5.0 Tunnel

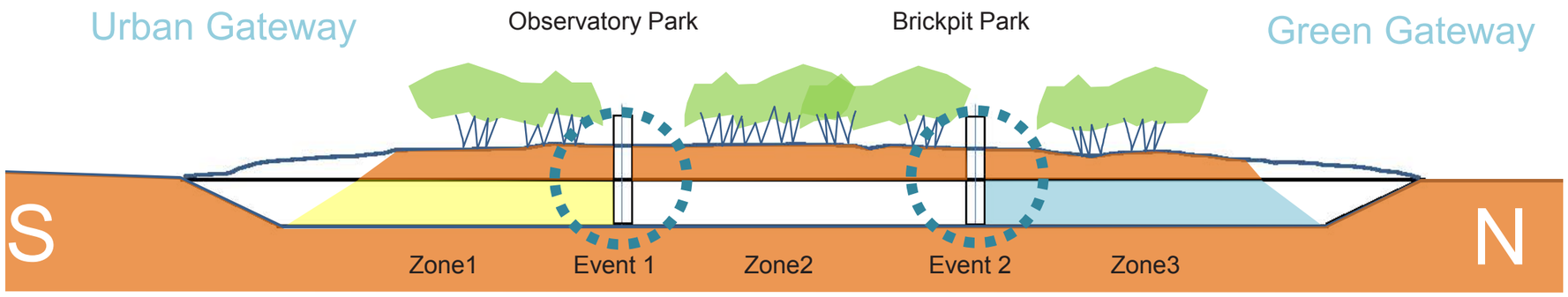
5.7 Tunnel Experience

Within the tunnel the 'light and shadow' patterning on the tunnel lining panels, as experienced by drivers, would provide a sense of surface light, shadow and colour of the landscape above. The motion of the driver, brings the pattern to life, referencing the green of the park above, providing orientation, interest and a sense of progress for the journey.

The experience of passing the pattern and moving into and out of the green area through various scales of light and shade can be thought of as a reference to light filtering through trees. In this way the driver becomes a participant in the creation of the experience and not simply an observer of an artwork.

As drivers pass the 'light and shadow' visual event they would experience a sense of delicate shifts in the patterning of the wall panels and, much like a flip book, feel a sense of the movement of the wind, sun and shade patterns of the landscape above.

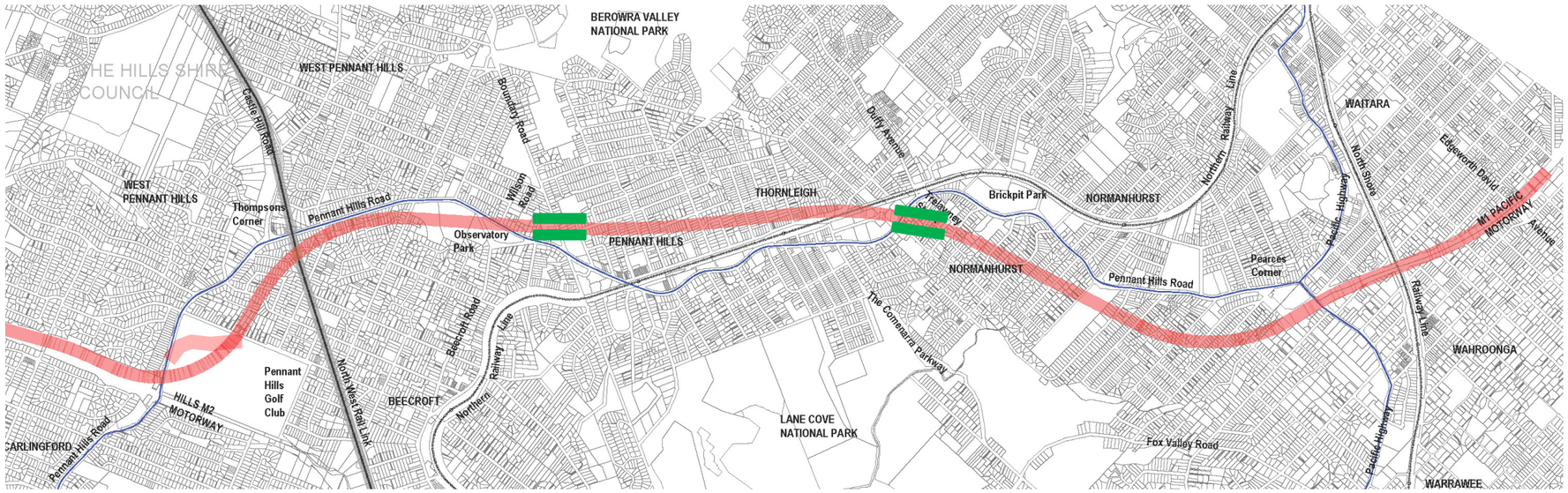
- The timing of various 'visual event' within the tunnel;
- The duration of the 'visual event' from the driver's point of view;
- The recognition of the 'visual events' as special moments in the journey; and
- Use standard panel spacing with some modification to create a 'visual event' and to facilitate ease of maintenance and constructability. Panel zones are proposed to be 96 metres long allowing for sufficient clearance to cross passage signage whilst providing approximately four to five seconds of 'visual event' experience; for allowing recognition and registration of the visual event with drivers and passengers. The 'visual event' is based on a fragmentation of the light and dark shading provided by the tree canopies in the referenced open spaces along the corridor above.



Event Experience Elevation Concept

- Variety and narrative of Tunnel as Transition Element in the Landscape
- Points of interest within the tunnel through events
- Reference points to surface features
- Shifting pattern of colours and shapes defining the overall driving experience into three distinct zones
- Feature Lighting at Event locations

M1-M2-5000-DR-UD-0212
TUNNEL EXPERIENCE DIAGRAM



5.0 Tunnel

Strategies for enhancing the driver experience have been built into the design.

These include provision of two ‘Event Experiences’ at third points of each main line carriage way tunnels, occurring at approximately 2.5 minutes at 80km/ph, consisting of a shifting pattern of wall colour and shapes.

Feature lighting is included at these locations within the ceiling to provide a brighter wall to create a change in lighting character, an appearance of a wider tunnel section, and a shift in experience relieving driver monotony and the perception of haze visibility.

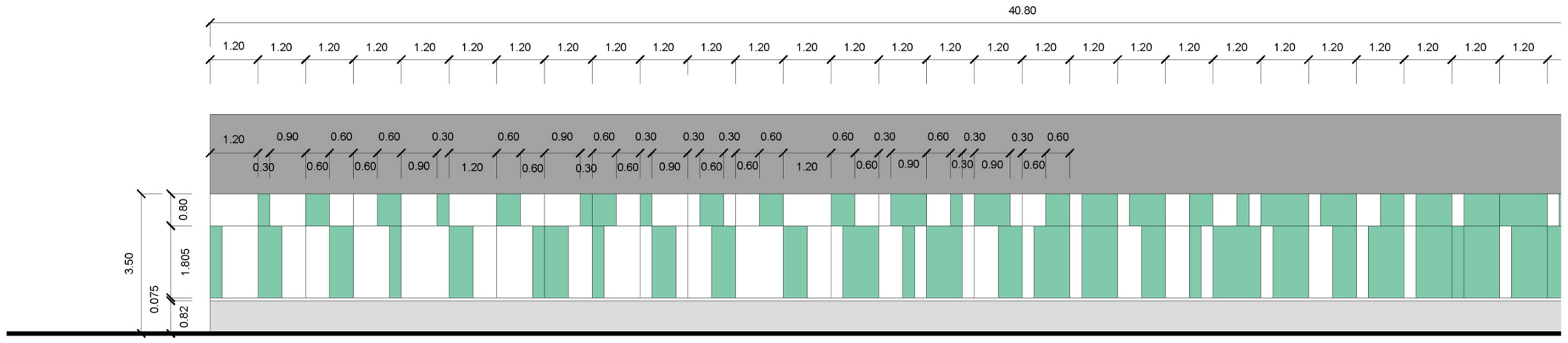
These ‘Event Experiences’ would also signal a shift in wall colour in the tunnel creating three distinct colour zones within the overall tunnel length allowing for a differing driver experiences during the journey, underscoring the tunnel as a gateway between the urban core and coastal areas. Wall colours selected will be intended to reinforce this concept.

They provide reference points to surface features and would be named for significant public parks that occur above the tunnel, namely Observatory Park, a well know historical place, and Brickpit Park, a new recreation facility built out of a brick pit site. They have a distinct and memorable wall pattern that is experienced kinetically as drivers pass by.

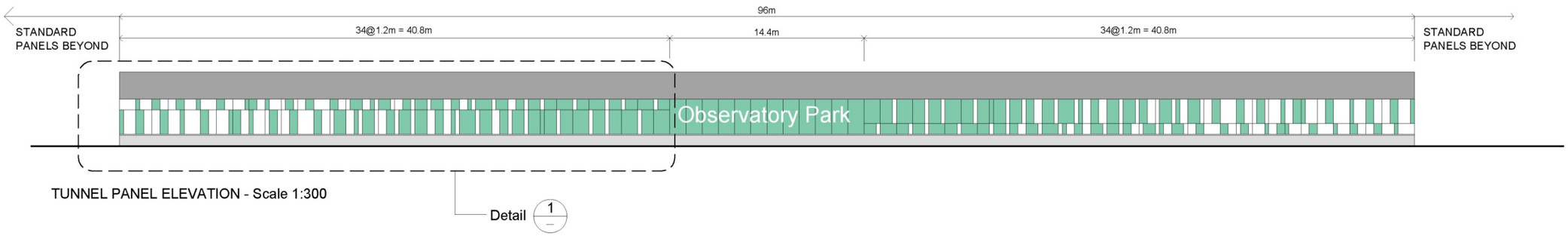
The reference to above ground features is an important part of the driver experience strategy as drivers can make a connection between their journey below the surface and actual places above. This will make these experiences more tangible and less abstract to aid in alleviating driver fatigue through providing a sense of orientation, a measure of progress, and visual interest during the journey.

Visual event special feature.

5.0 Tunnel



DETAIL 1 - Scale 1:100



TUNNEL PANEL ELEVATION - Scale 1:300

Tunnel Narrative – Event Option

Public Open Space Narrative – 2 Minute Interval

M1-M2-5000-DR-UD-0204
TUNNEL NARRATIVE – 'VISUAL EVENTS' SPECIAL FEATURE

5.0 Tunnel

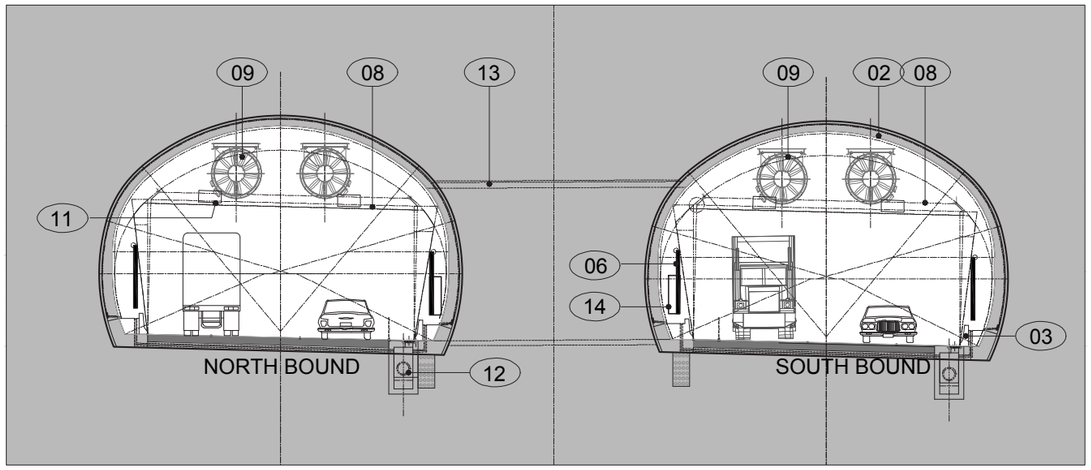
5.8 Tunnel Architecture and Cladding

Eight millimetre thick butt-jointed panels would be erected with stainless steel screw fixings for both sides of the tunnel linings. The cladding would be in a light grey colour with joints vertical to the road. The omission of vertical cover strips has the following advantages:

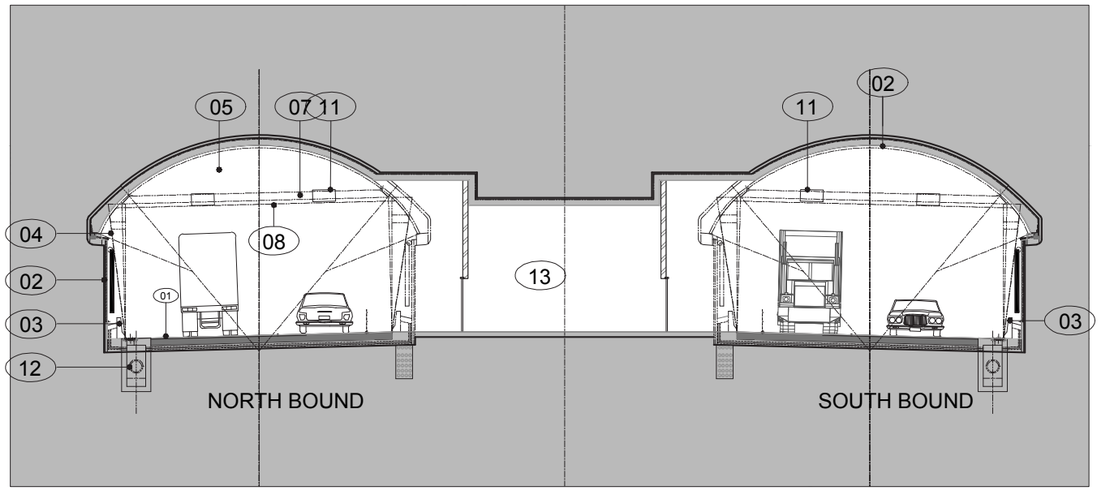
- A contemporary, clean uncluttered appearance to the cladding system;
- A significant reduction in material proliferation;
- Minor adjustments due to vertical alignment taken up in butt joints; and
- Simple integration of artistic motifs into the panels.

Tunnel cabinets are designed to suit two conditions, either concealed behind removable panels or provided with a matching stainless steel cover plate to reduce the impact of the horizontal cabinets against the line of the cladding which is perpendicular to the road.

All other services, piping, cable trays, tolling equipment, cameras and other tunnel associated safety equipment, would be painted black and located above the tunnel cladding. All concrete, rock and other tunnel structure would also be painted black.



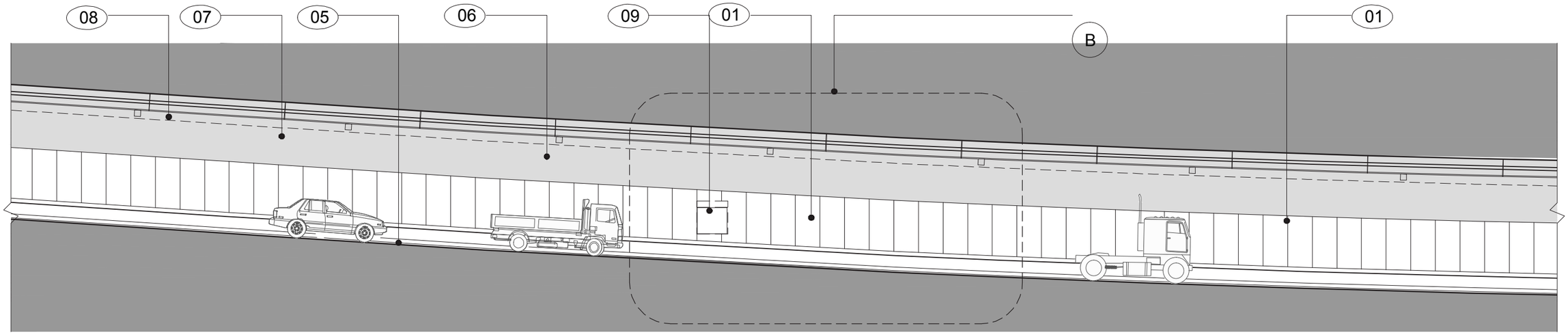
TYPICAL TUNNEL CROSS SECTION - TYPE 1 - IN SHALE



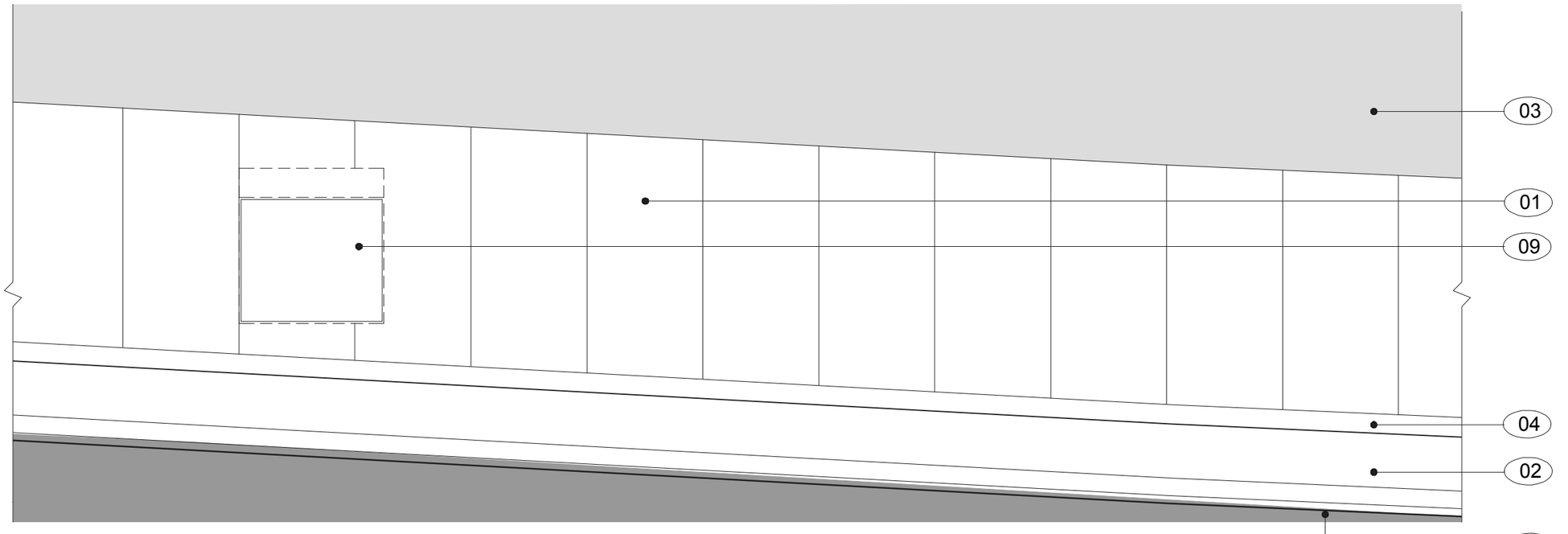
TYPICAL TUNNEL CROSS SECTION - TYPE 2 - IN SAND STONE

01 TOP OF ROAD PAVEMENT
02 TUNNEL STRUCTURE
03 TYPE F CONCRETE BARRIER
04 TUNNEL SURFACE ABOVE LINING PANELS - BLACK ZONE
05 SERVICES
06 TUNNEL LINING VITRE PANELS
07 VEHICLE ENVELOPE - 5.3M
08 OVERHEIGHT VEHICLE BARRIER ENVELOPE -5.15M
09 JET FAN
10 TUNNEL LIGHTING
11 ITS SIGNAGE
12 TUNNEL DRAINAGE
13 CROSS PASSAGE
14 FIRE SERVICE EQUIPMENT

M1-M2-5000-DR-UD-0209
TUNNEL SECTIONS - TYPICAL



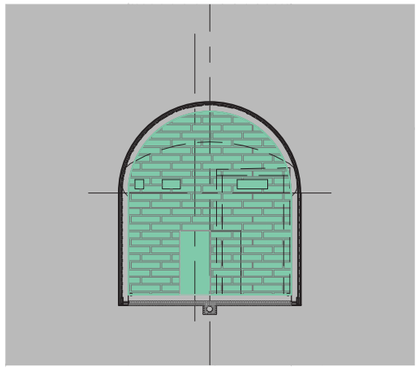
TYPICAL ELEVATION OF PANEL LINING IN TUNNEL - AT VARYING GRADIENTS
Scale 1:200 @ A3



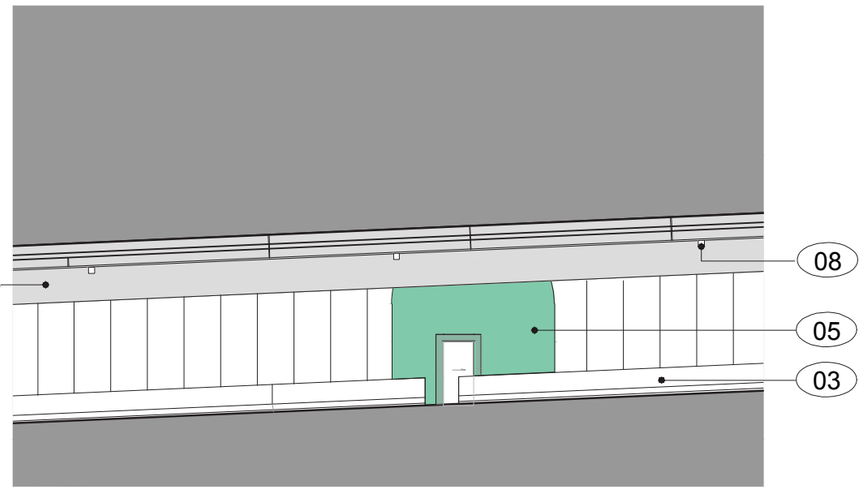
TYPICAL DETAILED ELEVATION B OF PANEL LINING IN TUNNEL - AT VARYING GRADIENTS
Scale 1:50 @ A3

01 TUNNEL LINING VITRE PANEL
02 TYPE F CONCRETE BARRIER
03 SURFACES ABOVE LINING PANELS PAINTED BLACK
04 200 GAP BETWEEN BARRIER AND U/S OF COVERSTRIP
05 TOP OF ROAD PAVEMENT
06 5300 HIGH VEHICLE ENVELOPE
07 TUNNEL LIGHTING
08 PIPES & SERVICES
09 M & E EQUIPMENT (VARIED SIZES)

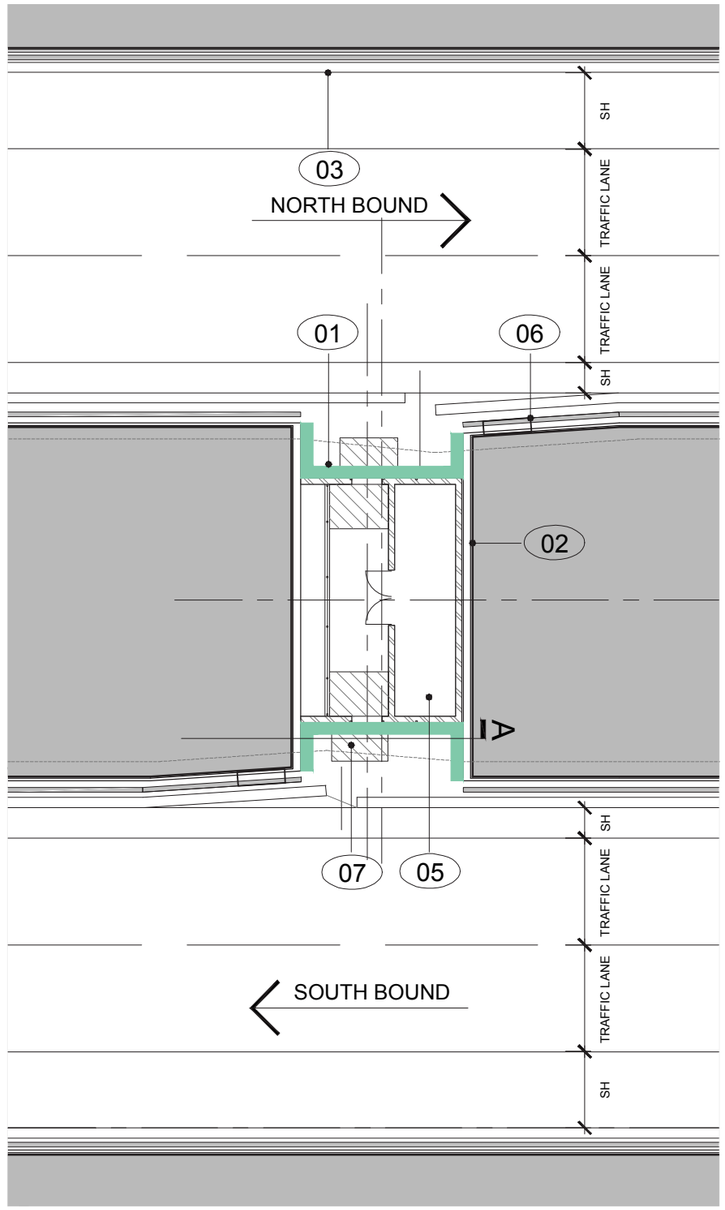
M1-M2-5000-DR-UD-0207
TUNNEL LINING ELEVATIONS



TYPICAL TUNNEL CROSS PASSAGE SECTION A SCALE 1:200 @ A3



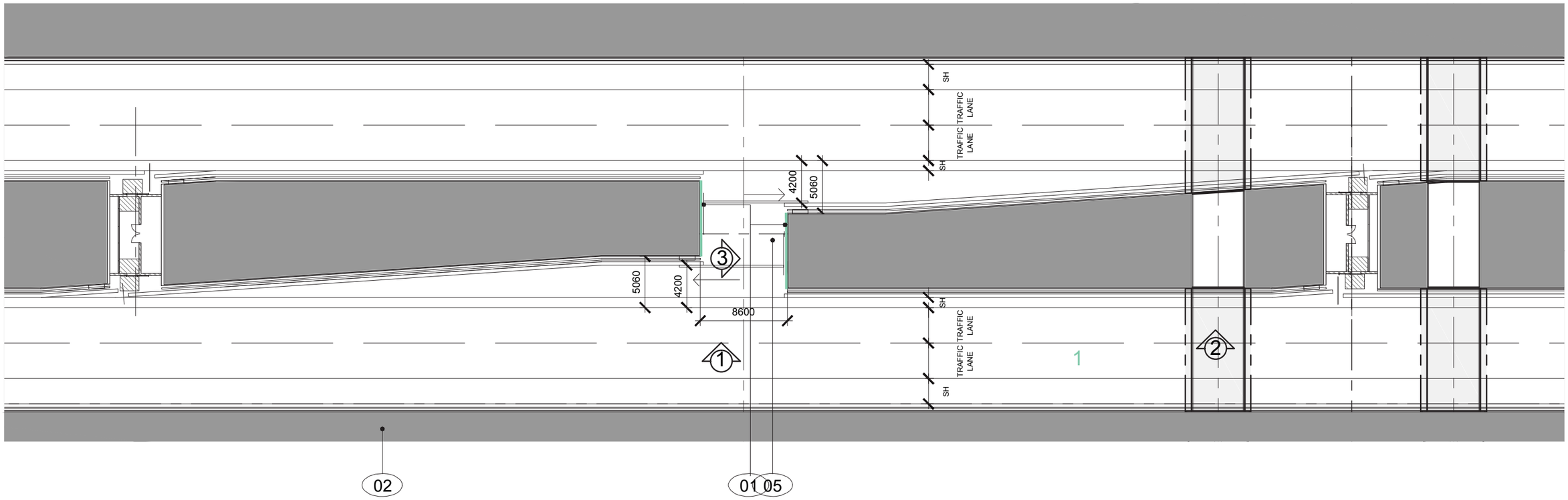
ELEVATION SCALE 1:200 @ A3

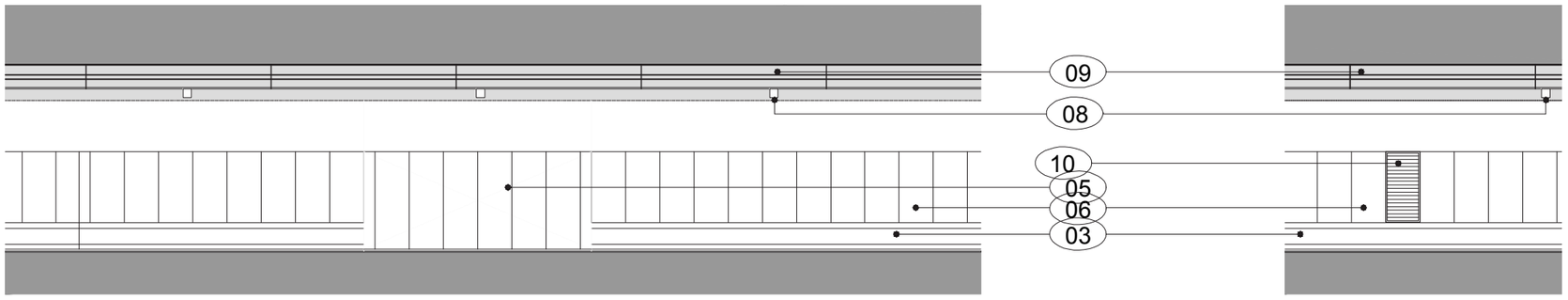


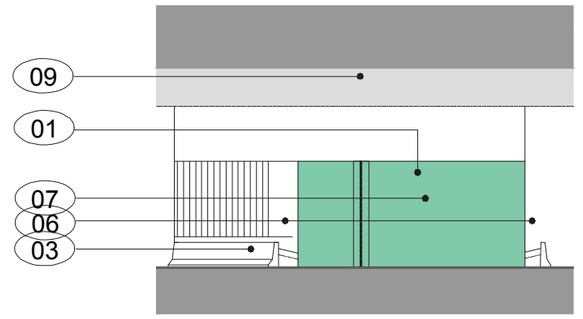
TYPICAL TUNNEL CROSS PASSAGE PLAN SCALE 1:200 @ A3

01 RENDERED BLOCK WALL IN SHADE OF JADE GREEN
02 TUNNEL STRUCTURE
03 TYPE F CONCRETE BARRIER
04 TUNNEL SURFACE ABOVE LINING PANELS - BLACK ZONE
05 VEHICLE CROSS PASSAGE
06 TUNNEL LINING VITRE PANELS
07 CIRCULATION SPACE
08 TUNNEL LIGHTING
09 SURFACE ABOVE TUNNEL LINING PAINTED BLACK
10 VENTILATION LOUVRE

M1-M2-5000-DR-UD-0210
TUNNEL CROSS PASSAGE







01 RENDERED BLOCK WALL IN SHADE OF JADE GREEN
02 TUNNEL STRUCTURE
03 TYPE F CONCRETE BARRIER
04 TUNNEL SURFACE ABOVE LINING PANELS - BLACK ZONE
05 VEHICLE CROSS PASSAGE
06 TUNNEL LINING VITRE PANELS
07 CIRCULATION SPACE
08 TUNNEL LIGHTING
09 SURFACE ABOVE TUNNEL LINING PAINTED BLACK
10 VENTILATION LOUVRE

M1-M2-5000-DR-UD-0211
TUNNEL CROSS PASSAGE

Artist's Impression Only

M1-M2-5000-DR-UD-0922
TUNNEL INTERIOR - TYPICAL EXIT

6.0 Operational Ancillary Facilities

6.1 Introduction

The facilities have been described with the motorway operations complex site itself, with the largest grouping of facilities, first. Following on from the motorway operations complex site, in a south to north order are the following facilities:

- Endeavour Energy switching station;
- Wilson Road tunnel support facility;
- Trelawney Street tunnel support facility; and
- Northern ventilation facility

6.2 Principles

The guiding principles in the development of the designs for these elements have been to:

- Make the ventilation structures, substations and the motorway operations complex as aesthetically pleasing as possible;
- Minimise environmental and visual impact upon any surrounding residential areas;
- Ensure the best contextual design response of these built elements; and
- Adopt best practice technical standards for the functioning of ventilation systems.

6.3 Strategies

The strategies to ensure the successful application of the guiding principles have been to:

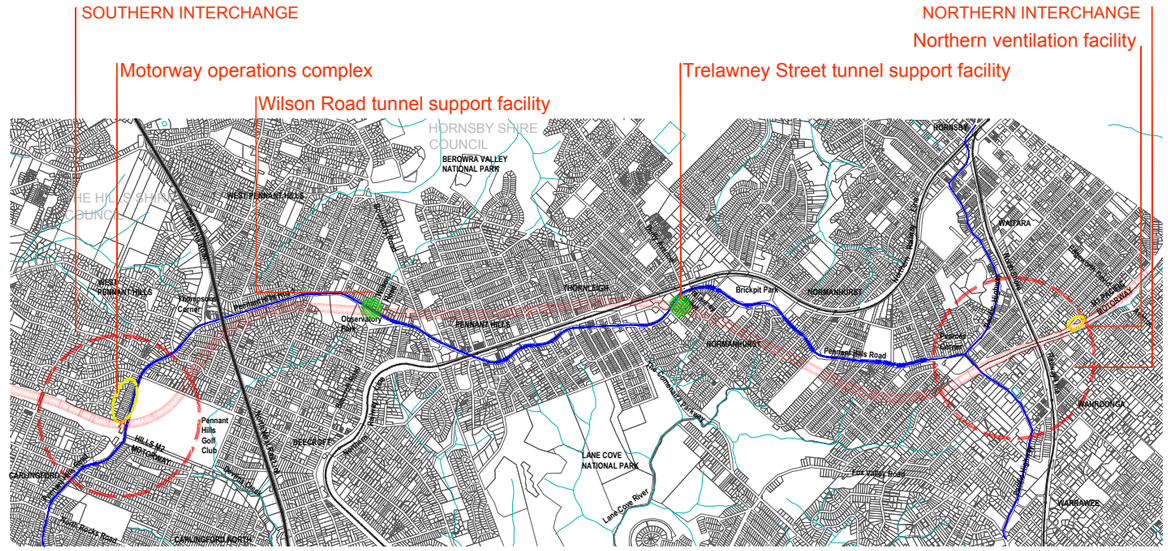
- Incorporate all engineering, Council, and Authorities' requirements including strategies to assist community consultation as well as precedent and design process studies ;
- Employ an integrated study approach to fan performance criteria, construction techniques, engineering and air flow characteristics;
- Evaluate materials and construction techniques in relation to aesthetic considerations.
- Provide, where appropriate, special design solutions to respond to surrounding character.

6.4 Background

The tunnel substations and related facilities would become a permanent feature of the landscape and as such their design has been considered in relation to tunnel precedents in Sydney.

The motorway operations complex is the centre from which incident response, toll monitoring/collection and the monitoring and broadcast of tunnel conditions would be carried out.

The ventilation structures and motorway operations complex for the project are described in detail on the following pages.



6.0 Operational Ancillary Facilities

6.5 Family of Forms

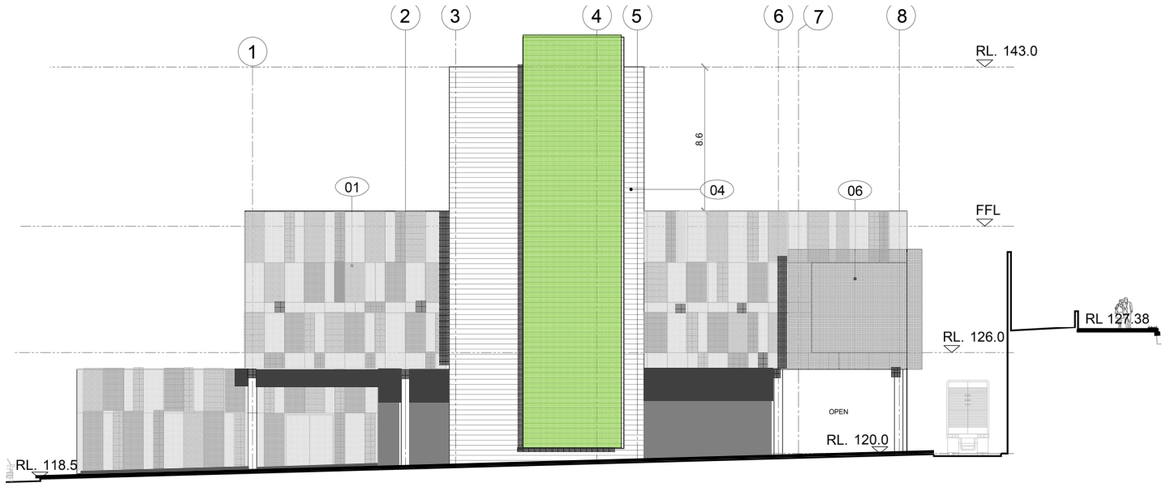
The architectural language of the project has been developed as a family of forms and materials. These repeat throughout the project and provide legibility and branding for the facilities. These materials and forms also allow the signature 'light and shadow' pattern to be integral to the design of facilities instead of an appliqué.

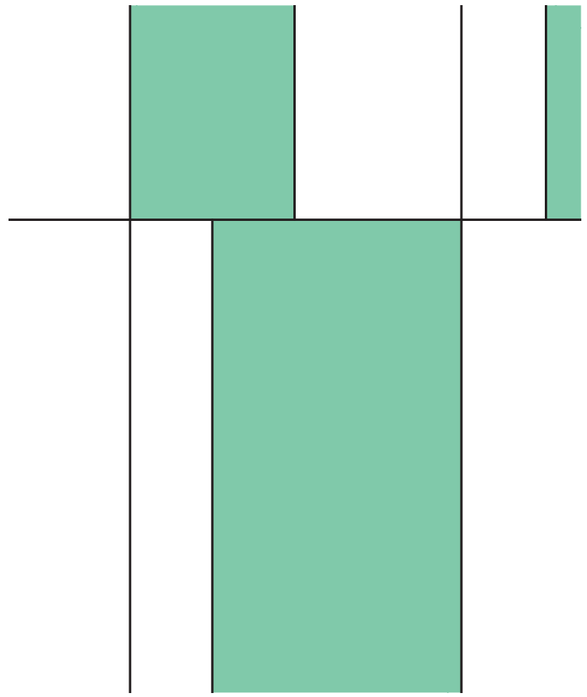
Strategies focus on:

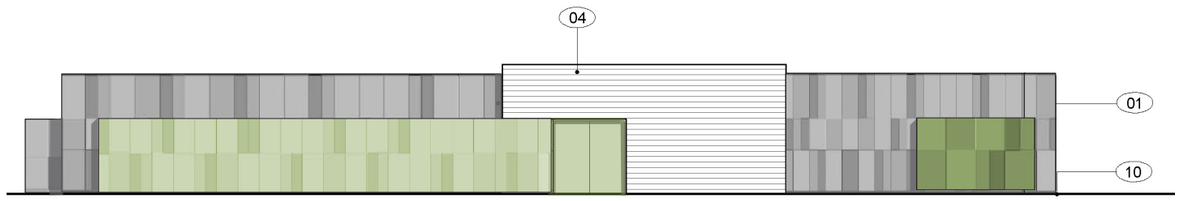
- Pattern;
- Transition; and
- Layering

Signature elements include:

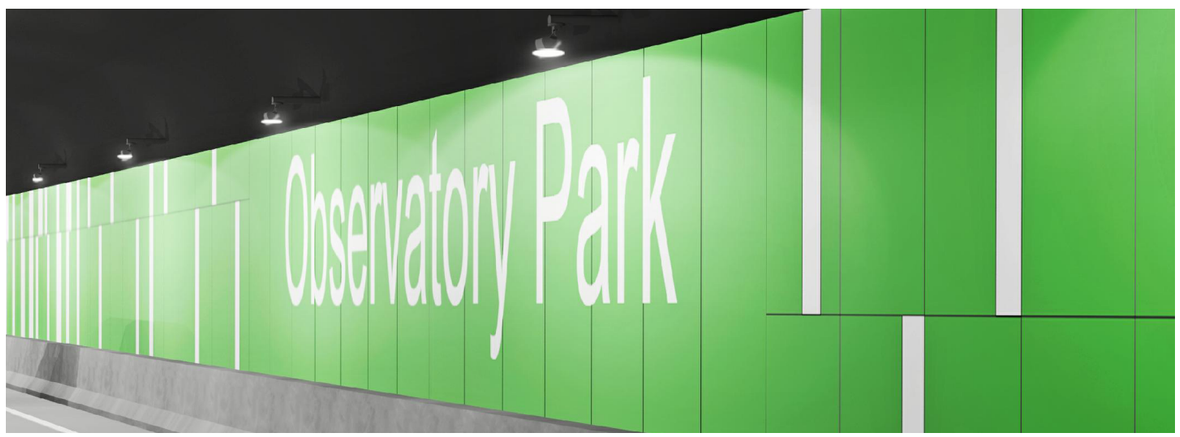
- Sunscreen lantern scrim at the Motorway Control Centre (MCC) and southern ventilation facility;
- GRC wall panels;
- A variety of subtle 'light and shadow' patterning on vertical surfaces and in tunnels;
- Elements in the landscape approach to facilities location;
- Continuous glazed or ventilation openings;
- Simple strong forms;
- A layered approach to the creation of built form facades and walls;
- Grey green tones to provide a neutral background to feature and bush planting areas;
- Sandstone; and 'timber look' materials at the northern ventilation facility.







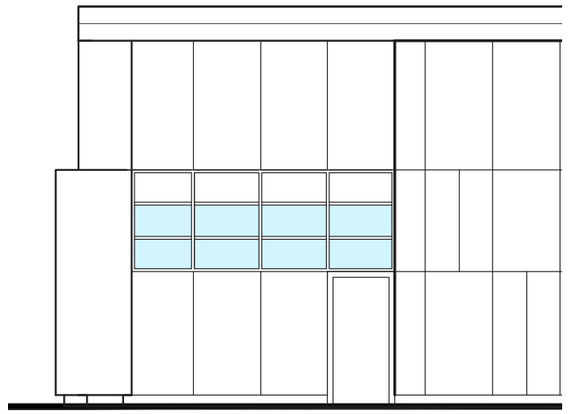
WILSON ROAD ELEVATION

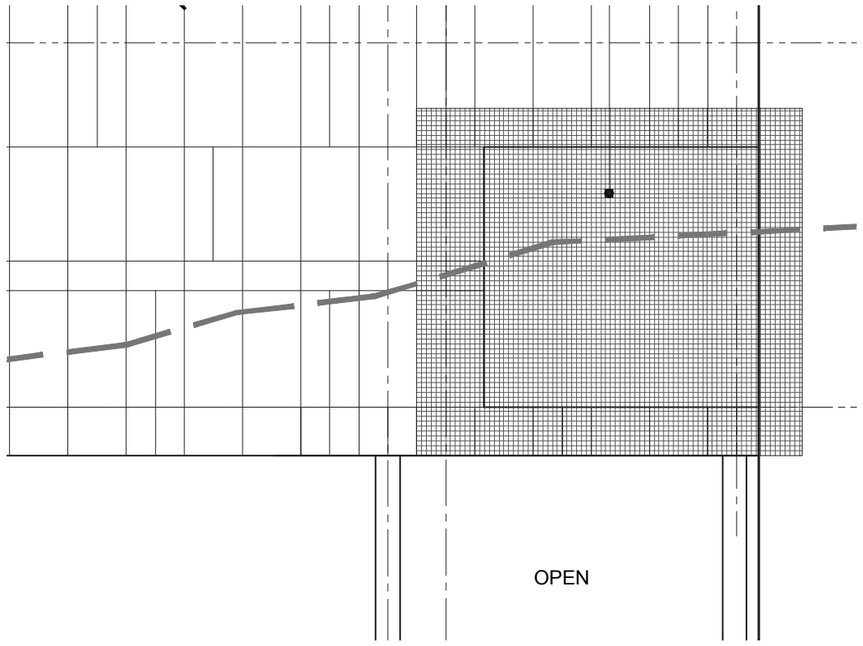


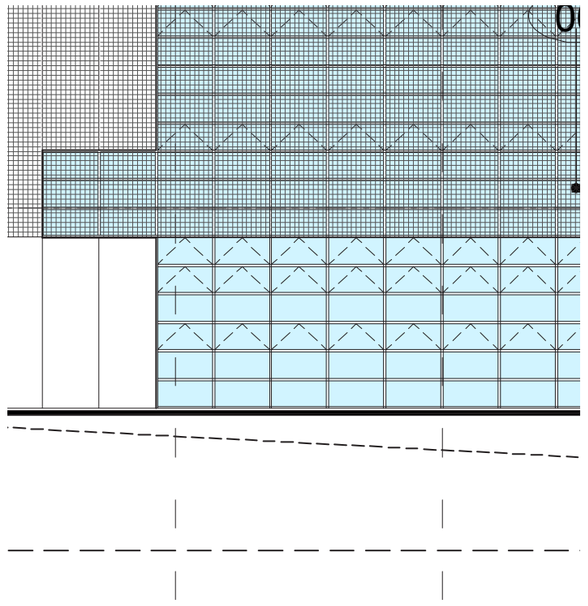
Pattern
Transition

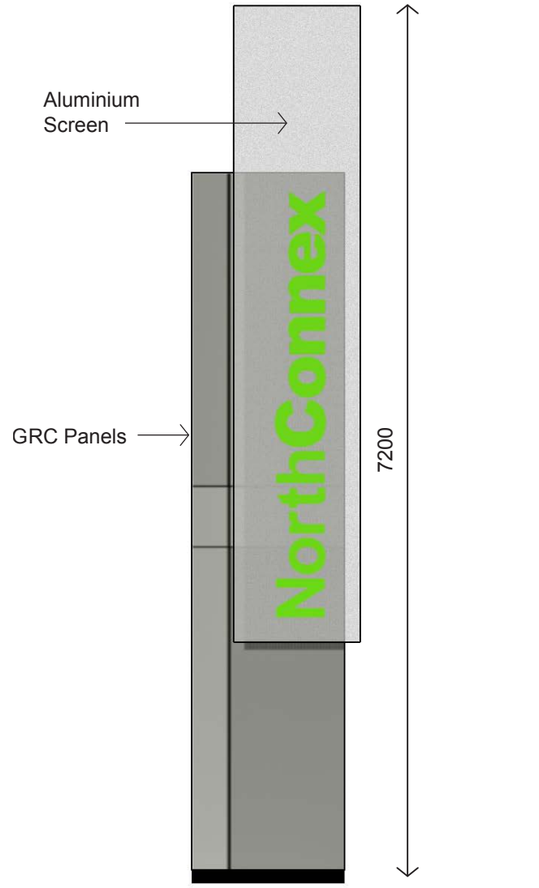
6.0 Operational Ancillary Facilities

Layering









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