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Diploma Cartography

Our Ref: B3031

22 February 2022

NSW Department of Planning and Environment
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150

Attention: Mr William Hodgkinson
Team Leader, Industry Assessments

Re: Minto Resource Recovery Facility (SSD-5339)
3 November 2021 - Request for additional Information

We refer to the subject request for additional information and provide below our response to the issues raised. Issues raised are shown in green with responses provided.

1. PLANS

Please label the individual stockpiles on one of the plans (PS02-A401 or PS02-A400), including the stockpiles of materials from the sand washing and concrete crushing plant.

The label should describe the waste or product they hold.

Response

Drawing PS02-A401 has been modified as required, refer Revision C. A complete set of the modified plans is provided as **Attachment 6**.

2. GENERAL

Please clearly describe what changes have been made as a result of submissions received during the exhibition of the Environmental Impact Statement. For example, the new stormwater layout, amended cut and fill, additional length of noise wall.

Comment

There have been some modifications to the plans of the proposed development which include such things as:

- providing more labelling of the plans.

- inclusion of additional plan showing stockpile locations (Plan PS02-A401, Revision C).
- modification to the engineering plans by removal of swept paths.
- changes to swept path diagrams as requested.

There has been no significant change to the earthworks besides the setback of the southern retaining wall by two (2) metres which has had a flow-on effect of moving the position of the overall cut and fill on the Site for it to remain balanced, to enable the water to flow to the pits and provide additional ponding for large storm events. As shown on Plan PS02-C105, Revision G, the processing plants, stockpiles and buildings have remained at the same RL as the original Environmental Impact Statement submission.

The following describes the main changes which have been made to the development as a result of the Response to Submissions:

Plan PS02-A400	Southern retaining wall, sand washing plant and shed moved into site by two (2) metres to allow drainage of overland flood water. Northern sediment basin removed and replaced with a pit and pump and an excess water storage tank (further details see Plan PS02-E100, Revision Q). Southern sediment basin removed and replaced with a pit and pump. Additional labelling as requested.
Plan PS02-AZ00	Chain wire fence and clip lock fence on southern and eastern boundary replaced with concrete panel/Hebel fence.
Plan PS02-DZ01	Plan deleted.
Plan PS02-DZ02	Plan deleted.
Plan PS02-DZ03	Plan deleted.
Plan PS02-DZ04	Plan deleted.
Plan PS02-E100	Northern drainage discharge removed. Northern water storage tank shown. Southern water storage tank increased to 450KL. Change to southern discharge to connect to existing infrastructure.
Plan PS02-E200	Removal of sediment pits and replacement with pit and pump process where water is pumped into the treatment system before discharge.
Plan PS02-E201	Plan deleted.

Plan PS02-E410 Plan deleted.

Plan PS02-E600 Plan deleted.

Plan PS02-E700 Plan modified in accordance with other modifications.

A response must be provided to all issues raised in submissions. Outstanding issues that have not been sufficiently responded to include concerns regarding turbidity monitoring, property prices and effect on business, the blind spot on Montore Road, asbestos (which has been responded to by referring to the Asbestos Management Plan which relates to remediation, not the ongoing operations which were the concern). Please be specific in addressing the relevant issues.

Comment

Turbidity monitoring

The facility will use online turbidity monitoring of the discharge water. In the event of an exceedance of the required value, the system will shut down discharge and one of the on-call staff will be called in to carry out repairs.

Property prices

It is widely recognised in the development assessment process that impact on property prices as a result of any form of development is not a matter for consideration pursuant to section 4.15 of the *Environmental Planning and Assessment Act 1979*. Notwithstanding, no evidence has been provided in submissions from the public which demonstrates how any perceived impact on property prices would result from the proposed development.

Effect on business

All development will have some impact on the environment within which it is located. The Site is located in an IN1 General Industry Zone. One objective of that zone is *"To minimise any adverse effect of industry on other land uses"*. The Environmental Impact Statement and responses to submissions have clearly established that the proposed development, suitably conditioned, would minimise the impact the proposed development would have on other land uses including business in the locality. Notwithstanding, no substantive evidence has been provided in submissions from the public which demonstrates how any perceived impact on business would result from the proposed development such that the above objective of the zone would not be achieved.

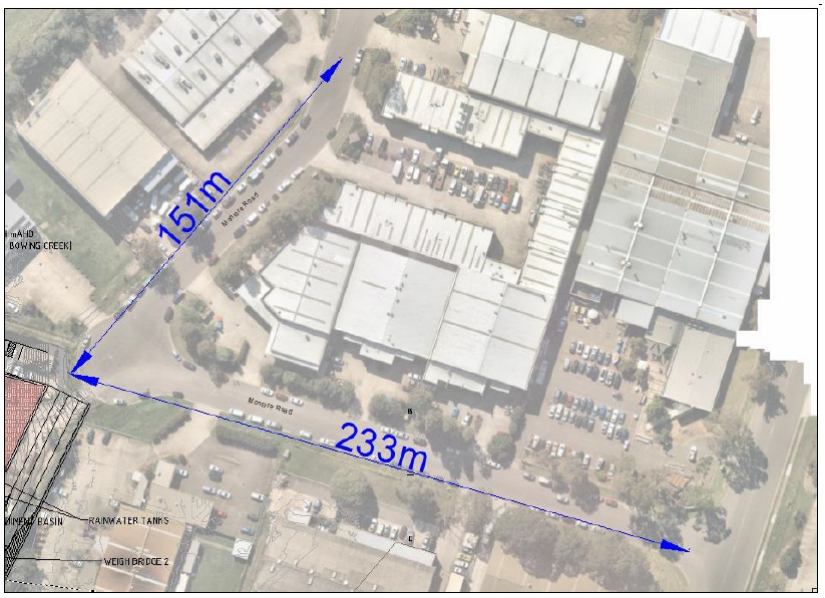
Blind spot Montore Road

The Traffic Engineer has indicated that it is unclear what is being referred to with respect to the "blind spot on Montore Road". The proposed driveway meets all sight distance requirements so there is no "blind spot". The sharp turn on Montore Road is existing and is not affected by the proposed driveway.

Montore Road is a 50km/h road and the site access is proposed via a two-way driveway from a cul-de-sac. The geometry of the road and the proposed location of the driveway would result in vehicles passing the

site at a speed lower than the speed limit of 50km/h. Regardless, the sight line from the driveway has been assessed against the requirements of a 50km/h road under AS2890.2:2018. The minimum sight line required is a 5s gap along the frontage road which corresponds to a distance of 69m as detailed in Figure 3.3 of AS2890.2:2018.

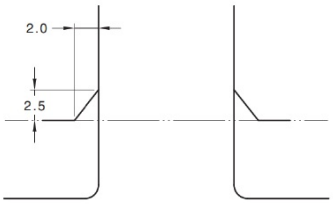
The proposed driveway location provides sight distances well in excess of the minimum 69m required by AS2890.2:2018 as shown below.



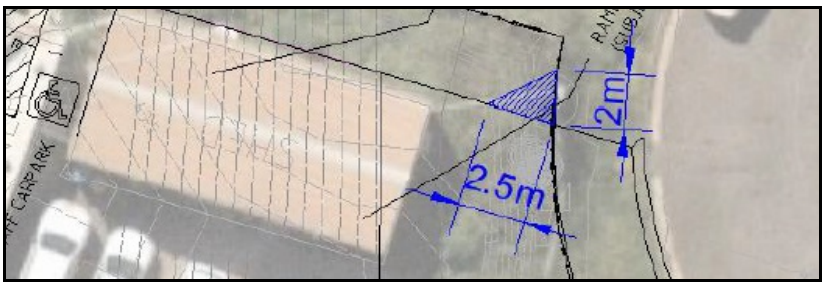
The requirements for sight lines between pedestrians along the Site frontage and egressing vehicles is described in AS2890.2:2018 and shown below.

(b) *Sight distance to pedestrians* — Minimum dimensions for sight distance splays required to enable a pedestrian on the public road footpath to evade a vehicle emerging from an access driveway shall be as shown in Figure 3. . Wherever practicable, larger splays should be provided.

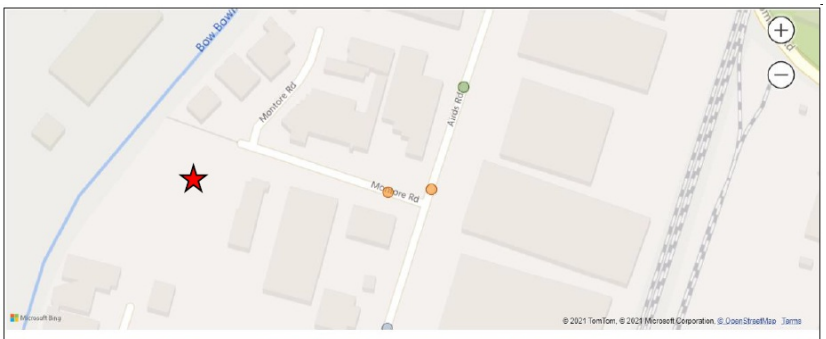
Dimensions in metres



The proposed access driveway provides adequate sight lines for pedestrians as shown below.



A review of the TfNSW crashes map has not identified any cluster of crashes within close proximity to the proposed site driveway. The nearest available crash statistic is shown below.



Reporting year	Crash Id	Degree of crash	RUM - code	RUM - description	Type of location	Natural lighting	Longitude	Latitude	Number killed	Number injured
2017	1151033	Serious Injury	73	Off rd right => obj	2-way undivided	Daylight	150.84	-34.03		1
2019	1207653	Non-casualty (towaway)	32	Right rear	2-way undivided	Dawn	150.84	-34.03		
2019	1217951	Serious Injury	71	Off rd left => obj	2-way undivided	Darkness	150.84	-34.03		1

Given the lack of historical crashes within close proximity to the proposed driveway and the ample sight lines provided to both vehicles and pedestrians, the proposed development will not negatively impact the safety of the road network within the immediate vicinity of the Site.

Asbestos

The facility does not accept asbestos. The EPA's Standards for Managing Construction Waste in NSW would be followed which requires inspection for asbestos. If any asbestos is found in a load, then the entire load is rejected and removed from the Site.

The RTS states that asphalt, road base, rock and terracotta are usually kept separate, but it still does not state where these products would be kept. The layout plan doesn't show stockpiles of these materials, instead the RTS refers to the main stockpiles which within which material is not separated. Describe where these materials are kept and the expected stockpile height and volume and show the location of these products on a plan.

Comment

The majority of waste materials consistently received at the Minto facility would be brick, concrete and VENM (sand and sandstone). Other wastes offered at infrequent times include asphalt, quarried road base and terracotta. An example would be if a major storm went through Sydney and terracotta roofs were destroyed. Usually, small quantities of these waste materials are not kept separately and, hence, have not been shown on the plans. These wastes are mixed with the brick or concrete stockpiles.

The tipping market is very dynamic in that the availability of different waste materials varies at different times, sometimes there is a surplus and other times there is a shortage. The applicant needs to be flexible with regard to what is received. The location and size of stockpiles of the unprocessed wastes will not change and the location and size of stockpiles of the processed waste will not change even with different wastes.

The RTS states that stockpiles adjacent to the boundary of the site will be 6 m but the stockpile layout plan, Drawing No. PS02-A401, states stockpiles C and D will be 8 m, please clarify.

Comment

Drawing No.PS02-A401 has been modified to state that Stockpiles C and D will be 6m in height.

3. WASTE MANAGEMENT

Please state whether all individual waste loads would be accompanied by a statement of compliance.

Comment

All brick and concrete waste loads would not be accompanied by a statement of compliance. All sand and sandstone loads will come with an ENM or VENM certificate for the project they are sourced from.

It is noted that the RTS states that the site does not require a dedicated tip and spread area or stockpile separation as the waste would be source separated. However, unless each load of waste has a statement of compliance, standards 1.2 and 4.1 of the EPA's Standards for Managing Construction Waste in NSW still apply. Please address these standards noting that if it is anticipated the waste won't have a statement of compliance, dedicated tip and spread inspection areas are required for each tipping point and these areas must not overlap or touch other stockpiles. Address and show the tip and spread areas on a plan.

Comment

Under Part 8A of the *Protection of the Environment Operations (Waste) Regulation 2014*, it is a condition of an Environment Protection Licence of a Construction and Demolition Waste Facility to comply with Standards for managing construction waste in NSW (**the Standards**). It is the intention of the applicant to comply with those standards where applicable.

Table 2-1 of the Environmental Impact Statement deals with the relevant standards, a copy of which is reproduced below.

Table 2-1: Standards for managing construction waste in NSW

Requirement		Incoming waste plan and proposed waste recycling steps
Standard 1:	**Inspection requirements**	
1.1	Inspection point 1 – verified weighbridge inspection.	Incoming trucks would stop at a receival point where the load would be inspected to ensure loads comply with the materials which the facility is licenced to receive pursuant to the Environment Protection Licence. If accepted, the driver would be instructed to proceed to the weighbridge office where a docket would be issued.
1.2	Inspection point 2 – tip and spread inspection area.	After the material is tipped, the loader spreads it for further inspection.
1.3	Training requirements for personnel.	Environmental induction for all employees and contractors before starting work. Induction to cover the following issues:

		(i) requirements of the Environmental Management Plan; (ii) specific environmental issues on the Site and control measures; (iii) roles and responsibilities for environmental management, and (iv) environmental incident procedures.
1.4	Rejected loads register.	If the load contains waste which the facility is not licenced to receive, the material is loaded back onto the truck and the driver would be instructed to turn around and leave the Site.
Standard 2:	**Sorting requirements**	
2.1	Sorting.	Once a docket is issued, the truck driver would be directed to a designated stockpile depending on the type of waste the truck is carrying and the material would be unloaded and the front end loader would move the material up onto the stockpile.
Standard 3:	**No mixing of waste**	
3.1	No mixing of inspected and sorted construction waste with waste that has not been inspected and sorted.	Inspected or sorted construction waste will not be mixed with waste that has not yet been inspected or sorted.
Standard 4:	**Waste storage requirements**	
4.1	Waste storage area.	Material processed will be stockpiled in segregated product bays or temporary stockpile areas prior to dispatch. Generally, stockpiles will be: • waste stockpiles (i.e. truck tipping / unloading area); • product stockpiles; • intermediate stockpiles, or • non-recyclable residues stockpiles. Intermediate stockpiles formed during sorting and transfer will be stockpiled in the unloading and processing area or within bins beneath processing equipment.
4.2	Inspection point 3 – waste storage area.	Employees will carry out regular inspections, including: • inspection of individual stockpiles to ensure stockpiles are not contaminated.
Standard 5:	**Transport requirements**	
5.1	Transport requirements.	Product and waste will not be transported from the Site unless it has been inspected, sorted, and stored in accordance with the EPA *Standards for Managing Construction Waste in*

	NSW (EPA 2019), or it has been rejected from the facility upon initial inspection.

In addition to the above, the applicant has, in the past, had extensive dealings with the Environment Protection Authority (**EPA**) with regard to both the interpretation of the Standards and the means by which compliance with the Standards can be achieved. A number of emails have been exchanged. Extracts from the emails are provided below.

Email Trail 1

From: EPA WARR Waste Strategy and Innovation Mailbox <WasteStrategy.Innovation@epa.nsw.gov.au>
Sent: Monday, 13 May 2019 4:07 PM
To: Brent Lawson <brent@concreterecyclers.com.au>
Cc: Justin Koek <Justin.Koek@epa.nsw.gov.au>; Daniel Zanello <Daniel.Zanello@epa.nsw.gov.au>
Subject: RE: Standards for Managing Construction Waste in NSW

Brent

Thank you for your email and our discussion last week about the Standards for Managing Construction Waste in NSW (Standards).

We have considered your queries and respond as set out below (in blue). We are more than happy to meet with you to discuss further.

Kind regards

Andrew Ward-Harvey
Unit Head, Waste Strategy
Waste and Resource Recovery Branch, NSW Environment Protection Authority
+61 2 9995 6191
andrew.ward-harvey@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

From: Brent Lawson <brent@concreterecyclers.com.au>
Sent: Thursday, 18 April 2019 2:08 PM
To: EPA WARR Waste Strategy and Innovation Mailbox <WasteStrategy.Innovation@epa.nsw.gov.au>
Subject: FW: Standards for Managing Construction Waste in NSW

Dear Sir/Madam

With regards to the EPA document Standards for Managing Construction Waste in NSW please clarify the following:

1. In the definitions Inspection point 1 needs to be at the weighbridge or after the weighbridge but before inspection point 2. We are designing a new site in western Sydney where trucks will queue to get onto the weighbridge in three lanes onsite. Will we meet the standard if we carry out inspection point 1 **before** the weighbridge?
EPA Response: The Standards require inspection point 1 to be located at or after the weighbridge and before inspection point 2. However, the EPA recognises there may be compelling operational reasons

at a specific site where inspection prior to the weighbridge on the premises is suitable. The EPA is happy to meet with you on site to discuss and understand application of this requirement at your premises.

2. We operate a concrete recycling plant at Kimbriki where there is a small vehicle unload area for the public. Box trailers and utes are hand unloaded by the driver. Our loaders are not allowed in the area whilst the public is there. We have our personnel inspecting the waste as they are being unloaded. Standard 1.2 (4) states "Manually turn or direct a plant operator to turn the load…." Please confirm this is not applicable to hand unloads.

EPA Response: The Standards require all loads of waste, other than waste which is certified as meeting requirements of a Resource Recovery Order, to be tipped, spread, turned and inspected under Standard 1.2. It is not evident from your email which parts of this process cannot be complied with. So that we can better understand your processes for hand unloads at Kimbriki, we would strongly suggest a site visit with the licensed officer.

3. WASTE TYPES – Our company recycles bricks and concrete primarily. Most brick loads from a cottage demolition includes other materials such as terracotta roof tiles, bathroom tiles and some soil. A load of concrete from civil works may include asphalt or road base. We also accept loads of waste that contain asphalt and road base with no concrete. All these materials are suitable to make the products we manufacture under the Recovered Aggregate Order 2014. This order states "In this order, recovered aggregate means material comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material." Please confirm that these waste types are acceptable as individual waste types and **not** mixed waste. Further please confirm we are allowed to mix these waste types. Standard 2.1 and 4.1 (1) would suggest we are not allowed to mix them. The standard says at the bottom of Attachment A to refer to the EPA waste reporting definitions for guidance. On reviewing these definitions there is no clarification.

EPA Response: The separate waste types are listed in Attachment A to the Standards, which includes mixed waste. We note this material you described includes a couple of different waste types and would therefore be 'mixed waste'. This appears to be predominantly a labelling/naming issue that we are confident we can resolve with further discussion. In this regard please note mixed waste materials can be mixed together, provided Standard 3 is complied with.

4. If it is acceptable to store the waste types together as in point 3 above do our signposts describe them as Mixed Waste or Bricks/Concrete? If it is mixed waste then Standard 2.1 applies and this will then create problems for sorting and classifying of theses loads.

EPA Response: See comments above. At this stage, this would be mixed waste – however, we are open to discuss with industry whether a separate category may be needed.

5. What percentage of different listed waste types when mixed with another listed waste type makes it no longer a single waste type and becomes Mixed Waste? For example if we receive some timber in with our brick what do we classify it as? How much timber is too much? How do we measure the content of timber when the load is tipped to determine if it's mixed or not?

EPA Response: The requirement under Standard 2.1 is to sort into the relevant waste type. There is no prescribed percentage in the standards, nor statement in the Standards stating that there is a zero tolerance approach for other waste in each storage area. EPA's usual regulatory approach will continue in accordance with our compliance policy.

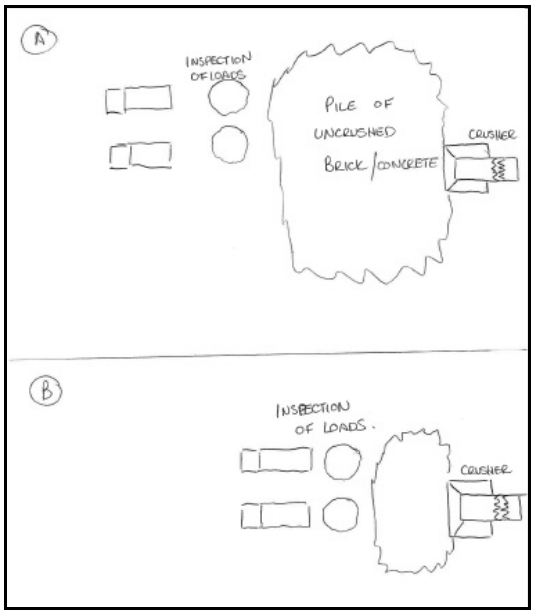
The Standard is still very confusing in the detail. Your help will be appreciated so we can train our personnel and customers over the next few weeks ready for implementation by 15 May 2019.

EPA Response: As set out above, the EPA will continue to engage with all stakeholders to assist transition to the Standards. Please refer also to our FAQs on our website at https://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition/construction-and-demolition-waste.

Kind Regards,

Brent Lawson
Managing Director

Email Trail 2



From: Daniel Zanello <Daniel.Zanello@epa.nsw.gov.au>
Sent: Thursday, 1 April 2021 1:24 PM
To: Brent Lawson <brent@concreterecyclers.com.au>
Cc: Magdalena Paszkiewicz <Magdalena.Paszkiewicz@epa.nsw.gov.au>; Sarah Crossie <Sarah.Crossie@epa.nsw.gov.au>
Subject: FW: Standards for Managing Construction Waste In NSW

Hi Brent

I've reviewed your request for clarification on the Standards for Managing Construction Waste (Standards) below and the diagram you have provided. I'm obviously not in a position to say whether any particular facility is in compliance or not with the Standards at any given point in time but am able to comment on a couple of aspects of the definition of Inspection Point 2. in light of the

high-level information provided. Just for clarity I've extracted the definition below:

> "Inspection point 2 or tip and spread inspection area means: one or more dedicated areas located on a C&D waste facility after inspection point 1 that are used solely for tipping, spreading, turning and inspecting each load of construction waste as required by Standard 1.2. The dedicated areas must:
> 1. have a combined minimum surface area of 100 square metres (m2);
> 2. be large enough so that each load of construction waste can be tipped, spread, turned and inspected in accordance with Standard 1.2;
> 3. be **clearly delineated from waste storage areas and other working areas at the C&D waste facility**; and
> 4. be a hardstand constructed from material that is:
>
> a. clearly distinguishable from any waste being tipped onto the hardstand; and
> b. capable of withstanding the tipping, spreading and scraping of waste, the load and frequency of incoming vehicles and machinery used at the C&D waste facility."

As per the information provided on the EPA website here https://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition/construction-and-demolition-waste , a tip and spread area must not be used for any other purpose such as waste stockpiling, sorting or storage.

The area may be comprised of multiple smaller areas and they may be moved over time. It's also stipulated that if multiple loads are tipped onto the tip and spread area at the one time then they are capable of being tipped and spread in accordance with the Standards without coming into contact with one another or any other waste stockpile.

The fact that a waste stockpile moves and or becomes smaller or larger over time, as per your diagram, is not indicative of whether the Standard's inspection requirements are being complied with. However, I note the definition above requires the tip and spread area to be clearly delineated from other working areas at the facility (see bold). This is not something I'm able to comment on based on the diagram you have provided and needs to be assessed on the ground at the facility. Tipping loads at the base of a stockpile where they likely to come into contact with that stockpile during the tip and spread process would in my view raise a potential non-compliance because of Standard 1.2.3.

Based on your explanation and diagram provided it does not appear in principle that you are in contravention of any of the inspection requirements acknowledging that it's how this scenario plays out on the ground at the facility, particularly whether the tip and spread area/s are clearly delineated at any point in time that would determine whether there are compliance issues or not.

Thanks for your enquiry and please feel free to contact me should you wish to discuss.

Regards

Daniel Zanello

From: Brent Lawson <brent@concreterecyclers.com.au>
Sent: Tuesday, 30 March 2021 11:30 AM
To: Magdalena Paszkiewicz <Magdalena.Paszkiewicz@epa.nsw.gov.au>
Cc: Anthony Males <anthony@concreterecyclers.com.au>; Sarah Crossie

<Sarah.Crossie@epa.nsw.gov.au>; Joanne Stuart <Joanne.Stuart@epa.nsw.gov.au>
Subject: RE: Standards for Managing Construction Waste In NSW
Hi Magna

Thank you for your response.
I also have another question about this document.
It relates to the inspection point 2.

Our company operates a number of bricks and concrete recycling facilities in Sydney. All of them operate the same way with regards to inspection point 2. I also believe this is how most large competitor operations are setup.

The loads are tipped, spread and inspected in front of the pushed up pile of brick and concrete. The question relates to the definition of "**dedicated area"**.
The size of the pile of pushed up uncrushed brick and concrete varies with the volume of material coming in the gate or being processed. As it changes over a number of days or weeks then the inspection location changes. This can be seen in the attached diagram. Diagram A shows a bigger pushed up pile of brick/concrete than diagram B and the location of the dedicated inspection location in B is under the uncrushed pile in A. All aspects of the standards are complied with as it changes ie minimum surface area, clearly delineated area and made of a hardstand constructed material.

Please advise if you think we are complying with the Standard.

I'm happy to discuss this in more details on a telephone conversation if you consider that appropriate.

Kind Regards,Brent LawsonManaging Director
14 Thackeray Street, Camellia, NSW, 2142
M: 0418 230 898
From: Magdalena Paszkiewicz <Magdalena.Paszkiewicz@epa.nsw.gov.au>
Sent: Friday, 26 March 2021 5:30 PM
To: Brent Lawson <brent@concreterecyclers.com.au>
Cc: Anthony Males <anthony@concreterecyclers.com.au>; Sarah Crossie <Sarah.Crossie@epa.nsw.gov.au>; Joanne Stuart <Joanne.Stuart@epa.nsw.gov.au>
Subject: RE: Standards for Managing Construction Waste In NSW

Good afternoon Brent,

The Standards for Managing Construction Waste apply to construction and demolition waste facilities under Part 8A of the Protection of the Environment Operations (Waste) Regulation 2014 (POEO Waste Regulation).

VENM is excluded from the definition of 'construction waste' in section 90A(a)(iii) of the POEO Waste Regulation if it falls within the meaning of Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act) being:

Virgin excavated natural material means natural material (such as clay, gravel, sand, soil or rock fines) —
(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities, and
(b) that does not contain any sulfidic ores or soils or any other waste,
and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.

You can view the requirements of Part 8A of the Waste Regulation including the definition of 'construction waste' online here. The definition of VENM is contained in Schedule 1 of the POEO Act here.

If, however, your facility is receiving 'construction waste' as defined in section 90A of the POEO Waste Regulation, then the Standards for Managing Construction Waste require every load of construction waste to be inspected by trained personnel from an elevated platform or by using a video camera to identify whether the load contains asbestos or other unpermitted waste. This information is available in the frequently asked questions on the Standards on the EPA website here.

Please let me know if you have any further questions or would like to discuss.

Kind regards,

Magda

Magdalena Paszkiewicz
A/Unit Head / Principal Policy & Programs Officer
Regulatory Policy and Reform
NSW Environment Protection Authority
D 02 9995 5843

www.epa.nsw.gov.au @NSW_EPA

The EPA acknowledges the traditional custodians of the land and waters where we work. As part of the world's oldest surviving culture, we pay our respect to Aboriginal elders past, present and emerging.

Report pollution and environmental incidents 131 555 or +61 2 9995 5555

---------- Forwarded Message ----------
From: Brent Lawson [brent@concreterecyclers.com.au]
Sent: 19/03/2021 15:47
To: info@epa.nsw.gov.au
Cc: anthony@concreterecyclers.com.au
Subject: Standards for Managing Construction Waste In NSW

I'm looking for advise in regards to the EPA document Standards for Managing Construction Waste In NSW.

Please advise if a licenced facility that is licenced to receive VENM is receiving material from a city sandstone excavation where the project has issued a certificate classifying the material as VENM, then does the licenced facility have to spread and inspect every load of VENM as it enters the facility as per the document Standards for Managing Construction Waste In NSW.

Kind Regards,

Brent Lawson

Managing Director

Concrete Recyclers

It is hoped that the above information and emails will allow the Department to better understand the operation of the proposed facility.

> ***The RTS still states that stockpile separation distances are not a requirement in the facility and stockpiles would touch each other. As previously identified, stockpile separation is required unless the stockpiles are the same listed waste type or are within an enclosed bay.***
>
> ***Explain why stockpile separation is not required at the facility.***

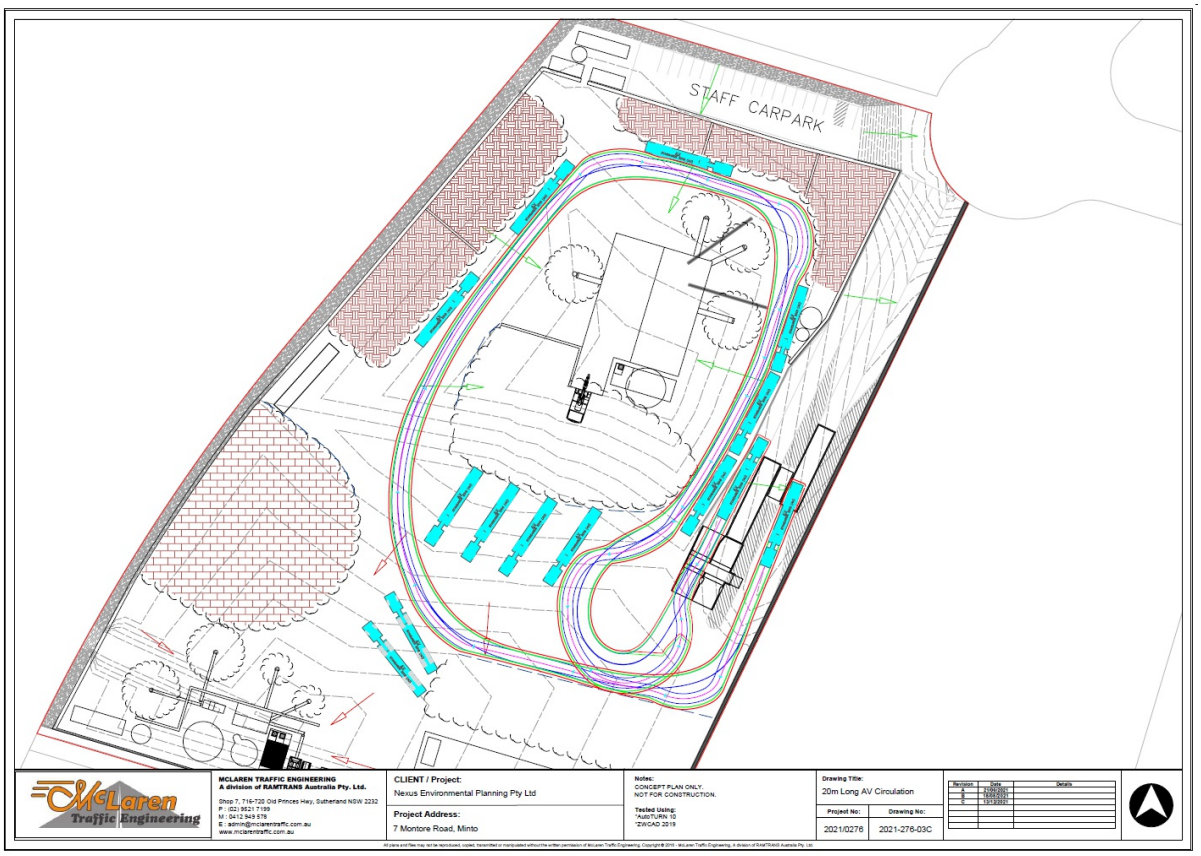
Comment

Please refer to the emails in response to the above queries of the Department.

> ***Drawing No. 021-276-03B shows the AV vehicles unloading straight into the stockpile, not unloading areas, please update the plan to show the vehicles unloading into the dedicated unloading areas. The drawing also shows two trucks unloading at once, demonstrate the two tip and spread areas will be kept separate.***

Comment

Drawing No.021-276-03C is reproduced below.



This drawing has been prepared by the Traffic Engineer to show that Articulated Vehicles can both enter the Site and manoeuvre within the Site. The stockpiles shown on the diagram are indicative only. Material delivered to the Site, as detailed in **Table 2-1** from the Environmental Impact Statement above and in the email correspondence with the EPA, will not occur directly to the stockpile(s). Rather, material will be deposited onto the sorting area (which is a dynamic location) and after inspection pushed onto the stockpile by the front end loader.

The drawing shows trucks unloading material either at the location of the mixed waste stockpile or the sandstone/sand stockpile. Because the material deposited at each of these locations will be the same, there is need for two(2) tip and spread areas.

Please address Council's concerns around worker's abilities to inspect every load imported, describe how the incoming trucks would be inspected and where the inspection point would be.

Comment

The issue of inspection points at the proposed facility is discussed in the above email trails between the applicant and the EPA based on the existing facilities operated by the applicant. All workers at the facility will be trained in accordance with the Environmental Management Plan for the Site (a draft of which is provided in the EIS) as is the case with the other facilities operated by the applicant.

The EPA is aware of this practice and has not raised concern with its implementation in the past.

Describe how waste would be moved around the site.

Comment

Waste will be moved around the Site by 3 x 35 tonne class wheel loaders as referred to in the Environmental Impact Statement.

The stated unloading and loading times do not seem to be realistic noting that the queueing and traffic assessments must assess worst-case. Please propose a more realistic timeframe and re assess the stacking of heavy vehicles.

Comment

The unloading and loading times provided are based on the times for loading and unloading at existing facilities operated by the applicant. The assessment has been undertaken on the basis of the worst case scenario being that the facility is operating at capacity.

According to the Noise Impact Assessment, the development would only have one front end loader loading vehicles and moving tipped material, yet the queuing plan shows three trucks loading at once and 6 unloading. Please provide more realistic unloading numbers and timings based on the operation of 1 front end loader.

Comment

Waste will be moved around the Site by 3 x 35 tonne class wheel loaders as referred to in both the Environmental Impact Statement and its accompanying acoustic impact assessment report.

4. NOISE

It is still unclear whether the hydraulic rock breaker and pulverisor would operate in or out of the shed and whether this has been taken into account in the noise (and air) assessments.

Comment

The applicant has advised that a rock breaker will not be operated at the facility. The pulverisor will usually operate outside. The use of a pulverisor attachment is included quantitatively in the typical worst case noise scenario in both the noise and air assessments.

It is also unclear if the rock breaker and pulverisor would be used simultaneously. Please clarify.

Comment

The applicant has advised that a rock breaker will not be operated at the facility.

Please estimate how often the hydraulic rock breaker would be used over the course of the worst hour noting it doesn't have the same sound power level as a pulverisor. The NIA must be updated to include its use given the NPI requires consideration of worst-case scenario.

Comment

The applicant has advised that a rock breaker will not be operated at the facility.

Please model the impact of extending the noise wall along the western boundary.

Comment

There has always been a barrier on the western boundary of the site as shown on Drawing PS02-AZ00, Issue E of the plans submitted with the October 2020 Environmental Impact Statement, that wall being a 6m high concrete panel fence. Modelling of that acoustic wall was undertaken as part of the acoustic impact assessment contained in the Environmental Impact Statement.

As part of the RTS, it is noted that:

> *In light of submissions regarding noise to industrial neighbours, the full extent of the southern and eastern boundaries will now match the western boundary and incorporate a 6m high concrete / Hebel panel wall. The wall comprise of a 1800mm high concrete panel 200mm thick at the base of the wall with the remaining section of the wall being Hebel block.*
>
> *In relation to construction noise impacts, the applicant concurs with the requirement to provide a Construction Noise and Vibration Management Plan as a necessary condition of consent and also consultation with the neighbours prior to construction.*

Advice from the Acoustic Engineer is that the treatment to the southern boundary will not have a noticeable change to the noise levels at the nearest residences as this noise travels over the western boundary fence which remains at 6m.

In terms of the industrial neighbours adjacent to the southern and eastern boundaries where a new 6m Hebel wall is proposed, the Acoustic Engineer expects a noise reduction of 10dB and resulting noise levels from activity behind the barrier of LAeq,11hr of 60dBA or less.

5. WATER

The Soil and Water Management Plan states that no discharge to Bow Bowing Creek is expected but the RTS still states that in large events water will discharge to Bow Bowing Creek. Please clarify and quantify the volume and frequency of water that will discharge to Bow Bowing Creek.

The statement "no untreated stormwater will be directly discharging to Bow Bowing Creek. Therefore, the proposed development will not alter the flow behaviour and impact adversely on the creek" does not make sense given treated water discharged to the creek still has the capacity to alter flow behaviour. In addition, the RTS states that in large rain events water will overtop and discharge to the creek, it is assumed this water will be untreated. Please clarify.

Comment

The following analyses were completed by the Water Engineer to address the above:

1. Review of the 6 minute pluviograph rainfall records used in the MUSIC modelling detailed in the Soil and Water Management Plan (**SWMP**) (March 2020) to determine frequency of recorded storm events at the Site.

2. Detailed water balance of the proposed site stormwater system including all stormwater flows, transfers and discharges from site stormwater treatment and storage systems.

Rainfall Analyses

The review of the 6 minute pluviograph data used in the MUSIC water quality modelling detailed in the SWMP used the following inputs, assumptions and methodology:

1. All 6 minute rainfall (pluviograph) data for the period of 1 January 1967 to 31 December 1996 for Liverpool (Whitlam Centre). The Whitlam Centre was considered the most representative pluviograph data for the Site, given the data station's relatively close proximity to Minto.

2. Average Recurrence Interval (**ARI**) and rainfall depth (**mm**) data for storms at Minto (Latitude: 34.031 °S; Longitude: 150.834 °E) based on Australian Rainfall and Runoff (Engineers Australia, 2016) was sourced from the Bureau of Meteorology Design Rainfall System (2016) website (http://www.bom.gov.au/water/designRainfalls/revised-ifd/).

3. Rainfall data was analysed for durations between 6 minutes and 72 hours by summing previous 6 minute periods to determine rainfall totals for the preceding duration over the 30 year data period (e.g. to determine say the 30 minute rainfall depth, the previous 5 rainfall depths would be added to give the total for that 30 minute period – 5 x 6 minute periods). This allowed for rainfall intensities to be determined within notable individual storms / rainfall days as well as for the entire rainfall event.

4. Results were then compared with the ARI and rainfall depth data to determine the ARI of the peak rainfall depth for each duration analysed as well as the frequency of rainfall depths exceeding predicted total depths of rainfall for standard ARIs.

5. Notable rainfall events for the Site were specifically analysed and summarised.

Predicted rainfall depths for design ARIs for Minto are summarised in the first Table below.

Results of the analyses of peak rainfall depths in the 30 year data period against ARIs for the data used in the MUSIC modelling are summarised in the second Table below.

Notable rainfall events in the data set are summarised in the third Table below.

Average Recurrence Interval (ARI) (1 in X years)	1	1.44	4.48	10	20	50	100	200
Annual Exceedance Probability (AEP)	63.2%	50%	20%	10%	5%	2%	1%	0.5%
Rainfall Duration (minutes)	Total Rainfall Depth (mm)							
6	7.6	8.5	11.5	13.7	15.8	18.7	21.0	22.7
12	11.7	13.2	18.1	21.4	24.8	29.4	32.9	35.6
15	13.2	14.9	20.3	24.1	27.9	33.0	37.0	40.0
18	14.4	16.2	22.2	26.3	30.4	36.0	40.4	43.7
30	17.8	20.0	27.3	32.3	37.4	44.3	49.7	53.9
60	22.6	25.4	34.3	40.6	46.9	55.5	62.4	67.8
90	25.7	28.8	38.9	46.0	53.2	62.9	70.8	76.9
120	28.3	31.7	42.6	50.4	58.3	69.1	77.7	84.4
180	32.5	36.4	49.1	58.1	67.2	79.8	89.8	97.2
270	37.8	42.4	57.4	68.1	78.9	93.8	106.0	114.0
360	42.3	47.6	64.8	77.0	89.4	107.0	120.0	129.0
540	50.1	56.6	77.9	92.9	108.0	129.0	146.0	156.0
720	56.6	64.3	89.3	107.0	125.0	149.0	168.0	181.0
1080	67.4	77.1	109.0	131.0	153.0	184.0	207.0	223.0
1440	76.0	87.4	124.0	150.0	177.0	212.0	239.0	259.0
1800	83.1	95.9	137.0	167.0	197.0	236.0	266.0	298.0
2160	89.0	103.0	149.0	181.0	214.0	256.0	289.0	327.0
2880	98.4	114.0	166.0	203.0	241.0	288.0	325.0	369.0
4320	111.0	129.0	189.0	231.0	275.0	328.0	370.0	414.0

Table 1: Summary of predicted rainfall depths (mm) for Average Recurrence Intervals.

Rainfall Duration (minutes)	Peak Rainfall Depth over Record (mm)	Equivalent Annual Exceedance Probability (%)	Equivalent Annual Recurrence Interval (1 in X years)
6	15.96	4.8	21.7
12	24.91	4.9	20.7
15	28.23	4.8	21.9
18	35.04	2.5	44.9
30	47.46	1.4	79.3
60	66.71	0.6	180.0
90	67.49	1.4	79.1
120	72.41	1.6	69.2
180	81.98	1.8	60.9
270	91.65	2.4	45.7
360	113.09	1.5	73.4
540	144.56	1.1	95.8
720	162.16	1.3	84.6
1080	186.14	1.9	54.7
1440	201.38	2.9	40.9
1800	225.19	2.8	41.7
2160	256.09	2.0	50.1
2880	280.45	2.5	45.2
4320	312.42	2.9	41.2

Table 2: Summary of peak rainfall depths (by duration) against Average Recurrence Interval.

Date (DD/MM/YYYY)	Storm Duration (hrs)	Rainfall Depth (mm)	Equivalent Annual Recurrence Interval (1 in X years)	Comments
31/03/1969	0.2	24.9	20.7	Storm event contains highest 12 and 18 minute rainfall depths on record.
	0.3	35.0	44.9	
	1	53.7	44.0	
15/04/1969	2	72.4	69.2	Storm event contains highest 2 and 3 hour rainfall depths on record.
	3	82.0	60.9	
03/04/1985	0.5	47.5	79.3	Storm event contains highest 30 minute, 1 hour and 1.5 hour rainfall depths on record.
	1	66.7	180	
	1.5	67.5	79.1	
15/12/1982	0.1	15.96	21.7	Highest 6 minute recorded rainfall on record. Total storm rainfall 18.8 mm in 30 minutes.
28-30/04/1988	6	113.1	73.4	Storm event contains highest 6, 9, 12, 18, 24, 36, 48 and 72 hour rainfall depths on record
	9	144.6	95.8	
	12	162.2	84.6	
	18	186.1	54.7	
	24	201.38	40.9	
	36	256.09	50.1	
	48	280.45	45.2	
	72	312.42	41.2	

Table 3: Summary of notable rainfall events and design ARIs.

Observations relating to the above results:

1. Over the 30 year period, there were thirteen (13) rainfall events which exceeded a 1 in 10 year ARI or 10% AEP event for durations between 6 minutes and 72 hours. These events ranged from a 1 in 10 year ARI event to a 1 in 180 year ARI event.

2. The peak 60 minute rainfall depth in the 30 year period of 66.7 mm is approximately the 1 in 180 year ARI or 0.6% AEP event. No other rainfall depth of any duration exceeded the 1 in 100 year ARI or 1% AEP for the entire 30 year record analysed.

3. Many of the peak rainfall depths per duration on record occur in the same overall storm – i.e. storms consist of longer rainfall events with significant shorter duration rainfall bursts within the overall storm.

Site Water Balance

The previous water balance analyses of the Site stormwater management was analysed to provide clarification of the frequency and volume of treated and untreated stormwater discharges from the Site to Bow Bowing Creek. The following data and assumptions were included in the analyses:

1. Site water balance was analysed for the period 1 January 1967 – 31 December 1996 (based on available 6 minute pluviograph file for Liverpool (Whitlam Centre)).

2. Site runoff from northern and southern catchments were obtained from the MUSIC model developed for the Site detailed in the SWMP (March 2020).

3. The stormwater treatment system has a treatment capacity of 500 kL/hour. The water balance model assumes that the treatment system is operational at all times (i.e. 24 hour capability for entire period modelled). Runoff from the southern catchment nearest treatment plant is directed to treatment plant preferentially to northern catchment runoff. Excess runoff unable to be treated overflows to storage tanks in each catchment.

4. The Site is assumed to be operational 7 days / week excepting for public holidays.

5. Northern and southern catchments are assumed to have 450 kL stormwater storage tanks. Treated stormwater from the treatment plant is preferentially directed to the southern storage tank prior to being directed to the northern storage tank. Only when both tanks are full, is treated stormwater directed to the Site stormwater outlet and to the Site discharge point to Bow Bowing Creek.

6. Stored stormwater is reused on site with seasonal demand rates as per SWMP (March 2020). Demands for dust suppression are assumed to be disabled on days where rain falls during the Site operational hours (taken to be from 7 am – 5 pm daily). Site reuse is deducted from the total storage volume in the southern tank in the water balance model at 5 pm each day, excepting public holidays – representing the reuse of stormwater over an operational day, with this tank topped up by stored water in the northern tank when storage is available.

7. Overflows from the northern storage tank are presumed to be directed to the swale at the north eastern site corner, estimated to provide an additional volume of approximately 400 kL prior to overtopping and discharging from the Site. The pit at the base of the swale is assumed to direct ponded water back to northern stormwater management system and then to treatment plant once capacity is available.

8. Only where storage tanks are full, and the treatment plant capacity is exceeded, will stormwater bypass the capture and treatment system and be directed to Bow Bowing Creek.

Results of the water balance modelling were analysed to determine the total number of site overflow events and overflow volumes, as well as the average number of overflow events and the volume discharged to Bow Bowing Creek per year. Results are summarised in Table 4 below.

	Total Discharges in 30 year period	Average Discharges per year	Total Volume of Treated Stormwater Discharged to Bow Bowing Creek (kL) over 30 Years (volume as % of total site stormwater generated)	Average Volume Discharged (kL/year)
Treated stormwater from site treatment system	209	6.97	82,685 (23%)	2,756.2
Untreated stormwater from Northern catchment	0	0.00	0 (0%)	0.0
Untreated stormwater from Southern catchment	0	0.00	0 (0.0%)	0.0
Total Untreated stormwater	0	0.00	0 (0.0%)	0.0

Table 4: Results of water balance modelling.

Comments relating to the water balance results:

1. The system is capable of treating all rainfall events in the 30 year period modelled without the discharge of untreated stormwater which includes the 1 in 44 year 18 minute storm event (31 March 1969), 1 in 180 year 1 hour event in the rainfall record (3 April 1985) and the maximum daily (24 hour) rainfall event (29-30 April 1988) in the rainfall record which demonstrates that the system does not discharge untreated stormwater in shorter and longer duration rainfall events, with all discharges during these storms passing through the treatment system or being temporarily detained in the Site storages.

2. Discharges of treated stormwater from the Site are approximately 23% of total site flow generated over the modelled period, noting that the average volume of treated stormwater discharged (approximately 2.8 ML/year) is less than the average volume of stormwater discharged from the Site for current site conditions (approximately 3.2 ML/year) according to the MUSIC modelling in the SWMP.

It is not considered economical nor reasonable to design the site stormwater treatment and management systems to cater for all events up to and including the PMF.

Confirm whether the sampling carried out at the Applicant's Wetherill Park facility, to inform the site's water characterisation, was undertaken soon after leachate-inducing events such as rain.

Comment

Yes, sampling was conducted within a week of a rain event which caused run off from the site.

Confirm whether the sampling points at the Wetherill Park facility are nodes draining leachate areas only or draining both stockpiles and additional clean catchments.

The run off areas captured at the Wetherill Park facility are similar to those of the proposed development containing stockpiles of brick and concrete and crushed concrete hardstand. In addition, recent analysis has been undertaken at the applicant's Camellia facility, the results of which are provided in **Attachment 3**.

6. TRAFFIC

The swept path diagrams indicate that a truck cannot exit the site if a truck is entering and vice versa, please describe how these movements would be managed onsite. A sign only is not sufficient.

Comment

The Site is a low-speed environment with adequate sight lines between an entering truck and an exiting truck such that, if a 20m long articulated vehicle is exiting the Site while another vehicle is entering the Site, either vehicle will stop to allow the other to pass.

The proposed traffic volumes are relatively low with 21 inbound and 21 outbound trips expected during the peak hour. This is equivalent to 1 truck entering and 1 truck exiting the Site approximately every 3

minutes. Any temporary stopping on-site to allow passing will be short in duration and will not result in any internal or external queueing.

It is reiterated that sight lines are available between an entering and exiting vehicle such that drivers will be able to easily observe and react to the one another.

The existing facilities operated by the applicant employ the use of signs to direct traffic with the site, a system which operates satisfactorily. All truck drivers using the facility will be required to operate in accordance with the Traffic Management section of the Environmental Plan of Management for the Site and as described at **Attachment 1** to this letter.

> ***Given space constraints in the tip and spread and manoeuvring area, it is necessary to identify swept out manoeuvres for AV design vehicles on the plan. It is again asked that a site plan be provided which shows swept paths as set out in AS 2890.2-2018, stockpile locations, tip and spread areas and loading areas (including appropriate areas for design loader vehicle manoeuvring areas adjacent to the truck), and swept out locus of the design truck(s) (including of all unloading vehicles) and trailer(s) between the site entrance, accessing all unloading and loading points, and site exit, on the plan.***

Comment

Swept path testing of trucks entering and exiting the loading areas is provided in **Attachment 2**. As shown in the swept paths, each loading and unloading area is capable of being accessed without reliance on another truck being moved. Considering this, the loader which is used in the spread/inspect area will be able to utilise the space which the truck was in while unloading material.

The issue of tip and spread areas is discussed in the response to the Waste Management Issue raised by the Department.

As the Department is aware, as a result of the flexible nature of the industry, the size of the stockpiles on the Site are dynamic. As such, it is not possible to provide swept path diagrams for all scenarios during the life of the operation of the facility.

The swept path diagrams in **Attachment 2** to this letter have been prepared on the basis that the facility is operating at capacity. The swept path diagrams clearly demonstrate that the vehicles are able to manoeuvre without undue operational complexity.

> ***Explain why the swept paths, particularly those shown entering and exiting the site, in Attachment 9 are different to those in Drawing 2021-276-03B in appendix 12 and which one is accurate.***

Comment

Modified swept path diagrams have been prepared as shown in **Attachment 2** to this letter.

> ***Based on truck arrivals at the specified short interval, identify how many separate and concurrently operating tip and spread areas are necessary to avoid internal queueing.***

Comment

The nature of the facility is such that stockpile size and, hence, location is dynamic with the general layout of the Site at capacity shown on the plans accompanying the RTS. Plan PS02-DZ10, Revision G shows the stockpile locations, unloading and loading areas in general terms which allows for the dynamic nature of the facility.

Based on the traffic generation determined in the Supplementary Traffic and Parking Advice dated 27th January 2021 (ref no. 200806.01FA) a peak of 19 trucks tipping waste will arrive over a 2-hour period. A graphical representation of the timing of different tasks for trucks unloading waste is presented in **Attachment 4** and shows 19 trucks arriving over a 1-hour period. During this 1-hour period, a total of four (4) tip points are needed to accommodate all of the truck movements. The Site provides more than four (4) tipping areas and, as such, can adequately accommodate the expected loading requirements of the Site. **It is reiterated that the 19 inbound trips is expected to occur over 2-hours, however, has been assessed in a single hour for a conservative analysis**.

The Fire Engine swept path shown in Drawing No. 2021-276-04B runs over the unloading area adjacent to the sand stockpile, please amend.

Comment

Modified swept path diagrams have been prepared as shown in **Attachment 2** to this letter.

7. LEACHATE AND GROUNDWATER IMPACT

The development includes construction of a crushed concrete hardstand, please demonstrate that the hardstand would be impermeable and if not, describe flowrate and impact of ongoing leachate seepage on in-situ soils.

Please provide details of any proposed impervious layers, such as impervious liners or pavement binder layers.

Comment

There are a number of solutions available for the surface of the Site, the final solution to be chosen as part of the Construction Certificate process. Potential solutions to reduce site subsoil permeability and limit surface water infiltration into site subsoils include construction of either or a combination of:

1. Well graded granular pavement, with a wearing course or surface seal, suitable to withstand high traffic loading from and frequent turning of heavy vehicles. Sealant requirements will depend on the achieved permeability of the pavement materials.

2. Cement stabilised recycled concrete pavement (may include a surface seal).

3. Rigid (concrete) pavement.

The following should be considered in assessing the suitability of the infiltration management solution options and in developing the design of and construction methodology for the adopted solution:

1. Progressive cracking of stabilised recycled concrete or rigid pavements under load and/or induced by shrinkage/swelling of plastic sub-grade materials will allow seepage of surface water into the sub-grade at crack locations. These seepage water concentrations are likely to result in water logging and weakening of sub-grade at crack locations and promote future sub-grade weakening and/or pavement degradation at crack locations.

2. If a granular drainage layer is placed under "rigid" pavements to allow drainage from between pavement and a clay sub-grade (i.e. prevent clay sub-grade saturation), design and construction methodologies must prevent potential for water logging within this drainage layer which would result in sub-grade deterioration as discussed above.

Benefits and further consideration for design of each of these pavement options are summarised as follows:

1. Well graded granular pavement:

    a. Where a surface seal is applied and it is affected by high traffic loading and vehicles turning, it is expected to require ongoing maintenance/re-application to maintain its effectiveness for purpose.

    b. A permeability of 1×10^{-8} m/sec can be achieved subject to strict placement specifications.

2. Stabilised recycled concrete pavement:

    The permeability of recycled concrete aggregate is approximately 5×10^{-7} m/sec. This is equivalent to silty sand/silt loess. Stabilisation with cement is likely to reduce the overall pavement permeability, however:

    i. Stabilised recycled concrete is weaker than concrete and, therefore, susceptible to cracking under heavy vehicle loading.

    ii. Where constructed on plastic clay sub-grade, stabilised recycled concrete pavements will be susceptible to cracking induced by shrinkage/swelling of the underlying clay due to soil moisture condition variations.

    iii. The integrity of stabilised recycled concrete pavements can be susceptible to sub-grade deterioration. Permeability will likely reduce when pavement is damaged or after crack propagation through to underlying materials.

    iv. Construction methodologies are to ensure uniform and adequate mixing of stabilising agent throughout pavement extent and depth and inclusion of watertight joints, as necessary, to achieve design permeability specifications.

    v. Pavement repairs can be costly, imposing and time consuming. Delays in carrying out necessary repairs may reduce the effectiveness of this design solution.

3. Rigid (concrete) pavement.

    i. The integrity of rigid pavements can be very susceptibility to sub-grade deterioration.

ii. Pavement repairs will be costly, imposing and time consuming. Delays in carrying out necessary repairs may reduce the effectiveness of this design solution.

Methods to further improve the permeability of the above pavement options and to reduce the risk of sub-grade and pavement damage due to sub-grade material saturation, include:

1. Placing a well graded granular layer, such as DGB20, under cement stabilised or rigid pavements.

2. Sealing the cement stabilised recycled concrete pavement by surface treatment such as a sprayed seal, emulsion or bitumen.

3. Installing a geosynthetic clay liner under pavement materials, e.g. Geofabric's Elcoseal which has a reputed permeability of $< 1 \times 10^{-10}$ m/sec, or similar. Benefits include:

   a. Installation and functionality are not governed by sub-grade material type.

   b. The liner has limited susceptibility to damage due to construction.

   c. Placement can include whole or parts of the Site, as considered necessary.

4. Constructing a clay capping layer under pavement materials, ensuring the clay is of low plasticity with a low shrink/swell potential and has a permeability of $< 1 \times 10^{-9}$ m/sec. It should be noted that the clay capping layer may be treated with lime or gypsum to limit impacts of waterlogging on material condition, particularly shrinkage/swelling of plastic clay, however, consideration should be given to the difficult to uniformly and adequately mix the stabilising agent into the soil. In addition, further assessment of suitability and laboratory testing will need to be undertaken with actual fill materials and with various quantities of agent that will be used for this purpose (all agents differ).

5. Placing a HDPE liner under the pavement materials taking precautions to prevent damage during placement and pavement construction, which would reduce the effectiveness in infiltration management.

Depending on infiltration management solution adopted, the following further assessments may need to be carried out to inform the design:

1. Site soil permeability, across the Site and throughout soil profiles.

2. Soil moisture conditions and variations.

3. Shrink/swell potential of in-situ clay or clay capping materials.

4. Assessment of suitability and laboratory testing of materials to be stabilised, with various quantities of the stabilising agent which will be used for clay or recycled concrete stabilisation.

5. Groundwater levels and fluctuations.

6. Salinity of in-situ sub-grade soils, fills and groundwater.

8. Air Quality

In response to the revised air quality report, EPA, in its letter dated 9 November 2021, highlighted some additional concerns to be addressed.

The EPA's concerns were regarding the:

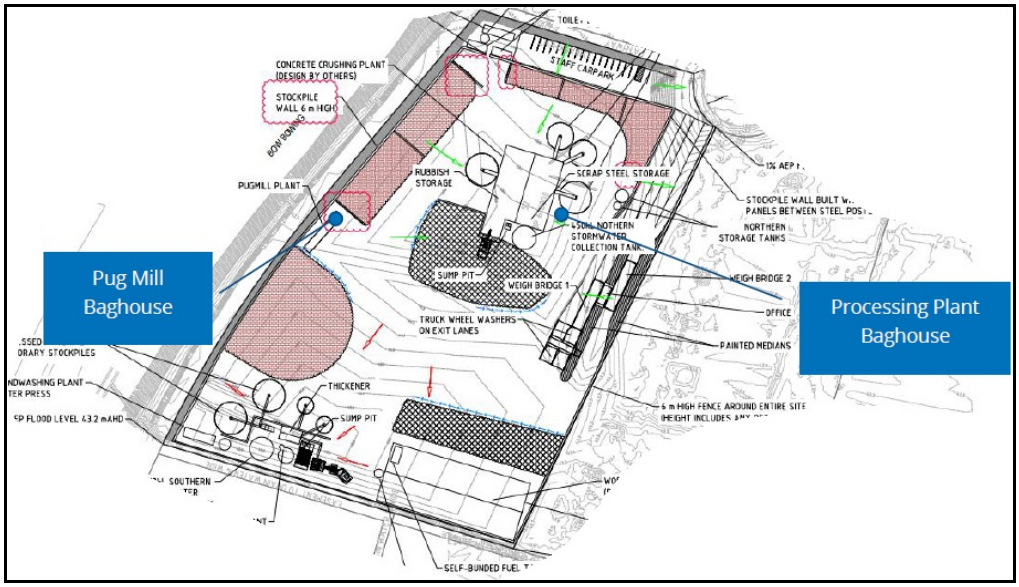
- complete enclosure of operational activities.
- sealing of haul roads.
- complete enclosure of stockpiled material or storage of stockpiled material in three(3) sided enclosures.
- emissions from baghouses.

The EPA recommended that additional mitigation measures be considered, and a revised assessment be conducted to demonstrate that no additional exceedance of $PM_{2.5}$ and PM_{10} are predicted.

A meeting was held on 16 November 2021 with the EPA to discuss its concerns. At the meeting, it was explained that:

- the crushing plant is enclosed, and it was not possible to fully enclose all the operational activities completely.
- it was intended to have the storage stockpiles enclosed in three(3) sided enclosures with a maximum stockpile height of 6m which is the height of the external wall. The main uncrushed stockpile in the centre could reach a stockpile height of 8m for operational reasons.
- the entry driveway is fully paved with asphalt.
- the entire site (hardstand) is to be fully sealed with a 5% roller compacted concrete layer.
- It was also explained at the meeting that, unfortunately, the air quality assessment did not reflect these air quality mitigation benefits. It was committed at the meeting that additional air quality modelling be conducted to reflect the benefits.
- The baghouses for the processing facility (crushers and screen) and Pugmill were discussed. Pug mills are industrial mixing devices capable of conditioning and mixing processed materials. The pug mill will be used to mix sand and road base with cement binder products and water to produce stabilised sand and road base. The cement binder will be stored on-site within a 40 tonne cement silo. To minimise fugitive dust emissions, during silo filling, a baghouse/dust collector is fitted to the silo. This source has now been included in the air quality model. The outlet of the baghouse is likely to be vertical at the side of the silo at a height of approximately 3 metres. An estimate of the dust emissions and concentration from the baghouse is presented in **Attachment 5**. The calculation demonstrates that a baghouse can achieve the required regulatory limit. Dust will be controlled in the processing facility (crushers and screen) with the use

of water sprays and vacuum dust extraction into a baghouse. The principle of operation of the baghouse is that transfer points between conveyors are enclosed and a negative pressure is created to remove any particulate. This dust is piped into a silo where the clean air can be filtered out and the dust settles for later addition into the crushed product. This source has now been included in the air quality model. The outlet of the baghouse is likely to be vertical at the side of the building at a height of 4m. An estimate of the dust emissions and concentration from the baghouse is presented in **Attachment 5**. The calculation demonstrates that a baghouse can achieve the required regulatory limit. The location of the baghouses is shown below. The baghouses have been modelled as volume sources to be conservative.



The results of the additional air quality modelling which should be read in conjunction with the revised Wilkinson Murray report (12166-A Version B, dated August 2021) is presented in **Attachment 5**.

We trust that the above and attachment is sufficient for the Department to proceed to the next stage of the assessment process.

Yours faithfully,
NEXUS ENVIRONMENTAL PLANNING PTY LTD
per:

Neil Kennan

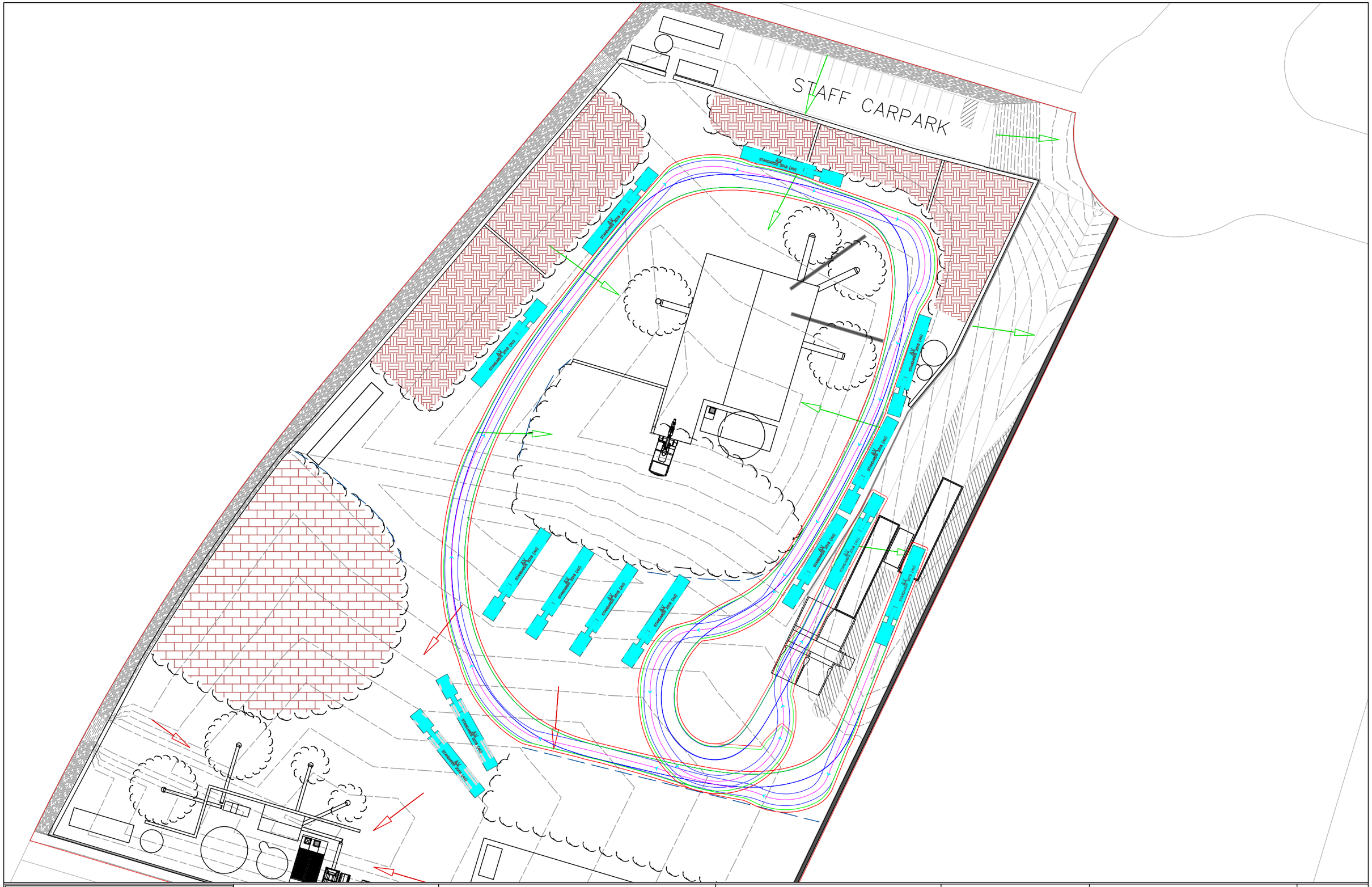
Attachment 1

Traffic Management Plan

TITLE	EMP 7 - TRAFFIC MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent. Insert relevant POEO Licence Conditions.
Objectives	To minimise the impact of trucks on the local road network and local residents, and to comply with approved access and vehicle movements.
Procedures	1. All new truck drivers to be provided with *Site Induction for Drivers* form at the site entrance. 2. Drivers provided with Site Traffic Management Policy. 3. All loads must be fully covered prior to leaving the Site. 4. 10 kph speed limit on internal road. 5. All vehicles are to enter and leave the Site in a forward direction.
Monitoring	1. All loads to be inspected at site entrance to make sure they are covered. 2. Complaints register to be used to record traffic management complaints.
Reporting	As required by Conditions/Licence.
Responsible Person	1. Environmental Officer responsible for weekly inspections of site entrance for waste accumulation, monthly inspections of road pavements for damage condition. 2. Truck drivers responsible to comply with permitted hours of operation.
Information/References	Insert relevant EMPs and Policies.

Attachment 2

Modified swept path diagrams



MCLAREN TRAFFIC ENGINEERING
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Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 7199
M : 0412 949 578
E : admin@mclarentraffic.com.au
www.mclarentraffic.com.au

CLIENT / Project:
Nexus Environmental Planning Pty Ltd

Project Address:
7 Montore Road, Minto

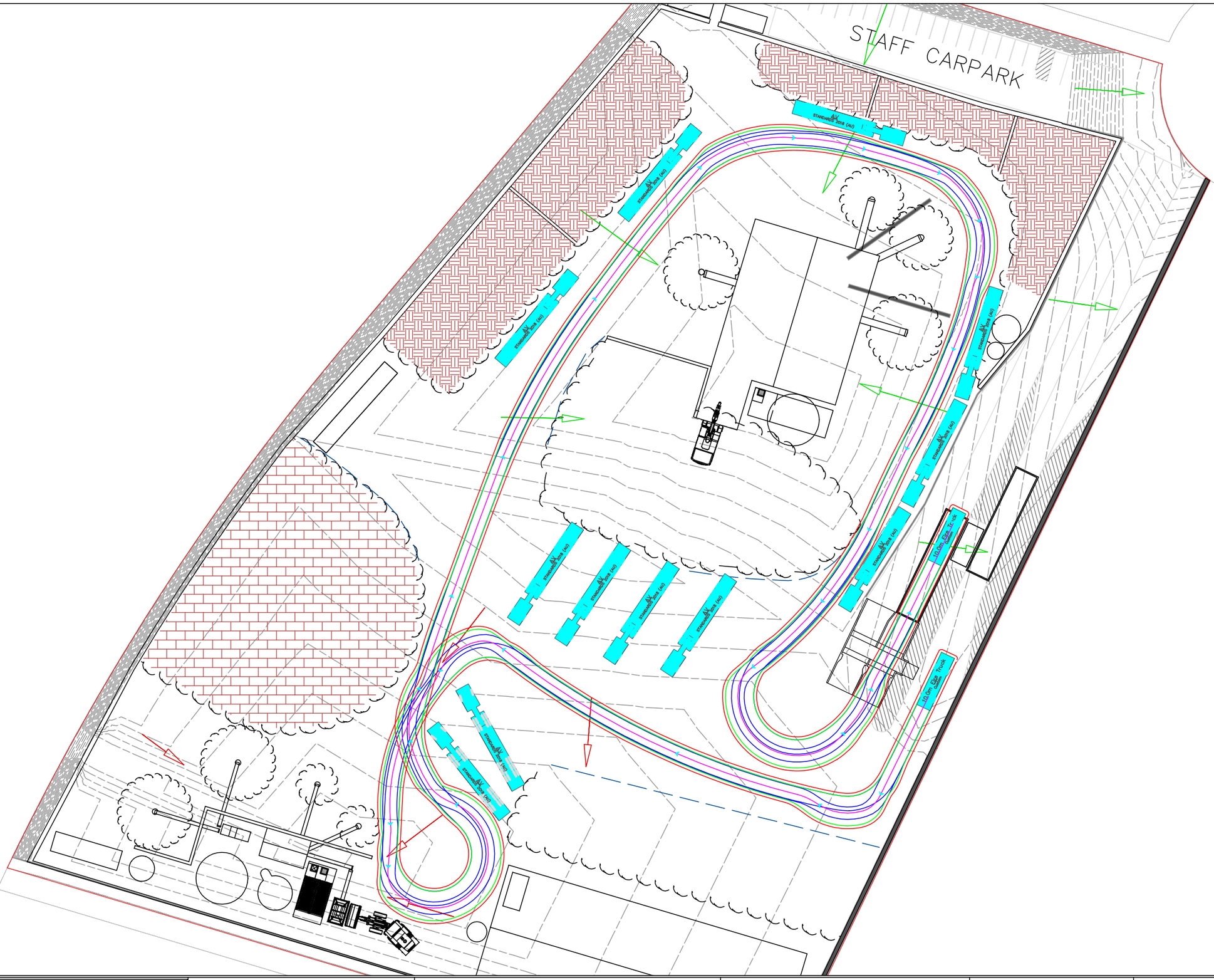
Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

Drawing Title:
20m Long AV Circulation

Project No:	Drawing No:
2021/0276	2021-276-03C

Revision	Date	Details
A	21/06/2021	
B	18/08/2021	
C	13/12/2021	



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Tested Using:
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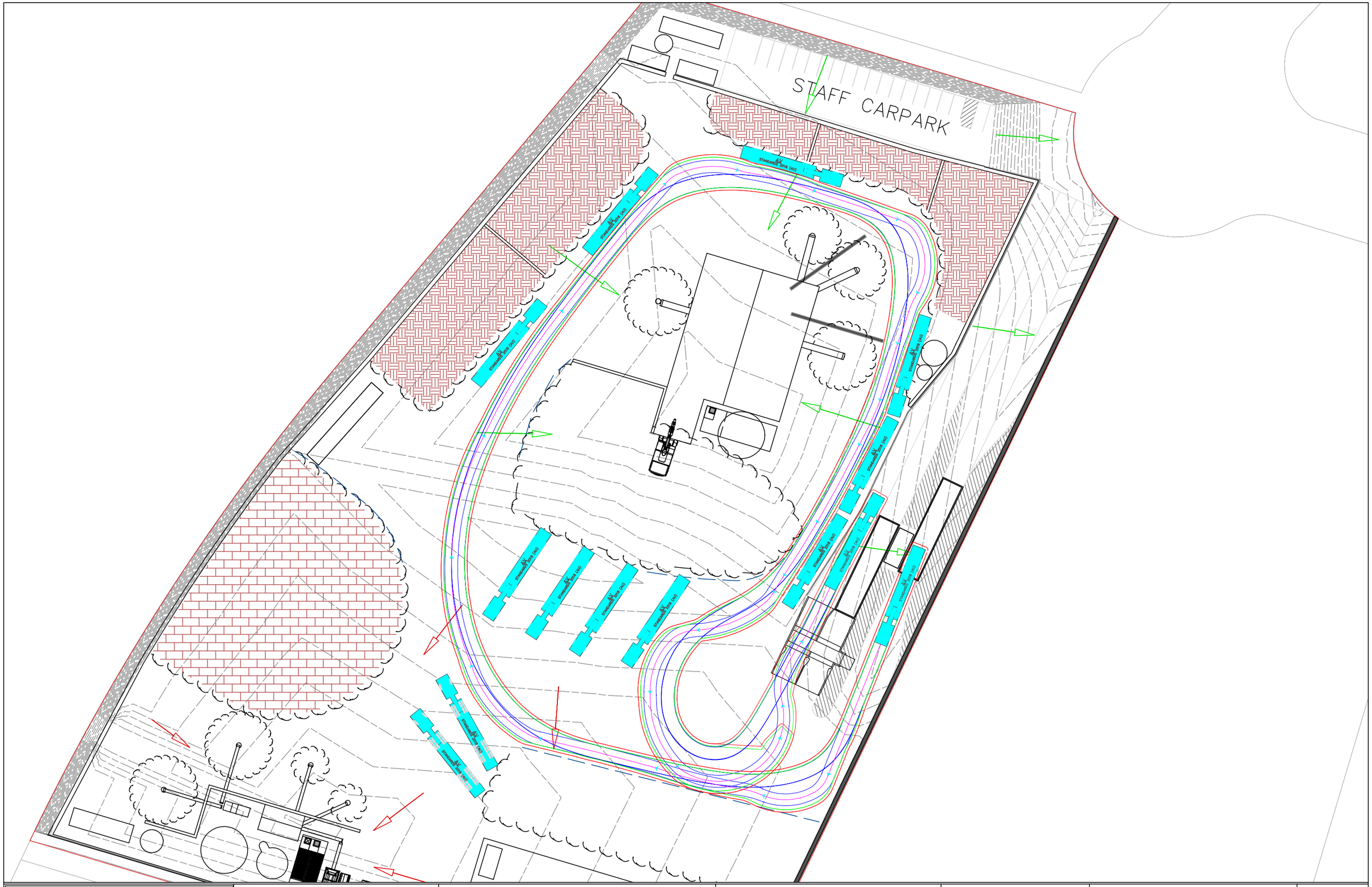
*ZWCAD 2019

Drawing Title:
Fire Truck Circulation

Project No:	Drawing No:
2021/0276	2021-276-04C

Revision	Date	Details
A	21/06/2021	
B	18/08/2021	
C	13/12/2021	



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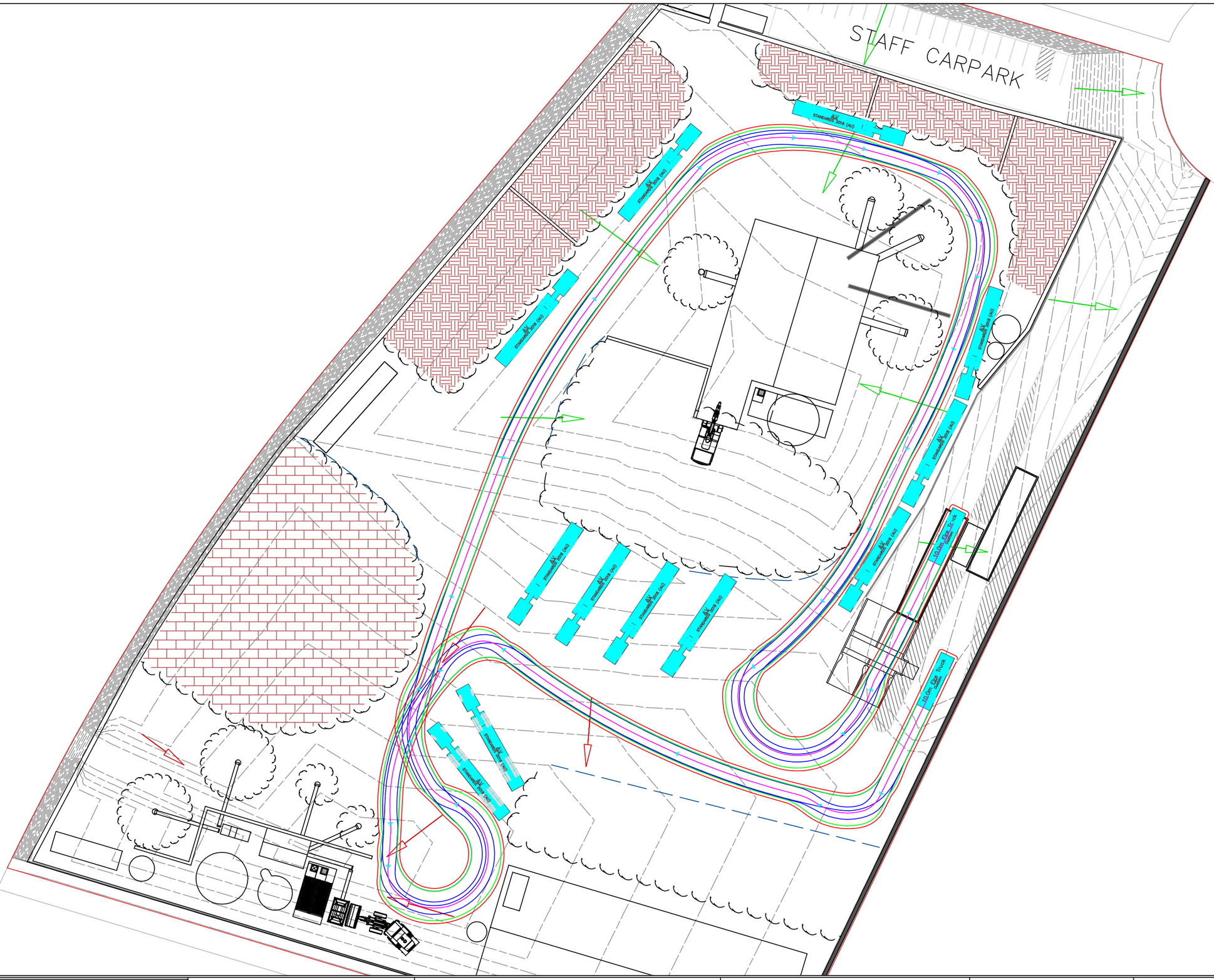
Drawing Title:
20m Long AV Circulation

Project No:	Drawing No:
2021/0276	2021-276-03C

Revision	Date	Details
A	21/06/2021	
B	18/08/2021	
C	13/12/2021	



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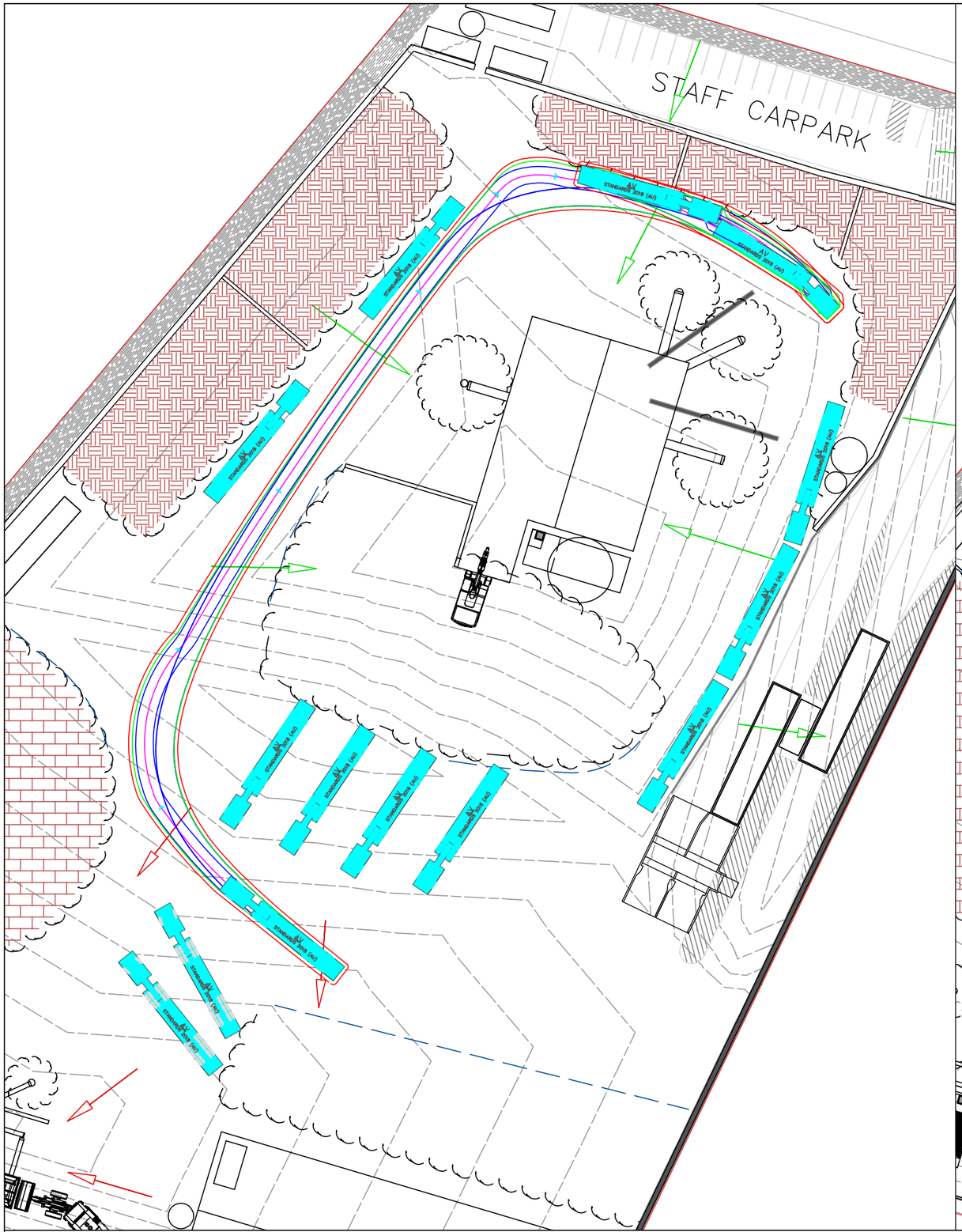
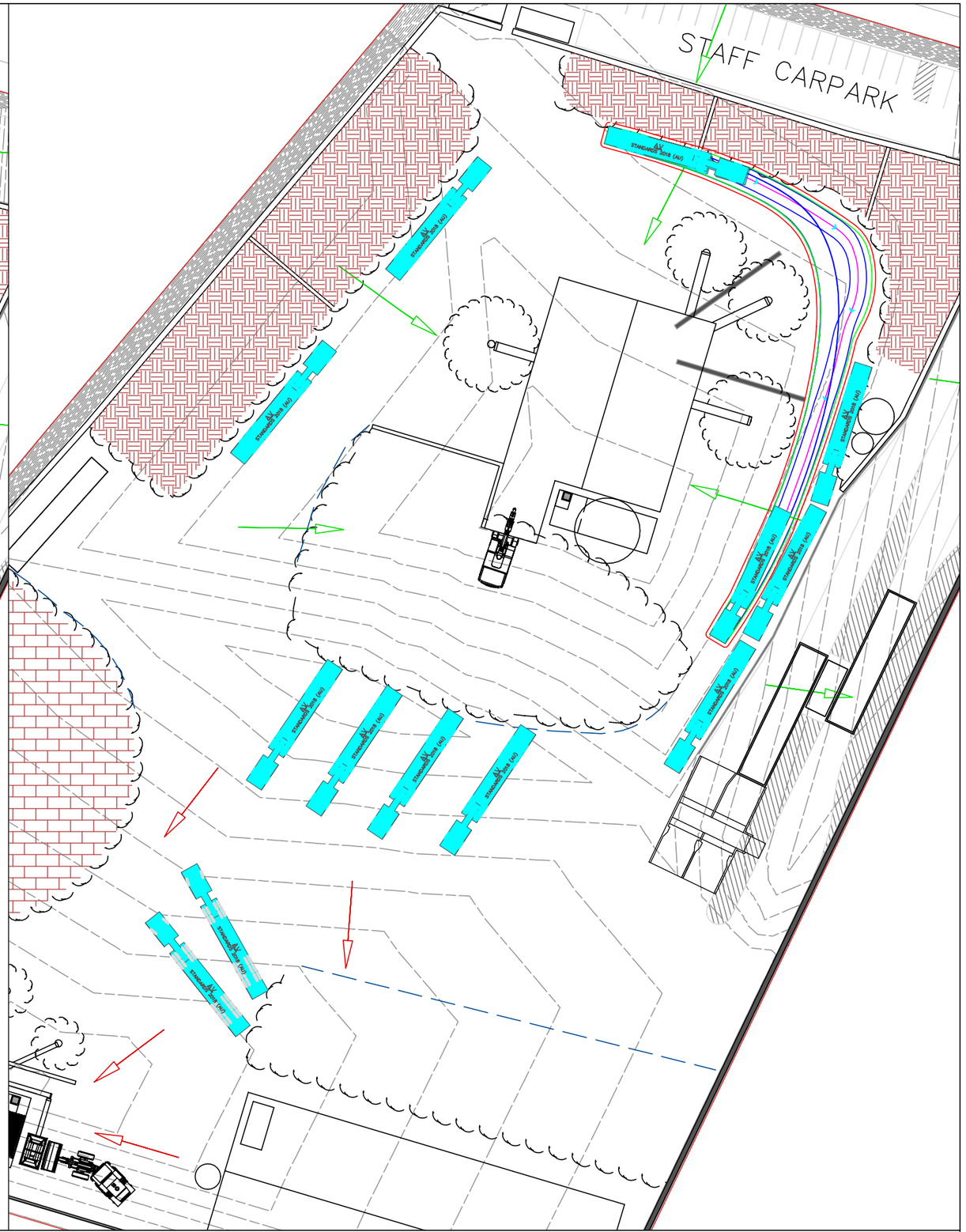
Drawing Title:
Fire Truck Circulation

Project No:	Drawing No:
2021/0276	2021-276-04C

Revision	Date	Details
A	21/06/2021	
B	18/08/2021	
C	13/12/2021	





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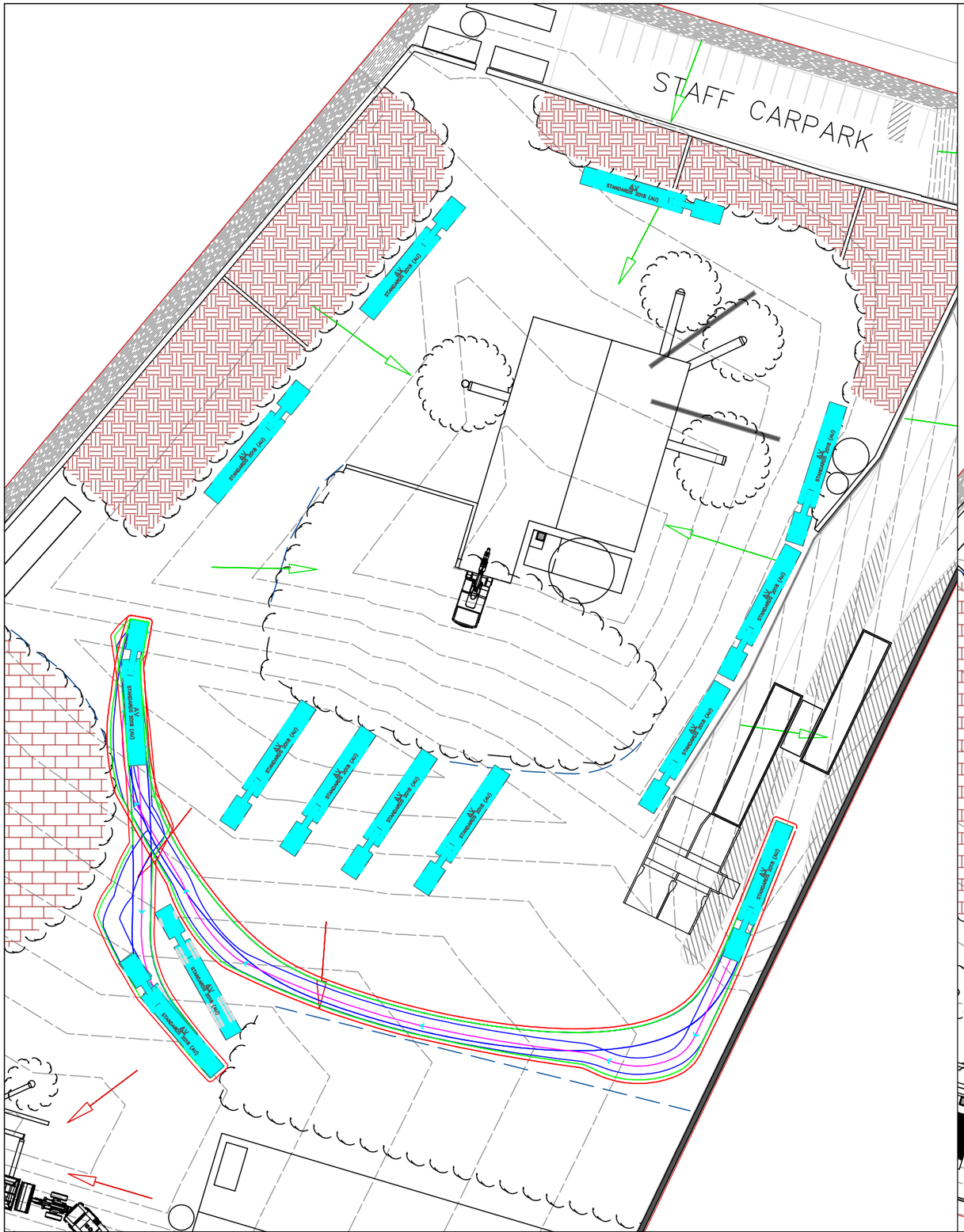
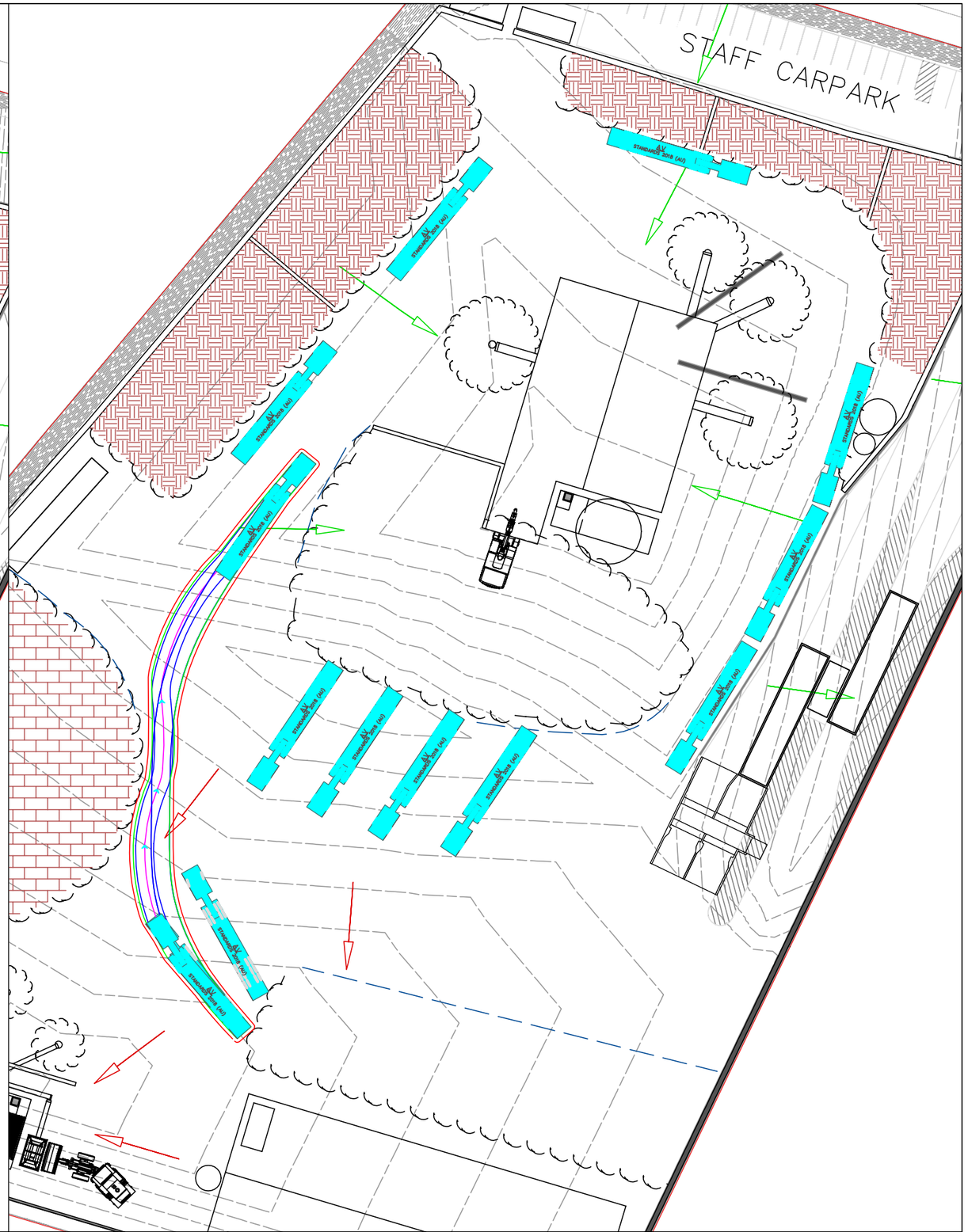
Drawing Title:
20m AV Unloading Space 9

Project No:	Drawing No:
2021/0276	2021-276-13A

Revision	Date	Details
A	13/12/2021	





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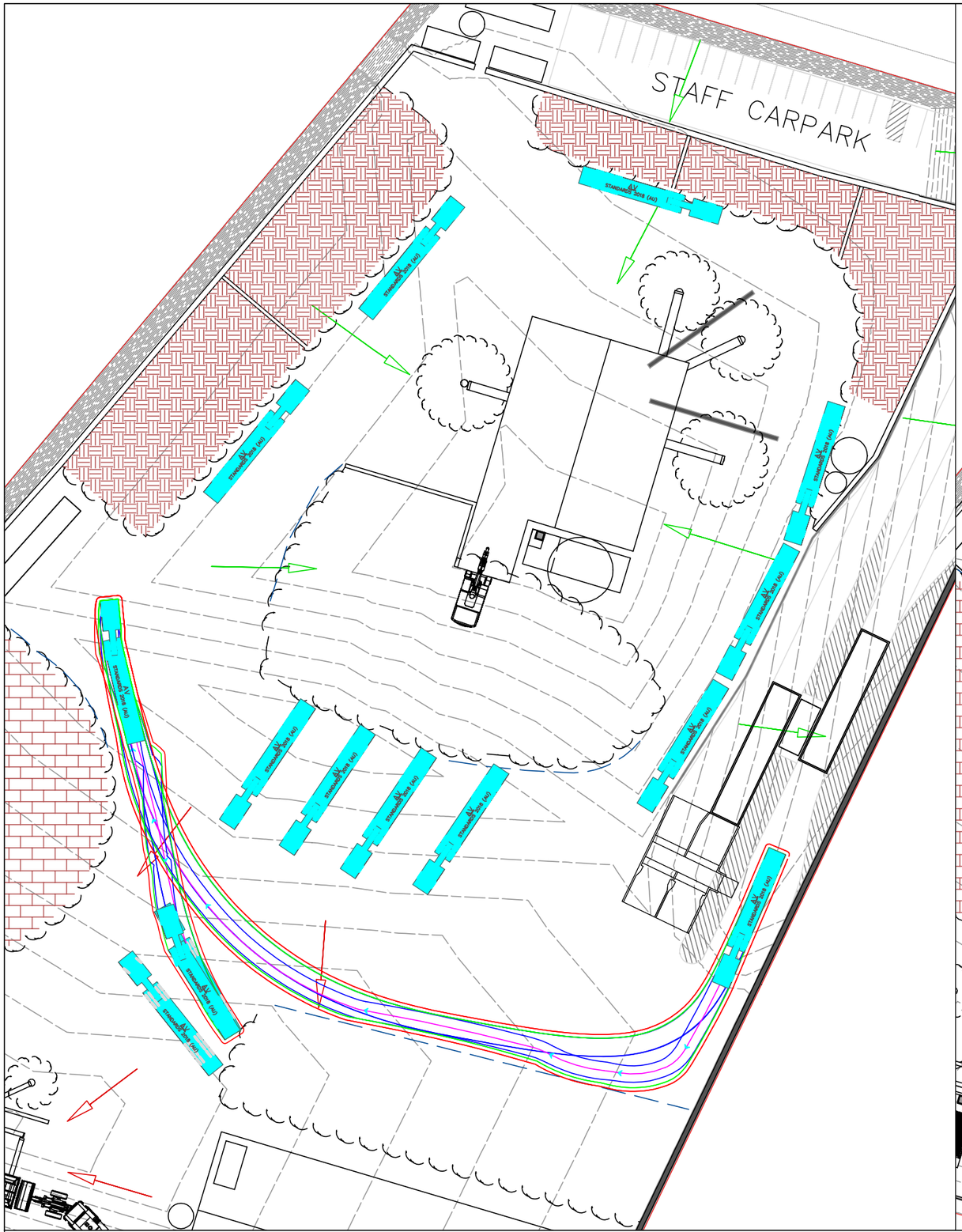
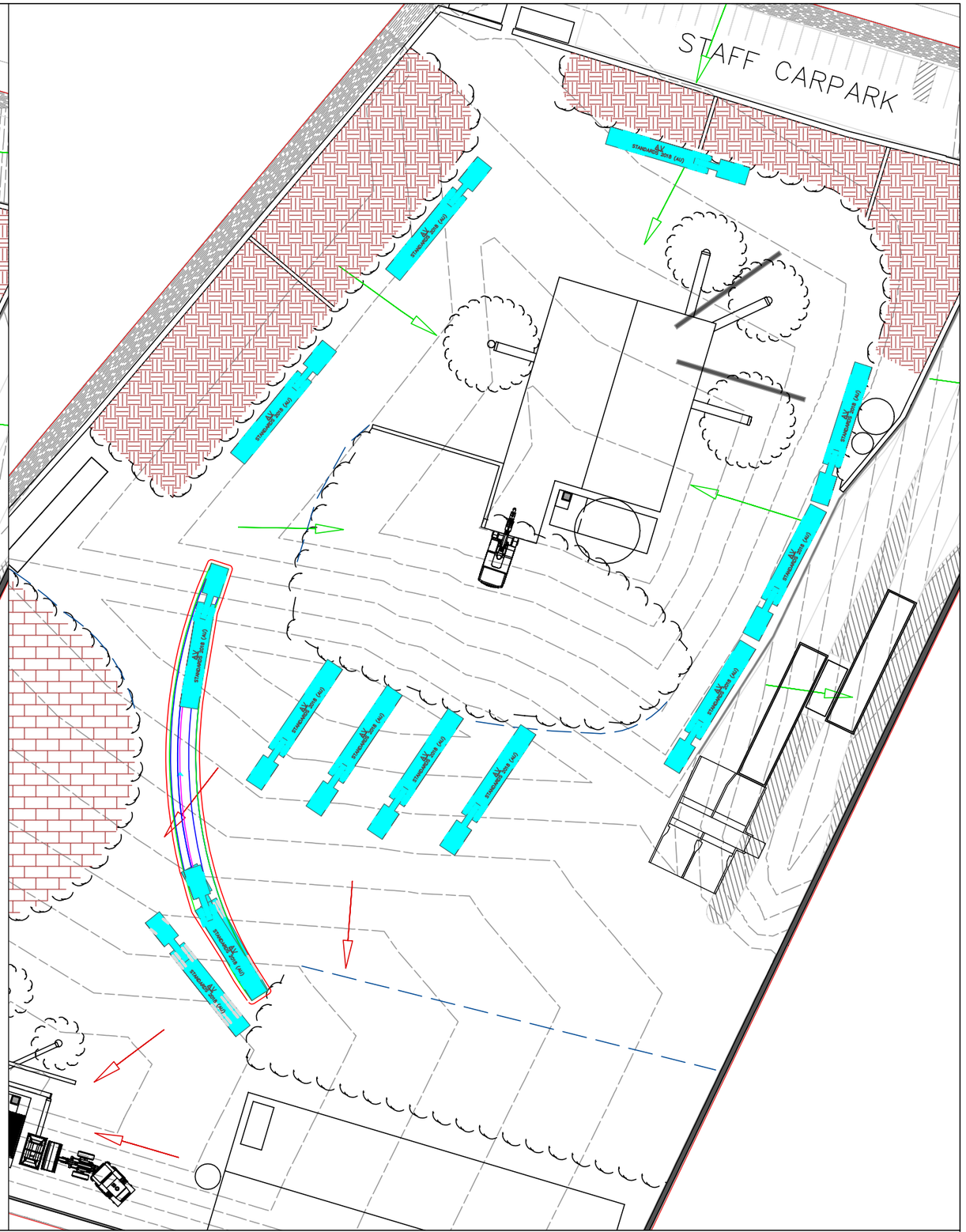
Drawing Title:
20m AV Unloading Space 1

Project No:	Drawing No:
2021/0276	2021-276-06A

Revision	Date	Details
A	13/12/2021	





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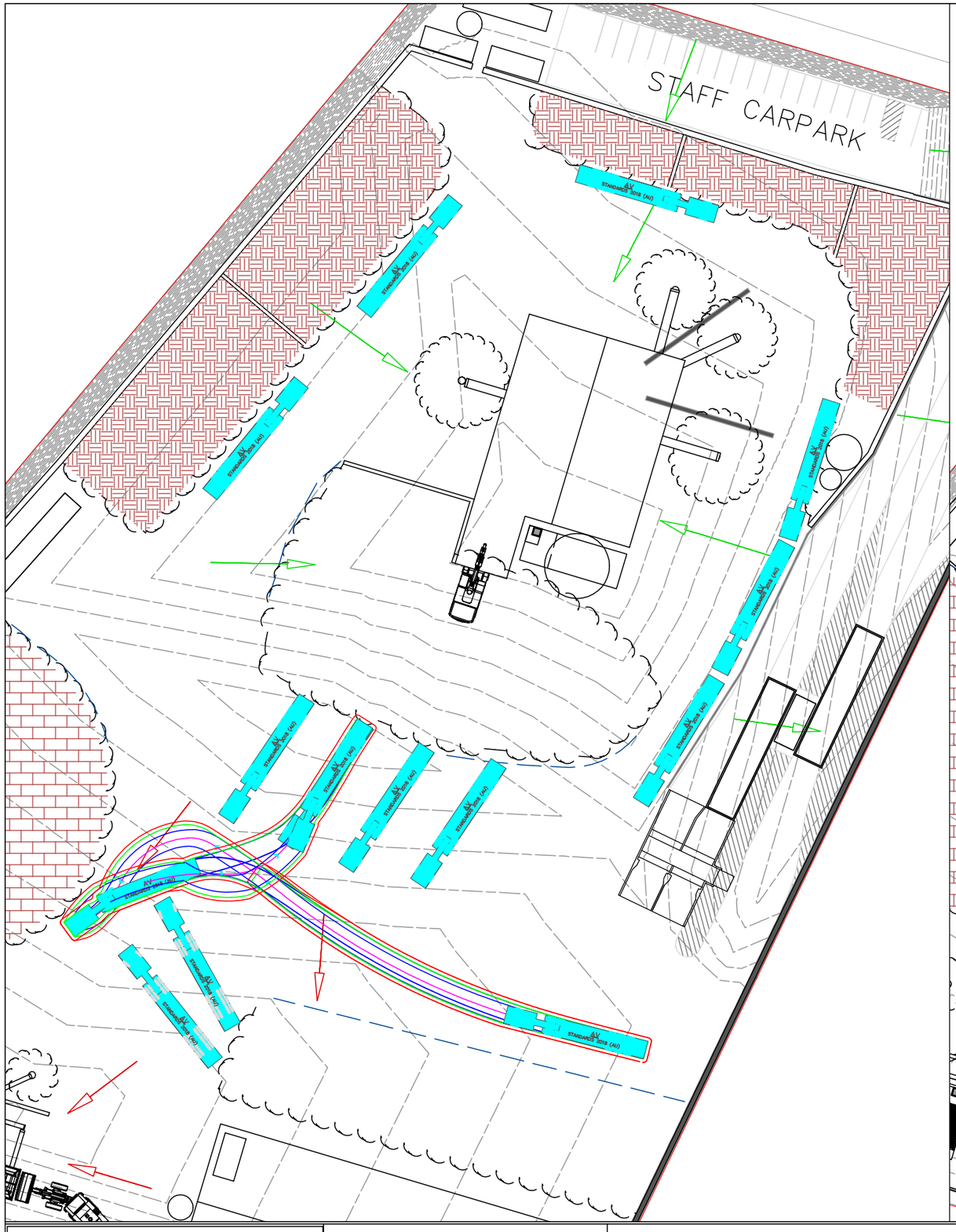
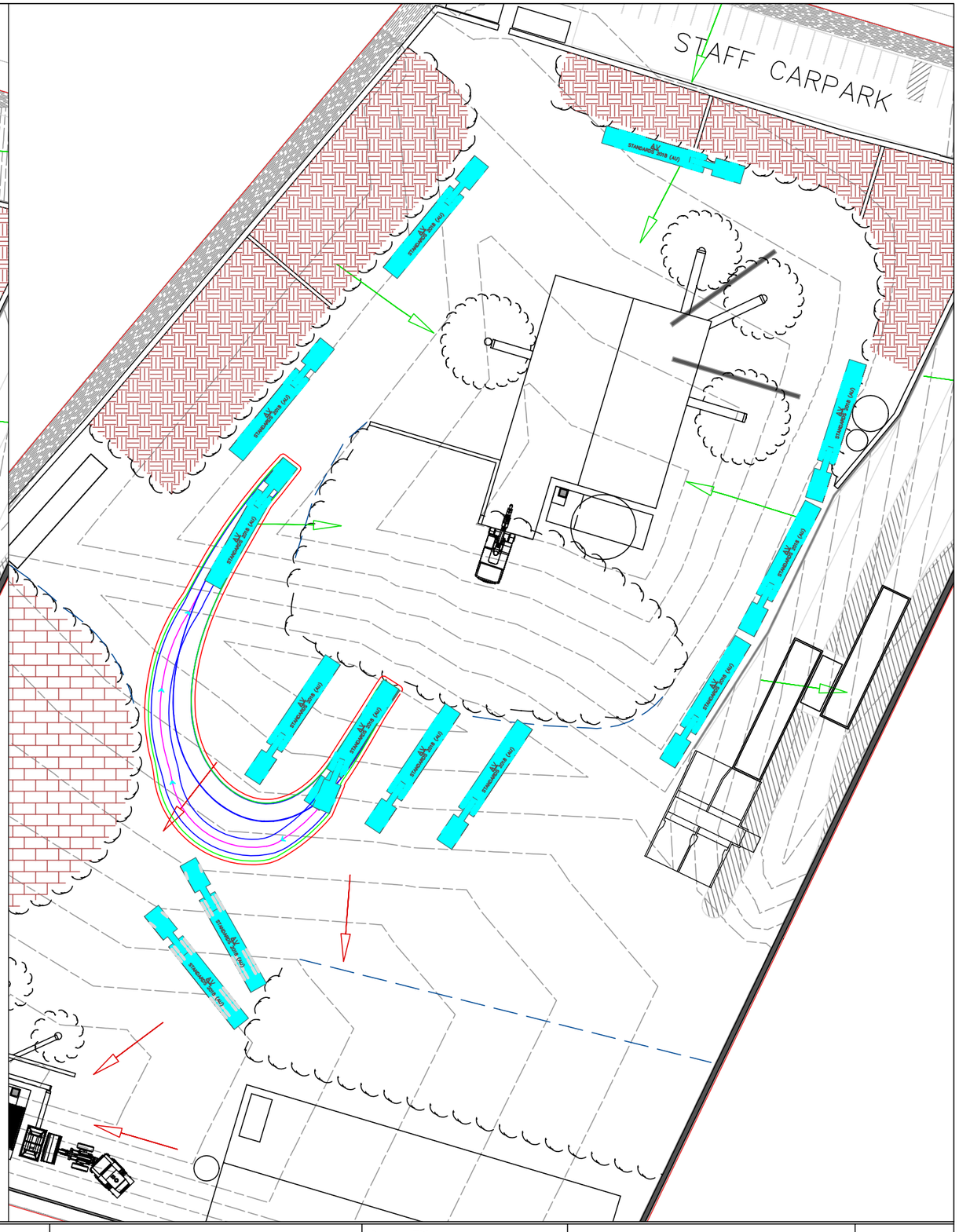
Drawing Title:
20m AV Unloading Space 2

Project No:	Drawing No:
2021/0276	2021-276-07A

Revision	Date	Details
A	13/12/2021	





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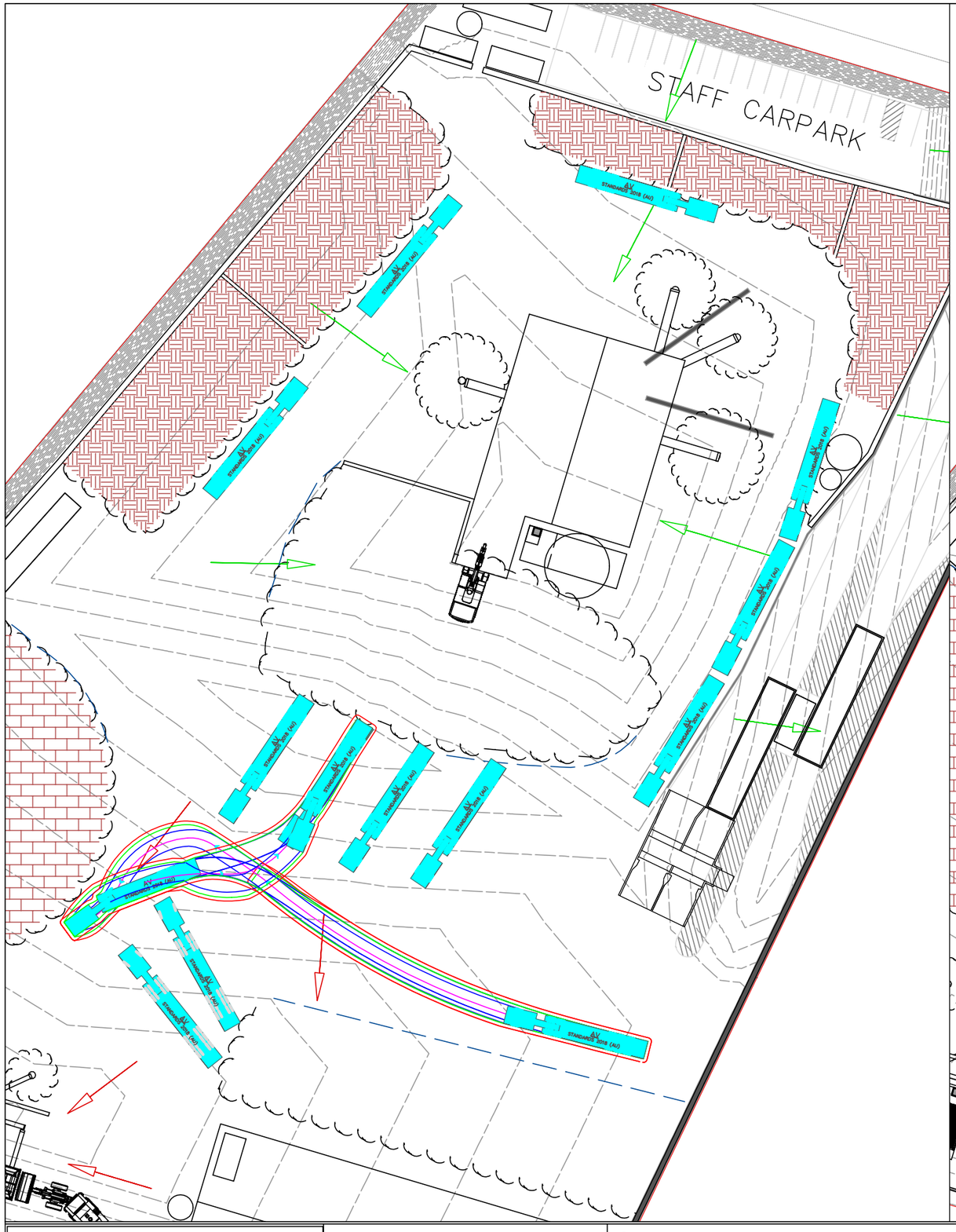
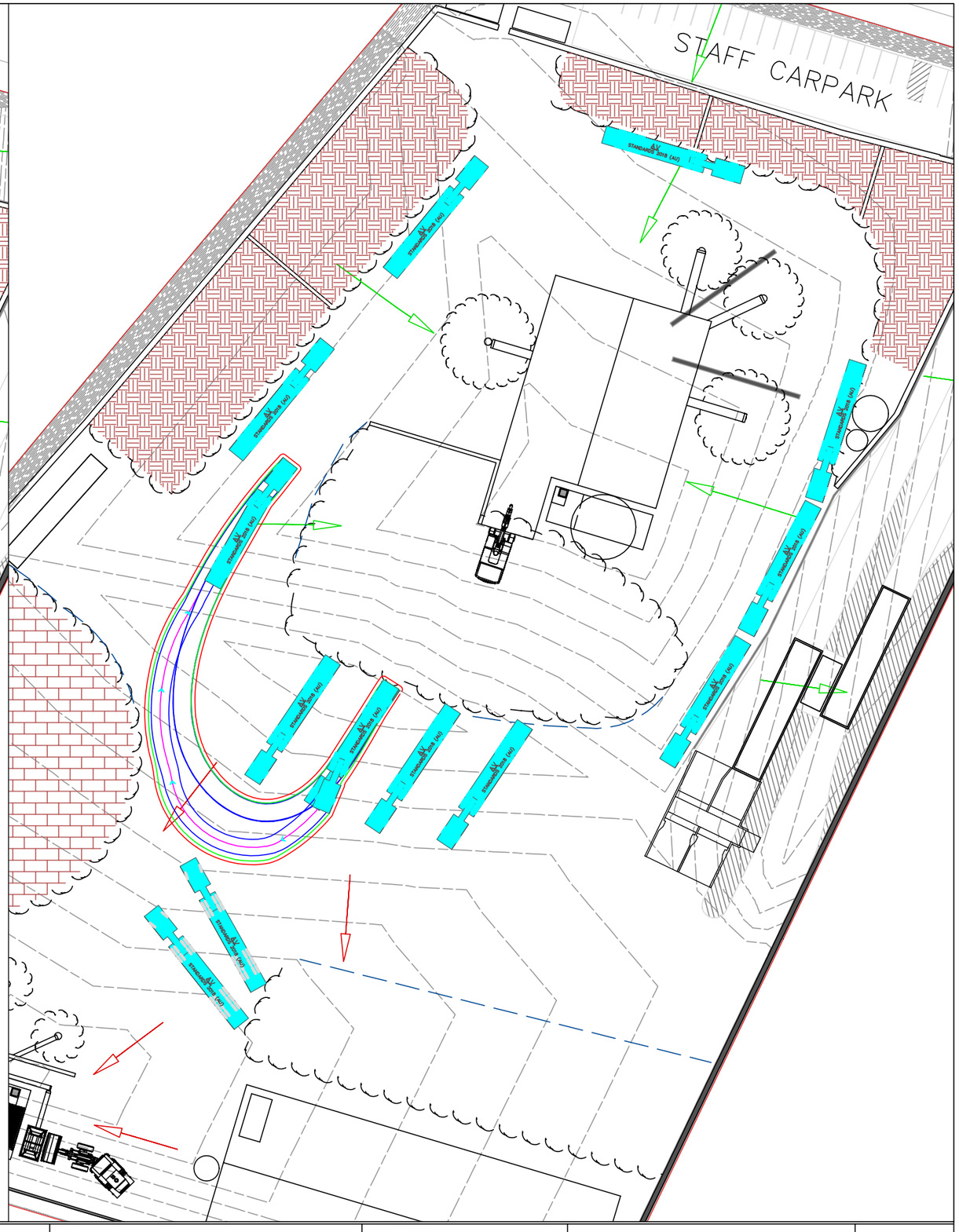
Drawing Title:
20m AV Unloading Space 3

Project No:	Drawing No:
2021/0276	2021-276-07A

Revision	Date	Details
A	13/12/2021	





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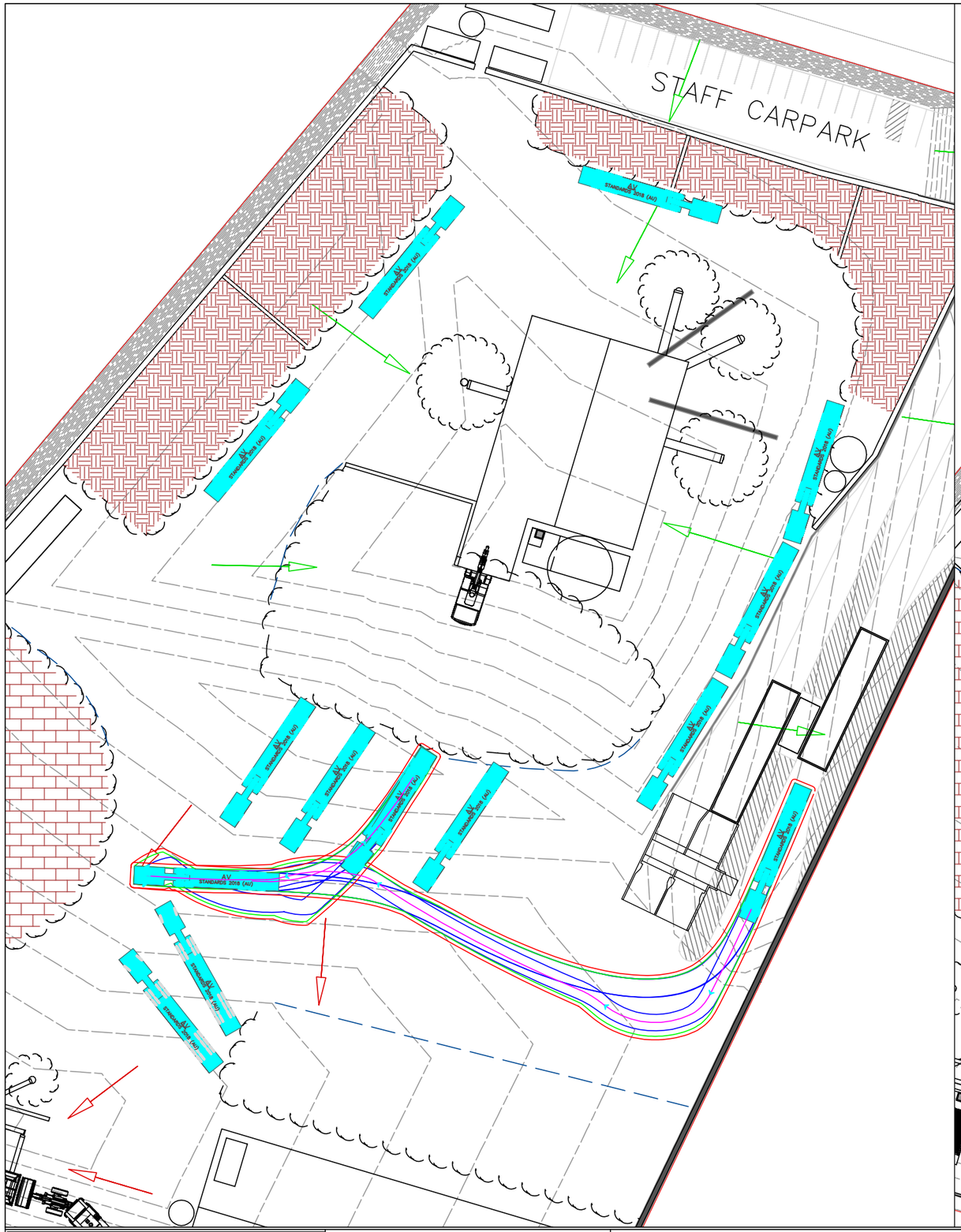
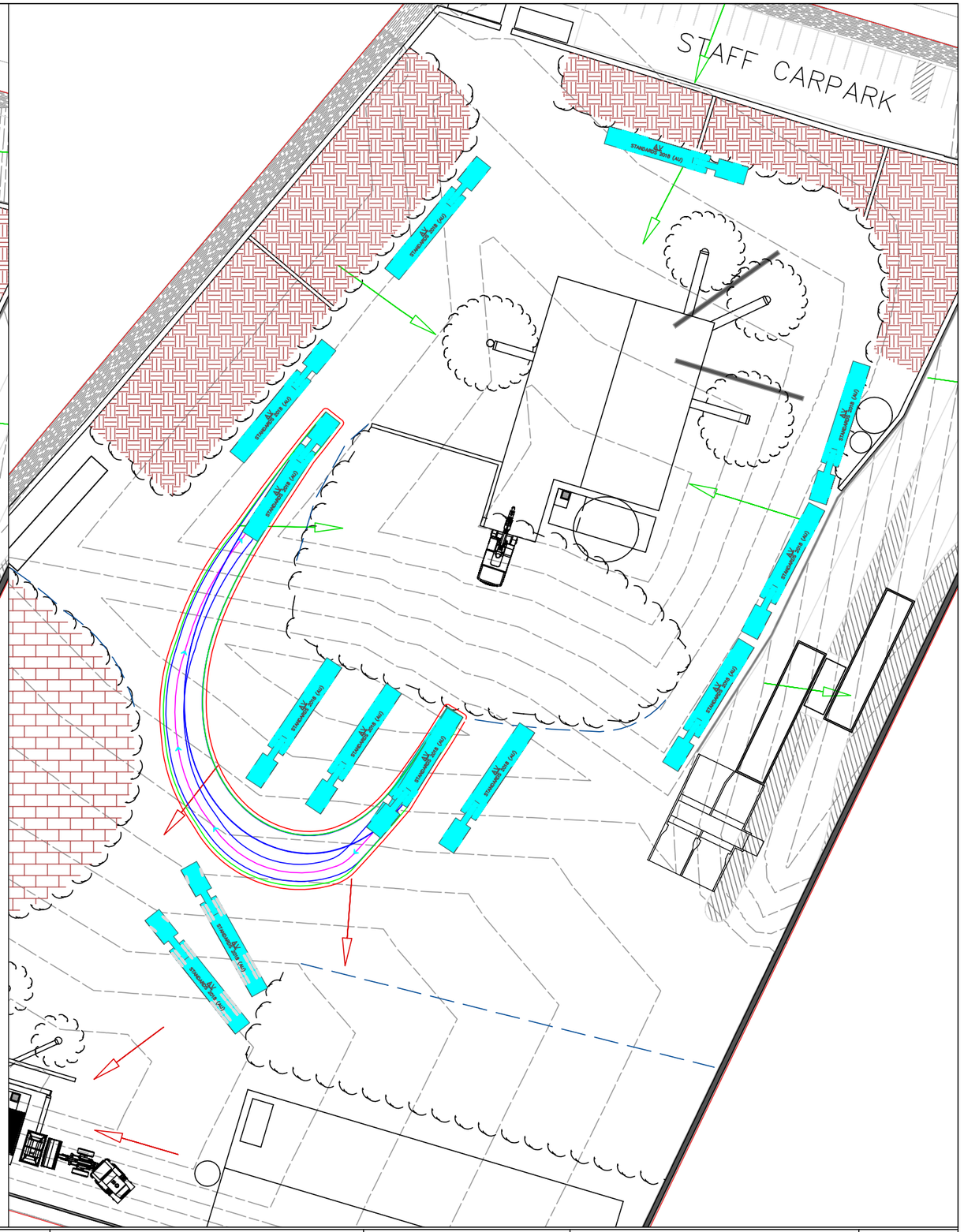
Drawing Title:
20m AV Unloading Space 4

Project No:	Drawing No:
2021/0276	2021-276-08A

Revision	Date	Details
A	13/12/2021	





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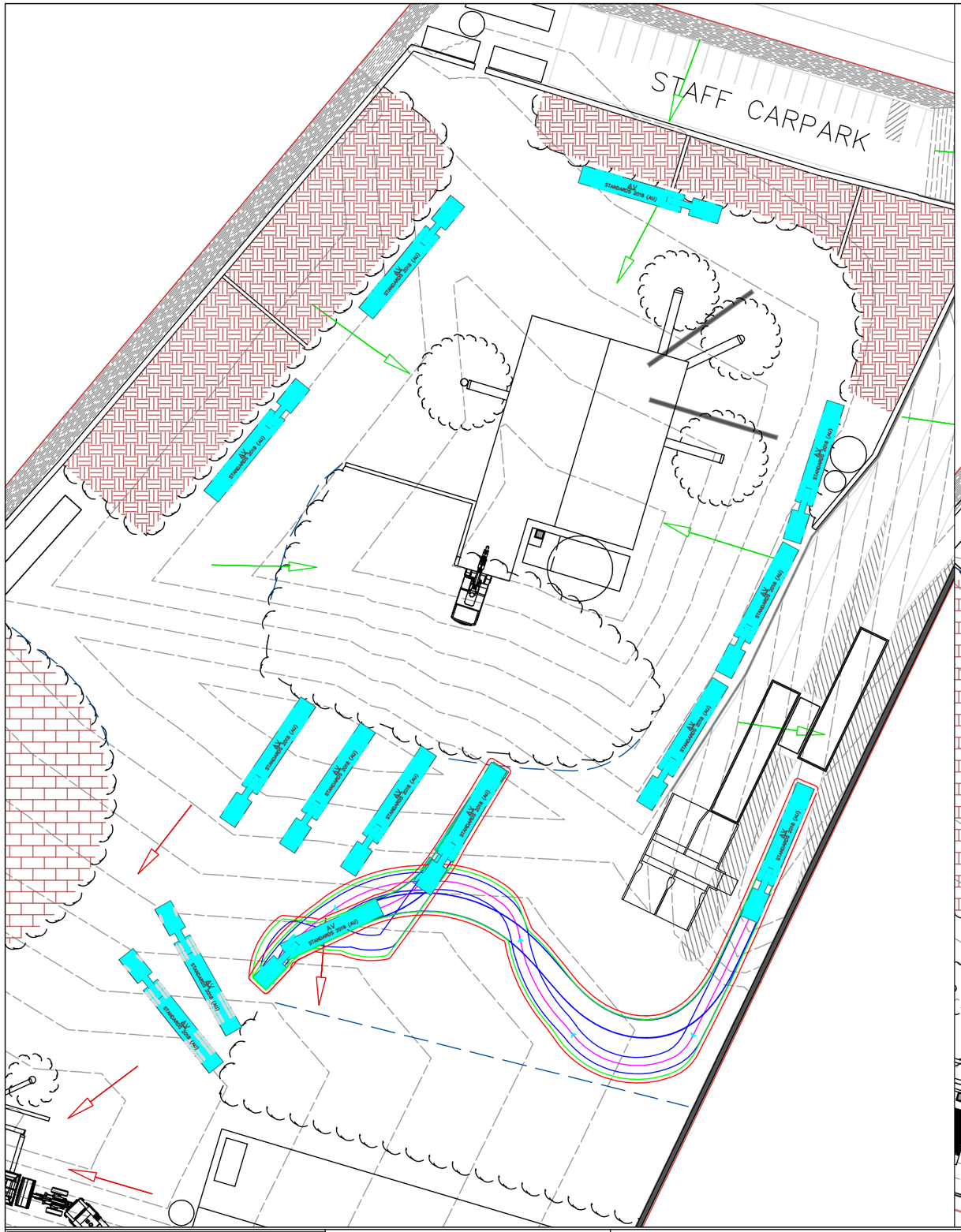
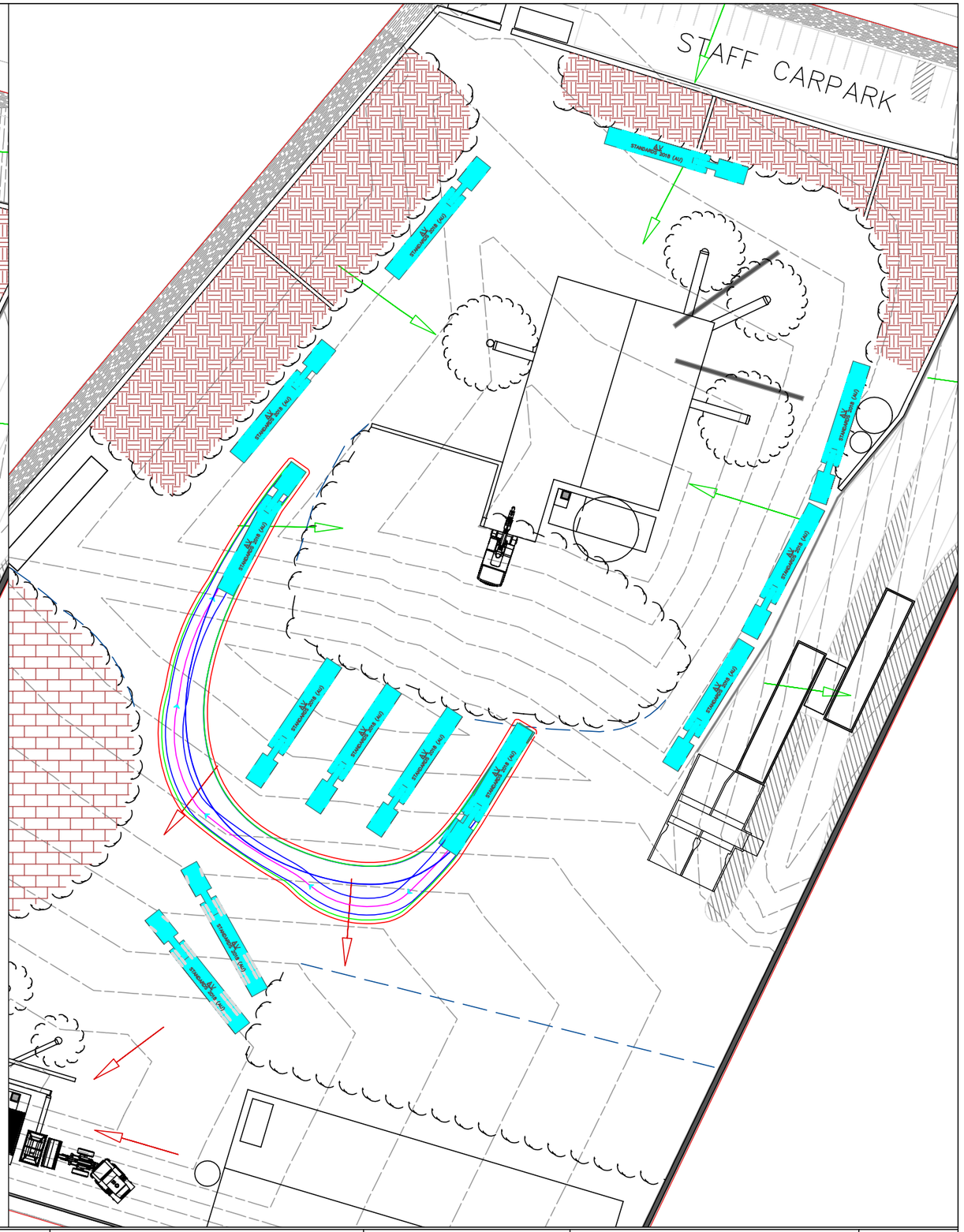
Drawing Title:
20m AV Unloading Space 5

Project No:	Drawing No:
2021/0276	2021-276-09A

Revision	Date	Details
A	13/12/2021	





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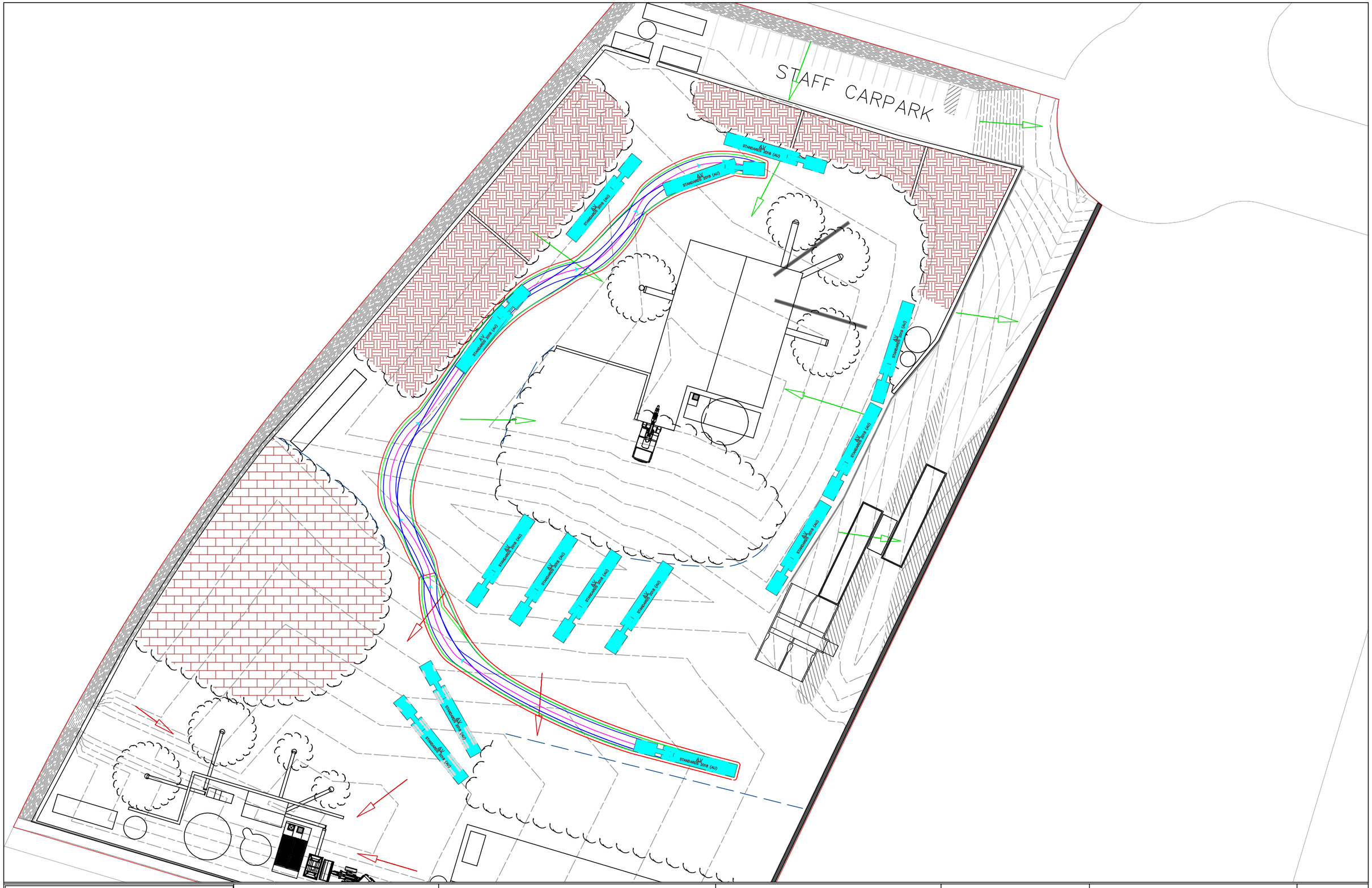
Drawing Title:
20m AV Unloading Space 6

Project No:	Drawing No:
2021/0276	2021-276-10A

Revision	Date	Details
A	13/12/2021	



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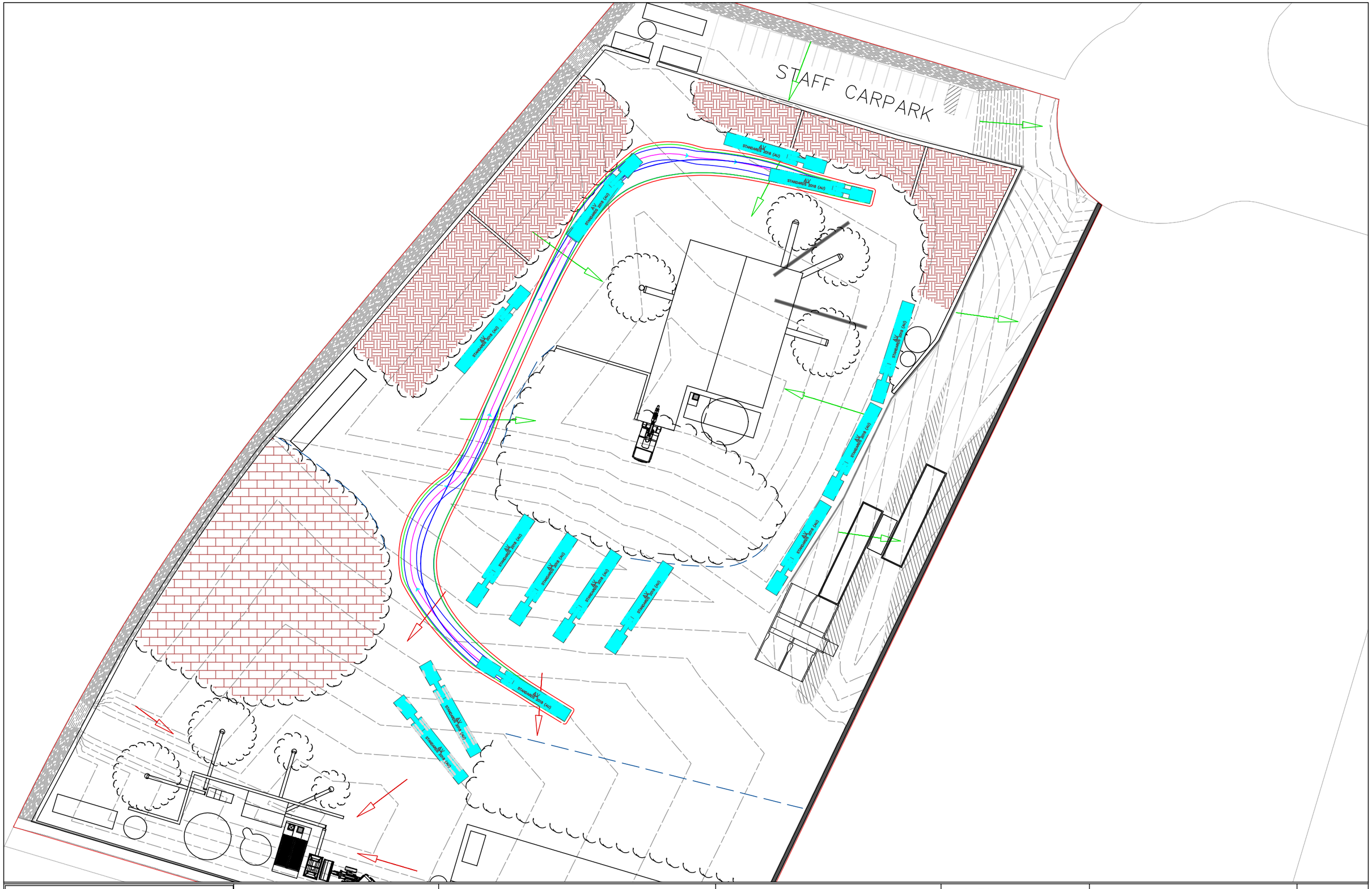
Drawing Title:
20m AV Unloading Space 7

Project No:	Drawing No:
2021/0276	2021-276-11A

Revision	Date	Details
A	13/12/2021	



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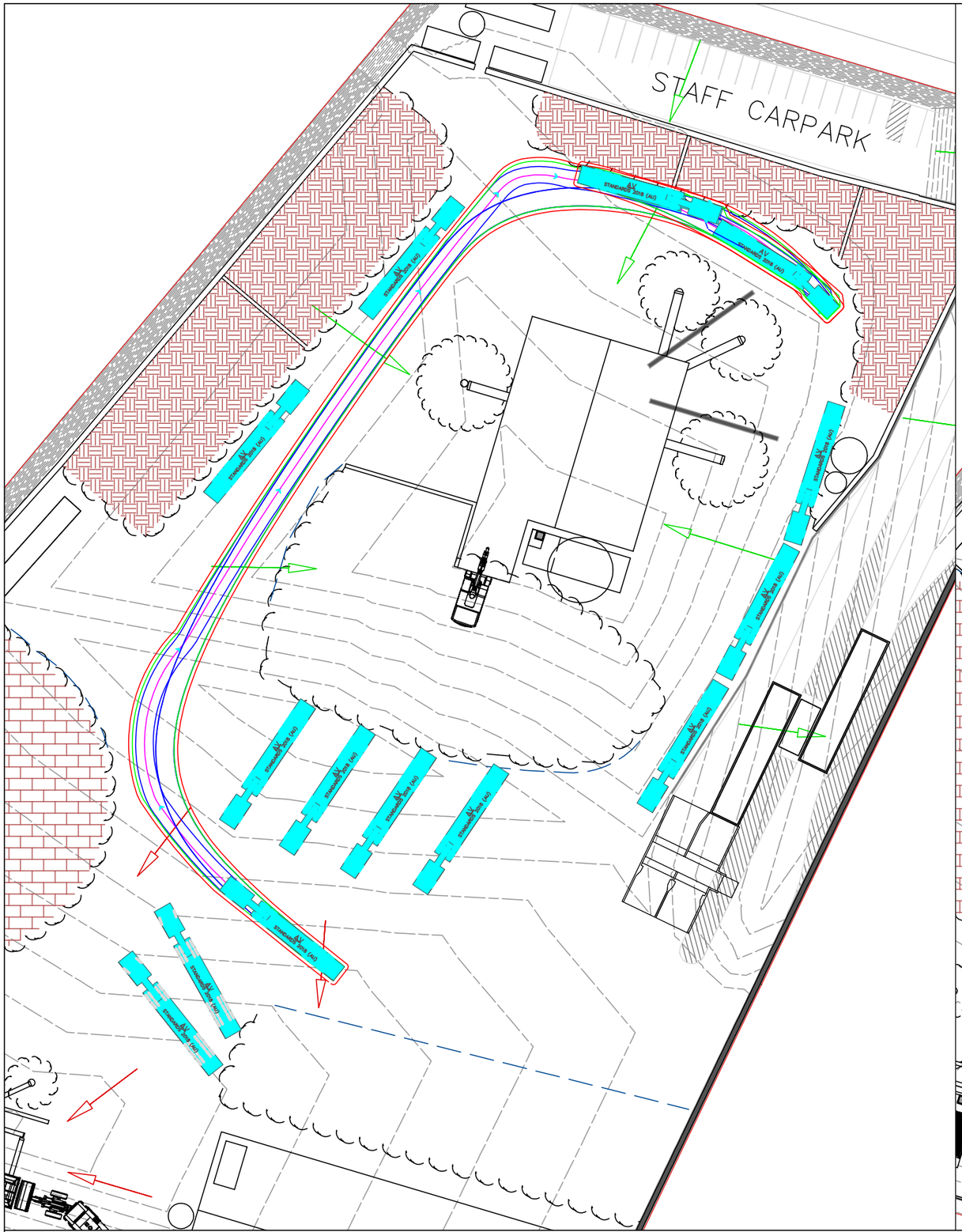
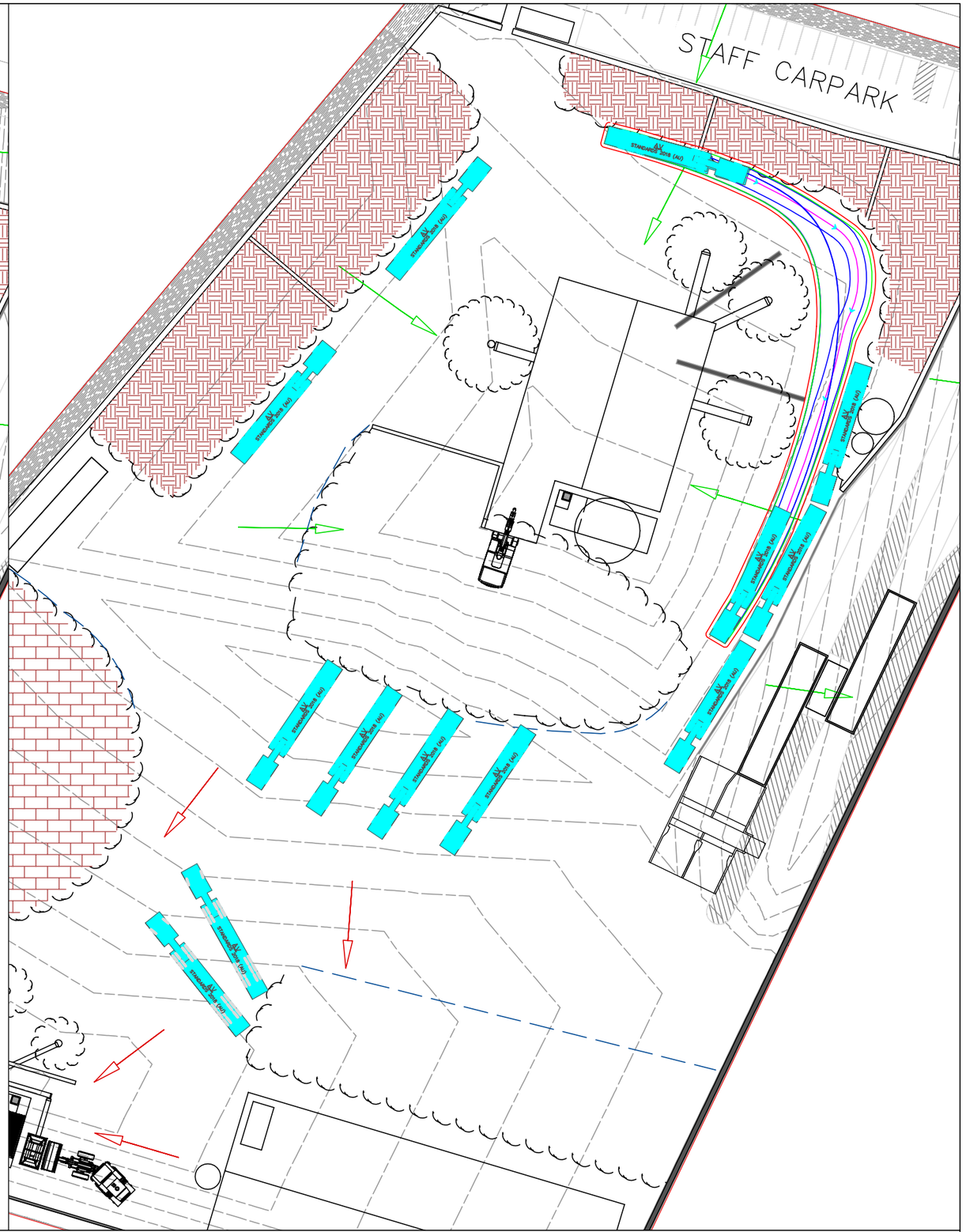
Drawing Title:
20m AV Unloading Space 8

Project No:	Drawing No:
2021/0276	2021-276-12A

Revision	Date	Details
A	13/12/2021	





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Drawing Title:
20m AV Unloading Space 9

Project No:	Drawing No:
2021/0276	2021-276-13A

Revision	Date	Details
A	13/12/2021	

Attachment 3

Analysis from the Camellia Facility

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 282275

Client Details

Client	Concrete Recyclers (Group) Pty Ltd
Attention	Daniel Long
Address	PO Box 238, Rydalmere, NSW, 1701

Sample Details

Your Reference	**Camellia - TT001**
Number of Samples	1 Water
Date samples received	08/11/2021
Date completed instructions received	08/11/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

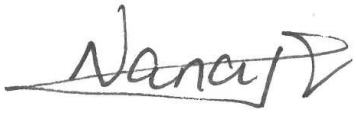
Date results requested by	09/11/2021
Date of Issue	09/11/2021

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Jaimie Loa-Kum-Cheung, Senior Chemist
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics		
Our Reference		282275-1
Your Reference	UNITS	TT001
Depth		0.5m
Date Sampled		08/11/2021
Type of sample		Water
Date prepared	-	08/11/2021
Date analysed	-	08/11/2021
pH	pH Units	8.3
Electrical Conductivity	µS/cm	630
Total Suspended Solids	mg/L	8
Turbidity	NTU	5.9
Nitrate as N in water	mg/L	2.2
Nitrite as N in water	mg/L	0.40
Total Nitrogen in water	mg/L	3.0

Metals in Waters - Total		
Our Reference		282275-1
Your Reference	UNITS	TT001
Depth		0.5m
Date Sampled		08/11/2021
Type of sample		Water
Date prepared	-	09/11/2021
Date analysed	-	09/11/2021
Phosphorus - Total	mg/L	<0.05

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-019	Suspended Solids - determined gravimetricially by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-022	Turbidity - measured nephelometrically using a turbidimeter, in accordance with APHA latest edition, 2130-B.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Metals-020	Determination of various metals by ICP-AES.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			08/11/2021	[NT]	[NT]	[NT]	[NT]	08/11/2021	[NT]
Date analysed	-			08/11/2021	[NT]	[NT]	[NT]	[NT]	08/11/2021	[NT]
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	94	[NT]
Turbidity	NTU	0.1	Inorg-022	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	[NT]	[NT]	[NT]	[NT]	102	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	[NT]	[NT]	[NT]	[NT]	102	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Metals in Waters - Total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			09/11/2021	[NT]	[NT]	[NT]	[NT]	09/11/2021	[NT]
Date analysed	-			09/11/2021	[NT]	[NT]	[NT]	[NT]	09/11/2021	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Total metals: no unfiltered, preserved sample was received, therefore analysis was conducted from the unpreserved sample bottle.
Note: there is a possibility some elements may be underestimated.

CHAIN OF CUSTODY FORM - Client

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Unit 20/119 Reichardt Road, Winnellie, NT 0820
08 8967 1201 | darwin@envirolab.com.au

Company:	Concrete Recyclers	Client Project Name/Number/Site etc (ie report title):	Camellia - TT001
Contact Person:	Daniel Long	PO No. (if applicable):	–
Project Mgr:	A. Males	Envirolab Quote No. :	–
Sampler:	D. Long	Date results required:	
Address:	14, Thackeray St, Camellia, NSW	Or choose:	☐ Standard ☐ Same Day ☑ 1 day ☐ 2 day ☐ 3 day
Phone:	– Mob: 0427753692	Note: Inform lab in advance if urgent turnaround is required - surcharges apply	
Email Results to:	dlong@concreterecyclers.com.au	Additional report format:	☐ Esdat ☐ Equis
Email Invoice to:	As above	Lab Comments:	

Sample information					Tests Required																Comments
Envirolab Sample ID (Lab use only)	Client Sample ID or Information	Depth	Date Sampled	Type of Sample	PH	Conductivity	Total Suspended Solid	Turbidity	Nitrate	Nitrite	Total Nitrogen	Total Phosphorus									Provide as much information about the sample as you can
1	TT001	0.5m	8/11/21	Water																	
	TT001	0.5m	8/11/21	Water																	

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

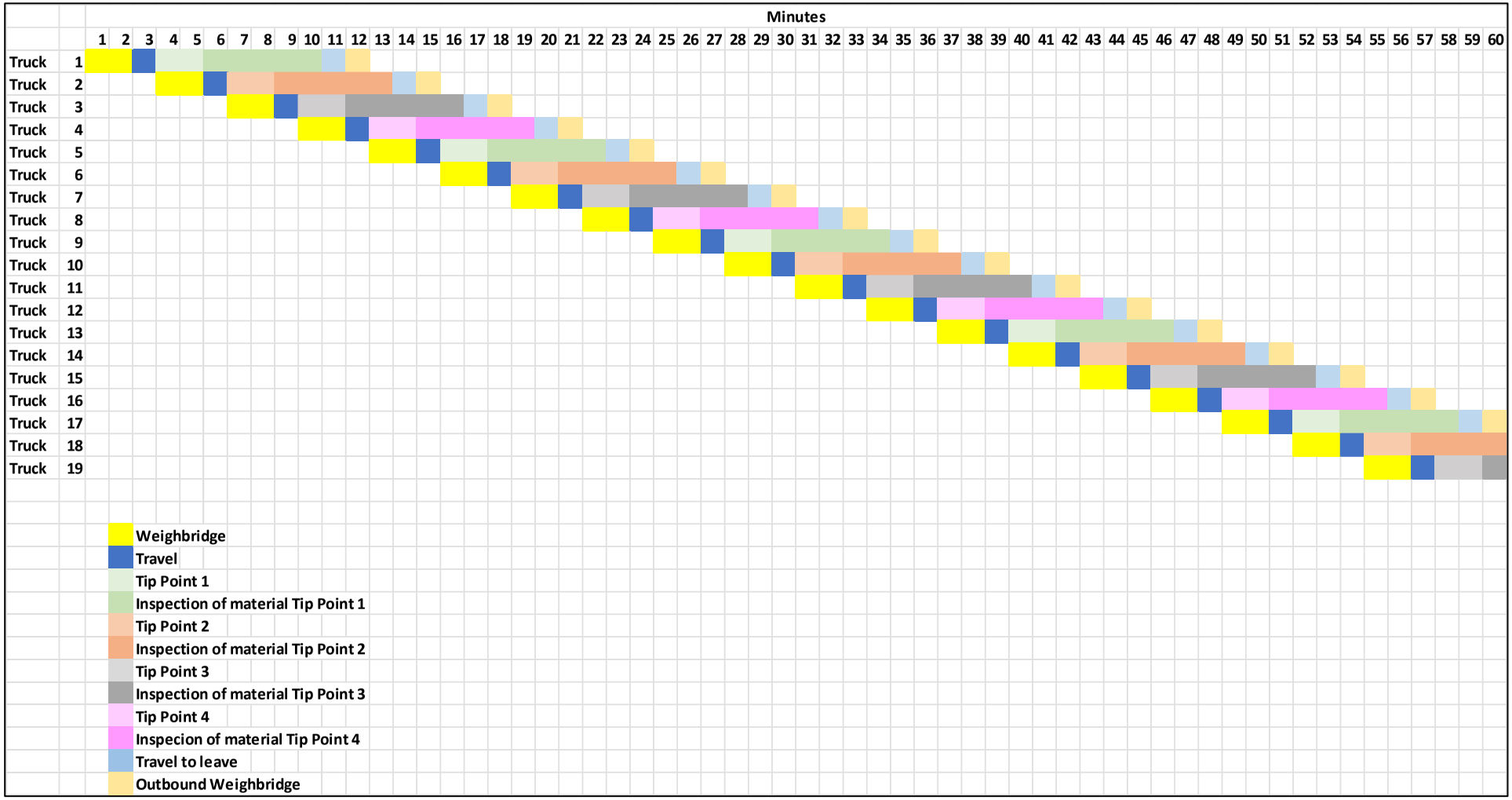
Relinquished by (Company):	Concrete Recyclers	Received by (Company):	ES
Print Name:	Daniel Long	Print Name:	Ray
Date & Time:	08/11/21 / 2:45pm	Date & Time:	8/11/2021 1500
Signature:	Daniel Long	Signature:	

Lab Use Only

Job number: 282275	Cooling: Ice / Ice pack / None
Temperature: 4	Security seal: Intact / Broken / None
TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

Attachment 4

Unloading Truck Times


Minutes
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
Truck 1
Truck 2
Truck 3
Truck 4
Truck 5
Truck 6
Truck 7
Truck 8
Truck 9
Truck 10
Truck 11
Truck 12
Truck 13
Truck 14
Truck 15
Truck 16
Truck 17
Truck 18
Truck 19
Weighbridge
Travel
Tip Point 1
Inspection of material Tip Point 1
Tip Point 2
Inspection of material Tip Point 2
Tip Point 3
Inspection of material Tip Point 3
Tip Point 4
Inspecion of material Tip Point 4
Travel to leave
Outbound Weighbridge

Attachment 5

Additional Air Quality modelling

APPENDIX B – Pug Mill Baghouse

Cement unloading to elevated storage silo – Pneumatic

Emission (TSP) (uncontrolled) = 0.36 kg/tonne (AP-42 11.12) Concrete Batching
Emission (TSP) (controlled) = 0.0005 kg/tonne (AP-42 11.12) Concrete Batching

AP-42 states that the control emission is based on baghouse (or similar) with an efficiency of 99.9%,

Assumptions:

- 1 cement truck per day
- Truck load 40 tonnes
- Unloading takes approximately 1 hours
- Currently the design of the Pug Mill baghouse has not been completed. Assuming a flowrate for the baghouse of (2,091 m^3/hr) similar to a Donaldson Cabinet Dust Collect 84 (See Figure A-1).

Assuming the TSP controlled emission rate the resulting fugitive emission from filling the cement silo is (0.0005kg/tonnes*40tonnes) 20grams/hr.

Assuming the unloading takes 1 hour the likely concentration coming out of the baghouse would be (20gram/hr /2,091 m^3/hr) 10mg/m^3.

This would meet POEO (Clean Air) Schedule 4 “Any activity or plant, except as listed below” Group 6 requirement of 50mg/m^3.

Donaldson
Torit

CABINET DUST COLLECTORS

SERIES 50 TO 80
MODELS 54, 64, 66, 75, 81 AND 84

Series 70 with Dust Drawer and Series 60 with optional 5-Gallon Pail Pack and fan motor starter

Compact, self-contained dust collector delivers excellent efficiency for in-plant dust and smoke control.

- Reliable and cost-efficient filtration on nuisance dust generated in industrial operations
- High collection efficiency of 99.9% allows recirculation of heated and/or air-conditioned plant air
- Manually-operated filter shaker makes filter cleaning easy
- Quick access to dust drawers and dust pails provides easy and safe maintenance
- Filter changes have never been easier with the EZ Filter Pack™, a one-piece, lightweight filter bag that installs without tools and provides a positive pressure seal

Excellent efficiency on nuisance dust for intermittent-duty applications

- Grinding
- Buffing and polishing
- Machining
- Metalworking
- Packaging
- Abrasive blasting
- Dental labs
- Textiles

Figure A-1 Possible Pug Mill Dust Collector

APPENDIX C – Processing Plant Baghouse

Materials transfers during processing was calculated using equation 6 below from the Emission estimation technique manual for Cement manufacturing, Version 2.1 (NPI, 2008):

$$EF_{PM_{10}} = 0.75 \times 0.001184 \times \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \times ER_{PM_{10}}$$

where:

EF_{PM10}	emission factor for PM_{10} (kg/Mg)
k	particle size multiplier (dimensionless)
U	mean wind speed (m/s)
M	material moisture content (%)
ER_{PM10}	emission reduction factor for PM_{10}

The emission factor for TSP was calculated by multiplying the emission factor for PM10 by 2.1, which is the ratio of the TSP and PM10 emission factors for material transfers presented in the AP42 documents, chapter 13.2.4 (USEPA, 2006a). The emission factor for PM2.5 was calculated in a similar fashion using a multiplier of 0.15.

Assumptions:

- 6 transfer points
- 300,000tonnes concrete
- 300days
- 13hour/day
- 2.55ms/s wind
- 5% moisture content
- At this stage it is proposed to install a 2000CFM (0.94m^3/s) Protobast dust collector (or similar) as shown in Figure B-1 and Figure B-2 with an efficiency of 99.9%.

EF(TSP)=2.1*0.75*0.001184*$(2.55/2.2)^{1.3}$/ $(5/2)^{1.4}$

EF(TSP)=0.0006 kg/tonne

Total TSP generated in a day = 6*300000*0.0006/300

Total TSP generated in a day = 3.8 kg/day

After baghouse Total TSP generated in a day = 3.8*((100-99.9)/100) = 0.0038 kg/day
or 3.8g/day

Concentration in (mg/m^3) = 1000*3.8/(13*60*60)/0.94 = 0.1 mg/m^3

This would meet POEO (Clean Air) Schedule 4 “Any crushing, grinding, separating or materials handling activity” Group 6 requirement of 20mg/m^3.

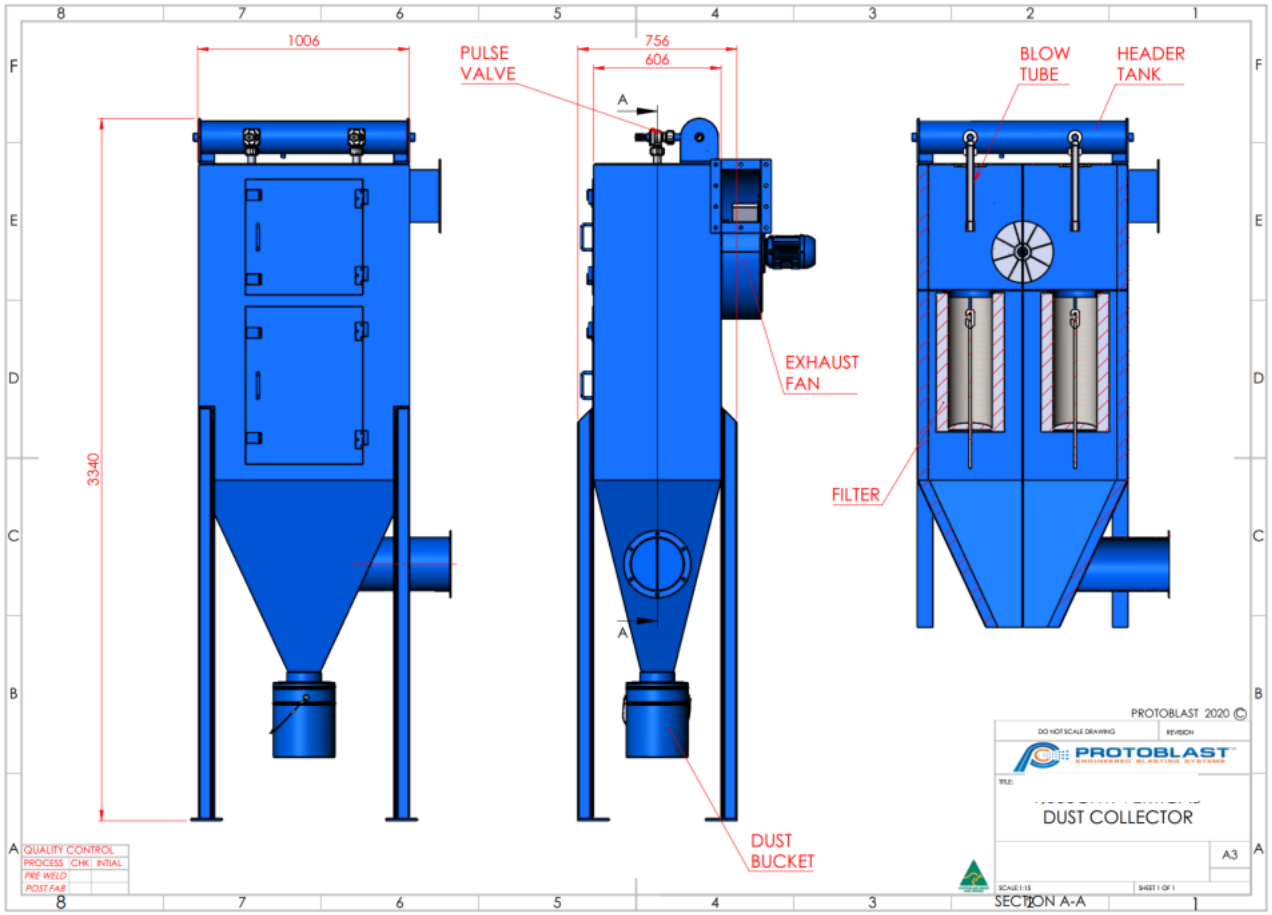


Figure B-1: Protoblast Dust Collector

Highly effective and efficient dust collector

How It Works

- Can be designed to fit any space requirements.
- Use highly efficient filter cartridge and dry bag type filtration units that will capture the finest dust particles.
- Reverse Pulse filter cleaning is used to extend the effective working life of both filter systems

Benefits of the Dry Dust Collector

- Filters 99.99% of all particles above 1 micron in size.
- Longer filter life, lower maintenance costs.
- Longer operating life.
- Meets all environmental and regulatory standards

Figure B-2: Protoblast Dust Collector Specification

Attachment 6

Modified plans of the proposed development

PROJECT: MINTO CONCRETE RECYCLERS

PLANSET: SITE EARTHWORKS

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

LOCALITY PLAN
N.T.S.

DRAWING LIST		
DWG NO.	REV	DWG TITLE
GENERAL		
PS02-A000	V	COVER SHEET
PS02-A300	B	RIPARIAN FEATURES CONSTRAINTS PLAN
PS02-A400	M	SITE LAYOUT
PS02-A401	C	STOCKPILE LAYOUT
PS02-AZ00	H	SITE FENCING, FIRE FIGHTING AND SPRINKLERS PLAN
CONSTRUCTION MANAGEMENT WORKS		
PS02-B300	I	SEDIMENT AND EROSION CONTROL PLAN
PS02-B350	B	SEDIMENT AND EROSION CONTROL DETAILS
EARTHWORKS		
PS02-C100	H	EARTHWORKS PLAN - SHEET 01
PS02-C105	G	EARTHWORKS PLAN - SHEET 02
PS02-C600	I	EARTHWORKS CUT & FILL ANALYSIS PLAN
PS02-C700	F	EARTHWORKS SECTIONS - SHEET 01
PS02-C701	E	EARTHWORKS SECTIONS - SHEET 02
PS02-C705	B	EARTHWORKS SECTIONS - SHEET 03
ROADWORKS		
PS03-DZ10	G	SITE LOADING AND UNLOADING PLAN
DRAINAGE		
PS02-E100	Q	DRAINAGE PLAN
PS02-E200	F	DRAINAGE DETAILS
PS02-E700	C	WATER QUALITY CATCHMENT PLAN
SITEWORKS		
PS02-F101	G	DRIVEWAY PLAN
PS02-F102	G	CARPARK PLAN
PS02-F103	E	DRIVEWAY CROSS SECTION
PS02-F200	J	RETAINING WALL PLAN
PS02-F201	H	RETAINING WALL DETAILS
PS02-F400	C	DRIVEWAY LONGITUDINAL AND TYPICAL CROSS SECTIONS
PAVEMENT AND SIGNAGE		
PS02-G100	H	PAVEMENT PLAN

LGA: CAMPBELLTOWN

7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
V	**MINOR AMENDMENTS**	**03/02/2022**	**JS**	**EZ/AW**	**SL**	**TH**
U	MINOR AMENDMENTS	21/12/2021	JS	EZ/AW	SL	TH
T	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
S	MINOR AMENDMENTS	13/09/2021	NN	EZ/AW	SL	TH
R	MINOR AMENDMENTS	01/09/2021	NN	EZ/AW	SL	TH
Q	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
P	MINOR AMENDMENTS	19/02/2021	JS	JCF	TH	TH
O	MINOR AMENDMENTS	10/02/2021	JS	AW	TH	TH

SCALE

GRID	DATUM	PROJECT MANAGER
---	---	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

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DRAWING TITLE: COVER SHEET

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-A000	V

DRAWING ID: P1203464-PS02-R25-A000

PRINTED: - - USER ISSUED

A1 / A3 LANDSCAPE (ATLC_v02.0.01)

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
A	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF	JCF		

SCALE: A1 (A3) 1:500 (1:1,000) — 0 5 10 15 20 25 30 35 40 45 50 METRES

GRID	DATUM	PROJECT MANAGER
MGA	m AHD	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE: MINTO CONCRETE RECYCLERS
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Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE: RIPARIAN FEATURES CONSTRAINTS PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-A300	B

DRAWING ID: P1203464-PS02-R25-A300

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

KEY:

- FINAL SURFACE CONTOUR
- DIVERSION SWALE UPSTREAM OF STOCKPILES
- SITE BOUNDARY
- 6m HIGH FENCE AROUND SITE (HEIGHT INCLUDES ANY RETAINING WALL HEIGHT)
- NORTHERN CATCHMENT OVERLAND FLOW
- SOUTHERN CATCHMENT OVERLAND FLOW
- UNCRUSHED MATERIAL
- CRUSHED MATERIAL STOCKPILE
- SAND/SANDSTONE/PUGMILLED MATERIAL STOCKPILE

12.0 x 3.0 m OFFICE AND LUNCHROOM

1% AEP FLOOD LEVEL 42.5 mAHD

RAINWATER TANK TO COLLECT LUNCHROOM AND OFFICE'S ROOF WATER

PEDESTRIAN ACCESS THROUGH CONCRETE PANEL WALL

TWO 7.6 x 3.0 m TOILET BLOCKS

PROCESSED MATERIAL TEMPORARY STOCKPILES

1% AEP FLOOD LEVEL 42.4 mAHD

CONCRETE CRUSHING PLANT (DESIGN BY OTHERS)

STAFF CARPARK

LAYBACK AND CROSSOVER TO COUNCIL REQUIREMENTS

STOCKPILE WALL 6 m HIGH

BOW BOWING

MONTORE ROAD

1% AEP FLOOD LEVEL 42.4 mAHD

RUBBISH STORAGE

SCRAP STEEL STORAGE

PUGMILL PLANT

STOCKPILE WALL BUILT WITH CONCRETE PANELS BETWEEN STEEL POSTS 6 m HIGH

450kL NOTHERN STORMWATER COLLECTION TANK.

NORTHERN STORAGE TANKS

SUMP PIT

WEIGH BRIDGE 1

WEIGH BRIDGE 2

OFFICE

TRUCK WHEEL WASHERS ON EXIT LANES

PAINTED MEDIANS

PROCESSED MATERIAL TEMPORARY STOCKPILES

SANDWASHING PLANT FILTER PRESS

THICKENER

SUMP PIT

1% AEP FLOOD LEVEL 43.2 mAHD

6 m HIGH FENCE AROUND ENTIRE SITE (HEIGHT INCLUDES ANY RETAINING WALL HEIGHT)

450kL SOUTHERN STORMWATER COLLECTION TANK

WORKSHOP (DESIGN BY OTHERS)

SAND WASHING PLANT (DESIGN BY OTHERS)

FUEL AND LUBRICANT TO BE STORED ON A CONCRETE AND BUNDED FLOOR.

1% AEP FLOOD LEVEL 43.5 mAHD

SELF-BUNDED FUEL TANK.

RAINWATER TANK TO COLLECT WORKSHOP'S ROOF WATER

EASEMENT TO DRAIN WATER 6 WIDE

EASEMENT TO DRAIN WATER 6741

VIEWPORT F102

VIEWPORT DZ03

VIEWPORT F101

NOTES:

- FINAL SURFACE CONTOURS ARE BASED ON PROPOSED, EXISTING AND LIDAR SURFACES.
- 1% AEP FLOOD LEVELS SUPPLIED BY COUNCIL (21/11/2014). MINIMUM FLOOD LEVELS TO BE 0.5M ABOVE FLOOD LEVELS.
- DETAILED CAR PARKING AND VEHICLE ACCESS TO BE DESIGNED TO AS/NZS 2890.1 (LATEST VERSION)
- TOTAL ON SITE CAR PARKING 25 CARS + 1 HANDICAP.
- CONCEPT DESIGN ONLY. SUBJECT TO DETAILED DESIGN.

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
M	**MINOR AMENDMENTS**	**03/02/2022**	**JS**	**EZ/AW**	**SL**	**TH**
L	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
K	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
J	MINOR AMENDMENTS	16/06/20	GM/JS	SS	SL	TH
I	MINOR AMENDMENTS	02/03/2020	LL	JCF	TH	TH
H	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
G	AMENDMENTS AS PER CLIENT COMMENTS	20/09/2018	PB/JCF/LZ	JCF	TH	
F	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		

SCALE

A1 (A3) 1:500 (1:1,000) METRES

A1 (A3) 1:2,000 (1:4,000) METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

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Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE: SITE LAYOUT

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-A400	M

DRAWING ID: P1203464-PS02-R25-A400

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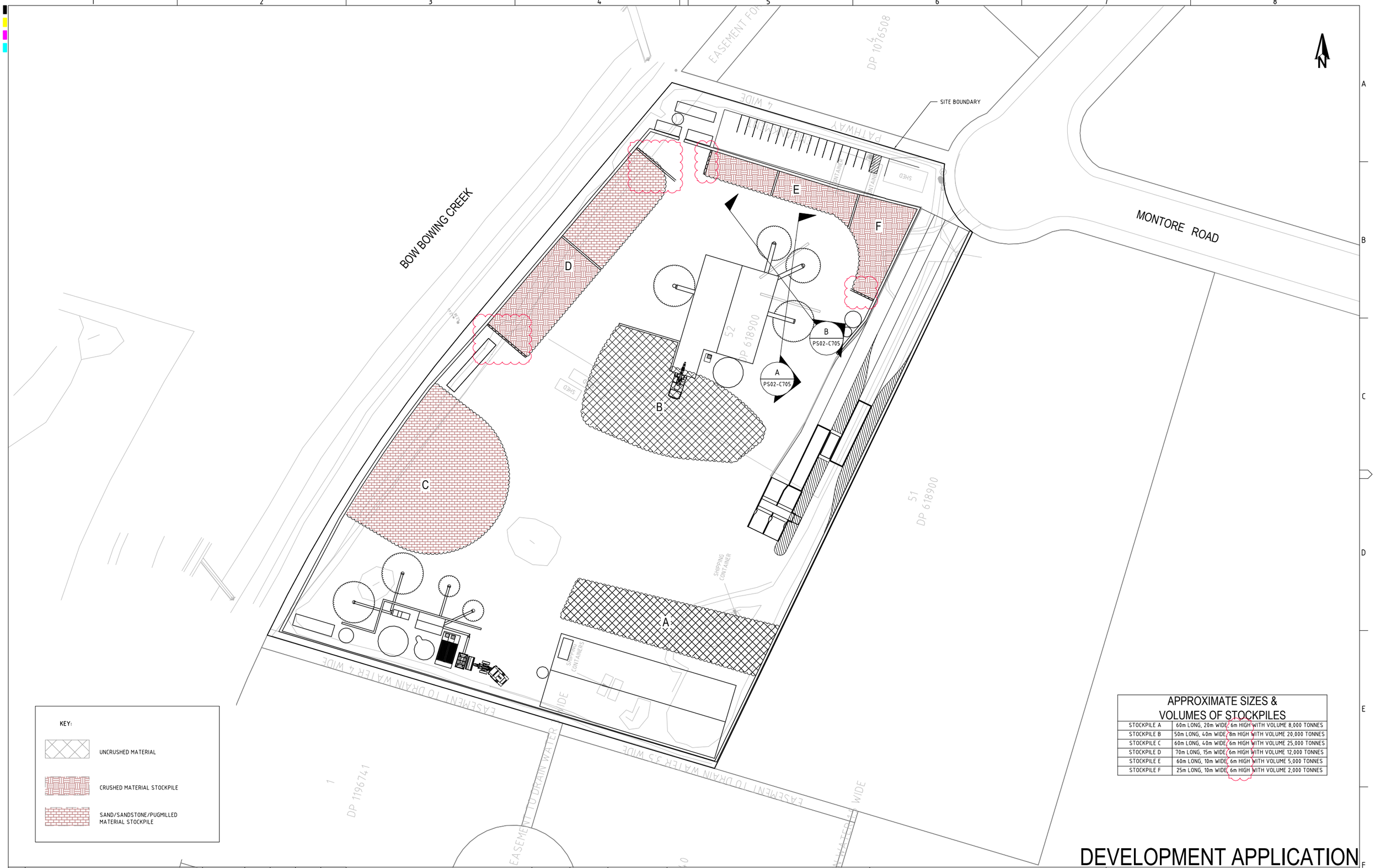
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



KEY:

- UNCRUSHED MATERIAL
- CRUSHED MATERIAL STOCKPILE
- SAND/SANDSTONE/PUGMILLED MATERIAL STOCKPILE

APPROXIMATE SIZES & VOLUMES OF STOCKPILES	
STOCKPILE A	60m LONG, 20m WIDE, 6m HIGH WITH VOLUME 8,000 TONNES
STOCKPILE B	50m LONG, 40m WIDE, 8m HIGH WITH VOLUME 20,000 TONNES
STOCKPILE C	60m LONG, 40m WIDE, 6m HIGH WITH VOLUME 25,000 TONNES
STOCKPILE D	70m LONG, 15m WIDE, 6m HIGH WITH VOLUME 12,000 TONNES
STOCKPILE E	60m LONG, 10m WIDE, 6m HIGH WITH VOLUME 5,000 TONNES
STOCKPILE F	25m LONG, 10m WIDE, 6m HIGH WITH VOLUME 2,000 TONNES

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
C	MINOR AMENDMENTS	21/12/2021	JS	EZ/AW	SL	TH
B	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
A	INITIAL RELEASE	13/09/2021	NN	AW/EZ	SL	TH

SCALE: A1 (A3) 1:500 (1:1,000) — 0 5 10 15 20 25 30 35 40 45 50 METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE: MINTO CONCRETE RECYCLERS — SITE EARTHWORKS

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DRAWING TITLE: STOCKPILE LAYOUT

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-A401	C

DRAWING ID: P1203464-PS02-R25-A401

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

KEY

- SITE BOUNDARY
- CONCRETE PANEL & HEBEL FENCE
- CHAIN WIRE FENCE
- VYR-60 SPRINKLER
- TORO TG101 OR EQUIVALENT SPRINKLER
- VYR-65 OR EQUIVALENT SPRINKLER (NOTE: ENDS OF CONVEYORS WILL ALSO HAVE MISTING SPRAYS)

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
H	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
G	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
F	MINOR AMENDMENTS	10/02/2021	JS	AW	TH	TH
E	MINOR AMENDMENTS	02/03/2020	LL	JCF	TH	TH
D	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
C	AMENDMENTS AS PER CLIENT COMMENTS	20/09/2018	PB/JCF/LZ	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
A	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH

PRINTED: ---- - USER: JSUAREZ

SCALE: 0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

GRID | DATUM | PROJECT MANAGER: TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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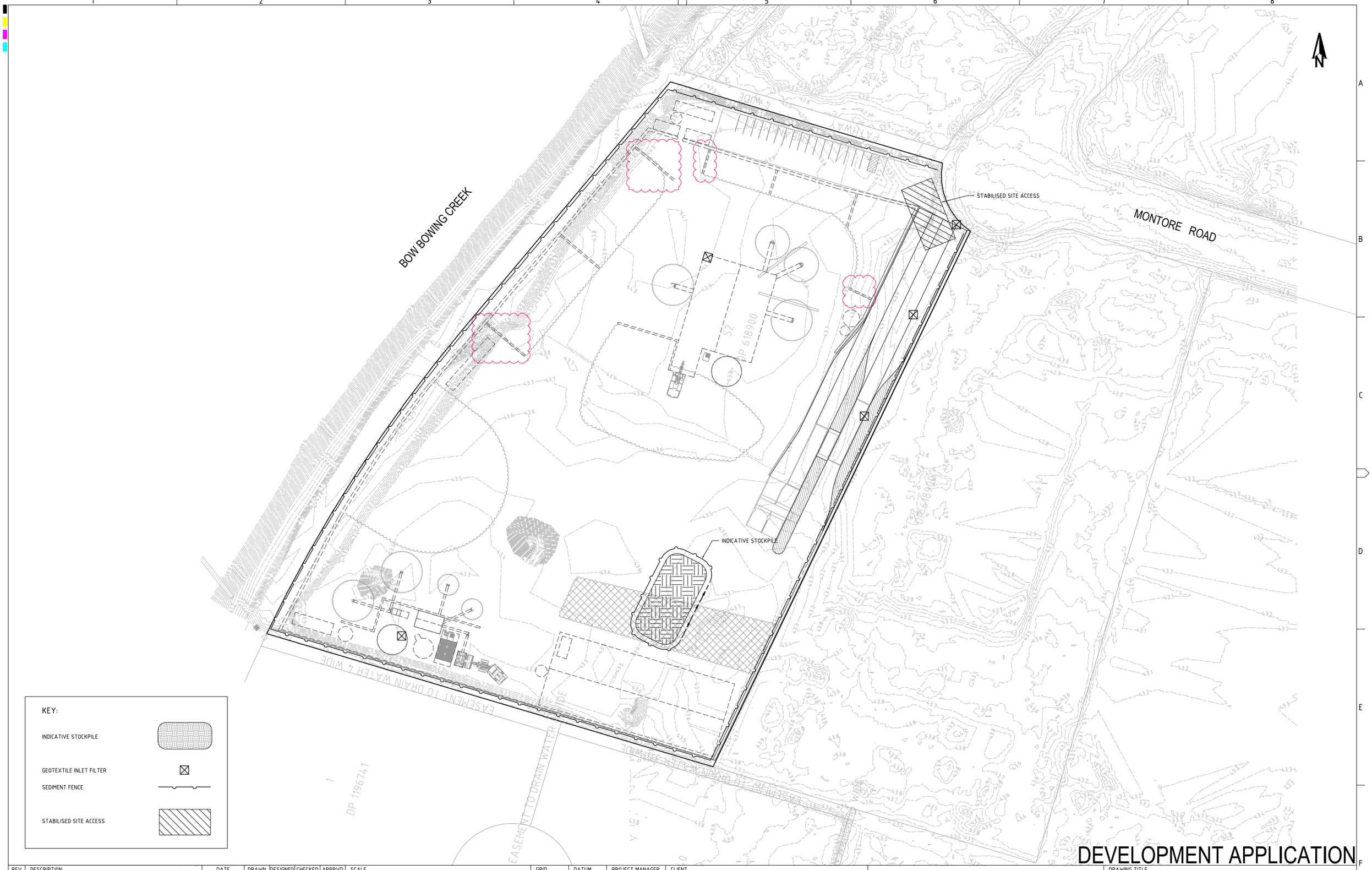
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
SITE FENCING, FIRE FIGHTING AND SPRINKLERS PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-AZ00	H

DRAWING ID: P1203464-PS02-R25-AZ00



KEY:

- INDICATIVE STOCKPILE
- GEOTEXTILE INLET FILTER
- SEDIMENT FENCE
- STABILISED SITE ACCESS

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
I	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
H	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
G	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
F	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
E	CLIENT REQUESTED AMENDMENTS	03/08/2018	PB	JCF	TH	TH
D	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
C	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	

SCALE: 0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

martens & Associates Pty Ltd
Consulting Engineers
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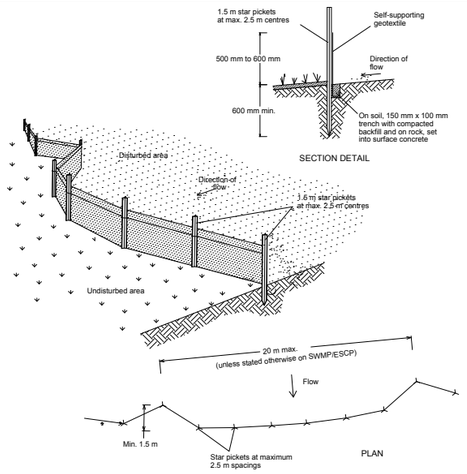
Civil
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE: SEDIMENT AND EROSION CONTROL PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-B300	I

DRAWING ID: P1203464-PS02-R25-B300

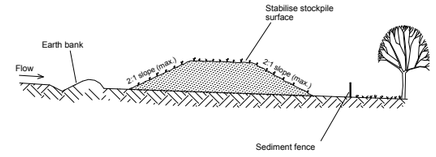
PRINTED: ---- USER: JSUAREZ
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

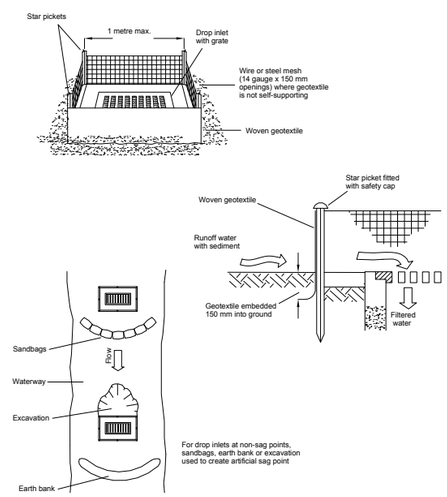
SEDIMENT FENCE — SD 6-8



Construction Notes

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

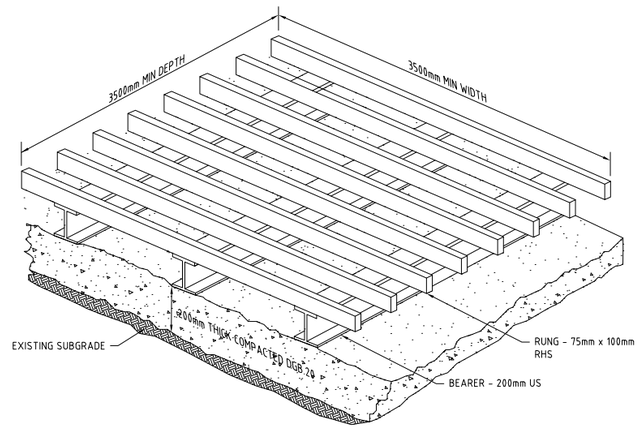
STOCKPILES — SD 4-1



Construction Notes

1. Fabricate a sediment barrier made from geotextile or straw bales.
2. Follow Standard Drawing 6-7 and Standard Drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres.
3. In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
4. Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

GEOTEXTILE INLET FILTER — SD 6-12



Construction Notes

A correctly designed and installed shaker pad will assist in preventing sediment transfer from a site. Any stabilised access point (SAP) can be designed with a shaker pad (compulsory in Type II SAP's)

Shaker pads can be designed and constructed to enable re-use on future projects.

The shaker pad:
1. Must be designed and certified by a practicing structural engineer. The certified design should be submitted with the relevant application.
2. Can be constructed from any suitable material.
3. Must be located on a suitably prepared and compacted sub-grade/base material.
4. Must be situated such thatthe rungs of the shaker pad are level with the adjoining natural surface.
5. Must be a minimum of 3.5 m in length.
6. Must be a minimum of 3.5 m in width.
7. Must have clear spacing between rungs of 200 - 250 mm.
8. Rings must have a maximum width (bearing area) of 75 mm.
9. Must have a minimum clear depth of 300 mm ie. from the top of the rung to the finished sub-grade/base level.
10. Must be provided with suitable barriers at the sides to ensure that all tyres of vehicles leaving the site traverse the device.

SHAKER PAD (CATTLE GRID)

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	**CLIENT REQUESTED AMENDMENTS**	**03/08/2018**	**PB**	**JCF**	**TH**	**TH**
A	BALANCE SITE EARTHWORKS	07/11/2017	CG	CG	TH	

SCALE

GRID: ---
DATUM: ---
PROJECT MANAGER: TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
SEDIMENT AND EROSION CONTROL DETAILS

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-B350	B

DRAWING ID: P1203464-PS02-R25-B350

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

EXISTING SITE CONTOURS

PROPOSED SITE CONTOURS

KEY

- EXISTING CONTOURS
- DESIGN CONTOURS
- INTERFACE
- RETAINING WALL
- EXTERNAL BOUNDARY
- OVERLAND FLOW

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
H	**MINOR AMENDMENTS**	**06/08/2021**	**NN**	**AW/EZ**	**SL**	**TH**
G	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
F	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
E	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
D	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
C	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	
A	BALANCE SITE EARTHWORKS	07/11/2017	CG	CG	TH	

SCALE
0 7.5 15.0 22.5 30.0 37.5 45.0 52.5 60.0 67.5 75.0 METRES
A1 (A3) 1:750 (1:1,500)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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DRAWING TITLE
EARTHWORKS PLAN
SHEET 01

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C100	H

DRAWING ID: P1203464-PS02-R25-C100

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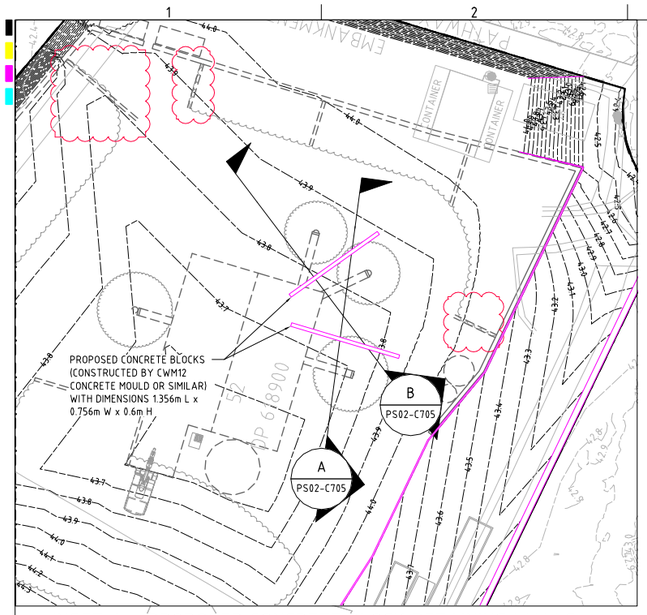
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



INSET A - PROPOSED CONCRETE BLOCK RETAINING WALLS

1V:2H BATTER WITH NATIVE PLANTINGS
(REFER LANDSCAPE ARCHITECT PLANS)
MAX HEIGHT 1.8 m

EMERGENCY OVERFLOW WEIR
RL 43.82

1V:2H BATTER WITH NATIVE PLANTINGS
(REFER LANDSCAPE ARCHITECT PLANS)
MAX HEIGHT 1.8 m

BOW BOWING CRE.

INSET A

MONTORE ROAD

1V:2H BATTER WITH NATIVE PLANTINGS
(REFER LANDSCAPE ARCHITECT PLANS)
MAX HEIGHT 1.8 m

EMERGENCY OVERFLOW WEIR
RL 43.62

PROPOSED RETAINING WALL
2m OFFSET FROM BOUNDARY

EASEMENT TO DRAIN WATER 1 WIDE

DP 1196741

DP 618900

SHIPPING CONTAINERS

KEY

- EXISTING CONTOURS
- DESIGN CONTOURS
- DESIGN SPOT HEIGHTS
- INTERFACE
- RETAINING WALL
- EXTERNAL BOUNDARY

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
G	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
F	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
E	MINOR AMENDMENTS	10/02/2021	JS	AW	TH	TH
D	STOCKPILE DETAILS ADDED	26/06/2020	RK	SA	SA	TH
C	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
A	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH

SCALE
0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

GRID	DATUM	PROJECT MANAGER
		TH

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CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

martens & Associates Pty Ltd
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Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
EARTHWORKS PLAN
SHEET 02

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C105	G

DRAWING ID: P1203464-PS02-R25-C105

EARTHWORKS SUMMARY		
	CUT	FILL
EARTHWORKS VOLUME (m^3)	-1298	7810
EARTHWORKS BALANCE (m^3)	-	6512
IMPORTED PAVEMENT (m^3)	-	6432
TOTAL BALANCE (m^3)	-	80

NOTES:
- EARTHWORKS VOLUMES MEASURED FROM EXISTING LEVELS TO DESIGN SURFACE LEVELS.
- APPROX. 6432 M3 OF HARDSTAND PAVEMENT AT 0.3 M DEPTH REQUIRED (21440 X 0.3).

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
I	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
H	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
G	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
F	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
E	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
D	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
C	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	

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SCALE: 0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

GRID	DATUM	PROJECT MANAGER
---	mAHD	TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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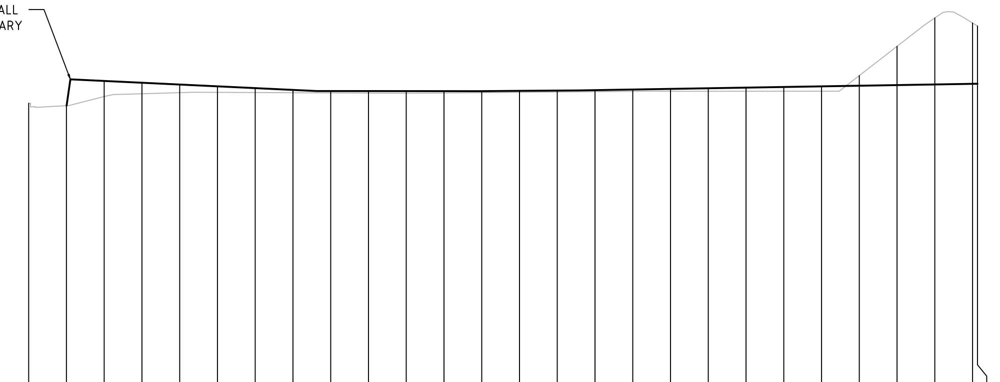
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
EARTHWORKS CUT & FILL ANALYSIS PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C600	I

DRAWING ID: P1203464-PS02-R25-C600

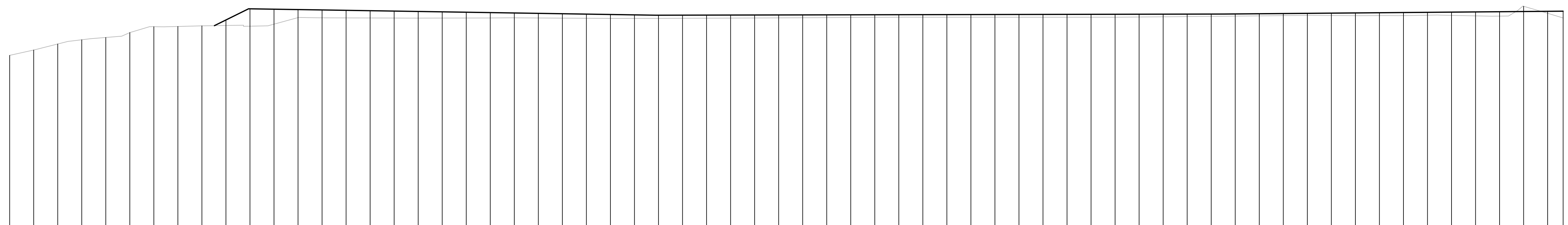


DATUM RL 28.000

CHAINAGE	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS	CUT / FILL DEPTH
0.000		42.834	0.000
2.000		42.707	0.000
4.000	44.015	43.192	0.823
6.000	43.92	43.338	0.582
8.000	43.825	43.395	0.430
10.000	43.73	43.411	0.319
12.000	43.635	43.402	0.234
14.000	43.54	43.392	0.148
16.000	43.481	43.383	0.098
18.000	43.48	43.373	0.107
20.000	43.478	43.365	0.113
22.000	43.476	43.378	0.098
24.000	43.475	43.395	0.080
26.000	43.491	43.412	0.079
28.000	43.506	43.429	0.077
30.000	43.528	43.446	0.082
32.000	43.562	43.464	0.098
34.000	43.595	43.471	0.124
36.000	43.629	43.469	0.159
38.000	43.662	43.470	0.192
40.000	43.695	43.471	0.224
42.000	43.729	43.473	0.256
44.000	43.762	44.298	-0.535
46.000	43.796	45.847	-2.051
48.000	43.829	47.348	-3.519
50.000	43.863	47.080	-3.217
50.260	43.867	46.921	-3.053

SECTION 1

SCALE: HORIZONTAL - 1:200
VERTICAL - 1:200



DATUM RL 26.000

CHAINAGE	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS	CUT / FILL DEPTH
0.000		40.224	0.000
2.000		40.668	0.000
4.000		41.170	0.000
6.000		41.522	0.000
8.000		41.713	0.000
10.000		42.119	0.000
12.000		42.609	0.000
14.000		42.629	0.000
16.000		42.680	0.000
18.000	43.17	42.713	0.457
20.000	44.098	42.653	1.445
22.000	44.066	42.822	1.245
24.000	44.035	43.369	0.666
26.000	44.004	43.348	0.656
28.000	43.973	43.342	0.631
30.000	43.941	43.336	0.605
32.000	43.91	43.330	0.580
34.000	43.878	43.325	0.553
36.000	43.847	43.329	0.518
38.000	43.815	43.332	0.483
40.000	43.783	43.336	0.447
42.000	43.752	43.347	0.405
44.000	43.72	43.335	0.385
46.000	43.689	43.323	0.366
48.000	43.657	43.311	0.346
50.000	43.626	43.301	0.325
52.000	43.594	43.301	0.293
54.000	43.567	43.303	0.263
56.000	43.571	43.311	0.260
58.000	43.575	43.319	0.256
60.000	43.579	43.327	0.252
62.000	43.583	43.335	0.249
64.000	43.587	43.344	0.243
66.000	43.591	43.355	0.236
68.000	43.596	43.367	0.229
70.000	43.6	43.379	0.221
72.000	43.604	43.391	0.213
74.000	43.608	43.403	0.205
76.000	43.612	43.403	0.209
78.000	43.616	43.400	0.216
80.000	43.62	43.400	0.220
82.000	43.624	43.400	0.225
84.000	43.628	43.399	0.229
86.000	43.632	43.399	0.234
88.000	43.636	43.399	0.238
90.000	43.64	43.400	0.240
92.000	43.645	43.402	0.243
94.000	43.649	43.417	0.232
96.000	43.653	43.435	0.218
98.000	43.657	43.453	0.204
100.000	43.661	43.473	0.188
102.000	43.671	43.492	0.179
104.000	43.688	43.512	0.176
106.000	43.705	43.532	0.173
108.000	43.721	43.552	0.170
110.000	43.738	43.540	0.198
112.000	43.755	43.527	0.228
114.000	43.772	43.532	0.240
116.000	43.789	43.533	0.256
118.000	43.806	43.566	0.239
120.000	43.823	43.552	0.271
122.000	43.839	43.511	0.328
124.000	43.856	43.491	0.365
126.000	43.873	44.308	-0.435
128.000	43.89	43.726	0.164
129.289	43.901	43.336	0.565

SECTION 2

SCALE: HORIZONTAL - 1:200
VERTICAL - 1:200

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
F	**MINOR AMENDMENTS**	**06/08/2021**	**NN**	**AW/EZ**	**SL**	**TH**
E	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
D	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
C	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	
A	BALANCE SITE EARTHWORKS	07/11/2017	CG	CG	TH	

SCALE: 0 2 4 6 8 10 12 14 16 18 20 METRES
A1 (A3) 1:200 (1:400)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

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All measurements in millimetres unless otherwise specified.

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

martens & Associates Pty Ltd
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Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
EARTHWORKS SECTIONS
SHEET 01

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C700	F

DRAWING ID: P1203464-PS02-R25-C700

A1 / A3 LANDSCAPE (A1LC_v02.0.01)

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BOW BOWING CHANNEL (APPROX. LOCATION)

ASSUMED GROUNDWATER TABLE

DATUM RL 25.000

CHAINAGE	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS	CUT / FILL DEPTH
0.000		39.764	0.000
2.000		39.771	0.000
4.000		39.572	0.000
6.000		39.008	0.000
8.000		39.594	0.000
10.000		39.719	0.000
12.000		39.674	0.000
14.000		39.615	0.000
16.000		39.715	0.000
18.000		39.984	0.000
20.000		40.545	0.000
22.000		41.000	0.000
24.000		41.310	0.000
26.000		42.034	0.000
28.000		42.228	0.000
30.000		42.272	0.000
32.000		42.319	0.000
34.000	43.098	42.372	0.727
36.000	44.093	42.579	1.514
38.000	44.039	43.196	0.843
40.000	44.005	43.797	0.208
42.000	43.971	44.031	-0.060
44.000	43.937	44.039	-0.102
46.000	43.903	44.047	-0.144
48.000	43.869	44.057	-0.188
50.000	43.835	44.061	-0.226
52.000	43.801	44.059	-0.258
54.000	43.767	44.067	-0.301
56.000	43.733	44.079	-0.346
58.000	43.718	44.090	-0.372
60.000	43.709	44.101	-0.392
62.000	43.711	44.113	-0.402
64.000	43.714	44.107	-0.392
66.000	43.718	44.096	-0.378
68.000	43.721	44.084	-0.363
70.000	43.724	44.064	-0.339
72.000	43.727	44.038	-0.310
74.000	43.731	44.012	-0.282
76.000	43.734	43.987	-0.253
78.000	43.737	43.961	-0.224
80.000	43.74	43.926	-0.186
82.000	43.738	43.909	-0.171
84.000	43.736	43.903	-0.167
86.000	43.734	43.888	-0.154
88.000	43.732	43.873	-0.141
90.000	43.73	43.858	-0.128
92.000	43.728	43.843	-0.115
94.000	43.726	43.833	-0.107
96.000	43.723	43.834	-0.111
96.531	43.723	43.835	-0.112

SECTION 3 - CONCEPTUAL GROUNDWATER MODEL

SCALE: HORIZONTAL - 1:200
VERTICAL - 1:200

DATUM RL 28.000

CHAINAGE	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS	CUT / FILL DEPTH
0.000		42.706	0.000
2.000	42.912	42.741	0.171
4.000	42.87	42.799	0.071
6.000	42.907	42.794	0.113
8.000	42.971	42.810	0.161
10.000	43.035	42.819	0.216
12.000	43.099	42.835	0.264
14.000	43.162	42.890	0.272
16.000	43.226	42.959	0.267
18.000	44.091	43.049	1.041
20.000	44.071	43.176	0.894
22.000	44.052	43.292	0.757
24.000	44.032	43.370	0.657
26.000	44.01	43.448	0.556
28.000	43.989	43.525	0.454
30.000	43.965	43.588	0.365
32.000	43.953	43.612	0.315
34.000	43.95	43.634	0.265
34.804	43.949	43.639	0.248

SECTION 4

SCALE: HORIZONTAL - 1:200
VERTICAL - 1:200

DATUM RL 28.000

CHAINAGE	DESIGN SURFACE LEVELS	EXISTING SURFACE LEVELS	CUT / FILL DEPTH
0.000		42.587	0.000
2.000		42.582	0.000
4.000	42.999	42.572	0.427
6.000	43.997	43.482	0.515
8.000	44.092	43.552	0.534
10.000	44.082	43.625	0.444
12.000	44.071	43.693	0.359
14.000	44.058	43.760	0.272
16.000	44.044	43.785	0.227
18.000	44.031	43.790	0.200
20.000	44.018	43.795	0.173
22.000	44.004	43.791	0.153
24.000	43.991	43.784	0.137
26.000	43.978	43.776	0.122
27.857	43.965	43.767	0.113

SECTION 5

SCALE: HORIZONTAL - 1:200
VERTICAL - 1:200

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
E	**MINOR AMENDMENTS**	**28/09/2018**	**JCF/LZ/PB**	**CG/JCF**	**TH**	**TH**
D	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
C	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	
A	BALANCE SITE EARTHWORKS	07/11/2017	CG	CG	TH	

SCALE: A1 (A3) 1:200 (1:400) METRES

GRID: ---
DATUM: MAHD
PROJECT MANAGER: TH

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All measurements in millimetres unless otherwise specified.

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

martens & Associates Pty Ltd
Consulting Engineers
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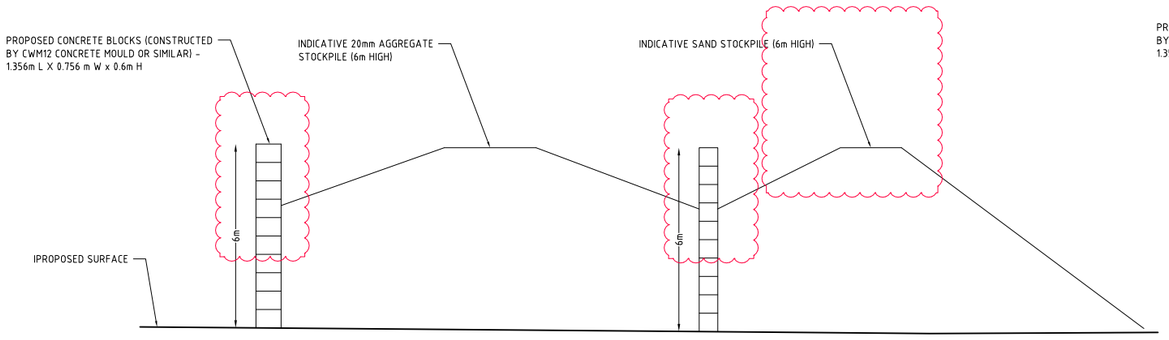
Civil
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE: EARTHWORKS SECTIONS SHEET 02

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C701	E

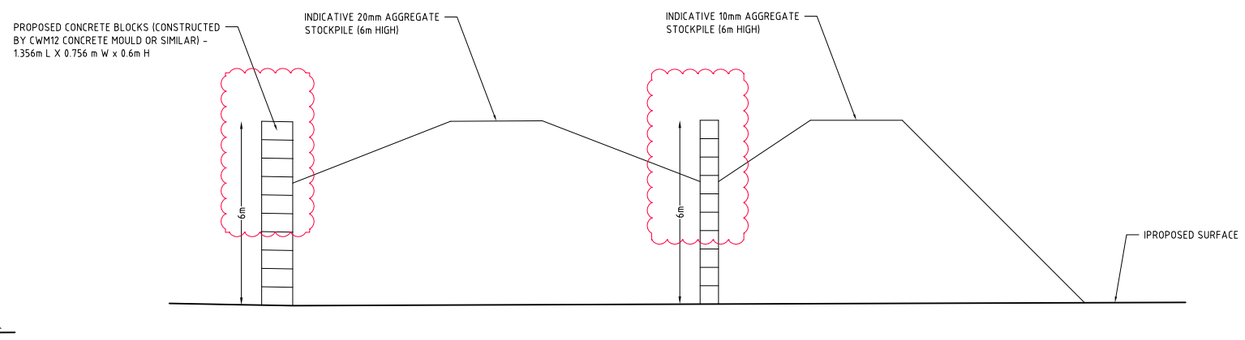
DRAWING ID: P1203464-PS02-R25-C701

A1 / A3 LANDSCAPE (A1LC_v02.0.01)



SECTION A

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100



SECTION B

SCALE: HORIZONTAL - 1:100
VERTICAL - 1:100

NOTES:
CONCRETE BLOCK RETAINING WALLS SHALL BE DESIGNED AND CERTIFIED BY STRUCTURAL ENGINEER.

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
B	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
A	STOCKPILE DETAILS ADDED	26/06/2020	RK	SA	SA	TH

SCALE
A1 (A3) 1:100 (1:200)
0 1 2 3 4 5 6 7 8 9 10 METRES

GRID	DATUM	PROJECT MANAGER
---	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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DRAWING TITLE
EARTHWORKS SECTIONS
SHEET 03

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-C705	B

DRAWING ID: P1203464-PS02-R25-C705

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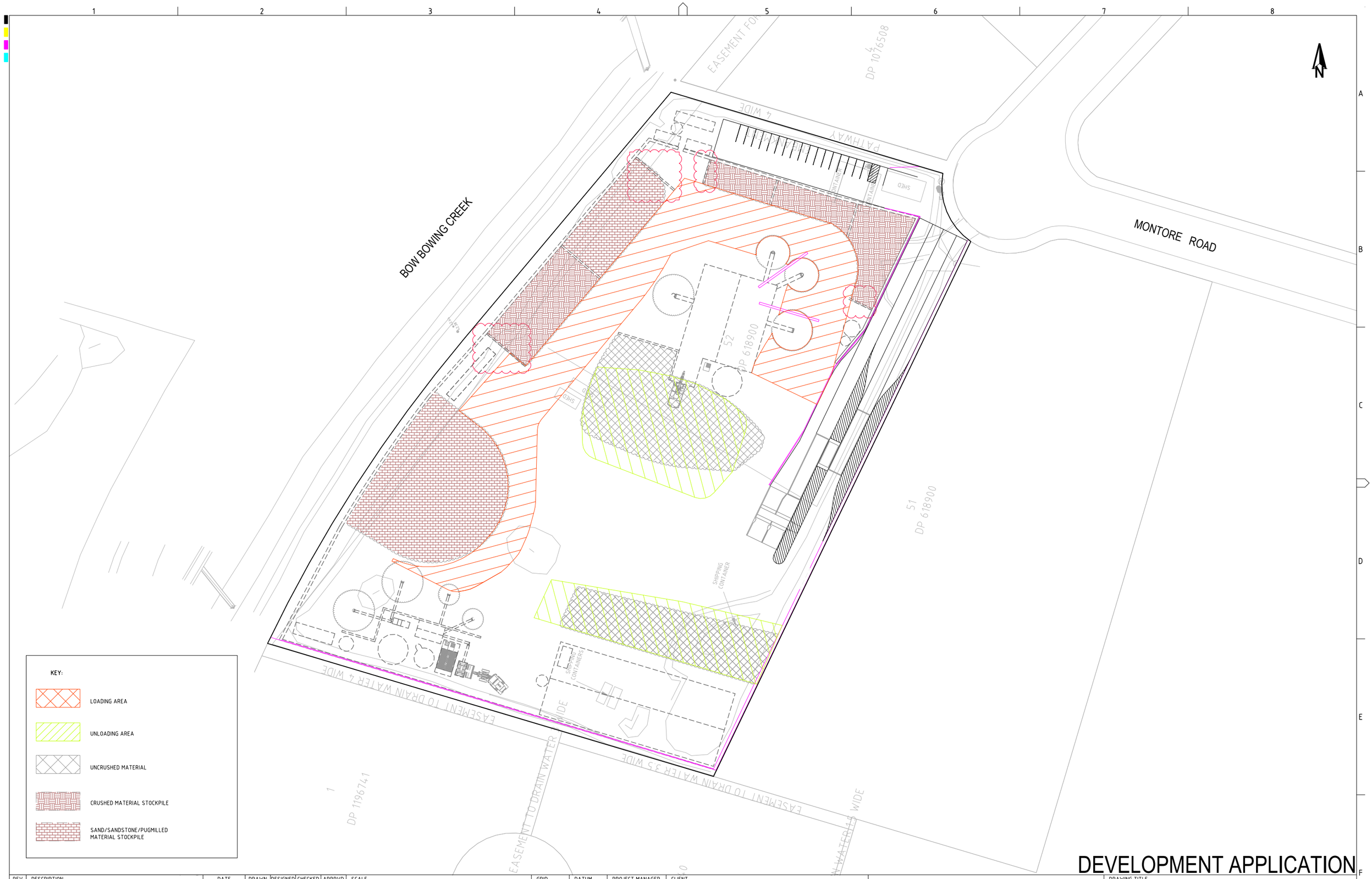
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
G	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
F	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
E	MINOR AMENDMENTS	02/03/2020	LL	JCF	TH	TH
D	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
C	AMENDMENTS AS PER CLIENT COMMENTS	20/09/2018	PB/JCF/LZ	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
A	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH

SCALE
0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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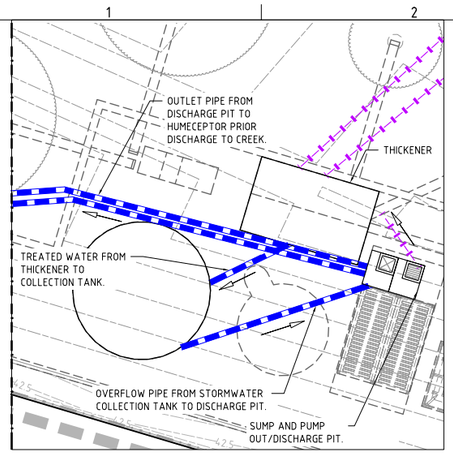
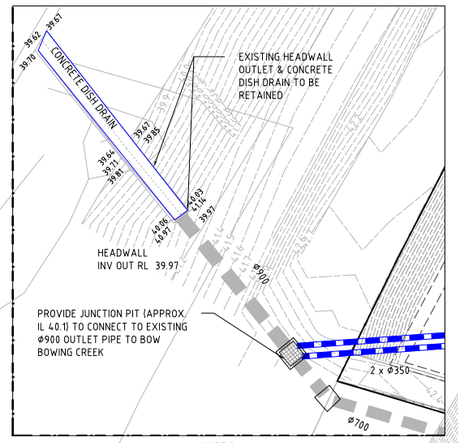
DRAWING TITLE
SITE LOADING & UNLOADING PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-DZ10	G

PRINTED ---- - USER: JSUAREZ
A1 / A3 LANDSCAPE (A1LC_v02.0.01)
DRAWING ID: P1203464-PS02-R25-DZ10



INSET A
SCALE - 1:200



INSET B
SCALE - 1:200

KEY

- FINAL SURFACE CONTOURS
- EXISTING STORMWATER PIPELINE
- PROPOSED STORMWATER PIPELINE
- PROPOSED CHARGED LINE
- STORMWATER PIT
- DRAINAGE INVERT
- DIVERSION SWALE UPSTREAM OF STOCKPILES
- RIDGE LINE
- PROPOSED TRENCH GRATE
- SITE BOUNDARY
- NORTHERN CATCHMENT OVERLAND FLOW
- SOUTHERN CATCHMENT OVERLAND FLOW
- FIRST FLUSH PUMP OUT PIT
- UNCRUSHED MATERIAL
- CRUSHED MATERIAL STOCKPILE
- SAND/SANDSTONE/PUGMILLED MATERIAL STOCKPILE

NOTES:
- FINAL SURFACE CONTOURS ARE BASED ON PROPOSED, EXISTING AND LIDAR SURFACES.
- SITE RAINFALL TO BE CAPTURED AND STORED ON SITE. REFER TO CONCEPT FLOW CHART PROVIDED IN ATTACHMENT D OF P1203464JR01V06 FOR MORE DETAILS.
- STORMWATER PIPE GRADE TO BE MINIMUM 1%.
- CONCEPT DESIGN ONLY. SUBJECT TO DETAILED DESIGN.

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
Q	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
P	MINOR AMENDMENTS	01/09/2021	NN	EZ	SL	TH
O	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
N	MINOR AMENDMENTS	20/05/2021	LL	EZ	SL	TH
M	MINOR AMENDMENTS	19/02/2021	JS	JCF	TH	TH
L	MINOR AMENDMENTS	10/02/2021	LL	AW	TH	TH
K	MINOR AMENDMENTS	16/06/20	GM/JS	SS	SL	TH
J	MINOR AMENDMENTS	02/03/2020	LL	EZ	TH	TH

SCALE
A1 (A3) 1:500 (1:1,000) 0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:200 (1:400) 0 2 4 6 8 10 12 14 16 18 20 METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
DRAINAGE PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-E100	Q

DRAWING ID: P1203464-PS02-R25-E100

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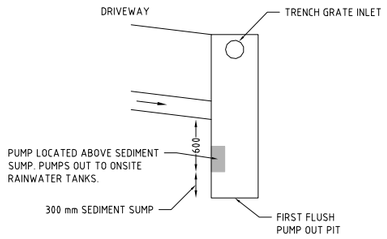
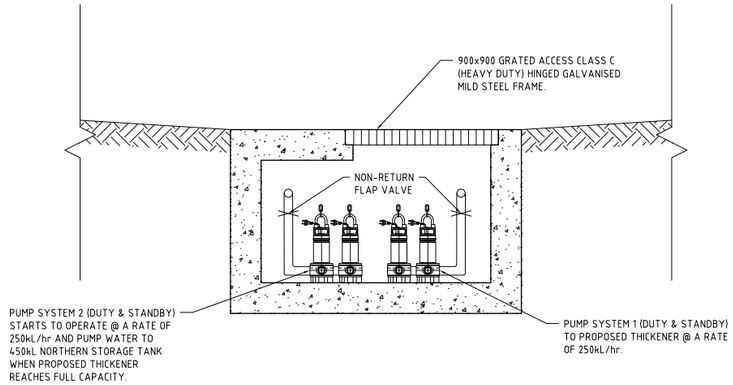
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



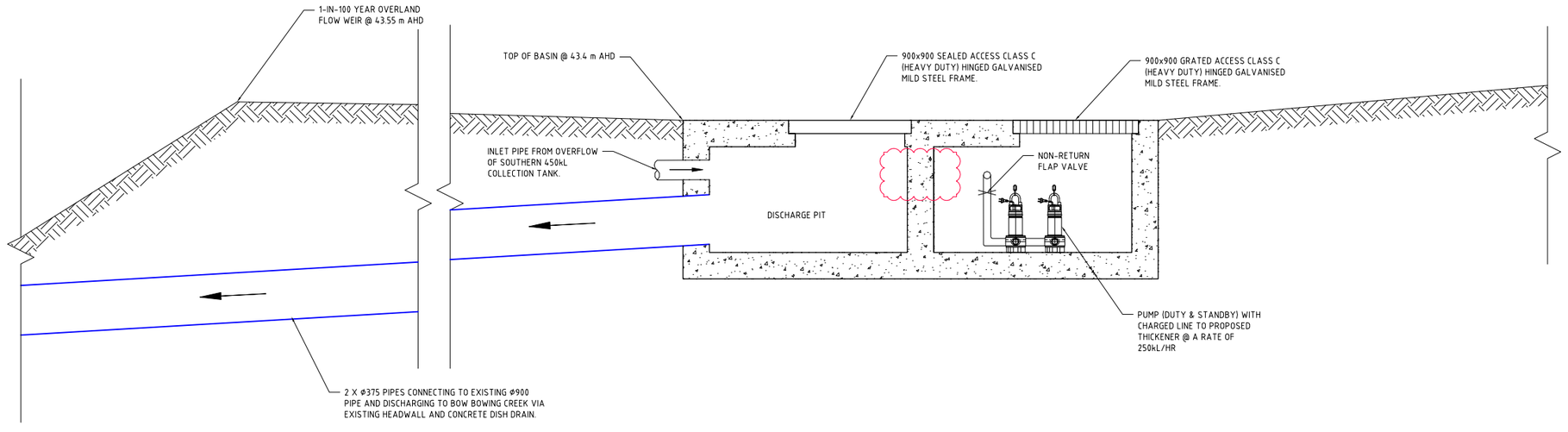
DETAIL: DRIVEWAY FIRST FLUSH PUMP OUT PIT

NOT TO SCALE



SECTION 01 - NORTHERN SUMP AND PUMP OUT PIT CONCEPT DESIGN

NOT TO SCALE



NOTES:
- CONCEPT DESIGN ONLY. SUBJECT TO DETAILED DESIGN.
- PUMP TO BE INSTALLED & SPECIFIED TO MANUFACTURERS DETAILS DESIGNED BY OTHERS.

SECTION 02 - SOUTHERN SUMP AND PUMP OUT/DISCHARGE PIT CONCEPT DESIGN

NOT TO SCALE

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
F	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
E	MINOR AMENDMENTS	20/05/2021	LL	EZ/JCF	TH	TH
D	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	EZ/JCF	TH	TH
C	AMENDMENTS AS PER CLIENT COMMENTS	20/09/2018	PB/JCF/LZ	JCF	TH	
B	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	EZ/JCF		
A	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH

SCALE

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)

GRID | DATUM | PROJECT MANAGER: TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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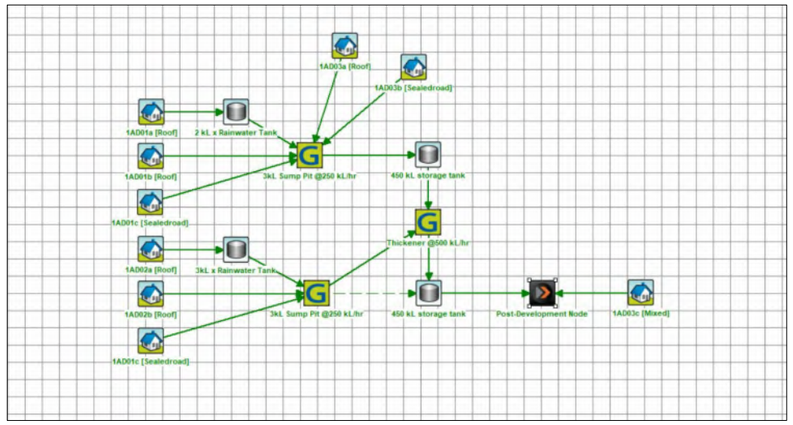
DRAWING TITLE: DRAINAGE DETAILS

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-E200	F

DRAWING ID: P1203464-PS02-R25-E200

MUSIC CATCHMENT PLAN

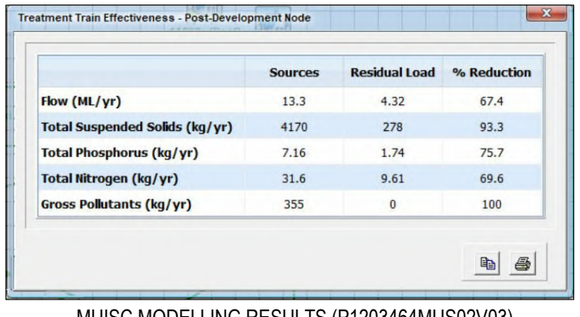
SCALE: NOT TO SCALE



MUSIC MODELLING LAYOUT (P1203464MUS02V03)

MUSIC CATCHMENTS (P12034641MUS02V03)

KEY	DESCRIPTION	MUSIC NODE ID	AREA (ha)	IMPERVIOUS %	MUSIC NODE REFERENCE
NORTHERN CATCHMENT					
	ROOF TO 2kL RWT	1AD01a	0.008	100	NSW MUSIC MODELLING GUIDELINES 2015
	ROOF BYPASS 2kL RWT	1AD01b	0.073	100	NSW MUSIC MODELLING GUIDELINES 2015
	SEALED ROAD TO SEDIMENT BASIN	1AD01c	0.887	100	NSW MUSIC MODELLING GUIDELINES 2015
SOUTHERN CATCHMENT					
	ROOF TO 3kL RWT	1AD02a	0.122	100	NSW MUSIC MODELLING GUIDELINES 2015
	ROOF BYPASS 3kL RWT	1AD02b	0.008	100	NSW MUSIC MODELLING GUIDELINES 2015
	SEALED ROAD TO SEDIMENT BASIN	1AD02c	0.888	100	NSW MUSIC MODELLING GUIDELINES 2015
	ROOF	1AD03a	0.002	100	NSW MUSIC MODELLING GUIDELINES 2015
	SEALED ROAD	1AD03b	0.215	100	NSW MUSIC MODELLING GUIDELINES 2015
	BUFFER	1AD03c	0.147	0	NSW MUSIC MODELLING GUIDELINES 2015
TOTAL SITE					
		TOTAL - OVERALL		2.350	= 100 % OF OVERALL AREA
		TOTAL - IMPERVIOUS		2.203	= 94 % OF OVERALL AREA
		TOTAL - PERVIOUS		0.147	= 6 % OF OVERALL AREA
NOTES:					
1. INTERNAL REUSE FOR TOILET FLUSHING IS 20 L/PERSON/DAY.					
2. INTERNAL REUSE FOR DUST SUPPRESSION AND SAND WASHING SYSTEM IS 163.5 kL/DAY FOR THE 450 kL STORAGE TANK LOCATED IN THE SITE'S SOUTH.					



MUISC MODELLING RESULTS (P1203464MUS02V03)

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
C	**MINOR AMENDMENTS**	**01/09/2021**	**NN**	**EZ**	**SL**	**TH**
B	MINOR AMENDMENTS	16/06/20	GM/JS	SS	SL	TH
A	INITIAL RELEASE	15/11/2019	LL	EZ	TH	TH

SCALE: 0 10 20 30 40 50 60 70 80 90 100 METRES
A1 (A3) 1:1,000 (1:2,000)

GRID | DATUM | PROJECT MANAGER: TH

CLIENT: CONCRETE RECYCLERS (GROUP) PTY LTD

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PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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DRAWING TITLE: WATER QUALITY CATCHMENT PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-E700	C

DRAWING ID: P1203464-PS02-R25-E700

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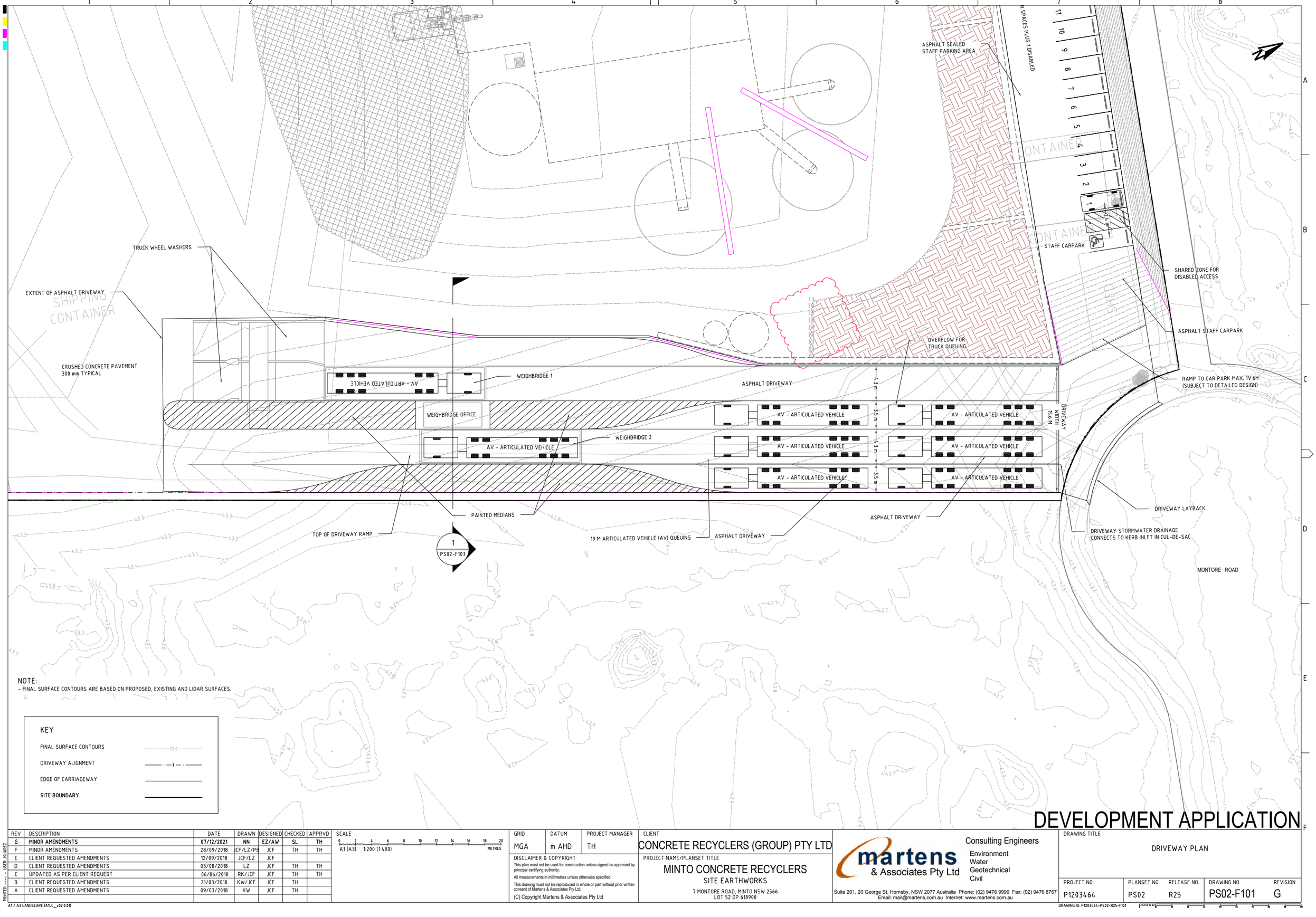
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



NOTE:
- FINAL SURFACE CONTOURS ARE BASED ON PROPOSED, EXISTING AND LIDAR SURFACES.

KEY

- FINAL SURFACE CONTOURS — 72.0
- DRIVEWAY ALIGNMENT
- EDGE OF CARRIAGEWAY
- SITE BOUNDARY

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
G	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
F	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
E	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
D	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
C	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
A	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	JCF	TH	

SCALE
0 2 4 6 8 10 12 14 16 18 20 METRES
A1 (A3) 1:200 (1:400)

GRID	DATUM	PROJECT MANAGER
MGA	m AHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
DRIVEWAY PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F101	G

DRAWING ID: P1203464-PS02-R25-F101

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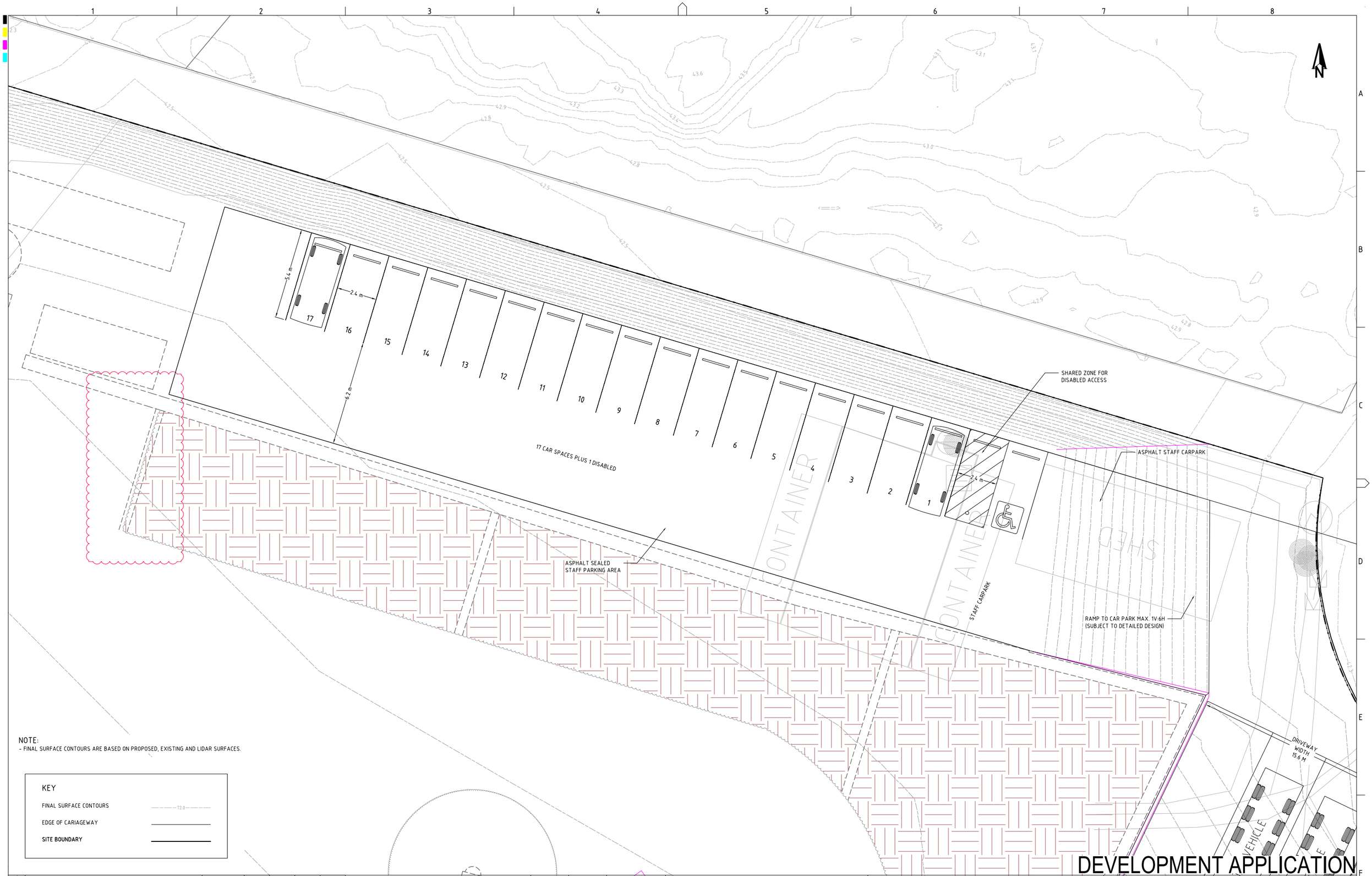
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



NOTE:
- FINAL SURFACE CONTOURS ARE BASED ON PROPOSED, EXISTING AND LIDAR SURFACES.

KEY

FINAL SURFACE CONTOURS — 72.0 —

EDGE OF CARIAGEWAY

SITE BOUNDARY

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
G	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
F	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
E	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
D	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
C	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
A	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	JCF	TH	

SCALE
0 1 2 3 4 5 6 7 8 9 10 METRES
A1 (A3) 1:100 (1:200)

GRID	DATUM	PROJECT MANAGER
MGA	m AHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

martens & Associates Pty Ltd
Consulting Engineers
Environment
Water
Geotechnical
Civil
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Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
CARPARK PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F102	G

DRAWING ID: P1203464-PS02-R25-F102

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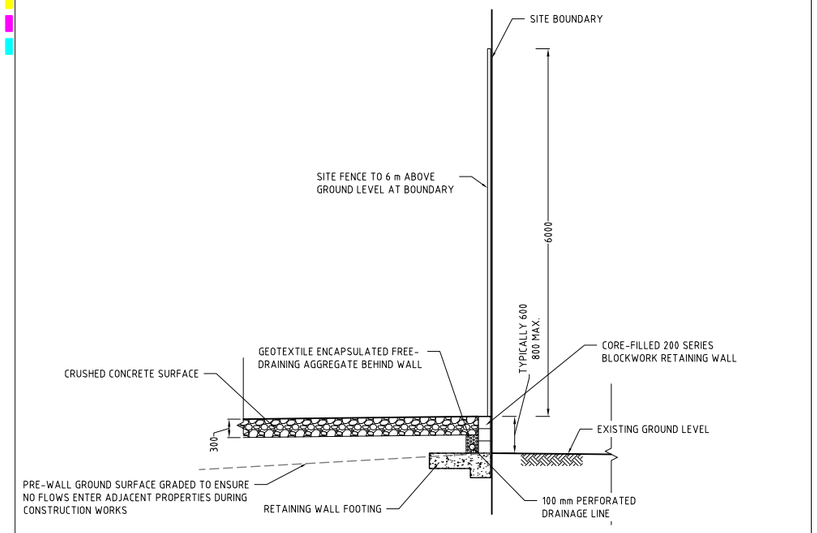
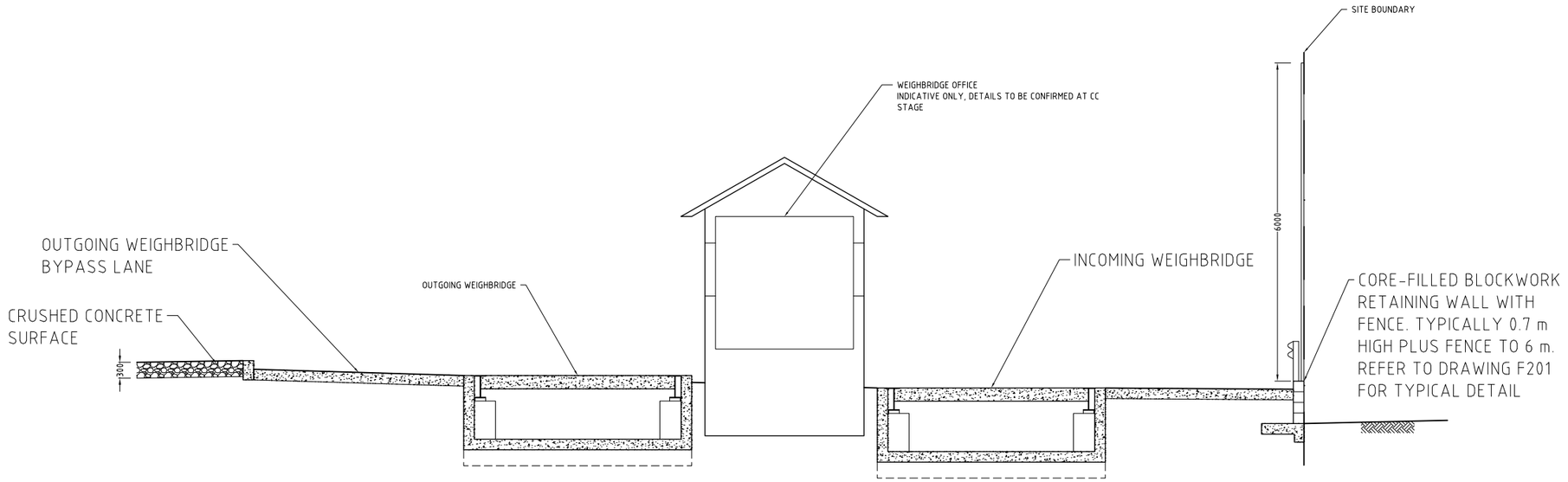
A1 / A3 LANDSCAPE (A1LC_v02.0.01)



TYPICAL PROPERTY BOUNDARY SECTION, EASTERN BOUNDARY



TYPICAL SECTION: DRIVEWAY / WEIGHBRIDGE

SCALE 1:100

NOTES:
- RETAINING WALL & FENCE SUBJECT TO DETAILED DESIGN.

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
E	**MINOR AMENDMENTS**	**28/09/2018**	**JCF/LZ/PB**	**JCF**	**TH**	**TH**
D	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
C	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
B	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
A	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	JCF	TH	

PRINTED ---- USER ISSUANCE

SCALE
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 METRES
A1 (A3) 1:50 (1:100)

GRID	DATUM	PROJECT MANAGER
MGA	m AHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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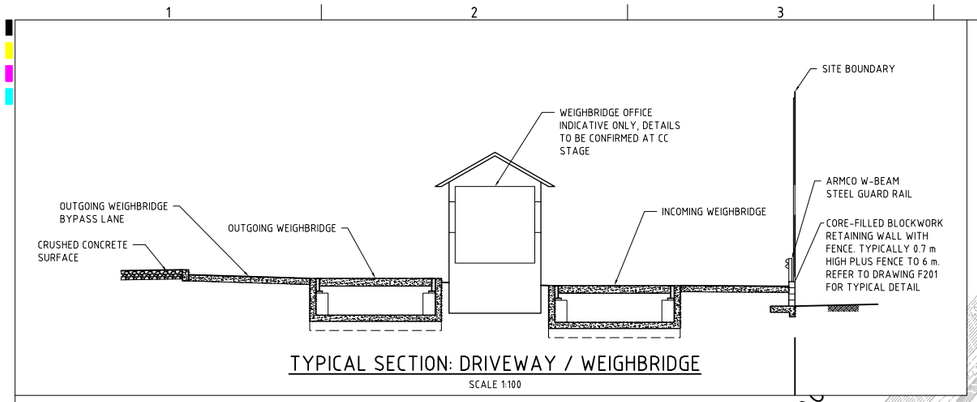
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
DRIVEWAY CROSS SECTION

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F103	E

DRAWING ID: P1203464-PS02-R25-F103

A1 / A3 LANDSCAPE (A1LC_v02.0.01)



TYPICAL SECTION: DRIVEWAY / WEIGHBRIDGE

SCALE 1:100

NOTE:
- FINAL SURFACE CONTOURS ARE BASED ON PROPOSED, EXISTING AND LIDAR SURFACES.

KEY

FINAL SURFACE CONTOURS ——72.0——

EDGE OF RETAINING WALL

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
J	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
I	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
H	MINOR AMENDMENTS	10/02/2021	JS	AW	TH	TH
G	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	CG/JCF	TH	TH
F	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
E	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
D	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
C	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	

SCALE
A1 (A3) 1:500 (1:1,000) 0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:100 (1:200) 0 1 2 3 4 5 6 7 8 9 10 METRES

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
LOT 52 DP 618900

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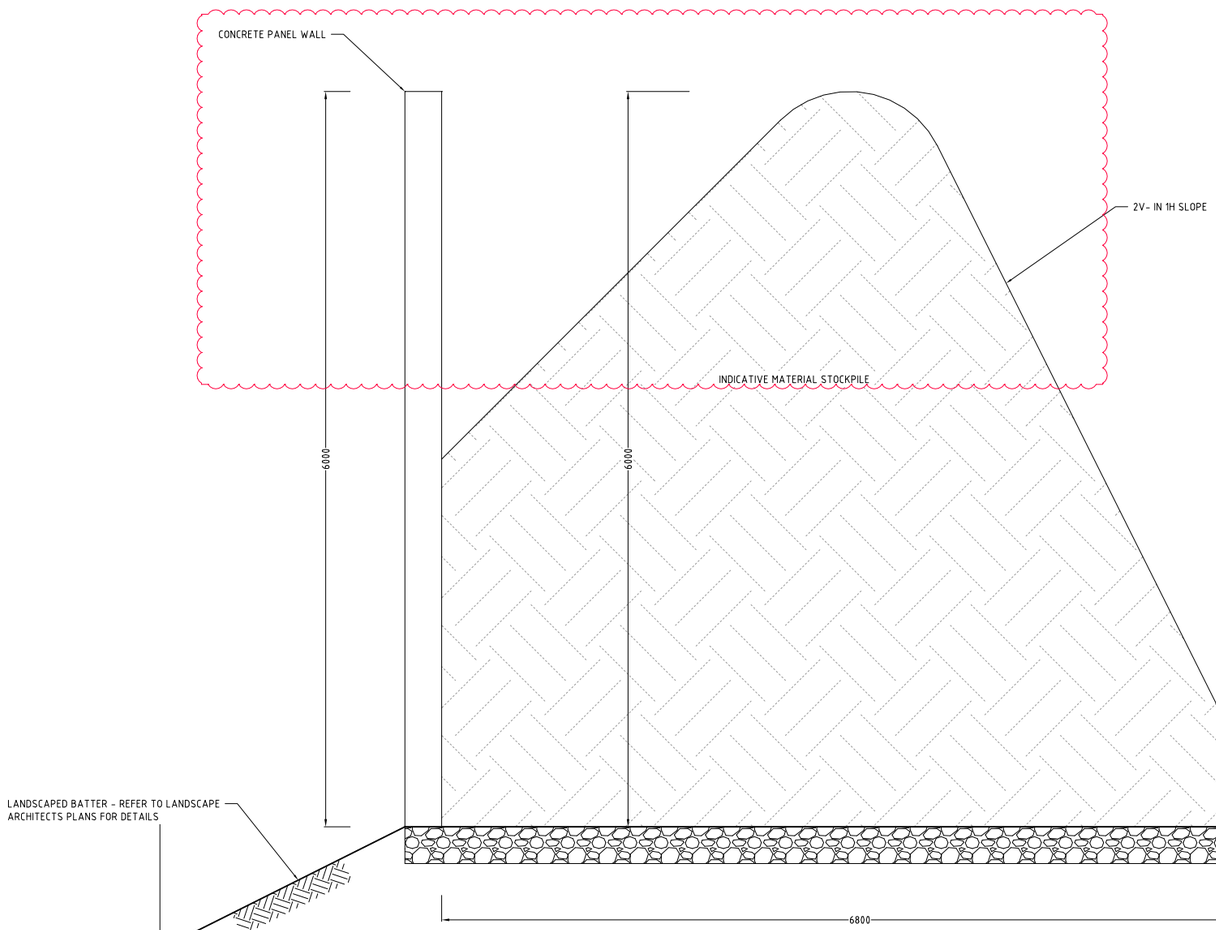
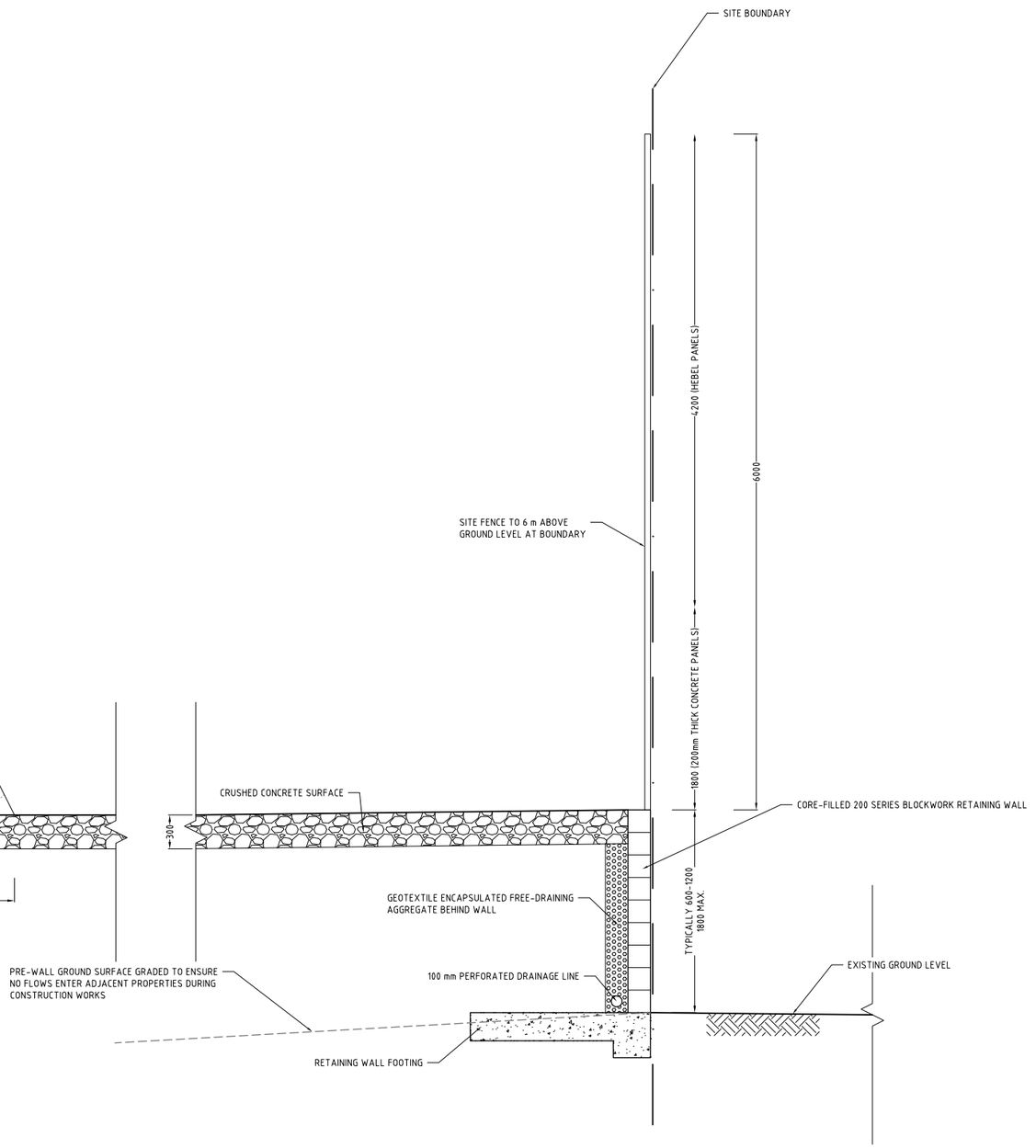
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
RETAINING WALL PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F200	J

DRAWING ID: P1203464-PS02-R25-F200





NOTE:
- CONCEPT DESIGN ONLY. SUBJECT TO DETAILED DESIGN.

TYPICAL PROPERTY BOUNDARY SECTIONS: EASTERN, SOUTHERN AND WESTERN BOUNDARIES

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
H	**MINOR AMENDMENTS**	**03/02/2022**	**JS**	**EZ/AW**	**SL**	**TH**
G	MINOR AMENDMENTS	07/12/2021	NN	EZ/AW	SL	TH
F	MINOR AMENDMENTS	10/02/2021	JS	AW	TH	TH
E	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
D	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
C	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
B	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
A	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	JCF	TH	

SCALE
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 METRES
A1 (A3) 1:20 (1:40)

GRID	DATUM	PROJECT MANAGER
MGA	m AHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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DRAWING TITLE
RETAINING WALL DETAILS

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F201	H

DRAWING ID: P1203464-PS02-R25-F201

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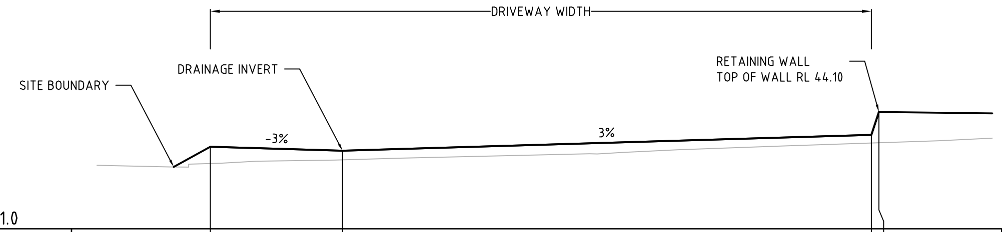
A1 / A3 LANDSCAPE (A1LC_v02.0.01)

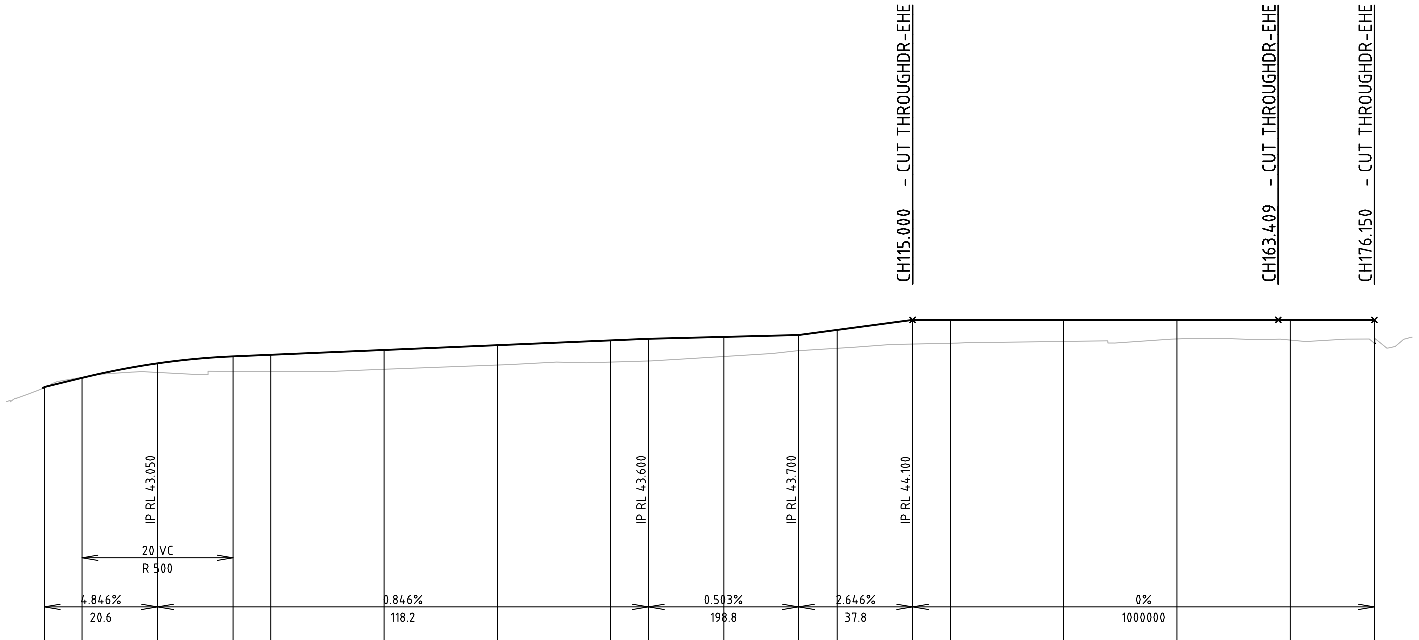


RL41.0

DESIGN ELEVATION	43.177	-0.105	0.315 VARIES	
OFFSET	0.000	3.500	17.500	17.700

DRIVEWAY (21-MSL01) TYPICAL SECTION

SCALE: 1:100



VERTICAL CURVE LENGTH (m)
VERTICAL CURVE RADIUS (m)
VERTICAL GRADE (%)
VERTICAL GRADE (1 IN ...)
HORIZONTAL CURVE RADIUS (m)

DATUM RL 34.000

DESIGN SURFACE LEVELS	42.323	42.565	42.950	43.135	43.177	43.304	43.431	43.558	43.600	43.650	43.700	43.835	44.100	44.100	44.100	44.100	44.100	44.100
EXISTING SURFACE LEVELS	42.302	42.581	42.709	42.736	42.732	42.793	42.905	42.983	43.012	43.132	43.285	43.349	43.461	43.482	43.530	43.596	43.566	43.481
CUT / FILL DEPTH	0.021	-0.015	0.241	0.398	0.445	0.510	0.526	0.574	0.588	0.519	0.415	0.487	0.639	0.618	0.570	0.504	0.534	0.619
CHAINAGE	0.000	5.000	15.000	25.000	30.000	45.000	60.000	75.000	80.000	90.000	99.883	105.000	115.000	120.000	135.000	150.000	165.000	176.150

21-MSL01 LONG. SECTION (ON ROAD ALIGNMENT)

SCALE: HORIZONTAL - 1:500
VERTICAL - 1:100

DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
C	**MINOR AMENDMENTS**	**28/09/2018**	**JCF/LZ/PB**	**CG/JCF**	**TH**	**TH**
B	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	CG/JCF	TH	
A	BALANCE SITE EARTHWORKS	07/11/2017	CG	CG	TH	

SCALE
A1 (A3) 1:500 (1:1,000) METRES
A1 (A3) 1:100 (1:200) METRES

GRID: ---
DATUM: MAHD
PROJECT MANAGER: TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
7 MONTORE ROAD, MINTO NSW 2566
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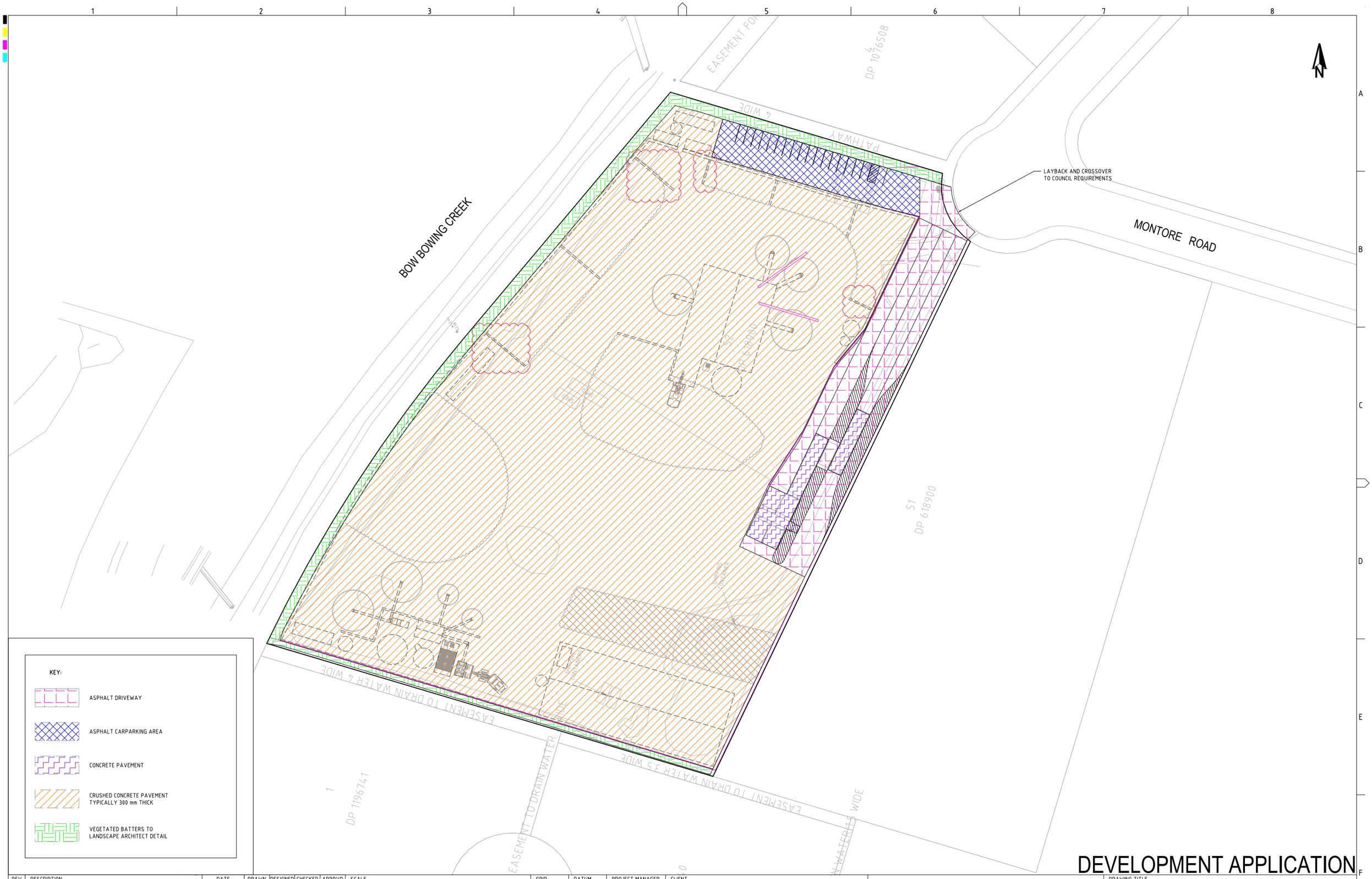
DRAWING TITLE
DRIVEWAY LONGITUDINAL AND TYPICAL CROSS SECTIONS

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-F400	C



DEVELOPMENT APPLICATION

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
H	**MINOR AMENDMENTS**	**07/12/2021**	**NN**	**EZ/AW**	**SL**	**TH**
G	MINOR AMENDMENTS	06/08/2021	NN	AW/EZ	SL	TH
F	MINOR AMENDMENTS	28/09/2018	JCF/LZ/PB	JCF	TH	TH
E	CLIENT REQUESTED AMENDMENTS	12/09/2018	JCF/LZ	JCF		
D	CLIENT REQUESTED AMENDMENTS	03/08/2018	LZ	JCF	TH	TH
C	UPDATED AS PER CLIENT REQUEST	06/06/2018	RK/JCF	JCF	TH	TH
B	CLIENT REQUESTED AMENDMENTS	21/03/2018	KW/JCF	JCF	TH	
A	CLIENT REQUESTED AMENDMENTS	09/03/2018	KW	JCF	TH	

SCALE
0 5 10 15 20 25 30 35 40 45 50 METRES
A1 (A3) 1:500 (1:1,000)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	TH

CLIENT
CONCRETE RECYCLERS (GROUP) PTY LTD

PROJECT NAME/PLANSET TITLE
MINTO CONCRETE RECYCLERS
SITE EARTHWORKS
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DRAWING TITLE
PAVEMENT PLAN

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1203464	PS02	R25	PS02-G100	H

DRAWING ID: P1203464-PS02-R25-G100

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A1 / A3 LANDSCAPE (A1LC_v02.0.01)