.qld.gov.au) .  
To access the *FNQROC Development Manual*, Local Laws and other applicable Policies log on to [www.douglas.qld.gov.au](http://www.douglas.qld.gov.au) .

## RIGHTS OF APPEAL

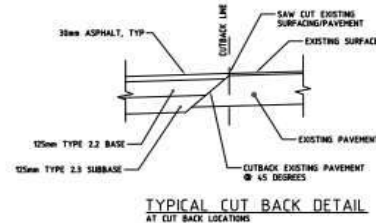
Attached

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## End of Decision Notice

**Att**    Appeal Rights  
         Pre-Start Meeting Template  
         Approved Drawings, Appendix A  
         Standard Conditions, Appendix B

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# CONCRETE NOTES

10mm THICK CONCRETE SLAB PAVEMENT (APPROVED BRUSH FINISH, 9.72 MIN FIBRE, 50mm TOP COVER, OVERLAYING - 50mm THICK CRACKS SHALL SELECT FILL, COMPACTED TO 98% SDD).

## SUBGRADE AND FILL NOTES

AREA TO BE CLEARED AND GRUBBED OUT TO REMOVE TOPSOIL AND ORGANIC MATERIAL.

WHERE NECESSARY APPROVED IMPORTED FILL TO BE SPREAD IN LAYERS NOT EXCEEDING 200mm AND COMPACTED USING VIBRATORY ROLLER TO 98% SDD AT OPTIMUM MOISTURE CONTENT.

ANY TIES TO BE REMOVED SHALL BE EXCAVATED AND THE HOLE FILLED WITH APPROVED IMPORTED FILL COMPACTED AS ABOVE.

FILLING TO BE BROUGHT UP TO THE UNDERSIDE OF THE ROAD PAVEMENT AND TRIMMED TO THE DESIRED LEVELS.

APPROVED IMPORTED FILLING UNDER THE PAVEMENT TO HAVE A CBR OF 15 AND A MIN DEPTH OF 100mm. IMPORTED GRAVEL MUST COMPLY WITH ALL ASPECTS OF THE "MAIN ROADS STANDARD SPECIFICATION MRS 1005 - UNBOUND PAVEMENTS".

ALL SLOTT SPOTS SHALL BE EXCAVATED BACK TO FIRM GROUND, THE BASE OF THE EXCAVATION COMPACTED AND BACKFILLED WITH APPROVED IMPORTED FILL COMPACTED AS ABOVE.

ALL FILL SHALL BE TESTED FOR COMPACTION IN ACCORDANCE WITH AS 3799 AND PROCEEDING REQUIREMENTS. SUB-GRADE TO BE TRIMMED AND COMPACTED TO 98% SDD (1 ASSUMED SOAKED CBR 7 MIN).

THE CONTRACTOR SHALL CHECK THE PAVEMENT SUBGRADE CBR AND SUBMIT THE CBR TEST RESULTS TO THE SUPERINTENDENT FOR CONFINEMENT OF PAVEMENT DESIGN AT LEAST TWO WEEKS PRIOR TO THE PLACEMENT OF ANY GRAVEL. REFER SPECIFICATION FOR TEST FREQUENCY AND LOCATION.

THE CONTRACTOR SHALL ADVISE THE COUNCIL, IN WRITING, OF THE SOURCE OF GRAVEL SUPPLY, PROOF OF GRAVEL'S CBR'S AND TYPE, AT LEAST ONE WEEK PRIOR TO PAVEMENT GRAVEL BEING DELIVERED TO THE SITE.

NO PAVEMENT GRAVEL IS TO BE DELIVERED TO THE SITE UNTIL AFTER THE CONTRACTOR HAS RECEIVED WRITTEN CONFIRMATION OF THE PAVEMENT DESIGN FROM THE SUPERINTENDENT.

THE CONTRACTOR IS TO ENSURE THAT THE PAVEMENT COURSES ARE SET DOWN SUFFICIENTLY TO ALLOW FOR THE THICKNESS OF ASPHALT (LANDFILL BUTHER) SEAL COAT.

## ASPHALT SURFACE (WHERE SPECIFIED)

THE PAVEMENT IS TO BE BROODEN CLEAN AND SHALL BE DRY PRIOR TO APPLYING PRIME COAT.

PRIME COAT SHALL BE APPLIED 48 HOURS PRIOR TO ASPHALT SEALING.

APPLY 30mm OF APPROVED ASPHALT.

THE PRIME COAT AND HOT MIX DESIGN SHALL BE SUPPLIED AND PLACED IN ACCORDANCE WITH COUNCIL DEVELOPMENT MANUAL REQUIREMENTS, WITH POLYMER ADDITIVES.

## CONSTRUCTION UNDER TRAFFIC

THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR APPROVAL BY COUNCIL PRIOR TO THE PRESTART MEETING.

## ROADWORKS NOTES

1. TRAFFIC CONTROL DEVICES (ROAD EDGE GUIDE POSTS, SIGNS, ETC) SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT ISSUE OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS ISSUED BY THE DEPARTMENT OF TRANSPORT, QUEENSLAND.

2. REFER TO THE "TYPE CROSS SECTIONS" DRAWING FOR PAVEMENT DETAILS.

3. CONSTRUCTION AND INSTALLATION OF ALL WORKS AS DETAILED ON THIS DRAWING IS TO BE IN ACCORDANCE WITH THE PROCEDURES, SPECIFICATIONS AND DRAWINGS CONTAINED IN THE CURRENT ISSUE OF THE "REGIONAL DEVELOPMENT MANUAL" AS ISSUED BY PRODOC KERN BUILT PTY. LTD. AND TO THE REQUIREMENTS OF THE COUNCIL.

4. THE CONTRACTOR SHALL Liaise WITH THE RELEVANT AUTHORITIES TO CONFIRM THE LOCATION OF ALL EXISTING SERVICES, AND SHALL ARRANGE FOR THE REMOVAL OR RELOCATION OF ANY SERVICES WHICH WILL BE AFFECTED BY THE WORKS.

5. THE CONTRACTOR/BUILDER SHALL OBTAIN COUNCIL APPROVALS PRIOR TO COMMENCING ANY CONSTRUCTION WORKS EXTERNAL TO THE SITE.

6. THE CONTRACTOR SHALL REMOVE ALL EXISTING CONSTRUCTION, TREES, SERVICES ETC AS NECESSARY TO PERMIT CONSTRUCTION OF THE NEW WORKS.

7. THE CONTRACTOR SHALL PROVIDE "AS CONSTRUCTED" DRAWINGS PREPARED BY A REGISTERED SURVEYOR IN ACCORDANCE WITH PRODOC TO THE SUPERINTENDENT PRIOR TO PRACTICAL COMPLETION.

8. ALL TREES ON THE SITE ARE TO REMAIN UNLESS NOTED OTHERWISE. PROTECTION OF EXISTING TREES SHALL BE IN ACCORDANCE WITH AS4477 - 2009 - PROTECTION OF TREES ON DEVELOPMENT SITES.

9. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS OF THE COUNCIL'S DECISION NOTICE/NOTIFIED DECISION NOTICE ISSUED FOR THE PROJECT - COPIES ARE AVAILABLE ON REQUEST.

10. SUBSOIL FLUSH POINTS TO BE IN ACCORDANCE WITH PRODOC DWS No. 5109S WHERE FLUSH POINTS OCCUR AT STORMWATER PITS, ENSURE FLUSHING POINT IS PROVIDED ABOVE THE PIT TO THE DETAILS SHOWN ON PRODOC DWS No. 5109S.

## SUBSOIL DRAINAGE NOTES

1. FOR SUBSOIL/SUBSURFACE DRAINAGE DETAILS AND DIMENSIONS REFER TO PRODOC DRAWING 5109S FOR DETAILS.

2. SUBSOIL FLUSHING POINTS AND OUTLETS TO BE POSITIONED ON SITE AS LOCATED ON ROADWORKS AND STORMWATER PLANS.

3. INFILL-FILTER MATERIAL TO BE TO SUPERINTENDENT'S APPROVAL AND SUBSOIL TRENCH BE LINED WITH A GEOTEXTILE FABRIC (BROOM JEN OR APPROVED EQUIVALENT).

4. SUBSOIL DRAIN TO BE 100mm SOCKED DRAIN COIL WITH A MIN GRADE OF 1%.

# SURVEY & EXISTING SERVICES

1. HORIZONTAL DATUM IS MDA 55

2. LEVEL DATUM IS AHD.

3. THE ORIGIN FOR THE LEVELS IS - PSM91717 RL9.779 AND LOCATED AT E. 108.319 N. 46169

4. REFER TO THE SURVEYOR FOR THE SURVEY STATION SETOUT DETAILS.

5. THE EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE DERIVED FROM SURFACE SURVEY AND COUNCIL RECORDS AND MAY NOT REPRESENT THE EXISTING SERVICES PRESENT BELOW THE SURFACE.

6. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE ALL EXISTING SERVICES PRIOR TO ANY EXCAVATION, PARTICULARLY ON FOOTPATHS.

7. ALL DAMAGE TO EXISTING SERVICES SHALL BE MADE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT AUTHORITY. ALL AT THE CONTRACTORS EXPENSE. THE CONTRACTOR SHALL NOTIFY THE RELEVANT AUTHORITY IMMEDIATELY WHEN ANY DAMAGE OCCURS.

8. THE LINE AND LEVEL OF EXISTING UNDERGROUND SERVICES SHALL BE DETERMINED BY THE CONTRACTOR AND THE ENGINEER SHALL BE NOTIFIED OF ANY POTENTIAL CLASHES WITH DESIGN STRUCTURES AND SERVICES PRIOR TO COMMENCING CONSTRUCTION.

9. EXISTING OUTLET LEVELS OR CONNECTION LEVELS FOR ALL DESIGN STORMWATER AND SEWER SHALL BE CONFIRMED BY THE CONTRACTOR AND THE ENGINEER SHALL BE NOTIFIED OF ANY VARIATIONS PRIOR TO COMMENCING CONSTRUCTION.

10. EXISTING SERVICES ON THE DRAWINGS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE, NO RESPONSIBILITY IS TAKEN BY THE PRINCIPAL OR SUPERINTENDENT FOR THE ACCURACY AND COMPLETENESS OF THE INFORMATION SHOWN.

11. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR IS TO ESTABLISH ON SITE THE EXACT POSITION OF ALL UNDERGROUND SERVICES IN THE PROPOSED WORKS AREA, METHODS FOR ACHIEVING THIS WILL INCLUDE BUT NOT BE LIMITED TO:-

- CAREFUL LIAISON WITH THE RELEVANT SERVICE AUTHORITIES.

- COMPREHENSIVELY SCANNING THE AFFECTED AREAS WITH A CABLE DETECTOR AND MARKING ON THE GROUND THE POSITION OF ALL SERVICES.

- HAND EXCAVATIONS TO EXPOSE ALL SUCH SERVICES WHICH MAY BE AFFECTED BY THE PROPOSED WORKS UNDER THE DIRECTION OF THE RELEVANT SERVICE AUTHORITY.

12. THE CONTRACTOR IS TO BRING TO THE SUPERINTENDENT'S ATTENTION ANY DISCREPANCIES BETWEEN THE EXISTING SERVICES THIS IDENTIFIED AND DOCUMENTED SERVICES WHICH MIGHT AFFECT THE PROPOSED WORKS, APPROPRIATE MEASURES TO RESOLVE ANY CONFLICT WILL BE DOCUMENTED BY THE SUPERINTENDENT.

13. THIS DESIGN HAS BEEN BASED ON SERVICE AUTHORITY "AS CONSTRUCTED" INFORMATION AND LIMITED POTHOLES OR NO POTHOLES HAS BEEN UNDERTAKEN TO VERIFY EXISTING SERVICE LOCATIONS AND DEPTHS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERTAKE POTHOLES TO VERIFY THE DESIGN, NOTIFY THE DESIGN CONSULTANTS OF ANY SERVICE CLASHES.

14. THE CONTRACTOR SHALL EXCAVATE BY HAND TO EXPOSE THE WATER MAINS AND/OR SEWERS AND SHALL CONSTRUCT A CONCRETE SPANNING SLAB TO COUNCIL REQUIREMENTS OVER THE WATER MAINS OR SEWERS SO THAT NO LOADS ARE IMPOSED ONTO THOSE MAINS.

## WATER RETICULATION NOTES

1. 150 DIA AND 100 DIA UPVC WATER MAINS TO BE CLASS B 1000 AND 63mm PE 100 DRN (HML).

2. VALVES AND HYDRANTS MUST BE LOCATED OPPOSITE BOUNDARY JUNCTIONS AND TRUNCATIONS.

3. WATER SUPPLY FITTINGS ARE TO INCORPORATE SOCKETS WITH AN EFFECTIVE SEALING LENGTH EQUAL OR GREATER THAN THAT OF THE UPVC PIPE USED.

4. ALIGNMENT OF WATER RETICULATION MAINS WITHIN ROAD RESERVES TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CAINS REGIONAL COUNCIL.

5. INSTALLATION OF VALVES AND FREE HYDRANTS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DOUGLAS SHIRE COUNCIL.

6. ALL WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH PRODOC.

7. FOR DETAILS FOR KERB AND PAVEMENT MARKINGS AND RETROREFLECTIVE MARKERS AT HYDRANTS REFER TO PRODOC STANDARD DRAWINGS 5200S AND 5201S.

## SEWERAGE RETICULATION

1. ALL SEWER PIPES SHALL BE 150 DIA PVC, CLASS SD1, UNLESS NOTED OTHERWISE.

2. ALL PCB'S SHALL BE OF TYPE AS NOTED SHALL BE IN ACCORDANCE WITH PRODOC DWS No 5109S. ALL PCB'S SHALL BE PLACED CLEAR OF ANY EASEMENTS, AND WHERE PCB'S CROSS UNDER EASEMENTS OR BATTERS SHALL BE EXTENDED 100mm BEYOND LAND CLEAR OF THE EASEMENT OR BATTER. AN 10. SHALL BE PROVIDED AT THE DOWNSTREAM END OF THE HOUSE DRAIN WITHIN 10m OF THE BOUNDARY, TO DELINEATE THE END OF THE PROPERTY CONNECTION BRANCH (PCB).

3. END CAPS ARE SHALL BE PROVIDED AT ALL LINE ENDS WHERE MANHOLES ARE NOT TO BE CONSTRUCTED.

4. WHERE MANHOLES OCCUR AT THE ENDS OF SEWER LINES, THE PROPERTY CONNECTION BRANCH (PCB) IS TO BE CONNECTED DIRECTLY TO MANHOLE TO AVOID DRY MANHOLE SITUATIONS. REFER TO PLAN FOR PCB LOCATIONS.

5. REFER TO THE SEWERAGE LONGITUDINAL SECTIONS FOR SEWER PIPE GRADES, INVERT LEVELS, STORMWATER CLASHES, ETC.

6. CONSTRUCTION OF THE SEWERAGE RETICULATION SHALL BE IN ACCORDANCE WITH THE PROCEDURES, SPECIFICATIONS AND DRAWINGS INCLUDING REQUIREMENTS FOR "AS CONSTRUCTED" DRAWINGS AS CONTAINED IN THE CURRENT ISSUE OF THE "REGIONAL DEVELOPMENT MANUAL" AS ISSUED BY PRODOC, AND SHALL BE TO THE REQUIREMENTS OF THE COUNCIL.

7. CONTRACTOR SHALL USE FIBREGLASS REINFORCED JUNCTIONS AT PCB'S WHERE REQUIRED BY DOUGLAS SHIRE COUNCIL.

8. INSTALL PIPE ANCHOR BLOCKS TO ALL 100 AND 150 DIA SEWERS AT GRADES GREATER THAN 1 ON 4 IN ACCORDANCE WITH PRODOC DWS No. 5109S-100 AND 5109S-150.

9. THE CONTRACTOR SHALL MAKE ALL APPLICATIONS AND PAY ALL FEES TO COUNCIL FOR THE SEWERAGE WORKS AND SHALL ARRANGE AND MANAGE COUNCIL'S INSPECTIONS AND TESTING OF THE WORKS. A COPY OF COUNCIL'S INSPECTION CERTIFICATE SHALL BE PROVIDED BY THE CONTRACTOR TO THE OWNER PRIOR TO PRACTICAL COMPLETION.

10. THE CONTRACTOR SHALL OBTAIN COUNCIL INSPECTIONS AND THEIR WITNESS TO TESTING PRIOR TO MAKING SEWERS LIVE. A COPY OF COUNCIL'S INSPECTION CERTIFICATE SHALL BE PROVIDED TO THE SUPERINTENDENT PRIOR TO PRACTICAL COMPLETION.

# EARTHWORKS NOTES

1. ALL FOOTPATHS SHALL BE GRASSED (DRILL SEEDING WITH APPROVED GRASS SPECIES) IN ACCORDANCE WITH LANDSCAPE SPECIFICATIONS, FERTILIZED AND MAINTAINED FOR THE REQUIRED MAINTENANCE PERIOD.

2. ALL BARE EARTHWORKS AREAS (LOTS, DRAINS, PARKS, VERGES, ETC.) SHALL BE GRASSED (DRILL SEEDING WITH APPROVED GRASS SPECIES) FOR SLOPES UP TO AND INCLUDING 1 ON 4, OR HYDROMULCH FOR SLOPES GREATER THAN 1 ON 4. USE APPROVED SEED MIX AND MAINTAIN, WATER AND FERTILISE FOR MAINTENANCE PERIOD.

3. CLEAR TREES, LARGE SHRUBS ETC FROM THE AREA OF LOTS AND ROAD RESERVES. ONLY FOR CONSTRUCTION OF ROADS AND SERVICES, AND EITHER REMOVE FROM SITE OR ALTERNATIVELY CHIP MULCH AND STOCKPILE FOR RE-USE IN LANDSCAPING. CONTRACTOR SHALL OBTAIN COUNCIL INSPECTION AND APPROVAL PRIOR TO COMMENCING ANY TREE AND VEGETATION CLEARING. ALL VEGETATION/CONSERVATION ZONES SHALL BE RETAINED AND SHALL BE ADEQUATELY FENCED/SEGREGATED PRIOR TO COMMENCING CONSTRUCTION.

4. SLASH THE EARTHWORKS AREA, RAKE AND STOCKPILE CUT VEGETATION FOR RE-USE IN THE LANDSCAPING, CONTINUE SLASHING AND RAKING LOTS AND PARK AREAS AS NECESSARY AND AS INSTRUCTED BY THE SUPERINTENDENT DURING THE CONTRACT AND MAINTENANCE PERIOD TO KEEP GRASS TO A MAXIMUM 50mm TO 100mm HIGH.

5. ALL GULLIES AND DEPRESSIONS REQUIRING FILLING SHALL BE CLEARED, GRUBBED AND CLEANED OUT OF SILT, BOLLERS, DEBRIS ETC TO PROVIDE A CLEAN FIRM BASE PRIOR TO PLACING ANY FILL OR FILTER MATERIALS. COMPACT ALL NATURAL SUBGRADES WITH 6 TO 8 PASSES OF A 10 TONNE VIBRATING ROLLER PRIOR TO PLACING ANY FILL MATERIALS. PLACE SUBSOIL DRAINAGEWAYS TO ENGINEER'S APPROVALS AT THE BASE OF ALL SUCH FILLS AND OUTLET TO THE STORMWATER DRAINAGE SYSTEM, NOTIFY THE SUPERINTENDENT FOR AN INSPECTION PRIOR TO PLACING ANY FILL MATERIALS.

6. WHERE FILL IS PLACED ON SLOPING EXISTING SURFACE, THE EXISTING SURFACE SHALL BE CLEARED AND THE BENCH COMPACTED TO 98% SDD PRIOR TO PLACING THE FILL MATERIAL.

7. REMOVE SURFACE ROCKS FROM THE LOTS, FOOTPATHS, VERGES AND PARKLAND AREAS. REUSE IN SOIL PROTECTION, REMOVE EXCESS FROM SITE OR STOCKPILE AS DIRECTED. ALL COSTS TO BE INCLUDED IN CONTRACT LUMP SUM.

8. THE CONTRACTOR SHALL ENSURE NO PONDING AREAS RESULT FROM THE EARTHWORKS OPERATION. ANY SUCH AREAS WHICH DEVELOP SHALL BE RECTIFIED AS DIRECTED BY THE SUPERINTENDENT. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT OF THE DEVELOPMENT OR EXISTENCE OF ANY SUCH PONDING AREAS.

9. BATTERS IN EXCESS OF 15m HIGH SHALL BE ASSESSED AND REPORTED FOR STABILITY CONSULTING CONSTRUCTION BY A GEOTECHNICAL ENGINEER. COPIES OF REPORTS SHALL BE FORWARDED TO THE SUPERINTENDENT AND TO COUNCIL.

10. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY BERM AT THE TOP OF ALL BATTERS TO DIRECT AND CONTROL RUNOFF TO A SINGLE LOCATION. THE DISCHARGE OVER THE BATTER SHALL BE THROUGH A STABILISED CRUTE ADDRESSED IN THE CONTRACTORS PLAN, e.g. REINFORCED TURF, GEOTEXTILE, CONCRETE OR SIMILAR.

11. THE CONTRACTOR SHALL SET OUT BY REGISTERED SURVEYORS THE LOCATION OF ALL CUT BATTERS PRIOR TO COMMENCING THESE EARTHWORKS. HE SHALL ENGAGE A GEOTECHNICAL ENGINEER TO INSPECT, REPORT AND CHECK THE DESIGN PROFILE AND THE INITIAL MATERIAL FOR LONG TERM STABILITY. DESIGN AMENDMENTS AND ANY RETAINING WALLS SHALL BE FINALISED TO COUNCIL'S APPROVALS PRIOR TO COMMENCEMENT OF ANY OF THESE EARTHWORKS.

12. ALL BOUNDARIES WITH EXISTING CREEKS AND VEGETATION MUST BE TEMPORARILY DELETED AND FENCED OFF/SEGREGATED TO RESTRICT BULKING ACCESS FOR THE DURATION OF THE CONSTRUCTION ACTIVITY.

13. THE CONTRACTOR SHALL ENSURE THE PROPOSED CONSTRUCTION EQUIPMENT TO BE USED ON THE SITE WILL NOT DAMAGE EXISTING UNDERGROUND INFRASTRUCTURE, IN PARTICULAR HEAVY EQUIPMENT TRAVERSING OVER A.C. MAINS WITH NORMAL COVERS.

14. THE CONTRACTOR SHALL ENSURE THE PROPOSED CONSTRUCTION EQUIPMENT TO BE USED ON THE SITE WILL NOT DAMAGE EXISTING UNDERGROUND INFRASTRUCTURE, IN PARTICULAR HEAVY EQUIPMENT TRAVERSING OVER A.C. MAINS WITH NORMAL COVERS.

# EROSION SEDIMENT CONTROL STRATEGY AND ENVIRONMENTAL PROTECTION

1. THE CONTRACTOR IS RESPONSIBLE WITHIN THE LIMITS IMPOSED BY THE WORKS, TO PROTECT AND PRESERVE THE NATURAL ENVIRONMENT AND AVOID POLLUTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INCORPORATION OF APPROPRIATE CONTROL MEASURES CONFORMING WITH THE REQUIREMENTS OF THE RELEVANT AUTHORITY. DRILL SEED ALL BARE EARTH AREAS, FOOTPATHS, DRAINS AND CUT BATTERS UP TO 1 ON 4 SLOPES SHALL BE DRILL SEEDING WITH APPROVED GRASS SPECIES, FERTILIZED AND MAINTAINED FOR THE REQUIRED MAINTENANCE PERIOD. HYDROMULCH ALL CUT AND FILL BATTERS STEEPER THAN 1 ON 4 SHALL BE HYDROMULCHED WITH APPROVED SUITABLE GRASS SPECIES AND MAINTAINED FOR THE REQUIRED MAINTENANCE PERIOD.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INCORPORATION OF APPROPRIATE CONTROL AND MANAGEMENT MEASURES CONFORMING TO THE REQUIREMENTS OF THE ACT AND THE RELEVANT AUTHORITIES.

3. THE EROSION AND SEDIMENT CONTROL STRATEGY, SHOWN OR NOTED ON THESE DRAWINGS, HAS BEEN PROVIDED AS A GUIDE.

4. THE CONTRACTOR SHALL PROVIDE AN EROSION SEDIMENT CONTROL PLAN (ESCP) FOR EACH PHASE OF HIS PROPOSED CONSTRUCTION PROGRAM AND WORK METHODS, AND IS WHOLLY RESPONSIBLE FOR THE IMPLEMENTATION, CONTROL, AND MANAGEMENT OF SUCH PLAN.

5. THE CONTRACTOR SHALL INSTALL ALL DEVICES/MEASURES NECESSARY TO COMPLY WITH THE PROVISIONS OF THE ESCP PROPOSED DEVELOPMENT MANUAL, THE ENVIRONMENTAL PROTECTION ACT, AND COUNCIL REQUIREMENTS.

6. THE ESCP SHALL INCLUDE SUCH MEASURES AS SHOWN ON THE STRATEGIC PLAN.

7. FOR ENGINEERS DO NOT ACCEPT RESPONSIBILITY FOR THE CONTRACTOR'S DESIGN & IMPLEMENTATION OF HIS ESCP NOR THE CONSEQUENCES OF HIS FAILURE TO APPLY ALL REASONABLE CONTROLS.

8. ALL STORMWATER INLETS, TRENCHES, ETC. SHALL BE CONSTRUCTED IN SUCH A WAY AS TO PREVENT THE ENTRY OF SEDIMENT INTO THE STRUCTURE. IF IT IS NECESSARY TO DISCHARGE INTO SUCH INLETS THEN SUITABLE SILT TRAPS SHALL BE CONSTRUCTED UPSTREAM OF THE INLETS SUCH THAT OVERFLOW FROM TRAPS ENTERS THE DRAINS AFTER THE SEDIMENT HAS DROPPED OUT.

9. ALL SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL THE END OF THE MAINTENANCE PERIOD, UNLESS NOTED OTHERWISE. ALL SEDIMENT CONTROL DEVICES ARE TO BE FULLY MAINTAINED IN AN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND THE MAINTENANCE PERIOD. THE CONTRACTOR SHALL ENSURE THAT ALL SEDIMENT CONTROL DEVICES ARE KEPT FREE OF SEDIMENT BUILD-UP.

10. SEDIMENT FENCES SHALL BE INSTALLED SUCH THAT THE BASE OF THE FENCE IS PLACED 100MM MINIMUM BELOW GROUND LEVEL, AND ANCHORED SECURELY IN SUCH POSITION.

11. ALL VEHICLE EXIT POINTS SHALL HAVE SHOWER GROSS, WASH BAYS OR SIMILAR TO PREVENT VEHICLES FROM TRACKING SOIL AND MUD OFF SITE.

12. ALL SOIL STOCKPILES SHALL BE PROTECTED AGAINST WIND EROSION BY COVERING AND AGAINST STORMWATER RUNOFF BY SILT FENCES AT THE DOWNHILL SLOPES. STOCKPILE LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND EROSION/CONTROL MEASURES IMPLEMENTED & MAINTAINED FOR THE LIFE OF THE STOCKPILE.

13. THE CONTRACTOR SHALL INSTALL TURF STRIPS BEHIND ALL KERB & CHANNEL, ADJACENT CONCRETE INVERTS AND ALL EXISTING DRAINS ETC WHERE DIRTY WATER SHEET FLOWS INTO DRAINAGE COLLECTION SYSTEMS.

14. DIVERT CLEAN WATER AROUND AREAS OF CONSTRUCTION.

15. DRILL SEED ALL ROAD SHOULDERS, FOOTPATHS, DRAINS AND CUT BATTERS UP TO 1 ON 4 SLOPE SHALL BE DRILL SEEDING WITH APPROVED GRASS SPECIES, FERTILIZED AND MAINTAINED FOR THE REQUIRED MAINTENANCE PERIOD.

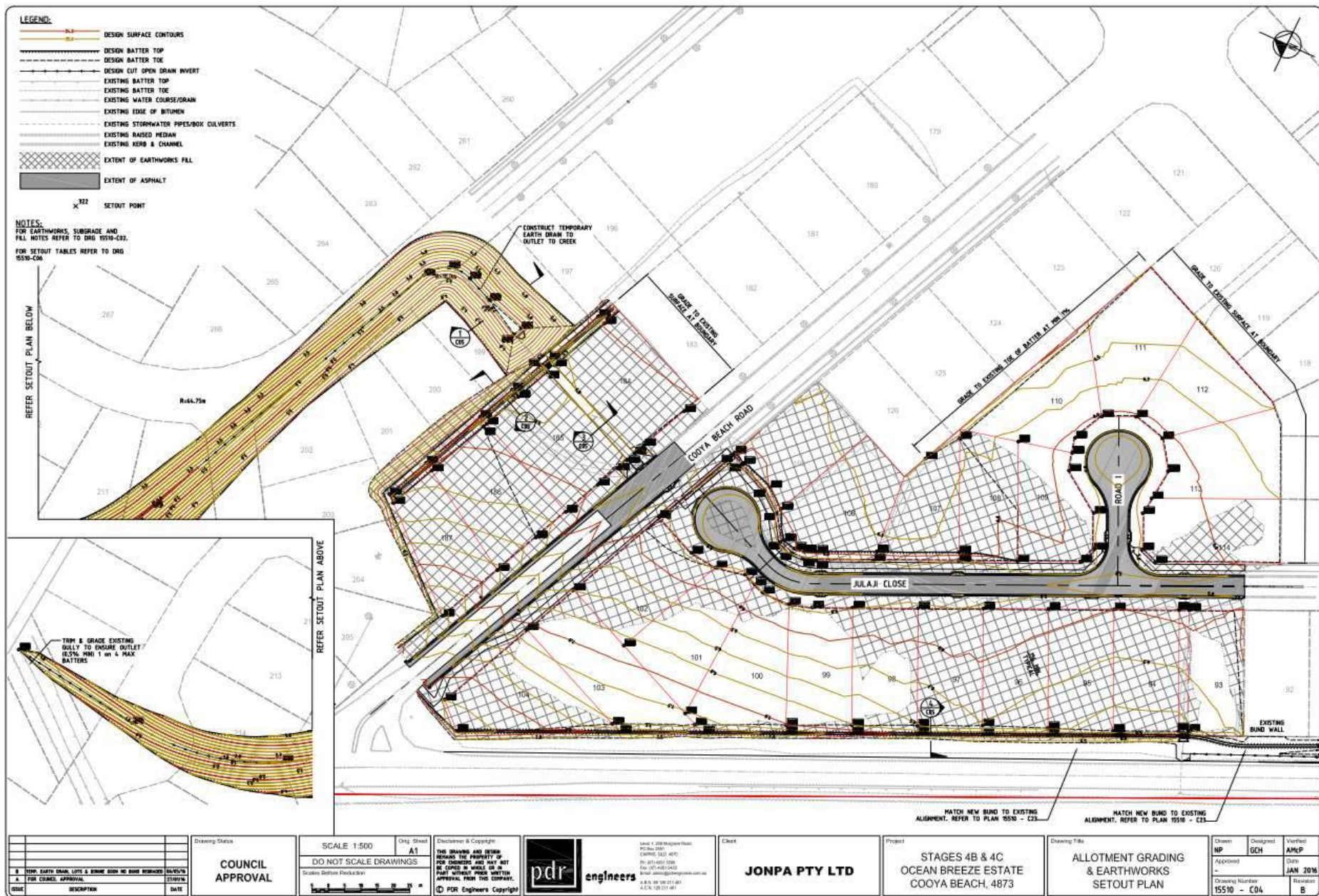
16. HYDROMULCH ALL CUT AND FILL BATTERS STEEPER THAN 1 ON 4, WITH APPROVED SUITABLE GRASS SPECIES AND MAINTAINED FOR THE REQUIRED MAINTENANCE PERIOD.

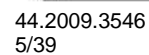
17. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY BERM AT THE TOP OF ALL BATTERS TO DIRECT AND CONTROL RUNOFF TO A SINGLE LOCATION. THE DISCHARGE OVER THE BATTER SHALL BE THROUGH A STABILISED CRUTE ADDRESSED IN THE CONTRACTORS PLAN, e.g. REINFORCED TURF, GEOTEXTILE, CONCRETE OR SIMILAR.

18. ALL WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH PRODOC.

Drawing Date		SCALE: N/A		Orig. Sheet		Client		Project		Drawing Title		Drawn		Designed		Worked	
COUNCIL APPROVAL		DO NOT SCALE DRAWINGS		AT		JONPA PTY LTD		STAGES 4B & 4C OCEAN BREEZE ESTATE COOYA BEACH, 4873		GENERAL NOTES		Approved		DCN		AMCP	
DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
15510 - C02		15510 - C02		15510 - C02		15510 - C02		15510 - C02		15510 - C02		15510 - C02		15510 - C02		15510 - C02	







# ALLOTMENT & EARTHWORK SETOUT

PT	EASTING	NORTHING	DL	PT	EASTING	NORTHING	DL	PT	EASTING	NORTHING	DL
300	8776.233	80482.274	8.263	350	8863.932	80405.198	5.757	400	8867.411	80408.791	5.511
301	8786.809	80476.358	8.358	351	8864.955	80406.873	5.599	401	8868.951	80407.850	6.008
302	8796.581	80479.237	7.971	352	8863.797	80403.379	5.736	402	8866.964	80406.395	6.009
303	8796.977	80432.368	7.533	353	8865.299	80401.792	6.617	403	8869.053	80354.627	2.632
304	8800.154	80406.008	7.788	354	8864.363	80397.652	5.703	404	8867.711	80306.444	2.633
305	8801.537	80409.245	7.267	355	8866.767	80398.485	6.093	405	8866.750	80323.988	2.508
306	8810.747	80392.795	7.601	356	8871.706	80381.364	5.761	406	8860.428	80353.444	2.523
307	8813.130	80383.832	7.813	357	8874.686	80381.644	6.195	407	8860.745	80358.812	2.490
308	8819.382	80384.298	7.548	358	8882.588	80375.520	5.748	408	8865.325	80344.735	2.447
309	8821.561	80385.383	6.760	359	8885.193	80358.668	6.767	409	8793.412	80389.705	5.996
310	8827.585	80384.036	6.900	360	8890.062	80354.545	5.841	410	8758.361	80425.916	5.670
311	8829.866	80381.123	6.552	361	8898.997	80353.538	5.928	411	8758.382	80468.812	1.636
312	8835.809	80377.766	6.906	362	8903.997	80352.560	5.783	412	8756.647	80376.234	1.229
313	8838.639	80378.985	6.258	363	8915.856	80326.333	5.802				
314	8844.332	80379.562	6.900	364	8922.787	80318.869	5.938				
315	8844.187	80379.635	6.438	365	8928.304	80316.299	5.908				
316	8852.475	80379.291	6.900	366	8933.005	80314.538	5.952				
317	8853.744	80379.869	6.626	367	8942.534	80316.979	5.975				
318	8860.796	80377.666	6.900	368	8946.916	80312.777	5.975				
319	8862.124	80377.652	6.670	369	8946.301	80317.204	5.952				
320	8863.598	80378.990	6.562	370	8955.446	80315.221	5.938				
321	8867.691	80408.676	7.501	371	8955.520	80312.367	5.869				
322	8868.938	80429.592	8.851	372	8959.084	80312.887	5.802				
323	8863.394	80413.451	7.278	373	8969.625	80317.914	5.784				
324	8824.390	80446.998	6.976	374	8973.647	80322.614	5.938				
325	8856.685	80446.856	5.868	375	8973.921	80373.666	6.308				
326	8859.321	80437.876	5.787	376	8987.657	80388.479	6.536				
327	8849.267	80426.432	5.769	377	8926.545	80356.883	6.177				
328	8851.041	80405.221	5.767	378	8880.850	80403.990	7.580				
329	8849.647	80411.251	5.755	379	8828.235	80404.830	6.789				
330	8848.117	80407.886	5.758	380	8834.485	80478.481	6.383				
331	8848.226	80399.111	5.726	381	8845.841	80475.517	6.157				
332	8850.282	80392.118	5.701	382	8857.778	80464.247	5.929				
333	8855.652	80389.851	5.736	383	8865.658	80465.827	5.835				
334	8863.781	80382.602	5.793	384	8868.703	80463.417	5.617				
335	8872.309	80384.352	5.787	385	8875.448	80462.285	5.617				
336	8880.638	80376.913	5.892	386	8875.823	80460.625	5.832				
337	8888.767	80387.854	5.948	387	8880.000	80454.008	5.930				
338	8897.693	80389.612	5.938	388	8825.965	80522.745	6.298				
339	8898.339	80386.882	5.929	389	8828.079	80525.091	6.454				
340	8884.631	80386.384	5.819	390	8840.257	80516.431	6.126				
341	8882.864	80386.730	5.885	391	8841.881	80518.993	6.367				
342	8882.256	80386.984	5.792	392	8859.685	80517.868	5.993				
343	8882.786	80386.625	5.864	393	8866.712	80517.359	5.871				
344	8877.764	80386.958	5.794	394	8862.004	80518.183	6.053				
345	8879.387	80379.895	6.083	395	8872.720	80512.889	5.643				
346	8872.708	80384.773	5.758	396	8873.933	80516.834	5.801				
347	8874.587	80415.978	6.024	397	8883.654	80497.259	5.676				
348	8864.966	80409.718	5.778	398	8884.866	80500.083	5.551				
349	8865.905	80408.938	5.931	399	8886.398	80496.817	5.676				

## COOYA BEACH ROAD

Number	Chainage	Easting	Northing	Radi/A Value	Bearing
L01	Start	-5.800	8782.628	80385.985	-
	End	6.008	8776.930	80366.753	10°30'14" Straight
L02	Start	6.008	8776.930	80366.753	-
	End	93.519	8868.224	80364.237	10°30'14" Straight
C01	Start	93.519	8868.224	80364.237	-
	End	102.451	8869.382	80423.163	758.880 10°30'14" Arc
L03	Start	102.451	8869.382	80423.163	-
	End	140.880	8869.428	80364.989	10°30'14" Straight

## JULAJI CLOSE

Number	Chainage	Easting	Northing	Radi/A Value	Bearing
L04	Start	90.800	8894.637	80358.388	-
	End	156.811	8896.019	80359.962	330°28'05" Straight
L05	Start	156.811	8896.019	80359.962	-
	End	250.883	8897.011	80359.497	330°28'05" Straight
C02	Start	250.883	8897.011	80359.497	-
	End	259.161	8893.962	80469.855	330°28'05" Arc 2°30'00" Arc
L06	Start	266.458	8896.909	80469.855	-
	End	288.078	8895.353	80462.888	22°58'00" Straight
L07	Start	288.078	8895.353	80462.888	-
	End	385.306	8864.458	80421.717	22°58'00" Straight
L08	Start	385.306	8864.458	80421.717	-
	End	297.986	8869.866	80439.331	22°58'00" Straight

## ROAD I

Number	Chainage	Easting	Northing	Radi/A Value	Bearing
L09	Start	2.008	8866.819	80359.962	-
	End	21.918	8855.996	80359.863	65°38'05" Straight
L10	Start	21.918	8855.996	80359.863	-
	End	30.806	8855.354	80364.508	65°38'05" Straight
L011	Start	30.806	8855.354	80364.508	-
	End	53.508	8864.755	80370.718	65°38'05" Straight

## COOYA BEACH ROAD - LEFT EDGE OF BITUMEN

Number	Chainage	Easting	Northing	Radi/A Value	Bearing
L102	Start	5.008	8782.628	80385.985	-
	End	88.644	8868.483	80462.224	10°30'14" Straight
C03	Start	88.644	8868.483	80462.224	-
	End	96.390	8865.730	80458.965	600.880 10°30'14" Arc 10°30'14" Arc
L103	Start	96.390	8865.730	80458.965	-
	End	95.972	8873.671	80425.057	10°30'14" Straight
L104	Start	95.972	8873.671	80425.057	-
	End	115.511	8879.836	80432.807	10°42'58" Straight
L105	Start	115.511	8879.836	80432.807	-
	End	117.362	8886.987	80450.178	10°42'58" Straight
L106	Start	117.362	8886.987	80450.178	-
	End	123.930	8898.889	80464.988	10°30'14" Straight

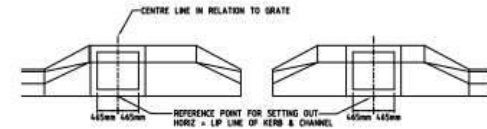
## COOYA BEACH ROAD - RIGHT EDGE OF BITUMEN

Number	Chainage	Easting	Northing	Radi/A Value	Bearing
L107	Start	5.008	8782.628	80385.985	-
	End	96.686	8868.483	80462.224	10°30'14" Straight
C04	Start	96.686	8868.483	80462.224	-
	End	104.432	8865.730	80458.965	600.880 10°30'14" Arc 10°30'14" Arc
L108	Start	104.432	8865.730	80458.965	-
	End	105.265	8873.671	80425.057	10°30'14" Straight
L109	Start	105.265	8873.671	80425.057	-
	End	115.511	8879.836	80432.807	10°42'58" Straight
L110	Start	115.511	8879.836	80432.807	-
	End	117.362	8886.987	80450.178	10°42'58" Straight
L111	Start	117.362	8886.987	80450.178	-
	End	123.795	8898.889	80464.988	10°30'14" Straight

# STORMWATER PIT SETOUT

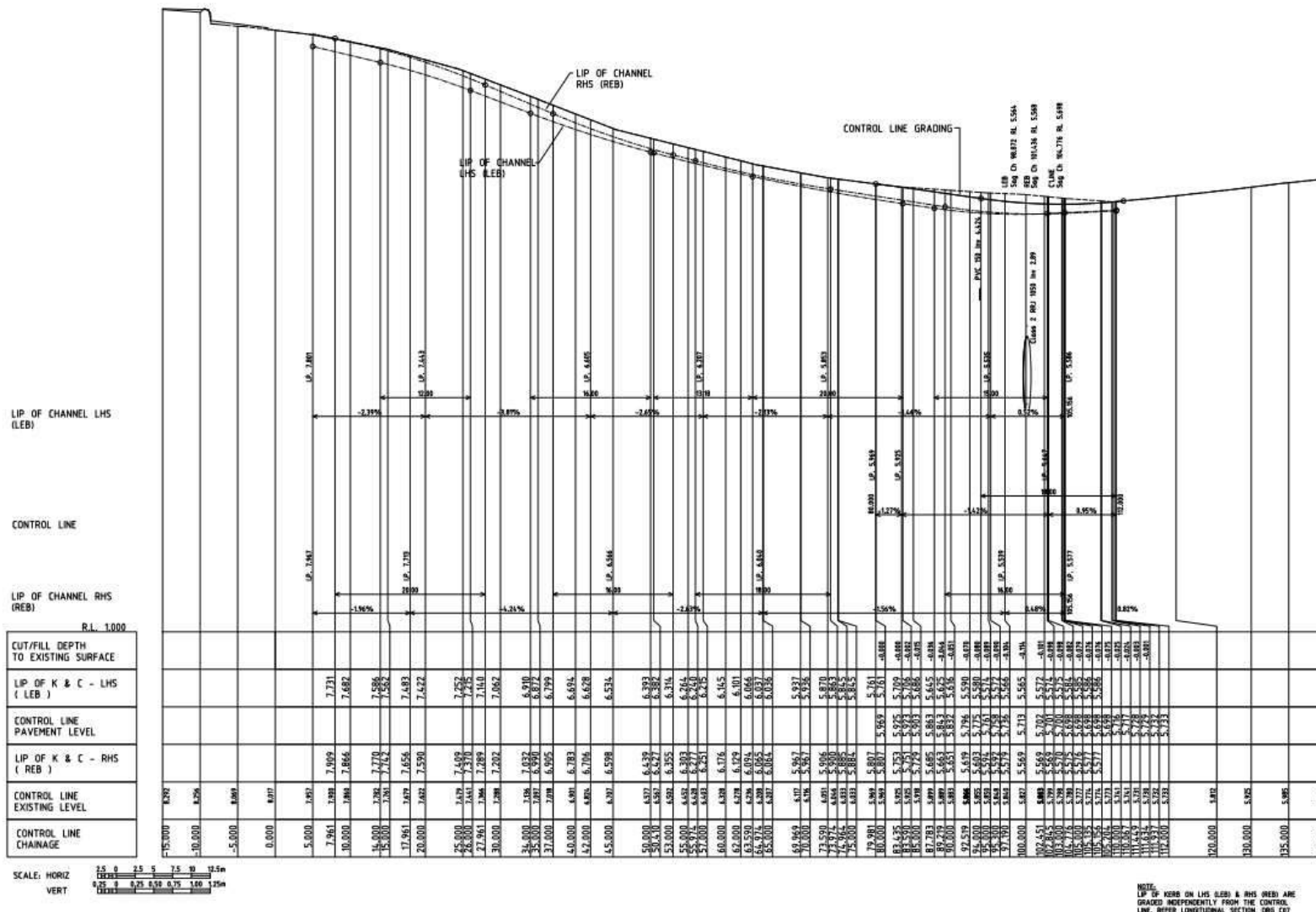
PIT ID	EASTING	NORTHING	DESIGN LEVEL (LIP)
A1	8865.178	80271.681	6.650
A2	8905.837	80290.528	5.695
A3	8889.532	80271.089	5.728
A4	8872.924	80253.478	5.517
A5	8855.486	80191.686	5.449
A6	8855.972	8018.229	5.672
A7	8864.432	80437.439	5.470
A8	8864.426	80448.228	5.568
A9	8863.944	80457.987	5.564
A10	8885.517	80477.833	5.456
A11	8896.917	80508.626	5.516
B1	8907.261	80292.394	5.695
C1	8908.917	80319.300	5.536
C2	8911.383	80316.646	5.536
D1	8878.328	80355.944	5.517
E1	8866.993	80294.453	5.449

NOTES:  
STRUCTURE A6 SETOUT @ CENTRE OF PUL  
STRUCTURES A1 & A11 SETOUT @ PIPE INVERT  
STRUCTURE A10 SETOUT @ CENTRE OF PIT



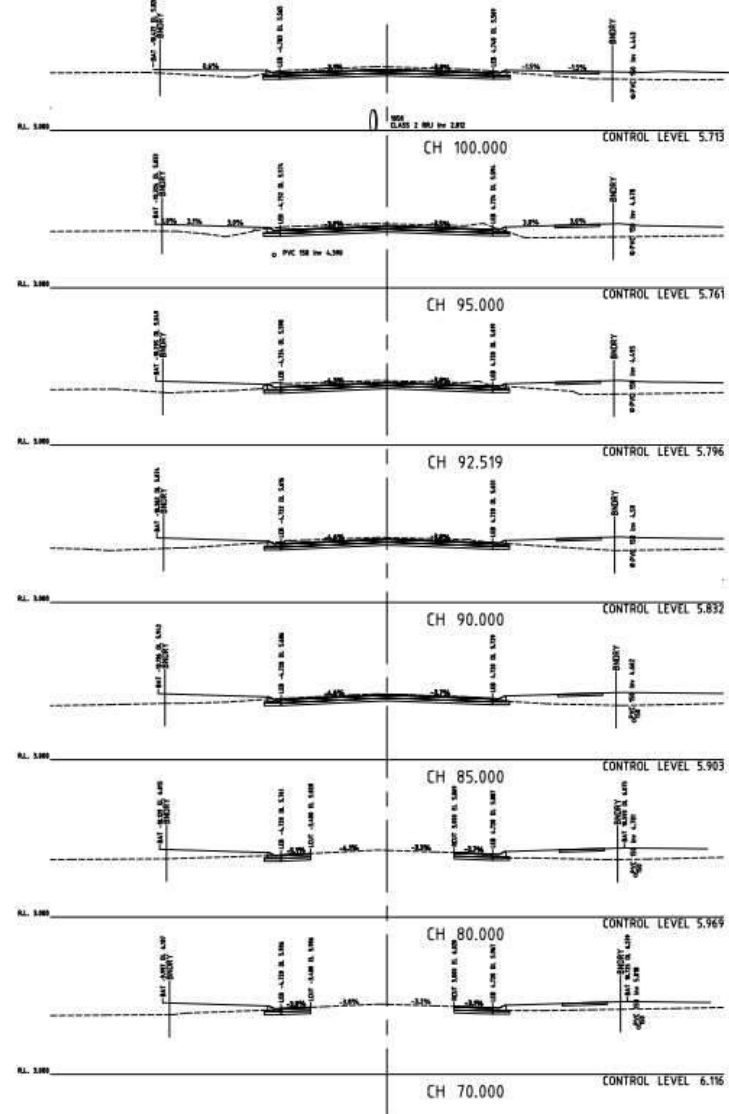
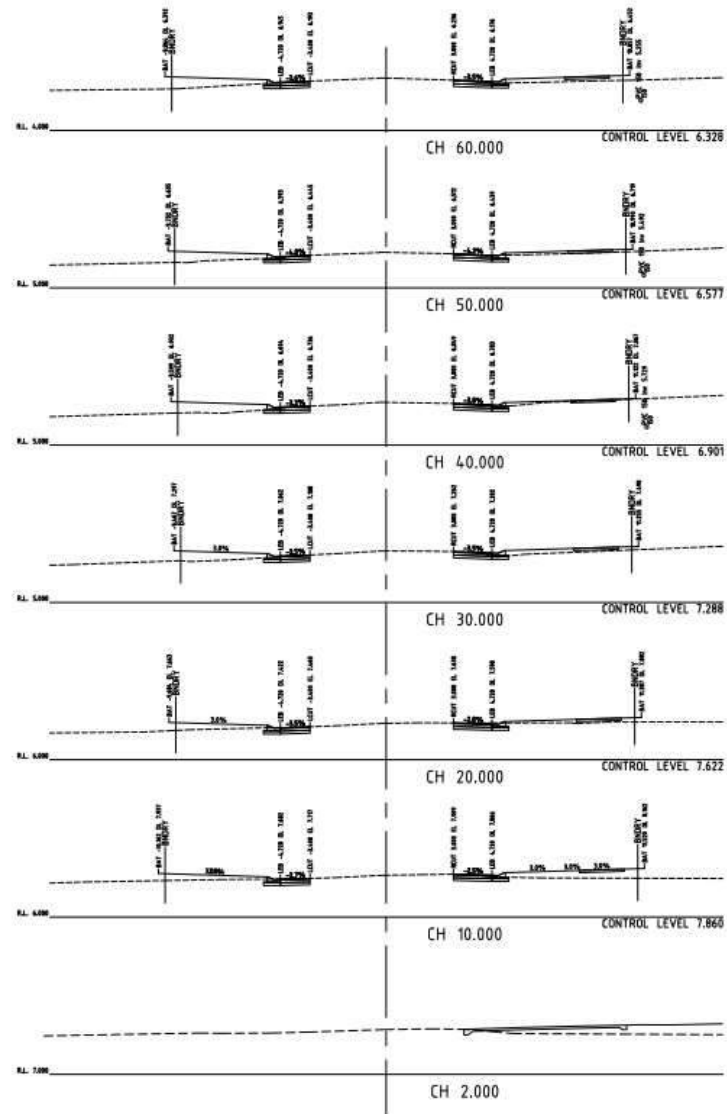
GRADED KERB INLET PIT SETOUT REFERENCE POINT  
SCALE: HTS

Drawing Status <b>COUNCIL APPROVAL</b>		SCALE: N/A DO NOT SCALE DRAWINGS Scales Before Reduction:		Designer & Copyright: THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF PDR ENGINEERS AND MAY NOT BE COPIED OR USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN APPROVAL FROM THIS COMPANY. PDR ENGINEERS Copyright		Client: <b>JONPA PTY LTD</b>		Project: STAGES 4B & 4C OCEAN BREEZE ESTATE COOYA BEACH, 4873.		Drawing Title: <b>EARTHWORKS, ROADWORKS &amp; STORMWATER SETOUT TABLES</b>		Drawn: NP		Designed: GDH		Verified: AMCP	
B ALLOTMENT & EARTHWORK SETOUT UPDATED A FOR COUNCIL APPROVAL ISSUE DESCRIPTION DATE												Approved: *		Date: JAN 2016		Revision: B	
												Drawing Number: 15510 - C06					



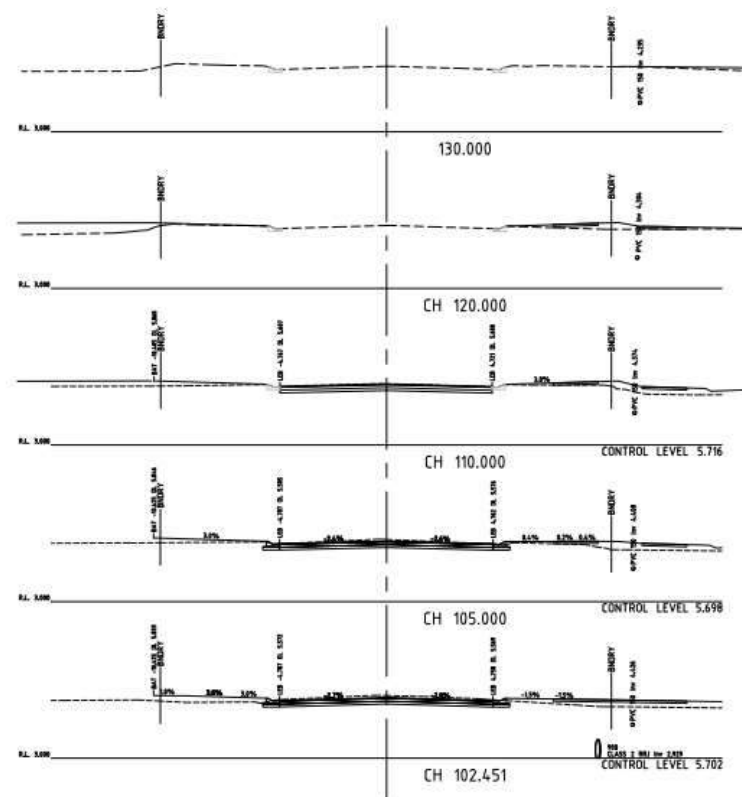
NOTE:  
LIP OF KERB ON LHS (LEB) & RHS (REB) ARE  
GRADED INDEPENDENTLY FROM THE CONTROL  
LINE. REFER LONGITUDINAL SECTION, DRG EXT

Drawing Title <b>COUNCIL APPROVAL</b>		SCALE: AS SHOWN <b>DO NOT SCALE DRAWINGS</b>		Designer & Copyright <b>THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF PDR ENGINEERS AND MUST NOT BE COPIED OR REPRODUCED IN ANY MANNER WITHOUT APPROVAL FROM THE COMPANY.</b> <b>© PDR ENGINEERS Copyright</b>		Client <b>JONPA PTY LTD</b>		Project <b>STAGES 4B &amp; 4C OCEAN BREEZE ESTATE COOYA BEACH, 4873</b>		Drawing Title <b>COOYA BEACH ROAD LONGITUDINAL SECTION</b>	
Drawing Number <b>15510 - C07</b>		Date <b>JAN 2016</b>		Revision <b>B</b>		Drawn <b>NP</b>		Designed <b>GCH</b>		Verified <b>AM/P</b>	



NOTE:  
LIP TO KERB ON LHS (RED) & RHS (RED) ARE  
GRADED INDEPENDENTLY FROM THE CONTROL  
LINE. REFER LONGITUDINAL SECTION, DRG C07

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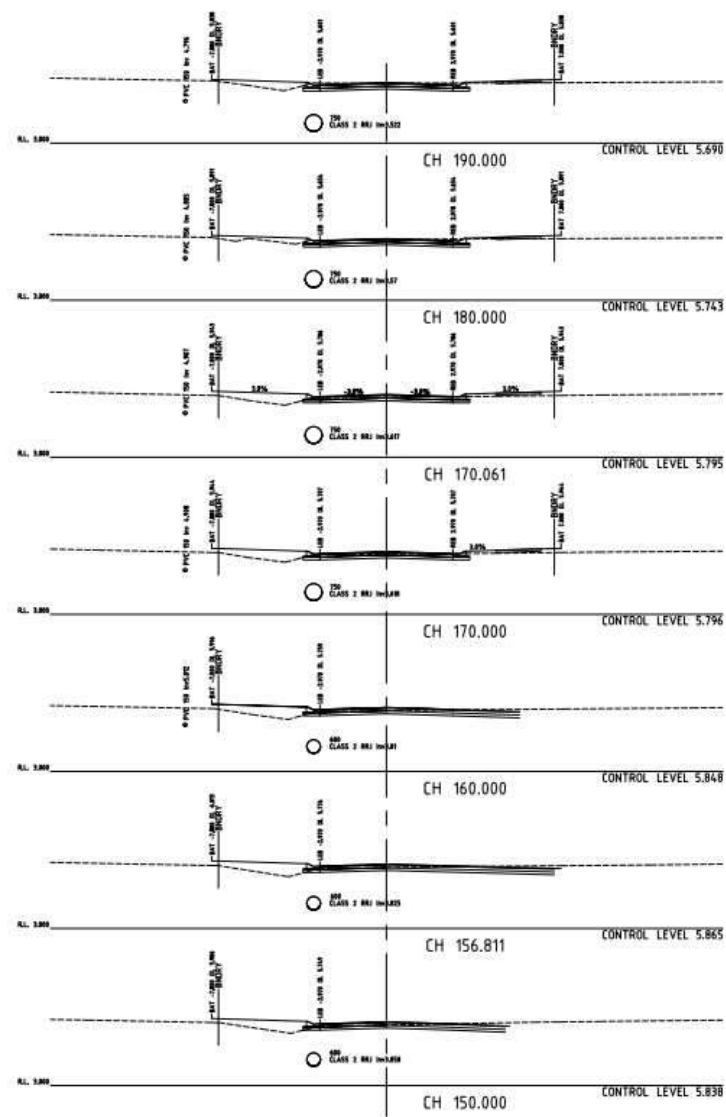
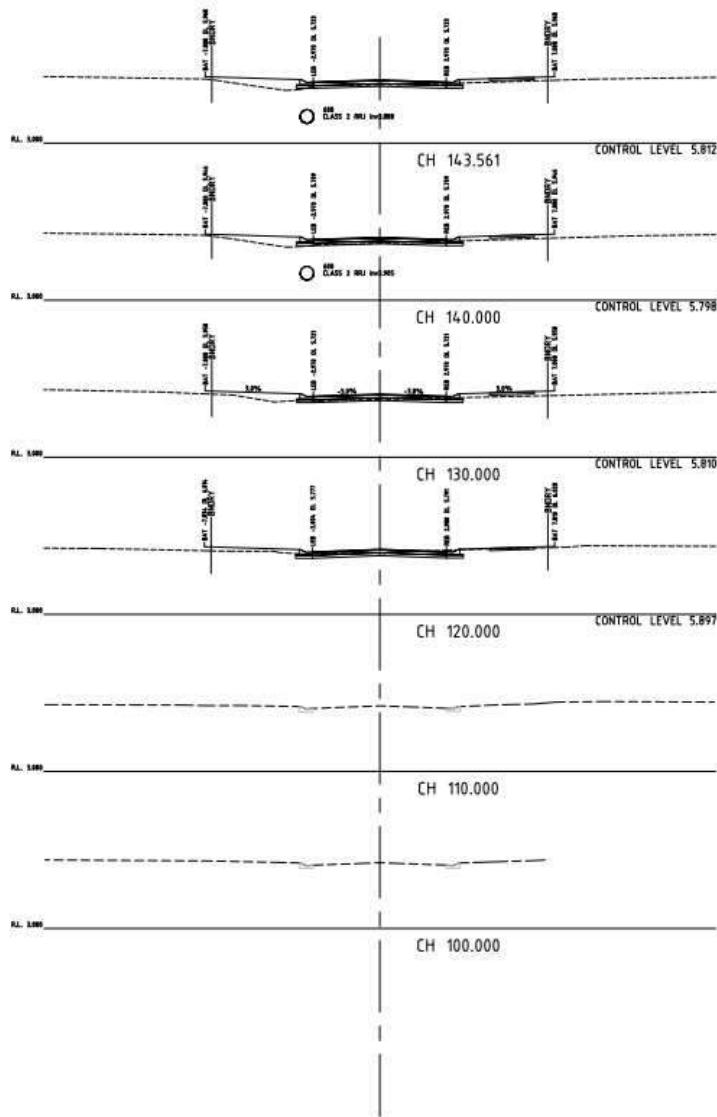


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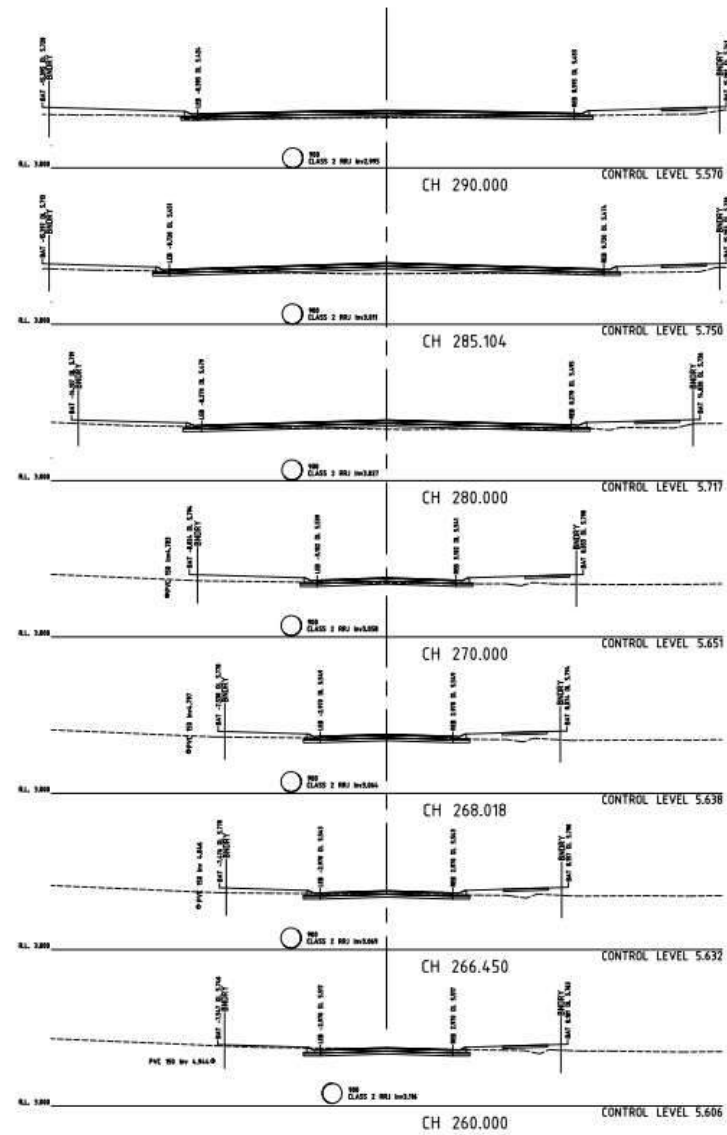
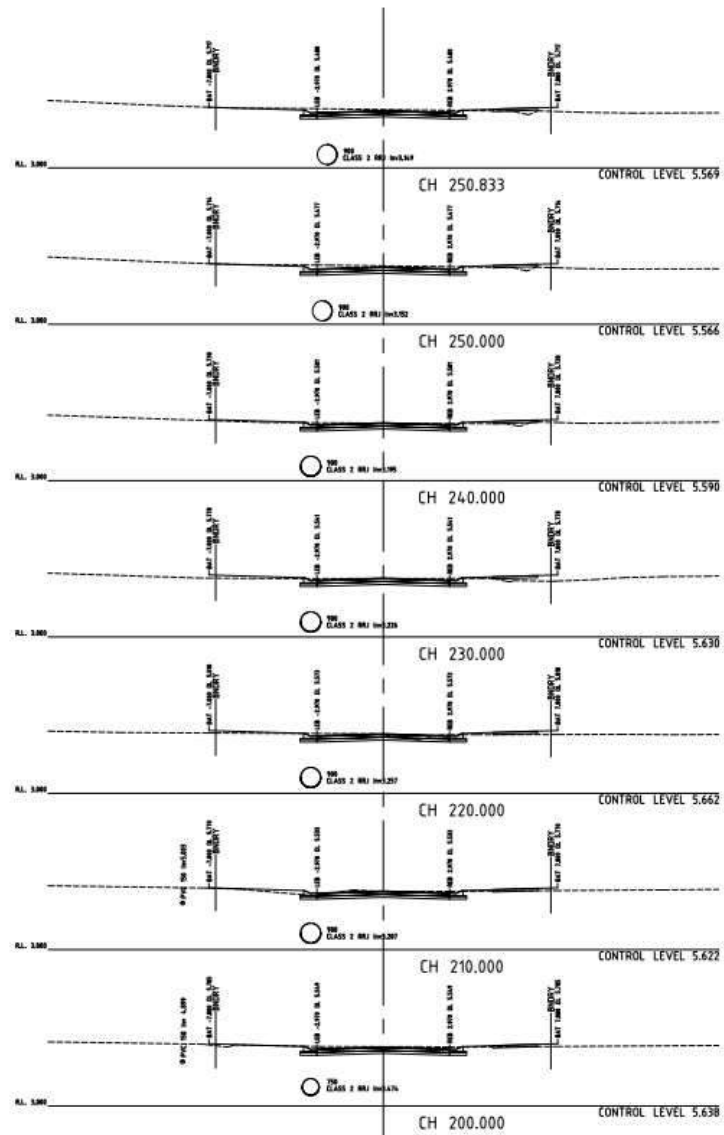
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9 FOR COUNCIL APPROVAL		21/01/16																			
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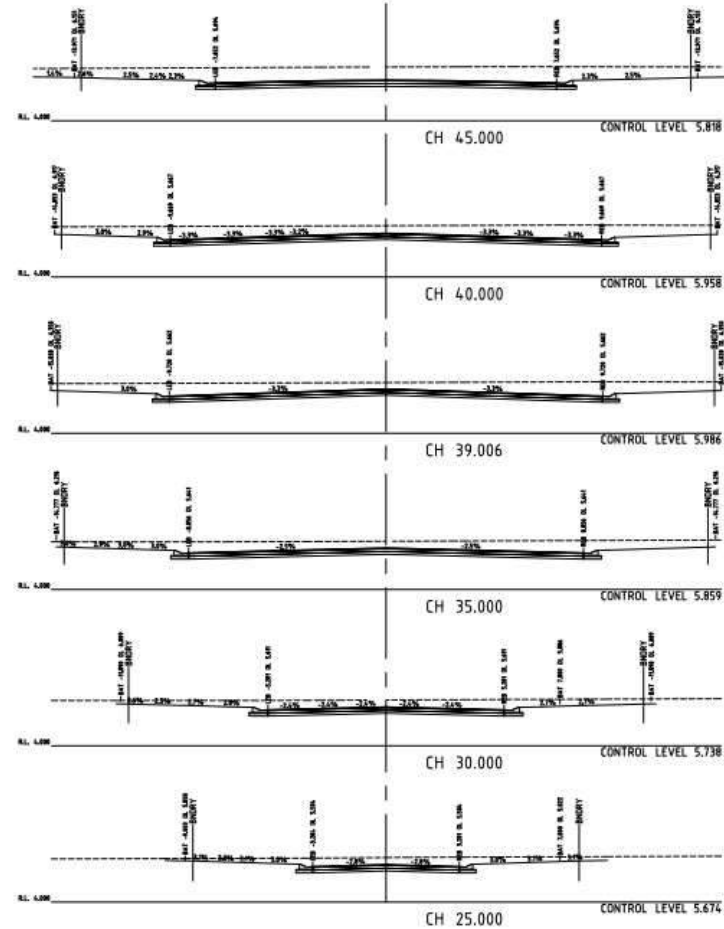
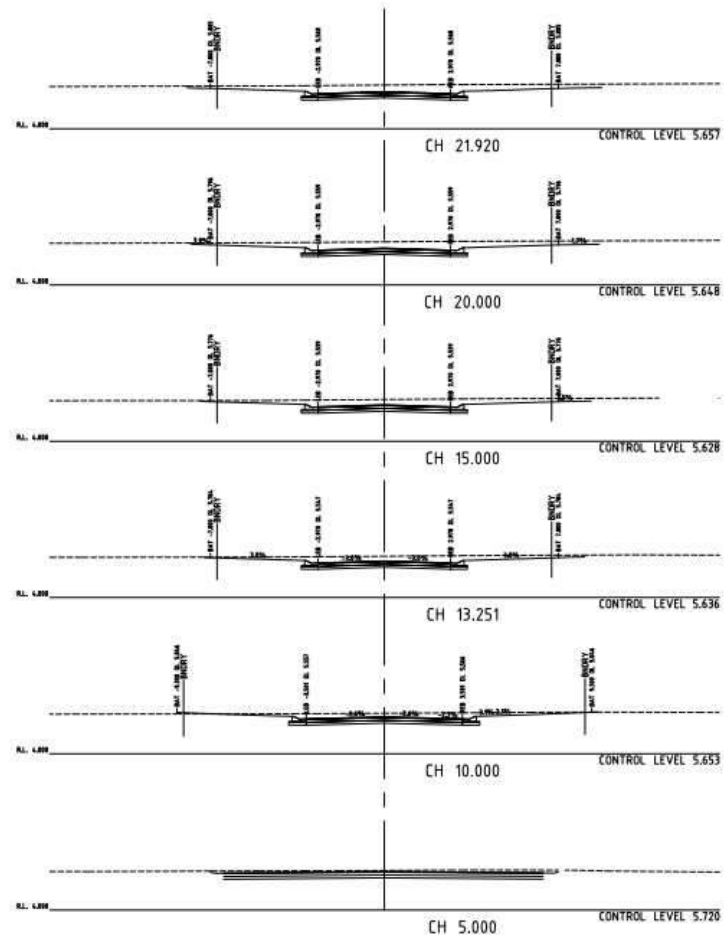
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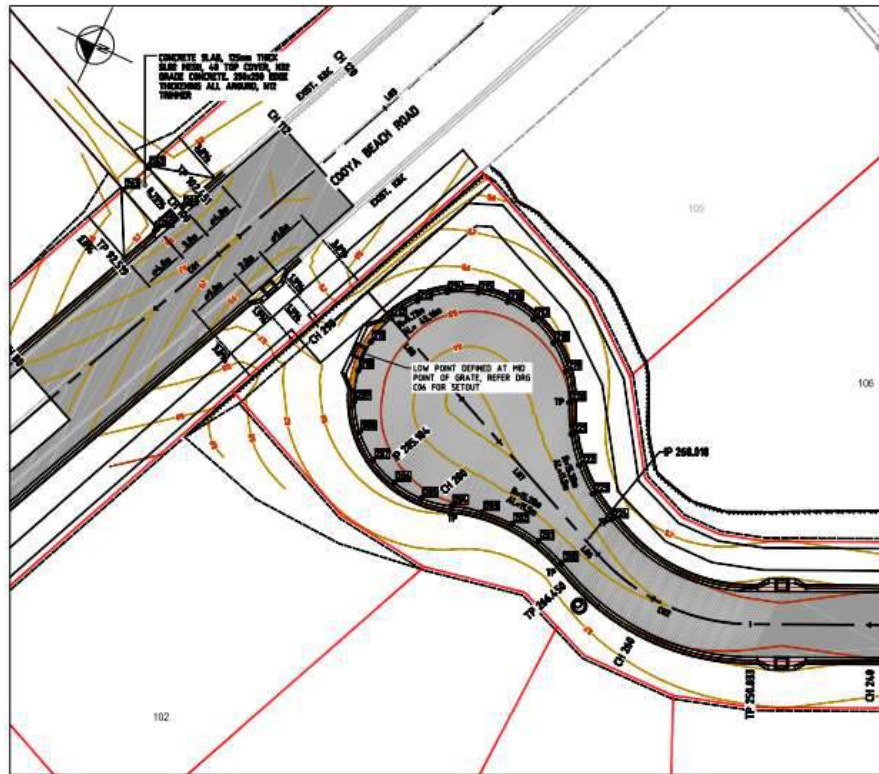
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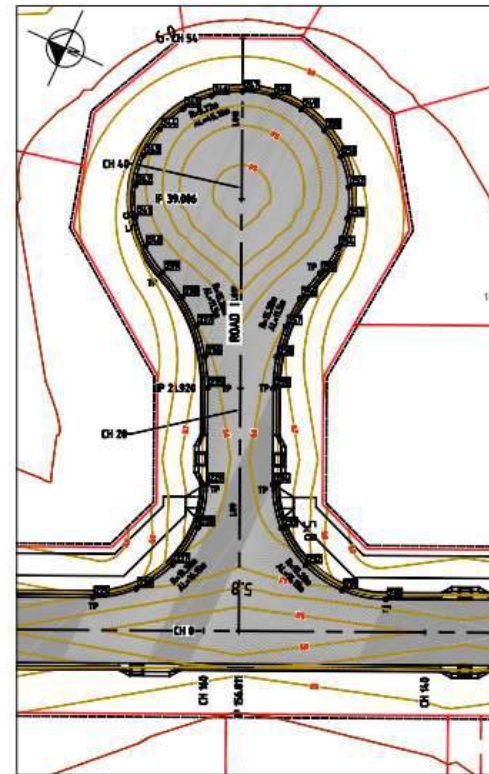
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A FOR COUNCIL APPROVAL			21/09/19																			
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Approved <b>---</b>	Date <b>JAN 2016</b>	Revision <b>A</b>																		



JULAJI CLOSE CUL-DE-SAC SETOUT PLAN  
SCALE: 1:200



ROAD 1 CUL-DE-SAC & INTERSECTION SETOUT PLAN  
SCALE: 1:200

**LEGEND:**

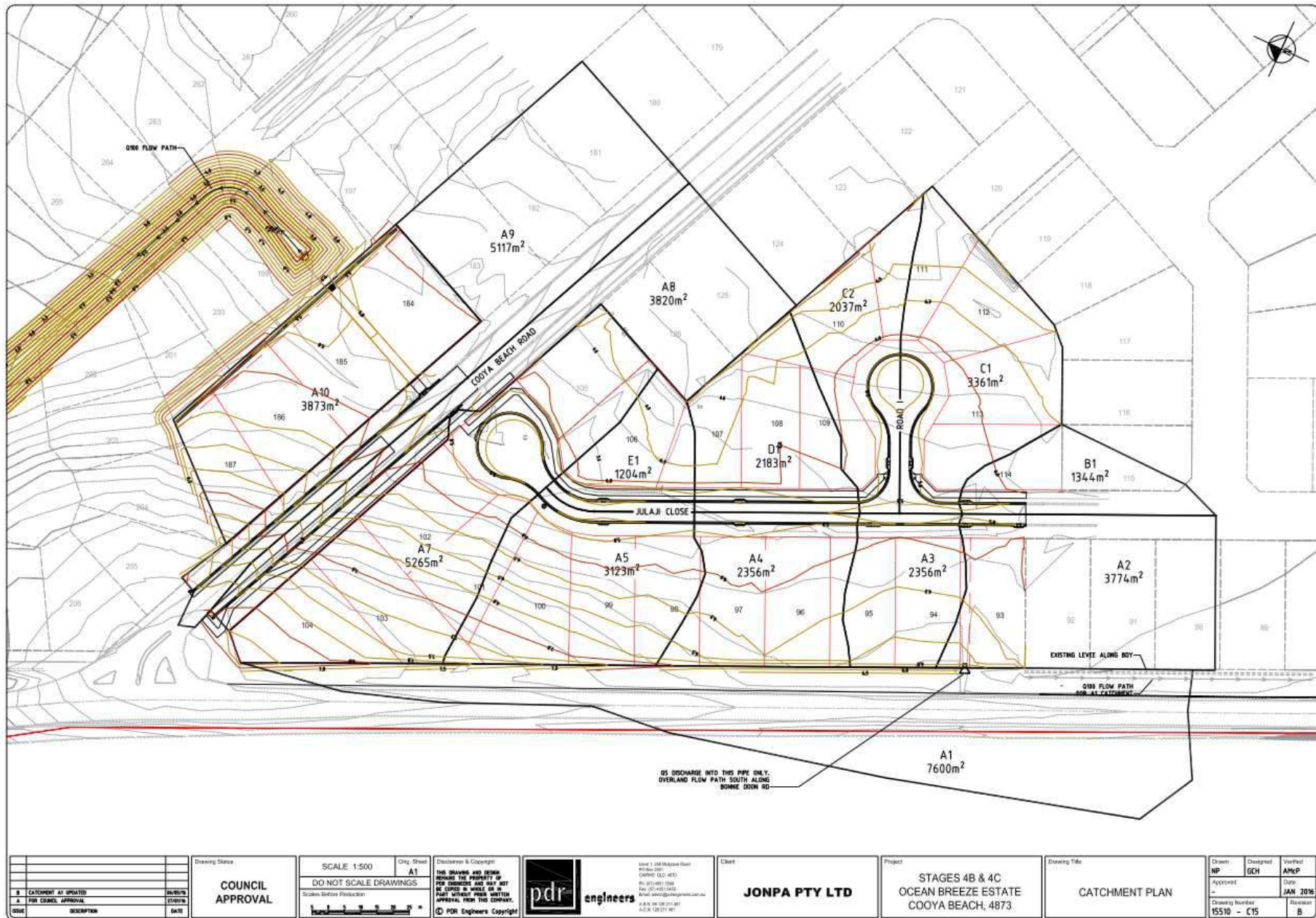
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- DESIGN KERB AND CHANNEL
- DESIGN ROAD CENTRELINES
- EXISTING EDGE OF BITUMEN
- EXISTING EDGE OF BITUMEN

**NOTES:**

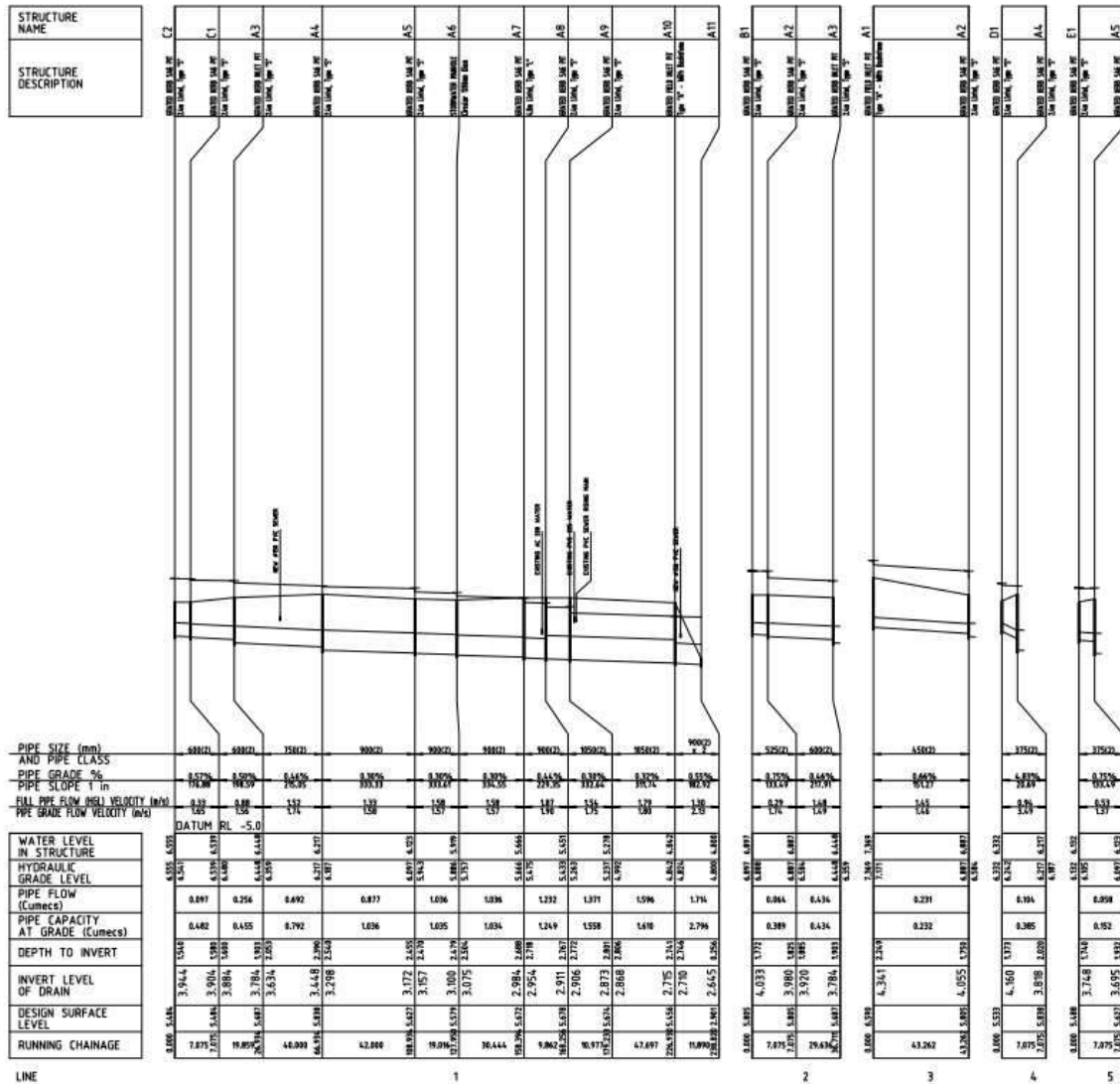
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- TP = TANGENT POINT
- # = TRANSITION ELEVATION

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POINT #	EASTING	NORTHING	DESIGN LEVEL	POINT #	EASTING	NORTHING	DESIGN LEVEL	POINT #	EASTING	NORTHING	DESIGN LEVEL	POINT #	EASTING	NORTHING	DESIGN LEVEL	POINT #	EASTING	NORTHING	DESIGN LEVEL	POINT #	EASTING	NORTHING	DESIGN LEVEL
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201	8855.745	88416.811	5.534	213	8878.767	88435.111	5.426	225	8893.250	88323.249	5.704	237	8891.621	88325.049	5.597	249	8841.561	88324.879	5.705	261	8864.559	88457.930	5.675
202	8854.128	88418.856	5.579	214	8872.620	88432.995	5.435	226	8895.595	88319.995	5.700	238	8891.288	88327.314	5.612	250	8840.376	88321.990	5.696	262	8871.448	88462.285	5.703
203	8855.972	88421.722	5.584	215	8873.790	88434.337	5.446	227	8891.887	88317.887	5.638	239	8892.545	88329.854	5.626	251	8838.755	88319.650	5.682	263	8864.783	88463.617	5.704
204	8855.283	88424.598	5.489	216	8874.178	88427.651	5.458	228	8892.964	88317.344	5.570	240	8893.980	88332.274	5.648	252	8836.599	88317.855	5.668				
205	8854.748	88427.772	5.674	217	8873.752	88424.979	5.448	229	8894.870	88318.164	5.567	241	8896.267	88334.901	5.654	253	8836.800	88316.756	5.654				
206	8855.027	88430.069	5.459	218	8872.547	88422.328	5.480	230	8894.253	88329.361	5.723	242	8898.574	88335.616	5.668	254	8837.205	88316.443	5.648				
207	8856.895	88432.671	5.445	219	8879.665	88428.238	5.491	231	8893.231	88333.045	5.709	243	8893.349	88335.876	5.682	255	8838.637	88316.944	5.626				
208	8857.863	88434.858	5.430	220	8868.284	88418.773	5.503	232	8893.974	88367.805	5.635	244	8894.160	88335.522	5.696	256	8825.662	88317.599	5.612				
209	8863.964	88436.448	5.415	221	8865.743	88417.467	5.505	233	8896.882	88318.416	5.573	245	8896.712	88334.383	5.706	257	8822.775	88317.720	5.597				
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211	8865.675	88437.361	5.410	223	8861.671	88413.393	5.538	235	8894.757	88321.765	5.568	247	8846.377	88330.193	5.714	259	8817.223	88316.361	5.568				

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STRUCTURE NAME	STRUCTURE DESCRIPTION
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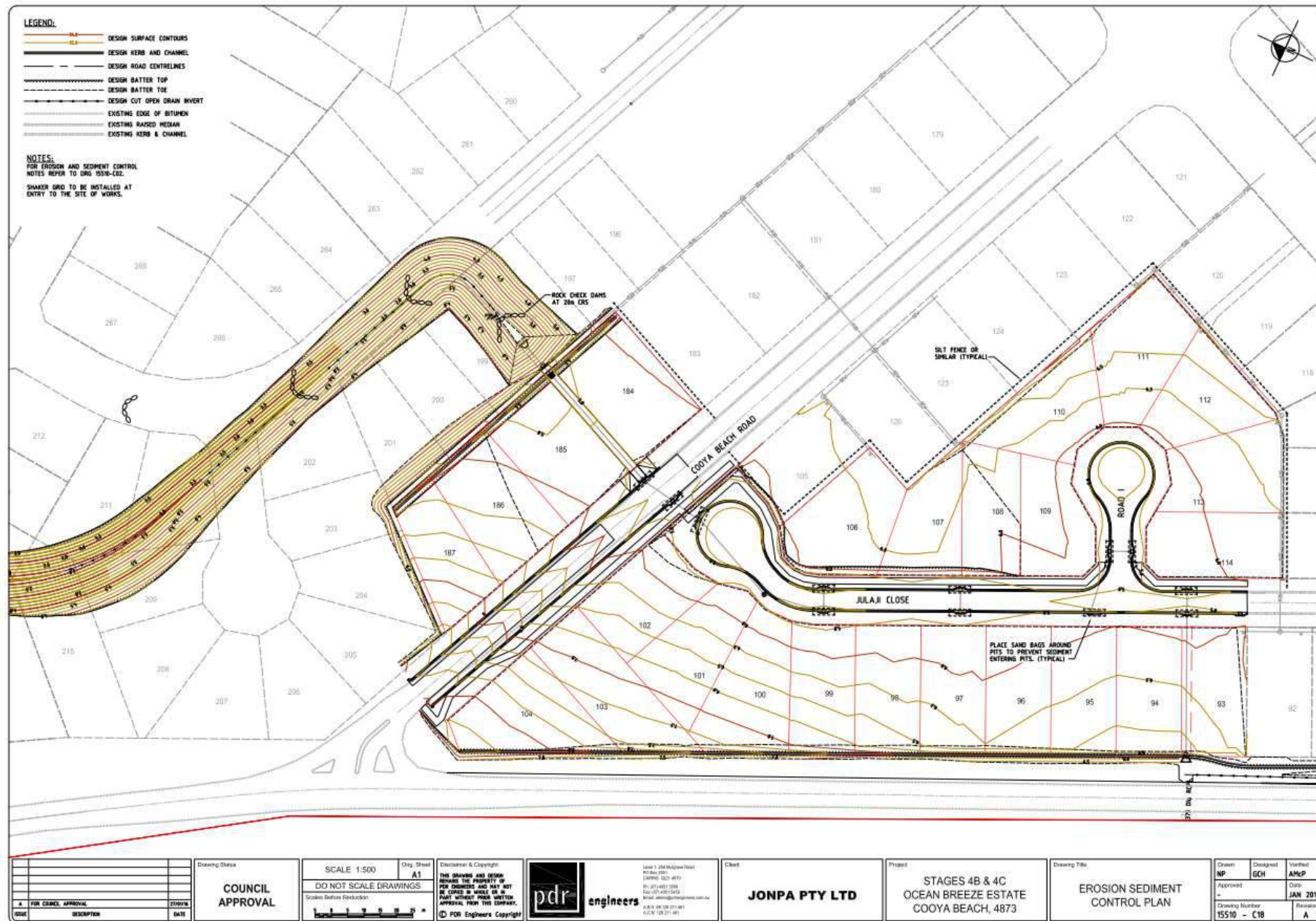


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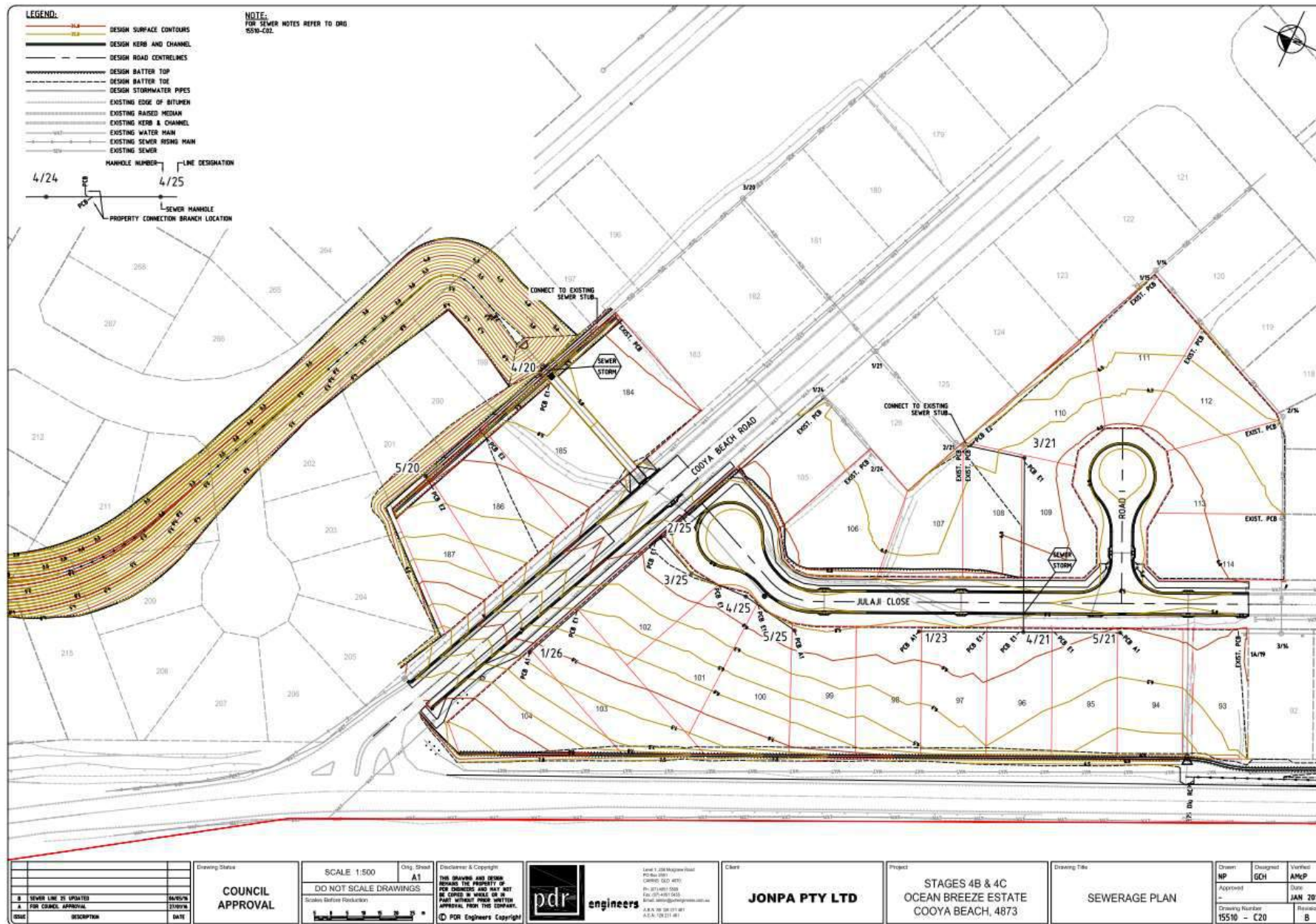


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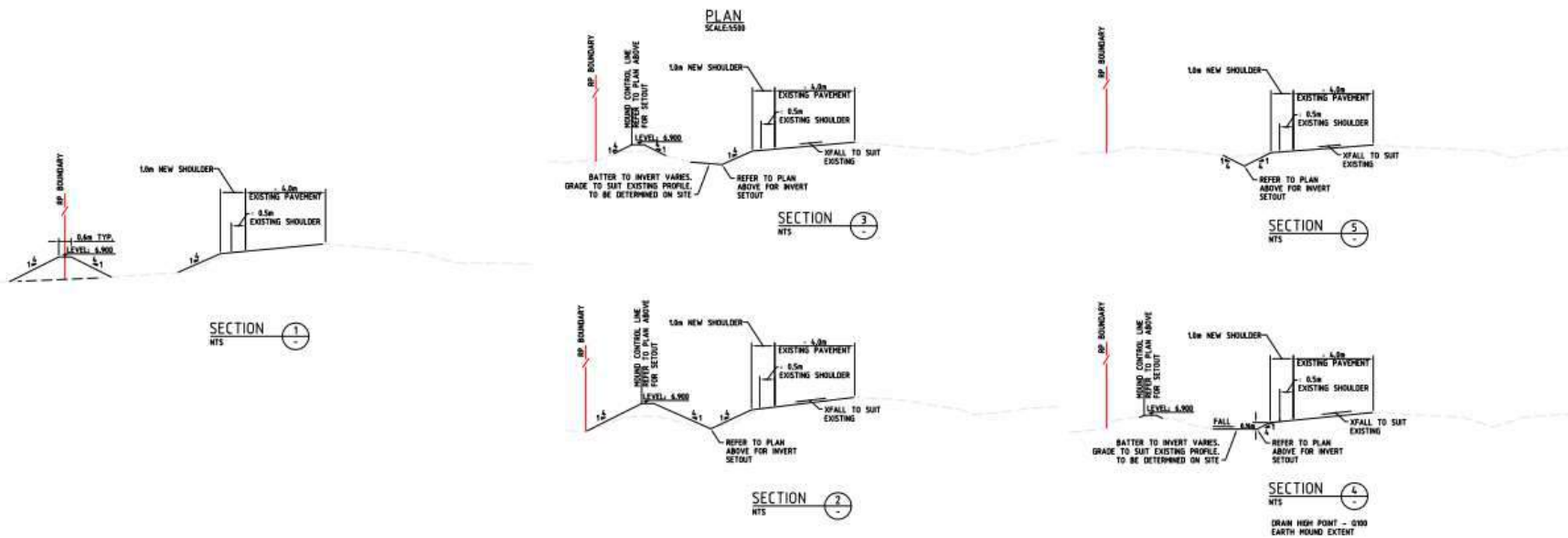
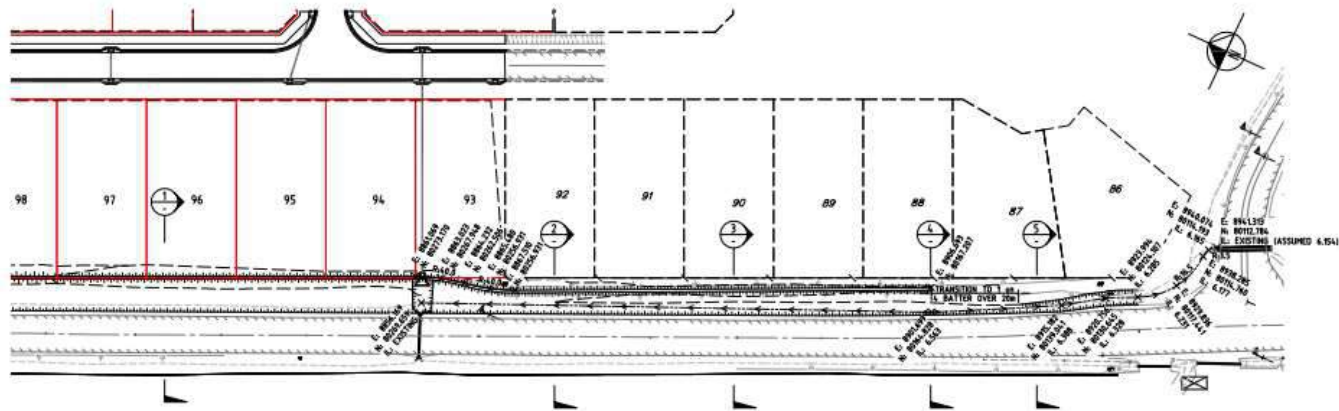




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				Scale: Before Production				© PDR Engineers Copyright													

## APPENDIX B: STANDARD CONDITIONS

### General

1. The proposed works are permitted subject to any alterations:
  - a. found necessary by Chief Executive Officer at the time of examination of Engineering drawings or during construction of the works because of particular engineering requirements and.
  - b. to ensure the works comply in all respects with the requirements of the *FNQROC Development Manual* and good engineering practice; and
  - c. to comply with project specific conditions and the following standard conditions of approval.

All works must be carried out in accordance with the approved plans, conditions and specifications, to the requirements and satisfaction of the Chief Executive Officer.

2. The conditions of any Reconfiguration of Lot or Material Change of Use permits applicable to the subject lot or lots shall be complied with in conjunction with this development permit.
3. 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.
4. Notwithstanding any approval given to engineering documents, where a discrepancy occurs between these documents and Council's standards, then Council's standards shall apply. All works must be performed in accordance with Council standards and Local Laws and other statutory requirements.
5. If in fact there are errors, omissions or insufficient detail on the plans for the purpose of construction, these deficiencies shall be made good during construction and Council reserves the right to withhold approval of construction until such deficiencies are made good to its satisfaction.
6. Work and or Technical Documents identified within these Development Approval Conditions are nominated as requiring Compliance Assessment under section 398 of the *Sustainable Planning Act 2009*. In particular As-Constructed Water, Stormwater and Sewerage Plans must be submitted to the Compliance Assessor (Douglas Shire Council) on the approved form (Form 32) and will be assessed against the provisions of Council's *FNQROC Development Manual*. Council must issue a Compliance Certificate for the assessable documents prior to granting Early Plan Sealing or Plan Sealing of a Subdivision Plan or the issue of a Works Acceptance Certificate, whichever occurs first.

### Timing of Effect

7. The conditions of this development permit must be effected prior to the approval and dating of the survey plan, except where specified otherwise in these conditions of approval, or at Council's discretion.

### **Easement Documentation**

8. Easement documents are to be submitted to Council's solicitors for checking in accordance with the conditions of the Reconfiguration Development Permit. Contact Council for current nominated solicitors details.

### **Portable Long Service Leave Notification**

9. As per the QLeave – Building and Construction Industry Authority Guidelines, if the works are over \$80 000, Council must sight a copy of the receipted Portable Long Service Notification and Payment form prior to commencement of work.

### **Construction Security Bond**

10. Lodgement of Construction Security Bond as per the *FNQROC Development Manual*, Section CP1.07, (ie, five (5) per cent of the value of the works) is required, prior to commencement of work. The bond shall be in favour of Council and in the format of cash or an unconditional bank guarantee, which must cover all aspects of the construction and have no termination date.

### **Third Party Agreement**

11. The developer must obtain written agreement from third parties and/or Referral Agencies for any works proposed on adjacent properties. The agreement(s) must be provided prior to the associated works commencing on site. All agreements must be available for Council scrutiny, upon request.

### **Commencement of Works**

12. Council is to receive written Notice of Intention to Commence Works and all matters relevant to the Pre-Start meeting are to be attended to in accordance with Section CP1.07, CP1.08 and Section CP1.09, of the *FNQROC Development Manual*.

### **Hours of Work**

13. Work involving the operation of construction plant and equipment of any description, shall only be carried out on site during the following times:
  - a. 7:00 am to 6:00 pm, Monday to Friday;
  - b. 7:00 am to 1:00 pm, Saturdays; and
  - c. no work is permitted on Sundays or Public Holidays.

Any variations to the above working hours must be authorised by the Chief Executive Officer, prior to the commencement of such works.

### **Public Notification of the Works**

14. The developer or the nominated representative must provide:
  - a. Public notification of the development in local newspapers in accordance with Section CP1.11 of the *FNQROC Development Manual*.

- b. Signage identifying the location of the project, general allotment layout, contact numbers (including out-of-office hours emergency numbers) must be provided at all entrance points to the development. All signage must be appropriately positioned, prior to the commencement of any works on the site.

### Site Inspections

15. Council requires a number of major inspections to be completed as Witness and Hold Points for Consulting Engineers and Council officers during the construction of the works. Inspections undertaken during construction shall be in accordance with Section CP1.16 (Inspection and Testing) of the *FNQROC Development Manual*. These Witness and Hold points are to be included in the contractors Inspection and Test Plan (ITP) and be made available for inspection, prior to the commencement of any works on the site.

### Soil and Water Management

16. All works must be in accordance with Section CP1.13 and D5 of the *FNQROC Development Manual*, and must comply with the following:
  - a. A copy of the contractor's Erosion and Sediment Control (ESC) Plan is to be submitted to Council and endorsed by the Consulting Engineer, prior to commencement of any works. In particular, the ESC Plan must address the Institution of Engineers' Australia *Guidelines for Soil Erosion and Sediment Control and the Environment Protection (Water) Policy* and Clauses CP1.06, CP1.13 and D5.10 of Council's *FNQROC Development Manual*. The ESC Plan must be relevant to all phases of the construction and be updated where necessary as works progress.
  - b. Any dewatering activities will require approval from Council's Environmental Protection Unit, telephone number 07 4099 9475 and a valid permit obtained prior to commencement.
  - c. During the construction period, the Consulting Engineer shall randomly audit and inspect ESC measures for compliance with the Engineer endorsed contractor's ESC Plan, derived from the Engineer's ESC Strategy (As per *FNQROC Development Manual* CP1 Appendix A).
  - d. It is the contractor's responsibility to ensure that the ESC Plan is updated and amended to reflect any changes in the construction methodology. All such amendments shall be approved by the Engineer and presented to Council.
  - e. The developer shall be held responsible for any rectification works required to clean up dust, pollutants and sediments that may leave the site as a result of construction activities.
  - f. The developer or their representative shall be responsible for communicating with third parties affected by any dust, pollutants or sediment leaving the site as a result of any construction activity that is associated with the project site.

### Street Lighting

17. The provision of street lighting is to be in accordance with the *FNQROC Development Manual* D8 and designed to comply with the Road Lighting Standard AS/NZS 1158, a compliance certificate that has been certified by an appropriate Registered Professional Engineer of Queensland (RPEQ) must be provided to demonstrate the lighting design

complies to the requirements of the Road Lighting Standard AS/NZS 1158. New street lighting is to be erected as a Rate 2 public lighting installation, Rate 1 will only be considered where an overhead electricity reticulation exists:

- a. Lighting columns, luminaires and lamps are to be of a type specified in Ergon Energy's *Lighting Construction Manual*, unless approved otherwise by Council.
- b. The applicable lighting category for roads associated with this project having a road hierarchy of residential access and above is identified in Table D8.1 of the *FNQROC Development Manual*.
- c. Local Area Traffic Management (LATM) devices including roundabouts, must be provided with an illumination of not less than 3.5 Lux as specified in the Road Lighting Standard AS/NZS 1158.
- d. Street lighting located adjacent to the development frontage must be located behind the kerb (usually a minimum of 820 mm from the invert of the kerb) and spaced to meet the required lighting category for the road.

### **Infrastructure Plans for Utility Services**

18. Approved infrastructure plans for gas, electrical and telecommunications services must be endorsed by Council, prior to the commencement of associated works.

### **Landscaping General**

19. Landscaping shall be provided in accordance with Part D9 and Part S8 of the *FNQROC Development Manual*, unless approved otherwise by Council.
20. The landscaping works must be constructed in accordance with the approved plans and conditions. The developer must seek approval in writing from the Council for any changes to the plan or the landscaping works on the site. This approval must be obtained prior to commencement of these works on site.
21. The landscape must be maintained in good order by the developer for at least three (3) months during the Works Acceptance period, and generally timed to coincide with the Final Works Acceptance Inspection, when all landscaping works must be in a condition suitable for Council to commence regular maintenance.

### **Trees**

22. Any trees must be planted and staked in accordance with the *FNQROC Development Manual* drawing S4210, with root barriers installed such that they are just visible at the finished surface level. Note that where footpaths are to be provided, a root barrier must also be provided between the tree and the path. Root barriers must be installed and appropriate topsoil, level of compaction and drainage provided, as specified by the manufacturer.
23. Street tree planting locations must be in compliance with *FNQROC Development Manual* D9.07.6 'Alignment and placement of Street Trees'. Trees shall be positioned a minimum of:
  - a. 7.5 metres from streetlights;
  - b. two (2) metres from the inlet or outlet of stormwater pipes;

- c, three (3) metres from any driveways;
  - d. ten (10) metres back from the apex of both boundaries of a corner lot;
  - e. 0.8 metres – one (1) metres from the back of kerbs.
24. All trees must be watered directly after planting and prior to laying mulch. The mulch must be left clear of the trunk and be laid in accordance with *FNQROC Development Manual* drawing S4210 and S8.14, at a radius of 0.5 metre around the base of the tree and out to the back of kerb.
  25. All trees must be of good vigour and health and must not be root-bound at the time of planting. They should be approximately 1.5 metres – two (2) metres tall with well-established root and branch formation. Trees should have a clear dominant central leader.
  26. A joint site inspection is to be held with Council officers and developer's representative to assess the general condition of any existing trees and shrubs within six (6) metres of any property boundary abutting the road reserve, or other Council land. If any dead, dying or dangerous trees are identified during the meeting, with the landowner's consent, they are to be removed to the satisfaction of Council officers, prior to the sealing of plans for the associated lot.
  27. Any trees identified on drawings to be retained, are to be protected in accordance with approved plans. This must include, but is not limited to, the erection and continued maintenance of suitable physical barrier(s) placed around the tree to protect the tree and the root system. Additional protection of tree trunks by the fixing of timber planks using wire loops is also required unless approved otherwise by Council. Any damage caused to nominated trees as a result of construction activity, will require inspection by Council and will require a specified number of suitable replacements trees of suitable maturity to be provided to replace the loss in amenity.

### **Verges**

28. All verges are to be covered full-width with topsoil (AS 4419/Soils for Landscaping and Garden Use) to a depth of not less than 40 mm, lightly compacted and grassed in accordance with Council's Guidelines and Specifications.
29. Any island beds or any shrub beds must have a permanent irrigation system installed, which must be connected to the Douglas Water Network. An Application for a Water Service Connection must be presented to Douglas Water & Waste to facilitate the connection, and must include the installation of a flow meter and associated valves.
30. All water reticulation, including permanent irrigation systems, are to be identified in as-constructed plans which must be submitted to Council for approval prior to the Works Acceptance (On Maintenance) meeting for landscaping.

### **Structures and Retaining Walls**

31. Separate building certification and/or structural certification is required for any works to alter existing structures, provide new structures or construct retaining walls that are over 900 mm high. Certification by a suitably qualified engineer must be provided, prior to opening the work site to the public.

## **The Location of Stormwater Quality Interception Devices (SQIDs)**

32. Council must approve the location of any SQIDs prior to installation. They shall be positioned to allow for economic and efficient maintenance operations, and will require a reinforced concrete hard standing area to be provided from the edge of the carriageway to the SQID location. Vehicular access from the public road reserve to the SQID must remain unrestricted.

## **Sewer and Water**

33. All water and sewerage works must be in accordance with Sections D6 and D7 of the *FNQROC Development Manual*, and must comply with the following:

- a. Douglas Shire Council requires a minimum of five (5) working days notice of intention to commence water and sewerage related works. The notice shall be given to the Senior Plumbing Inspector at Douglas Shire Council either in writing, by telephone 07 4099 9479, fax 07 4098 2902 or email to [enquiries@douglas.qld.gov.au](mailto:enquiries@douglas.qld.gov.au) prior to the commencement of works.
- b. The developer shall be responsible for confirming the location of all existing sewer, water and utility service infrastructure prior to the commencement of works on site. Any permits necessary to alter/interfere with such services must be obtained prior to the commencement of work and be available for Council inspection if required.
- c. Any works over or within the zone of influence of Council's existing water and sewerage infrastructure must be approved by Douglas Shire Council prior to the commencement of the proposed works. Unless otherwise approved in writing, existing infrastructure impacted by the development shall be subject to the maintenance period provisions contained in this Decision Notice.

Construction works shall include any works that may impact on existing infrastructure such as, but not limited to, mobilisation of heavy earthmoving equipment, stripping and grubbing, site filling, stockpiling of materials and installation of erosion and sediment control measures.

- d. All testing and acceptance of water and sewerage works shall be in accordance with CP1 Construction Procedures of the *FNQROC Development Manual*. Works are to be certified as acceptable by Douglas Water & Waste, and any operating manuals etc be provided to Council, prior to making an application for the acceptance of the works.

## **Sewer**

34. Douglas Water & Waste must be contacted to perform any direct connection to live sewer mains. Unless otherwise approved in writing, separate applications for approval on the prescribed forms shall be made to Douglas Water & Waste for each connection together with payment of the relevant fee. All connections are to be provided subject to the terms and conditions of Douglas Shire Council's 'Application for Plumbing Works'.
- a. Amended drawings in accordance with these conditions must be approved prior to the pre-start meeting.
  - b. The Inspection and Test Plan (ITP) must be approved prior to the pre-start meeting. At project completion the completed and validated ITP must be submitted and approved prior to the issue of a Works Acceptance Certificate.

- c. Where retaining walls are located within the zone of influence of a sewer the footings must be 1000 mm clear of the sewer and designed in accordance with the *Queensland Development Code*. Full design details and structural certification must be approved prior to commencement of works.
- d. Minimum clearances between sewer mains and other services must be in accordance with the *Sewerage Code of Australia*. Clearances must be included on the long-section drawing.
- e. Where a manhole is located in a batter, a flat area of 1.5 metres radius from the centre of the manhole must be provided. Where the manhole is located along a side or rear boundary and is on the 0.8 metre standard alignment then the flat area must be on at least three (3) sides.
- f. Where an easement is required the property connection branch must be extended at least one (1) metre from the easement boundary.
- g. House drains are to extend one (1) metre past the end of the driveway on hatchet blocks and 1.5 metres beyond the top of batters. An I.O. is to be provided at the downstream end of the house drain within one (1) metre of the boundary to delineate the end of the property connection branch.
- h. As-constructed sewerage drawings must be approved prior to granting of Early Plan Sealing or Issue of a Works Acceptance Certificate whichever occurs first. The as-constructed submission is to include the 'Statement of Compliance – As-constructed Documentation' and must be the final issue.

## **Water**

- 35. Douglas Shire Council must be contacted to perform any direct connection to live water mains whether being as a permanent connection, a connection for irrigation purposes or for construction water. Unless otherwise approved in writing, separate applications on the prescribed forms shall be made to Douglas Shire Council for connections, together with payment of the relevant fee. All connections are to be provided subject to the terms and conditions of Douglas Shire Council's 'Application for a Water Service Connection'.
  - a. Amended drawings in accordance with these conditions must be approved prior to the pre-start meeting.
  - b. The Inspection and Test Plan (ITP) must be approved prior to the pre-start meeting. At project completion the completed and validated ITP must be submitted and approved prior to the issue of a Works Acceptance Certificate.
  - c. Minimum clearances between water mains and other services must be in accordance with the *Water Supply Code of Australia* in particular the minimum clearance between water mains and sewer mains must be 500 mm with the sewer under the water main.
  - d. As-constructed water drawings must be approved prior to Issue of a Works Acceptance Certificate. The as-constructed submission is to include the 'Statement of Compliance – As-constructed Documentation' and must be the final issue.

## Roads and Footpaths

36. All works are to be designed and constructed in accordance with AS 1428.1-2001: '*Design for access and mobility*' – General requirements for access – New building work, and associated standard AS/NZS 1428.4 2002, '*Design for Access and Mobility*' – Tactile Indicators. The design is required to provide equal access for people with disability and include the provision of suitable ramps and landing areas and the installation of Tactile Ground Surface Indicators (TGSIs) where required.

## Cultural Heritage

37. The *Aboriginal Cultural Heritage Act* 2003 (the Act) seeks to protect artefacts and cultural sites that are of significance to Aboriginal people. The Act requires anyone carrying out an activity to exercise a Duty of Care. Guidelines have been produced to enable assessment of sites under the Act. These are available from Department of Environment Heritage Protection and can be downloaded from their website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au). The work identified in the project documentation is likely to require assessment of the site under the Act.