



Application for Development Approval
Proposed Holcim Albany Concrete Batching Plant
Lot 101 (No. 16) Locke Street and Lot 102 (No. 25) Kelly Street
Orana
City of Albany



Prepared for: Holcim Australia Pty Ltd

Prepared by: Allering and Associates

AUGUST 2021



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1.0 INTRODUCTION

Holcim (Australia) Pty Ltd (**Holcim**) is the landowner of the existing Albany concrete batching plant located in Lot 102 (No 25) Kelly Street in Orana (**Site** or **subject site**). The adjoining Lot 101 is also presently used for access to the plant via Locke Street for the delivery of aggregates and cement. The Holcim Orana plant is a leading concrete supplier for the southwest region and has been in operation since the 1960s. Since that time, the urban structure in Albany has grown significantly, which has heightened the importance of the plant to continue to supply a key construction material in its location.

The Site is located within the Orana Industrial area to the north of Albany, approximately 4km northwest of the Albany City Centre. A Location Plan for the subject site is included as **Figure 2**, while **Figure 3** shows an aerial photograph of the site. The site has excellent road linkages connecting through Locke Street to Albany Highway and South Coast Highway and is well placed to supply concrete as a key construction material for the engineering and construction industries within Albany and its surrounds. This application seeks to undertake the following:

1. Remove the old batching plant which has now become outdated and construct a new batching plant to upgrade the facility and bring it in line with contemporary standards for operational efficiency by improving dust management, noise control and wastewater management. This will be fully self-contained on Lot 102 which will allow the discontinuation of Lot 101 other than for a temporary period as outlined below;
2. Build a temporary batching plant on Lot 101 (No. 16) Locke Street, Orana (Lot 101), which is currently leased by Holcim and is used to store deliveries of aggregate and cement. The temporary plant will take over concrete production until the new batching plant is operational.

2.0 BACKGROUND

The Holcim Albany concrete batching plant has operated from the subject site for nearly 60 years providing the construction market with concrete. The plant has now become outdated and requires replacement to ensure it can continue to meet contemporary environmental, structural and safety standards. It also needs to incorporate a larger and improved wastewater management system capable of efficiently accommodating rainfall. There are no proposals to increase throughput or production volumes beyond existing approved levels.

The aim of the proposed redevelopment of the batching plant is the provision of a compact, basic plant which will be contained within Lot 102 and with the flexibility to meet the engineering and the architectural market where cream cement and “special” aggregates are required for the production of decorative concrete. The existing site office and display area at the front of the premises along Kelly Street will remain unchanged.

3.0 SITE DETAILS

3.1 Subject Site

The particulars of Lot 101 and 102 are described in Table 1.

Table 1

Lot Number	House Number	Diagram	Volume	Folio
102	25	93983	2120	44
101	16	93983	2120	43

Copies of the Certificates of Title are included in **Annexure 2**.

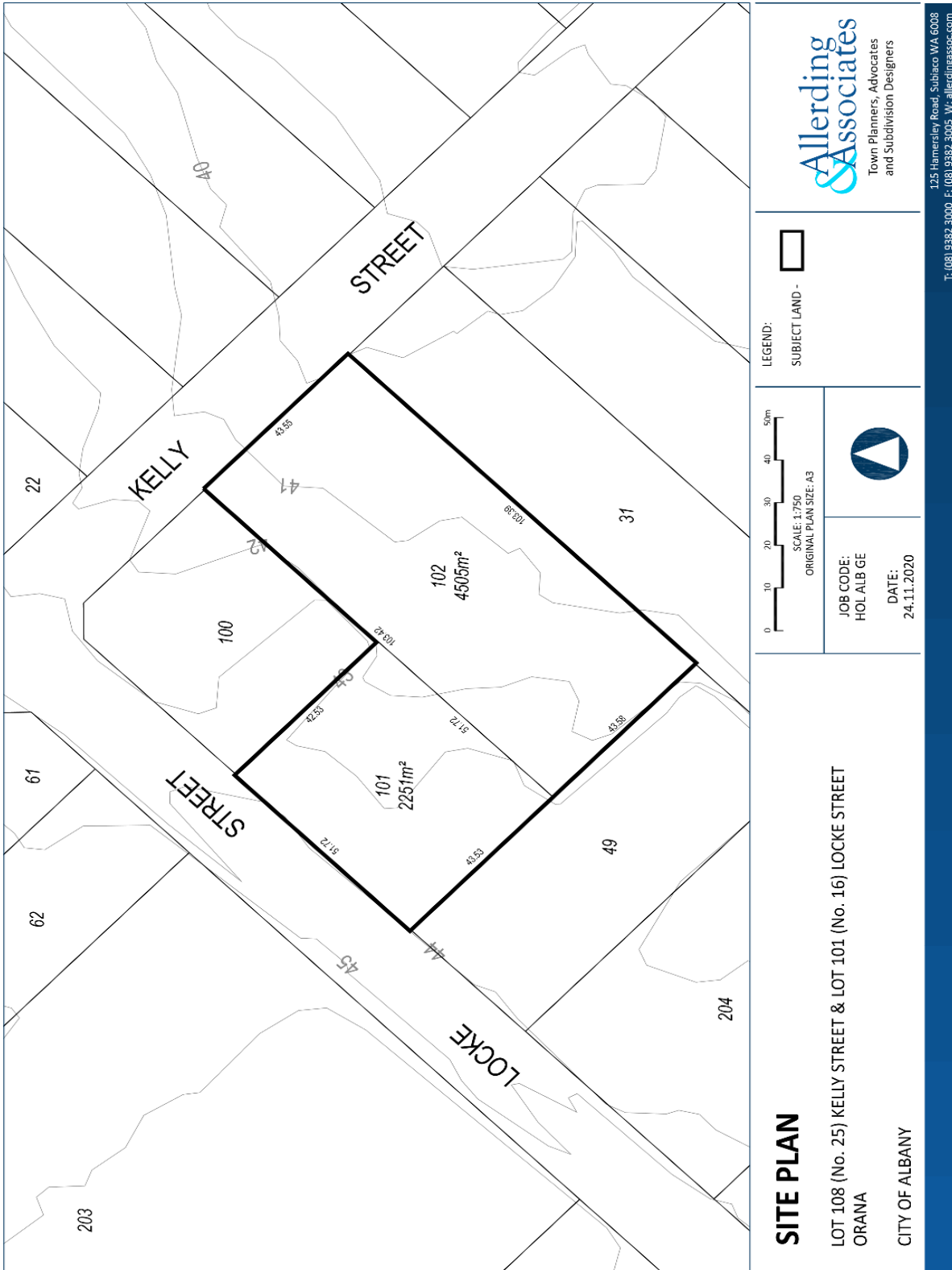


Figure 1. Site Plan

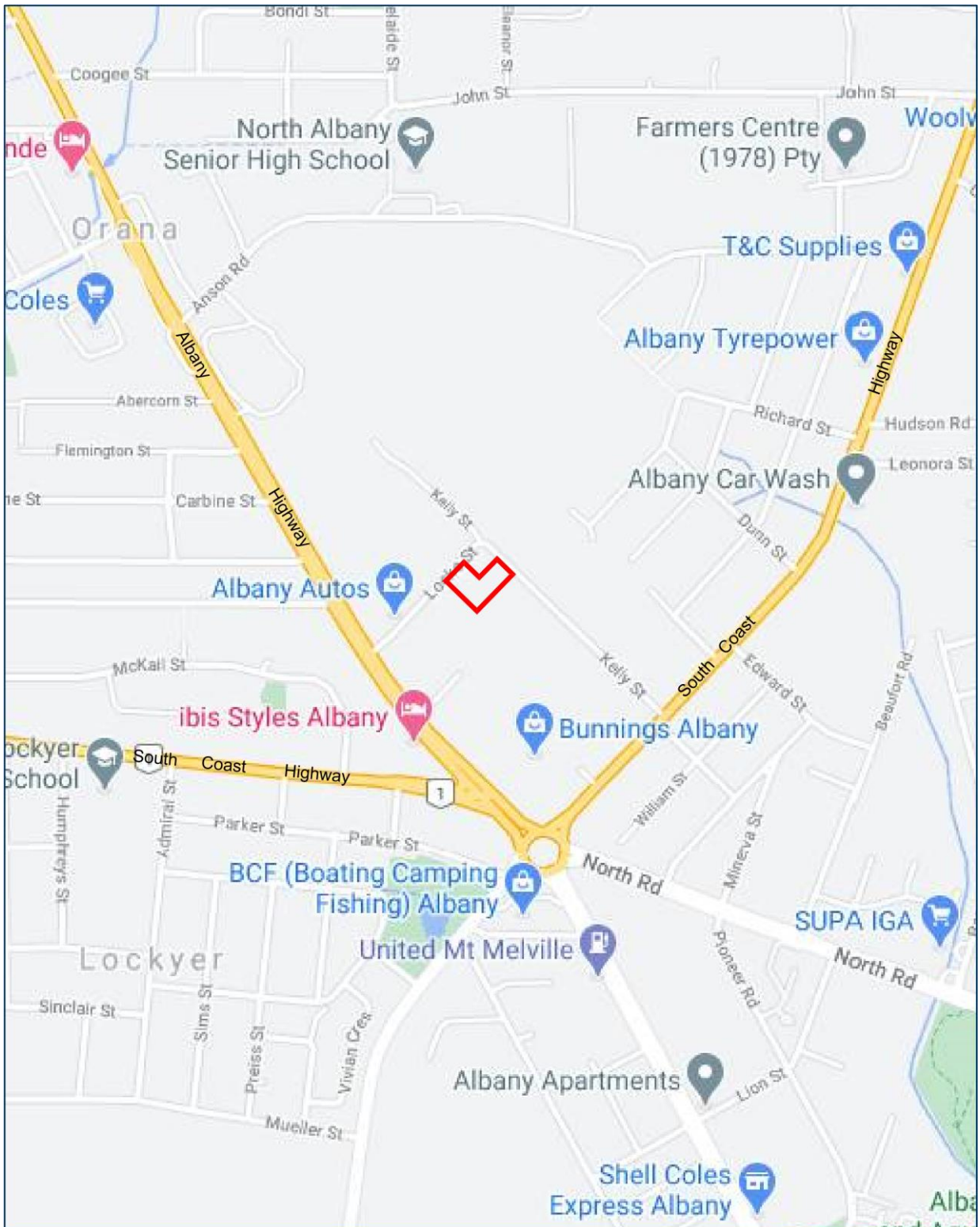


Figure 2: Location Plan





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<p>LEGEND:</p> <p> SUBJECT LAND</p>		<p>SCALE: 1:750 ORIGINAL PLAN SIZE: A3</p> 	
<p>JOB CODE: HOL ALB GE</p>		<p>DATE: 24.11.2020</p>	
<p>AERIAL PHOTO</p> <p>LOT 108 (No. 25) KELLY STREET & LOT 101 (No. 16) LOCKE STREET ORANA CITY OF ALBANY</p>			

Figure 3: Aerial Photo

3.2 Location and Context

The subject site is located in Kelly Street in Orana which is 4 km northwest of the Albany city centre and within the Orana industrial zone. It is situated approximately 9km southeast of Albany Airport (refer to **Figure 2** for a Location Plan).

The subject site is surrounded by industrial operations. Access to the site is via two existing crossovers to Kelly Street while Lot 101 has a crossover to Locke Street to the northwest of the Lot. Both of these access points comply with Australian standards and do not need to be modified to accommodate movement.

Access will be provided via Kelly Street only once the construction of the proposed development has been completed.

4.0 PROPOSED DEVELOPMENT

4.1 Site Layout and Built Form

The site is predominantly level, covered with an impermeable concrete base. The existing concrete batching plant is wholly located within Lot 102 as shown on **Figure 4**.



Figure 4: Existing Batching Plant location

The function of the facility is to batch concrete and load onto trucks for distribution for concrete production. Once raw materials are delivered to the plant, the pre-mixed loading facilities weigh and batch cement, sand, aggregates and water and load these in a controlled sequence for distribution in agitator trucks. Other associated infrastructure includes a designated wash /service area and an area to dispense specialised ingredients such as cream cement to the agitator truck for the provision of specialised concrete to the architectural market.

The proposed updated batching plant can be considered to ultimately comprise three major components:

- Aggregate Storage Area;
- Plant Core and Cement Storage Silos; and
- Wastewater Management Systems.

These are described below.

4.1.1 Aggregate Storage Area

Aggregate cartage trucks will deliver both coarse and fine aggregate, which includes quarry aggregate, manufactured and natural sand, into designated ground storage bins.

Aggregates in the ground storage bins will then be transferred by front end loader and weighed individually in one of the two aggregate weigh hoppers.

When a batch of concrete is called for the aggregate is discharged concurrently with the other load constituents, including the cement component, into the back of a mixer truck for mixing prior to delivery to the designated location.

4.1.2 Plant Core and Cement Storage Silos

The plant core will house the electronic and mechanical infrastructure used to measure the required amount of water, cement, and liquid admixtures, along with the aggregates, which will be mixed to complete the batch of required concrete.

4.1.3 Water and Waste Management System

The water and waste management processes will include the following components:

- Vehicle wash down areas;
- Slurry and settlement pits for collection and settlement of all on-site water for re-use within the batching plant;
- Truck washout pits for storage and drying of waste washout material prior to removal from site;
- Dirty water from rainfall events contaminated with sediment such as the aggregate bins; and
- Clean water from rainfall events which falls onto pavement areas which are not contaminated or dirty.

A diagrammatic description of the proposed water and wastewater flows is included on page 9 of **Annexure 3**.

Should any waste concrete material be retained in the barrel on the back of the truck, then that material would be discharged into a purpose built waste pit at the plant. After the material is discharged into the bin, water will be added to the barrel of the truck, mixed for a short period and discharged to cleanse the inside of the barrel.

Water from the waste pits is then allowed to settle for a period of time and then drained into a collection pit from which this water is returned to the batching process. These water collection pits and drainage channels are designed to maximise the ability to recycle collected water from truck wash down areas and rainfall. Water storage tanks will store this collected water for future use.

Waste material from the drying pits will be periodically transported off site by a licensed contractor and taken to their approved waste disposal site. The aggregate storage bins will be fitted with water sprays to suppress the potential for windblown dust and to condition the aggregates for the manufacturing process. All concrete trucks will be washed down of any residue. Water from this wash down will then be collected and directed to pits for settlement and recycling.

The new batching plant components, depicted in **Figure 5** and **Annexure 3**, shall be constructed on Lot 102. The existing batching plant will be removed, and concrete will be produced by a temporary, mobile batching plant which will be located on the adjoining lot (Lot 101). Lot 101 is leased by Holcim (refer to **Figure 6**).

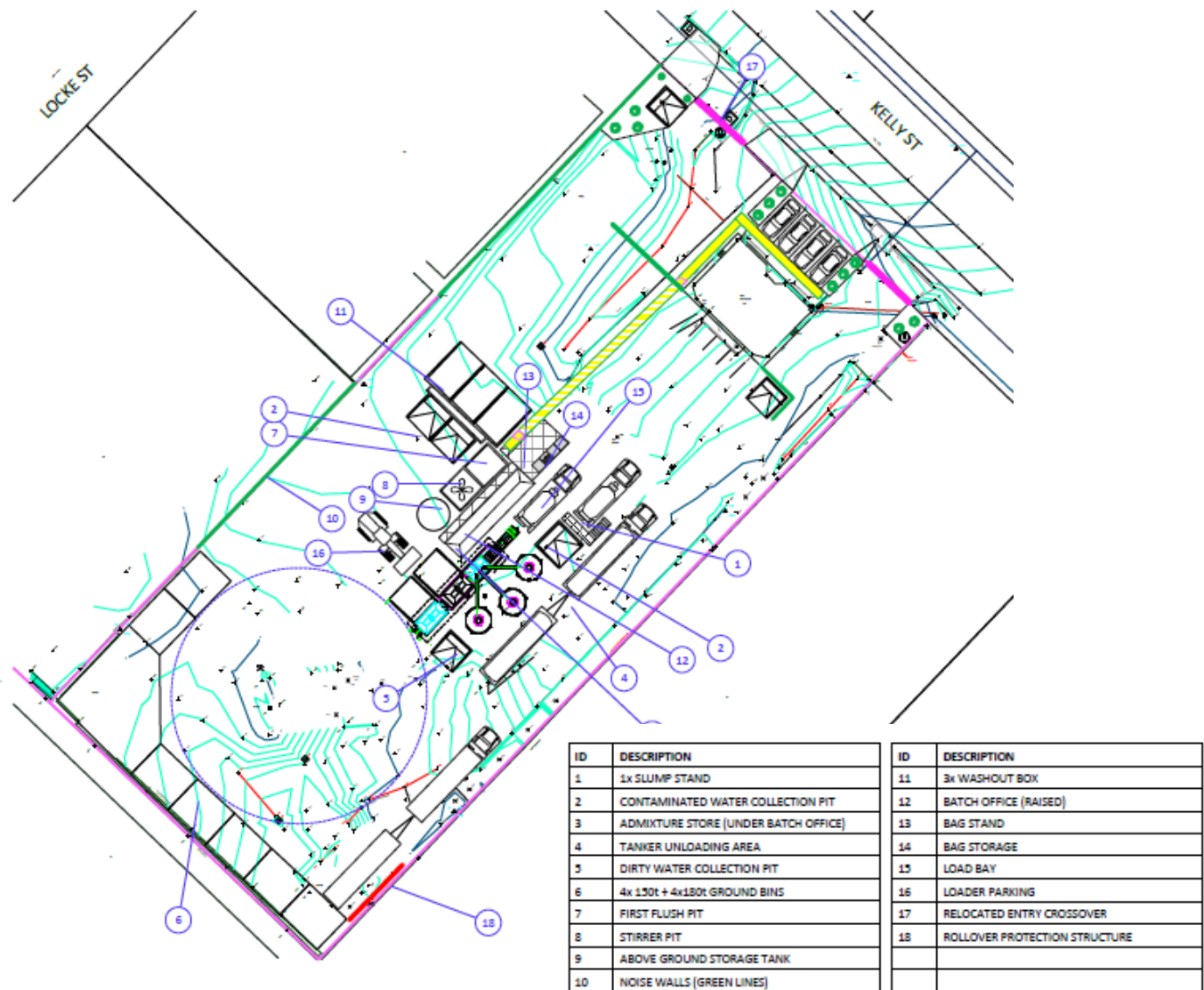


Figure 5: Proposed Batching Plant Components

The new batching plant include facilities for washing out truck agitators and for a batch office over the admixture stand.

The capability of the batching plant is included in **Annexure 4**. Notably, overall annual output will remain the same.

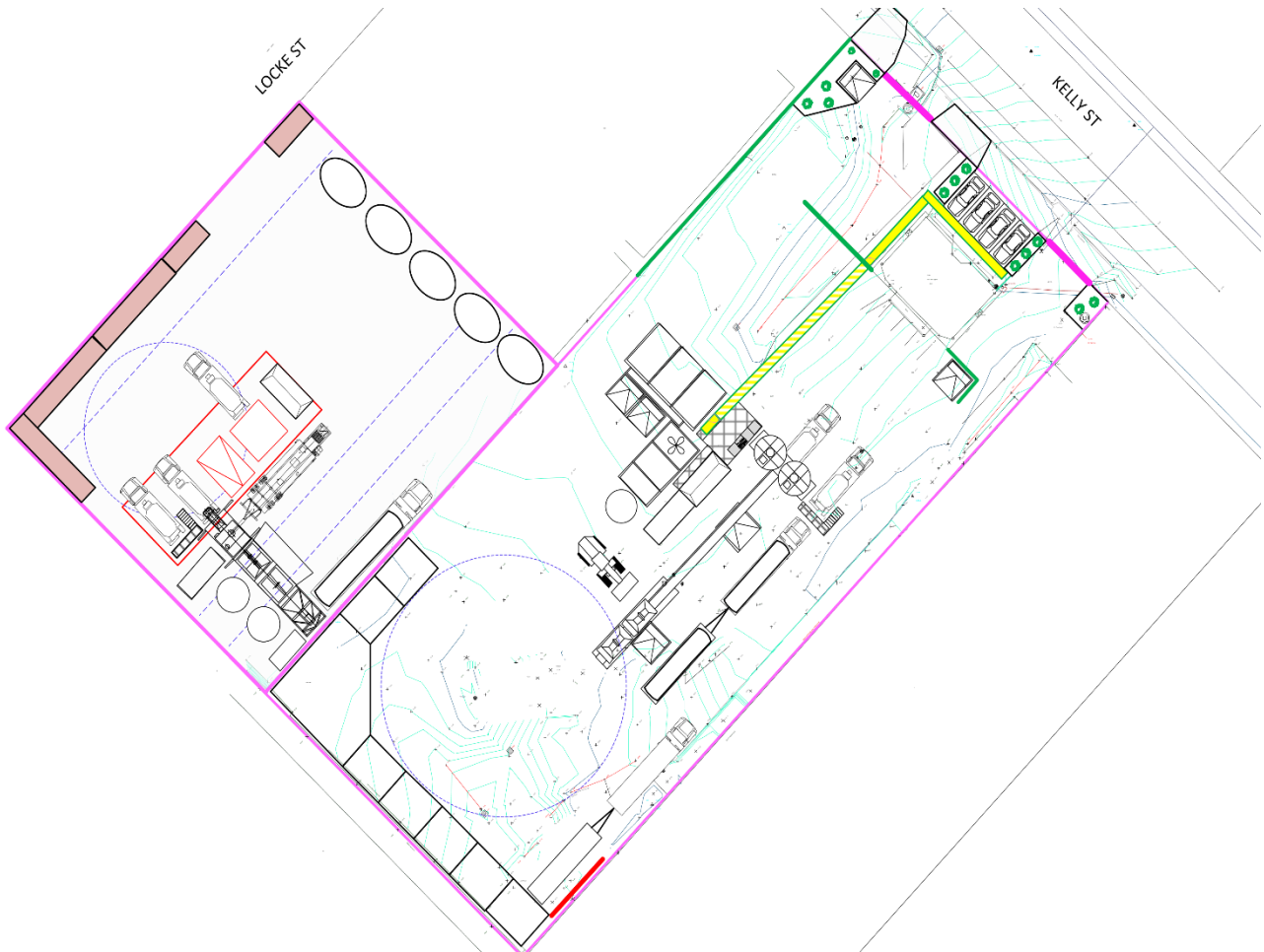


Figure 6: Proposed permanent and temporary plants

4.2 Traffic Generation

Traffic volumes into and out of the subject site as a result of the proposed development will remain unchanged. An updated Traffic Movement Plan which shows movements for vehicles for a typical day (100m³) and peak days (500m³) is included as **Annexure 5**. This breaks down to approximately:

- Typical Day 100m³: 17 concrete truck movements in/out each (34 total), 9 material delivery movements in/out each (18 total).
- Peak Day 500m³: 83 concrete truck movements in/out each (166 total), 33 material delivery movements in/out each (66 total).

The consolidation of the access points on to Kelly Street, an industrial road, does not give rise to any additional impacts.

4.3 Temporary Mobile Batching Plant

It is anticipated that the main batching plant on Lot 102 Kelly Street will be non-operational for a period of approximately 8 months while the existing batching plant is decommissioned, the updated batching plant is constructed, and an occupancy permit obtained. During this time, a mobile batching plant will be installed on Lot 102 to ensure the continuation of concrete production to the engineering and architectural markets.

Aggregate supply trucks and agitator trucks will access Lot 101 via the northernmost access point to Lot 102 from Kelly Street and will exit the site via the access point on Locke Street (refer to Figure 6).

A reinforced concrete hardstand area will be constructed below all “wet” areas including the truck washdown, agitator loading and slumping areas and the water and sediment pits to avoid contamination (refer to **Figure 7**). Plans and elevations for the mobile batching plant as well as details of its constituent components are included in **Annexure 3**.

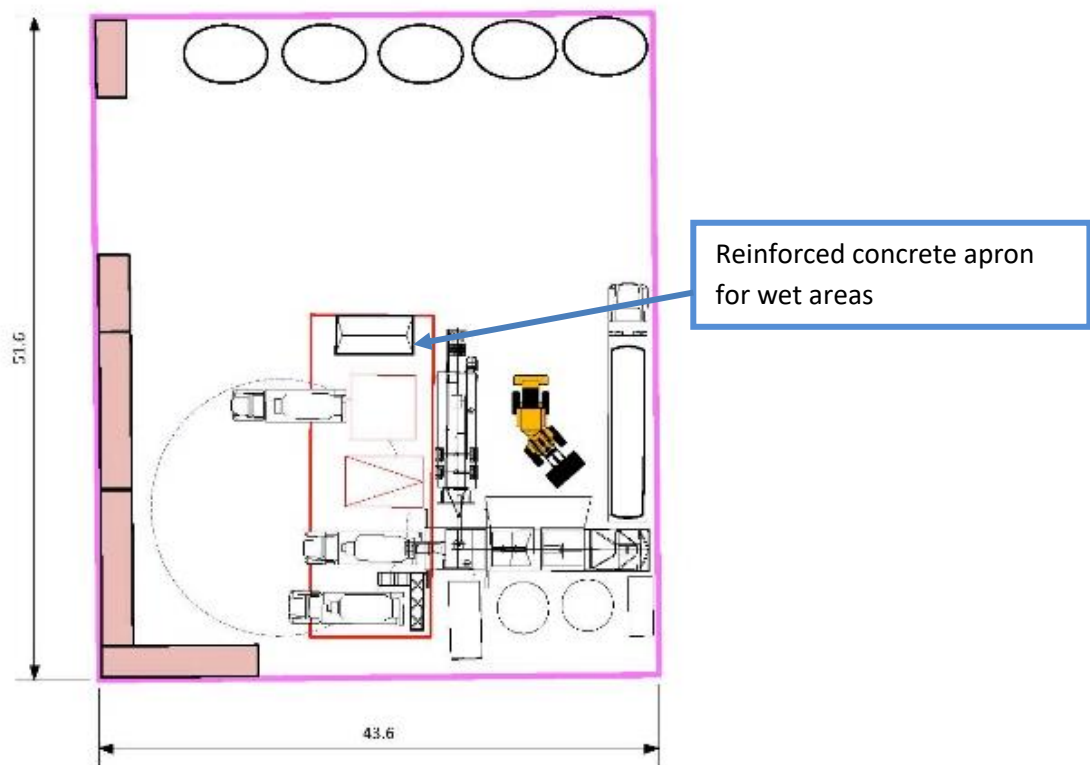


Figure 7: Temporary Mobile batching plant

Plant components and the concrete batching process will mirror the process described in Section 4.1 of this report, while the main office and vehicle parking areas on the northern section of Lot 102 will continue to be utilised throughout the decommissioning and construction process.

A Development Approval will be needed for the temporary plant for a period of approximately 8 months, but approval for a period of up to two years is sought to accommodate contingencies.

4.4 Staff and Parking

Parking bays will be provided for 4 cars. Three employees park their car at the site while agitator drivers park their vehicles at another yard where trucks are parked.

4.5 Services

Water, power and sewerage services are already available onsite and will continue to be utilised.

4.6 Hours of Operation

The hours of operation for the temporary and new batching plant will remain the same (6am to 4pm).

5.0 CONSIDERATION UNDER THE PLANNING FRAMEWORK

5.1 Environmental Protection Authority – Guidance Statement No. 3

The EPA's Guidance for the Assessment of Environmental Factors – Separation Distances between Industrial and Sensitive Land Uses No. 3 (**Guidance Statement No. 3**) provides for separation distances between industry (such as extractive industries) and sensitive land uses, which are listed as follows:

Residential developments, hospitals, motels, hostels, caravan parks, school, nursing homes, childcare facilities, shopping centres, playgrounds, and some public buildings. Some commercial, institutional and industrial land uses which required high levels of amenity or are sensitive to particular emissions may also be considered 'sensitive land uses. Examples include some retail outlets, offices and training centres, and some types of storage and manufacturing facilities.

Under Appendix 1 of the Guidance Statement No. 3, the recommended generic separation distance for batching plants to sensitive land uses is 300m to 500m depending on size. The proposed batching plant will be located approximately 220 metres away from the nearest residence. However, it is a pre-existing use, and the proposal involves the replacement of existing 60 year old facilities with a new batching plant. The new plant is based on contemporary concrete batching standards with resultant reductions overall in noise and dust emissions.

A review of site records over the past 5 years was also undertaken to ascertain whether there have been any public incidents or complaints received as a result of Holcim's operations. There have been no complaints received. The current separation distance and the new plant is therefore considered an appropriate separation between sensitive premises that does not result in any potential amenity impacts on the residential area to the northeast of the batching plant. Notwithstanding, two separate Noise Assessments have been undertaken and are included as **Annexures 6 and 7**.

Through the modelling undertaken for the Noise Assessments, the acoustic reports demonstrate that, together with the incorporated noise mitigation walls, the Albany batching plants will be capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

5.2 City of Albany's Local Planning Strategy

The City of Albany's Local Planning Strategy was endorsed by the WAPC in November 2019 and outlines the desired strategic direction for the growth and development of the City.

In particular, it identifies that as Albany has grown it has become a sprawling City, characterised by low density residential development which is distant from retail, recreational and employment areas. This is compounded by the lack of adequate public transport, thereby resulting in car dependency and a decrease in community cohesiveness. It is projected that the City of Albany will continue to grow as will its ageing population, with the need to provide smaller more affordable dwellings to cater for their needs.

As a result, the Strategy recommends urban consolidation by residential infill which will offer a variety of housing options. Also recommended is the improvement to services and infrastructure as well as improved educational opportunities for tertiary education.

The strategic directions and actions for the City of Albany are encapsulated in the Local Planning Strategy map which is included as **Annexure 8**.

The Holcim batching plant is pivotal and well located to supply concrete to facilitate a number of the proposed actions identified in the strategy including (but not limited to) the following:

- Provide concrete for the construction for the increase in residential densities (infill development) in suitable localities or precincts.
- Facilitate new mixed-use commercial development and increase the density and diversification of housing within the Albany Regional Activity Centre.
- Supply concrete for the construction of educational precincts (such as TAFE which has been earmarked for the Orana Activity Centre) and the diversification of housing and land uses to cater for the accommodation, entertainment, and shopping needs of students.
- The provision of concrete for new and upgraded infrastructure.

The proposed upgrade and redevelopment of the Orana Holcim batching plant can therefore be seen to align with the provision of concrete needs as identified by the City of Albany's Local Planning Strategy.

5.3 City of Albany's Planning Scheme No. 1

The site is zoned General Industry under the City of Albany's Local Planning Scheme No. 1 (**LPS1**). An extract of the LPS1 Scheme maps is provided as **Figure 8**. Clause 3.2.14 lists the objectives of the General Industry zone as follows:

3.2.14 General Industry Zone

- a) Provide for the establishment of industries, including medium and large-scale activities on land which provides for manufacturing, processing, fabrication, storage and distribution of goods, utilities and communications and associated uses that contribute to Albany’s economic growth and its regional centre status within the Great Southern region;
- b) Restrict retail activities from premises to those activities that are incidental to the primary industrial function on the site;
- c) Provide for any required buffer areas around land uses in accordance with the Environmental Protection Authority’s Guidance Statement No. 3 – Separation Distances Between Industrial and Sensitive Land Uses and regulate development within the buffer area to ensure compatibility with the industrial activities and surrounding land uses; and
- d) Restrict the sizes and location of signs and encourage on-site landscaping to improve the visual amenity within the zone.

The proposed upgrade of the existing concrete batching plant aligns with the above objectives and, in particular, provides for the efficient production of concrete as a key construction material which contributes to Albany’s economic growth and its regional centre status within the Great Southern region.

Schedule 1 of LPS1 provides a definition of the General Industry use in the following terms:

Industry-general means an industry other than a cottage, extractive light, mining, rural or service industry.

A concrete batching plant can reasonably be described as a General Industry use. General Industry is a P or permitted use within the General Industry zone.

5.3.1 LPS1 Development Standards

Clause 4.17 provides the development standards applicable to the Industrial zones. Responses to the applicable standards are summarised in Table 2 below.

Element	Standard	Response
Plot ratio	0.8	Complies
Primary street setback	9m	Complies for new development although the pre-existing main administration office is located with a setback of 6.5m.
Rear and side setback	Nil	Complies
Use of setbacks	A person shall only use land within the setback a) a means of access/egress c) The daily parking of passenger vehicles in an approved car parking area;	Complies

Element	Standard	Response
	the loading and unloading of vehicles; e) landscaping with lawns, gardens, trees shrubs and structures h) In an industry zone, a trade display,	
Parking	1 per 100m ² of net lettable area	Complies
Loading/Unloading and Service Areas	<p>4.8.1.11 The Local Government shall require an area to be provided on-site other than a car parking bay, for the loading and unloading and servicing or dispatch or receipt of goods and materials associated with any commercial or industrial use.</p> <p>4.8.1.12 All loading and servicing areas and associated vehicle crossings required to be provided shall comply with the following requirements:</p> <p>(a) Be located, constructed, drained, paved, lit and screened from public view to the satisfaction of the Local Government;</p> <p>(b) Designed to ensure that vehicles using them are able to enter and leave the premises in a forward gear;</p> <p>(c) Constructed to prevent traffic conflict with any adjoining vehicle crossovers, parking areas, public roads or rights-of-way;</p> <p>(d) Be marked on-site and permanently retained for that exclusive use.</p>	<p>Complies</p> <p>Complies</p> <p>Complies</p> <p>Complies</p>

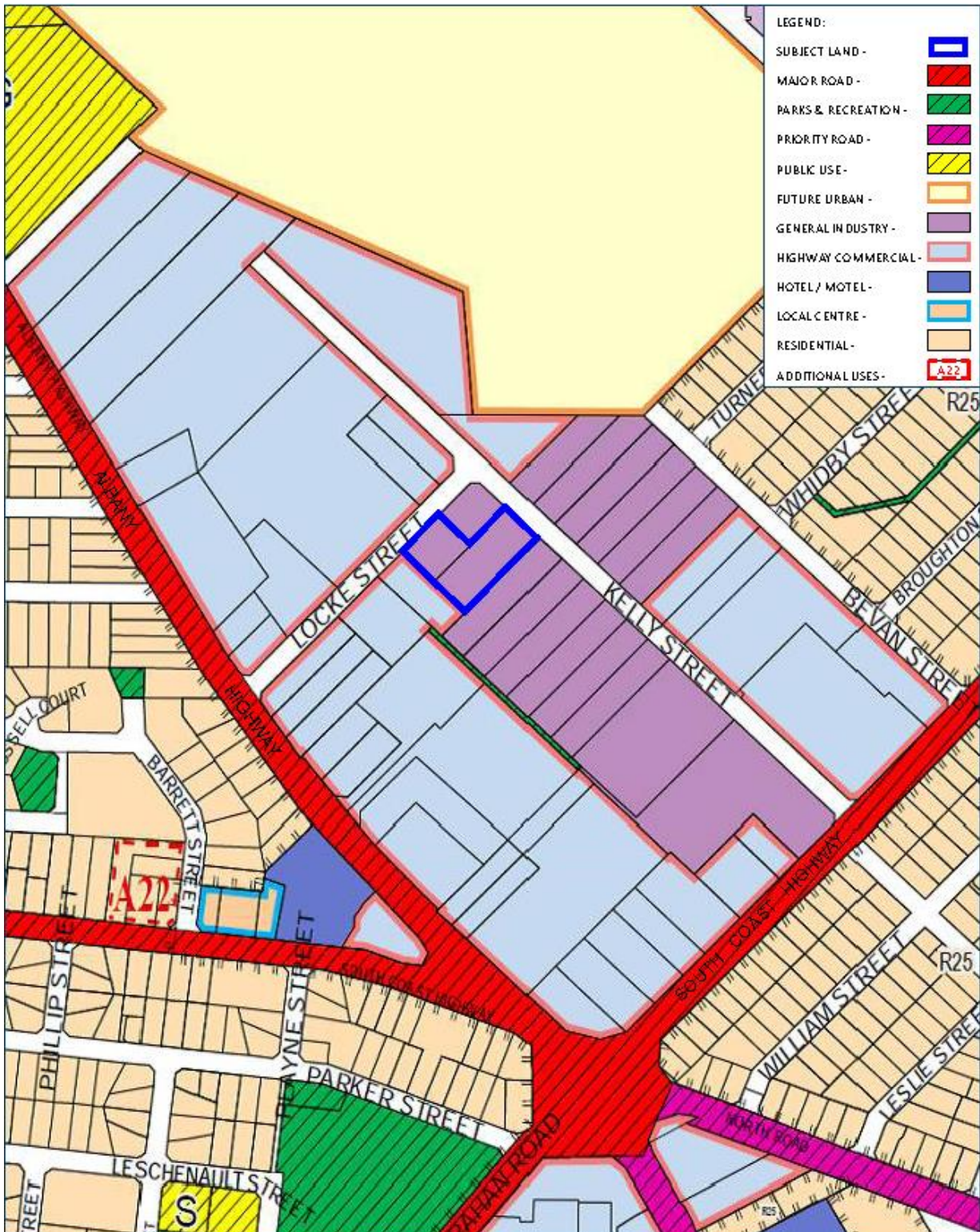


Figure 8: LPS Zoning

5.4 Planning and Development (Local Planning Schemes) Regulations 2015

The *Planning and Development (Local Planning Schemes) Regulations 2015 (the Regulations)* have introduced a set of deemed provisions within Schedule 2 that automatically form part of LPS1. In particular, Clause 67 of Schedule 2 deals with matters to be considered by Local Government and include the following key provisions relevant to this application:

Table 3: Matters to be Considered.

Matters to be considered	Comment
a) <i>The aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;</i>	The proposed development aligns with the Scheme’s stated objectives for the General Industry zone and complies with the development requirements for the zone.
b) <i>The requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;</i>	The proposed development which will update and modernise the existing batching plant is consistent with the purpose and intent of the applicable planning framework.
c) <i>Any environmental protection policy approved under the Environmental Protection Act 1986 section 31(d)</i>	The proposal is consistent with the guidance and advice provided by the EPA’s Guidance Statement No. 3 as discussed in Section 5.4 of this report and will improve environmental standards associated with dust, noise, and wastewater treatment. Acoustic reports undertaken for the proposed batching plants demonstrate that, together with the proposed mitigation walls, the Albany batching plant is capable of complying with the requirements of the Environmental Protection (Noise) Regulations at all times.
m) <i>The compatibility of the development with its setting including the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;</i>	The proposed development comprises a compact batching plant within a General Industry zone and is compatible with surrounding industrial development. The new batching plant will meet the development standards for the General Industry Zone and will provide no adverse visual impacts on the amenity of the surrounding locality.
n) <i>The amenity of the locality including the following –</i>	The proposed updated concrete batching plant has been designed to minimise emissions of noise (see c) above) and dust. It will be located on the existing concrete paved surface and wet areas will be re-

Matters to be considered	Comment
<p>(i) <i>environmental impacts of the development;</i></p> <p>(ii) <i>the character of the locality;</i></p> <p>(iii) <i>social impacts of the development;</i></p>	<p>paved to avoid contamination. Consequently, any environmental impacts will be minimised.</p> <p>As discussed in (n) above the new batching plant will be consistent with the existing industrial character of the locality.</p>
<p>o) <i>The likely effects of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or water resource.</i></p>	<p>As discussed in Section (n) above and Section 4.1.3 of this report, the proposed batching plant operations have been designed to minimise any adverse impacts on the natural environment and water resources.</p>
<p>p) <i>Whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;</i></p>	<p>The site contains no existing vegetation or trees for retention. The existing site is comprised wholly of hardstand to facilitate efficient operations to ensure retention of environmental standards. The proposal includes landscaped areas within the front setback.</p>
<p>q) <i>The adequacy of -</i></p> <p>i. <i>the proposed means of access and egress from the site; and</i></p> <p>ii. <i>arrangements for the loading, unloading, manoeuvring and parking of vehicles;</i></p>	<p>The two existing crossovers to Kelly Street will be maintained to continue to provide access to vehicles. It is proposed that vehicles will access the site via the northernmost crossover and will exit the site via the southernmost crossover, whilst the temporary batching plant is in operation.</p> <p>During the period of construction, access to the temporary batching plant will be undertaken via the crossover in Kelly Street while vehicles will exit via the existing crossover to Locke Street.</p> <p>The arrangements for the loading, unloading manoeuvring and parking of vehicles is depicted in the plans included as Annexure 3.</p>
<p>r) <i>The amount of traffic likely to be generated by the development particularly in relation to the capacity of the road system in the locality and the probable effects on traffic flow and safety;</i></p>	<p>There will be no additional traffic generated as a result of the proposed development.</p>
<p>s) <i>The availability and adequacy for the development of the following-</i></p> <p>iii. <i>public transport services;</i></p> <p>iv. <i>public utility services;</i></p> <p>v. <i>storage management and collection of waste;</i></p>	<p>The subject site is situated 350m and 550m away from routes running along Albany Highway and South Coast Highway, respectively.</p> <p>The site is provided with water, sewerage, electricity, and telecommunications.</p>

Matters to be considered	Comment
vi. <i>access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities);</i> vii. <i>access by older people and people with disability;</i>	The proposal will improve on the collection and treatment of wastewater by improving the capacity available for collection.
w) <i>The history of the site where the development is to be located</i>	The upgraded concrete batching plant will be located within the Orana Industrial Area on a site that has been historically used for concrete batching.

6.0 TECHNICAL REPORTS

6.1 Acoustic Reports

Two separate acoustic reports were undertaken:

1. For the proposed permanent concrete batching plant located on Lot 102 Kelly Street Orana which is included as **Annexure 6**.

With respect to the report's findings, we can advise that:

- Day time operations do not require additional noise mitigation requirements to meet assigned levels, but noise walls are provided that will assist in reducing noise during daytime hours;
 - Night-time mitigation measures are required which include the following measures:
 - Noise mitigation walls;
 - Mixing and slumping are not to occur at the same time; and
 - All heavy vehicles shall access the site via Kelly Street through the industrial area rather than via Locke Street adjacent to the Highway commercial area. All vehicles will enter/exit via Kelly Street, as 16 Locke Street will no longer form part of the concrete batching plant.
2. For the proposed temporary mobile batching plant to be located on lot 101 Locke Street, Orana which is included as **Annexure 7**.

With respect to the report's findings, we can advise that:

- Day time operations do not require additional noise mitigation requirements to meet assigned levels, but noise walls are provided that will assist in reducing noise during daytime hours;
- Night-time mitigation measures are required which include the following measures:
 - Noise mitigation walls;

- All heavy vehicles shall access the site via Kelly Street through the industrial area rather than via Locke Street adjacent to the Highway commercial area. All vehicles will enter/exit via Kelly Street.

The proposed temporary mobile and permanent batching plants, by incorporating nighttime noise mitigation measures including acoustic barriers, are capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

7.0 CONCLUSION

On behalf of Holcim (Australia) Pty Ltd, we seek Council's support for the proposed upgrade to the concrete batching plant at Lot 102 (No 25) Kelly Street, Orana and the temporary installation of a mobile batching plant at Lot 101 (No. 16 Locke Street, Orana) to be utilised during the construction process.

The proposal is both capable and appropriate for approval noting that:

- The proposal follows the intent of the local planning framework and is designed to operate in accordance with State environmental legislation;
- The proposed operation will be essential in the supply of concrete for the construction needs identified in the City of Albany's Local Planning Strategy;
- The proposal ensures the establishment of a batching plant operation which supports the development of the Albany and the surrounding regional areas through the provision of concrete for the engineering and architectural markets;
- The site is well suited to supplying premixed concrete to Albany and the surrounding regional areas given its immediate proximity to an established and proposed transport network;
- The management, efficiency and operations of the proposed plant represent the latest practices in sustainability and environmental management;
- Noise modelling undertaken for the proposed batching plants demonstrate that, together with the proposed mitigation walls, both the temporary and permanent Albany batching plant are capable of complying with the requirements of the Environmental Protection (Noise) Regulations at all times;
- Any off-site impacts to sensitive land uses arising from the establishment of the proposed batching plant are considered acceptable given the proposed acoustic walls, the buffer distances maintained between these land uses and the proposed upgrades to the system that will improve environmental standards associated with noise, dust, and wastewater treatment available; and
- The Holcim Albany plant in Orana has been operating from its established location for nearly 60 years and constitutes a key operation for the supply of concrete for Albany's planned development as identified by the City's strategic planning framework. The proposed batching plant will continue long term employment opportunities in the local area and be of significant benefit to the construction industry.

We therefore seek Council's favourable consideration and support of this proposal to enable approval for the upgrade of the Holcim Albany batching plant.

Annexure 1
Development Application Form

Annexure 2
Certificate of Title

WESTERN



AUSTRALIA

REGISTER NUMBER 102/D93983	
DUPLICATE EDITION 4	DATE DUPLICATE ISSUED 3/5/2010

RECORD OF CERTIFICATE OF TITLE
UNDER THE TRANSFER OF LAND ACT 1893

VOLUME **2120** FOLIO **44**

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 102 ON DIAGRAM 93983

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

HOLCIM (AUSTRALIA) PTY LTD OF TOWER B, LEVEL 8, 799 PACIFIC HIGHWAY, CHATSWOOD, NEW SOUTH WALES

(AN L281630) REGISTERED 8/4/2010

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. T592/1887 EASEMENT BENEFIT SEE TRANSFER 592/1887. REGISTERED 1/1/1887.
2. T125/1890 EASEMENT BENEFIT AS TO PORTION ONLY SEE TRANSFER 125/1890 AND VOL 2120 FOL 44. REGISTERED 1/1/1890.
3. T198/1890 EASEMENT BENEFIT AS TO PORTION ONLY SEE TRANSFER 198/1890 AND VOL 2120 FOL 44. REGISTERED 1/1/1890.
4. T199/1890 EASEMENT BENEFIT AS TO PORTION ONLY SEE TRANSFER 199/1890 AND VOL 2120 FOL 44. REGISTERED 1/1/1890.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 2120-44 (102/D93983)
PREVIOUS TITLE: 2120-41
PROPERTY STREET ADDRESS: 25 KELLY ST, ORANA.
LOCAL GOVERNMENT AUTHORITY: CITY OF ALBANY

WESTERN



AUSTRALIA

REGISTER NUMBER 101/D93983	
DUPLICATE EDITION N/A	DATE DUPLICATE ISSUED N/A

RECORD OF CERTIFICATE OF TITLE
UNDER THE TRANSFER OF LAND ACT 1893

VOLUME **2120** FOLIO **43**

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BGRoberts
REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 101 ON DIAGRAM 93983

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

AMBRIDGE NOMINEES PTY LTD OF POST OFFICE BOX 1919, ALBANY

(T G641150) REGISTERED 20/11/1997

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. T592/1887 EASEMENT BENEFIT SEE TRANSFER 592/1887. REGISTERED 1/1/1887.
2. EASEMENT BENEFIT - SEE DIAGRAM 93983.
3. T198/1890 EASEMENT BENEFIT AS TO PORTION ONLY SEE SKETCH ON VOL 2120 FOL 43. REGISTERED 1/1/1890.
4. T199/1890 EASEMENT BENEFIT AS TO PORTION ONLY SEE SKETCH ON VOL 2120 FOL 43. REGISTERED 1/1/1890.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 2120-43 (101/D93983)
PREVIOUS TITLE: 2120-41
PROPERTY STREET ADDRESS: 16 LOCKE ST, ORANA.
LOCAL GOVERNMENT AUTHORITY: CITY OF ALBANY

Annexure 3

Development Plans

ALBANY CONCRETE PLANT REDEVELOPMENT

USER REQUIREMENTS STATEMENT

Provides a complete, clear, unambiguous statement of the owners' requirements in measurable terms. The document identifies exactly the deliverables the owner requires. How these objectives are met (*i.e.* the solutions) is not part of this document.

Objective 1: Site location

The facilities will be constructed on the existing land on the corner of Kelly Street and Locke Street, Albany WA. The site has the following characteristics:

- Two blocks of land with one (the smaller portion gaining access to Locke Street) being leased;
- Main block (Holcim owned) is 4,504m² in area;
- Bore water available;
- Town water available;
- Neighbours have built to boundary; and
- Main office building in very good condition (built circa 2006) – potential to expand into roof space (for Batch Office).

Objective 2: Site function

The site shall have the following functions:

- A concrete batch plant including aggregate storage and all auxiliary equipment for the supply of concrete to both engineering and architectural markets;
- Amenities;
- Parking (garaging) of agitators;
- Washing out of agitators; and
- Parking of employees cars.

Objective 3: Plant capability

See Table 1.

Objective 4: Services

All services will be below ground or in cable trays – no aerial cables.

Power – supplied from existing supply

Potable water – bore water to be retained

Sewerage – Existing service

Air – 1x new screw-type air compressor with refrigerated dryer

Accommodation – 1x Batch Office

Objective 5: Water management

Only wet (contaminated) areas will be concrete paved.

As much of the existing concrete pavement will be used as possible.

All potentially contaminated areas will be sealed (concreted) and drain to a collection (chisel/wedge) pit where gross solids will be allowed to settle out.

Objective 6: Design life

Minimum design life shall be a minimum of 20 years and allow for continuous upgrades.

Table 1. Plant requirements

Requirement	Capability	Comments
Production rate (peak)	11 loads per hour 66 m ³ /h (sustained with average of 6.0m ³ /load)	Same capacity as existing plant.
Operating hours	No change	Existing
Production (average)	No change	25,000m ³ /year, 100 m ³ /day
Production (peak)	No change	40,000m ³ /year, 500 m ³ /day
Working day	10h	Site will need lighting for low light level operation.
Batch size	7.0m ³ (maximum) Weighers to be sized for single batching: 32MPa No fines Stabilised sand	No minis unless fitted with extended chutes.
Mixing technology	Dry mix	
Quality standard	AS 1379 "Specification and supply of concrete"	
Aggregate storage	4 = 2x coarse + 2x fine 4x decorative	Minimum 200m ³ equivalent storage. Minimum 50t ground storage for each decorative aggregate.
Cementitious material storage	3 x silos (minimum): GP, FA and Off-white comprised of: 2 x 80m ³ silos 1 x 80m ³ split silo (40T capacity each side)	2 weighers will be considered to ensure that white cement is not contaminated.
Water storage	100kL potable (500m ³ equivalent) 50kL recycled (from Concrete Plant)	No provision for hot and chilled water.
Admixtures	6	Bunded and roofed.
Additives	Stand and conveyor, or platform for adding bags.	Colour and fibres.
Slumping	1x slump stand to be provided	Preferred provision for another 1 later
Agitators	4 (base); 6 (max.)	6- or 8- or wheelers Capacity of trucks not >7.0m ³
FEL	1x Cat 938 or equivalent	To be provided by Business Unit.
Control	TBC	
Ticketing	CommandConcrete	
Power	Mains	Existing supply
Communications	Required for Command Concrete	Existing
Accommodation	New Batch Office required	Retain existing offices

REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



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ALBANY CONCRETE PLANT
CONCEPTS
USER REQ STATEMENT

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	NTS	DO NOT SCALE	SHEET 1 OF 17



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

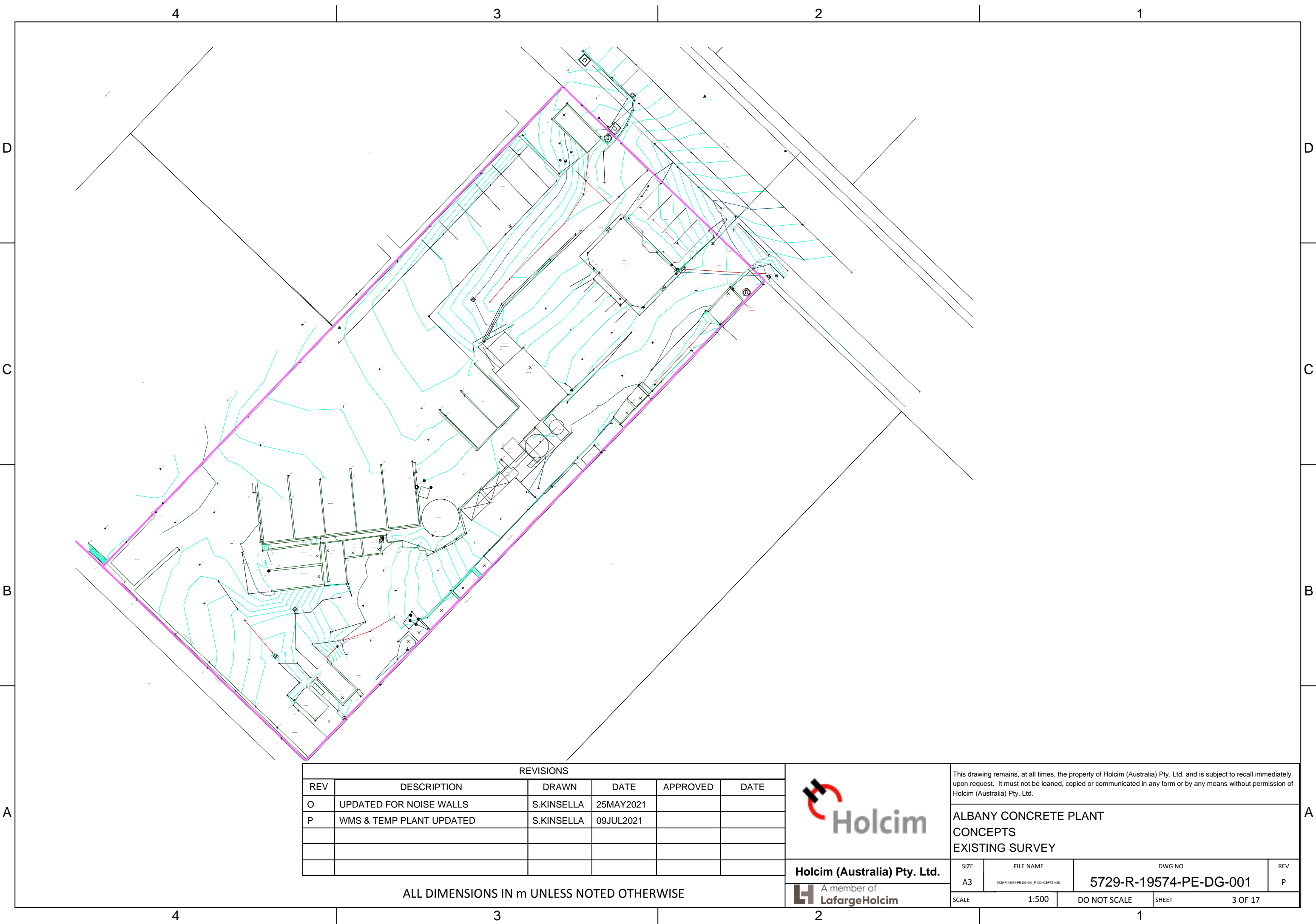


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**ALBANY CONCRETE PLANT
 CONCEPTS
 EXISTING SITE**

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	NTS	DO NOT SCALE	SHEET 2 OF 17



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



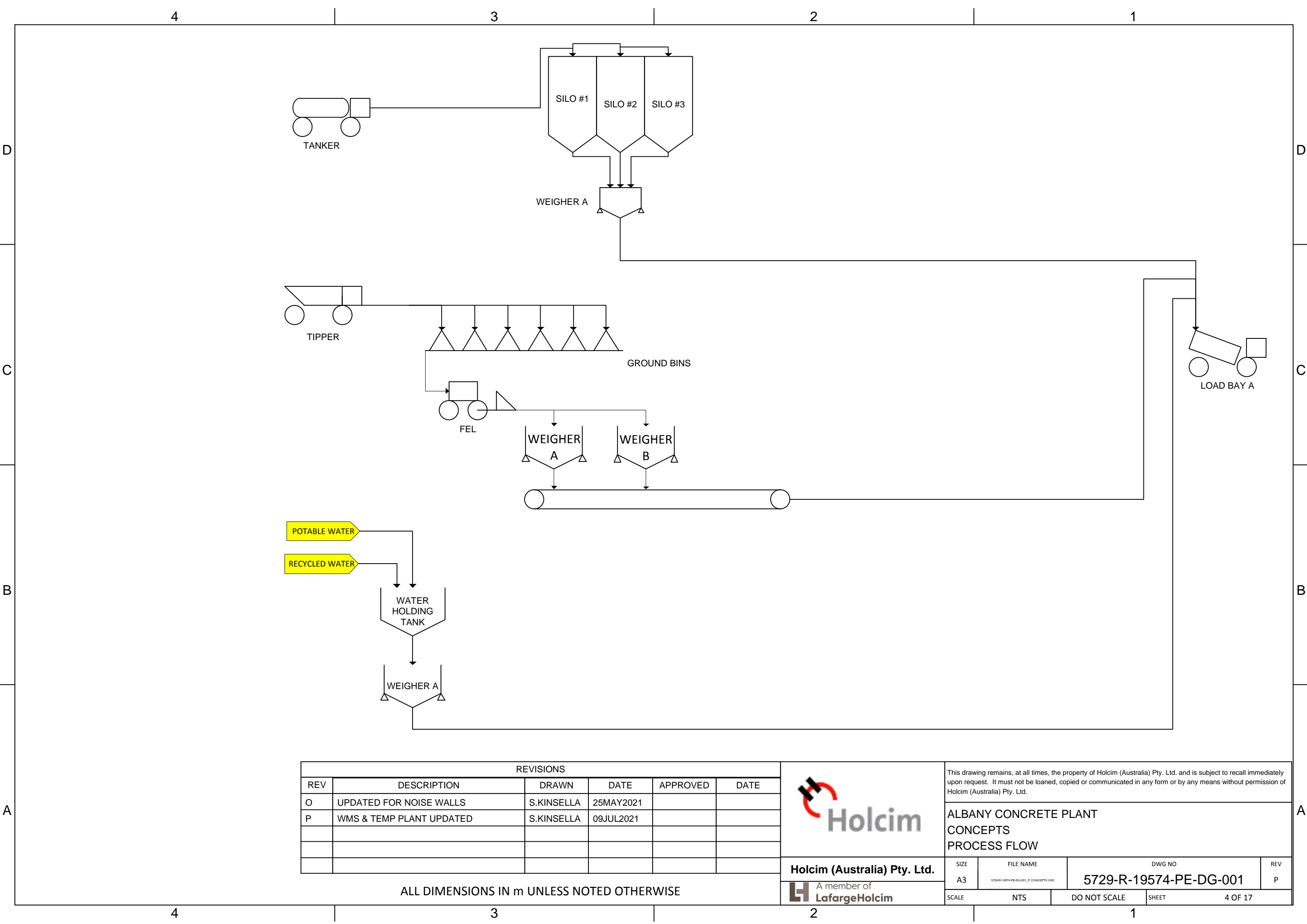
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ALBANY CONCRETE PLANT
CONCEPTS
EXISTING SURVEY

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P.CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	1:500	DO NOT SCALE	SHEET 3 OF 17

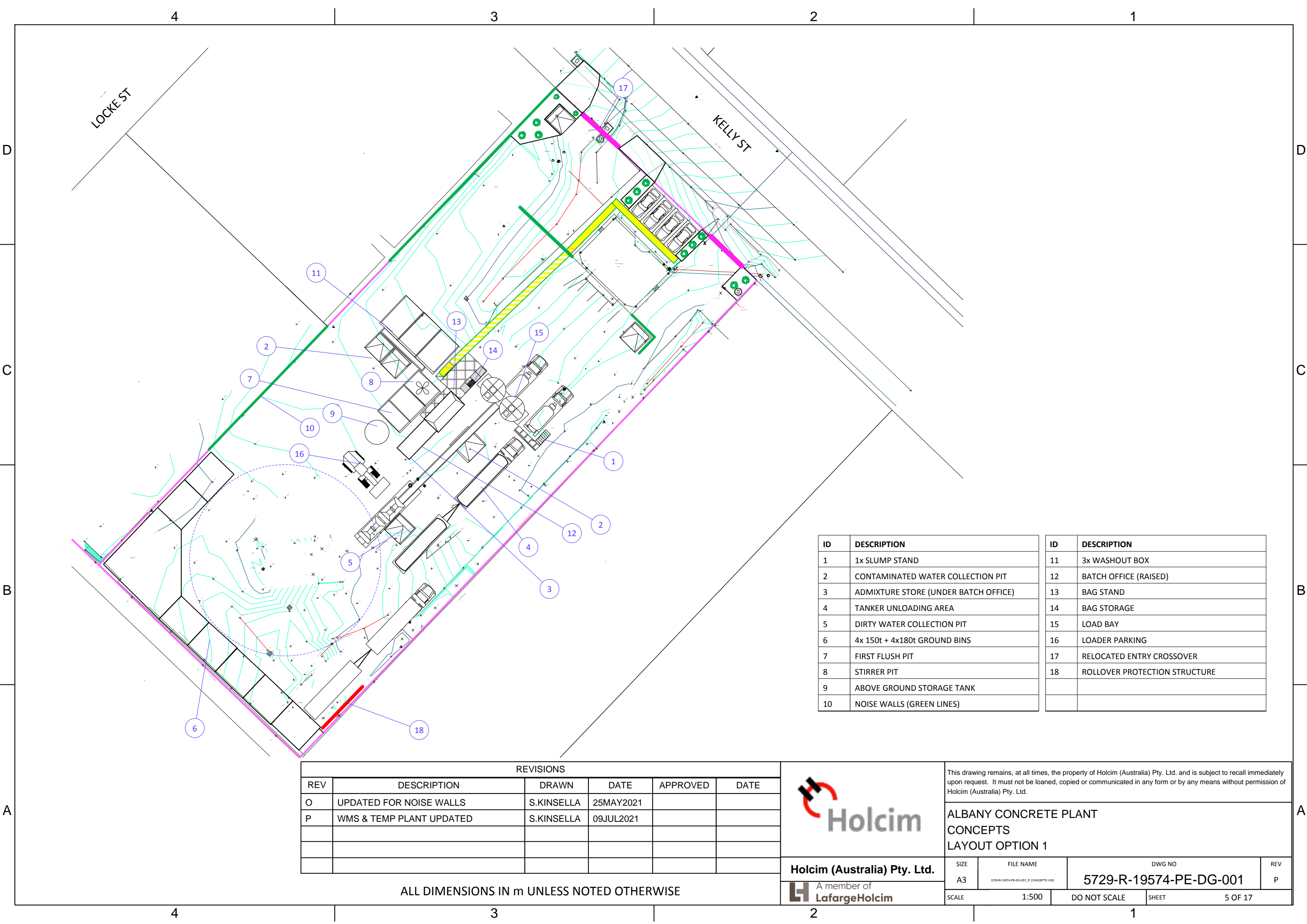


REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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ALBANY CONCRETE PLANT CONCEPTS PROCESS FLOW			
SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE NTS	DO NOT SCALE	SHEET 4 OF 17	

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



ID	DESCRIPTION
1	1x SLUMP STAND
2	CONTAMINATED WATER COLLECTION PIT
3	ADMIXTURE STORE (UNDER BATCH OFFICE)
4	TANKER UNLOADING AREA
5	DIRTY WATER COLLECTION PIT
6	4x 150t + 4x180t GROUND BINS
7	FIRST FLUSH PIT
8	STIRRER PIT
9	ABOVE GROUND STORAGE TANK
10	NOISE WALLS (GREEN LINES)

ID	DESCRIPTION
11	3x WASHOUT BOX
12	BATCH OFFICE (RAISED)
13	BAG STAND
14	BAG STORAGE
15	LOAD BAY
16	LOADER PARKING
17	RELOCATED ENTRY CROSSOVER
18	ROLLOVER PROTECTION STRUCTURE

REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

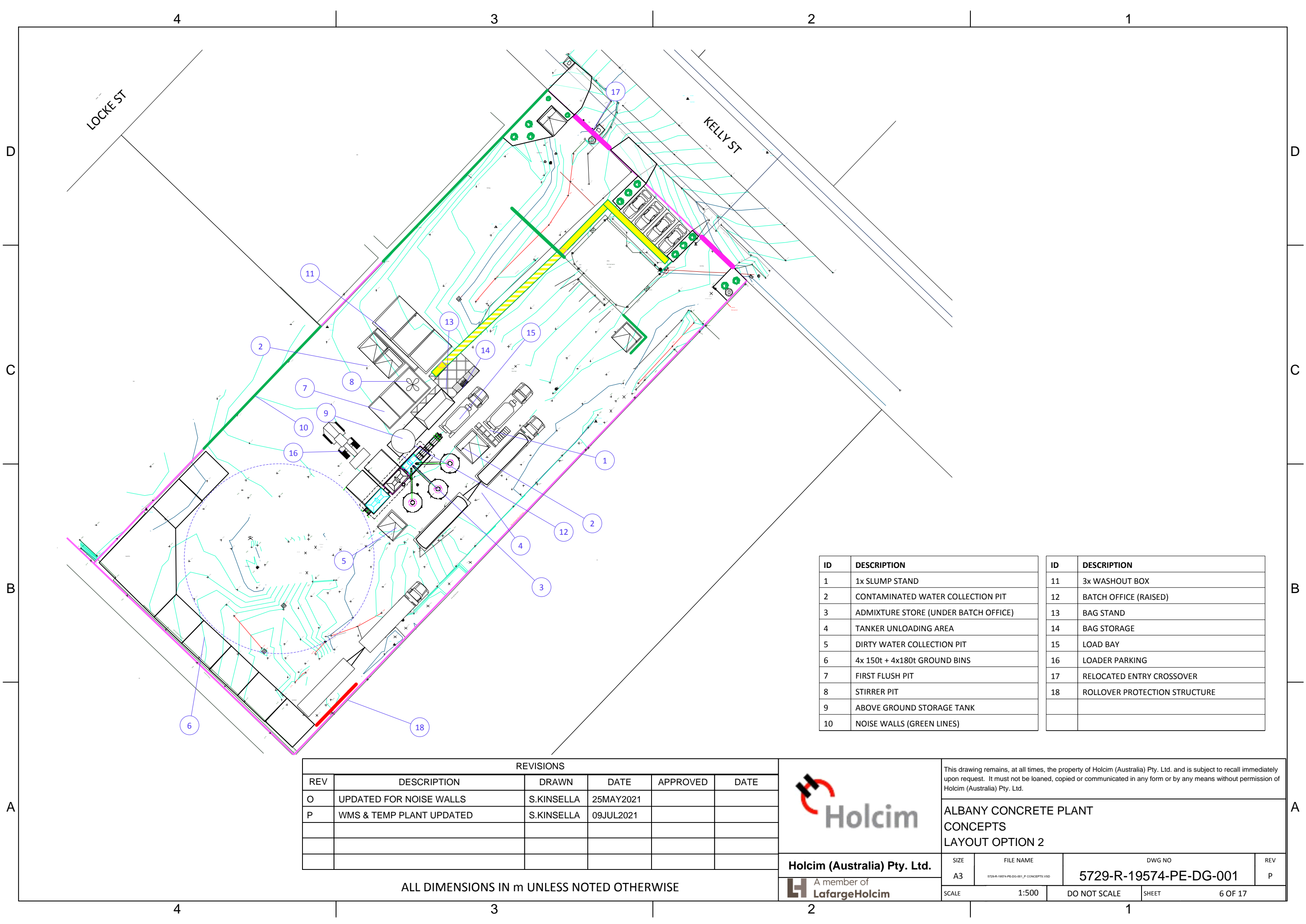


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**ALBANY CONCRETE PLANT
CONCEPTS
LAYOUT OPTION 1**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P1_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:500	DO NOT SCALE	SHEET 5 OF 17	

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



ID	DESCRIPTION
1	1x SLUMP STAND
2	CONTAMINATED WATER COLLECTION PIT
3	ADMIXTURE STORE (UNDER BATCH OFFICE)
4	TANKER UNLOADING AREA
5	DIRTY WATER COLLECTION PIT
6	4x 150t + 4x180t GROUND BINS
7	FIRST FLUSH PIT
8	STIRRER PIT
9	ABOVE GROUND STORAGE TANK
10	NOISE WALLS (GREEN LINES)

ID	DESCRIPTION
11	3x WASHOUT BOX
12	BATCH OFFICE (RAISED)
13	BAG STAND
14	BAG STORAGE
15	LOAD BAY
16	LOADER PARKING
17	RELOCATED ENTRY CROSSOVER
18	ROLLOVER PROTECTION STRUCTURE

REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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**ALBANY CONCRETE PLANT
CONCEPTS
LAYOUT OPTION 2**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P2_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:500	DO NOT SCALE	SHEET 6 OF 17	

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

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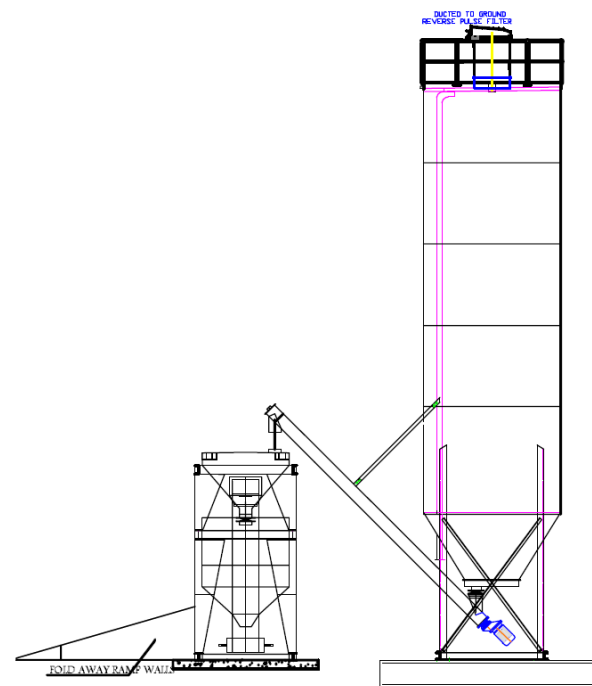
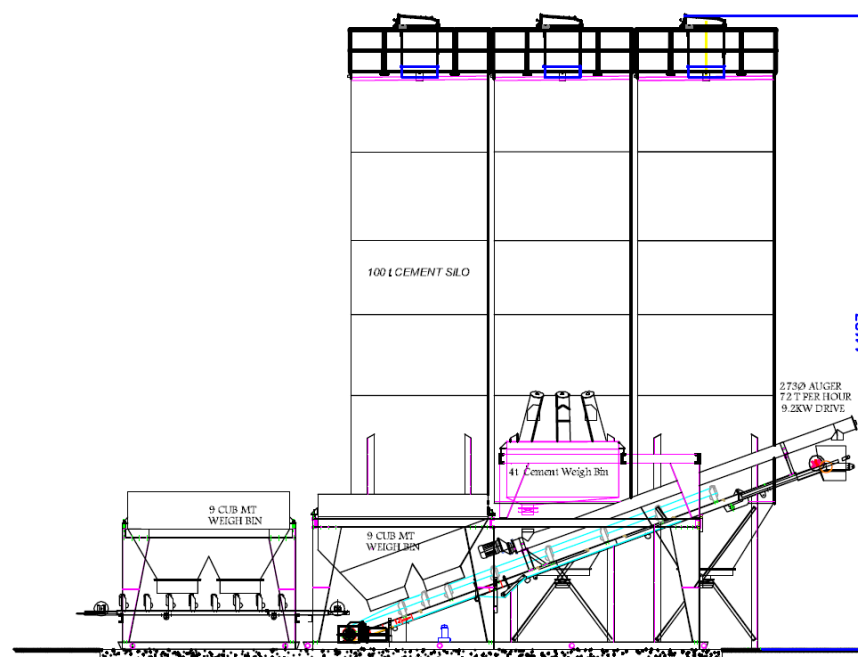
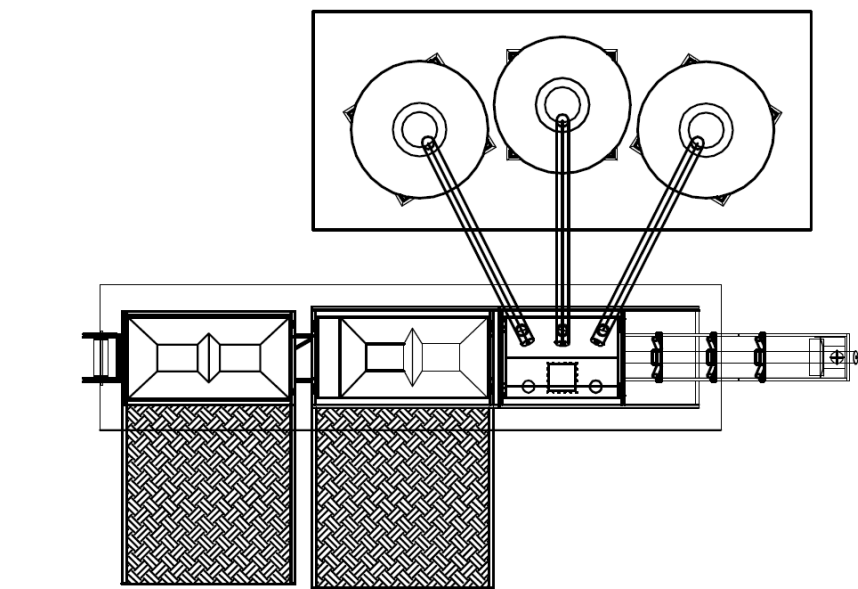
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REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



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ALBANY CONCRETE PLANT
CONCEPTS
TYPICAL PLANT

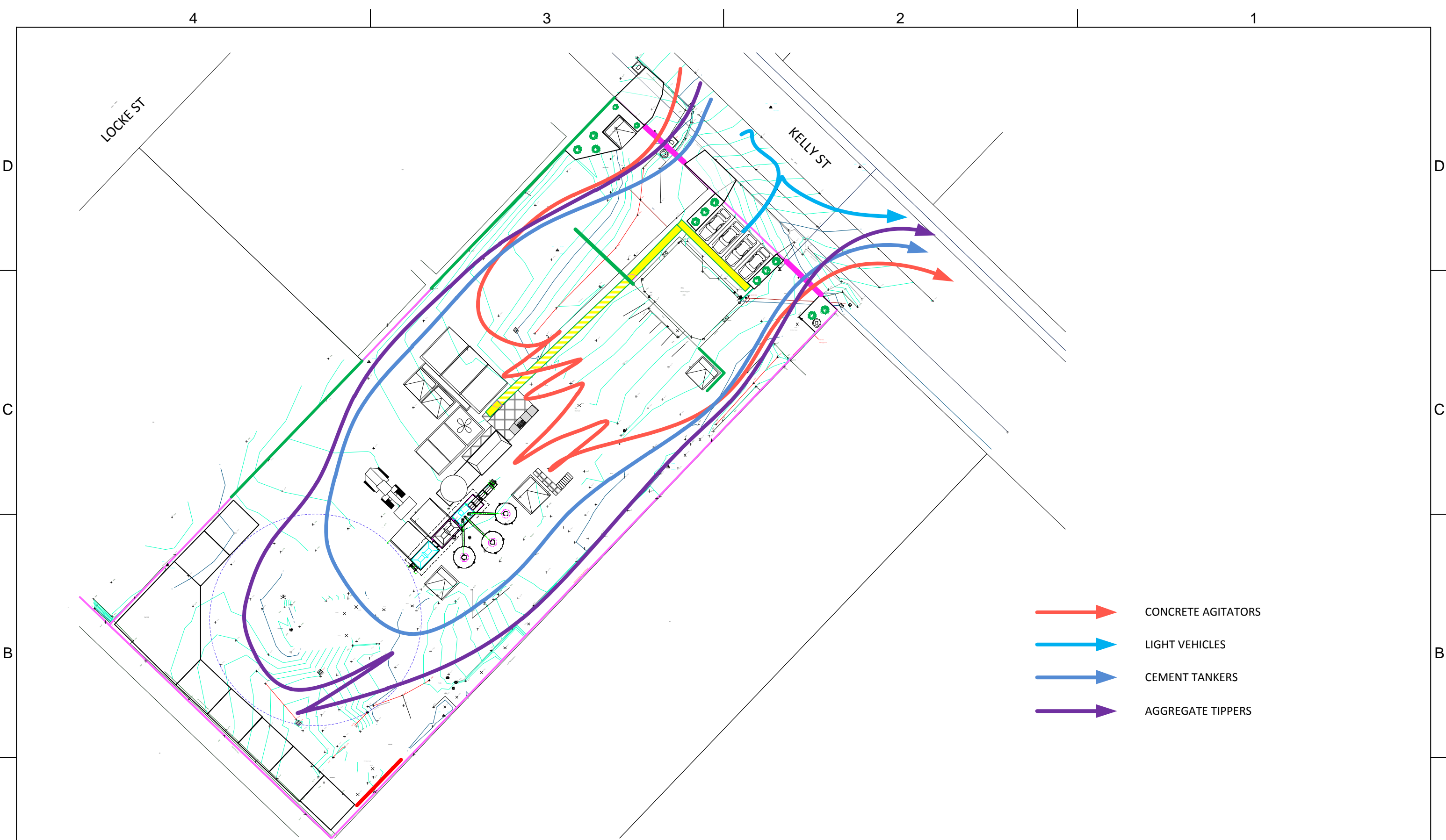
SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	NTS	DO NOT SCALE	SHEET 7 OF 17





4

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1



-  CONCRETE AGITATORS
-  LIGHT VEHICLES
-  CEMENT TANKERS
-  AGGREGATE TIPPERS

REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

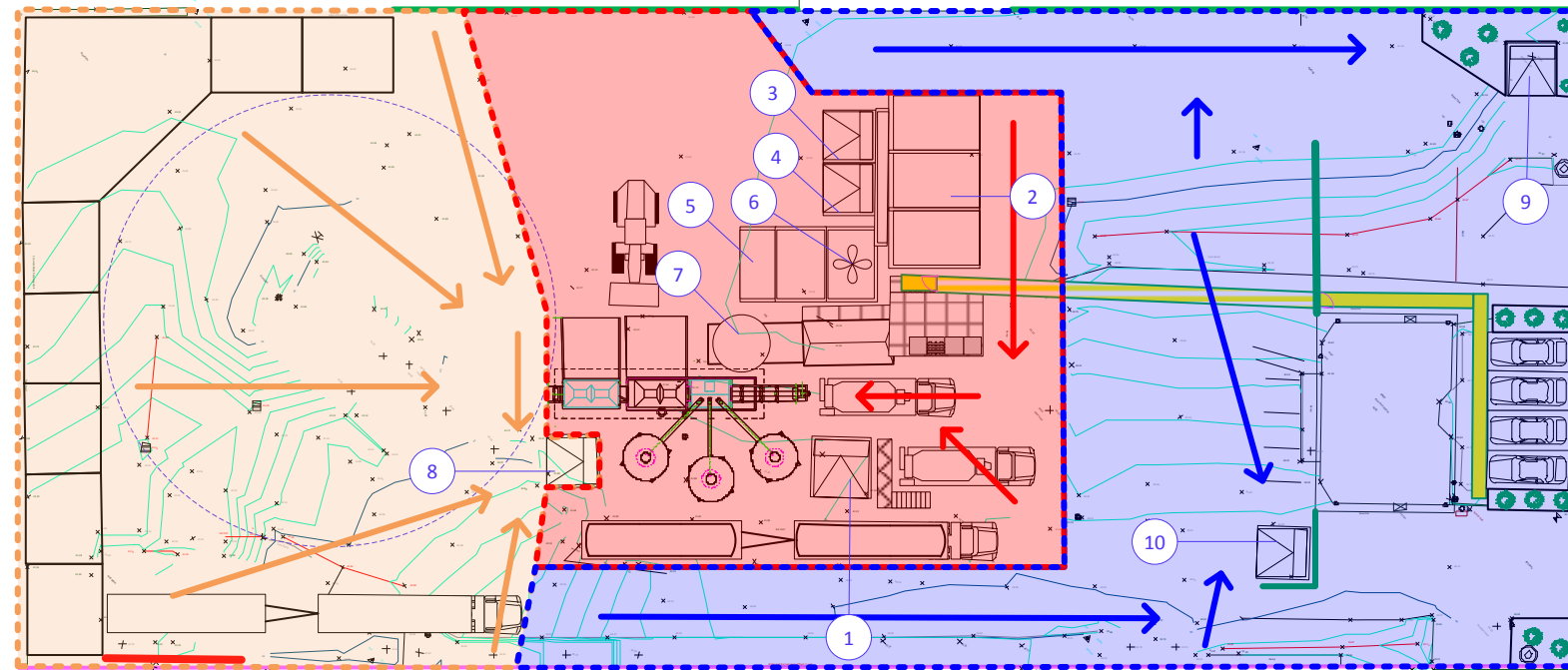


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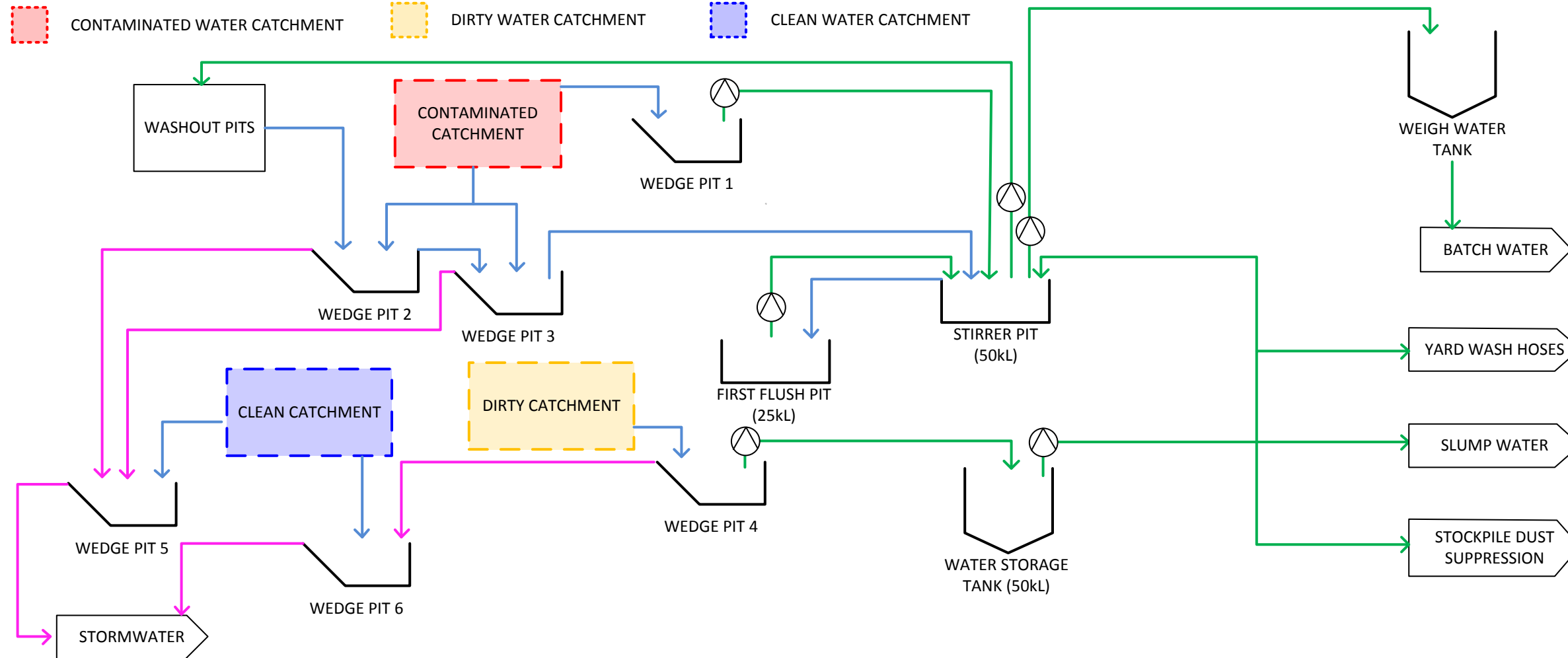
**ALBANY CONCRETE PLANT
CONCEPTS
TRAFFIC FLOW**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P.CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:500	DO NOT SCALE	SHEET 8 OF 17	



ID	DESCRIPTION
1	WEDGE PIT 1
2	WASHOUT PITS
3	WEDGE PIT 2
4	WEDGE PIT 3
5	FIRST FLUSH PIT
6	STIRRER PIT
7	STORAGE TANK
8	WEDGE PIT 4
9	WEDGE PIT 5
10	WEDGE PIT 6

 CONTAMINATED WATER CATCHMENT
 DIRTY WATER CATCHMENT
 CLEAN WATER CATCHMENT



- OVERFLOW / GENERAL DRAINAGE
- PUMPED FLOW
- BYPASS DRAINAGE

REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

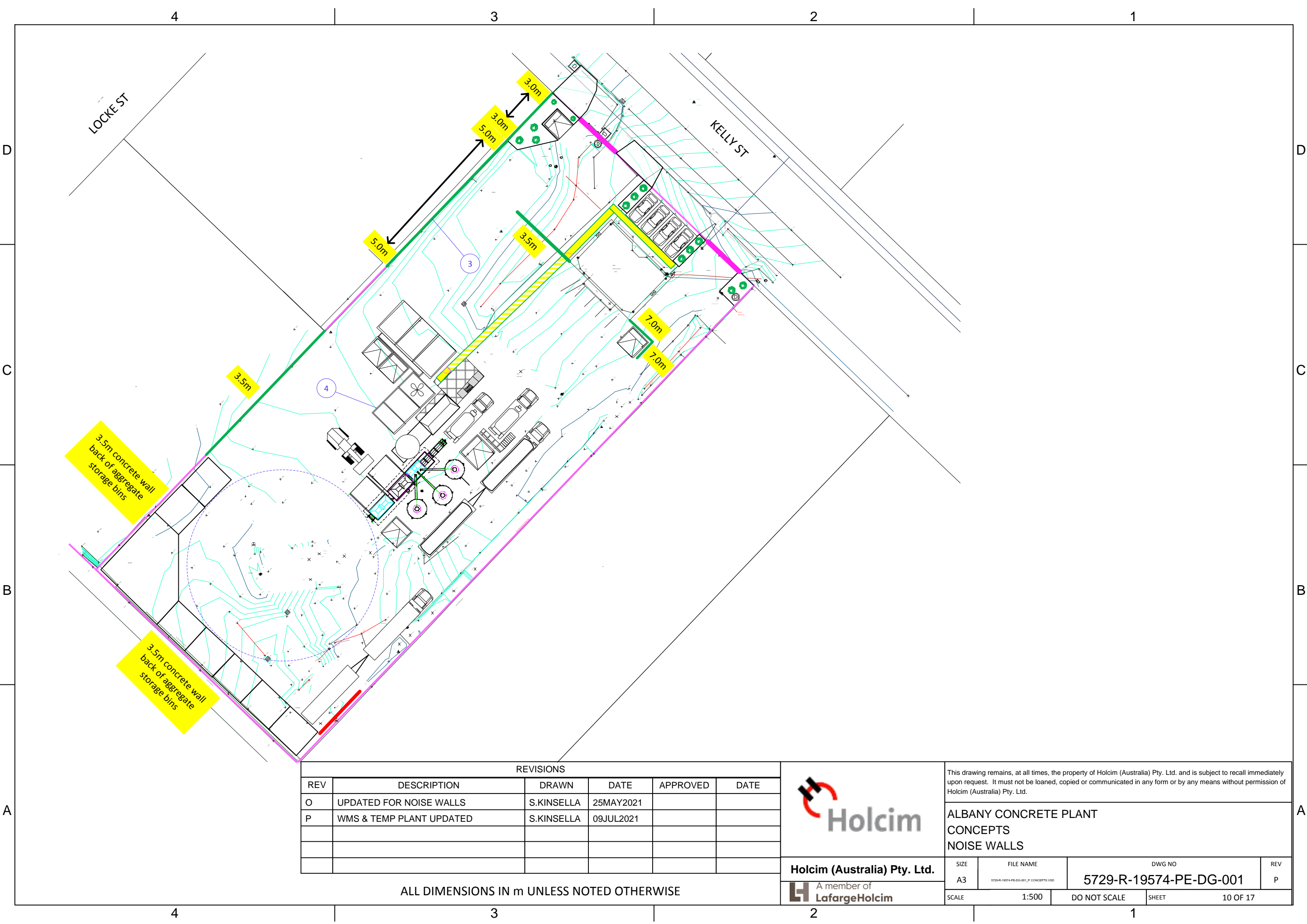


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**ALBANY CONCRETE PLANT
CONCEPTS
WATER MANAGEMENT**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE NTS	DO NOT SCALE	SHEET 9 OF 17	



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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ALBANY CONCRETE PLANT CONCEPTS NOISE WALLS			
SIZE A3	FILE NAME 5729-R-19574-PE-DG-01_P_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:500	DO NOT SCALE	SHEET 10 OF 17	

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

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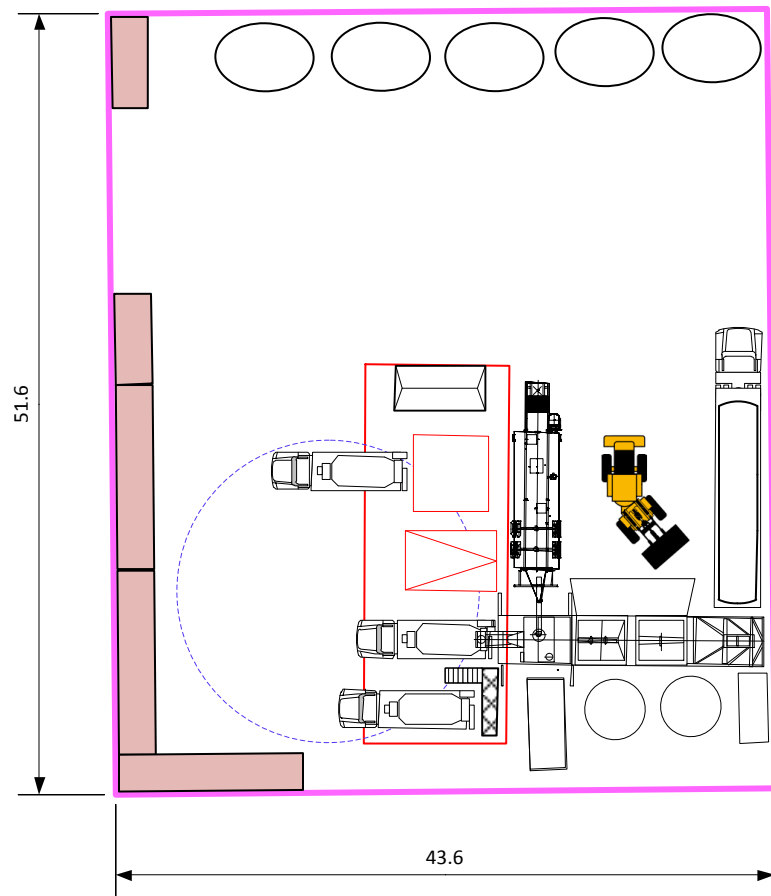
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REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE



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ALBANY CONCRETE PLANT
CONCEPTS
TEMPORARY PLANT

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P.CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	1:500	DO NOT SCALE	SHEET 11 OF 17

4

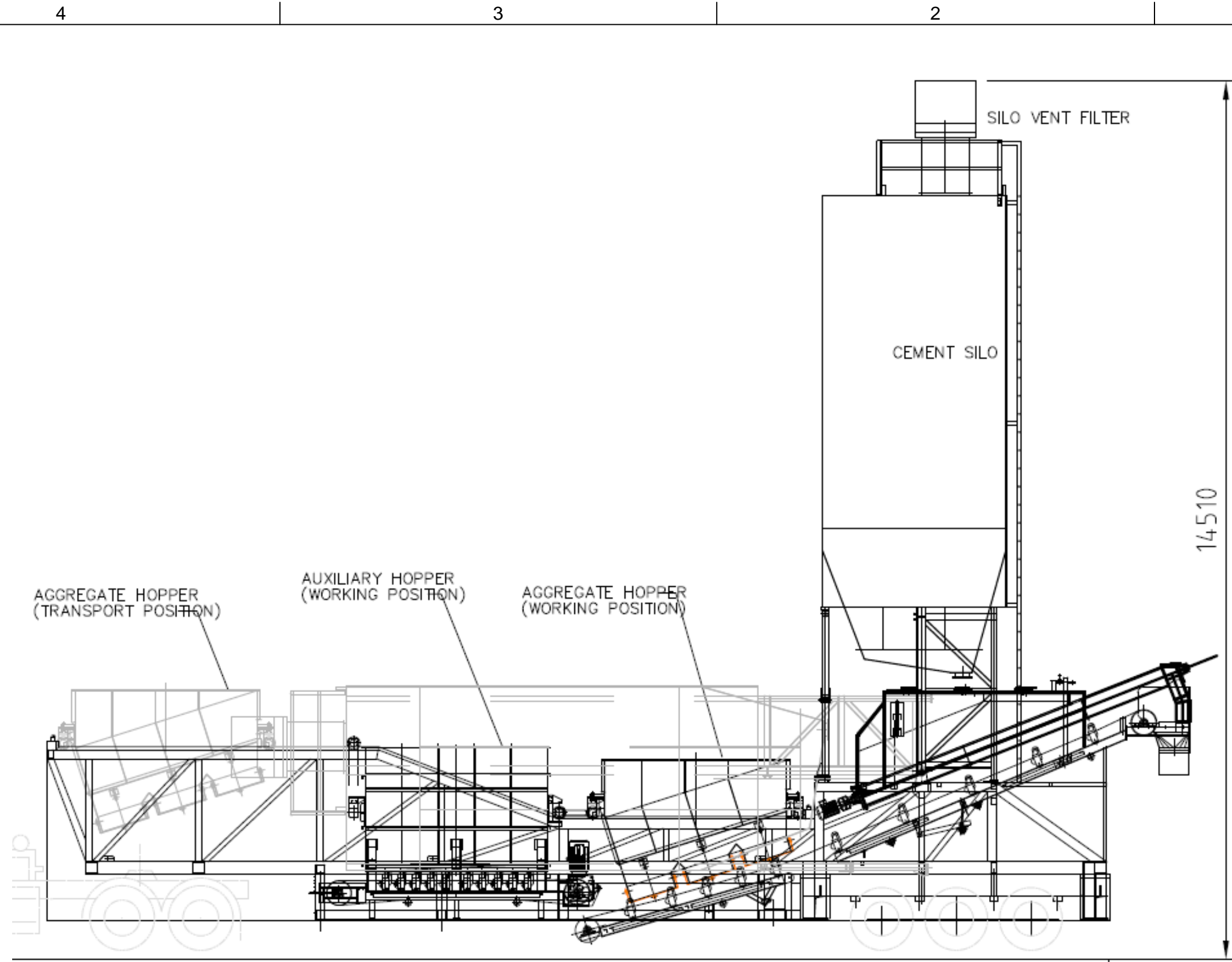
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REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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ALBANY CONCRETE PLANT
CONCEPTS
TEMPORARY PLANT A ELEVATION

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	NTS	DO NOT SCALE	SHEET 12 OF 17

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

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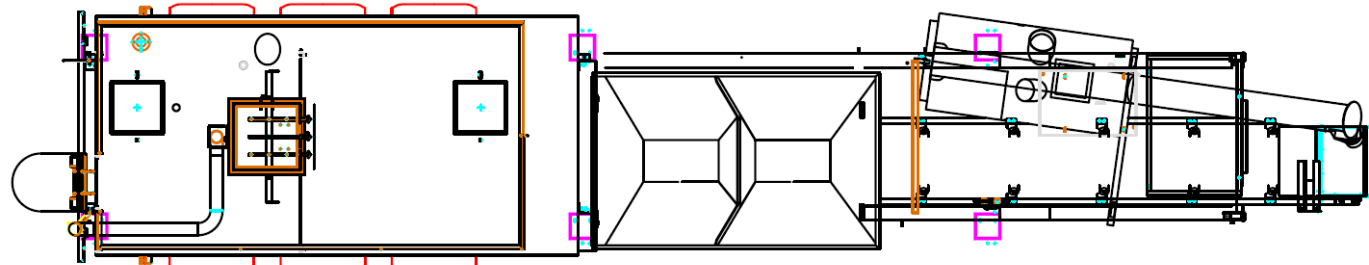
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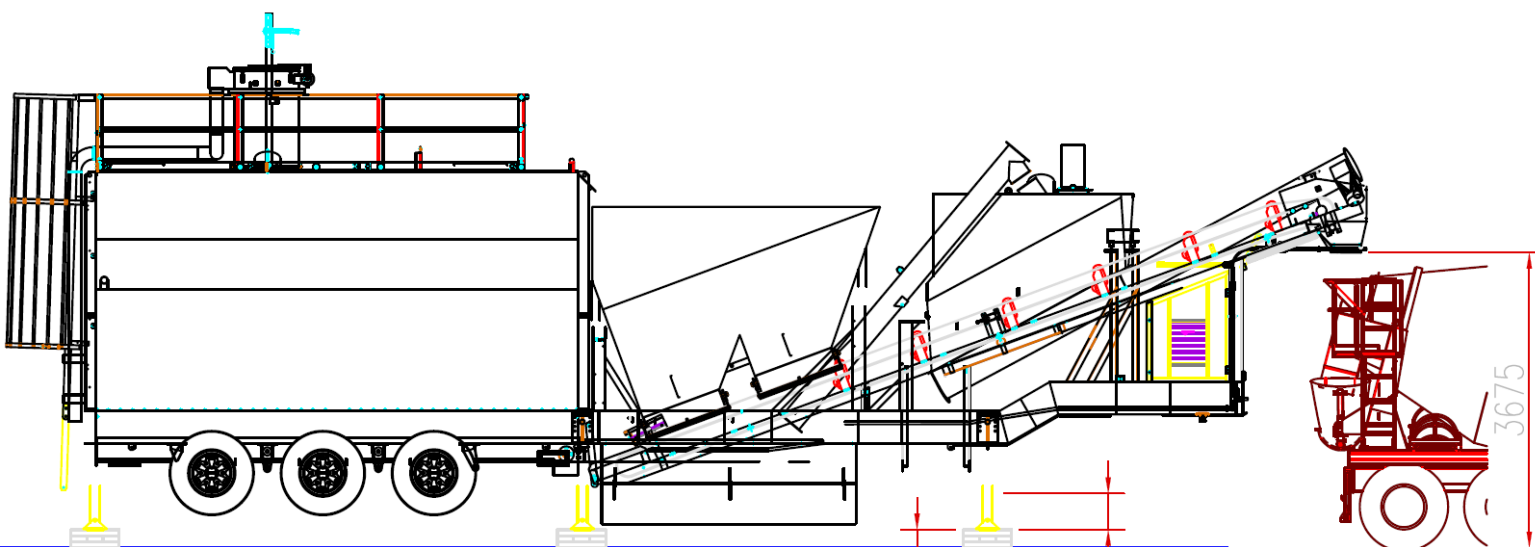
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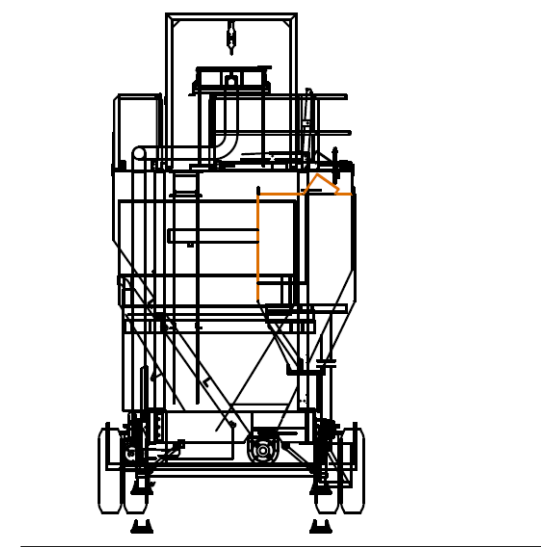
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REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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**ALBANY CONCRETE PLANT
CONCEPTS
TEMPORARY PLANT B ELEVATION**

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P1_CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	NTS	DO NOT SCALE	SHEET 13 OF 17

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

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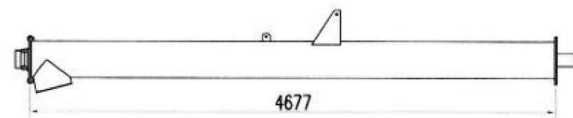
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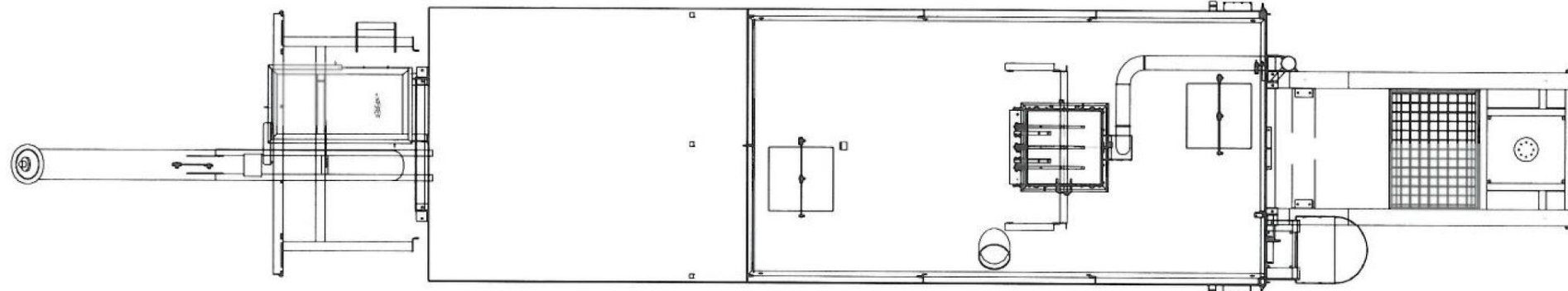
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2

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REMOVE THIS SECTION OF TRANSFER SCREW
AND STORE BESIDE SILO FOR TRANSPORT



D

D

C

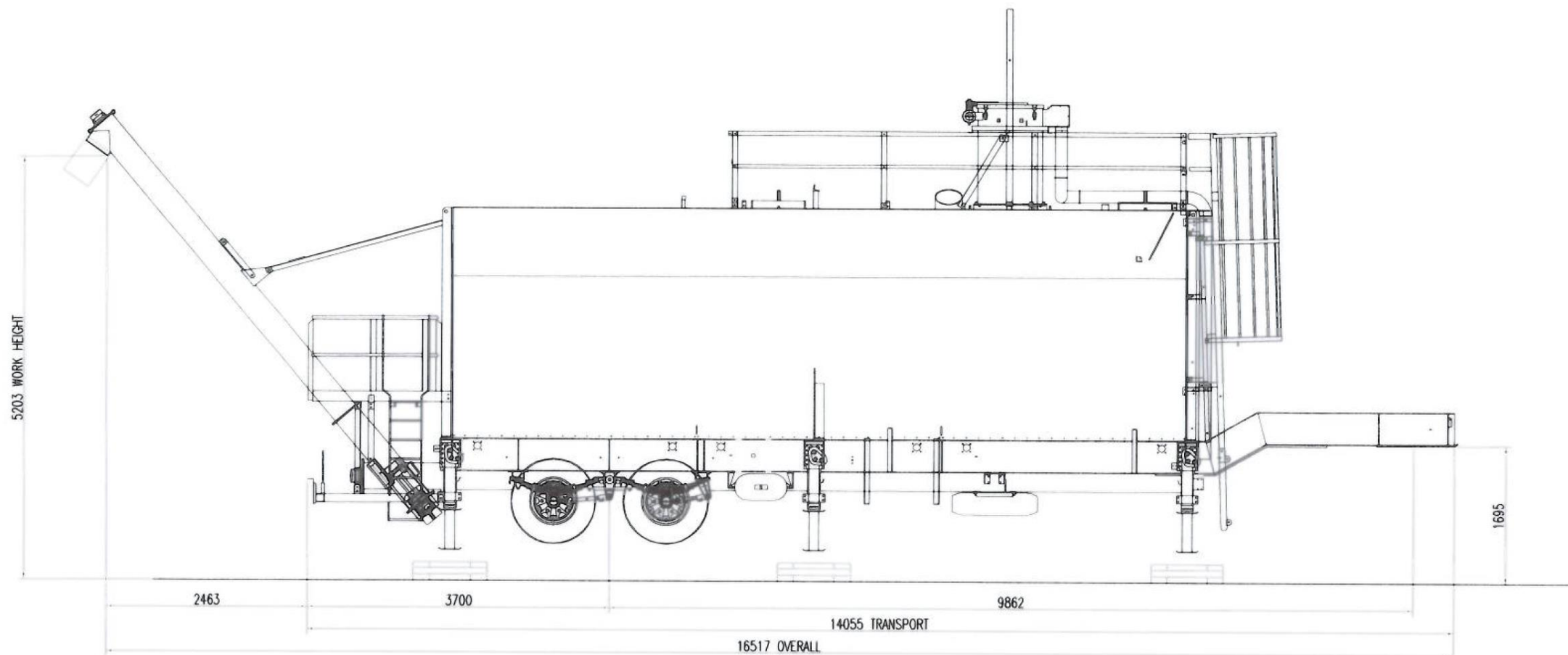
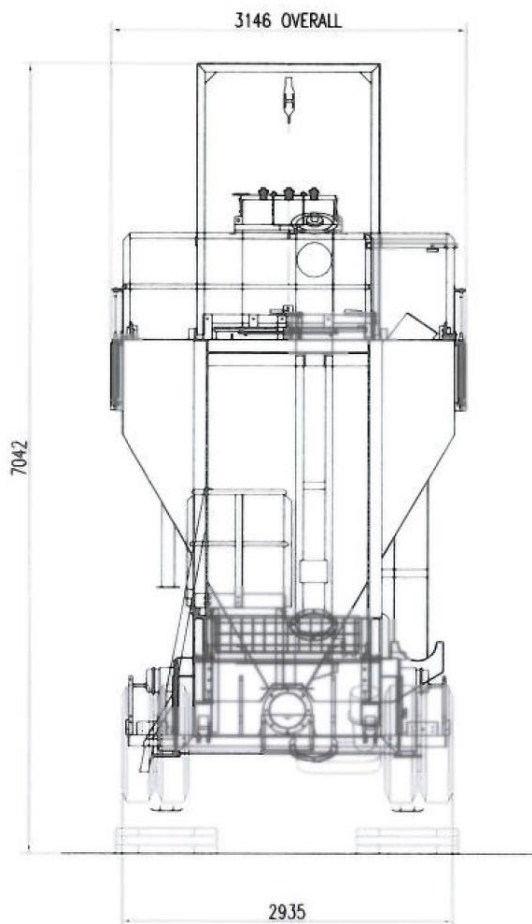
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B

B

A

A



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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**ALBANY CONCRETE PLANT
CONCEPTS
TEMPORARY PLANT SILO ELEVATION**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE NTS	DO NOT SCALE	SHEET 14 OF 17	

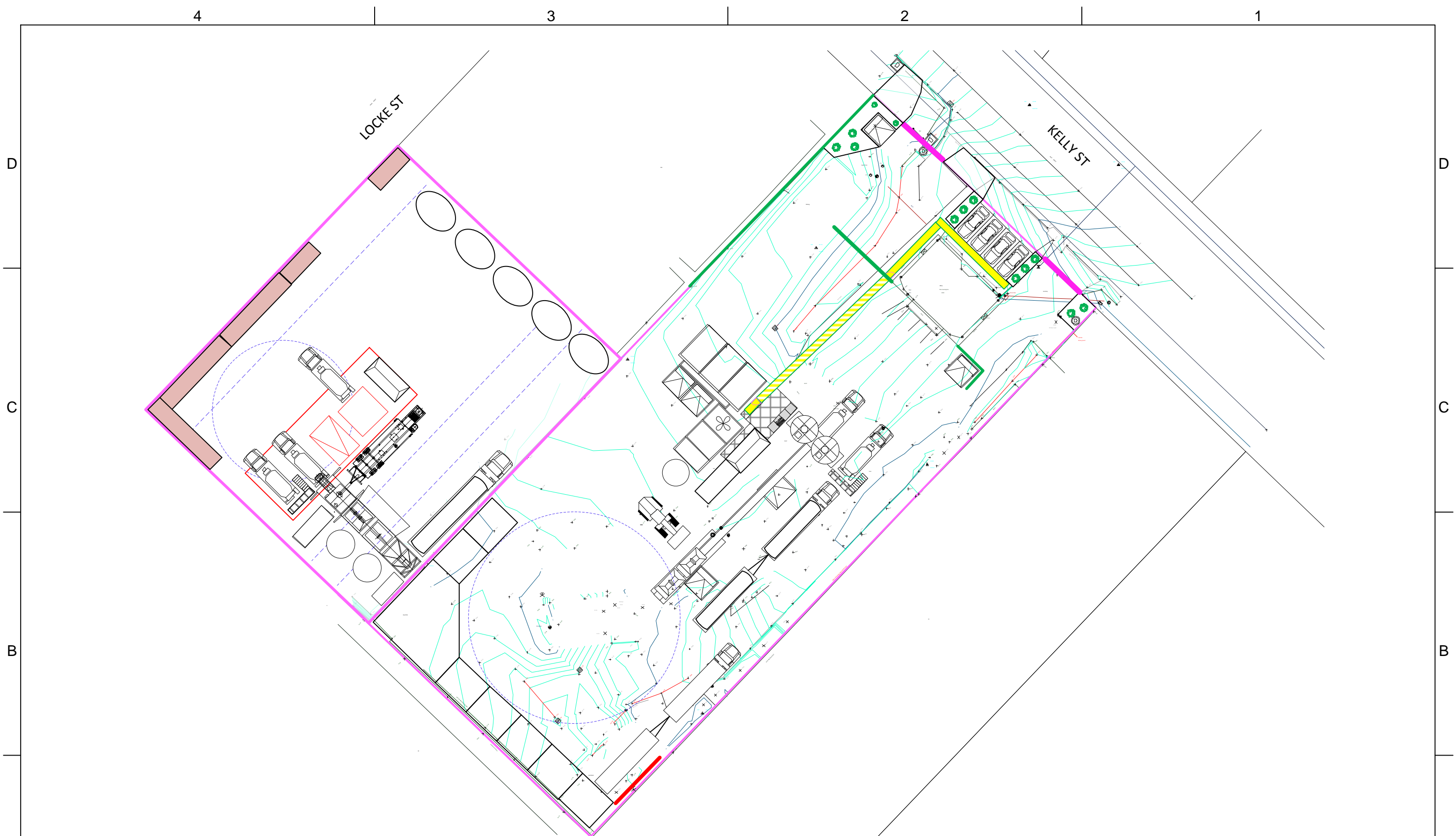
ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

4

3

2

1



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

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**ALBANY CONCRETE PLANT
CONCEPTS
PERMANANT & TEMP PLANTS**

SIZE	FILE NAME	DWG NO	REV
A3	5729-R-19574-PE-DG-001_P CONCEPTS.VSD	5729-R-19574-PE-DG-001	P
SCALE	1:500	DO NOT SCALE	SHEET 15 OF 17

4

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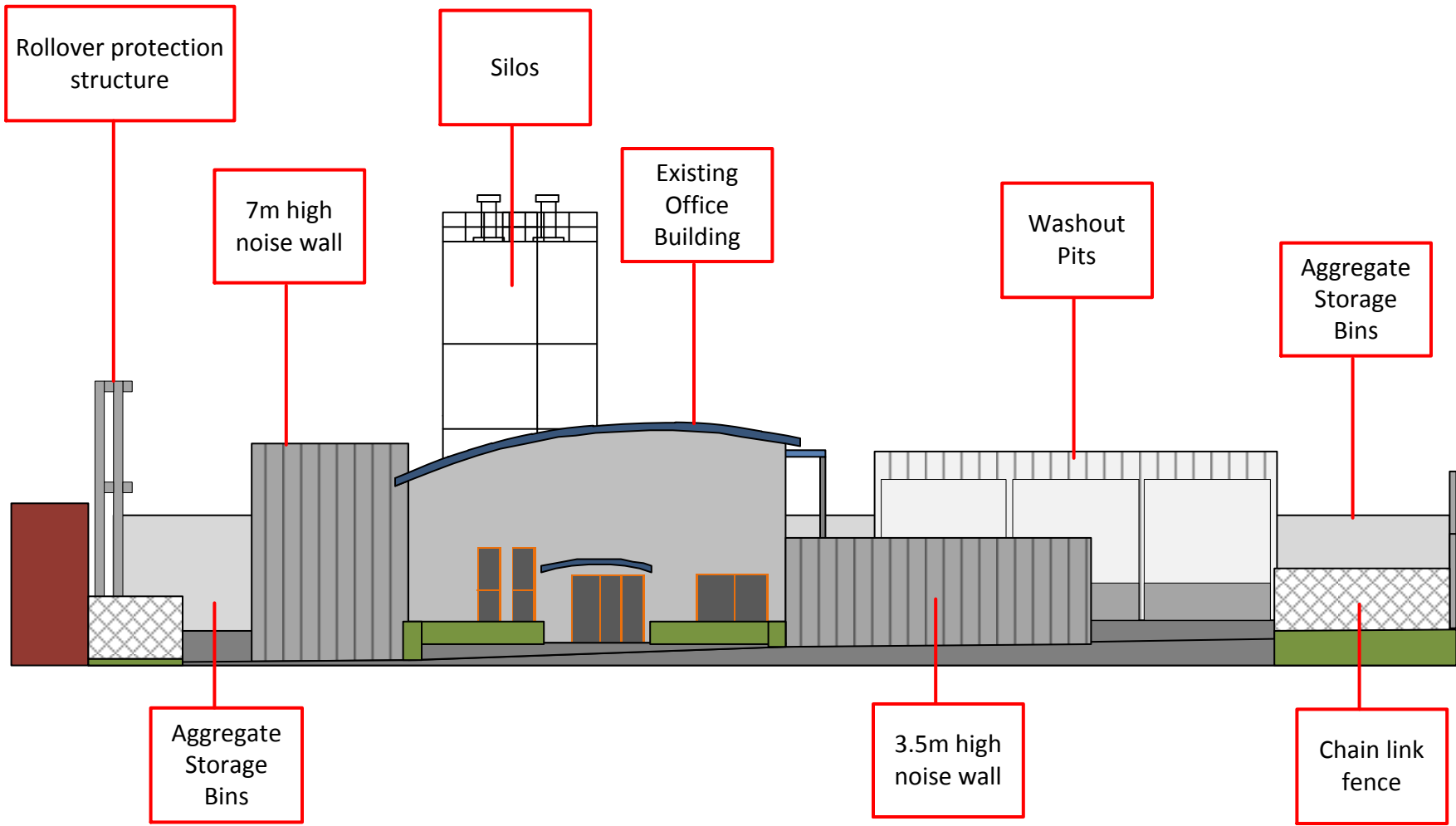
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A



REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		

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**ALBANY CONCRETE PLANT
 CONCEPTS
 ELEVATION KELLY ST**

SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P_CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:200	DO NOT SCALE	SHEET 16 OF 17	

4

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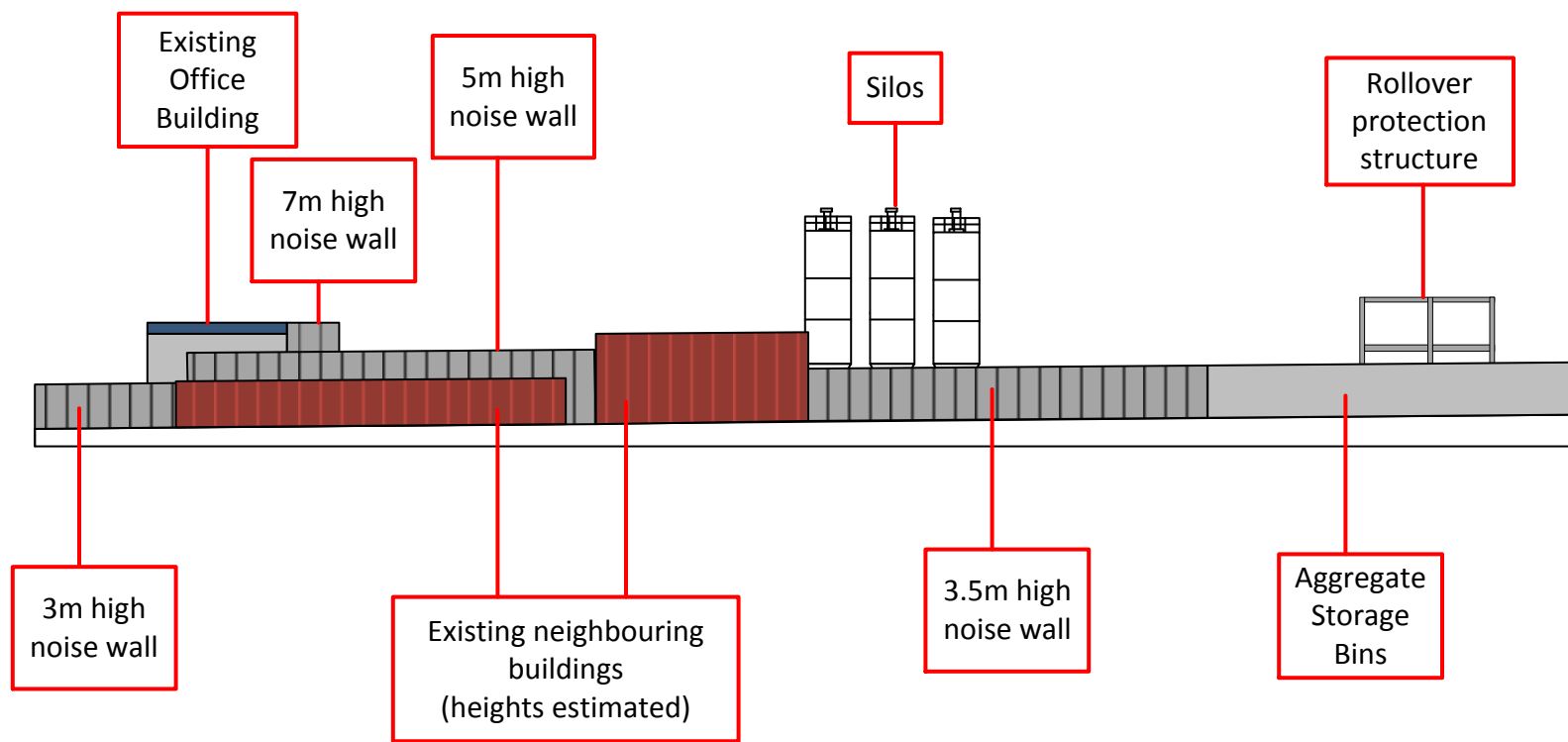
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REVISIONS					
REV	DESCRIPTION	DRAWN	DATE	APPROVED	DATE
O	UPDATED FOR NOISE WALLS	S.KINSELLA	25MAY2021		
P	WMS & TEMP PLANT UPDATED	S.KINSELLA	09JUL2021		



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ALBANY CONCRETE PLANT CONCEPTS ELEVATION LOCKE ST			
SIZE A3	FILE NAME 5729-R-19574-PE-DG-001_P.CONCEPTS.VSD	DWG NO 5729-R-19574-PE-DG-001	REV P
SCALE 1:500	DO NOT SCALE	SHEET 17 OF 17	

ALL DIMENSIONS IN m UNLESS NOTED OTHERWISE

4

3

2

1

Annexure 4

Plant Capability

Table 1. Plant requirements

Requirement	Capability	Comments
Production rate (peak)	11 loads per hour 66 m ³ /h (sustained with average of 6.0m ³ /load)	Same capacity as existing plant.
Operating hours	No change	Existing
Production (average)	No change	25,000m ³ / year, 100 m ³ /day
Production (peak)	No change	40,000m ³ /year, 500 m ³ /day
Working day	10h	Site will need lighting for low light level operation.
Batch size	7.0m ³ (maximum) Weighers to be sized for single batching: 32MPa No fines Stabilised sand	No minis unless fitted with extended chutes.
Mixing technology	Dry mix	
Quality standard	AS 1379 "Specification and supply of concrete"	
Aggregate storage	4 = 2x coarse + 2x fine 4x decorative	Minimum 200m ³ equivalent storage. Minimum 50t ground storage for each decorative aggregate.
Cementitious material storage	3 x silos (minimum): GP, FA and Off-white comprised of: 2 x 80m ³ silos 1 x 80m ³ split silo (40T capacity each side)	2 weighers will be considered to ensure that white cement is not contaminated.
Water storage	100kL potable (500m ³ equivalent) 50kL recycled (from Concrete Plant)	No provision for hot and chilled water.
Admixtures	6	Bunded and roofed.
Additives	Stand and conveyor, or platform for adding bags.	Colour and fibres.
Slumping	1x slump stand to be provided	Preferred provision for another 1 later
Agitators	4 (base); 6 (max.)	6- or 8- or wheelers Capacity of trucks not >7.0m ³
FEL	1x Cat 938 or equivalent	To be provided by Business Unit.
Control	TBC	
Ticketing	CommandConcrete	
Power	Mains	Existing supply
Communications	Required for Command Concrete	Existing
Accommodation	New Batch Office required	Retain existing offices

Annexure 5

Traffic Movements

Project: **Albany Concrete Plant**

No. agitators: 6 -
 Average load size: 6 m3
 Peak load size: 7.5 m3
 Average production rate: 66
 Peak production rate: 82.5 m3/h
 11 Loads/h
 Production: 500 m3/day

	Loads	Production, m3		Agitator			GP		EcoCen	
		m3/h	m3	Out	In	Sum	138	74		
0:00	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0.0	0.0	0.0	0.0
2:00	0	0	0	0	0	0	0.0	0.0	0.0	0.0
3:00		0	0	0	0	0	0.0	0.0	0.0	0.0
4:00		0	0	0	0	0	0.0	0.0	0.0	0.0
5:00		0	0	0	0	0	0.0	0.0	0.0	0.0
6:00	6	36	36	6	0	6	5.0	2.7		
7:00	10	60	96	10	6	16	8.3	4.4		
8:00	11	66	162	11	10	21	9.1	4.9		
9:00	11	66	228	11	11	22	9.1	4.9		
10:00	11	66	294	11	11	22	9.1	4.9		
11:00	8	48	342	8	11	19	6.6	3.6		
12:00	8	48	390	8	8	16	6.6	3.6		
13:00	6	36	426	6	8	14	5.0	2.7		
14:00	6	36	462	6	6	12	5.0	2.7		
15:00	3	18	480	3	6	9	2.5	1.3		
16:00	3	18	498	3	3	6	2.5	1.3		
17:00		0	498	0	3	3	0.0	0.0		
18:00		0	498	0	0	0	0.0	0.0		
19:00	0	0	498	0	0	0	0.0	0.0		
20:00	0	0	498	0	0	0	0.0	0.0		
21:00	0	0	498	0	0	0	0.0	0.0		
22:00	0	0	498	0	0	0	0.0	0.0		
23:00	0	0	498	0	0	0	0.0	0.0		
		498		83			68.7	36.9		
				498						

Materials Usage, t				
Mix design, kg/m ³				
FA	20/14	10	MS	FS
78	767	201	351	528

0	0	0	0	0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
2.8	27.6	7.2	12.6	19.0
4.7	46.0	12.1	21.1	31.7
5.1	50.6	13.3	23.2	34.8
5.1	50.6	13.3	23.2	34.8
5.1	50.6	13.3	23.2	34.8
3.7	36.8	9.6	16.8	25.3
3.7	36.8	9.6	16.8	25.3
2.8	27.6	7.2	12.6	19.0
2.8	27.6	7.2	12.6	19.0
1.4	13.8	3.6	6.3	9.5
1.4	13.8	3.6	6.3	9.5
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0

38.8 382 100 175 263

Truck movements in,											
Delivery Qty, t/truck											

Tanker (GP)			Tanker (EcoCem)			Tanker (FA)			Tipper (20/14mm)		
28			28			18			40		
In	Out	Sum	In	Out	Sum	In	Out	Sum	In	Out	Sum

		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
1		1			0			0			0
1	1	2			0			0			0
	1	1	1		1			0	1	1	2
		0		1	1	1		1	1	1	2
		0			0		1	1	1	1	2
1		1			0			0	1	1	2
	1	1	1		1			0	1	1	2
		0		1	1	1	1	1	1	1	2
		0			0		1	1	2	1	2
		0			0			1	1	2	4
		0			0			0	1	1	2
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0
		0			0			0			0

3 2 3 10
84 56 54 400

In/out									Tankers		Tippers,										
ck									max.no./h		max. no./h										
Tipper (10mm)			40			Tipper (MS)			40			Tipper (FS)			40			1		3	
In	Out	Sum	In	Out	Sum	In	Out	Sum	In	Out	Sum										
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			0			0				
		0			0			0			0			1		0					
		0			0			0			0			1		0					
		0	1	1	2	1	1	2			2			1		3					
		0	1	1	2	1	1	2			2			1		3					
	1	1	2		0	1	1	2			2			0		3					
		0	1	1	2	1	1	2			2			1		3					
	1	1	2	1	1	2					0			1		3					
		0			0	2	2	4			4			1		3					
	1	1	2		0	1	1	2			2			1		3					
		0	1	1	2			0			0			0		3					
		0			0			0			0			0		1					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					
		0			0			0			0			0		0					

Light vehicles			
In	Out	Sum	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
		0	0
		0	0
		0	7
5		5	23
3		3	32
1	1	2	32
		0	29
1	1	2	28
		0	24
1	1	2	24
		0	20
1	1	2	18
	5	5	13
	3	3	6
		0	0
		0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

SUM

3
120

5
200

7
280

12 12

Annexure 6
Acoustic Report Lot 102

ACOUSTIC ASSESSMENT

HOLCIM ALBANY REDEVELOPMENT

25 KELLY STREET

FOR

HOLCIM (AUSTRALIA) PTY LTD

MAY 2021

REFERENCE: 27737-2-20273

DOCUMENT CONTROL PAGE

ACOUSTIC ASSESSMENT

HOLCIM ALBANY REDEVELOPMENT

Job No: 20273

Document Reference: 127737-2-20273

FOR

HOLCIM (AUSTRALIA) PTY LTD

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2.0	BASELINE NOISE	2
3.0	ACOUSTIC CRITERIA	5
4.0	METHODOLOGY	8
5.0	PREDICTED NOISE LEVELS	8
6.0	CONCLUSION	9

APPENDIX

A	Noise Contour Plots & Noise Mitigation Wall Detail
---	--

1.0 INTRODUCTION

Holcim (Australia) Pty Ltd commissioned Herring Storer Acoustics to carry out an acoustic assessment of noise emissions for a redevelopment of the Holcim 25 Kelly Street site in Albany.

The existing site is within an Industrial Area, with residences further to the east, off Bevan Street. The proposed redeveloped batching plant is to incorporate noise mitigation and design to facilitate operation during the regulation night-time period as some concrete pours are required during the early morning period. The measures to mitigate noise emissions to noise sensitive receptors include heavy vehicle access via 25 Kelly Street (within the industrial area), and acoustic barriers to effectively attenuate noise towards receptors.

Operating scenarios under consideration are:

- A Day operation of the batching plant; and
- B Night operation (under night operation management practices).

The neighbouring noise sensitive premises and batch plant location are shown on Figure 1.

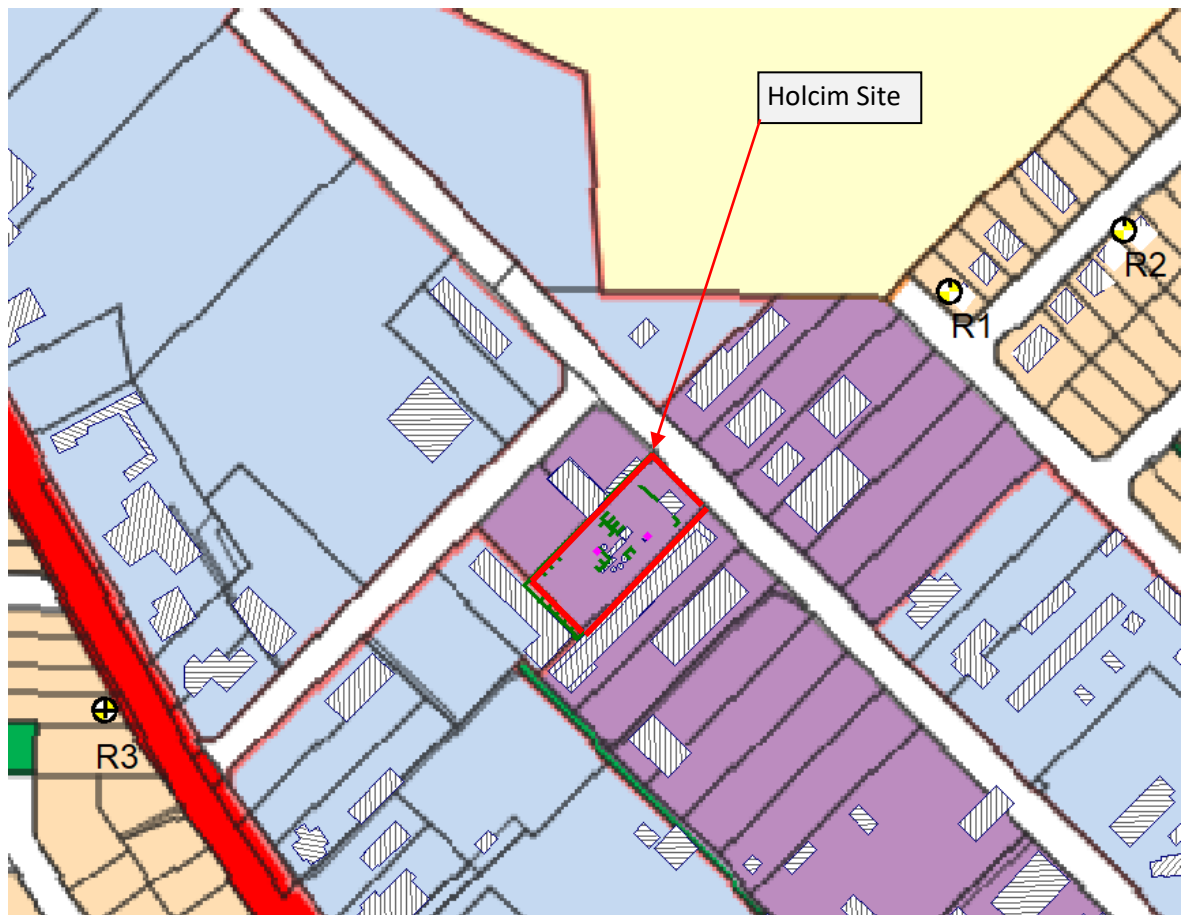


FIGURE 1 – AERIAL VIEW OF SITE AND NOISE SENSITIVE RECEPTORS

The purpose of this assessment was to determine whether the project will comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*.

2.0 BASELINE NOISE

Assessment of baseline noise for this site is dependent on being able to locate noise monitoring equipment near key receptor locations. It is made more complex for this project in that Holcim currently operate the existing batching plant, and baseline noise by definition, is the background noise associated with operations other than the site being assessed.

Baseline noise measurements were conducted over the period Thursday 19th November – Tuesday 1st December, 2020. Over this period the Holcim site was batching concrete during some weekdays (including the 19th), typically batching occurs during the morning period.

The key receptor locations are those residential premises on Bevan Street, separated from the Holcim site by a block of light industrial premises.

Noise monitoring has been undertaken by positioning a statistical noise monitor just inside a warehouse premises, inside the rear wire mesh fence close to the nearest residential receptor on Bevan Street. This monitoring location was selected as it is near to the key residential receptor and is a relatively secure location (with permission). The Holcim plant does not operate at all times, therefore extraction of noise data over a weekend provides an indication of baseline noise.

The measured background noise is shown on the attached graphs. The graphs includes a period over the weekends when Holcim operations were not occurring. Refer Figures 2, 3, 4 and 5.

The acoustic parameters of interest include the statistical L_{A90} and L_{A10} levels. The subscript 90 refers to the 10th percentile for the 15 minute measurement period, essentially the noise level in dB(A) which is not exceeded for 90 seconds within a 15 minute measurement period (nearly the lowest noise level). The L_{A90} noise levels are of interest in baseline noise monitoring because this represents the period where plant noise levels could be most audible at residential receptor locations.

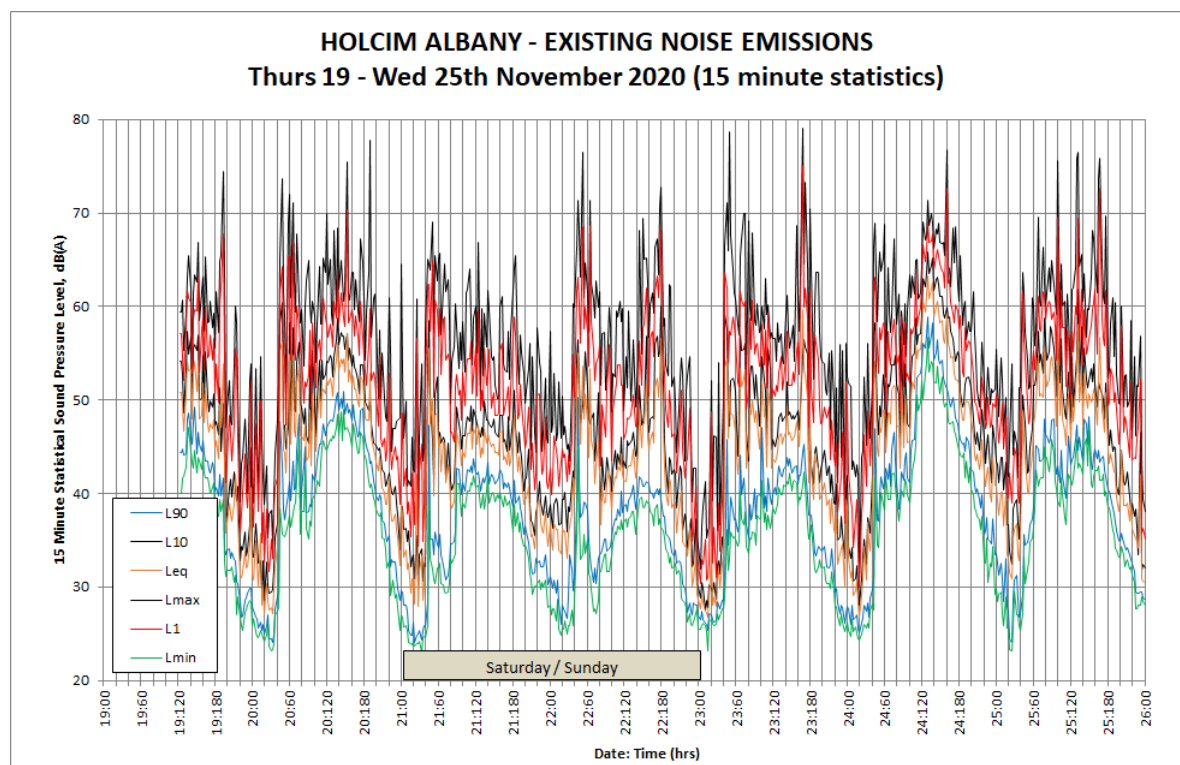


FIGURE 2 – BACKGROUND NOISE MONITORING – WEEK 1

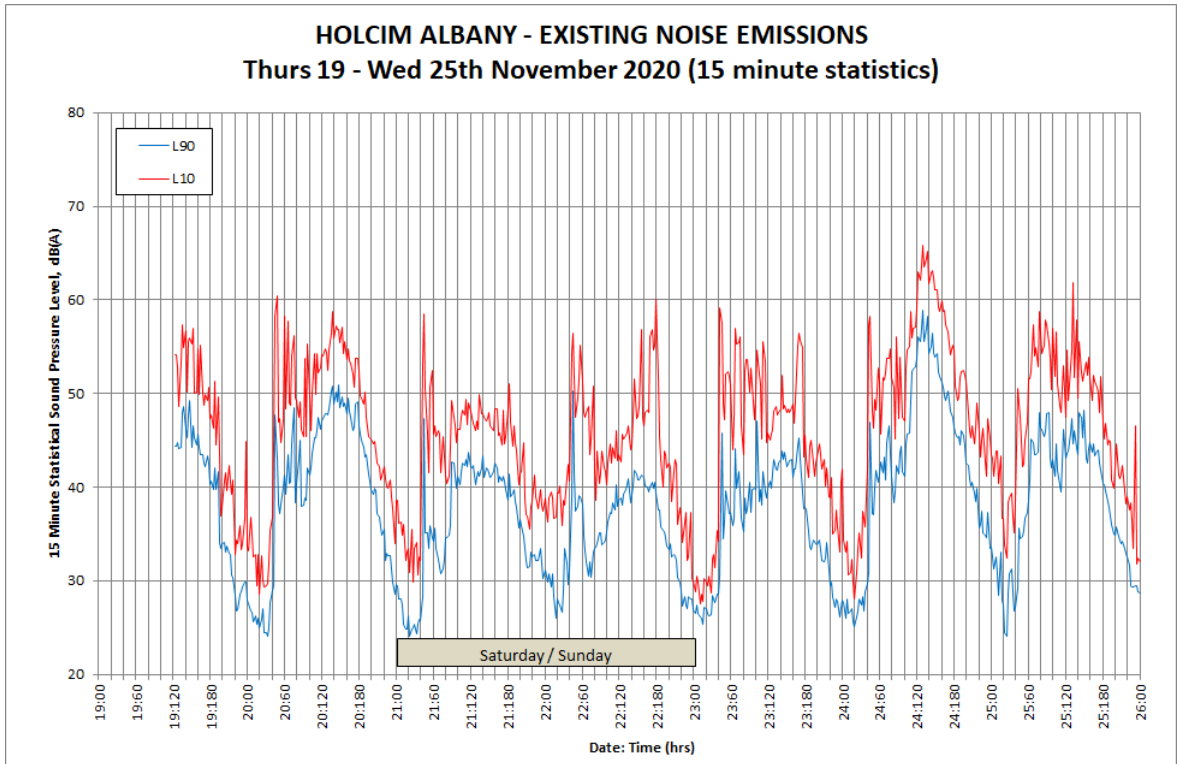


FIGURE 3 – BACKGROUND NOISE MONITORING L_{A90} AND L_{A10} – WEEK 1

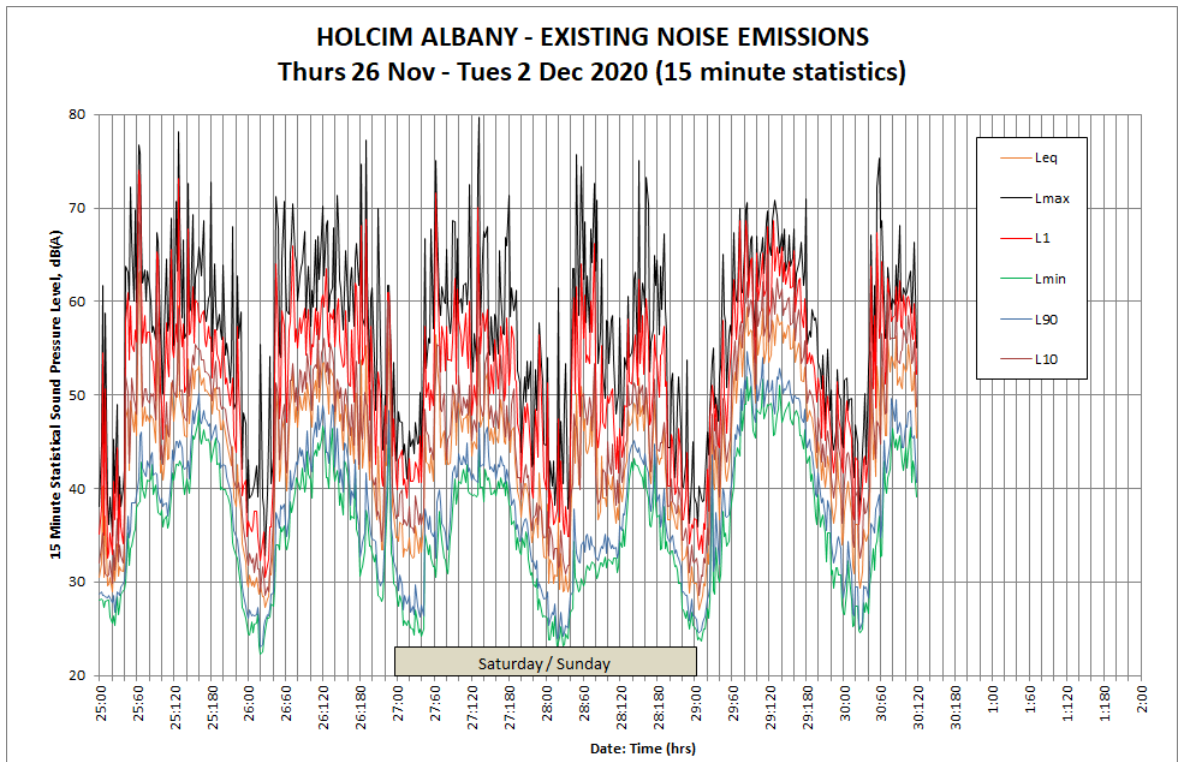


FIGURE 4 – BACKGROUND NOISE MONITORING – WEEK 2

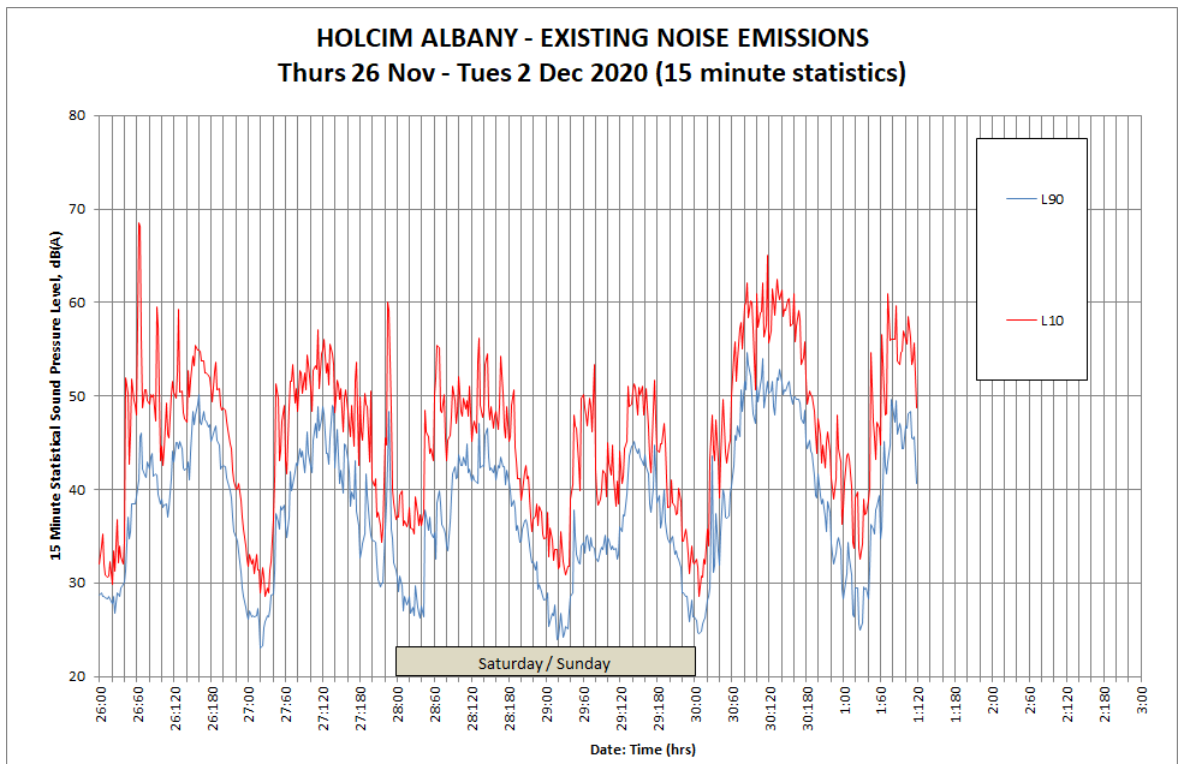


FIGURE 5 – BACKGROUND NOISE MONITORING L_{A90} AND L_{A10} – WEEK 2

Observations at the noise monitor location near Bevan Street residences are that there are a number of premises within the industrial area that emit both steady state and intermittent noise. The noise emissions include noise emissions from the existing Holcim batching plant, as well as emissions from warehousing and earthmoving contractor premises. In addition, the general background noise from wildlife (including birds), wind induced tree noise and local traffic are incorporated in the baseline noise measurements.

Baseline Noise Impact

The night-time 'assigned level' for residences on Bevan Street has been determined to be an L_{A10} of 42 dB(A). The acoustic design for the proposed plant includes an allowance for noise characteristic, with design emission levels at night of an L_{A10} of 37 dB(A) or lower. This adjustment also covers situations and time periods where there is significant noise emission from other premises (in which case noise characteristic from the Holcim site will be masked), where to comply with Regulation 7 (2) 'significantly contributing', and adjustment of +5 dB could apply during concurrent noise emission events.

3.0 ACOUSTIC CRITERIA

The Noise Regulations stipulate maximum allowable external noise levels at premises in receipt of the noise. For the highly sensitive area of a noise sensitive premises the allowable assigned noise levels are determined by the calculation of an influencing factor which is then added to the 'baseline assigned levels' shown in Table 3.1. For the highly sensitive area of a noise sensitive premises, the influencing factor is calculated for the usage of land within the two circles, having radii of 100m and 450m from the premises of concern. For other areas of a noise sensitive premises (other than highly sensitive area), commercial and industrial premises the allowable assigned noise levels are fixed, as listed in Table 3.1.

TABLE 3.1 – ASSIGNED OUTDOOR NOISE LEVELS

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A 10}	L _{A 1}	L _{A max}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 to 1900 hours Sunday and public holidays	40 + IF	50 + IF	65 + IF
	1900 to 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + IF	45 + IF	55 + IF
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90
Industrial and utility premises in the Kwinana Industrial Area	All hours	75	85	90

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.
IF = Influencing Factor

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

TABLE 3.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS WHEN MUSIC IS NOT PRESENT

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

Note: Where music is present the adjustment is +10 dB, and is +15dB if impulsiveness is present. The adjustments are cumulative to a maximum of 15 dB.

At the neighbouring receptors, the Influencing Factors would be as outlined in Table 3.3.

TABLE 3.3 – RECEIVER INFLUENCING FACTORS

Receptor	Industrial% Inner	Industrial% Outer	Commercial% Inner	Commercial% Outer	TF	IF	Night-time 'assigned level', LA10 dB(A)
R1	27	41	0	0	0	7	42
R2	0	37	0	0	0	4	39
R3	15	37	0	1	6	11	46

Notes:

1. TF = Traffic Factor.
2. IF = Influencing Factor.

The Local Planning Scheme shows the industrial classified area in purple and commercial classified area in light tan ('C'), with tan areas being residential only.

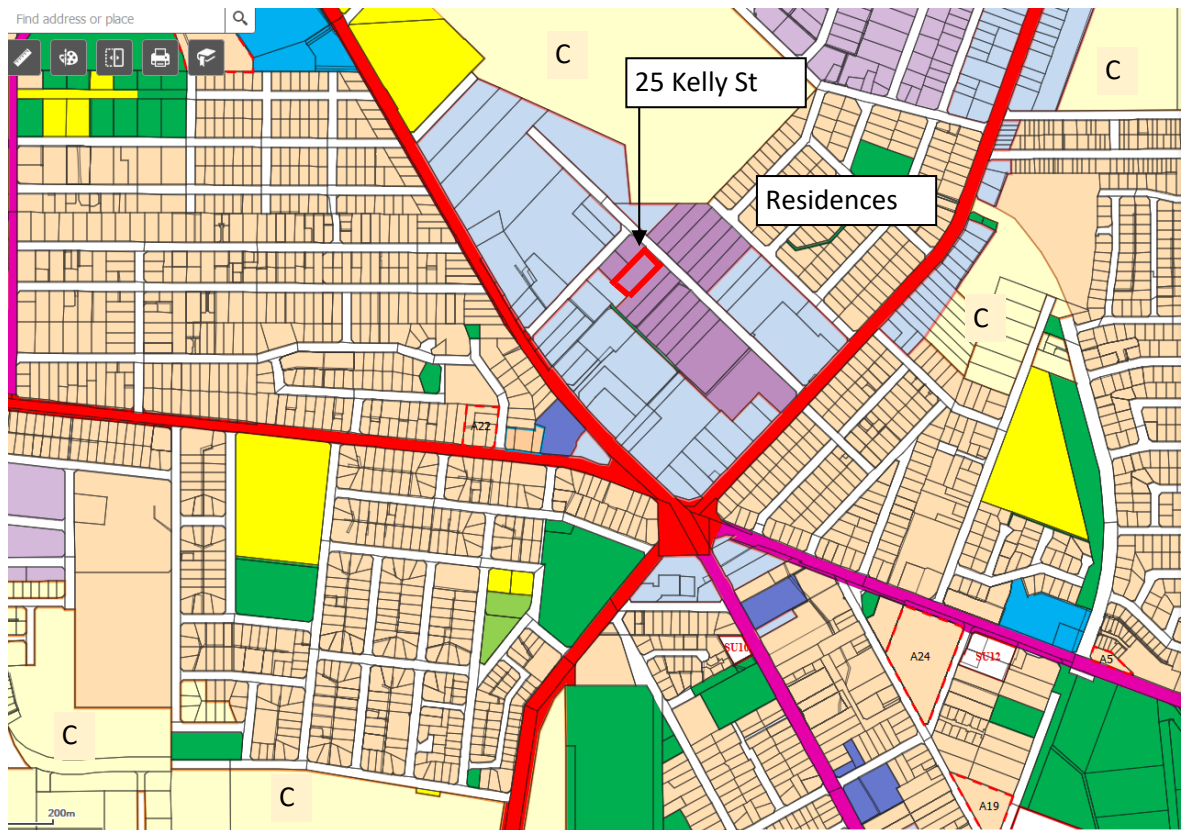


FIGURE 6 – LOCAL PLANNING SCHEME

Albany Highway (North of Roundabout, 21,941 vpd 2017/18) is classified as a 'major road' under the regulations. Chester Pass Road (South Coastal Highway) is classified as a 'secondary road' under the regulations (11,791 vpd 2017/18).

The assigned noise levels for the key residential receptors are listed in Tables 3.4 - 3.6.

**TABLE 3.4 – ASSIGNED OUTDOOR NOISE LEVELS
BEVAN STREET RESIDENCE – R1**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A 10}	L _{A 1}	L _{A max}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	52	62	72
	0900 to 1900 hours Sunday and public holidays	47	57	72
	1900 to 2200 hours all days	47	57	62
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	42	52	62

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

**TABLE 3.5 – ASSIGNED OUTDOOR NOISE LEVELS
TURNER STREET RESIDENCE – R2**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A 10}	L _{A 1}	L _{A max}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	49	59	69
	0900 to 1900 hours Sunday and public holidays	44	54	69
	1900 to 2200 hours all days	44	54	59
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	39	49	59

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

**TABLE 3.6 – ASSIGNED OUTDOOR NOISE LEVELS
TURNER STREET RESIDENCE – R3**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A 10}	L _{A 1}	L _{A max}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	56	66	76
	0900 to 1900 hours Sunday and public holidays	51	61	76
	1900 to 2200 hours all days	51	61	66
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	46	56	66

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

It is the L_{A10} parameter which applies to majority of the activities on the Holcim site, including loading and slumping. The nature of batch plant operation is that there will be periods of full operational activity (usually in the morning) but there are often periods of low activity.

The mixing (during the loading phase) and slumping can generate tonal noise emissions.

To be compliant during the night-time period under the regulations, noise emissions from the proposed Holcim operations should not exceed an L_{A10} of 37 dB(A) at night at the nearest residential receptors on Bevan Street (R1), after allowance for tonal characteristic.

4.0 METHODOLOGY

Noise levels were predicted using the acoustic software “SoundPlan” for worst case wind conditions as per the DER ‘Draft Guideline on Environmental Noise for Prescribed Premises (May 2016)’ for day operation.

It is noted that ‘worst case’ wind conditions refer to conditions where there is a temperature inversion in conjunction with light winds in the direction from noise source to receiver, resulting in effective sound propagation to receiver locations.

The sound power levels used in the acoustic modelling are shown in Table 3.1. These sound power levels have been determined based on acoustic measurement and verification of Holcim operations at a number of sites including existing Albany operations.

TABLE 4.1 – EQUIPMENT SOUND POWER LEVELS

Where tonality is present	Sound Power Level, dB(A)
Agi Slumping	110
Materials Loader	104
Agi Mixing (Plant and Agi)	109

The site layout provided by Holcim was used as a basis for the acoustic modelling. Where noise emissions were predicted to be non-compliant during the night time period, additional noise mitigation measures in the form of acoustic barriers were added to achieve a compliant noise emission. These acoustic barriers are shown in Appendix A.

5.0 PREDICTED NOISE LEVELS

Noise emissions have been predicted for two scenarios, these being:

Night-time operation

The main noise management measure for the night-time period under the regulations (prior to 7am) is that mixing and slumping operations are not to occur at the same time. A number of acoustic barrier walls have been located and sized to provide additional acoustic attenuation to residences to the east of the Holcim site (Bevan and Turner Streets).

Day-time operation

Day time operations are not restricted due to noise mitigation requirements.

Appendix A shows the proposed layout of the Concrete Batching Plant. Heavy vehicles will enter and depart from the site via 25 Kelly Street, within the industrial area.

The design incorporates acoustic mitigation measures, in the form of acoustic barriers.

Acoustic barrier walls are assumed to be tilt up concrete or similar to at least 3m, with the option of sheet metal to make up the required height (to be at least 0.6mm BMT - bare metal thickness).

A summary of the predicted residential receiver noise levels are shown in Table 5.1 for the ‘worst case’ wind scenario with the plant at full capacity.

TABLE 5.1 – PREDICTED NOISE LEVELS

Receiver Location	Night-Time Assigned Level L _{A10} dB(A)	Predicted Night-time L _{A10} Noise Emission, dB(A)	Day-Time/Sunday Assigned Level L _{A10} dB(A)	Predicted Day-time L _{A10} Noise Emission, dB(A)	Status
Mixing Only with Loader – Night Time					
R1- Bevan Street	42	37 (42)			Complies
R2 – Turner Street	39	24 (29)			Complies
R3 – Albany Highway	46	29 (34)			Complies
Slumping Only with Loader – Night Time					
R1- Bevan Street	42	36 (41)			Complies
R2 – Turner Street	39	26 (31)			Complies
R3 – Albany Highway	46	30 (35)			Complies
Slumping and Mixing with Loader – Day Time					
R1- Bevan Street			52	39 (44)	Complies
R2 – Turner Street			49	28 (33)	Complies
R3 – Albany Highway			56	31 (36)	Complies

Note: (##) indicates the sound level for -time compliance after adjustment of +5 dB(A) for 'tonal characteristic' at the receptor.

The proposed Holcim Albany batching plant with noise mitigation walls incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

6.0 CONCLUSION

Holcim (Australia) Pty Ltd commissioned Herring Storer Acoustics to carry out an acoustic assessment of noise emissions for a redevelopment of the Holcim 25 Kelly Street site in Albany.

The existing site is within an Industrial Area, with residences further to the east, off Bevan Street. The proposed redeveloped batching plant is to incorporate noise mitigation and design to facilitate operation during the regulation night-time period as some concrete pours are required during the early morning period. The measures to mitigate noise emissions to noise sensitive receptors include heavy vehicle access via 25 Kelly Street (within the industrial area), and acoustic barriers to effectively attenuate noise towards receptors.

Operating scenarios under consideration are:

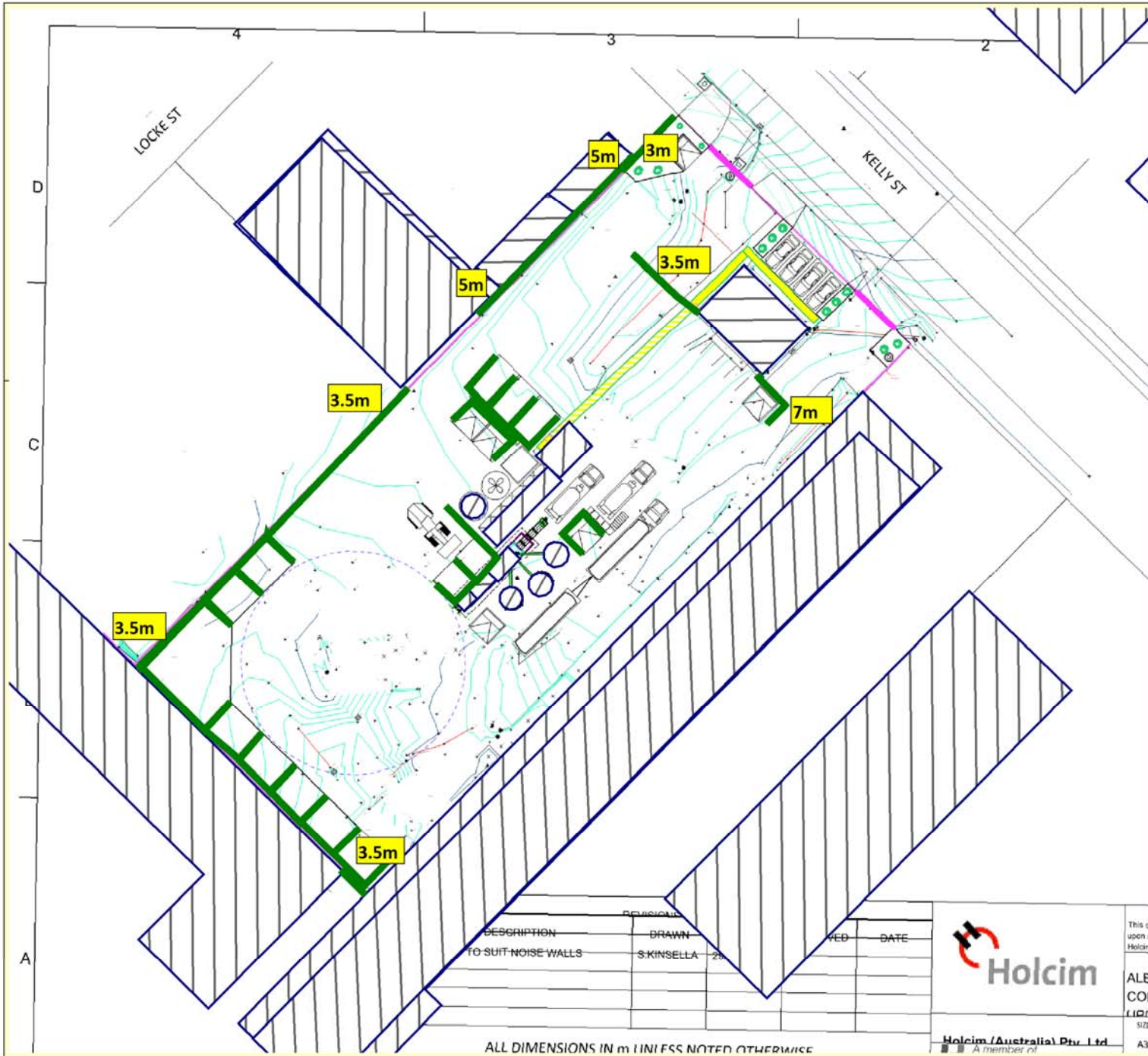
- A Day operation of the batching plant; and
- B Night operation (under night operation management practices).

The site layout provided by Holcim was used as a basis for the acoustic modelling. Where noise emissions were predicted to be non-compliant during the night time period, additional noise mitigation measures in the form of acoustic barriers were added to achieve a compliant noise emission.

The proposed Holcim Albany batching plant with noise mitigation walls incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

APPENDIX A

NOISE CONTOUR PLOTS & NOISE MITIGATION WALL DETAIL



Customer:
 Holcim
 Project: Holcim Albany Batching Plant
 Project-No.

ALBANY BATCHING PLANT - SLUMPING
 NOISE MITIGATION WALLS (GREEN)
 W8

Map
0

Result number 0
 Calculation in above ground

Project engineer: Paul Drew
 Created: 12/05/2021
 Processed with SoundPLAN 8.2, Update 5/05/2021

Signs and symbols

- Main building
- Wall
- Point receiver

Length scale 1:750

REVISIONS	DESCRIPTION	DRAWN	CHECKED	DATE
1	TO SUIT NOISE WALLS	S. KINSELLA		

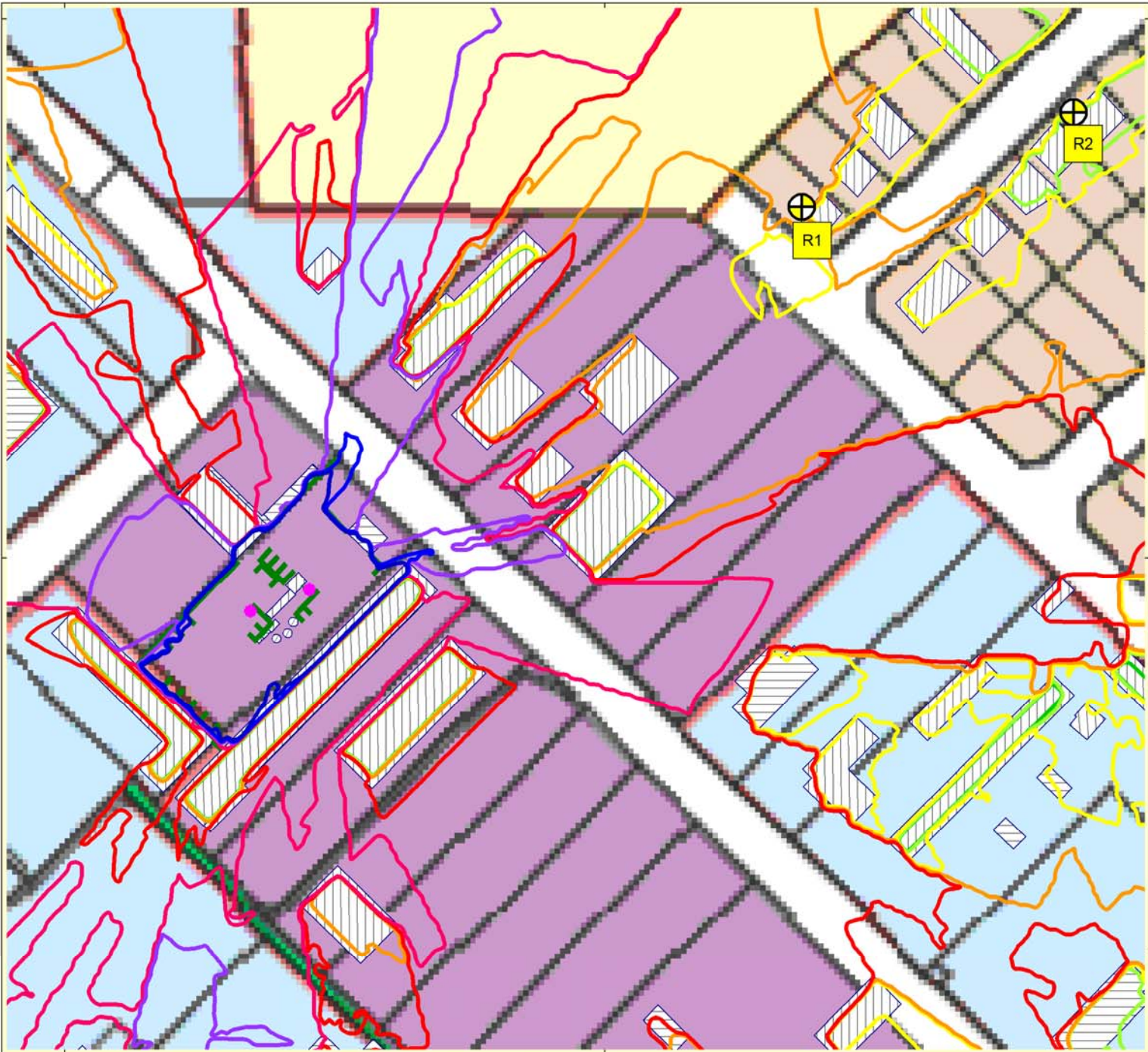


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Customer:
 Holcim
 Project: Holcim Albany Batching Plant
 Project-No.

ALBANY BATCHING PLANT - MIXING
 COMPLIANCE LEVELS (ADJUSTED)

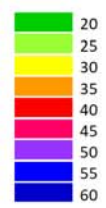
Industrial - 60 dB(A)
 Commercial - 55 dB(A)
 R1 - Night 37 dB(A)
 R2 - Night 34 dB(A)

Map
1

2021May Agi Slumping Wall8 All Plant -Mixing W8
 Result number 1026
 Calculation in 1.5 m above ground

Project engineer: Paul Drew
 Created: 12/05/2021
 Processed with SoundPLAN 8.2, Update 5/05/2021

Noise Levels
 dB(A)

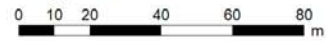


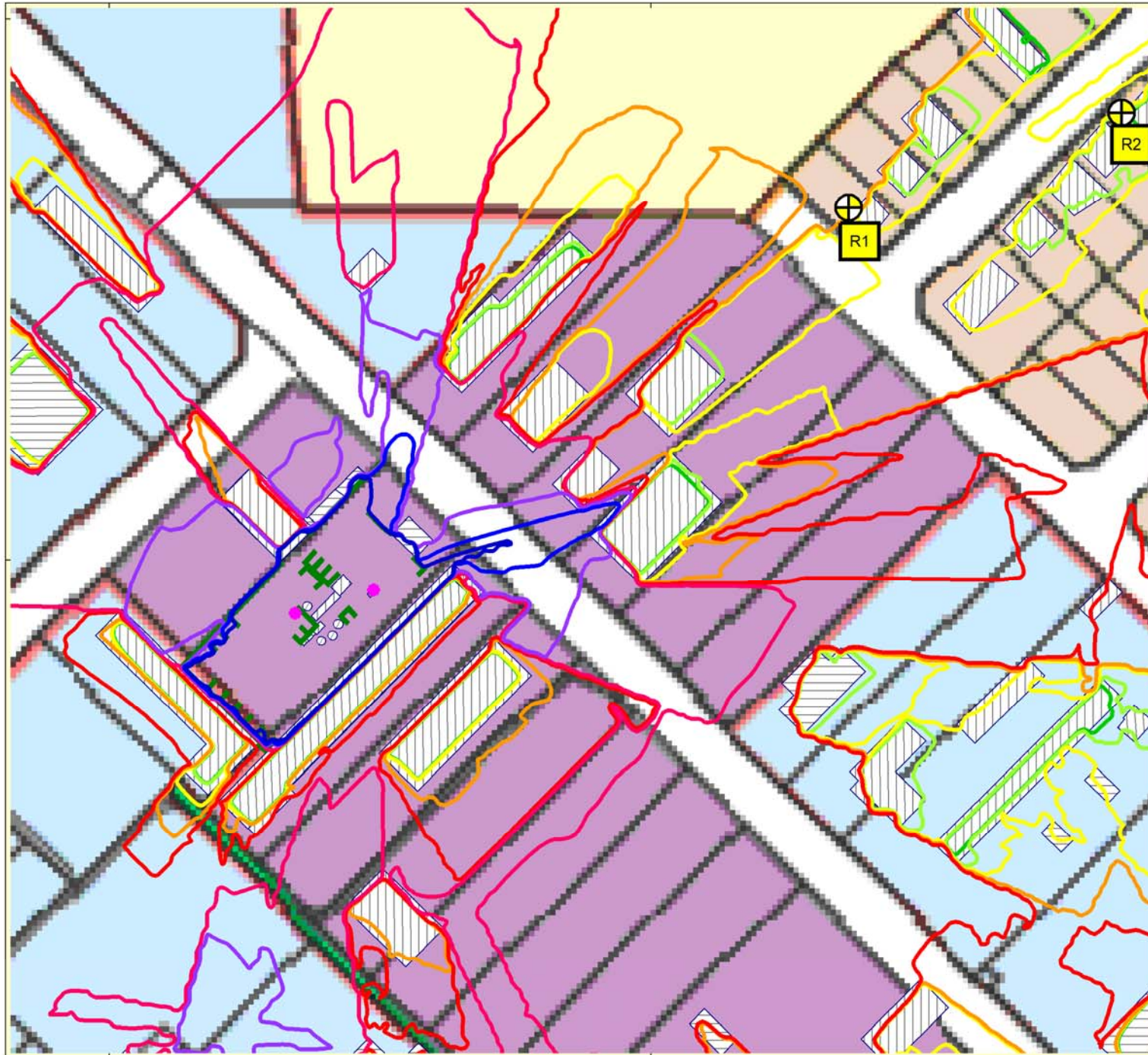
Signs and symbols

- Main building
- Wall
- Point receiver
- Point source

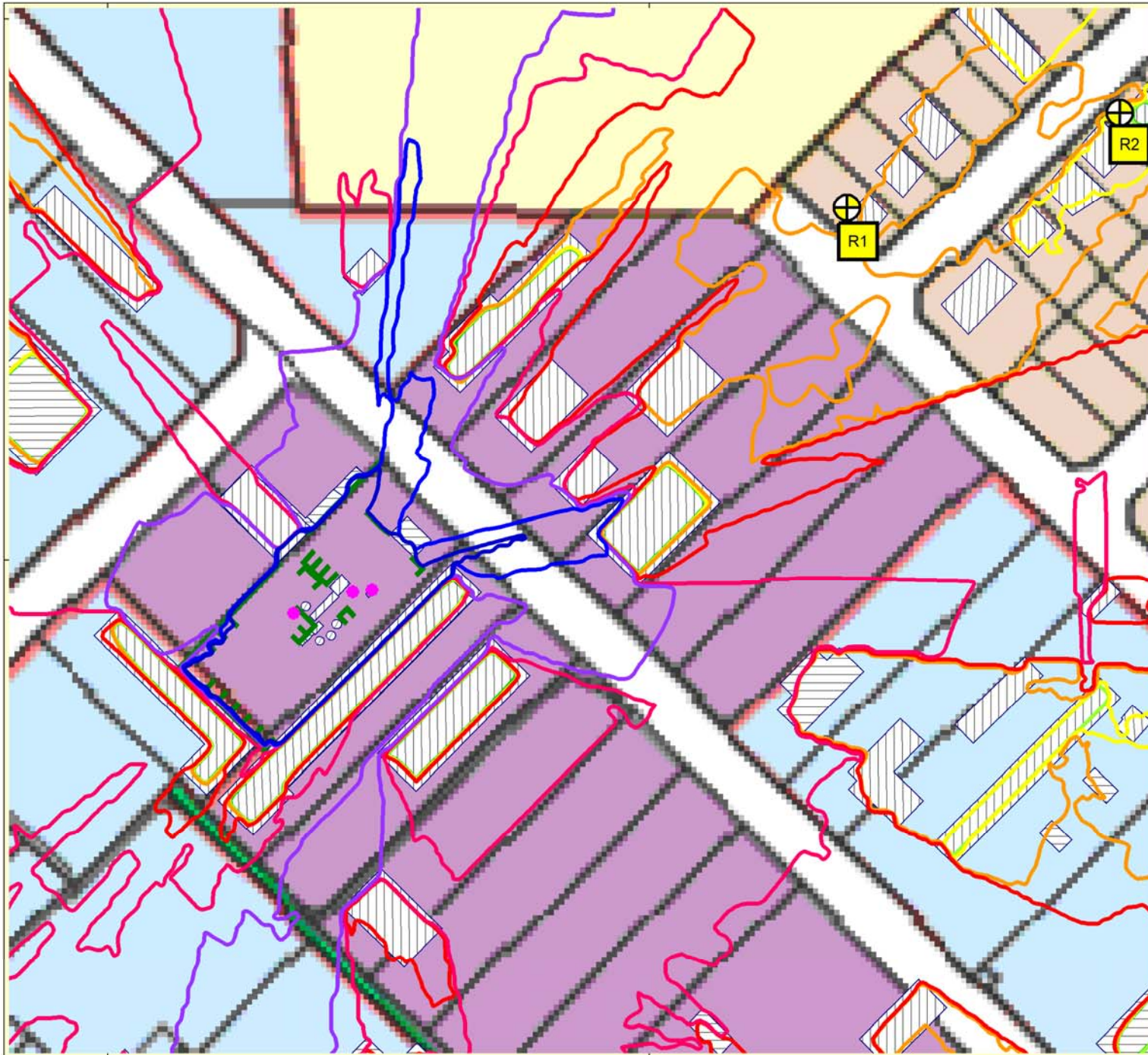


Length scale 1:2000





Customer: Holcim Project: Holcim Albany Batching Plant Project-No.	
ALBANY BATCHING PLANT - SLUMPING COMPLIANCE LEVELS (ADJUSTED) Industrial - 60 dB(A) Commercial - 55 dB(A) R1 - Night 37 dB(A) R2 - Night 34 dB(A)	Map 2
2021May Agi Slumping Wall8 All Plant - Slumping W8 Result number 1024 Calculation in 1.5 m above ground	
Project engineer: Paul Drew Created: 12/05/2021 Processed with SoundPLAN 8.2, Update 5/05/2021	
Noise Levels dB(A) 	Signs and symbols
 Length scale 1:2000 	
 HERRING STORER ACOUSTICS	



Customer:
Holcim
 Project: **Holcim Albany Batching Plant**
 Project-No.

ALBANY BATCHING PLANT - SLUMPING and MIXING **Map 3**

COMPLIANCE LEVELS (ADJUSTED)

Industrial - 60 dB(A)
 Commercial - 55 dB(A)
 R1 - Day 47 dB(A)
 R2 - Day 44 dB(A)

2021May Agi Slumping Wal8 All Plant - Slumping&Mix
Result number 1027
 Calculation in 1.5 m above ground

Project engineer: Paul Drew
 Created: 12/05/2021
 Processed with SoundPLAN 8.2, Update 5/05/2021

Noise Levels
 dB(A)

20
25
30
35
40
45
50
55
60

Signs and symbols

- Main building
- Wall
- Point receiver
- Point source

Length scale 1:2000

0 10 20 40 60 80 m

N

HERRING STORER
ACOUSTICS

Annexure 7
Acoustic Report Lot 101

ACOUSTIC ASSESSMENT

**HOLCIM ALBANY REDEVELOPMENT
TEMPORARY MOBILE BATCH PLANT**

LOCKE STREET

FOR

HOLCIM (AUSTRALIA) PTY LTD

JUNE 2021

REFERENCE: 27991-2-20273

DOCUMENT CONTROL PAGE

ACOUSTIC ASSESSMENT

**HOLCIM ALBANY REDEVELOPMENT
TEMPORARY MOBILE BATCH PLANT**

Job No: 20273

Document Reference: 27991-2-20273

FOR

HOLCIM (AUSTRALIA) PTY LTD

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2.0	BASELINE NOISE	2
3.0	ACOUSTIC CRITERIA	4
4.0	METHODOLOGY	7
5.0	PREDICTED NOISE LEVELS	8
6.0	CONCLUSION	9

APPENDIX

A	Noise Contour Plots & Noise Barrier Detail
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1.0 INTRODUCTION

Holcim (Australia) Pty Ltd commissioned Herring Storer Acoustics to carry out an acoustic assessment of noise emissions for a redevelopment of the Holcim 25 Kelly Street site in Albany. During the construction phase of the project, Holcim proposed to continue concrete batching with a mobile batching plant to be located on the adjacent Lot, 16 Locke Street. The mobile batch plant is expected to operate for approximately six months.

The existing site is within an Industrial Area, with residences further to the east, off Bevan Street. The proposed redeveloped batching plant is to incorporate noise mitigation and design to facilitate operation during the regulation night-time period as some concrete pours are required during the early morning period. The proposed temporary mobile batch plant is to include the use of acoustic barriers (mainly double stacked sea containers) to mitigate noise emissions to the surrounding commercial premises. Existing buildings will provide an acoustic barrier to the nearest residential receptors.

Operating scenarios under consideration are:

- A Day operation of the batching plant; and
- B Night operation (under night operation management practices).

The neighbouring noise sensitive premises and proposed temporary mobile batch plant location are shown on Figure 1.

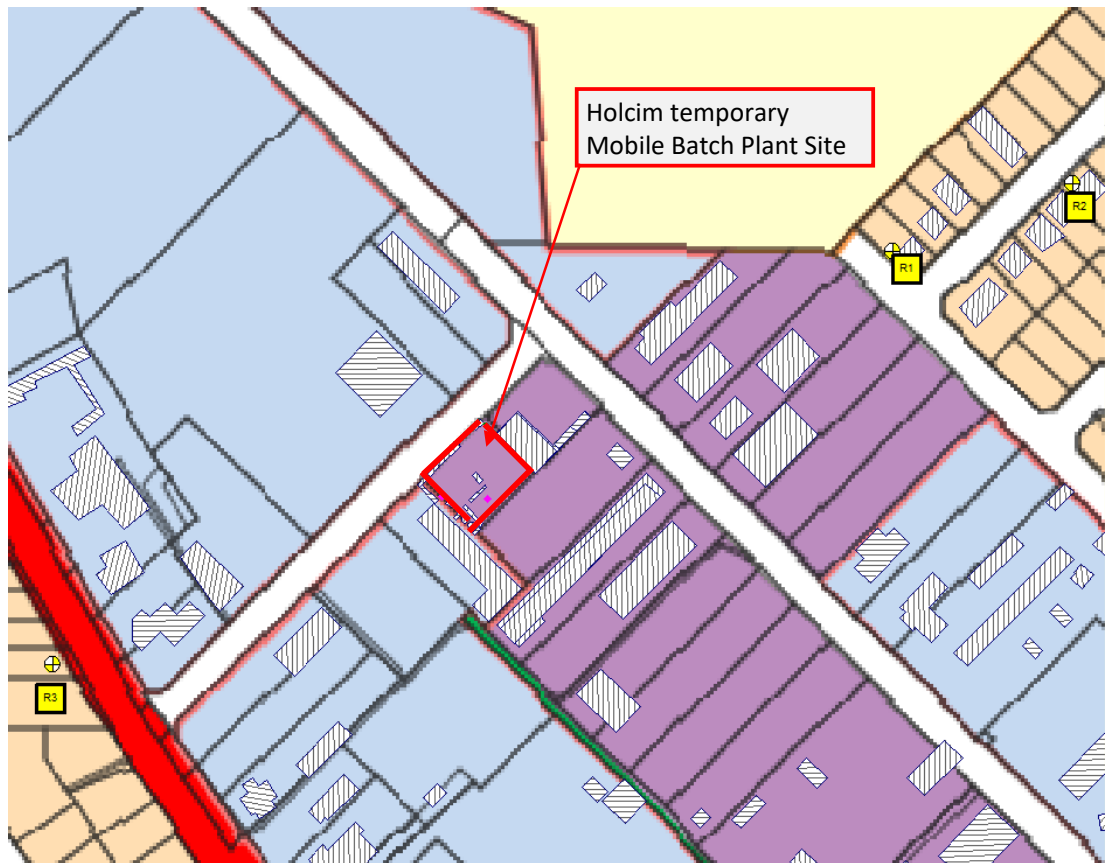


FIGURE 1 – AERIAL VIEW OF SITE AND NOISE SENSITIVE RECEPTORS

The purpose of this assessment was to determine whether the project will comply with the requirements of the *Environmental Protection (Noise) Regulations 1997*.

2.0 BASELINE NOISE

Assessment of baseline noise for this site is dependent on being able to locate noise monitoring equipment near key receptor locations. It is made more complex for this project in that Holcim currently operate the existing batching plant, and baseline noise by definition, is the background noise associated with operations other than the site being assessed.

Baseline noise measurements were conducted over the period Thursday 19th November – Tuesday 1st December, 2020. Over this period the Holcim site was batching concrete during some weekdays (including the 19th), typically batching occurs during the morning period.

The key receptor locations are those residential premises on Bevan Street, separated from the Holcim site by a block of light industrial premises.

Noise monitoring has been undertaken by positioning a statistical noise monitor just inside a warehouse premises, inside the rear wire mesh fence close to the nearest residential receptor on Bevan Street. This monitoring location was selected as it is near to the key residential receptor and is a relatively secure location (with permission). The Holcim plant does not operate at all times, therefore extraction of noise data over a weekend provides an indication of baseline noise.

The measured background noise is shown on the attached graphs. The graphs includes a period over the weekends when Holcim operations were not occurring. Refer Figures 2, 3, 4 and 5.

The acoustic parameters of interest include the statistical L_{A90} and L_{A10} levels. The subscript 90 refers to the 10th percentile for the 15 minute measurement period, essentially the noise level in dB(A) which is not exceeded for 90 seconds within a 15 minute measurement period (nearly the lowest noise level). The L_{A90} noise levels are of interest in baseline noise monitoring because this represents the period where plant noise levels could be most audible at residential receptor locations.

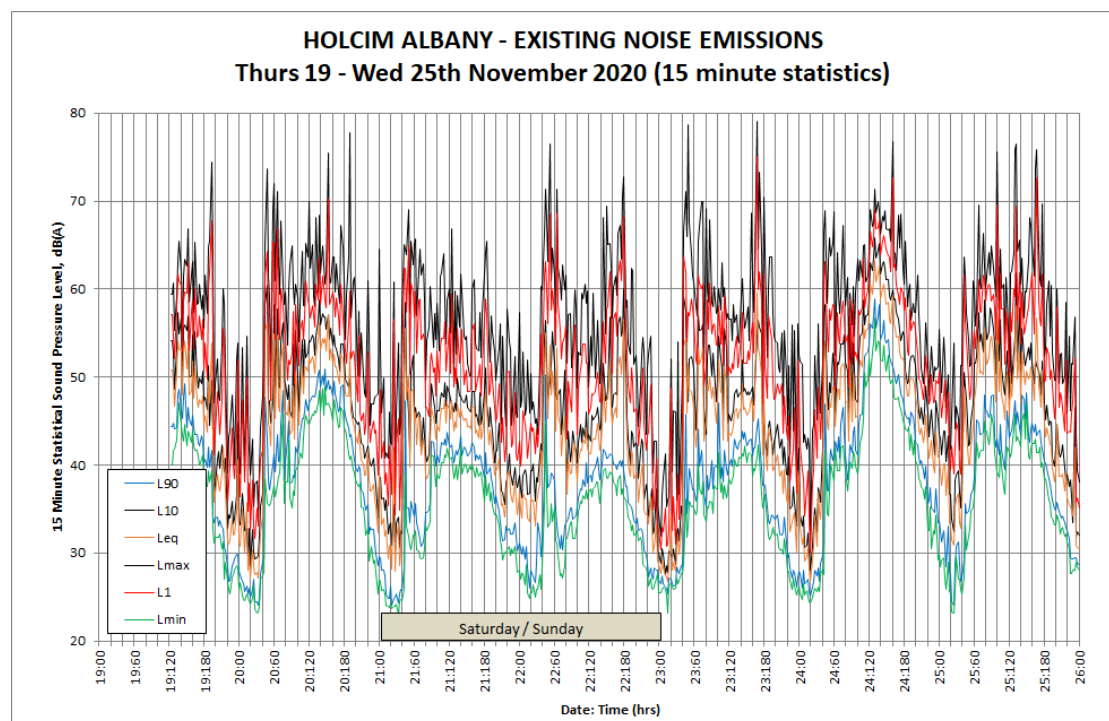


FIGURE 2 – BACKGROUND NOISE MONITORING – WEEK 1

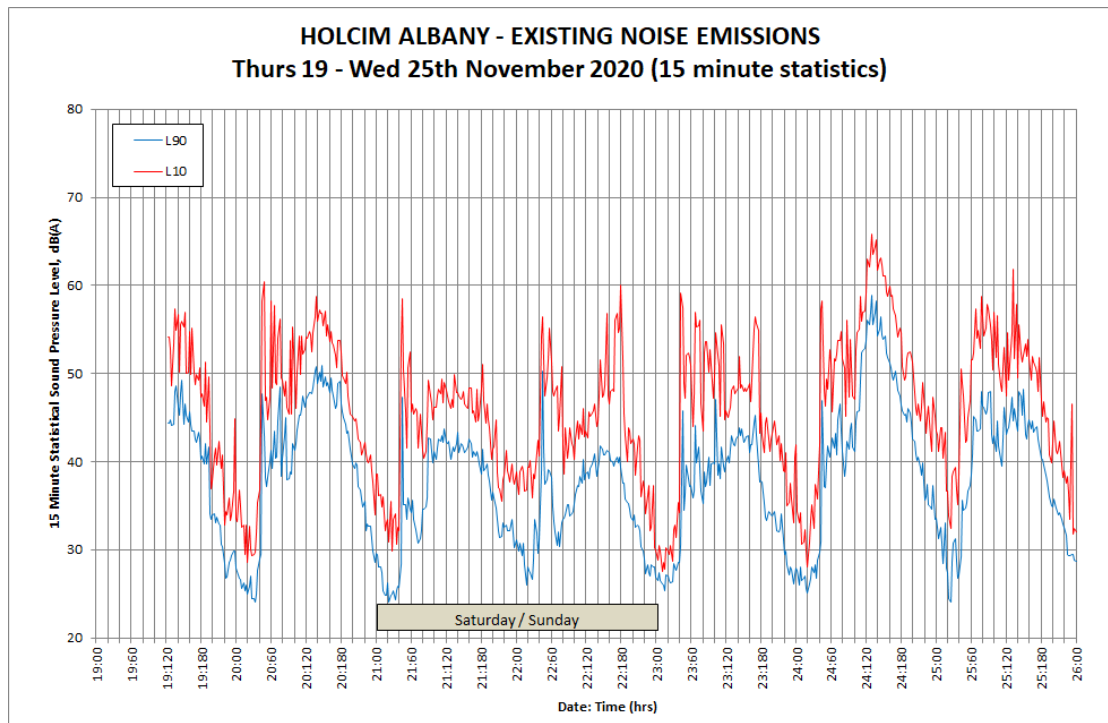


FIGURE 3 – BACKGROUND NOISE MONITORING L_{A90} AND L_{A10} – WEEK 1

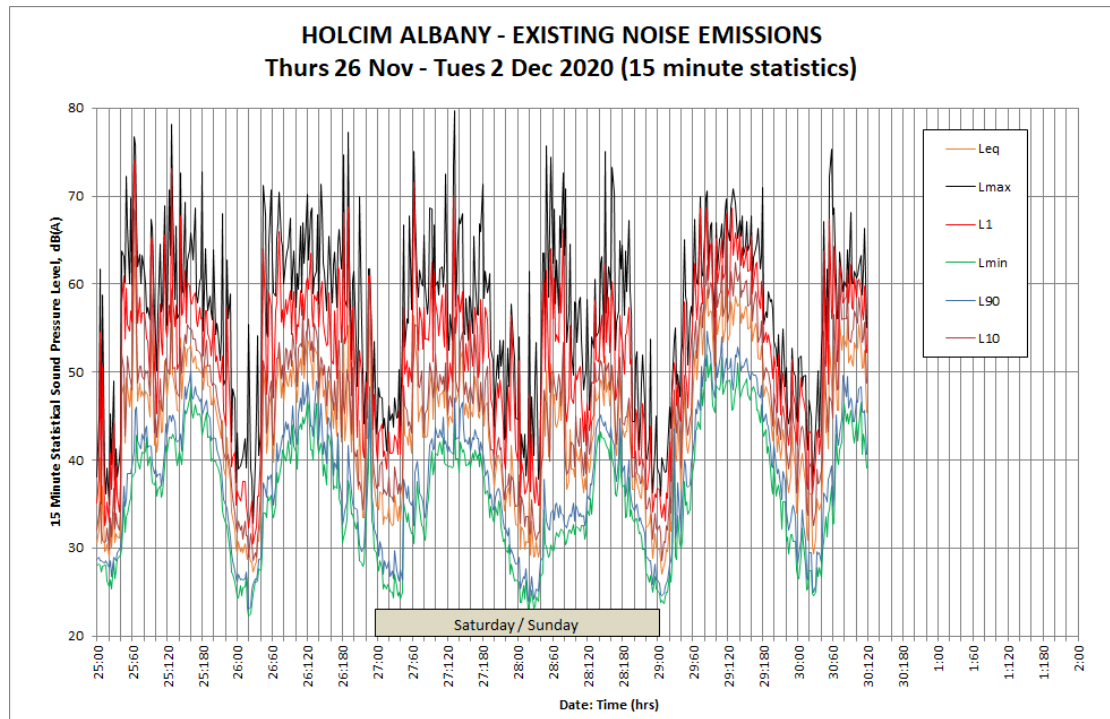


FIGURE 4 – BACKGROUND NOISE MONITORING – WEEK 2

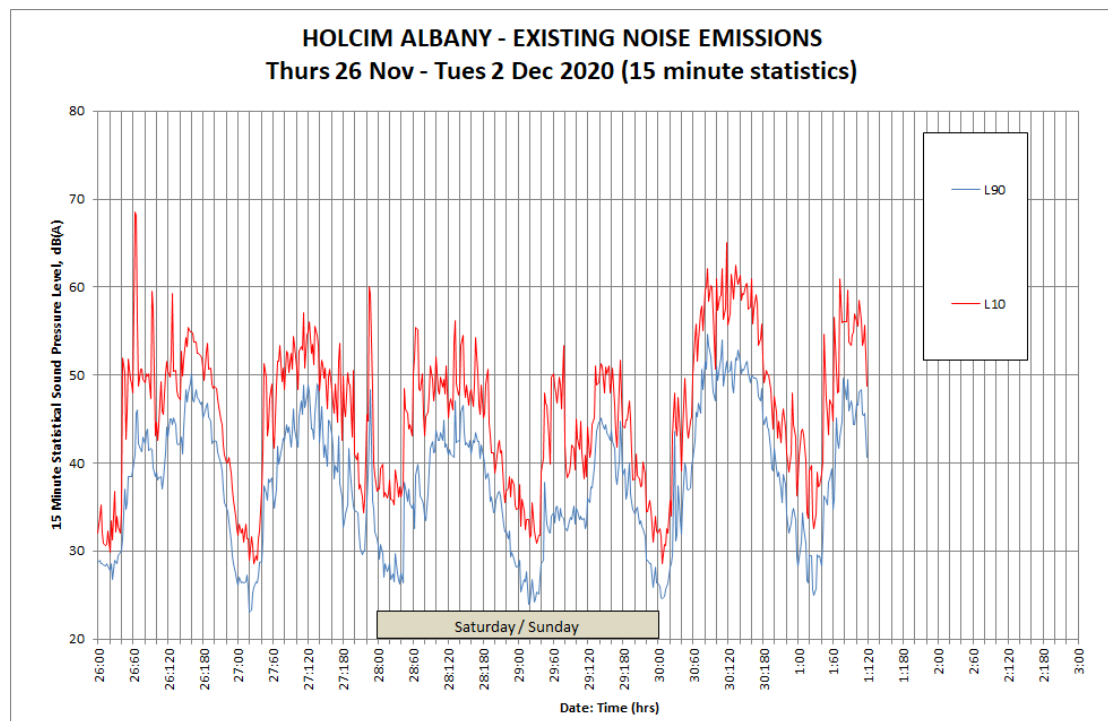


FIGURE 5 – BACKGROUND NOISE MONITORING L_{A90} AND L_{A10} – WEEK 2

Observations at the noise monitor location near Bevan Street residences are that there are a number of premises within the industrial area that emit both steady state and intermittent noise. The noise emissions include noise emissions from the existing Holcim batching plant, as well as emissions from warehousing and earthmoving contractor premises. In addition, the general background noise from wildlife (including birds), wind induced tree noise and local traffic are incorporated in the baseline noise measurements.

Baseline Noise Impact

The night-time ‘assigned level’ for residences on Bevan Street has been determined to be an L_{A10} of 42 dB(A). The acoustic design for the proposed plant includes an allowance for noise characteristic, with design emission levels at night of an L_{A10} of 37 dB(A) or lower. This adjustment also covers situations and time periods where there is significant noise emission from other premises (in which case noise characteristic from the Holcim site will be masked), where to comply with Regulation 7 (2) ‘significantly contributing’, and adjustment of +5 dB could apply during concurrent noise emission events.

3.0 ACOUSTIC CRITERIA

The Noise Regulations stipulate maximum allowable external noise levels at premises in receipt of the noise. For the highly sensitive area of a noise sensitive premises the allowable assigned noise levels are determined by the calculation of an influencing factor which is then added to the ‘baseline assigned levels’ shown in Table 3.1. For the highly sensitive area of a noise sensitive premises, the influencing factor is calculated for the usage of land within the two circles, having radii of 100m and 450m from the premises of concern. For other areas of a noise sensitive premises (other than highly sensitive area), commercial and industrial premises the allowable assigned noise levels are fixed, as listed in Table 3.1.

TABLE 3.1 – ASSIGNED OUTDOOR NOISE LEVELS

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 to 1900 hours Sunday and public holidays	40 + IF	50 + IF	65 + IF
	1900 to 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	35 + IF	45 + IF	55 + IF
Noise sensitive premises: any area other than highly sensitive area	All hours	60	75	80
Commercial premises	All hours	60	75	80
Industrial and utility premises other than those in the Kwinana Industrial Area	All hours	65	80	90
Industrial and utility premises in the Kwinana Industrial Area	All hours	75	85	90

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.
IF = Influencing Factor

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

TABLE 3.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS WHEN MUSIC IS NOT PRESENT

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

Note: Where music is present the adjustment is +10 dB, and is +15dB if impulsiveness is present. The adjustments are cumulative to a maximum of 15 dB.

At the neighbouring receptors, the Influencing Factors would be as outlined in Table 3.3.

TABLE 3.3 – RECEIVER INFLUENCING FACTORS

Receptor	Industrial% Inner	Industrial% Outer	Commercial% Inner	Commercial% Outer	TF	IF	Night-time 'assigned level', L _{A10} dB(A)
R1	27	41	0	0	0	7	42
R2	0	37	0	0	0	4	39
R3	15	37	0	1	6	11	46

Notes:
1. TF = Traffic Factor.
2. IF = Influencing Factor.

The Local Planning Scheme shows the industrial classified area in purple and commercial classified area in light tan ('C'), with tan areas being residential only.

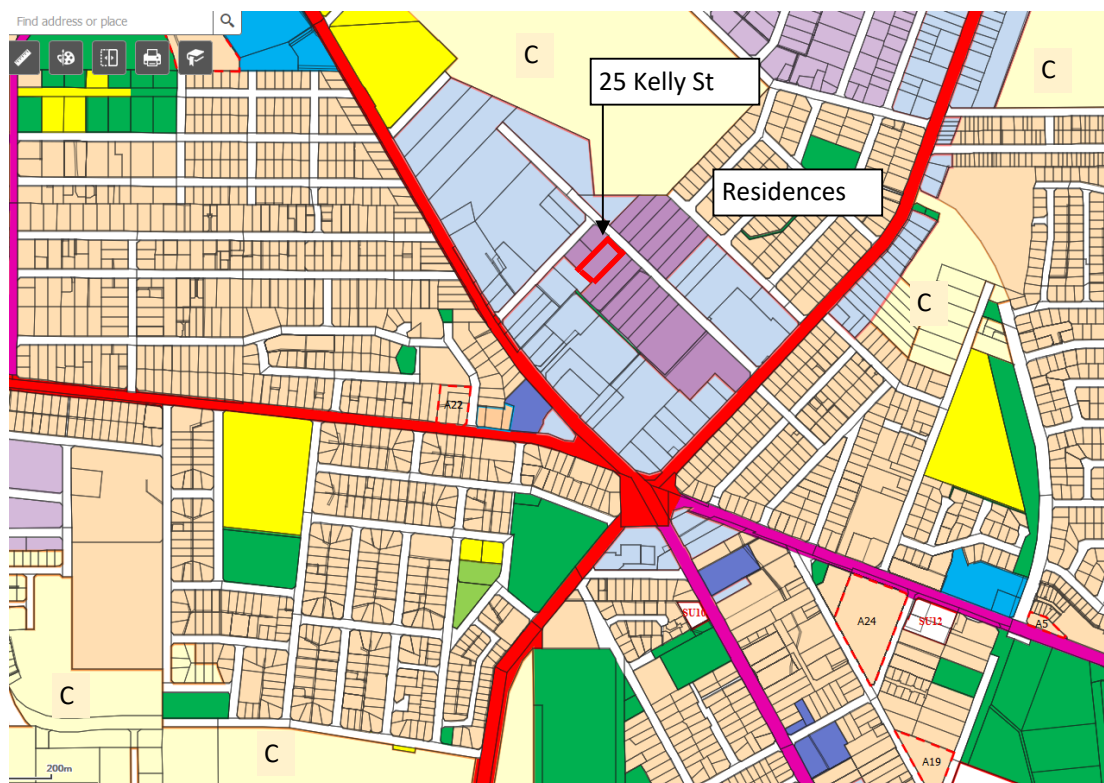


FIGURE 6 – LOCAL PLANNING SCHEME

Albany Highway (North of Roundabout, 21,941 vpd 2017/18) is classified as a ‘major road’ under the regulations. Chester Pass Road (South Coastal Highway) is classified as a ‘secondary road’ under the regulations (11,791 vpd 2017/18).

The assigned noise levels for the key residential receptors are listed in Tables 3.4 - 3.6.

**TABLE 3.4 – ASSIGNED OUTDOOR NOISE LEVELS
 BEVAN STREET RESIDENCE – R1**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	52	62	72
	0900 to 1900 hours Sunday and public holidays	47	57	72
	1900 to 2200 hours all days	47	57	62
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	42	52	62

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
 The L_{A1} noise level is the noise that is exceeded for 1% of the time.
 The L_{Amax} noise level is the maximum noise level recorded.

**TABLE 3.5 – ASSIGNED OUTDOOR NOISE LEVELS
 TURNER STREET RESIDENCE – R2**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	49	59	69
	0900 to 1900 hours Sunday and public holidays	44	54	69
	1900 to 2200 hours all days	44	54	59
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	39	49	59

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
 The L_{A1} noise level is the noise that is exceeded for 1% of the time.
 The L_{Amax} noise level is the maximum noise level recorded.

**TABLE 3.6 – ASSIGNED OUTDOOR NOISE LEVELS
 TURNER STREET RESIDENCE – R3**

Type of premises receiving noise	Time of day	Assigned level (dB)		
		L _{A10}	L _{A1}	L _{Amax}
Noise sensitive premises: highly sensitive area (i.e within 15m of a dwelling)	0700 to 1900 hours Monday to Saturday	56	66	76
	0900 to 1900 hours Sunday and public holidays	51	61	76
	1900 to 2200 hours all days	51	61	66
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and public holidays	46	56	66

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
 The L_{A1} noise level is the noise that is exceeded for 1% of the time.
 The L_{Amax} noise level is the maximum noise level recorded.

It is the L_{A10} parameter which applies to majority of the activities on the Holcim site, including loading and slumping. The nature of batch plant operation is that there will be periods of full operational activity (usually in the morning) but there are often periods of low activity.

The mixing (during the loading phase) and slumping can generate tonal noise emissions.

To be compliant during the night-time period under the regulations, noise emissions from the proposed Holcim operations should not exceed an L_{A10} of 37 dB(A) at night at the nearest residential receptors on Bevan Street (R1), after allowance for tonal characteristic.

4.0 METHODOLOGY

Noise levels were predicted using the acoustic software “SoundPlan” for worst case wind conditions as per the DER ‘Draft Guideline on Environmental Noise for Prescribed Premises (May 2016)’ for day operation.

It is noted that ‘worst case’ wind conditions refer to conditions where there is a temperature inversion in conjunction with light winds in the direction from noise source to receiver, resulting in effective sound propagation to receiver locations.

The sound power levels used in the acoustic modelling are shown in Table 3.1. These sound power levels have been determined based on acoustic measurement and verification of Holcim operations at a number of sites including existing Albany operations.

TABLE 4.1 – EQUIPMENT SOUND POWER LEVELS

Where tonality is present	Sound Power Level, dB(A)
Agi Slumping	110
Materials Loader	104
Agi Mixing (Plant and Agi)	109

The site layout provided by Holcim was used as a basis for the acoustic modelling. Where noise emissions were predicted to be non-compliant at adjacent commercial premises, additional noise mitigation measures in the form of acoustic barriers were added to achieve a compliant noise emission. These acoustic barriers are shown in Appendix A.

5.0 PREDICTED NOISE LEVELS

Noise emissions have been predicted for two scenarios, these being:

Night-time operation

The main noise management measure for the night-time period under the regulations (prior to 7am) is that mixing and slumping operations are not to occur at the same time.

Day-time operation

Day time operations are not restricted due to noise mitigation requirements.

Appendix A shows the proposed layout of the Concrete Batching Plant. Heavy vehicles will enter and depart from the site via Locke Street or Kelly Streets, within the industrial/commercial area.

The design incorporates acoustic mitigation measures, in the form of acoustic barriers.

A summary of the predicted residential receiver noise levels are shown in Table 5.1 for the ‘worst case’ wind scenario for the mobile plant.

TABLE 5.1 – PREDICTED NOISE LEVELS

Receiver Location	Night-Time Assigned Level L _{A10} dB(A)	Predicted Night-time L _{A10} Noise Emission, dB(A)	Day- Time/Sunday Assigned Level L _{A10} dB(A)	Predicted Day- Time L _{A10} Noise Emission, dB(A)	Status
Mixing Only with Loader – Night Time					
R1- Bevan Street	42	34 (39)			Complies
R2 – Turner Street	39	31 (36)			Complies
R3 – Albany Highway	46	29 (34)			Complies
Slumping Only with Loader – Night Time					
R1- Bevan Street	42	36 (41)			Complies
R2 – Turner Street	39	33 (38)			Complies
R3 – Albany Highway	46	30 (35)			Complies
Slumping and Mixing with Loader – Day Time					
R1- Bevan Street			52	38 (43)	Complies
R2 – Turner Street			49	36 (41)	Complies
R3 – Albany Highway			56	31 (36)	Complies

Note: (##) indicates the sound level for -time compliance after adjustment of +5 dB(A) for ‘tonal characteristic’ at the receptor.

The proposed Holcim Albany temporary mobile batching plant with noise mitigation barriers incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

6.0 CONCLUSION

Holcim (Australia) Pty Ltd commissioned Herring Storer Acoustics to carry out an acoustic assessment of noise emissions for a redevelopment of the Holcim 25 Kelly Street site in Albany. During the construction phase of the project, Holcim proposed to continue concrete batching with a mobile batching plant to be located on the adjacent lot. The mobile batch plant is expected to operate for approximately six months.

The existing site is within an Industrial Area, with residences further to the east, off Bevan Street. The proposed redeveloped batching plant is to incorporate noise mitigation and design to facilitate operation during the regulation night-time period as some concrete pours are required during the early morning period. The proposed temporary mobile batch plant is to include the use of acoustic barriers (mainly double stacked sea containers) to mitigate noise emissions to the surrounding commercial premises. Existing buildings will provide an acoustic barrier to the nearest residential receptors.

Operating scenarios under consideration are:

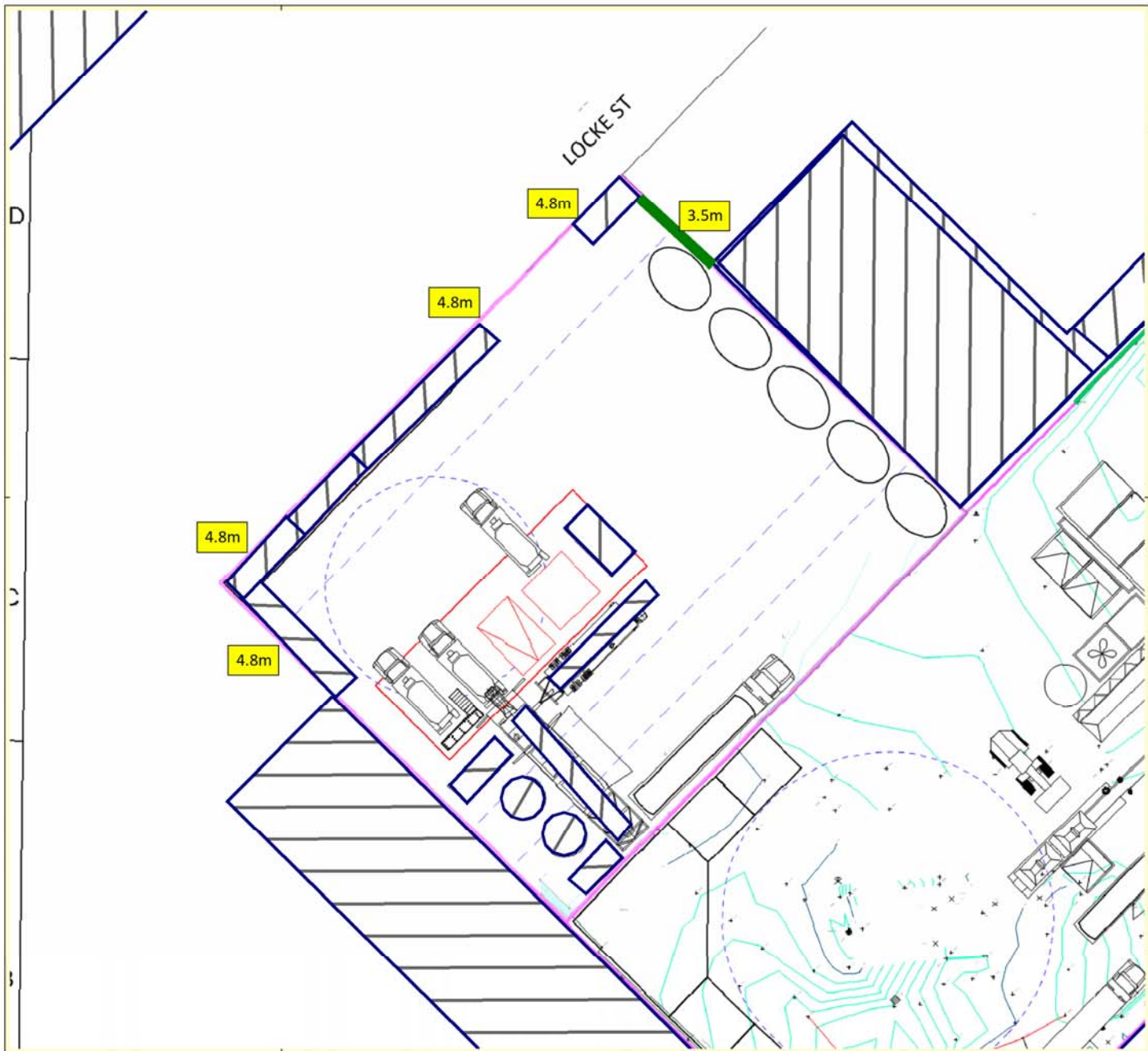
- A Day operation of the batching plant; and
- B Night operation (under night operation management practices).

The site layout provided by Holcim was used as a basis for the acoustic modelling. Where noise emissions were predicted to be non-compliant during the night time period, additional noise mitigation measures in the form of acoustic barriers were added to achieve a compliant noise emission.

The proposed Holcim Albany temporary mobile batching plant with noise mitigation barriers incorporated is capable of complying with the requirements of the *Environmental Protection (Noise) Regulations 1997* at all times.

APPENDIX A

NOISE CONTOUR PLOTS & NOISE MITIGATION BARRIER DETAIL



Customer:
 Holcim
 Project: Holcim Albany Batching Plant
 Project-No.

ALBANY MOBILE BATCHING PLANT

ACOUSTIC BARRIERS

2 X Seacontainer (4.8m)
 Sheet metal or other solid wall

Map
W1

Result number 0
 Calculation in above ground

Project engineer: Paul Drew
 Created: 30/06/2021
 Processed with SoundPLAN 8.2, Update 9/06/2021

Signs and symbols

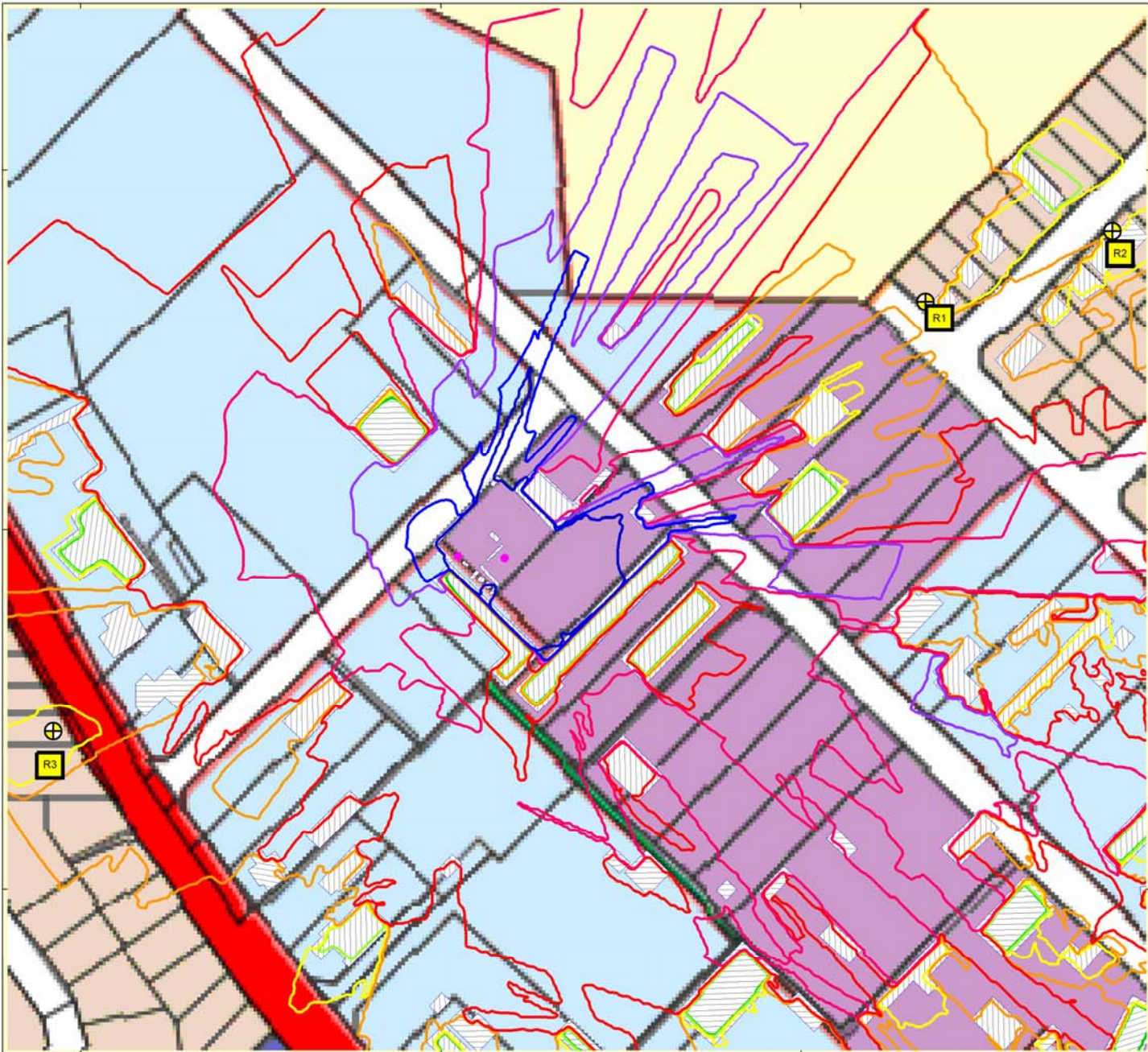
-  Main building
-  Wall
-  Point receiver



Length scale 1:500



 HERRING STORER
 ACOUSTICS



Customer:
Holcim
 Project: **Holcim Albany Batching Plant**
 Project-No.

**ALBANY MOBILE BATCHING PLANT
 SLUMPING**

COMPLIANCE LEVELS (ADJUSTED)
 Industrial - 60 dB(A)
 Commercial - 55 dB(A)
 R1 - Night 37 dB(A)
 R2 - Night 34 dB(A)

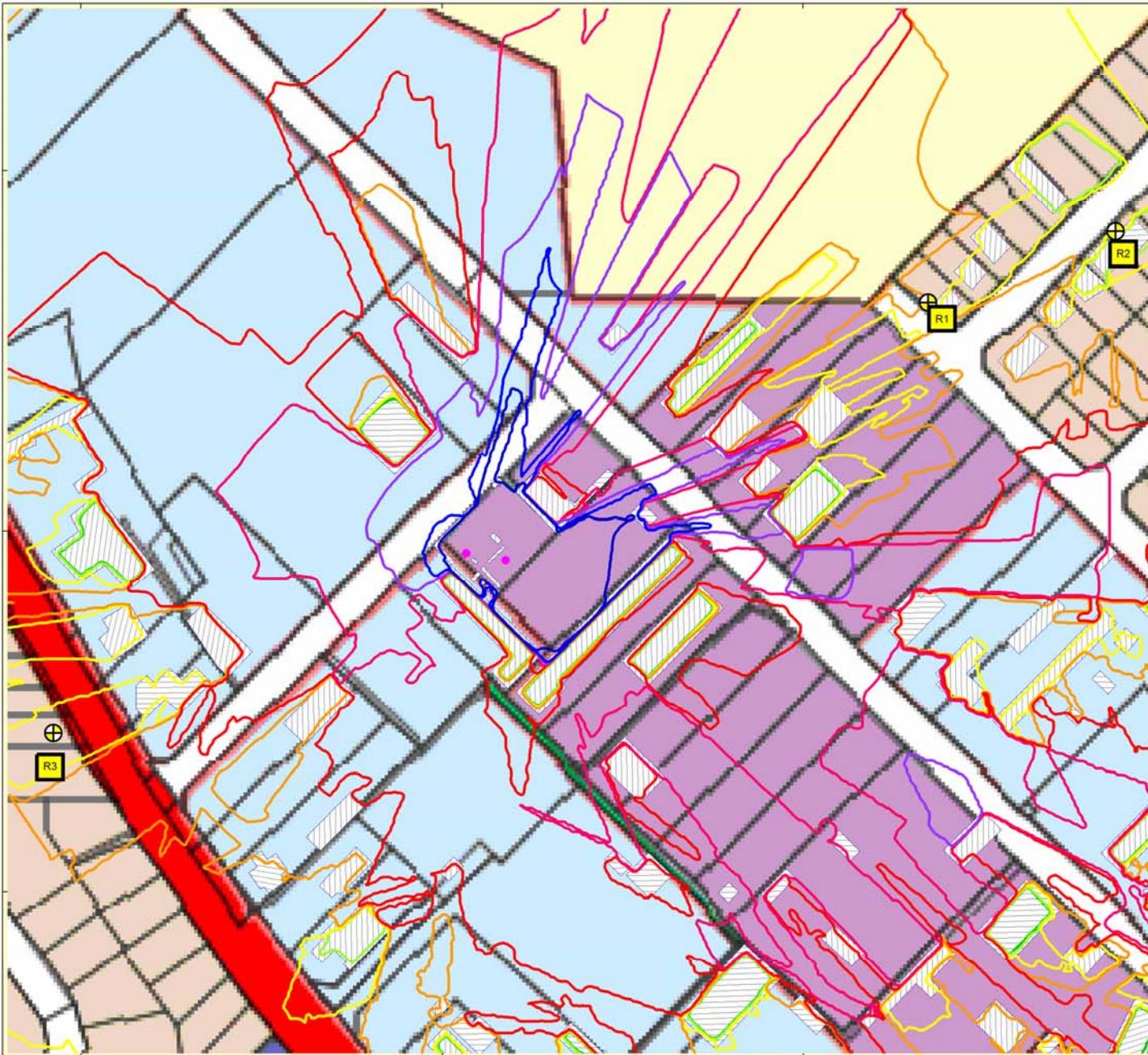
Map
M1

2021 June Mobile Slumping Option 2
Result number 1035
 Calculation in 1.5 m above ground

Project engineer: Paul Drew
 Created: 30/06/2021
 Processed with SoundPLAN 8.2, Update 9/06/2021

<p>Noise Levels dB(A)</p>	<p>Signs and symbols</p> <ul style="list-style-type: none"> Main building Wall Point receiver Point source
--------------------------------------	---

Length scale 1:3000



Customer:
 Holcim
 Project: Holcim Albany Batching Plant
 Project-No.

ALBANY MOBILE BATCHING PLANT
 MIXING

COMPLIANCE LEVELS (ADJUSTED)
 Industrial - 60 dB(A)
 Commercial - 55 dB(A)
 R1 - Night 37 dB(A)
 R2 - Night 34 dB(A)

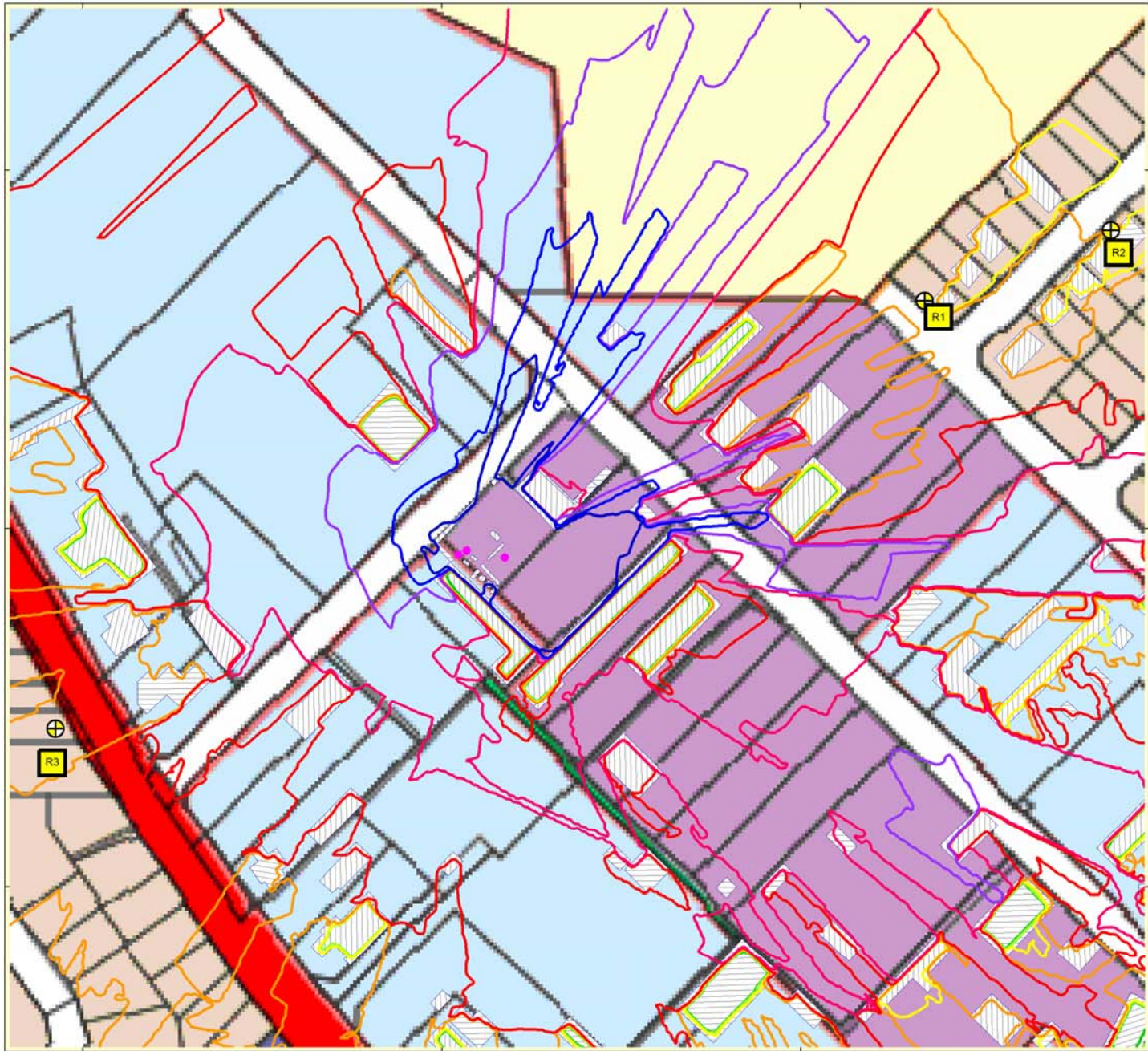
Map
M2

2021 June Mobile Mixing Option 2
 Result number 1037
 Calculation in 1.5 m above ground

Project engineer: Paul Drew
 Created: 30/06/2021
 Processed with SoundPLAN 8.2, Update 9/06/2021

<p>Noise Levels dB(A)</p> <ul style="list-style-type: none"> 20 25 30 35 40 45 50 55 60 	<p>Signs and symbols</p> <ul style="list-style-type: none"> Main building Wall + Point receiver Point source
--	---

Length scale 1:3000
 0 20 40 80 120 160



Customer:
 Holcim
 Project: Holcim Albany Batching Plant
 Project-No.

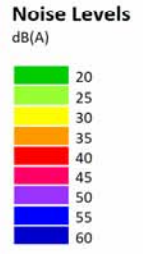
**ALBANY MOBILE BATCHING PLANT
 SLUMPING AND MIXING**

Map
M3

COMPLIANCE LEVELS (ADJUSTED)
 Industrial - 60 dB(A)
 Commercial - 55 dB(A)
 R1 - Night 37 dB(A)
 R2 - Night 34 dB(A)

2021 June Mobile Mixing and Slumping Option 2
Result number 1039
 Calculation in 1.5 m above ground

Project engineer: Paul Drew
 Created: 30/06/2021
 Processed with SoundPLAN 8.2, Update 9/06/2021



- Signs and symbols**
- Main building
 - Wall
 - Point receiver
 - Point source



Length scale 1:3000



Annexure 8
Local Planning Strategy Map

Local Planning Strategy 2019

Figure 2: Urban



Legend

Designation					
	Rural		Commercial		Neighbourhood Centre
	Parks and Recreation		Industry		Future Neighbourhood Centre
	Rural Living		Public Use		Local Centre
	Urban		Regional Centre		Future Local Centre
	Existing Tourism Accommodation Sites		Urban Growth		Rural Enterprise

Strategic Direction/Action

4	Protect agricultural land from urban sprawl and inappropriate development	IA1	Investigation Area 1 - Centennial Park Urban Renewal Area
5	Direct urban settlement growth of Albany to areas designated as 'urban growth'	IA2	Investigation Area 2 - Wool Stores
6	Direct rural living settlement of Albany to areas designated as 'rural living'	IA3	Investigation Area 3 - Neighbourhood and Local Centres
7	Support the collaboration between the City and State government in the redevelopment of the Spencer Park Urban Renewal Area	IA4	Investigation Area 4 - Mirambeena Strategic Industrial Area
8	Identify localities or precincts in the City suitable to increase residential densities (infill development) based on accessibility to services and facilities, utility infrastructure, heritage, character and amenity, and land capability	IA5	Investigation Area 5 - Pendeen Expansion Area
9	Continue to protect the primacy of the regional centre, identify its unique identity and build upon this, facilitate new mixed-use commercial development, increase the density and diversification of housing within and surrounding the regional centre, protect and enhance the heritage character, improve public realm with universal access, improve public transport, walkability and bikeability, diversify users - residents (age and cultural diversity), workers and visitors that engage with the regional centre and attract the location of regional facilities	IA6	Investigation Area 6 - Proposed Ardross Estate Light Industrial Area
10	Identify education precincts in conjunction with activity centres and support diversification of housing and land uses to cater for accommodation, entertainment and shopping needs of students	IA7	Investigation Area 7 - Lot 2 Hanrahan Road (CSBP Fertiliser Depot)
11	Advocate for the completion of the Ring Road	IA8	Investigation Area 8 - Robinson Industrial Area
12	Facilitate the planning and construction of key link roads	IA9	Investigation Area 9 - Gledhow Industrial Area
13	Advocate for development of industry in Mirambeena	IA10	Investigation Area 10 - Mueller Road
		IA11	Investigation Area 11 - Protection of Yakamia Creek and Lake Seppings
		IA12	Investigation Area 12 - Implementation of the Emu Point to Middleton Beach Coastal Hazard Risk Management Adaptation Plan
		IA13	Investigation Area 13 - Potential Airport Business Area

Other					
	Rail		Indicative Rail Spur Extension		Macro-corridors
	Primary Road		Landscape Protection Areas		SCA PDWSA
	District Road		Housing Strategy		Education Precinct
	Significant waterway		Strategic Infrastructure		Investigation Area 12 - Emu Point to Middleton Beach CHRMAP
	Strategic Important Road Extensions				
	Investigation Area 4 - Mirambeena Strategic Industrial Area				

1 0.5 0 Kilometers

1:100,000

SCALE @ A3

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MXD: X:\Planning & Development\Planning_Services\Strategic_Planner\ALPS_Review\new ALPS\MXD's_&_shapefiles\Fig 2 Urban.aprx Date Printed: 19/11/2019