Moreton Bay Regional Council

Enquiries: Xavier Dubreuil
Direct 07 5433 2739
Our Ref: DA/2021/1694
Your Ref: M2584E_2
Date: 10 August 2021

DFC (Project Management) Pty Ltd
c/- JFP Urban Consultants Pty Ltd
T209, Kon-Tiki Tower
L1 55 Plaza Parade
MAROOCHYDORE QLD 4558

Dear Applicant,

Re: DEVELOPMENT APPROVAL
Planning Act 2016
Development Application No.: DA/2021/1694
Property Location: 22-80 Cash Street D'Aguilar
Property Description: Lot 2 RP 80309 & Lot 1 RP 230991

Please be advised that on 3 August 2021 the above development application was approved by Council's delegate subject to conditions.

The following type of approval has been issued:

- Operational Works (Roadworks, Drainage Work, Stormwater and Earthwork (Archers Way, Stage 2))

The development allowed by this approval must be carried out in accordance with the attached Decision package.

Attached is an extract from the *Planning Act 2016* which details your appeal rights and the appeal rights of any submitters, if applicable, regarding this decision.

Should you require any further information about this matter, please contact Xavier Dubreuil as referenced above.

Yours faithfully

X. Dubreuil

Xavier Dubreuil
Engineer
Development Services

Enclosures: Attachment 1 - Decision Notice
Attachment 2 - Assessment Manager Conditions
Attachment 3 - Approved Plans / Documents
Attachment 4 - Appeal Rights

ATTACHMENT 1

Decision Notice

Decision Notice

Planning Act 2016, section 63

APPLICATION DETAILS

Application No:	**DA/2021/1694**
Applicant:	**DFC (Project Management) Pty Ltd**
Street Address:	**22-80 Cash Street D'AGUILAR**
Real Property Description:	**Lot 2 RP 80309 & Lot 1 RP 230991**
Planning Scheme:	**Moreton Bay Regional Council Planning Scheme**

APPROVAL DETAILS

Date of Decision: 3 August 2021

The development application was approved by Council's delegate subject to conditions (refer Attachment 2).

Application Type	**Development Permit**	**Preliminary Approval**
Operational Works for **Roadworks, Drainage Work, Stormwater and Earthwork (Archers Way, Stage 2)**	☑	☐

OTHER NECESSARY PERMITS

Not applicable.

CURRENCY PERIOD OF APPROVAL

The currency period stated in section 85 of the *Planning Act 2016* applies to this approval as outlined below:

- Operational Works - 2 years from the date of this approval starts to have effect.

DEEMED APPROVAL

Not applicable

VARIATION APPROVAL

Not applicable

INFRASTRUCTURE

Unless otherwise specified, all assessment manager conditions of this development approval relating to the provision of infrastructure are non-trunk infrastructure conditions under Chapter 4, section 145 of the *Planning Act 2016*.

ASSESSMENT MANAGER CONDITIONS

The Conditions relevant to this development approval are listed in Attachment 2 of the Decision package.

APPROVED PLANS / DOCUMENTS

The approved plans and/or documents as listed below for this development approval are included in Attachment 3 of the Decision package.

Approved Plans and Documents			
Plan / Document Name	**Reference Number**	**Prepared By**	**Dated**
Staging & Site Survey Plans			
Operational Works Civil Engineering	M2584E_2	JFP Urban Consultants	-
Construction Staging Plan	M2584E_2 LO1A	JFP Urban Consultants	16/06/20
Existing Services and Site Survey Plan	M2584E_2 LO2B	JFP Urban Consultants	14/07/21
Earthworks Plans			
Earthworks Layout Plan	M2584E_2 EW01C	JFP Urban Consultants	14/07/21
Earthworks Details Layout Plan Sheet 1 of 3	M2584E_2 EW02C	JFP Urban Consultants	07/04/21
Earthworks Details Layout Plan Sheet 2 of 3	M2584E_2 EW03C	JFP Urban Consultants	14/07/21
Earthworks Details Layout Plan Sheet 3 of 3	M2584E_2 EW04B	JFP Urban Consultants	09/03/21
Earthworks Details Plan	M2584E_2 EW05C	JFP Urban Consultants	07/04/21
Roadworks Plans			
Roadworks Layout Plan	M2584E_2 R01B	JFP Urban Consultants	14/07/21
Roadworks Details Plan	M2584E_2 R02A	JFP Urban Consultants	16/06/20
Roadworks Intersection Details Plan	M2584E_2 R03C	JFP Urban Consultants	14/07/21
Roadworks Longitudinal Section - Cash Street	M2584E_2 R04B	JFP Urban Consultants	07/07/21
Roadworks Cross Sections - Cash Street	M2584E_2 R05C	JFP Urban Consultants	07/07/21

Approved Plans and Documents			
Plan / Document Name	**Reference Number**	**Prepared By**	**Dated**
Roadworks Longitudinal - Section Road 2 (Flinders Street)	M2584E_2 R06A	JFP Urban Consultants	16/06/20
Roadworks Cross Sections - Road 2 (Flinders Street)	M2584E_2 R07B	JFP Urban Consultants	07/07/21
Roadworks Longitudinal Section - Road 3 (Muster Street & Flinders Street)	M2584E_2 R08A	JFP Urban Consultants	16/06/20
Roadworks Cross Sections - Road 3 (Muster Street & Flinders Street)	M2584E_2 R09B	JFP Urban Consultants	07/07/21
Signs and Linemarking Plans			
Signs and Linemarking Layout Plan	M2584E_2 SL01A	JFP Urban Consultants	16/06/20
Drainage Plans			
Drainage Catchment Plan	M2584E_2 D01B	JFP Urban Consultants	14/06/21
Drainage Layout Plan	M2584E_2 D02B	JFP Urban Consultants	14/07/21
Drainage Longitudinal Sections - Lines E & H	M2584E_2 D03C	JFP Urban Consultants	14/07/21
Drainage Longitudinal Sections - Lines 3E, 3H & I	M2584E_2 D04B	JFP Urban Consultants	14/07/21
Drainage Calculations Table - Sheet 1 of 2	M2584E_2 D05B	JFP Urban Consultants	14/07/21
Drainage Calculations Table - Sheet 2 of 2	M2584E_2 D06A	JFP Urban Consultants	16/06/20
Drainage Structure Details	M2584E_2 D7A	JFP Urban Consultants	16/06/20

ASSESSMENT BENCHMARKS

The Assessment Benchmarks that applied to the development from the following Categorising Instruments include;

Categorising Instrument (*Planning Regulation 2017*)

State Planning Policy
- *State Planning Policy 2017*, Part E.

Regional Plan
- *South East Queensland Regional Plan 2017 (ShapingSEQ).*

Local Categorising Instrument (Moreton Bay Regional Planning Scheme)

- Works Code

Local Categorising Instrument (Variation Approval)
Not applicable.

Local Categorising Instrument (Temporary Local Planning Instrument)
Not applicable.

OTHER RELEVANT ASSESSMENT MATTERS

Not applicable.

REASONS FOR APPROVAL DESPITE NON-COMPLIANCE WITH ASSESSMENT BENCHMARKS

Not applicable.

REFERRAL AGENCY CONDITIONS

There were no Referral Agencies applicable to this development application.

SUBMISSIONS

Not applicable.

APPEAL RIGHTS

Attachment 4 of the Decision package is an extract from the *Planning Act 2016* which details your appeal rights, and the appeal rights of any submitters, if applicable, regarding this decision.

ATTACHMENT 2

Assessment Manager Conditions of Approval

CONDITION		TIMING
OPERATIONAL WORKS		
DEVELOPMENT ENGINEERING		
1	**Road Classifications for Pavement Design**	
	Design pavement in accordance with the following road classifications: Road 1 (Banksia Street) - Living Residential - 2.0 x 10^5 ESA Road 2 (Flinders Street) - Living Residential - 2.0 x 10^5 ESA Cash Street - Living Residential - 2.5 x 10^5 ESA	Prior to subgrade inspections.
2	**Non-Conforming Designs**	
	Only non-conforming designs listed in this approval have been accepted. All other discrepancies with Council standards shall be redesigned and / or reconstructed as necessary to conform with Council standards at no cost to Council.	At all times during construction and prior to works being accepted Off Maintenance.
3	**Errors and Omissions**	
	Where errors or omissions occur in the design or works do not conform to or meet Council standards then these works shall be rectified to comply with Council standards at no cost to Council. Where drawings contain insufficient detail or do not contain details of works that are either necessary or associated with the development then these works shall be designed and constructed to Council standards. Only the approved plans shall be used for construction. Note: Council reserves the right to amend the approved drawings or request further information should this become necessary.	At all times during construction and prior to works being accepted Off Maintenance.
4	**Works – Applicant's Expense**	
	All works, services, facilities and/or public utility alterations required by or as a consequence of this approval or stated condition/s, whether carried out by the Council or otherwise, shall be at the developer's expense unless otherwise specified or agreed in writing. Replace existing Council infrastructure (including but not limited to street trees and footpaths) to Council's standards.	At all times during construction and prior to works being accepted Off Maintenance.
5	**Works – Connection to existing works**	
	Where existing works, including roads and drainage works, will not link up with and join smoothly to proposed works and are not more than twenty (20) metres from the nearest point of the proposed works the developer shall carry out such works as are necessary to ensure that the incomplete works, including roads and drainage, are constructed to link up with and join	Prior to works being accepted On Maintenance.

CONDITION		TIMING
	smoothly to the works proposed in accordance with Council's standards. These works are to be undertaken at the developer's expense unless otherwise specified or agreed in writing.	
6	**Notification of Finalisation of Works**	
	Notify Council in writing that the development works on site have been finalised.	At the time of completion of construction.
7	**As Constructed Drawings**	
A	Provide, for review and approval, Council with a preliminary set of the surveyor and engineering As Constructed drawings for the approved works and a digital ADAC file. Note: The current design standard and relevant planning scheme policy is MBRC Planning Scheme Policy Operational Works inspection, maintenance and bonding procedures.	Prior to requesting an On Maintenance inspection.
B	Submit 'As Constructed' drawings and digital ADAC file in accordance with Council's Planning Scheme, relevant Planning Scheme Policies and design standards current at the time of development.	Prior to works being accepted On Maintenance.
8	**Works Through Land not owned by the Developer**	
	Where any works are proposed to be undertaken on or extend into any property not owned by the developer then the other property owner's written consent must be lodged with Council. The written consent from the land owner must identify the correct drawing title and number (including revision number) for the works within or through their land.	Prior to any works commencing within those properties.
9	**Works in Existing Roads**	
A	Works carried out in or affecting existing Roads must be undertaken so that these roads are maintained in a safe and useable condition.	At all times.
B	Provide to Council's delegated officer and receive acknowledgement of a Traffic Management Plan, with site specific Guidance Scheme, prepared and signed by an appropriately qualified person and in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) for any works that will affect traffic movements or traffic safety in existing roads. Note: • A 'Part Road Closure Application' for Development Works form is to accompany the Traffic Management Plan submission. • This submission is required to be made in addition to any Traffic Management Plan which has been submitted and/or approved as part of a Construction Management Plan for the site during the development	At least five (5) days prior to undertaking the works in or affecting existing roads.

CONDITION		TIMING
	application process for Material Change of Use or Reconfiguring a Lot or subsequent non-IDAS applications.	
10	**Information Sign – Works in Existing Roads**	
	A construction advisory road sign must be erected and regularly updated and maintained displaying the developer and contractors details and the expected completion date for works on existing roads. The sign shall be located so as be clearly legible to the public from of minimum 15m distance from the existing road on which the works are to be carried out on.	For the duration of the works from commencement to acceptance of On Maintenance.
11	**Notification to Affected Premises**	
A	Provide Council with a copy of an information kit for 'Notification to Affected Premises' which includes the following: • A layout plan of the proposed development showing adjoining lot boundaries, new and existing roads, park and open space, drainage reserves and community purposes lots as applicable; • Details of any external works with any changes to existing works highlighted for easy identification; • Scheduled start and completion dates; • Contact names and phone numbers for the Developer, Supervising Engineer, Consulting Engineer, the Contractor, Wildlife Spotter and who to contact in an emergency; and • The site working hours authorised for the site works.	Prior to distribution of information kit to residents.
B	Provide all occupiers of premises adjoining the site, directly opposite the frontage of the site, adjacent to and directly opposite external works and residents/occupiers likely to be directly affected by the works with a copy of the 'Notification to Affected Premises' information kit. Provide Council's delegated officer with a list of premises which the information kit has been delivered to.	Not less than 14 days prior to commencing any construction works.
12	**Information Sign – Development Works**	
	An information sign containing the following details and after hours contact details must be provided at each entrance to the development site: • Developer • Supervising Consultant/ Engineers / Project Manager • Principal Contractor The sign must be at least 0.9m (W) by 0.6m (H). The sign must be erected and maintained for the duration of the development works.	For the duration of the development works from commencement to acceptance On Maintenance by Council.
13	**Prestart Meeting**	
	Arrange a prestart meeting with Council officers from Development Engineering section (contact Paul Knox on 07 5433 2003).	Not less than 7 days prior to commencing any construction works.

CONDITION		TIMING
	The following people will be required to attend the prestart meeting: • Developer's Supervising Engineer • Contractor's Engineer / Project Manager • Contractor's Site Supervisor • Fauna Manager (where required).	
14	**Mandatory Inspections with Council Officers**	
	Submit required documentation for each mandatory inspection in accordance with MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures.	Prior to requesting inspection.
	Undertake the following inspections with Council's delegated officer (where applicable to approved works) in accordance with MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures:	As prescribed below.
A	Stormwater drainage.	Prior to backfilling stormwater trenches.
B	Subgrade / box inspection.	Prior to placement of structural pavements.
C	Preseal inspection.	Prior to priming and sealing of structural pavements.
D	For concrete slabs and concrete pavements - foundations / subgrade and pre-pour inspections.	Prior to concrete pouring.
E	On maintenance inspection for Council's acceptance of all works.	Prior to works being accepted On Maintenance.
F	Off maintenance inspection of all works. Note: Reinspections attract a fee in accordance with Council's Fee Schedule. The fee must be paid prior to the reinspection.	After maintenance period has elapsed.
G	Provide Council's delegated officer with a copy of an Engineers' Certificate Soil tester's reports demonstrating that required compaction standards, finished levels and textures of finish have been obtained in accordance with Council's Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures.	Prior to proceeding to construction of next layer or surfacing.
15	**Testing Frequency – General**	
A	All testing of the works shall be carried to comply with the minimum testing frequencies given in MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures. Note: Council's delegated officer may vary the frequency of testing to suit site conditions but must provide written advice to the supervising engineer prior to commencement of the relevant works.	At all times during construction.

CONDITION		TIMING
B	Provide a plan identifying locations where testing has occurred.	Prior to works being accepted On Maintenance.
16	**Construction Hours Restrictions**	
	Ensure hours of construction are limited to 0630 to 1830 Monday to Saturday and not at all on Sundays and public holidays. Note: Council's engineer may approve (in writing) work outside the above hours where it can be demonstrated to the satisfaction of Council that the work will not cause unreasonable interference with the amenity of adjoining premise and any person.	At all times.
17	**Construction Nuisance and Annoyance**	
	Ensure construction works do not cause unreasonable interference with the amenity of adjoining premise and any person by reason of noise, vibration, electrical interference, smell, fumes, vapour, steam, soot, ash, dust, silt, wastewater, waste products, grit, oil or otherwise.	At all times.
18	**Construction Site Management**	
	Ensure the construction site is kept in a clean and tidy state.	At all times.
19	**Temporary Sedimentation, Erosion and Runoff Control**	
A	Implement an Erosion and Sediment Control Plan which is prepared by an experienced Certified Professional in Erosion and Sediment Control (CPESC) in accordance with International Erosion Control Association Australasia (IECA) Best Practice and Sediment Control document and MBRC Planning Scheme current at the time of development.	Prior to commencement of works and to be maintained current at all times during construction and until the development is accepted off-maintenance.
B	The temporary erosion and sediment control measures shall be maintained and be functional until the end of the Maintenance Period for the works or earlier if Council's delegated officer considers they are no longer required. Note: Council's delegated officer may order additional measures to control silt on site at no cost to Council.	At all times during construction.
20	**Haul Routes**	
	Submit and have approved by Council's delegated officer all haul routes for the transport of imported or spoil material and gravel pavement material along Council roads below sub-arterial standard. Note: Refer to MBRC Planning Scheme Values and Constraints Mapping - Road Hierarchy for details on sub-arterial and arterial roads.	Prior to a prestart meeting being held.

CONDITION		TIMING
21	**Spillage onto Existing Roads**	
	Clean those parts of the access route to the site that are affected by any material dropped, deposited or spilled on the roads as a result of construction processes associated with the site. Note: • All materials must be swept up and removed from the roads and not directed into Council's stormwater drainage system. • All care must be taken to prevent sediments being deposited on roads.	At all times during construction.
22	**Dust Control – Nuisance and Annoyance**	
	Implement suitable dust control measures. If airborne particles are observed leaving the site, any work is to cease immediately and satisfactory dust suppression is to be implemented. Note: Dust suppression measures must be in place at all times including weekends and public holidays.	At all times prior to works being accepted Off Maintenance.
23	**Earthworks Batters**	
	Where approved drawings do not include specifications for scour and erosion protection apply the following treatments to batter slopes: • Slopes of 1:6 or flatter – topsoil and seed • Slopes between 1:6 and 1:4 – topsoil and turf • Slopes of 1:4 or greater – provide treatment recommendation from a qualified geotechnical engineer (R.P.E.Q.) for Council approval prior to undertaking batter works • Or as directed by Council. Note: Batters within Open and Civic Spaces are to be treated in accordance with MBRC Planning Scheme Policy Integrated Design - Open and Civil Space Design.	At all times during construction.
24	**Road Crossings in Existing Roads**	
	All services crossings under Existing Council Roads are to be tunnel bored unless approved otherwise by Council's delegated officer. Where approval is given for open trenching, the following is to apply: • Minor Roads - backfill shall be compacted in layers to 95% standard maximum dry density and topped with 300mm of pavement material and a 50mm AC wearing course. • Sub-arterial or Arterial roads - refer to I.P.W.E.A. Standard Drawing RS-170.	At all times during construction.

CONDITION		TIMING
	• Verge - Backfill shall be compacted to 90% standard maximum dry density and topped with 75mm of sandy loam. Restoration of any vegetation shall be undertaken to a standard as near as practicable to the pre-construction standard.	
25	**Site works – Stormwater Runoff Quality**	
	Carry out earthworks in accordance with the State Planning Policy - Water Quality and IECA Best Practice Erosion and Sediment Control document. Note: • Soil disturbances of greater than 1.0 hectares will require a site specific Erosion & Sediment Control Plan. • Earthworks are to be undertaken to ensure that soil disturbances are staged into manageable areas of not greater than 3.5 hectares.	At all time during construction and until the site is suitably stabilised.
26	**Earth Retaining Structures**	
A	Earth retaining structures within the subject land around areas of cut that are on or near the boundaries of the site must be designed to allow for the existing live and dead loads associated with the adjoining land/premises current occupancy and use of the adjoining land including allowance for a 2m high boundary fence. The minimum design life (the period assumed in design for which a structure or structural element is required to perform its intended purpose without replacement or major structural repairs) for the earth retaining structure that is specified in Table 2.1 of Australian Standard AS4678.	At all times.
B	Submit for Council records copies of Forms 15 & 16 as detailed under section 254 of the Building Act 2006. The forms are to be signed by an RPEQ for all structural retaining walls. Additionally, submit certification from an R.P.E.Q. that the design and construction of retaining walls comply with the requirements of this condition.	Prior to works being accepted On Maintenance.
27	**Unsuitable Fill Materials**	
	Ensure that all fill material used on the development site is free of unsuitable materials, identified in AS3798 and the following: • actual acid sulfate soils and potential acid sulfate soils; • organic or putrescible matter; • material imported from land which is, or has been, listed on the “Environmental Management Register” under the *Environmental Protection Act 1994*; and • building demolition material.	At all times.
28	**Compaction Requirements**	
	All fill material which is intended to be load bearing, or the finished surface level of which is required to remain approximately constant, is selected, placed and compacted to	At all times during construction.

CONDITION		TIMING
	the standard prescribed in Australian Standard AS3798 Guidelines on Earthworks for Commercial and Residential developments.	
29	**Fill in Existing Parks - Extent**	
	If filling to an existing park is shown on the approved drawings then the extent of fill into the park shall not be varied without prior written approval of Council's Delegated Officer.	At all times during construction.
30	**Advisory Sign – Future Road Extension**	
	At the end of each road that is intended to extend with future development an advisory sign shall be supplied and erected to inform residents and the public of the future road extension. The sign shall be worded as follows: "This road may be extended with future development of the adjoining land. For further information refer to Council's Planning Scheme." This sign must be easily read at a distance of 5 metres. The sign shall not be attached to the road end hazard sign above the sign board.	Prior to works being accepted On Maintenance.
31	**Pavement Design**	
A	All road pavements must be designed, constructed and tested in accordance with MBRC Planning Scheme Policy - Integrated Design - Street, Roads and Utilities and standard drawings current at the time of construction. Note: • Council requires a primer seal placed under all asphalt surfaces. • Increased asphalt surface thicknesses for road thresholds are to be identified in the pavement design.	At all times during construction.
B	Submit, for review and approval by Council's delegated officer, a pavement design for all roads. Pavement designs are to include Soil tester's reports.	Prior to subgrade inspection.
32	**Pavement Jointing Detail**	
	Undertake pavement jointing in accordance with I.P.W.E.A.Q. Standard Drawings SEQ R-170.	Prior to works being accepted On Maintenance.
33	**Road Thresholds**	
A	Design and construct road threshold treatments in accordance with Council's Planning Scheme Policy Integrated Design - Streets, Roads and Utilities, standard drawings current at the time of construction and the following requirements: • Urban areas only: Concrete threshold treatment - full depth colour batched concrete.	At all times.

CONDITION		TIMING
	• All areas: Streetprint/indented/stamped asphalt treatment - an additional 10mm asphalt depth to be applied to the total area of threshold. Increased asphalt depth to be identified in Pavement Design.	
B	Submit, for review and approval by Council's delegated officer, the proposed colours and surface patterns for all road thresholds. Note: Road threshold colours are to be bright and natural and able to withstand continuous traffic use without discolouration.	At least 7 days prior to commencing construction of thresholds.
34	**Concrete Footpaths**	
	Construct concrete footpaths and kerb ramps in accordance with I.P.W.E.A. Standard Drawings SEQ R-065 and SEQ R-090.	Prior to works being accepted On Maintenance.
35	**Street Signs**	
	Street signs must be provided in accordance with Council's Standard Drawings and I.P.W.E.A. Standard Drawings. Note: • House numbers required for these signs shall be obtained from Council's house numbering officer by contacting Council's Customer Service. • The MBRC Logo is not to be put on the sign.	Prior to works being accepted On Maintenance.
36	**Hazard Management**	
A	Undertake the hazard identification and treatment process for any additional, existing or introduced hazards identified onsite by the Consultant or by Council's delegated officer during the construction process. Undertake a review of the identified hazards and provide a copy of the completed Hazard Mitigation Worksheet found in AUSTROADS Guide to Road Design Part 6: Roadside Design, Safety and Barriers Appendix B along with any supporting information.	Prior to works being accepted On Maintenance.
B	Provide, for review and approval by Council's delegated officer, adequate design documentation for the recommended hazard management treatment in accordance with AS3845:1999 and AUSTROADS Guide to Road Design Part 6: Roadside Design, Safety and Barriers.	Prior to construction of any hazard management treatment.
C	Construct approved hazard management treatments in accordance with Council's Planning Scheme, Planning Scheme Policies, standard drawings and any other relevant standards current at the time of development.	Prior to works being accepted On Maintenance.
37	**Stormwater Runoff Control – Batters and Retaining Walls**	
	Provide cut-off drains at the top of the batter with turf or rock lined batter drains for all batters and/or retaining walls generally higher than 600mm in height and with a catchment greater than 1000m2.	Prior to works being accepted On Maintenance.

CONDITION		TIMING
	Note: Where these are not detailed on the approved drawings then these works shall be in accordance with Council's current standards.	
38	**Stormwater Runoff Control – Open Drains**	
	Provide lining with appropriate scour protection to all open drains and bunds in accordance with Council's Planning Scheme, Planning Scheme Policies and standard drawings current at the time of development. Note: Dumped rock is generally not considered as an appropriate solution.	Prior to works being accepted On Maintenance.
39	**Stormwater Overland Flow – Site Earthworks**	
	Earthworks must be undertaken on the site so as not to cause nuisance and annoyance to any person or premises. The development must: • Allow stormwater overland flow which entered the land prior to the commencement of the earthworks to continue to enter the land; and • Ensure stormwater overland flow from the development site is not discharged or diverted onto land (other than a road) adjacent to the site in a manner which: o concentrates the rate of flow at any point along the property boundary; or o increases the peak flow rates of stormwater discharged at any point along the property boundary; beyond that which existed prior to commencement of these earthworks.	At all times during construction.
40	**CCTV – Stormwater Pipes**	
A	Undertake and provide, to the satisfaction of the Council, a high definition Closed Circuit Television (CCTV) recording of all stormwater pipes, including inter allotment roof water drainage. Recording to be undertaken within one month immediately preceding making a request for On Maintenance inspection and post road pavement construction works. CCTV to clearly display all joints (full surrounds) and any form of damage or defects, including date and time of the recording. The recording is to include a report signed by a suitably qualified Registered Professional Engineer Queensland (RPEQ) stating that the recording has been reviewed and all works are satisfactory. Where defects have been identified, consultant is to provide method of rectification to Council for approval, prior to carrying out any rectification works.	Prior to a request for On Maintenance Inspection
B	Undertake and provide, to the satisfaction of the Council, a high definition Closed Circuit Television (CCTV) recording of all stormwater pipes, including inter allotment roof water drainage. Recording to be undertaken within one month immediately preceding making a request for Off Maintenance inspection.	Prior to a request for Off Maintenance inspection.

CONDITION		TIMING
	CCTV to clearly display all joints (full surrounds) and any form of damage or defects, including date and time of the recording. The recording is to include a report signed by a suitably qualified Registered Professional Engineer Queensland (RPEQ) stating that the recording has been reviewed and all works are satisfactory. Where defects have been identified, consultant is to provide method of rectification to Council for approval, prior to carrying out any rectification works.	
41	**Drainage Behind Retaining Walls**	
	Design and install agricultural pipes or strip drains behind retaining walls in accordance with Q.U.D.M. to connect to: • The proposed inter-allotment drainage systems; or • To drainage inlet structures via a stub connection in roadways; or • Directly to kerb and channel if there are no drainage structures within 10m of the frontage of the land; or • As approved in writing by Council's delegated officer. Notes: • Corrugated pipes are not to be used to connect the stormwater drainage to Council's infrastructure. • The drainage system behind retaining walls must not connect to Council's subsurface drainage system in the Council road.	Prior to works being accepted On Maintenance.
42	**Provision of Kerb Adapters**	
	Provide a minimum of two (2) metal kerb adaptors per lot for lots that drain to the road. Where a lot has side crossfall of up to 1.5%, one (1) kerb adaptor shall be located at each side of the lot. Where a lot has side crossfall of greater than 1.5%, both kerb adaptors shall be located at the low side of the lot. For lots with a concrete footpath at the frontage, the kerb adaptors shall be connected to the front boundary of the lot with Class SN8 uPVC stormwater pipe.	Prior to works being accepted On Maintenance.
43	**Stabilisation of Disturbed Areas**	
	Ensure that a grass strike rate of at least 80% cover has been attained on all disturbed areas or other approved means of stabilisation of grassed areas have been provided. Note: For residential and rural residential subdivisions, the road reserve between kerb and property line shall be turfed as a condition of completion.	Prior to works being accepted On Maintenance.

ADVICES	
1	**Development Permit**
	This approval shall comply with all the conditions of related approval as stipulated in Council's Decision Notice – Development Permit dated 27 May 2020 referenced as DA/38032/2019/V3RL. The Applicant needs to be aware that the Currency Period of that Decision Notice may determine the validity period of this Decision Notice.
2	**Extent of Checking by Council**
	This approval shall not be taken to mean that the drawings have been checked in detail and Council accepts no responsibility whatsoever for the survey information, the design, or for the accuracy of any information or detail contained in the approved drawings and specifications.
3	**Aboriginal Cultural Heritage Act**
	The *Aboriginal Cultural Heritage Act 2003* commenced in Queensland on April 16, 2004. Under the Act, indigenous parties are key in assessing cultural heritage significance. The *Aboriginal Cultural Heritage Act 2003* establishes a Duty of Care for indigenous cultural heritage. This applies on all land and water, including freehold land. The Cultural Heritage Duty of Care lies with the person or entity conducting the activity. Penalty provisions apply for failing to fulfil the Cultural Heritage Duty of Care. Those proposing an activity that involves additional surface disturbance beyond that which has already occurred on the proposed site need to be mindful of the Duty of Care requirement. Details of how to fulfil the Duty of Care are outlined in the Duty of Care Guidelines gazetted with the Act. Council strongly advises that you contact the relevant state agency to obtain a copy of the Duty of Care Guidelines and further information on the responsibilities of developer under the terms of the *Aboriginal Cultural Heritage Act 2003*.
4	**Environmental Protection Act**
	It remains the duty of care of the site owner not to cause Environmental Harm as defined under the *Environmental Protection Act 1994*.
5	**Works on State-controlled Roads**
	Obtain relevant approvals and/or comments from the Department of Transport and Main Roads for works to be conducted within a State Controlled Road prior to commencing works within those roads.
6	**Approval does not Include Council Civil Works**
	This approval is limited to landscape works only and does not include approval of any civil works that may appear on the drawings. • The approval specifically excludes: • Any road pavements including surfacing • Scour protection works for Culverts and drainage pipe outlets

ADVICES	
	• Road furniture including guardrails, pedestrian handrails, road name signs and traffic control signage • Footpaths and bike paths (including chicanes) • Structures, walls, plinths, columns, etc in traffic islands • Traffic Noise Barriers unless specifically approved under the conditions of this approval. Where discrepancies are identified between landscaping and civil elements the details of the Civil works approval will prevail.
7	**Approval does not include Building Works**
	This approval is limited to landscape works only and does not include approval of any building works that may appear on the drawings.
	This approval is limited to Council and/or Unitywater civil works only and does not include approval of any building works that may appear on the drawings.
8	**Fill in Proposed Parks**
	Filling is not permitted in proposed parks without prior written approval of Council's Delegated Officer.
9	**Road and Stormwater infrastructure**
	In respect to Road and Stormwater infrastructure, the works shall be designed and constructed in accordance with the relevant Planning scheme codes and policies; The current relevant planning scheme codes and policies are: • Works code; • Reconfiguring a lot codes; • PSP- Integrated Design • PSP- Operational Works Inspection, Maintenance and Bonding Procedures. All of which may be downloaded free of charge from Council's website at www.moretonbay.qld.gov.au. The PSP- Operational Works Inspection, Maintenance and Bonding Procedures also contains details of other requirements such as: 1. arrangements for works going On or Off Maintenance; 2. inspection and testing; 3. checklists and certification proforma; 4. bonding procedures. Should further information be required regarding the road and stormwater component of the Operational Works Application, please contact Council's Officer, Xavier Dubreuil on phone (07) 5433 2739.

ATTACHMENT 3

Approved Plans / Documents

PROJECT:

OPERATIONAL WORKS
CIVIL ENGINEERING

PROJECT DETAILS:

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

PROJECT NUMBER: M2584E_2
MORETON BAY REGIONAL COUNCIL
REFERENCE: DA/38032/2019/V3RL

33 ALLOTMENTS
LOT1 ON RP230991 &
LOT2 ON RP80309
AREA - 2.46ha

LOCALITY PLAN

N.T.S.

SAFETY IN DESIGN

THE ENGINEERING DESIGN FOR THE PROPOSAL HAS BEEN DEVELOPED TO MEET THE STATED PROJECT BRIEF, AS EXPRESSED IN JFP URBAN CONSULTANTS OFFER FOR THE WORKS, AND THE DESIGN STANDARDS STIPULATED BY THE LOCAL AUTHORITY NAMED ON THIS PLAN. IT IS EXPECTED THAT A COMPETENT PRINCIPAL CONTRACTOR WILL BE APPOINTED FOR THE PROJECT AND THAT ALL 'HIGH RISK' CONSTRUCTION WORKS WILL BE ADDRESSED AS PART OF THEIR PROJECT SAFETY PLAN FOR THE SITE.

NON-STANDARD DESIGN SOLUTIONS ADOPTED IN THE PREPARATION OF THE PROPOSAL ARE LISTED AS FOLLOWS;

A HAZARD ASSESSMENT OF THESE NON-STANDARD ITEMS HAS BEEN CONDUCTED AND THE FOLLOWING HAZARDS, THEIR ASSOCIATED RISKS AND THE CONTROL MEASURES SUGGESTED ARE LISTED BELOW;

NON-STANDARD DESIGN ITEM	HAZARD IDENTIFIED	RISK ASSESSMENT	CONTROL MEASURE SUGGESTED
CONSTRUCTION OF WORKS WITHIN EXISTING ROAD RESERVE	POTENTIAL THREATS TO THE SAFETY OF THE PUBLIC USING THE EXISTING ROAD AND FOOTPATHS	MODERATE/POSSIBLE MAJOR RISK	PRINCIPAL CONTRACTOR TO INCLUDE TRAFFIC MANAGEMENT (INCLUDING PEDESTRIAN) FOR WORKS IN EXISTING ROAD RESERVE IN THEIR SAFETY PLAN
SITE ACCESS UNDER EXISTING OVERHEAD ELECTRICITY	ACCESS TO SITE UNDER OVERHEAD ELECTRICITY ALONG CASH STREET	MODERATE/POSSIBLE MAJOR RISK	IDENTIFYING MARKERS TO BE APPLIED TO EXISTING OVERHEAD ELECTRICITY THROUGHOUT CONSTRUCTION

INDEX:

STAGING & SITE SURVEY PLANS

M2584E_2	L01	A	CONSTRUCTION STAGING PLAN
M2584E_2	L02	B	EXISTING SERVICES AND SITE SURVEY PLAN

EARTHWORKS PLANS

M2584E_2	EW01	C	EARTHWORKS LAYOUT PLAN
M2584E_2	EW02	C	EARTHWORKS DETAIL LAYOUT PLAN SHEET 1 of 3
M2584E_2	EW03	C	EARTHWORKS DETAIL LAYOUT PLAN SHEET 2 of 3
M2584E_2	EW04	B	EARTHWORKS DETAIL LAYOUT PLAN SHEET 3 of 3
M2584E_2	EW05	C	EARTHWORKS DETAILS PLAN

ROADWORKS PLANS

M2584E_2	R01	B	ROADWORKS LAYOUT PLAN
M2584E_2	R02	A	ROADWORKS DETAILS PLAN
M2584E_2	R03	C	ROADWORKS INTERSECTION DETAILS PLAN
M2584E_2	R04	B	ROADWORKS LONGITUDINAL SECTION - CASH STREET
M2584E_2	R05	C	ROADWORKS CROSS SECTIONS - CASH STREET
M2584E_2	R06	A	ROADWORKS LONGITUDINAL - SECTION ROAD 2 (FLINDERS STREET)
M2584E_2	R07	B	ROADWORKS CROSS SECTIONS - ROAD 2 (FLINDERS STREET)
M2584E_2	R08	A	ROADWORKS LONGITUDINAL SECTION - ROAD 3 (MUSTER STREET & FLINDERS STREET)
M2584E_2	R09	B	ROADWORKS CROSS SECTIONS - ROAD 3 (MUSTER STREET & FLINDERS STREET)

SIGNS AND LINEMARKING PLANS

M2584E_2	SL01	A	SIGNS AND LINEMARKING LAYOUT PLAN

DRAINAGE PLANS

M2584E_2	D01	B	DRAINAGE CATCHMENT PLAN
M2584E_2	D02	B	DRAINAGE LAYOUT PLAN
M2584E_2	D03	C	DRAINAGE LONGITUDINAL SECTIONS - LINES E & H
M2584E_2	D04	B	DRAINAGE LONGITUDINAL SECTIONS - LINES 3E, 3H & I
M2584E_2	D05	B	DRAINAGE CALCULATIONS TABLES - SHEET 1 of 2
M2584E_2	D06	A	DRAINAGE CALCULATIONS TABLES - SHEET 2 of 2
M2584E_2	D07	A	DRAINAGE STRUCTURE DETAILS

EROSION & SEDIMENT CONTROL PLANS

M2584E_2	ES01	B	EROSION AND SEDIMENT CONTROL LAYOUT - BULK EARTHWORKS PHASE
M2584E_2	ES02	A	EROSION AND SEDIMENT CONTROL LAYOUT - ROADS & DRAINAGE PHASE
M2584E_2	ES03	A	EROSION AND SEDIMENT CONTROL LAYOUT - PRACTICAL COMPLETION PHASE
M2584E_2	ES04	A	EROSION AND SEDIMENT CONTROL DETAILS
M2584E_2	ES05	A	EROSION AND SEDIMENT CONTROL DETAILS - SEDIMENT BASIN 1
M2584E_2	ES06	A	EROSION AND SEDIMENT CONTROL DETAILS - SEDIMENT BASIN 2

SEWERAGE RETICULATION PLANS

M2584E_2	S01	D	SEWERAGE LAYOUT PLAN
M2584E_2	S02	D	SEWERAGE DETAIL LAYOUT PLAN - SHEET 1 of 3
M2584E_2	S03	C	SEWERAGE DETAIL LAYOUT PLAN - SHEET 2 of 3
M2584E_2	S04	D	SEWERAGE DETAIL LAYOUT PLAN - SHEET 3 of 3
M2584E_2	S05	C	SEWERAGE DETAILS PLAN - SHEET 1 of 2
M2584E_2	S06	A	SEWERAGE DETAILS PLAN - SHEET 2 of 2
M2584E_2	S07	E	SEWERAGE LONGITUDINAL SECTIONS - LINES 6 & 9
M2584E_2	S08	F	SEWERAGE LONGITUDINAL SECTIONS - LINES 8, 12 & 2

WATER RETICULATION PLANS

M2584E_2	W01	D	WATER RETICULATION LAYOUT PLAN - SHEET 1 of 3
M2584E_2	W02	D	WATER RETICULATION LAYOUT PLAN - SHEET 2 of 3
M2584E_2	W03	B	WATER RETICULATION LAYOUT PLAN - SHEET 3 of 3
M2584E_2	W04	D	WATER RETICULATION DETAILS PLAN - SHEET 1 of 2
M2584E_2	W05	D	WATER RETICULATION DETAILS PLAN - SHEET 2 of 2
M2584E_2	W06	B	WATER RETICULATION NOTES

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PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

PROJECT NUMBER:
M2584E_2

FILE NAME: COVERSHEET.DWG

LEGEND :

EXISTING CONTOURS 20.0

EXISTING LOT BOUNDARIES

PROPOSED LOT BOUNDARIES

FUTURE LOT BOUNDARIES

SUBJECT STAGE

HARTLEY DRIVE

CASH STREET

EXISTING LAKE

AKOONAH WAY

BARONGA COURT

ALLIKEA PLACE

BM - TBM 1
RL - 142.989 AHD

BM - OPM 90403
RL - 160.617 AHD

EXISTING STAGE 1 (27 LOTS)

901 Drainage Reserve

ROAD 1 (BANKSIA CLOSE)

ROAD 2 (FLINDERS STREET)

ROAD 3 (BRADMAN STREET)

STAGE 2 (33 LOTS)

ROAD 3 (MUSTER STREET)

ROAD 2 (FLINDERS STREET)

ROAD 3 (FLINDERS STREET)

FUTURE STAGE 4 (27 LOTS)

ROAD 5 (ILLAWARRA PLACE)

ROAD 3 (BRADMAN STREET)

FUTURE STAGE 3 (27 LOTS)

ROAD 4 (BRADMAN STREET)

ROAD 3 (FLINDERS STREET)

ROAD 3 (FLINDERS STREET)

FUTURE STAGE 5 (33 LOTS)

ROAD 6 (BUSHMAN COURT)

BM - OPM 51188
RL - 148.510 AHD
(AT CORNER OF
D'AGUILAR HIGHWAY
& MOUNT MEE ROAD)

D'AGUILAR HIGHWAY

FRANCES STREET

REFER DWG No. M2584E_2 L02 FOR BENCH MARK TABLE

DIAL BEFORE YOU DIG www.1100.com.au The Essential First Step

NORTH:

SCALE: 1:1000 A1

THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 10 20 30 40 50 (A1) 1:1000 100 Metres
(A3) 1:2000
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
T.McKINNEY RPEQ 5087 | A.FRASER RPEQ 5691 | J.PAPPAS RPEQ 6086 | S.MARSH RPEQ 8068

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE: CONSTRUCTION STAGING PLAN

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:

PROJECT:	PLAN:	ISSUE:
M2584E_2	L01	A

LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL

COUNCIL REF: DA/38032/2019/V3RL

FILE NAME: STAGING.DWG

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PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

EXISTING TRAFFIC ISLANDS REMOVED DURING STAGE 1
EXISTING CONCRETE PATHWAY
EXISTING COMMUNICATIONS PITS
EXISTING STORMWATER
EXISTING COMMUNICATIONS
AKOONAH WAY
EXISTING COMMUNICATIONS PITS
EXISTING U/G ELECTRICAL
EXISTING CONCRETE DRIVEWAYS
EXISTING CONCRETE PATHWAY
EXISTING CONCRETE DRIVEWAYS
EXISTING CONCRETE DRIVEWAYS
EXISTING STORMWATER
EXISTING CONCRETE PATHWAY
ALLIKEA PLACE
EXISTING CONCRETE PATHWAY
EXISTING COMMUNICATIONS PIT
BM - OPM 90403
RL - 160.617 AHD
BM - TBM 1
RL - 142.989 AHD
CASH STREET
EXISTING WATER MAIN
CASH STREET
EXISTING WATER MAIN
EXISTING POWER POLE
EXISTING COMMUNICATIONS PIT
EXISTING O/H ELECTRICAL
EXISTING COMMUNICATIONS ABANDONED
EXISTING POWER POLE
EXISTING FIRE HYDRANTS
EXISTING EDGE OF BITUMEN
EXISTING COMMUNICATIONS PIT
EXISTING FENCE TO BE REMOVED. PARTS OF FENCE ALIGNMENT LOCATED WITHIN ADJACENT PROPERTIES
EXISTING FIRE HYDRANT
EXISTING POWER POLE
EXISTING COMMUNICATIONS
EXISTING DISUSED WATER MAIN
EXISTING O/H ELECTRICAL
REFER INSET
EXISTING WATER VALVE
EXISTING FIRE HYDRANT
EXISTING COMMUNICATIONS
EXISTING DISUSED WATER MAIN
EXISTING BIORETENTION BASIN
ROAD 2 (FLINDERS STREET)
EXISTING CONCRETE PATHWAY
EXISTING WATER MAIN
EXISTING TEMPORARY TURN-AROUND & STAR PICKET FENCE, TO BE REMOVED.
EXISTING STORMWATER
ROAD 2
(FLINDERS STREET)
EXISTING SEWER
EXISTING STORMWATER
EXISTING FENCE REMOVED DURING STAGE 1 CONSTRUCTION PARTS OF FENCE ALIGNMENT LOCATED WITHIN ADJACENT PROPERTIES
EXISTING FENCE TO BE REMOVED PARTS OF FENCE ALIGNMENT LOCATED WITHIN ADJACENT PROPERTIES
ROAD 3 (BRADMAN STREET)
EXISTING WATER MAIN
EXISTING SEWER
EXISTING STORMWATER
ROAD 3
(BRADMAN STREET)
EXISTING CONCRETE PATHWAY

EXISTING EDGE OF BITUMEN
CASH STREET
EXISTING O/H ELECTRICAL
EXISTING WATER MAIN
EXISTING COMMUNICATIONS
EXISTING DISUSED WATER MAIN

INSET
SCALE 1:100

LEGEND :

- EXISTING CONTOURS
- EXISTING KERB AND CHANNEL
- EXISTING EDGE OF BITUMEN
- EXISTING STORMWATER
- EXISTING SEWERAGE
- EXISTING WATER MAIN
- EXISTING WATER SERVICE CROSSING
- EXISTING U/G ELECTRICAL
- EXISTING O/H ELECTRICAL
- EXISTING COMMUNICATION
- EXISTING GAS MAIN
- EXISTING TREE

BENCH MARK TABLE

BENCH MARK No.	LOCATION (APPROX.)	TYPE	EASTING	NORTHING	BENCH MARK RL.
TBM 1	CORNER CASH STREET & AKOONAH WAY	SCREW IN KERB	480665.913	7014743.193	142.989
OPM 51188	CORNER MOUNT MEE ROAD & D'AGUILAR HIGHWAY	PERMANENT SURVEY MARK	479926.019	7014957.007	148.510
OPM 90403	IN LOT 7 ON RP204140	PERMANENT SURVEY MARK	480954.790	7014708.711	160.617

REFER DWG No. M2584E_2 L01 FOR BENCH MARK LOCATIONS

DIAL BEFORE YOU DIG www.1100.com.au The Essential First Step

NORTH:

SCALE: 1:500 A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 5 10 15 20 25 (A1) 1:500 50 Metres
(A3) 1:1000
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
B	EXISTING WATERMAIN LABELS AMENDED	14/07/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:

EXISTING SERVICES AND SITE SURVEY PLAN

DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: L02 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: STAGING.DWG

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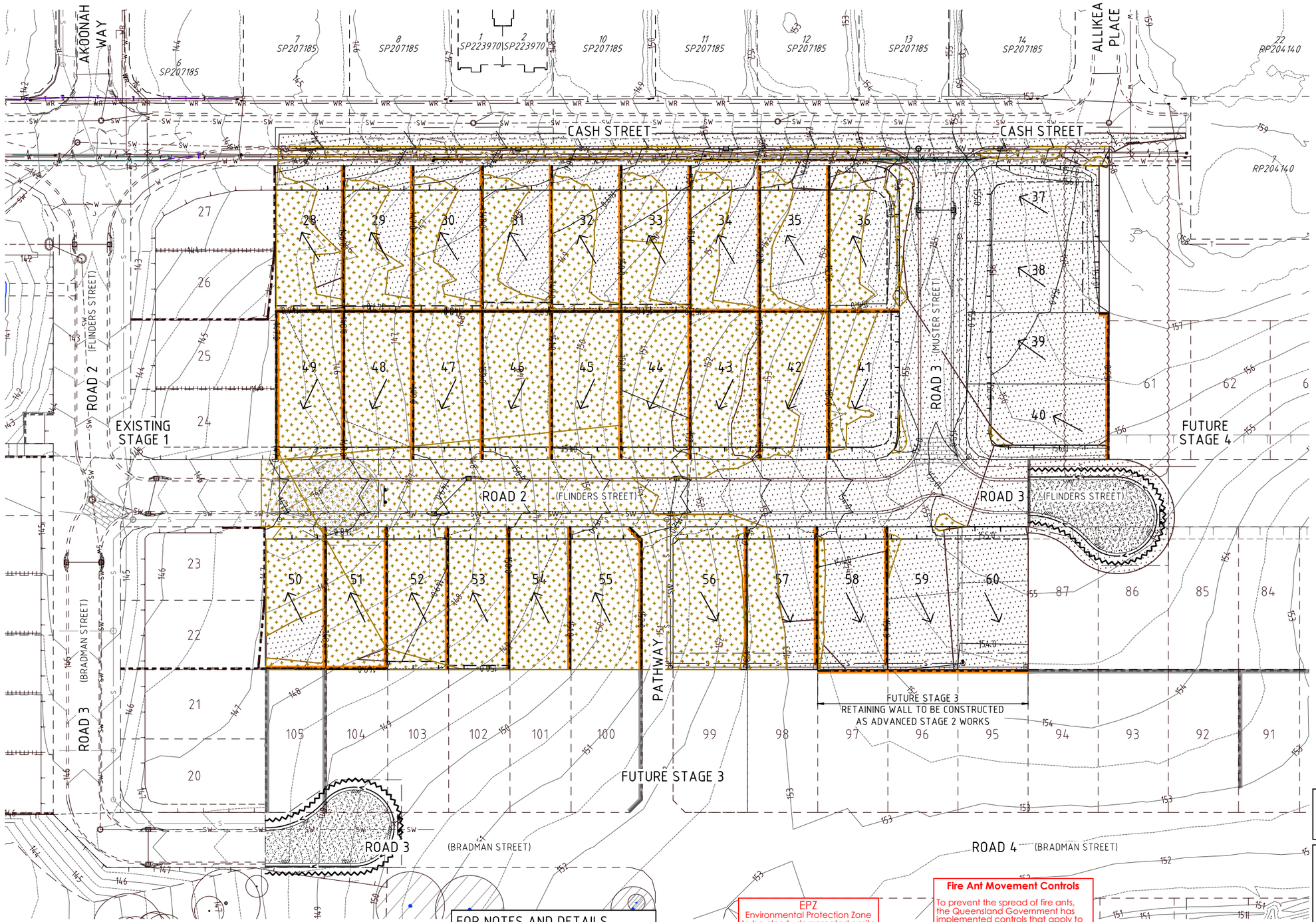
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

2/07/2021 K:\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\STAGING



LEGEND:

EXISTING CONTOURS — 32

FINISHED CONTOURS — 32

PROPOSED KERB AND CHANNEL

SPOT LEVELS
(#19.62 DENOTES NATURAL SURFACE LEVEL) — ✱ 19.06

PROPOSED FILL

PROPOSED CUT

PROPOSED CONCRETE SLEEPER RETAINING WALL

EXISTING CONCRETE SLEEPER RETAINING WALL

FUTURE CONCRETE SLEEPER RETAINING WALL

BATTER BETWEEN ALLOTMENTS (AT 1 IN 2 MAX.)

BATTER TO ALLOTMENT

PROPOSED SEWERAGE LINE — S

PROPOSED STORMWATER LINE — SW

PROPOSED ROOFWATER LINE — RW

TREE LEGEND

TREES TO BE RETAINED AND PROTECTED

TREES TO BE RETAINED AND REQUIRES THE SUPERVISION OF ANY EXCAVATION OR SERVICES WORKS WITHIN THE HATCHED PROTECTION ZONE BY AN ARBORIST ON SITE.

TPZ
Tree Protection Zone
All vegetation to be protected in accordance with AS4970 - Protection of Trees on Development Sites & any conditions of approval.

SPOT LEVELS

ALL LEVELS SHOWN ARE FINISHED SURFACE. SUBTRACT 100mm FOR EARTHWORKS LEVELS TO BATTERS & PARK AREAS, 150mm TO VERGES & 250mm TO ALLOTMENTS ALLOWING FOR TOPSOIL THICKNESS.

NOTE:

THE CONTRACTOR IS TO ENSURE THAT FOOTINGS FOR RETAINING WALLS ARE CLEAR OF THE PROPOSED SEWER AND ROOFWATER LINES REFER DETAILS ON DWG EW05.

SAFETY FENCE NOTE

STAR PICKET AND SAFETY BARRIER MESH FENCE TO BE ERECTED ON TOP OF ALL RETAINING WALLS GREATER THAN 1.0m IN HEIGHT

RETAINING WALL CERTIFICATION

1. CIVIL CONTRACTOR TO OBTAIN DESIGN AND CONSTRUCTION RPEQ CERTIFICATION FOR ALL CONCRETE SLEEPER, SANDSTONE BOULDER & CONCRETE BLOCK RETAINING WALLS.
2. WALL DESIGN AND CERTIFICATION TO BE PROVIDED TO SUPERVISING ENGINEER PRIOR TO CONSTRUCTION.
3. CONSTRUCTION CERTIFICATION TO BE PROVIDED TO SUPERVISING ENGINEER PRIOR TO "ON MAINTENANCE" INSPECTION.

EXISTING SERVICES LOCATIONS

THE DESIGN DETAILED ON THIS PLAN HAS BEEN PREPARED BASED ON SERVICE AUTHORITY AS CONSTRUCTED INFORMATION.
NO POT HOLING HAS BEEN UNDERTAKEN TO VERIFY EXISTING SERVICES LOCATIONS AND DEPTHS.
IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERTAKE POT HOLING (HYDROVAC EXCAVATION) PRIOR TO COMMENCEMENT OF CONSTRUCTION.

FOR NOTES AND DETAILS REFER DWG No. M2584E_2 EW05

FOR MAINTENANCE OF EXISTING VEGETATION AND REMOVAL, WHERE PERMITTED REFER TO THE APPROVED VEGETATION MANAGEMENT PLAN AND NAL PERMITS

EPZ
Environmental Protection Zone
to be clearly demarcated onsite and protected in accordance with the conditions of approval.

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

Fire Ant Movement Controls

To prevent the spread of fire ants, the Queensland Government has implemented controls that apply to individuals and commercial operators, to restrict the movement of materials that could carry fire ants including soil, turf, potted plants, mulch, baled hay or straw, animal manures, mining or quarry products.

Penalties apply for non-compliance with the movement controls. If you are unsure of your obligations under the Biosecurity Act 2014 contact the relevant Queensland State Government Department.

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SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH: N

SCALE: 1:500 (A1) — THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 5 10 15 20 25 (A1) 1:500 50 Metres
(A3) 1:1000
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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV	C	LOT 37 - 40 EARTHWORKS & RETAINING AMENDED	14/07/21	CDV
DRAWN	BJ	B	EARTHWORKS AMENDED TO IMPROVE LOT GRADES	09/03/21	CDV
CHECKED	HW	A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ
DATUM: AHD		ISSUE:	DETAILS:	DATE:	INIT:

TITLE: EARTHWORKS LAYOUT PLAN

DFC (PROJECT MANAGEMENT) PTY LTD

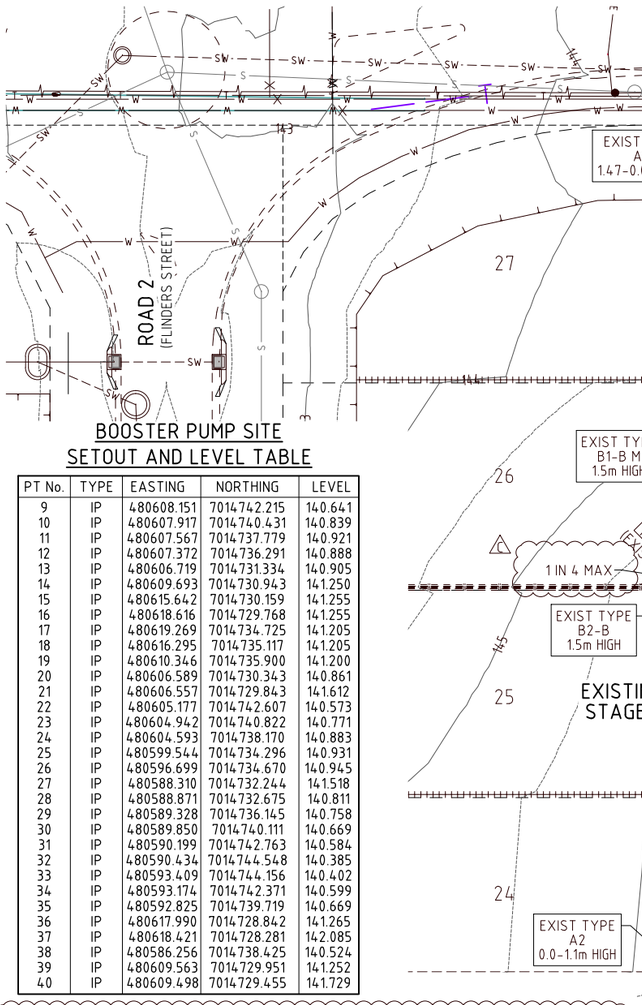
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

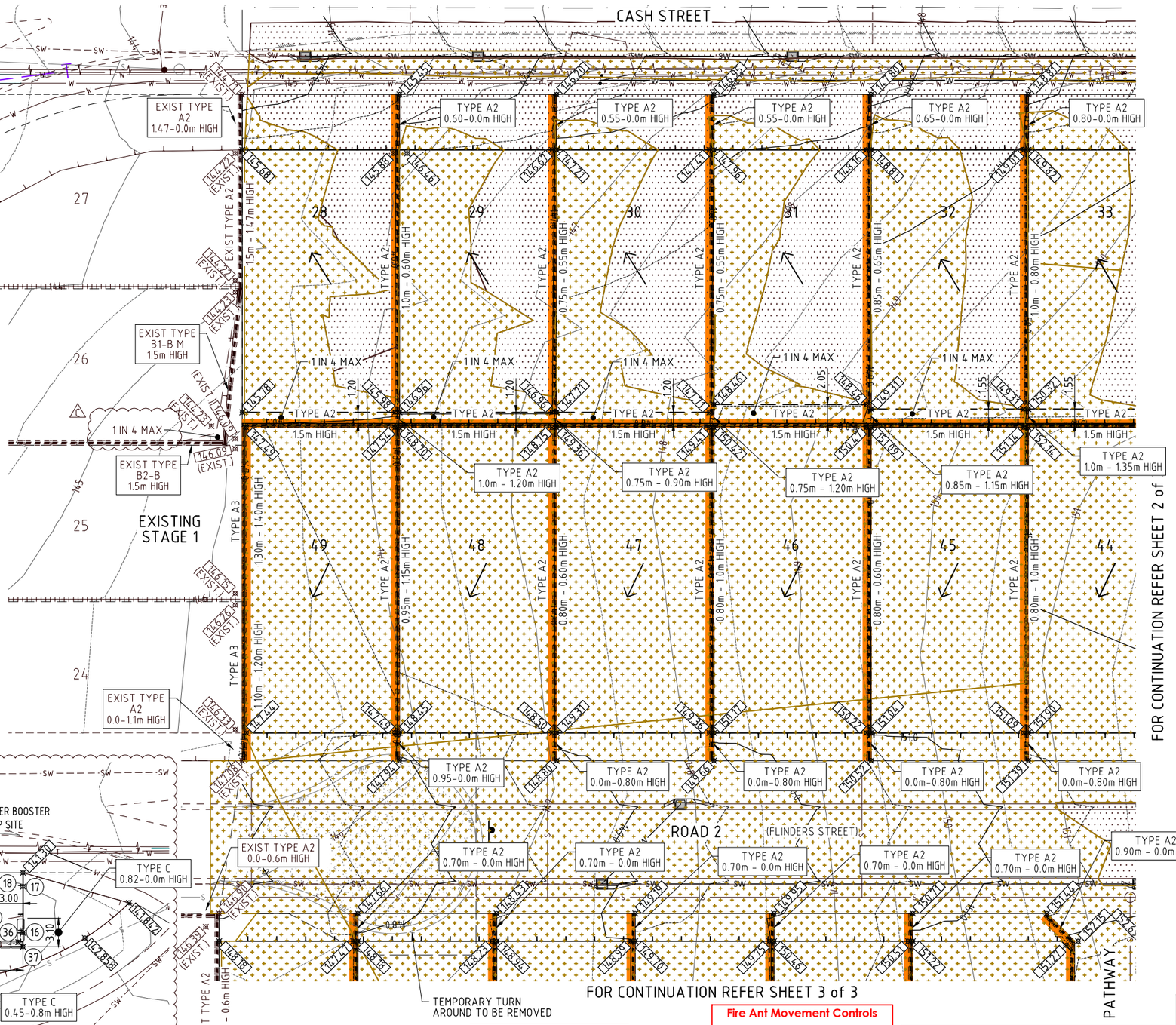
DETAILS:
PROJECT: M2584E_2 PLAN: EW01 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: EARTHWORKS.DWG

BOOSTER PUMP SITE SETOUT AND LEVEL TABLE

PT No.	TYPE	EASTING	NORTHING	LEVEL
9	IP	480608.151	7014742.215	140.641
10	IP	480607.917	7014740.431	140.839
11	IP	480607.567	7014737.779	140.921
12	IP	480607.372	7014736.291	140.888
13	IP	480606.719	7014731.334	140.905
14	IP	480609.693	7014730.943	141.250
15	IP	480615.642	7014730.159	141.255
16	IP	480618.616	7014729.768	141.255
17	IP	480619.269	7014734.725	141.205
18	IP	480616.295	7014735.117	141.205
19	IP	480610.346	7014735.900	141.200
20	IP	480606.589	7014730.343	140.861
21	IP	480606.557	7014729.843	141.612
22	IP	480605.177	7014742.607	140.573
23	IP	480604.942	7014740.822	140.771
24	IP	480604.593	7014738.170	140.883
25	IP	480599.544	7014734.296	140.931
26	IP	480596.699	7014734.670	140.945
27	IP	480588.310	7014732.244	141.518
28	IP	480588.871	7014732.675	140.811
29	IP	480589.328	7014736.145	140.758
30	IP	480589.850	7014740.111	140.669
31	IP	480590.199	7014742.763	140.584
32	IP	480590.434	7014744.548	140.385
33	IP	480593.409	7014744.156	140.402
34	IP	480593.174	7014742.371	140.599
35	IP	480592.825	7014739.719	140.669
36	IP	480617.990	7014728.842	141.265
37	IP	480618.421	7014728.281	142.085
38	IP	480586.256	7014738.425	140.524
39	IP	480609.563	7014729.951	141.252
40	IP	480609.498	7014729.455	141.729



BOOSTER PUMP SITE



FOR NOTES AND DETAILS REFER DWG No.M2584E_2 EW05

EPZ
Environmental Protection Zone to be clearly demarcated onsite and protected in accordance with the conditions of approval.

SPOT LEVELS
ALL LEVELS SHOWN ARE FINISHED SURFACE. SUBTRACT 100mm FOR EARTHWORKS LEVELS TO BATTERS & PARK AREAS, 150mm TO VERGES & 250mm TO ALLOTMENTS ALLOWING FOR TOPSOIL THICKNESS.

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

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FOR MAINTENANCE OF EXISTING VEGETATION AND REMOVAL, WHERE PERMITTED REFER TO THE APPROVED VEGETATION MANAGEMENT PLAN AND NAL PERMITS

LEGEND:

- EXISTING CONTOURS — 32
- FINISHED CONTOURS — 32
- PROPOSED KERB AND CHANNEL
- SPOT LEVELS (#19.62 DENOTES NATURAL SURFACE LEVEL) — #19.06
- PROPOSED FILL
- PROPOSED CUT
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- EXISTING CONCRETE SLEEPER RETAINING WALL
- FUTURE CONCRETE SLEEPER RETAINING WALL
- BATTER BETWEEN ALLOTMENTS (AT 1 IN 2 MAX.)
- BATTER TO ALLOTMENT
- PROPOSED SEWERAGE LINE — S
- PROPOSED STORMWATER LINE — SW
- PROPOSED ROOFWATER LINE — RW

TREE LEGEND

TREES TO BE RETAINED AND PROTECTED

TREES TO BE RETAINED AND REQUIRES THE SUPERVISION OF ANY EXCAVATION OR SERVICES WORKS WITHIN THE HATCHED PROTECTION ZONE BY AN ARBORIST ON SITE.

TPZ
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NOTE:
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SAFETY FENCE NOTE

STAR PICKET AND SAFETY BARRIER MESH FENCE TO BE ERECTED ON TOP OF ALL RETAINING WALLS GREATER THAN 1.0m IN HEIGHT

RETAINING WALL CERTIFICATION

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3. CONSTRUCTION CERTIFICATION TO BE PROVIDED TO SUPERVISING ENGINEER PRIOR TO "ON MAINTENANCE" INSPECTION.

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BRISBANE - SUNSHINE COAST - CENTRAL QLD
PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH: N

SCALE: 1:250 (A1) 1:500 (A3)
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 2.5 5 7.5 10 12.5 (A1) 1:250 25 Metres
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APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
T.McKINNEY RPEQ 5087 | A.FRASER RPEQ 5691 | J.PAPPAS RPEQ 6086 | S.MARSH RPEQ 8068

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
C	BOOSTER PUMP SITE ADDED	07/04/21	CDV
B	EARTHWORKS AMENDED TO IMPROVE LOT GRADES	09/03/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
EARTHWORKS DETAIL LAYOUT PLAN SHEET 1 of 3

DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR
DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: EW02 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: EARTHWORKS.DWG

CASH STREET

CASH STREET

ROAD 3 (MUSTER STREET)

ROAD 2 (FLINDERS STREET)

ROAD 3 (FLINDERS STREET)

PATHWAY

RP204140

TYPE A2 0.80-0.0m HIGH

TYPE A2 0.85m-0.00m HIGH

TYPE A2 1.0m-0.00m HIGH

TYPE A2 1.20m-0.00m HIGH

TYPE A2 1.05m - 0.70m HIGH

TYPE A2 1.5m HIGH

TYPE A2 1.45m - 1.50m HIGH

TYPE A2 1.20m - 1.25m HIGH

TYPE A2 0.50m - 0.55m HIGH

1 IN 4 MAX

TYPE A2 1.0m - 1.35m HIGH

1 IN 2 MAX.

1 IN 3 MAX.

TYPE A2 0.0m-0.85m HIGH

TYPE A2 0.65-0.85m HIGH

TYPE A2 0.8m-0.65m HIGH

TYPE A3 0.65-0.6m HIGH

TYPE A3 0.9-0.68m HIGH

TYPE A3 0.0-0.9m HIGH

TYPE A2 0.0m-0.80m HIGH

TYPE A2 0.0m-0.80m HIGH

TYPE A2 0.0-0.70m HIGH

TYPE A2 0.0m-0.90m HIGH

TYPE A2 0.90m - 0.0m HIGH

TYPE A2 0.60m - 0.0m HIGH

TYPE A2 0.85m - 0.0m HIGH

TYPE A2 0.85m - 0.0m HIGH

FUTURE STAGE 4

LOCALISED EARTHWORKS, TO SUIT TEMPORARY TURN AROUND.

FOR CONTINUATION REFER SHEET 1 of 3

FOR CONTINUATION REFER SHEET 3 of 3

LEGEND:

EXISTING CONTOURS 32

FINISHED CONTOURS 32

PROPOSED KERB AND CHANNEL

SPOT LEVELS
(#19.62 DENOTES NATURAL SURFACE LEVEL) 19.06

PROPOSED FILL

PROPOSED CUT

PROPOSED CONCRETE SLEEPER RETAINING WALL

EXISTING CONCRETE SLEEPER RETAINING WALL

FUTURE CONCRETE SLEEPER RETAINING WALL

BATTER BETWEEN ALLOTMENTS (AT 1 IN 2 MAX.)

BATTER TO ALLOTMENT

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PROPOSED STORMWATER LINE SW

PROPOSED ROOFWATER LINE RW

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FOR NOTES AND DETAILS REFER DWG No.M2584E_2 EW05

EXISTING SERVICES LOCATIONS

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NORTH: N

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J.PAPPAS RPEQ 6086
S.MARSH RPEQ 8068

DESIGNED	CDV	C	LOT 37 - 40 EARTHWORKS & RETAINING AMENDED	14/07/21	CDV
DRAWN	BJ	B	EARTHWORKS AMENDED TO IMPROVE LOT GRADES	09/03/21	CDV
CHECKED	HW	A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ
DATUM: AHD		ISSUE:	DETAILS:	DATE:	INIT:

TITLE:
EARTHWORKS DETAIL LAYOUT PLAN SHEET 2 of 3

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: EW03 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: EARTHWORKS.DWG

FOR CONTINUATION REFER SHEET 1 of 3

FOR CONTINUATION REFER SHEET 2 of 3

EXISTING STAGE 1

ROAD 2 (FLINDERS STREET)

ROAD 3 (MUSTER STREET)

ROAD 3 (FLINDERS STREET)

PATHWAY

FUTURE STAGE 3

TEMPORARY TURN AROUND TO BE REMOVED

EXIST TYPE A2 0.0-1.1m HIGH

TYPE A2 0.95-0.0m HIGH

TYPE A2 0.0m-0.80m HIGH

TYPE A2 0.0m-0.90m HIGH

TYPE A2 0.0-0.70m HIGH

TYPE A2 0.70m - 0.0m HIGH

TYPE A2 0.90m - 0.0m HIGH

TYPE A2 0.60m - 0.0m HIGH

TYPE A2 0.85m - 0.0m HIGH

EXIST TYPE A2 1.05m - 0.6m HIGH

EXIST TYPE A 0.0-1.05m HIGH

EXIST TYPE A3 0.4m HIGH

FUTURE TYPE A2 1.32m - 1.40m HIGH

FUTURE TYPE A2 0.6m HIGH

FUTURE TYPE A2 0.62m - 1.35m HIGH

TYPE A2 0.70m HIGH

TYPE A2 0.90m HIGH

TYPE A2 0.60m HIGH

TYPE A2 0.50m -0.85m HIGH

TYPE A2 0.35m - 0.85m HIGH

TYPE A2 1.0m HIGH

TYPE A2 0.85m HIGH

TYPE A2 1.4m HIGH

TYPE A2 1.5m HIGH

TYPE A2 0.70m - 1.30m HIGH

TYPE A2 0.70m - 0.45m HIGH

TYPE A2 0.80m - 0.45m HIGH

1 IN 4 MAX

PIER OVER SEWER AND ROOF WATER

FUTURE STAGE 3
RETAINING WALL TO BE CONSTRUCTED
AS ADVANCED STAGE 2 WORKS

50 51 52 53 54 55 56 57 58 59 60 87

103 102 105 104 101 100 99 98 97 96 95

LEGEND:

- EXISTING CONTOURS — 32
- FINISHED CONTOURS — 32
- PROPOSED KERB AND CHANNEL
- SPOT LEVELS (#19.62 DENOTES NATURAL SURFACE LEVEL) — #19.06
- PROPOSED FILL
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FOR NOTES AND DETAILS
REFER DWG No. M2584E_2 EW05

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NORTH: N

SCALE: 1:250 A1
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0 2.5 5 7.5 10 12.5 (A1) 1:250 25 Metres
(A3) 1:500
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DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
B	EARTHWORKS AMENDED TO IMPROVE LOT GRADES	09/03/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
EARTHWORKS DETAIL LAYOUT PLAN SHEET 3 of 3
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: EW04 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: EARTHWORKS.DWG

Moreton Bay Regional Council

EARTHWORKS NOTES

1. ALL LOTS TO BE FREE DRAINING TO ROOFWATER DRAINAGE OR ROADWAY.

CLEARING AND GRUBBING

2. ANY CLEARING REQUIRED TO BE UNDERTAKEN BY THE CONTRACTOR IS TO BE STRICTLY IN ACCORDANCE WITH THE COUNCIL APPROVED VEGETATION MANAGEMENT PLAN, INCLUDING THE LIMITS OF ALLOWABLE CLEARING, TREE PROTECTION REQUIREMENTS AND THE USE OF A FAUNA SPOTTER/CATCHER, AS SPECIFIED.
3. UNLESS OTHERWISE SPECIFIED OR DIRECTED, THE AREA TO BE CLEARED IS THAT REQUIRED BY SITE REGRADING WORKS, INCLUDING THE AREA OCCUPIED BY THE COMPLETED ROAD FORMATION AND ASSOCIATED DRAINAGE WORKS AND EROSION AND SEDIMENTATION MEASURES, THE CONTRACTOR SHALL ENSURE THAT ONLY THE ABSOLUTE MINIMUM AREA FOR CONSTRUCTION IS CLEARED.
4. THE AREA WITHIN THE LIMITS OF CLEARING SHALL BE CLEARED OF ALL VEGETATION, BOTH LIVING AND DEAD, ALL MINOR MAN-MADE STRUCTURES (SUCH AS FENCES, BUILDING MATERIAL AND EXISTING DRIVEWAYS), ALL RUBBISH AND OTHER MATERIALS WHICH, IN THE OPINION OF THE SUPERINTENDENT, ARE UNSUITABLE FOR USE IN THE WORKS WITH THE EXCEPTION OF CERTAIN TREES MARKED FOR PRESERVATION.
5. ALL TREES AND STUMPS ON OR WITHIN THE LIMITS OF CLEARING, THAT ARE TO BE REMOVED BY GRUBBING OPERATION SHALL BE CARRIED OUT TO A DEPTH OF 0.5m BELOW THE NATURAL SURFACE OR 1.5 METRES BELOW THE FINISHED SURFACE LEVEL, WHICHEVER IS THE LOWER.

TOPSOIL

6. ALL TOPSOIL ON ROADWORKS AREAS SHALL BE STRIPPED AND STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OPERATIONS. A TOPSOIL DEPTH OF 150mm HAS BEEN USED TO DETERMINE TOPSOIL AND EARTHWORK QUANTITIES. THE CONTRACTOR IS TO SATISFY HIMSELF OF THE ACCURACY OF THESE QUANTITIES AND TO MAKE ANY NECESSARY ALLOWANCE IF HE DISAGREES WITH QUANTITIES.

EARTHWORKS

7. EARTHWORKS ARE TO BE IN ACCORDANCE WITH AS 3798 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS" (LATEST ISSUE - INCLUDING ALL AMENDMENTS).
8. ALL FILLING SHALL BE COMPLETED TO A LEVEL 1 ARRANGEMENT, UNDER THE SUPERVISION OF THE PRINCIPAL'S OR CONTRACTOR'S APPOINTED GEOTECHNICAL ENGINEER.
9. THE EARTHWORKS QUANTITIES FOR ROADWORKS ARE CALCULATED USING THE MINIMUM ALLOWABLE TOTAL PAVEMENT THICKNESS (NOMINAL PAVEMENT). VARIATIONS TO THE PAVEMENT DEPTHS WILL BE PAYABLE AT THE RATES SHOWN IN THE PRICED SCHEDULE OF RATES.
10. "CUT" AND "FILL" QUANTITIES HAVE BEEN CALCULATED TO THE UNDERSIDE OF THE TOPSOIL LAYER.
11. ALL EARTHWORK QUANTITIES HAVE BEEN CALCULATED AND BILLED IN THE CONTRACT AS "NETT" QUANTITIES, THAT IS NO ALLOWANCE FOR BULKING OR COMPACTION HAS BEEN MADE.
12. ALL FILL PLACED ON THIS SITE IS TO COMPRISE OF ONLY NATURAL EARTH AND APPROVED ROCK AND IS TO BE FREE OF ALL CONTAMINANTS (REFER TO THE ENVIRONMENTAL PROTECTION ACT 1994 SECTION 11.), NO DEMOLITION MATERIAL IS TO BE USED.

ALLOTMENT FILLING COMPACTION/TESTING

13. MATERIAL TO BE PLACED IN 300mm (MAXIMUM) LAYERS AND COMPACTED TO A MINIMUM OF 95% AS. 1289(STANDARD) OF THE MAXIMUM DRY DENSITY.THE INSITU DENSITY OF THE FILL MATERIAL SHALL BE TESTED AT THE RATE OF ONE LOCATION PER ALLOTMENT AT THE FOLLOWING INTERVALS
    - TOTAL DEPTH LESS THAN 300mm: -NO TEST REQUIRED
    - TOTAL DEPTH OF FILL 300mm - 600mm: -ONE(1) TEST PER ALLOTMENT
    - TOTAL DEPTH EXCEEDING 600mm: -ONE(1) TEST IN THE FIRST LAYER THEN -ONE(1) TEST ON EACH ALTERNATIVE LAYER PLACED OVER THE FIRST LAYER

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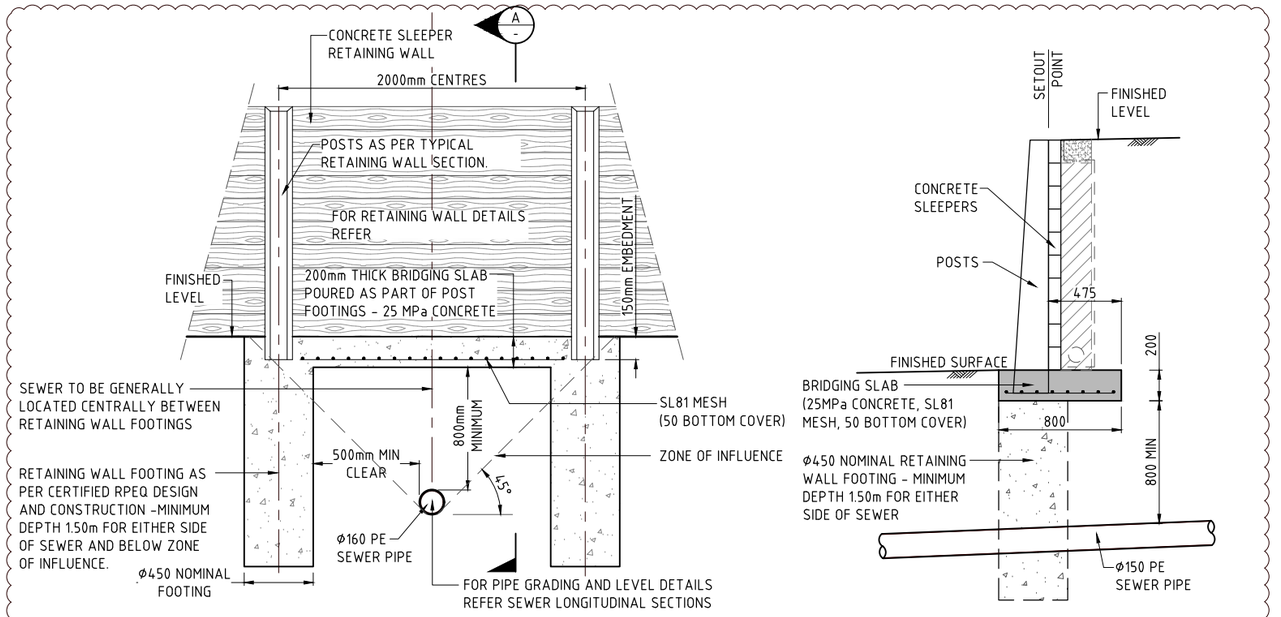
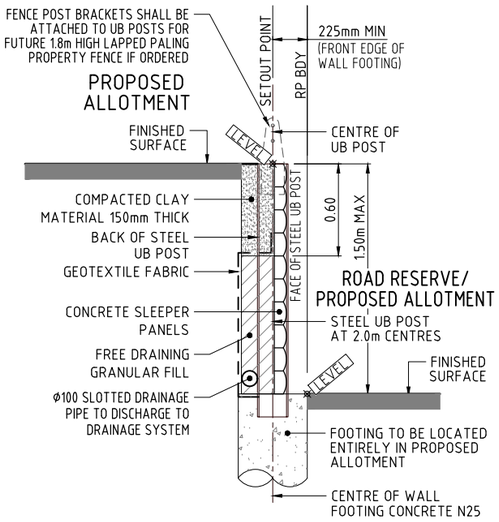


TYPICAL DETAIL - SEWER CROSSING UNDER CONCRETE SLEEPER RETAINING WALL

SCALE 1 : 20

SECTION A-A

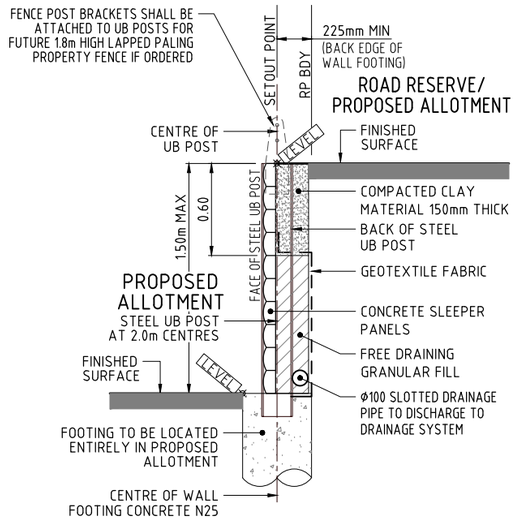
SCALE 1 : 20



TYPICAL SECTION - TYPE A3 CONCRETE SLEEPER/UB POST RETAINING WALL

SCALE 1:20

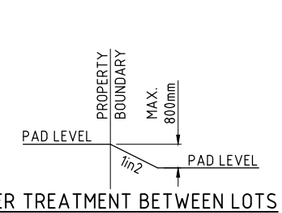
NOTE: RETAINING WALL DESIGN (INCLUDING FENCE POST BRACKETS AND FITTINGS) AND CONSTRUCTION CERTIFICATION TO INCORPORATE LOADING FROM FUTURE 1.8m HIGH LAPPED PALING PROPERTY FENCE



TYPICAL SECTION - TYPE A2 CONCRETE SLEEPER/UB POST RETAINING WALL

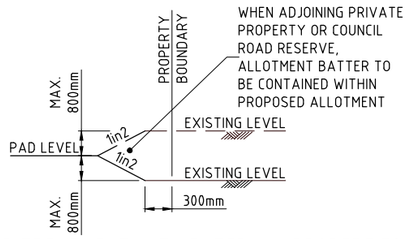
SCALE 1:20

NOTE: RETAINING WALL DESIGN (INCLUDING FENCE POST BRACKETS AND FITTINGS) AND CONSTRUCTION CERTIFICATION TO INCORPORATE LOADING FROM FUTURE 1.8m HIGH LAPPED PALING PROPERTY FENCE



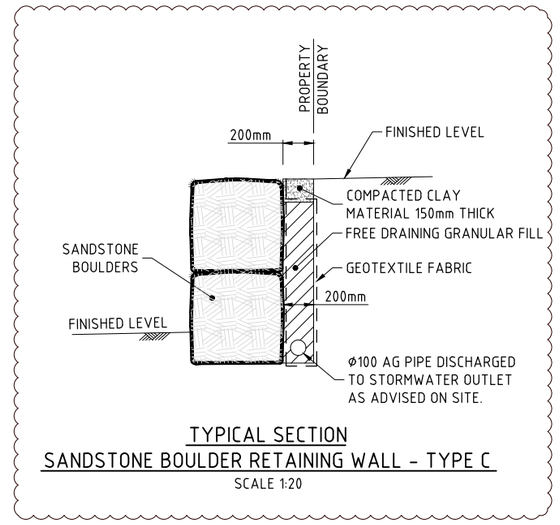
BATTER TREATMENT BETWEEN LOTS

N.T.S.



BATTER TREATMENT WITH EXTERNAL PROPERTIES

N.T.S.



TYPICAL SECTION SANDSTONE BOULDER RETAINING WALL - TYPE C

SCALE 1:20

FOR MAINTENANCE OF EXISTING VEGETATION AND REMOVAL, WHERE PERMITTED REFER TO THE APPROVED VEGETATION MANAGEMENT PLAN AND NAL PERMITS

SPOT LEVELS

ALL LEVELS SHOWN ARE FINISHED SURFACE. SUBTRACT 100mm FOR EARTHWORKS LEVELS TO BATTERS & PARK AREAS, 150mm TO VERGES & 250mm TO ALLOTMENTS ALLOWING FOR TOPSOIL THICKNESS.

NOTE:

THE CONTRACTOR IS TO ENSURE THAT FOOTINGS FOR RETAINING WALLS ARE CLEAR OF THE PROPOSED SEWER AND ROOFWATER LINES REFER DETAILS ON DWG EW05.

DIAL BEFORE YOU DIG www.1100.com.au The Essential First Step

NORTH:

SCALE: 1:20 A1 — THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE 0 0.2 0.4 0.6 0.8 1 (A1) 1:20 2 Metres (A3) 1:40
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED — FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
☐ T.M^cKINNEY RPEQ 5087 ☑ A.FRASER RPEQ 5691 ☐ J.PAPPAS RPEQ 6086 ☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
C	BOULDER WALL DETAIL ADDED	07/04/21	CDV
B	EARTHWORKS AMENDED TO IMPROVE LOT GRADES	09/03/21	WN
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE: EARTHWORKS DETAILS PLAN

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: EW05 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: EARTHWORKS.DWG

JFP URBAN CONSULTANTS
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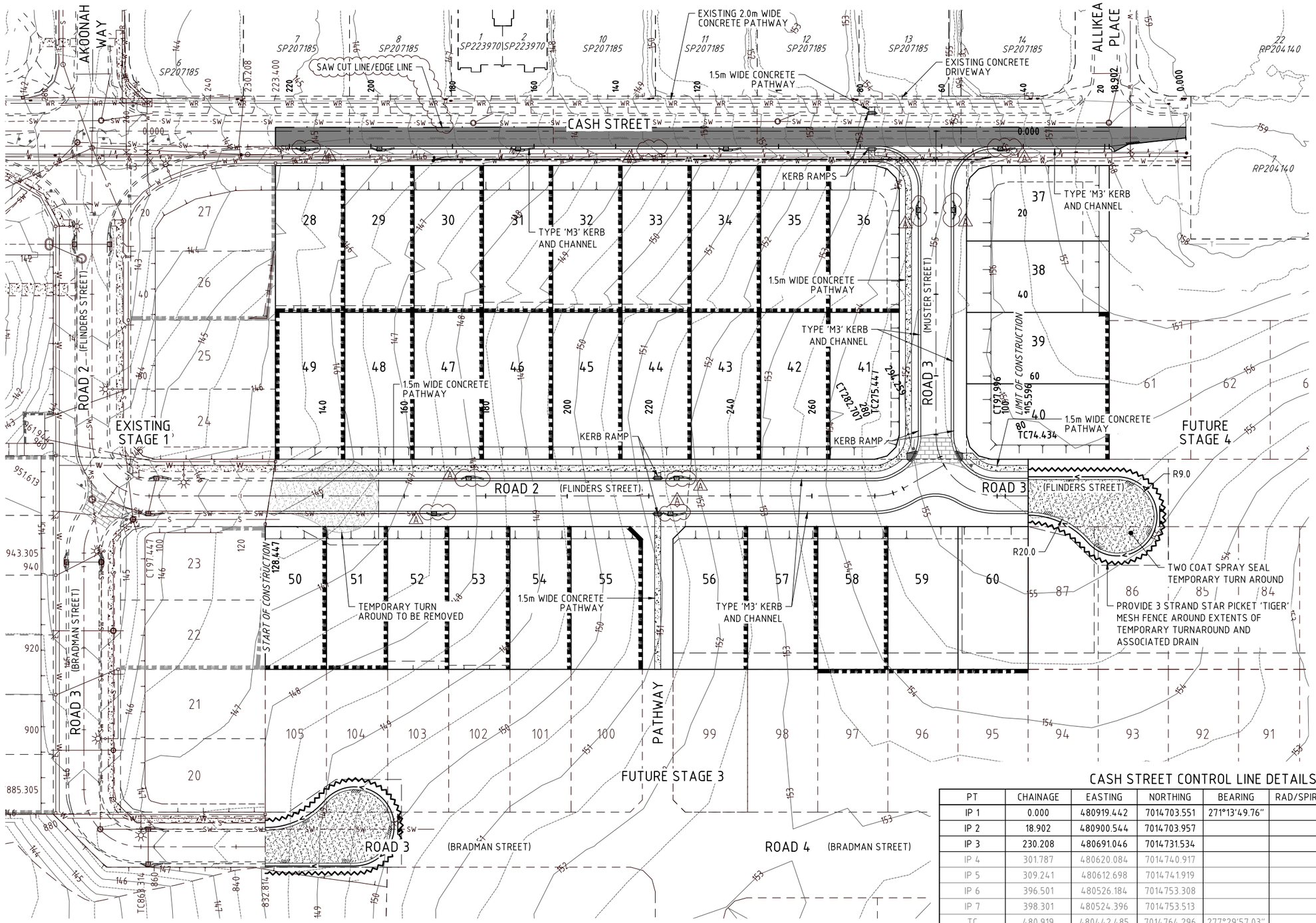
PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

2/07/2021 \\N\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\EARTHWORKS



LEGEND :

- EXISTING CONTOURS
- EXISTING KERB AND CHANNEL
- EXISTING STORMWATER
- EXISTING SEWERAGE
- EXISTING WATER
- EXISTING U/G ELECTRICAL
- EXISTING TELSTRA
- PROPOSED KERB AND CHANNEL
- FUTURE KERB AND CHANNEL
- PROPOSED RETAINING WALL
- DENOTES TRANSITION IN K&C REFER INTERSECTION DETAILS
- SINGLE PLATE STREET NAME SIGN
- HAZARD MARKER D4-5
- ROAD WIDENING PAVEMENT EXTENTS
- BOLLARDS @ 1.5m CENTRES

TREE LEGEND

TREES TO BE RETAINED AND PROTECTED

TREES TO BE RETAINED AND REQUIRES THE SUPERVISION OF ANY EXCAVATION OR SERVICES WORKS WITHIN THE HATCHED PROTECTION ZONE BY AN ARBORIST ON SITE.

TPZ
Tree Protection Zone
All vegetation to be protected in accordance with AS4970 - Protection of Trees on Development Sites & any conditions of approval.

FOR EARTHWORKS DETAILS REFER TO DWG No. M2584E__2 EW01-EW05

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPENCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY WORK.

PRIOR TO COMMENCEMENT OF WORKS REFER TO VEGETATION MANAGEMENT PLAN.

REFER TO LANDSCAPE PLANS FOR FINAL TRIM DETAILS

CASH STREET CONTROL LINE DETAILS

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	480919.442	7014703.551	271°13'49.76"			
IP 2	18.902	480900.544	7014703.957				
IP 3	230.208	480691.046	7014731.534				
IP 4	301.787	480620.084	7014740.917				
IP 5	309.241	480612.698	7014741.919				
IP 6	396.501	480526.184	7014753.308				
IP 7	398.301	480524.396	7014753.513				
TC	480.919	480442.485	7014764.296	277°29'57.03"			
IP 8	517.219	480406.323	7014769.056		R = 303.730	72.601	13°41'43.89"
CT	553.520	480372.315	7014782.243	291°11'40.92"			
IP 9	590.463	480337.871	7014795.599				
IP 10	613.711	480316.921	7014805.677	295°41'22.04"			

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NORTH:

SCALE: 1:500 A1 — THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE (A1) 1:500 (A3) 1:1000 — DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED — FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
T.McKINNEY RPEQ 5087 | A.FRASER RPEQ 5691 | J.PAPPAS RPEQ 6086 | S.MARSH RPEQ 8068

DESIGNED CDV | DRAWN BJ | CHECKED HW | DATUM: AHD

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
B	EXTENT OF ROAD WIDENING AMENDED	14/07/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE: ROADWORKS LAYOUT

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: R01 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS.DWG

JFP URBAN CONSULTANTS
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P 07 5450 3900 W www.jfp.com.au
JFP URBAN CONSULTANTS PTY. LTD. A.C.N. 050 414 045
PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

ROADWORKS NOTES

1. ALL DIMENSIONS ON THE DRAWINGS ARE IN METRES UNLESS SHOWN OTHERWISE.
2. ALL TURNOUT RADII ARE TO THE LIP OF THE CHANNEL.
3. LENGTH AND LOCATION OF MITRE DRAINS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT.
4. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT MORETON BAY REGIONAL COUNCIL STANDARDS AND STANDARD DRAWINGS UNLESS DIRECTED OTHERWISE.
5. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION. ANY COSTS ASSOCIATED WITH REPAIRING DAMAGE TO EXISTING SERVICES SHALL BE PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL ERECT TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE RELEVANT AUTHORITY SPECIFICATIONS.
7. SUB-BASE GRAVEL COMPACTED TO 95% AS1289 (MODIFIED) AND OF MINIMUM THICKNESS 75mm SHALL EXTEND UNDER THE KERB AND CHANNEL TO 150mm (MIN.) BEHIND THE KERB.
8. NBN TO RECEIVE 3 WEEKS NOTICE BEFORE INSTALLATION OF CONDUITS.
9. THE CONTRACTOR SHALL VERIFY OFFSET PEG LOCATIONS AND BENCH MARK LEVELS AND ADVISE THE SUPERINTENDENT OF ANY DISCREPANCY BEFORE THE COMMENCEMENT OF CONSTRUCTION.
10. KERB AND CHANNEL TO BE CONSTRUCTED IN ACCORDANCE WITH MBRC STD. DWG. RS-080.
11. SIDE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MBRC STD DRAWINGS RS-140 AND 142.
    a. TRIMMING AND COMPACTION OF SUBGRADE IS TO BE COMPLETED AND APPROVED BEFORE SUBSOIL DRAINS AND SERVICE CONDUITS ARE CONSTRUCTED. THE TRENCHES SHALL THEN BE EXCAVATED, AND THE EXCAVATED MATERIAL PLACED ON THE FOOTPATH AND NOT THE SUBGRADE.
    b. WHERE SUBSOIL DRAINS PASS UNDER SERVICE CONDUITS, THE SIDE DRAINS ARE TO BE DEEPENED AND GRADED OUT TO A NORMAL DEPTH AT A MINIMUM GRADE OF 1:250.
    c. IN DISPERSIVE, SOLUBLE OR FINE GRAINED SOILS, THE DEVELOPER'S REPRESENTATIVE IS TO EVALUATE WHETHER GEOFABRIC WRAPPED SUBSOIL DRAINS ARE REQUIRED. WHERE GEOFABRIC WRAPPED SUBSOIL DRAINS ARE PROPOSED THE DEVELOPER'S REPRESENTATIVE IS TO PROVIDE DETAILS FOR APPROVAL BY COUNCIL'S NOMINATED REPRESENTATIVE.
    d. ROAD SUBSOIL DRAINAGE MUST BE 'DAYLIGHTED' AND DISCHARGED TO AN APPROVED LEGAL POINT OF DISCHARGE. CAPS ARE TO BE PROVIDED TO UPSTREAM ENDS OF SUBSOIL DRAINS.
12. EACH PAVEMENT COURSE SHOULD NOT BE COMMENCED UNTIL THE PREVIOUS COURSE HAS BEEN INSPECTED AND APPROVED AND CERTIFIED BY THE CONSULTANT WITH RESPECT TO COMPACTION, FINISHED LEVELS AND TEXTURE OF FINISH. COMPACTION TESTS OF EACH LAYER ARE REQUIRED BEFORE PROCEEDING TO THE NEXT LAYER. ALL TEST RESULTS ARE TO BE PROVIDED TO COUNCIL'S NOMINATED REPRESENTATIVE PRIOR TO SURFACING.
13. SUBGRADE IS TO BE TRIMMED TO AN EVEN SURFACE FREE FROM LOOSE MATERIAL AND GRADED TO BE FREE-DRAINING. UNSUITABLE MATERIAL SUCH AS ORGANIC MATTER IS TO BE REMOVED. SUBGRADE AFFECTED BY RAINFALL AFTER FINAL TRIMMING SHALL NOT BE ACCEPTED UNTIL APPROPRIATE DRYING OUT TREATMENT HAS BEEN AFFECTED.
14. UNBOUND PAVEMENT COURSE MATERIAL IS TO BE PLACED ONLY ON UNDERLYING LAYERS MAINTAINED AT THE CORRECT MOISTURE CONTENT. PREPARED SUBGRADES AND PRECEDING LAYERS OF BASE COURSE SHALL BE MOISTENED IMMEDIATELY PRIOR TO SPREADING THE NEXT COURSE. PAVEMENT MATERIAL IS TO BE MAINTAINED AT THE SPECIFIED MOISTURE CONTENT PRIOR TO AND DURING SPREADING. THE LEADING EDGES OF THE PAVEMENT MATERIAL ARE TO BE KEPT MOIST. MINIMUM COMPACTED LAYER THICKNESS SHALL BE 100 MILLIMETRES AND MAXIMUM COMPACTED THICKNESS SHALL BE 150mm.
15. PRAM RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH MBRC STD DWG PC-2101A

CONCRETE PATHWAYS

CONCRETE PATHWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH IPWEA STD DWG RS-065

PAVEMENT DEPTH VERIFICATION

PAVEMENT DEPTHS SHALL BE VERIFIED BY THE PROVISION OF AS CONSTRUCTED LEVELS OF THE SUBGRADE AND PRE-SEAL STAGE (OR TOP OF KERB IF INSTALLED) AT A FREQUENCY OF THREE (3) LEVELS (RIGHT HAND SIDE, CENTRE AND LEFT HAND SIDE) EVERY 50 METRES. THE SURVEYED INFORMATION IS TO BE PROVIDED IN A TABULATED FORMAT AND IS TO BE CERTIFIED BY BOTH THE SURVEYOR AND CONSULTING ENGINEER PROVIDED WITH ON MAINTENANCE SUBMISSION.

SUBGRADE TESTING

A DESIGN CALIFORNIA BEARING RATION (CBR) IS TO BE DETERMINED FOR EACH IDENTIFIABLE UNIT DEFINED ON THE BASIS OF TOPOGRAPHY, GEOLOGICAL AND DRAINAGE CONDITION OF THE SITE. THE FOUR DAY SOAKED CBR AT A COMPACTION OF 100% STANDARD COMPACTION IS TO BE THE STANDARD TEST. TESTS ARE TO BE CARRIED OUT IN A NATA REGISTERED LABORATORY (NATIONAL ASSOCIATION OF TESTING AUTHORITIES). THE SAMPLING IS TO BE RANDOMLY LOCATED WITHIN EACH LENGTH OF THE PROPOSED ROADWAY WITH CONSTANT SUBGRADE MATERIAL. IT IS REQUIRED THAT A MINIMUM OF 1 TEST PER MATERIAL TYPE BE CARRIED OUT. THE LOCATION OF MATERIAL TYPE VARIANCES ARE TO BE DETAILED IN ACCORDANCE WITH SAMPLE TEST AND ADJOINING LOT. THE SAMPLES SHALL BE TAKEN GENERALLY IN THE POSITION OF THE OUTER WHEEL PATH ON BOTH SIDES OF THE PROPOSED ROAD. A SKETCH PLAN SHOWING THE LOCATION OF ALL TESTS IS TO BE SUBMITTED WITH THE TEST RESULTS.

ACCESS ROUTES.

THE CONTRACTOR MAY BE REQUIRED, FROM TIME TO TIME, DURING THE PERIOD OF CONSTRUCTION, TO CLEAN THOSE PARTS OF THE ACCESS ROUTE TO THE SITE THAT MAY BE AFFECTED BY ANY MATERIAL DROPPED, DEPOSITED OR SPILLED ON THE ROADS AS A RESULT OF CONSTRUCTION PROCESSES ASSOCIATED WITH THE SITE. ALL CONSTRUCTION TRAFFIC TO THE SUBJECT PROPERTY SHALL BE ACCESSED VIA BRISBANE ROAD.

DRIVEWAY NOTES:

ALL CONCRETE DRIVEWAYS ARE TO BE 3.0M. WIDE U.N.O., 125mm. THICK WITH F72 MESH, 50mm TOP COVER, ON A 75mm. THICK CBR15 GRAVEL BASE.
THE CONTRACTOR IS TO ENSURE THAT ALL SERVICE CONDUITS ARE IN PLACE BEFORE POURING THE DRIVEWAYS.
THE BACK OF KERB AND CHANNEL IS TO BE CUT DOWN AT ALL DRIVEWAY ENTRANCES.
THE EXACT LOCATION AND EXTENT OF THE DRIVEWAY WILL BE DETERMINED ON SITE BY THE SUPERVISING ENGINEER.

COMPACTION TESTING AND FREQUENCY

DETERMINATION OF THE COMPACTION PERFORMANCE OF THE SUBGRADE AND PAVEMENT GRAVEL MATERIALS -LABORATORY REFERENCE DENSITY, FIELD DENSITY, OPTIMUM MOISTURE CONTENT, FIELD MOISTURE CONTENT -SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1289 METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES, IN PARTICULAR THE E SERIES TESTS. THE LABORATORY REFERENCE DENSITY SHALL BE:

- NATURAL SUBGRADE - 100% STANDARD MAXIMUM DRY DENSITY (MDD)
- PAVEMENT UPPER AND LOWER SUB BASE LAYERS - 100% STANDARD MAXIMUM DRY DENSITY (MDD)
- PAVEMENT BASE LAYER - 100% STANDARD MAXIMUM DRY DENSITY (MDD)

THE MINIMUM FREQUENCY OF TESTING SHALL BE IN ACCORDANCE WITH COUNCIL'S PLANNING SCHEME POLICY OPERATIONAL WORKS INSPECTIONS, MAINTENANCE AND BONDING PROCEDURES. PLANNING SCHEME POLICY - INTEGRATED DESIGN - PAGE 45 OF 60.

A MINIMUM OF THREE (3) TESTS PER PROJECT WILL BE REQUIRED. A SKETCH PLAN SHOWING THE LOCATION OF THE TESTS IS TO BE SUBMITTED WITH THE RESULTS. ALL TESTS ARE TO BE DISTRIBUTED REASONABLY EVENLY THROUGH THE FULL DEPTH AND AREA OF PAVEMENT.

SURFACING

1. IN URBAN AND RURAL RESIDENTIAL AREAS, THE ASPHALTIC CONCRETE (A.C.) SURFACING THICKNESS IS TO BE:
   - 25mm (BCC TYPE 2) ON ACCESS TYPE STREETS AND LANEWAYS WITH TRAFFIC VOLUMES LESS THAN 4 X 105;
   - 50mm (BCC TYPE 3) FOR ARTERIAL AND SUB ARTERIAL ROADS; AND
   - 40mm (BCC TYPE 3) FOR ALL OTHER STREETS.

   IN COMMERCIAL AND INDUSTRIAL AREAS THE MINIMUM A.C. SURFACING THICKNESS IS TO BE 40mm.
2. WHERE STENCILED OR PATTERNED SURFACE TREATMENTS ARE PROPOSED AN ADDITIONAL 10mmSHALL BE ADDED TO THE DESIGN THICKNESS OF THE SURFACING. THE A.C. BINDER TYPE IS TO BE IN ACCORDANCE WITH AUSTROADS.
3. A.C. SURFACINGS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH BRISBANE CITY COUNCIL STANDARDS (BCC S310 SUPPLY OF DENSE GRADED ASPHALT AND S320 LAYING OF ASPHALT).
4. PRIMERS SEALS ARE REQUIRED TO BE PLACED UNDER ALL ASPHALT SURFACES. PRIMER SEALS SHALL CONSIST OF CUTBACK BITUMEN (AMC4) OR BITUMEN EMULSION TO MAIN ROADS SPECIFICATION (MRTS 11 SPRAYED BITUMINOUS SURFACINGS EXCLUDING EMULSIONS) AND MRTS 12 SPRAYED BITUMINOUS EMULSION SURFACINGS) WITH 10MM AGGREGATE. WHERE CUTBACK BITUMEN IS USED THE MINIMUM CURING TIME BEFORE THE NEXT SEALED LAYER (ASPHALT) CAN BE PLACED WILL BE FOURTEEN (14) DAYS. WHERE BITUMEN EMULSION IS USED THE MINIMUM CURING TIME BEFORE THE NEXT SEALED LAYER (ASPHALT) CAN BE PLACED WILL BE FOUR (4) DAYS.
5. IN RURAL AREAS AND WHERE SPECIFIED, BITUMEN SPRAY SEAL SURFACING IS TO BE PROVIDED IN THE FORM OF A 2 COAT POLYMER SPRAY SEAL (14MM/7MM) IN ACCORDANCE WITH MAIN ROAD TECHNICAL SPECIFICATIONS (MRTS 18 POLYMER MODIFIED BINDERS, MRTS 11 SPRAYED BITUMINOUS SURFACINGS EXCLUDING EMULSIONS).

THE DEGREE OF SATURATION OF BASE COURSE PRIOR TO SURFACING IS TO BE LESS THAN 65%. TEST RESULTS DEMONSTRATING DEGREE OF SATURATION ARE TO BE PROVIDED TO COUNCIL'S NOMINATED REPRESENTATIVE AT THE PRESEAL INSPECTION AND AS A PART OF THE ON MAINTENANCE DOCUMENTATION.

PAVEMENT

1. THE ROAD PAVEMENT ADOPTED WILL BE DETERMINED BY THE ENGINEER AND APPROVED BY MORETON BAY REGIONAL COUNCIL. THIS PAVEMENT SHALL BE BASED ON SOIL TESTS TAKEN AT FORMATION LEVEL.
2. ANY VARIATIONS TO THE NOMINAL PAVEMENT THICKNESS WILL BE PAID AT THE RATES SHOWN IN THE PRICED SCHEDULE OF RATES.

TOPSOIL

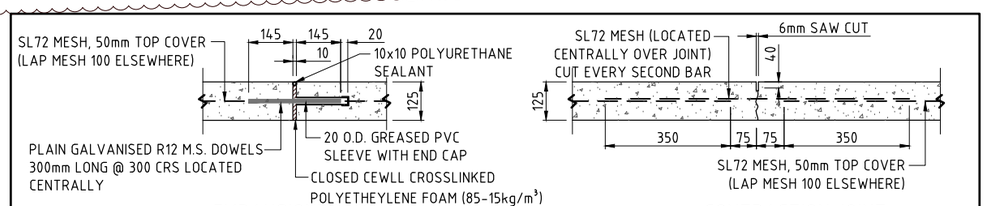
1. ALL TOPSOIL ON ROADWORK AREAS SHALL BE STRIPPED AND STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY ROADWORK OPERATIONS.
2. A TOPSOIL DEPTH OF 150mm. HAS BEEN USED TO DETERMINE TOPSOIL AND EARTHWORK QUANTITIES. THE CONTRACTOR IS TO SATISFY HIMSELF OF THE ACCURACY OF THESE QUANTITIES AND TO MAKE ANY NECESSARY ALLOWANCE IF HE DISAGREES WITH THEM.
3. A TOPSOIL RESPREAD DEPTH OF 250mm ON ALLOTMENTS HAS BEEN USED TO DETERMINE EARTHWORK QUANTITIES.

ROAD 2 (FLINDERS STREET) CONTROL LINE DETAILS

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	480653.667	7014740.239	187°29'57.03"			
TC	75.456	480643.820	7014665.428	187°29'57.03"			
IP 2	86.452	480641.992	7014651.548		R = -14.000	21.991	90°00'00.00"
CT	97.447	480655.873	7014649.721	97°29'57.03"			
TC	275.447	480832.350	7014626.490	97°29'57.03"			
IP 3	279.077	480836.032	7014626.005		R = -14.000	7.260	29°42'37.84"
CT	282.707	480839.470	7014627.409	67°47'19.19"			
IP 4	294.259	480850.164	7014631.776	67°47'19.19"			

ROAD 3 (MUSTER STREET & FLINDERS STREET) CONTROL LINE DETAILS

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	480858.894	7014713.201	187°29'57.03"			
TC	74.434	480849.180	7014639.404	187°29'57.03"			
IP 2	86.215	480847.222	7014624.532		R = -15.000	23.562	90°00'00.00"
CT	97.996	480862.094	7014622.574	97°29'57.03"			
TC	196.535	480959.789	7014609.714	97°29'57.03"			
IP 3	203.608	480966.861	7014608.783		R = -45.000	14.147	18°00'45.00"
CT	210.682	480973.873	7014610.085	79°29'12.03"			
TC	234.589	480997.380	7014614.447	79°29'12.03"			
IP 4	245.192	481010.653	7014616.910		R = 13.500	21.206	90°00'00.00"
CT	255.795	481013.116	7014603.637	169°29'12.03"			
TC	278.295	481017.222	7014581.514	169°29'12.03"			
IP 5	291.345	481019.623	7014568.577		R = 83.000	26.099	18°01'00.07"
CT	304.395	481017.904	7014555.531	187°30'12.10"			
TC	396.875	481005.828	7014463.843	187°30'12.10"			
IP 6	423.186	481001.453	7014430.629		R = 33.500	52.622	90°00'00.00"
CT	449.497	480968.240	7014435.004	277°30'12.10"			
TC	641.596	480777.786	7014460.089	277°30'12.10"			
IP 7	652.593	480763.903	7014461.918		R = 14.000	21.994	90°00'44.90"
CT	663.590	480765.735	7014475.800	7°30'57.00"			
TC	721.680	480773.333	7014533.392	7°30'57.00"			
IP 8	732.678	480775.165	7014547.276		R = -14.000	21.995	90°00'59.97"
CT	743.676	480761.281	7014549.103	277°29'57.03"			
TC	863.314	480642.666	7014564.718	277°29'57.03"			
IP 9	874.309	480628.785	7014566.545		R = 14.000	21.991	90°00'00.00"
CT	885.305	480630.613	7014580.425	7°29'57.03"			
IP 10	943.305	480638.182	7014637.929				
IP 11	947.459	480638.741	7014642.173		R = 14.000	8.308	34°00'07.78"
IP 12	951.613	480641.577	7014645.379				
IP 13	961.944	480648.423	7014653.116	41°30'02.74"			



EXPANSIONION JOINT
(16m CENTRES MAXIMUM)

CONTRACTION JOINT
(4m CENTRES MAXIMUM)

CONCRETE DRIVEWAYS TO SINGLE LOTS DETAILS

1. ALL CONCRETE DRIVEWAYS TO SINGLE LOTS ARE TO BE 3.0m WIDE U.N.O, GRADE N25 CONCRETE, 125mm THICK WITH SL72 MESH, 50mm TOP COVER, ON A 75mm CBR 15 GRAVEL BASE.
2. THE CONTRACTOR IS TO ENSURE THAT ALL SERVICE CONDUITS ARE IN PLACE BEFORE POURING THE DRIVEWAYS.
3. THE BACK OF KERB AND CHANNEL IS TO BE CUT DOWN AT ALL DRIVEWAY ENTRANCES. FOR DETAILS SEE MBRC STD DWGS RS-049 & RS 050
4. THE SUPERVISING ENGINEER IS TO BE NOTIFIED PRIOR TO POURING CONCRETE FOR INSPECTION OF PLACED MESH
5. THE EXACT LOCATION AND EXTENT OF THE DRIVEWAY WILL BE DETERMINED ON SITE BY THE SUPERVISING ENGINEER.
6. EXPANSION AND CONTRACTION JOINTS TO BE CONSTRUCTED IN ACCORDANCE WITH ABOVE DETAILS.

A

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NORTH:

SCALE: NOT TO SCALE — THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE — A1
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

ISSUE:

A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ
ISSUE:	DETAILS:	DATE:	INIT:

APPROVED — FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
☐ T.McKINNEY RPEQ 5087 ☑ A.FRASER RPEQ 5691 ☐ J.PAPPAS RPEQ 6086 ☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

TITLE: ROADWORKS DETAILS PLAN

DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: R02 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS.DWG

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BRISBANE - SUNSHINE COAST - CENTRAL QLD
SUNSHINE COAST
T209, Kon-Tiki Tower 1, 55 Plaza Parade,
Maroochydore Qld 4558
P 07 5450 3900 W www.jfp.com.au
JFP URBAN CONSULTANTS PTY. LTD. A.C.N. 050 414 043
PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

DENNIS FAMILY CORPORATION

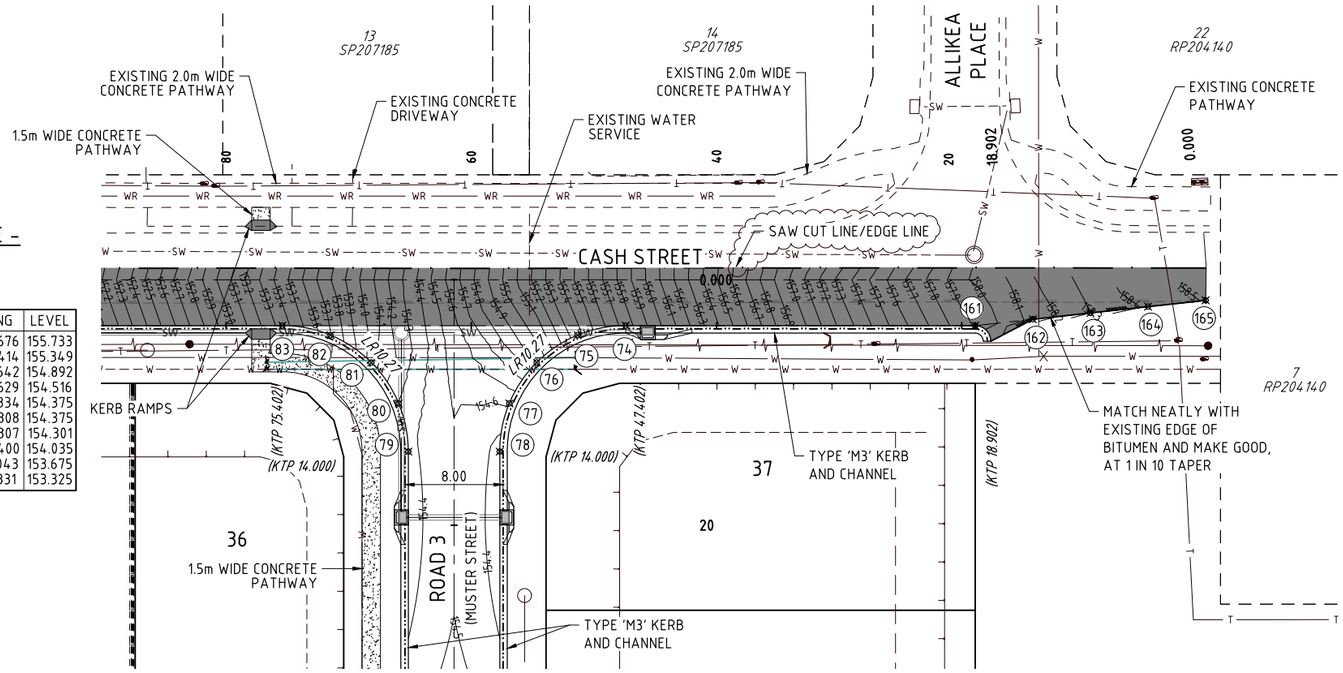
Approved Subject to Conditions of Decision Notice DA/2021/1694

LEGEND:

PAVEMENT CONTOURS — 15.2
PROPOSED KERB AND CHANNEL
PROPOSED STORMWATER — SW
SEWERAGE — S
WATER MAIN — W
EXISTING KERB AND CHANNEL
EXISTING U/G ELECTRICAL — E
TELSTRA — T
ROAD WIDENING PAVEMENT EXTENTS
KERB TRANSITION
KERB RAMP
BOLLARDS @ 1.5m CENTRES

LIP OF KERB SETOUT TABLE - CASH STREET AND ROAD 3 (MUSTER STREET)

PT No.	TYPE	EASTING	NORTHING	LEVEL
74	KTP	480872.288	7014707.676	155.733
75	QTR	480868.289	7014707.414	155.349
76	QTR	480864.695	7014705.642	154.892
77	QTR	480862.053	7014702.629	154.516
78	KTP	480860.765	7014698.834	154.375
79	KTP	480853.369	7014699.808	154.375
80	QTR	480853.107	7014703.807	154.301
81	QTR	480851.334	7014707.400	154.035
82	QTR	480848.322	7014710.043	153.675
83	KTP	480844.527	7014711.331	153.325

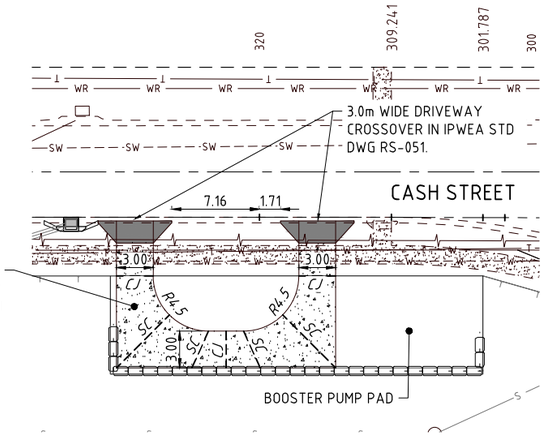


INTERSECTION DETAIL - CASH STREET & ROAD 3
SCALE 1:250

TAPER DETAIL - CASH STREET WIDENINIG
SCALE 1:250

LIP OF KERB SETOUT TABLE - CASH STREET TAPER

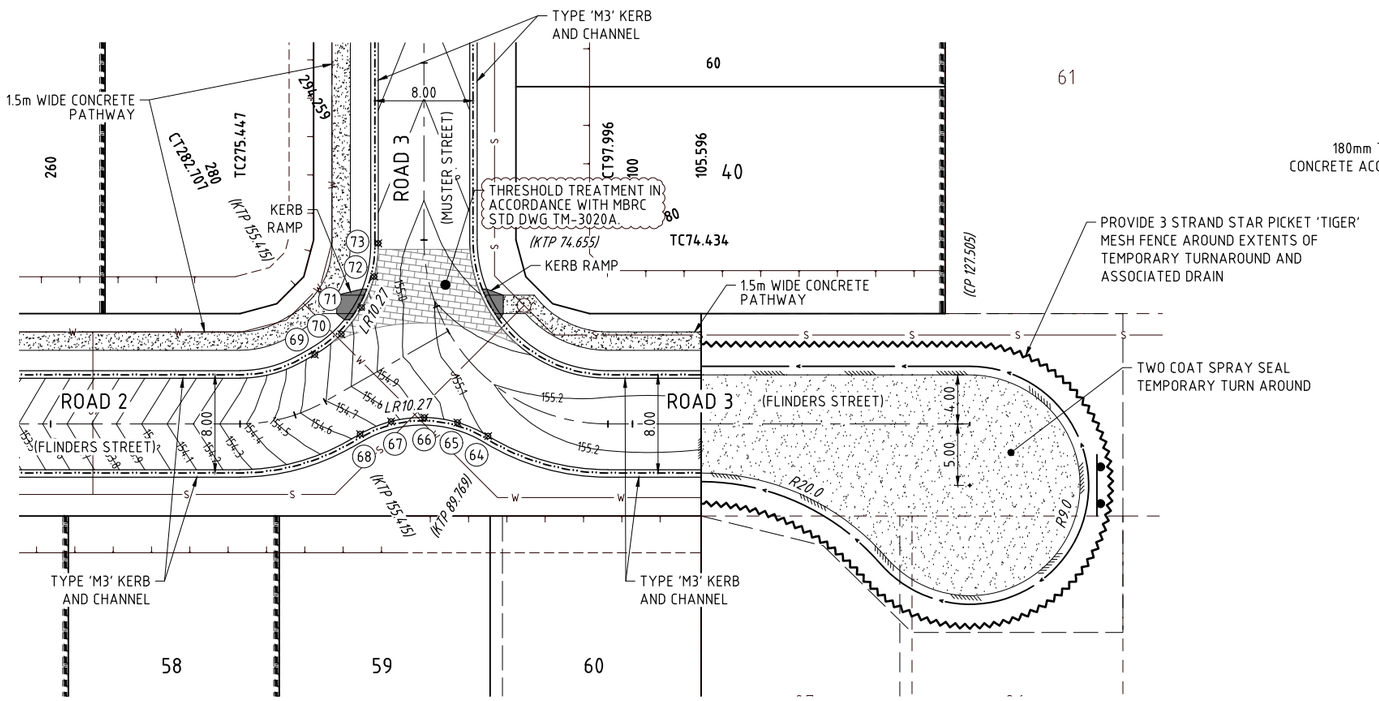
PT No.	TYPE	EASTING	NORTHING	LEVEL
161	KTP	480900.544	7014703.957	157.909
162	QTR	480905.268	7014703.855	158.126
163	QTR	480909.993	7014703.754	158.295
164	QTR	480914.717	7014703.652	158.414
165	IP	480919.442	7014703.551	158.509



BOOSTER PUMP SITE DRIVEWAY
SCALE 1:250

LIP OF KERB SETOUT TABLE - ROAD 2 AND ROAD 3 (FLINDERS STREET & MUSTER STREET)

PT No.	TYPE	EASTING	NORTHING	LEVEL
64	KTP	480852.284	7014622.874	155.105
65	QTR	480849.949	7014624.293	155.045
66	QTR	480847.324	7014625.045	154.915
67	QTR	480844.592	7014625.079	154.762
68	KTP	480841.949	7014624.392	154.634
69	KTP	480839.129	7014631.299	154.634
70	QTR	480841.498	7014632.658	154.747
71	QTR	480843.425	7014634.594	154.856
72	QTR	480844.773	7014636.970	154.928
73	KTP	480845.447	7014639.617	154.930



INTERSECTION DETAIL - ROAD 2 & ROAD 3
SCALE 1:250

NOTE: ALL RADII ARE MEASURED TO THE LIP OF THE KERB AND CHANNEL.
◑ 1.8m LENGTH TRANSITION BETWEEN KERB TYPES UNLESS SHOWN OTHERWISE.

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPENCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY WORK.

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URBAN DESIGNERS
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ENGINEERS
LANDSCAPE ARCHITECTS

NORTH: N

SCALE: 1:250 THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
A1 0 2.5 5 7.5 10 12.5 (A1) 1:250 25 Metres (A3) 1:500
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
☐ T.M°KINNEY RPEQ 5087 ☑ A.FRASER RPEQ 5691 ☐ J.PAPPAS RPEQ 6086
☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV	
DRAWN	BJ	
CHECKED	HW	
DATUM: AHD		

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
C	EXTENT OF ROAD WIDENING AMENDED	14/07/21	CDV
B	BOOSTER PUMP DRIVEWAY ADDED	07/04/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
ROADWORKS INTERSECTION DETAILS PLAN

DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: R03 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: INTERSECTION.DWG

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

2207/001 K:\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\INTERSECTION

CONTRACTOR TO NOTIFY SUPERINTENDENT IF WORKS TO EXISTING KERB & PAVEMENT IS REQUIRED TO ENSURE ADEQUATE & FREE DRAINING CONNECTION TO EXISTING ROAD

NOTES:

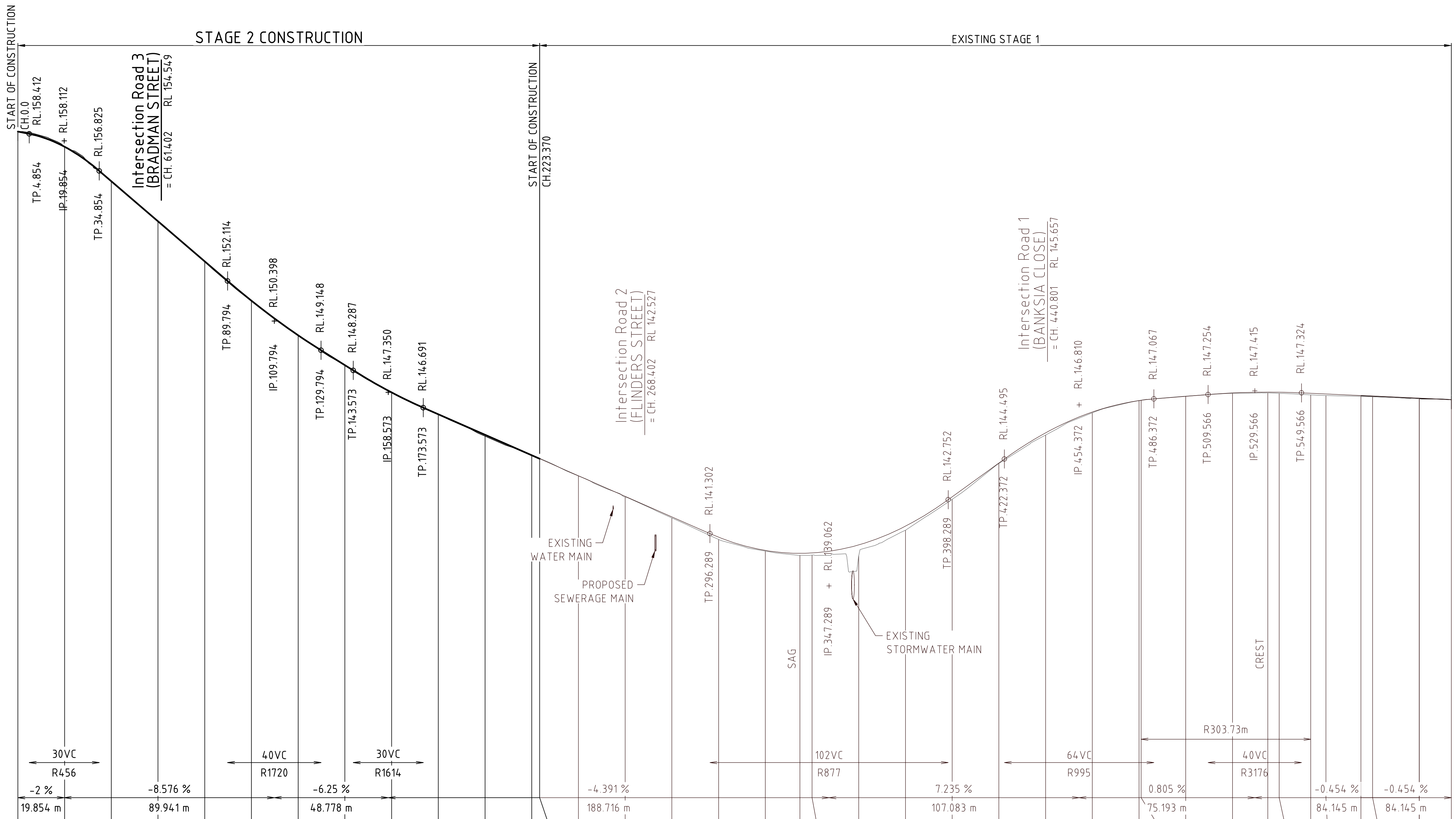
ASSUMED TOPSOIL DEPTH 150mm

ULTIMATE PAVEMENT DEPTHS ARE DETERMINED BY SOIL TESTS TAKEN AT FORMATION LEVEL.

ESA's $1.2x10^5$
"LIVING RESIDENTIAL" - ACCESS STREET

NOMINAL PAVEMENT
CH **0.000** TO CH **223.370**
25mm AC (BCC TYPE 2)
125mm BASE COURSE (CBR 60)
215mm SUB-BASE COURSE (CBR 45)

✳ REFER INTERSECTION DETAILS FOR LIP OF KERB LEVELS ON DWG No. **M2584E_2 R03**



DATUM R.L.129.0

PEGGED CHAINAGE ALONG CONTROLLINE	LHS LIP OF KERB LEVELS	RHS LIP OF KERB LEVELS	CUT (-ve) FILL	PAVEMENT LEVELS ALONG CONTROLLINE	SURFACE LEVELS ALONG CONTROLLINE
0.000	158.509		0.000	158.509	158.509
20.000	157.857		-0.017	157.857	157.874
40.000	156.384		-0.021	156.384	156.405
60.000	✳		-0.022	154.669	154.690
80.000	152.954		0.023	152.954	152.931
100.000	151.269		0.006	151.269	151.262
120.000	149.788		0.003	149.788	149.785
140.000	148.510		-0.000	148.510	148.511
160.000	147.344		0.010	147.344	147.334
180.000	146.409		0.008	146.409	146.400
200.000	145.530		0.059	145.530	145.471
220.000	144.652		-0.011	144.652	144.663
223.370					
240.000	✳		0.004	143.774	143.770
260.000	✳		0.026	142.896	142.869
280.000	✳		0.047	142.017	141.970
300.000	✳		0.094	141.147	141.053
320.000	140.581		0.028	140.581	140.553
334.816	140.456		0.084	140.456	140.372
340.000	140.471		0.091	140.471	140.380
360.000	140.817		0.459	140.817	140.358
380.000	141.620		0.174	141.620	141.445
400.000	142.876		0.105	142.876	142.770
420.000	144.323		0.021	144.323	144.302
440.000	✳		0.092	145.614	145.522
460.000	146.506		0.038	146.506	146.468
480.000	146.996		0.003	146.996	146.993
480.919	147.009		0.000	147.009	147.009
500.000	147.177		-0.005	147.177	147.182
520.000	147.321		0.013	147.321	147.308
535.140	147.357		0.035	147.357	147.322
540.000	147.353		0.048	147.353	147.305
553.520	147.306		0.068	147.306	147.239
560.000	147.277		0.068	147.277	147.209
575.000	147.209		0.029	147.209	147.180
580.000	147.186		0.023	147.186	147.163
600.000	147.095		0.021	147.095	147.075
3.711			0.000	147.033	147.033

LONGITUDINAL SECTION - CASH STREET

("LIVING RESIDENTIAL" - ACCESS STREET CH.0.000 - CH.223.370)

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PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH:

SCALE:
Horizontal 1:1000
Vertical 1:100
A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
0 10 20 30 40 50 (A1) 1:1000 100
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

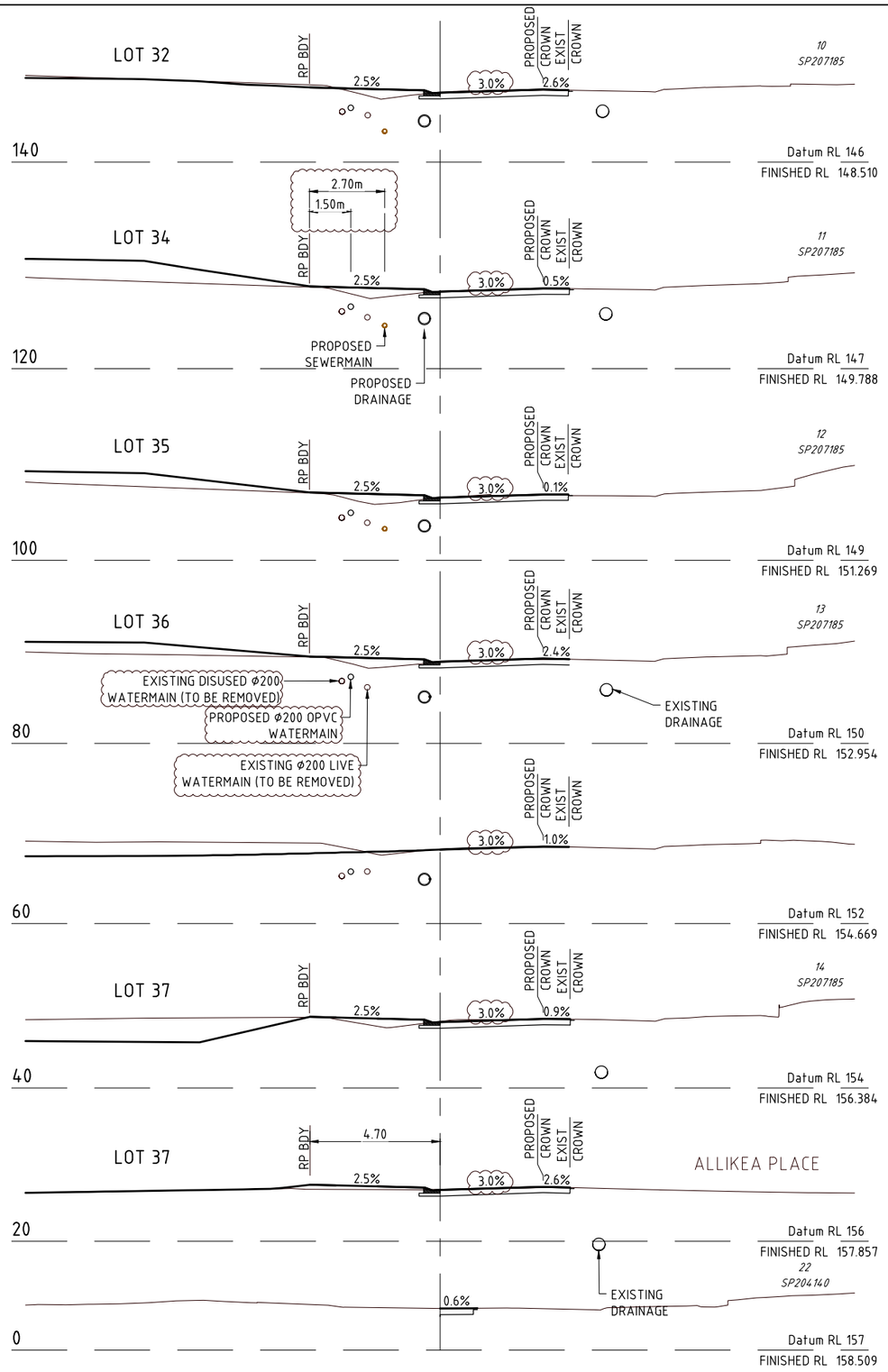
ISSUE:	DETAILS:	DATE:	INIT:
B	GRADING AMENDED TO ACHIEVE STD CROSSFALLS	7/7/21	WN
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

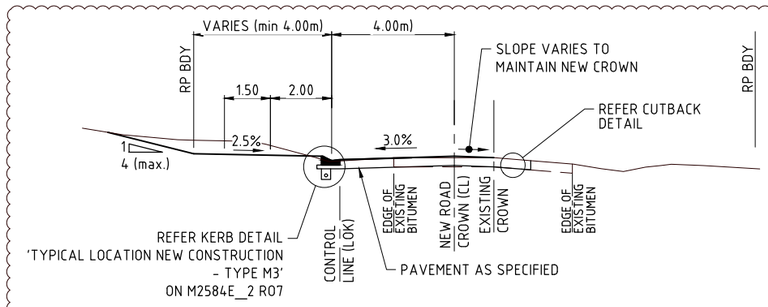
TITLE:
ROADWORKS LONGITUDINAL SECTION CASH STREET
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: R04 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

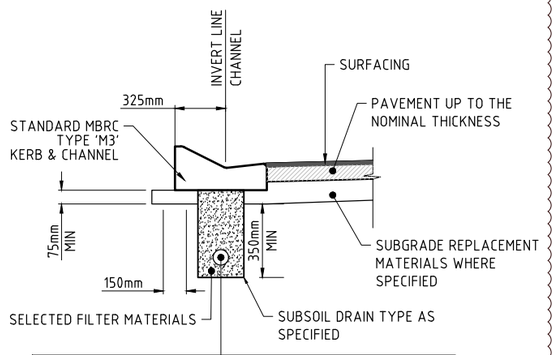
22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\ROADWORKS SECTIONS





CASH STREET - TYPICAL CROSS SECTION

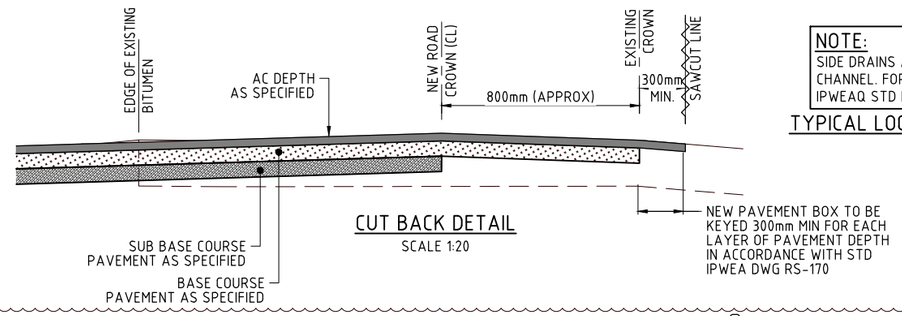
"LIVING RESIDENTIAL" ACCESS STREET/LOCAL COLLECTOR ROAD (40km/hr)
SCALE 1 : 100



NOTE:
SIDE DRAINS ARE TO BE LOCATED UNDER ALL KERB AND CHANNEL. FOR DETAILS OF SIDE DRAIN CONSTRUCTION REFER TO IPWEAQ STD DRAWING RS-140 & RS-142

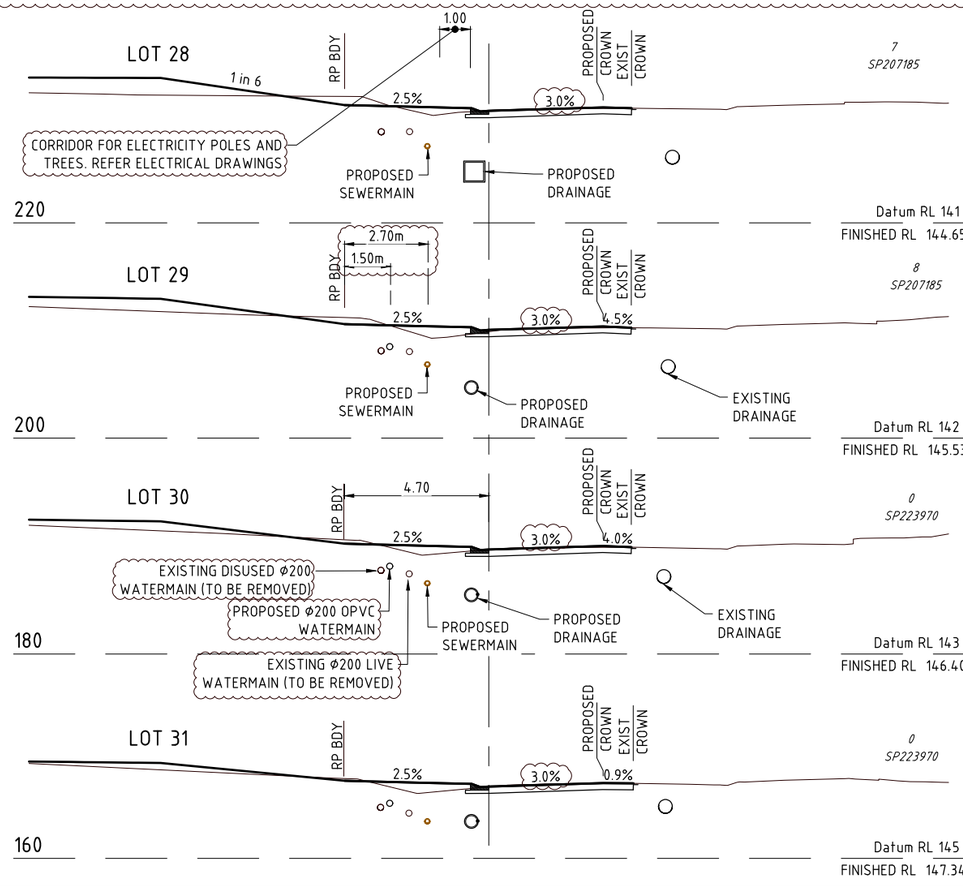
TYPICAL LOCATION NEW CONSTRUCTION - TYPE M3

SCALE 1:20



CUT BACK DETAIL

SCALE 1:20



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NORTH:

SCALE:
1:100
A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
(A3) 1:200
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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A.FRASER RPEQ 5691
J.PAPPAS RPEQ 6086
S.MARSH RPEQ 8068

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
C	EXTENT OF ROAD WIDENING AMENDED	7/7/21	WN
B	RFI AMENDMENTS	7/7/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
ROADWORKS CROSS SECTIONS CASH STREET
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: R05 ISSUE: C
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

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2/07/2021 N:\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\ROADWORKS\ROADWORKS SECTIONS

NOTES:

ASSUMED TOPSOIL DEPTH 150mm

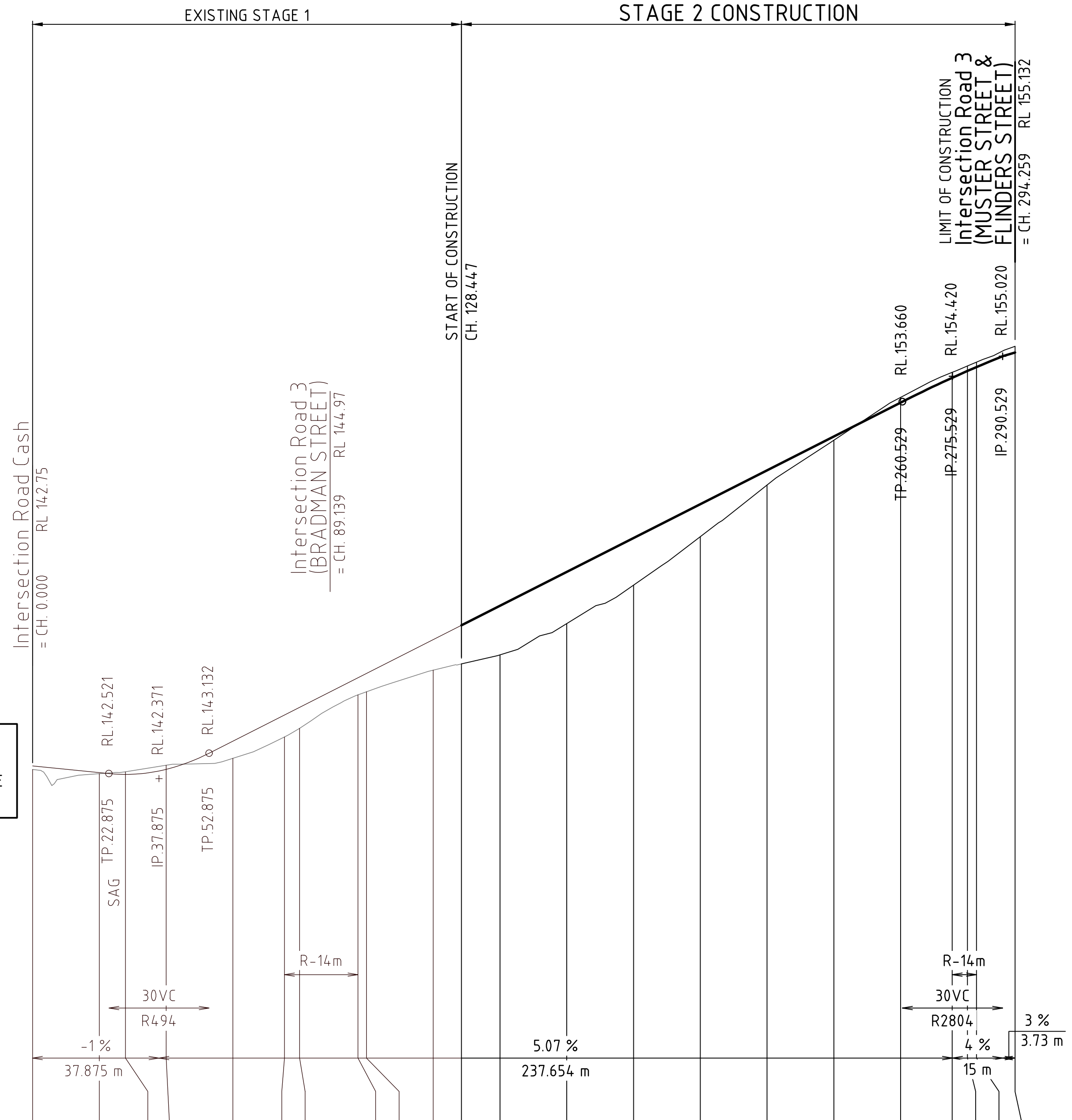
ULTIMATE PAVEMENT DEPTHS ARE DETERMINED BY SOIL TESTS TAKEN AT FORMATION LEVEL.

ESA's 1.2×10^5
"LIVING RESIDENTIAL" - ACCESS STREET

NOMINAL PAVEMENT
CH **128.447** TO CH **294.259**
25mm AC (BCC TYPE 2)
125mm BASE COURSE (CBR 60)
215mm SUB-BASE COURSE (CBR 45)

✳ REFER INTERSECTION DETAILS FOR LIP OF KERB LEVELS ON DWG No. **M2584E_2 R03**

CONTRACTOR TO NOTIFY SUPERINTENDENT IF WORKS TO EXISTING KERB & PAVEMENT IS REQUIRED TO ENSURE ADEQUATE & FREE DRAINING CONNECTION TO EXISTING ROAD



HORIZ. CURVE DATA

V.C.LENGTH (m)
RADIUS OF CURVATURE

TANGENT GRADE (%)
DISTANCE IP-IP

DATUM R.L.132.0

PEGGED CHAINAGE ALONG CONTROLLINE	LHS LIP OF KERB LEVELS	RHS LIP OF KERB LEVELS	CUT (-ve) FILL	PAVEMENT LEVELS ALONG CONTROLLINE	SURFACE LEVELS ALONG CONTROLLINE
0.000	✳	✳	0.105	142.750	142.645
20.000	✳	✳	0.031	142.550	142.519
27.817	142.385	142.385	-0.077	142.497	142.574
40.000	142.535	142.535	-0.125	142.647	142.772
60.000	143.381	143.381	0.514	143.493	142.979
75.456	144.165	144.165	0.659	144.277	143.618
80.000	144.395	144.395	0.631	144.507	143.876
97.447	145.280	✳ 145.280	0.512	145.392	144.880
100.000	145.409	145.409	0.550	145.521	144.971
120.000	146.423	146.423	0.916	146.535	145.619
128.447					
140.000	147.437	147.437	1.473	147.549	146.076
160.000	148.451	148.451	1.548	148.563	147.015
180.000	149.465	149.465	1.413	149.577	148.164
200.000	150.479	150.479	0.974	150.591	149.617
220.000	151.493	151.493	0.438	151.605	151.166
240.000	152.507	152.507	0.113	152.619	152.505
260.000	153.521	153.521	-0.157	153.633	153.790
275.447	154.264	154.264	-0.161	154.376	154.537
280.000	154.467	154.467	-0.149	154.579	154.728
282.707	✳	✳	-0.147	154.696	154.844
294.259	✳	✳		155.318	155.132

LONGITUDINAL SECTION - ROAD 2 (FLINDERS STREET)

("LIVING RESIDENTIAL" - ACCESS STREET CH.128.447 - END)

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PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH:

SCALE: Horizontal 1:1000 Vertical 1:100 A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
0 10 20 30 40 50 (A1) 1:1000 100
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
☐ T.McKINNEY RPEQ 5087 ☑ A.FRASER RPEQ 5691 ☐ J.PAPPAS RPEQ 6086
☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

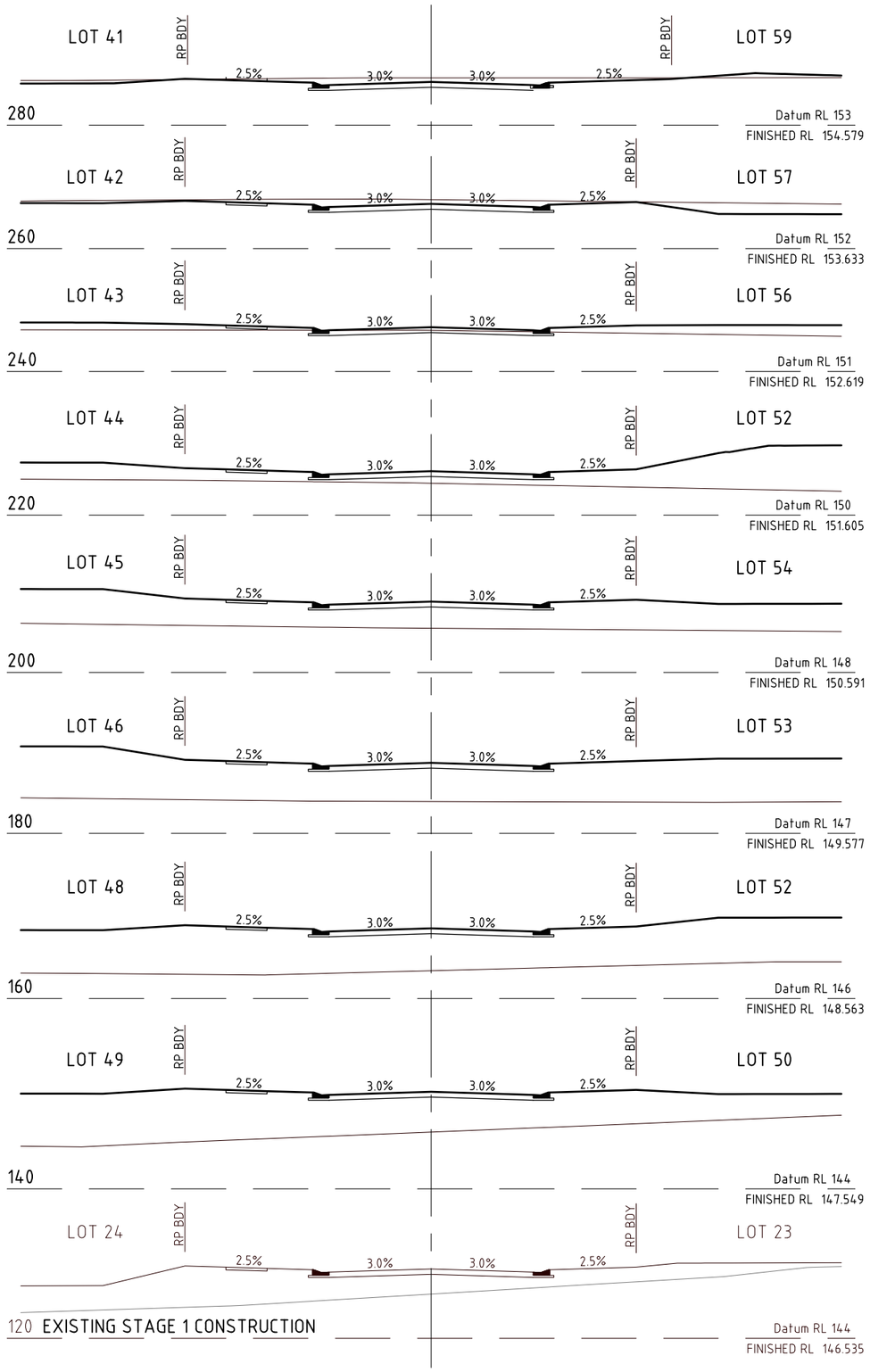
ISSUE:	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

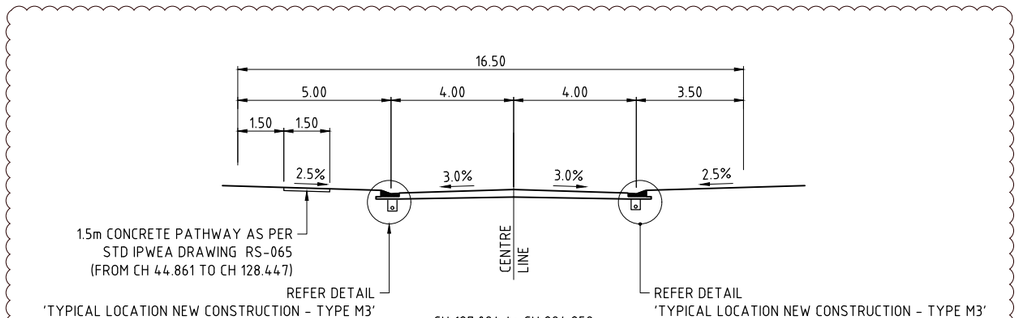
TITLE:
ROADWORKS LONGITUDINAL SECTION
ROAD 2 (FLINDERS STREET)
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: R06 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\ROADWORKS SECTIONS

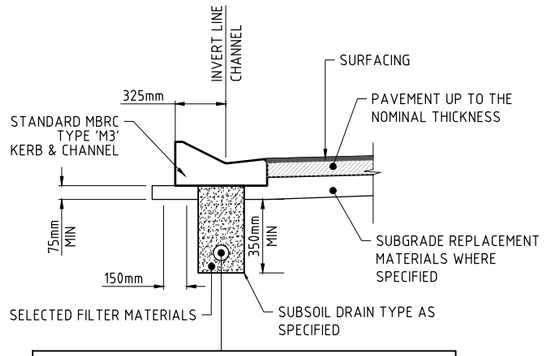




CH 127.084 to CH 294.259

TYPICAL CROSS SECTION - TYPE M3

(TYPE M3 - RESIDENTIAL ROAD 2)
SCALE 1 : 100



NOTE:
SIDE DRAINS ARE TO BE LOCATED UNDER ALL KERB AND CHANNEL. FOR DETAILS OF SIDE DRAIN CONSTRUCTION REFER TO IPWEAQ STD DRAWING RS-140 & RS-142

TYPICAL LOCATION NEW CONSTRUCTION - TYPE M3

SCALE 1:20

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step

NORTH:

SCALE: 1:100 A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
(A3) 1:200
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
B	RFI AMENDMENTS	7/7/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

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PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

TITLE:
ROADWORKS CROSS SECTIONS ROAD 2 (FLINDERS STREET)
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: R07 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

NOTES:

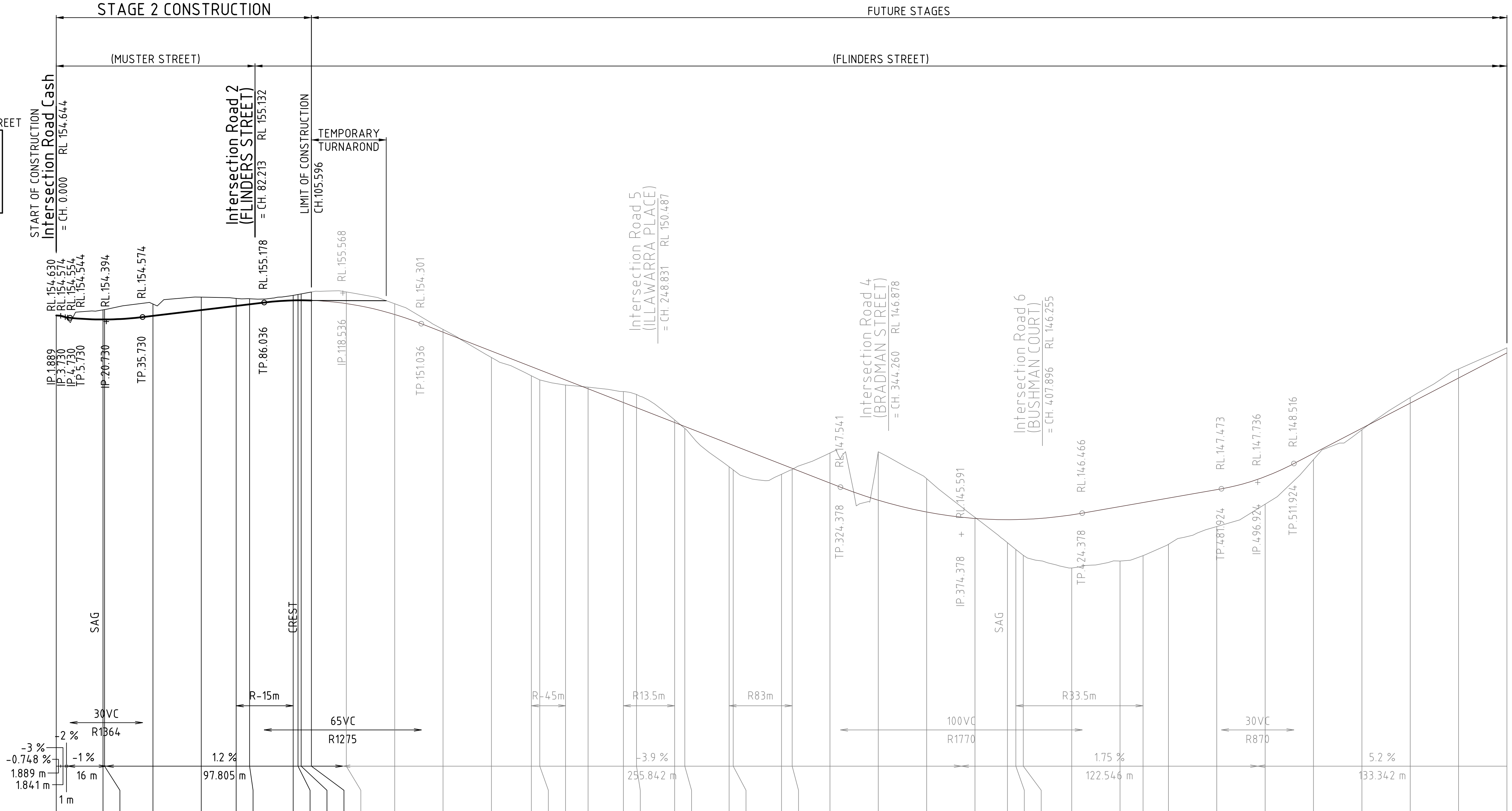
ASSUMED TOPSOIL DEPTH 150mm

ULTIMATE PAVEMENT DEPTHS ARE DETERMINED BY SOIL TESTS TAKEN AT FORMATION LEVEL.

ESA's $1.2x10^5$
"LIVING RESIDENTIAL" - ACCESS STREET

NOMINAL PAVEMENT
CH **0.000** TO CH **105.596**
25mm AC (BCC TYPE 2)
125mm BASE COURSE (CBR 60)
215mm SUB-BASE COURSE (CBR 45)

✳ REFER INTERSECTION DETAILS FOR LIP OF KERB LEVELS ON DWG No. **M2584E_2 R03**



HORIZ. CURVE DATA

V.C.LENGTH (m)
RADIUS OF CURVATURE

TANGENT GRADE (%)
DISTANCE IP-IP

DATUM R.L.134.0

PEGGED CHAINAGE ALONG CONTROLLINE	LHS LIP OF KERB LEVELS	RHS LIP OF KERB LEVELS	CUT (-ve) FILL	PAVEMENT LEVELS ALONG CONTROLLINE	SURFACE LEVELS ALONG CONTROLLINE
0.000			0.000	154.644	154.644
19.367	✳ 154.364	✳ 154.364	-0.398	154.476	154.874
20.000	154.364	154.364	-0.409	154.476	154.885
40.000	154.514	154.514	-0.492	154.626	155.117
60.000	154.754	154.754	-0.534	154.866	155.400
74.434	154.927	154.927	-0.307	155.039	155.346
80.000	154.994	✳	-0.226	155.106	155.332
97.996	155.153	155.153	-0.207	155.265	155.473
100.000	155.157	155.157	-0.241	155.269	155.510
101.331	155.158	155.158	-0.265	155.270	155.534
105.596					
120.000	155.021	155.021	-0.480	155.133	155.613
140.000	154.571	154.571	-0.443	154.683	155.126
160.000	153.839	153.839	-0.114	153.951	154.065
180.000	153.059	153.059	0.268	153.171	152.903
196.535	152.415	152.415	0.380	152.526	152.147
200.000	152.279	152.279	0.413	152.391	151.978
210.682	151.863	151.863	0.210	151.975	151.765
220.000	151.499	151.499	-0.066	151.611	151.677
234.589	150.931	150.931	-0.452	151.042	151.495
240.000	150.720	150.720	-0.544	150.831	151.375
255.795	✳	150.104	-0.106	150.216	150.322
260.000	149.940	149.940	0.081	150.052	149.971
278.295	149.226	149.226	0.957	149.338	148.381
280.000	149.160	149.160	1.018	149.272	148.254
300.000	148.381	148.380	0.420	148.492	148.072
304.395	148.209	148.209	0.049	148.320	148.272
320.000	147.601	147.600	-1.242	147.712	148.954
340.000	146.890	✳	-1.997	147.001	148.998
360.000	146.400	146.399	-1.382	146.511	147.892
380.000	146.135	146.134	-0.043	146.246	146.289
393.404	146.084	146.083	0.949	146.195	145.247
396.875	146.088	146.087	1.237	146.199	144.961
400.000	✳	146.096	1.489	146.208	144.719
420.000	146.284	146.283	2.197	146.395	144.198
440.000	146.628	146.628	2.257	146.740	144.483
449.497	146.794	146.794	2.198	146.906	144.708
460.000	146.978	146.978	1.913	147.090	145.177
480.000	147.328	147.328	1.528	147.440	145.912
500.000	147.866	147.866	1.140	147.977	146.838
520.000	148.824	148.824	0.254	148.936	148.682
540.000	149.864	149.864	0.063	149.976	149.913
560.000	150.904	150.904	-0.229	151.016	151.245
580.000	151.944	151.944	-0.374	152.056	152.430
600.000	152.984	152.984	-0.209	153.096	153.305

LONGITUDINAL SECTION - ROAD 3 (MUSTER STREET & FLINDERS STREET)

("LIVING RESIDENTIAL" - ACCESS STREET CH.0.0 - 105.596)

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URBAN DESIGNERS
SURVEYORS
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LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

NORTH:

SCALE:
Horizontal 1:1000
Vertical 1:100
A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
0 10 20 30 40 50 (A1) 1:1000 100
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

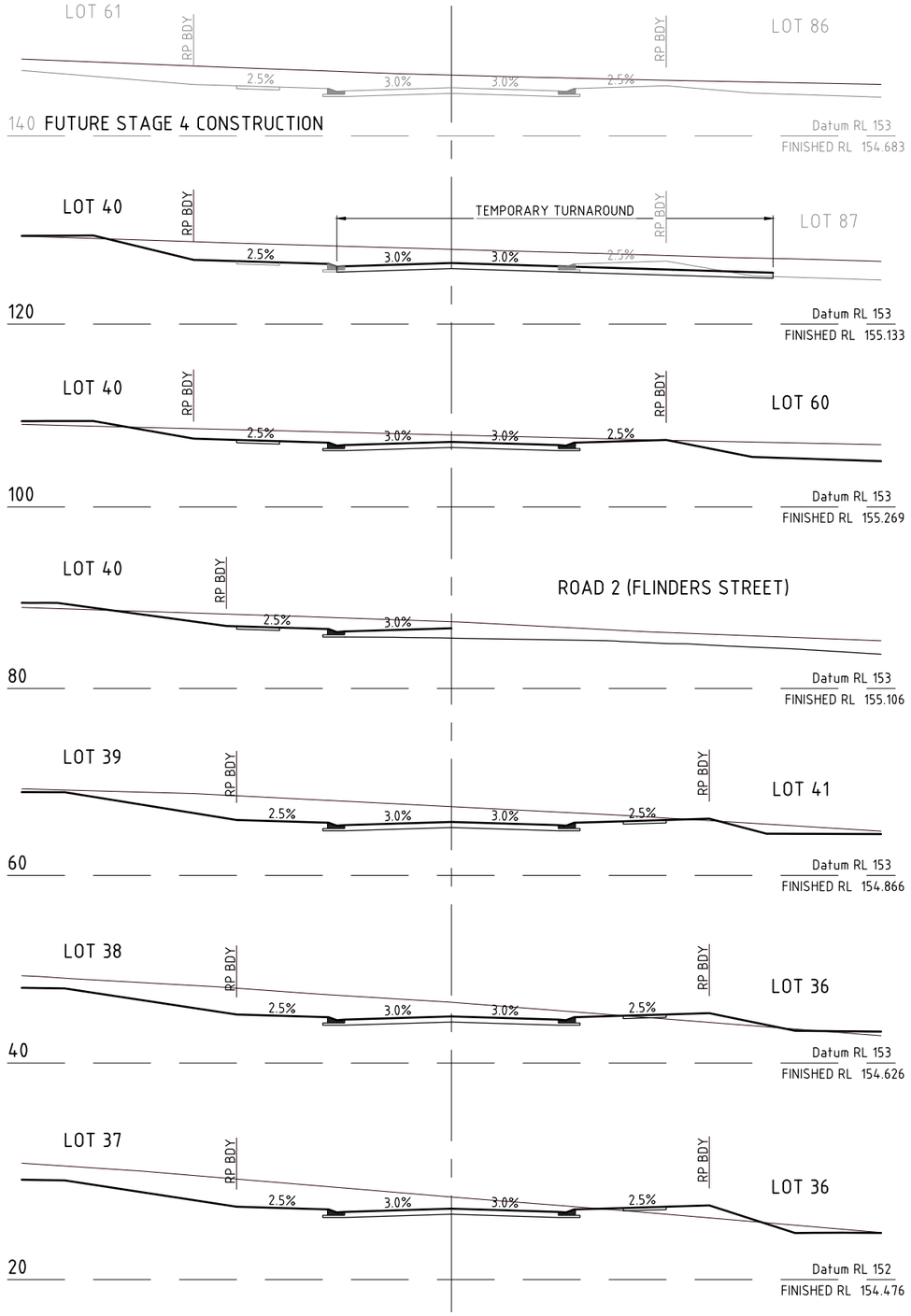
ISSUE:	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

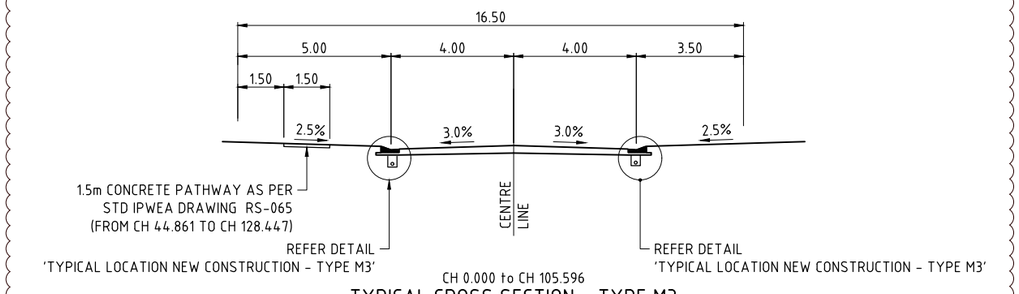
TITLE:
ROADWORKS LONGITUDINAL SECTION
ROAD 3 (MUSTER STREET & FLINDERS STREET)
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: R08 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

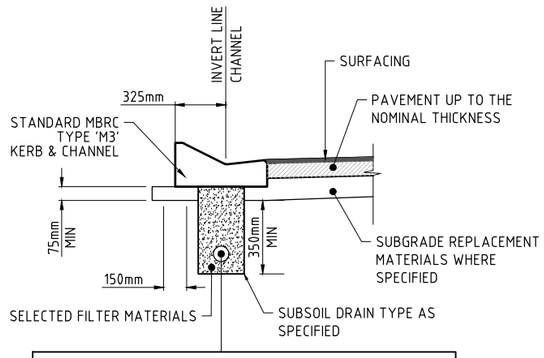
22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\ROADWORKS SECTIONS





TYPICAL CROSS SECTION - TYPE M3

(TYPE M3 - RESIDENTIAL ROAD 3)
SCALE 1 : 100



NOTE:
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TYPICAL LOCATION NEW CONSTRUCTION - TYPE M3

SCALE 1:20

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NORTH:

SCALE: 1:100 A1

THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 1 2 3 4 5 (A1) 1:100 10 Metres
(A3) 1:200
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
B	RFI AMENDMENTS	7/7/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:

ROADWORKS CROSS SECTIONS
ROAD 3 (MUSTER STREET & FLINDERS STREET)

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:

PROJECT:	PLAN:	ISSUE:
M2584E_2	R09	B

LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: ROADWORKS SECTIONS.DWG

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SUNSHINE COAST
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PLANNERS
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ENGINEERS
LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

AKOONAH WAY

ALLIKEA PLACE

CASH STREET

CASH STREET

ROAD 2 (FLINDERS STREET)

ROAD 3 (MUSTER STREET)

ROAD 3 (BRADMAN STREET)

EXISTING STAGE 1

ROAD 2 (FLINDERS STREET)

ROAD 3 (FLINDERS STREET)

ROAD 3 (BRADMAN STREET)

ROAD 4 (BRADMAN STREET)

PATHWAY

FUTURE STAGE 3

FUTURE STAGE 4

STREET NAME

G5-2

NO THROUGH ROAD

G5-10

GIVE WAY

R1-2A

D4-5
TO BE RELOCATED TO NEW STAGE 2 TEMPORARY TURNAROUND

D4-5
RELOCATED FROM STAGE 1 TEMPORARY TURNAROUND

TEMPORARY TURNAROUND
TO BE REMOVED

TEMPORARY TURNAROUND

GWL

SL

LL

6 SP207185
7 SP207185
8 SP207185
1 SP223970\SP223970
10 SP207185
11 SP207185
12 SP207185
13 SP207185
14 SP207185
22 RP204140
7 RP204140

LEGEND

SL	- SEPARATION LINE
BL	- BARRIER LINE
LL	- LANE LINE
EL	- EDGE LINE
CL	- CONTINUITY LINE
TL	- TURN LINE
OL	- PAINTED ISLAND
NSL	- NO STOPPING LINES
SPL	- STOP LINE
GWL	- GIVEWAY LINE
CW	- CROSSWALK LINE

NOTES

1. ALL PAVEMENT MARKING AND TRAFFIC SIGNS TO BE INSTALLED IN ACCORDANCE WITH THE QUEENSLAND DEPARTMENT OF MAIN ROADS, MANUAL OF UNIFORM TRAFFIC CONTROLS DEVICES (MUTCD).
2. TRAFFIC ISLAND NOSES ARE TO BE PAINTED WITH WHITE REFLECTORISED PAINT.
3. RAISED REFLECTORISED PAVEMENT MARKERS (RRPM's) ARE TO BE PLACED IN ACCORDANCE WITH M.U.T.C.D. - PART 2 SECTION 4.6.5.3.
4. INSTALL TGS1 ON ALL RAMPED KERB CROSSINGS IN ACCORDANCE WITH M.B.R.C. STANDARD DRAWING PC-2170.

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPENCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY WORK.

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NORTH:

SCALE: 1:500 A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 5 10 15 20 25 (A1) 1:500 50 Metres
(A3) 1:1000
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:

SIGNS AND LINEMARKING PLAN

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

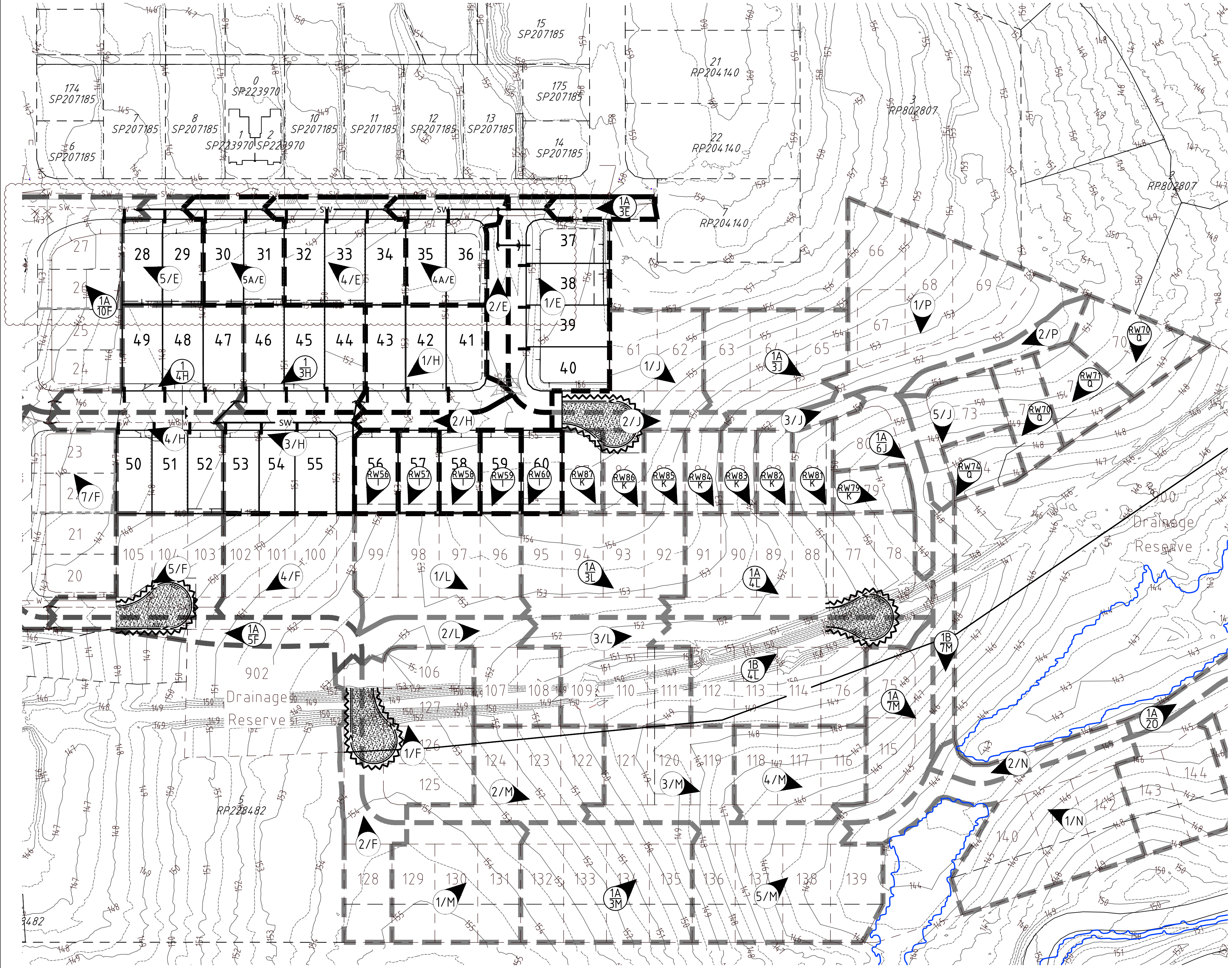
DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: SL01 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: LINEMARKING.DWG

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

2207/2021 N:\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\LINEMARK.DWG



CATCHMENT NAME	CATCHMENT AREA (ha)	RUNOFF COEFF MINOR	RUNOFF COEFF MAJOR	
1/A	0.069	0.88	1.00	EXISTING STAGE 1 CATCHMENTS
3/A	0.046	0.88	1.00	
4/A	0.031	0.88	1.00	
RW1/B	0.066	0.91	1.00	
RW2/B	0.067	0.91	1.00	
RW3/B	0.067	0.91	1.00	
RW13/D	0.063	0.91	1.00	
RW12/D	0.060	0.91	1.00	
RW11/D	0.060	0.91	1.00	
RW10/D	0.060	0.91	1.00	
RW9/D	0.060	0.91	1.00	
RW8/D	0.074	0.91	1.00	
RW4/B	0.070	0.91	1.00	
1A/6A	0.087	0.88	1.00	
6/A	0.030	0.88	1.00	
7/A	0.172	0.88	1.00	
RW5/C	0.102	0.91	1.00	FUTURE CATCHMENTS
1/O	0.026	0.88	1.00	
1A/2O	0.070	0.88	1.00	
2/O	0.713	0.88	1.00	
RW87/K	0.060	0.91	1.00	
RW86/K	0.060	0.91	1.00	
RW85/K	0.060	0.91	1.00	
RW84/K	0.053	0.91	1.00	
RW83/K	0.053	0.91	1.00	
RW82/K	0.053	0.91	1.00	
RW81/K	0.064	0.91	1.00	
RW79/K	0.061	0.91	1.00	
RW70/Q	0.125	0.91	1.00	
RW71/Q	0.095	0.91	1.00	
RW72/Q	0.083	0.91	1.00	
RW74/Q	0.069	0.91	1.00	
1/J	0.193	0.88	1.00	
2/J	0.055	0.88	1.00	
1/L	0.307	0.88	1.00	
2/L	0.210	0.88	1.00	
1/P	0.459	0.88	1.00	
2/P	0.074	0.88	1.00	
1A/3J	0.244	0.88	1.00	
3/J	0.044	0.88	1.00	
5/J	0.120	0.88	1.00	
1A/3L	0.291	0.88	1.00	
3/L	0.250	0.88	1.00	
1A/4L	0.442	0.88	1.00	
1B/4L	0.379	0.88	1.00	
1A/6J	0.131	0.88	1.00	
1/M	0.267	0.88	1.00	
2/M	0.237	0.88	1.00	
1A/3M	0.361	0.88	1.00	
3/M	0.228	0.88	1.00	
4/M	0.213	0.88	1.00	

LEGEND:

FINISHED CONTOURS

PROPOSED STORMWATER DRAINAGE

PROPOSED CATCHMENT BOUNDARIES

CATCHMENT NUMBERS 1/A

PROPOSED Q100 LINE

	CATCHMENT NAME	CATCHMENT AREA (ha)	RUNOFF COEFF MINOR	RUNOFF COEFF MAJOR
FUTURE CATCHMENTS	5/M	0.380	0.88	1.00
	1/N	0.409	0.88	1.00
	2/N	0.070	0.88	1.00
	1A/7M	0.199	0.88	1.00
	1B/7M	0.091	0.88	1.00
STAGE 2 CATCHMENTS	RW60/I	0.060	0.91	1.00
	RW59/I	0.060	0.91	1.00
	RW58/I	0.060	0.91	1.00
	RW57/I	0.060	0.91	1.00
	RW56/I	0.064	0.91	1.00
FUTURE CATCHMENTS	1/F	0.315	0.88	1.00
	2/F	0.171	0.88	1.00
	4/F	0.247	0.88	1.00
	1A/5F	0.127	0.88	1.00
	5/F	0.217	0.88	1.00
EXISTING STAGE 1 CATCHMENTS	7/F	0.333	0.88	1.00
	8/F	0.386	0.88	1.00
STAGE 2 CATCHMENTS	1/E	0.334	0.88	1.00
	2/E	0.062	0.88	1.00
	1/H	0.239	0.88	1.00
	2/H	0.069	0.88	1.00
	1A/3E	0.041	0.88	1.00
	4/E	0.230	0.88	1.00
	5/E	0.140	0.88	1.00
	4A/E	0.170	0.88	1.00
	5A/E	0.150	0.88	1.00
	1A/3H	0.230	0.88	1.00
	3/H	0.236	0.88	1.00
	1A/4H	0.253	0.88	1.00
	4/H	0.211	0.88	1.00
EXISTING STAGE 1 CATCHMENTS	1A/10F	0.372	0.88	1.00
	10/F	0.082	0.88	1.00
	1/G	0.171	0.88	1.00

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PLANNERS
URBAN DESIGNERS
SURVEYORS
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LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

NORTH: N

SCALE: 1:1000 A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 10 20 30 40 50 100 Metres
(A1) 1:1000
(A3) 1:2000
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED [illegible]
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD

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☐ J.PAPPAS RPEQ 6086
☐ S.MARSH RPEQ 8068
☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:	DETAILS:	DATE:	INIT:
B	LINE E AMENDED IN RESPONSE TO RFI DATED 02/06/21	14/06/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
DRAINAGE CATCHMENT PLAN

DFC (PROJECT MANAGEMENT) PTY LTD

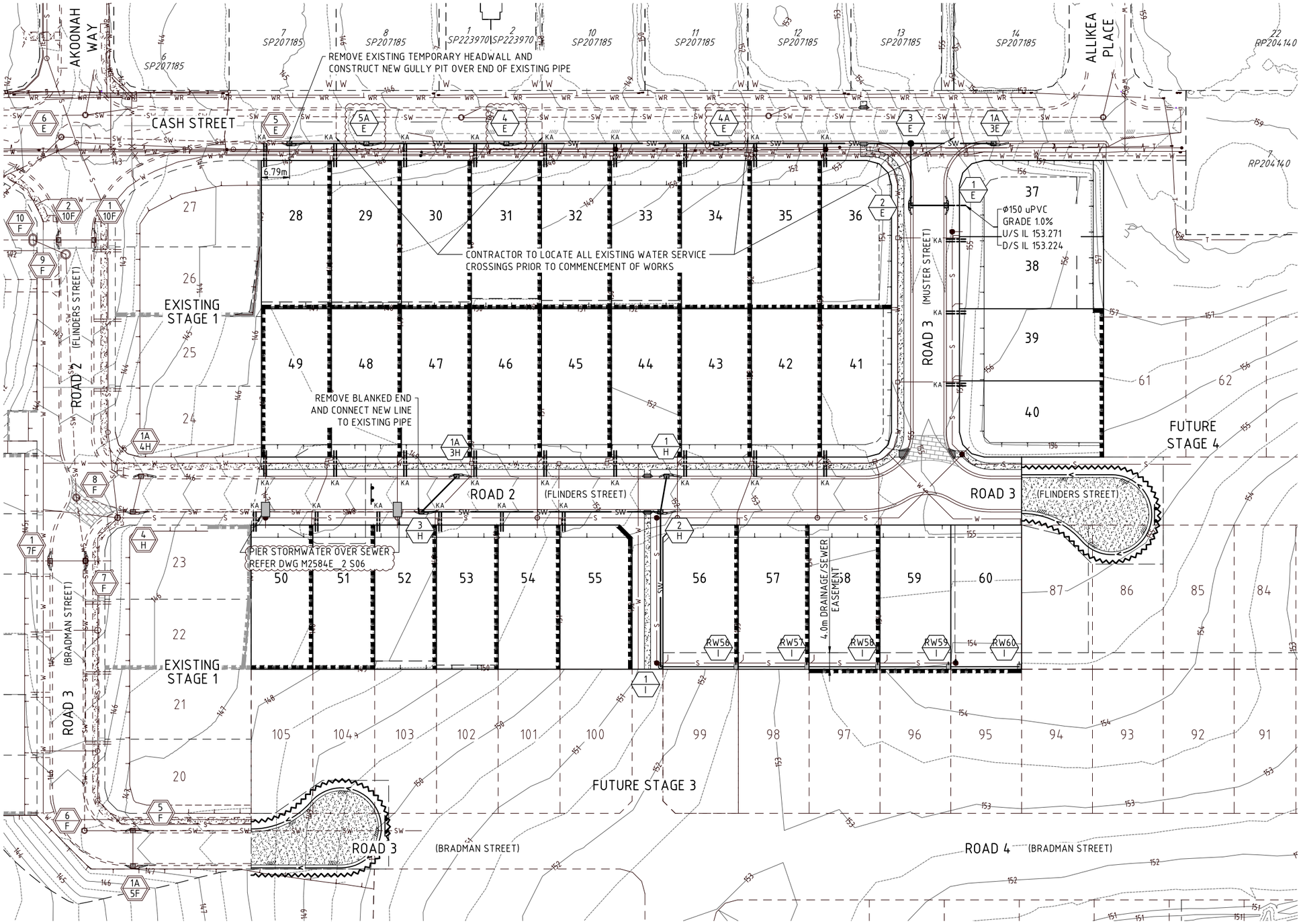
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: D01 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE.DWG

22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\DRAINAGE

Approved Subject to Conditions of Decision Notice DA/2021/1694



LEGEND:

- EXISTING STORMWATER DRAINAGE
- FINISHED CONTOURS
- PROPOSED STORMWATER DRAINAGE
- PROPOSED ROOFWATER DRAINAGE
- PROPOSED RETAINING WALL
- SEWERAGE
- WATER MAIN
- ROOFWATER DRAINAGE KERB ADAPTORS (FULL DEPTH TYPE)
- STRUCTURE NUMBERS

EXISTING / PROPOSED / FUTURE

DRAINAGE NOTES:

1. ROOFWATER LINES TO BE LAID 0.6m FROM PROPERTY BOUNDARIES, WHERE ROOFWATER LINE IS PARALLEL WITH SEWER 1.0m CLEARANCE TO SEWER LINE IS TO BE PROVIDED.
2. ROOFWATER PITS TO BE IN ACCORDANCE WITH IPWEAQ STD DWG D-0110 WITH CONCRETE INFILL GATIC LIDS OR APPROVED EQUIVALENT.
3. GRATED ROOFWATER PITS TO BE IN ACCORDANCE WITH IPWEAQ STD DWG D-0050 WITH 'BOLT DOWN' HEAVY DUTY GRATES & HOT DIPPED GALVANISED TO AS 1650.
4. THE DESIGN SURFACE LEVELS SHOWN FOR ROOFWATER PITS IS INDICATIVE ONLY.
   - PITS WITH SOLID COVERS SHALL FINISH 25mm (APPROX) ABOVE THE FINISHED SURFACE LEVEL
   - PITS WITH GRATED TOPS SHALL FINISH:
     a) AT THE INVERT OF CUT-OFF DRAINS (IF APPLICABLE)
     b) 200mm BELOW THE SURROUNDING FINSHED SURFACE
4. THE FINISHED SURFACE SHALL BE SHAPED TO DIRECT OVERLAND FLOW TO THE GRATED PITS
5. ALL GULLIES ARE TO BE LIP IN LINE TYPE S LINTEL IN ACCORDANCE WITH IPWEA STD DWGS DS-061, DS-062 & DS-063.
6. LOTS WITH FIELD INLETS ARE TO BE GRADED TO DIVERT WATER TO PITS.
7. ALL GRATES IN PRIVATE PROPERTY ARE TO BOLTED DOWN.
8. ACCESS CHAMBERS (MANHOLES) TO BE CONSTRUCTED IN ACCORDANCE WITH IPWEA STD DWGS DS-010. DS-015, DS-018, DS-019, DS-020 & DS-021.
9. STORMWATER BEDDING AND BACKFILL TO BE IN ACCORDANCE WITH IPWEA STD DWGS DS-030 AND DS-031. THE MINIMUM FREQUENCY OF TESTING SHALL BE IN ACCORDANCE WITH COUNCIL'S PLANNING SCHEME POLICY OPERATIONAL WORKS INSPECTIONS MAINTENANCE AND BONDING PROCEDURES-INTEGRATED DESIGN.
10. PIPES TO BE CONCRETE REINFORCED (CLASS 2) UNLESS NOTED OTHERWISE. (U) DENOTES uPVC CLASS SN8.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PIPES DURING CONSTRUCTION AND SCHOLL ADOPT CONSTRUCTION PRACTICES TO PREVENT CRACKING. ALL PIPES TO BE CCTV INSPECTED AT THE AND OF WORKS.

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPENCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY PIPE LAYING.

FLOW WIDTH CALCS FOR STRUCTURE 5/E BYPASS (IZZARDS EQUATION)

flow width-kerb invert	flow width - lip	dg max for dc of 0	dc=	w	F	Zg	Zp	dg	dp	dc	ng	np	s	Q
1.000	0.725	0.045	0.000	0.624	0.900	13.964	33.333	0.045	0.022	0.000	0.013	0.015	0.044	0.022

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PLANNERS · URBAN DESIGNERS · SURVEYORS · ENGINEERS · LANDSCAPE ARCHITECTS

NORTH: N

SCALE: 1:500 (A1) · A1 (A3) 1:1000
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 5 10 15 20 25 (A1) 1:500 50 Metres
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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☐ T.M^cKINNEY RPEQ 5087 ☑ A.FRASER RPEQ 5691 ☐ J.PAPPAS RPEQ 6086 ☐ S.MARSH RPEQ 8068 ☐

DESIGNED CDV · DRAWN BJ · CHECKED HW · DATUM: AHD

ISSUE: DETAILS: DATE: INIT:
B LINE E AMENDED IN RESPONSE TO RFI DATED 02/06/21 — 14/07/21 CDV
A ISSUE FOR OPERATIONAL WORKS APPROVAL — 16/06/20 BJ

TITLE: DRAINAGE LAYOUT PLAN

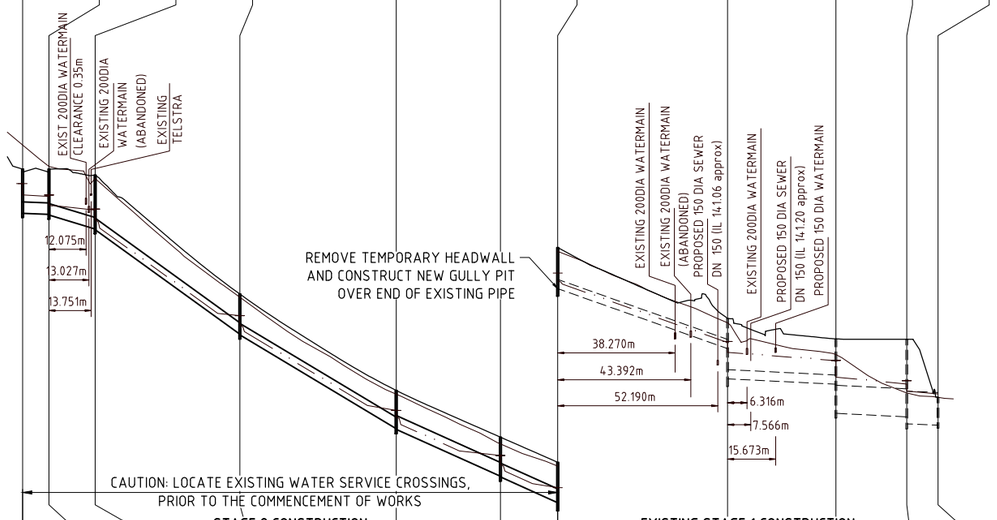
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: D02 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE.DWG

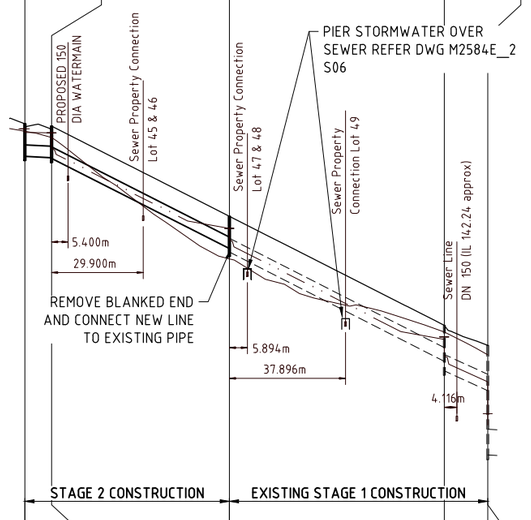
STRUCTURE NAME	1/E	2/E	3/E	4A/E	4/E	5A/E	5/E	6/E	7/E	8/E	9/E
STRUCTURE DESCRIPTION	IPWEA SAG GULLY 2.4m LINTEL Type M3 K&C	IPWEA SAG GULLY 2.4m LINTEL Type M3 K&C	STD IPWEA MANHOLE 1050mm DIAMETER	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	STD IPWEA MANHOLE 1050mm DIAMETER	STD IPWEA MANHOLE 2100mm DIAMETER	STD IPWEA MANHOLE 1500mm DIAMETER	OUTLET HEADWALL TO EXISTING DRAINAGE RESERVE
PIPE SIZE (mm) AND PIPE CLASS	375(2)	375(2)	375(2)	375(2)	450(2)	450(2)	600 x 300 (RCBC)	900 x 300 (RCBC)	900(2)	1050(2)	
PIPE GRADE %	0.40%	3.03%	7.23%	6.00%	4.50%	4.50%	3.53%	0.50%	0.50%	0.40%	
PIPE SLOPE 1 in X	250.01	33.03	13.84	16.67	22.22	22.22	28.33	199.64	199.93	246.94	
FULL PIPE FLOW VELOCITY (m/s)	1.24	1.47	1.61	2.08	1.89	2.29		1.56	2.82	2.08	
PART FULL FLOW VELOCITY (m/s)		2.80	3.97	3.95	3.79	3.98	3.51				
DATUM	DATUM RL 137.0						130.0				
WATER LEVEL IN STRUCTURE	153.973	153.603	153.143	149.669	146.578	145.111	144.058	141.827	141.209	140.551	140.166
HYDRAULIC GRADE LEVEL	153.973	153.607 153.554	153.324 153.109	152.848 149.669	149.417 146.578	146.412 145.111	144.862 144.058	143.851 141.684	141.470 141.203	140.664 140.441	140.210 140.166
PIPE FLOW (Cumecs)		0.137	0.162	0.178	0.230	0.301	0.364	0.421	0.421	1.856	1.856
PIPE CAPACITY AT GRADE (Cumecs)		0.111	0.305	0.471	0.429	0.604	0.604	0.561	0.343	1.337	1.808
DEPTH TO INVERT	1.446	1.480 1.500	1.759 1.779	1.312 1.332	1.249 1.269	1.276 1.296	1.316 1.336	0.984 1.969	1.478 2.426	2.531 2.759	0.906
INVERT LEVEL OF DRAIN	**153.003**	**152.969 152.949**	**152.493 152.473**	**149.062 149.042**	**145.982 145.962**	**144.432 144.412**	**143.570** 143.550	141.595 140.610	140.433 139.485	139.369 139.141	139.100
DESIGN SURFACE LEVEL	E 480860.628 N7014693.446	454.449 E 480852.101 N7014694.568	454.252 E 480854.071 N7014709.502	450.374 E 480807.271 N7014715.662	447.231 E 480756.710 N7014722.318	445.708 E 480723.004 N7014726.756	444.886 E 480704.458 N7014729.197	442.579 E 480649.751 N7014737.957	441.911 E 480621.770 N7014716.450	441.900 E 480599.004 N7014720.750	440.006 E 480590.910 N7014714.541
STRUCTURE SETOUT CO-ORDINATES	0.000	8.595 8.595	15.063 23.658	47.203 70.861	51.000 121.861	34.000 155.861	18.705 174.566	55.402 229.968	35.336 265.304	23.112 288.416	10.200 298.616
RUNNING CHAINAGE											

LINE E

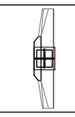


STRUCTURE NAME	1/H	2/H	3/H	4/H	8/F
STRUCTURE DESCRIPTION	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	
PIPE SIZE (mm) AND PIPE CLASS	375(2)	375(2)	450(2)	525(2)	
PIPE GRADE %	0.50%	5.07%	5.07%	4.56%	
PIPE SLOPE 1 in X	199.98	19.72	19.67	21.92	
FULL PIPE FLOW VELOCITY (m/s)	0.66	2.10	2.39		
PART FULL FLOW VELOCITY (m/s)		3.71	4.20	4.41	
DATUM	133.0				
WATER LEVEL IN STRUCTURE	151.761	151.628	148.515	144.976	142.475
HYDRAULIC GRADE LEVEL	151.761	151.643 151.628	151.172 148.515	148.181 144.895	144.403 142.475
PIPE FLOW (Cumecs)		0.073	0.232	0.380	0.539
PIPE CAPACITY AT GRADE (Cumecs)		0.124	0.394	0.641	0.961
DEPTH TO INVERT	1.064	1.032 1.052	1.052 1.777	1.177	1.485 1.476
INVERT LEVEL OF DRAIN	**150.861**	**150.817 150.797**	**147.856 147.731**	144.177	143.869 143.222
DESIGN SURFACE LEVEL	E 480784.722 N7014637.094	451.925 E 480782.188 N7014628.768	448.908 E 480724.609 N7014636.338	445.354 E 480655.109 N7014645.487	444.698 E 480641.932 N7014650.710
STRUCTURE SETOUT CO-ORDINATES	0.000	8.724 8.724	58.005 66.729	70.100 136.829	14.180 151.009
RUNNING CHAINAGE					

LINE H



REFERENCE POINT LOCATION FOR STORMWATER DRAINAGE STRUCTURES

STRUCTURE TYPE	HORIZONTAL REFERENCE LOCATION (STRUCTURE SETOUT CO-ORDINATES)		VERTICAL REFERENCE LEVEL
MANHOLE AND ROOFWATER PIT		℄ MAIN SHAFT	FINISHED SURFACE LEVEL - MANHOLE/PIT COVER
KERB INLET LIP IN LINE (DS-063)		CENTRE OF GULLY CHAMBER	LIP OF KERB
FIELD INLET AND ROOFWATER PIT		CENTRE OF GULLY CHAMBER	TOP OF GRATE OR COVER
HEADWALL		℄ OF HEADWALL (END OF OUTLET PIPE)	INVERT OF OUTLET PIPE.

REFER M2584E_2 D07 FOR ALLOWABLE STORMWATER PIPE CONSTRUCTION EQUIPMENT LOAD TABLE

Fire Ant Movement Controls

To prevent the spread of fire ants, the Queensland Government has implemented controls that apply to individuals and commercial operators, to restrict the movement of materials that could carry fire ants including soil, turf, potted plants, mulch, baled hay or straw, animal manures, mining or quarry products.

Penalties apply for non-compliance with the movement controls. if you are unsure of your obligations under the Biosecurity Act 2014 contact the relevant Queensland State Government Department.

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SURVEYORS
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LANDSCAPE ARCHITECTS

Moreton Bay Regional Council

NORTH:

SCALE: Horizontal 1:1000 Vertical 1:100 — A1 — THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE (A1) 1:100 / (A1) 1:1000 — DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

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DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE	DETAILS:	DATE:	INIT:
C	LINES AMENDED IN RESPONSE TO RFI DATED 02/06/21	14/07/21	CDV
B	AMENDMENTS TO COINCIDE WITH STAGE 1 DESIGN	09/03/21	WN
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:

DRAINAGE LONGITUDINAL SECTIONS LINES E & H

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

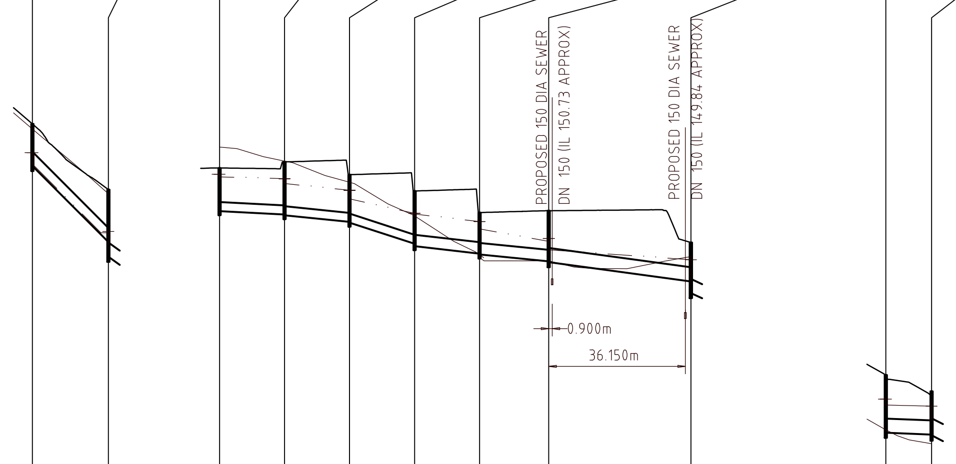
DETAILS:

PROJECT:	PLAN:	ISSUE:
M2584E_2	D03	C

LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL

COUNCIL REF: DA/38032/2019/V3RL

FILE NAME: DRAINAGE SECTIONS.DWG



Fire Ant Movement Controls

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Penalties apply for non-compliance with the movement controls. if you are unsure of your obligations under the Biosecurity Act 2014 contact the relevant Queensland State Government Department.

LINE 3E

	1A/3E	3/E
Structure	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	STD IPWEA MANHOLE 1050mm DIAMETER
PIPE SIZE (mm) AND PIPE CLASS	375(2)	
PIPE GRADE %	10.03%	
PIPE SLOPE 1 in X	9.97	
FULL PIPE FLOW VELOCITY (m/s)		
PART FULL FLOW VELOCITY (m/s)	2.43	
DATUM	DATUM RL 137.0	
WATER LEVEL IN STRUCTURE	155.228	153.143
HYDRAULIC GRADE LEVEL	155.228 / 154.928	153.109 / 152.848
PIPE FLOW (Cumecs)	0.022	
PIPE CAPACITY AT GRADE (Cumecs)	0.555	
DEPTH TO INVERT	1.111	1.391
INVERT LEVEL OF DRAIN	**154.877**	**152.861**
DESIGN SURFACE LEVEL	155.988	154.252
STRUCTURE SETOUT CO-ORDINATES	E480873.993 N7014706.879	E480854.073 N7014709.502
RUNNING CHAINAGE	0.000 / 20.092	20.092

LINE I

	RW60/I	RW59/I	RW58/I	RW57/I	RW56/I	1/I	2/H
Structure	IPWEA TYPE 2 FIELD INLET 900x600 WITH GRATED COVER	IPWEA TYPE 2 FIELD INLET 900x600 WITH GRATED COVER	IPWEA TYPE 2 FIELD INLET 900x600 WITH GRATED COVER	IPWEA TYPE 2 FIELD INLET 900x600 WITH GRATED COVER	IPWEA TYPE 2 FIELD INLET 900x600 WITH GRATED COVER	ROOFWATER MANHOLE 900mm DIAMETER	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C
PIPE SIZE (mm) AND PIPE CLASS	225(U)	225(U)	225(U)	300(U)	300(U)	375(2)	
PIPE GRADE %	0.51%	1.03%	3.25%	1.15%	1.00%	1.36%	
PIPE SLOPE 1 in X	195.26	97.48	30.76	86.76	100.00	73.44	
FULL PIPE FLOW VELOCITY (m/s)	0.72	1.42	2.09	1.75	2.19	1.44	
PART FULL FLOW VELOCITY (m/s)							
DATUM	RL 136.0						
WATER LEVEL IN STRUCTURE	153.841	153.735	153.437	152.833	152.625	152.189	151.628
HYDRAULIC GRADE LEVEL	153.841 / 153.781	153.735 / 153.613	153.437 / 153.219	152.833 / 152.823	152.625 / 152.441	152.111 / 151.938	151.628 / 151.172
PIPE FLOW (Cumecs)	0.033	0.065	0.096	0.127	0.159	0.159	
PIPE CAPACITY AT GRADE (Cumecs)	0.046	0.065	0.115	0.127	0.118	0.204	
DEPTH TO INVERT	1.146	1.394 / 1.414	1.252 / 1.272	1.399 / 1.462	1.089 / 1.109	1.340 / 1.360	1.032
INVERT LEVEL OF DRAIN	**152.677**	**152.589** / **152.569**	**152.392** / **152.372**	**151.813** / **151.750**	**151.552** / **151.532**	**151.349** / **151.329**	**150.817**
DESIGN SURFACE LEVEL	153.823	153.983	153.644	153.212	152.641	152.689	151.849
STRUCTURE SETOUT CO-ORDINATES	E480863.569 N7014580.145	E480846.512 N7014582.362	E480829.457 N7014584.587	E480812.407 N7014586.854	E480795.354 N7014589.098	E480777.210 N7014591.487	E480782.118 N7014628.768
RUNNING CHAINAGE	0.000 / 17.200	17.200 / 17.200	34.400 / 17.200	51.600 / 17.200	68.800 / 18.301	87.101 / 37.603	124.704

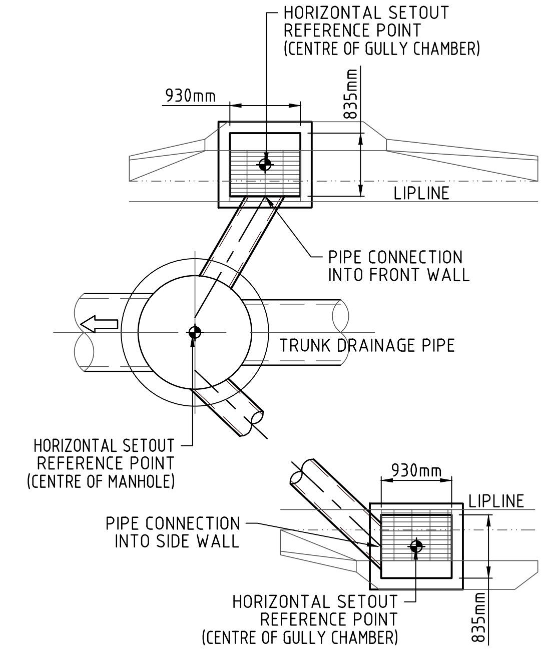
LINE 3H

	1A/3H	3/H
Structure	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C	IPWEA ON-GRADE GULLY 2.4m LINTEL Type M3 K&C
PIPE SIZE (mm) AND PIPE CLASS	375(2)	
PIPE GRADE %	0.40%	
PIPE SLOPE 1 in X	249.98	
FULL PIPE FLOW VELOCITY (m/s)	0.76	
PART FULL FLOW VELOCITY (m/s)		
DATUM	DATUM RL 137.0	
WATER LEVEL IN STRUCTURE	148.702	148.515
HYDRAULIC GRADE LEVEL	148.702 / 148.543	148.515 / 148.192
PIPE FLOW (Cumecs)	0.084	
PIPE CAPACITY AT GRADE (Cumecs)	0.111	
DEPTH TO INVERT	1.529	1.146
INVERT LEVEL OF DRAIN	**147.810**	**147.762**
DESIGN SURFACE LEVEL	149.339	148.908
STRUCTURE SETOUT CO-ORDINATES	E480734.158 N7014643.750	E480724.609 N7014636.338
RUNNING CHAINAGE	0.000 / 12.088	12.088

REFERENCE POINT LOCATION FOR STORMWATER DRAINAGE STRUCTURES

STRUCTURE TYPE	HORIZONTAL REFERENCE LOCATION (STRUCTURE SETOUT CO-ORDINATES)	VERTICAL REFERENCE LEVEL
MANHOLE AND ROOFWATER PIT	℄ MAIN SHAFT	FINISHED SURFACE LEVEL - MANHOLE/PIT COVER
TYPE 'A' GULLY PIT, LIP IN LINE	CENTRE OF GULLY	LIP OF KERB
FIELD INLET AND ROOFWATER PIT	CENTRE OF GULLY	TOP OF GRATE OR COVER
HEADWALL	℄ OF HEADWALL (END OF OUTLET PIPE)	INVERT OF OUTLET PIPE.

REFER M2584E_2 D07 FOR ALLOWABLE STORMWATER PIPE CONSTRUCTION EQUIPMENT LOAD TABLE



CONTRACTOR IS TO ENSURE THAT PIPE CONNECTIONS TO GULLY PITS ARE NOT CONSTRUCTED INTO THE CORNER OF TWO WALLS

GULLY PIT PIPE CONNECTION DETAIL

SCALE: NTS

NOTE: GRATED LIDS TO BE DEPRESSED 50mm BELOW FINISHED SURFACE LEVEL

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LINE 3E I 3H

BRISBANE - SUNSHINE COAST - CENTRAL QLD
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T209, Kon-Tiki Tower 1, 55 Plaza Parade, Maroochydore Qld 4558
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PLANNERS / URBAN DESIGNERS / SURVEYORS / ENGINEERS / LANDSCAPE ARCHITECTS

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APPROVED [illegible]
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD

☐ T.McKINNEY RPEQ 5087 [✓ A.FRASER RPEQ 5691] ☐ J.PAPPAS RPEQ 6086 ☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:	DETAILS:	DATE:	INIT:
B	LINES AMENDED IN RESPONSE TO RFI DATED 02/06/21	14/07/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:

DRAINAGE LONGITUDINAL SECTIONS LINES 3E, 3H & I

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: D04 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE SECTIONS.DWG

22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\DRAINAGE SECTIONS

DESIGN ARI (yrs)	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT (%)	tc SUB-CATCHMENT TIME OF CONC. (min)	I RAINFALL INTENSITY (mm/h)	C10 10yr RUNOFF CO-EFFICIENT	C CO-EFFICIENT OF RUNOFF	A SUB-CATCHMENT AREA (ha)	C×A EQUIVALENT AREA (ha)	+CA SUM OF (C × A) (ha)	Q SUB-CATCHMENT DISCHARGE (l/s)
10 100	1/E	1/E to 2/E	1/E	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.334	0.294 0.334	0.294 0.334	137 236
10 100	2/E	2/E to 3/E	1/E;2/E	ROAD/VERGE		5.00 5.00	216 329		0.88 1.00	0.062	0.055 0.062	0.055 0.062	33 57
10 100	1/H	1/H to 2/H	1/H	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.239	0.210 0.239	0.210 0.239	98 168
10 100	2/H	2/H to 3/H	RW60/I;RW59 /I;RW58/I;RW 57/I;RW56/I;1 /H;2/H	ROAD/VERGE		5.00 5.00	216 329		0.88 1.00	0.069	0.061 0.069	0.061 0.069	37 63
10 100	1A/3E	1A/3E to 3/E	1A/3E	ROAD/VERGE		5.00 5.00	216 329		0.88 1.00	0.041	0.036 0.041	0.036 0.041	22 38
10 100	3/E	3/E to 4A/E	1/E;2/E;1A/3E	MH									
10 100	4A/E	4A/E to 4/E	1/E;2/E;1A/3E ;4A/E	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.170	0.150 0.170	0.150 0.170	70 120
10 100	4/E	4/E to 5A/E	1/E;2/E;1A/3E ;4A/E;4/E	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.230	0.202 0.230	0.202 0.230	94 162
10 100	5A/E	5A/E to 5/E	1/E;2/E;1A/3E ;4A/E;4/E;5A /E	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.150	0.132 0.150	0.132 0.150	62 106
10 100	5/E	5/E to 6/E	1/E;2/E;1A/3E ;4A/E;4/E;5A /E;5/E	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.140	0.123 0.140	0.123 0.140	57 99
10 100	6/E	6/E to 7/E	1/E;2/E;1A/3E ;4A/E;4/E;5A /E;5/E	MH									
10 100	RW60/I	RW60/I to RW59/I	RW60/I	ALLOT		5.00 5.00	216 329		0.91 1.00	0.060	0.055 0.060	0.055 0.060	33 55
10 100	RW59/I	RW59/I to RW58/I	RW60/I;RW59 /I	ALLOT		5.00 5.00	216 329		0.91 1.00	0.060	0.055 0.060	0.055 0.060	33 55
10 100	RW58/I	RW58/I to RW57/I	RW60/I;RW59 /I;RW58/I	ALLOT		5.00 5.00	216 329		0.91 1.00	0.060	0.055 0.060	0.055 0.060	33 55
10 100	RW57/I	RW57/I to RW56/I	RW60/I;RW59 /I;RW58/I;RW 57/I	ALLOT		5.00 5.00	216 329		0.91 1.00	0.060	0.055 0.060	0.055 0.060	33 55
10 100	RW56/I	RW56/I to 1/I	RW60/I;RW59 /I;RW58/I;RW 57/I;RW56/I	ALLOT		5.00 5.00	216 329		0.91 1.00	0.064	0.058 0.064	0.058 0.064	35 58
10 100	1/I	1/I to 2/H	RW60/I;RW59 /I;RW58/I;RW 57/I;RW56/I	MH									

STRUCTURE No.	FLOW IN K&C (INC. BYPASS) (l/s)	ROAD GRADE AT INLET (%)	MINOR FLOW ROAD CAPACITY (l/s)	INLET TYPE	Qg FLOW INTO INLET (l/s)	Qb BYPASS FLOW (l/s)	BYPASS STRUCTURE No.
1/E	137 FLOW WIDTH 2.120 (0.000 3 month)	0.06	282	13S.111	137	0	
2/E	33 FLOW WIDTH 0.000 (0.000 3 month)	0.00	282	13S.111	33	0	
1/H	98 FLOW WIDTH 1.502 (0.000 3 month)	5.80	771	1	73	25	1A/3H
2/H	37 FLOW WIDTH 0.894 (0.000 3 month)	5.80	771	1	37	0	3/H
1A/3E	22 FLOW WIDTH 0.558 (0.000 3 month)	8.58	937	1	22	0	1/E
3/E				41			
4A/E	70 FLOW WIDTH 1.247 (0.000 3 month)	6.25	800	1	57	13	4/E
4/E	107 FLOW WIDTH 1.674 (0.000 3 month)	4.39	671	1	78	28	5A/E
5A/E	90 FLOW WIDTH 1.542 (0.000 3 month)	4.39	671	1	69	21	5/E
5/E	78 FLOW WIDTH 1.439 (0.000 3 month)	4.39	671	1	63	16	1/10F
6/E				41			
RW60/I	33 FLOW WIDTH 0.113 (0.000 3 month)	0.50	63	53S.15	33	0	RW87/K
RW59/I	33 FLOW WIDTH 0.113 (0.000 3 month)	1.25	63	53S.15	33	0	RW60/I
RW58/I	33 FLOW WIDTH 0.113 (0.000 3 month)	1.25	63	53S.15	33	0	RW59/I
RW57/I	33 FLOW WIDTH 0.113 (0.000 3 month)	0.16	63	53S.15	33	0	RW58/I
RW56/I	35 FLOW WIDTH 0.116 (0.000 3 month)	0.16	63	53S.15	35	0	RW57/I
1/I				41			

STRUCTURE No.	tc CRITICAL TIME OF CONC. (min)	I RAINFALL INTENSITY (mm/h)	+CA TOTAL (C × A) (ha)	Qt MAJOR TOTAL FLOW (l/s)	Qm MAJOR SURFACE FLOW CAPACITY (l/s)	Qs MAJOR SURFACE FLOW (l/s)	Qp PIPE FLOW (l/s)	L REACH LENGTH (m)	S PIPE GRADE (%)	PIPE / BOX DIMENSIONS (CLASS) (mm)	V FLOW VELOCITY (m/s)	T TIME OF FLOW IN REACH (min)	STRUCTURE CHART No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS
1/E	10.00 10.00	168 254	0.294 0.334	236			137 (Pipe flow= Grate flow)	8.595	0.40	375(2)	1.24	0.12		Qg 0.137 Qo 0.137 Do 375 CHRT 32: Vo2/2gDo 0.21 H/Do 0.61 Kg side flow 4.67 end flow 3.84
2/E	10.12 10.12	167 253	0.349 0.396	278			162 (Pipe flow= Sum upstr atten flows)	15.063	3.03	375(2)	1.47	0.17		Qg 0.026 Qo 0.162 Do 375 Angle 89 Chart 47 S/Do 2.5 chartdeg Du/Do 1.00 K0 1.92 K0.5 2.12 Qu/Qo 0.84 Cg 0.39 K 2.00 S/Do 2.0 K0 2.44 K0.5 2.40 K 2.42 S/Do 1.5 K0 2.67 K0.5 2.58 K 2.64
1/H	10.00 10.00	168 254	0.210 0.239	169			73 (Pipe flow= Grate flow)	8.724	0.87	375(2)	0.66	0.15		Qg 0.073 Qo 0.073 Do 375 CHRT 32: Vo2/2gDo 0.06 H/Do 0.60 Kg side flow 6.91 end flow 5.19
2/H	10.15 10.15	167 253	0.549 0.612	430			232 (Pipe flow= Sum upstr atten flows)	58.005	4.65	375(2)	2.10	0.46		Qg 0.028 Qo 0.232 Do 375 Flow 1/I made eqv grate flow Flow 1/H made eqv grate flow CHRT 32: Vo2/2gDo 0.60 H/Do 0.00 Kg side flow 3.57 end flow 3.18 K vals above for stepped pipes as grate flow grate flow decreased by 0.130 from 1/I grate flow decreased by 0.073 from 1/H Routine 2.4 CHART 49 High vel lat 1/I
1A/3E	5.00 5.00	216 329	0.036 0.041	37			22 (Pipe flow= Grate flow)	20.092	10.03	375(2)	0.20	0.33		Qg 0.022 Qo 0.022 Do 375 CHRT 32: Vo2/2gDo 0.01 H/Do 0.00 Kg side flow 10.71 end flow 7.49 Part full downstream pipe
3/E	10.29 10.29	166 251	0.385 0.437	305	1875	127	178 (Pipe flow= Sum upstr atten flows)	47.203	7.23	375(2)	1.61	0.49		Qo 0.178 Do 375 Flow 1A/3E made eqv grate flow Angle 90 Chart 47 S/Do 2.5 chartdeg Du/Do 1.00 K0 1.92 K0.5 2.12 Qu/Qo 0.91 Cg 0.24 K 1.97 S/Do 2.0 K0 2.44 K0.5 2.40 K 2.43 S/Do 1.5 K0 2.67 K0.5 2.58 K 2.65 Interp val for S/Do 1.88 Kw 2.49 CHART 46 S/Do 2.0 K0 2.04 K0.5 1.92 K 2.01 S/Do 1.5 K0 2.09 K0.5 2.31 K 2.14 Interp val for S/Do 1.88 Ku 2.04 K vals above for stepped pipes as grate flow grate flow decreased by 0.017 from 1A/3E Routine 2.2 CHART 52 B 900 In line 1A/3E Latrl 2/E Determine Kl
4A/E	10.78 10.78	163 247	0.535 0.607	416			230 (Pipe flow= Sum upstr atten flows)	51.000	6.00	375(2)	2.08	0.41		Qg 0.056 Qo 0.230 Do 375 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.24 K 0.93 S/Do 1.67 cor 0.21 Ku 1.14 Kw 1.14
4/E	11.19 11.19	160 243	0.737 0.837	565			301 (Pipe flow= Sum upstr atten flows)	34.000	4.50	450(2)	1.89	0.30		Qg 0.075 Qo 0.301 Do 450 CHART 33 Angle 1 S/Do 2.5 Du/Do 0.83 Qg/Qo 0.25 K 0.59 S/Do 1.37 cor 0.32 Ku 0.91 Kw 0.91
5A/E	11.49 11.49	159 241	0.869 0.987	661			364 (Pipe flow= Sum upstr atten flows)	18.705	4.50	450(2)	2.29	0.14		Qg 0.066 Qo 0.364 Do 450 CHART 33 Angle 1 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.18 K 0.75 S/Do 1.55 cor 0.18 Ku 0.93 Kw 0.93
5/E	11.63 11.63	158 240	0.992 1.127	751			421 (Pipe flow= Sum upstr atten flows)	55.402	3.53	600 x 300 (RCBC)	2.33	0.40		Qg 0.059 Qo 0.421 Do 400 Flow 5A/E made eqv grate flow CHRT 32: Vo2/2gDo 0.92 H/Do 0.00 Kg side flow 2.89 end flow 2.67 K vals above for stepped pipes as grate flow grate flow decreased by 0.362 from 5A/E
6/E	12.03 12.03	156 236	0.992 1.127	739	1341	318	421 (Pipe flow= Sum upstr atten flows)	35.336	0.50	900 x 300 (RCBC)	1.56	0.38		Qo 0.421 Do 450 Flow 5/E made eqv grate flow CHRT 32: Vo2/2gDo 0.41 H/Do 1.86 Kg side flow 2.71 end flow 2.45 K vals above for stepped pipes as grate flow grate flow decreased by 0.421 from 5/E
RW60/I	5.00 5.00	216 329	0.055 0.060	55			33 (Pipe flow= Grate flow)	17.200	0.51	225(U)	0.72	0.29		Qg 0.033 Qo 0.033 Do 225 CHRT 32: Vo2/2gDo 0.11 H/Do 2.76 Kg side flow 2.69 end flow 2.40
RW59/I	5.29 5.29	212 321	0.110 0.120	107			65 (Pipe flow= Sum upstr atten flows)	17.200	1.03	225(U)	1.42	0.20		Qg 0.032 Qo 0.065 Do 225 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.50 K 1.51 S/Do 4.02 cor -0.25 Ku 1.26 Kw 1.26
RW58/I	5.49 5.49	209 317	0.165 0.180	159			96 (Pipe flow= Sum upstr atten flows)	17.200	3.25	225(U)	2.09	0.14		Qg 0.032 Qo 0.096 Do 225 CHART 33 Angle 1 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.33 K 1.17 S/Do 3.56 cor -0.14 Ku 1.03 Kw 1.03
RW57/I	5.63 5.63	208 314	0.220 0.240	209			127 (Pipe flow= Sum upstr atten flows)	17.200	1.15	300(U)	1.75	0.16		Qg 0.032 Qo 0.127 Do 300 CHART 33 Angle 1 S/Do 2.5 Du/Do 0.75 Qg/Qo 0.25 K 0.16 S/Do 2.86 cor -0.05 Ku 0.11 Kw 0.11
RW56/I	5.79 5.79	206 310	0.278 0.304	262			159 (Pipe flow= Sum upstr atten flows)	18.301	1.00	300(U)	2.19	0.14		Qg 0.033 Qo 0.159 Do 300 CHART 33 Angle 1 S/Do 2.5 Du/Do 1.00 Qg/Qo 0.21 K 0.84 S/Do 2.86 cor -0.04 Ku 0.80 Kw 0.80
1/I	5.93 5.93	204 308	0.278 0.304	260	85	101	159 (Pipe flow= Sum upstream flows)	37.603	1.50	375(2)	1.44	0.44		Qo 0.159 Do 375 CHART 50 Du/Do0.80 alpha 89 K'w 0.30 Vu 2.25 WSE 0.25 Ku 1.64 Kw 2.37

STRUCTURE No.	V2/2g VELOCITY HEAD (m)	Ku U/S HEADLOSS COEFFICIENT	hu U/S PIPE STRUCT. HEADLOSS (m)	Kl LAT. HEADLOSS CO-EFFICIENT	hl LAT. PIPE STRUCT. HEADLOSS (m)	Kw W.S.E CO-EFFICIENT	hw CHANGE IN W.S.E (m)	Sf PIPE FRICTION SLOPE (%)	hf PIPE FRICTION HEADLOSS (L × Sf) (m)	PART FULL DEPTH (m)	Vp VELOCITY (m/s)
1/E	0.078	4.67	0.366			4.67	0.366	0.61	0.053		
2/E	0.110	2.09	0.230	Interp val for S/Do 1.74 Kw 2.53 CHART 46 S/Do 2.0 K0 2.04 K0.5 1.92 K 1.99 S/Do 1.5 K0 2.09 K0.5 2.31 K 2.18 Interp val for S/Do 1.74 Ku 2.09		2.53	0.279	0.85	0.129	0.194	2.80
1/H	0.022	6.91	0.154			6.91	0.154	0.18	0.015		
2/H	0.225	2.27	0.509	Dhv 375 Qhv 0.130 Dhv/Dlv 1.0 Dhv/Do 1.00 Qhv/Qo 0.56 H 2.13 Low vel latrl 1/H Dlv 375 Qlv 0.073 Dlv/Do 1.00 Qlv/Qo 0.32 L 0.10 H-L 2.03 Ku=Kw= 2.03 K vals step pipes as pipe flow Ku 2.03 Kw 2.03 Averaged Ku 2.27 Kw 2.27		2.27	0.509	1.75	1.013	0.212	3.59
1A/3E	0.002	1.00	0.300	Upstream HGL 155.228 below outlet pipe obv 155.252 Set Kp to 1		1.00	0.300	0.02	0.003	0.051	2.43
3/E	0.132	1.98	0.261	Dl/Do 1.00 B/Do 2.40 Qu/Qo 0.09 Do/Du 1.00 Do/Dl 1.00 K'l 1.70 Ml 0.99 Kl=K'l×Ml= 1.68 Determine Ku K'u 1.91 Mu 0.99 Ku=K'u×Mu= 1.89 Kw=Ku= 1.89 Combined pipes in line case Join Pipes: 2/E and 1A/3E Vel1 0.150 Vel2 1.457 Eq Dia 411 Angle 261 Flow 0.178 CHART 50 Du/Do1.10 alpha 0 K'w 0.05 Vu 1.34 WSE 0.09 Ku 0.63 Kw 0.66 Interpolated Ku= 1.89 Kw= 1.89 K vals step pipes as pipe flow Ku 1.89 Kw 1.89 Averaged Ku 1.98 Kw 2.23		2.23	0.295	1.03	0.485	0.160	3.97
4A/E	0.221	1.14	0.252			1.14	0.252	1.72	0.879	0.196	3.95
4/E	0.182	0.91	0.166			0.91	0.166	1.11	0.378	0.224	3.79
5A/E	0.267	0.93	0.249			0.93	0.249	1.63	0.306	0.252	3.98
5/E	0.277	0.75	0.207	CHART 33 Angle 2 S/Do 2.5 Du/Do 1.12 Qg/Qo 0.14 K 0.63 S/Do 1.69 cor 0.12 Ku 0.75 Kw 0.75 K vals step pipes as pipe flow Ku 0.75 Kw 0.75		0.75	0.207	1.99	1.100	0.200	3.51
6/E	0.124	1.73	0.214	CHART 51 ti 985 Do 450 theta 46 r/Do 3.37 Du 400 Du/Do 0.89 Kd 1.73 K'w 0.25 Vu 3.34 WSE 0.36 Ku 1.73 Kw 2.88 K vals step pipes as pipe flow Ku 1.73 Kw 2.88		2.88	0.357	0.75	0.267		
RW60/I	0.026	2.69	0.071			2.69	0.071	0.27	0.046		
RW59/I	0.103	1.26	0.130			1.26	0.130	1.03	0.176		
RW58/I	0.223	1.03	0.229			1.03	0.229	2.24	0.386		
RW57/I	0.156	0.11	0.017			0.11	0.017	1.15	0.198		
RW56/I	0.244	0.80	0.196			0.80	0.196	1.81	0.330		
1/I	0.106	1.64	0.173			2.37	0.251	0.82	0.310	0.240	2.13

OBVERT LEVELS (m)	DRAIN SECTION H.G.L (m)	UPSTREAM H.G.L (m)	LAT. H.G.L (m)	W.S.E. (m)	SURFACE OR K&C INVERT LEVEL (m)	STRUCTURE No.
153.378 153.344	153.607 153.554	153.973		153.973	154.449	1/E
153.324 152.868	153.324 153.109	153.554		153.603	154.449	2/E
151.185 151.109	151.408 151.393	151.562		151.562	151.925	1/H
150.884 148.188	150.884 148.504	151.393		151.393	151.849	2/H
155.252 153.236	154.928 153.109	155.228		155.228	155.988	1A/3E
152.848 149.437	152.848 149.669	153.109		153.143	154.252	3/E
149.417 146.357	149.417 146.578	149.669		149.669	150.374	4A/E
146.412 144.882	146.412 145.111	146.578		146.578	147.231	4/E
144.862 144.020	144.862 144.058	145.111		145.111	145.708	5A/E
143.851 141.895	143.851 141.684	144.058		144.058	144.886	5/E
140.910 140.733	141.470 141.203	141.684		141.827	142.579	6/E
152.918 152.830	153.585 153.539	153.656		153.656	153.823	RW60/I
152.810 152.634	153.410 153.233	153.539		153.539	153.983	RW59/I
152.614 152.054	153.004 152.618	153.233		153.233	153.644	RW58/I
152.054 151.856	152.601 152.403	152.618		152.618	153.212	RW57/I
151.836 151.653	152.207 151.877	152.403		152.403	152.641	RW56/I
151.704 151.140	151.704 151.393	15				

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☐ S.MARSH RPEQ 8068 ☐

DESIGNED	CDV
DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:	DETAILS:	DATE:	INIT:
B	LINE E AMENDED IN RESPONSE TO RFI DATED 02/06/21	14/07/21	CDV
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
DRAINAGE CALCULATIONS TABLES SHEET 1 of 2
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: D05 ISSUE: B
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE SECTIONS.DWG

22/07/2021 N:\M2584\STAGE_2\DESIGN\WORKING DRAWINGS\DRAINAGE SECTIONS

LOCATION					TIME			SUB-CATCHMENT RUNOFF							INLET DESIGN							DRAIN DESIGN													HEADLOSSES										PART FULL		DESIGN LEVELS							
						tc	I	C10	C	A	CxA	+CA	Q					Qg	Qb		tc	I	+CA	Qt	Qm	Qs	Qp	L	S		V	T			V2/2g	Ku	hu	Kl	hl	Kw	hw	Sf	hf		Vp							
DESIGN ARI	STRUCTURE No.	DRAIN SECTION	SUB-CATCHMENTS CONTRIBUTING	LAND USE	SLOPE OF CATCHMENT	SUB-CATCHMENT TIME OF CONC.	RAINFALL INTENSITY	10yr RUNOFF CO-EFFICIENT	CO-EFFICIENT OF RUNOFF	SUB-CATCHMENT AREA	EQUIVALENT AREA	SUM OF (C x A)	SUB-CATCHMENT DISCHARGE	FLOW IN K&C (INC. BYPASS)	ROAD GRADE AT INLET	MINOR FLOW ROAD CAPACITY	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	MAJOR TOTAL FLOW	MAJOR SURFACE FLOW CAPACITY	MAJOR SURFACE FLOW	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE / BOX DIMENSIONS (CLASS)	FLOW VELOCITY	TIME OF FLOW IN REACH	STRUCTURE CHART No.	STRUCTURE RATIOS FOR 'K' VALUE CALCULATIONS	VELOCITY HEAD	U/S HEADLOSS COEFFICIENT	U/S PIPE STRUCT. HEADLOSS	LAT. HEADLOSS CO-EFFICIENT	LAT. PIPE STRUCT. HEADLOSS	W.S.E CO-EFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEADLOSS (L x Sf)	DEPTH	VELOCITY	OBVERT LEVELS	DRAIN SECTION H.G.L	UPSTREAM H.G.L	LAT. H.G.L	W.S.E.	SURFACE OR K&C INVERT LEVEL	STRUCTURE No.
yrs					%	min	mm/h			ha	ha	ha	l/s	l/s	%	l/s		l/s	l/s		min	mm/h	ha	l/s	l/s	l/s	l/s	m	%		m/s	min			m		m		m		m	%	m	m	m/s	m	m	m	m	m	m	
10 100	1A/3H	1A/3H to 3/H	1A/3H	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.230	0.202 0.230	0.202 0.230	94 162	119 FLOW WIDTH	5.80 1.669	771 (0.000	1 3 month)	84	35	1A/4H	10.00 10.00	168 254	0.202 0.230	162			84 (Pipe flow= Grate flow)	12.088	0.40	375(2)	0.76	0.20		Qg 0.084 Qo 0.084 Do 375 CHRT 32: Vo2/2gDo 0.08 H/Do 0.95 Kg side flow 5.40 end flow 4.20	0.029	5.40	0.159			5.40	0.159	0.23	0.028			148.174 148.126	148.532 148.504	148.691		148.691	149.339	1A/3H
10 100	3/H	3/H to 4/H	RW60/I;RW59/I;RW58/I;RW57/I;RW56/I;1/H;2/H;1A/3H;3/H	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.236	0.208 0.236	0.208 0.236	97 167	97 FLOW WIDTH	5.80 1.495	771 (0.000	1 3 month)	73	24	4/H	10.61 10.61	164 248	0.959 1.078	743			380 (Pipe flow= Sum upstr atten flows)	70.100	5.07	450(2)	2.39	0.49		Qg 0.071 Qo 0.380 Do 450 Routine 2.1 CHART 48 Du/Do 0.83 Qu/Qo 0.60 K 0.98 d/Do 2.0 chrt Qg/Qo 0.19 Kg 0.23 d/Do 1.5 chrt Qg/Qo 0.19 Kg 0.26 d/Do 1.00 Interp value Kg 0.29 Ku=Kw= 1.27 Combined pipes in line case Join Pipes:	0.291	1.11	0.323		2/H and 1A/3H Vel1 2.058 Vel2 0.741 Eq Dia 479 Angle 168 Flow 0.309 CHART 33 Angle 0 S/Do 2.5 Du/Do 1.06 Qg/Qo 0.19 K 0.77 S/Do 1.62 cor 0.18 Ku 0.95 Kw 0.95 Interpolated Ku= 1.11 Kw= 1.11	1.11	0.323	1.78	1.249	0.249	4.20	148.181 144.627	148.181 144.895	148.504		148.504	148.908	3/H
10 100	1A/4H	1A/4H to 4/H	1A/4H	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.253	0.222 0.253	0.222 0.253	104 178	139 FLOW WIDTH	5.80 1.773	771 (0.000	1 3 month)	94	45	1/10F	10.00 10.00	168 254	0.222 0.253	179			94 (Pipe flow= Grate flow)	8.824	1.14	375(2)	0.85	0.15		Qg 0.094 Qo 0.094 Do 375 CHRT 32: Vo2/2gDo 0.10 H/Do 1.35 Kg side flow 4.28 end flow 3.48	0.037	4.28	0.158			4.28	0.158	0.29	0.025			144.416 144.315	144.920 144.895	145.078		145.078	145.456	1A/4H
10 100	4/H	4/H to 8/F	RW60/I;RW59/I;RW58/I;RW57/I;RW56/I;1/H;2/H;1A/3H;3/H;1A/4H;4/H	ROAD/ALLOT		10.00 10.00	168 254		0.88 1.00	0.211	0.185 0.211	0.185 0.211	86 149	111 FLOW WIDTH	5.80 1.592	771 (0.000	1 3 month)	80	31	7/F	11.10 11.10	161 244	1.366 1.542	1045			539 (Pipe flow= Sum upstr atten flows)	14.180	4.56	525(2)	2.41	0.10		Qg 0.076 Qo 0.539 Do 525 Flow 3/H made eqv grate flow Angle 91 Chart 47 S/Do 2.5 chartdeg Du/Do 0.71 K0 2.37 K0.5 2.33 Qu/Qo 0.17 Cg 1.29 K 2.32 S/Do 2.5 K0 2.37 K0.5 2.33 K 2.32 S/Do 2.0 K0 2.55 K0.5 2.41 K 2.37 Interp val for S/Do 2.30 Kw 2.34 CHART 46 S/Do 2.5 K0 1.49 K0.5 1.97 K 2.12 S/Do 2.0 K0 1.84 K0.5 2.03 K 2.09 Interp val for S/Do 2.30 Ku 2.10 K vals above for stepped pipes as grate flow grate flow decreased by 0.373 from 3/H Routine 2.24 Join Pipes:	0.296	1.66	0.492		1A/4H and 3/H Vel1 0.812 Vel2 2.347 Eq Dia 536 Angle 150 Flow 0.463 Angle 30 Chart 36 S/Do 2.5 chartdeg Du/Do 1.02 K0 1.52 K0.5 1.87 Qu/Qo 0.86 Cg 0.35 K 1.64 S/Do 2.5 K0 1.52 K0.5 1.87 K 1.64 S/Do 2.0 K0 1.82 K0.5 2.08 K 1.91 Interp val for S/Do 2.04 Kw 1.88 CHART 35 S/Do 2.5 K0 1.33 K0.5 1.49 K 1.39 S/Do 2.0 K0 1.55 K0.5 1.75 K 1.62 Interp val for S/Do 2.04 Ku 1.60 K vals step pipes as pipe flow Ku 1.60 Kw 1.88 Averaged Ku 1.65 Kw 1.94	1.94	0.573	1.44	0.204	0.286	4.41	144.403 143.756	144.403 143.517	144.895		144.976	145.354	4/H
10 100	7/E	7/E to 8/E	1/E;2/E;1A/3E;4A/E;4/E;5A/E;5/E;1/F;2/F;4/F;1A/5F;5/F;8/F;7/F;RW60/I;RW59/I;RW58/I;RW57/I;RW56/I;1/H;2/H;1A/3H;3/H;1A/4H;4/H;1A/10F;10/F	MH													4.1				13.13 13.13	150 228	4.337 4.919	3115	138	1260 (Pipe flow= Sum upstream flows)	1856	23.112	0.50	900(2)	2.82	0.14		Qo 1.856 Do 900 Flow 6/E made eqv grate flow Flow 10/F made eqv grate flow CHRT 32: Vo2/2gDo 0.44 H/Do 0.29 Kg side flow 3.78 end flow 3.33 K vals above for stepped pipes as grate flow grate flow decreased by 0.421 from 6/E grate flow decreased by 1.435 from 10/F Routine 2.2 CHART 53 Du/Do 0.9 Qu/Qo 0.77 Kw=Ku= 0.51 Combined pipes in line case	0.405	1.33	0.539		Join Pipes: 6/E and 10/F Vel1 2.851 Vel2 2.641 Eq Dia 918 Angle 166 Flow 1.856 CHART 50 Du/Do1.02 alpha 0 K'w 0.05 Vu 2.80 WSE 0.17 Ku 0.38 Kw 0.43 Interpolated Ku= 0.45 Kw= 0.47 K vals step pipes as pipe flow Ku 0.45 Kw 0.47 Averaged Ku 1.33 Kw 1.35	1.35	0.545	0.96	0.223			140.400 140.284	140.664 140.441	141.203		141.209	141.911	7/E
10 100	8/E	8/E to 9/E	1/E;2/E;1A/3E;4A/E;4/E;5A/E;5/E;1/F;2/F;4/F;1A/5F;5/F;8/F;7/F;RW60/I;RW59/I;RW58/I;RW57/I;RW56/I;1/H;2/H;1A/3H;3/H;1A/4H;4/H;1A/10F;10/F	MH													4.1				13.27 13.27	149 227	4.337 4.919	3102	138	1246 (Pipe flow= Sum upstream flows)	1856	10.200	0.40	1050(2)	2.08	0.08		Qo 1.856 Do 1050 CHART 51 Ti 228 Do 1050 theta 48 r/Do 0.86 Du 900 Du/Do 0.86 Kd 1.05 K'w 0.25 Vu 2.92 WSE 0.34 Ku 1.05 Kw 1.55	0.221	1.05	0.232			1.55	0.342	0.43	0.043			140.207 140.166	140.210 140.166	140.441		140.551	141.900	8/E
3mnth 100	9A	9A to OUT/B1	DRAINAGE RESERVE														4.1				5.00 5.00	216 329	0.120 0.120	110			110 (Pipe flow set by user)	12.350	0.50	375(2)	1.00	0.21		Qo 0.110 Do 375 CHRT 32: Vo2/2gDo 0.14 H/Do 0.00 Kg side flow 7.23 end flow 5.64 Part full downstream pipe	0.051	1.00	0.083		Upstream HGL 141.590 below outlet pipe obv 141.607 Set Kp to 1	1.00	0.083	0.39	0.049	0.275	1.27	141.607 141.545	141.507 141.445	141.590		141.590	143.396	9A/B1
3mnth 100	7E	7E to OUT/B2	DRAINAGE RESERVE														4.1				5.00 5.00	216 329	0.449 0.449	410			410 (Pipe flow set by user)	6.605	0.50	600(2)	1.40	0.08		Qo 0.410 Do 600 CHRT 32: Vo2/2gDo 0.16 H/Do 0.00 Kg side flow 6.69 end flow 5.31	0.100	6.69	0.668			6.69	0.668	0.41	0.027	0.454	1.76	141.173 141.140	141.173 140.994	141.841		141.841	141.911	7E/B2

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☐ S.MARSH RPEQ 8068 ☐

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DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE:
DRAINAGE CALCULATIONS TABLES
SHEET 2 of 2
DFC (PROJECT MANAGEMENT) PTY LTD
'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DETAILS:
PROJECT: M2584E_2 PLAN: D06 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE SECTIONS.DWG

DENNIS FAMILY CORPORATION

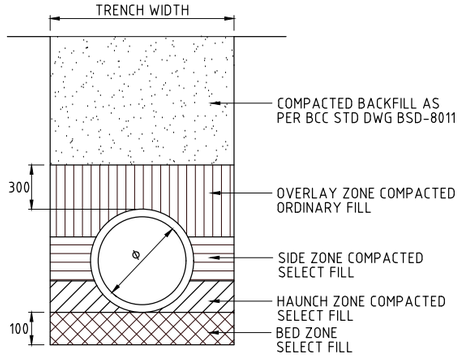
CONSTRUCTION EQUIPMENT	PIPE CLASS	MINIMUM COMPACTION COVER TO PIPE OBVERT								
		ϕ375	ϕ450	ϕ525	ϕ600	ϕ675	ϕ750	ϕ825	ϕ900	ϕ1050
VIBRATORY RAMMER (UP TO 75kg)	2	0.450	0.400	0.400	0.350	0.350	0.300	0.300	0.250	0.25
	3	0.300	0.300	0.300	0.250	0.250	0.200	0.200	0.200	0.200
VIBRATORY TRENCH ROLLER (UP TO 2t)	2	0.400	0.400	0.350	0.250	0.250	0.200	0.200	0.200	0.200
	3	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
VIBRATORY SMOOTH DRUM ROLLER (7t)	2	0.700	0.700	0.650	0.650	0.650	0.600	0.600	0.400	0.400
	3	0.450	0.450	0.450	0.350	0.350	0.200	0.200	0.200	0.200
VIBRATORY SMOOTH DRUM ROLLER (10t)	2	0.850	0.850	0.800	0.800	0.800	0.750	0.750	0.750	0.750
	3	0.550	0.550	0.500	0.500	0.500	0.200	0.200	0.200	0.200
EXCAVATOR AND COMPACTION WHEEL (15t)	2	0.700	0.650	0.650	0.650	0.650	0.600	0.600	0.550	0.550
	3	0.450	0.450	0.450	0.450	0.450	0.350	0.350	0.250	0.250
EXCAVATOR AND COMPACTION WHEEL (25t)	2	1.050	1.000	0.950	0.900	0.900	0.850	0.850	0.750	0.750
	3	0.650	0.650	0.650	0.650	0.650	0.600	0.600	0.500	0.500
GRADER [CAT120H] 14.5t)	2	0.600	0.600	0.450	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.600	0.450	0.450	0.200	0.200	0.200	0.200	0.200	0.200
GRADER [CAT140H] (17.0t)	2	0.600	0.600	0.600	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.600	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
SCRAPER [CAT613C11] (27.2t)	2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.200	0.200
	3	0.600	0.600	0.600	0.600	0.600	0.200	0.200	0.200	0.200
SCRAPER [CAT621F] (53.8t)	2	0.700	0.650	0.650	0.650	0.600	0.600	0.600	0.600	0.600
	3	0.650	0.600	0.600	0.650	0.600	0.600	0.600	0.600	0.600
DOZER [CATD7 G]	2	0.600	0.600	0.600	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
DOZER [CATD9 R]	2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.200
	3	0.600	0.600	0.600	0.600	0.600	0.200	0.200	0.200	0.200
EXCAVATOR [CAT315B] (15.8t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
EXCAVATOR [CAT317] (17.3t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
EXCAVATOR [CAT325B] (25.9t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

TYPE HS2 SUPPORT:

1. THE HAUNCH ZONE GOES FROM THE BASE OF THE PIPE TO A HEIGHT OF 0.3m TIMES THE DIAMETER OF THE PIPE (ie TO 3/10 OF THE DIAMETER OF THE PIPE).
2. THE HAUNCH ZONE IS COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 90%. (DI=60)
3. THE SIDE ZONE GOES FROM THE TOP OF THE HAUNCH ZONE TO A HEIGHT OF 0.7 TIMES THE DIAMETER OF THE PIPE (ie TO 7/10 OF THE DIAMETER OF THE PIPE).
4. THE SIDE ZONE IS COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 90%. (DI=60)
5. THERE IS A 300mm OVERLAY ZONE OF COMPACTED ORDINARY FILL.

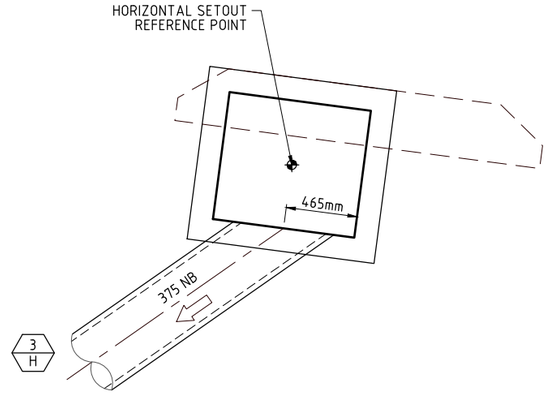
NOTES:

1. SOIL TYPE USED FOR THIS TABLE IS CLAYEY SAND. ALL OTHER SOIL TYPES MUST BE REFERRED IMMEDIATELY TO THE SUPERVISING ENGINEER SO MINIMUM COVERS CAN BE CALCULATED.
2. INSTALLATION TYPE FOR THIS TABLE IS HS2. (REFER DETAIL)
3. ANY CONSTRUCTION EQUIPMENT, INSTALLATION TYPE, PIPE CLASS OR PIPE DIAMETER NOT COVERED IN THIS TABLE SHOULD BE REFERRED ONTO THE SUPERVISING ENGINEER BEFORE ANY CONSTRUCTION COMMENCES
4. DISTANCES SHOWN ARE THE ABSOLUTE MINIMUM COMPACTION COVER TO THE OBVERT OF THE STORMWATER PIPE FOR THE NOMINATED MACHINERY. THE CONTRACTOR IS TO ENSURE THAT MACHINES THAT REQUIRE HIGHER COMPACTION COVER ARE KEPT CLEAR OF STORMWATER PIPES AND TRENCHES UNTIL THEIR NECESSARY COMPACTION COVER IS ACHIEVED.
5. CONSTRUCTION EQUIPMENT LISTED IN THIS TABLE ARE EXAMPLES ONLY AND EQUIVALENT MACHINERY MAY BE USED.

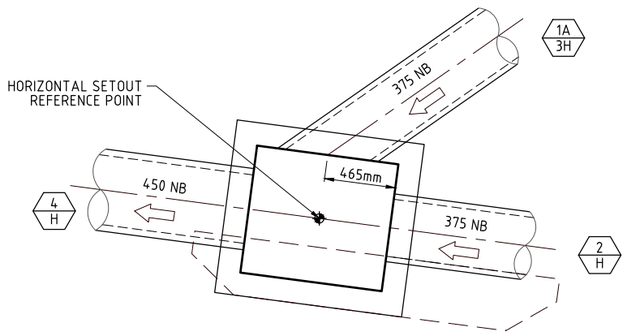


INSTALLATION TYPE HS2

NOTE:
CRACKED PIPES WILL NOT BE ACCEPTED AT 'ON MAINTENANCE' AND IT IS TO BE DEMONSTRATED IN ACCORDANCE WITH COUNCIL STANDARDS THAT THE STORMWATER SYSTEM IS ACCEPTABLE TO COUNCIL WITH REGARD TO CRACKED PIPES. (THE CONTRACTOR IS TO REFER TO SECTION 6.5.1 OF THE SUBDIVISION AND DEVELOPMENT GUIDELINES FOR FURTHER INFORMATION.)



STRUCTURE 1A/3H
GULLYPIT
SCALE 1:20



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0 0.2 0.4 0.6 0.8 1 (A1) 1:20 2 Metres
(A3) 1:40
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DRAWN	BJ
CHECKED	HW
DATUM: AHD	

ISSUE:

ISSUE:	DETAILS:	DATE:	INIT:
A	ISSUE FOR OPERATIONAL WORKS APPROVAL	16/06/20	BJ

TITLE: DRAINAGE STRUCTURE DETAILS

DFC (PROJECT MANAGEMENT) PTY LTD

'ARCHERS WAY' ESTATE - STAGE 2
AT 22-80 CASH STREET, D'AGUILAR

DENNIS FAMILY CORPORATION

DETAILS:
PROJECT: M2584E_2 PLAN: D07 ISSUE: A
LOCAL AUTHORITY REF: MORETON BAY REGIONAL COUNCIL
COUNCIL REF: DA/38032/2019/V3RL
FILE NAME: DRAINAGE DETAILS.DWG

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2021/1694

2/07/2021 N:\M2584E\STAGE_2\DESIGN\WORKING DRAWINGS\DRAINAGE DETAILS

ATTACHMENT 4

Appeal Rights

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for an appeal relating to the *Plumbing and Drainage Act 2018*—

(i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or

(ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

(iii) otherwise—20 business days after the day the notice is given; or

(g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and

(d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and

(e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and

(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—

(a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or

(b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

(1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

(a) conduct engaged in for the purpose of making a decision; and

(b) other conduct that relates to the making of a decision; and

(c) the making of a decision or the failure to make a decision; and

(d) a purported decision; and

(e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

(a) is final and conclusive; and

(b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise, whether by the Supreme Court, another court, any tribunal or another entity; and

(c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.

(2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.