C.

Stairs

C.01

Concrete Stairs

Function / Location

- Concrete stairs are typically used adjacent to concrete paths, with the finish of the concrete to match the adjacent concrete finish.
- Stairs are to comply with the Building Code of Australia and typically have a 150mm riser and a 300mm tread.
- A flight of stairs is minimum 2 risers, or a maximum of 18 risers. If more than 18 risers are required, a landing of minimum 750mm width must be installed. The staircase shall not have more than 36 risers without a change in direction.
- Stair nosings are to be cast into the concrete when installing new stairs, using Stair Type A. Nosing Type B is to be rebated into existing stair treads. Refer to Stair Nosing Section.

Supplier

- Contractor to nominate based on below specifications.

Materials and Dimensions

- **Stair Type A - Concrete:** Stairs are to include nosing profiles which include 50mm wide solid slip resistant highlighting strips on the tread at the nosing with a minimum luminance contrast of 30% with the tread to comply with AS1428.1. Nosings are to be set back 15mm from edge of tread.
- Stairs are to have Tactile Ground Surface Indicators (TGSI's) installed to comply with AS1428.4.1.
- TGSI's shall be used at the top and bottom of stairways and ramps and intermediate landings that have entrances from that level to the landing. They should not be installed at intermediate landings that have continuous handrails on both sides of the stairway or ramp.
- Set stairs back a minimum of 900mm from adjacent pathways so handrails and TGSI's do not encroach on the path.

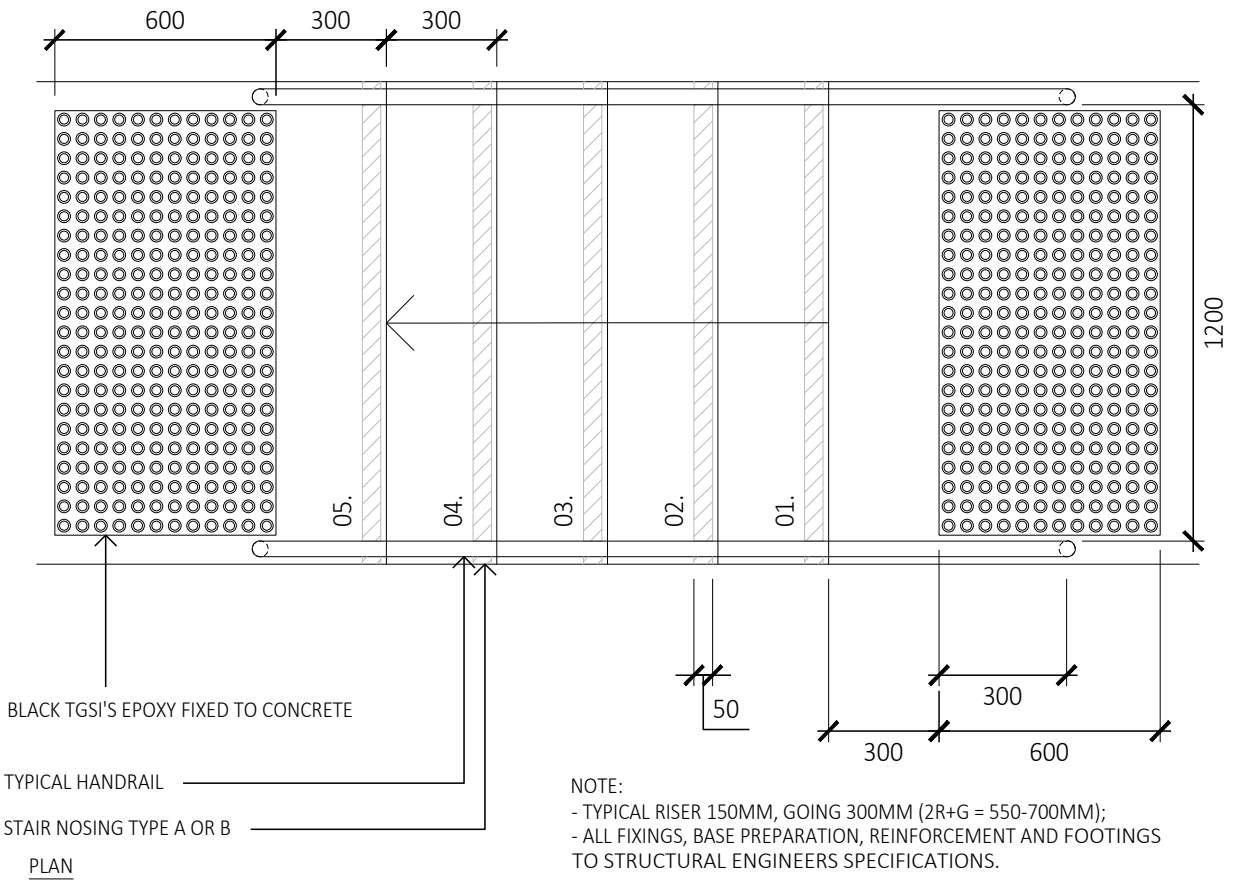
Stair Type A - Concrete

Installation

- Surface finish to match adjoining pavements.
- Obtain structural design drawings and specification prior to installation. These must be certified by a Registered Engineer.
- Stairs are to have TGSI's and Nosings installed to comply with AS1428.4.1.
- Refer to Handrails, Balustrades, TGSI's and Stair Nosing sections for more information.

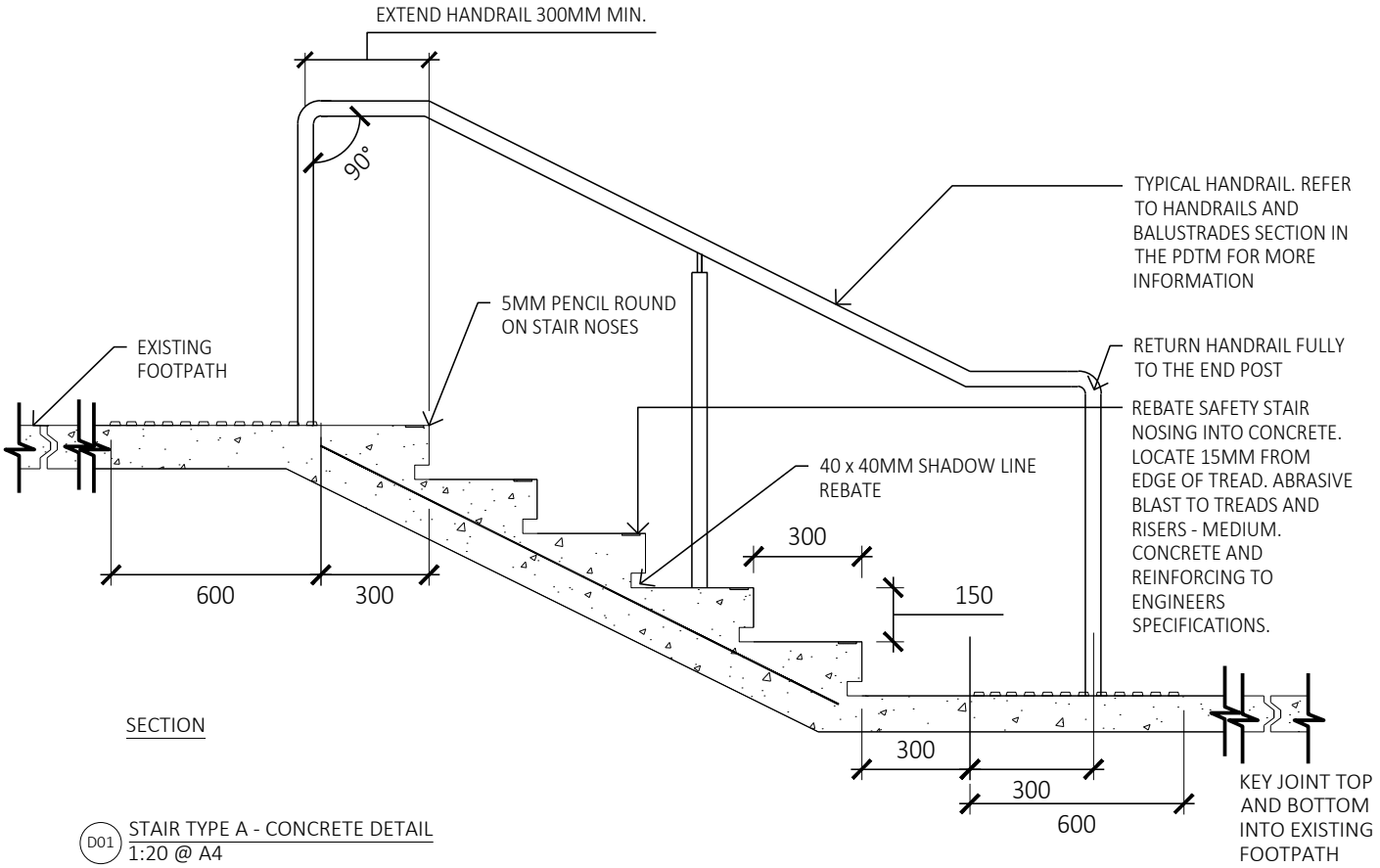
Maintenance

- Refer to HB 84-2006 - Guide to Concrete Repair and Protection, a joint publication of ACRA, CSIRO and Standards Ausralia, available at SAI Global publication, for more information.
- Use of a high-pressure water hose to remove superficial dirt.



PLAN

NOTE:
- TYPICAL RISER 150MM, GOING 300MM (2R+G = 550-700MM);
- ALL FIXINGS, BASE PREPARATION, REINFORCEMENT AND FOOTINGS TO STRUCTURAL ENGINEERS SPECIFICATIONS.



SECTION

D01 STAIR TYPE A - CONCRETE DETAIL
1:20 @ A4

C.02

Sandstone Stairs

Function / Location

- Sandstone stairs are to be used adjacent to: sandstone paths - either sandstone flagstone paving (crazy paving) or sandstone unit pavers; Crushed Sandstone Pavement (stabilised) or natural ground.
- Sandstone stairs shall be used in special places as directed by council.
- Stairs are to comply with the Building Code of Australia and typically have a 150mm riser and a 300mm tread.
- Stair nosings are to be rebated into the sandstone, using Stair Nosing Type B. Refer to Stair Nosing Section.

Supplier

- Contractor to nominate based on below specifications.

Materials and Dimensions

- **Stair Type B - Sandstone:**
  Unit Pavers: 'Buff'. 40 x 600 x 300mm' Risers and Treads to be Sawn Stone
  Flagstone - Split stone sheets to risers, Sawn to treads, 'Buff'. Sizes vary.
  Finish - Hydrasplit

Installation

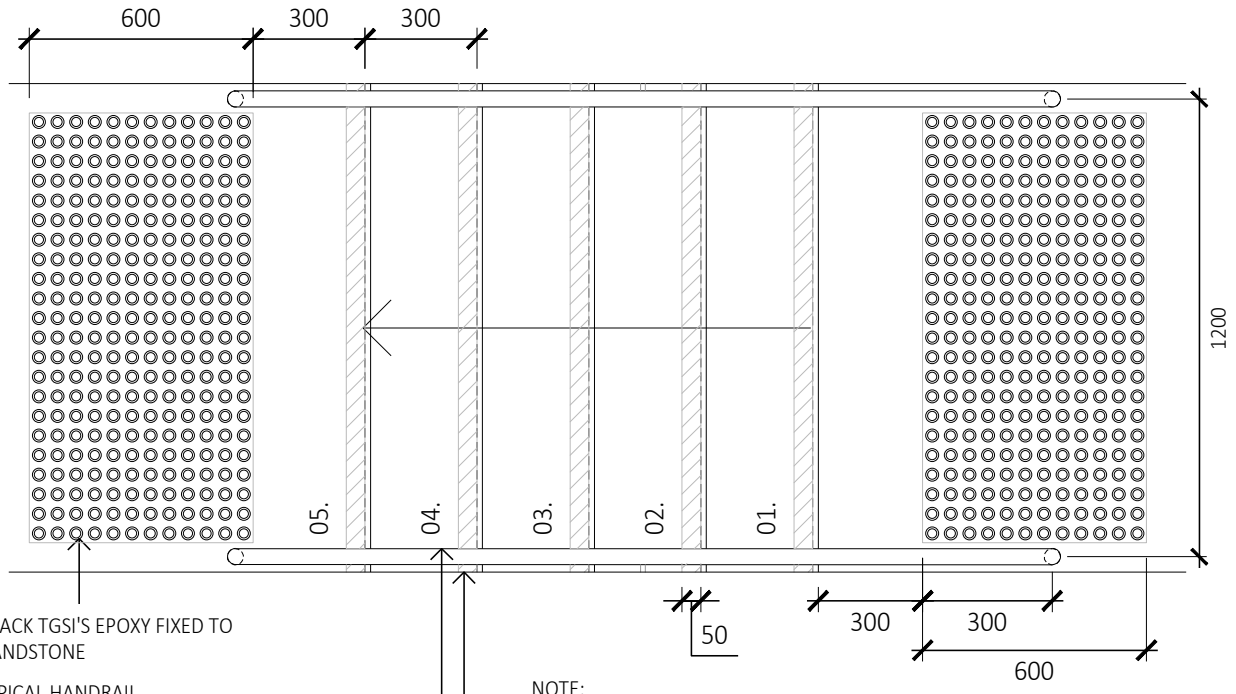
- Mortar to base and all joints.
- Sub-base as per Structural Engineers Specifications.
- Obtain structural design drawings and specification prior to installation. These must be certified by a Registered Engineer.
- Stairs are to have TGSI's installed to comply with AS1428.4.1.
- Refer to Handrails, Balustrades, TGSI's and Stair Nosings for more information.
- Apply sealant to sandstone pavers as per manufacturers recommendation.

Maintenance

- Use of a high-pressure water hose to remove superficial dirt.

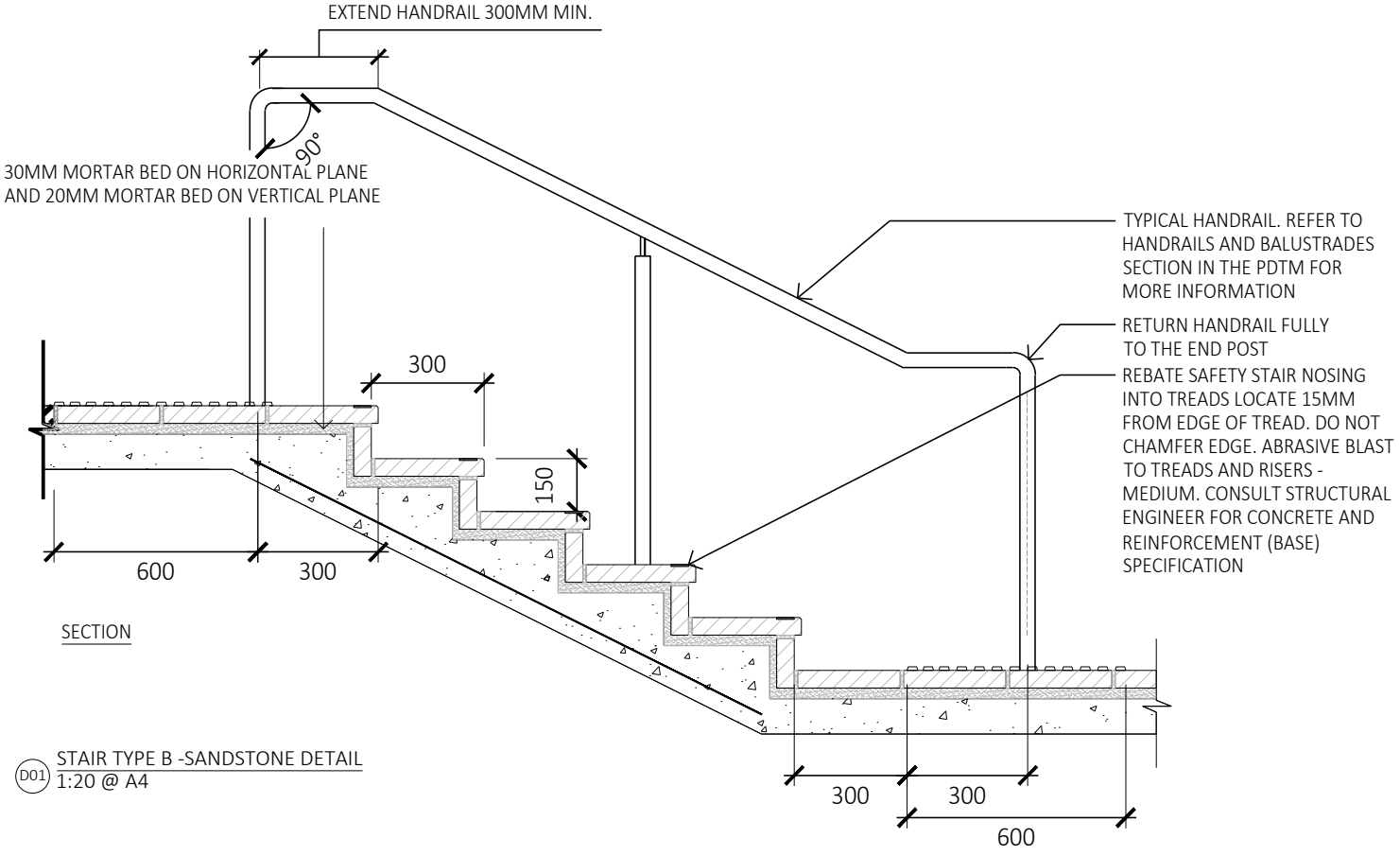
Stair Type B - Sandstone

Buff Sandstone Colour Range



PLAN

NOTE:
- TYPICAL RISER 150MM, GOING 300MM (2R+G);
- TREAD OVERHANG MIN 15MM MAX 25MM;
- 300 X 600 X 40MM SPLIT FACED, SANDSTONE PAVER GOINGS AND 140 X 600 X 40MM SPLIT FACED SANDSTONE PAVER RISERS;
- ALL FIXINGS, BASE PREPARATION, REINFORCEMENT AND FOOTINGS TO STRUCTURAL ENGINEERS SPECIFICATIONS.



SECTION

D01 STAIR TYPE B -SANDSTONE DETAIL
1:20 @ A4

C.03

Brick Stairs

Function / Location

- Brick stairs are typically used adjacent to brick or concrete paths.
- Stairs are to comply with the Building Code of Australia and typically have a 150mm riser and a 300mm tread.
- Stair nosings are to be rebated into the brick, using Stair Nosing Type B. Refer to Stair Nosing Section.

Supplier

- Contractor to nominate based on below specifications.

Materials and Dimensions

- Stair Type C - Brick. 230 x 110 x 76cm, <10% Cold Water Absorption, Exposure Grade Durability Class, Slight Lime Pitting Liability, Dark Solar Absorptance Rating, Colour Light Brown
- Brick format and colour to be determined on a job specific basis. This information will be provided by Council representative.
- Set stairs back a minimum of 900mm from adjacent pathways so handrails and TGSI's do not encroach on the path.

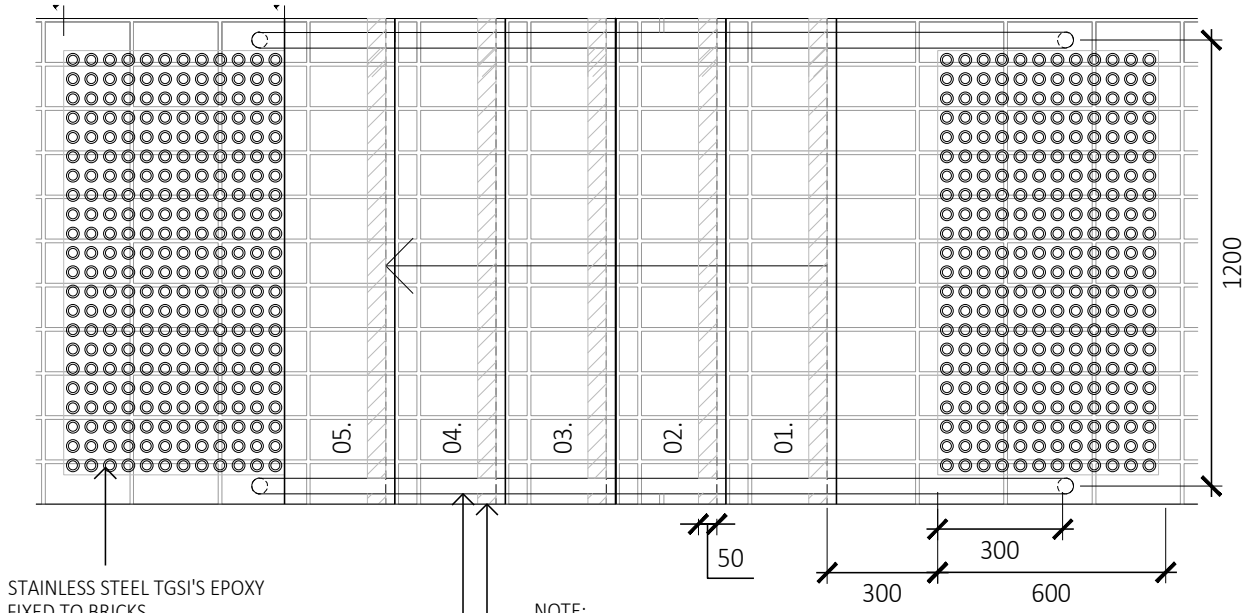
Installation

- Brick on concrete substrate to Engineers Specifications.
- Mortar on base and joints.
- If possible match in with adjacent brick pattern or use 'stacked bond' pattern.
- Obtain structural design drawings and specification prior to installation. These must be certified by a registered engineer.
- Stairs are to have TGSI's and Nosings installed to comply with AS1428.4.1.
- Refer to Handrails, Balustrades, TGSI's and Stair Nosings for more information.
- Apply Sealant to bricks as per manufacturers recommendations.

Maintenance

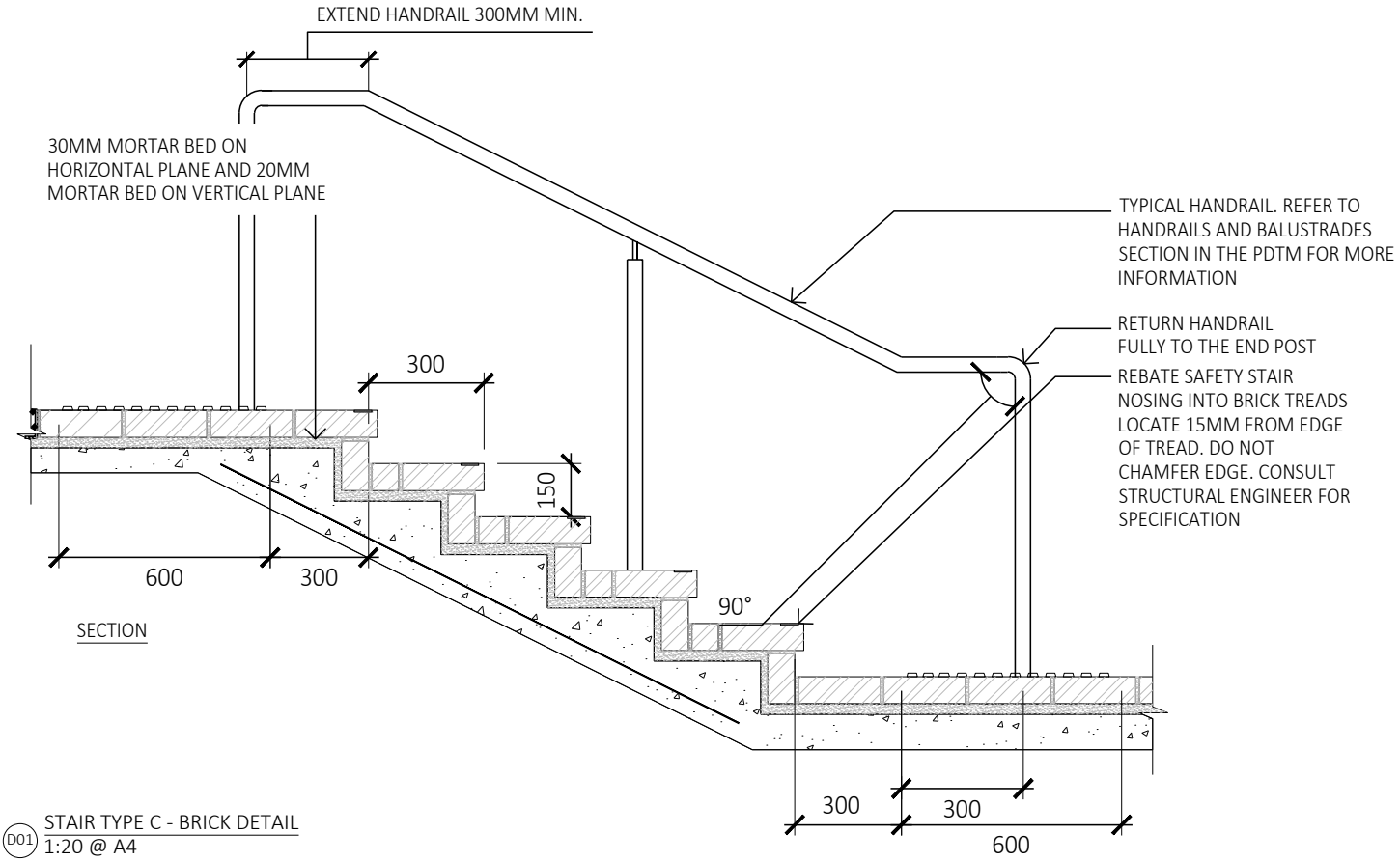
- Use of a high-pressure water hose to remove superficial dirt.

Stair Type C - Brick



PLAN

NOTE:
- TYPICAL RISER 150MM, GOING 300MM (2R+G);
- TREAD OVERHANG MIN 15MM MAX 25MM;
- ALL FIXINGS, BASE PREPARATION, REINFORCEMENT AND FOOTINGS TO STRUCTURAL ENGINEERS SPECIFICATIONS.



SECTION

D01 STAIR TYPE C - BRICK DETAIL
1:20 @ A4

C.04

Timber Stairs

Function / Location

- Timber stairs are typically used adjacent to timber decks and boardwalks.
- Timber stairs may be used in a natural setting or difficult to access site where a lightweight stair is required.
- Stairs are to comply with the Building Code of Australia and typically have a 150mm riser and a 300mm tread.
- Stair nosings are to be rebated into the timber tread, using Stair Nosing Type B. Refer to Stair Nosing Section.

Supplier

- Contractor to nominate based on below specifications.

Materials and Dimensions

- Australian hardwood timber slats (sustainably sourced timber AFS, FSC, PEFC Certified or recycled), with preference for Spotted Gum.
- Timber must be seasonsed to prevent leaching of tannins.
- Stairs are to have TGSI's installed to comply with AS1428.4.1.
- Stairs are to include nosing profiles which include 50-75mm wide solid slip resistant highlighting strips on the tread at the nosing with a minimum luminance contrast of 30% with the tread to comply with AS1428.1.
- Set stairs back a minimum of 900mm from adjacent pathways so handrails and TGSI's do not encroach on the path.

Installation

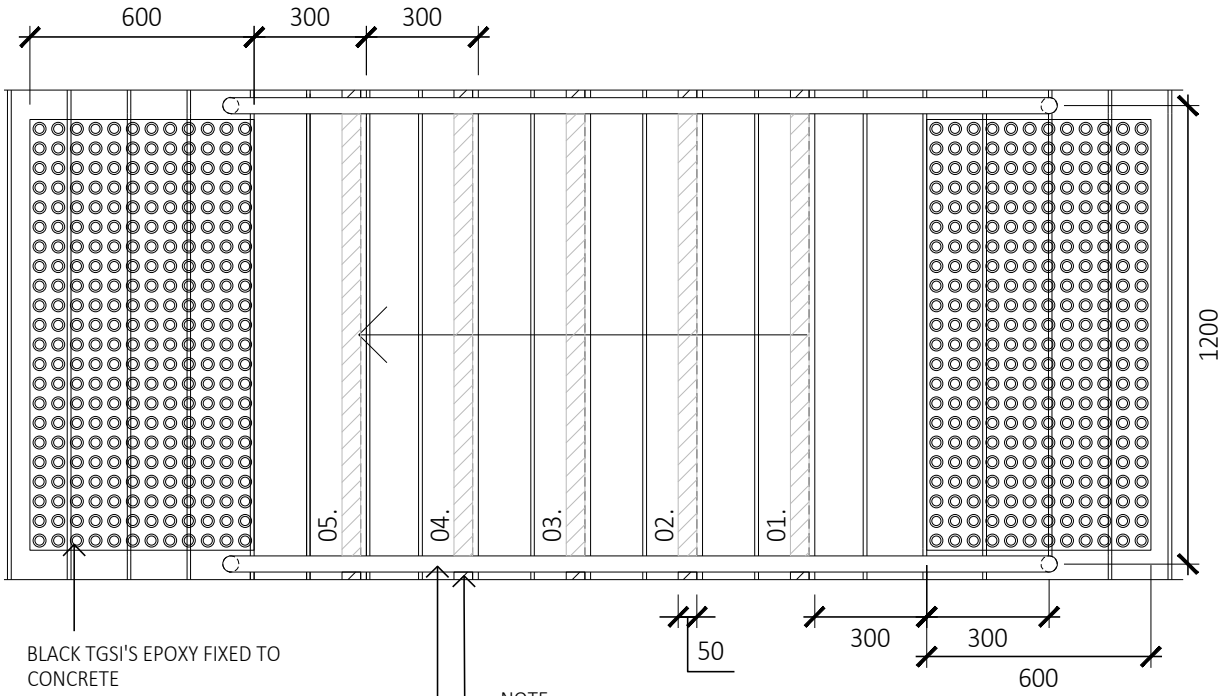
- Sub-structure to Engineers Specifications.
- Consult with a structural engineer regarding the specific site and design conditions.
- Obtain structural design drawings and specification prior to installation. These must be certified by a registered engineer.
- Refer to Handrails, Balustrades, TGSI's and Stair Nosings for more information.
- Coat with a commercial grade outdoor furniture oil which will not change the colour of the timber, and which is UV stable. Product equivalent to Dulux – Intergrain Nature's Timber Oil. Apply as per manufacturers recommendation.

Stair Type D - Timber

Natural Exterior Oil on Spotted Gum

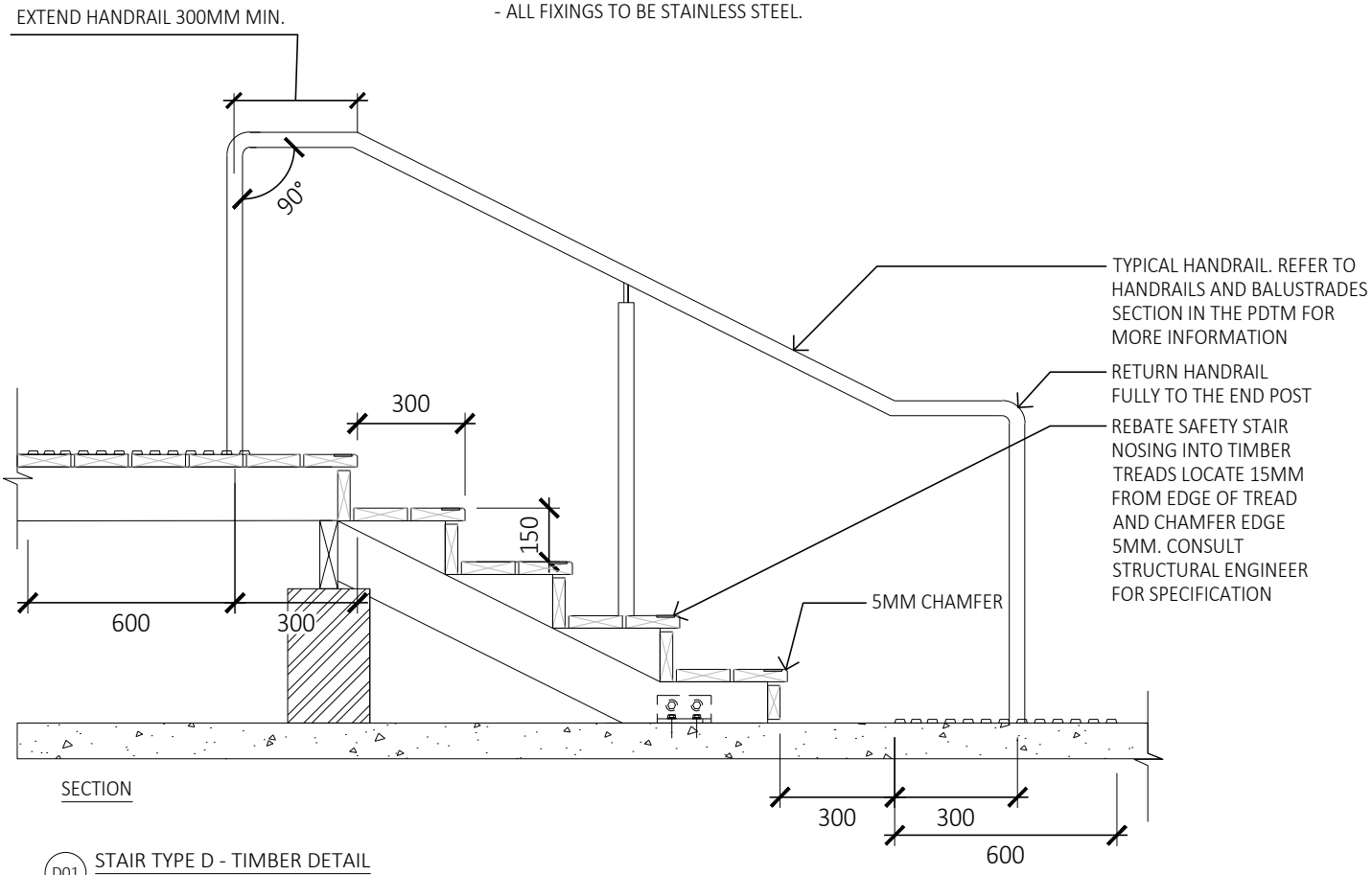
Maintenance

- Pressure wash
- Pre-treatment: Apply Intergrain Reviva or similar approved water based
- Finisher : Coat with product equivalent to Dulux – Intergrain Nature's Timber Oil. Apply as per manufacturers recommendation.
- First Onsite Oil Application: 3-6 months after the installation.
- Second Onsite Oil Application: 6-9 months after first onsite application.
- Ongoing Oil Application: Every 12 months.



PLAN

NOTE:
- TYPICAL RISER 150MM, GOING 300MM (2R+G);
- TREAD OVERHANG MIN 15MM MAX 25MM;
- 150 X 35 DAR HARDWOOD TIMBER BOARDS;
- HARDWOOD TIMBER BOARD FIXING PLATE AND STRINGERS;
- REBATE SAFETY STAIR NOSING INTO TIMBER TREADS (ABRALOY 493 S BLACK) LOCATE 15MM FROM STAIR NOSING;
- ALL FIXINGS, BASE PREPARATION, REINFORCEMENT AND FOOTINGS TO STRUCTURAL ENGINEERS SPECIFICATIONS;
- ALL FIXINGS TO BE STAINLESS STEEL.



SECTION

D01 STAIR TYPE D - TIMBER DETAIL
1:20 @ A4

C.05

Stair Nosings

Function / Location

- To provide a slip resistant nosing to stairs and to provide guidance for visually impaired users.
- Stair Nosings to be installed on all stairs in accordance with AS1428.1.
- Stair nosings must be used on all new high use stairs or stairs that pose a potential hazard to the visually impaired. Stair treads must be rebated to suit aluminium strip using Stair Nosing Type B or C, unless the nosing is to be installed in wet concrete. In this instance, Stair Nosing Type A shall be used.
- Stair nosing strips, cut to fit, combined with a heavy duty slip resistant resin abrasive granule compound infill, may be used to retrofit existing stairs. This nosing type may also be used for new sandstone or brick stairs.

Supplier

- Contractor to nominate based on below specifications.

Materials and Dimensions

- Stair Nosing Type A - Set in Wet Concrete treads
- Stair Nosing Type B - Set in rebated Set (Hard) Concrete treads
- Stair Nosing Type C - Set in rebated Timber, Sandstone & Brick treads
- Surface finish to be Slip -Resistant Infill, colour Black, equivalent to “Sparkling Black”
- 50mm wide x 10mm depth
- Install Stair Nosings to a Maximum 15mm from edge of tread.
- Stair nosing profiles to include 50mm wide solid slip resistant highlighting strips on the tread at the nosing with a minimum luminance contrast of 30% with the tread to comply with AS1428.1.

Installation

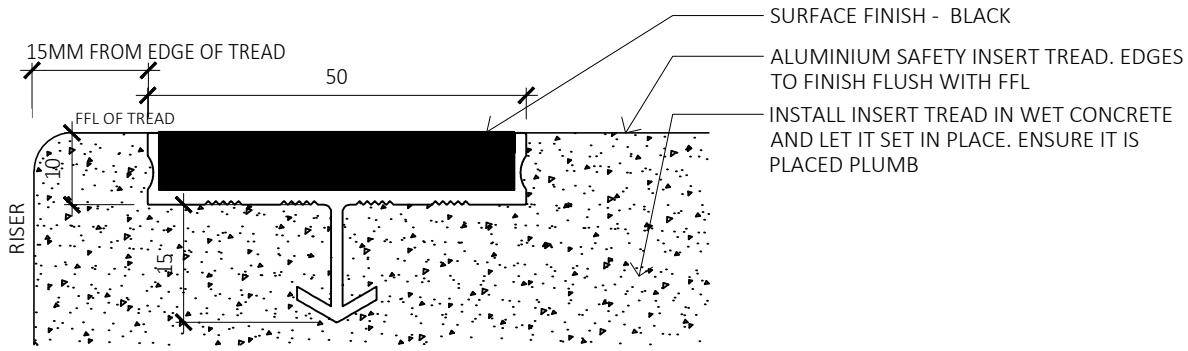
- Refer to manufacturers instructions.
- Refer to Australian Standard 1428.1- 2009 Designator Access and Mobility -General Requirements for access - New Building Work.

Maintenance

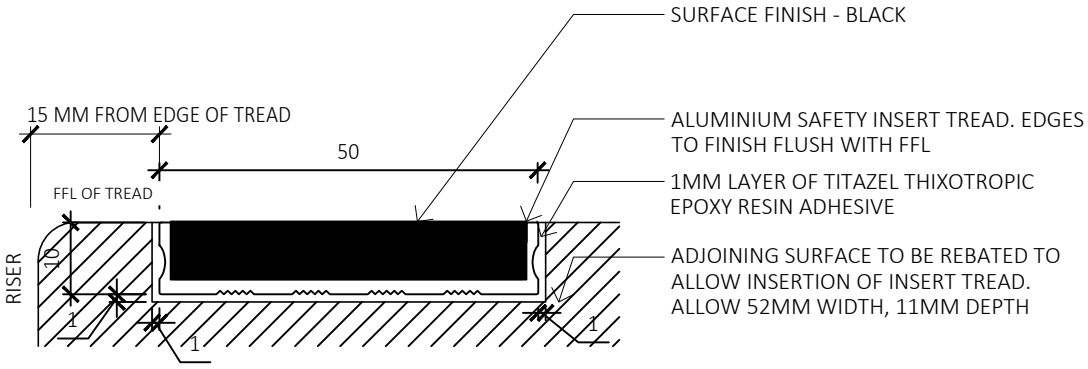
- Use of a high-pressure water hose to remove superficial dirt.

Aluminium Stair Nosings with Black Infill

NOTE:
1. HOLES TO BE PROVIDED IN THE TREADS TO SUIT 8 GAUGE STAINLESS STEEL OR BRASS SCREWS AT 250MM CENTRES
2. COLOUR OF SLIP-RESISTANT INFILL IS TO BE BLACK STANDARD INFILL EQUIVALENT TO "SPARKLING BLACK"



D01 STAIR NOSING TYPE A
Scale 1:1 @ A4



D02 STAIR NOSING TYPE B
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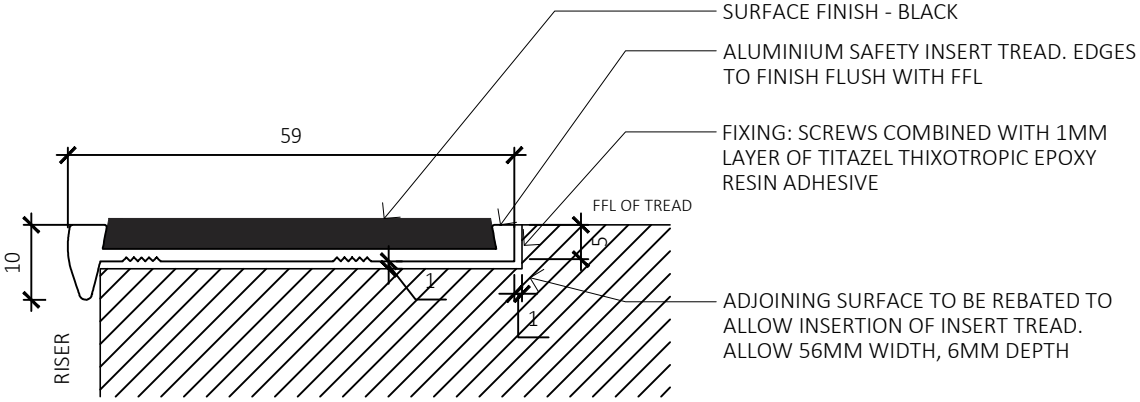

D03 STAIR NOSING TYPE C
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