

# Fast Trench Class D and Class G

Precast Grated Trench Units

Installation Guide



**Infrastructure  
Products AU**

A CRH COMPANY

# The Infrastructure Products Australia difference

Our vision is simple - we focus on partnerships and innovation to deliver the best solutions for our clients, on time and on budget, by adding value in service, quality and efficiencies.

We have teams with the experience and knowledge and in the right locations so that your project runs smoothly. Since our early beginnings, our business has been driven by constantly improving our products, so that you get a longer lasting, cost-efficient installation.

Plus, you'll benefit from the strength and global support of CRH, our parent company, a worldwide leader in diversified building products.

Combined, this has enabled us to offer sophisticated service solutions for companies like Telstra, National Broadband Network, Australian Department of Defence, VicRoads, local councils across Australia and more.

- | We design, manufacture, and distribute superior plastic and precast pits and covers
- | We offer unmatched flexibility of scale, engineering expertise and product range
- | We have global experience and reach, but local responsiveness and knowledge

# Introduction

This guide addresses the acceptable methods and details for installation of Fast Trench™.

The purpose is to serve as a guideline and the customer shall comply with all laws, regulations, codes and orders of any authority having jurisdiction over the customer and which relate to the customer's installation, maintenance and use of the products.

If the constructor's installation or use of any products contravenes any such laws, regulations, codes or orders of such authorities, the customer shall be responsible for the violation thereof and shall bear costs, expense and damage attributable to its failure to comply with the provisions of such laws, ordinances, rules, regulations, codes and orders.

Reproduction of the material herein is not permitted without the written permission of Infrastructure Products Australia.

## Content

Introduction	02
Health & Safety Notice	04
Requirements	05
Installation Guidelines (Part I)	06-10
Appendix A	11
Appendix B	12-13
Appendix C	14-17

# HEALTH & SAFETY

## Notice

In areas where the public have access, the site should be properly signed and guarded in accordance with the State and Territory regulators, laws and codes on health and safety.

Additionally, all other safety precautions required by legislation, the customer and as specified by the contract, the local authorities, other landowners and the police should be observed at all times.

Before excavation takes place, all necessary precautions to locate and protect existing buried services in the location of the access pit should be taken.



Scan QR Code for the STAKKAbOX™ Modula HS5 Material Safety Data Sheet (SDS).



# REQUIREMENTS

Required items for one Fast Trench include:

- 1x Trench
- 2x Concrete Pad

Cover Accessories

- 7x Trench Gate
- 32x Hexagon Head Bolt M12x60
- 32x Washer M12 Galv

You will require the following to install a Fast Trench:

1. The means of excavating a hole; mechanical digger, pneumatic hammer, vacuum truck, etc. depending on the ground conditions and size of pit being installed.
2. Means of excavating base and surrounding materials
3. Lifting cranes to suit the weight limits



Pad Details:

Fast Trench™ can be easily laid on pre-poured concrete pads with the units shimmed to allow them to match levels and grades required. Individual units are then placed end for end to form lengths of industrial trench. Penetrations can be formed in the trench walls to allow for drainage in outfall systems. These are Project specific and calculated at the time of manufacture. With the grate pieces butting together, Fast Trench™ becomes a clean, safe method of providing drainage to large paved areas. With the units in place an insitu pour at the base of the units will provide jointing of the units. The gap around the grate join can then be filled with a flexible jointing material (High Seal TG or equivalent). After the units are set in place it is recommended that 3-10% cement stabilised sand is pumped into the void under each unit for consolidation. Backfilling can occur with material specified for the individual Project. Fast Trench™ is suitable for any pavement type including brick pavers, asphalt and post tensioned slabs.



## Notes on Application

Class D & Class G application | Fast Trench™

Class	Typical Use	Ultimate Limit State Design Load (kN)
D	 <p>Major roads including freeway and motorway shoulders. Warehouses and loading docks. Purpose - major roads.</p>	240
G	 <p>Docks, wharfs and airport runways. Purpose - heavy and high traffic volumes.</p>	900

# INSTALLATION GUIDELINES

## Installation of Fast Trench™

**Excavation shall be made to suit the trench configuration.**

### 1 Pad Details:

Once the trench is excavated concrete pads are cast at every joint of the units. Refer to Drawing SP23-235-02-01. This allows the units to sit on the pads rather than the bedding. The bedding is left down approx. 100mm to allow a bedding mix to be poured under the units later. Shimming plates are used to build the units up to allow the top to match the finished surface reference level.

For the step in unit size it is recommended that the footing pad be stepped down. Refer to Drawing SP23-235-05-01. Each unit is to be seated and shimmed on each side of the pad to allow the tops to match.



### 2 Placement:

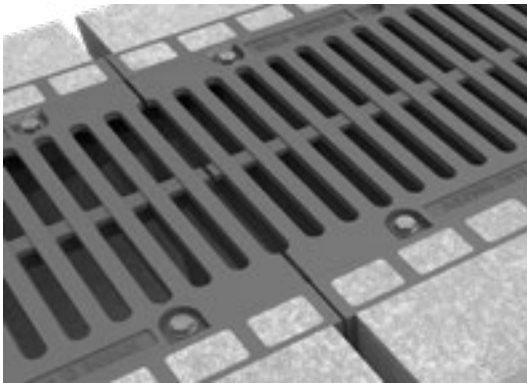
It is important that the units are not laid on the bedding but on pads. Units shall be lifted by crane with appropriate lifting clutches as per the lifting plans provided by IPA.

# INSTALLATION GUIDELINES

## Installation of Fast Trench™

### 3 Alignment Details

By using the “Shim” pads the tops of the units will match. It is recommended that a 10-20mm shimming allowance is provided to match the units. It is important that the grates match. There will be a gap of 10-20mm between the concrete which can be filled later if required with a flexible seal.



### 4 Unit to Unit Connection

When the units are placed together there is a 300x300 block out in the floor at the end of each unit with exposed Y12 bars. This allows for an insitu pour to joint the units together at the pad. Refer to Dwg. SP23-235-02-02 and Dwg. SP23-235-05-01. The connection helps tie the units but the placement on the pads secure the units in place.



### 5 Unit to Sump Connection

The unit connection remains the same with the invert of the trench unit to match the internal wall of the sump unit. The sump wall will be cast by the manufacture to the appropriate height to suit the Project needs and to match the incoming unit.

### 6 Sump Unit

The sump unit allows for the connection to the outfall pipes where required whilst also providing the continuation of the strip drain profile. The sump unit is founded on footings in a similar way to that is shown on Dwg. SP23-235-05-01. From the invert of the incoming trench to the invert of the outfall pipe it is recommended that a concrete “flow channel” be cast to allow for hydraulic flow.

### 7 Pipe Connection to Sump

Penetrations will be provided in the walls of the sump to all the placement of drainage pipes. Allowances are made to the Clients requirements. A concrete collar can be poured around the pipe against the outer wall of the sump to secure the pipe in place.

# INSTALLATION GUIDELINES

## Installation of Fast Trench™

Turn to page 7 for Installation Guidelines of Plaastic Base - Opt 2

### 8 Securing of Units

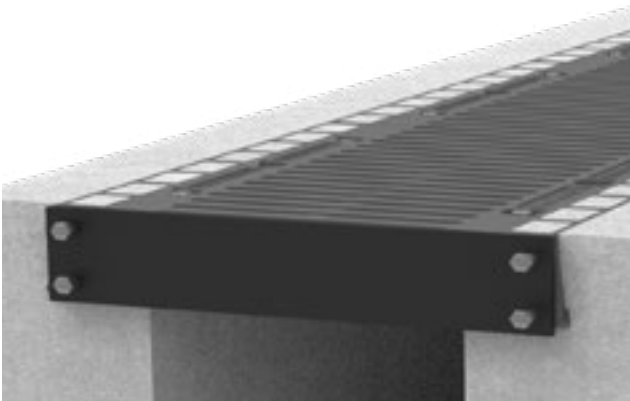
Once the units are in place and shimmed to the correct levels a 3-10% blinding is pumped under the units to support and bed them. The blinding should encase the unit at least 350mm up from the base. Refer to Dwg. SP23-235-02-02 and SP23-235-05-01.

---

### 9 End of Units

The units can be capped off at the end of the unit with end plates. The end of the unit can be capped with concrete to seal the unit or drainage can be directed to the unit.

Refer to Dwg. SP23-235-02-01





# INSTALLATION GUIDELINES

## Installation of Fast Trench™

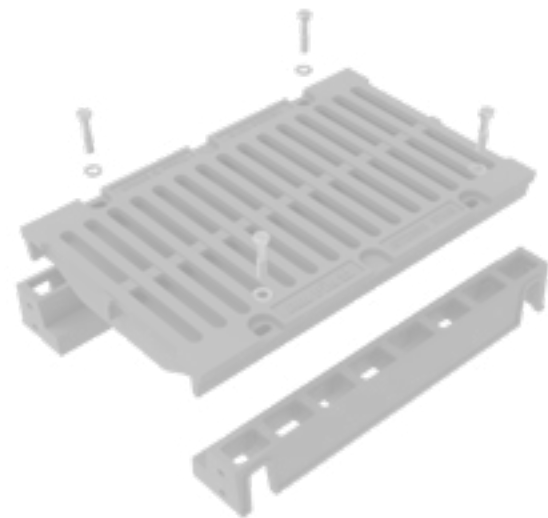
### 10 Backfill Material

Once the blinding is in place and the unit is secured the normal treatment of pavement material can continue to the Project Specifications.



### 11 Plaza Deck

“Plaza Deck” drainage membranes can be added where required for site specifications.



# INSTALLATION GUIDELINES

## Installation of Fast Trench™

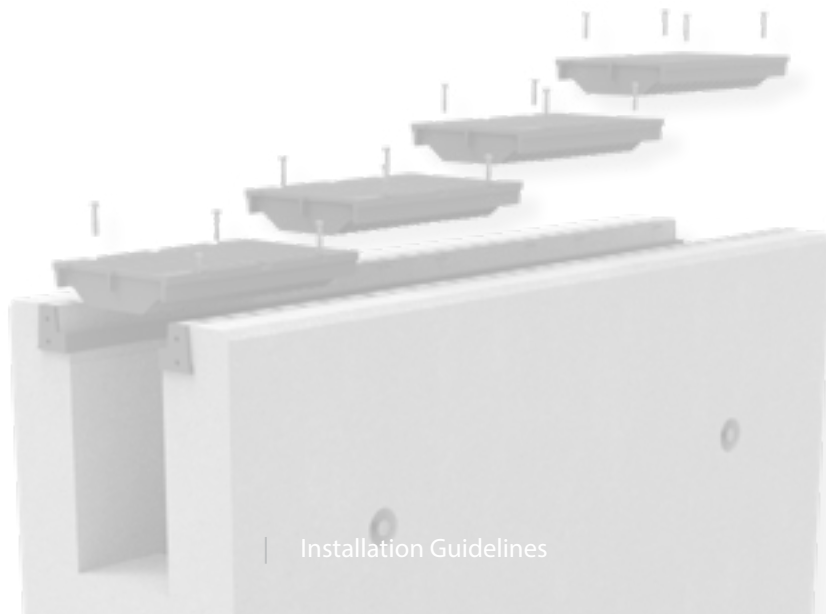
### 12 Internal Screed

Once the Units are secured in place an internal screed can be formed in the floor. The units when placed may have various step downs of the units to achieve an outfall level. To create a grade of the trench floor it is recommended an internal blinding screed of 15MPa concrete be poured in the trench floor at a grade of approximately 1:200 from the high point to the outfall. The depth of the screed will vary along the trench units as the unit's transition from one depth to another. The grates will be required to be removed to complete this work. Refer to Drawing SP23-235-05-01.

---

### 13 Finished Pavement

The finished units can have brick/asphalt or concrete pavement laid to the drain edge.



# APPENDIX A

## Trench Size Guide

TABLE OF VARIOUS SIZES

PRODUCT No.	UNIT SIZE DEPTH mm	STANDARD UNIT LENGTH m	TRENCH & GRATE LOADING TYPE GRATE CLASS	APPROXIMATE MASS OF UNIT (kg)
AP500D	550	4.50	CLASS D (Mild Steel)	3250
APFT 500	500	4.20	CLASS G (Cast Iron)	4823
APFT 600	600	4.20	CLASS G (Cast Iron)	5250
APFT 700	700	4.20	CLASS G (Cast Iron)	5677
APFT 800	800	4.20	CLASS G (Cast Iron)	6104
APFT 900	900	4.20	CLASS G (Cast Iron)	6523
APFT 1000	1000	4.20	CLASS G (Cast Iron)	6959
APFT 1100	1100	4.20	CLASS G (Cast Iron)	7386
* Note that due to various levels of inlet trench units. Sump unit mass may change.				
SMALLER LENGTHS CAN BE MANUFACTURED TO SUIT SITE CONDITIONS				

# APPENDIX B

1 1x Trench



2 2x Concrete Pad



3 7x Trench Gate

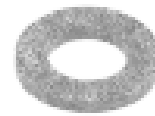


# APPENDIX B

- 4 32x Hexagon Head Bolt M12x60



- 
- 5 32x Washer M12 Galvanised



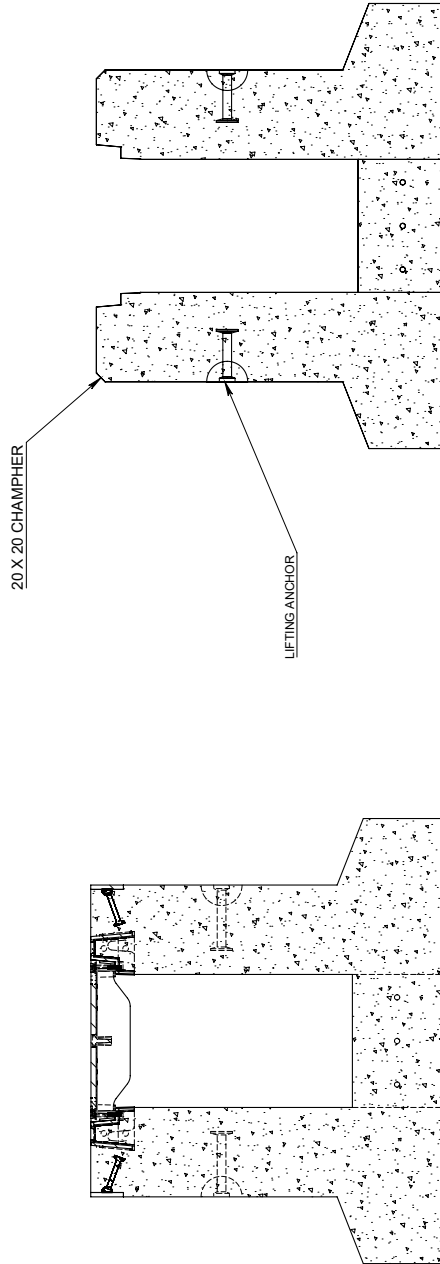


# APPENDIX C

## SP23-235-02-02


### NOTES

1. CONCRETE CLASS NOMINAL 50MPA.
2. REINFORCEMENT TO COMPLY WITH AUS PITS COMPUTATIONS
3. STANDARD UNIT LENGTH IS 4.20 m. HOWEVER SHORTER UNITS CAN BE AND AS4671.
4. MANUFACTURED ON REQUEST.
5. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
6. ALL DESIGNS CONTAINED HEREIN ARE PROTECTED BY COPYRIGHT AND TRADEMARK TO AUS PITS.



ARMOUR EDGE

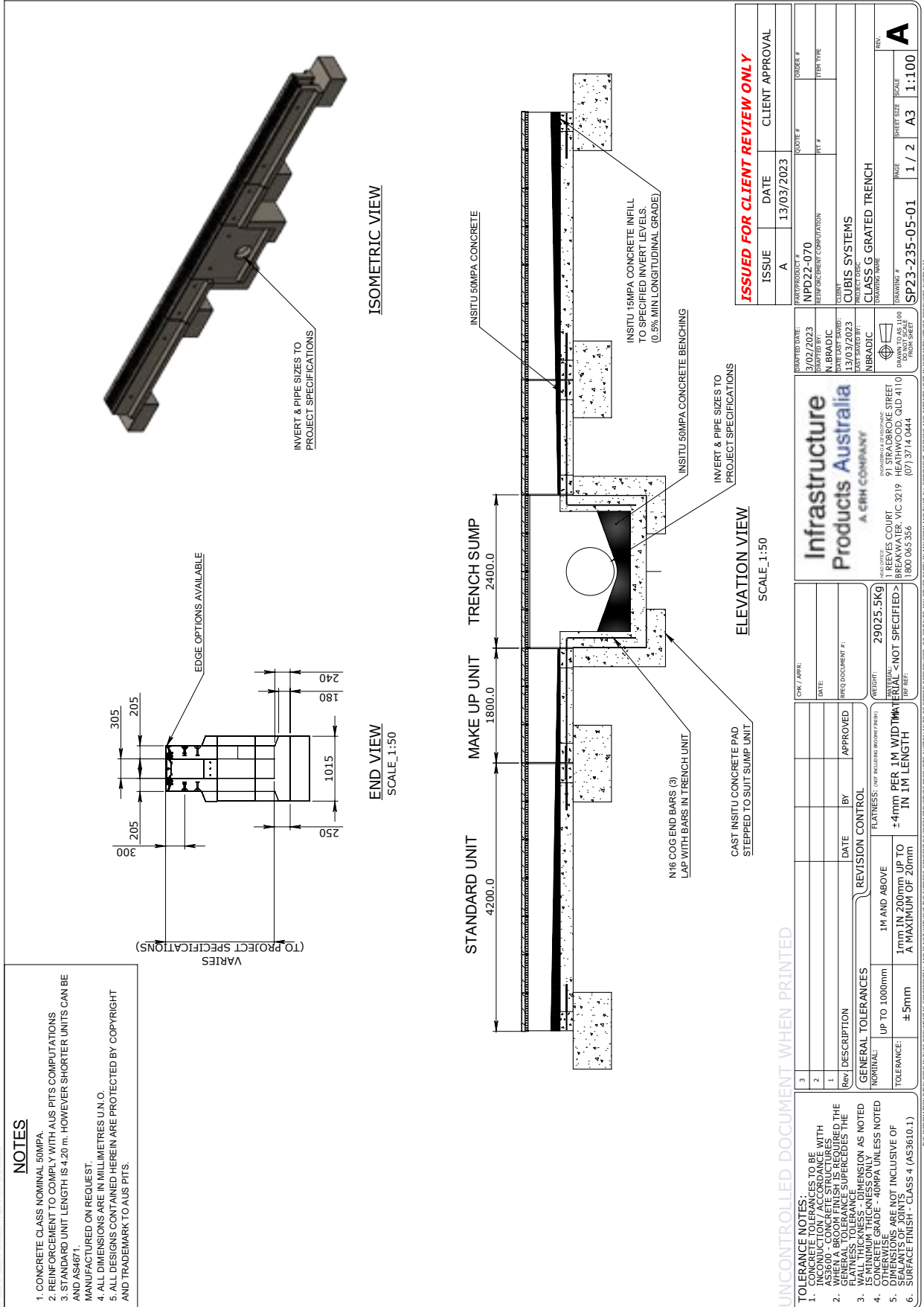
NORMAL EDGE

 <small>DRAWN TO AS 1100 BY DRAWN SHEET</small>	<small>NAME:</small> CLASS G GRATED TRENCH <small>DRAWING NO.:</small> SP23-235-02-01 <small>DESIGNED BY:</small> N. BRADIC <small>DATE:</small>	<small>REV:</small> <b>A</b> <small>SCALE:</small> 1:50
	<small>DATE:</small> 2/2 <small>DATE:</small> A3 <small>DATE:</small> 2/2	<small>SCALE:</small> 1:50

UNCONTROLLED DOCUMENT WHEN PRINTED

# APPENDIX C

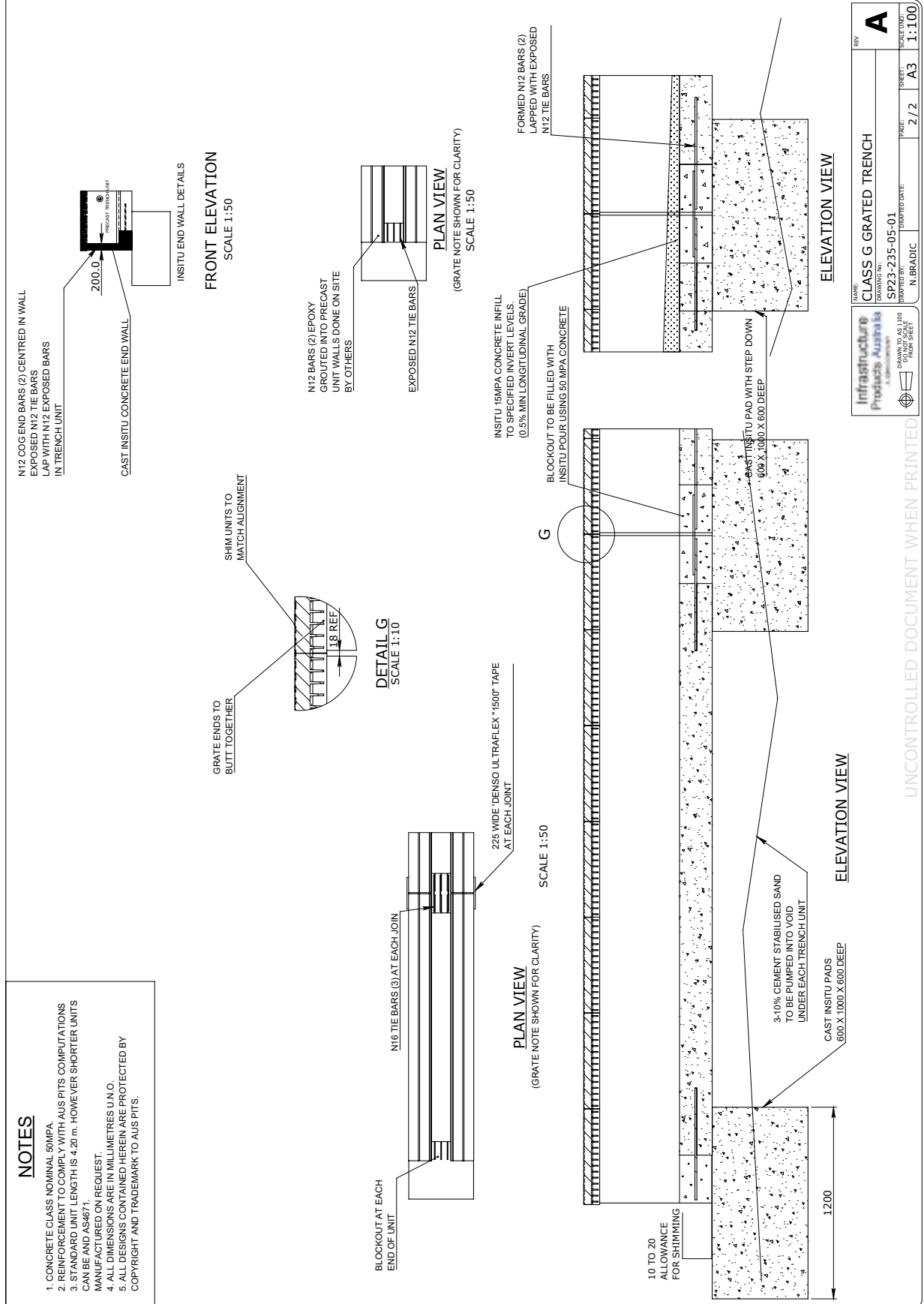
## SP23-235-05-01





# APPENDIX C

## SP23-235-05-02



REV	DATE	BY	CHKD	APP'D
<b>A</b>				
<b>CLASS G GRATED TRENCH</b> DRAWING NO: SP23-235-05-01 DRAWN BY: N. BRADIC CHECKED BY: N. BRADIC DATE: 2/2 SHEET: A3 TOTAL SHEETS: 1-100				

UNCONTROLLED DOCUMENT WHEN PRINTED

# Contact us

## Phone number

| 1800 065 356

## Email

| [sales@cubis-systems.com.au](mailto:sales@cubis-systems.com.au)

## Website

| [infrastructureproducts.com.au](http://infrastructureproducts.com.au)



# Offices

## Breakwater (Geelong)

| 1/1 Reeves Court, Breakwater VIC 3219

## Corio (Geelong)

| Lot 3, 25 Heales Road, Corio VIC 3214

## Heathwood (Brisbane)

| 91 Stradbroke Street, Heathwood QLD 4110

## Penrith (Sydney)

| 182 Andrews Road, Penrith NSW 2750

## Smeaton Grange (Sydney)

| Unit 2, 13 Dunn Road, Smeaton Grange  
NSW 2567